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

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Addendum

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

From data-month October 2002, a new location program ISCloc has been used in operations. Also, the IASPEI standard seismic phase list has been adopted by the ISC (Storchak,D.A., J.Schweitzer, P.Bormann (2003) The IASPEI Standard Seismic Phase List, Seismological Research Letters 74, 6, 761-772).

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

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

The following example illustrates the changes :-

September 2002

*NEIC **01** 18:45:41.7±1.7,21.70S×179.55W,h600km,mb4.6/6,*
Error ellipse: s-maj=75.5km s-min=25.7km az=151.0
*IDC **01** 18:45:46.3±2.6,21.76S×179.70W,h627km±37km,mb3.5/4,*
mb1 3.7/4,mb1mx3.2/14,Error ellipse: s-maj=83.2km
s-min=20.6km az=159.0
ISC 01 18:45:43.1±2.7,22.3S±0.2×179.6W±0.3,h613km±42km,
n22,σt§15/21,mb4.4/9,1C,South of Fiji Islands

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

Epicentral Estimates

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

Observational Data

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

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

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

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

*NEIC **01** 00:06:28.7±0.9, 18.31S×167.00E, h10km, Error ellipse: s-maj=21.4km s-min=16.3km az=102.0*
*IDC **01** 00:06:28.1±1.6, 17.66S×166.73E, mb3.9/8, mb1 4.2/8, mb1mx4.1/14, MS3.6/7, Ms1 3.6/7, ms1mx3.4/19, Error ellipse: s-maj=66.7km s-min=25.8km az=152.0*
ISC 01 00:06:27.0±0.8, 18.20S±0.06×166.9E±0.1, h10km, n17, σ1§11/18, mb3.8/8, MS3.5/6, 1C, Vanuatu Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**1.38**	**68**	⇑*i*P	**Pn**	**00 06 38.4**	**-1.4**
DZM	**Mont Dzumac**	**3.88**	**186**	*e*P	**Pn**	**00 07 26.0**	**-2.0**
DZM				*e*S	**Sn**	**00 08 14.5**	**+0.4**
DZM	**Mont Dzumac**	**3.88**	**186**	*e*P	**Pn**	**00 07 26.0**	**-2.0**
DZM				*e*S	**Sn**	**00 08 14.5**	**+0.4**
NOUC	**Port Laguerre**	**3.92**	**188**	*e*P	**Pn**	**00 07 28.1**	**-0.5**
NOUC				*e*S	**Sn**	**00 08 15.7**	**+0.4**
NOUC	**Port Laguerre**	**3.92**	**188**	*e*P	**Pn**	**00 07 28.1**	**-0.5**
NOUC				*e*S	**Sn**	**00 08 15.7**	**+0.4**
CTA	**Charters Tower**	**19.60**	**261**	LR	LR	00 17 13.2	
	comp=Z,276nm,18.2s,baz=55,slow=33						
PMG	**Port Moresby**	**21.05**	**292**	LR	LR	00 17 04.8	
	comp=Z,91nm,18.7s,MS3.2,baz=136,slow=31						
STKA	**Stephens Creek**	**26.59**	**234**	P	**P**	**00 12 09.9**	**+2.7**
	2.0nm,0.6s,mb3.9,baz=63,slow=4.5,SNR=2.6						
STKA				LR	LR	00 20 40.3	
	comp=Z,129nm,21.6s,MS3.4,baz=28,slow=32						
WRA	**Warramunga Arr**	**30.80**	**261**	P	**P**	**00 12 45.1**	**-0.2**
	0.3nm,0.6s,mb3.3,baz=80,slow=6.0,SNR=3.7						
ASAR	**Alice Springs**	**31.25**	**254**	P	**P**	**00 12 49.0**	**-0.3**
	1.7nm,0.7s,mb4.0,baz=81,slow=8.5,SNR=17						
ASAR				LR	LR	00 25 07.9	
	comp=Z,117nm,20.5s,MS3.5,baz=173,slow=36						
FITZ	**Fitzroy Crossi**	**39.15**	**263**	P	**P**	**00 13 57.5**	**+0.7**
	3.5nm,0.8s,mb4.1,baz=90,slow=10,SNR=3.8						
FITZ				LR	LR	00 27 21.3	
	comp=Z,49nm,19.2s,MS3.4,baz=104,slow=32						
CMAR	**Chiang Mai Arr**	**76.06**	**295**	P	**P**	**00 18 16.6**	**-0.4**
	0.4nm,0.4s,mb3.8,baz=134,slow=3.8,SNR=4.6						
SONM	**Songino Array**	**85.07**	**324**	P	**P**	**00 19 02.4**	**-1.8**
	0.5nm,0.7s,mb3.7,baz=131,slow=2.2,SNR=4.0						
NVAR	**Mina Array Bea**	**89.79**	**49**	P	**P**	**00 19 28.5**	**+1.2**
	0.5nm,0.9s,mb3.9,baz=226,slow=5.1,SNR=3.6						
NVAR				LR	LR	00 54 16.6	
	comp=Z,38nm,19.5s,MS3.8,baz=275,slow=32						
NVAR	**Mina Array Bea**	**89.79**	**49**	P	**P**	**00 19 28.5**	**+1.2**
NVAR				LR	LR	00 54 16.6	
ILAR	**Eielson Array**	**89.92**	**18**	LR	LR	00 55 46.6	
	comp=Z,36nm,19.2s,MS3.8,baz=30,slow=33						
TXAR	**Lajitas Array**	**98.23**	**62**	P	**P**	**00 20 06.6**	**+0.5**
	0.4nm,0.8s,mb4.0,baz=211,slow=5.3,SNR=4.2						

*NEIC **01** 00:08:23.0±4.2, 6.79S×154.19E, h105km±31km, mb4.5/1, Error ellipse: s-maj=51.9km s-min=25.2km az=119.0*
*IDC **01** 00:08:23.8±6.3, 6.79S×154.17E, h107km±51km, mb3.5/5, mb1 3.8/6, mb1mx3.6/14, Error ellipse: s-maj=51.6km s-min=32.6km az=120.0*
ISC 01 00:08:20.6±4.9, 6.8S±0.2×154.3E±0.2, h95km±40km, n9, σ0§79/10, mb3.8/6, Bougainville - Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**7.50**	**249**	P	**P**	**00 10 08.7**	**-0.3**
	0.9nm,0.3s,baz=0.4,slow=5.2,SNR=5.5						
PMG				S	**S**	**00 11 33.5**	**+0.4**
	2.1nm,0.3s,baz=48,slow=20,SNR=3.8						
WRAB	**Tennant Creek**	**23.34**	**234**	P	**P**	**00 13 20.1**	**-1.1**
	33nm,1.5s,mb4.5						
WRA	**Warramunga Arr**	**23.35**	**234**	P	**P**	**00 13 22.1**	**+0.8**
	2.2nm,0.8s,mb3.5,baz=56,slow=10,SNR=6.1						
ASAR	**Alice Springs**	**25.78**	**227**	P	**P**	**00 13 44.5**	**0.0**
	0.9nm,0.8s,mb3.3,baz=67,slow=9.4,SNR=2.5						
MKAR	**Makanchi Array**	**82.74**	**319**	P	**P**	**00 20 35.8**	**+0.4**
	0.7nm,0.8s,mb3.5,baz=108,slow=4.6,SNR=4.7						
ZAL	**Zalesovo**	**83.58**	**326**	P	**P**	**00 20 40.2**	**+0.8**
	0.4nm,0.3s,mb3.7,baz=108,slow=3.2,SNR=2.7						
ZAL	**Zalesovo**	**83.58**	**326**	P	**P**	**00 20 40.2**	**+0.8**
KURK	**Kurchatov**	**86.19**	**322**	P	**P**	**00 20 50.8**	**-1.7**
NVAR	**Mina Array Bea**	**92.15**	**52**	P	**P**	**00 21 21.5**	**+0.5**
	1.3nm,1.1s,mb4.0,baz=241,slow=4.8,SNR=4.0						

*NEIC **01** 00:13:37.2, 17.99N×68.16W, h92km, MD3.6(RSPR), After RSPR.*
RSPR 01 00:13:37.2, 17.99N×68.16W, h92km±2km, M3.6, 9C-1D, Mona Passage

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MGP	**Maguayo**	**1.01**	**89**	⇑*e*P	P	00 13 56.3	-1.1
MGP	**Maguayo**	**1.01**	**89**	⇓*e*P	P	00 13 56.0	-1.4
MGP				S	S	00 14 10.7	-1.9
LSP	**Las Mesas**	**1.03**	**79**	⇑*e*P	P	00 13 56.7	-0.9
LSP				S	S	00 14 11.0	-2.0
LRS	**Lares**	**1.28**	**76**	⇑*e*P	P	00 13 59.0	-1.8
LRS				S	S	00 14 16.2	-2.2
AOPR	**Arecibo Observ**	**1.38**	**75**	⇑*e*P	P	00 14 00.6	-1.4
AOPR	**Arecibo Observ**	**1.38**	**75**	S	S	00 14 18.3	-2.1
OBIP	**Obispado Ponce**	**1.48**	**88**	⇑*e*P	P	00 14 02.1	-1.0
OBIP	**Obispado Ponce**	**1.48**	**88**	S	S	00 14 20.6	-1.7
ICM	**Isla Caja Muer**	**1.56**	**93**	⇑*e*P	P	00 14 02.7	-1.5
ICM				S	S	00 14 21.7	-2.4
SJG	**San Juan**	**1.91**	**86**	⇑*e*P	P	00 14 08.0	-0.8
SJG				S	S	00 14 30.0	-2.1
HUMP	**Col San Antoni**	**2.20**	**86**	⇑*e*P	P	00 14 11.2	-1.5
HUMP				S	S	00 14 36.9	-2.1
CBYP	**Canovanas**	**2.20**	**82**	⇓*e*P	P	00 14 11.1	-1.6
CBYP				S	S	00 14 36.6	-2.6

*IDC **01** 00:44:43.1±0.9, 21.65S×69.01E, mb3.9/10, mb1 4.1/10, mb1mx3.9/19, MS3.8/4, Ms1 3.8/4, ms1mx3.4/15, Error ellipse: s-maj=29.9km s-min=19.5km az=43.0*
*NEIC **01** 00:44:44.7±0.5, 21.67S×68.98E, h10km, mb4.0/1, Error ellipse: s-maj=15.9km s-min=12.4km az=204.0*
ISC 01 00:44:42.8±0.7, 21.7S±0.1×69.0E±0.1, h10km, n13, σ0§61/12, mb4.0/11, MS3.8/4, Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMBO	**Kilima Mbogo**	**37.08**	**299**	P	**P**	**00 51 55.9**	**+0.7**
	2.2nm,1.0s,mb4.0,baz=44,slow=23,SNR=2.9						
LSZ	**Lusaka**	**39.17**	**272**	*e*P	**P**	**00 52 12.6**	**-0.2**
	4.0nm,1.2s,mb4.0						
MAW	**Mawson**	**46.11**	**183**	P	**P**	**00 53 08.9**	**+0.2**
	2.2nm,0.7s,mb4.2,baz=346,slow=5.4,SNR=4.1						
MAW				LR	LR	01 06 37.4	
	comp=Z,159nm,19.5s,MS4.0,baz=257,slow=28						
CMAR	**Chiang Mai Arr**	**49.47**	**39**	P	**P**	**00 53 36.5**	**+1.0**
	0.4nm,0.4s,mb3.8,baz=221,slow=9.6,SNR=3.6						
CMAR				LR	LR	01 09 24.1	
	comp=Z,48nm,21.4s,MS3.5,baz=240,slow=30						
FITZ	**Fitzroy Crossi**	**53.11**	**97**	P	**P**	**00 54 04.1**	**+0.9**
	3.4nm,0.7s,mb4.4,baz=340,slow=7.7,SNR=3.8						
ASAR	**Alice Springs**	**59.43**	**105**	P	**P**	**00 54 47.6**	**-0.7**
	1.3nm,0.7s,mb4.1,baz=260,slow=6.5,SNR=13						
WRA	**Warramunga Arr**	**60.66**	**101**	P	**P**	**00 54 56.2**	**-0.6**
	1.4nm,0.7s,mb4.2,baz=256,slow=6.2,SNR=8.2						
STKA	**Stephens Creek**	**64.54**	**116**	LR	LR	01 21 37.4	
	comp=Z,213nm,19.8s,MS4.3,baz=25,slow=34						
MKAR	**Makanchi Array**	**69.17**	**10**	P	**P**	**00 55 50.9**	**-0.7**
	0.9nm,0.7s,mb3.8,baz=202,slow=6.5,SNR=7.8						
MKAR				LR	LR	01 23 08.2	
	comp=Z,25nm,18.9s,MS3.5,baz=16,slow=33						
BRTR	**Keskin Array B**	**69.43**	**332**	P	**P**	**00 55 52.8**	**-0.5**
	0.4nm,0.7s,mb3.5,baz=149,slow=8.4,SNR=3.6						
KURK	**Kurchatov**	**72.55**	**6**	*e*P	**P**	**00 56 12.1**	**+0.2**
BVAR	**Borovoye Array**	**74.37**	**1**	P	**P**	**00 56 22.6**	**+0.2**
	0.6nm,0.9s,mb3.5,baz=180,slow=8.6,SNR=2.4						
ZAL	**Zalesovo**	**76.50**	**10**	P	**P**	**00 56 33.9**	**-0.7**
	0.8nm,0.3s,mb4.1,baz=126,slow=9.2,SNR=3.1						

*IDC **01** 01:16:10.1±1.1, 15.54N×45.86W, mb3.5/7, mb1 3.8/7, mb1mx3.6/22, MS3.3/6, Ms1 3.4/6, ms1mx3.1/22, Error ellipse: s-maj=34.4km s-min=25.3km az=13.0*
*NEIC **01** 01:16:11.4±0.5, 15.58N×45.88W, h10km, mb4.3/3, Error ellipse: s-maj=15.1km s-min=13.5km az=130.0*
ISC 01 01:16:09.9±0.6, 15.6N±0.1×45.9W±0.1, h10km, n16, σ0§88/13, mb3.8/11, MS3.3/6, 1D, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ROSC	**El Rosal**	**29.87**	**252**	LR	LR	01 31 52.6	
	comp=Z,53nm,21.8s,MS3.1,baz=150,slow=32						
LPAZ	**La Paz**	**38.50**	**216**	P	**P**	**01 23 35.2**	**+0.8**
	0.7nm,0.7s,mb3.5,baz=41,slow=9.0,SNR=3.8						
LPAZ				LR	LR	01 41 03.4	
	comp=Z,33nm,18.2s,MS3.2,baz=105,slow=39						
LPAZ	**La Paz**	**38.50**	**216**	P	**P**	**01 23 35.2**	**+0.8**
LPAZ				LR	LR	01 41 03.4	
DBIC	**Dimbokro**	**41.19**	**98**	P	**P**	**01 23 55.8**	**-0.8**
	1.3nm,0.7s,mb3.7,baz=300,slow=11,SNR=2.5						
MTE	**Manteigas**	**41.48**	**46**	*e*P	**P**	**01 23 57.7**	**-1.1**
PLAL	**Pickwick Lake**	**42.36**	**305**	P	**P**	**01 24 04.9**	**-1.2**
	3.1nm,1.0s,mb3.9						
SCHQ	**Schefferville**	**42.40**	**342**	LR	LR	01 38 10.3	
	comp=Z,51nm,19.9s,MS3.4,baz=144,slow=31						
ESDC	**Sonseca Array**	**43.72**	**48**	LR	LR	01 40 14.9	
	comp=Z,35nm,19.3s,MS3.3,baz=265,slow=33						
LVC	**Limon Verde**	**44.12**	**211**	P	**P**	**01 24 20.4**	**-0.1**
	5.3nm,0.9s,mb4.3						
TXAR	**Lajitas Array**	**54.61**	**295**	P	**P**	**01 25 41.3**	**+0.1**
	0.4nm,0.9s,mb3.5,baz=97,slow=7.3,SNR=4.0						
TXAR				LR	LR	01 49 38.5	
	comp=Z,26nm,18.9s,MS3.3,baz=180,slow=37						
TRQA	**Tornquist**	**55.43**	**195**	P	**P**	**01 25 46.6**	**-0.4**
	6.8nm,2.1s,mb4.3						
CLL	**Collm**	**58.68**	**39**	⇓P	**P**	**01 26 11.4**	**+1.5**
	logA/T=0.6,mb4.4						
PDAR	**Pinedale Array**	**60.29**	**311**	P	**P**	**01 26 21.3**	**+0.2**
	0.2nm,0.5s,mb3.4,baz=90,slow=8.1,SNR=3.2						
YKA	**Yellowknife Ar**	**66.49**	**332**	P	**P**	**01 27 00.8**	**-0.8**
	0.4nm,1.0s,mb3.4,baz=97,slow=6.5,SNR=4.0						
YKA				LR	LR	01 54 03.3	
	comp=Z,39nm,18.4s,MS3.6,baz=75,slow=34						
BRTR	**Keskin Array B**	**72.28**	**53**	P	**P**	**01 27 38.2**	**+0.6**
	0.4nm,0.7s,mb3.5,baz=281,slow=7.3,SNR=3.5						
ILAR	**Eielson Array**	**80.66**	**335**	P	**P**	**01 28 25.6**	**+1.4**
	0.6nm,0.8s,mb3.6,baz=58,slow=4.8,SNR=6.4						

*NEIC **01** 01:56:08.7±0.7, 51.53N×16.18E, h5km, ML3.0(VIE), ML2.9(SZGRF), ML2.7(BRG), Error ellipse: s-maj=7.9km s-min=5.5km az=204.0*
*WAR **01** 01:56:10.2, 51.50N×16.09E, h1km, Location given by Rudna mine, origin time based upon KSP*
*PRU **01** 01:56:10.5, 51.45N×16.11E, Felt In Harrachov*
ISC 01 01:56:07.8±0.6, 51.45N±0.03×16.10E±0.03, n27, σ1§43/54, 1C, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.62**	**169**	*e*Pg	**Pg**	**01 56 22.5**	**+2.2**
KSP				*e*Sg	**Sg**	**01 56 31.4**	**+2.8**
KSP	**Ksiaz**	**0.62**	**169**	*e*PG	**Pg**	**01 56 22.0**	**+1.7**
KSP				*i* Sg	**Sg**	**01 56 31.5**	**+2.9**
KSP	**Ksiaz**	**0.62**	**169**	*e*Pg	**Pg**	**01 56 22.4**	**+2.1**
KSP				*i* Sg	**Sg**	**01 56 31.5**	**+2.9**
UPC	**Upice**	**0.95**	**183**	*e*PG	**Pg**	**01 56 28.5**	**+1.7**
DPC	**Dobruska-Polom**	**1.11**	**173**	*e*PG	**Pg**	**01 56 31.2**	**+1.1**
DPC				*e*SG	**Sg**	**01 56 45.9**	**+1.0**
	87nm,0.5s						
PVCC	**Panska Ves**	**1.34**	**227**	*e*PG	**Pg**	**01 56 35.7**	**+1.1**
BRG	**Berggiesshubel**	**1.48**	**248**	*e*Pn	**Pn**	**01 56 36.9**	**+1.1**
BRG				*i* Pg	**Pg**	**01 56 37.9**	**+0.6**
BRG				*i* Sg	**Sg**	**01 56 57.7**	**+0.7**
RUE	**Ruedersdorf**	**1.77**	**307**	*e*P	**Pn**	**01 56 41.5**	**+1.6**
PRU	**Pruhonice**	**1.77**	**215**	*e*PN	**Pn**	**01 56 42.7**	**+2.7**
PRU				PG	**Pg**	**01 56 44.0**	**+0.8**
PRU				*i* x	x	01 56 48.6	
PRU				SG	**Sg**	**01 57 06.2**	**-0.6**
	58nm,0.3s						
PRU	**Pruhonice**	**1.77**	**215**	*e*Pg	**Pg**	**01 56 44.0**	**+0.8**
PRU				*e*Sg	**Sg**	**01 57 06.4**	**-0.4**
RAC	**Raciborz**	**1.91**	**135**	*e*P	**Pg**	**01 56 47.0**	**+1.0**
RAC				*e*S	**Sg**	**01 57 14.0**	**+2.6**
MORC	**Moravsky Berou**	**1.91**	**151**	*e*P	**Pn**	**01 56 43.0**	**+1.0**
MORC				*e*S	**Sn**	**01 57 06.0**	**-1.2**
CLL	**Collm**	**1.95**	**267**	*e*PG	**Pg**	**01 56 45.0**	**-1.7**
CLL				*i*		01 56 50.1	
CLL				*i* SG	**Sg**	**01 57 11.5**	**-1.2**
CLL	**Collm**	**1.95**	**267**	*e*Pg	**Pg**	**01 56 45.0**	**-1.7**
CLL				*i* Sg	**Sg**	**01 57 11.5**	**-1.2**
OKC	**Ostrava-Krasne**	**2.08**	**140**	*e*PG	**Pg**	**01 56 49.2**	**-0.1**
OKC				*e*SG	**Sg**	**01 57 15.7**	**-1.3**
NKC	**Novy Kostel**	**2.62**	**244**	*e*PN	**Pn**	**01 56 53.8**	**+1.7**
NKC				*e*PG	**Pg**	**01 57 00.4**	**+0.3**
NKC				*e*SG	**Sg**	**01 57 34.6**	**-0.4**
OJC	**Ojcow**	**2.65**	**116**	*e*Pg	**Pg**	**01 56 59.7**	**-1.0**
OJC				*e*Sg	**Sg**	**01 57 35.3**	**-0.7**
OJC	**Ojcow**	**2.65**	**116**	*e*PG	**Pg**	**01 57 00.0**	**-0.7**
OJC				*e*SG	**Sg**	**01 57 35.0**	**-1.0**
KHC	**Kasperske Hory**	**2.83**	**216**	*e*PN	**Pn**	**01 56 56.4**	**+1.2**
KHC				*e*PG	**Pg**	**01 57 03.3**	**-1.1**
KHC				*e*SN	**Sn**	**01 57 29.0**	**-1.5**
KHC				*e*SG	**Sg**	**01 57 39.9**	**-2.2**
KHC	**Kasperske Hory**	**2.83**	**216**	*e*Pn	**Pn**	**01 56 56.4**	**+1.2**
KHC				*e*Pg	**Pg**	**01 57 03.3**	**-1.1**
KHC				*e*Sg	**Sg**	**01 57 39.9**	**-2.2**
MOX	**Moxa**	**2.94**	**256**	*e*Pg	**Pg**	**01 57 05.5**	**-1.1**
MOX				*e*Sg	**Sg**	**01 57 44.9**	**-1.0**
ZST	**Bratislava**	**3.32**	**168**	*e*SB	**Sg**	**01 57 55.3**	**-3.2**
NIE	**Niedzica**	**3.38**	**125**	*e*P	**Pg**	**01 57 13.1**	**-2.1**
NIE				*e*		01 57 16.0	
NIE				*e*Sg	**Sg**	**01 57 58.3**	**-1.9**
VYHS	**Vyhne**	**3.45**	**148**	*e*SB	**Sg**	**01 57 58.9**	**-3.7**
BSD	**Bornholm Skovb**	**3.74**	**349**	*i* P	**Pn**	**01 57 06.1**	**-1.9**
BSD				*i* S	**Sn**	**01 57 46.2**	**-7.2**
MOA	**Molln**	**3.80**	**199**	⇑*i*PN	**Pn**	**01 57 10.2**	**+1.3**
MOA				*i* SG	**Sg**	**01 58 12.7**	**-1.6**
	11nm,0.6s						
KWP	**Kalwaria**	**4.59**	**111**	*e*Pg	**Pg**	**01 57 34.2**	**-5.3**

*ISK **01** 01:57:31.4, 38.23N×27.25E, h15km, MD3.5*
*ATH **01** 01:57:31.1, 38.20N×27.30E, h4km, MD3.2/3*
ISC 01 01:57:31.8±0.6, 38.21N±0.03×27.27E±0.05, h10km±4km, n21, σ0§85/28, 1C, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IZM	**Izmir**	**0.19**	**358**	*i* PG	**Pg**	**01 57 36.1**	**+0.2**
IZM				SG	**Sg**	**01 57 39.1**	**+0.4**
KDAG	**Bornova**	**0.19**	**359**	*i* P	**Pg**	**01 57 36.2**	**+0.2**
KDAG				*i* S	**Sg**	**01 57 40.0**	**+1.2**
SMG	**Samos**	**0.61**	**215**	⇑*i*PG	**Pg**	**01 57 42.6**	**-1.4**
AYDN	**Tasoluk**	**0.73**	**139**	*i* P	**Pb**	**01 57 45.5**	**-0.6**
AYDN				*i* S	**Sb**	**01 57 56.5**	**+0.6**
AKS	**Akhisar**	**0.79**	**32**	*i* PG	**Pg**	**01 57 47.1**	**-0.6**
MLSB	**Milas**	**1.00**	**156**	*e*PG	**Pg**	**01 57 51.1**	**-0.7**
MANT	**Manisa**	**1.05**	**74**	*i* P	**Pb**	**01 57 52.4**	**+0.8**
MANT				*i* S	**Sb**	**01 58 05.3**	**+0.2**
BDRM	**Kayabasi**	**1.15**	**173**	*i* P	**Pb**	**01 57 52.6**	**-0.7**
BDRM				*i* S	**Sb**	**01 58 09.4**	**+1.3**
PRK	**Paraskevi**	**1.30**	**323**	*e*PB	**Pb**	**01 57 56.0**	**+0.2**
PRK				*e*SB	**Sb**	**01 58 14.0**	**+1.6**
YER	**Yerkesik**	**1.34**	**143**	*i* PN	**Pn**	**01 57 56.7**	**+0.1**
DENT	**Denizli**	**1.46**	**108**	*e*PN	**Pn**	**01 57 58.5**	**+0.1**
DNZL	**Cakiroluk**	**1.50**	**110**	*i* P	**Pn**	**01 58 00.1**	**+1.2**
DNZL				*i* S	**Sb**	**01 58 21.8**	**+3.6**
BALB	**Balikesir**	**1.50**	**18**	*e*PN	**Pn**	**01 57 59.2**	**+0.2**
DST	**Dursunbey**	**1.75**	**37**	*e*PN	**Pn**	**01 58 01.9**	**-0.6**
APE	**Apeiranthos**	**1.79**	**231**	*e*PB	**Pb**	**01 58 05.2**	**+0.9**
EDC	**Edincik**	**2.18**	**12**	*e*PN	**Pn**	**01 58 07.6**	**-1.1**
LPK	**Lapseki**	**2.20**	**350**	*e*PN	**Pn**	**01 58 07.9**	**-1.0**
BNT	**Bandirma**	**2.20**	**13**	*e*PN	**Pn**	**01 58 08.2**	**-0.7**
KCT	**Karacabey**	**2.22**	**22**	*e*PN	**Pn**	**01 58 08.4**	**-0.8**
ORLT	**Orhaneli**	**2.23**	**34**	*e*PN	**Pn**	**01 58 08.4**	**-0.9**
KGT	**Karabiga**	**2.24**	**1**	*e*PN	**Pn**	**01 58 08.9**	**-0.6**

*NEIC **01** 02:01:00.3±1.2, 19.91S×177.72W, h500km, mb4.4/4, Error ellipse: s-maj=49.2km s-min=18.4km az=151.0*
*IDC **01** 02:01:09.8±2.9, 19.55S×178.13W, h598km±34km, mb3.1/9, mb1 3.3/9, mb1mx3.2/17, Error ellipse: s-maj=58.4km s-min=15.1km az=155.0*
ISC 01 02:01:08.2±3.6, 19.8S±0.3×178.1W±0.2, h599km±44km, n17, σ0§92/15, mb3.9/10, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**33.48**	**263**	P	**P**	**02 07 01.7**	**+0.9**
	6.3nm,0.4s,mb4.6,baz=90,slow=9.2,SNR=24						
CTA	**Charters Tower**	**33.48**	**263**	P	**P**	**02 07 01.7**	**+0.9**
CTAO	**Charters Tower**	**33.48**	**263**	*e*P	**P**	**02 07 01.1**	**+0.2**
	14nm,0.8s,mb4.6						
PMG	**Port Moresby**	**35.10**	**282**	P	**P**	**02 07 14.6**	**+0.3**
	5.7nm,0.7s,mb4.3,baz=148,slow=18,SNR=4.4						
PMG	**Port Moresby**	**35.10**	**282**	*e*P	**P**	**02 07 14.7**	**+0.4**
	10.0nm,1.0s,mb4.4						
PMG				PcP	PcP	02 09 25.7	-3.4
STKA	**Stephens Creek**	**38.03**	**243**	P	**P**	**02 07 39.1**	**+0.9**
	2.9nm,1.1s,mb3.7,baz=68,slow=11,SNR=2.7						
WAKE	**Wake Island**	**41.59**	**338**	P	**P**	**02 08 07.6**	**+0.7**
	13nm,1.0s,mb4.4						
ASAR	**Alice Springs**	**44.60**	**256**	P	**P**	**02 08 30.4**	**0.0**
	3.2nm,0.6s,mb4.0,baz=87,slow=7.9,SNR=33						
ASAR				S	**S**	**02 14 25.2**	**+1.0**
	0.5nm,0.7s,baz=93,slow=15,SNR=5.2						
WRAB	**Tennant Creek**	**44.61**	**261**	*e*P	**P**	**02 08 28.4**	**-2.1**
	10.0nm,0.9s,mb4.3						
WRA	**Warramunga Arr**	**44.62**	**261**	P	**P**	**02 08 29.7**	**-0.8**
	1.1nm,0.3s,mb3.9,baz=97,slow=8.1,SNR=17						
FITZ	**Fitzroy Crossi**	**53.04**	**262**	P	**P**	**02 09 32.5**	**-0.3**
	0.9nm,0.5s,mb3.4,baz=94,slow=4.2,SNR=7.5						
NVAR	**Mina Array Bea**	**80.56**	**43**	P	**P**	**02 12 20.9**	**+0.4**
	0.2nm,0.3s,mb3.0,baz=211,slow=5.3,SNR=4.2						
TXAR	**Lajitas Array**	**86.74**	**57**	P	**P**	**02 12 51.8**	**+0.7**
	0.1nm,0.5s,baz=252,slow=5.7,SNR=2.4						
ILAR	**Eielson Array**	**87.62**	**13**	P	**P**	**02 12 52.9**	**-1.5**
	0.4nm,0.6s,mb3.3,baz=219,slow=5.9,SNR=4.8						
AKASG	**Malin Array Be**	**142.33**	**331**	PKhKP		02 19 29.9	
	0.3nm,0.4s,baz=24,slow=2.3,SNR=4.6						
BRTR	**Keskin Array B**	**146.28**	**313**	PKPbc	PKPbc	02 19 43.8	+1.8
	1.1nm,0.9s,baz=117,slow=3.2,SNR=4.7						
GERES	**GERESS Array B**	**149.47**	**345**	PKPbc	PKPdf	02 19 51.6	+6.6
	1.2nm,0.8s,baz=27,slow=3.0,SNR=12						

*NEIC **01** 02:07:33.4, 40.44S×173.47E, h171km, After WEL.*
WEL 01 02:07:33.6±0.2, 40.46S×173.48E, h169km±2km, ML3.8/4, 9C-3D, Error ellipse: s-maj=2.2km s-min=1.2km az=0.0, Cook Strait

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NNZ	**Nelson**	**0.77**	**186**	⇑PN	P	02 07 58.7	-0.2
NNZ				SN	S	02 08 17.6	-0.8
NNZ	**Nelson**	**0.77**	**186**	P	P	02 07 58.7	-0.2
NNZ				S	S	02 08 17.6	-0.8
QRZ	**Quartz Range**	**0.81**	**243**	⇑PN	P	02 07 58.7	-0.5
QRZ				SN	S	02 08 17.5	-1.4
QRZ	**Quartz Range**	**0.81**	**243**	P	P	02 07 58.8	-0.4
QRZ				S	S	02 08 17.5	-1.4
MRW	**Makara Radio**	**1.21**	**130**	⇑PN	P	02 08 02.2	-0.1
MRW				SN	S	02 08 23.2	-1.2
MRW	**Makara Radio**	**1.21**	**130**	⇑P	P	02 08 02.2	0.0
MRW				S	S	02 08 23.2	-1.1
SNZO	**South Karori**	**1.26**	**133**	⇑PN	P	02 08 02.5	-0.3
SNZO				SN	S	02 08 23.8	-1.4
SNZO	**South Karori**	**1.26**	**133**	*e*P	P	02 08 02.0	-0.7
SNZO				P		02 08 02.5	
SNZO				*e*S	S	02 08 23.5	-1.8
WEL	**Wellington**	**1.28**	**131**	⇑PN	P	02 08 02.7	-0.2
WEL				SN	S	02 08 24.2	-1.3
WEL	**Wellington**	**1.28**	**131**	P	P	02 08 02.7	-0.2
BSWZ	**Blackbirch Sta**	**1.29**	**167**	*e*PN	P	02 08 03.1	0.0
BSWZ				SN	S	02 08 25.3	-0.5
CAW	**Cannon Point**	**1.37**	**119**	⇑PN	P	02 08 03.5	-0.3
CAW				SN	S	02 08 25.9	-1.1
CAW	**Cannon Point**	**1.37**	**119**	P	P	02 08 03.5	-0.3
THZ	**Tophouse**	**1.38**	**198**	PN	P	02 08 03.5	-0.4
THZ				SN	S	02 08 25.4	-1.8
THZ	**Tophouse**	**1.38**	**198**	P	P	02 08 03.5	-0

BVAR	**Borovoye Array**	**57.28**	**45**	P		**P**	**02 19 18.5**	**+1.4**
	0.4nm,0.4s,mb3.8,baz=292,slow=8.0,SNR=3.9							
MKAR	**Makanchi Array**	**67.12**	**44**	P		**P**	**02 20 23.7**	**+0.8**
	0.6nm,0.6s,mb3.8,baz=323,slow=6.1,SNR=7.2							
ASAR	**Alice Springs**	**150.95**	**34**	PKPbc		PKPdf	02 29 23.9	+6.5
	0.6nm,0.6s,baz=344,slow=2.6,SNR=7.7							

*MAN **01** 02:09:40.8, 12.29N×123.91E, h70km, mb4.3, ML3.1, MS2.8*

ISC 01 02:09:40.7±1.9, 12.3N±0.1×123.91E±0.06, h87km±25km, n8, σ0§22/11, 5C-1D, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MMPH	**Masbate**	**0.29**	**284**	↑*i*P	**P**	**02 09 53.8**	**+0.1**
MMPH				*i* S	**S**	**02 09 56.3**	**-7.2**
CNP	**Catarman**	**0.77**	**73**	↑*e*P	**P**	**02 09 57.6**	**-0.2**
RCP	**Roxas**	**1.35**	**238**	↓*e*P	**P**	**02 10 05.1**	**+0.3**
RCP				*e*S	**S**	**02 10 22.6**	**-0.1**
OCLP	**Ormoc**	**1.41**	**151**	↑*e*P	**P**	**02 10 05.6**	**+0.1**
PLP	**Palo**	**1.53**	**137**	*e*P	**P**	**02 10 07.6**	**+0.4**
PLP				*e*S	**S**	**02 10 26.6**	**0.0**
BESP	**Borongan**	**1.65**	**114**	↑*e*P	**P**	**02 10 08.5**	**-0.1**
BESP				*e*S	Sx	02 13 18.4	
OTRP	**Odiongan**	**1.85**	**273**	↑*e*P	**P**	**02 10 11.2**	**0.0**
TBP	**Tagbilaran**	**2.58**	**181**	*e*P	**P**	**02 10 21.0**	**-0.3**

*BJI **01** 02:10:50.5, 2.64N×126.40E, h40km, mB5.0, mb4.9, Ms4.4, Msz4.0*
*NEIC **01** 02:10:52.0±0.2, 3.32N×126.57E, h10km, mb4.9/20, Error ellipse: s-maj=9.4km s-min=4.9km az=68.0*
*HRVD **01** 02:10:52.0±0.8, 3.66N×126.83E, h50km±7km, MW4.8/25, Centroid moment Tensor Solution. LP body waves: s9,c12;Mantle waves: s25,c30; Half duration: 0 Moment tensor: Scale 10^{16}Nm; Mrr0.36±.34; Mθθ0.28±.23; Mφφ-0.65±.24; Mrθ-0.08±.17; Mθφ1.70±.16; Mφr1.31±.24; Best double couple: M0 2.19×10^{16} NP1:θs97°, δ52°, λ5°. NP2:θs4°, δ86°, λ142°. Principal axes: T 1.99, Plg29°, Azm314°; N .41, Plg52°, Azm179°; P -2.4, Plg22°, Azm57°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*MOS **01** 02:10:53.6±1.3, 3.30N×126.58E, h33km, mb5.1/14 Error ellipse: s-maj=24.8km s-min=9.2km az=111.9*
*IDC **01** 02:10:55.8±2.2, 3.35N×126.63E, h36km±17km, mb4.4/26, mb1 4.4/26, mb1mx4.4/29, MS3.5/9, Ms1 3.6/9, ms1mx3.3/31, Error ellipse: s-maj=19.8km s-min=9.8km az=74.0*

ISC 01 02:10:55.6±1.1, 3.27N±0.04×126.53E±0.07, h51km±9km, h37km±7.2km; pP-P, n107, σ1§13/111, mb4.8/58, MS3.6/13, 11C-3D, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DAV	**Davao City (W)**	**3.90**	**346**	*e*P	**P**	**02 12 00.8**	**+6.3**
KCP	**Kidapawan**	**3.99**	**339**	↑*i*P	**P**	**02 11 59.6**	**+3.8**
CTBH	**Cotabato--PC H**	**4.54**	**330**	↑*i*P	**P**	**02 12 06.7**	**+3.0**
BIPH	**Bislig**	**4.89**	**358**	↑*e*P	**P**	**02 12 04.0**	**-4.5**
BIPH				*e*S	**S**	**02 13 03.8**	**-0.7**
PAGZ	**Pagadian**	**5.53**	**326**	↑*e*P	**P**	**02 12 15.2**	**-2.1**
SCPH	**Surigao**	**6.56**	**351**	*e*P	**P**	**02 12 35.0**	**+3.2**
FITZ	**Fitzroy Crossi**	**21.25**	**182**	*e*P	**P**	**02 15 39.4**	**-0.3**
	8.6nm,0.6s,mb4.3						
FITZ	**Fitzroy Crossi**	**21.25**	**182**	P	**P**	**02 15 39.5**	**-0.2**
	8.9nm,0.7s,mb4.2,baz=15,slow=8.9,SNR=22						
FITZ				S	**S**	**02 19 31.6**	**+3.7**
	6.0nm,1.1s,baz=4.8,slow=23,SNR=2.4						
QIZ	**Qiongzhong**	**22.62**	**315**	*e*P	**P**	**02 15 51.7**	**-1.7**
JOW	**Kunigami**	**23.49**	**4**	P	**P**	**02 16 03.0**	**+1.2**
	14nm,0.8s,mb4.5,baz=169,slow=15,SNR=3.3						
PMG	**Port Moresby**	**24.10**	**122**	P	**P**	**02 16 08.1**	**+0.3**
	2.0nm,0.3s,mb4.0,baz=304,slow=15,SNR=2.2						
WRA	**Warramunga Arr**	**24.30**	**162**	P	**P**	**02 16 09.5**	**-0.3**
	12nm,0.4s,mb4.7,baz=340,slow=10,SNR=109						
WRA				S	**S**	**02 20 20.4**	**-2.0**
	1.7nm,0.8s,baz=344,slow=15,SNR=4.5						
WB2	**Warramunga Arr**	**24.31**	**162**	*e*P	**P**	**02 16 09.8**	**0.0**
WB2				*i*		02 16 18.7	
WB2				*e*S	**S**	**02 20 22.4**	**0.0**
AS12	**Alice Springs**	**27.71**	**165**	*e*P	**P**	**02 16 41.2**	**-0.3**
	5.5nm,0.4s,mb4.5						
ASAR	**Alice Springs**	**27.71**	**165**	P	**P**	**02 16 40.9**	**-0.6**
	3.6nm,0.5s,mb4.2,baz=348,slow=7.0,SNR=44						
ASAR				S	**S**	**02 21 27.4**	**+8.8**
	1.6nm,0.9s,baz=354,slow=18,SNR=3.1						
ASAR				ScP		02 23 34.9	
	1.6nm,1.0s,baz=316,slow=1.8,SNR=4.3						
CBIJ	**Chichi jima**	**28.03**	**31**	P	**P**	**02 16 41.2**	**-3.1**
	36nm,0.5s,mb5.2,baz=227,slow=19,SNR=3.8						
SSE	**Sheshan**	**28.14**	**350**	↓P	**P**	**02 16 49.2**	**+3.9**
SSE				S	**S**	**02 21 25.8**	**+0.5**
SSE				AMB	AMB		
	comp=Z,25nm,0.9s,mb4.8						
SSE				AMB	AMB		
	comp=Z,65nm,3.1s						
NJ2	**Nanjing**	**29.53**	**347**	*e*P	**P**	**02 16 59.1**	**+1.4**
NJ2				PP	PP	02 17 56.2	+1.3
NJ2				S	**S**	**02 21 49.0**	**+1.5**
NJ2				AMB	AMB		
	comp=Z,220nm,5.3s						
NJ2				LR	LR		
	comp=N,280nm,19.4s						
NJ2				LR	LR		
	comp=E,390nm,12.7s						
NJ2				LR	LR		
	comp=Z,270nm,14.8s,MS4.0						
NANT	**Nan**	**29.61**	**303**	P	**P**	**02 16 59.5**	**+1.0**
JNU	**Nakatsue**	**29.98**	**7**	P	**P**	**02 16 59.3**	**-2.3**
	baz=180,slow=16						
JNU				LR	LR	02 27 34.6	
	comp=Z,84nm,21.5s,MS3.3,baz=60,slow=33						
CTA	**Charters Tower**	**30.23**	**141**	P	**P**	**02 17 03.0**	**-0.9**
	comp=Z,1.5nm,0.7s,mb3.9,baz=338,slow=5.4,SNR=1.8						
CTA	**Charters Tower**	**30.23**	**141**	P	**P**	**02 17 03.2**	**-0.8**
CMAR	**Chiang Mai Arr**	**30.94**	**301**	P	**P**	**02 17 11.8**	**+1.5**
	comp=Z,2.9nm,0.8s,mb4.1,baz=115,slow=7.5,SNR=12						
CMAR				LR	LR	02 29 33.7	
	comp=Z,50nm,18.2s,MS3.2,baz=350,slow=36						
CHG	**Chiang Mai**	**31.09**	**302**	P	**P**	**02 17 13.5**	**+1.9**
ENH	**Enshi**	**31.33**	**331**	*e*P	**P**	**02 17 12.2**	**-1.5**
	comp=Z,18nm,0.8s,mb5.0						
ENH				LR	LR		
	comp=Z,88nm,19.0s,MS3.5						
FORT	**Forrest**	**33.88**	**178**	*e*P	**P**	**02 17 27.9**	**-7.9**
	comp=Z,49nm,0.7s,mb5.5						
XAN	**Xi'an**	**34.74**	**334**	P	**P**	**02 17 41.6**	**-1.5**
XAN				AP	pP	02 17 51.0	-5.4
XAN				XP	sP	02 17 56.1	-6.7
XAN				AMB	AMB		
	comp=Z,9.0nm,0.9s,mb4.7						
CD2	**Chengdu**	**34.90**	**324**	↑*i*P	**P**	**02 17 43.1**	**-1.4**
CD2				AMB	AMB		
	comp=Z,10.0nm,1.0s,mb4.7						
DL2	**Dalian**	**35.76**	**353**	P	**P**	**02 17 53.3**	**+1.6**
DL2				AMB	AMB		
	comp=Z,20nm,0.8s,mb5.1						
NWAO	**Narrogin (SRO)**	**37.06**	**193**	P	**P**	**02 18 03.9**	**+1.2**
	comp=Z,4.3nm,0.7s,mb4.4,baz=217,slow=3.3,SNR=3.5						
STKA	**Stephens Creek**	**37.77**	**159**	*e*P	**P**	**02 18 09.3**	**+0.6**
	comp=Z,11nm,0.8s,mb4.6						
STKA	**Stephens Creek**	**37.77**	**159**	P	**P**	**02 18 09.1**	**+0.4**
	comp=Z,11nm,0.6s,mb4.8,baz=332,slow=8.4,SNR=36						
BJI	**Beijing**	**37.79**	**347**	*e*P	**P**	**02 18 08.7**	**-0.1**
BJI				AMB	AMB		
	comp=Z,14nm,0.7s,mb4.8						
SNY	**Shenyang**	**38.48**	**356**	↓P	**P**	**02 18 16.8**	**+2.3**
SNY				AMB	AMB		
	comp=Z,30nm,0.6s,mb5.2						
LZH	**Lanzhou**	**38.80**	**330**	*e*P	**P**	**02 18 17.6**	**+0.4**
LZH				AMB	AMB		
	comp=Z,42nm,1.3s,mb5.0						
ARMA	**Armidale**	**41.19**	**146**	*e*P	**P**	**02 18 37.4**	**+0.3**
MDJ	**Mudanjiang**	**41.27**	**3**	P	**P**	**02 18 36.1**	**-1.4**
MDJ				AMB	AMB		
	comp=Z,13nm,0.9s,mb4.6						
MDJ				AMB	AMB		
	comp=Z,62nm,6.3s						
MDJ	**Mudanjiang**	**41.27**	**3**	*e*P	**P**	**02 18 38.4**	**+0.8**
	comp=Z,15nm,0.9s,mb4.6						
LSA	**Lhasa**	**42.60**	**312**	*e*P	**P**	**02 18 50.4**	**+1.7**
	comp=Z,9.1nm,0.6s,mb4.7						
LSA				LR	LR		
	comp=Z,38nm,18.6s,MS3.3						
ASAJ	**Asahikawa**	**43.09**	**17**	P	**P**	**02 18 52.4**	**-0.2**
	comp=Z,21nm,0.7s,mb5.0,baz=247,slow=7.0,SNR=13						
ASAJ				LR	LR	02 36 54.5	
	comp=Z,57nm,18.7s,MS3.5,baz=149,slow=36						
GTA	**Gaotai**	**43.39**	**330**	*e*P	**P**	**02 18 56.1**	**+1.0**
GTA				AP	pP	02 19 04.0	-4.6
GTA				AMB	AMB		
	comp=Z,8.0nm,0.7s,mb4.6						
YSS	**Yuzh-Sakhalins**	**45.74**	**15**	↑*i*P	**P**	**02 19 13.0**	**-0.8**
YSS				pmax	pmax		
	comp=Z,20nm,0.6s,mb5.2						
YSS	**Yuzh-Sakhalins**	**45.74**	**15**	*e*P	**P**	**02 19 13.5**	**-0.3**
	comp=Z,13nm,0.5s,mb5.1						
HIA	**Hailar**	**46.20**	**354**	*e*P	**P**	**02 19 17.7**	**+0.3**
	comp=Z,9.5nm,0.7s,mb4.8						
KKN	**Kakani**	**46.27**	**306**	*e*P	**P**	**02 19 17.2**	**-1.0**
	comp=Z,8.1nm,0.4s,mb5.0						
DMN	**Daman**	**46.34**	**306**	*e*P	**P**	**02 19 18.7**	**-0.1**
	comp=Z,14nm,0.5s,mb5.2						
GKN	**Gorkha**	**46.88**	**306**	*e*P	**P**	**02 19 21.9**	**-1.1**
	comp=Z,10.0nm,0.4s,mb5.1						
ULN	**Ulaanbaatar**	**47.50**	**342**	*c i*P	**P**	**02 19 27.7**	**+0.1**
ULN	**Ulaanbaatar**	**47.50**	**342**	*e*P	**P**	**02 19 27.4**	**-0.2**
	comp=Z,12nm,1.3s,mb4.7						
KOLN	**Koldanda**	**47.63**	**305**	*e*P	**P**	**02 19 29.4**	**+0.5**
	comp=Z,49nm,0.6s,mb5.7						
SONM	**Songino Array**	**47.67**	**342**	P	**P**	**02 19 28.4**	**-0.6**
	comp=Z,2.0nm,0.6s,mb4.3,baz=158,slow=9.7,SNR=16						
SONM				ScP		02 24 47.8	
	comp=Z,0.4nm,0.8s,baz=108,slow=4.6,SNR=2.8						
DANN	**Dangsing**	**47.73**	**306**	*e*P	**P**	**02 19 29.9**	**+0.2**
	comp=Z,5.9nm,0.7s,mb4.8						
HYB	**Hyderabad**	**49.09**	**290**	*i* P	**P**	**02 19 40.0**	**-0.3**
HYB	**Hyderabad**	**49.09**	**290**	*e*P	**P**	**02 19 40.0**	**-0.3**
ZAK	**Zakamensk**	**50.90**	**341**	*e*P	**P**	**02 19 56.2**	**+2.5**
TLY	**Talaya**	**51.91**	**342**	*e*P	**P**	**02 20 01.1**	**-0.2**
TLY				*e*PP	pP	02 20 17.9	+2.8
TLY				*e*		02 21 56.4	
TLY				*e*S	**S**	**02 27 18.9**	**+0.1**
TLY				pmax	pmax		
	comp=Z,18nm,0.7s,mb5.1						
TLY				MLR	MLR		
	comp=Z,400nm,18.0s,MS4.5						
WMQ	**Urumqi**	**52.99**	**325**	P	**P**	**02 20 10.1**	**+0.6**
BOD	**Bodaibo**	**55.29**	**352**	*e*P	**P**	**02 20 26.1**	**-0.1**
MKAR	**Makanchi Array**	**57.82**	**326**	P	**P**	**02 20 43.4**	**-1.0**
	comp=Z,7.1nm,0.5s,mb5.0,baz=122,slow=8.1,SNR=79						
MKAR				ScP		02 25 35.5	
	comp=Z,0.8nm,0.6s,baz=124,slow=4.4,SNR=4.2						
MKAR				LR	LR	02 48 09.8	
	comp=Z,56nm,18.3s,MS3.7,baz=172,slow=39						
MKAR	**Makanchi Array**	**57.82**	**326**	P	**P**	**02 20 42.9**	**-1.5**
MKAR				pmax	pmax		
	comp=Z,3.0nm,0.5s						
YAK	**Yakutsk**	**58.67**	**2**	*e*P	**P**	**02 20 48.6**	**-1.5**
YAK				pmax	pmax		
	comp=Z,10.0nm,0.9s,mb4.8						
YAK				pmax	pmax		
	comp=N,6.0nm,1.3s						
YAK				pmax	pmax		
	comp=N,3.0nm,0.9s						
YAK				pmax	pmax		
	comp=Z,10.0nm,0.9s,mb4.8						
YAK	**Yakutsk**	**58.67**	**2**	*e*P	**P**	**02 20 49.0**	**-1.0**
	comp=Z,33nm,0.8s,mb5.4						
ZAL	**Zalesovo**	**60.91**	**333**	P	**P**	**02 21 04.3**	**-1.3**
	comp=Z,8.6nm,1.1s,mb4.8,baz=266,slow=7.6,SNR=24						
ZAL				LR	LR	02 48 32.9	
	comp=Z,47nm,19.1s,MS3.7,baz=76,slow=37						
ZAL	**Zalesovo**	**60.91**	**333**	*i* P	**P**	**02 21 05.6**	**0.0**
ZAL				pmax	pmax		
	comp=Z,9.0nm,1.1s						
RPZ	**Rata Peaks**	**61.50**	**145**	P	**P**	**02 21 10.6**	**+1.0**
	comp=Z,7.6nm,0.9s,mb4.8,baz=324,slow=8.7,SNR=3.0						
KURK	**Kurchatov**	**62.02**	**328**	*e*P	**P**	**02 21 11.9**	**-1.2**
NVS	**Novosibirsk**	**62.20**	**333**	*e*P	**P**	**02 21 12.4**	**-1.7**
NVS				pmax	pmax		
	comp=N,8.0nm,0.8s						
NVS				pmax	pmax		
	comp=E,7.0nm,0.8s						
NVS				pmax	pmax		
	comp=Z,9.0nm,0.8s,mb5.0						
SEY	**Seymchan**	**62.53**	**13**	*e*P	**P**	**02 21 17.2**	**+0.9**
SEY				*e*		02 21 22.7	
SEY				*e*	pP	02 21 32.7	+2.3
SEY				pmax	pmax		
	comp=Z,30nm,0.9s,mb5.4						
FX1	**Attu Island--F**	**62.58**	**30**	P	**P**	**02 21 16.4**	**-0.3**
	comp=Z,26nm,0.9s,mb5.4,baz=337,slow=10,SNR=6.1						
FX1	**Attu Island--F**	**62.58**	**30**	*e*P	**P**	**02 21 16.2**	**-0.5**
BVAR	**Borovoye Array**	**67.60**	**327**	P	**P**	**02 21 47.8**	**-1.3**
	comp=Z,8.0nm,0.8s,mb4.8,baz=121,slow=8.6,SNR=29						
BRVK	**Borovoye**	**67.67**	**327**	*e*P	**P**	**02 21 48.9**	**-0.6**
TIXI	**Tiksi**	**68.31**	**1**	↑*i*P	**P**	**02 21 52.5**	**-0.7**
TIXI				S	S	02 30 44.2	-4.6
TIXI				pmax	pmax		
	comp=Z,64nm,0.7s,mb5.8						
TIXI	**Tiksi**	**68.31**	**1**	*e*P	**P**	**02 21 53.0**	**-0.2**
	comp=Z,9.0nm,0.3s,mb5.3						
ZRNK	**Zerenda**	**68.32**	**327**	*e*P	**P**	**02 21 52.6**	**-1.0**
BILL	**Bilibino**	**70.05**	**15**	*d i*P	**P**	**02 22 03.7**	**-0.2**
BILL				pmax	pmax		
	comp=Z,5.0nm,0.8s,mb4.5						
BILL	**Bilibino**	**70.05**	**15**	*e*P	**P**	**02 22 03.6**	**-0.3**
	comp=Z,6.4nm,1.0s,mb4.5						
AB31	**Akbulak array**	**72.38**	**321**	P	**P**	**02 22 17.1**	**-1.1**
AB31				pmax	pmax		
	comp=Z,1.0nm,0.4s,mb4.1						
SVE	**Sverdlovsk**	**74.25**	**329**	↓*e*P	**P**	**02 22 22.8**	**-6.2**
ARU	**Arti**	**75.22**	**328**	↑*i*P	**P**	**02 22 33.8**	**-0.8**
ARU				*e*	pP	02 22 44.2	-4.9
ARU				*e*		02 25 23.0	
ARU				*e*S	S	02 32 09.5	+1.2
ARU				*e*SS	SS	02 37 02.0	+1.1
ARU				pmax	pmax		
	comp=Z,6.0nm,0.8s,mb4.6						
GNI	**Garni**	**81.63**	**310**	*e*P	**P**	**02 23 09.8**	**-0.2**
GNI				pmax	pmax		
	comp=Z,7.0nm,1.2s						
ZEI	**Tsey**	**82.38**	**313**	*e*P	**P**	**02 23 15.8**	**+1.9**
RSO	**Redoubt South**	**82.59**	**30**	*e*P	**P**	**02 23 11.0**	**-3.5**
IMA	**Indian Mountai**	**82.89**	**24**	*e*P	**P**	**02 23 18.0**	**+2.0**
	comp=Z,32nm,0.8s,mb5.4						
PMR	**Palmer**	**84.44**	**29**	*e*P	**P**	**02 23 23.9**	**0.0**
	comp=Z,15nm,0.9s,mb5.1						
MCK	**McKinley**	**84.66**	**26**	*e*P	**P**	**02 23 25.3**	**+0.4**
	comp=Z,8.1nm,1.1s,mb4.8						
SML	**Sawmill**	**84.84**	**28**	*e*P	**P**	**02 23 26.8**	**+1.0**
ILAR	**Eielson Array**	**85.60**	**25**	P	**P**	**02 23 28.5**	**-1.0**
	comp=Z,1.6nm,0.6s,mb4.4,baz=251,slow=5.0,SNR=28						
ANN	**Anapa**	**87.08**	**315**	*e*P	**P**	**02 23 35.3**	**-2.0**
ANN				pmax	pmax		
	comp=Z,6.0nm,0.7s,mb4.9						
OBN	**Obninsk**	**87.33**	**325**	*c i*P	**P**	**02 23 38.9**	**+0.7**
OBN				pmax	pmax		
	comp=Z,21nm,1.2s,mb5.2						
JOF	**Joensuu**	**89.50**	**333**	*e*p	**P**	**02 23 49.1**	**+0.8**
BRTR	**Keskin Array B**	**90.16**	**310**	P	**P**	**02 23 51.6**	**-0.4**
	comp=Z,2.4nm,0.9s,mb4.5,baz=124,slow=4.5,SNR=14						
INK	**Inuvik**	**90.66**	**21**	P	**P**	**02 23 53.4**	**-0.3**
	comp=Z,2.0nm,1.0s,mb4.4,baz=285,slow=4.8,SNR=5.9						
ARCES	**ARCESS Array B**	**90.81**	**340**	P	**P**	**02 23 55.5**	**+1.1**
	comp=Z,1.9nm,0.6s,mb4.6,baz=79,slow=6.7,SNR=16						
ARCES				LR	LR	03 09 14.2	
	comp=Z,20nm,20.5s,MS3.5,baz=239,slow=38						
SPB4	**Spitsbergen Ar**	**90.90**	**349**	*e*P	**P**	**02 23 50.4**	**-4.2**
KAF	**Kangasniemi**	**91.92**	**332**	*e*p	**P**	**02 24 00.0**	**+0.4**
AKASG	**Malin Array Be**	**92.13**	**321**	P	**P**	**02 24 00.6**	**-0.2**
	comp=Z,0.3nm,0.3s,mb4.1,baz=72,slow=4.5,SNR=4.3						
FINES	**FINESS Array B**	**92.15**	**332**	P	**P**	**02 24 00.8**	**+0.1**
	comp=Z,0.9nm,0.4s,mb4.4,baz=67,slow=5.5,SNR=22						
FINES				LR	LR	03 07 51.3	
	comp=Z,26nm,19.1s,MS3.7,baz=3.0,slow=37						
FINES	**FINESS Array B**	**92.15**	**332**	*i* P	**P**	**02 24 01.8**	**+1.1**
FINES				pmax	pmax		
	comp=Z,1.0nm,0.4s						
DLBC	**Dease Lake**	**94.24**	**31**	P	**P**	**02 24 11.4**	**+1.1**
	comp=Z,1.0nm,0.7s,mb4.4,baz=41,slow=1.5,SNR=4.3						
NOA	**NORSAR Array B**	**99.11**	**334**	P	**P**	**02 24 32.5**	**+0.2**
	comp=Z,0.4nm,0.8s,mb4.0,baz=63,slow=5.0,SNR=2.5						
NOA				LR	LR	03 15 48.0	
	comp=Z,26nm,18.8s,MS3.8,baz=100,slow=39						
NOA	**NORSAR Array B**	**99.11**	**334**	P	**P**	**02 24 32.5**	**+0.2**
NOA				LR	LR	03 15 48.0	
YKA	**Yellowknife Ar**	**100.00**	**24**	P	**P**	**02 24 36.6**	**+0.2**
	comp=Z,0.9nm,1.0s,baz=294,slow=4.2,SNR=12						
YKA				LR	LR	03 09 29.3	
	comp=Z,31nm,19.8s,MS3.8,baz=270,slow=35						
GERES	**GERESS Array B**	**102.33**	**321**	P	Pdif	02 24 47.3	+0.2
	comp=Z,0.3nm,0.7s,baz=90,slow=2.0,SNR=3.7						
ULM	**Lac du Bonnet**	**115.46**	**29**	PKP	PKPdf	02 29 32.8	+0.8
	comp=Z,0.7nm,0.3s,baz=347,slow=4.9,SNR=3.3						
TXAR	**Lajitas Array**	**122.04**	**52**	PKP	PKPdf	02 29 47.2	+1.9
	comp=Z,0.5nm,0.6s,baz=307,slow=0.3,SNR=8.9						
TXAR	**Lajitas Array**	**122.04**	**52**	PKP	PKPdf	02 29 47.2	+1.9

*NEIC **01** 02:12:17.5, 14.75N×94.07W, h16km, MD4.4(MEX), After MEX.*
*MEX **01** 02:12:19.0±1.6, 14.84N±94.04W, h14km±4.5km, MD4.4*
*IDC **01** 02:12:32.9±9.1, 16.03N±93.54W, h115km±52km, mb3.3/4, mb1 3.6/6, mb1mx3.3/22, MS3.3/1, Ms1 3.2/1, ms1mx2.6/14, Error ellipse: s-maj=114.0km s-min=40.3km az=170.0*

ISC 01 02:12:16.0±1.8, 14.8N±0.1×94.00W±0.07, h45km±15km, n16, σ1§10/18, mb3.7/5, MS3.3/1, Off coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**2.34**	**50**	*i* P	**P**	**02 12 53.2**	**+0.3**
CCIG				*i* S	**S**	**02 13 21.4**	**+0.8**
SCX	**San Cristobal**	**2.36**	**34**	*i* P	**P**	**02 12 56.0**	**+2.9**
SCX	**San Cristobal**	**2.36**	**34**	*i* P	**P**	**02 12 56.2**	**+3.1**
CMIG	**Matias Romero**	**2.46**	**340**	*i* P	**P**	**02 12 53.8**	**-0.7**
CMIG				*i* S	**S**	**02 13 22.3**	**-1.2**
OXX	**Oaxaca**	**3.48**	**312**	*e*P	**P**	**02 13 10.0**	**+1.0**
EVV	**El Vigia**	**3.88**	**341**	*e*P	**P**	**02 13 14.0**	**-0.7**
TEIG	**Tepich**	**7.70**	**44**	P	**P**	**02 14 06.6**	**-1.6**
	5.3nm,0.3s,baz=190,slow=9.2,SNR=4.7						
TEIG				S	**S**	**02 15 19.7**	**-15**
	1.9nm,0.3s,baz=169,slow=13,SNR=2.6						
TXAR	**Lajitas Array**	**17.02**	**330**	P	**P**	**02 16 13.2**	**+0.9**
	0.0nm,0.3s,baz=148,slow=12,SNR=4.9						
PV10	**Paradox Valley**	**27.01**	**333**	P	**P**	**02 17 56.5**	**+0.7**
SRU	**San Rafael**	**28.27**	**332**	P	**P**	**02 18 12.5**	**+5.3**
NVAR	**Mina Array Bea**	**31.86**	**322**	P	**P**	**02 18 41.6**	**+2.6**
	1.0nm,0.9s,mb3.7,baz=128,slow=9.5,SNR=5.8						
LPAZ	**La Paz**	**40.07**	**139**	P	**P**	**02 19 47.8**	**-1.0**
	2.2nm,1.4s,mb3.7						
SCHQ	**Schefferville**	**45.20**	**22**	LR	LR	02 38 28.4	
	comp=Z,33nm,20.0s,MS3.3,baz=31,slow=35						
YKA	**Yellowknife Ar**	**49.85**	**348**	P	**P**	**02 21 05.7**	**-0.7**
	0.7nm,0.8s,mb3.8,baz=153,slow=7.1,SNR=18						
INK	**Inuvik**	**59.16**	**344**	P	**P**	**02 22 14.0**	**-0.2**
	0.5nm,0.7s,mb3.6,baz=140,slow=13,SNR=3.5						
ILAR	**Eielson Array**	**61.37**	**337**	P	**P**	**02 22 29.1**	**-0.4**
	0.9nm,1.0s,mb3.8,baz=142,slow=5.7,SNR=6.0						

MEX 01 02:14:51.3±0.5, 14.84N×94.22W, h15km, MD4.1, Off coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMIG	**Matias Romero**	**2.33**	**344**	*i* P	Pn	02 15 26.3	-3.3
CMIG				*i* S	Sn	02 15 52.8	-5.4
SCX	**San Cristobal**	**2.42**	**39**	*e*P	Pn	02 15 27.5	-3.6
CCIG	**Comitan**	**2.47**	**54**	*i* P	Pn	02 15 27.8	-3.9
CCIG				*i* S	Sn	02 15 57.2	-4.6
OXX	**Oaxaca**	**3.28**	**313**	*e*P	Pn	02 15 38.5	-4.8

*IDC **01** 02:44:12.8±2.6, 18.49S×167.97E, mb4.1/7, mb1 4.4/7, mb1mx4.2/14, MS3.6/3, Ms1 3.6/3, ms1mx3.2/21, Error ellipse: s-maj=85.7km s-min=30.4km az=141.0*
*NEIC **01** 02:44:16.6±1.1, 18.02S×167.61E, h10km, Error ellipse: s-maj=24.2km s-min=17.7km az=85.0*

ISC 01 02:44:15.9±0.6, 18.10S±0.06×167.48E±0.07, h10km, n18, σ1§21/22, mb4.1/6, MS3.5/3, 4C-1D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**0.84**	**60**	↑*i*P	**Pb**	**02 44 31.9**	**-0.3**
BKM				S	**Sb**	**02 44 43.2**	**-0.1**
DZM	**Mont Dzumac**	**4.07**	**194**	*e*P	**Pn**	**02 45 20.6**	**+0.9**
DZM				*e*S	**Sn**	**02 46 07.0**	**-1.0**
DZM	**Mont Dzumac**	**4.07**	**194**	*e*P	**Pn**	**02 45 20.6**	**+0.9**
DZM				*e*S	**Sn**	**02 46 07.0**	**-1.0**
NOUC	**Port Laguerre**	**4.13**	**195**	*e*P	**Pn**	**02 45 22.0**	**+1.4**
NOUC				*e*S	**Sn**

*NAO **01** 03:02:29.5±2.2,67.62N×33.52E,ML2.2*
*IDC **01** 03:02:30.6±1.6,67.75N×33.42E,mb1 3.2/5, mb1mx3.1/22,ML2.9/5,Error ellipse: s-maj=18.0km s-min=8.1km az=85.0*

HEL 01 03:02:28.7±0.2,67.67N×33.72E,ML2.1,ML2.3(BER), **ML2.2**(NAO),**Explosion,Baltic States - Belarus - Northwestern Russia**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
APA0	**Apatity Array**	**0.29**	**257**	*i* P	Pg	03 02 33.8	-0.6
APA0				*i* S	Sg	03 02 37.8	-0.4
APA0	**Apatity Array**	**0.29**	**257**	Pg	Pg	03 02 33.8	-0.6
	baz=89,slow=16						
APA0				Lg		03 02 37.8	
	baz=80,slow=37						
MSF	**Maaselka**	**2.56**	**229**	*e*P	Pn	03 03 12.2	+0.1
MSF				*e*SB	Sb	03 03 45.4	-2.0
SGF	**Sodankyl**	**2.77**	**269**	*e*P	Pn	03 03 14.0	-1.1
SGF				*e*S	Sn	03 03 48.2	-1.5
SGF				MSG		03 03 57.5	
	comp=Z,7.3nm,0.2s						
KEV	**Kevo**	**3.22**	**314**	*e*P	Pn	03 03 20.7	-0.8
KEV				*e*S	Sn	03 03 58.6	-2.6
ARA0	**ARCESS Array S**	**3.54**	**306**	*e*P	Pn	03 03 24.6	-1.5
ARA0				*e*PG	Pg	03 03 33.2	-6.3
ARA0				*e*S	Sn	03 04 05.3	-4.1
ARA0				*e*SG	Sg	03 04 20.5	-6.2
ARA0	**ARCESS Array S**	**3.54**	**306**	Pn	Pn	03 03 24.6	-1.5
	baz=122,slow=16						
ARA0				Pg	Pg	03 03 33.2	-6.3
	baz=118,slow=16						
ARA0				Sn	Sn	03 04 05.3	-4.1
	baz=129,slow=28						
ARA0				Lg		03 04 20.5	
	baz=122,slow=28						
ARCES	**ARCESS Array B**	**3.54**	**306**	Pn	Pn	03 03 24.4	-1.7
	comp=Z,2.1nm,0.3s,baz=122,slow=14,SNR=188						
ARCES				Pg	Pg	03 03 32.6	-6.8
	comp=Z,2.7nm,0.3s,baz=118,slow=16,SNR=28						
ARCES				Sn	Sn	03 04 04.9	-4.5
	comp=Z,3.1nm,0.3s,baz=121,slow=26,SNR=13						
ARCES				Lg		03 04 14.7	
	comp=Z,3.4nm,0.3s,baz=117,slow=30,SNR=8.4						
OUL	**Oulu**	**4.08**	**234**	*e*P	Pn	03 03 32.6	-1.2
OUL				*e*SG	Sg	03 04 34.2	-10
KTK1	**Kautokeino**	**4.11**	**294**	*e*P	Pn	03 03 32.1	-2.1
KTK1				*e*SG	Sg	03 04 34.4	-11
KTK1				AML	AML	03 04 40.9	
	comp=Z,16nm,0.7s						
KJN	**Kajaani**	**4.36**	**217**	*e*SG	Sg	03 04 42.3	-12
JOF	**Joensuu**	**4.88**	**193**	*e*SG	Sg	03 04 58.3	-13
JOF				MSG		03 05 00.9	
	comp=Z,3.5nm,0.3s						
TRO	**Tromso**	**5.75**	**297**	*e*P	Pn	03 03 54.7	-2.7
TRO				*e*SG	Sg	03 05 27.5	-13
TRO				AML	AML	03 05 33.7	
	comp=Z,6.7nm,0.4s						
FIA0	**FINESS Array S**	**7.06**	**211**	Pn	Pn	03 04 12.2	-3.7
	baz=14,slow=16						
FIA0				Sn	Sn	03 05 30.6	-7.2
	baz=18,slow=28						
FIA0				Lg		03 06 05.3	
	baz=18,slow=28						
FIA0	**FINESS Array S**	**7.06**	**211**	*e*P	Pn	03 04 12.2	-3.7
FIA0				*e*S	Sn	03 05 30.6	-7.2
FIA0				*e*SG		03 06 05.3	
FINES	**FINESS Array B**	**7.06**	**211**	Pn	Pn	03 04 11.9	-4.0
	comp=Z,0.1nm,0.3s,baz=27,slow=12,SNR=7.4						
FINES				Pg	Pg	03 04 33.6	-16
	comp=Z,0.1nm,0.3s,baz=29,slow=14,SNR=3.4						
FINES				Sn	Sn	03 05 31.4	-6.4
	comp=Z,0.2nm,0.3s,baz=25,slow=23,SNR=5.7						
FINES				Lg		03 06 02.2	
	comp=Z,0.8nm,0.3s,baz=33,slow=26,SNR=8.9						
MOR8	**Moi Rana**	**7.71**	**268**	*e*	x	03 05 26.6	
MOR8	**Moi Rana**	**7.71**	**268**	*e*	x	03 05 26.6	
HFS	**Hagfors**	**11.56**	**239**	Pn	P	03 05 11.6	-6.2
	baz=59,slow=14						
HFS				Sn	S	03 07 15.6	-13
	baz=40,slow=28						
HFS				Lg		03 08 22.1	
	baz=70,slow=37						
HFS	**Hagfors**	**11.56**	**239**	Pn	P	03 05 11.7	-6.2
	comp=Z,0.0nm,0.3s,baz=45,slow=16,SNR=3.5						
HFS				Sn	S	03 07 15.5	-13
	comp=Z,0.0nm,0.3s,baz=40,slow=22,SNR=3.1						
HFS				Lg		03 08 24.9	
	comp=Z,0.0nm,0.3s,baz=61,slow=26,SNR=3.6						
SPA0	**Spitsbergen Ar**	**11.63**	**342**	Pn	P	03 05 12.9	-5.8
	baz=140,slow=14						
SPA0	**Spitsbergen Ar**	**11.63**	**342**	*e*P	P	03 05 12.9	-5.8
SPITS	**Spitsbergen Ar**	**11.63**	**342**	Pn	P	03 05 12.6	-6.1
	comp=Z,0.1nm,0.3s,baz=140,slow=15,SNR=9.3						
SPITS				Sn	S	03 07 16.1	-14
	comp=Z,0.1nm,0.3s,baz=130,slow=22,SNR=2.9						
NOA	**NORSAR Array B**	**11.74**	**246**	Pn	P	03 05 14.0	-6.2
	comp=Z,0.1nm,0.3s,baz=47,slow=13,SNR=2.4						
NOA				Lg		03 08 30.7	
	comp=Z,0.1nm,0.3s,baz=38,slow=24,SNR=3.3						

*IDC **01** 03:04:13.1±5.5,38.12N×72.46E,mb3.5/4,mb1 3.6/6, mb1mx3.4/22,ML3.4/2,MS3.9/1,Ms1 3.9/1,ms1mx2.5/26, Error ellipse: s-maj=107.0km s-min=32.2km az=162.0*
*NNC **01** 03:04:19.3±14.0,39.46N×71.99E,mpv3.8,Error ellipse: s-maj=1.22.1km s-min=104.7km az=63.0*
*MOS **01** 03:04:20.8±1.4,38.74N×72.14E,h33km,mb3.8/1,Error ellipse: s-maj=65.4km s-min=29.7km az=76.3*

ISC 01 03:04:30.4±2.1,39.8N±0.2×71.63E±0.10,h33km,n19, σ1§47/19,mb3.4/4,MS3.9/1,2C-1D,Tajikistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AML	**Almayashu**	**2.79**	**33**	P	**P**	**03 05 15.6**	**+1.8**
	SNR=24						
UCH	**Uchtor**	**3.25**	**41**	P	**P**	**03 05 20.4**	**+0.1**
	SNR=24						
EKS2	**Erkin-Say**	**3.27**	**29**	P	**P**	**03 05 22.6**	**+2.1**
	SNR=7.8						
KK31	**Karatay Array**	**3.39**	**346**	Pn	**Pn**	**03 05 23.5**	**+1.1**
	17nm,0.7s,baz=150,slow=11,SNR=99						
KK31				⇑Lg		03 06 23.3	
	17nm,0.6s,baz=157,slow=30,SNR=4.5						
AAK	**Ala-Archa**	**3.55**	**37**	P	**P**	**03 05 25.6**	**+1.1**
	SNR=13						
KZA	**Kyzart**	**3.55**	**49**	P	**P**	**03 05 23.1**	**-1.5**
	SNR=20						
KBK	**Karagaybulak**	**3.79**	**40**	P	**P**	**03 05 28.7**	**+0.8**
	SNR=9.6						
CHMS	**Chumysh**	**3.95**	**35**	P	**P**	**03 05 30.4**	**+0.1**
	SNR=9.8						
ULHL	**Ulahol**	**4.25**	**54**	P	**P**	**03 05 31.7**	**-2.8**
	SNR=6.5						
MKAR	**Makanchi Array**	**10.44**	**45**	Pn	**P**	**03 06 57.9**	**-2.8**
	0.1nm,0.3s,baz=228,slow=15,SNR=6.4						
AB31	**Akbulak array**	**12.58**	**322**	⇑Pn	**P**	**03 07 25.7**	**-4.1**
	0.8nm,0.5s,baz=128,slow=14,SNR=28						
AB31				⇓Sn	**S**	**03 09 47.2**	**-2.4**
	5.7nm,1.1s,baz=128,slow=24,SNR=10						
ZAL	**Zalesovo**	**16.71**	**28**	P	**P**	**03 08 21.9**	**-1.3**
	0.6nm,0.3s,baz=179,slow=4.5,SNR=6.3						
ZAL	**Zalesovo**	**16.71**	**28**	P	**P**	**03 08 22.0**	**-1.3**
ZAL				pmax	pmax		
	comp=Z,1.0nm,0.3s						
FINES	**FINESS Array B**	**35.07**	**323**	P	**P**	**03 11 21.8**	**-0.1**
	comp=Z,0.3nm,0.5s,mb3.5,baz=108,slow=12,SNR=3.8						
ARCES	**ARCESS Array B**	**38.30**	**336**	P	**P**	**03 11 50.5**	**+1.4**
	comp=Z,0.6nm,0.7s,mb3.4,baz=117,slow=10,SNR=3.2						
ARCES	**ARCESS Array B**	**38.30**	**336**	P	**P**	**03 11 50.5**	**+1.4**
ARCES				pmax	pmax		
	comp=Z,1.0nm,0.7s						
HFS	**Hagfors**	**40.82**	**320**	P	**P**	**03 12 10.1**	**0.0**
	comp=Z,0.4nm,0.5s,mb3.3,baz=108,slow=9.4,SNR=5.2						
JMIC	**Jan Mayen**	**49.78**	**335**	LR	LR	03 37 49.1	
	comp=Z,132nm,21.6s,MS3.9,baz=76,slow=39						
YKA	**Yellowknife Ar**	**77.92**	**3**	P	**P**	**03 16 21.3**	**-4.6**
	comp=Z,0.2nm,0.4s,mb3.4,baz=351,slow=5.6,SNR=9.3						

*IDC **01** 03:06:35.9±0.6,20.79S×174.35W,mb4.5/16,mb1 4.6/18, mb1mx4.6/23,ML4.8/2,MS4.1/8,Ms1 4.1/8,ms1mx3.7/28, Error ellipse: s-maj=26.7km s-min=14.7km az=140.0*
*NEIC **01** 03:06:37.8±0.2,20.67S×174.43W,h10km,mb4.9/12, MS4.5/13,Error ellipse: s-maj=11.9km s-min=7.4km az=134.0*
*HRVD **01** 03:06:37.8±0.4,20.92S×173.65W,h23km±1km,MW5.0/42, Centroid moment Tensor Solution. LP body waves: s24,c32;Mantle waves: s42,c59; Half duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr2.95±.22; Mθθ-0.4±.16; Mφφ-2.54±.14; Mrθ0.49±.25; Mrφ-1.35±.11; Mθφ1.51±.21; Best double couple: M₀3.46×10¹⁶ NP1:φs210°, δ32°, λ97°. NP2:φs22°, δ59°, λ86°. Principal axes: T 3.34, Plg76°, Azm280°; N .23, Plg4°, Azm24°; P -3.57, Plg14°, Azm115°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*BJI **01** 03:06:37.7,20.70S×174.40W,h10km,mb5.0*
*MOS **01** 03:06:48.2±2.4,19.32S×175.67W,h33km,mb5.3/1,Error ellipse: s-maj=26.1km s-min=18.9km az=10.2*

ISC 01 03:06:40.2±0.3,20.76S±0.08×174.39W±0.09,h33km, n134,σ1§11/52,mb4.7/29,MS4.4/19,10C-3D,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**13.66**	**94**	Pn	**P**	**03 09 40.6**	**-14**
	14nm,0.3s,baz=229,slow=8.2,SNR=24						
RAR				Sn	S	03 11 53.2	-32
	0.7nm,0.3s,baz=198,slow=23,SNR=2.5						
URZ	**Urewera**	**18.92**	**201**	P	**P**	**03 11 00.1**	**-0.8**
	0.8nm,0.3s,baz=25,slow=6.7,SNR=5.1						
URZ				S	**S**	**03 14 20.4**	**-6.7**
	0.4nm,0.3s,baz=169,slow=12,SNR=2.9						
SNZO	**South Karori**	**22.48**	**202**	P	**P**	**03 11 33.6**	**-4.3**
	77nm,1.6s,mb4.9						
RPZ	**Rata Peaks**	**25.91**	**205**	P	**P**	**03 12 08.0**	**-3.1**
	13nm,0.9s,mb4.5,slow=7.1,SNR=2.8						
CTA	**Charters Tower**	**36.83**	**264**	P	**P**	**03 13 47.4**	**+0.1**
	2.0nm,0.3s,mb4.4,baz=101,slow=9.7,SNR=7.3						
CTA				LR	LR	03 25 32.0	
	comp=Z,228nm,18.8s,MS4.0,baz=257,slow=31						
CTAO	**Charters Tower**	**36.83**	**264**	P	**P**	**03 13 47.0**	**-0.2**
	31nm,1.8s,mb4.8						
PMG	**Port Moresby**	**38.70**	**281**	P	**P**	**03 14 01.9**	**-1.1**
	10.0nm,0.8s,mb4.6,baz=102,slow=2.2,SNR=4.7						
STKA	**Stephens Creek**	**40.73**	**245**	*e*P	**P**	**03 14 19.2**	**-0.5**
	4.0nm,1.0s,mb4.0						
STKA	**Stephens Creek**	**40.73**	**245**	P	**P**	**03 14 18.8**	**-0.9**
	2.7nm,0.6s,mb4.0,baz=75,slow=10,SNR=7.2						
STKA				LR	LR	03 27 54.2	
	comp=Z,202nm,20.0s,MS4.0,baz=300,slow=31						
ASAR	**Alice Springs**	**47.75**	**256**	P	**P**	**03 15 15.0**	**-1.2**
	3.8nm,0.7s,mb4.5,baz=91,slow=8.2,SNR=33						
ASAR				LR	LR	03 32 58.0	
	comp=Z,167nm,21.5s,MS4.0,baz=102,slow=33						
ASAR	**Alice Springs**	**47.75**	**256**	P	**P**	**03 15 15.0**	**-1.2**
ASAR				LR	LR	03 32 58.0	
WRAB	**Tennant Creek**	**47.90**	**262**	*e*P	**P**	**03 15 14.0**	**-3.5**
	12nm,0.7s,mb5.0						
WRA	**Warramunga Arr**	**47.91**	**261**	P	**P**	**03 15 15.2**	**-2.4**
	4.8nm,0.9s,mb4.5,baz=96,slow=7.8,SNR=9.0						
WRA				LR	LR	03 34 57.1	
	comp=Z,193nm,20.8s,MS4.1,baz=60,slow=36						
SBA	**Scott Base**	**57.86**	**185**	*e*P	**P**	**03 16 31.8**	**+1.1**
	29nm,1.6s,mb5.1						
QSPA	**South Pole Qui**	**69.31**	**180**	*e*P	**P**	**03 17 46.7**	**+1.0**
	24nm,1.3s,mb5.0						
MAJO	**Matsushiro**	**72.47**	**322**	PFAKE		03 18 20.0	+15
MAJO				LR	LR		
	comp=Z,103nm,19.0s,MS4.1						
JNU	**Nakatsue**	**74.82**	**315**	P	**P**	**03 18 17.9**	**-1.4**
	comp=Z,19nm,1.2s,mb4.9,baz=132,slow=13,SNR=4.0						
ASAJ	**Asahikawa**	**75.62**	**330**	P	**P**	**03 18 24.6**	**+1.0**
	comp=Z,7.3nm,1.0s,mb4.5,baz=171,slow=22,SNR=3.7						
CMB	**Columbia Colle**	**77.40**	**41**	*e*P	**P**	**03 18 32.9**	**-0.9**
	comp=Z,7.7nm,1.3s,mb4.5						
YSS	**Yuzh-Sakhalins**	**77.69**	**332**	*e*P	**P**	**03 18 35.5**	**+0.3**
YSS				*e*		03 18 43.0	
YSS				pmax	pmax		
	comp=Z,20nm,1.0s,mb5.0						
MTUM	**Tungsten Hills**	**78.11**	**42**	*e*P	**P**	**03 18 36.8**	**-1.0**
YBH	**Yreka Blue Hor**	**78.43**	**37**	P	**P**	**03 18 38.4**	**-1.0**
	comp=Z,1.5nm,0.8s,mb4.0,baz=174,slow=7.2,SNR=3.8						
NVAR	**Mina Array Bea**	**78.93**	**42**	P	**P**	**03 18 42.1**	**-0.1**
	comp=Z,4.9nm,0.9s,mb4.5,baz=216,slow=7.1,SNR=21						
MAW	**Mawson**	**82.44**	**199**	P	**P**	**03 19 00.8**	**+0.6**
	comp=Z,2.5nm,0.8s,mb4.2,baz=103,slow=8.2,SNR=3.7						
MAW	**Mawson**	**82.44**	**199**	*e*P	**P**	**03 19 00.8**	**+0.7**
	comp=Z,6.5nm,1.0s,mb4.5						
MAW				*e*		03 20 11.8	
MAW				*e*		03 20 33.6	
MSU	**Marysvale**	**82.89**	**44**	*e*P	**P**	**03 19 03.8**	**+0.7**
FIB	**Fire Island**	**83.94**	**12**	PFAKE		03 19 20.0	+12
FIB				LR	LR		
	comp=Z,4μm,22.0s,MS5.8						
SRU	**San Rafael**	**84.30**	**45**	*e*P	**P**	**03 19 10.3**	**+0.1**
HLID	**Hailey**	**84.35**	**39**	*e*P	**P**	**03 19 10.4**	**0.0**
	comp=Z,4.6nm,1.0s,mb4.6						
TXAR	**Lajitas Array**	**84.38**	**56**	P	**P**	**03 19 10.6**	**-0.3**
	comp=Z,1.0nm,1.0s,mb3.9,baz=198,slow=4.0,SNR=8.3						
TXAR				LR	LR	03 50 53.5	
	comp=Z,107nm,20.9s,MS4.2,baz=215,slow=32						
DAU	**Daniels Canyon**	**84.53**	**43**	*e*P	**P**	**03 19 10.2**	**-1.2**
CN2	**Changchun**	**84.60**	**321**	*e*P	**P**	**03 19 12.2**	**+0.6**
CN2				AMB	AMB		
	comp=Z,10.0nm,0.9s,mb5.0						
TCUT	**Toone Canyon**	**84.82**	**43**	*e*P	**P**	**03 19 13.3**	**+0.5**
PV10	**Paradox Valley**	**84.90**	**46**	*e*P	**P**	**03 19 12.6**	**-0.7**
ANMO	**Albuquerque**	**84.96**	**50**	*de*P	**P**	**03 19 14.0**	**+0.4**
NEW	**Newport**	**85.65**	**34**	PFAKE		03 19 30.0	+13
NEW				LR	LR		
	comp=Z,300nm,19.0s,MS4.7						
MCMT	**McKenzie Canyo**	**86.00**	**39**	*e*P	**P**	**03 19 18.9**	**+0.4**
MSO	**Missoula**	**86.52**	**37**	PFAKE		03 19 30.0	+9.0
MSO				LR	LR		
	comp=Z,265nm,19.0s,MS4.7						
MCK	**McKinley**	**86.54**	**11**	*e*P	**P**	**03 19 19.7**	**-1.0**
	comp=Z,7.2nm,0.9s,mb4.9						
PLCA	**Paso Flores**	**86.62**	**132**	LR	LR	03 50 28.2	
	comp=Z,122nm,20.1s,MS4.3,baz=183,slow=30						
BW06	**Boulder Array**	**86.87**	**42**	PFAKE		03 19 30.0	+7.2
BW06				LR	LR		
	comp=Z,154nm,19.0s,MS4.4						
PDAR	**Pinedale Array**	**86.87**	**42**	P	**P**	**03 19 22.0**	**-0.8**
	comp=Z,0.7nm,0.7s,mb4.0,baz=198,slow=4.7,SNR=6.6						
BOZ	**Bozeman (W)**	**87.17**	**39**	PFAKE		03 19 40.0	+16
BOZ				LR	LR		
	comp=Z,228nm,21.0s,MS4.6						
SNAA	**Sanae**	**87.63**	**177**	⇑*i*	**P**	**03 19 26.2**	**+0.4**
VNA3	**Neumayer Olymp**	**87.63**	**175**	⇓*i*	**P**	**03 19 26.6**	**+0.8**
COLA	**College**	**87.78**	**11**	*e*P	**P**	**03 19 25.9**	**-0.7**
COLA	**College**	**87.78**	**11**	*e*P	**P**	**03 19 26.0**	**-0.7**
	comp=Z,25nm,1.4s,mb5.2						
COLA				*e*		03 19 40.3	
ILAR	**Eielson Array**	**87.86**	**11**	P	**P**	**03 19 26.9**	**-0.2**
	comp=Z,4.3nm,1.1s,mb4.6,baz=220,slow=5.3,SNR=12						
ISCO	**Idaho Springs**	**87.92**	**46**	PFAKE		03 19 40.0	+12
ISCO				LR	LR		
	comp=Z,129nm,20.0s,MS4.3						
VNA2	**Neumayer--Watz**	**88.11**	**176**	⇑*i*	**P**	**03 19 29.1**	**+1.0**
DAWY	**Dawson**	**88.82**	**15**	*e*P	**P**	**03 19 31.6**	**-0.1**
ENH	**Enshi**	**89.00**	**303**	*e*P	**P**	**03 19 34.5**	**+1.1**
	comp=Z,25nm,1.0s,mb5.5						
BILL	**Bilibino**	**89.68**	**353**	*e*P	**P**	**03 19 36.9**	**+1.3**
HKT	**Hockley**	**90.80**	**58**	PFAKE		03 19 50.0	+8.2
HKT				LR	LR		
	comp=Z,162nm,20.0s,MS4.5						
XAN	**Xi'an**	**91.00**	**306**	P	**P**	**03 19 45.1**	**+2.4**
XAN				AP	pP	03 19 53.4	+0.1
XAN				AMB	AMB		
	comp=Z,13nm,1.2s,mb5.1						
NANT	**Nan**	**91.96**	**289**	P	**P**	**03 19 49.0**	**+1.6**
CMAR	**Chiang Mai Arr**	**93.40**	**288**	P	**P**	**03 19 56.1**	**+2.1**
	comp=Z,7.4nm,1.0s,mb5.1,baz=119,slow=3.0,SNR=32						
CHG	**Chiang Mai**	**93.52**	**289**	⇑P	**P**	**03 19 56.6**	**+2.1**
	comp=Z,10nm,0.9s,mb5.3						
YKA	**Yellowknife Ar**	**95.36**	**24**	P	**P**	**03 20 01.1**	**-0.8**
	comp=Z,0.8nm,0.8s,mb4.2,baz=230,slow=3.8,SNR=5.1						
YKA	**Yellowknife Ar**	**95.36**	**24**	P	**P**	**03 20 01.1**	**-0.8**
LVC	**Limon Verde**	**95.51**	**117**	LR	LR	03 50 54.0	
	comp=Z,147nm,21.1s,MS4.4,baz=177,slow=28						
CCM	**Cathedral Cave**	**97.36**	**52**	PFAKE		03 20 20.0	+8.4
CCM				LR	LR		
	comp=Z,176nm,19.0s,MS4.6						
LPAZ	**La Paz**	**98.83**	**111**	LR	LR	03 57 26.7	
	comp=Z,69nm,18.2s,MS4.2,baz=53,slow=31						
ZAK	**Zakamensk**	**101.00**	**320**	*e*P	P	03 20 24.5	-3.2
ACSO	**Alum Creek Sta**	**104.14**	**52**	PFAKE		03 20 50.0	+8.1
ACSO				LR	LR		
	comp=Z,529nm,22.0s,MS5.0						
AAM	**Ann Arbor**	**104.19**	**50**	PFAKE		03 20 50.0	+7.9
AAM				LR	LR		
	comp=Z,149nm,19.0s,MS4.5						
ZAL	**Zalesovo**	**112.83**	**321**	PKiKP		03 25 13.8	
	comp=Z,0.7nm,0.3s,baz=194,slow=8.1,SNR=3.5						
MKAR	**Makanchi Array**	**113.84**	**313**	PKiKP		03 25 16.2	
	comp=Z,1.6nm,0.8s,baz=51,slow=3.1,SNR=12						
BDFB	**Brasilia**	**116.12**	**120**	PKP	PKPdf	03 25 21.4	+0.6
	comp=Z,0.7nm,0.5s,baz=125,slow=20,SNR=3.1						
BVAR	**Borovoye Array**	**121.45**	**320**	PKP	PKPdf	03 25 31.3	+1.1
	comp=Z,2.3nm,0.7s,baz=90,slow=1.5,SNR=17						
BRVK	**Borovoye**	**121.51**	**320**	*e*PKIKP	PKPdf	03 25 30.7	+0.4
ZRNK	**Zerenda**	**122.29**	**320**	*e*PKIKP	PKPdf	03 25 32.8	+0.9
ARCES	**ARCESS Array B**	**129.75**	**351**	PKP	PKPdf	03 25 47.0	+1.2
	comp=Z,1.3nm,0.6s,baz=45,slow=3.4,SNR=6.9						
FINES	**FINESS Array B**	**136.92**	**346**	PKP	PKPdf	03 25 59.3	-0.1
	comp=Z,1.1nm,0.8s,baz=326,slow=6.9,SNR=5.1						
NOA	**NORSAR Array B**	**139.57**	**356**	PKP	PKPdf	03 26 03.6	-0.5
	comp=Z,2.0nm,0.7s,baz=20,slow=1.9,SNR=2.8						
SUW	**Suwalki**	**144.20**	**342**	*e*Pn	PKPbc	03 26 12.4	+0.6
SUW				*e*Pg	tx	03 26 19.3	
AKASG	**Malin Array Be**	**144.81**	**334**	PKP	PKPdf	03 26 13.6	0.0
	comp=Z,3.0nm,0.5s,baz=41,slow=4.2,SNR=22						
EKA	**Eskdalemuir Ar**	**144.86**	**9**	PKP	PKPdf	03 26 13.3	-0.2
	comp=Z,19nm,1.4s,baz=349,slow=3.6,SNR=3.2						
BSEG	**Bad Segeberg**	**146.69**	**355**	*e*PKP2	PKPab	03 26 20.3	-1.3
MALT	**Malatya**	**146.75**	**309**	*e*P	PKPdf	03 26 07.5	-10
KWP	**Kalwaria**	**148.14**	**339**	*e*PX	PKPab	03 26 24.5	-2.9
KWP				*e*		03 26 34.9	
KWP				*e*		03 26 46.1	
OJC	**Ojcow**	**148.53**	**342**	*e*PKP	PKPdf	03 26 25.4	+5.6
KSP	**Ksiaz**	**148.82**	**347**	*e*PX	PKPab	03 26 26.1	-4.1
KSP	**Ksiaz**	**148.82**	**347**	*e*PKP	PKPdf	03 26 21.7	+1.5
KSP				*e*PKPdf	PKPab	03 26 26.3	-3.9
CLL	**Collm**	**148.97**	**351**	⇑*i*PKP1	PKPdf	03 26 26.2	+5.8
CLL				*i* *PPKP		03 26 35.0	
CLL	**Collm**	**148.97**	**351**	*i* PKIKP	PKPdf	03 26 26.2	+5.8
CLL				*i*		03 26 35.0	
CLL				pmax	pmax		
	comp=Z,51nm,1.7s						
NIE	**Niedzica**	**149.10**	**341**	⇑*e*PKP	PKPdf	03 26 27.1	+6.4
CRVS	**Cervenica-Dubn**	**149.19**	**339**	*e*PKP	PKPdf	03 26 28.3	+7.4
UPC	**Upice**	**149.20**	**347**	*e*PKPbc	PKPdf	03 26 27.0	+6.2
BRG	**Berggiesshubel**	**149.24**	**350**	*e*PKHKP		03 26 24.1	
BRG				pmax	pmax		
	comp=Z,38nm,1.8s						
DPC	**Dobruska-Polom**	**149.28**	**347**	*e*PKPbc	PKPdf	03 26 27.6	+6.6
OKC	**Ostrava-Krasne**	**149.32**	**344**	*e*PKPbc	PKPdf	03 26 27.6	+6.5
BRTR	**Keskin Array B**	**149.48**	**314**	PKPbc	PKPdf	03 26 27.2	+5.6
	comp=Z,3.0nm,0.8s,baz=134,slow=3.7,SNR=19						
MORC	**Moravsky Berou**	**149.53**	**345**	*e*PKP	PKPdf	03 26 28.1	+6.7
MOX	**Moxa**	**149.81**	**352**	*e*PKIKP	PKPdf	03 26 28.7	+6.9
MOX				pmax	pmax		
	comp=Z,27nm,1.6s						
PRU	**Pruhonice**	**149.99**	**348**	*e*PKPbc	PKPdf	03 26 28.7	+6.6
NKC	**Novy Kostel**	**150.10**	**351**	*e*PKPbc	PKPdf	03 26 28.6	+6.3
MLR	**Mumlele Rosu**	**150.20**	**331**	PKPbc	PKPdf	03 26 28.9	+6.3
	baz=344,slow=5.5						
VRAC	**Vranov**	**150.20**	**345**	PKPbc	PKPdf	03 26 27.9	+5.4
	comp=Z,3.0nm,0.9s,baz=36,slow=2.3,SNR=7.6						
VYHS	**Vyhne**	**150.36**	**342**	*i* PKP	PKPdf	03 26 30.2	+7.5
PSZ	**Piszkesteto**	**150.55**	**340**	⇑*ep*PKP/F	PKPdf	03 26 30.4	+7.3
PSZ	**Piszkesteto**	**150.55**	**340**	*e*PKP	PKPdf	03 26 30.1	+7.0
GIVF	**Givet**	**150.72**	**1**	*e*PKIKP	PKPdf	03 26 29.5	+6.3
BAIF	**Baives**	**150.75**	**2**	*e*PKIKP	PKPdf	03 26 29.6	+6.3
	comp=Z,86nm,1.6s						
GRA1	**Grafenberg Arr**	**150.79**	**353**	*e*PKPbc	PKPdf	03 26 31.1	+7.8
GRF	**Grafenberg Arr**	**150.79**	**353**	*e*PKHKP	PKPdf	03 26 31.1	+7.8
KHC	**Kasperske Hory**	**150.99**	**349**	*e*PKPbc	PKPdf	03 26 31.3	+7.7
WET	**Wettzell**	**151.09**	**350**	*e*PKHKP	PKPdf	03 26 31.7	+7.9
GEC2	**GERESS Array S**	**151.24**	**349**	*e*PKHKP	PKPdf	03 26 31.8	+7.8

SONM	**Songino Array**	**9.19**	**329**	Pn	P	03 16 09.3	-4.3
	0.1nm,0.3s,baz=148,slow=12,SNR=3.6						
SONM				Pg	P	03 16 46.2	+33
	0.3nm,0.3s,baz=151,slow=18,SNR=3.6						
SONM				Sn	Sn	03 17 54.6	-4.4
	0.2nm,0.3s,baz=144,slow=25,SNR=2.7						
SONM				Lg		03 18 49.5	
	0.3nm,0.3s,baz=150,slow=32,SNR=3.8						
JHJ	**Hachijo jima 2**	**22.29**	**100**	LR	LR	03 26 49.7	
	comp=Z,49nm,18.9s,baz=91,slow=35						
MKAR	**Makanchi Array**	**23.40**	**297**	P	P	03 19 07.4	-0.5
	0.5nm,0.8s,baz=90,slow=13,SNR=4.4						
ZAL	**Zalesovo**	**23.66**	**315**	P	P	03 19 09.8	-0.5
	0.8nm,0.6s,baz=258,slow=3.8,SNR=3.2						
YKA	**Yellowknife Ar**	**70.73**	**21**	P	P	03 25 14.2	-1.9
	0.3nm,0.7s,baz=325,slow=5.9,SNR=9.7						

*IDC **01** 03:33:17.7±1.7,0.50N×124.97E,mb4.0/3,mb1 4.2/4, mb1mx3.8/16,ML3.5/1,Error ellipse: s-maj=126.0km s-min=22.9km az=66.0*
*NEIC **01** 03:33:22.0±0.7,0.52N×124.79E,h45km,mb4.5/5,Error ellipse: s-maj=32.0km s-min=11.2km az=69.0*
ISC 01 03:33:18.7±0.6,0.6N±0.1×124.7E±0.2,h33km,n12, σ1§19/12,mb4.2/8,Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**18.55**	**177**	P	**P**	**03 37 34.8**	**-0.3**
	0.1nm,0.3s,baz=18,slow=13,SNR=2.6						
WRAB	**Tennant Creek**	**22.46**	**156**	*e*P	**P**	**03 38 15.3**	**-1.1**
	12nm,0.6s,mb4.5						
WRA	**Warramunga Arr**	**22.46**	**156**	P	**P**	**03 38 16.4**	**0.0**
	5.6nm,0.7s,mb4.1,baz=335,slow=11,SNR=23						
WB2	**Warramunga Arr**	**22.47**	**156**	*e*P	**P**	**03 38 16.6**	**+0.1**
PMG	**Port Moresby**	**24.48**	**114**	*e*P	**P**	**03 38 36.3**	**0.0**
	31nm,1.9s,mb4.4						
ASAR	**Alice Springs**	**25.69**	**160**	P	**P**	**03 38 49.0**	**+1.3**
	2.6nm,0.8s,mb3.8,baz=344,slow=9.4,SNR=17						
ENH	**Enshi**	**32.90**	**335**	*e*P	**P**	**03 39 51.1**	**-1.1**
	15nm,2.0s,mb4.6						
LSA	**Lhasa**	**43.11**	**315**	*e*P	**P**	**03 41 15.4**	**-2.4**
	2.9nm,0.6s,mb4.2						
MKAR	**Makanchi Array**	**59.04**	**327**	P	**P**	**03 43 20.9**	**+3.0**
	0.6nm,0.5s,mb3.9,baz=129,slow=8.4,SNR=9.2						
KURK	**Kurchatov**	**63.35**	**329**	*e*P	**P**	**03 43 48.8**	**+1.8**
SMY	**Shemya**	**66.23**	**30**	P	**P**	**03 44 05.0**	**-0.5**
ARU	**Arti**	**76.53**	**329**	*e*P	**P**	**03 45 07.6**	**+0.4**
	9.0nm,1.4s,mb4.5						

*IDC **01** 03:39:21.4±1.4,14.54N×94.71W,mb4.0/7,mb1 4.3/9, mb1mx4.0/22,ML3.9/2,MS3.7/4,Ms1 3.7/4,ms1mx3.2/30, Error ellipse: s-maj=46.5km s-min=26.1km az=68.0*
*MEX **01** 03:39:27.8±0.8,14.83N×94.96W,h17km±36km,MD4.3*
*NEIC **01** 03:39:29.5,14.95N×94.83W,h9km,mb4.0/11, MD4.2(MEX),After MEX.*
ISC 01 03:39:24.1±0.7,14.87N±0.06×94.90W±0.04,h10km,n42, σ1§60/46,mb4.1/15,MS3.7/4,Off coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HUIG	**Huatulco**	**1.46**	**308**	*i* P	**Pn**	**03 39 49.4**	**-1.3**
HUIG				*i* S	**Sb**	**03 40 06.9**	**-2.7**
CMIG	**Matias Romero**	**2.20**	**0**	*i* P	**Pn**	**03 40 02.2**	**+0.9**
CMIG				*i* S	**Sn**	**03 40 26.9**	**-1.9**
VHO	**Vista Hermosa**	**2.81**	**321**	*i* P	**Pn**	**03 40 10.2**	**+0.3**
VHO				*i* S	**Sn**	**03 40 41.2**	**-2.9**
OXX	**Oaxaca**	**2.81**	**322**	*i* P	**Pn**	**03 40 12.5**	**+2.6**
OXX				*i* S	**Sn**	**03 40 45.5**	**+1.3**
SCX	**San Cristobal**	**2.86**	**49**	*i* P	**Pn**	**03 40 12.6**	**+1.9**
CCIG	**Comitan**	**3.01**	**62**	*i* P	**Pn**	**03 40 12.9**	**+0.1**
CCIG				*i* S	**Sn**	**03 40 48.4**	**-1.0**
PNIG	**Pinotepa**	**3.45**	**296**	*i* P	**Pn**	**03 40 17.6**	**-1.5**
PNIG				*i* S	**Sn**	**03 40 57.5**	**-3.0**
EVV	**El Vigia**	**3.59**	**353**	*e*P	**Pn**	**03 40 07.0**	**-14**
IISM	**Ciudad Serdan**	**4.73**	**330**	*e*P	**Pn**	**03 40 47.0**	**+10**
POHV	**Veracruz**	**4.75**	**332**	*e*P	**Pn**	**03 40 40.0**	**+2.4**
PPM	**Popocatepetl**	**5.48**	**320**	*i* P	**Pn**	**03 40 47.3**	**-0.6**
PPM				*e*P		03 40 52.5	
PPM				*i* S	**Sn**	**03 41 50.6**	**-1.2**
TEIG	**Tepich**	**8.26**	**49**	Pn	**P**	**03 41 25.7**	**-1.2**
	6.7nm,0.3s,baz=182,slow=4.9,SNR=6.9						
TEIG				Sn	**Sn**	**03 42 55.3**	**-6.0**
	2.0nm,0.3s,baz=180,slow=16,SNR=2.7						
JCT	**Junction City**	**16.17**	**345**	*e*P	**P**	**03 43 16.2**	**+3.0**
	15nm,1.8s						
TXAR	**Lajitas Array**	**16.51**	**332**	Pn	**P**	**03 43 19.7**	**+2.2**
	0.0nm,0.3s,baz=149,slow=7.7,SNR=18						
MIAR	**Mount Ida**	**19.62**	**3**	*e*P	**P**	**03 43 55.7**	**0.0**
	28nm,2.0s						
WMOK	**Wichita Mounta**	**20.09**	**351**	*e*P	**P**	**03 44 01.3**	**+0.6**
	5.7nm,1.1s						
OTAV	**Otavalo**	**21.82**	**130**	*e*P	**P**	**03 44 15.7**	**-3.0**
	6.8nm,1.3s,mb3.9						
ANMO	**Albuquerque**	**22.54**	**335**	*e*P	**P**	**03 44 28.6**	**+3.0**
	4.4nm,1.6s,mb3.6						
WUAZ	**Wupatki**	**25.32**	**327**	*e*P	**P**	**03 44 57.3**	**+4.7**
	22nm,1.3s,mb4.5						
PV01	**Paradox Valley**	**26.13**	**335**	*e*P	**P**	**03 45 03.5**	**+3.2**
PV10	**Paradox Valley**	**26.53**	**335**	*e*P	**P**	**03 45 05.0**	**+1.2**
PCRV	**Puerto La Cruz**	**29.90**	**95**	LR	LR	03 57 47.8	
	comp=Z,76nm,20.7s,MS3.3,baz=116,slow=37						
HWUT	**Hardware Ranch**	**30.30**	**335**	P	**P**	**03 45 35.5**	**-2.3**
	1.4nm,0.8s,mb3.7						
PDAR	**Pinedale Array**	**30.52**	**338**	P	**P**	**03 45 40.0**	**+0.2**
	0.6nm,1.0s,mb3.4,baz=141,slow=9.5,SNR=4.0						
NVAR	**Mina Array Bea**	**31.26**	**323**	P	**P**	**03 45 48.2**	**+1.9**
	2.2nm,1.1s,mb3.9,baz=135,slow=8.7,SNR=13						
NVAR	**Mina Array Bea**	**31.26**	**323**	P	**P**	**03 45 48.2**	**+1.9**
KSWY	**Kelly School**	**31.65**	**338**	P	**P**	**03 45 50.9**	**+1.2**
HLID	**Hailey**	**33.10**	**334**	P	**P**	**03 46 02.5**	**+0.1**
	5.6nm,1.4s,mb4.3						
MCMT	**McKenzie Canyo**	**33.51**	**337**	*e*P	**P**	**03 46 08.3**	**+2.4**
BOZ	**Bozeman (W)**	**33.76**	**339**	*e*P	**P**	**03 46 09.2**	**+1.1**
	12nm,1.8s,mb4.5						
ULM	**Lac du Bonnet**	**35.29**	**359**	P	**P**	**03 46 19.8**	**-1.4**
	2.0nm,0.9s,mb4.0,baz=197,slow=5.8,SNR=2.9						
PQI	**Presque Isle**	**38.85**	**30**	*e*P	**P**	**03 46 49.4**	**-1.7**
	109nm,0.7s						
LPAZ	**La Paz**	**40.72**	**138**	*e*P	**P**	**03 47 06.1**	**-0.8**
	2.4nm,1.5s,mb3.6						
LVC	**Limon Verde**	**45.12**	**145**	P	**P**	**03 47 45.6**	**+2.8**
	25nm,1.7s,mb4.8						
YKA	**Yellowknife Ar**	**49.56**	**348**	P	**P**	**03 48 16.3**	**-0.8**
	1.7nm,1.1s,mb4.0,baz=151,slow=7.5,SNR=14						
YKA				LR	LR	04 12 42.9	
	comp=Z,45nm,18.6s,MS3.5,baz=265,slow=40						
INK	**Inuvik**	**58.82**	**344**	P	**P**	**03 49 23.0**	**-1.9**
	2.8nm,1.1s,mb4.2,baz=154,slow=6.6,SNR=4.4						
PLCA	**Paso Flores**	**59.76**	**159**	P	**P**	**03 49 25.9**	**-5.8**
	2.3nm,1.0s,mb4.2,baz=316,slow=11,SNR=2.8						
PLCA	**Paso Flores**	**59.76**	**159**	P	**P**	**03 49 25.9**	**-5.8**
ILAR	**Eielson Array**	**60.94**	**337**	P	**P**	**03 49 39.0**	**-0.4**
	4.9nm,1.3s,mb4.5,baz=130,slow=3.7,SNR=13						
USHA	**Ushuaia**	**72.98**	**164**	LR	LR	04 16 22.2	
	comp=Z,127nm,18.0s,MS4.2,baz=189,slow=31						
NOA	**NORSAR Array B**	**84.71**	**28**	LR	LR	04 26 59.6	
	comp=Z,31nm,19.4s,MS3.7,baz=285,slow=34						
CMAR	**Chiang Mai Arr**	**144.18**	**337**	PKP	PKPdf	03 58 58.4	-5.7
	1.4nm,1.0s,baz=6.4,slow=2.5,SNR=5.3						

*MAN **01** 04:04:43.0,8.41N×125.84E,h15km,mb4.3,ML3.1,MS2.8*
ISC 01 04:04:43.4±1.3,8.51N±0.05×125.87E±0.09,h15km,n8, σ1§12/11,4C-1D,Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BUTP	**Butuan**	**0.52**	**332**	*e*P	**Pb**	**04 04 54.9**	**+1.2**
CGP	**Cagayan de Oro**	**1.17**	**268**	*e*P	**Pb**	**04 05 03.1**	**-1.6**
CGP				*e*S	**Sb**	**04 05 19.8**	**+0.3**
SCPH	**Surigao**	**1.32**	**343**	*e*P	**Pb**	**04 05 07.5**	**0.0**
DAV	**Davao City (W)**	**1.46**	**191**	*e*P	**Pn**	**04 05 09.5**	**+0.1**
KCP	**Kidapawan**	**1.68**	**208**	*e*P	**Pn**	**04 05 09.4**	**-3.1**
KCP				*i* S	**Sn**	**04 05 35.2**	**+1.4**
CTBH	**Cotabato--PC H**	**2.05**	**232**	*i* P	**Pn**	**04 05 16.9**	**-1.0**
TBP	**Tagbilaran**	**2.31**	**301**	*e*P	**Pn**	**04 05 21.0**	**-0.5**
PAGZ	**Pagadian**	**2.55**	**255**	*e*P	**Pn**	**04 05 26.1**	**+1.1**
PAGZ				*e*S	**Sn**	**04 06 02.9**	**+6.9**

*NEIC **01** 04:06:52.9±2.3,30.34S×178.56W,h124km±21km,mb4.6/3, Error ellipse: s-maj=19.1km s-min=14.8km az=177.0*

*IDC **01** 04:07:04.0±8.1,31.18S×178.82W,h224km±81km,mb3.6/4, mb1 3.6/5,mb1mx3.5/14,Error ellipse: s-maj=72.8km s-min=41.2km az=5.0*
ISC 01 04:07:05.9±2.3,31.15S±0.10×179.5W±0.2,h214km±18km, n22,σ1§01/24,mb4.0/6,2C-2D,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**7.16**	**195**	P	**P**	**04 08 48.6**	**-0.5**
PUZ				S	**S**	**04 10 11.3**	**+1.7**
URZ	**Urewera**	**7.64**	**201**	P	**P**	**04 08 55.5**	**+0.2**
	0.3nm,0.3s,baz=267,slow=5.7,SNR=8.6						
URZ				S	**S**	**04 10 22.2**	**+1.5**
	2.7nm,0.3s,baz=82,slow=22,SNR=15						
URZ	**Urewera**	**7.64**	**201**	P	**P**	**04 08 56.1**	**+0.8**
KNZ	**Kokohu**	**8.20**	**196**	S	**S**	**04 10 32.7**	**-1.0**
PWZ	**Pawanui**	**9.36**	**198**	S	**S**	**04 11 00.4**	**0.0**
BFZ	**Birch Farm**	**10.13**	**199**	S	**S**	**04 11 18.0**	**-0.3**
MRZ	**Mangatainoka R**	**10.31**	**202**	S	**S**	**04 11 20.7**	**-1.8**
THZ	**Tophouse**	**12.24**	**208**	*e*P	**P**	**04 09 52.9**	**-1.4**
THZ				S	**S**	**04 12 07.5**	**+0.5**
KHZ	**Kahutara**	**12.57**	**205**	*e*P	**P**	**04 09 58.2**	**-0.1**
RAR	**Rarotonga**	**20.21**	**65**	*e*P	**P**	**04 11 06.8**	**-19**
CTA	**Charters Tower**	**32.71**	**281**	P	**P**	**04 13 20.8**	**+0.5**
	2.5nm,0.6s,mb4.0,baz=117,slow=14,SNR=3.8						
CTAO	**Charters Tower**	**32.71**	**281**	P	**P**	**04 13 13.0**	**-7.3**
	3.6nm,0.8s,mb4.0						
STKA	**Stephens Creek**	**33.10**	**258**	P	**P**	**04 13 25.0**	**+1.4**
	4.0nm,0.7s,mb4.0,baz=89,slow=8.9,SNR=5.6						
ASAR	**Alice Springs**	**41.83**	**268**	P	**P**	**04 14 35.9**	**-0.5**
	2.2nm,1.1s,mb3.5,baz=105,slow=7.6,SNR=7.2						
WRAB	**Tennant Creek**	**42.89**	**274**	P	**P**	**04 14 45.7**	**+0.7**
	23nm,1.2s,mb4.5						
WRA	**Warramunga Arr**	**42.89**	**274**	P	**P**	**04 14 43.6**	**-1.4**
	0.7nm,0.4s,mb3.5,baz=112,slow=7.8,SNR=7.9						
QSPA	**South Pole Qui**	**58.96**	**180**	*e*P	**P**	**04 16 45.4**	**+1.0**
	2.2nm,0.3s,mb4.3						
SNAA	**Sanae**	**77.44**	**179**	*i*	**P**	**04 18 31.8**	**-6.4**
VNA3	**Neumayer Olymp**	**77.64**	**177**	*i*	**P**	**04 18 38.3**	**-1.1**
VNA2	**Neumayer--Watz**	**78.06**	**177**	*i*	**P**	**04 18 42.6**	**+0.9**
VNA1	**Neumayer--Stat**	**78.30**	**177**	*i*	**P**	**04 18 42.5**	**-0.5**
FINES	**FINESS Array B**	**145.40**	**339**	PKPbc	PKPbc	04 26 14.6	-3.5
	0.4nm,0.6s,baz=63,slow=3.1,SNR=6.2						

*NEIC **01** 04:09:59.1,63.38N×145.18W,h5km,ML3.3(AEIC), ML3.5(PMR),After AEIC.*
PGC 01 04:09:59.8,63.34N×145.41W,h1km,ML3.7/1,Eastern Alaska.,Central Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PAX	**Paxson**	**0.37**	**184**	P	Pg	04 10 06.6	-0.6
PAX				S	Sg	04 10 11.8	-0.4
DDM	**Donnelly Dome**	**0.49**	**336**	P	Pg	04 10 08.6	-1.0
DDM				S	Sg	04 10 15.3	-1.0
DOT	**Dot Lake**	**0.68**	**62**	P	Pg	04 10 09.5	-3.9
DOT				S	Sg	04 10 16.7	-5.8
SDG	**Sourdough**	**0.82**	**184**	P	Pg	04 10 14.9	-1.3
HDA	**Harding Lake**	**1.27**	**328**	P	Pb	04 10 23.4	-0.9
HDA				S	Sb	04 10 40.4	-0.5
TOA	**Tolsona**	**1.29**	**196**	P	Pb	04 10 23.7	-0.8
TZL	**Tazlina**	**1.30**	**180**	P	Pb	04 10 23.8	-1.0
RND	**Reindeer**	**1.55**	**274**	P	Pn	04 10 29.0	+0.3
IL1	**Eielson Array**	**1.58**	**336**	P	Pn	04 10 27.2	-1.9
MCK	**McKinley**	**1.63**	**286**	P	Pn	04 10 30.6	+0.8
BCA3	**Beaver Creek A**	**1.67**	**98**	P	Pn	04 10 28.2	-2.1
CCB	**Clear Creek Bu**	**1.68**	**322**	P	Pn	04 10 28.9	-1.7
SCM	**Sheep Creek Mo**	**1.75**	**211**	P	Pn	04 10 31.0	-0.6
GLM	**Gilmore Dome**	**1.87**	**333**	P	Pn	04 10 31.1	-2.1
KLU	**Klutina**	**1.87**	**187**	P	Pn	04 10 32.7	-0.6
COLA	**College**	**1.88**	**326**	P	Pn	04 10 31.1	-2.3
HUR	**Hurricane**	**1.95**	**261**	P	Pn	04 10 34.8	+0.4
BWN	**Browne**	**1.98**	**297**	P	Pn	04 10 33.8	-1.1
NEA	**Nenana**	**2.04**	**309**	P	Pn	04 10 34.4	-1.3
MDM	**Murphy Dome**	**2.04**	**324**	P	Pn	04 10 34.3	-1.4
GLB	**Gilahina Butte**	**2.05**	**158**	P	Pn	04 10 34.6	-1.2
SML	**Sawmill**	**2.05**	**223**	P	Pn	04 10 35.3	-0.5
PRP	**Porcupine Dome**	**2.19**	**359**	P	Pn	04 10 35.7	-2.1
TRF	**Thorofare Moun**	**2.20**	**275**	P	Pn	04 10 38.8	+0.8
VLZ	**Valdez**	**2.26**	**191**	P	Pn	04 10 38.0	-0.8
GHO	**Glory Hole Cre**	**2.26**	**228**	P	Pn	04 10 39.0	+0.1
JPK	**Jack Peak**	**2.36**	**194**	P	Pn	04 10 39.7	-0.6
KNK	**Knik Glacier**	**2.40**	**218**	P	Pn	04 10 41.0	+0.1
BMRM	**Bremner River**	**2.41**	**171**	P	Pn	04 10 39.7	-1.3
CUT	**Chulitna**	**2.42**	**249**	P	Pn	04 10 41.6	+0.6
PMR	**Palmer**	**2.46**	**226**	P	Pn	04 10 41.5	-0.3
KTH	**Kantishna Hill**	**2.48**	**277**	P	Pn	04 10 41.9	-0.2
PWA	**Palmer West**	**2.68**	**233**	P	Pn	04 10 41.8	+1.3
BALM	**Bally**	**2.72**	**147**	P	Pn	04 10 45.2	-0.3
DAWY	**Dawson**	**2.78**	**72**	Pn	Pn	04 10 43.9	-2.3
DAWY				Pg	Pg	04 10 50.2	-5.1
DAWY				Sn	Sn	04 11 15.6	-5.3
DAWY				Sg	Sg	04 11 26.2	-6.1
DAWY				Trac		04 11 32.8	
	comp=Z,162nm,0.2s						
DAWY	**Dawson**	**2.78**	**72**	P	Pn	04 10 43.4	-2.9
CRQM	**Cirque**	**2.81**	**157**	P	Pn	04 10 46.1	-0.6
EYAK	**Cordova Ski Ar**	**2.81**	**183**	P	Pn	04 10 46.4	-0.2
CVA	**Cordova**	**2.81**	**183**	P	Pn	04 10 46.3	-0.4
PMS	**Palmer South**	**2.86**	**225**	P	Pn	04 10 48.0	+0.6
MLY	**Manley**	**2.88**	**308**	P	Pn	04 10 46.2	-1.6
GOU	**Gould Hall**	**2.98**	**226**	P	Pn	04 10 49.7	+0.6
HIN	**Hinchinbrook I**	**3.00**	**190**	P	Pn	04 10 48.7	-0.7
RC01	**Rabbit Creek A**	**3.03**	**224**	P	Pn	04 10 50.4	+0.5
CTGM	**Chitina Glacie**	**3.06**	**139**	P	Pn	04 10 49.2	-1.0
FIB	**Fire Island**	**3.12**	**228**	*e*P	Pn	04 10 52.5	+1.4
SKT	**Skwentna**	**3.13**	**247**	P	Pn	04 10 52.4	+1.1
FYU	**Fort Yukon**	**3.24**	**1**	P	Pn	04 10 50.9	-1.9
MPA	**Moose Pass**	**3.42**	**215**	P	Pn	04 10 55.6	+0.3
YAH	**Yahtse**	**3.46**	**148**	P	Pn	04 10 54.1	-1.8
SLKM	**Skilak Lake**	**3.64**	**221**	P	Pn	04 10 59.0	+0.5
SEW	**Seward**	**3.77**	**212**	P	Pn	04 10 59.5	-0.9
CHX	**Chaix Hills**	**3.87**	**146**	P	Pn	04 11 00.2	-1.6
BKG	**Blockade Glaci**	**3.93**	**238**	P	Pn	04 11 03.4	+0.7
BM3	**Burnt Mountain**	**4.11**	**4**	P	Pn	04 11 03.0	-2.3
BRLK	**Bradley Lake**	**4.44**	**219**	P	Pn	04 11 09.0	-0.9
IM3	**Indian Mountai**	**4.46**	**310**	P	Pn	04 11 07.8	-2.3
REF	**Redoubt East F**	**4.48**	**234**	P	Pn	04 11 11.2	+0.8
IMA	**Indian Mountai**	**4.48**	**311**	*e*P	Pn	04 11 08.8	-1.7
NCT	**North Crescent**	**4.51**	**235**	P	Pn	04 11 09.9	-1.0
RSO	**Redoubt South**	**4.51**	**234**	P	Pn	04 11 10.7	-0.2
CNPM	**China Poot**	**4.74**	**219**	P	Pn	04 11 13.6	-0.5
ILW	**Iliamna West**	**4.93**	**232**	P	Pn	04 11 17.1	+0.2
SVW	**Sparrevohn**	**5.27**	**249**	*e*P	Pn	04 11 22.6	+0.9
WHY	**Whitehorse**	**5.64**	**114**	Pn	Pn	04 11 23.4	-3.5
WHY				Sn	Sn	04 12 26.5	-6.8
WHY				Sg	Sg	04 12 55.2	-12
WHY				Trac		04 13 05.0	
	comp=Z,10.0nm,0.3s						
WHY	**Whitehorse**	**5.64**	**114**	P	Pn	04 11 23.0	-3.9
INK	**Inuvik**	**6.97**	**39**	Pn	Pn	04 11 41.7	-3.9
INK				Sg	Sg	04 13 42.2	-10
INK				Trac		04 13 51.8	
	comp=Z,14nm,0.8s						
INK	**Inuvik**	**6.97**	**39**	*e*P	Pn	04 11 40.7	-4.9
DLBC	**Dease Lake**	**8.96**	**116**	Trac		04 15 10.7	
	comp=Z,7.0nm,0.7s						
DLBC	**Dease Lake**	**8.96**	**116**	Sg	Sg	04 14 41.4	-17
YKW3	**Yellowknife Ar**	**13.97**	**79**	Pn	P	04 13 15.5	-5.3

DJA 01 04:45:23.1±1.0,9.83S×116.08E,h33km,MD4.9/3, ML3.5/2,2C-4D,Error ellipse: s-maj=23.3km s-min=17.6km az=162.0,Sumbawa region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RATI	**Rata**	**1.22**	**334**	*i*Pg	P	04 45 41.9	-2.0
	59nm,0.2s						
RATI				*i*Sg	S	04 45 55.5	-4.1
KEDI	**Kedomdong**	**1.33**	**1**	*i*Pg	P	04 45 44.3	-1.3
	62nm,0.2s						
KEDI				*i*Sg	S	04 46 00.1	-2.2
KELI	**Kelakatan**	**2.24**	**315**	*i*Pn	Pn	04 45 57.1	-1.7
KELI				*i*Sn	Sn	04 46 22.0	-3.6

*JMA **01** 05:30:23.2±0.1,24.52N×122.75E,h80km±1km,M3.0*
*TAP **01** 05:30:23.2,24.32N×122.76E,h49km±1km,ML3.8*
ISC 01 05:30:23.4±2.1,24.5N±0.2×122.8E±0.1,h78km±12km,n7, σ0§31/13,Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**0.23**	**103**	P	**P**	**05 30 35.2**	**0.0**
YOJ				S	**S**	**05 30 44.0**	**0.0**
IRIF	**Iriomote-Funau**	**0.90**	**101**	P	**P**	**05 30 41.2**	**-0.1**
IRIF				S	**S**	**05 30 54.9**	**+0.1**
HATJ	**Hateruma jima**	**1.05**	**116**	P	**P**	**05 30 43.1**	**-0.1**
HATJ				S	**S**	**05 30 58.5**	**+0.4**
JKRS	**Kuro-shima**	**1.17**	**103**	P	**P**	**05 30 45.0**	**+0.3**
JKRS				*e*S	**S**	**05 31 00.5**	**-0.1**
JIJ	**Ishigaki jima**	**1.26**	**97**	P	**P**	**05 30 45.6**	**-0.4**
JIJ				S	**S**	**05 31 02.1**	**-0.8**
JTJ	**Tarama**	**1.77**	**86**	P	**P**	**05 30 52.8**	**+0.1**
JTJ				*e*S	**S**	**05 31 14.7**	**+0.4**
JOGS	**Gusukube**	**2.41**	**84**	*e*S	**S**	**05 31 30.2**	**+0.1**

*IDC **01** 05:41:48.9±1.9,6.75S×129.66E,mb3.9/3,mb1 4.2/6, mb1mx4.0/13,ML4.0/3,Error ellipse: s-maj=79.8km s-min=24.2km az=74.0*
*NEIC **01** 05:41:50.1±0.6,6.72S×129.75E,h10km,mb4.1/2,Error ellipse: s-maj=16.6km s-min=8.1km az=65.0*
ISC 01 05:42:08.5±3.2,7.7S±0.1×129.3E±0.1,h226km±38km,n14, σ0§88/19,mb3.5/4,Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**10.91**	**199**	*e*P	**P**	**05 44 40.8**	**+0.9**
	1.1nm,0.2s						
FITZ				*e*S	**S**	**05 46 38.1**	**-0.7**
FITZ	**Fitzroy Crossi**	**10.91**	**199**	Pn	**P**	**05 44 39.6**	**-0.3**
	0.5nm,0.3s,baz=32,slow=11,SNR=14						
FITZ				Sn	**S**	**05 46 38.9**	**+0.1**
	2.3nm,0.3s,baz=152,slow=19,SNR=13						
WRAB	**Tennant Creek**	**13.10**	**158**	*e*P	**P**	**05 45 06.8**	**-0.6**
	26nm,1.1s						
WRA	**Warramunga Arr**	**13.10**	**159**	Pn	**P**	**05 45 07.3**	**-0.1**
	0.9nm,0.3s,baz=334,slow=13,SNR=21						
WRA				Sn	**S**	**05 47 29.1**	**+0.4**
	2.6nm,0.3s,baz=334,slow=22,SNR=12						
WB2	**Warramunga Arr**	**13.11**	**158**	*e*P	**P**	**05 45 07.7**	**+0.3**
WB2				*e*S	**S**	**05 47 24.7**	**-4.1**
AS12	**Alice Springs**	**16.46**	**165**	*e*P	**P**	**05 45 52.5**	**+4.1**
	4.8nm,0.4s						
ASAR	**Alice Springs**	**16.46**	**165**	P	**P**	**05 45 53.0**	**+4.6**
	1.2nm,0.3s,baz=341,slow=9.7,SNR=31						
ASAR				S	**S**	**05 48 52.7**	**+9.2**
	0.8nm,0.3s,baz=336,slow=24,SNR=8.7						
PMG	**Port Moresby**	**17.76**	**97**	P	**P**	**05 45 52.9**	**-10**
	25nm,1.7s						
CM31	**Chiang Mai Arr**	**39.65**	**311**	*e*P	**P**	**05 49 19.8**	**-0.4**
	4.9nm,1.1s,mb3.9						
CMAR	**Chiang Mai Arr**	**39.65**	**311**	P	**P**	**05 49 20.9**	**+0.7**
	1.1nm,0.8s,mb3.4,baz=144,slow=6.8,SNR=7.8						
MKAR	**Makanchi Array**	**68.44**	**327**	P	**P**	**05 52 49.0**	**+1.1**
	0.5nm,0.4s,mb3.5,baz=115,slow=9.1,SNR=13						
MKAR	**Makanchi Array**	**68.44**	**327**	P	**P**	**05 52 49.0**	**+1.1**
ZAL	**Zalesovo**	**71.91**	**334**	P	**P**	**05 53 08.7**	**0.0**
	0.7nm,0.6s,mb3.4,baz=254,slow=1.7,SNR=4.4						
KURK	**Kurchatov**	**72.76**	**329**	*e*P	**P**	**05 53 11.0**	**-2.8**

*LDG **01** 05:42:38.0±0.4,44.73N×7.77E,h4km,Md2.4/2,Ml2.1/10, Error ellipse: s-maj=6.3km s-min=3.1km az=78.0*
*NEIC **01** 05:42:40.0,44.79N×7.58E,h40km,MD2.4(LDG),After GEN.*
*STR **01** 05:42:40.2±0.5,44.73N×7.61E,h5km±1km,Ml2.0,Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
ISC 01 05:42:39.9±0.4,44.75N±0.02×7.64E±0.04,h26km±3km, n33,σ0§83/61,Northern Italy

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

PET					*e*S	**S**	**05 48 23.0**	**+1.2**
PET					smax			
	comp=N,144nm,0.4s							
PET					smax			
	comp=E,111nm,0.4s							
NLC	**Nalytchevo**	**1.23**	**31**	PN	**P**	**05 48 08.4**	**-0.1**
NLC				S	**S**	**05 48 26.8**	**-0.5**
SPN	**Mys Shipunski**	**1.44**	**47**	PN	**P**	**05 48 11.9**	**+1.0**
SPN				S	**S**	**05 48 32.6**	**+0.9**
KII	**Karymskiy**	**2.04**	**20**	PN	**P**	**05 48 18.1**	**0.0**
KII				S	**S**	**05 48 43.8**	**-0.4**
MKZ	**Mys Kozlova**	**3.20**	**39**	PN	**P**	**05 48 33.4**	**0.0**
MKZ				S	**S**	**05 49 10.1**	**-1.2**
KBTR	**Krutoberegovo**	**4.88**	**31**	PN	**P**	**05 48 56.4**	**+0.4**
FX1	**Attu Island--F**	**9.11**	**79**	P	**P**	**05 49 54.9**	**+1.8**
	comp=E,2.2nm,0.3s,baz=232,slow=24,SNR=5.5							
FX1				S	**S**	**05 51 33.2**	**-1.2**
	comp=E,7.3nm,0.3s,baz=208,slow=21,SNR=13							
FX1	**Attu Island--F**	**9.11**	**79**	PN	**P**	**05 49 54.9**	**+1.8**
FX1				S	**S**	**05 51 33.2**	**-1.2**
FX1				pmax	pmax			
	comp=Z,2.0nm,0.3s							
FX1				smax				
	comp=N,7.0nm,0.3s							
ILAR	**Eielson Array**	**30.28**	**44**	P	**P**	**05 53 43.3**	**-1.3**
	comp=N,0.3nm,0.6s,mb3.1,baz=275,slow=6.8,SNR=4.3							
YKA	**Yellowknife Ar**	**44.62**	**41**	P	**P**	**05 55 44.7**	**+0.2**
	comp=N,0.1nm,0.4s,mb2.9,baz=300,slow=7.5,SNR=4.2							
NVAR	**Mina Array Bea**	**57.12**	**68**	P	**P**	**05 57 20.2**	**+1.2**
	comp=N,0.4nm,0.5s,mb3.7,baz=297,slow=6.5,SNR=4.0							
TXAR	**Lajitas Array**	**72.04**	**65**	P	**P**	**05 58 56.3**	**+0.7**
	comp=N,1.0nm,0.4s,mb3.3,baz=296,slow=5.2,SNR=6.2							
ASAR	**Alice Springs**	**78.42**	**203**	P	**P**	**05 59 30.6**	**-1.4**
	comp=N,0.2nm,0.4s,mb3.2,baz=19,slow=4.9,SNR=4.1							

*ISK **01** 05:55:01.5, 37.33N×26.64E, h6km, MD3.4, ML3.5*
*NEIC **01** 05:55:02.4, 37.37N×26.67E, h26km, MD3.7(ATH), After ATH.*
*ATH **01** 05:55:02.4, 37.37N×26.67E, h26km±1km, MD3.7/15, ML3.9*
*THE **01** 05:55:05.0, 37.30N×26.74E, h20km*

ISC 01 05:55:01.6±0.2, 37.34N±0.02×26.61E±0.02, h6km, n49, σ0↟98/67, 3C-4D, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
SMG	**Samos**	**0.41**	**26**	*e*PB		**Pb**	**05 55 10.6**	**-0.2**
SMG				SB		**Sb**	**05 55 16.6**	**-0.5**
BDRM	**Kayabasi**	**0.72**	**112**	↑*i*P		**Pg**	**05 55 15.7**	**-0.3**
BDRM				*i* S		**Sg**	**05 55 26.4**	**+0.9**
NISR	**Nisiros**	**0.83**	**150**	*e*PN		**Pn**	**05 55 19.0**	**-0.6**
APE	**Apeiranthos**	**0.90**	**253**	↓*i*PB		**Pb**	**05 55 20.2**	**+1.0**
APE				*e*SN		**Sn**	**05 55 35.2**	**+1.2**
MLSB	**Milas**	**0.93**	**92**	PG		**Pg**	**05 55 18.9**	**-1.3**
MLSB				SG		**Sg**	**05 55 32.4**	**-0.2**
AYDN	**Tasoluk**	**1.06**	**72**	*i* P		**Pb**	**05 55 21.9**	**-0.1**
AYDN				*i* S		**Sb**	**05 55 37.0**	**+1.1**
IZM	**Izmir**	**1.18**	**26**	*i* PN		**Pn**	**05 55 24.5**	**0.0**
KDAG	**Bornova**	**1.18**	**26**	↑*i*P		**Pb**	**05 55 24.6**	**+0.5**
KDAG				*i* S		**Sb**	**05 55 41.1**	**+1.7**
THR4	**Thira Island,**	**1.31**	**228**	*e*Pb		**Pb**	**05 55 26.7**	**+0.5**
THR4				*e*Sb		**Sb**	**05 55 43.7**	**+0.6**
SANT	**Santorini**	**1.33**	**224**	*e*P		**Pb**	**05 55 26.1**	**-0.6**
SANT				*e*S		**Sb**	**05 55 43.0**	**-0.9**
THR1	**Thera Island**	**1.33**	**224**	*e*Pb		**Pb**	**05 55 27.3**	**+0.7**
THR1				*e*Sb		**Sb**	**05 55 43.8**	**-0.1**
THR3	**Thira Island,**	**1.34**	**227**	*e*Pb		**Pb**	**05 55 27.7**	**+0.9**
THR3				*e*Sb		**Sb**	**05 55 44.5**	**+0.5**
YER	**Yerkesik**	**1.35**	**98**	*i* PN		**Pn**	**05 55 27.1**	**+0.1**
THR5	**Thira Island,**	**1.37**	**228**	*e*Pb		**Pb**	**05 55 27.9**	**+0.7**
THR6	**Thira Island,**	**1.38**	**225**	*e*Pb		**Pb**	**05 55 27.5**	**+0.1**
THR6				*e*Sb		**Sb**	**05 55 45.1**	**0.0**
ARG	**Arkhangelos**	**1.65**	**132**	*e*PN		**Pn**	**05 55 32.0**	**+0.7**
AKS	**Akhisar**	**1.81**	**31**	PN		**Pn**	**05 55 33.2**	**-0.3**
KARP	**Karpathos**	**1.84**	**166**	↓*i*PB		**Pb**	**05 55 33.6**	**-1.7**
MANT	**Manisa**	**1.92**	**53**	*i* P		**Pn**	**05 55 38.8**	**+3.6**
MANT				*i* S		**Sn**	**05 55 56.3**	**-3.6**
PRK	**Paraskevi**	**1.93**	**352**	*e*PB		**Pb**	**05 55 35.0**	**-1.7**
DNZL	**Cakiroluk**	**1.97**	**79**	*i* P		**Pn**	**05 55 36.3**	**+0.5**
DNZL				*i* S		**Sn**	**05 56 06.4**	**+5.3**
DENT	**Denizli**	**1.97**	**77**	*e*PN		**Pn**	**05 55 36.3**	**+0.4**
NPS	**Neapolis**	**2.22**	**202**	*e*PN		**Pn**	**05 55 40.0**	**+0.5**
PTL	**Penteli**	**2.29**	**289**	*e*PN		**Pn**	**05 55 41.5**	**+1.0**
KRIS	**Kristallenia**	**2.33**	**203**	*e*PN		**Pn**	**05 55 40.6**	**-0.4**
KRIS				*e*S		**Sn**	**05 56 07.7**	**-2.7**
ATH	**Athens Observa**	**2.38**	**286**	↓*i*PN		**Pn**	**05 55 42.5**	**+0.7**
MPAR	**Parnis Oros**	**2.42**	**291**	*e*PN		**Pn**	**05 55 41.0**	**-1.3**
BALB	**Balikesir**	**2.51**	**23**	*e*PN		**Pn**	**05 55 44.2**	**+0.7**
NAIG	**Nisos Aigina**	**2.52**	**281**	*e*PN		**Pn**	**05 55 44.0**	**+0.3**
NSAL	**Nisos Salamina**	**2.56**	**284**	*e*PB		**Pb**	**05 55 47.0**	**-0.6**
XRY	**Khrisi**	**2.57**	**197**	*e*PB		**Pb**	**05 55 47.0**	**-0.7**
ELL	**Elmali**	**2.70**	**102**	PN		**Pn**	**05 55 46.8**	**+0.5**
VAM	**Vamos**	**2.74**	**226**	*e*PB		**Pb**	**05 55 49.0**	**-1.6**
LIA	**Limnos Island**	**2.79**	**337**	↑*i*PN		**Pn**	**05 55 47.6**	**0.0**
AOS	**Alonnisos**	**2.82**	**311**	*e*Pn		**Pn**	**05 55 48.9**	**+0.9**
LPK	**Lapseki**	**3.03**	**2**	*e*PN		**Pn**	**05 55 51.7**	**+0.6**
LKR	**Lokris**	**3.14**	**296**	*e*PN		**Pn**	**05 55 53.4**	**+0.8**
NEO	**Neokhori**	**3.31**	**307**	↓*i*PN		**Pn**	**05 55 55.4**	**+0.4**
XOR	**Xorichti**	**3.37**	**308**	*e*Pn		**Pn**	**05 55 56.2**	**+0.4**
SART	**Tekirdag**	**3.38**	**7**	P		**Pn**	**05 55 55.6**	**-0.3**
ULDT	**Uludag**	**3.43**	**34**	P		**Pg**	**05 56 49.8**	**-3.1**
ULDT				S		**Sg**	**05 56 49.8**	**-5.9**
ALN	**Alexandroupoli**	**3.58**	**353**	*e*Pn		**Pn**	**05 55 58.2**	**-0.7**
OUR	**Ouranopolis**	**3.63**	**326**	*e*Pn		**Pn**	**05 56 00.5**	**+1.0**
AGG	**Agios Georgios**	**3.77**	**298**	*e*Pn		**Pn**	**05 56 02.1**	**+0.6**
ESKT	**Eskisehir**	**3.98**	**55**	P		**Pn**	**05 56 13.2**	**+8.7**
KNT	**Kendrikon**	**4.79**	**324**	*e*Pn		**Pn**	**05 56 15.9**	**-0.1**
KNT				*e*Sn		**Sn**	**05 57 09.1**	**-3.3**
HENT	**Hendek**	**4.82**	**42**	P		**Pg**	**05 56 34.7**	**-3.1**
GRG	**Griva**	**4.88**	**319**	*e*Pn		**Pn**	**05 56 17.2**	**0.0**
GRG				*e*Sn		**Sn**	**05 57 12.2**	**-2.6**
MEV	**Metsovon**	**4.88**	**302**	*e*Pn		**Pn**	**05 56 17.8**	**+0.6**
MEV				*e*Sn		**Sn**	**05 57 11.4**	**-3.3**

*BJI **01** 06:03:33.6, 15.94N×122.79E, h42km, mB4.5, mb4.3, Ms4.0, Msz3.9*
*IDC **01** 06:03:33.2±0.7, 16.44N×122.52E, mb4.1/12, mb1 4.3/13, mb1mx4.1/21, ML3.6/1, MS3.7/8, Ms1 3.8/8, ms1mx3.4/24, Error ellipse: s-maj=22.3km s-min=12.1km az=91.0*
*MOS **01** 06:03:36.4±1.1, 16.58N×122.67E, h33km, mb4.7/6, Error ellipse: s-maj=17.7km s-min=10.1km az=112.6*
*MAN **01** 06:03:38.0, 16.45N×122.42E, h14km, mb4.7, ML3.6, MS3.5*
*NEIC **01** 06:03:39.0±1.4, 16.48N×122.60E, h43km±14km, mb4.3/10, Error ellipse: s-maj=13.1km s-min=8.4km az=73.0*

ISC 01 06:03:36.5±0.3, 16.45N±0.02×122.67E±0.03, h33km, n79, σ1↟17/96, mb4.3/29, MS4.0/16, 22C-3D, Luzon

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
PALP	**Palanan**	**0.65**	**339**	↑*e*P		**P**	**06 03 49.5**	**+0.4**
PALP				*e*S		**S**	**06 04 02.1**	**+3.8**
CAUP	**Cauayan**	**0.94**	**301**	↑*e*P		**P**	**06 03 52.1**	**-1.3**
CAUP				*e*S		**S**	**06 04 05.4**	**-0.4**
BALP	**Baler**	**1.26**	**236**	↑*e*P		**P**	**06 03 56.4**	**-1.5**
BALP				*e*S		**S**	**06 04 12.7**	**-1.3**
CVP	**Callao Caves**	**1.48**	**327**	↑*i*P		**P**	**06 04 01.9**	**+0.8**
CVP				*i* S		**S**	**06 04 20.8**	**+1.3**
PCPH	**Palayan**	**1.75**	**240**	↑*e*P		**P**	**06 04 04.5**	**-0.4**
PCPH				*e*S		**S**	**06 04 25.5**	**-0.8**
POLP	**Polilio Island**	**1.85**	**202**	↑*e*P		**P**	**06 04 08.9**	**+2.5**
POLP				*e*S		**S**	**06 04 29.7**	**+0.8**
SGCP	**Mt. Cagua**	**1.88**	**342**	↑*e*P		**P**	**06 04 08.9**	**+2.2**
SGCP				*e*S		**S**	**06 04 35.0**	**+5.6**
APYP	**Conner**	**1.95**	**316**	↑*e*P		**P**	**06 04 07.9**	**0.0**
APYP				*e*S		**S**	**06 04 33.0**	**+1.5**
BCPH	**Baguio City Da**	**2.00**	**268**	↑*i*P		**P**	**06 04 08.8**	**+0.2**
BCPH				*i* S		**S**	**06 04 33.2**	**+0.5**
ABRA	**Dolores**	**2.21**	**303**	↑*e*P		**P**	**06 04 11.4**	**-0.2**
SZP	**Santa**	**2.38**	**298**	↓*e*P		**P**	**06 04 14.8**	**+0.9**
SZP				*e*S		**S**	**06 04 43.5**	**+1.3**
GQP	**Guinayangan**	**2.54**	**185**	↑*e*P		**P**	**06 04 18.0**	**+1.7**
GQP				*i* S		Px	06 04 22.0	
LQP	**Lukban**	**2.57**	**205**	*e*P		**P**	**06 04 17.0**	**+0.3**
LQP				*i* S		**S**	**06 04 47.5**	**+0.4**
BOLP	**Bolinao**	**2.64**	**269**	↑*e*P		**P**	**06 04 18.0**	**+0.3**
BOLP				*e*S		**S**	**06 04 45.1**	**-3.8**
SCZP	**Santa Cruz**	**2.73**	**256**	↑*e*P		**P**	**06 04 18.8**	**-0.2**
SCZP				*e*S		**S**	**06 05 02.4**	**+11**
TGY	**Tagaytay City**	**2.87**	**216**	↑*e*P		**P**	**06 04 26.0**	**+5.0**
TGY	**Tagaytay City**	**2.87**	**216**	Pg		**P**	**06 04 24.6**	**+3.6**
	169nm,0.3s,baz=33,slow=4.8,SNR=12							
TGY				Lg			06 05 02.2	
	348nm,0.3s,baz=197,slow=19,SNR=7.5							
BOAC	**Boac**	**3.08**	**195**	↑*e*P		**P**	**06 04 24.7**	**+0.7**
PVCP	**Virac**	**3.18**	**153**	↑*e*P		**P**	**06 04 25.8**	**+0.3**
PVCP				*e*S		**S**	**06 05 04.5**	**+1.8**
PGP	**Puerto Galera**	**3.37**	**210**	*e*P		**P**	**06 04 37.0**	**+8.9**
LUBP	**Lubang**	**3.57**	**221**	↑*e*P		**P**	**06 04 33.2**	**+2.3**
BBP	**Basco**	**4.02**	**351**	↑*e*P		**P**	**06 04 39.4**	**+2.1**
MSLP	**Maasin**	**6.63**	**161**	↑*e*P		**P**	**06 05 21.1**	**+7.0**
SCPH	**Surigao**	**7.18**	**157**	*e*P		**P**	**06 05 12.9**	**-8.9**
JOW	**Kunigami**	**11.57**	**26**	Pn		**P**	**06 06 20.4**	**-2.0**
	0.8nm,0.3s,baz=332,slow=27,SNR=2.1							
SSE	**Sheshan**	**14.64**	**355**	↑P		**P**	**06 07 07.9**	**+4.7**
SSE				S		**S**	**06 09 53.9**	**+8.8**
SSE				AMB		AMB		
	comp=Z,8.0nm,1.1s							
SSE				AMB		AMB		
	comp=Z,56nm,3.7s							
SSE				LR		LR		
	comp=N,99nm,15.0s							
SSE				LR		LR		
	comp=E,260nm,15.0s							
SSE				LR		LR		
	comp=Z,243nm,15.0s							
NJ2	**Nanjing**	**15.91**	**348**	*e*P		**P**	**06 07 23.1**	**+3.5**
NJ2				AP			06 07 32.4	
NJ2				PP		PP	06 07 37.1	+4.7
NJ2				XP			06 07 38.2	
NJ2				S		**S**	**06 10 23.0**	**+8.2**
NJ2				XS			06 10 37.0	
NJ2				AMB		AMB		
	comp=Z,20nm,0.6s							
NJ2				AMB		AMB		
	comp=Z,270nm,4.5s							
NJ2				LR		LR		
	comp=N,520nm,14.7s							
NJ2				LR		LR		
	comp=E,980nm,19.5s							
NJ2				LR		LR		
	comp=Z,590nm,17.3s							
WHN	**Wuhan**	**15.95**	**333**	*e*P		**P**	**06 07 25.0**	**+4.8**
WHN				*e*S		**S**	**06 10 16.0**	**+0.2**
WHN				LR		LR		
	comp=N,890nm,15.2s							
WHN				LR		LR		
	comp=E,280nm,10.2s							
WHN				LR		LR		
	comp=Z,720nm,14.3s							
GYA	**Guiyang**	**17.90**	**306**	P		**P**	**06 07 45.7**	**+1.1**
GYA				AMB		AMB		
	comp=Z,10.0nm,1.0s							
ENH	**Enshi**	**18.29**	**321**	*e*P		**P**	**06 07 48.2**	**-1.4**
	comp=Z,17nm,1.0s							
XAN	**Xi'an**	**21.43**	**327**	P		**P**	**06 08 23.9**	**0.0**
XAN				AP			06 08 31.8	
XAN				XP			06 08 35.8	
XAN				S		**S**	**06 12 20.2**	**+5.4**
XAN				SS		SS	06 12 53.3	+2.8
XAN				AMB		AMB		
	comp=Z,15nm,1.1s,mb4.2							
XAN				LR		LR		
	comp=N,236nm,16.5s,MS3.8							
XAN				LR		LR		
	comp=E,163nm,15.1s,MS3.8							
XAN				LR		LR		
	comp=Z,323nm,15.1s,MS3.8							
CD2	**Chengdu**	**22.46**	**313**	*e*P		**P**	**06 08 34.8**	**+0.6**
CD2				S		**S**	**06 12 42.7**	**+8.9**
CD2				AMB		AMB		
	comp=Z,20nm,1.2s,mb4.4							
CD2				LR		LR		
	comp=N,610nm,16.8s							
CD2				LR		LR		
	comp=Z,550nm,16.8s,MS4.1							
CM31	**Chiang Mai Arr**	**22.71**	**279**	P		**P**	**06 08 34.8**	**-2.1**
	comp=Z,8.4nm,1.2s,mb4.0							
CMAR	**Chiang Mai Arr**	**22.71**	**279**	P		**P**	**06 08 34.7**	**-2.1**
	comp=Z,1.6nm,0.9s,mb3.5,baz=78,slow=8.1,SNR=7.9							
CMAR				LR		LR	06 17 20.5	
	comp=Z,251nm,20.4s,MS3.6,baz=95,slow=37							
BJT	**Baijiatuau**	**24.15**	**348**	*e*P		**P**	**06 08 45.0**	**-5.6**
	comp=Z,7.2nm,0.8s,mb4.2							
BJI	**Beijing**	**24.17**	**348**	*e*P		**P**	**06 08 53.3**	**+2.5**
BJI				AMB		AMB		
	comp=Z,6.0nm,0.9s,mb4.0							
BJI				LR		LR		
	comp=N,125nm,12.3s,MS3.9							
BJI				LR		LR		
	comp=E,196nm,12.3s,MS3.9							
BJI				LR		LR		
	comp=Z,114nm,16.7s,MS3.4							
LZH	**Lanzhou**	**25.74**	**323**	*e*P		**P**	**06 09 09.7**	**+3.8**
LZH				AP		pP	06 09 14.5	-0.7
LZH				XP		sP	06 09 18.6	-0.5
LZH				AMB		AMB		
	comp=Z,26nm,1.5s,mb4.5							
LZH				AMB		AMB		
	comp=Z,84nm,4.9s							
LZH				LR		LR		
	comp=N,250nm,12.3s							
LZH				LR		LR		
	comp=Z,290nm,16.0s,MS3.9							
LSA	**Lhasa**	**31.73**	**300**	P		**P**	**06 09 58.8**	**-1.0**
	comp=Z,3.7nm,1.0s,mb4.2							
ULN	**Ulaanbaatar**	**33.86**	**341**	*d i*P		**P**	**06 10 18.6**	**+0.5**
ULN	**Ulaanbaatar**	**33.86**	**341**	*e*P		**P**	**06 10 16.6**	**-1.4**
	comp=Z,4.7nm,1.2s,mb4.3							
SONM	**Songino Array**	**34.04**	**340**	P		**P**	**06 10 19.7**	**+0.1**
	comp=Z,1.6nm,0.8s,mb4.0,baz=157,slow=9.4,SNR=6.0							
FITZ	**Fitzroy Crossi**	**34.46**	**175**	P		**P**	**06 10 22.7**	**-0.8**
	comp=Z,4.9nm,1.1s,mb4.4,baz=2.8,slow=24,SNR=2.3							
PMG	**Port Moresby**	**35.32**	**135**	P		**P**	**06 10 30.2**	**-0.7**
	comp=Z,14nm,1.3s,mb4.7							
ZAK	**Zakamensk**	**37.27**	**339**	*e*P		**P**	**06 10 47.5**	**+0.5**
WRAB	**Tennant Creek**	**37.94**	**162**	*e*P		**P**	**06 10 52.0**	**-0.9**
	comp=Z,47nm,1.1s,mb5.1							
WRA	**Warramunga Arr**	**37.94**	**162**	P		**P**	**06 10 52.5**	**-0.5**
	comp=Z,8.8nm,0.9s,mb4.5,baz=343,slow=9.6,SNR=28							
WB2	**Warramunga Arr**	**37.95**	**162**	*e*P		**P**	**06 10 52.4**	**-0.6**
TLY	**Talaya**	**38.27**	**341**	*e*P		**P**	**06 10 52.7**	**-2.7**
TLY				*e*PP		pP	06 11 09.4	+4.3
TLY				*e*			06 12 20.4	
TLY				pmax		pmax		
	comp=Z,10.0nm,0.7s,mb4.7							
TLY				MLR		MLR		
	comp=Z,2μm,19.0s,MS5.0							
ASAR	**Alice Springs**	**41.36**	**164**	P		**P**	**06 11 21.8**	**+0.6**
	comp=Z,2.8nm,1.0s,mb3.9,baz=343,slow=7.2,SNR=13							
CTA	**Charters Tower**	**43.08**	**147**	LR		LR	06 28 38.3	
	comp=Z,122nm,21.8s,MS3.8,baz=229,slow=35							
MKAR	**Makanchi Array**	**45.03**	**321**	P		**P**	**06 11 50.8**	**0.0**
	comp=Z,6.5nm,1.0s,mb4.4,baz=124,slow=8.7,SNR=14							
MKAR				PcP		PcP	06 13 29.9	-1.9
	comp=Z,1.6nm,0.9s,baz=136,slow=2.7,SNR=3.8							
MKAR				LR		LR	06 32 34.2	
	comp=Z,73nm,19.6s,MS3.6,baz=312,slow=39							
MKAR	**Makanchi Array**	**45.03**	**321**	*i* P		**P**	**06 11 50.8**	**0.0**
MKAR				pmax		pmax		
	comp=Z,7.0nm,1.0s							
MKAR	**Makanchi Array**	**45.03**	**321**	P		**P**	**06 11 50.8**	**0.0**
MKAR				PcP		PcP	06 13 29.9	-1.9
MKAR				LR		LR	06 32 34.2	
YAK	**Yakutsk**	**45.79**	**5**	*e*P		**P**	**06 11 56.7**	**0.0**
YAK				pmax		pmax		
	comp=Z,7.0nm,0.7s,mb4.7							
YAK				MLR		MLR		
	comp=Z,100nm,19.0s,MS3.8							
ZAL	**Zalesovo**	**47.55**	**331**	P		**P**	**06 12 10.4**	**-0.3**
	comp=Z,1.4nm,0.7s,mb4.1,baz=260,slow=7.9,SNR=7.7							
ZAL				LR		LR	06 33 52.1	
	comp=Z,69nm,19.5s,MS3.6,baz=55,slow=38							
KURK	**Kurchatov**	**49.02**	**324**	*e*P		**P**	**06 12 21.4**	**-0.7**
BVAR	**Borovoye Array**	**54.62**	**324**	P		**P**	**06 13 03.3**	**-0.9**
	comp=Z,2.0nm,0.7s,mb4.3,baz=102,slow=7.6,SNR=13							
BVAR				PcP		PcP	06 14 04.5	-2.3
	comp=Z,1.6nm,0.9s,baz=72,slow=4.6,SNR=3.6							
BRVK	**Borovoye**	**54.69**	**324**	*e*P		**P**	**06 13 04.2**	**-0.5**
TIXI	**Tiksi**	**55.31**	**2**	*e*P		**P**	**06 13 08.0**	**-0.9**
TIXI				pmax		pmax		
	comp=Z,25nm,0.8s,mb5.3							
TIXI				MLR		MLR		
	comp=Z,800nm,18.0s,MS4.8							
TIXI	**Tiksi**	**55.31**	**2**	*e*P		**P**	**06 13 08.8**	**-0.1**
	comp=Z,5.7nm,1.3s,mb4.4							
ZRNK	**Zerenda**	**55.38**	**324**	*e*P		**P**	**06 13 08.7**	**-0.9**
BILL	**Bilibino**	**58.52**	**18**	↑*e*P		**P**	**06 13 32.4**	**+0.6**
BILL				pmax		pmax		
	comp=Z,3.0nm,0.9s,mb4.3							
SVE	**Sverdlovsk**	**61.15**	**326**	↑*e*P		**P**	**06 13 49.1**	**-0.8**
GNI	**Garni**	**70.45**	**307**	*i* P		**P**	**06 14 48.1**	**-1.5**
ZEI	**Tsey**	**70.85**	**310**	*e*P		**P**	**06 14 51.6**	**-0.4**
KIV	**Kislovodsk**	**71.62**	**311**	P		**P**	**06 14 57.0**	**+0.4**
OBN	**Obninsk**	**74.46**	**323**	*e*P		**P**	**06 15 11.0**	**-2.1**
OBN				pmax		pmax		
	comp=Z,8.0nm,1.0s,mb4.6							
OBN				MLR		MLR		
	comp=Z,100nm,16.0s,MS4.2							
COLA	**College**	**75.04**	**26**	*d i*P		**P**	**06 15 14.2**	**-2.0**
COLA				pmax		pmax		
	comp=Z,1.0nm,0.7s,mb3.9							
COLA	**College**	**75.04**	**26**	*e*P		**P**	**06 15 14.0**	**-2.3**
	comp=Z,5.7nm,0.8s,mb4.5							
JOF	**Joensuu**	**76.12**	**332**	*e*P		**P**	**06 15 21.6**	**-0.8**
ARCES	**ARCESS Array B**	**77.21**	**339**	P		**P**	**06 15 29.1**	**+0.5**
	comp=Z,2.0nm,0.8s,mb4.1,baz=72,slow=7.7,SNR=7.9							
ARCES				LR		LR	06 54 24.3	
	comp=Z,49nm,19.3s,MS3.8,baz=184,slow=40							
KAF	**Kangasniemi**	**78.55**	**332**	*e*P		**P**	**06 15 35.3**	**-0.7**
	baz=75,slow=5.2							
FINES	**FINESS Array B**	**78.82**	**331**	P		**P**	**06 15 36.6**	**-0.9**
	comp=Z,1.8nm,0.7s,mb4.1,baz=68,slow=5.4,SNR=19							
FINES				LR		LR	06 54 05.8	
	comp=Z,54nm,19.7s,MS3.9,baz=137,slow=38							
FINES	**FINESS Array B**	**78.82**	**331**	*i* P		**P**	**06 15 37.4**	**-0.1**
FINES				pmax		pmax		
	comp=Z,2.0nm,0.7s							
BRTR	**Keskin Array B**	**78.94**	**308**	LR		LR	06 51 16.1	
	comp=Z,21nm,18.9s,MS3.5,baz=85,slow=36							
INK	**Inuvik**	**79.86**	**22**	P		**P**	**06 15 44.5**	**+1.5**
	comp=Z,2.1nm,1.0s,mb4.0							
NB2	**NORSAR Subarra**	**85.69**	**333**	P		**P**	**06 16 12.8**	**-0.2**
	comp=Z,4.6nm,0.9s,mb4.7,baz=65,slow=4.6							
NOA	**NORSAR Array B**	**85.69**	**333**	P		**P**	**06 16 12.7**	**-0.3**
	comp=Z,2.4nm,0.8s,mb4.5,baz=64,slow=5.0,SNR=15							
NOA				LR		LR	06 57 43.6	
	comp=Z,80nm,21.1s,MS4.1,baz=55,slow=38							
YKA	**Yellowknife Ar**	**89.52**	**23**	P		**P**	**06 16 33.3**	**+2.0**
	comp=Z,0.3nm,0.7s,mb3.8,baz=305,slow=4.5,SNR=7.1							

DJA 01 06:06:24.5±1.0, 9.51S×115.53E, h28km±41km, MD5.1/4, ML3.4/1, 7D, Error ellipse: s-maj=41.6km s-min=11.4km az=171.0, South of Bali

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
RATI	**Rata**	**0.78**	**360**	↓*e*Pn		**Pn**	**06 06 37.8**	**-1.8**
	229nm,0.2s							
RATI				↓*i*Sn		Sn	06 06 47.8	-2.5
INGI	**Ingas**	**0.78**	**331**	↓*i*Pn		**Pn**	**06 06 38.0**	**-1.6**
	226nm,0.2s							
INGI				↓*i*Sn		Sn	06 06 47.4	-3.0
KEDI	**Kedomdong**	**1.16**	**30**	↓*i*Pn		**Pn**	**06 06 43.1**	**-2.0**
	53nm,0.2s							
KEDI				↓*i*Sn		Sn	06 06 57.0	-3.1
KELI	**Kelakatan**	**1.64**	**321**	↓*i*Pn		**Pn**	**06 06 50.1**	**-1.8**

*IDC **01** 06:12:38.1±1.1, 16.65N×122.91E, mb3.7/6, mb1 3.9/7, mb1mx3.7/20, ML4.6/1, Error ellipse: s-maj=30.4km s-min=16.3km az=97.0*
*MAN **01** 06:12:41.4, 16.42N×122.57E, h19km, mb4.2, ML3.0, MS2.7*
*NEIC **01** 06:12:43.8±0.9, 16.61N×122.81E, h35km, Error ellipse: s-maj=33.7km s-min=15.3km az=84.0*

ISC 01 06:12:42.0±0.5, 16.45N±0.03×122.62E±0.04, h33km, n28, σ1↟26/40, mb3.8/7, 15C-1D, Luzon

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
PALP	**Palanan**	**0.64**	**343**	↑*e*P		**P**	**06 12 54.2**	**-0.4**
PALP			

CDF	**Champ du Feu**	**0.48**	**77**	*e*Pg	**Pg**	**06 25 51.4**	**+0.5**
CDF				*e*Pn	**Pn**	**06 25 52.5**	**-2.1**
CDF				*e*Sg	**Sg**	**06 25 57.9**	**+0.6**
	1µm,0.3s						
HINF	**Hinteralfeld**	**0.52**	**159**	*e*Pg	**Pg**	**06 25 54.5**	**+2.6**
HINF				*e*Sg	**Sg**	**06 26 01.2**	**+2.4**
	279nm,0.2s						
WLS	**Welschbruch**	**0.53**	**78**	Pg	**Pg**	**06 25 52.6**	**+0.7**
WLS				Sg	**Sg**	**06 25 59.8**	**+0.9**
WLS	**Welschbruch**	**0.53**	**78**	*e*P	**Pg**	**06 25 53.6**	**+1.7**
WLS				S	**Sg**	**06 25 59.6**	**+0.9**
WLS	**Welschbruch**	**0.53**	**78**	Pg	**Pg**	**06 25 53.4**	**+1.5**
WLS				Sg	**Sg**	**06 25 59.7**	**+0.7**
MOF	**Molkenrain**	**0.59**	**141**	Pg	**Pg**	**06 25 54.4**	**+1.2**
MOF	**Molkenrain**	**0.59**	**141**	⇓*i*P	**Pg**	**06 25 55.6**	**+2.5**
MOF	**Molkenrain**	**0.59**	**141**	Pg	**Pg**	**06 25 55.4**	**+2.3**
LIBD	**Limburg**	**0.70**	**102**	Pg	**Pg**	**06 25 57.4**	**+2.0**
LIBD				Sg	**Sg**	**06 26 05.3**	**+0.6**
LIBD	**Limburg**	**0.70**	**102**	*e*P	**Pg**	**06 25 57.3**	**+1.9**
LIBD				P		06 25 57.4	
LIBD	**Limburg**	**0.70**	**102**	Pg	**Pg**	**06 25 57.3**	**+1.9**
LIBD				Sg	**Sg**	**06 26 05.1**	**+0.3**
RFYF	**Reffroy**	**0.80**	**294**	*e*Pg	**Pg**	**06 26 00.0**	**+2.5**
	baz=110						
RFYF				*e*Sg	**Sg**	**06 26 12.1**	**+3.9**
	235nm,0.3s						
STR	**Strasbourg**	**0.84**	**70**	Pg	**Pg**	**06 26 00.0**	**+1.9**
FBB	**Freiburg**	**0.91**	**109**	*e*Pn	**Pn**	**06 26 01.1**	**+0.3**
FBB				Sn	**Sn**	**06 26 11.9**	**-2.5**
KIZ	**Kirchzarten**	**0.96**	**111**	⇑*i*Pn	**Pn**	**06 26 00.9**	**-0.7**
KIZ				Sn	**Sb**	**06 26 13.1**	**-0.1**
KIZ	**Kirchzarten**	**0.96**	**111**	⇑*e*P	**Pb**	**06 26 01.9**	**+1.5**
KIZ				S	**Sb**	**06 26 13.1**	**-0.1**
KIZ				*e*S	**Sb**	**06 26 13.3**	**+0.1**
LOMF	**Lomont**	**0.97**	**170**	Pn	**Pn**	**06 26 02.6**	**+0.9**
LOMF				*e*Pg	**Pg**	**06 26 03.5**	**+2.7**
LOMF				*e*Sg	**Sg**	**06 26 17.1**	**+3.4**
LOMF	**Lomont**	**0.97**	**170**	*e*P	**Pg**	**06 26 03.5**	**+2.7**
LOMF				*e*S	**Sg**	**06 26 17.1**	**+3.4**
LOMF	**Lomont**	**0.97**	**170**	Pg	**Pg**	**06 26 02.7**	**+1.9**
LOMF				Sg	**Sg**	**06 26 15.3**	**+1.6**
BOURR	**Bourrignon**	**1.01**	**154**	*e*Pn	**Pn**	**06 26 03.0**	**+0.7**
	20nm,0.5s						
BOURR	**Bourrignon**	**1.01**	**154**	*e*Pg	**Pg**	**06 26 04.0**	**+2.4**
	SNR=20						
BOURR				*e*Sg	**Sg**	**06 26 17.3**	**+2.2**
	SNR=10						
SFTF	**Sexfontaines**	**1.03**	**265**	*e*Pg	**Pg**	**06 26 04.5**	**+2.4**
	baz=102						
SFTF				*e*Sg	**Sg**	**06 26 18.9**	**+3.0**
	283nm,0.2s						
MEZF	**Maizieres J'vi**	**1.04**	**282**	*e*Pg	**Pg**	**06 26 03.8**	**+1.7**
	baz=102						
MEZF				*e*Sg	**Sg**	**06 26 19.1**	**+3.2**
	187nm,0.3s						
FELD	**Feldberg**	**1.05**	**114**	Pn	**Pn**	**06 26 02.5**	**-0.3**
FELD				Pg	**Pg**	**06 26 03.5**	**+1.2**
FELD				Sg	**Sg**	**06 26 16.7**	**+0.4**
FELD	**Feldberg**	**1.05**	**114**	PG	**Pg**	**06 26 03.5**	**+1.2**
FELD				SG	**Sg**	**06 26 16.7**	**+0.4**
FELD	**Feldberg**	**1.05**	**114**	P	**Pg**	**06 26 03.5**	**+1.2**
FELD				*e*S	**Sb**	**06 26 16.3**	**+0.6**
FELD				S	**Sg**	**06 26 16.7**	**+0.4**
FELD	**Feldberg**	**1.05**	**114**	Pg	**Pg**	**06 26 03.3**	**+1.0**
FELD				Sg	**Sg**	**06 26 16.4**	**+0.1**
BBS	**Basel-Blauen**	**1.05**	**143**	Pg	**Pg**	**06 26 04.2**	**+1.9**
LANF	**Langenberg**	**1.06**	**50**	Pn	**Pn**	**06 26 01.7**	**-1.2**
LANF				*e*Pg	**Pg**	**06 26 02.7**	**+0.1**
	SNR=24						
LANF	**Langenberg**	**1.06**	**50**	⇑*e*P	**Pb**	**06 26 02.7**	**+0.8**
LANF	**Langenberg**	**1.06**	**50**	Pg	**Pg**	**06 26 02.6**	**+0.1**
BFO	**Black Forest**	**1.17**	**88**	*e*Pg	**Pg**	**06 26 05.7**	**+0.9**
	SNR=51						
BFO				*e*Sg	**Sg**	**06 26 19.9**	**-0.4**
	SNR=25						
BFO	**Black Forest**	**1.17**	**88**	*e*Pg	**Pg**	**06 26 03.1**	**-1.6**
BFO				*e*Sg	**Sg**	**06 26 20.1**	**-0.2**
BALST	**Balsthal**	**1.23**	**142**	*e*Pn	**Pn**	**06 26 06.5**	**+1.1**
	12nm,0.8s						
SULZ	**Sulz-Cheisache**	**1.29**	**126**	*e*Pn	**Pn**	**06 26 07.8**	**+1.5**
	14nm,0.6s						
SULZ	**Sulz-Cheisache**	**1.29**	**126**	*e*Pg	**Pg**	**06 26 08.6**	**+1.3**
	SNR=9.9						
SULZ				*e*Sg	**Sg**	**06 26 24.8**	**+0.3**
	SNR=7.3						
BRANT	**Les Verrieres**	**1.37**	**183**	*e*Pn	**Pn**	**06 26 09.4**	**+2.0**
	15nm,0.6s						
WLF	**Walferdange**	**1.39**	**348**	*e*Pg	**Pg**	**06 26 10.7**	**+1.5**
	SNR=6.7						
WLF				*e*Sg	**Sg**	**06 26 27.7**	**0.0**
WLF	**Walferdange**	**1.39**	**348**	*e*P	**Pb**	**06 26 10.4**	**+2.8**
WLF				*e*S	**Sb**	**06 26 28.1**	**+2.5**
SLE	**Schleitheim**	**1.39**	**112**	⇑*i*Pn	**Pn**	**06 26 07.7**	**0.0**
	14nm,0.5s						
SLE				*e*Sn	**Sn**	**06 26 24.5**	**-2.3**
	14nm,0.5s						
SLE	**Schleitheim**	**1.39**	**112**	*e*Pg	**Pg**	**06 26 10.2**	**+1.0**
	SNR=54						
SLE				*e*Sg	**Sg**	**06 26 27.4**	**-0.4**
	SNR=7.4						
KTD	**Kalmit**	**1.42**	**44**	Pn	**Pn**	**06 26 09.5**	**+1.4**
KTD				*e*Pg	**Pg**	**06 26 10.5**	**+0.7**
KTD				*e*Sg	**Sg**	**06 26 27.8**	**-1.0**
	SNR=3.1						
KTD				Sn	**Sn**	**06 26 28.2**	**+0.7**
KTD	**Kalmit**	**1.42**	**44**	*e*P	**Pg**	**06 26 10.5**	**+0.7**
KTD	**Kalmit**	**1.42**	**44**	Pn	**Pn**	**06 26 09.1**	**+1.0**
RUP	**Ruppelstein**	**1.43**	**13**	Pn	**Pn**	**06 26 09.6**	**+1.3**
RUP				⇓Pg	**Pg**	**06 26 10.9**	**+0.9**
RUP				Sn	**Sn**	**06 26 28.7**	**+0.9**
RUP	**Ruppelstein**	**1.43**	**13**	⇓P	**Pg**	**06 26 10.9**	**+0.9**
RUP				S	**Sn**	**06 26 28.7**	**+0.9**
RUP	**Ruppelstein**	**1.43**	**13**	Pn	**Pn**	**06 26 09.8**	**+1.5**
SPAK	**Spaichingen**	**1.49**	**97**	Pn	**Pn**	**06 26 10.5**	**+1.4**
SPAK				Pg	**Pg**	**06 26 11.9**	**+0.7**
SPAK	**Spaichingen**	**1.49**	**97**	P	**Pg**	**06 26 11.9**	**+0.7**
SPAK	**Spaichingen**	**1.49**	**97**	Pn	**Pn**	**06 26 10.5**	**+1.4**
SPAK				Sg	**Sg**	**06 26 30.2**	**-0.8**
LBG	**Lerchenberg**	**1.52**	**75**	⇑*e*Pn	**Pn**	**06 26 08.0**	**-1.5**
LBG				Sn	**Sn**	**06 26 30.6**	**+0.6**
LBG	**Lerchenberg**	**1.52**	**75**	⇑*e*P	**Pn**	**06 26 09.0**	**-0.5**
LBG				S	**Sn**	**06 26 30.6**	**+0.6**
TRULL	**Truellikon**	**1.56**	**114**	*e*Pn	**Pn**	**06 26 12.0**	**+1.9**
	14nm,0.2s						
ZUR	**Zurich**	**1.64**	**124**	*e*Pg	**Pg**	**06 26 15.2**	**+1.0**
	SNR=6.3						
ZUR				*e*Sg	**Sg**	**06 26 36.0**	**-0.1**
	SNR=9.2						
TUBL	**Tuebingen Lnz**	**1.68**	**82**	Pn	**Pn**	**06 26 11.6**	**-0.2**
TUBL				Sg	**Sg**	**06 26 35.7**	**-1.7**
ABH	**Alteburg**	**1.70**	**22**	Pn	**Pn**	**06 26 14.1**	**+2.0**
ABH				⇓*e*Pg	**Pg**	**06 26 15.1**	**-0.3**
ABH				Sn	**Sn**	**06 26 36.0**	**+1.4**
ABH	**Alteburg**	**1.70**	**22**	⇓*e*P	**Pg**	**06 26 15.1**	**-0.3**
ABH				S	**Sn**	**06 26 36.0**	**+1.4**
GUT	**Gutenstein**	**1.71**	**97**	Pn	**Pn**	**06 26 13.7**	**+1.4**
GUT				*e*Pg	**Pg**	**06 26 15.9**	**+0.3**
GUT				Sg	**Sg**	**06 26 37.1**	**-1.3**
SISB	**Singen-Sch Ber**	**1.72**	**110**	Pn	**Pn**	**06 26 15.4**	**+3.1**
SISB				Sg	**Sg**	**06 26 38.2**	**-0.4**
CABF	**La Chapelle**	**1.73**	**191**	*e*Pn	**Pn**	**06 26 13.7**	**+1.2**
CABF				*e*Pg	**Pg**	**06 26 17.6**	**+1.7**
CABF				*e*Sg	**Sg**	**06 26 39.6**	**+0.7**
	60nm,0.2s						
GIMEL	**Gimel**	**1.79**	**187**	*e*Pn	**Pn**	**06 26 14.6**	**+1.3**
	5.3nm,0.2s						
STU	**Stuttgart**	**1.80**	**74**	*e*Pn	**Pn**	**06 26 17.1**	**+3.6**
STU				*e*Sg	**Sg**	**06 26 39.6**	**-1.8**
	SNR=13						
STU	**Stuttgart**	**1.80**	**74**	*e*Pn	**Pn**	**06 26 17.1**	**+3.6**
STU				*e*Sg	**Sg**	**06 26 39.6**	**-1.7**
WILA	**Wila**	**1.80**	**119**	*e*Pg	**Pg**	**06 26 18.2**	**+0.8**
	SNR=14						
WILA				*e*Sg	**Sg**	**06 26 40.9**	**-0.5**
	SNR=5.8						
BUCH	**Bad Urach**	**1.85**	**85**	Pn	**Pn**	**06 26 13.8**	**-0.5**
BUCH				*e*Pg	**Pg**	**06 26 18.4**	**0.0**
BUCH				Sg	**Sg**	**06 26 41.5**	**-1.6**
TOD	**Tromm**	**1.96**	**48**	Pn	**Pn**	**06 26 20.0**	**+4.1**
TOD				*e*Pg	**Pg**	**06 26 20.1**	**-0.5**
	SNR=3.0						
TOD				Sn	**Sn**	**06 26 44.7**	**+3.5**
TOD	**Tromm**	**1.96**	**48**	P	**Pn**	**06 26 20.0**	**+4.1**
TOD				S	**Sn**	**06 26 44.7**	**+3.5**
BGG	**Burgeitz**	**1.97**	**14**	*e*Pg	**Pg**	**06 26 22.4**	**+1.7**
BGG				Sg	**Sg**	**06 26 45.4**	**-1.5**
	51nm,0.7s						
LOR	**Lormes**	**2.11**	**242**	*e*Pn	**Pn**	**06 26 18.7**	**+0.7**
LOR				*e*Pg	**Pg**	**06 26 24.9**	**+1.4**
	baz=62						
LOR				*e*Sg	**Sg**	**06 26 50.6**	**-1.0**
	91nm,0.2s						
GIVF	**Givet**	**2.14**	**328**	*e*Pg	**Pg**	**06 26 22.7**	**-1.3**
GIVF				*e*Sg	**Sg**	**06 26 49.8**	**-2.7**
	59nm,0.4s						
KAMOR	**Kamor**	**2.21**	**116**	*e*Sg	**Sg**	**06 26 53.6**	**-1.3**
	SNR=4.6						
SIND	**Sindeldorf**	**2.26**	**61**	Pn	**Pn**	**06 26 19.0**	**-1.1**
SIND				*e*Pg	**Pg**	**06 26 25.1**	**-1.3**
SIND				Sg	**Sg**	**06 26 54.1**	**-2.5**
BAIF	**Baives**	**2.35**	**319**	*e*Pn	**Pn**	**06 26 22.8**	**+1.4**
BAIF				*e*Pg	**Pg**	**06 26 28.2**	**0.0**
BAIF				*e*Sg	**Sg**	**06 26 56.6**	**-2.9**
	36nm,0.6s						
KLL	**Kalltalsperre**	**2.35**	**356**	*e*Pg	**Pg**	**06 26 29.1**	**+0.8**
KLL				*e*Sg	**Sg**	**06 26 54.8**	**-4.8**
SSF	**Saint Saulge**	**2.42**	**240**	*e*Pn	**Pn**	**06 26 22.9**	**+0.5**
SSF				*e*Pg	**Pg**	**06 26 31.0**	**+1.3**
SSF				*e*Sg	**Sg**	**06 27 01.8**	**-0.2**
	75nm,0.3s						
HDH	**Heidenheim**	**2.43**	**82**	Pn	**Pn**	**06 26 23.5**	**+0.9**
HDH				Sg	**Sg**	**06 26 59.9**	**-2.5**
DAVA	**Damuels**	**2.45**	**113**	⇑*i*PN	**Pn**	**06 26 23.9**	**+1.1**
DAVA				*i* SN	**Sn**	**06 26 53.0**	**-0.6**
DAVA				*i* SG	**Sg**	**06 27 01.2**	**-1.7**
	29nm,0.3s						
UBR	**Uberruh**	**2.45**	**103**	Pn	**Pn**	**06 26 23.4**	**+0.5**
UBR				*e*Pg	**Pg**	**06 26 30.2**	**-0.1**
UBR				Sg	**Sg**	**06 27 01.0**	**-2.0**
UBR	**Uberruh**	**2.45**	**103**	*e*PG	**Pg**	**06 26 30.2**	**-0.1**
UBR				SG	**Sg**	**06 27 01.0**	**-2.0**
SMF	**Signal de Mont**	**2.49**	**229**	*e*Pn	**Pn**	**06 26 23.5**	**+0.1**
SMF				*e*Pg	**Pg**	**06 26 32.2**	**+1.0**
SMF				*e*Sg	**Sg**	**06 27 04.0**	**-0.4**
	116nm,0.3s						
AVF	**Avril sur Loir**	**2.66**	**236**	*e*Pn	**Pn**	**06 26 26.0**	**+0.1**
AVF				*e*Pg	**Pg**	**06 26 35.2**	**+0.7**
AVF				*e*Sg	**Sg**	**06 27 09.5**	**-0.5**
	25nm,0.2s						
LPL	**La Plagne**	**2.79**	**178**	*e*Pn	**Pn**	**06 26 29.0**	**+1.3**
LPL				*e*Pg	**Pg**	**06 26 36.9**	**-0.2**
LPL				*e*Sg	**Sg**	**06 27 13.6**	**-0.8**
	10nm,0.4s						
LPG	**La Plagne**	**2.81**	**178**	*e*Pn	**Pn**	**06 26 29.2**	**+1.2**
LPG				*e*Pg	**Pg**	**06 26 37.3**	**-0.2**
LPG				*e*Sg	**Sg**	**06 27 14.5**	**-0.5**
	16nm,0.4s						
HYF	**Humbligny**	**2.85**	**250**	*e*Pn	**Pn**	**06 26 29.6**	**+1.0**
HYF				*e*Sg	**Sg**	**06 27 14.6**	**-1.8**
BGF	**Bois d'Agland**	**3.08**	**237**	*e*Pn	**Pn**	**06 26 30.8**	**-1.0**
BGF				*e*Pg	**Pg**	**06 26 43.2**	**+0.3**
BGF				*e*Sg	**Sg**	**06 27 22.5**	**-1.4**
	116nm,0.4s						
FUR	**Furstenfeldbru**	**3.14**	**91**	*e*Sg	**Sg**	**06 27 22.5**	**-3.5**
	SNR=8.4						
MOTA	**Moosalm**	**3.20**	**106**	⇓*i*PN	**Pn**	**06 26 35.0**	**+1.5**
MOTA				*i* SN	**Sn**	**06 27 12.0**	**-0.6**
SQTA	**Sankt Quirin**	**3.31**	**107**	⇓*i*PN	**Pn**	**06 26 35.1**	**+0.1**
SQTA				*i* SN	**Sn**	**06 27 12.7**	**-2.6**
GRA1	**Grafenberg Arr**	**3.36**	**64**	*e*Pg	**Pg**	**06 26 44.6**	**-3.8**
GRA1				*e*Sg	**Sg**	**06 27 27.3**	**-5.9**
GRF	**Grafenberg Arr**	**3.36**	**64**	*e*Pg	**Pg**	**06 26 44.6**	**-3.9**
GRF				*e*Sg	**Sg**	**06 27 27.3**	**-5.8**
ORIF	**Oris-en-Rattie**	**3.42**	**188**	*e*Pn	**Pn**	**06 26 37.0**	**+0.3**
ORIF				*e*Pg	**Pg**	**06 26 48.2**	**-1.5**
ORIF				*e*Sg	**Sg**	**06 27 30.8**	**-4.5**
	12nm,0.3s						
WATA	**Walderalm**	**3.50**	**104**	⇓*i*PN	**Pn**	**06 26 38.8**	**+0.9**
WATA				*i* SN	**Sn**	**06 27 19.7**	**-0.6**
WTTA	**Wattenberg**	**3.56**	**105**	⇓*i*PN	**Pn**	**06 26 39.4**	**+0.7**
WTTA				*i* SN	**Sn**	**06 27 19.8**	**-2.1**
WTTA				*i* SG	**Sg**	**06 27 37.3**	**-2.8**
	4.7nm,0.4s						
MBDF	**Montbardon**	**3.58**	**178**	*e*Pn	**Pn**	**06 26 38.5**	**-0.5**
MBDF				*e*Sg	**Sg**	**06 27 38.6**	**-2.1**
	8.2nm,0.5s						
TCF	**Toulx Ste Croi**	**3.59**	**237**	*e*Pn	**Pn**	**06 26 38.5**	**-0.6**
TCF				*e*Pg	**Pg**	**06 26 52.5**	**-0.7**
TCF				*e*Sn	**Sn**	**06 27 20.6**	**-2.0**
TCF				*e*Sg	**Sg**	**06 27 37.7**	**-3.4**
	30nm,0.3s						
VIVF	**Saint-Julien-l**	**3.69**	**202**	*e*Pn	**Pn**	**06 26 40.7**	**+0.2**
VIVF				*e*Pg	**Pg**	**06 26 53.6**	**-1.5**
VIVF				*e*Sg	**Sg**	**06 27 41.3**	**-3.0**
	12nm,0.3s						
MOX	**Moxa**	**4.03**	**53**	*e*Pg	**Pg**	**06 26 57.4**	**-4.5**
MOX				*e*Sg	**Sg**	**06 27 52.3**	**-3.4**
WET	**Wettzell**	**4.25**	**76**	*e*Pn	**Pn**	**06 26 47.3**	**-1.2**
	SNR=3.7						
NKC	**Novy Kostel**	**4.30**	**61**	*e*PG	**Pg**	**06 27 03.2**	**-4.0**
NKC				*e*SG	**Sg**	**06 27 56.2**	**-8.3**
SMRF	**Simiane la Rot**	**4.39**	**190**	*e*Pg	**Pg**	**06 27 06.8**	**-2.2**
SMRF				*e*Sg	**Sg**	**06 28 03.7**	**-3.7**
	3.4nm,0.4s						
LDF	**La Druitiere**	**4.47**	**276**	*e*Pn	**Pn**	**06 26 51.2**	**-0.4**
LDF				*e*Sg	**Sg**	**06 28 03.3**	**-6.9**
	20nm,0.4s						
RJF	**Les Rejaudoux**	**4.59**	**231**	*e*Pn	**Pn**	**06 26 52.2**	**-1.1**
RJF				*e*Pg	**Pg**	**06 27 11.2**	**-1.9**
RJF				*e*Sg	**Sg**	**06 28 09.0**	**-5.3**
	12nm,0.3s						
CAF	**Calviac**	**4.59**	**224**	*e*Pn	**Pn**	**06 26 53.3**	**0.0**
CAF				*e*Pg	**Pg**	**06 27 10.2**	**-2.9**
CAF				*e*Sg	**Sg**	**06 28 10.6**	**-3.7**
	16nm,0.4s						
LASF	**Ste Croix**	**4.63**	**205**	*e*Pn	**Pn**	**06 26 53.8**	**-0.1**
LASF				*e*Pg	**Pg**	**06 27 10.8**	**-3.1**
LASF				*e*Sg	**Sg**	**06 28 10.0**	**-5.7**
	12nm,0.5s						
KHC	**Kasperske Hory**	**4.71**	**77**	*e*PN	**Pn**	**06 26 53.5**	**-1.4**
KHC				*e*PG	**Pg**	**06 27 11.1**	**-4.3**
KHC				*e*SN	**Sn**	**06 27 44.8**	**-6.0**
KHC				*e*SG	**Sg**	**06 28 08.7**	**-9.4**
FLN	**La Foliniere**	**4.71**	**278**	*e*Pn	**Pn**	**06 26 54.1**	**-1.0**
FLN				*e*Sg	**Sg**	**06 28 12.4**	**-6.0**
	22nm,0.4s						
KBA	**Koelnbreinsper**	**4.73**	**103**	⇓*i*PN	**Pn**	**06 26 53.5**	**-1.8**
KBA				*i* SN	**Sn**	**06 27 47.4**	**-4.0**
KBA				*i* SG	**Sg**	**06 28 13.8**	**-5.1**
	7.8nm,0.5s						
FRF	**La Foret Royal**	**4.75**	**179**	*e*Pn	**Pn**	**06 26 55.0**	**-0.5**
FRF				*e*Sn	**Sn**	**06 27 46.8**	**-5.0**
FRF				*e*Sg	**Sg**	**06 28 14.7**	**-4.7**
	3.8nm,0.5s						
GEC2	**GERESS Array S**	**4.76**	**81**	*e*Pn	**Pn**	**06 26 54.8**	**-0.9**
	SNR=8.0						
MFF	**Saint Martin d**	**4.87**	**252**	*e*Pn	**Pn**	**06 26 56.2**	**-1.1**
MFF				*e*Sn	**Sn**	**06 27 51.6**	**-3.3**
MFF				*e*Sg	**Sg**	**06 28 17.8**	**-5.7**
	12nm,0.3s						
GRR	**Gorron**	**4.96**	**274**	*e*Pn	**Pn**	**06 26 57.6**	**-0.9**
GRR				*e*Sg	**Sg**	**06 28 19.9**	**-6.7**
	9.7nm,0.2s						
CLL	**Collm**	**5.13**	**52**	*e*PG	**Pg**	**06 27 18.0**	**-5.8**
CLL				*e*SG	**Sg**	**06 28 24.0**	**-8.2**
CLL				*e*		06 28 29.0	
LFF	**La Frestale**	**5.25**	**232**	*e*Pg	**Pg**	**06 27 21.9**	**-4.2**
LFF				*e*Sg	**Sg**	**06 28 30.0**	**-6.0**
	30nm,0.5s						
BRG	**Berggiesshubel**	**5.43**	**59**	*e*Pg	**Pg**	**06 27 24.2**	**-5.7**
BRG				*e*Sg	**Sg**	**06 28 32.8**	**-10**
PRU	**Pruhonice**	**5.49**	**69**	*e*SG	**Sg**	**06 28 33.8**	**-10**
	6.6nm,0.4s						
MTLF	**Montolieu**	**5.83**	**213**	*e*Pg	**Pg**	**06 27 32.9**	**-4.8**
MTLF				*e*Sg	**Sg**	**06 28 48.7**	**-6.6**
	5.1nm,0.4s						
SGMF	**Saint Gilles**	**6.10**	**273**	*e*Pn	**Pn**	**06 27 13.2**	**-1.4**
SGMF				*e*Sn	**Sn**	**06 28 20.0**	**-5.8**
SGMF				*e*Sg	**Sg**	**06 28 56.7**	**-7.8**
	7.8nm,0.4s						
QUIF	**Quistinic**	**6.54**	**270**	*e*Pn	**Pn**	**06 27 19.1**	**-1.7**
QUIF				*e*Sg	**Sg**	**06 29 10.1**	**-9.0**
	3.7nm,0.3s						
ROSF	**Rostrenen**	**6.57**	**274**	*e*Pn	**Pn**	**06 27 19.7**	**-1.6**
ROSF				*e*Sn	**Sn**	**06 28 31.4**	**-6.2**
ROSF				*e*Sg	**Sg**	**06 29 11.1**	**-9.1**
	7.2nm,0.4s						
DPC	**Dobruska-Polom**	**6.69**	**69**	*e*SG	**Sg**	**06 29 09.8**	**-14**
EPF	**Esparros**	**6.85**	**222**	*e*Sg	**Sg**	**06 29 21.2**	**-8.2**
	4.0nm,0.4s						
ETSF	**Etsaut**	**7.37**	**225**	*e*Sg	**Sg**	**06 29 36.7**	**-10**
	4.8nm,0.5s						
SJPF	**Ste Jean**	**7.53**	**229**	*e*Sg	**Sg**	**06 29 41.9**	**-10**
	4.1nm,0.5s						

*IDC **01** 06:46:39.0±1.7,8.97S×110.44E,mb4.0/7,mb1 4.2/8, mb1mx4.0/16,ML3.4/1,MS3.3/1,Ms1 3.5/1,ms1mx2.6/19, Error ellipse: s-maj=93.6km s-min=18.3km az=47.0*
*NEIC **01** 06:46:41.1±0.9,8.77S×110.71E,h10km,Error ellipse: s-maj=52.1km s-min=9.8km az=222.0*
*DJA **01** 06:46:42.6±1.3, 10.80S×110.67E,h30km±5km,MD4.9/3, ML4.6/3,Error ellipse: s-maj=40.3km s-min=9.1km az=15.0*

ISC 01 06:46:48.8±2.7,9.0S±0.1×110.7E±0.1,h97km±23km,n22, σ0§97/21,mb4.0/8,1C-5D,Jawa

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
KELI	**Kelakatan**	**3.86**	**79**	⇓*e*Pn		**P**		**06 47 48.9**	**+1.6**
	126nm,0.2s								
RATI	**Rata**	**4.82**	**88**	⇓*i*Pn		**P**		**06 47 59.6**	**-0.8**
	96nm,0.2s								
RATI	**Rata**	**4.82**	**88**	⇓*i*P		**P**		**06 48 01.0**	**+0.6**
RATI				⇓*i*Sn		**S**		**06 48 56.1**	**+0.6**
KEDI	**Kedomdong**	**5.41**	**85**	⇑*i*Pn		**P**		**06 48 07.5**	**-0.9**
	32nm,0.1s								
KEDI				⇓*i*Sn		**S**		**06 49 09.5**	**-0.5**
TPI	**Tanjungpandan**	**6.85**	**334**	*e*Pn		**P**		**06 48 46.5**	**+18**
FITZ	**Fitzroy Crossi**	**17.15**	**124**	P		**P**		**06 50 41.0**	**-2.8**
	0.1nm,0.3s,baz=305,slow=16,SNR=3.5								
FITZ				S		**S**		**06 53 38.9**	**-11**
	0.1nm,0.3s,baz=170,slow=15,SNR=3.5								
FITZ				LR		LR		06 56 58.4	
	comp=Z,47nm,20.8s,baz=282,slow=36								
WRA	**Warramunga Arr**	**25.36**	**118**	P		**P**		**06 52 08.9**	**+0.3**
	2.5nm,0.9s,mb3.6,baz=292,slow=11,SNR=8.5								
WRAB	**Tennant Creek**	**25.36**	**118**	*e*P		**P**		**06 52 09.3**	**+0.6**
	51nm,1.6s,mb4.7								
ASAR	**Alice Springs**	**26.61**	**126**	P		**P**		**06 52 22.1**	**+2.0**
	2.0nm,1.0s,mb3.6,baz=302,slow=9.1,SNR=10								
CMAR	**Chiang Mai Arr**	**29.60**	**337**	LR		LR		07 05 17.5	
	comp=Z,57nm,19.5s,baz=170,slow=38								
PMG	**Port Moresby**	**36.02**	**94**	*e*P		**P**		**06 53 41.9**	**-0.9**
SONM	**Songino Array**	**56.67**	**357**	P		**P**		**06 56 24.4**	**0.0**
	1.6nm,0.8s,mb4.1,baz=172,slow=8.7,SNR=4.7								
MKAR	**Makanchi Array**	**61.00**	**338**	P		**P**		**06 56 54.5**	**+0.1**
	1.0nm,0.5s,mb4.2,baz=143,slow=7.6,SNR=19								
KURK	**Kurchatov**	**65.61**	**338**	*e*P		**P**		**06 57 24.4**	**-0.2**
ZAL	**Zalesovo**	**66.37**	**344**	P		**P**		**06 57 28.8**	**-0.6**
	1.1nm,0.4s,mb4.0,baz=272,slow=3.2,SNR=8.0								
ZAL	**Zalesovo**	**66.37**	**344**	P		**P**		**06 57 28.8**	**-0.6**
BVAR	**Borovoye Array**	**70.61**	**336**	P		**P**		**06 57 55.2**	**-0.3**
	2.8nm,1.0s,mb4.0,baz=143,slow=7.4,SNR=8.0								
ZRNK	**Zerenda**	**71.13**	**335**	*e*P		**P**		**06 57 58.6**	**0.0**
BRTR	**Keskin Array B**	**85.83**	**311**	P		**P**		**06 59 19.6**	**+0.7**
	0.4nm,0.4s,mb3.7,baz=143,slow=6.2,SNR=3.7								
YKA	**Yellowknife Ar**	**117.38**	**22**	PKP		PKPdf		07 05 27.0	+4.2
	0.1nm,0.5s,baz=270,slow=1.2,SNR=3.7								
NCB	**Newcomb**	**144.87**	**6**	*e*PKPdf		PKPdf		07

*BJI **01** 07:04:39.7, 44.00S×90.97E, h26km, mB5.1, mb4.7, Ms5.4, Msz5.4*
*IDC **01** 07:04:41.5±0.6, 43.41S×91.80E, mb4.4/12, mb1 4.4/12, mb1mx4.4/16, MS5.1/4, Ms1 5.0/4, ms1mx4.6/10, Error ellipse: s-maj=27.7km s-min=16.3km az=162.0*
*NEIC **01** 07:04:42.1±0.3, 43.35S×91.66E, h10km, mb4.8/7, MS4.9/6, Error ellipse: s-maj=13.5km s-min=9.1km az=147.0*
*SYO **01** 07:04:42.1, 43.35S×91.66E, h10km, MB4.8, MS4.9*
*HRVD **01** 07:04:42.1±0.2, 43.35S×91.78E, h12km, MW5.4/68, Centroid moment Tensor Solution. LP body waves: s53,c102;Mantle waves: s68,c131; Half duration: 1s2 Moment tensor: Scale 10^{17}Nm; M_{rr}-0.03±.03; $M_{\theta\theta}$1.41±.03; $M_{\phi\phi}$-1.38±.03; $M_{r\theta}$-0.05±.07; $M_{\theta\phi}$-0.70±.03; $M_{\phi r}$-0.15±.07; Best double couple: $M_0$1.57×10^{17} NP1: ϕ_s328°, δ86°, λ-4°. NP2:ϕ_s59°, δ86°, λ-176°. Principal axes: T 1.58, Plg0°, Azm193°; N -.01, Plg84°, Azm100°; P -1.56, Plg6°, Azm283°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 01 07:04:41.0±0.3, 43.50S±0.07×91.71E±0.10, h10km, (h15km±2.6km: pP-P), n59, σ1§07/46, mb4.6/22, MS5.0/15, 1C-7D, Southeast Indian Ridge

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
NWAO	**Narrogin (SRO)**	**22.58**	**71**	P		**P**	**07 09 40.5**	**-2.2**
	9.1nm,0.9s,mb4.2,baz=259,slow=5.2,SNR=2.9							
MAW	**Mawson**	**28.62**	**203**	*e*P		**P**	**07 10 39.1**	**0.0**
	10nm,0.9s,mb4.5							
MAW	**Mawson**	**28.62**	**203**	P		**P**	**07 10 38.9**	**-0.2**
	10.0nm,0.9s,mb4.5,baz=52,slow=11,SNR=10.0							
MAW				LR		LR	07 19 39.6	
	comp=Z,3μm,21.2s,MS4.9,baz=41,slow=31							
SYO	**Syowa Base**	**36.79**	**208**	⇓P		**P**	**07 11 49.6**	**-0.6**
SYO	**Syowa Base**	**36.79**	**208**	⇓pP		pP	07 11 51.8	-1.4
SYO	**Syowa Base**	**36.79**	**208**	⇓sP		sP	07 11 57.6	+3.1
SYO	**Syowa Base**	**36.79**	**208**	⇓*e*P		**P**	**07 11 49.6**	**-0.6**
SYO				*e*pP		pP	07 11 51.8	-1.4
SYO				*e*sP		sP	07 11 57.6	+3.1
SYO				*e*PP		PP	07 13 17.7	+2.1
FITZ	**Fitzroy Crossi**	**38.18**	**59**	P		**P**	**07 12 02.1**	**-0.2**
	2.8nm,0.8s,mb4.0,baz=162,slow=20,SNR=2.4							
AS12	**Alice Springs**	**39.81**	**74**	*e*P		**P**	**07 12 16.6**	**+0.6**
	6.8nm,0.8s,mb4.4							
ASAR	**Alice Springs**	**39.81**	**74**	P		**P**	**07 12 15.9**	**-0.1**
	4.2nm,0.8s,mb4.2,baz=226,slow=7.2,SNR=16							
ASAR				PcP		PcP	07 14 21.0	-1.7
	0.3nm,0.5s,baz=220,slow=2.8,SNR=3.7							
ASAR				LR		LR	07 26 42.8	
	comp=Z,2μm,19.7s,MS4.9,baz=230,slow=33							
STKA	**Stephens Creek**	**40.59**	**91**	*e*P		**P**	**07 12 22.8**	**+0.5**
	7.8nm,0.9s,mb4.3							
STKA	**Stephens Creek**	**40.59**	**91**	P		**P**	**07 12 22.8**	**+0.4**
	5.9nm,0.9s,mb4.2,baz=203,slow=6.5,SNR=4.4							
STKA				LR		LR	07 26 41.8	
	comp=Z,3μm,18.2s,MS5.2,baz=236,slow=33							
WRA	**Warramunga Arr**	**42.59**	**70**	P		**P**	**07 12 38.0**	**-0.8**
	5.1nm,0.8s,mb4.3,baz=228,slow=8.1,SNR=16							
WRA				PcP		PcP	07 14 32.8	+1.1
	0.6nm,0.7s,baz=231,slow=3.0,SNR=5.3							
WRA				LR		LR	07 28 40.7	
	comp=Z,2μm,18.2s,MS5.0,baz=230,slow=34							
WB2	**Warramunga Arr**	**42.59**	**70**	*e*P		**P**	**07 12 38.5**	**-0.4**
WRAB	**Tennant Creek**	**42.60**	**70**	*e*P		**P**	**07 12 37.8**	**-1.1**
	15nm,0.8s,mb4.8							
VNDA	**Vanda**	**43.67**	**163**	P		**P**	**07 12 48.0**	**+1.0**
SBA	**Scott Base**	**44.75**	**163**	*e*P		**P**	**07 12 55.0**	**-0.7**
	21nm,1.5s,mb4.7							
SBA				LR		LR		
	comp=Z,957nm,20.0s,MS4.7							
QSPA	**South Pole Qui**	**46.65**	**180**	*e*P		**P**	**07 13 11.1**	**+0.4**
ARMA	**Armidale**	**48.65**	**95**	*e*P		**P**	**07 13 29.5**	**+2.5**
SNAA	**Sanae**	**50.77**	**204**	⇓*i*		**P**	**07 13 39.7**	**-3.0**
SNAA	**Sanae**	**50.77**	**204**	*e*		**P**	**07 13 46.7**	**+4.0**
SNAA	**Sanae**	**50.77**	**204**	*e*P		**P**	**07 13 41.2**	**-1.5**
PALK	**Pallekele**	**51.51**	**346**	P		**P**	**07 13 44.7**	**-4.4**
VNA2	**Neumayer--Watz**	**52.42**	**204**	*e*		**P**	**07 14 03.8**	**+8.7**
VNA2	**Neumayer--Watz**	**52.42**	**204**	⇓*i*P		**P**	**07 13 55.5**	**+0.4**
VNA2				*e*			07 14 03.8	
VNA1	**Neumayer--Stat**	**52.79**	**204**	⇑*i*		**P**	**07 13 49.4**	**-8.6**
VNA3	**Neumayer Olymp**	**52.95**	**203**	*e*		**P**	**07 14 08.3**	**+9.2**
VNA3	**Neumayer Olymp**	**52.95**	**203**	⇓*i*P		**P**	**07 14 00.8**	**+1.7**
VNA3				*e*			07 14 08.3	
SUR	**Sutherland**	**55.46**	**256**	P		**P**	**07 14 19.4**	**+1.4**
	comp=Z,8.5nm,1.0s,mb4.7,baz=104,slow=12,SNR=3.8							
SUR	**Sutherland**	**55.46**	**256**	*e*P		**P**	**07 14 16.3**	**-1.8**
SUR				LR		LR		
	comp=Z,773nm,20.0s,MS4.8							
LBTB	**Lobatse**	**56.24**	**266**	*e*P		**P**	**07 14 22.4**	**-1.3**
	comp=Z,10nm,1.3s,mb4.7							
LBTB				LR		LR		
	comp=Z,510nm,22.0s,MS4.6							
LSZ	**Lusaka**	**60.48**	**277**	*e*P		**P**	**07 14 52.9**	**-0.6**
	comp=Z,12nm,1.0s,mb4.9							
LSZ				LR		LR		
	comp=Z,1μm,22.0s,MS5.0							
CMAR	**Chiang Mai Arr**	**62.01**	**8**	P		**P**	**07 15 02.7**	**-1.1**
	comp=Z,2.2nm,0.9s,mb4.3,baz=203,slow=6.9,SNR=6.2							
KMBO	**Kilima Mbogo**	**64.13**	**295**	P		**P**	**07 15 17.8**	**-0.1**
	comp=Z,2.4nm,0.9s,mb4.2,baz=51,slow=22,SNR=3.3							
TSUM	**Tsumeb**	**65.65**	**266**	P		**P**	**07 15 28.1**	**+0.5**
	comp=Z,3.2nm,1.1s,mb4.2,baz=94,slow=13,SNR=2.7							
KMI	**Kunming**	**69.03**	**11**	*e*P		**P**	**07 15 50.6**	**+1.7**
KMI				AP		pP	07 15 56.8	+4.8
KMI				XP		sP	07 15 59.4	+6.3
KMI				PP		PP	07 18 23.8	+0.1
KMI				S		S	07 24 56.8	+4.4
KMI				SS		SS	07 29 23.6	+3.6
KMI				AMB		AMB		
	comp=Z,11nm,1.1s,mb4.7							
KMI				AMB		AMB		
	comp=Z,152nm,5.1s							
KMI				LR		LR		
	comp=Z,2μm,20.9s,MS5.4							
LSA	**Lhasa**	**72.84**	**359**	P		**P**	**07 16 12.2**	**+0.4**
ENH	**Enshi**	**75.20**	**16**	*e*P		**P**	**07 16 21.9**	**-3.5**
	comp=Z,21nm,1.3s,mb4.9							
ENH				LR		LR		
	comp=Z,1μm,20.0s,MS5.2							
XAN	**Xi'an**	**78.75**	**15**	P		**P**	**07 16 44.9**	**-0.2**
XAN				AP		pP	07 16 53.2	+4.9
LZH	**Lanzhou**	**79.98**	**10**	*e*P		**P**	**07 16 52.8**	**+1.1**
LZH				AP		pP	07 16 56.0	+1.1
LZH				PP		PP	07 19 56.0	+0.9
LZH				*e*S		S	07 26 52.0	-2.2
LZH				AMB		AMB		
	comp=Z,15nm,1.0s,mb4.9							
LZH				AMB		AMB		
	comp=Z,61nm,4.5s							
LZH				LR		LR		
	comp=N,790nm,16.2s							
LZH				LR		LR		
	comp=Z,1μm,21.0s,MS5.3							
GTA	**Gaotai**	**82.85**	**6**	*e*P		**P**	**07 17 08.1**	**+1.4**
GTA				AP		pP	07 17 12.6	+2.7
GTA				XP		sP	07 17 15.3	+4.4
GTA				AMB		AMB		
	comp=Z,8.0nm,1.1s,mb4.7							
GTA				AMB		AMB		
	comp=Z,72nm,5.0s							
GTA				LR		LR		
	comp=N,263nm,19.4s,MS4.7							
GTA				LR		LR		
	comp=E,166nm,21.3s,MS4.7							
GTA				LR		LR		
	comp=Z,284nm,18.6s,MS4.7							
WMQ	**Urumqi**	**87.01**	**357**	*e*P		**P**	**07 17 27.3**	**0.0**
WMQ				AP		pP	07 17 31.8	+1.3
WMQ				PP		PP	07 20 52.2	-0.9
WMQ				SKS		SKS	07 27 51.0	-5.8
WMQ				S		S	07 28 03.0	-1.4
WMQ				SS		SS	07 33 47.9	-2.4
WMQ				AMB		AMB		
	comp=Z,59nm,1.5s,mb5.6							
WMQ				AMB		AMB		
	comp=Z,392nm,7.6s							
WMQ				LR		LR		
	comp=N,887nm,17.2s,MS5.4							
WMQ				LR		LR		
	comp=E,965nm,18.7s,MS5.4							
WMQ				LR		LR		
	comp=Z,1μm,18.0s,MS5.3							
MAT	**Matsushiro**	**90.18**	**36**	P		**P**	**07 17 48.7**	**+6.1**
MAT				*e*S		S	07 28 32.4	-1.6
MAT	**Matsushiro**	**90.18**	**36**	P		**P**	**07 17 49.0**	**+6.4**
MAT				S		S	07 28 32.0	-2.0
MAT				LR		LR		
	comp=Z,720nm,21.0s,MS5.1							
SONM	**Songino Array**	**91.87**	**10**	P		**P**	**07 17 50.7**	**+0.6**
	comp=Z,1.3nm,0.7s,mb4.3,baz=202,slow=7.8,SNR=3.6							
ULN	**Ulaanbaatar**	**91.98**	**10**	*e*P		**P**	**07 17 49.2**	**-1.4**
	comp=Z,6.7nm,1.1s,mb4.9							
CN2	**Changchun**	**92.00**	**24**	*e*P		**P**	**07 17 52.0**	**+1.2**
CN2				*e*S		S	07 28 51.0	+1.0
CN2				LR		LR		
	comp=Z,500nm,21.0s,MS4.9							
BRTR	**Keskin Array B**	**98.04**	**319**	P		**P**	**07 18 18.8**	**+0.3**
	comp=Z,0.6nm,0.9s,mb4.1,baz=146,slow=10,SNR=2.5							
ILAR	**Eielson Array**	**141.46**	**36**	PKP		PKPdf	07 24 11.2	-2.9
	comp=Z,0.6nm,0.8s,baz=268,slow=4.0,SNR=4.7							
DAWY	**Dawson**	**144.78**	**36**	*e*PKP		PKPdf	07 24 16.8	-3.1
INK	**Inuvik**	**145.82**	**28**	PKPbc		PKPbc	07 24 20.0	+0.6
	comp=Z,16nm,1.2s,baz=329,slow=3.4,SNR=21							
INK	**Inuvik**	**145.82**	**28**	*e*PKP		PKPdf	07 24 19.3	-2.3
RES	**Resolute Bay**	**148.58**	**3**	PKPdf		PKPdf	07 24 22.7	-3.3
RES				*e*PKPbc		PKPdf	07 24 27.2	+1.3
DLBC	**Dease Lake**	**150.34**	**45**	PKPbc		PKPdf	07 24 33.9	+4.7
	comp=Z,2.5nm,0.9s,baz=295,slow=8.8,SNR=2.0							
YKA	**Yellowknife Ar**	**155.55**	**30**	PKP		PKPdf	07 24 34.8	-1.6
	comp=Z,0.3nm,1.1s,baz=258,slow=5.7,SNR=3.2							
YKA				PKPab		PKPab	07 25 01.0	-0.8
	comp=Z,0.7nm,0.8s,baz=304,slow=2.0,SNR=7.8							
YKA	**Yellowknife Ar**	**155.55**	**30**	PKP		PKPdf	07 24 34.8	-1.6
YKA				PKPab		PKPab	07 25 00.9	-0.8
TXAR	**Lajitas Array**	**161.25**	**134**	PKP		PKPdf	07 24 44.3	+0.1
	comp=Z,0.9nm,0.7s,baz=265,slow=3.9,SNR=2.6							
TXAR				PKPab		PKPab	07 25 29.0	+1.6
	comp=Z,0.5nm,0.7s,baz=233,slow=9.0,SNR=2.1							
JCT	**Junction City**	**164.10**	**141**	PKP		PKPdf	07 24 44.7	-2.4
PDAR	**Pinedale Array**	**164.45**	**85**	PKP		PKPdf	07 24 47.1	+0.1
	comp=Z,0.2nm,0.4s,baz=225,slow=3.8,SNR=3.4							
PDAR				PKPab		PKPab	07 25 40.7	-0.2
	comp=Z,0.2nm,0.3s,baz=270,slow=2.7,SNR=2.4							

*LDG **01** 07:08:07.9±0.1, 35.63N×78.28E, h10km, Mb4.5/14, Ms3.3/1, Error ellipse: s-maj=6.4km s-min=3.6km az=41.0*
*IDC **01** 07:08:08.1±0.6, 35.73N×78.18E, mb4.2/16, mb1 4.4/19, mb1mx4.3/23, ML4.1/3, MS3.5/5, Ms1 3.5/5, ms1mx3.3/22, Error ellipse: s-maj=16.3km s-min=12.5km az=73.0*
*MOS **01** 07:08:12.0±1.0, 35.77N×78.37E, h31km, mb4.7/17, Error ellipse: s-maj=10.5km s-min=5.2km az=113.0*
*NEIC **01** 07:08:12.9±2.0, 35.73N×78.37E, h26km±15km, mb4.5/17, Error ellipse: s-maj=9.1km s-min=5.5km az=225.0*
*BJI **01** 07:08:12.9, 35.81N×78.37E, h23km, mb4.9, ML4.8, Ms4.1*
*NNC **01** 07:08:13.7±4.1, 35.73N×78.21E, h30km±53km, Error ellipse: s-maj=42.0km s-min=17.8km az=171.0*

ISC 01 07:08:09.3±1.1, 35.58N±0.02×78.17E±0.04, h15km±7km, n145, σ1§34/161, mb4.4/39, MS3.6/7, 9C-8D, Eastern Kashmir

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
KSH	**Kashi**	**4.30**	**337**	*e*P		**Pn**	**07 09 17.8**	**+2.0**
KSH				S		**Sn**	**07 10 12.6**	**+6.4**
KSH				S		Sn		
	comp=N,2μm,1.2s							
KSH				S		Sn		
	comp=E,2μm,1.1s							
CHCP	**Chirah Chowk**	**4.48**	**246**	P		**Pn**	**07 09 18.9**	**+0.5**
CEP	**Cherat**	**5.45**	**253**	⇑P		**Pn**	**07 09 30.7**	**-1.4**
CEP				S		**Sn**	**07 10 33.0**	**-2.2**
KKR	**Kurukshetra**	**5.72**	**192**	*e*		**Pn**	**07 09 32.9**	**-2.9**
THW	**Thamme Wali**	**6.01**	**244**	P		**Pn**	**07 09 39.7**	**-0.3**
ASOR	**Ausora**	**6.81**	**183**	*e*P		**Pn**	**07 09 54.7**	**+3.4**
ASOR				AMb		AMB	07 10 00.0	
	comp=Z,35nm,0.2s							
ASOR				*e*			07 11 11.1	
ULHL	**Ulahol**	**6.82**	**348**	P		**Pn**	**07 09 52.4**	**+0.9**
	SNR=12							
KZA	**Kyzart**	**6.88**	**342**	P		**Pn**	**07 09 52.5**	**+0.4**
	SNR=37							
NDI	**New Delhi**	**6.93**	**187**	*e*		**Pn**	**07 09 58.0**	**+5.1**
NDI				*e*S		**Sn**	**07 11 12.0**	**-0.1**
SBDP	**Sheikh Budin**	**6.94**	**244**	⇑P		**Pn**	**07 09 51.7**	**-1.4**
AYAN	**Aya Nagar**	**7.13**	**187**	*e*P		**Pn**	**07 09 57.4**	**+1.6**
AYAN				AMb		AMB	07 10 00.2	
	comp=Z,32nm,0.6s							
AYAN				*e*S		**Sn**	**07 11 17.2**	**-0.1**
UCH	**Uchtor**	**7.22**	**338**	P		**Pn**	**07 09 57.4**	**+0.3**
	SNR=24							
SONA	**Sohna**	**7.37**	**188**	*e*P		**Pn**	**07 10 00.4**	**+1.3**
SONA				AMb		AMB	07 10 01.5	
	comp=Z,20nm,0.3s							
SONA				*e*S		**Sn**	**07 11 24.0**	**+0.8**
AML	**Almayashu**	**7.41**	**333**	P		**Pn**	**07 10 01.6**	**+1.9**
	SNR=11							
KBK	**Karagaybulak**	**7.50**	**341**	P		**Pn**	**07 10 04.5**	**+3.7**
	SNR=7.5							
TKM2	**Tokmak 2**	**7.60**	**346**	P		**Pn**	**07 10 02.4**	**+0.1**
	SNR=11							
AAK	**Ala-Archa**	**7.60**	**339**	P		**Pn**	**07 10 02.5**	**+0.2**
	SNR=26							
AAA	**Alma-Ata**	**7.74**	**353**	*e*P		**Pn**	**07 10 02.0**	**-2.2**
AAA				pmax		pmax		
	comp=Z,100nm,0.5s							
FRU	**Bishkek**	**7.75**	**340**	*e*P		**Pn**	**07 10 05.0**	**+0.6**
FRU				pmax		pmax		
	comp=E,60nm,1.4s							
KHET	**Khetri**	**7.75**	**196**	*e*P		**Pn**	**07 10 05.1**	**+0.7**
KHET				*e*S		**Sn**	**07 11 30.7**	**-2.0**
CHMS	**Chumysh**	**7.87**	**341**	P		**Pn**	**07 10 08.0**	**+2.0**
	SNR=5.8							
DANN	**Dangsing**	**8.63**	**145**	*e*P		**P**	**07 10 16.6**	**0.0**
KOLN	**Koldanda**	**9.05**	**148**	*e*P		**P**	**07 10 22.2**	**-0.3**
	comp=E,54nm,0.5s							
GKN	**Gorkha**	**9.34**	**142**	*e*P		**P**	**07 10 25.9**	**-0.6**
	comp=E,120nm,0.4s							
AJM	**Ajmer**	**9.56**	**199**	⇓*i*P		**P**	**07 10 28.0**	**-1.6**
AJM				*i* S		**Sn**	**07 12 14.0**	**-3.8**
KK31	**Karatay Array**	**9.57**	**324**	⇑P		**P**	**07 10 27.9**	**-1.7**
	comp=E,6.4nm,0.5s,baz=136,slow=12,SNR=80							
KK31				⇑S		**Sn**	**07 12 14.1**	**-3.8**
	comp=E,9.5nm,0.5s,baz=142,slow=23,SNR=8.3							
KKAR	**Karatay Array**	**9.57**	**324**	P		**P**	**07 10 28.4**	**-1.2**
KKAR				S		**Sn**	**07 12 14.0**	**-3.9**
KKAR				pmax		pmax		
	comp=Z,1.0nm,0.3s							
KKAR				smax				
	comp=Z,5.0nm,0.5s							
KKN	**Kakani**	**9.85**	**140**	*e*P		**P**	**07 10 31.0**	**-2.5**
	comp=Z,72nm,0.6s							
KKN	**Kakani**	**9.85**	**140**	*e*P		**P**	**07 10 31.0**	**-2.5**
KKN				pmax		pmax		
	comp=Z,36nm,0.6s							
DMN	**Daman**	**9.90**	**141**	*e*P		**P**	**07 10 33.0**	**-1.2**
	comp=Z,70nm,0.5s							
JASL	**Jaisalmer**	**10.63**	**218**	*e*P		**P**	**07 10 41.0**	**-3.2**
QUE	**Quetta**	**10.86**	**243**	*e*P		**P**	**07 10 52.0**	**+4.7**
WMQ	**Urumqi**	**11.02**	**39**	*e*P		**P**	**07 10 47.4**	**-2.0**
WMQ				S		**S**	**07 12 50.0**	**-3.3**
MK31	**Makanchi Array**	**11.62**	**14**	⇓P		**P**	**07 10 55.2**	**-2.5**
	comp=Z,12nm,0.6s,baz=199,slow=14,SNR=138							
MK31				⇓S		**S**	**07 13 03.1**	**-5.0**
	comp=Z,24nm,0.8s,baz=194,slow=26,SNR=7.3							
MKAR	**Makanchi Array**	**11.62**	**14**	Pn		**P**	**07 10 55.1**	**-2.5**
	comp=Z,2.9nm,0.3s,baz=200,slow=14,SNR=138							
MKAR				Sn		**S**	**07 12 59.5**	**-8.6**
	comp=Z,0.9nm,0.3s,baz=197,slow=20,SNR=3.6							
MKAR	**Makanchi Array**	**11.62**	**14**	*e*P		**P**	**07 10 55.6**	**-2.1**
MKAR				*e*S		**S**	**07 13 01.5**	**-6.6**
MKAR				pmax		pmax		
	comp=Z,2.0nm,0.3s							
MKAR				smax				
	comp=Z,22nm,0.8s							
LSA	**Lhasa**	**12.40**	**115**	P		**P**	**07 11 09.0**	**+0.7**
LSA	**Lhasa**	**12.40**	**115**	*e*P		**P**	**07 11 08.9**	**+0.6**
LSA				pmax		pmax		
	comp=Z,9.0nm,0.8s							
LSA	**Lhasa**	**12.40**	**115**	*e*P		**P**	**07 11 08.8**	**+0.6**
	comp=Z,9.3nm,0.8s							
KURK	**Kurchatov**	**15.13**	**1**	⇓P		**P**	**07 11 40.9**	**-3.1**
	comp=Z,4.1nm,0.8s,baz=193,slow=9.7,SNR=17							
KURK	**Kurchatov**	**15.13**	**1**	*e*P		**P**	**07 11 40.2**	**-3.8**
SHL	**Shillong**	**15.45**	**127**	*e*P		**P**	**07 11 43.0**	**-5.4**
SHL				*e*			07 16 40.0	

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
POO	**Poona**	**17.41**	**194**	*e*		**P**	**07 12 11.0**	**-2.4**
GTA	**Gaotai**	**17.59**	**71**	*e*P		**P**	**07 12 16.9**	**+1.5**
GTA				AP			07 12 21.3	
GTA				XP			07 12 24.2	
GTA				AMB		AMB		
	comp=Z,4.0nm,0.6s							
GTA				LR		LR		
	comp=N,183nm,9.9s							
GTA				LR		LR		
	comp=E,131nm,7.6s							
VOSK	**Vostochnaya**	**17.88**	**346**	⇓P		**P**	**07 12 17.9**	**-1.1**
	comp=E,5.6nm,0.8s							
VOSK	**Vostochnaya**	**17.88**	**346**	P		**P**	**07 12 19.9**	**+0.9**
VOSK				pmax		pmax		
	comp=Z,5.0nm,0.9s							
HYB	**Hyderabad**	**18.09**	**179**	*i* P		**P**	**07 12 20.5**	**-1.4**
HYB	**Hyderabad**	**18.09**	**179**	*e*P		**P**	**07 12 20.5**	**-1.4**
BVA0	**Borovoye Array**	**18.29**	**345**	⇓P		**P**	**07 12 24.4**	**+0.3**
	comp=Z,2.6nm,1.1s,baz=154,slow=8.9,SNR=9.4							
BVA0	**Borovoye Array**	**18.29**	**345**	*i* P		**P**	**07 12 24.9**	**+0.8**
BVAR	**Borovoye Array**	**18.29**	**345**	P		**P**	**07 12 22.9**	**-1.2**
	comp=Z,0.8nm,0.3s,baz=152,slow=11,SNR=35							
BVAR				LR		LR	07 19 40.9	
	comp=Z,220nm,18.9s,baz=90,slow=38							
BRVK	**Borovoye**	**18.34**	**345**	*e*P		**P**	**07 12 24.2**	**-0.6**
ZRNK	**Zerenda**	**18.54**	**342**	⇑P		**P**	**07 12 26.8**	**-0.4**
	comp=Z,7.1nm,0.8s							
ZRNK	**Zerenda**	**18.54**	**342**	*e*P		**P**	**07 12 25.6**	**-1.6**
ZAL	**Zalesovo**	**18.93**	**12**	P		**P**	**07 12 28.1**	**-3.7**
	comp=Z,1.0nm,0.3s,baz=188,slow=10,SNR=11							
ZAL				S		**S**		**07 15 59.6**	**+0.4**
	comp=Z,0.2nm,0.3s,baz=85,slow=24,SNR=2.4							
AB31	**Akbulak array**	**19.11**	**321**	⇑P		**P**	**07 12 31.2**	**-2.8**
	comp=Z,20nm,1.1s,baz=126,slow=12,SNR=79							
AB31				⇓S		**S**	**07 15 54.5**	**-8.9**
	comp=Z,2.5nm,0.7s							
AB31	**Akbulak array**	**19.11**	**321**	*e*P		**P**	**07 12 31.2**	**-2.9**
AB31				pmax		pmax		
	comp=Z,22nm,1.1s							
NVS	**Novosibirsk**	**19.58**	**9**	*i* P		**P**	**07 12 36.5**	**-2.9**
NVS				*e*S		**S**	**07 16 10.9**	**-2.8**
NVS				pmax		pmax		
	comp=N,25nm,1.0s							
NVS				pmax		pmax		
	comp=Z,19nm,1.0s							
NVS				pmax		pmax		
	comp=E,7.0nm,1.2s							
NVS				smax				
	comp=N,22nm,1.9s							
NVS				smax				
	comp=E,10.0nm,1.6s							
ZAK	**Zakamensk**	**23.43**	**43**	*e*P		**P**	**07 13 17.9**	**-0.6**
SONM	**Songino Array**	**24.22**	**51**	P		**P**	**07 13 26.9**	**+0.6**
	comp=E,5.8nm,0.8s,mb4.1,baz=254,slow=9.0,SNR=12							
TLY	**Talaya**	**24.29**	**41**	*e*P		**P**	**07 13 28.9**	**+2.0**
TLY				*e*			07 17 04.9	
TLY				pmax		pmax		
	comp=Z,22nm,0.8s,mb4.6							
TLY				MLR		MLR		
	comp=Z,2μm,15.0s,MS4.7							
SVE	**Sverdlovsk**	**24.33**	**336**	⇑*e*P		**P**	**07 13 27.8**	**+0.6**
ULN	**Ulaanbaatar**	**24.65**	**51**	*de*P		**P**	**07 13 33.1**	**+2.7**
ARU	**Arti**	**24.74**	**334**	⇑*i*P		**P**	**07 13 31.0**	**-0.2**
ARU				*e*			07 14 02.4	
ARU				*e*S		**S**	**07 17 48.2**	**-1.5**
ARU				*e*SS		SS	07 18 39.3	-7.5
ARU				pmax		pmax		
	comp=Z,8.0nm,0.7s,mb4.4							
ARU	**Arti**	**24.74**	**334**	*e*P		**P**	**07 13 30.4**	**-0.8**
	comp=Z,11nm,0.8s,mb4.5							
CM31	**Chiang Mai Arr**	**25.08**	**127**	*e*P		**P**	**07 13 36.0**	**+1.2**
	comp=Z,7.2nm,0.6s,mb4.4							
CMAR	**Chiang Mai Arr**	**25.08**	**127**	P		**P**	**07 13 35.6**	**+0.8**
	comp=Z,7.5nm,0.6s,mb4.4,baz=316,slow=9.7,SNR=21							
CMAR				LR		LR	07 23 40.8	
	comp=Z,90nm,19.7s,MS3.3,baz=185,slow=37							
GYA	**Guiyang**	**25.98**	**103**	P		**P**	**07 13 45.0**	**+1.8**
GYA				AMB		AMB		
	comp=Z,10.0nm,0.8s,mb4.4							
HHC	**Hu-ho-hao-te**	**26.66**	**69**	*e*P		**P**	**07 13 46.1**	**-3.2**
HHC				AMB		AMB		
	comp=Z,7.0nm,1.1s,mb4.1							
GNI	**Garni**	**26.69**	**290**	*e*P		**P**	**07 13 47.8**	**-1.8**
GNI				pmax		pmax		
	comp=Z,21nm,1.7s							
ENH	**Enshi**	**26.75**	**92**	*e*P		**P**	**07 13 51.4**	**+1.2**
	comp=Z,7.2nm,0.8s,mb4.2							
ZEI	**Tsey**	**27.39**	**296**	*

SBF	**Sospel**	**53.52**	**302**	*e*P	**P**	**07 17 31.8**	**+0.4**	
	comp=Z,18nm,0.7s,mb4.8							
SBF	**Sospel**	**53.52**	**302**	*e*P	**P**	**07 17 31.8**	**+0.4**	
SBF				pmax	pmax			
	comp=Z,9.0nm,0.7s,mb4.8							
LPG	**La Plagne**	**53.53**	**304**	*e*P	**P**	**07 17 32.1**	**+0.7**	
	comp=Z,15nm,0.9s,mb4.6							
LPG	**La Plagne**	**53.53**	**304**	*e*P	**P**	**07 17 32.1**	**+0.7**	
LPG				pmax	pmax			
	comp=Z,7.0nm,0.9s,mb4.6							
LPL	**La Plagne**	**53.54**	**304**	*e*P	**P**	**07 17 31.9**	**+0.4**	
	comp=Z,8.9nm,0.7s,mb4.5							
LPL	**La Plagne**	**53.54**	**304**	*e*P	**P**	**07 17 31.9**	**+0.4**	
LPL				pmax	pmax			
	comp=Z,4.0nm,0.7s,mb4.5							
CABF	**La Chapelle**	**53.67**	**305**	*e*P	**P**	**07 17 32.3**	**-0.1**	
	comp=Z,17nm,1.1s,mb4.6							
CABF	**La Chapelle**	**53.67**	**305**	*e*P	**P**	**07 17 32.3**	**-0.1**	
CABF				pmax	pmax			
	comp=Z,9.0nm,1.0s,mb4.7							
MBDF	**Montbardon**	**53.73**	**303**	*e*P	**P**	**07 17 32.5**	**-0.4**	
	comp=Z,6.4nm,0.8s,mb4.3							
MBDF	**Montbardon**	**53.73**	**303**	*e*P	**P**	**07 17 32.5**	**-0.4**	
MBDF				pmax	pmax			
	comp=Z,3.0nm,0.8s,mb4.3							
FRF	**La Foret Royal**	**54.16**	**302**	*e*P	**P**	**07 17 36.2**	**+0.2**	
LOR	**Lormes**	**54.95**	**307**	*e*P	**P**	**07 17 41.5**	**-0.3**	
VIVF	**Saint-Julien-l**	**55.12**	**304**	*e*P	**P**	**07 17 43.0**	**-0.1**	
SMF	**Signal de Mont**	**55.14**	**306**	*e*P	**P**	**07 17 42.9**	**-0.3**	
	comp=Z,11nm,0.9s,mb4.6							
SMF	**Signal de Mont**	**55.14**	**306**	*e*P	**P**	**07 17 42.9**	**-0.3**	
SMF				pmax	pmax			
	comp=Z,5.0nm,0.9s,mb4.5							
SSF	**Saint Saulge**	**55.24**	**307**	*e*P	**P**	**07 17 44.1**	**+0.1**	
SSF				pmax	pmax			
	comp=Z,1.0nm,0.6s,mb4.0							
SSF	**Saint Saulge**	**55.24**	**307**	*e*P	**P**	**07 17 44.1**	**+0.1**	
	comp=Z,1.4nm,0.6s,mb4.2							
LDF	**La Druitiere**	**57.11**	**309**	*e*P	**P**	**07 17 57.2**	**-0.2**	
	comp=Z,8.4nm,0.7s,mb4.6							
LDF	**La Druitiere**	**57.11**	**309**	*e*P	**P**	**07 17 57.2**	**-0.2**	
LDF				pmax	pmax			
	comp=Z,4.0nm,0.7s,mb4.6							
MTLF	**Montolieu**	**57.28**	**303**	*e*P	**P**	**07 17 58.9**	**+0.3**	
	comp=Z,2.9nm,0.7s,mb4.1							
MTLF	**Montolieu**	**57.28**	**303**	*e*P	**P**	**07 17 58.9**	**+0.3**	
MTLF				pmax	pmax			
	comp=Z,1.0nm,0.7s,mb4.0							
SJPF	**Ste Jean**	**59.72**	**304**	*e*P	**P**	**07 18 15.7**	**+0.1**	
	comp=Z,99nm,1.6s,mb5.3							
SJPF	**Ste Jean**	**59.72**	**304**	*e*P	**P**	**07 18 15.7**	**+0.1**	
SJPF				pmax	pmax			
	comp=Z,50nm,1.6s,mb5.3							
IMA	**Indian Mountai**	**71.13**	**20**	*e*P	**P**	**07 19 28.5**	**-0.1**	
INK	**Inuvik**	**73.75**	**12**	P	**P**	**07 19 43.1**	**-0.8**	
	comp=Z,2.3nm,1.0s,mb4.1,baz=356,slow=3.9,SNR=12							
INK	**Inuvik**	**73.75**	**12**	*e*P	**P**	**07 19 43.3**	**-0.7**	
INK				pmax	pmax			
	comp=Z,3.0nm,1.1s							
INK	**Inuvik**	**73.75**	**12**	*e*P	**P**	**07 19 43.3**	**-0.7**	
	comp=Z,3.5nm,1.1s,mb4.2							
ILAR	**Eielson Array**	**73.94**	**18**	P	**P**	**07 19 44.3**	**-0.8**	
	comp=Z,1.5nm,1.0s,mb3.9,baz=328,slow=5.2,SNR=16							
DAWY	**Dawson**	**76.34**	**16**	*e*P	**P**	**07 19 57.7**	**-1.2**	
WRA	**Warramunga Arr**	**76.67**	**127**	P	**P**	**07 20 00.8**	**-0.8**	
	comp=Z,1.0nm,0.9s,mb3.8,baz=324,slow=6.1,SNR=6.3							
WRAB	**Tennant Creek**	**76.67**	**127**	P	**P**	**07 20 02.5**	**+0.9**	
ASAR	**Alice Springs**	**79.07**	**129**	P	**P**	**07 20 13.8**	**-0.9**	
	comp=Z,0.7nm,0.6s,mb3.8,baz=309,slow=5.5,SNR=11							
DBIC	**Dimbokro**	**80.50**	**271**	P	**P**	**07 20 21.7**	**-1.0**	
	comp=Z,1.2nm,0.8s,mb3.9,baz=49,slow=9.3,SNR=1.9							
YKA	**Yellowknife Ar**	**81.72**	**6**	P	**P**	**07 20 27.5**	**-0.5**	
	comp=Z,2.0nm,0.5s,mb4.3,baz=344,slow=5.4,SNR=72							
DLBC	**Dease Lake**	**83.41**	**14**	P	**P**	**07 20 37.1**	**+0.3**	
	comp=Z,0.9nm,0.6s,mb4.0,baz=334,slow=5.5,SNR=4.3							
STKA	**Stephens Creek**	**89.66**	**130**	P	**P**	**07 21 09.1**	**+1.0**	
	comp=Z,4.9nm,1.2s,mb4.7,baz=311,slow=11,SNR=3.3							

NIED ***01*** *07:56:00,24.10N×121.40E,h32km,Mw5.0 Best double couple: M₀4.17×10¹⁶ NP1:φs175°,δ66°,λ29°. NP2:φs72°, δ64°,λ153°.*

ORF ***01*** *07:56:06.1,20.98N×120.52E,h30km,mb5.5*

MOS ***01*** *07:56:10.8±0.9,24.26N×121.72E,h33km,mb5.5/13, MS5.1/26,Error ellipse: s-maj=11.6km s-min=6.3km az=109.1*

JMA ***01*** *07:56:10.6±0.2,24.12N×121.43E,h63km,M5.3*

BJI ***01*** *07:56:11.2,24.23N×121.57E,h25km,mB5.3,mb5.1, ML5.3,Ms5.3,Msz5.2*

TAP ***01*** *07:56:11.1,24.08N×121.53E,h22km,ML5.2*

TAP Felt V J at Chiawan, V J at Hualien, IV J at Hehuanshan, IV J at Shilin, III J at Tachien, V J at Nanshan, IV J at Nanau, III J at Nioudou, III J at Hungye, III J at Ryuetan, II J at Suao, II J at Sanguang, I J at Yuchr, II J at Neicheng, II J at Ilan, II J at Nanjuang, II J at Liyutan, I J at Yuli, II J at Sanyi, I J at Taichung, II J at Alishan, II J at Hsinchu, I J at Mucha, III J at Tsauling, II J at Jungli (National Central University), II J at Taipai, II J at Gukeng, II J at Chenggung, II J at Lidau, II J, II J at Kuangyinshan, II J at Tsaushan, I J at Tauyuan, II J at Dacheng, II J at Chiayi, I J at Dapu, I J at Dungshan, II J at Szhu, I J at Nanshi, I J at Jiashian, I J at Jiali.

NEIC ***01*** *07:56:13.6±0.6,24.08N×121.61E,h45km±5km,mb5.2/65, MS5.1/9,Error ellipse: s-maj=4.4km s-min=4.0km az=155.0*

NEIC At least 2 people killed and 1 injured by a rockslide in Hua-lien County. A bridge collapsed at Taroko Gorge National Park. Felt in most parts of the island. Recorded [7 TAP] in Hua-lien; [5 TAP] in I-lan; [3 TAP] in Nan-t'ou, T'ai-chung and Yun-lin; [2 TAP] in Chia-i, Hsin-chu, Miao-li, T'ai-pei, T'ai-tung and T'ao-yuan; [1 TAP] in Kao-hsiung and T'ai-nan.

HRVD ***01*** *07:56:13.6±0.2,24.04N×121.57E,h28km,MW5.2/52, Centroid moment Tensor Solution. LP body waves: s41,c59;Mantle waves: s52,c93; Half duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr5.19±.26; Mθθ-2.42±.17; Mφφ-2.77±.22; Mrθ3.30±.29; Mrφ-3.89±.12; Mθr-3.00±.34; Best double couple: M₀7.3×10¹⁶ NP1:φs195°,δ53°,λ47°. NP2:φs73°,δ54°,λ132°. Principal axes: T 8.11, Plg57°, Azm43°; N -1.62, Plg33°, Azm225°; P -6.49, Plg1°, Azm134°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

IDC ***01*** *07:56:14.9±2.1,24.07N×121.66E,h62km±19km,mb4.5/25, mb1 4.7/29,mb1mx4.6/32,MS4.7/16,Ms1 4.7/16, ms1mx4.5/29 Error ellipse: s-maj=13.2km s-min=9.9km az=65.0*

ISC 01 07:56:10.6±0.1,24.06N±0.01×121.65E±0.01,h29km, h29km±.7km:pP-P,n429,σ1§22/468,mb5.1/104,MS5.0/45, 39C-31D,Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TWD	**Chiawan**	**0.05**	**294**	⇑*i*P	**Pn**	**07 56 15.6**	**+0.4**
TWD				S	**Sn**	**07 56 18.4**	**+0.6**
HWA	**Hwalien**	**0.09**	**206**	⇑*i*P	**Pn**	**07 56 16.2**	**+0.4**
ESL	**Shilin**	**0.31**	**219**	⇑*i*P	**Pb**	**07 56 17.3**	**-0.9**
WHF	**Hehuan Shan**	**0.36**	**284**	⇓*i*P	**Pb**	**07 56 17.7**	**-1.1**
ENA	**Nanau**	**0.38**	**13**	⇓*i*P	**Pb**	**07 56 19.9**	**+0.8**
ENA				S	**Sb**	**07 56 26.0**	**+1.1**
NNS	**Nan Shan**	**0.46**	**327**	⇑*i*P	**Pb**	**07 56 19.9**	**-0.3**
NNS				S	**Sb**	**07 56 26.1**	**-0.8**
TWT	**Tachien**	**0.47**	**294**	⇑*i*P	**Pb**	**07 56 20.0**	**-0.5**
WDT	**Danda**	**0.56**	**238**	⇓*i*P	**Pb**	**07 56 21.2**	**-0.7**
TWC	**Suao**	**0.58**	**18**	⇑*i*P	**Pb**	**07 56 23.2**	**+1.0**
ENTT	**Nioudou**	**0.58**	**353**	⇑*i*P	**Pb**	**07 56 22.9**	**+0.6**
EHY	**Hungye**	**0.63**	**209**	*e*P	**Pb**	**07 56 21.8**	**-1.2**
TWE	**Neicheng**	**0.66**	**2**	⇓*i*P	**Pb**	**07 56 24.2**	**+0.7**
NSK	**Sanguang**	**0.67**	**337**	⇑*i*P	**Pb**	**07 56 23.6**	**0.0**
SMLT	**Sun Moon Lake**	**0.71**	**256**	⇓*i*P	**Pb**	**07 56 23.4**	**-0.9**
SMLT				S	**Sb**	**07 56 31.6**	**-2.2**
ILA	**Ilan**	**0.71**	**7**	*e*P	**Pb**	**07 56 25.6**	**+1.3**
ILA				S	**Sb**	**07 56 36.1**	**+2.3**
TYC	**Yuchr**	**0.74**	**258**	⇑*i*P	**Pb**	**07 56 23.8**	**-1.1**
TWF1	**Yuli**	**0.77**	**205**	*e*P	**Pb**	**07 56 23.5**	**-1.9**
TWF1				S	**Sb**	**07 56 36.1**	**+0.5**
NSTT	**Nanjuang**	**0.82**	**314**	⇑*i*P	**Pn**	**07 56 26.2**	**0.0**
NSTT				S	**Sb**	**07 56 36.3**	**-0.6**
TWQ1	**Liyutan**	**0.85**	**290**	*e*P	**Pn**	**07 56 26.6**	**0.0**
TWQ1				S	**Sb**	**07 56 37.3**	**-0.5**
YUS	**Yu-Shan**	**0.85**	**228**	⇑*i*P	**Pn**	**07 56 26.6**	**-0.1**
NSY	**Sanyi**	**0.88**	**294**	*e*P	**Pn**	**07 56 27.7**	**+0.6**
TCU	**Taichung**	**0.89**	**276**	*e*P	**Pn**	**07 56 27.6**	**+0.4**
TWA	**Mucha**	**0.92**	**356**	⇓P	**Pn**	**07 56 28.9**	**+1.2**
TWA				S	**Sb**	**07 56 41.4**	**+1.6**
TATO	**Taipei**	**0.92**	**351**	*e*Pg	**Pn**	**07 56 28.6**	**+0.9**
TATO				*e*S	**Sb**	**07 56 40.9**	**+1.0**
ALS	**Alishan**	**0.95**	**235**	⇑P	**Pn**	**07 56 28.3**	**+0.3**
ALS				S	**Sb**	**07 56 40.4**	**-0.1**
HSN	**Hsinchu**	**0.96**	**320**	*e*P	**Pn**	**07 56 29.7**	**+1.4**
HSN				S	**Sb**	**07 56 42.5**	**+1.5**
TAP1	**Taipei**	**0.98**	**353**	*e*P	**Pn**	**07 56 29.8**	**+1.3**
TAP	**Taipei**	**0.98**	**352**	*e*P	**Pn**	**07 56 30.0**	**+1.4**
TAP				S	**Sn**	**07 56 43.8**	**+2.3**
CHKT	**Chengkung**	**0.99**	**195**	*e*P	**Pn**	**07 56 28.1**	**-0.5**
CHKT				S	**Sn**	**07 56 41.7**	**0.0**
TWB1	**Santiao Chiao**	**0.99**	**18**	*e*P	**Pn**	**07 56 30.2**	**+1.5**
CHN5	**Tsauling**	**1.00**	**243**	*e*P	**Pn**	**07 56 29.3**	**+0.6**
NCU	**National Centr**	**1.00**	**335**	*e*P	**Pn**	**07 56 30.4**	**+1.7**
NCU				S	**Sn**	**07 56 44.8**	**+2.8**
NWF	**Wu-fen Shan**	**1.01**	**7**	*e*P	**Pn**	**07 56 30.4**	**+1.4**
ELDTW	**Lidau**	**1.04**	**214**	*e*P	**Pn**	**07 56 28.3**	**-1.1**
ELDTW				S	**Sn**	**07 56 42.6**	**-0.4**
TWS1	**Kuangyinshan**	**1.06**	**349**	*e*P	**Pn**	**07 56 31.3**	**+1.7**
TWS1				S	**Sn**	**07 56 47.1**	**+3.6**
WGK	**Gukeng**	**1.06**	**250**	*e*P	**Pn**	**07 56 30.6**	**+1.0**
WGK				S	**Sn**	**07 56 44.6**	**+1.1**
CHN2	**Minshiung**	**1.20**	**244**	*e*P	**Pn**	**07 56 32.5**	**+1.0**
CHN4	**Tsaushan**	**1.20**	**234**	*e*P	**Pn**	**07 56 33.0**	**+1.4**
CHN4				S	**Sn**	**07 56 49.7**	**+2.8**
STYT	**Tauyuan**	**1.21**	**223**	*e*P	**Pn**	**07 56 32.3**	**+0.5**
TWY	**Chenhua**	**1.21**	**358**	*e*P	**Pn**	**07 56 33.1**	**+1.3**
TWY				S	**Sn**	**07 56 49.3**	**+1.9**
WTP	**Ta-pu**	**1.25**	**230**	*e*P	**Pn**	**07 56 33.5**	**+1.2**
CHY	**Chiayi**	**1.25**	**244**	*e*P	**Pn**	**07 56 33.5**	**+1.1**
CHY				S	**Sn**	**07 56 49.8**	**+1.5**
WTCT	**Ta-ch'eng**	**1.27**	**261**	*e*P	**Pn**	**07 56 33.2**	**+0.7**
WTCT				S	**Sn**	**07 56 50.4**	**+1.7**
YOJ	**Yonaguni jima**	**1.31**	**72**	P	**Pn**	**07 56 35.5**	**+2.3**
YOJ				S	**Sn**	**07 56 53.7**	**+4.0**
TWK	**Hsinying**	**1.32**	**234**	*e*P	**Pn**	**07 56 34.8**	**+1.4**
TWK				S	**Sn**	**07 56 52.1**	**+1.9**
TWG	**Pinlang**	**1.34**	**203**	*e*P	**Pn**	**07 56 31.9**	**-1.7**
CHN1	**Nanshi**	**1.35**	**230**	*e*P	**Pn**	**07 56 35.0**	**+1.3**
WSF	**Szhu**	**1.37**	**252**	*e*P	**Pn**	**07 56 35.2**	**+1.1**
WSF				S	**Sn**	**07 56 51.9**	**+0.6**
TTN	**Taitung**	**1.38**	**200**	*e*P	**Pn**	**07 56 33.5**	**-0.7**
SGST	**Jiashian**	**1.38**	**225**	*e*P	**Pn**	**07 56 35.7**	**+1.5**
SGST				S	**Sn**	**07 56 54.6**	**+3.0**
CHN8	**Yiju**	**1.50**	**242**	*e*P	**Pn**	**07 56 37.2**	**+1.4**
CHN8				S	**Sn**	**07 56 56.6**	**+2.1**
CHN3	**Shinhua**	**1.53**	**231**	*e*P	**Pn**	**07 56 39.3**	**+2.9**
ECL	**Taimali**	**1.59**	**204**	*e*P	**Pn**	**07 56 35.4**	**-1.8**
SCLT	**Jiali**	**1.60**	**237**	*e*P	**Pn**	**07 56 39.2**	**+1.9**
SCLT				S	**Sn**	**07 56 59.9**	**+2.8**
SSD	**Sandimen**	**1.61**	**216**	*e*P	**Pn**	**07 56 37.9**	**+0.4**
SSD				S	**Sn**	**07 57 00.1**	**+2.7**
PCYT	**Pengchaiyu**	**1.61**	**14**	*e*P	**Pn**	**07 56 38.4**	**+0.9**
TAI1	**Yung-k'ang**	**1.65**	**232**	*e*P	**Pn**	**07 56 40.4**	**+2.3**
TWM1	**Shoushan**	**1.67**	**223**	*e*P	**Pn**	**07 56 40.7**	**+2.4**
SGLT	**Jiouru**	**1.70**	**219**	*e*P	**Pn**	**07 56 40.9**	**+2.1**
EAST	**Anshuo**	**1.82**	**204**	*e*P	**Pn**	**07 56 39.2**	**-1.3**
TAW	**Tawu**	**1.83**	**202**	*e*P	**Pn**	**07 56 41.4**	**+0.8**
IRIF	**Iriomote-Funau**	**1.92**	**81**	P	**Pn**	**07 56 44.1**	**+2.2**
IRIF				S	**Sn**	**07 57 09.3**	**+4.0**
SCZT	**Fangliau**	**1.93**	**210**	*e*P	**Pn**	**07 56 42.1**	**+0.1**
SCZT				S	**Sn**	**07 57 07.9**	**+2.4**
HATJ	**Hateruma jima**	**1.97**	**90**	P	**Pn**	**07 56 45.1**	**+2.4**
HATJ				S	**Sn**	**07 57 10.8**	**+4.2**
PNG	**Penghu**	**1.98**	**256**	*e*P	**Pn**	**07 56 42.4**	**-0.4**
PNG				S	**Sn**	**07 57 06.8**	**0.0**
WDGT	**Dungji**	**1.99**	**247**	*e*P	**Pn**	**07 56 43.5**	**+0.6**
WDGT				S	**Sn**	**07 57 07.1**	**0.0**
LAY	**Lan-yu**	**2.01**	**183**	*e*P	**Pn**	**07 56 42.0**	**-1.2**
TWP	**Hsiaoliuchiu**	**2.08**	**215**	*e*P	**Pn**	**07 56 46.1**	**+1.9**
JKRS	**Kuro-shima**	**2.16**	**85**	P	**Pn**	**07 56 48.1**	**+2.7**
JKRS				S	**Sn**	**07 57 16.7**	**+5.2**
HEN	**Hengchun**	**2.21**	**202**	*e*P	**Pn**	**07 56 47.7**	**+1.6**
TWK1	**Hengchun**	**2.24**	**200**	*e*P	**Pn**	**07 56 48.4**	**+1.8**
JIJ	**Ishigaki jima**	**2.30**	**82**	P	**Pn**	**07 56 49.2**	**+1.8**
JIJ				S	**Sn**	**07 57 17.7**	**+2.8**
JTJ	**Tarama**	**2.84**	**78**	P	**Pn**	**07 56 57.3**	**+2.1**
JTJ				S	**Sn**	**07 57 34.0**	**+5.2**
QZH	**Quanzhou**	**2.92**	**288**	⇓*i*P	**Pn**	**07 56 54.1**	**-2.1**
QZH				S	**Sn**	**07 57 28.0**	**-2.7**
QZH				S	Sn		
	comp=N,6μm,0.7s						
QZH				S	Sn		
	comp=E,25μm,1.8s						
QZH				LR	LR		
	comp=N,56μm,12.8s						
QZH				LR	LR		
	comp=E,105μm,15.2s						
QZH				LR	LR		
	comp=Z,93μm,11.7s						
KNM	**Kinmen**	**2.96**	**278**	*e*P	**Pn**	**07 56 57.2**	**+0.5**
JMJ	**Miyako jima 2**	**3.41**	**76**	P	**Pn**	**07 57 05.4**	**+2.3**
JMJ				S	**Sn**	**07 57 46.4**	**+3.4**
JOGS	**Gusukube**	**3.50**	**78**	P	**Pn**	**07 57 06.1**	**+1.7**
JOGS				S	**Sn**	**07 57 49.7**	**+4.4**
BBP	**Basco**	**3.61**	**175**	⇑*e*P	**Pn**	**07 57 05.4**	**-0.6**
BBP				*e*S	**Sn**	**07 57 47.6**	**-0.6**
JKE	**Kume jima 2**	**5.17**	**63**	P	**Pn**	**07 57 29.4**	**+1.3**
JAGN	**Aguni-jima**	**5.65**	**62**	P	**Pn**	**07 57 35.9**	**+1.0**
SGCP	**Mt. Cagua**	**5.80**	**176**	⇑*e*P	**Pn**	**07 57 32.5**	**-4.5**
SGCP				*e*S	**Sn**	**07 58 41.7**	**-1.6**
APYP	**Conner**	**6.18**	**184**	⇑*e*P	**Pn**	**07 57 42.5**	**+0.2**
APYP				*e*S	**Sn**	**07 58 52.8**	**+0.1**
CVP	**Callao Caves**	**6.33**	**178**	*e*P	**Pn**	**07 57 44.1**	**-0.3**
JIH	**Iheya**	**6.43**	**61**	P	**Pn**	**07 57 45.9**	**0.0**
JOW	**Kunigami**	**6.60**	**64**	P	**Pn**	**07 57 47.5**	**-0.8**
	comp=Z,58nm,0.3s,baz=215,slow=8.7,SNR=83						
JOW				S	**Sn**	**07 59 03.4**	**+0.2**
	baz=313,slow=28,SNR=1.7						
JOW	**Kunigami**	**6.60**	**64**	P	**Pn**	**07 57 47.5**	**-0.7**
JOW				*e*S	**Sn**	**07 59 03.5**	**+0.3**
PALP	**Palanan**	**7.00**	**174**	⇑*e*P	**Pn**	**07 57 54.0**	**+0.1**
SSE	**Sheshan**	**7.02**	**357**	⇓P	**Pn**	**07 57 52.5**	**-1.7**
SSE				S	**Sn**	**07 59 07.6**	**-6.3**
SSE				AMB	AMB		
	comp=Z,198nm,0.9s						
SSE				S	Sn		
	comp=N,1μm,1.2s						
SSE				S	Sn		
	comp=E,1μm,1.3s						
SSE				LR	LR		
	comp=N,2μm,15.0s						
SSE				LR	LR		
	comp=E,14μm,15.0s						
SSE				LR	LR		
	comp=Z,12μm,15.0s						
JTK	**Tokunoshima**	**7.55**	**59**	P	**Pn**	**07 58 00.0**	**-1.6**
BALP	**Baler**	**8.28**	**180**	⇑*e*P	**P**	**07 58 04.8**	**-6.9**
BALP				*e*S	Sn	07 59 14.4	-31
NJ2	**Nanjing**	**8.34**	**343**	*e*P	**P**	**07 58 09.1**	**-3.4**
NJ2				AP		07 58 15.2	
NJ2				XP		07 58 21.5	
NJ2				S	**Sn**	**07 59 40.3**	**-6.4**
NJ2				XS		07 59 51.2	
NJ2				LR	LR		
	comp=N,27μm,11.3s						
NJ2				LR	LR		
	comp=E,22μm,11.9s						
JAM	**Amami Oshima**	**8.36**	**57**	P	**P**	**07 58 10.6**	**-2.2**
JMZ	**Minamidaito 2**	**8.86**	**77**	P	**P**	**07 58 15.5**	**-4.3**
JMZ				*e*S	Sn	**07 59 51.0**	**-8.7**
WHN	**Wuhan**	**9.15**	**316**	*e*P	**P**	**07 58 20.5**	**-3.4**
WHN				AMB	AMB		
	comp=Z,32nm,1.0s						
WHN				LR	LR		
	comp=N,13μm,9.0s						
WHN				LR	LR		
	comp=E,15μm,10.0s						
JNN	**Nakanoshima**	**9.33**	**50**	P	**P**	**07 58 26.2**	**0.0**
LQP	**Lukban**	**9.89**	**181**	*e*P	**P**	**07 58 47.0**	**+13**
TGY	**Tagaytay City**	**9.93**	**184**	P	**P**	**07 58 36.2**	**+1.6**
	comp=E,27nm,0.3s,baz=143,slow=10,SNR=1.7						
JIU2	**Izumi 2**	**11.69**	**42**	P	**P**	**07 59 00.4**	**+1.9**
QIZ	**Qiongzhong**	**12.07**	**248**	⇓P	**P**	**07 59 03.4**	**-0.3**
QIZ				S	**S**	**08 01 18.5**	**+0.2**
QIZ				LR	LR		
	comp=N,4μm,14.0s						
QIZ				LR	LR		
	comp=E,5μm,19.5s						
QIZ				LR	LR		
	comp=Z,4μm,15.0s						
QIZ	**Qiongzhong**	**12.07**	**248**	*e*Pn	**P**	**07 59 02.9**	**-0.8**
	comp=Z,44nm,1.3s						
QIZ				*e*Sn	**S**	**08 01 15.2**	**-3.1**
JNU	**Nakatsue**	**12.13**	**40**	P	**P**	**07 59 05.8**	**+1.3**
	comp=Z,1.3nm,0.3s,baz=217,slow=8.7,SNR=10						
ENH	**Enshi**	**12.47**	**302**	*e*Pn	**P**	**07 59 06.8**	**-2.2**
	comp=Z,18nm,0.7s						
TIA	**Tai'an**	**12.73**	**343**	*e*P	**P**	**07 59 10.4**	**-2.0**
TIA				LR	LR		
	comp=N,1μm,11.0s						
TIA				LR	LR		
	comp=E,3μm,10.0s						
JKD	**Kudamatsu**	**13.38**	**40**	P	**P**	**07 59 24.8**	**+3.8**
GYA	**Guiyang**	**13.77**	**283**	⇑*i*P	**P**	**07 59 23.8**	**-2.5**
GYA				AMB	AMB		
	comp=Z,20nm,1.5s						
GYA				LR	LR		
	comp=N,3μm,11.4s						
GYA				LR	LR		
	comp=E,15μm,12.3s						
GYA				LR	LR		
	comp=Z,21μm,13.2s						
INCN	**Inchon**	**14.05**	**17**	P	**P**	**07 59 33.3**	**+3.5**
	comp=Z,272nm,1.4s						
KS15	**Wonju Array Si**	**14.37**	**20**	*e*P	**P**	**07 59 40.8**	**+6.6**
DL2	**Dalian**	**14.80**	**360**	P	**P**	**07 59 42.0**	**+2.3**
DL2				AMB	AMB		
	comp=Z,40nm,0.9s						
DL2				AMB	AMB		
	comp=Z,260nm,4.3s						
DL2				LR	LR		
	comp=E,4μm,17.4s						
DL2				LR	LR		
	comp=Z,4μm,14.5s						
XAN	**Xi'an**	**14.91**	**315**	P	**P**	**07 59 39.6**	**-1.6**
XAN				XP		07 59 47.5	
XAN				S	**S**	**08 02 31.1**	**+5.0**
XAN				AMB	AMB		
	comp=Z,37nm,1.2s						
XAN				LR	LR		
	comp=E,10μm,12.5s						
XAN				LR	LR		
	comp=Z,13μm,14.3s						
TIY	**Taiyuan**	**15.73**	**332**	⇓P	**P**	**07 59 51.2**	**-0.6**
TIY				LR	LR		
	comp=E,10μm,13.0s						
TIY				LR	LR		
	comp=Z,12μm,13.0s						
BJT	**Baijiatuau**	**16.57**	**345**	*e*P	**P**	**08 00 03.8**	**+1.3**
	comp=Z,167nm,1.4s						
BJI	**Beijing**	**16.59**	**345**	P	**P**	**08 00 04.0**	**+1.3**
BJI				S	**S**	**08 03 09.4**	**+4.3**
BJI				AMB	AMB		
	comp=Z,593nm,2.5s						
BJI				LR	LR		
	comp=N,7μm,13.2s						
BJI				LR	LR		
	comp=E,3μm,11.5s						
BJI				LR	LR		
	comp=Z,4μm,15.8s						
KMI	**Kunming**	**17.23**	**277**	*e*P	**P**	**08 00 14.5**	**+3.6**
KMI				AP		08 00 18.3	
KMI				XP		08 00 19.5	
KMI				PP	PP	08 00 28.2	+3.0
KMI				AMB	AMB		
	comp=Z,344nm,4.1s						
KMI				LR	LR		
	comp=N,9μm,13.7s						
KMI				LR	LR		
	comp=E,12μm,11.9s						
KMI				LR	LR		
	comp=Z,14μm,12.8s						
CD2	**Chengdu**	**17.27**	**297**	⇑*i*P	**P**	**08 00 10.1**	**-1.2**
CD2				AP		08 00 16.2	
CD2				PPP	PPP	08 00 31.8	-2.1
CD2				S	**S**	**08 03 23.8**	**+3.1**
CD2				AMB	AMB		
	comp=Z,150nm,0.7s						
CD2				AMB	AMB		
	comp=Z,520nm,6.0s						
CD2				LR	LR		
	comp=Z,19μm,12.6s						
SNY	**Shenyang**	**17.79**	**5**	⇑P	**P**	**08 00 18.5**	**+0.7**
SNY				S	**S**	**08 03 39.6**	**+7.0**
SNY				AMB	AMB		
	comp=Z,2μm,5.8s						
SNY				LR	LR		
	comp=N,5μm,12.9s						
SNY				LR	LR		
	comp=E,2μm,12.2s						
SNY				LR	LR		
	comp=Z,7μm,14.2s						
JHJ	**Hachijo jima 2**	**18.29**	**56**	P	**P**	**08 00 25.1**	**+1.1**
	comp=Z,17nm,0.3s,baz=210,slow=9.1,SNR=5.7						
JHJ				LR	LR	08 07 00.5	
	comp=Z,1μm,21.2s,baz=243,slow=35						
KKM	**Kota Kinabalu**	**18.66**	**197**	⇓*e*P	**P**	**08 00 30.3**	**+1.7**
HHC	**Hu-ho-

VLA MLR MLR
comp=E,2µm,14.0s,MS5.0
VLA MLR MLR
comp=Z,4µm,14.0s,MS5.0
MDJ Mudanjiang 21.51 16 P **P** **08 00 57.4 -1.8**
MDJ AMB AMB
comp=Z,59nm,1.3s,mb4.9
MDJ LR LR
comp=N,3µm,17.2s,MS5.1
MDJ LR LR
comp=E,5µm,16.6s,MS5.1
MDJ LR LR
comp=Z,4µm,14.7s,MS5.0
MDJ Mudanjiang 21.51 16 *eP* **P** **08 00 58.4 -0.8**
comp=Z,121nm,1.4s,mb5.1
CHAT Chantaburi 21.74 242 P **P** **08 01 03.0 +1.3**
CHG Chiang Mai 21.76 260 P **P** **08 01 02.4 +0.5**
comp=Z,94nm,1.1s,mb5.1
CHG S **S** **08 05 01.1 +5.3**
NST Nakhon Sawan 21.87 252 P **P** **08 01 02.0 -0.9**
CM31 Chiang Mai Arr 21.87 260 *eP* **P** **08 01 03.2 +0.2**
comp=Z,22nm,0.6s,mb4.8
CMAR Chiang Mai Arr 21.87 260 P **P** **08 01 03.8 +0.8**
comp=Z,30nm,0.7s,mb4.8,baz=60,slow=8.0,SNR=84
CMAR PcP PcP 08 05 00.4 -2.1
comp=Z,1.6nm,0.6s,baz=28,slow=0.6,SNR=4.9
CMAR LR LR 08 10 03.2
comp=Z,2µm,18.4s,MS4.5,baz=75,slow=38
BDT Bhumibol Dam 22.23 257 P **P** **08 01 07.5 +0.9**
comp=Z,20nm,0.8s,mb4.6
NNT Nongplab 23.69 245 P **P** **08 01 23.5 +2.6**
GTA Gaotai 23.97 315 P **P** **08 01 24.2 +0.7**
GTA AP 08 01 28.3
GTA XP 08 01 31.3
GTA PP PP 08 02 00.5 +2.8
GTA PPP PPP 08 02 10.4 +2.7
GTA PCP PcP 08 05 06.2 -0.5
GTA S **S** **08 05 41.0 +5.8**
GTA XS 08 05 48.3
GTA SCS ScS 08 12 31.1 +3.8
GTA AMB AMB
comp=Z,118nm,1.5s,mb5.1
GTA AMB AMB
comp=Z,939nm,4.2s
GTA LR LR
comp=N,3µm,12.2s,MS5.2
GTA LR LR
comp=E,4µm,13.3s,MS5.2
GTA LR LR
comp=Z,6µm,13.3s,MS5.2
HIA Hailar 25.20 357 *eP* **P** **08 01 33.5 -1.7**
comp=Z,21nm,0.9s,mb4.7
ASAJ Asahikawa 26.35 35 P **P** **08 01 44.6 -1.3**
comp=Z,5.0nm,0.3s,mb4.5,baz=249,slow=9.5,SNR=5.0
ASAJ LR LR 08 12 43.4
comp=Z,2µm,18.8s,MS4.6,baz=349,slow=38
KLR Kul'dur 26.35 15 *eP* **P** **08 01 43.5 -2.3**
KLR pmax pmax
comp=Z,30nm,1.2s,mb4.7
KLR MLR MLR
comp=E,3µm,14.0s
KLR MLR MLR
comp=Z,8µm,14.0s,MS5.4
ULN Ulaanbaatar 26.44 338*c i* P **P** **08 01 46.0 -0.7**
ULN Ulaanbaatar 26.44 338 *eP* **P** **08 01 45.8 -0.9**
comp=Z,71nm,1.2s,mb5.1
SONM Songino Array 26.65 337 P **P** **08 01 47.9 -0.7**
comp=Z,20nm,0.7s,mb4.8,baz=158,slow=9.1,SNR=46
SHL Shillong 27.04 279⇑ *i P* **P** **08 01 54.5 +2.1**
SHL *eS* **S** **08 06 29.5 +3.1**
LSA Lhasa 27.73 288 P **P** **08 02 00.3 +1.6**
LSA AP pP 08 02 08.9 +1.6
LSA XP sP 08 02 11.9 +0.8
LSA LR LR
comp=N,1µm,14.7s,MS5.2
LSA LR LR
comp=E,4µm,15.4s,MS5.2
LSA LR LR
comp=Z,7µm,15.4s,MS5.3
LSA Lhasa 27.73 288 *eP* **P** **08 01 59.6 +0.9**
comp=Z,68nm,0.6s,mb5.5
IPM Ipoh 27.75 229⇑ *eP* **P** **08 01 59.1 +0.1**
AGT Agartala 27.75 276⇑ *i* **P** **08 02 11.0 +12**
AGT ‖ *i* 08 02 53.0
KGM Kluang 28.19 222‖ *eP* **P** **08 02 09.1 +6.2**
YSS Yuzh-Sakhalins 28.41 31⇑ *eP* **P** **08 02 02.0 -2.6**
YSS pmax pmax
comp=Z,40nm,1.1s,mb5.0
YSS MLR MLR
comp=N,1µm,16.0s,MS4.7
YSS MLR MLR
comp=Z,2µm,16.0s,MS4.7
YSS MLR MLR
comp=E,900nm,15.0s,MS4.7
YSS Yuzh-Sakhalins 28.41 31 *eP* **P** **08 02 02.0 -2.6**
comp=E,52nm,1.1s,mb5.1
ZAK Zakamensk 29.91 336 *eP* **P** **08 02 16.2 -1.8**
TLY Talaya 30.85 338⇑ *iP* **P** **08 02 24.3 -2.0**
TLY *e* 08 05 27.1
TLY pmax pmax
comp=Z,504nm,2.1s,mb6.0
MOY Mondy 31.80 335 *eP* **P** **08 02 33.4 -1.3**
GUN Gumba 32.31 285 *eP* **P** **08 02 39.3 -0.1**
comp=Z,134nm,0.9s,mb5.8
KKN Kakani 32.84 284 *eP* **P** **08 02 43.3 -0.7**
comp=Z,109nm,1.0s,mb5.8
DMN Daman 33.00 284 *eP* **P** **08 02 45.0 -0.4**
comp=Z,191nm,1.2s,mb5.9
GKN Gorkha 33.41 285 *eP* **P** **08 02 48.3 -0.6**
comp=Z,233nm,1.4s,mb5.9
WMQ Urumqi 34.05 314 *eP* **P** **08 02 54.2 -0.1**
WMQ AP pP 08 03 03.9 +0.9
WMQ XP sP 08 03 07.8 +1.0
WMQ PP PP 08 04 08.5 -0.2
WMQ PCP PcP 08 05 31.9 +0.2
WMQ S **S** **08 08 16.2 -0.7**
WMQ XS 08 08 32.2
WMQ SCP 08 09 13.0
WMQ PCS 08 09 16.9
WMQ SS SS 08 10 24.5 -0.8
WMQ SCS ScS 08 13 13.5 -0.3
WMQ AMB AMB
comp=Z,32nm,0.8s,mb5.3
WMQ AMB AMB
comp=Z,286nm,5.6s
WMQ LR LR
comp=N,3µm,16.0s,MS5.2
WMQ LR LR
comp=E,3µm,17.1s,MS5.2
WMQ LR LR
comp=Z,5µm,17.9s,MS5.3
DANN Dangsing 34.17 285 *eP* **P** **08 02 56.8 +1.3**
BOD Bodaibo 34.17 353 *eP* **P** **08 02 51.3 -3.9**
KOLN Koldanda 34.33 284 *eP* **P** **08 02 56.3 -0.6**
comp=Z,91nm,0.9s,mb5.7
VIS Vishakhapatnam 36.27 267 *eP* **P** **08 03 14.7 +1.2**
YAK Yakutsk 38.35 6 *eP* **P** **08 03 27.6 -2.9**
YAK *e* 08 04 58.1
YAK *e*PPP PPP 08 05 14.7 -10
YAK *eS* **S** **08 09 28.6 +5.9**
YAK *e* 08 13 31.0
YAK pmax pmax
comp=Z,6.0nm,0.8s,mb4.4
YAK pmax pmax
comp=Z,4.0nm,0.9s,mb4.2
YAK pmax pmax
comp=N,4.0nm,1.1s
YAK smax
comp=N,2.0nm,1.1s
YAK MLR MLR
comp=N,2µm,15.0s,MS5.0
YAK MLR MLR
comp=Z,2µm,15.0s,MS5.0
YAK MLR MLR
comp=E,410nm,14.0s,MS5.0
YAK Yakutsk 38.35 6 *eP* **P** **08 03 28.3 -2.2**
comp=E,16nm,0.6s,mb4.9
MKAR Makanchi Array 38.72 316 P **P** **08 03 33.4 -0.4**
comp=E,51nm,0.6s,mb5.4,baz=106,slow=8.8,SNR=230
MKAR PcP PcP 08 05 43.8 -1.9
comp=E,2.7nm,0.6s,baz=86,slow=5.0,SNR=4.7
MKAR LR LR 08 21 05.2
comp=E,3µm,18.2s,MS5.1,baz=101,slow=38
MKAR Makanchi Array 38.72 316 *i* **P** **08 03 33.4 -0.4**
MKAR pmax pmax
comp=Z,30nm,0.7s

KGD Kothagudem 38.75 268 *eP* **P** **08 03 34.5 +0.1**
KGD *e* 08 09 47.4
KGD *eSS* SS 08 12 36.5 +24
KGD *e* 08 15 16.0
ASOR Ausora 39.41 287 *eP* **P** **08 03 39.5 -0.3**
WAU Wau 39.66 139 *eP* **P** **08 03 43.4 +1.5**
NDI New Delhi 39.90 286⇑ *iP* **P** **08 03 42.5 -1.3**
AYAN Aya Nagar 40.00 286 *eP* **P** **08 03 43.8 -0.7**
SONA Sohna 40.05 286 *eP* **P** **08 03 44.5 -0.5**
BHGR Bahadurgarh 40.15 287 *eP* **P** **08 03 45.7 -0.1**
KKR Kurukshetra 40.17 289 *eP* **P** **08 03 47.0 +1.0**
BHPL Bhopal 40.39 278 *eP* **P** **08 03 48.4 +0.6**
BHPL *e* pP 08 03 56.5 -0.2
comp=Z,29nm,0.9s
KUDL Kundal 40.58 286 *eP* **P** **08 03 48.4 -1.0**
ZAL Zalesovo 40.58 327 P **P** **08 03 47.8 -1.3**
comp=Z,33nm,1.2s,mb4.8,baz=262,slow=8.1,SNR=31
ZAL LR LR 08 22 39.9
comp=Z,3µm,18.2s,MS5.2,baz=249,slow=39
HYB Hyderabad 40.72 269 *i P* **P** **08 03 51.0 +0.4**
HYB Hyderabad 40.72 269 *eP* **P** **08 03 51.0 +0.4**
KHET Khetri 41.19 286 *eP* **P** **08 03 53.9 -0.4**
KSH Kashi 41.32 303 *eP* **P** **08 03 56.1 +0.8**
KSH *e*AP pP 08 04 05.0 +0.9
KSH *e*XP sP 08 04 09.0 +1.2
KSH *e*PP PP 08 05 34.2 +0.5
KSH *e*PCP PcP 08 05 54.4 +0.3
KSH *e*SCP 08 09 40.6
KSH *e*PCS 08 09 44.4
KSH *eS* **S** **08 10 06.6 -1.0**
KSH *eXS* 08 10 22.5
KSH *eSS* SS 08 13 05.3 -1.7
KSH *eSCS* ScS 08 13 55.0 0.0
KSH AMB AMB
comp=Z,30nm,0.7s,mb5.0
KSH AMB AMB
comp=Z,280nm,2.7s,mb5.4
KSH LR LR
comp=N,1µm,12.2s,MS5.4
KSH LR LR
comp=E,3µm,13.9s,MS5.4
CUD Cuddapah 41.45 265 *eP* **P** **08 03 57.4 +0.8**
CUD *e*pP pP 08 04 04.6 -0.8
CUD *eS*P sP 08 04 10.6 +1.5
PMG Port Moresby 41.56 140 P **P** **08 03 57.4 -0.2**
comp=E,31nm,1.0s,mb4.9,baz=349,slow=6.0,SNR=9.7
PMG LR LR 08 20 57.6
comp=E,517nm,18.9s,MS4.4,baz=158,slow=36
PMG Port Moresby 41.56 140 *eP* **P** **08 03 57.9 +0.2**
comp=E,62nm,1.3s,mb5.1
ULHL Ulahol 41.58 307 P **P** **08 03 58.5 +1.1**
SNR=14
NVS Novosibirsk 41.84 327 *i P* **P** **08 03 57.5 -1.9**
NVS *i* pP 08 04 06.3 -1.9
NVS *i* 08 05 38.0
NVS pmax pmax
comp=N,67nm,1.8s
NVS pmax pmax
comp=Z,63nm,1.8s,mb4.9
NVS pmax pmax
comp=E,38nm,1.6s
FITZ Fitzroy Crossi 42.08 174 *eP* **P** **08 03 58.6 -3.3**
comp=E,7.0nm,1.3s,mb4.1
TKM2 Tokmak 2 42.17 308 P **P** **08 04 03.1 +0.9**
SNR=43
KZA Kyzart 42.27 307 P **P** **08 04 04.4 +1.4**
SNR=27
AJM Ajmer 42.40 284⇑ *iP* **P** **08 04 03.0 -1.3**
KURK Kurchatov 42.46 320 *eP* **P** **08 04 03.3 -1.2**
KBK Karagaybulak 42.59 308 P **P** **08 04 06.9 +1.1**
SNR=10.0
CHMS Chumysh 42.80 308 P **P** **08 04 07.9 +0.5**
SNR=8.6
UCH Uchtor 42.83 307 P **P** **08 04 09.0 +1.3**
SNR=30
FRU Bishkek 42.87 308 *eP* **P** **08 04 09.0 +1.1**
FRU *e* pP 08 04 16.0 -0.8
FRU pmax pmax
comp=Z,60nm,1.8s,mb5.0
FRU MLR MLR
comp=Z,2µm,16.0s,MS5.2
AAK Ala-Archa 42.92 307 P **P** **08 04 09.2 +0.8**
SNR=10
AML Almayashu 43.42 307 P **P** **08 04 13.9 +1.4**
SNR=26
EKS2 Erkin-Say 43.44 307 P **P** **08 04 13.2 +0.6**
SNR=11
POO Poona 44.71 272 *eP* **P** **08 04 23.7 +0.5**
POO *e* 08 04 24.8
comp=Z,55nm,0.5s
WRAB Tennant Creek 45.44 163 *eP* **P** **08 04 26.9 -2.1**
comp=Z,45nm,0.8s,mb5.3
WRA Warramunga Arr 45.45 163 P **P** **08 04 26.9 -2.2**
comp=Z,13nm,0.5s,mb5.0,baz=344,slow=8.6,SNR=197
WB2 Warramunga Arr 45.45 163 *eP* **P** **08 04 26.5 -2.6**
KKAR Karatay Array 45.88 307 *i P* **P** **08 04 31.9 -0.3**
KKAR pmax pmax
comp=Z,27nm,1.0s,mb5.1
TIXI Tiksi 47.80 3 *eP* **P** **08 04 42.8 -4.1**
TIXI S **S** **08 11 28.0 -13**
TIXI pmax pmax
comp=Z,402nm,1.4s,mb6.3
TIXI Tiksi 47.80 3 *eP* **P** **08 04 44.1 -2.8**
comp=Z,12nm,0.5s,mb5.2
BVA0 Borovoye Array 48.04 321 *i P* **P** **08 04 48.1 -0.9**
BVA0 pmax pmax
comp=Z,1.0nm,0.5s,mb4.1
BVAR Borovoye Array 48.04 321 P **P** **08 04 48.1 -0.9**
comp=Z,16nm,0.5s,mb5.3,baz=104,slow=9.1,SNR=72
BVAR PcP PcP 08 06 15.5 -1.5
comp=Z,2.7nm,0.5s,baz=82,slow=3.3,SNR=4.7
BRVK Borovoye 48.11 321 *eP* **P** **08 04 48.8 -0.8**
FX1 Attu Island--F 48.15 40 *eP* **P** **08 04 48.8 -1.1**
QUE Quetta 48.68 290 *eP* **P** **08 04 53.5 -0.8**
ZRNK Zerenda 48.82 320 *eP* **P** **08 04 53.9 -1.2**
AS12 Alice Springs 48.91 165 *eP* **P** **08 04 54.5 -1.6**
comp=Z,65nm,1.8s,mb5.4
ASAR Alice Springs 48.91 165 P **P** **08 04 54.5 -1.6**
comp=Z,7.0nm,0.5s,mb5.0,baz=339,slow=7.4,SNR=96
ASAR PcP PcP 08 06 17.9 -2.6
comp=Z,2.6nm,0.6s,baz=340,slow=2.8,SNR=4.3
CTA Charters Tower 50.00 149 *eP* **P** **08 05 03.9 -0.7**
comp=Z,9.1nm,0.9s,mb4.8
CTA Charters Tower 50.00 149 P **P** **08 05 03.5 -1.0**
comp=Z,4.6nm,0.6s,mb4.7,baz=322,slow=9.7,SNR=11
CTA LR LR 08 26 01.4
comp=Z,521nm,18.0s,MS4.6,baz=337,slow=36
BILL Bilibino 51.66 20 *eP* **P** **08 05 13.4 -3.1**
BILL pmax pmax
comp=Z,22nm,1.1s,mb5.0
BILL MLR MLR
comp=Z,700nm,16.0s,MS4.8
BILL Bilibino 51.66 20 *eP* **P** **08 05 14.2 -2.3**
comp=Z,30nm,1.2s,mb5.1
BILL *e*PP PP 08 07 19.1 +4.4
FORT Forrest 54.87 173 *eP* **P** **08 05 38.6 -2.3**
comp=Z,88nm,0.7s,mb5.9
KLBR Kellerberrin 55.46 184 *eP* **P** **08 05 42.3 -2.8**
comp=Z,9.5nm,0.6s,mb5.0
ARU Arti 55.46 323⇑ *iP* **P** **08 05 42.8 -2.0**
ARU *e* 08 06 40.8
ARU *e* 08 07 46.6
ARU *eS* **S** **08 13 27.3 +1.4**
ARU pmax pmax
comp=Z,70nm,1.3s,mb5.5
ARU MLR MLR
comp=Z,600nm,18.0s,MS4.7
ARU MLR MLR
comp=N,800nm,16.0s,MS5.0
ARU MLR MLR
comp=E,500nm,17.0s,MS5.0
STKA Stephens Creek 58.80 160 *eP* **P** **08 06 06.5 -2.3**
comp=E,8.9nm,0.6s,mb5.0
STKA Stephens Creek 58.80 160 P **P** **08 06 06.2 -2.6**
comp=E,8.9nm,0.5s,mb5.0,baz=338,slow=6.4,SNR=30
STKA LR LR 08 34 21.7
comp=E,310nm,19.8s,MS4.4,baz=22,slow=39
TNA Tin City 60.26 27 *eP* **P** **08 06 17.4 -0.9**
TNA *e* pP 08 06 27.3 -0.2
ANM Nome 61.24 28 *eP* **P** **08 06 24.2 -0.8**
GNI Garni 65.22 305*c iP* **P** **08 06 51.9 +0.3**
GNI pmax pmax
comp=Z,77nm,1.3s
GNI MLR MLR
comp=Z,800nm,17.0s

GNI Garni 65.22 305 *eP* **P** **08 06 51.7 +0.1**
comp=Z,116nm,1.4s,mb5.7
GNI *e* pP 08 07 01.1 +0.3
TOO Toolangi 65.28 159 *eP* **P** **08 06 50.9 -1.1**
comp=Z,5.3nm,0.5s,mb4.8
ZEI Tsey 65.35 308 *eP* **P** **08 06 38.0 -14**
ZEI *e* 08 07 26.0
ZEI *e* 08 15 37.0
ZEI pmax pmax
comp=Z,100nm,5.0s
ZEI MLR MLR
comp=Z,1µm,18.0s,MS5.1
GOF Gofitskoye 65.55 310 *eP* **P** **08 06 53.0 -0.6**
GOF *i* pP 08 07 02.0 -0.8
GOF pmax pmax
comp=Z,85nm,1.4s,mb5.6
GOF MLR MLR
comp=E,4µm,16.0s
GOF MLR MLR
comp=Z,2µm,17.0s,MS5.4
SVW Sparrevohn 65.76 32 *eP* **P** **08 06 54.2 -0.5**
KIV Kislovodsk 66.00 309*c iP* **P** **08 06 56.0 -0.5**
KIV pmax pmax
comp=Z,107nm,1.0s,mb5.8
KIV MLR MLR
comp=Z,200nm,20.0s,MS4.3
KIV Kislovodsk 66.00 309 *eP* **P** **08 06 55.5 -1.0**
comp=Z,52nm,1.1s,mb5.5
KIV *e* pP 08 07 04.8 -0.9
IMA Indian Mountai 66.12 26 *eP* **P** **08 06 56.3 -0.6**
VOR Voronezh 66.91 318 P **P** **08 07 00.0 -2.2**
VOR *e* pP 08 07 09.5 -1.9
VOR pmax pmax
comp=Z,60nm,1.4s,mb5.4
VOR pmax pmax
comp=E,70nm,1.2s
MOS Moscow 67.16 322 *eP* **P** **08 07 01.9 -1.8**
MOS *e* pP 08 07 10.8 -2.1
MOS *e* 08 07 28.3
MOS *e* 08 09 26.8
MOS *eS* S 08 15 50.3 -4.3
MOS pmax pmax
comp=Z,60nm,0.9s,mb5.6
MOS MLR MLR
comp=Z,1µm,16.0s,MS5.1
RSO Redoubt South 67.24 32 *eP* **P** **08 07 03.2 -0.9**
APA Apatity 67.35 335⇑ *eP* **P** **08 07 04.4 -0.3**
APA pmax pmax
comp=Z,43nm,1.4s,mb5.3
APA MLR MLR
comp=Z,2µm,14.0s,MS5.5
OBN Obninsk 67.86 322 *eP* **P** **08 07 05.3 -2.8**
OBN *e*PS PS 08 16 10.7 -20
OBN pmax pmax
comp=Z,39nm,1.5s,mb5.2
OBN MLR MLR
comp=Z,600nm,19.0s,MS4.8
OBN Obninsk 67.86 322 *eP* **P** **08 07 04.7 -3.4**
OBN *e* pP 08 07 14.9 -2.4
PWA Palmer West 68.42 31 *eP* **P** **08 07 09.7 -1.8**
MCK McKinley 68.46 29 *eP* **P** **08 07 10.1 -1.6**
comp=Z,12nm,0.7s,mb5.0
PMS Palmer South 68.64 31 *eP* **P** **08 07 12.8 -0.1**
COLA College 68.70 27 *eP* **P** **08 07 13.1 -0.1**
PMR Palmer 68.78 31 *eP* **P** **08 07 13.4 -0.3**
JOF Joensuu 69.02 331 *eP* **P** **08 07 14.0 -1.2**
SML Sawmill 69.11 31 *eP* **P** **08 07 14.5 -1.2**
ILAR Eielson Array 69.13 27 P **P** **08 07 13.8 -2.0**
comp=Z,5.9nm,0.5s,mb4.8,baz=268,slow=4.5,SNR=146
KEV Kevo 69.25 338 *ep* **P** **08 07 14.7 -1.8**
ARCES ARCESS Array B 69.81 338 P **P** **08 07 19.1 -0.8**
comp=Z,3.3nm,0.7s,mb4.4,baz=63,slow=8.1,SNR=9.6
ARCES LR LR 08 41 25.3
comp=Z,781nm,19.0s,MS5.0,baz=57,slow=39
ELZG Elazig 69.95 304 *i P* **P** **08 07 17.1 -4.2**
ELZG *i* S pP 08 07 28.7 -1.7
ARSS Ar Rass 70.04 290 P **P** **08 07 23.5 +1.5**
TOA Tolsona 70.04 30 *eP* **P** **08 07 21.2 -0.2**
EYAK Cordova Ski Ar 70.62 32 *eP* **P** **08 07 24.0 -1.0**
EYAK *e* pP 08 07 33.6 -0.6
HILS Ha'il 70.81 292 P **P** **08 07 26.8 0.0**
GZT Gaziantep 71.34 303 *i P* **P** **08 07 21.6 -8.2**
GZT *i* S pP 08 07 36.1 -2.9
KAF Kangasniemi 71.47 330 *ep* **P** **08 07 28.9 -1.2**
baz=73,slow=5.8
SIM Simferopol' 71.74 312 *eP* **P** **08 07 30.7 -1.3**
SIM pmax pmax
comp=Z,30nm,0.8s,mb5.3
SIM MLR MLR
comp=Z,530nm,17.8s,MS4.8
FINES FINESS Array B 71.77 330 P **P** **08 07 30.4 -1.5**
comp=Z,3.3nm,0.6s,mb4.5,baz=61,slow=5.5,SNR=39
FINES LR LR 08 41 47.0
comp=Z,1µm,19.2s,MS5.2,baz=182,slow=38
FINES FINESS Array B 71.77 330 *i P* **P** **08 07 30.4 -1.5**
FINES pmax pmax
comp=Z,3.0nm,0.6s
DAWY Dawson 72.45 27 *eP* **P** **08 07 34.8 -1.1**
MNK Minsk 72.91 322 *eP* **P** **08 07 37.0 -1.7**
INK Inuvik 73.18 22 *eP* **P** **08 07 38.9 -1.2**
comp=Z,33nm,1.1s,mb5.2
AKASG Malin Array Be 73.25 318 P **P** **08 07 38.0 -2.7**
comp=Z,3.5nm,0.6s,mb4.5,baz=59,slow=5.9,SNR=17
AKASG LR LR 08 43 34.3
comp=Z,350nm,19.1s,MS4.7,baz=60,slow=39
KBRS Khaybar 73.47 291 P **P** **08 07 43.2 +0.7**
BRTR Keskin Array B 73.59 307 P **P** **08 07 42.1 -0.8**
comp=Z,9.9nm,0.9s,mb4.8,baz=104,slow=5.1,SNR=33
BRTR LR LR 08 45 34.1
comp=Z,174nm,18.4s,MS4.4,baz=120,slow=40
KSHT Keshet 74.01 299 P **P** **08 07 45.5 -0.1**
HMDT Nahal Hemdat 74.47 299 P **P** **08 07 48.1 -0.2**
HNTI Hanita 74.49 300 P **P** **08 07 49.2 +0.9**
KIS Kishinev 74.65 315 *eP* **P** **08 07 47.0 -2.0**
KIS *e* pP 08 07 56.0 -2.3
KIS *e* 08 08 02.0
KIS MLR MLR
comp=N,400nm,18.0s,MS5.0
KIS MLR MLR
comp=E,600nm,18.0s,MS5.0
KIS MLR MLR
comp=Z,900nm,18.0s,MS5.1
KIS MLR MLR
comp=Z,900nm,18.0s
HAF Haifa 74.71 299 P **P** **08 07 50.2 +0.6**
OFRI 'Ofer 74.79 299 P **P** **08 07 49.6 -0.5**
SLTI Sal'it 74.87 299 P **P** **08 07 50.2 -0.4**
JMQS Jabal Moqyreh 75.29 295 P **P** **08 07 53.1 0.0**
ZFRI Zfri 75.31 297 P **P** **08 07 52.6 -0.5**
CSS Prodhromos 75.33 302 *eP* **P** **08 07 52.2 -0.9**
CSS *e* pP 08 08 01.4 -1.0
PRNI Paran 75.52 297 P **P** **08 07 53.9 -0.4**
SUW Suwalki 75.65 323 *eP* **P** **08 07 53.1 -1.5**
SUW MLR MLR 08 43 56.2
comp=Z,2µm,18.8s,MS5.3
SUW Suwalki 75.65 323 P **P** **08 07 53.6 -1.0**
EIL Elat 75.79 296 P **P** **08 07 55.3 -0.6**
ALWS Ilw as Safayha 75.82 296 P **P** **08 07 56.0 0.0**
KZIT Kziot 75.83 298 P **P** **08 07 55.3 -0.8**
JMOS Jabal al Moall 75.83 296 P **P** **08 07 56.0 -0.1**
HARR Harsova 76.00 313‖ *iP* **P** **08 08 05.4 +8.6**
HAQS Haql 76.01 296 P **P** **08 07 58.5 +1.3**
BDAS Al Bad' 76.08 295 P **P** **08 07 57.4 -0.2**
DAG Danmarks Havn 76.56 351 *i P* **P** **08 07 59.0 -0.3**
DAG Danmarks Havn 76.56 351 *eP* **P** **08 07 59.0 -0.3**
SIT Sitka 76.88 33 *eP* **P** **08 08 01.0 -0.4**
MLR Muntele Rosu 77.04 314 P **P** **08 08 01.9 -0.6**
comp=Z,3.5nm,0.5s,mb4.5,baz=164,slow=2.2,SNR=9.4
MLR Muntele Rosu 77.04 314‖ *iP* **P** **08 08 02.4 -0.1**
KWP Kalwaria 77.55 319 *eP* **P** **08 08 04.7 -0.5**
KWP *e* pP 08 08 14.6 0.0
KWP MLR MLR 08 45 53.9
comp=Z,600nm,22.5s,MS4.9
KWP Kalwaria 77.55 319 P **P** **08 08 04.8 -0.5**
comp=Z,114nm,1.4s,mb5.6
NB2 NORSAR Subarra 78.53 332 P **P** **08 08 08.3 -2.1**
comp=Z,6.2nm,0.8s,mb4.6,baz=62,slow=5.3
NOA NORSAR Array B 78.53 332 P **P** **08 08 08.3 -2.1**
comp=Z,3.1nm,0.7s,mb4.3,baz=59,slow=5.6,SNR=16
NOA LR LR 08 46 07.1
comp=Z,2µm,18.3s,MS5.5,baz=45,slow=38
CRVS Cervenica-Dubn 78.58 319 *eP* **P** **08 08 11.1 +0.2**
CRVS *e* pP 08 08 19.7 -0.6
RES Resolute Bay 78.72 9 *eP* **P** **08 08 09.8 -1.5**

comp=Z,16nm,1.3s,mb4.8
DLBC Dease Lake 78.84 31 eP P 08 08 12.6 +0.5
OJC Ojcow 79.04 320 eP P 08 08 12.5 -0.9
NIE Niedzica 79.07 319 eP P 08 08 13.5 -0.1
NIE e pP 08 08 22.5 -0.4
PSZ Piszkesteto 79.94 318 ePcP PcP 08 08 26.9 +0.8
PSZ Piszkesteto 79.94 318 P P 08 08 18.4 0.0
comp=Z,28nm,1.5s,mb5.0
PSZ e pP 08 08 27.1 -0.5
RAC Raciborz 80.03 320 eP P 08 08 18.7 -0.1
RAC MLR MLR 08 46 36.7
comp=Z,800nm,17.8s,MS5.1
OKC Ostrava-Krasne 80.17 320 eP P 08 08 26.1 +6.6
OKC L 08 46 30.0
comp=Z,0.6nm,16.5s
BOLS Boljevac 80.31 314 iP P 08 08 18.9 -1.4
VYHS Vyhne 80.34 319 i P P 08 08 19.9 -0.5
VYHS e pP 08 08 27.9 -1.9
MORC Moravsky Berou 80.55 320 P P 08 08 21.4 -0.1
comp=Z,23nm,1.5s,mb4.9
MORC e pP 08 08 30.2 -0.7
KSP Ksiaz 80.79 322 eP P 08 08 22.9 +0.1
KSP e pP 08 08 32.1 0.0
KSP MLR MLR 08 48 50.6
comp=Z,2µm,17.9s,MS5.4
KSP Ksiaz 80.79 322 eP P 08 08 22.0 -0.8
KSP e 08 08 28.6
KSP MLR MLR
comp=Z,2µm,17.9s,MS5.5
KSP Ksiaz 80.79 322 eP P 08 08 22.0 -0.8
KSP epP pP 08 08 24.8 -7.3
KSP ePcP PcP 08 08 28.6 -1.1
KSP LR LR
comp=Z,2µm,17.9s,MS5.5
DPC Dobruska-Polom 81.00 321 eP P 08 08 21.7 -2.2
DPC ePCP PcP 08 08 31.0 +0.4
DPC L 08 47 20.0
comp=Z,1.0nm,17.4s
UPC Upice 81.10 322 eP P 08 08 25.1 +0.7
UPC ex x 08 08 33.6
KRIS Kristallenia 81.24 305 eP P 08 08 25.0 -0.4
VRAC Vranov 81.31 320 P P 08 08 24.0 -1.5
comp=Z,1.1nm,0.3s,mb4.2,baz=24,slow=9.0,SNR=5.1
SKO Skopje 81.42 312 eP P 08 08 25.0 -1.2
SKO i pP 08 08 35.2 -0.4
BRG Berggiesshubel 82.10 322 eP P 08 08 30.0 +0.4
BRG e pP 08 08 39.5 +0.5
BRG pmax pmax
comp=Z,19nm,1.6s,mb4.8
BRG MLR MLR
comp=N,980nm,16.6s,MS5.4
BRG MLR MLR
comp=E,820nm,16.6s,MS5.4
BRG MLR MLR
comp=Z,1µm,16.6s,MS5.4
BRG Berggiesshubel 82.10 322 eP P 08 08 30.0 +0.4
comp=Z,19nm,1.6s,mb4.8
BRG e pP 08 08 39.5 +0.5
BRG LR LR
comp=Z,1µm,16.6s,MS5.4
PRU Pruhonice 82.18 321 eP P 08 08 38.9 +8.9
PRU L 08 49 10.0
comp=Z,1.1nm,18.0s
CLL Collm 82.41 323 P P 08 08 30.0 -1.2
CLL e 08 08 37.0
CLL e*PP pP 08 08 44.0 +3.4
CLL e 08 11 29.0
CLL ePP PP 08 11 45.0 +2.7
CLL Collm 82.41 323 eP P 08 08 29.0 -2.2
CLL e pP 08 08 37.0 -3.6
YKW3 Yellowknife Ar 82.87 23 eP P 08 08 32.3 -1.1
YKA Yellowknife Ar 82.92 23 P P 08 08 32.6 -1.0
comp=Z,7.9nm,0.7s,mb4.9,baz=311,slow=5.0,SNR=171
KHC Kasperske Hory 83.14 321 eP P 08 08 34.7 -0.3
KHC ePCP PcP 08 08 41.6 +1.6
KHC L 08 50 20.0
comp=Z,0.9nm,17.5s
GERES GERESS Array B 83.21 321 P P 08 08 34.2 -1.1
comp=Z,1.0nm,0.7s,mb4.0,baz=56,slow=4.8,SNR=6.1
NKC Novy Kostel 83.24 322 eP P 08 08 35.7 +0.2
NKC L 08 49 20.0
comp=Z,0.9nm,14.5s
MOX Moxa 83.50 323 i P P 08 08 36.0 -0.8
comp=Z,logA/T=0.9,mb4.7
MOX PP PP 08 12 00.0 +9.0
MOX L 08 49 51.0
MOX Moxa 83.50 323 eP P 08 08 36.0 -0.8
MOX pmax pmax
comp=Z,8.0nm,1.0s,mb4.7
MOX MLR MLR
comp=Z,2µm,18.0s,MS5.4
MOX Moxa 83.50 323 eP P 08 08 36.0 -0.8
comp=Z,8.0nm,1.0s,mb4.7
MOX LR LR
comp=Z,2µm,18.0s,MS5.4
LEGS Legarje 83.62 318 eP P 08 08 36.7 -0.9
BOJS Bojanci 83.87 317 eP P 08 08 38.3 -0.5
BOJS e pP 08 08 47.3 -1.0
LJU Ljubljana 84.06 318 eP P 08 08 38.8 -1.0
LJU e pP 08 08 48.0 -1.2
GRA1 Grafenberg Arr 84.20 322 eP P 08 08 40.2 -0.2
comp=Z,32nm,1.4s,mb5.3
GRA1 ePP PP 08 11 55.1 -1.5
GRA1 LR LR
comp=Z,900nm,19.3s,MS5.2
GRF Grafenberg Arr 84.20 322 eP P 08 08 40.2 -0.2
GRF e 08 11 55.1
GRF pmax pmax
comp=Z,32nm,1.4s,mb5.3
GRF MLR MLR
comp=Z,900nm,19.3s,MS5.2
KMBO Kilima Mbogo 85.33 267 P P 08 08 45.7 -1.2
comp=Z,2.0nm,0.7s,mb4.4,baz=354,slow=22,SNR=7.0
KMBO LR LR 08 44 58.9
comp=Z,172nm,18.9s,MS4.5,baz=278,slow=34
KMBO Kilima Mbogo 85.33 267 eP P 08 08 46.5 -0.4
comp=Z,7.6nm,1.2s,mb4.7
RNI2 Rionero Sannit 86.39 314 eP P 08 08 59.2 +7.7
SNTG Esanatoglia 86.41 316 eP P 08 08 51.8 +0.3
PGD Poggio Sodo 86.87 317 eP P 08 08 54.6 +0.8
VMG Vicchio 86.93 317 eP P 08 08 55.6 +1.6
WLF Walferdange 86.99 324 P P 08 08 53.9 -0.3
CDF Champ du Feu 87.08 323 eP P 08 08 55.1 +0.4
PGC Sidney 87.24 37 eP P 08 08 55.9 +0.5
comp=Z,113nm,1.5s,mb5.9
SNB Saturna Island 87.32 37 P P 08 08 57.1 +1.3
OCWA Octopus Mounta 87.33 38 eP P 08 08 57.5 +1.6
comp=Z,66nm,1.4s,mb5.7
MCW Mount Constitu 87.56 37 P P 08 08 58.5 +1.5
HINF Hinteralfeld 87.64 322 eP P 08 08 57.0 -0.4
EKA Eskdalemuir Ar 88.02 332 P P 08 08 58.2 -0.8
comp=Z,1.6nm,0.8s,mb4.3,baz=53,slow=3.5,SNR=3.4
GNW Green Mountain 88.20 38 eP P 08 09 01.0 +1.0
JCW Jim Creek 88.33 37 P P 08 09 01.7 +1.0
RPW Rockport 88.41 36 eP P 08 09 01.3 +0.3
BMW Boistfort Moun 88.58 39 eP P 08 09 03.2 +1.3
PNT Penticton 88.92 35 P P 08 09 03.7 +0.3
LPG La Plagne 89.00 320 eP P 08 09 03.4 -0.5
comp=Z,18nm,0.9s,mb5.1
LPL La Plagne 89.00 320 eP P 08 09 03.3 -0.6
comp=Z,12nm,0.7s,mb5.0
LON Longmire 89.23 38 eP P 08 09 05.2 +0.2
PGF Pioggiola 89.26 317 eP P 08 09 04.3 -0.9
comp=Z,66nm,1.3s,mb5.5
NLW Nelson Butte 89.27 36 eP P 08 09 05.2 +0.1
NLW e 08 09 18.7
SHW Mount Saint He 89.31 39 eP P 08 09 07.2 +1.8
MBDF Montbardon 89.42 320 eP P 08 09 05.1 -0.8
comp=Z,5.4nm,0.8s,mb4.6
SBF Sospel 89.50 319 eP P 08 09 05.3 -1.1
COR Corvallis 89.60 40 eP P 08 09 08.6 +1.8
comp=Z,65nm,1.3s,mb5.8
LOR Lormes 89.62 323 eP P 08 09 05.8 -1.0
comp=Z,16nm,1.1s,mb5.0
LOR eR
comp=Z,1µm,19.0s
WTV Waterville 89.70 36 P P 08 09 08.0 +0.8
ORIF Oris-en-Rattie 89.83 320 eP P 08 09 06.8 -1.1
ORIF eR
comp=Z,950nm,17.5s
KEBM Edson Butte 89.93 42 eP P 08 09 08.2 -0.2
SSF Saint Saulge 89.94 323 eP P 08 09 07.3 -1.0
comp=Z,4.5nm,0.8s,mb4.5
SSOR Sweet Springs 89.94 40 eP P 08 09 09.4 +1.0
SMF Signal de Mont 90.00 322 eP P 08 09 07.4 -1.2
comp=Z,44nm,1.2s,mb5.3
FRF La Foret Royal 90.14 319 eP P 08 09 08.0 -1.4
comp=Z,41nm,1.5s,mb5.2
AVF Avril sur Loir 90.18 323 eP P 08 09 08.2 -1.3
comp=Z,26nm,1.1s,mb5.2
HSO Harness Mounta 90.32 41 eP P 08 09 11.9 +1.7
LMR La Mourre 90.35 319 eP P 08 09 09.1 -1.2
comp=Z,12nm,1.1s,mb4.9
VGB Gordon Butte 90.53 39 eP P 08 09 11.7 +0.6
DPW Davenport 90.54 36 eP P 08 09 12.0 +0.9
BGF Bois d'Agland 90.60 323 eP P 08 09 10.5 -0.9
comp=Z,10.0nm,0.7s,mb5.0
NEW Newport 90.87 35 eP P 08 09 13.1 +0.6
comp=Z,45nm,1.4s,mb5.6
NEW LR LR
comp=Z,559nm,21.0s,MS5.0
HUMO Hull Mountain 90.92 42 eP P 08 09 14.3 +1.3
FLN La Foliniere 91.02 326 eP P 08 09 12.9 -0.3
comp=Z,110nm,1.6s,mb5.6
FLN eR
comp=Z,1µm,18.0s
YBH Yreka Blue Hor 91.56 42 eP P 08 09 16.8 +0.9
comp=Z,31nm,1.4s,mb5.4
LNOR Lincton Mounta 91.72 37 eP P 08 09 17.4 +0.9
WALA Waterton Lakes 91.99 33 eP P 08 09 18.5 +0.8
comp=Z,59nm,1.4s,mb5.7
CAF Calviac 92.02 322 eP P 08 09 17.2 -0.8
RJF Les Rejaudoux 92.10 322 eP P 08 09 17.8 -0.5
comp=Z,94nm,1.4s,mb5.6
RJF eR
comp=Z,779nm,17.0s
MFF Saint Martin d 92.20 324 eP P 08 09 17.7 -1.1
FCC Fort Churchill 92.33 18 eP P 08 09 18.4 -0.6
comp=Z,16nm,1.0s,mb5.3
ROSF Rostrenen 92.71 327 eP P 08 09 19.8 -1.2
comp=Z,244nm,1.9s,mb6.0
MOD Modoc 92.93 41 eP P 08 09 23.1 +0.9
comp=Z,47nm,1.3s,mb5.8
MSO Missoula 93.44 35 eP P 08 09 24.6 +0.2
comp=Z,33nm,1.3s,mb5.6
WVOR Wild Horse Val 93.61 40 eP P 08 09 26.3 +1.0
comp=Z,49nm,1.7s,mb5.7
WVOR LR LR
comp=Z,532nm,20.0s,MS5.0
OHCM Honcut 93.70 44 eP P 08 09 25.8 0.0
CHMT Chamberlain Mo 93.74 34 eP P 08 09 25.9 +0.1
BEKR Beckwourth 94.10 43 eP P 08 09 28.0 +0.4
comp=Z,12nm,0.9s,mb5.3
HRY Holter Researc 94.60 34 eP P 08 09 30.2 +0.4
WCN Washoe City 94.80 43 eP P 08 09 31.6 +0.7
comp=Z,7.3nm,1.0s,mb5.1
CMB Columbia Colle 95.15 44 eP P 08 09 32.7 +0.2
comp=Z,19nm,1.1s,mb5.4
HLID Hailey 95.31 37 eP P 08 09 34.0 +0.9
comp=Z,8.5nm,1.1s,mb5.1
HLID LR LR
comp=Z,632nm,22.0s,MS5.0
MCMT McKenzie Canyo 95.33 36 eP P 08 09 34.0 +0.8
BOZ Bozeman (W) 95.42 34 eP P 08 09 33.9 +0.3
comp=Z,8.7nm,1.3s,mb5.0
BOZ LR LR
comp=Z,541nm,20.0s,MS5.0
QLMT Earthquake Lak 96.08 35 eP P 08 09 37.4 +0.8
NVAR Mina Array Bea 96.23 43 P P 08 09 38.2 +0.8
comp=Z,2.9nm,0.7s,mb4.8,baz=296,slow=4.3,SNR=21
TPH Tonopah 97.12 43 eP P 08 09 41.7 +0.3
comp=Z,7.5nm,1.0s,mb5.1
HWUT Hardware Ranch 98.19 37 eP P 08 09 47.7 +1.5
comp=Z,8.5nm,1.3s,mb5.1
PDAR Pinedale Array 98.48 35 P P 08 09 47.4 -0.1
comp=Z,0.4nm,0.6s,mb4.1,baz=270,slow=1.5,SNR=4.5
MSU Marysvale 99.90 40 ePdif P 08 09 54.6 +0.6
NEN Nelson 100.13 44 ePdif P 08 09 55.9 +0.7
QSPA South Pole Qui 113.85 180 ePKP PKPdf 08 14 48.4 -2.5
DBIC Dimbokro 119.56 293 PKP PKPdf 08 14 58.4 -5.1
comp=Z,2.1nm,0.6s,baz=45,slow=4.6,SNR=7.0
KIC Kosan Boka 119.63 293 ePKIKP PKPdf 08 14 58.1 -5.4
comp=Z,16nm,0.6s
TIC Toumodi 119.72 293 ePKIKP PKPdf 08 14 58.0 -5.7
comp=Z,7.2nm,0.2s
LIC Lamto 119.94 293 eP PKPdf 08 14 58.7 -5.4
comp=Z,7.4nm,0.6s
LIC eR
comp=Z,421nm,19.5s
LIC Lamto 119.94 293 ePKIKP PKPdf 08 14 58.4 -5.7
comp=Z,35nm,1.5s
LIC Lamto 119.94 293 eP PKPdf 08 14 58.7 -5.4
LIC LR LR
comp=Z,210nm,19.5s,MS4.8
SNAA Sanae 123.25 198 iP PKPdf 08 15 03.6 -5.6
SNAA Sanae 123.25 198 i PKPdf 08 15 12.4 +3.2
SNAA Sanae 123.25 198 iPdif Pdif 08 11 46.7 +11
SNAA iPKPdf PKPdf 08 15 03.6 -5.6
SNAA iP 08 15 12.4
VNA2 Neumayer--Watz 124.90 198 P PKPdf 08 15 08.8 -3.6
VNA2 Neumayer--Watz 124.90 198 i PKPdf 08 15 17.3 +4.9
VNA2 Neumayer--Watz 124.90 198 iPdif Pdif 08 11 48.6 +5.2
VNA2 PKPdf PKPdf 08 15 08.8 -3.6
VNA2 iP 08 15 17.3
VNA1 Neumayer--Stat 125.29 198 iP PKPdf 08 15 10.4 -2.7
VNA1 Neumayer--Stat 125.29 198 i PKPdf 08 15 19.3 +6.2
VNA1 Neumayer--Stat 125.29 198 iPdif Pdif 08 11 48.5 +3.4
VNA1 iPKPdf PKPdf 08 15 10.4 -2.7
VNA1 iP 08 15 19.3
VNA3 Neumayer Olymp 125.37 197 iP PKPdf 08 15 08.1 -5.1
VNA3 Neumayer Olymp 125.37 197 i PKPdf 08 15 17.2 +4.0
VNA3 Neumayer Olymp 125.37 197 iPdif Pdif 08 11 49.8 +4.4
VNA3 iPKPdf PKPdf 08 15 08.1 -5.1
VNA3 iP 08 15 17.2
ROSC El Rosal 147.31 31 PKPbc PKPdf 08 15 52.4 -2.5
comp=Z,5.2nm,0.5s,baz=322,slow=19,SNR=3.4
OTAV Otavalo 148.96 42 ePKP PKPdf 08 15 54.6 -2.9
BDFB Brasilia 167.17 309 PKPab PKPab 08 17 18.8 -1.8
comp=Z,2.0nm,0.6s,baz=31,slow=5.9,SNR=5.6
LPAZ La Paz 168.00 52 PKP PKPdf 08 16 16.7 -2.9
comp=Z,1.5nm,1.0s,baz=159,slow=2.3,SNR=4.1
LPAZ PKPab PKPab 08 17 22.8 -1.4
comp=Z,3.8nm,1.1s,baz=1.0,slow=8.5,SNR=4.9
LPAZ La Paz 168.00 52 ePKP PKPdf 08 16 17.4 -2.3

DJA 01 07:57:39.5±1.0, 9.55N×116.14E, h15km, ML3.5/2, 3C-1D, Error ellipse: s-maj=22.9km s-min=18.4km az=153.0, Sumbawa region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RATI	Rata	1.01	324	i Pg	Pg	07 57 56.3	-3.6
	80nm,0.2s						
RATI				i Sg	Sg	07 58 11.2	-2.4
KEDI	Kedomdong	1.06	359	i Pn	Pn	07 57 57.6	-2.1
	63nm,0.2s						
KEDI				eSn	Sn	07 58 10.0	-4.1
KELI	Kelakatan	2.10	309	ePn	Pn	07 58 12.4	-2.2

MAN 01 08:05:18.6, 10.51N×125.80E, h3km, mb4.0, ML2.9, MS2.5
ISC 01 08:05:18.8±1.7, 10.49N±0.04×125.8E±0.1, h3km, n6, σ0°79/10, 4C, Leyte

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SCPH	Surigao	0.76	202	iP	Pg	08 05 33.9	0.0
SCPH				eS	Sg	08 05 44.2	+0.1
MSLP	Maasin	0.97	249	ePn	Pb	08 05 38.1	+0.3
MSLP				eS	Sb	08 05 56.9	+6.0
PLP	Palo	1.03	311	i P	Pb	08 05 38.3	-0.6
PLP				i S	Sb	08 05 52.2	-0.4
BESP	Borongan	1.15	343	ePn	Pb	08 05 39.4	-1.5
BESP				eS	Sb	08 05 57.8	+1.6
TBP	Tagbilaran	2.05	247	eP	Pn	08 05 54.9	+0.4
PVCP	Virac	3.47	333	ePn	Pn	08 06 15.1	+0.3

JMA 01 08:14:41.3±0.1, 42.89N×145.24E, h46km±1km, M3.5, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JAK	Akkeshi	0.41	285	P	P	08 14 51.2	-0.1
JAK				eS	S	08 14 58.5	+0.2
NEM2	Nemuro 2	0.60	38	P	P	08 14 53.3	-0.3
NEM2				S	S	08 15 01.7	-0.9
JNK	Nakash	0.79	331	P	P	08 14 55.9	-0.3
JNK				eS	S	08 15 06.0	-1.1
JOB	Onbets	1.03	271	P	P	08 14 59.3	-0.3
JRA	Rausu	1.05	355	P	P	08 14 59.8	0.0
JRA				eS	S	08 15 13.3	-0.3
JAR	Ashorobuto	1.15	291	P	P	08 15 01.0	-0.2
JCH	Churui	1.41	259	P	P	08 15 04.3	-0.7
JTKR	Abashiri--Toko	1.45	319	P	P	08 15 05.7	+0.1

IDC 01 08:34:28.1±2.0, 24.41S×175.72W, mb4.2/8, mb1 4.5/9, mb1mx4.3/16, ML4.4/1, MS4.0/1, Ms1 3.9/1, ms1mx3.2/26, Error ellipse: s-maj=112.0km s-min=21.1km az=163.0
NEIC 01 08:34:30.5±0.7, 24.01S×175.85W, h10km, mb4.7/3, Error ellipse: s-maj=22.3km s-min=14.6km az=161.0
ISC 01 08:34:29.1±0.7, 24.1S±0.1×175.9W±0.1, h10km, n17, σ1§13/14, mb4.3/10, MS4.0/1, South of Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAR	Rarotonga	15.18	82	Pn	P	08 37 54.6	-11
	1.6nm,0.3s,baz=247,slow=13,SNR=10.0						
SNZO	South Karori	18.91	202	P	P	08 38 53.2	+1.0
	71nm,1.1s						
CTA	Charters Tower	35.20	269	P	P	08 41 26.4	+0.8
	1.9nm,0.5s,mb4.2,baz=90,slow=14,SNR=4.4						
PMG	Port Moresby	38.09	286	P	P	08 41 50.8	+0.8
	12nm,1.0s,mb4.6,baz=87,slow=7.0,SNR=3.9						
STKA	Stephens Creek	38.13	249	LR	LR	08 54 48.4	
	comp=Z,223nm,20.5s,MS4.0,baz=204,slow=32						
ASAR	Alice Springs	45.68	260	P	P	08 42 52.5	+0.4
	2.3nm,1.0s,mb4.1,baz=99,slow=8.1,SNR=12						
WRAB	Tennant Creek	46.10	265	P	P	08 42 54.2	-1.3
	11nm,1.1s,mb4.7						
WRA	Warramunga Arr	46.11	265	P	P	08 42 54.3	-1.2
	2.3nm,1.1s,mb4.0,baz=103,slow=8.2,SNR=15						
QSPA	South Pole Qui	66.04	180	P	P	08 45 16.4	-1.1
QSPA				eP		08 45 28.7	
NVAR	Mina Array Bea	82.32	42	P	P	08 46 53.6	+1.2
	1.5nm,0.8s,mb4.0,baz=210,slow=6.9,SNR=10.0						
TPH	Tonopah	82.77	43	eP	P	08 46 55.2	+0.5
	4.1nm,1.1s,mb4.4						
TXAR	Lajitas Array	87.38	56	P	P	08 47 17.5	-0.6
	1.9nm,1.1s,mb4.2,baz=211,slow=5.3,SNR=3.2						
ENH	Enshi	89.60	303	eP	P	08 47 26.8	-1.8
PDAR	Pinedale Array	90.25	42	P	P	08 47 30.9	-0.4
	1.0nm,1.2s,mb4.0,baz=225,slow=3.8,SNR=3.8						
CMAR	Chiang Mai Arr	93.09	289	P	P	08 47 47.7	+2.7
	1.2nm,0.8s,mb4.4,baz=129,slow=2.7,SNR=6.6						
AKASG	Malin Array Be	147.03	330	PKPbc	PKPdf	08 54 11.5	-1.4
	0.7nm,0.4s,baz=45,slow=2.7,SNR=4.7						
BRTR	Keskin Array B	150.60	309	PKPbc	PKPdf	08 54 23.3	+4.4
	0.8nm,0.7s,SNR=5.3						
BRTR				PKPab	PKPab	08 54 30.3	-0.1
	0.7nm,0.8s,baz=63,slow=3.2,SNR=3.7						

IDC 01 08:38:01.1±1.0, 16.54N×122.58E, mb3.7/7, mb1 3.9/8, mb1mx3.7/19, ML4.3/1, Error ellipse: s-maj=30.8km s-min=14.7km az=93.0
NEIC 01 08:38:02.4±0.6, 16.54N×122.63E, h10km, mb4.4/2, Error ellipse: s-maj=19.9km s-min=9.8km az=73.0
MAN 01 08:38:05.0, 16.40N×122.48E, h17km, mb4.6, ML3.4, MS3.3
ISC 01 08:38:06.0±0.8, 16.45N±0.03×122.58E±0.09, h52km±6km, n28, σ1§31/34, mb3.8/9, 10C, Luzon

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PALP	Palanan	0.62	347	iP	P	08 38 17.4	-1.4
PALP				eS	S	08 38 30.3	+1.9
CAUP	Cauayan	0.87	304	iP	P	08 38 20.1	-2.0
CAUP				eS	S	08 38 33.6	-0.6
BALP	Baler	1.19	234	eP	Px	08 38 21.5	
BALP				eS	Sx	08 38 26.5	
CVP	Callao Caves	1.44	330	eP	P	08 38 29.8	-0.4
CVP				eS	S	08 38 51.2	+3.1
POLP	Polillo Island	1.82	200	eP	P	08 38 34.2	-1.4
POLP				eS	S	08 38 56.3	-1.2
APYP	Conner	1.89	318	eP	P	08 38 36.3	-0.2
APYP				eS	S	08 39 02.1	+3.0
ABRA	Dolores	2.14	304	eP	P	08 38 39.9	-0.2
LQP	Lukban	2.53	203	eP	P	08 38 48.5	+2.8
GQP	Guinayangan	2.54	183	eP	P	08 38 46.5	+0.8
GQP				eS	S	08 39 15.0	-0.5
BOLP	Bolinao	2.56	269	eP	P	08 38 43.7	-2.2
SCZP	Santa Cruz	2.65	256	eP	P	08 38 48.2	+0.9
TGY	Tagaytay City	2.82	214	Pn	P	08 38 49.1	-0.6
	41nm,0.3s,baz=25,slow=17,SNR=2.3						
TGY				Sn	S	08 39 24.2	+1.5
	44nm,0.3s,baz=313,slow=20,SNR=3.1						
TGY				Lg		08 39 32.9	
	55nm,0.3s,baz=277,slow=10.0,SNR=5.7						
BOAC	Boac	3.06	193	eP	P	08 39 04.2	+11
LUBP	Lubang	3.52	220	eP	P	08 39 02.9	+3.3
CM31	Chiang Mai Arr	22.63	279	P	P	08 43 04.1	+0.5
	3.0nm,0.4s,mb4.1						
SONM	Songino Array	34.01	340	P	P	08 44 45.2	-1.7
	0.8nm,0.7s,mb3.8,baz=126,slow=5.8,SNR=3.7						
WRAB	Tennant Creek	37.97	162	P	P	08 45 20.1	-0.5
	16nm,1.3s,mb4.6						
WRA	Warramunga Arr	37.97	162	P	P	08 45 21.1	+0.4
	1.4nm,0.7s,mb3.8,baz=344,slow=9.5,SNR=8.9						
ASAR	Alice Springs	41.38	164	P	P	08 45 50.5	+1.6
	0.5nm,0.8s,mb3.2,baz=357,slow=8.8,SNR=4.6						
MKAR	Makanchi Array	44.97	321	P	P	08 46 17.4	-0.4
	1.2nm,0.9s,mb3.7,baz=109,slow=8.4,SNR=10						
MKAR				PcP	PcP	08 47 58.8	+0.1
	0.8nm,1.1s,baz=104,slow=5.9,SNR=3.2						
ZAL	Zalesovo	47.51	331	P	P	08 46 38.8	+1.0
	0.6nm,0.4s,mb4.0,baz=36,slow=17,SNR=4.1						
KURK	Kurchatov	48.97	324	eP	P	08 46 48.9	-0.2
BRVK	Borovoye	54.64	324	eP	P	08 47 31.1	-0.6
ZRNK	Zerenda	55.33	324	eP	P	08 47 34.4	-2.2
FINES	FINESS Array B	78.77	331	P	P	08 50 05.1	+0.6
	0.5nm,0.6s,mb3.6,baz=90,slow=8.3,SNR=6.9						
NB2	NORSAR Subarra	85.65	333	P	P	08 50 41.1	+1.1
	0.5nm,0.8s,mb3.8,baz=66,slow=5.0						
NOA	NORSAR Array B	85.65	333	P	P	08 50 40.7	+0.7
	0.4nm,0.7s,mb3.7,baz=64,slow=4.9,SNR=4.1						
NOA	NORSAR Array B	85.65	333	P	P	08 50 40.7	+0.7

NEIC 01 09:10:47.4±1.0, 50.20N×19.08E, h5km, MG2.1(WAR), Error ellipse: s-maj=19.6km s-min=7.8km az=170.0
PRU 01 09:10:47.6, 50.16N×19.03E
WAR 01 09:10:47.4, 50.21N×19.10E, h1km, Location given by Central Institute of Mining, origin time based upon OJC, Poland

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OJC	Ojcow	0.45	88	ePg	Pg	09 10 56.4	+0.1
OJC				i Sg	Sg	09 11 03.0	+0.7
OKC	Ostrava-Krasne	0.72	239	ePG	Pg	09 11 00.9	-0.8
OKC				eSG	Sg	09 11 07.9	-3.3
MORC	Moravsky Berou	1.09	247	eP	Pb	09 11 08.4	-0.4
MORC				eS	Sb	09 11 22.0	-1.4
NIE	Niedzica	1.11	135	ePg	Pg	09 11 09.2	-0.4
NIE				eSg	Sg	09 11 24.4	0.0
LIKS	Likavka	1.16	180	ePN	Pn	09 11 08.8	-1.8
LIKS				eSN	Sn	09 11 24.9	-2.4
VYHS	Vyhne	1.72	186	i PN	Pn	09 11 17.6	-1.1
VYHS				eSN	Sn	09 11 40.2	-1.4
DPC	Dobruska-Polom	1.79	276	ePG	Pg	09 11 18.5	-4.6
DPC				eSG	Sg	09 11 42.3	-4.6
	22nm,0.8s						
KSP	Ksiaz	1.90	291	ePN	Pn	09 11 20.0	-1.2
KSP				ePG	Pg	09 11 23.0	-2.3
KSP				eSG	Sg	09 11 47.0	-3.7
UPC	Upice	2.00	280	eSG	Sg	09 11 48.9	-5.1
PSZ	Piszkesteto	2.35	167	ePn	Pn	09 11 28.4	+0.7
PSZ				PB	Pb	09 11 33.4	+3.2
PSZ				eSn	Sn	09 11 55.5	-2.0
PRU	Pruhonice	2.94	268	eSG	Sg	09 12 18.2	-7.2
	5.0nm,0.4s						
KHC	Kasperske Hory	3.75	255	eSG	Sg	09 12 42.8	-9.2
CLL	Collm	4.03	288	eSG	Sg	09 12 56.0	-5.4

CASC 01 09:16:25.7±2.1, 10.36N×86.37W, MD3.9, mb4.1(NEIC)
IDC 01 09:16:30.3±22.0, 11.53N×85.75W, mb3.6/5, mb1 3.9/5, mb1mx3.6/19, Error ellipse: s-maj=443.0km s-min=56.8km

az=173.0
NEIC ***01*** *09:16:32.0±0.9,11.46N×85.87W,h10km,mb4.1/5,Error ellipse: s-maj=31.3km s-min=15.1km az=62.0*
ISC 01 09:16:24.4±0.7,**10.23N**±0.05×**86.55W**±0.05,**h10**km,**n37**,
σ1§05/42,mb3.8/10,**5C-4D,Off coast of Costa Rica**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VCR	**Vista de Mar**	**0.91**	**96⇑**	*eP*	**Pb**	**09 16 42.1**	**+0.2**
CRZC	**La Cruz**	**1.18**	**52⇑**	*eP*	**Pb**	**09 16 45.7**	**-0.8**
CRZC				*eS*	**Sb**	**09 17 00.8**	**-0.9**
JCR	**Jicaral**	**1.47**	**105⇓**	*eP*	**Pn**	**09 16 50.6**	**-0.5**
JCR				*eS*	**Sb**	**09 17 10.1**	**+0.1**
CONN	**Concepcion**	**1.61**	**34⇑**	*eP*	**Pn**	**09 16 51.3**	**-1.8**
APON	**Apoyo**	**1.74**	**16**	*eP*	**Pn**	**09 16 55.3**	**+0.3**
TICN	**Ticuantepe**	**1.82**	**10**	*eP*	**Pn**	**09 16 56.0**	**-0.1**
TICN				*eS*	**Sn**	**09 17 20.7**	**+1.2**
FORC	**Fortuna**	**1.87**	**82⇓**	*eP*	**Pn**	**09 16 56.8**	**0.0**
XAVN	**Gruta Xavier**	**1.92**	**7**	*eP*	**Pn**	**09 16 56.6**	**-1.0**
MGAN	**Managua**	**1.93**	**9**	*eP*	**Pn**	**09 16 57.0**	**-0.7**
COPN	**Copaltepe**	**1.94**	**359**	*eP*	**Pn**	**09 16 57.8**	**-0.1**
COPN				*eS*	**Sn**	**09 17 24.1**	**+1.6**
COFN	**Cofrada**	**1.96**	**13**	*eP*	**Pn**	**09 16 56.5**	**-1.7**
CGA2	**Cerro Gallo 2**	**2.06**	**96⇓**	*eP*	**Pn**	**09 16 59.6**	**-0.1**
MOMJ	**Momotombo**	**2.17**	**0**	*eP*	**Pn**	**09 17 00.7**	**-0.4**
PYN	**Poneloya**	**2.19**	**348⇓**	*eP*	**Pn**	**09 17 02.2**	**+0.8**
LEON	**Leon**	**2.20**	**351**	*eP*	**Pn**	**09 17 01.7**	**+0.2**
PRS1	**Puriscal**	**2.22**	**96**	*eP*	**Pn**	**09 17 01.2**	**-0.6**
VPS2	**Volcan Poas 2**	**2.28**	**91**	*eP*	**Pn**	**09 17 03.0**	**+0.3**
PYTN	**Playitas**	**2.35**	**12**	*eS*	**Sn**	**09 17 34.1**	**+1.3**
LAJ	**Bijagual**	**2.42**	**98**	*eP*	**Pn**	**09 16 59.1**	**-5.7**
SJS	**Escuela Geolog**	**2.48**	**96⇑**	*eP*	**Pn**	**09 17 05.4**	**-0.2**
SJS				*eS*	**Sn**	**09 17 37.0**	**+0.9**
LCR2	**La Lucha 2**	**2.56**	**101**	*eP*	**Pn**	**09 17 06.7**	**0.0**
ICR	**Volcan Irazu**	**2.69**	**95**	*eP*	**Pn**	**09 17 10.4**	**+1.8**
URSC	**Urasca**	**2.76**	**98**	*eP*	**Pn**	**09 17 10.6**	**+1.0**
TRTC	**Tortuguero**	**2.81**	**83⇑**	*eP*	**Pn**	**09 17 09.9**	**-0.4**
BUS	**Buena Vista**	**2.83**	**103**	*eP*	**Pn**	**09 17 11.2**	**+0.6**
SJG	**San Juan** 20nm,1.0s,mb4.4	**21.26**	**66**	*eP*	**P**	**09 20 59.6**	**-14**
PLAL	**Pickwick Lake** 4.2nm,0.8s,mb4.0	**24.68**	**357**	P	**P**	**09 21 42.5**	**-4.4**
TXAR	**Lajitas Array** 1.8nm,1.1s,mb3.5,baz=126,slow=12,SNR=3.8	**24.85**	**322**	P	**P**	**09 21 50.7**	**+2.1**
TXAR	**Lajitas Array**	**24.85**	**322**	P	**P**	**09 21 50.7**	**+2.1**
SWET	**Sewanee**	**24.88**	**1**	*eP*	**P**	**09 21 44.4**	**-4.4**
MIAR	**Mount Ida** 3.2nm,0.8s,mb3.9	**25.04**	**346**	P	**P**	**09 21 48.1**	**-2.3**
LPAZ	**La Paz** 11nm,2.5s,mb4.2	**32.04**	**145**	P	**P**	**09 23 05.6**	**+12**
PDAR	**Pinedale Array** 0.3nm,0.3s,mb3.4,baz=135,slow=15,SNR=3.7	**38.13**	**332**	P	**P**	**09 23 44.6**	**-0.9**
HWUT	**Hardware Ranch** 5.0nm,1.8s,mb3.9	**38.22**	**329**	P	**P**	**09 23 45.9**	**-0.4**
NVAR	**Mina Array Bea** 0.7nm,0.8s,mb3.5,baz=146,slow=6.5,SNR=5.3	**39.95**	**320**	P	**P**	**09 24 03.5**	**+2.8**
SCHQ	**Schefferville** 1.7nm,0.7s,mb4.1,baz=221,slow=9.3,SNR=4.3	**47.16**	**15**	P	**P**	**09 24 53.8**	**-5.0**
YKA	**Yellowknife Ar** 0.1nm,0.4s,mb3.2,baz=142,slow=7.0,SNR=7.5	**55.97**	**345**	P	**P**	**09 26 01.4**	**-3.7**

IDC 01 09:29:16.6±19.0,**21.73S×68.87E,mb3.8**/3,**mb1 4.0**/3,
mb1mx3.6/17,**MS3.4**/2,**Ms1 3.6**/2,**ms1mx2.9**/25,**Error ellipse: s-maj=641.0km s-min=38.4km az=54.0,**
Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMBO	**Kilima Mbogo** comp=Z,49nm,18.5s,baz=287,slow=33	**36.99**	**299**	LR	LR	09 49 39.9	
CMAR	**Chiang Mai Arr** comp=Z,50nm,20.4s,baz=335,slow=31	**49.62**	**39**	LR	LR	09 55 01.9	
ASAR	**Alice Springs** 1.5nm,1.0s,baz=264,slow=6.1,SNR=12	**59.55**	**105**	P	P	09 39 22.2	-2.3
WRA	**Warramunga Arr** 0.7nm,0.6s,baz=259,slow=6.7,SNR=7.3	**60.79**	**101**	P	P	09 39 30.9	-2.1
MKAR	**Makanchi Array** 0.7nm,0.6s,baz=194,slow=5.0,SNR=7.1	**69.27**	**10**	P	P	09 40 25.5	-2.1

JMA ***01*** *09:29:35.8±0.3,24.17N×121.60E,h57km,M2.5*
TAP ***01*** *09:29:37.1,24.60N×121.64E,h46km,ML3.3*
ISC 01 09:29:36.4±2.7,**24.3N**±0.7×**121.6E**±0.2,**h70**km±42km,**n5**,
σ0§32/9,Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**1.26**	**84**	P	**P**	**09 29 58.4**	**-0.2**
YOJ				S	**S**	**09 30 15.1**	**0.0**
IRIF	**Iriomote-Funau**	**1.91**	**89**	P	**P**	**09 30 07.2**	**-0.2**
IRIF				S	**S**	**09 30 30.9**	**+0.6**
JKRS	**Kuro-shima**	**2.17**	**92**	P	**P**	**09 30 11.1**	**+0.1**
JIJ	**Ishigaki jima**	**2.29**	**89**	P	**P**	**09 30 12.5**	**-0.2**
JIJ				S	**S**	**09 30 39.2**	**-0.5**
JTJ	**Tarama**	**2.81**	**83**	P	**P**	**09 30 20.5**	**+0.4**
JTJ				S	**S**	**09 30 52.8**	**-0.1**

CASC 01 09:40:25.8±2.7,**10.33N×86.26W,h4**km±13km,**MD3.8,**
1C-1D,Off coast of Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VCR	**Vista de Mar**	**0.65**	**108**	*eP*	Pg	09 40 40.1	+1.3
VCR				*eS*	Sg	09 40 48.2	+0.6
CRZC	**La Cruz**	**0.91**	**46⇓**	*eP*	Pb	09 40 42.9	-0.8
CRZC				*eS*	Sb	09 40 56.8	+1.0
JCR	**Jicaral**	**1.23**	**113**	*eP*	Pb	09 40 48.5	-0.6
JCR				*eS*	Sb	09 41 04.7	-0.5
CONN	**Concepcion**	**1.38**	**27**	*eP*	Pb	09 40 50.3	-1.5
APON	**Apoyo**	**1.59**	**7**	*eP*	Pn	09 40 55.6	+0.7
CGA2	**Cerro Gallo 2**	**1.80**	**100**	*eP*	Pn	09 40 57.7	-0.1
CGA2				*eS*	Sn	09 41 19.8	-1.5
COPN	**Copaltepe**	**1.87**	**350⇑**	*eP*	Pn	09 40 56.6	-2.3
COPN				*eS*	Sn	09 41 23.6	+0.4
PRS1	**Puriscal**	**1.95**	**100**	*eP*	Pn	09 40 59.4	-0.6
LAJ	**Bijagual**	**2.16**	**102**	*eP*	Pn	09 40 58.7	-4.2
PYTN	**Playitas**	**2.21**	**5**	*eS*	Sn	09 41 32.5	+0.8
LCR2	**La Lucha 2**	**2.30**	**104**	*eP*	Pn	09 41 06.5	+1.5
ICR	**Volcan Irazu**	**2.42**	**98**	*eP*	Pn	09 41 09.5	+2.8
URSC	**Urasca**	**2.50**	**101**	*eP*	Pn	09 41 08.0	+0.2

IDC ***01*** *09:45:17.3±2.4,6.53S×130.04E,mb3.5/1,mb1 3.6/4, mb1mx3.5/13,ML3.0/3,Error ellipse: s-maj=93.0km s-min=29.8km az=77.0*
ISC 01 09:45:20.4±1.8,**6.7S**±0.2×**129.9E**±0.3,**h33**km,**n4**,**σ1§20/5,**
mb3.5/1,Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi** 0.1nm,0.3s,baz=14,slow=14,SNR=3.3	**12.08**	**200**	Pn	**P**	**09 48 13.0**	**-0.1**
WRA	**Warramunga Arr** 0.1nm,0.3s,baz=347,slow=13,SNR=9.9	**13.85**	**162**	Pn	**P**	**09 48 36.4**	**-0.3**
WRA				Sn	**S**	**09 51 09.5**	**-0.7**
	0.1nm,0.3s,baz=342,slow=29,SNR=3.1						
ASAR	**Alice Springs** 0.1nm,0.3s,baz=349,slow=11,SNR=7.2	**17.30**	**168**	P	**P**	**09 49 22.8**	**+1.7**
MKAR	**Makanchi Array** 0.3nm,0.5s,mb3.5,baz=127,slow=7.2,SNR=3.9	**67.93**	**327**	P	**P**	**09 56 17.6**	**-0.4**

IDC ***01*** *10:01:47.0±3.3,7.63S×121.46E,h515km±45km,mb3.1/3, mb1 3.0/6,mb1mx2.9/16,Error ellipse: s-maj=93.0km s-min=18.7km az=59.0*
ISC 01 10:01:44.9±1.2,**7.5S**±0.3×**121.5E**±0.6,**h500**km,**n6,**
σ0§86/6,mb3.5/3,Flores Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi** 0.5nm,0.3s,baz=353,slow=9.6,SNR=12	**11.28**	**159**	P	**P**	**10 04 17.6**	**+0.6**
WRA	**Warramunga Arr** 0.2nm,0.3s,baz=318,slow=10,SNR=15	**17.57**	**136**	P	**P**	**10 05 20.7**	**-0.2**
ASAR	**Alice Springs** 0.1nm,0.3s,baz=320,slow=8.5,SNR=9.3	**20.01**	**145**	P	**P**	**10 05 44.2**	**-0.1**
ASAR				PcP	PcP	10 09 36.9	-1.4
	0.0nm,0.3s,baz=343,slow=1.6,SNR=3.8						
STKA	**Stephens Creek** 5.8nm,1.1s,mb3.9,baz=318,slow=14,SNR=2.1	**30.65**	**145**	P	**P**	**10 07 18.9**	**-0.4**
SONM	**Songino Array** 0.7nm,0.5s,mb3.2,baz=158,slow=7.8,SNR=5.7	**56.70**	**348**	P	**P**	**10 10 43.0**	**+0.9**
MKAR	**Makanchi Array** 0.7nm,0.5s,mb3.5,baz=136,slow=7.4,SNR=11	**64.30**	**331**	P	**P**	**10 11 31.3**	**-0.9**

LDG ***01*** *10:19:48.7±0.1,42.97N×0.28E,h14km,Md2.6/2,Ml2.4/9, Error ellipse: s-maj=1.0km s-min=0.8km az=162.0*
NEIC ***01*** *10:19:48.7,42.97N×0.28E,h14km,ML2.4(LDG), ML2.4(STR),MN1.7(MDD),After LDG.*
STR ***01*** *10:19:48.8±0.1,42.99N×0.30E,h5km±1km,Ml2.4,Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
MDD ***01*** *10:19:49.5±0.2,42.98N×0.27E,h10km,mbLg1.8/17,Error ellipse: s-maj=2.5km s-min=1.6km az=8.0,PRXIMO*
ISC 01 10:19:47.3±0.2,**43.09N**±0.02×**0.32E**±0.02,**h14**km,**n51,**
σ1§20/75,France

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EPF	**Esparros**	**0.06**	**163**	*ePg*	**Pg**	**10 19 51.7**	**+1.6**
EPF				*eSg*	**Sg**	**10 19 54.0**	**+2.1**
	90nm,0.2s						
LABF	**Labassere**	**0.18**	**258**	Pg	**Pg**	**10 19 53.0**	**+1.3**
LABF				Sg	**Sg**	**10 19 55.8**	**+1.1**
LABF	**Labassere**	**0.18**	**258**	P	**Pg**	**10 19 53.0**	**+1.3**
LABF				S	**Sg**	**10 19 55.8**	**+1.1**
RESF	**Ens**	**0.28**	**177**	Pg	**Pg**	**10 19 53.1**	**-0.3**
RESF				Sg	**Sg**	**10 19 56.2**	**-1.2**
RESF	**Ens**	**0.28**	**177**	P	**Pg**	**10 19 53.3**	**-0.1**
RESF				S	**Sg**	**10 19 56.2**	**-1.3**
VIEF	**Viey**	**0.29**	**227**	Pg	**Pg**	**10 19 53.5**	**-0.2**
VIEF				Sg	**Sg**	**10 19 56.8**	**-1.2**
VIEF	**Viey**	**0.29**	**227**	P	**Pg**	**10 19 53.6**	**-0.1**
VIEF				S	**Sg**	**10 19 56.6**	**-1.4**
MELF	**Melles**	**0.39**	**123**	Pg	**Pg**	**10 19 56.0**	**+0.6**
MELF				Sg	**Sg**	**10 20 00.7**	**-0.2**
MELF	**Melles**	**0.39**	**123**	P	**Pb**	**10 19 55.9**	**+0.5**
MELF				S	**Sg**	**10 20 01.2**	**+0.4**
REYF	**Montagne du Re**	**0.52**	**269**	Pg	**Pg**	**10 19 58.3**	**+0.3**
REYF				Sg	**Sg**	**10 20 05.6**	**+0.5**
REYF	**Montagne du Re**	**0.52**	**269**	P	**Pb**	**10 19 58.5**	**+0.8**
REYF				S	**Sb**	**10 20 05.3**	**+0.5**
MLS	**Moulis**	**0.58**	**102**	Pg	**Pg**	**10 20 00.1**	**+0.9**
MLS	**Moulis**	**0.58**	**102**	P	**Pb**	**10 20 00.7**	**+1.9**
MLS				S	**Sb**	**10 20 08.0**	**+1.4**
ETSF	**Etsaut**	**0.67**	**254**	*ePg*	**Pg**	**10 20 00.7**	**-0.2**
ETSF				*eSg*	**Sg**	**10 20 08.7**	**-1.3**
	49nm,0.2s						
FDAF	**Les Forges d'A**	**0.70**	**248**	Pg	**Pg**	**10 20 01.1**	**-0.4**
FDAF				Lg		10 20 09.8	
SALF	**Salau**	**0.72**	**117**	Pg	**Pg**	**10 20 02.3**	**+0.4**
SALF				Sg	**Sg**	**10 20 11.5**	**-0.1**
SALF	**Salau**	**0.72**	**117**	P	**Pb**	**10 20 02.3**	**+1.3**
SALF				S	**Sb**	**10 20 11.0**	**+0.5**
ATE	**Arette**	**0.75**	**270**	P	**Pb**	**10 20 02.8**	**+1.3**
ATE				S	**Sb**	**10 20 12.8**	**+1.5**
EGRA	**Graus** 1.2nm,0.1s,SNR=7.9	**0.89**	**180**	Pg	**Pg**	**10 20 04.4**	**-0.8**
EGRA	**Graus**	**0.89**	**180**	Pg	**Pg**	**10 20 04.2**	**-1.0**
EGRA				Lg		10 20 16.3	
CSOR	**Sort**	**0.93**	**139**	Pg	**Pg**	**10 20 05.6**	**-0.4**
CSOR				Lg		10 20 17.1	
	7.4nm,0.2s						
LARF	**Larrau**	**0.96**	**268**	S	**Sb**	**10 20 18.6**	**+1.2**
SJPF	**Ste Jean**	**1.13**	**272**	*ePg*	**Pg**	**10 20 09.4**	**-0.6**
SJPF				*eSg*	**Sg**	**10 20 24.1**	**-1.1**
	9.4nm,0.2s						
CAVN	**Les Avellanes**	**1.24**	**165**	Pg	**Pg**	**10 20 10.9**	**-1.4**
CAVN				Lg		10 20 26.2	
	8.9nm,0.1s						
EALK	**Alkurruntz** 0.5nm,0.1s,SNR=7.9	**1.34**	**276**	Pg	**Pg**	**10 20 14.1**	**-0.2**
EALK				Lg		10 20 31.6	
	18nm,0.4s,SNR=7.9						
EALK	**Alkurruntz**	**1.34**	**276**	Pg	**Pg**	**10 20 14.1**	**-0.2**
EALK				Lg		10 20 32.0	
CLLI	**Llivia**	**1.36**	**116**	Pg	**Pg**	**10 20 14.2**	**-0.4**
CLLI				Lg		10 20 31.8	
	1.3nm,0.1s						
CARF	**Carcanieres**	**1.36**	**105**	Lg		10 20 33.2	
MTLF	**Montolieu**	**1.41**	**79**	*ePg*	**Pg**	**10 20 16.5**	**+0.9**
MTLF				*eSg*	**Sg**	**10 20 35.1**	**+0.6**
	3.2nm,0.2s						
VALF	**Valcebollere**	**1.43**	**118**	Lg		10 20 34.2	
EMIR	**Miracle** 2.3nm,0.1s,SNR=7.9	**1.47**	**142**	Pg	**Pg**	**10 20 17.1**	**+0.4**
EMIR				Lg		10 20 35.1	
	3.1nm,0.1s,SNR=7.9						
ESAC	**San Caprasio** 3.7nm,0.1s,SNR=7.9	**1.48**	**203**	Pg	**Pg**	**10 20 15.6**	**-1.4**
ESAC				Lg		10 20 33.7	
	40nm,0.2s,SNR=5.0						
ESAC	**San Caprasio**	**1.48**	**203**	Pg	**Pg**	**10 20 15.6**	**-1.4**
ESAC				Lg		10 20 34.2	
CBRU	**Bruguera**	**1.59**	**120**	Pg	**Pg**	**10 20 18.2**	**-0.9**
CBRU				Lg		10 20 39.3	
	2.9nm,0.2s						
EPOB	**Poblet** 0.5nm,0.1s,SNR=9.7	**1.82**	**162**	Pg	**Pg**	**10 20 21.3**	**-2.4**
EPOB				Lg		10 20 43.3	
	3.3nm,0.1s						
EPOB	**Poblet**	**1.82**	**162**	Pn	**Pn**	**10 20 21.3**	**+2.8**
EPOB				Sn	**Sn**	**10 20 43.3**	**+1.8**
LFF	**La Frestale**	**1.88**	**9**	*ePg*	**Pg**	**10 20 26.2**	**+1.3**
LFF				*eSg*	**Sg**	**10 20 51.5**	**+1.5**
	14nm,0.3s						
EJON	**La Jonquera** 0.3nm,0.1s,SNR=7.0	**2.00**	**108**	Pg	**Pg**	**10 20 26.5**	**-0.7**
EJON				Lg		10 20 52.7	
	2.1nm,0.3s,SNR=4.0						
EJON	**La Jonquera**	**2.00**	**108**	Pn	**Pn**	**10 20 26.0**	**+4.9**
EJON				Sn	**Sn**	**10 20 50.9**	**+4.9**
CFON	**Fontmartina** 7.9nm,0.2s	**2.05**	**129**	Lg		10 20 52.7	
ERTA	**Horta de San J** 0.6nm,0.1s,SNR=7.9	**2.13**	**180**	Pg	**Pg**	**10 20 27.4**	**-2.4**
ERTA				Lg		10 20 53.1	
	2.7nm,0.2s,SNR=4.0						
ERTA	**Horta de San J**	**2.13**	**180**	Pg	**Pg**	**10 20 27.5**	**-2.3**
ERTA				Sn	**Sn**	**10 20 51.7**	**+2.4**
CAF	**Calviac**	**2.23**	**34**	*ePg*	**Pg**	**10 20 32.1**	**+0.2**
CAF				*eSg*	**Sg**	**10 21 01.8**	**+0.1**
	3.6nm,0.2s						
RJF	**Les Rejaudoux**	**2.38**	**21**	*ePg*	**Pg**	**10 20 35.2**	**+0.3**
RJF				*eSg*	**Sg**	**10 21 06.9**	**+0.2**
	5.9nm,0.2s						
LASF	**Ste Croix**	**2.76**	**68**	*ePg*	**Pg**	**10 20 41.1**	**-1.3**
LASF				*eSg*	**Sg**	**10 21 17.6**	**-1.6**
	2.1nm,0.3s						
EMOS	**Mosqueruela** 0.1nm,0.1s,SNR=7.9	**2.78**	**193**	Pg	**Pg**	**10 20 39.7**	**-3.2**
EMOS				Lg		10 21 14.7	
	1.1nm,0.3s,SNR=4.0						
ETOR	**Torete** 0.8nm,0.2s,SNR=7.9	**2.87**	**219**	Sn	**Sn**	**10 21 06.8**	**-1.4**
TCF	**Toulx Ste Croi**	**3.48**	**22**	*ePg*	**Pg**	**10 20 55.3**	**-1.4**
TCF				*eSg*	**Sg**	**10 21 41.4**	**-1.7**
	2.5nm,0.3s						
MFF	**Saint Martin d**	**3.53**	**355**	*ePg*	**Pg**	**10 20 56.6**	**-1.3**
VIVF	**Saint-Julien-l**	**3.61**	**59**	*ePg*	**Pg**	**10 20 57.9**	**-1.5**
VIVF				*eSg*	**Sg**	**10 21 43.9**	**-3.6**
	1.4nm,0.3s						
BGF	**Bois d'Agland**	**3.91**	**27**	*ePg*	**Pg**	**10 21 03.3**	**-2.1**

NIED ***01*** *10:27:00,33.40N×137.30E,h380km,Mw4.3 Best double couple: M0 2.85×10^15 NP1:φs157°,δ82°,λ77°. NP2:φs38°, δ15°,λ150°.*
BJI ***01*** *10:27:31.6,32.90N×137.83E,h371km,mB4.4,mb4.3*
MOS ***01*** *10:27:36.2±0.8,33.33N×137.26E,h374km,mb4.2/9,Error ellipse: s-maj=17.7km s-min=9.8km az=86.7*
JMA ***01*** *10:27:36.4±0.3,33.39N×137.29E,h386km±3km,M3.8*
NEIC ***01*** *10:27:37.5±0.4,33.33N×137.23E,h372km±3km,mb4.0/13, Error ellipse: s-maj=7.7km s-min=5.0km az=149.0*
IDC ***01*** *10:27:37.4±0.6,33.33N×137.29E,h369km±6km,mb3.4/19, mb1 3.6/23,mb1mx3.5/31,Error ellipse: s-maj=12.0km s-min=10.7km az=114.0*
ISC 01 10:27:37.2±0.3,**33.43N**±0.05×**137.28E**±0.04,**h378**km±1km,
n91,σ0§89/110,mb3.8/35,**3C-1D,Near south coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TK01	**Tokai 1**	**0.42**	**37**	S	**S**	**10 29 02.6**	**+0.7**
TK02	**Tokai 2**	**0.65**	**37**	P	**P**	**10 28 25.5**	**+0.4**
TK02				S	**S**	**10 29 04.2**	**+1.5**
TK03	**Tokai 3**	**0.93**	**38**	P	**P**	**10 28 26.9**	**+1.0**
TK03				S	**S**	**10 29 06.4**	**+2.3**
JIE	**Ise**	**1.07**	**334**	P	**P**	**10 28 26.7**	**+0.3**
JIE				S	**S**	**10 29 05.2**	**+0.1**
TK04	**Tokai 4**	**1.07**	**27**	P	**P**	**10 28 27.1**	**+0.7**
TK04				S	**S**	**10 29 07.0**	**+1.9**
JWZ	**Kozaga**	**1.31**	**275**	P	**P**	**10 28 26.7**	**-0.9**
JWZ				S	**S**	**10 29 05.8**	**-1.2**
JWY	**Kouya**	**1.61**	**300**	P	**P**	**10 28 29.3**	**+0.2**
JWY				S	**S**	**10 29 09.5**	**-0.3**
JHJ	**Hachijo jima 2** 45nm,0.3s,baz=68,slow=21,SNR=28	**2.12**	**98**	P	**P**	**10 28 31.6**	**-0.7**
JHJ				S	**S**	**10 29 15.2**	**-0.2**
	52nm,0.3s,baz=102,slow=22,SNR=4.3						
JHJ2	**Mitsune**	**2.15**	**98**	P	**P**	**10 28 32.1**	**-0.4**
JIM2	**Oshima 3**	**2.20**	**54**	P	**P**	**10 28 32.0**	**-0.8**
JYN	**Shimob**	**2.31**	**26**	P	**P**	**10 28 33.5**	**-0.1**
JGM	**Miyama**	**2.31**	**349**	P	**P**	**10 28 34.4**	**+0.7**
JGM				S	**S**	**10 29 18.6**	**+0.7**
JOD2	**Odawara 2**	**2.36**	**39**	P	**P**	**10 28 33.8**	**-0.2**
JAI	**Aioi**	**2.39**	**279**	P	**P**	**10 28 34.0**	**-0.2**
JAI				S	**S**	**10 29 18.4**	**-0.5**
JWT	**Wachi**	**2.42**	**320**	P	**P**	**10 28 34.6**	**+0.2**
JWT				S	**S**	**10 29 19.1**	**-0.2**
JMN	**Monobe**	**2.86**	**277**	P	**P**	**10 28 37.9**	**0.0**
JMN				S	**S**	**10 29 25.7**	**+0.2**
JRY	**Ryogami san**	**2.91**	**27**	P	**P**	**10 28 38.5**	**+0.2**
MAJO	**Matsushiro**	**3.20**	**13**	*eP*	**P**	**10 28 40.4**	**-0.4**
MAT	**Matsushiro**	**3.20**	**13**	P	**P**	**10 28 40.7**	**-0.1**
MAT				S	**S**	**10 29 29.7**	**-1.1**
MAT	**Matsushiro**	**3.20**	**13**	P	**P**	**10 28 40.7**	**-0.1**
MAT				S	**S**	**10 29 30.3**	**-0.5**
MAT	**Matsushiro**	**3.20**	**13**	*eP*	**P**	**10 28 41.0**	**+0.2**
MAT				*eS*	**S**	**10 29 30.0**	**-0.8**
BSO1	**Boso 1**	**3.30**	**67**	P	**P**	**10 28 39.0**	**-2.8**
BSO1				S	**S**	**10 29 28.7**	**-3.7**
JAG	**Ashikaga**	**3.48**	**30**	P	**P**	**10 28 41.7**	**-1.7**
JAG				S	**S**	**10 29 33.2**	**-2.2**
JHS	**Saijyo**	**3.79**	**296**	P	**P**	**10 28 46.8**	**+0.5**
JTO	**Tosashimizu**	**3.80**	**263**	P	**P**	**10 28 46.1**	**-0.3**
JTO				S	**S**	**10 29 42.2**	**+1.4**
JNU	**Nakatsue** 2.4nm,0.3s,baz=72,slow=15,SNR=19	**5.37**	**268**	P	**P**	**10 29 02.4**	**-0.3**
CBIJ	**Chichi jima** 3.3nm,0.3s,baz=303,slow=22,SNR=7.0	**7.60**	**145**	P	**P**	**10 29 22.6**	**-5.5**
CBIJ				S	**S**	**10 30 45.1**	**-10**
	14nm,0.3s,baz=119,slow=23,SNR=10						
ASAJ	**Asahikawa** 1.7nm,0.3s,baz=231,slow=9.4,SNR=10	**11.44**	**20**	P	**P**	**10 30 12.6**	**-0.7**
ASAJ				S	**S**	**10 32 16.7**	**-0.3**
	0.8nm,0.3s,baz=41,slow=29,SNR=7.5						
SSE	**Sheshan**	**13.82**	**265**	⇑P	**P**	**10 30 41.6**	**+1.2**
SSE				AMB	AMB		
	comp=Z,12nm,1.0s						
YSS	**Yuzh-Sakhalins**	**14.13**	**16⇑**	*eP*	**P**	**10 30 43.0**	**-0.7**
YSS				*eS*	**S**	**10 33 09.5**	**-3.5**
YSS				pmax	pmax		
	comp=Z,30nm,1.0s						
YSS				pmax	pmax		
	comp=Z,110nm,0.9s						
YSS				smax			
	comp=N,30nm,0.8s						
YSS	**Yuzh-Sakhalins** comp=N,96nm,0.7s	**14.13**	**16**	*eP*	**P**	**10 30 43.3**	**-0.4**
NJ2	**Nanjing**	**15.57**	**270**	*eP*	**P**	**10 30 59.5**	**+0.6**
NJ2				AMB	AMB		
	comp=Z,20nm,0.5s						
BJT	**Baijiatuau**	**18.14**	**297**	*eP*	**P**	**10 31 24.2**	**-0.8**
BJT				pmax	pmax		
	comp=Z,20nm,0.8s						
BJT	**Baijiatuau** comp=Z,20nm,0.8s	**18.14**	**297**	*eP*	**P**	**10 31 24.2**	**-0.8**
BJI	**Beijing**	**18.14**	**297**	*eP*	**P**	**10 31 24.8**	**-0.2**
BJI				AMB	AMB		
	comp=Z,20nm,0.8s						
WHN	**Wuhan**	**19.66**	**268**	⇑P	**P**	**10 31 40.0**	**0.0**
HHC	**Hu-ho-hao-te**	**21.75**	**297**	*eP*	**P**	**10 32 00.8**	**+0.7**
HHC				AMB	AMB		
	comp=Z,8.0nm,1.0s,mb3.9						
XAN	**Xi'an**	**23.57**	**279**	P	**P**	**10 32 16.1**	**-0.9**
XAN				AMB	AMB		
	comp=Z,8.0nm,0.9s,mb4.0						
ENH	**Enshi** comp=Z,49nm,0.9s,mb4.7	**23.79**	**270**	*eP*	**P**	**10 32 17.4**	**-1.6**
ULN	**Ulaanbaatar**	**26.89**	**311⇓**	*eP*	**P**	**10 32 47.4**	**+0.7**
SONM	**Songino Array** comp=Z,0.8nm,0.5s,mb3.2,baz=128,slow=6.6,SNR=3.9	**27.29**	**311**	P	**P**	**10 32 51.0**	**+0.7**
GYA	**Guiyang**	**27.36**	**263**	P	**P**	**10 32 49.5**	**-1.7**
GYA				AMB	AMB		
	comp=Z,10.0nm,0.7s,mb4.2						
TLY	**Talaya**	**30.39**	**317**	*eP*	**P**	**10 33 16.7**	**-0.7**
TLY				pmax	pmax		
	comp=Z,8.0nm,0.7s,mb4.1						
CMAR	**Chiang Mai Arr** comp=Z,1.5nm,0.8s,mb3.3,baz=50,slow=7.2,SNR=11

comp=Z,1.4nm,0.5s,mb4.0
HLID Hailey 79.30 45 *e*P **P 10 39 03.3 +0.4**
comp=Z,1.1nm,0.6s,mb3.8
NVAR Mina Array Bea 79.87 51 P **P 10 39 07.6 +1.6**
comp=Z,1.7nm,0.5s,mb4.0,baz=310,slow=4.4,SNR=19
TPH Tonopah 80.77 50 *e*P **P 10 39 11.4 +0.7**
TPH pmax pmax
comp=Z,2.0nm,0.7s,mb4.0
TPH Tonopah 80.77 50 *e*P **P 10 39 11.4 +0.7**
comp=Z,2.0nm,0.7s,mb4.0
FRB Frobisher Bay 81.00 11 P **P 10 39 11.8 +0.4**
comp=Z,2.3nm,0.5s,mb4.2,baz=1.8,slow=5.5,SNR=9.8
BW06 Boulder Array 82.60 43 *e*P **P 10 39 20.2 +0.2**
comp=Z,1.2nm,0.7s,mb3.8
PDAR Pinedale Array 82.60 43 P **P 10 39 20.9 +0.9**
comp=Z,1.2nm,0.7s,mb3.8,baz=297,slow=3.7,SNR=14
NLU North Lily Min 82.87 46 *e*P **P 10 39 22.7 +1.3**
MSU Marysvale 83.69 48 *e*P **P 10 39 26.6 +1.0**
NEN Nelson 83.74 51 *e*P **P 10 39 26.7 +0.8**
GERES GERESS Array B 83.91 326 P **P 10 39 26.4 0.0**
comp=Z,0.7nm,0.8s,mb3.6,baz=53,slow=6.7,SNR=5.4
SRU San Rafael 84.33 46 *e*P **P 10 39 29.9 +1.1**
PV10 Paradox Valley 85.70 46 *e*P **P 10 39 36.8 +1.4**
DAVOX Davos 87.18 327 P **P 10 39 42.6 +0.3**
comp=Z,0.6nm,0.3s,mb3.8,baz=160,slow=20,SNR=3.4
SDCO Great Sand Dun 88.22 45 *e*P **P 10 39 47.9 +0.5**
comp=Z,1.1nm,0.9s,mb3.7
SCHQ Schefferville 89.68 14 P **P 10 39 54.1 +0.3**
comp=Z,1.0nm,0.8s,mb3.8,baz=256,slow=7.7,SNR=3.3
TXAR Lajitas Array 95.01 50 P **P 10 40 19.8 +0.9**
comp=Z,0.7nm,0.5s,mb3.9,baz=243,slow=2.8,SNR=4.2
LPAZ La Paz 151.43 60 PKPbc PKPdf 10 46 49.8 +9.2
comp=Z,1.5nm,0.9s,baz=334,slow=4.3,SNR=6.5

DJA 01 10:33:01.2±0.9, 8.44S×114.14E, h98km±6km, MD4.7/4, ML3.5/2, 6C-2D, Error ellipse: s-maj=32.5km s-min=15.3km az=24.0, Bali region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KELI	**Kelakatan**	**0.41**	**58**	⇑*e*Pg	P	10 33 15.8	-0.5
	190nm,0.2s						
KELI				⇑*e*Sg	S	10 33 27.2	-0.5
INGI	**Ingas**	**1.07**	**111**	⇓*i*Pn	P	10 33 22.4	-0.1
INGI				⇑*e*Sn	S	10 33 36.1	-2.4
RATI	**Rata**	**1.41**	**102**	⇓*e*Pn	P	10 33 25.8	-0.9
	72nm,0.2s						
RATI				⇑*e*Sn	S	10 33 45.0	-0.6
KEDI	**Kedomdong**	**1.96**	**92**	⇑*i*Pn	P	10 33 32.7	-0.9
	21nm,0.2s						
KEDI				⇑*e*Sn	S	10 33 55.7	-1.9

CASC 01 10:38:37.5±2.8, 10.33N×86.38W, h6km±29km, MD4.0, ML4.0, 1C, Off coast of Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VCR	**Vista de Mar**	**0.76**	**106**	*e*P	Pb	10 38 52.8	+0.1
CRZC	**La Cruz**	**0.98**	**51**	⇑*e*P	Pb	10 38 56.9	+0.3
CRZC				*e*S	Sb	10 39 12.0	+2.4
JCR	**Jicaral**	**1.33**	**111**	*e*P	Pb	10 39 01.1	-1.4
JCR				*e*S	Sb	10 39 19.6	-0.2
CONN	**Concepcion**	**1.43**	**31**	*e*P	Pn	10 39 02.7	-1.4
APON	**Apoyo**	**1.60**	**11**	*e*P	Pn	10 39 06.5	-0.1
TICN	**Ticuantepe**	**1.70**	**5**	*e*P	Pn	10 39 05.2	-2.7
XAVN	**Gruta Xavier**	**1.81**	**2**	*e*P	Pn	10 39 08.6	-0.8
MGAN	**Managua**	**1.81**	**4**	*e*P	Pn	10 39 07.1	-2.4
CGA2	**Cerro Gallo 2**	**1.91**	**99**	*e*P	Pn	10 39 10.2	-0.7
PRS1	**Puriscal**	**2.06**	**99**	*e*P	Pn	10 39 12.0	-1.2
VPS2	**Volcan Poas 2**	**2.11**	**99**	*e*P	Pn	10 39 13.8	0.0
LAJ	**Bijagual**	**2.27**	**102**	*e*P	Pn	10 39 09.5	-6.6
SJS	**Escuela Geolog**	**2.32**	**100**	*e*P	Pn	10 39 17.1	+0.3
LCR2	**La Lucha 2**	**2.41**	**104**	*e*P	Pn	10 39 18.0	-0.1
URSC	**Urasca**	**2.61**	**101**	*e*P	Pn	10 39 21.3	+0.4
TRTC	**Tortuguero**	**2.63**	**85**	*e*P	Pn	10 39 20.8	-0.5
BUS	**Buena Vista**	**2.69**	**106**	*e*P	Pn	10 39 22.2	+0.1

*NEIC **01** 10:54:22.7±0.4, 0.97N×126.23E, mb4.5/4, Error ellipse: s-maj=23.0km s-min=7.4km az=64.0*
*IDC **01** 10:54:23.9±4.9, 0.89N×126.01E, h58km±45km, mb3.9/9, mb1 4.1/10, mb1mx3.9/17, ML3.9/1, Error ellipse: s-maj=70.3km s-min=11.2km az=65.0*
ISC 01 10:54:21.4±0.4, 0.91N±0.09×126.1E±0.2, h54km, h54km±4.1km: pP-P, n28, σ1§00/26, mb4.3/13, 2C-1D, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**18.90**	**181**	*e*P	**P**	**10 58 37.5**	**-2.8**
	3.2nm,0.6s						
FITZ	**Fitzroy Crossi**	**18.90**	**181**	P	**P**	**10 58 39.5**	**-0.8**
	0.3nm,0.3s,baz=10.0,slow=8.6,SNR=8.7						
WRAB	**Tennant Creek**	**22.24**	**159**	*e*P	**P**	**10 59 15.4**	**+0.3**
	112nm,1.1s,mb5.2						
WRAB				*e*		10 59 20.2	
WRAB				*e*pP		10 59 27.6	
WRAB				*e*sP		10 59 33.7	
WRA	**Warramunga Arr**	**22.25**	**159**	P	**P**	**10 59 15.5**	**+0.4**
	15nm,1.0s,mb4.4,baz=337,slow=12,SNR=95						
WRA				S	**S**	**11 03 18.4**	**+6.9**
	1.9nm,0.8s,baz=344,slow=17,SNR=4.6						
WB2	**Warramunga Arr**	**22.25**	**159**	*e*P	**P**	**10 59 15.4**	**+0.3**
WB2				*i*		10 59 20.2	
PMG	**Port Moresby**	**23.35**	**117**	P	**P**	**10 59 24.3**	**-1.7**
	37nm,1.8s,mb4.5						
AS12	**Alice Springs**	**25.58**	**163**	*e*P	**P**	**10 59 48.2**	**+0.8**
	8.4nm,1.0s,mb4.2						
ASAR	**Alice Springs**	**25.58**	**163**	P	**P**	**10 59 48.2**	**+0.8**
	2.8nm,0.3s,mb4.3,baz=346,slow=12,SNR=82						
CMAR	**Chiang Mai Arr**	**31.84**	**305**	P	**P**	**11 00 43.5**	**-0.2**
	2.1nm,1.1s,mb3.9,baz=131,slow=7.9,SNR=6.2						
ENH	**Enshi**	**33.19**	**333**	*e*P	**P**	**11 00 56.0**	**+0.8**
	13nm,1.6s,mb4.6						
STKA	**Stephens Creek**	**35.77**	**157**	*e*P	**P**	**11 01 18.0**	**+0.7**
	7.3nm,0.9s,mb4.6						
STKA	**Stephens Creek**	**35.77**	**157**	P	**P**	**11 01 17.9**	**+0.5**
	8.9nm,0.9s,mb4.7,baz=326,slow=8.0,SNR=8.8						
LSA	**Lhasa**	**43.87**	**314**	*e*P	**P**	**11 02 25.6**	**+1.1**
	8.4nm,1.8s,mb4.2						
SONM	**Songino Array**	**49.76**	**343**	P	**P**	**11 03 11.1**	**+0.5**
	0.8nm,0.6s,mb3.9,baz=158,slow=6.7,SNR=4.2						
MKAR	**Makanchi Array**	**59.52**	**327**	P	**P**	**11 04 20.2**	**-1.4**
	4.9nm,1.0s,mb4.5,baz=124,slow=8.7,SNR=12						
MKAR	**Makanchi Array**	**59.52**	**327**	P	**P**	**11 04 20.2**	**-1.4**
ZAL	**Zalesovo**	**62.81**	**334**	P	**P**	**11 04 43.7**	**0.0**
	0.8nm,0.4s,mb4.2,baz=194,slow=3.4,SNR=5.2						
KURK	**Kurchatov**	**63.78**	**329**	*e*P	**P**	**11 04 49.9**	**-0.2**
BVAR	**Borovoye Array**	**69.33**	**328**	P	**P**	**11 05 25.0**	**-0.2**
	1.5nm,0.7s,mb4.0,baz=149,slow=8.6,SNR=11						
BRVK	**Borovoye**	**69.41**	**328**	*e*P	**P**	**11 05 23.6**	**-2.0**
BRVK				*e*pP	pP	11 05 36.7	-4.1
BRVK				*e*sP	sP	11 05 47.1	+0.5
ZRNK	**Zerenda**	**70.04**	**327**	*e*P	**P**	**11 05 28.2**	**-1.3**
ZRNK				*e*pP	pP	11 05 43.7	-1.0
TIXI	**Tiksi**	**70.65**	**1**	*e*P	**P**	**11 05 34.1**	**+1.2**
SML	**Sawmill**	**87.10**	**28**	*e*P	**P**	**11 07 03.2**	**+0.9**
DAWY	**Dawson**	**91.17**	**26**	*e*P	**P**	**11 07 17.6**	**-3.9**
DAWY				*e*	pP	11 07 35.0	-2.3
BRTR	**Keskin Array B**	**91.31**	**310**	P	**P**	**11 07 23.8**	**+0.9**
	0.3nm,0.4s,mb3.9,baz=100,slow=8.8,SNR=3.1						
VNA2	**Neumayer--Watz**	**103.95**	**194**	⇓*i*		11 12 40.7	
VNA3	**Neumayer Olymp**	**104.28**	**193**	⇑*i*		11 12 41.5	
VNA1	**Neumayer--Stat**	**104.35**	**194**	⇑*i*		11 12 41.9	

IDC 01 10:56:43.2±5.5, 5.92S×132.99E, h170km±49km, mb3.7/1, mb1 3.5/4, mb1mx3.3/12, Error ellipse: s-maj=67.6km s-min=21.1km az=79.0, Aru Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**14.00**	**175**	P	P	10 59 55.5	+0.2
	0.4nm,0.3s,baz=356,slow=13,SNR=5.0						
WRA				S	S	11 02 26.1	-0.7
	0.1nm,0.3s,baz=359,slow=23,SNR=3.4						
FITZ	**Fitzroy Crossi**	**14.08**	**210**	P	P	10 59 54.4	-1.9
	0.5nm,0.3s,baz=26,slow=12,SNR=12						
FITZ				S	S	11 02 31.6	+3.0
	0.4nm,0.3s,slow=20,SNR=5.0						
ASAR	**Alice Springs**	**17.67**	**177**	P	P	11 00 39.4	-0.6
	0.3nm,0.3s,baz=7.1,slow=12,SNR=5.1						
ASAR				S	S	11 03 52.8	+3.9
	0.0nm,0.3s,baz=356,slow=29,SNR=2.8						
MKAR	**Makanchi Array**	**69.00**	**325**	P	P	11 07 30.0	-2.1
	2.7nm,1.2s,baz=112,slow=7.8,SNR=4.1						

*NAO **01** 11:15:56.6±3.1, 67.84N×20.38E, ML2.0*
*BER **01** 11:15:58.9±4.3, 67.88N×20.29E, ML1.8, ML2.0(NAO), Suspected explosion*
*HEL **01** 11:15:58.4±0.2, 67.86N×20.47E, ML2.0, ML1.8(BER), ML2.0(NAO), Explosion*
ISC 01 11:15:52.4±0.6, 67.63N±0.03×20.31E±0.07, n17, σ1§27/21, Sweden

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KIF	**Kilpisjarvi**	**1.39**	**7**	*e*P	**Pb**	**11 16 19.3**	**+0.2**
KIF				*e*S	**Sb**	**11 16 36.0**	**-1.2**
KTK1	**Kautokeino**	**1.76**	**37**	*e*P	**Pn**	**11 16 25.0**	**+0.6**
KTK1				*e*SN	**Sn**	**11 16 48.7**	**+0.8**
KTK1				AML	AML	11 16 58.9	
	comp=Z,10nm,0.6s						
SGF	**Sodankyl**	**2.40**	**92**	*e*P	**Pn**	**11 16 38.6**	**+5.1**
SGF				*e*SG	**Sg**	**11 17 10.5**	**-1.6**
LOF	**Lofoten**	**2.61**	**284**	*e*SG	**Sg**	**11 17 20.4**	**+1.0**
LOF				AML	AML	11 17 22.9	
	comp=Z,12nm,0.6s						
ARA0	**ARCESS Array S**	**2.70**	**43**	*e*P	**Pn**	**11 16 38.9**	**+1.0**
ARA0				*e*SG	**Sg**	**11 17 15.8**	**-6.6**
ARA0	**ARCESS Array S**	**2.70**	**43**	Pn	**Pn**	**11 16 38.9**	**+1.0**
	baz=228,slow=16						
ARA0				Lg		11 17 15.8	
	baz=226,slow=28						
MOR8	**Moi Rana**	**2.74**	**240**	*e*SG	**Sg**	**11 17 22.0**	**-1.7**
MOR8				AML	AML	11 17 24.4	
	comp=Z,15nm,0.4s						
KEV	**Kevo**	**3.24**	**46**	*e*P	**Pn**	**11 16 47.6**	**+2.0**
KEV				*e*SB	**Sb**	**11 17 28.9**	**-2.1**
OUL	**Oulu**	**3.41**	**136**	*e*SG	**Sg**	**11 17 46.8**	**+1.0**
OUL				MSG		11 17 52.4	
	comp=Z,3.0nm,0.3s						
NSS	**Namsos**	**4.61**	**231**	*e*SG	**Sg**	**11 18 25.3**	**-0.5**
APA0	**Apatity Array**	**4.85**	**84**	*e*S	**Sn**	**11 18 06.0**	**-0.2**
APA0	**Apatity Array**	**4.85**	**84**	Sn	**Sn**	**11 18 06.0**	**-0.2**
	baz=286,slow=28						
FIA0	**FINESS Array S**	**6.69**	**156**	*e*S	**Sn**	**11 18 55.9**	**+3.7**
FIA0				*e*SG	**Sg**	**11 19 31.1**	**-4.0**
FIA0	**FINESS Array S**	**6.69**	**156**	Sn	**Sn**	**11 18 55.9**	**+3.7**
	baz=351,slow=28						
FIA0				Lg		11 19 31.1	
	baz=348,slow=28						
HFS	**Hagfors**	**8.07**	**204**	Lg		11 20 15.6	
	baz=354,slow=28						
HFS	**Hagfors**	**8.07**	**204**	*e*SG	**Sg**	**11 20 15.6**	**-5.4**
HFS	**Hagfors**	**8.07**	**204**	Lg		11 20 15.6	
	baz=354,slow=28						

*GUC **01** 11:23:52.6±0.7, 33.77S×72.02W, h8km±1km, MD3.4, ML3.5*
*NEIC **01** 11:23:52.6, 33.77S×72.02W, h8km, ML3.5(GUC), After GUC.*
ISC 01 11:23:51.6±1.1, 33.77S±0.03×72.09W±0.05, h9km±5km, n18, σ0§57/33, 7C-3D, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LCCH	**Las Cruces**	**0.52**	**56**	⇑*i*P	**Pg**	**11 24 02.5**	**+0.4**
LCCH				*i* S	**Sg**	**11 24 09.8**	**+0.6**
LNV	**Longovilo**	**0.59**	**108**	⇓*i*P	**Pg**	**11 24 03.9**	**+0.5**
LNV				*i* S	**Sg**	**11 24 11.9**	**+0.5**
IHA	**Instituto Hidr**	**0.83**	**27**	⇑*i*P	**Pb**	**11 24 07.7**	**0.0**
IHA				*i* S	**Sb**	**11 24 19.2**	**+0.4**
TACH	**Talagante**	**0.96**	**83**	⇑*i*P	**Pb**	**11 24 09.2**	**-0.8**
TACH				*i* S	**Sb**	**11 24 22.3**	**-0.4**
RCDM	**Rinconada Maip**	**1.10**	**76**	*i* P	**Pb**	**11 24 11.5**	**-0.9**
RCDM				*i* S	**Sb**	**11 24 26.2**	**-0.5**
ROCH	**El Roble**	**1.20**	**49**	*i* P	**Pb**	**11 24 13.6**	**-0.5**
ROCH				*i* S	**Sb**	**11 24 30.3**	**+0.8**
CHCH	**Chadas Angostu**	**1.20**	**98**	⇑*i*P	**Pb**	**11 24 13.3**	**-0.8**
CHCH				*i* S	**Sb**	**11 24 29.5**	**-0.1**
SFDO	**San Fernando**	**1.22**	**134**	*e*P	**Pb**	**11 24 14.1**	**-0.4**
SFDO				*i* S	**Sb**	**11 24 30.8**	**+0.6**
ANTU	**Antumapu**	**1.23**	**81**	*i* P	**Pb**	**11 24 13.9**	**-0.6**
ANTU				*i* S	**Sb**	**11 24 30.1**	**-0.2**
ANTU				AMP		11 24 34.6	
	comp=E,589nm,0.4s						
CACH	**El Canelo**	**1.28**	**106**	⇓*i*P	**Pb**	**11 24 15.7**	**+0.2**
CACH				*i* S	**Sb**	**11 24 33.0**	**+1.2**
PCH	**Pirque**	**1.32**	**84**	⇑*i*P	**Pb**	**11 24 15.0**	**-1.1**
PCH				*i* S	**Sb**	**11 24 32.8**	**-0.2**
PEL	**Peldehue**	**1.33**	**62**	⇑*i*P	**Pb**	**11 24 15.6**	**-0.6**
PEL				*i* S	**Sb**	**11 24 32.9**	**-0.3**
PACH	**Papudo**	**1.35**	**24**	*i* P	**Pb**	**11 24 16.5**	**-0.1**
PACH				*i* S	**Sb**	**11 24 34.0**	**+0.2**
CICH	**Cipreses**	**1.49**	**112**	⇑*i*P	**Pn**	**11 24 18.3**	**-0.3**
JACH	**Jahuel**	**1.66**	**49**	*i* P	**Pn**	**11 24 20.6**	**-0.5**
JACH				*i* S	**Sn**	**11 24 42.9**	**+0.2**
TALC	**Talca**	**1.66**	**167**	*i* P	**Pn**	**11 24 21.8**	**+0.6**
TALC				*i* S	**Sn**	**11 24 43.3**	**+0.5**
TALC				AMP		11 24 48.1	
	comp=E,2μm,0.5s						
PTCH	**Petorca**	**1.79**	**33**	⇓*i*P	**Pn**	**11 24 23.4**	**+0.5**
PTCH				*i* S	**Sn**	**11 24 47.1**	**+1.1**
PTCH				AMP		11 24 50.6	
	comp=E,598nm,0.3s						
CMCH	**Combarbala**	**2.75**	**20**	AMP		11 25 20.3	
	comp=N,525nm,0.6s						

*NEIC **01** 11:27:40.9±0.8, 17.23S×69.98W, h158km±8km, Error ellipse: s-maj=15.9km s-min=13.3km az=223.0*
*IDC **01** 11:27:41.0±1.6, 17.28S×69.87W, h157km±15km, mb3.4/5, mb1 3.5/6, mb1mx3.3/15, Error ellipse: s-maj=27.4km s-min=12.9km az=102.0*
ISC 01 11:27:39.9±0.8, 17.27S±0.07×69.95W±0.10, h163km±7km, n12, σ1§03/17, mb3.6/5, 1C, Peru-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ARE	**Arequipa**	**1.68**	**298**	⇑*i*P	**P**	**11 28 12.2**	**-0.5**
LPAZ	**La Paz**	**2.00**	**61**	P	**P**	**11 28 17.3**	**+1.2**
	39nm,0.3s,baz=268,slow=9.0,SNR=808						
LPAZ				S	**S**	**11 28 43.6**	**-0.5**
	4.0nm,0.3s,baz=352,slow=23,SNR=4.4						
LPAZ	**La Paz**	**2.00**	**61**	*e*P	**P**	**11 28 17.2**	**+1.0**
LPAZ				P		11 28 17.3	
LPAZ				*e*S	**S**	**11 28 41.7**	**-2.4**
LPAZ				S	**S**	**11 28 43.6**	**-0.5**
LVC	**Limon Verde**	**5.40**	**170**	P	**P**	**11 29 01.5**	**+1.8**
	1.7nm,0.3s,baz=342,slow=8.9,SNR=28						
LVC				S	**S**	**11 30 00.6**	**-0.9**
	3.4nm,0.3s,baz=243,slow=23,SNR=16						
LVC	**Limon Verde**	**5.40**	**170**	P	**P**	**11 29 01.5**	**+1.8**
LVC				*e*P		11 29 01.5	
LVC				*e*S	x	11 29 44.2	
LVC				S	**S**	**11 30 00.6**	**-0.9**
BDFB	**Brasilia**	**21.10**	**89**	P	**P**	**11 32 13.6**	**+0.8**
	2.3nm,0.8s,mb3.6,baz=245,slow=14,SNR=3.8						
DBIC	**Dimbokro**	**68.55**	**75**	P	**P**	**11 38 26.4**	**-1.0**
	1.4nm,0.6s,mb3.9,baz=219,slow=6.2,SNR=3.9						
PDAR	**Pinedale Array**	**69.97**	**330**	P	**P**	**11 38 36.3**	**+0.7**
	0.2nm,0.5s,mb3.1,baz=137,slow=16,SNR=3.4						
ULM	**Lac du Bonnet**	**71.01**	**343**	P	**P**	**11 38 40.8**	**-0.9**
	1.8nm,0.3s,mb4.2,baz=150,slow=6.9,SNR=6.7						
QSPA	**South Pole Qui**	**72.90**	**180**	P	**P**	**11 38 51.5**	**-0.9**
YKA	**Yellowknife Ar**	**86.89**	**341**	P	**P**	**11 40 07.8**	**+0.9**
	0.2nm,0.5s,mb3.2,baz=134,slow=5.0,SNR=7.9						
YKA	**Yellowknife Ar**	**86.89**	**341**	P	**P**	**11 40 07.8**	**+0.9**

*IDC **01** 11:32:53.5±0.9, 0.94N×125.93E, mb4.1/8, mb1 4.2/9, mb1mx4.0/18, ML4.0/1, Error ellipse: s-maj=63.9km s-min=15.1km az=72.0*
*NEIC **01** 11:32:54.3±0.5, 1.12N×126.43E, h10km, mb4.4/2, Error ellipse: s-maj=29.6km s-min=8.8km az=76.0*
ISC 01 11:32:56.1±0.6, 1.0N±0.1×126.1E±0.3, h33km, n19, σ0§77/17, mb4.2/10, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**18.94**	**181**	P	**P**	**11 37 16.4**	**-0.7**
	0.4nm,0.3s,baz=90,slow=2.2,SNR=8.2						
WRAB	**Tennant Creek**	**22.28**	**159**	*e*P	**P**	**11 37 52.0**	**0.0**
	14nm,0.6s,mb4.5						
WRA	**Warramunga Arr**	**22.28**	**159**	P	**P**	**11 37 52.5**	**+0.4**
	4.4nm,0.5s,mb4.2,baz=337,slow=11,SNR=71						
WB2	**Warramunga Arr**	**22.29**	**159**	*e*P	**P**	**11 37 51.8**	**-0.3**
AS12	**Alice Springs**	**25.62**	**163**	*e*P	**P**	**11 38 24.7**	**+0.2**
	3.3nm,0.3s,mb4.3						
ASAR	**Alice Springs**	**25.62**	**163**	P	**P**	**11 38 25.4**	**+0.8**
	2.7nm,0.3s,mb4.2,baz=346,slow=12,SNR=75						
ASAR				PcP	PcP	11 41 56.0	+0.5
	0.4nm,0.5s,baz=348,slow=2.4,SNR=4.7						
NWAO	**Narrogin (SRO)**	**34.72**	**193**	P	**P**	**11 39 45.1**	**-0.1**
	4.7nm,0.9s,mb4.4,baz=31,slow=6.5,SNR=2.6						
STKA	**Stephens Creek**	**35.80**	**157**	P	**P**	**11 39 54.8**	**+0.3**
	4.7nm,0.8s,mb4.5,baz=335,slow=13,SNR=4.6						
MAJO	**Matsushiro**	**37.15**	**16**	*e*P	**P**	**11 40 01.4**	**-4.4**
	3.3nm,0.8s,mb4.2						
SONM	**Songino Array**	**49.73**	**343**	P	**P**	**11 41 47.6**	**+0.4**
	0.7nm,0.7s,mb3.8,baz=135,slow=10,SNR=3.9						
MKAR	**Makanchi Array**	**59.48**	**326**	P	**P**	**11 42 57.2**	**-1.2**
	0.8nm,0.4s,mb4.2,baz=124,slow=8.1,SNR=16						
MKAR	**Makanchi Array**	**59.48**	**326**	P	**P**	**11 42 57.2**	**-1.2**
BVAR	**Borovoye Array**	**69.30**	**328**	P	**P**	**11 44 02.1**	**0.0**
	0.7nm,0.5s,mb3.8,baz=135,slow=8.4,SNR=8.3						
BRVK	**Borovoye**	**69.37**	**328**	*e*P	**P**	**11 44 02.9**	**+0.3**
ZRNK	**Zerenda**	**70.01**	**327**	*e*P	**P**	**11 44 06.3**	**-0.1**
DAWY	**Dawson**	**91.14**	**26**	*e*P	**P**	**11 45 57.6**	**-1.1**
FINES	**FINESS Array B**	**93.96**	**332**	P	**P**	**11 46 13.7**	**+2.1**
	0.5nm,0.9s,mb4.0,baz=153,slow=37,SNR=3.0						
YKA	**Yellowknife Ar**	**102.28**	**24**	P	Pdif	11 46 51.2	+1.9
	0.1nm,0.5s,baz=278,slow=8.0,SNR=4.2						
YKA	**Yellowknife Ar**	**102.28**	**24**	P	Pdif	11 46 51.2	+1.9

*NEIC **01** 11:50:28.7±0.9, 7.06N×73.35W, h166km±13km, mb3.5/3, Error ellipse: s-maj=23.6km s-min=14.7km az=111.0*
*IDC **01** 11:50:29.3±1.3, 7.10N×73.28W, h139km±26km, mb2.6/1, mb1 3.1/3, mb1mx2.9/22, Error ellipse: s-maj=69.2km s-min=7.8km az=131.0*
ISC 01 11:50:27.8±0.8, 7.1N±0.1×73.3W±0.1, h162km±12km, n8, σ0§96/9, mb3.5/4, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ROSC	**El Rosal**	**2.47**	**204**	P	**P**	**11 51 09.9**	**+0.3**
	12nm,0.3s,baz=284,slow=18,SNR=30						
ROSC				S	**S**	**11 51 41.6**	**-0.1**
	29nm,0.3s,baz=82,slow=23,SNR=15						
SDV	**Santo Domingo**	**3.18**	**57**	P	**P**	**11 51 19.9**	**+1.3**
	7.7nm,0.3s,baz=263,slow=13,SNR=61						
SDV				S	**S**	**11 51 56.7**	**-0.9**
	3.5nm,0.3s,baz=23,slow=8.4,SNR=16						
LPAZ	**La Paz**	**23.82**	**168**	P	**P**	**11 55 26.9**	**-0.4**
	1.6nm,1.4s,mb3.4						
MIAR	**Mount Ida**	**33.06**	**328**	P	**P**	**11 56 49.6**	**-0.6**
	6.3nm,1.3s,mb4.2						
ANMO	**Albuquerque**	**41.16**	**317**	*e*P	**P**	**11 57 56.7**	**-1.1**
	0.9nm,0.9s,mb3.4						
YKA	**Yellowknife Ar**	**62.91**	**340**	P	**P**	**12 00 40.7**	**+1.8**
	0.1nm,0.5s,mb2.9,baz=132,slow=6.5,SNR=6.7						
YKA	**Yellowknife Ar**	**62.91**	**340**	P	**P**	**12 00 40.7**	**+1.8**
WRA	**Warramunga Arr**	**150.31**	**242**	PKPbc	PKPdf	12 10 04.8	+10
	0.9nm,1.2s,baz=103,slow=2.8,SNR=4.8						

*NEIC **01** 11:53:43.9±0.8, 5.60S×128.08E, h290km, mb4.0/2, Error ellipse: s-maj=38.6km s-min=10.4km az=70.0*
*IDC **01** 11:53:55.4±8.5, 6.19S×127.82E, h434km±118km, mb3.0/1, mb1 3.2/4, mb1mx3.0/13, Error ellipse: s-maj=91.0km s-min=45.1km az=50.0*
ISC 01 11:53:49.0±4.0, 5.9S±0.3×128.0E±0.5, h380km±52km, n8, σ0§73/9, mb3.5/2, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**12.30**	**190**	P	**P**	**11 56 34.8**	**-0.3**
	0.3nm,0.3s,baz=12,slow=9.3,SNR=7.9						
WRAB	**Tennant Creek**	**15.24**	**156**	*e*P	**P**	**11 57 07.1**	**-0.2**
	19nm,1.1s						
WRA	**Warramunga Arr**	**15.25**	**157**	P	**P**	**11 57 07.4**	**0.0**
	0.8nm,0.3s,baz=334,slow=11,SNR=45						
WRA				S	**S**	**11 59 45.9**	**-0.7**
	0.1nm,0.3s,baz=335,slow=21,SNR=3.4						
WB2	**Warramunga Arr**	**15.25**	**156**	*e*P	**P**	**11 57 07.5**	**+0.1**
ASAR	**Alice Springs**	**18.54**	**163**	P	**P**	**11 57 42.4**	**+1.6**
	0.6nm,0.3s,baz=344,slow=12,SNR=39						
ENH	**Enshi**	**40.12**	**335**	P	**P**	**12 00 50.0**	**-0.9**
	1.4nm,0.5s,mb3.5						
MKAR	**Makanchi Array**	**66.23**	**328**	P	**P**	**12 03 59.7**	**+0.6**
	0.5nm,0.4s,mb3.6,baz=117,slow=7.7,SNR=11						
MKAR	**Makanchi Array**	**66.23**	**328**	P	**P**	**12 03 59.7**	**+0.6**

*NEIC **01** 12:25:38.3±0.7, 13.61N×142.03E, h10km, mb4.3/2, Error ellipse: s-maj=24.6km s-min=16.7km az=81.0*
*IDC **01** 12:25:39.1±1.0, 12.94N×143.66E, mb3.7/6, mb1 4.0/6, mb1mx3.7/20, Error ellipse: s-maj=76.9km s-min=24.3km az=

MOA				*i* Sg	**Sg**	**12 49 30.3**	**-1.9**

IDC ***01*** *13:15:50.5±0.9,25.51N×142.90E, mb3.7/8, mb1 3.9/8, mb1mx3.7/22, Error ellipse: s-maj=36.7km s-min=16.0km az=89.0*
NEIC ***01*** *13:15:52.1±0.7,25.58N×142.71E, h10km, Error ellipse: s-maj=27.6km s-min=13.7km az=92.0*
ISC 01 13:15:53.2±0.8,25.40N±0.08×142.9E±0.2, h33km, n14, σ1§29/15, mb3.7/8, Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**1.80**	**340**	Pn		**Pn**		**13 16 23.1**	**+0.6**
	47nm,0.3s,baz=235,slow=2.6,SNR=45								
CBIJ				Sn		**Sn**		**13 16 47.0**	**+2.6**
	66nm,0.3s,baz=287,slow=23,SNR=12								
WRA	**Warramunga Arr**	**45.82**	**191**	P		**P**		**13 24 14.7**	**+0.6**
	1.1nm,0.5s,mb4.0,baz=9.2,slow=8.7,SNR=11								
WRA	**Warramunga Arr**	**45.82**	**191**	P		**P**		**13 24 14.7**	**+0.6**
FITZ	**Fitzroy Crossi**	**46.37**	**203**	P		**P**		**13 24 21.4**	**+2.9**
	1.8nm,0.8s,mb4.1,baz=41,slow=11,SNR=3.8								
ASAR	**Alice Springs**	**49.54**	**191**	P		**P**		**13 24 43.5**	**+0.4**
	0.5nm,1.1s,mb3.5,baz=12,slow=9.8,SNR=4.6								
MKAR	**Makanchi Array**	**52.03**	**311**	P		**P**		**13 25 00.7**	**-1.0**
	0.3nm,0.5s,mb3.5,baz=95,slow=9.8,SNR=8.3								
KURK	**Kurchatov**	**54.61**	**315**	*e*P		**P**		**13 25 18.8**	**-1.9**
ILAR	**Eielson Array**	**58.91**	**28**	P		**P**		**13 25 50.7**	**-0.5**
	1.2nm,1.1s,mb3.8,baz=255,slow=5.2,SNR=5.2								
ZRNK	**Zerenda**	**60.54**	**318**	*e*P		**P**		**13 26 00.1**	**-2.5**
YKA	**Yellowknife Ar**	**73.34**	**28**	P		**P**		**13 27 23.3**	**+0.3**
	0.9nm,1.1s,mb3.6,baz=291,slow=5.8,SNR=7.6								
YKA	**Yellowknife Ar**	**73.34**	**28**	P		**P**		**13 27 23.3**	**+0.3**
FINES	**FINESS Array B**	**79.73**	**334**	P		**P**		**13 27 59.0**	**-0.1**
	0.3nm,0.3s,mb3.6,baz=90,slow=3.8,SNR=12								
FINES	**FINESS Array B**	**79.73**	**334**	P		**P**		**13 27 59.0**	**-0.1**
NOA	**NORSAR Array B**	**85.41**	**339**	P		**P**		**13 28 28.3**	**+0.1**
	0.1nm,0.6s,mb3.1,baz=53,slow=4.2,SNR=2.8								

DJA 01 13:26:34.5±0.9, 9.38S×114.00E, h62km±28km, MD4.8/4, ML4.8/4, 4C-4D, Error ellipse: s-maj=35.6km s-min=14.2km az=23.0, South of Bali

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
KELI	**Kelakatan**	**1.25**	**23**	*e*Pn		P		13 26 55.4	-0.9
	1µm,0.2s								
KELI				*e*Sn		S		13 27 11.1	-1.3
INGI	**Ingas**	**1.26**	**64**	*e*Pn		P		13 26 55.5	-0.9
	1µm,0.2s								
INGI				*e*Sn		S		13 27 11.1	-1.5
RATI	**Rata**	**1.65**	**67**	*e*Pn		P		13 27 01.0	-0.8
	2µm,0.2s								
RATI				*e*Sn		S		13 27 19.8	-2.1
KEDI	**Kedomdong**	**2.27**	**67**	*e*Pn		P		13 27 09.2	-1.2
	192nm,0.2s								
KEDI				*e*Sn		S		13 27 34.2	-3.0

NEIC ***01*** *13:44:56.8±0.9,9.17S×123.45E, h10km, mb4.4/2, Error ellipse: s-maj=29.5km s-min=11.6km az=61.0*
IDC ***01*** *13:44:56.7±1.4,9.47S×123.04E, mb3.9/3, mb1 4.2/6, mb1mx4.0/14, ML4.2/3, Error ellipse: s-maj=118.0km s-min=21.0km az=62.0*
ISC 01 13:45:05.2±2.5, 9.7S±0.2×123.4E±0.2, h101km±30km, n13, σ1§16/17, mb3.9/4, Timor region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**8.62**	**166**	*e*P		**P**		**13 47 07.5**	**-1.2**
	4.7nm,0.3s								
FITZ				*e*S		**S**		**13 48 38.3**	**-6.6**
FITZ	**Fitzroy Crossi**	**8.62**	**166**	Pn		**P**		**13 47 07.8**	**-0.9**
	2.5nm,0.3s,baz=2.8,slow=8.7,SNR=46								
FITZ				Sn		**S**		**13 48 38.5**	**-6.4**
	5.8nm,0.3s,baz=194,slow=12,SNR=13								
WRA	**Warramunga Arr**	**14.66**	**135**	Pn		**P**		**13 48 29.6**	**+0.8**
	1.1nm,0.3s,baz=317,slow=13,SNR=51								
WRA				Sn		**S**		**13 51 08.4**	**-0.6**
	0.6nm,0.3s,baz=294,slow=23,SNR=23								
WRAB	**Tennant Creek**	**14.67**	**135**	*e*P		**P**		**13 48 28.8**	**0.0**
	12nm,0.7s								
WB2	**Warramunga Arr**	**14.67**	**135**	*e*P		**P**		**13 48 28.9**	**0.0**
WB2				*e*S		**S**		**13 51 06.5**	**-2.7**
AS12	**Alice Springs**	**17.13**	**145**	*e*P		**P**		**13 49 02.7**	**+3.0**
	6.4nm,0.4s								
ASAR	**Alice Springs**	**17.13**	**145**	P		**P**		**13 49 02.6**	**+2.9**
	1.2nm,0.3s,baz=318,slow=12,SNR=57								
ASAR				S		**S**		**13 52 06.7**	**+1.6**
	0.3nm,0.3s,baz=316,slow=20,SNR=5.8								
PMG	**Port Moresby**	**23.43**	**91**	P		**P**		**13 50 06.5**	**+0.3**
	11nm,1.0s,mb4.1								
STKA	**Stephens Creek**	**27.77**	**145**	P		**P**		**13 50 51.4**	**+4.7**
	1.8nm,0.7s,mb3.7,baz=338,slow=16,SNR=2.9								
ENH	**Enshi**	**41.94**	**342**	P		**P**		**13 52 42.5**	**-5.2**
SONM	**Songino Array**	**59.25**	**347**	P		**P**		**13 54 58.7**	**+0.4**
	0.8nm,0.7s,mb3.9,baz=169,slow=7.3,SNR=3.0								
MKAR	**Makanchi Array**	**67.13**	**331**	P		**P**		**13 55 49.3**	**-0.9**
	0.6nm,0.5s,mb3.7,baz=193,slow=7.8,SNR=8.7								
INK	**Inuvik**	**103.80**	**22**	*e*Pdif		Pdif		13 58 54.4	-2.2

NEIC ***01*** *13:47:37.0±0.8,49.87N×18.23E, h5km, ML3.1(FUR), ML3.0(SZGRF), ML2.6(VIE), Error ellipse: s-maj=10.1km s-min=6.8km az=217.0*
BGR ***01*** *13:47:38.5±1.2,49.80N×18.33E, h1km, ML3.0/7, Error ellipse: s-maj=15.6km s-min=13.3km az=52.0*
PRU 01 13:47:36.1,49.84N×18.43E, 2C, Czech and Slovak Republics

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
OKC	**Ostrava-Krasne**	**0.18**	**269**	*e*PG		Pg		13 47 40.4	+0.6
OKC				*e*SG		Sg		13 47 43.8	+1.6
RAC	**Raciborz**	**0.29**	**328**	*e*Pg		Pg		13 47 42.0	+0.2
RAC				*e*Sg		Sg		13 47 47.0	+1.3
MORC	**Moravsky Berou**	**0.58**	**264**	*e*P		Pg		13 47 46.8	-0.8
LIKS	**Likavka**	**0.91**	**151**	*i* SN		Sn		13 48 08.9	-0.9
OJC	**Ojcow**	**0.96**	**66**	*e*Pg		Pg		13 47 52.5	-2.8
OJC				*e*Sg		Sg		13 48 05.3	-2.8
KOLL	**Kolacno**	**1.26**	**181**	*i* PN		Pn		13 47 59.6	-1.4
KOLL				*e*SN		Sn		13 48 17.0	-1.9
NIE	**Niedzica**	**1.29**	**108**	*e*Pg		Pg		13 47 59.5	-2.5
NIE				*e*Sg		Sg		13 48 18.7	-0.5
VYHS	**Vyhne**	**1.37**	**169**	*i* PN		Pn		13 48 01.4	-1.1
VYHS				*e*SN		Sn		13 48 19.2	-2.5
DPC	**Dobruska-Polom**	**1.45**	**291**	*e*PG		Pg		13 48 02.5	-2.6
DPC				*e*SG		Sg		13 48 22.3	-2.1
	35nm,0.3s								
UPC	**Upice**	**1.69**	**294**	*e*PG		Pg		13 48 06.9	-3.0
UPC				*e*SG		Sg		13 48 29.7	-2.7
KSP	**Ksiaz**	**1.70**	**307**	*e*Pg		Pg		13 48 07.3	-2.7
KSP				*e*Sn		Sn		13 48 27.8	-2.1
KSP				*e*Sg		Sg		13 48 30.6	-2.0
ZST	**Bratislava**	**1.86**	**208**	*e*SN		Sn		13 48 31.9	-2.2
KECS	**Kecovo**	**1.91**	**134**	*e*SN		Sn		13 48 34.4	-1.0
PSZ	**Piszkesteto**	**2.15**	**153**	*e*P		Pn		13 48 15.4	+1.7
CRVS	**Cervenica-Dubn**	**2.19**	**114**	*e*PN		Pn		13 48 16.5	+2.2
CRVS				*e*SN		Sn		13 48 44.3	+1.8
PRU	**Pruhonice**	**2.52**	**275**	*e*PG		Pg		13 48 20.4	-6.0
PRU				*i* x		x		13 48 23.2	
PRU				SG		Sg		13 48 54.0	-5.9
	20nm,0.8s								
BRG	**Berggiesshubel**	**3.05**	**292**	*e*Pg		Pg		13 48 32.0	-5.1
BRG				*e*Sg		Sg		13 49 12.7	-5.0
BRG	**Berggiesshubel**	**3.05**	**292**	*i* Pg		Pg		13 48 31.9	-5.2
BRG				*i* Sg		Sg		13 49 12.1	-5.7
KHC	**Kasperske Hory**	**3.24**	**259**	*e*PN		Pn		13 48 26.7	-2.5
KHC				*e*PG		Pg		13 48 36.2	-4.6
KHC				*e*SG		Sg		13 49 18.4	-5.6
GEC2	**GERESS Array S**	**3.25**	**254**	*e*Pn		Pn		13 48 27.7	-1.6
GEC2				*e*Sg		Sg		13 49 18.9	-5.3
GEC2	**GERESS Array S**	**3.25**	**254**	*e*Pn		Pn		13 48 27.7	-1.6
GEC2				*e*Sg		Sg		13 49 18.9	-5.3
MOA	**Molln**	**3.40**	**236**	*i* PN		Pn		13 48 29.0	-2.4
MOA				*i* SG		Sg		13 49 24.5	-4.6
	3.7nm,0.5s								
WET	**Wettzell**	**3.69**	**261**	*e*Pg		Pg		13 48 46.0	-3.7
WET				*e*Sg		Sg		13 49 33.5	-5.3
WET	**Wettzell**	**3.69**	**261**	*e*Pg		Pg		13 48 46.0	-3.7
WET				*e*Sg		Sg		13 49 33.5	-5.3
CLL	**Collm**	**3.76**	**295**	*e*Sg		Sg		13 49 37.3	-3.9
GUNZ	**Gunzen**	**3.96**	**280**	*e*Sg		Sg		13 49 41.9	-6.0
MOX	**Moxa**	**4.45**	**283**	*e*Sg		Sg		13 49 58.9	-5.3
MOX	**Moxa**	**4.45**	**283**	*e*Pg		Pg		13 48 57.3	-7.6
MOX				*e*Sg		Sg		13 49 59.3	-4.9
GRF	**Grafenberg Arr**	**4.67**	**271**	*e*Sg		Sg		13 50 04.2	-7.6

NIED ***01*** *13:51:00,28.40N×129.50E, h77km, Mw3.7 Best double couple: M0 4.14×10^14 NP1:φs122°,δ67°,λ-118°. NP2: φs356°,δ36°,λ-41°.*
JMA ***01*** *13:51:45.9±0.1,28.45N×129.47E, h55km±1km, M3.6*
ISC 01 13:51:45.5±1.0,28.42N±0.07×129.5E±0.1, h60km±12km, n7, σ0§45/14, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JAM	**Amami Oshima**	**0.12**	**94**	P		**P**		**13 51 54.3**	**-0.2**
JAM				S		**S**		**13 52 00.4**	**-0.7**
JZK	**Kikaishima**	**0.45**	**103**	P		**P**		**13 51 56.9**	**-0.1**
JZK				S		**S**		**13 52 05.8**	**+0.4**
JTK	**Tokunoshima**	**0.78**	**216**	P		**P**		**13 52 01.5**	**+0.7**
JTK				S		**S**		**13 52 13.2**	**+1.0**
JNN	**Nakanoshima**	**1.46**	**14**	P		**P**		**13 52 10.0**	**-0.2**
JNN				S		**S**		**13 52 28.5**	**+0.1**
JOW	**Kunigami**	**1.91**	**214**	P		**P**		**13 52 16.0**	**-0.3**
JOW				S		**S**		**13 52 38.5**	**-0.6**
JIH	**Iheya**	**1.92**	**224**	P		**P**		**13 52 16.7**	**+0.2**
JIH				S		**S**		**13 52 39.0**	**-0.4**
JKC	**Kuchinoerabu**	**2.13**	**17**	P		**P**		**13 52 19.4**	**-0.1**
JKC				S		**S**		**13 52 45.0**	**+0.3**

NEIC ***01*** *13:52:21.3,46.90N×7.10E, h5km, ML2.3(LDG), ML1.9(STR), ML1.5(ZUR), After ZUR.*
STR ***01*** *13:52:21.9±0.9,46.91N×7.08E, h10km±1km, Ml1.9, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
ZUR ***01*** *13:52:21.3,46.88N×7.12E, h5km, ML1.5/6*
LDG ***01*** *13:52:22.4±0.1,46.91N×7.04E, h8km, Md2.3/2, Ml2.3/13, Error ellipse: s-maj=1.6km s-min=0.8km az=98.0*
ISC 01 13:52:20.3±0.3,46.89N±0.02×6.97E±0.03, h10km, n25, σ1§12/38, 2C, Switzerland

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
TORNY	**Torny**	**0.12**	**183**	*i* Pg		**Pg**		**13 52 24.6**	**+1.3**
	3.0nm,0.2s								
BRANT	**Les Verrieres**	**0.34**	**278**	*e*Pg		**Pg**		**13 52 30.5**	**+3.1**
	1.8nm,0.4s								
BRANT				*i* Sg		**Sg**		**13 52 37.1**	**+5.0**
	1.8nm,0.4s								
LOMF	**Lomont**	**0.47**	**348**	Pg		**Pg**		**13 52 30.3**	**+0.5**
WIMIS	**Wimmis**	**0.51**	**117**	Pg		**Pg**		**13 52 29.5**	**-1.0**
	1.0nm,0.5s								
WIMIS				*e*Sg		**Sg**		**13 52 35.6**	**-1.8**
	1.0nm,0.5s								
AIGLE	**Aigle**	**0.55**	**181**	*e*Pg		**Pg**		**13 52 31.8**	**+0.3**
	1.4nm,0.7s								
SENIN	**Lac Senin**	**0.58**	**157**	*e*Pg		**Pg**		**13 52 32.0**	**0.0**
	0.4nm,0.3s								
BALST	**Balsthal**	**0.67**	**48**	*i* Pg		**Pg**		**13 52 33.3**	**-0.4**
	1.7nm,0.7s								
CABF	**La Chapelle**	**0.67**	**245**	*e*Pg		**Pg**		**13 52 36.0**	**+2.3**
CABF				*e*Sg		**Sg**		**13 52 45.9**	**+3.2**
	4.7nm,0.2s								
BBS	**Basel-Blauen**	**0.68**	**33**	Pg		**Pg**		**13 52 34.0**	**0.0**
HINF	**Hinteralfeld**	**0.93**	**355**	*e*Pg		**Pg**		**13 52 39.9**	**+1.0**
HINF				*e*Sg		**Sg**		**13 52 51.9**	**+0.6**
	15nm,0.2s								
MOF	**Molkenrain**	**0.97**	**7**	Pg		**Pg**		**13 52 40.7**	**+1.0**
HAU	**Haudompre**	**1.19**	**340**	*e*Pg		**Pg**		**13 52 44.8**	**+0.7**
HAU				*e*Sg		**Sg**		**13 53 00.4**	**+0.4**
	13nm,0.3s								
FELD	**Feldberg**	**1.21**	**35**	Pg		**Pg**		**13 52 43.9**	**-0.6**
ECH	**Echery**	**1.33**	**6**	Pg		**Pg**		**13 52 45.9**	**-1.0**
ECH				Sg		**Sg**		**13 53 04.5**	**-0.2**
LPL	**La Plagne**	**1.39**	**187**	*e*Pg		**Pg**		**13 52 49.0**	**+1.0**
LPL				*e*Sg		**Sg**		**13 53 07.4**	**+0.8**
	2.2nm,0.3s								
LPG	**La Plagne**	**1.40**	**186**	*e*Pg		**Pg**		**13 52 49.3**	**+0.9**
LPG				*e*Sg		**Sg**		**13 53 08.0**	**+0.9**
	2.9nm,0.3s								
THEF	**They Montfort**	**1.49**	**334**	Pg		**Pg**		**13 52 50.7**	**+0.6**
THEF				Sg		**Sg**		**13 53 11.7**	**+1.7**
CDF	**Champ du Feu**	**1.53**	**8**	*e*Pn		**Pn**		**13 52 48.3**	**+0.4**
CDF				*e*Pg		**Pg**		**13 52 50.5**	**-0.5**
CDF				*e*Sn		**Sn**		**13 53 07.0**	**-1.0**
CDF				*e*Sg		**Sg**		**13 53 09.9**	**-1.6**
	2.3nm,0.2s								
ORIF	**Oris-en-Rattie**	**2.12**	**201**	*e*Pg		**Pg**		**13 53 02.0**	**-0.6**
ORIF				*e*Sg		**Sg**		**13 53 29.9**	**-0.9**
	1.6nm,0.3s								
LOR	**Lormes**	**2.16**	**281**	*e*Sg		**Sg**		**13 53 31.4**	**-0.8**
	2.7nm,0.2s								
SMF	**Signal de Mont**	**2.16**	**265**	*e*Sg		**Sg**		**13 53 31.4**	**-1.0**
	2.3nm,0.2s								
SSF	**Saint Saulge**	**2.38**	**275**	*e*Sg		**Sg**		**13 53 38.1**	**-1.4**
	2.1nm,0.3s								
AVF	**Avril sur Loir**	**2.48**	**269**	*e*Sg		**Sg**		**13 53 42.1**	**-0.9**
	1.4nm,0.3s								
VIVF	**Saint-Julien-l**	**2.59**	**219**	*e*Sg		**Sg**		**13 53 44.6**	**-2.0**
	2.0nm,0.3s								
BGF	**Bois d'Agland**	**2.85**	**265**	*e*Sg		**Sg**		**13 53 53.7**	**-1.7**
	5.3nm,0.4s								

IDC ***01*** *14:14:10.1±0.7,37.96S×175.47E, h244km±15km, mb3.3/2, mb1 3.6/3, mb1mx3.4/11, Error ellipse: s-maj=32.7km s-min=19.5km az=130.0*
NEIC ***01*** *14:14:11.8,37.97S×176.10E, h267km, After WEL.*
WEL ***01*** *14:14:11.9±0.4,37.90S×176.05E, h263km±3km, ML4.9/8, Error ellipse: s-maj=3.2km s-min=2.7km az=90.0*
ISC 01 14:14:08.9±0.6,38.08S±0.04×176.09E±0.07, h291km±4km, n107, σ1§02/136, mb3.4/2, 2C-5D, North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
UTU	**Utuhina**	**0.12**	**139**	PN		**P**		**14 14 46.1**	**-0.1**
UTU	**Utuhina**	**0.12**	**139**	P		**P**		**14 14 46.1**	**-0.1**
LIRZ	**Lichensteins R**	**0.25**	**71**	PN		**P**		**14 14 45.9**	**-0.4**
LIRZ	**Lichensteins R**	**0.25**	**71**	P		**P**		**14 14 45.9**	**-0.4**
PATZ	**Paeroa**	**0.33**	**156**	PN		**P**		**14 14 46.8**	**+0.3**
PATZ	**Paeroa**	**0.33**	**156**	P		**P**		**14 14 46.6**	**+0.1**
TAZ	**Tarawera**	**0.36**	**114**	PN		**P**		**14 14 46.5**	**0.0**
TAZ	**Tarawera**	**0.36**	**114**	P		**P**		**14 14 46.5**	**0.0**
TGRZ	**Tauranga**	**0.38**	**21**	PN		**P**		**14 14 45.5**	**-1.1**
TGRZ	**Tauranga**	**0.38**	**21**	P		**P**		**14 14 45.5**	**-1.0**
TGRZ				S		**S**		**14 15 13.7**	**-2.2**
MARZ	**Manawahe**	**0.47**	**78**	PN		**P**		**14 14 46.2**	**-0.5**
MARZ	**Manawahe**	**0.47**	**78**	P		**P**		**14 14 46.3**	**-0.5**
EDRZ	**Edgecumbe**	**0.51**	**93**	PN		**P**		**14 14 46.2**	**-0.7**
RATZ	**Rangitukua**	**0.82**	**198**	PN		**P**		**14 14 48.3**	**+0.5**
RATZ	**Rangitukua**	**0.82**	**198**	P		**P**		**14 14 48.3**	**+0.5**
URZ	**Urewera**	**0.82**	**103**	P		**P**		**14 14 47.3**	**-0.6**
	52nm,0.3s,baz=249,slow=5.1,SNR=278								
URZ				S		**S**		**14 15 15.1**	**-3.2**
	110nm,0.3s,baz=142,slow=21,SNR=33								
URZ	**Urewera**	**0.82**	**103**	‖PN		**P**		**14 14 47.3**	**-0.6**
URZ				SN		**S**		**14 15 15.0**	**-3.2**
URZ				SN		**S**		**14 15 15.2**	**-3.1**
URZ	**Urewera**	**0.82**	**103**	‖P		**P**		**14 14 47.3**	**-0.5**
RITZ	**Rihia Road**	**0.91**	**191**	PN		**P**		**14 14 49.0**	**+0.8**
RITZ	**Rihia Road**	**0.91**	**191**	P		**P**		**14 14 49.0**	**+0.8**
KATZ	**Kakaramea**	**0.94**	**199**	PN		**P**		**14 14 49.0**	**+0.7**
KATZ				*e*SN		**S**		**14 15 18.5**	**-0.7**
KATZ	**Kakaramea**	**0.94**	**199**	P		**P**		**14 14 49.0**	**+0.7**
MGZ	**Maungaku**	**1.01**	**205**	PN		**P**		**14 14 49.6**	**+0.9**
MGZ	**Maungaku**	**1.01**	**205**	P		**P**		**14 14 49.6**	**+1.0**
HIZ	**Hauiti**	**1.06**	**246**	PN		**P**		**14 14 48.5**	**-0.4**
KAVZ	**Karewarewa**	**1.07**	**199**	PN		**P**		**14 14 49.8**	**+0.8**
KAVZ	**Karewarewa**	**1.07**	**199**	P		**P**		**14 14 49.8**	**+0.9**
WTVZ	**West Tongariro**	**1.10**	**201**	PN		**P**		**14 14 49.8**	**+0.7**
WTVZ				SN		**S**		**14 15 19.4**	**-1.2**
BKZ	**Black Stump Fm**	**1.13**	**164**	‖PN		**P**		**14 14 50.2**	**+1.0**
BKZ				SN		**S**		**14 15 19.3**	**-1.5**
NGZ	**Ngauruhoe**	**1.16**	**199**	PN		**P**		**14 14 50.0**	**+0.6**
NGZ	**Ngauruhoe**	**1.16**	**199**	P		**P**		**14 14 50.0**	**+0.6**
MWZ	**Matawai**	**1.16**	**103**	PN		**P**		**14 14 49.4**	**0.0**
MWZ				SN		**S**		**14 15 19.4**	**-1.7**
CNZ	**Chateau**	**1.19**	**201**	PN		**P**		**14 14 50.4**	**+0.7**
CNZ	**Chateau**	**1.19**	**201**	P		**P**		**14 14 50.3**	**+0.7**
WPVZ	**Whakapapa**	**1.20**	**201**	PN		**P**		**14 14 50.3**	**+0.7**
TUVZ	**Tukino**	**1.23**	**196**	PN		**P**		**14 14 50.7**	**+0.8**
TUVZ	**Tukino**	**1.23**	**196**	P		**P**		**14 14 50.7**	**+0.8**
FWVZ	**Far West T-bar**	**1.24**	**200**	PN		**P**		**14 14 50.9**	**+1.0**
FWVZ	**Far West T-bar**	**1.24**	**200**	P		**P**		**14 14 50.9**	**+1.0**
DRZ	**Dome Shelter**	**1.26**	**199**	PN		**P**		**14 14 51.7**	**+1.6**
VRZ	**Vera Road**	**1.47**	**225**	PN		**P**		**14 14 51.8**	**+0.4**
VRZ				SN		**S**		**14 15 24.8**	**+0.3**
VRZ	**Vera Road**	**1.47**	**225**	P		**P**		**14 14 51.8**	**+0.4**
KNZ	**Kokohu**	**1.56**	**127**	‖PN		**P**		**14 14 53.1**	**+1.2**
KNZ				SN		**S**		**14 15 25.1**	**-0.3**
KNZ	**Kokohu**	**1.56**	**127**	‖P		**P**		**14 14 53.1**	**+1.2**
KNZ				S		**S**		**14 15 25.1**	**-0.4**
PUZ	**Puketiti**	**1.71**	**90**	PN		**P**		**14 14 53.0**	**0.0**
PUZ				SN		**S**		**14 15 23.8**	**-3.5**
PUZ	**Puketiti**	**1.71**	**90**	P		**P**		**14 14 53.0**	**0.0**
RAEZ	**Rainy Point**	**1.79**	**227**	PN		**P**		**14 14 54.4**	**+0.8**
RAEZ	**Rainy Point**	**1.79**	**227**	P		**P**		**14 14 54.4**	**+0.8**
MXZ	**Matakaoa Point**	**1.83**	**74**	PN		**P**		**14 14 52.7**	**-1.2**
MXZ				SN		**S**		**14 15 27.6**	**-1.4**
WAZ	**Wanganui**	**1.88**	**207**	PN		**P**		**14 14 55.0**	**+0.8**
WAZ	**Wanganui**	**1.88**	**207**	P		**P**		**14 14 55.0**	**+0.8**
NEZ	**North Egmont**	**1.96**	**232**	PN		**P**		**14 14 55.9**	**+1.0**
TSZ	**Takapari Road**	**1.98**	**183**	PN		**P**		**14 14 56.2**	**+1.2**
TSZ				SN		**S**		**14 15 32.0**	**+1.1**
TSZ	**Takapari Road**	**1.98**	**183**	P		**P**		**14 14 56.2**	**+1.2**
PKE	**Pukeiti**	**1.98**	**235**	PN		**P**		**14 14 56.1**	**+1.0**
PKE				SN		**S**		**14 15 31.9**	**+0.9**
PKE	**Pukeiti**	**1.98**	**235**	P		**P**		**14 14 56.1**	**+1.0**
DFE	**Dawson Falls**	**1.99**	**231**	PN		**P**		**14 14 56.2**	**+1.1**
DFE	**Dawson Falls**	**1.99**	**231**	P		**P**		**14 14 56.2**	**+1.1**
PWZ	**Pawanui**	**2.03**	**163**	‖PN		**P**		**14 14 57.3**	**+1.8**
PWZ				SN		**S**		**14 15 34.1**	**+2.3**
PWZ	**Pawanui**	**2.03**	**163**	‖P		**P**		**14 14 57.3**	**+1.8**
NRZ	**Ngariki Road**	**2.10**	**233**	PN		**P**		**14 14 57.3**	**+1.3**
NRZ	**Ngariki Road**	**2.10**	**233**	P		**P**		**14 14 57.2**	**+1.1**
NWEZ	**Newall Road**	**2.11**	**235**	PN		**P**		**14 14 57.3**	**+1.2**
NWEZ	**Newall Road**	**2.11**	**235**	P		**P**		**14 14 57.3**	**+1.2**
BFZ	**Birch Farm**	**2.60**	**177**	PN		**P**		**14 15 02.0**	**+1.4**
BFZ				SN		**S**		**14 15 41.6**	**+0.9**
BFZ	**Birch Farm**	**2.60**	**177**	P		**P**		**14 15 02.0**	**+1.4**
KIW	**Kapiti Island**	**2.92**	**198**	PN		**P**		**14 15 04.2**	**+0.5**
CAW	**Cannon Point**	**3.12**	**194**	PN		**P**		**14 15 06.3**	**+0.6**
CAW				SN		**S**		**14 15 49.6**	**-0.4**
CAW	**Cannon Point**	**3.12**	**194**	P		**P**		**14 15 06.3**	**+0.6**
MRW	**Makara Radio**	**3.32**	**198**	PN		**P**		**14 15 08.2**	**+0.4**
MRW				SN		**S**		**14 15 53.3**	**-0.4**
MRW	**Makara Radio**	**3.32**	**198**	P		**P**		**14 15 08.2**	**+0.4**
WEL	**Wellington**	**3.36**	**197**	PN		**P**		**14 15 08.8**	**+0.6**
WEL				SN		**S**		**14 15 55.1**	**+0.7**
WEL	**Wellington**	**3.36**	**197**	*e*P		**P**		**14 15 08.8**	**+0.6**
MSWZ	**Moikau Station**	**3.39**	**191**	PN		**P**		**14 15 08.9**	**+0.4**
MSWZ				SN		**S**		**14 15 54.5**	**-0.5**
SNZO	**South Karori**	**3.39**	**198**	PN		**P**		**14 15 08.8**	**+0.2**
SNZO				SN		**S**		**14 15 53.8**	**-1.3**
SNZO	**South Karori**	**3.39**	**198**	P		**P**		**14 15 08.8**	**+0.2**
BHW	**Baring Head**	**3.45**	**195**	PN		**P**		**14 15 09.4**	**+0.2**
BHW				SN		**S**		**14 15 54.9**	**-1.3**
BHW	**Baring Head**	**3.45**	**195**	P		**P**	

comp=N,52nm,18.1s,MS3.7,baz=296,slow=39
WRA Warramunga Arr 87.75 111 P **P** **14 36 59.7 -0.5**
comp=N,0.6nm,0.8s,mb3.9,baz=293,slow=4.3,SNR=4.4
WRAB Tennant Creek 87.76 111 P **P** **14 36 59.8 -0.5**
NVAR Mina Array Bea 127.92 350 PKP PKPdf 14 43 17.0 -1.8
comp=N,0.7nm,0.8s,SNR=5.7
NVAR Mina Array Bea 127.92 350 PKP PKPdf 14 43 17.0 -1.8

MOS ***01*** *14:24:19.2±0.7, 61.47N×153.14W, h162km, mb4.6/13, Error ellipse: s-maj=25.2km s-min=9.4km az=97.7*
BJI ***01*** *14:24:19.6, 61.30N×152.70W, h169km, mB4.4, mb4.6*
NEIC ***01*** *14:24:20.7, 61.32N×152.74W, h169km, mb4.5/63, After AEIC.*
IDC ***01*** *14:24:22.3±1.5, 61.60N×152.81W, h166km±12km, mb4.1/20, mb1 4.3/24, mb1mx4.2/27, Error ellipse: s-maj=14.1km s-min=8.3km az=38.0*
ISC 01 14:24:19.2±0.2, 61.42N±0.02×152.97W±0.04, h161km±1km, h169km±1.3km:pP-P, n298, σ1$00/305, mb4.5/96, 8C-5D, Southern Alaska

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BGL	**Barrier Glacie**	**0.32**	**119**	P	**P**	**14 24 42.2**	**+0.7**
BGL				S	**S**	**14 25 00.9**	**+2.4**
CKL	**Chakachamna La**	**0.38**	**126**	P	**P**	**14 24 42.4**	**+0.7**
CKL				S	**S**	**14 25 00.6**	**+1.7**
CRP	**Crater Peak**	**0.42**	**111**	P	**P**	**14 24 42.2**	**+0.4**
CRP				S	**S**	**14 25 00.3**	**+1.1**
BKG	**Blockade Glaci**	**0.49**	**135**	P	**P**	**14 24 42.0**	**-0.1**
SPU	**Mount Spurr**	**0.50**	**118**	P	**P**	**14 24 43.1**	**+0.9**
SKT	**Skwentna**	**0.89**	**50**	P	**P**	**14 24 45.2**	**+0.9**
SKT				S	**S**	**14 25 05.2**	**+1.5**
RDT	**Redoubt**	**0.89**	**162**	P	**P**	**14 24 44.9**	**+0.6**
REF	**Redoubt East F**	**0.94**	**172**	P	**P**	**14 24 45.5**	**+0.8**
RSO	**Redoubt South**	**0.96**	**174**	*eP*	**P**	**14 24 45.6**	**+0.8**
SUA	**Susitna One**	**1.07**	**87**	P	**P**	**14 24 45.8**	**0.0**
ILIM	**Iliamna**	**1.34**	**180**	P	**P**	**14 24 48.7**	**+0.4**
ILW	**Iliamna West**	**1.36**	**183**	P	**P**	**14 24 49.0**	**+0.5**
FIB	**Fire Island**	**1.37**	**99**	P	**P**	**14 24 49.5**	**+0.9**
IVS	**Iliamna South**	**1.41**	**182**	P	**P**	**14 24 49.7**	**+0.7**
ILS	**Iliamna Low So**	**1.47**	**182**	P	**P**	**14 24 49.9**	**+0.4**
PWA	**Palmer West**	**1.50**	**80**	P	**P**	**14 24 49.9**	**0.0**
GOU	**Gould Hall**	**1.55**	**97**	P	**P**	**14 24 50.4**	**0.0**
RC01	**Rabbit Creek A**	**1.60**	**100**	P	**P**	**14 24 50.5**	**-0.4**
CUT	**Chulitna**	**1.62**	**51**	P	**P**	**14 24 51.8**	**+0.7**
SLKM	**Skilak Lake**	**1.62**	**123**	*jiP*	**P**	**14 24 50.9**	**-0.3**
PMS	**Palmer South**	**1.65**	**95**	P	**P**	**14 24 51.2**	**-0.3**
PMR	**Palmer**	**1.85**	**83**	P	**P**	**14 24 52.7**	**-0.9**
HOM	**Homer**	**1.88**	**159**	P	**P**	**14 24 53.8**	**-0.2**
BRLK	**Bradley Lake**	**1.95**	**147**	P	**P**	**14 24 53.8**	**-0.9**
GHO	**Glory Hole Cre**	**1.97**	**78**	P	**P**	**14 24 54.3**	**-0.6**
MPA	**Moose Pass**	**1.99**	**116**	P	**P**	**14 24 54.7**	**-0.5**
AUL	**Augustine Lava**	**2.06**	**187**	P	**P**	**14 24 56.0**	**+0.1**
XLV	**Seldovia**	**2.06**	**162**	P	**P**	**14 24 55.1**	**-0.9**
TT01	**Tatalina**	**2.07**	**318**	P	**P**	**14 24 58.5**	**+2.4**
AUE	**Augustine Isla**	**2.08**	**186**	P	**P**	**14 24 55.9**	**-0.3**
AGU	**Augustine-Summ**	**2.08**	**187**	P	**P**	**14 24 56.4**	**+0.2**
SEW	**Seward**	**2.17**	**126**	P	**P**	**14 24 56.2**	**-1.1**
HUR	**Hurricane**	**2.21**	**43**	P	**P**	**14 24 58.7**	**+0.8**
SML	**Sawmill**	**2.25**	**78**	P	**P**	**14 24 57.6**	**-0.7**
KTH	**Kantishna Hill**	**2.34**	**23**	P	**P**	**14 25 00.4**	**+0.9**
TRF	**Thorofare Moun**	**2.39**	**30**	P	**P**	**14 25 01.2**	**+1.2**
SCM	**Sheep Creek Mo**	**2.73**	**79**	P	**P**	**14 25 03.6**	**-0.6**
RND	**Reindeer**	**2.77**	**42**	P	**P**	**14 25 05.3**	**+0.6**
KAPH	**Katmai Pasha**	**2.91**	**194**	P	**P**	**14 25 06.4**	**-0.1**
MCK	**McKinley**	**2.98**	**37**	P	**P**	**14 25 07.9**	**+0.6**
KAHG	**Katmai Hook Gl**	**3.04**	**196**	P	**P**	**14 25 08.0**	**-0.2**
KARR	**Katmai Rainbow**	**3.06**	**197**	P	**P**	**14 25 08.3**	**0.0**
DHY	**Denali Highway**	**3.10**	**55**	P	**P**	**14 25 09.4**	**+0.5**
JPK	**Jack Peak**	**3.10**	**94**	P	**P**	**14 25 07.7**	**-1.2**
KAWH	**Katmai**	**3.18**	**198**	P	**P**	**14 25 09.5**	**-0.4**
BWN	**Browne**	**3.20**	**29**	P	**P**	**14 25 11.4**	**+1.2**
VLZ	**Valdez**	**3.22**	**92**	P	**P**	**14 25 09.2**	**-1.2**
TOA	**Tolsona**	**3.31**	**75**	P	**P**	**14 25 11.9**	**+0.4**
HIN	**Hinchinbrook I**	**3.32**	**105**	P	**P**	**14 25 09.9**	**-1.9**
KLU	**Klutina**	**3.39**	**86**	P	**P**	**14 25 11.6**	**-1.0**
MGLS	**Mageik LS**	**3.43**	**201**	P	**P**	**14 25 13.7**	**+0.6**
CAHL	**Cahill**	**3.58**	**200**	P	**P**	**14 25 15.0**	**0.0**
KJL	**Kejulik**	**3.62**	**202**	P	**P**	**14 25 15.8**	**+0.2**
EYAK	**Cordova Ski Ar**	**3.63**	**101**	P	**P**	**14 25 13.4**	**-2.3**
NEA	**Nenana**	**3.63**	**28**	P	**P**	**14 25 15.7**	**-0.1**
KDAK	**Kodiak Island**	**3.65**	**177**	P	**P**	**14 25 13.2**	**-2.8**
MLY	**Manley**	**3.77**	**15**	P	**P**	**14 25 18.1**	**+0.6**
PAX	**Paxson**	**3.84**	**63**	P	**P**	**14 25 18.0**	**-0.5**
MID	**Middleton Isla**	**3.85**	**118**	P	**P**	**14 25 16.9**	**-1.6**
COB	**Clear Creek Bu**	**4.00**	**34**	P	**P**	**14 25 20.0**	**0.0**
HDA	**Hardin Lake**	**4.07**	**40**	P	**P**	**14 25 21.6**	**+0.1**
BMRM	**Bremner River**	**4.08**	**93**	P	**P**	**14 25 20.2**	**-1.3**
MDM	**Murphy Dome**	**4.15**	**29**	P	**P**	**14 25 22.5**	**0.0**
COLA	**College**	**4.17**	**32**	*eP*	**P**	**14 25 22.9**	**+0.1**
COLA	**College**	**4.17**	**32**	P	**P**	**14 25 22.9**	**+0.1**
IL1	**Eielson Array**	**4.36**	**37**	P	**P**	**14 25 25.2**	**+0.1**
ILAR	**Eielson Array**	**4.36**	**37**	P	**P**	**14 25 24.9**	**-0.2**
	189nm,0.3s,baz=224,slow=12,SNR=3143						
ILAR				S	**S**	**14 26 12.5**	**-3.5**
	50nm,0.3s,baz=233,slow=15,SNR=7.7						
GLM	**Gilmore Dome**	**4.38**	**33**	P	**P**	**14 25 25.8**	**+0.3**
GLB	**Gilahina Butte**	**4.40**	**86**	P	**P**	**14 25 25.0**	**-0.7**
KAIM	**Kayak Island**	**4.47**	**106**	P	**P**	**14 25 25.6**	**-1.0**
IM3	**Indian Mountai**	**4.60**	**356**	P	**P**	**14 25 29.7**	**+1.4**
IMA	**Indian Mountai**	**4.68**	**356**	*eP*	**P**	**14 25 30.9**	**+1.5**
DOT	**Dot Lake**	**4.69**	**58**	P	**P**	**14 25 28.8**	**-0.8**
TGL	**Tana Glacier**	**4.97**	**93**	P	**P**	**14 25 31.9**	**-1.3**
SNH	**Sunshine Point**	**5.12**	**100**	P	**P**	**14 25 33.4**	**-1.8**
BALM	**Baldy**	**5.15**	**90**	P	**P**	**14 25 33.9**	**-1.7**
PRP	**Porcupine Dome**	**5.30**	**36**	P	**P**	**14 25 37.7**	**+0.2**
CYK	**Cape Yakataga**	**5.32**	**100**	P	**P**	**14 25 35.1**	**-2.6**
BCA3	**Beaver Creek A**	**5.48**	**68**	P	**P**	**14 25 39.0**	**-0.9**
YAH	**Yahtse**	**5.58**	**96**	P	**P**	**14 25 39.7**	**-1.5**
CHX	**Chaix Hills**	**5.97**	**98**	P	**P**	**14 25 44.4**	**-2.0**
FYU	**Fort Yukon**	**6.18**	**30**	P	**P**	**14 25 48.9**	**-0.4**
ANM	**Nome**	**6.47**	**305**	P	**P**	**14 25 53.9**	**+0.8**
DAWY	**Dawson**	**6.78**	**61**	P	**P**	**14 25 56.1**	**-1.1**
PNL	**Peninsula**	**6.92**	**99**	P	**P**	**14 25 56.5**	**-2.6**
BM3	**Burnt Mountain**	**7.02**	**27**	P	**P**	**14 25 60.0**	**-0.5**
SDPT	**Sand Point**	**7.25**	**216**	P	**P**	**14 26 02.6**	**-0.8**
SDN	**Sand Point**	**7.26**	**216**	*eP*	**P**	**14 26 01.4**	**-2.2**
BLHA	**Black Hill**	**7.47**	**104**	P	**P**	**14 26 05.3**	**-0.8**
PN7A	**Pavlof North-7**	**7.64**	**222**	P	**P**	**14 26 07.0**	**-1.7**
DOL	**Dolgoi Island**	**7.83**	**221**	P	**P**	**14 26 10.1**	**-1.2**
TNA	**Tin City**	**7.87**	**308**	P	**P**	**14 26 12.2**	**+0.5**
BALA	**Baldy Mountain**	**8.10**	**224**	P	**P**	**14 26 14.0**	**-0.7**
FALS	**False Pass**	**8.58**	**225**	P	**P**	**14 26 20.0**	**-1.1**
WHY	**Whitehorse**	**8.81**	**87**	P	**P**	**14 26 21.6**	**-2.5**
WESE	**West Dahl East**	**9.29**	**227**	P	**P**	**14 26 29.9**	**-0.7**
BESE	**Bessie Mountai**	**9.50**	**99**	P	**P**	**14 26 31.3**	**-1.7**
SIT	**Sitka**	**10.03**	**108**	P	**P**	**14 26 37.1**	**-2.8**
UNV	**Unalaska Valle**	**10.48**	**230**	P	**P**	**14 26 44.9**	**-0.9**
INK	**Inuvik**	**10.73**	**42**	P	**P**	**14 26 48.9**	**-0.3**
	16nm,0.3s,baz=249,slow=14,SNR=230						
INK				S	**S**	**14 28 48.0**	**+1.1**
	1.5nm,0.3s,baz=189,slow=17,SNR=3.2						
INK	**Inuvik**	**10.73**	**42**	*eP*	**P**	**14 26 48.4**	**-0.8**
DLBC	**Dease Lake**	**11.87**	**94**	P	**P**	**14 27 04.8**	**+0.8**
	1.4nm,0.3s,baz=289,slow=11,SNR=77						
DLBC				S	**S**	**14 29 16.7**	**+3.2**
	0.9nm,0.3s,baz=151,slow=19,SNR=3.0						
DLBC	**Dease Lake**	**11.87**	**94**	*eP*	**P**	**14 27 03.6**	**-0.4**
NIKO	**Nikolski**	**12.04**	**232**	P	**P**	**14 27 05.3**	**-1.0**
ADK	**Adak**	**16.07**	**244**	P	**P**	**14 27 56.0**	**-0.9**
BBB	**Bella Bella**	**16.35**	**113**	P	**P**	**14 28 01.4**	**+0.9**
	1.1nm,0.3s,baz=306,slow=9.8,SNR=14						
BBB				S	**S**	**14 31 02.1**	**+6.0**
	0.3nm,0.3s,baz=139,slow=9.3,SNR=6.5						
YKW3	**Yellowknife Ar**	**17.88**	**69**	*eP*	**P**	**14 28 16.9**	**-1.6**
YKA	**Yellowknife Ar**	**17.90**	**70**	P	**P**	**14 28 18.2**	**-0.4**
	6.1nm,0.3s,baz=282,slow=11,SNR=274						
YKA				ScP		14 36 03.5	
	0.2nm,0.3s,baz=285,slow=2.4,SNR=12						
YKA	**Yellowknife Ar**	**17.90**	**70**	P	**P**	**14 28 18.2**	**-0.4**
YKA				ScP		14 36 03.5	
BILL	**Bilibino**	**18.30**	**309**	*c iP*	**P**	**14 28 23.4**	**+0.4**
BILL				pmax	pmax		
	comp=Z,23nm,1.6s						
BILL	**Bilibino**	**18.30**	**309**	*eP*	**P**	**14 28 22.7**	**-0.3**
	comp=Z,6.3nm,0.4s						
FX1	**Attu Island--F**	**20.05**	**260**	P	**P**	**14 28 43.3**	**+2.2**
	comp=Z,12nm,0.6s,baz=52,slow=19,SNR=3.6						
PGC	**Sidney**	**20.97**	**114**	*eP*	**P**	**14 28 50.4**	**0.0**
	comp=Z,103nm,1.1s						
MCW	**Mount Constitu**	**21.22**	**113**	P	**P**	**14 28 54.8**	**+1.9**
RPW	**Rockport**	**21.98**	**112**	*eP*	**P**	**14 28 59.6**	**-0.7**
GNW	**Green Mountain**	**22.07**	**115**	*eP*	**P**	**14 28 59.7**	**-1.5**
BMW	**Boistfort Moun**	**22.74**	**118**	*eP*	**P**	**14 29 09.3**	**+1.7**
NLW	**Nelson Butte**	**22.78**	**111**	*eP*	**P**	**14 29 08.5**	**+0.6**
FMW	**Mount Fremont**	**23.06**	**115**	P	**P**	**14 29 13.6**	**+2.9**
LON	**Longmire**	**23.14**	**115**	*eP*	**P**	**14 29 12.8**	**+1.4**
WTV	**Waterville**	**23.24**	**111**	P	**P**	**14 29 14.2**	**+1.8**
EBG	**Ellensburg**	**23.56**	**113**	P	**P**	**14 29 17.5**	**+2.0**
ASR	**Mount Adams--S**	**23.70**	**116**	P	**P**	**14 29 18.9**	**+2.1**
DPW	**Davenport**	**23.90**	**109**	*eP*	**P**	**14 29 19.1**	**+0.4**
OD2	**Odessa Site #2**	**24.03**	**110**	P	**P**	**14 29 21.1**	**+1.1**
RES	**Resolute Bay**	**24.10**	**34**	*eP*	**P**	**14 29 20.3**	**0.0**
	comp=Z,8.1nm,0.6s,mb4.4						
NEW	**Newport**	**24.11**	**107**	P	**P**	**14 29 22.0**	**+1.3**
	comp=Z,26nm,0.6s,mb4.9,baz=322,slow=8.7,SNR=52						
NEW	**Newport**	**24.11**	**107**	*eP*	**P**	**14 29 21.6**	**+0.8**
	comp=Z,23nm,0.6s,mb4.9						
GL2	**New Goldendale**	**24.18**	**115**	P	**P**	**14 29 23.5**	**+2.1**
COR	**Corvallis**	**24.22**	**120**	*eP*	**P**	**14 29 20.2**	**-1.6**
VGB	**Gordon Butte**	**24.55**	**116**	*eP*	**P**	**14 29 26.0**	**+1.1**
CROR	**Criterion Rdg**	**24.88**	**117**	P	**P**	**14 29 29.6**	**+1.6**
WALA	**Waterton Lakes**	**25.04**	**102**	*eP*	**P**	**14 29 28.3**	**-1.1**
	comp=Z,6.5nm,0.6s,mb4.3						
HSO	**Harness Mounta**	**25.18**	**122**	*eP*	**P**	**14 29 32.0**	**+1.2**
KEBM	**Edson Butte**	**25.22**	**124**	*eP*	**P**	**14 29 32.9**	**+1.7**
LNOR	**Lincton Mounta**	**25.37**	**112**	*eP*	**P**	**14 29 32.2**	**-0.4**
HUMO	**Hull Mountain**	**26.00**	**123**	*eP*	**P**	**14 29 39.6**	**+1.2**
MSO	**Missoula**	**26.63**	**105**	*eP*	**P**	**14 29 43.1**	**-1.0**
	comp=Z,20nm,1.3s,mb4.6						
YBH	**Yreka Blue Hor**	**26.83**	**123**	P	**P**	**14 29 47.9**	**+1.9**
	comp=Z,9.3nm,0.7s,mb4.5,baz=350,slow=3.6,SNR=46						
YBH	**Yreka Blue Hor**	**26.83**	**123**	*eP*	**P**	**14 29 47.2**	**+1.2**
	comp=Z,7.9nm,0.8s,mb4.4						
CHMT	**Chamberlain Mo**	**26.89**	**104**	*eP*	**P**	**14 29 45.7**	**-0.7**
MOD	**Modoc**	**27.68**	**120**	*eP*	**P**	**14 29 54.5**	**+0.8**
	comp=Z,16nm,1.0s,mb4.7						
HRY	**Holter Researc**	**27.70**	**103**	*eP*	**P**	**14 29 52.8**	**-1.0**
WDC	**Whiskeytown Da**	**27.88**	**124**	*eP*	**P**	**14 29 55.5**	**0.0**
	comp=Z,9.2nm,0.7s,mb4.6						
WVOR	**Wild Horse Val**	**27.94**	**117**	*eP*	**P**	**14 29 56.4**	**+0.2**
	comp=Z,16nm,0.8s,mb4.8						
BOZ	**Bozeman (W)**	**28.58**	**104**	*eP*	**P**	**14 30 01.9**	**+0.2**
	comp=Z,10nm,0.7s,mb4.7						
FCC	**Fort Churchill**	**28.62**	**69**	*eP*	**P**	**14 30 01.8**	**-0.1**
	comp=Z,18nm,0.6s,mb5.0						
MCMT	**McKenzie Canyo**	**28.64**	**107**	*eP*	**P**	**14 30 02.3**	**0.0**
HLID	**Hailey**	**28.90**	**110**	*eP*	**P**	**14 30 04.8**	**+0.2**
	comp=Z,6.5nm,0.6s,mb4.5						
QLMT	**Earthquake Lak**	**29.29**	**105**	*eP*	**P**	**14 30 08.7**	**+0.6**
BEKR	**Beckwourth**	**29.36**	**122**	*eP*	**P**	**14 30 09.1**	**+0.3**
	comp=Z,6.8nm,0.6s,mb4.5						
NSHM	**Saint Helena R**	**29.62**	**127**	*eP*	**P**	**14 30 11.0**	**-0.1**
YMR	**Madison River**	**29.63**	**105**	*eP*	**P**	**14 30 12.0**	**+0.9**
LKWY	**Lake**	**29.97**	**105**	*eP*	**P**	**14 30 15.9**	**+1.8**
	comp=Z,8.6nm,0.8s,mb4.5						
BMN	**Battle Mountai**	**30.20**	**118**	*eP*	**P**	**14 30 16.6**	**+0.4**
TIXI	**Tiksi**	**30.36**	**322**	*eP*	**P**	**14 30 16.3**	**-1.0**
TIXI				pmax	pmax		
	comp=Z,2.0nm,1.1s,mb3.8						
KSWY	**Kelly School**	**30.58**	**106**	*eP*	**P**	**14 30 20.1**	**+0.6**
REDW	**Red Top Meadow**	**30.68**	**107**	*eP*	**P**	**14 30 21.0**	**+0.6**
CMB	**Columbia Colle**	**30.92**	**124**	*eP*	**P**	**14 30 22.5**	**0.0**
	comp=Z,4.4nm,0.6s,mb4.4						
HVU	**Hansel Valley**	**31.05**	**111**	*eP*	**P**	**14 30 24.4**	**+0.7**
NVAR	**Mina Array Bea**	**31.42**	**121**	P	**P**	**14 30 27.9**	**+1.0**
	comp=Z,12nm,0.7s,mb4.7,baz=327,slow=8.2,SNR=115						
SPUT	**South Promonto**	**31.57**	**111**	*eP*	**P**	**14 30 28.9**	**+0.7**
HWUT	**Hardware Ranch**	**31.73**	**109**	*eP*	**P**	**14 30 30.0**	**+0.4**
	comp=Z,7.8nm,0.6s,mb4.6						
BW06	**Boulder Array**	**31.74**	**106**	*eP*	**P**	**14 30 30.2**	**+0.5**
	comp=Z,16nm,0.4s,mb5.1						
PDAR	**Pinedale Array**	**31.74**	**106**	P	**P**	**14 30 30.4**	**+0.8**
	comp=Z,18nm,0.4s,mb5.2,baz=334,slow=4.2,SNR=317						
PDAR				ScP		14 36 42.5	
	comp=Z,0.5nm,0.6s,baz=304,slow=2.0,SNR=4.0						
TPH	**Tonopah**	**32.17**	**120**	*eP*	**P**	**14 30 33.5**	**0.0**
	comp=Z,11nm,0.9s,mb4.6						
TCUT	**Toone Canyon**	**32.20**	**110**	*eP*	**P**	**14 30 34.9**	**+1.2**
JLU	**Jordanelle**	**32.59**	**110**	*eP*	**P**	**14 30 37.6**	**+0.6**
DAU	**Daniels Canyon**	**32.83**	**110**	*eP*	**P**	**14 30 39.9**	**+0.8**
NLU	**North Lily Min**	**32.83**	**112**	*eP*	**P**	**14 30 39.5**	**+0.3**
ULM	**Lac du Bonnet**	**32.87**	**83**	P	**P**	**14 30 39.4**	**+0.1**
	comp=Z,13nm,0.7s,mb4.8,baz=305,slow=9.4,SNR=24						
ULM				ScP		14 36 46.9	
	comp=Z,1.4nm,0.9s,baz=281,slow=5.4,SNR=3.5						
ULM	**Lac du Bonnet**	**32.87**	**83**	*eP*	**P**	**14 30 39.0**	**-0.3**
	comp=Z,26nm,0.9s,mb5.0						
MPU	**Maple Canyon**	**32.98**	**111**	*eP*	**P**	**14 30 40.8**	**+0.4**
RSSD	**Black Hills**	**33.30**	**99**	*eP*	**P**	**14 30 43.6**	**+0.5**
	comp=Z,7nm,0.5s,mb5.0						
MVU	**Marysvale**	**33.96**	**114**	*eP*	**P**	**14 30 50.2**	**+1.5**
	comp=Z,22nm,1.2s,mb4.8						
MSU	**Marysvale**	**33.97**	**113**	*eP*	**P**	**14 30 50.4**	**+1.5**
SRU	**San Rafael**	**34.22**	**111**	*eP*	**P**	**14 30 52.0**	**+1.1**
YAK	**Yakutsk**	**34.63**	**306**	*eP*	**P**	**14 30 53.2**	**-0.9**
YAK				pmax	pmax		
	comp=Z,9.0nm,0.9s,mb4.4						
YAK				pmax	pmax		
	comp=E,3.0nm,1.0s						
YAK	**Yakutsk**	**34.63**	**306**	*eP*	**P**	**14 30 53.5**	**-0.7**
NEN	**Nelson**	**35.23**	**119**	*eP*	**P**	**14 31 00.6**	**+1.0**
PV10	**Paradox Valley**	**35.48**	**110**	*eP*	**P**	**14 31 02.5**	**+0.9**
PV01	**Paradox Valley**	**35.89**	**110**	*eP*	**P**	**14 31 06.2**	**+1.2**
ISCO	**Idaho Springs**	**35.91**	**105**	*eP*	**P**	**14 31 05.3**	**+0.2**
	comp=E,2.1nm,0.6s,mb3.9						
RW3	**Ridgway**	**36.20**	**109**	*eP*	**P**	**14 31 07.9**	**+0.3**
FRB	**Frobisher Bay**	**36.29**	**48**	P	**P**	**14 31 08.6**	**+0.5**
	comp=E,3.7nm,0.4s,mb4.4,baz=316,slow=8.1,SNR=13						
WUAZ	**Wupatki**	**36.83**	**115**	*eP*	**P**	**14 31 14.1**	**+1.2**
	comp=E,36nm,0.7s,mb5.1						
SDCO	**Great Sand Dun**	**37.61**	**107**	*eP*	**P**	**14 31 20.8**	**+1.2**
	comp=E,18nm,0.8s,mb4.8						
DAG	**Danmarks Havn**	**39.12**	**15**	*jiP*	**P**	**14 31 31.1**	**-0.6**
	comp=E,4.9nm,0.5s,mb4.4						
ANMO	**Albuquerque**	**39.48**	**110**	*deP*	**P**	**14 31 36.7**	**+1.7**
ANMO				pmax	pmax		
	comp=Z,1.0nm,0.5s						
ANMO	**Albuquerque**	**39.48**	**110**	*eP*	**P**	**14 31 36.2**	**+1.2**
	comp=Z,3.4nm,0.8s,mb4.0						
TUC	**Tucson**	**39.81**	**117**	*eP*	**P**	**14 31 38.9**	**+1.1**
	comp=Z,7.1nm,0.9s,mb4.3						
KSU1	**Kansas State U**	**40.71**	**97**	*eP*	**P**	**14 31 45.0**	**-0.1**
MNTX	**Cornudas Mount**	**42.70**	**112**	*eP*	**P**	**14 32 02.4**	**+1.0**
SCHQ	**Schefferville**	**42.79**	**58**	P	**P**	**14 32 01.6**	**-0.1**
	comp=Z,1.5nm,0.6s,mb3.8,baz=289,slow=8.8,SNR=8.8						
WMOK	**Wichita Mounta**	**43.19**	**103**	*eP*	**P**	**14 32 05.3**	**+0.1**
	comp=Z,22nm,0.8s,mb4.8						
BOD	**Bodaibo**	**43.36**	**309**	*eP*	**P**	**14 32 04.7**	**-1.5**
CCM	**Cathedral Cave**	**44.11**	**93**	*eP*	**P**	**14 32 10.5**	**-2.1**
	comp=Z,5.4nm,0.8s,mb4.2						
TXAR	**Lajitas Array**	**45.48**	**112**	P	**P**	**14 32 24.7**	**+1.1**
	comp=Z,8.3nm,0.7s,mb4.5,baz=313,slow=5.5,SNR=59						
TXAR				PcP	PcP	14 33 59.3	-0.8
	comp=Z,0.7nm,0.5s,baz=57,slow=1.9,SNR=4.0						
TXAR	**Lajitas Array**	**45.48**	**112**	P	**P**	**14 32 24.7**	**+1.1**
TXAR				PcP	PcP	14 33 59.3	-0.8
MIAR	**Mount Ida**	**45.81**	**98**	*eP*	**P**	**14 32 24.7**	**-1.4**
	comp=Z,25nm,0.9s,mb4.8						
USIN	**University of**	**45.90**	**90**	*eP*	**P**	**14 32 26.1**	**-0.7**
	comp=Z,24nm,0.6s,mb5.0						
JCT	**Junction City**	**46.26**	**107**	*eP*	**P**	**14 32 30.1**	**+0.4**
	comp=Z,6nm,0.6s,mb5.4						
WVT	**Waverly**	**47.28**	**91**	*eP*	**P**	**14 32 36.9**	**-0.7**
	comp=Z,3.8nm,0.7s,mb4.1						
OXF	**Oxford**	**47.83**	**94**	*eP*	**P**	**14 32 41.3**	**-0.6**
	comp=Z,93nm,0.9s,mb5.4						
PLAL	**Pickwick Lake**	**48.09**	**92**	*eP*	**P**	**14 32 42.9**	**-1.1**
	comp=Z,19nm,0.9s,mb4.7						
BINY	**Binghamton**	**48.15**	**76**	*eP*	**P**	**14 32 43.5**	**-0.7**
	comp=Z,13nm,0.5s,mb4.8						
SSPA	**Standing Stone**	**48.47**	**79**	*eP*	**P**	**14 32 46.2**	**-0.6**
	comp=Z,14nm,0.4s,mb4.9						
CN2	**Changchun**	**49.03**	**288**	*eP*	**P**	**14 32 51.2**	**+0.2**
CN2				AP	pP	14 33 28.6	+1.2
CN2				*eS*	**S**	**14 39 40.8**	**-0.9**
CN2				AMB	AMB		
	comp=Z,10.0nm,0.7s,mb4.5						
KEV	**Kevo**	**49.12**	**0**	*ep*	**P**	**14 32 50.6**	**-0.7**
ARCES	**ARCESS Array B**	**49.33**	**1**	P	**P**	**14 32 52.5**	**-0.5**
	comp=Z,1.9nm,0.6s,mb3.9,baz=349,slow=6.1,SNR=30						
ARCES				PcP	PcP	14 34 12.1	-1.3
	comp=Z,2.6nm,0.8s,slow=3.6,SNR=5.6						
FWV	**Forest Hill**	**49.49**	**84**	*eP*	**P**	**14 32 53.2**	**-1.4**
PWV	**Princeton**	**49.58**	**84**	*eP*	**P**	**14 32 54.9**	**-0.4**
MYNC	**Murphy**	**49.92**	**89**	*eP*	**P**	**14 32 56.9**	**-1.0**
	comp=Z,18nm,1.0s,mb4.7						
LRAL	**Lakeview Retre**	**50.19**	**93**	*eP*	**P**	**14 32 58.3**	**-1.7**
	comp=Z,6.1nm,0.6s,mb4.4						
TLY	**Talaya**	**51.92**	**310**	*eP*	**P**	**14 33 13.4**	**+0.7**
TLY				*eS*	**S**	**14 40 21.5**	**+0.1**
TLY				pmax	pmax		
	comp=Z,24nm,0.7s,mb4.9						
TLY				MLR	MLR		
	comp=Z,200nm,5.0s						
ULN	**Ulaanbaatar**	**53.69**	**305**	*diP*	**P**	**14 33 26.4**	**+0.5**
ULN	**Ulaanbaatar**	**53.69**	**305**	*eP*	**P**	**14 33 26.1**	**+0.3**
	comp=Z,5.4nm,0.8s,mb4.3						
SONM	**Songino Array**	**53.98**	**305**	P	**P**	**14 33 29.2**	**+1.2**
	comp=Z,8.6nm,0.6s,mb4.6,baz=36,slow=7.0,SNR=20						
NVS	**Novosibirsk**	**55.91**	**325**	*eP*	**P**	**14 33 39.7**	**-2.2**
NVS				*e*	pP	14 34 18.8	-0.3
NVS				pmax	pmax		
	comp=N,6.0nm,0.5s						
NVS				pmax	pmax		
	comp=E,5.0nm,0.5s						
NVS				pmax	pmax		
	comp=Z,16nm,0.5s,mb5.1						
JOF	**Joensuu**	**55.94**	**358**	*ep*	**P**	**14 33 41.2**	**-0.8**
ZAL	**Zalesovo**	**56.26**	**323**	P	**P**	**14 33 43.4**	**-1.0**
	comp=Z,7.3nm,0.6s,mb4.7,baz=359,slow=6.3,SNR=28						
ZAL	**Zalesovo**	**56.26**	**323**	*i P*	**P**	**14 33 43.8**	**-0.5**
ZAL				pmax	pmax		
	comp=Z,7.0nm,0.6s						
KAF	**Kangasniemi**	**56.79**	**0**	*ep*	**P**	**14 33 47.1**	**-0.9**
	comp=Z,3.3nm,0.4s,mb4.5,baz=357,slow=6.7						
KAF	**Kangasniemi**	**56.79**	**0**	*eP*	**P**	**14 33 47.1**	**-0

ORIF	**Oris-en-Rattie**	**72.64**	**16**	*e*P		**P**	**14 35 30.2**	**+0.1**
	comp=Z,2.5nm,0.5s,mb3.9							
MBDF	**Montbardon**	**72.94**	**15**	*e*P		**P**	**14 35 32.8**	**+0.9**
	comp=Z,5.0nm,0.7s,mb4.1							
SMRF	**Simiane la Rot**	**73.53**	**16**	*e*P		**P**	**14 35 35.9**	**+0.6**
	comp=Z,9.6nm,0.8s,mb4.3							
ETSF	**Etsaut**	**73.65**	**21**	*e*P		**P**	**14 35 36.2**	**+0.2**
	comp=Z,14nm,1.0s,mb4.3							
MTLF	**Montolieu**	**73.67**	**19**	*e*P		**P**	**14 35 35.8**	**-0.3**
	comp=Z,11nm,0.8s,mb4.3							
KIV	**Kislovodsk**	**74.22**	**348**	*α i*P		**P**	**14 35 40.0**	**+0.7**
KIV				*e*			14 38 31.8	
KIV				pmax	pmax			
	comp=Z,12nm,0.8s,mb4.7							
KIV	**Kislovodsk**	**74.22**	**348**	*e*P		**P**	**14 35 39.2**	**0.0**
	comp=Z,19nm,1.1s,mb4.7							
KMI	**Kunming**	**74.78**	**294**	*e*P		**P**	**14 35 46.5**	**+3.7**
KMI				AMB	AMB			
	comp=Z,6.0nm,0.9s,mb4.2							
ZEI	**Tsey**	**75.27**	**347**	*e*P		**P**	**14 35 40.0**	**-5.2**
PGF	**Pioggiola**	**75.36**	**14**	*e*P		**P**	**14 35 45.6**	**-0.2**
	comp=Z,13nm,0.8s,mb4.3							
ESDC	**Sonseca Array**	**76.15**	**24**	P		**P**	**14 35 50.6**	**+0.3**
	comp=Z,0.3nm,0.4s,mb3.3,baz=327,slow=4.3,SNR=5.9							
BRTR	**Keskin Array B**	**79.07**	**355**	P		**P**	**14 36 07.6**	**+1.3**
	comp=Z,1.8nm,0.6s,mb3.9,slow=2.5,SNR=12							
QSPA	**South Pole Qui**	**151.22**	**180**	*e*P		PKPdf	14 43 52.8	+8.0
VNA3	**Neumayer Olymp**	**162.62**	**140**			PKPdf	14 43 58.9	-0.3
VNA1	**Neumayer--Stat**	**163.23**	**138**	⇑*i*		PKPdf	14 44 01.0	+1.1
VNA2	**Neumayer--Watz**	**163.43**	**139**	⇑*i*		PKPdf	14 44 01.3	+1.3

TAP ***01*** *14:31:56.0,24.41N×121.79E,h9km,ML3.2*
TAP Felt IV J at Nanau, II J at Nioudou.
JMA ***01*** *14:31:57.2±0.1,24.75N×121.82E,h46km,M2.6*
ISC 01 14:31:55.9±0.4**,24.40N**±0.02×**121.88E**±0.02**,h2**km±3**km,**
n60,σ0^{s}**92**/108**,6C-8D,Taiwan**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ENA	**Nanau**	**0.13**	**283**	⇓*i*P	**Pg**	**14 31 58.9**	**+0.4**
ENA				S	**Sg**	**14 32 00.2**	**0.0**
TWC	**Suao**	**0.21**	**353**	⇑*i*P	**Pg**	**14 32 01.0**	**+0.9**
TWC				S	**Sg**	**14 32 03.9**	**+0.9**
ENTT	**Nioudou**	**0.37**	**310**	⇓*i*P	**Pg**	**14 32 03.4**	**+0.1**
ENTT				S	**Sg**	**14 32 07.6**	**-0.7**
TWE	**Neicheng**	**0.37**	**329**	⇓*i*P	**Pg**	**14 32 03.6**	**+0.3**
TWE				S	**Sg**	**14 32 08.1**	**-0.3**
ILA	**Ilan**	**0.38**	**342**	P	**Pg**	**14 32 04.0**	**+0.5**
ILA				S	**Sg**	**14 32 09.4**	**+0.7**
TWD	**Chiawan**	**0.41**	**219**	⇑*i*P	**Pg**	**14 32 03.9**	**-0.2**
TWD				S	**Sg**	**14 32 09.5**	**-0.1**
NNS	**Nan Shan**	**0.46**	**275**	⇓*i*P	**Pg**	**14 32 04.7**	**-0.5**
NNS				S	**Sg**	**14 32 09.8**	**-1.5**
HWA	**Hwalien**	**0.49**	**211**	P	**Pg**	**14 32 06.2**	**+0.5**
NSK	**Sanguang**	**0.55**	**300**	⇓*i*P	**Pg**	**14 32 06.6**	**-0.3**
NSK				S	**Sg**	**14 32 13.5**	**-0.7**
TWB1	**Santiao Chiao**	**0.61**	**9**	*i*P	**Pg**	**14 32 08.4**	**+0.2**
TWB1				S	**Sg**	**14 32 16.2**	**-0.2**
WHF	**Hehuan Shan**	**0.61**	**246**	⇑*i*P	**Pg**	**14 32 07.5**	**-0.7**
WHF				S	**Sg**	**14 32 15.2**	**-1.2**
TWA	**Mucha**	**0.64**	**335**	⇓*i*P	**Pg**	**14 32 08.8**	**+0.2**
TWA				S	**Sg**	**14 32 16.5**	**-0.6**
TWT	**Tachien**	**0.66**	**257**	⇑P	**Pg**	**14 32 08.7**	**-0.3**
TWT				S	**Sg**	**14 32 16.8**	**-1.0**
NWF	**Wu-fen Shan**	**0.67**	**352**	*i*P	**Pg**	**14 32 09.8**	**+0.4**
NWF				S	**Sg**	**14 32 18.1**	**-0.2**
ESL	**Shilin**	**0.71**	**215**	⇑*i*P	**Pg**	**14 32 09.2**	**-0.9**
ESL				S	**Sg**	**14 32 19.6**	**0.0**
TAP1	**Taipei**	**0.71**	**333**	*e*P	**Pg**	**14 32 10.6**	**+0.4**
TAP1				S	**Sg**	**14 32 19.4**	**-0.2**
TAP	**Taipei**	**0.72**	**332**	*e*P	**Pg**	**14 32 10.7**	**+0.4**
TAP				S	**Sg**	**14 32 19.6**	**-0.3**
TWS1	**Kuangyinshan**	**0.81**	**329**	P	**Pg**	**14 32 12.9**	**+0.7**
TWS1				S	**Sg**	**14 32 23.6**	**+0.6**
NSTT	**Nanjuang**	**0.83**	**286**	⇓*i*P	**Pg**	**14 32 12.0**	**-0.5**
NSTT				S	**Sg**	**14 32 21.4**	**-2.2**
NCU	**National Centr**	**0.85**	**312**	*e*P	**Pg**	**14 32 13.4**	**+0.6**
NCU				S	**Sg**	**14 32 25.3**	**+1.2**
TWY	**Chenhua**	**0.91**	**344**	*e*P	**Pg**	**14 32 14.1**	**+0.1**
TWY				S	**Sg**	**14 32 26.8**	**+0.7**
HSN	**Hsinchu**	**0.92**	**296**	*e*P	**Pb**	**14 32 14.1**	**-0.2**
HSN				S	**Sg**	**14 32 27.4**	**+0.9**
WDT	**Danda**	**0.94**	**227**	*i*P	**Pb**	**14 32 13.4**	**-1.2**
TWQ1	**Liyutan**	**1.01**	**267**	*e*P	**Pb**	**14 32 15.4**	**-0.4**
TWQ1				S	**Sb**	**14 32 28.1**	**-1.3**
NSY	**Sanyi**	**1.02**	**271**	*e*P	**Pb**	**14 32 15.5**	**-0.4**
NSY				S	**Sb**	**14 32 28.7**	**-0.9**
EHY	**Hungye**	**1.02**	**210**	*i*P	**Pb**	**14 32 15.1**	**-0.9**
EHY				S	**Sb**	**14 32 30.0**	**+0.2**
SMLT	**Sun Moon Lake**	**1.03**	**240**	P	**Pb**	**14 32 15.2**	**-0.9**
SMLT				S	**Sb**	**14 32 29.2**	**-0.8**
YOJ	**Yonaguni jima**	**1.03**	**86**	P	**Pb**	**14 32 16.8**	**+0.6**
YOJ				S	**Sb**	**14 32 31.0**	**+0.9**
TYC	**Yuchr**	**1.06**	**242**	⇑*i*P	**Pb**	**14 32 15.7**	**-0.9**
TYC				S	**Sb**	**14 32 29.3**	**-1.4**
TCU	**Taichung**	**1.13**	**257**	*e*P	**Pb**	**14 32 18.1**	**+0.3**
TCU				S	**Sb**	**14 32 32.3**	**-0.4**
TWF1	**Yuli**	**1.17**	**207**	*e*P	**Pb**	**14 32 18.1**	**-0.5**
TWF1				S	**Sb**	**14 32 35.1**	**+1.1**
PCYT	**Pengchaiyu**	**1.24**	**8**	*e*P	**Pb**	**14 32 19.2**	**-0.5**
PCYT				S	**Sb**	**14 32 37.6**	**+1.6**
YUS	**Yu-Shan**	**1.24**	**223**	⇓*i*P	**Pb**	**14 32 19.4**	**-0.4**
YUS				S	**Sb**	**14 32 38.0**	**+2.0**
ALS	**Alishan**	**1.32**	**228**	P	**Pb**	**14 32 20.9**	**-0.3**
CHN5	**Tsauling**	**1.36**	**234**	*i*P	**Pb**	**14 32 22.1**	**+0.3**
CHN5				S	**Sb**	**14 32 40.9**	**+1.5**
CHKT	**Chengkung**	**1.38**	**200**	*e*P	**Pb**	**14 32 22.0**	**-0.1**
CHKT				S	**Sb**	**14 32 41.4**	**+1.3**
WGK	**Gukeng**	**1.40**	**240**	*e*P	**Pb**	**14 32 22.2**	**-0.2**
WGK				S	**Sb**	**14 32 41.7**	**+1.1**
ELDTW	**Lidau**	**1.44**	**213**	*i*P	**Pn**	**14 32 22.9**	**-0.2**
ELDTW				S	**Sb**	**14 32 43.4**	**+1.5**
CHN2	**Minshiung**	**1.55**	**236**	*e*P	**Pn**	**14 32 23.0**	**-1.6**
WTCT	**Ta-ch'eng**	**1.55**	**250**	*e*P	**Pn**	**14 32 25.2**	**+0.5**
WTCT				S	**Sb**	**14 32 46.4**	**+1.2**
CHN4	**Tsaushan**	**1.57**	**229**	*e*P	**Pn**	**14 32 25.9**	**+0.9**
CHN4				S	**Sb**	**14 32 45.4**	**-0.3**
STYT	**Tauyuan**	**1.60**	**220**	*e*P	**Pn**	**14 32 25.0**	**-0.4**
STYT				S	**Sb**	**14 32 47.7**	**+1.1**
CHY	**Chiayi**	**1.60**	**236**	*e*P	**Pn**	**14 32 25.7**	**+0.3**
CHY				S	**Sb**	**14 32 48.1**	**+1.5**
WTP	**Ta-pu**	**1.63**	**225**	*e*P	**Pn**	**14 32 26.9**	**+1.1**
IRIF	**Iriomote-Funau**	**1.69**	**92**	P	**Pn**	**14 32 26.1**	**-0.6**
IRIF				S	**Sb**	**14 32 48.1**	**-1.0**
WSF	**Szhu**	**1.69**	**244**	*e*P	**Pn**	**14 32 28.4**	**+1.7**
TWK	**Hsinying**	**1.70**	**229**	*e*P	**Pn**	**14 32 28.2**	**+1.4**
CHN1	**Nanshi**	**1.73**	**226**	*e*P	**Pn**	**14 32 28.6**	**+1.3**
TWG	**Pinlang**	**1.74**	**205**	*e*P	**Pn**	**14 32 27.2**	**-0.1**
TWG				S	**Sn**	**14 32 49.8**	**-0.6**
SGST	**Jiashian**	**1.77**	**222**	*e*P	**Pn**	**14 32 29.2**	**+1.4**
SGST				S	**Sn**	**14 32 52.9**	**+1.7**
HATJ	**Hateruma jima**	**1.79**	**101**	S	**Sn**	**14 32 52.3**	**+0.5**
CHN8	**Yiju**	**1.85**	**236**	*e*P	**Pn**	**14 32 29.1**	**+0.1**
CHN8				S	**Sn**	**14 32 53.9**	**+0.6**
JKRS	**Kuro-shima**	**1.95**	**94**	P	**Pn**	**14 32 30.1**	**-0.3**
JKRS				S	**Sn**	**14 32 54.5**	**-1.3**
ECL	**Taimali**	**1.98**	**205**	*e*P	**Pn**	**14 32 31.4**	**+0.5**
SSD	**Sandimen**	**2.00**	**215**	*e*P	**Pn**	**14 32 30.8**	**-0.4**
JIJ	**Ishigaki jima**	**2.06**	**91**	P	**Pn**	**14 32 31.6**	**-0.4**
JIJ				S	**Sn**	**14 32 56.5**	**-2.2**
EAST	**Anshuo**	**2.22**	**205**	*e*P	**Pn**	**14 32 35.6**	**+1.3**
EAST				S	**Sn**	**14 33 01.5**	**-1.1**
PNG	**Penghu**	**2.28**	**249**	*e*P	**Pn**	**14 32 33.9**	**-1.2**
PNG				S	**Sn**	**14 33 03.0**	**-1.2**
WDGT	**Dungji**	**2.33**	**241**	*e*P	**Pn**	**14 32 36.5**	**+0.7**
WDGT				S	**Sn**	**14 33 02.9**	**-2.5**
JTJ	**Tarama**	**2.58**	**84**	S	**Sn**	**14 33 09.5**	**-2.4**

IDC ***01*** *14:38:51.1±3.0,32.50S×178.05W,mb4.1/3,mb1 4.3/4, mb1mx4.1/14,ML3.7/1,Error ellipse: s-maj=67.8km s-min=36.0km az=118.0*
ISC 01 14:38:50.1±3.0**,32.7S**±0.1×**177.5W**±0.5**,h33**km**,n8,**
σ0^{s}**81**/9**,mb4.1**/3**,South of Kermadec Islands**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PUZ	**Puketiti**	**6.40**	**212**	P	**P**	**14 40 25.4**	**+0.9**
PUZ				S	**S**	**14 41 40.8**	**+3.5**
URZ	**Urewera**	**7.10**	**217**	Pn	**Pn**	**14 40 34.7**	**+0.2**
	1.3nm,0.3s,baz=168,slow=13,SNR=8.0						
URZ				Sn	**Sn**	**14 41 54.4**	**-0.4**
	5.2nm,0.3s,baz=146,slow=21,SNR=20						
URZ	**Urewera**	**7.10**	**217**	P	**P**	**14 40 33.3**	**-1.0**
KIW	**Kapiti Island**	**10.18**	**215**	*e*P	**P**	**14 41 16.2**	**-0.8**
ASAR	**Alice Springs**	**43.48**	**269**	P	**P**	**14 46 52.4**	**+0.2**
	0.7nm,0.3s,mb3.9,baz=110,slow=7.8,SNR=24						
WRA	**Warramunga Arr**	**44.67**	**274**	P	**P**	**14 47 01.4**	**-0.3**
	2.3nm,0.3s,mb4.5,baz=112,slow=8.1,SNR=163						
FITZ	**Fitzroy Crossi**	**52.84**	**271**	P	**P**	**14 48 05.3**	**+0.5**
	0.9nm,0.6s,mb3.9,baz=119,slow=13,SNR=2.5						
FINES	**FINESS Array B**	**147.44**	**339**	PKPbc	PKPdf	14 58 34.3	+7.0
	0.5nm,0.6s,baz=45,slow=5.4,SNR=7.8						

IDC ***01*** *14:48:32.3±1.6,5.12S×133.69E,mb4.1/1,mb1 4.3/5, mb1mx4.1/12,ML3.8/4,MS3.3/2,Ms1 3.3/2,ms1mx2.8/17, Error ellipse: s-maj=64.8km s-min=24.7km az=71.0*
NEIC ***01*** *14:48:33.1±1.4,5.11S×133.91E,h10km,Error ellipse: s-maj=19.6km s-min=18.2km az=130.0*
ISC 01 14:48:31.3±1.3**,5.12S**±0.10×**133.8E**±0.2**,h10**km**,n12,**
σ0^{s}**64**/16**,mb4.0**/1**,Aru Islands region**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**13.96**	**109**	LR	LR	14 57 54.3	
	comp=Z,109nm,20.8s,baz=100,slow=40						
PMG	**Port Moresby**	**13.96**	**109**	P	**P**	**14 51 47.0**	**-4.8**
	9.3nm,0.9s						
WRAB	**Tennant Creek**	**14.74**	**178**	*e*P	**P**	**14 52 01.6**	**-0.3**
	29nm,1.1s						
WB2	**Warramunga Arr**	**14.75**	**178**	*e*P	**P**	**14 52 02.0**	**0.0**
WB2				*e*S	**S**	**14 54 39.8**	**-6.6**
WRA	**Warramunga Arr**	**14.75**	**178**	Pn	**P**	**14 52 01.1**	**-0.9**
	0.3nm,0.3s,baz=355,slow=13,SNR=20						
WRA				Sn	**S**	**14 54 39.5**	**-6.8**
	0.2nm,0.3s,baz=357,slow=23,SNR=5.1						
FITZ	**Fitzroy Crossi**	**15.15**	**211**	*e*P	**P**	**14 52 06.5**	**-0.7**
	4.6nm,0.8s						
FITZ				*e*S	**S**	**14 54 47.0**	**-8.8**
FITZ	**Fitzroy Crossi**	**15.15**	**211**	Pn	**P**	**14 52 07.3**	**+0.1**
	1.3nm,0.3s,baz=29,slow=12,SNR=31						
FITZ				Sn	**S**	**14 54 48.4**	**-7.4**
	0.6nm,0.3s,baz=191,slow=18,SNR=5.6						
AS12	**Alice Springs**	**18.44**	**180**	*e*P	**P**	**14 52 52.4**	**+3.4**
	8.5nm,0.7s						
ASAR	**Alice Springs**	**18.44**	**180**	P	**P**	**14 52 49.8**	**+0.8**
	0.4nm,0.3s,baz=3.0,slow=12,SNR=18						
ASAR				S	**S**	**14 56 12.2**	**+0.5**
	0.1nm,0.3s,baz=358,slow=25,SNR=4.1						
CTA	**Charters Tower**	**19.22**	**142**	P	**P**	**14 52 58.5**	**+0.2**
	0.1nm,0.3s,baz=11,slow=16,SNR=2.6						
CTA				LR	LR	15 00 33.7	
	comp=Z,114nm,21.1s,baz=247,slow=38						
CTAO	**Charters Tower**	**19.22**	**142**	*e*P	**P**	**14 52 58.1**	**-0.3**
	9.7nm,1.2s						
MKAR	**Makanchi Array**	**68.78**	**325**	P	**P**	**14 59 38.1**	**+0.3**
	1.5nm,0.7s,mb4.0,baz=117,slow=8.1,SNR=17						

NEIC ***01*** *14:52:29.2±0.9,4.08N×129.14E,h10km,mb4.5/3,Error ellipse: s-maj=30.7km s-min=11.6km az=52.0*
IDC ***01*** *14:52:29.8±3.3,3.76N×128.70E,mb4.0/4,mb1 4.2/4, mb1mx3.8/17,Error ellipse: s-maj=97.4km s-min=56.5km az=88.0*
ISC 01 14:52:27.7±1.2**,4.1N**±0.2×**129.1E**±0.2**,h10**km**,n8,**σ0^{s}**66**/8**,**
mb4.1/7**,North of Halmahera**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**22.30**	**189**	P	**P**	**14 57 26.3**	**-0.7**
	2.5nm,0.7s,mb3.8,baz=16,slow=8.7,SNR=5.9						
PMG	**Port Moresby**	**22.41**	**127**	P	**P**	**14 57 27.8**	**-0.4**
	7.0nm,0.8s,mb4.1						
QIZ	**Qiongzhong**	**24.00**	**310**	*e*P	**P**	**14 57 43.8**	**+0.1**
	31nm,1.4s,mb4.5						
WRAB	**Tennant Creek**	**24.40**	**168**	*e*P	**P**	**14 57 49.1**	**+1.5**
WRA	**Warramunga Arr**	**24.41**	**168**	P	**P**	**14 57 47.9**	**+0.2**
	1.4nm,0.4s,mb3.8,baz=346,slow=10,SNR=20						
ASAR	**Alice Springs**	**27.96**	**171**	P	**P**	**14 58 19.9**	**-0.8**
	1.1nm,0.4s,mb3.9,baz=351,slow=7.4,SNR=18						
ASAR				PcP	PcP	15 01 37.2	+1.0
	0.3nm,0.4s,baz=355,slow=1.7,SNR=5.4						
CM31	**Chiang Mai Arr**	**32.79**	**298**	*e*P	**P**	**14 59 03.6**	**0.0**
	3.5nm,0.5s,mb4.5						
STKA	**Stephens Creek**	**37.66**	**163**	P	**P**	**14 59 45.2**	**+0.2**
	1.4nm,0.3s,mb4.2,baz=337,slow=10,SNR=16						

IDC 01 15:15:58.1±5.5**,23.96S×66.71W,h195**km±28km**,mb2.9/1,**
mb1 3.4/3**,mb1mx3.1**/13**,Error ellipse: s-maj=127.0km**
s-min=29.2km az=7.0,Jujuy Province

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
LVC	**Limon Verde**	**2.43**	**303**	P	P	15 16 41.5	+0.2
	32nm,0.3s,baz=122,slow=6.2,SNR=692						
LVC				S	S	15 17 14.9	+0.3
	23nm,0.3s,baz=246,slow=21,SNR=23						
BDFB	**Brasilia**	**19.43**	**68**	P	P	15 20 10.0	-1.5
	0.6nm,0.3s,baz=250,slow=10,SNR=6.3						
YKA	**Yellowknife Ar**	**94.18**	**340**	P	P	15 28 54.5	-0.8
	0.1nm,0.5s,baz=131,slow=4.3,SNR=6.6						
MKAR	**Makanchi Array**	**146.32**	**40**	PKPbc	PKPbc	15 35 14.6	-0.9
	0.4nm,0.5s,baz=310,slow=4.0,SNR=6.7						

ISC 01 15:29:29.5±2.7**,36.9N**±0.2×**70.3E**±0.2**,h200**km**,n10,**
σ0^{s}**37**/11**,1D,Hindu Kush region**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
AML	**Almayashu**	**5.88**	**25**	P	**P**	**15 30 56.0**	**+0.2**
	SNR=65						
KK31	**Karatay Array**	**6.24**	**1**	P	**P**	**15 31 01.4**	**+0.8**
	1.0nm,0.2s,baz=208,slow=14,SNR=74						
KK31				⇓S	**S**	**15 32 11.4**	**-0.2**
	4.2nm,0.7s,baz=189,slow=28,SNR=5.7						
UCH	**Uchtor**	**6.27**	**30**	P	**P**	**15 31 00.9**	**0.0**
	SNR=35						
EKS2	**Erkin-Say**	**6.38**	**24**	P	**P**	**15 31 02.7**	**+0.3**
	SNR=15						
KZA	**Kyzart**	**6.46**	**35**	P	**P**	**15 31 02.7**	**-0.8**
	SNR=11						
AAK	**Ala-Archa**	**6.60**	**28**	P	**P**	**15 31 05.3**	**0.0**
	SNR=8.8						
KBK	**Karagaybulak**	**6.80**	**30**	P	**P**	**15 31 08.0**	**+0.1**
	SNR=6.8						
CHMS	**Chumysh**	**7.01**	**28**	P	**P**	**15 31 10.7**	**+0.1**
	SNR=5.4						
TKM2	**Tokmak 2**	**7.29**	**32**	P	**P**	**15 31 14.2**	**-0.1**
	SNR=30						
AB31	**Akbulak array**	**14.51**	**332**	P	**P**	**15 32 46.1**	**-0.4**
	0.1nm,0.3s,baz=143,slow=13,SNR=7.4						

IDC ***01*** *15:40:00.3±2.4,5.96S×145.67E,h118km±25km,mb3.9/10, mb1 4.1/13,mb1mx4.0/17,MS2.9/3,Ms1 2.9/3, ms1mx2.7/17,Error ellipse: s-maj=25.7km s-min=11.8km az=109.0*
NEIC ***01*** *15:40:01.9±1.1,6.08S×145.59E,h135km±13km,mb4.5/13, Error ellipse: s-maj=16.2km s-min=8.5km az=121.0*
ISC 01 15:40:00.3±1.3**,6.06S**±0.08×**145.5E**±0.1**,h128**km±15km**,**
n46,σ0^{s}**93**/44**,mb4.5**/18**,1D,New Guinea**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WAU	**Wau**	**1.76**	**137**	⇓*i*P	**P**	**15 40 32.5**	**+0.9**
PMG	**Port Moresby**	**3.71**	**154**	P	**P**	**15 40 57.4**	**+0.3**
	56nm,0.3s,baz=9.0,slow=4.5,SNR=256						
PMG				S	**S**	**15 41 40.0**	**-0.6**
	75nm,0.3s,baz=131,slow=20,SNR=17						
PMG				LR	LR	15 41 58.8	
	comp=Z,178nm,19.9s,baz=327,slow=32						
PMG	**Port Moresby**	**3.71**	**154**	*e*P	**P**	**15 40 57.2**	**+0.1**
PMG				*e*S	**S**	**15 41 40.2**	**-0.4**
RAB	**Rabaul**	**6.88**	**75**	*e*P	**P**	**15 41 40.1**	**+0.2**
CTA	**Charters Tower**	**13.97**	**177**	*e*P	**P**	**15 43 21.2**	**+7.5**
	10nm,0.6s						
CTA				*e*S	x	15 48 30.0	
CTA	**Charters Tower**	**13.97**	**177**	P	**P**	**15 43 22.0**	**+8.3**
	1.2nm,0.3s,baz=358,slow=14,SNR=23						
CTAO	**Charters Tower**	**13.97**	**177**	*e*P	**P**	**15 43 21.7**	**+7.9**
WRAB	**Tennant Creek**	**17.55**	**217**	*e*P	**P**	**15 43 55.3**	**-3.2**
	23nm,0.6s						
WB2	**Warramunga Arr**	**17.55**	**217**	*e*P	**P**	**15 43 58.2**	**-0.3**
	0.7nm,0.3s,baz=40,slow=12,SNR=48						
WRA	**Warramunga Arr**	**17.56**	**217**	P	**P**	**15 43 58.0**	**-0.6**
AS12	**Alice Springs**	**20.77**	**211**	*e*P	**P**	**15 44 33.1**	**+0.3**
	6.8nm,1.0s						
ASAR	**Alice Springs**	**20.77**	**211**	P	**P**	**15 44 33.3**	**+0.5**
	3.6nm,0.8s,baz=28,slow=13,SNR=35						
ASAR				S	**S**	**15 48 21.9**	**+10**
	0.7nm,0.8s,baz=31,slow=19,SNR=2.7						
ASAR				LR	LR	15 53 33.2	
	comp=Z,28nm,20.9s,baz=291,slow=39						
FITZ	**Fitzroy Crossi**	**22.79**	**237**	*e*P	**P**	**15 44 52.6**	**-0.1**
	9.3nm,0.5s,mb4.4						
FITZ	**Fitzroy Crossi**	**22.79**	**237**	P	**P**	**15 44 53.0**	**+0.2**
	11nm,0.6s,mb4.4,baz=69,slow=4.2,SNR=31						
STKA	**Stephens Creek**	**25.95**	**188**	*e*P	**P**	**15 45 20.3**	**-2.4**
	3.8nm,0.4s,mb4.2						
STKA	**Stephens Creek**	**25.95**	**188**	P	**P**	**15 45 23.7**	**+1.0**
	5.5nm,0.5s,mb4.3,baz=350,slow=8.8,SNR=16						
NWAO	**Narrogin (SRO)**	**37.50**	**221**	P	**P**	**15 47 04.2**	**+0.7**
	4.6nm,0.9s,mb4.3,baz=45,slow=13,SNR=2.9						
JHJ	**Hachijo jima 2**	**39.34**	**352**	LR	LR	16 02 33.2	
	comp=Z,20nm,20.3s,baz=106,slow=34						
ENH	**Enshi**	**49.96**	**318**	*e*P	**P**	**15 48 41.4**	**-2.0**
	2.4nm,0.6s,mb4.3						
CM31	**Chiang Mai Arr**	**51.97**	**299**	*e*P	**P**	**15 48 58.7**	**-0.1**
	3.7nm,0.5s,mb4.7						
CMAR	**Chiang Mai Arr**	**51.97**	**299**	P	**P**	**15 48 58.9**	**+0.1**
SHL	**Shillong**	**60.80**	**304**	*e*P	**P**	**15 50 01.2**	**-0.3**
LSA	**Lhasa**	**63.09**	**308**	*e*P	**P**	**15 50 17.4**	**+0.7**
	5.2nm,0.8s,mb4.5						
SONM	**Songino Array**	**63.74**	**332**	P	**P**	**15 50 21.1**	**+0.4**
	0.8nm,0.4s,mb3.9,baz=137,slow=5.8,SNR=2.6						
GUN	**Gumba**	**66.66**	**304**	*e*P	**P**	**15 50 40.0**	**+0.2**
	27nm,0.7s,mb5.2						
KKN	**Kakani**	**67.11**	**303**	*e*P	**P**	**15 50 42.3**	**-0.4**
	19nm,0.7s,mb5.0						
DMN	**Daman**	**67.19**	**303**	*e*P	**P**	**15 50 43.2**	**0.0**
	26nm,0.8s,mb5.1						
GKN	**Gorkha**	**67.72**	**303**	*e*P	**P**	**15 50 46.0**	**-0.4**
	17nm,0.7s,mb5.0						
KOLN	**Koldanda**	**68.50**	**303**	*e*P	**P**	**15 50 51.2**	**-0.1**
	18nm,0.8s,mb5.0						
MKAR	**Makanchi Array**	**76.60**	**321**	P	**P**	**15 51 38.5**	**+0.1**
	2.8nm,0.8s,mb4.0,baz=101,slow=6.2,SNR=21						
ZAL	**Zalesovo**	**78.28**	**328**	P	**P**	**15 51 46.1**	**-1.4**
	0.9nm,0.4s,mb3.9,baz=237,slow=4.2,SNR=4.1						
KZA	**Kyzart**	**79.62**	**315**	P	**P**	**15 51 56.8**	**+1.7**
	SNR=13						
TKM2	**Tokmak 2**	**79.64**	**315**	P	**P**	**15 51 55.8**	**+0.6**
	SNR=5.7						
UCH	**Uchtor**	**80.19**	**315**	P	**P**	**15 51 59.8**	**+1.6**
	SNR=8.2						
AML	**Almayashu**	**80.74**	**314**	P	**P**	**15 52 02.3**	**+1.2**
	SNR=9.0						
EKS2	**Erkin-Say**	**80.84**	**315**	P	**P**	**15 52 02.4**	**+0.8**
	SNR=8.0						
QSPA	**South Pole Qui**	**83.91**	**180**	*e*P	**P**	**15 52 17.9**	**+1.4**
	2.9nm,0.8s,mb4.2						
BVAR	**Borovoye Array**	**85.94**	**324**	P	**P**	**15 52 27.0**	**-0.1**
	1.9nm,0.6s,mb4.2,baz=135,slow=6.3,SNR=18						
ILAR	**Eielson Array**	**86.12**	**23**	P	**P**	**15 52 25.8**	**-1.9**
	2.5nm,0.7s,mb4.2,baz=253,slow=5.0,SNR=20						
ZRNK	**Zerenda**	**86.73**	**324**	*e*P	**P**	**15 52 30.3**	**-0.6**
DAWY	**Dawson**	**88.95**	**25**	P	**P**	**15 52 41.0**	**-0.3**
INK	**Inuvik**	**92.25**	**22**	P	**P**	**15 52 55.4**	**-1.2**
	1.2nm,1.0s,mb4.1,baz=228,slow=4.5,SNR=2.6						
KIC	**Kosan Boka**	**150.42**	**272**	*e*P

JKRS				S		**Sn**	**16 43 21.9**	**-0.1**
JIJ	**Ishigaki jima**	**3.00**	**56**	P		**Pn**	**16 42 50.3**	**-0.1**
JIJ				S		**Sn**	**16 43 25.4**	**-0.9**
JTJ	**Tarama**	**3.58**	**56**	P		**Pn**	**16 42 58.3**	**-0.3**
JTJ				S		**Sn**	**16 43 40.9**	**0.0**

*IDC **01** 16:49:50.8±1.2,25.88S×176.90W,mb3.9/5,mb1 4.3/6, mb1mx4.2/13,ML3.3/1,MS3.1/1,Ms1 3.1/1,ms1mx2.5/25, Error ellipse: s-maj=59.1km s-min=25.7km az=154.0*
*NEIC **01** 16:49:53.5±0.7,25.95S×176.95W,h15km, Error ellipse: s-maj=27.7km s-min=17.5km az=120.0*
ISC 01 16:50:07.7±0.9,**26.38S**±0.07×**177.8W**±0.2,**h100**km,**n22**, σ1§**10**/16,**mb3.9**/6,**1C-1D**,**South of Fiji Islands**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**12.61**	**199**	Pn	**P**	**16 53 00.5**	**-4.1**
	0.2nm,0.3s,baz=353,slow=16,SNR=3.0						
URZ				Sn	**S**	**16 55 24.9**	**+1.8**
	1.9nm,0.3s,baz=129,slow=18,SNR=12						
MRZ	**Mangatainoka R**	**15.28**	**200**	S	**S**	**16 56 25.1**	**-0.5**
THZ	**Tophouse**	**17.16**	**204**	P	**P**	**16 54 07.2**	**+4.7**
RAR	**Rarotonga**	**17.25**	**76**	LR	LR	16 58 42.9	
	comp=Z,70nm,21.4s,baz=242,slow=32						
KHZ	**Kahutara**	**17.52**	**202**	S	**S**	**16 57 15.7**	**-0.4**
MQZ	**McQueen's Vall**	**18.96**	**202**	S	**S**	**16 57 46.9**	**-1.0**
ASAR	**Alice Springs**	**43.67**	**263**	P	**P**	**16 58 05.0**	**+0.7**
	1.4nm,0.4s,mb4.0,baz=92,slow=7.3,SNR=44						
WRA	**Warramunga Arr**	**44.30**	**268**	P	**P**	**16 58 09.4**	**0.0**
	1.7nm,0.9s,mb3.8,baz=100,slow=7.1,SNR=30						
QSPA	**South Pole Qui**	**63.72**	**180**	*eP*	**P**	**17 00 30.7**	**+0.4**
	6.6nm,0.7s,mb4.6						
SNAA	**Sanae**	**82.16**	**178**	⇓*i*	**P**	**17 02 16.1**	**-2.1**
VNA3	**Neumayer Olymp**	**82.29**	**176**		**P**	**17 02 20.8**	**+1.9**
VNA2	**Neumayer--Watz**	**82.73**	**177**		**P**	**17 02 21.8**	**+0.7**
VNA1	**Neumayer--Stat**	**82.96**	**176**	⇑*i*	**P**	**17 02 21.8**	**-0.5**
NVAR	**Mina Array Bea**	**85.16**	**43**	P	**P**	**17 02 26.4**	**-7.5**
	0.6nm,0.8s,mb3.6,baz=212,slow=8.2,SNR=4.1						
TXAR	**Lajitas Array**	**90.05**	**57**	P	**P**	**17 02 49.6**	**-8.0**
	0.5nm,0.8s,mb3.7,baz=194,slow=5.2,SNR=4.1						
CMAR	**Chiang Mai Arr**	**92.26**	**289**	P	**P**	**17 03 07.5**	**-0.6**
	0.6nm,0.8s,mb3.9,baz=110,slow=3.6,SNR=4.2						
NB2	**NORSAR Subarra**	**144.81**	**352**	PKP		17 09 25.6	
	1.4nm,0.7s,baz=9.0,slow=3.3						
NOA	**NORSAR Array B**	**144.81**	**352**	PKP	PKPdf	17 09 25.9	-6.2
	1.8nm,0.7s,baz=12,slow=2.3,SNR=11						
HFS	**Hagfors**	**145.34**	**350**	PKP	PKPdf	17 09 27.6	-5.5
	6.7nm,0.5s,baz=72,slow=4.7,SNR=54						
AKASG	**Malin Array Be**	**148.14**	**327**	PKPbc	PKPdf	17 09 36.2	-1.8
	3.0nm,0.9s,baz=41,slow=3.5,SNR=8.5						
BRTR	**Keskin Array B**	**150.66**	**305**	PKPbc	PKPdf	17 09 45.0	+2.7
	0.4nm,0.6s,baz=45,slow=2.0,SNR=3.3						
BRTR				PKPab	PKPab	17 09 52.2	-5.2
	1.0nm,0.8s,baz=100,slow=3.7,SNR=4.9						
GERES	**GERESS Array B**	**155.85**	**341**	PKPab	PKPab	17 10 11.2	-7.8
	0.3nm,0.7s,baz=37,slow=4.9,SNR=4.2						

*IDC **01** 16:53:10.8±7.6,14.74N×93.74W,mb3.5/5,mb1 3.8/6, mb1mx3.6/21,ML3.5/1,MS3.8/1,Ms1 3.8/1,ms1mx2.7/27, Error ellipse: s-maj=174.0km s-min=97.2km az=24.0*
*NEIC **01** 16:53:22.7,15.22N×94.47W,h13km, MD4.3(MEX), After MEX.*
*MEX **01** 16:53:22.7±0.7,15.22N×94.47W,h13km±198km,MD4.3*
ISC 01 16:53:21.7±3.5,**15.3N**±0.2×**94.5W**±0.1,**h55**km±23km,**n10**, σ1§**22**/11,**mb3.5**/5,**MS3.8**/1,**Near coast of Oaxaca**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CMIG	**Matias Romero**	**1.87**	**347**	*iP*	**P**	**16 53 51.8**	**-0.2**
CMIG				*iS*	**S**	**16 54 13.8**	**-0.7**
SCX	**San Cristobal**	**2.28**	**50**	*iP*	**P**	**16 53 58.7**	**+0.9**
CCIG	**Comitan**	**2.45**	**65**	*iP*	**P**	**16 53 57.8**	**-2.4**
CCIG				*iS*	**S**	**16 54 29.7**	**+0.8**
TXAR	**Lajitas Array**	**16.39**	**330**	P	**P**	**16 57 12.4**	**+2.8**
	0.0nm,0.3s,baz=156,slow=11,SNR=4.7						
PDAR	**Pinedale Array**	**30.33**	**338**	P	**P**	**16 59 30.9**	**+0.5**
	0.2nm,0.3s,mb3.3,baz=135,slow=6.4,SNR=2.6						
NVAR	**Mina Array Bea**	**31.22**	**322**	P	**P**	**16 59 39.9**	**+1.6**
	0.3nm,0.7s,mb3.2,baz=135,slow=8.9,SNR=4.1						
LVC	**Limon Verde**	**45.18**	**146**	LR	LR	17 17 51.6	
	comp=Z,126nm,20.9s,MS3.8,baz=310,slow=33						
YKA	**Yellowknife Ar**	**49.29**	**348**	P	**P**	**17 02 06.1**	**-0.8**
	0.4nm,0.6s,mb3.6,baz=154,slow=7.3,SNR=12						
INK	**Inuvik**	**58.58**	**344**	P	**P**	**17 03 13.9**	**-1.0**
	0.4nm,0.5s,mb3.7,baz=123,slow=4.9,SNR=5.2						
ILAR	**Eielson Array**	**60.77**	**337**	P	**P**	**17 03 29.0**	**-1.0**
	0.5nm,0.7s,mb3.7,baz=128,slow=5.2,SNR=4.1						

*NIED **01** 17:02:00,35.00N×136.90E,h29km,Mw3.5 Best double couple: M0 2.21×10^14 NP1:φs343°,δ53°,λ-96°. NP2: φs172°,δ38°,λ-83°.*
*JMA **01** 17:02:11.8,34.99N×136.92E,h37km±1km,M3.6 Broadband fault plane solution: P waves. NP1:φs293°, δ48°,λ-139°. NP2:φs172°,δ60°,λ-50°. Principal axes: T Plg7°, Azm235°; N Plg34°, Azm330°; P Plg55°, Azm135°;*
JMA Felt II J1.
ISC 01 17:02:12.0±0.5,**34.97N**±0.03×**136.90E**±0.05,**h31**km±5km, **n10**,σ0§**54**/18,**4C-1D**,**Western Honshu**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JAA	**Atsumi**	**0.39**	**150**	⇓P	**Pb**	**17 02 21.0**	**+0.2**
JAA				S	**Sb**	**17 02 27.2**	**+0.3**
JAO	**Obara**	**0.41**	**44**	⇑P	**Pb**	**17 02 20.8**	**-0.3**
JAO				S	**Sb**	**17 02 27.5**	**+0.1**
TSUJ	**Tsu 2**	**0.48**	**237**	⇑P	**Pb**	**17 02 21.9**	**-0.2**
TSUJ				S	**Sb**	**17 02 29.3**	**+0.3**
JIE	**Ise**	**0.60**	**196**	⇑P	**Pb**	**17 02 23.9**	**-0.2**
JIE				S	**Sb**	**17 02 32.6**	**+0.3**
JGM	**Miyama**	**0.74**	**348**	P	**Pn**	**17 02 25.8**	**-0.6**
JGM				S	**Sb**	**17 02 36.1**	**-0.2**
JKN	**Kiinagashima**	**0.89**	**216**	⇑P	**Pn**	**17 02 28.0**	**-0.6**
JKN				S	**Sn**	**17 02 40.7**	**+0.2**
TK04	**Tokai 4**	**0.99**	**126**	P	**Pn**	**17 02 29.4**	**-0.5**
JHE	**Heguri**	**1.05**	**253**	P	**Pn**	**17 02 30.4**	**-0.4**
JHE				S	**Sn**	**17 02 45.2**	**+0.7**
SHZ3	**Shizuoka 3**	**1.08**	**85**	P	**Pn**	**17 02 30.9**	**-0.3**
MAT	**Matsushiro**	**1.89**	**34**	P	**Pn**	**17 02 42.4**	**-0.4**
MAT				S	**Sn**	**17 03 07.6**	**+1.7**

*BJI **01** 17:11:11.3,35.67N×77.58E,h17km,ML3.5*
*IDC **01** 17:11:11.5±1.3,35.62N×78.03E,mb3.7/7,mb1 3.9/10, mb1mx3.6/23,ML3.5/3, Error ellipse: s-maj=31.0km s-min=22.1km az=48.0*
*NEIC **01** 17:11:13.1±0.5,35.62N×77.97E,h10km,mb4.4/1, Error ellipse: s-maj=16.3km s-min=5.6km az=59.0*
*NNC **01** 17:11:13.1±4.3,35.46N×78.12E,h26km±60km, Error ellipse: s-maj=45.4km s-min=10.0km az=167.0*
*MOS **01** 17:11:14.6±0.8,35.69N×78.26E,h33km,mb4.6/1, Error ellipse: s-maj=23.0km s-min=9.5km az=103.8*
ISC 01 17:11:10.2±0.4,**35.65N**±0.04×**78.08E**±0.08,**h4**km,**n32**, σ0§**88**/36,**mb3.7**/8,**1C-2D**,**Eastern Kashmir**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KSH	**Kashi**	**4.21**	**337**	*e*PG	**Pb**	**17 12 22.8**	**-1.8**
KSH				SG	**Sb**	**17 13 19.8**	**+3.7**
KSH				S	Sn		
	comp=N,90nm,0.9s						
KSH				S	Sn		
	comp=E,120nm,1.0s						
DANN	**Dangsing**	**8.73**	**145**	*eP*	**P**	**17 13 21.1**	**+0.8**
KOLN	**Koldanda**	**9.15**	**148**	*eP*	**P**	**17 13 25.8**	**-0.3**
	comp=E,5.0nm,0.3s						
GKN	**Gorkha**	**9.44**	**142**	*eP*	**P**	**17 13 30.2**	**+0.1**
	comp=E,15nm,0.4s						
KK31	**Karatay Array**	**9.47**	**324**	P	**P**	**17 13 30.9**	**+0.5**
	comp=E,0.5nm,0.4s,baz=133,slow=11,SNR=21						
KK31				⇑S	**Sn**	**17 15 18.2**	**-0.3**
	comp=E,0.9nm,0.6s,baz=145,slow=23,SNR=4.6						
KKN	**Kakani**	**9.95**	**140**	*eP*	**P**	**17 13 37.5**	**+0.4**
	comp=E,5.4nm,0.4s						
KKN	**Kakani**	**9.95**	**140**	*eP*	**P**	**17 13 37.5**	**+0.4**
KKN				pmax	pmax		
	comp=Z,3.0nm,0.4s						
DMN	**Daman**	**10.00**	**141**	*eP*	**P**	**17 13 37.7**	**-0.2**
	comp=Z,7.2nm,0.4s						
GUN	**Gumba**	**10.17**	**137**	*eP*	**P**	**17 13 40.2**	**0.0**
	comp=Z,7.7nm,0.6s						
MK31	**Makanchi Array**	**11.57**	**15**	P	**P**	**17 13 58.3**	**-0.9**
	comp=Z,1.6nm,0.6s,baz=197,slow=13,SNR=23						
MK31				⇓S	**S**	**17 16 10.1**	**+0.1**
	comp=Z,1.7nm,0.7s,baz=196,slow=25,SNR=7.0						
MKAR	**Makanchi Array**	**11.57**	**15**	Pn	**P**	**17 13 58.9**	**-0.4**
	comp=Z,0.3nm,0.3s,baz=199,slow=14,SNR=24						
MKAR				Sn	**S**	**17 16 10.3**	**+0.3**
	comp=Z,0.2nm,0.3s,baz=193,slow=21,SNR=6.8						
LSA	**Lhasa**	**12.50**	**115**	P	**P**	**17 14 10.0**	**-1.9**
LSA				pmax	pmax		
	comp=Z,2.0nm,0.8s						
LSA	**Lhasa**	**12.50**	**115**	P	**P**	**17 14 10.0**	**-1.8**
	comp=Z,2.0nm,0.8s						
KURK	**Kurchatov**	**15.06**	**1**	⇓P	**P**	**17 14 51.2**	**+5.7**
	comp=Z,1.7nm,1.4s,baz=186,slow=9.3,SNR=4.1						
KURK	**Kurchatov**	**15.06**	**1**	P	**P**	**17 14 45.8**	**+0.4**
BVAR	**Borovoye Array**	**18.20**	**345**	P	**P**	**17 15 26.2**	**+0.9**
	comp=Z,0.2nm,0.3s,baz=161,slow=12,SNR=8.7						
BRVK	**Borovoye**	**18.25**	**345**	*eP*	**P**	**17 15 26.9**	**+0.9**
ZRNK	**Zerenda**	**18.45**	**342**	*eP*	**P**	**17 15 29.6**	**+1.2**
ZAL	**Zalesovo**	**18.88**	**12**	P	**P**	**17 15 34.5**	**+0.9**
	comp=Z,0.3nm,0.3s,baz=124,slow=2.3,SNR=2.8						
AB31	**Akbulak array**	**19.01**	**321**	P	**P**	**17 15 34.5**	**-0.7**
	comp=Z,1.5nm,0.8s,baz=125,slow=11,SNR=12						
NVS	**Novosibirsk**	**19.52**	**9**	*eP*	**P**	**17 15 39.8**	**-1.4**
CMAR	**Chiang Mai Arr**	**25.18**	**127**	P	**P**	**17 16 39.4**	**+1.0**
	comp=Z,0.7nm,0.9s,mb3.2,baz=314,slow=10,SNR=5.1						
KIV	**Kislovodsk**	**28.26**	**298**	P	**P**	**17 17 03.3**	**-3.1**
KIV				pmax	pmax		
	comp=Z,11nm,1.8s,mb4.2						
KIV	**Kislovodsk**	**28.26**	**298**	P	**P**	**17 17 03.3**	**-3.1**
	comp=Z,11nm,1.8s,mb4.2						
AKASG	**Malin Array Be**	**37.95**	**309**	P	**P**	**17 18 29.9**	**-0.5**
	comp=Z,0.4nm,0.5s,mb3.4,baz=79,slow=8.1,SNR=3.2						
MLR	**Muntele Rosu**	**40.18**	**301**	P	**P**	**17 18 49.4**	**+0.3**
	comp=Z,3.6nm,0.9s,mb4.1,baz=83,slow=8.1,SNR=7.9						
FINES	**FINESS Array B**	**41.43**	**325**	P	**P**	**17 18 59.4**	**+0.3**
	comp=Z,0.7nm,0.5s,mb3.5,baz=104,slow=7.9,SNR=14						
FINES	**FINESS Array B**	**41.43**	**325**	P	**P**	**17 18 59.4**	**+0.3**
ARCES	**ARCESS Array B**	**44.17**	**336**	P	**P**	**17 19 22.0**	**+0.6**
	comp=Z,2.9nm,1.0s,mb4.0,baz=102,slow=8.3,SNR=4.7						
HFS	**Hagfors**	**47.27**	**322**	P	**P**	**17 19 46.4**	**+0.3**
	comp=Z,0.4nm,0.5s,mb3.6,baz=108,slow=9.1,SNR=3.3						
YKA	**Yellowknife Ar**	**81.66**	**6**	P	**P**	**17 23 30.3**	**-0.1**
	comp=Z,0.3nm,0.7s,mb3.3,baz=345,slow=5.2,SNR=7.3						
YKA	**Yellowknife Ar**	**81.66**	**6**	P	**P**	**17 23 30.3**	**-0.1**

*NEIC **01** 17:13:24.7±1.4,16.92S×71.95W,h80km±12km, Error ellipse: s-maj=33.1km s-min=13.3km az=81.0*
NEIC Felt [III] at Camana.
*IDC **01** 17:13:27.7±3.7,17.09S×71.92W,h112km±35km,mb3.5/4, mb1 3.8/5,mb1mx3.4/17,MS3.4/1,Ms1 3.4/1,ms1mx2.8/18, Error ellipse: s-maj=42.5km s-min=19.0km az=92.0*
ISC 01 17:13:24.5±1.3,**17.01S**±0.08×**71.9W**±0.2,**h86**km±11km, **n11**,σ1§**16**/12,**mb3.6**/4,**1C**,**Near coast of Peru**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ARE	**Arequipa**	**0.65**	**33**	⇑*iP*	**P**	**17 13 39.9**	**-0.5**
ARE				*iS*	**S**	**17 13 52.3**	**+0.2**
LPAZ	**La Paz**	**3.65**	**79**	P	**P**	**17 14 25.7**	**+5.7**
	baz=265,slow=11						
LVC	**Limon Verde**	**6.23**	**154**	P	**P**	**17 14 55.9**	**+0.4**
	16nm,0.3s,baz=344,slow=8.5,SNR=69						
LVC				S	**S**	**17 16 05.1**	**-0.9**
	64nm,0.3s,baz=296,slow=11,SNR=22						
OTAV	**Otavalo**	**18.33**	**339**	*eP*	**P**	**17 17 36.0**	**+1.5**
	1.1nm,0.5s						
BDFB	**Brasilia**	**22.92**	**90**	P	**P**	**17 18 22.9**	**+0.9**
	3.7nm,0.9s,mb3.7,baz=276,slow=12,SNR=4.6						
PLCA	**Paso Flores**	**23.67**	**178**	P	**P**	**17 18 30.3**	**+1.4**
	0.9nm,0.6s,mb3.3,baz=14,slow=12,SNR=3.1						
SDV	**Santo Domingo**	**25.76**	**3**	P	**P**	**17 18 49.0**	**-0.1**
	1.7nm,0.5s,mb3.7,baz=143,slow=12,SNR=4.2						
PCRV	**Puerto La Cruz**	**27.94**	**15**	LR	LR	17 31 20.5	
	comp=Z,76nm,19.4s,baz=340,slow=38						
GNAR	**Gosnell**	**55.42**	**342**	*eP*	**P**	**17 22 49.1**	**-3.3**
YKA	**Yellowknife Ar**	**86.06**	**342**	P	**P**	**17 25 54.8**	**-1.6**
	0.6nm,0.5s,mb3.8,baz=135,slow=5.2,SNR=17						
YKA	**Yellowknife Ar**	**86.06**	**342**	P	**P**	**17 25 54.8**	**-1.6**

*GII **01** 17:13:59.9±0.7,28.22N×34.60E,h6km±30km,ML3.7/5, Mw3.3/4*
*SNSN **01** 17:14:01.9,28.44N×34.47E,h13km,MI3.1*
*HLW **01** 17:14:01.9,28.45N×34.45E,h4km,Mb3.1*
ISC 01 17:14:01.2±0.6,**28.42N**±0.04×**34.48E**±0.04,**h1**km±6km, **n32**,σ0§**58**/36,**8C-5D**,**Egypt**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
HDHB	**Dhahab**	**0.33**	**23**	⇓*eP*	**Pg**	**17 14 08.0**	**+0.3**
HKAT	**Jabal Katrina**	**0.44**	**283**	⇑*eP*	**Pg**	**17 14 10.2**	**+0.3**
BDAS	**Al Bad'**	**0.55**	**89**	P	**Pg**	**17 14 12.8**	**+0.6**
SHRM		**0.61**	**210**	⇓*eP*	**Pg**	**17 14 14.0**	**+0.7**
TR1		**0.62**	**228**	⇓*eP*	**Pg**	**17 14 14.1**	**+0.6**
NUB		**0.62**	**14**	⇓*eP*	**Pg**	**17 14 13.4**	**-0.2**
TR2		**0.66**	**267**	⇑*eP*	**Pg**	**17 14 14.4**	**0.0**
AYUS	**'Aynunah**	**0.74**	**108**	P	**Pg**	**17 14 16.3**	**+0.4**
HAQS	**Haql**	**0.75**	**32**	P	**Pg**	**17 14 16.3**	**+0.2**
HBST	**Basata**	**0.82**	**16**	⇑*eP*	**Pg**	**17 14 17.4**	**-0.2**
JMOS	**Jabal al Moall**	**0.93**	**37**	P	**Pb**	**17 14 19.7**	**-0.1**
ZEIT		**0.99**	**237**	⇑*eP*	**Pb**	**17 14 21.1**	**+0.3**
ALWS	**Ilw as Safayha**	**1.03**	**30**	P	**Pb**	**17 14 21.1**	**-0.3**
HRDS	**Abu Rudays**	**1.07**	**286**	⇑*eP*	**Pb**	**17 14 21.9**	**-0.4**
EIL	**Elat**	**1.31**	**18**	Pn	**Pn**	**17 14 26.2**	**-0.4**
JMQS	**Jabal Moqyreh**	**1.32**	**69**	P	**Pb**	**17 14 25.8**	**-0.6**
AQBJ	**Aqaba**	**1.40**	**21**	Pn	**Pn**	**17 14 27.3**	**-0.5**
MBH	**Mount Berech**	**1.42**	**16**	Pn	**Pn**	**17 14 28.1**	**-0.1**
HNKL	**Nakhl**	**1.56**	**344**	⇑*eP*	**Pn**	**17 14 30.1**	**-0.1**
HNKL				S	**Sb**	**17 14 50.7**	**-0.1**
KMTI	**Karmit**	**1.69**	**7**	Pn	**Pn**	**17 14 31.8**	**-0.2**
KMTI				Sn	**Sn**	**17 14 55.2**	**+0.6**
ZNM		**1.69**	**305**	⇓*eP*	**Pn**	**17 14 31.9**	**-0.2**
TBKS	**Tabuk**	**1.84**	**96**	P	**Pn**	**17 14 33.6**	**-0.5**
ZAF		**1.90**	**297**	⇓*eP*	**Pn**	**17 14 34.7**	**-0.3**
PRNI	**Paran**	**1.98**	**13**	Pn	**Pn**	**17 14 36.0**	**-0.2**
PRNI				Sn	**Sn**	**17 15 04.1**	**+2.2**
SUZ		**2.02**	**315**	P	**Pn**	**17 14 36.5**	**-0.1**
ZFRI	**Zfri**	**2.21**	**16**	Pn	**Pn**	**17 14 39.4**	**-0.1**
KZIT	**Kziot**	**2.48**	**358**	Pn	**Pn**	**17 14 42.7**	**-0.6**
KZIT				Sn	**Sn**	**17 15 17.6**	**+3.0**
MASH	**Mash'abbe Sade**	**2.58**	**6**	Pn	**Pn**	**17 14 44.8**	**0.0**
RTMM	**Retamin**	**2.63**	**4**	Pn	**Pn**	**17 14 45.4**	**0.0**
GLL	**Jalalah**	**2.68**	**296**	⇑*eP*	**Pn**	**17 14 45.7**	**-0.5**
MZDA	**Masada**	**2.98**	**15**	Pn	**Pn**	**17 14 50.2**	**-0.3**
HMDT	**Nahal Hemdat**	**3.92**	**13**	Pn	**Pn**	**17 15 03.1**	**-0.8**

*IDC **01** 17:23:04.6±2.1,5.74N×125.70E,mb3.3/4,mb1 3.5/4, mb1mx3.4/19, Error ellipse: s-maj=130.0km s-min=26.3km az=68.0*
ISC 01 17:23:15.9±1.4,**6.2N**±0.1×**127.0E**±0.2,**h142**km±19km,**n6**, σ1§**18**/8,**mb3.1**/4,**2C**,**Philippine Islands region**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BIPH	**Bislig**	**2.08**	**341**	⇑*iP*	**P**	**17 23 53.2**	**+1.3**
BIPH				*i* S	**S**	**17 24 18.4**	**-1.1**
KCP	**Kidapawan**	**2.09**	**293**	⇑*iP*	**P**	**17 23 52.0**	**0.0**
KCP				*i* S	**S**	**17 24 19.9**	**+0.2**
FITZ	**Fitzroy Crossi**	**24.19**	**183**	P	**P**	**17 28 19.6**	**-0.9**
	0.6nm,0.3s,mb3.5,baz=5.7,slow=14,SNR=7.0						
WRA	**Warramunga Arr**	**26.95**	**165**	P	**P**	**17 28 47.4**	**+1.2**
	0.2nm,0.7s,mb2.9,baz=338,slow=11,SNR=5.1						
ASAR	**Alice Springs**	**30.43**	**167**	P	**P**	**17 29 16.6**	**-0.7**
	0.4nm,1.0s,mb3.1,baz=343,slow=7.5,SNR=3.7						
MKAR	**Makanchi Array**	**55.73**	**324**	P	**P**	**17 32 40.1**	**+0.1**
	0.1nm,0.4s,mb3.0,baz=109,slow=6.4,SNR=4.3						

*NEIC **01** 17:41:27.2±0.9,7.34S×116.15E,mb4.5/4, Error ellipse: s-maj=44.4km s-min=13.3km az=53.0*
*IDC **01** 17:41:29.6±7.7,7.59S×115.96E,h250km±73km,mb3.5/4, mb1 3.6/5,mb1mx3.3/16, Error ellipse: s-maj=95.1km s-min=19.5km az=58.0*
*DJA **01** 17:41:45.5±1.0,8.05S×115.61E,h114km±10km,MD4.5/4, ML4.8/2, Error ellipse: s-maj=20.3km s-min=11.0km az=16.0*
ISC 01 17:41:26.5±0.6,**7.16S**±0.09×**116.20E**±0.09,**h227**km,**n20**, σ1§**16**/20,**mb4.1**/8,**3C-5D**,**Bali Sea**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KEDI	**Kedomdong**	**1.32**	**184**	⇑*ePg*	**P**	**17 42 03.6**	**+2.0**
	746nm,0.2s						
RATI	**Rata**	**1.69**	**203**	⇑*ePg*	**P**	**17 42 04.2**	**-0.4**
	1µm,0.2s						
RATI	**Rata**	**1.69**	**203**	⇓*iP*	**P**	**17 42 05.4**	**+0.8**
RATI				⇓*eSg*	Sx	17 42 16.7	
INGI	**Ingas**	**1.95**	**212**	⇑*ePn*	**P**	**17 42 05.8**	**-1.2**
	2µm,0.2s						
INGI				⇓*eSn*	Sx	17 42 20.4	
KELI	**Kelakatan**	**1.99**	**238**	⇓*ePn*	**P**	**17 42 07.8**	**+0.4**
	1µm,0.3s						
KELI				⇓*eSn*	Sx	17 42 25.5	
FITZ	**Fitzroy Crossi**	**14.24**	**141**	*eP*	**P**	**17 44 38.5**	**-1.1**
	6.4nm,1.3s						
FITZ	**Fitzroy Crossi**	**14.24**	**141**	P	**P**	**17 44 38.3**	**-1.3**
	0.5nm,0.3s,baz=343,slow=11,SNR=15						
FITZ				S	**S**	**17 47 13.8**	**+1.6**
	0.2nm,0.3s,baz=177,slow=19,SNR=3.1						
WRA	**Warramunga Arr**	**21.70**	**128**	P	**P**	**17 46 00.2**	**+0.2**
	2.6nm,0.7s,mb3.9,baz=300,slow=11,SNR=35						
WRAB	**Tennant Creek**	**21.70**	**128**	*eP*	**P**	**17 46 00.5**	**+0.4**
	14nm,1.1s,mb4.4						
WRAB				*e*		17 46 40.4	
WB2	**Warramunga Arr**	**21.71**	**128**	*eP*	**P**	**17 46 00.2**	**+0.1**
AS12	**Alice Springs**	**23.62**	**136**	*eP*	**P**	**17 46 17.9**	**-0.7**
	3.8nm,0.6s,mb4.2						
ASAR	**Alice Springs**	**23.62**	**136**	P	**P**	**17 46 17.4**	**-1.3**
	3.5nm,0.6s,mb4.2,baz=309,slow=8.8,SNR=133						
ASAR				PcP	PcP	17 49 55.1	-2.7
	0.2nm,0.5s,baz=298,slow=2.0,SNR=4.0						
PMG	**Port Moresby**	**30.71**	**96**	*eP*	**P**	**17 47 18.7**	**-4.0**
	16nm,1.1s,mb4.6						
PMG				*e*		17 47 39.3	
PMG				*ep*P	pP	17 48 04.0	-4.5
CTAO	**Charters Tower**	**31.83**	**117**	*eP*	**P**	**17 47 32.5**	**+0.1**
	23nm,1.4s,mb4.5						
CTAO				*e*		17 47 52.0	
CTAO				*ep*P	pP	17 48 19.2	+0.7
STKA	**Stephens Creek**	**34.13**	**139**	*eP*	**P**	**17 47 49.6**	**-2.4**
	2.4nm,0.5s,mb4.0						
STKA	**Stephens Creek**	**34.13**	**139**	P	**P**	**17 47 50.0**	**-1.9**
	3.3nm,0.6s,mb4.0,baz=316,slow=8.5,SNR=7.0						
ENH	**Enshi**	**37.77**	**350**	P	**P**	**17 48 24.1**	**+1.6**
	3.7nm,0.9s,mb3.9						
MKAR	**Makanchi Array**	**61.59**	**334**	P	**P**	**17 51 22.6**	**+0.5**
	0.7nm,0.5s,mb3.5,baz=154,slow=6.7,SNR=12						
KURK	**Kurchatov**	**66.15**	**335**	*eP*	**P**	**17 51 50.1**	**-1.4**
CPUP	**Villa Florida**	**146.12**	**190**	PKPbc	PKPbc	18 00 38.8	-1.8
	3.0nm,1.2s,baz=175,slow=2.9,SNR=4.4						

*NEIC **01** 17:55:09.4±1.5,20.73N×146.05E,h10km,mb4.3/2, Error ellipse: s-maj=67.9km s-min=12.0km az=82.0*
*IDC **01** 17:55:28.9±4.3,20.62N×145.29E,h158km±33km,mb3.5/8, mb1 3.6/9,mb1mx3.3/24, Error ellipse: s-maj=78.0km s-min=13.5km az=85.0*
ISC 01 17:55:29.6±2.8,**20.6N**±0.1×**144.6E**±0.6,**h163**km±19km, **n13**,σ0§**77**/14,**mb3.8**/9,**Mariana Islands**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CBIJ	**Chichi jima**	**6.84**	**342**	P	**P**	**17 57 09.7**	**+1.2**
	2.4nm,0.3s,baz=276,slow=23,SNR=6.4						
CBIJ				S	**S**	**17 58 24.2**	**-1.1**
	14nm,0.3s,baz=288,slow=22,SNR=9.6						
MAJO	**Matsushiro**	**16.85**	**342**	*eP*	**P**	**17 59 09.6**	**-7.6**
	8.7nm,1.1s						
PMG	**Port Moresby**	**29.91**	**175**	*eP*	**P**	**18 01 16.0**	**-8.5**
	19nm,1.1s,mb4.7						
WRAB	**Tennant Creek**

*NEIC **01** 19:11:54.1±0.9,23.34N×94.26E,h92km±13km,Error ellipse: s-maj=18.1km s-min=8.9km az=218.0*
*IDC **01** 19:11:56.4±4.2,23.40N×94.54E,h103km±37km,mb3.4/3, mb1 3.3/4,mb1mx3.1/18,MS3.3/1,Ms1 3.3/1,ms1mx2.5/17, Error ellipse: s-maj=116.0km s-min=20.0km az=60.0*
ISC 01 19:11:52.8±1.1,23.3N±0.1×94.2E±0.1,h97km±15km,n13, σ0⁹99/13,mb3.6/3,Myanmar-India border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SHL	**Shillong**	**3.09**	**316**	*eP*	**P**	**19 13 42.0**	**+1.4**
SHL				*eS*	**S**	**19 13 14.5**	**-2.2**
CMAR	**Chiang Mai Arr**	**6.55**	**137**	P	**P**	**19 13 28.2**	**+0.1**
	0.1nm,0.3s,baz=314,slow=13,SNR=3.4						
LSA	**Lhasa**	**6.91**	**337**	*eP*	**P**	**19 13 34.1**	**+1.0**
KKN	**Kakani**	**9.22**	**301**	*eP*	**P**	**19 14 04.0**	**-0.4**
	6.1nm,0.2s						
DMN	**Daman**	**9.28**	**299**	*eP*	**P**	**19 14 05.5**	**+0.3**
	5.0nm,0.3s						
GKN	**Gorkha**	**9.82**	**300**	*eP*	**P**	**19 14 12.9**	**+0.3**
	15nm,0.3s						
KOLN	**Koldanda**	**10.57**	**297**	*eP*	**P**	**19 14 22.6**	**0.0**
	4.2nm,0.2s						
ENH	**Enshi**	**15.26**	**60**	*eP*	**P**	**19 15 23.4**	**-0.6**
	9.9nm,1.5s						
MKAR	**Makanchi Array**	**25.30**	**341**	P	**P**	**19 17 13.7**	**+2.0**
	2.0nm,0.5s,mb3.8,baz=148,slow=11,SNR=26						
BRVK	**Borovoye**	**34.81**	**335**	P	**P**	**19 18 34.6**	**-1.3**
CBIJ	**Chichi jima**	**43.34**	**75**	LR	LR	19 37 40.2	
	comp=Z,40nm,20.2s,baz=6.5,slow=36						
WRA	**Warramunga Arr**	**58.14**	**134**	P	**P**	**19 21 38.4**	**-0.5**
	0.2nm,0.4s,mb3.5,baz=321,slow=7.4,SNR=9.3						
ASAR	**Alice Springs**	**60.56**	**138**	P	**P**	**19 21 55.3**	**-0.2**
	0.2nm,0.3s,mb3.6,baz=320,slow=6.8,SNR=9.0						

IDC 01 19:18:06.1±6.8,4.65S×152.05E,mb3.8/3,mb1 4.0/3, mb1mx3.7/12,Error ellipse: s-maj=114.0km s-min=82.4km az=178.0,New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WB2	**Warramunga Arr**	**22.98**	**227**	*eP*	P	19 23 13.6	-0.1
WRA	**Warramunga Arr**	**22.99**	**227**	P	P	19 23 13.7	-0.1
	2.2nm,0.6s,baz=52,slow=10,SNR=28						
ASAR	**Alice Springs**	**25.77**	**221**	P	P	19 23 38.9	-1.6
	0.3nm,0.4s,baz=52,slow=9.0,SNR=7.7						
STKA	**Stephens Creek**	**28.81**	**199**	P	P	19 24 05.0	-3.2
	1.6nm,0.7s,baz=28,slow=14,SNR=4.1						

*TRN **01** 19:32:51.8, 10.00N×63.36W,h34km, MD3.8*
*IDC **01** 19:32:51.2±2.9, 10.26N×62.92W,mb3.6/6,mb1 4.0/7, mb1mx3.7/21,ML4.0/1,MS2.6/1,Ms1 2.6/1,ms1mx2.4/20, Error ellipse: s-maj=72.2km s-min=21.3km az=163.0*
*NEIC **01** 19:32:52.4±0.8, 10.13N×62.95W,h10km,mb4.5/2, Error ellipse: s-maj=15.6km s-min=13.5km az=96.0*
*FUNV **01** 19:32:53.9, 10.18N×62.99W,h5km,MW3.0*
ISC 01 19:32:52.1±0.8,10.13N±0.03×63.10W±0.02,h5km±5km, n32,σ1⁹36/47,mb3.8/8,5C-1D,Near coast of Venezuela

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GUNV	**Guanoco**	**0.15**	**79**	*ePg*	**Pg**	**19 32 55.3**	**-0.1**
GUNV				*eS*	**Sg**	**19 32 56.4**	**-1.1**
CRUV	**Carupano**	**0.56**	**346**	*eP*	**Pg**	**19 33 03.5**	**+0.2**
CRUV				*eS*	**Sg**	**19 33 10.2**	**-0.6**
GUIV	**Guiria**	**1.00**	**59**	*ePg*	**Pb**	**19 33 10.6**	**-1.0**
GUIV				*eS*	**Sb**	**19 33 23.4**	**-1.5**
ORIV	**Oritupano**	**1.10**	**196**	*ePg*	**Pb**	**19 33 15.3**	**+2.0**
ORIV				*eS*	**Sb**	**19 33 31.6**	**+3.9**
ITEV	**Isla Los Testi**	**1.22**	**358**	*ePg*	**Pb**	**19 33 15.5**	**+0.2**
ITEV				*eS*	**Sb**	**19 33 31.3**	**+0.2**
TCE	**Chacachacare**	**1.44**	**67**	*eP*	**Pn**	**19 33 19.5**	**+0.6**
TCE				*eS*	**Sb**	**19 33 39.0**	**+1.5**
PCRV	**Puerto La Cruz**	**1.52**	**272**	Pn	**Pn**	**19 33 21.3**	**+1.2**
	16nm,0.3s,baz=60,slow=4.1,SNR=240						
PCRV				Sn	**Sn**	**19 33 43.9**	**+3.5**
	29nm,0.3s,baz=269,slow=19,SNR=6.3						
PCRV	**Puerto La Cruz**	**1.52**	**272**	*eP*	**Pn**	**19 33 22.2**	**+2.1**
PCRV				*eS*	**Sb**	**19 33 43.0**	**+3.2**
TPP	**Pointe-a-Pierr**	**1.63**	**83**	*eP*	**Pn**	**19 33 21.9**	**+0.1**
TPP				*eS*	**Sb**	**19 33 50.8**	**+7.6**
TRN	**Trinidad (W)**	**1.74**	**73**	*eP*	**Pn**	**19 33 24.7**	**+1.4**
TRN				*eS*	**Sn**	**19 33 47.6**	**+1.4**
TBH	**Brigand Hill**	**2.03**	**80**	*eP*	**Pn**	**19 33 31.5**	**+4.1**
RIOV	**Rio Grande**	**2.41**	**148**	*eS*	**Sn**	**19 34 02.0**	**-1.1**
GRW	**Mount Saint Ca**	**2.46**	**35**	*eP*	**Pn**	**19 33 33.3**	**-0.3**
TPR	**Prospect**	**2.51**	**65**	*eP*	**Pn**	**19 33 35.3**	**+1.0**
TPR				*eS*	**Sn**	**19 34 07.5**	**+1.9**
CUPV	**Cœpira**	**2.65**	**269**	*eP*	**Pn**	**19 33 38.1**	**+1.8**
CUPV				*eS*	**Sn**	**19 34 10.8**	**+1.5**
BIRV	**Birongo**	**3.14**	**277**	*eP*	**Pn**	**19 33 44.5**	**+1.2**
BIRV				*eS*	**Sn**	**19 34 22.1**	**+0.5**
CAOV	**Caicara del Or**	**4.23**	**229**	*ePg*	**Pn**	**19 33 59.1**	**+0.3**
CAOV				*eS*	**Sn**	**19 34 47.6**	**-1.7**
BAUV	**El Baul**	**5.02**	**257**	*eP*	**Pn**	**19 34 09.7**	**-0.2**
BAUV				*eS*	**Sn**	**19 35 06.1**	**-3.0**
SDV	**Santo Domingo**	**7.54**	**261**	Pn	**Pn**	**19 34 44.3**	**-1.0**
	2.1nm,0.3s,baz=80,slow=7.4,SNR=13						
SDV				Sn	**Sn**	**19 36 10.8**	**-1.4**
	3.9nm,0.3s,baz=342,slow=15,SNR=18						
ROSC	**El Rosal**	**12.30**	**246**	LR	LR	19 40 27.5	
	comp=Z,29nm,20.9s,baz=323,slow=36						
LPAZ	**La Paz**	**26.72**	**191**	*eP*	**P**	**19 38 34.4**	**-0.2**
	14nm,2.5s,mb4.0						
JSC	**Jenkinsville**	**29.23**	**328**	*eP*	**P**	**19 38 56.0**	**-1.2**
LVC	**Limon Verde**	**33.04**	**190**	*eP*	**P**	**19 39 27.3**	**-3.5**
	30nm,1.9s,mb4.9						
TXAR	**Lajitas Array**	**42.42**	**303**	P	**P**	**19 40 49.4**	**-0.2**
	0.3nm,0.6s,mb3.1,baz=120,slow=8.6,SNR=5.3						
TXAR	**Lajitas Array**	**42.42**	**303**	P	**P**	**19 40 49.4**	**-0.2**
ULM	**Lac du Bonnet**	**48.28**	**332**	P	**P**	**19 41 33.7**	**-2.5**
	0.8nm,0.4s,mb4.1,baz=143,slow=6.6,SNR=4.3						
ULM	**Lac du Bonnet**	**48.28**	**332**	P	**P**	**19 41 33.7**	**-2.5**
PDAR	**Pinedale Array**	**51.85**	**317**	P	**P**	**19 42 01.5**	**-2.1**
	0.7nm,0.8s,mb3.6,baz=100,slow=9.0,SNR=6.6						
NVAR	**Mina Array Bea**	**56.67**	**309**	P	**P**	**19 42 38.3**	**-0.7**
	0.4nm,0.7s,mb3.6,baz=138,slow=5.7,SNR=4.1						
YKA	**Yellowknife Ar**	**63.94**	**336**	P	**P**	**19 43 24.8**	**-3.5**
	0.9nm,0.8s,mb3.9,baz=111,slow=7.4,SNR=13						
YKA	**Yellowknife Ar**	**63.94**	**336**	P	**P**	**19 43 24.8**	**-3.5**
GERES	**GERESS Array B**	**73.76**	**42**	P	**P**	**19 44 26.4**	**-2.8**
	0.3nm,0.8s,mb3.3,baz=270,slow=2.9,SNR=2.2						

*NNC **01** 19:44:32.0±1.1,42.43N×82.53E,mpv2.9, Error ellipse: s-maj=9.9km s-min=5.6km az=139.0*
*IDC **01** 19:44:32.9±3.7,42.46N×82.93E,mb3.8/1,mb1 3.7/3, mb1mx3.3/21,ML3.0/2,Error ellipse: s-maj=65.9km s-min=30.5km az=102.0*
BJI 01 19:44:29.7,42.11N×82.26E,h7km,ML3.5,1C-2D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WMQ	**Urumqi**	**4.34**	**65**	*ePG*	Pn	19 45 45.5	+7.9
WMQ				S	Sn	19 46 25.2	-4.0
WMQ				SG	Sg	19 46 40.0	-14
WMQ				S	Sn		
	comp=N,26nm,0.8s						
WMQ				S	Sn		
	comp=E,29nm,0.8s						
MK31	**Makanchi Array**	**4.68**	**0**	Pn	Pn	19 45 42.4	-0.1
	comp=E,0.3nm,0.2s,baz=187,slow=13,SNR=41						
MK31				⇓Pg	Pg	19 45 51.5	-12
	comp=E,1.8nm,0.3s,baz=176,slow=17,SNR=15						
MK31				⇓Lg		19 46 49.1	
	comp=E,41nm,0.7s,baz=173,slow=29,SNR=17						
MKAR	**Makanchi Array**	**4.68**	**0**	Pn	Pn	19 45 43.0	+0.4
	comp=E,0.7nm,0.3s,baz=177,slow=12,SNR=26						
MKAR				Pg	Pg	19 45 52.8	-10
	comp=E,2.6nm,0.3s,baz=179,slow=16,SNR=35						
MKAR				Lg		19 46 49.4	
	comp=E,3.8nm,0.3s,baz=168,slow=28,SNR=6.3						
KK31	**Karatay Array**	**8.72**	**280**	⇑Lg		19 49 10.1	
	comp=E,2.0nm,0.7s,baz=88,slow=26,SNR=4.2						
ZAL	**Zalesovo**	**11.96**	**7**	Pn	P	19 47 20.9	-2.5
	comp=E,0.3nm,0.3s,baz=126,slow=4.7,SNR=3.6						
ZAL				Sn	S	19 49 27.4	-11
	comp=E,0.3nm,0.3s,baz=51,slow=13,SNR=2.3						
ZAL				Lg		19 50 34.2	
	comp=E,0.1nm,0.3s,baz=1.0,slow=2.9,SNR=3.3						
ARCES	**ARCESS Array B**	**39.75**	**333**	P	P	19 52 05.5	+1.3
	comp=E,1.3nm,0.8s,baz=90,slow=9.0,SNR=5.2						

*ISK **01** 19:48:50.4, 39.94N×40.71E,h5km,MD4.2,ML4.1*
*IDC **01** 19:48:51.6±0.9, 39.99N×40.86E,mb3.8/10,mb1 4.0/14, mb1mx3.9/24,ML4.3/3,MS3.5/10,Ms1 3.5/10, ms1mx3.4/24,Error ellipse: s-maj=15.8km s-min=12.1km az=18.0*
*MOS **01** 19:48:52.2±1.2, 39.80N×40.74E,h10km,mb4.4/17,Error ellipse: s-maj=8.0km s-min=5.2km az=120.4*
*NEIC **01** 19:48:56.0±2.9, 39.93N×40.90E,h26km±21km,mb4.2/19, Error ellipse: s-maj=12.8km s-min=6.4km az=174.0*
ISC 01 19:48:52.2±0.2,39.92N±0.03×40.70E±0.03,h5km,n126, σ1⁹27/136,mb4.2/33,MS3.6/10,6C-2D,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
EZM	**Erzurum**	**0.41**	**92**	*i* PG	**Pg**	**19 49 01.1**	**+0.7**
ERZM	**Erzurum**	**0.51**	**91**	*i* P	**Pg**	**19 49 00.7**	**-1.8**
ERZM				*i* S	**Sg**	**19 49 11.6**	**+2.2**
EZC	**Erzincan**	**0.70**	**257**	*i* PG	**Pg**	**19 49 11.4**	**+5.1**
VRT	**Varto**	**1.01**	**140**	*i* PG	**Pg**	**19 49 10.9**	**-1.6**
BINT	**Bingol**	**1.05**	**189**	*i* PG	**Pg**	**19 49 11.6**	**-1.6**
GUMT	**Gumushane**	**1.08**	**301**	*i* PG	**Pg**	**19 49 12.5**	**-1.3**
GUMT					**Sg**	**19 49 28.0**	**-0.3**
AGRT	**Agri**	**1.79**	**99**	PN	**Pn**	**19 49 23.8**	**-0.3**
BTMT	**Batman**	**1.83**	**160**	PN	**Pn**	**19 49 25.5**	**+0.9**
ELZG	**Elazig**	**1.94**	**224**	*i* P	**Pn**	**19 49 27.4**	**+1.1**
ELZG				*i* S	**Sn**	**19 50 00.4**	**+9.1**
DIY	**Diyarbakir**	**2.05**	**191**	PN	**Pn**	**19 49 28.4**	**+0.6**
BEST	**Besiri**	**2.07**	**167**	*i* P	**Pn**	**19 49 28.9**	**+0.8**
BEST				*i* S	**Sn**	**19 49 59.9**	**+5.4**
MYA	**Malataya**	**2.38**	**229**	PN	**Pn**	**19 49 33.2**	**+0.7**
VANB	**Van**	**2.47**	**121**	PN	**Pn**	**19 49 33.3**	**-0.5**
TVAN	**Van**	**2.52**	**123**	*i* P	**Pn**	**19 49 34.4**	**-0.1**
TVAN				*i* S	**Sn**	**19 50 15.5**	**+10**
VANT	**Van**	**2.55**	**124**	PN	**Pn**	**19 49 34.6**	**-0.4**
SVSK	**Karacayir**	**2.85**	**271**	*e*PN	**Pn**	**19 49 38.3**	**-0.9**
GNI	**Garni**	**3.11**	**84**	*e*Pn	**Pn**	**19 49 41.4**	**-1.6**
GNI				*e*Pg	**Pg**	**19 49 49.1**	**-5.3**
TOKT	**Tokat**	**3.21**	**279**	PN	**Pn**	**19 49 44.3**	**-0.1**
TI2	**Plekhanov**	**3.57**	**58**	⇓*i*P	**Pn**	**19 49 52.0**	**+2.5**
ZEI	**Tsey**	**3.73**	**39**	*e*P	**Pn**	**19 49 54.2**	**+2.4**
ZEI				*e*		19 50 28.0	
ZEI				pmax	pmax		
	comp=Z,50nm,1.0s						
ZEI				MLR	MLR		
	comp=Z,800nm,6.0s						
GAZ	**Gaziantep**	**3.87**	**226**	*e*PN	**Pn**	**19 49 54.3**	**+0.6**
BNN	**Bunyan**	**3.91**	**256**	*e*PN	**Pn**	**19 49 53.5**	**-0.8**
YOZ	**Yozgat**	**4.16**	**268**	*e*PN	**Pn**	**19 49 57.0**	**-0.8**
KIV	**Kislovodsk**	**4.30**	**19**	*e*P	**Pn**	**19 50 00.0**	**+0.2**
KIV	**Kislovodsk**	**4.30**	**19**	*e*P	**Pn**	**19 49 60.0**	**+0.1**
GOF	**Gofitskoye**	**5.42**	**18**	*e*P	**Pn**	**19 50 19.0**	**+3.3**
GOF				pmax	pmax		
	comp=Z,30nm,1.0s						
KAMT	**Kaman**	**5.42**	**266**	*e*PN	**Pn**	**19 50 15.5**	**-0.2**
BRTR	**Keskin Array B**	**5.44**	**270**	Pn	**Pn**	**19 50 16.6**	**+0.6**
	comp=Z,0.2nm,0.3s,baz=97,slow=15,SNR=11						
BRTR				Pg	**Pg**	**19 50 32.6**	**-8.2**
	comp=Z,1.3nm,0.3s,baz=98,slow=12,SNR=21						
BRTR				Lg		19 51 47.9	
	baz=106,slow=32,SNR=1.7						
ANN	**Anapa**	**5.45**	**335**	*e*P	**Pn**	**19 50 16.3**	**+0.2**
ANN				*e*S	**Sn**	**19 51 19.8**	**-0.2**
ANN				pmax	pmax		
	comp=Z,7.0nm,0.7s						
SIM	**Simferopol'**	**7.00**	**318**	*e*P	**Pn**	**19 50 40.6**	**+2.6**
SIM				*e*S	**Sn**	**19 51 59.6**	**+0.7**
SIM				pmax	pmax		
	comp=Z,20nm,0.8s						
CSS	**Prodhromos**	**7.67**	**232**	*e*P	**Pn**	**19 50 40.4**	**-6.9**
ASF	**Jabal al Asfar**	**8.32**	**203**	Pn	**P**	**19 50 57.2**	**+0.8**
	comp=Z,0.4nm,0.3s,baz=342,slow=13,SNR=11						
ASF				Lg		19 53 19.6	
	comp=Z,0.4nm,0.3s,baz=252,slow=20,SNR=2.5						
ASF				LR	LR	19 54 27.2	
	comp=Z,240nm,20.4s,baz=83,slow=40						
KIS	**Kishinev**	**11.16**	**313**	*e*P	**P**	**19 51 36.0**	**+0.5**
KIS				*e*S	**S**	**19 53 39.0**	**-2.8**
KIS				MLR	MLR		
	comp=N,200nm,14.0s						
KIS				MLR	MLR		
	comp=Z,200nm,14.0s						
KIS				MLR	MLR		
	comp=Z,200nm,14.0s						
VOR	**Voronezh**	**11.86**	**355**	P	**P**	**19 51 40.0**	**-5.0**
VOR				pmax	pmax		
	comp=N,40nm,1.0s						
VOR				pmax	pmax		
	comp=E,60nm,1.0s						
VOR				pmax	pmax		
	comp=Z,50nm,1.0s						
MLR	**Muntele Rosu**	**12.20**	**302**	Pn	**P**	**19 51 49.4**	**-0.1**
	comp=Z,0.7nm,0.3s,baz=195,slow=6.1,SNR=6.7						
MLR				Sn	**S**	**19 54 06.0**	**-1.0**
	comp=Z,0.4nm,0.3s,baz=228,slow=16,SNR=2.3						
MLR				LR	LR	19 57 34.1	
	comp=Z,43nm,19.0s,baz=106,slow=43						
AKASG	**Malin Array Be**	**13.46**	**327**	Pn	**P**	**19 52 02.3**	**-3.9**
	comp=Z,1.7nm,0.3s,baz=134,slow=10,SNR=30						
AKASG				Sn	**S**	**19 54 27.1**	**-10**
	comp=Z,0.4nm,0.3s,baz=136,slow=25,SNR=3.8						
OBN	**Obninsk**	**15.46**	**351**	*e*P	**P**	**19 52 31.0**	**-1.4**
OBN				pmax	pmax		
	comp=Z,20nm,0.7s						
OBN				MLR	MLR		
	comp=Z,200nm,18.0s						
OBN	**Obninsk**	**15.46**	**351**	P	**P**	**19 52 31.3**	**-1.1**
	comp=Z,22nm,0.8s						
MOS	**Moscow**	**15.96**	**354**	*e*P	**P**	**19 52 36.4**	**-2.6**
MOS				pmax	pmax		
	comp=Z,50nm,0.7s						
MOS				MLR	MLR		
	comp=Z,500nm,15.0s						
PSZ	**Piszkesteto**	**16.96**	**305**	*e*P	**P**	**19 52 52.9**	**+1.3**
PSZ				pmax	pmax		
	comp=Z,3.0nm,0.8s						
PSZ	**Piszkesteto**	**16.96**	**305**	*e*P	**P**	**19 52 52.9**	**+1.2**
	comp=Z,3.4nm,0.8s						
MNK	**Minsk**	**16.97**	**334**	*e*P	**P**	**19 52 47.0**	**-4.7**
SUW	**Suwalki**	**18.41**	**326**	*e*P	**P**	**19 53 09.9**	**+0.1**
DPC	**Dobruska-Polom**	**20.03**	**309**	*e*P	**P**	**19 53 31.3**	**+2.6**
CPI2	**Carpinone**	**20.04**	**283**	*e*P	**P**	**19 53 35.9**	**+7.1**
CII	**Carovilli**	**20.04**	**284**	*e*P	**P**	**19 53 32.1**	**+3.3**
KSP	**Ksiaz**	**20.23**	**311**	*e*P	**P**	**19 53 31.8**	**+1.0**
ARU	**Arti**	**20.27**	**29**	⇓*i*P	**P**	**19 53 31.6**	**+0.5**
ARU				*i*		19 53 48.5	
ARU				*e*S	**S**	**19 57 17.4**	**+3.9**
ARU				*e*SS	SS	19 57 37.3	-5.2
ARU				pmax	pmax		
	comp=Z,8.0nm,0.9s						
ARU				MLR	MLR		
	comp=Z,100nm,18.0s,MS3.2						
ARU				MLR	MLR		
	comp=N,100nm,17.0s,MS3.4						
ARU				MLR	MLR		
	comp=E,100nm,19.0s,MS3.4						
ARU	**Arti**	**20.27**	**29**	*e*P	**P**	**19 53 28.9**	**-2.3**
	comp=E,7.0nm,0.8s						
UPC	**Upice**	**20.27**	**310**	*e*P	**P**	**19 53 29.4**	**-1.8**
MOA	**Molln**	**20.57**	**301**	⇑*i*P	**P**	**19 53 33.5**	**-0.8**
	comp=E,8.2nm,1.1s						
AQU	**L'Aquila**	**20.67**	**286**	P	**P**	**19 53 37.8**	**+2.3**
PTCC	**Patocco-Chiusa**	**20.91**	**297**	*e*P	**P**	**19 53 42.0**	**+4.1**
PRU	**Pruhonice**	**20.98**	**307**	*e*P	**P**	**19 53 39.0**	**+0.5**
GMNA	**Gemona**	**20.98**	**297**	*e*P	**P**	**19 53 42.4**	**+3.9**
KBA	**Koelnbreinsper**	**21.03**	**299**	⇑*i*P	**P**	**19 53 38.7**	**-0.4**
	comp=E,16nm,1.1s,mb4.3						
KBA	**Koelnbreinsper**	**21.03**	**299**	⇑*i*P	**P**	**19 53 38.7**	**-0.4**
KBA				pmax	pmax		
	comp=Z,16nm,1.1s,mb4.3						
GERES	**GERESS Array B**	**21.17**	**304**	P	**P**	**19 53 38.8**	**-1.7**
	comp=Z,1.7nm,0.8s,mb3.4,baz=108,slow=13,SNR=11						
MNS	**Montasola**	**21.21**	**286**	*e*P	**P**	**19 53 49.4**	**+8.5**
KHC	**Kasperske Hory**	**21.32**	**305**	*e*P	**P**	**19 53 40.8**	**-1.3**
KHC				x	x	19 53 45.0	
SVE	**Sverdlovsk**	**21.35**	**31**	⇑*e*P	**P**	**19 53 43.3**	**+1.0**
SVE				*e*		19 54 00.0	
SVE				*e*S	**S**	**19 57 41.0**	**+6.1**
SVE				pmax	pmax		
	comp=Z,40nm,2.0s,mb4.4						
SVE				MLR	MLR		
	comp=Z,300nm,14.0s,MS3.8						
SVE				MLR	MLR		
	comp=N,100nm,12.0s,MS3.9						
SVE				MLR	MLR		
	comp=E,300nm,12.0s,MS3.9						
BRG	**Berggiesshubel**	**21.63**	**309**	P	**P**	**19 53 49.0**	**+3.8**
BRG				pmax	pmax		
	comp=Z,9.0nm,1.7s,mb3.9						
BRG	**Berggiesshubel**	**21.63**	**309**	P	**P**	**19 53 49.0**	**+3.8**
	comp=Z,8.9nm,1.7s,mb3.9						
SFI	**Santa Sofia**	**21.79**	**290**	*e*P	**P**	**19 53 52.7**	**+5.9**
WATA	**Walderalm**	**22.26**	**299**	⇑*i*P	**P**	**19 53 54.7**	**+3.2**
	comp=Z,7.3nm,1.1s,mb4.0						
WATA	**Walderalm**	**22.26**	**299**	⇑*i*P	**P**	**19 53 54.7**	**+3.2**
WATA				pmax	pmax		
	comp=Z,7.0nm,1.1s,mb4.0						
NKC	**Novy Kostel**	**22.33**	**307**	*e*P	**P**	**19 53 52.2**	**0.0**
CLL	**Collm**	**22.34**	**310**	P	**P**	**19 53 52.0**	**-0.2**
	comp=Z,logA/T=0.9,mb4.1						
CLL				*e*		19 54 02.0	
CLL				*e*		19 54 41.0	
CLL	**Collm**	**22.34**	**310**	*e*P	**P**	**19 53 52.0**	**-0.2**
CLL				pmax	pmax		
	comp=Z,11nm,1.4s,mb4.1						
CLL	**Collm**	**22.34**	**310**	*e*P	**P**	**19 53 52.0**	**-0.2**
	comp=Z,11nm,1.4s,mb4.1						
CLL				*e*		19 54 02.0	
GRA1	**Grafenberg Arr**	**22.95**	**305**	*e*P	**P**	**19 53 58.3**	**+0.1**
	comp=Z,10.0nm,1.1s,mb4.2						
GRF	**Grafenberg Arr**	**22.95**	**305**	*e*P	**P**	**19 53 58.3**	**+0.1**
GRF				pmax	pmax		
	comp=Z,10.0nm,1.1s,mb4.2						
ZRNK	**Zerenda**	**23.28**	**47**	P	**P**	**19 53 55.8**	**-5.6**
ZRNK				*e*		19 54 04.1	
FINES	**FINESS Array B**	**23.35**	**342**	P	**P**	**19 54 00.3**	**-1.7**
	comp=Z,3.8nm,0.7s,mb3.9,baz=135,slow=8.1,SNR=13						
FINES				LR	LR	20 04 02.4	
	comp=Z,114nm,19.4s,MS3.3,baz=173,slow=39						
FINES	**FINESS Array B**	**23.35**	**342**	P	**P**	**19 54 00.3**	**-1.7**
FINES				LR	LR	20 04 02.4	
JOF	**Joensuu**	**23.72**	**349**	*e*p	**P**	**19 54 04.4**	**-1.1**
KAF	**Kangasniemi**	**23.89**	**343**	*e*p	**P**	**19 54 08.3**	**+1.1**
PGF	**Pioggiola**	**23.91**	**287**	*e*P	**P**	**19 54 08.0**	**+0.4**
	comp=Z,30nm,1.2s,mb4.3						
PGF	**Pioggiola**	**23.91**	**287**	*e*P	**P**	**19 54 08.0**	**+0.4**
PGF				pmax	pmax		
	comp=Z,15nm,1.2s,mb4.3						
BRVK	**Borovoye**	**24.04**	**47**	P	**P**	**19 54 08.8**	**+0.1**
BVAR	**Borovoye Array**	**24.09**	**47**	P	**P**	**19 54 08.3**	**-0.9**
	comp=Z,0.8nm,0.7s,mb3.2,baz=240,slow=12,SNR=5.0						
BVAR				LR	LR	20 05 26.2	
	comp=Z,136nm,18.3s,MS3.5,baz=210,slow=42						
CDF	**Champ du Feu**	**25.27**	**301**	*e*P	**P**	**19 54 21.0**	**+0.3**
	comp=Z,4.8nm,0.9s,mb3.7						
CDF	**Champ du Feu**	**25.27**	**301**	*e*P	**P**	**19 54 21.0**	**+0.3**
CDF				pmax	pmax		
	comp=Z,2.0nm,0.9s,mb3.6						
MBDF	**Montbardon**	**25.43**	**292**	*e*P	**P**	**19 54 23.2**	**+1.0**
	comp=Z,23nm,1.0s,mb4.3						
MBDF	**Montbardon**	**25.43**	**292**	*e*P	**P**	**19 54 23.2**	**+1.0**
MBDF				pmax	pmax		
	comp=Z,11nm,1.0s,mb4.3						
LPG	**La Plagne**	**25.44**	**294**	*e*P	**P**	**19 54 22.7**	**+0.4**
	comp=Z,8.0nm,0.8s,mb4.0						
LPG	**La Plagne**	**25.44**	**294**	*e*P	**P**	**19 54 22.7**	**+0.4**
LPG				pmax	pmax		
	comp=Z,4.0nm,0.8s,mb4.0						
LPL	**La Plagne**	**25.45**	**294**	*e*P	**P**	**19 54 22.5**	**+0.1**
	comp=Z,11nm,1.2s,mb4.0						
LPL	**La Plagne**	**25.45**	**294**	*e*P	**P**	**19 54 22.5**	**+0.1**
LPL				pmax	pmax		
	comp=Z,6.0nm,1.2s,mb4.0						
BNI	**Bardonecchia**	**25.49**	**293**	P	**P**	**19 54 30.1**	**+7.3**
LMR	**La Mourre**	**25.68**	**289**	*e*P	**P**	**19 54 25.6**	**+1.0**
	comp=Z,20nm,1.2s,mb4.2						
LMR	**La Mourre**	**25.68**	**289**	*e*P	**P**	**19 54 25.6**	**+1.0**
LMR				pmax	pmax		
	comp=Z,10.0nm,1.2s,mb4.2						
CABF	**La Chapelle**	**25.93**	**296**	*e*P	**P**	**19 54 27.3**	**+0.4**
	comp=Z,33nm,1.2s,mb4.4						
CABF	**La Chapelle**	**25.93**	**296**	*e*P	**P**	**19 54 27.3**	**+0.4**
CABF				pmax	pmax		
	comp=Z,16nm,1.3s,mb4.4						
ORIF	**Oris-en-Rattie**	**26.06**	**293**	*e*P	**P**	**19 54 29.2**	**+1.1**
	comp=Z,14nm,1.1s,mb4.1						

KCP				*i* S		**Sn**	**19 56 43.7**	**0.0**	
CTBH	**Cotabato--PC H**	**1.74**	**343**	*e*P		**Pn**	**19 56 28.9**	**+0.2**	
CTBH				*i* S		**Sn**	**19 56 50.1**	**-0.1**	
WRA	**Warramunga Arr**	**27.02**	**160**	P		**P**	**20 01 40.8**	**-1.0**	
	0.3nm,0.4s,mb3.1,baz=333,slow=11,SNR=9.6								
ASAR	**Alice Springs**	**30.37**	**163**	P		**P**	**20 02 11.8**	**-0.1**	
	0.3nm,0.5s,mb3.3,baz=339,slow=6.9,SNR=9.7								
STKA	**Stephens Creek**	**40.53**	**158**	P		**P**	**20 03 39.6**	**+1.2**	
	1.2nm,0.7s,mb3.6,baz=338,slow=5.4,SNR=4.1								

NEIC ***01*** *20:06:23.4±0.7,5.46S×148.02E,h162km±8km,mb4.2/7, Error ellipse: s-maj=13.3km s-min=7.6km az=120.0*
IDC ***01*** *20:06:23.8±2.0,5.57S×148.10E,h168km±19km,mb4.1/5, mb1 4.2/8,mb1mx3.9/15,Error ellipse: s-maj=35.9km s-min=11.5km az=117.0*

ISC 01 20:06:21.4±0.9,5.36S±0.08×148.0E±0.1,h153km±8km, n26,σ0°91/31,mb4.3/10,4C,Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
WAU	**Wau**	**2.34**	**212**	⇑*e*P		**P**		**20 07 02.4**	**+1.2**
WAU				*e*S		**S**		**20 07 31.5**	**-0.3**
PMG	**Port Moresby**	**4.11**	**191**	P		**P**		**20 07 22.6**	**-1.4**
	14nm,0.3s,baz=32,slow=5.2,SNR=66								
PMG				S		**S**		**20 08 06.4**	**-5.6**
	56nm,0.3s,baz=200,slow=20,SNR=27								
PMG	**Port Moresby**	**4.11**	**191**	⇑*e*P		**P**		**20 07 22.6**	**-1.3**
PMG				*e*S		**S**		**20 08 06.1**	**-6.0**
RAB	**Rabaul**	**4.33**	**75**	*e*P		**P**		**20 07 29.1**	**+2.3**
CTA	**Charters Tower**	**14.74**	**186**	P		**P**		**20 09 43.1**	**-0.5**
	0.2nm,0.3s,baz=11,slow=5.4,SNR=4.0								
CTAO	**Charters Tower**	**14.74**	**186**	*e*P		**P**		**20 09 43.8**	**+0.2**
	8.7nm,1.0s								
WRAB	**Tennant Creek**	**19.64**	**221**	⇑*e*P		**P**		**20 10 39.5**	**-0.9**
	42nm,0.6s								
WB2	**Warramunga Arr**	**19.65**	**221**	⇑*i*P		**P**		**20 10 39.6**	**-0.8**
WB2				*e*S		**S**		**20 14 09.7**	**+1.1**
WRA	**Warramunga Arr**	**19.66**	**221**	P		**P**		**20 10 39.5**	**-1.0**
	4.0nm,0.3s,baz=48,slow=11,SNR=176								
WRA				S		**S**		**20 14 09.8**	**+1.0**
	baz=44,slow=17,SNR=4.9								
AS12	**Alice Springs**	**22.70**	**215**	*e*P		**P**		**20 11 11.3**	**+0.6**
	12nm,0.5s,mb4.6								
AS12				*e*				20 11 16.5	
ASAR	**Alice Springs**	**22.70**	**215**	P		**P**		**20 11 11.4**	**+0.7**
	14nm,0.5s,mb4.6,baz=47,slow=9.0,SNR=382								
ASAR				S		**S**		**20 15 07.2**	**+3.4**
	2.9nm,0.9s,baz=31,slow=19,SNR=7.1								
FITZ	**Fitzroy Crossi**	**25.23**	**238**	*e*P		**P**		**20 11 34.7**	**-0.2**
	13nm,0.4s,mb4.8								
FITZ	**Fitzroy Crossi**	**25.23**	**238**	P		**P**		**20 11 34.9**	**0.0**
	16nm,0.4s,mb4.9,baz=53,slow=6.0,SNR=75								
LSA	**Lhasa**	**64.64**	**306**	P		**P**		**20 16 46.4**	**+1.2**
	1.3nm,0.6s,mb3.9								
GUN	**Gumba**	**68.34**	**303**	*e*P		**P**		**20 17 08.5**	**0.0**
	6.0nm,0.5s,mb4.6								
KKN	**Kakani**	**68.80**	**302**	*e*P		**P**		**20 17 10.8**	**-0.6**
DMN	**Daman**	**68.89**	**302**	*e*P		**P**		**20 17 12.3**	**+0.4**
	3.4nm,0.6s,mb4.3								
GKN	**Gorkha**	**69.41**	**302**	*e*P		**P**		**20 17 14.9**	**-0.2**
	11nm,1.0s,mb4.6								
KOLN	**Koldanda**	**70.21**	**302**	*e*P		**P**		**20 17 19.9**	**0.0**
MKAR	**Makanchi Array**	**77.63**	**320**	P		**P**		**20 18 03.4**	**+1.1**
	5.4nm,1.1s,mb4.1,baz=96,slow=7.7,SNR=12								
ZAL	**Zalesovo**	**79.00**	**327**	P		**P**		**20 18 09.9**	**+0.3**
	1.4nm,0.4s,mb3.9,baz=2,slow=7.9,SNR=5.9								
KURK	**Kurchatov**	**81.28**	**323**	P		**P**		**20 18 20.4**	**-1.4**
ILAR	**Eielson Array**	**84.51**	**23**	P		**P**		**20 18 37.5**	**-0.5**
	1.7nm,1.1s,mb3.7,baz=267,slow=5.0,SNR=10								
QSPA	**South Pole Qui**	**84.61**	**180**	*e*P		**P**		**20 18 37.4**	**-0.7**
	3.6nm,0.6s,mb4.3								
ZRNK	**Zerenda**	**87.63**	**324**	*e*P		**P**		**20 18 52.7**	**-0.7**
BDFB	**Brasilia**	**153.81**	**143**	PKPbc		PKPdf		20 26 03.9	+9.0
	1.1nm,0.4s,baz=174,slow=3.4,SNR=4.1								

IDC 01 20:30:49.3±1.7,0.74N×124.91E,mb3.7/3,mb1 3.9/3, mb1mx3.5/15,Error ellipse: s-maj=185.0km s-min=23.4km az=64.0,Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
WRA	**Warramunga Arr**	**22.54**	**156**	P		P	P	20 35 50.0	-2.5
	1.1nm,0.6s,baz=333,slow=11,SNR=16								
ASAR	**Alice Springs**	**25.79**	**161**	P		P	P	20 36 23.0	-0.8
	0.6nm,0.4s,baz=347,slow=7.3,SNR=6.9								
MKAR	**Makanchi Array**	**59.01**	**327**	P		P	P	20 40 50.9	-2.4
	1.0nm,0.5s,baz=115,slow=8.9,SNR=16								

IDC ***01*** *20:38:29.2±2.1,33.55S×179.24W,mb3.6/2,mb1 3.9/3, mb1mx3.8/13,ML3.7/1,Error ellipse: s-maj=62.7km s-min=39.2km az=135.0*

ISC 01 20:38:31.3±3.3,33.73S±0.10×179.6W±0.5,h10km,n8, σ0°82/7,mb3.4/2,South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
PUZ	**Puketiti**	**4.68**	**201**	*e*P		**Pn**		**20 39 42.6**	**-1.1**
PUZ				S		**Sn**		**20 40 39.6**	**+0.9**
URZ	**Urewera**	**5.26**	**210**	Pn		**Pn**		**20 39 52.6**	**+0.7**
	2.5nm,0.3s,baz=101,slow=2.3,SNR=12								
URZ				Sn		**Sn**		**20 40 52.6**	**-0.8**
	1.9nm,0.3s,baz=116,slow=22,SNR=6.9								
URZ	**Urewera**	**5.26**	**210**	P		**Pn**		**20 39 53.0**	**+1.1**
ASAR	**Alice Springs**	**41.71**	**271**	P		**P**		**20 46 22.8**	**+0.6**
	0.5nm,0.7s,mb3.2,baz=114,slow=7.1,SNR=4.6								
WRA	**Warramunga Arr**	**43.01**	**277**	P		**P**		**20 46 32.2**	**-0.5**
	1.0nm,0.9s,mb3.5,baz=116,slow=8.2,SNR=7.6								
FINES	**FINESS Array B**	**147.74**	**337**	PKPbc		PKPdf		20 58 14.3	-1.4
	0.5nm,0.6s,baz=45,slow=2.7,SNR=8.9								
NB2	**NORSAR Subarra**	**151.79**	**349**	PKP				20 58 24.6	
	0.3nm,0.6s,baz=17,slow=2.6								
NOA	**NORSAR Array B**	**151.79**	**349**	PKPbc		PKPdf		20 58 24.6	+2.7
	0.5nm,0.9s,baz=15,slow=4.1,SNR=3.7								

IDC 01 20:45:31.3±5.2,7.24S×156.60E,mb3.8/4,mb1 4.0/4, mb1mx3.9/13,Error ellipse: s-maj=133.0km s-min=37.0km az=107.0,Bougainville - Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
WRA	**Warramunga Arr**	**25.01**	**237**	P		P	P	20 50 57.4	-1.1
	1.6nm,0.8s,baz=63,slow=9.5,SNR=10.0								
ASAR	**Alice Springs**	**27.23**	**231**	P		P	P	20 51 16.8	-2.3
	0.6nm,0.8s,baz=64,slow=8.4,SNR=4.8								
ASAR				pP		pP	pP	20 51 26.4	+7.3
	0.4nm,0.7s,baz=56,slow=9.5,SNR=4.5								
CMAR	**Chiang Mai Arr**	**62.33**	**295**	P		P	P	20 55 55.9	-2.4
	1.1nm,0.9s,baz=118,slow=4.9,SNR=8.2								
MKAR	**Makanchi Array**	**84.64**	**318**	P		P	P	20 58 07.2	-1.0
	0.8nm,0.6s,baz=93,slow=6.0,SNR=9.2								

IDC 01 21:15:49.2±5.5,29.71S×141.63E,mb1 3.1/3, mb1mx3.1/9,ML2.5/3,Error ellipse: s-maj=128.0km s-min=16.6km az=76.0,New South Wales

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
STKA	**Stephens Creek**	**2.16**	**181**	Pn		Pn	Pn	21 16 26.2	-0.7
	0.8nm,0.3s,baz=292,slow=13,SNR=15								
STKA				Pg		Pg	Pg	21 16 28.4	-3.9
	0.7nm,0.3s,baz=285,slow=12,SNR=14								
STKA				Sn		Sn	Sn	21 16 53.3	-1.6
	1.7nm,0.3s,baz=326,slow=6.7,SNR=7.0								
STKA				Lg				21 16 58.7	
	3.0nm,0.3s,baz=357,slow=22,SNR=12								
STKA	**Stephens Creek**	**2.16**	**181**	*e*P		Pn		21 16 26.5	-0.4
STKA				*e*S		Sn		21 16 53.9	-0.9
BBOO	**Buckleboo**	**5.68**	**236**	*e*P		Pn		21 16 35.6	-41
BBOO				*e*S				21 17 09.8	
ASAR	**Alice Springs**	**9.16**	**309**	Pn		P		21 18 02.5	-3.1
	0.0nm,0.3s,baz=150,slow=13,SNR=2.5								
ASAR				Sn		Sn		21 19 32.8	-18
	0.1nm,0.3s,baz=149,slow=22,SNR=3.4								
WRA	**Warramunga Arr**	**11.76**	**324**	Pn		P		21 18 38.8	-2.4
	0.1nm,0.3s,baz=151,slow=12,SNR=6.9								

IDC 01 21:20:05.5±3.7,3.40S×140.18E,mb3.6/3,mb1 3.9/4, mb1mx3.7/11,ML3.7/1,Error ellipse: s-maj=117.0km s-min=28.3km az=93.0,Irian Jaya

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
WRA	**Warramunga Arr**	**17.40**	**199**	P		P	P	21 24 08.0	-3.5
	0.3nm,0.3s,baz=22,slow=12,SNR=13								
FITZ	**Fitzroy Crossi**	**20.41**	**223**	P		P	P	21 24 43.6	-3.4
	2.2nm,0.9s,baz=33,slow=7.2,SNR=7.2								
ASAR	**Alice Springs**	**21.04**	**196**	P		P	P	21 24 52.5	-1.0
	2.7nm,0.6s,baz=27,slow=9.5,SNR=26								
MKAR	**Makanchi Array**	**71.23**	**322**	P		P	P	21 31 26.6	-1.9
	0.2nm,0.5s,baz=93,slow=9.4,SNR=7.8								

GII ***01*** *21:25:03.8±1.0,28.39N×34.00E,h10km±30km,ML2.4/3*
SNSN ***01*** *21:25:08.6,28.52N×34.71E,h2km,Ml1.9*

ISC 01 21:25:04.5±2.7,28.4N±0.1×34.5E±0.2,h2km,n11, σ0°68/13,Egypt

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
BDAS	**Al Bad'**	**0.57**	**86**	P		**Pg**		**21 25 16.0**	**+0.2**
AYUS	**'Ayunuah**	**0.74**	**106**	P		**Pg**		**21 25 19.5**	**+0.1**
HAQS	**Haql**	**0.78**	**32**	P		**Pg**		**21 25 19.4**	**-0.6**
JMOS	**Jabal al Moall**	**0.96**	**36**	P		**Pb**		**21 25 22.8**	**-0.6**
ALWS	**Ilw as Safayha**	**1.05**	**30**	P		**Pb**		**21 25 25.0**	**-0.1**
EIL	**Elat**	**1.34**	**19**	Pn		**Pn**		**21 25 31.0**	**+0.8**
JMQS	**Jabal Moqyreh**	**1.34**	**68**	P		**Pb**		**21 25 28.9**	**-1.0**
MBH	**Mount Berech**	**1.45**	**16**	Pn		**Pn**		**21 25 31.1**	**-0.6**
KMTI	**Karmit**	**1.72**	**8**	Pn		**Pn**		**21 25 34.9**	**-0.7**
KMTI						**Sn**		**21 25 58.4**	**0.0**
TBKS	**Tabuk**	**1.85**	**95**	P		**Pn**		**21 25 38.5**	**+1.0**
PRNI	**Paran**	**2.00**	**14**	Pn		**Pn**		**21 25 39.8**	**+0.1**
PRNI						**Sn**		**21 26 07.0**	**+1.3**

IDC ***01*** *21:57:47.8±0.7,19.33S×67.65W,h196km±8km,mb3.9/9, mb1 3.9/13,mb1mx3.8/20,Error ellipse: s-maj=18.0km s-min=8.0km az=90.0*
NEIC ***01*** *21:57:48.3±0.7,19.32S×67.63W,h203km±7km,mb4.1/6, Error ellipse: s-maj=12.8km s-min=7.1km az=71.0*

ISC 01 21:57:47.5±0.6,19.34S±0.05×67.63W±0.09,h209km±6km, n26,σ1°10/29,mb4.1/14,1C,Southern Bolivia

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
LPAZ	**La Paz**	**3.08**	**351**	P		**P**		**21 58 40.0**	**+1.1**
	39nm,0.3s,baz=170,slow=7.8,SNR=568								
LPAZ				S		**S**		**21 59 18.6**	**-0.2**
	11nm,0.3s,baz=266,slow=19,SNR=6.0								
LVC	**Limon Verde**	**3.46**	**200**	P		**P**		**21 58 44.0**	**+0.3**
	66nm,0.3s,baz=21,slow=9.1,SNR=520								
LVC				S		**S**		**21 59 25.8**	**-1.3**
	12nm,0.3s,baz=102,slow=23,SNR=11								
LVC	**Limon Verde**	**3.46**	**200**	P		**P**		**21 58 44.0**	**+0.4**
LVC				S		**S**		**21 59 25.8**	**-1.3**
ARE	**Arequipa**	**4.66**	**307**	⇑*i*P		**P**		**21 58 58.7**	**+0.3**
ARE				*i* S		**S**		**21 59 53.5**	**0.0**
CPUP	**Villa Florida**	**11.77**	**128**	P		**P**		**22 00 31.1**	**+1.0**
	0.3nm,0.3s,baz=346,slow=14,SNR=5.9								
CPUP	**Villa Florida**	**11.77**	**128**	*e*P		**P**		**22 00 29.4**	**-0.7**
CPUP				*e*				22 00 40.8	
BDFB	**Brasilia**	**19.07**	**82**	P		**P**		**22 01 56.4**	**+0.3**
	0.5nm,0.3s,baz=258,slow=8.5,SNR=5.1								
TRQA	**Tornquist**	**19.29**	**166**	*e*P		**P**		**22 01 57.5**	**-0.7**
	1.8nm,0.8s								
PLCA	**Paso Flores**	**21.46**	**186**	P		**P**		**22 02 22.4**	**+2.4**
	5.9nm,0.7s,mb4.2,baz=6.5,slow=11,SNR=15								
OTAV	**Otavalo**	**22.16**	**330**	*e*P		**P**		**22 02 28.2**	**+1.3**
	2.8nm,0.6s,mb4.0								
SDV	**Santo Domingo**	**28.21**	**354**	P		**P**		**22 03 21.7**	**-1.3**
	2.8nm,0.5s,mb4.2,baz=147,slow=3.2,SNR=6.7								
PCRV	**Puerto La Cruz**	**29.48**	**6**	P		**P**		**22 03 33.0**	**-1.4**
	7.5nm,0.4s,mb4.6,baz=194,slow=4.2,SNR=4.9								
SWET	**Sewanee**	**56.97**	**342**	P		**P**		**22 07 10.4**	**-2.9**
TXAR	**Lajitas Array**	**59.58**	**323**	P		**P**		**22 07 31.2**	**-0.3**
	0.9nm,0.9s,mb3.4,baz=147,slow=10,SNR=4.7								
SNAA	**Sanae**	**63.92**	**161**	P		**P**		**22 07 59.8**	**+0.1**
DBIC	**Dimbokro**	**66.98**	**74**	P		**P**		**22 08 19.1**	**-1.0**
	2.5nm,0.7s,mb3.9,baz=119,slow=3.7,SNR=8.5								
PV10	**Paradox Valley**	**69.32**	**326**	P		**P**		**22 08 33.4**	**-0.7**
QSPA	**South Pole Qui**	**70.84**	**180**	*e*P		**P**		**22 08 44.2**	**+1.6**
	3.2nm,0.5s,mb4.2								
AHID	**Auburn Hatcher**	**73.62**	**328**	P		**P**		**22 09 00.8**	**+1.1**
	19nm,0.9s,mb4.7								
ULM	**Lac du Bonnet**	**73.64**	**342**	P		**P**		**22 08 59.4**	**-0.3**
	3.7nm,0.4s,mb4.4,baz=147,slow=7.1,SNR=10								
SCHQ	**Schefferville**	**73.88**	**0**	P		**P**		**22 09 00.6**	**-0.3**
	2.1nm,0.6s,mb3.9,baz=305,slow=19,SNR=6.2								
SBA	**Scott Base**	**78.15**	**190**	*e*P		**P**		**22 09 22.3**	**-2.1**
	6.6nm,1.4s,mb4.1								
TSUM	**Tsumeb**	**79.51**	**107**	P		**P**		**22 09 33.8**	**+1.1**
	3.0nm,1.0s,mb3.9,baz=275,slow=13,SNR=4.0								
FCC	**Fort Churchill**	**80.82**	**346**	*e*P		**P**		**22 09 39.3**	**+0.4**
	2.4nm,0.6s,mb4.0								
YKA	**Yellowknife Ar**	**89.57**	**340**	P		**P**		**22 10 23.2**	**+1.4**
	1.3nm,0.6s,mb3.9,baz=130,slow=4.7,SNR=39								
ASAR	**Alice Springs**	**132.37**	**207**	PKP		PKPdf		22 16 38.9	+1.4
	0.4nm,0.4s,baz=165,slow=1.5,SNR=6.5								

NIED ***01*** *21:58:00,23.90N×122.00E,h38km,Mw4.0 Best double couple: M0 1.07×10^15 NP1:φs254°,δ90°,λ-158°. NP2: φs164°,δ68°,λ0°.*
IDC ***01*** *21:58:45.5±1.3,24.06N×122.03E,mb3.6/5,mb1 3.8/6, mb1mx3.5/23,ML4.1/1,MS3.0/1,Ms1 3.0/1,ms1mx2.4/22, Error ellipse: s-maj=32.7km s-min=26.4km az=31.0*
NEIC ***01*** *21:58:47.2±6.1,24.12N×121.98E,h12km±39km,mb4.4/2, ML4.5(TAP),Error ellipse: s-maj=19.4km s-min=11.9km az=209.0*
NEIC Recorded [2 TAP] in Hua-lien and I-lan; [1 TAP] in Nan-t'ou and T'ai-tung Counties.
BJI ***01*** *21:58:47.5,23.98N×121.93E,h15km,mB4.8,mb4.6, ML3.7,Ms3.7,Msz3.6*
TAP ***01*** *21:58:49.7,23.84N×121.93E,h28km,ML4.4*
TAP Felt I J at Hualien, II J at Shilin, II J at Nanau, I J at Hungye, I J at Hehuanshan, I J at Chenggung.
JMA ***01*** *21:58:49.9±0.2,23.87N×122.01E,h63km,M4.1*

ISC 01 21:58:48.4±0.3,23.81N±0.02×122.06E±0.02,h19km±3km, n95,σ0°96/161,mb3.8/7,MS3.0/1,12C-5D,Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
HWA	**Hwalien**	**0.45**	**292**	⇑*i*P		**Pb**		**21 58 58.2**	**+0.7**
HWA				S		**Sb**		**21 59 04.8**	**+1.1**
TWD	**Chiawan**	**0.50**	**303**	⇑*i*P		**Pb**		**21 58 58.8**	**+0.3**
TWD				S		**Sb**		**21 59 05.3**	**0.0**
ESL	**Shilin**	**0.57**	**271**	⇑*i*P		**Pb**		**21 58 59.8**	**+0.1**
ESL				S		**Sb**		**21 59 07.0**	**-0.4**
ENA	**Nanau**	**0.68**	**335**	⇑*i*P		**Pb**		**21 59 01.9**	**+0.4**
ENA				S		**Sb**		**21 59 10.8**	**+0.4**
EHY	**Hungye**	**0.74**	**246**	⇓*i*P		**Pb**		**21 59 02.7**	**+0.2**
EHY				S		**Sb**		**21 59 12.0**	**-0.1**
WHF	**Hehuan Shan**	**0.80**	**295**	⇑*i*P		**Pb**		**21 59 03.3**	**-0.2**
WHF				S		**Sb**		**21 59 13.6**	**-0.3**
TWC	**Suao**	**0.82**	**347**	⇑*i*P		**Pb**		**21 59 04.6**	**+0.7**
TWC				S		**Sb**		**21 59 15.3**	**+0.9**
TWF1	**Yuli**	**0.83**	**237**	⇓*i*P		**Pb**		**21 59 04.3**	**+0.2**
TWF1				S		**Sb**		**21 59 14.8**	**0.0**
WDT	**Danda**	**0.85**	**267**	*i* P		**Pb**		**21 59 04.5**	**+0.2**
WDT				S		**Sb**		**21 59 15.1**	**-0.2**
NNS	**Nan Shan**	**0.89**	**315**	⇑*i*P		**Pb**		**21 59 04.8**	**-0.2**
NNS				S		**Sb**		**21 59 16.2**	**-0.2**
TWT	**Tachien**	**0.92**	**299**	⇑*i*P		**Pb**		**21 59 05.8**	**+0.2**
TWT				S		**Sb**		**21 59 17.5**	**+0.1**
ENTT	**Nioudou**	**0.94**	**332**	⇑*i*P		**Pb**		**21 59 05.8**	**-0.1**
ENTT				S		**Sb**		**21 59 17.6**	**-0.4**
CHKT	**Chengkung**	**0.95**	**222**	*e*P		**Pb**		**21 59 05.5**	**-0.6**
CHKT				S		**Sb**		**21 59 16.7**	**-1.5**
TWE	**Neicheng**	**0.98**	**339**	⇑P		**Pb**		**21 59 06.7**	**+0.1**
TWE				S		**Sb**		**21 59 19.0**	**0.0**
ILA	**Ilan**	**1.00**	**343**	*e*P		**Pb**		**21 59 07.3**	**+0.5**
ILA				S		**Sb**		**21 59 20.2**	**+0.7**
YUS	**Yu-Shan**	**1.06**	**253**	⇓P		**Pb**		**21 59 08.3**	**+0.3**
YUS				S		**Sb**		**21 59 20.8**	**-0.7**
SMLT	**Sun Moon Lake**	**1.06**	**274**	⇑P		**Pb**		**21 59 07.8**	**-0.2**
SMLT				S		**Sb**		**21 59 20.6**	**-0.9**
NSK	**Sanguang**	**1.08**	**324**	⇑P		**Pb**		**21 59 07.8**	**-0.4**
NSK				S		**Sb**		**21 59 20.7**	**-1.1**
YOJ	**Yonaguni jima**	**1.09**	**53**	P		**Pb**		**21 59 09.5**	**+1.1**
YOJ				S		**Sb**		**21 59 24.1**	**+2.0**
TYC	**Yuchr**	**1.10**	**275**	*e*P		**Pb**		**21 59 08.3**	**-0.4**
TYC				S		**Sb**		**21 59 21.2**	**-1.4**
ELDTW	**Lidau**	**1.14**	**237**	*e*P		**Pb**		**21 59 08.4**	**-0.8**
ELDTW				S		**Sb**		**21 59 21.5**	**-2.1**
ALS	**Alishan**	**1.19**	**256**	⇓P		**Pb**		**21 59 10.3**	**+0.2**
ALS				S		**Sb**		**21 59 24.6**	**-0.4**
TWB1	**Santiao Chiao**	**1.20**	**357**	*e*P		**Pb**		**21 59 10.3**	**0.0**
TWB1				S		**Sb**		**21 59 24.7**	**-0.6**
TWA	**Mucha**	**1.25**	**340**	*e*P		**Pn**		**21 59 11.3**	**+0.2**
TWA				S		**Sb**		**21 59 26.8**	**+0.1**
NSTT	**Nanjuang**	**1.27**	**311**	*e*P		**Pn**		**21 59 11.4**	**+0.1**
NSTT				S		**Sb**		**21 59 26.5**	**-0.9**
TATO	**Taipei**	**1.27**	**336**	*e*Pg		**Pn**		**21 59 04.7**	**-6.8**
TATO				*e*				21 59 11.2	
CHN5	**Tsauling**	**1.28**	**261**	*e*P		**Pn**		**21 59 11.9**	**+0.3**
CHN5				S		**Sb**		**21 59 28.2**	**+0.4**
NWF	**Wu-fen Shan**	**1.28**	**349**	*e*P		**Pn**		**21 59 12.2**	**+0.6**
NWF				S		**Sb**		**21 59 27.7**	**-0.1**
TWQ1	**Liyutan**	**1.29**	**295**	*e*P		**Pn**		**21 59 12.2**	**+0.5**
TWQ1				S		**Sb**		**21 59 28.8**	**+0.7**
TCU	**Taichung**	**1.31**	**285**	*e*P		**Pn**		**21 59 12.6**	**+0.6**
TCU				S		**Sb**		**21 59 29.4**	**+0.8**
TAP1	**Taipei**	**1.32**	**338**	*e*P		**Pn**		**21 59 12.4**	**+0.2**
TAP1				S		**Sb**		**21 59 28.6**	**-0.3**
TAP	**Taipei**	**1.33**	**338**	*e*P		**Pn**		**21 59 12.3**	**+0.1**
TAP				S		**Sb**		**21 59 29.0**	**-0.1**
NSY	**Sanyi**	**1.33**	**297**	*e*P		**Pn**		**21 59 12.9**	**+0.6**
NSY				S		**Sb**		**21 59 29.6**	**+0.3**
TWG	**Pinlang**	**1.34**	**223**	*e*P		**Pn**		**21 59 11.0**	**-1.3**
TTN	**Taitung**	**1.34**	**219**	*e*P		**Pn**		**21 59 11.4**	**-1.0**
STYT	**Tauyuan**	**1.36**	**242**	*e*P		**Pn**		**21 59 12.6**	**0.0**
STYT				S		**Sb**		**21 59 29.0**	**-1.0**
WGK	**Gukeng**	**1.38**	**265**	*e*P		**Pn**		**21 59 13.5**	**+0.5**
WGK				S		**Sb**		**21 59 30.8**	**+0.2**
HSN	**Hsinchu**	**1.40**	**315**	*e*P		**Pn**		**21 59 13.6**	**+0.3**
HSN				S		**Sb**		**21 59 31.4**	**0.0**
NCU	**National Centr**	**1.41**	**326**	*e*P		**Pn**		**21 59 13.4**	**+0.1**
NCU				S		**Sb**		**21 59 30.9**	**-0.4**
TWS1	**Kuangyinshan**	**1.42**	**336**	*e*P		**Pn**		**21 59 13.6**	**+0.1**
TWS1				S		**Sn**		**21 59 31.2**	**-0.5**
CHN4	**Tsaushan**	**1.42**	**252**	*e*P		**Pn**		**21 59 14.1**	**+0.6**
CHN4				S		**Sn**		**21 59 32.8**	**+1.0**
WTP	**Ta-pu**	**1.44**	**247**	*e*P		**Pn**		**21 59 14.3**	**+0.5**
WTP				S		**Sn**		**21 59 33.1**	**+0.8**
CHN2	**Minshiung**	**1.48**	**260**	*e*P		**Pn**		**21 59 15.5**	**+1.2**
CHN2				S		**Sn**		**21 59 34.7**	**+1.4**
TWY	**Chenhua**	**1.52**	**344**	*e*P		**Pn**		**21 59 15.2**	**+0.3**
TWY				S		**Sn**		**21 59 34.0**	**-0.4**
CHY	**Chiayi**	**1.53**	**259**	*e*P		**Pn**		**21 59 16.0**	**+0.9**
CHY				S		**Sn**		**21 59 35.2**	**+0.6**
CHN1	**Nanshi**	**1.54**	**247**	*e*P		**Pn**		**21 59 15.9**	**+0.7**
CHN1				S		**Sn**		**21 59 36.0**	**+1.2**
SGST	**Jiashian**	**1.54**	**242**	*e*P		**Pn**		**21 59 15.9**	**+0.7**
SGST				S		**Sn**		**21 59 36.5**	**+1.7**
TWK	**Hsinying**	**1.54**	**250**	*e*P		**Pn**		**21 59 15.6**	**+0.4**
TWK				S		**Sn**		**21 59 35.5**	**+0.6**
ECL	**Taimali**	**1.58**	**220**	*e*P		**Pn**		**21 59 14.1**	**-1.7**
IRIF	**Iriomote-Funau**	**1.61**	**71**	P		**Pn**		**21 59 17.2**	**+0.9**

*GII **01** 22:39:03.3±0.7,28.22N×34.53E,h6km±30km, ML3.5/5, Mw3.2/4*
*HLW **01** 22:39:05.5,28.45N×34.47E,h4km,Mb3.2*
*SNSN **01** 22:39:08.1,28.52N×34.66E,h14km, Ml2.9*
ISC 01 22:39:05.0±0.6,**28.42N**±0.03×**34.48E**±0.04,**h5**km±5km, **n29,**σ0°**61/34,7C-5D,Egypt**

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
HDHB	**Dhahab**	**0.32**	**22**⇑	*eP*	**Pg**		**22 39 11.6**	**+0.2**
HKAT	**Jabal Katrina**	**0.44**	**283**⇓	*eP*	**Pg**		**22 39 13.9**	**+0.1**
HKAT				S	**Sg**		**22 39 20.2**	**+0.4**
BDAS	**Al Bad'**	**0.55**	**89**	P	**Pg**		**22 39 16.5**	**+0.5**
SHRM		**0.61**	**210**⇑	*eP*	**Pg**		**22 39 17.7**	**+0.4**
NUB		**0.62**	**14**⇑	*eP*	**Pg**		**22 39 17.0**	**-0.4**
TR1		**0.62**	**228**⇓	*eP*	**Pg**		**22 39 17.9**	**+0.3**
TR2		**0.67**	**267**⇓	*eP*	**Pg**		**22 39 18.2**	**-0.2**
AYUS	**'Aynunah**	**0.73**	**108**	P	**Pg**		**22 39 20.1**	**+0.4**
HAQS	**Haql**	**0.74**	**32**	P	**Pg**		**22 39 19.9**	**0.0**
HBST	**Basata**	**0.82**	**16**	⇓P	**Pb**		**22 39 21.1**	**-0.3**
JMOS	**Jabal al Moall**	**0.92**	**36**	P	**Pb**		**22 39 23.1**	**0.0**
ZEIT		**1.00**	**237**⇑	*eP*	**Pb**		**22 39 25.3**	**+0.8**
ALWS	**Ilw as Safayha**	**1.02**	**30**	P	**Pb**		**22 39 24.3**	**-0.6**
EIL	**Elat**	**1.31**	**18**	Pn	**Pn**		**22 39 29.6**	**-0.4**
JMQS	**Jabal Moqyreh**	**1.31**	**69**	P	**Pb**		**22 39 29.5**	**-0.3**
AQBJ	**Aqaba**	**1.39**	**21**	Pn	**Pn**		**22 39 30.6**	**-0.6**
MBH	**Mount Berech**	**1.42**	**15**	Pn	**Pn**		**22 39 31.6**	**0.0**
HHRG	**Al Ghardaqah**	**1.45**	**214**⇑	*eP*	**Pn**		**22 39 31.0**	**-1.0**
HNKL	**Nakhl**	**1.56**	**344**⇓	*eP*	**Pn**		**22 39 33.0**	**-0.6**
HNKL				S	**Sb**		**22 39 53.7**	**-0.4**
KMTI	**Karmit**	**1.69**	**7**	Pn	**Pn**		**22 39 35.3**	**-0.1**
KMTI				Sn	**Sn**		**22 39 58.8**	**+1.1**
TBKS	**Tabuk**	**1.83**	**96**	P	**Pn**		**22 39 37.0**	**-0.5**
ZAF		**1.90**	**297**⇑	*eP*	**Pn**		**22 39 38.5**	**0.0**
PRNI	**Paran**	**1.98**	**13**	Pn	**Pn**		**22 39 39.9**	**+0.3**
PRNI				Sn	**Sn**		**22 40 07.5**	**+2.6**
SUZ		**2.02**	**315**	⇑P	**Pn**		**22 39 39.4**	**-0.8**
ZFRI	**Zfri**	**2.21**	**16**	Pn	**Pn**		**22 39 43.2**	**+0.4**
KZIT	**Kziot**	**2.48**	**358**	Pn	**Pn**		**22 39 46.3**	**-0.4**
KZIT				Sn	**Sn**		**22 40 21.6**	**+3.9**
MASH	**Mash'abbe Sade**	**2.58**	**6**	Pn	**Pn**		**22 39 47.9**	**-0.2**
HMDT	**Nahal Hemdat**	**3.92**	**13**	Pn	**Pn**		**22 40 07.0**	**-0.3**
YNBS	**Yanbu' al Bahr**	**5.14**	**141**	P	**Pn**		**22 40 24.9**	**+0.3**

*IDC **01** 22:49:16.8±4.1,53.05N×158.77E,h75km±37km,mb3.6/16, mb1 3.9/17,mb1mx3.8/24,ML4.2/1,Error ellipse: s-maj=17.0km s-min=13.8km az=145.0*
*MOS **01** 22:49:17.5±1.1,52.89N×158.99E,h107km,mb4.9/1,Error ellipse: s-maj=19.1km s-min=8.8km az=77.7*
MOS Felt (II) at Petropavlovsk-Kamchatskii.
*NEIC **01** 22:49:19.1±0.7,53.03N×158.82E,h97km±6km,mb4.4/4, Error ellipse: s-maj=10.3km s-min=7.5km az=159.0*
NEIC Felt [II] at Petropavlovsk-Kamchatskiy.
*KRSC **01** 22:49:19.0±1.3,52.87N×159.21E,h96km±2km,ML4.4*
ISC 01 22:49:18.5±0.3,**52.82N**±0.03×**159.31E**±0.05,**h96**km,**n83,** σ1°**04/**113,**mb3.9/**19,**1C,Off east coast of Kamchatka Peninsula**

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
NLC	**Nalytchevo**	**0.35**	**3**	P	**P**		**22 49 33.8**	**+0.8**
NLC				S	**S**		**22 49 44.4**	**+0.4**
NLC	**Nalytchevo**	**0.35**	**3**	*i* P	**P**		**22 49 33.7**	**+0.7**
NLC				*e*S	**S**		**22 49 44.4**	**+0.4**
PET	**Petropavlovsk**	**0.45**	**298**	P	**P**		**22 49 33.9**	**+0.2**
PET				S	**S**		**22 49 44.6**	**-0.4**
PET	**Petropavlovsk**	**0.45**	**298**	*i* P	**P**		**22 49 33.9**	**+0.2**
PET				*i* S	**S**		**22 49 44.5**	**-0.5**
PET	**Petropavlovsk**	**0.45**	**298**⇑	*i* PN	**P**		**22 49 33.9**	**+0.2**
PET				*e*S	**S**		**22 49 44.8**	**-0.2**
PET	comp=Z,623nm,1.0s			pmax	pmax			
PET	comp=Z,8μm,0.4s			pmax	pmax			
PET	comp=Z,9μm,0.3s			pmax	pmax			
PET	comp=N,698nm,1.5s			smax				
PET	comp=N,4μm,0.3s			smax				
PET	comp=E,7μm,0.3s			smax				
PET	comp=N,6μm,0.4s			smax				
PET	comp=E,8μm,0.6s			smax				
PET	**Petropavlovsk**	**0.45**	**298**	*e*P	**P**		**22 49 33.4**	**-0.3**
UGLR	**Uglovaya**	**0.49**	**323**	*i* P	**P**		**22 49 34.6**	**+0.6**
SPN	**Mys Shipunski**	**0.51**	**57**	P	**P**		**22 49 35.2**	**+1.0**
SPN				S	**S**		**22 49 46.5**	**+0.6**
SPN	**Mys Shipunski**	**0.51**	**57**	*i* P	**P**		**22 49 35.1**	**+0.9**
SPN				*i* S	**S**		**22 49 46.7**	**+0.8**
SDLR	**Sedlovina**	**0.53**	**331**	*i* P	**P**		**22 49 34.8**	**+0.5**
SMAR	**Somma**	**0.54**	**325**	*i* P	**P**		**22 49 34.8**	**+0.4**
SMAR				*e*S	**S**		**22 49 46.8**	**+0.6**
AVH	**Avacha**	**0.57**	**322**	*i* P	**P**		**22 49 35.2**	**+0.6**
AVH				*e*S	**S**		**22 49 47.3**	**+0.7**
RUS	**Russkaya**	**0.62**	**232**	P	**P**		**22 49 35.5**	**+0.4**
RUS				S	**S**		**22 49 47.2**	**-0.2**
RUS	**Russkaya**	**0.62**	**232**	*e*P	**P**		**22 49 35.5**	**+0.4**
RUS				*e*S	**S**		**22 49 47.4**	**0.0**
KOK	**Koryaka**	**0.63**	**320**	*i* P	**P**		**22 49 35.6**	**+0.5**
KOK				*e*S	**S**		**22 49 47.3**	**-0.2**
GRL	**Gorelyy**	**0.80**	**251**	*i* P	**P**		**22 49 37.7**	**+0.9**
GRL				*i* S	**S**		**22 49 51.5**	**+1.2**
GNL	**Ganaly**	**1.20**	**317**	*i* P	**P**		**22 49 41.0**	**-0.5**
GNL				*i* S	**S**		**22 49 56.8**	**-1.7**
KII	**Karymskiy**	**1.22**	**4**	P	**P**		**22 49 41.9**	**+0.2**
KII				S	**S**		**22 49 58.7**	**-0.2**
KII	**Karymskiy**	**1.22**	**4**	*i* P	**P**		**22 49 41.9**	**+0.2**
KII				*i* S	**S**		**22 49 59.5**	**+0.6**
APC	**Apacha**	**1.31**	**276**	*i* P	**P**		**22 49 42.9**	**+0.2**
APC				*i* S	**S**		**22 50 00.4**	**-0.2**
APC	comp=E,4μm,1.1s			Smax				
MIPR	**Malaya Ipel'ka**	**1.65**	**252**	*i* P	**P**		**22 49 47.6**	**+0.7**
MIPR				*i* S	**S**		**22 50 08.9**	**+1.0**
PAU	**Pauzhetka**	**2.05**	**230**	*i* P	**P**		**22 49 53.5**	**+1.4**
PAU				*e*S	**S**		**22 50 17.6**	**+0.6**
PAU	comp=E,1μm,0.8s			Smax				
MKZ	**Mys Kozlova**	**2.26**	**39**	P	**P**		**22 49 55.2**	**+0.2**
MKZ	**Mys Kozlova**	**2.26**	**39**	*i* P	**P**		**22 49 55.1**	**+0.1**
MKZ				*i* S	**S**		**22 50 21.7**	**-0.4**
TUMR	**Tumrok**	**2.52**	**11**	*i* P	**P**		**22 49 59.7**	**+1.1**
TUMR				*e*S	**S**		**22 50 29.2**	**+0.7**
SKR	**Severo-Kuril's**	**2.92**	**224**	*e*P	**P**		**22 50 03.5**	**-0.6**
SKR				*e*S	**S**		**22 50 37.6**	**-0.7**
SKR	**Severo-Kuril's**	**2.92**	**224**	*e*PN	**P**		**22 50 03.5**	**-0.6**
SKR	comp=Z,300nm,0.7s			pmax	pmax			
SKR	comp=E,230nm,0.5s			pmax	pmax			
KMNR	**Kamenistaya**	**2.99**	**10**	*i* P	**P**		**22 50 06.1**	**+0.9**
KMNR				*e*S	**S**		**22 50 40.3**	**+0.1**
ALID	**Alaid**	**3.04**	**232**	*e*P	**P**		**22 50 05.6**	**-0.2**
ESO	**Esso**	**3.13**	**354**	*i* P	**P**		**22 50 06.8**	**-0.3**
KPT	**Kopyto**	**3.20**	**9**	*i* P	**P**		**22 50 08.4**	**+0.4**
KOZ	**Kozyrevsk**	**3.26**	**6**	*i* P	**P**		**22 50 09.5**	**+0.6**
KOZ	**Kozyrevsk**	**3.26**	**6**	*i* P	**P**		**22 50 09.4**	**+0.5**
ZLN	**Zelenaya**	**3.32**	**15**	*i* P	**P**		**22 50 10.9**	**+1.2**
LGNR	**Loginova**	**3.37**	**13**	*i* P	**P**		**22 50 11.7**	**+1.4**
CIRR	**Tsirk**	**3.41**	**14**	*e*P	**P**		**22 50 12.2**	**+1.4**
KRSR	**Krestovskiy**	**3.48**	**12**	*e*P	**P**		**22 50 10.8**	**-1.1**
KRSR				*e*S	**S**		**22 50 48.9**	**-3.3**
SRDR	**Sredinnyy**	**3.52**	**4**	*i* P	**P**		**22 50 12.1**	**-0.2**
SRDR				*e*S	**S**		**22 50 51.6**	**-1.4**
KLY	**Klyuchi**	**3.59**	**12**	P	**P**		**22 50 14.7**	**+1.4**
KLY	**Klyuchi**	**3.59**	**12**	*e*P	**P**		**22 50 14.6**	**+1.3**
KLY				*e*S	**S**		**22 50 55.2**	**+0.4**
SVLR	**Shiveluch**	**3.93**	**16**	*e*P	**P**		**22 50 18.9**	**+1.0**
SVLR				*e*S	**S**		**22 51 01.8**	**-1.3**
KBTR	**Krutoberegovo**	**3.96**	**30**	P	**P**		**22 50 18.0**	**-0.5**
KBTR				S	**S**		**22 51 00.7**	**-3.4**
KBTR	**Krutoberegovo**	**3.96**	**30**	*e*P	**P**		**22 50 17.9**	**-0.6**
KBTR				*e*S	**S**		**22 51 05.5**	**+1.4**
KBG	**Krutoberegovo**	**3.97**	**28**	*e*P	**P**		**22 50 18.8**	**+0.3**
KBG				*e*S	**S**		**22 51 07.1**	**+2.9**
KBG				Smax				
	comp=E,420nm,0.9s							
BKI	**Bering**	**4.60**	**56**	*i* P	**P**		**22 50 26.5**	**-0.6**
BKI				*i* S	**S**		**22 51 14.0**	**-5.7**
BKI	comp=E,210nm,0.3s			Smax				
FX1	**Attu Island--F**	**8.39**	**84**	P	**P**		**22 51 19.2**	**+0.2**
	comp=E,9.6nm,0.3s,baz=311,slow=1.7,SNR=61							
FX1	comp=E,23nm,0.3s,baz=102,slow=22,SNR=16			S	**S**		**22 52 49.1**	**-3.7**
FX1	**Attu Island--F**	**8.39**	**84**	*e*P	**P**		**22 51 19.6**	**+0.6**
YSS	**Yuzh-Sakhalins**	**12.17**	**248**	*e*PN	**P**		**22 51 55.8**	**-14**
BILL	**Bilibino**	**15.63**	**10**	*e*P	**P**		**22 52 52.5**	**-1.6**
BILL	comp=Z,5.0nm,0.8s			pmax	pmax			
BILL	**Bilibino**	**15.63**	**10**	*e*P	**P**		**22 52 52.5**	**-1.6**
	comp=Z,5.2nm,0.8s							
YAK	**Yakutsk**	**18.27**	**312**	*e*P	**P**		**22 53 20.7**	**-5.8**
YAK	comp=Z,4.0nm,0.3s			pmax	pmax			
TIXI	**Tiksi**	**23.14**	**336**	*e*P	**P**		**22 54 15.3**	**-0.9**
TIXI	**Tiksi**	**23.14**	**336**	P	**P**		**22 54 14.2**	**-2.0**
ILAR	**Eielson Array**	**29.34**	**45**	P	**P**		**22 55 12.3**	**-1.5**
	comp=Z,0.8nm,0.8s,mb3.4,baz=262,slow=7.4,SNR=5.8							
INK	**Inuvik**	**34.38**	**37**	P	**P**		**22 55 55.1**	**-2.6**
ENH	**Enshi**	**42.49**	**258**	P	**P**		**22 57 01.3**	**-4.3**
	comp=Z,14nm,1.9s,mb4.4							
YKA	**Yellowknife Ar**	**43.69**	**42**	P	**P**		**22 57 13.7**	**-1.1**
	comp=Z,1.1nm,0.9s,mb3.6,baz=297,slow=7.7,SNR=9.5							
YKA	**Yellowknife Ar**	**43.69**	**42**	P	**P**		**22 57 13.7**	**-1.1**
KURK	**Kurchatov**	**47.48**	**302**	*e*P	**P**		**22 57 40.3**	**-4.7**
MKAR	**Makanchi Array**	**47.85**	**295**	P	**P**		**22 57 43.2**	**-4.8**
	comp=Z,0.4nm,0.4s,mb3.6,baz=46,slow=6.6,SNR=14							
MKAR	**Makanchi Array**	**47.85**	**295**	*i* P	**P**		**22 57 43.9**	**-4.1**
BVAR	**Borovoye Array**	**50.19**	**308**	P	**P**		**22 58 01.5**	**-4.4**
	comp=Z,0.6nm,0.5s,mb3.8,baz=44,slow=8.9,SNR=7.3							
BVAR	comp=Z,0.5nm,0.4s,baz=41,slow=1.8,SNR=6.5			PcP	PcP		22 59 21.1	-2.8
ZRNK	**Zerenda**	**50.89**	**309**	*e*P	**P**		**22 58 06.5**	**-4.8**
NVAR	**Mina Array Bea**	**56.28**	**69**	P	**P**		**22 58 52.0**	**+0.9**
	comp=Z,1.0nm,0.7s,mb4.0,baz=317,slow=6.8,SNR=6.3							
NVAR	**Mina Array Bea**	**56.28**	**69**	P	**P**		**22 58 52.0**	**+0.9**
CMAR	**Chiang Mai Arr**	**57.66**	**258**	P	**P**		**22 58 58.5**	**-2.6**
	comp=Z,0.4nm,0.6s,mb3.6,baz=30,slow=7.3,SNR=2.6							
CMAR	comp=Z,0.6nm,0.8s,baz=24,slow=1.9,SNR=4.1			PcP	PcP		22 59 50.1	-2.7
HWUT	**Hardware Ranch**	**57.81**	**62**	*e*P	**P**		**22 59 02.7**	**+0.8**
	comp=Z,2.1nm,0.8s,mb4.2							
PDAR	**Pinedale Array**	**58.07**	**60**	P	**P**		**22 59 04.0**	**+0.4**
	comp=Z,1.1nm,0.5s,mb4.1,baz=323,slow=3.2,SNR=13							
RSSD	**Black Hills**	**59.95**	**56**	*e*P	**P**		**22 59 16.6**	**0.0**
RSSD	comp=Z,4.0nm,0.4s,mb4.8			pmax	pmax			
RSSD	**Black Hills**	**59.95**	**56**	*e*P	**P**		**22 59 16.6**	**0.0**
	comp=Z,4.2nm,0.4s,mb4.8							
FINES	**FINESS Array B**	**60.18**	**336**	P	**P**		**22 59 13.5**	**-4.4**
	comp=Z,0.3nm,0.5s,mb3.6,baz=56,slow=6.9,SNR=7.0							
PV10	**Paradox Valley**	**61.47**	**63**	P	**P**		**22 59 27.1**	**+0.2**
NOA	**NORSAR Array B**	**63.67**	**343**	P	**P**		**22 59 38.3**	**-2.8**
	comp=Z,0.2nm,0.5s,mb3.2,baz=15,slow=8.6,SNR=3.3							
SCHQ	**Schefferville**	**66.11**	**27**	P	**P**		**22 59 54.8**	**-2.1**
	comp=Z,1.1nm,0.5s,mb4.0,baz=308,slow=19,SNR=5.1							
TXAR	**Lajitas Array**	**71.18**	**66**	P	**P**		**23 00 28.8**	**+0.3**
	comp=Z,1.5nm,0.4s,mb4.2,baz=297,slow=5.2,SNR=28							
GERES	**GERESS Array B**	**74.59**	**337**	P	**P**		**23 00 45.5**	**-2.6**
	comp=Z,0.5nm,0.9s,mb3.3,baz=27,slow=4.4,SNR=3.5							
WRA	**Warramunga Arr**	**75.63**	**204**	P	**P**		**23 00 53.7**	**-0.9**
	comp=Z,4.6nm,1.0s,mb4.2,baz=20,slow=6.2,SNR=7.6							
FITZ	**Fitzroy Crossi**	**76.41**	**213**	P	**P**		**23 00 58.2**	**-0.8**
	baz=22,slow=5.4							
BRTR	**Keskin Array B**	**76.53**	**320**	P	**P**		**23 00 56.0**	**-3.3**
	comp=Z,0.1nm,0.4s,mb2.9,baz=79,slow=19,SNR=2.6							
ASAR	**Alice Springs**	**79.31**	**204**	P	**P**		**23 01 14.6**	**-0.4**
	comp=Z,1.6nm,0.6s,mb4.0,baz=15,slow=4.9,SNR=16							
STKA	**Stephens Creek**	**85.74**	**195**	P	**P**		**23 01 47.6**	**-0.1**
	comp=Z,5.8nm,1.1s,mb4.4,baz=300,slow=9.3,SNR=4.3							
QSPA	**South Pole Qui**	**142.56**	**180**	*e*P	PKPdf		23 08 34.7	-3.6
PLCA	**Paso Flores**	**144.48**	**91**	PKP	PKPdf		23 08 42.5	-0.3
	comp=Z,1.4nm,0.6s,baz=242,slow=6.8,SNR=4.8							

*NEIC **01** 22:55:49.9,38.47N×23.95E,h24km,ML2.7(ATH), After ATH.*
*THE **01** 22:55:50.3,38.47N×23.95E,h6km,ML2.4*
*ATH **01** 22:55:50.0,38.38N×23.76E,h38km±6km,MD2.9/5,ML2.6*
ISC 01 22:55:49.4±0.9,**38.44N**±0.04×**24.04E**±0.08,**h18**km±7km, **n15,**σ0°**62/**25,**2C,Aegean Sea**

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
MPAR	**Parnis Oros**	**0.38**	**219**	*e*PB	**Pb**		**22 55 57.0**	**-0.2**
PTL	**Penteli**	**0.42**	**199**	*e*PB	**Pb**		**22 55 58.8**	**+0.9**
ATH	**Athens Observa**	**0.54**	**208**⇑	*i*PB	**Pb**		**22 56 00.0**	**+0.1**
AOS	**Alonnisos**	**0.74**	**350**	*e*Pg	**Pb**		**22 56 03.4**	**0.0**
AOS				*e*Sg	**Sb**		**22 56 14.0**	**+1.1**
LKR	**Lokris**	**0.84**	**285**	*e*PN	**Pb**		**22 56 03.6**	**-1.5**
NEO	**Neokhori**	**1.07**	**324**	*e*PB	**Pb**		**22 56 08.9**	**-0.1**
NEO				*e*SN	**Sn**		**22 56 24.3**	**+0.3**
XOR	**Xorichti**	**1.13**	**325**	*e*Pg	**Pb**		**22 56 10.1**	**0.0**
XOR				*e*Sg	**Sb**		**22 56 25.1**	**+0.6**
AGG	**Agios Georgios**	**1.46**	**294**	*e*Pb	**Pb**		**22 56 15.2**	**-0.4**
AGG				*e*Sb	**Sb**		**22 56 34.1**	**+0.3**
PAIG	**Paliouri**	**1.51**	**349**	*e*Pb	**Pb**		**22 56 16.2**	**-0.2**
PAIG				*e*Sb	**Sb**		**22 56 36.1**	**+0.8**
OUR	**Ouranopolis**	**1.89**	**359**	*e*Pb	**Pb**		**22 56 22.1**	**-0.9**
OUR				*e*Sb	**Sb**		**22 56 45.1**	**-1.2**
PLG	**Polygyros**	**1.98**	**347**⇑	*i*PN	**Pn**		**22 56 22.8**	**+0.2**
LIT	**Litokhoron**	**2.04**	**325**	*e*Pn	**Pn**		**22 56 23.8**	**+0.3**
LIT				*e*Sn	**Sn**		**22 56 48.7**	**0.0**
SRS	**Serrai**	**2.69**	**353**	*e*Pn	**Pn**		**22 56 33.1**	**+0.4**
SRS				*e*Sn	**Sn**		**22 57 05.3**	**+0.2**
GRG	**Griva**	**2.81**	**334**	*e*Pn	**Pn**		**22 56 33.9**	**-0.5**
GRG				*e*Sn	**Sn**		**22 57 07.6**	**-0.5**
KNT	**Kendrikon**	**2.85**	**342**	*e*Pn	**Pn**		**22 56 35.6**	**+0.6**
KNT				*e*Sn	**Sn**		**22 57 08.6**	**-0.6**

*NEIC **01** 22:59:37.0±0.4,17.32S×66.31E,h10km,mb4.6/8,Error ellipse: s-maj=13.9km s-min=11.2km az=204.0*
*IDC **01** 22:59:36.2±0.8,17.27S×66.45E,mb4.1/12,mb1 4.2/12, mb1mx4.1/20,MS4.0/3,Ms1 3.9/3,ms1mx3.3/24,Error ellipse: s-maj=27.0km s-min=17.7km az=46.0*
ISC 01 22:59:35.1±0.5,**17.29S**±0.10×**66.35E**±0.09,**h10**km,**n30,** σ0°**97/**28,**mb4.3/**19,**MS4.0/**3,Mauritius - Reunion region**

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
KMBO	**Kilima Mbogo**	**32.81**	**296**	*e*P	**P**		**23 06 10.7**	**-0.4**
	comp=Z,139nm,18.7s,MS3.7,baz=101,slow=31							
KMBO	**Kilima Mbogo**	**32.81**	**296**	*e*P	**P**		**23 06 10.7**	**-0.4**
	6.5nm,1.8s,mb4.3							
HYB	**Hyderabad**	**36.52**	**20**	*i* P	**P**		**23 06 46.0**	**+3.1**
HYB	**Hyderabad**	**36.52**	**20**	*e*P	**P**		**23 06 46.0**	**+3.1**
LSZ	**Lusaka**	**36.65**	**268**	*e*P	**P**		**23 06 42.9**	**-1.1**
	5.6nm,1.3s,mb4.2							
SUR	**Sutherland**	**43.64**	**241**	P	**P**		**23 07 41.5**	**-0.2**
CMAR	**Chiang Mai Arr**	**47.85**	**44**	P	**P**		**23 08 16.5**	**+1.1**
	1.2nm,0.7s,mb4.1,baz=236,slow=8.8,SNR=8.7							
NWAO	**Narrogin (SRO)**	**48.19**	**119**	*e*P	**P**		**23 08 12.3**	**-5.5**
	52nm,1.7s,mb5.3							
MAW	**Mawson**	**50.34**	**182**	P	**P**		**23 08 34.5**	**+0.7**
	2.3nm,0.6s,mb4.4,baz=358,slow=5.8,SNR=5.4							
FITZ	**Fitzroy Crossi**	**56.27**	**100**	P	**P**		**23 09 18.8**	**+0.3**
	2.7nm,0.7s,mb4.4,baz=212,slow=9.5,SNR=3.3							
GNI	**Garni**	**60.58**	**341**	*e*P	**P**		**23 09 54.1**	**+5.8**
	6.0nm,1.0s,mb4.7							
ENH	**Enshi**	**62.94**	**42**	P	**P**		**23 10 01.5**	**-2.8**
	1.8nm,0.6s,mb4.4							
AS12	**Alice Springs**	**63.11**	**108**	*e*P	**P**		**23 10 05.2**	**-0.3**
	7.5nm,1.1s,mb4.7							
ASAR	**Alice Springs**	**63.11**	**108**	P	**P**		**23 10 05.2**	**-0.2**
	4.4nm,0.8s,mb4.6,baz=272,slow=5.8,SNR=31							
WRA	**Warramunga Arr**	**64.09**	**104**	P	**P**		**23 10 12.0**	**-0.1**
	6.1nm,0.9s,mb4.6,baz=264,slow=6.1,SNR=21							
WB2	**Warramunga Ar**	**64.10**	**104**	*e*P	**P**		**23 10 11.9**	**-0.3**
WRAB	**Tennant Creek**	**64.10**	**104**	*e*P	**P**		**23 10 11.5**	**-0.6**
	29nm,1.1s,mb5.2							
WRAB				*e*PcP	PcP		23 10 40.0	-7.2
BRTR	**Keskin Array B**	**64.41**	**332**	P	**P**		**23 10 14.6**	**+0.7**
	0.2nm,0.3s,mb3.6,baz=317,slow=28,SNR=2.3							
KIV	**Kislovodsk**	**64.68**	**341**	*e*P	**P**		**23 10 13.8**	**-1.8**
	7.1nm,1.4s,mb4.5							
MKAR	**Makanchi Array**	**65.38**	**12**	P	**P**		**23 10 19.6**	**-0.4**
	1.0nm,0.8s,mb3.9,baz=210,slow=9.8,SNR=6.3							
KURK	**Kurchatov**	**68.56**	**8**	*e*P	**P**		**23 10 39.6**	**-0.5**
ZRNK	**Zerenda**	**69.98**	**2**	*e*P	**P**		**23 10 48.6**	**-0.1**
BVAR	**Borovoye Array**	**70.11**	**3**	P	**P**		**23 10 49.6**	**+0.1**
	0.7nm,0.7s,mb3.7,baz=164,slow=11,SNR=5.3							
BRVK	**Borovoye**	**70.14**	**3**	*e*P	**P**		**23 10 49.6**	**-0.1**
ZAL	**Zalesovo**	**72.69**	**11**	P	**P**		**23 11 04.6**	**-0.3**
	0.8nm,0.7s,mb3.8,baz=201,slow=6.6,SNR=6.0							
DBIC	**Dimbokro**	**74.23**	**282**	P	**P**		**23 11 16.5**	**+1.7**
	3.0nm,1.0s,mb4.2,baz=174,slow=6.0,SNR=2.4							
DBIC				LR	LR		23 42 25.4	
	comp=Z,50nm,19.2s,MS3.8,baz=102,slow=35							
CTA	**Charters Tower**	**75.03**	**107**	P	**P**		**23 11 19.7**	**+0.4**
	7.3nm,1.0s,mb4.6,baz=186,slow=8.7,SNR=3.6							
CTAO	**Charters Tower**	**75.03**	**107**	*e*P	**P**		**23 11 19.5**	**+0.2**
	11nm,1.1s,mb4.7							
AKASG	**Malin Array Be**	**75.14**	**337**	P	**P**		**23 11 20.9**	**+1.7**
	0.1nm,0.3s,mb3.2,baz=141,slow=4.7,SNR=4.8							
CBIJ	**Chichi jima**	**85.72**	**60**	LR	LR		23 44 37.5	
	comp=Z,187nm,21.5s,MS4.5,baz=95,slow=32							

*NEIC **01** 23:08:20.9±1.2,24.16S×179.94E,h545km,mb4.5/2,Error ellipse: s-maj=77.0km s-min=18.2km az=165.0*
*IDC **01** 23:08:21.4±15.0,23.87S×179.85E,h545km±182km, mb3.4/6,mb1 3.6/6,mb1mx3.4/14,Error ellipse: s-maj=91.0km s-min=59.4km az=169.0*
ISC 01 23:08:24.4±1.7,**24.1S**±0.8×**179.7E**±0.3,**h600**km,**n9,** σ0°**28/**9,**mb4.1/**7,**1C,South of Fiji Islands**

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**31.23**	**271**	P	**P**		**23 13 58.5**	**+0.4**
	7.3nm,0.4s,mb4.7,baz=100,slow=11,SNR=7.4							
CTAO	**Charters Tower**	**31.23**	**271**	*e*P	**P**		**23 13 58.4**	**+0.4**
	7.6nm,0.5s,mb4.6							
STKA	**Stephens Creek**	**34.43**	**248**	P	**P**		**23 14 24.7**	**0.0**
	1.7nm,0.4s,mb4.0,baz=113,slow=15,SNR=8.8							
ASAR	**Alice Springs**	**41.77**	**261**	P	**P**		**23 15 24.6**	**+0.2**
	1.7nm,0.4s,mb3.9,baz=96,slow=7.1,SNR=17							
WB2	**Warramunga Arr**	**42.14**	**266**	*e*P	**P**		**23 15 27.1**	**-0.2**
WRAB	**Tennant Creek**	**42.15**	**266**⇑	*e*P	**P**		**23 15 27.0**	**-0.3**
	10nm,0.7s,mb4.5							
WRAB				*e*			23 16 57.2	
WRA	**Warramunga Arr**	**42.15**	**266**	P	**P**		**23 15 27.0**	**-0.4**
	2.9nm,0.4s,mb4.2,baz=97,slow=8.4,SNR=22							
FITZ	**Fitzroy Crossi**	**50.57**	**266**	P	**P**		**23 16 31.5**	**+0.3**
	3.8nm,0.8s,mb3.9,baz=182,slow=9.8,SNR=8.2							
TXAR	**Lajitas Array**	**90.73**	**58**	P	**P**		**23 20 25.7**	**0.0**
	0.2nm,0.4s,mb3.4,baz=219,slow=8.0,SNR=4.0							

*IDC **01** 23:11:12.1±2.0,13.45N×144.83E,mb3.8/7,mb1 3.9/7, mb1mx3.7/20,Error ellipse: s-maj=71.0km s-min=20.9km az=78.0*
*NEIC **01** 23:11:30.3±0.8,13.27N×144.56E,h150km±12km,Error ellipse: s-maj=45.6km s-min=14.5km az=80.0*
ISC 01 23:11:28.7±0.8,**13.3N**±0.1×**144.5E**±0.4,**h149**km±14km, **n10,**σ0°**51/**11,**mb3.5/

WB2	**Warramunga Arr**	**20.75**	**227**	*e*P		**P**	**23 22 28.3**	**0.0**
WB2				*i*			23 22 31.9	
WRA	**Warramunga Arr**	**20.76**	**227**	P		**P**	**23 22 27.9**	**-0.5**
	8.4nm,0.5s,baz=50,slow=10,SNR=50							
AS12	**Alice Springs**	**23.55**	**221**	*e*P		**P**	**23 22 57.7**	**+1.7**
	2.7nm,0.4s,mb4.0							
ASAR	**Alice Springs**	**23.55**	**221**	P		**P**	**23 22 57.8**	**+1.7**
	7.2nm,1.0s,mb4.0,baz=53,slow=9.2,SNR=46							
ASAR				LR	LR		23 33 15.2	
	comp=Z,124nm,18.7s,MS3.4,baz=182,slow=39							
STKA	**Stephens Creek**	**26.87**	**197**	P		**P**	**23 23 26.1**	**-1.4**
	3.7nm,0.7s,mb4.0,baz=36,slow=15,SNR=7.2							
FITZ	**Fitzroy Crossi**	**26.91**	**242**	⇓*i*P		**P**	**23 23 27.8**	**-0.1**
	2.9nm,0.4s,mb4.2							
FITZ	**Fitzroy Crossi**	**26.91**	**242**	P		**P**	**23 23 27.9**	**0.0**
	3.1nm,0.4s,mb4.2,baz=57,slow=6.5,SNR=22							
TGY	**Tagaytay City**	**35.49**	**305**	LR	LR		23 38 21.6	
	comp=Z,3µm,20.3s,MS5.0,baz=208,slow=35							
ILAR	**Eielson Array**	**84.32**	**23**	P		**P**	**23 30 07.6**	**-9.2**
	0.6nm,1.0s,mb3.7,baz=252,slow=4.5,SNR=4.5							

*IDC **01** 23:28:60.0±0.5,3.41N×113.68E,mb4.4/18,mb1 4.5/18, mb1mx4.5/21,MS4.5/15,Ms1 4.6/15,ms1mx4.5/19,Error ellipse: s-maj=33.1km s-min=11.9km az=57.0*

*BJI **01** 23:29:00.7,3.21N×114.20E,h37km,mB4.9,mb4.8,Ms5.0, Msz4.7*

*NEIC **01** 23:29:01.9±0.3,3.59N×113.93E,h10km,mb4.8/21, MS4.8/88,Error ellipse: s-maj=10.3km s-min=6.2km az=52.0*

NEIC Felt at Bintulu and Miri.

*HRVD **01** 23:29:01.9±0.2,3.67N×113.82E,h12km,MW5.2/60, Centroid moment Tensor Solution. LP body waves: s40,c57;Mantle waves: s60,c115; Half duration: 0 Moment tensor: Scale 10^16^Nm; Mrr0.36±.16; Mθθ1.98±.14; Mφφ-2.34±.17; Mrθ-1.86±.39; Mθφ-5.96±.11; Mφr-1.93±.39; Best double couple: M0:6.81×10^16^ NP1:φs348°,δ74°,λ-10°. NP2:φs81°,δ80°,λ-163°. Principal axes: T 6.19, Plg4°, Azm214°; N 1.23, Plg71°, Azm111°; P -7.42, Plg19°, Azm306°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*MOS **01** 23:29:03.7±1.1,3.63N×113.97E,h33km,mb4.9/7, MS4.8/5 Error ellipse: s-maj=25.1km s-min=9.3km az=122.3*

ISC 01 23:28:60.0±1.3,**3.56N**±0.04×**113.93E**±0.05,**h8**km±8km, **h25**km±2.9km:**pP-P,n194,**σ1s**18**/125,**mb4.8**/53,**MS4.8**/120, **5C-2D,Borneo**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
KKM	**Kota Kinabalu**	**3.35**	**43**	⇓*e*P		**Pn**	**23 29 53.2**	**-0.6**
KGM	**Kluang**	**10.71**	**262**	*e*P		**P**	**23 31 38.0**	**+1.1**
QIZ	**Qiongzhong**	**15.88**	**346**	P		**P**	**23 32 47.8**	**+2.1**
QIZ				S		**S**	**23 35 50.5**	**+8.4**
QIZ				AMB	AMB			
	comp=Z,22nm,1.4s							
QIZ				LR	LR			
	comp=N,2µm,13.9s							
QIZ				LR	LR			
	comp=E,2µm,13.3s							
QIZ				LR	LR			
	comp=Z,2µm,14.5s							
KKTK	**Khon Kaen**	**16.74**	**320**	P		**P**	**23 33 02.0**	**+5.3**
	comp=Z,309nm,0.7s							
NST	**Nakhon Sawan**	**18.14**	**312**	P		**P**	**23 33 17.0**	**+2.8**
NANT	**Nan**	**19.92**	**320**	P		**P**	**23 33 34.9**	**-0.3**
BDT	**Bhumibol Dam**	**19.98**	**314**	P		**P**	**23 33 35.0**	**-0.9**
CM31	**Chiang Mai Arr**	**20.84**	**316**	*e*P		**P**	**23 33 44.9**	**+0.1**
	comp=Z,34nm,0.8s							
CM31				LR	LR			
	comp=Z,2µm,20.0s,MS4.5							
CMAR	**Chiang Mai Arr**	**20.84**	**316**	P		**P**	**23 33 43.6**	**-1.2**
	comp=Z,26nm,0.7s,baz=140,slow=8.7,SNR=128							
CMAR				LR	LR		23 42 25.7	
	comp=Z,1µm,20.5s,MS4.3,baz=130,slow=39							
CMAR	**Chiang Mai Arr**	**20.84**	**316**	P		**P**	**23 33 43.6**	**-1.2**
CMAR				LR	LR		23 42 25.7	
CHRT	**Chiangrai**	**21.29**	**321**	⇓P		**P**	**23 33 49.5**	**+0.1**
	comp=Z,210nm,0.8s,mb5.5							
QZH	**Quanzhou**	**21.72**	**11**	*e*P		**P**	**23 33 53.0**	**-0.8**
QZH				*e*S		**S**	**23 37 40.0**	**-9.2**
QZH				LR	LR			
	comp=N,2µm,15.0s,MS4.9							
QZH				LR	LR			
	comp=E,3µm,13.4s,MS4.9							
QZH				LR	LR			
	comp=Z,4µm,15.2s,MS4.9							
TATO	**Taipei**	**22.50**	**18**	PFAKE			23 34 10.0	+8.6
TATO				LR	LR			
	comp=Z,1µm,20.0s,MS4.2							
GYA	**Guiyang**	**23.81**	**344**	⇑*i*P		**P**	**23 34 16.4**	**+2.1**
GYA				AMB	AMB			
	comp=Z,10.0nm,1.2s,mb4.1							
GYA				LR	LR			
	comp=N,3µm,24.0s,MS4.9							
GYA				LR	LR			
	comp=E,4µm,22.2s,MS4.9							
GYA				LR	LR			
	comp=Z,1µm,17.4s,MS4.5							
KMI	**Kunming**	**23.99**	**334**	*e*P		**P**	**23 34 18.4**	**+2.3**
KMI				AP			23 34 22.8	
KMI				PP	PP		23 34 50.8	+0.6
KMI				S		**S**	**23 38 37.1**	**+7.2**
KMI				XS			23 38 47.1	
KMI				AMB	AMB			
	comp=Z,14nm,0.9s,mb4.4							
KMI				AMB	AMB			
	comp=Z,84nm,3.1s							
KMI				LR	LR			
	comp=N,2µm,13.6s,MS4.9							
KMI				LR	LR			
	comp=E,3µm,16.9s,MS4.9							
KMI				LR	LR			
	comp=Z,1µm,15.8s,MS4.5							
FITZ	**Fitzroy Crossi**	**24.43**	**152**	*e*P		**P**	**23 34 20.8**	**+0.4**
	comp=Z,8.1nm,0.8s,mb4.2							
FITZ				*e*S		**S**	**23 38 48.5**	**+11**
FITZ	**Fitzroy Crossi**	**24.43**	**152**	P		**P**	**23 34 20.4**	**0.0**
	comp=Z,7.9nm,0.7s,mb4.2,baz=3.6,slow=16,SNR=6.2							
FITZ				LR	LR		23 44 48.5	
	comp=Z,601nm,18.8s,MS4.1,baz=304,slow=39							
WHN	**Wuhan**	**26.84**	**1**	*e*P		**P**	**23 34 43.5**	**+0.6**
WHN				S		**S**	**23 39 20.0**	**+2.4**
WHN				LR	LR			
	comp=N,2µm,14.0s,MS4.9							
WHN				LR	LR			
	comp=E,1µm,14.0s,MS4.9							
WHN				LR	LR			
	comp=Z,5µm,19.7s							
ENH	**Enshi**	**26.89**	**351**	*e*P		**P**	**23 34 42.7**	**-0.8**
	comp=Z,9.5nm,1.0s,mb4.3							
ENH				LR	LR			
	comp=Z,3µm,18.1s,MS4.8							
JOW	**Kunigami**	**26.90**	**29**	LR	LR		23 44 49.6	
	comp=Z,1µm,21.5s,MS4.5,baz=206,slow=35							
NJ2	**Nanjing**	**28.71**	**9**	*e*P		**P**	**23 34 56.2**	**-3.7**
NJ2				AP	pP		23 35 05.3	+3.0
NJ2				XP	sP		23 35 10.3	+6.9
NJ2				S		**S**	**23 39 49.0**	**+1.2**
NJ2				XS			23 40 06.0	
NJ2				AMB	AMB			
	comp=Z,20nm,0.8s,mb4.9							
NJ2				AMB	AMB			
	comp=Z,240nm,7.3s							
NJ2				LR	LR			
	comp=N,2µm,16.0s,MS5.3							
NJ2				LR	LR			
	comp=E,5µm,13.9s,MS5.3							
NJ2				LR	LR			
	comp=Z,9µm,14.8s,MS5.5							
CD2	**Chengdu**	**28.85**	**342**	⇑*i*P		**P**	**23 35 00.6**	**-0.5**
CD2				PP	PP		23 35 55.0	+0.7
CD2				S		**S**	**23 39 47.3**	**-2.6**
CD2				SS	SS		23 41 18.6	+1.4
CD2				AMB	AMB			
	comp=Z,30nm,1.4s,mb4.8							
CD2				LR	LR			
	comp=E,2µm,15.6s							
CD2				LR	LR			
	comp=Z,2µm,13.2s,MS5.0							
SHL	**Shillong**	**30.45**	**318**	*e*P		**P**	**23 35 14.5**	**-1.0**
SHL				*e*S		**S**	**23 40 15.0**	**-0.5**
XAN	**Xi'an**	**30.68**	**352**	P		**P**	**23 35 21.0**	**+3.5**

WRA	**Warramunga Arr**	**30.78**	**140**	P		**P**	**23 35 17.6**	**-0.9**
	comp=Z,4.8nm,0.9s,mb4.3,baz=317,slow=9.6,SNR=9.4							
WRA				LR	LR		23 49 16.8	
	comp=Z,1µm,20.4s,MS4.6,baz=315,slow=40							
WRAB	**Tennant Creek**	**30.78**	**140**	*e*P		**P**	**23 35 18.2**	**-0.3**
	comp=Z,26nm,1.0s,mb5.0							
WRAB				LR	LR			
	comp=Z,2µm,19.5s,MS4.8							
WB2	**Warramunga Arr**	**30.79**	**140**	*e*P		**P**	**23 35 18.9**	**+0.3**
GUMO	**Guam**	**32.13**	**70**	PFAKE			23 35 40.0	+10
GUMO				LR	LR			
	comp=Z,1µm,20.0s,MS4.6							
AS12	**Alice Springs**	**33.34**	**145**	*e*P		**P**	**23 35 42.3**	**+1.5**
	comp=Z,9.8nm,1.2s,mb4.6							
ASAR	**Alice Springs**	**33.34**	**145**	P		**P**	**23 35 40.3**	**-0.5**
	comp=Z,3.5nm,0.9s,mb4.3,baz=325,slow=7.9,SNR=11							
ASAR				PcP	PcP		23 38 20.2	-2.6
	comp=Z,1.3nm,0.7s,baz=336,slow=2.6,SNR=5.8							
ASAR				LR	LR		23 50 41.2	
	comp=Z,494nm,19.4s,MS4.2,baz=134,slow=39							
LZH	**Lanzhou**	**33.68**	**345**	*e*P		**P**	**23 35 44.5**	**+0.8**
LZH				AP	pP		23 35 52.7	+6.6
LZH				XP	sP		23 35 57.5	+10
LZH				PP	PP		23 36 56.6	+0.3
LZH				*e*S		**S**	**23 41 03.0**	**-2.7**
LZH				AMB	AMB			
	comp=Z,28nm,1.5s,mb5.0							
LZH				AMB	AMB			
	comp=Z,94nm,4.0s							
LZH				LR	LR			
	comp=E,1µm,13.0s							
LZH				LR	LR			
	comp=Z,2µm,16.0s,MS4.9							
LSA	**Lhasa**	**33.79**	**323**	P		**P**	**23 35 46.2**	**+1.5**
LSA				AP	pP		23 35 54.1	+7.0
LSA				XP	sP		23 35 58.2	+10
LSA				PCP	PcP		23 38 19.0	-5.1
LSA				S		**S**	**23 41 08.1**	**+0.6**
LSA				XS			23 41 24.9	
LSA				SCS	ScS		23 46 05.5	-2.5
LSA				LR	LR			
	comp=N,1µm,22.1s,MS4.6							
LSA				LR	LR			
	comp=E,920nm,22.1s,MS4.6							
LSA				LR	LR			
	comp=Z,1µm,18.3s,MS4.6							
LSA	**Lhasa**	**33.79**	**323**	*e*P		**P**	**23 35 46.5**	**+1.8**
	comp=Z,4.4nm,0.7s,mb4.5							
LSA				LR	LR			
	comp=Z,817nm,19.0s,MS4.5							
PMG	**Port Moresby**	**35.53**	**112**	P		**P**	**23 36 00.9**	**+1.1**
	comp=Z,23nm,1.0s,mb5.1,baz=323,slow=17,SNR=4.3							
PMG	**Port Moresby**	**35.53**	**112**	P		**P**	**23 36 00.9**	**+1.1**
PMG				LR	LR			
	comp=Z,452nm,22.0s,MS4.2							
INCN	**Inchon**	**35.71**	**17**	PFAKE			23 36 10.0	+8.9
INCN				LR	LR			
	comp=Z,586nm,19.0s,MS4.4							
GUN	**Gumba**	**36.07**	**315**	*e*P		**P**	**23 36 03.6**	**-0.7**
BJT	**Baijiatuan**	**36.34**	**3**	*e*P		**P**	**23 36 06.6**	**+0.2**
	comp=Z,34nm,1.4s,mb5.1							
BJT				LR	LR			
	comp=Z,2µm,21.0s,MS4.8							
BJI	**Beijing**	**36.37**	**3**	*e*P		**P**	**23 36 06.7**	**+0.1**
BJI				PP	PP		23 37 27.5	-2.4
BJI				S		**S**	**23 41 45.2**	**-2.1**
BJI				AMB	AMB			
	comp=Z,16nm,0.6s,mb5.1							
BJI				LR	LR			
	comp=N,2µm,19.8s,MS5.1							
BJI				LR	LR			
	comp=E,3µm,16.0s,MS5.1							
BJI				LR	LR			
	comp=Z,1µm,21.3s							
NWAO	**Narrogin (SRO)**	**36.42**	**175**	PFAKE			23 36 20.0	+13
NWAO				LR	LR			
	comp=Z,507nm,20.0s,MS4.3							
KKN	**Kakani**	**36.43**	**314**	*e*P		**P**	**23 36 07.3**	**+0.1**
	comp=Z,26nm,0.7s,mb5.3							
DMN	**Daman**	**36.45**	**314**	*e*P		**P**	**23 36 07.3**	**-0.1**
	comp=Z,37nm,0.7s,mb5.4							
FORT	**Forrest**	**36.72**	**159**	*e*P		**P**	**23 36 07.4**	**-2.2**
	comp=Z,62nm,2.8s,mb4.9							
FORT				*i*		pP	23 36 10.8	-1.3
GKN	**Gorkha**	**37.01**	**314**	*e*P		**P**	**23 36 10.0**	**-2.1**
	comp=Z,73nm,0.7s,mb5.6							
BTO	**Baotou**	**37.04**	**355**	*e*P		**P**	**23 36 12.5**	**+0.2**
BTO				S		**S**	**23 41 58.0**	**+0.3**
BTO				AMB	AMB			
	comp=Z,21nm,0.8s,mb5.0							
BTO				LR	LR			
	comp=N,2µm,14.3s,MS5.4							
BTO				LR	LR			
	comp=E,4µm,15.2s,MS5.4							
TRD	**Trivandrum**	**37.08**	**279**	*e*S		**S**	**23 42 00.6**	**+2.1**
HHC	**Hu-ho-hao-te**	**37.18**	**357**	⇑P		**P**	**23 36 13.9**	**+0.5**
HHC				PCP	PcP		23 38 32.3	-1.6
HHC				S		**S**	**23 42 00.5**	**+0.8**
HHC				PCS			23 42 22.3	
HHC				AMB	AMB			
	comp=Z,13nm,1.2s,mb4.6							
HHC				AMB	AMB			
	comp=Z,83nm,5.4s							
HHC				LR	LR			
	comp=N,545nm,15.5s,MS4.6							
HHC				LR	LR			
	comp=E,661nm,15.9s,MS4.6							
HHC				LR	LR			
	comp=Z,641nm,15.6s,MS4.5							
HYB	**Hyderabad**	**37.32**	**294**	*i* P		**P**	**23 36 15.0**	**+0.2**
HYB	**Hyderabad**	**37.32**	**294**	*e*P		**P**	**23 36 15.0**	**+0.2**
KOLN	**Koldanda**	**37.63**	**313**	*e*P		**P**	**23 36 16.5**	**-0.8**
	comp=Z,36nm,0.7s,mb5.2							
DANN	**Dangsing**	**37.84**	**314**	*e*P		**P**	**23 36 18.0**	**-1.1**
GTA	**Gaotai**	**37.92**	**342**	⇑P		**P**	**23 36 21.4**	**+1.8**
GTA				AP	pP		23 36 28.7	+6.7
GTA				XP	sP		23 36 31.9	+8.8
GTA				PP	PP		23 37 48.8	-0.4
GTA				PCP	PcP		23 38 37.3	+1.1
GTA				S		**S**	**23 42 06.6**	**-4.4**
GTA				AMB	AMB			
	comp=Z,13nm,1.1s,mb4.6							
GTA				AMB	AMB			
	comp=Z,67nm,4.2s							
GTA				LR	LR			
	comp=N,573nm,12.5s,MS4.8							
GTA				LR	LR			
	comp=E,778nm,16.0s,MS4.8							
GTA				LR	LR			
	comp=Z,720nm,13.7s,MS4.6							
SNY	**Shenyang**	**39.06**	**11**	*e*P		**P**	**23 36 28.4**	**-0.8**
SNY				LR	LR			
	comp=N,680nm,20.2s							
SNY				LR	LR			
	comp=E,750nm,14.5s							
SNY				LR	LR			
	comp=Z,830nm,14.9s							
CTAO	**Charters Tower**	**39.49**	**128**	PFAKE			23 36 40.0	+7.0
CTAO				LR	LR			
	comp=Z,663nm,21.0s,MS4.5							
MAJO	**Matsushiro**	**39.71**	**31**	PFAKE			23 36 50.0	+15
MAJO				LR	LR			
	comp=Z,543nm,21.0s,MS4.4							
MAT	**Matsushiro**	**39.71**	**31**	P		**P**	**23 36 33.4**	**-1.2**
MAT				S	SS		23 45 37.0	+11
MAT	**Matsushiro**	**39.71**	**31**	P		**P**	**23 36 33.0**	**-1.6**
	comp=Z,31nm,1.5s,mb4.8							
MAT				*e*S	SS		23 45 38.0	+12
MAT				LR	LR			
	comp=Z,360nm,21.0s,MS4.2							
NDI	**New Delhi**	**42.91**	**310**	*e*P		**P**	**23 36 59.0**	**-2.1**
MDJ	**Mudanjiang**	**43.15**	**16**	PFAKE			23 37 10.0	+7.2
MDJ				LR	LR			
	comp=Z,744nm,20.0s,MS4.6							
STKA	**Stephens Creek**	**43.97**	**145**	*e*P		**P**	**23 37 10.7**	**+1.0**
	comp=Z,6.7nm,0.8s,mb4.4							
STKA	**Stephens Creek**	**43.97**	**145**	P		**P**	**23 37 10.1**	**+0.5**
	comp=Z,7.0nm,1.1s,mb4.3,baz=324,slow=4.2,SNR=4.4							
STKA				PcP	PcP		23 38 54.6	-1.5
	comp=Z,3.4nm,0.8s,baz=314,slow=14,SNR=2.0							
STKA				LR	LR		23 57 34.5	
	comp=Z,619nm,21.2s,MS4.5,baz=115,slow=39							
ULN	**Ulaanbaatar**	**44.53**	**353**	*ce*P		**P**	**23 37 14.5**	**+0.6**
ULN				pmax	pmax			
	comp=Z,7.0nm,1.0s,mb4.5							
ULN	**Ulaanbaatar**	**44.53**	**353**	*e*P		**P**	**23 37 14.3**	**+0.3**
	comp=Z,5.8nm,1.0s,mb4.4							
ULN				LR	LR			
	comp=Z,466nm,19.0s,MS4.4							
SONM	**Songino Array**	**44.58**	**353**	P		**P**	**23 37 14.0**	**-0.4**
	comp=Z,2.0nm,0.5s,mb4.2,baz=174,slow=11,SNR=3.9							
HIA	**Hailar**	**45.80**	**5**	PFAKE			23 37 40.0	+16
HIA				LR	LR			
	comp=Z,913nm,19.0s,MS4.7							
WMQ	**Urumqi**	**46.32**	**334**	*e*P		**P**	**23 37 28.6**	**+0.4**
ZAK	**Zakamensk**	**47.51**	**351**	*e*P		**P**	**23 37 37.7**	**+0.1**
KLR	**Kul'dur**	**47.97**	**16**	*e*P		**P**	**23 37 41.8**	**+0.6**
KLR				MLR	MLR			
	comp=N,500nm,16.0s,MS4.9							
KLR				MLR	MLR			
	comp=E,900nm,16.0s,MS4.9							
KLR				MLR	MLR			
	comp=E,500nm,14.0s							
KLR				MLR	MLR			
	comp=Z,1µm,14.0s,MS5.0							
TLY	**Talaya**	**48.72**	**351**	*e*P		**P**	**23 37 47.2**	**+0.3**
TLY				pmax	pmax			
	comp=Z,18nm,0.8s,mb5.2							
TLY				MLR	MLR			
	comp=Z,6µm,14.0s,MS5.8							
YSS	**Yuzh-Sakhalins**	**49.91**	**26**	PFAKE			23 38 10.0	+14
YSS				LR	LR			
	comp=Z,383nm,20.0s,MS4.4							
MKAR	**Makanchi Array**	**51.05**	**332**	P		**P**	**23 38 04.8**	**0.0**
	comp=Z,5.4nm,0.8s,mb4.5,baz=134,slow=8.6,SNR=28							
MKAR				PcP	PcP		23 39 20.6	-0.4
	comp=Z,2.6nm,0.6s,baz=165,slow=3.1,SNR=5.6							
QUE	**Quetta**	**51.65**	**306**	*e*P		**P**	**23 38 09.5**	**-0.1**
WAKE	**Wake Island**	**53.75**	**69**	PFAKE			23 38 40.0	+15
WAKE				LR	LR			
	comp=Z,440nm,22.0s,MS4.5							
BOD	**Bodaibo**	**54.10**	**0**	*e*P		**P**	**23 38 25.7**	**-1.7**
KURK	**Kurchatov**	**55.57**	**334**	*e*P		**P**	**23 38 37.2**	**-1.1**
ZAL	**Zalesovo**	**55.58**	**340**	P		**P**	**23 38 37.6**	**-0.7**
	comp=Z,2.3nm,0.6s,mb4.4,baz=265,slow=6.8,SNR=14							
NVS	**Novosibirsk**	**56.85**	**339**	*e*P		**P**	**23 38 34.9**	**-13**
YAK	**Yakutsk**	**59.51**	**9**	PFAKE			23 39 20.0	+14
YAK				LR	LR			
	comp=Z,387nm,19.0s,MS4.5							
BVAR	**Borovoye Array**	**60.91**	**332**	P		**P**	**23 39 14.9**	**-0.7**
	comp=Z,3.1nm,0.7s,mb4.5,baz=129,slow=9.5,SNR=16							
BRVK	**Borovoye**	**60.98**	**332**	*e*P		**P**	**23 39 15.3**	**-0.8**
PET	**Petropavlovsk**	**61.47**	**29**	PFAKE			23 39 30.0	+11
PET				LR	LR			
	comp=Z,487nm,19.0s,MS4.7							
ZRNK	**Zerenda**	**61.53**	**331**	*e*P		**P**	**23 39 17.6**	**-2.2**
SVE	**Sverdlovsk**	**67.70**	**332**	*e*P		**P**	**23 40 00.0**	**+0.2**
SVE				*e*S		S	23 49 02.0	+6.1
SVE				pmax	pmax			
	comp=Z,200nm,2.2s,mb5.8							
SVE				MLR	MLR			
	comp=Z,500nm,13.0s,MS4.9							
SVE				MLR	MLR			
	comp=N,500nm,15.0s,MS5.0							
SVE				MLR	MLR			
	comp=E,400nm,15.0s,MS5.0							
ARU	**Arti**	**68.50**	**331**	*e*P		**P**	**23 40 04.5**	**-0.4**
ARU				pmax	pmax			
	comp=Z,11nm,1.4s,mb4.6							
ARU				MLR	MLR			
	comp=Z,500nm,19.0s,MS4.8							
ARU	**Arti**	**68.50**	**331**	*e*P		**P**	**23 40 04.0**	**-0.9**
	comp=Z,5.6nm,0.9s,mb4.5							
ARU				LR	LR			
	comp=Z,586nm,20.0s,MS4.8							
TIXI	**Tiksi**	**68.65**	**5**	*e*P		**P**	**23 40 03.7**	**-1.9**
TIXI				*e*S		S	23 49 02.1	-5.0
TIXI				pmax	pmax			
	comp=Z,31nm,0.8s,mb5.3							
TIXI				MLR	MLR			
	comp=Z,8µm,17.0s,MS6.0							
TIXI	**Tiksi**	**68.65**	**5**	*e*P		**P**	**23 40 06.8**	**+1.2**
	comp=Z,7.4nm,0.9s,mb4.6							
TIXI				LR	LR			
	comp=Z,413nm,19.0s,MS4.7							
SMY	**Shemya**	**69.45**	**34**	*e*P		**P**	**23 40 03.5**	**-7.3**
	comp=Z,91nm,1.0s,mb5.7							
SMY				LR	LR			
	comp=Z,2µm,19.0s,MS5.4							
RPZ	**Rata Peaks**	**69.49**	**139**	P		**P**	**23 40 11.7**	**+0.5**
	comp=Z,18nm,1.1s,mb4.9,baz=257,slow=6.7,SNR=3.8							
RPZ				LR	LR		00 10 13.3	
	comp=Z,434nm,18.7s,MS4.7,baz=259,slow=36							
MIDW	**Midway**	**69.57**	**61**	PFAKE			23 40 20.0	+8.1
MIDW				LR	LR			
	comp=Z,7µm,20.0s,MS5.9							
SNZO	**South Karori**	**70.94**	**136**	PFAKE			23 40 30.0	+10
SNZO				LR	LR			
	comp=Z,738nm,19.0s,MS5.0							
GNI	**Garni**	**71.85**	**311**	*e*P		**P**	**23 40 27.1**	**+1.5**
GNI				pmax	pmax			
	comp=Z,14nm,1.7s							
GNI	**Garni**	**71.85**	**311**	PFAKE			23 40 40.0	+14
GNI				LR	LR			
	comp=Z,275nm,19.0s,MS4.5							
ZEI	**Tsey**	**72.98**	**314**	*e*P		**P**	**23 40 31.5**	**-0.7**
ZEI				*e*S		S	23 50 26.0	+28
ZEI				pmax	pmax			
	comp=Z,100nm,6.0s							
BILL	**Bilibino**	**73.34**	**18**	*e*P		**P**	**23 40 14.6**	**-19**
BILL				pmax	pmax			
	comp=Z,6.0nm,2.0s,mb4.2							
BILL				MLR	MLR			
	comp=Z,300nm,17.0s,MS4.6							
KIV	**Kislovodsk**	**74.07**	**315**	*e*P		**P**	**23 40 39.0**	**+0.5**
KIV				pmax	pmax			
	comp=Z,5.0nm,0.9s,mb4.4							
KIV				MLR	MLR			
	comp=Z,200nm,19.0s,MS4.4							
KIV	**Kislovodsk**	**74.07**	**315**	PFAKE			23 40 50.0	+11
KIV				LR	LR			
	comp=Z,274nm,20.0s,MS4.5							
YNBS	**Yanbu' al Bahr**	**75.73**	**294**	P		**P**	**23 40 33.9**	**-15**
KMBO	**Kilima Mbogo**	**76.78**	**268**	P		**P**	**23 40 53.9**	**-0.7**
	comp=Z,3.0nm,0.5s,mb4.5,baz=9.0,slow=21,SNR=4.5							
KMBO				LR	LR		00 13 03.4	
	comp=Z,340nm,19.5s,MS4.7,baz=91,slow=34							
TBKS	**Tabuk**	**77.21**	**298**	P		**P**	**23 40 59.8**	**+3.1**
JMQS	**Jabal Moqyreh**	**77.83**	**299**	P		**P**	**23 41 04.8**	**+4.7**
AYUS	**'Aynunah**	**78.33**	**298**	P		**P**	**23 41 05.5**	**+2.6**
BDAS	**Al Bad'**	**78.49**	**298**	P		**P**	**23 41 08.5**	**+4.7**
JMOS	**Jabal al Moall**	**78.51**	**299**	P		**P**	**23 41 12.1**	**+8.3**
ALWS	**Ilw as Safayha**	**78.56**	**299**	P		**P**	**23 41 14.9**	**+11**
HAQS	**Haql**	**78.67**	**299**	P		**P**	**23 41 12.2**	**+

comp=Z,2.3nm,0.6s,mb4.6,baz=101,slow=5.4,SNR=15
FINES LR LR 00 25 30.2

comp=Z,466nm,18.5s,MS4.9,baz=284,slow=40
FINES FINESS Array B 85.87 331 *i* P **P** **23 41 41.6 +0.3**
FINES pmax pmax

comp=Z,2.0nm,0.6s
FINES FINESS Array B 85.87 331 P **P** **23 41 41.2 -0.1**
FINES LR LR 00 25 30.2
ARCES ARCESS Array B 86.13 339 P **P** **23 41 43.2 +0.7**
comp=Z,2.1nm,0.7s,mb4.5,baz=90,slow=4.9,SNR=6.7
ARCES LR LR 00 26 19.9

comp=Z,458nm,19.2s,MS4.9,baz=187,slow=40
SBA Scott Base 86.13 170 PFAKE 23 41 50.0 +7.6
SBA LR LR

comp=Z,470nm,19.0s,MS4.9
LSZ Lusaka 86.83 255 *e*P **P** **23 41 46.7 -0.4**
comp=Z,5.7nm,0.8s,mb4.8
LSZ LR LR

comp=Z,717nm,21.0s,MS5.0
IMA Indian Mountai 87.74 24 *e*P **P** **23 41 52.8 +2.5**
comp=Z,7.4nm,0.7s,mb5.0
KWP Kalwaria 88.11 319 *e*P **P** **23 41 54.2 +1.8**
comp=Z,9.4nm,1.0s,mb5.0
KBS Kingsbay 88.83 349 PFAKE 23 42 10.0 +15
KBS LR LR

comp=Z,493nm,20.0s,MS4.9
FIB Fire Island 89.75 29 PFAKE 23 42 10.0 +10
FIB LR LR

comp=Z,2μm,21.0s,MS5.6
LBTB Lobatse 89.98 245 PFAKE 23 42 10.0 +8.0
LBTB LR LR

comp=Z,326nm,19.0s,MS4.8
MCK McKinley 89.99 26 PFAKE 23 42 10.0 +8.9
MCK LR LR

comp=Z,130nm,19.0s,MS4.4
PMR Palmer 90.19 28 PFAKE 23 42 10.0 +7.9
PMR LR LR

comp=Z,188nm,19.0s,MS4.5
COLA College 90.29 25 PFAKE 23 42 10.0 +7.5
COLA LR LR

comp=Z,156nm,20.0s,MS4.4
ILAR Eielson Array 90.71 25 P **P** **23 42 05.4 +1.0**
comp=Z,0.5nm,0.8s,mb3.9,baz=284,slow=4.9,SNR=4.3
ILAR LR LR 00 25 22.0

comp=Z,109nm,19.8s,MS4.3,baz=113,slow=37
ILAR Eielson Array 90.71 25 P **P** **23 42 05.4 +1.0**
ILAR LR LR 00 25 21.9
NOA NORSAR Array B 93.04 332 LR LR 00 29 51.2
comp=Z,376nm,19.6s,MS4.8,baz=55,slow=39
QSPA South Pole Qui 93.48 180 *e*P **P** **23 42 18.9 +2.1**
comp=Z,3.1nm,0.9s,mb4.7
KONO Kongsberg 94.15 330 PFAKE 23 42 30.0 +10
KONO LR LR

comp=Z,373nm,22.0s,MS4.8
INK Inuvik 94.87 20 P **P** **23 42 24.5 +1.1**
comp=Z,14nm,2.1s,mb5.0
ESK Eskdalemuir 102.10 329 PFAKE 23 43 10.0 +13
ESK LR LR

comp=Z,355nm,19.0s,MS4.9
ESLA Sonseca Array 108.73 314 PFAKE 23 47 40.0
ESLA LR LR

comp=Z,1μm,19.0s,MS5.5
COR Corvallis 110.05 40 PFAKE 23 47 50.0 +15
COR LR LR

comp=Z,985nm,19.0s,MS5.4
NEW Newport 111.92 34 PFAKE 23 47 50.0 +12
NEW LR LR

comp=Z,139nm,19.0s,MS4.6
WDC Whiskeytown Da 112.33 43 PFAKE 23 47 50.0 +11
WDC LR LR

comp=Z,336nm,19.0s,MS5.0
MOD Modoc 113.23 41 PFAKE 23 47 50.0 +8.7
MOD LR LR

comp=Z,456nm,22.0s,MS5.0
WVOR Wild Horse Val 114.05 40 PFAKE 23 47 50.0 +7.1
WVOR LR LR

comp=Z,311nm,20.0s,MS4.9
MSO Missoula 114.51 34 PFAKE 23 47 50.0 +6.4
MSO LR LR

comp=Z,239nm,20.0s,MS4.8
CMB Columbia Colle 114.95 45 PFAKE 23 48 00.0 +15
CMB LR LR

comp=Z,253nm,19.0s,MS4.8
BMN Battle Mountai 115.97 41 PFAKE 23 48 00.0 +13
BMN LR LR

comp=Z,324nm,22.0s,MS4.9
HLID Hailey 116.09 37 PFAKE 23 48 00.0 +13
HLID LR LR

comp=Z,239nm,19.0s,MS4.8
BOZ Bozeman (W) 116.50 34 PFAKE 23 48 00.0 +12
BOZ LR LR

comp=Z,206nm,21.0s,MS4.7
TPH Tonopah 117.14 44 PFAKE 23 48 00.0 +11
TPH LR LR

comp=Z,362nm,21.0s,MS5.0
DAC Darwin (Calif) 117.74 46 PFAKE 23 48 00.0 +10
DAC LR LR

comp=Z,405nm,20.0s,MS5.0
DBIC Dimbokro 118.06 279 PFAKE 23 48 00.0 +8.7
DBIC LR LR

comp=Z,128nm,19.0s,MS4.6
AHID Auburn Hatcher 118.53 36 PFAKE 23 48 00.0 +8.4
AHID LR LR

comp=Z,218nm,20.0s,MS4.8
HWUT Hardware Ranch 118.93 38 PFAKE 23 48 00.0 +7.6
HWUT LR LR

comp=Z,334nm,22.0s,MS4.9
BW06 Boulder Array 119.44 36 PFAKE 23 48 00.0 +6.7
BW06 LR LR

comp=Z,197nm,21.0s,MS4.7
PFO Pinyon Flat Ob 119.81 48 PFAKE 23 48 00.0 +5.8
PFO LR LR

comp=Z,532nm,21.0s,MS5.2
MVU Marysvale 120.28 41 PFAKE 23 48 10.0 +15
MVU LR LR

comp=Z,318nm,19.0s,MS5.0
ULM Lac du Bonnet 120.57 22 PFAKE 23 48 10.0 +15
ULM LR LR

comp=Z,431nm,21.0s,MS5.1
SCHQ Schefferville 121.81 1 PFAKE 23 48 10.0 +12
SCHQ LR LR

comp=Z,436nm,21.0s,MS5.1
PV10 Paradox Valley 122.40 39 *e*PKPdf PKPdf 23 47 59.8 +0.6
WUAZ Wupatki 122.48 43 PFAKE 23 48 10.0 +11
WUAZ LR LR

comp=Z,318nm,19.0s,MS5.0
ISCO Idaho Springs 123.61 36 PFAKE 23 48 10.0 +8.5
ISCO LR LR

comp=Z,278nm,22.0s,MS4.9
TUC Tucson 124.59 46 PFAKE 23 48 10.0 +6.3
TUC LR LR

comp=Z,261nm,20.0s,MS4.9
SDCO Great Sand Dun 124.99 38 PFAKE 23 48 10.0 +5.7
SDCO LR LR

comp=Z,398nm,22.0s,MS5.0
ANMO Albuquerque 126.10 41 PFAKE 23 48 20.0 +14
ANMO LR LR

comp=Z,296nm,19.0s,MS5.0
CBKS Cedar Bluff 127.62 33 PFAKE 23 48 20.0 +11
CBKS LR LR

comp=Z,166nm,21.0s,MS4.7
MNTX Cornudas Mount 128.75 44 PFAKE 23 48 20.0 +8.3
MNTX LR LR

comp=Z,219nm,22.0s,MS4.8
JFWS Jewell Farm 128.83 23 PFAKE 23 48 20.0 +8.5
JFWS LR LR

comp=Z,328nm,22.0s,MS5.0
WMOK Wichita Mounta 131.04 36 PFAKE 23 48 30.0 +14
WMOK LR LR

comp=Z,260nm,21.0s,MS4.9
TXAR Lajitas Array 131.33 45 PKP PKPdf 23 48 14.8 -1.9
comp=Z,0.6nm,0.9s,baz=45,slow=8.8,SNR=3.6
AAM Ann Arbor 131.64 17 PFAKE 23 48 30.0 +13
AAM LR LR

comp=Z,334nm,20.0s,MS5.0
WVL Waterville 131.98 3 PFAKE 23 48 30.0 +13
WVL LR LR

comp=Z,5μm,19.0s,MS6.2
NCB Newcomb 132.12 8 PFAKE 23 48 30.0 +12
NCB LR LR

comp=Z,292nm,22.0s,MS4.9
LBNH Lisbon 132.12 6 PFAKE 23 48 30.0 +12
LBNH LR LR

comp=Z,322nm,20.0s,MS5.0
CCM Cathedral Cave 132.47 27 PFAKE 23 48 30.0 +11
CCM LR LR

comp=Z,175nm,20.0s,MS4.8
ERPA Erie 132.81 14 PFAKE 23 48 30.0 +11
ERPA LR LR

comp=Z,246nm,20.0s,MS4.9
JCT Junction City 133.27 41 PFAKE 23 48 30.0 +10
JCT LR LR

comp=Z,218nm,19.0s,MS4.9
BINY Binghamton 133.57 10 PFAKE 23 48 30.0 +10
BINY LR LR

comp=Z,736nm,22.0s,MS5.3
ACSO Alum Creek Sta 133.74 18 PFAKE 23 48 30.0 +9.2
ACSO LR LR

comp=Z,611nm,20.0s,MS5.3
HRV Harvard--Oak R 133.88 6 PFAKE 23 48 30.0 +9.1
HRV LR LR

comp=Z,70nm,22.0s,MS4.3
MIAR Mount Ida 134.10 32 PFAKE 23 48 30.0 +8.4
MIAR LR LR

comp=Z,325nm,21.0s,MS5.0
WCI Wyandotte Cave 134.39 22 PFAKE 23 48 30.0 +7.9
WCI LR LR

comp=Z,1μm,21.0s,MS5.5
SSPA Standing Stone 134.70 13 PFAKE 23 48 30.0 +7.4
SSPA LR LR

comp=Z,1μm,21.0s,MS5.6
MCWV Mont Chateau 135.16 15 PFAKE 23 48 30.0 +6.5
MCWV LR LR

comp=Z,393nm,19.0s,MS5.2
WVT Waverly 135.58 25 PFAKE 23 48 30.0 +5.6
WVT LR LR

comp=Z,276nm,19.0s,MS5.0
HKT Hockley 136.16 38 PFAKE 23 48 40.0 +14
HKT LR LR

comp=Z,237nm,20.0s,MS4.9
PLAL Pickwick Lake 136.44 27 PFAKE 23 48 40.0 +14
PLAL LR LR

comp=Z,219nm,20.0s,MS4.9
CBN Corbin 137.14 13 PFAKE 23 48 40.0 +13
CBN LR LR

comp=Z,449nm,19.0s,MS5.2
BLA Blacksburg 137.29 17 PFAKE 23 48 40.0 +13
BLA LR LR

comp=Z,316nm,19.0s,MS5.1
LRAL Lakeview Retre 138.55 27 PFAKE 23 48 40.0 +10
LRAL LR LR

comp=Z,255nm,22.0s,MS4.9
BBSR BB Station 144.24 358 PFAKE 23 48 50.0 +13
BBSR LR LR

comp=Z,565nm,20.0s,MS5.3
TRQA Tornquist 145.47 186 *e*PKPdf PKPdf 23 48 40.4 -1.6

*NEIC **01** 23:38:16.7, 37.83S×176.94E, h5km, ML3.8(WEL), After WEL.*
WEL 01 23:38:16.8±0.1, 37.81S×176.91E, h5km, ML3.9/5, 6C-5D, Error ellipse: s-maj=1.2km s-min=1.1km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MARZ	**Manawahe**	**0.26**	**227**	⇓PG	Pg	23 38 22.0	0.0
MARZ				SG	Sg	23 38 25.6	+0.1
MARZ	**Manawahe**	**0.26**	**227**	⇓P	Pg	23 38 22.0	0.0
EDRZ	**Edgecumbe**	**0.33**	**205**	⇑PG	Pg	23 38 23.4	0.0
EDRZ				SG	Sg	23 38 28.2	+0.4
EDRZ	**Edgecumbe**	**0.33**	**205**	⇑P	Pg	23 38 23.4	0.0
EDRZ				S	Sg	23 38 28.2	+0.4
WIZ	**White Island**	**0.36**	**38**	⇓PG	Pg	23 38 24.3	+0.2
WIZ	**White Island**	**0.36**	**38**	⇓P	Pg	23 38 24.3	+0.3
LIRZ	**Lichensteins R**	**0.46**	**245**	PG	Pg	23 38 26.1	0.0
LIRZ	**Lichensteins R**	**0.46**	**245**	P	Pg	23 38 26.1	+0.1
URZ	**Urewera**	**0.47**	**161**	⇑PG	Pg	23 38 25.7	-0.6
URZ				SG	Sg	23 38 34.3	+1.6
MKRZ	**Makatiti**	**0.48**	**227**	⇓PG	Pg	23 38 26.9	+0.4
MKRZ				SG	Sg	23 38 33.5	+0.6
TGRZ	**Tauranga**	**0.52**	**279**	PG	Pg	23 38 27.5	+0.2
TGRZ				SG	Sg	23 38 34.3	+0.1
TGRZ	**Tauranga**	**0.52**	**279**	P	Pg	23 38 27.5	+0.2
TAZ	**Tarawera**	**0.53**	**217**	⇑PG	Pg	23 38 27.6	+0.2
TAZ	**Tarawera**	**0.53**	**217**	⇑P	Pg	23 38 27.6	+0.2
UTU	**Utuhina**	**0.68**	**237**	P*	Pb	23 38 29.7	-1.0
MWZ	**Matawai**	**0.71**	**137**	⇑P*	Pb	23 38 30.3	-1.1
MWZ				S*	Sb	23 38 40.8	-0.4
PATZ	**Paeroa**	**0.77**	**222**	P*	Pb	23 38 32.2	-0.1
PUZ	**Puketiti**	**1.10**	**104**	P*	Pb	23 38 38.0	+0.1
TOZ	**Tahuroa Road**	**1.12**	**274**	P*	Pb	23 38 37.8	-0.5
TOZ				S*	Sb	23 38 52.5	-0.5
MXZ	**Matakaoa Point**	**1.13**	**78**	P*	Pb	23 38 38.2	-0.4
KNZ	**Kokohu**	**1.35**	**154**	PN	Pn	23 38 43.0	+0.7
BKZ	**Black Stump Fm**	**1.39**	**194**	P*	Pb	23 38 41.0	-1.9
KUZ	**Kuaotunu**	**1.43**	**318**	PN	Pn	23 38 42.2	-1.2
MGZ	**Maungaku**	**1.60**	**222**	P*	Pb	23 38 44.3	-2.3
NGZ	**Ngauruhoe**	**1.71**	**217**	P*	Pb	23 38 47.1	-1.3
HIZ	**Hauiti**	**1.77**	**246**	PN	Pn	23 38 46.3	-2.0
WCZ	**Waipu Caves**	**2.78**	**311**	PN	Pn	23 38 59.9	-2.8

*IDC **01** 23:47:28.9±0.8, 23.44S×175.89W, mb4.4/10, mb1 4.6/12, mb1mx4.4/19, ML4.3/2, MS3.4/1, Ms1 3.4/1, ms1mx3.1/15, Error ellipse: s-maj=31.5km s-min=20.5km az=142.0*
*NEIC **01** 23:47:30.0±0.5, 23.42S×175.83W, h10km, mb4.8/7, Error ellipse: s-maj=15.8km s-min=11.5km az=158.0*
ISC 01 23:47:28.8±0.6, 23.4S±0.1×175.88W±0.10, h10km, n53, σ1§40/26, mb4.5/14, MS4.3/4, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAR	**Rarotonga**	**15.06**	**85**	Pn	**P**	**23 51 00.7**	**-2.8**
	3.8nm,0.3s,baz=340,slow=6.0,SNR=4.6						
RAR				Sn	**S**	**23 53 32.1**	**-19**
	2.1nm,0.3s,baz=45,slow=21,SNR=3.9						
RAR				LR	LR	23 55 43.0	
	comp=Z,139nm,19.5s,baz=169,slow=33						
URZ	**Urewera**	**15.95**	**200**	Pn	**P**	**23 51 13.9**	**-1.0**
	0.3nm,0.3s,baz=39,slow=13,SNR=1.9						
URZ				Sn	**S**	**23 53 56.5**	**-15**
	1.0nm,0.3s,baz=185,slow=21,SNR=4.1						
DZM	**Mont Dzumac**	**16.37**	**271**	*e*P	**P**	**23 51 26.7**	**+6.4**
DZM	**Mont Dzumac**	**16.37**	**271**	*e*P	**P**	**23 51 26.7**	**+6.4**
RPZ	**Rata Peaks**	**22.91**	**205**	P	**P**	**23 52 34.6**	**+0.7**
	8.5nm,0.9s,mb4.2,baz=27,slow=14,SNR=2.5						
CTA	**Charters Tower**	**35.26**	**268**	*e*P	**P**	**23 54 26.1**	**+0.2**
	7.3nm,0.9s,mb4.6						
CTA	**Charters Tower**	**35.26**	**268**	P	**P**	**23 54 26.1**	**+0.2**
	5.5nm,0.4s,mb4.8,baz=96,slow=10,SNR=16						
CTAO	**Charters Tower**	**35.26**	**268**	*e*P	**P**	**23 54 26.0**	**+0.1**
	12nm,0.9s,mb4.8						
CTAO				LR	LR		
	comp=Z,253nm,18.1s,MS4.0						
PMG	**Port Moresby**	**37.97**	**285**	P	**P**	**23 54 49.2**	**+0.5**
	comp=Z,15nm,0.9s,mb4.7,baz=209,slow=2.9,SNR=4.7						
PMG	**Port Moresby**	**37.97**	**285**	*e*P	**P**	**23 54 48.6**	**-0.1**
	comp=Z,38nm,1.2s,mb5.0						
PMG				LR	LR		
	comp=Z,157nm,18.5s,MS3.9						
STKA	**Stephens Creek**	**38.40**	**248**	P	**P**	**23 54 52.4**	**+0.2**
	comp=Z,1.4nm,0.4s,mb4.0,baz=102,slow=12,SNR=8.4						
STKA	**Stephens Creek**	**38.40**	**248**	P	**P**	**23 54 52.4**	**+0.2**
AS12	**Alice Springs**	**45.84**	**259**	*e*P	**P**	**23 55 52.0**	**-1.1**
	comp=Z,12nm,1.3s,mb4.7						
ASAR	**Alice Springs**	**45.84**	**259**	P	**P**	**23 55 52.5**	**-0.5**
	comp=Z,3.8nm,0.6s,mb4.5,baz=99,slow=7.7,SNR=36						
WB2	**Warramunga Arr**	**46.20**	**264**	*e*P	**P**	**23 55 54.6**	**-1.4**
WRAB	**Tennant Creek**	**46.21**	**264**	*e*P	**P**	**23 55 54.6**	**-1.4**
	comp=Z,9.9nm,0.6s,mb4.9						
WRAB				LR	LR		
	comp=Z,205nm,18.5s,MS4.1						
WRA	**Warramunga Arr**	**46.21**	**264**	P	**P**	**23 55 54.7**	**-1.4**
	comp=Z,2.2nm,0.3s,mb4.5,baz=90,slow=5.8,SNR=28						
QSPA	**South Pole Qui**	**66.65**	**180**	*e*P	**P**	**23 58 22.5**	**+1.3**
	comp=Z,1.4nm,0.7s,mb4.1						
MAJO	**Matsushiro**	**73.73**	**323**	P	**P**	**23 59 03.1**	**-1.9**
	comp=Z,12nm,1.6s,mb4.6						
MAW	**Mawson**	**79.47**	**199**	P	**P**	**23 59 37.8**	**+1.2**
	comp=Z,2.3nm,0.6s,mb4.3,baz=110,slow=1.5,SNR=3.6						
TXAR	**Lajitas Array**	**87.00**	**56**	P	**P**	**00 00 17.3**	**+1.4**
	comp=Z,0.8nm,0.8s,mb4.0,baz=211,slow=7.3,SNR=4.5						
ENH	**Enshi**	**89.31**	**303**	*e*P	**P**	**00 00 29.2**	**+2.2**
	comp=Z,7.8nm,1.0s,mb5.0						
ILAR	**Eielson Array**	**90.75**	**12**	P	**P**	**00 00 33.9**	**+1.1**
	comp=Z,0.3nm,0.6s,mb3.8,baz=218,slow=3.8,SNR=4.7						
CMAR	**Chiang Mai Arr**	**92.94**	**289**	P	**P**	**00 00 46.2**	**+2.2**
	comp=Z,7.8nm,1.1s,mb5.0,baz=128,slow=3.5,SNR=15						
ZAL	**Zalesovo**	**114.02**	**320**	PKiKP		00 06 07.7	
	comp=Z,0.6nm,0.2s,baz=306,slow=5.5,SNR=3.2						
ZAL	**Zalesovo**	**114.02**	**320**	PKPdf	PKPdf	00 06 07.7	-3.3
MKAR	**Makanchi Array**	**114.63**	**312**	PKP	PKPdf	00 06 09.3	-3.0
	comp=Z,0.4nm,0.7s,baz=315,slow=1.7,SNR=4.7						
ARCES	**ARCESS Array B**	**132.15**	**350**	PKP	PKPdf	00 06 42.1	-3.4
	comp=Z,1.4nm,0.8s,slow=1.2,SNR=5.6						
FINES	**FINESS Array B**	**139.13**	**344**	PKP	PKPdf	00 06 56.4	-2.2
	comp=Z,0.3nm,0.7s,baz=132,slow=26,SNR=2.9						
DJNS	**Zahran al Janu**	**142.74**	**269**	P	PKPdf	00 07 22.4	+16
ARSS	**Ar Rass**	**144.46**	**282**	P	PKPbc	00 07 07.0	+1.4
HILS	**Ha'il**	**145.84**	**285**	P	PKPbc	00 07 08.0	-1.2
AKASG	**Malin Array Be**	**146.53**	**331**	PKPbc	PKPbc	00 07 11.1	+1.0
	comp=Z,2.6nm,0.5s,baz=39,slow=4.0,SNR=29						
KWP	**Kalwaria**	**150.06**	**335**	*e*PKP	PKPdf	00 07 21.4	+4.0
BRTR	**Keskin Array B**	**150.25**	**310**	PKPbc	PKPdf	00 07 22.0	+3.9
	comp=Z,1.7nm,0.7s,baz=127,slow=3.0,SNR=14						
JMQS	**Jabal Moqyreh**	**151.04**	**288**	P	PKPdf	00 07 23.7	+4.1
KSP	**Ksiaz**	**151.06**	**344**	*e*P	PKPdf	00 07 24.3	+5.4
CLL	**Collm**	**151.34**	**348**	P	PKPdf	00 07 24.3	+5.0
	comp=Z,logA/T=0.8						
CLL				*i*		00 07 32.7	
CLL	**Collm**	**151.34**	**348**	*i* P	PKPdf	00 07 24.3	+5.0
CLL				*i*		00 07 32.7	
UPC	**Upice**	**151.44**	**344**	*e*PKP	PKPdf	00 07 25.0	+5.5
OKC	**Ostrava-Krasne**	**151.45**	**341**	*e*PKP	PKPdf	00 07 25.0	+5.5
DPC	**Dobruska-Polom**	**151.50**	**344**	*e*PKP	PKPdf	00 07 25.6	+6.0
BRG	**Berggiesshubel**	**151.57**	**347**	*e*P	PKPdf	00 07 25.4	+5.7
BRG				*e*		00 07 29.8	
BRG				LR	LR		
	comp=Z,260nm,17.3s,MS5.1						
AYUS	**'Aynunah**	**151.61**	**286**	P	PKPdf	00 07 22.6	+2.1
JMOS	**Jabal al Moall**	**151.69**	**288**	P	PKPab	00 07 31.4	-3.6
ALWS	**Ilw as Safayha**	**151.72**	**289**	P	PKPab	00 07 32.0	-3.1
BDAS	**Al Bad'**	**151.75**	**287**	P	PKPdf	00 07 26.3	+5.6
PVCC	**Panska Ves**	**151.76**	**346**	*e*PKP	PKPdf	00 07 25.9	+5.9
HAQS	**Haql**	**151.86**	**288**	P	PKPab	00 07 31.0	-4.7
TAYS	**Tayyib Ism**	**151.94**	**287**	P	PKPdf	00 07 26.6	+5.7
PRU	**Pruhonice**	**152.27**	**345**	*e*PKP	PKPdf	00 07 26.5	+5.7
KHC	**Kasperske Hory**	**153.29**	**346**	*e*PKP	PKPdf	00 07 29.1	+6.9
GERES	**GERESS Array B**	**153.54**	**346**	PKP	PKPdf	00 07 21.0	-1.6
	comp=Z,0.3nm,0.9s,baz=63,slow=2.2,SNR=3.1						
GERES				PKPbc	PKPdf	00 07 29.4	+6.8
	comp=Z,0.5nm,0.9s,baz=27,slow=3.0,SNR=4.3						

*MDD **01** 23:51:59.7±0.6, 43.14N×0.65W, mbLg1.0/5, Error ellipse: s-maj=5.1km s-min=3.6km az=32.0, PRXIMO*
*LDG **01** 23:52:00.0±0.4, 43.12N×0.61W, h2km, Md1.9/2, Ml1.7/2, Error ellipse: s-maj=9.4km s-min=3.6km az=109.0*
ISC 01 23:51:57.8±0.9, 43.20N±0.04×0.65W±0.07, h2km, n6, σ0§77/8, Pyrenees

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ETSF	**Etsaut**	**0.31**	**167**	*e*Pg	**Pg**	**23 52 04.8**	**+0.8**
ETSF				*e*Sg	**Sg**	**23 52 07.0**	**-1.1**
	6.2nm,0.2s						
EALK	**Alkurruntz**	**0.62**	**272**	Pg	**Pg**	**23 52 10.4**	**+0.1**
	0.0nm,0.0s,SNR=7.9						
EALK				Lg		23 52 20.7	
	1.9nm,0.3s,SNR=5.7						
EPF	**Esparros**	**0.75**	**103**	*e*Pg	**Pg**	**23 52 13.2**	**+0.5**
EPF				*e*Sg	**Sg**	**23 52 23.1**	**+0.4**
	2.6nm,0.3s						
ESAC	**San Caprasio**	**1.48**	**175**	Pg	**Pg**	**23 52 27.4**	**0.0**
	2.3nm,0.3s,SNR=7.9						
ESAC				Lg		23 52 46.0	
	6.2nm,0.3s,SNR=6.3						
LFF	**La Frestale**	**2.01**	**30**	*e*Sg	**Sg**	**23 53 05.4**	**+0.7**
	2.3nm,0.3s						
RJF	**Les Rejaudoux**	**2.62**	**36**	*e*Sg	**Sg**	**23 53 23.6**	**-1.4**
	0.7nm,0.2s						

NEIC 02 00:04:26.4, 60.10N×153.38W, h145km, After AEIC., Southern Alaska

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RSO	**Redoubt South**	**0.48**	**40**	*e*P	P	00 04 46.3	-1.3
SPU	**Mount Spurr**	**1.27**	**30**	*e*P	P	00 04 52.3	-1.3
SVW	**Sparrevohn**	**1.50**	**313**	*e*P	P	00 04 52.4	-3.6
SLKM	**Skilak Lake**	**1.62**	**74**	*e*P	P	00 04 56.0	-1.3
PMS	**Palmer South**	**2.20**	**57**	*e*P	P	00 05 02.5	-1.6
KDAK	**Kodiak Island**	**2.36**	**170**	*e*P	P	00 05 02.9	-3.2
TOA	**Tolsona**	**4.04**	**57**	*e*P	P	00 05 25.9	-2.0
MCK	**McKinley**	**4.21**	**28**	*e*P	P	00 05 28.2	-2.0
COLA	**College**	**5.43**	**26**	*e*P	P	00 05 43.7	-2.7
IMA	**Indian Mountai**	**6.00**	**359**	*e*P	P	00 05 52.6	-1.3
DAWY	**Dawson**	**7.67**	**53**	*e*P	P	00 06 14.4	-2.1
INK	**Inuvik**	**11.88**	**38**	*e*P	P	00 07 09.6	-2.2

*WEL **02** 00:14:52.8±0.1, 37.83S×176.93E, h5km, ML4.0/5, Error ellipse: s-maj=1.0km s-min=0.8km az=90.0*
ISC 02 00:14:52.3±0.5, 37.79S±0.03×176.91E±0.04, h13km±5km, n17, σ0§98/23, 3C-4D, North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MARZ	**Manawahe**	**0.27**	**222**	⇓PG	**Pg**	**00 14 58.2**	**+0.1**
WIZ	**White Island**	**0.34**	**41**	⇓PG	**Pg**	**00 15 00.3**	**+0.8**
WIZ				SG	**Sg**	**00 15 03.3**	**-1.0**
EDRZ	**Edgecumbe**	**0.35**	**202**	⇑PG	**Pg**	**00 14 59.5**	**0.0**
EDRZ				SG	**Sg**	**00 15 04.6**	**+0.1**
MKRZ	**Makatiti**	**0.49**	**224**	⇓PG	**Pg**	**00 15 03.0**	**+0.6**
MKRZ				SG	**Sg**	**00 15 09.5**	**+0.4**
URZ	**Urewera**	**0.50**	**161**	⇑PG	**Pg**	**00 15 01.9**	**-0.6**
URZ				SG	**Sg**	**00 15 07.8**	**-1.5**
TGRZ	**Tauranga**	**0.51**	**276**	⇓PG	**Pg**	**00 15 03.6**	**+0.8**
TGRZ				SG	**Sg**	**00 15 10.5**	**+0.6**
MWZ	**Matawai**	**0.74**	**138**	⇑P*	**Pb**	**00 15 06.5**	**+0.1**
PUZ	**Puketiti**	**1.11**	**105**	P*	**Pb**	**00 15 14.3**	**+1.5**
TOZ	**Tahuroa Road**	**1.11**	**272**	P*	**Pb**	**00 15 13.0**	**+0.1**
TOZ				S*	**Sb**	**00 15 28.4**	**+1.3**
MXZ	**Matakaoa Point**	**1.13**	**79**	P*	**Pb**	**00 15 14.7**	**+1.4**
KNZ	**Kokohu**	**1.37**	**154**	P*	**Pb**	**00 15 19.4**	**+2.1**
KUZ	**Kuaotunu**	**1.40**	**317**	PN	**Pn**	**00 15 16.1**	**-1.6**
BKZ	**Black Stump Fm**	**1.42**	**193**	*e*P*	**Pb**	**00 15 17.1**	**-0.9**
MKAZ	**Moumakai**	**1.54**	**295**	PN	**Pn**	**00 15 19.1**	**-0.6**
MGZ	**Maungaku**	**1.62**	**221**	P*	**Pb**	**00 15 20.5**	**-1.0**
HIZ	**Hauiti**	**1.77**	**245**	PN	**Pn**	**00 15 22.0**	**-0.9**
WCZ	**Waipu Caves**	**2.76**	**311**	PN	**Pn**	**00 15 35.9**	**-1.2**

*ZUR **02** 00:22:42.9, 47.19N×7.43E, h2km, ML0.8/2*
*LDG **02** 00:22:44.8±0.2, 47.20N×7.30E, h3km, Md1.9/2, Ml1.9/7, Error ellipse: s-maj=4.2km s-min=2.0km az=100.0*
*NEIC **02** 00:22:44.7, 47.25N×7.71E, h5km, ML1.9(LDG), ML1.6(STR), After STR.*
*STR **02** 00:22:44.7±0.8, 47.25N×7.71E, h5km±1km, Ml1.6, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
ISC 02 00:22:43.1±0.8, 47.19N±0.03×7.36E±0.04, h2km, n14, σ1§22/22, 1D, Switzerland

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BOURR	**Bourrignon**	**0.23**	**338**	⇓*i* Pg	**Pg**	**00 22 48.3**	**+0.8**
	1.0nm,0.8s						
BOURR				*e*Sg	**Sg**	**00 22 52.5**	**+1.9**
	1.0nm,0.8s						
BALST	**Balsthal**	**0.28**	**57**	*e*Pg	**Pg**	**00 22 48.3**	**-0.3**
	3.7nm,1.6s						
BALST				*e*Sg	**Sg**	**00 22 51.7**	**-0.5**
	3.7nm,1.6s						
BBS	**Basel-Blauen**	**0.30**	**20**	Pg	**Pg**	**00 22 49.0**	**0.0**
BBS				Sg	**Sg**	**00 22 53.5**	**+0.5**
LOMF	**Lomont**	**0.40**	**295**	Pg	**Sg**	**00 22 56.7**	**+0.5**
BRANT	**Les Verrieres**	**0.65**	**248**	*e*P*P	**Pg**	**00 22 57.8**	**+1.7**
MOF	**Molkenrain**	**0.68**	**347**	Pg	**Pg**	**00 22 58.4**	**+1.7**
MOF				Sg	**Sg**	**00 23 08.9**	**+3.1**
HINF	**Hinteralfeld**	**0.72**	**332**	*e*Pg	**Pg**	**00 22 58.6**	**+1.2**
HINF				*e*Sg	**Sg**	**00 23 07.0**	**+0.1**
	8.4nm,0.3s						
FELD	**Feldberg**	**0.82**	**32**	Pg	**Pg**	**00 22 57.5

	3.0nm,0.3s						
SFTF	**Sexfontaines**	**1.87**	**304**	*e*Sg	**Sg**	**00 23 43.2**	**-2.1**
	1.2nm,0.3s						
MEZF	**Maizieres J'vi**	**2.04**	**311**	*e*Sg	**Sg**	**00 23 48.0**	**-2.8**
	1.1nm,0.2s						
LOR	**Lormes**	**2.38**	**273**	*e*Sg	**Sg**	**00 23 57.9**	**-4.5**
	0.7nm,0.2s						

IDC ***02*** *00:38:16.5±1.2,2.94S×129.83E,mb4.0/5,mb1 4.3/7, mb1mx4.1/17,ML4.2/2,MS2.9/2,Ms1 2.9/2,ms1mx2.6/23, Error ellipse: s-maj=74.3km s-min=15.1km az=70.0*
NEIC ***02*** *00:38:22.9±0.6,3.06S×129.89E,h50km,mb4.0/3,Error ellipse: s-maj=30.9km s-min=7.6km az=73.0*

ISC 02 00:38:20.7±0.7,3.05S±0.09×129.9E±0.2,h50km,n21, σ0$44/20,mb4.0/5,MS2.9/1,1D,Seram

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**15.53**	**195**	*e*P	**P**	**00 41 58.9**	**+0.8**
	6.6nm,0.8s						
FITZ	**Fitzroy Crossi**	**15.53**	**195**	Pn	**P**	**00 41 57.6**	**-0.5**
	0.9nm,0.3s,baz=16,slow=7.5,SNR=15						
FITZ				LR	LR	00 47 16.4	
	comp=Z,38nm,18.8s,baz=179,slow=35						
WRAB	**Tennant Creek**	**17.33**	**166**	*e*P	**P**	**00 42 20.6**	**-0.1**
	11nm,0.6s						
WRA	**Warramunga Arr**	**17.33**	**166**	P	**P**	**00 42 20.1**	**-0.6**
	0.9nm,0.3s,baz=346,slow=13,SNR=12						
WRA				S	**S**	**00 45 37.7**	**+7.7**
	0.2nm,0.3s,baz=341,slow=21,SNR=4.6						
WB2	**Warramunga Arr**	**17.34**	**166**	*e*P	**P**	**00 42 20.8**	**0.0**
AS12	**Alice Springs**	**20.85**	**170**	*e*P	**P**	**00 43 01.3**	**+0.6**
	20nm,0.7s						
ASAR	**Alice Springs**	**20.85**	**170**	P	**P**	**00 43 01.4**	**+0.7**
	9.2nm,0.6s,baz=349,slow=11,SNR=94						
ASAR				PcP	PcP	00 47 09.6	+1.6
	0.9nm,0.5s,slow=1.8,SNR=8.2						
ASAR				LR	LR	00 50 02.3	
	comp=Z,44nm,19.6s,MS2.9,baz=351,slow=34						
KKTK	**Khon Kaen**	**32.99**	**307**	P	**P**	**00 44 53.0**	**-0.3**
NANT	**Nan**	**36.03**	**308**	⇓P	**P**	**00 45 19.5**	**+0.1**
CMAR	**Chiang Mai Arr**	**37.25**	**306**	P	**P**	**00 45 29.4**	**-0.1**
	1.7nm,0.8s,mb3.9,baz=134,slow=7.1,SNR=9.0						
CHG	**Chiang Mai**	**37.44**	**307**	P	**P**	**00 45 31.6**	**+0.5**
MKAR	**Makanchi Array**	**64.92**	**326**	P	**P**	**00 48 56.9**	**-0.3**
	1.9nm,0.9s,mb4.1,baz=113,slow=7.9,SNR=11						
MKAR	**Makanchi Array**	**64.92**	**326**	P	**P**	**00 48 56.9**	**-0.4**
ZAL	**Zalesovo**	**68.04**	**333**	P	**P**	**00 49 16.5**	**-0.4**
	0.8nm,0.7s,mb3.9,baz=264,slow=11,SNR=5.5						
ZAL	**Zalesovo**	**68.04**	**333**	P	**P**	**00 49 16.5**	**-0.4**
KURK	**Kurchatov**	**69.14**	**328**	*e*P	**P**	**00 49 23.4**	**-0.4**
TIXI	**Tiksi**	**74.57**	**360**	*e*P	**P**	**00 49 56.3**	**+0.6**
	2.0nm,1.0s,mb4.0						
BVAR	**Borovoye Array**	**74.71**	**327**	P	**P**	**00 49 56.6**	**-0.2**
	0.9nm,0.6s,mb3.9,baz=101,slow=7.6,SNR=6.8						
BRVK	**Borovoye**	**74.78**	**327**	*e*P	**P**	**00 49 57.9**	**+0.6**
CPUP	**Villa Florida**	**149.96**	**167**	PKPbc	PKPdf	00 58 10.4	+9.0
	1.1nm,0.5s,baz=239,slow=20,SNR=9.9						
CPUP	**Villa Florida**	**149.96**	**167**	*e*PKPbc	PKPdf	00 58 10.1	+8.8

IDC ***02*** *00:38:57.0±12.0,7.92N×95.02E,mb3.6/5,mb1 3.8/5, mb1mx3.6/17,Error ellipse: s-maj=305.0km s-min=81.4km az=129.0*

ISC 02 00:38:54.0±3.4,7.2N±0.4×95.9E±0.6,h33km,n9,σ1$00/9, mb3.9/9,Nicobar Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DMN	**Daman**	**22.70**	**335**	*e*P	**P**	**00 43 55.5**	**+1.4**
	8.6nm,0.5s,mb4.4						
KKN	**Kakani**	**22.78**	**335**	*e*P	**P**	**00 43 55.8**	**+0.9**
	6.1nm,0.5s,mb4.3						
GKN	**Gorkha**	**23.24**	**334**	*e*P	**P**	**00 43 58.7**	**-0.7**
	14nm,0.7s,mb4.5						
KOLN	**Koldanda**	**23.51**	**332**	*e*P	**P**	**00 44 01.2**	**-0.8**
	8.5nm,0.8s,mb4.2						
MKAR	**Makanchi Array**	**41.12**	**346**	P	**P**	**00 46 34.3**	**-2.2**
	0.2nm,0.6s,mb2.9,baz=143,slow=7.2,SNR=2.7						
ZAL	**Zalesovo**	**47.44**	**351**	P	**P**	**00 47 28.0**	**+0.7**
	0.6nm,0.3s,mb4.0,baz=225,slow=7.1,SNR=2.4						
BRTR	**Keskin Array B**	**64.14**	**311**	P	**P**	**00 49 27.0**	**-0.6**
	0.7nm,1.1s,mb3.6,baz=124,slow=5.2,SNR=3.4						
FINES	**FINESS Array B**	**74.08**	**332**	P	**P**	**00 50 28.7**	**+0.4**
	1.0nm,0.9s,mb3.7,baz=104,slow=7.9,SNR=4.9						
GERES	**GERESS Array B**	**79.44**	**318**	P	**P**	**00 50 59.2**	**+0.5**
	0.3nm,0.8s,mb3.2,baz=90,slow=4.9,SNR=3.0						

IDC ***02*** *00:43:19.4±1.1,16.69N×123.14E,mb3.7/6,mb1 3.9/7, mb1mx3.7/20,ML4.4/1,Error ellipse: s-maj=42.5km s-min=19.5km az=78.0*
NEIC ***02*** *00:43:21.1±0.7,16.66N×123.12E,h10km,Error ellipse: s-maj=24.2km s-min=11.5km az=81.0*
MAN ***02*** *00:43:24.2,16.40N×122.50E,h22km,mb4.0,ML2.8, MS2.5*

ISC 02 00:43:23.7±1.1,16.49N±0.04×122.79E±0.09,h41km±10km, n19,σ1$14/27,mb3.6/6,7C,Luzon

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PALP	**Palanan**	**0.67**	**329**	⇑*e*P	**P**	**00 43 36.8**	**0.0**
PALP				*e*S	**S**	**00 43 48.4**	**+2.1**
CAUP	**Cauayan**	**1.03**	**296**	⇑*e*P	**P**	**00 43 39.3**	**-2.6**
CAUP				*e*S	**S**	**00 43 52.7**	**-2.6**
BALP	**Baler**	**1.38**	**238**	⇑*e*P	**P**	**00 43 43.5**	**-3.5**
BALP				*e*S	**S**	**00 43 59.0**	**-5.3**
CVP	**Callao Caves**	**1.52**	**323**	*e*P	**P**	**00 43 49.1**	**+0.2**
CVP				*e*S	**S**	**00 44 07.5**	**-0.2**
APYP	**Conner**	**2.01**	**313**	⇑*e*P	**P**	**00 43 55.0**	**-0.9**
APYP				*e*S	**S**	**00 44 21.5**	**+1.5**
ABRA	**Dolores**	**2.30**	**300**	⇑*e*P	**P**	**00 43 58.8**	**-1.2**
GQP	**Guinayangan**	**2.59**	**187**	*e*P	**P**	**00 44 05.0**	**+0.8**
GQP				*e*S	**S**	**00 44 34.0**	**-0.7**
BOLP	**Bolinao**	**2.76**	**268**	⇑*e*P	**P**	**00 44 06.3**	**-0.3**
BOLP				*e*S	**S**	**00 44 40.2**	**+1.2**
SCZP	**Santa Cruz**	**2.85**	**256**	⇑*e*P	**P**	**00 44 09.1**	**+1.2**
TGY	**Tagaytay City**	**2.97**	**217**	Pn	**P**	**00 44 13.0**	**+3.5**
	35nm,0.3s,baz=106,slow=7.4,SNR=4.1						
TGY				Sn	**S**	**00 44 55.1**	**+11**
	102nm,0.3s,baz=317,slow=7.4,SNR=3.8						
WRA	**Warramunga Arr**	**37.94**	**162**	P	**P**	**00 50 38.9**	**-0.4**
	0.7nm,1.0s,mb3.4,baz=342,slow=9.4,SNR=4.6						
ASAR	**Alice Springs**	**41.36**	**164**	P	**P**	**00 51 08.6**	**+0.9**
	0.3nm,0.5s,mb3.1,baz=356,slow=7.4,SNR=4.6						
MKAR	**Makanchi Array**	**45.07**	**321**	P	**P**	**00 51 36.7**	**-0.9**
	0.8nm,0.7s,mb3.7,baz=130,slow=9.5,SNR=4.6						
MKAR	**Makanchi Array**	**45.07**	**321**	P	**P**	**00 51 36.7**	**-0.9**
KURK	**Kurchatov**	**49.06**	**324**	*e*P	**P**	**00 52 08.8**	**0.0**
BVAR	**Borovoye Array**	**54.66**	**324**	P	**P**	**00 52 50.2**	**-0.7**
	0.6nm,0.6s,mb3.8,baz=101,slow=7.6,SNR=4.3						
BRVK	**Borovoye**	**54.73**	**324**	P	**P**	**00 52 51.3**	**-0.1**
ARCES	**ARCESS Array B**	**77.22**	**339**	P	**P**	**00 55 15.7**	**+0.8**
	1.9nm,1.0s,mb4.0,baz=70,slow=11,SNR=3.6						
FINES	**FINESS Array B**	**78.84**	**331**	P	**P**	**00 55 24.1**	**+0.2**
	0.9nm,0.7s,mb3.8,baz=63,slow=5.1,SNR=16						

TAP ***02*** *00:46:44.9,24.67N×122.65E,h115km,ML3.0*
JMA ***02*** *00:46:45.7±0.1,24.73N×122.62E,h10km,M1.8*

ISC 02 00:46:46.4±3.0,24.8N±0.3×122.7E±0.1,h106km±23km,n6, σ0$36/9,Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
YOJ	**Yonaguni jima**	**0.45**	**135**	P	**P**	**00 47 02.3**	**-0.3**
YOJ				*e*S	**S**	**00 47 15.0**	**+0.3**
IRIF	**Iriomote-Funau**	**1.07**	**114**	P	**P**	**00 47 07.9**	**-0.3**
IRIF				S	**S**	**00 47 24.5**	**-0.2**
HATJ	**Hateruma jima**	**1.26**	**124**	S	**S**	**00 47 29.0**	**+0.3**
JKRS	**Kuro-shima**	**1.34**	**113**	*e*S	**S**	**00 47 30.5**	**+0.3**
JIJ	**Ishigaki jima**	**1.41**	**107**	*e*S	**S**	**00 47 31.0**	**-0.7**
JTJ	**Tarama**	**1.86**	**94**	P	**P**	**00 47 18.3**	**+0.5**
JTJ				*e*S	**S**	**00 47 41.5**	**+0.2**

MOS ***02*** *00:48:11.3±0.8,8.95N×93.93E,h25km,mb4.7/8,Error ellipse: s-maj=23.2km s-min=11.6km az=101.9*
IDC ***02*** *00:48:13.6±0.6,9.08N×93.96E,h23km±3km,mb3.9/14, mb1 4.0/15,mb1mx4.0/19,ML4.3/1,MS3.7/9,Ms1 3.7/9, ms1mx3.3/29,Error ellipse: s-maj=26.3km s-min=11.4km az=60.0*

NEIC ***02*** *00:48:14.5±0.3,9.08N×94.08E,mb4.6/20,Error ellipse: s-maj=9.4km s-min=6.9km az=62.0*
BJI ***02*** *00:48:15.8,9.25N×94.38E,h14km,mB4.6,mb4.7,Ms4.3, Msz3.9*

ISC 02 00:48:12.1±0.4,8.98N±0.06×93.97E±0.06,h26km, h26km±1.0km:pP-P,n100,σ1$03/92,mb4.4/39,MS3.8/10, 3C-3D,Nicobar Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PBA	**Port Blair**	**2.92**	**336**	*e*P	**Pn**	**00 49 04.0**	**+6.0**
IPM	**Ipoh**	**8.26**	**121**	⇓*e*P	**P**	**00 50 18.3**	**+5.0**
CMAR	**Chiang Mai Arr**	**10.59**	**27**	Pn	**P**	**00 50 45.6**	**+0.2**
	0.7nm,0.3s,baz=211,slow=15,SNR=18						
CMAR				LR	LR	00 55 06.2	
	comp=Z,156nm,18.9s,baz=215,slow=39						
PALK	**Pallekele**	**13.24**	**264**	*e*P	**P**	**00 51 24.2**	**+3.0**
VIS	**Vishakhapatnam**	**13.51**	**311**	*e*P	**P**	**00 51 25.4**	**+0.6**
VIS				AMb	AMB	00 51 31.9	
	comp=Z,42nm,0.7s						
VIS				*e*S	**S**	**00 53 44.6**	**-10**
CUD	**Cuddapah**	**15.85**	**292**	*e*P	**P**	**00 51 58.4**	**+3.0**
CUD				*e*S	**S**	**00 54 44.2**	**-6.0**
KOD	**Kodaikanal**	**16.32**	**276**	*e*P	**P**	**00 52 05.9**	**+4.6**
KOD				AMb	AMB	00 52 09.2	
	comp=Z,30nm,1.2s						
SHL	**Shillong**	**16.61**	**353**	*e*P	**P**	**00 52 06.5**	**+1.4**
HYB	**Hyderabad**	**17.18**	**301**	*i* P	**P**	**00 52 20.0**	**+7.8**
HYB				*e*		00 55 16.0	
HYB				*e*S	**S**	**00 55 25.0**	**+4.1**
HYB	**Hyderabad**	**17.18**	**301**	*e*P	**P**	**00 52 20.0**	**+7.8**
HYB				*e*S	**S**	**00 55 16.0**	**-4.9**
DMN	**Daman**	**20.33**	**337**	*e*P	**P**	**00 52 56.4**	**+7.1**
	comp=Z,54nm,0.9s						
KKN	**Kakani**	**20.43**	**337**	*e*P	**P**	**00 52 55.3**	**+5.0**
	comp=Z,58nm,1.1s						
LSA	**Lhasa**	**20.78**	**353**	P	**P**	**00 52 54.2**	**+0.3**
LSA	**Lhasa**	**20.78**	**353**	P	**P**	**00 52 53.1**	**-0.8**
	comp=Z,6.0nm,0.7s						
GKN	**Gorkha**	**20.87**	**336**	*e*P	**P**	**00 52 54.6**	**-0.2**
	comp=Z,125nm,1.1s						
KAD	**Karad**	**20.95**	**295**	*e*P	**P**	**00 53 02.4**	**+6.6**
KAD				AMb	AMB	00 53 04.7	
	comp=Z,30nm,0.6s						
KOLN	**Koldanda**	**21.09**	**334**	*e*P	**P**	**00 52 57.1**	**0.0**
	comp=Z,45nm,0.9s,mb4.8						
GYA	**Guiyang**	**21.15**	**33**	⇑P	**P**	**00 52 59.0**	**+1.3**
GYA				AP		00 53 06.7	
GYA				AMB	AMB		
	comp=Z,10.0nm,0.7s,mb4.2						
CD2	**Chengdu**	**23.65**	**21**	*e*P	**P**	**00 53 24.3**	**+1.8**
CD2				AMB	AMB		
	comp=Z,30nm,1.1s,mb4.6						
CD2				LR	LR		
	comp=E,360nm,8.4s						
CD2				LR	LR		
	comp=Z,230nm,12.0s,MS3.9						
NDI	**New Delhi**	**25.14**	**323**	*e*	**P**	**00 53 44.0**	**+7.1**
ENH	**Enshi**	**25.68**	**32**	*e*P	**P**	**00 53 40.3**	**-1.6**
	comp=Z,8.0nm,0.8s,mb4.3						
XAN	**Xi'an**	**28.48**	**27**	P	**P**	**00 54 07.8**	**+0.3**
XAN				AP	pP	00 54 14.9	-0.2
XAN				AMB	AMB		
	comp=Z,5.0nm,1.0s,mb4.1						
NJ2	**Nanjing**	**32.55**	**42**	*e*P	**P**	**00 54 45.4**	**+1.9**
NJ2				AMB	AMB		
	comp=Z,30nm,0.5s,mb5.5						
SSE	**Sheshan**	**33.56**	**45**	⇑P	**P**	**00 54 54.7**	**+2.4**
SSE				AMB	AMB		
	comp=Z,27nm,0.7s,mb5.3						
SSE				AMB	AMB		
	comp=Z,41nm,3.7s						
WMQ	**Urumqi**	**35.13**	**352**	*e*P	**P**	**00 55 14.5**	**+8.8**
MKAR	**Makanchi Array**	**38.98**	**347**	P	**P**	**00 55 37.1**	**-0.9**
	comp=Z,2.4nm,1.0s,mb3.9,baz=162,slow=7.7,SNR=7.8						
MKAR	**Makanchi Array**	**38.98**	**347**	*i* P	**P**	**00 55 39.3**	**+1.3**
MKAR				pmax	pmax		
	comp=Z,2.0nm,1.0s						
SONM	**Songino Array**	**40.13**	**13**	P	**P**	**00 55 46.6**	**-0.9**
	comp=Z,1.9nm,0.7s,mb4.0,baz=180,slow=14,SNR=2.3						
KURK	**Kurchatov**	**43.50**	**346**	*e*P	**P**	**00 56 15.8**	**+0.7**
ZAL	**Zalesovo**	**45.43**	**352**	P	**P**	**00 56 30.3**	**-0.3**
	comp=Z,1.7nm,0.7s,mb4.0,baz=211,slow=8.6,SNR=8.9						
ZAL				pP	pP	00 56 37.8	-0.7
	comp=Z,3.2nm,0.7s,baz=216,slow=7.6,SNR=9.5						
ZAL	**Zalesovo**	**45.43**	**352**	P	**P**	**00 56 30.3**	**-0.3**
ZAL				pP	pP	00 56 37.8	-0.7
NVS	**Novosibirsk**	**46.53**	**351**	*e*P	**P**	**00 56 38.6**	**-0.6**
NWAO	**Narrogin (SRO)**	**47.20**	**153**	P	**P**	**00 56 44.8**	**-0.2**
	comp=Z,35nm,1.3s,mb5.1,baz=263,slow=4.9,SNR=6.6						
NWAO	**Narrogin (SRO)**	**47.20**	**153**	*e*P	**P**	**00 56 44.9**	**-0.1**
	comp=Z,21nm,1.3s,mb4.9						
BVAR	**Borovoye Array**	**47.89**	**341**	P	**P**	**00 56 49.3**	**-0.8**
	comp=Z,0.6nm,0.4s,mb4.0,baz=135,slow=8.4,SNR=4.9						
BVAR				pP	pP	00 56 56.5	-1.5
	comp=Z,1.1nm,0.5s,baz=129,slow=9.5,SNR=5.0						
ZRNK	**Zerenda**	**48.29**	**340**	*e*P	**P**	**00 56 52.2**	**-0.9**
WRA	**Warramunga Arr**	**49.05**	**126**	P	**P**	**00 56 58.8**	**-0.6**
	comp=Z,0.8nm,0.5s,mb4.0,baz=305,slow=8.9,SNR=4.8						
WRA				pP	pP	00 57 07.4	0.0
	comp=Z,3.6nm,0.9s,baz=304,slow=9.1,SNR=10						
WRAB	**Tennant Creek**	**49.05**	**126**	P	**P**	**00 56 59.0**	**-0.4**
	comp=Z,9.7nm,0.8s,mb4.9						
ASAR	**Alice Springs**	**50.76**	**131**	P	**P**	**00 57 11.3**	**-1.1**
	comp=Z,0.9nm,0.7s,mb3.8,baz=299,slow=6.9,SNR=8.3						
ASAR				pP	pP	00 57 19.6	-0.8
	comp=Z,1.4nm,0.7s,baz=303,slow=6.8,SNR=7.8						
ASAR				LR	LR	01 18 04.1	
	comp=Z,63nm,21.6s,MS3.6,baz=338,slow=35						
BOD	**Bodaibo**	**51.12**	**14**	*e*P	**P**	**00 57 13.1**	**-1.6**
GNI	**Garni**	**53.55**	**314**	*e*P	**P**	**00 57 33.6**	**+0.5**
GNI				pmax	pmax		
	comp=Z,12nm,2.4s						
ARU	**Arti**	**54.81**	**337**	⇓*i*P	**P**	**00 57 41.6**	**-0.6**
ARU				*e*		00 58 42.0	
ARU				*e*		00 59 46.9	
ARU				*e*PPP	PPP	01 01 00.9	+2.3
ARU				*e*S	**S**	**01 05 16.1**	**-3.5**
ARU				pmax	pmax		
	comp=Z,4.0nm,0.8s,mb4.5						
ARU	**Arti**	**54.81**	**337**	*e*P	**P**	**00 57 40.5**	**-1.7**
	comp=Z,3.2nm,0.7s,mb4.5						
ARU				*e*	pP	00 57 48.7	-1.5
YSS	**Yuzh-Sakhalins**	**56.02**	**38**	*e*P	**P**	**00 57 52.3**	**+1.2**
YSS				pmax	pmax		
	comp=Z,8.0nm,1.1s,mb4.7						
KIV	**Kislovodsk**	**56.39**	**317**	⇓*e*P	**P**	**00 57 53.7**	**0.0**
KIV				pmax	pmax		
	comp=Z,8.0nm,1.2s,mb4.6						
KIV	**Kislovodsk**	**56.39**	**317**	*e*P	**P**	**00 57 53.2**	**-0.5**
	comp=Z,6.2nm,1.0s,mb4.6						
KMBO	**Kilima Mbogo**	**57.38**	**263**	LR	LR	01 18 37.2	
	comp=Z,78nm,20.8s,MS3.8,baz=83,slow=32						
CTA	**Charters Tower**	**59.00**	**120**	LR	LR	01 26 05.1	
	comp=Z,90nm,18.4s,MS3.9,baz=50,slow=38						
ANN	**Anapa**	**60.21**	**317**	*ce*P	**P**	**00 58 14.1**	**-6.3**
ANN				pmax	pmax		
	comp=Z,7.0nm,1.3s,mb4.5						
ANN				pmax	pmax		
	comp=Z,50nm,1.1s,mb5.5						
STKA	**Stephens Creek**	**60.99**	**134**	LR	LR	01 25 52.0	
	comp=Z,165nm,20.3s,MS4.2,baz=55,slow=37						
BRTR	**Keskin Array B**	**61.58**	**310**	P	**P**	**00 58 27.9**	**-1.9**
	comp=Z,0.8nm,0.8s,mb3.9,baz=120,slow=6.2,SNR=7.7						
BRTR				pP	pP	00 58 35.0	-3.0
	comp=Z,1.3nm,0.7s,baz=132,slow=8.3,SNR=9.2						
BRTR				PP	PP	01 00 44.9	-2.7
	comp=Z,0.1nm,0.3s,baz=124,slow=5.2,SNR=3.8						
BRTR				LR	LR	01 29 44.7	
	comp=Z,22nm,18.6s,MS3.4,baz=125,slow=40						
OBN	**Obninsk**	**64.36**	**328**	*e*P	**P**	**00 58 47.2**	**-0.7**
OBN				*e*		01 01 09.6	
OBN				pmax	pmax		
	comp=Z,15nm,1.9s,mb4.7						
OBN				MLR	MLR		
	comp=Z,100nm,21.0s,MS4.0						
TIXI	**Tiksi**	**66.19**	**11**	*e*P	**P**	**00 58 58.4**	**-1.0**
TIXI				pmax	pmax		
	comp=Z,39nm,0.8s,mb5.5						
AKASG	**Malin Array Be**	**67.19**	**321**	P	**P**	**00 59 04.4**	**-1.7**
	comp=Z,0.2nm,0.3s,mb3.7,baz=91,slow=4.6,SNR=3.4						
JOF	**Joensuu**	**69.78**	**334**	*ep*	**P**	**00 59 20.1**	**-1.9**
FINES	**FINESS Array B**	**71.66**	**332**	P	**P**	**00 59 32.7**	**-0.7**
	comp=Z,1.2nm,0.5s,mb4.1,baz=101,slow=4.6,SNR=18						
FINES				LR	LR	01 33 59.7	
	comp=Z,33nm,21.2s,MS3.6,baz=350,slow=38						
FINES	**FINESS Array B**	**71.66**	**332**	*i* P	**P**	**00 59 32.7**	**-0.7**
FINES				pmax	pmax		
	comp=Z,1.0nm,0.5s						
KAF	**Kangasniemi**	**71.73**	**333**	*ep*	**P**	**00 59 32.5**	**-1.3**
	baz=104,slow=5.8						
OJC	**Ojcow**	**73.02**	**320**	*e*P	**P**	**00 59 41.1**	**-0.6**
ARCES	**ARCESS Array B**	**74.17**	**340**	P	**P**	**00 59 47.7**	**-0.3**
	comp=Z,1.5nm,0.6s,mb4.1,baz=108,slow=3.8,SNR=8.1						
ARCES				LR	LR	01 35 14.6	
	comp=Z,105nm,20.0s,MS4.1,baz=158,slow=38						
ARCES	**ARCESS Array B**	**74.17**	**340**	P	**P**	**00 59 47.7**	**-0.3**
ARCES				LR	LR	01 35 14.6	
MORC	**Moravsky Berou**	**74.43**	**319**	*e*P	**P**	**00 59 49.8**	**-0.1**
	comp=Z,4.8nm,1.1s,mb4.3						
BRG	**Berggiesshubel**	**76.80**	**320**	*e*P	**P**	**01 00 13.1**	**+10**
BRG				pmax	pmax		
	comp=Z,12nm,1.8s,mb4.5						
BRG	**Berggiesshubel**	**76.80**	**320**	P	**P**	**01 00 13.1**	**+10**
	comp=Z,12nm,1.8s,mb4.5						
GERES	**GERESS Array B**	**76.89**	**318**	P	**P**	**01 00 04.0**	**+0.1**
	comp=Z,1.4nm,0.8s,mb4.0,baz=90,slow=5.3,SNR=16						
GRA1	**Grafenberg Arr**	**78.52**	**319**	*e*P	**P**	**01 00 12.9**	**+0.1**
	comp=Z,5.0nm,1.0s,mb4.4						
GRA1				*e*	pP	01 00 22.6	+1.5
GRF	**Grafenberg Arr**	**78.52**	**319**	*e*P	**P**	**01 00 12.9**	**+0.1**
GRF				*e*	pP	01 00 22.6	+1.5
GRF				pmax	pmax		
	comp=Z,5.0nm,1.0s,mb4.4						
NB2	**NORSAR Subarra**	**78.69**	**331**	P	**P**	**01 00 12.6**	**-0.9**
	comp=Z,1.3nm,0.8s,mb3.9,baz=95,slow=5.3						
NOA	**NORSAR Array B**	**78.69**	**331**	P	**P**	**01 00 13.1**	**-0.4**
	comp=Z,0.9nm,0.6s,mb3.9,baz=95,slow=5.0,SNR=5.6						
NOA				pP	pP	01 00 20.2	-1.6
	comp=Z,2.1nm,0.9s,baz=93,slow=5.7,SNR=5.7						
NOA				LR	LR	01 37 59.2	
	comp=Z,31nm,22.0s,MS3.6,baz=155,slow=38						
NOA	**NORSAR Array B**	**78.69**	**331**	P	**P**	**01 00 13.1**	**-0.4**
NOA				pP	pP	01 00 20.2	-1.5
NOA				LR	LR	01 37 59.2	
MAW	**Mawson**	**79.58**	**192**	P	**P**	**01 00 20.0**	**+1.8**
	comp=Z,3.5nm,0.7s,mb4.4,baz=280,slow=24,SNR=7.6						
MAW	**Mawson**	**79.58**	**192**	*e*P	**P**	**01 00 19.8**	**+1.6**
	comp=Z,3.9nm,0.6s,mb4.5						
LPG	**La Plagne**	**81.73**	**315**	*e*P	**P**	**01 00 30.4**	**+0.5**
	comp=Z,11nm,0.9s,mb4.5						
LPL	**La Plagne**	**81.73**	**315**	*e*P	**P**	**01 00 30.5**	**+0.5**
	comp=Z,7.0nm,0.7s,mb4.4						
MBDF	**Montbardon**	**81.76**	**314**	*e*P	**P**	**01 00 31.0**	**+0.8**
HAU	**Haudompre**	**81.81**	**317**	*e*P	**P**	**01 00 30.1**	**-0.2**
	comp=Z,5.0nm,0.7s,mb4.2						
FRF	**La Foret Royal**	**81.95**	**313**	*e*P	**P**	**01 00 32.2**	**+1.0**
SMRF	**Simiane la Rot**	**82.68**	**313**	*e*P	**P**	**01 00 34.9**	**-0.1**
VIVF	**Saint-Julien-l**	**83.24**	**314**	*e*P	**P**	**01 00 38.1**	**+0.3**
	comp=Z,20nm,1.3s,mb4.7						
LOR	**Lormes**	**83.55**	**317**	*e*P	**P**	**01 00 39.2**	**-0.2**
	comp=Z,4.2nm,0.7s,mb4.4						
SMF	**Signal de Mont**	**83.63**	**316**	*e*P	**P**	**01 00 39.7**	**-0.1**
AVF	**Avril sur Loir**	**83.95**	**316**	*e*P	**P**	**01 00 41.9**	**+0.5**
BGF	**Bois d'Agland**	**84.32**	**316**	*e*P	**P**	**01 00 44.1**	**+0.8**
RJF	**Les Rejaudoux**	**85.41**	**315**	*e*P	**P**	**01 00 49.2**	**+0.5**
LDF	**La Druitiere**	**86.03**	**318**	*e*P	**P**	**01 00 52.0**	**+0.2**
FLN	**La Foliniere**	**86.24**	**319**	*e*P	**P**	**01 00 52.8**	**0.0**
	comp=Z,13nm,0.9s,mb4.8						
URZ	**Urewera**	**90.16**	**129**	P	**P**	**01 01 11.8**	**0.0**
	comp=Z,12nm,0.9s,mb5.2,baz=215,slow=5.9,SNR=3.4						
IMA	**Indian Mountai**	**90.67**	**22**	P	**P**	**01 01 15.4**	**+1.9**
EVO	**Evora**	**93.70**	**310**	*e*P	**P**	**01 01 26.9**	**-1.2**
ILAR	**Eielson Array**	**93.79**	**22**	P	**P**	**01 01 28.0**	**+0.1**
	comp=Z,0.4nm,0.8s,mb3.9,baz=300,slow=4.3,SNR=5.8						
ILAR				pP	pP	01 01 36.2	0.0
	comp=Z,0.9nm,1.0s,baz=280,slow=5.4,SNR=4.8						
NVAR	**Mina Array Bea**	**124.06**	**30**	PKP	PKPdf	01 07 11.8	-1.8

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**10.62**	**199**	P	P	01 22 57.4	+0.4
	2.2nm,0.3s,baz=21,slow=9.3,SNR=40						
FITZ				S	S	01 24 51.4	-2.0
	1.2nm,0.3s,baz=75,slow=12,SNR=3.7						
WRA	**Warramunga Arr**	**12.85**	**158**	P	P	01 23 23.8	-1.9
	3.5nm,0.3s,baz=334,slow=14,SNR=37						
WRA				S	S	01 25 42.4	-2.9
	0.8nm,0.3s,baz=339,slow=23,SNR=4.9						
ASAR	**Alice Springs**	**16.20**	**164**	P	P	01 24 08.0	+0.3
	0.9nm,0.3s,baz=346,slow=9.6,SNR=23						
ASAR				S	S	01 27 06.0	+4.6
	0.2nm,0.3s,baz=350,slow=27,SNR=3.7						
MKAR	**Makanchi Array**	**68.66**	**327**	P	P	01 31 12.8	-2.1
	0.5nm,0.5s,baz=118,slow=7.1,SNR=6.4						

IDC 02 01:40:31.1±9.1, 4.39S×147.27E, mb3.9/2, mb1 4.1/3, mb1mx3.8/12, ML3.1/1, Error ellipse: s-maj=300.0km s-min=31.7km az=101.0, Bismarck Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**19.94**	**218**	P	P	01 45 04.3	-3.3
	0.1nm,0.3s,baz=40,slow=11,SNR=9.7						
ASAR	**Alice Springs**	**23.10**	**213**	P	P	01 45 38.9	-0.9
	1.0nm,0.6s,baz=40,slow=7.3,SNR=11						
SONM	**Songino Array**	**63.15**	**330**	P	P	01 51 01.1	-1.9
	3.1nm,0.7s,baz=135,slow=12,SNR=3.7						

IGQ ***02*** *01:41:07.9, 1.02S×78.31W, h13km±2km, mb4.1, Error ellipse: s-maj=1.2km s-min=0.7km az=6.4*

ISC 02 01:41:08.3±0.5, 1.03S±0.03×78.29W±0.05, h8km±8km, n25, σ0§31/33, 12C-6D, Ecuador

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TAMB	**Tambo**	**0.34**	**347**	⇑P	**Pg**	**01 41 15.4**	**+0.2**
VC1	**Cotopaxi 1**	**0.40**	**344**	⇑P	**Pg**	**01 41 16.6**	**+0.2**
RUN2	**Runtun**	**0.41**	**197**	⇑P	**Pg**	**01 41 16.6**	**-0.1**
JUIV	**Juive**	**0.43**	**204**	⇑P	**Pg**	**01 41 17.0**	**0.0**
JUIV				S	**Sg**	**01 41 22.9**	**0.0**
NAS1	**Nasa**	**0.43**	**334**	⇑P	**Pg**	**01 41 17.4**	**+0.3**
ULBA	**Ulba**	**0.44**	**196**	⇑P	**Pg**	**01 41 17.0**	**-0.1**
RETU	**Refugio**	**0.45**	**200**	⇑P	**Pg**	**01 41 17.6**	**+0.2**
RETU				S	**Sg**	**01 41 23.6**	**+0.2**
CUSU	**Cusua**	**0.46**	**205**	⇑P	**Pg**	**01 41 17.5**	**0.0**
CUSU				S	**Sg**	**01 41 23.5**	**-0.1**
PATA	**Patacocha**	**0.49**	**197**	⇓P	**Pg**	**01 41 18.3**	**+0.1**
ARRY	**Arrayan**	**0.50**	**199**	⇑P	**Pg**	**01 41 18.1**	**-0.4**
IGUA	**Igualata**	**0.58**	**217**	⇑P	**Pg**	**01 41 20.1**	**+0.2**
ANTI	**Antisana**	**0.59**	**13**	⇓P	**Pg**	**01 41 19.4**	**-0.7**
JUA2	**San Juan 2**	**0.87**	**339**	⇓P	**Pb**	**01 41 25.3**	**+0.1**
JUA2				S	**Sb**	**01 41 37.4**	**+0.6**
GGP	**Refugio Guagua**	**0.90**	**340**	⇓P	**Pb**	**01 41 25.8**	**+0.1**
CGGP	**Crater GGP**	**0.90**	**340**	⇓P	**Pb**	**01 41 26.0**	**+0.2**
PINO	**Pino**	**0.92**	**340**	P	**Pb**	**01 41 25.7**	**-0.4**
YANA	**Yana**	**0.94**	**343**	P	**Pb**	**01 41 26.1**	**-0.5**
YANA				S	**Sb**	**01 41 38.3**	**-0.7**
EPALM	**Reventador vol**	**0.98**	**35**	P	**Pb**	**01 41 27.0**	**-0.2**
EPALM				S	**Sb**	**01 41 40.1**	**0.0**
ELAGU	**Cayambe Volc**	**1.04**	**17**	P	**Pb**	**01 41 27.6**	**-0.5**
CAYR	**Refugio Cayamb**	**1.07**	**15**	⇑P	**Pb**	**01 41 28.8**	**+0.1**
CAYA	**Cayambe**	**1.13**	**15**	⇑P	**Pb**	**01 41 29.9**	**+0.2**
CONE	**Cono NE Rev Vo**	**1.15**	**34**	P	**Pb**	**01 41 30.2**	**+0.1**
CONE				S	**Sb**	**01 41 45.6**	**+0.7**
AZU1	**Azuela**	**1.17**	**37**	⇓P	**Pb**	**01 41 30.4**	**0.0**
AZU1				S	**Sb**	**01 41 45.5**	**0.0**
COTA	**Cotacachi**	**1.35**	**358**	P	**Pb**	**01 41 33.5**	**+0.1**
CUPA	**Cupa**	**1.84**	**319**	P	**Pn**	**01 41 48.5**	**+8.0**

NEIC ***02*** *01:51:24.9±1.2, 9.15N×93.77E, Error ellipse: s-maj=38.2km s-min=18.7km az=119.0*
IDC ***02*** *01:51:24.9±1.6, 9.11N×93.64E, h26km±6km, mb3.5/4, mb1 3.7/5, mb1mx3.4/18, ML4.1/1, Error ellipse: s-maj=67.2km s-min=31.7km az=92.0*

ISC 02 01:51:22.7±7.6, 9.1N±0.9×93.8E±0.7, h27km, n7, σ0§06/5, mb3.6/4, Nicobar Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**10.57**	**28**	Pn	**P**	**01 53 55.7**	**0.0**
	0.4nm,0.3s,baz=211,slow=16,SNR=3.8						
MKAR	**Makanchi Array**	**38.82**	**347**	P	**P**	**01 58 47.1**	**0.0**
	0.4nm,0.6s,mb3.3,baz=158,slow=7.8,SNR=4.1						
ZAL	**Zalesovo**	**45.29**	**353**	P	**P**	**01 59 39.9**	**0.0**
	0.8nm,0.4s,mb3.9,baz=192,slow=9.4,SNR=3.9						
FINES	**FINESS Array B**	**71.46**	**332**	P	**P**	**02 02 42.6**	**-0.1**
	1.4nm,1.1s,mb3.8,baz=104,slow=7.9,SNR=4.5						
FINES				pP	pP	02 02 50.6	-0.6
	0.7nm,0.7s,baz=90,slow=5.7,SNR=2.3						
GERES	**GERESS Array B**	**76.67**	**318**	P	**P**	**02 03 13.1**	**+0.1**
	0.2nm,0.5s,mb3.3,baz=90,slow=5.9,SNR=3.2						
GERES				pP	pP	02 03 22.2	+0.5
	0.7nm,0.7s,baz=90,slow=5.3,SNR=5.9						
PLCA	**Paso Flores**	**145.56**	**201**	PKPbc	PKPbc	02 11 00.9	+1.5
	1.2nm,0.7s,baz=65,slow=4.3,SNR=3.5						
PLCA				pPKPbc		02 11 08.6	
	1.9nm,0.8s,baz=1.6,slow=23,SNR=2.2						
PLCA	**Paso Flores**	**145.56**	**201**	*e*PKPbc	PKPbc	02 11 01.4	+2.0
PLCA				*e*pPKPbc		02 11 08.6	

SKHL 02 02:01:24.1±0.1, 50.96N×134.81E, h8km±1km, mb3.6/2, Southeastern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GRNR	**Gornyy**	**1.04**	**100**	*e*Pg	Pg	02 01 42.6	-2.3
GRNR				pPg		02 01 45.2	
GRNR				*e*Sg	Sg	02 01 56.0	-2.8
EKMR	**Ekimchan**	**2.41**	**332**	*e*Pn	Pn	02 02 04.5	+0.1
EKMR				*e*Pg	Pg	02 02 07.2	-4.9
EKMR				AMB	AMB	02 02 09.5	
	8.0nm,0.4s						
EKMR				pPg		02 02 11.0	
EKMR				*e*Sg	Sg	02 02 38.8	-5.4
EKMR				A		02 02 39.5	
	21nm,0.5s						
EKMR				A		02 02 39.5	
	23nm,0.5s						
KLR	**Kul'dur**	**2.62**	**230**	*e*Pg	Pg	02 02 11.2	-5.3
KLR				*e*Sg	Sg	02 02 45.7	-5.8
NKL	**Nikolayevsk**	**4.24**	**57**	*e*Sg	Sg	02 03 35.0	-10
YASR	**Yasnyy**	**4.81**	**302**	*e*Pn	Pn	02 02 35.1	-3.0
YASR				pPn		02 02 38.4	
YASR				*e*Sg	Sg	02 03 51.9	-12
YASR				A		02 04 00.1	
	6.0nm,0.5s						
YASR				A		02 04 00.1	
	3.0nm,0.5s						
BMKR	**Bomnak**	**5.21**	**318**	*e*Pg	Pg	02 02 58.0	-10
BMKR				AMB	AMB	02 03 03.0	
	4.0nm,0.5s						
BMKR				*e*Sg	Sg	02 04 06.5	-11
BMKR				A		02 04 07.2	
	12nm,0.5s						
ZEA	**Zeya**	**5.40**	**304**	*e*Sg	Sg	02 04 13.0	-11
KROS	**Kirovskiy**	**5.90**	**309**	*e*Sg	Sg	02 04 26.2	-14
KROS				A		02 04 33.1	
	4.0nm,0.5s						

NEIC ***02*** *02:33:45.4±0.4, 5.39S×102.52E, mb4.5/3, Error ellipse: s-maj=12.2km s-min=8.2km az=59.0*
IDC ***02*** *02:33:45.4±1.5, 5.44S×102.46E, h39km±6km, mb3.9/9, mb1 4.1/9, mb1mx3.8/17, MS3.3/2, Ms1 3.3/2, ms1mx2.9/17, Error ellipse: s-maj=72.4km s-min=13.2km az=51.0*

ISC 02 02:33:43.8±4.7, 5.5S±0.2×102.5E±0.2, h44km±49km, n15, σ0§58/14, mb4.1/11, MS3.3/2, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
COCO	**West Island**	**8.70**	**219**	*e*P	**P**	**02 35 49.8**	**-0.1**
CM31	**Chiang Mai Arr**	**24.00**	**352**	*e*P	**P**	**02 38 55.9**	**+0.3**
	5.5nm,0.4s,mb4.3						
CMAR	**Chiang Mai Arr**	**24.00**	**352**	P	**P**	**02 38 56.2**	**+0.6**
	0.8nm,0.4s,mb3.5,baz=180,slow=9.0,SNR=3.7						
CMAR				pP		02 39 08.0	
	1.2nm,0.4s,baz=176,slow=9.4,SNR=2.4						
FITZ	**Fitzroy Crossi**	**25.90**	**121**	P	**P**	**02 39 13.2**	**-0.5**
	6.4nm,0.8s,mb4.2,baz=285,slow=20,SNR=3.7						
WRA	**Warramunga Arr**	**34.19**	**118**	P	**P**	**02 40 26.4**	**-0.9**
	2.1nm,0.8s,mb4.1,baz=294,slow=9.9,SNR=7.5						
WRAB	**Tennant Creek**	**34.19**	**118**	*e*P	**P**	**02 40 27.5**	**+0.2**
	2.6nm,0.4s,mb4.5						
ASAR	**Alice Springs**	**35.28**	**124**	P	**P**	**02 40 37.0**	**+0.3**
	1.8nm,0.5s,mb4.3,baz=304,slow=8.3,SNR=22						
ASAR				pP	pP	02 40 46.5	-2.0
	0.9nm,0.4s,baz=297,slow=7.8,SNR=7.3						
ASAR				LR	LR	02 52 54.9	
	comp=Z,77nm,21.1s,MS3.4,baz=345,slow=33						
STKA	**Stephens Creek**	**45.05**	**131**	*e*P	**P**	**02 41 58.3**	**+1.0**
	6.7nm,0.5s,mb4.7						
STKA	**Stephens Creek**	**45.05**	**131**	P	**P**	**02 41 58.6**	**+1.3**
	9.3nm,0.6s,mb4.8,baz=311,slow=7.5,SNR=28						
MKAR	**Makanchi Array**	**55.00**	**343**	P	**P**	**02 43 12.7**	**-0.4**
	0.4nm,0.4s,mb3.6,baz=141,slow=7.8,SNR=12						
MKAR				pP	pP	02 43 23.8	-1.8
	2.1nm,0.5s,baz=148,slow=7.6,SNR=13						
MKAR				LR	LR	03 09 46.3	
	comp=Z,20nm,20.3s,MS3.2,baz=20,slow=39						
MKAR	**Makanchi Array**	**55.00**	**343**	P	**P**	**02 43 12.7**	**-0.4**
MKAR				pP	pP	02 43 23.8	-1.8
MKAR				LR	LR	03 09 46.3	
ZAL	**Zalesovo**	**60.99**	**348**	P	**P**	**02 43 54.8**	**-0.2**
	1.0nm,0.3s,mb4.4,baz=169,slow=3.9,SNR=3.1						
BVAR	**Borovoye Array**	**64.25**	**339**	P	**P**	**02 44 15.7**	**-0.9**
	0.3nm,0.5s,mb3.6,baz=170,slow=9.0,SNR=3.8						
BRTR	**Keskin Array B**	**77.44**	**313**	P	**P**	**02 45 36.9**	**+0.4**
	1.7nm,1.2s,mb3.9,baz=135,slow=5.2,SNR=4.8						
TXAR	**Lajitas Array**	**145.74**	**43**	PKPbc	PKPbc	02 53 20.8	+1.8
	1.1nm,0.5s,baz=296,slow=0.8,SNR=9.7						
TXAR				pPKPbc		02 53 33.2	
	1.0nm,0.4s,baz=267,slow=1.0,SNR=6.4						

IDC ***02*** *02:34:55.7±1.6, 18.53S×69.12W, h129km±19km, mb3.2/3, mb1 3.3/5, mb1mx3.2/16, Error ellipse: s-maj=34.6km s-min=15.3km az=97.0*
NEIC ***02*** *02:34:56.3±1.2, 18.45S×69.11W, h132km±13km, Error ellipse: s-maj=26.1km s-min=15.0km az=97.0*

ISC 02 02:34:54.9±1.1, 18.49S±0.06×69.1W±0.2, h132km±11km, n7, σ0§85/11, mb3.1/2, Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LPAZ	**La Paz**	**2.37**	**23**	P	**P**	**02 35 35.2**	**+1.0**
	2.1nm,0.3s,baz=188,slow=9.4,SNR=62						
LPAZ				S	**S**	**02 36 03.1**	**-0.9**
	0.5nm,0.3s,baz=343,slow=20,SNR=7.4						
LPAZ	**La Paz**	**2.37**	**23**	*e*Pn	**S**	**02 35 35.3**	**+1.1**
LPAZ				S	**S**	**02 36 03.1**	**-0.9**
LVC	**Limon Verde**	**4.11**	**178**	P	**P**	**02 35 58.3**	**+1.2**
	0.8nm,0.3s,baz=2.4,slow=9.6,SNR=5.6						
LVC				S	**S**	**02 36 43.8**	**-1.0**
	1.9nm,0.3s,baz=121,slow=22,SNR=9.6						
LVC	**Limon Verde**	**4.11**	**178**	*e*P	**P**	**02 35 58.3**	**+1.2**
LVC				S	**S**	**02 36 43.8**	**-1.0**
BDFB	**Brasilia**	**20.33**	**85**	P	**P**	**02 39 22.8**	**+0.2**
	1.6nm,0.4s,baz=266,slow=7.5,SNR=6.8						
PDAR	**Pinedale Array**	**71.44**	**330**	P	**P**	**02 46 02.9**	**+0.2**
	0.2nm,0.7s,mb2.9,baz=135,slow=5.1,SNR=2.3						
YKA	**Yellowknife Ar**	**88.31**	**341**	P	**P**	**02 47 31.5**	**-0.7**
	0.2nm,0.5s,mb3.2,baz=134,slow=4.9,SNR=12						

CASC 02 02:49:21.3±2.2, 11.09N×87.05W, h45km±148km, MD3.9, 7C-4D, Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRUN	**El Crucero**	**1.15**	**40**	*e*P	P	02 49 40.9	-0.3
COPN	**Copaltepe**	**1.17**	**22**	⇓*i*P	P	02 49 41.8	+0.3
COPN				*e*S	S	02 49 55.9	-0.7
TICN	**Ticuantepe**	**1.23**	**40**	*e*P	P	02 49 42.2	-0.1
APON	**Apoyo**	**1.27**	**49**	*e*P	P	02 49 42.5	-0.4
XAVN	**Gruta Xavier**	**1.27**	**34**	⇓*e*P	P	02 49 42.8	-0.1
PYN	**Poneloya**	**1.28**	**1**	⇑*e*P	P	02 49 43.7	+0.6
MGAN	**Managua**	**1.31**	**37**	⇑*e*P	P	02 49 43.4	-0.3
MGAN				*e*S	S	02 50 00.2	0.0
LEON	**Leon**	**1.33**	**7**	⇑*i*P	P	02 49 44.0	+0.2
WILN	**Americas 2**	**1.36**	**38**	*e*P	P	02 49 44.7	+0.4
WILN				*e*S	S	02 50 01.5	+0.1
COFN	**Cofrada**	**1.40**	**41**	*e*P	P	02 49 44.3	-0.5
MOMJ	**Momotombo**	**1.40**	**21**	⇑*e*P	P	02 49 44.8	-0.1
MOMJ				*e*S	S	02 50 41.8	-0.6
CNGN	**Cerro Negro**	**1.44**	**14**	⇑*e*P	P	02 49 45.4	-0.1
CONN	**Concepcion**	**1.47**	**71**	*e*P	P	02 49 44.8	-1.1
TEL3	**Telica 3**	**1.49**	**8**	⇑*e*P	P	02 49 46.2	+0.1
TELN	**Telica**	**1.52**	**8**	*e*P	P	02 49 46.8	+0.3
CRIN	**San Cristobal**	**1.60**	**360**	*e*P	P	02 49 48.1	+0.4
VCR	**Vista de Mar**	**1.69**	**124**	⇓*e*P	P	02 49 47.3	-1.7
PYTN	**Playitas**	**1.73**	**34**	*e*P	P	02 49 49.0	-0.6
PYTN				*e*S	S	02 50 10.1	-0.5
JCR	**Jicaral**	**2.27**	**123**	*e*P	P	02 49 55.4	-1.8
CNCH	**Conchagua**	**2.30**	**341**	*e*P	P	02 49 57.1	-0.6
CNCH				*e*S	S	02 50 24.6	-0.3
BLLM	**Bellamira**	**2.61**	**334**	*e*P	P	02 50 01.7	-0.3
BLLM				*e*S	S	02 50 32.2	-0.5
CGA2	**Cerro Gallo 2**	**2.76**	**113**	*e*P	P	02 50 03.7	-0.4
CGA2				*e*S	S	02 50 34.8	-1.6
CAHU	**Cacacuatique**	**2.90**	**337**	*e*P	P	02 50 06.3	+0.2
PRS1	**Puriscal**	**2.91**	**112**	*e*P	P	02 50 05.7	-0.6
SNVI	**San Vicente**	**3.06**	**325**	*e*P	P	02 50 07.6	-0.8
SNVI				*e*S	S	02 50 41.5	-2.5
LAJ	**Bijagual**	**3.13**	**113**	⇓*e*P	P	02 50 05.4	-4.0
LCBS	**La Ceiba**	**3.17**	**324**	*e*P	P	02 50 09.0	-0.9
LCBS				*e*S	S	02 50 43.9	-3.0
LFRS	**El Faro**	**3.19**	**322**	*e*P	P	02 50 09.7	-0.6
LFRS				*e*S	S	02 50 44.1	-3.4
LCR2	**La Lucha 2**	**3.28**	**114**	*e*P	P	02 50 11.3	-0.3
LFU	**La Fuente**	**3.32**	**323**	*e*S	S	02 50 48.0	-2.7
ICR	**Volcan Irazu**	**3.35**	**109**	*e*P	P	02 50 14.2	+1.6
URSC	**Urasca**	**3.45**	**111**	*e*P	P	02 50 15.7	+1.8
BUS	**Buena Vista**	**3.58**	**115**	⇑*e*P	P	02 50 16.0	+0.3
BUS				*e*S	S	02 50 56.1	-1.1
SBLS	**San Blas**	**3.71**	**318**	*e*P	P	02 50 17.4	-0.3
SBLS				*e*S	S	02 50 56.9	-3.8
RTR	**El Retiro**	**3.77**	**318**	*e*S	S	02 50 59.4	-2.7
RBDL	**Robledal**	**3.96**	**320**	*e*P	P	02 50 20.4	-0.6

CASC 02 03:13:51.7±1.9, 12.02N×88.09W, h19km±6km, MD4.0, 5C-7D, Off coast of central America

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PYN	**Poneloya**	**1.10**	**71**	⇑*e*P	Pb	03 14 11.8	-0.2
PYN				*e*S	Sb	03 14 27.4	+1.5
CRIN	**San Cristobal**	**1.22**	**56**	*e*P	Pb	03 14 13.9	0.0
CRIN				*e*S	Sb	03 14 31.5	+2.2
LEON	**Leon**	**1.23**	**71**	⇑*e*P	Pn	03 14 13.2	-1.0
LEON				*e*S	Sb	03 14 30.1	+0.4
CNCH	**Conchagua**	**1.27**	**11**	*e*P	Pn	03 14 13.7	-0.9
CNCH				*e*S	Sb	03 14 30.3	-0.5
TEL3	**Telica 3**	**1.33**	**66**	*e*P	Pn	03 14 14.6	-0.9
VSM	**San Miguel**	**1.41**	**353**	*e*P	Pn	03 14 16.4	-0.2
BLLM	**Bellamira**	**1.42**	**354**	*e*P	Pn	03 14 16.1	-0.6
BLLM				*e*S	Sb	03 14 36.3	+1.3
CNGN	**Cerro Negro**	**1.44**	**71**	*e*P	Pn	03 14 15.7	-1.4
COPN	**Copaltepe**	**1.48**	**84**	⇓*e*P	Pn	03 14 16.8	-0.8
COPN				*e*S	Sn	03 14 38.0	+1.6
MOMJ	**Momotombo**	**1.56**	**76**	*e*P	Pn	03 14 18.1	-0.7
XAVN	**Gruta Xavier**	**1.73**	**86**	⇓*i*P	Pn	03 14 20.6	-0.7
XAVN				*e*S	Sn	03 14 42.5	-0.4
SNVI	**San Vicente**	**1.74**	**335**	*e*P	Pn	03 14 21.5	+0.1
SNVI				*e*S	Sn	03 14 43.1	-0.1
CAHU	**Cacacuatique**	**1.74**	**356**	*e*P	Pn	03 14 21.2	-0.2
CAHU				*e*S	Sn	03 14 44.9	+1.7
MGAN	**Managua**	**1.81**	**86**	*e*P	Pn	03 14 21.4	-0.9
MGAN				*e*S	Sn	03 14 43.1	-1.8
TICN	**Ticuantepe**	**1.82**	**89**	⇓*e*P	Pn	03 14 21.8	-0.7
TICN				*e*S	Sn	03 14 45.3	+0.1
LCBS	**La Ceiba**	**1.84**	**332**	⇑*e*P	Pn	03 14 21.7	-1.1
LCBS				*e*S	Sn	03 14 47.8	+2.1
LFRS	**El Faro**	**1.85**	**329**	⇓*e*P	Pn	03 14 21.9	-1.0
LFRS				*e*S	Sn	03 14 46.4	+0.4
WILN	**Americas 2**	**1.87**	**86**	*e*P	Pn	03 14 22.1	-1.1
WILN				*e*S	Sn	03 14 45.7	-0.7
LBRS	**Las Brisas**	**1.94**	**332**	⇑*e*P	Pn	03 14 24.1	-0.1
COFN	**Cofrada**	**1.94**	**86**	⇓*e*P	Pn	03 14 23.0	-1.3
LFU	**La Fuente**	**1.98**	**330**	*e*P	Pn	03 14 24.3	-0.6
PYTN	**Playitas**	**2.05**	**75**	*e*P	Pn	03 14 25.4	-0.5
PYTN				*e*S	Sn	03 14 51.6	+0.5
BOQS	**Boqueron**	**2.06**	**326**	*e*P	Pn	03 14 25.7	-0.3
BOQS				*e*S	Sn	03 14 55.1	+3.8
SBLS	**San Blas**	**2.34**	**321**	⇓*e*P	Pn	03 14 29.3	-0.7
SBLS				*e*S	Sn	03 14 59.8	+1.3
SNJE	**San Jose**	**2.35**	**321**	*e*P	Pn	03 14 29.6	-0.6
RTR	**El Retiro**	**2.40**	**321**	*e*P	Pn	03 14 30.0	-0.8
CONN	**Concepcion**	**2.46**	**100**	*e*P	Pn	03 14 31.1	-0.5
CONN				*e*S	Sn	03 15 01.0	-0.4
RBDL	**Robledal**	**2.59**	**323**	*e*P	Pn	03 14 33.1	-0.5
RBDL				*e*S	Sn	03 15 02.6	-2.3
CUSS	**Cusmapa**	**2.61**	**316**	*e*P	Pn	03 14 32.0	-1.7
JCR	**Jicaral**	**3.64**	**126**	*e*P	Pn	03 14 46.5	-1.9
PRS1	**Puriscal**	**4.23**	**118**	*e*P	Pn	03 14 57.0	+0.2
LAJ	**Bijagual**	**4.45**	**118**	*e*P	Pn	03 14 54.9	-5.0
LCR2	**La Lucha 2**	**4.61**	**119**	*e*P	Pn	03 15 01.6	-0.6
URSC	**Urasca**	**4.76**	**117**	⇓*e*P	Pn	03 15 04.3	0.0
BUS	**Buena Vista**	**4.91**	**120**	⇑*i*P	Pn	03 15 05.7	-0.8
BUS				*e*S	Sn	03 16 00.1	-3.5

DHMR 02 03:35:31.4±1.3, 11.69N×43.58E, h9km±21km, ML3.8, 1C-1D, Ethiopia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TRBA	**At Turbah**	**1.60**	**19**	*i*S	Sb	03 36 23.2	+2.3
ADEN	**Aden**	**1.75**	**52**	⇑*i*P	Pn	03 36 01.8	-0.4
ADEN				*i*S	Sn	03 36 27.1	+2.4
UDYN	**Al 'Udayn**	**2.30**	**10**	*i*P	Pn	03 36 11.7	+1.7
UDYN				*i*S	Sn	03 36 43.0	+4.2
UDYN				AML	AML	03 36 46.5	
	comp=N,846nm,0.4s						
LBOS		**2.71**	**37**	*i*P	Pn	03 36 19.1	+3.1
LBOS				*i*S	Sn	03 36 54.6	+5.3
HAJJ	**Hajjah**	**3.98**	**0**	⇓*i*P	Pn	03 36 35.0	+0.9

CASC ***02*** *03:36:12.4±2.4, 10.24N×86.30W, MD4.1, ML4.6*
IDC ***02*** *03:36:16.7±4.2, 12.30N×84.67W, mb3.5/4, mb1 4.0/4, mb1mx3.6/19, MS2.7/2, Ms1 2.6/2, ms1mx2.5/21, Error ellipse: s-maj=133.0km s-min=63.7km az=32.0*

ISC 02 03:36:11.9±0.9, 10.18N±0.06×86.42W±0.06, h10km, n28, σ1§23/29, mb3.4/4, 3C-3D, Off coast of Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VCR	**Vista de Mar**	**0.78**	**94**	⇑*e*P	**Pb**	**03 36 27.0**	**0.0**
VCR				*e*S	**Sb**	**03 36 37.4**	**+0.1**
CRZC	**La Cruz**	**1.11**	**46**	⇑*e*P	**Pb**	**03 36 31.2**	**-1.5**
CRZC				*e*S	**Sb**	**03 36 47.8**	**+0.7**
JCR	**Jicaral**	**1.33**	**104**	*e*P	**Pb**	**03 36 35.6**	**-0.9**
CONN	**Concepcion**	**1.58**	**29**	⇓*e*P	**Pn**	**03 36 38.4**	**-1.7**
FORC	**Fortuna**	**1.74**	**80**	*e*P	**Pn**	**03 36 41.8**	**-0.7**
APON	**Apoyo**	**1.76**	**11**	*e*P	**Pn**	**03 36 44.0**	**+1.3**
CRUN	**El Crucero**	**1.79**	**4**	*e*P	**Pn**	**03 36 45.1**	**+1.9**
CGA2	**Cerro Gallo 2**	**1.93**	**95**	*e*P	**Pn**	**03 36 44.8**	**-0.3**
MGAN	**Managua**	**1.96**	**5**	*e*P	**Pn**	**03 36 46.4**	**+0.8**
WILN	**Americas 2**	**1.98**	**6**	⇓*e*P	**Pn**	**03 36 46.6**	**+0.7**
PRS1	**Puriscal**	**2.08**	**95**	*e*P	**Pn**	**03 36 46.6**	**-0.7**
VPS2	**Volcan Poas 2**	**2.15**	**90**	*e*P	**Pn**	**03 36 48.3**	**+0.1**
MOMJ	**Momotombo**	**2.22**	**357**	*e*P	**Pn**	**03 36 50.4**	**+1.1**
LEON	**Leon**	**2.27**	**348**	⇓*e*P	**Pn**	**03 36 47.5**	**-2.5**
LAJ	**Bijagual**	**2.28**	**98**	*e*P	**Pn**	**03 36 44.1**	**-6.1**
SJS	**Escuela Geolog**	**2.34**	**96**	*e*P	**Pn**	**03 36 52.1**	**+1.1**
SJS				*e*S	**Sn**	**03 37 23.2**	**+3.1**
PYTN	**Playitas**	**2.37**	**9**	⇑*e*P	**Pn**	**03 36 49.3**	**-2.1**
LCR2	**La Lucha 2**	**2.42**	**100**	*e*P	**Pn**	**03 36 51.9**	**-0.3**
ICR	**Volcan Irazu**	**2.55**	**94**	*e*P	**Pn**	**03 36 54.8**	**+0.7**
URSC	**Urasca**	**2.62**	**97**	*e*P	**Pn**	**03 36 55.9**	**+0.9**
TRTC	**Tortuguero**	**2.69**	**81**	*e*P	**Pn**	**03 36 54.5**	**-1.5**
BUS	**Buena Vista**	**2.69**	**103**	*e*P	**Pn**	**03 36 56.3**	**+0.3**
ROSC	**El Rosal**	**13.10**	**113**	LR	LR	03 44 39.9	
	comp=Z,72nm,19.0s,baz=132,slow=40						

az=62.0
NEIC ***02*** *04:19:27.2±0.4,17.86N×105.99W,h10km,mb4.9/44, MS4.6/5,MD4.9(MEX),Error ellipse: s-maj=7.8km s-min=4.6km az=210.0*
HRVD ***02*** *04:19:27.2±0.2,18.02N×106.07W,h12km,MW5.3/63, Centroid moment Tensor Solution. LP body waves: s57,c108;Mantle waves: s63,c132; Half duration: 1ŝ1 Moment tensor: Scale 10^{17}Nm; M_{rr}-0.36±.02; $M_{\theta\theta}$0.16±.02; $M_{\phi\phi}$0.20±.02; $M_{r\theta}$-0.28±.04; $M_{\theta\phi}$-1.10±.01; $M_{\phi r}$0.11±.05; Best double couple: $M_0$1.14×10^{17} NP1:ϕ_s1°, δ74°,λ-3°. NP2:ϕ_s91°,δ87°,λ-164°. Principal axes: T 1.32, Plg9°, Azm225°; N -.38, Plg74°, Azm100°; P -.95, Plg13°, Azm317°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
BJI ***02*** *04:19:27.2, 17.90N×106.00W,h10km,mb5.3,Ms4.9, Msz4.7*
MEX ***02*** *04:19:30.1±1.0,18.09N×105.93W,h9km±158km,MD4.8*
ISC 02 04:19:25.6±0.4,17.85N±0.04×106.03W±0.03,h10km, n163,σ1ŝ13/145,mb4.6/49,MS4.7/27,2C,Off coast of Jalisco

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
CJM	**Chamela**	**1.89**	**30**	*i* P			**Pn**	**04 19 55.1**	**-3.1**
CJM				*i* S			**Sn**	**04 20 15.7**	**-6.6**
COLM	**Colima**	**2.58**	**59**	*i* P			**Pn**	**04 20 06.7**	**-1.6**
COLM				*i* S			**Sn**	**04 20 33.8**	**-6.2**
SFJM	**Santa Fe**	**3.85**	**47**	*i* P			**Pn**	**04 20 25.6**	**-0.7**
ZIIG	**Zihuatanejo**	**4.36**	**92**	*e*P			**Pn**	**04 20 31.6**	**-1.8**
MOIG	**Morelia**	**4.93**	**68**	*i* P			**Pn**	**04 20 41.2**	**-0.4**
MOIG				*i* S			**Sn**	**04 21 34.8**	**-4.6**
ZAIG	**Zacatecas**	**5.87**	**33**	*i* P			**Pn**	**04 20 56.1**	**+1.2**
UNM	**Universidad Na**	**6.66**	**76**	*e*P			**Pn**	**04 21 06.5**	**+0.5**
YAIG	**Yautepec**	**6.69**	**80**	⇑*i*P			**Pn**	**04 21 08.5**	**+2.2**
PPM	**Popocatepetl**	**7.13**	**79**	*i* P			**Pn**	**04 21 13.5**	**+0.9**
IISM	**Ciudad Serdan**	**8.29**	**81**	*e*P			**P**	**04 21 30.5**	**+1.7**
POHV	**Veracruz**	**8.39**	**80**	*e*P			**P**	**04 21 31.0**	**+0.8**
VHO	**Vista Hermosa**	**8.91**	**94**	*i* P			**P**	**04 21 38.2**	**+0.9**
OXX	**Oaxaca**	**8.91**	**94**	*e*P			**P**	**04 21 38.5**	**+1.1**
CMIG	**Matias Romero**	**10.66**	**92**	*i* P			**P**	**04 22 01.7**	**+0.1**
CMIG	**Matias Romero**	**10.66**	**92**	*i* P			**P**	**04 21 57.7**	**-3.9**
TXAR	**Lajitas Array**	**11.63**	**10**	Pn			**P**	**04 22 15.7**	**+0.9**
	0.5nm,0.3s,baz=191,slow=13,SNR=46								
TXAR					LR		LR	04 26 09.5	
	comp=Z,2μm,18.1s,baz=195,slow=34								
CCIG	**Comitan**	**13.38**	**95**	*i* P			**P**	**04 22 36.8**	**-1.3**
JCT	**Junction City**	**13.79**	**23**	*e*P			**P**	**04 22 45.1**	**+1.5**
	325nm,1.8s								
MNTX	**Cornudas Mount**	**13.80**	**2**	*e*P			**P**	**04 22 45.4**	**+1.6**
	0.8nm,1.0s								
TUC	**Tucson**	**15.02**	**344**	*e*P			**P**	**04 23 01.0**	**+1.2**
	14nm,1.0s								
HKT	**Hockley**	**15.22**	**36**	*e*P			**P**	**04 23 01.3**	**-1.0**
	222nm,2.0s								
TEIG	**Tepich**	**16.95**	**79**	P			**P**	**04 23 27.4**	**+2.9**
	0.6nm,0.3s,baz=264,slow=12,SNR=2.5								
TEIG	**Tepich**	**16.95**	**79**	P			**P**	**04 23 27.5**	**+2.9**
ANMO	**Albuquerque**	**17.04**	**359**	*e*P			**P**	**04 23 27.6**	**+2.0**
	145nm,2.3s								
BAR	**Barrett**	**17.61**	**329**	*e*P			**P**	**04 23 34.1**	**+1.4**
WMOK	**Wichita Mounta**	**18.02**	**20**	*e*P			**P**	**04 23 36.7**	**-1.1**
	341nm,2.0s								
WUAZ	**Wupatki**	**18.23**	**346**	*e*P			**P**	**04 23 42.1**	**+1.7**
	61nm,1.5s								
PFO	**Pinyon Flat Ob**	**18.27**	**331**	*e*P			**P**	**04 23 43.1**	**+2.1**
	995nm,2.8s								
LDFC	**Landfair**	**18.97**	**337**	*e*P			**P**	**04 23 50.9**	**+1.4**
NEN	**Nelson**	**19.38**	**338**	*e*P			**P**	**04 23 54.2**	**-0.1**
MWC	**Mount Wilson**	**19.53**	**329**	*e*P			**P**	**04 23 55.8**	**-0.4**
SDCO	**Great Sand Dun**	**19.83**	**1**	*e*P			**P**	**04 23 59.4**	**0.0**
	101nm,1.6s								
MIAR	**Mount Ida**	**20.00**	**31**	*e*P			**P**	**04 23 59.5**	**-1.8**
	373nm,2.4s								
PV01	**Paradox Valley**	**20.33**	**354**	*e*P			**P**	**04 24 04.9**	**+0.2**
PV10	**Paradox Valley**	**20.62**	**353**	*e*P			**P**	**04 24 06.6**	**-1.1**
UALR	**University of**	**20.81**	**33**	*e*P			**P**	**04 24 08.3**	**-1.4**
	54nm,1.1s								
MSU	**Marysvale**	**21.27**	**347**	*e*P			**P**	**04 24 15.1**	**+0.7**
MVU	**Marysvale**	**21.27**	**347**	*e*P			**P**	**04 24 15.0**	**+0.6**
	61nm,1.5s,mb4.7								
SRU	**San Rafael**	**21.54**	**350**	*e*P			**P**	**04 24 17.3**	**+0.2**
ISCO	**Idaho Springs**	**21.88**	**1**	*e*P			**P**	**04 24 21.5**	**+1.1**
	41nm,1.7s,mb4.6								
OXF	**Oxford**	**22.26**	**39**	*e*P			**P**	**04 24 23.5**	**-0.8**
	136nm,1.4s,mb5.2								
MTUM	**Tungsten Hills**	**22.34**	**333**	*e*P			**P**	**04 24 26.6**	**+1.6**
TPH	**Tonopah**	**22.41**	**336**	*e*P			**P**	**04 24 26.0**	**+0.2**
	12nm,1.0s,mb4.3								
MPU	**Maple Canyon**	**22.61**	**349**	*e*P			**P**	**04 24 28.4**	**+0.6**
NLU	**North Lily Min**	**22.64**	**348**	*e*P			**P**	**04 24 28.9**	**+0.8**
KSU1	**Kansas State U**	**22.71**	**19**	*e*P			**P**	**04 24 28.7**	**0.0**
LRV	**Little Rabbit**	**22.75**	**327**	*e*P			**P**	**04 24 31.0**	**+1.8**
LRAL	**Lakeview Retre**	**22.83**	**45**	*e*P			**P**	**04 24 29.6**	**-0.4**
	428nm,2.0s,mb5.5								
DAU	**Daniels Canyon**	**22.93**	**350**	*e*P			**P**	**04 24 31.6**	**+0.7**
NVAR	**Mina Array Bea**	**23.14**	**335**	P			**P**	**04 24 34.4**	**+1.4**
	3.0nm,0.8s,mb3.8,baz=153,slow=9.0,SNR=17								
NVAR					LR		LR	04 32 54.0	
	comp=Z,2μm,20.2s,MS4.6,baz=130,slow=35								
JLU	**Jordanelle**	**23.15**	**349**	*e*P			**P**	**04 24 33.7**	**+0.7**
CTU	**Camp Tracy**	**23.29**	**349**	*e*P			**P**	**04 24 36.2**	**+1.7**
PLAL	**Pickwick Lake**	**23.38**	**40**	*e*P			**P**	**04 24 35.2**	**-0.1**
	31nm,0.9s,mb4.7								
GLAT	**Glass**	**23.57**	**36**	P			**P**	**04 24 37.8**	**+0.6**
TCUT	**Toone Canyon**	**23.64**	**350**	*e*P			**P**	**04 24 39.1**	**+1.2**
CMB	**Columbia Colle**	**23.72**	**331**	*e*P			**P**	**04 24 38.8**	**+0.2**
	31nm,1.3s,mb4.6								
UTMT	**University of**	**23.86**	**36**	*e*P			**P**	**04 24 41.1**	**+1.1**
	220nm,1.2s,mb5.5								
CCM	**Cathedral Cave**	**23.93**	**30**	*e*P			**P**	**04 24 41.2**	**+0.5**
	48nm,0.9s,mb4.9								
HWUT	**Hardware Ranch**	**24.15**	**350**	*e*P			**P**	**04 24 42.9**	**+0.1**
	23nm,1.5s,mb4.4								
FVM	**French Village**	**24.27**	**31**	*e*P			**P**	**04 24 44.2**	**+0.2**
	108nm,1.5s,mb5.1								
LKC	**Lake Chabot**	**24.30**	**328**	*e*P			**P**	**04 24 46.3**	**+2.1**
WVT	**Waverly**	**24.31**	**38**	*e*P			**P**	**04 24 43.1**	**-1.2**
	62nm,1.5s,mb4.8								
WCN	**Washoe City**	**24.48**	**334**	*e*P			**P**	**04 24 45.2**	**-0.8**
	39nm,1.4s,mb4.7								
BMN	**Battle Mountai**	**24.49**	**339**	*e*P			**P**	**04 24 47.0**	**+0.9**
	17nm,1.0s,mb4.4								
HVU	**Hansel Valley**	**24.54**	**348**	*e*P			**P**	**04 24 46.5**	**0.0**
SIUC	**Southern Illin**	**24.68**	**33**	*e*P			**P**	**04 24 49.2**	**+1.2**
	70nm,1.1s,mb5.1								
SWET	**Sewanee**	**24.87**	**42**	*e*P			**P**	**04 24 50.6**	**+0.8**
SLM	**Saint Louis**	**24.88**	**30**	*e*P			**P**	**04 24 50.9**	**+1.1**
	46nm,0.6s,mb5.2								
BW06	**Boulder Array**	**25.02**	**354**	*e*P			**P**	**04 24 49.8**	**-1.3**
	3.6nm,0.9s,mb3.9								
PDAR	**Pinedale Array**	**25.02**	**354**	P			**P**	**04 24 51.4**	**+0.2**
	2.2nm,0.8s,mb3.8,baz=162,slow=9.4,SNR=15								
PDAR					LR		LR	04 34 19.0	
	comp=Z,928nm,20.4s,MS4.3,baz=188,slow=36								
NSHM	**Saint Helena R**	**25.17**	**328**	*e*P			**P**	**04 24 53.5**	**+0.8**
BEKR	**Beckwourth**	**25.21**	**333**	*e*P			**P**	**04 24 53.6**	**+0.6**
	62nm,1.9s,mb4.8								
OHCM	**Honcut**	**25.27**	**331**	*e*P			**P**	**04 24 53.9**	**+0.3**
USIN	**University of**	**25.69**	**35**	*e*P			**P**	**04 24 58.2**	**+0.7**
	80nm,0.9s,mb5.2								
REDW	**Red Top Meadow**	**25.76**	**352**	*e*P			**P**	**04 24 58.0**	**-0.1**
CPCT	**Cooper Cave**	**25.92**	**43**	*e*P			**P**	**04 24 59.6**	**-0.1**
KSWY	**Kelly School**	**25.98**	**352**	*e*P			**P**	**04 25 00.7**	**+0.5**
HLID	**Hailey**	**26.59**	**346**	*e*P			**P**	**04 25 05.8**	**-0.1**
	13nm,1.1s,mb4.4								
WCI	**Wyandotte Cave**	**26.64**	**36**	*e*P			**P**	**04 25 05.8**	**-0.6**
	33nm,0.9s,mb4.9								
WVOR	**Wild Horse Val**	**26.76**	**339**	*e*P			**P**	**04 25 05.1**	**-2.2**
	8.3nm,1.0s,mb4.2								
LKWY	**Lake**	**26.89**	**353**	*e*P			**P**	**04 25 07.5**	**-1.0**
	1.3nm,0.4s,mb3.8								
MOD	**Modoc**	**26.90**	**336**	*e*P			**P**	**04 25 08.1**	**-0.6**
	16nm,1.4s,mb4.3								
YMR	**Madison River**	**27.06**	**352**	*e*P			**P**	**04 25 10.7**	**+0.7**
BLO	**Bloomington**	**27.18**	**35**	*e*P			**P**	**04 25 10.4**	**-0.9**
	168nm,2.0s,mb5.2								
QLMT	**Earthquake Lak**	**27.28**	**352**	*e*P			**P**	**04 25 12.6**	**+0.5**
COW	**Cow Castle Cre**	**27.48**	**51**	*e*P			**P**	**04 25 12.4**	**-1.6**
MCMT	**McKenzie Canyo**	**27.50**	**349**	*e*P			**P**	**04 25 14.5**	**+0.5**
YBH	**Yreka Blue Hor**	**27.75**	**333**	P			**P**	**04 25 15.3**	**-1.1**
	0.8nm,0.5s,mb3.6,baz=144,slow=8.7,SNR=2.7								
BOZ	**Bozeman (W)**	**28.11**	**352**	*e*P			**P**	**04 25 18.5**	**-1.1**
	75nm,2.1s,mb5.0								
JFWS	**Jewell Farm**	**28.35**	**25**	*e*P			**P**	**04 25 21.0**	**-0.8**
	45nm,1.4s,mb4.9								
JFWS					LR		LR		
	comp=Z,2μm,21.0s,MS4.6								
HRY	**Holter Researc**	**29.18**	**352**	*e*P			**P**	**04 25 28.8**	**-0.5**
PWV	**Princeton**	**29.29**	**43**	*e*P			**P**	**04 25 29.6**	**-0.8**
KEBM	**Edson Butte**	**29.39**	**332**	P			**P**	**04 25 29.7**	**-1.5**
ELN	**Prospectdale**	**29.43**	**44**	P			**P**	**04 25 30.2**	**-1.4**
FWV	**Forest Hill**	**29.59**	**43**	*e*P			**P**	**04 25 33.3**	**+0.3**
CHMT	**Chamberlain Mo**	**29.59**	**350**	*e*P			**P**	**04 25 31.9**	**-1.1**
MSO	**Missoula**	**29.63**	**349**	*e*P			**P**	**04 25 32.0**	**-1.3**
	comp=Z,80nm,1.8s,mb5.2								
LNOR	**Lincton Mounta**	**29.74**	**343**	*e*P			**P**	**04 25 34.8**	**+0.5**
SSOR	**Sweet Springs**	**30.24**	**336**	*e*P			**P**	**04 25 37.7**	**-1.0**
MCWV	**Mont Chateau**	**31.41**	**41**	P			**P**	**04 25 47.9**	**-1.2**
	comp=Z,3.9nm,0.4s,mb4.6								
DPW	**Davenport**	**31.56**	**344**	P			**P**	**04 25 50.2**	**-0.1**
LON	**Longmire**	**31.63**	**339**	*e*P			**P**	**04 25 49.3**	**-1.6**
NEW	**Newport**	**31.66**	**346**	P			**P**	**04 25 50.3**	**-0.9**
	comp=Z,1.9nm,0.8s,mb4.0,baz=147,slow=10,SNR=9.6								
NEW					LR		LR	04 38 24.3	
	comp=Z,1μm,20.2s,MS4.5,baz=60,slow=36								
NEW	**Newport**	**31.66**	**346**	*e*P			**P**	**04 25 50.1**	**-1.0**
	comp=Z,30nm,1.7s,mb4.8								
NEW					LR		LR		
	comp=Z,1μm,19.0s,MS4.6								
OTAV	**Otavalo**	**32.28**	**120**	*e*P			**P**	**04 25 59.2**	**+2.2**
	comp=Z,22nm,1.3s,mb4.8								
NLW	**Nelson Butte**	**32.34**	**342**	*e*P			**P**	**04 25 57.0**	**-0.1**
SDMD	**Soldier's Deli**	**33.19**	**44**	P			**P**	**04 26 04.6**	**-0.1**
SSPA	**Standing Stone**	**33.20**	**41**	*e*P			**P**	**04 26 03.0**	**-1.7**
	comp=Z,97nm,0.8s,mb4.8								
ULM	**Lac du Bonnet**	**33.33**	**12**	P			**P**	**04 26 05.4**	**-0.4**
	comp=Z,0.9nm,0.4s,mb4.0,baz=196,slow=7.4,SNR=2.6								
ULM					LR		LR	04 39 23.3	
	comp=Z,1μm,20.5s,MS4.6,baz=14,slow=36								
ROSC	**El Rosal**	**33.58**	**109**	P			**P**	**04 26 13.3**	**+5.0**
	comp=Z,1.9nm,0.5s,mb4.3,baz=312,slow=13,SNR=1.5								
SADO	**Sadowa**	**35.02**	**34**	P			**P**	**04 26 19.9**	**-0.5**
	comp=Z,6.9nm,0.7s,mb4.7,baz=253,slow=7.4,SNR=8.1								
BINY	**Binghamton**	**35.26**	**40**	*e*P			**P**	**04 26 21.6**	**-0.9**
SDV	**Santo Domingo**	**35.52**	**100**	P			**P**	**04 26 26.4**	**+1.5**
	comp=Z,10nm,0.9s,mb4.8,baz=331,slow=5.0,SNR=10								
NCB	**Newcomb**	**37.32**	**39**	P			**P**	**04 26 37.9**	**-2.0**
	comp=Z,7.6nm,1.0s,mb4.5								
ACCN	**Adirondack Com**	**37.34**	**40**	P			**P**	**04 26 40.5**	**+0.5**
QUA2	**Belchertown**	**37.59**	**42**	P			**P**	**04 26 42.9**	**+0.9**
DLBC	**Dease Lake**	**44.21**	**342**	P			**P**	**04 27 36.7**	**+0.3**
	comp=Z,3.2nm,0.9s,mb4.0,baz=156,slow=8.8,SNR=5.5								
DLBC	**Dease Lake**	**44.21**	**342**	P			**P**	**04 27 36.7**	**+0.2**
YKA	**Yellowknife Ar**	**45.00**	**354**	P			**P**	**04 27 40.9**	**-1.8**
	comp=Z,1.5nm,0.7s,mb3.9,baz=168,slow=7.3,SNR=48								
YKA					LR		LR	04 45 50.6	
	comp=Z,984nm,18.2s,MS4.8,baz=150,slow=35								
YKA	**Yellowknife Ar**	**45.00**	**354**	P			**P**	**04 27 40.9**	**-1.8**
YKA					LR		LR	04 45 50.6	
YKW3	**Yellowknife Ar**	**45.07**	**354**	*e*P			**P**	**04 27 41.2**	**-2.1**
SCHQ	**Schefferville**	**47.50**	**30**	P			**P**	**04 28 03.3**	**+0.6**
	baz=223,slow=12								
SCHQ					LR		LR	04 47 05.2	
	comp=Z,408nm,19.5s,MS4.4,baz=67,slow=35								
SCHQ	**Schefferville**	**47.50**	**30**	P			**P**	**04 28 01.8**	**-0.8**
SCHQ					LR		LR		
	comp=Z,1μm,20.0s,MS4.9								
RKT	**Rikitea**	**49.58**	**216**	*e*S			**S**	**04 35 26.3**	**+0.3**
RKT				*e*R				04 41 51.3	
	comp=Z,3μm,27.5s								
LPAZ	**La Paz**	**50.44**	**130**	P			**P**	**04 28 26.9**	**+1.1**
	comp=Z,2.5nm,0.7s,mb4.3,baz=323,slow=9.3,SNR=13								
LPAZ					LR		LR	04 47 21.7	
	comp=Z,807nm,20.8s,MS4.7,baz=78,slow=33								
LPAZ	**La Paz**	**50.44**	**130**	*e*P			**P**	**04 28 26.5**	**+0.7**
	comp=Z,6.7nm,1.1s,mb4.6								
DAWY	**Dawson**	**51.43**	**342**	*e*P			**P**	**04 28 31.5**	**-1.2**
INK	**Inuvik**	**53.35**	**348**	P			**P**	**04 28 45.6**	**-1.4**
	comp=Z,4.2nm,0.7s,mb4.5,baz=139,slow=7.8,SNR=53								
INK	**Inuvik**	**53.35**	**348**	*e*P			**P**	**04 28 44.9**	**-2.2**
	comp=Z,5.2nm,0.7s,mb4.6								
ILAR	**Eielson Array**	**54.27**	**340**	P			**P**	**04 28 51.5**	**-2.3**
	comp=Z,277nm,0.4s,baz=150,slow=7.2,SNR=3.1								
PPT	**Papeete**	**55.45**	**233**	*e*S			**S**	**04 36 44.5**	**-1.6**
PPT				*e*SS			SS	04 40 28.0	-2.7
PPT				*e*R				04 44 31.1	
	comp=Z,3μm,26.2s,baz=48								
IMA	**Indian Mountai**	**57.32**	**339**	P			**P**	**04 29 13.4**	**-2.4**
TBI	**Tubuai**	**58.96**	**228**	*e*S			**S**	**04 37 31.2**	**-1.2**
TBI				*e*SS			SS	04 41 17.0	-11
TBI				*e*R				04 46 09.6	
	comp=Z,42nm,25.0s								
CPUP	**Villa Florida**	**64.55**	**132**	P			**P**	**04 30 05.6**	**+0.1**
	comp=Z,7.1nm,1.2s,mb4.6,baz=7.5,slow=6.4,SNR=6.2								
CPUP					LR		LR	04 57 35.2	
	comp=Z,470nm,19.0s,MS4.7,baz=346,slow=35								
CPUP	**Villa Florida**	**64.55**	**132**	*e*P			**P**	**04 30 04.6**	**-0.8**
BDFB	**Brasilia**	**66.14**	**117**	P			**P**	**04 30 16.3**	**+0.5**
	comp=Z,2.6nm,0.7s,mb4.4,baz=281,slow=8.4,SNR=5.8								
BDFB					LR		LR	04 58 49.6	
	comp=Z,351nm,20.6s,MS4.5,baz=120,slow=36								
PLCA	**Paso Flores**	**66.96**	**151**	P			**P**	**04 30 20.9**	**+0.2**
	comp=Z,3.2nm,0.8s,mb4.4,baz=32,slow=8.6,SNR=7.9								
PLCA					LR		LR	04 53 17.5	
	comp=Z,648nm,19.0s,MS4.9,baz=346,slow=30								
PLCA	**Paso Flores**	**66.96**	**151**	*e*P			**P**	**04 30 20.9**	**+0.3**
PLCA					LR		LR		
	comp=Z,450nm,22.0s,MS4.6								
TRQA	**Tornquist**	**69.31**	**144**	P			**P**	**04 30 36.2**	**+0.8**
BORG	**Borgarnes**	**71.76**	**27**	LR			LR	05 02 00.8	
	comp=Z,736nm,18.8s,MS5.0,baz=230,slow=36								
BORG	**Borgarnes**	**71.76**	**27**	P			**P**	**04 30 50.8**	**+1.0**
JMIC	**Jan Mayen**	**75.70**	**20**	LR			LR	05 05 00.3	
	comp=Z,896nm,19.4s,MS5.1,baz=290,slow=36								
JMIC	**Jan Mayen**	**75.70**	**20**	AMS			AMS	05 05 17.5	
	comp=Z,757nm,18.1s,MS5.0								
KBS	**Kingsbay**	**77.73**	**10**	*e*S			S	04 41 17.5	+2.9
KBS				*e*SS			SS	04 46 10.2	-7.3
KBS					AMS		AMS	05 06 50.8	
	comp=Z,476nm,20.0s,MS4.8								
ARCES	**ARCESS Array B**	**86.38**	**15**	LR			LR	05 11 12.9	
	comp=Z,718nm,19.3s,MS5.1,baz=313,slow=36								
NOA	**NORSAR Array B**	**86.91**	**26**	P			**P**	**04 32 11.5**	**-0.1**
	comp=Z,0.3nm,0.8s,mb3.6,baz=46,slow=25,SNR=2.3								
NOA					LR		LR	05 09 46.8	
	comp=Z,429nm,20.3s,MS4.8,baz=310,slow=35								
KONO	**Kongsberg**	**86.95**	**27**	*e*SKSa				04 42 39.6	
KONO				*e*SS			SS	04 48 30.0	-4.2
KONO					AMS		AMS	05 10 07.8	
	comp=Z,452nm,20.0s,MS4.9								
ESDC	**Sonseca Array**	**87.70**	**49**	LR			LR	05 12 01.5	
	comp=Z,384nm,18.7s,MS4.8,baz=305,slow=36								
FINES	**FINESS Array B**	**92.27**	**21**	LR			LR	05 13 23.5	
	comp=Z,605nm,20.6s,MS5.0,baz=176,slow=35								
DBIC	**Dimbokro**	**98.52**	**80**	LR			LR	05 14 05.0	
	comp=Z,199nm,20.2s,MS4.6,baz=273,slow=33								
MDJ	**Mudanjiang**	**99.84**	**323**	P			**P**	**04 33 09.4**	**-2.3**
MDJ				PP			PP	04 37 15.6	-3.3
MDJ				PPP			PPP	04 39 33.1	+5.2
MDJ				SKS			SKS	04 43 47.4	-6.6
MDJ				S			S	04 44 43.8	+2.0
MDJ				PS			PS	04 46 13.2	-2.4
MDJ				SS			SS	04 51 43.1	+5.1
MDJ				AMB			AMB		
	comp=Z,6.0nm,1.1s,mb4.9								
MDJ					LR		LR		
	comp=N,57nm,22.6s,MS4.3								
MDJ					LR		LR		
	comp=E,86nm,22.6s,MS4.3								
MDJ					LR		LR		
	comp=Z,138nm,25.8s,MS4.3								
CN2	**Changchun**	**102.67**	**325**	*e*P			Pdif	04 33 24.6	+0.1
CN2					LR		LR		
	comp=Z,300nm,19.0s,MS4.8								
QSPA	**South Pole Qui**	**107.76**	**180**	*e*PKP				04 37 55.8	
QSPA					LR		LR		
	comp=Z,160nm,21.8s,MS4.5								
VNA3	**Neumayer Olymp**	**108.81**	**160**	*e*				04 38 22.0	
VNA2	**Neumayer--Watz**	**109.56**	**160**	*e*				04 38 27.8	
SSE	**Sheshan**	**113.48**	**317**	⇑PKP			PKPdf	04 38 06.5	-0.9
SSE					SS		SS	04 54 42.6	-1.2
SSE					LR		LR		
	comp=N,346nm,15.0s,MS5.3								
SSE					LR		LR		
	comp=E,432nm,15.0s,MS5.3								
SSE					LR		LR		
	comp=Z,644nm,15.0s,MS5.3								
NJ2	**Nanjing**	**114.34**	**319**	*e*PKP			PKPdf	04 38 03.2	-5.9
NJ2					PP		PP	04 39 04.0	-2.9
NJ2					PPP		PPP	04 41 27.0	-4.6
NJ2					PKS		PKS	04 41 39.0	-2.7
NJ2					LR		LR		
	comp=N,320nm,27.2s,MS5.0								
NJ2					LR		LR		
	comp=E,360nm,26.2s,MS5.0								
NJ2					LR		LR		
	comp=Z,150nm,21.5s,MS4.6								
WMQ	**Urumqi**	**117.36**	**349**	PKP			PKPdf	04 38 13.1	-1.5
LZH	**Lanzhou**	**119.36**	**332**	*e*PKP			PKPdf	04 38 12.9	-5.8
LZH					XPKP			04 38 17.2	
LZH					LR		LR		
	comp=E,164nm,18.5s								
LZH					LR		LR		
	comp=Z,248nm,21.5s,MS4.8								
WRA	**Warramunga Arr**	**123.11**	**258**	PKP			PKPdf	04 38 23.4	-2.9
	comp=Z,0.7nm,0.6s,baz=354,slow=1.0,SNR=5.8								
ASAR	**Alice Springs**	**124.00**	**253**	PKP			PKPdf	04 38 24.1	-4.0
	comp=Z,0.9nm,0.7s,baz=75,slow=1.6,SNR=9.3								
GYA	**Guiyang**	**125.70**	**323**	PKP			PKPdf	04 38 32.6	+1.3
GYA					PP		PP	04 40 23.8	-0.8
GYA					PKS		PKS	04 42 07.4	+3.6
KMI	**Kunming**	**128.92**	**326**	*e*PKP			PKPdf	04 38 35.4	-2.1
KMI					XPKP			04 38 39.4	
KMI					LR		LR		
	comp=Z,63nm,34.6s,MS4.1								

BJI ***02*** *04:51:42.8, 19.89S×174.20W,h61km,mB5.3,mb5.0, Ms5.3,Msz4.9*
NEIC ***02*** *04:51:43.6±0.1,19.81S×174.76W,mb4.9/29,MS5.3/54, Error ellipse: s-maj=7.3km s-min=4.0km az=140.0*
SYO ***02*** *04:51:43.6,19.81S×174.76W,h48km,MB4.9,MS5.3*
HRVD ***02*** *04:51:43.6±0.6,20.29S×173.93W,h62km±4km,MW5.1/38, Centroid moment Tensor Solution. LP body waves: s20,c23;Mantle waves: s38,c43; Half duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}0.54±.34; $M_{\theta\theta}$4.44±.41; $M_{\phi\phi}$-4.98±.42; $M_{r\theta}$2.73±.24; $M_{\theta\phi}$-1.83±.39; $M_{\phi r}$1.15±.27; Best double couple: $M_0$5.87×10^{16} NP1:ϕ_s148°,δ60°,λ7°. NP2:ϕ_s54°,δ84°,λ150°. Principal axes: T 5.96, Plg25°, Azm7°; N -.17, Plg59°, Azm223°; P -5.79, Plg16°, Azm104°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
MOS ***02*** *04:51:44.4±2.5,19.69S×175.38W,h33km,mb5.5/3 Error ellipse: s-maj=21.7km s-min=18.5km az=17.9*
IDC ***02*** *04:51:44.0±0.7,19.81S×174.75W,h50km±5km,mb4.5/17, mb1 4.7/19,mb1mx4.7/21,MS3.9/3,Ms1 3.9/3, ms1mx3.

YSS LR LR
comp=Z,407nm,21.0s,MS4.7
CMB Columbia Colle 76.97 41 *e*P **P 05 03 30.9 -0.7**
comp=Z,9.8nm,1.1s,mb4.7
CMB LR LR
comp=Z,1µm,22.0s,MS5.2
WDC Whiskeytown Da 77.29 38 PFAKE 05 03 40.0 +6.7
WDC LR LR
comp=Z,2µm,19.0s,MS5.4
DAC Darwin (Calif) 77.69 44 PFAKE 05 03 50.0 +14
DAC LR LR
comp=Z,3µm,20.0s,MS5.5
MTUM Tungsten Hills 77.70 43 *e*P **P 05 03 35.5 -0.1**
YBH Yreka Blue Hor 77.94 37 PFAKE 05 03 50.0 +13
YBH LR LR
comp=Z,2µm,20.0s,MS5.5
WCN Washoe City 78.14 40 *e*P **P 05 03 37.4 -0.6**
comp=Z,17nm,1.3s,mb4.8
NVAR Mina Array Bea 78.51 42 P **P 05 03 40.0 0.0**
comp=Z,12nm,0.9s,mb4.8,baz=212,slow=7.0,SNR=60
NVAR pP pP 05 03 54.4 +0.2
comp=Z,7.5nm,1.1s,baz=234,slow=1.9,SNR=5.8
LDFC Landfair 78.66 46 *e*P **P 05 03 40.7 -0.3**
TPH Tonopah 78.98 43 *e*P **P 05 03 42.1 -0.6**
comp=Z,18nm,1.0s,mb5.0
TPH *e*pP pP 05 03 55.5 -1.3
TPH LR LR
comp=Z,1µm,20.0s,MS5.3
NEN Nelson 79.16 46 *e*P **P 05 03 43.5 -0.2**
MOD Modoc 79.43 38 *e*P **P 05 03 44.1 -1.0**
comp=Z,10nm,1.3s,mb4.6
MOD LR LR
comp=Z,3µm,20.0s,MS5.6
KDAK Kodiak Island 79.57 12 PFAKE 05 04 00.0 +15
KDAK LR LR
comp=Z,1µm,19.0s,MS5.3
TUC Tucson 80.22 51 *e*P **P 05 03 49.3 -0.2**
comp=Z,21nm,1.1s,mb5.0
BMN Battle Mountai 80.38 41 PFAKE 05 04 00.0 +10
BMN LR LR
comp=Z,1µm,20.0s,MS5.3
WVOR Wild Horse Val 80.73 38 *e*P **P 05 03 50.9 -1.1**
comp=Z,8.6nm,1.1s,mb4.6
WVOR LR LR
comp=Z,2µm,21.0s,MS5.4
OCWA Octopus Mounta 81.16 32 PFAKE 05 04 10.0 +16
OCWA LR LR
comp=Z,2µm,21.0s,MS5.4
WUAZ Wupatki 81.46 48 *e*P **P 05 03 56.5 +0.5**
comp=Z,14nm,1.1s,mb4.8
WUAZ LR LR
comp=Z,2µm,19.0s,MS5.6
MDJ Mudanjiang 81.84 323 P **P 05 03 58.6 +0.9**
MDJ AP pP 05 04 13.2 +1.3
MDJ XP sP 05 04 16.8 -0.4
MDJ PP PP 05 07 06.3 -1.0
MDJ S S 05 14 09.1 +3.2
MDJ PS PS 05 15 43.7 +42
MDJ SS SS 05 19 29.6 +1.6
MDJ AMB AMB
comp=Z,14nm,0.8s,mb4.9
MDJ AMB AMB
comp=Z,55nm,4.0s
MDJ LR LR
comp=N,850nm,21.4s,MS5.1
MDJ LR LR
comp=E,516nm,24.0s,MS5.1
MDJ LR LR
comp=Z,570nm,18.8s
MDJ Mudanjiang 81.84 323 *e*P **P 05 03 59.0 +1.3**
comp=Z,3.4nm,0.5s,mb4.5
MDJ LR LR
comp=Z,359nm,20.0s,MS4.7
RSO Redoubt South 82.05 11 *e*P **P 05 03 57.4 -1.0**
MVU Marysvale 82.48 45 *e*P **P 05 04 01.5 +0.4**
comp=Z,9.3nm,1.1s,mb4.6
MVU LR LR
comp=Z,2µm,21.0s,MS5.4
MSU Marysvale 82.51 45 *e*P **P 05 04 01.8 +0.5**
SLKM Skilak Lake 82.56 12 *e*P **P 05 04 00.5 -0.6**
SPU Mount Spurr 82.85 11 *e*P **P 05 04 01.5 -1.0**
MAW Mawson 83.14 199 P **P 05 04 05.0 +1.1**
comp=Z,12nm,0.7s,mb5.0,baz=135,slow=7.0,SNR=20
MAW Mawson 83.14 199 *e*P **P 05 04 04.6 +0.7**
PMS Palmer South 83.37 12 *e*P **P 05 04 05.0 -0.2**
CN2 Changchun 83.75 321 *e*P **P 05 04 08.9 +1.4**
CN2 *e*AP pP 05 04 22.0 +0.3
CN2 *e*S S 05 14 28.0 +2.9
CN2 AMB AMB
comp=Z,10.0nm,0.9s,mb5.0
CN2 LR LR
comp=Z,500nm,21.0s,MS4.9
PMR Palmer 83.77 12 *e*P **P 05 04 06.6 -0.6**
HLID Hailey 83.90 39 *e*P **P 05 04 08.0 -0.2**
comp=Z,17nm,1.4s,mb5.0
HLID *e*pP pP 05 04 21.8 -0.6
HLID LR LR
comp=Z,2µm,21.0s,MS5.3
MNTX Cornudas Mount 83.92 53 *e*P **P 05 04 08.3 -0.3**
MNTX *e*pP pP 05 04 22.6 -0.2
SRU San Rafael 83.92 45 *e*P **P 05 04 09.0 +0.5**
JLU Jordanelle 84.11 43 *e*P **P 05 04 09.1 -0.2**
DAU Daniels Canyon 84.13 43 *e*P **P 05 04 08.8 -0.7**
TXAR Lajitas Array 84.16 56 P **P 05 04 09.9 0.0**
comp=Z,7.5nm,0.9s,mb4.8,baz=214,slow=9.0,SNR=37
TXAR pP pP 05 04 24.4 +0.3
comp=Z,11nm,1.3s,baz=207,slow=5.6,SNR=6.0
TXAR Lajitas Array 84.16 56 P **P 05 04 09.9 0.0**
TXAR pP pP 05 04 24.4 +0.3
DPW Davenport 84.31 34 *e*P **P 05 04 10.1 -0.1**
TCUT Toone Canyon 84.41 43 *e*P **P 05 04 11.2 +0.3**
PV10 Paradox Valley 84.54 46 *e*P **P 05 04 11.5 -0.1**
HWUT Hardware Ranch 84.57 42 PFAKE 05 04 20.0 +8.3
HWUT LR LR
comp=Z,3µm,20.0s,MS5.6
WHN Wuhan 84.60 305 *e*P **P 05 04 14.2 +2.1**
ANMO Albuquerque 84.65 50 *e*P **P 05 04 12.6 +0.3**
comp=Z,32nm,1.1s,mb5.4
ANMO *e*pP pP 05 04 25.9 -0.7
PV01 Paradox Valley 84.73 46 *e*P **P 05 04 12.4 -0.2**
NEW Newport 85.13 34 P **P 05 04 13.4 -0.9**
comp=Z,1.4nm,0.8s,mb4.1,baz=214,slow=5.4,SNR=3.6
NEW Newport 85.13 34 *e*P **P 05 04 13.6 -0.7**
NEW LR LR
comp=Z,2µm,19.0s,MS5.4
AHID Auburn Hatcher 85.48 41 PFAKE 05 04 30.0 +14
AHID LR LR
comp=Z,1µm,19.0s,MS5.3
MCMT McKenzie Canyo 85.54 39 *e*P **P 05 04 16.6 +0.2**
MCMT *e*pP pP 05 04 30.7 0.0
MSO Missoula 86.03 37 PFAKE 05 04 30.0 +11
MSO LR LR
comp=Z,2µm,19.0s,MS5.5
QLMT Earthquake Lak 86.39 40 *e*P **P 05 04 21.5 +1.0**
QLMT *e*pP pP 05 04 35.3 +0.5
BW06 Boulder Array 86.45 42 *e*P **P 05 04 20.6 -0.2**
comp=Z,3.0nm,1.1s,mb4.4
BW06 LR LR
comp=Z,1µm,20.0s,MS5.2
PDAR Pinedale Array 86.45 42 P **P 05 04 20.6 -0.2**
comp=Z,2.0nm,0.9s,mb4.3,baz=224,slow=3.7,SNR=14
SEY Seymchan 86.54 346 *e*P **P 05 04 21.1 +0.3**
SEY *e* pP 05 04 33.4 -1.7
SEY pmax pmax
comp=Z,50nm,0.9s,mb5.7
BOZ Bozeman (W) 86.71 39 *e*P **P 05 04 21.9 -0.1**
comp=Z,3.8nm,1.0s,mb4.6
BOZ *e*pP pP 05 04 36.1 -0.3
BOZ LR LR
comp=Z,2µm,19.0s,MS5.5
COLA College 87.01 11 *e*P **P 05 04 22.8 -0.3**
ILAR Eielson Array 87.09 12 P **P 05 04 23.4 -0.1**
comp=Z,8.3nm,0.9s,mb5.0,baz=208,slow=5.5,SNR=37
HRY Holter Researc 87.17 38 *e*P **P 05 04 24.1 -0.2**
IMA Indian Mountai 87.18 8 *e*P **P 05 04 24.4 +0.5**
PLCA Paso Flores 87.42 132 P **P 05 04 25.7 0.0**
comp=Z,2.3nm,0.8s,mb4.5,baz=272,slow=7.2,SNR=4.8
PLCA Paso Flores 87.42 132 P **P 05 04 25.8 +0.1**
PLCA LR LR
comp=Z,790nm,22.0s,MS5.1
BJT Baijiatuau 87.66 314 PFAKE 05 04 40.0 +13
BJT LR LR
comp=Z,507nm,20.0s,MS4.9
BJI Beijing 87.66 314 *e*P **P 05 04 28.4 +1.5**
BJI AMB AMB
comp=Z,9.0nm,0.7s,mb5.1
BJI LR LR
comp=N,95nm,21.2s,MS4.6
BJI LR LR
comp=E,218nm,21.2s,MS4.6
SYO Syowa Base 87.95 192 ⇓P **P 05 04 28.0 +0.5**
SYO Syowa Base 87.95 192 ⇓PcP PcP 05 04 30.0 +0.3
SYO Syowa Base 87.95 192 ⇓*e*P **P 05 04 28.0 +0.5**
SYO ⇓*e*PcP PcP 05 04 30.0 +0.3
DAWY Dawson 88.08 15 *e*P **P 05 04 28.4 +0.2**
ENH Enshi 88.28 303 *e*P **P 05 04 31.0 +1.0**
comp=E,31nm,1.3s,mb5.4
ENH LR LR
comp=Z,418nm,22.0s,MS4.8
SNAA Sanae 88.48 177 ⇓*i* **P 05 04 30.1 +0.1**
VNA3 Neumayer Olymp 88.50 175 ⇑*i* **P 05 04 31.5 +1.4**
BILL Bilibino 88.80 353 *e*P **P 05 04 31.2 -0.4**
BILL *e* pP 05 04 46.7 +0.7
BILL pmax pmax
comp=Z,6.0nm,1.0s,mb4.9
VNA2 Neumayer--Watz 88.97 176 ⇓*i* **P 05 04 34.1 +1.7**
VNA1 Neumayer--Stat 89.18 176 ⇓*i* **P 05 04 35.0 +1.6**
EFI East Falkland 89.89 146 PFAKE 05 04 50.0 +13
EFI LR LR
comp=Z,886nm,20.0s,MS5.2
HIA Hailar 90.03 323 PFAKE 05 04 50.0 +12
HIA LR LR
comp=Z,880nm,21.0s,MS5.2
XAN Xi'an 90.25 306 P **P 05 04 41.2 +2.0**
XAN AMB AMB
comp=Z,18nm,1.0s,mb5.4
RSSD Black Hills 90.62 43 *e*P **P 05 04 40.5 -0.2**
comp=Z,4.8nm,0.9s,mb4.8
RSSD LR LR
comp=Z,1µm,20.0s,MS5.4
HHC Hu-ho-hao-te 91.17 313 *e*P **P 05 04 45.8 +2.4**
HHC AMB AMB
comp=Z,14nm,1.1s,mb5.2
HHC AMB AMB
comp=Z,130nm,5.8s
KMI Kunming 91.84 296 *e*P **P 05 04 46.7 -0.2**
KMI AP pP 05 05 03.9 +2.6
KMI AMB AMB
comp=Z,6.0nm,1.0s,mb4.9
YAK Yakutsk 92.75 337 PFAKE 05 05 00.0 +10
YAK LR LR
comp=Z,454nm,21.0s,MS4.9
CMAR Chiang Mai Arr 92.83 288 P **P 05 04 52.8 +1.2**
comp=Z,1.5nm,0.6s,mb4.6,baz=114,slow=2.7,SNR=9.7
INK Inuvik 92.93 14 P **P 05 04 50.3 -0.5**
comp=Z,6.2nm,0.9s,mb5.0,baz=216,slow=4.4,SNR=23
INK Inuvik 92.93 14 *e*P **P 05 04 49.8 -1.0**
comp=Z,9.6nm,1.1s,mb5.1
YKA Yellowknife Ar 94.72 24 P **P 05 04 59.0 0.0**
comp=Z,2.6nm,0.8s,mb4.7,baz=239,slow=4.2,SNR=51
YKA Yellowknife Ar 94.72 24 P **P 05 04 59.0 -0.1**
YKW3 Yellowknife Ar 94.75 24 *e*P **P 05 04 58.9 -0.3**
LZH Lanzhou 94.88 306 *e*P **P 05 05 02.6 +2.2**
LZH AP pP 05 05 18.5 +3.6
LZH AMB AMB
comp=Z,24nm,1.2s,mb5.5
LVC Limon Verde 96.17 117 PFAKE 05 05 20.0 +13
LVC LR LR
comp=Z,524nm,19.0s,MS5.0
ULN Ulaanbaatar 96.95 318 PFAKE 05 05 20.0 +10
ULN LR LR
comp=Z,297nm,20.0s,MS4.8
ULM Lac du Bonnet 98.21 40 P **P 05 05 13.8 -1.3**
comp=Z,1.0nm,0.5s,mb4.6,baz=271,slow=3.1,SNR=3.7
TIXI Tiksi 98.99 345 *e*P **P 05 05 17.1 -1.2**
TIXI pmax pmax
comp=Z,29nm,1.2s,mb5.7
LPAZ La Paz 99.42 111 P **P 05 05 24.0 +2.5**
comp=Z,0.8nm,0.7s,mb4.4,baz=288,slow=2.1,SNR=3.1
LPAZ La Paz 99.42 111 *e*P **P 05 05 23.6 +2.2**
LPAZ LR LR
comp=Z,638nm,21.0s,MS5.1
LSA Lhasa 103.05 297 PFAKE 05 05 50.0 +13
LSA LR LR
comp=Z,282nm,22.0s,MS4.8
CPUP Villa Florida 103.84 125 PFAKE 05 05 50.0 +9.0
CPUP LR LR
comp=Z,321nm,20.0s,MS4.8
WMQ Urumqi 108.87 311 PDIF Pdif 05 06 03.3 +0.5
WMQ PP PP 05 10 38.7 +0.1
WMQ S 05 18 06.0
WMQ PS PS 05 19 58.5 -0.2
WMQ SS SS 05 25 50.7 +1.0
WMQ PP PP
comp=Z,46nm,10.2s
WMQ LR LR
comp=N,984nm,28.2s,MS5.3
WMQ LR LR
comp=E,872nm,29.0s,MS5.3
WMQ LR LR
comp=Z,µm,28.6s,MS5.4
MKAR Makanchi Array 113.03 313 PKiKP 05 10 14.7
comp=Z,5.0nm,1.0s,baz=45,slow=1.7,SNR=24
KSH Kashi 117.08 305 PKP PKPdf 05 10 22.9 +0.8
BRVK Borovoye 120.66 321 *e*PKIKP PKPdf 05 10 29.2 +0.5
KBS Kingsbay 120.86 359 PFAKE 05 10 40.0 +11
KBS LR LR
comp=Z,879nm,22.0s,MS5.4
ZRNK Zerenda 121.44 321 *e*PKIKP PKPdf 05 10 30.6 +0.4
SPITS Spitsbergen Ar 121.45 357 PKP PKPdf 05 10 31.2 +1.4
comp=Z,8.1nm,0.8s,baz=112,slow=4.9,SNR=6.8
SVE Sverdlovsk 125.23 326 ⇑*e*PKIKP PKPdf 05 10 36.3 -1.1
ARU Arti 126.44 326 PFAKE 05 10 50.0 +10
ARU LR LR
comp=Z,888nm,22.0s,MS5.4
ARCES ARCESS Array B 128.86 351 PKP PKPdf 05 10 44.6 +0.6
comp=Z,3.9nm,0.6s,baz=3.6,slow=1.5,SNR=20
LBTB Lobatse 131.16 205 PFAKE 05 11 00.0 +10
LBTB LR LR
comp=Z,342nm,21.0s,MS5.0
FINES FINESS Array B 136.02 346 PKP PKPdf 05 10 58.2 +0.5
comp=Z,1.8nm,0.6s,baz=69,slow=4.2,SNR=12
OBN Obninsk 137.65 334 PFAKE 05 11 10.0 +9.1
OBN LR LR
comp=Z,914nm,19.0s,MS5.5
LSZ Lusaka 138.40 214 PFAKE 05 11 20.0 +17
LSZ LR LR
comp=Z,557nm,20.0s,MS5.3
NOA NORSAR Array B 138.70 356 PKP PKPdf 05 11 03.0 +0.4
comp=Z,1.4nm,0.8s,baz=15,slow=3.9,SNR=4.2
NOA NORSAR Array B 138.70 356 PKP PKPdf 05 11 03.0 +0.4
HFS Hagfors 139.38 354 PKhKP 05 10 53.3
comp=Z,1.1nm,0.6s,baz=108,slow=4.7,SNR=7.5
HFS PKP PKPdf 05 11 04.8 +0.9
comp=Z,2.9nm,0.8s,baz=90,slow=4.4,SNR=5.5
KONO Kongsberg 140.19 357 PFAKE 05 11 20.0 +15
KONO LR LR
comp=Z,944nm,21.0s,MS5.5
KIV Kislovodsk 140.71 316 PFAKE 05 11 20.0 +13
KIV LR LR
comp=Z,538nm,21.0s,MS5.3
GNI Garni 140.74 310 PFAKE 05 11 20.0 +13
GNI LR LR
comp=Z,351nm,20.0s,MS5.1
KMBO Kilima Mbogo 142.32 240 PFAKE 05 11 20.0 +10
KMBO LR LR
comp=Z,536nm,19.0s,MS5.3
AKASG Malin Array Be 143.91 334 PKhKP 05 11 09.9
comp=Z,12nm,0.9s,baz=37,slow=4.3,SNR=27
BEST Besiri 144.03 308 *i* P PKPbc 05 11 13.2 +1.3
EKA Eskdalemuir Ar 144.07 8 PKP PKPdf 05 11 10.9 -1.2
comp=Z,2.5nm,0.7s,baz=326,slow=2.5,SNR=11
ESK Eskdalemuir 144.08 8 PFAKE 05 11 30.0 +19
ESK LR LR
comp=Z,797nm,21.0s,MS5.5
ARSS Ar Rass 144.62 287 P PKPbc 05 11 15.7 +1.8
DCN Croghan 145.25 13 *e*P PKPdf 05 11 15.6 +1.3
DLF Lyons Farm 145.45 13 *e*P PKPdf 05 11 16.3 +1.7
BSEG Bad Segeberg 145.82 355 *e*PKHKP 05 11 17.0
BLJS Baljurashi 145.89 276 P PKPdf 05 11 20.9 +4.5
SVST Sivas 146.40 313 *i* P PKPdf 05 11 21.3 +4.6
KIS Kishinev 146.85 330 *e*PKP2 PKPab 05 11 22.0 -0.6
OJC Ojcow 147.63 342 *e*PKP PKPdf 05 11 20.8 +2.4
KSP Ksiaz 147.93 347 *e*PKIKP PKPdf 05 11 23.9 +5.1
KSP *e* 05 11 38.0
CLL Collm 148.08 351 *i* PKPdf 05 11 20.5 +1.5
CLL *i* PKP1 PKPdf 05 11 24.0 +5.0
CLL *i* 05 11 30.1
CLL *i* 05 11 38.9
CLL Collm 148.08 351 *i* PKHKP 05 11 20.5
CLL *i* 05 11 24.0
CLL *i* 05 11 38.9
CLL pmax pmax
comp=Z,28nm,1.0s
CLL MLR MLR
comp=Z,800nm,17.5s,MS5.6
NIE Niedzica 148.19 341 ⇓*e*PKP PKPdf 05 11 24.5 +5.2
CRVS Cervenica-Dubn 148.28 340 *e*PKP PKPdf 05 11 22.3 +2.9
CRVS *e* 05 11 38.2
CRVS *e* 05 11 42.8
AVNT Avonos 148.30 313 *i* P PKPdf 05 11 25.2 +5.4
UPC Upice 148.31 347 *e*PKPbc PKPdf 05 11 24.4 +5.0
BRG Berggiesshubel 148.35 350 *e*PKHKP 05 11 21.5
BRG *i* 05 11 25.2
BRG *e* 05 11 40.9
BRG pmax pmax
comp=Z,13nm,0.9s
DPC Dobruska-Polom 148.39 346 *e*PKPbc PKPdf 05 11 25.3 +5.7
DPC *ep*PKP 05 11 41.2
DPC L 06 15 00.0
comp=Z,0.4nm,17.9s
OKC Ostrava-Krasne 148.43 344 *e*PKPbc PKPdf 05 11 24.6 +5.0
OKC *ep*PKP 05 11 32.7
OKC L 06 16 00.0
comp=Z,1.0nm,20.6s
PVCC Panska Ves 148.57 349 *e*PKPbc PKPdf 05 11 25.7 +5.8
PVCC *ep*PKP 05 11 40.8
PVCC L 06 11 40.0
comp=Z,0.4nm,19.6s
MORC Moravsky Berou 148.63 345 *e*PKP PKPdf 05 11 20.5 +0.5
BRTR Keskin Array B 148.66 315 PKP PKPdf 05 11 21.6 +1.2
comp=Z,7.9nm,0.9s,baz=117,slow=2.8,SNR=15
BRTR PKPbc PKPdf 05 11 25.6 +5.2
comp=Z,7.4nm,0.9s,baz=135,slow=2.0,SNR=28
BRTR pPKPbc 05 11 40.8
comp=Z,9.7nm,1.1s,baz=90,slow=1.2,SNR=4.6
VRI Vrincioaia 148.66 331 ⇑*i* P PKPdf 05 11 26.0 +5.8
VRI Vrincioaia 148.66 331 ⇑*i* P PKPdf 05 11 26.0 +5.9
MOX Moxa 148.93 352 *e*PKHKP 05 11 21.7
MOX pmax pmax
comp=Z,16nm,1.5s
MOX MLR MLR
comp=Z,800nm,21.0s,MS5.5
HARR Harsova 148.94 328 ⇑*i* P PKPdf 05 11 26.9 +6.3
HARR Harsova 148.94 328 ⇑*i* P PKPdf 05 11 27.0 +6.3
PRU Pruhonice 149.10 348 *e*PKPbc PKPdf 05 11 26.4 +5.7
comp=Z,18nm,1.2s
PRU *ep*PKP 05 11 41.6
PRU L 06 11 50.0
comp=Z,0.8nm,20.0s
ASF Jabal al Asfar 149.19 300 PKPbc PKPdf 05 11 28.9 +7.5
comp=Z,14nm,0.8s,baz=341,slow=3.0,SNR=15
NKC Novy Kostel 149.21 351 *e*PKPbc PKPdf 05 11 25.9 +5.0
NKC *ep*PKP 05 11 41.8
NKC L 06 12 00.0
comp=Z,0.4nm,19.0s
MLR Muntele Rosu 149.31 331 ⇑*i* P PKPdf 05 11 27.6 +6.4
MLR Muntele Rosu 149.31 331 ⇑*i* P PKPdf 05 11 27.5 +6.3
ISR Istrita 149.31 330 ⇑*i* P PKPdf 05 11 27.9 +6.7
ISR Istrita 149.31 330 ⇑*i* P PKPdf 05 11 27.9 +6.7
VYHS Vyhne 149.46 342 *i* PKP PKPdf 05 11 27.6 +6.2
VYHS *e* 05 11 32.9
VYHS *e* 05 11 43.6
PSZ Piszkesteto 149.65 340 *e*PKP/F 05 11 28.1
PSZ Piszkesteto 149.65 340 *e*PKPbc PKPdf 05 11 27.1 +5.4
BAIF Baives 149.91 1 *e*PKIKP PKPdf 05 11 23.7 +1.7
GRA1 Grafenberg Arr 149.91 352 *e*PKPdf PKPdf 05 11 24.3 +2.3
GRA1 *e*PKPbc PKPdf 05 11 29.1 +7.1
GRA1 LR LR
comp=Z,1µm,21.2s,MS5.7
GRF Grafenberg Arr 149.91 352 *e*PKIKP PKPdf 05 11 24.3 +2.3
GRF Grafenberg Arr 149.91 352 *e*PKHKP 05 11 29.1
ABH Alteburg 150.04 357 PKP PKPdf 05 11 29.4 +7.2
KHC Kasperske Hory 150.10 349 *e*PKPbc PKPdf 05 11 28.9 +6.6
KHC *ep*PKP 05 11 44.2
KHC L 06 11 40.0
comp=Z,1.3nm,21.2s
KHC Kasperske Hory 150.10 349 *e*PKHKP 05 11 28.9
KHC MLR MLR
comp=Z,1µm,21.2s,MS5.7
ZST Bratislava 150.21 344 *i* PKP PKPdf 05 11 29.8 +7.3
ZST *e* 05 11 37.3
TOD Tromm 150.24 355 PKP PKPdf 05 11 29.8 +7.3
RUP Ruppelstein 150.24 358 PKP PKPdf 05 11 30.2 +7.7
WLF Walferdange 150.31 359 *e*PKPbc PKPdf 05 11 29.9 +7.2
GEC2 GERESS Array S 150.35 349 *e*PKIKP PKPdf 05 11 29.9 +7.2
GERES GERESS Array B 150.35 349 PKP PKPdf 05 11 24.4 +1.7
comp=Z,7.9nm,0.9s,baz=333,slow=3.0,SNR=9.6
GERES PKPbc PKPdf 05 11 29.2 +6.5
comp=Z,13nm,1.0s,baz=45,slow=1.9,SNR=41
JMQS Jabal Moqyreh 150.80 294 P PKPdf 05 11 32.3 +8.2
ROSF Rostrenen 150.81 12 *e*PKIKP PKPdf 05 11 24.8 +1.4
comp=Z,58nm,1.4s
FLN La Foliniere 150.85 8 *e*PKIKP PKPdf 05 11 24.9 +1.4
comp=Z,17nm,0.9s
LANF Langenberg 150.93 357 PKP PKPdf 05 11 31.7 +8.1
LDF La Druitiere 151.06 7 *e*PKIKP PKPdf 05 11 25.2 +1.4
comp=Z,16nm,1.0s
CSS Prodhromos 151.06 307 *e*PKPbc PKPdf 05 11 31.6 +7.3
GRR Gorron 151.16 8 *e*PKIKP PKPdf 05 11 25.5 +1.5
comp=Z,7.6nm,0.8s
MOA Molln 151.19 347 ⇑*i* PKP PKPdf 05 11 31.4 +7.4
QUIF Quistinic 151.24 12 *e*PKIKP PKPdf 05 11 25.5 +1.4
comp=Z,94nm,1.5s
FUR Furstenfeldbru 151.40 352 *e*PKIKP PKPdf 05 11 32.8 +8.5
JMOS Jabal al Moall 151.41 295 P PKPdf 05 11 33.7 +8.8
AYUS 'Aynunah 151.46 293 P PKPdf 05 11 31.5 +6.4
MEZF Maizieres J'vi 151.48 0 *e*PKIKP PKPdf 05 11 26.6 +2.2
WLS Welschbruch 151.52 357 PKP PKPdf 05 11 32.4 +8.3
BFO Black Forest 151.54 356 *e*PKIKP PKPdf 05 11 32.4 +7.9
BDAS Al Bad' 151.56 293 P PKPdf 05 11 33.7 +8.5
HAQS Haql 151.58 294 P PKPdf 05 11 33.9 +8.7
ECH Echery 151.72 357 PKP PKPdf 05 11 33.0 +8.2
TAYS Tayyib Ism 151.73 293 P PKPdf 05 11 34.6 +9.2
SPAK Spaichingen 151.74 355 PKP PKPdf 05 11 33.1 +8.3
THEF They Montfort 151.75 359 PKP PKPdf 05 11 33.4 +8.6
HAU Haudompre 151.96 358 *e*PKIKP PKPdf 05 11 26.7 +1.5
KBA Koelnbreinsper 152.11 348 ⇑*i* PKP PKPdf 05 11 33.8 +8.4
WATA Walderalm 152.17 351 ⇑*i* PKP PKPdf 05 11 33.8 +8.3
MOTA Moosalm 152.23 351 ⇓*i* PKP PKPdf 05 11 34.0 +8.4
WTTA Wattenberg 152.23 351 ⇓*i* PKP PKPdf 05 11 34.1 +8.5
SQTA Sankt Quirin 152.34 351 ⇑*i* PKP PKPdf 05 11 34.3 +8.6
DAVA Damuels 152.44 353 ⇑*i* PKP PKPdf 05 11 34.9 +9.0
LOR Lormes 152.69 2 *e*PKIKP PKPdf 05 11 28.2 +2.0
comp=Z,13nm,1.0s
SSF Saint Saulge 152.88 3 *e*PKIKP PKPdf 05 11 28.4 +1.9
MFF Saint Martin d 153.01 8 *e*PKIKP PKPdf 05 11 28.2 +1.5
comp=Z,9.1nm,1.0s
AVF Avril sur Loir 153.15 3 *e*PKIKP PKPdf 05 11 28.8 +1.9
SMF Signal de Mont 153.31 2 *e*PKIKP PKPdf 05 11 28.9 +1.8
CABF La Chapelle 153.36 359 *e*PKIKP PKPdf 05 11 29.7 +2.5
TCF Toulx Ste Croi 153.57 5 *e*PKIKP PKPdf 05 11 29.5 +2.0
PYM Petit Puy Mans 154.16 4 PKP PKPdf 05 11 38.8 +11
SBF Sospel 156.05 356 *e*PKIKP PKPdf 05 11 32.5 +1.7
ETSF Etsaut 156.56 11 *e*PKIKP PKPdf 05 11 34.3 +2.7
comp=Z,7.3nm,0.8s
EPF Esparros 156.58 9 *e*PKIKP PKPdf 05 11 34.0 +2.4
comp=Z,6.1nm,0.8s
GELF Grande-Etoile 156.60 360 PKP PKPdf 05 11 41.3 +10
LMR La Mourre 156.63 358 *e*PKIKP PKPdf 05 11 32.5 +0.9
comp=Z,23nm,1.3s
EVO Evora 158.17 29 *e*PKIKP PKPdf 05 11 34.9 +1.1
comp=Z,9.5nm,0.9s
ESDC Sonseca Array 158.76 20 PKP PKPdf 05 11 36.0 +1.5
comp=Z,0.7nm,0.9s,baz=342,slow=2.8,SNR=4.6
ESDC PKPab PKPab 05 12 11.7 -1.0
comp=Z,1.8nm,0.8s,baz=322,slow=3.4,SNR=7.2
DBIC Dimbokro 163.57 142 PFAKE 05 11 50.0 +10
DBIC LR LR
comp=Z,323nm,19.0s

JMA 02 05:02:31.9±0.1, 37.10N×141.17E, h55km±1km, M3.8,9C,
Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.30**	**270**	⇑P		P	05 02 41.5	0.0
ONAJ				S		S	05 02 48.3	-0.2
JFK	**Kawauchi**	**0.36**	**319**	⇑P		P	05 02 41.9	-0.2
JFK				S		S	05 02 48.9	-0.6
JHO	**Hitachi**	**0.69**	**225**	⇑P		P	05 02 45.4	-0.3
JHO				*e*S		S	05 02 54.9	-1.1

JFT	**Otama**	**0.79**	**302**	⇑P	P	05 02 47.8	+0.8
JFT				S	S	05 02 59.1	+0.9
JMM	**Marumori**	**0.82**	**339**	⇑P	P	05 02 47.4	-0.1
JMM				S	S	05 02 58.8	-0.3
JFY	**Yanaizu**	**1.21**	**285**	⇑P	P	05 02 52.9	+0.1
JOU	**Okura**	**1.32**	**343**	⇑P	P	05 02 54.3	-0.3
JIO	**Ouri**	**1.36**	**6**	⇑P	P	05 02 54.5	-0.6
JYS	**Shirataka**	**1.42**	**322**	⇑P	P	05 02 56.1	+0.1

IDC ***02*** *05:11:19.5±0.4,21.12S×174.51W,mb5.2/19,mb1 5.3/21, mb1mx5.3/22,ML5.1/2,MS5.1/16,Ms1 5.1/16, ms1mx4.9/26,Error ellipse: s-maj=20.5km s-min=12.1km az=155.0*

NEIC ***02*** *05:11:21.3±0.1,21.04S×174.48W,h10km,mb5.5/28, MS5.3/105,Error ellipse: s-maj=6.5km s-min=3.8km az=135.0*

SYO ***02*** *05:11:21.3,21.04S×174.48W,h10km,MB5.5,MS5.3*

HRVD ***02*** *05:11:21.3±0.2,21.30S×173.81W,h16km,MW5.6/73, Centroid moment Tensor Solution. LP body waves: s56,c108;Mantle waves: s73,c157; Half duration: 1s5 Moment tensor: Scale 10¹⁷Nm; Mrr2.29±.04; Mθθ-0.31±.04; Mϕϕ-1.98±.03; Mrθ0.72±.12; Mθϕ-1.17±.03; Mϕr1.81±.11; Best double couple: Mo3.12×10¹⁷ NP1: ϕs212°,δ26°,λ98°. NP2:ϕs23°,δ64°,λ86°. Principal axes: T 2.98, Plg70°, Azm286°; N .28, Plg3°, Azm25°; P -3.26, Plg19°, Azm116°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

BJI ***02*** *05:11:21.9,20.72S×174.31W,h15km,mB5.7,mb5.4, Ms5.3,Msz5.1*

MOS ***02*** *05:11:24.4±0.9,20.90S×174.54W,h33km,mb5.7/19, MS5.2/28,Error ellipse: s-maj=13.4km s-min=9.4km az=80.7*

ISC 02 05:11:23.2±0.2,**21.15S**±0.05×**174.33W**±0.04,**h32**km, **h32**km±1.9km**:pP-P,n584,**σ1s**19**/182,**mb5.4**/64,**MS5.2**/136, **52C-17D,Tonga Islands**

Code	Station Name	Δ°	AZ°	Phase	ID		Time		Res
				Op	ISC		h m s		ISC
RAR	**Rarotonga**	**13.58**	**93**	Pn	**P**		**05 14 25.5**		**-11**
	16nm,0.3s,baz=239,slow=9.2,SNR=13								
RAR				Sn	S		05 16 42.7		-24
	8.0nm,0.3s,baz=65,slow=16,SNR=3.7								
RAR	**Rarotonga**	**13.58**	**93**	*e*P	**P**		**05 14 26.0**		**-10**
RAR	**Rarotonga**	**13.58**	**93**	*e*P	**P**		**05 14 24.9**		**-11**
BKM	**Butte a Klehm**	**16.80**	**279**	*i* P	**P**		**05 15 21.6**		**+3.7**
DZM	**Mont Dzumac**	**17.90**	**264**	*e*P	**P**		**05 15 29.9**		**-1.8**
DZM	**Mont Dzumac**	**17.90**	**264**	*e*P	**P**		**05 15 29.9**		**-1.8**
NOUC	**Port Laguerre**	**18.04**	**263**	*e*P	**P**		**05 15 34.4**		**+1.0**
NOUC	**Port Laguerre**	**18.04**	**263**	*e*P	**P**		**05 15 34.4**		**+1.0**
URZ	**Urewera**	**18.59**	**202**	Pn	**P**		**05 15 38.9**		**-1.2**
	3.2nm,0.3s,baz=8.1,slow=4.8,SNR=13								
URZ				Sn	**S**		**05 18 51.9**		**-11**
	2.1nm,0.3s,baz=139,slow=18,SNR=7.6								
SNZO	**South Karori**	**22.14**	**202**	*e*P	**P**		**05 16 19.1**		**+1.2**
	298nm,1.3s,mb5.6								
SNZO				LR	LR				
	comp=Z,4μm,19.0s,MS4.9								
QRZ	**Quartz Range**	**22.57**	**207**	P	**P**		**05 16 22.3**		**+0.1**
QRZ	**Quartz Range**	**22.57**	**207**	*e*P	**P**		**05 16 25.4**		**+3.2**
TBI	**Tubuai**	**23.11**	**100**	*e*P	**P**		**05 16 24.9**		**-2.7**
	comp=Z,276nm,1.1s,mb5.6								
TBI				*e*R			05 21 28.3		
	comp=Z,116nm,27.2s								
THZ	**Tophouse**	**23.21**	**205**	P	**P**		**05 16 26.5**		**-1.9**
THZ	**Tophouse**	**23.21**	**205**	*e*P	**P**		**05 16 30.8**		**+2.4**
PAE	**Paea**	**23.59**	**86**	*e*P	**P**		**05 16 28.8**		**-3.5**
	comp=Z,150nm,1.1s,mb5.3								
PPT	**Papeete**	**23.61**	**86**	*e*P	**P**		**05 16 29.2**		**-3.3**
	comp=Z,132nm,1.4s,mb5.2								
PPT	**Papeete**	**23.61**	**86**	P	**P**		**05 16 30.8**		**-1.7**
	comp=Z,49nm,0.7s,mb5.0,baz=286,slow=10,SNR=3.0								
DSZ	**Denniston Nort**	**23.64**	**207**	*e*P	**P**		**05 16 34.5**		**+2.0**
TVO	**Taravao**	**23.87**	**86**	*e*P	**P**		**05 16 31.6**		**-3.4**
	comp=Z,280nm,1.1s,mb5.6								
RPZ	**Rata Peaks**	**25.59**	**205**	P	**P**		**05 16 49.7**		**-1.5**
	comp=Z,52nm,0.6s,mb5.2,baz=47,slow=1.7,SNR=6.0								
RPZ				LR	LR		05 26 45.4		
	comp=Z,8μm,18.8s,MS5.2,baz=22,slow=36								
RPZ	**Rata Peaks**	**25.59**	**205**	P	**P**		**05 16 49.6**		**-1.5**
RPZ				LR	LR		05 26 45.4		
PMOR	**Pomariorio Ree**	**25.84**	**81**	*e*P	**P**		**05 16 50.6**		**-3.2**
	comp=Z,138nm,1.2s,mb5.3								
BWZ	**Berwen**	**26.73**	**206**	*e*P	**P**		**05 17 02.1**		**+0.3**
ARMA	**Armidale**	**31.91**	**246**	*e*P	**P**		**05 17 47.6**		**-0.6**
CNB	**Canberra Magne**	**34.76**	**238**	*e*P	**P**		**05 18 10.4**		**-2.4**
	comp=Z,43nm,1.2s,mb5.2								
RKT	**Rikitea**	**36.44**	**101**	*e*P	**P**		**05 18 24.3**		**-2.8**
	comp=Z,108nm,1.2s,mb5.7								
RKT	**Rikitea**	**36.44**	**101**	*e*L			05 26 37.9		
RKT				*e*R			05 27 46.4		
	comp=Z,9μm,32.5s								
CTA	**Charters Tower**	**36.84**	**264**	*e*P	**P**		**05 18 28.9**		**-1.7**
	comp=Z,7.6nm,0.9s,mb4.5								
CTA				*e*S	**S**		**05 24 31.3**		**+19**
CTA	**Charters Tower**	**36.84**	**264**	*e*P	**P**		**05 18 28.9**		**-1.7**
CTA				pmax	pmax				
	comp=Z,8.0nm,0.9s								
CTAO	**Charters Tower**	**36.84**	**264**	*e*P	**P**		**05 18 29.5**		**-1.1**
CTAO				pmax	pmax				
	comp=Z,20nm,1.0s,mb4.9								
CTAO				MLR	MLR				
	comp=Z,3μm,19.0s,MS5.1								
CTAO	**Charters Tower**	**36.84**	**264**	*e*P	**P**		**05 18 29.5**		**-1.1**
	comp=Z,20nm,1.0s,mb4.9								
CTAO				LR	LR				
	comp=Z,3μm,19.0s,MS5.1								
TAU	**Tasmania Unive**	**38.63**	**227**	PFAKE			05 19 00.0		+15
TAU				LR	LR				
	comp=Z,2μm,19.0s,MS4.9								
PMG	**Port Moresby**	**38.83**	**282**	P	**P**		**05 18 45.1**		**-2.2**
	comp=Z,50nm,0.9s,mb5.2,baz=109,slow=4.9,SNR=13								
PMG	**Port Moresby**	**38.83**	**282**	*e*P	**P**		**05 18 45.2**		**-2.2**
PMG				pmax	pmax				
	comp=Z,68nm,1.1s								
PMG				MLR	MLR				
	comp=Z,2μm,20.0s								
PMG	**Port Moresby**	**38.83**	**282**	*e*P	**P**		**05 18 45.1**		**-2.2**
	comp=Z,68nm,1.1s,mb5.3								
PMG				LR	LR				
	comp=Z,2μm,20.0s,MS5.0								
STKA	**Stephens Creek**	**40.62**	**245**	*e*P	**P**		**05 19 00.3**		**-1.7**
	comp=Z,16nm,1.3s,mb4.5								
STKA	**Stephens Creek**	**40.62**	**245**	P	**P**		**05 19 00.0**		**-1.9**
	comp=Z,22nm,1.1s,mb4.7,baz=96,slow=6.2,SNR=9.9								
STKA				LR	LR		05 34 15.6		
	comp=Z,2μm,18.0s,MS5.1,baz=76,slow=34								
AS12	**Alice Springs**	**47.72**	**257**	*e*P	**P**		**05 19 56.8**		**-2.4**
	comp=Z,66nm,1.1s,mb5.6								
ASAR	**Alice Springs**	**47.72**	**257**	P	**P**		**05 19 56.2**		**-3.0**
	comp=Z,38nm,0.9s,mb5.4,baz=89,slow=8.4,SNR=142								
ASAR				PcP	PcP		05 21 27.8		-0.7
	comp=Z,14nm,0.9s,baz=98,slow=4.9,SNR=4.7								
ASAR				S	**S**		**05 26 48.4**		**-3.8**
	comp=Z,1.8nm,1.0s,baz=98,slow=14,SNR=4.5								
ASAR				LR	LR		05 39 17.4		
	comp=Z,2μm,18.6s,MS5.0,baz=98,slow=35								
WB2	**Warramunga Arr**	**47.90**	**262**	*i* P	**P**		**05 19 57.9**		**-2.8**
WB2				eS			05 25 22.4		
WRAB	**Tennant Creek**	**47.90**	**262**	*e*P	**P**		**05 19 58.0**		**-2.7**
	comp=Z,113nm,1.1s,mb5.8								
WRAB				LR	LR				
	comp=Z,3μm,20.0s,MS5.2								
WRA	**Warramunga Arr**	**47.91**	**262**	P	**P**		**05 19 57.5**		**-3.3**
	comp=Z,20nm,0.8s,mb5.2,baz=96,slow=7.8,SNR=50								
WRA				PcP	PcP		05 21 28.5		-0.8
	comp=Z,18nm,1.1s,baz=94,slow=4.3,SNR=5.5								
WRA				S	**S**		**05 26 57.0**		**+2.0**
	comp=Z,1.7nm,0.9s,baz=100,slow=14,SNR=7.4								
WRA				LR	LR		05 39 55.9		
	comp=Z,3μm,18.5s,MS5.3,baz=95,slow=36								
KAKA	**Kakadu**	**51.46**	**270**	*e*P	**P**		**05 20 25.4**		**-2.6**
	comp=Z,37nm,1.1s,mb5.2								
FORT	**Forrest**	**52.20**	**247**	*e*P	**P**		**05 20 31.0**		**-2.4**
	comp=Z,85nm,0.7s,mb5.8								
GUMO	**Guam**	**52.89**	**307**	PFAKE			05 20 50.0		+11
GUMO				LR	LR				
	comp=Z,1μm,21.0s,MS5.0								
FITZ	**Fitzroy Crossi**	**56.34**	**262**	*e*P	**P**		**05 21 01.9**		**-2.0**
	comp=Z,10nm,1.3s,mb4.7								
FITZ	**Fitzroy Crossi**	**56.34**	**262**	P	**P**		**05 21 01.4**		**-2.5**
	comp=Z,6.9nm,0.7s,mb4.8,baz=178,slow=7.1,SNR=21								
SBA	**Scott Base**	**57.48**	**185**	*e*P	**P**		**05 21 12.4**		**+1.1**
SBA				pmax	pmax				
	comp=Z,41nm,1.0s,mb5.4								
SBA				MLR	MLR				
	comp=Z,1μm,19.0s,MS5.1								
SBA	**Scott Base**	**57.48**	**185**	*e*P	**P**		**05 21 12.4**		**+1.1**
	comp=Z,41nm,1.0s,mb5.4								
SBA				LR	LR				
	comp=Z,1μm,19.0s,MS5.1								
VNDA	**Vanda**	**57.60**	**186**	P	**P**		**05 21 13.0**		**+0.9**
RPN	**Rapa Nui**	**59.05**	**110**	PFAKE			05 21 40.0		+17
RPN				LR	LR				
	comp=Z,13μm,19.0s,MS6.1								
KLBR	**Kellerberrin**	**60.89**	**245**	*e*P	**P**		**05 21 33.6**		**-1.8**
	comp=Z,69nm,1.1s,mb5.7								
NWAO	**Narrogin (SRO)**	**61.15**	**243**	PFAKE			05 21 50.0		+13
NWAO				LR	LR				
	comp=Z,2μm,19.0s,MS5.2								
MUN	**Mundaring**	**62.14**	**244**	*e*P	**P**		**05 21 42.4**		**-1.5**
	comp=Z,32nm,1.2s,mb5.3								
MUN	**Mundaring**	**62.14**	**244**	*e*P	**P**		**05 21 42.4**		**-1.5**
MUN				pmax	pmax				
	comp=Z,32nm,1.2s,mb5.3								
CBIJ	**Chichi jima**	**63.81**	**317**	LR	LR		05 45 33.6		
	comp=Z,1μm,20.5s,MS5.0,baz=133,slow=32								
QSPA	**South Pole Qui**	**68.93**	**180**	*e*P	**P**		**05 22 27.4**		**+0.7**
	comp=Z,56nm,1.1s,mb5.4								
QSPA				LR	LR				
	comp=Z,740nm,19.2s,MS4.9								
JHJ	**Hachijo jima 2**	**69.50**	**320**	LR	LR		05 53 08.8		
	comp=Z,599nm,18.2s,MS4.9,baz=303,slow=36								
TGY	**Tagaytay City**	**72.56**	**293**	LR	LR		05 53 53.6		
	comp=Z,757nm,19.1s,MS5.0,baz=71,slow=35								
ADK	**Adak**	**72.74**	**358**	PFAKE			05 23 00.0		+10
ADK				LR	LR				
	comp=Z,301nm,19.0s,MS4.6								
MAJO	**Matsushiro**	**72.81**	**322**	*e*P	**P**		**05 22 49.8**		**-1.0**
MAJO				pmax	pmax				
	comp=Z,78nm,1.2s,mb5.5								
MAJO				MLR	MLR				
	comp=Z,852nm,20.0s,MS5.0								
MAJO	**Matsushiro**	**72.81**	**322**	*e*P	**P**		**05 22 49.8**		**-1.0**
	comp=Z,78nm,1.2s,mb5.5								
MAJO				LR	LR				
	comp=Z,852nm,20.0s,MS5.0								
MAT	**Matsushiro**	**72.81**	**322**	P	**P**		**05 22 49.7**		**-1.1**
MAT				*e*S	S		05 32 13.2		+0.1
MAT	**Matsushiro**	**72.81**	**322**	*e*P	**P**		**05 22 50.0**		**-0.8**
MAT				S	S		05 32 13.0		-0.1
MAT				pmax	pmax				
	comp=Z,88nm,1.2s,mb5.6								
MAT				MLR	MLR				
	comp=Z,710nm,20.0s,MS4.9								
MAT	**Matsushiro**	**72.81**	**322**	*e*P	**P**		**05 22 50.0**		**-0.8**
	comp=Z,88nm,1.2s,mb5.6								
MAT				S	S		05 32 13.0		-0.1
MAT				LR	LR				
	comp=Z,710nm,20.0s,MS4.9								
SMY	**Shemya**	**74.25**	**353**	*e*P	**P**		**05 22 57.7**		**-1.1**
SMY				pmax	pmax				
	comp=Z,137nm,1.1s,mb5.8								
SMY				MLR	MLR				
	comp=Z,5μm,22.0s,MS5.7								
SMY	**Shemya**	**74.25**	**353**	*e*P	**P**		**05 22 57.7**		**-1.2**
	comp=Z,137nm,1.1s,mb5.8								
SMY				LR	LR				
	comp=Z,5μm,22.0s,MS5.7								
JNU	**Nakatsue**	**75.13**	**315**	LR	LR		05 52 06.1		
	comp=Z,333nm,18.1s,MS4.7,baz=302,slow=33								
SAO	**San Andreas Ge**	**76.19**	**41**	*e*P	**P**		**05 23 10.6**		**+0.3**
SAO				pmax	pmax				
	comp=Z,95nm,1.2s,mb5.6								
SAO				MLR	MLR				
	comp=Z,3μm,19.0s,MS5.6								
SAO	**San Andreas Ge**	**76.19**	**41**	*e*P	**P**		**05 23 10.6**		**+0.3**
	comp=Z,95nm,1.2s,mb5.6								
SAO				LR	LR				
	comp=Z,3μm,19.0s,MS5.6								
HOPS	**Hopland**	**76.67**	**39**	PFAKE			05 23 20.0		+7.1
HOPS				LR	LR				
	comp=Z,2μm,19.0s,MS5.5								
TATO	**Taipei**	**77.39**	**303**	PFAKE			05 23 30.0		+13
TATO				LR	LR				
	comp=Z,1μm,20.0s,MS5.2								
PFO	**Pinyon Flat Ob**	**77.48**	**46**	PFAKE			05 23 30.0		+12
PFO				LR	LR				
	comp=Z,2μm,19.0s,MS5.4								
PET	**Petropavlovsk**	**77.49**	**344**	*e*P	**P**		**05 23 15.1**		**-2.1**
PET				*e*S	S		05 33 05.5		+0.9
PET				*e*PPS	PPS		05 33 57.0		-9.1
PET				*e*SS	SS		05 38 09.3		+2.5
PET				pmax	pmax				
	comp=Z,399nm,24.3s								
PET				smax					
	comp=E,414nm,18.7s								
PET				smax					
	comp=N,348nm,14.9s								
PET				MLR	MLR				
	comp=Z,1μm,21.0s,MS5.1								
PET	**Petropavlovsk**	**77.49**	**344**	PFAKE			05 23 30.0		+13
PET				LR	LR				
	comp=Z,1μm,19.0s,MS5.2								
CMB	**Columbia Colle**	**77.65**	**41**	*e*P	**P**		**05 23 17.9**		**-0.5**
CMB				pmax	pmax				
	comp=Z,50nm,1.0s,mb5.4								
CMB				MLR	MLR				
	comp=Z,2μm,20.0s,MS5.3								
CMB	**Columbia Colle**	**77.65**	**41**	*e*P	**P**		**05 23 17.9**		**-0.5**
	comp=Z,50nm,1.0s,mb5.4								
CMB				LR	LR				
	comp=Z,2μm,20.0s,MS5.3								
WDC	**Whiskeytown Da**	**78.03**	**38**	PFAKE			05 23 30.0		+10
WDC				LR	LR				
	comp=Z,2μm,19.0s,MS5.5								
YSS	**Yuzh-Sakhalins**	**78.05**	**332**	*i* P	**P**		**05 23 19.6**		**-0.8**
YSS				*e**PP	pP		05 23 29.6		-0.8
YSS				*e*			05 26 10.0		
YSS				*e*S	S		05 33 16.0		+5.3
YSS				*e*PS	PS		05 33 46.0		-10
YSS				*e*PPS	PPS		05 34 10.0		-4.0
YSS				pmax	pmax				
	comp=N,20nm,1.2s								
YSS				pmax	pmax				
	comp=E,40nm,1.2s								
YSS				pmax	pmax				
	comp=Z,90nm,1.2s,mb5.6								
YSS				pmax	pmax				
	comp=Z,500nm,6.0s								
YSS				MLR	MLR				
	comp=E,600nm,18.0s								
YSS				MLR	MLR				
	comp=Z,500nm,18.0s,MS4.9								
YSS	**Yuzh-Sakhalins**	**78.05**	**332**	*e*P	**P**		**05 23 20.5**		**+0.1**
	comp=Z,117nm,1.4s,mb5.6								
YSS				LR	LR				
	comp=Z,948nm,20.0s,MS5.1								
DAC	**Darwin (Calif)**	**78.32**	**44**	PFAKE			05 23 30.0		+7.9
DAC				LR	LR				
	comp=Z,1μm,20.0s,MS5.3								
MTUM	**Tungsten Hills**	**78.36**	**42**	*e*P	**P**		**05 23 22.6**		**+0.4**
YBH	**Yreka Blue Hor**	**78.70**	**37**	P	**P**		**05 23 24.1**		**+0.1**
	comp=Z,25nm,1.0s,mb5.1,baz=192,slow=7.5,SNR=32								
YBH	**Yreka Blue Hor**	**78.70**	**37**	P	**P**		**05 23 24.1**		**+0.1**
YBH				LR	LR				
	comp=Z,1μm,19.0s,MS5.3								
WCN	**Washoe City**	**78.84**	**40**	*e*P	**P**		**05 23 24.8**		**-0.1**
NVAR	**Mina Array Bea**	**79.18**	**42**	P	**P**		**05 23 27.0**		**+0.2**
	comp=Z,42nm,0.8s,mb5.5,baz=212,slow=6.6,SNR=41								
NVAR				LR	LR		05 54 41.3		
	comp=Z,2μm,18.1s,MS5.4,baz=320,slow=33								
TPH	**Tonopah**	**79.64**	**42**	*e*P	**P**		**05 23 29.2**		**0.0**
TPH				MLR	MLR				
	comp=Z,2μm,20.0s,MS5.3								
HSO	**Harness Mounta**	**79.69**	**35**	*e*P	**P**		**05 23 30.0**		**+0.6**
KS15	**Wonju Array Si**	**79.69**	**317**	*e*P	**P**		**05 23 29.4**		**-0.2**
MOD	**Modoc**	**80.17**	**38**	PFAKE			05 23 40.0		+8.0
MOD				LR	LR				
	comp=Z,2μm,19.0s,MS5.4								
COR	**Corvallis**	**80.29**	**34**	*e*P	**P**		**05 23 31.4**		**-1.2**
COR				pmax	pmax				
	comp=Z,64nm,1.4s,mb5.4								
COR	**Corvallis**	**80.29**	**34**	*e*P	**P**		**05 23 31.4**		**-1.2**
	comp=Z,64nm,1.4s,mb5.4								
INCN	**Inchon**	**80.52**	**316**	*e*P	**P**		**05 23 33.6**		**-0.3**
	comp=Z,123nm,1.2s,mb5.7								
INCN				LR	LR				
	comp=Z,452nm,20.0s,MS4.8								
KDAK	**Kodiak Island**	**80.70**	**12**	PFAKE			05 23 50.0		+16
KDAK				LR	LR				
	comp=Z,2μm,19.0s,MS5.5								
TUC	**Tucson**	**80.71**	**50**	*e*P	**P**		**05 23 35.3**		**+0.2**
TUC				MLR	MLR				
	comp=Z,1μm,19.0s,MS5.3								
VLA	**Vladivostok**	**80.81**	**323**	⇓*i*P	**P**		**05 23 34.0**		**-1.4**
VLA				*i*			05 23 40.0		
VLA				*e*S	S		05 33 44.0		+4.1
VLA				pmax	pmax				
	comp=Z,1μm,8.0s								
VLA				MLR	MLR				
	comp=Z,2μm,18.0s,MS5.4								
VLA				MLR	MLR				
	comp=N,900nm,16.0s,MS5.4								
VLA				MLR	MLR				
	comp=E,1μm,16.0s,MS5.4								
SSOR	**Sweet Springs**	**80.92**	**35**	*e*P	**P**		**05 23 35.8**		**-0.1**
BMN	**Battle Mountai**	**81.07**	**40**	PFAKE			05 23 50.0		+13
BMN				LR	LR				
	comp=Z,1μm,19.0s,MS5.3								
WVOR	**Wild Horse Val**	**81.46**	**38**	PFAKE			05 23 50.0		+11
WVOR				LR	LR				
	comp=Z,2μm,20.0s,MS5.6								
BMW	**Boistfort Moun**	**81.61**	**33**	*e*P	**P**		**05 23 40.3**		**+0.8**
CROR	**Criterion Ridg**	**81.78**	**35**	P	**P**		**05 23 37.1**		**-3.3**
SHW	**Mount Saint He**	**81.93**	**34**	*e*P	**P**		**05 23 42.3**		**+1.2**
OCWA	**Octopus Mounta**	**82.01**	**32**	PFAKE			05 23 50.0		+8.5
OCWA				LR	LR				
	comp=Z,714nm,20.0s,MS5.0								
WUAZ	**Wupatki**	**82.02**	**47**	PFAKE			05 23 50.0		+8.2
WUAZ				LR	LR				
	comp=Z,845nm,19.0s,MS5.1								
MAW	**Mawson**	**82.10**	**199**	*e*P	**P**		**05 23 42.6**		**+1.0**
	comp=Z,9.0nm,0.8s,mb4.8								
MAW	**Mawson**	**82.10**	**199**	P	**P**		**05 23 42.1**		**+0.5**
	comp=Z,12nm,0.9s,mb4.8,baz=146,slow=6.8,SNR=12								
MAW				LR	LR		05 59 14.7		
	comp=Z,1μm,19.1s,MS5.2,baz=7.8,slow=35								
MAW	**Mawson**	**82.10**	**199**	*e*P	**P**		**05 23 42.3**		**+0.7**
MAW				pmax	pmax				
	comp=Z,38nm,1.1s								
LON	**Longmire**	**82.52**	**33**	*e*P	**P**		**05 23 44.1**		**-0.1**
GNW	**Green Mountain**	**82.55**	**32**	*e*P	**P**		**05 23 44.6**		**+0.3**
FMW	**Mount Fremont**	**82.71**	**33**	P	**P**		**05 23 46.1**		**+0.9**
NJ2	**Nanjing**	**82.95**	**308**	*e*P	**P**		**05 23 47.1**		**+0.4**
NJ2				S	S		05 33 58.0		-4.1
NJ2				SS	SS		05 39 25.0		-4.1
NJ2				AMB	AMB				
	comp=Z,880nm,9.7s								
NJ2				LR	LR				
	comp=N,880nm,23.3s,MS5.2								
NJ2				LR	LR				
	comp=E,1μm,25.0s,MS5.2								
NJ2				LR	LR				
	comp=Z,1μm,26.8s,MS5.2								
GZH	**Guangzhou**	**83.04**	**298**	P	**P**		**05 23 46.4**		**-1.0**
GZH				AMB	AMB				
	comp=Z,530nm,4.1s								
GZH				LR	LR				
	comp=N,306nm,19.0s,MS4.9								
GZH				LR	LR				
	comp=E,327nm,17.8s,MS4.9								
GZH				LR	LR				
	comp=Z,649nm,18.1s,MS5.0								
MDJ	**Mudanjiang**	**83.05**	**323**	P	**P**		**05 23 47.7**		**+0.7**
MDJ				AP	pP		05 23 51.8		-5.3
MDJ				XP	sP		05 23 55.0		-5.4
MDJ				PP	PP		05 26 58.0		-1.8
MDJ				AMB	AMB				
	comp=Z,43nm,1.1s,mb5.4								
MDJ				AMB	AMB				
	comp=Z,290nm,3.5s								
MDJ				LR	LR				
	comp=N,808nm,19.6s								
MDJ				LR	LR				
	comp=E,437nm,25.2s								
MDJ				LR	LR				
	comp=Z,770nm,22.4s,MS5.0								
MDJ	**Mudanjiang**	**83.05**	**323**	*e*P	**P**		**05 23 47.4**		**+0.5**
	comp=Z,109nm,1.5s,mb5.7								
MDJ				LR	LR				
	comp=Z,817nm,20.0s,MS5.1								
MVU	**Marysvale**	**83.10**	**44**	PFAKE			05 24 00.0		+13
MVU				LR	LR				
	comp=Z,961nm,20.0s,MS5.2								
RSO	**Redoubt South**	**83.19**	**11**	*e*P	**P**		**05 23 46.6**		**-0.7**
SVW	**Sparrevohn**	**83.34**	**9**	*e*P	**P**		**05 23 47.8**		**-0.3**
KGM	**Kluang**	**83.59**	**275**	⇓*e*P	**P**		**05 23 51.2**		**+0.7**
SLKM	**Skilak Lake**	**83.69**	**12**	*e*P	**P**		**05 23 50.1**		**+0.3**
RPW	**Rockport**	**83.80**	**32**	*e*P	**P**		**05 23 51.1**		**+0.4**
ETW	**Entiat**	**83.84**	**33**	P	**P**		**05 23 51.8**		**+0.8**
SPU	**Mount Spurr**	**83.98**	**11**	*e*P	**P**		**05 23 50.4**		**-0.9**
WTV	**Waterville**	**84.10**	**34**	P	**P**		**05 23 52.8**		**+0.6**
NLW	**Nelson Butte**	**84.15**	**33**	P	**P**		**05 23 53.0**		**+0.6**
QIZ	**Qiongzhong**	**84.26**	**293**	P	**P**		**05 23 53.3**		**-0.4**
QIZ				S	S		05 34 23.7		+8.3
QIZ				AMB	AMB				
	comp=Z,356nm,9.6s		

HWUT LR LR
comp=Z,2µm,19.0s,MS5.4
PNT Penticton 85.31 32 P **P** **05 23 58.6 +0.4**
MA2 Magadan 85.36 343 *ce*P **P** **05 23 57.3 -0.9**
MA2 *e*S S 05 34 20.1 -5.1
MA2 *e*PS PS 05 35 20.1 -6.6
MA2 *e*SS SS 05 40 00.0 -3.6
MA2 pmax pmax
comp=Z,150nm,2.3s,mb5.7
MA2 MLR MLR
comp=Z,1µm,20.0s,MS5.3
WHN Wuhan 85.61 305 P **P** **05 24 01.0 +0.8**
WHN AMB AMB
comp=Z,67nm,1.2s,mb5.8
WHN AMB AMB
comp=Z,379nm,7.0s
WHN LR LR
comp=N,600nm,16.0s
WHN LR LR
comp=Z,1µm,21.4s
NEW Newport 85.93 34 PFAKE 05 24 10.0 +8.6
NEW LR LR
comp=Z,2µm,19.0s,MS5.5
AHID Auburn Hatcher 86.16 41 PFAKE 05 24 10.0 +7.4
AHID LR LR
comp=Z,2µm,19.0s,MS5.4
TIA Tai'an 86.26 311 *e*P **P** **05 24 04.2 +0.9**
TIA AMB AMB
comp=Z,50nm,1.3s,mb5.6
PLCA Paso Flores 86.32 132 P **P** **05 24 04.7 +1.2**
comp=Z,13nm,1.0s,mb5.1,baz=226,slow=5.3,SNR=11
PLCA Paso Flores 86.32 132 P **P** **05 24 04.7 +1.2**
PLCA LR LR
comp=Z,790nm,22.0s,MS5.1
IPM Ipoh 86.65 276⇓ *e*P **P** **05 24 06.7 +1.0**
MSO Missoula 86.79 37 PFAKE 05 24 20.0 +14
MSO LR LR
comp=Z,2µm,20.0s,MS5.5
SYO Syowa Base 86.82 192 ⇓P **P** **05 24 04.1 -1.2**
SYO Syowa Base 86.82 192 ⇑PcP PcP 05 24 08.2 +0.4
SYO Syowa Base 86.82 192⇓ *e*P **P** **05 24 04.1 -1.2**
SYO ⇑*e*PcP PcP 05 24 08.2 +0.4
BW06 Boulder Array 87.11 42 *e*P **P** **05 24 07.0 -0.2**
comp=Z,16nm,0.8s,mb5.3
BW06 LR LR
comp=Z,1µm,19.0s,MS5.3
PDAR Pinedale Array 87.11 42 P **P** **05 24 07.3 +0.1**
comp=Z,17nm,0.8s,mb5.3,baz=207,slow=3.8,SNR=14
PDAR LR LR 05 59 11.4
comp=Z,944nm,18.4s,MS5.2,baz=244,slow=33
SDCO Great Sand Dun 87.21 48 PFAKE 05 24 20.0 +12
SDCO LR LR
comp=Z,828nm,20.0s,MS5.1
SNAA Sanae 87.24 177 *e* **P** **05 24 09.0 +1.7**
SNAA Sanae 87.24 177 *j*P **P** **05 24 07.9 +0.6**
SNAA *e* 05 24 09.0
SNAA *e* 05 24 29.2
SNAA *e* 05 27 20.8
VNA3 Neumayer Olymp 87.24 175 *e* **P** **05 24 09.5 +2.2**
VNA3 Neumayer Olymp 87.24 175 *e* **P** **05 24 27.0 +20**
VNA3 Neumayer Olymp 87.24 175⇑ *j*P **P** **05 24 08.3 +1.0**
VNA3 *e* 05 24 09.5
VNA3 *e* 05 24 27.0
VNA3 *e* 05 27 19.6
VNA3 *e* 05 29 09.5
DLBC Dease Lake 87.34 22 *e*P **P** **05 24 08.3 +0.3**
BOZ Bozeman (W) 87.44 39 PFAKE 05 24 20.0 +11
BOZ LR LR
comp=Z,1µm,19.0s,MS5.4
VNA2 Neumayer--Watz 87.72 176 *e* **P** **05 24 12.4 +2.8**
VNA2 Neumayer--Watz 87.72 176 *e* 05 29 14.0
VNA2 Neumayer--Watz 87.72 176⇑ *j*P **P** **05 24 11.3 +1.7**
VNA2 *e* 05 24 12.4
VNA2 *e* 05 24 30.1
VNA2 *e* 05 27 24.5
VNA2 *e* 05 29 14.0
SEY Seymchan 87.82 345 *e*P **P** **05 24 10.2 0.0**
SEY *e* 05 34 38.3
SEY *e*S S 05 34 48.0 -0.6
SEY MLR MLR
comp=Z,2µm,18.0s,MS5.6
SEY MLR MLR
comp=E,1µm,17.0s
VNA1 Neumayer--Stat 87.93 175 *e* **P** **05 24 13.9 +3.3**
VNA1 Neumayer--Stat 87.93 175 *e* 05 29 15.1
VNA1 Neumayer--Stat 87.93 175⇓ *j*P **P** **05 24 12.9 +2.3**
VNA1 *e* 05 24 13.9
VNA1 *e* 05 24 33.6
VNA1 *e* 05 27 25.8
VNA1 *e* 05 29 15.1
JCT Junction City 88.05 56 PFAKE 05 24 20.0 +7.9
JCT LR LR
comp=Z,835nm,20.0s,MS5.2
COLA College 88.14 11 P **P** **05 24 11.6 -0.1**
COLA pmax pmax
comp=Z,120nm,1.4s,mb5.9
COLA College 88.14 11 *e*P **P** **05 24 11.5 -0.2**
ISCO Idaho Springs 88.14 46 PFAKE 05 24 20.0 +7.7
ISCO LR LR
comp=Z,805nm,19.0s,MS5.2
ILAR Eielson Array 88.22 11 P **P** **05 24 11.5 -0.6**
comp=Z,53nm,1.2s,mb5.6,baz=219,slow=4.6,SNR=70
IMA Indian Mountai 88.34 8 *e*P **P** **05 24 13.1 +0.5**
EFI East Falkland 88.66 146 PFAKE 05 24 30.0 +16
EFI LR LR
comp=Z,1µm,19.0s,MS5.3
BJT Baijiatuau 88.78 314 PFAKE 05 24 30.0 +15
BJT LR LR
comp=Z,713nm,19.0s,MS5.1
BJI Beijing 88.78 314 P **P** **05 24 16.1 +0.7**
BJI SKS SKS 05 34 45.7 -3.2
BJI AMB AMB
comp=Z,44nm,1.8s,mb5.5
BJI LR LR
comp=N,370nm,16.7s,MS5.2
BJI LR LR
comp=E,646nm,17.4s,MS5.2
BJI LR LR
comp=Z,509nm,17.6s,MS5.0
DAWY Dawson 89.17 15 *e*P **P** **05 24 16.9 +0.3**
ENH Enshi 89.26 303 *e*P **P** **05 24 18.3 +0.5**
comp=Z,255nm,1.4s,mb6.4
ENH LR LR
comp=Z,716nm,19.0s,MS5.1
GYA Guiyang 89.96 298⇑ *j*P **P** **05 24 22.4 +1.2**
GYA SKS SKS 05 34 53.0 -3.4
GYA S S 05 35 02.6 -6.8
GYA AMB AMB
comp=Z,60nm,1.7s,mb5.7
GYA AMB AMB
comp=Z,460nm,9.0s
GYA LR LR
comp=N,460nm,23.1s,MS5.0
GYA LR LR
comp=E,530nm,21.9s,MS5.0
GYA LR LR
comp=Z,650nm,19.2s,MS5.1
BILL Bilibino 90.06 353 *e*P **P** **05 24 20.1 -0.6**
BILL pmax pmax
comp=Z,13nm,1.1s,mb5.2
BILL Bilibino 90.06 353 *e*P **P** **05 24 20.1 -0.7**
comp=Z,13nm,1.1s,mb5.2
WMOK Wichita Mounta 90.66 53 PFAKE 05 24 40.0 +16
WMOK LR LR
comp=Z,771nm,21.0s,MS5.1
NNT Nongplab 90.75 283 P **P** **05 24 27.7 +2.6**
HKT Hockley 90.95 58 PFAKE 05 24 40.0 +14
HKT LR LR
comp=Z,956nm,19.0s,MS5.2
HIA Hailar 91.23 323 PFAKE 05 24 40.0 +13
HIA LR LR
comp=Z,970nm,20.0s,MS5.2
RSSD Black Hills 91.27 43 PFAKE 05 24 40.0 +13
RSSD LR LR
comp=Z,2µm,19.0s,MS5.5
XAN Xi'an 91.27 306 P **P** **05 24 28.3 +1.2**
XAN AP pP 05 24 38.2 +0.9
XAN AMB AMB
comp=Z,83nm,1.3s,mb5.9
NST Nakhon Sawan 91.51 286 P **P** **05 24 30.0 +1.5**
CBKS Cedar Bluff 91.72 49 PFAKE 05 24 40.0 +11
CBKS LR LR
comp=Z,858nm,19.0s,MS5.2
NANT Nan 92.14 289⇑P **P** **05 24 32.3 +0.9**
comp=Z,65nm,1.0s,mb5.9
HHC Hu-ho-hao-te 92.28 313⇑P **P** **05 24 33.1 +1.6**
HHC AP pP 05 24 43.9 +2.2
HHC AMB AMB
comp=Z,32nm,1.7s,mb5.4
HHC AMB AMB
comp=Z,316nm,8.4s
HHC LR LR
comp=N,237nm,16.7s,MS4.9
HHC LR LR
comp=E,296nm,16.9s,MS4.9
HHC LR LR
comp=Z,346nm,16.7s,MS4.9
KMI Kunming 92.71 296 *e*P **P** **05 24 35.8 +1.9**
KMI AP pP 05 24 46.5 +2.4
KMI PP PP 05 28 15.8 -2.8
KMI PPP PPP 05 30 19.3 -1.0
KMI SKS SKS 05 35 06.5 -5.8
KMI S S 05 35 32.2 -1.5
KMI XS 05 35 50.9
KMI AMB AMB
comp=Z,328nm,4.5s
KMI LR LR
comp=N,598nm,19.5s,MS5.3
KMI LR LR
comp=E,930nm,20.4s,MS5.3
KMI LR LR
comp=Z,1µm,21.3s,MS5.3
BDT Bhumibol Dam 93.08 287 P **P** **05 24 37.0 +1.2**
comp=Z,18nm,1.0s,mb5.5
BTO Baotou 93.23 312 *e*P **P** **05 24 37.5 +1.6**
CHRT Chiangrai 93.33 290⇑P **P** **05 24 38.5 +1.6**
comp=Z,171nm,0.9s,mb6.5
CMAR Chiang Mai Arr 93.57 288 P **P** **05 24 38.7 +0.7**
comp=Z,24nm,1.0s,mb5.6,baz=114,slow=3.0,SNR=91
CMAR LR LR 06 09 29.1
comp=Z,291nm,18.0s,MS4.8,baz=125,slow=37
CHTO Chiang Mai 93.70 289 P **P** **05 24 39.8 +1.2**
CHTO SKSac 05 35 15.1
YAK Yakutsk 94.02 337 *e*P **P** **05 24 37.6 -1.4**
YAK MLR MLR
comp=Z,866nm,19.0s,MS5.2
INK Inuvik 94.03 14 P **P** **05 24 39.0 +0.1**
INK Inuvik 94.03 14 *e*P **P** **05 24 38.4 -0.5**
comp=Z,26nm,1.0s,mb5.6
CD2 Chengdu 94.04 301 *e*P **P** **05 24 41.0 +1.1**
CD2 SKS SKS 05 35 16.3 -3.3
CD2 S S 05 35 49.9 +4.8
CD2 AMB AMB
comp=Z,20nm,1.2s,mb5.4
CD2 AMB AMB
comp=Z,320nm,9.8s
CD2 LR LR
comp=N,590nm,18.0s
CD2 LR LR
comp=Z,640nm,19.2s,MS5.1
MIAR Mount Ida 94.51 55 PFAKE 05 24 50.0 +8.0
MIAR LR LR
comp=Z,1µm,20.0s,MS5.4
LVC Limon Verde 95.29 117 P **P** **05 24 46.8 +0.9**
comp=Z,10nm,0.8s,mb5.3,baz=218,slow=0.5,SNR=12
LVC Limon Verde 95.29 117 P **P** **05 24 46.8 +0.9**
LVC LR LR
comp=Z,902nm,19.0s,MS5.3
YKA Yellowknife Ar 95.69 24 P **P** **05 24 46.7 0.0**
comp=Z,9.2nm,0.8s,mb5.2,baz=236,slow=4.2,SNR=112
YKA LR LR 06 03 27.9
comp=Z,549nm,19.2s,MS5.0,baz=215,slow=33
YKA Yellowknife Ar 95.69 24 P **P** **05 24 46.7 0.0**
YKA LR LR 06 03 27.9
YKW3 Yellowknife Ar 95.72 24 *e*P **P** **05 24 46.2 -0.7**
LZH Lanzhou 95.90 306 *e*P **P** **05 24 48.9 +0.6**
LZH AP pP 05 24 52.0 -6.6
LZH PP PP 05 28 45.0 +2.1
LZH SKS SKS 05 35 23.0 -6.6
LZH *e*S S 05 36 05.0 +4.2
LZH AMB AMB
comp=Z,54nm,1.6s,mb5.7
LZH LR LR
comp=N,401nm,16.9s
LZH LR LR
comp=Z,493nm,19.6s,MS5.0
CCM Cathedral Cave 97.55 52 PFAKE 05 25 10.0 +14
CCM LR LR
comp=Z,1µm,19.0s,MS5.3
OXF Oxford 97.70 56 PFAKE 05 25 10.0 +14
OXF LR LR
comp=Z,2µm,21.0s,MS5.6
ULN Ulaanbaatar 98.11 318 P **P** **05 24 58.7 +0.7**
ULN pmax pmax
comp=Z,5.0nm,1.1s,mb5.0
ULN Ulaanbaatar 98.11 318 *e*P **P** **05 24 57.4 -0.6**
comp=Z,5.1nm,1.1s,mb5.0
ULN LR LR
comp=Z,492nm,20.0s,MS5.0
SONM Songino Array 98.51 318 P **P** **05 25 00.2 +0.4**
comp=Z,2.0nm,1.1s,mb4.6,baz=146,slow=5.2,SNR=2.8
LPAZ La Paz 98.64 111 P **P** **05 25 02.8 +1.7**
comp=Z,1.9nm,0.9s,mb4.6,baz=244,slow=3.8,SNR=6.2
LPAZ LR LR 06 02 37.7
comp=Z,816nm,18.2s,MS5.3,baz=320,slow=31
LPAZ La Paz 98.64 111 P **P** **05 25 04.3 +3.3**
LPAZ La Paz 98.64 111 *e*P **P** **05 25 01.4 +0.4**
LPAZ LR LR
comp=Z,500nm,19.0s,MS5.0
PLAL Pickwick Lake 98.89 56 PFAKE 05 25 10.0 +8.2
PLAL LR LR
comp=Z,896nm,19.0s,MS5.3
ULM Lac du Bonnet 98.92 40 LR LR 06 05 41.8
comp=Z,2µm,18.5s,MS5.5,baz=35,slow=33
ULM Lac du Bonnet 98.92 40 PFAKE 05 25 10.0 +8.5
ULM LR LR
comp=Z,2µm,20.0s,MS5.6
LRAL Lakeview Retre 99.09 58 PFAKE 05 25 10.0 +7.2
LRAL LR LR
comp=Z,697nm,19.0s,MS5.2
WVT Waverly 99.46 55 PFAKE 05 25 20.0 +16
WVT LR LR
comp=Z,913nm,20.0s,MS5.3
JFWS Jewell Farm 99.94 48 PFAKE 05 25 20.0 +14
JFWS LR LR
comp=Z,784nm,19.0s,MS5.2
GTA Gaotai 100.05 308 *e*P P 05 25 08.2 +1.2
GTA PP PP 05 29 16.6 +1.6
GTA SKS SKS 05 35 38.8 -12
GTA S S 05 36 32.8 -2.9
GTA SS SS 05 43 31.8 -1.6
GTA AMB AMB
comp=Z,4.0nm,1.1s
GTA AMB AMB
comp=Z,96nm,6.8s
GTA LR LR
comp=N,138nm,19.4s,MS4.7
GTA LR LR
comp=E,187nm,18.2s,MS4.7
GTA LR LR
comp=Z,268nm,20.1s,MS4.8
TIXI Tiksi 100.27 344 *e*P P 05 25 06.7 -0.6
TIXI *e* 05 29 17.9
TIXI *e* 05 35 48.9
TIXI *e*S S 05 36 39.8 +3.1
TIXI pmax pmax
comp=Z,16nm,1.3s
TIXI Tiksi 100.27 344 PFAKE 05 25 20.0 +13
TIXI LR LR
comp=Z,955nm,22.0s,MS5.3
WCI Wyandotte Cave 101.29 53 PFAKE 05 25 20.0 +7.4
WCI LR LR
comp=Z,6µm,19.0s,MS6.1
ZAK Zakamensk 101.32 320 *e*P P 05 25 11.1 -1.4
TLY Talaya 101.54 321 *e*P P 05 25 12.4 -1.0
TLY *e* 05 29 22.0
TLY pmax pmax
comp=Z,41nm,0.7s
DWPF Disney 102.11 64 PFAKE 05 25 30.0 +14
DWPF LR LR
comp=Z,279nm,19.0s,MS4.8
CPUP Villa Florida 102.83 125 PFAKE 05 25 30.0 +10
CPUP LR LR
comp=Z,304nm,21.0s,MS4.8
LSA Lhasa 103.93 297 PFAKE 05 25 40.0 +16
LSA LR LR
comp=Z,282nm,22.0s,MS4.8
ACSO Alum Creek Sta 104.33 52 PFAKE 05 25 40.0 +14
ACSO LR LR
comp=Z,1µm,20.0s,MS5.4
AAM Ann Arbor 104.39 50 PFAKE 05 25 40.0 +14
AAM LR LR
comp=Z,1µm,19.0s,MS5.5
BLA Blacksburg 105.47 56 PFAKE 05 30 00.0
BLA LR LR
comp=Z,1µm,19.0s,MS5.4
MCWV Mont Chateau 106.52 53 PFAKE 05 30 00.0
MCWV LR LR
comp=Z,1µm,19.0s,MS5.4
ERPA Erie 106.99 51 PFAKE 05 30 00.0
ERPA LR LR
comp=Z,1µm,20.0s,MS5.4
CBN Corbin 108.06 55 PFAKE 05 30 00.0
CBN LR LR
comp=Z,1µm,19.0s,MS5.5
SSPA Standing Stone 108.20 53 PFAKE 05 30 00.0
SSPA LR LR
comp=Z,4µm,20.0s,MS6.0
BINY Binghamton 109.92 51 PFAKE 05 30 00.0
BINY LR LR
comp=Z,1µm,20.0s,MS5.5
WMQ Urumqi 109.95 310 PDIF Pdif 05 25 51.1 +0.5
WMQ PP PP 05 30 29.3 +0.2
WMQ PP PP
comp=Z,73nm,10.2s
WMQ LR LR
comp=N,2µm,28.2s,MS5.5
WMQ LR LR
comp=E,1µm,29.0s,MS5.5
WMQ LR LR
comp=Z,2µm,28.6s,MS5.6
NCB Newcomb 111.49 50 PFAKE 05 30 10.0 +11
NCB LR LR
comp=Z,1µm,20.0s,MS5.5
ZAL Zalesovo 113.16 321 PKiKP 05 29 57.5
comp=Z,1.3nm,0.6s,baz=108,slow=1.3,SNR=6.8
ZAL Zalesovo 113.16 321 *i* PKIKP PKPdf 05 29 57.2 -5.3
ZAL pmax pmax
comp=Z,1.0nm,0.6s
LBNH Lisbon 113.17 50 PFAKE 05 30 10.0 +7.2
LBNH LR LR
comp=Z,1µm,19.0s,MS5.5
HRV Harvard--Oak R 113.20 52 PFAKE 05 30 10.0 +7.1
HRV LR LR
comp=Z,338nm,19.0s,MS5.0
WES Weston 113.36 52 PFAKE 05 30 10.0 +6.8
WES LR LR
comp=Z,503nm,20.0s,MS5.1
NVS Novosibirsk 114.13 322 *e*PKIKP PKPdf 05 29 59.9 -4.5
NVS pmax pmax
comp=Z,1.0nm,0.3s
NVS pmax pmax
comp=N,2.0nm,0.5s
MKAR Makanchi Array 114.14 313 PKP PKPdf 05 29 59.6 -5.0
comp=N,3.7nm,1.0s,baz=90,slow=3.6,SNR=13
MKAR Makanchi Array 114.14 313 *i* PKIKP PKPdf 05 30 00.2 -4.5
MKAR pmax pmax
comp=Z,4.0nm,1.0s
KURK Kurchatov 116.80 317 *e*PKIKP PKPdf 05 30 04.6 -5.1
SCHQ Schefferville 117.06 38 PFAKE 05 30 20.0 +10
SCHQ LR LR
comp=Z,1µm,19.0s,MS5.6
BBSR BB Station 117.16 64 PFAKE 05 30 20.0 +9.1
BBSR LR LR
comp=Z,1µm,19.0s,MS5.6
KSH Kashi 118.08 304 *e*PKP PKPdf 05 30 10.1 -2.3
KSH *e*PP PP 05 31 28.5 +1.4
KSH *e*PKS PKS 05 33 45.4 +2.4
KSH *e*SKS SKS 05 37 21.1 +14
KSH *e*SKKS 05 38 21.0
KSH *e*SS SS 05 47 40.1 +4.4
KSH PP PP
comp=Z,220nm,5.0s
KSH LR LR
comp=N,130nm,8.5s
KSH LR LR
comp=E,170nm,10.7s
FRU Bishkek 119.32 308 *e*PKIKP PKPdf 05 30 10.5 -4.3
BVAR Borovoye Array 121.78 320 PKP PKPdf 05 30 14.3 -5.0
comp=E,29nm,1.2s,baz=90,slow=3.0,SNR=38
BRVK Borovoye 121.84 320 *e*PKIKP PKPdf 05 30 14.6 -4.8
KBS Kingsbay 122.09 359 PFAKE 05 30 30.0 +11
KBS LR LR
comp=Z,464nm,19.0s,MS5.2
ZRNK Zerenda 122.62 320 *e*PKIKP PKPdf 05 30 15.7 -5.2
SVE Sverdlovsk 126.45 326⇓ *i*PKHKP 05 30 06.3
SVE pmax pmax
comp=Z,40nm,1.5s
SVE MLR MLR
comp=N,400nm,17.0s,MS5.2
SVE MLR MLR
comp=E,200nm,17.0s,MS5.2
SVE MLR MLR
comp=Z,1µm,17.0s,MS5.6
ARU Arti 127.67 326 *e*PKIKP PKPdf 05 30 25.7 -4.9
ARU *e* 05 30 39.8
ARU MLR MLR
comp=Z,888nm,22.0s,MS5.4
ARU Arti 127.67 326 *e*PKP PKPdf 05 30 25.7 -4.9
ARU *e* 05 30 39.8
ARU LR LR
comp=Z,888nm,22.0s,MS5.4
ARCES ARCESS Array B 130.13 351 PKP PKPdf 05 30 30.2 -4.7
comp=Z,4.7nm,0.9s,slow=2.4,SNR=8.8
LBTB Lobatse 130.20 204 PFAKE 05 30 40.0 +3.7
LBTB LR LR
comp=Z,429nm,20.0s,MS5.1
APA Apatity 130.41 346⇑ *e*PKIKP PKPdf 05 30 35.7 +0.2
JOF Joensuu 134.75 344 *ep* PKPdf 05 30 38.4 -5.4
KAF Kangasniemi 136.66 346 *ep* PKPdf 05 30 32.2 -15
FINES FINESS Array B 137.30 346 PKhKP 05 30 35.6
comp=Z,2.1nm,0.9s,slow=3.8,SNR=5.7
FINES PKP PKPdf 05 30 43.8 -4.7
comp=Z,16nm,1.3s,baz=27,slow=4.3,SNR=9.0
LSZ Lusaka 137.59 213 PFAKE 05 31 00.0 +10
LSZ LR LR
comp=Z,558nm,20.0s,MS5.3
MOS Moscow 138.05 333 *e*PKIKP PKPdf 05 30 44.9 -5.1
MOS *e*SS SS 05 51 35.7 -7.3
MOS MLR MLR
comp=Z,1µm,18.0s,MS5.6
OBN Obninsk 138.91 333 *c i*PKIKP PKPdf 05 30 47.3 -4.3
OBN *e* 05 33 41.8
OBN pmax pmax
comp=Z,30nm,1.4s
OBN Obninsk 138.91 333⇑ *i*PKP PKPdf 05 30 47.4 -4.2
OBN LR LR
comp=Z,500nm,19.0s,MS5.3
VOR Voronezh 139.89 328 PKIKP PKPdf 05 30 50.0 -3.4
VOR pmax pmax
comp=Z,50nm,1.8s
NB2 NORSAR Subarra 139.95 356 PKP 05 30 40.0
comp=Z,7.7nm,1.4s,baz=17,slow=2.6
NOA NORSAR Array B 139.95 356 PKP PKPdf 05 30 48.5 -4.8
comp=Z,2.2nm,1.0s,baz=31,slow=2.3,SNR=4.1
HFS Hagfors 140.63 354 PKhKP 05 30 42.3
comp=Z,4.0nm,0.8s,baz=63,slow=3.3,SNR=7.4
HFS Hagfors 140.63 354 PKP PKPdf 05 30 42.3 -12
GOF Gofitskoye 141.16 317 *e*P Pdif 05 28 05.5 -2.4
GOF Gofitskoye 141.16 317 *e*PKIKP PKPdf 05 30 47.5 -8.4
GOF pmax pmax
comp=Z,20nm,1.5s
KONO Kongsberg 141.43 357 PFAKE 05 31 00.0 +4.1
KONO LR LR
comp=Z,589nm,19.0s,MS5.4
ZEI Tsey 141.50 313 *i* PKIKP PKPdf 05 30 54.0 -2.6
ZEI *e* 05 33 55.0
ZEI MLR MLR
comp=Z,500nm,18.0s,MS5.3
GNI Garni 141.80 309 PFAKE 05 31 10.0 +13
GNI LR LR
comp=Z,351nm,20.0s,MS5.1
KIV Kislovodsk 141.85 315 *i* PKIKP PKPdf 05 30 52.8 -4.3
KIV pmax pmax
comp=Z,7.0nm,0.8s
KIV Kislovodsk 141.85 315 *e*PKP PKPdf 05 30 52.9 -4.2
KIV LR LR
comp=Z,538nm,21.0s,MS5.3
KMBO Kilima Mbogo 142.01 238 PKhKP 05 30 51.0
comp=Z,1.1nm,0.3s,baz=210,slow=23,SNR=3.6
KMBO Kilima Mbogo 142.01 238 PKP PKPdf 05 30 51.0 -7.4
KMBO LR LR
comp=Z,559nm,19.0s,MS5.3
VANB Van 143.27 307 *e*P PKPbc 05 30 52.5 -0.2

VANB	Van	143.27	307	P		PKPbc	05 30 52.5	-0.2
EDR	Drumtochty	143.76	8⇑	*e*P		PKPbc	05 30 53.1	-0.5
EDR					AMB	AMB	05 30 55.0	
	comp=Z,87nm,1.2s							
EBH	Black Hill	144.29	9⇑	*i*P		PKPbc	05 30 54.9	-0.2
EBH					AMB	AMB	05 30 57.3	
	comp=Z,317nm,1.1s							
VRT	Varto	144.47	308	*i* P		PKPbc	05 30 58.8	+2.6
VRT	Varto	144.47	308	P		PKPbc	05 30 58.8	+2.6
SUW	Suwalki	144.58	342	*e*PKP		PKPdf	05 30 56.3	-5.2
SUW				*e*			05 31 03.1	
MUD	Monsted U'grnd	144.64	357⇑	*i*P		PKPbc	05 30 56.6	+0.5
	comp=Z,221nm,1.1s							
MUD				*i*			05 46 32.8	
	comp=Z,350nm,19.0s							
EDI	Edinburgh	144.65	9⇑	*i*P		PKPbc	05 30 56.2	0.0
EDI					AMB	AMB	05 30 58.4	
	comp=Z,214nm,1.2s							
EAU	Auchinoon	144.69	9⇑	*i*P		PKPbc	05 30 56.5	+0.3
EAU					AMB	AMB	05 30 58.9	
	comp=Z,437nm,1.3s							
ESY	Stoneypath	144.73	8⇑	*i*P		PKPbc	05 30 56.5	+0.1
ESY					AMB	AMB	05 30 58.6	
	comp=Z,189nm,1.2s							
ANN	Anapa	144.78	319	*e*PKP		PKPdf	05 30 58.8	-3.4
BTMT	Batman	144.81	307	P		PKPbc	05 30 58.4	+1.2
EBL	Broad Law	144.81	9⇑	*e*P		PKPbc	05 30 57.0	+0.4
GMK	Mull of Kintyr	144.82	11⇑	*e*P		PKPbc	05 30 57.0	+0.4
GCL	Cushendall	144.97	12⇑	*e*P		PKPbc	05 30 57.3	+0.3
BEST	Besiri	145.07	306	*i* P		PKPbc	05 30 59.1	+1.2
COP	Copenhagen	145.14	353⇑	*i*P		PKPbc	05 31 09.6	+12
	comp=Z,27nm,0.9s							
	comp=Z,210nm,20.0s							
COP	Copenhagen	145.14	353⇑	*e*P		PKPbc	05 31 09.6	+12
COP					LR	LR		
	comp=Z,210nm,20.0s,MS4.9							
AKASG	Malin Array Be	145.18	334	PKPbc		PKPbc	05 30 57.1	-0.6
	comp=Z,70nm,1.1s,baz=34,slow=3.3,SNR=182							
EKA	Eskdalemuir Ar	145.22	9	PKPbc		PKPbc	05 30 57.8	+0.1
	comp=Z,36nm,0.9s,baz=329,slow=2.9,SNR=51							
ESK	Eskdalemuir	145.23	9⇑	*e*P		PKPbc	05 30 57.8	+0.1
ESK					AMB	AMB	05 31 00.2	
	comp=Z,106nm,1.3s							
ESK	Eskdalemuir	145.23	9	*e*PKIKP		PKPdf	05 30 57.9	-4.7
ESK	Eskdalemuir	145.23	9	*e*PKPdf		PKPdf	05 30 57.0	-5.6
ESK					LR	LR		
	comp=Z,639nm,20.0s,MS5.4							
BWH	Wardlaw	145.30	9⇑	*e*P		PKPbc	05 30 58.3	+0.4
BSD	Bornholm Skovb	145.38	351⇑	*i*P		PKPbc	05 30 58.4	+0.3
	comp=Z,179nm,1.0s							
	comp=Z,490nm,20.0s							
GAL1	Galloway	145.43	11⇑	*e*P		PKPbc	05 30 58.7	+0.5
BHH	Howats Hill	145.45	9⇑	*e*P		PKPbc	05 30 58.9	+0.6
GUMT	Gumushane	145.45	312	*i* P		PKPbc	05 31 00.7	+1.9
GUMT	Gumushane	145.45	312	P		PKPbc	05 31 00.8	+2.0
BBH	Bruntsheil	145.45	9	*e*P		PKPbc	05 30 59.1	+0.8
BTA	Talkin	145.71	9⇑	*e*P		PKPbc	05 30 60.0	+1.1
BDL	Dobcross Hall	145.77	9⇑	*e*P		PKPbc	05 30 59.8	+0.7
BBO1	Bothel	145.79	9	*e*P		PKPbc	05 31 00.2	+1.1
GMM	Mts of Mourne	145.80	12	*e*P		PKPbc	05 30 59.3	+0.1
DMUB	Kingscourt	145.92	13	*e*P		PKPbc	05 31 00.8	+1.3
FURI	Furi	145.96	254	PKPdf		PKPdf	05 31 04.7	-0.4
LCP	Cassop	146.03	7⇑	*i*P		PKPbc	05 30 60.0	+0.2
DCN	Croghan	146.36	14	*e*P		PKPbc	05 31 02.1	+1.6
DLF	Lyons Farm	146.56	13	*e*P		PKPbc	05 31 02.6	+1.6
WAR	Warsaw	146.75	343	*e*PKP		PKPdf	05 31 04.3	-1.0
WAR				*e*			05 31 15.0	
HPK	Haverah Park	146.77	8⇑	*e*P		PKPbc	05 31 03.2	+1.8
MYA	Malataya	147.03	309	*i* P		PKPdf	05 31 06.2	0.0
MYA	Malataya	147.03	309	P		PKPdf	05 31 06.3	+0.1
MALT	Malatya	147.03	309	P		PKPdf	05 30 46.4	-20
BSEG	Bad Segeberg	147.07	355	*e*PKPdf		PKPdf	05 31 02.4	-3.4
BSEG				*e*PKPbc		PKPbc	05 31 04.6	-1.2
LHO	Holmfirth	147.15	8⇑	*i*P		PKPdf	05 31 03.9	-2.1
SVSK	Karacayir	147.40	312	P		PKPdf	05 31 04.1	-2.7
SVSK	Karacayir	147.40	312	P		PKPdf	05 31 04.2	-2.6
KBI1	Birley Grange	147.47	8⇑	*e*P		PKPdf	05 31 04.8	-1.6
SVST	Sivas	147.50	312	*i* P		PKPdf	05 31 07.3	+0.4
KWE	Weaver Farm	147.66	8⇑	*e*P		PKPdf	05 31 05.7	-1.0
KSY	Syston	147.87	7	*e*P		PKPdf	05 31 01.9	-5.2
LVV	L'vov	147.90	337	*i* PKIKP		PKPdf	05 31 03.8	-3.4
HLM1	Long Mynd	147.99	10⇑	*e*P		PKPdf	05 31 06.3	-1.0
HLM1					AMB	AMB	05 31 11.2	
	comp=Z,175nm,1.3s							
CWF	Charnwood Fore	148.01	8	*e*P		PKPdf	05 31 06.1	-1.2
SSP1	Stoney Pound	148.05	10⇑	*e*P		PKPdf	05 31 06.6	-0.7
RUE	Ruedersdorf	148.10	351	*e*PKPbc		PKPdf	05 31 07.3	-0.2
KIS	Kishinev	148.10	329	*i* PKP2		PKPab	05 31 06.0	-4.5
KIS				*e*			05 38 12.0	
KIS					MLR	MLR		
	comp=Z,600nm,20.0s,MS5.4							
KIS					MLR	MLR		
	comp=N,500nm,21.0s							
KIS					MLR	MLR		
	comp=Z,500nm,20.0s							
BYBT	Boyabat	148.17	316	*e*P		PKPdf	05 31 08.6	+0.7
BYBT	Boyabat	148.17	316	P		PKPdf	05 31 08.7	+0.7
GAZ	Gaziantep	148.35	307	P		PKPdf	05 31 09.6	+1.2
GAZ	Gaziantep	148.35	307	P		PKPdf	05 31 09.7	+1.3
HTR	Trewern Hill	148.35	11⇑	*e*P		PKPdf	05 31 07.0	-0.9
HTR					AMB	AMB	05 31 12.4	
	comp=Z,76nm,1.3s							
WIT	Witteveen	148.38	359	*e*PKP		PKPdf	05 31 07.7	-0.2
	comp=Z,181nm,1.5s							
MCH1	Michaelchurch	148.48	10	*e*P		PKPdf	05 31 07.2	-0.8
HAE	Alders End	148.51	10⇑	*e*P		PKPdf	05 31 07.4	-0.7
HAE					AMB	AMB	05 31 14.0	
	comp=Z,216nm,1.3s							
KWP	Kalwaria	148.52	339	*e*PKP		PKPdf	05 31 08.9	+0.7
KTG1	Tilbrook Grang	148.52	7	*e*P		PKPdf	05 31 02.9	-5.3
BNN	Bunyan	148.67	311	P		PKPdf	05 31 09.7	+0.9
BNN	Bunyan	148.67	311	P		PKPdf	05 31 09.8	+1.0
YOZ	Yozgat	148.68	313	P		PKPdf	05 31 09.3	+0.5
YOZ	Yozgat	148.68	313	P		PKPdf	05 31 09.4	+0.5
OJC	Ojcow	148.91	342	*e*PKP(df)		PKPdf	05 31 05.8	-3.0
OJC				*e*PKP(bc)		PKPdf	05 31 09.3	+0.5
OJC				*e*PP		PP	05 34 40.8	-1.0
OJC				*e*SKKS			05 41 28.8	
OJC				*e*SS		SS	05 53 44.1	-3.4
OJC					MLR	MLR	06 34 06.7	
	comp=Z,600nm,24.0s,MS5.3							
OJC	Ojcow	148.91	342⇑	*e*PKP2		PKPab	05 31 09.3	-4.4
OJC				*e*			05 34 40.8	
OJC				*e*SS		SS	05 53 44.1	-3.4
KSP	Ksiaz	149.21	347	*e*PKP		PKPdf	05 31 10.5	+1.2
KSP				*e*			05 31 17.1	
KSP	Ksiaz	149.21	347	*i* PKP2		PKPab	05 31 10.3	-4.6
KSP				*e*SS		SS	05 53 54.5	+3.8
KSP	Ksiaz	149.21	347	*e*PKP		PKPdf	05 31 05.6	-3.7
KSP				*e*PKPdf		PKPdf	05 31 10.3	+1.0
KSP				*e*pPKP			05 31 15.0	
KSP				*e*SS		SS	05 53 54.5	+3.8
WTSB	Winterswijk	149.22	359	*e*PKP		PKPdf	05 31 08.8	-0.5
	comp=Z,40nm,4.6s							
CANT	Cankiri	149.35	316	P		PKPdf	05 31 11.9	+2.0
CANT	Cankiri	149.35	316	P		PKPdf	05 31 12.0	+2.1
CLL	Collm	149.35	351	*e*		PKPdf	05 31 06.0	-3.5
CLL				*i*	PKP1	PKPdf	05 31 10.5	+1.0
CLL				*i*	PKP2	PKPab	05 31 14.9	-0.6
CLL				*i*			05 31 29.5	
CLL				*e*			05 33 56.0	
CLL	Collm	149.35	351	*e*PKIKP		PKPdf	05 31 06.0	-3.5
CLL				*i*			05 31 10.5	
CLL					pmax	pmax		
	comp=Z,132nm,1.3s							
CLL					MLR	MLR		
	comp=Z,600nm,20.5s,MS5.4							
CLL	Collm	149.35	351	*e*PKP		PKPdf	05 31 06.0	-3.5
CLL				*i*	PKP	PKPdf	05 31 10.5	+1.0
CLL				*i*			05 31 29.5	
CLL					LR	LR		
	comp=Z,600nm,20.5s,MS5.4							
AVNT	Avonos	149.40	312	*i* P		PKPdf	05 31 10.9	+0.9
RAC	Raciborz	149.47	344	*e*PKP(df)		PKPdf	05 31 07.0	-2.7
RAC					MLR	MLR	06 39 47.5	
	comp=Z,700nm,20.4s,MS5.5							
NIE	Niedzica	149.47	341	*e*PKP(df)		PKPdf	05 31 07.1	-2.7
NIE				*i*	PKP(bc)	PKPdf	05 31 11.6	+1.8
CEYT	Ceyhan	149.49	308	P		PKPdf	05 31 11.8	+1.6
CEYT	Ceyhan	149.49	308	P		PKPdf	05 31 11.8	+1.6
SBD	Saint Breward	149.53	13⇑	*e*P		PKPdf	05 31 05.3	-4.5
HTY	Hatay	149.53	306	P		PKPdf	05 31 11.8	+1.5
HTY	Hatay	149.53	306	P		PKPdf	05 31 11.8	+1.5
CRVS	Cervenica-Dubn	149.56	339	*i* PKP		PKPdf	05 31 11.7	+1.8
CRVS				*e*			05 31 18.7	
UPC	Upice	149.58	347	*e*PKPdf		PKPdf	05 31 06.4	-3.5
UPC				*ex*		x	05 31 10.6	
BRG	Berggiesshubel	149.63	350	*i* PKHKP			05 31 06.9	
BRG				*i*			05 31 11.3	
BRG					pmax	pmax		
	comp=Z,102nm,1.4s							
BRG					MLR	MLR		
	comp=N,690nm,19.2s,MS5.5							
BRG					MLR	MLR		
	comp=E,440nm,19.2s,MS5.5							
BRG					MLR	MLR		
	comp=Z,780nm,19.2s,MS5.5							
BRG	Berggiesshubel	149.63	350	*i* P		PKPdf	05 31 06.9	-3.1
BRG				*i*			05 31 11.3	
BRG				*e*			05 43 15.0	
BRG					LR	LR		
	comp=Z,780nm,19.2s,MS5.5							
DPC	Dobruska-Polom	149.66	346	*e*PKPbc		PKPdf	05 31 10.4	+0.3
DPC				*ex*		x	05 31 15.6	
OKC	Ostrava-Krasne	149.71	344	*e*PKP		PKPdf	05 31 06.4	-3.7
OKC				*e*PKPbc		PKPdf	05 31 11.6	+1.5
BRTR	Keskin Array B	149.78	314	PKP		PKPdf	05 31 06.2	-4.3
	comp=Z,15nm,0.9s,baz=135,slow=8.7,SNR=40							
BRTR					PKPbc	PKPdf	05 31 11.2	+0.6
	comp=Z,16nm,0.9s,baz=135,slow=2.0,SNR=58							
PVCC	Panska Ves	149.85	349	*e*PKPdf		PKPdf	05 31 06.3	-4.0
NIG	Nigde	149.86	311	*i* P		PKPdf	05 31 12.6	+1.8
NIG	Nigde	149.86	311	P		PKPdf	05 31 12.7	+1.9
KAMT	Kaman	149.91	313	*i* P		PKPdf	05 31 12.2	+1.4
VRI	Vrincioaia	149.91	330⇓	*i*P		PKPdf	05 31 11.6	+1.0
VRI	Vrincioaia	149.91	330⇓	*i*P		PKPdf	05 31 11.4	+0.8
MORC	Moravsky Berou	149.91	345	*e*PKPdf		PKPdf	05 31 06.5	-3.9
MORC				*e*PKPbc		PKPdf	05 31 12.2	+1.7
YNBS	Yanbu' al Bahr	150.06	282	P		PKPdf	05 31 11.5	0.0
ASF	Jabal al Asfar	150.11	298	PKPbc		PKPdf	05 31 13.6	+2.2
	comp=Z,16nm,0.9s,baz=290,slow=1.0,SNR=24							
HARR	Harsova	150.18	327⇓	*i*P		PKPdf	05 31 13.5	+2.5
HARR	Harsova	150.18	327⇓	*e*P		PKPdf	05 31 13.4	+2.4
MOX	Moxa	150.19	352	PP2			05 31 08.0	
MOX				PKP2		PKPab	05 31 13.0	-6.0
MOX				L			05 48 17.0	
MOX	Moxa	150.19	352	*e*PKHKP		PKPdf	05 31 07.6	-3.3
MOX					pmax	pmax		
	comp=Z,104nm,1.7s							
MOX					MLR	MLR		
	comp=Z,500nm,20.0s,MS5.3							
MOX	Moxa	150.19	352	*e*PKP		PKPdf	05 31 07.6	-3.3
MOX				*e*			05 31 13.0	
MOX					LR	LR		
	comp=Z,500nm,20.0s,MS5.3							
DUSS	Damascus Unive	150.26	301	*i* P		PKPdf	05 31 14.6	+3.1
ANTO	Ankara	150.28	315	*e*P		PKPdf	05 31 12.6	+1.3
ANTO	Ankara	150.28	315	P		PKPdf	05 31 12.6	+1.3
LOD	Lodumlu	150.28	315	*e*P		PKPdf	05 31 14.2	+2.8
LOD	Lodumlu	150.28	315	P		PKPdf	05 31 14.2	+2.9
PRU	Pruhonice	150.37	348	*e*PKPdf		PKPdf	05 31 07.1	-4.1
PRU				*e*PKPbc		PKPdf	05 31 12.5	+1.3
HGN	Heimansgroeve	150.44	360	*e*PKP		PKPdf	05 31 10.0	-1.3
	comp=Z,15nm,0.8s							
HGN				*e*SKKS			05 40 44.8	
HGN				*e*PPS		PPS	05 47 13.0	-29
NKC	Novy Kostel	150.48	351	*e*PKPdf		PKPdf	05 31 06.5	-4.8
NKC				*ex*		x	05 31 13.0	
ISR	Istrita	150.55	329⇑	*i*P		PKPdf	05 31 13.8	+2.2
ISR	Istrita	150.55	329⇓	*i*P		PKPdf	05 31 14.1	+2.5
MLR	Muntele Rosu	150.56	330	PKP		PKPdf	05 31 06.8	-4.7
	comp=Z,9.5nm,1.2s,baz=29,slow=5.4,SNR=8.2							
MLR					PKPbc	PKPdf	05 31 13.9	+2.4
	comp=Z,42nm,1.1s,baz=5.8,slow=2.7,SNR=37							
MLR	Muntele Rosu	150.56	330⇓	*i*P		PKPdf	05 31 08.0	-3.6
MLR	Muntele Rosu	150.56	330⇓	*e*P		PKPdf	05 31 08.0	-3.6
VRAC	Vranov	150.58	345	PKP		PKPdf	05 31 06.8	-4.7
	comp=Z,1.5nm,0.3s,baz=198,slow=3.2,SNR=4.3							
VRAC					PKPbc	PKPdf	05 31 13.1	+1.6
	comp=Z,24nm,1.0s,baz=32,slow=1.1,SNR=30							
VYHS	Vyhne	150.74	342	*e*PKP		PKPdf	05 31 13.7	+1.9
PSN	Preselentsi	150.74	325	*e*P		PKPdf	05 31 14.5	+2.6
HRI	Mount Hermon	150.77	301	*e*P		PKPdf	05 31 14.8	+2.5
KOLL	Kolacno	150.79	343	*i* PKP		PKPdf	05 31 14.4	+2.6
KSHT	Keshet	150.79	300	P		PKPdf	05 31 14.8	+2.5
PSZ	Piszkesteto	150.93	340⇑	*e*pPKP/F			05 31 14.4	
PSZ	Piszkesteto	150.93	340	*e*PKPdf		PKPdf	05 31 08.5	-3.6
PSZ				*e*PKPbc		PKPdf	05 31 14.2	+2.1
MDU	Mudurnu	150.98	317	P		PKPdf	05 31 14.7	+2.3
MDU	Mudurnu	150.98	317	P		PKPdf	05 31 14.7	+2.4
GIVF	Givet	151.10	1	*e*PKIKP		PKPdf	05 31 08.7	-3.5
BAIF	Baives	151.12	2	*e*PKIKP		PKPdf	05 31 08.7	-3.6
	comp=Z,11nm,1.1s							
TBKS	Tabuk	151.13	290	P		PKPdf	05 31 16.0	+3.0
GRA1	Grafenberg Arr	151.18	353	*e*PKPdf		PKPdf	05 31 07.7	-4.7
GRA1				*e*PKPbc		PKPdf	05 31 15.4	+3.0
GRA1				*e*PKPab		PKPab	05 31 23.6	+0.4
GRF	Grafenberg Arr	151.18	353	*e*PKIKP		PKPdf	05 31 07.7	-4.7
HMDT	Nahal Hemdat	151.22	299	P		PKPdf	05 31 15.8	+2.8
ABH	Alteburg	151.29	357	PKP		PKPdf	05 31 15.4	+2.9
IKL	Isikli	151.32	308	*e*P		PKPdf	05 31 14.7	+1.7
IKL	Isikli	151.32	308	P		PKPdf	05 31 14.7	+1.7
KHC	Kasperske Hory	151.37	349	*e*PKPdf		PKPdf	05 31 09.4	-3.3
KHC				*e*PKPbc		PKPdf	05 31 14.9	+2.2
KHC					pPKP		05 31 28.0	
KIZT	Kizilcal	151.39	314	*i* P		PKPdf	05 31 16.3	+3.3
KIZT	Kizilcal	151.39	314	P		PKPdf	05 31 16.3	+3.3
RUP	Ruppelstein	151.48	358	PKP		PKPdf	05 31 15.9	+3.1
ZST	Bratislava	151.49	344	*i* PKP		PKPdf	05 31 10.0	-2.9
ZST				*i*			05 31 16.3	
ZST				*e*			05 31 31.8	
PRD	Provadia	151.49	325	*e*P		PKPdf	05 31 16.5	+3.4
TOD	Tromm	151.49	356	PKP		PKPdf	05 31 15.7	+2.9
DRGI	Dragot	151.49	298	P		PKPdf	05 31 16.4	+3.0
SRO	Srobarova	151.50	342	*e*PKP		PKPdf	05 31 16.4	+3.5
KONT	Konya--Tatoy	151.52	312	*e*P		PKPdf	05 31 15.8	+2.5
KONT	Konya--Tatoy	151.52	312	P		PKPdf	05 31 15.9	+2.6
WLF	Walferdange	151.54	359	*e*PKPbc		PKPdf	05 31 15.9	+3.0
JMQS	Jabal Moqyreh	151.62	292	P		PKPdf	05 31 17.4	+3.7
GEC2	GERESS Array S	151.62	349	*e*PKPdf		PKPdf	05 31 10.1	-3.0
GEC2				*e*PKPbc		PKPdf	05 31 16.2	+3.1
GERES	GERESS Array B	151.62	349	PKP		PKPdf	05 31 09.2	-3.8
	comp=Z,1.7nm,1.0s,slow=1.3,SNR=9.2							
GERES					PKPbc	PKPdf	05 31 15.0	+1.9
	comp=Z,23nm,1.1s,baz=45,slow=1.9,SNR=43							
HRT	Hereke	151.73	319	*e*P		PKPdf	05 31 15.7	+2.2
HDMB	Hadim	151.88	310	P		PKPdf	05 31 16.9	+3.1
HDMB	Hadim	151.88	310	P		PKPdf	05 31 16.9	+3.1
ISK	Istanbul-Kandi	151.95	320	*e*P		PKPdf	05 31 14.3	+0.5
FLN	La Foliniere	152.01	9	*e*PKIKP		PKPdf	05 31 09.8	-3.8
	comp=Z,52nm,1.3s							
FLN				*e*R				
	comp=Z,683nm,20.8s							
YLV	Yalova	152.06	319	*e*P		PKPdf	05 31 14.2	+0.2
CSS	Prodhromos	152.09	305	*e*PKPbc		PKPdf	05 31 16.3	+2.1
PRNI	Paran	152.10	295	P		PKPdf	05 31 17.7	+3.3
SOP	Sopron	152.10	344⇑	*i*pPKP/F			05 31 17.3	
LANF	Langenberg	152.17	357	PKP		PKPdf	05 31 17.2	+3.3
LDF	La Druitiere	152.22	8	*e*PKIKP		PKPdf	05 31 09.9	-4.1
	comp=Z,63nm,1.5s							
JMOS	Jabal al Moall	152.24	293	D			05 31 18.7	
ALWS	Ilw as Safayha	152.25	293	P		PKPdf	05 31 18.8	+4.2
AYUS	'Aynunah	152.25	291	P		PKPdf	05 31 17.9	+3.3
EIL	Elat	152.28	294	P		PKPdf	05 31 17.9	+3.2
MBH	Mount Berech	152.29	294	P		PKPdf	05 31 17.8	+3.1
STU	Stuttgart	152.29	355	*e*PKPdf		PKPdf	05 31 10.6	-3.5
STU				*e*PKPbc		PKPdf	05 31 17.1	+3.1
GRR	Gorron	152.32	9	*e*PKIKP		PKPdf	05 31 10.4	-3.7
	comp=Z,57nm,1.4s							
LEF	Lefka	152.36	306	*e*P		PKPdf	05 31 18.0	+3.4
LEF	Lefka	152.36	306	P		PKPdf	05 31 18.1	+3.5
BDAS	Al Bad'	152.36	291	P		PKPdf	05 31 18.1	+3.3
KMTI	Karmit	152.39	295	P		PKPdf	05 31 17.7	+2.9
HAQS	Haql	152.41	292	P		PKPdf	05 31 19.2	+4.3
MOA	Molln	152.47	347⇑	*i*PKP		PKPdf	05 31 17.8	+3.5
KZIT	Kziot	152.49	297	P		PKPdf	05 31 18.3	+3.4
PVL	Pavlikeni	152.54	328	*e*P		PKPdf	05 31 11.5	-3.1
STR	Strasbourg	152.57	357	PKP		PKPdf	05 31 18.2	+3.8
FUR	Furstenfeldbru	152.67	352	*e*PKPbc		PKPdf	05 31 18.4	+3.8
MEZF	Maizieres J'vi	152.70	1	*e*PKIKP		PKPdf	05 31 11.2	-3.4
	comp=Z,36nm,1.3s							
WLS	Welschbruch	152.76	358	PKP		PKPdf	05 31 18.5	+3.8
CDF	Champ du Feu	152.76	358	*e*PKIKP		PKPdf	05 31 10.9	-3.8
EDRB	Edirne	152.77	324	*e*P		PKPdf	05 31 27.1	+12
BFO	Black Forest	152.79	356	*e*PKPdf		PKPdf	05 31 11.2	-3.6
BFO				*e*PKPbc		PKPdf	05 31 18.4	+3.6
BFO				*e*PKPab		PKPab	05 31 29.3	-0.7
ECH	Echery	152.97	358	PKP		PKPdf	05 31 17.2	+2.2
THEF	They Montfort	152.98	360	PKP		PKPdf	05 31 18.5	+3.5
SPAK	Spaichingen	152.99	355	PKP		PKPdf	05 31 18.2	+3.2
HAU	Haudompre	153.20	359	*e*PKIKP		PKPdf	05 31 11.4	-3.9
HAU				*e*R				
	comp=Z,669nm,18.5s							
HINF	Hinteralfeld	153.37	358	*e*PKIKP		PKPdf	05 31 11.8	-3.8
PERS	Pernice	153.43	345	*e*PKPdf		PKPdf	05 31 11.3	-4.4
WATA	Walderalm	153.44	351⇑	*i*PKP		PKPdf	05 31 20.2	+4.5
MOTA	Moosalm	153.50	352⇑	*i*PKP		PKPdf	05 31 19.9	+4.1
WTTA	Wattenberg	153.50	351⇑	*i*PKP		PKPdf	05 31 20.4	+4.6
BALB	Balikesir	153.53	319	*e*P		PKPdf	05 31 24.8	+8.7
BALB	Balikesir	153.53	319	P		PKPdf	05 31 24.9	+8.8
SQTA	Sankt Quirin	153.60	351⇑	*i*PKP		PKPdf	05 31 20.4	+4.5
KDZ	Kurdzhali	153.62	325	*e*P		PKPdf	05 31 12.0	-4.1
DAVA	Damuels	153.70	354⇑	*i*PKP		PKPdf	05 31 18.3	+2.2
LOMF	Lomont	153.84	358	PKP		PKPdf	05 31 18.7	+2.4
LOR	Lormes	153.90	3	*e*PKIKP		PKPdf	05 31 12.7	-3.6
	comp=Z,39nm,1.4s							
LOR				*e*R				
	comp=Z,872nm,18.8s							
RZN	Rozhen	153.96	326	*e*P		PKPdf	05 31 12.5	-4.1
AKS	Akhisar	154.03	318	*e*P		PKPdf	05 31 32.1	+15
AKS	Akhisar	154.03	318	P		PKPdf	05 31 32.1	+15
VTS	Vitosha	154.04	329	*e*P		PKPdf	05 31 12.5	-4.2
SSF	Saint Saulge	154.09	3	*e*PKIKP		PKPdf	05 31 13.1	-3.5
	comp=Z,45nm,1.5s							
LJU	Ljubljana	154.13	346	*e*PKPdf		PKPdf	05 31 13.0	-3.7
LJU				*e*PKPbc		PKPdf	05 31 21.1	+4.4
SISC	Sisak	154.19	343	*i* PKP		PKPdf	05 31 13.2	-3.5
DAVOX	Davos	154.20	353	PKPbc		PKPdf	05 31 21.5	+4.7
	comp=Z,11nm,1.0s,baz=305,slow=1.6,SNR=11							
DIVS	Divcibare	154.21	336⇓	*i*P		PKPdf	05 31 12.5	-4.4
VOY	Vojsko	154.28	347	*e*PKPdf		PKPdf	05 31 12.2	-4.7
AVF	Avril sur Loir	154.35	4	*e*PKIKP		PKPdf	05 31 13.1	-3.9
	comp=Z,9.4nm,1.2s							
BRMO	Bormio	154.44	352	*e*PKP		PKPdf	05 31 16.5	-0.6
BOJS	Bojanci	154.46	344	*e*PKPdf		PKPdf	05 31 13.5	-3.7
BOJS				*e*PKPbc		PKPdf	05 31 22.1	+4.9
BOJS				*e*			05 31 36.5	
SMF	Signal de Mont	154.52	3	*e*PKIKP		PKPdf	05 31 13.4	-3.8
	comp=Z,18nm,1.2s

M_W0.50±.08; Best double couple: $M_0$1.45×10^{17} NP1: ϕ₀271°, δ69°, λ-178°. NP2:ϕ₀181°, δ88°, λ-21°. Principal axes: T 1.79, Plg14°, Azm228°; N -.67, Plg69°, Azm357°; P -1.12, Plg16°, Azm134°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.

*BJI **02** 05:17:28.8, 17.80N×106.00W, h10km, mB5.0, mb5.4, Ms5.1, Ms2.5.1*

*MEX **02** 05:17:31.1±2.3, 18.09N×106.15W, h15km, MD4.8*

ISC 02 05:17:27.5±0.3, 17.87N±0.04×106.02W±0.02, h10km, n219, σ1⅛08/217, mb4.9/71, MS4.9/23, 1C-1D, Off coast of Jalisco

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CJM	**Chamela**	**1.87**	**30**	⇑*i*P	**Pn**	**05 17 55.9**	**-4.0**
CJM				*e*S	**Sn**	**05 18 17.6**	**-6.3**
COLM	**Colima**	**2.57**	**59**	*i* P	**Pn**	**05 18 08.0**	**-2.0**
COLM				*i* S	**Sn**	**05 18 39.1**	**-2.4**
SFJM	**Santa Fe**	**3.84**	**47**	*i* P	**Pn**	**05 18 26.0**	**-2.0**
ZIIG	**Zihuatanejo**	**4.35**	**93**	*i* P	**Pn**	**05 18 35.3**	**0.0**
ZIIG				*i* S	**Sn**	**05 19 26.0**	**-0.6**
MOIG	**Morelia**	**4.92**	**68**	*i* P	**Pn**	**05 18 43.5**	**+0.2**
MOIG				*i* S	**Sn**	**05 19 39.3**	**-1.8**
MAIG	**Mazatlaan**	**5.31**	**356**	*e*P	**Pn**	**05 18 45.2**	**-3.6**
MAIG				*e*S	**Sn**	**05 19 41.9**	**-8.9**
CAIG	**El Cayaco**	**5.55**	**98**	*i* P	**Pn**	**05 18 53.2**	**+0.9**
CAIG				*i* S	**Sn**	**05 19 57.9**	**+0.9**
CAIG	**El Cayaco**	**5.55**	**98**	*e*P	**Pn**	**05 18 50.9**	**-1.4**
CAIG				*i* S	**Sn**	**05 19 57.9**	**+0.9**
ZAIG	**Zacatecas**	**5.86**	**33**	*e*P	**Pn**	**05 18 54.3**	**-2.2**
ACX	**Acapulco**	**5.91**	**99**	*e*P	**Pn**	**05 18 58.0**	**+0.6**
UNM	**Universidad Na**	**6.65**	**76**	*e*P	**Pn**	**05 19 08.8**	**+1.0**
UNM				*e*P		05 19 10.0	
UNM				*e*S	**Sn**	**05 20 26.0**	**+1.5**
UNM	**Universidad Na**	**6.65**	**76**	*e*P	**Pn**	**05 19 08.8**	**+1.0**
UNM				*e*S	**Sn**	**05 20 26.0**	**+1.5**
YAIG	**Yautepec**	**6.68**	**80**	*i* P	**Pn**	**05 19 08.4**	**+0.3**
YAIG				*i* S	**Sn**	**05 20 23.8**	**-1.3**
PPM	**Popocatepetl**	**7.12**	**79**	*e*P	**Pn**	**05 19 15.0**	**+0.7**
PPM				*e*P		05 19 15.1	
PPM				*e*S	**Sn**	**05 20 36.6**	**+0.4**
PPM	**Popocatepetl**	**7.12**	**79**	*e*P	**Pn**	**05 19 15.0**	**+0.7**
PPM				*e*S	**Sn**	**05 20 43.8**	**+7.7**
LPIG	**La Paz**	**7.38**	**328**	*e*P	**Pn**	**05 19 12.9**	**-5.2**
LPIG	**La Paz**	**7.38**	**328**	*e*P	**Pn**	**05 19 18.4**	**+0.4**
IISM	**Ciudad Serdan**	**8.28**	**81**	*e*P	**P**	**05 19 32.0**	**+1.4**
POHV	**Veracruz**	**8.38**	**80**	*e*P	**P**	**05 19 34.0**	**+2.0**
VHO	**Vista Hermosa**	**8.90**	**94**	*i* P	**P**	**05 19 41.5**	**+2.3**
VHO				*e*S	**Sn**	**05 21 21.7**	**+1.2**
VHO	**Vista Hermosa**	**8.90**	**94**	*i* P	**P**	**05 19 41.5**	**+2.3**
VHO				*e*S	**Sn**	**05 21 30.0**	**+9.5**
OXX	**Oaxaca**	**8.91**	**94**	*e*P	**P**	**05 19 39.5**	**+0.2**
CMIG	**Matias Romero**	**10.66**	**92**	*e*P	**P**	**05 20 04.0**	**+0.6**
TXAR	**Lajitas Array**	**11.62**	**10**	Pn	**P**	**05 20 17.2**	**+0.7**
	0.8nm,0.3s,baz=189,slow=14,SNR=124						
TXAR				LR	LR	05 24 58.4	
	comp=Z,5μm,18.1s,baz=350,slow=39						
CCIG	**Comitan**	**13.37**	**95**	*i* P	**P**	**05 20 42.0**	**+2.0**
JCT	**Junction City**	**13.78**	**23**	*e*P	**P**	**05 20 47.0**	**+1.7**
MNTX	**Cornudas Mount**	**13.79**	**2**	*e*P	**P**	**05 20 45.8**	**+0.3**
	6.6nm,1.5s						
TUC	**Tucson**	**15.01**	**344**	*e*P	**P**	**05 21 02.4**	**+0.9**
	39nm,1.2s						
HKT	**Hockley**	**15.20**	**36**	*e*P	**P**	**05 21 03.0**	**-1.0**
	198nm,1.5s						
ANMO	**Albuquerque**	**17.02**	**359**	*e*P	**P**	**05 21 29.0**	**+1.7**
	167nm,1.7s						
BAR	**Barrett**	**17.60**	**329**	*e*P	**P**	**05 21 35.6**	**+1.0**
WMOK	**Wichita Mounta**	**18.00**	**20**	*e*P	**P**	**05 21 38.8**	**-0.8**
	168nm,1.4s						
WUAZ	**Wupatki**	**18.21**	**346**	*e*P	**P**	**05 21 44.4**	**+2.1**
	192nm,1.5s						
PFO	**Pinyon Flat Ob**	**18.26**	**331**	*e*P	**P**	**05 21 44.2**	**+1.4**
	153nm,1.6s						
LDFC	**Landfair**	**18.96**	**336**	*e*P	**P**	**05 21 53.6**	**+2.4**
NEN	**Nelson**	**19.37**	**338**	*e*P	**P**	**05 21 55.6**	**-0.6**
PAS	**Pasadena**	**19.52**	**329**	pP		05 22 01.2	
MWC	**Mount Wilson**	**19.52**	**329**	*e*P	**P**	**05 21 58.0**	**+0.1**
SDCO	**Great Sand Dun**	**19.81**	**1**	*e*P	**P**	**05 22 01.3**	**+0.2**
	279nm,1.4s						
MIAR	**Mount Ida**	**19.99**	**31**	*e*P	**P**	**05 22 01.3**	**-1.8**
	61nm,1.1s						
PV01	**Paradox Valley**	**20.32**	**354**	*e*P	**P**	**05 22 06.6**	**+0.1**
PV10	**Paradox Valley**	**20.61**	**353**	*e*P	**P**	**05 22 08.6**	**-0.9**
UALR	**University of**	**20.79**	**33**	*e*P	**P**	**05 22 10.6**	**-0.9**
	72nm,1.0s						
DAC	**Darwin (Calif)**	**21.00**	**333**	*e*P	**P**	**05 22 13.8**	**+0.2**
	108nm,1.5s,mb5.0						
MVU	**Marysvale**	**21.26**	**347**	*e*P	**P**	**05 22 17.0**	**+0.8**
	64nm,1.2s,mb4.8						
MSU	**Marysvale**	**21.26**	**347**	*e*P	**P**	**05 22 16.8**	**+0.5**
SRU	**San Rafael**	**21.53**	**350**	*e*P	**P**	**05 22 18.9**	**0.0**
ISCO	**Idaho Springs**	**21.86**	**1**	*e*P	**P**	**05 22 22.9**	**+0.7**
	106nm,1.5s,mb5.0						
ISCO				LR	LR		
	comp=Z,4μm,19.0s,MS4.8						
SOR	**Soroa**	**22.12**	**73**	*e*P	**P**	**05 22 26.4**	**+1.4**
SOR				*e*S	**S**	**05 26 32.8**	**+9.2**
	comp=E,4μm,2.9s						
OXF	**Oxford**	**22.24**	**39**	*e*P	**P**	**05 22 25.6**	**-0.5**
	comp=E,300nm,1.2s,mb5.6						
MTUM	**Tungsten Hills**	**22.33**	**333**	*e*P	**P**	**05 22 27.3**	**+0.4**
MET	**Memphis--Engin**	**22.37**	**37**	*e*P	**P**	**05 22 27.5**	**+0.2**
TPH	**Tonopah**	**22.40**	**336**	*e*P	**P**	**05 22 28.7**	**+1.1**
	comp=E,32nm,1.1s,mb4.7						
MPU	**Maple Canyon**	**22.60**	**349**	*e*P	**P**	**05 22 30.2**	**+0.6**
NLU	**North Lily Min**	**22.63**	**348**	*e*P	**P**	**05 22 30.9**	**+1.0**
KSU1	**Kansas State U**	**22.69**	**19**	*e*P	**P**	**05 22 30.8**	**+0.3**
LRV	**Little Rabbit**	**22.75**	**327**	*e*P	**P**	**05 22 32.8**	**+1.8**
LRAL	**Lakeview Retre**	**22.82**	**45**	*e*P	**P**	**05 22 32.4**	**+0.6**
	comp=E,258nm,1.3s,mb5.5						
DAU	**Daniels Canyon**	**22.92**	**350**	*e*P	**P**	**05 22 33.0**	**+0.2**
GNAR	**Gosnell**	**22.93**	**35**	*e*P	**P**	**05 22 33.6**	**+0.6**
NVAR	**Mina Array Bea**	**23.13**	**335**	P	**P**	**05 22 36.2**	**+1.4**
	comp=E,6.9nm,0.9s,mb4.1,baz=149,slow=9.2,SNR=42						
NVAR	**Mina Array Bea**	**23.13**	**335**	P	**P**	**05 22 36.2**	**+1.4**
JLU	**Jordanelle**	**23.14**	**349**	*e*P	**P**	**05 22 35.6**	**+0.7**
SAO	**San Andreas Ge**	**23.23**	**327**	*e*P	**P**	**05 22 36.7**	**+0.9**
HALT	**Halls**	**23.27**	**36**	*e*P	**P**	**05 22 36.3**	**+0.1**
CTU	**Camp Tracy**	**23.28**	**349**	*e*P	**P**	**05 22 37.2**	**+0.9**
PLAL	**Pickwick Lake**	**23.36**	**40**	*e*P	**P**	**05 22 37.2**	**0.0**
	comp=E,83nm,1.1s,mb5.1						
PVMO	**Portageville**	**23.44**	**35**	P	**P**	**05 22 38.6**	**+0.8**
GLAT	**Glass**	**23.56**	**36**	*e*P	**P**	**05 22 40.0**	**+1.0**
TCUT	**Toone Canyon**	**23.63**	**350**	*e*P	**P**	**05 22 41.8**	**+2.1**
CMB	**Columbia Colle**	**23.71**	**331**	*e*P	**P**	**05 22 40.6**	**+0.2**
	comp=E,116nm,1.7s,mb5.0						
CMB				LR	LR		
	comp=Z,1μm,22.0s,MS4.4						
UTMT	**University of**	**23.85**	**36**	*e*P	**P**	**05 22 42.8**	**+1.0**
	comp=Z,543nm,1.1s,mb5.9						
CCM	**Cathedral Cave**	**23.92**	**30**	*e*P	**P**	**05 22 42.5**	**0.0**
	comp=Z,253nm,1.2s,mb5.5						
CCM				LR	LR		
	comp=Z,3μm,21.0s,MS4.7						
SPUT	**South Promonto**	**24.01**	**348**	*e*P	**P**	**05 22 44.5**	**+1.2**
HWUT	**Hardware Ranch**	**24.14**	**350**	*e*P	**P**	**05 22 45.5**	**+0.9**
	comp=Z,21nm,1.0s,mb4.5						
HWUT				LR	LR		
	comp=Z,3μm,20.0s,MS4.7						
FVM	**French Village**	**24.26**	**31**	*e*P	**P**	**05 22 45.5**	**-0.2**
	comp=Z,179nm,1.3s,mb5.3						
LKC	**Lake Chabot**	**24.29**	**328**	*e*P	**P**	**05 22 48.0**	**+1.9**
WVT	**Waverly**	**24.29**	**38**	*e*P	**P**	**05 22 46.0**	**-0.2**
	comp=E,178nm,1.6s,mb5.2						
WCN	**Washoe City**	**24.47**	**334**	*e*P	**P**	**05 22 49.3**	**+1.5**
	comp=Z,79nm,1.3s,mb5.0						
BMN	**Battle Mountai**	**24.48**	**339**	*e*P	**P**	**05 22 48.8**	**+0.8**
	comp=Z,64nm,1.3s,mb4.9						
BMN				LR	LR		
	comp=Z,1μm,20.0s,MS4.5						
HVU	**Hansel Valley**	**24.53**	**348**	*e*P	**P**	**05 22 49.5**	**+1.1**
PAHR	**Pah Rah Range**	**24.66**	**335**	*e*P	**P**	**05 22 51.2**	**+1.5**
	comp=Z,22nm,1.1s,mb4.6						
SIUC	**Southern Illin**	**24.66**	**33**	*e*P	**P**	**05 22 50.5**	**+0.7**
	comp=Z,179nm,1.3s,mb5.4						
DWPF	**Disney**	**24.78**	**61**	P	**P**	**05 22 50.1**	**-0.8**
	comp=Z,466nm,1.7s,mb5.7						
MGV	**Manicaragua**	**24.82**	**76**	*e*P	**P**	**05 22 35.4**	**-16**
	baz=291						
MGV				*e*S	**S**	**05 27 17.6**	**+6.5**
	comp=N,3μm,8.8s						
MGV				*e*S	**S**	**05 27 17.6**	**+6.5**
	comp=E,1μm,2.7s						
SWET	**Sewanee**	**24.85**	**42**	*e*P	**P**	**05 22 51.9**	**+0.3**
SLM	**Saint Louis**	**24.86**	**30**	*e*P	**P**	**05 22 52.4**	**+0.8**
	comp=E,362nm,1.1s,mb5.8						
BW06	**Boulder Array**	**25.00**	**354**	*e*P	**P**	**05 22 52.8**	**-0.1**
	comp=E,63nm,1.8s,mb4.8						
PDAR	**Pinedale Array**	**25.00**	**354**	P	**P**	**05 22 53.1**	**+0.2**
	comp=E,3.3nm,0.8s,mb3.9,baz=162,slow=8.9,SNR=24						
NSHM	**Saint Helena R**	**25.16**	**328**	*e*P	**P**	**05 22 53.1**	**-1.4**
AHID	**Auburn Hatcher**	**25.19**	**351**	*e*P	**P**	**05 22 55.1**	**+0.4**
	comp=E,25nm,1.1s,mb4.7						
BEKR	**Beckwourth**	**25.20**	**333**	*e*P	**P**	**05 22 56.0**	**+1.2**
	comp=E,38nm,1.2s,mb4.8						
OHCM	**Honcut**	**25.26**	**331**	*e*P	**P**	**05 22 56.3**	**+0.9**
USIN	**University of**	**25.68**	**35**	*e*P	**P**	**05 23 01.3**	**+1.9**
	comp=E,264nm,1.3s,mb5.6						
REDW	**Red Top Meadow**	**25.74**	**352**	*e*P	**P**	**05 23 00.4**	**+0.5**
HOPS	**Hopland**	**25.76**	**328**	*e*P	**P**	**05 22 58.9**	**-1.2**
CPCT	**Cooper Cave**	**25.90**	**43**	*e*P	**P**	**05 23 01.4**	**-0.1**
KSWY	**Kelly School**	**25.97**	**352**	*e*P	**P**	**05 23 02.7**	**+0.7**
RSSD	**Black Hills**	**26.23**	**3**	*e*P	**P**	**05 23 04.3**	**-0.1**
	comp=E,13nm,1.1s,mb4.4						
HLID	**Hailey**	**26.58**	**346**	*e*P	**P**	**05 23 07.8**	**+0.2**
	comp=E,23nm,1.1s,mb4.6						
WCI	**Wyandotte Cave**	**26.63**	**36**	*e*P	**P**	**05 23 08.2**	**0.0**
	comp=E,59nm,1.0s,mb5.1						
WDC	**Whiskeytown Da**	**26.74**	**331**	*e*P	**P**	**05 23 07.9**	**-1.2**
	comp=E,10nm,1.1s,mb4.3						
WVOR	**Wild Horse Val**	**26.75**	**339**	*e*P	**P**	**05 23 08.9**	**-0.3**
	comp=E,52nm,1.4s,mb4.9						
LKWY	**Lake**	**26.87**	**353**	*e*P	**P**	**05 23 11.4**	**+1.1**
	comp=E,5.8nm,1.1s,mb4.0						
MOD	**Modoc**	**26.89**	**336**	*e*P	**P**	**05 23 09.6**	**-0.9**
	comp=E,22nm,1.3s,mb4.5						
YMR	**Madison River**	**27.04**	**352**	*e*P	**P**	**05 23 12.1**	**+0.3**
BLO	**Bloomington**	**27.17**	**35**	*e*P	**P**	**05 23 12.9**	**-0.1**
	comp=E,20nm,0.8s,mb4.7						
QLMT	**Earthquake Lak**	**27.27**	**352**	*e*P	**P**	**05 23 14.4**	**+0.6**
COW	**Cow Castle Cre**	**27.47**	**51**	*e*P	**P**	**05 23 15.8**	**0.0**
MCMT	**McKenzie Canyo**	**27.48**	**349**	*e*P	**P**	**05 23 16.7**	**+0.6**
JSC	**Jenkinsville**	**27.50**	**49**	*e*P	**P**	**05 23 16.7**	**+0.6**
YBH	**Yreka Blue Hor**	**27.75**	**333**	P	**P**	**05 23 17.3**	**-1.0**
	comp=E,13nm,1.1s,mb4.5,baz=132,slow=9.0,SNR=6.8						
YBH	**Yreka Blue Hor**	**27.75**	**333**	*e*P	**P**	**05 23 16.8**	**-1.5**
	comp=E,49nm,1.3s,mb5.0						
CSU	**Charleston Sou**	**27.75**	**52**	*e*P	**P**	**05 23 19.7**	**+1.2**
TWB	**Tillmans-White**	**27.79**	**52**	*e*P	**P**	**05 23 18.5**	**-0.3**
BOZ	**Bozeman (W)**	**28.09**	**352**	*e*P	**P**	**05 23 21.2**	**-0.2**
	comp=E,48nm,1.5s,mb4.9						
KRMB	**Red Mountain**	**28.12**	**331**	*e*P	**P**	**05 23 19.7**	**-2.0**
LCCM	**Lewis and Clar**	**28.32**	**351**	P	**P**	**05 23 24.6**	**+1.2**
JFWS	**Jewell Farm**	**28.34**	**25**	*e*P	**P**	**05 23 22.6**	**-1.0**
	comp=E,82nm,1.0s,mb5.3						
HUMO	**Hull Mountain**	**28.56**	**333**	*e*P	**P**	**05 23 25.0**	**-0.7**
HRY	**Holter Researc**	**29.16**	**352**	*e*P	**P**	**05 23 30.8**	**-0.2**
PWV	**Princeton**	**29.28**	**43**	*e*P	**P**	**05 23 33.1**	**+0.9**
KEBM	**Edson Butte**	**29.38**	**332**	P	**P**	**05 23 33.3**	**+0.3**
ELN	**Prospectdale**	**29.41**	**44**	*e*P	**P**	**05 23 33.5**	**+0.2**
FWV	**Forest Hill**	**29.57**	**43**	*e*P	**P**	**05 23 35.0**	**+0.2**
CHMT	**Chamberlain Mo**	**29.58**	**350**	*e*P	**P**	**05 23 34.6**	**-0.1**
MSO	**Missoula**	**29.61**	**349**	*e*P	**P**	**05 23 33.9**	**-1.2**
	comp=E,124nm,1.4s,mb5.5						
LNOR	**Lincton Mounta**	**29.73**	**343**	*e*P	**P**	**05 23 34.6**	**-1.6**
ACSO	**Alum Creek Sta**	**29.87**	**37**	*e*P	**P**	**05 23 36.0**	**-1.5**
	comp=E,40nm,1.3s,mb5.0						
ACSO				LR	LR		
	comp=Z,1μm,19.0s,MS4.6						
VGB	**Gordon Butte**	**30.19**	**339**	P	**P**	**05 23 40.8**	**+0.6**
AAM	**Ann Arbor**	**30.92**	**33**	*e*P	**P**	**05 23 45.8**	**-1.0**
	comp=Z,52nm,1.0s,mb5.3						
MCWV	**Mont Chateau**	**31.39**	**41**	*e*P	**P**	**05 23 50.9**	**0.0**
	comp=Z,29nm,1.0s,mb5.1						
MCWV				LR	LR		
	comp=Z,3μm,19.0s,MS4.9						
DPW	**Davenport**	**31.54**	**344**	*e*P	**P**	**05 23 52.3**	**+0.2**
NEW	**Newport**	**31.64**	**346**	*e*P	**P**	**05 23 51.7**	**-1.3**
	comp=Z,46nm,1.4s,mb5.1						
WALA	**Waterton Lakes**	**31.77**	**350**	*e*P	**P**	**05 23 53.4**	**-0.7**
	comp=Z,44nm,1.6s,mb5.0						
CBN	**Corbin**	**32.19**	**45**	*e*P	**P**	**05 23 58.7**	**+0.8**
	comp=Z,95nm,1.2s,mb5.5						
OTAV	**Otavalo**	**32.28**	**120**	*e*P	**P**	**05 23 59.4**	**+0.5**
	comp=Z,90nm,1.4s,mb5.4						
SDMD	**Soldier's Deli**	**33.18**	**44**	P	**P**	**05 24 07.5**	**+1.0**
SSPA	**Standing Stone**	**33.18**	**41**	*e*P	**P**	**05 24 05.0**	**-1.5**
	comp=Z,38nm,1.4s,mb5.1						
SSPA				LR	LR		
	comp=Z,6μm,20.0s,MS5.3						
ULM	**Lac du Bonnet**	**33.32**	**12**	P	**P**	**05 24 05.8**	**-1.7**
	comp=Z,41nm,1.4s,mb5.2,baz=193,slow=8.3,SNR=6.4						
ULM				LR	LR	05 38 12.9	
	comp=Z,3μm,20.8s,MS5.0,baz=197,slow=37						
ULM	**Lac du Bonnet**	**33.32**	**12**	*e*P	**P**	**05 24 05.0**	**-2.5**
	comp=Z,31nm,1.1s,mb5.2						
MVL	**Millersville**	**33.81**	**43**	*e*P	**P**	**05 24 11.7**	**-0.3**
SADO	**Sadowa**	**35.01**	**34**	P	**P**	**05 24 21.1**	**-1.0**
	comp=Z,21nm,0.8s,mb5.1,baz=249,slow=8.1,SNR=18						
BINY	**Binghamton**	**35.24**	**40**	*e*P	**P**	**05 24 22.2**	**-2.1**
	comp=Z,35nm,1.0s,mb5.2						
BRNJ	**Basking Ridge**	**35.33**	**43**	*e*P	**P**	**05 24 25.3**	**+0.3**
SDV	**Santo Domingo**	**35.51**	**100**	P	**P**	**05 24 28.0**	**+1.3**
SDV				S	**S**	**05 30 06.8**	**+5.4**
PAL	**Palisades**	**35.92**	**43**	*e*P	**P**	**05 24 28.9**	**-1.2**
	comp=Z,30nm,0.9s,mb5.2						
NCB	**Newcomb**	**37.31**	**39**	*e*P	**P**	**05 24 40.3**	**-1.3**
	comp=Z,9.0nm,0.8s,mb4.7						
ACCN	**Adirondack Com**	**37.32**	**40**	*e*P	**P**	**05 24 41.3**	**-0.4**
QUA2	**Belchertown**	**37.57**	**42**	*e*P	**P**	**05 24 44.0**	**+0.2**
	comp=Z,31nm,1.0s,mb5.0						
MIV	**Mineville/With**	**37.78**	**39**	*e*P	**P**	**05 24 44.7**	**-0.9**
SJG	**San Juan**	**37.87**	**83**	P	**P**	**05 24 46.1**	**-0.5**
	comp=Z,23nm,0.7s,mb5.0,baz=233,slow=10.0,SNR=4.0						
SJG	**San Juan**	**37.87**	**83**	P	**P**	**05 24 46.1**	**-0.5**
BRYW	**Bryant College**	**37.92**	**43**	*e*P	**P**	**05 24 47.9**	**+1.0**
HRV	**Harvard--Oak R**	**38.20**	**43**	*e*P	**P**	**05 24 49.0**	**-0.1**
	comp=Z,31nm,1.0s,mb5.0						
WES	**Weston**	**38.29**	**43**	*e*P	**P**	**05 24 48.6**	**-1.3**
	comp=Z,27nm,0.9s,mb5.0						
HNH	**Hanover**	**38.34**	**40**	*e*P	**P**	**05 24 50.2**	**-0.2**
	comp=Z,4.4nm,1.4s,mb4.0						
FCC	**Fort Churchill**	**41.77**	**9**	*e*P	**P**	**05 25 17.1**	**-1.3**
	comp=Z,37nm,1.2s,mb4.9						
EMMW	**East Machias**	**41.86**	**42**	*e*P	**P**	**05 25 19.8**	**+0.4**
	comp=Z,219nm,1.2s,mb5.7						
PQI	**Presque Isle**	**42.45**	**39**	P	**P**	**05 25 26.1**	**+1.8**
DLBC	**Dease Lake**	**44.20**	**342**	*e*P	**P**	**05 25 37.8**	**-0.4**
YKA	**Yellowknife Ar**	**44.98**	**354**	P	**P**	**05 25 43.1**	**-1.5**
	comp=Z,2.3nm,0.7s,mb4.1,baz=168,slow=7.4,SNR=14						
YKA				LR	LR	05 45 08.4	
	comp=Z,1μm,21.1s,MS4.8,baz=150,slow=37						
YKW3	**Yellowknife Ar**	**45.05**	**354**	*e*P	**P**	**05 25 43.8**	**-1.3**
SCHQ	**Schefferville**	**47.49**	**30**	P	**P**	**05 26 03.9**	**-0.6**
	comp=Z,14nm,1.0s,mb4.9,baz=249,slow=7.1,SNR=11						
SCHQ				LR	LR	05 45 38.5	
	comp=Z,1μm,18.3s,MS4.9,baz=236,slow=36						
SCHQ	**Schefferville**	**47.49**	**30**	*e*P	**P**	**05 26 01.9**	**-2.5**
	comp=Z,26nm,1.1s,mb5.1						
RKT	**Rikitea**	**49.59**	**216**	*e*S	**S**	**05 33 26.6**	**-1.5**
RKT				*e*R		05 40 12.9	
	comp=Z,5μm,27.5s						
LPAZ	**La Paz**	**50.44**	**130**	P	**P**	**05 26 28.4**	**+0.7**
	comp=Z,7.1nm,1.0s,mb4.7,baz=333,slow=8.8,SNR=16						
LPAZ	**La Paz**	**50.44**	**130**	*e*P	**P**	**05 26 27.5**	**-0.2**
	comp=Z,26nm,1.6s,mb5.0						
DAWY	**Dawson**	**51.42**	**342**	*e*P	**P**	**05 26 33.4**	**-1.2**
SLKM	**Skilak Lake**	**52.93**	**334**	*e*P	**P**	**05 26 44.9**	**-1.0**
PMS	**Palmer South**	**53.08**	**335**	*e*P	**P**	**05 26 46.9**	**-0.1**
INK	**Inuvik**	**53.34**	**348**	*e*P	**P**	**05 26 46.9**	**-2.0**
RSO	**Redoubt South**	**53.96**	**334**	*e*P	**P**	**05 26 52.5**	**-1.0**
SPU	**Mount Spurr**	**54.05**	**334**	*e*P	**P**	**05 26 53.0**	**-1.1**
LVC	**Limon Verde**	**54.18**	**137**	P	**P**	**05 26 56.0**	**+0.4**
	comp=Z,23nm,1.3s,mb5.0,baz=311,slow=3.7,SNR=5.5						
ILAR	**Eielson Array**	**54.26**	**340**	P	**P**	**05 26 54.4**	**-1.3**
	comp=Z,9.1nm,1.1s,mb4.6,baz=154,slow=5.0,SNR=18						
PPT	**Papeete**	**55.46**	**233**	*e*S	**S**	**05 34 47.7**	**-0.5**
PPT				*e*SS	SS	05 38 32.8	-0.1
PPT				*e*R		05 42 32.8	
	comp=Z,4μm,26.5s,baz=45						
SVW	**Sparrevohn**	**55.51**	**333**	*e*P	**P**	**05 27 02.4**	**-2.4**
RES	**Resolute Bay**	**57.16**	**3**	*e*P	**P**	**05 27 13.4**	**-3.2**
	comp=Z,9.0nm,1.1s,mb4.7						
IMA	**Indian Mountai**	**57.31**	**339**	*e*P	**P**	**05 27 15.6**	**-2.1**
TBI	**Tubuai**	**58.98**	**228**	*e*S	**S**	**05 35 37.9**	**+3.4**
TBI				*e*R		05 44 11.9	
	comp=Z,58nm,25.0s						
ANM	**Nome**	**61.01**	**335**	*e*P	**P**	**05 27 40.8**	**-2.5**
CPUP	**Villa Florida**	**64.55**	**132**	P	**P**	**05 28 06.0**	**-1.4**
	comp=Z,9.1nm,0.9s,mb4.8,baz=345,slow=6.6,SNR=11						
CPUP	**Villa Florida**	**64.55**	**132**	*e*P	**P**	**05 28 05.9**	**-1.5**
	comp=Z,19nm,1.4s,mb4.9						
BDFB	**Brasilia**	**66.14**	**117**	P	**P**	**05 28 17.6**	**-0.2**
	comp=Z,18nm,1.0s,mb5.1,baz=290,slow=8.2,SNR=23						
PLCA	**Paso Flores**	**66.97**	**151**	P	**P**	**05 28 22.4**	**-0.3**
	comp=Z,4.5nm,0.9s,mb4.5,baz=347,slow=7.7,SNR=6.0						
PLCA	**Paso Flores**	**66.97**	**151**	*e*P	**P**	**05 28 22.0**	**-0.6**
DAG	**Danmarks Havn**	**72.14**	**14**	*i* P	**P**	**05 28 52.0**	**-1.8**
DAG	**Danmarks Havn**	**72.14**	**14**	*e*P	**P**	**05 28 52.0**	**-1.8**
JMIC	**Jan Mayen**	**75.68**	**20**	AMS	AMS	06 03 18.3	
	comp=Z,991nm,17.0s,MS5.2						
KBS	**Kingsbay**	**77.71**	**10**	*e*S	S	05 39 17.5	+1.1
KBS				*e*SS	SS	05 44 20.3	+1.0
KBS				AMS	AMS	06 05 25.4	
	comp=Z,1μm,16.0s,MS5.3						
DCN	**Croghan**	**80.96**	**37**	*e*P	**P**	**05 29 43.5**	**-0.1**
DMUB	**Kingscourt**	**81.00**	**36**	*e*P	**P**	**05 29 42.4**	**-1.3**
DLF	**Lyons Farm**	**81.40**	**37**	*e*P	**P**	**05 29 46.1**	**+0.2**
EKA	**Eskdalemuir Ar**	**82.58**	**34**	P	**P**	**05 29 52.0**	**0.0**
	comp=Z,3.4nm,1.0s,mb4.3,baz=284,slow=6.9,SNR=7.1						
MTE	**Manteigas**	**84.86**	**49**	*e*P	**P**	**05 30 03.3**	**-0.6**
ARCES	**ARCESS Array B**	**86.37**	**15**	LR	LR	06 09 13.1	
	comp=Z,1μm,18.9s,MS5.3,baz=322,slow=36						
NOA	**NORSAR Array B**	**86.89**	**26**	P	**P**	**05 30 11.9**	**-1.5**
	comp=Z,2.7nm,1.1s,mb4.4,baz=300,slow=4.7,SNR=4.5						
NOA				LR	LR	06 07 47.2	
	comp=Z,509nm,20.9s,MS4.9,baz=305,slow=35						
NOA	**NORSAR Array B**	**86.89**	**26**	P	**P**	**05 30 11.9**	**-1.5**
NOA				LR	LR	06 07 47.2	
KONO	**Kongsberg**	**86.93**	**27**	*e*PP	PP	05 33 41.6	+2.5
KONO				*e*SKSa		05 40 41.4	
KONO				*e*SS	SS	05 46 36.6	+0.7
KONO				AMS	AMS	06 08 07.7	
	comp=Z,567nm,20.0s,MS5.0						
ESDC	**Sonseca Array**	**87.69**	**49**	P	**P**	**05 30 17.5**	**-0.3**
	comp=Z,1.9nm,1.0s,mb4.3,baz=311,slow=6.9

*MOS **02** 06:03:48.6±3.1,42.06N×45.15E,h21km,mb3.8/1,Error ellipse: s-maj=93.7km s-min=14.6km az=136.5*
*TIF **02** 06:03:51.8,42.07N×46.00E,h13km,Mpv3.4*
ISC 02 06:03:53.1±0.8,42.07N±0.07×46.11E±0.08,h10km,n10, σ0§89/14,2C-1D,Eastern Caucasus

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
BTLR	**Botlikh**	**0.60**	**8**	⇑*i*PG		**Pg**	**06 04 05.2**	**-0.1**
BTLR				pmax	pmax			
	comp=Z,51nm,0.8s							
DGRG	**David-gareji**	**0.82**	**222**	⇓*i*P		**Pb**	**06 04 08.6**	**-0.5**
DGRG				*i* S		**Sb**	**06 04 20.9**	**+0.9**
UNCR	**Uncukul**	**0.82**	**38**	*e*PG		**Pg**	**06 04 10.2**	**+0.5**
UNCR				pmax	pmax			
	comp=Z,23nm,0.2s							
KRNR	**Karanay**	**0.96**	**38**	*e*PG		**Pg**	**06 04 11.0**	**-1.5**
KRNR				pmax	pmax			
	comp=Z,21nm,0.2s							
DUS	**Dusheti**	**1.04**	**272**	⇑*i*P		**Pb**	**06 04 12.7**	**-0.2**
DUS				*i* S		**Sb**	**06 04 27.4**	**+1.0**
MTA	**Mtatsminda**	**1.05**	**250**	*e*P		**Pb**	**06 04 11.9**	**-1.0**
MTA				*i* S		**Sb**	**06 04 25.8**	**-0.7**
BUJR	**Buynaksk**	**1.06**	**44**	*e*PN		**Pn**	**06 04 16.0**	**+2.0**
BUJR				pmax	pmax			
	comp=Z,91nm,0.3s							
TI2	**Plekhanov**	**1.06**	**252**	*e*PG		**Pg**	**06 04 04.7**	**-10**
DBC	**Dubki**	**1.09**	**29**	*i* PG		**Pg**	**06 04 15.0**	**-0.1**
AKH	**Akhalkalaki**	**2.06**	**252**	*e*P		**Pn**	**06 04 27.7**	**-0.6**
AKH				*i* S		**Sn**	**06 04 54.8**	**+0.5**

*IDC **02** 06:11:40.1±4.7,3.79S×129.22E,h179km±43km,mb3.5/4, mb1 3.6/6,mb1mx3.5/17,Error ellipse: s-maj=69.7km s-min=13.1km az=69.0*
ISC 02 06:11:31.3±3.3,3.5S±0.2×129.5E±0.3,h112km±30km,n8, σ0§47/9,mb3.7/3,Seram

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**15.00**	**194**	P		**P**	**06 14 59.1**	**+0.4**
	0.2nm,0.3s,baz=5.3,slow=15,SNR=4.1							
WRA	**Warramunga Arr**	**17.01**	**164**	P		**P**	**06 15 23.5**	**-0.1**
	0.6nm,0.3s,baz=345,slow=12,SNR=8.9							
WB2	**Warramunga Arr**	**17.01**	**164**	*e*P		**P**	**06 15 23.5**	**-0.2**
WB2				*i*			06 17 54.8	
AS12	**Alice Springs**	**20.49**	**168**	*e*P		**P**	**06 16 02.3**	**0.0**
	9.9nm,0.7s							
AS12				*e*			06 18 05.8	
ASAR	**Alice Springs**	**20.49**	**168**	P		**P**	**06 16 02.5**	**+0.2**
	8.5nm,0.7s,baz=350,slow=12,SNR=87							
ASAR				S		**S**	**06 19 40.1**	**-0.2**
	0.4nm,0.6s,baz=347,slow=16,SNR=3.4							
CMAR	**Chiang Mai Arr**	**37.19**	**307**	P		**P**	**06 18 32.7**	**-0.8**
	0.6nm,0.3s,mb4.0,baz=150,slow=8.0,SNR=4.3							
MKAR	**Makanchi Array**	**65.06**	**326**	P		**P**	**06 22 01.9**	**-0.1**
	0.5nm,0.5s,mb3.6,baz=121,slow=8.3,SNR=6.3							
BVAR	**Borovoye Array**	**74.86**	**328**	P		**P**	**06 23 02.2**	**+0.9**
	0.7nm,0.6s,mb3.6,baz=112,slow=7.8,SNR=4.1							

*IDC **02** 06:11:38.2±1.3,11.00S×164.96E,mb4.2/9,mb1 4.4/9, mb1mx4.2/15,MS4.0/3,Ms1 4.0/3,ms1mx3.7/17,Error ellipse: s-maj=52.8km s-min=22.1km az=134.0*
*NEIC **02** 06:11:39.7±0.7,10.92S×164.90E,h10km,mb4.6/3,Error ellipse: s-maj=17.2km s-min=14.0km az=106.0*
ISC 02 06:11:41.8±0.7,11.08S±0.10×164.8E±0.1,h33km,n20, σ0§92/20,mb4.2/10,MS4.2/2,Santa Cruz Islands region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**11.04**	**172**	*e*P		**P**	**06 14 19.8**	**-0.8**
DZM				*e*S		**S**	**06 16 16.2**	**-7.7**
PMG	**Port Moresby**	**17.45**	**274**	LR		LR	06 21 21.6	
	comp=Z,262nm,19.1s,baz=111,slow=33							
CTA	**Charters Tower**	**19.98**	**241**	*e*P		**P**	**06 16 16.0**	**+1.7**
	9.7nm,0.9s							
CTA	**Charters Tower**	**19.98**	**241**	P		**P**	**06 16 15.7**	**+1.4**
	10.0nm,0.8s,baz=73,slow=12,SNR=6.6							
CTAO	**Charters Tower**	**19.98**	**241**	*e*P		**P**	**06 16 12.3**	**-2.0**
ARMA	**Armidale**	**22.82**	**211**	*e*P		**P**	**06 16 47.0**	**+4.0**
STKA	**Stephens Creek**	**29.80**	**222**	P		**P**	**06 17 49.2**	**+1.3**
	2.3nm,0.7s,mb4.0,baz=53,slow=15,SNR=6.3							
STKA				LR		LR	06 29 04.3	
	comp=Z,300nm,18.2s,MS4.0,baz=19,slow=35							
STKA	**Stephens Creek**	**29.80**	**222**	P		**P**	**06 17 49.2**	**+1.3**
STKA				LR		LR	06 29 04.3	
WRAB	**Tennant Creek**	**30.60**	**250**	*e*P		**P**	**06 17 54.1**	**-1.1**
WRA	**Warramunga Arr**	**30.62**	**250**	P		**P**	**06 17 54.9**	**-0.4**
	4.4nm,0.7s,mb4.4,baz=79,slow=9.0,SNR=16							
WRA				PcP		PcP	06 20 53.0	-0.3
	0.6nm,0.7s,baz=80,slow=3.2,SNR=4.6							
ASAR	**Alice Springs**	**31.96**	**243**	P		**P**	**06 18 06.5**	**-0.7**
	3.8nm,0.7s,mb4.4,baz=70,slow=9.9,SNR=25							
ASAR				PcP		PcP	06 20 57.0	+0.1
	1.2nm,0.7s,baz=76,slow=1.5,SNR=8.4							
SBA	**Scott Base**	**66.78**	**180**	*e*P		**P**	**06 22 31.1**	**-0.5**
	4.3nm,0.9s,mb4.5							
ENH	**Enshi**	**67.21**	**309**	*e*P		**P**	**06 22 34.0**	**-1.1**
CMAR	**Chiang Mai Arr**	**71.29**	**294**	P		**P**	**06 23 01.6**	**+1.2**
	1.4nm,0.3s,mb4.3,baz=117,slow=4.1,SNR=5.1							
SONM	**Songino Array**	**78.15**	**324**	P		**P**	**06 23 39.7**	**+0.3**
	0.8nm,0.4s,mb4.0,baz=149,slow=7.2,SNR=3.9							
QSPA	**South Pole Qui**	**78.93**	**180**	*e*P		**P**	**06 23 44.5**	**+1.4**
	13nm,1.1s,mb4.8							
ILAR	**Eielson Array**	**83.83**	**19**	P		**P**	**06 24 08.9**	**0.0**
	0.5nm,0.7s,mb3.8,baz=228,slow=5.1,SNR=5.3							
NVAR	**Mina Array Bea**	**86.74**	**50**	P		**P**	**06 24 23.5**	**-0.4**
	0.7nm,1.0s,mb3.8,baz=225,slow=2.6,SNR=2.6							
NVAR				LR		LR	06 57 07.1	
	comp=Z,125nm,18.7s,MS4.3,baz=220,slow=32							
MKAR	**Makanchi Array**	**92.92**	**317**	P		**P**	**06 24 53.0**	**+0.2**
	0.6nm,0.6s,mb4.2,baz=98,slow=8.6,SNR=4.7							
SNAA	**Sanae**	**97.03**	**184**	P		**P**	**06 25 11.2**	**+0.2**

*JMA **02** 06:23:49.1±0.2,43.94N×147.92E,M4.1*
ISC 02 06:23:49.7±1.6,43.9N±0.2×148.0E±0.1,h10km,n10, σ0§55/19,East of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
NEM2	**Nemuro 2**	**1.74**	**252**	P		**Pn**	**06 24 20.2**	**-0.1**
NEM2				*e*S		**Sn**	**06 24 42.9**	**+0.2**
JRA	**Rausu**	**2.09**	**271**	P		**Pn**	**06 24 25.1**	**-0.2**
JRA				*e*S		**Sn**	**06 24 51.4**	**-0.1**
JNK	**Nakash**	**2.41**	**263**	P		**Pn**	**06 24 29.7**	**-0.2**
JNK				*e*S		**Sn**	**06 24 59.5**	**-0.2**
JAK	**Akkeshi**	**2.59**	**250**	P		**Pn**	**06 24 32.4**	**0.0**
JAK				*e*S		**Sn**	**06 25 04.1**	**-0.1**
JTKR	**Abashiri--Toko**	**2.96**	**272**	P		**Pn**	**06 24 38.3**	**+0.5**
JAR	**Ashorobuto**	**3.15**	**260**	P		**Pn**	**06 24 39.9**	**-0.4**
JAR				*e*S		**Sn**	**06 25 18.8**	**+0.5**
JOB	**Onbets**	**3.21**	**253**	P		**Pn**	**06 24 41.7**	**+0.4**
JOB				*e*S		**Sn**	**06 25 20.3**	**+0.3**
JCH	**Churui**	**3.64**	**251**	P		**Pn**	**06 24 47.9**	**+0.5**
JCH				*e*S		**Sn**	**06 25 31.5**	**+0.6**
JNBK	**Urakawa-nobuka**	**4.19**	**249**	P		**Pn**	**06 24 54.8**	**-0.4**
JNBK				*e*S		**Sn**	**06 25 45.3**	**+0.6**
JKB	**Kayabe**	**5.52**	**251**	P		**Pn**	**06 25 13.7**	**-0.2**
JKB				*e*S		**Sn**	**06 26 16.2**	**-2.0**

*NEIC **02** 06:35:06.3±3.6,43.29N×129.40W,h10km,mb3.5/1,Error ellipse: s-maj=43.2km s-min=15.0km az=82.0*
ISC 02 06:35:04.8±5.4,43.4N±0.2×129.4W±0.6,h10km,n12, σ0§46/12,mb3.3/1,Off coast of Oregon

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
HSO	**Harness Mounta**	**4.59**	**86**	*e*P		**Pn**	**06 36 15.4**	**-0.5**
HUMO	**Hull Mountain**	**4.78**	**97**	*e*P		**Pn**	**06 36 18.7**	**+0.2**
LVP	**Lakeview Peak**	**5.66**	**59**	P		**Pn**	**06 36 32.1**	**+1.1**
FL2	**Flat Top 2**	**5.75**	**58**	P		**Pn**	**06 36 32.5**	**+0.2**
TDH	**Tom, Dick, Har**	**5.78**	**68**	P		**Pn**	**06 36 32.3**	**-0.4**
ERK	**Elk Rock**	**5.81**	**57**	P		**Pn**	**06 36 33.2**	**+0.1**
SHW	**Mount Saint He**	**5.82**	**58**	P		**Pn**	**06 36 33.1**	**-0.2**
ASR	**Mount Adams--S**	**6.21**	**61**	P		**Pn**	**06 36 39.1**	**+0.4**
GNW	**Green Mountain**	**6.24**	**45**	*e*P		**Pn**	**06 36 39.2**	**0.0**
LON	**Longmire**	**6.34**	**55**	*e*P		**Pn**	**06 36 40.0**	**-0.7**
RPW	**Rockport**	**7.48**	**44**	P		**Pn**	**06 36 56.2**	**-0.4**
WMOK	**Wichita Mounta**	**25.17**	**100**	P		**P**	**06 40 31.7**	**+0.1**
	0.7nm,0.7s,mb3.3							

*NEIC **02** 06:40:34.5,31.77S×71.26W,h81km,MD3.3(GUC),After GUC.*
GUC 02 06:40:34.5±1.0,31.77S×71.26W,h81km±4km,MD3.3, ML3.7,7C-10D,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
ILCH	**Illapel**	**0.15**	**28**	⇑*i*P		P	06 40 46.9	+0.7
ILCH				*i* S		S	06 40 55.6	+0.6
ILCH				AMP			06 40 57.2	
	comp=N,10μm,0.2s							
PTCH	**Petorca**	**0.56**	**151**	⇓*i*P		P	06 40 49.4	+0.3
PTCH				*i* S		S	06 41 00.0	+0.2
PTCH				AMP			06 41 00.9	
	comp=N,15μm,0.3s							
CMCH	**Combarbala**	**0.64**	**20**	⇑*i*P		P	06 40 50.4	+0.6
CMCH				*i* S		S	06 41 01.8	+0.6
CMCH				AMP			06 41 02.8	
	comp=E,24μm,0.5s							
PACH	**Papudo**	**0.78**	**191**	⇓*i*P		P	06 40 52.0	+0.6
PACH				⇓*i*S		S	06 41 05.1	+1.2
JACH	**Jahuel**	**1.07**	**148**	*i* P		P	06 40 55.0	+0.4
JACH				*i* S		S	06 41 10.0	+0.2
OVCH	**Ovalle**	**1.16**	**2**	⇓*i*P		P	06 40 56.1	+0.2
OVCH				*i* S		S	06 41 11.6	-0.2
OVCH				AMP			06 41 14.3	
	comp=E,2μm,0.3s							
ROCH	**El Roble**	**1.21**	**170**	⇑*i*P		P	06 40 56.8	+0.2
ROCH				*i* S		S	06 41 14.2	+1.1
IHA	**Instituto Hidr**	**1.29**	**195**	⇑*i*P		P	06 40 57.4	-0.1
IHA				*i* S		S	06 41 14.3	-0.6
PEL	**Peldehue**	**1.45**	**161**	⇓*i*P		P	06 40 59.9	+0.1
PEL				AMP			06 41 22.4	
	comp=E,1μm,0.3s							
TLL	**Tololo Astrono**	**1.65**	**14**	⇓*i*P		P	06 41 02.6	+0.3
TLL				*i* S		S	06 41 23.9	+1.2
TLL				AMP			06 41 25.2	
	comp=N,845nm,0.5s							
LCCH	**Las Cruces**	**1.72**	**189**	*i* P		P	06 41 03.1	-0.1
LCCH				*i* S		S	06 41 24.1	-0.3
CLCH	**Cerro Calan**	**1.73**	**160**	⇑*i*P		P	06 41 03.5	+0.1
CLCH				*i* S		S	06 41 25.2	+0.6
CLCH				AMP			06 41 28.0	
	comp=N,584nm,0.3s							
CLCH				AMP			06 41 28.9	
	comp=E,933nm,0.8s							
FCH	**Farellones**	**1.75**	**153**	AMP			06 41 28.9	
	comp=E,905nm,0.2s							
RCDM	**Rinconada Maip**	**1.75**	**168**	AMP			06 41 28.0	
	comp=E,1μm,0.1s							
FSR	**Penalolen**	**1.81**	**160**	⇓*i*P		P	06 41 04.9	+0.4
FSR				*i* S		S	06 41 27.2	+0.8
FSR				AMP			06 41 32.9	
	comp=E,442nm,0.4s							
LSCH	**La Serena**	**1.86**	**0**	AMP			06 41 30.4	
	comp=E,390nm,0.2s							
ANTU	**Antumapu**	**1.87**	**164**	AMP			06 41 32.2	
	comp=E,442nm,0.2s							
TACH	**Talagante**	**1.90**	**172**	⇑*i*P		P	06 41 05.7	+0.2
TACH				*i* S		S	06 41 28.8	+0.3
PCH	**Pirque**	**1.95**	**161**	⇓*i*P		P	06 41 06.3	0.0
PCH				*i* S		S	06 41 30.4	+0.7
CHCH	**Chadas Angostu**	**2.21**	**167**	⇓*i*P		P	06 41 09.8	-0.2
LMEL	**Las Melosas**	**2.25**	**157**	⇓*i*P		P	06 41 11.1	+0.5
LMEL				*i* S		S	06 41 38.3	+1.1
LMEL				AMP			06 41 40.4	
	comp=N,812nm,0.2s							
MDZ	**Mendoza**	**2.32**	**119**	*e*P		P	06 41 13.1	+1.6
MDZ				*e*			06 41 38.0	
SFDO	**San Fernando**	**2.84**	**176**	⇑*i*P		P	06 41 18.4	-0.4
SFDO				*i* S		S	06 41 51.4	-0.6

*TIF **02** 07:58:18.4,42.27N×45.84E,h12km,Mpv3.8*
*MOS **02** 07:58:22.1±1.6,42.11N×46.01E,h19km,mb3.8/1,Error ellipse: s-maj=29.6km s-min=11.9km az=53.3*
ISC 02 07:58:21.7±0.5,42.11N±0.04×46.00E±0.04,h20km±9km, n15,σ1§10/28,3C-4D,Eastern Caucasus

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
BTLR	**Botlikh**	**0.58**	**17**	⇑*i*PG		**Pb**	**07 58 32.0**	**-1.0**
BTLR				*i* S		**Sb**	**07 58 40.8**	**+0.1**
BTLR				pmax	pmax			
	comp=Z,75nm,0.2s							
DGRG	**David-gareji**	**0.81**	**216**	⇓*i*P		**Pb**	**07 58 36.4**	**-0.5**
DGRG				*i* S		**Sb**	**07 58 49.8**	**+2.4**
UNCR	**Uncukul**	**0.84**	**44**	*e*PG		**Pb**	**07 58 38.0**	**+0.6**
UNCR				*i* S		**Sb**	**07 58 48.3**	**0.0**
UNCR				pmax	pmax			
	comp=Z,23nm,0.2s							
ARKR	**Arakani**	**0.89**	**56**	⇓*i*PG		**Pb**	**07 58 36.5**	**-1.7**
ARKR				*e*S		**Sb**	**07 58 49.3**	**-0.3**
DUS	**Dusheti**	**0.97**	**269**	⇑*i*P		**Pb**	**07 58 38.2**	**-1.4**
DUS				*i* S		**Sb**	**07 58 52.6**	**+0.7**
KRNR	**Karanay**	**0.98**	**43**	*e*PG		**Pb**	**07 58 43.3**	**+0.5**
KRNR				*i* S		**Sb**	**07 58 53.5**	**+1.2**
KRNR				pmax	pmax			
	comp=Z,16nm,0.2s							
MTA	**Mtatsminda**	**0.99**	**246**	⇑*i*P		**Pb**	**07 58 38.3**	**-1.7**
MTA				*i* S		**Sb**	**07 58 53.2**	**+0.5**
TI2	**Plekhanov**	**1.01**	**248**	⇓*i*PG		**Pb**	**07 58 31.0**	**-9.3**
BUJR	**Buynaksk**	**1.09**	**49**	*e*PG		**Pb**	**07 58 41.0**	**-0.6**
BUJR				*e*S		**Sb**	**07 58 57.0**	**+1.6**
BUJR				pmax	pmax			
	comp=Z,91nm,0.3s							
UKTR	**Uchkent**	**1.28**	**38**	PG		**Pn**	**07 58 43.0**	**-1.6**
UKTR				*e*S		**Sb**	**07 59 05.0**	**+4.0**
MAK	**Makhachkala**	**1.40**	**52**	*e*PG		**Sb**	**07 59 08.0**	**+3.6**
AKT	**Akhty**	**1.44**	**115**	*i* PG		**Pn**	**07 58 47.0**	**+0.1**
AKT				*i* S		**Sb**	**07 59 06.0**	**+0.4**
STE	**Stepanavan**	**1.64**	**228**	*i* P		**Pn**	**07 58 49.0**	**-0.7**
STE				*e*S		**Sn**	**07 59 10.5**	**+0.2**
VAD	**Vardenisi**	**1.93**	**186**	*e*P		**Pn**	**07 58 53.0**	**-0.9**
VAD				*e*S		**Sn**	**07 59 18.0**	**+0.2**
AKH	**Akhalkalaki**	**2.00**	**250**	⇓*i*P		**Pn**	**07 58 54.9**	**-0.1**
AKH				*i* S		**Sn**	**07 59 22.1**	**+2.4**

*MEX **02** 08:04:04.8±0.4,18.05N×106.52W,h13km,MD4.8*
*IDC **02** 08:04:08.9±7.8,17.80N×105.76W,mb3.2/4,mb1 3.7/5, mb1mx3.6/18,ML3.7/1,MS3.6/5,Ms1 3.6/5,ms1mx3.4/10, Error ellipse: s-maj=137.0km s-min=84.6km az=140.0*
*NEIC **02** 08:04:16.8±2.0,18.64N×105.51W,h10km,mb4.1/2,Error ellipse: s-maj=29.1km s-min=14.8km az=1.0*
ISC 02 08:04:12.1±1.5,18.1N±0.1×105.8W±0.1,h10km,n17, σ1§21/16,mb3.3/5,MS3.7/4,Off coast of Jalisco

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
CJM	**Chamela**	**1.52**	**27**	*i* P		**Pn**	**08 04 35.3**	**-4.2**
CJM				*i* S		**Sb**	**08 04 59.0**	**-0.3**
COLM	**Colima**	**2.24**	**62**	*i* P		**Pn**	**08 04 49.0**	**-0.8**
COLM				*e*S		**Sn**	**08 05 21.5**	**+3.8**
SFJM	**Santa Fe**	**3.49**	**48**	*i* P		**Pn**	**08 05 03.0**	**-4.6**
TXAR	**Lajitas Array**	**11.31**	**9**	Pn		**P**	**08 06 57.7**	**+0.8**
	0.1nm,0.3s,baz=186,slow=13,SNR=6.8							
TXAR				LR		LR	08 11 27.2	
	comp=Z,122nm,21.0s,baz=250,slow=38							
JCT	**Junction City**	**13.44**	**23**	P		**P**	**08 07 25.7**	**+0.3**
NEN	**Nelson**	**19.20**	**337**	*e*P		**P**	**08 08 37.7**	**-1.0**
SDCO	**Great Sand Dun**	**19.54**	**1**	*e*P		**P**	**08 08 39.6**	**-3.0**
	14nm,1.5s							
MSU	**Marysvale**	**21.05**	**346**	*e*P		**P**	**08 08 59.8**	**+1.2**
NVAR	**Mina Array Bea**	**22.98**	**334**	P		**P**	**08 09 18.8**	**+0.9**
	0.7nm,1.0s,mb3.0,baz=165,slow=10,SNR=3.3							
CCM	**Cathedral Cave**	**23.57**	**30**	*e*P		**P**	**08 09 25.3**	**+1.6**
	13nm,1.4s,mb4.2							
PDAR	**Pinedale Array**	**24.76**	**353**	P		**P**	**08 09 35.1**	**-0.1**
	0.3nm,0.7s,mb2.9,baz=194,slow=7.4,SNR=2.9							
PDAR	**Pinedale Array**	**24.76**	**353**	P		**P**	**08 09 35.1**	**-0.1**
SJG	**San Juan**	**37.62**	**84**	LR		LR	08 26 38.3	
	comp=Z,74nm,21.3s,MS3.5,baz=240,slow=36							
PCRV	**Puerto La Cruz**	**40.60**	**96**	LR		LR	08 30 01.2	
	comp=Z,64nm,19.9s,MS3.5,baz=282,slow=38							
YKA	**Yellowknife Ar**	**44.74**	**354**	P		**P**	**08 12 27.5**	**+0.4**
	0.3nm,0.8s,mb3.2,baz=166,slow=7.3,SNR=7.2							
YKA				LR		LR	08 31 41.0	
	comp=Z,129nm,18.7s,MS3.9,baz=180,slow=37							
LPAZ	**La Paz**	**50.45**	**130**	LR		LR	08 31 28.4	
	comp=Z,112nm,21.9s,MS3.8,baz=103,slow=33							
ILAR	**Eielson Array**	**54.08**	**340**	P		**P**	**08 13 36.5**	**-2.3**
	0.4nm,1.0s,mb3.3,baz=157,slow=6.0,SNR=4.5							

*IDC **02** 08:10:24.6±1.6,5.35S×102.51E,mb3.8/8,mb1 4.0/8, mb1mx3.9/15,Error ellipse: s-maj=72.3km s-min=17.5km az=53.0*
*NEIC **02** 08:10:29.5±0.7,5.82S×102.04E,h50km,Error ellipse: s-maj=20.1km s-min=14.4km az=60.0*
ISC 02 08:10:25.4±0.7,5.74S±0.10×102.0E±0.1,h33km,n13, σ1§14/12,mb3.9/8,Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
COCO	**West Island**	**8.21**	**218**	*e*P		**P**	**08 12 24.5**	**-0.4**
	40nm,0.4s							
CMAR	**Chiang Mai Arr**	**24.24**	**353**	P		**P**	**08 15 41.6**	**+1.0**
	1.1nm,0.4s,mb3.6,baz=180,slow=8.1,SNR=4.9							
WRA	**Warramunga Arr**	**34.43**	**117**	P		**P**	**08 17 11.6**	**-0.5**
	0.6nm,0.5s,mb3.8,baz=305,slow=9.1,SNR=5.8							
WRAB	**Tennant Creek**	**34.43**	**117**	P		**P**	**08 17 10.6**	**-1.6**
ASAR	**Alice Springs**	**35.47**	**123**	P		**P**	**08 17 21.7**	**+0.7**
	0.3nm,0.5s,mb3.4,baz=305,slow=7.7,SNR=5.6							
STKA	**Stephens Creek**	**45.18**	**130**	P		**P**	**08 18 43.1**	**+2.0**
	4.0nm,0.9s,mb4.3,baz=343,slow=4.9,SNR=7.6							
SONM	**Songino Array**	**53.49**	**4**	P		**P**	**08 19 43.1**	**-1.6**
	1.4nm,0.7s,mb4.0,baz=191,slow=6.3,SNR=4.4							
MKAR	**Makanchi Array**	**55.16**	**344**	P		**P**	**08 19 57.3**	**+0.3**
	2.0nm,0.7s,mb4.2,baz=149,slow=9.1,SNR=13							
ZAL	**Zalesovo**	**61.20**	**348**	P		**P**	**08 20 38.7**	**-0.5**
	1.0nm,0.7s,mb4.1,baz=242,slow=3.3,SNR=6.4							
ZAL	**Zalesovo**	**61.20**	**348**	P		**P**	**08 20 38.7**	**-0.5**
BRVK	**Borovoye**	**64.44**	**339**	P		**P**	**08 21 00.6**	**0.0**
BRTR	**Keskin Array B**	**77.33**	**313**	P		**P**	**08 22 22.1**	**+3.4**
	0.2nm,0.3s,mb3.5,baz=117,slow=8.3,SNR=3.9							
TXAR	**Lajitas Array**	**146.24**	**43**	PKPbc	PKPbc		08 30 06.0	+2.8
	0.8nm,0.7s,baz=341,slow=1.2,SNR=12							

KRSC 02 08:11:14.4±0.9,52.75N×156.91E,h307km±4km,ML3.8, Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
APC	**Apacha**	**0.23**	**41**	*i* P		P	08 11 52.6	-0.9
MIPR	**Malaya Ipel'ka**	**0.48**	**191**	*e*P		P	08 11 53.8	-0.2
MIPR				*e*S		S	08 12 22.9	-2.1
GRL	**Gorelyy**	**0.74**	**105**	*e*P		P	08 11 55.1	+0.4
GRL				*e*S		S	08 12 24.6	-1.6
RUS	**Russkaya**	**1.03**	**107**	*e*P		P	08 11 55.8	0.0
RUS				*e*S		S	08 12 26.2	-2.1
PET	**Petropavlovsk**	**1.09**	**75**	*e*P		P	08 11 56.1	-0.1
PET				*e*S		S	08 12 27.0	-1.9
GNL	**Ganaly**	**1.13**	**33**	*i* P		P	08 11 55.5	-0.9
KOK	**Koryaka**	**1.18**	**62**	*e*P		P	08 11 56.8	+0.2
AVH	**Avacha**	**1.22**	**64**	*e*P		P	08 11 56.9	0.0
AVH				*e*S		S	08 12 26.5	-3.6
UGLR	**Uglovaya**	**1.25**	**68**	*i* P		P	08 11 57.3	+0.3
UGLR				*e*S		S	08 12 28.0	-2.3
SMAR	**Somma**	**1.25**	**65**	*e*P		P	08 11 57.5	+0.4
SDLR	**Sedlovina**	**1.30**	**65**	*i* P		P	08 11 57.3	-0.1
SDLR				*e*S		S	08 12 27.8	-3.2
NLC	**Nalytchevo**	**1.53**	**73**	*e*P		P	08 11 59.0	+0.2
NLC				*e*S		S	08 12 31.8	-1.6
SPN	**Mys Shipunski**	**1.92**	**78**	*i* P		P	08 12 00.9	-0.5
SPN				*i* S		S	08 12 35.0	-3.1
KII	**Karymskiy**	**1.99**	**49**	*e*P		P	08 12 02.3	+0.3
KII				*e*S		S	08 12 38.3	-0.9
TUMR	**Tumrok**	**3.18**	**36**	*i* P		P	08 12 12.9	+0.1
MKZ	**Mys Kozlova**	**3.39**	**56**	*e*P		P	08 12 14.1	-0.9
MKZ				*e*S		S	08 12 58.3	-4.0
ZLN	**Zelenaya**	**3.99**	**33**	*e*P		P	08 12 21.7	+0.4
ZLN				*e*S		S	08 13 10.1	-3.5
CIRR	**Tsirk**	**4.05**	**32**	*e*P		P	08 12 22.1	+0.1
KBTR	**Krutoberegovo**	**4.89**	**42**	*e*P		P	08 12 31.1	-0.3
KBTR				*e*S		S	08 13 27.8	-3.9

DJA 02 08:17:57.1±1.0,8.69S×116.14E,h106km±6km,MD5.0/3, 6C,Error ellipse: s-maj=41.6km s-min=17.3km az=179.0, Sumbawa region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
KEDI	**Kedomdong**	**0.20**	**352**	⇑*e*Pn		P	08 18 11.9	-0.3
	138nm,0.2s							
KEDI				⇑*e*Sn		S	08 18 23.0	-0.5

YKA	**Yellowknife Ar**	83.28	27	P		**P**		08 46 42.7	+0.9	
FINES	**FINESS Array B**	92.21	335	P		**P**		08 47 24.7	-0.1	
	0.7nm,0.8s,mb4.1,baz=79,slow=7.1,SNR=4.3									
DBIC	**Dimbokro**	144.85	302	PKP	PKPdf			08 53 52.9	-3.7	
	1.8nm,0.6s,baz=90,slow=6.2,SNR=6.8									

CASC 02 08:38:01.4±2.0, 13.89N×91.20W, h57km±27km, MD3.6, ML3.6, 8C-1D, Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase ID			Time			Res
				Op		ISC	h	m	s	ISC
JAT	**Jato**	**0.60**	**315⇑**	*eP*		P	08	38	13.9	-0.4
JAT				*eS*		S	08	38	25.2	+1.4
JAT				AML		AML	08	38	26.2	
	comp=N,2μm,0.2s									
PCG	**Pacaya**	**0.76**	**49⇑**	*eP*		P	08	38	16.6	+0.2
PCG				*eS*		S	08	38	29.2	+1.7
IXG	**Ixpaco**	**0.78**	**69⇑**	*eP*		P	08	38	16.0	-0.6
IXG				*eS*		S	08	38	27.8	0.0
IXG				AML		AML	08	38	29.3	
	comp=N,2μm,0.4s									
CUSS	**Cusmapa**	**1.22**	**89**	*eP*		P	08	38	23.1	+0.6
CUSS				*eS*		S	08	38	37.3	-1.0
RBDL	**Robledal**	**1.49**	**81⇓**	*eP*		P	08	38	26.7	+0.3
RBDL				*eS*		S	08	38	46.8	+1.9
RTR	**El Retiro**	**1.51**	**90⇑**	*eP*		P	08	38	27.0	+0.2
RTR				*eS*		S	08	38	46.7	+1.1
SBLS	**San Blas**	**1.54**	**92⇑**	*eP*		P	08	38	26.8	-0.3
SBLS				*eS*		S	08	38	47.2	+1.1
SNJE	**San Jose**	**1.55**	**91⇑**	*eP*		P	08	38	27.2	-0.1
SNJE				*eS*		S	08	38	46.9	+0.5
LFU	**La Fuente**	**2.04**	**94⇑**	*eP*		P	08	38	34.4	+0.4
LFRS	**El Faro**	**2.10**	**97⇑**	*eP*		P	08	38	34.9	0.0
LFRS				*eS*		S	08	39	00.3	+0.5

MOS ***02*** *08:40:23.2±2.4, 41.70N×45.73E, h30km, mb3.8/1, Error ellipse: s-maj=23.7km s-min=12.0km az=46.5*
TIF ***02*** *08:40:26.3, 42.06N×45.91E, h9km, Mpv4.0*
ISC 02 08:40:27.2±0.5, 42.12N±0.05×46.02E±0.04, h10km, n14, σ1§06/22, 4D, Eastern Caucasus

Code	Station Name	Δ°	AZ°	Phase ID			Time			Res
				Op		ISC	h	m	s	ISC
DGRG	**David-gareji**	**0.82**	**216⇓**	*iP*		**Pb**	**08**	**40**	**41.9**	**-1.3**
DGRG				*iS*		**Sb**	**08**	**40**	**53.5**	**-0.6**
UNCR	**Uncukul**	**0.83**	**44**	*i* PG		**Pg**	**08**	**40**	**43.0**	**-0.8**
UNCR				pmax	pmax					
	comp=Z,23nm,0.2s									
ARKR	**Arakani**	**0.87**	**56**	*e*PG		**Pg**	**08**	**40**	**43.5**	**-1.2**
ARKR				pmax	pmax					
	comp=Z,36nm,0.3s									
KRNR	**Karanay**	**0.97**	**43**	*e*PG		**Pg**	**08**	**40**	**47.3**	**+0.7**
KRNR				pmax	pmax					
	comp=Z,27nm,0.2s									
DUS	**Dusheti**	**0.98**	**269⇓**	*iP*		**Pb**	**08**	**40**	**46.4**	**+0.6**
DUS				*iS*		**Sb**	**08**	**41**	**00.2**	**+1.6**
MTA	**Mtatsminda**	**1.01**	**245⇓**	*iP*		**Pb**	**08**	**40**	**44.7**	**-1.6**
MTA				*iS*		**Sb**	**08**	**40**	**59.0**	**-0.4**
TI2	**Plekhanov**	**1.02**	**248**	*i* PG		**Pg**	**08**	**40**	**37.4**	**-10**
TI2				*iS*		**Sb**	**08**	**40**	**51.5**	**-8.3**
DBC	**Dubki**	**1.08**	**33**	*i* PG		**Pg**	**08**	**40**	**47.5**	**-1.4**
URKR	**Urkarakh**	**1.20**	**87**	*e*PG		**Pg**	**08**	**40**	**52.0**	**+0.7**
URKR				*iS*		**Sb**	**08**	**41**	**10.0**	**+4.9**
UKTR	**Uchkent**	**1.27**	**38**	*e*PN		**Pn**	**08**	**40**	**56.0**	**+5.0**
MAK	**Makhachkala**	**1.38**	**52**	*e*PN		**Sg**	**08**	**41**	**14.0**	**+0.6**
MAK				pmax	pmax					
	comp=N,600nm,1.5s									
MAK				pmax	pmax					
	comp=E,440nm,1.5s									
AKT	**Akhty**	**1.43**	**116**	PG		**Pg**	**08**	**40**	**50.0**	**-5.8**
AKT				*eS*		**Sb**	**08**	**41**	**13.0**	**+1.3**
KSMR	**Kasumkent**	**1.66**	**107**	*e*PN		**Pn**	**08**	**40**	**49.0**	**-7.6**
KSMR				*eS*		**Sn**	**08**	**41**	**02.5**	**-16**
AKH	**Akhalkalaki**	**2.02**	**250⇓**	*iP*		**Pn**	**08**	**41**	**02.8**	**+1.1**
AKH				*i* S		**Sn**	**08**	**41**	**27.9**	**+0.7**

NEIC ***02*** *08:59:52.6±3.4, 31.52S×179.84W, h302km±29km, mb4.0/3, Error ellipse: s-maj=40.7km s-min=20.1km az=46.0*
IDC ***02*** *08:59:57.3±6.3, 32.11S×179.99E, h353km±72km, mb3.0/2, mb1 3.3/3, mb1mx3.2/12, Error ellipse: s-maj=80.9km s-min=29.3km az=2.0*
ISC 02 08:59:56.4±1.5, 31.98S±0.10×179.7E±0.2, h327km±15km, n20, σ0§94/22, mb3.5/5, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID			Time			Res
				Op		ISC	h	m	s	ISC
PUZ	**Puketiti**	**6.19**	**190**	P		**P**	**09**	**01**	**29.4**	**+0.1**
PUZ				S		**S**	**09**	**02**	**43.0**	**+0.8**
URZ	**Urewera**	**6.61**	**198**	P		**P**	**09**	**01**	**35.8**	**+1.5**
	2.8nm,0.3s,baz=353,slow=5.5,SNR=18									
URZ				S		**S**	**09**	**02**	**52.9**	**+1.8**
	7.2nm,0.3s,baz=214,slow=24,SNR=18									
URZ	**Urewera**	**6.61**	**198**	P		**P**	**09**	**01**	**33.9**	**-0.4**
KNZ	**Kokohu**	**7.21**	**193**	*eP*		**P**	**09**	**01**	**40.2**	**-1.3**
PWZ	**Pawanui**	**8.35**	**195**	*eP*		**P**	**09**	**01**	**53.5**	**-1.7**
PWZ				S		**S**	**09**	**03**	**28.8**	**+0.1**
BFZ	**Birch Farm**	**9.11**	**197**	*eP*		**P**	**09**	**02**	**05.0**	**+0.6**
BFZ				*eS*		**S**	**09**	**03**	**44.5**	**-0.9**
MRZ	**Mangatainoka R**	**9.27**	**200**	*eP*		**P**	**09**	**02**	**06.8**	**+0.4**
QRZ	**Quartz Range**	**10.54**	**211**	P		**P**	**09**	**02**	**22.1**	**+0.4**
QRZ				*eS*		**S**	**09**	**04**	**17.9**	**+1.2**
THZ	**Tophouse**	**11.17**	**207**	P		**P**	**09**	**02**	**28.9**	**-0.5**
THZ				S		**S**	**09**	**04**	**29.9**	**-0.5**
KHZ	**Kahutara**	**11.51**	**203**	P		**P**	**09**	**02**	**32.2**	**-1.3**
KHZ				S		**S**	**09**	**04**	**36.7**	**-1.1**
CTAO	**Charters Tower**	**32.16**	**283**	*eP*		**P**	**09**	**05**	**57.0**	**+0.9**
	2.3nm,0.5s,mb3.7									
ASAR	**Alice Springs**	**41.08**	**270**	P		**P**	**09**	**07**	**10.1**	**-0.3**
	0.4nm,0.6s,mb2.9,baz=105,slow=7.3,SNR=7.6									
WRA	**Warramunga Arr**	**42.21**	**275**	P		**P**	**09**	**07**	**19.2**	**-0.4**
	0.8nm,0.3s,mb3.3,baz=112,slow=8.0,SNR=28									
SBA	**Scott Base**	**46.33**	**184**	*eP*		**P**	**09**	**07**	**53.0**	**+1.5**
	1.4nm,0.6s,mb3.3									
QSPA	**South Pole Qui**	**58.13**	**180**	*eP*		**P**	**09**	**09**	**17.7**	**-0.1**
	8.6nm,0.7s,mb4.2									
FINES	**FINESS Array B**	**145.89**	**338**	PKPbc	PKPbc		09	18	55.1	-1.5
	2.7nm,0.5s,baz=48,slow=4.7,SNR=43									
NB2	**NORSAR Subarra1**	**149.96**	**349**	PKP			09	19	13.0	
	0.2nm,0.3s,baz=17,slow=2.6									
NOA	**NORSAR Array B**	**149.96**	**349**	PKPbc	PKPdf		09	19	06.0	+4.0
	0.4nm,0.8s,baz=69,slow=3.0,SNR=2.3									
NOA				PKPab	PKPab		09	19	12.7	-3.8
	0.8nm,0.6s,baz=22,slow=2.4,SNR=3.8									
NOA	**NORSAR Array B**	**149.96**	**349**	PKPbc	PKPdf		09	19	06.0	+4.0
NOA				PKPab	PKPab		09	19	12.7	-3.8
HFS	**Hagfors**	**150.34**	**346**	PKPbc	PKPdf		09	19	06.4	+3.8
	1.1nm,0.8s,baz=37,slow=7.2,SNR=3.4									
HFS				PKPab	PKPab		09	19	14.1	-3.9
	0.8nm,0.4s,baz=45,slow=2.0,SNR=7.9									

NNC ***02*** *09:07:00.2±8.0, 41.53N×44.60E, Error ellipse: s-maj=100.7km s-min=63.6km az=78.0*
MOS ***02*** *09:07:13.9±1.7, 42.14N×46.02E, h9km, mb4.2/1, Error ellipse: s-maj=7.8km s-min=6.1km az=79.3*
TIF ***02*** *09:07:13.6, 42.18N×45.87E, h20km, Mpv4.7*
NEIC ***02*** *09:07:15.4±0.8, 42.20N×46.12E, h10km, mb3.8/1, Error ellipse: s-maj=15.5km s-min=10.9km az=151.0*
IDC ***02*** *09:07:16.2±2.5, 42.50N×45.96E, mb3.6/6, mb1 3.6/9, mb1mx3.5/20, ML3.4/3, Error ellipse: s-maj=53.5km s-min=23.9km az=178.0*
ISC 02 09:07:13.9±0.7, 42.09N±0.04×46.04E±0.03, h5km±5km, n56, σ1§26/71, mb3.4/7, 11C-7D, Eastern Caucasus

Code	Station Name	Δ°	AZ°	Phase ID			Time			Res
				Op		ISC	h	m	s	ISC
DGRG	**David-gareji**	**0.81**	**218⇑**	*iP*		**Pb**	**09**	**07**	**30.4**	**+0.4**
DGRG				*eS*		**Sb**	**09**	**07**	**44.2**	**+3.2**
UNCR	**Uncukul**	**0.84**	**42⇓**	*iPG*		**Pg**	**09**	**07**	**30.8**	**+0.2**
UNCR				*eS*		**Sb**	**09**	**07**	**42.3**	**+0.5**
UNCR				pmax	pmax					
	comp=Z,287nm,0.2s									
KRNR	**Karanay**	**0.98**	**41⇑**	*i* PG		**Pg**	**09**	**07**	**33.0**	**-0.4**
KRNR				*i* S		**Sb**	**09**	**07**	**46.0**	**+0.1**
KRNR				pmax	pmax					
	comp=Z,239nm,0.2s									
DUS	**Dusheti**	**1.00**	**271⇑**	*iP*		**Pb**	**09**	**07**	**32.9**	**-0.3**
DUS				*iS*		**Sb**	**09**	**07**	**47.5**	**+1.0**
MTA	**Mtatsminda**	**1.01**	**247⇓**	*iP*		**Pb**	**09**	**07**	**32.3**	**-1.2**
MTA				*i* S		**Sb**	**09**	**07**	**46.9**	**0.0**
TI2	**Plekhanov**	**1.03**	**250⇑**	*i* PG		**Pg**	**09**	**07**	**25.0**	**-9.4**
BUJR	**Buynaksk**	**1.08**	**47⇑**	*i* PG		**Pg**	**09**	**07**	**36.0**	**+0.6**
BUJR				*iS*		**Sb**	**09**	**07**	**51.0**	**+2.1**
BUJR				pmax	pmax					
	comp=Z,1μm,0.2s									
DBC	**Dubki**	**1.10**	**32⇑**	*i* PG		**Pg**	**09**	**07**	**36.5**	**+0.7**
DBC				*iS*		**Sb**	**09**	**07**	**53.5**	**+4.1**
DBC				pmax	pmax					
	comp=Z,333nm,0.3s									
URKR	**Urkarakh**	**1.19**	**86**	*i* PG		**Pg**	**09**	**07**	**38.0**	**+0.4**
URKR				*i* S		**Sb**	**09**	**07**	**58.0**	**+6.0**
SGKR	**Sergokala**	**1.26**	**72**	*i* PG		**Pg**	**09**	**07**	**38.0**	**-1.0**
SGKR				*i* S		**Sb**	**09**	**07**	**55.5**	**+1.5**
SGKR				pmax	pmax					
	comp=Z,507nm,0.3s									
MAK	**Makhachkala**	**1.39**	**51**	*e*PG		**Pg**	**09**	**07**	**41.3**	**-0.3**
MAK				*i* S		**Sb**	**09**	**08**	**02.2**	**+4.3**
MAK				pmax	pmax					
	comp=Z,500nm,1.0s									
MAK				pmax	pmax					
	comp=N,330nm,1.0s									
MAK				pmax	pmax					
	comp=E,360nm,1.0s									
MAK				pmax	pmax					
	comp=Z,620nm,1.0s									
MAK				smax						
	comp=N,4μm,1.0s									
MAK				smax						
	comp=E,2μm,1.0s									
MAK				smax						
	comp=N,3μm,0.6s									
MAK				smax						
	comp=E,4μm,0.6s									
STE	**Stepanavan**	**1.64**	**229**	*i* P		**Pn**	**09**	**07**	**42.0**	**-1.6**
STE				*eS*		**Sn**	**09**	**08**	**05.0**	**-0.3**
ZEI	**Tsey**	**1.73**	**294**	*eP*		**Pn**	**09**	**07**	**45.0**	**+0.2**
	comp=Z,100nm,1.0s									
ZEI	**Tsey**	**1.73**	**294**	*e*PN		**Pn**	**09**	**07**	**45.0**	**+0.2**
ZEI				*i* S		**Sg**	**09**	**08**	**11.0**	**-0.4**
ZEI				pmax	pmax					
	comp=Z,100nm,1.0s									
ZEI				smax						
	comp=N,2μm,5.0s									
ZEI	**Tsey**	**1.73**	**294**	*i* PN		**Sg**	**09**	**08**	**11.0**	**-0.4**
AKH	**Akhalkalaki**	**2.02**	**251⇓**	*iP*		**Pn**	**09**	**07**	**48.9**	**-0.1**
	comp=Z,300nm,0.4s									
AKH				*i* S		**Sn**	**09**	**08**	**17.3**	**+2.3**
GNI	**Garni**	**2.17**	**207**	*e*PN		**Pn**	**09**	**07**	**51.6**	**+0.4**
KUBR	**Kubataba**	**2.58**	**312**	*e*PN		**Pn**	**09**	**07**	**58.3**	**+1.3**
SHAR	**Shatzhatmas**	**2.98**	**305⇓**	*e*PN		**Pn**	**09**	**08**	**04.8**	**+2.1**
KIV	**Kislovodsk**	**3.09**	**308**	*e*PN		**Pn**	**09**	**08**	**05.9**	**+1.7**
KIV	**Kislovodsk**	**3.09**	**308**	*e*Pn		**Pn**	**09**	**08**	**05.9**	**+1.7**
GUMR	**Gum-Bashi**	**3.26**	**302**	*e*PN		**Pn**	**09**	**08**	**07.8**	**+1.2**
NAGR	**Nagutskaya**	**3.36**	**316**	PN		**Pn**	**09**	**08**	**09.0**	**+0.9**
GOF	**Gofitskoye**	**3.69**	**325⇑**	*i*PN		**Pn**	**09**	**08**	**13.0**	**+0.3**
GOF				*i* S		**Sn**	**09**	**08**	**52.5**	**-4.6**
GOF				pmax	pmax					
	comp=Z,40nm,1.2s									
GOF				smax						
	comp=N,360nm,1.5s									
ERZM	**Erzurum**	**4.16**	**240**	*i* P		**Pn**	**09**	**08**	**19.6**	**+0.2**
BRTR	**Keskin Array B**	**9.68**	**260**	Pn		**P**	**09**	**09**	**37.6**	**+0.7**
	comp=N,0.1nm,0.3s,baz=53,slow=7.2,SNR=2.6									
AB31	**Akbulak array**	**12.07**	**49**	⇑Pn		**P**	**09**	**10**	**09.7**	**+0.3**
	comp=N,0.3nm,0.3s,baz=241,slow=14,SNR=10									
ISP	**Isparta**	**12.64**	**256⇓**	*eP*		**P**	**09**	**10**	**15.5**	**-1.7**
AKASG	**Malin Array Be**	**14.43**	**312**	Pn		**P**	**09**	**10**	**37.7**	**-2.9**
	comp=N,0.3nm,0.3s,baz=110,slow=14,SNR=3.4									
OBN	**Obninsk**	**14.44**	**338**	*eP*		**P**	**09**	**10**	**36.6**	**-4.2**
OBN				pmax	pmax					
	comp=Z,12nm,0.8s									
OBN				MLR	MLR					
	comp=Z,100nm,5.0s									
OBN	**Obninsk**	**14.44**	**338**	P		**P**	**09**	**10**	**36.6**	**-4.2**
MOS	**Moscow**	**14.72**	**341**	*eP*		**P**	**09**	**10**	**40.3**	**-4.1**
MOS				pmax	pmax					
	comp=Z,70nm,0.7s									
ARU	**Arti**	**16.48**	**25**	*eP*		**P**	**09**	**11**	**03.4**	**-3.7**
ARU	**Arti**	**16.48**	**25**	*eP*		**P**	**09**	**11**	**03.4**	**-3.7**
ARU				*e*			09	11	07.6	
APE	**Apeiranthos**	**16.58**	**259**	*eP*		**P**	**09**	**11**	**08.8**	**+0.3**
SVE	**Sverdlovsk**	**17.48**	**27⇓**	*eP*		**P**	**09**	**11**	**16.1**	**-3.6**
SVE				pmax	pmax					
	comp=Z,40nm,1.8s									
KK31	**Karatay Array**	**18.03**	**79**	⇑Pn		**P**	**09**	**11**	**27.6**	**+0.9**
	comp=Z,1.0nm,0.5s,baz=281,slow=18,SNR=11									
ZRNK	**Zerenda**	**18.85**	**47**	⇑Pn		**P**	**09**	**11**	**36.2**	**-0.5**
	comp=Z,8.6nm,0.8s									
ZRNK	**Zerenda**	**18.85**	**47**	*eP*		**P**	**09**	**11**	**34.0**	**-2.7**
BRVK	**Borovoye**	**19.59**	**48**	⇓Pn		**P**	**09**	**11**	**45.6**	**+0.1**
	comp=Z,5.9nm,0.8s									
BRVK	**Borovoye**	**19.59**	**48**	*eP*		**P**	**09**	**11**	**43.0**	**-2.4**
BVAR	**Borovoye Array**	**19.64**	**48**	P		**P**	**09**	**11**	**43.3**	**-2.7**
	comp=Z,0.5nm,0.3s,baz=233,slow=7.4,SNR=13									
BVAR				S		**S**	**09**	**15**	**17.3**	**-4.5**
	comp=Z,0.1nm,0.3s,baz=242,slow=28,SNR=3.6									
VOSK	**Vostochnaya**	**19.85**	**49**	⇑Pn		**P**	**09**	**11**	**48.2**	**-0.2**
	comp=Z,4.9nm,0.6s									
FINES	**FINESS Array B**	**22.81**	**335**	P		**P**	**09**	**12**	**17.5**	**-0.7**
	comp=Z,0.6nm,0.3s,mb3.5,baz=147,slow=10,SNR=19									
GERES	**GERESS Array B**	**23.54**	**298**	P		**P**	**09**	**12**	**26.0**	**+0.5**
	comp=Z,0.1nm,0.4s,mb2.6,baz=98,slow=6.9,SNR=4.2									
KURK	**Kurchatov**	**23.91**	**58**	P		**P**	**09**	**12**	**29.2**	**+0.1**
CLL	**Collm**	**24.28**	**304**	P		**P**	**09**	**12**	**31.0**	**-1.7**
CLL	**Collm**	**24.28**	**304**	*eP*		**P**	**09**	**12**	**24.0**	**-8.7**
MKAR	**Makanchi Array**	**26.15**	**67**	P		**P**	**09**	**12**	**52.3**	**+1.8**
	comp=Z,1.3nm,0.8s,mb3.5,baz=260,slow=8.8,SNR=4.2									
MKAR	**Makanchi Array**	**26.15**	**67**	*i* P		**P**	**09**	**12**	**58.1**	**+7.6**
HFS	**Hagfors**	**26.76**	**324**	P		**P**	**09**	**12**	**54.0**	**-2.0**
	comp=Z,1.3nm,0.8s,mb3.5,baz=104,slow=12,SNR=2.5									
ARCES	**ARCESS Array B**	**29.51**	**345**	P		**P**	**09**	**13**	**17.9**	**-2.9**
	comp=Z,1.7nm,0.8s,mb3.8,baz=160,slow=11,SNR=4.3									
ULN	**Ulaanbaatar**	**42.56**	**61**	*eP*		**P**	**09**	**15**	**12.2**	**+0.3**
ULN				pmax	pmax					
	comp=Z,1.0nm,0.7s,mb3.6									
ULN	**Ulaanbaatar**	**42.56**	**61**	*eP*		**P**	**09**	**15**	**12.2**	**+0.3**
	comp=Z,1.3nm,0.7s,mb3.8									
BOD	**Bodaibo**	**44.47**	**45**	*eP*		**P**	**09**	**15**	**20.2**	**-7.1**
YKA	**Yellowknife Ar**	**74.61**	**351**	P		**P**	**09**	**18**	**52.8**	**-2.2**
	comp=Z,0.4nm,0.9s,mb3.3,baz=15,slow=5.8,SNR=6.6									

MOS ***02*** *09:07:31.0±1.7, 42.27N×45.99E, h15km, mb4.3/1, Error ellipse: s-maj=15.3km s-min=9.6km az=100.1*
NEIC ***02*** *09:07:32.2±0.7, 42.23N×45.99E, h10km, mb4.0/1, Error ellipse: s-maj=12.2km s-min=9.0km az=151.0*
IDC ***02*** *09:07:32.3±2.2, 42.57N×46.13E, mb3.9/7, mb1 4.0/11, mb1mx3.8/22, ML4.2/3, Error ellipse: s-maj=42.9km s-min=13.3km az=164.0*
ISC 02 09:07:30.1±0.6, 42.24N±0.07×46.00E±0.07, h10km, n32, σ1§35/34, mb3.8/8, 2C, Eastern Caucasus

Code	Station Name	Δ°	AZ°	Phase ID			Time			Res
				Op		ISC	h	m	s	ISC
GNI	**Garni**	**2.29**	**205**	*e*PN		**Pn**	**09**	**08**	**09.6**	**+1.0**
PYA	**Pyatigorsk**	**2.80**	**311**	PN		**Pn**	**09**	**08**	**13.0**	**-2.8**
PYA				*i*			09	08	35.0	
PYA				*i* S		**Sn**	**09**	**08**	**44.0**	**-6.0**
PYA	**Pyatigorsk**	**2.80**	**311**	PN		**Pn**	**09**	**08**	**13.0**	**-2.8**
KIV	**Kislovodsk**	**2.97**	**306**	PN		**Pn**	**09**	**08**	**19.9**	**+1.7**
KIV	**Kislovodsk**	**2.97**	**306**	Pn		**Pn**	**09**	**08**	**19.9**	**+1.7**
TVAN	**Van**	**4.20**	**209**	*i* P		**Pn**	**09**	**08**	**30.2**	**-5.5**
BEST	**Besiri**	**5.66**	**221**	*i* P		**Pn**	**09**	**08**	**53.5**	**-2.8**
MALT	**Malatya**	**6.99**	**238**	*e*P		**Pn**	**09**	**09**	**13.8**	**-1.3**
BOYT	**Boyabat**	**8.32**	**268**	*i* P		**P**	**09**	**09**	**27.6**	**-6.2**
BRTR	**Keskin Array B**	**9.68**	**259**	Pn		**P**	**09**	**09**	**57.0**	**+4.6**
	0.1nm,0.3s,baz=60,slow=10.0,SNR=5.4									
AB31	**Akbulak array**	**11.99**	**49**	⇑Sn		**S**	**09**	**12**	**38.2**	**-0.7**
	5.2nm,0.6s,baz=244,slow=20,SNR=3.4									
OBN	**Obninsk**	**14.29**	**338**	*eP*		**P**	**09**	**10**	**53.2**	**-1.2**
AKASG	**Malin Array Be**	**14.30**	**312**	Pn		**P**	**09**	**10**	**54.8**	**+0.2**
	0.5nm,0.3s,baz=114,slow=10.0,SNR=4.9									
MLR	**Muntele Rosu**	**14.82**	**289**	Pn		**P**	**09**	**11**	**03.2**	**+1.8**
	0.2nm,0.3s,baz=193,slow=8.2,SNR=4.5									
ARU	**Arti**	**16.35**	**25**	P		**P**	**09**	**11**	**19.7**	**-1.4**
ARU	**Arti**	**16.35**	**25**	P		**P**	**09**	**11**	**19.7**	**-1.4**
ZRNK	**Zerenda**	**18.77**	**47**	*eP*		**P**	**09**	**11**	**53.4**	**+2.1**
BRVK	**Borovoye**	**19.52**	**48**	*eP*		**P**	**09**	**11**	**59.2**	**-0.9**
BVAR	**Borovoye Array**	**19.56**	**48**	P		**P**	**09**	**12**	**00.0**	**-0.6**
	0.9nm,0.3s,baz=239,slow=8.6,SNR=8.2									
BVAR				S		**S**	**09**	**15**	**36.0**	**+0.7**
	0.3nm,0.3s,baz=239,slow=26,SNR=3.7									
FINES	**FINESS Array B**	**22.66**	**335**	P		**P**	**09**	**12**	**34.0**	**+1.7**
	1.2nm,0.3s,mb3.7,baz=146,slow=9.9,SNR=11									
GERES	**GERESS Array B**	**23.44**	**297**	P		**P**	**09**	**12**	**42.4**	**+2.3**
	0.7nm,0.6s,mb3.2,baz=90,slow=12,SNR=5.9									
CLL	**Collm**	**24.17**	**303**	P		**P**	**09**	**12**	**46.0**	**-1.2**
CLL				*i* *PP			09	12	50.4	
MKAR	**Makanchi Array**	**26.12**	**67**	P		**P**	**09**	**13**	**06.1**	**+0.4**
	2.1nm,1.0s,mb3.6,baz=268,slow=8.7,SNR=4.9									
APA	**Apatity**	**26.29**	**349⇑**	*iP*		**P**	**09**	**13**	**05.7**	**-1.3**
HFS	**Hagfors**	**26.62**	**323**	P		**P**	**09**	**13**	**10.6**	**+0.4**
	2.0nm,0.6s,mb3.8,baz=120,slow=12,SNR=5.7									
ARCES	**ARCESS Array B**	**29.35**	**345**	P		**P**	**09**	**13**	**34.5**	**-0.4**
	19nm,1.4s,mb4.7,baz=157,slow=9.2,SNR=9.0									
ARCES	**ARCESS Array B**	**29.35**	**345**	P		**P**	**09**	**13**	**34.5**	**-0.4**
EKA	**Eskdalemuir Ar**	**34.19**	**310**	P		**P**	**09**	**14**	**17.9**	**+0.5**
	0.6nm,0.6s,mb3.7,baz=102,slow=7.7,SNR=4.5									
ULN	**Ulaanbaatar**	**42.51**	**61**	*eP*		**P**	**09**	**15**	**29.5**	**+2.5**
ULN				pmax	pmax					
	comp=Z,2.0nm,0.9s,mb3.9									
ULN	**Ulaanbaatar**	**42.51**	**61**	*eP*		**P**	**09**	**15**	**29.5**	**+2.6**
	comp=Z,2.5nm,0.9s,mb3.9									
BOD	**Bodaibo**	**44.39**	**45**	*eP*		**P**	**09**	**15**	**41.4**	**-0.7**
YKA	**Yellowknife Ar**	**74.46**	**351**	P		**P**	**09**	**19**	**09.1**	**-0.4**
	comp=Z,0.5nm,0.5s,mb3.7,baz=13,slow=6.3,SNR=12									

IDC 02 09:27:15.4±2.4, 3.35N×127.77E, mb3.6/3, mb1 3.7/3, mb1mx3.5/17, Error ellipse: s-maj=243.0km s-min=23.5km az=67.0, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID			Time			Res
				Op		ISC	h	m	s	ISC
WRA	**Warramunga Arr**	**24.03**	**165**	P		P	09	32	33.5	+0.3
	0.8nm,1.2s,baz=336,slow=8.4,SNR=8.1									
ASAR	**Alice Springs**	**27.51**	**168**	P		P	09	33	02.0	-3.8
	0.4nm,1.1s,baz=334,slow=9.0,SNR=4.1									
ASAR				PcP	PcP		09	36	21.0	-3.5
	0.2nm,0.4s,baz=352,slow=2.1,SNR=8.8									
MKAR	**Makanchi Array**	**58.46**	**325**	P		P	09	37	14.5	-1.1
	1.5nm,0.4s,baz=129,slow=8.5,SNR=16									

TIF ***02*** *09:34:29.9, 42.22N×45.85E, h16km, Mpv3.9*
MOS ***02*** *09:34:33.5±2.6, 42.11N×45.89E, h23km, mb3.8/1, Error ellipse: s-maj=23.6km s-min=12.3km az=49.9*
ISC 02 09:34:30.9±0.5, 42.11N±0.05×46.08E±0.04, h10km, n14, σ0§97/21, 5D, Eastern Caucasus

Code	Station Name	Δ°	AZ°	Phase ID			Time			Res
				Op		ISC	h	m	s	ISC
BTLR	**Botlikh**	**0.

Error ellipse: s-maj=2.6km s-min=1.6km az=77.0
*NEIC **02** 09:54:40.0,44.63N×6.80E,h2km,ML2.3(GEN), ML2.0(LDG),ML2.0(STR),After LDG.*
*STR **02** 09:54:40.3±0.9,44.66N×6.97E,h5km±1km,Ml2.0,Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
ISC 02 09:54:38.8±0.3,44.61N±0.01×6.79E±0.03,h12km±3km, n32,σ0§53/60,France

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
MBDF	**Montbardon**	**0.11**	**352**	*e*Pg		**Pg**	**09 54 42.3**	**+0.4**
MBDF				*e*Sg		**Sg**	**09 54 44.2**	**+0.2**
	37nm,0.1s							
PZZ	**Prazzo**	**0.25**	**116**	P		**Pg**	**09 54 44.1**	**0.0**
PZZ				S		**Sg**	**09 54 47.4**	**-0.3**
RRL	**Cesana Torines**	**0.31**	**359**	P		**Pg**	**09 54 45.7**	**+0.4**
RRL				S		**Sg**	**09 54 50.1**	**+0.5**
BHB	**Bricherasio**	**0.41**	**56**	P		**Pg**	**09 54 46.9**	**-0.3**
BHB				S		**Sg**	**09 54 51.7**	**-1.0**
FENE	**Fenestrelle**	**0.46**	**25**	P		**Pg**	**09 54 48.1**	**-0.1**
FENE				S		**Sg**	**09 54 54.1**	**-0.4**
STV2	**Anna di Valdie**	**0.53**	**134**	P		**Pb**	**09 54 49.5**	**0.0**
STV2				S		**Sb**	**09 54 56.4**	**-0.4**
STV	**Sta Anna Valdi**	**0.53**	**134**	P		**Pb**	**09 54 49.4**	**-0.1**
STV				S		**Sb**	**09 54 56.5**	**-0.3**
ENR	**Entracque**	**0.59**	**131**	P		**Pb**	**09 54 50.6**	**0.0**
ENR				S		**Sb**	**09 54 58.2**	**-0.5**
RSP	**Reno Superiore**	**0.63**	**31**	P		**Pb**	**09 54 51.2**	**0.0**
RSP				S		**Sb**	**09 54 59.3**	**-0.4**
TOUF	**Mont Tournerai**	**0.68**	**151**	Pg		**Pg**	**09 54 52.8**	**+0.2**
ORIF	**Oris-en-Rattie**	**0.72**	**295**	*e*Pg		**Pg**	**09 54 54.0**	**+0.7**
ORIF				*e*Sg		**Sg**	**09 55 02.6**	**-0.4**
	6.2nm,0.2s							
AUTN	**L'Aution**	**0.77**	**143**	Pg		**Pg**	**09 54 55.1**	**+0.8**
AUTN				Sg		**Sg**	**09 55 05.1**	**+0.5**
AURF	**Auriere**	**0.82**	**152**	Pg		**Pg**	**09 54 55.3**	**0.0**
SAOF	**Saorge**	**0.83**	**139**	Pg		**Pg**	**09 54 55.3**	**-0.3**
SAOF				Sg		**Sg**	**09 55 06.1**	**-0.6**
ROB	**Roburent**	**0.83**	**112**	P		**Pb**	**09 54 54.8**	**+0.1**
ROB				S		**Sb**	**09 55 05.4**	**-0.3**
CALN	**Calern**	**0.86**	**175**	Pg		**Pg**	**09 54 57.6**	**+1.4**
MONE	**Monesi**	**0.87**	**127**	P		**Pb**	**09 54 55.7**	**+0.3**
MONE				S		**Sb**	**09 55 06.9**	**+0.1**
SBF	**Sospel**	**0.88**	**148**	*e*Pg		**Pg**	**09 54 56.6**	**+0.1**
SBF				*e*Sg		**Sg**	**09 55 08.9**	**+0.6**
	8.1nm,0.3s							
LSD	**Ceresole Reale**	**0.88**	**17**	P		**Pb**	**09 54 56.0**	**+0.5**
LSD				S		**Sb**	**09 55 07.5**	**+0.5**
LPG	**La Plagne**	**0.88**	**358**	*e*Pg		**Pg**	**09 54 56.3**	**-0.3**
LPG				*e*Sg		**Sg**	**09 55 08.9**	**+0.5**
	2.3nm,0.2s							
LPL	**La Plagne**	**0.90**	**357**	*e*Pg		**Pg**	**09 54 56.7**	**-0.3**
LPL				*e*Sg		**Sg**	**09 55 08.7**	**-0.4**
	3.0nm,0.3s							
NEGI	**Negi**	**1.01**	**139**	P		**Pb**	**09 54 58.4**	**+0.7**
NEGI				S		**Sb**	**09 55 11.1**	**+0.4**
RORO		**1.04**	**118**	P		**Pb**	**09 54 58.4**	**+0.1**
RORO				S		**Sb**	**09 55 11.7**	**0.0**
IMI	**Imperia**	**1.06**	**131**	P		**Pb**	**09 54 59.0**	**+0.5**
IMI				S		**Sb**	**09 55 12.4**	**+0.4**
FRF	**La Foret Royal**	**1.06**	**186**	*e*Pg		**Pg**	**09 55 00.0**	**0.0**
FRF				*e*Sg		**Sg**	**09 55 13.8**	**-0.4**
	5.1nm,0.2s							
SMRF	**Simiane la Rot**	**1.08**	**234**	*e*Pg		**Pg**	**09 55 00.6**	**+0.1**
SMRF				*e*Sg		**Sg**	**09 55 16.0**	**+1.0**
	3.6nm,0.3s							
FIN	**Finale Ligure**	**1.09**	**111**	P		**Pb**	**09 54 59.2**	**+0.1**
FIN				S		**Sb**	**09 55 12.9**	**-0.2**
PCP	**Pian Castagno**	**1.25**	**93**	P		**Pb**	**09 55 02.0**	**+0.2**
LMR	**La Mourre**	**1.30**	**189**	*e*Pg		**Pg**	**09 55 04.7**	**-0.1**
LMR				*e*Sg		**Sg**	**09 55 20.4**	**-1.7**
	3.9nm,0.2s							
VIVF	**Saint-Julien-l**	**1.53**	**280**	*e*Pg		**Pg**	**09 55 08.6**	**-0.8**
VIVF				*e*Sg		**Sg**	**09 55 28.7**	**-1.2**
	1.7nm,0.3s							
LASF	**Ste Croix**	**2.17**	**257**	*e*Pn		**Pn**	**09 55 15.2**	**-0.1**
LASF				*e*Sn		**Sn**	**09 55 35.5**	**-6.9**
PGF	**Pioggiola**	**2.61**	**141**	*e*Pn		**Pn**	**09 55 22.3**	**+0.7**
PGF				*e*Sn		**Sn**	**09 55 52.5**	**-1.0**
	0.5nm,0.2s							

WEL 02 10:06:41.4±0.9,36.52S×178.22E,h131km±9km,ML3.7/1, Error ellipse: s-maj=10.6km s-min=8.0km az=90.0,Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
MXZ	**Matakaoa Point**	**1.05**	**176**	PN		P	10 07 04.3	-0.8
MXZ				SN		S	10 07 21.8	-1.3
PUZ	**Puketiti**	**1.55**	**179**	PN		P	10 07 10.5	-0.1
PUZ				SN		S	10 07 31.6	-1.3
MWZ	**Matawai**	**1.90**	**197**	PN		P	10 07 15.0	+0.4
MWZ				SN		S	10 07 40.0	+0.1
URZ	**Urewera**	**1.95**	**207**	*e*PN		P	10 07 15.1	-0.1
URZ				SN		S	10 07 40.7	-0.3
KNZ	**Kokohu**	**2.54**	**190**	PN		P	10 07 22.0	-0.8
KNZ				SN		S	10 07 52.4	-1.9
PWZ	**Pawanui**	**3.66**	**197**	PN		P	10 07 35.2	-2.6
PWZ				SN		S	10 08 16.1	-4.7
MRZ	**Mangatainoka R**	**4.62**	**206**	SN		S	10 08 37.0	-6.7

*NEIC **02** 10:10:10.0±0.8,6.01S×150.25E,h53km±13km,mb4.0/1, Error ellipse: s-maj=27.8km s-min=10.9km az=137.0*
*IDC **02** 10:10:13.4±8.0,6.20S×150.19E,h74km±54km,mb3.6/4, mb1 3.8/5,mb1mx3.5/14,ML3.2/1,Error ellipse: s-maj=62.4km s-min=55.8km az=141.0*
ISC 02 10:10:08.7±1.1,6.1S±0.2×150.3E±0.2,h57km±15km,n10, σ0§42/12,mb3.7/3,1C-1D,New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
KMBE	**Kimbe**	**0.52**	**348**	*ie*	*iP*	**P**	**10 10 20.6**	**-0.1**
RAB	**Rabaul**	**2.66**	**45**	*e*	P	**P**	**10 10 50.2**	**+0.1**
PMG	**Port Moresby**	**4.52**	**223**	P		**P**	**10 11 16.7**	**+0.4**
	8.5nm,0.3s,baz=48,slow=4.8,SNR=38							
PMG				S		**S**	**10 12 08.4**	**+0.1**
	11nm,0.3s,baz=91,slow=18,SNR=9.7							
PMG	**Port Moresby**	**4.52**	**223**	*e*Pn		**P**	**10 11 16.6**	**+0.2**
PMG				*e*Sn		**S**	**10 12 07.8**	**-0.4**
WRAB	**Tennant Creek**	**20.71**	**227**	*e*P		**P**	**10 14 46.4**	**-0.4**
	4.0nm,0.4s							
WB2	**Warramunga Arr**	**20.72**	**227**	*e*P		**P**	**10 14 46.7**	**-0.2**
WRA	**Warramunga Arr**	**20.73**	**227**	P		**P**	**10 14 46.9**	**-0.1**
	1.3nm,0.4s,baz=52,slow=11,SNR=33							
ASAR	**Alice Springs**	**23.53**	**220**	P		**P**	**10 15 15.8**	**+1.1**
	0.5nm,0.5s,mb3.2,baz=55,slow=9.3,SNR=13							
FITZ	**Fitzroy Crossi**	**26.84**	**241**	P		**P**	**10 15 46.1**	**0.0**
	8.2nm,1.2s,mb4.1,baz=61,slow=10,SNR=5.7							
STKA	**Stephens Creek**	**26.92**	**196**	P		**P**	**10 15 46.3**	**-0.5**
	2.0nm,0.8s,mb3.7,baz=16,slow=15,SNR=4.2							

*LDG **02** 10:35:12.8±0.6,15.09S×168.57E,h10km,Error ellipse: s-maj=64.8km s-min=17.2km az=150.0*
*MOS **02** 10:35:16.9±0.9,14.48S×167.24E,h33km,mb5.5/5,Error ellipse: s-maj=44.0km s-min=28.5km az=102.1*
*IDC **02** 10:35:25.6±3.2,14.43S×167.27E,h94km±27km,mb3.9/11, mb1 4.1/11,mb1mx4.0/15,Error ellipse: s-maj=48.2km s-min=19.2km az=145.0*
*NEIC **02** 10:35:29.0±2.1,14.53S×167.23E,mb4.7/5,Error ellipse: s-maj=12.7km s-min=6.7km az=109.0*
ISC 02 10:35:29.0±1.7,14.64S±0.09×167.2E±0.1,h140km±17km, n102,σ0§89/39,mb4.2/19,4C,Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**3.17**	**162**	*ie*	*iP*	**P**	**10 36 18.6**	**-0.3**
BKM				S		**S**	**10 36 57.7**	**+0.6**
DZM	**Mont Dzumac**	**7.43**	**186**	*e*P		**P**	**10 37 16.2**	**+0.3**
DZM				*e*S		**S**	**10 38 37.5**	**-1.6**
DZM	**Mont Dzumac**	**7.43**	**186**	*e*P		**P**	**10 37 16.2**	**+0.3**
DZM				*e*S		**S**	**10 38 37.5**	**-1.6**
NOUC	**Port Laguerre**	**7.47**	**187**	*e*P		**P**	**10 37 17.4**	**+0.9**
NOUC				*e*S		**S**	**10 38 39.4**	**-0.7**
NOUC	**Port Laguerre**	**7.47**	**187**	*e*P		**P**	**10 37 17.4**	**+0.9**
NOUC				*e*S		**S**	**10 38 39.4**	**-0.7**
ARMA	**Armidale**	**21.27**	**220**	*e*P		**P**	**10 40 07.3**	**+1.9**
STKA	**Stephens Creek**	**29.02**	**229**	*ie*	*iP*	**P**	**10 41 19.0**	**+1.0**
	8.5nm,1.0s,mb4.4							
STKA	**Stephens Creek**	**29.02**	**229**	P		**P**	**10 41 19.1**	**+1.1**
	4.6nm,0.4s,mb4.5,baz=47,slow=7.7,SNR=26							
WRA	**Warramunga Arr**	**31.80**	**256**	P		**P**	**10 41 41.5**	**-1.2**
	0.5nm,0.3s,mb3.6,baz=83,slow=8.0,SNR=14							
WRA				pP		pP	10 42 08.8	-4.1
	2.2nm,1.1s,baz=88,slow=8.3,SNR=5.3							
AS12	**Alice Springs**	**32.66**	**249**	*e*P		**P**	**10 41 49.4**	**-0.6**
	8.4nm,1.4s,mb4.3							
ASAR	**Alice Springs**	**32.66**	**249**	P		**P**	**10 41 48.9**	**-1.2**
	0.9nm,0.4s,mb3.8,baz=75,slow=9.3,SNR=34							
ASAR				pP		pP	10 42 15.7	-4.8
	2.4nm,0.9s,baz=73,slow=9.9,SNR=2.2							
NWAO	**Narrogin (SRO)**	**48.75**	**239**	*e*P		**P**	**10 44 01.5**	**-0.1**
	0.8nm,0.4s,mb3.7							
SBA	**Scott Base**	**63.23**	**180**	*e*P		**P**	**10 45 45.0**	**+0.7**
	7.8nm,1.0s,mb4.5							
YSS	**Yuzh-Sakhalins**	**65.13**	**342**	*ie*	*iP*	**P**	**10 45 57.0**	**-0.1**
YSS					pmax	pmax		
	comp=Z,30nm,1.1s,mb5.0							
YSS	**Yuzh-Sakhalins**	**65.13**	**342**	*e*P		**P**	**10 45 57.4**	**+0.3**
	comp=Z,29nm,1.0s,mb5.1							
CMAR	**Chiang Mai Arr**	**74.87**	**294**	P		**P**	**10 46 57.2**	**+0.7**
	comp=Z,1.2nm,0.8s,mb3.6,baz=129,slow=5.0,SNR=5.3							
QSPA	**South Pole Qui**	**75.39**	**180**	*e*P		**P**	**10 46 58.7**	**+0.4**
	comp=Z,4.7nm,1.1s,mb4.0							
SEY	**Seymchan**	**78.19**	**353**	*e*P		**P**	**10 47 14.4**	**+0.3**
SEY				*e*			10 47 31.5	
SEY					pmax	pmax		
	comp=Z,40nm,0.9s,mb5.0							
SEY					pmax	pmax		
	comp=N,10.0nm,1.0s							
YAK	**Yakutsk**	**81.93**	**343**	*e*P		**P**	**10 47 33.6**	**-0.5**
YAK					pmax	pmax		
	comp=Z,10.0nm,0.9s,mb4.5							
YAK					pmax	pmax		
	comp=N,4.0nm,1.0s							
YAK					pmax	pmax		
	comp=E,3.0nm,1.6s							
YAK	**Yakutsk**	**81.93**	**343**	*e*P		**P**	**10 47 34.5**	**+0.4**
	comp=E,31nm,0.9s,mb4.9							
ULN	**Ulaanbaatar**	**82.03**	**324**	*e*P		**P**	**10 47 35.9**	**+1.0**
SONM	**Songino Array**	**82.39**	**324**	P		**P**	**10 47 38.2**	**+1.4**
	comp=E,1.5nm,1.1s,mb3.5,baz=135,slow=10,SNR=4.5							
BILL	**Bilibino**	**82.45**	**360**	*ic*	*iP*	**P**	**10 47 36.8**	**+0.2**
BILL					pmax	pmax		
	comp=Z,11nm,1.1s,mb4.4							
YBH	**Yreka Blue Hor**	**85.39**	**45**	P		**P**	**10 47 52.4**	**+0.5**
	comp=Z,1.5nm,0.9s,mb3.7,baz=9.1,slow=3.4,SNR=3.9							
ZAK	**Zakamensk**	**85.45**	**325**	*e*P		**P**	**10 47 50.5**	**-1.5**
ILAR	**Eielson Array**	**86.45**	**18**	P		**P**	**10 47 55.0**	**-1.5**
	comp=Z,1.3nm,0.7s,mb3.8,baz=240,slow=5.3,SNR=13							
NVAR	**Mina Array Bea**	**87.25**	**49**	P		**P**	**10 48 00.9**	**-0.1**
	comp=Z,0.8nm,0.9s,mb3.5,baz=213,slow=6.0,SNR=4.6							
TIXI	**Tiksi**	**89.87**	**349**	*e*P		**P**	**10 48 11.7**	**-0.9**
TIXI				*e*			10 48 21.6	
TIXI					pmax	pmax		
	comp=Z,44nm,1.1s,mb5.3							
MKAR	**Makanchi Array**	**97.11**	**316**	P		**P**	**10 48 45.4**	**-0.9**
	comp=Z,0.3nm,0.5s,mb3.9,baz=94,slow=7.7,SNR=4.7							
MKAR	**Makanchi Array**	**97.11**	**316**	*i* P		**P**	**10 48 47.2**	**+0.8**
MKAR	**Makanchi Array**	**97.11**	**316**	P		**P**	**10 48 45.4**	**-1.0**
ZAL	**Zalesovo**	**97.30**	**324**	P		**P**	**10 48 46.6**	**-0.5**
	comp=Z,0.5nm,0.3s,mb4.3,baz=327,slow=2.9,SNR=3.4							
YKA	**Yellowknife Ar**	**97.49**	**27**	P		**P**	**10 48 47.2**	**-0.5**
	comp=Z,0.4nm,0.9s,mb3.8,baz=261,slow=4.9,SNR=7.5							
YKA	**Yellowknife Ar**	**97.49**	**27**	P		**P**	**10 48 47.2**	**-0.5**
ARCES	**ARCESS Array B**	**120.15**	**345**	PKP		PKPdf	10 54 04.2	+1.4
	comp=Z,1.8nm,0.3s,baz=80,slow=2.6,SNR=48							
JOF	**Joensuu**	**122.78**	**338**	*e*pkp		PKPdf	10 54 08.6	+0.6
KAF	**Kangasniemi**	**125.09**	**339**	*e*pkp		PKPdf	10 54 13.8	+1.3
	baz=45,slow=1.9							
FINES	**FINESS Array B**	**125.62**	**338**	PKP		PKPdf	10 54 15.4	+1.9
	comp=Z,1.2nm,0.7s,baz=68,slow=1.6,SNR=15							
NOA	**NORSAR Array B**	**130.53**	**345**	SKPbc			10 57 37.8	
	comp=Z,3.1nm,0.9s,baz=32,slow=3.0,SNR=8.5							
HFS	**Hagfors**	**130.62**	**343**	PKP		PKPdf	10 54 24.5	+1.3
	comp=Z,1.1nm,0.8s,baz=90,slow=4.3,SNR=3.9							
HFS				SKPbc			10 57 38.6	
	comp=Z,3.1nm,0.9s,baz=63,slow=6.6,SNR=4.9							
AKASG	**Malin Array Be**	**130.63**	**326**	SKPbc			10 57 38.2	
	comp=Z,0.9nm,0.6s,baz=41,slow=4.1,SNR=8.8							
GERES	**GERESS Array B**	**139.54**	**333**	PKP		PKPdf	10 54 43.2	+3.2
	comp=Z,0.4nm,0.6s,baz=45,slow=1.9,SNR=4.4							
CABF	**La Chapelle**	**144.43**	**337**	*e*PKP1		PKPbc	10 54 50.5	+2.2
	comp=Z,12nm,0.8s							
GRAM		**144.47**	**331**	P		PKPbc	10 54 50.8	+2.3
FLN	**La Foliniere**	**144.50**	**346**	*e*PKP1		PKPbc	10 54 48.9	+0.5
LDF	**La Druitiere**	**144.57**	**345**	*e*PKP1		PKPbc	10 54 49.3	+0.7
	comp=Z,8.7nm,0.8s							
BACM		**144.63**	**331**	P		PKPbc	10 54 51.6	+2.7
LOR	**Lormes**	**144.64**	**340**	*e*PKP1		PKPbc	10 54 50.4	+1.6
	comp=Z,38nm,1.3s							
CODM		**144.65**	**332**	P		PKPbc	10 54 50.4	+1.4
MAIM		**144.71**	**330**	P		PKPdf	10 54 50.0	+0.9
SSF	**Saint Saulge**	**144.93**	**341**	*e*PKP1		PKPbc	10 54 51.7	+2.0
	comp=Z,51nm,1.0s							
GRR	**Gorron**	**144.94**	**346**	*e*PKP1		PKPbc	10 54 50.7	+1.1
	comp=Z,43nm,1.0s							
LSD	**Ceresole Reale**	**144.97**	**335**	P		PKPdf	10 54 52.6	+3.1
LPL	**La Plagne**	**145.09**	**336**	*e*PKP1		PKPbc	10 54 52.5	+2.4
	comp=Z,11nm,0.8s							
LPG	**La Plagne**	**145.10**	**336**	*e*PKP1		PKPbc	10 54 52.5	+2.3
	comp=Z,8.3nm,0.6s							
PCP	**Pian Castagno**	**145.12**	**333**	P		PKPdf	10 54 51.9	+2.1
RSP	**Reno Superiore**	**145.18**	**335**	P		PKPdf	10 54 51.9	+1.9
SMF	**Signal de Mont**	**145.19**	**340**	*e*PKP1		PKPbc	10 54 52.0	+1.7
	comp=Z,50nm,1.1s							
AVF	**Avril sur Loir**	**145.22**	**340**	*e*PKP1		PKPbc	10 54 52.0	+1.6
	comp=Z,29nm,1.1s							
FENE	**Fenestrelle**	**145.36**	**335**	P		PKPdf	10 54 52.4	+2.2
BHB	**Bricherasio**	**145.43**	**335**	P		PKPdf	10 54 51.9	+1.5
SGMF	**Saint Gilles**	**145.43**	**348**	*e*PKP1		PKPbc	10 54 52.4	+1.5
	comp=Z,14nm,0.4s							
ROSF	**Rostrenen**	**145.49**	**349**	*e*PKP1		PKPbc	10 54 52.6	+1.6
BNI	**Bardonecchia**	**145.50**	**335**	*e*PKPdf		PKPdf	10 54 53.5	+3.1
FIN	**Finale Ligure**	**145.53**	**333**	P		PKPdf	10 54 52.4	+1.8
RRL	**Cesana Torines**	**145.56**	**335**	P		PKPdf	10 54 53.4	+2.9
BGF	**Bois d'Agland**	**145.59**	**341**	*e*PKP1		PKPbc	10 54 53.5	+2.1
ROB	**Roburent**	**145.61**	**333**	P		PKPdf	10 54 53.0	+2.3
RORO		**145.67**	**333**	P		PKPdf	10 54 53.1	+2.3
MBDF	**Montbardon**	**145.72**	**335**	*e*PKP1		PKPbc	10 54 53.8	+2.0
PZZ	**Prazzo**	**145.77**	**334**	P		PKPdf	10 54 52.9	+1.9
QUIF	**Quistinic**	**145.88**	**348**	*e*PKP1		PKPbc	10 54 53.7	+1.7
	comp=Z,5.0nm,0.6s							
IMI	**Imperia**	**145.91**	**333**	P		PKPdf	10 54 53.8	+2.6
ORIF	**Oris-en-Rattie**	**145.92**	**336**	*e*PKP1		PKPbc	10 54 54.6	+2.4
	comp=Z,12nm,0.5s							
TCF	**Toulx Ste Croi**	**146.03**	**341**	*e*PKP1		PKPbc	10 54 54.6	+2.1
	comp=Z,2.9nm,0.4s							
SBF	**Sospel**	**146.14**	**333**	*e*PKP1		PKPbc	10 54 54.8	+2.0
	comp=Z,24nm,0.7s							
MFF	**Saint Martin d**	**146.42**	**344**	*e*PKP1		PKPbc	10 54 55.7	+2.4
	comp=Z,40nm,1.0s							
VIVF	**Saint-Julien-l**	**146.44**	**337**	*e*PKP1		PKPbc	10 54 56.0	+2.6
	comp=Z,3.8nm,0.4s							
PGF	**Pioggiola**	**146.45**	**330**	*e*PKP1		PKPbc	10 54 56.9	+3.3
	comp=Z,38nm,1.1s							
FRF	**La Foret Royal**	**146.73**	**334**	*e*PKP1		PKPbc	10 54 56.6	+2.5
	comp=Z,27nm,0.8s							
SMRF	**Simiane la Rot**	**146.83**	**335**	*e*PKP1		PKPbc	10 54 57.4	+3.0
	comp=Z,6.4nm,0.5s							
LMR	**La Mourre**	**146.97**	**334**	*e*PKP1		PKPbc	10 54 57.4	+2.7
	comp=Z,12nm,0.6s							
RJF	**Les Rejaudoux**	**147.13**	**341**	*e*PKP1		PKPdf	10 54 58.0	+4.9
	comp=Z,8.1nm,0.7s							
CAF	**Calviac**	**147.29**	**340**	*e*PKP1		PKPdf	10 54 58.6	+5.2
LASF	**Ste Croix**	**147.41**	**337**	*e*PKP1		PKPdf	10 54 58.0	+4.3
LFF	**La Frestale**	**147.69**	**342**	*e*PKP1		PKPdf	10 54 59.4	+5.3
MTLF	**Montolieu**	**148.64**	**339**	*e*PKP1		PKPdf	10 55 02.1	+6.4
	comp=Z,28nm,1.0s							
EPF	**Esparros**	**149.54**	**341**	*e*PKP1		PKPdf	10 55 05.5	+8.4
	comp=Z,5.4nm,0.5s							
EALK	**Alkurruntz**	**149.92**	**343**	Pdif		PKPdf	10 54 56.0	-1.7
ETSF	**Etsaut**	**149.94**	**342**	*e*PKP1		PKPdf	10 55 05.7	+8.0
	comp=Z,11nm,0.6s							
EGRA	**Graus**	**150.30**	**340**	Pdif		PKPdf	10 55 07.0	+8.7
ELAN	**Lanestosa**	**150.40**	**346**	Pdif		PKPdf	10 55 04.7	+6.4
EPOB	**Poblet**	**150.79**	**338**	Pdif		PKPdf	10 55 03.0	+4.0
ESAC	**San Caprasio**	**150.98**	**341**	Pdif		PKPdf	10 55 07.0	+7.7
EPON	**Pontenova**	**151.01**	**352**	Pdif		PKPdf	10 55 09.2	+10
ERTA	**Horta de San J**	**151.40**	**339**	Pdif		PKPdf	10 55 09.2	+9.3
STS	**Santiago**	**151.62**	**353**	Pdif		PKPdf	10 55 09.7	+10
ERUA	**La Rua**	**151.92**	**351**	Pdif		PKPdf	10 55 09.7	+9.0
EMOS	**Mosqueruela**	**152.21**	**340**	Pdif		PKPdf	10 55 09.7	+8.5
ETOR	**Torete**	**152.29**	**342**	Pdif		PKPdf	10 55 10.6	+9.3
GUD	**Guadarrama**	**153.02**	**345**	Pdif		PKPdf	10 55 11.6	+9.3
ESDC	**Sonseca Array**	**153.89**	**344**	PKPab		PKPab	10 55 27.1	-0.8
	comp=Z,1.3nm,0.8s,baz=45,slow=2.1,SNR=5.1							

IDC 02 10:39:46.8±3.0,57.71S×32.29W,mb4.2/1,mb1 4.4/1, mb1mx3.9/11,MS3.2/1,Ms1 3.2/1,ms1mx2.9/10,4D, Error ellipse: s-maj=2045.0km s-min=80.7km az=42.0, Scotia Sea

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
VNA1	**Neumayer--Stat**	**16.49**	**151**	*ie*	*iP*	P	10 44 04.7	+24
VNA3	**Neumayer Olymp**	**16.54**	**154**	*ie*	*iP*	P	10 44 02.9	+22
VNA2	**Neumayer--Watz**	**16.89**	**152**	*ie*	*iP*	P	10 44 05.6	+20
SNAA	**Sanae**	**18.52**	**151**	*ie*	*iP*	P	10 44 19.6	+14
CPUP	**Villa Florida**	**36.03**	**320**	LR		LR	11 00 57.8	
	comp=Z,34nm,20.7s,baz=320,slow=35							
LPAZ	**La Paz**	**49.22**	**312**	P		P	10 48 37.3	-1.4
	1.5nm,0.5s,baz=174,slow=5.3,SNR=13							
YKA	**Yellowknife Ar**	**135.55**	**319**	PKP		PKPdf	10 59 06.3	-3.2
	0.1nm,0.5s,baz=134,slow=1.9,SNR=3.9							
ILAR	**Eielson Array**	**149.09**	**311**	PKPbc		PKPdf	10 59 35.0	+2.1
	1.3nm,0.6s,baz=132,slow=2.2,SNR=9.8							

MAN 02 10:41:31.0,16.43N×122.66E,h62km,mb3.8,ML2.5, MS2.0,4C,Luzon

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
PALP	**Palanan**	**0.66**	**341**	*ie*	*iP*	P	10 41 46.1	+1.2
PALP				*e*	S	S	10 41 58.4	+2.9
CAUP	**Cauayan**	**0.95**	**303**	*ie*	P	P	10 41 49.1	+0.6
CAUP				*e*	S	S	10 42 02.7	+1.0
BALP	**Baler**	**1.25**	**237**	*ie*	P	P	10 41 53.8	+1.1
BALP				*e*	S	S	10 42 09.4	+0.6
CVP	**Callao Caves**	**1.49**	**328**	*e*	P	P	10 41 59.7	+3.5
CVP				*e*	S	S	10 42 18.8	+4.0
APYP	**Conner**	**1.96**	**317**	*ie*	P	P	10 42 02.7	+0.2
APYP				*e*	S	S	10 42 31.9	+6.0

*NEIC **02** 10:55:57.1,38.59N×19.70E,h26km,MD3.5(ATH),After ATH.*
*ATH **02** 10:55:57.1,38.59N×19.70E,h26km±3km,MD3.5/6*
*THE **02** 10:56:00.2,38.75N×19.83E,h11km,ML3.3*
ISC 02 10:55:56.4±0.9,38.63N±0.04×19.64E±0.04,h20km±8km, n30,σ1§29/38,1D,Ionian Sea

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
LKD	**Levkas**	**0.80**	**84**	*e*Pg		**Pb**	**10 56 12.8**	**+1.4**
LKD				*e*Sg		**Sb**	**10 56 21.3**	**-0.5**
VLS	**Valsamata**	**0.87**	**121**	*e*PN		**Pn**	**10 56 13.5**	**0.0**
VLS				*e*SN		**Sn**	**10 56 25.0**	**-0.7**
IGT	**Igoumenitsa**	**1.05**	**31**	*e*Pg		**Pb**	**10 56 16.9**	**+1.2**
IGT				*e*Sg		**Sb**	**10 56 29.1**	**-0.1**
KEK	**Kerkira**	**1.09**	**7**	*e*PN		**Pn**	**10 56 18.1**	**+1.5**
KEK				*e*SB		**Sb**	**10 56 35.0**	**+4.8**
JAN	**Janina**	**1.40**	**42**	*e*PB		**Pb**	**10 56 21.7**	**

NVAR				pP	pP	12 08 57.4	+0.4		
	0.6nm,0.9s,baz=138,slow=6.4,SNR=3.8								
NVAR	**Mina Array Bea**	**74.81**	**322**	P	**P**	**12 08 31.3**	**+1.2**		
NVAR				pP	pP	12 08 57.4	+0.4		
YKA	**Yellowknife Ar**	**90.28**	**341**	P	**P**	**12 09 49.5**	**+0.3**		
	0.9nm,0.9s,mb3.9,baz=132,slow=4.6,SNR=17								
YKA				pP	pP	12 10 17.8	+0.7		
	1.9nm,1.0s,baz=134,slow=4.7,SNR=8.2								
YKA	**Yellowknife Ar**	**90.28**	**341**	P	**P**	**12 09 49.5**	**+0.3**		
YKA				pP	pP	12 10 17.8	+0.7		
NOUC	**Port Laguerre**	**111.64**	**235**	*e*P	PKPdf	12 15 30.6	+8.6		
MKAR	**Makanchi Array**	**144.68**	**35**	PKP	PKPdf	12 16 24.8	+1.2		
	0.8nm,0.5s,baz=299,slow=2.4,SNR=9.1								

IDC ***02*** *11:59:03.6±1.1,16.63N×123.12E,mb3.7/6,mb1 3.9/7, mb1mx3.6/19,ML4.5/1,MS3.2/1,Ms1 3.4/1,ms1mx2.7/20, Error ellipse: s-maj=54.1km s-min=19.1km az=74.0*
MAN ***02*** *11:59:07.8, 16.39N×122.48E,h18km,mb4.0,ML2.8, MS2.5*

ISC 02 11:59:06.0±0.6, 16.41N±0.03×122.66E±0.06, h18km, n18, σ1$15/27, mb3.6/6, MS3.0/1, 8C, Luzon

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PALP	**Palanan**	**0.68**	**341**	⇑*e*P	**Pb**	**11 59 20.0**	**+0.9**
PALP				*e*S	**Sb**	**11 59 32.4**	**+4.5**
CAUP	**Cauayan**	**0.96**	**303**	⇑*e*P	**Pb**	**11 59 22.9**	**-0.8**
CAUP				*e*S	**Sb**	**11 59 36.4**	**+0.5**
BALP	**Baler**	**1.24**	**237**	⇑*e*P	**Pb**	**11 59 27.4**	**-1.1**
BALP				*e*S	**Sb**	**11 59 42.4**	**-1.6**
CVP	**Callao Caves**	**1.51**	**328**	*e*P	**Pn**	**11 59 32.8**	**+0.4**
CVP				*e*S	**Sn**	**11 59 52.3**	**+0.5**
POLP	**Polilio Island**	**1.81**	**203**	⇑*e*P	**Pn**	**11 59 37.4**	**+0.6**
POLP				*e*S	**Sn**	**11 59 58.8**	**-0.7**
SGCP	**Mt. Cagua**	**1.91**	**342**	⇑*e*P	**Pn**	**11 59 39.7**	**+1.5**
SGCP				*e*S	**Sn**	**12 00 01.0**	**-0.9**
APYP	**Conner**	**1.98**	**317**	⇑*e*P	**Pn**	**11 59 38.8**	**-0.3**
APYP				*e*S	**Sn**	**12 00 06.5**	**+2.9**
ABRA	**Dolores**	**2.23**	**304**	⇑*e*P	**Pn**	**11 59 42.4**	**-0.4**
ABRA				*e*S	**Sn**	**12 00 14.4**	**+4.3**
GQP	**Guinayangan**	**2.50**	**185**	⇑*e*P	**Pn**	**11 59 48.5**	**+1.9**
GQP				*e*S	**Sn**	**12 00 18.0**	**+1.0**
LQP	**Lukban**	**2.53**	**205**	*e*P	**Pn**	**11 59 51.0**	**+4.0**
TGY	**Tagaytay City**	**2.84**	**216**	Pn	**Pn**	**11 59 56.7**	**+5.3**
	48nm,0.3s,baz=169,slow=5.2,SNR=3.0						
TGY				Sn	**Sn**	**12 00 28.1**	**+2.7**
	53nm,0.3s,baz=188,slow=3.9,SNR=4.0						
CMAR	**Chiang Mai Arr**	**22.71**	**279**	LR	LR	12 13 11.2	
	comp=Z,52nm,19.5s,MS3.0,baz=257,slow=37						
SONM	**Songino Array**	**34.08**	**340**	P	**P**	**12 05 50.7**	**-0.8**
	0.5nm,0.6s,mb3.6,baz=157,slow=11,SNR=4.4						
WRA	**Warramunga Arr**	**37.91**	**162**	P	**P**	**12 06 23.2**	**-1.0**
	1.3nm,0.7s,mb3.7,baz=343,slow=9.3,SNR=6.9						
ASAR	**Alice Springs**	**41.32**	**164**	P	**P**	**12 06 52.1**	**-0.3**
	0.6nm,0.8s,mb3.3,baz=1.7,slow=8.8,SNR=7.9						
MKAR	**Makanchi Array**	**45.05**	**321**	P	**P**	**12 07 21.5**	**-1.1**
	0.5nm,0.6s,mb3.5,baz=114,slow=10.0,SNR=4.4						
FINES	**FINESS Array B**	**78.85**	**331**	P	**P**	**12 11 08.2**	**-1.1**
	0.8nm,0.7s,mb3.7,baz=56,slow=6.9,SNR=7.9						
NOA	**NORSAR Array B**	**85.72**	**333**	P	**P**	**12 11 44.2**	**-0.7**
	0.3nm,0.6s,mb3.7,baz=69,slow=4.7,SNR=3.0						

TIF 02 12:10:23.3, 40.14N×45.02E, h16km, Mpv4.1, 3C-1D, Eastern Caucasus

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
VAD	**Vardenisi**	**0.55**	**85**	*e*P	Pb	12 10 34.0	0.0
VAD				*e*S	Sb	12 10 43.0	+1.6
DGRG	**David-gareji**	**1.34**	**11**	⇓*i*P	Pn	12 10 51.7	+4.3
DGRG				*i* S	Sb	12 11 13.3	+9.1
MTA	**Mtatsminda**	**1.56**	**354**	⇑*i*P	Pn	12 10 54.3	+3.6
MTA				*i* S	Sn	12 11 17.1	+6.5
AKH	**Akhalkalaki**	**1.72**	**318**	*e*P	Pn	12 10 56.2	+3.3
AKH				S	Sn	12 11 21.2	+6.6
DUS	**Dusheti**	**1.96**	**353**	⇑*i*P	Pn	12 11 02.6	+6.2
DUS				*i* S	Sn	12 11 30.8	+10
TVAN	**Van**	**2.04**	**218**	⇑*i*P	Pn	12 11 01.2	+3.7
TVAN				*i* S	Sn	12 11 37.7	+15
ERZM	**Erzurum**	**2.82**	**266**	*i* P	Pn	12 11 17.2	+8.7

IDC ***02*** *12:44:53.5±3.9, 3.50S×139.95E,mb3.5/3,mb1 3.7/4, mb1mx3.6/11,ML3.4/1,MS3.5/1,Ms1 3.5/1,ms1mx2.2/15, Error ellipse: s-maj=127.0km s-min=28.6km az=92.0*

ISC 02 12:44:58.5±2.5, 3.6S±0.2×139.4E±0.4, h33km, n6, σ0$14/5, mb3.3/1, MS3.4/1, Irian Jaya

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KAKA	**Kakadu**	**11.43**	**217**	*e*P	**P**	**12 47 42.6**	**+0.1**
	7.4nm,0.4s						
WRA	**Warramunga Arr**	**17.02**	**197**	P	**P**	**12 48 55.5**	**-0.1**
	0.1nm,0.3s,baz=22,slow=13,SNR=12						
FITZ	**Fitzroy Crossi**	**19.78**	**222**	P	**P**	**12 49 28.7**	**-0.1**
	2.3nm,0.8s,baz=68,slow=11,SNR=4.2						
ASAR	**Alice Springs**	**20.68**	**194**	P	**P**	**12 49 38.5**	**+0.1**
	0.9nm,0.6s,baz=29,slow=9.5,SNR=13						
JNU	**Nakatsue**	**37.38**	**348**	LR	LR	13 06 20.7	
	comp=Z,65nm,20.8s,MS3.4,baz=62,slow=34						
MKAR	**Makanchi Array**	**70.90**	**322**	P	**P**	**12 56 14.3**	**0.0**
	0.2nm,0.5s,mb3.3,baz=92,slow=6.6,SNR=3.5						

WEL 02 12:47:45.2±0.3, 43.79S×169.34E, h12km, ML3.5/1, Error ellipse: s-maj=3.5km s-min=2.9km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
LMZ	**Lake Moeraki**	**0.09**	**322**	PG	Pg	12 47 47.8	-0.1
LMZ				SG	Sg	12 47 50.7	+0.9
WVZ	**Waitaha Valley**	**1.24**	**56**	P*	Pb	12 48 08.4	+0.4
WVZ				S*	Sb	12 48 23.3	-0.5
WVZ				S*	Sb	12 48 23.4	-0.5
ODZ	**Otahua Downs**	**1.57**	**144**	PN	Pn	12 48 12.3	-0.8
ODZ				SN	Sn	12 48 31.7	-1.7
TUZ	**Tuapeka**	**2.18**	**175**	PN	Pn	12 48 20.5	-1.4
TUZ				SN	Sn	12 48 43.6	-5.4

NIED ***02*** *12:55:00, 43.10N×146.40E, h44km, Mw4.1 Best double couple: M0 1.4×10^15 NP1:φs193°, δ80°, λ-41°. NP2:φs292°, δ50°, λ-167°*
MOS ***02*** *12:55:52.9±1.2, 43.06N×146.35E, h55km, mb4.9/4, Error ellipse: s-maj=15.8km s-min=8.6km az=85.6*
SKHL ***02*** *12:55:53.8±2.0, 43.14N×146.37E, h29km±9km, mb5.0/3*
NEIC ***02*** *12:55:54.4±0.4, 43.11N×146.39E, mb4.6/6, Error ellipse: s-maj=11.1km s-min=6.7km az=135.0*
NEIC Recorded [1 JMA] in eastern Hokkaido.
IDC ***02*** *12:55:54.9±0.6, 43.11N×146.54E, h48km±4km, mb3.7/15, mb1 3.9/16, mb1mx3.8/23, MS3.1/3, Ms1 3.1/3, ms1mx2.7/32, Error ellipse: s-maj=16.1km s-min=9.5km az=6.0*
JMA ***02*** *12:55:54.4±0.1, 43.14N×146.37E, h52km±1km, M4.2*
JMA Felt I J1.

ISC 02 12:55:53.5±0.7, 43.13N±0.04×146.41E±0.06, h52km±6km, h43km±1.7km: pP-P, n77, σ0$93/78, mb4.0/20, MS3.3/1, 6D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
NEM2	**Nemuro 2**	**0.54**	**296**	P	**P**	**12 56 05.9**	**+0.5**
NEM2				*e*S	**S**	**12 56 14.0**	**0.0**
YUK	**Yuzh-Kuril'sk**	**0.99**	**336**	⇓*i*P	**P**	**12 56 10.5**	**-0.8**
YUK				⇓*i*P		12 56 10.5	
YUK				AMB	AMB	12 56 12.8	
	970nm,0.2s						
YUK				AMB	AMB	12 56 12.8	
	2μm,0.2s						
YUK				AMB	AMB	12 56 12.8	
	4μm,0.2s						
YUK				AMB	AMB	12 56 15.0	
	4μm,0.7s						
YUK				AMB	AMB	12 56 15.0	
	10μm,0.7s						
YUK				AMB	AMB	12 56 15.0	
	3μm,0.8s						
YUK				*i* S	**S**	**12 56 23.0**	**-1.4**
YUK				A		12 56 25.1	
	25μm,1.0s						
YUK				A		12 56 25.1	
	30μm,0.6s						
YUK				A		12 56 25.4	
	16μm,0.5s						
YUK				A		12 56 25.4	
	9μm,0.3s						
YUK	**Yuzh-Kuril'sk**	**0.99**	**336**	*i*PN	**P**	**12 56 10.5**	**-0.8**
YUK				*i* S	**S**	**12 56 23.0**	**-1.4**
YUK				pmax	pmax		
	comp=Z,4μm,0.3s						
YUK				pmax	pmax		
	comp=N,970nm,0.2s						
YUK				pmax	pmax		
	comp=E,2μm,0.2s						
YUK				pmax	pmax		
	comp=N,4μm,0.7s						
YUK				pmax	pmax		
	comp=Z,10μm,0.7s						
YUK				pmax	pmax		
	comp=E,3μm,0.8s						
YUK				smax			
	comp=N,25μm,1.0s						
YUK				smax			
	comp=E,30μm,0.6s						
YUK				smax			
	comp=N,9μm,0.4s						
YUK				smax			
	comp=E,16μm,0.5s						
JRA	**Rausu**	**1.24**	**311**	P	**P**	**12 56 15.3**	**+0.5**
JRA				*e*S	**S**	**12 56 30.8**	**+0.2**
JAK	**Akkeshi**	**1.27**	**264**	P	**P**	**12 56 15.6**	**+0.4**
JAK				*e*S	**S**	**12 56 31.1**	**-0.2**
JNK	**Nakash**	**1.32**	**291**	P	**P**	**12 56 15.9**	**-0.1**
JNK				*e*S	**S**	**12 56 31.9**	**-0.8**
JOB	**Onbets**	**1.91**	**264**	P	**P**	**12 56 24.6**	**+0.4**
JOB				*e*S	**S**	**12 56 47.3**	**+0.3**
JAR	**Ashorobuto**	**1.94**	**276**	P	**P**	**12 56 25.2**	**+0.5**
JAR				*e*S	**S**	**12 56 48.2**	**+0.4**
JTKR	**Abashiri--Toko**	**2.01**	**296**	P	**P**	**12 56 26.6**	**+1.0**
JTKR				*e*S	**S**	**12 56 50.4**	**+0.9**
JCH	**Churui**	**2.30**	**258**	P	**P**	**12 56 29.8**	**0.0**
JCH				*e*S	**S**	**12 56 57.5**	**+0.5**
KUR	**Kuril'sk**	**2.35**	**26**	*e*P	**P**	**12 56 31.0**	**+0.6**
KUR				AMB	AMB	12 56 34.2	
	comp=E,147nm,0.4s						
KUR				AMB	AMB	12 56 34.2	
	comp=E,122nm,0.4s						
KUR				AMB	AMB	12 56 34.2	
	comp=E,244nm,0.4s						
KUR				*e*S	**S**	**12 56 56.8**	**-1.3**
KUR				A		12 57 02.8	
	comp=E,2μm,1.0s						
KUR				A		12 57 03.2	
	comp=E,945nm,0.3s						
KUR				A		12 57 03.2	
	comp=E,630nm,0.3s						
KUR	**Kuril'sk**	**2.35**	**26**	*e*PN	**P**	**12 56 31.0**	**+0.6**
KUR				*e*S	**S**	**12 56 56.8**	**-1.3**
KUR				pmax	pmax		
	comp=N,150nm,0.4s						
KUR				pmax	pmax		
	comp=E,120nm,0.4s						
KUR				pmax	pmax		
	comp=Z,240nm,0.4s						
KUR				smax			
	comp=N,950nm,0.3s						
KUR				smax			
	comp=E,630nm,0.3s						
KUR				smax			
	comp=E,2μm,1.0s						
ASAJ	**Asahikawa**	**2.94**	**291**	P	**P**	**12 56 40.4**	**+1.4**
ASAJ	comp=E,25nm,0.3s,baz=110,slow=10,SNR=46			S	**S**	**12 57 18.2**	**+5.0**
	comp=E,25nm,0.3s,baz=21,slow=28,SNR=8.0						
ASAJ				LR	LR	12 58 03.6	
	comp=E,277nm,19.3s,baz=14,slow=42						
ASAJ	**Asahikawa**	**2.94**	**291**	PN	**P**	**12 56 40.4**	**+1.5**
ASAJ				S	**S**	**12 57 18.2**	**+5.0**
ASAJ				pmax	pmax		
	comp=Z,25nm,0.3s						
ASAJ				smax			
	comp=N,25nm,0.3s						
ASAJ				MLR	MLR		
	comp=Z,277nm,19.3s						
YSS	**Yuzh-Sakhalins**	**4.62**	**327**	⇓*i*P	**P**	**12 57 04.0**	**+1.5**
YSS				*e*sP		12 57 21.9	
YSS				*i* S	**S**	**12 57 53.8**	**-1.7**
YSS				A		12 57 54.8	
	comp=Z,50nm,0.7s						
YSS	**Yuzh-Sakhalins**	**4.62**	**327**	⇓*i*PN	**P**	**12 57 04.0**	**+1.5**
YSS				*i* S	**S**	**12 57 53.8**	**-1.7**
YSS	**Yuzh-Sakhalins**	**4.62**	**327**	*e*P	**P**	**12 57 03.3**	**+0.7**
TYV	**Tymovskoe**	**8.15**	**343**	*e*P	**P**	**12 57 51.0**	**-0.7**
TYV				*e*S	**S**	**12 59 24.7**	**+1.3**
MAJO	**Matsushiro**	**9.12**	**227**	*e*PN	**P**	**12 58 02.7**	**-2.3**
MAJO				pmax	pmax		
	comp=Z,9.0nm,0.5s						
MAJO	**Matsushiro**	**9.12**	**227**	*e*P	**P**	**12 58 02.7**	**-2.3**
	comp=Z,8.5nm,0.5s						
MAT	**Matsushiro**	**9.12**	**227**	P	**P**	**12 58 02.6**	**-2.4**
MAT				S	**S**	**12 59 47.0**	**-0.3**
MAT	**Matsushiro**	**9.12**	**227**	*e*PN	**P**	**12 58 03.0**	**-2.0**
MAT				*e*S	**S**	**12 59 47.0**	**-0.3**
MAT				pmax	pmax		
	comp=Z,8.0nm,0.6s						
MAT	**Matsushiro**	**9.12**	**227**	*e*P	**P**	**12 58 03.0**	**-2.0**
	comp=Z,8.0nm,0.6s						
MAT				*e*S	**S**	**12 59 47.0**	**-0.3**
JHJ	**Hachijo jima 2**	**11.27**	**210**	LR	LR	13 02 39.2	
	comp=Z,75nm,20.4s,baz=44,slow=36						
FX1	**Attu Island--F**	**20.27**	**52**	P	**P**	**13 00 28.0**	**+1.0**
	comp=Z,65nm,1.2s,baz=160,slow=11,SNR=5.8						
FX1	**Attu Island--F**	**20.27**	**52**	P	**P**	**13 00 28.0**	**+1.0**
FX1				pmax	pmax		
	comp=Z,65nm,1.2s						
SONM	**Songino Array**	**28.22**	**294**	P	**P**	**13 01 43.2**	**-0.1**
	comp=Z,2.2nm,0.5s,mb4.0,baz=86,slow=8.4,SNR=20						
TIXI	**Tiksi**	**29.86**	**349**	P	**P**	**13 01 56.6**	**-1.1**
TIXI				pmax	pmax		
	comp=Z,7.0nm,1.0s,mb4.3						
IMA	**Indian Mountai**	**39.49**	**34**	*e*P	**P**	**13 03 20.6**	**+0.5**
IMA				*e**PP	pP	13 03 31.8	-1.9
IMA				pmax	pmax		
	comp=Z,20nm,0.7s,mb5.0						
IMA	**Indian Mountai**	**39.49**	**34**	*e*P	**P**	**13 03 20.6**	**+0.5**
	comp=Z,20nm,0.7s,mb5.0						
IMA				*e*pP	pP	13 03 31.8	-1.9
COLA	**College**	**41.89**	**36**	*e*P	**P**	**13 03 41.1**	**+1.4**
COLA				*e**PP	pP	13 03 51.5	-1.9
COLA				pmax	pmax		
	comp=Z,1.0nm,0.7s,mb3.5						
COLA	**College**	**41.89**	**36**	*e*P	**P**	**13 03 41.1**	**+1.4**
	comp=Z,1.3nm,0.7s,mb3.7						
COLA				*e*pP	pP	13 03 51.5	-1.9
ILAR	**Eielson Array**	**42.30**	**36**	P	**P**	**13 03 43.2**	**0.0**
	comp=Z,0.6nm,0.8s,mb3.3,baz=252,slow=5.8,SNR=12						
ILAR				pP	pP	13 03 55.4	-1.4
	comp=Z,2.4nm,0.9s,baz=276,slow=8.3,SNR=12						
MKAR	**Makanchi Array**	**44.40**	**298**	P	**P**	**13 04 00.2**	**-0.2**
	comp=Z,5.2nm,1.1s,mb4.2,baz=82,slow=8.5,SNR=11						
MKAR				pP	pP	13 04 12.4	-1.7
	comp=Z,0.9nm,0.5s,baz=81,slow=9.2,SNR=5.1						
MKAR	**Makanchi Array**	**44.40**	**298**	P	**P**	**13 04 00.2**	**-0.2**
MKAR				pP	pP	13 04 12.4	-1.7
KURK	**Kurchatov**	**45.43**	**304**	*e*P	**P**	**13 04 08.0**	**-0.6**
INK	**Inuvik**	**47.21**	**30**	P	**P**	**13 04 22.4**	**0.0**
	comp=Z,2.1nm,0.6s,mb4.3,baz=290,slow=6.0,SNR=23						
INK	**Inuvik**	**47.21**	**30**	*e*P	**P**	**13 04 22.2**	**-0.2**
INK				pmax	pmax		
	comp=Z,1.0nm,0.7s						
INK	**Inuvik**	**47.21**	**30**	*e*P	**P**	**13 04 22.2**	**-0.2**
	comp=Z,1.4nm,0.7s,mb4.0						
DMN	**Daman**	**51.25**	**273**	*e*P	**P**	**13 04 54.1**	**0.0**
GKN	**Gorkha**	**51.37**	**274**	*e*P	**P**	**13 04 55.1**	**+0.1**
	comp=Z,6.7nm,0.4s,mb4.9						
DANN	**Dangsing**	**51.82**	**275**	*e*P	**P**	**13 04 58.7**	**+0.4**
KOLN	**Koldanda**	**52.26**	**275**	*e*P	**P**	**13 05 01.5**	**-0.1**
	comp=Z,6.2nm,0.4s,mb4.8						
RES	**Resolute Bay**	**55.71**	**16**	*e*P	**P**	**13 05 24.7**	**-1.7**
RES				pmax	pmax		
	comp=Z,6.0nm,0.8s,mb4.7						
RES	**Resolute Bay**	**55.71**	**16**	*e*P	**P**	**13 05 24.7**	**-1.7**
	comp=Z,6.0nm,0.8s,mb4.7						
YKA	**Yellowknife Ar**	**56.61**	**33**	P	**P**	**13 05 32.2**	**-0.8**
	comp=Z,0.4nm,0.7s,mb3.6,baz=297,slow=6.5,SNR=8.4						
YKA				pP	pP	13 05 45.2	-1.9
	comp=Z,1.9nm,0.9s,baz=303,slow=7.7,SNR=14						
YKA	**Yellowknife Ar**	**56.61**	**33**	P	**P**	**13 05 32.2**	**-0.8**
YKA				pP	pP	13 05 45.2	-2.0
WRA	**Warramunga Arr**	**63.74**	**193**	P	**P**	**13 06 20.9**	**-1.3**
	comp=Z,1.6nm,0.8s,mb4.1,baz=12,slow=6.9,SNR=16						
FINES	**FINESS Array B**	**65.18**	**333**	P	**P**	**13 06 29.6**	**-1.2**
	comp=Z,1.7nm,0.5s,mb4.3,baz=51,slow=8.1,SNR=16						
FINES				LR	LR	13 37 43.0	
	comp=Z,19nm,18.6s,MS3.3,baz=4.7,slow=38						
ASAR	**Alice Springs**	**67.46**	**192**	P	**P**	**13 06 46.5**	**+0.6**
	comp=Z,1.3nm,0.8s,mb4.0,baz=11,slow=5.8,SNR=19						
BOZ	**Bozeman (W)**	**67.72**	**48**	*e*P	pP	13 07 01.1	-0.7
NVAR	**Mina Array Bea**	**68.36**	**57**	P	**P**	**13 06 53.0**	**+1.7**
	comp=Z,0.3nm,0.5s,mb3.6,baz=288,slow=7.8,SNR=4.4						
NVAR				pP	pP	13 07 05.1	-0.8
	comp=Z,0.5nm,0.6s,baz=306,slow=4.5,SNR=4.6						
NVAR				sP	sP	13 07 10.9	-0.6
	comp=Z,0.8nm,0.6s,baz=299,slow=5.2,SNR=7.1						
NVAR	**Mina Array Bea**	**68.36**	**57**	P	**P**	**13 06 53.0**	**+1.7**
NVAR				pP	pP	13 07 05.1	-0.8
NVAR				sP	sP	13 07 10.9	-0.6
NB2	**NORSAR Subarra**	**69.98**	**339**	P	**P**	**13 06 59.9**	**-1.0**
	comp=Z,1.0nm,0.5s,mb4.0,baz=32,slow=6.2						
NOA	**NORSAR Array B**	**69.98**	**339**	P	**P**	**13 07 00.1**	**-0.7**
	comp=Z,1.1nm,0.5s,mb4.0,baz=34,slow=6.2,SNR=5.4						
PDAR	**Pinedale Array**	**70.72**	**49**	P	**P**	**13 07 06.7**	**+1.1**
	comp=Z,0.2nm,0.5s,mb3.3,baz=329,slow=5.3,SNR=3.5						
PDAR				pP	pP	13 07 19.5	-0.8
	comp=Z,0.7nm,0.5s,baz=293,slow=1.4,SNR=6.6						
AKASG	**Malin Array Be**	**71.76**	**323**	P	**P**	**13 07 11.1**	**-0.7**
	comp=Z,0.9nm,0.4s,mb4.1,baz=41,slow=5.6,SNR=8.7						
ULM	**Lac du Bonnet**	**72.32**	**37**	pP	pP	13 07 27.5	-2.2
	comp=Z,2.2nm,0.9s,baz=337,slow=7.1,SNR=2.8						
CLL	**Collm**	**77.61**	**332**	*e**PP	pP	13 07 58.0	-2.1
GERES	**GERESS Array B**	**79.44**	**330**	P	**P**	**13 07 56.5**	**+1.1**
	comp=Z,0.2nm,0.6s,mb3.3,baz=39,slow=6.3,SNR=2.3						
CDF	**Champ du Feu**	**82.00**	**334**	*e*P	pP	13 08 21.3	-2.5
	comp=Z,2.8nm,0.6s						
TXAR	**Lajitas Array**	**83.44**	**56**	P	**P**	**13 08 17.9**	**+1.3**
	comp=Z,0.8nm,1.0s,mb3.7,baz=282,slow=4.5,SNR=6.1						
TXAR				pP	pP	13 08 31.3	-0.3
	comp=Z,0.4nm,0.5s,baz=298,slow=2.9,SNR=6.5						
TXAR	**Lajitas Array**	**83.44**	**56**	P	**P**	**13 08 17.9**	**+1.3**
TXAR				pP	pP	13 08 31.3	-0.3
LOR	**Lormes**	**84.09**	**335**	*e*P	pP	13 08 31.8	-2.6
SMF	**Signal de Mont**	**84.65**	**335**	*e*P	pP	13 08 35.0	-2.3
	comp=Z,7.9nm,0.9s						
AVF	**Avril sur Loir**	**84.67**	**335**	*e*P	pP	13 08 35.1	-2.3
	comp=Z,9.9nm,1.0s						
LPL	**La Plagne**	**84.72**	**333**	*e*P	pP	13 08 36.0	-1.7
	comp=Z,4.8nm,0.8s						
LPG	**La Plagne**	**84.73**	**333**	*e*P	pP	13 08 36.1	-1.6
	comp=Z,3.4nm,0.6s						
BGF	**Bois d'Agland**	**85.03**	**336**	*e*P	pP	13 08 37.6	-1.6
TCF	**Toulx Ste Croi**	**85.47**	**336**	*e*P	pP	13 08 39.3	-2.1
MFF	**Saint Martin d**	**85.86**	**338**	*e*P	pP	13 08 40.8	-2.5
VIVF	**Saint-Julien-l**	**85.99**	**334**	*e*P	pP	13 08 42.1	-1.9
	comp=Z,5.8nm,1.0s						
RJF	**Les Rejaudoux**	**86.56**	**336**	*e*P	pP	13 08 45.0	-1.8
CAF	**Calviac**	**86.74**	**335**	*e*P	pP	13 08 46.6	-1.1
	comp=Z,8.3nm,0.8s						
MTLF	**Montolieu**	**88.13**	**335**	*e*P	pP	13 08 51.2	-3.2
ETSF	**Etsaut**	**89.37**	**336**	*e*P	pP	13 08 58.7	-1.7
	comp=Z,6.0nm,0.8s						
ESDC	**Sonseca Array**	**93.33**	**338**	pP	pP	13 09 16.7	-2.1
	comp=Z,0.6nm,0.7s,baz=16,slow=2.7,SNR=3.5						

IDC 02 13:16:26.1±16.0, 23.04S×174.74W, mb4.3/5, mb1 4.5/5, mb1mx4.0/16, Error ellipse: s-maj=311.0km s-min=129.9km az=82.0, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CTA	**Charters Tower**	**36.33**	**267**	P	P	13 23 33.1	-0.5
	6.2nm,0.5s,baz=110,slow=11,SNR=16						
STKA	**Stephens Creek**	**39.52**	**247**	P	P	13 23 57.1	-3.3
	1.3nm,0.4s,baz=84,slow=12,SNR=9.3						
ASAR	**Alice Springs**	**46.94**	**259**	P	P	13 24 58.4	-2.3
	0.8nm,0.4s,baz=90,slow=8.2,SNR=36						
WRA	**Warramunga Arr**	**47.29**	**264**	P	P	13 25 01.6	-1.9
	2.4nm,0.4s,baz=99,slow=8.3,SNR=74						
FITZ	**Fitzroy Crossi**	**55.72**	**263**	P	P	13 26 05.4	-1.7
	2.9nm,0.7s,baz=163,slow=6.9,SNR=4.7						

NEIC ***02*** *13:22:00.3, 35.50N×120.81W, h5km, ML3.7(NCEDC), MW3.6(BRK), After NCEDC.*
NEIC Felt [IV] at Cayucos and Templeton; [III] at Atascadero, Morro Bay and Paso Robles; [II] at Los Osos and San Luis Obispo.
IDC ***02*** *13:22:03.2±2.2, 35.65N×120.67W, mb2.9/2, mb1 3.4/5, mb1mx3.3/22, ML3.2/3, Error ellipse: s-maj=24.2km s-min=20.9km az=39.0*

ISC 02 13:21:57.6±1.1, 35.35N±0.08×120.9W±0.1, h5km, n25, σ0$94/27, mb3.4/1, Central California

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
LRV	**Little Rabbit**	**1.08**	**355**	*e*P	**Pb**	**13 22 18.3**	**-0.2**
SAO	**San Andreas**	**1.48**	**343**	*e*P	**Pn**	**13 22 24.1**	**-1.0**
SAO				*e*S	**Sb**	**13 22 44.9**	**+0.5**
SAC	**San Andreas**	**2.55**	**332**	*e*P	**Pn**	**13 22 39.6**	**-0.7**
LKC	**Lake Chabot**	**2.57**	**339**	*e*P	**Pn**	**13 22 39.6**	**-1.0**
MWC	**Mount Wilson**	**2.59**	**115**	*e*P	**Pn**	**13 22 41.6**	**+0.7**
CMB

LPAZ				Lg			13 25 10.6				
LPAZ				LR	LR		13 25 56.3				
CPUP	**Villa Florida**	**13.76 119**	P	**P**			**13 26 05.0**	**+1.9**			
	0.3nm,0.3s,baz=332,slow=12,SNR=7.4										
CPUP			LR	LR			13 32 31.0				
	comp=Z,160nm,18.8s,baz=319,slow=42										
CPUP	**Villa Florida**	**13.76 119**	*eP*	**P**			**13 26 04.6**	**+1.4**			
CPUP			LR	LR			13 32 31.0				
TRQA	**Tornquist**	**19.44 159**	*eP*	**P**			**13 27 12.3**	**-1.5**			
	0.9nm,0.8s										
PLCA	**Paso Flores**	**20.58 180**	P	**P**			**13 27 25.8**	**0.0**			
	3.7nm,0.8s,baz=356,slow=12,SNR=8.0										
PLCA			LR	LR			13 34 54.4				
	comp=Z,90nm,18.6s,MS3.2,baz=183,slow=35										
PLCA	**Paso Flores**	**20.58 180**	*eP*	**P**			**13 27 25.5**	**-0.2**			
PLCA			LR	LR			13 34 54.4				
BDFB	**Brasilia**	**22.02 82**	P	**P**			**13 27 39.2**	**-1.1**			
	6.7nm,0.6s,mb4.2,baz=254,slow=12,SNR=8.4										
BDFB			LR	LR			13 37 19.4				
	comp=Z,324nm,18.7s,MS3.8,baz=307,slow=40										
SDV	**Santo Domingo**	**28.79 0**	LR	LR			13 41 21.7				
	comp=Z,115nm,18.2s,MS3.5,baz=222,slow=39										
TXAR	**Lajitas Array**	**58.52 326**	P	**P**			**13 32 41.0**	**-1.3**			
	0.3nm,0.8s,mb3.4,baz=108,slow=8.6,SNR=3.4										
SDCO	**Great Sand Dun**	**66.19 330**	*eP*	**P**			**13 33 34.1**	**+0.9**			
DBIC	**Dimbokro**	**69.95 75**	P	**P**			**13 33 55.2**	**-1.7**			
	3.7nm,0.8s,mb4.3,baz=240,slow=3.2,SNR=4.5										
DBIC	**Dimbokro**	**69.95 75**	P	**P**			**13 33 55.2**	**-1.7**			
QSPA	**South Pole Qui**	**70.10 180**	*eP*	**P**			**13 33 58.8**	**+2.0**			
	2.2nm,0.6s,mb4.3										
NVAR	**Mina Array Bea**	**73.36 323**	P	**P**			**13 34 17.9**	**+1.0**			
	0.3nm,0.8s,mb3.3,baz=162,slow=5.7,SNR=2.7										
RAR	**Rarotonga**	**82.14 250**	LR	LR			14 02 01.8				
	comp=Z,90nm,21.7s,MS4.1,baz=346,slow=29										
YKA	**Yellowknife Ar**	**89.31 341**	P	**P**			**13 35 40.5**	**+0.4**			
	1.7nm,0.8s,mb4.4,baz=135,slow=4.6,SNR=41										
YKA	**Yellowknife Ar**	**89.31 341**	P	**P**			**13 35 40.5**	**+0.4**			
ASAR	**Alice Springs**	**130.35 210**	PKP	PKPdf			13 41 56.2	+2.2			
	0.7nm,0.8s,baz=117,slow=1.5,SNR=8.3										
WRA	**Warramunga Ar**	**133.28 213**	PKP	PKPdf			13 42 01.8	+2.1			
	0.5nm,0.7s,baz=147,slow=1.7,SNR=8.4										
MKAR	**Makanchi Array**	**145.42 33**	PKPbc	PKPbc			13 42 23.1	+1.8			
	8.1nm,0.8s,baz=325,slow=4.0,SNR=41										
SONM	**Songino Array**	**152.22 4**	PKPbc	PKPdf			13 42 41.2	+10			
	1.4nm,0.6s,baz=332,slow=2.3,SNR=13										

*NEIC **02** 13:25:30.5±2.1,6.90S×129.70E,h48km±20km,mb3.7/1, Error ellipse: s-maj=30.6km s-min=11.9km az=52.0*
*IDC **02** 13:25:32.9±7.0,7.06S×129.55E,h68km±66km,mb3.9/5, mb1 4.1/8,mb1mx4.0/13,ML4.3/3,Error ellipse: s-maj=92.6km s-min=20.6km az=57.0*

ISC 02 13:25:42.1±1.6,7.64S±0.08×129.5E±0.1,h201km±18km, n24,σ0§68/30,mb4.2/9,1D,Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KAKA	**Kakadu**	**5.81**	**150**	⇓*iP*	**P**	**13 27 08.1**	**+0.4**
	41nm,0.5s						
KAKA				*eS*	**S**	**13 28 13.0**	**-1.2**
FITZ	**Fitzroy Crossi**	**11.04**	**199**	*eP*	**P**	**13 28 16.0**	**+0.3**
	4.4nm,0.3s						
FITZ				*eS*	**S**	**13 30 15.7**	**-0.4**
FITZ	**Fitzroy Crossi**	**11.04**	**199**	P	**P**	**13 28 15.9**	**+0.2**
	2.1nm,0.3s,baz=18,slow=10,SNR=55						
FITZ				S	**S**	**13 30 15.9**	**-0.2**
	4.3nm,0.3s,baz=94,slow=9.0,SNR=11						
WRAB	**Tennant Creek**	**13.11**	**159**	*eP*	**P**	**13 28 42.5**	**+0.6**
	15nm,0.4s						
WRA	**Warramunga Arr**	**13.12**	**159**	P	**P**	**13 28 42.3**	**+0.3**
	2.2nm,0.3s,baz=339,slow=14,SNR=40						
WRA				S	**S**	**13 31 03.1**	**-0.8**
	5.6nm,0.3s,baz=335,slow=23,SNR=9.8						
WB2	**Warramunga Arr**	**13.12**	**159**	*eP*	**P**	**13 28 42.6**	**+0.6**
WB2				*eS*	**S**	**13 31 03.3**	**-0.6**
AS12	**Alice Springs**	**16.50**	**165**	*eP*	**P**	**13 29 27.5**	**+3.6**
	3.7nm,0.3s						
AS12				*eS*	**S**	**13 32 22.1**	**+2.2**
ASAR	**Alice Springs**	**16.50**	**165**	P	**P**	**13 29 27.0**	**+3.1**
	0.7nm,0.3s,baz=346,slow=13,SNR=51						
ASAR				S	**S**	**13 32 24.9**	**+4.9**
	1.4nm,0.3s,baz=336,slow=18,SNR=7.3						
FORT	**Forrest**	**23.06**	**183**	*eP*	**P**	**13 30 38.0**	**+7.0**
	25nm,0.4s,mb5.1						
STKA	**Stephens Creek**	**26.64**	**156**	*eP*	**P**	**13 31 09.8**	**+5.5**
	3.3nm,1.7s,mb3.7						
STKA	**Stephens Creek**	**26.64**	**156**	P	**P**	**13 31 09.8**	**+5.5**
	2.1nm,0.5s,mb4.0,baz=317,slow=9.1,SNR=8.3						
CMAR	**Chiang Mai Arr**	**39.73**	**311**	P	**P**	**13 32 56.8**	**-0.1**
	1.9nm,0.7s,mb3.6,baz=136,slow=7.3,SNR=6.8						
GUN	**Gumba**	**54.96**	**312**	*eP*	**P**	**13 34 54.6**	**-0.2**
	13nm,0.4s,mb4.8						
KKN	**Kakani**	**55.34**	**311**	*eP*	**P**	**13 34 57.5**	**0.0**
DMN	**Daman**	**55.37**	**311**	*eP*	**P**	**13 34 57.5**	**-0.2**
GKN	**Gorkha**	**55.93**	**311**	*eP*	**P**	**13 35 01.1**	**-0.6**
	9.5nm,0.4s,mb4.7						
KOLN	**Koldanda**	**56.59**	**310**	*eP*	**P**	**13 35 06.3**	**-0.1**
	10nm,0.6s,mb4.6						
SONM	**Songino Array**	**58.87**	**342**	P	**P**	**13 35 22.2**	**+0.1**
	0.4nm,0.5s,mb3.3,baz=158,slow=6.7,SNR=4.1						
MKAR	**Makanchi Array**	**68.46**	**327**	P	**P**	**13 36 24.9**	**+0.5**
	2.6nm,0.4s,mb4.2,baz=115,slow=8.4,SNR=42						
MKAR	**Makanchi Array**	**68.46**	**327**	P	**P**	**13 36 24.9**	**+0.5**
ZAL	**Zalesovo**	**71.91**	**334**	P	**P**	**13 36 44.7**	**-0.5**
	0.8nm,0.4s,mb3.8,baz=232,slow=3.8,SNR=5.0						
ZAL	**Zalesovo**	**71.91**	**334**	P	**P**	**13 36 44.7**	**-0.5**
KURK	**Kurchatov**	**72.78**	**329**	*eP*	**P**	**13 36 50.3**	**-0.1**
LPAZ	**La Paz**	**150.54**	**144**	PKPbc	PKPdf	13 45 19.6	+14
	0.3nm,0.5s,baz=153,slow=6.8,SNR=4.7						

IGQ 02 13:26:19.6,2.44S×77.48W,h12km±10km,mb4.1,4C-7D, Error ellipse: s-maj=13.2km s-min=5.7km az=109.6, Peru-Ecuador border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PATA	**Patacocha**	**1.33**	**314**	⇓P	Pb	13 26 44.4	+0.4
PATA				S	Sb	13 26 58.8	-2.1
ARRY	**Arrayan**	**1.34**	**313**	⇓P	Pb	13 26 44.3	0.0
IGUA	**Igualata**	**1.49**	**309**	⇑P	Pn	13 26 47.9	+1.6
TAMB	**Tambo**	**1.95**	**333**	⇓P	Pn	13 26 54.1	+1.3
VC1	**Cotopaxi 1**	**2.01**	**333**	⇑P	Pn	13 26 55.8	+2.1
NAS1	**Nasa**	**2.05**	**331**	⇓P	Pn	13 26 56.5	+2.2
NAS1				S	Sn	13 27 20.7	+0.6
ANTI	**Antisana**	**2.09**	**341**	⇓P	Pn	13 26 56.2	+1.3
QIL1	**Quilotoa**	**2.15**	**317**	P	Pn	13 26 55.7	-0.1
CONE	**Cono NE Rev Vo**	**2.36**	**356**	P	Pn	13 27 00.8	+2.1
CONE				S	Sn	13 27 29.5	+1.7
JUA2	**San Juan 2**	**2.48**	**333**	⇓P	Pn	13 27 03.7	+3.2
CAYR	**Refugio Cayamb**	**2.49**	**348**	⇑P	Pn	13 27 03.0	+2.3
CAYR				S	Sn	13 27 33.5	+2.3
GGP	**Refugio Guagua**	**2.51**	**334**	⇓P	Pn	13 27 04.5	+3.6
GGP				S	Sn	13 27 35.3	+3.6
CGGP	**Crater GGP**	**2.51**	**333**	P	Pn	13 27 04.4	+3.4
PINO	**Pino**	**2.53**	**333**	P	Pn	13 27 04.8	+3.5
CAYA	**Cayambe**	**2.54**	**348**	P	Pn	13 27 04.1	+2.7
YANA	**Yana**	**2.55**	**335**	⇑P	Pn	13 27 05.1	+3.6
YANA				S	Sn	13 27 35.2	+2.5
JOR1	**San Jorge 1**	**2.68**	**334**	P	Pn	13 27 03.6	+0.2
JOR1				S	Sn	13 27 33.9	-2.2
COTA	**Cotacachi**	**2.88**	**343**	P	Pn	13 27 11.2	+4.9

*IDC **02** 13:40:58.0±1.9,1.68N×126.36E,mb3.2/3,mb1 3.5/4, mb1mx3.4/16,ML3.5/1,Error ellipse: s-maj=123.0km s-min=23.9km az=68.0*

ISC 02 13:41:00.4±2.0,1.8N±0.3×126.6E±0.7,h33km,n4,σ0§02/4, mb3.1/3,Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**19.76**	**183**	P	**P**	**13 45 30.6**	**0.0**
	0.1nm,0.3s,baz=32,slow=9.5,SNR=3.2						
WRA	**Warramunga Arr**	**22.87**	**161**	P	**P**	**13 46 02.3**	**0.0**
	0.7nm,0.7s,mb3.2,baz=336,slow=10,SNR=12						
ASAR	**Alice Springs**	**26.26**	**165**	P	**P**	**13 46 34.7**	**0.0**
	0.2nm,0.9s,mb2.7,baz=344,slow=10,SNR=3.1						
MKAR	**Makanchi Array**	**59.09**	**326**	P	**P**	**13 50 59.9**	**0.0**
	0.2nm,0.4s,mb3.5,baz=107,slow=9.0,SNR=3.4						

*NEIC **02** 13:44:16.9±4.8,6.04S×152.19E,h30km±32km,mb4.5/3, Error ellipse: s-maj=30.9km s-min=8.9km az=118.0*

*IDC **02** 13:44:21.3±5.2,6.07S×152.08E,h70km±45km,mb3.9/11, mb1 4.1/12,mb1mx4.0/15,ML3.6/1,MS3.4/1,Ms1 3.3/1, ms1mx2.8/15,Error ellipse: s-maj=37.1km s-min=24.1km az=113.0*

ISC 02 13:44:16.8±2.1,6.0S±0.1×152.2E±0.2,h43km±16km,n21, σ0§94/23,mb4.1/12,MS3.3/1,New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAB	**Rabaul**	**1.83**	**0**	*eP*	**P**	**13 44 46.5**	**+0.1**
PMG	**Port Moresby**	**5.98**	**236**	P	**P**	**13 45 45.2**	**+0.3**
	9.8nm,0.3s,baz=73,slow=11,SNR=21						
PMG				S	**S**	**13 46 54.0**	**+0.8**
	2.5nm,0.3s,baz=319,slow=24,SNR=4.1						
PMG	**Port Moresby**	**5.98**	**236**	*eP*	**P**	**13 45 42.6**	**-2.4**
PMG				*eS*	**S**	**13 46 53.6**	**+0.5**
KAKA	**Kakadu**	**20.58**	**250**	*eP*	**P**	**13 48 55.1**	**+0.3**
	20nm,0.6s						
WRAB	**Tennant Creek**	**22.15**	**230**	*eP*	**P**	**13 49 11.4**	**+1.0**
WB2	**Warramunga Arr**	**22.15**	**230**	*eP*	**P**	**13 49 10.4**	**-0.1**
WRA	**Warramunga Arr**	**22.16**	**230**	P	**P**	**13 49 11.6**	**+1.0**
	7.6nm,0.9s,mb4.1,baz=55,slow=10,SNR=36						
AS12	**Alice Springs**	**24.82**	**223**	*eP*	**P**	**13 49 36.4**	**-0.2**
	6.8nm,0.9s,mb4.2						
ASAR	**Alice Springs**	**24.82**	**223**	P	**P**	**13 49 36.2**	**-0.3**
	10nm,1.1s,mb4.3,baz=57,slow=8.6,SNR=46						
STKA	**Stephens Creek**	**27.54**	**200**	P	**P**	**13 50 00.8**	**-1.0**
	1.7nm,0.6s,mb3.8,baz=6.1,slow=13,SNR=5.0						
STKA				LR	LR	14 01 15.2	
	comp=Z,78nm,18.8s,MS3.3,baz=24,slow=37						
FITZ	**Fitzroy Crossi**	**28.52**	**243**	*eP*	**P**	**13 50 09.4**	**-1.3**
	5.8nm,0.6s,mb4.5						
FITZ	**Fitzroy Crossi**	**28.52**	**243**	P	**P**	**13 50 09.4**	**-1.4**
	4.7nm,0.6s,mb4.4,baz=55,slow=4.7,SNR=16						
SONM	**Songino Array**	**67.03**	**328**	P	**P**	**13 55 07.8**	**+0.2**
	0.4nm,0.4s,mb3.8,baz=154,slow=6.1,SNR=5.2						
BILL	**Bilibino**	**74.57**	**5**	*eP*	**P**	**13 55 52.9**	**+0.2**
	4.0nm,0.9s,mb4.3						
MKAR	**Makanchi Array**	**80.84**	**319**	P	**P**	**13 56 28.0**	**+0.2**
	0.8nm,0.8s,mb3.7,baz=104,slow=5.0,SNR=4.5						
ZAL	**Zalesovo**	**81.83**	**327**	P	**P**	**13 56 32.1**	**-0.8**
	1.6nm,0.4s,mb4.3,baz=270,slow=4.1,SNR=8.5						
COLA	**College**	**83.23**	**22**	*eP*	**P**	**13 56 38.5**	**-1.3**
ILAR	**Eielson Array**	**83.54**	**22**	P	**P**	**13 56 40.6**	**-0.7**
	2.4nm,0.7s,mb4.4,baz=253,slow=5.5,SNR=26						
BVAR	**Borovoye Array**	**89.84**	**323**	P	**P**	**13 57 11.7**	**-0.6**
	1.1nm,0.7s,mb4.3,baz=104,slow=5.9,SNR=6.4						
NVAR	**Mina Array Bea**	**93.34**	**52**	P	**P**	**13 57 30.2**	**+1.4**
	0.4nm,0.7s,mb3.9,baz=263,slow=7.3,SNR=3.5						
YKA	**Yellowknife Ar**	**96.81**	**28**	P	**P**	**13 57 46.3**	**+2.3**
	0.3nm,0.8s,mb3.8,baz=270,slow=4.8,SNR=7.2						

IDC 02 13:49:25.2±1.8,0.97N×125.96E,mb3.6/4,mb1 3.8/4, mb1mx3.6/15,Error ellipse: s-maj=175.0km s-min=23.2km az=64.0,Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**22.34**	**159**	P	P	13 54 25.7	-0.7
	1.1nm,0.5s,baz=336,slow=11,SNR=16						
ASAR	**Alice Springs**	**25.67**	**163**	P	P	13 54 57.5	-1.3
	0.4nm,0.4s,baz=346,slow=7.5,SNR=12						
STKA	**Stephens Creek**	**35.87**	**157**	P	P	13 56 25.7	-3.3
	1.0nm,0.5s,baz=350,slow=6.1,SNR=4.0						
MKAR	**Makanchi Array**	**59.40**	**327**	P	P	13 59 29.7	-2.2
	0.3nm,0.5s,baz=110,slow=8.8,SNR=3.9						

*NIED **02** 14:07:00,45.00N×148.70E,h104km,Mw4.5 Best double couple: M0 6.19×10^15 NP1:φs112°,δ65°,λ142°. NP2: φs220°,δ56°,λ31°.*
*BJI **02** 14:07:44.5,45.39N×148.41E,h136km,mB4.6,mb4.9*
*MOS **02** 14:07:45.6±1.3,45.52N×148.34E,h150km,mb4.6/17, Error ellipse: s-maj=8.9km s-min=6.2km az=97.7*
*NEIC **02** 14:07:45.3±0.2,45.57N×148.34E,mb4.5/45,Error ellipse: s-maj=6.8km s-min=3.9km az=148.0*
*SKHL **02** 14:07:45.4±0.2,45.35N×148.50E,h117km±15km,mb5.5/3, mbh5.7/1,msh5.5/2*
*IDC **02** 14:07:45.4±0.6,45.61N×148.23E,h125km±4km,mb4.0/23, mb1 4.2/25,mb1mx4.2/27,Error ellipse: s-maj=14.3km s-min=10.2km az=152.0*
*JMA **02** 14:07:45.3±0.5,45.02N×148.70E,h122km,M4.3*

ISC 02 14:07:43.8±0.4,45.37N±0.03×148.50E±0.05,h129km±3km, h131km±4.3km:pP-P,n250,σ1§23/266,mb4.4/76,14C-23D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KUR	**Kuril'sk**	**0.47**	**253**	⇑*iP*	**P**	**14 08 02.8**	**+0.1**
KUR				⇑*iP*		14 08 02.8	
KUR				AMB	AMB	14 08 03.5	
	1μm,0.4s						
KUR				AMB	AMB	14 08 03.5	
	652nm,0.4s						
KUR				AMB	AMB	14 08 03.5	
	7μm,0.4s						
KUR				AMB	AMB	14 08 04.0	
	2μm,1.0s						
KUR				AMB	AMB	14 08 04.0	
	6μm,1.0s						
KUR				AMB	AMB	14 08 04.0	
	18μm,1.0s						
KUR				*eS*	**S**	**14 08 16.5**	**-0.6**
KUR				A		14 08 18.0	
	12μm,0.4s						
KUR				A		14 08 18.0	
	9μm,0.4s						
KUR				A		14 08 19.0	
	58μm,1.5s						
KUR				A		14 08 19.0	
	82μm,1.5s						
KUR	**Kuril'sk**	**0.47**	**253**	⇑*iPN*	**P**	**14 08 02.8**	**+0.1**
KUR				pmax	pmax		
	comp=N,2μm,1.0s						
KUR				pmax	pmax		
	comp=E,6μm,1.0s						
KUR				pmax	pmax		
	comp=Z,18μm,1.0s						
YUK	**Yuzh-Kuril'sk**	**2.31**	**236**	*eP*	**P**	**14 08 22.5**	**+0.4**
YUK				AMB	AMB	14 08 23.8	
	comp=Z,190nm,0.5s						
YUK				AMB	AMB	14 08 23.8	
	comp=Z,420nm,0.5s						
YUK				AMB	AMB	14 08 23.8	
	comp=Z,1μm,0.5s						
YUK				AMB	AMB	14 08 24.0	
	comp=Z,2μm,0.8s						
YUK				AMB	AMB	14 08 24.0	
	comp=Z,3μm,1.0s						
YUK				*i* S	**S**	**14 08 51.4**	**+0.2**
YUK				A		14 08 56.3	
	comp=Z,2μm,1.5s						
YUK				A		14 08 56.3	
	comp=Z,5μm,0.7s						
YUK				A		14 08 57.5	
	comp=Z,3μm,0.5s						
YUK				A		14 08 57.5	
	comp=Z,2μm,0.5s						
YUK				*e*rx	rx	14 11 11.5	
YUK	**Yuzh-Kuril'sk**	**2.31**	**236**	*e*PN	**P**	**14 08 22.5**	**+0.4**
YUK				*i* S	**S**	**14 08 51.4**	**+0.2**
YUK				pmax	pmax		
	comp=N,190nm,0.5s						
YUK				pmax	pmax		
	comp=E,420nm,0.5s						
YUK				pmax	pmax		
	comp=Z,1μm,0.5s						
YUK				pmax	pmax		
	comp=Z,3μm,1.0s						
YUK				pmax	pmax		
	comp=E,2μm,0.8s						
YUK				smax			
	comp=N,2μm,1.5s						
YUK				smax			
	comp=E,5μm,0.7s						
YUK				smax			
	comp=N,3μm,0.5s						
YUK				smax			
	comp=E,2μm,0.5s						
JRA	**Rausu**	**2.81**	**240**	P	**P**	**14 08 29.7**	**+1.1**
NEM2	**Nemuro 2**	**2.82**	**226**	P	**P**	**14 08 28.0**	**-0.8**
NEM2				*eS*	**S**	**14 09 00.5**	**-2.5**
JNK	**Nakash**	**3.24**	**238**	P	**P**	**14 08 35.5**	**+1.1**
JTKR	**Abashiri--Toko**	**3.56**	**248**	P	**P**	**14 08 39.7**	**+1.0**
JAK	**Akkeshi**	**3.62**	**230**	P	**P**	**14 08 39.0**	**-0.5**
JAK				*eS*	**S**	**14 09 20.2**	**-1.9**
JMP	**Maruseppu**	**3.91**	**251**	P	**P**	**14 08 44.6**	**+1.3**
JAR	**Ashorobuto**	**3.98**	**240**	P	**P**	**14 08 45.6**	**+1.4**
JOB	**Onbets**	**4.17**	**235**	P	**P**	**14 08 47.4**	**+0.6**
JOB				*eS*	**S**	**14 09 35.5**	**+0.4**
JSE	**Soyaes**	**4.21**	**266**	P	**P**	**14 08 49.3**	**+2.0**
YSS	**Yuzh-Sakhalins**	**4.29**	**294**	⇓*eP*	**P**	**14 08 49.3**	**+0.8**
YSS				AMB	AMB	14 08 50.0	
	comp=E,90nm,0.4s						
YSS				AMB	AMB	14 08 50.0	
	comp=E,70nm,0.4s						
YSS				AMB	AMB	14 08 50.0	
	comp=E,50nm,0.6s						
YSS				AMB	AMB	14 08 50.6	
	comp=E,100nm,0.4s						
YSS				AMB	AMB	14 08 50.6	
	comp=E,60nm,0.4s						
YSS				AMB	AMB	14 08 50.6	
	comp=E,50nm,0.5s						
YSS				*i* S	**S**	**14 09 39.0**	**+0.9**
YSS				A		14 09 44.0	
	comp=E,1μm,1.6s						
YSS				A		14 09 44.0	
	comp=E,1μm,2.0s						
YSS				A		14 09 44.0	
	comp=E,310nm,1.1s						
YSS				A		14 09 44.0	
	comp=E,470nm,1.1s						
YSS				A		14 09 44.0	
	comp=E,340nm,1.3s						
YSS				A		14 09 44.0	
	comp=E,400nm,1.0s						
YSS				A		14 09 44.0	
	comp=E,610nm,1.0s						
YSS				A		14 09 44.0	
	comp=E,550nm,1.2s						
YSS				*i* rx	rx	14 09 57.0	
YSS				AMS	AMS	14 10 50.0	
	comp=E,400nm,4.0s						
YSS	**Yuzh-Sakhalins**	**4.29**	**294**	⇓*e*PN	**P**	**14 08 49.3**	**+0.8**
YSS				*i* S	**S**	**14 09 39.0**	**+0.9**
YSS				pmax	pmax		
	comp=Z,90nm,0.4s						
YSS				pmax	pmax		
	comp=N,50nm,0.6s						
YSS				pmax	pmax		
	comp=E,70nm,0.4s						
YSS				smax			
	comp=N,400nm,1.0s						
YSS				smax			
	comp=E,610nm,1.0s						
YSS				smax			
	comp=Z,550nm,1.2s						
YSS				smax			
	comp=E,1μm,2.0s						
YSS				MLR	MLR		
	comp=Z,400nm,4.0s						
YSS	**Yuzh-Sakhalins**	**4.29**	**294**	*eP*	**P**	**14 08 48.4**	**-0.1**
JKK2	**Kamakawa 2**	**4.37**	**252**	P	**P**	**14 08 51.4**	**+1.9**
ASAJ	**Asahikawa**	**4.39**	**255**	P	**P**	**14 08 52.0**	**+2.2**
	comp=Z,15nm,0.3s,baz=88,slow=13,SNR=71						
ASAJ				S	**S**	**14 09 43.7**	**+3.3**
	comp=Z,4.0nm,0.3s,baz=195,slow=11,SNR=5.6						
ASAJ	**Asahikawa**	**4.39**	**255**	P	**P**	**14 08 51.8**	**+2.1**
ASAJ	**Asahikawa**	**4.39**	**255**	PN	**P**	**14 08 52.0**	**+2.3**
ASAJ				S	**S**	**14 09 43.7**	**+3.3**
ASAJ				pmax	pmax		
	comp=Z,15nm,0.3s						
ASAJ				smax			
	comp=N,4.0nm,0.3s						
JCH	**Churui**	**4.62**	**235**	P	**P**	**14 08 52.6**	**-0.2**
JCH				*eS*	**S**	**14 09 45.3**	**-0.6**
JWK2	**Keihoku**	**4.66**	**272**	P	**P**	**14 08 56.4**	**+3.1**
JFR	**Furan**	**4.78**	**245**	P	**P**	**14 08 56.8**	**+1.8**
JSS	**Shosan**	**4.82**	**261**	P	**P**	**14 08 58.6**	**+3.0**
JAB	**Ashibetsu**	**4.87**	**250**	P	**P**	**14 08 58.3**	**+2.1**
JEM	**Erimo**	**5.12**	**231**	P	**P**	**14 09 00.1**	**+0.5**
JBT2	**Biratori 2**	**5.13**	**242**	P	**P**	**14 09 00.0**	**+0.4**
JBT2				*eS*	**S**	**14 09 59.3**	**+1.2**
JNBK	**Urakawa-nobuka**	**5.18**	**235**	P	**P**	**14 08 59.2**	**-1.1**
JEW	**Eniwo**	**5.67**	**246**	P	**P**	**14 09 08.6**	**+1.7**
UGL	**Uglegorsk**	**5.74**	**313**	⇓*i*P	**P**	**14 09 09.3**	**+1.5**
UGL				⇓*i*P		14 09 09.3	
UGL				AMB	AMB	14 09 10.0	
	comp=N,92nm,0.5s						
UGL				AMB	AMB	14 09 10.0	
	comp=N,312nm,0.8s						
UGL				*i* S	**S**	**14 10 18.0**	**+5.0**
UGL				A		14 10 21.0	
	comp=N,2μm,5.0s						
UGL				A		14 10 21.0	
	comp=N,2μm,4.0s						
UGL				A		14 10 21.0	
	comp=N,2μm,4.0s						
UGL	**Uglegorsk**	**5.74**	**313**	*i*PN	**P**	**14 09 09.3**	**+1.5**
UGL				pmax	pmax		
	comp=Z,312nm,0.8s						
UGL				pmax	pmax		
	comp=E,92nm,0.5s						
JNB	**Noboribetsu**	**6.12**	**244**	P	**P**	**14 09 12.7**	**-0.3**
JNB				*eS*	**S**	**14 10 19.7**	**-2.5**
JKB	**Kayabe**	**6.44**	**240**	P	**P**	**14 09 16.3**	**-1.1**
JKB				*eS*	**S**	**14 10 24.2**	**-5.8**
JSH	**Shimam**	**6.68**	**249**	P	**P**	**14 09 21.7**	**+1.1**
JYM2	**Yakumo 2**	**6.73**	**244**	P	**P**	**14 09 20.9**	**-0.4**
JYM2				*eS*	**S**	**14 10 35.1**	**-1.8**
TYV	**Tymovskoe**	**6.74**	**327**	*eP*	**P**	**14 09 21.2**	**-0.3**
TYV				AMB	AMB	14 09 27.0	
	comp=E,101nm,0.9s						
JSR	**Shiriuchi**	**7.02**	**240**	P	**P**	**14 09 24.1**	**-1.2**
JSR				*eS*	**S**	**14 10 37.9**	**-6.2**
JTM	**Tenmabayashi**	**7.11**	**232**	P	**P**	**14 09 23.6**	**-2.9**
JTM				*eS*	**S**	**14 10 37.7**	**-8.6**
JANG	**Nango**	**7.16**	**228**	P	**P**	**14 09 23.9**	**-3.2**
JANG				*eS*	**S**	**14 10 39.2**	**-8.2**

comp=N,58nm,10.1s
PET MLR MLR
comp=Z,60nm,13.0s
PET Petropavlovsk 10.13 37 *e*P **P 14 10 06.5 -0.2**
MAJO Matsushiro 11.75 225 *e*PN **P 14 10 29.3 +1.1**
MAJO pmax pmax
comp=Z,4.0nm,0.4s
MAJO Matsushiro 11.75 225 *e*P **P 14 10 29.3 +1.1**
comp=Z,4.1nm,0.4s
MAT Matsushiro 11.75 225 P P **14 10 28.9 +0.7**
MAT *e*S **S 14 12 35.4 -1.8**
MAT Matsushiro 11.75 225 PN **P 14 10 29.0 +0.8**
MAT S **S 14 12 40.0 +2.8**
MAT pmax pmax
comp=Z,6.0nm,0.8s
MAT Matsushiro 11.75 225 P P **14 10 29.0 +0.8**
comp=Z,6.0nm,0.8s
MAT S **S 14 12 40.0 +2.8**
KLR Kul'dur 12.01 295 *e*PN **P 14 10 32.8 +1.3**
KLR pmax pmax
comp=E,24nm,1.4s
KLR pmax pmax
comp=Z,24nm,1.4s
MDJ Mudanjiang 13.41 273 P P **14 10 49.7 0.0**
MDJ AP 14 10 53.2
MDJ AMB AMB
comp=Z,25nm,0.8s
MDJ AMB AMB
comp=Z,132nm,4.6s
MDJ LR LR
comp=N,59nm,21.2s
MDJ LR LR
comp=E,76nm,22.0s
MDJ LR LR
comp=Z,107nm,22.0s
MDJ Mudanjiang 13.41 273 *e*P **P 14 10 50.0 +0.3**
comp=Z,17nm,0.7s
MA2 Magadan 14.29 5 *e*P **P 14 11 01.0 +0.2**
MA2 *e*S **S 14 13 37.0 +0.7**
MA2 pmax pmax
comp=Z,10.0nm,0.8s
MA2 Magadan 14.29 5 *e*P **P 14 10 58.3 -2.5**
comp=Z,14nm,0.8s
ZEA Zeya 16.08 309⇓ *e*P **P 14 11 23.9 +0.5**
ZEA AMB AMB 14 11 25.1
comp=Z,52nm,0.8s
ZEA AMB AMB 14 11 25.1
comp=Z,59nm,1.0s
ZEA AMB AMB 14 11 25.1
comp=Z,70nm,1.0s
ZEA AMB AMB 14 11 27.0
comp=Z,300nm,4.0s
ZEA AMB AMB 14 11 27.0
comp=Z,400nm,6.0s
CN2 Changchun 16.49 273 *e*P **P 14 11 27.6 -1.0**
CN2 AMB AMB
comp=Z,20nm,0.6s
CN2 LR LR
comp=Z,300nm,21.0s
KS15 Wonju Array Si 17.35 250 *e*P **P 14 11 37.6 -1.5**
SEY Seymchan 17.74 6 *e*P **P 14 11 42.9 -0.7**
SEY *e*S **S 14 14 54.1 -0.2**
SEY pmax pmax
comp=N,30nm,0.8s
SEY pmax pmax
comp=Z,60nm,0.8s
FX1 Attu Island--F 17.74 56 P **P 14 11 44.5 +0.8**
comp=Z,8.3nm,0.3s,baz=302,slow=5.5,SNR=11
FX1 Attu Island--F 17.74 56 P **P 14 11 44.5 +0.8**
FX1 pmax pmax
comp=Z,8.0nm,0.3s
FX1 Attu Island--F 17.74 56 *e*P **P 14 11 43.9 +0.2**
INCN Inchon 18.16 252 *e*P **P 14 11 48.7 +0.1**
comp=Z,37nm,0.7s
SNY Shenyang 18.37 268 ⇓P **P 14 11 50.3 -0.6**
SNY LR LR
comp=N,230nm,16.9s
SNY LR LR
comp=Z,260nm,31.6s
CLNS Chul'man 18.64 316 *e*P **P 14 11 56.0 +2.4**
CLNS pmax pmax
comp=Z,40nm,0.8s
CLNS pmax pmax
comp=N,20nm,1.0s
CLNS pmax pmax
comp=E,20nm,1.0s
HIA Hailar 19.82 292 P **P 14 12 02.7 -3.5**
HIA pmax pmax
comp=Z,19nm,0.8s
HIA Hailar 19.82 292 P **P 14 12 02.7 -3.5**
comp=Z,19nm,0.8s
YAK Yakutsk 19.93 334 *e*P **P 14 12 04.4 -2.8**
YAK pmax pmax
comp=Z,264nm,0.8s
YAK Yakutsk 19.93 334 *e*P **P 14 12 04.4 -2.8**
comp=Z,264nm,0.8s
YAK *e* 14 12 10.6
DL2 Dalian 20.89 261 P **P 14 12 18.1 +1.0**
DL2 AMB AMB
comp=Z,30nm,0.6s
BJI Beijing 24.24 269 *e*P **P 14 12 50.2 +0.6**
BJI AMB AMB
comp=Z,22nm,0.8s,mb4.7
BJI LR LR
comp=Z,205nm,29.4s
BJT Baijiatuan 24.26 269 *e*P **P 14 12 50.2 +0.5**
BJT pmax pmax
comp=Z,12nm,0.5s
BJT Baijiatuan 24.26 269 *e*P **P 14 12 50.2 +0.5**
comp=Z,12nm,0.5s,mb4.7
BOD Bodaibo 24.48 313 *e*P **P 14 12 45.7 -6.0**
BILL Bilibino 24.53 16 *e*P **P 14 12 50.4 -1.7**
BILL pmax pmax
comp=Z,8.0nm,1.0s,mb4.2
BILL Bilibino 24.53 16 *e*P **P 14 12 50.4 -1.7**
comp=Z,7.6nm,1.0s,mb4.2
JOW Kunigami 24.57 228 P **P 14 12 54.2 +1.4**
comp=Z,13nm,0.4s,mb4.8,baz=5.9,slow=7.9,SNR=11
TIA Tai'an 25.32 260 *e*P **P 14 13 00.5 +0.6**
TIA AMB AMB
comp=Z,25nm,1.0s,mb4.7
SSE Sheshan 25.61 246 ⇓P **P 14 13 00.8 -1.7**
SSE AMB AMB
comp=Z,29nm,0.7s,mb5.0
SSE AMB AMB
comp=Z,36nm,3.9s
SSE LR LR
comp=N,69nm,20.0s
SSE LR LR
comp=E,28nm,20.0s
SSE LR LR
comp=Z,80nm,20.0s
NJ2 Nanjing 26.52 250 *e*P **P 14 13 10.7 -0.2**
NJ2 AP pP 14 13 40.1 +1.9
NJ2 XP sP 14 13 56.5 +3.3
NJ2 AMB AMB
comp=Z,40nm,0.7s,mb5.2
NJ2 LR LR
comp=N,1μm,27.5s
NJ2 LR LR
comp=E,500nm,26.8s
NJ2 LR LR
comp=Z,990nm,26.5s
HHC Hu-ho-hao-te 27.18 274 ⇓P **P 14 13 17.3 +0.4**
HHC AMB AMB
comp=Z,33nm,1.2s,mb4.8
HHC AMB AMB
comp=Z,69nm,4.4s
TIXI Tiksi 27.98 347 P **P 14 13 20.1 -3.8**
TIXI *e* 14 13 53.6
TIXI pmax pmax
comp=Z,34nm,1.1s,mb5.0
ULN Ulaanbaatar 28.34 290 *e*P **P 14 13 25.8 -1.5**
ULN *e**PP pP 14 13 56.4 +1.6
ULN Ulaanbaatar 28.34 290 *e*P **P 14 13 25.5 -1.7**
comp=Z,6.6nm,1.1s,mb4.3
SONM Songino Array 28.78 290 P **P 14 13 28.9 -2.2**
comp=Z,1.3nm,0.4s,mb4.0,baz=87,slow=8.3,SNR=11
SONM PcP PcP 14 16 37.7 -0.4
comp=Z,1.7nm,0.9s,baz=138,slow=2.4,SNR=4.5
TLY Talaya 29.98 299 *e*P **P 14 13 39.2 -2.7**
TLY pmax pmax
comp=Z,14nm,0.9s,mb4.7
ZAK Zakamensk 30.37 296 *e*P **P 14 13 44.0 -1.3**
ZAK *e* 14 14 29.7
WHN Wuhan 30.47 253 ⇓P **P 14 13 45.8 -0.6**

XAN Xi'an 32.18 263 P **P 14 14 00.7 -0.6**
XAN AMB AMB
comp=Z,28nm,0.8s,mb5.0
ENH Enshi 33.94 257 *e*P **P 14 14 15.6 -0.9**
comp=Z,25nm,0.7s,mb5.1
LZH Lanzhou 34.70 270 *e*P **P 14 14 23.5 +0.6**
GTA Gaotai 36.00 278 *e*P **P 14 14 34.1 +0.3**
GTA AMB AMB
comp=Z,25nm,0.9s,mb4.8
GTA AMB AMB
comp=Z,80nm,3.8s
GTA LR LR
comp=N,71nm,17.5s
GTA LR LR
comp=E,86nm,19.0s
GTA LR LR
comp=Z,124nm,28.1s
IMA Indian Mountai 36.80 35 *e*P **P 14 14 40.5 +0.3**
IMA pmax pmax
comp=Z,80nm,0.6s,mb5.5
IMA Indian Mountai 36.80 35 *e*P **P 14 14 40.5 +0.3**
comp=Z,80nm,0.6s,mb5.5
CD2 Chengdu 37.55 263⇓ *i*P **P 14 14 47.0 +0.1**
CD2 LR LR
comp=N,330nm,19.2s
CD2 LR LR
comp=Z,450nm,21.6s
GYA Guiyang 38.27 255⇓ *i*P **P 14 14 53.2 +0.3**
GYA AMB AMB
comp=Z,20nm,0.5s,mb5.0
COLA College 39.19 37 *c*e P **P 14 14 58.1 -2.1**
COLA College 39.19 37 *e*P **P 14 15 00.5 +0.3**
comp=Z,8.2nm,0.5s,mb4.6
ILAR Eielson Array 39.61 37 P **P 14 15 04.7 +1.1**
comp=Z,4.9nm,1.1s,mb4.1,baz=263,slow=3.9,SNR=64
ILAR ScP 14 20 43.9
comp=Z,1.0nm,0.8s,baz=275,slow=3.9,SNR=9.1
ZAL Zalesovo 40.83 306 P **P 14 15 12.3 -1.4**
comp=Z,0.7nm,0.6s,mb3.5,baz=194,slow=8.3,SNR=2.4
ZAL PcP PcP 14 17 12.5 -0.4
comp=Z,3.3nm,0.6s,baz=292,slow=3.9,SNR=15
ZAL Zalesovo 40.83 306 P **P 14 15 12.3 -1.5**
ZAL PcP PcP 14 17 12.5 -0.4
KMI Kunming 41.82 257 *e*P **P 14 15 22.8 +0.6**
KMI AMB AMB
comp=Z,15nm,1.2s,mb4.5
KMI AMB AMB
comp=Z,65nm,5.6s
KMI LR LR
comp=N,229nm,17.9s
KMI LR LR
comp=E,316nm,19.1s
KMI LR LR
comp=Z,424nm,18.7s
WMQ Urumqi 42.41 290 *e*P **P 14 15 29.0 +2.2**
DAWY Dawson 42.92 38 *e*P **P 14 15 30.8 +0.2**
INK Inuvik 44.52 31 P **P 14 15 43.5 +0.1**
comp=Z,8.0nm,0.5s,mb4.6,baz=305,slow=6.8,SNR=208
INK ScP 14 21 03.5
comp=Z,1.4nm,1.0s,baz=278,slow=7.7,SNR=3.8
INK Inuvik 44.52 31⇓ *e*P **P 14 15 43.2 -0.2**
INK pmax pmax
comp=Z,7.0nm,0.5s
INK Inuvik 44.52 31⇓ *e*P **P 14 15 43.2 -0.2**
comp=Z,7.2nm,0.5s,mb4.6
INK ScP 14 21 03.5
MKAR Makanchi Array 44.70 297 P **P 14 15 43.6 -1.6**
comp=Z,3.9nm,0.7s,mb4.1,baz=75,slow=8.5,SNR=26
MKAR PcP PcP 14 17 25.1 -0.7
comp=Z,5.0nm,0.7s,baz=62,slow=4.6,SNR=9.5
MKAR ScP 14 21 04.7
comp=Z,1.7nm,0.7s,baz=71,slow=6.4,SNR=3.3
KURK Kurchatov 45.44 303 *e*P **P 14 15 48.3 -2.7**
LSA Lhasa 47.12 271 P **P 14 16 06.2 +1.8**
LSA Lhasa 47.12 271 *e*P **P 14 16 05.9 +1.5**
LSA pmax pmax
comp=Z,8.0nm,0.7s,mb4.5
LSA Lhasa 47.12 271 *e*P **P 14 16 05.9 +1.5**
comp=Z,7.7nm,0.7s,mb4.4
CM31 Chiang Mai Arr 48.91 253 *e*P **P 14 16 18.2 -0.3**
comp=Z,5.1nm,0.5s,mb4.4
CMAR Chiang Mai Arr 48.91 253 P **P 14 16 18.9 +0.4**
comp=Z,4.7nm,0.6s,mb4.3,baz=40,slow=7.2,SNR=17
VOSK Vostochnaya 49.03 308 P **P 14 16 16.2 -2.7**
VOSK pmax pmax
comp=Z,3.0nm,0.9s,mb3.9
SHL Shillong 49.10 266⇓ *i*P **P 14 16 20.0 +0.1**
BVA0 Borovoye Array 49.23 309 *i* P **P 14 16 18.1 -2.4**
BRVK Borovoye 49.28 309 *e*P **P 14 16 18.2 -2.6**
ZRNK Zerenda 50.02 309 *e*P **P 14 16 23.7 -2.8**
GUN Gumba 51.89 273 *e*P **P 14 16 41.3 +0.3**
comp=Z,85nm,0.4s
KKN Kakani 52.39 273 *e*P **P 14 16 44.7 0.0**
comp=Z,51nm,0.6s,mb5.3
KKN Kakani 52.39 273 *e*P **P 14 16 44.7 0.0**
KKN pmax pmax
comp=Z,25nm,0.6s,mb5.0
DMN Daman 52.62 273 *e*P **P 14 16 46.8 +0.4**
comp=Z,41nm,0.4s,mb5.5
GKN Gorkha 52.71 274 *e*P **P 14 16 47.1 0.0**
comp=Z,66nm,0.5s
DANN Dangsing 53.12 275 *e*P **P 14 16 50.8 +0.7**
RES Resolute Bay 53.13 17 *e*P **P 14 16 47.2 -2.4**
RES pmax pmax
comp=Z,6.0nm,0.6s,mb4.5
RES Resolute Bay 53.13 17 *e*P **P 14 16 47.2 -2.4**
comp=Z,5.6nm,0.6s,mb4.5
KOLN Koldanda 53.58 274 *e*P **P 14 16 53.7 +0.2**
KKAR Karatay Array 53.82 297 *e*P **P 14 16 53.4 -1.6**
ARU Arti 53.83 317 *e*P **P 14 16 51.4 -3.5**
ARU pmax pmax
comp=Z,5.0nm,0.7s,mb4.3
ARU Arti 53.83 317 *e*P **P 14 16 51.4 -3.5**
comp=Z,5.3nm,0.7s,mb4.4
YKW3 Yellowknife Ar 53.88 35 *e*P **P 14 16 54.7 -0.5**
YKA Yellowknife Ar 53.92 35 P **P 14 16 54.8 -0.7**
comp=Z,2.8nm,0.7s,mb4.1,baz=301,slow=6.8,SNR=54
YKA pP pP 14 17 24.0 -1.9
comp=Z,4.0nm,0.9s,baz=298,slow=6.8,SNR=6.5
YKA ScP 14 21 44.9
comp=Z,0.3nm,0.7s,baz=296,slow=4.3,SNR=6.1
YKA Yellowknife Ar 53.92 35 P **P 14 16 54.8 -0.7**
YKA pP pP 14 17 24.1 -1.9
YKA ScP 14 21 44.9
AB31 Akbulak array 56.81 308 P **P 14 17 14.0 -2.5**
AB31 pmax pmax
comp=Z,3.0nm,0.6s,mb4.3
NDI New Delhi 57.49 279 *e* **P 14 17 19.0 -2.6**
ARCES ARCESS Array B 58.06 340 P **P 14 17 21.9 -3.1**
comp=Z,2.8nm,0.8s,mb4.1,baz=41,slow=8.3,SNR=11
ARCES PcP PcP 14 18 14.4 -0.7
comp=Z,1.5nm,0.6s,baz=59,slow=3.7,SNR=6.0
ARCES ARCESS Array B 58.06 340 P **P 14 17 21.9 -3.1**
ARCES PcP PcP 14 18 14.4 -0.7
NLW Nelson Butte 58.90 52 *e*P **P 14 17 31.1 0.0**
JOF Joensuu 61.10 332 ep **P 14 17 42.6 -3.3**
KAF Kangasniemi 63.29 334 ep **P 14 17 57.2 -3.3**
FINES FINESS Array B 63.87 333 P **P 14 18 00.9 -3.2**
comp=Z,4.4nm,0.6s,mb4.5,baz=44,slow=7.1,SNR=27
FCC Fort Churchill 64.14 31 *e*P **P 14 18 04.9 -1.0**
FCC pmax pmax
comp=Z,5.0nm,0.8s,mb4.4
FCC Fort Churchill 64.14 31 *e*P **P 14 18 04.9 -1.0**
comp=Z,4.5nm,0.8s,mb4.3
OBN Obninsk 64.58 324⇑ *e*P **P 14 18 06.0 -2.8**
OBN *e**PP pP 14 18 41.0 +0.7
OBN pmax pmax
comp=Z,18nm,1.4s,mb4.7
BOZ Bozeman (W) 65.12 50 *e*P **P 14 18 13.2 +0.7**
BOZ pmax pmax
comp=Z,2.0nm,0.5s,mb4.2
BOZ Bozeman (W) 65.12 50 *e*P **P 14 18 13.2 +0.6**
comp=Z,2.4nm,0.5s,mb4.3
CTA Charters Tower 65.18 182 P **P 14 18 12.8 -0.5**
comp=Z,7.1nm,1.1s,mb4.4,baz=304,slow=7.3,SNR=3.2
CTA Charters Tower 65.18 182 P **P 14 18 12.8 -0.5**
NVAR Mina Array Bea 65.91 59 P **P 14 18 12.8 +0.5**
comp=Z,1.8nm,0.6s,mb4.1,baz=306,slow=5.8,SNR=19
NVAR pP pP 14 18 48.8 -0.4
comp=Z,1.1nm,0.6s,baz=302,slow=5.6,SNR=3.5
WRA Warramunga Arr 66.27 195 P **P 14 18 20.6 +0.4**
comp=Z,2.3nm,0.6s,mb4.2,baz=13,slow=6.9,SNR=2.4
PDAR Pinedale Array 68.13 51 P **P 14 18 32.0 +0.5**
comp=Z,1.5nm,0.5s,mb4.0,baz=242,slow=0.7,SNR=14
PDAR pP pP 14 19 03.0 -0.2
comp=Z,1.6nm,0.7s,baz=315,slow=4.2,SNR=4.2

NB2 NORSAR Subarra 68.44 339 P **P 14 18 30.3 -2.8**
comp=Z,2.0nm,0.5s,mb4.1,baz=30,slow=6.5
NOA NORSAR Array B 68.44 339 P **P 14 18 30.8 -2.3**
comp=Z,3.6nm,0.5s,mb4.4,baz=30,slow=6.4,SNR=17
GOF Gofitskoye 68.46 313⇓ *i*P **P 14 18 33.0 -0.5**
GOF pmax pmax
comp=Z,30nm,1.0s,mb5.0
KIV Kislovodsk 69.40 312 *e*P **P 14 18 37.5 -1.8**
KIV *e**PP pP 14 19 15.1 +4.0
KIV pmax pmax
comp=Z,17nm,0.7s,mb4.9
KIV Kislovodsk 69.40 312 *e*P **P 14 18 38.2 -1.1**
comp=Z,17nm,0.7s,mb4.9
ULM Lac du Bonnet 69.63 38 P **P 14 18 40.0 -0.6**
comp=Z,2.7nm,0.6s,mb4.2,baz=307,slow=4.2,SNR=6.6
ULM pP pP 14 19 10.8 -1.6
comp=Z,1.9nm,0.5s,baz=253,slow=8.8,SNR=3.1
ASAR Alice Springs 69.98 194 P **P 14 18 43.5 +0.3**
comp=Z,4.0nm,0.5s,mb4.4,baz=9.2,slow=4.7,SNR=4.1
SRU San Rafael 70.05 54 *e*P **P 14 18 43.9 +0.6**
AKASG Malin Array Be 70.84 324 P **P 14 18 45.3 -2.6**
comp=Z,1.9nm,0.5s,mb4.1,baz=35,slow=5.9,SNR=15
GNI Garni 70.91 308⇓ *e*P **P 14 18 47.3 -1.2**
GNI pmax pmax
comp=Z,15nm,1.4s
PV10 Paradox Valley 71.40 54 *e*P **P 14 18 52.6 +1.2**
PV01 Paradox Valley 71.83 54 *e*P **P 14 18 55.0 +1.0**
ANMO Albuquerque 75.27 55⇑ *e*P **P 14 19 10.2 -3.7**
CRVS Cervenica-Dubn 75.36 327 *e*P **P 14 19 12.0 -2.1**
SCHQ Schefferville 75.77 20 P **P 14 19 16.1 -0.2**
comp=Z,4.1nm,0.6s,mb4.2,baz=105,slow=18,SNR=14
CLL Collm 76.31 333⇑ P **P 14 19 18.8 -0.6**
comp=Z,logA/T=1.2,mb4.6
CLL Collm 76.31 333⇑ *i*P **P 14 19 18.8 -0.6**
CLL pmax pmax
comp=Z,10.0nm,0.6s,mb4.6
CLL Collm 76.31 333⇑ *i*P **P 14 19 18.8 -0.6**
comp=Z,10.0nm,0.6s,mb4.6
BRG Berggiesshubel 76.38 332 P **P 14 19 19.8 0.0**
BRG pmax pmax
comp=Z,3.0nm,1.1s,mb3.8
BRG Berggiesshubel 76.38 332 P **P 14 19 19.8 0.0**
comp=Z,3.4nm,1.1s,mb3.9
VYHS Vyhne 76.68 328 *e*P **P 14 19 21.6 0.0**
VYHS *e* 14 19 31.4
BRTR Keskin Array B 77.12 314 P **P 14 19 24.1 -0.1**
comp=Z,2.0nm,0.5s,mb4.0,baz=72,slow=3.9,SNR=18
MOX Moxa 77.33 334 *e*P **P 14 19 24.0 -1.1**
GERES GERESS Array B 78.21 331 P **P 14 19 29.2 -0.7**
comp=Z,1.3nm,0.4s,mb3.9,baz=41,slow=5.6,SNR=28
GRA1 Grafenberg Arr 78.28 333 *e*P **P 14 19 29.8 -0.6**
comp=Z,12nm,1.1s,mb4.4
GRF Grafenberg Arr 78.28 333 *e*P **P 14 19 29.8 -0.6**
GRF pmax pmax
comp=Z,12nm,1.1s,mb4.4
HASS Wahat al Ahsa' 78.32 294 P **P 14 19 30.6 -0.5**
DLF Lyons Farm 79.41 345 *e*P **P 14 19 36.7 +0.3**
DCN Croghan 79.50 346 *e*P **P 14 19 37.2 +0.3**
BAIF Baives 80.02 338 *e*P **P 14 19 40.4 +0.7**
CDF Champ du Feu 80.63 335 *e*P **P 14 19 43.9 +0.9**
comp=Z,12nm,1.1s,mb4.1
TXAR Lajitas Array 80.95 57 P **P 14 19 46.2 +1.1**
comp=Z,1.4nm,0.6s,mb3.8,baz=299,slow=4.1,SNR=25
TXAR pP pP 14 20 16.3 -1.6
comp=Z,2.3nm,0.5s,baz=299,slow=4.0,SNR=6.3
HAU Haudompre 81.27 335 *e*P **P 14 19 47.1 +0.7**
comp=Z,9.0nm,0.8s,mb4.2
HAU *e*R
comp=Z,66nm,22.0s
HILS Ha'il 81.70 301 P **P 14 19 50.3 +1.2**
ARSS Ar Rass 81.91 299 P **P 14 19 50.6 +0.4**
MZLS Mizel 82.01 296 P **P 14 19 51.5 +0.8**
FLN La Foliniere 82.41 340 *e*P **P 14 19 51.9 -0.4**
comp=Z,6.4nm,0.6s,mb4.2
FLN *e*R
comp=Z,96nm,22.1s
LDF La Druitiere 82.48 340 *e*P **P 14 19 52.4 -0.2**
LOR Lormes 82.65 337 *e*P **P 14 19 54.8 +1.2**
LOR *e*R
comp=Z,54nm,19.7s
GRR Gorron 82.85 340 *e*P **P 14 19 54.5 0.0**
comp=Z,15nm,0.6s,mb4.6
SSF Saint Saulge 82.94 337 *e*P **P 14 19 55.2 +0.2**
comp=Z,8.1nm,0.9s,mb4.1
SMF Signal de Mont 83.23 336 *e*P **P 14 19 57.0 +0.5**
comp=Z,49nm,1.2s,mb4.8
AVF Avril sur Loir 83.23 337 *e*P **P 14 19 57.0 +0.5**
comp=Z,4.7nm,0.5s,mb4.2
LPL La Plagne 83.39 334 *e*P **P 14 19 58.2 +0.9**
comp=Z,7.3nm,0.8s,mb4.1
LPG La Plagne 83.40 334 *e*P **P 14 19 58.4 +1.0**
comp=Z,8.4nm,0.7s,mb4.3
ROSF Rostrenen 83.46 341 *e*P **P 14 19 57.8 +0.2**
comp=Z,17nm,0.9s,mb4.5
QUIF Quistinic 83.83 341 *e*P **P 14 20 00.0 +0.6**
comp=Z,14nm,0.7s,mb4.5
TCF Toulx Ste Croi 84.01 337 *e*P **P 14 20 01.3 +1.0**
comp=Z,7.3nm,0.8s,mb4.2
JMQS Jabal Moqyreh 84.08 306 P **P 14 20 02.5 +1.4**
MBDF Montbardon 84.09 334 *e*P **P 14 20 01.9 +1.2**
ORIF Oris-en-Rattie 84.19 334 *e*P **P 14 20 01.1 -0.2**
comp=Z,8.2nm,0.8s,mb4.2
ORIF *e*R
comp=Z,30nm,21.5s
TBKS Tabuk 84.19 305 P **P 14 20 03.0 +1.4**
ALWS Ilw as Safayha 84.23 306 P **P 14 20 03.2 +1.4**
JMOS Jabal al Moall 84.31 306 P **P 14 20 03.8 +1.6**
MFF Saint Martin d 84.34 339 *e*P **P 14 20 02.5 +0.6**
comp=Z,8.0nm,0.8s,mb4.3
KBRS Khaybar 84.40 301 P **P 14 20 04.3 +1.5**
HAQS Haql 84.50 306 P **P 14 20 04.5 +1.3**
VIVF Saint-Julien-l 84.61 335 *e*P **P 14 20 04.0 +0.6**
comp=Z,11nm,0.9s,mb4.3
SBF Sospel 84.65 333 *e*P **P 14 20 04.7 +1.1**
BDAS Al Bad' 84.87 306 P **P 14 20 06.1 +1.1**
AYUS 'Aynunah 84.96 305 P **P 14 20 06.6 +1.1**
RJF Les Rejaudoux 85.10 337 *e*P **P 14 20 06.8 +1.0**
comp=Z,20nm,1.1s,mb4.5
RJF *e*R
comp=Z,107nm,23.0s
FRF La Foret Royal 85.18 333 *e*P **P 14 20 06.6 +0.4**
CAF Calviac 85.30 337 *e*P **P 14 20 08.1 +1.3**
PGF Pioggiola 85.31 331 *e*P **P 14 20 07.2 +0.3**
comp=Z,38nm,1.2s,mb4.7
LMR La Mourre 85.42 333 *e*P **P 14 20 07.2 -0.2**
comp=Z,8.0nm,0.7s,mb4.2
LASF Ste Croix 85.56 335 *e*P **P 14 20 09.5 +1.4**
LFF La Frestale 85.65 338 *e*P **P 14 20 09.7 +1.2**
WES Weston 85.68 28 *e*P **P 14 20 09.2 +0.5**
comp=Z,13nm,0.8s,mb4.7
SWET Sewanee 85.90 42 *e*P **P 14 20 09.0 -1.0**
TATS Tathlith 86.36 294 P **P 14 20 13.7 +1.2**
EPF Esparros 87.53 337 *e*P **P 14 20 17.9 +0.3**
ETSF Etsaut 87.89 338 *e*P **P 14 20 19.7 +0.3**
comp=Z,7.4nm,0.8s,mb4.3
ESDC Sonseca Array 91.80 339 P **P 14 20 37.4 -0.4**
comp=Z,2.1nm,1.0s,mb4.1,baz=12,slow=4.5,SNR=4.5
EVO Evora 93.84 342 *e*P **P 14 20 48.4 +1.3**
MIR Mirnyy 119.35 202⇑ *e*P Pdif 14 22 45.0 +5.3
MIR pmax pmax
comp=Z,170nm,0.4s
DBIC Dimbokro 122.96 328 PKP PKPdf 14 26 26.3 +1.4
comp=Z,2.1nm,0.6s,baz=64,slow=5.3,SNR=4.0
DBIC Dimbokro 122.96 328 PKIKP PKPdf 14 26 26.3 +1.3
DBIC pmax pmax
comp=Z,2.0nm,0.6s
BDFB Brasilia 147.26 30 PKPbc PKPdf 14 27 14.5 +5.0
comp=Z,4.6nm,0.7s,baz=274,slow=1.3,SNR=7.6
BDFB pPKPbc 14 27 47.9
comp=Z,5.5nm,0.8s,baz=358,slow=2.7,SNR=4.4
BDFB Brasilia 147.26 30 PKP2 PKPab 14 27 14.5 -1.8
BDFB pmax pmax
comp=Z,5.0nm,0.7s
BDFB pmax pmax
comp=N,6.0nm,0.8s
SNAA Sanae 150.29 198⇓ *i* PKPdf 14 27 20.8 +8.1
SNAA Sanae 150.29 198⇓ *i* 14 27 52.7
PLCA Paso Flores 151.29 95 *e*PKPbc PKPdf 14 27 23.9 +8.8
VNA2 Neumayer--Watz 151.81 197⇑ *i* PKPdf 14 27 25.7 +11
VNA2 Neumayer--Watz 151.81 197⇑ *i* 14 27 57.7
CPUP Villa Florida 151.92 56 PKPbc PKPdf 14 27 25.6 +9.1
comp=N,0.8nm,0.7s,baz=344,slow=7.4,SNR=3.1
CPUP Villa Florida 151.92 56 PKIKP PKPdf 14 27 25.6 +9.1
CPUP pmax pmax
comp=Z,1.0nm,0.7s

VNA3	Neumayer Olymp	151.99	195	⇑	*i*	PKPdf 14 27 25.7 +10
VNA3	Neumayer Olymp	151.99	195	⇓	*i*	14 27 58.0
VNA1	Neumayer--Stat	152.21	196	⇑	*i*	PKPdf 14 27 24.3 +8.7
VNA1	Neumayer--Stat	152.21	196	⇓	*i*	14 27 59.0

DJA ***02*** *14:08:11.4±0.9, 11.66S×120.35E, h33km, MD5.1/3, Error ellipse: s-maj=82.7km s-min=17.8km az=31.0*

MOS ***02*** *14:08:12.7±1.3, 9.61S×120.82E, h33km, mb5.1/15, Error ellipse: s-maj=14.3km s-min=9.1km az=109.2*

NEIC ***02*** *14:08:13.2±2.0, 9.68S×120.92E, h27km±14km, mb4.9/14, MS4.4/3, Error ellipse: s-maj=11.4km s-min=5.8km az=217.0*

SYO ***02*** *14:08:13.2, 9.68S×120.92E, h27km, MB4.9, MS4.4*

BJI ***02*** *14:08:13.2, 9.70S×120.90E, h26km, mB5.1, mb5.0, Ms4.4, Msz4.3*

HRVD ***02*** *14:08:13.2±0.3, 9.95S×120.78E, h33km, MW5.1/53, Centroid moment Tensor Solution. LP body waves: s30,c42;Mantle waves: s53,c83; Half duration: 1s1 Moment tensor: Scale 10^16 Nm; Mrr 0.34±.21; Mθθ -0.48±.13; Mϕϕ 0.14±.16; Mrθ 4.85±.14; Mθϕ -0.03±.09; Mϕr 0.95±.20; Best double couple: Mo 4.96×10^16 NP1: ϕs 283°, δ3°, λ115°. NP2: ϕs 79°, δ88°, λ89°. Principal axes: T 4.9, Plg47°, Azm348°; N .12, Plg1°, Azm79°; P -5.02, Plg43°, Azm170°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

IDC ***02*** *14:08:15.2±1.7, 9.85S×120.62E, h42km±14km, mb4.6/12, mb1 4.8/15, mb1mx4.7/17, ML5.0/3, MS4.0/14, Ms1 4.0/14, ms1mx3.9/17 Error ellipse: s-maj=22.8km s-min=11.3km az=70.0*

ISC 02 14:08:11.9±0.8, 9.73S±0.04×121.05E±0.05, h34km±8km, h35km±3.5km; pP-P, n134, σ1§24/126, mb4.9/41, MS4.2/27, 18C-12D, Savu Sea

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
KEDI	**Kedomdong**	**5.03**	**284**	⇓	*e*Pn	**P**	**14 09 28.5**	**+1.6**
KEDI				⇑	*e*Sn	**S**	**14 10 25.3**	**+0.7**
RATI	**Rata**	**5.54**	**280**	⇓	*e*Pn	**P**	**14 09 33.5**	**-0.5**
RATI				⇑	*e*Sn	**S**	**14 10 32.9**	**-4.5**
INGI	**Ingas**	**5.90**	**278**	⇑	*e*Pn	**P**	**14 09 37.2**	**-1.9**
INGI				⇑	*e*Sn	**S**	**14 10 40.2**	**-6.2**
INGI	**Ingas**	**5.90**	**278**	⇑	*e*Pn	**P**	**14 09 37.2**	**-1.9**
INGI					*e*Sn	**S**	**14 10 39.6**	**-6.8**
KELI	**Kelakatan**	**6.65**	**283**	⇑	*e*Pn	**P**	**14 09 48.4**	**-1.3**
KELI				⇑	*e*Sn	**S**	**14 10 59.6**	**-5.6**
KELI	**Kelakatan**	**6.65**	**283**	⇑	*e*Pn	**P**	**14 09 48.4**	**-1.3**
KELI					*e*Sn	**S**	**14 10 58.7**	**-6.5**
FITZ	**Fitzroy Crossi**	**9.44**	**152**		*e*P	**P**	**14 10 27.7**	**-0.8**
	85nm,0.4s							
FITZ					*e*		14 10 36.8	
FITZ					*e*S	**S**	**14 12 07.0**	**-7.6**
FITZ	**Fitzroy Crossi**	**9.44**	**152**		P	**P**	**14 10 28.0**	**-0.5**
	20nm,0.3s,baz=351,slow=8.3,SNR=542							
FITZ					S	**S**	**14 12 03.8**	**-11**
	10nm,0.3s,baz=140,slow=1.9,SNR=4.0							
KAKA	**Kakadu**	**11.52**	**106**		*e*P	**P**	**14 10 59.7**	**+2.6**
	41nm,0.6s							
KAKA					*e*S	**S**	**14 13 02.7**	**-2.9**
WRA	**Warramunga Arr**	**16.36**	**130**		P	**P**	**14 12 00.3**	**-0.5**
	6.3nm,0.3s,baz=304,slow=14,SNR=106							
WRA					S	**S**	**14 14 51.8**	**-8.9**
	1.3nm,0.3s,baz=293,slow=24,SNR=3.6							
WRA					LR	LR	14 19 21.5	
	comp=Z,313nm,19.4s,baz=310,slow=40							
WRAB	**Tennant Creek**	**16.37**	**130**		*e*P	**P**	**14 12 00.4**	**-0.4**
	152nm,0.6s							
WB2	**Warramunga Arr**	**16.37**	**130**		*e*P	**P**	**14 12 00.9**	**+0.1**
WB2					*e*S	**S**	**14 14 51.6**	**-9.3**
KKM	**Kota Kinabalu**	**16.39**	**343**	⇓	*e*P	**P**	**14 12 05.4**	**+4.3**
AS12	**Alice Springs**	**18.52**	**140**		*e*P	**P**	**14 12 29.3**	**+1.6**
	31nm,0.5s							
ASAR	**Alice Springs**	**18.52**	**140**		P	**P**	**14 12 28.9**	**+1.2**
	3.2nm,0.3s,baz=312,slow=12,SNR=184							
ASAR					S	**S**	**14 15 47.3**	**-2.4**
	1.0nm,0.3s,baz=315,slow=24,SNR=5.9							
ASAR					LR	LR	14 20 58.6	
	comp=Z,498nm,19.4s,baz=310,slow=41							
KGM	**Kluang**	**21.16**	**303**	⇑	*e*P	**P**	**14 12 59.0**	**+2.4**
KLBR	**Kellerberrin**	**21.97**	**188**		*e*P	**P**	**14 13 03.5**	**-1.0**
	105nm,1.3s,mb5.1							
KLBR					*e*S	**S**	**14 16 48.8**	**-11**
MUN	**Mundaring**	**22.59**	**191**		*e*P	**P**	**14 13 09.9**	**-0.9**
	6.5nm,0.3s,mb4.5							
MUN					*e*S	**S**	**14 17 06.6**	**-4.8**
NWAO	**Narrogin (SRO)**	**23.35**	**188**		P	**P**	**14 13 18.0**	**-0.2**
	24nm,0.6s,mb4.8,baz=6.6,slow=10,SNR=34							
NWAO					S	**S**	**14 17 27.1**	**+2.1**
	28nm,0.5s,baz=301,slow=11,SNR=8.1							
NWAO	**Narrogin (SRO)**	**23.35**	**188**		*e*P	**P**	**14 13 18.0**	**-0.2**
NWAO					pmax	pmax		
	comp=Z,20nm,0.6s							
NWAO	**Narrogin (SRO)**	**23.35**	**188**		*e*P	**P**	**14 13 18.0**	**-0.3**
	comp=Z,20nm,0.6s,mb4.7							
TGY	**Tagaytay City**	**23.68**	**360**		LR	LR	14 23 23.4	
	comp=Z,451nm,21.8s,MS3.9,baz=229,slow=38							
IPM	**Ipoh**	**24.50**	**305**	⇓	*e*P	**P**	**14 13 30.3**	**+0.8**
PMG	**Port Moresby**	**25.75**	**91**		P	**P**	**14 13 45.8**	**+4.4**
	comp=Z,7.6nm,0.6s,mb4.4,baz=261,slow=9.9,SNR=5.9							
PMG					LR	LR	14 26 13.0	
	comp=Z,572nm,19.3s,MS4.1,baz=94,slow=41							
CTA	**Charters Tower**	**26.41**	**116**		*e*P	**P**	**14 13 50.8**	**+3.3**
	comp=Z,6.3nm,0.6s,mb4.3							
CTA					*e*S	S	14 19 15.1	+59
CTA	**Charters Tower**	**26.41**	**116**		P	**P**	**14 13 51.2**	**+3.8**
	comp=Z,9.1nm,0.7s,mb4.4,baz=290,slow=8.5,SNR=9.7							
CTA					LR	LR	14 25 58.3	
	comp=Z,542nm,19.4s,MS4.1,baz=140,slow=40							
CTAO	**Charters Tower**	**26.41**	**116**		*e*P	**P**	**14 13 50.1**	**+2.6**
STKA	**Stephens Creek**	**29.12**	**142**		*e*P	**P**	**14 14 13.4**	**+1.5**
	comp=Z,16nm,0.5s,mb5.0							
STKA	**Stephens Creek**	**29.12**	**142**		P	**P**	**14 14 13.6**	**+1.7**
	comp=Z,22nm,0.7s,mb5.0,baz=313,slow=8.9,SNR=63							
STKA					PcP	PcP	14 17 20.6	+1.2
	comp=Z,4.1nm,0.5s,baz=345,slow=5.9,SNR=3.7							
STKA					LR	LR	14 25 53.3	
	comp=Z,640nm,21.9s,MS4.2,baz=322,slow=36							
QIZ	**Qiongzhong**	**30.64**	**339**		P	**P**	**14 14 26.4**	**+0.9**
QIZ					S	**S**	**14 19 24.1**	**-0.1**
QIZ					LR	LR		
	comp=N,252nm,20.8s							
QIZ					LR	LR		
	comp=E,206nm,26.1s							
QIZ					LR	LR		
	comp=Z,548nm,22.8s,MS4.2							
KKTK	**Khon Kaen**	**31.56**	**325**		P	**P**	**14 14 32.0**	**-1.7**
BDT	**Bhumibol Dam**	**34.54**	**321**		P	**P**	**14 15 02.0**	**+2.5**
NANT	**Nan**	**34.73**	**325**	⇓	P	**P**	**14 15 02.8**	**+1.7**
CM31	**Chiang Mai Arr**	**35.50**	**322**		*e*P	**P**	**14 15 07.1**	**-0.6**
	comp=Z,3.7nm,0.4s,mb4.7							
CMAR	**Chiang Mai Arr**	**35.50**	**322**		P	**P**	**14 15 07.2**	**-0.5**
	comp=Z,3.4nm,0.5s,mb4.5,baz=153,slow=7.1,SNR=19							
CMAR					ScP		14 21 19.6	
	comp=Z,2.5nm,0.8s,baz=169,slow=3.2,SNR=15							
CMAR					LR	LR	14 31 28.5	
	comp=Z,311nm,18.1s,MS4.1,baz=140,slow=39							
CMAR	**Chiang Mai Arr**	**35.50**	**322**		P	**P**	**14 15 07.2**	**-0.5**
CMAR					ScP		14 21 19.6	
CMAR					LR	LR	14 31 28.5	
CHG	**Chiang Mai**	**35.77**	**322**		P	**P**	**14 15 10.5**	**+0.5**
CHRT	**Chiangrai**	**36.10**	**325**	⇓	P	**P**	**14 15 13.5**	**+0.7**
JOW	**Kunigami**	**37.01**	**11**		LR	LR	14 29 35.0	
	comp=Z,269nm,21.7s,MS4.0,baz=352,slow=34							
KMI	**Kunming**	**38.97**	**333**		*e*P	**P**	**14 15 38.7**	**+2.0**
KMI					AP	pP	14 15 47.8	+1.2
KMI					XP	sP	14 15 50.7	-0.2
KMI					PP	PP	14 17 09.8	-0.4
KMI					S	**S**	**14 21 38.2**	**+5.3**
KMI					XS		14 21 46.2	
KMI					SS	SS	14 24 19.9	+2.6
KMI					AMB	AMB		
	comp=Z,15nm,1.8s,mb4.4							
KMI					AMB	AMB		
	comp=Z,169nm,4.6s							
KMI					LR	LR		
	comp=N,234nm,15.4s,MS4.3							
KMI					LR	LR		
	comp=E,316nm,20.1s,MS4.3							
KMI					LR	LR		
	comp=Z,424nm,18.5s,MS4.3							
SSE	**Sheshan**	**40.59**	**0**	⇑	P	**P**	**14 15 50.4**	**+0.3**
SSE					S	**S**	**14 21 57.5**	**+0.4**
SSE					AMB	AMB		
	comp=Z,27nm,0.7s,mb5.0							
SSE					AMB	AMB		
	comp=Z,83nm,8.9s							
SSE					LR	LR		
	comp=N,252nm,15.0s,MS4.2							
SSE					LR	LR		
	comp=E,121nm,15.0s,MS4.2							
SSE					LR	LR		
	comp=Z,324nm,15.0s,MS4.3							
NJ2	**Nanjing**	**41.59**	**357**		*e*P	**P**	**14 15 59.0**	**+0.5**
NJ2					AMB	AMB		
	comp=Z,20nm,0.8s,mb4.8							
XAN	**Xi'an**	**45.02**	**346**		P	**P**	**14 16 26.0**	**-0.2**
XAN					AP	pP	14 16 34.2	-2.1
XAN					AMB	AMB		
	comp=Z,7.0nm,0.7s,mb4.6							
LZH	**Lanzhou**	**48.37**	**341**		*e*P	**P**	**14 16 53.3**	**+0.7**
LZH					AP	pP	14 17 00.3	-2.3
LZH					XP	sP	14 17 03.1	-3.7
LZH					PP	PP	14 18 43.0	-1.7
LZH					*e*S	**S**	**14 23 49.0**	**-0.5**
LZH					SS	SS	14 27 12.0	-2.2
LZH					AMB	AMB		
	comp=Z,57nm,1.7s,mb5.3							
LZH					AMB	AMB		
	comp=Z,150nm,4.0s							
LZH					LR	LR		
	comp=N,212nm,14.6s							
LZH					LR	LR		
	comp=Z,492nm,18.8s,MS4.5							
LSA	**Lhasa**	**48.64**	**325**		*e*P	**P**	**14 16 53.8**	**-0.9**
LSA					pmax	pmax		
	comp=Z,8.0nm,0.6s,mb4.9							
LSA	**Lhasa**	**48.64**	**325**		*e*P	**P**	**14 16 53.8**	**-0.9**
	comp=Z,7.7nm,0.6s,mb4.9							
BJT	**Baijiatuao**	**49.70**	**355**		*e*P	**P**	**14 17 01.5**	**-1.3**
BJT					pmax	pmax		
	comp=Z,11nm,0.4s							
BJT	**Baijiatuao**	**49.70**	**355**		*e*P	**P**	**14 17 01.5**	**-1.3**
	comp=Z,11nm,0.4s,mb5.2							
BJI	**Beijing**	**49.72**	**355**		*e*P	**P**	**14 17 02.3**	**-0.6**
BJI					AMB	AMB		
	comp=Z,11nm,0.5s,mb5.1							
HYB	**Hyderabad**	**49.91**	**303**		*i* P	**P**	**14 17 02.0**	**-2.6**
HYB					*e*		14 18 03.5	
GTA	**Gaotai**	**52.72**	**339**	⇓	P	**P**	**14 17 26.4**	**+0.8**
GTA					AP	pP	14 17 36.9	+1.2
GTA					XP	sP	14 17 41.2	+1.4
GTA					AMB	AMB		
	comp=Z,16nm,1.2s,mb4.8							
GTA					AMB	AMB		
	comp=Z,95nm,4.6s							
GTA					LR	LR		
	comp=N,71nm,17.5s,MS4.0							
GTA					LR	LR		
	comp=E,86nm,18.6s,MS4.0							
GTA					LR	LR		
	comp=Z,115nm,22.8s,MS3.9							
CN2	**Changchun**	**53.42**	**4**		*e*P	**P**	**14 17 33.0**	**+2.3**
POO	**Poona**	**54.37**	**301**		*e*P	**P**	**14 17 34.0**	**-4.1**
MDJ	**Mudanjiang**	**54.64**	**7**		P	**P**	**14 17 38.6**	**-1.1**
MDJ					PP	PP	14 19 43.4	-0.2
MDJ					S	**S**	**14 25 22.3**	**+6.8**
MDJ					XS		14 25 32.8	
MDJ					AMB	AMB		
	comp=Z,8.0nm,0.9s,mb4.8							
MDJ					AMB	AMB		
	comp=Z,147nm,4.4s							
MDJ					LR	LR		
	comp=N,233nm,20.8s,MS4.2							
MDJ					LR	LR		
	comp=E,80nm,23.8s,MS4.2							
MDJ					LR	LR		
	comp=Z,292nm,21.2s,MS4.3							
ULN	**Ulaanbaatar**	**58.67**	**349**		*e*P	**P**	**14 18 07.6**	**-0.7**
ULN					pmax	pmax		
	comp=Z,7.0nm,0.8s,mb4.7							
ULN					MLR	MLR		
	comp=Z,216nm,22.0s,MS4.2							
ULN	**Ulaanbaatar**	**58.67**	**349**		*e*P	**P**	**14 18 07.6**	**-0.7**
	comp=Z,7.1nm,0.8s,mb4.8							
ULN					LR	LR		
	comp=Z,216nm,22.0s,MS4.2							
SONM	**Songino Array**	**58.77**	**349**		P	**P**	**14 18 08.6**	**-0.4**
	comp=Z,3.3nm,0.4s,mb4.7,baz=162,slow=8.1,SNR=38							
YSS	**Yuzh-Sakhalins**	**59.66**	**17**		*c i*P	**P**	**14 18 14.5**	**-0.7**
YSS					pmax	pmax		
	comp=Z,10.0nm,1.1s,mb4.8							
YSS					MLR	MLR		
	comp=Z,100nm,19.0s,MS4.0							
WMQ	**Urumqi**	**61.30**	**333**		P	**P**	**14 18 27.0**	**+0.6**
WMQ					AP	pP	14 18 39.8	+3.1
WMQ					XP	sP	14 18 45.1	+4.4
WMQ					PCP	PcP	14 19 09.7	+1.3
WMQ					PP	PP	14 20 43.7	+0.1
WMQ					SCP		14 23 05.9	
WMQ					PCS		14 23 11.0	
WMQ					S	**S**	**14 26 41.1**	**-1.6**
WMQ					XS		14 27 02.1	
WMQ					PS	PS	14 27 02.3	-0.7
WMQ					SCS	ScS	14 28 10.4	-0.9
WMQ					SS	SS	14 30 41.7	-3.0
WMQ					AMB	AMB		
	comp=Z,31nm,1.6s,mb5.2							
WMQ					AMB	AMB		
	comp=Z,215nm,8.3s							
WMQ					LR	LR		
	comp=N,412nm,22.0s,MS4.7							
WMQ					LR	LR		
	comp=E,411nm,21.2s,MS4.7							
WMQ					LR	LR		
	comp=Z,616nm,21.3s,MS4.7							
ZAK	**Zakamensk**	**61.83**	**347**		*e*P	**P**	**14 18 28.8**	**-1.1**
ZAK					*e*		14 26 46.0	
TLY	**Talaya**	**62.98**	**348**	⇓	*i*P	**P**	**14 18 37.4**	**-0.1**
TLY					*e*S	**S**	**14 27 03.3**	**-0.4**
TLY					pmax	pmax		
	comp=Z,119nm,2.0s,mb5.7							
TLY					MLR	MLR		
	comp=Z,1μm,23.0s,MS5.1							
IRK	**Irkutsk**	**63.38**	**349**		*e*P	**P**	**14 18 29.6**	**-11**
IRK					*e*		14 19 10.0	
MOY	**Mondy**	**63.55**	**346**		*e*P	**P**	**14 18 41.2**	**-0.1**
MKAR	**Makanchi Array**	**66.03**	**332**		P	**P**	**14 18 57.1**	**-0.3**
	comp=Z,14nm,0.5s,mb5.3,baz=150,slow=7.5,SNR=80							
MKAR					LR	LR	14 51 54.1	
	comp=Z,74nm,19.9s,MS3.9,baz=273,slow=40							
MKAR	**Makanchi Array**	**66.03**	**332**		*i* P	**P**	**14 18 57.6**	**+0.2**
MKAR					pmax	pmax		
	comp=Z,15nm,0.5s							
BOD	**Bodaibo**	**67.56**	**356**		*e*P	**P**	**14 19 05.5**	**-1.3**
MAW	**Mawson**	**69.25**	**200**		LR	LR	14 46 18.8	
	comp=Z,171nm,21.4s,MS4.3,baz=84,slow=33							
MAW	**Mawson**	**69.25**	**200**		P	**P**	**14 19 16.3**	**-0.9**
MAW					pmax	pmax		
	comp=Z,6.0nm,0.4s							
MAW	**Mawson**	**69.25**	**200**		P	**P**	**14 19 16.3**	**-0.9**
	comp=Z,6.4nm,0.4s,mb4.9							
PET	**Petropavlovsk**	**70.25**	**23**		*e*P	**P**	**14 19 25.8**	**+2.3**
PET					*e*S	S	14 28 36.9	+5.3
PET					pmax	pmax		
	comp=Z,5.0nm,0.5s,mb4.7							
PET					MLR	MLR		
	comp=Z,83nm,23.0s,MS3.9							
ZAL	**Zalesovo**	**70.45**	**338**		P	**P**	**14 19 23.2**	**-1.5**
	comp=Z,11nm,0.3s,mb5.2,baz=253,slow=4.8,SNR=31							
ZAL					LR	LR	14 50 21.5	
	comp=Z,58nm,21.4s,MS3.8,baz=224,slow=36							
ZAL	**Zalesovo**	**70.45**	**338**		*i* P	**P**	**14 19 23.4**	**-1.3**
ZAL					pmax	pmax		
	comp=Z,11nm,0.3s							
ZAL	**Zalesovo**	**70.45**	**338**		P	**P**	**14 19 23.2**	**-1.5**
ZAL					LR	LR	14 50 21.5	
KURK	**Kurchatov**	**70.55**	**333**		*e*P	**P**	**14 19 25.2**	**-0.2**
NVS	**Novosibirsk**	**71.72**	**338**		*e*P	**P**	**14 19 30.4**	**-1.9**
YAK	**Yakutsk**	**71.85**	**4**		*e*P	**P**	**14 19 31.4**	**-1.6**
YAK					pmax	pmax		
	comp=Z,8.0nm,0.4s,mb5.0							
YAK	**Yakutsk**	**71.85**	**4**		*e*P	**P**	**14 19 31.4**	**-1.5**
	comp=Z,8.2nm,0.4s,mb5.0							
MA2	**Magadan**	**73.07**	**15**		*e*P	**P**	**14 19 41.2**	**+1.0**
MA2					*e*		14 19 55.7	
MA2					*e*S	S	14 29 04.5	+0.6
MA2					pmax	pmax		
	comp=Z,7.0nm,0.9s,mb4.6							
MA2					MLR	MLR		
	comp=N,200nm,23.0s							
MA2	**Magadan**	**73.07**	**15**		*e*P	**P**	**14 19 40.3**	**0.0**
	comp=N,15nm,0.9s,mb4.9							
BRVK	**Borovoye**	**75.97**	**331**		*e*P	**P**	**14 19 55.8**	**-1.3**
SEY	**Seymchan**	**76.35**	**14**		*e*P	**P**	**14 20 00.0**	**+0.9**
SEY							14 30 05.3	
SEY					*SS		14 30 14.9	
SEY					*e*SS	SS	14 34 39.4	+1.6
SEY					*e*SSS	SSS	14 37 49.9	-3.3
SEY					pmax	pmax		
	comp=N,10.0nm,0.8s							
SEY					pmax	pmax		
	comp=Z,40nm,0.8s,mb5.4							
ZRNK	**Zerenda**	**76.51**	**331**		*e*P	**P**	**14 19 58.4**	**-1.8**
SYO	**Syowa Base**	**77.92**	**201**	⇓	P	**P**	**14 20 04.5**	**-3.2**
SYO	**Syowa Base**	**77.92**	**201**	⇓	P	**P**	**14 20 08.7**	**+1.0**
SYO	**Syowa Base**	**77.92**	**201**	⇓	P	**P**	**14 20 11.1**	**+3.4**
SYO	**Syowa Base**	**77.92**	**201**	⇓	*e*P	**P**	**14 20 08.7**	**+1.0**
QSPA	**South Pole Qui**	**80.27**	**180**		*e*P	**P**	**14 20 21.2**	**+0.9**
	comp=Z,7.6nm,0.7s,mb4.7							
QSPA					LR	LR		
	comp=Z,360nm,20.1s,MS4.7							
TIXI	**Tiksi**	**81.36**	**2**		*e*P	**P**	**14 20 26.0**	**-0.2**
TIXI					*e*	pP	14 20 39.1	+2.3
TIXI					*e*S	S	14 30 28.3	-5.0
TIXI					pmax	pmax		
	comp=Z,89nm,1.1s,mb5.6							
TIXI	**Tiksi**	**81.36**	**2**		*e*P	**P**	**14 20 25.6**	**-0.6**
ARU	**Arti**	**83.49**	**330**		*c i*P	**P**	**14 20 35.7**	**-1.7**
ARU					pmax	pmax		
	comp=Z,13nm,1.6s,mb4.7							
ARU	**Arti**	**83.49**	**330**		*e*P	**P**	**14 20 36.2**	**-1.2**
	comp=Z,7.3nm,1.1s,mb4.6							
ARU					LR	LR		
	comp=Z,172nm,20.0s,MS4.4							
KMBO	**Kilima Mbogo**	**83.70**	**270**		P	**P**	**14 20 41.7**	**+2.3**
	comp=Z,1.5nm,0.5s,mb4.4,baz=63,slow=11,SNR=3.6							
KMBO	**Kilima Mbogo**	**83.70**	**270**		*e*P	**P**	**14 20 40.5**	**+1.0**
BILL	**Bilibino**	**83.94**	**16**	⇑	*e*P	**P**	**14 20 40.0**	**+0.6**
BILL					pmax	pmax		
	comp=Z,7.0nm,2.0s,mb4.4							
GNI	**Garni**	**85.92**	**312**		*e*P	**P**	**14 20 49.6**	**-0.3**
GNI					pmax	pmax		
	comp=Z,18nm,1.7s							
ZEI	**Tsey**	**87.26**	**314**		*e*P	**P**	**14 20 58.0**	**+1.6**
ZEI					*e*		14 21 15.0	
ZEI					*e*		14 31 33.0	
ZEI					MLR	MLR		
	comp=Z,200nm,22.0s,MS4.5							
KIV	**Kislovodsk**	**88.42**	**315**		*ce*P	**P**	**14 21 02.4**	**+0.5**
KIV					pmax	pmax		
	comp=Z,17nm,1.9s,mb5.0							
KIV					MLR	MLR		
	comp=Z,100nm,22.0s,MS4.2							
GOF	**Gofitskoye**	**88.47**	**316**	⇑	*i*P	**P**	**14 21 03.0**	**+0.9**
GOF					*i*	pP	14 21 15.0	+2.1
GOF					pmax	pmax		
	comp=Z,70nm,1.5s,mb5.7							
LSZ	**Lusaka**	**90.20**	**255**		*e*P	**P**	**14 21 11.4**	**+0.4**
SNAA	**Sanae**	**90.84**	**195**	⇑	*i*	**P**	**14 21 14.2**	**+1.5**
VNA2	**Neumayer--Watz**	**92.46**	**195**	⇑	*i*	**P**	**14 21 23.6**	**+3.4**
VNA3	**Neumayer Olymp**	**92.82**	**194**	⇑	*i*	**P**	**14 21 24.4**	**+2.5**
BRTR	**Keskin Array B**	**94.16**	**309**		P	**P**	**14 21 28.5**	**-0.1**
	comp=Z,0.7nm,0.6s,mb4.3,baz=121,slow=7.2,SNR=4.1							
BRTR					LR	LR	15 08 20.1	
	comp=Z,51nm,20.1s,MS4.0,baz=60,slow=38							
OBN	**Obninsk**	**94.75**	**325**		*e*P	**P**	**14 21 31.3**	**+0.3**
OBN					pmax	pmax		
	comp=Z,5.0nm,0.9s,mb4.9							
AKASG	**Malin Array Be**	**98.60**	**320**		P	**P**	**14 21 47.6**	**-0.9**
	comp=Z,2.2nm,0.9s,mb4.7,baz=84,slow=4.4,SNR=6.1							
AKASG					LR	LR	15 12 47.9	
	comp=Z,35nm,18.2s,MS3.9,baz=75,slow=39							
ILAR	**Eielson Array**	**99.61**	**26**		P	**P**	**14 21 53.0**	**+0.2**
	comp=Z,0.4nm,0.7s,mb4.0,baz=266,slow=4.2,SNR=6.2							
ILAR					LR	LR	15 09 26.4	
	comp=Z,48nm,18.4s,MS4.0,baz=61,slow=37							
ILAR	**Eielson Array**	**99.61**	**26**		P	**P**	**14 21 53.0**	**+0.2**
ILAR					LR	LR	15 09 26.4	
FINES	**FINESS Array B**	**100.85**	**331**		PKiKP		14 26 26.5	
	comp=Z,1.3nm,1.0s,baz=117,slow=3.1,SNR=3.9							
YKA	**Yellowknife Ar**	**114.01**	**25**		PKP	PKPdf	14 26 49.5	+2.3
	comp=Z,0.2nm,0.3s,baz=304,slow=1.8,SNR=26							
YKA					SKP		14 30 20.6	
	comp=Z,0.3nm,0.6s,baz=300,slow=2.0,SNR=12							
YKA	**Yellowknife Ar**	**114.01**	**25**		PKP	PKPdf	14 26 49.5	+2.3
YKA					SKP		14 30 20.6	
EKA	**Eskdalemuir Ar**	**117.03**	**328**		PKP	PKPdf	14 26 56.4	+3.1
	comp=Z,0.3nm,0.3s,baz=53,slow=3.3,SNR=4.0							
NVAR	**Mina Array Bea**	**119.91**	**51**		PKP	PKPdf	14 27 02.9	+3.5
	comp=Z,0.4nm,0.8s,baz=349,slow=1.8,SNR=4.4							
MSU	**Marysvale**	**124.55**	**50**		*e*PKiKP	PKPdf	14 27 11.4	+3.1
PDAR	**Pinedale Array**	**125.05**	**44**		PKP	PKPdf	14 27 13.1	+3.9
	comp=Z,0.5nm,0.9s,baz=115,slow=3.3,SNR=4.4							
SRU	**San Rafael**	**125.60**	**49**		*e*PKiKP	PKPdf	14 27 14.1	+3.8
PV10	**Paradox Valley**	**126.94**	**49**		*e*PKP	PKPdf	14 27 17.1	+4.2
PV01	**Paradox Valley**	**127.36**	**49**		*e*PKP	PKPdf	14 27 18.8	+5.0
PLCA	**Paso Flores**	**

0.1nm,0.3s,baz=315,slow=17,SNR=3.7
MKAR Makanchi Array 66.64 329 P P 15 04 20.6 -2.1
0.4nm,0.6s,baz=115,slow=7.3,SNR=4.1

*NEIC **02** 14:54:01.4, 38.81N×9.48W, MN2.1(MDD), After MDD.*
*MDD **02** 14:54:02.4±1.0, 38.73N×9.63W, h21km±2km, mbLg1.9/6, Error ellipse: s-maj=8.2km s-min=6.2km az=90.0, PRXIMO*
*INMG **02** 14:54:03.2±1.1, 38.67N×9.58W, h17km±4km, ML1.5, Error ellipse: s-maj=5.8km s-min=2.3km az=77.0*
ISC 02 14:54:01.6±0.9, 38.84N±0.03×9.40W±0.08, h21km, n30, σ1§22/53, 2C, Portugal

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
PLOU	**Loures**	**0.20**	**78**	*e*Pg		**Pb**	**14 54 10.7**	**+3.8**
PLOU				*e*Sg		**Sb**	**14 54 16.4**	**+6.0**
	42nm,0.1s							
PLOU	**Loures**	**0.20**	**78**	Pg		**Pb**	**14 54 10.7**	**+3.8**
PLOU				Lg			14 54 16.4	
	21nm,0.1s							
MOE	**Montemor**	**0.88**	**111**	*e*P		**Pb**	**14 54 21.2**	**+3.1**
MOE				*e*S		**Sb**	**14 54 34.2**	**+4.8**
PTOM	**Tomar**	**1.09**	**45**	*e*S		**Sb**	**14 54 41.8**	**+6.3**
	10nm,0.1s							
PTOM	**Tomar**	**1.09**	**45**	S		**Sb**	**14 54 41.8**	**+6.3**
	5.1nm,0.1s							
PTEO	**Sao Teotonio**	**1.40**	**157**	*e*P		**Pn**	**14 54 25.1**	**-1.1**
PTEO				*e*S		**Sn**	**14 54 41.4**	**-2.8**
	3.5nm,0.2s							
PTEO	**Sao Teotonio**	**1.40**	**157**	P		**Pn**	**14 54 25.1**	**-1.1**
PTEO				S		**Sn**	**14 54 41.4**	**-2.8**
	1.8nm,0.2s							
PBEJ	**Beja**	**1.46**	**124**	*e*S		**Sn**	**14 54 46.1**	**+0.5**
	2.1nm,0.1s							
PBEJ	**Beja**	**1.46**	**124**	S		**Sn**	**14 54 46.1**	**+0.5**
	1.1nm,0.1s							
EBAD	**Badajoz**	**1.87**	**92**	Pn		**Pn**	**14 54 34.2**	**+1.3**
EBAD	0.2nm,0.0s,SNR=6.4			Sn		**Sn**	**14 54 57.4**	**+1.4**
	2.6nm,0.1s,SNR=18							
EBAD				Lg			14 55 04.6	
	7.1nm,0.1s,SNR=6.0							
EBAD	**Badajoz**	**1.87**	**92**	Pn		**Pn**	**14 54 34.1**	**+1.2**
EBAD				Sn		**Sn**	**14 54 57.4**	**+1.3**
EBAD				Lg			14 55 04.6	
EGRO	**El Granado**	**2.00**	**130**	Pn		**Pn**	**14 54 34.8**	**0.0**
	0.1nm,0.1s,SNR=4.6							
EGRO				Sn		**Sn**	**14 54 59.5**	**+0.1**
	0.5nm,0.1s,SNR=7.9							
EGRO				Lg			14 55 07.1	
	2.0nm,0.2s,SNR=7.9							
EGRO	**El Granado**	**2.00**	**130**	Pn		**Pn**	**14 54 34.9**	**+0.1**
EGRO				Sn		**Sn**	**14 54 59.3**	**-0.1**
EGRO				Lg			14 55 07.1	
PALC	**Alcoutim**	**2.05**	**132**	*e*Pn		**Pn**	**14 54 35.7**	**+0.2**
PALC				*e*Sn		**Sn**	**14 54 59.4**	**-1.3**
	2.6nm,0.4s							
PALC	**Alcoutim**	**2.05**	**132**	Pn		**Pn**	**14 54 35.7**	**+0.2**
PALC				Sn		**Sn**	**14 54 59.4**	**-1.3**
	1.3nm,0.4s							
EMIN	**Mina Concepcio**	**2.40**	**116**	Pn		**Pn**	**14 54 41.2**	**+0.6**
	0.2nm,0.1s,SNR=7.9							
EMIN				Sn		**Sn**	**14 55 09.3**	**-0.3**
	0.4nm,0.1s,SNR=7.9							
EMIN				Lg			14 55 19.8	
	0.4nm,0.3s,SNR=7.9							
EMIN	**Mina Concepcio**	**2.40**	**116**	Pn		**Pn**	**14 54 41.3**	**+0.8**
EMIN				Sn		**Sn**	**14 55 09.1**	**-0.5**
EMIN				Lg			14 55 20.2	
ELOB	**Lobios**	**3.19**	**18**	Pn		**Pn**	**14 54 53.5**	**+1.8**
	1.0nm,0.1s,SNR=7.9							
ELOB				Sn		**Sn**	**14 55 29.0**	**-0.6**
	0.6nm,0.1s,SNR=7.9							
ELOB	**Lobios**	**3.19**	**18**	Pn		**Pn**	**14 54 53.2**	**+1.5**
ELOB				Sn		**Sn**	**14 55 29.0**	**-0.6**
EZAM	**Zamans**	**3.35**	**9**	Pn		**Pn**	**14 54 55.5**	**+1.6**
EZAM				Sn		**Sn**	**14 55 31.8**	**-1.7**
ESPR	**Espera**	**3.43**	**124**	Sn		**Sn**	**14 55 35.5**	**-0.2**
	1.4nm,0.3s,SNR=7.9							
ESPR	**Espera**	**3.43**	**124**	Pn		**Pn**	**14 54 55.8**	**+0.7**
ESPR				Sn		**Sn**	**14 55 34.5**	**-1.2**
ECAL	**Calabor**	**3.70**	**32**	⇑Pn		**Pn**	**14 55 00.8**	**+1.8**
	2.1nm,0.2s,SNR=18							
ECAL				Sn		**Sn**	**14 55 42.6**	**0.0**
	1.2nm,0.2s,SNR=7.9							
ECAL	**Calabor**	**3.70**	**32**	⇑Pn		**Pn**	**14 55 00.8**	**+1.8**
ECAL				Sn		**Sn**	**14 55 42.6**	**0.0**
EADA	**Adamuz**	**3.84**	**99**	Sn		**Sn**	**14 55 44.9**	**-1.3**
	0.2nm,0.1s,SNR=7.9							
EADA				Lg			14 56 05.5	
	0.2nm,0.2s,SNR=4.0							
EADA	**Adamuz**	**3.84**	**99**	Pn		**Pn**	**14 55 02.2**	**+1.2**
EADA				Sn		**Sn**	**14 55 44.6**	**-1.6**
EMAZ	**Mazaricos**	**4.12**	**4**	Pn		**Pn**	**14 55 05.2**	**+0.3**
	0.5nm,0.1s,SNR=7.9							
EMAZ				Sn		**Sn**	**14 55 49.7**	**-3.3**
	1.0nm,0.2s,SNR=7.9							
EMAZ	**Mazaricos**	**4.12**	**4**	Pn		**Pn**	**14 55 04.0**	**-0.9**
EMAZ				Sn		**Sn**	**14 55 50.1**	**-2.9**
EINC	**Incio**	**4.12**	**22**	Pn		**Pn**	**14 55 04.2**	**-0.8**
	4.8nm,0.6s,SNR=7.9							
EINC				Sn		**Sn**	**14 55 51.9**	**-1.3**
	7.0nm,0.9s,SNR=7.9							
ESDC	**Sonseca Array**	**4.30**	**77**	Pn		**Pn**	**14 55 08.4**	**+0.8**
	0.8nm,0.2s,baz=260,slow=13,SNR=8.3							
ESDC				Sn		**Sn**	**14 55 56.8**	**-0.9**
	1.4nm,0.9s,baz=263,slow=24,SNR=7.9							

CASC 02 15:57:24.9±1.7, 13.03N×89.19W, h47km±22km, MD3.8, ML3.8, 11C-5D, El Salvador

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
LFRS	**El Faro**	**0.60**	**11**	⇑*i*P		P	15 57 37.5	+0.2
LFRS				*e*S		S	15 57 46.6	+0.3
LCBS	**La Ceiba**	**0.65**	**18**	⇑*i*P		P	15 57 38.0	+0.1
LCBS				*e*S		S	15 57 48.0	+0.5
SNET	**Serv Nac Est T**	**0.65**	**356**	*e*P		P	15 57 38.2	+0.2
SNET				*e*S		S	15 57 48.6	+1.0
SNET				*i*			15 57 50.1	
	comp=Z,2µm,0.3s							
SNVI	**San Vicente**	**0.67**	**30**	⇑*e*P		P	15 57 38.4	+0.2
SNVI				*e*S		S	15 57 48.1	+0.2
BOQS	**Boqueron**	**0.71**	**352**	⇑*e*P		P	15 57 39.3	+0.7
BOQS				*e*S		S	15 57 50.6	+1.8
LBRS	**Las Brisas**	**0.72**	**11**	⇑*e*P		P	15 57 39.3	+0.5
LBRS				*e*S		S	15 57 48.9	-0.1
LFU	**La Fuente**	**0.72**	**6**	⇑*e*P		P	15 57 39.3	+0.5
LFU				*e*S		S	15 57 50.5	+1.4
SBLS	**San Blas**	**0.91**	**332**	*e*P		P	15 57 42.0	+0.5
SBLS				*e*S		S	15 57 54.8	+1.0
SNJE	**San Jose**	**0.93**	**334**	*e*P		P	15 57 42.2	+0.5
SNJE				*e*S		S	15 57 55.0	+0.8
VSM	**San Miguel**	**0.97**	**66**	⇑*e*P		P	15 57 43.0	+0.7
VSM				*e*S		S	15 57 56.5	+1.3
RTR	**El Retiro**	**0.97**	**333**	⇓*e*P		P	15 57 42.9	+0.6
RTR				*e*S		S	15 57 56.0	+0.8
BLLM	**Bellamira**	**1.01**	**66**	*e*P		P	15 57 43.5	+0.6
BLLM				*e*S		S	15 57 57.5	+1.3
CUSS	**Cusmapa**	**1.15**	**320**	⇓*e*P		P	15 57 44.8	0.0
CUSS				*e*S		S	15 57 59.2	-0.4
RBDL	**Robledal**	**1.18**	**336**	⇓*e*P		P	15 57 45.6	+0.3
RBDL				*e*S		S	15 58 00.6	+0.1
CAHU	**Cacacuatique**	**1.20**	**52**	*e*P		P	15 57 45.9	+0.3
CAHU				*e*S		S	15 58 01.8	+0.9
CNCH	**Conchagua**	**1.34**	**79**	⇑*e*P		P	15 57 47.2	-0.4
CNCH				*e*S		S	15 58 04.4	-0.1
MTO2	**Montecristo 2**	**1.37**	**353**	⇑*e*P		P	15 57 47.8	-0.3
MTO2				*e*S		S	15 58 05.1	-0.3
IXG	**Ixpaco**	**1.68**	**313**	⇓*e*P		P	15 57 51.9	-0.5
IXG				*e*S		S	15 58 12.8	-0.1
IXG					AML	AML	15 58 13.3	
	comp=N,5µm,0.4s							
CRIN	**San Cristobal**	**2.11**	**99**	⇓*i*P		P	15 57 59.1	+0.6
CRIN				*e*S		S	15 58 24.5	+1.0
PYN	**Poneloya**	**2.21**	**107**	*e*P		P	15 57 59.4	-0.4
PYN				*e*S		S	15 58 24.2	-1.8
LEON	**Leon**	**2.32**	**105**	*e*P		P	15 58 00.4	-1.1
TEL3	**Telica 3**	**2.33**	**101**	⇑*e*P		P	15 58 01.1	-0.5
CNGN	**Cerro Negro**	**2.48**	**102**	⇑*e*P		P	15 58 03.0	-0.8
CNGN				*e*S		S	15 58 32.2	-0.8
TP2	**Tecpan 2**	**2.49**	**315**	*e*S		S	15 58 36.0	+2.7
TP2					AML	AML	15 58 37.9	
	comp=N,278nm,0.4s							
COPN	**Copaltepe**	**2.67**	**108**	*e*P		P	15 58 05.5	-0.9
JAT	**Jato**	**2.71**	**299**	*e*S		S	15 58 37.1	-1.6
MGAN	**Managua**	**3.00**	**107**	*e*S		S	15 58 44.4	-1.8

IDC 02 16:04:07.3±3.0, 23.58S×176.18W, mb3.6/5, mb1 4.1/6, mb1mx3.9/15, ML4.5/1, Error ellipse: s-maj=204.0km s-min=28.3km az=159.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
RAR	**Rarotonga**	**15.36**	**84**	Pn		P	16 07 32.4	-15
	2.1nm,0.3s,baz=254,slow=11,SNR=5.4							
ASAR	**Alice Springs**	**45.54**	**259**	P		P	16 12 28.6	-2.2
	0.9nm,1.0s,baz=96,slow=7.4,SNR=8.3							
WRA	**Warramunga Arr**	**45.92**	**265**	P		P	16 12 31.4	-2.4
	0.3nm,0.4s,baz=99,slow=8.3,SNR=5.4							
NVAR	**Mina Array Bea**	**82.13**	**42**	P		P	16 16 31.1	-0.2
	0.5nm,0.9s,baz=220,slow=4.6,SNR=4.9							
TXAR	**Lajitas Array**	**87.31**	**56**	P		P	16 16 54.7	-2.8
	0.1nm,0.4s,baz=233,slow=4.5,SNR=3.2							
CMAR	**Chiang Mai Arr**	**92.72**	**289**	P		P	16 17 23.8	+0.7
	0.6nm,0.8s,baz=135,slow=2.6,SNR=3.2							

*WEL **02** 16:07:44.7±0.4, 36.84S×179.64E, h12km, ML4.5/8, Error ellipse: s-maj=4.3km s-min=3.4km az=90.0*
*IDC **02** 16:07:46.6±7.3, 36.85S×179.66E, h40km±58km, mb4.3/6, mb1 4.4/8, mb1mx4.2/15, ML4.2/2, MS3.6/5, Ms1 3.6/5, ms1mx3.3/16, Error ellipse: s-maj=49.4km s-min=40.4km az=8.0*
*NEIC **02** 16:07:49.6±2.5, 36.93S×179.34E, h53km±17km, mb4.3/2, ML4.5(WEL), Error ellipse: s-maj=29.8km s-min=9.6km az=60.0*
*SYO **02** 16:07:49.6, 36.93S×179.34E, h53km, MB4.3*
ISC 02 16:07:47.8±0.8, 37.11S±0.04×179.43E±0.08, h53km, n107, σ1§47/120, mb4.5/8, MS3.7/4, 5C-7D, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
MXZ	**Matakaoa Point**	**1.00**	**243**	PN		**P**	**16 08 07.0**	**+1.2**
MXZ				S*		**S**	**16 08 24.3**	**+5.0**
MXZ	**Matakaoa Point**	**1.00**	**243**	P		**P**	**16 08 07.0**	**+1.1**
PUZ	**Puketiti**	**1.34**	**224**	PN		**P**	**16 08 12.7**	**+2.0**
PUZ				SN		**S**	**16 08 33.6**	**+6.0**
PUZ	**Puketiti**	**1.34**	**224**	P		**P**	**16 08 12.7**	**+2.0**
PUZ				S		**S**	**16 08 33.4**	**+5.8**
WIZ	**White Island**	**1.83**	**256**	PN		**P**	**16 08 17.4**	**-0.2**
WIZ	**White Island**	**1.83**	**256**	*e*P		**P**	**16 08 17.4**	**-0.1**
MWZ	**Matawai**	**1.94**	**230**	⇓PN		**P**	**16 08 20.6**	**+1.6**
MWZ				SN		**S**	**16 08 48.7**	**+6.4**
MWZ	**Matawai**	**1.94**	**230**	⇓P		**P**	**16 08 20.6**	**+1.6**
MWZ				S		**S**	**16 08 48.2**	**+6.0**
URZ	**Urewera**	**2.17**	**237**	P		**P**	**16 08 24.0**	**+1.7**
	142nm,0.3s,baz=34,slow=2.0,SNR=500							
URZ				S		**S**	**16 08 53.7**	**+5.8**
	52nm,0.3s,baz=294,slow=23,SNR=7.5							
URZ				LR		LR	16 09 20.7	
	comp=Z,328nm,20.0s,baz=339,slow=38							
URZ	**Urewera**	**2.17**	**237**	⇓PN		**P**	**16 08 23.8**	**+1.5**
URZ				SN		**S**	**16 08 53.8**	**+5.8**
URZ	**Urewera**	**2.17**	**237**	P		**P**	**16 08 23.8**	**+1.5**
EDRZ	**Edgecumbe**	**2.36**	**244**	PN		**P**	**16 08 26.5**	**+1.6**
EDRZ	**Edgecumbe**	**2.36**	**244**	P		**P**	**16 08 26.5**	**+1.5**
KNZ	**Kokohu**	**2.36**	**215**	PN		**P**	**16 08 25.5**	**+0.6**
KNZ				SN		**S**	**16 08 55.3**	**+2.5**
KNZ	**Kokohu**	**2.36**	**215**	*e*P		**P**	**16 08 25.5**	**+0.5**
KNZ				S		**S**	**16 08 55.3**	**+2.5**
MARZ	**Manawahe**	**2.36**	**247**	PN		**P**	**16 08 25.9**	**+1.0**
MARZ	**Manawahe**	**2.36**	**247**	P		**P**	**16 08 26.0**	**+1.0**
TAZ	**Tarawera**	**2.58**	**243**	PN		**P**	**16 08 29.6**	**+1.5**
TAZ	**Tarawera**	**2.58**	**243**	P		**P**	**16 08 29.6**	**+1.5**
LIRZ	**Lichensteins R**	**2.58**	**249**	PN		**P**	**16 08 29.8**	**+1.6**
LIRZ	**Lichensteins R**	**2.58**	**249**	P		**P**	**16 08 29.8**	**+1.7**
TGRZ	**Tauranga**	**2.60**	**255**	PN		**P**	**16 08 28.8**	**+0.4**
TGRZ	**Tauranga**	**2.60**	**255**	P		**P**	**16 08 28.8**	**+0.4**
UTU	**Utuhina**	**2.78**	**246**	PN		**P**	**16 08 33.4**	**+2.4**
PATZ	**Paeroa**	**2.82**	**242**	PN		**P**	**16 08 32.8**	**+1.3**
PATZ	**Paeroa**	**2.82**	**242**	*e*P		**P**	**16 08 32.8**	**+1.3**
KUZ	**Kuaotunu**	**3.00**	**276**	PN		**P**	**16 08 32.9**	**-1.1**
KUZ				SN		**S**	**16 09 08.3**	**-0.6**
KUZ	**Kuaotunu**	**3.00**	**276**	P		**P**	**16 08 32.9**	**-1.1**
BKZ	**Black Stump Fm**	**3.10**	**228**	PN		**P**	**16 08 35.9**	**+0.5**
BKZ				SN		**S**	**16 09 14.8**	**+3.3**
BKZ	**Black Stump Fm**	**3.10**	**228**	P		**P**	**16 08 35.9**	**+0.5**
BKZ				S		**S**	**16 09 14.8**	**+3.3**
TOZ	**Tahuroa Road**	**3.19**	**258**	PN		**P**	**16 08 36.9**	**+0.2**
TOZ	**Tahuroa Road**	**3.19**	**258**	P		**P**	**16 08 36.9**	**+0.2**
MKAZ	**Moumakai**	**3.41**	**269**	PN		**P**	**16 08 40.0**	**+0.2**
MKAZ	**Moumakai**	**3.41**	**269**	P		**P**	**16 08 40.0**	**+0.2**
PWZ	**Pawanui**	**3.54**	**214**	PN		**P**	**16 08 40.1**	**-1.6**
PWZ				SN		**S**	**16 09 23.4**	**+0.7**
PWZ	**Pawanui**	**3.54**	**214**	P		**P**	**16 08 40.1**	**-1.6**
MGZ	**Maungaku**	**3.61**	**237**	PN		**P**	**16 08 42.9**	**+0.3**
OTAZ	**Otara**	**3.61**	**271**	⇓PN		**P**	**16 08 43.0**	**+0.3**
OTAZ	**Otara**	**3.61**	**271**	P		**P**	**16 08 43.3**	**+0.6**
WTVZ	**West Tongariro**	**3.63**	**235**	PN		**P**	**16 08 43.6**	**+0.6**
MTAZ	**Motutapu**	**3.63**	**274**	PN		**P**	**16 08 43.4**	**+0.3**
MTAZ	**Motutapu**	**3.63**	**274**	P		**P**	**16 08 43.4**	**+0.4**
NGZ	**Ngauruhoe**	**3.66**	**234**	PN		**P**	**16 08 43.5**	**+0.1**
CNZ	**Chateau**	**3.70**	**235**	PN		**P**	**16 08 44.8**	**+0.8**
CNZ	**Chateau**	**3.70**	**235**	*e*P		**P**	**16 08 44.8**	**+0.8**
FWVZ	**Far West T-bar**	**3.73**	**234**	PN		**P**	**16 08 44.9**	**+0.5**
KAAZ	**Kauri Point**	**3.80**	**273**	PN		**P**	**16 08 45.9**	**+0.6**
KAAZ	**Kauri Point**	**3.80**	**273**	P		**P**	**16 08 45.9**	**+0.6**
HIZ	**Hauiti**	**3.88**	**247**	PN		**P**	**16 08 47.7**	**+1.2**
WTAZ	**Waiatarua**	**3.89**	**271**	PN		**P**	**16 08 47.1**	**+0.5**
WTAZ	**Waiatarua**	**3.89**	**271**	P		**P**	**16 08 47.1**	**+0.5**
TSZ	**Takapari Road**	**4.01**	**222**	PN		**P**	**16 08 46.4**	**-1.9**
TSZ				SN		**S**	**16 09 36.0**	**+1.5**
TSZ	**Takapari Road**	**4.01**	**222**	P		**P**	**16 08 46.4**	**-1.9**
VRZ	**Vera Road**	**4.20**	**240**	PN		**P**	**16 08 52.0**	**+1.0**
WCZ	**Waipu Caves**	**4.26**	**284**	PN		**P**	**16 08 51.1**	**-0.7**
WCZ	**Waipu Caves**	**4.26**	**284**	P		**P**	**16 08 51.0**	**-0.8**
BFZ	**Birch Farm**	**4.35**	**214**	SN		**S**	**16 09 42.5**	**-0.5**
WAZ	**Wanganui**	**4.38**	**232**	PN		**P**	**16 08 53.2**	**-0.3**
WAZ				SN		**S**	**16 09 46.1**	**+2.3**
WAZ	**Wanganui**	**4.38**	**232**	*e*P		**P**	**16 08 53.2**	**-0.3**
MRZ	**Mangatainoka R**	**4.65**	**219**	PN		**P**	**16 08 54.4**	**-2.9**
MRZ				SN		**S**	**16 09 49.0**	**-1.5**
MTW	**Mount Morrison**	**5.07**	**216**	PN		**P**	**16 08 59.2**	**-4.0**
MTW				SN		**S**	**16 09 58.7**	**-2.4**
MTW	**Mount Morrison**	**5.07**	**216**	*e*P		**P**	**16 08 59.2**	**-3.9**
OUZ	**Omahuta**	**5.08**	**290**	PN		**P**	**16 09 02.5**	**-0.9**
OUZ	**Omahuta**	**5.08**	**290**	P		**P**	**16 09 02.5**	**-0.8**
CAW	**Cannon Point**	**5.24**	**219**	PN		**P**	**16 09 01.7**	**-3.8**
CAW				SN		**S**	**16 10 02.9**	**-2.5**
CAW	**Cannon Point**	**5.24**	**219**	*e*P		**P**	**16 09 01.6**	**-3.9**
MSWZ	**Moikau Station**	**5.39**	**216**	PN		**P**	**16 09 03.3**	**-4.2**
MRW	**Makara Radio**	**5.52**	**220**	PN		**P**	**16 09 07.1**	**-2.3**
MRW				SN		**S**	**16 10 09.4**	**-2.9**
NNZ	**Nelson**	**6.24**	**227**	PN		**P**	**16 09 16.1**	**-3.4**
NNZ				SN		**S**	**16 10 25.9**	**-4.4**
NNZ	**Nelson**	**6.24**	**227**	*e*P		**P**	**16 09 16.1**	**-3.4**
BSWZ	**Blackbirch Sta**	**6.30**	**221**	PN		**P**	**16 09 16.6**	**-3.6**
BSWZ				SN		**S**	**16 10 29.5**	**-2.2**
QRZ	**Quartz Range**	**6.53**	**233**	PN		**P**	**16 09 20.1**	**-3.5**
QRZ	**Quartz Range**	**6.53**	**233**	*e*P		**P**	**16 09 20.1**	**-3.7**
THZ	**Tophouse**	**6.86**	**225**	PN		**P**	**16 09 24.6**	**-3.7**
THZ				SN		**S**	**16 10 43.1**	**-2.6**
KHZ	**Kahutara**	**6.98**	**219**	PN		**P**	**16 09 24.6**	**-5.2**
KHZ				SN		**S**	**16 10 42.0**	**-6.6**
LTZ	**Lake Taylor**	**7.89**	**222**	PN		**P**	**16 09 39.5**	**-3.0**
LTZ				SN		**S**	**16 11 03.5**	**-7.8**
RPZ	**Rata Peaks**	**9.18**	**221**	P		**P**	**16 09 58.2**	**-2.0**
	1.0nm,0.3s,baz=3.0,slow=18,SNR=3.5							
RPZ				S		**S**	**16 11 34.8**	**-8.4**
	4.8nm,0.3s,baz=23,slow=20,SNR=9.9							
ODZ	**Otahua Downs**	**10.33**	**217**	PN		**P**	**16 10 10.3**	**-5.6**
STKA	**Stephens Creek**	**31.48**	**268**	*e*P		**P**	**16 14 07.0**	**+0.4**
	3.8nm,1.2s,mb4.1							
STKA	**Stephens Creek**	**31.48**	**268**	P		**P**	**16 14 06.7**	**0.0**
	0.8nm,0.3s,mb4.0,baz=115,slow=11,SNR=11							
STKA				PcP		PcP	16 16 57.5	-1.4
	2.8nm,0.8s,baz=76,slow=2.6,SNR=3.4							
STKA				LR		LR	16 27 13.5	
	comp=Z,226nm,18.8s,MS3.9,baz=200,slow=37							
CTA	**Charters Tower**	**33.48**	**291**	P		**P**	**16 14 23.6**	**-0.6**
CTA				LR		LR	16 27 01.9	
	comp=Z,102nm,19.9s,MS3.5,baz=317,slow=34							
AS12	**Alice Springs**	**41.12**	**276**	*e*P		**P**	**16 15 27.4**	**-0.9**
	9.5nm,0.5s,mb4.7							
ASAR	**Alice Springs**	**41.12**	**276**	P		**P**	**16 15 27.4**	**-0.9**
	7.5nm,0.4s,mb4.6,baz=121,slow=8.1,SNR=329							
ASAR				S		**S**	**16 21 35.9**	**-1.5**
	0.6nm,0.9s,baz=140,slow=11,SNR=5.8							
ASAR				LR		LR	16 33 05.8	
	comp=Z,60nm,19.0s,MS3.5,baz=290,slow=37							
WB2	**Warramunga Arr**	**42.71**	**281**	*e*P		**P**	**16 15 39.8**	**-1.6**
WRAB	**Tennant Creek**	**42.72**	**281**	*e*P		**P**	**16 15 39.6**	**-1.9**
	8.4nm,0.4s,mb4.8							
WRA	**Warramunga Arr**	**42.72**	**281**	P		**P**	**16 15 40.2**	**-1.3**
	4.2nm,0.3s,mb4.6,baz=120,slow=7.8,SNR=123							
FITZ	**Fitzroy Crossi**	**50.60**	**277**	P		**P**	**16 16 42.6**	**-1.0**
	1.6nm,0.4s,mb4.3,baz=330,slow=8.2,SNR=14							
FITZ				LR		LR	16 39 33.9	
	comp=Z,88nm,18.6s,MS3.8,baz=309,slow=38							
QSPA	**South Pole Qui**	**53.02**	**180**	*e*P		**P**	**16 17 04.6**	**+3.6**
	5.9nm,1.0s,mb4.5							
SYO	**Syowa Base**	**70.11**	**194**	⇓P		**P**	**16 18 56.8**	**+1.0**
SYO	**Syowa Base**	**70.11**	**194**	⇑pP		pP	16 19 03.0	-7.7
SNAA	**Sanae**	**71.51**	**179**	⇑*i*		**P**	**16 19 05.5**	**+1.2**
SNAA	**Sanae**	**71.51**	**179**	⇓*i*		pP	16 19 17.5	-1.7
VNA3	**Neumayer Olymp**	**71.75**	**177**			**P**	**16 19 08.9**	**+3.2**
VNA3	**Neumayer Olymp**	**71.75**	**177**	⇑*i*		pP	16 19 18.6	-2.0
VNA2	**Neumayer--Watz**	**72.16**	**178**			**P**	**16 19 11.5**	**+3.4**
VNA2	**Neumayer--Watz**	**72.16**	**178**	⇑*i*		pP	16 19 22.1	-0.9
VNA1	**Neumayer--Stat**	**72.40**	**177**	⇑*i*		**P**	**16 19 13.1**	**+3.5**
VNA1	**Neumayer--Stat**	**72.40**	**177**	⇓*i*		pP	16 19 22.3	-2.2
CMAR	**Chiang Mai Arr**	**93.65**	**290**	P		**P**	**16 20 59.4**	**-0.6**
	1.0nm,0.6s,mb4.4,baz=147,slow=3.6,SNR=12							
MKAR	**Makanchi Array**	**120.32**	**308**	PKP		PKPdf	16 26 32.5	-0.5
	0.8nm,0.8s,baz=135,slow=2.0,SNR=4.2							
MKAR	**Makanchi Array**	**120.32**	**308**	PKP		PKPdf	16 26 32.5	-0.5
ARCES	**ARCESS Array B**	**144.58**	**345**	PKP		PKPdf	16 27 16.2	-1.0
	2.0nm,0.5s,baz=37,slow=2.7,SNR=28							
JOF	**Joensuu**	**147.65**	**333**	*e*pkp		PKPdf	16 27 24.5	+1.9
KAF	**Kangasniemi**	**149.94**	**335**	*e*pkp		PKPdf	16 27 30.9	+4.6
	2.1nm,0.4s,baz=27,slow=1.8							
FINES	**FINESS Array B**	**150.48**	**334**	PKPbc		PKPdf	16 27 32.8	+5.6
	5.7nm,0.8s,baz=90,slow=5.7,SNR=24							
BRTR	**Keskin Array B**	**153.16**	**286**	PKPbc		PKPdf	16 27 40.1	+8.4
	1.7nm,0.6s,baz=153,slow=2.8,SNR=10							
AKASG	**Malin Array Be**	**154.80**	**312**	PKPbc		PKPdf	16 27 42.2	+8.6
	0.4nm,0.4s,baz=58,slow=1.9,SNR=6.3							

DJA 02 16:16:35.9±0.9, 8.76S×116.30E, h5km±6km, ML4.1/1, 7C, Error ellipse: s-maj=19.2km s-min=13.4km az=118.0, Sumbawa region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
KEDI	**Kedomdong**	**0.33**	**326**	⇑*e*Pg		Pg	16 16 42.9	+0.4
KEDI				⇑*e*Sg		Sg	16 16 46.5	-0.4
RATI	**Rata**	**0.76**	**273**	⇑*e*Pg		Pg	16 16 49.8	-1.3
**RAT

WAU	**Wau**	**1.62**	**163**	*e*P	**P**	**16 54 16.4**	**+0.6**
PMG	**Port Moresby**	**3.71**	**166**	P	**P**	**16 54 43.7**	**-0.9**
	2.5nm,0.3s,baz=345,slow=12,SNR=17						
PMG				S	**S**	**16 55 27.7**	**+0.4**
	3.9nm,0.3s,baz=317,slow=19,SNR=6.3						
PMG	**Port Moresby**	**3.71**	**166**	*e*P	**P**	**16 54 43.6**	**-1.0**
PMG				S	**S**	**16 55 27.8**	**+0.4**
WRA	**Warramunga Arr**	**18.21**	**218**	P	**P**	**16 57 55.5**	**-1.4**
	0.1nm,0.3s,baz=38,slow=11,SNR=4.8						
ASAR	**Alice Springs**	**21.38**	**212**	P	**P**	**16 58 31.6**	**+1.2**
	0.4nm,0.8s,mb2.8,baz=51,slow=8.1,SNR=8.5						
FITZ	**Fitzroy Crossi**	**23.54**	**237**	P	**P**	**16 58 52.3**	**+0.7**
	2.5nm,0.7s,mb3.7,baz=45,slow=9.1,SNR=3.8						
STKA	**Stephens Creek**	**26.32**	**189**	P	**P**	**16 59 17.2**	**-0.7**
	1.7nm,0.8s,mb3.6,baz=4.4,slow=13,SNR=2.6						
STKA	**Stephens Creek**	**26.32**	**189**	P	**P**	**16 59 17.2**	**-0.7**
ILAR	**Eielson Array**	**85.59**	**23**	P	**P**	**17 06 17.9**	**0.0**
	0.4nm,0.6s,mb3.5,baz=243,slow=5.1,SNR=5.7						

NEIC ***02*** *16:54:41.4±0.8,24.08S×66.91W,h189km±8km,mb3.9/1, Error ellipse: s-maj=13.6km s-min=8.6km az=70.0*
IDC ***02*** *16:54:41.1±1.2,24.08S×66.95W,h184km±10km,mb3.6/4, mb1 3.6/9,mb1mx3.5/17, Error ellipse: s-maj=19.3km s-min=15.1km az=57.0*

ISC 02 16:54:40.2±0.8,24.12S±0.06×66.9W±0.1,h191km±9km, n23,σ0°68/23,mb3.9/5,2D,Salta Province

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
LVC	**Limon Verde**	**2.36**	**309**	P		**P**	**16 55 23.3**	**+0.9**
	33nm,0.3s,baz=126,slow=6.6,SNR=502							
LVC				S		**S**	**16 55 54.4**	**-0.5**
	70nm,0.3s,baz=302,slow=22,SNR=70							
LVC	**Limon Verde**	**2.36**	**309**	*e*P		**P**	**16 55 23.2**	**+0.8**
LVC				*e*S		**S**	**16 55 50.3**	**-4.6**
LPAZ	**La Paz**	**7.88**	**352**	P		**P**	**16 56 33.2**	**+0.6**
	0.5nm,0.3s,baz=168,slow=8.9,SNR=12							
LPAZ				S		**S**	**16 57 59.8**	**-0.7**
	0.2nm,0.3s,baz=224,slow=24,SNR=3.8							
LPAZ	**La Paz**	**7.88**	**352**	*e*P		**P**	**16 56 33.3**	**+0.7**
LPAZ				S		**S**	**16 57 59.8**	**-0.7**
CPUP	**Villa Florida**	**8.97**	**106**	P		**P**	**16 56 46.7**	**-0.3**
	0.2nm,0.3s,baz=305,slow=12,SNR=4.3							
CPUP	**Villa Florida**	**8.97**	**106**	*e*P		**P**	**16 56 46.9**	**-0.1**
TRQA	**Tornquist**	**14.52**	**164**	*e*P		**P**	**16 57 57.5**	**-0.4**
PLCA	**Paso Flores**	**16.84**	**190**	P		**P**	**16 58 25.1**	**-1.0**
	0.1nm,0.3s,baz=1.7,slow=9.5,SNR=3.7							
PLCA	**Paso Flores**	**16.84**	**190**	P		**P**	**16 58 26.2**	**0.0**
BDFB	**Brasilia**	**19.68**	**68**	P		**P**	**16 58 56.7**	**+0.3**
	0.5nm,0.3s,baz=248,slow=11,SNR=9.4							
USHA	**Ushuaia**	**30.69**	**182**	P		**P**	**17 00 38.7**	**-0.2**
	16nm,1.1s,mb4.7,baz=355,slow=8.8,SNR=4.9							
VNA3	**Neumayer Olymp**	**57.02**	**161**			**P**	**17 04 08.2**	**+0.5**
VNA1	**Neumayer--Stat**	**57.21**	**160**	⇓*i*		**P**	**17 04 14.8**	**+5.7**
VNA2	**Neumayer--Watz**	**57.58**	**160**			**P**	**17 04 13.0**	**+1.3**
SNAA	**Sanae**	**59.22**	**161**	⇓*i*		**P**	**17 04 21.5**	**-1.5**
TXAR	**Lajitas Array**	**63.81**	**324**	P		**P**	**17 04 54.2**	**-0.1**
	0.2nm,0.6s,mb3.1,baz=140,slow=7.0,SNR=2.6							
QSPA	**South Pole Qui**	**66.08**	**180**	*e*P		**P**	**17 05 08.6**	**+0.5**
	1.2nm,0.5s,mb4.0							
ULM	**Lac du Bonnet**	**78.36**	**342**	P		**P**	**17 06 20.3**	**-0.3**
	1.2nm,0.5s,mb3.8,baz=183,slow=7.3,SNR=3.8							
YKA	**Yellowknife Ar**	**94.26**	**340**	P		**P**	**17 07 38.3**	**+0.2**
	0.3nm,0.4s,mb3.8,baz=133,slow=4.7,SNR=17							
ASAR	**Alice Springs**	**128.37**	**205**	PKP	PKPdf		17 13 25.9	+1.3
	0.5nm,0.7s,baz=128,slow=1.8,SNR=6.7							
WRA	**Warramunga Arr**	**131.54**	**207**	PKP	PKPdf		17 13 32.2	+1.4
	0.3nm,0.7s,baz=157,slow=1.8,SNR=6.3							
ZAL	**Zalesovo**	**143.47**	**28**	PKP	PKPdf		17 13 50.8	-0.6
	0.9nm,0.8s,baz=81,slow=3.3,SNR=5.2							
MKAR	**Makanchi Array**	**146.58**	**40**	PKPbc	PKPbc		17 14 00.5	+2.0
	1.5nm,0.5s,baz=317,slow=2.7,SNR=14							

INMG ***02*** *17:21:07.7±0.9,34.91N×3.78W,h14km±9km,ML2.5, Error ellipse: s-maj=9.3km s-min=2.7km az=157.0*
NEIC ***02*** *17:21:08.0,35.03N×3.82W,MG3.8(MDD), After MDD.*
MDD ***02*** *17:21:08.4±1.1,35.04N×3.81W,mb3.8/20, Error ellipse: s-maj=11.5km s-min=4.0km az=8.0, PRXIMO AftershockPLICA*

ISC 02 17:21:06.8±0.8,35.06N±0.05×3.89W±0.03,h10km,n56, σ1°21/101,1D,Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
EMEL	**Melilla**	**0.80**	**72**	P		**Pb**	**17 21 21.9**	**-0.4**
	344nm,0.2s,SNR=41							
EMEL				S		**Sb**	**17 21 32.4**	**-0.4**
	1μm,0.2s,SNR=9.2							
MELI	**Melilla**	**0.81**	**73**	⇓P		**Pb**	**17 21 22.2**	**-0.3**
MELI				S		**Sb**	**17 21 33.4**	**+0.2**
ERON	**Agron**	**1.96**	**2**	P		**Pn**	**17 21 40.0**	**-0.4**
	2.1nm,0.2s,SNR=7.9							
ERON				S		**Sn**	**17 22 07.0**	**+1.8**
	9.6nm,0.3s,SNR=7.9							
ERON	**Agron**	**1.96**	**2**	P		**Pn**	**17 21 40.8**	**+0.4**
ERON				S		**Sn**	**17 22 06.7**	**+1.5**
EBER	**Berja**	**2.00**	**23**	P		**Pn**	**17 21 40.2**	**-0.9**
	2.0nm,0.2s,SNR=14							
EBER	**Berja**	**2.00**	**23**	P		**Pn**	**17 21 40.2**	**-0.9**
EBER				S		**Sn**	**17 22 06.8**	**+0.4**
ELOJ	**Sierra Loja**	**2.09**	**354**	P		**Pn**	**17 21 43.7**	**+1.3**
	3.3nm,0.3s,SNR=7.9							
ELOJ				S		**Sn**	**17 22 11.3**	**+2.6**
	11nm,0.4s,SNR=7.9							
ELOJ	**Sierra Loja**	**2.09**	**354**	P		**Pn**	**17 21 43.2**	**+0.8**
ELOJ				S		**Sn**	**17 22 10.0**	**+1.3**
ELIJ	**Sierra de Lija**	**2.21**	**327**	P		**Pn**	**17 21 47.3**	**+3.2**
	12nm,0.5s,SNR=20							
ELIJ	**Sierra de Lija**	**2.21**	**327**	P		**Pn**	**17 21 47.3**	**+3.1**
ELIJ				S		**Sn**	**17 22 13.7**	**+1.9**
ECOG	**Cogollos-Vega**	**2.23**	**7**	P		**Pn**	**17 21 45.2**	**+0.9**
	3.3nm,0.3s,SNR=7.9							
ECOG				S		**Sn**	**17 22 12.6**	**+0.5**
	12nm,0.5s,SNR=4.0							
ECOG	**Cogollos-Vega**	**2.23**	**7**	P		**Pn**	**17 21 44.5**	**+0.2**
ECOG				S		**Sn**	**17 22 13.8**	**+1.7**
ESPR	**Espera**	**2.41**	**319**	P		**Pn**	**17 21 49.8**	**+2.8**
	1.4nm,0.2s,SNR=7.7							
ESPR				S		**Sn**	**17 22 20.0**	**+3.2**
	5.4nm,0.2s,SNR=4.0							
ESPR	**Espera**	**2.41**	**319**	P		**Pn**	**17 21 48.3**	**+1.3**
ESPR				S		**Sn**	**17 22 18.4**	**+1.6**
ELUQ	**Luque**	**2.51**	**353**	P		**Pn**	**17 21 50.6**	**+2.2**
	4.3nm,0.3s,SNR=7.9							
ELUQ	**Luque**	**2.51**	**353**	P		**Pn**	**17 21 50.0**	**+1.6**
ELUQ				S		**Sn**	**17 22 21.3**	**+1.9**
EQES	**Quesada**	**2.81**	**13**	P		**Pn**	**17 21 54.1**	**+1.4**
	4.2nm,0.2s,SNR=44							
EQES				S		**Sn**	**17 22 27.2**	**+0.2**
	82nm,0.6s							
EQES	**Quesada**	**2.81**	**13**	P		**Pn**	**17 21 54.1**	**+1.4**
EQES				S		**Sn**	**17 22 26.7**	**-0.3**
EHUE	**Huescar**	**2.94**	**20**	P		**Pn**	**17 21 56.2**	**+1.7**
	1.6nm,0.2s,SNR=11							
EHUE				S		**Sn**	**17 22 29.8**	**-0.4**
	10.0nm,0.4s							
EHUE	**Huescar**	**2.94**	**20**	P		**Pn**	**17 21 56.1**	**+1.7**
EHUE				S		**Sn**	**17 22 30.1**	**-0.1**
EADA	**Adamuz**	**3.15**	**350**	P		**Pn**	**17 21 59.0**	**+1.6**
	0.7nm,0.2s,SNR=4.0							
EADA				S		**Sn**	**17 22 35.1**	**-0.5**
	2.4nm,0.3s							
EADA	**Adamuz**	**3.15**	**350**	P		**Pn**	**17 21 58.0**	**+0.5**
EADA				S		**Sn**	**17 22 35.5**	**0.0**
EMUR	**La Murta**	**3.50**	**37**	P		**Pn**	**17 22 01.6**	**-0.8**
	1.4nm,0.3s,SNR=5.1							
EMUR				S		**Sn**	**17 22 40.6**	**-3.8**
	3.6nm,0.4s							
EMUR	**La Murta**	**3.50**	**37**	P		**Pn**	**17 22 01.4**	**-1.1**
EMUR				S		**Sn**	**17 22 40.1**	**-4.3**
EMIN	**Mina Concepcio**	**3.51**	**321**	P		**Pn**	**17 22 03.0**	**+0.3**
	1.7nm,0.1s,SNR=32							
EMIN				S		**Sn**	**17 22 43.4**	**-1.3**
	3.1nm,0.2s							
EMIN	**Mina Concepcio**	**3.51**	**321**	P		**Pn**	**17 22 03.0**	**+0.3**
EMIN				S		**Sn**	**17 22 42.5**	**-2.2**
PALC	**Alcoutim**	**3.77**	**311**	*e*Pn		**Pn**	**17 22 06.6**	**+0.4**
PALC				*e*Sn		**Sn**	**17 22 49.1**	**-2.0**
	9.1nm,0.4s							
PALC	**Alcoutim**	**3.77**	**311**	Pn		**Pn**	**17 22 06.6**	**+0.4**
PALC				Sn		**Sn**	**17 22 49.1**	**-2.0**
	4.6nm,0.4s							

EGRO	**El Granado**	**3.81**	**311**	P		**Pn**	**17 22 07.1**	**+0.2**
	2.5nm,0.2s,SNR=10							
EGRO				S		**Sn**	**17 22 50.6**	**-1.7**
	6.1nm,0.3s							
EGRO	**El Granado**	**3.81**	**311**	P		**Pn**	**17 22 07.0**	**+0.1**
EGRO				S		**Sn**	**17 22 50.1**	**-2.2**
ETOB	**Tobarra**	**4.04**	**27**	P		**Pn**	**17 22 10.5**	**+0.4**
	4.3nm,0.2s,SNR=27							
ETOB				S		**Sn**	**17 22 55.8**	**-2.2**
	4.7nm,0.3s							
ETOB	**Tobarra**	**4.04**	**27**	P		**Pn**	**17 22 10.5**	**+0.4**
ETOB				S		**Sn**	**17 22 56.5**	**-1.5**
PBEJ	**Beja**	**4.36**	**314**	*e*Pn		**Pn**	**17 22 15.1**	**+0.4**
PBEJ				*e*Sn		**Sn**	**17 23 05.5**	**-0.7**
	5.3nm,0.5s							
PBEJ	**Beja**	**4.36**	**314**	Pn		**Pn**	**17 22 15.1**	**+0.4**
PBEJ				Sn		**Sn**	**17 23 05.5**	**-0.7**
	2.7nm,0.5s							
EBAD	**Badajoz**	**4.46**	**327**	P		**Pn**	**17 22 16.7**	**+0.6**
	2.6nm,0.2s,SNR=1453							
EBAD				S		**Sn**	**17 23 05.8**	**-2.9**
	7.0nm,0.3s,SNR=7.9							
EBAD	**Badajoz**	**4.46**	**327**	P		**Pn**	**17 22 16.8**	**+0.7**
EBAD				S		**Sn**	**17 23 05.1**	**-3.5**
ESDC	**Sonseca Array**	**4.61**	**359**	P		**Pn**	**17 22 18.0**	**-0.1**
	1.7nm,0.1s,baz=178,slow=12,SNR=16							
ESDC				S		**Sn**	**17 23 09.9**	**-2.5**
	1.5nm,0.4s,baz=66,slow=7.6,SNR=7.9							
ESLA	**Sonseca Array**	**4.61**	**359**	*e*P		**Pn**	**17 22 17.8**	**-0.4**
PTEO	**Sao Teotonio**	**4.63**	**304**	*e*Pn		**Pn**	**17 22 19.2**	**+0.7**
PTEO				*e*Sn		**Sn**	**17 23 10.1**	**-2.8**
	6.6nm,0.3s							
PTEO	**Sao Teotonio**	**4.63**	**304**	Pn		**Pn**	**17 22 19.2**	**+0.7**
PTEO				Sn		**Sn**	**17 23 10.1**	**-2.8**
	3.3nm,0.3s							
EBEN	**Beniarda**	**4.67**	**38**	P		**Pn**	**17 22 18.4**	**-0.6**
	1.1nm,0.3s,SNR=7.9							
EBEN				S		**Sn**	**17 23 08.8**	**-5.3**
	0.8nm,0.2s,SNR=7.9							
EBEN	**Beniarda**	**4.67**	**38**	P		**Pn**	**17 22 18.1**	**-1.0**
EBEN				S		**Sn**	**17 23 08.2**	**-5.8**
MOE	**Montemor**	**4.98**	**315**	*e*Sn		**Sn**	**17 23 21.1**	**-0.7**
PCBR	**Castelo Branco**	**5.56**	**330**	*e*Pn		**Pn**	**17 22 32.0**	**+0.4**
PLOU	**Loures**	**5.69**	**314**	*e*Pn		**Pn**	**17 22 33.0**	**-0.4**
EIBI	**Ibiza**	**5.76**	**45**	P		**Pn**	**17 22 32.7**	**-1.8**
	1.6nm,0.2s,SNR=7.9							
EIBI				S		**Sn**	**17 23 34.2**	**-7.2**
	1.4nm,0.3s,SNR=7.9							
EIBI	**Ibiza**	**5.76**	**45**	P		**Pn**	**17 22 32.6**	**-1.9**
EIBI				S		**Sn**	**17 23 34.4**	**-6.9**
PTOM	**Tomar**	**5.80**	**323**	*e*Pn		**Pn**	**17 22 35.5**	**+0.4**
ETOR	**Torete**	**5.93**	**14**	P		**Pn**	**17 22 36.6**	**-0.2**
	0.7nm,0.2s,SNR=7.9							
ETOR				S		**Sn**	**17 23 41.2**	**-4.4**
	1.9nm,0.4s,SNR=7.9							
ERTA	**Horta de San J**	**6.76**	**28**	P		**Pn**	**17 22 48.4**	**-0.2**
	2.3nm,0.4s,SNR=5.8							
ERTA	**Horta de San J**	**6.76**	**28**	P		**Pn**	**17 22 48.0**	**-0.6**
PVRL	**Vila Real**	**6.90**	**335**	*e*Pn		**Pn**	**17 22 50.9**	**+0.4**
PVRL				*e*Sn		**Sn**	**17 24 06.5**	**-3.4**
PBRG	**Braganca**	**7.10**	**342**	*e*Pn		**Pn**	**17 22 53.1**	**-0.2**
PBRG				*e*Sn		**Sn**	**17 24 10.1**	**-4.7**
ECAL	**Calabor**	**7.22**	**343**	P		**Pn**	**17 22 54.5**	**-0.6**
	1.5nm,0.3s,SNR=7.9							
ECAL				S		**Sn**	**17 24 12.8**	**-5.2**
	4.3nm,0.5s,SNR=7.9							
ECAL	**Calabor**	**7.22**	**343**	P		**Pn**	**17 22 54.4**	**-0.7**
ECAL				S		**Sn**	**17 24 12.7**	**-5.4**
EALK	**Alkurruntz**	**8.35**	**12**	P		**P**	**17 23 10.5**	**-0.3**

IDC 02 17:30:07.0±4.6,53.05N×168.01W,mb3.8/5,mb1 3.7/6, mb1mx3.5/25,ML2.8/1,MS3.0/2,Ms1 3.0/2,ms1mx2.4/29, Error ellipse: s-maj=106.0km s-min=36.7km az=163.0, Fox Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
ILAR	**Eielson Array**	**15.93**	**34**	Pn		P	17 33 51.7	-2.1
	0.0nm,0.3s,baz=238,slow=8.5,SNR=2.7							
INK	**Inuvik**	**22.33**	**34**	P		P	17 35 04.2	-3.2
	0.9nm,0.7s,baz=240,slow=8.8,SNR=5.1							
YKA	**Yellowknife Ar**	**29.17**	**50**	P		P	17 36 09.8	-1.8
	0.1nm,0.6s,baz=275,slow=8.5,SNR=3.3							
ASAJ	**Asahikawa**	**33.28**	**275**	LR		LR	17 47 53.9	
	comp=Z,17nm,20.0s,baz=20,slow=32							
JHJ	**Hachijo jima 2**	**41.93**	**263**	LR		LR	17 52 37.7	
	comp=Z,35nm,21.1s,baz=284,slow=32							
FINES	**FINESS Array B**	**65.31**	**353**	P		P	17 40 50.3	-1.9
	1.7nm,0.8s,baz=27,slow=8.5,SNR=8.3							
HFS	**Hagfors**	**67.17**	**359**	P		P	17 41 02.1	-1.9
	1.1nm,0.4s,baz=27,slow=3.2,SNR=11							
AKASG	**Malin Array Be**	**75.61**	**349**	P		P	17 41 53.2	-1.5
	1.9nm,0.8s,baz=15,slow=6.4,SNR=5.4							

JMA ***02*** *17:58:03.0±0.2,24.68N×122.79E,h34km,M2.8*
TAP ***02*** *17:58:04.6,24.88N×122.69E,h4km±1km,ML3.3*

ISC 02 17:58:00.6±2.5,24.9N±0.3×122.9E±0.5,h6km±62km,n5, σ0°39/9,Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
YOJ	**Yonaguni jima**	**0.46**	**161**	P		**Pg**	**17 58 10.5**	**+0.7**
YOJ				S		**Sg**	**17 58 15.7**	**-0.3**
IRIF	**Iriomote-Funau**	**0.98**	**125**	P		**Pb**	**17 58 19.5**	**-0.1**
IRIF				*e*S		**Sb**	**17 58 32.6**	**-0.1**
JKRS	**Kuro-shima**	**1.25**	**122**	P		**Pb**	**17 58 23.7**	**-0.5**
JKRS				*e*S		**Sb**	**17 58 41.0**	**+0.6**
JIJ	**Ishigaki jima**	**1.30**	**114**	P		**Pb**	**17 58 24.6**	**-0.4**
JIJ				*e*S		**Sb**	**17 58 41.7**	**-0.1**
JTJ	**Tarama**	**1.71**	**98**	P		**Pn**	**17 58 31.4**	**+0.2**

MAN 02 18:07:22.3,16.15N×120.00E,h10km,mb4.5,ML3.4, MS3.2,8C,Luzon

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
BOLP	**Bolinao**	**0.25**	**339**↑	*e*P		Pg	18 07 28.9	+1.3
BOLP				*e*S		Sg	18 07 32.7	+1.6
SCZP	**Santa Cruz**	**0.38**	**194**↑	*e*P		Pg	18 07 30.5	+0.3
SCZP				*e*S		Sg	18 07 36.9	+1.5
BCPH	**Baguio City Da**	**0.60**	**67**↑	*i*P		Pg	18 07 34.5	0.0
BCPH				*i* S		Sg	18 07 43.9	+1.4
BALP	**Baler**	**1.57**	**105**↑	*e*P		Pn	18 07 51.0	+0.6
ABRA	**Dolores**	**1.64**	**241**↑	*e*P		Pn	18 07 49.9	-1.5
ABRA				*e*S		Sn	18 08 15.0	+2.3
CAUP	**Cauayan**	**1.92**	**65**↑	*e*P		Pn	18 07 56.8	+1.4
APYP	**Conner**	**2.08**	**35**↑	*e*P		Pn	18 07 56.3	-1.3
APYP				*e*S		Sn	18 08 24.5	+0.7
LUBP	**Lubang**	**2.41**	**174**↑	*e*P		Pn	18 08 02.5	-0.1

IDC ***02*** *18:11:33.7±0.5,28.87N×43.46W,mb4.3/26,mb1 4.5/26, mb1mx4.4/29,MS4.1/19,Ms1 4.2/19,ms1mx4.1/21, Error ellipse: s-maj=13.6km s-min=12.5km az=124.0*
NEIC ***02*** *18:11:37.3±0.2,28.86N×43.44W,mb4.6/37,MS4.3/5, Error ellipse: s-maj=5.8km s-min=3.3km az=174.0*

ISC 02 18:11:35.5±0.3,28.88N±0.06×43.46W±0.04,h23km, h23km±.5km:pP-P,n111,σ0°78/103,mb4.5/61,MS4.2/23, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
BBSR	**BB Station**	**18.60**	**286**	*e*P		**P**	**18 15 55.4**	**+2.0**
SJG	**San Juan**	**23.36**	**248**	LR		LR	18 23 58.8	
	comp=Z,365nm,20.1s,MS3.8,baz=270,slow=32							
EMMW	**East Machias**	**24.75**	**316**	P		**P**	**18 16 55.9**	**-0.7**
PCRV	**Puerto La Cruz**	**27.20**	**231**	LR		LR	18 26 11.0	
	comp=Z,223nm,21.4s,MS3.7,baz=179,slow=32							
SCHQ	**Schefferville**	**30.95**	**333**	P		**P**	**18 17 52.1**	**-0.8**
	4.2nm,0.9s,mb4.3,baz=92,slow=10,SNR=4.1							
SCHQ				LR		LR	18 29 16.7	
	comp=Z,411nm,20.4s,MS4.1,baz=136,slow=34							
SADO	**Sadowa**	**32.37**	**309**	LR		LR	18 29 34.6	
	comp=Z,653nm,18.3s,MS4.4,baz=124,slow=33							
ESDC	**Sonseca Array**	**34.12**	**61**	P		**P**	**18 18 20.0**	**-0.7**
	3.5nm,1.0s,mb4.3,baz=261,slow=8.7,SNR=9.3							
ESDC				LR		LR	18 28 51.2	
	comp=Z,218nm,19.3s,MS3.9,baz=245,slow=30							
QUIF	**Quistinic**	**36.34**	**47**	*e*P		**P**	**18 18 39.3**	**-0.2**
	55nm,1.5s,mb5.0							
ROSF	**Rostrenen**	**36.40**	**47**	*e*P		**P**	**18 18 40.0**	**0.0**

SGMF	**Saint Gilles**	**36.83**	**47**	*e*P		**P**	**18 18 43.8**	**+0.2**
GRR	**Gorron**	**37.96**	**47**	*e*P		**P**	**18 18 54.2**	**+1.1**
	15nm,1.0s,mb4.4							
MFF	**Saint Martin d**	**38.00**	**50**	*e*P		**P**	**18 18 53.9**	**+0.4**
	11nm,0.9s,mb4.3							
PLAL	**Pickwick Lake**	**38.11**	**291**	*e*P		**P**	**18 18 55.3**	**+0.8**
PLAL				*e*		pP	18 19 02.5	+1.0
FLN	**La Foliniere**	**38.30**	**47**	*e*P		**P**	**18 18 56.1**	**+0.1**
FLN				*e*R				
	314nm,21.2s							
LFF	**La Frestale**	**38.30**	**53**	*e*P		**P**	**18 18 55.0**	**-1.0**
	14nm,0.8s,mb4.4							
FRB	**Frobisher Bay**	**38.41**	**342**	P		**P**	**18 18 56.1**	**-0.7**
	7.4nm,0.8s,mb4.5,baz=137,slow=8.5,SNR=13							
LDF	**La Druitiere**	**38.48**	**47**	*e*P		**P**	**18 18 57.6**	**+0.1**
	15nm,1.0s,mb4.4							
MTLF	**Montolieu**	**39.14**	**56**	*e*P		**P**	**18 19 02.0**	**-1.0**
	8.5nm,0.9s,mb4.2							
TCF	**Toulx Ste Croi**	**39.54**	**51**	*e*P		**P**	**18 19 06.7**	**+0.3**
AVF	**Avril sur Loir**	**40.40**	**51**	*e*P		**P**	**18 19 13.4**	**-0.1**
CCM	**Cathedral Cave**	**40.53**	**296**	*e*P		**P**	**18 19 13.8**	**-0.7**
	3.9nm,0.7s,mb4.2							
SSF	**Saint Saulge**	**40.55**	**50**	*e*P		**P**	**18 19 14.7**	**0.0**
	7.9nm,0.8s,mb4.1							
SMF	**Signal de Mont**	**40.71**	**51**	*e*P		**P**	**18 19 16.4**	**+0.4**
	17nm,1.0s,mb4.3							
LOR	**Lormes**	**40.82**	**50**	*e*P		**P**	**18 19 16.9**	**0.0**
	12nm,1.0s,mb4.2							
LOR				*e*R				
	149nm,22.2s							
BAIF	**Baives**	**41.58**	**46**	*e*P		**P**	**18 19 21.7**	**-1.3**
	14nm,1.1s,mb4.2							
UALR	**University of**	**41.62**	**291**	*e*P		**P**	**18 19 23.7**	**+0.1**
	20nm,1.0s,mb4.7							
MEZF	**Maizieres J'vi**	**41.82**	**48**	*e*P		**P**	**18 19 25.4**	**+0.4**
	9.6nm,0.6s,mb4.3							
CABF	**La Chapelle**	**42.24**	**51**	*e*P		**P**	**18 19 29.2**	**+0.7**
	12nm,1.0s,mb4.2							
TIC	**Toumodi**	**42.47**	**114**	*e*P		**P**	**18 19 30.5**	**-0.3**
	65nm,1.2s,mb5.1							
MBDF	**Montbardon**	**42.53**	**54**	*e*P		**P**	**18 19 32.7**	**+1.8**
	15nm,1.1s,mb4.3							
LPL	**La Plagne**	**42.57**	**53**	*e*P		**P**	**18 19 31.7**	**+0.5**
LPG	**La Plagne**	**42.58**	**53**	*e*P		**P**	**18 19 31.9**	**+0.6**
	7.7nm,1.0s,mb4.1							
DBIC	**Dimbokro**	**42.59**	**114**	P		**P**	**18 19 31.4**	**-0.4**
	7.8nm,0.9s,mb4.4,baz=280,slow=7.5,SNR=10.0							
DBIC				LR		LR	18 34 26.2	
	comp=Z,872nm,20.9s,MS4.6,baz=270,slow=32							
HAU	**Haudompre**	**42.60**	**49**	*e*P		**P**	**18 19 31.4**	**0.0**
HAU				*e*R				
	250nm,22.2s							
MIAR	**Mount Ida**	**42.66**	**291**	*e*P		**P**	**18 19 32.6**	**+0.5**
	65nm,1.8s,mb5.0							
LIC	**Lamto**	**42.71**	**114**	*e*P		**P**	**18 19 32.8**	**0.0**
	26nm,0.9s,mb4.7							
LIC				*e*R				
	537nm,17.5s							
KIC	**Kosan Boka**	**42.86**	**114**	*e*P		**P**	**18 19 33.5**	**-0.5**
	144nm,1.7s,mb5.4							
CDF	**Champ du Feu**	**43.27**	**49**	*e*P		**P**	**18 19 36.9**	**0.0**
	4.2nm,0.6s,mb4.0							
OTAV	**Otavalo**	**43.91**	**236**	*e*P		**P**	**18 19 43.6**	**+1.1**
	8.4nm,1.1s,mb4.4							
BDFB	**Brasilia**	**44.48**	**186**	P		**P**	**18 19 47.8**	**+0.7**
	5.7nm,0.7s,mb4.4,baz=359,slow=9.5,SNR=14							
BDFB				LR		LR	18 36 33.7	
	comp=Z,185nm,18.6s,MS4.0,baz=169,slow=34							
ULM	**Lac du Bonnet**	**44.62**	**314**	P		**P

HLID	**Hailey**	**57.45**	**305**	*eP*	**P**		**18 21 24.9**	**0.0**
	comp=Z,5.1nm,1.4s,mb4.4								
AKASG	**Malin Array Be**	**57.53**	**46**	P	**P**		**18 21 24.4**	**-1.0**
	comp=Z,3.0nm,1.0s,mb4.3,baz=273,slow=6.3,SNR=9.0								
NEW	**Newport**	**58.51**	**311**	P	**P**		**18 21 32.3**	**0.0**
	comp=Z,9.8nm,1.1s,mb4.8,baz=68,slow=6.5,SNR=10								
NEW	**Newport**	**58.51**	**311**	*eP*	**P**		**18 21 31.5**	**-0.8**
	comp=Z,24nm,1.3s,mb5.1								
LNOR	**Lincton Mounta**	**59.73**	**309**	*eP*	**P**		**18 21 40.4**	**-0.4**
NLW	**Nelson Butte**	**60.66**	**311**	*eP*	**P**		**18 21 46.4**	**-0.7**
NVAR	**Mina Array Bea**	**61.48**	**300**	P	**P**		**18 21 52.6**	**-0.2**
	comp=Z,1.4nm,0.7s,mb4.2,baz=78,slow=7.2,SNR=12								
NVAR				LR	LR		18 48 27.8		
	comp=Z,478nm,19.2s,MS4.7,baz=130,slow=36								
MTUM	**Tungsten Hills**	**61.97**	**299**	*eP*	**P**		**18 21 55.9**	**-0.3**
BRTR	**Keskin Array B**	**62.81**	**58**	P	**P**		**18 22 01.5**	**-0.2**
	comp=Z,3.4nm,1.0s,mb4.5,baz=270,slow=4.9,SNR=11								
INK	**Inuvik**	**63.53**	**335**	LR	LR		18 48 26.2		
	comp=Z,292nm,19.9s,MS4.5,baz=269,slow=35								
INK	**Inuvik**	**63.53**	**335**	*eP*	**P**		**18 22 04.3**	**-1.7**
	comp=Z,26nm,1.7s,mb5.0								
OHCM	**Honcut**	**63.61**	**302**	*eP*	**P**		**18 22 07.7**	**+0.8**
OHCM				*e*	pP		18 22 14.3	+0.2	
DLBC	**Dease Lake**	**64.14**	**324**	P	**P**		**18 22 10.1**	**+0.1**
	comp=Z,1.7nm,0.8s,mb4.2,baz=283,slow=6.3,SNR=4.2								
DAWY	**Dawson**	**66.94**	**332**	*eP*	**P**		**18 22 27.5**	**-0.5**
ILAR	**Eielson Array**	**69.71**	**334**	P	**P**		**18 22 45.2**	**+0.1**
	comp=Z,2.8nm,0.8s,mb4.3,baz=69,slow=4.4,SNR=31								
ILAR				LR	LR		18 55 09.2		
	comp=Z,161nm,18.2s,MS4.3,baz=89,slow=38								
COLA	**College**	**70.04**	**334**	*eP*	**P**		**18 22 46.9**	**-0.3**
GNI	**Garni**	**70.75**	**54**	*eP*	**P**		**18 22 52.0**	**+0.1**
GNI				*e*	pP	pP	18 22 59.1	-0.1	
ARU	**Arti**	**72.66**	**35**	PFAKE			18 23 10.0	+7.0	
ARU				LR	LR				
	comp=Z,93nm,19.0s,MS4.1								
PLCA	**Paso Flores**	**73.68**	**201**	P	**P**		**18 23 09.6**	**+0.3**
	comp=Z,2.0nm,0.8s,mb4.1,baz=30,slow=4.3,SNR=8.8								
PLCA	**Paso Flores**	**73.68**	**201**	*eP*	**P**		**18 23 08.5**	**-0.8**
	comp=Z,1.9nm,0.8s,mb4.1								
ZRNK	**Zerenda**	**79.64**	**35**	*eP*	**P**		**18 23 42.9**	**+0.5**
LSZ	**Lusaka**	**81.91**	**112**	*eP*	**P**		**18 23 55.1**	**0.0**
KMBO	**Kilima Mbogo**	**82.41**	**95**	LR	LR		18 59 15.7		
	comp=Z,535nm,21.1s,MS4.9,baz=278,slow=35								
KMBO	**Kilima Mbogo**	**82.41**	**95**	*eP*	**P**		**18 23 58.4**	**+0.7**
KURK	**Kurchatov**	**85.71**	**33**	*eP*	**P**		**18 24 12.9**	**-0.8**
KURK				*e*	pP		18 24 21.6	+0.5	
ZAL	**Zalesovo**	**86.19**	**28**	P	**P**		**18 24 17.8**	**+1.9**
	comp=Z,0.6nm,0.8s,mb3.9,baz=55,slow=2.4,SNR=3.7								
MKAR	**Makanchi Array**	**90.17**	**34**	P	**P**		**18 24 37.0**	**+1.8**
	comp=Z,0.9nm,0.8s,mb4.1,baz=297,slow=5.4,SNR=3.8								
MKAR	**Makanchi Array**	**90.17**	**34**	P	**P**		**18 24 37.0**	**+1.8**
QSPA	**South Pole Qui**	**118.79**	**180**	*e*PKP	PKPdf		18 30 17.6	-8.1	
CMAR	**Chiang Mai Arr**	**120.56**	**42**	PKP	PKPdf		18 30 27.5	-3.0	
	comp=Z,1.1nm,0.7s,baz=304,slow=3.6,SNR=14								
ASAR	**Alice Springs**	**174.30**	**25**	PKP	PKPdf		18 31 44.6	-3.4	
	comp=Z,0.7nm,0.8s,baz=187,slow=2.2,SNR=6.0								

*IDC **02** 18:13:53.1±1.2,28.90N×43.49W,mb3.9/9,mb1 4.2/9, mb1mx3.9/25,Error ellipse: s-maj=35.3km s-min=26.7km az=167.0*
*NEIC **02** 18:13:54.6±0.7,28.90N×43.49W,h10km,mb4.5/1,Error ellipse: s-maj=20.1km s-min=15.8km az=161.0*
ISC 02 18:13:52.9±1.1,29.0N±0.2×43.5W±0.2,h10km,n11, σ0s54/10,mb3.9/9,Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LPAZ	**La Paz**	**50.90**	**211**	P	**P**	**18 22 56.3**	**-0.2**
	1.3nm,0.8s,mb3.9,baz=342,slow=3.2,SNR=2.9						
TXAR	**Lajitas Array**	**52.01**	**286**	P	**P**	**18 23 04.7**	**-0.2**
	0.8nm,0.9s,mb3.7,baz=90,slow=8.1,SNR=4.4						
PDAR	**Pinedale Array**	**54.00**	**304**	P	**P**	**18 23 19.1**	**-0.2**
	1.8nm,1.0s,mb4.0,baz=76,slow=7.4,SNR=5.2						
FINES	**FINESS Array B**	**55.28**	**33**	P	**P**	**18 23 27.9**	**-0.6**
	2.0nm,0.9s,mb4.2,baz=14,slow=7.9,SNR=3.3						
YKA	**Yellowknife Ar**	**56.05**	**328**	P	**P**	**18 23 33.0**	**-1.0**
	0.8nm,0.9s,mb3.8,baz=92,slow=7.5,SNR=5.3						
NEW	**Newport**	**58.43**	**311**	P	**P**	**18 23 51.4**	**+0.4**
	5.7nm,1.2s,mb4.5,baz=78,slow=9.3,SNR=3.7						
NEW	**Newport**	**58.43**	**311**	P	**P**	**18 23 51.3**	**+0.3**
	5.2nm,1.1s,mb4.5						
NVAR	**Mina Array Bea**	**61.40**	**300**	P	**P**	**18 24 12.1**	**+0.5**
	0.6nm,0.8s,mb3.8,baz=83,slow=7.3,SNR=3.8						
BRTR	**Keskin Array B**	**62.80**	**58**	P	**P**	**18 24 21.4**	**+0.5**
	0.7nm,0.8s,mb3.8,baz=304,slow=5.2,SNR=3.9						
ILAR	**Eielson Array**	**69.61**	**334**	P	**P**	**18 25 04.8**	**+0.8**
	1.2nm,0.8s,mb3.9,baz=64,slow=4.9,SNR=8.0						
CMAR	**Chiang Mai Arr**	**120.51**	**42**	PKP	PKPdf	18 32 46.8	-1.7
	0.5nm,0.5s,baz=282,slow=2.6,SNR=4.1						

*NEIC **02** 18:26:27.7,34.97N×2.48W,h18km,MG3.5(MDD),After MDD.*
MDD 02 18:26:26.6±1.4,34.98N×2.41W,mb3.5/10,Error ellipse: s-maj=13.9km s-min=5.9km az=3.0,PRXIMO,Morocco

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MELI	**Melilla**	**0.53**	**307**	P	Pg	18 26 36.9	-0.4
MELI				S	Sg	18 26 42.6	-1.8
EMEL	**Melilla**	**0.55**	**306**	P	Pg	18 26 36.5	-1.0
	347nm,0.2s,SNR=13						
EMEL				S	Sg	18 26 45.0	0.0
	304nm,0.3s,SNR=12						
EBER	**Berja**	**1.96**	**349**	P	Pn	18 26 58.8	-2.5
	1.5nm,0.3s,SNR=7.5						
EBER	**Berja**	**1.96**	**349**	P	Pn	18 26 58.5	-2.9
EBER				S	Sn	18 27 20.9	-6.1
ERON	**Agron**	**2.33**	**331**	P	Pn	18 27 03.6	-3.1
ERON				S	Sn	18 27 31.0	-5.5
ECOG	**Cogollos-Vega**	**2.48**	**338**	S	Sn	18 27 35.9	-4.4
	3.4nm,0.3s,SNR=7.9						
ECOG	**Cogollos-Vega**	**2.48**	**338**	P	Pn	18 27 05.6	-3.2
ECOG				S	Sn	18 27 34.3	-5.9
ELOJ	**Sierra Loja**	**2.58**	**327**	S	Sn	18 27 40.9	-2.0
	0.7nm,0.2s,SNR=7.9						
ELOJ	**Sierra Loja**	**2.58**	**327**	P	Pn	18 27 07.3	-3.1
ELOJ				S	Sn	18 27 36.2	-6.8
EHUE	**Huescar**	**2.84**	**357**	P	Pn	18 27 12.6	-1.4
	1.6nm,0.2s,SNR=8.1						
EHUE				S	Sn	18 27 46.3	-3.0
	1.1nm,0.2s,SNR=5.8						
EHUE	**Huescar**	**2.84**	**357**	P	Pn	18 27 11.9	-2.1
EHUE				S	Sn	18 27 43.3	-6.1
EQES	**Quesada**	**2.87**	**350**	P	Pn	18 27 13.0	-1.5
	1.7nm,0.1s,SNR=13						
EQES				S	Sn	18 27 46.0	-4.2
	18nm,0.4s,SNR=4.0						
EQES	**Quesada**	**2.87**	**350**	P	Pn	18 27 12.9	-1.5
EQES				S	Sn	18 27 44.8	-5.4
ELUQ	**Luque**	**2.98**	**330**	P	Pn	18 27 15.1	-0.9
	2.2nm,0.4s,SNR=7.9						
ELUQ				S	Sn	18 27 47.9	-5.2
	2.0nm,0.4s,SNR=7.9						
ELUQ	**Luque**	**2.98**	**330**	P	Pn	18 27 13.6	-2.4
ELUQ				S	Sn	18 27 46.5	-6.6
EMUR	**La Murta**	**3.01**	**18**	P	Pn	18 27 13.2	-3.3
	4.2nm,0.3s,SNR=9.0						
EMUR				S	Sn	18 27 50.1	-3.7
	2.7nm,0.3s,SNR=4.5						
EMUR	**La Murta**	**3.01**	**18**	P	Pn	18 27 13.0	-3.5
EMUR				S	Sn	18 27 46.8	-7.0
ELIJ	**Sierra de Lija**	**3.09**	**310**	P	Pn	18 27 14.1	-3.5
	1.3nm,0.4s,SNR=4.0						
ELIJ				S	Sn	18 27 51.4	-4.4
	1.5nm,0.3s,SNR=4.0						
ELIJ	**Sierra de Lija**	**3.09**	**310**	P	Pn	18 27 13.8	-3.8
ELIJ				S	Sn	18 27 47.8	-8.0
ESPR	**Espera**	**3.37**	**305**	P	Pn	18 27 19.9	-1.7
	0.9nm,0.2s,SNR=7.9						
ESPR				S	Sn	18 27 58.2	-4.7
	2.4nm,0.3s,SNR=7.9						
ESPR	**Espera**	**3.37**	**305**	P	Pn	18 27 18.3	-3.3
ESPR				S	Sn	18 27 55.2	-7.7
EADA	**Adamuz**	**3.63**	**332**	P	Pn	18 27 23.0	-2.3
	0.4nm,0.2s,SNR=4.8						
EADA				S	Sn	18 28 04.3	-5.2
	4.6nm,0.4s,SNR=9.4						
EADA	**Adamuz**	**3.63**	**332**	P	Pn	18 27 21.9	-3.3
EADA				S	Sn	18 28 01.4	-8.0
EVIA	**Vianos**	**3.66**	**359**	P	Pn	18 27 22.6	-3.0
EVIA				S	Sn	18 28 02.1	-8.0
ETOB	**Tobarra**	**3.73**	**10**	P	Pn	18 27 24.0	-2.6
	2.4nm,0.3s,SNR=11						
ETOB				S	Sn	18 28 06.9	-5.0
	1.9nm,0.2s,SNR=6.0						
ETOB	**Tobarra**	**3.73**	**10**	P	Pn	18 27 24.1	-2.5
ETOB				S	Sn	18 28 04.8	-7.1
EBEN	**Beniarda**	**4.11**	**25**	P	Pn	18 27 30.3	-1.9
	0.9nm,0.2s,SNR=7.9						
EBEN				S	Sn	18 28 16.2	-5.5
	1.0nm,0.3s,SNR=7.9						
EBEN	**Beniarda**	**4.11**	**25**	P	Pn	18 27 29.2	-2.9
EBEN				S	Sn	18 28 14.1	-7.6
EMIN	**Mina Concepcio**	**4.42**	**310**	P	Pn	18 27 33.2	-3.4
	0.3nm,0.2s,SNR=7.9						
EMIN				S	Sn	18 28 22.2	-7.3
	1.1nm,0.4s,SNR=7.9						
EMIN	**Mina Concepcio**	**4.42**	**310**	P	Pn	18 27 32.7	-3.8
EMIN				S	Sn	18 28 20.4	-9.2
EGRO	**El Granado**	**4.83**	**303**	P	Pn	18 27 38.4	-3.9
	1.5nm,0.3s,SNR=7.9						
EGRO	**El Granado**	**4.83**	**303**	P	Pn	18 27 37.8	-4.5
ESDC	**Sonseca Array**	**4.85**	**346**	P	Pn	18 27 39.9	-2.7
	1.0nm,0.3s,baz=165,slow=12,SNR=5.2						
EIBI	**Ibiza**	**5.04**	**36**	P	Pn	18 27 42.8	-2.4
	1.8nm,0.2s,SNR=7.9						
EBAD	**Badajoz**	**5.28**	**317**	P	Pn	18 27 44.3	-4.3
	0.5nm,0.3s,SNR=7.9						
EMOS	**Mosqueruela**	**5.59**	**15**	P	Pn	18 27 49.6	-3.5
	0.6nm,0.3s,SNR=7.9						
EMOS	**Mosqueruela**	**5.59**	**15**	P	Pn	18 27 49.3	-3.7
ETOR	**Torete**	**5.84**	**3**	P	Pn	18 27 53.4	-3.1
	0.8nm,0.3s,SNR=7.9						
ERTA	**Horta de San J**	**6.35**	**19**	P	Pn	18 28 00.9	-2.9
	0.8nm,0.3s,SNR=7.9						
ERTA	**Horta de San J**	**6.35**	**19**	P	Pn	18 28 00.5	-3.2

*NIED **02** 18:38:00,33.50N×140.90E,h50km,Mw3.6 Best double couple: Ms3.01×10^14 NP1:φs198°,δ75°,λ87°. NP2:φs30°, δ15°,λ102°.*
*JMA **02** 18:38:51.9±0.1,33.50N×140.90E,h65km±3km,M3.8*
*NEIC **02** 18:38:52.8±2.0,33.36N×140.79E,h55km±17km,mb3.7/2, Error ellipse: s-maj=37.9km s-min=15.4km az=68.0*
*IDC **02** 18:38:53.1±3.3,33.38N×140.88E,h60km±25km,mb3.4/5, mb1 3.6/6,mb1mx3.3/22,ML3.5/1,Error ellipse: s-maj=40.0km s-min=17.5km az=61.0*
ISC 02 18:38:51.2±0.7,33.44N±0.04×140.93E±0.07,h63km±6km, n26,σ0s60/37,mb3.8/8,Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHJ2	**Mitsune**	**0.99**	**251**	P	**P**	**18 39 10.4**	**+1.0**
JHJ2				S	**S**	**18 39 23.4**	**+0.5**
JHJ	**Hachijo jima 2**	**1.01**	**252**	P	**P**	**18 39 10.2**	**+0.5**
	574nm,0.3s,baz=69,slow=21,SNR=325						
JHJ				S	**S**	**18 39 23.5**	**+0.1**
	1µm,0.3s,baz=69,slow=22,SNR=50						
BSO1	**Boso 1**	**1.21**	**2**	P	**P**	**18 39 12.1**	**-0.3**
BSO1				S	**S**	**18 39 28.2**	**0.0**
BSO2	**Boso 2**	**1.32**	**354**	S	**S**	**18 39 31.5**	**+0.6**
BSO3	**Boso 3**	**1.40**	**346**	P	**S**	**18 39 15.3**	**+0.1**
BSO3				S	**S**	**18 39 32.7**	**-0.2**
BSO4	**Boso 4**	**1.62**	**343**	P	**P**	**18 39 18.4**	**+0.3**
BSO4				S	**S**	**18 39 38.5**	**+0.5**
JKO	**Kozu shima**	**1.67**	**297**	P	**P**	**18 39 19.1**	**+0.4**
JKO				S	**S**	**18 39 38.8**	**-0.3**
NJJJ	**Nii jima 2**	**1.67**	**306**	P	**P**	**18 39 19.1**	**+0.3**
NJJJ				S	**S**	**18 39 38.8**	**-0.4**
JIM2	**Oshima 3**	**1.78**	**316**	P	**P**	**18 39 20.0**	**-0.3**
JIM2				S	**S**	**18 39 40.8**	**-1.0**
JIZS	**Izushimoda**	**2.12**	**307**	P	**P**	**18 39 25.5**	**+0.4**
JIZS				S	**S**	**18 39 50.0**	**-0.3**
KTJJ	**Kamata 2**	**2.14**	**314**	P	**P**	**18 39 25.0**	**-0.3**
KTJJ				S	**S**	**18 39 49.1**	**-1.5**
AJI	**Ajiro**	**2.20**	**317**	P	**P**	**18 39 26.1**	**-0.1**
MAJO	**Matsushiro**	**3.82**	**325**	*e*Pn	**P**	**18 39 49.3**	**+0.4**
MAJO				*e*Sn	**S**	**18 40 32.4**	**-0.5**
MAT	**Matsushiro**	**3.82**	**325**	P	**P**	**18 39 49.2**	**+0.3**
MAT				S	**S**	**18 40 32.8**	**-0.1**
MAT	**Matsushiro**	**3.82**	**325**	*e*P	**P**	**18 39 49.0**	**+0.1**
MAT				*e*S	**S**	**18 40 33.0**	**+0.1**
CBIJ	**Chichi jima**	**6.42**	**170**	P	**P**	**18 40 23.3**	**-1.9**
	2.9nm,0.3s,baz=346,slow=19,SNR=7.3						
HIA	**Hailar**	**22.31**	**321**	*e*P	**P**	**18 43 45.4**	**+1.1**
	2.4nm,0.5s,mb3.9						
ULN	**Ulaanbaatar**	**29.20**	**310**	*e*P	**P**	**18 44 49.1**	**+0.5**
	0.9nm,0.6s,mb3.7						
SONM	**Songino Array**	**29.61**	**309**	P	**P**	**18 44 53.1**	**+0.8**
	0.2nm,0.4s,mb3.2,baz=115,slow=7.6,SNR=6.0						
MKAR	**Makanchi Array**	**45.77**	**305**	P	**P**	**18 47 08.2**	**+0.2**
	1.2nm,1.0s,mb3.8,baz=89,slow=10,SNR=5.2						
BVAR	**Borovoye Array**	**52.74**	**314**	P	**P**	**18 48 01.5**	**0.0**
	0.2nm,0.3s,mb3.5,baz=100,slow=9.4,SNR=2.9						
WRA	**Warramunga Arr**	**53.45**	**188**	P	**P**	**18 48 06.6**	**-0.7**
	3.9nm,0.4s,mb4.7,baz=5.7,slow=7.6,SNR=14						
ASAR	**Alice Springs**	**57.18**	**188**	P	**P**	**18 48 33.5**	**-0.6**
	1.2nm,0.5s,mb4.2,baz=4.3,slow=6.7,SNR=46						
AKASG	**Malin Array Be**	**76.90**	**323**	P	**P**	**18 50 38.1**	**+0.2**
	0.3nm,0.4s,mb3.6,baz=48,slow=4.8,SNR=4.1						
LPAZ	**La Paz**	**148.74**	**64**	PKPbc	PKPdf	18 58 35.7	+7.8
	0.6nm,0.7s,baz=297,slow=4.5,SNR=3.5						
LPAZ	**La Paz**	**148.74**	**64**	PKPbc	PKPdf	18 58 35.7	+7.8

*NEIC **02** 18:42:09.6,36.15N×22.16E,h19km,MD3.5(ATH),After ATH.*
ATH 02 18:42:09.6,36.15N×22.16E,h19km±1km,MD3.5/5, Southern Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KYTH	**Kithira**	**0.72**	**79**	*e*PN	Pn	18 42 23.5	-1.2
VLI	**Veliai**	**0.84**	**48**	*e*PN	Pn	18 42 26.8	+0.3
ITM	**Ithomi**	**1.04**	**350**	*e*PN	Pn	18 42 29.1	-0.2
VAM	**Vamos**	**1.82**	**113**	*e*PN	Pn	18 42 42.0	+1.7
EVR	**Evrytania**	**2.78**	**354**	*e*PB	Pb	18 42 56.2	-2.2
KRIS	**Kristallenia**	**2.89**	**109**	*e*Pn	Pn	18 42 53.6	-2.1
KRIS				*e*Pg	Pn	18 43 03.3	+7.6

*NAO **02** 19:24:52.7±2.5,59.64N×6.62E,ML2.0*
*BER **02** 19:24:53.8±3.4,59.89N×6.27E,h5km,MD1.8,ML1.3, MW1.8,ML2.0(NAO)*
ISC 02 19:24:52.6±0.7,59.88N±0.03×6.23E±0.06,h11km±5km, n15,σ0s71/26,2C-1D,Southern Norway

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ODD1	**Odda**	**0.20**	**81**	*i*P	**Pg**	**19 24 57.0**	**-0.2**
ODD1				*e*S	**Sg**	**19 25 00.0**	**-0.2**
ODD1				AML	AML	19 25 00.2	
	comp=Z,87nm,0.3s						
BLS5	**Blasjo**	**0.47**	**166**	*i*P	**Pb**	**19 25 03.3**	**+0.9**
BLS5				*e*S	**Sg**	**19 25 09.2**	**+0.4**
BLS5				AML	AML	19 25 10.0	
	comp=Z,40nm,0.3s						
EGD	**Espegrend**	**0.64**	**308**	*e*P	**Pb**	**19 25 05.1**	**-0.1**
EGD				*e*S	**Sb**	**19 25 13.6**	**-0.2**
EGD				AML	AML	19 25 14.6	
	comp=Z,5.8nm,0.1s						
RUND	**Rundenannen**	**0.69**	**322**	*e*P	**Pb**	**19 25 06.0**	**0.0**
RUND				*e*S	**Sb**	**19 25 15.2**	**0.0**
RUND				AML	AML	19 25 17.5	
	comp=Z,30nm,0.2s						
ASK	**Askoy**	**0.79**	**320**	*e*P	**Pb**	**19 25 08.0**	**+0.1**
ASK				*e*S	**Sb**	**19 25 18.2**	**-0.2**
ASK				AML	AML	19 25 19.6	
	comp=Z,5.5nm,0.2s						
KMY	**Karmoy**	**0.84**	**217**	*i*P	**Pb**	**19 25 08.5**	**-0.1**
KMY				*e*S	**Sb**	**19 25 19.2**	**-0.4**
KMY				AML	AML	19 25 20.5	
	comp=Z,11nm,0.2s						
SUE	**Sulen**	**1.39**	**329**	*e*P	**Pn**	**19 25 18.4**	**+0.5**
SUE				*e*S	**Sb**	**19 25 35.8**	**+0.2**
SUE				AML	AML	19 25 37.9	
	comp=Z,9.3nm,0.1s						
SNART	**Snartemo**	**1.63**	**161**	*e*S	**Sn**	**19 25 41.8**	**-0.7**
KONO	**Kongsberg**	**1.72**	**96**	*e*P	**Pn**	**19 25 23.6**	**+0.9**
KONO				*e*S	**Sn**	**19 25 46.4**	**+1.6**
NAO	**NORSAR Subarra**	**2.48**	**66**	Pn	**Pn**	**19 25 33.8**	**+0.3**
NAO				Lg		19 26 08.2	
NBO	**NORSAR Subarra**	**2.53**	**61**	Pn	**Pn**	**19 25 34.3**	**0.0**
NBO				Lg		19 26 10.4	
NB2	**NORSAR Subarra**	**2.73**	**63**	Pn	**Pn**	**19 25 36.3**	**-0.8**
NB2				Pg	**Pg**	**19 25 40.8**	**-6.4**
NB2				Lg		19 26 16.6	
NC6	**NORSAR Subarra**	**2.74**	**69**	Pn	**Pn**	**19 25 36.9**	**-0.5**
NC6				Pg	**Pg**	**19 25 41.2**	**-6.2**
NC6				Lg		19 26 16.1	
MOL	**Molde**	**2.77**	**13**	*e*S	**Sn**	**19 26 12.3**	**+0.8**
HFS	**Hagfors**	**3.76**	**83**	Pn	**Pn**	**19 25 50.7**	**-1.1**
	baz=265,slow=12						
HFS				Sn	**Sn**	**19 26 33.0**	**-3.4**
	baz=261,slow=37						
HFS				Lg		19 26 46.8	
	baz=270,slow=37						

*IDC **02** 19:35:48.9±2.8,11.19N×85.23W,mb3.5/3,mb1 4.0/3, mb1mx3.6/19,MS3.9/2,Ms1 3.9/2,ms1mx3.0/20,Error ellipse: s-maj=122.0km s-min=55.5km az=41.0*
*CASC **02** 19:35:49.4±2.0,10.32N×86.20W,MD4.0*
ISC 02 19:35:51.2±1.7,10.32N±0.07×86.23W±0.08,h24km±12km, n33,σ0s48/33,mb3.5/3,MS3.5/1,8C-4D,Off coast of Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VCR	**Vista de Mar**	**0.62**	**108**	*e*P	**Pb**	**19 36 03.3**	**0.0**
VCR				*e*S	**Sb**	**19 36 11.5**	**-0.2**
CRZC	**La Cruz**	**0.89**	**45**	*i*P	**Pb**	**19 36 07.8**	**0.0**
CRZC				*e*S	**Sb**	**19 36 19.2**	**0.0**
CONN	**Concepcion**	**1.37**	**26**	*e*P	**Pn**	**19 36 15.1**	**-0.1**
FORC	**Fortuna**	**1.55**	**84**	*e*P	**Pn**	**19 36 18.0**	**+0.3**
APON	**Apoyo**	**1.59**	**6**	*e*P	**Pn**	**19 36 18.7**	**+0.4**
CRUN	**El Crucero**	**1.65**	**358**	*e*P	**Pn**	**19 36 20.1**	**+0.9**
TICN	**Ticuantepe**	**1.70**	**0**	*e*P	**Pn**	**19 36 20.2**	**+0.3**
CGA2	**Cerro Gallo 2**	**1.77**	**100**	*e*P	**Pn**	**19 36 20.5**	**-0.3**
MGAN	**Managua**	**1.81**	**360**	*e*P	**Pn**	**19 36 21.3**	**-0.2**
XAVN	**Gruta Xavier**	**1.82**	**357**	*e*P	**Pn**	**19 36 21.6**	**+0.1**
COFN	**Cofrada**	**1.82**	**4**	*e*P	**Pn**	**19 36 21.3**	**-0.3**
WILN	**Americas 2**	**1.83**	**1**	*e*P	**Pn**	**19 36 21.3**	**-0.4**
WILN				*e*S	**Sn**	**19 36 49.1**	**+4.8**
COPN	**Copaltepe**	**1.88**	**349**	*e*P	**Pn**	**19 36 22.1**	**-0.3**
VPS2	**Volcan Poas 2**	**1.97**	**94**	*e*P	**Pn**	**19 36 24.3**	**+0.6**
MOMJ	**Momotombo**	**2.09**	**352**	*e*P	**Pn**	**19 36 25.2**	**-0.3**
LAJ	**Bijagual**	**2.13**	**102**	*e*P	**Pn**	**19 36 21.4**	**-4.7**
SJS	**Escuela Geolog**	**2.18**	**100**	*e*P	**Pn**	**19 36 27.2**	**+0.5**
PYN	**Poneloya**	**2.19**	**339**	*e*P	**Pn**	**19 36 26.7**	**-0.2**
PYTN	**Playitas**	**2.21**	**4**	*e*P	**Pn**	**19 36 26.7**	**-0.5**
LCR2	**La Lucha 2**	**2.27**	**105**	*e*P	**Pn**	**19 36 27.9**	**-0.1**
TEL3	**Telica 3**	**2.31**	**345**	*e*P	**Pn**	**19 36 28.4**	**-0.2**
TELN	**Telica**	**2.34**	**346**	*e*P	**Pn**	**19 36 29.2**	**+0.1**
ICR	**Volcan Irazu**	**2.39**	**98**	*e*P	**Pn**	**19 36 28.9**	**-0.8**
URSC	**Urasca**	**2.46**	**101**	*e*P	**Pn**	**19 36 31.8**	**+1.0**
TRTC	**Tortuguero**	**2.49**	**84**	*e*P	**Pn**	**19 36 30.2**	**-1.0**
CRIN	**San Cristobal**	**2.50**	**341**	*e*P	**Pn**	**19 36 32.2**	**+1.0**
ACR	**Cerro Adams**	**3.45**	**119**	*e*P	**Pn**	**19 36 44.9**	**+0.1**
TEIG	**Tepich**	**10.04**	**349**	LR	LR	19 42 35.3	
	comp=Z,2µm,18.2s,baz=98,slow=43						
TXAR	**Lajitas Array**	**24.97**	**322**	P	**P**	**19 41 13.9**	**-0.7**
	1.1nm,0.5s,mb3.7,baz=140,slow=9.1,SNR=6.4						
NVAR	**Mina Array Bea**	**40.08**	**320**	P	**P**	**19 43 26.8**	**+0.1**
	0.9nm,0.9s,mb3.5,baz=126,slow=7.8,SNR=6.9						
NVAR				PcP	PcP	19 45 30.4	-1.3
	0.3nm,0.7s,baz=135,slow=2.6,SNR=5.1						
YKA	**Yellowknife Ar**	**55.97**	**345**	P	**P**	**19 45 24.4**	**-5.4**
	0.1nm,0.4s,mb3.2,baz=142,slow=6.8,SNR=4.5						
YKA				PcP	PcP	19 46 25.2	-2.8
	0.1nm,0.5s,baz=149,slow=3.9,SNR=5.6						
ESDC	**Sonseca Array**	**77.56**	**52**	LR	LR	20 15 21.1	
	comp=Z,22nm,21.3s,MS3.5,baz=170,slow=31						
CMAR	**Chiang Mai Arr**	**150.95**	**350**	PKPbc	PKPdf	19

LMR	**La Mourre**	**1.12**	**187**	*e*Pg		**Pg**	**20 02 39.6**	**+0.4**
LMR				*e*Sg		**Sg**	**20 02 54.2**	**0.0**
	9.9nm,0.2s							
PCP	**Pian Castagno**	**1.32**	**85**	P		**Pb**	**20 02 41.0**	**+0.2**
VIVF	**Saint-Julien-l**	**1.51**	**286**	*e*Pg		**Pg**	**20 02 45.6**	**-1.2**
VIVF				*e*Sg		**Sg**	**20 03 05.1**	**-1.9**
	2.2nm,0.3s							
PGF	**Pioggiola**	**2.53**	**138**	*e*Pn		**Pn**	**20 02 58.4**	**+0.3**
PGF				*e*Sn		**Sn**	**20 03 27.7**	**-1.4**
	1.6nm,0.2s							

TIR ***02*** *20:03:35.1,41.01N×20.08E,h15km,MI2.9*
NEIC ***02*** *20:03:37.5±0.4,41.17N×20.28E,h5km,MD3.5(ATH), MD3.1(PDG),Error ellipse: s-maj=6.7km s-min=4.5km az=222.0*
ATH ***02*** *20:03:37.8,41.16N×20.34E,h5km±3km,MD3.4/4*
THE ***02*** *20:03:39.0,41.08N×20.39E,h10km*
SOF ***02*** *20:03:47.9,41.80N×21.08E,h7km,MD2.7*

ISC 02 20:03:37.4±0.3,41.10N±0.02×20.28E±0.03,h5km,n36, σ1°53/58,4C-5D,Albania

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OHR	**Ohrid**	**0.40**	**88**	⇑*i*Pg	**Pg**	**20 03 45.7**	**+0.4**
OHR				⇓*i*Sg	**Sg**	**20 03 52.6**	**+2.0**
BIA	**Bitola**	**0.80**	**95**	⇓*i*Pg	**Pg**	**20 03 51.9**	**-1.4**
BIA				⇑*i*Sg	**Sg**	**20 04 04.0**	**+0.1**
FNA	**Florina**	**0.89**	**110**	*e*Pg	**Pg**	**20 03 54.3**	**-0.9**
FNA				*e*Sg	**Sg**	**20 04 05.4**	**-1.6**
ULC	**Ulcinj**	**1.16**	**319**	*e*Pg	**Pg**	**20 03 57.8**	**-2.7**
ULC				*e*Sg	**Sg**	**20 04 12.6**	**-3.4**
SKO	**Skopje**	**1.24**	**45**	⇑*i*Pg	**Pg**	**20 04 01.2**	**-0.9**
SKO				⇓*i*		20 04 04.8	
SKO				*i* Sg	**Sg**	**20 04 18.7**	**+0.1**
SKO				Lg		20 04 23.0	
	comp=Z,0.1nm,0.5s						
KZN	**Kozani**	**1.38**	**124**	*e*PB	**Pb**	**20 04 04.5**	**+1.1**
KEK	**Kerkira**	**1.43**	**195**	*e*PG	**Pg**	**20 04 05.0**	**-0.9**
KEK				*e*SB	**Sb**	**20 04 27.5**	**+5.0**
MEV	**Metsovon**	**1.50**	**151**	*e*Pb	**Pb**	**20 04 05.6**	**+0.3**
MEV				*e*Sb	**Sb**	**20 04 25.6**	**+1.1**
JAN	**Janina**	**1.50**	**163**	*e*PB	**Pb**	**20 04 07.0**	**+1.6**
PVY	**Plav**	**1.52**	**352**	⇑*i*Pg	**Pg**	**20 04 05.0**	**-2.6**
PVY				*e*Sg	**Sg**	**20 04 28.9**	**+1.1**
TTG	**Podgorica**	**1.53**	**331**	⇓*i*Pg	**Pg**	**20 04 04.0**	**-4.0**
TTG				*e*Sg	**Sg**	**20 04 26.6**	**-1.8**
IGT	**Igoumenitsa**	**1.56**	**178**	*e*Pb	**Pb**	**20 04 07.0**	**+0.6**
IGT				*e*Sb	**Sb**	**20 04 27.9**	**+1.5**
BUM	**Brajici-Budva**	**1.58**	**320**	*e*Pg	**Pg**	**20 04 04.7**	**-4.3**
BUM				*e*Sg	**Sg**	**20 04 27.2**	**-3.0**
GRG	**Griva**	**1.61**	**94**	*e*Pb	**Pb**	**20 04 06.5**	**-0.8**
GRG				*e*Sb	**Sb**	**20 04 27.8**	**-0.1**
IVA	**Berane**	**1.80**	**351**	⇓*i*Pn	**Pn**	**20 04 11.8**	**+2.5**
IVA				*e*Sn	**Sn**	**20 04 38.2**	**+5.5**
LCI	**Lecce**	**1.81**	**246**	*e*Pn	**Pn**	**20 04 11.3**	**+1.8**
HCY	**Herceg Novi**	**1.90**	**316**	*e*Pn	**Pn**	**20 04 10.0**	**-0.7**
HCY				*e*Sn	**Sn**	**20 04 36.5**	**+1.2**
LIT	**Litokhoron**	**1.96**	**120**	*e*Pb	**Pb**	**20 04 11.6**	**-1.5**
LIT				*e*Sb	**Sb**	**20 04 36.1**	**-1.8**
NKY	**Niksic**	**1.96**	**331**	*e*Pn	**Pn**	**20 04 12.7**	**+1.0**
NKY				*e*Sn	**Sn**	**20 04 39.0**	**+2.1**
KNT	**Kendrikon**	**1.98**	**87**	*e*Pb	**Pb**	**20 04 12.0**	**-1.6**
KNT				*e*Sb	**Sb**	**20 04 36.4**	**-2.2**
BRY	**Bratogost**	**2.22**	**325**	*e*Pn	**Pn**	**20 04 16.0**	**+0.7**
BRY				*e*Sn	**Sn**	**20 04 44.4**	**+0.9**
KKB	**Krupnik**	**2.25**	**69**	*e*P	**Pn**	**20 04 17.0**	**+1.3**
KKB				*e*Pg	**Pg**	**20 04 19.0**	**-3.2**
PLE	**Pljevlja**	**2.33**	**344**	*e*Pn	**Pn**	**20 04 18.7**	**+1.8**
PLE				*e*Sn	**Sn**	**20 04 50.2**	**+4.0**
UPM	**Unac-Piva**	**2.34**	**335**	*e*Pn	**Pn**	**20 04 18.6**	**+1.6**
UPM				*e*Sn	**Sn**	**20 04 48.6**	**+2.1**
EVR	**Evrytania**	**2.48**	**151**	*e*PN	**Pn**	**20 04 22.5**	**+3.5**
MMB	**Musomiste**	**2.65**	**78**	*e*P	**Pn**	**20 04 23.5**	**+2.0**
VTS	**Vitosha**	**2.65**	**55**	*e*P	**Pn**	**20 04 21.8**	**+0.2**
VTS				*e*Pg	**Pg**	**20 04 23.2**	**-7.1**
NEO	**Neokhori**	**2.88**	**127**	*e*Pn	**Pn**	**20 04 23.7**	**-1.1**
VLS	**Valsamata**	**2.92**	**175**	*e*Pn	**Pn**	**20 04 25.0**	**-0.4**
PGB	**Panagyurishte**	**3.25**	**62**	*e*P	**Pn**	**20 04 32.0**	**+1.9**
RZN	**Rozhen**	**3.39**	**79**	*e*P	**Pn**	**20 04 34.5**	**+2.4**
MRLC	**Muro Lucano**	**3.54**	**266**	*e*Pn	**Pn**	**20 04 35.0**	**-0.6**
MGR	**Morigerati**	**3.72**	**257**	*e*Pn	**Pn**	**20 04 35.7**	**-1.0**
SGO	**Sicignano**	**3.81**	**264**	*e*Pn	**Pn**	**20 04 37.0**	**-0.9**
SDI	**San Donato**	**4.90**	**279**	*e*Pn	**Pn**	**20 04 51.9**	**-1.6**
FSSB	**Fossombrone**	**6.13**	**298**	*e*Pn	**Pn**	**20 05 07.5**	**-3.3**

ATH ***02*** *20:31:39.8,41.31N×19.93E,h13km,MD3.5/6*
TIR ***02*** *20:31:40.9,41.11N×20.25E,h14km,MI3.0*
NEIC ***02*** *20:31:43.0±0.4,41.15N×20.28E,h5km,MD3.5(ATH), MD3.1(PDG),Error ellipse: s-maj=6.5km s-min=5.1km az=221.0*
THE ***02*** *20:31:42.6,41.15N×20.23E,h10km,ML3.3*

ISC 02 20:31:42.8±0.2,41.11N±0.02×20.24E±0.02,h5km,n52, σ1°34/87,6C-4D,Albania

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
TIR	**Tirane**	**0.37**	**310**	⇓*i*Pg	**Pg**	**20 31 49.5**	**-0.8**
TIR				*i* Sg	**Sg**	**20 31 55.7**	**+0.4**
OHR	**Ohrid**	**0.42**	**89**	⇑*i*Pg	**Pg**	**20 31 54.4**	**-0.8**
OHR				⇓*i*Sg	**Sg**	**20 31 57.5**	**+0.7**
OHR				⇑*i*Sg	**Sg**	**20 31 57.5**	**+0.7**
QSH	**Qafa e Shtames**	**0.49**	**328**	*i* Pg	**Pg**	**20 31 50.0**	**-2.5**
QSH				*i* Sg	**Sg**	**20 31 59.0**	**-0.1**
KBN	**Korca**	**0.63**	**139**	*i* Pg	**Pg**	**20 31 54.0**	**-1.4**
KBN				*i* Sg	**Sg**	**20 32 04.9**	**+1.0**
LACI	**Lac**	**0.67**	**323**	*i* Pg	**Pg**	**20 31 54.5**	**-1.6**
LACI				*i* Sg	**Sg**	**20 32 04.8**	**-0.2**
BIA	**Bitola**	**0.82**	**96**	*i* Pg	**Pg**	**20 31 56.6**	**-2.6**
BIA				⇑*i*Sg	**Sg**	**20 32 09.0**	**-1.1**
TPE	**Tepelena**	**0.83**	**192**	*i* Pg	**Pg**	**20 31 57.7**	**-1.6**
TPE				*i* Sg	**Sg**	**20 32 12.5**	**+2.1**
FNA	**Florina**	**0.92**	**110**	*e*Pg	**Pg**	**20 31 59.1**	**-2.0**
FNA				*e*Sg	**Sg**	**20 32 13.8**	**+0.5**
PUK	**Puka**	**0.97**	**344**	*i* Pg	**Pg**	**20 32 00.8**	**-1.4**
PUK				*i* Sg	**Sg**	**20 32 16.8**	**+1.6**
LSK	**Leskovik**	**0.99**	**164**	*i* pg?	**Sg**	**20 32 14.6**	**-1.2**
SDA	**Shkodra**	**1.10**	**330**	*i* pg?	**Pg**	**20 32 06.9**	**+2.2**
SDA				*i* Sg	**Sn**	**20 32 30.2**	**+10**
ULC	**Ulcinj**	**1.14**	**319**	*e*Pg	**Pg**	**20 32 02.9**	**-2.6**
ULC				*e*Sg	**Sg**	**20 32 17.7**	**-2.9**
SKO	**Skopje**	**1.25**	**46**	⇑*i*Pg	**Pg**	**20 32 06.0**	**-1.7**
SKO				⇓*i*		20 32 09.8	
SKO				*i* Sg	**Sg**	**20 32 23.8**	**-0.5**
SKO				Lg		20 32 26.0	
	comp=Z,0.1nm,0.5s						
KZN	**Kozani**	**1.41**	**124**	*e*PN	**Pn**	**20 32 11.0**	**+1.9**
KEK	**Kerkira**	**1.43**	**194**	*e*PB	**Pb**	**20 32 10.1**	**+0.5**
KEK				*e*SB	**Sb**	**20 32 31.8**	**+3.8**
PVY	**Plav**	**1.50**	**352**	⇑*i*Pg	**Pg**	**20 32 09.9**	**-2.8**
PVY				*e*Sg	**Sg**	**20 32 33.5**	**+0.8**
TTG	**Podgorica**	**1.51**	**331**	⇓*i*Pg	**Pg**	**20 32 09.7**	**-3.3**
TTG				*e*Sg	**Sg**	**20 32 32.0**	**-1.1**
MEV	**Metsovon**	**1.52**	**150**	*e*Pb	**Pb**	**20 32 11.7**	**+0.7**
MEV				*e*Sb	**Sb**	**20 32 32.4**	**+1.8**
JAN	**Janina**	**1.52**	**162**	*e*PG	**Pg**	**20 32 13.0**	**-0.1**
BUM	**Brajici-Budva**	**1.56**	**320**	*e*Pg	**Pg**	**20 32 09.8**	**-4.1**
BUM				*e*Sg	**Sg**	**20 32 32.2**	**-2.6**
IGT	**Igoumenitsa**	**1.57**	**178**	*e*Pb	**Pb**	**20 32 12.3**	**+0.3**
IGT				*e*Sb	**Sb**	**20 32 32.8**	**+0.7**
GRG	**Griva**	**1.64**	**95**	*e*Pb	**Pb**	**20 32 11.8**	**-1.3**
GRG				*e*Sb	**Sb**	**20 32 34.5**	**+0.5**
VAY	**Valandovo**	**1.77**	**82**	*i* Sn	**Sn**	**20 32 39.2**	**+1.8**
IVA	**Berane**	**1.78**	**352**	*e*Pn	**Pn**	**20 32 15.8**	**+1.3**
IVA				*e*Sn	**Sn**	**20 32 41.1**	**+3.3**
LCI	**Lecce**	**1.79**	**245**	*e*Pn	**Pn**	**20 32 17.0**	**+2.4**
LCI				*e*Sn	**Sn**	**20 32 39.8**	**+1.7**
HCY	**Herceg Novi**	**1.87**	**316**	*e*Pn	**Pn**	**20 32 15.2**	**-0.5**
HCY				*e*Sn	**Sn**	**20 32 40.8**	**+0.8**
NKY	**Niksic**	**1.94**	**332**	*e*Pn	**Pn**	**20 32 17.6**	**+0.8**
NKY				*e*Sn	**Sn**	**20 32 44.5**	**+2.7**
LIT	**Litokhoron**	**1.98**	**120**	*e*Pn	**Pn**	**20 32 17.1**	**-0.2**
LIT				*e*Sn	**Sn**	**20 32 43.0**	**+0.1**
KNT	**Kendrikon**	**2.00**	**88**	*e*Pn	**Pn**	**20 32 17.1**	**-0.6**
KNT				*e*Sn	**Sn**	**20 32 43.2**	**-0.3**
BRY	**Bratogost**	**2.20**	**325**	*e*Pn	**Pn**	**20 32 20.7**	**+0.3**
BRY				*e*Sn	**Sn**	**20 32 50.6**	**+2.4**
PLE	**Pljevlja**	**2.31**	**344**	*e*Pn	**Pn**	**20 32 23.2**	**+1.2**
PLE				*e*Sn	**Sn**	**20 32 53.5**	**+2.4**
UPM	**Unac-Piva**	**2.32**	**335**	*e*Pn	**Pn**	**20 32 23.2**	**+1.0**
UPM				*e*Sn	**Sn**	**20 32 52.7**	**+1.3**
SOH	**Sokhos**	**2.37**	**96**	*e*Pn	**Pn**	**20 32 23.3**	**+0.4**
LKD	**Levkas**	**2.42**	**172**	*e*Pn	**Pn**	**20 32 23.3**	**-0.2**
NVSS	**Nova Varos 2**	**2.43**	**351**	*e*Pn	**Pn**	**20 32 25.5**	**+1.7**
NVSS				Sn	**Sn**	**20 32 56.7**	**+2.4**
EVR	**Evrytania**	**2.50**	**151**	*e*PN	**Pn**	**20 32 26.5**	**+1.8**
SRS	**Serrai**	**2.53**	**89**	*e*Pn	**Pn**	**20 32 24.6**	**-0.6**
PLG	**Polygyros**	**2.54**	**106**	*e*PB	**Pb**	**20 32 27.5**	**-1.0**
AGG	**Agios Georgios**	**2.63**	**142**	*e*Pn	**Pn**	**20 32 26.1**	**-0.4**
AGG				*e*Sn	**Sn**	**20 32 60.0**	**+0.8**
XOR	**Xorichti**	**2.85**	**127**	*e*Pn	**Pn**	**20 32 29.9**	**+0.2**
XOR				*e*Sn	**Sn**	**20 33 04.3**	**-0.5**
PAIG	**Paliouri**	**2.87**	**113**	*e*Pn	**Pn**	**20 32 30.1**	**0.0**
PAIG				*e*Sn	**Sn**	**20 33 05.8**	**+0.4**
VLS	**Valsamata**	**2.94**	**175**	*e*PN	**Pn**	**20 32 29.5**	**-1.5**
OUR	**Ouranopolis**	**2.94**	**104**	*e*Pn	**Pn**	**20 32 30.6**	**-0.5**
DIVS	**Divcibare**	**3.00**	**357**	⇑*i*Pn	**Pn**	**20 32 33.3**	**+1.5**
DIVS				Sn	**Sn**	**20 33 08.0**	**-0.6**
AOS	**Alonnisos**	**3.39**	**124**	*e*Pn	**Pn**	**20 32 37.3**	**-0.1**
SLCN	**Sala Consilina**	**3.58**	**260**	*e*Pn	**Pn**	**20 32 41.0**	**+0.9**
MRLC	**Muro Lucano**	**3.62**	**266**	*e*Pn	**Pn**	**20 32 39.5**	**-1.2**
MGR	**Morigerati**	**3.70**	**256**	*e*Pn	**Pn**	**20 32 40.6**	**-1.2**
SGO	**Sicignano**	**3.79**	**263**	*e*Pn	**Pn**	**20 32 42.0**	**-1.0**
CSSN	**Cassano Irpino**	**3.96**	**268**	*e*Pn	**Pn**	**20 32 43.6**	**-1.9**
CII	**Carovilli**	**4.51**	**280**	*e*P	**Pn**	**20 32 52.6**	**-0.7**
CII				S	**Sn**	**20 33 43.4**	**-3.5**
SDI	**San Donato**	**4.88**	**279**	*e*Pn	**Pn**	**20 32 57.0**	**-1.6**

DJA 02 20:34:31.0±0.6,8.85S×115.31E,h15km,MD5.4/4,5C-1D, Error ellipse: s-maj=24.8km s-min=5.3km az=176.0,Bali region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
INGI	**Ingas**	**0.17**	**280**	⇓*i*Pg	Pg	20 34 35.0	-0.3
	1µm,0.2s						
INGI				⇑*e*Sg	Sg	20 34 38.0	-0.2
RATI	**Rata**	**0.25**	**60**	⇑*i*Pg	Pg	20 34 36.3	-0.3
	278nm,0.2s						
RATI				⇑*e*Sg	Sg	20 34 39.8	-0.6
KEDI	**Kedomdong**	**0.87**	**66**	⇑*e*Pg	Pg	20 34 45.8	-2.7
	85nm,0.2s						
KELI	**Kelakatan**	**1.03**	**308**	⇑*e*Pn	Pn	20 34 48.2	-2.6
KELI				*e*Sn	Sn	20 35 00.8	-4.1

IDC ***02*** *20:48:16.8±3.3,35.98N×27.78E,h99km±21km,mb3.6/4, mb1 3.5/7,mb1mx3.3/20,Error ellipse: s-maj=78.6km s-min=11.2km az=154.0*
NEIC ***02*** *20:48:18.6,36.41N×27.58E,h82km,mb3.5/15,After ATH.*
ATH ***02*** *20:48:18.2,36.38N×27.61E,h93km±3km*
ISK ***02*** *20:48:30.3,37.49N×28.09E,h5km,MD3.1,ML2.8*

ISC 02 20:48:17.5±0.3,36.29N±0.03×27.70E±0.03,h102km±3km, n67,σ1°03/80,mb3.6/8,1C-1D,Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ARG	**Arkhangelos**	**0.35**	**103**	⇑*i*P	**P**	**20 48 33.5**	**+0.7**
ARG				*e*S	**S**	**20 48 43.7**	**-0.5**
BDRM	**Kayabasi**	**0.80**	**345**	*i* P	**P**	**20 48 35.6**	**-0.7**
BDRM				*i* S	**S**	**20 48 46.4**	**-3.8**
YER	**Yerkesik**	**0.96**	**29**	*i* PG	**P**	**20 48 38.6**	**+0.7**
YER				SG	**S**	**20 48 45.4**	**-7.9**
MLSB	**Milas**	**1.00**	**3**	*i* PG	**P**	**20 48 38.1**	**-0.3**
AYDN	**Tasoluk**	**1.37**	**6**	*i* P	**P**	**20 48 43.2**	**+0.4**
AYDN				*i* S	**S**	**20 48 56.7**	**-4.9**
KSL	**Kastellorizon**	**1.53**	**95**	*e*P	**P**	**20 48 46.5**	**+1.8**
SMG	**Samos**	**1.57**	**334**	*e*P	**P**	**20 48 44.6**	**-0.6**
SMG				*e*S	**S**	**20 49 02.2**	**-3.6**
DNZL	**Cakiroluk**	**1.76**	**37**	*i* P	**P**	**20 48 49.0**	**+1.4**
DNZL				*i* S	**S**	**20 49 10.2**	**+0.3**
DENT	**Denizli**	**1.81**	**36**	*e*PG	**P**	**20 48 47.4**	**-0.7**
THR3	**Thira Island,**	**1.86**	**274**	*e*P	**P**	**20 48 49.2**	**+0.4**
THR6	**Thira Island,**	**1.86**	**273**	*e*P	**P**	**20 48 49.3**	**+0.5**
THR4	**Thira Island,**	**1.87**	**276**	*e*P	**P**	**20 48 49.3**	**+0.4**
THR5	**Thira Island,**	**1.90**	**274**	*e*P	**P**	**20 48 50.6**	**+1.2**
NPS	**Neapolis**	**1.98**	**239**	*e*P	**P**	**20 48 50.7**	**+0.2**
NPS				*e*S	**S**	**20 49 14.5**	**-0.4**
KRIS	**Kristallenia**	**2.11**	**239**	*e*Pn	**S**	**20 48 52.7**	**+0.6**
KRIS				*e*Sn	**S**	**20 49 17.7**	**-0.2**
IZM	**Izmir**	**2.13**	**351**	PN	**P**	**20 48 52.1**	**-0.3**
KDAG	**Bornova**	**2.13**	**351**	*i* P	**P**	**20 48 52.2**	**-0.3**
KDAG				*i* S	**S**	**20 49 16.2**	**-2.3**
XRY	**Khrisi**	**2.16**	**230**	⇓*i*P	**P**	**20 48 54.0**	**+1.1**
MANT	**Manisa**	**2.30**	**17**	*i* P	**P**	**20 48 55.3**	**+0.6**
MANT				*i* S	**S**	**20 49 20.6**	**-1.8**
KHL	**Karahalli**	**2.49**	**35**	PN	**P**	**20 48 58.3**	**+0.9**
IDI	**Anoyia**	**2.50**	**247**	P	**P**	**20 48 57.3**	**-0.1**
	11nm,0.3s,baz=41,slow=4.7,SNR=113						
IDI				S	**S**	**20 49 25.2**	**-2.1**
	15nm,0.3s,baz=280,slow=19,SNR=14						
AKS	**Akhisar**	**2.58**	**2**	*e*PN	**P**	**20 48 58.2**	**-0.4**
VAM	**Vamos**	**2.98**	**254**	*e*P	**P**	**20 49 05.9**	**+1.9**
ALT	**Altintas**	**3.35**	**34**	*e*PN	**P**	**20 49 10.1**	**+1.0**
ORLT	**Orhaneli**	**3.86**	**14**	*e*PN	**P**	**20 49 15.0**	**-1.1**
ESKT	**Eskisehir**	**4.07**	**37**	PN	**P**	**20 49 19.8**	**+0.9**
CSS	**Prodhromos**	**4.78**	**105**	*e*Pn	**P**	**20 49 29.7**	**+1.1**
CSS				*e*Sn	**S**	**20 50 16.4**	**-6.6**
BRTR	**Keskin Array B**	**5.81**	**52**	P	**P**	**20 49 44.5**	**+1.9**
	0.4nm,0.3s,baz=221,slow=14,SNR=18						
BRTR				S	**S**	**20 50 48.4**	**0.0**
	0.1nm,0.3s,baz=225,slow=22,SNR=4.6						
SLTI	**Sal'it**	**7.30**	**122**	Sn	**S**	**20 51 24.5**	**-0.4**
HMDT	**Nahal Hemdat**	**7.63**	**120**	Sn	**S**	**20 51 32.5**	**-0.5**
KZIT	**Kziot**	**7.75**	**132**	Sn	**S**	**20 51 31.2**	**-4.8**
DRGI	**Dragot**	**7.92**	**124**	Sn	**S**	**20 51 39.3**	**-0.9**
MZDA	**Masada**	**8.08**	**126**	Sn	**S**	**20 51 41.8**	**-2.3**
PRNI	**Paran**	**8.51**	**132**	Sn	**S**	**20 51 49.7**	**-4.8**
KMTI	**Karmit**	**8.53**	**134**	Sn	**S**	**20 51 50.2**	**-4.7**
MBH	**Mount Berech**	**8.87**	**135**	Sn	**S**	**20 51 58.9**	**-4.3**
EIL	**Elat**	**8.98**	**135**	Sn	**S**	**20 52 01.6**	**-4.4**
GERES	**GERESS Array B**	**16.20**	**325**	P	**P**	**20 52 03.2**	**+3.1**
	0.1nm,0.3s,baz=144,slow=12,SNR=7.7						
SBF	**Sospel**	**17.23**	**302**	*e*P	**P**	**20 52 08.8**	**-4.1**
FRF	**La Foret Royal**	**17.68**	**301**	*e*P	**P**	**20 52 16.9**	**-1.5**
	16nm,1.0s						
MBDF	**Montbardon**	**17.97**	**304**	*e*P	**P**	**20 52 21.9**	**0.0**
	3.3nm,0.6s						
LPG	**La Plagne**	**18.27**	**307**	*e*P	**P**	**20 52 25.1**	**-0.2**
	1.5nm,0.3s						
LPL	**La Plagne**	**18.29**	**307**	*e*P	**P**	**20 52 25.1**	**-0.5**
	2.2nm,0.3s						
SMRF	**Simiane la Rot**	**18.54**	**301**	*e*P	**P**	**20 52 28.2**	**-0.2**
ORIF	**Oris-en-Rattie**	**18.63**	**304**	*e*P	**P**	**20 52 28.4**	**-1.0**
CABF	**La Chapelle**	**19.14**	**309**	*e*P	**P**	**20 52 34.4**	**-0.6**
	3.1nm,0.5s						
HINF	**Hinteralfeld**	**19.23**	**313**	*e*P	**P**	**20 52 37.0**	**+1.1**
CDF	**Champ du Feu**	**19.28**	**315**	*e*P	**P**	**20 52 35.3**	**-1.2**
	4.3nm,0.7s						
VIVF	**Saint-Julien-l**	**19.42**	**303**	*e*P	**P**	**20 52 36.8**	**-1.2**
	4.2nm,0.7s						
SMF	**Signal de Mont**	**20.58**	**308**	*e*P	**P**	**20 52 49.4**	**-0.6**
	3.4nm,0.6s						
MTLF	**Montolieu**	**20.75**	**298**	*e*P	**P**	**20 52 50.7**	**-1.0**
	4.7nm,0.6s						
AVF	**Avril sur Loir**	**20.95**	**308**	*e*P	**P**	**20 52 54.1**	**+0.5**
	2.7nm,0.7s						
SSF	**Saint Saulge**	**20.95**	**308**	*e*P	**P**	**20 52 53.5**	**-0.2**
	2.6nm,0.5s						
BGF	**Bois d'Agland**	**21.19**	**307**	*e*P	**P**	**20 52 56.3**	**+0.2**
CAF	**Calviac**	**21.22**	**302**	*e*P	**P**	**20 52 57.2**	**+0.8**
TCF	**Toulx Ste Croi**	**21.52**	**306**	*e*P	**P**	**20 52 57.9**	**-1.4**
RJF	**Les Rejaudoux**	**21.69**	**303**	*e*P	**P**	**20 53 01.8**	**+0.7**
EPF	**Esparros**	**22.05**	**296**	*e*P	**P**	**20 53 06.0**	**+1.4**
MFF	**Saint Martin d**	**23.16**	**305**	*e*P	**P**	**20 53 16.3**	**+1.0**
	2.6nm,0.5s,mb3.5						
LDF	**La Drutiere**	**23.78**	**310**	*e*P	**P**	**20 53 21.9**	**+0.6**
	1.2nm,0.3s,mb3.4						
FLN	**La Foliniere**	**24.07**	**310**	*e*P	**P**	**20 53 24.5**	**+0.5**
	2.8nm,0.3s,mb3.8						
GRR	**Gorron**	**24.17**	**309**	*e*P	**P**	**20 53 25.2**	**+0.2**
	4.5nm,0.4s,mb3.9						
ESDC	**Sonseca Array**	**25.12**	**287**	P	**P**	**20 53 33.6**	**-0.5**
	1.1nm,0.7s,mb3.4,baz=89,slow=10,SNR=4.3						
FINES	**FINESS Array B**	**25.19**	**358**	P	**P**	**20 53 35.0**	**+0.3**
	1.2nm,0.9s,mb3.3,baz=159,slow=12,SNR=3.8						
HFS	**Hagfors**	**25.51**	**344**	P	**P**	**20 53 39.5**	**+1.9**
	1.9nm,1.0s,mb3.5,baz=162,slow=9.4,SNR=6.0						
ARCES	**ARCESS Array B**	**33.32**	**359**	P	**P**	**20 54 47.1**	**0.0**
	4.0nm,0.9s,mb4.2,baz=190,slow=7.4,SNR=5.4						
ARE0	**ARCESS Array S**	**33.32**	**359**	*e*P	**P**	**20 54 45.4**	**-1.7**

NEIC ***02*** *20:56:41.4±0.8,21.23S×68.34W,h128km±10km,Error ellipse: s-maj=20.4km s-min=9.6km az=87.0*
IDC ***02*** *20:56:41.4±0.9,21.23S×68.31W,h123km±11km,mb3.6/2, mb1 3.6/4,mb1mx3.3/14,Error ellipse: s-maj=34.4km s-min=11.0km az=100.0*

ISC 02 20:56:40.2±0.7,21.24S±0.05×68.5W±0.1,h139km±10km, n13,σ1°03/16,mb3.6/1,1C,Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
LVC	**Limon Verde**	**1.43**	**197**	P	**P**	**20 57 09.3**	**+0.7**
	baz=16,slow=9.5						
LVC				S	**S**	**20 57 30.2**	**-0.1**
	106nm,0.3s,baz=126,slow=19,SNR=53						
LVC	**Limon Verde**	**1.43**	**197**	⇑*i*Pn	**P**	**20 57 09.4**	**+0.8**
LVC				*e*Sn	**S**	**20 57 29.7**	**-0.6**
LPAZ	**La Paz**	**4.94**	**4**	P	**P**	**20 57 55.0**	**+1.5**
	1.9nm,0.3s,baz=194,slow=5.4,SNR=45						
LPAZ				S	**S**	**20 58 50.3**	**+0.1**
	0.4nm,0.3s,baz=248,slow=19,SNR=1.9						
LPAZ	**La Paz**	**4.94**	**4**	*e*Pn	**P**	**20 57 55.0**	**+1.4**
LPAZ				S	**S**	**20 58 50.3**	**+0.1**
ARE	**Arequipa**	**5.56**	**328**	*e*P	**P**	**20 58 02.0**	**+0.1**
ARE				*e*S	**S**	**20 59 03.0**	**-2.1**
TRQA	**Tornquist**	**17.66**	**163**	*e*P	**P**	**21 00 38.1**	**-0.9**
	0.2nm,0.4s						
PLCA	**Paso Flores**	**19.51**	**185**	P	**P**	**21 00 59.2**	**+0.3**
	0.1nm,0.3s,baz=4.1,slow=14,SNR=5.5						
PLCA	**Paso Flores**	**19.51**	**185**	*e*P	**P**	**21 00 59.3**	**+0.5**
	0.8nm,0.6s						
BDFB	**Brasilia**	**20.16**	**77**	P	**P**	**21 01 04.3**	**-1.4**
	3.2nm,0.4s,baz=255,slow=9.8,SNR=11						
YKA	**Yellowknife Ar**	**91.09**	**340**	P	**P**	**21 09 30.9**	**+1.2**
	0.4nm,0.6s,mb3.6,baz=133,slow=4.6,SNR=19						
YKA	**Yellowknife Ar**	**91.09**	**340**	P	**P**	**21 09 30.9**	**+1.2**
MKAR	**Makanchi Array**	**145.17**	**36**	PKPbc	PKPbc	21 16 04.0	+2.5
	1.8nm,0.8s,baz=306,slow=3.9,SNR=7.5						
MKAR	**Makanchi Array**	**145.17**	**36**	PKPbc	PKPbc	21 16 04.0	+2.4

IDC 02 21:10:48.4±3.7,11.70S×166.35E,mb3.8/4,mb1 3.8/4, mb1mx3.7/14,Error ellipse: s-maj=111.0km s-min=47.5km az=117.0,Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ASAR	**Alice Springs**	**33.04**	**244**	P	P	21 17 25.4	-2.

	comp=Z,8.4nm,0.2s						
EBAD	**Badajoz**	**4.26**	**65**	Pn	**Pn**	**21 36 11.8**	**+0.5**
	comp=Z,3.2nm,0.1s,SNR=7.9						
EBAD				Sn	**Sn**	**21 37 02.4**	**+1.7**
	comp=Z,7.1nm,0.1s,SNR=7.9						
EMIN	**Mina Concepcio**	**4.27**	**79**	Pn	**Pn**	**21 36 11.1**	**-0.5**
	comp=Z,1.5nm,0.1s,SNR=20						
EMIN				Sn	**Sn**	**21 37 01.1**	**+0.1**
	comp=Z,4.4nm,0.2s,SNR=8.4						
EMIN	**Mina Concepcio**	**4.27**	**79**	P	**Pn**	**21 36 11.2**	**-0.3**
EMIN				S	**Sn**	**21 37 00.7**	**-0.3**
PCBR	**Castelo Branco**	**4.48**	**51**	*e*Pn	**Pn**	**21 36 15.7**	**+1.3**
PCBR				*e*Sn	**Sn**	**21 37 08.2**	**+2.1**
	comp=Z,3.7nm,0.1s						
PCBR	**Castelo Branco**	**4.48**	**51**	Pn	**Pn**	**21 36 15.7**	**+1.3**
PCBR				Sn	**Sn**	**21 37 08.2**	**+2.1**
	comp=Z,1.9nm,0.1s						
PVIS	**Viseu**	**4.83**	**40**	*e*Pn	**Pn**	**21 36 20.3**	**+0.9**
PVIS				*e*Sn	**Sn**	**21 37 16.7**	**+1.8**
	comp=Z,15nm,0.1s						
PVIS	**Viseu**	**4.83**	**40**	Pn	**Pn**	**21 36 20.3**	**+0.9**
PVIS				Sn	**Sn**	**21 37 16.7**	**+1.8**
	comp=Z,7.6nm,0.1s						
ESPR	**Espera**	**4.90**	**91**	Sn	**Sn**	**21 37 15.1**	**-1.7**
	comp=Z,21nm,0.2s,SNR=7.9						
ELIJ	**Sierra de Lija**	**5.28**	**90**	Pn	**Pn**	**21 36 25.4**	**-0.3**
	comp=Z,0.4nm,0.2s,SNR=7.9						
ELIJ				Sn	**Sn**	**21 37 24.4**	**-1.9**
	comp=Z,0.5nm,0.2s,SNR=7.9						
ELIJ	**Sierra de Lija**	**5.28**	**90**	P	**Pn**	**21 36 25.3**	**-0.4**
ELIJ				S	**Sn**	**21 37 23.5**	**-2.8**
PVRL	**Vila Real**	**5.34**	**37**	*e*Sn	**Sn**	**21 37 28.6**	**+0.9**
ELOB	**Lobios**	**5.66**	**31**	Pn	**Pn**	**21 36 32.2**	**+1.1**
	comp=Z,0.4nm,0.1s,SNR=7.9						
ELOB				Sn	**Sn**	**21 37 35.5**	**-0.2**
	comp=Z,4.1nm,0.1s,SNR=7.9						
ELOB	**Lobios**	**5.66**	**31**	P	**Pn**	**21 36 31.5**	**+0.5**
ELOB				S	**Sn**	**21 37 34.4**	**-1.4**
EZAM	**Zamans**	**5.66**	**26**	Sn	**Sn**	**21 37 34.6**	**-1.2**
	comp=Z,3.0nm,0.1s,SNR=7.4						
EZAM	**Zamans**	**5.66**	**26**	P	**Pn**	**21 36 31.4**	**+0.3**
EZAM				S	**Sn**	**21 37 35.1**	**-0.7**
EADA	**Adamuz**	**5.97**	**77**	Pn	**Pn**	**21 36 34.8**	**-0.6**
	comp=Z,1.0nm,0.1s,SNR=14						
EADA				Sn	**Sn**	**21 37 42.6**	**-1.0**
	comp=Z,2.2nm,0.2s,SNR=6.6						
EADA	**Adamuz**	**5.97**	**77**	P	**Pn**	**21 36 34.7**	**-0.7**
EADA				S	**Sn**	**21 37 41.6**	**-2.0**
PBRG	**Braganca**	**6.22**	**39**	*e*Pn	**Pn**	**21 36 39.3**	**+0.3**
PBRG				*e*Sn	**Sn**	**21 37 49.4**	**-0.3**
	comp=Z,5.1nm,0.1s						
PBRG	**Braganca**	**6.22**	**39**	Pn	**Pn**	**21 36 39.3**	**+0.3**
PBRG				Sn	**Sn**	**21 37 49.4**	**-0.3**
	comp=Z,2.5nm,0.1s						
EMAZ	**Mazaricos**	**6.30**	**20**	Pn	**Pn**	**21 36 40.2**	**+0.1**
	comp=Z,0.3nm,0.1s,SNR=7.9						
EMAZ	**Mazaricos**	**6.30**	**20**	P	**Pn**	**21 36 39.5**	**-0.6**
EMAZ				S	**Sn**	**21 37 47.9**	**-3.8**
ECAL	**Calabor**	**6.32**	**38**	Pn	**Pn**	**21 36 40.8**	**+0.4**
	comp=Z,4.8nm,0.4s,SNR=7.2						
ECAL				Sn	**Sn**	**21 37 51.0**	**-1.3**
	comp=Z,3.3nm,0.2s,SNR=7.9						
ECAL	**Calabor**	**6.32**	**38**	P	**Pn**	**21 36 40.8**	**+0.4**
ECAL				S	**Sn**	**21 37 50.8**	**-1.5**
STS	**Santiago**	**6.37**	**23**	Sn	**Sn**	**21 37 51.7**	**-1.8**
	comp=Z,2.8nm,0.2s,SNR=7.9						
STS	**Santiago**	**6.37**	**23**	P	**Pn**	**21 36 40.9**	**-0.2**
STS				S	**Sn**	**21 37 50.7**	**-2.8**
ERUA	**La Rua**	**6.48**	**34**	Sn	**Sn**	**21 37 55.8**	**-0.5**
	comp=Z,1.6nm,0.2s,SNR=4.0						
EBAN	**Banos Encina**	**6.59**	**78**	Sn	**Sn**	**21 37 57.5**	**-1.5**
	comp=Z,2.4nm,0.3s,SNR=7.9						
EBAN	**Banos Encina**	**6.59**	**78**	P	**Pn**	**21 36 42.5**	**-1.7**
EBAN				S	**Sn**	**21 37 56.3**	**-2.7**
EINC	**Incio**	**6.61**	**31**	Pn	**Pn**	**21 36 44.3**	**-0.2**
	comp=Z,1.1nm,0.1s,SNR=10						
EINC				Sn	**Sn**	**21 37 58.3**	**-1.3**
	comp=Z,2.3nm,0.2s,SNR=6.3						
EINC	**Incio**	**6.61**	**31**	P	**Pn**	**21 36 44.3**	**-0.2**
EINC				S	**Sn**	**21 37 58.3**	**-1.3**
ESDC	**Sonseca Array**	**6.80**	**65**	Pn	**Pn**	**21 36 46.1**	**-1.1**
	comp=Z,2.6nm,0.1s,baz=250,slow=13,SNR=14						
ESDC				Sn	**Sn**	**21 38 02.3**	**-2.1**
	comp=Z,0.8nm,0.3s,baz=250,slow=23,SNR=9.0						
EQES	**Quesada**	**7.12**	**81**	Pn	**Pn**	**21 36 50.8**	**-0.8**
	comp=Z,0.3nm,0.2s,SNR=7.9						
EQES	**Quesada**	**7.12**	**81**	P	**Pn**	**21 36 49.8**	**-1.9**
EQES				S	**Sn**	**21 38 08.7**	**-3.6**
EPON	**Pontenova**	**7.25**	**29**	Pn	**Pn**	**21 36 54.3**	**+0.8**
	comp=Z,0.7nm,0.3s,SNR=7.9						
EPON				Sn	**Sn**	**21 38 13.4**	**-2.2**
	comp=Z,1.2nm,0.2s,SNR=7.9						
EPON	**Pontenova**	**7.25**	**29**	P	**Pn**	**21 36 53.2**	**-0.3**
EPON				S	**Sn**	**21 38 12.4**	**-3.1**
EARI	**Arriondas**	**8.09**	**38**	Sn	**Sn**	**21 38 35.7**	**-0.7**
	comp=Z,0.4nm,0.2s,SNR=7.9						
EARI	**Arriondas**	**8.09**	**38**	P	**P**	**21 37 04.9**	**-0.2**
EARI				S	**Sn**	**21 38 35.7**	**-0.7**
ETOB	**Tobarra**	**8.39**	**76**	Pn	**P**	**21 37 07.6**	**-1.8**
	comp=Z,0.3nm,0.1s,SNR=7.9						
ETOB	**Tobarra**	**8.39**	**76**	P	**P**	**21 37 06.6**	**-2.8**
ETOB				S	**Sn**	**21 38 42.5**	**-1.6**
ETOR	**Torete**	**8.58**	**61**	Pn	**P**	**21 37 11.5**	**-0.5**
	comp=Z,1.6nm,0.2s,SNR=14						
ETOR				Sn	**Sn**	**21 38 44.5**	**-4.3**
	comp=Z,0.2nm,0.1s,SNR=4.7						
ETSF	**Etsaut**	**10.51**	**53**	*e*Pn	**P**	**21 37 36.9**	**-1.5**
EPF	**Esparros**	**11.15**	**54**	*e*Pn	**P**	**21 37 47.4**	**+0.2**

IDC 02 21:36:51.8±9.4, 24.14S×67.00W, h140km±69km, mb1 3.4/3, mb1mx3.2/14, Error ellipse: s-maj=164.0km s-min=26.4km az=57.0, Salta Province

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
LPAZ	**La Paz**	**7.88**	**352**	P	P	21 38 44.4	-0.4
	1.0nm,0.3s,baz=179,slow=9.3,SNR=31						
LPAZ				S	S	21 40 13.1	+0.3
	baz=321,slow=13,SNR=2.1						
CPUP	**Villa Florida**	**9.02**	**106**	P	P	21 38 58.9	-1.0
	0.0nm,0.3s,baz=286,slow=16,SNR=2.5						
BDFB	**Brasilia**	**19.74**	**68**	P	P	21 41 10.9	-1.9
	0.7nm,0.3s,baz=244,slow=9.1,SNR=9.7						

*NEIC **02** 22:41:36.0,60.23N×151.21W,h63km,ML3.6(PMR), ML3.2(AEIC), After AEIC.*
*IDC **02** 22:41:42.1±2.4,60.43N×149.13W,mb3.4/1,mb1 3.5/4, mb1mx3.3/21,ML3.2/3, Error ellipse: s-maj=30.9km s-min=25.0km az=114.0*

ISC 02 22:41:33.4±0.9, 60.18N±0.09×151.2W±0.2, h85km±13km, n16, σ0§37/16, Kenai Peninsula

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SLKM	**Skilak Lake**	**0.60**	**56**	*e*P	**P**	**22 41 48.2**	**-0.4**
RSO	**Redoubt South**	**0.81**	**291**	*e*P	**P**	**22 41 51.1**	**+0.3**
SPU	**Mount Spurr**	**1.09**	**338**	*e*P	**P**	**22 41 54.1**	**+0.1**
GOU	**Gould Hall**	**1.23**	**34**	*e*P	**P**	**22 41 55.9**	**0.0**
PMS	**Palmer South**	**1.35**	**37**	*e*P	**P**	**22 41 57.7**	**+0.3**
PWA	**Palmer West**	**1.62**	**23**	*e*P	**P**	**22 42 01.2**	**+0.3**
PMR	**Palmer**	**1.75**	**35**	*e*P	**P**	**22 42 02.6**	**0.0**
SVW	**Sparrevohn**	**2.36**	**295**	*e*P	**P**	**22 42 10.6**	**-0.4**
KDAK	**Kodiak Island**	**2.50**	**197**	*e*P	**P**	**22 42 13.1**	**+0.1**
MID	**Middleton Isla**	**2.58**	**105**	*e*P	**P**	**22 42 02.4**	**-12**
TOA	**Tolsona**	**3.12**	**50**	*e*P	**P**	**22 42 21.7**	**+0.1**
ILAR	**Eielson Array**	**5.03**	**22**	Pn	**P**	**22 42 47.5**	**-0.4**
	0.6nm,0.3s,baz=199,slow=14,SNR=27						
ILAR				Sn	**S**	**22 43 39.9**	**-5.4**
	3.1nm,0.3s,baz=214,slow=23,SNR=11						
IMA	**Indian Mountai**	**6.02**	**350**	*e*P	**P**	**22 43 05.4**	**+4.0**
INK	**Inuvik**	**11.17**	**36**	Pn	**P**	**22 44 11.2**	**-0.2**
	0.1nm,0.3s,baz=264,slow=7.4,SNR=3.9						
YKA	**Yellowknife Ar**	**17.57**	**67**	Pn	**P**	**22 45 33.8**	**+0.2**
	0.1nm,0.3s,baz=278,slow=10,SNR=14						
SONM	**Songino Array**	**55.40**	**307**	P	pP	22 51 23.0	+1.1
	0.5nm,0.9s,baz=27,slow=6.4,SNR=3.5						

IDC 02 22:44:17.3±43.0, 16.06S×172.72W, mb4.3/3, mb1 4.5/3, mb1mx3.9/15, Error ellipse: s-maj=833.0km s-min=181.2km az=79.0, Samoa Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**44.28**	**241**	P	P	22 52 29.7	-1.0
	2.0nm,0.9s,baz=92,slow=12,SNR=4.1						
WRA	**Warramunga Arr**	**50.33**	**257**	P	P	22 53 14.7	-3.6
	1.7nm,0.5s,baz=97,slow=6.9,SNR=5.0						
AS12	**Alice Springs**	**50.53**	**252**	*e*P	P	22 53 18.4	-1.4
	6.5nm,0.7s						
ASAR	**Alice Springs**	**50.53**	**252**	P	P	22 53 18.4	-1.4
	8.5nm,0.6s,baz=89,slow=8.5,SNR=157						

*IDC **02** 23:23:08.2±3.1,31.61S×178.23W,mb4.1/2,mb1 4.3/3, mb1mx4.0/13,ML3.2/1, Error ellipse: s-maj=69.4km s-min=36.3km az=111.0*

ISC 02 23:23:08.9±5.6, 31.8S±0.2×177.9W±0.8, h33km, n5, σ0§08/5, mb4.0/2, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**7.66**	**211**	Pn	**Pn**	**23 25 01.2**	**0.0**
	0.3nm,0.3s,baz=130,slow=7.9,SNR=3.4						
URZ				Sn	**Sn**	**23 26 27.7**	**0.0**
	1.7nm,0.3s,baz=341,slow=22,SNR=11						
ASAR	**Alice Springs**	**43.15**	**268**	P	**P**	**23 31 08.3**	**+0.1**
	0.6nm,0.4s,mb3.7,baz=108,slow=7.4,SNR=9.9						
WB2	**Warramunga Arr**	**44.26**	**273**	*e*P	**P**	**23 31 17.1**	**-0.1**
WRA	**Warramunga Arr**	**44.27**	**273**	P	**P**	**23 31 17.3**	**0.0**
	2.0nm,0.4s,mb4.2,baz=113,slow=7.9,SNR=17						
FINES	**FINESS Array B**	**146.47**	**339**	PKPbc	PKPbc	23 42 48.8	+3.0
	0.3nm,0.5s,baz=45,slow=3.9,SNR=5.3						

*NEIC **02** 23:31:46.6±1.7,25.53N×142.57E,h37km±15km,mb4.2/1, Error ellipse: s-maj=16.7km s-min=8.1km az=92.0*
*IDC **02** 23:31:47.3±3.2,25.51N×142.64E,h42km±28km,mb3.8/12, mb1 3.9/12,mb1mx3.8/21,MS2.9/2,Ms1 2.9/2, ms1mx2.6/20, Error ellipse: s-maj=24.7km s-min=17.1km az=95.0*

ISC 02 23:31:45.9±2.0, 25.51N±0.08×142.5E±0.2, h47km±16km, n23, σ0§84/23, mb4.1/14, MS3.5/1, Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CBIJ	**Chichi jima**	**1.61**	**348**	P	**P**	**23 32 13.3**	**+1.0**
	117nm,0.3s,baz=189,slow=3.4,SNR=85						
CBIJ				S	**S**	**23 32 37.1**	**+5.1**
	91nm,0.3s,baz=276,slow=23,SNR=5.0						
JHJ	**Hachijo jima 2**	**7.96**	**343**	LR	LR	23 35 58.1	
	comp=Z,35nm,21.0s,baz=3.8,slow=32						
MAJO	**Matsushiro**	**11.61**	**342**	P	**P**	**23 34 29.7**	**-1.9**
SONM	**Songino Array**	**36.09**	**318**	P	**P**	**23 38 45.7**	**+0.8**
	0.7nm,0.5s,mb3.8,baz=123,slow=8.3,SNR=10						
WRAB	**Tennant Creek**	**45.87**	**191**	*e*P	**P**	**23 40 05.7**	**0.0**
	7.2nm,0.6s,mb4.8						
WB2	**Warramunga Arr**	**45.88**	**191**	*e*P	**P**	**23 40 05.5**	**-0.2**
WRA	**Warramunga Arr**	**45.88**	**191**	P	**P**	**23 40 05.6**	**-0.2**
	2.6nm,0.6s,mb4.4,baz=9.8,slow=8.4,SNR=20						
ASAR	**Alice Springs**	**49.59**	**190**	P	**P**	**23 40 34.5**	**-0.2**
	0.6nm,0.6s,mb3.8,baz=17,slow=13,SNR=8.4						
MKAR	**Makanchi Array**	**51.74**	**311**	P	**P**	**23 40 50.7**	**+0.1**
	0.7nm,0.5s,mb3.9,baz=91,slow=9.6,SNR=11						
KURK	**Kurchatov**	**54.33**	**315**	*e*P	**P**	**23 41 08.7**	**-1.1**
ILAR	**Eielson Array**	**58.95**	**28**	P	**P**	**23 41 41.0**	**-1.4**
	0.6nm,0.7s,mb3.8,baz=253,slow=5.5,SNR=7.5						
BVAR	**Borovoye Array**	**59.43**	**318**	P	**P**	**23 41 46.1**	**+0.1**
	3.6nm,0.5s,mb4.7,baz=89,slow=7.7,SNR=18						
ZRNK	**Zerenda**	**60.27**	**318**	*e*P	**P**	**23 41 50.7**	**-1.0**
INK	**Inuvik**	**64.34**	**24**	P	**P**	**23 42 18.2**	**-0.3**
	0.8nm,0.7s,mb3.9,baz=315,slow=8.6,SNR=11						
INK	**Inuvik**	**64.34**	**24**	*e*P	**P**	**23 42 17.9**	**-0.7**
YKA	**Yellowknife Ar**	**73.38**	**28**	P	**P**	**23 43 14.1**	**-0.2**
	0.5nm,0.5s,mb3.8,baz=293,slow=6.2,SNR=16						
KAF	**Kangasniemi**	**79.04**	**335**	*e*p	**P**	**23 43 46.9**	**+0.6**
	1.2nm,0.4s,mb4.2,baz=53,slow=5.2						
FINES	**FINESS Array B**	**79.51**	**334**	P	**P**	**23 43 49.6**	**+0.8**
	1.3nm,0.5s,mb4.2,baz=61,slow=5.5,SNR=11						
FINES				LR	LR	00 21 17.0	
	comp=Z,20nm,19.0s,MS3.5,baz=23,slow=37						
NVAR	**Mina Array Bea**	**81.25**	**52**	P	**P**	**23 43 59.8**	**+1.3**
	0.6nm,0.8s,mb3.5,baz=297,slow=6.0,SNR=3.1						
AKASG	**Malin Array Be**	**84.08**	**324**	P	**P**	**23 44 13.6**	**+0.8**
	1.1nm,0.7s,mb4.1,baz=51,slow=4.8,SNR=6.7						
NB2	**NORSAR Subarra**	**85.20**	**338**	P	**P**	**23 44 18.9**	**+0.8**
	1.0nm,0.6s,mb4.1,baz=49,slow=4.6						
NOA	**NORSAR Array B**	**85.20**	**338**	P	**P**	**23 44 18.9**	**+0.8**
	1.2nm,0.6s,mb4.2,baz=45,slow=4.9,SNR=6.4						
NOA	**NORSAR Array B**	**85.20**	**338**	P	**P**	**23 44 18.9**	**+0.8**

*LDG **02** 23:40:36.1±0.1,46.30N×7.22E,h2km,Md1.8/3,Ml1.8/10, Error ellipse: s-maj=2.1km s-min=0.9km az=88.0*
*NEIC **02** 23:40:36.1,46.30N×7.22E,h2km,ML1.8(LDG), ML1.1(ZUR), After LDG.*

ZUR 02 23:40:36.5, 46.28N×7.20E, h8km, ML1.1/5, 3C-3D, Switzerland

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GRYON	**Gryon**	**0.07**	**242**	↓*i*Pg	Pg	23 40 38.8	+0.3
	7.9nm,0.3s						
GRYON				*i* Sg	Sg	23 40 40.1	+0.3
	7.9nm,0.3s						
SENIN	**Lac Senin**	**0.11**	**42**	↑*i*Pg	Pg	23 40 39.4	+0.3
	3.6nm,0.2s						
SENIN				*i* Sg	Sg	23 40 41.4	+0.5
	3.6nm,0.2s						
AIGLE	**Aigle**	**0.18**	**290**	↓*i*Pg	Pg	23 40 40.3	0.0
	2.0nm,0.6s						
AIGLE				*e*Sg	Sg	23 40 43.0	+0.1
	2.0nm,0.6s						
SALAN	**Lac Salanfe**	**0.21**	**228**	↑*i*Pg	Pg	23 40 41.1	+0.2
	2.7nm,0.3s						
SALAN				*e*Sg	Sg	23 40 43.9	+0.1
	2.7nm,0.3s						
DIX	**Grande Dixence**	**0.25**	**143**	↓*i*Pg	Pg	23 40 42.2	+0.5
	0.7nm,0.3s						
DIX				*e*Sg	Sg	23 40 45.8	+0.6
	0.7nm,0.3s						
EMV	**Vieux Emosson**	**0.30**	**223**	↑*i*Pg	Pg	23 40 42.7	0.0
	0.9nm,0.2s						
LPL	**La Plagne**	**0.83**	**203**	*e*Pg	Pg	23 40 52.7	-0.5
LPL				*e*Sg	Sg	23 41 03.1	-1.2
	2.3nm,0.4s						
CABF	**La Chapelle**	**0.83**	**294**	*e*Pg	Pg	23 40 52.9	-0.3
CABF				*e*Sg	Sg	23 41 03.5	-0.9
	3.6nm,0.3s						
LPG	**La Plagne**	**0.84**	**202**	*e*Pg	Pg	23 40 53.0	-0.4
LPG				*e*Sg	Sg	23 41 04.0	-0.7
	0.9nm,0.2s						
HINF	**Hinteralfeld**	**1.55**	**351**	*e*Pg	Pg	23 41 04.6	-2.9
HINF				*e*Sg	Sg	23 41 25.1	-3.2
	2.8nm,0.2s						
MBDF	**Montbardon**	**1.58**	**191**	*e*Pg	Pg	23 41 06.1	-2.0
MBDF				*e*Sg	Sg	23 41 26.7	-2.6
	0.9nm,0.3s						
ORIF	**Oris-en-Rattie**	**1.65**	**215**	*e*Pg	Pg	23 41 07.4	-2.0
ORIF				*e*Sg	Sg	23 41 29.3	-2.1
	1.1nm,0.3s						
HAU	**Haudompre**	**1.82**	**342**	*e*Pg	Pg	23 41 09.4	-3.4
HAU				*e*Sg	Sg	23 41 32.6	-4.5
	2.6nm,0.3s						
VIVF	**Saint-Julien-l**	**2.27**	**232**	*e*Pg	Pg	23 41 18.6	-3.3
VIVF				*e*Sg	Sg	23 41 48.1	-4.2
	1.0nm,0.2s						
SMF	**Signal de Mont**	**2.35**	**280**	*e*Pg	Pg	23 41 19.8	-3.6
SMF				*e*Sg	Sg	23 41 50.6	-4.1
	1.4nm,0.2s						
LOR	**Lormes**	**2.50**	**294**	*e*Pg	Pg	23 41 22.6	-3.8
LOR				*e*Sg	Sg	23 41 54.6	-5.0
	0.6nm,0.2s						
MEZF	**Maizieres J'vi**	**2.66**	**328**	*e*Pg	Pg	23 41 25.5	-4.0
AVF	**Avril sur Loir**	**2.70**	**282**	*e*Pg	Pg	23 41 25.5	-4.9
AVF				*e*Sg	Sg	23 42 01.1	-5.3
	0.6nm,0.3s						

*JMA **02** 23:56:26.1±0.5,23.95N×121.65E,h50km,M2.8*

TAP 02 23:56:27.3, 24.11N×121.63E, h42km, ML3.2, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
YOJ	**Yonaguni jima**	**1.31**	**74**	P	P	23 56 48.9	-0.6
YOJ				*e*S	S	23 57 05.9	-0.1
IRIF	**Iriomote-Funau**	**1.93**	**83**	P	P	23 56 57.2	-1.1
IRIF				S	S	23 57 20.1	-1.3
JKRS	**Kuro-shima**	**2.18**	**86**	P	P	23 57 01.3	-0.5
JKRS				S	S	23 57 27.6	-0.1
JIJ	**Ishigaki jima**	**2.31**	**83**	P	P	23 57 02.4	-1.3
JIJ				*e*S	S	23 57 28.5	-2.5
JTJ	**Tarama**	**2.85**	**79**	P	P	23 57 10.4	-1.0
JTJ				*e*S	S	23 57 43.6	-1.2

GUC 03 00:04:10.9±0.7, 32.00S×71.42W, h48km, MD3.5, ML2.5, 1C, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PTCH	**Petorca**	**0.49**	**123**	↑*i*P	P	00 04 22.1	+0.2
PTCH				*i* S	S	00 04 30.8	+0.9
PTCH				AMP		00 04 31.7	
	comp=N,709nm,0.2s						
CMCH	**Combarbala**	**0.89**	**24**	*e*P	P	00 04 27.5	+0.2
CMCH				*i* S	S	00 04 40.7	+1.3
CMCH				AMP		00 04 43.7	
	comp=E,309nm,0.5s						
PEL	**Peldehue**	**1.30**	**152**	*i* S	S	00 04 50.9	+1.2
PEL				AMP		00 04 53.9	
	comp=E,244nm,0.3s						
RCDM	**Rinconada Maip**	**1.58**	**161**	*i* S	S	00 04 56.7	+0.3
FCH	**Farellones**	**1.64**	**145**	*e*P	P	00 04 38.8	+1.1
FCH				*i* S	S	00 04 59.2	+1.4
FCH				AMP		00 05 03.1	
	comp=N,46nm,0.3s						

JMA 03 00:26:42.3±0.2, 31.31N×142.62E, h31km, M3.7, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JHJ2	**Mitsune**	**2.98**	**308**	S	Sn	00 28 04.0	+0.3
BSO1	**Boso 1**	**3.61**	**338**	P	Pn	00 27 37.8	+0.2
BSO2	**Boso 2**	**3.77**	**336**	S	Sn	00 28 23.4	-0.3
BSO3	**Boso 3**	**3.91**	**334**	P	Pn	00 27 42.5	+0.6
BSO4	**Boso 4**	**4.14**	**333**	P	Pn	00 27 45.3	+0.2
BSO4				S	Sn	00 28 31.9	-1.2
CBIJ	**Chichi jima**	**4.22**	**185**	P	Pn	00 27 48.8	+2.5
CBIJ				*e*S	Sn	00 28 36.7	+1.6
JOD2	**Odawara 2**	**4.93**	**324**	P	Pn	00 27 56.9	+0.6
JOD2				S	Sn	00 28 49.1	-3.9
JRY	**Ryogami san**	**5.62**	**328**	P	Pn	00 28 06.9	+0.8
JRY				*e*S	Sn	00 29 09.3	-1.1
JMK	**Ichinoseki**	**7.71**	**352**	P	Pn	00 28 33.2	-2.2
JMK				S	Sn	00 29 52.3	-10

*NEIC **03** 00:52:29.0±2.8,43.23N×127.90W,h10km,mb3.4/1, Error ellipse: s-maj=34.4km s-min=10.7km az=86.0*

ISC 03 00:52:26.2±3.7, 43.3N±0.1×128.1W±0.4, h10km, n23, σ0§63/23, mb3.2/1, Off coast of Oregon

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RNO	**Roman Nose**	**3.21**	**77**	P	**Pn**	**00 53 18.0**	**+0.3**
MPOR	**Mary's Peak**	**3.49**	**68**	P	**Pn**	**00 53 20.8**	**-1.0**
HSO	**Harness Mounta**	**3.63**	**84**	*e*P	**Pn**	**00 53 23.0**	**-0.8**
KMOR	**Kings Mountain**	**4.05**	**52**	P	**Pn**	**00 53 29.1**	**-0.5**
SSOR	**Sweet Springs**	**4.34**	**67**	*e*P	**Pn**	**00 53 33.8**	**-0.1**
HUOR	**Husband**	**4.59**	**77**	P	**Pn**	**00 53 37.8**	**+0.4**
BMW	**Boistfort Moun**	**4.71**	**45**	*e*P	**Pn**	**00 53 37.9**	**-1.2**
VLMM	**Larch Mountain**	**4.88**	**60**	P	**Pn**	**00 53 41.8**	**+0.3**
LVP	**Lakeview Peak**	**4.92**	**53**	P	**Pn**	**00 53 42.3**	**+0.3**
TDH	**Tom, Dick, Har**	**4.94**	**64**	P	**Pn**	**00 53 42.8**	**+0.4**
FL2	**Flat Top 2**	**5.02**	**52**	P	**Pn**	**00 53 44.0**	**+0.5**
VLL	**Laurance Lake**	**5.08**	**62**	P	**Pn**	**00 53 45.0**	**+0.7**
SHW	**Mount Saint He**	**5.08**	**53**	*e*P	**Pn**	**00 53 43.0**	**-1.3**
ERK	**Elk Rock**	**5.09**	**51**	P	**Pn**	**00 53 44.9**	**+0.5**
KOSW	**Kosmos**	**5.26**	**50**	P	**Pn**	**00 53 47.5**	**+0.6**
ASR	**Mount Adams--S**	**5.44**	**56**	P	**Pn**	**00 53 49.9**	**+0.5**
LON	**Longmire**	**5.64**	**50**	*e*P	**Pn**	**00 53 51.6**	**-0.6**
FMW	**Mount Fremont**	**5.83**	**49**	P	**Pn**	**00 53 55.1**	**+0.3**
GL2	**New Goldendale**	**5.83**	**60**	P	**Pn**	**00 53 54.8**	**-0.1**
GSM	**Grass Mountain**	**5.93**	**46**	P	**Pn**	**00 53 56.7**	**+0.4**
SDCO	**Great Sand Dun**	**18.00**	**100**	P	**P**	**00 56 38.1**	**+0.1**
MNTX	**Cornudas Mount**	**21.31**	**115**	P	**P**	**00 57 14.6**	**-0.7**
WMOK	**Wichita Mounta**	**24.20**	**101**	P	**P**	**00 57 44.7**	**+0.9**
	0.4nm,0.4s,mb3.2						

*MDD **03** 00:57:01.0±1.4,35.25N×4.25W,mb3.5/11, Error ellipse: s-maj=10.6km s-min=4.0km az=24.0, PRXI

4.6nm,0.4s
EGRO El Granado 3.46 313 P Pn **00 57 56.0 +0.3**
0.6nm,0.1s,SNR=7.9
EGRO El Granado 3.46 313 P Pn **00 57 55.5 -0.2**
EGRO S Sn **00 58 35.4 -1.7**
PBEJ Beja 4.01 315 *e*Sn Sn **00 58 49.2 -2.0**
3.1nm,0.4s
ETOB Tobarra 4.05 32 P Pn **00 58 04.3 +0.2**
0.4nm,0.2s,SNR=7.9
ETOB Tobarra 4.05 32 P Pn **00 58 04.0 0.0**
ETOB S Sn **00 58 49.9 -2.3**
EBAD Badajoz 4.14 329 P Pn **00 58 05.3 -0.1**
EBAD S Sn **00 58 51.0 -3.5**
PTEO Sao Teotonio 4.27 304 *e*Pn Pn **00 58 07.4 +0.3**
ESDC Sonseca Array 4.45 3 P Pn **00 58 09.2 -0.4**
1.3nm,0.2s,baz=178,slow=12,SNR=16
ESDC Sonseca Array 4.45 3 P Pn **00 58 09.2 -0.4**
ESDC S Sn **00 58 58.2 -4.0**
ESDC S Sn **00 58 58.3 -3.8**
PCBR Castelo Branco 5.26 332 *e*Pn Pn **00 58 20.6 -0.6**
PCBR *e*Sn Sn **00 59 18.5 -4.1**
2.4nm,0.4s
PTOM Tomar 5.48 324 *e*Pn Pn **00 58 24.3 +0.1**
PTOM *e*Sn Sn **00 59 23.7 -4.4**
ETOR Torete 5.85 17 P Pn **00 58 28.8 -0.8**
1.0nm,0.4s,SNR=7.9
PVRL Vila Real 6.62 337 *e*Sn Sn **00 59 51.2 -5.3**
PBRG Braganca 6.84 344 *e*Pn Pn **00 58 42.6 -0.9**
ECAL Calabor 6.97 345 P Pn **00 58 45.8 +0.5**
0.7nm,0.2s,SNR=7.9
ECAL Calabor 6.97 345 P Pn **00 58 44.0 -1.3**
ECAL S Sn **00 59 59.3 -6.2**

NEIC ***03*** *01:13:30.0, 15.57N×93.83W, h18km, MD4.1(MEX), After MEX.*

MEX 03 01:13:29.4±1.4, 15.53N×93.85W, h16km±28km, MD4.1, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SCX	**San Cristobal**	**1.68**	**44**	*i* P	Pn	01 13 55.8	-2.6
SCX				*i* S	Sn	01 14 15.0	-4.6
CCIG	**Comitan**	**1.81**	**65**	*e*P	Pn	01 13 57.2	-3.1
CCIG				*i* S	Sn	01 14 16.4	-6.6
CMIG	**Matias Romero**	**1.85**	**328**	*i* P	Pn	01 13 57.2	-3.6
CMIG				*i* S	Sn	01 14 18.4	-5.6
HUIG	**Huatulco**	**2.19**	**277**	*i* P	Pn	01 14 01.1	-4.7
HUIG				*i* S	Sn	01 14 24.9	-7.8
OXX	**Oaxaca**	**3.17**	**300**	*e*P	Pn	01 14 22.5	+2.8

JMA ***03*** *01:15:36.8±0.2, 30.98N×142.09E, h56km, M3.8*
NEIC ***03*** *01:15:36.1±0.8, 30.52N×141.75E, h40km, Error ellipse: s-maj=28.6km s-min=12.7km az=73.0*
IDC ***03*** *01:15:38.0±4.7, 30.35N×141.79E, h52km±41km, mb3.3/4, mb1 3.5/5, mb1mx3.2/21, ML3.1/1, MS3.0/1, Ms1 3.2/1, ms1mx2.4/17, Error ellipse: s-maj=53.2km s-min=26.8km az=72.0*

ISC 03 01:15:34.2±1.4, 30.75N±0.07×141.9E±0.2, h38km±16km, n22, σ1°52/32, mb3.6/4, MS3.0/1, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHJ2	**Mitsune**	**2.94**	**324**	P	**P**	**01 16 20.6**	**+1.1**
JHJ2				S	**S**	**01 16 53.7**	**-0.3**
CBIJ	**Chichi jima**	**3.66**	**176**	P	**P**	**01 16 27.9**	**-1.9**
3.1nm,0.3s,slow=20,SNR=4.5							
CBIJ				S	**S**	**01 17 04.2**	**-8.0**
5.5nm,0.3s,baz=270,slow=20,SNR=3.7							
CBIJ	**Chichi jima**	**3.66**	**176**	P	**P**	**01 16 35.4**	**+5.6**
CBIJ				*e*S	**S**	**01 17 17.6**	**+5.3**
BSO1	**Boso 1**	**3.96**	**349**	P	**P**	**01 16 33.6**	**-0.5**
BSO1				S	**S**	**01 17 18.5**	**-1.5**
BSO2	**Boso 2**	**4.10**	**347**	S	**S**	**01 17 26.3**	**+2.9**
BSO3	**Boso 3**	**4.20**	**344**	P	**P**	**01 16 38.2**	**+0.7**
BSO3				S	**S**	**01 17 26.6**	**+0.6**
BSO4	**Boso 4**	**4.42**	**343**	P	**P**	**01 16 41.9**	**+1.3**
BSO4				S	**S**	**01 17 28.8**	**-2.7**
JOD2	**Odawara 2**	**5.07**	**333**	P	**P**	**01 16 50.8**	**+1.0**
JOD2				S	**S**	**01 17 45.8**	**-2.2**
JHU	**Hanno**	**5.53**	**337**	P	**P**	**01 16 56.6**	**+0.4**
JHU				S	**S**	**01 17 53.6**	**-5.9**
JRY	**Ryogami san**	**5.81**	**335**	P	**P**	**01 17 01.1**	**+1.0**
JRY				S	**S**	**01 18 06.9**	**+0.4**
JHO	**Hitachi**	**5.94**	**350**	P	**P**	**01 17 00.1**	**-1.9**
JHO				S	**S**	**01 18 04.3**	**-5.5**
JAG	**Ashikaga**	**6.01**	**341**	P	**P**	**01 17 02.2**	**-0.7**
MAJO	**Matsushiro**	**6.54**	**333**	P	**P**	**01 17 11.7**	**+1.3**
MAT	**Matsushiro**	**6.54**	**333**	P	**P**	**01 17 11.2**	**+0.9**
MAT	**Matsushiro**	**6.54**	**333**	P	**P**	**01 17 11.0**	**+0.7**
JMK	**Ichinoseki**	**8.20**	**356**	P	**P**	**01 17 29.5**	**-3.9**
JMK				S	**S**	**01 18 58.3**	**-7.5**
CMAR	**Chiang Mai Arr**	**40.69**	**263**	LR	LR	01 42 08.3	
comp=Z,21nn,19.2s,MS3.0,baz=190,slow=39							
MKAR	**Makanchi Array**	**48.01**	**307**	P	**P**	**01 24 12.9**	**+1.6**
0.2nm,0.5s,mb3.4,baz=83,slow=12,SNR=3.0							
WRA	**Warramunga Arr**	**50.92**	**189**	P	**P**	**01 24 31.2**	**-2.8**
0.4nm,0.4s,mb3.7,baz=6.1,slow=7.4,SNR=4.3							
ASAR	**Alice Springs**	**54.65**	**189**	P	**P**	**01 24 59.0**	**-2.7**
0.2nm,0.4s,mb3.5,baz=7.9,slow=7.0,SNR=4.6							
PV10	**Paradox Valley**	**84.64**	**48**	*e*P	**P**	**01 28 07.3**	**+2.2**
TXAR	**Lajitas Array**	**93.62**	**53**	P	**P**	**01 28 50.2**	**+2.3**
0.4nm,0.8s,mb3.9,baz=297,slow=4.0,SNR=4.2							

IDC ***03*** *01:32:05.5±2.2, 52.84N×170.71W, mb3.5/4, mb1 3.7/5, mb1mx3.5/23, ML3.3/1, Error ellipse: s-maj=55.0km s-min=29.0km az=176.0*
NEIC ***03*** *01:32:27.5, 52.97N×167.55W, h24km, ML3.4(AEIC), After AEIC.*

ISC 03 01:32:25.8±0.7, 53.1N±0.1×167.7W±0.1, h74km±7km, n27, σ0°62/30, mb3.3/3, Fox Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NIKO	**Nikolski**	**0.70**	**262**	P	**P**	**01 32 40.9**	**-0.1**
NIKO				S	**S**	**01 32 52.1**	**-0.3**
MCIR	**Makushin Cirqu**	**1.00**	**29**	P	**P**	**01 32 45.2**	**+0.5**
MSW	**Makushin Switc**	**1.00**	**33**	P	**P**	**01 32 44.8**	**+0.1**
MSW				S	**S**	**01 32 58.5**	**-0.5**
UNV	**Unalaska Valle**	**1.05**	**43**	P	**P**	**01 32 45.2**	**-0.2**
UNV				S	**S**	**01 32 59.3**	**-0.7**
MTBL	**Makushin Table**	**1.08**	**34**	P	**P**	**01 32 46.1**	**+0.4**
AHB	**Akutan Harbor**	**1.53**	**47**	P	**P**	**01 32 52.4**	**+0.6**
AKA	**Akutan**	**1.57**	**47**	P	**P**	**01 32 52.7**	**+0.4**
WESS	**West Dahl Sout**	**2.26**	**51**	P	**P**	**01 33 02.4**	**+0.6**
WESE	**West Dahl East**	**2.32**	**52**	P	**P**	**01 33 03.0**	**+0.4**
WESN	**West Dahl Nort**	**2.38**	**50**	P	**P**	**01 33 04.5**	**+1.0**
FALS	**False Pass**	**3.10**	**53**	P	**P**	**01 33 14.4**	**+0.8**
BALA	**Baldy Mountain**	**3.59**	**52**	P	**P**	**01 33 20.9**	**+0.5**
DRIA	**Deer Island**	**3.73**	**57**	P	**P**	**01 33 22.4**	**+0.1**
DTNA	**Dutton South F**	**3.82**	**55**	P	**P**	**01 33 23.1**	**-0.5**
DOL	**Dolgoi Island**	**4.02**	**57**	P	**P**	**01 33 25.8**	**-0.6**
ATKA	**Atka Island**	**4.04**	**260**	P	**P**	**01 33 27.3**	**+0.5**
SPIA	**Saint Paul Isl**	**4.36**	**342**	P	**P**	**01 33 31.6**	**+0.6**
SDN	**Sand Point**	**4.80**	**59**	P	**P**	**01 33 36.3**	**-1.0**
SDPT	**Sand Point**	**4.82**	**59**	P	**P**	**01 33 36.1**	**-1.4**
GSTD	**Great Sitkin T**	**5.24**	**262**	P	**P**	**01 33 43.3**	**0.0**
ADK	**Adak**	**5.61**	**261**	P	**P**	**01 33 47.8**	**-0.6**
ILAR	**Eielson Array**	**15.80**	**34**	P	**P**	**01 36 04.3**	**-0.3**
0.0nm,0.3s,baz=234,slow=11,SNR=4.2							
INK	**Inuvik**	**22.20**	**34**	P	**P**	**01 37 15.3**	**-1.2**
1.8nm,0.7s,mb3.5,baz=243,slow=7.9,SNR=12							
YKA	**Yellowknife Ar**	**29.01**	**50**	P	**P**	**01 38 20.2**	**-0.1**
0.1nm,0.3s,mb2.9,baz=274,slow=8.2,SNR=8.4							
YKA	**Yellowknife Ar**	**29.01**	**50**	P	**P**	**01 38 20.2**	**-0.1**
TXAR	**Lajitas Array**	**51.74**	**91**	P	**P**	**01 41 28.3**	**+0.7**
0.3nm,0.5s,mb3.6,baz=301,slow=5.5,SNR=5.4							
TXAR	**Lajitas Array**	**51.74**	**91**	P	**P**	**01 41 28.3**	**+0.7**

BJI ***03*** *02:34:54.1, 10.90N×95.05E, h36km, mB4.7, mb4.7, Ms4.5, Msz4.1*
MOS ***03*** *02:34:56.4±0.6, 11.30N×95.15E, h33km, mb5.1/10, Error ellipse: s-maj=21.9km s-min=8.3km az=115.4*
SYO ***03*** *02:34:56.3, 11.13N×95.06E, h24km, MB4.7*
IDC ***03*** *02:34:56.6±0.6, 11.18N×95.08E, h24km±4km, mb4.3/18, mb1 4.5/19, mb1mx4.4/21, ML4.3/1, MS3.5/5, Ms1 3.5/5, ms1mx3.2/18, Error ellipse: s-maj=24.8km s-min=11.7km az=57.0*
NEIC ***03*** *02:34:56.3±0.2, 11.13N×95.06E, mb4.7/40, Error ellipse: s-maj=9.1km s-min=4.1km az=52.0*

ISC 03 02:34:54.6±0.3, 11.14N±0.05×95.12E±0.04, h25km, h25km±.7km: pP-P, n150, σ0°79/145, mb4.6/71, MS3.9/13, 15C-5D, Andaman Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NNT	**Nongplab**	**4.74**	**72**	P	**P**	**02 36 05.5**	**-0.9**
BDT	**Bhumibol Dam**	**7.14**	**31**	P	**P**	**02 36 39.0**	**-1.2**
CMAR	**Chiang Mai Arr**	**8.16**	**26**	Pn	**P**	**02 36 53.5**	**-0.9**
1.0nm,0.3s,baz=214,slow=15,SNR=33							
CMAR				LR	LR	02 40 05.3	
comp=Z,218nm,18.1s,baz=195,slow=38							
IPM	**Ipoh**	**8.76**	**138**	*e*P	**P**	**02 37 01.3**	**-1.4**
VIS	**Vishakhapatnam**	**13.16**	**301**	*e*P	**P**	**02 37 59.3**	**-3.3**
KMI	**Kunming**	**15.67**	**26**	*e*P	**P**	**02 38 37.4**	**+1.8**
KMI				AP		02 38 46.8	
KMI				AMB	AMB		
comp=Z,12nm,1.5s							
KMI				LR	LR		
comp=N,581nm,10.1s							
KMI				LR	LR		
comp=E,913nm,9.5s							
KMI				LR	LR		
comp=Z,412nm,10.1s							
HYB	**Hyderabad**	**17.22**	**293**	*i* P	**P**	**02 38 58.5**	**+3.3**
HYB	**Hyderabad**	**17.22**	**293**	*e*P	**P**	**02 38 58.5**	**+3.3**
GYA	**Guiyang**	**18.73**	**34**	*i* P	**P**	**02 39 15.1**	**+1.2**
GYA				AMB	AMB		
comp=Z,10.0nm,1.2s							
GYA				LR	LR		
comp=N,1μm,10.2s							
GYA				LR	LR		
comp=E,960nm,11.4s							
GYA				LR	LR		
comp=Z,480nm,9.6s							
GUN	**Gumba**	**18.80**	**334**	*e*P	**P**	**02 39 13.7**	**-1.1**
comp=Z,52nm,0.7s							
LSA	**Lhasa**	**18.83**	**349**	P	**P**	**02 39 15.0**	**-0.1**
LSA	**Lhasa**	**18.83**	**349**	*e*P	**P**	**02 39 15.3**	**+0.1**
comp=Z,12nm,0.8s							
DMN	**Daman**	**18.89**	**332**	*e*P	**P**	**02 39 15.5**	**-0.3**
comp=Z,43nm,0.7s							
KKN	**Kakani**	**18.97**	**332**	*e*P	**P**	**02 39 16.0**	**-0.7**
comp=Z,44nm,0.8s							
GKN	**Gorkha**	**19.45**	**331**	*e*P	**P**	**02 39 21.3**	**-1.0**
comp=Z,45nm,0.5s							
KOLN	**Koldanda**	**19.77**	**328**	*e*P	**P**	**02 39 25.3**	**-0.6**
comp=Z,76nm,0.6s							
GZH	**Guangzhou**	**21.05**	**53**	P	**P**	**02 39 42.6**	**+3.3**
GZH				LR	LR		
comp=N,516nm,12.9s,MS4.3							
GZH				LR	LR		
comp=E,523nm,11.8s,MS4.3							
GZH				LR	LR		
comp=Z,432nm,10.9s,MS4.1							
CD2	**Chengdu**	**21.24**	**21**	P	**P**	**02 39 40.9**	**-0.2**
CD2				AMB	AMB		
comp=Z,60nm,0.8s,mb5.0							
CD2				AMB	AMB		
comp=Z,140nm,4.8s							
CD2				LR	LR		
comp=E,810nm,9.5s							
CD2				LR	LR		
comp=Z,680nm,10.7s,MS4.3							
POO	**Poona**	**21.82**	**292**	*e*P	**P**	**02 39 46.5**	**-0.5**
NDI	**New Delhi**	**24.19**	**319**	*e*P	**P**	**02 40 08.0**	**-2.3**
XAN	**Xi'an**	**26.05**	**27**	P	**P**	**02 40 26.5**	**-1.4**
XAN				AP	pP	02 40 33.9	-1.4
XAN				AMB	AMB		
comp=Z,9.0nm,0.8s,mb4.3							
LZH	**Lanzhou**	**26.06**	**16**	*e*P	**P**	**02 40 28.5**	**+0.5**
LZH				AP	pP	02 40 37.1	+1.7
LZH				XP	sP	02 40 40.7	+1.9
LZH				AMB	AMB		
comp=Z,28nm,1.5s,mb4.6							
LZH				AMB	AMB		
comp=Z,69nm,4.0s							
LZH				LR	LR		
comp=E,226nm,9.0s							
LZH				LR	LR		
comp=Z,273nm,10.0s,MS4.1							
GTA	**Gaotai**	**28.46**	**8**	*e*P	**P**	**02 40 51.0**	**+1.2**
GTA				AMB	AMB		
comp=Z,11nm,1.3s,mb4.3							
GTA				AMB	AMB		
comp=Z,94nm,3.6s							
GTA				LR	LR		
comp=N,106nm,8.7s							
GTA				LR	LR		
comp=E,80nm,8.7s							
GTA				LR	LR		
comp=Z,87nm,6.8s							
NJ2	**Nanjing**	**30.20**	**43**	*e*P	**P**	**02 41 06.8**	**+1.4**
NJ2				S	**S**	**02 45 54.0**	**-8.0**
NJ2				AMB	AMB		
comp=Z,20nm,0.6s,mb5.0							
NJ2				AMB	AMB		
comp=Z,60nm,5.0s							
NJ2				LR	LR		
comp=N,350nm,12.6s,MS4.5							
NJ2				LR	LR		
comp=E,490nm,11.0s,MS4.5							
NJ2				LR	LR		
comp=Z,720nm,12.0s,MS4.5							
SSE	**Sheshan**	**31.25**	**47**	P	**P**	**02 41 11.9**	**-2.8**
SSE				S	**S**	**02 46 12.5**	**-6.0**
SSE				AMB	AMB		
comp=Z,28nm,0.7s,mb5.2							
SSE				LR	LR		
comp=N,74nm,20.0s,MS3.4							
SSE				LR	LR		
comp=E,50nm,20.0s,MS3.4							
SSE				LR	LR		
comp=Z,59nm,12.7s							
WMQ	**Urumqi**	**33.19**	**350**	*e*P	**P**	**02 41 32.5**	**+1.0**
WMQ				AP	pP	02 41 42.1	+3.1
WMQ				XP	sP	02 41 46.0	+3.7
WMQ				PP	PP	02 42 44.8	+1.9
WMQ				PCP	PcP	02 44 13.7	-0.3
WMQ				S	**S**	**02 46 50.4**	**+1.9**
WMQ				XS		02 47 06.4	
WMQ				SCP		02 47 54.4	
WMQ				PCS		02 47 58.3	
WMQ				SCS	ScS	02 51 53.8	-0.8
WMQ				AMB	AMB		
comp=Z,6.0nm,0.8s,mb4.6							
WMQ				AMB	AMB		
comp=Z,55nm,5.4s							
WMQ				LR	LR		
comp=N,211nm,16.2s,MS4.1							
WMQ				LR	LR		
comp=E,214nm,17.3s,MS4.1							
WMQ				LR	LR		
comp=Z,340nm,18.2s,MS4.1							
KZA	**Kyzart**	**35.38**	**334**	P	**P**	**02 41 51.5**	**+1.1**
SNR=7.0							
UCH	**Uchtor**	**35.82**	**333**	P	**P**	**02 41 55.2**	**+1.1**
SNR=5.3							
AML	**Almayashu**	**36.11**	**333**	P	**P**	**02 41 57.4**	**+0.8**
SNR=10							
AAK	**Ala-Archa**	**36.16**	**334**	P	**P**	**02 41 57.8**	**+0.9**
SNR=6.8							
USP	**Ospenovka**	**36.67**	**334**	P	**P**	**02 42 01.7**	**+0.4**
SNR=9.9							
MKAR	**Makanchi Array**	**37.16**	**345**	P	**P**	**02 42 05.8**	**+0.4**
comp=Z,11nm,0.9s,mb4.7,baz=164,slow=8.3,SNR=30							
MKAR				LR	LR	03 00 27.6	
comp=Z,37nm,18.6s,MS3.2,baz=21,slow=41							
MKAR	**Makanchi Array**	**37.16**	**345**	P	**P**	**02 42 05.0**	**-0.3**
MKAR				pmax	pmax		
comp=Z,11nm,0.9s							
SONM	**Songino Array**	**37.79**	**12**	P	**P**	**02 42 10.6**	**+0.1**
comp=Z,1.1nm,0.6s,mb3.8,baz=202,slow=6.7,SNR=12							
SONM				PcP	PcP	02 44 28.1	+0.6
comp=Z,0.6nm,0.6s,baz=180,slow=2.9,SNR=2.5							
KKAR	**Karatay Array**	**38.35**	**331**	*i* P	**P**	**02 42 15.1**	**-0.3**
KKAR				pmax	pmax		
comp=Z,2.0nm,0.7s,mb4.0							
ZAK	**Zakamensk**	**39.70**	**8**	*e*P	**P**	**02 42 27.3**	**+0.8**
TLY	**Talaya**	**41.02**	**8**	*e*P	**P**	**02 42 37.6**	**+0.3**
TLY				pmax	pmax		
comp=Z,27nm,0.6s,mb5.0							
KURK	**Kurchatov**	**41.72**	**344**	*e*P	**P**	**02 42 43.4**	**+0.3**
CN2	**Changchun**	**41.78**	**33**	*e*P	**P**	**02 42 44.4**	**+0.7**
CN2				AMB	AMB		
comp=Z,10.0nm,0.9s,mb4.5							
FITZ	**Fitzroy Crossi**	**41.86**	**134**	P	**P**	**02 42 43.8**	**-0.8**
comp=Z,6.9nm,1.1s,mb4.2,baz=5.6,slow=10.0,SNR=4.1							
ZAL	**Zalesovo**	**43.47**	**351**	P	**P**	**02 42 57.1**	**-0.2**
comp=Z,6.1nm,0.5s,mb4.6,baz=223,slow=7.9,SNR=26							
ZAL				LR	LR	03 04 42.9	
comp=Z,48nm,20.9s,MS3.4,baz=111,slow=41							
NVS	**Novosibirsk**	**44.59**	**350**	*e*P	**P**	**02 43 05.4**	**-1.0**
BVA0	**Borovoye Array**	**46.26**	**340**	*i* P	**P**	**02 43 19.6**	**0.0**
BVA0				pmax	pmax		
comp=Z,1.0nm,0.9s,mb3.8							
BVAR	**Borovoye Array**	**46.26**	**340**	P	**P**	**02 43 19.5**	**-0.2**
comp=Z,9.6nm,0.8s,mb4.8,baz=135,slow=8.4,SNR=54							
BRVK	**Borovoye**	**46.32**	**339**	*e*P	**P**	**02 43 20.3**	**+0.1**
ZRNK	**Zerenda**	**46.68**	**339**	*e*P	**P**	**02 43 23.2**	**+0.2**
AB31	**Akbulak array**	**47.88**	**329**	*i* P	**P**	**02 43 32.4**	**-0.2**
AB31				pmax	pmax		
comp=Z,1.0nm,0.5s,mb4.1							
BOD	**Bodaibo**	**48.77**	**13**	*e*P	**P**	**02 43 38.5**	**-0.8**
WRA	**Warramunga Arr**	**49.44**	**128**	P	**P**	**02 43 45.3**	**+0.3**
comp=Z,3.7nm,0.6s,mb4.6,baz=307,slow=8.7,SNR=28							
WRA				pP	pP	02 43 52.4	-0.3
comp=Z,7.1nm,0.8s,baz=304,slow=8.5,SNR=16							
WB2	**Warramunga Arr**	**49.45**	**128**	*e*P	**P**	**02 43 45.2**	**+0.2**
WB2				*e*	pP	02 43 52.3	-0.5
AS12	**Alice Springs**	**51.33**	**133**	*e*P	**P**	**02 43 59.0**	**-0.3**
comp=Z,5.6nm,1.0s,mb4.5							
AS12				*i*	pP	02 44 06.9	-0.2
ASAR	**Alice Springs**	**51.33**	**133**	P	**P**	**02 43 59.5**	**+0.2**
comp=Z,3.4nm,0.6s,mb4.5,baz=310,slow=6.7,SNR=46							
ASAR				pP	pP	02 44 07.0	-0.1
comp=Z,5.3nm,0.7s,baz=311,slow=7.1,SNR=17							
SVE	**Sverdlovsk**	**52.77**	**337**	*i* P	**P**	**02 44 09.6**	**-0.1**
SVE				pmax	pmax		
comp=Z,60nm,1.5s,mb5.3							
GNI	**Garni**	**52.91**	**312**	*c i* P	**P**	**02 44 11.7**	**+0.7**
GNI				pmax	pmax		
comp=Z,30nm,1.1s							
GNI	**Garni**	**52.91**	**312**	*e*P	**P**	**02 44 11.8**	**+0.8**
comp=Z,51nm,1.4s,mb5.3							
ARU	**Arti**	**53.30**	**336**	*c i* P	**P**	**02 44 13.2**	**-0.5**
ARU				pmax	pmax		
comp=Z,39nm,1.5s,mb5.1							
ARU				MLR	MLR		
comp=Z,100nm,21.0s,MS3.8							
ARU	**Arti**	**53.30**	**336**	*e*P	**P**	**02 44 13.1**	**-0.5**
comp=Z,11nm,0.6s,mb5.0							
ZEI	**Tsey**	**54.37**	**315**	*e*P	**P**	**02 44 22.6**	**+0.9**
KIV	**Kislovodsk**	**55.60**	**316**	*c i*P	**P**	**02 44 30.5**	**-0.1**
KIV				*e*PP	pP	02 44 49.1	+11
KIV				pmax	pmax		
comp=Z,25nm,1.2s,mb5.1							
KIV	**Kislovodsk**	**55.60**	**316**	*e*P	**P**	**02 44 30.7**	**+0.1**
comp=Z,34nm,1.2s,mb5.2							
GOF	**Gofitskoye**	**55.75**	**317**	*e*P	**P**	**02 44 31.0**	**-0.7**
YAK	**Yakutsk**	**56.61**	**19**	*e*P	**P**	**02 44 36.8**	**-0.8**
YAK				pmax	pmax		
comp=Z,14nm,0.6s,mb5.2							
YAK				MLR	MLR		
comp=Z,100nm,16.0s,MS4.0							
BRTR	**Keskin Array B**	**61.08**	**309**	P	**P**	**02 45 07.1**	**-1.8**
comp=Z,5.5nm,0.7s,mb4.8,baz=125,slow=7.5,SNR=48							
STKA	**Stephens Creek**	**61.70**	**136**	*e*P	**P**	**02 45 13.7**	**+0.4**
comp=Z,3.4nm,0.9s,mb4.5							
STKA				*i*	pP	02 45 20.9	-0.3
STKA	**Stephens Creek**	**61.70**	**136**	P	**P**	**02 45 13.6**	**+0.4**
comp=Z,12nm,1.2s,mb4.9,baz=326,slow=12,SNR=5.3							
STKA				pP	pP	02 45 21.1	-0.1
comp=Z,5.8nm,0.8s,baz=320,slow=6.4,SNR=5.5							
MOS	**Moscow**	**62.83**	**328**	*e*P	**P**	**02 45 16.4**	**-4.1**
MOS				pmax	pmax		
comp=Z,150nm,1.7s,mb5.8							
OBN	**Obninsk**	**63.17**	**327**	*e*P	**P**	**02 45 22.4**	**-0.3**
OBN				pmax	pmax		
comp=Z,25nm,0.9s,mb5.3							
MA2	**Magadan**	**63.45**	**28**	*e*P	**P**	**02 45 24.1**	**-0.3**
MA2				pmax	pmax		
comp=Z,13nm,1.6s,mb4.8							
KIS	**Kishinev**	**65.80**	**317**	*e*	**P**	**02 45 40.0**	**+0.1**
KIS				*e*	S	02 54 30.0	+6.7
AKASG	**Malin Array Be**	**66.23**	**321**	P	**P**	**02 45 41.0**	**-1.5**
comp=Z,4.8nm,1.0s,mb4.5,baz=96,slow=4.1,SNR=14							
JOF	**Joensuu**	**68.35**	**334**	*ep*	**P**	**02 45 51.5**	**-4.3**
comp=Z,1.3nm,0.4s,mb4.3							
JOF	**Joensuu**	**68.35**	**334**	*e*P	**P**	**02 45 51.5**	**-4.3**
JOF				pmax	pmax		
comp=Z,1.0nm,0.4s,mb4.2							
KWP	**Kalwaria**	**70.20**	**319**	*e*P	**P**	**02 46 07.3**	**0.0**
FINES	**FINESS Array B**	**70.31**	**332**	P	**P**	**02 46 07.7**	**-0.1**
comp=Z,3.7nm,0.5s,mb4.6,baz=98,slow=6.2,SNR=49							
FINES				LR	LR	03 18 33.0	
comp=Z,33nm,18.5s,MS3.6,baz=151,slow=37							
KAF	**Kangasniemi**	**70.36**	**332**	*ep*	**P**	**02 46 08.6**	**+0.5**
comp=Z,3.5nm,0.5s,mb4.5,baz=109,slow=6.2							
KAF	**Kangasniemi**	**70.36**	**332**	*e*P	**P**	**02 46 08.6**	**+0.5**
KAF				pmax	pmax		
comp=Z,4.0nm,0.5s,mb4.6							
CRVS	**Cervenica-Dubn**	**70.95**	**318**	*i* P	**P**	**02 46 11.9**	**0.0**
NIE	**Niedzica**	**71.74**	**318**	*e*P	**P**	**02 46 16.6**	**0.0**
KEV	**Kevo**	**72.10**	**340**	*ep*	**P**	**02 46 16.5**	**-2.0**
comp=Z,1.3nm,0.5s,mb4.1							
KEV	**Kevo**	**72.10**	**340**	*e*P	**P**	**02 46 16.5**	**-2.0**
KEV				pmax	pmax		
comp=Z,1.0nm,0.5s,mb4.0							
OJC	**Ojcow**	**72.13**	**319**	*i* P	**P**	**02 46 18.8**	**-0.1**
ARCES	**ARCESS Array B**	**72.55**	**340**	P	**P**	**02 46 21.4**	**+0.4**
comp=Z,3.1nm,0.5s,mb4.5,baz=87,slow=6.5,SNR=29							
ARCES				LR	LR	03 22 56.5	
comp=Z,58nm,19.8s,MS3.9,baz=316,slow=40							
VYHS	**Vyhne**	**72.65**	**317**	*e*P	**P**	**02 46 21.6**	**-0.5**
VYHS				*ep*P	pP	02 46 29.1	-1.0
BILL	**Bilibino**	**72.72**	**22**	*e*P	**P**	**02 46 21.4**	**-0.7**
BILL				*e*	pP	02 46 29.8	-0.3
BILL				*e*		02 46 38.9	
BILL				*e*		02 49 01.5	
BILL				pmax	pmax		
comp=Z,10.0nm,1.6s,mb4.5							
BILL				MLR	MLR		
comp=Z,100nm,16.0s,MS4.2							
OKC	**Ostrava-Krasne**	**

SQTA	**Sankt Quirin**	**77.79**	**316**	⇑	*i*P		**P**	**02 46 51.0**	**-0.4**
	comp=Z,12nm,1.5s,mb4.6								
MOTA	**Moosalm**	**77.86**	**316**	⇓	*i*P		**P**	**02 46 51.0**	**-0.7**
	comp=Z,11nm,1.3s,mb4.6								
DAVA	**Damuels**	**78.69**	**316**	⇑	*i*P		**P**	**02 46 56.5**	**+0.2**
	comp=Z,7.1nm,0.7s,mb4.7								
PGF	**Pioggiola**	**79.72**	**311**		*e*P		**P**	**02 47 02.4**	**+0.4**
	comp=Z,9.1nm,0.7s,mb4.5								
CDF	**Champ du Feu**	**80.34**	**318**		*e*P		**P**	**02 47 05.0**	**-0.2**
	comp=Z,3.3nm,0.7s,mb4.0								
HAU	**Haudompre**	**81.00**	**317**		*e*P		**P**	**02 47 08.5**	**-0.2**
	comp=Z,6.4nm,0.7s,mb4.4								
LPG	**La Plagne**	**81.02**	**315**		*e*P		**P**	**02 47 09.2**	**+0.4**
	comp=Z,22nm,0.8s,mb4.8								
LPL	**La Plagne**	**81.03**	**315**		*e*P		**P**	**02 47 09.3**	**+0.4**
	comp=Z,19nm,0.7s,mb4.8								
MBDF	**Montbardon**	**81.09**	**314**		*e*P		**P**	**02 47 09.5**	**+0.2**
	comp=Z,8.1nm,0.7s,mb4.5								
FRF	**La Foret Royal**	**81.32**	**313**		*e*P		**P**	**02 47 10.5**	**0.0**
CABF	**La Chapelle**	**81.34**	**316**		*e*P		**P**	**02 47 10.7**	**+0.2**
	comp=Z,16nm,1.1s,mb4.6								
LMR	**La Mourre**	**81.45**	**312**		*e*P		**P**	**02 47 11.4**	**+0.2**
	comp=Z,8.3nm,0.6s,mb4.5								
ORIF	**Oris-en-Rattie**	**81.70**	**314**		*e*P		**P**	**02 47 12.7**	**+0.3**
MEZF	**Maizieres J'vi**	**81.80**	**318**		*e*P		**P**	**02 47 11.9**	**-1.0**
MAW	**Mawson**	**81.91**	**192**		P		**P**	**02 47 15.0**	**+1.9**
	comp=Z,3.1nm,0.8s,mb4.3,baz=90,slow=14,SNR=4.1								
MAW					pP		pP	02 47 22.5	+1.3
	comp=Z,4.6nm,0.7s,baz=28,slow=7.3,SNR=3.8								
SMRF	**Simiane la Rot**	**82.04**	**313**		*e*P		**P**	**02 47 14.6**	**+0.4**
	comp=Z,9.4nm,0.7s,mb4.5								
BAIF	**Baives**	**82.14**	**319**		*e*P		**P**	**02 47 14.8**	**+0.2**
	comp=Z,14nm,0.9s,mb4.6								
VIVF	**Saint-Julien-l**	**82.56**	**314**		*e*P		**P**	**02 47 17.1**	**+0.2**
	comp=Z,3.1nm,0.6s,mb4.2								
LOR	**Lormes**	**82.77**	**317**		*e*P		**P**	**02 47 18.0**	**+0.1**
	comp=Z,10nm,0.9s,mb4.6								
SMF	**Signal de Mont**	**82.87**	**316**		*e*P		**P**	**02 47 18.2**	**-0.3**
	comp=Z,6.1nm,0.6s,mb4.5								
SSF	**Saint Saulge**	**83.04**	**316**		*e*P		**P**	**02 47 19.3**	**0.0**
AVF	**Avril sur Loir**	**83.18**	**316**		*e*P		**P**	**02 47 19.9**	**-0.2**
	comp=Z,3.0nm,0.6s,mb4.2								
RJF	**Les Rejaudoux**	**84.69**	**315**		*e*P		**P**	**02 47 27.7**	**0.0**
LDF	**La Druitiere**	**85.18**	**318**		*e*P		**P**	**02 47 30.7**	**+0.6**
	comp=Z,13nm,1.0s,mb4.7								
FLN	**La Foliniere**	**85.38**	**319**		*e*P		**P**	**02 47 31.3**	**+0.2**
MFF	**Saint Martin d**	**85.59**	**316**		*e*P		**P**	**02 47 32.7**	**+0.5**
	comp=Z,7.6nm,0.8s,mb4.7								
IMA	**Indian Mountai**	**88.25**	**22**		*e*P		**P**	**02 47 46.0**	**+1.3**
	comp=Z,26nm,1.2s,mb5.3								
SYO	**Syowa Base**	**88.79**	**197**	⇓	sP		sP	02 48 01.2	+3.2
ESDC	**Sonseca Array**	**89.86**	**310**		P		**P**	**02 47 53.9**	**+1.0**
	comp=Z,0.3nm,0.5s,mb3.9,baz=64,slow=4.4,SNR=4.9								
ILAR	**Eielson Array**	**91.38**	**22**		P		**P**	**02 47 59.4**	**+0.1**
	comp=Z,0.6nm,0.6s,mb4.1,baz=314,slow=4.7,SNR=17								
EVO	**Evora**	**93.20**	**310**		*e*P		**P**	**02 48 07.5**	**-0.8**
	comp=Z,21nm,1.1s,mb5.2								
INK	**Inuvik**	**93.61**	**16**		P		**P**	**02 48 10.6**	**+1.1**
	comp=Z,1.7nm,0.5s,mb4.7,baz=342,slow=3.4,SNR=26								
NVAR	**Mina Array Bea**	**121.64**	**31**		PKP		PKPdf	02 53 50.2	-1.1
	comp=Z,0.6nm,0.8s,baz=322,slow=1.6,SNR=5.1								
NVAR					pPKP			02 53 57.2	
	comp=Z,2.1nm,1.1s,baz=278,slow=1.3,SNR=4.9								
NVAR	**Mina Array Bea**	**121.64**	**31**		PKP		PKPdf	02 53 50.2	-1.1
NVAR					pPKP			02 53 57.2	
PDAR	**Pinedale Array**	**121.79**	**21**		PKP		PKPdf	02 53 48.6	-2.9
	comp=Z,0.7nm,0.6s,baz=113,slow=1.6,SNR=7.6								
PDAR					pPKP			02 53 56.5	
	comp=Z,0.6nm,0.7s,baz=333,slow=3.3,SNR=4.4								
TXAR	**Lajitas Array**	**135.87**	**24**		PKP		PKPdf	02 54 18.2	-0.5
	comp=Z,0.5nm,0.6s,baz=79,slow=0.4,SNR=11								
TXAR					pPKP			02 54 25.4	
	comp=Z,0.4nm,0.5s,baz=131,slow=1.4,SNR=3.8								
TXAR	**Lajitas Array**	**135.87**	**24**		PKP		PKPdf	02 54 18.2	-0.5
TXAR					pPKP			02 54 25.4	
CPUP	**Villa Florida**	**149.94**	**236**		PKPbc		PKPdf	02 54 45.8	+2.6
	comp=Z,2.2nm,1.0s,baz=168,slow=5.3,SNR=3.8								
ROSC	**El Rosal**	**160.95**	**326**		PKPab		PKPab	02 55 39.5	+1.0
	comp=Z,7.7nm,1.0s,baz=125,slow=19,SNR=4.1								

*IDC **03** 02:44:18.1±1.1,10.75N×94.60E,mb3.8/7,mb1 4.0/8, mb1mx3.8/19,ML3.8/1,Error ellipse: s-maj=46.5km s-min=20.0km az=53.0*

*NEIC **03** 02:44:21.8±0.7,10.76N×94.66E,h25km,mb4.0/3,Error ellipse: s-maj=24.3km s-min=11.2km az=54.0*

ISC 03 02:44:22.8±4.8,**10.9N**±0.2×**94.8E**±0.2,**h47**km±41km,**n16, σ1§08/16,mb3.9/8,Andaman Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**8.55**	**28**	Pn		**P**	**02 46 26.5**	**-0.3**
	0.3nm,0.3s,baz=215,slow=15,SNR=7.5							
GUN	**Gumba**	**18.90**	**335**	*e*P		**P**	**02 48 42.8**	**+0.5**
	9.1nm,0.7s							
DMN	**Daman**	**18.98**	**333**	*e*P		**P**	**02 48 46.0**	**+2.9**
KKN	**Kakani**	**19.05**	**333**	*e*P		**P**	**02 48 45.6**	**+1.6**
GKN	**Gorkha**	**19.52**	**332**	*e*P		**P**	**02 48 47.4**	**-1.8**
KOLN	**Koldanda**	**19.82**	**330**	*e*P		**P**	**02 48 51.2**	**-1.2**
	11nm,0.8s							
MKAR	**Makanchi Array**	**37.34**	**346**	P		**P**	**02 51 32.5**	**-0.1**
	0.9nm,0.8s,mb3.7,baz=172,slow=8.9,SNR=4.1							
KURK	**Kurchatov**	**41.89**	**345**	*e*P		**P**	**02 52 09.2**	**-1.0**
BVAR	**Borovoye Array**	**46.39**	**340**	P		**P**	**02 52 47.6**	**+1.2**
	2.6nm,1.1s,mb4.1,baz=153,slow=6.6,SNR=7.1							
ZRNK	**Zerenda**	**46.81**	**339**	*e*P		**P**	**02 52 49.3**	**-0.4**
WRA	**Warramunga Arr**	**49.54**	**128**	P		**P**	**02 53 11.4**	**0.0**
	1.3nm,0.6s,mb4.1,baz=307,slow=8.8,SNR=7.3							
WRAB	**Tennant Creek**	**49.54**	**128**	*e*P		**P**	**02 53 11.2**	**-0.2**
	2.1nm,0.6s,mb4.3							
ASAR	**Alice Springs**	**51.40**	**132**	P		**P**	**02 53 25.7**	**+0.3**
	0.8nm,0.7s,mb3.8,baz=313,slow=6.5,SNR=9.0							
BRTR	**Keskin Array B**	**60.99**	**309**	P		**P**	**02 54 32.3**	**-1.6**
	1.0nm,1.0s,mb3.9,baz=124,slow=4.5,SNR=4.6							
GERES	**GERESS Array B**	**76.04**	**318**	P		**P**	**02 56 08.2**	**+1.2**
	0.5nm,0.7s,mb3.5,baz=101,slow=6.8,SNR=4.8							
ILAR	**Eielson Array**	**91.75**	**22**	P		**P**	**02 57 26.6**	**+0.2**
	0.5nm,0.9s,mb3.8,baz=304,slow=4.3,SNR=4.9							

WEL 03 03:12:46.8±0.7,**36.52S**×**178.37E,h12**km,**ML3.7/1,Error ellipse: s-maj=7.1km s-min=5.3km az=90.0,Off east coast of North Island**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**1.55**	**183**	PN		Pn	03 13 13.3	-1.2
PUZ				SN		Sn	03 13 33.9	-0.7
MWZ	**Matawai**	**1.93**	**200**	P*		Pb	03 13 18.5	-3.0
MWZ				S*		Sb	03 13 40.8	-4.7
URZ	**Urewera**	**2.00**	**210**	P*		Pb	03 13 19.3	-3.5
URZ				S*		Sb	03 13 41.9	-5.8

CASC 03 03:53:51.8±1.9,**13.94N**×**92.18W,h36**km±506km,**MD3.9, 3C,Off coast of Chiapas**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
JAT	**Jato**	**0.65**	**54**	*e*P		P	03 54 03.5	-0.9
JAT				*e*S		S	03 54 14.5	+0.9
IXG	**Ixpaco**	**1.69**	**82**	*e*P		P	03 54 17.5	-1.9
IXG				*e*S		S	03 54 42.0	+2.0
CUSS	**Cusmapa**	**2.17**	**91**	*e*P		P	03 54 25.0	-1.2
CUSS				*e*S		S	03 54 52.2	+0.2
RBDL	**Robledal**	**2.42**	**86**	*e*P		P	03 54 29.2	-0.7
RBDL				*e*S		S	03 54 58.4	-0.2
RTR	**El Retiro**	**2.46**	**91**	⇑ *e*P		P	03 54 30.1	-0.3
RTR				*e*S		S	03 54 59.6	+0.1
SBLS	**San Blas**	**2.48**	**92**	⇑ *e*P		P	03 54 30.6	-0.1
SBLS				*e*S		S	03 55 00.0	-0.1
SNJE	**San Jose**	**2.50**	**91**	*e*P		P	03 54 31.0	+0.1
SNJE				*e*S		S	03 55 00.8	+0.3
BOQS	**Boqueron**	**2.82**	**94**	⇑ *e*P		P	03 54 36.0	+0.5
BOQS				*e*S		S	03 55 08.7	-0.1
LFU	**La Fuente**	**2.98**	**93**	*e*P		P	03 54 37.7	-0.1
LFRS	**El Faro**	**3.04**	**96**	*e*P		P	03 54 38.7	0.0
LFRS				*e*S		S	03 55 13.4	-1.0
LCBS	**La Ceiba**	**3.12**	**95**	*e*P		P	03 54 39.5	-0.3
LCBS				*e*S		S	03 55 13.1	-3.2

*ATH **03** 04:11:21.9,38.84N×21.15E,h5km,MD3.1/4*

*NEIC **03** 04:11:21.9,38.84N×21.15E,h5km,MD3.1(ATH),After ATH.*

*THE **03** 04:11:22.2,38.79N×21.23E,h3km,ML2.9*

ISC 03 04:11:21.4±0.6,**38.81N**±0.03×**21.22E**±0.04,**h3**km±5km, **n19,σ0884/29,Greece**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
LKD	**Levkas**	**0.46**	**257**	*e*Pg		**Pg**	**04 11 30.7**	**+0.1**
LKD				*e*Sg		**Sg**	**04 11 37.8**	**+1.1**
EVR	**Evrytania**	**0.47**	**77**	*e*PB		**Pb**	**04 11 31.2**	**-0.7**
EVR				*e*SB		**Sb**	**04 11 40.2**	**+1.3**
RLS	**Riolos of Patr**	**0.78**	**166**	*e*PG		**Pg**	**04 11 37.0**	**+0.1**
VLS	**Valsamata**	**0.81**	**218**	*e*PB		**Pb**	**04 11 36.5**	**-1.1**
VLS				*e*SB		**Sb**	**04 11 50.0**	**+1.3**
AGG	**Agios Georgios**	**0.89**	**76**	*e*Pg		**Pg**	**04 11 39.0**	**-0.2**
AGG				*e*Sg		**Sg**	**04 11 52.1**	**+1.1**
JAN	**Janina**	**0.89**	**341**	*e*PB		**Pb**	**04 11 39.2**	**+0.1**
MEV	**Metsovon**	**0.97**	**0**	*e*Pg		**Pg**	**04 11 40.1**	**-0.6**
MEV				*e*Sg		**Sg**	**04 11 55.2**	**+1.5**
IGT	**Igoumenitsa**	**1.00**	**316**	*e*Pg		**Pg**	**04 11 40.7**	**-0.6**
KEK	**Kerkira**	**1.42**	**310**	*e*PG		**Pg**	**04 11 47.2**	**-2.6**
LIT	**Litokhoron**	**1.62**	**37**	*e*Pb		**Pb**	**04 11 51.0**	**-0.5**
LIT				*e*Sb		**Sb**	**04 12 12.9**	**+0.7**
XOR	**Xorichti**	**1.63**	**70**	*e*Pb		**Pb**	**04 11 52.3**	**+0.6**
XOR				*e*Sb		**Sb**	**04 12 12.0**	**-0.6**
ITM	**Ithomi**	**1.72**	**161**	*e*PN		**Pn**	**04 11 57.1**	**+4.6**
FNA	**Florina**	**1.97**	**3**	*e*Pn		**Pn**	**04 11 57.1**	**+1.1**
FNA				*e*Sn		**Sn**	**04 12 22.2**	**+0.7**
AOS	**Alonnisos**	**2.10**	**79**	*e*Pn		**Pn**	**04 11 57.7**	**-0.2**
PAIG	**Paliouri**	**2.21**	**59**	*e*Pn		**Pn**	**04 11 58.7**	**-0.6**
PAIG				*e*Sn		**Sn**	**04 12 26.9**	**-0.6**
GRG	**Griva**	**2.33**	**23**	*e*Pn		**Pn**	**04 12 00.7**	**-0.4**
SOH	**Sokhos**	**2.59**	**39**	*e*Pn		**Pn**	**04 12 04.7**	**-0.2**
SOH				*e*Sn		**Sn**	**04 12 37.0**	**-0.2**
OUR	**Ouranopolis**	**2.62**	**54**	*e*Pn		**Pn**	**04 12 04.7**	**-0.6**
KNT	**Kendrikon**	**2.68**	**28**	*e*Pn		**Pn**	**04 12 05.5**	**-0.5**

*GUC **03** 04:36:45.1±0.7,37.86S×73.94W,h15km±4km,ML6.4, MW6.6(NEIC)*

*IGIL **03** 04:36:45.2,37.64S×73.20W,h2km,MS7.2*

*IDC **03** 04:36:46.2±0.4,37.70S×73.46W,mb5.6/14,mb1 5.6/17, mb1mx5.6/17,ML4.8/4,MS6.7/15,Ms1 6.7/15, ms1mx6.6/24,Error ellipse: s-maj=14.1km s-min=9.6km az=80.0*

*MOS **03** 04:36:50.8±1.8,37.63S×73.24W,h33km,mb6.1/44, MS6.7/31,Error ellipse: s-maj=14.9km s-min=6.8km az=97.1*

*HRVD **03** 04:36:50.0±0.1,37.95S×73.75W,h24km,MW6.6/73, Centroid moment Tensor Solution. LP body waves: s73,c193;Mantle waves: s68,c150; Half duration: 4s9 Moment tensor: Scale 10^19Nm; Mrr0.48; Mθθ0.00; Mφφ-0.49; Mrθ0.47±.01; Mrφ0.13; Mθφ-0.79±.01; Best double couple: M0 1.04×10^19 NP1:φs0°,δ16°,λ118°. NP2: φs151°,δ76°,λ82°. Principal axes: T 1.04, Plg58°, Azm51°; N 0, Plg7°, Azm153°; P -1.05, Plg31°, Azm248°; nsta1 refers to body waves, cutoff=50s. nsta2 refers to mantle waves, cutoff=125s.*

*NEIC **03** 04:36:50.0±0.2,37.70S×73.41W,h21km,mb5.9/87, ME6.3,MS6.5/85,MW6.6,ML6.4(GUC) Error ellipse: s-maj=7.2km s-min=5.2km az=66.0 Broadband fault plane solution: P waves. NP1:φs150°,δ85°,λ90°. NP2:φs330°, δ5°,λ90°. Principal axes: T Plg50°, Azm60°; N Plg0°, Azm0°; P Plg40°, Azm240°; Moment Tensor Solution. s57 Moment tensor: Scale 10^18 Nm; Mrr4.82; Mθθ0.49; Mφφ-5.30; Mrθ3.50; Mrφ-0.19; Mθφ-5.67; Best double couple: M0 8.4×10^18 NP1:φs22°,δ24°,λ133°. NP2:φs157°, δ73°,λ73°. Principal axes: T 8.68, Plg59°, Azm43°; N -.63, Plg16°, Azm162°; P -8.04, Plg26°, Azm260°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism.*

NEIC Minor damage [VI] and power outages occurred at Canete. Felt [VI] at Angol, Concepcion, Los Angeles, Talcahuano and Victoria; [V] at Lebu, Lonquimay, Temuco, Valdivia and Villarica; [IV] at Cauquenes, Chillan, Linares and Talca; [III] at Curico, Osorno, Rancagua and San Fernando; [II] at Santiago. Also felt at Chiguayante.

*BJI **03** 04:36:50.0,37.70S×73.40W,h21km,mB6.2,Ms6.8, Msz6.8*

*SYO **03** 04:36:50.0,37.70S×73.41W,h21km,MB5.9,MS6.5*

ISC 03 04:36:47.5±1.0,**37.81S**±0.02×**73.42W**±0.05,**h17**km±6km, **h32**km±1.5km**:pP-P,n655,σ1§40/328,mb5.8**/92,**MS6.6**/109, **42C-20D,Near coast of central Chile**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
TMCH	**Temuco**	**1.13**	**146**	*e*P		**Pb**	**04 37 08.0**	**-0.2**
TMCH				*i* S		**Sb**	**04 37 24.5**	**+2.0**
TMCH				AMP			04 37 38.1	
	comp=N,428μm,0.8s							
CCHI	**Chillan**	**1.61**	**42**	*e*P		**Pn**	**04 37 17.6**	**+2.2**
CCHI				*i* S		**Sn**	**04 37 42.4**	**+6.5**
CCHI				AMP			04 37 49.3	
	comp=E,1225μm,0.4s							
COCH	**Cobquecura**	**1.75**	**17**	*e*P		**Pn**	**04 37 17.4**	**0.0**
COCH				AMP			04 37 53.9	
	comp=E,207μm,0.6s							
VLCH	**Valdivia**	**2.00**	**176**	*e*P		**Pn**	**04 37 19.0**	**-2.0**
VLCH				*i* S		**Sn**	**04 37 44.4**	**-1.5**
VLCH				AMP			04 38 09.6	
	comp=N,587μm,0.8s							
OSCH	**Osorno**	**2.77**	**175**	*i* P		**Pn**	**04 37 30.1**	**-2.0**
OSCH				*i* S		**Sn**	**04 38 03.9**	**-1.6**
OSCH				AMP			04 38 28.4	
	comp=E,337μm,0.6s							
TALC	**Talca**	**2.80**	**31**	*e*P		**Pn**	**04 37 31.8**	**-0.6**
TALC				*i* S		**Sn**	**04 38 11.3**	**+5.2**
PLCA	**Paso Flores**	**3.67**	**144**	Pn		**Pn**	**04 37 45.4**	**+0.5**
PLCA	**Paso Flores**	**3.67**	**144**	Pn		**Pn**	**04 37 45.6**	**+0.8**
	comp=E,25nm,0.3s,baz=313,slow=12,SNR=248							
PLCA					Pg	**Pn**	**04 37 54.4**	**+10**
	comp=E,125nm,0.3s,baz=318,slow=16,SNR=50							
PLCA					Lg		04 38 40.8	
	comp=E,331nm,0.3s,baz=335,slow=17,SNR=2.5							
PLCA	**Paso Flores**	**3.67**	**144**	*e*P		**Pn**	**04 37 45.3**	**+0.5**
PLCA				*e*S		**Sn**	**04 38 45.8**	**+18**
ANTU	**Antumapu**	**4.80**	**29**	*e*P		**Pn**	**04 37 59.6**	**-1.2**
ANTU				*i* S		**Sn**	**04 38 57.8**	**+1.2**
RCDM	**Rinconada Maip**	**4.80**	**27**	*e*P		**Pn**	**04 37 58.8**	**-2.1**
RCDM				*i* S		**Sn**	**04 38 56.7**	**-0.1**
MDZ	**Mendoza**	**6.17**	**39**	*e*P		**Pn**	**04 38 20.6**	**+0.5**
MDZ				S		**Sn**	**04 39 21.7**	**-9.3**
MDZ	**Mendoza**	**6.17**	**39**	*e*P		**Pn**	**04 38 20.6**	**+0.5**
MDZ				*e*			04 38 27.3	
MDZ				*e*			04 38 46.3	
MDZ				S		**Sn**	**04 39 21.7**	**-9.3**
TRQA	**Tornquist**	**9.04**	**95**	*e*P		**P**	**04 38 59.8**	**-0.5**
	comp=E,42nm,0.8s							
TRQA				S		Sn	04 41 06.5	+24
LVC	**Limon Verde**	**15.63**	**16**	Pn		**P**	**04 40 25.8**	**-2.9**
	comp=E,1.6nm,0.3s,baz=218,slow=8.4,SNR=24							
LVC					Sn	**S**	**04 43 22.9**	**+1.1**
	comp=E,2.4nm,0.3s,baz=322,slow=19,SNR=2.3							
LVC					LR	LR	04 46 38.2	
	comp=E,232μm,19.2s,baz=201,slow=38							
LVC	**Limon Verde**	**15.63**	**16**	*e*P		**P**	**04 40 24.2**	**-4.5**
	comp=E,17nm,0.7s							
LVC				epP			04 40 34.9	
USHA	**Ushuaia**	**17.37**	**170**	P		**P**	**04 40 51.4**	**+0.9**
	comp=E,2.2nm,0.3s,baz=337,slow=11,SNR=36							
USHA					S	**S**	**04 44 12.7**	**+11**
	comp=E,0.3nm,0.3s,baz=328,slow=10,SNR=1.7							
USHA					Lg		04 46 08.8	
	comp=E,0.8nm,0.3s,baz=275,slow=7.3,SNR=3.3							
USHA					LR	LR	04 48 08.2	
	comp=E,313μm,18.4s,baz=326,slow=39							
EFI	**East Falkland**	**17.59**	**147**	*e*P		**P**	**04 40 54.5**	**+1.2**
	comp=E,387nm,1.0s							
CPUP	**Villa Florida**	**17.77**	**55**	P		**P**	**04 40 50.8**	**-4.9**
	comp=E,0.1nm,0.3s,baz=254,slow=15,SNR=9.3							
CPUP					Lg		04 46 29.2	
	comp=E,1.6nm,0.3s,baz=198,slow=14,SNR=5.2							
CPUP					LR	LR	04 48 24.7	
	comp=E,713μm,21.6s,baz=244,slow=39							
CPUP	**Villa Florida**	**17.77**	**55**	*e*P		**P**	**04 40 52.1**	**-3.6**
CPUP					pmax	pmax		
	comp=Z,3.0nm,1.1s							
CPUP	**Villa Florida**	**17.77**	**55**	*e*P		**P**	**04 40 52.1**	**-3.6**
	comp=Z,3.3nm,1.1s							

ARE	**Arequipa**	**21.33**	**5**	*e*P			**P**	**04 41 36.0**	**+0.1**
ARE				*e*				04 45 40.0	
LPAZ	**La Paz**	**21.94**	**14**	P			**P**	**04 41 41.6**	**-0.4**
LPAZ				S			**S**	**04 45 49.4**	**+11**
LPAZ	**La Paz**	**21.94**	**14**	P			**P**	**04 41 41.8**	**-0.2**
	comp=Z,162nm,1.1s,mb5.4,baz=172,slow=9.3,SNR=68								
LPAZ				S			**S**	**04 45 47.6**	**+9.2**
	comp=Z,11nm,0.9s,baz=171,slow=16,SNR=1.8								
LPAZ	**La Paz**	**21.94**	**14**	*e*P			**P**	**04 41 41.9**	**-0.1**
LPAZ				pmax		pmax			
	comp=Z,567nm,1.4s								
LPAZ				MLR		MLR			
	comp=Z,113μm,21.0s								
LPAZ	**La Paz**	**21.94**	**14**	*e*P			**P**	**04 41 41.9**	**-0.1**
	comp=Z,567nm,1.4s,mb5.8								
LPAZ				LR		LR			
	comp=Z,113μm,21.0s,MS6.3								
PMSA	**Palmer Station**	**27.57**	**171**	*e*P			**P**	**04 42 33.2**	**-2.0**
CAM4	**Nova Friburgo**	**30.64**	**69**	*e*P			**P**	**04 43 01.6**	**-1.6**
CAM4				*i*				04 43 04.2	
CAM4				*i*		pP		04 43 06.7	-1.4
CAM4				*i*				04 43 09.0	
CAM4				*i*				04 43 11.6	
CAM4	**Nova Friburgo**	**30.64**	**69**	*e*P			**P**	**04 43 01.6**	**-1.6**
CAM4				*i*				04 43 04.2	
CAM4				*i*		pP		04 43 06.7	-1.5
CAM4				*i*				04 43 09.0	
CAM4				*i*				04 43 11.6	
BDFB	**Brasilia**	**31.47**	**52**	P			**P**	**04 43 08.7**	**-1.9**
	comp=Z,38nm,0.9s,mb5.2,baz=223,slow=7.3,SNR=51								
BDFB				S			**S**	**04 48 19.4**	**+2.8**
	comp=Z,16nm,0.9s,baz=135,slow=19,SNR=1.4								
BDFB				Lg				04 52 53.2	
	comp=Z,33nm,1.1s,baz=121,slow=19,SNR=2.5								
BDFB				LR		LR		04 57 27.6	
	comp=Z,490μm,18.3s,MS7.2,baz=222,slow=40								
RPN	**Rapa Nui**	**31.95**	**279**	PFAKE				04 43 30.0	+15
RPN				LR		LR			
	comp=Z,48μm,19.0s,MS6.2								
CAM3	**Guarapari**	**33.14**	**68**	*e*P			**P**	**04 43 24.3**	**-0.8**
CAM3				*i*				04 43 25.9	
CAM3				*i*				04 43 35.1	
CAM3				*i*				04 43 46.2	
CAM3				*i*				04 43 51.0	
CAM3	**Guarapari**	**33.14**	**68**	*e*P			**P**	**04 43 24.3**	**-0.8**
CAM3				*i*				04 43 25.9	
CAM3				*i*				04 43 35.1	
CAM3				*i*				04 43 46.2	
CAM3				*i*				04 43 51.0	
OTAV	**Otavalo**	**38.14**	**352**	P			**P**	**04 44 08.9**	**+1.2**
OTAV				S			**S**	**04 50 03.9**	**+4.3**
OTAV	**Otavalo**	**38.14**	**352**	*e*P			**P**	**04 44 08.8**	**+1.1**
	comp=Z,352nm,1.4s,mb5.9								
ROSC	**El Rosal**	**42.45**	**359**	P			**P**	**04 44 44.1**	**+0.8**
	comp=Z,143nm,1.1s,mb5.5,baz=178,slow=8.4,SNR=18								
ROSC				S			**S**	**04 51 03.8**	**-0.3**
	comp=Z,4.4nm,0.8s,baz=180,slow=19,SNR=2.7								
TRSB	**Teresina**	**43.11**	**48**	*c*eP			**P**	**04 44 48.0**	**-0.7**
TRSB				*i*				04 46 28.8	
TRSB				*e*				04 51 13.9	
VNA3	**Neumayer Olymp**	**46.30**	**156**	*e*		pP		04 45 24.2	+5.6
VNA3	**Neumayer Olymp**	**46.30**	**156**	⇓ *i*P			**P**	**04 45 16.6**	**+3.1**
VNA3				*e*				04 45 24.2	
VNA3				*e*				04 46 48.4	
VNA3				*e*				04 47 05.4	
SDV	**Santo Domingo**	**46.52**	**4**	S			**S**	**04 52 01.3**	**-1.6**
	comp=Z,4.8nm,1.0s,baz=313,slow=19,SNR=2.0								
VNA1	**Neumayer--Stat**	**46.65**	**155**	*e*		pP		04 45 26.7	+5.3
VNA1	**Neumayer--Stat**	**46.65**	**155**	⇓ *i*P			**P**	**04 45 18.9**	**+2.6**
VNA1				*e*				04 45 26.7	
VNA1				*e*				04 46 51.0	
VNA1				*e*				04 47 06.2	
VNA2	**Neumayer--Watz**	**46.98**	**156**	*e*		pP		04 45 29.5	+5.5
VNA2	**Neumayer--Watz**	**46.98**	**156**	⇓ *i*P			**P**	**04 45 21.8**	**+2.9**
VNA2				*e*				04 45 29.5	
VNA2				*e*				04 46 54.0	

UNM **Universidad Na** 61.78 332 eP P **04 47 09.0 +1.2**
SYO **Syowa Base** 62.75 158 ⇑P P **04 47 14.2 +0.6**
SYO **Syowa Base** 62.75 158 ⇓pP pP 04 47 21.0 +2.1
SYO **Syowa Base** 62.75 158 ⇓PcP PcP 04 47 50.8 -1.1
SYO **Syowa Base** 62.75 158 ⇑iP P **04 47 14.2 +0.6**
SYO epP pP 04 47 21.0 +2.1
SYO ePcP PcP 04 47 50.8 -1.1
MOIG Morelia 62.87 330 *i* P P **04 47 14.7 -0.3**
COLM Colima 63.44 328 *i* P P **04 47 18.1 -0.6**
TBI Tubuai 65.41 259 eS S 04 56 13.2 -0.3
TBI eL 05 04 03.7
TBI eR 05 06 45.2
comp=Z,2µm,24.8s
DWPF Disney 66.00 352 P P **04 47 34.3 -1.0**
DWPF PP PP 04 50 00.8 -2.2
DWPF S S 04 56 20.3 -0.4
DWPF Disney 66.00 352 eP P **04 47 35.4 +0.2**
comp=Z,185nm,1.1s,mb6.0
DWPF LR LR
comp=Z,20µm,22.0s,MS6.3
ZAIG Zacatecas 66.20 331 *i* P P **04 47 34.8 -1.8**
PAE Paea 68.61 264 eP P **04 47 55.2 +3.3**
comp=Z,425nm,1.4s,mb6.2
PPT Papeete 68.66 264 eP P **04 47 54.7 +2.5**
comp=Z,306nm,1.5s,mb6.0
PPT Papeete 68.66 264 ePP PP 04 50 22.6 -3.5
PPT eS S 04 56 52.7 -0.1
PPT eSS SS 05 00 50.4 -29
PPT eL 05 04 58.9
PPT eR 05 08 24.2
comp=Z,112µm,25.8s,baz=118
PPT Papeete 68.66 264 P P **04 47 56.5 +4.3**
comp=Z,78nm,1.0s,mb5.6,baz=85,slow=22,SNR=3.2
PMOR Pomariorio Ree 68.79 267 eP P **04 47 56.1 +3.1**
comp=Z,88nm,1.3s,mb5.5
MAW Mawson 69.85 164 ⇓*i*P P **04 48 00.1 +1.4**
comp=Z,62nm,0.9s,mb5.5
MAW *i* S S 04 57 08.7 +2.6
MAW Mawson 69.85 164 P P **04 48 00.3 +1.7**
comp=Z,62nm,0.9s,mb5.5,baz=206,slow=7.8,SNR=18
MAW S S 04 57 07.0 +0.9
comp=Z,0.9nm,0.5s,baz=311,slow=19,SNR=1.6
MAW LR LR 05 21 07.4
comp=Z,105µm,18.1s,MS7.1,baz=227,slow=38
MAW Mawson 69.85 164 ⇓*i*P P **04 48 00.1 +1.4**
MAW *i* S S 04 57 08.7 +2.6
MAW pmax pmax
comp=Z,62nm,0.9s
SACV Santiago Islan 70.28 52 eP P **04 48 02.1 0.0**
BBSR BB Station 70.29 8 P P **04 48 00.8 -1.1**
BBSR PP PP 04 50 29.8 -10
BBSR S S 04 57 13.6 +1.9
BBSR SS SS 05 01 29.8 -14
BBSR BB Station 70.29 8 eP P **04 48 01.0 -0.9**
comp=Z,82nm,0.9s,mb5.7
BBSR LR LR
comp=Z,70µm,19.0s,MS6.9
HKT Hockley 70.59 339 P P **04 48 02.7 -1.1**
HKT S S 04 57 16.4 +1.1
HKT Hockley 70.59 339 eP P **04 48 02.1 -1.7**
HKT pmax pmax
comp=Z,183nm,1.8s,mb5.7
HKT MLR MLR
comp=Z,3µm,21.0s,MS5.5
HKT Hockley 70.59 339 eP P **04 48 02.1 -1.7**
comp=Z,182nm,1.8s,mb5.7
HKT LR LR
comp=Z,3µm,21.0s,MS5.5
RGRS Roger Stewart 70.63 354 eP P **04 48 04.3 +0.3**
COW Cow Castle Cre 71.15 354 eP P **04 48 05.9 -1.3**
LRAL Lakeview Retre 71.61 348 eP P **04 48 07.7 -2.2**
comp=Z,232nm,1.3s,mb6.0
LRAL LR LR
comp=Z,20µm,19.0s,MS6.4
JSC Jenkinsville 72.09 353 eP P **04 48 10.5 -2.3**
JCT Junction City 72.27 336 eP P **04 48 12.1 -1.8**
JCT pmax pmax
comp=Z,265nm,1.2s,mb6.0
JCT MLR MLR
comp=Z,7µm,21.0s,MS5.9
JCT Junction City 72.27 336 eP P **04 48 12.1 -1.8**
comp=Z,265nm,1.2s,mb6.0
JCT LR LR
comp=Z,7µm,21.0s,MS5.9
TXAR Lajitas Array 72.55 333 P P **04 48 13.9 -1.6**
comp=Z,28nm,0.8s,mb5.2,baz=154,slow=8.3,SNR=52
TXAR S S 04 57 37.1 -0.7
comp=Z,0.5nm,0.8s,baz=199,slow=19,SNR=2.6
TXAR LR LR 05 15 17.9
comp=Z,31µm,18.8s,MS6.6,baz=35,slow=32
TXAR PKPPKP 05 16 04.5
comp=Z,0.7nm,1.0s,baz=315,slow=1.3,SNR=3.0
OXF Oxford 73.47 346 eP P **04 48 18.5 -2.3**
OXF pmax pmax
comp=Z,272nm,1.2s,mb6.1
OXF MLR MLR
comp=Z,15µm,20.0s,MS6.3
OXF Oxford 73.47 346 eP P **04 48 18.5 -2.3**
comp=Z,272nm,1.2s,mb6.1
OXF LR LR
comp=Z,15µm,20.0s,MS6.3
SWET Sewanee 73.58 349 eP P **04 48 19.6 -1.9**
CPCT Cooper Cave 73.61 351 eP P **04 48 19.2 -2.4**
PLAL Pickwick Lake 73.69 347 eP P **04 48 19.5 -2.6**
comp=Z,93nm,1.1s,mb5.6
PLAL LR LR
comp=Z,14µm,20.0s,MS6.2
SUR Sutherland 73.98 119 P P **04 48 24.1 +0.3**
comp=Z,96nm,0.7s,mb5.8,baz=238,slow=5.3,SNR=46
SUR S S 04 57 58.0 +4.1
comp=Z,5.6nm,1.1s,baz=162,slow=9.6,SNR=1.9
SUR LR LR 05 18 49.3
comp=Z,56µm,19.1s,MS6.9,baz=233,slow=34
SUR Sutherland 73.98 119 eP P **04 48 26.4 +2.6**
comp=Z,158nm,1.0s,mb5.9
SUR LR LR
comp=Z,57µm,19.0s,MS6.9
UALR University of 74.32 344 eP P **04 48 23.2 -2.6**
comp=Z,106nm,1.3s,mb5.6
MIAR Mount Ida 74.38 343 eP P **04 48 24.2 -1.9**
MIAR pmax pmax
comp=Z,187nm,1.6s,mb5.8
MIAR MLR MLR
comp=Z,9µm,21.0s,MS6.0
MIAR Mount Ida 74.38 343 eP P **04 48 24.2 -1.9**
comp=Z,187nm,1.6s,mb5.8
MIAR LR LR
comp=Z,9µm,21.0s,MS6.0
RAR Rarotonga 74.54 255 LR LR 05 12 52.3
comp=Z,28µm,20.5s,MS6.5,baz=181,slow=29
RAR Rarotonga 74.54 255 PFAKE 04 48 40.0 +13
RAR LR LR
comp=Z,25µm,20.0s,MS6.5
HBAR Harrisburg 74.72 345 eP P **04 48 28.6 +0.5**
WVT Waverly 74.77 348 eP P **04 48 25.9 -2.4**
WVT pmax pmax
comp=Z,168nm,0.9s,mb6.0
WVT MLR MLR
comp=Z,19µm,22.0s,MS6.3
WVT Waverly 74.77 348 eP P **04 48 25.9 -2.4**
comp=Z,168nm,0.9s,mb6.0
WVT LR LR
comp=Z,19µm,22.0s,MS6.3
HALT Halls 74.82 347 eP P **04 48 27.5 -1.1**
BLA Blacksburg 74.92 354 PFAKE 04 48 40.0 +11
BLA LR LR
comp=Z,23µm,22.0s,MS6.4
GNAR Gosnell 75.00 346 eP P **04 48 31.1 +1.4**
UTMT University of 75.15 347 eP P **04 48 28.8 -1.7**
comp=Z,552nm,1.2s,mb6.4
GLAT Glass 75.16 347 eP P **04 48 29.6 -0.9**
MNTX Cornudas Mount 75.31 332 eP P **04 48 28.8 -2.7**
comp=Z,5.3nm,1.3s
MNTX LR LR
comp=Z,2µm,19.0s
MIR Mirnyy 75.45 174 keP P **04 48 32.0 +0.4**
MIR *e* 04 51 23.0
MIR ePPP PPP 04 53 16.0 +7.3
MIR eS S 04 58 03.0 -6.6
MIR eSS SS 05 03 00.0 -2.8
MIR pmax pmax
comp=Z,5µm,11.0s
MIR pmax pmax
comp=Z,325nm,2.0s,mb5.9
MIR smax
comp=N,5µm,17.0s
MIR smax
comp=E,6µm,17.0s
MIR MLR MLR
comp=N,28µm,17.0s,MS6.7
MIR MLR MLR
comp=E,22µm,17.0s,MS6.7
MIR MLR MLR
comp=Z,50µm,17.0s,MS6.9
CBN Corbin 75.72 357 PFAKE 04 48 40.0 +6.2
CBN LR LR
comp=Z,34µm,21.0s,MS6.6
WMOK Wichita Mounta 75.92 339 eP P **04 48 32.8 -2.2**
WMOK pmax pmax
comp=Z,227nm,1.4s,mb5.9
WMOK MLR MLR
comp=Z,14µm,21.0s,MS6.2
WMOK Wichita Mounta 75.92 339 eP P **04 48 32.8 -2.2**
comp=Z,227nm,1.4s,mb5.9
WMOK LR LR
comp=Z,14µm,21.0s,MS6.2
USIN University of 76.53 348 eP P **04 48 35.7 -2.6**
comp=Z,201nm,1.0s,mb6.0
SIUC Southern Illin 76.55 347 eP P **04 48 36.4 -2.1**
comp=Z,236nm,1.2s,mb6.0
WCI Wyandotte Cave 76.59 350 eP P **04 48 35.6 -3.0**
WCI pmax pmax
comp=Z,59nm,1.0s,mb5.5
WCI MLR MLR
comp=Z,23µm,19.0s,MS6.5
WCI Wyandotte Cave 76.59 350 eP P **04 48 35.6 -3.0**
comp=Z,59nm,1.0s,mb5.5
WCI LR LR
comp=Z,23µm,19.0s,MS6.5
SDMD Soldier's Deli 76.90 357 eP P **04 48 44.1 +3.8**
FVM French Village 77.03 346 eP P **04 48 38.7 -2.4**
FVM pmax pmax
comp=Z,233nm,1.2s,mb6.0
FVM French Village 77.03 346 eP P **04 48 38.7 -2.4**
comp=Z,232nm,1.2s,mb6.0
LIC Lamto 77.04 72 eP P **04 48 40.6 -1.0**
comp=Z,838nm,0.8s,mb6.4
LIC eR
comp=Z,77µm,19.8s
LIC Lamto 77.04 72 eP P **04 48 40.2 -1.4**
comp=Z,1µm,0.8s
LIC Lamto 77.04 72 eP P **04 48 40.6 -1.0**
comp=Z,419nm,0.8s,mb6.4
LIC LR LR
comp=Z,39µm,19.8s,MS6.7
CCM Cathedral Cave 77.26 346 eP P **04 48 40.3 -2.0**
CCM pmax pmax
comp=Z,251nm,0.9s,mb6.2
CCM MLR MLR
comp=Z,3µm,20.0s,MS5.6
CCM Cathedral Cave 77.26 346 eP P **04 48 40.3 -2.0**
comp=Z,251nm,0.9s,mb6.2
CCM LR LR
comp=Z,3µm,20.0s,MS5.6
MCWV Mont Chateau 77.31 355 eP P **04 48 41.6 -1.0**
comp=Z,144nm,1.4s,mb5.7
MCWV LR LR
comp=Z,26µm,20.0s,MS6.5
TIC Toumodi 77.32 71 eP P **04 48 42.1 -1.0**
comp=Z,1µm,0.9s
KIC Kosan Boka 77.34 72 eP P **04 48 42.2 -1.1**
comp=Z,2µm,0.7s
DBIC Dimbokro 77.46 71 P P **04 48 42.9 -1.0**
DBIC S S 04 58 34.2 +1.7
DBIC SKKPbc 05 11 51.2
DBIC Dimbokro 77.46 71 P P **04 48 43.7 -0.2**
comp=Z,320nm,0.7s,mb6.3,baz=204,slow=5.8,SNR=123
DBIC S S 04 58 34.6 +2.0
comp=Z,6.9nm,1.2s,baz=87,slow=19,SNR=3.8
DBIC PKKP PKKP 05 07 21.3 -7.9
comp=Z,6.0nm,1.1s,baz=322,slow=6.1,SNR=3.5
DBIC LR LR 05 24 14.4
comp=Z,59µm,18.1s,MS7.0,baz=211,slow=37
DBIC Dimbokro 77.46 71 P P **04 48 43.7 -0.2**
DBIC S S 04 58 34.6 +2.0
DBIC PKKP PKKP 05 07 21.3 -7.9
DBIC LR LR 05 24 14.4
MVL Millersville 77.47 358 eP P **04 48 42.6 -0.9**
BLO Bloomington 77.55 350 eP P **04 48 41.1 -2.8**
BLO pmax pmax
comp=Z,125nm,0.9s,mb5.8
BLO Bloomington 77.55 350 eP P **04 48 41.1 -2.8**
comp=Z,125nm,0.9s,mb5.8
SLM Saint Louis 77.63 347 eP P **04 48 42.5 -1.9**
SLM pmax pmax
comp=Z,339nm,1.1s,mb6.2
SLM Saint Louis 77.63 347 eP P **04 48 42.5 -1.9**
comp=Z,340nm,1.1s,mb6.2
TUC Tucson 77.97 328 eP P **04 48 45.8 -0.6**
TUC pmax pmax
comp=Z,61nm,1.2s,mb5.4
TUC MLR MLR
comp=Z,11µm,20.0s,MS6.2
TUC Tucson 77.97 328 eP P **04 48 45.8 -0.5**
comp=Z,61nm,1.2s,mb5.4
TUC LR LR
comp=Z,11µm,20.0s,MS6.2
BRNJ Basking Ridge 78.12 359 eP P **04 48 49.2 +2.2**
ACSO Alum Creek Sta 78.16 353 eP P **04 48 45.2 -2.0**
comp=Z,369nm,1.2s,mb6.2
ACSO LR LR
comp=Z,26µm,20.0s,MS6.6
SSPA Standing Stone 78.17 357 eP P **04 48 47.0 -0.2**
comp=Z,86nm,1.3s,mb5.5
SSPA LR LR
comp=Z,19µm,20.0s,MS6.4
CPNY Central Park 78.22 360 eP P **04 48 48.0 +0.5**
PAL Palisades 78.44 360 eP P **04 48 49.9 +1.2**
PAL pmax pmax
comp=Z,39nm,1.2s,mb5.2
PAL Palisades 78.44 360 eP P **04 48 49.9 +1.2**
comp=Z,39nm,1.2s,mb5.2
ANMO Albuquerque 78.62 333 eP P **04 48 49.1 -0.8**
ANMO pmax pmax
comp=Z,154nm,1.3s
ANMO MLR MLR
comp=Z,20µm,19.0s
ANMO Albuquerque 78.62 333 eP P **04 48 49.1 -0.8**
comp=Z,154nm,1.3s,mb5.8
ANMO LR LR
comp=Z,20µm,19.0s,MS6.5
TSUM Tsumeb 79.25 106 P P **04 48 54.1 +0.5**
comp=Z,79nm,0.8s,mb5.7,baz=200,slow=6.2,SNR=102
TSUM S S 04 58 54.3 +2.7
comp=Z,2.6nm,1.0s,baz=321,slow=23,SNR=7.0
ALLY Alegheny Colle 79.31 355 eP P **04 48 54.8 +1.3**
BRYW Bryant College 79.36 1 eP P **04 48 55.1 +1.3**
comp=Z,310nm,1.3s,mb6.1
KSU1 Kansas State U 79.45 342 eP P **04 48 52.9 -1.4**
BINY Binghamton 79.66 358 eP P **04 48 54.2 -1.2**
comp=Z,88nm,1.2s,mb5.6
BINY LR LR
comp=Z,30µm,20.0s,MS6.6
SNZO South Karori 79.69 225 PFAKE 04 49 10.0 +14
SNZO LR LR
comp=Z,35µm,20.0s,MS6.7
QUA2 Belchertown 79.71 1 eP P **04 48 56.2 +0.6**
comp=Z,326nm,1.3s,mb6.1
QUA2 epP pP 04 49 05.8 +4.8
ERPA Erie 79.77 355 eP P **04 48 56.0 0.0**
comp=Z,156nm,1.3s,mb5.8
ERPA LR LR
comp=Z,21µm,20.0s,MS6.5
WES Weston 79.83 2 eP P **04 48 55.6 -0.7**
WES pmax pmax
comp=Z,232nm,1.3s,mb6.0
WES MLR MLR
comp=Z,29µm,19.0s,MS6.6
WES Weston 79.83 2 eP P **04 48 55.6 -0.7**
comp=Z,232nm,1.3s,mb6.0
WES LR LR
comp=Z,29µm,19.0s,MS6.6
HRV Harvard--Oak R 79.95 1 eP P **04 48 58.3 +1.4**
HRV pmax pmax
comp=Z,159nm,1.2s,mb5.8
HRV MLR MLR
comp=Z,6µm,20.0s,MS5.9
HRV Harvard--Oak R 79.95 1 eP P **04 48 58.3 +1.4**
comp=Z,159nm,1.2s,mb5.8
HRV LR LR
comp=Z,6µm,20.0s,MS5.9
CBKS Cedar Bluff 80.00 339 PFAKE 04 49 10.0 +13
CBKS LR LR
comp=Z,10µm,20.0s,MS6.2
RPZ Rata Peaks 80.05 222 S S 04 59 01.6 +2.1
comp=Z,19nm,1.2s,baz=77,slow=14,SNR=1.8
RPZ LR LR 05 15 36.9
comp=Z,75µm,21.7s,MS7.0,baz=105,slow=29
AAM Ann Arbor 80.27 352 eP P **04 48 56.2 -2.5**
AAM pmax pmax
comp=Z,68nm,0.8s,mb5.6
AAM MLR MLR
comp=Z,33µm,22.0s,MS6.6
AAM Ann Arbor 80.27 352 eP P **04 48 56.2 -2.4**
comp=Z,68nm,0.8s,mb5.6
AAM LR LR
comp=Z,33µm,22.0s,MS6.6
URZ Urewera 80.30 229 LR LR 05 16 51.1
comp=Z,44µm,19.7s,MS6.8,baz=134,slow=30
SDCO Great Sand Dun 80.80 335 eP P **04 49 01.0 -0.6**
comp=Z,75nm,1.1s,mb5.5
SDCO LR LR
comp=Z,22µm,21.0s,MS6.5
ACCN Adirondack Com 80.81 360 eP P **04 49 00.2 -1.3**
BAR Barrett 80.88 324 eP P **04 49 01.8 -0.3**
WUAZ Wupatki 81.00 329 eP P **04 49 02.8 +0.1**
comp=Z,122nm,1.3s,mb5.7
WUAZ LR LR
comp=Z,16µm,22.0s,MS6.3
HNH Hanover 81.14 1 eP P **04 49 02.9 -0.3**
comp=Z,21nm,1.4s,mb4.9
NCB Newcomb 81.40 359 eP P **04 49 04.6 0.0**
comp=Z,63nm,0.9s,mb5.5
NCB LR LR
comp=Z,19µm,19.0s,MS6.5
MIV Mineville/With 81.50 360 eP P **04 49 03.7 -1.3**
PFO Pinyon Flat Ob 81.56 325 eP P **04 49 05.9 +0.3**
PFO pmax pmax
comp=Z,142nm,1.2s,mb5.8
PFO MLR MLR
comp=Z,21µm,21.0s,MS6.5
PFO Pinyon Flat Ob 81.56 325 eP P **04 49 05.9 +0.3**
comp=Z,142nm,1.2s,mb5.8
PFO LR LR
comp=Z,21µm,21.0s,MS6.5
LBNH Lisbon 81.68 1 PFAKE 04 49 20.0 +14
LBNH LR LR
comp=Z,20µm,20.0s,MS6.5
LBTB Lobatse 81.72 115 P P **04 49 05.5 -1.1**
LBTB P 04 49 08.8
LBTB S S 04 59 17.1 0.0
LBTB Lobatse 81.72 115 eP P **04 49 05.9 -0.7**
LBTB pmax pmax
comp=Z,105nm,0.8s,mb5.8
LBTB MLR MLR
comp=Z,30µm,20.0s,MS6.7
LBTB Lobatse 81.72 115 eP P **04 49 05.9 -0.6**
comp=Z,105nm,0.8s,mb5.8
LBTB LR LR
comp=Z,30µm,20.0s,MS6.7
JFWS Jewell Farm 81.79 348 eP P **04 49 05.1 -1.5**
JFWS pmax pmax
comp=Z,180nm,1.3s,mb5.8
JFWS MLR MLR
comp=Z,21µm,20.0s,MS6.5
JFWS Jewell Farm 81.79 348 eP P **04 49 05.1 -1.5**
comp=Z,180nm,1.3s,mb5.8
JFWS LR LR
comp=Z,21µm,20.0s,MS6.5
PTN Potsdam (NY) 82.01 359 eP P **04 49 06.4 -1.3**
WVL Waterville 82.06 3 eP P **04 49 10.7 +2.7**
comp=Z,395nm,1.3s,mb6.2
WVL LR LR
comp=Z,64µm,20.0s,MS7.0
LDFC Landfair 82.19 327 eP P **04 49 09.2 +0.4**
PV01 Paradox Valley 82.22 333 eP P **04 49 08.5 -0.4**
EMMW East Machias 82.31 4 eP P **04 49 10.4 +1.2**
comp=Z,243nm,0.8s,mb6.2
EMMW LR LR
comp=Z,85µm,20.0s,MS7.1
SADO Sadowa 82.36 356 S S 04 59 20.5 -2.8
baz=328,slow=19
MSNY Massena 82.44 359 eP P **04 49 09.6 -0.3**
NEN Nelson 82.56 327 eP P **04 49 10.4 -0.4**
PV10 Paradox Valley 82.61 333 eP P **04 49 09.9 -1.0**
ISCO Idaho Springs 82.69 336 eP P **04 49 10.3 -1.1**
ISCO pmax pmax
comp=Z,71nm,1.3s,mb5.5
ISCO MLR MLR
comp=Z,12µm,20.0s,MS6.3
ISCO Idaho Springs 82.69 336 eP P **04 49 10.3 -1.1**
comp=Z,72nm,1.3s,mb5.5
ISCO LR LR
comp=Z,12µm,20.0s,MS6.3
PAS Pasadena 82.80 324 P P **04 49 12.4 +0.4**
PAS S S 04 59 32.8 +4.8
PAS SS SS 05 04 55.6 +1.4
MWC Mount Wilson 82.80 324 eP P **04 49 12.5 +0.4**
EHRO Hierro 83.29 47 P P **04 49 15.8 +1.1**
comp=Z,9µm,5.7s
CHIE El Hierro 83.36 47 P P **04 49 14.5 -0.6**
comp=Z,46nm,1.0s,mb5.5
SRU San Rafael 83.80 332 eP P **04 49 16.5 -0.5**
MSU Marysvale 83.91 330 eP P **04 49 17.6 0.0**
MVU Marysvale 83.92 330 eP P **04 49 17.4 -0.3**
comp=Z,67nm,1.2s,mb5.7
MVU LR LR
comp=Z,13µm,20.0s,MS6.3
EHIG Higuera 84.07 47 P P **04 49 20.1 +1.4**
comp=Z,6µm,3.9s
EGOM La Gomera 84.12 48 P P **04 49 19.5 +0.6**
comp=Z,6µm,6.3s
PQI Presque Isle 84.24 4 eP P **04 49 18.3 -0.7**
comp=Z,588nm,1.3s,mb6.6
PQI LR LR
comp=Z,91µm,20.0s,MS7.2
DAC Darwin (Calif) 84.29 326 eP P **04 49 23.0 +3.4**
DAC e*PP pP 04 49 31.4 +6.4
DAC pmax pmax
comp=Z,130nm,1.5s,mb5.8
DAC MLR MLR
comp=Z,9µm,22.0s,MS6.1
DAC Darwin (Calif) 84.29 326 eP P **04 49 23.0 +3.4**
comp=Z,130nm,1.5s,mb5.8
DAC epP pP 04 49 31.4 +6.3
DAC LR LR
comp=Z,9µm,22.0s,MS6.1
CCAN Las Canadas 84.52 48 P P **04 49 22.8 +1.9**
comp=Z,232nm,1.8s,mb6.0
EBAJ Bajamar 84.91 48 P P **04 49 24.3 +1.4**
comp=Z,9µm,4.9s
MPU Maple Canyon 85.01 332 eP P **04 49 23.0 0.0**
MPU epP pP 04 49 33.7 +5.2
EOSO Osorio 85.03 49 P P **04 49 24.7 +1.2**
comp=Z,8µm,5.5s
NLU North Lily Min 85.12 331 eP P **04 49 23.7 0.0**
NLU epP pP 04 49 35.3 +6.2
DAU Daniels Canyon 85.21 332 P P **04 49 24.3 +0.2**
DAU Daniels Canyon 85.21 332 eP P **04 49 23.9 -0.2**
JLU Jordanelle 85.45 332 eP P **04 49 24.8 -0.4**
MTUM Tungsten Hills 85.62 325 eP P **04 49 29.5 +3.3**
TPH Tonopah 85.62 327 P P **04 49 26.4 +0.2**
TPH pmax pmax
comp=Z,84nm,1.0s,mb5.9
TPH Tonopah 85.62 327 eP P **04 49 26.3 +0.1**
comp=Z,131nm,1.2s,mb6.0
TPH epP pP 04 49 37.3 +5.6
TPH LR LR
comp=Z,11µm,21.0s,MS6.2
CTU Camp Tracy 85.64 332 eP P **04 49 25.9 -0.3**
CTU epP pP 04 49 41.9 +10
TCUT Toone Canyon 85.88 332 eP P **04 49 28.2 +0.8**
LRV Little Rabbit 85.99 323 eP P **04 49 33.0 +5.0**
RSSD Black Hills 86.13 338 eP P **04 49 27.2 -1.4**
comp=Z,59nm,0.9s,mb5.8
RSSD LR LR
comp=Z,3µm,19.0s,MS5.6
CFTV Fuerteventura 86.16 49 P P **04 49 30.6 +1.5**
comp=Z,108nm,1.5s,mb5.9
HWUT Hardware Ranch 86.37 332 eP P **04 49 29.0 -0.8**
comp=Z,144nm,1.1s,mb6.1
HWUT LR LR
comp=Z,24µm,19.0s,MS6.6
NVAR Mina Array Bea 86.39 326 P P **04 49 30.3 +0.3**
comp=Z,15nm,0.8s,mb5.2,baz=139,slow=5.9,SNR=47
NVAR S S 05 00 06.5 +3.2
comp=Z,0.1nm,0.3s,baz=158,slow=31,SNR=2.6
NVAR PKKP PKKP 05 07 20.5 +6.3
comp=Z,0.4nm,0.6s,baz=252,slow=4.7,SNR=4.6

NVAR LR LR 05 22 35.6
comp=Z,6µm,20.1s,MS6.0,baz=275,slow=32
SPUT South Promonto 86.44 332 *e*P **P** **04 49 29.5 -0.7**
SAO San Andreas Ge 86.47 323 PFAKE 04 49 40.0 +10
SAO LR LR
comp=Z,7µm,21.0s,MS6.1
BW06 Boulder Array 86.67 334 *e*P **P** **04 49 30.1 -1.1**
comp=Z,99nm,1.4s,mb5.8
BW06 *e*pP pP 04 49 41.2 +4.5
BW06 LR LR
comp=Z,30µm,20.0s,MS6.7
PDAR Pinedale Array 86.67 334 P **P** **04 49 30.4 -0.8**
comp=Z,24nm,0.9s,mb5.4,baz=135,slow=4.2,SNR=58
PDAR PKKPbc 05 07 31.0
comp=Z,1.9nm,1.2s,baz=88,slow=0.6,SNR=3.9
PDAR PKPPKP 05 15 47.6
comp=Z,0.7nm,0.9s,slow=4.5,SNR=3.9
HVU Hansel Valley 86.97 332 P **P** **04 49 32.3 -0.4**
HVU Hansel Valley 86.97 332 *e*P **P** **04 49 32.1 -0.6**
HVU *e*pP pP 04 49 43.3 +5.1
CMB Columbia Colle 87.00 325 P **P** **04 49 35.6 +2.6**
CMB pmax pmax
comp=Z,24nm,1.1s,mb5.3
CMB Columbia Colle 87.00 325 *e*P **P** **04 49 35.5 +2.5**
comp=Z,22nm,1.0s,mb5.3
CMB LR LR
comp=Z,15µm,22.0s,MS6.3
EFAM Famara 87.01 49 P **P** **04 49 34.5 +1.2**
comp=Z,6µm,4.0s
PDA Ponta Delgada 87.13 36 *i* P **P** **04 49 36.0 +2.4**
PDA *i* PP PP 04 53 03.0 +3.2
PDA *i* S S 05 00 22.0 +12
PDA *e*SS SS 05 06 06.0 +8.8
PDA *e*LR LR 05 17 34.0
ADH Angra Heroismo 87.15 34 *i* P **P** **04 49 43.0 +9.3**
ADH *i* PP PP 04 53 13.0 +13
ADH *i* S S 05 00 22.5 +12
ADH *i* SS SS 05 06 18.0 +21
ADH *i* LR LR 05 18 22.5
AHID Auburn Hatcher 87.21 333 *e*P **P** **04 49 33.4 -0.5**
comp=Z,36nm,0.9s,mb5.6
AHID LR LR
comp=Z,21µm,20.0s,MS6.5
BMN Battle Mountai 87.59 328 P **P** **04 49 37.4 +1.6**
BMN pmax pmax
comp=Z,13nm,1.0s,mb5.1
BMN Battle Mountai 87.59 328 *e*P **P** **04 49 37.0 +1.2**
comp=Z,21nm,1.1s,mb5.3
BMN *e*pP pP 04 49 47.5 +6.3
BMN LR LR
comp=Z,13µm,22.0s,MS6.3
REDW Red Top Meadow 87.64 334 *e*P **P** **04 49 35.2 -0.7**
WCN Washoe City 87.75 326 P **P** **04 49 40.2 +3.7**
WCN pmax pmax
comp=Z,93nm,2.0s,mb5.7
WCN Washoe City 87.75 326 *e*P **P** **04 49 39.2 +2.7**
comp=Z,211nm,2.1s,mb6.0
KSWY Kelly School 87.80 334 *e*P **P** **04 49 38.4 +1.7**
KSWY *e*pP pP 04 49 50.0 +7.9
NSHM Saint Helena R 88.42 324 *e*P **P** **04 49 42.9 +3.1**
NSHM *e*pP pP 04 49 53.2 +7.9
BEKR Beckwourth 88.48 326 *e*P **P** **04 49 40.3 +0.3**
comp=Z,27nm,1.4s,mb5.3
LKWY Lake 88.54 335 P **P** **04 49 44.3 +4.1**
LKWY pmax pmax
comp=Z,6.0nm,1.0s,mb4.9
LKWY Lake 88.54 335 *e*P **P** **04 49 44.0 +3.8**
comp=Z,8.2nm,1.3s
LKWY LR LR
comp=Z,94nm,19.0s
YMR Madison River 88.83 334 *e*P **P** **04 49 41.9 +0.4**
YMR *e*pP pP 04 49 53.6 +6.6
HOPS Hopland 89.02 324 PFAKE 04 49 50.0 +7.4
HOPS LR LR
comp=Z,8µm,19.0s,MS6.2
HLID Hailey 89.12 332 *e*P **P** **04 49 42.9 -0.1**
comp=Z,49nm,1.2s,mb5.7
HLID LR LR
comp=Z,12µm,19.0s,MS6.3
QLMT Earthquake Lak 89.13 334 *e*P **P** **04 49 46.4 +3.4**
MCMT McKenzie Canyo 89.63 333 *e*P **P** **04 49 46.7 +1.3**
LSZ Lusaka 89.65 109 *e*P **P** **04 49 47.6 +1.5**
comp=Z,124nm,1.0s,mb6.2
LSZ LR LR
comp=Z,45µm,20.0s,MS6.9
WVOR Wild Horse Val 89.85 328 *e*P **P** **04 49 49.4 +3.0**
comp=Z,52nm,1.4s,mb5.7
WVOR LR LR
comp=Z,15µm,19.0s,MS6.4
ULM Lac du Bonnet 89.89 346 P **P** **04 49 45.0 -1.4**
comp=Z,107nm,1.2s,mb6.0,baz=171,slow=3.7,SNR=29
ULM S S 05 00 12.7 -23
comp=Z,0.8nm,0.8s,baz=311,slow=19,SNR=1.5
ULM PKKPbc 05 07 19.0
comp=Z,1.6nm,0.8s,baz=22,slow=4.7,SNR=3.6
ULM Lac du Bonnet 89.89 346 *e*P **P** **04 49 44.9 -1.6**
comp=Z,150nm,1.2s,mb6.2
ULM *e*pP pP 04 49 55.4 +3.5
ULM LR LR
comp=Z,26µm,20.0s,MS6.7
BOZ Bozeman (W) 89.91 334 *e*P **P** **04 49 47.5 +0.8**
comp=Z,9.3nm,1.0s,mb5.1
BOZ LR LR
comp=Z,21µm,20.0s,MS6.6
WDC Whiskeytown Da 90.04 325 *e*P **P** **04 49 46.3 -1.1**
comp=Z,22nm,1.4s,mb5.3
WDC LR LR
comp=Z,11µm,22.0s,MS6.2
MOD Modoc 90.12 327 *e*P **P** **04 49 48.0 +0.3**
comp=Z,34nm,1.2s,mb5.5
MOD LR LR
comp=Z,19µm,19.0s,MS6.5
KHMM Horse Mountain 90.82 324 *e*P **P** **04 49 52.1 +1.1**
HRY Holter Researc 90.91 335 *e*P **P** **04 49 52.7 +1.5**
YBH Yreka Blue Hor 91.04 325 S S 05 00 48.0 +1.8
comp=Z,0.2nm,0.3s,baz=65,slow=8.7,SNR=2.0
YBH Yreka Blue Hor 91.04 325 P **P** **04 49 54.0 +2.1**
YBH pmax pmax
comp=Z,8.0nm,1.0s
YBH Yreka Blue Hor 91.04 325 *e*P **P** **04 49 53.2 +1.3**
comp=Z,12nm,1.1s,mb5.1
YBH LR LR
comp=Z,9µm,21.0s,MS6.2
TAU Tasmania Unive 91.54 209 PFAKE 04 50 10.0 +16
TAU LR LR
comp=Z,23µm,19.0s,MS6.6
CHMT Chamberlain Mo 91.57 334 P **P** **04 49 54.6 +0.3**
MSO Missoula 91.74 333 *e*P **P** **04 49 58.2 +3.2**
comp=Z,93nm,1.7s,mb5.8
MSO LR LR
comp=Z,26µm,19.0s,MS6.7
SCHQ Schefferville 92.44 4 P **P** **04 49 57.0 -1.1**
comp=Z,5.8nm,0.9s,mb4.9,baz=115,slow=14,SNR=7.2
SCHQ PP PP 04 53 41.4 -0.5
comp=Z,13nm,1.0s,baz=202,slow=8.1,SNR=4.2
SCHQ S S 05 00 28.4 -30
comp=Z,1.3nm,0.8s,baz=198,slow=20,SNR=1.9
SCHQ Schefferville 92.44 4 *e*P **P** **04 49 59.1 +1.1**
comp=Z,26nm,1.1s,mb5.5
SCHQ *e*pP pP 04 50 07.6 +4.1
SCHQ LR LR
comp=Z,36µm,21.0s,MS6.8
LNOR Lincton Mounta 92.55 330 P **P** **04 50 00.8 +2.0**
LNOR Lincton Mounta 92.55 330 *e*P **P** **04 50 00.3 +1.5**
SSOR Sweet Springs 93.43 327 P **P** **04 50 04.8 +2.0**
NEW Newport 94.10 332 S S 05 01 05.9 -6.9
comp=Z,0.3nm,0.3s,baz=297,slow=18,SNR=2.2
NEW PKKP PKKP 05 07 08.8 +7.9
comp=Z,0.6nm,0.5s,baz=54,slow=14,SNR=2.8
NEW Newport 94.10 332 P **P** **04 50 07.2 +1.4**
NEW pmax pmax
comp=Z,24nm,1.2s
NEW Newport 94.10 332 *e*P **P** **04 50 05.2 -0.6**
comp=Z,36nm,1.4s,mb5.6
NEW *e*pP pP 04 50 15.4 +4.2
NEW LR LR
comp=Z,17µm,19.0s,MS6.5
DPW Davenport 94.18 332 P **P** **04 50 08.7 +2.5**
LON Longmire 94.68 329 P **P** **04 50 10.7 +2.2**
LON Longmire 94.68 329 *e*P **P** **04 50 10.5 +2.0**
BMW Boistfort Moun 95.04 328 P **P** **04 50 13.4 +3.2**
BMW Boistfort Moun 95.04 328 P **P** **04 50 12.9 +2.7**
PTEO Sao Teotonio 95.81 46 *e*P **P** **04 50 16.3 +2.3**
PTEO *e*PP PP 04 54 07.8 -0.5
POHA Pohakuloa 95.90 290 PFAKE 04 50 30.0 +15
POHA LR LR
comp=Z,20µm,20.0s,MS6.6
LIS Lisbon 96.38 45 *e*P **P** **04 50 15.9 -0.7**
LIS *e*PP PP 04 54 08.2 -4.7
LIS *e*S SKS 05 00 48.8 -8.6
LIS *e*S SKS 05 00 49.1 -8.3
LIS AMS AMS 05 32 38.1
comp=Z,84µm,21.7s,MS7.2
LIS Lisbon 96.38 45 *e*P **P** **04 50 15.9 -0.7**
LIS *e*PP PP 04 54 08.2 -4.6
LIS *e*S SKS 05 00 48.8 -8.6
comp=Z,84µm,21.7s
OCWA Octopus Mounta 96.45 328 PFAKE 04 50 30.0 +13
OCWA LR LR
comp=Z,16µm,20.0s,MS6.5
PALC Alcoutim 96.47 47 *e*PP PP 04 54 09.3 -4.3
PLOU Loures 96.50 45 *e*P **P** **04 50 17.6 +0.5**
PLOU *e*PP PP 04 54 09.3 -4.4
EGRO El Granado 96.52 47 P **P** **04 50 17.5 +0.3**
comp=Z,1µm,5.2s
PBEJ Beja 96.64 46 *e*P **P** **04 50 19.9 +2.2**
PBEJ *e*PP PP 04 54 14.5 -0.3
EVO Evora 96.90 46 *e*P **P** **04 50 17.5 -1.4**
comp=Z,25nm,0.9s,mb5.3
EVO *e*R
comp=Z,98µm,22.8s
EJIF Jimena Fronter 96.97 49 P **P** **04 50 18.6 -0.6**
ESPR Espera 97.02 48 P **P** **04 50 18.6 -0.8**
EMIN Mina Concepcio 97.15 47 P **P** **04 50 20.9 +0.9**
comp=Z,514nm,3.3s
PTOM Tomar 97.42 45 *e*P **P** **04 50 22.4 +1.2**
PTOM *e*PP PP 04 54 14.4 -6.7
PCOI Coimbra 97.76 44 *e*PP PP 04 54 21.4 -2.4
PCBR Castelo Branco 98.10 45 *e*P **P** **04 50 25.4 +1.2**
PCBR *e*PP PP 04 54 18.9 -7.5
ELUQ Luque 98.42 49 P **P** **04 50 25.1 -0.7**
MTE Manteigas 98.44 45 *e*P **P** **04 50 25.3 -0.5**
MTE *e*PP PP 04 54 22.1 -6.7
MTE *e*S SKS 05 01 02.8 -5.3
MTE *e*LR LR 05 22 58.1
comp=Z,108µm,21.7s
MTE Manteigas 98.44 45 *e*P **P** **04 50 27.3 +1.5**
PVIS Viseu 98.46 44 *e*PP PP 04 54 25.2 -3.7
EADA Adamuz 98.64 48 P **P** **04 50 26.0 -0.7**
PVRL Vila Real 98.94 44 *e*PP PP 04 54 28.4 -3.9
EBAN Banos Encina 99.11 48 P **P** **04 50 28.0 -0.8**
ELOB Lobios 99.16 43 P **P** **04 50 28.9 -0.1**
EMAZ Mazaricos 99.41 42 P **P** **04 50 30.0 -0.1**
comp=Z,503nm,3.5s
PAB San Pablo 99.69 47 Pdiff **P** **04 50 32.0 +0.5**
PAB SKSac 05 01 10.6
PAB PS PS 05 03 29.9 -4.7
PBRG Braganca 99.84 44 *e*PP PP 04 54 35.8 -3.6
ECAL Calabor 99.93 44 P **P** **04 50 30.6 -2.0**
comp=Z,281nm,2.6s,mb6.2
ESDC Sonseca Array 100.00 47 P **P** **04 50 33.8 +0.9**
comp=Z,6.8nm,1.0s,mb5.0,baz=248,slow=4.1,SNR=12
ESDC PP PP 04 54 36.1 -4.6
comp=Z,1.8nm,0.8s,baz=248,slow=6.9,SNR=3.8
ESDC LR LR 05 38 35.3
comp=Z,55µm,18.2s,MS7.1,baz=235,slow=37
ESDC Sonseca Array 100.00 47 P **P** **04 50 31.6 -1.3**
comp=Z,6.1nm,1.0s,mb5.0
ERUA La Rua 100.02 44 P P 04 50 30.5 -2.4
EINC Incio 100.08 43 P P 04 50 32.0 -1.2
comp=Z,867nm,5.5s
EMUR La Murta 100.42 50 P P 04 50 35.1 +0.2
comp=Z,878nm,6.7s
EARI Arriondas 101.68 44 P P 04 50 41.7 +1.4
comp=Z,597nm,4.3s
ETOR Torete 101.85 47 P P 04 50 43.2 +2.0
comp=Z,838nm,4.8s
EMOS Mosqueruela 102.49 48 P Pdif 04 50 45.5 +1.4
ELAN Lanestosa 102.62 45 P Pdif 04 50 42.4 -2.2
EALK Alkurruntz 103.69 46 P Pdif 04 50 49.9 +0.5
ETSF Etsaut 104.03 46 *e*P Pdif 04 50 49.8 -1.0
comp=Z,30nm,1.3s
YKA Yellowknife Ar 105.30 342 Pdiff Pdif 04 50 54.9 -1.0
comp=Z,0.9nm,0.6s,baz=146,slow=4.8,SNR=24
YKA PP PP 04 55 17.3 -3.0
comp=Z,0.4nm,0.6s,baz=142,slow=8.0,SNR=5.1
YKA PKKPbc 05 06 40.9
comp=Z,0.4nm,0.6s,baz=336,slow=3.2,SNR=10.0
YKA Yellowknife Ar 105.30 342 Pdif Pdif 04 50 54.9 -1.0
YKA PP PP 04 55 17.3 -3.0
YKA PKKPbc 05 06 40.9
KMBO Kilima Mbogo 105.52 104 PP PP 04 55 22.7 -0.3
comp=Z,1.2nm,0.6s,baz=40,slow=24,SNR=5.3
MTLF Montolieu 105.91 47 *e*P Pdif 04 50 57.7 -1.4
comp=Z,20nm,1.0s
ROSF Rostrenen 105.97 41 *e*P Pdif 04 50 57.7 -1.5
comp=Z,42nm,1.2s
MFF Saint Martin d 106.55 44 *e*P Pdif 04 51 00.9 -0.9
comp=Z,22nm,1.1s
CAF Calviac 106.77 46 *e*P Pdif 04 51 01.4 -1.4
comp=Z,30nm,1.4s
TCF Toulx Ste Croi 107.66 45 *e*P Pdif 04 51 06.1 -0.6
comp=Z,7.7nm,0.9s
FLN La Foliniere 107.69 42 P Pdif 04 51 05.7 -1.1
SMRF Simiane la Rot 108.25 48 *e*P Pdif 04 51 09.2 -0.2
comp=Z,74nm,1.4s
SMF Signal de Mont 108.79 45 *e*P Pdif 04 51 11.9 +0.2
LOR Lormes 109.16 45 *e*P Pdif 04 51 12.8 -0.5
LOR *e*R
comp=Z,138µm,20.5s
LPG La Plagne 109.80 47 *e*P Pdif 04 51 16.2 0.0
HGN Heimansgroeve 112.24 42 *e*Pdif Pdif 04 51 30.1 +3.4
HGN *e*PP PP 04 55 59.6 -12
HGN *e*PPP PPP 04 58 58.1 +24
HGN *e*ScS 05 01 54.5
HGN *e*S Sx 05 05 50.2
HGN *e*SS SS 05 11 16.9 -29
HGN *e*SSS SSS 05 15 29.4 -29
DAVOX Davos 112.33 48 PKIKP 04 55 24.5
comp=Z,1.7nm,0.3s,baz=186,slow=16,SNR=3.3
DAVOX PP PP 04 56 09.5 -2.6
comp=Z,11nm,1.2s,baz=159,slow=8.6,SNR=3.4
DAVOX Davos 112.33 48 PKPdf PKPdf 04 55 24.5 -1.3
DAVOX PP PP 04 56 09.5 -2.6
DAVA Damuels 112.59 47 ⇑*i* PKP PKPdf 04 55 24.7 -1.6
DAVA *i* 04 55 44.3
FURI Furi 112.84 97 Pdiff Pdif 04 51 34.8 +4.5
FURI PP PP 04 56 14.9 -2.1
FURI sSdiff 05 04 18.4
FURI SP SP 05 05 51.3 +6.6
MOTA Moosalm 113.33 47 ⇑*i* PKP PKPdf 04 55 25.8 -2.0
MOTA *i* 04 55 45.3
WTSB Winterswijk 113.34 42 *e*Pdif Pdif 04 51 30.6 -1.0
AS12 Alice Springs 113.68 207 *e*PKP PKPdf 04 55 31.5 +2.4
comp=Z,4.9nm,0.9s
ASAR Alice Springs 113.68 207 PKiKP 04 55 28.9
comp=Z,3.3nm,0.9s,baz=128,slow=1.2,SNR=8.4
ASAR PKKPbc 05 06 05.3
comp=Z,0.7nm,0.7s,baz=356,slow=1.6,SNR=4.7
ASAR PKPPKP 05 14 57.5
comp=Z,0.8nm,0.9s,baz=315,slow=1.4,SNR=4.7
WIT Witteveen 113.72 41 *e*Pdif Pdif 04 51 35.8 +2.6
PTCC Patocco-Chiusa 114.19 49 *e*P PKPdf 04 55 27.9 -1.6
NVLJ Novalja 114.20 52 *i* P Pdif 04 51 37.7 +2.2
ROBS Robic 114.20 49 *e*Pdif Pdif 04 51 38.0 +2.5
VOY Vojsko 114.33 50 *e*PKPdf PKPdf 04 55 34.3 +4.5
VOY *e*PP PP 04 56 18.4 -8.5
KBA Koelnbreinsper 114.52 49 ⇑*i* PKP PKPdf 04 55 26.5 -3.6
KBA *i* 04 55 43.4
GRA1 Grafenberg Arr 114.59 45 *e*PKP PKPdf 04 55 29.9 -0.3
GRA1 *e*PP PP 04 56 22.5 -6.1
GRA1 *e* 04 58 44.9
GRA1 *e*SKSac 05 02 17.8
GRA1 *e*SP SP 05 06 13.4 +13
GRA1 LR LR
comp=Z,67µm,19.3s,MS7.3
GRF Grafenberg Arr 114.59 45 *e*PKIKP PKPdf 04 55 29.9 -0.3
GRF *e* 04 56 22.5
GRF *e* 05 02 17.8
GRF MLR MLR
comp=Z,67µm,19.3s,MS7.3
LJU Ljubljana 114.72 50 *e*Pdif Pdif 04 51 39.7 +2.0
LJU *e*PP PP 04 56 26.9 -2.7
LJU *e*PPP PPP 04 58 51.3 -3.7
LJU *e*SKSac 05 02 14.2
LJU *e*SKKSac 05 03 28.3
LJU *e*SP SP 05 06 12.4 +11
LJU *e* 05 07 30.5
LJU *e*SS SS 05 12 37.7 +18
LJU *e* 05 13 14.1
LJU Ljubljana 114.72 50 *e*Pdif Pdif 04 51 39.7 +2.0
LJU *e*PP PP 04 56 26.9 -2.7
LJU *e*PPP PPP 04 58 51.3 -3.7
LJU *e*SKSac 05 02 14.2
LJU *e*SKKSac 05 03 28.3
LJU *e*SP SP 05 06 12.4 +11
LJU *e* 05 07 30.5
LJU *e*SS SS 05 12 37.7 +18
LJU *e* 05 13 14.1
BOJS Bojanci 114.90 51 *e*Pdiff Pdif 04 51 40.4 +1.8
BOJS *e*PKPdf PKPdf 04 55 29.5 -1.4
BOJS *e*PP PP 04 56 29.6 -1.3
PDKS Podkum 115.02 50 *e*Pdiff Pdif 04 51 42.1 +3.0
PDKS *e*PKPdf PKPdf 04 55 30.2 -0.9
PDKS *e*PP PP 04 56 24.2 -7.5
PDKS *e*PPP PPP 04 58 48.6 -9.1
PDKS *e*SP SP 05 06 15.0 +10
STON Ston 115.16 54 *i* P PKPdf 04 55 28.4 -3.1
MOX Moxa 115.28 45 *i* P PKPdf 04 55 31.0 -0.5
comp=Z,logA/T=1.1
MOX PP PP 04 56 27.0 -6.4
MOX PKS tx 05 02 21.0
MOX *e* 05 06 08.0
MOX L 05 44 27.0
MOX Moxa 115.28 45 *e*PKIKP PKPdf 04 55 31.0 -0.5
MOX pmax pmax
comp=Z,20nm,1.4s
MOX MLR MLR
comp=Z,44µm,21.0s,MS7.0
MOA Molln 115.44 48 ⇑*i* PKP PKPdf 04 55 27.9 -4.0
MOA *i* 04 55 48.6
NKC Novy Kostel 115.54 45 *e*PDIF Pdif 04 51 43.8 +2.5
NKC *e*PP PP 04 56 31.8 -3.5
NKC *e*x x 04 58 51.2
NKC *e*SKS SKS 05 02 17.7 -4.9
NKC *e*SP SP 05 06 12.0 +2.7
NKC L 05 48 00.0
comp=Z,44nm,17.5s
NKC Novy Kostel 115.54 45 *e*P Pdif 04 51 43.8 +2.5
NKC *e* 04 56 31.8
NKC *e* 05 02 17.7
NKC *e*SP SP 05 06 12.0 +2.7
NKC MLR MLR
comp=Z,44µm,17.5s,MS7.1
SISC Sisak 115.57 51 *i* P Pdif 04 51 38.7 -2.8
GERES GERESS Array B 115.59 47 PKP PKPdf 04 55 28.3 -3.9
comp=Z,7.7nm,0.8s,baz=225,slow=1.9,SNR=26
GERES PKKPab 05 06 13.3
comp=Z,0.4nm,0.4s,baz=243,slow=3.0,SNR=4.2
KHC Kasperske Hory 115.66 47 *e*PDIF Pdif 04 51 43.5 +1.7
KHC *e*PKP PKPdf 04 55 27.7 -4.8
KHC *e*x x 04 59 49.0
KHC *e*PP PP 04 56 25.7 -10
KHC *e*x x 04 58 53.5
KHC *e*SKS SKS 05 02 12.0 -11
KHC *e*SP SP 05 06 10.9 +0.6
KHC Kasperske Hory 115.66 47 *e*P Pdif 04 51 43.5 +1.7
KHC *e* 04 55 27.5
KHC *e* 05 02 12.0
KHC *e*SP SP 05 06 10.9 +0.6
KHC Kasperske Hory 115.66 47 *e*Pdif Pdif 04 51 43.5 +1.7
KHC *e*PKP PKPdf 04 55 20.4 -12
KHC *e*PKP PKPdf 04 55 27.5 -4.8
KHC *e* 04 55 49.0
KHC *e*PP PP 04 56 25.7 -10
KHC *e* 04 58 53.5
KHC *e*SKS SKS 05 02 12.0 -11
KHC *e*SP SP 05 06 10.9 +0.6
ARSA Arzberg 115.90 49 ⇑*i* PKP PKPdf 04 55 29.2 -3.7
ARSA *i* 04 55 50.1
OHR Ohrid 116.35 57 ⇑*i* PP 04 56 39.1 -2.0
CLL Collm 116.37 44 *e*PDIF Pdif 04 51 47.0 +2.1
CLL *i* PKP PKPdf 04 55 32.3 -1.3
CLL *i* 04 55 46.9
CLL *e*PP PP 04 56 30.0 -11
CLL *e*PP PP 04 56 42.0 +1.0
CLL *e*PPP PPP 04 59 17.0 +8.3
CLL *e*SKS SKS 05 02 19.0 -6.6
CLL *e*SKKS 05 03 38.0
CLL *e*PS PS 05 06 18.0 -0.7
CLL *e*PPS PPS 05 07 37.0 0.0
CLL *e*SSS SSS 05 16 48.0 -13
CLL Collm 116.37 44 *i* PKIKP PKPdf 04 55 32.3 -1.3
CLL *e* 05 02 19.0
CLL pmax pmax
comp=Z,11nm,0.9s
CLL MLR MLR
comp=Z,69µm,19.0s,MS7.3
CLL Collm 116.37 44 *e*Pdif Pdif 04 51 47.0 +2.1
CLL *i* PKP PKPdf 04 55 32.3 -1.3
CLL *e*SKS SKS 05 02 19.0 -6.6
CLL LR LR
comp=Z,69µm,19.0s,MS7.3
PRA Prague 116.59 46 PP PP 04 56 38.0 -4.6
PRA SKP 04 59 07.0
PRA *e*x x 05 06 35.0
PRA *e*x x 05 07 47.0
PRA L 05 46 30.0
PRU Pruhonice 116.61 46 *e*PDIF Pdif 04 51 49.0 +3.0
PRU *e*PP PP 04 56 37.8 -5.0
PRU *e*SKP 04 59 05.4
PRU *e*SKS SKS 05 02 21.7 -4.8
PRU *e*SP SP 05 06 20.2 +1.3
PRU L 05 46 00.0
comp=Z,66nm,18.0s
BRG Berggiesshubel 116.69 45 *e*P Pdif 04 51 49.9 +3.6
BRG pmax pmax
comp=Z,1.0nm,0.4s
BRG Berggiesshubel 116.69 45 *e*PKIKP PKPdf 04 55 32.9 -1.4
BRG *e* 04 56 42.0
BRG *e* 04 59 18.0
BRG *e* 05 02 24.0
BRG *e* 05 06 11.8
BRG *e*SS SS 05 12 46.0 +1.2
BRG pmax pmax
comp=Z,10.0nm,1.1s
BRG MLR MLR
comp=N,32µm,20.9s,MS7.1
BRG MLR MLR
comp=E,33µm,20.9s,MS7.1
BRG MLR MLR
comp=Z,48µm,20.9s,MS7.1
BRG Berggiesshubel 116.69 45 *e*Pdif Pdif 04 51 49.9 +3.6
BRG *e*PKP PKPdf 04 55 32.9 -1.4
BRG *e*PP PP 04 56 42.0 -1.2
BRG *e*SKP 04 59 18.0
BRG *e*SKS SKS 05 02 24.0 -2.8
BRG *e*SKKS 05 03 43.0
BRG *e* 05 06 11.8
BRG *e*SP SP 05 06 38.0 +18
BRG *i* 05 07 48.0
BRG *e* 05 09 42.4
BRG *e*SS SS 05 12 46.0 +1.2
BRG LR LR
comp=Z,48µm,20.9s,MS7.1
SOP Sopron 116.73 49 *e*PP PP 04 56 40.9 -2.7
MUD Monsted U'grnd 116.81 38 *i* P Pdif 04 51 50.6 +3.9
MUD *i* 04 56 35.5
MUD *i* 05 04 47.2
MUD *i* 05 06 25.7
MUD *i* 05 07 44.4
comp=Z,68µm,20.0s
PVCC Panska Ves 116.88 46 *e*PDIF Pdif 04 51 48.0 +0.8
PVCC *e*PP PP 04 56 40.1 -4.5
PVCC *e*SKP 04 59 05.7
PVCC *e*SKS SKS 05 02 21.4 -6.1
PVCC *e*SP SP 05 06 27.9 +6.6
PVCC L 05 45 50.0
comp=Z,71nm,19.7s
WB2 Warramunga Arr 116.90 209 *e*PKP PKPdf 04 55 38.1 +2.7
WB2 *e* 04 56 40.2
WB2 *e* 05 02 20.9
WB2 *e* 05 03 33.0
WB2 *e* 05 06 19.6
WRA Warramunga Arr 116.90 209 PKP PKPdf 04 55 35.3 -0.1
comp=Z,14nm,1.1s,baz=162,slow=1.5,SNR=21
WRA PP PP 04 56 41.1 -4.3
comp=Z,2.7nm,0.8s,baz=164,slow=2.1,SNR=5.1

WRA PKKPbc 05 05 59.5
comp=Z,6.6nm,1.1s,baz=346,slow=4.2,SNR=5.4
WRAB Tennant Creek 116.91 209 *e*PKP PKPdf 04 55 35.8 +0.4
ILAR Eielson Array 117.06 333 PKP PKPdf 04 55 30.6 -4.0
comp=Z,2.4nm,0.8s,baz=128,slow=1.9,SNR=14
ILAR PKKP PKKP 05 05 57.4 -21
comp=Z,1.3nm,0.9s,baz=301,slow=5.0,SNR=5.8
SKO Skopje 117.17 57 *e*PKP PKPdf 04 55 28.0 -7.4
DIVS Divcibare 117.21 54 *i*P PKPdf 04 55 33.1 -2.3
KRUC Moravsky 117.26 48 P PKPdf 04 55 34.9 -0.5
ZST Bratislava 117.29 49 *e*PP PP 04 56 41.9 -5.6
ZST *e*PKSDF 04 59 08.0
ZST *e* 05 06 20.1
ZST *e* 05 26 00.7
MCK McKinley 117.29 331 *e*PKP PKPdf 04 55 33.9 -1.2
MCK LR LR
comp=Z,8μm,22.0s,MS6.3
COLA College 117.47 332 *d i*PKIKP PKPdf 04 55 23.2 -12
COLA College 117.47 332 *e*PKP PKPdf 04 55 33.7 -1.7
COLA LR LR
comp=Z,13μm,20.0s,MS6.5
VRAC Vranov 117.49 48 PKP PKPdf 04 55 34.1 -1.7
comp=Z,5.1nm,0.5s,baz=356,slow=16,SNR=5.5
VRAC PP PP 04 56 44.4 -4.5
comp=Z,2.9nm,0.3s,baz=202,slow=11,SNR=1.8
VAY Valandovo 117.63 58 ⇑ *i*PKP PKPdf 04 55 22.8 -13
VAY ⇑ *i* 04 56 47.0
UPC Upice 117.69 46 *e*PP PP 04 56 35.1 -15
UPC *e*PKS PKS 04 59 14.9 +6.8
DPC Dobruska-Polom 117.80 46 *e*PDIF Pdif 04 51 53.7 +2.5
DPC *e*PP PP 04 56 37.4 -14
DPC *e*SKP 04 59 04.6
DPC *e*SKS SKS 05 02 26.6 -4.2
DPC *e*PS PS 05 06 32.4 +0.8
DPC L 05 49 50.0
comp=Z,37nm,17.6s
DPC Dobruska-Polom 117.80 46 *e*P Pdif 04 51 53.7 +2.5
DPC *e* 05 02 26.6
DPC *e*SP SP 05 06 32.4 +2.8
DPC MLR MLR
comp=Z,37μm,17.6s,MS7.1
JMIC Jan Mayen 117.81 20 *e*PP PP 04 56 46.6 -4.1
JMIC *e*SKSa 05 02 27.7
JMIC *e* 05 06 46.3
JMIC *e*SS SS 05 12 58.4 -0.6
JMIC AMS AMS 05 48 30.9
comp=Z,19μm,18.6s,MS6.8
KSP Ksiaz 118.00 46 *e*PKP PKPdf 04 55 35.0 -1.8
KSP *e*PP PP 04 56 46.9 -5.5
KSP *e*SKS SKS 05 02 28.6 -2.9
KSP *e*PS PS 05 06 49.2 +16
KSP LME 05 46 51.0
comp=Z,68μm,19.9s
KSP Ksiaz 118.00 46 *e*PKIKP PKPdf 04 55 34.8 -2.0
KSP *e* 05 02 25.0
KSP *e*SP SP 05 06 35.0 +3.6
KSP *e*PPS PPS 05 07 57.0 +3.0
KSP *e*SS SS 05 13 08.0 +6.1
KSP MLR MLR
comp=Z,126μm,19.2s,MS7.6
KSP Ksiaz 118.00 46 *e*Pdif Pdif 04 51 54.5 +2.4
KSP *e*PKP PKPdf 04 55 34.8 -2.0
KSP *e*PP PP 04 56 36.0 -16
KSP *e*SKS SKS 05 02 25.0 -6.5
KSP *e*SKKS 05 03 40.0
KSP *e*SP SP 05 06 35.0 +3.6
KSP *e*PPS PPS 05 07 57.0 +3.0
KSP *e*SS SS 05 13 08.0 +6.1
KSP LR LR
comp=Z,126μm,19.2s,MS7.6
COP Copenhagen 118.07 40 *i*P Pdif 04 51 54.8 +2.5
COP *i* 04 56 43.9
COP *i* 04 59 44.2
COP *i* 05 03 54.4
COP *i* 05 06 27.9
comp=Z,21μm,18.0s
MORC Moravsky Berou 118.25 47 *e*PKP PKPdf 04 55 35.1 -2.2
VYHS Vyhne 118.46 49 *e*PKP PKPdf 04 55 35.6 -2.2
VYHS *e* 04 55 54.9
VYHS *e* 04 56 02.6
VYHS *e* 04 59 21.7
VYHS *e*SP SP 05 06 31.4 -4.1
VYHS Vyhne 118.46 49 *e*PKIKP PKPdf 04 55 35.6 -2.2
VYHS *e* 04 59 21.7
VYHS *e* 05 06 31.4
KONO Kongsberg 118.48 35 *e*PP PP 04 56 52.0 -3.6
KONO *e*SKSa 05 02 22.8
KONO *i* 05 06 45.7
KONO *e*SS SS 05 13 16.9 +9.0
KONO AMS AMS 05 44 22.7
comp=Z,35μm,22.0s,MS6.9
KONO Kongsberg 118.48 35 *c i*PKIKP PKPdf 04 55 28.9 -8.6
KONO Kongsberg 118.48 35 ‖ *e*PKP PKPdf 04 55 28.9 -8.6
VTS Vitosha 118.62 57 P PKPdf 04 55 37.5 -0.7
OKC Ostrava-Krasne 118.63 48 *e*PP PP 04 56 52.2 -4.7
OKC *ex* x 04 59 21.1
OKC *e*SKS SKS 05 02 27.5 -6.3
OKC *e*SP SP 05 06 47.3 +10
OKC L 05 47 40.0
comp=Z,28nm,18.2s
RAC Raciborz 118.77 47 *e*Pdiff Pdif 04 51 56.1 +0.6
RAC *e*PKP(df) 04 55 28.6
RAC *e*PP PP 04 56 52.4 -5.4
RAC *e*SP SP 05 06 40.8 +2.5
RAC *e*SS SS 05 13 12.5 +0.6
RAC LMN 05 46 38.5
comp=Z,47μm,21.0s
RAC MLR MLR 05 46 48.1
comp=Z,40μm,20.0s,MS7.0
RAC LME 05 46 55.3
comp=Z,50nm,19.4s
RAC Raciborz 118.77 47 *e*PKIKP PKPdf 04 55 28.6 -10
RAC *e* 04 56 52.4
RAC *e*SP SP 05 06 40.8 +2.5
RAC *e*SS SS 05 13 12.5 +0.6
RAC MLR MLR
comp=N,47μm,21.0s,MS7.3
RAC MLR MLR
comp=Z,40μm,20.0s,MS7.0
RAC MLR MLR
comp=E,50μm,19.4s,MS7.3
BSD Bornholm Skovb 119.10 41 *i*P Pdif 04 51 57.5 +0.7
BSD *i* 04 55 23.1
BSD *i* 04 56 50.4
BSD *i*S PS 05 06 48.8 +5.6
BSD *i* 05 08 06.6
comp=Z,37μm,18.0s
DAG Danmarks Havn 119.26 12 *i*P PKPdf 04 55 35.0 -3.7
comp=Z,10μm,21.0s
DAG Danmarks Havn 119.26 12 *e*P PKPdf 04 55 35.0 -3.7
DAG LR LR
comp=Z,10μm,21.0s,MS6.4
NIE Niedzica 119.73 49 *e*PKP PKPdf 04 55 38.3 -1.8
OJC Ojcow 119.76 48 *e*Pdiff Pdif 04 52 00.4 +0.6
OJC *e*PKP(df) 04 55 38.1
OJC *e*PP PP 04 56 58.5 -5.5
OJC *e*SKS(ac) 05 02 30.9
OJC *e*SKKS 05 03 59.3
OJC *e*PS PS 05 07 07.8 +19
OJC *e* 05 13 34.5
OJC MLR MLR 05 48 27.8
comp=Z,46μm,19.0s,MS7.1
OJC Ojcow 119.76 48 ⇑ *e*PKIKP PKPdf 04 55 38.1 -2.1
OJC *e* 04 56 58.5
OJC *e* 05 02 30.9
OJC *e* 05 13 34.5
OJC MLR MLR
comp=Z,46μm,19.0s,MS7.1
NB2 NORSAR Subarra 119.81 34 PKPdf PKPdf 04 55 37.9 -2.1
comp=Z,22nm,1.4s,baz=248,slow=1.9
NB2 NORSAR Subarra 119.81 34 PKPd 04 55 37.9
baz=248,slow=1.9
NOA NORSAR Array B 119.81 34 PKP PKPdf 04 55 37.3 -2.7
comp=Z,3.2nm,0.7s,baz=249,slow=2.2,SNR=13
NOA PKKPbc 05 05 57.9
comp=Z,1.6nm,0.8s,baz=67,slow=4.5,SNR=5.2
IMA Indian Mountai 120.18 332 *e*P PKPdf 04 55 39.1 -1.5
CRVS Cervenica-Dubn 120.20 50 *e*PKP PKPdf 04 55 39.3 -1.8
CRVS *e* 05 26 12.9
DNZL Cakiroluk 120.48 64 *i*P PKPdf 04 55 40.3 -1.6
HFS Hagfors 120.56 35 PKP PKPdf 04 55 37.3 -4.3
comp=Z,6.5nm,0.6s,baz=180,slow=3.0,SNR=16
HFS Hagfors 120.56 35 PKP PKPdf 04 55 37.3 -4.3

UZH Uzhgorod 120.60 50 *e*P Pdif 04 52 01.0 -2.6
BDAS Al Bad' **120.71 76** P PKPdf 04 55 41.4 -1.2
KWP Kalwaria 121.25 49 *e*PKP PKPdf 04 55 42.0 -1.2
KWP *e*PP PP 04 57 11.0 -3.2
KWP *e*SKS SKS 05 02 41.2 -1.5
KWP MLR MLR 05 49 26.6
comp=Z,49μm,19.5s,MS7.2
WAR Warsaw 121.27 46 *e*PKIKP PKPdf 04 55 46.3 +3.2
WAR *e* 04 57 11.4
WAR *e* 05 02 39.8
WAR *e*PS PS 05 07 01.7 -1.1
WAR MLR MLR
comp=E,35μm,20.4s,MS7.1
WAR MLR MLR
comp=Z,36μm,21.1s,MS7.0
WAR MLR MLR
comp=N,23μm,20.2s,MS7.1
BLJS Baljurashi 121.44 88 P PKPdf 04 55 44.4 +0.2
NSS Namsos 121.52 30 *e*PP PP 04 57 11.7 -4.1
NSS *e*SKSa 05 02 35.0
NSS *e* 05 07 16.8
NSS *e*SS SS 05 13 48.1 +0.8
NSS AMS AMS 05 57 04.0
comp=Z,23μm,23.1s,MS6.8
JMQS Jabal Moqyreh 121.53 76 P PKPdf 04 55 43.9 -0.3
FITZ Fitzroy Crossi 121.57 201 *e*PKP PKPdf 04 55 43.3 -1.2
comp=Z,18nm,0.9s
FITZ *e* 04 57 17.7
FITZ *i* 05 02 35.3
FITZ *i* 05 04 08.8
FITZ *i* 05 06 58.8
FITZ Fitzroy Crossi 121.57 201 PKP PKPdf 04 55 42.8 -1.7
comp=Z,13nm,1.1s,baz=185,slow=5.5,SNR=6.5
ISP Isparta 121.59 64 *e*PKP PKPdf 04 55 32.7 -11
ULDT Uludag 121.60 61 *i*P PKPdf 04 55 41.0 -3.0
MLR Muntele Rosu 121.63 55 PKP PKPdf 04 55 41.5 -2.5
comp=Z,16nm,1.0s,baz=34,slow=1.7,SNR=14
MLR PP PP 04 57 14.4 -2.7
comp=Z,14nm,1.1s,baz=349,slow=5.2,SNR=1.9
MLR Muntele Rosu 121.63 55 ⇑ *i*P PKPdf 04 55 41.9 -2.1
MLR Muntele Rosu 121.63 55 ‖ *i*P PKPdf 04 55 41.5 -2.5
ISR Istrita 121.88 55 ⇑ *i*P PKPdf 04 55 39.7 -4.8
ISR Istrita 121.88 55 ‖ *i*P PKPdf 04 55 39.6 -4.9
LVV L'vov 122.11 49 *e*P Pdif 04 52 07.0 -3.2
LVV *e*PPP PPP 04 59 51.0 -5.3
LVV *e* 05 02 37.0
LVV *e*PS PS 05 07 08.0 -2.5
VRI Vrincioaia 122.29 54 ⇑ *i*P PKPdf 04 55 43.3 -1.9
VRI Vrincioaia 122.29 54 ⇑ *i*P PKPdf 04 55 43.3 -1.9
CSS Prodhromos 122.39 69 *e*PKP PKPdf 04 55 44.5 -1.1
HARR Harsova 122.61 56 ⇑ *i*P PKPdf 04 55 44.2 -1.6
KBRS Khaybar 122.65 81 P PKPdf 04 55 48.1 -1.2
TATS Tathlith 122.74 90 P PKPdf 04 55 47.0 +0.4
HENT Hendek 123.10 61 *i*P PKPdf 04 55 42.5 -4.4
SUW Suwalki 123.12 44 *e*PKP PKPdf 04 55 43.6 -3.0
SUW *e*PKIKP PKPdf 04 55 45.3 -1.3
SUW *ep*PKP 04 55 53.0
SUW *e*PP PP 04 57 22.7 -4.5
SUW *e*SKS SKS 05 02 43.9 -4.7
SUW *e*PS PS 05 07 21.8 +2.4
SUW MLR MLR 05 48 06.2
comp=Z,61μm,21.0s,MS7.2
SUW Suwalki 123.12 44 *i*PKIKP PKPdf 04 55 45.3 -1.3
SUW *e* 04 55 53.0
SUW *e* 04 57 22.7
SUW *e* 05 02 43.9
SUW *e*PS PS 05 07 21.8 +2.4
SUW MLR MLR
comp=Z,61μm,21.0s,MS7.2
SUW MLR MLR
comp=N,35μm,20.2s,MS7.2
SUW MLR MLR
comp=E,43μm,19.5s,MS7.2
KMPD K-Podol'skiy 123.13 51 P PKPdf 04 55 44.0 -2.7
KIS Kishinev 124.05 54 *e*P Pdif 04 52 23.0 +4.2
KIS *i* 04 55 46.0
KIS *i* 04 56 02.0
KIS *i* 04 57 28.0
KIS *i*PPP PPP 05 00 08.0 -3.9
KIS *i* 05 02 48.0
KIS *i*PS PS 05 07 28.0 +1.0
KIS pmax pmax
comp=E,2μm,17.0s
KIS pmax pmax
comp=Z,6μm,17.0s
KIS pmax pmax
comp=Z,6μm,18.0s
KIS MLR MLR
comp=Z,37μm,18.0s,MS7.1
KIS MLR MLR
comp=E,24μm,19.0s
KIS MLR MLR
comp=Z,42μm,19.0s
KAKA Kakadu 124.23 211 *e*PKP PKPdf 04 55 50.3 +0.6
comp=Z,19nm,0.8s
BRTR Keskin Array B 124.59 64 PKP PKPdf 04 55 45.4 -4.5
comp=Z,12nm,0.8s,baz=197,slow=3.1,SNR=30
ELDT Eldivan 124.74 63 *i*P PKPdf 04 55 48.8 -1.4
AVNT Avonos 125.09 65 *i*P PKPdf 04 55 46.8 -4.1
BALT Daday 125.11 61 *i*P PKPdf 04 55 47.5 -3.3
COBT Iskenderun 125.20 68 *i*P PKPdf 04 55 49.6 -1.5
HILS Ha'il 125.40 81 P PKPdf 04 55 50.8 -0.9
TNA Tin City 125.52 329 *e*PKP PKPdf 04 55 50.3 -0.6
KIEV Kiev 125.53 50 PKIKP PKPdf 04 55 48.0 -3.3
AKASG Malin Array Be 125.54 50 PKhKP 04 55 45.6
comp=Z,5.0nm,0.6s,baz=264,slow=3.0,SNR=27
AKASG PP PP 04 57 36.8 -6.4
comp=Z,11nm,1.1s,baz=260,slow=6.5,SNR=7.6
CTKT Corum 125.75 63 *i*P PKPdf 04 55 50.8 -1.2
ARSS Ar Rass 125.81 83 P PKPdf 04 55 52.4 -0.2
MNK Minsk 125.87 45 *e*PKIKP PKPdf 04 55 47.0 -4.8
MNK *e* 04 57 38.0
KBS Kingsbay 125.91 14 *e*PKPd 04 55 45.0
KBS *e*PP PP 04 57 41.4 -3.7
KBS *i* 05 07 36.2
KBS *e*SS SS 05 14 44.1 +2.0
KBS AMS AMS 05 48 34.1
comp=Z,15μm,22.0s,MS6.6
BOYT Boyabat 126.12 62 *i*P PKPdf 04 55 51.9 -0.8
VSU Vasula 126.35 40 P PKPdf 04 55 51.3 -1.3
MZLS Mizel 126.45 86 P PKPdf 04 55 53.4 -0.3
GZT Gaziantep 126.50 68 *i*P PKPdf 04 55 49.8 -3.7
SPITS Spitsbergen Ar 126.63 15 PKP PKPdf 04 55 51.7 -1.0
comp=Z,12nm,0.8s,baz=90,slow=6.0,SNR=9.8
FINES FINESS Array B 126.73 36 PKP PKPdf 04 55 51.0 -2.2
comp=Z,5.8nm,0.8s,baz=184,slow=1.1,SNR=15
SIM Simferopol' 126.81 58 *e*P Pdif 04 52 45.0 +14
SIM *i* 04 55 52.0
SIM *e* 04 57 47.0
SIM *e*PPP PPP 05 00 32.0 -3.1
SIM *e* 05 02 54.0
SIM *e*PS PS 05 07 53.0 +1.1
SIM *e*SS SS 05 14 50.0 -4.6
SIM pmax pmax
comp=Z,6μm,17.0s
KAF Kangasniemi 126.99 35 *e*pkp PKPdf 04 55 51.5 -2.2
baz=257,slow=1.4
ARCES ARCESS Array B 127.92 26 PKP PKPdf 04 55 53.4 -2.0
comp=Z,15nm,1.1s,baz=275,slow=1.6,SNR=19
ARCES ARCESS Array B 127.92 26 PKP PKPdf 04 55 53.4 -2.0
ELZG Elazig 127.97 67 *i*P PKPdf 04 55 53.9 -2.5
PUL Pulkovo 128.44 39 *e*P Pdif 04 52 39.2 +1.5
PUL *e* 04 55 52.7
PUL *i* 04 58 00.6
PUL *i* 05 02 57.2
PUL pmax pmax
comp=Z,500nm,0.5s
PUL pmax pmax
comp=N,60nm,0.7s
PUL pmax pmax
comp=Z,30nm,0.7s
PUL pmax pmax
comp=E,100nm,0.8s
PUL Pulkovo 128.44 39 *e*PKP PKPdf 04 55 47.3 -9.4
KEV Kevo 128.47 26 *e*pkp PKPdf 04 55 45.3 -11
ANN Anapa 129.00 59 *e*PKIKP PKPdf 04 55 54.5 -3.7
ANN *e* 05 02 56.5
ANN *e*SP Sx 05 09 52.5
JOF Joensuu 129.41 35 *e*pkp PKPdf 04 55 55.4 -3.0
BEST Besiri 129.42 69 *i*P PKPdf 04 55 57.4 -1.8
ERZM Erzurum 130.20 66 *i*P PKPdf 04 55 29.9 -31
HASS Wahat al Ahsa' 130.57 87 P PKPdf 04 56 00.7 -1.0
APA Apatity 130.66 29 ‖ *i*PKIKP PKPdf 04 55 59.0 -1.7

APA *i* 04 58 13.0
APA *i* 05 03 11.0
APA pmax pmax
comp=Z,43nm,1.2s
APA pmax pmax
comp=Z,2μm,14.0s
OBN Obninsk 130.93 46 *d i*P Pdif 04 53 00.1 +11
OBN *i* 04 56 00.5
OBN *i* 04 58 11.7
OBN *e* 05 03 05.6
OBN *i*PS PS 05 08 17.9 -8.7
OBN *i* 05 10 10.3
OBN *i*SS tx 05 16 16.2
OBN pmax pmax
comp=Z,500nm,16.3s
OBN pmax pmax
comp=Z,75nm,1.6s
OBN pmax pmax
comp=Z,1μm,16.3s
OBN MLR MLR
comp=Z,40μm,19.0s,MS7.1
OBN Obninsk 130.93 46 ⇑ *e*PKP PKPdf 04 55 53.3 -8.2
OBN *e*PKP PKPdf 04 56 01.1 -0.4
OBN LR LR
comp=Z,41μm,19.0s,MS7.2
LVZ Lovozero 131.15 29 *i*P Pdif 04 52 52.6 +3.2
LVZ *e* 04 56 01.3
LVZ *i* 04 58 17.3
LVZ *e*PS PS 05 08 30.5 +2.4
LVZ *i*SS SS 05 15 37.8 -9.4
LVZ *e*SSS SSS 05 20 37.0 -3.4
LVZ pmax pmax
comp=Z,40nm,1.0s
LVZ pmax pmax
comp=N,7.0nm,1.1s
LVZ pmax pmax
comp=E,10.0nm,1.5s
LVZ pmax pmax
comp=Z,570nm,3.3s
LVZ pmax pmax
comp=N,210nm,3.2s
LVZ pmax pmax
comp=E,310nm,4.0s
LVZ Lovozero 131.15 29 ‖ *e*PKP PKPdf 04 55 53.0 -8.6
MOS Moscow 131.62 45 *e*PKIKP PKPdf 04 56 01.1 -1.7
MOS *e*PPP PPP 05 01 20.2 +7.0
MOS *i*PPS PPS 05 10 12.6 +0.1
MOS pmax pmax
comp=Z,140nm,1.4s
VOR Voronezh 131.87 50 PKIKP PKPdf 04 56 00.0 -3.4
VOR *e* 04 58 19.0
VOR pmax pmax
comp=Z,270nm,2.2s
KIV Kislovodsk 132.37 61 *c i*P Pdif 04 53 01.4 +6.0
KIV *i* 04 56 02.9
KIV *i*PPP PPP 05 01 13.6 -6.3
KIV *i*PS PS 05 08 40.1 +1.2
KIV *i*PPS PPS 05 10 26.7 +6.4
KIV *i*SS SS 05 16 21.7 +18
KIV *i*SSS SSS 05 20 53.4 -5.2
KIV pmax pmax
comp=Z,300nm,14.7s
KIV pmax pmax
comp=Z,40nm,1.1s
KIV pmax pmax
comp=Z,1μm,18.6s
KIV Kislovodsk 132.37 61 ⇑ *i*PKP PKPdf 04 55 55.7 -8.9
KIV *e*PKP PKPdf 04 56 03.5 -1.1
PYA Pyatigorsk 132.65 61 *i*PKIKP PKPdf 04 56 02.0 -3.1
PYA *i* 04 58 22.0
PYA *i* 05 03 09.0
PYA *e*PS PS 05 08 40.0 -1.4
PYA *i*PPS PPS 05 10 26.0 +2.9
PYA *i*SSS SSS 05 20 57.0 -5.8
PYA pmax pmax
comp=E,3μm,7.0s
PYA pmax pmax
comp=Z,8μm,7.0s
PYA pmax pmax
comp=Z,8μm,17.0s
GNI Garni 132.73 67 *i*PKIKP PKPdf 04 55 54.9 -11
GNI *e* 04 56 04.8
GNI Garni 132.73 67 *i*PKPr 04 55 54.9
GNI *e*PKP PKPdf 04 56 04.8 -0.7
ZEI Tsey 132.89 63 *i*P Pdif 04 53 10.0 +12
ZEI *i* 04 56 03.0
ZEI *i* 04 58 25.0
ZEI *i* 05 03 08.0
ZEI *i*PS PS 05 08 38.0 -5.7
ZEI *i*PPS PPS 05 10 32.0 +6.4
ZEI pmax pmax
comp=Z,200nm,14.0s
ZEI pmax pmax
comp=Z,1μm,6.0s
ZEI pmax pmax
comp=Z,4μm,8.0s
ZEI MLR MLR
comp=Z,42μm,21.0s,MS7.1
GOF Gofitskoye 132.90 60 ⇑ *i*PKIKP PKPdf 04 56 05.0 -0.6
GOF *i* 04 58 26.0
GOF *e* 05 08 35.0
GOF pmax pmax
comp=Z,60nm,1.5s
GOF pmax pmax
comp=Z,2μm,6.0s
GOF pmax pmax
comp=Z,150nm,1.5s
GOF pmax pmax
comp=N,2μm,7.0s
GOF pmax pmax
comp=E,5μm,7.0s
GOF pmax pmax
comp=Z,10μm,7.0s
MAK Makhachkala 135.50 64 *e*PKIKP PKPdf 04 56 07.0 -3.4
MAK *i* 04 58 42.0
MAK *i*PPP PPP 05 01 44.0 -1.6
MAK *e* 05 03 12.0
MAK pmax pmax
comp=E,800nm,8.0s
MAK pmax pmax
comp=Z,4μm,8.0s
MAK pmax pmax
comp=N,700nm,10.0s
MAK pmax pmax
comp=E,1μm,10.0s
MAK pmax pmax
comp=Z,2μm,10.0s
MAK pmax pmax
comp=Z,9μm,8.0s
MAK pmax pmax
comp=N,1μm,10.0s
MAK pmax pmax
comp=E,4μm,10.0s
BILL Bilibino 135.72 332 ⇑ *i*P Pdif 04 53 18.8 +9.3
BILL *i* 04 58 53.6
BILL *i*PPP PPP 05 01 46.6 -0.1
BILL *e*PS PS 05 09 13.6 +6.9
BILL pmax pmax
comp=Z,100nm,8.2s
BILL MLR MLR
comp=Z,10μm,19.0s,MS6.6
BILL Bilibino 135.72 332 ‖ *e*PKP PKPdf 04 56 01.2 -9.0
BILL *e*PKP PKPdf 04 56 05.0 -5.2
TRD Trivandrum 140.42 130 *i*PKP PKPdf 04 56 11.6 -8.6
PET Petropavlovsk 141.31 310 *e*PKHKP 04 56 08.5
PET *e* 04 59 22.9
PET *e*SS SS 05 17 46.8 -2.1
PET pmax pmax
comp=Z,2μm,11.0s
PET pmax pmax
comp=Z,2μm,10.8s
PET pmax pmax
comp=Z,2μm,14.0s
PET pmax pmax
comp=Z,2μm,16.1s
PET pmax pmax
comp=Z,3μm,18.3s
PET pmax pmax
comp=Z,3μm,13.4s
KOD Kodaikanal 142.08 129 *e*PKP PKPdf 04 56 17.5 -5.6
VAN Vannovskaya 142.09 74 *e*PKHKP 04 56 11.4
SEY Seymchan 142.69 327 *i*PKHKP 04 56 14.6
SEY *e* 05 02 42.7
SEY *e* 05 18 06.4

GSI	**Gunungsitoli**	**142.74**	**165**	*e*Pn		PKPdf	04 56 26.0	+1.8	
SKR	**Severo-Kuril's**	**142.94**	**307**	*i* PKHKP			04 56 14.0		
SKR				*e*SS	SS		05 18 08.0	+0.4	
SKR				*e*SSS	SSS		05 23 36.0	+6.1	
SKR				pmax	pmax				
	comp=Z,180nm,1.0s								
SKR				pmax	pmax				
	comp=Z,4μm,16.0s								
SKR				MLR	MLR				
	comp=N,4μm,20.0s,MS6.4								
SKR				MLR	MLR				
	comp=E,6μm,20.0s,MS6.4								
SKR				MLR	MLR				
	comp=Z,9μm,20.0s,MS6.5								
GOA	**Goa**	**143.54**	**119**	*e*PKP		PKPdf	04 56 20.1	-5.3	
TIXI	**Tiksi**	**144.21**	**348**	*e*PKHKP			04 56 18.0		
TIXI				*e*			04 59 34.5		
TIXI				pmax	pmax				
	comp=Z,2μm,1.1s								
TIXI				MLR	MLR				
	comp=Z,107μm,19.0s,MS7.6								
TIXI	**Tiksi**	**144.21**	**348**	*e*PKP		PKPdf	04 56 18.1	-6.9	
KGM	**Kluang**	**144.26**	**174** ⇑	*e*P		PKPbc	04 56 23.0	+0.5	
	comp=Z,104nm,0.8s								
PSI	**Prapat**	**144.36**	**167** ⇓	*e*Pn		PKPbc	04 56 21.8	-1.0	
PSI	**Prapat**	**144.36**	**167**	*e*Sn			04 56 33.0		
SVE	**Sverdlovsk**	**144.36**	**43** ⇑	*i* PKIKP		PKPdf	04 56 21.5	-4.2	
SVE				*i*			04 59 36.0		
SVE				*e*PPP	PPP		05 02 54.0	-1.0	
SVE				pmax	pmax				
	comp=Z,2μm,3.8s								
SVE				pmax	pmax				
	comp=Z,11μm,16.0s								
SVE				pmax	pmax				
	comp=N,600nm,15.0s								
SVE				pmax	pmax				
	comp=E,3μm,15.0s								
MA2	**Magadan**	**144.54**	**322**	*c i* PKHKP			04 56 19.7		
MA2				pmax	pmax				
	comp=Z,88nm,1.0s								
MA2				MLR	MLR				
	comp=Z,7μm,21.0s,MS6.4								
MA2	**Magadan**	**144.54**	**322**	*e*PKP		PKPdf	04 56 20.8	-5.1	
AB31	**Akbulak array**	**144.83**	**56**	*i* PKIKP		PKPdf	04 56 22.2	-4.6	
AB31				pmax	pmax				
	comp=Z,729nm,1.4s								
DAV	**Davao City (W)**	**144.88**	**214**	*e*P		PKPbc	04 56 42.0	+18	
KAD	**Karad**	**145.02**	**117**	*e*PKP		PKPdf	04 56 23.1	-5.0	
KAD				*e*			04 56 30.4		
	comp=Z,321nm,1.5s								
BOM	**Bombay**	**145.07**	**113** ⇑	*i* PKP		PKPdf	04 56 24.8	-3.3	
BOM				AMb		AMB	04 56 34.1		
	comp=Z,112nm,1.1s								
TSI	**Tuntungan**	**145.08**	**166** ⇑	*e*Pn		PKPbc	04 56 23.5	-1.3	
KLM	**Kuala Lumpur**	**145.17**	**171**	*e*P		PKPbc	04 56 24.0	-1.0	
BHUJ	**Bhuj**	**145.28**	**104**	*e*PKP		PKPdf	04 56 24.7	-3.6	
BHUJ				*e*			04 56 32.0		
	comp=Z,395nm,0.9s								
BHUJ				*e*			05 21 13.9		
	comp=Z,3μm,19.3s								
POO	**Poona**	**145.59**	**115**	*e*PKP		PKPdf	04 56 27.2	-1.8	
POO				*e*			05 13 26.9		
	comp=Z,4μm,19.7s								
MDRS	**Chennai**	**145.98**	**129**	*i* PKP		PKPdf	04 56 26.0	-3.8	
CUD	**Cuddapah**	**146.12**	**126** ⇓	*e*P		PKPbc	04 56 27.2	0.0	
CUD				*e*			04 58 01.3		
CUD				*e*			04 58 42.0		
CUD				*e*			04 59 51.8		
CUD				*e*			05 02 29.0		
CUD				*e*			05 03 14.2		
CUD				*e*			05 10 02.5		
CUD				*e*			05 16 21.1		
CUD				*e*			05 18 37.2		
CUD				*e*			05 20 16.6		
CUD				*e*			05 24 10.1		
CUD				*e*			05 26 06.3		
CUD				*e*			05 28 06.8		
QUE	**Quetta**	**146.47**	**91**	*e*P		PKPdf	04 56 30.5	+0.3	
QUE				*e*S		PP	05 00 00.0	+5.2	
IPM	**Ipoh**	**146.54**	**170** ⇓	*e*P		PKPbc	04 56 29.2	+0.9	
KKM	**Kota Kinabalu**	**147.19**	**198** ⇑	*e*P		PKPdf	04 56 30.1	-1.8	
LATR	**Latur**	**147.44**	**118**	*e*PKP		PKPdf	04 56 33.9	+1.8	
TBP	**Tagbilaran**	**147.97**	**214**	*e*P		PKPdf	04 56 34.9	+1.8	
HYB	**Hyderabad**	**148.12**	**122** ⇑	*i* PKP		PKPdf	04 56 32.5	-0.7	
	comp=Z,190nm,1.0s								
HYB				*e*			04 56 34.5		
HYB				*e*PP	PP		05 00 00.0	-4.9	
HYB				*e*PPP	PPP		05 03 16.0	-9.1	
HYB				*e*SKS	SKS		05 03 30.0	-11	
HYB				*e*			05 10 36.0		
HYB				*e*PPS	PPS		05 12 50.0	+1.7	
HYB				*e*SS	SS		05 19 08.0	+0.5	
HYB				LR	LR		06 02 20.0		
	comp=Z,56nm,20.0s								
HYB	**Hyderabad**	**148.12**	**122** ⇑	*e*PKP		PKPdf	04 56 32.5	-0.7	
HYB				*e*			04 56 34.5		
AKL	**Akola**	**149.26**	**115**	*e*PKP		PKPdf	04 56 34.3	-0.7	
AKL				AMb		AMB	04 56 43.1		
	comp=Z,149nm,1.2s								
AKL				*i*			04 57 12.0		
KGD	**Kothagudem**	**149.62**	**124**	*e*PKPd			04 56 33.1		
KGD				*e*			04 56 52.2		
KGD				*e*			04 57 44.0		
KGD				*e*			05 10 24.4		
KGD				*e*SS	SS		05 19 15.7	-8.4	
KGD				*e*			05 25 10.7		
KGD				*e*			05 39 43.3		
YUK	**Yuzh-Kuril'sk**	**149.89**	**294**	*e*PKIKP		PKPdf	04 56 30.0	-5.3	
YUK				*e*			05 00 16.0		
YUK				pmax	pmax				
	comp=Z,6μm,16.5s								
ZRNK	**Zerenda**	**149.98**	**48**	*e*PKHKP			04 56 32.2		
PPR	**Puerto Princes**	**150.02**	**205**	*e*P		PKPdf	04 56 40.0	+3.6	
KALP	**Kalibo**	**150.40**	**213** ⇑	*e*P		PKPdf	04 56 43.5	+6.6	
BRVK	**Borovoye**	**150.69**	**47**	*e*PKIKP		PKPdf	04 56 35.5	-0.7	
BVA0	**Borovoye Array**	**150.76**	**47**	PKIKP		PKPdf	04 56 34.0	-2.3	
BVAR	**Borovoye Array**	**150.76**	**47**	PKP		PKPdf	04 56 33.3	-3.0	
	comp=Z,8.7nm,1.0s,baz=273,slow=1.8,SNR=0.5								
BVAR				PKPbc		PKPdf	04 56 40.0	+3.7	
	comp=Z,45nm,0.7s,baz=295,slow=2.5,SNR=3.7								
AJM	**Ajmer**	**150.83**	**103**	*e*PKP		PKPdf	04 56 33.8	-3.5	
AJM				*e*			05 21 56.1		
	comp=Z,2μm,20.0s								
BHPL	**Bhopal**	**151.13**	**112**	*e*PKP		PKPdf	04 56 34.4	-3.4	
BHPL				*e*			04 56 43.4		
	comp=Z,84nm,0.8s								
VIS	**Vishakhapatnam**	**151.44**	**128**	*e*PKP		PKPdf	04 56 36.7	-1.6	
VIS				*e*			05 26 16.3		
	comp=Z,2μm,19.0s								
YAK	**Yakutsk**	**151.86**	**337**	*e*PKIKP		PKPdf	04 56 34.1	-3.6	
YAK				*e*			04 56 40.3		
YSS	**Yuzh-Sakhalins**	**151.97**	**301** ⇑	*i* PKIKP		PKPdf	04 56 33.0	-5.3	
YSS				*e*			04 56 43.8		
YSS				*e*			04 56 51.0		
YSS				*e*			05 00 29.0		
YSS				PPS	PPS		05 13 30.0	+8.8	
YSS				*e*SS	SS		05 19 48.0	-1.1	
YSS				pmax	pmax				
	comp=Z,70nm,1.0s								
YSS	**Yuzh-Sakhalins**	**151.97**	**301**	*e*PKPdf		PKPdf	04 56 40.9	+2.6	
YSS				*e*PKPbc		PKPdf	04 56 44.3	+6.0	
YSS				*e*PKPab		PKPab	04 56 53.6	+0.9	
KKAR	**Karatay Array**	**152.19**	**68**	*i* PKIKP		PKPdf	04 56 37.7	-1.1	
KKAR				pmax	pmax				
	comp=Z,81nm,1.1s								
ASAJ	**Asahikawa**	**152.24**	**295**	PKPbc		PKPdf	04 56 42.1	+3.3	
	comp=Z,28nm,0.8s,baz=257,slow=11,SNR=8.1								
BLSP	**Bilaspur**	**153.79**	**120**	*e*PKP		PKPdf	04 56 38.6	-3.0	
NDI	**New Delhi**	**153.90**	**102**	*e*PKP		PKPdf	04 56 38.6	-2.9	
NNT	**Nongplab**	**154.15**	**165**	P		PKPdf	04 56 42.5	+0.2	
AML	**Almayashu**	**154.52**	**70**	P		PKPdf	04 56 40.3	-1.7	
	SNR=13								
EKS2	**Erkin-Say**	**154.59**	**69**	P		PKPdf	04 56 39.4	-2.6	
	SNR=14								
MAJO	**Matsushiro**	**154.83**	**277**	PKPdf		PKPdf	04 56 39.3	-3.3	
MAJO				PP		PP	05 00 45.9	+4.0	
MAJO				SKKSac			05 07 30.8		
MAJO				SKKPdf			05 08 43.1		
MAJO	**Matsushiro**	**154.83**	**277**	*e*PKPdf		PKPdf	04 56 41.5	-1.1	
MAJO				*e*PKPbc		PKPdf	04 56 50.8	+8.2	
MAT	**Matsushiro**	**154.83**	**277**	PKP		PKPdf	04 56 39.0	-3.6	
MAT	**Matsushiro**	**154.83**	**277**	PKP		PKPdf	04 56 49.0	+6.4	
MAT				LR		LR			
	comp=Z,14μm,20.0s,MS6.8								
USP	**Ospenovka**	**155.11**	**67**	P		PKPdf	04 56 43.1	+0.4	
	SNR=14								
AAK	**Ala-Archa**	**155.12**	**69**	P		PKPdf	04 56 40.5	-2.3	
	SNR=13								
UCH	**Uchtor**	**155.13**	**70**	P		PKPdf	04 56 41.0	-1.8	
	SNR=27								
FRU	**Bishkek**	**155.20**	**68** ⇑	*e*PKIKP		PKPdf	04 56 41.0	-1.9	
FRU				*i*			05 00 42.0		
KBK	**Karagaybulak**	**155.45**	**69**	P		PKPdf	04 56 43.0	-0.2	
	SNR=6.2								
KZA	**Kyzart**	**155.68**	**70**	P		PKPdf	04 56 44.9	+1.4	
	SNR=17								
TKM2	**Tokmak 2**	**155.92**	**68**	P		PKPdf	04 56 41.2	-2.6	
	SNR=18								
KSH	**Kashi**	**156.09**	**76**	*i* PKP		PKPdf	04 56 42.3	-1.8	
KSH				APKP			04 56 52.4		
KSH				XPKP			04 56 56.3		
KSH				PKS	PKS		05 00 14.4	+1.0	
KSH				PP	PP		05 00 50.1	+1.0	
KSH				SKS	SKS		05 03 43.7	-5.9	
KSH				SKKS			05 07 33.0		
KURK	**Kurchatov**	**156.34**	**48**	*e*PKIKP		PKPdf	04 56 41.0	-3.1	
NVS	**Novosibirsk**	**156.72**	**35**	*i* PKIKP		PKPdf	04 56 43.1	-1.4	
NVS				*i*			05 00 49.4		
NST	**Nakhon Sawan**	**157.23**	**164**	P		PKPdf	04 57 04.2	+18	
CLNS	**Chul'man**	**157.41**	**333**	*e*PKIKP		PKPdf	04 56 39.3	-6.1	
CLNS				pmax	pmax				
	comp=Z,5.0nm,0.9s								
CLNS				pmax	pmax				
	comp=N,2.0nm,0.7s								
CLNS				pmax	pmax				
	comp=E,3.0nm,1.0s								
CAL	**Calcutta**	**158.14**	**129**	*e*PKP		PKPdf	04 56 48.0	+0.6	
CAL				*e*			04 57 20.0		
CAL				*e*			04 58 19.0		
CAL				*e*			05 00 59.0		
KOLN	**Koldanda**	**158.29**	**111**	*e*P		PKPdf	04 56 46.4	-1.0	
KKTK	**Khon Kaen**	**158.36**	**170**	P		PKPdf	04 56 47.0	-0.8	
BDT	**Bhumibol Dam**	**158.46**	**160**	P		PKPdf	04 56 47.0	-0.9	
KLR	**Kul'dur**	**158.58**	**310** ⇓	*i* PKIKP		PKPdf	04 56 42.0	-5.1	
KLR				*e*			05 01 00.0		
KLR				pmax	pmax				
	comp=Z,3μm,13.0s								
JOW	**Kunigami**	**158.70**	**245**	PKP		PKPdf	04 56 45.2	-2.7	
	comp=Z,6.1nm,0.9s,baz=342,slow=19,SNR=1.6								
DANN	**Dangsing**	**158.72**	**110**	*e*P		PKPdf	04 56 48.1	+0.2	
GKN	**Gorkha**	**159.18**	**112**	*e*P		PKPdf	04 56 46.0	-2.5	
GKN	**Gorkha**	**159.18**	**112**	*e*P			04 57 24.6		
	comp=Z,118nm,0.9s								
DMN	**Daman**	**159.31**	**113**	*e*P		PKPdf	04 56 47.7	-0.9	
	comp=Z,34nm,0.9s								
DMN	**Daman**	**159.31**	**113**	*e*P			04 57 25.1		
	comp=Z,159nm,0.8s								
BOD	**Bodaibo**	**159.39**	**349**	*e*PKIKP		PKPdf	04 56 43.7	-4.0	
BOD				*e*			04 57 24.7		
BOD				*e*			05 01 02.0		
KKN	**Kakani**	**159.54**	**113**	*e*P		PKPdf	04 56 47.7	-1.2	
	comp=Z,61nm,1.1s								
KKN	**Kakani**	**159.54**	**113**	*e*P			04 57 26.3		
	comp=Z,124nm,0.7s								
CMAR	**Chiang Mai Arr**	**159.60**	**159**	PKP		PKPdf	04 56 45.9	-3.2	
	comp=Z,8.3nm,1.1s,baz=232,slow=3.3,SNR=20								
CHG	**Chiang Mai**	**159.93**	**158** ⇑	P		PKPdf	04 56 48.8	-0.7	
	comp=Z,25nm,0.7s								
CHTO	**Chiang Mai**	**159.93**	**158**	PKPdf		PKPdf	04 56 46.6	-2.9	
CHTO				PP		PP	05 01 12.8	+2.9	
CHTO				SKKSac			05 07 54.0		
MKAR	**Makanchi Array**	**159.98**	**56**	PKP		PKPdf	04 56 45.2	-3.5	
	comp=Z,24nm,1.1s,baz=322,slow=1.0,SNR=31								
MKAR				PKPab		PKPab	04 57 27.3	+0.4	
	comp=Z,42nm,0.8s,baz=286,slow=3.3,SNR=15								
MKAR				PP		PP	05 01 06.1	-3.2	
	comp=Z,10nm,0.9s,baz=315,slow=6.1,SNR=3.8								
MKAR	**Makanchi Array**	**159.98**	**56**	PKIKP		PKPdf	04 56 45.2	-3.5	
MKAR							05 01 06.1		
GUN	**Gumba**	**160.04**	**114**	*e*P		PKPdf	04 56 47.7	-1.7	
GUN	**Gumba**	**160.04**	**114**	*e*P			04 57 28.7		
	comp=Z,248nm,1.0s								
VLA	**Vladivostok**	**160.06**	**293** ⇑	*i* PKIKP		PKPdf	04 56 44.0	-4.9	
VLA				*i*			05 01 12.0		
VLA				*i*			05 03 40.0		
VLA				pmax	pmax				
	comp=Z,3μm,14.0s								
VLA				pmax	pmax				
	comp=Z,3μm,9.0s								
VLA				pmax	pmax				
	comp=N,600nm,10.0s								
VLA				pmax	pmax				
	comp=E,2μm,12.0s								
NANT	**Nan**	**160.38**	**163**	P		PKPdf	04 56 48.0	-2.0	
	comp=E,52nm,1.5s								
AGT	**Agartala**	**160.91**	**132**	*e*PKP		PKPdf	04 56 47.0	-3.4	
QIZ	**Qiongzhong**	**161.08**	**190**	PKPdf		PKPdf	04 56 49.2	-1.4	
QIZ				pPKPab			04 57 40.9		
QIZ				PP		PP	05 01 16.0	-0.6	
QIZ				SKKSac			05 08 01.7		
QIZ				SS		SS	05 21 29.8	+2.7	
QIZ	**Qiongzhong**	**161.08**	**190** ⇑	PKP		PKPdf	04 56 49.8	-0.8	
QIZ				PKP2		PKPab	04 57 35.3	+2.9	
QIZ				PKS		PKS	05 00 19.3	+0.2	
QIZ				PP		PP	05 01 15.9	-0.7	
QIZ				PPP		PPP	05 04 58.5	-4.3	
QIZ				SKKS			05 07 59.0		
QIZ				SS		SS	05 21 27.2	+0.2	
QIZ				LR		LR			
	comp=N,16μm,21.0s								
QIZ				LR		LR			
	comp=E,6μm,22.3s								
QIZ				LR		LR			
	comp=Z,20μm,21.0s								
MDJ	**Mudanjiang**	**161.43**	**299**	PKPdf		PKPdf	04 56 46.5	-3.8	
MDJ	**Mudanjiang**	**161.43**	**299**	PKP		PKPdf	04 56 45.6	-4.7	
MDJ				PP		PP	05 01 17.7	0.0	
MDJ				SS		SS	05 21 26.6	-3.6	
MDJ				LR		LR			
	comp=N,13μm,20.7s								
MDJ				LR		LR			
	comp=E,9μm,23.8s								
MDJ				LR		LR			
	comp=Z,23μm,21.7s								
SHL	**Shillong**	**162.55**	**130**	*e*PKP		PKPdf	04 56 49.2	-2.7	
SHL				*e*			04 57 39.8		
HKC	**Hong Kong**	**163.22**	**205**	⇑P		PKPdf	04 56 52.0	-0.7	
QZH	**Quanzhou**	**163.60**	**222**	⇑PKP		PKPdf	04 56 51.3	-1.7	
QZH				PP		PP	05 01 35.0	+5.3	
QZH				PPP		PPP	05 05 13.0	-8.3	
QZH				SS		SS	05 22 00.0	+6.3	
QZH				PP		PP			
	comp=Z,5μm,13.0s								
GZH	**Guangzhou**	**164.22**	**203**	PKP		PKPdf	04 56 51.8	-1.9	
GZH				LR		LR			
	comp=N,4μm,19.3s								
GZH				LR		LR			
	comp=E,2μm,20.2s								
GZH				LR		LR			
	comp=Z,11μm,19.0s								
WMQ	**Urumqi**	**164.50**	**61**	PKPdf		PKPdf	04 56 51.4	-1.9	
WMQ				PKPab		PKPab	04 57 46.1	-0.5	
WMQ				PP		PP	05 01 32.4	-1.6	
WMQ				SKKSac			05 08 22.2		
WMQ				SKKSac			05 11 58.2		
WMQ	**Urumqi**	**164.50**	**61**	PKP		PKPdf	04 56 51.8	-1.5	
WMQ				APKP			04 57 02.6		
WMQ				XPKP			04 57 06.2		
WMQ				PKS		PKS	05 00 23.5	+2.0	
WMQ				SKS		SKS	05 03 50.9	-5.9	
WMQ				SKKS			05 08 17.9		
WMQ				SS		SS	05 22 02.0	-0.5	
WMQ				PP		PP			
	comp=Z,3μm,9.9s								
WMQ				LR		LR			
	comp=N,10μm,30.2s								
WMQ				LR		LR			
	comp=E,9μm,29.0s								
WMQ				LR		LR			
	comp=Z,30μm,31.2s								
CN2	**Changchun**	**164.52**	**299**	*e*PKP		PKPdf	04 56 47.8	-5.6	
CN2				PKP2		PKPab	04 57 45.5	-1.2	
CN2				PP		PP	05 01 32.8	-1.4	
CN2				SS		SS	05 22 00.6	-2.1	
CN2				LR		LR			
	comp=Z,19μm,21.0s								
LSA	**Lhasa**	**164.84**	**118**	*e*PKPdf		PKPdf	04 56 54.4	+0.3	
TLY	**Talaya**	**165.97**	**8**	*e*PKIKP		PKPdf	04 56 52.0	-2.5	
TLY				*e*			05 01 39.7		
TLY				*e*			05 03 45.0		
TLY				pmax	pmax				
	comp=Z,213nm,1.8s								
SSE	**Sheshan**	**166.22**	**245**	PKPdf		PKPdf	04 56 50.7	-4.6	
SSE	**Sheshan**	**166.22**	**245**	PKP		PKPdf	04 56 55.1	-0.2	
SSE				SS		SS	05 22 27.3	+7.2	
SSE				LR		LR			
	comp=N,10μm,20.9s								
SSE				LR		LR			
	comp=E,14μm,20.9s								
SSE				LR		LR			
	comp=Z,18μm,21.4s								
SNY	**Shenyang**	**166.34**	**292**	⇑PKP		PKPdf	04 56 51.7	-3.4	
SNY				PP		PP	05 01 48.5	+5.2	
SNY				PP		PP			
	comp=Z,5μm,15.5s								
KMI	**Kunming**	**166.94**	**164**	*e*PKP		PKPdf	04 56 54.0	-2.0	
KMI				PKP2		PKPab	04 57 58.8	+1.0	
KMI				PP		PP	05 01 45.2	-1.6	
KMI				SKS		SKS	05 03 51.7	-7.3	
KMI				SKKS			05 08 27.3		
KMI				SS		SS	05 22 26.0	-1.5	
KMI				SSS		SSS	05 28 59.4	-0.4	
KMI				PP		PP			
	comp=Z,22μm,2.1s								
KMI				PP		PP			
	comp=Z,3μm,12.1s								
KMI				LR		LR			
	comp=N,10μm,19.3s								
KMI				LR		LR			
	comp=E,13μm,20.2s								
KMI				LR		LR			
	comp=Z,18μm,29.0s								
ZAK	**Zakamensk**	**167.21**	**10**	*e*PKIKP		PKPdf	04 56 54.5	-0.9	
ZAK				*e*			04 57 57.0		
DL2	**Dalian**	**168.13**	**280**	⇑PKP		PKPdf	04 56 51.9	-4.4	
DL2				PKP2		PKPab	04 58 10.1	+7.5	
DL2				PP		PP	05 01 57.1	+4.7	
DL2				PPP		PPP	05 06 05.7	+12	
DL2				SS		SS	05 22 44.9	+5.9	
DL2				PP		PP			
	comp=Z,2μm,10.8s								
DL2				LR		LR			
	comp=N,10μm,21.6s								
DL2				LR		LR			
	comp=Z,18μm,20.6s								
GYA	**Guiyang**	**168.69**	**180**	PKP		PKPdf	04 56 56.8	-0.2	
GYA				APKP			04 57 07.2		
GYA				PKP2		PKPab	04 58 13.0	+7.6	
GYA				PKS		PKS	05 00 27.4	+2.7	
GYA				PP		PP	05 01 56.0	+0.5	
GYA				SKKS			05 08 36.8		
GYA				SS		SS	05 22 41.8	-3.1	
GYA				PP		PP			
	comp=Z,4μm,14.2s								
GYA				LR		LR			
	comp=N,7μm,22.5s								
GYA				LR		LR			
	comp=E,5μm,27.3s								
GYA				LR		LR			
	comp=Z,12μm,24.0s								
SONM	**Songino Array**	**169.98**	**1**	PKP		PKPdf	04 56 53.4	-3.7	
	comp=Z,4.7nm,1.1s,SNR=18								
SONM				PKPab		PKPab	04 58 11.2	+0.8	
	comp=Z,5.0nm,0.9s,baz=341,slow=5.9,SNR=2.9								
WHN	**Wuhan**	**170.31**	**224** ⇑	PKP		PKPdf	04 56 56.0	-1.9	
WHN				PKP2		PKPab	04 58 16.0	+3.5	
WHN				SKKS			05 08 50.0		
TIA	**Tai'an**	**171.42**	**263**	PKP		PKPdf	04 56 55.0	-3.4	
TIA				PKP2		PKPab	04 58 23.8	+6.5	
TIA				PP		PP	05 02 12.0	+3.1	
TIA				PPP		PPP	05 06 16.0	-0.7	
TIA				SS		SS	05 23 15.0	+4.1	
TIA				LR		LR			
	comp=N,21μm,40.0s								
TIA				LR		LR			
	comp=E,20μm,38.0s								
ENH	**Enshi**	**172.11**	**199**	*e*PKPdf		PKPdf	04 56 57.4	-1.6	
BJI	**Beijing**	**172.20**	**290**	PKP		PKPdf	04 56 55.8	-2.9	
BJI				PP		PP			
	comp=Z,5μm,13.4s								
CD2	**Chengdu**	**172.74**	**160**	PKP		PKPdf	04 56 56.7	-2.5	
CD2				PKP2		PKPab	04 58 27.0	+3.8	
CD2				PP		PP	05 02 13.3	-2.3	
CD2				PPP		PPP	05 06 14.9	-11	
CD2				SKKS			05 08 56.3		
CD2				SS		SS	05 23 31.4	+7.1	
CD2				LR		LR			
	comp=E,10μm,19.6s								
CD2				LR		LR			
	comp=Z,5μm,18.5s								
GTA	**Gaotai**	**174.46**	**71**	PKP		PKPdf	04 56 56.9	-2.6	
GTA				APKP			04 57 07.5		
GTA				XPKP			04 57 11.6		
GTA				PKP2		PKPab	04 58 32.8	+2.1	
GTA				PKS		PKS	05 00 27.7	+0.9	
GTA				PP		PP	05 02 24.6	+0.6	
GTA				SKS		SKS	05 03 53.5	-8.3	
GTA				PPP		PPP	05 06 38.8	+0.9	
GTA				SKKS			05 09 07.7		
GTA				SS		SS	05 23 38.2	-2.0	
GTA				LR		LR			
	comp=N,9μm,22.8s								
GTA				LR		LR			
	comp=E,9μm,19.0s								
GTA				LR		LR			
	comp=Z,19μm,22.4s								
HHC	**Hu-ho-hao-te**	**175.09**	**310**	⇑PKP		PKPdf	04 56 56.9	-2.8	
HHC				PKP2		PKPab	04 58 38.0	+4.6	
HHC				PKS		PKS	05 00 27.0	0.0	
HHC				PP		PP	05 02 32.2	+5.1	
HHC				SKS		SKS	05 03 58.1	-3.7	
HHC				SKKS			05 09 13.8		
HHC				SS		SS	05 23 52.3	+5.9	
HHC				LR		LR			
	comp=N,11μm,22.5s								
HHC				LR		LR			
	comp=E,10μm,21.1s								
HHC				LR		LR			
	comp=

*IDC **03** 04:44:34.1±1.5,38.65S×72.20W,mb4.2/3,mb1 4.6/4, mb1mx4.3/13,ML3.7/1,MS5.1/1,Ms1 5.1/1,ms1mx4.9/22, Error ellipse: s-maj=675.0km s-min=30.8km az=60.0*

ISC 03 04:44:31.6±0.7,**40.8S**±0.1×**74.2W**±0.2,**h25**km,**n11, σ1§29/11,mb4.4/5,1C-3D,Off coast of southern Chile**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLCA	**Paso Flores**	**2.75**	**90**	Pn	**Pn**	**04 45 15.3**	**+0.1**
	3.9nm,0.3s,baz=316,slow=17,SNR=3.5						
PLCA				LR	LR	04 46 27.8	
	comp=Z,38μm,18.8s,baz=179,slow=47						
VNA3	**Neumayer Olymp**	**43.81**	**155**	*i*	**P**	**04 52 37.2**	**+0.6**
VNA1	**Neumayer--Stat**	**44.19**	**154**	*j*	**P**	**04 52 44.8**	**+5.1**
VNA2	**Neumayer--Watz**	**44.51**	**154**	*j*	**P**	**04 52 42.4**	**+0.1**
SNAA	**Sanae**	**46.02**	**155**	*j*	**P**	**04 52 53.2**	**-1.1**
TXAR	**Lajitas Array**	**74.95**	**334**	P	**P**	**04 56 09.9**	**-2.5**
	1.9nm,0.8s,mb4.1,baz=152,slow=9.7,SNR=5.0						
ANMO	**Albuquerque**	**81.03**	**334**	*eP*	**P**	**04 56 43.2**	**-2.5**
TPH	**Tonopah**	**87.82**	**327**	P	**P**	**04 57 21.6**	**+1.8**
	7.1nm,1.1s,mb4.8						
NVAR	**Mina Array Bea**	**88.57**	**327**	P	**P**	**04 57 23.7**	**+0.4**
	1.6nm,0.9s,mb4.3,baz=149,slow=5.3,SNR=3.7						
PDAR	**Pinedale Array**	**89.12**	**335**	P	**P**	**04 57 26.2**	**+0.4**
	1.4nm,0.9s,mb4.3,baz=169,slow=4.6,SNR=3.6						
HLID	**Hailey**	**91.48**	**332**	*eP*	**P**	**04 57 38.2**	**+1.4**
	3.5nm,1.2s,mb4.6						

*IDC **03** 04:52:56.6±3.0,43.27S×76.91W,mb3.9/2,mb1 4.1/3, mb1mx3.9/13,ML4.2/1,Error ellipse: s-maj=97.6km s-min=38.0km az=178.0*

*GUC **03** 04:53:18.0±0.5,37.90S×74.08W,h32km±5km,ML4.3*

*NEIC **03** 04:53:20.1±4.8,37.90S×74.00W,h30km±35km, ML4.3(GUC), Error ellipse: s-maj=33.5km s-min=10.5km az=96.0*

ISC 03 04:53:20.2±1.5,**37.94S**±0.05×**73.9W**±0.1,**h39**km±14km, **n14,σ1§34/18,mb3.6/3,3D,Near coast of central Chile**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TMCH	**Temuco**	**1.31**	**129**	*eP*	**P**	**04 53 41.7**	**-0.8**
TMCH				*i* S	**S**	**04 53 59.2**	**+0.2**
TMCH				AMP		04 54 01.6	
	comp=N,4μm,0.7s						
VLCH	**Valdivia**	**1.94**	**164**	*eP*	**P**	**04 53 52.4**	**+1.0**
VLCH				*i* S	**S**	**04 54 15.9**	**+1.2**
VLCH				AMP		04 54 41.8	
	comp=N,5μm,0.7s						
CCHI	**Chillan**	**1.99**	**48**	*eP*	**P**	**04 53 51.3**	**-0.7**
CCHI				*i* S	**S**	**04 54 17.2**	**+1.4**
CCHI				AMP		04 54 25.3	
	comp=N,4μm,0.6s						
COCH	**Cobquecura**	**2.02**	**27**	*i* P	**P**	**04 53 51.2**	**-1.2**
COCH				AMP		04 54 27.9	
	comp=E,1μm,0.7s						
OSCH	**Osorno**	**2.71**	**167**	*eP*	**P**	**04 54 01.6**	**-0.8**
OSCH				AMP		04 54 56.3	
	comp=E,4μm,0.7s						
PLCA	**Paso Flores**	**3.83**	**138**	Pn	**P**	**04 54 20.0**	**+1.8**
	comp=E,1.7nm,0.3s,baz=303,slow=11,SNR=3.4						
PLCA				Sn	**S**	**04 55 19.0**	**+16**
	comp=E,7.8nm,0.3s,baz=236,slow=21,SNR=3.7						
PLCA	**Paso Flores**	**3.83**	**138**	*e*Pn	**P**	**04 54 19.8**	**+1.5**
TRQA	**Tornquist**	**9.43**	**94**	*eP*	**P**	**04 55 34.2**	**-2.4**
LPAZ	**La Paz**	**22.16**	**15**	*eP*	**P**	**04 58 15.3**	**+1.0**
	comp=E,0.7nm,0.7s,mb3.2						
VNA3	**Neumayer Olymp**	**46.34**	**156**	*j*	**P**	**05 01 39.9**	**-3.8**
VNA2	**Neumayer--Watz**	**47.02**	**156**	*j*	**P**	**05 01 47.4**	**-1.7**
SNAA	**Sanae**	**48.56**	**156**	*j*	**P**	**05 01 59.7**	**-1.4**
TXAR	**Lajitas Array**	**72.48**	**333**	P	**P**	**05 04 47.3**	**+2.7**
	comp=E,0.2nm,0.5s,mb3.3,baz=151,slow=9.3,SNR=3.8						
DBIC	**Dimbokro**	**77.88**	**72**	P	**P**	**05 05 16.8**	**+0.9**
	comp=E,2.3nm,0.7s,mb4.2,baz=207,slow=5.9,SNR=6.4						

*IDC **03** 04:57:43.5±0.9,6.99N×126.45E,mb4.0/9,mb1 4.2/9, mb1mx4.0/20,Error ellipse: s-maj=55.8km s-min=17.2km az=79.0*

*NEIC **03** 04:57:55.0±7.2,6.93N×126.41E,h94km±69km,mb4.5/2, Error ellipse: s-maj=44.0km s-min=15.6km az=82.0*

*MAN **03** 04:58:05.3,6.77N×125.92E,h158km,mb4.6,ML3.5, MS3.4*

ISC 03 04:58:02.3±0.6,**6.60N**±0.06×**126.0E**±0.1,**h171**km±6km, **n20,σ0§91/23,mb3.9/10,1C-2D,Mindanao**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KCP	**Kidapawan**	**1.02**	**294**	*eP*	**P**	**04 58 30.1**	**+0.8**
KCP				*i* S	**S**	**04 58 50.2**	**-0.1**
GSPH	**General Santos**	**1.18**	**245**	*eP*	**P**	**04 58 31.0**	**+0.1**
GSPH				*i* S	**S**	**04 58 50.0**	**-3.0**
BIPH	**Bislig**	**1.61**	**12**	*i* P	**P**	**04 58 35.9**	**+0.9**
BIPH				*i* S	**S**	**04 58 59.3**	**-1.0**
CGP	**Cagayan de Oro**	**2.27**	**325**	*eP*	**P**	**04 58 43.3**	**+1.1**
SCPH	**Surigao**	**3.21**	**351**	*eP*	**P**	**04 58 54.3**	**+0.5**
TBP	**Tagbilaran**	**3.75**	**325**	*eP*	**P**	**04 59 00.5**	**-0.1**
KAKA	**Kakadu**	**20.19**	**162**	*eP*	**P**	**05 02 25.8**	**+0.3**
	11nm,0.6s						
FITZ	**Fitzroy Crossi**	**24.54**	**181**	P	**P**	**05 03 08.1**	**+0.3**
	4.3nm,0.9s,mb4.0,baz=20,slow=12,SNR=4.4						
WRAB	**Tennant Creek**	**27.61**	**163**	*eP*	**P**	**05 03 35.0**	**-1.0**
	14nm,0.8s,mb4.8						
WRA	**Warramunga Arr**	**27.61**	**163**	P	**P**	**05 03 35.4**	**-0.6**
	0.3nm,0.4s,mb3.4,baz=342,slow=9.9,SNR=4.4						
KS15	**Wonju Array Si**	**30.75**	**3**	P	**P**	**05 03 56.8**	**-6.9**
ASAR	**Alice Springs**	**31.05**	**166**	P	**P**	**05 04 06.4**	**0.0**
	0.5nm,0.3s,mb3.6,baz=341,slow=7.2,SNR=7.2						
NWAO	**Narrogin (SRO)**	**40.18**	**191**	P	**P**	**05 05 24.1**	**+0.6**
	4.4nm,0.4s,mb4.4,baz=14,slow=8.5,SNR=6.7						
NWAO	**Narrogin (SRO)**	**40.18**	**191**	*eP*	**P**	**05 05 24.1**	**+0.6**
STKA	**Stephens Creek**	**41.04**	**160**	P	**P**	**05 05 31.8**	**+1.3**
	0.8nm,0.4s,mb3.8,baz=346,slow=10,SNR=4.2						
MKAR	**Makanchi Array**	**54.82**	**324**	P	**P**	**05 07 16.4**	**-0.5**
	1.0nm,0.6s,mb3.8,baz=117,slow=8.1,SNR=7.1						
ILAR	**Eielson Array**	**82.83**	**26**	P	**P**	**05 10 06.0**	**-2.5**
	0.5nm,0.7s,mb3.4,baz=214,slow=3.3,SNR=2.2						
ARCES	**ARCESS Array B**	**87.53**	**340**	P	**P**	**05 10 32.1**	**+0.6**
	2.5nm,0.9s,mb4.1,baz=74,slow=5.2,SNR=6.9						
FINES	**FINESS Array B**	**88.99**	**332**	P	**P**	**05 10 38.2**	**-0.3**
	1.5nm,0.9s,mb3.9,baz=34,slow=6.9,SNR=3.9						
FINES	**FINESS Array B**	**88.99**	**332**	P	**P**	**05 10 38.2**	**-0.3**

*IDC **03** 04:59:53.2±0.9,37.73S×73.49W,mb4.4/9,ML4.4/1,Error ellipse: s-maj=29.4km s-min=14.9km az=61.0*

*NEIC **03** 04:59:56.3±0.4,37.66S×73.48W,h20km,mb4.6/6,Error ellipse: s-maj=12.8km s-min=7.7km az=70.0*

ISC 03 04:59:56.0±4.1,**37.69S**±0.07×**73.4W**±0.2,**h29**km±29km, **n40,σ1§04/39,mb4.7/18,2C-1D,Near coast of central Chile**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLCA	**Paso Flores**	**3.77**	**145**	Pn	**Pn**	**05 00 53.5**	**-0.3**
PLCA				Pg	**Pn**	**05 01 03.1**	**+9.3**
	13nm,0.3s,baz=298,slow=14,SNR=5.2						
PLCA				Lg		05 01 52.7	
	39nm,0.3s,baz=48,slow=23,SNR=6.7						
PLCA	**Paso Flores**	**3.77**	**145**	*e*Pn	**Pn**	**05 00 53.8**	**-0.1**
PLCA				Pg	**Pn**	**05 01 03.1**	**+9.3**
PLCA				*e*Pg	**Pn**	**05 01 03.9**	**+10**
PLCA				Lg		05 01 52.7	
PLCA				*e*Sg	**Sn**	**05 01 53.7**	**+16**
TRQA	**Tornquist**	**9.06**	**96**	*eP*	**P**	**05 02 08.5**	**+0.4**
	6.0nm,1.3s						
LVC	**Limon Verde**	**15.52**	**16**	Pn	**P**	**05 03 34.9**	**+0.3**
LVC	**Limon Verde**	**15.52**	**16**	P	**P**	**05 03 32.7**	**-1.9**
USHA	**Ushuaia**	**17.48**	**170**	P	**P**	**05 03 59.2**	**-0.1**
CPUP	**Villa Florida**	**17.71**	**55**	P	**P**	**05 04 03.0**	**+0.8**
	0.3nm,0.3s,baz=265,slow=6.2,SNR=6.9						
CPUP	**Villa Florida**	**17.71**	**55**	*eP*	**P**	**05 04 00.8**	**-1.5**
	0.7nm,0.5s						
LPAZ	**La Paz**	**21.82**	**14**	P	**P**	**05 04 50.3**	**+2.4**
	3.5nm,0.9s,mb3.8,baz=149,slow=17,SNR=7.4						
LPAZ	**La Paz**	**21.82**	**14**	*eP*	**P**	**05 04 49.4**	**+1.4**
BDFB	**Brasilia**	**31.41**	**53**	P	**P**	**05 06 16.4**	**-0.5**
	1.5nm,0.5s,mb4.1,baz=182,slow=8.5,SNR=4.1						
OTAV	**Otavalo**	**38.02**	**352**	*eP*	**P**	**05 07 14.0**	**+0.4**
	14nm,1.3s,mb4.5						
ROSC	**El Rosal**	**42.33**	**359**	P	**P**	**05 07 52.4**	**+3.1**
	baz=178,slow=7.7						
SDV	**Santo Domingo**	**46.40**	**4**	P	**P**	**05 08 21.2**	**-0.8**
	9.5nm,1.1s,mb4.6,baz=125,slow=7.7,SNR=5.1						
VNA3	**Neumayer Olymp**	**46.41**	**156**	*i*	**P**	**05 08 21.8**	**+0.5**
VNA2	**Neumayer--Watz**	**47.09**	**156**	*j*	**P**	**05 08 27.7**	**+1.0**
SNAA	**Sanae**	**48.63**	**157**	*i*	**P**	**05 08 36.7**	**-2.0**
TXAR	**Lajitas Array**	**72.44**	**333**	P	**P**	**05 11 22.1**	**+0.3**
	1.9nm,0.7s,mb4.2,baz=154,slow=8.8,SNR=15						
SWET	**Sewanee**	**73.46**	**349**	*eP*	**P**	**05 11 27.0**	**-0.6**
MNTX	**Cornudas Mount**	**75.20**	**332**	*eP*	**P**	**05 11 35.7**	**-2.1**
WMOK	**Wichita Mounta**	**75.81**	**339**	*eP*	**P**	**05 11 40.6**	**-0.5**
	8.2nm,1.3s,mb4.5						
LIC	**Lamto**	**77.01**	**72**	*eP*	**P**	**05 11 48.0**	**-0.3**
	73nm,1.0s,mb5.6						
CCM	**Cathedral Cave**	**77.14**	**346**	*eP*	**P**	**05 11 48.0**	**-0.6**
	33nm,1.3s,mb5.1						
TIC	**Toumodi**	**77.29**	**71**	*eP*	**P**	**05 11 49.9**	**+0.1**
	62nm,0.9s,mb5.6						
KIC	**Kosan Boka**	**77.31**	**72**	*eP*	**P**	**05 11 50.5**	**+0.6**
	85nm,0.8s,mb5.7						
DBIC	**Dimbokro**	**77.43**	**71**	P	**P**	**05 11 50.9**	**+0.4**
	14nm,0.7s,mb5.0,baz=199,slow=5.2,SNR=29						
DBIC	**Dimbokro**	**77.43**	**71**	P	**P**	**05 11 50.9**	**+0.3**
ANMO	**Albuquerque**	**78.51**	**333**	*eP*	**P**	**05 11 56.8**	**+0.7**
	7.1nm,1.2s,mb4.5						
SADO	**Sadowa**	**82.24**	**356**	P	**P**	**05 12 13.4**	**-2.3**
	6.2nm,0.9s,mb4.5,baz=261,slow=5.9,SNR=4.1						
NVAR	**Mina Array Bea**	**86.29**	**326**	P	**P**	**05 12 38.0**	**+1.7**
	1.1nm,0.7s,mb4.2,baz=145,slow=6.8,SNR=9.5						
NVAR	**Mina Array Bea**	**86.29**	**326**	P	**P**	**05 12 38.0**	**+1.7**
PDAR	**Pinedale Array**	**86.56**	**334**	P	**P**	**05 12 38.0**	**+0.4**
	1.4nm,0.9s,mb4.2,baz=163,slow=4.2,SNR=9.9						
BW06	**Boulder Array**	**86.56**	**334**	*eP*	**P**	**05 12 37.3**	**-0.2**
	3.5nm,1.1s,mb4.5						
HLID	**Hailey**	**89.01**	**332**	*eP*	**P**	**05 12 50.4**	**+1.1**
	2.6nm,1.1s,mb4.5						
ULM	**Lac du Bonnet**	**89.77**	**346**	P	**P**	**05 12 52.5**	**-0.2**
	3.3nm,0.9s,mb4.7,baz=179,slow=1.4,SNR=5.4						
GERES	**GERESS Array B**	**115.52**	**47**	PKP	PKPdf	05 18 35.0	-5.0
	0.9nm,0.8s,baz=180,slow=4.0,SNR=5.1						
BRTR	**Keskib Array B**	**124.55**	**64**	PKP	PKPdf	05 18 53.9	-3.8
	2.4nm,1.1s,baz=179,slow=3.9,SNR=7.9						
BVAR	**Borovoye Array**	**150.69**	**47**	PKPbc	PKPdf	05 19 46.8	+2.8
	4.3nm,0.6s,baz=270,slow=4.4,SNR=26						
BVAR				PKPab	PKPab	05 19 53.1	-0.7
	1.3nm,0.6s,baz=287,slow=4.2,SNR=6.0						
ZAL	**Zalesovo**	**157.91**	**36**	PKPab	PKPab	05 20 24.1	-0.3
	1.0nm,0.4s,baz=70,slow=6.3,SNR=4.2						
MKAR	**Makanchi Array**	**159.91**	**55**	PKPab	PKPab	05 20 32.9	-0.4
	1.7nm,0.7s,baz=287,slow=4.5,SNR=8.3						

*MOS **03** 05:12:35.8±0.9,14.18N×90.72W,h110km,mb5.3/29, Error ellipse: s-maj=11.2km s-min=5.1km az=105.4*

*MEX **03** 05:12:38.5±4.5,14.11N×90.97W,h120km±128km,MD5.2*

*IDC **03** 05:12:40.0±0.3,14.50N×90.57W,h120km±2km,mb4.8/28, mb1 4.9/31,mb1mx4.9/31,MS6.0/1,Ms1 6.0/1, ms1mx5.0/29,Error ellipse: s-maj=11.5km s-min=6.6km az=63.0*

*HRVD **03** 05:12:40.1±0.5,14.38N×90.87W,h96km±6km,MW5.7/45, Centroid moment Tensor Solution. LP body waves: s3,c3; Mantle waves: s45,c80; Half duration: 1§7 Moment tensor: Scale 10¹⁷Nm; Mrr-1.67±.27; Mθθ1.13±.23; Mφφ0.55±.25; Mrθ2.50±.11; Mrφ-3.09±.26; Mθφ-1.82±.14; Best double couple: M₀4.22×10¹⁷ NP1:φs163°, δ26°, λ-47°. NP2:φs297°, δ71°, λ-108°. Principal axes: T 5.3, Plg24°, Azm41°; N -2.16, Plg17°, Azm303°; P -3.14, Plg60°, Azm181°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*NEIC **03** 05:12:40.1±0.2,14.46N×90.73W,mb5.1/106, MD5.2(MEX) Error ellipse: s-maj=5.5km s-min=3.1km az=38.0*

NEIC Felt at Guatemala City. Felt [III] at San Salvador, El Salvador.

*BJI **03** 05:12:40.1,14.50N×90.70W,h124km,mB5.3*

ISC 03 05:12:38.5±0.1,**14.41N**±0.02×**90.87W**±0.02,**h124**km, **h124km±.5km:pP-P,n650,σ1§36/532,mb5.2/138,117C-30D, Guatemala**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCG	**Pacaya**	**0.25**	**93**	*j* P	**P**	**05 12 55.9**	**+0.2**
GCG	**Guatemala City**	**0.37**	**62**	*j* *eP*	**P**	**05 12 58.2**	**+2.0**
GCG				*e*S	**S**	**05 13 12.5**	**+2.8**
IXG	**Ixpaco**	**0.46**	**120**	*j* *eP*	**P**	**05 12 56.4**	**-0.4**
IXG				*e*S	**S**	**05 13 09.6**	**-1.0**
IXG				AML	AML	05 13 15.9	
	comp=N,1576μm,0.6s						
JAT	**Jato**	**0.75**	**263**	*i* *eP*	**P**	**05 12 57.4**	**-1.3**
JAT				AML	AML	05 13 13.7	
	comp=E,394μm,0.3s						
CUSS	**Cusmapa**	**1.02**	**119**	*j* P	**P**	**05 13 01.3**	**0.0**
CUSS				*e*S	**S**	**05 13 18.1**	**-0.3**
RBDL	**Robledal**	**1.18**	**104**	*j* *eP*	**P**	**05 13 03.8**	**+0.8**
RTR	**El Retiro**	**1.29**	**113**	*j* P	**P**	**05 13 05.1**	**+0.9**
SBLS	**San Blas**	**1.33**	**115**	*j* P	**P**	**05 13 05.3**	**+0.6**
SNJE	**San Jose**	**1.34**	**114**	*j* P	**P**	**05 13 05.4**	**+0.8**
MTO2	**Montecristo 2**	**1.46**	**90**	*j* P	**P**	**05 13 07.8**	**+1.7**
BOQS	**Boqueron**	**1.68**	**113**	*e*P	**P**	**05 13 09.8**	**+1.1**
SNET	**Serv Nac Est T**	**1.74**	**114**	*j* *eP*	**P**	**05 13 10.0**	**+0.6**
SNET				*e*S	**S**	**05 13 34.8**	**+1.9**
SNET				*i*		05 13 47.8	
	comp=Z,80μm,0.7s						
LBRS	**Las Brisas**	**1.89**	**110**	*j* P	**P**	**05 13 12.5**	**+1.3**
LFRS	**El Faro**	**1.92**	**114**	*e*P	**P**	**05 13 12.4**	**+0.9**
LCBS	**La Ceiba**	**1.98**	**112**	*e*P	**P**	**05 13 13.4**	**+1.1**
SNVI	**San Vicente**	**2.12**	**112**	*e*P	**P**	**05 13 15.5**	**+1.3**
SNVI				*e*S	**S**	**05 13 43.9**	**+2.8**
CCIG	**Comitan**	**2.23**	**327**	*e*P	**P**	**05 13 17.6**	**+2.1**
CCIG				*e*S	**S**	**05 13 45.6**	**+2.0**
CAHU	**Cacacuatique**	**2.66**	**104**	*j* *eP*	**P**	**05 13 22.6**	**+1.4**
VSM	**San Miguel**	**2.70**	**111**	*e*P	**P**	**05 13 23.4**	**+1.6**
SCX	**San Cristobal**	**2.87**	**324**	*i* P	**P**	**05 13 25.2**	**+1.1**
CNCH	**Conchagua**	**3.15**	**111**	*e*P	**P**	**05 13 29.2**	**+1.4**
CRIN	**San Cristobal**	**4.08**	**114**	*i* *eP*	**P**	**05 13 41.8**	**+1.5**
CRIN				*e*S	**S**	**05 14 27.5**	**-0.1**
SOMN	**Somoto**	**4.25**	**103**	*i* P	**P**	**05 13 44.9**	**+2.4**
PYN	**Poneloya**	**4.25**	**118**	*j* *eP*	**P**	**05 13 42.9**	**+0.4**
TELN	**Telica**	**4.32**	**114**	*i* *eP*	**P**	**05 13 44.4**	**+0.9**
TELN				*e*S	**S**	**05 14 33.2**	**0.0**
TEL3	**Telica 3**	**4.32**	**115**	*i* *eP*	**P**	**05 13 44.4**	**+0.9**
TEL3				*e*S	**S**	**05 14 30.7**	**-2.6**
LEON	**Leon**	**4.35**	**117**	*j* *eP*	**P**	**05 13 43.9**	**+0.1**
CNGN	**Cerro Negro**	**4.48**	**115**	*i* *eP*	**P**	**05 13 46.3**	**+0.7**
CNGN				*e*S	**S**	**05 14 34.8**	**-2.3**
QUIN	**Quiabu**	**4.51**	**106**	*j* *eP*	**P**	**05 13 47.0**	**+1.1**
MOMJ	**Momotombo**	**4.66**	**115**	*i* *eP*	**P**	**05 13 48.8**	**+0.8**
MOMJ				*e*S	**S**	**05 14 39.7**	**-1.7**
CMIG	**Matias Romero**	**4.70**	**305**	*i* P	**P**	**05 13 47.1**	**-1.4**
CMIG				*i* S	**S**	**05 13 49.1**	**+0.4**
COPN	**Copaltepe**	**4.72**	**118**	*i* *eP*	**P**	**05 13 49.1**	**+0.4**
COPN				*e*S	**S**	**05 14 39.0**	**-3.9**
APYN	**Apoyeque**	**4.90**	**116**	*i* *eP*	**P**	**05 13 53.0**	**+1.7**
XAVN	**Gruta Xavier**	**4.96**	**116**	*i* *eP*	**P**	**05 13 52.9**	**+0.9**
XAVN				*e*S	**S**	**05 14 47.7**	**-1.0**
TUIG	**Tuzandepetl**	**4.96**	**317**	*i* P	**P**	**05 13 52.2**	**+0.1**
TUIG				*i* S	**S**	**05 14 47.4**	**-1.4**
MGAN	**Managua**	**5.03**	**116**	*i* *eP*	**P**	**05 13 53.5**	**+0.5**
MGAN				*e*S	**S**	**05 14 47.5**	**-2.9**
MGAN				*i*		05 14 52.9	
	comp=E,6μm,0.5s						
PYTN	**Playitas**	**5.04**	**111**	*j* *eP*	**P**	**05 13 53.1**	**+0.1**
PYTN				*e*S	**S**	**05 14 51.8**	**+1.2**
CRUN	**El Crucero**	**5.06**	**118**	*j* *eP*	**P**	**05 13 54.0**	**+0.6**
WILN	**Americas 2**	**5.08**	**116**	*i* *eP*	**P**	**05 13 54.2**	**+0.6**
WILN				*e*S	**S**	**05 14 53.3**	**+1.8**
WILN				*i*		05 14 55.8	
	comp=E,9μm,0.5s						
TICN	**Ticuantepe**	**5.09**	**117**	*i* *eP*	**P**	**05 13 54.8**	**+0.9**
TICN				*e*S	**S**	**05 14 50.8**	**-1.3**
COFN	**Cofrada**	**5.15**	**115**	*i* *eP*	**P**	**05 13 54.6**	**+0.1**
COFN				*e*S	**S**	**05 14 54.1**	**+0.8**
MASN	**Masaya**	**5.19**	**117**	*j* *eP*	**P**	**05 13 55.6**	**+0.5**
MASN				*e*S	**S**	**05 14 51.2**	**-3.1**
HUIG	**Huatulco**	**5.24**	**286**	*i* P	**P**	**05 13 52.1**	**-3.7**
HUIG				*i* S	**S**	**05 14 46.1**	**-9.4**
APON	**Apoyo**	**5.29**	**117**	*i* *eP*	**P**	**05 13 57.3**	**+0.8**
APON				*e*S	**S**	**05 14 54.9**	**-1.9**
CONN	**Concepcion**	**5.84**	**118**	*j* *eP*	**P**	**05 14 04.1**	**+0.3**
CONN				*e*S	**S**	**05 15 09.5**	**-0.6**
CRZC	**La Cruz**	**6.18**	**123**	*eP*	**P**	**05 14 10.9**	**+2.3**
CRZC				*e*S	**S**	**05 15 20.1**	**+1.7**
OXX	**Oaxaca**	**6.23**	**296**	*i* P	**P**	**05 14 09.2**	**0.0**
VHO	**Vista Hermosa**	**6.24**	**296**	*i* P	**P**	**05 14 08.8**	**-0.4**
VHO				*i* S	**S**	**05 15 18.2**	**-1.5**
TEIG	**Tepich**	**6.29**	**23**	P	**P**	**05 14 11.4**	**+1.3**
	comp=E,170nm,0.3s,baz=220,slow=8.0,SNR=137						
TEIG				S	**S**	**05 15 24.2**	**+3.2**
	comp=E,12nm,0.3s,baz=52,slow=19,SNR=2.1						
TEIG	**Tepich**	**6.29**	**23**	*i* Pn	**P**	**05 14 11.3**	**+1.2**
TEIG				*e*Sn	**S**	**05 15 36.7**	**+16**
VCR	**Vista de Mar**	**6.66**	**129**	*j* *eP*	**P**	**05 14 17.5**	**+2.4**
VCR				*e*S	**S**	**05 15 29.8**	**-0.2**
FORC	**Fortuna**	**7.21**	**122**	*i* *eP*	**P**	**05 14 24.5**	**+2.0**
JCR	**Jicaral**	**7.22**	**128**	*i* P	**P**	**05 14 25.2**	**+2.4**
JCR				*e*S	**S**	**05 15 42.6**	**-1.1**
PNIG	**Pinotepa**	**7.27**	**287**	*i* P	**P**	**05 14 18.8**	**-4.6**
PNIG				*i* S	**S**	**05 15 41.5**	**-3.4**
CGA2	**Cerro Gallo 2**	**7.63**	**124**	*j* *eP*	**P**	**05 14 30.3**	**+2.1**
CGA2				*e*S	**S**	**05 15 55.8**	**+2.2**
CGA2	**Cerro Gallo 2**	**7.63**	**124**	*i* *eP*	**P**	**05 14 30.6**	**+2.4**
POHV	**Veracruz**	**7.69**	**308**	*eP*	**P**	**05 14 28.6**	**-0.5**
VPS2	**Volcan Poas 2**	**7.72**	**122**	*eP*	**P**	**05 14 31.5**	**+2.1**
IISM	**Ciudad Serdan**	**7.72**	**307**	*eP*	**P**	**05 14 28.2**	**-1.2**
TRTC	**Tortuguero**	**7.96**	**118**	*i* *eP*	**P**	**05 14 33.5**	**+0.8**
LAJ	**Bijagual**	**8.00**	**124**	*i* P	**P**	**05 14 32.2**	**-0.9**
SJS	**Escuela Geolog**	**8.01**	**123**	*i* *eP*	**P**	**05 14 34.4**	**+1.1**
SJS				*e*P		05 14 35.5	
SJS				*e*S	**S**	**05 16 03.4**	**+0.7**
SJS	**Escuela Geolog**	**8.01**	**123**	*i* *eP*	**P**	**05 14 34.4**	**+1.1**
SJS				*e*S	**S**	**05 16 02.8**	**+0.1**
LCR2	**La Lucha 2**	**8.16**	**124**	*j* *eP*	**P**	**05 14 37.4**	**+2.1**
ICR	**Volcan Irazu**	**8.17**	**122**	*j* *eP*	**P**	**05 14 37.4**	**+2.0**
URSC	**Urasca**	**8.29**	**122**	*j* *eP*	**P**	**05 14 39.5**	**+2.4**
BUS	**Buena Vista**	**8.46**	**124**	*eP*	**P**	**05 14 42.4**	**+3.0**
BUS				*e*S	**S**	**05 16 17.8**	**+4.1**
PPM	**Popocatepetl**	**8.76**	**303**	*eP*	**P**	**05 14 44.8**	**+1.5**
PPM				*i* P		05 14 46.1	
PPM				*i* S	**S**	**05 16 23.0**	**+2.2**
LIO	**Limon**	**8.82**	**119**	*eP*	**P**	**05 14 46.0**	**+1.8**
YAIG	**Yautepec**	**9.02**	**301**	*i* P	**P**	**05 14 47.2**	**+0.4**
YAIG				*i* S	**S**	**05 16 23.7**	**-3.4**
YAIG	**Yautepec**	**9.02**	**301**	*i* P	**P**	**05 14 47.2**	**+0.4**
YAIG				*i* S	**S**	**05 16 17.0**	**-10**
ACX	**Acapulco**	**9.05**	**287**	*i* P	**P**	**05 14 44.8**	**-2.5**
IIZ	**Mezontepec**	**9.32**	**302**	*eP*	**P**	**05 14 52.0**	**+1.2**
UNM	**Universidad Na**	**9.34**	**303**	*i* P	**P**	**05 14 50.6**	**-0.5**
UNM				*i* P		05 14 53.1	
UNM				*i* S	**S**	**05 16 32.8**	**-1.9**
UNM	**Universidad Na**	**9.34**	**303**	*i* P	**P**	**05 14 53.5**	**+2.4**
UNM				*i* S	**S**	**05 16 32.8**	**-1.9**
CAIG	**El Cayaco**	**9.42**	**287**	*i* P	**P**	**05 14 50.6**	**-1.6**
ACR	**Cerro Adams**	**9.47**	**126**	*eP*	**P**	**05 14 54.2**	**+1.4**
BRU2	**Volcan**	**9.76**	**124**	*eP*	**P**	**05 14 58.8**	**+2.0**
BRU2				*e*S	**S**	**05 16 46.6**	**+1.7**
ZIIG	**Zihuatanejo**	**10.67**	**289**	*i* P	**P**	**05 15 09.1**	**+0.1**
ZIIG	**Zihuatanejo**	**10.67**	**289**	*j* *i* P	**P**	**05 15 09.1**	**+0.1**
MOIG	**Morelia**	**11.17**	**299**	*i* P	**P**	**05 15 16.5**	**+1.0**
SFJM	**Santa Fe**	**13.09**	**299**	*eP*	**P**	**05 15 41.9**	**+1.2**
MCJ	**Malvern**	**13.13**	**73**	*i* P	**P**	**05 15 42.8**	**+1.5**
COLM	**Colima**	**13.16**

USIN ePP 05 18 05.4
SJG San Juan 24.01 78 P **P** **05 17 41.2 -1.8**
comp=Z,55nm,0.7s,mb5.0,baz=264,slow=8.9,SNR=17
WCI Wyandotte Cave 24.07 9 P **P** **05 17 44.8 +1.4**
WCI pmax pmax
comp=Z,620nm,1.0s,mb5.9
WCI Wyandotte Cave 24.07 9⇑ *iP* **P** **05 17 44.6 +1.2**
comp=Z,622nm,1.0s,mb5.9
WCI epP 05 18 09.9
WCI esP 05 18 25.4
SLM Saint Louis 24.14 1 P **P** **05 17 45.2 +1.1**
SLM pmax pmax
comp=Z,290nm,1.4s,mb5.4
SLM Saint Louis 24.14 1 *eP* **P** **05 17 44.6 +0.5**
comp=Z,286nm,1.4s,mb5.4
SLM epP 05 18 11.0
ANMO Albuquerque 24.82 328 *eP* **P** **05 17 51.3 +0.7**
BLO Bloomington 24.96 8⇑ *iP* **P** **05 17 52.5 +0.6**
comp=Z,185nm,1.1s,mb5.4
BLO epP 05 18 19.4
KSU1 Kansas State U 25.11 349 *eP* **P** **05 17 53.0 -0.3**
KSU1 *e* pP 05 18 19.7 +0.3
TUC Tucson 25.45 318 *eP* **P** **05 17 58.4 +1.8**
TUC *e* 05 21 26.4
TUC pmax pmax
comp=Z,100nm,1.2s,mb5.1
TUC Tucson 25.45 318 *eP* **P** **05 17 58.4 +1.8**
comp=Z,100nm,1.2s,mb5.1
TUC *e* 05 21 26.4
PCRV Puerto La Cruz 25.96 96 P **P** **05 18 02.5 +1.0**
comp=Z,17nm,0.7s,mb4.6,baz=257,slow=9.3,SNR=9.6
CBN Corbin 26.55 24⇑ *iP* **P** **05 18 07.8 +1.3**
comp=Z,472nm,1.1s,mb5.9
SDCO Great Sand Dun 26.63 333 *eP* **P** **05 18 07.6 +0.3**
comp=Z,39nm,1.6s,mb4.7
SDCO *e* pP 05 18 35.6 +1.9
ACSO Alum Creek Sta 26.64 14⇑ *iP* **P** **05 18 08.0 +0.6**
comp=Z,330nm,1.0s,mb5.8
MCWV Mont Chateau 26.95 19⇑ *iP* **P** **05 18 10.9 +0.7**
comp=Z,645nm,1.7s,mb5.9
WUAZ Wupatki 27.95 322 *eP* **P** **05 18 20.5 +1.1**
comp=Z,130nm,1.3s,mb5.3
WUAZ ePcP PcP 05 21 32.1 +0.3
WUAZ eScP 05 25 03.6
PV01 Paradox Valley 28.36 330 *eP* **P** **05 18 24.6 +1.6**
PV01 *e* pP 05 18 51.5 +1.8
JFWS Jewell Farm 28.41 1 P **P** **05 18 23.2 -0.3**
JFWS pmax pmax
comp=Z,38nm,1.0s,mb4.9
JFWS Jewell Farm 28.41 1 *eP* **P** **05 18 22.7 -0.7**
comp=Z,38nm,1.0s,mb4.9
ISCO Idaho Springs 28.41 336 P **P** **05 18 24.2 +0.7**
ISCO pmax pmax
comp=Z,19nm,1.4s,mb4.4
ISCO Idaho Springs 28.41 336 *eP* **P** **05 18 23.9 +0.4**
comp=Z,20nm,1.4s,mb4.4
ISCO epP pP 05 18 51.5 +1.4
SSPA Standing Stone 28.48 21⇑ *iP* **P** **05 18 24.7 +0.6**
comp=Z,175nm,1.1s,mb5.5
AAM Ann Arbor 28.48 11 P **P** **05 18 24.2 +0.1**
AAM *e* pP 05 18 50.7 0.0
AAM pmax pmax
comp=Z,560nm,1.7s,mb5.8
AAM Ann Arbor 28.48 11 *eP* **P** **05 18 23.7 -0.4**
comp=Z,212nm,1.4s,mb5.5
AAM epP pP 05 18 50.5 -0.2
MVL Millersville 28.49 24⇑ *iP* **P** **05 18 24.9 +0.7**
ALLY Alegheny Colle 28.69 17⇑ *eP* **P** **05 18 26.1 +0.1**
PV10 Paradox Valley 28.78 329 *eP* **P** **05 18 26.5 -0.3**
PV10 *e* pP 05 18 53.9 +0.5
ERPA Erie 29.17 17⇑ *eP* **P** **05 18 30.3 0.0**
comp=Z,211nm,1.0s,mb5.7
BAR Barrett 29.71 312 *eP* **P** **05 18 36.2 +1.0**
BAR ePcP PcP 05 21 35.8 -0.5
BRNJ Basking Ridge 29.79 25 *eP* **P** **05 18 36.8 +0.9**
BBSR BB Station 29.82 49 P **P** **05 18 36.5 +0.5**
BBSR pP pP 05 19 02.9 -0.1
BBSR BB Station 29.82 49 *eP* **P** **05 18 36.3 +0.2**
comp=Z,304nm,1.4s,mb5.7
BBSR epP pP 05 19 04.4 +1.5
LDFC Landfair 29.99 318 *eP* **P** **05 18 39.6 +2.0**
LDFC ePcP PcP 05 21 37.6 +0.7
LDFC eScP 05 25 10.5
SRU San Rafael 30.09 329 P **P** **05 18 39.4 +1.0**
SRU *e* pP 05 19 01.6 -3.7
SRU San Rafael 30.09 329 *eP* **P** **05 18 39.0 +0.5**
SRU epP pP 05 19 06.5 +1.2
CPNY Central Park 30.14 26 *eP* **P** **05 18 38.6 -0.3**
NEN Nelson 30.17 319⇑ *eP* **P** **05 18 40.5 +1.3**
NEN ePcP PcP 05 21 37.7 +0.3
NEN eScP 05 25 09.3
PAL Palisades 30.34 26 P **P** **05 18 40.7 +0.1**
PAL pmax pmax
comp=Z,56nm,0.9s,mb5.2
PAL Palisades 30.34 26⇑ *eP* **P** **05 18 40.6 0.0**
comp=Z,56nm,0.9s,mb5.2
MSU Marysvale 30.51 326 *eP* **P** **05 18 43.3 +1.1**
MSU ePcP PcP 05 21 39.2 +1.0
MSU eScP 05 25 11.1
MVU Marysvale 30.52 326 *eP* **P** **05 18 43.4 +1.1**
comp=Z,122nm,1.8s,mb5.3
MVU ePcP PcP 05 21 39.0 +0.7
BINY Binghamton 30.54 22⇑ *iP* **P** **05 18 42.5 +0.2**
comp=Z,311nm,1.1s,mb6.0
MPU Maple Canyon 31.33 328 *eP* **P** **05 18 50.1 +0.8**
MPU epP pP 05 19 17.1 +0.7
MPU ePcP PcP 05 21 41.0 +0.7
DAU Daniels Canyon 31.44 329 P **P** **05 18 51.1 +0.8**
DAU Daniels Canyon 31.44 329 *eP* **P** **05 18 50.9 +0.6**
DAU epP pP 05 19 18.8 +1.3
MWC Mount Wilson 31.51 314 P **P** **05 18 52.7 +1.8**
MWC Mount Wilson 31.51 314 *eP* **P** **05 18 52.5 +1.6**
MWC ePcP PcP 05 21 41.4 +0.5
NLU North Lily Min 31.51 328 *eP* **P** **05 18 53.5 +2.6**
NLU ePcP PcP 05 21 41.1 +0.3
PAS Pasadena 31.55 313 P **P** **05 18 52.9 +1.6**
PAS PcP PcP 05 21 42.0 +1.0
PAS Sc P 05 25 15.8
RSSD Black Hills 31.67 342 P **P** **05 18 51.9 -0.4**
RSSD pmax pmax
comp=Z,420nm,4.0s
RSSD Black Hills 31.67 342 *eP* **P** **05 18 52.2 -0.1**
comp=Z,415nm,4.0s
RSSD epP pP 05 19 19.3 -0.2
RSSD ePcP PcP 05 21 40.6 -0.7
JLU Jordanelle 31.68 329 *eP* **P** **05 18 52.7 +0.3**
SADO Sadowa 31.86 16 P **P** **05 18 53.5 -0.4**
comp=Z,131nm,1.1s,mb5.6,baz=219,slow=8.8,SNR=52
SADO pP pP 05 19 17.6 -3.5
comp=Z,48nm,0.8s,baz=200,slow=9.1,SNR=3.4
QUA2 Belchertown 32.05 26⇑ *eP* **P** **05 18 55.5 0.0**
comp=Z,142nm,1.2s,mb5.6
TCUT Toone Canyon 32.06 330 *eP* **P** **05 18 56.2 +0.6**
TCUT epP pP 05 19 24.4 +1.5
BRYW Bryant College 32.12 28⇑ *eP* **P** **05 18 56.2 +0.1**
comp=Z,138nm,1.1s,mb5.6
BRYW ePP PP 05 20 12.5 +5.7
DAC Darwin (Calif) 32.33 317 P **P** **05 19 00.1 +2.0**
DAC pmax pmax
comp=Z,51nm,1.3s,mb5.1
DAC Darwin (Calif) 32.33 317⇑ *eP* **P** **05 18 59.3 +1.3**
comp=Z,51nm,1.3s,mb5.1
DAC ePcP PcP 05 21 44.1 +0.9
ACCN Adirondack Com 32.43 24⇑ *eP* **P** **05 18 58.8 0.0**
HWUT Hardware Ranch 32.51 330 *eP* **P** **05 18 59.9 +0.3**
comp=Z,44nm,1.4s,mb5.1
HWUT ePcP PcP 05 21 43.9 +0.3
PDAR Pinedale Array 32.52 334 P **P** **05 18 59.6 0.0**
comp=Z,3.0nm,0.7s,mb4.2,baz=129,slow=9.5,SNR=16
PDAR pP pP 05 19 27.0 +0.1
comp=Z,16nm,1.0s,baz=108,slow=9.4,SNR=13
PDAR PcP PcP 05 21 43.1 -0.5
comp=Z,5.9nm,0.9s,baz=97,slow=5.0,SNR=14
PDAR Sc P 05 25 17.1
comp=Z,2.2nm,0.6s,baz=134,slow=5.5,SNR=6.3
PDAR PKiKP 05 29 09.3
comp=Z,2.0nm,0.8s,baz=148,slow=2.2,SNR=7.7
HRV Harvard--Oak R 32.58 27 P **P** **05 19 00.5 +0.4**
HRV pmax pmax
comp=Z,150nm,1.2s,mb5.7
HRV Harvard--Oak R 32.58 27⇑ *eP* **P** **05 19 00.2 +0.1**
comp=Z,146nm,1.2s,mb5.7
WES Weston 32.59 27⇑ *iP* **P** **05 19 00.4 +0.2**
comp=Z,423nm,1.7s,mb6.0

NCB Newcomb 32.71 22 *eP* **P** **05 19 01.1 -0.2**
comp=Z,710nm,1.7s,mb6.2
PTN Potsdam (NY) 32.96 21 P **P** **05 19 04.1 +0.7**
PTN Potsdam (NY) 32.96 21 *eP* **P** **05 19 03.7 +0.2**
MIV Mineville/With 33.06 23 *eP* **P** **05 19 03.4 -0.9**
TPH Tonopah 33.17 320 P **P** **05 19 07.0 +1.7**
TPH pmax pmax
comp=Z,10.0nm,1.1s,mb4.6
TPH Tonopah 33.17 320⇑ *eP* **P** **05 19 07.0 +1.7**
comp=Z,10nm,1.1s,mb4.6
TPH epP pP 05 19 34.5 +1.8
TPH ePcP PcP 05 21 46.3 +0.9
AHID Auburn Hatcher 33.20 332 *eP* **P** **05 19 05.5 +0.1**
comp=Z,31nm,1.2s,mb5.0
AHID epP pP 05 19 33.3 +0.5
AHID ePcP PcP 05 21 45.9 +0.5
HVU Hansel Valley 33.23 329 P **P** **05 19 06.9 +1.2**
HVU Hansel Valley 33.23 329 *eP* **P** **05 19 07.2 +1.4**
HVU epP pP 05 19 34.0 +0.9
HVU ePcP PcP 05 21 45.3 -0.3
MSNY Massena 33.38 21 *eP* **P** **05 19 07.3 +0.4**
REDW Red Top Meadow 33.56 333⇑ *eP* **P** **05 19 08.9 +0.3**
REDW epP pP 05 19 36.7 +0.6
MTUM Tungsten Hills 33.59 318 *eP* **P** **05 19 10.6 +1.7**
MTUM ePcP PcP 05 21 47.6 +1.0
MTUM eScP 05 25 20.8
KSWY Kelly School 33.67 334 *eP* **P** **05 19 09.6 0.0**
KSWY epP pP 05 19 37.7 +0.7
NVAR Mina Array Bea 34.06 320 P **P** **05 19 15.2 +2.4**
comp=Z,128nm,1.1s,mb5.7,baz=136,slow=8.0,SNR=298
NVAR pP pP 05 19 41.8 +1.4
comp=Z,77nm,1.0s,baz=127,slow=10.0,SNR=9.1
NVAR PcP PcP 05 21 49.4 +1.4
comp=Z,47nm,0.9s,baz=127,slow=4.7,SNR=16
NVAR pPcP 05 22 20.1
comp=Z,10nm,0.9s,baz=135,slow=5.1,SNR=3.1
NVAR ScP 05 25 22.9
comp=Z,13nm,1.0s,baz=127,slow=4.6,SNR=12
NVAR PKiKP 05 29 12.6
comp=Z,1.8nm,0.8s,baz=166,slow=2.5,SNR=8.5
LKWY Lake 34.34 335 P **P** **05 19 17.4 +2.2**
LKWY pmax pmax
comp=Z,5.0nm,1.0s,mb4.3
LKWY Lake 34.34 335 *eP* **P** **05 19 17.0 +1.8**
comp=Z,5.2nm,1.0s,mb4.3
LKWY epP pP 05 19 43.9 +1.1
YMR Madison River 34.66 334 *eP* **P** **05 19 18.7 +0.8**
YMR epP pP 05 19 46.3 +0.7
BMN Battle Mountai 34.66 323 P **P** **05 19 19.9 +1.9**
BMN pmax pmax
comp=Z,180nm,1.5s,mb5.7
BMN Battle Mountai 34.66 323⇑ *iP* **P** **05 19 19.6 +1.6**
comp=Z,175nm,1.6s,mb5.6
BMN epP pP 05 19 47.0 +1.4
BMN ePcP PcP 05 21 50.1 +0.5
LRV Little Rabbit 34.72 315 *eP* **P** **05 19 20.4 +1.9**
LRV ePcP PcP 05 21 51.5 +1.6
QLMT Earthquake Lak 34.99 334 *eP* **P** **05 19 21.6 +0.9**
QLMT epP pP 05 19 49.9 +1.6
QLMT eScP 05 25 20.0
WVL Waterville 35.05 27⇑ *eP* **P** **05 19 21.7 +0.4**
comp=Z,743nm,1.5s,mb6.3
WVL epP pP 05 19 48.3 -0.6
CMB Columbia Colle 35.16 318 P **P** **05 19 23.6 +1.4**
CMB pmax pmax
comp=Z,64nm,1.1s,mb5.4
CMB Columbia Colle 35.16 318⇑ *eP* **P** **05 19 23.6 +1.3**
comp=Z,64nm,1.1s,mb5.4
CMB ePcP PcP 05 21 51.7 +0.6
SAO San Andreas Ge 35.19 315 P **P** **05 19 23.4 +0.9**
SAO pmax pmax
comp=Z,42nm,1.1s,mb5.2
SAO San Andreas Ge 35.19 315 *eP* **P** **05 19 22.9 +0.4**
comp=Z,42nm,1.1s,mb5.2
SAO ePcP PcP 05 21 52.0 +0.7
HLID Hailey 35.36 330 *eP* **P** **05 19 24.5 +0.7**
comp=Z,55nm,1.6s,mb5.1
WCN Washoe City 35.49 320 P **P** **05 19 27.3 +2.3**
WCN pmax pmax
comp=Z,150nm,1.6s,mb5.6
WCN Washoe City 35.49 320⇑ *iP* **P** **05 19 27.1 +2.1**
comp=Z,150nm,1.6s,mb5.6
WCN ePcP PcP 05 21 52.9 +0.8
MCMT McKenzie Canyo 35.60 333 *eP* **P** **05 19 27.2 +1.3**
MCMT epP pP 05 19 55.5 +1.9
BOZ Bozeman (W) 35.73 335 P **P** **05 19 26.9 0.0**
BOZ pmax pmax
comp=Z,14nm,1.0s,mb4.8
BOZ Bozeman (W) 35.73 335⇑ *eP* **P** **05 19 26.9 0.0**
comp=Z,14nm,1.0s,mb4.8
BOZ epP pP 05 19 55.5 +0.9
ULM Lac du Bonnet 35.98 355 P **P** **05 19 27.9 -1.1**
comp=Z,90nm,1.0s,mb5.7,baz=175,slow=8.5,SNR=101
ULM pP pP 05 19 54.9 -1.8
comp=Z,77nm,1.1s,baz=170,slow=6.4,SNR=5.9
ULM Lac du Bonnet 35.98 355⇑ *iP* **P** **05 19 27.6 -1.4**
comp=Z,309nm,1.3s,mb6.1
ULM epP pP 05 19 55.0 -1.8
ULM *eS* **S** **05 24 57.2 -0.5**
LKC Lake Chabot 36.12 316 *eP* **P** **05 19 32.9 +2.6**
ARE Arequipa 36.16 147 *eP* **P** **05 19 33.0 +2.2**
EMMW East Machias 36.16 29 *eP* **P** **05 19 30.9 +0.3**
comp=Z,2µm,1.7s
BEKR Beckwourth 36.20 320⇑ *iP* **P** **05 19 33.0 +2.1**
comp=Z,142nm,1.3s,mb5.7
BEKR epP pP 05 20 01.3 +2.6
BEKR ePcP PcP 05 21 54.7 +0.6
OHCM Honcut 36.60 319 *eP* **P** **05 19 35.9 +1.5**
OHCM ePcP PcP 05 21 56.0 +0.6
OHCM eScP 05 25 31.1
HRY Holter Researc 36.67 336 *eP* **P** **05 19 35.3 +0.4**
HRY epP pP 05 20 02.8 +0.1
WVOR Wild Horse Val 36.78 325 *eP* **P** **05 19 37.2 +1.3**
comp=Z,123nm,1.3s,mb5.7
WVOR ePcP PcP 05 21 56.9 +1.1
NSHM Saint Helena R 36.89 317 *eP* **P** **05 19 38.9 +2.1**
NSHM ePcP PcP 05 21 56.9 +0.6
MOD Modoc 37.39 323⇑ *eP* **P** **05 19 42.0 +1.0**
comp=Z,81nm,1.3s,mb5.5
MOD epP pP 05 20 10.0 +1.1
MOD *es*P sP 05 20 24.0 +0.5
MOD ePcP PcP 05 21 58.6 +0.8
CHMT Chamberlain Mo 37.42 335 *eP* **P** **05 19 40.9 -0.2**
CHMT eScP 05 25 34.6
PQI Presque Isle 37.42 26⇑ *eP* **P** **05 19 41.3 +0.2**
comp=Z,2µm,2.0s
MSO Missoula 37.64 334 *eP* **P** **05 19 43.1 +0.1**
comp=Z,28nm,1.2s,mb5.0
MSO epP pP 05 20 11.8 +1.0
LPAZ La Paz 37.88 143 P **P** **05 19 45.8 +0.5**
comp=Z,21nm,0.7s,mb5.1,baz=333,slow=9.1,SNR=35
LPAZ pP pP 05 20 12.3 -0.8
comp=Z,20nm,0.7s,baz=325,slow=8.3,SNR=6.1
LPAZ PcP PcP 05 22 00.2 +0.7
comp=Z,28nm,1.2s,baz=25,slow=3.2,SNR=6.0
LPAZ pPcP 05 22 32.5
comp=Z,39nm,1.3s,baz=350,slow=1.1,SNR=5.1
LPAZ La Paz 37.88 143 P **P** **05 19 46.4 +1.1**
LPAZ pmax pmax
comp=Z,12nm,0.8s
LPAZ La Paz 37.88 143 *eP* **P** **05 19 46.2 +0.9**
comp=Z,12nm,0.8s,mb4.8
LPAZ ePcP PcP 05 22 00.3 +0.8
LPAZ eScP 05 25 34.9
YBH Yreka Blue Hor 38.73 321 P **P** **05 19 52.6 +0.4**
comp=Z,12nm,0.8s,mb4.8,baz=131,slow=4.8,SNR=24
YBH pP pP 05 20 20.5 +0.4
comp=Z,9.1nm,0.9s,baz=250,slow=7.0,SNR=3.6
YBH PcP PcP 05 22 02.0 +0.1
comp=Z,9.6nm,0.9s,baz=111,slow=3.6,SNR=4.5
YBH Yreka Blue Hor 38.73 321 P **P** **05 19 52.2 +0.1**
YBH pmax pmax
comp=Z,55nm,1.5s
YBH Yreka Blue Hor 38.73 321⇑ *eP* **P** **05 19 51.8 -0.3**
comp=Z,55nm,1.5s,mb5.2
YBH ePcP PcP 05 22 01.3 -0.6
BSMT Bassoo Peak 38.80 334 P **P** **05 19 53.5 +0.9**
KHMM Horse Mountain 38.89 319 *eP* **P** **05 19 54.2 +0.8**
KHMM ePcP PcP 05 22 04.1 +1.7
LNOR Lincton Mounta 38.94 329 P **P** **05 19 54.0 +0.2**
LNOR Lincton Mounta 38.94 329 *eP* **P** **05 19 53.6 -0.2**
KRMB Red Mountain 39.35 320 *eP* **P** **05 19 58.6 +0.7**
KRMB ePcP PcP 05 22 03.8 -0.1
VGB Gordon Butte 39.97 327 P **P** **05 20 04.4 +2.1**

VGB Gordon Butte 39.97 327 *eP* **P** **05 20 03.6 +1.3**
HSO Harness Mounta 40.01 323 P **P** **05 20 04.4 +1.8**
HSO *e* pP 05 20 32.3 +1.6
HSO Harness Mounta 40.01 323 *eP* **P** **05 20 03.8 +1.1**
HSO ePcP PcP 05 22 06.0 +0.1
NEW Newport 40.12 333 P **P** **05 20 04.0 +0.4**
comp=Z,10nm,1.1s,mb4.6,baz=144,slow=9.8,SNR=13
NEW PcP PcP 05 22 05.2 -1.0
comp=Z,21nm,1.1s,baz=133,slow=9.1,SNR=4.7
NEW Sc P 05 25 45.9
comp=Z,12nm,1.2s,baz=118,slow=5.8,SNR=5.2
NEW PKiKP 05 29 15.1
comp=Z,3.1nm,1.0s,baz=189,slow=4.3,SNR=3.9
NEW Newport 40.12 333 P **P** **05 20 04.0 +0.4**
NEW PcP PcP 05 22 05.2 -1.0
NEW Sc P 05 25 45.9
GL2 New Goldendale 40.29 327 P **P** **05 20 06.7 +1.8**
DPW Davenport 40.33 331 P **P** **05 20 06.2 +1.0**
DPW Davenport 40.33 331 *eP* **P** **05 20 05.9 +0.7**
DPW *ep*P pP 05 20 33.7 +0.4
DPW *es*CP 05 25 47.1
KEBM Edson Butte 40.37 321 *eP* **P** **05 20 08.0 +2.4**
KEBM *ep*P pP 05 20 36.2 +2.5
SSOR Sweet Springs 40.46 325 P **P** **05 20 06.7 +0.4**
SSOR Sweet Springs 40.46 325 *eP* **P** **05 20 07.0 +0.6**
SSOR *es*CP 05 25 47.8
COR Corvallis 40.77 324 P **P** **05 20 11.6 +2.7**
COR Corvallis 40.77 324 *eP* **P** **05 20 10.6 +1.8**
COR *ep*P pP 05 20 37.7 +0.7
COR *es*P sP 05 20 51.3 -0.3
EBG Ellensburg 40.80 329 P **P** **05 20 10.4 +1.4**
LON Longmire 41.32 328 P **P** **05 20 13.8 +0.4**
LON Longmire 41.32 328 *eP* **P** **05 20 14.0 +0.6**
NLW Nelson Butte 41.48 330 P **P** **05 20 15.6 +0.9**
GSM Grass Mountain 41.61 328 P **P** **05 20 16.6 +0.8**
BMW Boistfort Moun 41.90 326 P **P** **05 20 19.4 +1.3**
BMW Boistfort Moun 41.90 326 *eP* **P** **05 20 19.1 +1.0**
BMW ePcP PcP 05 22 12.8 +0.7
BMW eScP 05 25 53.5
RPW Rockport 42.31 330 *eP* **P** **05 20 21.5 +0.1**
GNW Green Mountain 42.38 328 *eP* **P** **05 20 21.6 -0.4**
GNW ePcP PcP 05 22 13.9 +0.2
LVC Limon Verde 42.62 149 P **P** **05 20 26.0 +1.7**
comp=Z,31nm,0.9s,mb5.0,baz=308,slow=5.3,SNR=28
LVC pP pP 05 20 51.4 -1.1
comp=Z,44nm,1.0s,baz=290,slow=6.0,SNR=7.1
LVC PcP PcP 05 22 16.3 +1.5
comp=Z,16nm,0.9s,baz=316,slow=6.6,SNR=3.8
LVC pPcP 05 22 47.1
comp=Z,22nm,1.0s,baz=288,slow=2.3,SNR=4.1
LVC Limon Verde 42.62 149 *eP* **P** **05 20 25.7 +1.3**
comp=Z,51nm,1.0s,mb5.2
OCWA Octopus Mounta 43.20 327 *eP* **P** **05 20 29.2 +0.5**
comp=Z,142nm,1.4s,mb5.5
OCWA *ep*P pP 05 20 58.0 +1.0
SCHQ Schefferville 44.46 20 P **P** **05 20 38.6 -0.2**
comp=Z,340nm,0.9s,mb6.1,baz=217,slow=6.4,SNR=218
SCHQ Schefferville 44.46 20⇑ *iP* **P** **05 20 38.4 -0.3**
comp=Z,492nm,0.9s,mb6.2
SCHQ *ep*P pP 05 21 07.3 +0.2
SCHQ *es*P sP 05 21 20.5 -0.9
RPN Rapa Nui 45.01 204 *eP* **P** **05 20 43.9 +0.4**
comp=Z,4µm,1.3s
RPN *ep*P pP 05 21 12.2 +0.2
YKA Yellowknife Ar 50.89 346 P **P** **05 21 27.6 -1.0**
comp=Z,18nm,0.9s,mb5.1,baz=148,slow=7.7,SNR=239
YKA pP pP 05 21 56.4 -1.2
comp=Z,30nm,0.8s,baz=146,slow=7.5,SNR=12
YKA pPcP 05 23 15.3
comp=Z,3.4nm,0.8s,baz=156,slow=3.8,SNR=3.8
YKA ScP 05 26 26.9
comp=Z,3.2nm,1.0s,baz=148,slow=4.6,SNR=6.0
YKA PKPPKP 05 52 01.5
comp=Z,1.8nm,1.1s,baz=1.5,slow=2.6,SNR=5.9
YKA Yellowknife Ar 50.89 346 P **P** **05 21 27.6 -1.0**
YKA pP pP 05 21 56.4 -1.2
YKA pPcP 05 23 15.3
YKA ScP 05 26 26.9
YKA P'P' 05 52 01.5
MDZ Mendoza 51.52 156 *eP* pP 05 22 02.4 -0.5
FRB Frobisher Bay 51.67 12 P **P** **05 21 33.0 -1.5**
comp=Z,69nm,0.9s,mb5.7,baz=203,slow=8.0,SNR=88
FRB pP pP 05 22 01.3 -2.3
comp=Z,40nm,0.8s,baz=216,slow=8.9,SNR=4.6
BDFB Brasilia 51.82 124 P **P** **05 21 34.7 -1.5**
comp=Z,52nm,0.9s,mb5.6,baz=304,slow=9.8,SNR=76
BDFB pP pP 05 22 02.0 -3.4
comp=Z,26nm,0.9s,baz=172,slow=2.5,SNR=4.1
BDFB PcP PcP 05 22 46.4 -1.3
comp=Z,36nm,0.9s,baz=329,slow=7.9,SNR=5.4
BDFB Sc P 05 26 36.0
comp=Z,19nm,1.0s,baz=304,slow=6.5,SNR=5.5
CPUP Villa Florida 52.00 141 P **P** **05 21 35.7 -1.7**
CPUP pP pP 05 22 02.7 -3.8
CPUP Sc P 05 26 36.4
CPUP Villa Florida 52.00 141 P **P** **05 21 35.7 -1.8**
comp=Z,32nm,0.9s,mb5.4,baz=352,slow=8.1,SNR=49
CPUP pP pP 05 22 02.9 -3.7
comp=Z,20nm,0.9s,baz=344,slow=8.7,SNR=5.1
CPUP Sc P 05 26 36.5
comp=Z,24nm,1.3s,baz=358,slow=6.6,SNR=4.2
CPUP Villa Florida 52.00 141 P **P** **05 21 35.9 -1.6**
CPUP pmax pmax
comp=Z,24nm,1.0s
CPUP Villa Florida 52.00 141 *eP* **P** **05 21 35.7 -1.8**
comp=Z,24nm,1.0s,mb5.2
CPUP *es*CP 05 26 35.8
DLBC Dease Lake 52.73 335 LR LR 05 49 48.7
comp=Z,14µm,20.2s,baz=99,slow=42
PTCN Pitcairn Islan 54.80 225 *eP* **P** **05 21 57.0 -1.1**
RKT Rikitea 57.04 230 *eP* **P** **05 22 14.0 -0.1**
comp=Z,292nm,1.1s,mb6.2
RKT *ep*P pP 05 22 41.0 -2.7
comp=Z,132nm,0.9s
PLCA Paso Flores 58.01 162 P **P** **05 22 20.4 -0.3**
comp=Z,57nm,0.9s,mb5.6,baz=352,slow=9.7,SNR=12
PLCA pP pP 05 22 48.0 -2.4
comp=Z,21nm,1.0s,baz=310,slow=5.9,SNR=3.3
PLCA Paso Flores 58.01 162 *eP* **P** **05 22 20.1 -0.6**
comp=Z,14nm,1.1s,mb4.9
PLCA *ep*P pP 05 22 48.4 -1.9
TRQA Tornquist 58.81 154 *eP* **P** **05 22 24.8 -1.5**
comp=Z,7.9nm,1.3s,mb4.6
CAM4 Nova Friburgo 59.79 127 *eP* **P** **05 22 32.5 -0.7**
CAM4 *i* 05 22 36.9
CAM4 *i* pP 05 23 02.2 -0.9
CAM4 Nova Friburgo 59.79 127 *eP* **P** **05 22 32.5 -0.7**
CAM4 *i* 05 22 36.9
CAM4 *i* pP 05 23 02.2 -0.9
INK Inuvik 60.36 343 P **P** **05 22 35.3 -1.2**
comp=Z,16nm,0.8s,mb5.1,baz=128,slow=7.5,SNR=64
INK pP pP 05 23 04.8 -1.7
comp=Z,31nm,0.9s,baz=141,slow=7.5,SNR=9.8
INK PKP2bc 05 51 59.8
comp=Z,3.4nm,1.0s,baz=298,slow=1.9,SNR=5.3
INK Inuvik 60.36 343 P **P** **05 22 35.3 -1.2**
INK pP pP 05 23 04.8 -1.7
INK ⇑*e* 05 51 59.8
CAM3 Guarapari 60.54 124 *eP* **P** **05 22 37.2 -1.2**
CAM3 *i* 05 22 38.7
CAM3 *i* 05 22 43.7
CAM3 Guarapari 60.54 124 *eP* **P** **05 22 37.2 -1.2**
CAM3 *i* 05 22 38.7
CAM3 *i* 05 22 43.7
EYAK Cordova Ski Ar 60.63 332 P **P** **05 22 38.4 0.0**
TOA Tolsona 61.47 334 *eP* **P** **05 22 44.0 -0.1**
SML Sawmill 62.28 333 P **P** **05 22 49.1 -0.4**
SML Sawmill 62.28 333 *eP* **P** **05 22 48.2 -1.3**
PMR Palmer 62.55 333 P **P** **05 22 50.4 -0.9**
PMR pmax pmax
comp=Z,12nm,1.0s,mb4.8
PMR Palmer 62.55 333 *eP* **P** **05 22 50.3 -1.0**
PMS Palmer South 62.62 332 *eP* **P** **05 22 51.0 -0.7**
ILAR Eielson Array 62.90 336 P **P** **05 22 52.1 -1.5**
comp=Z,9.0nm,1.0s,mb4.7,baz=122,slow=4.2,SNR=68
ILAR pP pP 05 23 23.1 -0.6
comp=Z,29nm,1.1s,baz=120,slow=4.5,SNR=12
ILAR PKP2bc 05 51 54.2
comp=Z,2.0nm,1.0s,baz=296,slow=3.6,SNR=8.3
ILAR Eielson Array 62.90 336 P **P** **05 22 52.1 -1.5**
ILAR pP pP 05 23 23.1 -0.6
ILAR ⇑*e* 05 51 54.2
MCK McKinley 63.29 335 P **P** **05 22 55.5 -0.6**
MCK *e* 05 23 19.5

MCK pmax pmax
comp=Z,14nm,1.2s,mb4.8
MCK McKinley 63.29 335 *eP* **P 05 22 54.8 -1.3**
comp=Z,14nm,1.2s,mb4.8
MCK *epP* pP 05 23 26.4 +0.1
COLA College 63.32 336 *eP* **P 05 22 54.8 -1.5**
COLA College 63.32 336 *eP* **P 05 22 54.7 -1.6**
PMOR Pomariorio Ree 63.51 245 *eP* **P 05 22 57.8 -0.5**
comp=Z,264nm,1.6s,mb5.8
PMOR *epP* pP 05 23 25.9 -2.6
comp=Z,236nm,1.4s
SPU Mount Spurr 63.73 332 *eP* **P 05 22 58.1 -0.9**
SPU *epP* pP 05 23 28.5 -0.7
RSO Redoubt South 63.83 331 *eP* **P 05 22 58.9 -0.7**
SVW Sparrevohn 65.36 331 *eP* **P 05 23 07.8 -1.8**
IMA Indian Mountai 66.02 337 *eP* **P 05 23 12.2 -1.5**
PPT Papeete 66.05 243 *eP* **P 05 23 14.4 -0.3**
comp=Z,93nm,1.5s,mb5.4
PPT *epP* pP 05 23 44.0 -1.1
comp=Z,138nm,1.4s
PPT Papeete 66.05 243 P **P 05 23 15.5 +0.8**
comp=Z,32nm,0.9s,mb5.2,baz=118,slow=13,SNR=2.7
PAE Paea 66.09 243 *eP* **P 05 23 14.9 -0.1**
comp=Z,365nm,1.2s,mb6.1
PAE *epP* pP 05 23 43.7 -1.7
comp=Z,518nm,1.5s
SDPT Sand Point 66.68 324 *eP* **P 05 23 18.8 +0.7**
BORG Borgarnes 68.37 26 pP pP 05 23 57.1 -1.8
comp=Z,71nm,1.0s,baz=273,slow=4.2,SNR=7.3
CHIE El Hierro 68.48 66 P pP 05 23 59.6 -0.6
EGOM La Gomera 69.10 65 P pP 05 24 04.0 -0.1
CCAN Las Canadas 69.62 65 P pP 05 24 08.1 +0.7
EBAJ Bajamar 69.82 65 P pP 05 24 05.7 -2.9
NIKO Nikolski 71.40 321 *eP* **P 05 23 47.4 +0.5**
USHA Ushuaia 71.55 167 P **P 05 23 46.6 -1.1**
comp=Z,29nm,0.9s,mb5.1,baz=334,slow=3.4,SNR=11
USHA pP pP 05 24 16.9 -1.7
comp=Z,37nm,1.0s,baz=296,slow=4.4,SNR=5.1
TNA Tin City 71.63 335 *eP* **P 05 23 47.9 -0.2**
comp=Z,10nm,1.0s,mb4.6
CFTV Fuerteventura 71.81 65 P pP 05 24 20.3 -0.4
DAG Danmarks Havn 72.01 13 *jiP* **P 05 23 48.9 -1.3**
comp=Z,19nm,0.8s,mb5.0
DAG *i* pP 05 24 19.4 -1.7
comp=Z,49µm,21.0s
EFAM Famara 72.21 64 P pP 05 24 22.6 -0.5
EMAZ Mazaricos 74.44 49 P pP 05 24 33.8 -2.3
PLOU Loures 74.72 53 *epP* pP 05 24 36.1 -1.7
EZAM Zamans 74.72 50 P pP 05 24 36.8 -0.9
STS Santiago 74.76 49 P pP 05 24 36.4 -1.5
DCN Croghan 74.77 38 *eP* pP 05 24 35.6 -2.1
DCN Croghan 74.77 38 *eP* **P 05 24 04.6 -1.9**
DCN *eP* pP 05 24 35.6 -2.1
DMUB Kingscourt 74.95 38 *eP* pP 05 24 36.8 -1.9
DMUB Kingscourt 74.95 38 *eP* **P 05 24 05.7 -1.9**
DMUB *eP* pP 05 24 36.8 -1.9
PCOI Coimbra 75.11 52 *epP* pP 05 24 39.2 -0.8
PTEO Sao Teotonio 75.21 55 *epP* pP 05 24 39.9 -0.7
PTOM Tomar 75.21 52 *epP* pP 05 24 39.5 -1.1
DLF Lyons Farm 75.22 38 *eP* pP 05 24 38.3 -2.0
DLF Lyons Farm 75.22 38 *eP* **P 05 24 06.5 -2.6**
DLF *eP* pP 05 24 38.3 -2.0
ELOB Lobios 75.22 50 P pP 05 24 38.6 -2.0
MOE Montemor 75.38 53 *epP* pP 05 24 41.1 -0.5
PVIS Viseu 75.48 51 *epP* pP 05 24 40.8 -1.3
GMM Mts of Mourne 75.49 37⇑ *eP* pP 05 24 39.9 -2.0
PVRL Vila Real 75.55 51 *epP* pP 05 24 41.1 -1.4
GMK Mull of Kintyr 75.61 36⇑ *eP* pP 05 24 40.8 -1.7
EVO Evora 75.64 53 *eP* **P 05 24 08.1 -3.7**
comp=Z,40nm,1.1s,mb4.8
EVO *epP* pP 05 24 40.5 -2.6
EINC Incio 75.66 49 P pP 05 24 41.8 -1.3
EPON Pontenova 75.73 48 P pP 05 24 41.4 -2.1
MTE Manteigas 75.78 51 *eP* **P 05 24 11.2 -1.3**
MTE *epP* pP 05 24 42.3 -1.5
PBEJ Beja 75.82 54 *epP* pP 05 24 43.1 -1.0
ERUA La Rua 75.84 49 P pP 05 24 42.8 -1.3
PCBR Castelo Branco 75.90 52 *epP* pP 05 24 43.3 -1.2
MDO Dochfour 76.12 34⇑ *eP* pP 05 24 43.3 -2.1
EGRO El Granado 76.19 54 P pP 05 24 44.6 -1.6
ECAL Calabor 76.20 50 P pP 05 24 44.3 -1.8
PALC Alcoutim 76.20 54 *epP* pP 05 24 45.8 -0.5
PBRG Braganca 76.21 50 *epP* pP 05 24 44.5 -1.7
ADK Adak 76.24 320 *eP* **P 05 24 14.9 0.0**
RAR Rarotonga 76.32 244 P **P 05 24 17.6 +1.7**
comp=Z,62nm,0.7s,mb5.4,baz=85,slow=6.5,SNR=7.7
RAR Rarotonga 76.32 244 *eP* **P 05 24 18.1 +2.2**
MLA1 Latheron 76.57 33 *eP* pP 05 24 46.5 -1.4
SBJ Saint Breward 76.61 41⇑ *eP* pP 05 24 49.4 +1.1
SBD AMB AMB 05 24 51.5
comp=Z,102nm,1.5s,mb5.3
MCD Coleburn Distil 76.70 34⇑ *eP* pP 05 24 47.1 -1.5
EMIN Mina Concepcio 76.79 54 P pP 05 24 48.1 -1.5
MME1 Meikle Cairn 76.88 34 *eP* pP 05 24 47.8 -1.9
ESK Eskdalemuir 76.97 36 *eP* **P 05 24 17.3 -1.6**
ESK *e**PP pP 05 24 48.6 -1.6
ESK pmax pmax
comp=Z,210nm,1.2s,mb5.7
ESK Eskdalemuir 76.97 36 *eP* **P 05 24 17.3 -1.5**
comp=Z,206nm,1.2s,mb5.7
ESK *epP* pP 05 24 48.6 -1.6
EARI Arriondas 77.14 48 P pP 05 24 49.6 -1.8
WAL1 Walls 77.25 31⇑ *eP* pP 05 24 50.1 -1.6
HTR Trewern Hill 77.31 39 *eP* pP 05 24 50.4 -1.9
HTR AMB AMB 05 24 52.3
comp=Z,160nm,1.5s,mb5.5
SSP1 Stoney Pound 77.37 39⇑ *eP* pP 05 24 50.5 -2.0
SAN1 Sandwick 77.47 31⇑ *eP* pP 05 24 51.1 -1.8
YEL1 Yell 77.48 30⇑ *eP* pP 05 24 51.7 -1.3
LRW Lerwick 77.48 31⇑ *eP* pP 05 24 51.4 -1.6
MCH1 Michaelchurch 77.49 39⇑ *eP* pP 05 24 51.0 -2.2
MCH1 AMB AMB 05 24 53.0
comp=Z,115nm,1.5s,mb5.4
HLM1 Long Mynd 77.50 39⇑ *eP* pP 05 24 51.4 -1.9
HLM1 AMB AMB 05 24 53.2
comp=Z,186nm,1.3s,mb5.6
ESPR Espera 77.57 55 P pP 05 24 52.7 -1.3
HAE Alders End 77.76 39⇑ *eP* pP 05 24 52.9 -1.8
HAE AMB AMB 05 24 54.1
comp=Z,169nm,1.1s,mb5.7
ROSF Rostrenen 77.80 43 *eP* **P 05 24 21.0 -2.6**
comp=Z,32nm,1.1s,mb4.7
QUIF Quistinic 77.93 43 *eP* **P 05 24 22.0 -2.3**
comp=Z,35nm,0.9s,mb4.8
QUIF *epP* pP 05 24 52.8 -2.9
ELIJ Sierra de Lija 77.94 55 P pP 05 24 56.2 +0.2
EJIF Jimena Fronter 77.94 55 P pP 05 24 57.0 +0.9
SGMF Saint Gilles 78.29 43 *eP* **P 05 24 23.6 -2.7**
GUD Guadarrama 78.31 51 P pP 05 24 57.6 -0.4
EADA Adamuz 78.37 53 P pP 05 24 57.2 -1.2
ELAN Lanestosa 78.44 48 P pP 05 24 57.0 -1.6
ESDC Sonseca Array 78.60 52 P **P 05 24 26.5 -1.7**
comp=Z,9.7nm,0.8s,mb4.7,baz=287,slow=5.5,SNR=22
ESDC *epP* pP 05 24 57.4 -2.3
comp=Z,57nm,1.1s,baz=287,slow=5.4,SNR=14
ESDC Sonseca Array 78.60 52 P **P 05 24 26.5 -1.7**
ESDC P pP 05 24 57.2 -2.4
ESDC *epP* pP 05 24 57.4 -2.2
ESLA Sonseca Array 78.60 52 *eP* **P 05 24 26.3 -1.9**
comp=Z,3.0nm,0.9s
ESLA *epP* pP 05 24 59.0 -0.6
ELOJ Sierra Loja 78.87 54 P pP 05 24 60.0 -1.1
EBAN Banos Encina 78.99 53 P pP 05 25 00.6 -1.1
ERON Agron 79.17 54 P pP 05 25 01.9 -0.8
ECOG Cogollos-Vega 79.31 54 P pP 05 25 03.0 -0.5
GRR Gorron 79.38 43 *eP* **P 05 24 30.0 -2.2**
comp=Z,57nm,0.8s,mb5.1
SPB4 Spitsbergen Ar 79.47 12 *eP* **P 05 24 33.3 +1.1**
FLN La Foliniere 79.57 42 *eP* **P 05 24 31.1 -2.1**
comp=Z,40nm,0.8s,mb5.0
FLN *epP* pP 05 25 03.4 -1.3
EQES Quesada 79.61 54 P pP 05 25 04.8 -0.4
EALK Alkurruntz 79.83 48 P pP 05 24 08.1 -1.4
LDF La Druitiere 79.83 42 *eP* **P 05 24 32.4 -2.3**
comp=Z,31nm,0.9s,mb4.8
ETOR Torete 79.85 50 P pP 05 25 06.1 -0.3
EVIA Vianos 79.90 53 P pP 05 25 06.7 0.0
EBER Berja 79.91 54 P pP 05 25 06.2 -0.6
EHUE Huescar 79.98 54 P pP 05 25 06.3 -0.8
MFF Saint Martin d 80.17 44 *eP* **P 05 24 34.0 -2.5**
ETSF Etsaut 80.57 48 *eP* **P 05 24 36.8 -1.9**
comp=Z,17nm,0.9s,mb4.6
ETSF *epP* pP 05 25 09.3 -0.9

ETOB Tobarra 80.63 53 P pP 05 25 09.8 -0.9
ESAC San Caprasio 80.86 49 P pP 05 25 10.7 -1.1
LFF La Frestale 81.10 46 *eP* **P 05 24 39.2 -2.3**
comp=Z,84nm,1.3s,mb5.1
EMOS Mosqueruela 81.12 51 P pP 05 25 12.4 -0.8
EPF Esparros 81.19 48 *eP* **P 05 24 39.7 -2.3**
comp=Z,24nm,1.0s,mb4.7
BILL Bilibino 81.49 338 *c iP* **P 05 24 42.7 -0.3**
BILL *e* pP 05 25 15.3 +0.7
BILL *e* 05 27 52.9
BILL pmax pmax
comp=Z,37nm,1.1s,mb5.1
BILL Bilibino 81.49 338 *eP* **P 05 24 42.4 -0.6**
comp=Z,42nm,1.1s,mb5.2
RJF Les Rejaudoux 81.56 45 *eP* **P 05 24 41.5 -2.4**
comp=Z,34nm,1.0s,mb4.8
TCF Toulx Ste Croi 81.83 44 *eP* **P 05 24 42.8 -2.5**
comp=Z,32nm,1.1s,mb4.8
TCF *epP* pP 05 25 13.8 -3.1
HYF Humbligny 81.91 43 *eP* **P 05 24 43.5 -2.1**
CAF Calviac 82.02 46 *eP* **P 05 24 43.8 -2.5**
BGF Bois d'Agland 82.20 44 *eP* **P 05 24 44.8 -2.4**
comp=Z,32nm,0.9s,mb4.8
FX1 Attu Island--F 82.20 323 *eP* **P 05 24 47.5 +0.5**
BAIF Baives 82.31 40 *eP* **P 05 24 45.5 -2.1**
MTLF Montolieu 82.47 47 *eP* **P 05 24 46.4 -2.2**
comp=Z,46nm,1.3s,mb4.9
PYM Petit Puy Mans 82.49 45 *eP* **P 05 24 47.7 -1.0**
AVF Avril sur Loir 82.49 44 *eP* **P 05 24 45.8 -2.8**
comp=Z,18nm,0.8s,mb4.6
AVF *epP* pP 05 25 16.9 -3.4
SSF Saint Saulge 82.53 43 *eP* **P 05 24 46.2 -2.6**
comp=Z,24nm,1.0s,mb4.7
GIVF Givet 82.69 40 *eP* **P 05 24 47.6 -1.9**
LOR Lormes 82.72 43 *eP* **P 05 24 47.5 -2.3**
comp=Z,43nm,0.8s,mb5.0
LOR *epP* pP 05 25 18.6 -2.9
LBL Lubilhac 82.77 45 *eP* **P 05 24 48.5 -1.6**
SMF Signal de Mont 82.85 44 *eP* **P 05 24 47.7 -2.8**
comp=Z,25nm,1.0s,mb4.7
KONO Kongsberg 82.90 30 *eP* **P 05 24 48.6 -1.8**
EJON La Jonquera 83.15 48 P pP 05 25 23.3 -0.5
NAO01 NORSAR Array S 83.17 29 *eP* **P 05 24 51.6 -0.2**
comp=Z,11nm,0.9s,mb4.7
NAO01 *epP* pP 05 25 22.3 -1.2
NAO01 *esP* sP 05 25 37.1 0.0
MEZF Maizieres J'vi 83.21 42 *eP* **P 05 24 49.4 -2.8**
HGN Heimansgroeve 83.22 39 *eP* **P 05 24 50.9 -1.2**
comp=Z,16nm,1.7s,mb4.6
HGN *ePP* pP 05 25 21.6 -2.3
NB2 NORSAR Subarra 83.26 29 P **P 05 24 51.8 -0.4**
comp=Z,1.1nm,0.8s,baz=293,slow=5.3
NOA NORSAR Array B 83.26 29 P **P 05 24 52.2 0.0**
comp=Z,11nm,0.9s,mb4.7,baz=289,slow=5.2,SNR=29
NOA pP pP 05 25 22.5 -1.5
comp=Z,16nm,0.8s,baz=289,slow=5.1,SNR=12
WTSB Winterswijk 83.44 38 *eP* **P 05 24 52.0 -1.3**
WTSB *ePP* pP 05 25 23.3 -1.7
LASF Ste Croix 83.46 46 *eP* **P 05 24 52.3 -1.3**
MUD Monsted U'grnd 83.58 33⇑ *iP* pP 05 25 25.6 0.0
comp=Z,42nm,1.2s
WLF Walferdange 83.63 40 *eP* **P 05 24 53.8 -0.5**
WLF *epP* pP 05 25 25.5 -0.6
VIVF Saint-Julien-l 83.84 45 *eP* **P 05 24 54.1 -1.4**
comp=Z,38nm,1.1s,mb4.8
VIVF *epP* pP 05 25 25.4 -1.9
THEF They Montfort 83.88 42 *eP* **P 05 24 54.2 -1.4**
HAU Haudompre 84.17 42 *eP* **P 05 24 55.0 -2.1**
comp=Z,30nm,0.7s,mb4.9
RUP Ruppelstein 84.19 40⇑ *eP* **P 05 24 56.3 -0.8**
RUP Ruppelstein 84.19 40 *eP* **P 05 24 56.2 -0.9**
CABF La Chapelle 84.36 43 *eP* **P 05 24 56.2 -1.8**
TIC Toumodi 84.37 85 *eP* **P 05 24 56.4 -2.4**
comp=Z,112nm,1.1s,mb5.6
ABH Alteburg 84.44 40⇑ *eP* **P 05 24 57.4 -1.0**
ABH Alteburg 84.44 40 *eP* **P 05 24 57.5 -0.9**
LIC Lamto 84.46 85 *eP* **P 05 24 57.2 -2.1**
comp=Z,94nm,1.1s,mb5.5
LIC Lamto 84.46 85 *eP* **P 05 24 57.3 -2.0**
comp=Z,40nm,1.1s,mb5.2
LIC *epP* pP 05 25 30.3 -0.8
DBIC Dimbokro 84.52 85 P **P 05 24 57.6 -2.0**
DBIC Dimbokro 84.52 85 P **P 05 24 57.6 -2.0**
comp=Z,13nm,1.0s,mb4.8,baz=292,slow=4.8,SNR=14
DBIC pP pP 05 25 29.8 -1.7
comp=Z,14nm,0.8s,baz=257,slow=5.2,SNR=6.8
HINF Hinteralfeld 84.55 42 *eP* **P 05 24 56.9 -2.1**
ECH Echery 84.64 42 *eP* **P 05 24 57.9 -1.5**
ORIF Oris-en-Rattie 84.66 45 *eP* **P 05 24 58.1 -1.5**
comp=Z,32nm,0.9s,mb5.0
LOMF Lomont 84.66 43 *eP* **P 05 24 58.3 -1.2**
CDF Champ du Feu 84.67 41 *eP* **P 05 24 57.7 -1.8**
comp=Z,26nm,0.9s,mb4.9
CDF *epP* pP 05 25 29.1 -2.3
SMRF Simiane la Rot 84.69 46 *eP* **P 05 24 56.8 -2.9**
KIC Kosan Boka 84.71 85 *eP* **P 05 24 58.2 -2.3**
comp=Z,71nm,0.9s,mb5.6
WLS Welschbruch 84.72 41 *eP* **P 05 24 58.3 -1.5**
MOF Molkenrain 84.72 42 *eP* **P 05 24 58.3 -1.5**
LANF Langenberg 84.85 41 *eP* **P 05 24 59.2 -1.2**
BSEG Bad Segeberg 84.94 36 *eP* **P 05 25 00.6 -0.1**
BSEG *e**PP pP 05 25 33.2 +0.6
BSEG pmax pmax
comp=Z,36nm,1.0s,mb5.3
LIBD Limburg 84.95 42 *eP* **P 05 24 59.7 -1.2**
BBS Basel-Blauen 85.07 42 *eP* **P 05 25 00.0 -1.6**
BBS Basel-Blauen 85.07 42 *eP* **P 05 24 59.9 -1.7**
LPL La Plagne 85.08 44 *eP* **P 05 25 00.7 -1.0**
comp=Z,29nm,1.1s,mb4.8
LPG La Plagne 85.10 44 *eP* **P 05 25 00.9 -0.8**
comp=Z,44nm,1.2s,mb5.0
BNI Bardonecchia 85.17 45 P **P 05 25 01.4 -0.7**
BNI *e* pP 05 25 34.4 +0.4
BNI Bardonecchia 85.17 45 *eP* **P 05 25 01.1 -1.0**
BNI *epP* pP 05 25 33.8 -0.2
KIZ Kirchzarten 85.20 42⇑ *eP* **P 05 25 00.8 -1.4**
RRL Cesana Torines 85.28 45 P **P 05 25 01.7 -0.9**
FELD Feldberg 85.28 42⇑ *eP* **P 05 25 01.2 -1.4**
TOD Tromm 85.30 40 *eP* **P 05 25 01.2 -1.4**
MBDF Montbardon 85.32 45 *eP* **P 05 25 00.7 -2.2**
comp=Z,22nm,0.8s,mb4.9
BFO Black Forest 85.36 41 *eP* **P 05 25 01.4 -1.6**
BFO *e**PP pP 05 25 34.0 -0.9
BFO pmax pmax
comp=Z,12nm,1.1s,mb4.7
BFO Black Forest 85.36 41 *eP* **P 05 25 01.4 -1.6**
comp=Z,12nm,1.1s,mb4.7
BFO *epP* pP 05 25 34.0 -0.9
LSD Ceresole Reale 85.39 44 P **P 05 25 02.5 -0.6**
ARCES ARCESS Array B 85.41 18 P **P 05 25 01.5 -1.2**
comp=Z,5.9nm,0.6s,mb4.7,baz=277,slow=4.7,SNR=48
ARCES pP pP 05 25 33.6 -1.0
comp=Z,11nm,0.8s,baz=291,slow=4.7,SNR=4.6
ARCES PP PP 05 28 21.6 -2.2
comp=Z,12nm,0.9s,baz=297,slow=5.4,SNR=8.1
ARCES PKKPbc 05 43 08.9
comp=Z,1.3nm,0.8s,baz=72,slow=3.8,SNR=6.0
ARCES ARCESS Array B 85.41 18 P **P 05 25 01.5 -1.2**
ARCES pP pP 05 25 33.6 -1.0
ARCES PP PP 05 28 21.6 -2.2
ARCES PKKPbc 05 43 08.9
ARE0 ARCESS Array S 85.41 18 *eP* **P 05 25 02.5 -0.2**
FENE Fenestrelle 85.44 45 P **P 05 25 02.6 -0.8**
LMR La Mourre 85.51 47 *eP* **P 05 25 01.1 -2.7**
comp=Z,33nm,1.0s,mb4.9
RSP Reno Superiore 85.54 45 P **P 05 25 02.9 -1.0**
FRF La Foret Royal 85.55 46 *eP* **P 05 25 02.2 -1.8**
comp=Z,36nm,0.7s,mb5.1
COP Copenhagen 85.55 34 *i* P pP 05 25 34.2 -1.4
COP Copenhagen 85.55 34 *eP* pP 05 25 34.2 -1.4
PZZ Prazzo 85.61 45 P **P 05 25 03.7 -0.6**
BHB Bricherasio 85.63 45 P **P 05 25 03.0 -1.4**
SPAK Spaichingen 85.72 42⇑ *eP* **P 05 25 03.3 -1.4**
SPAK Spaichingen 85.72 42 *eP* **P 05 25 02.9 -1.8**
KEV Kevo 85.75 18 *ep* **P 05 25 03.2 -1.2**
comp=Z,0.3nm,0.3s
STV Sta Anna Valdi 85.83 46 P **P 05 25 02.7 -2.7**
SIND Sindeldorf 85.88 40⇑ *eP* **P 05 25 04.3 -1.2**
ORO Oropa 85.90 44 *eP* **P 05 25 05.0 -0.7**
ENR Entracque 85.90 46 P **P 05 25 03.8 -2.0**
GUT Gutenstein 85.94 41⇑ *eP* **P 05 25 04.5 -1.3**
BUCH Bad Urach 85.98 41⇑ *eP* **P 05 25 05.2 -0.8**
SBF Sospel 86.01 46 *epP* pP 05 25 37.3 -0.9
ROB Roburent 86.19 45 P **P 05 25 04.5 -2.7**

IMI Imperia 86.31 46 P **P 05 25 05.2 -2.5**
RORO 86.38 45 P **P 05 25 05.0 -3.1**
FIN Finale Ligure 86.45 45 P **P 05 25 04.5 -3.8**
HDH Heidenheim 86.49 41 *eP* **P 05 25 07.4 -1.0**
PCP Pian Castagno 86.59 45 P **P 05 25 05.7 -3.3**
DAVA Damuels 86.67 42⇑ *iP* **P 05 25 08.7 -0.7**
comp=Z,43nm,1.1s,mb5.3
DAVA *i* pP 05 25 41.0 -0.4
comp=Z,103nm,1.2s
UBR Uberruh 86.70 42⇑ *eP* **P 05 25 08.5 -1.0**
MOX Moxa 86.71 39 *iP* **P 05 25 08.6 -0.9**
MOX pP pP 05 25 41.0 -0.5
MOX Moxa 86.71 39 *eP* **P 05 25 08.6 -0.9**
MOX *e* pP 05 25 41.3 -0.2
MOX pmax pmax
comp=Z,108nm,1.8s,mb5.5
MOX Moxa 86.71 39 *eP* **P 05 25 08.6 -0.9**
comp=Z,108nm,1.8s,mb5.5
MOX *e* pP 05 25 41.3 -0.2
GRA1 Grafenberg Arr 86.78 39 *eP* **P 05 25 09.6 -0.2**
comp=Z,28nm,1.0s,mb5.2
GRA1 *epP* pP 05 25 42.4 +0.6
GRF Grafenberg Arr 86.78 39 *eP* **P 05 25 09.6 -0.2**
GRF *e**PP pP 05 25 42.4 +0.6
GRF pmax pmax
comp=Z,28nm,1.0s,mb5.2
DAVOX Davos 86.82 43 P **P 05 25 09.8 -0.3**
comp=Z,18nm,0.8s,mb5.0,baz=323,slow=13,SNR=17
DAVOX pP pP 05 25 42.1 0.0
comp=Z,23nm,1.1s,baz=253,slow=5.5,SNR=4.2
BSD Bornholm Skovb 87.08 34⇓ *iP* pP 05 25 43.4 +0.2
comp=Z,45nm,1.2s
BOB Bobbio (Coli) 87.14 45 *eP* **P 05 25 10.4 -1.3**
CLL Collm 87.32 38 P **P 05 25 11.9 -0.5**
comp=Z,logA/T=1.3,mb5.0
CLL *i* *PP pP 05 25 44.4 -0.1
CLL Collm 87.32 38 *i* P **P 05 25 11.9 -0.5**
CLL *i* *PP pP 05 25 44.4 -0.1
CLL pmax pmax
comp=Z,24nm,1.2s,mb5.0
CLL Collm 87.32 38 *i* P **P 05 25 11.9 -0.5**
comp=Z,24nm,1.2s,mb5.0
CLL *i* pP pP 05 25 44.4 -0.1
NKC Novy Kostel 87.35 39 *epP* pP 05 25 43.6 -1.0
MOTA Moosalm 87.44 42⇑ *iP* **P 05 25 12.4 -0.7**
comp=Z,19nm,1.0s,mb5.0
MOTA *i* pP 05 25 45.2 +0.1
comp=Z,41nm,1.2s
PGF Pioggiola 87.48 47 *eP* **P 05 25 11.3 -2.1**
comp=Z,31nm,0.9s,mb4.9
CODM 87.52 45 P **P 05 25 08.6 -5.0**
SQTA Sankt Quirin 87.55 42⇑ *iP* **P 05 25 12.7 -0.9**
comp=Z,9.4nm,1.1s,mb4.7
SQTA *i* pP 05 25 45.5 -0.2
comp=Z,54nm,1.5s
WTTA Wattenberg 87.81 42⇑ *iP* **P 05 25 14.0 -0.9**
comp=Z,9.2nm,1.1s,mb4.7
WTTA *i* pP 05 25 47.3 +0.4
comp=Z,20nm,1.4s
BRG Berggiesshubel 88.03 38 *eP* **P 05 25 15.7 -0.1**
BRG *i* *PP pP 05 25 47.9 0.0
BRG *e* 05 28 43.5
BRG pmax pmax
comp=Z,39nm,2.0s,mb5.1
BRG Berggiesshubel 88.03 38 *eP* **P 05 25 15.7 -0.1**
comp=Z,39nm,2.0s,mb5.1
BRG *i* pP pP 05 25 47.9 0.0
BRG *e* 05 28 43.5
CTI Castel Tesino 88.21 43 *eP* pP 05 25 48.4 -0.5
KHC Kasperske Hory 88.41 40 *eP* **P 05 25 17.0 -0.7**
KHC *epP* pP 05 25 49.0 -0.8
PVCC Panska Ves 88.53 38 *eP* **P 05 25 18.3 +0.1**
PVCC *epP* pP 05 25 50.0 -0.3
GEC2 GERESS Array S 88.59 40 *eP* **P 05 25 17.8 -0.7**
GEC2 *e**PP pP 05 25 50.7 +0.1
GEC2 pmax pmax
comp=Z,12nm,1.1s,mb4.8
GEC2 GERESS Array S 88.59 40 *eP* **P 05 25 17.8 -0.7**
comp=Z,12nm,1.1s,mb4.8
GEC2 *epP* pP 05 25 50.7 +0.1
GERES GERESS Array B 88.59 40 P **P 05 25 18.1 -0.4**
comp=Z,2.7nm,0.7s,mb4.4,baz=270,slow=4.0,SNR=18
GERES pP pP 05 25 50.4 -0.3
comp=Z,8.9nm,0.9s,baz=297,slow=3.0,SNR=8.6
GERES PP PP 05 28 48.2 -2.5
comp=Z,2.2nm,0.9s,baz=290,slow=7.8,SNR=2.6
PRU Pruhonice 88.70 38 *eP* **P 05 25 19.0 0.0**
PRU *epP* pP 05 25 50.5 -0.6
KBA Koelnbreinsper 88.97 42⇑ *iP* **P 05 25 19.6 -0.7**
comp=Z,15nm,1.1s,mb4.9
KBA *i* pP 05 25 50.4 -2.1
comp=Z,41nm,1.5s
SFI Santa Sofia 89.04 45 *eP* **P 05 25 19.3 -1.5**
GMNA Gemona 89.18 42 *eP* pP 05 25 52.8 -0.7
PTCC Patocco-Chiusa 89.21 42 *eP* **P 05 25 20.2 -1.2**
MOA Molln 89.29 41⇑ *iP* **P 05 25 20.4 -1.4**
comp=Z,6.9nm,1.0s,mb4.6
MOA *i* pP 05 25 54.1 +0.1
comp=Z,14nm,1.1s
UPC Upice 89.39 38 *eP* **P 05 25 22.8 +0.6**
UPC *epP* pP 05 25 54.5 +0.1
KAF Kangasniemi 89.42 25 *ep* **P 05 25 21.1 -1.0**
KSP Ksiaz 89.43 37 *eP* **P 05 25 21.2 -1.2**
KSP *e**PP pP 05 25 54.5 -0.1
CADS Cadrg 89.52 42 *eP* **P 05 25 21.8 -1.1**
CADS *epP* pP 05 25 54.9 -0.3
DPC Dobruska-Polom 89.63 38 *eP* **P 05 25 22.8 -0.6**
DPC *epP* pP 05 25 55.5 -0.1
FINES FINESS Array B 89.66 25 P **P 05 25 22.4 -0.9**
comp=Z,3.9nm,0.8s,mb4.6,baz=333,slow=4.3,SNR=9.2
FINES pP pP 05 25 54.2 -1.2
comp=Z,12nm,0.8s,baz=315,slow=2.7,SNR=10
FINES PP PP 05 28 56.6 -2.3
comp=Z,6.0nm,1.0s,baz=288,slow=6.0,SNR=5.4
VOY Vojsko 89.69 42 *eP* **P 05 25 21.8 -1.9**
VOY *e* pP 05 25 56.2 +0.3
TRI Trieste 89.72 43 *eP* pP 05 25 56.0 -0.1
TIXI Tiksi 90.08 348 P **P 05 25 23.4 -1.6**
TIXI *e**PP pP 05 25 55.6 -1.6
TIXI *e* 05 28 58.3
TIXI pmax pmax
comp=Z,86nm,0.9s,mb5.9
TIXI Tiksi 90.08 348 *eP* **P 05 25 23.8 -1.2**
comp=Z,17nm,0.1s,mb6.1
TIXI *epP* pP 05 25 56.7 -0.5
LJU Ljubljana 90.10 42 *eP* **P 05 25 25.0 -0.7**
LJU *epP* pP 05 25 57.7 -0.2
PDKS Podkum 90.39 42 *eP* **P 05 25 26.2 -0.8**
NVLJ Novalja 90.86 43 *iP* **P 05 25 28.1 -1.2**
OKC Ostrava-Krasne 90.92 38 *eP* **P 05 25 28.2 -1.2**
OKC *epP* pP 05 26 00.8 -0.9
MA2 Magadan 91.23 333 *eP* **P 05 25 29.8 -0.8**
MA2 pmax pmax
comp=Z,10.0nm,0.9s,mb5.0
MA2 Magadan 91.23 333 *eP* **P 05 25 30.9 +0.3**
OJC Ojcow 91.73 37 *eP* pP 05 26 05.4 0.0
VYHS Vyhne 91.87 39 *eP* **P 05 25 32.6 -1.3**
VYHS *e* pP 05 26 06.7 +0.6
NIE Niedzica 92.37 38 *eP* pP 05 26 09.0 +0.6
SKO Skopje 96.29 44 *eP* **P 05 26 04.0 +10**
AKASG Malin Array Be 96.78 34 P **P 05 25 55.0 -1.2**
comp=Z,0.2nm,0.3s,baz=315,slow=2.7,SNR=4.9
AKASG pP pP 05 26 27.1 -1.4
comp=Z,1.7nm,0.7s,baz=286,slow=3.9,SNR=3.4
AKASG PP PP 05 29 51.1 -3.8
comp=Z,4.2nm,1.0s,baz=298,slow=7.1,SNR=5.7
AKASG PKKPbc 05 42 38.4
comp=Z,0.6nm,0.6s,baz=108,slow=1.9,SNR=5.4
AKASG PKKPab 05 43 09.7
comp=Z,5.9nm,1.1s,baz=106,slow=2.1,SNR=7.0
OBN Obninsk 97.82 27⇑ *iP* **P 05 26 00.8 0.0**
OBN *e**PP pP 05 26 28.1 -5.0
OBN *e* 05 30 00.6
OBN pmax pmax
comp=Z,37nm,1.8s,mb5.6
OBN Obninsk 97.82 27 *eP* **P 05 25 58.1 -2.7**
VNA3 Neumayer Olymp 100.72 161⇑ *iP* 05 26 45.5
VNA1 Neumayer--Stat 101.04 160⇑ *iP* 05 26 47.3
VNA2 Neumayer--Watz 101.38 161⇑ *iP* 05 26 47.9
SNAA Sanae 102.95 161⇑ *iP* 05 26 54.3
QSPA South Pole Qui 104.36 180 *eP* Pdif 05 26 33.2 +3.7
comp=Z,3.3nm,0.9s
BRTR Keskin Array B 105.42 41 PKiKP 05 30 50.7
comp=Z,1.9nm,0.9s,baz=270,slow=2.5,SNR=5.0

BRTR PKKPbc 05 42 14.6
comp=Z,1.5nm,0.9s,baz=146,slow=4.5,SNR=6.5
BRTR PKKPab 05 42 43.0
comp=Z,1.8nm,0.8s,baz=143,slow=6.2,SNR=8.5
ZEI Tsey 109.58 34 *e*P Pdif 05 26 49.2 -4.1
ZEI 05 31 25.0
ZAL Zalesovo 111.83 3 PKiKP 05 30 58.7
comp=Z,1.1nm,0.3s,baz=121,slow=1.8,SNR=5.6
ZAL PP PP 05 31 33.1 -14
comp=Z,1.3nm,0.8s,baz=138,slow=1.9,SNR=4.1
ZAL Zalesovo 111.83 3 PKPdf PKPdf 05 30 58.7 +0.3
ZAL PP PP 05 31 33.1 -14
TLY Talaya 112.99 350 *e*PKIKP PKPdf 05 31 17.6 +17
TLY pmax pmax
comp=Z,18nm,1.1s
TLY MLR MLR
comp=Z,396μm,18.0s
CN2 Changchun 113.25 332 *e*PKP PKPdf 05 31 04.4 +2.9
CN2 PP PP 05 32 01.1 +2.7
CN2 PPP PPP 05 34 22.9 +0.1
CN2 SKS SKS 05 38 05.6 +31
CN2 SKKS 05 38 42.0
CN2 SS SS 05 47 32.5 +2.1
CN2 LR LR
comp=N,8μm,22.0s
CN2 LR LR
comp=E,10μm,22.0s
CN2 LR LR
comp=Z,16μm,21.0s
ZAK Zakamensk 114.30 350 *e*PKIKP PKPdf 05 31 01.7 -1.7
KURK Kurchatov 114.50 7 *e*PKIKP PKPdf 05 31 03.7 -0.1
SONM Songino Array 116.15 347 PKP PKPdf 05 31 08.9 +1.8
comp=Z,2.8nm,0.9s,slow=1.2,SNR=12
SONM pPKP 05 31 42.5
comp=Z,1.5nm,0.8s,baz=225,slow=1.7,SNR=2.9
SONM PP PP 05 32 13.2 -5.4
comp=Z,0.8nm,0.6s,baz=27,slow=5.5,SNR=3.7
SONM PKKPbc 05 41 40.1
comp=Z,3.8nm,0.9s,baz=203,slow=2.9,SNR=13
SONM PKKP PKKP 05 42 09.4 +22
comp=Z,5.0nm,0.8s,baz=198,slow=3.9,SNR=12
KS15 Wonju Array Si 116.86 326 *e*PKP PKPdf 05 31 10.4 +1.7
JNU Nakatsue 118.18 321 PKP PKPdf 05 31 12.4 +1.1
comp=Z,8.2nm,0.7s,baz=324,slow=14,SNR=4.3
MKAR Makanchi Array 118.77 5 PKP PKPdf 05 31 12.0 -0.2
comp=Z,1.8nm,0.5s,baz=1.9,slow=2.8,SNR=17
MKAR pPKP 05 31 48.0
comp=Z,2.4nm,0.9s,baz=315,slow=1.7,SNR=2.8
MKAR PKKPbc 05 41 28.7
comp=Z,1.1nm,0.9s,baz=180,slow=2.7,SNR=4.8
MKAR Makanchi Array 118.77 5 PKP PKPdf 05 31 12.0 -0.2
MKAR pPKP 05 31 48.0
MKAR PKKPbc 05 41 28.7
LBTB Lobatse 119.72 111 *e*PKP PKPdf 05 31 16.4 +1.9
USP Ospenovka 121.06 12 P PKPdf 05 31 17.4 +0.7
SNR=9.5
HHC Hu-ho-hao-te 121.22 340 *e*PKP PKPdf 05 31 18.7 +1.6
LSZ Lusaka 121.26 99 *e*PKP PKPdf 05 31 19.8 +2.1
EKS2 Erkin-Say 121.48 13 P PKPdf 05 31 19.8 +2.2
SNR=6.4
AAK Ala-Archa 121.67 13 P PKPdf 05 31 19.8 +1.9
SNR=5.0
AML Almayashu 121.97 13 P PKPdf 05 31 20.1 +1.6
SNR=8.1
WMQ Urumqi 122.04 1 PKP PKPdf 05 31 19.6 +1.0
WMQ PP PP 05 33 00.2 +1.3
WMQ PKS PKS 05 34 55.0 +0.7
WMQ SKS SKS 05 38 14.0 +8.2
WMQ SKKS 05 39 34.8
WMQ SS SS 05 49 22.2 -1.8
WMQ PP PP
comp=Z,328nm,10.3s
UCH Uchtor 122.06 13 P PKPdf 05 31 21.8 +3.1
SNR=12
ULHL Ulahol 122.39 11 P PKPdf 05 31 20.9 +1.6
SNR=18
JOW Kunigami 124.09 317 PKP PKPdf 05 31 25.7 +2.7
comp=Z,27nm,0.7s,baz=58,slow=1.7,SNR=4.5
MAW Mawson 124.15 168 *e*PKP PKPdf 05 31 23.8 +1.7
comp=Z,7.2nm,1.0s
MAW *ep*PKP 05 31 55.7
MAW Mawson 124.15 168 PKP PKPdf 05 31 24.0 +1.9
comp=Z,6.7nm,0.7s,baz=192,slow=2.7,SNR=11
MAW pPKP 05 31 54.9
comp=Z,9.7nm,0.9s,baz=248,slow=4.7,SNR=5.6
KSH Kashi 124.97 12 *e*PKP PKPdf 05 31 25.1 +0.7
KSH *e*XPKP 05 32 13.0
KSH *e*PP PP 05 33 20.0 +1.4
KSH *e*PKS PKS 05 35 00.0 0.0
KSH *e*SKS SKS 05 38 22.1 +7.0
KSH *e*SKKS 05 39 57.3
KSH *e*SS SS 05 50 02.8 +1.6
KSH PP PP
comp=Z,1μm,12.9s
KSH LR LR
comp=N,2μm,13.0s
KSH LR LR
comp=E,2μm,13.8s
TOO Toolangi 125.22 234 *e*PKP PKPdf 05 31 27.4 +2.5
comp=E,13nm,0.9s
SSE Sheshan 125.27 326 PKP PKPdf 05 31 25.8 +0.6
SSE SS SS 05 50 11.6 +6.5
SSE LR LR
comp=N,10μm,20.9s
SSE LR LR
comp=E,14μm,20.9s
SSE LR LR
comp=Z,18μm,21.4s
CTA Charters Tower 125.37 255 *e*PKP PKPdf 05 31 28.5 +2.9
comp=Z,12nm,0.9s
CTA Charters Tower 125.37 255 PKP PKPdf 05 31 28.7 +3.1
comp=Z,16nm,0.9s,baz=88,slow=3.0,SNR=8.7
CTAO Charters Tower 125.37 255 *e*PKP PKPdf 05 31 28.4 +2.8
GTA Gaotai 125.54 350 PKP PKPdf 05 31 27.6 +2.1
GTA XPKP 05 32 18.4
GTA PP PP
comp=Z,1μm,14.5s
GTA LR LR
comp=N,10μm,18.3s
GTA LR LR
comp=E,5μm,19.8s
GTA LR LR
comp=Z,16μm,18.2s
NJ2 Nanjing 125.73 329 *e*PKP PKPdf 05 31 23.4 -2.6
NJ2 LR LR
comp=N,48μm,18.0s
NJ2 LR LR
comp=E,24μm,20.0s
NJ2 LR LR
comp=Z,100μm,20.0s
KMBO Kilima Mbogo 127.08 80 PKP PKPdf 05 31 32.5 +3.4
comp=Z,0.8nm,0.2s,baz=34,slow=24,SNR=3.6
LZH Lanzhou 127.89 345 *e*PKP PKPdf 05 31 33.0 +2.9
LZH PP PP 05 33 41.0 +2.9
LZH SS SS 05 50 39.0 +1.6
XAN Xi'an 128.27 339 PKP PKPdf 05 31 33.4 +2.5
WHN Wuhan 129.14 332 *e*PKP PKPdf 05 31 34.8 +2.1
STKA Stephens Creek 129.21 241 *e*PKP PKPdf 05 31 35.0 +2.2
comp=Z,22nm,1.0s
STKA *ep*PKP 05 32 06.7
STKA Stephens Creek 129.21 241 PKP PKPdf 05 31 35.4 +2.7
comp=Z,25nm,0.9s,baz=67,slow=2.2,SNR=22
STKA pPKP 05 32 07.2
comp=Z,35nm,1.1s,baz=91,slow=2.5,SNR=7.0
ENH Enshi 131.44 336 *e*PKP PKPdf 05 31 37.2 +0.2
GYA Guiyang 135.95 337 PKP PKPdf 05 31 47.0 +1.5
GYA PKS PKS 05 35 21.8 +1.1
GYA PP PP
comp=Z,190nm,9.8s
GYA LR LR
comp=N,670nm,20.4s
GYA LR LR
comp=E,1μm,22.5s
GYA LR LR
comp=Z,2μm,23.0s
LSA Lhasa 136.11 357 *e*PKP PKPdf 05 31 48.7 +3.0
WB2 Warramunga Arr 136.55 256 *e*PKP PKPdf 05 31 49.4 +2.7
WB2 *ep*PKP 05 32 19.7
WB2 *e*SKP 05 35 12.3
WRAB Tennant Creek 136.55 256 *e*PKPdf PKPdf 05 31 49.2 +2.5
WRA Warramunga Arr 136.56 256 PKhKP 05 31 41.5
comp=Z,2.6nm,0.8s,baz=85,slow=2.7,SNR=9.2
WRA PKP PKPdf 05 31 49.6 +2.9
comp=Z,46nm,0.9s,baz=87,slow=1.7,SNR=72
WRA pPKP 05 32 21.2
comp=Z,12nm,1.0s,baz=90,slow=1.5,SNR=2.3
WRA PP PP 05 34 30.8 -2.2
comp=Z,2.9nm,1.1s,baz=86,slow=5.9,SNR=5.8
WRA SKPbc 05 35 12.2
comp=Z,5.9nm,0.9s,baz=83,slow=1.5,SNR=5.8
ASAR Alice Springs 136.84 251 PKhKP 05 31 35.3
comp=Z,1.8nm,1.0s,baz=104,slow=4.2,SNR=7.6
ASAR PKP PKPdf 05 31 49.0 +1.9
comp=Z,18nm,0.9s,baz=104,slow=2.0,SNR=22
ASAR pPKP 05 32 20.4
comp=Z,6.2nm,0.8s,baz=92,slow=1.7,SNR=1.5
ASAR PP PP 05 34 33.1 -1.5
comp=Z,1.6nm,1.0s,baz=98,slow=5.7,SNR=4.3
ASAR SKPbc 05 35 13.1
comp=Z,9.2nm,1.1s,baz=111,slow=2.9,SNR=6.5
GKN Gorkha 137.62 6 *e*P PKPdf 05 31 49.6 +1.1
comp=Z,71nm,1.0s
KOLN Koldanda 137.73 7 *e*P PKPdf 05 31 50.0 +1.2
comp=Z,63nm,1.2s
GUN Gumba 137.81 4 *e*P PKPdf 05 31 47.6 -1.3
comp=Z,52nm,0.9s
KKN Kakani 137.89 5 *e*P PKPdf 05 31 49.0 -0.1
comp=Z,40nm,0.8s
KAKA Kakadu 137.95 267 *e*PKP PKPdf 05 31 52.7 +3.2
comp=Z,22nm,0.9s
DMN Daman 138.05 5 *e*P PKPdf 05 31 50.5 +1.1
comp=Z,59nm,1.1s
KMI Kunming 138.53 341 *e*PKP PKPdf 05 31 53.7 +3.4
KMI LR LR
comp=N,10μm,19.3s
KMI LR LR
comp=E,13μm,20.2s
KMI LR LR
comp=Z,5μm,21.7s
POO Poona 143.97 25⇑*i*P PKPbc 05 31 57.0 -2.3
FITZ Fitzroy Crossi 144.80 259 *e*PKP PKPdf 05 32 03.1 +1.6
comp=Z,85nm,1.0s
FITZ *ep*PKP 05 32 33.3
FITZ *e*SKP 05 35 33.6
NANT Nan 145.09 341 P PKPdf 05 32 02.0 0.0
comp=Z,52nm,1.0s
CHG Chiang Mai 145.60 343⇑P PKPdf 05 32 03.3 +0.4
comp=Z,52nm,1.1s
CHTO Chiang Mai 145.60 343 PKPdf PKPdf 05 32 03.2 +0.3
CHTO pPKiKP 05 32 41.9
CM31 Chiang Mai Arr 145.94 343 *e*PKPdf PKPdf 05 32 05.0 +1.5
CMAR Chiang Mai Arr 145.94 343 PKPbc PKPbc 05 32 04.8 +0.3
comp=Z,30nm,0.8s,baz=339,slow=3.5,SNR=108
CMAR pPKPbc 05 32 37.6
comp=Z,18nm,0.9s,baz=335,slow=3.5,SNR=3.6
KKM Kota Kinabalu 146.31 305⇓*e*P PKPdf 05 32 07.1 +2.8
comp=Z,140nm,1.0s
KKTK Khon Kaen 146.59 336⇓P PKPdf 05 32 08.0 +3.4
comp=Z,1μm,0.8s
HYB Hyderabad 146.70 19⇑*i*PKP PKPdf 05 32 06.0 +1.3
comp=Z,60nm,1.0s
HYB *e* 05 32 36.0
HYB *ep*PKP 05 33 00.5
HYB Hyderabad 146.70 19⇑*e*P PKPdf 05 32 06.0 +1.3
BDT Bhumibol Dam 147.07 342 P PKPdf 05 32 08.0 +2.6
comp=Z,22nm,1.0s
KGD Kothagudem 147.14 15 *e*PKPd 05 32 03.8
KGD *e* 05 39 39.8
KGD *e* 05 48 14.8
NST Nakhon Sawan 148.19 340 P PKPdf 05 32 12.1 +4.8
NWAO Narrogin (SRO) 148.50 229 PKPdf PKPdf 05 32 11.3 +4.0
NWAO pPKPbc 05 32 42.9
NWAO Narrogin (SRO) 148.50 229 *e*PKPdf PKPdf 05 32 09.6 +2.3
NWAO *e*PKPab PKPab 05 32 16.7 -0.3
KLBR Kellerberrin 148.73 232 *e*PKP PKPdf 05 32 10.3 +2.6
comp=Z,90nm,1.1s
KLBR *ep*PKP 05 32 43.9
MUN Mundaring 149.72 230 *e*PKP PKPdf 05 32 12.0 +2.8
comp=Z,81nm,0.9s
MUN *ep*PKP 05 32 47.2
NNT Nongplab 151.19 338 P PKPdf 05 32 16.0 +4.1
IPM Ipoh 157.75 327⇓*e*P PKPdf 05 32 24.0 +3.1

NEIC ***03*** *05:14:10.1, 37.87S×73.66W, h18km, ML4.1(GUC), After GUC.*
GUC 03 05:14:10.1±0.7, 37.87S×73.66W, h18km±6km, ML4.1, 4C, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
					Op	ISC	h m s	ISC
TMCH	**Temuco**	**1.20**	**137**	⇑*i*P		Pb	05 14 29.8	-2.2
TMCH				*i* S		Sb	05 14 45.5	-1.6
TMCH				AMP			05 14 49.5	
comp=E,3μm,0.4s								
CCHI	**Chillan**	**1.78**	**45**⇑*i*P			Pn	05 14 40.1	-0.3
CCHI				*i* S		Sn	05 15 02.9	+0.1
CCHI				AMP			05 15 06.3	
comp=E,4μm,0.4s								
COCH	**Cobquecura**	**1.87**	**22**⇑*i*P			Pn	05 14 41.9	+0.2
COCH				*i* S		Sn	05 15 05.2	+0.3
COCH				AMP			05 15 09.4	
comp=N,1μm,0.3s								
VLCH	**Valdivia**	**1.96**	**171**⇑*i*P			Pn	05 14 43.0	0.0
VLCH				*i* S		Sn	05 15 07.8	+0.4
VLCH				AMP			05 15 20.1	
comp=N,5μm,0.8s								
OSCH	**Osorno**	**2.73**	**172**	*i* P		Pn	05 14 54.0	0.0
OSCH				AMP			05 15 43.7	
comp=E,2μm,0.5s								
TALC	**Talca**	**2.95**	**34**	*i* S		Sn	05 15 32.7	+0.2

IDC ***03*** *05:33:02.8±0.9, 37.74S×73.48W, mb4.2/8, mb1 4.3/12, mb1mx4.2/18, ML3.9/4, Error ellipse: s-maj=29.7km s-min=14.6km az=61.0*
GUC ***03*** *05:33:03.2±1.0, 37.90S×73.84W, h12km±10km, ML4.9*
NEIC ***03*** *05:33:05.7±2.9, 37.80S×73.57W, h22km±21km, mb4.2/7, ML4.9(GUC), Error ellipse: s-maj=18.1km s-min=7.5km az=94.0*
ISC 03 05:33:05.7±0.4, 37.81S±0.04×73.51W±0.09, h33km, n45, σ1§16/43, mb4.4/16, 3C-3D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
					Op	ISC	h m s	ISC
TMCH	**Temuco**	**1.17**	**143**	*e*P		**P**	**05 33 25.0**	**-0.7**
TMCH				*i* S		**S**	**05 33 40.8**	**+0.1**
TMCH				AMP			05 33 47.5	
comp=N,7μm,1.0s								
CCHI	**Chillan**	**1.66**	**44**⇑*i*P			**P**	**05 33 35.2**	**+2.4**
CCHI				*i* S		**S**	**05 34 00.5**	**+7.3**
CCHI				AMP			05 34 04.2	
comp=E,19μm,0.5s								
CCHI				AMP			05 34 04.5	
comp=E,33μm,0.5s								
VLCH	**Valdivia**	**2.00**	**174**⇓*i*P			**P**	**05 33 36.8**	**-0.9**
OSCH	**Osorno**	**2.77**	**174**⇓*i*P			**P**	**05 33 47.5**	**-1.2**
OSCH				AMP			05 34 37.2	
comp=E,4μm,0.6s								
TALC	**Talca**	**2.84**	**33**	*i* S		**S**	**05 34 29.4**	**+6.2**
TALC				AMP			05 34 42.1	
comp=N,13μm,0.6s								
PLCA	**Paso Flores**	**3.71**	**143**	Pn		**Pn**	**05 34 02.4**	**+0.3**
comp=N,2.0nm,0.3s,baz=319,slow=10,SNR=6.0								
PLCA				Pg		**P**	**05 34 12.5**	**+10**
comp=N,5.6nm,0.3s,baz=332,slow=15,SNR=7.9								
PLCA				Lg			05 35 02.1	
comp=N,16nm,0.3s,baz=46,slow=22,SNR=7.6								
PLCA	**Paso Flores**	**3.71**	**143**	*e*P		**P**	**05 34 02.9**	**+0.9**
PLCA				Pg		**P**	**05 34 12.5**	**+10**
PLCA				Lg			05 35 02.1	
SFDO	**San Fernando**	**3.78**	**33**	*i* P		**P**	**05 34 02.5**	**-0.5**
CLCH	**Cerro Calan**	**5.03**	**30**⇓*i*P			**P**	**05 34 19.1**	**-1.7**
CLCH				*i* S		**S**	**05 35 19.5**	**+1.0**
LVC	**Limon Verde**	**15.66**	**16**	Pn		**P**	**05 36 45.2**	**-0.3**
comp=N,0.2nm,0.3s,baz=198,slow=12,SNR=2.2								
LVC	**Limon Verde**	**15.66**	**16**	P		**P**	**05 36 44.6**	**-0.9**
USHA	**Ushuaia**	**17.37**	**170**	P		**P**	**05 37 09.2**	**+2.4**
comp=N,0.1nm,0.3s,baz=8.7,slow=13,SNR=2.3								
CPUP	**Villa Florida**	**17.83**	**55**	P		**P**	**05 37 11.8**	**-1.0**
comp=N,0.2nm,0.3s,baz=242,slow=9.8,SNR=7.4								
CPUP	**Villa Florida**	**17.83**	**55**	*e*P		**P**	**05 37 11.5**	**-1.3**
comp=N,4.4nm,1.2s								
ARE	**Arequipa**	**21.34**	**5**	*e*P		**P**	**05 37 54.0**	**+1.9**
LPAZ	**La Paz**	**21.96**	**14**	P		**P**	**05 37 59.7**	**+1.4**
comp=N,3.2nm,0.7s,mb3.9,baz=148,slow=5.2,SNR=9.4								
LPAZ	**La Paz**	**21.96**	**14**	*e*P		**P**	**05 37 59.6**	**+1.4**
comp=N,1.8nm,0.7s,mb3.6								
BDFB	**Brasilia**	**31.53**	**52**	P		**P**	**05 39 25.8**	**-1.4**
comp=N,1.6nm,0.6s,mb4.0,baz=231,slow=4.3,SNR=6.8								
OTAV	**Otavalo**	**38.14**	**352**	*e*P		**P**	**05 40 21.4**	**-2.1**
comp=N,8.6nm,1.3s,mb4.3								
VNA3	**Neumayer Olymp**	**46.32**	**156**			**P**	**05 41 39.0**	**+9.4**
SDV	**Santo Domingo**	**46.53**	**4**	P		**P**	**05 41 31.4**	**-0.6**
comp=N,3.0nm,0.6s,mb4.4,baz=179,slow=6.0,SNR=5.8								
VNA2	**Neumayer--Watz**	**47.00**	**156**⇑*i*			**P**	**05 41 30.7**	**-4.2**
SNAA	**Sanae**	**48.54**	**157**⇓*i*			**P**	**05 41 47.4**	**+0.4**
QSPA	**South Pole Qui**	**52.43**	**180**	*e*P		**P**	**05 42 17.8**	**+1.3**
comp=N,3.7nm,1.0s,mb4.3								
TXAR	**Lajitas Array**	**72.52**	**333**	P		**P**	**05 44 31.5**	**+0.5**
comp=N,1.0nm,0.7s,mb3.9,baz=151,slow=8.4,SNR=14								
TXAR	**Lajitas Array**	**72.52**	**333**	P		**P**	**05 44 31.5**	**+0.5**
MNTX	**Cornudas Mount**	**75.28**	**332**	*e*P		**P**	**05 44 45.0**	**-2.1**
comp=N,2.3nm,1.1s,mb4.0								
LIC	**Lamto**	**77.11**	**72**	*e*P		**P**	**05 44 56.9**	**-0.9**
comp=N,48nm,0.8s,mb5.5								
CCM	**Cathedral Cave**	**77.25**	**346**	*e*P		**P**	**05 44 57.2**	**-1.0**
comp=N,8.1nm,0.7s,mb4.8								
TIC	**Toumodi**	**77.39**	**71**	*e*P		**P**	**05 44 59.6**	**+0.2**
comp=N,50nm,0.9s,mb5.5								
KIC	**Kosan Boka**	**77.41**	**72**	*e*P		**P**	**05 44 58.8**	**-0.7**
comp=N,90nm,0.9s,mb5.7								
DBIC	**Dimbokro**	**77.53**	**71**	P		**P**	**05 45 00.8**	**+0.6**
comp=N,11nm,0.7s,mb4.9,baz=212,slow=5.9,SNR=27								
DBIC	**Dimbokro**	**77.53**	**71**	P		**P**	**05 45 00.8**	**+0.6**
ANMO	**Albuquerque**	**78.59**	**333**	*e*P		**P**	**05 45 06.2**	**+0.6**
comp=N,2.6nm,1.0s,mb4.1								
TSUM	**Tsumeb**	**79.32**	**106**	P		**P**	**05 45 10.5**	**+0.7**
comp=N,1.9nm,0.8s,mb4.1,baz=291,slow=6.1,SNR=5.8								
PV10	**Paradox Valley**	**82.58**	**333**	*e*P		**P**	**05 45 26.4**	**-0.2**
NVAR	**Mina Array Bea**	**86.36**	**326**	P		**P**	**05 45 47.0**	**+1.5**
comp=N,0.7nm,0.7s,mb4.0,baz=143,slow=7.0,SNR=5.9								
PDAR	**Pinedale Array**	**86.65**	**334**	P		**P**	**05 45 47.5**	**+0.7**
comp=N,0.7nm,0.9s,mb3.9,baz=153,slow=6.6,SNR=6.4								
GERES	**GERESS Array B**	**115.65**	**47**	PKP	PKPdf		05 51 44.1	-0.1
comp=N,0.2nm,0.2s,baz=243,slow=2.2,SNR=3.6								
VKA	**Vienna**	**116.91**	**49**	MLRZ			05 48 00.0	
comp=N,34nm,17.0s								
BRTR	**Keskin Array B**	**124.66**	**64**	PKP	PKPdf		05 52 03.2	+1.4
comp=N,0.7nm,0.7s,baz=225,slow=1.7,SNR=4.0								
BRVK	**Borovoye**	**150.75**	**47**	*e*PKPbc	PKPdf		05 52 55.5	+7.4
BVAR	**Borovoye Array**	**150.82**	**47**	PKPbc	PKPdf		05 52 56.4	+8.2
comp=N,8.4nm,1.0s,baz=295,slow=3.0,SNR=22								
BVAR				PKPab	PKPab		05 53 02.9	-0.5
comp=N,0.9nm,0.6s,slow=1.4,SNR=5.7								
ZAL	**Zalesovo**	**158.05**	**36**	PKPab	PKPab		05 53 33.9	-0.1
comp=N,0.7nm,0.3s,baz=17,slow=2.9,SNR=3.0								
MKAR	**Makanchi Array**	**160.04**	**56**	PKPab	PKPab		05 53 42.4	-0.4
comp=N,1.4nm,0.7s,baz=292,slow=4.4,SNR=8.2								

JMA ***03*** *05:33:56.1±0.3, 34.41N×136.97E, h351km±3km, M3.6*
ISC 03 05:33:55.5±1.5, 34.4N±0.1×137.02E±0.09, h353km±13km, n18, σ0§83/25, Near south coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
					Op	ISC	h m s	ISC
JIE	**Ise**	**0.26**	**273**	P		**P**	**05 34 40.3**	**+0.3**
JAA	**Atsumi**	**0.27**	**22**	P		**P**	**05 34 40.4**	**+0.4**
JAA				S		**S**	**05 35 14.9**	**+0.1**
JWY	**Kouya**	**1.19**	**263**	P		**P**	**05 34 42.8**	**+0.1**
JGM	**Miyama**	**1.34**	**349**	P		**P**	**05 34 43.6**	**+0.2**
JGM				S		**S**	**05 35 20.2**	**-0.8**
JWZ	**Kozaga**	**1.38**	**232**	P		**P**	**05 34 43.2**	**-0.4**
JWT	**Wachi**	**1.61**	**305**	P		**P**	**05 34 44.8**	**-0.1**
JYN	**Shimob**	**1.68**	**48**	P		**P**	**05 34 46.1**	**+0.8**
JOD2	**Odawara 2**	**1.92**	**62**	P		**P**	**05 34 47.6**	**+0.7**
JKG	**Kaga**	**1.98**	**344**	P		**P**	**05 34 47.1**	**-0.2**
JIM2	**Oshima 3**	**2.02**	**80**	P		**P**	**05 34 47.6**	**0.0**
JAI	**Aioi**	**2.21**	**255**	P		**P**	**05 34 48.7**	**-0.3**
JRY	**Ryogami san**	**2.25**	**43**	P		**P**	**05 34 49.6**	**+0.3**
JRY				S		**S**	**05 35 32.9**	**+1.6**
MAT	**Matsushiro**	**2.37**	**24**	P		**P**	**05 34 50.0**	**-0.2**
MAT				S		**S**	**05 35 31.9**	**-1.1**
MAT	**Matsushiro**	**2.37**	**24**	P		**P**	**05 34 50.1**	**-0.1**
MAT				*e*S		**S**	**05 35 32.4**	**-0.6**
JHJ2	**Mitsune**	**2.65**	**118**	P		**P**	**05 34 56.6**	**+4.1**
JHJ2				S		**S**	**05 35 42.7**	**+5.6**
JMN	**Monobe**	**2.69**	**257**	P		**P**	**05 34 52.6**	**-0.2**
JHS	**Saijyo**	**3.28**	**282**	P		**P**	**05 34 58.0**	**0.0**
BSO1	**Boso 1**	**3.28**	**84**	P		**P**	**05 34 56.4**	**-1.7**
BSO1				S		**S**	**05 35 45.7**	**-1.4**

MEX ***03*** *05:36:10.6±0.8, 15.35N×96.80W, h16km±21km, MD4.2*
NEIC ***03*** *05:36:11.2, 15.35N×96.86W, h16km, MD4.2(MEX), After MEX.*
ISC 03 05:36:09.2±1.6, 15.51N±0.10×96.84W±0.05, h16km, n11, σ1§22/19, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
					Op	ISC	h m s	ISC
HUIG	**Huatulco**	**0.75**	**69**	*i* P		**Pb**	**05 36 23.1**	**-0.3**
HUIG				*i* S		**Sb**	**05 36 32.8**	**-0.3**
PNIG	**Pinotepa**	**1.52**	**306**	*i* P		**Pn**	**05 36 36.3**	**+0.3**
PNIG				*i* S		**Sb**	**05 36 53.0**	**-2.5**
VHO	**Vista Hermosa**	**1.56**	**4**	*i* P		**Pn**	**05 36 36.1**	**-0.4**
VHO				*i* S		**Sn**	**05 36 57.6**	**+1.1**
OXX	**Oaxaca**	**1.57**	**4**	*i* P		**Pn**	**05 36 37.2**	**+0.5**
OXX				*i* S		**Sn**	**05 36 55.2**	**-1.6**
CMIG	**Matias Romero**	**2.45**	**50**	*i* P		**Pn**	**05 36 47.6**	**-1.6**
CMIG				*i* S		**Sn**	**05 37 19.4**	**+0.3**
CMIG	**Matias Romero**	**2.45**	**50**	*i* P		**Pn**	**05 36 47.6**	**-1.6**
CMIG				*i* S		**Sn**	**05 37 23.4**	**+4.3**
IISM	**Ciudad Serdan**	**3.50**	**352**	*e*P		**Pn**	**05 37 05.1**	**+0.9**
POHV	**Veracruz**	**3.57**	**353**	*i* P		**Pn**	**05 37 07.0**	**+1.8**
PPM	**Popocatepetl**	**3.93**	**334**	*e*P		**Pn**	**05 37 11.0**	**+0.6**
PPM				*e*P			05 37 13.0	
PPM				*i* S		**Sn**	**05 37 58.0**	**+1.3**
PPM	**Popocatepetl**	**3.93**	**334**	*e*P		**Pn**	**05 37 13.0**	**+2.6**
PPM				*i* S		**Sn**	**05 37 58.0**	**+1.3**
YAIG	**Yautepec**	**3.96**	**328**	*i* S		**Sn**	**05 37 56.0**	**-1.4**

IDC ***03*** *05:57:32.2±2.0, 37.95S×73.63W, mb3.7/5, mb1 3.9/7, mb1mx3.9/13, ML4.0/2, Error ellipse: s-maj=51.0km s-min=36.1km az=2.0*
NEIC ***03*** *05:57:36.7±0.4, 37.72S×73.64W, h20km, mb4.2/3, Error ellipse: s-maj=15.6km s-min=8.8km az=83.0*
ISC 03 05:57:36.8±0.6, 37.73S±0.08×73.5W±0.2, h33km, n20, σ0§98/18, mb4.0/9, 2C-2D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
					Op	ISC	h m s	ISC
PLCA	**Paso Flores**	**3.77**	**144**	Lg			05 59 30.4	
3.0nm,0.3s,baz=229,slow=20,SNR=4.5								
LVC	**Limon Verde**	**15.57**	**16**	Pn		**P**	**06 01 16.1**	**+0.7**
0.1nm,0.3s,baz=176,slow=16,SNR=1.8								
CPUP	**Villa Florida**	**17.77**	**55**	P		**P**	**06 01 43.9**	**+0.8**
0.1nm,0.3s,baz=245,slow=17,SNR=2.3								
CPUP	**Villa Florida**	**17.77**	**55**	P		**P**	**06 01 43.9**	**+0.7**
LPAZ	**La Paz**	**21.87**	**14**	P		**P**	**06 02 29.7**	**+1.2**
0.7nm,0.7s,mb3.2,baz=157,slow=13,SNR=2.9								
VNA3	**Neumayer Olymp**	**46.39**	**156**	*i*		**P**	**06 06 02.5**	**+1.2**
VNA1	**Neumayer--Stat**	**46.75**	**155**⇑*i*			**P**	**06 06 04.1**	**0.0**
VNA2	**Neumayer--Watz**	**47.07**	**156**⇑*i*			**P**	**06 06 08.2**	**+1.6**
SNAA	**Sanae**	**48.62**	**157**⇓*i*			**P**	**06 06 18.0**	**-0.7**
TXAR	**Lajitas Array**	**72.45**	**333**	P		**P**	**06 09 01.6**	**0.0**
0.7nm,0.7s,mb3.7,baz=158,slow=8.0,SNR=7.2								
WMOK	**Wichita Mounta**	**75.83**	**339**	P		**P**	**06 09 21.1**	**-0.2**
2.6nm,1.2s,mb4.0								
LIC	**Lamto**	**77.07**	**72**	*e*P		**P**	**06 09 26.5**	**-2.2**
18nm,0.8s,mb5.1								
CCM	**Cathedral Cave**	**77.17**	**346**	*e*P		**P**	**06 09 28.1**	**-0.7**
3.3nm,0.7s,mb4.4								
TIC	**Toumodi**	**77.35**	**71**	*e*P		**P**	**06 09 27.8**	**-2.5**
148nm,1.7s								
KIC	**Kosan Boka**	**77.37**	**72**	*e*P		**P**	**06 09 30.6**	**+0.2**
125nm,1.6s								
DBIC	**Dimbokro**	**77.49**	**71**	P		**P**	**06 09 30.4**	**-0.6**
2.9nm,0.7s,mb4.3,baz=166,slow=5.2,SNR=6.2								
ANMO	**Albuquerque**	**78.52**	**333**	P		**P**	**06 09 36.3**	**0.0**
1.3

Error ellipse: s-maj=46.1km s-min=23.2km az=52.0
*GUC **03** 06:07:29.1±0.7,37.91S×73.99W,h28km±6km,ML4.1*
*NEIC **03** 06:07:31.4±0.9,37.86S×73.77W,h20km,ML4.1(GUC),*
Error ellipse: s-maj=22.0km s-min=10.6km az=91.0
ISC 03 06:07:31.1±0.8,37.91S±0.04×73.8W±0.1,h28km,n15,
σ1§14/20,mb3.8/5,1D,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
TMCH	**Temuco**	**1.25**	**132**	*e*P		**Pn**	**06 07 51.9**	**-1.0**
TMCH				*i* S		**Sn**	**06 08 08.5**	**-0.4**
TMCH				AMP			06 08 14.9	
	comp=N,3μm,0.5s							
TMCH				AMP			06 08 21.3	
	comp=E,3μm,0.7s							
CCHI	**Chillan**	**1.89**	**47**	*e*P		**Pn**	**06 08 02.0**	**-0.1**
CCHI				*i* S		**Sn**	**06 08 27.9**	**+2.7**
CCHI				AMP			06 08 30.7	
	comp=E,4μm,0.4s							
CCHI				AMP			06 08 31.3	
	comp=N,3μm,0.2s							
VLCH	**Valdivia**	**1.94**	**167**	*e*P		**Pn**	**06 08 02.0**	**-0.8**
VLCH				*i* S		**Sn**	**06 08 26.8**	**+0.4**
VLCH				AMP			06 08 44.0	
	comp=N,5μm,0.3s							
VLCH				AMP			06 08 44.6	
	comp=E,5μm,0.6s							
COCH	**Cobquecura**	**1.95**	**25**	*e*P		**Pn**	**06 08 02.3**	**-0.6**
COCH				AMP			06 08 35.9	
	comp=N,790nm,0.3s							
COCH				AMP			06 08 36.7	
	comp=E,1μm,0.7s							
TALC	**Talca**	**3.05**	**35**	⇓*i*P		**Pn**	**06 08 16.6**	**-2.0**
TALC				*i* S		**Sn**	**06 08 53.4**	**-1.2**
PLCA	**Paso Flores**	**3.78**	**139**	Pn		**Pn**	**06 08 30.4**	**+1.5**
	comp=E,0.8nm,0.3s,baz=311,slow=12,SNR=9.5							
PLCA				Pg		**Pn**	**06 08 40.5**	**+12**
	comp=E,2.6nm,0.3s,baz=311,slow=18,SNR=18							
PLCA				Lg			06 09 28.3	
	comp=E,4.1nm,0.3s,baz=232,slow=22,SNR=5.2							
PLCA				LR		LR	06 10 27.1	
	comp=E,3μm,18.7s,baz=291,slow=46							
PLCA	**Paso Flores**	**3.78**	**139**	*e*P		**Pn**	**06 08 30.6**	**+1.7**
LPAZ	**La Paz**	**22.11**	**15**	P		**P**	**06 12 26.3**	**+0.4**
	comp=E,0.7nm,0.8s,mb3.1,baz=191,slow=12,SNR=2.3							
LPAZ	**La Paz**	**22.11**	**15**	P		**P**	**06 12 26.3**	**+0.4**
BDFB	**Brasilia**	**31.77**	**53**	P		**P**	**06 13 57.4**	**+2.2**
	comp=E,5.8nm,1.3s,mb4.2,baz=193,slow=27,SNR=2.8							
TXAR	**Lajitas Array**	**72.50**	**333**	P		**P**	**06 18 56.7**	**-0.5**
	comp=E,1.4nm,1.1s,mb3.8,baz=153,slow=8.4,SNR=5.0							
TXAR	**Lajitas Array**	**72.50**	**333**	P		**P**	**06 18 56.7**	**-0.5**
DBIC	**Dimbokro**	**77.77**	**72**	P		**P**	**06 19 27.7**	**+0.1**
	comp=E,3.7nm,0.9s,mb4.3,baz=194,slow=4.2,SNR=3.8							
DBIC	**Dimbokro**	**77.77**	**72**	P		**P**	**06 19 27.7**	**+0.1**
PDAR	**Pinedale Array**	**86.63**	**334**	P		**P**	**06 20 13.9**	**+0.9**
	comp=E,0.5nm,1.0s,mb3.7,baz=233,slow=4.5,SNR=2.7							

*IDC **03** 06:18:36.0±0.9,37.67S×73.54W,mb4.3/9,mb1 4.3/12,*
mb1mx4.3/16,ML3.8/3,Error ellipse: s-maj=30.8km
s-min=15.7km az=57.0
*GUC **03** 06:18:37.7±0.8,37.77S×73.75W,h37km,ML4.8*
*NEIC **03** 06:18:38.3±4.2,37.69S×73.66W,h16km±26km,mb4.1/9,*
ML4.8(GUC),Error ellipse: s-maj=16.5km s-min=7.0km
az=86.0
ISC 03 06:18:38.6±2.4,37.75S±0.03×73.6W±0.1,h28km±17km,
n47,σ0§91/44,mb4.5/16,4C-4D,Near coast of central
Chile

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
TMCH	**Temuco**	**1.25**	**143**	⇓*i*P		**Pn**	**06 19 00.2**	**-0.2**
TMCH				*i* S		**Sn**	**06 19 16.8**	**+0.5**
TMCH				AMP			06 19 30.2	
	comp=N,4μm,0.9s							
CCHI	**Chillan**	**1.65**	**47**	*e*P		**Pn**	**06 19 07.1**	**+0.9**
CCHI				AMP			06 19 42.8	
	comp=N,30μm,0.8s							
CCHI				AMP			06 19 43.1	
	comp=N,49μm,0.7s							
COCH	**Cobquecura**	**1.73**	**21**	*e*P		**Pn**	**06 19 07.3**	**0.0**
COCH				AMP			06 19 38.9	
	comp=E,8μm,0.7s							
VLCH	**Valdivia**	**2.07**	**173**	⇑*i*P		**Pn**	**06 19 11.7**	**-0.4**
VLCH				*i* S		**Sn**	**06 19 35.8**	**-1.4**
VLCH				AMP			06 19 54.5	
	comp=N,5μm,0.5s							
TALC	**Talca**	**2.82**	**34**	⇑*i*P		**Pn**	**06 19 22.9**	**0.0**
TALC				*e*S		**Sn**	**06 19 56.6**	**+0.3**
TALC				AMP			06 20 17.2	
	comp=E,14μm,0.6s							
PLCA	**Paso Flores**	**3.79**	**143**	Pn		**Pn**	**06 19 38.1**	**+1.5**
	comp=E,0.8nm,0.3s,baz=311,slow=16,SNR=3.2							
PLCA				Pg		**Pn**	**06 19 45.2**	**+8.6**
	comp=E,4.2nm,0.3s,baz=318,slow=15,SNR=14							
PLCA				Lg			06 20 39.8	
	comp=E,8.6nm,0.3s,baz=226,slow=22,SNR=4.4							
PLCA	**Paso Flores**	**3.79**	**143**	*e*P		**Pn**	**06 19 37.9**	**+1.3**
LMEL	**Las Melosas**	**4.76**	**36**	⇑*i*P		**Pn**	**06 19 49.8**	**-0.6**
MDZ	**Mendoza**	**6.20**	**40**	*e*P		**Pn**	**06 20 19.6**	**+8.9**
MDZ				*e*			06 20 32.4	
TRQA	**Tornquist**	**9.17**	**95**	*e*P		**P**	**06 20 51.7**	**-0.4**
	comp=E,4.9nm,1.4s							
LVC	**Limon Verde**	**15.61**	**16**	Pn		**P**	**06 22 14.9**	**-3.5**
	comp=E,0.1nm,0.3s,baz=247,slow=4.9,SNR=2.9							
LVC	**Limon Verde**	**15.61**	**16**	*e*P		**P**	**06 22 15.2**	**-3.2**
	comp=E,7.1nm,0.8s							
CPUP	**Villa Florida**	**17.84**	**55**	P		**P**	**06 22 46.7**	**+0.3**
	comp=E,0.1nm,0.3s,baz=250,slow=10,SNR=7.7							
CPUP	**Villa Florida**	**17.84**	**55**	*e*P		**P**	**06 22 46.8**	**+0.3**
	comp=E,5.0nm,1.3s							
ARE	**Arequipa**	**21.29**	**5**	*e*P		**P**	**06 23 26.0**	**+0.8**
LPAZ	**La Paz**	**21.91**	**14**	P		**P**	**06 23 32.2**	**+0.8**
	comp=E,5.0nm,0.8s,mb4.0,baz=176,slow=9.3,SNR=12							
LPAZ	**La Paz**	**21.91**	**14**	*e*P		**P**	**06 23 32.1**	**+0.6**
	comp=E,7.3nm,1.2s,mb4.0							
BDFB	**Brasilia**	**31.54**	**53**	P		**P**	**06 24 58.6**	**-2.1**
	comp=E,5.2nm,1.1s,mb4.3,baz=229,slow=7.1,SNR=5.5							
VNA3	**Neumayer Olymp**	**46.40**	**156**	⇓*i*		**P**	**06 27 04.3**	**+0.5**
SDV	**Santo Domingo**	**46.47**	**4**	P		**P**	**06 27 04.1**	**-1.0**
	comp=E,3.6nm,0.7s,mb4.4,baz=349,slow=6.2,SNR=5.6							
VNA1	**Neumayer--Stat**	**46.75**	**155**	⇑*i*		sP	06 27 17.9	-0.7
VNA2	**Neumayer--Watz**	**47.08**	**156**	⇓*i*		**P**	**06 27 09.9**	**+0.7**
SNAA	**Sanae**	**48.62**	**157**	⇓*i*		**P**	**06 27 21.9**	**+0.7**
QSPA	**South Pole Qui**	**52.49**	**180**	*e*P		**P**	**06 27 51.5**	**+0.8**
	comp=E,24nm,0.9s,mb5.1							
TXAR	**Lajitas Array**	**72.44**	**333**	P		**P**	**06 30 04.8**	**+0.4**
	comp=E,1.3nm,0.8s,mb3.9,baz=152,slow=8.8,SNR=12							
SWET	**Sewanee**	**73.50**	**349**	*e*P		**P**	**06 30 07.3**	**-3.2**
LIC	**Lamto**	**77.14**	**72**	*e*P		**P**	**06 30 31.3**	**-0.3**
	comp=E,44nm,0.9s,mb5.4							
TIC	**Toumodi**	**77.42**	**71**	*e*P		**P**	**06 30 32.9**	**-0.2**
	comp=E,103nm,1.1s,mb5.7							
KIC	**Kosan Boka**	**77.44**	**72**	*e*P		**P**	**06 30 33.1**	**-0.2**
	comp=E,80nm,0.9s,mb5.7							
DBIC	**Dimbokro**	**77.55**	**71**	P		**P**	**06 30 33.8**	**-0.1**
	comp=E,11nm,0.8s,mb4.8,baz=205,slow=7.1,SNR=16							
ANMO	**Albuquerque**	**78.52**	**333**	*e*P		**P**	**06 30 38.1**	**-0.7**
	comp=E,2.7nm,1.1s,mb4.1							
SDCO	**Great Sand Dun**	**80.70**	**335**	*e*P		**P**	**06 30 50.3**	**-0.1**
	comp=E,1.3nm,0.9s,mb3.9							
PV01	**Paradox Valley**	**82.12**	**333**	*e*P		**P**	**06 30 58.6**	**+0.8**
PV10	**Paradox Valley**	**82.50**	**333**	*e*P		**P**	**06 31 00.0**	**+0.2**
MSU	**Marysvale**	**83.81**	**331**	*e*P		**P**	**06 31 08.0**	**+1.5**
TPH	**Tonopah**	**85.51**	**327**	*e*P		**P**	**06 31 13.8**	**-1.3**
	comp=E,1.9nm,0.8s,mb4.4							
NVAR	**Mina Array Bea**	**86.28**	**326**	P		**P**	**06 31 20.2**	**+1.4**
	comp=E,0.9nm,0.8s,mb4.0,baz=141,slow=6.8,SNR=7.3							
PDAR	**Pinedale Array**	**86.57**	**334**	P		**P**	**06 31 20.9**	**+0.8**
	comp=E,1.0nm,0.8s,mb4.1,baz=146,slow=5.3,SNR=8.8							
ULM	**Lac du Bonnet**	**89.81**	**346**	P		**P**	**06 31 34.2**	**-1.3**
	comp=E,0.8nm,0.6s,mb4.2,baz=162,slow=6.4,SNR=4.4							
ULM	**Lac du Bonnet**	**89.81**	**346**	*e*P		**P**	**06 31 33.4**	**-2.0**
	comp=E,6.3nm,1.1s,mb4.9							
SCHQ	**Schefferville**	**92.40**	**4**	P		**P**	**06 31 47.1**	**-0.1**
	comp=E,1.9nm,0.8s,mb4.5,baz=198,slow=5.9,SNR=2.3							
GERES	**GERESS Array B**	**115.64**	**47**	PKP		PKPdf	06 37 18.3	-4.5
	comp=E,0.2nm,0.2s,baz=242,slow=2.9,SNR=3.5							
BRTR	**Keskin Array B**	**124.68**	**64**	PKP		PKPdf	06 37 37.2	-3.3
	comp=E,0.6nm,0.6s,baz=225,slow=1.1,SNR=3.9							
AKASG	**Malin Array Be**	**125.60**	**50**	PKP		PKPdf	06 37 36.3	-5.6
	comp=E,0.4nm,0.4s,baz=279,slow=2.2,SNR=5.5							
ZAL	**Zalesovo**	**158.02**	**36**	PKPab		PKPab	06 39 06.9	-0.6
	comp=E,1.3nm,0.5s,baz=280,slow=6.6,SNR=3.9							
MKAR	**Makanchi Array**	**160.04**	**55**	PKP		PKPdf	06 38 36.5	-2.8
	comp=E,1.1nm,1.0s,baz=256,slow=5.0,SNR=4.5							
MKAR				PKPab		PKPab	06 39 16.1	-0.4
	comp=E,2.4nm,0.9s,baz=284,slow=5.0,SNR=8.4							
SONM	**Songino Array**	**169.92**	**0**	PKPab		PKPab	06 39 59.9	+0.4
	comp=E,0.6nm,0.8s,baz=315,slow=1.7,SNR=3.6							

*GUC **03** 06:28:49.8±0.7,37.82S×73.83W,h27km±9km,ML3.9*
*NEIC **03** 06:28:49.8,37.82S×73.83W,h27km,ML3.9(GUC),After*
GUC.
ISC 03 06:28:50.4±1.5,37.80S±0.04×73.7W±0.2,h27km,n11,
σ0§95/14,1C-2D,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
TMCH	**Temuco**	**1.28**	**138**	*e*P		**Pn**	**06 29 12.0**	**-0.7**
TMCH				*i* S		**Sn**	**06 29 28.3**	**-0.8**
TMCH				AMP			06 29 32.2	
	comp=E,3μm,0.3s							
CCHI	**Chillan**	**1.76**	**48**	*i* P		**Pn**	**06 29 20.9**	**+1.3**
CCHI				*i* S		**Sn**	**06 29 44.9**	**+3.5**
CCHI				AMP			06 29 50.1	
	comp=E,2μm,0.4s							
CCHI				AMP			06 29 50.5	
	comp=E,3μm,0.5s							
COCH	**Cobquecura**	**1.82**	**24**	*e*P		**Pn**	**06 29 21.6**	**+1.1**
COCH				AMP			06 29 55.5	
	comp=N,658nm,0.7s							
VLCH	**Valdivia**	**2.04**	**170**	⇓*i*P		**Pn**	**06 29 23.9**	**+0.3**
VLCH				AMP			06 30 07.3	
	comp=E,4μm,0.6s							
PLCA	**Paso Flores**	**3.81**	**141**	*e*P		**Pn**	**06 29 49.8**	**+0.9**
SFDO	**San Fernando**	**3.85**	**35**	*i* P		**Pn**	**06 29 49.2**	**-0.1**
LNV	**Longovilo**	**4.26**	**27**	*i* P		**Pn**	**06 29 54.5**	**-0.8**
CICH	**Cipreses**	**4.37**	**38**	⇑*i*P		**Pn**	**06 29 57.4**	**+0.5**
TACH	**Talagante**	**4.71**	**29**	*i* P		**Pn**	**06 30 01.1**	**-0.5**
LMEL	**Las Melosas**	**4.86**	**37**	⇓*i*P		**Pn**	**06 30 03.7**	**0.0**
CLCH	**Cerro Calan**	**5.09**	**31**	*e*P		**Pn**	**06 30 05.9**	**-1.1**
CLCH				*e*S		**Sn**	**06 31 04.5**	**-1.1**

*IDC **03** 06:37:49.0±0.6,37.77S×73.61W,mb4.5/9,mb1 4.7/13,*
mb1mx4.6/15,ML4.7/4,MS5.1/4,Ms1 5.1/4,ms1mx4.8/19,
Error ellipse: s-maj=24.0km s-min=13.9km az=67.0
*GUC **03** 06:37:50.1±0.7,37.84S×73.95W,h34km,ML5.5*
*MOS **03** 06:37:52.9±1.1,37.91S×73.40W,h33km,mb5.9/1,Error*
ellipse: s-maj=38.0km s-min=17.6km az=74.2
*SYO **03** 06:37:52.2,37.79S×73.63W,h19km,MB4.6*
*NEIC **03** 06:37:52.3±2.9,37.79S×73.63W,h19km±18km,mb4.6/5,*
Error ellipse: s-maj=14.4km s-min=5.0km az=92.0
*BJI **03** 06:37:52.2,37.80S×73.60W,h19km*
ISC 03 06:37:49.7±1.9,37.81S±0.03×73.66W±0.08,h11km±12km,
h11km±4.0km:pP-P,n92,σ1§16/71,mb4.9/13,MS5.3/2,
11C-8D,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
TMCH	**Temuco**	**1.24**	**139**	⇓*i*P		**Pb**	**06 38 13.2**	**+0.6**
TMCH				*i* S		**Sb**	**06 38 30.5**	**+2.0**
TMCH				AMP			06 38 34.1	
	comp=N,48μm,0.7s							
CCHI	**Chillan**	**1.75**	**47**	⇑*i*P		**Pn**	**06 38 22.2**	**+2.0**
CCHI				*i* S		**Sn**	**06 38 46.4**	**+3.9**
CCHI				AMP			06 38 58.4	
	comp=N,55μm,0.8s							
CCHI				AMP			06 38 58.7	
	comp=N,98μm,0.8s							
CCHI	**Chillan**	**1.75**	**47**	⇑*i*P		**Pn**	**06 38 22.2**	**+2.0**
CCHI				*i* S		**Sn**	**06 38 46.4**	**+3.9**
COCH	**Cobquecura**	**1.82**	**23**	⇓*i*P		**Pn**	**06 38 22.1**	**+1.0**
COCH				AMP			06 38 58.1	
	comp=E,18μm,0.6s							
COCH	**Cobquecura**	**1.82**	**23**	⇓*i*P		**Pn**	**06 38 22.1**	**+1.0**
VLCH	**Valdivia**	**2.02**	**171**	*i* P		**Pn**	**06 38 23.5**	**-0.5**
VLCH				*i* S		**Sn**	**06 38 48.2**	**-1.2**
VLCH				AMP			06 39 12.2	
	comp=E,79μm,0.8s							
VLCH	**Valdivia**	**2.02**	**171**	*e*P		**Pn**	**06 38 23.5**	**-0.5**
VLCH				*i* S		**Sn**	**06 38 47.5**	**-1.9**
OSCH	**Osorno**	**2.79**	**172**	*e*P		**Pn**	**06 38 34.8**	**-0.3**
OSCH				*e*S		**Sn**	**06 39 07.8**	**-1.2**
OSCH				AMP			06 39 27.4	
	comp=E,41μm,0.5s							
OSCH	**Osorno**	**2.79**	**172**	*e*P		**Pn**	**06 38 34.4**	**-0.7**
OSCH				*i* S		**Sn**	**06 39 06.4**	**-2.6**
TALC	**Talca**	**2.91**	**35**	*i* P		**Pn**	**06 38 37.2**	**+0.4**
TALC				*i* S		**Sn**	**06 39 12.9**	**+0.9**
TALC	**Talca**	**2.91**	**35**	*e*P		**Pn**	**06 38 37.2**	**+0.5**
TALC				*e*S		**Sn**	**06 39 12.9**	**+0.9**
PLCA	**Paso Flores**	**3.79**	**141**	Pn		**Pn**	**06 38 50.2**	**+1.0**
	comp=E,8.1nm,0.3s,baz=314,slow=15,SNR=218							
PLCA				Pg		**Pg**	**06 38 59.6**	**-5.7**
	comp=E,35nm,0.3s,baz=339,slow=16,SNR=47							
PLCA				Lg			06 39 51.8	
	comp=E,53nm,0.3s,baz=213,slow=22,SNR=3.7							
PLCA	**Paso Flores**	**3.79**	**141**	*e*P		**Pn**	**06 38 50.4**	**+1.2**
SFDO	**San Fernando**	**3.84**	**35**	⇑*i*P		**Pn**	**06 38 49.5**	**-0.5**
CICH	**Cipreses**	**4.36**	**38**	*i* P		**Pn**	**06 38 57.6**	**+0.2**
CACH	**El Canelo**	**4.44**	**35**	P		**Pn**	**06 38 57.9**	**-0.7**
CHCH	**Chadas Angostu**	**4.58**	**33**	P		**Pn**	**06 38 59.4**	**-1.1**
TACH	**Talagante**	**4.70**	**29**	P		**Pn**	**06 39 00.7**	**-1.5**
LMEL	**Las Melosas**	**4.85**	**36**	P		**Pn**	**06 39 04.0**	**-0.3**
ANTU	**Antumapu**	**4.90**	**31**	P		**Pn**	**06 39 03.8**	**-1.2**
RCDM	**Rinconada Maip**	**4.90**	**29**	P		**Pn**	**06 39 03.6**	**-1.4**
MDZ	**Mendoza**	**6.29**	**40**	*e*P		**Pn**	**06 39 32.6**	**+7.9**
MDZ				*e*			06 39 44.3	
TRQA	**Tornquist**	**9.23**	**95**	*e*P		**P**	**06 40 05.3**	**-0.4**
	comp=E,4.5nm,0.8s							
LVC	**Limon Verde**	**15.69**	**16**	Pn		**P**	**06 41 32.9**	**+0.6**
	comp=E,1.5nm,0.3s,baz=195,slow=9.7,SNR=14							
LVC	**Limon Verde**	**15.69**	**16**	*e*P		**P**	**06 41 31.6**	**-0.7**
	comp=E,24nm,0.9s							
USHA	**Ushuaia**	**17.39**	**170**	P		**P**	**06 41 55.3**	**+1.6**
	comp=E,0.8nm,0.3s,baz=319,slow=7.8,SNR=14							
USHA				LR		LR	06 49 12.9	
	comp=E,4μm,19.5s,baz=327,slow=39							
EFI	**East Falkland**	**17.69**	**147**	*e*P		**P**	**06 41 58.0**	**+0.6**
	comp=E,137nm,1.0s							
CPUP	**Villa Florida**	**17.93**	**55**	P		**P**	**06 41 58.7**	**-1.8**
	comp=E,0.6nm,0.3s,baz=246,slow=10,SNR=18							
CPUP				LR		LR	06 49 00.9	
	comp=E,4μm,21.0s,baz=241,slow=38							
CPUP	**Villa Florida**	**17.93**	**55**	*e*P		**P**	**06 42 00.3**	**-0.3**
	comp=E,4.4nm,0.8s							
ARE	**Arequipa**	**21.35**	**6**	*e*P		**P**	**06 42 41.0**	**+1.9**
LPAZ	**La Paz**	**21.99**	**14**	P		**P**	**06 42 46.6**	**+1.1**
	comp=E,2.8nm,0.6s,mb3.9,baz=190,slow=9.0,SNR=22							
LPAZ	**La Paz**	**21.99**	**14**	*e*P		**P**	**06 42 46.9**	**+1.4**
	comp=E,18nm,1.0s,mb4.5							
CAM4	**Nova Friburgo**	**30.82**	**69**	⇑*i*P		**P**	**06 44 05.9**	**-1.9**
CAM4				*i*		pP	06 44 07.6	-3.6
CAM4				*i*			06 44 13.0	
CAM4				*i*			06 44 33.2	
CAM4	**Nova Friburgo**	**30.82**	**69**	⇑*i*P		**P**	**06 44 05.9**	**-1.9**
CAM4				*i*		pP	06 44 07.6	-3.6
CAM4				*i*			06 44 13.0	
CAM4				*i*			06 44 33.2	
BDFB	**Brasilia**	**31.63**	**53**	P		**P**	**06 44 12.6**	**-2.3**
	comp=E,3.8nm,0.6s,mb4.4,baz=219,slow=5.8,SNR=17							
BDFB				LR		LR	06 58 13.3	
	comp=E,5μm,18.3s,MS5.2,baz=152,slow=39							
CAM3	**Guarapari**	**33.32**	**69**	(P)		**P**	**06 44 26.4**	**-3.2**
CAM3				*i*		pP	06 44 29.0	-4.0
CAM3				*i*			06 44 38.2	
CAM3				*i*			06 44 51.3	
CAM3	**Guarapari**	**33.32**	**69**	⇓*i*P		**P**	**06 44 29.0**	**-0.7**
CAM3				*i*			06 44 38.4	
CAM3				*i*			06 44 49.8	
CAM3	**Guarapari**	**33.32**	**69**	⇓*i*P		**P**	**06 44 29.0**	**-0.6**
CAM3				*i*			06 44 38.2	
CAM3				*i*			06 44 38.4	
CAM3				*i*			06 44 51.3	
ROSC	**El Rosal**	**42.45**	**359**	P		**P**	**06 45 48.9**	**+2.5**
	comp=E,6.1nm,0.7s,mb4.3,baz=190,slow=21,SNR=5.2							
VNA3	**Neumayer Olymp**	**46.37**	**156**	⇑*i*P		**P**	**06 46 18.6**	**+1.5**
VNA3				*e*			06 46 28.0	
VNA1	**Neumayer--Stat**	**46.73**	**155**	*e*		**P**	**06 46 29.6**	**+10**
VNA1	**Neumayer--Stat**	**46.73**	**155**	⇑*i*P		**P**	**06 46 21.1**	**+1.2**
VNA1				*e*			06 46 29.6	
VNA2	**Neumayer--Watz**	**47.05**	**156**	*e*		**P**	**06 46 32.6**	**+10**
VNA2	**Neumayer--Watz**	**47.05**	**156**	⇑*i*P		**P**	**06 46 23.8**	**+1.3**
VNA2				*e*			06 46 32.6	
SNAA	**Sanae**	**48.59**	**157**	⇑*i*P		**P**	**06 46 34.4**	**-0.1**
SNAA				*e*			06 46 44.7	
QSPA	**South Pole Qui**	**52.43**	**180**	*e*P		**P**	**06 47 03.9**	**+0.2**
	comp=E,25nm,0.9s,mb5.1							
MAIT	**Maitri**	**53.34**	**156**	*e*P		**P**	**06 47 10.7**	**+0.2**
SYO	**Syowa Base**	**62.82**	**158**	⇓*i*P		**P**	**06 48 15.5**	**-1.5**
SYO	**Syowa Base**	**62.82**	**158**	⇓pP		pP	06 48 21.4	+0.8
SYO	**Syowa Base**	**62.82**	**158**	⇓sP		sP	06 48 23.5	+1.6
SYO	**Syowa Base**	**62.82**	**158**	*e*P		**P**	**06 48 15.5**	**-1.5**
SYO				*e*			06 48 23.5	
SYO				*e*			06 48 32.6	
SYO	**Syowa Base**	**62.82**	**158**	⇓*e*P		**P**	**06 48 15.5**	**-1.5**
SYO				*e*pP		pP	06 48 21.4	+0.8
SYO				*e*sP		sP	06 48 23.5	+1.6
SYO				*e*PP		PP	06 50 32.6	-4.4
MAW	**Mawson**	**69.90**	**164**	P		**P**	**06 49 01.5**	**-0.6**
	comp=E,3.9nm,0.7s,mb4.4,baz=192,slow=6.7,SNR=6.4							
TXAR	**Lajitas Array**	**72.46**	**333**	P		**P**	**06 49 18.0**	**-0.1**
	comp=E,3.2nm,0.7s,mb4.3,baz=153,slow=9.0,SNR=40							
TXAR	**Lajitas Array**	**72.46**	**333**	P		**P**	**06 49 18.0**	**-0.1**
RAR	**Rarotonga**	**74.36**	**255**	LR		LR	07 12 58.8	
	comp=E,2μm,18.9s,MS5.5,baz=309,slow=28							
LIC	**Lamto**	**77.22**	**72**	*e*P		**P**	**06 49 45.1**	**-0.6**
	comp=E,90nm,0.7s,mb5.8							
TIC	**Toumodi**	**77.50**	**71**	*e*P		**P**	**06 49 46.6**	**-0.6**
	comp=E,106nm,0.8s,mb5.8							
KIC	**Kosan Boka**	**77.53**	**72**	*e*P		**P**	**06 49 46.8**	**-0.6**
	comp=E,160nm,0.8s,mb6.0							
DBIC	**Dimbokro**	**77.64**	**71**	P		**P**	**06 49 47.6**	**-0.4**
	comp=E,27nm,0.7s,mb5.3,baz=202,slow=6.1,SNR=54							
ANMO	**Albuquerque**	**78.54**	**333**	*e*P		**P**	**06 49 53.2**	**+0.7**
NVAR	**Mina Array Bea**	**86.29**	**326**	P		**P**	**06 50 34.0**	**+1.4**
	comp=E,2.5nm,0.8s,mb4.5,baz=146,slow=6.8,SNR=14							
PDAR	**Pinedale Array**	**86.59**	**334**	P		**P**	**06 50 34.2**	**+0.3**
	comp=E,2.2nm,0.7s,mb4.5,baz=140,slow=4.8,SNR=20							
ULM	**Lac du Bonnet**	**89.85**	**346**	P		**P**	**06 50 48.6**	**-0.7**
	comp=E,3.6nm,0.9s,mb4.7,baz=190,slow=4.3,SNR=5.4							
YKA	**Yellowknife Ar**	**105.24**	**342**	Pdiff		Pdif	06 51 57.8	-1.0
	comp=E,0.1nm,0.5s,baz=145,slow=4.5,SNR=3.6							
YKA	**Yellowknife Ar**	**105.24**	**342**	Pdif		Pdif	06 51 57.8	-1.0
ASAR	**Alice Springs**	**113.59**	**208**	PKIKP			06 56 28.7	
	comp=E,0.4nm,1.0s,baz=135,slow=1.3,SNR=3.4							
ASAR				PKKPbc			07 07 11.8	
	comp=E,0.5nm,0.5s,baz=341,slow=2.6,SNR=7.0							
GERES	**GERESS Array B**	**115.73**	**47**	PKP		PKPdf	06 56 32.4	-2.6
	comp=E,4.7nm,1.1s,baz=225,slow=1.9,SNR=9.0							
WRA	**Warramunga Arr**	**116.80**	**210**	PKP		PKPdf	06 56 35.3	-2.4
	comp=E,1.1nm,1.1s,baz=164,slow=1.3,SNR=3.6							
WRA	**Warramunga Arr**	**116.80**	**210**	PKP		PKPdf	06 56 35.3	-2.4
ILAR	**Eielson Array**	**116.98**	**333**	PKP		PKPdf	06 56 33.9	-3.1
	comp=E,0.8nm,0.9s,baz=208,slow=2.4,SNR=5.5							
NOA	**NORSAR Array B**	**119.92**	**34**	PKP		PKPdf	06 56 39.6	-3.1
	comp=E,0.7nm,0.8s,baz=209,slow=4.5,SNR=3.2							
BRTR	**Keskin Array B**	**124.77**	**64**	PKP		PKPdf	06 56 50.2	-2.4
	comp=E,2.7nm,0.7s,baz=188,slow=3.8,SNR=14							

CCM	**Cathedral Cave**	**77.16**	**346**	*e*P		**P**	**07 02 12.2**	**-0.5**
	comp=E,2.4nm,0.6s,mb4.3							
DBIC	**Dimbokro**	**77.66**	**71**	P		**P**	**07 02 15.6**	**-0.4**
	comp=E,1.8nm,0.8s,mb4.1,baz=198,slow=3.2,SNR=5.4							
PV10	**Paradox Valley**	**82.46**	**333**	*e*P		**P**	**07 02 42.1**	**+1.1**
NVAR	**Mina Array Bea**	**86.23**	**326**	P		**P**	**07 03 01.1**	**+1.0**
	comp=E,0.3nm,0.6s,mb3.7,baz=144,slow=5.1,SNR=2.7							
PDAR	**Pinedale Array**	**86.53**	**334**	P		**P**	**07 03 01.7**	**+0.2**
	comp=E,0.2nm,0.4s,mb3.7,baz=143,slow=4.5,SNR=3.0							

NEIC ***03*** *06:55:53.0±1.0, 6.16S×150.03E, h58km±13km, mb4.2/3, Error ellipse: s-maj=31.2km s-min=14.6km az=119.0*
IDC ***03*** *06:55:56.7±6.7, 6.31S×149.76E, h69km±48km, mb3.8/4, mb1 4.0/5, mb1mx3.7/14, ML3.5/1, Error ellipse: s-maj=59.1km s-min=45.5km az=130.0*

ISC 03 06:55:52.2±1.3, 6.2S±0.2×149.9E±0.2, h57km±14km, n11, σ0§52/13, mb3.7/3, New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KMBE	**Kimbe**	**0.70**	**21**	*i* P	**P**	**06 56 06.1**	**-0.2**
PMG	**Port Moresby**	**4.17**	**220**	P	**P**	**06 56 55.9**	**+0.9**
	25nm,0.3s,baz=26,slow=4.3,SNR=29						
PMG				S	**S**	**06 57 42.2**	**-0.7**
	39nm,0.3s,baz=18,slow=19,SNR=13						
PMG	**Port Moresby**	**4.17**	**220**	*e*P	**P**	**06 56 55.9**	**+0.9**
PMG				*e*S	**S**	**06 57 42.7**	**-0.3**
KAKA	**Kakadu**	**18.42**	**248**	*e*P	**P**	**07 00 05.1**	**-0.2**
	7.1nm,0.6s						
WRAB	**Tennant Creek**	**20.35**	**226**	*e*P	**P**	**07 00 26.3**	**-0.3**
	31nm,0.8s						
WB2	**Warramunga Arr**	**20.36**	**226**	*e*P	**P**	**07 00 26.2**	**-0.4**
WRA	**Warramunga Arr**	**20.36**	**226**	P	**P**	**07 00 26.8**	**0.0**
	12nm,0.6s,baz=51,slow=11,SNR=51						
ASAR	**Alice Springs**	**23.19**	**220**	P	**P**	**07 00 55.9**	**+0.9**
	1.4nm,0.7s,mb3.5,baz=53,slow=9.5,SNR=17						
FITZ	**Fitzroy Crossi**	**26.45**	**241**	*e*P	**P**	**07 01 26.3**	**+0.3**
	9.8nm,1.5s,mb4.1						
FITZ	**Fitzroy Crossi**	**26.45**	**241**	P	**P**	**07 01 26.4**	**+0.3**
	2.9nm,0.4s,mb4.2,baz=62,slow=8.4,SNR=17						
STKA	**Stephens Creek**	**26.68**	**196**	P	**P**	**07 01 27.6**	**-0.5**
	1.0nm,0.6s,mb3.5,baz=7.6,slow=15,SNR=3.4						

NEIC ***03*** *06:58:26.8, 17.09N×99.94W, h57km, MD3.7(MEX), After MEX.*

MEX 03 06:58:27.3±1.1, 17.10N×99.92W, h52km±13km, MD3.9, 1D, Guerrero

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ACX	**Acapulco**	**0.23**	**180**	*i* P	P	06 58 34.3	-1.7
ACX				*i* S	S	06 58 41.5	-0.9
CAIG	**El Cayaco**	**0.34**	**261**	⇓*i* P	P	06 58 35.1	-1.9
CAIG				*i* S	S	06 58 42.1	-1.9
ZIIG	**Zihuatanejo**	**1.56**	**289**	*i* P	P	06 58 51.9	-1.3
ZIIG				*i* S	S	06 59 09.6	-2.9
YAIG	**Yautepec**	**1.93**	**25**	*e*P	P	06 58 56.7	-1.6
YAIG				*i* S	S	06 59 18.9	-2.5
MOIG	**Morelia**	**2.83**	**335**	*i* P	P	06 59 10.9	-0.3
MOIG				*i* S	S	06 59 41.4	-2.9
IISM	**Ciudad Serdan**	**3.06**	**52**	*e*P	P	06 59 14.5	+0.1

STR ***03*** *07:16:47.5±0.5, 44.32N×7.57E, h5km±1km, Ml2.0, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
NEIC ***03*** *07:16:47.5, 44.32N×7.57E, h5km, ML2.4(LDG), ML2.0(STR), After STR.*
LDG ***03*** *07:16:48.4±0.1, 44.27N×7.56E, h3km, Md2.4/3, Ml2.4/11, Error ellipse: s-maj=1.9km s-min=1.0km az=76.0*

ISC 03 07:16:47.5±0.6, 44.30N±0.02×7.49E±0.05, h5km, n18, σ0§94/34, Northern Italy

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SAOF	**Saorge**	**0.32**	**171**	Pg	**Pg**	**07 16 53.8**	**-0.1**
SAOF				Sg	**Sg**	**07 16 59.3**	**+1.1**
TOUF	**Mont Tournerai**	**0.33**	**211**	Pg	**Pg**	**07 16 54.8**	**+0.6**
AURF	**Auriere**	**0.43**	**196**	Pg	**Pg**	**07 16 56.4**	**+0.3**
AURF				Sg	**Sg**	**07 17 02.9**	**+1.1**
SBF	**Sospel**	**0.44**	**185**	*e*Pg	**Pg**	**07 16 56.4**	**+0.1**
SBF				*e*Sg	**Sg**	**07 17 01.9**	**-0.3**
	20nm,0.2s						
MVIF	**Mont Vial**	**0.47**	**211**	Pg	**Pg**	**07 16 58.0**	**+1.1**
MVIF				Sg	**Sg**	**07 17 04.5**	**+1.3**
MBDF	**Montbardon**	**0.67**	**310**	*e*Pg	**Pg**	**07 17 02.3**	**+1.5**
MBDF				*e*Sg	**Sg**	**07 17 12.0**	**+2.2**
	4.9nm,0.2s						
FRF	**La Foret Royal**	**0.96**	**220**	*e*Pg	**Pg**	**07 17 06.4**	**-0.2**
FRF				*e*Sg	**Sg**	**07 17 19.0**	**-0.4**
	7.5nm,0.3s						
LMR	**La Mourre**	**1.20**	**217**	*e*Pg	**Pg**	**07 17 10.9**	**-0.5**
LMR				*e*Sg	**Sg**	**07 17 26.2**	**-1.2**
	19nm,0.2s						
ORIF	**Oris-en-Rattie**	**1.30**	**299**	*e*Pn	**Pn**	**07 17 12.4**	**0.0**
ORIF				*e*Sg	**Sg**	**07 17 31.5**	**+0.6**
	5.4nm,0.4s						
LPG	**La Plagne**	**1.31**	**337**	*e*Pg	**Pg**	**07 17 14.1**	**+0.5**
LPG				*e*Sg	**Sg**	**07 17 31.6**	**+0.6**
	2.5nm,0.4s						
LPL	**La Plagne**	**1.33**	**336**	*e*Pg	**Pg**	**07 17 14.5**	**+0.4**
LPL				*e*Sg	**Sg**	**07 17 32.0**	**+0.2**
	0.8nm,0.2s						
SMRF	**Simiane la Rot**	**1.42**	**257**	*e*Pg	**Pg**	**07 17 16.1**	**+0.3**
SMRF				*e*Sg	**Sg**	**07 17 33.8**	**-0.8**
	7.9nm,0.3s						
PGF	**Pioggiola**	**2.07**	**147**	*e*Pn	**Pn**	**07 17 21.6**	**-1.7**
PGF				*e*Sn	**Sn**	**07 17 45.3**	**-4.5**
	4.0nm,0.4s						
VIVF	**Saint-Julien-l**	**2.09**	**286**	*e*Pn	**Pn**	**07 17 23.5**	**-0.1**
VIVF				*e*Sg	**Sg**	**07 17 55.7**	**-1.3**
	2.4nm,0.4s						
LOR	**Lormes**	**3.91**	**321**	*e*Pn	**Pn**	**07 17 48.4**	**-1.1**
LOR				*e*Sg	**Sg**	**07 18 52.8**	**-4.7**
	3.6nm,0.4s						
SSF	**Saint Saulge**	**3.93**	**316**	*e*Pn	**Pn**	**07 17 48.6**	**-1.2**
SSF				*e*Sg	**Sg**	**07 18 53.0**	**-5.2**
	5.4nm,0.4s						
BGF	**Bois d'Agland**	**3.97**	**306**	*e*Pn	**Pn**	**07 17 48.8**	**-1.6**
BGF				*e*Sg	**Sg**	**07 18 54.1**	**-5.6**
	15nm,0.5s						
TCF	**Toulx Ste Croi**	**4.22**	**300**	*e*Pn	**Pn**	**07 17 53.1**	**-0.9**

IDC ***03*** *07:26:13.2±2.6, 38.65S×74.80W, mb3.3/2, mb1 3.7/4, mb1mx3.6/13, ML3.5/2, Error ellipse: s-maj=56.7km s-min=19.4km az=45.0*

ISC 03 07:26:16.8±2.1, 38.6S±0.2×74.8W±0.3, h33km, n4, σ0§54/5, mb3.3/2, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PLCA	**Paso Flores**	**3.89**	**125**	Pn	**Pn**	**07 27 16.0**	**+0.1**
	0.5nm,0.3s,baz=277,slow=8.8,SNR=3.1						
PLCA				Pg	**P**	**07 27 24.0**	**+8.3**
	3.1nm,0.3s,baz=314,slow=14,SNR=11						
PLCA				Lg		07 28 14.4	
	4.1nm,0.3s,baz=219,slow=23,SNR=3.1						
CPUP	**Villa Florida**	**19.09**	**55**	P	**P**	**07 30 39.0**	**-0.4**
	0.1nm,0.3s,baz=229,slow=9.3,SNR=2.9						
LPAZ	**La Paz**	**22.98**	**17**	P	**P**	**07 31 20.1**	**+0.6**
	0.8nm,0.9s,mb3.1,baz=198,slow=12,SNR=4.0						
TXAR	**Lajitas Array**	**72.77**	**334**	P	**P**	**07 37 43.4**	**-0.3**
	0.4nm,0.8s,mb3.4,baz=148,slow=8.5,SNR=3.7						

NEIC ***03*** *07:28:10.9, 63.13N×144.53W, h4km, ML3.4(PMR), ML3.3(AEIC), After AEIC.*
IDC ***03*** *07:28:10.2±1.1, 63.23N×144.49W, mb3.4/2, mb1 3.7/5, mb1mx3.5/22, ML3.4/3, Error ellipse: s-maj=17.4km s-min=8.9km az=43.0*

ISC 03 07:28:10.5±0.8, 63.15N±0.02×144.50W±0.06, h7km±6km, n66, σ0§66/70, mb3.3/2, Central Alaska

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PAX	**Paxson**	**0.48**	**248**	P	**Pg**	**07 28 19.8**	**-0.3**
PAX				S	**Sg**	**07 28 25.9**	**-0.6**
DOT	**Dot Lake**	**0.54**	**21**	P	**Pg**	**07 28 21.8**	**+0.5**
DOT				S	**Sg**	**07 28 29.4**	**+0.8**
TZL	**Tazlina**	**1.19**	**202**	P	**Pb**	**07 28 32.9**	**0.0**
BCA3	**Beaver Creek A**	**1.24**	**93**	P	**Pb**	**07 28 33.9**	**+0.1**
TOA	**Tolsona**	**1.30**	**217**	P	**Pb**	**07 28 34.9**	**-0.1**
TOA				S	**Sb**	**07 28 52.2**	**+0.5**
DHY	**Denali Highway**	**1.31**	**268**	P	**Pb**	**07 28 34.5**	**-0.5**
HDA	**Harding Lake**	**1.67**	**320**	P	**Pn**	**07 28 42.0**	**+1.6**
GLB	**Gilahina Butte**	**1.74**	**169**	P	**Pn**	**07 28 41.4**	**0.0**
KLU	**Klutina**	**1.79**	**202**	P	**Pn**	**07 28 42.0**	**-0.1**
SCM	**Sheep Creek Mo**	**1.86**	**226**	P	**Pn**	**07 28 43.4**	**+0.2**
IL1	**Eielson Array**	**1.94**	**328**	P	**Pn**	**07 28 44.5**	**+0.2**
ILAR	**Eielson Array**	**1.94**	**328**	Pg	**Pg**	**07 28 43.8**	**-5.5**
	12nm,0.3s,baz=143,slow=16,SNR=201						
ILAR				Lg		07 29 12.7	
	117nm,0.3s,baz=144,slow=28,SNR=45						
RND	**Reindeer**	**1.98**	**279**	P	**Pn**	**07 28 45.0**	**+0.1**
MCK	**McKinley**	**2.08**	**288**	P	**Pn**	**07 28 47.3**	**+1.0**
CCB	**Clear Creek Bu**	**2.10**	**317**	P	**Pn**	**07 28 46.1**	**-0.4**
BMRM	**Bremner River**	**2.19**	**181**	P	**Pn**	**07 28 48.3**	**+0.5**
VLZ	**Valdez**	**2.20**	**204**	P	**Pn**	**07 28 47.6**	**-0.3**
SML	**Sawmill**	**2.23**	**235**	P	**Pn**	**07 28 49.0**	**+0.6**
GLM	**Gilmore Dome**	**2.24**	**327**	P	**Pn**	**07 28 47.7**	**-0.9**
COLA	**College**	**2.28**	**321**	P	**Pn**	**07 28 48.9**	**-0.2**
JPK	**Jack Peak**	**2.32**	**206**	P	**Pn**	**07 28 49.7**	**0.0**
HUR	**Hurricane**	**2.34**	**268**	P	**Pn**	**07 28 50.8**	**+0.7**
BALM	**Baldy**	**2.35**	**153**	P	**Pn**	**07 28 51.2**	**+1.0**
PRP	**Porcupine Dome**	**2.42**	**350**	P	**Pn**	**07 28 51.2**	**+0.1**
BWN	**Browne**	**2.44**	**297**	P	**Pn**	**07 28 52.5**	**+1.1**
MDM	**Murphy Dome**	**2.45**	**320**	P	**Pn**	**07 28 50.6**	**-1.0**
GHO	**Glory Hole Cre**	**2.48**	**238**	P	**Pn**	**07 28 53.0**	**+1.1**
NEA	**Nenana**	**2.48**	**307**	P	**Pn**	**07 28 51.6**	**-0.4**
CFI	**College Fiord**	**2.50**	**219**	P	**Pn**	**07 28 52.1**	**-0.2**
TGL	**Tana Glacier**	**2.53**	**161**	P	**Pn**	**07 28 52.9**	**+0.2**
KNK	**Knik Glacier**	**2.54**	**228**	P	**Pn**	**07 28 52.9**	**+0.1**
TRF	**Thorofare Moun**	**2.63**	**279**	P	**Pn**	**07 28 54.2**	**0.0**
CTGM	**Chitina Glacie**	**2.65**	**144**	P	**Pn**	**07 28 54.5**	**+0.1**
PMR	**Palmer**	**2.66**	**236**	*e*P	**Pn**	**07 28 54.8**	**+0.2**
EYAK	**Cordova Ski Ar**	**2.67**	**193**	P	**Pn**	**07 28 54.1**	**-0.7**
CVA	**Cordova**	**2.68**	**193**	P	**Pn**	**07 28 54.6**	**-0.2**
CUT	**Chulitna**	**2.75**	**257**	P	**Pn**	**07 28 56.3**	**+0.3**
HIN	**Hinchinbrook I**	**2.92**	**200**	P	**Pn**	**07 28 57.7**	**-0.6**
PWA	**Palmer West**	**2.92**	**241**	P	**Pn**	**07 28 58.2**	**-0.1**
KTH	**Kantishna Hill**	**2.92**	**281**	P	**Pn**	**07 28 59.2**	**+0.9**
PWL	**Port Wells**	**2.92**	**220**	P	**Pn**	**07 28 57.9**	**-0.5**
PMS	**Palmer South**	**3.04**	**233**	P	**Pn**	**07 29 00.3**	**+0.2**
YAH	**Yahtse**	**3.09**	**154**	P	**Pn**	**07 29 01.0**	**+0.4**
GOU	**Gould Hall**	**3.17**	**234**	*e*P	**Pn**	**07 29 01.6**	**-0.2**
RC01	**Rabbit Creek A**	**3.21**	**232**	P	**Pn**	**07 29 02.8**	**+0.4**
FIB	**Fire Island**	**3.32**	**236**	P	**Pn**	**07 29 03.6**	**-0.4**
MLY	**Manley**	**3.33**	**307**	P	**Pn**	**07 29 03.3**	**-0.8**
SUA	**Susitna One**	**3.37**	**243**	P	**Pn**	**07 29 04.6**	**0.0**
FYU	**Fort Yukon**	**3.45**	**355**	P	**Pn**	**07 29 05.8**	**0.0**
SKT	**Skwentna**	**3.46**	**253**	P	**Pn**	**07 29 06.2**	**+0.3**
SLKM	**Skilak Lake**	**3.79**	**228**	P	**Pn**	**07 29 09.9**	**-0.7**
SEW	**Seward**	**3.86**	**220**	P	**Pn**	**07 29 11.7**	**+0.1**
SPU	**Mount Spurr**	**4.05**	**244**	*e*P	**Pn**	**07 29 13.8**	**-0.6**
BKG	**Blockade Glaci**	**4.20**	**244**	P	**Pn**	**07 29 16.2**	**-0.3**
BM3	**Burnt Mountain**	**4.29**	**359**	P	**Pn**	**07 29 17.3**	**-0.5**
RSO	**Redoubt South**	**4.75**	**239**	P	**Pn**	**07 29 23.9**	**-0.4**
IM3	**Indian Mountai**	**4.90**	**310**	P	**Pn**	**07 29 25.6**	**-0.8**
IMA	**Indian Mountai**	**4.92**	**311**	*e*P	**Pn**	**07 29 25.6**	**-1.1**
ILIM	**Iliamna**	**5.08**	**236**	P	**Pn**	**07 29 29.1**	**+0.2**
TT01	**Tatalina**	**5.25**	**272**	P	**Pn**	**07 29 31.5**	**+0.1**
SVW	**Sparrevohn**	**5.60**	**254**	*e*P	**Pn**	**07 29 39.6**	**+3.3**
INK	**Inuvik**	**6.87**	**36**	Pn	**Pn**	**07 29 49.8**	**-4.4**
	0.5nm,0.3s,baz=235,slow=16,SNR=28						
INK				Sn	**Sn**	**07 31 08.8**	**-4.7**
	0.7nm,0.3s,baz=250,slow=26,SNR=3.4						
INK				Lg		07 31 48.5	
	1.6nm,0.3s,baz=257,slow=21,SNR=8.8						
DLBC	**Dease Lake**	**8.50**	**117**	Pn	**P**	**07 30 15.2**	**-1.8**
	0.2nm,0.3s,baz=311,slow=14,SNR=5.3						
DLBC				Lg		07 32 41.0	
	0.8nm,0.3s,baz=221,slow=19,SNR=10						
YKA	**Yellowknife Ar**	**13.62**	**79**	Pn	**P**	**07 31 22.8**	**-3.4**
	0.1nm,0.3s,baz=283,slow=13,SNR=11						
PDAR	**Pinedale Array**	**28.73**	**119**	P	**P**	**07 34 11.2**	**+1.0**
	1.3nm,1.2s,mb3.5,baz=333,slow=6.6,SNR=3.8						
TXAR	**Lajitas Array**	**42.76**	**123**	P	**P**	**07 36 09.9**	**0.0**
	0.2nm,0.7s,mb3.0,baz=324,slow=7.8,SNR=2.5						

DJA 03 07:37:38.7±1.0, 8.42S×117.16E, h33km, ML4.0/3, 3C-3D, Error ellipse: s-maj=84.0km s-min=22.3km az=171.0, Sumbawa region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KEDI	**Kedomdong**	**1.04**	**266**	⇓*e*Pg	P	07 37 56.3	-0.7
	129nm,0.2s						
KEDI				⇑*i*Sg	S	07 38 09.3	-1.2
RATI	**Rata**	**1.64**	**259**	⇑*i*Pn	Pn	07 38 03.5	-2.2
	64nm,0.2s						
RATI				⇓*i*Sn	Sn	07 38 23.7	-2.2
INGI	**Ingas**	**2.03**	**259**	⇑*e*Pn	Pn	07 38 10.8	-0.6
	296nm,0.2s						
INGI				⇓*i*Sn	Sn	07 38 32.1	-3.8

GUC ***03*** *08:08:28.0±0.8, 37.85S×73.91W, h32km±5km, ML4.1*
NEIC ***03*** *08:08:28.0, 37.85S×73.91W, h32km, ML4.1(GUC), After GUC.*

ISC 03 08:08:26.9±2.5, 37.88S±0.05×73.9W±0.1, h11km±17km, n6, σ0§47/10, 3C, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TMCH	**Temuco**	**1.31**	**132**	⇑*i*P	**Pb**	**08 08 50.6**	**-0.5**
TMCH				*i* S	**Sb**	**08 09 07.5**	**-0.2**
TMCH				AMP		08 09 11.8	
	comp=N,2μm,0.4s						
CCHI	**Chillan**	**1.91**	**49**	⇑*i*P	**Pn**	**08 08 59.7**	**-0.1**
CCHI				*i* S	**Sn**	**08 09 24.3**	**+0.4**
CCHI				AMP		08 09 30.6	
	comp=N,3μm,0.5s						
CCHI				AMP		08 09 30.9	
	comp=N,4μm,0.5s						
COCH	**Cobquecura**	**1.94**	**26**	*e*P	**Pn**	**08 08 59.5**	**-0.7**
COCH				AMP		08 09 33.6	
	comp=E,764nm,0.6s						
VLCH	**Valdivia**	**1.99**	**166**	⇑*i*P	**Pn**	**08 09 01.6**	**+0.7**
VLCH				*i* S	**Sn**	**08 09 26.1**	**+0.2**
VLCH				AMP		08 09 42.0	
	comp=E,5μm,0.8s						
OSCH	**Osorno**	**2.75**	**168**	*i* P	**Pn**	**08 09 11.9**	**0.0**
OSCH				*i* S	**Sn**	**08 09 44.9**	**-0.6**
OSCH				AMP		08 10 04.2	
	comp=E,2μm,0.6s						
PLCA	**Paso Flores**	**3.84**	**139**	*e*P	**Pn**	**08 09 27.9**	**+0.7**

IDC ***03*** *08:39:06.1±2.7, 51.94N×176.89E, mb3.2/3, mb1 3.7/4, mb1mx3.4/24, ML3.5/1, Error ellipse: s-maj=68.7km s-min=13.4km az=7.0*
NEIC ***03*** *08:39:10.1, 51.75N×176.64E, h47km, ML3.4(AEIC), After AEIC.*

ISC 03 08:39:08.9±1.6, 52.0N±0.4×176.8E±0.2, h35km±17km, n13, σ0§42/16, mb3.3/3, Rat Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SMY	**Shemya**	**1.82**	**295**	P	**P**	**08 39 38.6**	**+0.2**
SMY				S	**S**	**08 40 00.4**	**-0.2**
FX1	**Attu Island--F**	**2.41**	**294**	Pn	**P**	**08 39 46.5**	**-0.3**
	36nm,0.3s,baz=35,slow=15,SNR=86						
FX1				Sn	**S**	**08 40 15.1**	**-0.2**
	23nm,0.3s,baz=90,slow=20,SNR=7.8						
FX1	**Attu Island--F**	**2.41**	**294**	P	**P**	**08 39 46.5**	**-0.3**
FX1				S	**S**	**08 40 16.0**	**+0.7**
KIMD	**Kanaga Island**	**3.70**	**91**	P	**P**	**08 40 05.5**	**+0.3**
KIKV	**Kanaga Island**	**3.73**	**89**	P	**P**	**08 40 06.1**	**+0.5**
KIWB	**Kanaga Island**	**3.74**	**90**	P	**P**	**08 40 05.9**	**+0.1**
ADK	**Adak**	**4.03**	**89**	P	**P**	**08 40 09.8**	**0.0**
ETKA	**Kagalaska Isla**	**4.20**	**89**	P	**P**	**08 40 11.7**	**-0.6**
GSTD	**Great Sitkin T**	**4.35**	**86**	P	**P**	**08 40 14.2**	**-0.3**
ATKA	**Atka Island**	**5.55**	**84**	P	**P**	**08 40 31.3**	**0.0**
ILAR	**Eielson Array**	**22.55**	**41**	P	**P**	**08 44 06.0**	**-0.6**
	0.4nm,0.6s,mb3.0,baz=238,slow=8.5,SNR=5.0						
YKA	**Yellowknife Ar**	**36.80**	**46**	P	**P**	**08 46 15.6**	**+0.9**
	0.2nm,0.4s,mb3.3,baz=282,slow=8.6,SNR=10						
TXAR	**Lajitas Array**	**61.24**	**78**	P	**P**	**08 49 22.3**	**-0.3**
	0.2nm,0.5s,mb3.5,baz=315,slow=3.5,SNR=4.1						

MAN 03 08:45:06.3, 11.71N×121.34E, h24km, mb3.7, ML2.5, MS2.0, 6C, Panay

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SJMP	**San Jose**	**0.78**	**344**	⇑*e*P	Pb	08 45 21.0	-0.1
SJMP				*e*S	Sb	08 45 33.2	+2.0
CUYO	**Cuyo Island**	**0.91**	**200**	⇑*e*P	Pb	08 45 23.1	-0.1
CUYO				*e*S	Sb	08 45 36.2	+1.3
OTRP	**Odiongan**	**0.93**	**46**	⇑*e*P	Pb	08 45 23.5	-0.2
OTRP				*e*S	Sb	08 45 36.9	+1.2
KALP	**Kalibo**	**0.98**	**92**	⇑*e*P	Pb	08 45 23.9	-0.5
KALP						09 15 03.3	
ENPP	**El Nido**	**1.94**	**255**	⇑*e*P	Pn	08 45 38.2	-0.2
LUBP	**Lubang**	**2.28**	**332**	⇑*e*P	Pn	08 45 43.5	+0.2

IDC 03 09:02:24.0±5.2, 29.46S×177.68W, mb3.5/2, mb1 3.8/2, mb1mx3.6/12, Error ellipse: s-maj=279.0km s-min=76.6km az=165.0, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ASAR	**Alice Springs**	**43.45**	**266**	P	P	09 10 28.7	-1.9
	0.3nm,0.5s,baz=106,slow=7.4,SNR=5.9						
WRA	**Warramunga Arr**	**44.35**	**271**	P	P	09 10 36.3	-1.6
	0.7nm,0.6s,baz=111,slow=7.7,SNR=22						
FINES	**FINESS Array B**	**144.35**	**341**	PKP	PKPdf	09 22 00.8	-2.4
	0.7nm,0.6s,baz=34,slow=5.0,SNR=3.2						

IDC 03 09:19:32.6±9.5, 0.95N×124.06E, mb3.8/3, mb1 4.0/3, mb1mx3.6/15, Error ellipse: s-maj=196.0km s-min=146.0km az=61.0, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**23.08**	**155**	P	P	09 24 38.6	-2.5
	0.9nm,0.5s,baz=333,slow=10,SNR=16						
ASAR	**Alice Springs**	**26.27**	**159**	P	P	09 25 10.1	-1.5
	1.0nm,0.3s,baz=333,slow=8.6,SNR=29						
STKA	**Stephens Creek**	**36.63**	**155**	P	P	09 26 41.8	-0.9
	0.8nm,0.5s,baz=342,slow=12,SNR=4.4						

WEL 03 09:27:43.0±0.4, 39.30S×177.55E, h41km±5km, ML3.6/4, 2C-1D, Error ellipse: s-maj=3.5km s-min=1.8km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KNZ	**Kokohu**	**0.29**	**20**	⇓PN	P	09 27 51.1	-0.1
KNZ				SN	S	09 27 57.0	0.0
BKZ	**Black Stump Fm**	**0.83**	**279**	⇑PN	P	09 27 57.4	-0.9
BKZ				SN	S	09 28 08.3	-1.2
PWZ	**Pawanui**	**0.90**	**216**	PN	P	09 27 58.7	-0.6
PWZ				SN	S	09 28 11.5	+0.1
MWZ	**Matawai**	**0.96**	**359**	PN	P	09 27 59.5	-0.6
MWZ				SN	S	09 28 11.7	-1.1
URZ	**Urewera**	**1.09**	**342**	⇑PN	P	09 28 01.3	-0.7
URZ				SN	S	09 28 14.6	-1.4
HATZ	**Hinemaiaia**	**1.20**	**289**	PN	P	09 28 03.0	-0.5
TAZ	**Tarawera**	**1.33**	**322**	PN	P	09 28 04.6	-1.0
PATZ	**Paeroa**	**1.36**	**312**	PN	P	09 28 04.7	-1.2
TSZ	**Takapari Road**	**1.44**	**238**	PN	P	09 28 05.5	-1.6
RATZ	**Rangitukua**	**1.45**	**287**	*e*PN	P	09 28 07.6	+0.5
TUVZ	**Tukino**	**1.47**	**270**	PN	P	09 28 06.9	-0.5
KAVZ	**Karewarewa**	**1.49**	**277**	PN	P	09 28 07.0	-0.7
NGZ	**Ngauruhoe**	**1.52**	**274**	PN	P	09 28 07.5	-0.6
WTVZ	**West Tongariro**	**1.53**	**276**	PN	P	09 28 08.2	-0.1
CNZ	**Chateau**	**1.55**	**273**	PN	P	09 28 07.9	-0.7
LIRZ	**Lichensteins R**	**1.58**	**324**	PN	P	09 28 09.3	+0.3
MGZ	**Maungaku**	**1.59**	**280**	PN	P	09 28 09.8	+0.7
BFZ	**Birch Farm**	**1.71**	**215**	PN	P	09 28 09.2	-1.5
BFZ				SN	S	09 28 29.6	-2.0
WAZ	**Wanganui**	**2.03**	**256**	PN	P	09 28 15.0	-0.5
MRZ	**Mangatainoka R**	**2.04**	**227**	PN	P	09 28 13.5	-2.0
MTW	**Mount Morrison**	**2.43**	**219**	PN	P	09 28 17.7	-3.5
CAW	**Cannon Point**	**2.62**	**226**	PN	P	09 28 20.4	-3.5
MRW	**Makara Radio**	**2.91**	**228**	PN	P	09 28 24.7	-3.2
NNZ	**Nelson**	**3.72**	**238**	PN	P	09 28 36.4	-3.0
QRZ	**Quartz Range**	**4.14**	**247**	PN	P	09 28 40.7	-4.7
THZ	**Tophouse**	**4.31**	**234**	PN	P	09 28 42.6	-5.2
KHZ	**Kahutara**	**4.35**	**223**	PN	P	09 28 44.5	-4.0
LTZ	**Lake Taylor**	**5.30**	**227**	PN	P	09 28 57.0	-4.7
LTZ				SN	S	09 29 51.7	-11
MQZ	**McQueen's Vall**	**5.74**	**218**	SN

comp=Z,2.6nm,0.1s
SUF Sumiainen 3.28 54 *eP* **Pn 09 40 27.1 +1.7**
SUF MSG 09 41 14.9
comp=Z,1.1nm,0.1s
HFS Hagfors 3.41 260 *eP* **Pn 09 40 31.9 +4.7**
HFS *ePG* **Pg 09 40 39.3 -0.5**
HFS *eSG* **Sg 09 41 24.8 -0.4**
HFS Hagfors 3.41 260 Pn **Pn 09 40 31.9 +4.7**
baz=78,slow=11
HFS Pg **Pg 09 40 39.3 -0.5**
baz=89,slow=16
HFS Lg 09 41 24.8
baz=72,slow=37
ARA0 ARCESS Array S 8.93 12 *eP* **P 09 41 42.7 -2.3**
ARA0 *eSG* **Sg 09 44 09.4 -20**
ARA0 ARCESS Array S 8.93 12 Pn **P 09 41 42.7 -2.3**
baz=191,slow=14
ARA0 Lg 09 44 09.4
baz=38,slow=28

NIED ***03*** *10:40:00,26.90N×127.50E,h59km,Mw3.9 Best double couple: M0 7.15×10^14 NP1:φs304°,δ59°,λ109°. NP2:φs89°,δ36°,λ61°.*
NEIC ***03*** *10:40:08.0±1.5,26.92N×127.41E,h66km±15km,Error ellipse: s-maj=22.3km s-min=14.5km az=76.0*
IDC ***03*** *10:40:08.3±1.4,26.91N×127.54E,h68km±14km,mb3.4/9, mb1 3.6/9,mb1mx3.5/22,Error ellipse: s-maj=29.7km s-min=17.0km az=71.0*
JMA ***03*** *10:40:09.1±0.1,26.88N×127.48E,h68km±1km,M3.6*
ISC 03 10:40:08.0±0.4,26.87N±0.06×127.51E±0.06,h79km±4km, n28,σ0§93/39,mb3.6/9,Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAGN	**Aguni-jima**	**0.37**	**220**	P	**P**	**10 40 20.4**	**-0.2**
JAGN				S	**S**	**10 40 28.8**	**-1.3**
JIH	**Iheya**	**0.44**	**68**	P	**P**	**10 40 21.5**	**+0.4**
JIH				S	**S**	**10 40 30.3**	**-0.8**
NAH1	**Naha**	**0.68**	**166**	P	**P**	**10 40 23.8**	**+0.3**
NAH1				S	**S**	**10 40 34.7**	**-0.4**
JOW	**Kunigami**	**0.69**	**93**	P	**P**	**10 40 23.6**	**0.0**
	566nm,0.3s,baz=241,slow=7.4,SNR=1791						
JOW				S	**S**	**10 40 35.0**	**-0.1**
	1µm,0.3s,baz=119,slow=19,SNR=44						
JOW	**Kunigami**	**0.69**	**93**	P	**P**	**10 40 23.8**	**+0.2**
JOW				S	**S**	**10 40 34.8**	**-0.3**
JJT2	**Tamagusuku 2**	**0.76**	**163**	P	**P**	**10 40 25.0**	**+0.6**
JKE	**Kume jima 2**	**0.84**	**230**	P	**P**	**10 40 25.5**	**+0.2**
JKE				S	**S**	**10 40 37.9**	**-0.3**
JTK	**Tokunoshima**	**1.57**	**54**	P	**P**	**10 40 35.4**	**+0.7**
JTK				S	**S**	**10 40 55.1**	**+0.7**
JAM	**Amami Oshima**	**2.41**	**50**	P	**P**	**10 40 46.8**	**+0.6**
JAM				S	**S**	**10 41 14.5**	**-0.1**
JZK	**Kikaishima**	**2.62**	**56**	P	**P**	**10 40 50.0**	**+0.9**
JZK				*e*S	**S**	**10 41 21.5**	**+1.7**
JOGS	**Gusukube**	**2.83**	**222**	*e*S	**S**	**10 41 25.2**	**+0.1**
JTJ	**Tarama**	**3.37**	**222**	*e*S	**S**	**10 41 40.9**	**+2.5**
JMZ	**Minamidaito 2**	**3.49**	**107**	P	**P**	**10 40 59.6**	**-1.6**
JMZ				*e*S	**S**	**10 41 35.6**	**-6.0**
JIJ	**Ishigaki jima**	**3.93**	**231**	P	**P**	**10 41 08.2**	**+0.9**
JIJ				*e*S	**S**	**10 41 48.6**	**-3.9**
JTN	**Tanegashima 3**	**4.85**	**38**	S	**S**	**10 42 13.8**	**-1.6**
YSS	**Yuzh-Sakhalins**	**23.38**	**27**	P	**P**	**10 45 11.1**	**+1.0**
SONM	**Songino Array**	**26.67**	**327**	P	**P**	**10 45 42.2**	**+0.9**
	0.8nm,0.4s,mb3.6,baz=134,slow=9.8,SNR=5.6						
MKAR	**Makanchi Array**	**40.63**	**311**	P	**P**	**10 47 41.6**	**+0.1**
	1.3nm,0.6s,mb3.9,baz=96,slow=10,SNR=14						
WRA	**Warramunga Arr**	**47.00**	**171**	P	**P**	**10 48 32.9**	**-0.4**
	0.8nm,0.6s,mb3.6,baz=352,slow=8.5,SNR=9.1						
WRA	**Warramunga Arr**	**47.00**	**171**	P	**P**	**10 48 32.9**	**-0.4**
BRVK	**Borovoye**	**49.44**	**318**	*e*P	**P**	**10 48 48.5**	**-3.2**
ZRNK	**Zerenda**	**50.19**	**318**	*e*P	**P**	**10 48 57.0**	**-0.5**
ASAR	**Alice Springs**	**50.62**	**172**	P	**P**	**10 49 01.2**	**0.0**
	0.6nm,0.6s,mb3.8,baz=357,slow=9.1,SNR=18						
ILAR	**Eielson Array**	**64.18**	**28**	P	**P**	**10 50 34.7**	**-1.4**
	0.1nm,0.5s,mb2.9,baz=297,slow=10,SNR=4.5						
FINES	**FINESS Array B**	**71.99**	**330**	P	**P**	**10 51 23.4**	**-1.3**
	0.5nm,0.4s,mb3.7,baz=45,slow=7.9,SNR=5.6						
BRTR	**Keskin Array B**	**76.13**	**308**	P	**S**	**10 51 48.8**	**-0.3**
	1.1nm,0.8s,mb3.8,baz=90,slow=6.2,SNR=7.0						
YKA	**Yellowknife Ar**	**78.22**	**25**	P	**P**	**10 52 00.8**	**+0.7**
	0.6nm,0.7s,mb3.5,baz=301,slow=5.5,SNR=13						
NOA	**NORSAR Array B**	**78.45**	**334**	P	**P**	**10 52 01.2**	**-0.3**
	0.3nm,0.6s,mb3.2,baz=83,slow=4.5,SNR=2.6						

IDC ***03*** *10:43:22.1±3.0,26.36S×175.00W,mb4.3/5,mb1 4.5/6, mb1mx4.2/14,ML4.4/1,MS3.7/1,Ms1 3.6/1,ms1mx2.7/17, Error ellipse: s-maj=174.0km s-min=24.3km az=162.0*
NEIC ***03*** *10:43:32.6±1.0,24.46S×175.89W,h40km,Error ellipse: s-maj=36.2km s-min=21.8km az=172.0*
ISC 03 10:43:30.6±1.1,24.5S±0.3×176.0W±0.2,h33km,n13, σ1§12/10,mb4.3/6,MS3.7/1,South of Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**15.28**	**81**	Pn	**P**	**10 46 52.9**	**-13**
	1.5nm,0.3s,baz=203,slow=7.7,SNR=3.3						
CTA	**Charters Tower**	**35.16**	**270**	P	**P**	**10 50 25.0**	**+1.4**
	2.4nm,0.5s,mb4.4,baz=96,slow=13,SNR=3.3						
CTA	**Charters Tower**	**35.16**	**270**	P	**P**	**10 50 25.0**	**+1.4**
CTAO	**Charters Tower**	**35.16**	**270**	*e*P	**P**	**10 50 24.1**	**+0.5**
STKA	**Stephens Creek**	**37.93**	**249**	LR	LR	11 04 47.7	
	comp=Z,118nm,20.1s,MS3.7,baz=207,slow=34						
ASAR	**Alice Springs**	**45.57**	**260**	P	**P**	**10 51 50.0**	**+0.6**
	6.8nm,1.2s,mb4.4,baz=99,slow=7.9,SNR=9.4						
WRAB	**Tennant Creek**	**46.03**	**265**	*e*P	**P**	**10 51 52.0**	**-1.2**
WRA	**Warramunga Arr**	**46.04**	**265**	P	**P**	**10 51 52.0**	**-1.3**
	0.7nm,0.4s,mb3.9,baz=109,slow=8.1,SNR=16						
QSPA	**South Pole Qui**	**65.56**	**180**	*e*P	**P**	**10 54 12.7**	**+0.1**
	6.8nm,1.2s,mb4.5						
NVAR	**Mina Array Bea**	**82.70**	**42**	P	**P**	**10 55 52.1**	**-0.3**
	1.6nm,0.8s,mb4.1,baz=214,slow=7.0,SNR=12						
CMAR	**Chiang Mai Arr**	**93.21**	**289**	P	**P**	**10 56 46.6**	**+3.1**
	1.4nm,0.8s,mb4.5,baz=133,slow=3.3,SNR=8.9						
AKASG	**Malin Array Be**	**147.44**	**330**	PKPbc	PKPdf	11 03 11.5	+3.1
	0.5nm,0.5s,baz=27,slow=3.1,SNR=5.4						
BRTR	**Keskin Array B**	**150.88**	**308**	PKPbc	PKPdf	11 03 20.8	+6.7
	0.8nm,0.8s,baz=72,slow=3.9,SNR=4.2						
BRTR				PKPab	PKPab	11 03 32.2	+2.8
	0.3nm,0.4s,baz=27,slow=8.3,SNR=4.0						

KRSC ***03*** *10:49:48.4±1.6,50.56N×157.37E,h43km±21km,ML4.0*
ISC 03 10:49:48.5±0.9,50.64N±0.06×157.34E±0.07,h43km,n23, σ1§02/45,Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**0.78**	**274**	*e*P	**P**	**10 50 02.0**	**-1.2**
SKR				*i* S	**S**	**10 50 12.3**	**-1.6**
PAU	**Pauzhetka**	**0.90**	**338**	*i* P	**P**	**10 50 05.3**	**+0.5**
PAU				*i* S	**S**	**10 50 17.1**	**+0.3**
PAU				Smax			
	2µm,0.4s						
ALID	**Alaid**	**1.16**	**282**	*i* P	**P**	**10 50 08.9**	**+0.4**
ALID				*i* S	**S**	**10 50 23.1**	**-0.3**
MIPR	**Malaya Ipel'ka**	**1.68**	**348**	*e*P	**P**	**10 50 16.1**	**+0.1**
MIPR				*e*S	**S**	**10 50 36.4**	**-0.1**
RUS	**Russkaya**	**1.94**	**22**	*e*P	**P**	**10 50 19.2**	**-0.5**
RUS				*e*S	**S**	**10 50 41.8**	**-1.2**
GRL	**Gorelyy**	**1.97**	**13**	*i* P	**P**	**10 50 20.7**	**+0.6**
GRL				*i* S	**S**	**10 50 43.5**	**-0.3**
KRMR	**Karymshinskiy**	**2.25**	**12**	*e*P	**P**	**10 50 24.8**	**+0.7**
KRMR				*e*S	**S**	**10 50 52.3**	**+1.4**
APC	**Apacha**	**2.30**	**357**	*i* P	**P**	**10 50 25.2**	**+0.4**
APC				*e*S	**S**	**10 50 56.5**	**+4.5**
APC				Smax			
	80nm,1.0s						
PET	**Petropavlovsk**	**2.53**	**18**	*e*P	**P**	**10 50 27.8**	**-0.3**
PET				*i* S	**S**	**10 50 56.5**	**-1.4**
UGLR	**Uglovaya**	**2.74**	**19**	*e*P	**P**	**10 50 31.4**	**+0.3**
UGLR				*e*S	**S**	**10 51 04.9**	**+1.7**
AVH	**Avacha**	**2.77**	**18**	*e*P	**P**	**10 50 32.6**	**+1.0**
AVH				*e*S	**S**	**10 51 04.7**	**+0.6**
KOK	**Koryaka**	**2.78**	**16**	*e*P	**P**	**10 50 33.0**	**+1.3**
KOK				*e*S	**S**	**10 51 05.0**	**+0.8**
SMAR	**Somma**	**2.78**	**18**	*e*P	**P**	**10 50 33.1**	**+1.4**
SMAR				*e*S	**S**	**10 51 04.5**	**+0.2**
SDLR	**Sedlovina**	**2.81**	**19**	*e*P	**P**	**10 50 31.9**	**-0.3**
SDLR				*e*S	**S**	**10 51 03.9**	**-1.2**
NLC	**Nalytchevo**	**2.83**	**25**	*i* P	**P**	**10 50 31.0**	**-1.3**
NLC				*e*S	**S**	**10 51 03.8**	**-1.7**
SPN	**Mys Shipunski**	**2.98**	**33**	*e*P	**P**	**10 50 34.3**	**-0.1**
SPN				*e*S	**S**	**10 51 07.0**	**-2.2**
GNL	**Ganaly**	**3.09**	**7**	*e*P	**P**	**10 50 36.7**	**+0.7**
GNL				*e*S	**S**	**10 51 12.4**	**+0.3**
MKZ	**Mys Kozlova**	**4.75**	**33**	*e*P	**P**	**10 50 59.1**	**-0.5**
MKZ				*e*S	**S**	**10 51 52.8**	**-1.3**
TUMR	**Tumrok**	**4.96**	**19**	*e*P	**P**	**10 51 04.0**	**+1.6**
TUMR				*e*S	**S**	**10 51 58.5**	**-0.7**
KMNR	**Kamenistaya**	**5.42**	**18**	*e*P	**P**	**10 51 11.3**	**+2.4**
KMNR				*e*S	**S**	**10 52 10.7**	**-0.1**
ZLN	**Zelenaya**	**5.78**	**20**	*e*P	**P**	**10 51 15.2**	**+1.3**
ZLN				*e*S	**S**	**10 52 19.9**	**+0.1**
KBTR	**Krutoberegovo**	**6.47**	**28**	*e*P	**P**	**10 51 22.3**	**-1.4**
KBTR				*e*S	**S**	**10 52 31.6**	**-5.5**
BKI	**Bering**	**6.94**	**45**	*e*S	**S**	**10 52 39.8**	**-8.9**

BER ***03*** *10:59:51.6±4.2,73.36N×7.73E,h14km±135km, ML2.2(NAO)*
NAO 03 10:59:54.5±8.3,73.64N×9.68E,ML2.2,Greenland Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SPA0	**Spitsbergen Ar**	**4.85**	**17**	Pn	Pn	11 01 08.8	-1.6
	baz=186,slow=12						
KBS	**Kingsbay**	**5.35**	**5**	Pn	Pn	11 01 13.3	-4.2
KBS				Sn	Sn	11 02 15.0	-5.8
ARA0	**ARCESS Array S**	**6.47**	**122**	Pn	Pn	11 01 29.7	-3.6
	baz=312,slow=10						
ARA0				Sn	Sn	11 02 42.5	-6.3
	baz=309,slow=22						

IDC ***03*** *11:11:45.4±5.9,40.00N×14.78E,h275km±61km,mb3.1/4, mb1 3.1/7,mb1mx2.9/24,Error ellipse: s-maj=65.0km s-min=31.9km az=72.0*
NEIC ***03*** *11:11:46.6±1.1,39.86N×14.92E,h303km±6km,Error ellipse: s-maj=26.7km s-min=11.7km az=45.0*
ISC 03 11:11:45.9±1.4,39.9N±0.2×15.0E±0.2,h310km±8km,n13, σ0§68/13,mb3.4/3,2D,Tyrrhenian Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MGR	**Morigerati**	**0.55**	**58**	*i*P*g*	**P**	**11 12 25.9**	**0.0**
SGO	**Sicignano**	**0.76**	**21**	*i*P*g*	**P**	**11 12 27.1**	**+0.5**
PTRP	**Pietrapertosa**	**1.08**	**51**	*e*P*g*	**P**	**11 12 27.9**	**0.0**
TDS	**Terranova Siba**	**1.09**	**100**	*e*P*g*	**P**	**11 12 27.6**	**-0.3**
ORI	**Oriolo Calabro**	**1.17**	**79**	*e*P*g*	**P**	**11 12 28.0**	**-0.4**
IDI	**Anoyia**	**9.11**	**117**	P	**P**	**11 13 54.4**	**+0.6**
	0.9nm,0.3s,baz=314,slow=10,SNR=7.9						
KRIS	**Kristallenia**	**9.59**	**116**	*e*Pn	**P**	**11 13 58.9**	**-0.9**
MLR	**Muntele Rosu**	**9.86**	**52**	P	**P**	**11 14 03.7**	**+0.7**
	0.2nm,0.3s,baz=292,slow=16,SNR=2.3						
BRTR	**Keskin Array B**	**14.38**	**85**	P	**P**	**11 14 58.0**	**+0.3**
	0.1nm,0.3s,baz=270,slow=9.9,SNR=4.9						
HFS	**Hagfors**	**20.32**	**358**	P	**P**	**11 15 58.9**	**-0.5**
	0.9nm,0.4s,baz=172,slow=10,SNR=5.8						
FINES	**FINESS Array B**	**22.68**	**14**	P	**P**	**11 16 22.3**	**+0.3**
	2.5nm,0.4s,mb3.9,baz=191,slow=7.1,SNR=27						
ARCES	**ARCESS Array B**	**30.27**		P	**P**	**11 17 28.8**	**-1.5**
	1.0nm,0.7s,mb3.4,baz=190,slow=7.4,SNR=6.3						
YKA	**Yellowknife Ar**	**70.27**	**338**	P	**P**	**11 22 28.0**	**+1.1**
	0.1nm,0.5s,mb2.9,baz=42,slow=5.8,SNR=6.0						

NIED ***03*** *11:29:00,33.60N×140.00E,h104km,Mw4.3 Best double couple: M0 2.89×10^15 NP1:φs228°,δ71°,λ83°. NP2:φs68°,δ21°,λ109°.*
MOS ***03*** *11:29:18.5±1.1,33.50N×139.77E,h115km,mb4.8/5,Error ellipse: s-maj=21.0km s-min=8.5km az=112.7*
JMA ***03*** *11:29:19.8±0.1,33.65N×140.01E,h99km±1km,M4.3*
JMA Felt II J1.
BJI ***03*** *11:29:19.0,33.50N×139.80E,h112km,mb4.5*
IDC ***03*** *11:29:19.3±0.4,33.54N×139.86E,h106km±4km,mb3.8/21, mb1 4.0/24,mb1mx3.9/29,MS2.7/2,Ms1 2.7/2, ms1mx2.6/25,Error ellipse: s-maj=14.9km s-min=10.3km az=81.0*
NEIC ***03*** *11:29:20.3±1.1,33.52N×139.79E,h113km±9km,mb4.1/2, Error ellipse: s-maj=11.2km s-min=9.3km az=102.0*
NEIC Recorded [2 JMA] on Hachijo-jima.
ISC 03 11:29:18.5±0.4,33.56N±0.04×139.93E±0.06,h113km±2km, h106km±3.4km:pP-P,n66,σ1§02/80,mb4.2/27,2C, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHJ	**Hachijo jima 2**	**0.46**	**196**	P	**P**	**11 29 36.2**	**+0.7**
	2µm,0.3s,baz=274,slow=3.7,SNR=1737						
JHJ				S	**S**	**11 29 48.8**	**+0.4**
	3µm,0.3s,baz=90,slow=20,SNR=107						
JHJ2	**Mitsune**	**0.46**	**192**	P	**P**	**11 29 36.0**	**+0.4**
JHJ2				*e*S	**S**	**11 29 49.2**	**+0.8**
JKO	**Kozu shima**	**0.91**	**314**	P	**P**	**11 29 39.3**	**-0.1**
JKO				*e*S	**S**	**11 29 54.0**	**-0.9**
NJJJ	**Nii jima 2**	**1.00**	**328**	P	**P**	**11 29 40.2**	**-0.1**
NJJJ				*e*S	**S**	**11 29 55.7**	**-0.8**
JIM2	**Oshima 3**	**1.23**	**340**	P	**P**	**11 29 42.3**	**-0.5**
BSO3	**Boso 3**	**1.33**	**21**	P	**P**	**11 29 43.2**	**-0.8**
BSO1	**Boso 1**	**1.40**	**38**	P	**P**	**11 29 43.5**	**-1.3**
JIZS	**Izushimoda**	**1.45**	**323**	P	**P**	**11 29 45.4**	**+0.1**
JIZS				*e*S	**S**	**11 30 04.6**	**-1.0**
BSO4	**Boso 4**	**1.47**	**13**	P	**P**	**11 29 45.5**	**-0.1**
KTJJ	**Kamata 2**	**1.54**	**333**	P	**P**	**11 29 45.9**	**-0.5**
KTJJ				*e*S	**S**	**11 30 07.0**	**-0.5**
AJI	**Ajiro**	**1.63**	**335**	P	**P**	**11 29 47.4**	**-0.2**
JOD2	**Odawara 2**	**1.84**	**338**	P	**P**	**11 29 50.0**	**-0.1**
JOD2				*e*S	**S**	**11 30 12.5**	**-1.2**
TK04	**Tokai 4**	**1.90**	**296**	P	**P**	**11 29 52.1**	**+1.3**
TK01	**Tokai 1**	**1.96**	**277**	P	**P**	**11 29 52.3**	**+0.7**
TK01				*e*S	**S**	**11 30 18.1**	**+1.6**
SHZ3	**Shizuoka 3**	**2.07**	**317**	P	**P**	**11 29 54.2**	**+1.2**
SHZ3				*e*S	**S**	**11 30 20.6**	**+1.6**
JYN	**Shimob**	**2.25**	**330**	P	**P**	**11 29 56.1**	**+0.7**
MAJO	**Matsushiro**	**3.29**	**335**	*e*P	**P**	**11 30 09.7**	**+0.2**
MAJO				*e*S	**S**	**11 30 53.7**	**+5.5**
MAT	**Matsushiro**	**3.29**	**335**	P	**P**	**11 30 09.5**	**0.0**
MAT				S	**S**	**11 30 49.3**	**+1.1**
MAT	**Matsushiro**	**3.29**	**335**	*e*P	**P**	**11 30 10.0**	**+0.5**
MAT				*e*S	**S**	**11 30 49.0**	**+0.8**
CBIJ	**Chichi jima**	**6.73**	**163**	P	**P**	**11 30 53.7**	**-2.5**
	4.1nm,0.3s,baz=343,slow=19,SNR=7.9						
CBIJ				S	**S**	**11 32 04.5**	**-7.5**
	9.2nm,0.3s,baz=270,slow=20,SNR=2.6						
CBIJ				LR	LR	11 33 38.0	
	comp=Z,42nm,18.6s,baz=287,slow=38						
JNU	**Nakatsue**	**7.59**	**269**	P	**P**	**11 31 07.6**	**-0.2**
	1.7nm,0.3s,baz=72,slow=15,SNR=11						
ASAJ	**Asahikawa**	**10.74**	**10**	P	**P**	**11 31 45.7**	**-4.4**
	1.3nm,0.3s,baz=228,slow=14,SNR=7.2						
ASAJ				S	**S**	**11 33 36.1**	**-13**
	0.6nm,0.3s,baz=252,slow=19,SNR=3.4						
ASAJ				LR	LR	11 36 53.7	
	comp=Z,52nm,18.5s,baz=150,slow=42						
HIA	**Hailar**	**21.70**	**322**	*e*P	**P**	**11 33 59.8**	**-1.4**
HIA				pmax	pmax		
	comp=Z,9.0nm,0.9s						
HIA	**Hailar**	**21.70**	**322**	*e*P	**P**	**11 33 59.8**	**-1.5**
	comp=Z,8.7nm,0.9s,mb4.1						
ULN	**Ulaanbaatar**	**28.48**	**310**	*e*P	**P**	**11 35 05.1**	**+0.2**
ULN				pmax	pmax		
	comp=Z,4.0nm,0.7s,mb4.1						
ULN	**Ulaanbaatar**	**28.48**	**310**	*e*P	**P**	**11 35 05.1**	**+0.2**
	comp=Z,3.5nm,0.7s,mb4.0						
SONM	**Songino Array**	**28.89**	**310**	P	**P**	**11 35 07.9**	**-0.6**
	comp=Z,1.9nm,0.7s,mb3.9,baz=108,slow=7.8,SNR=8.7						
BOD	**Bodaibo**	**29.92**	**332**	⇑*i*P	**P**	**11 35 16.8**	**-0.9**
ZAK	**Zakamensk**	**31.62**	**313**	*e*P	**P**	**11 35 30.7**	**-1.9**
TLY	**Talaya**	**31.83**	**316**	⇑*i*P	**P**	**11 35 34.8**	**+0.4**
TLY				pmax	pmax		
	comp=Z,53nm,0.9s,mb5.3						
TIXI	**Tiksi**	**38.61**	**354**	*e*P	**P**	**11 36 31.2**	**-0.5**
TIXI				pmax	pmax		
	comp=Z,24nm,0.7s,mb5.1						
TIXI	**Tiksi**	**38.61**	**354**	*e*P	**P**	**11 36 34.2**	**+2.5**
WMQ	**Urumqi**	**41.43**	**300**	*e*P	**P**	**11 36 55.4**	**+0.2**
ZAL	**Zalesovo**	**43.45**	**315**	P	**P**	**11 37 11.2**	**-0.4**
	comp=Z,3.0nm,0.9s,mb4.0,baz=278,slow=9.2,SNR=12						
ZAL				pP	pP	11 37 34.3	-3.4
	comp=Z,1.2nm,0.6s,baz=312,slow=8.8,SNR=2.2						
NVS	**Novosibirsk**	**44.44**	**316**	*i* P	**P**	**11 37 18.4**	**-1.0**
NVS				pmax	pmax		
	comp=N,3.0nm,0.7s						
NVS				pmax	pmax		
	comp=E,8.0nm,0.7s						
NVS				pmax	pmax		
	comp=Z,14nm,0.7s,mb4.8						
MKAR	**Makanchi Array**	**45.02**	**305**	P	**P**	**11 37 23.9**	**-0.3**
	comp=Z,3.2nm,0.6s,mb4.2,baz=88,slow=8.7,SNR=29						
KURK	**Kurchatov**	**47.19**	**311**	*e*P	**P**	**11 37 40.5**	**-0.8**
IMA	**Indian Mountai**	**50.30**	**29**	*e*P	**P**	**11 38 08.1**	**+3.0**
BVAR	**Borovoye Array**	**52.06**	**314**	P	**P**	**11 38 17.6**	**-0.9**
	comp=Z,4.2nm,0.7s,mb4.6,baz=90,slow=7.4,SNR=26						
BRVK	**Borovoye**	**52.12**	**314**	*e*P	**P**	**11 38 18.5**	**-0.5**
ZRNK	**Zerenda**	**52.90**	**314**	*e*P	**P**	**11 38 24.1**	**-0.7**
ILAR	**Eielson Array**	**53.08**	**31**	P	**P**	**11 38 24.6**	**-1.3**
	comp=Z,1.8nm,0.7s,mb4.2,baz=273,slow=7.0,SNR=24						
ILAR				pP	pP	11 38 52.4	-0.6
	comp=Z,0.7nm,0.7s,baz=267,slow=6.6,SNR=3.1						
WB2	**Warramunga Arr**	**53.47**	**187**	*e*P	**P**	**11 38 27.9**	**-1.5**
WRA	**Warramunga Arr**	**53.47**	**187**	P	**P**	**11 38 28.0**	**-1.4**
	comp=Z,1.9nm,0.7s,mb4.3,baz=4.3,slow=7.6,SNR=33						
ASAR	**Alice Springs**	**57.19**	**187**	P	**P**	**11 38 54.9**	**-1.3**
	comp=Z,0.5nm,0.5s,mb3.8,baz=4.4,slow=7.3,SNR=17						
INK	**Inuvik**	**58.03**	**26**	P	**P**	**11 39 00.8**	**-0.6**
	comp=Z,1.3nm,0.8s,mb4.0,baz=284,slow=7.0,SNR=14						
STKA	**Stephens Creek**	**65.10**	**178**	P	**P**	**11 39 49.0**	**-0.4**
	comp=Z,3.7nm,0.6s,mb4.4,baz=338,slow=5.6,SNR=7.1						
ARCES	**ARCESS Array B**	**66.82**	**340**	P	**P**	**11 39 59.4**	**-0.2**
	comp=Z,1.5nm,0.7s,mb3.9,baz=67,slow=6.9,SNR=2.8						
YKA	**Yellowknife Ar**	**67.42**	**29**	P	**P**	**11 40 03.0**	**-0.5**
	comp=Z,1.7nm,1.0s,mb3.8,baz=295,slow=5.9,SNR=4.2						
FINES	**FINESS Array B**	**71.32**	**332**	P	**P**	**11 40 26.6**	**-0.6**
	comp=Z,1.8nm,0.6s,mb4.0,baz=76,slow=7.9,SNR=7.9						
FINES				pP	pP	11 40 53.0	-2.8
	comp=Z,2.3nm,0.9s,baz=153,slow=8.5,SNR=2.8						
KIV	**Kislovodsk**	**72.27**	**311**	*e*P	**P**	**11 40 34.7**	**+1.5**
KIV				pmax	pmax		
	comp=Z,10.0nm,0.9s,mb4.7						
AKASG	**Malin Array Be**	**76.30**	**322**	P	**P**	**11 40 55.9**	**-0.3**
	comp=Z,2.6nm,0.6s,mb4.2,baz=47,slow=6.0,SNR=8.2						
HFS	**Hagfors**	**76.75**	**335**	P	**P**	**11 40 58.4**	**-0.1**
	comp=Z,2.5nm,0.9s,mb4.0,baz=48,slow=8.7,SNR=3.8						
NB2	**NORSAR Subarra**	**76.91**	**337**	P	**P**	**11 40 59.0**	**-0.4**
	comp=Z,1.1nm,0.6s,mb3.8,baz=42,slow=5.3						
NOA	**NORSAR Array B**	**76.91**	**337**	P	**P**	**11 40 59.8**	**+0.4**
	comp=Z,1.3nm,0.8s,mb3.7,baz=41,slow=5.3,SNR=3.9						
NVAR	**Mina Array Bea**	**78.06**	**52**	P	**P**	**11 41 07.7**	**+1.4**
	comp=Z,0.9nm,0.7s,mb3.6,baz=317,slow=4.5,SNR=8.7						
BRTR	**Keskin Array B**	**80.24**	**311**	P	**P**	**11 41 18.7**	**+0.7**
	comp=Z,2.2nm,1.1s,mb3.9,baz=135,slow=5.2,SNR=5.6						
PDAR	**Pinedale Array**	**80.98**	**44**	P	**P**	**11 41 22.6**	**+0.7**
	comp=Z,0.5nm,0.7s,mb3.5,baz=259,slow=2.6,SNR=5.2						
DAU	**Daniels Canyon**	**81.39**	**47**	*e*P	**P**	**11 41 26.0**	**+1.9**
SRU	**San Rafael**	**82.63**	**48**	*e*P	**P**	**11 41 31.7**	**+1.2**
PV10	**Paradox Valley**	**84.00**	**48**	*e*P	**P**	**11 41 39.5**	**+2.2**
PV01	**Paradox Valley**	**84.44**	**47**	*e*P	**P**	**11 41 41.2**	**+1.7**
GERES	**GERESS Array B**	**85.01**	**328**	P	**P**	**11 41 42.7**	**+0.6**
	comp=Z,0.6nm,0.4s,mb3.9,baz=34,slow=4.8,SNR=5.7						
EKA	**Eskdalemuir Ar**	**85.98**	**340**	P	**P**	**11 41 47.0**	**+0.3**
	comp=Z,3.0nm,0.9s,mb4.2,baz=311,slow=7.7,SNR=4.0						
TXAR	**Lajitas Array**	**93.22**	**52**	P	**P**	**11 42 22.9**	**+1.5**
	comp=Z,1.6nm,0.7s,mb4.5,baz=292,slow=2.8,SNR=24						
TXAR				pP	pP	11 42 51.1	-0.2
	comp=Z,0.5nm,0.8s,baz=290,slow=3.3,SNR=2.9						
WVL	**Waterville**	**97.72**	**21**	*e*P	**P**	**11 42 44.7**	**+3.2**

IDC 03 11:40:38.2±4.6,24.43S×179.92W,h496km±38km, mb3.4/4,mb1 3.6/4,mb1mx3.3/13,Error ellipse: s-maj=162.0km s-min=29.5km az=164.0,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**31.56**	**271**	P	P	11 46 19.9	-0.7
	5.7nm,0.4s,baz=97,slow=10,SNR=18						
ASAR	**Alice Springs**	**42.03**	**261**	P	P	11 47 45.8	-1.1
	1.

ASAR	**Alice Springs**	**48.77**	**253**	P		**P**		**11 57 42.6**	**+0.3**
	16nm,0.6s,mb4.8,baz=88,slow=8.6,SNR=378								
YBH	**Yreka Blue Hor**	**75.21**	**37**	P		**P**		**12 00 38.0**	**-0.4**
	1.7nm,0.8s,mb3.7,baz=161,slow=4.0,SNR=4.1								
NVAR	**Mina Array Bea**	**75.94**	**42**	P		**P**		**12 00 43.3**	**+0.8**
	0.9nm,0.7s,mb3.5,baz=233,slow=11,SNR=9.4								
PDAR	**Pinedale Array**	**83.87**	**42**	P		**P**		**12 01 23.6**	**-1.1**
	0.5nm,0.6s,mb3.4,baz=207,slow=3.3,SNR=4.4								
ILAR	**Eielson Array**	**83.88**	**12**	P		**P**		**12 01 24.9**	**+0.8**
	0.3nm,0.7s,mb3.2,baz=239,slow=6.3,SNR=5.8								

*NAO **03** 11:58:09.1±4.1,60.47N×26.61E,ML2.1*
*HEL **03** 11:58:09.3±0.6,60.48N×26.84E,ML1.6,ML2.1(NAO), Explosion*
*BER **03** 11:58:11.8±3.4,60.54N×26.72E,ML2.1(NAO), Suspected explosion*

ISC 03 11:58:08.0±1.9,**60.53N**±0.09×**26.9E**±0.2,**n10,**σ1§**02**/14,
Finland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PVF	**Pernaja**	**0.49**	**273**	*eP*	**Pg**	**11 58 17.9**	**0.0**
PVF				*eS*	**Sg**	**11 58 24.3**	**-0.1**
FIA0	**FINESS Array S**	**1.00**	**338**	*eP*	**Pb**	**11 58 27.3**	**-0.5**
FIA0				*eS*	**Sg**	**11 58 41.3**	**+0.1**
FIA0	**FINESS Array S**	**1.00**	**338**	Pg	**Pg**	**11 58 27.4**	**-0.6**
	baz=157,slow=18						
FIA0				Lg		11 58 41.2	
	baz=159,slow=37						
FIA0				Rg		11 58 46.2	
	baz=158,slow=56						
KAF	**Kangasniemi**	**1.61**	**351**	*eP*	**Pn**	**11 58 38.2**	**+0.3**
KEF	**Keuruu**	**1.91**	**331**	*eP*	**Pn**	**11 58 43.2**	**+1.1**
KEF				MSG		11 59 11.2	
	comp=Z,2.3nm,0.1s						
SUF	**Sumiainen**	**2.23**	**352**	*eP*	**Pn**	**11 58 48.5**	**+1.8**
SUF				MSG		11 59 19.7	
	comp=Z,2.8nm,0.2s						
HFS	**Hagfors**	**6.55**	**272**	*eS*	**Sn**	**12 00 57.8**	**-6.5**
HFS				*e*SG		12 01 31.0	
HFS	**Hagfors**	**6.55**	**272**	Sn	**Sn**	**12 00 57.8**	**-6.5**
	baz=81,slow=28						
HFS				Lg		12 01 31.0	
	baz=89,slow=37						
ARA0	**ARCESS Array S**	**9.06**	**357**	Pn	**P**	**12 00 20.9**	**-2.2**
	baz=178,slow=14						
ARA0				Sn	**Sn**	**12 02 02.1**	**-5.1**
	baz=163,slow=28						
ARA0	**ARCESS Array S**	**9.06**	**357**	*eP*	**P**	**12 00 20.9**	**-2.2**
ARA0				*eS*	**Sn**	**12 02 02.1**	**-5.1**

*NEIC **03** 13:14:55.0,58.19N×153.90W,h63km,ML3.4(AEIC),After AEIC.*
*IDC **03** 13:14:55.8±8.1,58.54N×154.07W,h83km±59km,mb3.7/1, mb1 3.5/5,mb1mx3.2/23,ML3.7/4,Error ellipse: s-maj=67.1km s-min=38.2km az=57.0*

ISC 03 13:14:52.0±0.3,**58.18N**±0.04×**153.86W**±0.06,**h87**km±4km,
n77,σ0§**95**/83,**mb3.8**/1,**Kodiak Island region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAHG	**Katmai Hook Gl**	**0.48**	**311**	P	**P**	**13 15 06.4**	**0.0**
KAHG				S	**S**	**13 15 15.6**	**-1.7**
KAPH	**Katmai Pasha**	**0.49**	**329**	P	**P**	**13 15 06.4**	**-0.1**
KAPH				S	**S**	**13 15 15.8**	**-1.6**
KARR	**Katmai Rainbow**	**0.55**	**306**	P	**P**	**13 15 06.9**	**-0.1**
CAHL	**Cahill**	**0.78**	**261**	P	**P**	**13 15 09.2**	**-0.1**
ACHA	**Angle Creek He**	**0.78**	**273**	P	**P**	**13 15 09.5**	**+0.2**
ACHA				S	**S**	**13 15 21.2**	**-0.9**
KDAK	**Kodiak Island**	**0.79**	**120**	P	**P**	**13 15 10.1**	**+0.7**
KDAK				S	**S**	**13 15 22.1**	**-0.1**
KJL	**Kejulik**	**0.92**	**263**	P	**P**	**13 15 11.1**	**+0.3**
AGU	**Augustine-Summ**	**1.21**	**10**	P	**P**	**13 15 15.7**	**+1.4**
AUE	**Augustine Isla**	**1.21**	**12**	P	**P**	**13 15 15.6**	**+1.3**
AUL	**Augustine Lava**	**1.23**	**10**	P	**P**	**13 15 15.7**	**+1.1**
ILS	**Iliamna Low So**	**1.83**	**12**	P	**P**	**13 15 23.6**	**+1.2**
CNPM	**China Poot**	**1.92**	**44**	P	**P**	**13 15 24.9**	**+1.3**
ILW	**Iliamna West**	**1.92**	**11**	P	**P**	**13 15 25.0**	**+1.4**
ILIM	**Iliamna**	**1.96**	**13**	P	**P**	**13 15 25.2**	**+1.1**
BRLK	**Bradley Lake**	**2.21**	**43**	P	**P**	**13 15 28.4**	**+0.8**
RSO	**Redoubt South**	**2.36**	**13**	P	**P**	**13 15 31.0**	**+1.3**
REF	**Redoubt East F**	**2.39**	**14**	P	**P**	**13 15 31.3**	**+1.2**
SEW	**Seward**	**2.98**	**48**	P	**P**	**13 15 37.7**	**-0.6**
BKG	**Blockade Glaci**	**3.01**	**15**	P	**P**	**13 15 39.9**	**+1.2**
SVW	**Sparrevohn**	**3.07**	**344**	P	**P**	**13 15 40.1**	**+0.6**
CKL	**Chakachamna La**	**3.12**	**14**	P	**P**	**13 15 41.3**	**+1.0**
SPU	**Mount Spurr**	**3.15**	**16**	P	**P**	**13 15 41.5**	**+0.9**
MPA	**Moose Pass**	**3.27**	**43**	P	**P**	**13 15 44.3**	**+2.1**
FIB	**Fire Island**	**3.53**	**30**	P	**P**	**13 15 46.0**	**+0.1**
RC01	**Rabbit Creek A**	**3.59**	**34**	P	**P**	**13 15 47.1**	**+0.4**
SUA	**Susitna One**	**3.65**	**24**	P	**P**	**13 15 47.7**	**+0.2**
PMS	**Palmer South**	**3.77**	**33**	P	**P**	**13 15 49.6**	**+0.5**
PWL	**Port Wells**	**3.89**	**44**	P	**P**	**13 15 50.5**	**-0.3**
PWA	**Palmer West**	**4.02**	**28**	P	**P**	**13 15 52.9**	**+0.3**
MID	**Middleton Isla**	**4.11**	**69**	*eP*	**P**	**13 15 54.1**	**+0.3**
PMR	**Palmer**	**4.17**	**33**	P	**P**	**13 15 54.1**	**-0.6**
KNK	**Knik Glacier**	**4.24**	**38**	P	**P**	**13 15 55.2**	**-0.4**
CFI	**College Fiord**	**4.31**	**43**	P	**P**	**13 15 55.5**	**-1.1**
GHO	**Glory Hole Cre**	**4.37**	**32**	P	**P**	**13 15 57.4**	**-0.1**
HIN	**Hinchinbrook I**	**4.38**	**56**	P	**P**	**13 15 57.4**	**-0.2**
SDPT	**Sand Point**	**4.62**	**235**	P	**P**	**13 16 00.9**	**+0.1**
SDN	**Sand Point**	**4.63**	**235**	P	**P**	**13 16 01.6**	**+0.5**
CVA	**Cordova**	**4.78**	**57**	P	**P**	**13 16 02.6**	**-0.4**
EYAK	**Cordova Ski Ar**	**4.78**	**57**	P	**P**	**13 16 02.6**	**-0.6**
VLZ	**Valdez**	**4.83**	**49**	P	**P**	**13 16 03.5**	**-0.2**
TT01	**Tatalina**	**4.86**	**348**	P	**P**	**13 16 04.4**	**+0.2**
SCM	**Sheep Creek Mo**	**4.92**	**39**	P	**P**	**13 16 05.0**	**0.0**
BLHA	**Black Hill**	**5.13**	**245**	P	**P**	**13 16 08.7**	**+0.8**
KLU	**Klutina**	**5.20**	**47**	P	**P**	**13 16 08.7**	**-0.2**
HAG	**Hague Volcano**	**5.28**	**241**	P	**P**	**13 16 10.9**	**+1.0**
DOL	**Dolgoi Island**	**5.36**	**239**	P	**P**	**13 16 11.6**	**+0.6**
BMRM	**Bremner River**	**5.47**	**55**	P	**P**	**13 16 11.3**	**-1.2**
DTNA	**Dutton South F**	**5.54**	**240**	P	**P**	**13 16 13.0**	**-0.4**
KTH	**Kantishna Hill**	**5.58**	**14**	P	**P**	**13 16 13.2**	**-0.8**
DHY	**Denali Highway**	**5.86**	**30**	P	**P**	**13 16 17.9**	**+0.1**
SNH	**Sunshine Point**	**6.01**	**66**	P	**P**	**13 16 20.4**	**+0.5**
MCK	**McKinley**	**6.07**	**21**	P	**P**	**13 16 20.3**	**-0.4**
TGL	**Tana Glacier**	**6.18**	**61**	P	**P**	**13 16 22.1**	**-0.3**
BALM	**Baldy**	**6.50**	**59**	P	**P**	**13 16 26.3**	**-0.5**
YAH	**Yahtse**	**6.58**	**65**	P	**P**	**13 16 27.7**	**-0.2**
CHX	**Chaix Hills**	**6.83**	**69**	P	**P**	**13 16 29.5**	**-1.8**
CTGM	**Chitina Glacie**	**6.95**	**61**	P	**P**	**13 16 32.2**	**-0.8**
COLA	**College**	**7.30**	**21**	P	**P**	**13 16 36.2**	**-1.7**
MDM	**Murphy Dome**	**7.31**	**19**	P	**P**	**13 16 35.6**	**-2.4**
IL1	**Eielson Array**	**7.41**	**24**	P	**P**	**13 16 37.7**	**-1.6**
ILAR	**Eielson Array**	**7.41**	**24**	P	**P**	**13 16 38.0**	**-1.3**
	0.5nm,0.3s,baz=210,slow=14,SNR=18						
ILAR				S	**S**	**13 17 56.0**	**-6.3**
	1.6nm,0.3s,baz=213,slow=28,SNR=13						
BCPM	**Bancas Point**	**7.54**	**70**	P	**P**	**13 16 39.0**	**-2.1**
PNL	**Peninsula**	**7.63**	**73**	P	**P**	**13 16 42.0**	**-0.4**
BCA3	**Beaver Creek A**	**7.69**	**45**	P	**P**	**13 16 42.9**	**-0.3**
IM3	**Indian Mountai**	**7.83**	**0**	P	**P**	**13 16 43.9**	**-1.3**
IMA	**Indian Mountai**	**7.92**	**1**	*eP*	**P**	**13 16 47.0**	**+0.7**
UNV	**Unalaska Valle**	**8.31**	**244**	P	**P**	**13 16 50.4**	**-1.1**
MSW	**Makushin Switc**	**8.40**	**245**	P	**P**	**13 16 51.8**	**-1.0**
ANM	**Nome**	**8.45**	**324**	*eP*	**P**	**13 16 53.5**	**0.0**
BESE	**Bessie Mountai**	**9.99**	**80**	P	**P**	**13 17 14.7**	**+0.5**
BM3	**Burnt Mountain**	**10.18**	**21**	P	**P**	**13 17 14.8**	**-1.9**
DLBC	**Dease Lake**	**12.52**	**79**	P	**P**	**13 17 50.0**	**+2.1**
	1.1nm,0.3s,baz=262,slow=8.2,SNR=26						
DLBC				S	**S**	**13 19 56.4**	**-9.5**
	0.1nm,0.3s,baz=329,slow=19,SNR=4.6						
INK	**Inuvik**	**13.59**	**33**	P	**P**	**13 18 01.9**	**+0.2**
	0.0nm,0.3s,baz=238,slow=12,SNR=2.6						
INK	**Inuvik**	**13.59**	**33**	P	**P**	**13 18 01.9**	**+0.2**
YKA	**Yellowknife Ar**	**19.67**	**61**	P	**P**	**13 19 18.1**	**+2.0**
	0.1nm,0.3s,baz=273,slow=9.8,SNR=9.4						
YKA	**Yellowknife Ar**	**19.67**	**61**	P	**P**	**13 19 18.1**	**+2.0**
AKASG	**Malin Array Be**	**71.45**	**358**	P	**P**	**13 26 04.3**	**+0.1**
	0.7nm,0.4s,mb3.8,baz=360,slow=5.7,SNR=5.2						

*NEIC **03** 13:35:54.0,59.79N×153.72W,h154km,After AEIC.*
*IDC **03** 13:36:02.7±5.3,60.61N×153.48W,h210km±43km,mb3.6/3, mb1 3.5/7,mb1mx3.2/24,Error ellipse: s-maj=52.2km s-min=21.1km az=25.0*

ISC 03 13:35:51.7±0.3,**59.80N**±0.04×**153.76W**±0.08,
h162km±3km,**n89,**σ0§**70**/95,**mb3.9**/3,**Southern Alaska**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OPT	**Oil Point**	**0.30**	**118**	P	**P**	**13 36 14.5**	**+0.4**
OPT				S	**S**	**13 36 29.9**	**-1.4**
ILS	**Iliamna Low So**	**0.38**	**65**	P	**P**	**13 36 14.5**	**+0.2**
ILS				S	**S**	**13 36 31.1**	**-0.6**
ILW	**Iliamna West**	**0.41**	**50**	P	**P**	**13 36 14.6**	**+0.2**
ILW				S	**S**	**13 36 31.1**	**-0.8**
IVE	**Iliamna Volcan**	**0.43**	**59**	P	**P**	**13 36 14.7**	**+0.2**
IVE				S	**S**	**13 36 31.2**	**-0.9**
AUL	**Augustine Lava**	**0.45**	**158**	P	**P**	**13 36 14.9**	**+0.3**
AUL				S	**S**	**13 36 31.1**	**-1.1**
AGU	**Augustine-Summ**	**0.47**	**159**	P	**P**	**13 36 15.2**	**+0.5**
AUE	**Augustine Isla**	**0.48**	**156**	P	**P**	**13 36 15.0**	**+0.2**
ILIM	**Iliamna**	**0.49**	**54**	P	**P**	**13 36 14.9**	**+0.1**
RSO	**Redoubt South**	**0.83**	**37**	P	**P**	**13 36 17.5**	**+0.9**
REF	**Redoubt East F**	**0.87**	**37**	P	**P**	**13 36 17.6**	**+0.7**
HOM	**Homer**	**1.08**	**97**	P	**P**	**13 36 19.3**	**+0.9**
XLV	**Seldovia**	**1.09**	**108**	P	**P**	**13 36 19.2**	**+0.7**
KAPH	**Katmai Pasha**	**1.24**	**194**	P	**P**	**13 36 20.4**	**+0.5**
CNPM	**China Poot**	**1.31**	**101**	P	**P**	**13 36 20.9**	**+0.3**
KAHG	**Katmai Hook Gl**	**1.37**	**198**	P	**P**	**13 36 21.6**	**+0.4**
SYI	**Shuyak Island**	**1.38**	**149**	P	**P**	**13 36 21.5**	**+0.2**
KARR	**Katmai Rainbow**	**1.39**	**201**	P	**P**	**13 36 22.0**	**+0.6**
BRLK	**Bradley Lake**	**1.45**	**90**	P	**P**	**13 36 22.6**	**+0.6**
BKG	**Blockade Glaci**	**1.48**	**29**	P	**P**	**13 36 23.1**	**+0.9**
CKL	**Chakachamna La**	**1.57**	**26**	P	**P**	**13 36 24.2**	**+1.0**
SVW	**Sparrevohn**	**1.61**	**326**	P	**P**	**13 36 24.6**	**+1.0**
SPU	**Mount Spurr**	**1.62**	**31**	P	**P**	**13 36 24.6**	**+0.8**
ACHA	**Angle Creek He**	**1.79**	**208**	P	**P**	**13 36 26.2**	**+0.7**
ANCK	**Angle Creek**	**1.84**	**210**	P	**P**	**13 36 26.9**	**+0.8**
SLKM	**Skilak Lake**	**1.91**	**67**	P	**P**	**13 36 27.7**	**+0.9**
KDAK	**Kodiak Island**	**2.11**	**163**	P	**P**	**13 36 28.4**	**-0.7**
SEW	**Seward**	**2.19**	**80**	P	**P**	**13 36 30.5**	**+0.3**
SUA	**Susitna One**	**2.24**	**40**	P	**P**	**13 36 31.4**	**+0.7**
FIB	**Fire Island**	**2.24**	**51**	P	**P**	**13 36 31.8**	**+1.0**
MPA	**Moose Pass**	**2.31**	**71**	P	**P**	**13 36 32.1**	**+0.6**
RC01	**Rabbit Creek A**	**2.38**	**55**	P	**P**	**13 36 32.5**	**0.0**
GOU	**Gould Hall**	**2.41**	**53**	*eP*	**P**	**13 36 33.8**	**+1.0**
SKT	**Skwentna**	**2.45**	**25**	P	**P**	**13 36 33.6**	**+0.3**
PMS	**Palmer South**	**2.53**	**53**	P	**P**	**13 36 34.5**	**+0.2**
PWA	**Palmer West**	**2.66**	**44**	P	**P**	**13 36 34.9**	**-1.0**
PWL	**Port Wells**	**2.90**	**66**	P	**P**	**13 36 38.4**	**-0.5**
PMR	**Palmer**	**2.90**	**50**	P	**P**	**13 36 38.1**	**-0.8**
KNK	**Knik Glacier**	**3.08**	**56**	P	**P**	**13 36 40.4**	**-0.8**
GHO	**Glory Hole Cre**	**3.09**	**48**	P	**P**	**13 36 40.5**	**-0.8**
CUT	**Chulitna**	**3.12**	**31**	P	**P**	**13 36 41.8**	**+0.1**
CFI	**College Fiord**	**3.27**	**62**	P	**P**	**13 36 43.4**	**-0.3**
TT01	**Tatalina**	**3.31**	**342**	P	**P**	**13 36 44.2**	**+0.2**
SML	**Sawmill**	**3.34**	**50**	P	**P**	**13 36 43.5**	**-1.0**
HIN	**Hinchinbrook I**	**3.68**	**77**	P	**P**	**13 36 49.0**	**+0.1**
SCM	**Sheep Creek Mo**	**3.75**	**54**	P	**P**	**13 36 49.2**	**-0.6**
HUR	**Hurricane**	**3.76**	**30**	P	**P**	**13 36 49.0**	**-0.9**
JPK	**Jack Peak**	**3.77**	**67**	P	**P**	**13 36 50.4**	**+0.4**
VLZ	**Valdez**	**3.91**	**67**	P	**P**	**13 36 51.4**	**-0.5**
KTH	**Kantishna Hill**	**4.00**	**18**	P	**P**	**13 36 53.2**	**+0.1**
TRF	**Thorofare Moun**	**4.02**	**23**	P	**P**	**13 36 53.8**	**+0.5**
CVA	**Cordova**	**4.07**	**76**	P	**P**	**13 36 53.6**	**-0.3**
EYAK	**Cordova Ski Ar**	**4.07**	**76**	P	**P**	**13 36 53.9**	**-0.1**
KLU	**Klutina**	**4.22**	**63**	P	**P**	**13 36 55.5**	**-0.3**
RND	**Reindeer**	**4.31**	**31**	P	**P**	**13 36 56.8**	**-0.3**
TOA	**Tolsona**	**4.36**	**55**	*eP*	**P**	**13 36 58.9**	**+1.1**
DHY	**Denali Highway**	**4.50**	**40**	P	**P**	**13 36 59.1**	**-0.4**
MCK	**McKinley**	**4.56**	**28**	P	**P**	**13 37 00.5**	**+0.1**
TZL	**Tazlina**	**4.65**	**57**	P	**P**	**13 37 01.9**	**+0.4**
BMRM	**Bremner River**	**4.69**	**72**	P	**P**	**13 37 02.4**	**+0.4**
PAX	**Paxson**	**5.10**	**48**	P	**P**	**13 37 01.1**	**-0.3**
GLB	**Gilahina Butte**	**5.17**	**67**	P	**P**	**13 37 09.0**	**+0.7**
NEA	**Nenana**	**5.27**	**23**	P	**P**	**13 37 08.8**	**-0.9**
CCB	**Clear Creek Bu**	**5.60**	**27**	P	**P**	**13 37 13.2**	**-0.8**
HDA	**Harding Lake**	**5.62**	**32**	P	**P**	**13 37 13.9**	**-0.3**
SDPT	**Sand Point**	**5.74**	**222**	P	**P**	**13 37 15.0**	**-0.8**
SDN	**Sand Point**	**5.75**	**222**	P	**P**	**13 37 15.3**	**-0.7**
MDM	**Murphy Dome**	**5.78**	**24**	P	**P**	**13 37 15.5**	**-0.9**
COLA	**College**	**5.79**	**26**	P	**P**	**13 37 15.9**	**-0.5**
BALM	**Baldy**	**5.79**	**73**	P	**P**	**13 37 17.0**	**+0.5**
ILAR	**Eielson Array**	**5.93**	**30**	P	**P**	**13 37 17.9**	**-0.4**
	5.7nm,0.3s,baz=219,slow=13,SNR=461						
ILAR				S	**S**	**13 38 20.4**	**-5.3**
	2.5nm,0.3s,baz=223,slow=20,SNR=20						
IL1	**Eielson Array**	**5.93**	**30**	P	**P**	**13 37 17.7**	**-0.7**
YAH	**Yahtse**	**6.04**	**79**	P	**P**	**13 37 18.3**	**-1.5**
IM3	**Indian Mountai**	**6.21**	**0**	P	**P**	**13 37 22.7**	**+0.6**
CTGM	**Chitina Glacie**	**6.27**	**74**	P	**P**	**13 37 23.1**	**+0.2**
IMA	**Indian Mountai**	**6.29**	**0**	*eP*	**P**	**13 37 23.2**	**0.0**
CHX	**Chaix Hills**	**6.36**	**82**	P	**P**	**13 37 23.6**	**-0.5**
DOL	**Dolgoi Island**	**6.39**	**227**	P	**P**	**13 37 23.9**	**-0.6**
BCA3	**Beaver Creek A**	**6.61**	**55**	P	**P**	**13 37 28.2**	**+0.7**
FALS	**False Pass**	**7.20**	**231**	P	**P**	**13 37 33.2**	**-2.1**
BM3	**Burnt Mountain**	**8.66**	**24**	P	**P**	**13 37 53.1**	**-1.6**
UNV	**Unalaska Valle**	**9.18**	**235**	P	**P**	**13 38 01.1**	**-0.4**
INK	**Inuvik**	**12.23**	**37**	P	**P**	**13 38 41.2**	**+0.1**
	0.2nm,0.3s,baz=243,slow=14,SNR=10						
INK	**Inuvik**	**12.23**	**37**	P	**P**	**13 38 41.2**	**+0.1**
DLBC	**Dease Lake**	**12.25**	**86**	P	**P**	**13 38 49.9**	**+8.5**
	0.4nm,0.3s,baz=269,slow=12,SNR=10						
YKA	**Yellowknife Ar**	**18.88**	**65**	P	**P**	**13 40 02.1**	**+0.6**
	0.3nm,0.3s,baz=282,slow=11,SNR=52						
YKA				PcP	PcP	13 44 20.8	0.0
	0.1nm,0.3s,baz=284,slow=1.5,SNR=7.2						
YKA	**Yellowknife Ar**	**18.88**	**65**	P	**P**	**13 40 02.1**	**+0.6**
YKA				PcP	PcP	13 44 20.8	0.0
SONM	**Songino Array**	**54.60**	**305**	P	**P**	**13 45 06.6**	**+1.7**
	1.6nm,0.6s,mb3.9,baz=53,slow=7.0,SNR=11						
ZAL	**Zalesovo**	**57.33**	**323**	P	**P**	**13 45 24.1**	**0.0**
	1.5nm,0.5s,mb4.1,baz=338,slow=7.7,SNR=6.4						
BVAR	**Borovoye Array**	**62.07**	**332**	P	**P**	**13 45 56.8**	**+0.1**
	0.8nm,0.5s,mb3.8,baz=25,slow=6.5,SNR=6.4						

*NNC **03** 13:39:08.1±18.0,38.26N×72.12E,mpv3.9,Error ellipse: s-maj=153.4km s-min=134.1km az=111.0*
*IDC **03** 13:39:10.7±27.0,37.86N×72.81E,h171km±162km, mb3.0/1,mb1 3.2/4,mb1mx2.9/22,ML3.4/2,MS2.7/1, Ms1 2.7/1,ms1mx2.3/8,Error ellipse: s-maj=246.0km s-min=95.7km az=18.0*
*MOS **03** 13:39:18.9±0.1,38.99N×72.01E,h203km,mb3.8/1,Error ellipse: s-maj=59.2km s-min=26.4km az=88.2*

ISC 03 13:39:09.4±2.9,**38.2N**±0.2×**72.2E**±0.2,**h166**km±18km,**n13,**
σ0§**66**/17,**mb3.0**/1,**2C-1D,Tajikistan**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AML	**Almayashu**	**4.13**	**16**	P	**P**	**13 40 12.6**	**+0.1**
	SNR=52						
UCH	**Uchtor**	**4.43**	**23**	P	**P**	**13 40 16.6**	**0.0**
	SNR=18						
KZA	**Kyzart**	**4.56**	**30**	P	**P**	**13 40 17.8**	**-0.4**
	SNR=6.5						
EKS2	**Erkin-Say**	**4.66**	**15**	P	**P**	**13 40 19.9**	**+0.5**
	SNR=16						
AAK	**Ala-Archa**	**4.80**	**21**	P	**P**	**13 40 21.7**	**+0.4**
	SNR=13						
KK31	**Karatay Array**	**5.09**	**346**	P	**P**	**13 40 24.8**	**-0.4**
	6.8nm,0.4s,baz=163,slow=12,SNR=136						
KK31				⇑S	**S**	**13 41 24.1**	**+0.4**
	9.1nm,0.4s,baz=167,slow=23,SNR=15						
KKAR	**Karatay Array**	**5.09**	**346**	*e*PN	**P**	**13 40 24.8**	**-0.4**
KKAR				S	**S**	**13 41 24.0**	**+0.3**
KKAR				pmax	pmax		
	comp=Z,1.0nm,0.2s						
KKAR				smax			
	comp=Z,3.0nm,0.3s						
MKAR	**Makanchi Array**	**11.40**	**38**	P	**P**	**13 41 47.8**	**-0.3**
	baz=225,slow=14,SNR=4.4						
AB31	**Akbulak array**	**14.16**	**325**	⇑P	**P**	**13 42 26.5**	**+3.0**
	comp=Z,0.5nm,0.6s,baz=126,slow=14						
AB31				⇓S	**S**	**13 44 55.8**	**-0.9**
	comp=Z,0.9nm,0.6s,baz=124,slow=24						
AB31	**Akbulak array**	**14.16**	**325**	P	**P**	**13 42 22.3**	**-1.2**
AB31				S	**S**	**13 44 52.0**	**-4.7**
BVAR	**Borovoye Array**	**14.91**	**356**	P	**P**	**13 42 37.1**	**+4.3**
	comp=Z,0.3nm,0.3s,baz=175,slow=12,SNR=5.5						
ZAL	**Zalesovo**	**18.00**	**25**	P	**P**	**13 43 09.2**	**-0.7**
	comp=Z,0.2nm,0.3s,baz=161,slow=1.1,SNR=3.5						
ZAL				LR	LR	13 51 19.9	
	comp=Z,28nm,21.9s,baz=202,slow=40						
YKA	**Yellowknife Ar**	**79.54**	**3**	P	**P**	**13 50 59.5**	**+0.9**
	comp=Z,0.2nm,0.5s,mb3.0,baz=350,slow=5.5,SNR=5.9						

IDC 03 13:40:20.4±26.0,**23.56S×174.57W,mb4.0**/4,**mb1 4.1**/4,
mb1mx3.9/14,**Error ellipse: s-maj=484.0km s-min=139.4km az=79.0,Tonga Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**36.46**	**268**	P	P	13 47 28.4	-0.7
	1.7nm,0.3s,baz=92,slow=9.7,SNR=4.7						
STKA	**Stephens Creek**	**39.47**	**248**	P	P	13 47 51.8	-2.4
	0.8nm,0.5s,baz=97,slow=12,SNR=5.0						
ASAR	**Alice Springs**	**47.00**	**259**	P	P	13 48 53.2	-2.1
	0.4nm,0.4s,baz=97,slow=8.4,SNR=24						
WRA	**Warramunga Arr**	**47.40**	**264**	P	P	13 48 56.6	-1.9
	0.9nm,0.3s,baz=101,slow=8.4,SNR=17						

*IDC **03** 13:44:39.8±1.1,44.89N×28.05W,mb3.7/11,mb1 3.9/11, mb1mx3.7/26,Error ellipse: s-maj=33.6km s-min=20.6km az=25.0*
*NEIC **03** 13:44:41.3±0.7,44.91N×28.01W,h10km,Error ellipse: s-maj=24.1km s-min=13.6km az=219.0*

ISC 03 13:44:39.5±1.0,**44.9N**±0.2×**28.1W**±0.2,**h10**km,**n16,**
σ0§**68**/14,**mb3.7**/11,**Northern Mid-Atlantic Ridge**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FRB	**Frobisher Bay**	**29.48**	**324**	P	**P**	**13 50 45.4**	**0.0**
	3.1nm,1.0s,mb4.0,baz=111,slow=10.0,SNR=3.7						
FRB	**Frobisher Bay**	**29.48**	**324**	P	**P**	**13 50 45.4**	**0.0**
ARCES	**ARCESS Array B**	**36.19**	**29**	P	**P**	**13 51 44.5**	**+0.7**
	5.1nm,1.0s,mb4.4,baz=37,slow=6.1,SNR=3.7						
ARCES	**ARCESS Array B**	**36.19**	**29**	P	**P**	**13 51 44.5**	**+0.7**
AKASG	**Malin Array Be**	**38.07**	**60**	P	**P**	**13 51 59.1**	**-0.7**
	0.8nm,0.6s,mb3.6,baz=278,slow=8.6,SNR=4.8						
DBIC	**Dimbokro**	**43.12**	**145**	P	**P**	**13 52 42.0**	**+0.2**
	2.7nm,0.9s,mb4.0,baz=230,slow=8.8,SNR=3.5						
BRTR	**Keskin Array B**	**44.95**	**74**	P	**P**	**13 52 55.5**	**-0.9**
	0.6nm,0.8s,mb3.5,baz=326,slow=4.5,SNR=4.0						
YKA	**Yellowknife Ar**	**49.98**	**323**	P	**P**	**13 53 35.7**	**+0.4**
	0.2nm,0.8s,mb3.2,baz=66,slow=6.1,SNR=3.3						
YKA				PcP	PcP	13 54 54.6	-1.0
	0.2nm,0.7s,baz=67,slow=3.9,SNR=5.5						
YKA	**Yellowknife Ar**	**49.98**	**323**	P	**P**	**13 53 35.7**	**+0.4**
YKA				PcP	PcP	13 54 54.6	-1.0
INK	**Inuvik**	**54.35**	**334**	P	**P**	**13 54 06.6**	**-1.4**
	0.8nm,0.9s,mb3.6,baz=50,slow=9.2,SNR=2.9						
PDAR	**Pinedale Array**	**56.40**	**299**	P	**P**	**13 54 23.2**	**0.0**
	0.5nm,1.1s,mb3.5,baz=22,slow=4.9,SNR=2.5						
BVAR	**Borovoye Array**	**60.15**	**44**	P	**P**	**13 54 49.9**	**+0.6**
	0.6nm,0.6s,mb3.8,baz=315,slow=13,SNR=4.8						
ILAR	**Eielson Array**	**60.73**	**335**	P	**P**	**13 54 53.1**	**0.0**
	0.4nm,0.7s,mb3.6,baz=53,slow=4.5,SNR=4.7						
SONM	**Songino Array**	**79.36**	**29**	P	**P**	**13 56 47.6**	**+1.0**
	1.2nm,0.8s,mb3.9,baz=329,slow=7.2,SNR=7.5						
WRA	**Warramun

AAK	**Ala-Archa**	**3.62**	**28**	P		**P**	**14 21 22.0**	**+0.6**
	SNR=204							
KBK	**Karagaybulak**	**3.82**	**33**	P		**P**	**14 21 24.6**	**+0.5**
	SNR=149							
KK31	**Karatay Array**	**3.84**	**342**	⇑Pn		**P**	**14 21 22.1**	**-2.3**
	comp=E,21nm,0.3s,baz=159,slow=12,SNR=1367							
KK31				⇑Pg		**P**	**14 21 32.5**	**+8.0**
	comp=E,118nm,0.6s,baz=155,slow=16,SNR=7.4							
KK31				⇑Sn		**S**	**14 22 09.4**	**+0.8**
	comp=E,66nm,0.4s,baz=178,slow=24,SNR=4.0							
KK31				⇑Lg			14 22 24.1	
	comp=E,322nm,0.7s,baz=161,slow=30,SNR=7.8							
KKAR	**Karatay Array**	**3.84**	**342**	*e*PN		**P**	**14 21 35.0**	**+11**
KKAR							14 22 10.1	
KKAR							14 22 21.3	
KKAR				pmax	pmax			
	comp=Z,124nm,0.6s							
KKAR				smax				
	comp=Z,15nm,0.3s							
KKAR				smax				
	comp=Z,40nm,0.3s							
FRU	**Bishkek**	**3.84**	**28**	*e*PN		**P**	**14 21 25.5**	**+1.0**
FRU				*i*			14 21 34.0	
FRU				*e*S		**S**	**14 22 16.0**	**+7.2**
FRU				smax				
	comp=E,2μm,1.5s							
FRU				smax				
	comp=E,5μm,2.0s							
CHMS	**Chumysh**	**4.04**	**28**	P		**P**	**14 21 27.4**	**+0.3**
	SNR=421							
ULHL	**Ulahol**	**4.16**	**47**	P		**P**	**14 21 30.0**	**+1.1**
	SNR=17							
USP	**Ospenovka**	**4.19**	**24**	P		**P**	**14 21 29.0**	**-0.3**
	SNR=155							
TKM2	**Tokmak 2**	**4.32**	**36**	P		**P**	**14 21 31.1**	**-0.1**
	SNR=98							
AAA	**Alma-Ata**	**5.24**	**42**	*e*PN		**P**	**14 21 44.0**	**0.0**
AAA				*e*			14 21 57.2	
AAA				pmax	pmax			
	comp=Z,100nm,0.5s							
CEP	**Cherat**	**5.64**	**182**	P		**P**	**14 21 49.5**	**0.0**
CHCP	**Chirah Chowk**	**5.87**	**171**	P		**P**	**14 21 52.2**	**-0.5**
THW	**Thamme Wali**	**6.67**	**183**	P		**P**	**14 22 03.4**	**-0.6**
SBDP	**Sheikh Budin**	**7.24**	**189**	P		**P**	**14 22 19.7**	**+7.8**
MK31	**Makanchi Array**	**10.41**	**42**	⇑P		**P**	**14 22 53.0**	**-2.3**
	comp=E,6.6nm,0.8s,baz=228,slow=11,SNR=29							
MK31				⇓Lg			14 25 53.5	
	comp=Z,20nm,0.9s,baz=214,slow=25,SNR=4.1							
MKAR	**Makanchi Array**	**10.41**	**42**	Pn		**P**	**14 22 53.8**	**-1.6**
	comp=Z,0.6nm,0.3s,baz=225,slow=14,SNR=20							
MKAR				Lg			14 25 51.7	
	comp=Z,0.5nm,0.3s,baz=234,slow=27,SNR=4.2							
MKAR				LR	LR		14 26 25.9	
	comp=Z,35nm,21.1s,baz=126,slow=35							
MKAR	**Makanchi Array**	**10.41**	**42**	Pn		**P**	**14 22 53.8**	**-1.6**
MKAR				Lg			14 25 51.7	
MKAR				LR	LR		14 26 25.9	
KURK	**Kurchatov**	**12.13**	**20**	⇑P		**P**	**14 23 13.9**	**-4.7**
	comp=Z,8.2nm,2.3s,baz=205,slow=14,SNR=12							
KURK				⇑Lg			14 26 49.3	
	comp=Z,57nm,1.5s,baz=86,slow=15,SNR=9.3							
KURK	**Kurchatov**	**12.13**	**20**	*e*P		**P**	**14 23 14.0**	**-4.6**
WMQ	**Urumqi**	**12.41**	**64**	*e*P		**P**	**14 23 20.5**	**-1.8**
WMQ				PP		PP	14 23 30.5	-2.0
WMQ				S		**S**	**14 25 37.5**	**-2.2**
WMQ				SS		SS	14 25 51.8	-3.9
WMQ				PCP		PcP	14 29 03.1	+3.7
WMQ				SCP			14 32 34.2	
WMQ				PCS			14 32 35.9	
WMQ				SCS		ScS	14 36 09.0	+7.9
WMQ				AMB		AMB		
	comp=Z,14nm,0.7s							
WMQ				AMB		AMB		
	comp=Z,88nm,4.1s							
WMQ				LR		LR		
	comp=N,1μm,10.2s							
WMQ				LR		LR		
	comp=E,976nm,11.4s							
WMQ				LR		LR		
	comp=Z,1μm,11.7s							
AB31	**Akbulak array**	**13.10**	**322**	⇓Pn		**P**	**14 23 24.7**	**-6.7**
	comp=Z,10nm,0.6s							
AB31				⇑Sn		**S**	**14 25 43.9**	**-12**
	comp=Z,9.1nm,0.5s							
AB31	**Akbulak array**	**13.10**	**322**	P		**P**	**14 23 24.7**	**-6.8**
AB31							14 25 43.9	
AB31				pmax	pmax			
	comp=Z,4.0nm,0.4s							
AB31				smax				
	comp=Z,9.0nm,0.5s							
BVA0	**Borovoye Array**	**13.62**	**355**	⇓P		**P**	**14 23 32.7**	**-5.4**
	comp=Z,1.3nm,0.6s							
BVA0				⇓Lg			14 27 35.3	
	comp=Z,14nm,1.8s							
BVA0	**Borovoye Array**	**13.62**	**355**	P		**P**	**14 23 32.6**	**-5.5**
BVAR	**Borovoye Array**	**13.62**	**355**	Pn		**P**	**14 23 32.7**	**-5.3**
	comp=Z,1.2nm,0.3s,baz=160,slow=12,SNR=26							
BVAR				Lg			14 27 36.8	
	comp=Z,0.4nm,0.3s,baz=163,slow=30,SNR=3.1							
BVAR				LR		LR	14 29 39.9	
	comp=Z,146nm,21.2s,baz=135,slow=41							
BRVK	**Borovoye**	**13.66**	**355**	*e*P		**P**	**14 23 33.3**	**-5.3**
ZRNK	**Zerenda**	**13.66**	**352**	⇓P		**P**	**14 23 33.9**	**-4.7**
	comp=Z,5.2nm,0.6s							
ZRNK				⇑Lg			14 27 37.1	
	comp=Z,52nm,1.8s							
ZRNK	**Zerenda**	**13.66**	**352**	*e*P		**P**	**14 23 34.1**	**-4.6**
DANN	**Dangsing**	**14.67**	**136**	*e*P		**P**	**14 23 45.4**	**-6.6**
KOLN	**Koldanda**	**15.05**	**137**	*e*P		**P**	**14 23 49.1**	**-7.8**
	comp=Z,22nm,0.5s							
GKN	**Gorkha**	**15.43**	**134**	*e*P		**P**	**14 23 55.4**	**-6.3**
	comp=Z,158nm,0.4s							
KKN	**Kakani**	**15.95**	**133**	*e*P		**P**	**14 24 01.0**	**-7.4**
	comp=Z,77nm,0.5s							
KKN	**Kakani**	**15.95**	**133**	*e*P		**P**	**14 24 01.0**	**-7.4**
KKN				pmax	pmax			
	comp=Z,39nm,0.5s							
DMN	**Daman**	**15.99**	**134**	*e*P		**P**	**14 24 02.4**	**-6.5**
	comp=Z,26nm,0.5s							
GUN	**Gumba**	**16.20**	**131**	*e*P		**P**	**14 24 04.9**	**-6.7**
	comp=Z,24nm,0.4s							
ZAL	**Zalesovo**	**16.83**	**27**	P		**P**	**14 24 17.9**	**-1.4**
	comp=Z,2.9nm,0.3s,baz=164,slow=7.7,SNR=30							
ZAL				LR		LR	14 31 40.9	
	comp=Z,218nm,18.6s,baz=163,slow=40							
ZAL	**Zalesovo**	**16.83**	**27**	P		**P**	**14 24 17.9**	**-1.4**
ZAL				LR		LR	14 31 40.9	
NVS	**Novosibirsk**	**17.09**	**22**	*i* P		**P**	**14 24 22.0**	**-0.5**
NVS				pmax	pmax			
	comp=N,28nm,1.4s							
NVS				pmax	pmax			
	comp=E,9.0nm,1.4s							
NVS				pmax	pmax			
	comp=Z,37nm,1.4s							
LSA	**Lhasa**	**18.39**	**116**	P		**P**	**14 24 39.0**	**+0.1**
LSA	**Lhasa**	**18.39**	**116**	*e*P		**P**	**14 24 35.3**	**-3.6**
LSA				pmax	pmax			
	comp=Z,3.0nm,0.7s							
LSA	**Lhasa**	**18.39**	**116**	*e*P		**P**	**14 24 35.3**	**-3.6**
	comp=Z,3.4nm,0.7s							
SVE	**Sverdlovsk**	**18.95**	**340**	⇑*e*P		**P**	**14 24 43.5**	**-1.6**
SVE				pmax	pmax			
	comp=Z,50nm,2.9s							
SVE				MLR	MLR			
	comp=N,1μm,10.0s							
SVE				MLR	MLR			
	comp=E,500nm,10.0s							
SVE				MLR	MLR			
	comp=Z,2μm,10.0s							
ARU	**Arti**	**19.20**	**337**	*e*P		**P**	**14 24 44.4**	**-3.5**
ARU				pmax	pmax			
	comp=Z,18nm,1.6s							
ARU				MLR	MLR			
	comp=Z,700nm,18.0s							
GNI	**Garni**	**21.04**	**281**	*e*P		**P**	**14 25 08.1**	**+0.6**
GNI				pmax	pmax			
	comp=Z,96nm,1.2s							
GNI				MLR	MLR			
	comp=Z,100nm,16.0s							
GNI	**Garni**	**21.04**	**281**	*e*P		**P**	**14 25 08.5**	**+1.0**
	comp=Z,127nm,1.3s,mb5.1							
GTA	**Gaotai**	**21.34**	**81**	*e*P		**P**	**14 25 11.0**	**+0.6**
GTA				AMB		AMB		
	comp=Z,17nm,1.5s,mb4.2							
GTA				AMB		AMB		
	comp=Z,99nm,3.8s							
GTA				LR		LR		
	comp=N,131nm,12.2s,MS3.7							
GTA				LR		LR		
	comp=E,172nm,14.8s,MS3.7							
GTA				LR		LR		
	comp=Z,130nm,10.6s,MS3.6							
ZEI	**Tsey**	**21.50**	**288**	*e*P		**P**	**14 25 10.4**	**-1.6**
GOF	**Gofitskoye**	**22.20**	**294**	*e*P		**P**	**14 25 19.0**	**+0.1**
GOF				pmax	pmax			
	comp=Z,70nm,1.4s,mb4.9							
KIV	**Kislovodsk**	**22.39**	**291**	*e*P		**P**	**14 25 20.9**	**+0.1**
KIV				pmax	pmax			
	comp=Z,12nm,0.8s,mb4.4							
KIV				MLR	MLR			
	comp=Z,200nm,16.0s,MS3.6							
KIV	**Kislovodsk**	**22.39**	**291**	*e*P		**P**	**14 25 20.8**	**0.0**
	comp=E,18nm,0.7s,mb4.6							
HYB	**Hyderabad**	**22.66**	**164**	*i* P		**P**	**14 25 25.5**	**+1.8**
HYB	**Hyderabad**	**22.66**	**164**	*e*P		**P**	**14 25 25.5**	**+1.8**
MOY	**Mondy**	**23.42**	**49**	*e*P		**P**	**14 25 34.2**	**+3.5**
ZAK	**Zakamensk**	**24.42**	**53**	*e*P		**P**	**14 25 41.0**	**+0.6**
TLY	**Talaya**	**24.99**	**50**	*e*P		**P**	**14 25 48.6**	**+2.7**
TLY				pmax	pmax			
	comp=Z,57nm,1.0s,mb5.1							
TLY				MLR	MLR			
	comp=Z,300nm,15.0s,MS3.9							
LZH	**Lanzhou**	**25.21**	**88**	*e*P		**P**	**14 25 51.4**	**+3.3**
LZH				AP	pP		14 26 00.7	-1.3
LZH				XP	sP		14 26 04.9	-4.1
LZH				PP	PP		14 26 24.4	-3.4
LZH				*e*S		**S**	**14 30 00.1**	**-6.6**
LZH				AMB	AMB			
	comp=Z,28nm,1.5s,mb4.6							
LZH				AMB	AMB			
	comp=Z,75nm,4.0s							
LZH				LR	LR			
	comp=N,500nm,15.6s							
LZH				LR	LR			
	comp=Z,616nm,15.8s,MS4.2							
SONM	**Songino Array**	**25.98**	**60**	P		**P**	**14 25 56.0**	**+0.8**
	comp=Z,3.3nm,0.7s,mb4.0,baz=271,slow=8.9,SNR=13							
ULN	**Ulaanbaatar**	**26.42**	**60**	*e*P		**P**	**14 25 59.8**	**+0.5**
ULN	**Ulaanbaatar**	**26.42**	**60**	*e*P		**P**	**14 26 00.0**	**+0.7**
	comp=Z,4.5nm,0.7s,mb4.1							
OBN	**Obninsk**	**28.38**	**315**	*e*P		**P**	**14 26 16.5**	**-0.5**
OBN				S		**S**	**14 31 06.0**	**+7.8**
OBN				SS		SS	14 32 15.0	-11
OBN				pmax	pmax			
	comp=Z,19nm,1.3s,mb4.6							
OBN				MLR	MLR			
	comp=Z,400nm,16.0s,MS4.1							
ASF	**Jabal al Asfar**	**29.36**	**267**	LR		LR	14 40 36.9	
	comp=Z,86nm,18.4s,MS3.4,baz=98,slow=42							
BRTR	**Keskin Array B**	**29.53**	**283**	P		**P**	**14 26 26.9**	**-0.6**
	comp=Z,1.5nm,0.6s,mb3.9,baz=92,slow=7.4,SNR=9.5							
CMAR	**Chiang Mai Arr**	**31.23**	**124**	P		**P**	**14 26 40.4**	**-2.2**
	comp=Z,0.4nm,0.4s,mb3.6,baz=314,slow=8.9,SNR=4.2							
CMAR				LR	LR		14 41 25.3	
	comp=Z,158nm,18.9s,MS3.7,baz=315,slow=41							
AKASG	**Malin Array Be**	**31.90**	**305**	P		**P**	**14 26 47.0**	**-1.2**
	comp=Z,1.2nm,0.5s,mb4.0,baz=81,slow=7.5,SNR=4.3							
AKASG				LR		LR	14 41 34.9	
	comp=Z,181nm,18.7s,MS3.8,baz=80,slow=40							
KIS	**Kishinev**	**32.12**	**298**	*e*		PP	14 28 02.0	+3.8
BOD	**Bodaibo**	**32.50**	**42**	*e*P		**P**	**14 26 52.6**	**-0.8**
FINES	**FINESS Array B**	**35.59**	**324**	P		**P**	**14 27 19.8**	**-0.1**
	comp=Z,1.6nm,0.4s,mb4.3,baz=117,slow=4.3,SNR=16							
FINES				LR		LR	14 42 45.5	
	comp=Z,402nm,18.8s,MS4.2,baz=175,slow=38							
PSZ	**Piszkesteto**	**38.08**	**300**	P		**P**	**14 27 42.2**	**+1.3**
NJ2	**Nanjing**	**38.27**	**86**	*e*P		**P**	**14 27 44.0**	**+1.4**
NJ2				AP		pP	14 27 54.1	-3.2
NJ2				XP		sP	14 27 58.9	-5.3
NJ2				PPP		Px	14 29 14.3	
NJ2				S		**S**	**14 33 36.0**	**+3.9**
NJ2				XS			14 33 52.0	
NJ2				AMB		AMB		
	comp=Z,10.0nm,1.0s,mb4.5							
NJ2				LR		LR		
	comp=N,350nm,20.0s,MS4.2							
NJ2				LR		LR		
	comp=E,110nm,24.0s,MS4.2							
NJ2				LR		LR		
	comp=Z,5μm,22.0s,MS5.2							
ARCES	**ARCESS Array B**	**38.78**	**336**	P		**P**	**14 27 47.0**	**+0.4**
	comp=Z,2.8nm,0.6s,mb4.2,baz=112,slow=7.6,SNR=30							
ARCES				LR		LR	14 44 52.8	
	comp=Z,347nm,19.7s,MS4.2,baz=122,slow=38							
ARCES	**ARCESS Array B**	**38.78**	**336**	P		**P**	**14 27 47.0**	**+0.4**
ARCES				LR		LR	14 44 52.8	
YAK	**Yakutsk**	**41.04**	**37**	*e*P		**P**	**14 28 05.5**	**+0.2**
YAK				pmax	pmax			
	comp=Z,24nm,0.9s,mb4.8							
YAK	**Yakutsk**	**41.04**	**37**	*e*P		**P**	**14 28 05.5**	**+0.2**
	comp=Z,24nm,0.9s,mb4.8							
BRG	**Berggiesshubel**	**41.57**	**306**	P		**P**	**14 28 15.1**	**+5.4**
BRG				pmax	pmax			
	comp=Z,17nm,1.7s,mb4.4							
BRG	**Berggiesshubel**	**41.57**	**306**	P		**P**	**14 28 15.1**	**+5.4**
	comp=Z,17nm,1.7s,mb4.4							
GERES	**GERESS Array B**	**42.03**	**303**	P		**P**	**14 28 13.6**	**+0.2**
	comp=Z,2.0nm,0.9s,mb3.7,baz=34,slow=4.8,SNR=7.0							
NB2	**NORSAR Subarra**	**42.61**	**321**	P		**P**	**14 28 17.6**	**-0.4**
	comp=Z,1.8nm,0.6s,mb4.0,baz=91,slow=7.9							
NOA	**NORSAR Array B**	**42.61**	**321**	P		**P**	**14 28 17.6**	**-0.4**
	comp=Z,0.4nm,0.4s,mb3.5,baz=99,slow=7.3,SNR=5.5							
NOA				LR		LR	14 47 02.5	
	comp=Z,276nm,21.1s,MS4.1,baz=130,slow=38							
TIXI	**Tiksi**	**42.69**	**23**	*e*P		**P**	**14 28 18.6**	**0.0**
TIXI				*e*			14 30 00.9	
TIXI				pmax	pmax			
	comp=Z,51nm,0.8s,mb5.3							
TIXI				MLR	MLR			
	comp=Z,500nm,10.0s,MS4.7							
TIXI	**Tiksi**	**42.69**	**23**	*e*P		**P**	**14 28 18.9**	**+0.3**
	comp=Z,14nm,1.1s,mb4.6							
KONO	**Kongsberg**	**43.40**	**319**	AMS		AMS	14 47 41.2	
	comp=Z,255nm,18.0s,MS4.2							
GRA1	**Grafenberg Arr**	**43.48**	**304**	*e*P		**P**	**14 28 27.2**	**+1.9**
	comp=Z,10.0nm,0.6s,mb4.7							
GRF	**Grafenberg Arr**	**43.48**	**304**	*e*P		**P**	**14 28 27.2**	**+1.9**
GRF				pmax	pmax			
	comp=Z,10.0nm,0.6s,mb4.7							
KBS	**Kingsbay**	**45.94**	**346**	AMS		AMS	14 50 58.5	
	comp=Z,265nm,18.0s,MS4.1							
KMBO	**Kilima Mbogo**	**51.51**	**227**	LR		LR	14 54 23.1	
	comp=Z,72nm,18.8s,MS3.7,baz=100,slow=40							
BILL	**Bilibino**	**55.55**	**27**	⇓*i* P		**P**	**14 29 56.5**	**-1.1**
BILL				*i* *PP		pP	14 30 06.6	-6.4
BILL				*e*SP		sP	14 30 10.6	-8.9
BILL				*e*			14 30 57.2	
BILL				*e*			14 32 00.0	
BILL				pmax	pmax			
	comp=Z,3.0nm,1.3s,mb4.2							
ESDC	**Sonseca Array**	**56.91**	**297**	LR		LR	14 59 28.7	
	comp=Z,66nm,18.6s,MS3.8,baz=350,slow=41							
IMA	**Indian Mountai**	**69.02**	**18**	*e*P		**P**	**14 31 27.9**	**+0.6**
IMA				pmax	pmax			
	comp=Z,16nm,1.0s,mb4.9							
IMA	**Indian Mountai**	**69.02**	**18**	*e*P		**P**	**14 31 27.9**	**+0.7**
	comp=Z,16nm,1.0s,mb4.9							
COLA	**College**	**71.38**	**17**	*e*P		**P**	**14 31 42.1**	**+0.5**
ILAR	**Eielson Array**	**71.68**	**17**	P		**P**	**14 31 43.2**	**-0.2**
	comp=Z,1.2nm,0.8s,mb3.9,baz=324,slow=6.1,SNR=18							
ILAR				LR		LR	15 07 58.6	
	comp=Z,57nm,18.1s,MS3.9,baz=332,slow=40							
ILAR	**Eielson Array**	**71.68**	**17**	P		**P**	**14 31 43.2**	**-0.2**
ILAR				LR		LR	15 07 58.6	
SML	**Sawmill**	**73.89**	**19**	*e*P		**P**	**14 31 56.9**	**+0.6**
YKA	**Yellowknife Ar**	**78.24**	**3**	P		**P**	**14 32 21.3**	**+0.4**
	comp=Z,0.5nm,0.4s,mb3.8,baz=349,slow=5.6,SNR=26							
YKA				LR		LR	15 11 00.0	
	comp=Z,81nm,18.5s,MS4.1,baz=330,slow=39							
SCHQ	**Schefferville**	**79.72**	**337**	LR		LR	15 07 13.0	
	comp=Z,113nm,20.1s,MS4.2,baz=82,slow=35							
WRA	**Warramunga Arr**	**82.81**	**123**	P		**P**	**14 32 45.3**	**-0.7**
	comp=Z,1.3nm,0.5s,mb4.2,baz=323,slow=4.9,SNR=36							
WB2	**Warramunga Arr**	**82.82**	**123**	*e*P		**P**	**14 32 45.0**	**-1.0**
ASAR	**Alice Springs**	**85.22**	**126**	P		**P**	**14 32 57.6**	**-0.4**
	comp=Z,1.3nm,0.6s,mb4.2,baz=314,slow=4.9,SNR=29							
ULM	**Lac du Bonnet**	**90.04**	**352**	P		**P**	**14 33 20.9**	**+0.3**
	comp=Z,4.3nm,1.1s,mb4.7,baz=225,slow=10.0,SNR=2.3							
ULM				LR		LR	15 16 02.8	
	comp=Z,122nm,18.6s,MS4.4,baz=1.2,slow=37							
NEW	**Newport**	**92.26**	**6**	LR		LR	15 19 55.8	
	comp=Z,98nm,18.6s,MS4.3,baz=140,slow=39							
PDAR	**Pinedale Array**	**98.13**	**1**	LR		LR	15 20 07.1	
	comp=Z,70nm,21.4s,MS4.1,baz=65,slow=36							

*IDC **03** 14:27:05.5±0.9,39.34N×72.25E,mb3.9/10,mb1 4.1/13, mb1mx4.0/22,ML4.0/2,MS3.6/1,Ms1 3.6/1,ms1mx2.7/33, Error ellipse: s-maj=18.5km s-min=17.0km az=11.0*
*MOS **03** 14:27:07.9±1.2,39.24N×72.24E,h33km,mb4.7/2, Error ellipse: s-maj=24.7km s-min=15.7km az=73.1*
*NNC **03** 14:27:10.7±17.0,39.64N×72.05E,mpv4.3, Error ellipse: s-maj=240.0km s-min=159.0km az=79.0*
*NEIC **03** 14:27:10.6±0.5,39.19N×72.45E,h50km,mb4.3/4, Error ellipse: s-maj=13.8km s-min=6.9km az=56.0*

ISC 03 14:27:10.5±1.0,39.15N±0.05×72.3E±0.1,h59km±9km,n44,
σ1§24/45,mb3.9/12,MS3.6/1,2C-1D,Kyrgyzstan

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
AML	**Almayashu**	**3.16**	**19**	P		**P**	**14 27 58.8**	**-0.2**
	SNR=90							
UCH	**Uchtor**	**3.50**	**28**	P		**P**	**14 28 04.0**	**+0.2**
	SNR=114							
EKS2	**Erkin-Say**	**3.68**	**17**	P		**P**	**14 28 05.5**	**-0.8**
	SNR=25							
KZA	**Kyzart**	**3.68**	**37**	P		**P**	**14 28 07.6**	**+1.2**
	SNR=15							
AAK	**Ala-Archa**	**3.85**	**25**	P		**P**	**14 28 09.4**	**+0.6**
	SNR=27							
KBK	**Karagaybulak**	**4.03**	**29**	P		**P**	**14 28 12.1**	**+0.8**
	SNR=21							
KK31	**Karatay Array**	**4.17**	**342**	Pn		**P**	**14 28 09.1**	**-4.1**
	14nm,0.4s,baz=157,slow=12,SNR=183							
KK31				Pg		**P**	**14 28 17.6**	**+4.4**
	144nm,0.7s,baz=159,slow=14,SNR=25							
KK31				⇓Lg			14 29 05.8	
	65nm,0.5s,baz=161,slow=29,SNR=5.2							
CHMS	**Chumysh**	**4.26**	**25**	P		**P**	**14 28 15.0**	**+0.4**
	SNR=34							
ULHL	**Ulahol**	**4.30**	**43**	P		**P**	**14 28 15.6**	**+0.5**
	SNR=11							
USP	**Ospenovka**	**4.43**	**21**	P		**P**	**14 28 15.9**	**-0.9**
	SNR=19							
TKM2	**Tokmak 2**	**4.51**	**32**	P		**P**	**14 28 18.2**	**+0.2**
	SNR=10							
CEP	**Cherat**	**5.33**	**184**	P		**P**	**14 28 35.7**	**+6.3**
CHCP	**Chirah Chowk**	**5.54**	**172**	P		**P**	**14 28 38.9**	**+6.6**
THW	**Thamme Wali**	**6.36**	**184**	P		**P**	**14 28 49.2**	**+5.4**
SBDP	**Sheikh Budin**	**6.95**	**191**	P		**P**	**14 28 54.6**	**+2.6**
MKAR	**Makanchi Array**	**10.57**	**41**	Pn		**P**	**14 29 37.4**	**-4.2**
	baz=232,slow=16,SNR=2.1							
MKAR				Lg			14 32 39.1	
	0.2nm,0.3s,baz=223,slow=30,SNR=3.3							
AB31	**Akbulak array**	**13.42**	**323**	⇑Pn		**P**	**14 30 11.3**	**-8.3**
	4.6nm,0.5s							
AB31				⇑Sn		**S**	**14 32 33.2**	**-15**
	4.9nm,0.5s							
BVAR	**Borovoye Array**	**13.94**	**355**	Pn		**P**	**14 30 19.4**	**-6.9**
	0.7nm,0.3s,baz=158,slow=12,SNR=8.0							
BVAR				Lg			14 34 19.5	
	0.2nm,0.3s,baz=188,slow=31,SNR=3.8							
DANN	**Dangsing**	**14.37**	**135**	*e*P		**P**	**14 30 31.7**	**-0.5**
KOLN	**Koldanda**	**14.74**	**137**	*e*P		**P**	**14 30 34.0**	**-3.0**
	16nm,0.7s							
GKN	**Gorkha**	**15.13**	**134**	*e*P		**P**	**14 30 40.6**	**-1.4**
	51nm,0.4s							
KKN	**Kakani**	**15.66**	**132**	*e*P		**P**	**14 30 47.8**	**-0.9**
	30nm,0.5s							
KKN	**Kakani**	**15.66**	**132**	*e*P		**P**	**14 30 47.8**	**-0.9**
KKN				pmax	pmax			
	comp=Z,15nm,0.5s							
DMN	**Daman**	**15.70**	**133**	*e*P		**P**	**14 30 46.7**	**-2.5**
	comp=Z,19nm,0.6s							
GUN	**Gumba**	**15.91**	**131**	*e*P		**P**	**14 30 51.6**	**-0.4**
	comp=Z,11nm,0.4s							
ZAL	**Zalesovo**	**17.06**	**26**	P		**P**	**14 31 03.9**	**-2.3**
	comp=Z,1.3nm,0.3s,baz=161,slow=11,SNR=8.7							
ZAK	**Zakamensk**	**24.52**	**53**	*e*P		**P**	**14 32 26.8**	**+1.5**
SONM	**Songino Array**	**26.04**	**59**	P		**P**	**14 32 41.4**	**+1.6**
	comp=Z,1.0nm,0.6s,mb3.6,baz=273,slow=10,SNR=7.9							
ULN	**Ulaanbaatar**	**26.48**	**59**	*e*P		**P**	**14 32 42.2**	**-1.6**
ULN				pmax	pmax			
	comp=Z,3.0nm,1.0s,mb3.8							
ULN	**Ulaanbaatar**	**26.48**	**59**	*e*P		**P**	**14 32 42.2**	**-1.6**
	comp=Z,2.8nm,1.0s,mb3.8							
BRTR	**Keskin Array B**	**29.71**	**284**	P		**P**	**14 33 12.8**	**-0.3**
	comp=Z,1.4nm,0.9s,mb3.7,baz=90,slow=7.4,SNR=4.1							
AKASG	**Malin Array Be**	**32.17**	**305**	P		**P**	**14 33 34.1**	**-0.4**
	comp=Z,0.3nm,0.3s,mb3.6,baz=82,slow=6.6,SNR=3.1							
BOD	**Bodaibo**	**32.66**	**41**	*e*P		**P**	**14 33 38.9**	**+0.2**
FINES	**FINESS Array B**	**35.91**	**324**	P		**P**	**14 34 06.6**	**+0.1**
	comp=Z,2.2nm,0.8s,mb4.2,baz=114,slow=8.4,SNR=6.7							
ARCES	**ARCESS Array B**	**39.12**	**336**	P		**P**	**14 34 31.6**	**-1.6**
	comp=Z,2.2nm,0.6s,mb4.0,baz=115,slow=8.1,SNR=20							
NB2	**NORSAR Subarra**	**42.92**	**321**	P		**P**	**14 35 03.0**	**-1.6**
	comp=Z,1.9nm,0.8s,mb3.9,baz=93,slow=7.9

CAYA	**Cayambe**	**2.37**	**4**	P		**P**	**14 39 33.5**	**+1.4**
OTAV	**Otavalo**	**2.54**	**353**	*e*PKP		**P**	**14 39 34.7**	**+0.2**

IDC ***03*** *14:42:43.7±4.2,37.82S×73.63W,mb3.8/2,mb1 3.8/4, mb1mx3.7/13,ML3.7/2,MS3.3/5,Ms1 3.3/5,ms1mx3.2/19, Error ellipse: s-maj=88.5km s-min=18.8km az=69.0*
GUC ***03*** *14:42:45.1±0.7,37.89S×73.88W,h25km,ML4.2*
NEIC ***03*** *14:42:45.1,37.89S×73.88W,h25km,ML4.2(GUC),After GUC.*

ISC 03 14:42:46.0±1.0,37.86S±0.04×73.9W±0.1,h25km,n15, σ1§35/17,mb3.8/2,MS3.2/1,4C,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
TMCH	**Temuco**	**1.32**	**133**	⇑*iP*		**Pn**	**14 43 07.0**	**-2.0**
TMCH				*i*S		**Sn**	**14 43 22.8**	**-3.1**
TMCH				AMP			14 43 27.3	
	comp=N,7μm,0.5s							
CCHI	**Chillan**	**1.89**	**49**	*i*P		**Pn**	**14 43 17.6**	**+0.4**
CCHI				*i*S		**Sn**	**14 43 42.4**	**+2.0**
CCHI				AMP			14 43 46.1	
	comp=E,7μm,0.5s							
COCH	**Cobquecura**	**1.92**	**27**	*i*P		**Pn**	**14 43 17.3**	**-0.4**
COCH				AMP			14 43 50.3	
	comp=N,2μm,0.5s							
VLCH	**Valdivia**	**2.00**	**167**	*i*P		**Pn**	**14 43 18.2**	**-0.7**
VLCH				*i*S		**Sn**	**14 43 43.2**	**-0.1**
PLCA	**Paso Flores**	**3.84**	**139**	Pn		**Pn**	**14 43 45.2**	**+0.1**
	comp=N,0.9nm,0.3s,baz=314,slow=10,SNR=14							
PLCA				Pg		**Pn**	**14 43 52.7**	**+7.6**
	comp=N,6.7nm,0.3s,baz=315,slow=13,SNR=27							
PLCA				Sn		**Sn**	**14 44 30.7**	**+0.6**
	comp=N,12nm,0.3s,baz=300,slow=9.2,SNR=4.1							
PLCA				Lg			14 44 40.8	
	comp=N,15nm,0.3s,baz=43,slow=23,SNR=7.1							
PLCA				LR		LR	14 45 35.7	
	comp=N,258nm,19.9s,baz=325,slow=46							
PLCA	**Paso Flores**	**3.84**	**139**	eP		**Pn**	**14 43 45.2**	**+0.1**
LVC	**Limon Verde**	**15.78**	**17**	LR		LR	14 52 33.6	
	comp=N,129nm,19.7s,baz=182,slow=38							
USHA	**Ushuaia**	**17.38**	**169**	LR		LR	14 54 02.9	
	comp=N,181nm,18.7s,baz=337,slow=39							
CPUP	**Villa Florida**	**18.08**	**55**	P		**P**	**14 46 55.4**	**-1.9**
	comp=N,0.1nm,0.3s,baz=204,slow=12,SNR=3.3							
CPUP				LR		LR	14 53 42.2	
	comp=N,98nm,21.1s,baz=251,slow=37							
LPAZ	**La Paz**	**22.07**	**15**	P		**P**	**14 47 39.8**	**-1.0**
	comp=N,0.8nm,0.7s,mb3.3,baz=176,slow=10.0,SNR=4.3							
BDFB	**Brasilia**	**31.77**	**53**	LR		LR	15 03 55.6	
	comp=N,47nm,19.9s,MS3.2,baz=16,slow=40							
VNA3	**Neumayer Olymp**	**46.39**	**156**	⇑*i*		**P**	**14 51 13.4**	**+1.8**
VNA1	**Neumayer--Stat**	**46.75**	**155**	⇑*i*		**P**	**14 51 16.2**	**+1.8**
VNA2	**Neumayer--Watz**	**47.07**	**156**	⇑*i*		**P**	**14 51 18.6**	**+1.6**
DBIC	**Dimbokro**	**77.80**	**72**	P		**P**	**14 54 41.9**	**-1.3**
	comp=N,2.2nm,0.6s,mb4.3,baz=201,slow=8.4,SNR=7.3							

KRSC 03 15:05:26.6±1.1,52.51N×160.19E,h9km±2km,ML4.0,Off east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
SPN	**Mys Shipunski**	**0.60**	**350**	*e*P		Pg	15 05 39.3	+0.7
SPN				*e*S		Sg	15 05 48.1	+1.4
NLC	**Nalytchevo**	**0.84**	**323**	*e*P		Pb	15 05 43.9	+1.0
NLC				*e*S		Sb	15 05 56.3	+2.3
RUS	**Russkaya**	**1.03**	**266**	*e*P		Pb	15 05 46.6	+0.5
RUS				*e*S		Sb	15 06 00.7	+1.2
PET	**Petropavlovsk**	**1.07**	**299**	*e*P		Pb	15 05 47.2	+0.4
PET				*e*S		Sb	15 06 01.8	+1.2
UGLR	**Uglovaya**	**1.08**	**311**	*e*P		Pb	15 05 48.1	+1.0
UGLR				*e*S		Sb	15 06 04.7	+3.5
SDLR	**Sedlovina**	**1.10**	**315**	*e*P		Pb	15 05 48.0	+0.6
SDLR				*e*S		Sb	15 06 03.9	+2.2
SMAR	**Somma**	**1.13**	**312**	*e*P		Pb	15 05 49.0	+1.1
SMAR				*e*S		Sb	15 06 04.1	+1.6
AVH	**Avacha**	**1.16**	**311**	*e*P		Pb	15 05 49.3	+0.9
AVH				*e*S		Sb	15 06 05.0	+1.6
KOK	**Koryaka**	**1.23**	**310**	*e*P		Pb	15 05 50.2	+0.7
KOK				*e*S		Sb	15 06 06.2	+1.0
GRL	**Gorelyy**	**1.29**	**273**	*e*P		Pb	15 05 51.6	+0.9
GRL				*e*S		Sb	15 06 09.0	+1.8
KRMR	**Karymshinskiy**	**1.29**	**285**	*e*P		Pb	15 05 51.4	+0.7
KRMR				*i*S		Sb	15 06 08.9	+1.6
KII	**Karymskiy**	**1.59**	**344**	*e*P		Pn	15 05 55.4	+0.2
KII				*e*S		Sb	15 06 15.3	-0.6
GNL	**Ganaly**	**1.80**	**312**	*e*P		Pn	15 05 59.3	+1.1
GNL				*e*S		Sn	15 06 22.2	+0.9
APC	**Apacha**	**1.89**	**284**	*e*P		Pn	15 06 00.5	+1.1
APC				*e*S		Sn	15 06 27.3	+3.7
APC				Smax				
	220nm,1.1s							
MIPR	**Malaya Ipel'ka**	**2.12**	**265**	*e*P		Pn	15 06 04.3	+1.6
MIPR				*e*S		Sn	15 06 31.4	+2.1
MKZ	**Mys Kozlova**	**2.25**	**24**	*e*P		Pn	15 06 02.5	-2.0
MKZ				*i*S		Sn	15 06 30.6	-2.0
PAU	**Pauzhetka**	**2.34**	**245**	*e*P		Pn	15 06 08.3	+2.5
PAU				*e*S		Sn	15 06 38.6	+3.7
PAU				Smax				
	180nm,0.7s							
TUMR	**Tumrok**	**2.78**	**359**	*e*P		Pn	15 06 12.3	+0.2
TUMR				*e*S		Sn	15 06 46.4	+0.3
SKR	**Severo-Kuril's**	**3.13**	**236**	*e*S		Sn	15 06 53.6	-1.4
KMNR	**Kamenistaya**	**3.25**	**0**	*e*P		Pn	15 06 19.8	+0.9
KMNR				*e*S		Sn	15 06 59.2	+1.1
KPT	**Kopyto**	**3.46**	**0**	*e*P		Pn	15 06 23.1	+1.2
KPT				*e*S		Sn	15 07 04.6	+1.1
ESO	**Esso**	**3.53**	**346**	*e*P		Pn	15 06 23.4	+0.6
ZLN	**Zelenaya**	**3.53**	**6**	*e*P		Pn	15 06 23.2	+0.4
ZLN				*e*S		Sn	15 07 04.9	-0.3
KOZ	**Kozyrevsk**	**3.56**	**357**	*e*P		Pn	15 06 24.2	+1.0
KOZ				*e*S		Sn	15 07 06.6	+0.7
LGNR	**Loginova**	**3.59**	**4**	*e*P		Pn	15 06 23.6	-0.1
LGNR				*e*S		Sn	15 07 05.6	-1.1
CIRR	**Tsirk**	**3.63**	**5**	*e*P		Pn	15 06 25.5	+1.3
CIRR				*e*S		Sn	15 07 07.8	+0.2
KRSR	**Krestovskiy**	**3.72**	**3**	*e*S		Sn	15 07 11.9	+1.9
KLY	**Klyuchi**	**3.82**	**4**	*e*P		Pn	15 06 27.2	+0.3
KLY				*e*S		Sn	15 07 11.8	-0.7
SRDR	**Sredinnyy**	**3.83**	**356**	*e*P		Pn	15 06 26.9	-0.1
SRDR				*e*S		Sn	15 07 10.2	-2.4
KBTR	**Krutoberegovo**	**4.01**	**21**	*e*P		Pn	15 06 30.1	+0.4
KBTR				*e*S		Sn	15 07 16.2	-1.2
KBG	**Krutoberegovo**	**4.03**	**20**	S		Sn	15 07 18.6	+0.8
KBG				Smax				
	320nm,1.0s							
SVLR	**Shiveluch**	**4.12**	**8**	*e*P		Pn	15 06 31.9	+0.7
SVLR				*e*S		Sn	15 07 19.9	-0.2
BKI	**Bering**	**4.36**	**49**	*e*S		Sn	15 07 19.0	-7.1

IDC 03 15:11:04.0±10.0,23.70S×177.47W,mb3.8/3,mb1 4.0/3, mb1mx3.8/13,MS3.7/2,Ms1 3.7/2,ms1mx3.2/17,Error ellipse: s-maj=362.0km s-min=98.3km az=141.0,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**36.63**	**287**	LR		LR	15 30 00.9	
	comp=Z,59nm,19.3s,baz=109,slow=31							
ASAR	**Alice Springs**	**44.35**	**260**	P		P	15 19 16.1	-1.9
	0.9nm,1.0s,baz=96,slow=7.3,SNR=8.9							
WRA	**Warramunga Arr**	**44.73**	**265**	P		P	15 19 19.4	-1.7
	0.5nm,0.5s,baz=103,slow=7.6,SNR=6.4							
CMAR	**Chiang Mai Arr**	**91.64**	**289**	P		P	15 24 13.7	-1.2
	0.8nm,0.7s,baz=135,slow=3.2,SNR=5.1							
LVC	**Limon Verde**	**96.71**	**118**	LR		LR	15 58 37.3	
	comp=Z,56nm,20.6s,baz=301,slow=30							

IDC 03 15:23:37.9±4.3,2.54S×139.88E,mb3.3/2,mb1 3.7/3, mb1mx3.5/11,ML3.6/1,Error ellipse: s-maj=164.0km s-min=29.9km az=88.0,Near north coast of Irian Jaya

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**18.12**	**197**	P		P	15 27 51.6	-1.3
	0.2nm,0.3s,baz=18,slow=12,SNR=12							
ASAR	**Alice Springs**	**21.78**	**195**	P		P	15 28 31.2	-2.3
	0.5nm,0.5s,baz=24,slow=9.1,SNR=10							
MKAR	**Makanchi Array**	**70.37**	**322**	P		P	15 34 54.0	-1.8
	0.3nm,0.6s,baz=114,slow=8.5,SNR=4.3							

NEIC ***03*** *15:56:14.5±1.0,24.39S×66.99W,h171km±11km,Error ellipse: s-maj=22.0km s-min=13.0km az=68.0*
IDC ***03*** *15:56:17.9±1.7,24.02S×67.10W,h183km±11km,mb3.4/2, mb1 3.6/6,mb1mx3.4/15,Error ellipse: s-maj=32.2km s-min=17.8km az=25.0*

ISC 03 15:56:17.5±1.0,24.13S±0.09×67.2W±0.1,h192km±10km, n14,σ0§51/15,mb3.3/2,1C-1D,Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
LVC	**Limon Verde**	**2.15**	**314**	P		**P**	**15 56 57.2**	**-0.3**
	54nm,0.3s,baz=144,slow=6.6,SNR=465							
LVC				S		**S**	**15 57 28.3**	**0.0**
	32nm,0.3s,baz=302,slow=20,SNR=20							
LPAZ	**La Paz**	**7.85**	**354**	P		**P**	**15 58 09.8**	**+0.2**
	2.3nm,0.3s,baz=169,slow=10.0,SNR=51							
LPAZ				S		**S**	**15 59 37.1**	**0.0**
	0.0nm,0.3s,baz=338,slow=19,SNR=3.1							
LPAZ	**La Paz**	**7.85**	**354**	P		**P**	**15 58 09.8**	**+0.2**
LPAZ				S		**S**	**15 59 37.1**	**0.0**
CPUP	**Villa Florida**	**9.24**	**106**	P		**P**	**15 58 27.9**	**+0.2**
	0.2nm,0.3s,baz=290,slow=15,SNR=7.3							
CPUP	**Villa Florida**	**9.24**	**106**	P		**P**	**15 58 27.9**	**+0.2**
TRQA	**Tornquist**	**14.59**	**163**	*e*P		**P**	**15 59 29.0**	**-6.9**
	1.9nm,0.9s							
BDFB	**Brasilia**	**19.94**	**68**	P		**P**	**16 00 32.5**	**-3.8**
	0.3nm,0.3s,baz=202,slow=5.4,SNR=3.6							
VNA1	**Neumayer--Stat**	**57.30**	**160**	⇑*i*		**P**	**16 05 47.2**	**+0.3**
VNA2	**Neumayer--Watz**	**57.67**	**160**	⇓*i*		**P**	**16 05 49.3**	**-0.2**
PDAR	**Pinedale Array**	**77.15**	**329**	P		**P**	**16 07 52.0**	**+0.6**
	0.2nm,0.4s,mb3.1,baz=124,slow=6.5,SNR=3.4							
YKA	**Yellowknife Ar**	**94.17**	**340**	P		**P**	**16 09 14.4**	**-0.5**
	0.3nm,0.6s,mb3.5,baz=130,slow=4.5,SNR=10							
YKA	**Yellowknife Ar**	**94.17**	**340**	P		**P**	**16 09 14.4**	**-0.5**
ZAL	**Zalesovo**	**143.61**	**28**	PKP		PKPdf	16 15 27.6	-1.2
	0.6nm,0.6s,baz=235,slow=7.7,SNR=3.4							
MKAR	**Makanchi Array**	**146.76**	**39**	PKPbc		PKPbc	16 15 37.1	+0.9
	1.1nm,0.5s,baz=324,slow=1.8,SNR=13							

LDG ***03*** *16:07:52.9±0.2,14.23S×167.33E,h10km,Mb4.9/3,Error ellipse: s-maj=30.2km s-min=9.3km az=87.0*
BJI ***03*** *16:08:02.5,14.42S×167.51E,h98km,mB5.0,mb4.5*
NEIC ***03*** *16:08:04.9±0.3,15.04S×167.51E,mb4.7/8,Error ellipse: s-maj=11.2km s-min=7.8km az=112.0*
IDC ***03*** *16:08:05.0±0.6,15.00S×167.50E,h125km±4km,mb4.1/15, mb1 4.2/15,mb1mx4.2/18,MS3.7/8,Ms1 3.7/8, ms1mx3.5/19,Error ellipse: s-maj=18.8km s-min=13.1km az=141.0*
MOS ***03*** *16:08:06.9±0.8,15.14S×167.71E,h162km,mb4.9/4,Error ellipse: s-maj=21.0km s-min=19.9km az=12.7*

ISC 03 16:08:04.3±1.3,15.05S±0.08×167.39E±0.09, h129km±12km,h130km±3.3km:pP-P,n99,σ0§99/56, mb4.4/27,12C-8D,Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**2.73**	**163**	⇑*iP*		**P**	**16 08 48.4**	**+0.2**
BKM				S		**S**	**16 09 22.2**	**+0.8**
DZM	**Mont Dzumac**	**7.04**	**187**	*e*P		**P**	**16 09 45.8**	**-0.2**
DZM				*e*S		**S**	**16 11 01.5**	**-3.6**
DZM	**Mont Dzumac**	**7.04**	**187**	*e*P		**P**	**16 09 45.8**	**-0.2**
DZM				*e*S		**S**	**16 11 01.5**	**-3.6**
NOUC	**Port Laguerre**	**7.09**	**188**	*e*P		**P**	**16 09 46.2**	**-0.5**
NOUC				*e*S		**S**	**16 11 01.9**	**-4.3**
NOUC	**Port Laguerre**	**7.09**	**188**	*e*P		**P**	**16 09 46.2**	**-0.5**
NOUC				*e*S		**S**	**16 11 01.9**	**-4.3**
CTA	**Charters Tower**	**20.76**	**253**	*e*P		**P**	**16 12 39.9**	**+3.4**
	11nm,0.9s							
CTA				*e*			16 13 03.1	
CTA	**Charters Tower**	**20.76**	**253**	P		**P**	**16 12 38.6**	**+2.1**
	7.7nm,0.9s,baz=56,slow=15,SNR=4.6							
CTA				pP			16 13 01.1	
	12nm,0.9s,baz=72,slow=12,SNR=3.5							
CTAO	**Charters Tower**	**20.76**	**253**	*e*P		**P**	**16 12 39.1**	**+2.6**
	51nm,1.5s							
ARMA	**Armidale**	**21.06**	**221**	*e*P		**P**	**16 12 39.9**	**+0.4**
URZ	**Urewera**	**24.67**	**161**	P		**P**	**16 13 15.2**	**+0.8**
	30nm,0.9s,mb4.8,baz=328,slow=8.4,SNR=5.7							
RPZ	**Rata Peaks**	**28.74**	**174**	P		**P**	**16 13 50.9**	**-0.7**
	15nm,0.9s,mb4.7,baz=304,slow=4.1,SNR=3.6							
RPZ				LR		LR	16 24 33.8	
	comp=Z,139nm,18.4s,baz=197,slow=34							
STKA	**Stephens Creek**	**28.88**	**230**	⇑*iP*		**P**	**16 13 53.4**	**+0.4**
	21nm,0.6s,mb5.0							
STKA	**Stephens Creek**	**28.88**	**230**	P		**P**	**16 13 53.6**	**+0.6**
	28nm,0.7s,mb5.1,baz=40,slow=7.3,SNR=76							
STKA				PcP		PcP	16 16 59.0	-0.3
	3.6nm,0.7s,baz=12,slow=4.6,SNR=4.7							
STKA				LR		LR	16 23 55.1	
	comp=Z,160nm,19.8s,baz=210,slow=33							
WRAB	**Tennant Creek**	**31.85**	**256**	P		**P**	**16 14 18.4**	**-0.9**
WRA	**Warramunga Arr**	**31.86**	**256**	P		**P**	**16 14 17.7**	**-1.7**
	7.7nm,1.2s,mb4.3,baz=84,slow=8.4,SNR=16							
WRA				pP		pP	16 14 47.3	-0.4
	3.4nm,0.8s,baz=87,slow=9.4,SNR=6.6							
WRA				PcP		PcP	16 17 06.4	-0.7
	2.3nm,0.9s,baz=79,slow=2.5,SNR=5.6							
AS12	**Alice Springs**	**32.67**	**250**	⇑*iP*		**P**	**16 14 25.4**	**-1.0**
	20nm,0.9s,mb4.8							
ASAR	**Alice Springs**	**32.67**	**250**	P		**P**	**16 14 25.4**	**-1.0**
	12nm,0.6s,mb4.8,baz=80,slow=9.0,SNR=138							
ASAR				pP		pP	16 14 53.0	-1.8
	6.8nm,0.8s,baz=81,slow=9.1,SNR=5.1							
ASAR				ScP			16 20 42.5	
	1.5nm,1.0s,baz=104,slow=2.8,SNR=6.4							
ASAR				LR		LR	16 28 40.4	
	comp=Z,119nm,19.4s,baz=330,slow=38							
FITZ	**Fitzroy Crossi**	**40.07**	**260**	*e*P		**P**	**16 15 28.9**	**+0.3**
	9.2nm,1.0s,mb4.4							
MUN	**Mundaring**	**49.41**	**241**	*e*P		**P**	**16 16 42.2**	**-0.8**
	10nm,0.9s,mb4.5							
NJ2	**Nanjing**	**65.98**	**316**	*e*P		**P**	**16 18 39.5**	**+0.3**
NJ2				S		S	16 27 10.0	-4.7
NJ2				AMB		AMB		
	comp=Z,10.0nm,1.0s,mb4.6							
KMI	**Kunming**	**74.57**	**302**	*e*P		**P**	**16 19 32.8**	**+1.6**
KMI				AMB		AMB		
	comp=Z,12nm,1.6s,mb4.3							
KMI				LR		LR		
	comp=Z,48nm,35.3s							
QSPA	**South Pole Qui**	**74.98**	**180**	*e*P		**P**	**16 19 32.3**	**-0.1**
	comp=Z,40nm,1.2s,mb4.9							
CMAR	**Chiang Mai Arr**	**75.18**	**294**	P		**P**	**16 19 36.0**	**+1.3**
	comp=Z,2.0nm,0.8s,mb3.8,baz=130,slow=5.3,SNR=14							
CMAR				pP		pP	16 20 06.2	-1.1
	comp=Z,2.6nm,1.0s,baz=111,slow=4.7,SNR=5.6							
MA2	**Magadan**	**75.58**	**351**	*i*P		**P**	**16 19 35.0**	**-1.1**
MA2				pmax		pmax		
	comp=Z,16nm,1.2s,mb4.5							
HHC	**Hu-ho-hao-te**	**75.90**	**320**	*e*P		**P**	**16 19 35.4**	**-2.9**
HHC				AMB		AMB		
	comp=Z,8.0nm,1.0s,mb4.3							
MAW	**Mawson**	**81.63**	**202**	P		**P**	**16 20 08.3**	**-0.6**
	comp=Z,8.3nm,1.1s,mb4.3,baz=117,slow=3.3,SNR=3.6							
MAW				LR		LR	16 54 50.9	
	comp=Z,121nm,19.5s,baz=62,slow=34							
YAK	**Yakutsk**	**82.37**	**343**	*e*P		**P**	**16 20 13.1**	**+0.3**
YAK				pmax		pmax		
	comp=Z,29nm,1.6s,mb4.7							
YAK	**Yakutsk**	**82.37**	**343**	*e*P		**P**	**16 20 12.7**	**-0.1**
	comp=Z,18nm,1.2s,mb4.6							
ULN	**Ulaanbaatar**	**82.46**	**324**	*e*P		**P**	**16 20 13.3**	**-0.3**
ULN	**Ulaanbaatar**	**82.46**	**324**	*e*P		**P**	**16 20 14.9**	**+1.4**
	comp=Z,24nm,1.5s,mb4.6							
SONM	**Songino Array**	**82.82**	**324**	P		**P**	**16 20 15.9**	**+0.5**
	comp=Z,1.7nm,0.7s,mb3.9,baz=146,slow=4.5,SNR=16							
BILL	**Bilibino**	**82.86**	**360**	*e*P		**P**	**16 20 14.4**	**-0.8**
BILL				*e*		pP	16 20 50.4	+2.2
BILL				*e*			16 21 07.8	
BILL				*e*			16 23 27.0	
BILL				*e*S		S	16 30 20.4	-0.8
BILL				*i* SS		SS	16 35 48.8	-1.3
BILL				pmax		pmax		
	comp=Z,8.0nm,1.4s,mb4.3							
GTA	**Gaotai**	**82.97**	**314**	*e*P		**P**	**16 20 18.4**	**+2.1**
GTA				AMB		AMB		
	comp=Z,11nm,1.6s,mb4.3							
BOD	**Bodaibo**	**84.81**	**334**	*e*P		**P**	**16 20 24.5**	**-0.6**
YBH	**Yreka Blue Hor**	**85.56**	**45**	P		**P**	**16 20 30.0**	**+0.7**
	comp=Z,0.6nm,0.3s,mb3.8,baz=150,slow=12,SNR=3.3							
YBH				pP		pP	16 21 00.3	-2.1
	comp=Z,0.7nm,0.4s,baz=168,slow=10,SNR=1.7							
ZAK	**Zakamensk**	**85.88**	**325**	⇑*iP*		**P**	**16 20 30.6**	**0.0**
TLY	**Talaya**	**86.32**	**326**	*e*P		**P**	**16 20 33.4**	**+0.7**
TLY				pmax		pmax		
	comp=Z,35nm,1.3s,mb4.9							
ILAR	**Eielson Array**	**86.79**	**18**	P		**P**	**16 20 33.2**	**-1.4**
	comp=Z,0.5nm,0.7s,mb3.4,baz=239,slow=5.9,SNR=4.5							
ILAR				pP		pP	16 21 05.8	-2.2
	comp=Z,0.6nm,0.6s,baz=220,slow=7.0,SNR=3.5							
ILAR				LR		LR	16 53 19.5	
	comp=Z,36nm,21.1s,baz=46,slow=31							
NVAR	**Mina Array Bea**	**87.39**	**49**	P		**P**	**16 20 37.3**	**-0.9**
	comp=Z,0.5nm,0.8s,mb3.4,baz=237,slow=4.8,SNR=3.6							
NVAR				pP		pP	16 21 10.2	-1.3
	comp=Z,0.6nm,0.8s,baz=214,slow=6.3,SNR=2.5							
NVAR				LR		LR	16 53 11.1	
	comp=Z,24nm,18.2s,baz=230,slow=31							
TIXI	**Tiksi**	**90.30**	**349**	*e*P		**P**	**16 20 50.5**	**-0.7**
TIXI				*e*S		S	16 31 33.3	+1.5
TIXI				pmax		pmax		
	comp=Z,42nm,1.5s,mb5.2							
WMQ	**Urumqi**	**93.03**	**315**	*e*P		**P**	**16 21 04.5**	**+0.1**
SNAA	**Sanae**	**93.24**	**183**	⇑*i*		**P**	**16 21 04.2**	**-0.5**
SNAA	**Sanae**	**93.24**	**183**			pP	16 21 39.4	+1.1
SNAA	**Sanae**	**93.24**	**183**	⇓*i*		sP	16 21 56.8	+4.4
SNAA	**Sanae**	**93.24**	**183**	⇓*iP*		**P**	**16 21 03.9**	**-0.8**
SNAA				⇓*iP*		sP	16 21 56.8	+4.4
VNA3	**Neumayer Olymp**	**93.90**	**181**	⇓*i*		pP	16 21 46.2	+4.9
VNA3	**Neumayer Olymp**	**93.90**	**181**	⇓*i*		sP	16 22 02.1	+6.7
VNA3	**Neumayer Olymp**	**93.90**	**181**	⇑*iP*		**P**	**16 21 08.3**	**+0.6**
VNA3				⇓*iP*		pP	16 21 46.2	+4.9
VNA2	**Neumayer--Watz**	**94.17**	**182**			**P**	**16 21 10.4**	**+1.5**
VNA2	**Neumayer--Watz**	**94.17**	**182**	⇑*i*		pP	16 21 48.3	+5.8
VNA2	**Neumayer--Watz**	**94.17**	**182**	⇓*i*		sP	16 22 04.1	+7.5
VNA2	**Neumayer--Watz**	**94.17**	**182**	⇓*iP*		**P**	**16 21 10.1**	**+1.2**
VNA2				⇑*iP*		pP	16 21 48.3	+5.8
VNA1	**Neumayer--Stat**	**94.47**	**181**	⇑*i*		pP	16 21 49.7	+5.8
VNA1	**Neumayer--Stat**	**94.47**	**181**	⇑*i*		sP	16 22 04.7	+6.7
VNA1	**Neumayer--Stat**	**94.47**	**181**	⇑*iP*		**P**	**16 21 11.0**	**+0.7**
VNA1				⇑*iP*			16 21 49.7	
PDAR	**Pinedale Array**	**95.08**	**47**	LR		LR	16 58 21.1	
	comp=Z,24nm,18.1s,baz=75,slow=32							
MKAR	**Makanchi Array**	**97.51**	**316**	P		**P**	**16 21 25.9**	**+1.2**
	comp=Z,1.3nm,0.6s,mb4.5,baz=92,slow=6.2,SNR=12							
MKAR				pP		pP	16 21 58.3	-0.1
	comp=Z,1.5nm,0.9s,baz=166,slow=10.0,SNR=4.3							
MKAR	**Makanchi Array**	**97.51**	**316**	*i* P		**P**	**16 21 25.9**	**+1.2**
MKAR				pmax		pmax		
	comp=Z,1.0nm,0.6s							
ZAL	**Zalesovo**	**97.72**	**324**	P		**P**	**16 21 24.9**	**-0.6**
	comp=Z,0.7nm,0.8s,mb4.1,baz=253,slow=5.6,SNR=6.3							
YKA	**Yellowknife Ar**	**97.78**	**27**	P		**P**	**16 21 25.0**	**-0.5**
	comp=Z,0.1nm,0.4s,mb3.6,baz=251,slow=5.0,SNR=3.8							
YKA				pP		pP	16 21 58.4	-0.7
	comp=Z,0.4nm,0.7s,baz=257,slow=4.5,SNR=4.6							
YKA				LR		LR	17 00 22.8	
	comp=Z,39nm,19.1s,baz=230,slow=32							
ARCES	**ARCESS Array B**	**120.59**	**345**	PKP		PKPdf	16 26 40.3	0.0
	comp=Z,2.1nm,0.5s,baz=70,slow=1.2,SNR=21							
ARCES				pPKP			16 27 13.6	
	comp=Z,3.4nm,0.8s,slow=3.6,SNR=2.3							
FINES	**FINESS Array B**	**126.06**	**338**	PKP		PKPdf	16 26 51.6	+0.7
	comp=Z,5.4nm,1.2s,baz=326,slow=6.9,SNR=5.7							
AKASG	**Malin Array Be**	**131.06**	**326**	PKP		PKPdf	16 27 01.8	+1.0
	comp=Z,0.2nm,0.3s,slow=1.0,SNR=6.6							
GERES	**GERESS Array B**	**139.98**	**333**	PKhKP			16 27 12.6	
	comp=Z,0.3nm,0.5s,baz=45,slow=2.8,SNR=3.7							
GERES				PKP		PKPdf	16 27 19.1	+1.8
	comp=Z,0.3nm,0.4s,baz=31,slow=5.7,SNR=3.5							
CDF	**Champ du Feu**	**142.91**	**338**	*e*PKP1		PKPdf	16

EVR	**Evrytania**	**2.17**	**5**	*e*PG	**Pg**	**16 24 56.5**	**-2.4**
PTL	**Penteli**	**2.25**	**54**	*e*PN	**Pn**	**16 24 55.0**	**+1.6**
AGG	**Agios Georgios**	**2.35**	**15**	*e*Pn	**Pn**	**16 24 57.0**	**+2.1**
VAM	**Vamos**	**2.53**	**121**	*e*PB	**Pb**	**16 25 01.0**	**+0.3**
NEO	**Neokhori**	**2.87**	**27**	*e*PN	**Pn**	**16 25 04.5**	**+2.2**
XOR	**Xorichti**	**2.91**	**26**	*e*Pn	**Pn**	**16 25 04.5**	**+1.6**
IGT	**Igoumenitsa**	**2.94**	**341**	*e*Pn	**Pn**	**16 25 05.4**	**+2.1**
IGT				*e*Sn	**Sn**	**16 25 40.6**	**+1.6**
JAN	**Janina**	**2.95**	**349**	*e*PB	**Pb**	**16 25 06.0**	**-2.0**
AOS	**Alonnisos**	**3.03**	**37**	*e*Pn	**Pn**	**16 25 05.5**	**+0.9**
	comp=Z,8.0nm,0.7s						
MEV	**Metsovon**	**3.04**	**355**	*e*Pn	**Pn**	**16 25 07.6**	**+2.9**
THR5	**Thira Island,**	**3.07**	**95**	*e*Pn	**Pn**	**16 25 07.2**	**+2.1**
IDI	**Anoyia**	**3.07**	**117**	Pn	**Pn**	**16 25 06.0**	**+0.8**
	6.6nm,0.3s,baz=300,slow=14,SNR=23						
IDI				Sn	**Sn**	**16 25 36.0**	**-6.4**
	19nm,0.3s,baz=333,slow=23,SNR=11						
THR3	**Thira Island,**	**3.11**	**95**	*e*Pn	**Pn**	**16 25 08.0**	**+2.3**
THR6	**Thira Island,**	**3.12**	**96**	*e*Pn	**Pn**	**16 25 07.9**	**+2.1**
SANT	**Santorini**	**3.16**	**96**	*e*P	**Pn**	**16 25 08.3**	**+1.8**
THR1	**Thera Island**	**3.16**	**96**	*e*Pn	**Pn**	**16 25 08.7**	**+2.1**
THR1				*e*Sn	**Sn**	**16 25 44.9**	**+0.2**
APE	**Apeiranthos**	**3.20**	**83**	*e*PN	**Pn**	**16 25 08.5**	**+1.5**
KEK	**Kerkira**	**3.26**	**335**	*e*PN	**Pn**	**16 25 09.2**	**+1.3**
LIT	**Litokhoron**	**3.42**	**12**	*e*Pn	**Pn**	**16 25 11.6**	**+1.5**
KZN	**Kozani**	**3.55**	**3**	*e*PN	**Pn**	**16 25 14.5**	**+2.5**
KRIS	**Kristallenia**	**3.56**	**115**	*e*P	**Pn**	**16 25 14.5**	**+2.3**
PAIG	**Paliouri**	**3.58**	**27**	*e*Pn	**Pn**	**16 25 13.5**	**+1.1**
XRY	**Khrisi**	**3.85**	**118**	*e*PB	**Pb**	**16 25 21.5**	**-1.8**
PLG	**Polygyros**	**3.91**	**22**	*e*PN	**Pn**	**16 25 18.0**	**+1.0**
FNA	**Florina**	**4.03**	**358**	*e*Pn	**Pn**	**16 25 19.9**	**+1.1**
FNA				*e*Sn	**Sn**	**16 26 05.8**	**-0.8**
OUR	**Ouranopolis**	**4.05**	**27**	*e*Pn	**Pn**	**16 25 19.9**	**+0.9**
LOS	**Limnos**	**4.21**	**40**	*e*Pn	**Pn**	**16 25 21.7**	**+0.3**
GRG	**Griva**	**4.25**	**9**	*e*Pn	**Pn**	**16 25 22.9**	**+1.0**
SOH	**Sokhos**	**4.30**	**18**	*e*Pn	**Pn**	**16 25 24.0**	**+1.4**
LCI	**Lecce**	**4.48**	**324**	*e*P	**Pn**	**16 25 25.6**	**+0.4**
KNT	**Kendrikon**	**4.52**	**13**	*e*Pn	**Pn**	**16 25 26.4**	**+0.6**
KNT				*e*Sn	**Sn**	**16 26 16.9**	**-2.3**
SOI	**Samo**	**4.58**	**288**	*e*P	**Pn**	**16 25 27.3**	**+0.7**
SRS	**Serrai**	**4.64**	**19**	*e*Pn	**Pn**	**16 25 27.8**	**+0.4**
BOZC	**Bozcaada**	**4.69**	**48**	*i* P	**Pn**	**16 25 27.6**	**-0.6**
KARP	**Karpathos**	**4.69**	**103**	*e*PB	**Pb**	**16 25 35.0**	**-2.7**
BDRM	**Kayabasi**	**4.73**	**84**	*i* Pn	**Pn**	**16 25 30.4**	**+1.7**
KDAG	**Bornova**	**4.82**	**68**	*i* P	**Pn**	**16 25 30.9**	**+0.8**
MTTG	**Motta San Giov**	**4.83**	**287**	*e*Pn	**Pn**	**16 25 30.8**	**+0.6**
TDS	**Terranova Siba**	**5.03**	**307**	*e*P	**Pn**	**16 25 34.1**	**+1.1**
AGST	**Augusta-Monte**	**5.09**	**278**	*e*Pn	**Pn**	**16 25 32.7**	**-1.2**
MMB	**Musomiste**	**5.11**	**19**	*i* P	**Pn**	**16 25 33.0**	**-1.2**
ORI	**Oriolo Calabro**	**5.20**	**311**	*e*P	**Pn**	**16 25 36.2**	**+0.8**
SKO	**Skopje**	**5.21**	**359**	*e*Pn	**Pn**	**16 25 35.3**	**-0.3**
KKB	**Krupnik**	**5.24**	**13**	*i* P	**Pn**	**16 25 36.0**	**0.0**
PZI	**Palazzolo**	**5.31**	**275**	*e*P	**Pn**	**16 25 36.7**	**-0.2**
MEU	**Monte Lauro**	**5.32**	**276**	*e*Pn	**Pn**	**16 25 37.5**	**+0.3**
BRT	**Bari-Castellan**	**5.34**	**322**	*e*P	**Pn**	**16 25 37.4**	**0.0**
ALN	**Alexandroupoli**	**5.42**	**39**	*e*Pn	**Pn**	**16 25 38.4**	**-0.1**
RZN	**Rozhen**	**5.50**	**25**	*i* P	**Pn**	**16 25 40.0**	**+0.3**
VAE	**Valguarnera**	**5.76**	**279**	Pn	**Pn**	**16 25 45.1**	**+1.8**
	4.5nm,0.3s,baz=279,slow=19,SNR=4.8						
VAE				Sn	**Sn**	**16 26 47.5**	**-2.6**
	2.1nm,0.3s,baz=8.8,slow=17,SNR=1.6						
MGR	**Morigerati**	**5.80**	**307**	*e*Pn	**Pn**	**16 25 44.1**	**+0.3**
SLCN	**Sala Consilina**	**5.89**	**310**	*e*Pn	**Pn**	**16 25 46.4**	**+1.3**
SART	**Tekirdag**	**5.89**	**46**	*i* P	**Pn**	**16 25 44.2**	**-1.0**
VTS	**Vitosha**	**5.97**	**12**	*i* P	**Pn**	**16 25 47.0**	**+0.8**
DNZL	**Cakiroluk**	**6.05**	**79**	*i* P	**Pn**	**16 25 49.0**	**+1.7**
SGO	**Sicignano**	**6.19**	**310**	*e*P	**Pn**	**16 25 50.1**	**+0.7**
MRLC	**Muro Lucano**	**6.20**	**312**	*e*Pn	**Pn**	**16 25 50.0**	**+0.5**
CSSN	**Cassano Irpino**	**6.55**	**311**	*e*Pn	**Pn**	**16 25 54.1**	**-0.3**
FG5	**Orsara di Pugl**	**6.67**	**315**	*e*P	**Pn**	**16 25 57.0**	**+0.9**
RGNG	**Rignano Grg**	**6.75**	**318**	*e*Pn	**Pn**	**16 25 56.8**	**-0.5**
STON	**Ston**	**6.79**	**335**	*i* Pn	**Pn**	**16 25 55.5**	**-2.4**
STON				*i* Sn	**Sn**	**16 27 09.1**	**-7.0**
ULDT	**Uludag**	**6.84**	**58**	*i* P	**Pn**	**16 26 01.4**	**+2.9**
CII	**Carovilli**	**7.50**	**314**	*e*Pn	**Pn**	**16 26 08.9**	**+1.1**
RNI2	**Rionero Sannit**	**7.58**	**313**	*e*Pn	**Pn**	**16 26 10.3**	**+1.4**
SDI	**San Donato**	**7.79**	**312**	*e*P	**Pn**	**16 26 11.2**	**-0.6**
HENT	**Hendek**	**8.35**	**58**	*i* P	**P**	**16 26 20.1**	**+0.5**
SNTG	**Esanatoglia**	**9.26**	**317**	*e*Pn	**P**	**16 26 32.1**	**-0.1**
MLR	**Muntele Rosu**	**9.33**	**19**	Pn	**P**	**16 26 33.4**	**+0.1**
	0.2nm,0.3s,baz=199,slow=10,SNR=5.4						
BRTR	**Keskin Array B**	**9.96**	**69**	Pn	**P**	**16 26 43.3**	**+1.5**
	0.5nm,0.3s,baz=255,slow=14,SNR=17						
BALT	**Daday**	**10.35**	**59**	*i* P	**P**	**16 26 46.5**	**-0.7**
VOY	**Vojsko**	**10.91**	**331**	*e*Pn	**P**	**16 26 52.7**	**-2.1**
VOY				*e*Sn	**S**	**16 28 49.4**	**-8.5**
GERES	**GERESS Array B**	**13.38**	**337**	Pn	**P**	**16 27 28.5**	**+0.4**
	0.1nm,0.3s,baz=157,slow=15,SNR=3.3						
GERES				Sn	**S**	**16 29 51.2**	**-6.6**
	0.2nm,0.3s,baz=156,slow=23,SNR=4.4						
KHC	**Kasperske Hrby**	**13.67**	**337**	*e*P	**P**	**16 27 39.5**	**+7.7**
AKASG	**Malin Array Be**	**14.99**	**19**	Pn	**P**	**16 27 45.1**	**-4.0**
	0.5nm,0.3s,baz=210,slow=12,SNR=6.9						
KIV	**Kislovodsk**	**17.61**	**59**	*e*P	**P**	**16 28 24.0**	**+1.4**
KIV				pmax	pmax		
	comp=Z,5.0nm,0.7s						
ZEI	**Tsey**	**18.17**	**64**	*e*P	**P**	**16 28 30.4**	**+0.7**
GNI	**Garni**	**18.46**	**72**	*e*P	**P**	**16 28 31.7**	**-1.6**
GNI				pmax	pmax		
	comp=Z,6.0nm,0.8s						
OBN	**Obninsk**	**21.04**	**24**	*e*P	**P**	**16 29 01.2**	**-0.6**
OBN				*e*		16 29 15.1	
OBN						16 29 22.0	
OBN				pmax	pmax		
	comp=Z,25nm,1.4s,mb4.3						
HFS	**Hagfors**	**23.94**	**350**	P	**P**	**16 29 28.8**	**-1.5**
	comp=Z,2.3nm,0.4s,mb4.0,baz=164,slow=11,SNR=13						
FINES	**FINESS Array B**	**24.88**	**5**	P	**P**	**16 29 37.9**	**-1.6**
	comp=Z,2.0nm,0.5s,mb3.9,baz=164,slow=12,SNR=19						
FINES				LR	LR		
	comp=Z,54nm,18.0s,baz=341,slow=40					16 40 38.7	
EKA	**Eskdalemuir Ar**	**25.07**	**326**	P	**P**	**16 29 41.5**	**+0.2**
	comp=Z,2.3nm,0.7s,mb3.8,baz=128,slow=9.0,SNR=9.6						
NB2	**NORSAR Subarra**	**25.18**	**348**	P	**P**	**16 29 41.1**	**-1.2**
	comp=Z,2.1nm,0.5s,mb4.0,baz=156,slow=9.3						
NOA	**NORSAR Array B**	**25.18**	**348**	P	**P**	**16 29 41.4**	**-1.0**
	comp=Z,2.6nm,0.6s,mb4.0,baz=157,slow=9.1,SNR=13						
KAF	**Kangasniemi**	**25.56**	**5**	*ep*	**P**	**16 29 44.9**	**-1.0**
	baz=175,slow=8.7						
JOF	**Joensuu**	**26.87**	**10**	*ep*	**P**	**16 29 55.7**	**-2.4**
	comp=Z,0.9nm,0.3s,mb3.8						
AB31	**Akbulak array**	**30.39**	**54**	*i* P	**P**	**16 30 27.5**	**-2.4**
ARU	**Arti**	**31.60**	**40**	*e*P	**P**	**16 30 37.9**	**-2.6**
ARU				pmax	pmax		
	comp=Z,5.0nm,0.8s,mb4.4						
ARU	**Arti**	**31.60**	**40**	*e*P	**P**	**16 30 37.9**	**-2.6**
	comp=Z,4.7nm,0.8s,mb4.4						
SVE	**Sverdlovsk**	**32.81**	**40**	P	**P**	**16 30 48.8**	**-2.2**
ARCES	**ARCESS Array B**	**32.91**	**3**	P	**P**	**16 30 49.8**	**-1.9**
	comp=Z,1.9nm,0.6s,mb4.2,baz=187,slow=9.8,SNR=12						
KEV	**Kevo**	**33.19**	**3**	*ep*	**P**	**16 30 50.4**	**-3.8**
	comp=Z,0.5nm,0.4s,mb3.8						
KEV	**Kevo**	**33.19**	**3**	*e*P	**P**	**16 30 50.4**	**-3.8**
KEV				pmax	pmax		
	comp=Z,1.0nm,0.4s,mb4.1						
ZRNK	**Zerenda**	**36.58**	**48**	*e*P	**P**	**16 31 22.0**	**-1.4**
BRVK	**Borovoye**	**37.36**	**48**	*e*P	**P**	**16 31 28.3**	**-1.6**
BVAR	**Borovoye Array**	**37.42**	**48**	P	**P**	**16 31 29.2**	**-1.2**
	comp=Z,4.8nm,0.6s,mb4.5,baz=260,slow=6.0,SNR=60						
KKAR	**Karatay Array**	**37.63**	**65**	*e*P	**P**	**16 31 31.2**	**-1.1**
KKAR				pmax	pmax		
	comp=Z,2.0nm,0.6s,mb4.0						
VOSK	**Vostochnaya**	**37.75**	**49**	P	**P**	**16 31 31.4**	**-1.8**
VOSK				pmax	pmax		
	comp=Z,3.0nm,0.8s,mb4.1						
DBIC	**Dimbokro**	**38.44**	**225**	P	**P**	**16 31 40.4**	**+1.0**
	comp=Z,3.3nm,0.6s,mb4.2,baz=27,slow=12,SNR=9.5						
TIC	**Toumodi**	**38.56**	**225**	*e*P	**P**	**16 31 41.2**	**+0.8**
	comp=Z,18nm,0.2s,mb5.4						
KIC	**Kosan Boka**	**38.63**	**225**	*e*P	**P**	**16 31 41.9**	**+0.9**
	comp=Z,91nm,1.6s,mb5.2						
LIC	**Lamto**	**38.90**	**225**	*e*P	**P**	**16 31 44.3**	**+1.0**
	comp=Z,20nm,0.6s,mb5.0						
KURK	**Kurchatov**	**42.48**	**52**	*i* P	**P**	**16 32 10.4**	**-1.9**
KURK				pmax	pmax		
	comp=Z,2.0nm,0.7s,mb3.9						
KURK	**Kurchatov**	**42.48**	**52**	*e*P	**P**	**16 32 10.5**	**-1.8**
NVS	**Novosibirsk**	**45.06**	**46**	*e*P	**P**	**16 32 30.9**	**-2.2**
NVS				pmax	pmax		
	comp=N,4.0nm,0.9s						
NVS				pmax	pmax		
	comp=E,4.0nm,0.9s						
NVS				pmax	pmax		
	comp=Z,7.0nm,0.9s,mb4.5						
MKAR	**Makanchi Array**	**45.36**	**57**	P	**P**	**16 32 33.8**	**-1.9**
	comp=Z,5.0nm,0.5s,mb4.7,baz=273,slow=7.5,SNR=50						
MKAR	**Makanchi Array**	**45.36**	**57**	*e*P	**P**	**16 32 33.5**	**-2.1**
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.4s						
ZAL	**Zalesovo**	**46.03**	**47**	P	**P**	**16 32 38.5**	**-2.3**
	comp=Z,3.5nm,0.4s,mb4.6,baz=88,slow=6.4,SNR=15						
DANN	**Dangsing**	**52.30**	**80**	*e*P	**P**	**16 33 27.8**	**-1.8**
KOLN	**Koldanda**	**52.43**	**81**	*e*P	**P**	**16 33 28.7**	**-1.8**
	comp=Z,7.7nm,0.9s,mb4.6						
GKN	**Gorkha**	**53.14**	**80**	*e*P	**P**	**16 33 33.4**	**-2.5**
	comp=Z,14nm,0.9s,mb4.9						
DMN	**Daman**	**53.69**	**80**	*e*P	**P**	**16 33 38.3**	**-1.6**
	comp=Z,17nm,0.8s,mb5.0						
KKN	**Kakani**	**53.75**	**80**	*e*P	**P**	**16 33 38.1**	**-2.2**
	comp=Z,6.9nm,0.6s,mb4.8						
KKN	**Kakani**	**53.75**	**80**	*e*P	**P**	**16 33 38.1**	**-2.2**
KKN				pmax	pmax		
	comp=Z,3.0nm,0.6s,mb4.4						
TSUM	**Tsumeb**	**55.78**	**185**	P	**P**	**16 33 54.3**	**-0.9**
	comp=Z,0.7nm,0.8s,mb3.7,baz=311,slow=19,SNR=3.4						
ZAK	**Zakamensk**	**57.88**	**48**	*e*P	**P**	**16 34 07.6**	**-2.1**
SCHQ	**Schefferville**	**60.07**	**318**	P	**P**	**16 34 23.5**	**-1.4**
	baz=121,slow=19						
TIXI	**Tiksi**	**60.70**	**20**	*e*P	**P**	**16 34 27.5**	**-1.5**
TIXI				pmax	pmax		
	comp=Z,6.0nm,1.0s,mb4.7						
SONM	**Songino Array**	**60.73**	**50**	P	**P**	**16 34 25.3**	**-4.2**
	comp=Z,1.2nm,0.7s,mb4.2,baz=276,slow=8.2,SNR=5.4						
BOD	**Bodaibo**	**60.99**	**38**	*e*P	**P**	**16 34 27.0**	**-4.1**
CMAR	**Chiang Mai Arr**	**69.27**	**82**	P	**P**	**16 35 22.4**	**-2.8**
	comp=Z,0.8nm,0.6s,mb3.8,baz=299,slow=8.1,SNR=10.0						
YKA	**Yellowknife Ar**	**75.01**	**341**	P	**P**	**16 35 58.3**	**-0.1**
	comp=Z,0.3nm,0.7s,mb3.3,baz=33,slow=5.5,SNR=7.0						
YKA	**Yellowknife Ar**	**75.01**	**341**	P	**P**	**16 35 58.3**	**-0.1**
ASAR	**Alice Springs**	**121.18**	**98**	PKP	PKPdf	16 43 09.9	-2.3
	comp=Z,0.1nm,0.3s,baz=310,slow=1.8,SNR=9.7						

DJA 03 16:53:35.8±1.0, 9.09S×117.36E, h15km, ML3.8/3, 7C,
Error ellipse: s-maj=32.1km s-min=19.5km az=4.0,
Sumbawa region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
KEDI	**Kedomdong**	**1.37**	**296**	⇑*i*	P	Pn	16 53 59.6	-0.9
	60nm,0.2s							
KEDI	**Kedomdong**	**1.37**	**296**	⇑*e*	P	Pn	16 54 00.0	-0.5
KEDI				⇑*i*	Sn	Sn	16 54 15.0	-3.4
RATI	**Rata**	**1.84**	**281**	⇑*i*	Pn	Pn	16 54 04.9	-2.4
	42nm,0.2s							
RATI	**Rata**	**1.84**	**281**	*e*	Pg	Pg	16 54 07.6	-5.1
RATI				⇑*i*	Sn	Sn	16 54 25.6	-4.8
INGI	**Ingas**	**2.21**	**277**	⇑*i*	Pn	Pn	16 54 09.8	-2.6
	86nm,0.2s							
INGI				⇑*i*	Sn	Sn	16 54 34.5	-5.1

*NEIC **03** 16:56:13.1±2.8,30.49S×179.50W,h270km±25km, mb4.1/2,*
Error ellipse: s-maj=22.5km s-min=14.7km az=223.0
*IDC **03** 16:56:17.8±2.1,30.76S×179.56W,h315km±19km, mb3.6/8,*
mb1 3.8/10,mb1mx3.7/16,Error ellipse: s-maj=21.5km
s-min=17.2km az=0.0

ISC 03 16:56:15.9±1.6, 30.79S±0.09×179.8W±0.1, h296km±14km,
n43,σ1s27/33, mb3.8/9, 1C-2D, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**7.44**	**192**	P		**P**	**16 58 05.6**	**+2.3**
PUZ				S		**S**	**16 59 24.2**	**-3.5**
URZ	**Urewera**	**7.88**	**198**	P		**P**	**16 58 09.3**	**+0.6**
	40nm,0.3s,baz=271,slow=2.6,SNR=84							
URZ				S		**S**	**16 59 42.0**	**+4.7**
	30nm,0.3s,baz=147,slow=20,SNR=16							
KNX	**Kokohu**	**8.47**	**194**	P		**P**	**16 58 17.0**	**+1.0**
KNZ				S		**S**	**16 59 52.7**	**+2.2**
PWZ	**Pawanui**	**9.62**	**196**	P		**P**	**16 58 30.0**	**-0.1**
BFZ	**Birch Farm**	**10.38**	**197**	P		**P**	**16 58 39.4**	**-0.2**
BFZ				S		**S**	**17 00 32.1**	**-0.9**
MRZ	**Mangatainoka R**	**10.55**	**200**	P		**P**	**16 58 38.7**	**-2.9**
KIW	**Kapiti Island**	**10.94**	**202**	P		**P**	**16 58 46.3**	**-0.1**
MTW	**Mount Morrison**	**11.03**	**199**	P		**P**	**16 58 48.4**	**+0.9**
CAW	**Cannon Point**	**11.11**	**201**	P		**P**	**16 58 46.2**	**-2.3**
THZ	**Tophouse**	**12.44**	**206**	P		**P**	**16 59 05.4**	**+0.5**
KHZ	**Kahutara**	**12.78**	**203**	P		**P**	**16 59 07.3**	**-1.8**
LTZ	**Lake Taylor**	**13.55**	**206**	P		**P**	**16 59 18.2**	**-0.2**
RPZ	**Rata Peaks**	**14.81**	**207**	P		**P**	**16 59 31.8**	**-1.6**
	1.1nm,0.3s,baz=4.7,slow=11,SNR=8.3							
RPZ				S		**S**	**17 02 08.6**	**-1.8**
	1.5nm,0.3s,baz=319,slow=14,SNR=11							
CTA	**Charters Tower**	**32.37**	**281**	P		**P**	**17 02 21.1**	**+0.9**
	4.6nm,0.8s,mb4.1,baz=105,slow=12,SNR=5.0							
STKA	**Stephens Creek**	**32.91**	**258**	*e*P		**P**	**17 02 26.3**	**+1.6**
	2.6nm,0.6s,mb3.9							
STKA	**Stephens Creek**	**32.91**	**258**	P		**P**	**17 02 26.1**	**+1.4**
	3.5nm,0.8s,mb4.0,baz=83,slow=9.9,SNR=5.7							
ASAR	**Alice Springs**	**41.58**	**268**	P		**P**	**17 03 36.9**	**+0.1**
	0.8nm,0.5s,mb3.2,baz=107,slow=7.6,SNR=20							
ASAR				PcP		PcP	17 05 26.4	-2.2
	0.6nm,0.7s,baz=115,slow=3.4,SNR=4.3							
ASAR				ScP			17 08 44.5	
	1.2nm,0.8s,baz=132,slow=3.8,SNR=6.5							
WB2	**Warramunga Arr**	**42.59**	**274**	*e*P		**P**	**17 03 44.8**	**-0.2**
WRA	**Warramunga Arr**	**42.60**	**274**	P		**P**	**17 03 45.2**	**+0.1**
	1.9nm,0.3s,mb3.7,baz=112,slow=7.8,SNR=49							
WRA				ScP			17 08 49.1	
	0.4nm,0.7s,baz=97,slow=4.0,SNR=6.8							
QSPA	**South Pole Qui**	**59.32**	**180**	*e*P		**P**	**17 05 49.9**	**+1.4**
	4.3nm,0.7s,mb4.0							
USHA	**Ushuaia**	**76.44**	**146**	P		**P**	**17 07 33.7**	**-0.7**
	2.3nm,0.8s,mb3.9,baz=216,slow=17,SNR=2.4							
SNAA	**Sanae**	**77.80**	**179**	⇑*i*		**P**	**17 07 41.7**	**+0.2**
VNA3	**Neumayer Olymp**	**78.01**	**177**	⇓*i*		**P**	**17 07 44.2**	**+1.6**
VNA2	**Neumayer--Watz**	**78.42**	**177**	⇓*i*		**P**	**17 07 46.2**	**+1.3**
PLCA	**Paso Flores**	**83.34**	**134**	P		**P**	**17 08 10.6**	**-0.4**
	2.0nm,1.1s,mb3.9,baz=230,slow=17,SNR=2.9							
NVAR	**Mina Array Bea**	**89.56**	**44**	P		**P**	**17 08 40.2**	**-0.8**
	1.0nm,0.8s,mb3.7,baz=228,slow=11,SNR=4.8							
NVAR	**Mina Array Bea**	**89.56**	**44**	P		**P**	**17 08 40.2**	**-0.8**
ILAR	**Eielson Array**	**98.66**	**14**	P		**P**	**17 09 20.0**	**-2.1**
	0.2nm,0.6s,mb3.6,baz=225,slow=5.1,SNR=3.4							
MKAR	**Makanchi Array**	**116.87**	**310**	PKP		PKPdf	17 14 24.1	-1.0
	0.8nm,0.5s,baz=180,slow=2.8,SNR=14							
BVAR	**Borovoye Array**	**125.63**	**316**	PKP		PKPdf	17 14 41.1	-0.7
	2.6nm,0.7s,baz=90,slow=3.0,SNR=13							
SPITS	**Spitsbergen Ar**	**131.98**	**356**	PKP		PKPdf	17 14 54.1	+0.7
	7.5nm,0.9s,baz=270,slow=2.0,SNR=3.8							
ARCES	**ARCESS Array B**	**138.64**	**347**	PKhKP			17 14 55.9	
	1.6nm,0.7s,baz=333,slow=2.7,SNR=6.9							
ARCES				PKP		PKPdf	17 15 06.9	+1.1
	2.8nm,0.8s,baz=45,slow=1.7,SNR=8.6							
JOF	**Joensuu**	**142.21**	**337**	*e*pkp		PKPdf	17 15 07.7	-4.5
KAF	**Kangasniemi**	**144.40**	**339**	*e*pkp		PKPdf	17 15 13.9	-2.0
	baz=39,slow=3.1							
FINES	**FINESS Array B**	**144.97**	**339**	PKP		PKPdf	17 15 16.3	-0.7
	22nm,0.7s,baz=55,slow=3.8,SNR=110							
ASF	**Jabal al Asfar**	**148.80**	**282**	PKPbc		PKPdf	17 15 30.8	+6.5
	2.4nm,0.5s,baz=15,slow=4.5,SNR=5.4							
NB2	**NORSAR Subarra**	**148.89**	**350**	PKP			17 15 27.0	
	5.0nm,0.6s,baz=17,slow=2.6							
NOA	**NORSAR Array B**	**148.89**	**350**	PKPbc		PKPdf	17 15 27.1	+3.6
	4.1nm,0.6s,baz=15,slow=4.1,SNR=17							
HFS	**Hagfors**	**149.30**	**347**	PKPbc		PKPdf	17 15 27.9	+3.7
	5.0nm,0.5s,baz=90,slow=4.4,SNR=22							
HFS				PKPab		PKPab	17 15 33.5	-3.3
	2.7nm,0.5s,baz=63,slow=3.3,SNR=9.3							
AKASG	**Malin Array Be**	**150.67**	**321**	PKPbc		PKPdf	17 15 32.2	+5.8
	2.8nm,0.5s,baz=50,slow=2.3,SNR=29							
BRTR	**Keskin Array B**	**151.44**	**297**	PKPbc		PKPdf	17 15 34.2	+6.2
	4.5nm,0.6s,baz=137,slow=4.9,SNR=23							
EKA	**Eskdalemuir Ar**	**155.35**	**5**	PKPab		PKPab	17 15 58.4	-3.9
	0.8nm,0.6s,baz=342,slow=2.6,SNR=4.6							
GERES	**GERESS Array B**	**159.27**	**334**	PKPab		PKPab	17 16 17.1	-2.3
	0.2nm,0.3s,baz=14,slow=5.5,SNR=4.3							

*NNC **03** 17:31:43.7±4.0,36.48N×69.67E,h108km±44km, mpv3.7,*
Error ellipse: s-maj=32.5km s-min=24.8km az=40.0

ISC 03 17:31:37.3±1.4, 36.10N±0.08×70.1E±0.2, h100km, n18,
σ0s84/20, 3C-3D, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
AML	**Almayashu**	**6.64**	**24**	P		**P**	**17 33 14.1**	**+0.2**
	SNR=37							
KK31	**Karatay Array**	**7.00**	**3**	⇓P		**P**	**17 33 18.7**	**-0.1**
	2.6nm,0.4s,baz=187,slow=13,SNR=82							
KK31				⇑S		**S**	**17 34 33.9**	**-3.6**
	0.9nm,0.3s,baz=187,slow=23,SNR=4.4							
UCH	**Uchtor**	**7.02**	**28**	P		**P**	**17 33 19.2**	**+0.1**
	SNR=18							
EKS2	**Erkin-Say**	**7.15**	**22**	P		**P**	**17 33 20.8**	**0.0**
	SNR=11							
KZA	**Kyzart**	**7.19**	**32**	P		**P**	**17 33 21.2**	**-0.2**
	SNR=17							
AAK	**Ala-Archa**	**7.36**	**26**	P		**P**	**17 33 23.9**	**+0.2**
	SNR=16							
CHMS	**Chumysh**	**7.77**	**26**	P		**P**	**17 33 29.1**	**-0.2**
	SNR=12							
USP	**Ospenovka**	**7.92**	**24**	P		**P**	**17 33 31.3**	**-0.1**
	SNR=14							
TKM2	**Tokmak 2**	**8.03**	**30**	P		**P**	**17 33 32.6**	**-0.2**
	SNR=19							
MK31	**Makanchi Array**	**14.05**	**37**	⇑P		**P**	**17 34 55.9**	**+3.2**
	2.7nm,1.1s,baz=217,slow=12,SNR=9.7							
KOLN	**Koldanda**	**14.16**	**122**	*e*P		**P**	**17 34 53.2**	**-1.0**
	2.6nm,0.3s							
GKN	**Gorkha**	**14.74**	**119**	*e*P		**P**	**17 35 02.4**	**+0.7**
	3.8nm,0.3s							
AB31	**Akbulak array**	**15.09**	**334**	P		**P**	**17 35 06.0**	**0.0**
	1.7nm,0.5s,baz=153,slow=12,SNR=57							
AB31				⇑S		**S**	**17 37 45.5**	**-5.2**
	1.3nm,0.6s,baz=162,slow=20,SNR=6.9							
DMN	**Daman**	**15.31**	**119**	*e*P		**P**	**17 35 07.0**	**-1.9**
	2.8nm,0.3s							
KKN	**Kakani**	**15.32**	**118**	*e*P		**P**	**17 35 09.4**	**+0.3**
	6.1nm,0.6s							
GUN	**Gumba**	**15.68**	**117**	*e*P		**P**	**17 35 14.8**	**+1.2**
ZRNK	**Zerenda**	**16.86**	**358**	⇓P		**P**	**17 35 28.8**	**+0.6**
	6.1nm,1.9s							
BVA0	**Borovoye

LSA	**Lhasa**	**16.67**	**354**	*e*Pn		**P**	**17 45 17.9**	**-2.7**
	comp=Z,54nm,1.0s								
LSA				*e*Sn		**S**	**17 48 25.9**	**+2.0**
LATR	**Latur**	**16.87**	**291**	*e*P		**P**	**17 45 22.2**	**-0.9**
LATR				*e*			17 56 54.6		
GKN	**Gorkha**	**16.88**	**333**	*e*P		**P**	**17 45 20.6**	**-2.6**
	comp=Z,308nm,0.7s								
QIZ	**Qiongzhong**	**17.07**	**67**	⇑*i*P		**P**	**17 45 26.3**	**+0.7**
QIZ					PP	PP	17 45 41.7	+1.8	
QIZ					S	**S**	**17 48 39.9**	**+7.0**	
QIZ					PCP	PcP	17 50 08.4	-2.3	
QIZ					AMB	AMB			
	comp=Z,687nm,8.8s								
QIZ					LR	LR			
	comp=N,4μm,17.0s								
QIZ					LR	LR			
	comp=E,3μm,18.5s								
QIZ					LR	LR			
	comp=Z,4μm,20.5s								
QIZ	**Qiongzhong**	**17.07**	**67**	*e*P		**P**	**17 45 27.1**	**+1.4**	
	comp=Z,123nm,1.4s								
KOLN	**Koldanda**	**17.17**	**330**	*e*P		**P**	**17 45 26.1**	**-0.7**	
	comp=Z,241nm,0.6s								
AKL	**Akola**	**17.24**	**298**	⇑*i*P		**P**	**17 45 29.3**	**+1.6**	
AKL				⇑*i*			17 48 22.7		
DANN	**Dangsing**	**17.58**	**331**	*e*P		**P**	**17 45 30.6**	**-1.3**	
BHPL	**Bhopal**	**18.07**	**306**	*e*P		**P**	**17 45 38.2**	**+0.1**	
BHPL				*e*			17 48 49.8		
GYA	**Guiyang**	**18.38**	**41**	⇑*i*P		**P**	**17 45 42.6**	**+0.5**	
GYA					AP		17 45 48.0		
GYA					XP		17 45 49.6		
GYA					PP	PP	17 46 01.2	+3.8	
GYA					S	**S**	**17 49 12.2**	**+10**	
GYA					SCP		17 53 46.7		
GYA					AMB	AMB			
	comp=Z,90nm,1.0s								
GYA					AMB	AMB			
	comp=Z,720nm,4.2s								
GYA					LR	LR			
	comp=N,3μm,15.2s								
GYA					LR	LR			
	comp=E,2μm,12.4s								
GYA					LR	LR			
	comp=Z,4μm,15.0s								
JHNI	**Jhansi**	**18.52**	**314**	⇓*i*		PcP	17 50 41.0	+28	
JHNI				*e*			17 54 40.0		
KAD	**Karad**	**18.82**	**285**	*e*P		**P**	**17 45 47.8**	**+0.3**	
KAD				*e*			17 45 51.9		
	comp=Z,222nm,1.7s								
KAD				*e*			17 49 04.2		
GOA	**Goa**	**18.92**	**280**	⇑*e*P		**P**	**17 45 49.0**	**+0.3**	
GOA				*e*			17 49 07.8		
POO	**Poona**	**19.39**	**289**	*e*P		**P**	**17 45 54.2**	**+0.4**	
POO				*e*			17 45 57.7		
	comp=Z,218nm,1.7s								
CD2	**Chengdu**	**20.27**	**27**	P		**P**	**17 46 02.1**	**-1.2**	
CD2				S		**S**	**17 49 47.0**	**+3.1**	
CD2				AMB	AMB				
	comp=Z,240nm,1.3s								
CD2				AMB	AMB				
	comp=Z,570nm,9.1s								
CD2				LR	LR				
	comp=N,3μm,14.1s								
CD2				LR	LR				
	comp=Z,3μm,18.5s,MS4.6								
BOM	**Bombay**	**20.43**	**289**	*e*P		**P**	**17 46 07.1**	**+2.1**	
BOM				*e*			17 49 31.1		
NDI	**New Delhi**	**21.52**	**319**	*e*P		**P**	**17 46 15.0**	**-1.1**	
NDI				*e*			17 50 03.0		
GZH	**Guangzhou**	**21.58**	**60**	P		**P**	**17 46 21.3**	**+4.6**	
GZH				LR	LR				
	comp=E,4μm,15.9s								
GZH				LR	LR				
	comp=Z,5μm,7.8s								
ENH	**Enshi**	**22.82**	**39**	*e*P		**P**	**17 46 28.5**	**-0.6**	
	comp=Z,714nm,1.0s,mb6.0								
ENH				*e*PcP		PcP	17 50 20.4	-0.7	
KKM	**Kota Kinabalu**	**23.74**	**105**	⇓*e*P		**P**	**17 46 39.9**	**+1.7**	
LZH	**Lanzhou**	**24.86**	**21**	⇑⇑P		**P**	**17 46 49.9**	**+1.0**	
LZH					AP		17 46 57.2		
LZH					XP		17 47 00.4		
LZH					PP	PP	17 47 27.7	+1.5	
LZH					S	**S**	**17 51 10.0**	**+3.0**	
LZH					AMB	AMB			
	comp=Z,333nm,1.5s,mb5.7								
LZH					AMB	AMB			
	comp=Z,1μm,4.0s								
LZH					LR	LR			
	comp=N,2μm,14.3s								
LZH					LR	LR			
	comp=Z,5μm,18.0s,MS5.1								
XAN	**Xi'an**	**25.32**	**32**	P		**P**	**17 46 51.9**	**-1.4**	
XAN					AP	pP	17 46 59.1	-3.5	
XAN					S	**S**	**17 51 12.8**	**-1.8**	
XAN					AMB	AMB			
	comp=Z,200nm,1.1s,mb5.6								
XAN					AMB	AMB			
	comp=Z,422nm,10.1s								
XAN					LR	LR			
	comp=N,1μm,18.3s,MS4.8								
XAN					LR	LR			
	comp=E,2μm,15.5s,MS4.8								
XAN					LR	LR			
	comp=Z,2μm,19.2s,MS4.7								
WHN	**Wuhan**	**26.17**	**45**	⇓P		**P**	**17 47 00.5**	**-0.7**	
QZH	**Quanzhou**	**26.72**	**60**	P		**P**	**17 47 06.9**	**+0.6**	
QZH				AMB	AMB				
	comp=Z,120nm,1.1s,mb5.3								
QZH				LR	LR				
	comp=N,4μm,15.2s,MS5.2								
QZH				LR	LR				
	comp=E,4μm,15.8s,MS5.2								
QZH				LR	LR				
	comp=Z,8μm,18.5s,MS5.3								
GTA	**Gaotai**	**26.90**	**11**	⇑*i*P		**P**	**17 47 08.7**	**+0.8**	
GTA					AP	pP	17 47 16.0	-1.3	
GTA					XP	sP	17 47 19.2	-2.2	
GTA					PP	PP	17 47 53.8	+0.2	
GTA					PCP	PcP	17 50 30.5	+0.6	
GTA					S	**S**	**17 51 43.3**	**+2.8**	
GTA					XS		17 51 54.9		
GTA					SS	SS	17 52 58.8	+4.2	
GTA					SCP		17 54 09.1		
GTA					PCS		17 54 11.7		
GTA					SCS	ScS	17 57 58.0	+2.3	
GTA					AMB	AMB			
	comp=Z,106nm,1.1s,mb5.3								
GTA					AMB	AMB			
	comp=Z,554nm,9.5s								
GTA					LR	LR			
	comp=N,785nm,19.4s								
GTA					LR	LR			
	comp=E,523nm,13.3s								
TGY	**Tagaytay City**	**26.99**	**85**	LR		LR	17 57 54.9		
	comp=E,2μm,18.4s,MS4.8,baz=89,slow=37								
TATO	**Taipei**	**29.20**	**62**	PFAKE			17 47 40.0	+11	
TATO				LR		LR			
	comp=Z,2μm,20.0s,MS4.7								
QUE	**Quetta**	**29.65**	**309**	*e*P		**P**	**17 47 34.5**	**+1.9**	
TIY	**Taiyuan**	**29.96**	**32**	*e*P		**P**	**17 47 35.0**	**-0.4**	
TIY				LR		LR			
	comp=N,1μm,13.0s								
TIY				LR		LR			
	comp=Z,2μm,13.0s,MS5.0								
NJ2	**Nanjing**	**30.19**	**47**	*e*P		**P**	**17 47 35.1**	**-2.3**	
NJ2					AP	pP	17 47 44.5	-2.5	
NJ2					XP	sP	17 47 48.9	-2.5	
NJ2					PP	PP	17 48 33.8	-2.7	
NJ2					S	**S**	**17 52 26.0**	**-7.2**	
NJ2					AMB	AMB			
	comp=Z,962nm,6.0s								
NJ2					LR	LR			
	comp=Z,3μm,24.0s,MS4.9								
KSH	**Kashi**	**30.43**	**333**	*e*P		**P**	**17 47 39.1**	**-0.4**	
KSH				*e*AP		pP	17 47 46.0	-3.1	
KSH				*e*XP		sP	17 47 49.6	-3.9	
KSH				*e*PP		PP	17 48 38.1	-1.5	
KSH				*e*PCP		PcP	17 50 39.4	+0.7	
KSH				*e*S		**S**	**17 52 36.5**	**-0.4**	
KSH				*e*XS			17 52 47.5		
KSH				*e*SS		SS	17 54 14.3	-3.6	
KSH				*e*SCP			17 54 19.2		
KSH				*e*SCS		ScS	17 58 13.6	+1.7	
KSH				AMB		AMB			
	comp=Z,60nm,1.2s,mb5.2								
KSH				AMB		AMB			
	comp=Z,280nm,4.4s								
KSH				LR		LR			
	comp=N,4μm,14.3s,MS5.3								
KSH				LR		LR			
	comp=E,4μm,15.2s,MS5.3								
WMQ	**Urumqi**	**31.02**	**352**	P		P	**17 47 45.4**	**+0.7**	
WMQ				AP		pP	17 47 54.9	+0.6	
WMQ				XP		sP	17 47 58.9	+0.2	
WMQ				PP		PP	17 48 48.4	+1.2	
WMQ				PCP		PcP	17 50 40.4	+0.2	
WMQ				S		**S**	**17 52 47.5**	**+1.3**	
WMQ				XS			17 53 03.4		
WMQ				SCP			17 54 19.4		
WMQ				PCS			17 54 23.4		
WMQ				SS		SS	17 54 33.3	+1.8	
WMQ				SCS		ScS	17 58 15.1	+0.4	
WMQ				AMB		AMB			
	comp=Z,40nm,0.8s,mb5.3								
WMQ				AMB		AMB			
	comp=Z,348nm,5.4s								
WMQ				LR		LR			
	comp=N,3μm,16.2s,MS5.2								
WMQ				LR		LR			
	comp=E,3μm,17.3s,MS5.2								
WMQ				LR		LR			
	comp=Z,5μm,18.2s,MS5.2								
BTO	**Baotou**	**31.17**	**25**	*e*P		**P**	**17 47 45.4**	**-0.7**	
BTO				AMB		AMB			
	comp=Z,154nm,1.1s,mb5.8								
SSE	**Sheshan**	**31.41**	**51**	P		**P**	**17 47 48.6**	**+0.3**	
SSE				S		**S**	**17 52 59.0**	**+6.6**	
SSE				AMB		AMB			
	comp=Z,44nm,0.8s,mb5.3								
SSE				LR		LR			
	comp=N,547nm,15.0s,MS4.8								
SSE				LR		LR			
	comp=E,1μm,15.0s,MS4.8								
SSE				LR		LR			
	comp=Z,2μm,16.0s,MS4.9								
TIA	**Tai'an**	**31.54**	**39**	*e*P		**P**	**17 47 48.1**	**-1.2**	
TIA				AMB		AMB			
	comp=Z,52nm,1.5s,mb5.1								
HHC	**Hu-ho-hao-te**	**32.03**	**27**	⇑P		**P**	**17 47 53.7**	**+0.1**	
HHC				AP		pP	17 48 03.1	-0.2	
HHC				XP		sP	17 48 07.2	-0.4	
HHC				PP		PP	17 49 01.4	+1.1	
HHC				PCP		PcP	17 50 41.8	-1.1	
HHC				S		**S**	**17 53 03.4**	**+1.4**	
HHC				XS			17 53 18.8		
HHC				PCS			17 54 24.5		
HHC				SS		SS	17 54 55.8	+0.2	
HHC				SCS		ScS	17 58 18.9	-0.9	
HHC				AMB		AMB			
	comp=Z,82nm,1.2s,mb5.4								
HHC				AMB		AMB			
	comp=Z,207nm,2.9s,mb5.5								
HHC				LR		LR			
	comp=N,799nm,13.9s,MS4.8								
HHC				LR		LR			
	comp=E,1μm,14.3s,MS4.8								
KZA	**Kyzart**	**32.86**	**335**	P		**P**	**17 48 01.6**	**+0.8**	
	SNR=22								
UCH	**Uchtor**	**33.29**	**334**	P		**P**	**17 48 05.3**	**+0.8**	
	SNR=12								
TKM2	**Tokmak 2**	**33.42**	**336**	P		**P**	**17 48 06.2**	**+0.5**	
	SNR=14								
AML	**Almayashu**	**33.56**	**333**	P		**P**	**17 48 07.8**	**+0.9**	
	SNR=32								
BJT	**Baijiatuau**	**33.62**	**33**	*e*P		**P**	**17 48 07.1**	**-0.3**	
	comp=E,91nm,1.4s,mb5.5								
AAK	**Ala-Archa**	**33.63**	**335**	P		**P**	**17 48 08.6**	**+1.1**	
	SNR=22								
BJI	**Beijing**	**33.64**	**33**	P		**P**	**17 48 07.5**	**-0.1**	
BJI				AP		pP	17 48 13.7	-3.5	
BJI				XP		sP	17 48 16.3	-5.3	
BJI				S		**S**	**17 53 25.0**	**-2.1**	
BJI				XS			17 53 38.2		
BJI				AMB		AMB			
	comp=Z,51nm,1.4s,mb5.3								
BJI				AMB		AMB			
	comp=Z,776nm,4.6s								
BJI				LR		LR			
	comp=N,2μm,17.2s,MS5.0								
BJI				LR		LR			
	comp=E,2μm,18.2s,MS5.0								
BJI				LR		LR			
	comp=Z,2μm,22.3s,MS4.8								
FRU	**Bishkek**	**33.74**	**335**	⇑*e*P		**P**	**17 48 08.0**	**-0.4**	
FRU				*e*			17 48 26.0		
FRU				pmax		pmax			
	comp=Z,150nm,2.1s,mb5.5								
FRU				MLR		MLR			
	comp=Z,4μm,21.0s,MS5.1								
CHMS	**Chumysh**	**33.83**	**335**	P		**P**	**17 48 09.0**	**-0.1**	
	SNR=14								
EKS2	**Erkin-Say**	**33.95**	**334**	P		**P**	**17 48 11.3**	**+1.1**	
	SNR=22								
USP	**Ospenovka**	**34.15**	**335**	P		**P**	**17 48 12.4**	**+0.5**	
	SNR=41								
MKAR	**Makanchi Array**	**34.86**	**347**	P		**P**	**17 48 17.9**	**-0.1**	
	comp=Z,53nm,0.9s,mb5.5,baz=162,slow=8.2,SNR=167								
MKAR				ScP			17 54 34.4		
	comp=Z,3.8nm,0.9s,baz=158,slow=6.5,SNR=6.6								
MKAR				LR		LR	18 05 56.4		
	comp=Z,2μm,21.3s,MS4.7,baz=165,slow=42								
MKAR	**Makanchi Array**	**34.86**	**347**	*i* P		**P**	**17 48 17.7**	**-0.3**	
MKAR				pmax		pmax			
	comp=Z,64nm,1.0s								
JOW	**Kunigami**	**35.58**	**62**	P		**P**	**17 48 24.3**	**-0.1**	
	comp=Z,18nm,0.5s,mb5.2,baz=249,slow=24,SNR=18								
JOW				LR		LR	18 03 56.5		
	comp=Z,3μm,21.2s,MS5.0,baz=286,slow=38								
KKAR	**Karatay Array**	**35.77**	**331**	*i* P		**P**	**17 48 25.8**	**0.0**	
KKAR				pmax		pmax			
	comp=Z,16nm,0.8s,mb5.0								
DL2	**Dalian**	**36.01**	**39**	⇑P		**P**	**17 48 28.5**	**+0.7**	
DL2				S		**S**	**17 54 01.7**	**-2.0**	
DL2				AMB		AMB			
	comp=Z,70nm,1.1s,mb5.5								
DL2				LR		LR			
	comp=N,1μm,14.7s,MS4.9								
DL2				LR		LR			
	comp=E,1μm,15.3s,MS4.9								
DL2				LR		LR			
	comp=Z,2μm,14.9s,MS4.9								
SONM	**Songino Array**	**36.39**	**15**	P		**P**	**17 48 31.4**	**+0.4**	
	comp=Z,38nm,1.0s,mb5.3,baz=198,slow=7.8,SNR=110								
SONM				pP		pP	17 48 39.6	-1.1	
	comp=Z,26nm,1.0s,baz=207,slow=8.3,SNR=8.1								
SONM				PcP		PcP	17 50 54.9	-0.3	
	comp=Z,7.9nm,0.9s,baz=214,slow=4.5,SNR=4.1								
SONM				pPcP			17 51 05.6		
	comp=Z,11nm,0.9s,baz=194,slow=5.1,SNR=4.7								
SONM				ScP			17 54 39.7		
	comp=Z,6.1nm,1.0s,baz=207,slow=2.8,SNR=9.7								
ULN	**Ulaanbaatar**	**36.59**	**16**	*e*P		**P**	**17 48 32.5**	**-0.1**	
	comp=Z,54nm,1.3s,mb5.2								
ULN				LR		LR			
	comp=Z,3μm,20.0s,MS5.0								
ZAK	**Zakamensk**	**38.13**	**10**	*e*P		**P**	**17 48 44.9**	**-0.6**	
INCN	**Inchon**	**38.48**	**45**	*e*P		**P**	**17 48 47.5**	**-1.1**	
	comp=Z,49nm,0.9s,mb5.2								
INCN				LR		LR			
	comp=Z,3μm,19.0s,MS5.2								
SNY	**Shenyang**	**38.98**	**37**	⇑P		**P**	**17 48 52.4**	**-0.3**	
SNY				AMB		AMB			
	comp=Z,60nm,1.7s,mb5.0								
MOY	**Mondy**	**39.03**	**8**	*e*P		**P**	**17 48 54.2**	**+1.2**	
KS15	**Wonju Array Si**	**39.33**	**46**	*e*P		**P**	**17 48 55.2**	**-0.4**	
KURK	**Kurchatov**	**39.39**	**345**	*i* P		**P**	**17 48 56.2**	**+0.2**	
KURK				pmax		pmax			
	comp=Z,52nm,1.2s,mb5.1								
KURK	**Kurchatov**	**39.39**	**345**	*e*P		**P**	**17 48 56.0**	**-0.1**	
TLY	**Talaya**	**39.44**	**10**	⇑*i*P		**P**	**17 48 57.6**	**+1.2**	
TLY				*e*			17 51 05.5		
TLY				*e*S		**S**	**17 54 55.8**	**-0.1**	
TLY				pmax		pmax			
	comp=Z,457nm,1.0s,mb6.2								
TLY				MLR		MLR			
	comp=Z,15μm,21.0s,MS5.8								
JNU	**Nakatsue**	**39.72**	**53**	P		**P**	**17 48 59.7**	**+0.8**	
	comp=Z,36nm,1.1s,mb5.0,baz=8.7,slow=4.7,SNR=5.0								
IRK	**Irkutsk**	**40.09**	**11**	*e*P		**P**	**17 49 02.4**	**+0.6**	
IRK				*e*			17 50 39.7		
CN2	**Changchun**	**41.28**	**36**	*e*P		**P**	**17 49 11.8**	**+0.1**	
CN2				*e*AP		pP	17 49 21.5	-0.1	
CN2				PP		PP	17 50 46.3	-3.7	
CN2				PCP		PcP	17 51 09.7	-1.0	
CN2				SCP			17 54 57.4		
CN2				*e*S		**S**	**17 55 24.6**	**+1.2**	
CN2				SS		SS	17 58 24.3	+1.5	
CN2				LR		LR			
	comp=N,2μm,15.0s,MS5.3								
CN2				LR		LR			
	comp=E,2μm,15.0s,MS5.3								
CN2				LR		LR			
	comp=Z,3μm,15.0s,MS5.2								
ZAL	**Zalesovo**	**41.32**	**352**	P		**P**	**17 49 11.8**	**-0.2**	
	comp=Z,27nm,0.9s,mb4.9,baz=210,slow=7.5,SNR=118								
ZAL				ScP			17 54 57.1		
	comp=Z,1.3nm,0.8s,baz=101,slow=9.7,SNR=6.7								
ZAL	**Zalesovo**	**41.32**	**352**	*i* P		**P**	**17 49 12.1**	**+0.1**	
ZAL				pmax		pmax			
	comp=Z,27nm,0.9s								
HIA	**Hailar**	**42.22**	**26**	*e*P		**P**	**17 49 19.2**	**-0.2**	
	comp=Z,64nm,1.2s,mb5.1								
HIA				*e*ScP			17 55 01.8		
NVS	**Novosibirsk**	**42.42**	**351**	*i* P		**P**	**17 49 19.6**	**-1.3**	
NVS				*i* S		**S**	**17 55 31.3**	**-8.7**	
NVS				pmax		pmax			
	comp=N,27nm,1.0s								
NVS				pmax		pmax			
	comp=E,11nm,1.0s								
NVS				pmax		pmax			
	comp=Z,42nm,1.0s,mb5.0								
NVS				smax					
	comp=N,26nm,1.6s								
NVS				smax					
	comp=E,23nm,1.6s								
VOSK	**Vostochnaya**	**43.38**	**340**	P		**P**	**17 49 28.6**	**-0.2**	
VOSK				pmax		pmax			
	comp=Z,61nm,1.1s,mb5.2								
BVAR	**Borovoye Array**	**43.82**	**340**	P		**P**	**17 49 32.0**	**-0.4**	
	comp=Z,54nm,1.1s,mb5.2,baz=149,slow=8.6,SNR=95								
BRVK	**Borovoye**	**43.89**	**340**	*e*P		**P**	**17 49 32.3**	**-0.6**	
MDJ	**Mudanjiang**	**44.17**	**37**	P		**P**	**17 49 35.2**	**-0.1**	
MDJ				AP		pP	17 49 40.5	-4.7	
MDJ				XP		sP	17 49 44.4	-4.9	
MDJ				PCP		PcP	17 51 17.6	-2.7	
MDJ				PP		PP	17 51 19.1	-0.6	
MDJ				SCP			17 55 08.2		
MDJ				PCS			17 55 11.0		
MDJ				S		**S**	**17 56 11.1**	**+5.3**	
MDJ				XS			17 56 21.3		
MDJ				SCS		ScS	17 59 30.6	+1.9	
MDJ				AMB		AMB			
	comp=Z,208nm,4.6s								
MDJ				LR		LR			
	comp=N,888nm,17.7s,MS4.9								
MDJ				LR		LR			
	comp=E,1μm,16.9s,MS4.9								
MDJ				LR		LR			
	comp=Z,1μm,16.1s,MS4.9								
ZRNK	**Zerenda**	**44.23**	**339**	*e*P		**P**	**17 49 35.0**	**-0.7**	
FITZ	**Fitzroy Crossi**	**44.53**	**133**	*e*P		**P**	**17 49 36.0**	**-2.5**	
	comp=Z,11nm,0.4s,mb5.0								
FITZ				*e*			17 51 21.4		
FITZ	**Fitzroy Crossi**	**44.53**	**133**	P		**P**	**17 49 37.5**	**-1.1**	
	comp=Z,13nm,0.4s,mb5.1,baz=349,slow=6.7,SNR=100								
AB31	**Akbulak array**	**45.29**	**330**	*i* P		**P**	**17 49 44.5**	**+0.3**	
AB31				pmax		pmax			
	comp=Z,68nm,1.1s,mb5.4								
MAJO	**Matsushiro**	**46.55**	**52**	*e*P		**P**	**17 49 53.5**	**-0.8**	
	comp=Z,75nm,1.3s,mb5.5								
MAJO				LR		LR			
	comp=Z,2μm,19.0s,MS5.1								
MAT	**Matsushiro**	**46.55**	**52**	P		**P**	**17 49 53.4**	**-0.9**	
MAT				S			17 56 51.0		
MAT	**Matsushiro**	**46.55**	**52**	*e*P		**P**	**17 49 53.0**	**-1.3**	
	comp=Z,60nm,1.1s,mb5.4								
MAT				*e*S			17 56 52.0		
MAT				LR		LR			
	comp=Z,2μm,18.0s,MS5.2								
MZLS	**Mizel**	**46.58**	**291**	P		**P**	**17 49 55.6**	**+0.8**	
KAMS	**Al Khamasin**	**46.98**	**286**	P		**P**	**17 49 58.4**	**+0.4**	
BOD	**Bodaibo**	**47.39**	**15**	⇑*i*P		**P**	**17 49 59.9**	**-0.7**	
ARSS	**Ar Rass**	**48.53**	**293**	P		**P**	**17 50 09.9**	**-0.1**	
AFFS	**'Afif**	**48.59**	**290**	P		**P**	**17 50 11.5**	**+1.0**	
MUN	**Mundaring**	**49.91**	**154**	*e*P		**P**	**17 50 19.7**	**-0.8**	
	comp=Z,9.4nm,0.8s,mb4.9								
MUN				*e*		pP	17 50 29.9	-0.5	
HILS	**Ha'il**	**49.96**	**295**	P		**P**	**17 50 21.8**	**+0.8**	
CLNS	**Chul'man**	**49.97**	**22**	⇑*i*P		**P**	**17 50 20.7**	**0.0**	
CLNS				*e*			17 52 18.5		
CLNS				pmax		pmax			
	comp=N,10.0nm,0.9s								
CLNS				pmax		pmax			
	comp=Z,20nm,0.9s,mb5.2								
CLNS				pmax		pmax			
	comp=E,10.0nm,0.8s								
CLNS				pmax		pmax			
	comp=Z,10.0nm,1.2s,mb4.7								
CLNS				pmax		pmax			
	comp=N,10.0nm,1.0s								
CLNS				pmax		pmax			
	comp=E,10.0nm,1.1s								
CLNS				MLR		MLR			
	comp=N,600nm,13.0s,MS4.9								
CLNS				MLR		MLR			
	comp=Z,1μm,13.0s,MS5.1								
CLNS				MLR		MLR			
	comp=E,500nm,14.0s,MS4.9								
GNI	**Garni**	**50.24**	**312**	*e*P		**P**	**17 50 24.4**	**+1.5**	
GNI				pmax		pmax			
	comp=Z,184nm,1.3s								
GNI				MLR		MLR			
	comp=Z,1μm,19.0s								
GNI	**Garni**	**50.24**	**312**	*e*P		**P**	**17 50 24.4**	**+1.5**	
	comp=Z,114nm,1.3s,mb5.7								
GNI				LR		LR			
	comp=Z,1μm,20.0s,MS4.9								
KLBR	**Kellerberrin**	**50.26**	**153**	*e*P		**P**	**17 50 21.9**	**-1.3**	
	comp=Z,26nm,1.2s,mb5.1								
KLBR				*e*		pP	17 50 31.9	-1.2	
SVE	**Sverdlovsk**	**50.28**	**337**	⇑*i*P		**P**	**17 50 23.0**	**0.0**	
SVE				*e*			18 00 11.0		
SVE				pmax		pmax			
	comp=Z,180nm,1.2s,mb6.0								
SVE				MLR		MLR			
	comp=N,600nm,16.0s,MS5.0								
SVE				MLR		MLR			
	comp=E,1μm,16.0s,MS5.0								
SVE				MLR		MLR			
	comp=Z,2μm,16.0s,MS5.1								
ARU	**Arti**	**50.80**	**336**	*e*P		**P**	**17 50 25.8**	**-1.1**	
ARU				pmax		pmax			
	comp=Z,68nm,1.2s,mb5.5								
ARU				MLR		MLR			
	comp=Z,2μm,22.0s,MS5.0								
ARU	**Arti**	**50.80**	**336**	*e*P		**P**	**17 50 25.8**	**-1.2**	
	comp=Z,68nm,1.2s,mb5.5								
ARU				LR		LR			
	comp=Z,2μm,22.0s,MS5.0								
NWAO	**Narrogin (SRO)**	**51.17**	**154**	*e*P		**P**	**17 50 28.3**	**-1.8**	
	comp=Z,30nm,1.3s,mb5.1								
NWAO				LR		LR			
	comp=Z,449nm,21.0s,MS4.5								
ZEI	**Tsey**	**51.70**	**315**	*e*P		**P**	**17 50 36.0**	**+2.

ERZM Erzurum 52.65 310 *i* P **P** **17 50 42.4 +1.3**
EZM Erzurum 52.75 310 *i* P **P** **17 50 42.9 +1.1**
KIV Kislovodsk 52.93 316α *i* P **P** **17 50 43.6 +0.5**
KIV *e* 17 50 50.0
KIV *i* S **S** **17 58 16.3 +7.9**
KIV pmax pmax
comp=Z,55nm,1.0s,mb5.4
KIV MLR MLR
comp=Z,1μm,19.0s,MS4.9
KIV Kislovodsk 52.93 316 *e* P **P** **17 50 43.4 +0.3**
comp=Z,77nm,1.0s,mb5.6
KIV LR LR
comp=Z,1μm,19.0s,MS4.9
GOF Gofitskoye 53.07 317⇓ *i* P **P** **17 50 44.0 -0.2**
GOF *e* 17 58 10.0
GOF pmax pmax
comp=Z,60nm,1.1s,mb5.4
GOF MLR MLR
comp=N,1μm,18.0s,MS5.3
GOF MLR MLR
comp=E,2μm,18.0s,MS5.3
GOF MLR MLR
comp=Z,2μm,18.0s,MS5.1
YSS Yuzh-Sakhalins 53.38 41⇓ *e* P **P** **17 50 46.0 -0.5**
YSS *e* 17 50 52.2
YSS MLR MLR
comp=N,2μm,15.0s,MS5.3
YSS MLR MLR
comp=E,1μm,15.0s,MS5.3
YSS MLR MLR
comp=Z,2μm,15.0s,MS5.2
YSS Yuzh-Sakhalins 53.38 41 *e* P **P** **17 50 45.8 -0.7**
comp=Z,76nm,1.0s,mb5.6
YSS LR LR
comp=Z,1μm,19.0s,MS4.9
EZC Erzincan 53.76 310 *i* P **P** **17 50 53.1 +3.7**
ASAR Alice Springs 54.01 132 P **P** **17 50 49.7 -1.7**
comp=Z,8.7nm,0.7s,mb4.8,baz=310,slow=6.8,SNR=100
ASAR PcP PcP 17 51 54.8 -1.4
comp=Z,12nm,0.9s,baz=311,slow=4.0,SNR=10.0
ASAR ScP 17 55 49.8
comp=Z,2.3nm,0.8s,baz=299,slow=4.5,SNR=6.2
ASAR S **S** **17 58 21.1 -2.3**
comp=Z,2.3nm,1.1s,baz=299,slow=14,SNR=5.9
ASAR LR LR 18 16 53.9
comp=Z,453nm,19.9s,MS4.5,baz=301,slow=39
ELZG Elazig 54.10 308 *i* P **P** **17 50 52.2 +0.3**
MYA Malataya 54.49 308 P **P** **17 50 55.4 +0.6**
TBKS Tabuk 54.66 295 P **P** **17 50 57.2 +1.1**
GZT Gaziantep 54.97 307 *i* P **P** **17 50 57.8 -0.4**
GAZ Gaziantep 55.21 306 P **P** **17 51 00.7 +0.7**
JMQS Jabal Moqyreh 55.29 296 P **P** **17 51 01.1 +0.5**
YAK Yakutsk 55.44 20c *i* P **P** **17 50 59.6 -1.7**
YAK *e* 17 52 59.5
YAK *e* PS Px 17 58 39.3
YAK *e* ScS 18 00 43.3 -1.0
YAK pmax pmax
comp=Z,10.0nm,1.0s,mb4.8
YAK pmax pmax
comp=N,10.0nm,1.2s
YAK pmax pmax
comp=E,8.0nm,1.2s
YAK pmax pmax
comp=Z,4.0nm,0.9s,mb4.5
YAK pmax pmax
comp=E,6.0nm,1.1s
YAK smax
comp=N,2.0nm,1.2s
YAK smax
comp=E,2.0nm,1.2s
YAK MLR MLR
comp=Z,300nm,11.0s,MS4.6
YAK MLR MLR
comp=N,380nm,15.0s,MS4.7
YAK MLR MLR
comp=E,190nm,14.0s,MS4.7
YAK Yakutsk 55.44 20 *e* P **P** **17 50 59.1 -2.2**
comp=E,39nm,0.9s,mb5.4
YAK LR LR
comp=Z,1μm,19.0s,MS4.9
COBT Iskenderun 55.86 305 *i* P **P** **17 51 03.8 -0.8**
SVSK Karacayir 55.91 310 *e* P **P** **17 51 05.3 +0.3**
BDAS Al Bad' 55.95 296 P **P** **17 51 05.3 -0.1**
TOKT Tokat 56.34 310 *e* P **P** **17 51 08.5 +0.5**
CEYT Ceyhan 56.34 306 *i* P **P** **17 51 08.5 +0.4**
ANN Anapa 56.77 315 *e* P **P** **17 51 06.6 -4.5**
ANN pmax pmax
comp=Z,20nm,1.3s,mb5.0
YOZ Yozgat 57.13 309 P **P** **17 51 12.9 -0.8**
KMBO Kilima Mbogo 57.23 260 P **P** **17 51 14.2 -0.5**
comp=Z,1.6nm,0.5s,mb4.3,baz=41,slow=20,SNR=4.0
KMBO Kilima Mbogo 57.23 260 *e* P **P** **17 51 13.9 -0.9**
KMBO LR LR
comp=Z,1μm,20.0s,MS5.0
AVNT Avonos 57.33 308 *i* P **P** **17 51 14.2 -0.9**
NIG Nigde 57.41 307 *e* P **P** **17 51 14.8 -0.9**
CTKT Corum 57.71 310 *i* P **P** **17 51 19.9 +2.2**
VOR Voronezh 57.86 324 *e* P **P** **17 51 18.0 -0.6**
VOR *e** PP pP 17 51 26.0 -2.8
VOR pmax pmax
comp=N,30nm,1.2s
VOR pmax pmax
comp=Z,90nm,1.2s,mb5.7
VOR pmax pmax
comp=E,50nm,1.3s
CSS Prodhromos 58.00 303 P **P** **17 51 17.8 -2.1**
PMG Port Moresby 58.05 110 PFAKE 17 51 30.0 +10
PMG LR LR
comp=Z,441nm,21.0s,MS4.5
KAMT Kaman 58.30 308 *i* P **P** **17 51 21.2 -0.7**
TOS Tosya 58.36 310 *e* P **P** **17 51 22.8 +0.5**
BRTR Keskin Array B 58.42 309 P **P** **17 51 21.7 -1.0**
comp=Z,14nm,0.8s,mb5.0,baz=121,slow=7.2,SNR=86
BRTR LR LR 18 20 11.6
comp=Z,842nm,19.6s,MS4.9,baz=205,slow=40
BZK Bozkurt 58.55 311 P **P** **17 51 23.4 -0.2**
CANT Cankiri 58.58 310 P **P** **17 51 24.1 +0.2**
ELDT Eldivan 58.71 310 *i* P **P** **17 51 24.2 -0.5**
ANTO Ankara 59.08 309 *e* P **P** **17 51 25.7 -1.7**
SIM Simferopol' 59.09 315c *i* P **P** **17 51 27.0 -0.4**
SIM *i* S **S** **17 59 32.0 +1.6**
SIM pmax pmax
comp=Z,30nm,1.1s,mb5.2
SIM MLR MLR
comp=Z,710nm,21.4s,MS4.8
SAFT Safranbolu 59.39 310 P **P** **17 51 28.6 -0.9**
KIZT Kizilcal 59.64 307 P **P** **17 51 29.6 -1.7**
MOS Moscow 60.22 327 *e* P **P** **17 51 32.5 -2.5**
MOS *e* 17 53 50.9
MOS *e* S **S** **17 59 48.7 +3.9**
MOS *e* PS PS 17 59 55.5 -9.1
MOS *e* SS SS 18 03 40.4 -2.8
MOS *e* SSS SSS 18 06 20.1 +3.6
MOS pmax pmax
comp=Z,180nm,1.1s,mb6.0
ESKT Eskisehir 60.52 308 *i* P **P** **17 51 36.2 -1.1**
OBN Obninsk 60.55 327α *i* P **P** **17 51 36.2 -1.0**
OBN *i** PP pP 17 51 46.7 -0.6
OBN *e* 17 51 52.4
OBN 17 52 20.0
OBN *e* 17 53 54.0
OBN *e* S **S** **17 59 55.1 +6.1**
OBN pmax pmax
comp=Z,63nm,1.2s,mb5.6
OBN MLR MLR
comp=Z,1μm,18.0s,MS5.0
OBN Obninsk 60.55 327 *e* P **P** **17 51 35.8 -1.4**
comp=Z,100nm,1.5s,mb5.7
OBN LR LR
comp=Z,1μm,19.0s,MS5.0
HENT Hendek 60.66 310 *i* P **P** **17 51 36.2 -2.0**
ELL Elmali 60.95 305 *i* P **P** **17 51 39.7 -0.5**
CTA Charters Tower 61.72 121 *e* P **P** **17 51 44.6 -1.0**
comp=Z,12nm,1.6s,mb4.8
CTA Charters Tower 61.72 121 P **P** **17 51 44.1 -1.5**
comp=Z,7.5nm,0.8s,mb4.9,baz=289,slow=6.0,SNR=4.1
CTA LR LR 18 20 17.3
comp=Z,180nm,20.8s,MS4.2,baz=287,slow=38
CTAO Charters Tower 61.72 121 PFAKE 17 52 00.0 +14
CTAO LR LR
comp=Z,711nm,19.0s,MS4.8
YLV Yalova 61.77 309 *e* P **P** **17 51 43.8 -1.9**
ULDT Uludag 61.90 309 *i* P **P** **17 51 45.5 -1.1**
TIXI Tiksi 62.38 12⇑ *i* P **P** **17 51 47.8 -1.5**
TIXI *e* pP 17 51 59.3 -0.2
TIXI *e* S **S** **18 00 07.0 -5.1**
TIXI pmax pmax
comp=Z,635nm,1.2s,mb6.6
TIXI MLR MLR
comp=Z,5μm,16.0s,MS5.8
TIXI Tiksi 62.38 12 *e* P **P** **17 51 47.6 -1.8**
comp=Z,70nm,1.0s,mb5.7
TIXI LR LR
comp=Z,749nm,22.0s,MS4.8
MA2 Magadan 62.67 29 *e* P **P** **17 51 49.6 -1.8**
MA2 pmax pmax
comp=Z,45nm,1.2s,mb5.5
MA2 MLR MLR
comp=Z,900nm,16.0s,MS5.0
MA2 Magadan 62.67 29 *e* P **P** **17 51 49.6 -1.8**
comp=Z,16nm,0.8s,mb5.2
MA2 LR LR
comp=Z,730nm,20.0s,MS4.8
KIS Kishinev 63.12 316 *e* P **P** **17 51 53.0 -1.6**
KIS *e* pP 17 52 03.0 -1.8
KIS *e* 17 54 20.0
KIS *e* S **S** **18 00 20.0 -1.6**
KIS *e* PS PS 18 00 44.0 -0.3
KDAG Bornova 63.18 307 *i* P **P** **17 51 53.8 -1.3**
AKASG Malin Array Be 63.56 320 P **P** **17 51 56.0 -1.4**
comp=Z,6.3nm,0.8s,mb4.7,baz=95,slow=4.3,SNR=43
AKASG LR LR 18 22 52.0
comp=Z,608nm,21.8s,MS4.7,baz=125,slow=39
STKA Stephens Creek 64.38 135⇑ *i* P **P** **17 52 01.6 -1.4**
comp=Z,6.4nm,0.9s,mb4.7
STKA *e* pP 17 52 11.9 -1.4
STKA Stephens Creek 64.38 135 P **P** **17 52 01.7 -1.4**
comp=Z,5.4nm,0.6s,mb4.8,baz=309,slow=8.4,SNR=12
STKA LR LR 18 23 12.4
comp=Z,588nm,19.8s,MS4.8,baz=115,slow=39
VRI Vrincioaia 64.38 315⇓ *i* P sP 17 52 17.7 +0.9
VRI Vrincioaia 64.38 315⇓ *i* P sP 17 52 17.7 +0.9
ISR Istrita 64.41 314⇓ *i* P sP 17 52 18.5 +1.5
ISR Istrita 64.41 314⇓ *i* P sP 17 52 18.5 +1.5
KRIS Kristallenia 64.42 303 *e* P **P** **17 52 02.4 -0.9**
comp=Z,26nm,1.1s,mb5.2
SANT Santorini 64.50 304 *e* P **P** **17 52 01.5 -2.3**
SEY Seymchan 64.67 26 *e* P **P** **17 52 02.9 -1.5**
SEY *e* 17 52 31.7
SEY 17 54 28.6
SEY *e* S **S** **18 00 38.9 -1.7**
SEY *e* 18 01 49.7
SEY *e* SS SS 18 04 50.6 -2.7
SEY pmax pmax
comp=E,40nm,1.4s
SEY pmax pmax
comp=Z,90nm,1.4s,mb5.6
SEY smax
comp=N,740nm,23.2s
SEY smax
comp=E,260nm,18.3s
MLR Muntele Rosu 64.87 314⇑ *i* P sP 17 52 20.6 +0.6
MLR Muntele Rosu 64.87 314⇑ *i* P sP 17 52 20.6 +0.6
PET Petropavlovsk 64.96 37 *e* P **P** **17 52 06.1 -0.3**
PET *e* S **S** **18 00 42.9 -1.4**
PET *e* SS SS 18 05 04.0 +5.8
PET pmax pmax
comp=Z,34nm,1.2s,mb5.2
PET MLR MLR
comp=Z,2μm,19.0s,MS5.2
PET Petropavlovsk 64.96 37 PFAKE 17 52 20.0 +14
PET LR LR
comp=Z,1μm,20.0s,MS5.1
MNK Minsk 65.21 324 *e* P **P** **17 52 06.0 -2.0**
PUL Pulkovo 65.27 330 *e* P **P** **17 52 08.4 +0.1**
PUL *e* S 18 00 47.5 -0.5
PUL pmax pmax
comp=N,50nm,0.8s
PUL pmax pmax
comp=Z,70nm,0.8s,mb5.7
PUL pmax pmax
comp=E,110nm,1.1s
PUL pmax pmax
comp=Z,60nm,0.6s,mb5.8
PUL pmax pmax
comp=N,210nm,2.0s
PUL pmax pmax
comp=E,130nm,1.1s
PUL smax
comp=N,170nm,18.8s
PUL smax
comp=Z,90nm,12.8s
PUL smax
comp=E,250nm,1.9s
PUL smax
comp=N,910nm,4.8s
PUL smax
comp=Z,610nm,3.7s
PUL smax
comp=E,250nm,1.9s
PUL MLR MLR
comp=Z,910nm,21.0s,MS5.0
PUL MLR MLR
comp=N,490nm,17.0s,MS4.9
PUL MLR MLR
comp=E,650nm,21.0s,MS4.9
PUL Pulkovo 65.27 330 *e* P **P** **17 52 08.6 +0.3**
RZN Rozhen 65.39 310 *i* P **P** **17 52 09.0 -0.4**
JOF Joensuu 65.81 334 *e* p **P** **17 52 11.1 -0.6**
comp=E,2.4nm,0.4s,mb4.6
JOF Joensuu 65.81 334 *e* P **P** **17 52 11.1 -0.6**
JOF pmax pmax
comp=Z,2.0nm,0.4s,mb4.5
PGB Panagyurishte 65.86 311 *i* P **P** **17 52 12.0 -0.4**
MMB Musomiste 66.12 310 *i* P **P** **17 52 12.0 -2.1**
LVZ Lovozero 66.41 339 *e* P **P** **17 52 13.2 -2.3**
LVZ *i* 17 54 41.3
LVZ *e* S 18 01 02.6 +0.8
LVZ pmax pmax
comp=N,10.0nm,1.2s
LVZ pmax pmax
comp=Z,30nm,1.2s,mb5.2
LVZ pmax pmax
comp=E,10.0nm,0.9s
LVZ pmax pmax
comp=Z,930nm,3.5s
LVZ pmax pmax
comp=N,180nm,3.0s
LVZ pmax pmax
comp=E,320nm,3.1s
LVZ smax
comp=Z,20nm,6.0s
LVZ smax
comp=N,60nm,6.6s
LVZ smax
comp=E,10.0nm,5.2s
LVZ smax
comp=N,110nm,2.4s
LVZ smax
comp=Z,480nm,3.1s
LVZ smax
comp=E,390nm,3.9s
LVZ MLR MLR
comp=N,430nm,16.0s,MS5.1
LVZ MLR MLR
comp=Z,1μm,16.0s,MS5.2
LVZ MLR MLR
comp=E,800nm,17.0s,MS5.1
LVZ Lovozero 66.41 339 *e* P **P** **17 52 14.6 -0.9**
VTS Vitosha 66.57 311 *i* P **P** **17 52 16.0 -0.9**
KKB Krupnik 66.62 310 *i* P **P** **17 52 16.0 -1.2**
APA Apatity 66.71 339⇑ *i* P **P** **17 52 16.3 -1.1**
APA *e* 17 52 24.0
APA pmax pmax
comp=Z,54nm,1.2s,mb5.5
APA MLR MLR
comp=Z,2μm,16.0s,MS5.5
VAY Valandovo 66.97 309⇑ *i* P **P** **17 52 18.3 -1.2**
KWP Kalwaria 67.53 318 *e* P **P** **17 52 22.6 -0.2**
KWP *e* pP pP 17 52 27.9 -5.2
KWP *e* PcP PcP 17 52 47.8 -2.2
KWP MLR MLR 18 23 56.1
comp=Z,400nm,25.4s,MS4.5
BOLS Boljevac 67.56 312⇑ *i* P **P** **17 52 22.4 -0.7**
FINES FINESS Array B 67.73 331 P **P** **17 52 22.9 -1.0**
comp=Z,17nm,0.9s,mb5.1,baz=111,slow=7.0,SNR=80
FINES LR LR 18 28 17.6
comp=Z,626nm,19.3s,MS4.8,baz=258,slow=41
KAF Kangasniemi 67.79 332 *ep* **P** **17 52 23.7 -0.6**
comp=Z,78nm,1.3s,mb5.6,baz=102,slow=6.1
KAF Kangasniemi 67.79 332 *e* P **P** **17 52 23.7 -0.6**
KAF pmax pmax
comp=Z,78nm,1.3s,mb5.6
SUW Suwalki 67.80 323 *e* P **P** **17 52 23.4 -1.1**
SUW *e* pP pP 17 52 33.3 -1.5
SUW *e* S S 18 01 22.8 +4.0
SUW MLR MLR 18 25 10.1
comp=Z,900nm,21.1s,MS5.0
SKO Skopje 67.85 310 *e* P **P** **17 52 23.0 -2.0**
CRVS Cervenica-Dubn 68.27 318 *e* P **P** **17 52 27.9 +0.4**
CRVS *e* 17 52 30.6
CRVS *e* pP pP 17 52 35.8 -2.0
CRVS *e* sP sP 17 52 39.9 -1.6
CRVS *e* 17 52 57.3
CRVS *e* PP PP 17 54 42.8 -18
CRVS *e* 17 55 10.5
CRVS Cervenica-Dubn 68.27 318 *e* P **P** **17 52 27.9 +0.4**
CRVS *e* pP 17 52 39.9 +2.1
CRVS *e* 17 52 57.3
KECS Kecovo 68.88 317 *e* P **P** **17 52 31.9 +0.6**
DIVS Divcibare 68.99 312⇓ *i* P **P** **17 52 31.2 -0.8**
NIE Niedzica 69.06 318 *e* P **P** **17 52 32.6 +0.2**
PSZ Piszkesteto 69.24 316⇑ *e* P **P** **17 52 33.2 -0.3**
PSZ Piszkesteto 69.24 316 *e* P **P** **17 52 31.7 -1.8**
PSZ pmax pmax
comp=Z,41nm,1.3s,mb5.2
PSZ Piszkesteto 69.24 316 *e* P **P** **17 52 31.7 -1.8**
comp=Z,41nm,1.4s,mb5.2
OJC Ojcow 69.46 319⇑ *i* P **P** **17 52 34.6 -0.2**
OJC *i* sP sP 17 52 44.6 -4.2
OJC *i* S S 18 01 40.3 +1.8
OJC MLR MLR 18 28 25.4
comp=Z,300nm,19.0s,MS4.6
KEV Kevo 69.67 340 *ep* **P** **17 52 35.4 -0.4**
comp=Z,1.4nm,0.3s,mb4.4
KEV Kevo 69.67 340 *e* P **P** **17 52 35.4 -0.4**
KEV pmax pmax
comp=Z,1.0nm,0.3s,mb4.2
VYHS Vyhne 69.98 317 *i* P **P** **17 52 37.8 -0.2**
VYHS *e* 17 52 40.2
VYHS *e* 17 52 44.6
VYHS *e* pP pP 17 52 47.9 -0.4
VYHS *e* 17 53 04.7
VYHS Vyhne 69.98 317 *i* P **P** **17 52 37.8 -0.2**
VYHS *e* pP 17 52 47.0 -1.3
VYHS *e* 17 53 04.7
ARCES ARCESS Array B 70.11 340 P **P** **17 52 38.5 0.0**
comp=Z,20nm,0.8s,mb5.1,baz=95,slow=6.5,SNR=83
ARCES LR LR 18 26 55.3
comp=Z,2μm,19.1s,MS5.3,baz=113,slow=39
ARCES ARCESS Array B 70.11 340 P **P** **17 52 38.5 0.0**
ARCES LR LR 18 26 55.3
SRO Srobarova 70.30 316 *e* P **P** **17 52 40.8 +0.9**
SRO *e* pP pP 17 52 50.3 +0.1
RAC Raciborz 70.48 319 *e* P **P** **17 52 41.5 +0.5**
RAC MLR MLR 18 26 47.4
comp=Z,400nm,21.5s,MS4.6
OKC Ostrava-Krasne 70.50 318⇑ *e* P **P** **17 52 41.0 -0.1**
OKC *e* pP pP 17 52 51.3 -0.1
OKC *e* L 18 30 10.0
comp=Z,0.3nm,14.2s
MORC Moravsky Berou 70.89 318 *e* P **P** **17 52 43.1 -0.4**
comp=Z,44nm,1.4s,mb5.2
ZST Bratislava 71.12 317 *e* P **P** **17 52 45.2 +0.3**
ZST *e* pP pP 17 52 55.2 0.0
ZST *e* 17 53 12.0
SISC Sisak 71.59 314 *i* P **P** **17 52 54.0 +6.2**
BILL Bilibino 71.67 22 *e* P **P** **17 52 47.2 -0.6**
BILL *i* pP 17 52 57.5 -0.6
BILL *i* 17 53 05.6
BILL *e* 17 55 25.3
BILL *i* S S 18 02 04.3 +0.4
BILL *e* SS SS 18 06 39.8 -1.7
BILL pmax pmax
comp=Z,47nm,1.5s,mb5.2
BILL MLR MLR
comp=Z,1μm,17.7s,MS5.2
BILL Bilibino 71.67 22 *e* P **P** **17 52 46.3 -1.5**
comp=Z,34nm,1.3s,mb5.1
DPC Dobruska-Polom 71.69 319⇑ *i* P **P** **17 52 48.4 +0.1**
DPC *e* pP pP 17 52 59.0 +0.4
TDS Terranova Siba 71.71 308 *e* P **P** **17 52 49.1 +0.5**
KSP Ksiaz 71.72 319 *e* P **P** **17 52 48.2 -0.2**
KSP *e* pP pP 17 52 59.0 +0.3
KSP *e* PcP PcP 17 53 05.3 -2.4
KSP *e* S S 18 02 07.9 +3.1
KSP MLR MLR 18 29 13.1
comp=Z,1μm,20.8s,MS5.1
KSP Ksiaz 71.72 319⇑ *e* P **P** **17 52 48.8 +0.4**
KSP *e* pP pP 17 52 58.3 -0.4
KSP *e* S S 18 02 04.0 -0.8
KSP LR LR
comp=Z,1μm,20.9s,MS5.2
UPC Upice 71.89 319⇑ *i* P **P** **17 52 50.0 +0.6**
UPC *e* pP pP 17 52 59.4 -0.3
ARSA Arzberg 72.18 316⇑ *i* P **P** **17 52 51.5 +0.3**
comp=Z,30nm,2.0s,mb4.9
PERS Pernice 72.46 315 *e* P **P** **17 52 52.9 0.0**
BSD Bornholm Skovb 72.70 324 *i* P **P** **17 52 55.0 +0.9**
comp=Z,25nm,1.0s,mb5.1
comp=Z,560nm,17.0s
PVCC Panska Ves 72.81 319⇑ *e* P **P** **17 52 55.2 +0.3**
PVCC *e* pP pP 17 53 05.4 +0.2
PVCC L 18 29 30.0
comp=Z,0.6nm,20.2s
PRU Pruhonice 72.83 319⇑ *i* P **P** **17 52 55.1 +0.1**
PRU *e* pP pP 17 53 02.3 -3.0
PRU L 18 31 10.0
OBKA Obir 72.85 315⇑ *i* P **P** **17 52 55.6 +0.3**
comp=Z,49nm,1.4s,mb5.2
LJU Ljubljana 72.88 314 *e* P **P** **17 52 55.6 +0.2**
CEY Cerknica 72.95 314 *e* P **P** **17 52 55.5 -0.4**
MOA Molln 73.02 316⇑ *i* P **P** **17 52 55.8 -0.5**
comp=Z,37nm,1.1s,mb5.2
BRG Berggiesshubel 73.21 319 *i* P **P** **17 52 57.8 +0.5**
BRG *e** PP pP 17 53 08.3 +0.7
BRG *e* S S 18 02 24.0 +2.1
BRG pmax pmax
comp=Z,78nm,1.6s,mb5.4
BRG Berggiesshubel 73.21 319 *i* P **P** **17 52 57.8 +0.5**
comp=Z,78nm,1.6s,mb5.4
BRG *e* pP pP 17 53 08.3 +0.7
BRG *e* S S 18 02 24.0 +2.1
RUE Ruedersdorf 73.32 321 *e* P **P** **17 52 57.6 -0.3**
VOY Vojsko 73.32 314 *e* P **P** **17 52 57.7 -0.3**
VOY *e* pP 17 53 06.1 -2.2
GEC2 GERESS Array S 73.39 317 *e* P **P** **17 52 58.6 +0.2**
GEC2 pmax pmax
comp=Z,31nm,1.1s,mb5.2
GEC2 GERESS Array S 73.39 317 *e* P **P** **17 52 58.6 +0.2**
comp=Z,31nm,1.1s,mb5.2
GERES GERESS Array B 73.39 317 P **P** **17 52 58.4 0.0**
comp=Z,13nm,0.9s,mb4.9,baz=90,slow=5.3,SNR=82
KHC Kasperske Hory 73.46 318⇑ *i* P **P** **17 52 58.4 -0.4**
KHC *e* pP pP 17 53 08.8 -0.3
KHC L 18 30 10.0
comp=Z,0.4nm,17.7s
MOR8 Moi Rana 73.60 335 *e* P **P** **17 52 58.4 -0.9**
MOR8 AMb AMB 17 52 59.6
comp=Z,55nm,1.6s,mb5.2
MOR8 *e* pP pP 17 53 08.3 -1.3
FX1 Attu Island--F 73.66 38 *e* P **P** **17 52 58.8 -1.1**
KBA Koelnbreinsper 73.67 315⇑ *i* P **P** **17 52 59.7 -0.3**
comp=Z,25nm,1.1s,mb5.0
PTCC Patocco-Chiusa 73.68 315 *e* P **P** **17 52 59.8 -0.3**
GMNA Gemona 73.77 315 *e* P **P** **17 53 00.3 -0.3**
CLL Collm 73.80 320⇑ P **P** **17 53 00.5 -0.2**
comp=Z,logA/T=1.5,mb5.2
CLL *i** PP pP 17 53 08.2 -2.8
CLL *i** SP sP 17 53 13.5 -1.2
CLL *i* 17 53 34.2
CLL Collm 73.80 320⇑ *i* P **P** **17 53 00.5 -0.2**
CLL *i** PP pP 17 53 08.2 -2.8
CLL pmax pmax
comp=Z,45nm,1.5s,mb5.2
CLL Collm 73.80 320⇑ *i* P **P** **17 53 00.5 -0.2**
comp=Z,45nm,1.5s,mb5.2
CLL *i* pP pP 17 53 08.2 -2.8
WET Wettzell 73.92 318 *e* P **P** **17 53 01.9 +0.4**
WET pmax pmax
comp=Z,45nm,1.6s,mb5.2
WET Wettzell 73.92 318 *e* P **P** **17 53 01.9 +0.4**
comp=Z,45nm,1.6s,mb5.2
FVI Forni Avoltri 74.07 315 *e* P **P** **17 53 02.3 -0.1**

SNTG Esanatoglia 74.11 312 *e*P **P** **17 53 02.7 0.0**
LOF Lofoten 74.12 337 *e*P **P** **17 53 03.5 +1.3**
LOF AMb AMB 17 53 08.5
comp=Z,73nm,1.6s,mb5.4
SMY Shemya 74.23 39 PFAKE 17 53 10.0 +6.8
SMY LR LR
comp=Z,2µm,20.0s,MS5.4
SPB4 Spitsbergen Ar 74.61 348 *e*P **P** **17 53 05.0 0.0**
MOX Moxa 74.69 319 *i*P **P** **17 53 06.0 +0.1**
comp=Z,logA/T=1.6,mb5.3
MOX S S 18 02 35.0 -3.4
MOX L 18 33 13.0
MOX Moxa 74.69 319 *e*P **P** **17 53 06.0 +0.1**
MOX pmax pmax
comp=Z,69nm,1.6s,mb5.3
MOX MLR MLR
comp=Z,400nm,18.0s,MS4.8
MOX Moxa 74.69 319 *e*P **P** **17 53 06.0 +0.1**
comp=Z,69nm,1.6s,mb5.3
MOX LR LR
comp=Z,400nm,18.0s,MS4.8
NB2 NORSAR Subarra 74.80 330 P **P** **17 53 05.3 -1.0**
comp=Z,74nm,1.4s,mb5.4,baz=90,slow=5.8
NB2 NORSAR Subarra 74.80 330 P **P** **17 53 05.3 -1.0**
baz=90,slow=6.2
NOA NORSAR Array B 74.80 330 P **P** **17 53 05.7 -0.6**
comp=Z,20nm,0.9s,mb5.0,baz=91,slow=5.7,SNR=28
NOA LR LR 18 31 43.7
comp=Z,638nm,18.4s,MS5.0,baz=80,slow=40
WTTA Wattenberg 74.82 316⇑ *i*P **P** **17 53 06.3 -0.4**
comp=Z,32nm,1.1s,mb5.2
WATA Walderalm 74.86 316⇓ *i*P **P** **17 53 06.1 -0.8**
comp=Z,21nm,1.1s,mb5.0
SFI Santa Sofia 74.86 312 *e*P **P** **17 53 08.0 +1.0**
CTI Castel Tesino 74.88 314 *e*P **P** **17 53 07.0 -0.1**
NAO01 NORSAR Array S 74.96 330 *e*P **P** **17 53 06.0 -1.2**
comp=Z,18nm,0.8s,mb5.1
PGD Poggio Sodo 74.96 312 *e*P **P** **17 53 08.8 +1.2**
GRA1 Grafenberg Arr 74.98 318 *e*P **P** **17 53 08.3 +0.7**
comp=Z,68nm,1.5s,mb5.4
GRA1 *e*pP pP 17 53 17.8 -0.1
GRA1 *e*S S 18 02 45.0 +3.3
GRA1 LR LR
comp=Z,500nm,21.9s,MS4.8
GRF Grafenberg Arr 74.98 318 *e*P **P** **17 53 08.3 +0.7**
GRF *e**PP pP 17 53 17.8 -0.1
GRF *e*S S 18 02 45.0 +3.3
GRF pmax pmax
comp=Z,68nm,1.5s,mb5.4
GRF MLR MLR
comp=Z,500nm,21.9s,MS4.8
VMG Vicchio 75.08 312 *e*P **P** **17 53 09.6 +1.3**
SQTA Sankt Quirin 75.12 316⇑ *i*P **P** **17 53 07.8 -0.6**
comp=Z,19nm,1.1s,mb4.9
MOTA Moosalm 75.18 316⇑ *i*P **P** **17 53 08.1 -0.7**
comp=Z,24nm,1.2s,mb5.0
BSEG Bad Segeberg 75.38 323 *e*P **P** **17 53 10.3 +0.6**
BSEG pmax pmax
comp=Z,81nm,1.4s,mb5.5
KBS Kingsbay 75.59 349 *e*S S 18 02 47.2 -0.7
KBS *e*SS SS 18 07 41.4 -0.5
KBS AMS AMS 18 33 53.2
comp=Z,1µm,18.0s,MS5.2
KBS Kingsbay 75.59 349 PFAKE 17 53 20.0 +9.4
KBS LR LR
comp=Z,1µm,19.0s,MS5.3
KONO Kongsberg 75.61 329 *e*S S 18 02 38.9 -10
KONO AMS AMS 18 32 33.9
comp=Z,835nm,18.0s,MS5.1
KONO Kongsberg 75.61 329 *e*P **P** **17 53 10.7 -0.3**
KONO Kongsberg 75.61 329 *e*P **P** **17 53 10.8 -0.2**
KONO LR LR
comp=Z,1µm,19.0s,MS5.2
BRMO Bormio 75.73 315 *e*P **P** **17 53 12.0 0.0**
GSCL Gusciola 75.74 313 *e*P **P** **17 53 13.0 +1.0**
MUD Monsted U'grnd 75.93 325⇑ *i*P **P** **17 53 13.5 +0.6**
comp=Z,23nm,0.5s,mb5.4
MUD *e*S S 18 03 00.6 +8.6
comp=Z,340nm,17.0s
LBTB Lobatse 75.95 240 P **P** **17 53 15.0 +1.3**
LBTB Lobatse 75.95 240 *e*P **P** **17 53 13.8 +0.1**
comp=Z,7.6nm,0.7s,mb4.7
LBTB LR LR
comp=Z,642nm,21.0s,MS4.9
DAVA Damuels 76.02 316⇑ *i*P **P** **17 53 13.6 +0.1**
comp=Z,54nm,1.6s,mb5.2
SPAK Spaichingen 76.69 317 *e*P **P** **17 53 17.0 -0.3**
VAI Varese 76.89 314 *e*P **P** **17 53 17.7 -0.9**
BFO Black Forest 76.97 317 *e*P **P** **17 53 18.3 -0.7**
BFO pmax pmax
comp=Z,15nm,1.3s,mb4.8
BFO Black Forest 76.97 317 *e*P **P** **17 53 18.3 -0.7**
comp=Z,15nm,1.3s,mb4.8
PGF Pioggiola 77.05 311 *e*P **P** **17 53 19.1 -0.4**
comp=Z,60nm,1.2s,mb5.1
FELD Feldberg 77.23 317 *e*P **P** **17 53 20.3 -0.1**
LANF Langenberg 77.26 318 *e*P **P** **17 53 20.6 0.0**
LIBD Limburg 77.47 317 *e*P **P** **17 53 21.7 -0.1**
WLS Welschbruch 77.61 317 *e*P **P** **17 53 22.2 -0.3**
CDF Champ du Feu 77.67 317 *e*P **P** **17 53 22.2 -0.6**
comp=Z,50nm,1.3s,mb5.0
RUP Ruppelstein 77.68 318 *e*P **P** **17 53 23.1 +0.3**
ECH Echery 77.76 317 *e*P **P** **17 53 23.0 -0.3**
MOF Molkenrain 77.82 317 *e*P **P** **17 53 23.6 0.0**
HINF Hinteralfeld 78.01 317 *e*P **P** **17 53 24.1 -0.6**
comp=Z,19nm,1.0s,mb4.7
SBF Sospel 78.05 312 *e*P **P** **17 53 24.7 -0.3**
comp=Z,123nm,1.1s,mb5.4
LOMF Lomont 78.08 316 *e*P **P** **17 53 24.8 -0.3**
AURF Auriere 78.12 313 *e*P **P** **17 53 20.7 -4.7**
HAU Haudompre 78.33 317 *e*P **P** **17 53 25.9 -0.5**
comp=Z,68nm,1.3s,mb5.1
HAU *e*R
comp=Z,588nm,20.8s
LPG La Plagne 78.34 314 *e*P **P** **17 53 26.9 +0.4**
comp=Z,67nm,0.8s,mb5.3
LPL La Plagne 78.35 314 *e*P **P** **17 53 26.9 +0.3**
comp=Z,144nm,1.1s,mb5.5
MBDF Montbardon 78.42 313 *e*P **P** **17 53 26.4 -0.6**
comp=Z,101nm,1.4s,mb5.3
BNI Bardonecchia 78.44 314 *e*P **P** **17 53 26.2 -0.9**
THEF They Montfort 78.54 317 *e*P **P** **17 53 27.3 -0.3**
CABF La Chapelle 78.67 315 *e*P **P** **17 53 28.4 +0.1**
comp=Z,95nm,1.4s,mb5.2
LMR La Mourre 78.78 312 *e*P **P** **17 53 28.5 -0.5**
comp=Z,244nm,1.6s,mb5.6
ORIF Oris-en-Rattie 79.02 314 *e*P **P** **17 53 30.1 -0.2**
comp=Z,18nm,1.0s,mb4.7
ORIF *e*R
comp=Z,636nm,21.2s
GIVF Givet 79.07 319 *e*P **P** **17 53 30.3 -0.2**
MEZF Maizieres J'vi 79.13 317 *e*P **P** **17 53 30.5 -0.3**
SMRF Simiane la Rot 79.36 313 *e*P **P** **17 53 31.5 -0.7**
comp=Z,34nm,1.0s,mb4.9
BAIF Baives 79.47 319 *e*P **P** **17 53 32.7 +0.1**
comp=Z,70nm,1.2s,mb5.2
VIVF Saint-Julien-l 79.88 314 *e*P **P** **17 53 34.8 -0.2**
LOR Lormes 80.09 316 *e*P **P** **17 53 35.6 -0.4**
comp=Z,81nm,1.3s,mb5.2
LOR *e*R
comp=Z,603nm,20.0s
SMF Signal de Mont 80.20 316 *e*P **P** **17 53 36.1 -0.5**
comp=Z,70nm,1.1s,mb5.2
SSF Saint Saulge 80.36 316 *e*P **P** **17 53 37.1 -0.4**
comp=Z,35nm,1.1s,mb4.9
AVF Avril sur Loir 80.51 316 *e*P **P** **17 53 37.8 -0.4**
comp=Z,24nm,0.9s,mb4.8
LASF Ste Croix 80.58 313 *e*P **P** **17 53 39.1 +0.4**
comp=Z,216nm,1.7s,mb5.5
BGF Bois d'Agland 80.89 316 *e*P **P** **17 53 40.1 -0.2**
HYF Humbligny 80.91 316 *e*P **P** **17 53 40.7 +0.3**
TSUM Tsumeb 81.05 248 P **P** **17 53 43.2 +1.5**
comp=Z,5.6nm,0.9s,mb4.5,baz=20,slow=5.1,SNR=8.3
TCF Toulx Ste Croi 81.37 315 *e*P **P** **17 53 42.9 +0.1**
comp=Z,62nm,1.2s,mb5.1
CAF Calviac 81.70 314 *e*P **P** **17 53 44.8 +0.3**
comp=Z,61nm,1.4s,mb5.0
TNA Tin City 81.87 25 *e*P **P** **17 53 44.9 -0.1**
MTLF Montolieu 81.87 313 *e*P **P** **17 53 45.4 -0.1**
comp=Z,112nm,1.4s,mb5.3
KSY Syston 81.96 322 *e*P **P** **17 53 43.3 -2.4**
KTG1 Tilbrook Grang 81.97 322 *e*P **P** **17 53 44.5 -1.2**
RJF Les Rejaudoux 82.02 315 *e*P **P** **17 53 46.5 +0.3**
comp=Z,91nm,1.3s,mb5.2
RJF *e*R
comp=Z,479nm,20.0s

DAG Danmarks Havn 82.25 348⇓ *i*P **P** **17 53 46.1 -0.7**
comp=Z,9.0nm,0.8s,mb4.8
DAG Danmarks Havn 82.25 348⇓ *e*P **P** **17 53 46.1 -0.7**
comp=Z,9.0nm,0.8s,mb4.8
KBI1 Birley Grange 82.46 323⇑ *e*P **P** **17 53 47.9 -0.3**
KBI1 AMB AMB 17 53 51.0
comp=Z,58nm,1.2s,mb5.4
LDF La Druitiere 82.50 318 *e*P **P** **17 53 48.4 -0.2**
comp=Z,55nm,1.1s,mb5.2
SUR Sutherland 82.53 234 *e*P **P** **17 53 50.5 +1.5**
comp=Z,24nm,0.8s,mb5.3
SUR LR LR
comp=Z,1µm,21.0s,MS5.2
LFF La Frestale 82.62 314 *e*P **P** **17 53 49.7 +0.4**
KWE Weaver Farm 82.69 323⇑ *e*P **P** **17 53 49.5 0.0**
KWE AMB AMB 17 54 00.8
comp=Z,74nm,1.8s,mb5.4
FLN La Foliniere 82.71 318 *e*P **P** **17 53 49.4 -0.2**
comp=Z,39nm,1.0s,mb5.1
FLN *e*R
comp=Z,744nm,20.5s
MFF Saint Martin d 82.91 316 *e*P **P** **17 53 50.7 0.0**
comp=Z,58nm,1.2s,mb5.2
ESK Eskdalemuir 82.99 325 *e*P **P** **17 53 50.2 -0.7**
ESK pmax pmax
comp=Z,31nm,1.0s,mb5.3
ESK Eskdalemuir 82.99 325 *e*P **P** **17 53 50.2 -0.7**
comp=Z,31nm,1.0s,mb5.3
GRR Gorron 83.03 318 *e*P **P** **17 53 51.3 +0.1**
ANM Nome 83.17 25 *e*P **P** **17 53 52.6 +1.0**
EPF Esparros 83.28 312 *e*P **P** **17 53 52.7 +0.1**
MAW Mawson 83.39 191 *e*P **P** **17 53 53.9 +1.2**
comp=Z,16nm,0.8s,mb5.1
MAW *e* pP 17 54 04.8 +1.6
MAW Mawson 83.39 191 P **P** **17 53 53.3 +0.6**
comp=Z,19nm,0.8s,mb5.2,baz=359,slow=6.0,SNR=24
MAW LR LR 18 23 17.3
comp=Z,397nm,21.9s,MS4.8,baz=60,slow=30
MAW Mawson 83.39 191 *e*P **P** **17 53 52.6 -0.1**
MAW pmax pmax
comp=Z,44nm,1.0s
ETSF Etsaut 83.95 312 *e*P **P** **17 53 56.5 +0.4**
comp=Z,48nm,1.1s,mb5.2
SGMF Saint Gilles 84.16 318 *e*P **P** **17 53 57.2 +0.2**
comp=Z,35nm,1.0s,mb5.2
SJPF Ste Jean 84.38 313 *e*P **P** **17 53 57.7 -0.6**
comp=Z,145nm,1.5s,mb5.6
ROSF Rostrenen 84.61 318 *e*P **P** **17 53 58.9 -0.4**
comp=Z,22nm,0.8s,mb5.0
QUIF Quistinic 84.64 318 *e*P **P** **17 53 59.1 -0.3**
ESDC Sonseca Array 87.19 310 P **P** **17 54 12.7 +0.6**
comp=Z,2.7nm,0.6s,mb4.7,baz=63,slow=4.9,SNR=12
ESDC LR LR 18 39 59.1
comp=Z,223nm,19.5s,MS4.6,baz=60,slow=40
ESLA Sonseca Array 87.19 310 *e*P **P** **17 54 12.2 0.0**
IMA Indian Mountai 87.21 22 *e*P **P** **17 54 12.9 +1.3**
COLA College 89.92 22 *e*P **P** **17 54 25.0 +0.5**
SYO Syowa Base 90.05 197 ⇓P **P** **17 54 26.4 +1.3**
SYO Syowa Base 90.05 197 ⇓*e*pP pP 17 54 38.3 +2.6
SYO Syowa Base 90.05 197⇓ *e*P **P** **17 54 26.4 +1.3**
SYO *e*pP pP 17 54 38.3 +2.6
SPU Mount Spurr 90.08 26 *e*P **P** **17 54 25.5 +0.1**
MCK McKinley 90.10 23 *e*P **P** **17 54 25.8 +0.4**
MCK *e**PP pP 17 54 36.1 +0.1
MCK pmax pmax
comp=Z,57nm,1.2s,mb5.8
MCK McKinley 90.10 23 *e*P **P** **17 54 25.8 +0.4**
comp=Z,57nm,1.2s,mb5.8
MCK *e*pP pP 17 54 36.1 +0.1
RSO Redoubt South 90.11 27 *e*P **P** **17 54 25.6 0.0**
ILAR Eielson Array 90.32 22 P **P** **17 54 25.9 -0.6**
comp=Z,11nm,0.9s,mb5.2,baz=299,slow=4.0,SNR=60
ILAR PP PP 17 58 03.4 +0.2
comp=Z,2.4nm,0.8s,baz=296,slow=7.7,SNR=7.8
ILAR PKKPbc 18 11 55.5
comp=Z,0.6nm,0.7s,baz=147,slow=2.2,SNR=5.8
ILAR LR LR 18 43 01.8
comp=Z,333nm,18.7s,MS4.8,baz=313,slow=41
EVO Evora 90.53 310 *e*P **P** **17 54 28.1 0.0**
comp=Z,79nm,1.4s,mb5.5
EVO *e*R
comp=Z,385nm,21.0s
FIB Fire Island 90.89 26 *e*P **P** **17 54 30.3 +1.1**
GOU Gould Hall 91.04 26 *e*P **P** **17 54 31.4 +1.5**
PMS Palmer South 91.11 25 *e*P **P** **17 54 31.3 +1.1**
PMR Palmer 91.11 25 *e*P **P** **17 54 30.6 +0.4**
PMR pmax pmax
comp=Z,84nm,1.1s,mb6.0
SLKM Skilak Lake 91.19 26 *e*P **P** **17 54 30.6 0.0**
SLKM *e**PP pP 17 54 38.7 -2.5
KDAK Kodiak Island 91.42 29 *e*P **P** **17 54 31.9 +0.2**
comp=Z,71nm,1.0s,mb6.0
KDAK LR LR
comp=Z,765nm,21.0s,MS5.1
TOA Tolsona 92.04 24 *e*P **P** **17 54 35.6 +1.1**
RES Resolute Bay 92.30 2 *e*P **P** **17 54 35.6 +0.2**
RES pmax pmax
comp=Z,16nm,1.1s,mb5.3
RES Resolute Bay 92.30 2 *e*P **P** **17 54 35.5 +0.1**
comp=Z,16nm,1.2s,mb5.2
INK Inuvik 92.30 16 *e*P **P** **17 54 35.3 -0.2**
INK *e**PP pP 17 54 42.2 -4.0
INK pmax pmax
comp=Z,46nm,1.2s
INK Inuvik 92.30 16 *e*P **P** **17 54 35.3 -0.2**
comp=Z,46nm,1.3s,mb5.7
INK *e*pP pP 17 54 42.2 -3.9
EYAK Cordova Ski Ar 93.06 25 *e*P **P** **17 54 40.6 +1.4**
DAWY Dawson 93.37 20 *e*P **P** **17 54 41.2 +0.7**
DBIC Dimbokro 96.29 278 LR LR 18 38 09.4
comp=Z,379nm,20.9s,MS4.8,baz=56,slow=35
DBIC Dimbokro 96.29 278 PFAKE 17 55 10.0 +15
DBIC LR LR
comp=Z,252nm,20.0s,MS4.7
SIT Sitka 99.48 25 PFAKE 17 55 20.0 +12
SIT LR LR
comp=Z,519nm,20.0s,MS5.0
YKW3 Yellowknife Ar 101.56 13 *e*Pdif P 17 55 17.2 -0.5
YKA Yellowknife Ar 101.63 13 P P 17 55 17.7 -0.3
comp=Z,0.8nm,0.8s,baz=329,slow=4.5,SNR=16
YKA PKKPbc 18 11 24.9
comp=Z,0.9nm,0.8s,baz=151,slow=2.4,SNR=14
YKA PKKP PKKP 18 11 32.6 +9.0
comp=Z,0.7nm,0.8s,baz=149,slow=2.5,SNR=5.6
YKA Yellowknife Ar 101.63 13 P P 17 55 17.7 -0.3
YKA PKKPbc 18 11 24.9
YKA PKKP PKKP 18 11 32.6 +9.0
QSPA South Pole Qui 102.92 180 *e*P Pdif 17 55 20.3 -3.1
comp=Z,4.0nm,1.1s
QSPA LR LR
comp=Z,280nm,20.8s,MS4.8
SCHQ Schefferville 110.30 348 Pdif Pdif 17 55 55.8 -0.5
SCHQ LR LR
comp=Z,1µm,21.0s,MS5.4
NEW Newport 113.28 22 PFAKE 18 00 20.0 +18
NEW LR LR
comp=Z,511nm,22.0s,MS5.1
HUMO Hull Mountain 115.44 29 *e*PKP PKPdf 18 00 08.8 +2.2
HUMO *e* 18 00 19.7
MSO Missoula 115.62 20 PFAKE 18 00 20.0 +13
MSO LR LR
comp=Z,794nm,21.0s,MS5.3
CHMT Chamberlain Mo 115.77 20 *e*PKP PKPdf 18 00 08.0 +0.9
YBH Yreka Blue Hor 116.23 29 PFAKE 18 00 20.0 +12
YBH LR LR
comp=Z,245nm,20.0s,MS4.8
ULM Lac du Bonnet 116.47 6 PFAKE 18 00 20.0 +12
ULM LR LR
comp=Z,560nm,20.0s,MS5.2
WDC Whiskeytown Da 117.20 30 *e*PKIKP PKPdf 18 00 11.2 +1.2
MOD Modoc 117.22 28 *e*PKP PKPdf 18 00 11.7 +1.7
MOD LR LR
comp=Z,332nm,20.0s,MS5.0
BOZ Bozeman (W) 117.42 19 PFAKE 18 00 20.0 +10
BOZ LR LR
comp=Z,587nm,19.0s,MS5.2
WVOR Wild Horse Val 117.52 26 *e*PKP PKPdf 18 00 12.6 +2.0
WVOR LR LR
comp=Z,337nm,20.0s,MS5.0
MCMT McKenzie Canyo 117.74 21 *e*PKP PKPdf 18 00 13.2 +2.3
HLID Hailey 118.27 22 *e*PKP PKPdf 18 00 14.1 +2.1
HLID LR LR
comp=Z,498nm,20.0s,MS5.1
BEKR Beckwourth 118.81 29 *e*PKP PKPdf 18 00 14.8 +1.6
BMN Battle Mountai 119.77 26 PFAKE 18 00 30.0 +15
BMN LR LR
comp=Z,293nm,21.0s,MS4.9
AHID Auburn Hatcher 120.15 21 PFAKE 18 00 30.0 +14
AHID LR LR
comp=Z,444nm,21.0s,MS5.1
CMB Columbia Colle 120.23 30 PFAKE 18 00 30.0 +14
CMB LR LR
comp=Z,286nm,19.0s,MS4.9
BW06 Boulder Array 120.66 19 PFAKE 18 00 30.0 +13
BW06 LR LR
comp=Z,481nm,20.0s,MS5.1
PDAR Pinedale Array 120.66 19 PKP PKPdf 18 00 17.9 +1.2
comp=Z,4.0nm,0.9s,slow=1.5,SNR=22
PDAR pPKP 18 00 28.3
comp=Z,3.5nm,0.7s,baz=16,slow=0.6,SNR=11
PDAR SKP 18 03 52.0
comp=Z,1.4nm,0.9s,slow=1.5,SNR=5.5
PDAR PKKPbc 18 10 22.4
comp=Z,0.6nm,0.8s,baz=153,slow=3.3,SNR=4.9
SAO San Andreas Ge 120.67 32 PFAKE 18 00 30.0 +13
SAO LR LR
comp=Z,406nm,19.0s,MS5.1
NVAR Mina Array Bea 120.91 29 PKP PKPdf 18 00 19.8 +2.5
comp=Z,10nm,0.8s,baz=333,slow=0.8,SNR=51
NVAR pPKP 18 00 29.8
comp=Z,6.2nm,0.8s,baz=247,slow=3.3,SNR=8.4
NVAR SKP 18 03 54.1
comp=Z,2.7nm,0.8s,baz=329,slow=0.8,SNR=8.2
RSSD Black Hills 120.98 14 *e*PKIKP PKPdf 18 00 18.5 +1.2
HWUT Hardware Ranch 121.01 21 *e*PKP PKPdf 18 00 18.6 +1.2
HWUT LR LR
comp=Z,570nm,19.0s,MS5.2
LBNH Lisbon 121.39 348 PFAKE 18 00 30.0 +12
LBNH LR LR
comp=Z,630nm,21.0s,MS5.2
MTUM Tungsten Hills 121.65 30 *e*PKP PKPdf 18 00 21.1 +2.3
TPH Tonopah 121.70 28 *e*PKP PKPdf 18 00 21.0 +2.2
TPH LR LR
comp=Z,256nm,21.0s,MS4.8
NCB Newcomb 122.10 349 PFAKE 18 00 30.0 +11
NCB LR LR
comp=Z,620nm,19.0s,MS5.3
HRV Harvard--Oak R 122.97 347 PFAKE 18 00 30.0 +8.8
HRV LR LR
comp=Z,115nm,21.0s,MS4.5
DAC Darwin (Calif) 122.98 30 PFAKE 18 00 30.0 +8.6
DAC LR LR
comp=Z,249nm,19.0s,MS4.9
MVU Marysvale 123.47 24 *e*PKP PKPdf 18 00 25.1 +2.8
MVU LR LR
comp=Z,220nm,19.0s,MS4.8
MSU Marysvale 123.48 24 *e*PKIKP PKPdf 18 00 25.3 +3.0
JFWS Jewell Farm 124.22 3 PFAKE 18 00 40.0 +16
JFWS LR LR
comp=Z,740nm,20.0s,MS5.3
ISCO Idaho Springs 124.58 18 PFAKE 18 00 40.0 +16
ISCO LR LR
comp=Z,655nm,21.0s,MS5.3
ERPA Erie 124.75 354 PFAKE 18 00 40.0 +15
ERPA LR LR
comp=Z,681nm,20.0s,MS5.3
PV10 Paradox Valley 124.77 21 *e*PKP PKPdf 18 00 26.9 +2.1
NEN Nelson 124.78 28 *e*PKP PKPdf 18 00 27.5 +2.6
AAM Ann Arbor 124.85 357 PFAKE 18 00 40.0 +15
AAM LR LR
comp=Z,680nm,22.0s,MS5.3
SSPA Standing Stone 125.95 352 PFAKE 18 00 40.0 +13
SSPA LR LR
comp=Z,370nm,20.0s,MS5.0
MVL Millersville 126.33 350 *e*PKP PKPdf 18 00 29.3 +1.5
WUAZ Wupatki 126.39 25 PFAKE 18 00 40.0 +12
WUAZ LR LR
comp=Z,265nm,20.0s,MS4.9
SDCO Great Sand Dun 126.51 18 *e*PKP PKPdf 18 00 29.0 +0.8
SDCO *e* 18 00 39.7
SDCO LR LR
comp=Z,744nm,19.0s,MS5.4
ACSO Alum Creek Sta 126.87 356 PFAKE 18 00 40.0 +11
ACSO LR LR
comp=Z,433nm,19.0s,MS5.2
CBKS Cedar Bluff 127.01 13 PFAKE 18 00 40.0 +11
CBKS LR LR
comp=Z,510nm,20.0s,MS5.2
MCWV Mont Chateau 127.16 353 *e*PKP PKPdf 18 00 29.0 -0.4
MCWV LR LR
comp=Z,978nm,22.0s,MS5.4
KSU1 Kansas State U 127.32 10 *e*PKP PKPdf 18 00 30.7 +1.0
CBN Corbin 128.25 351 PFAKE 18 00 40.0 +8.5
CBN LR LR
comp=Z,823nm,22.0s,MS5.4
ANMO Albuquerque 128.75 21 *e*PKP PKPdf 18 00 34.9 +2.3
ANMO LR LR
comp=Z,559nm,22.0s,MS5.2
WCI Wyandotte Cave 128.99 359 PFAKE 18 00 50.0 +17
WCI LR LR
comp=Z,452nm,19.0s,MS5.2
CCM Cathedral Cave 129.00 5 PFAKE 18 00 50.0 +17
CCM LR LR
comp=Z,130nm,21.0s,MS4.6
TUC Tucson 129.40 26 *e*PKP PKPdf 18 00 36.5 +2.7
TUC *e* 18 00 47.1
TUC LR LR
comp=Z,254nm,20.0s,MS4.9
BLA Blacksburg 129.65 353 PFAKE 18 00 50.0 +16
BLA LR LR
comp=Z,753nm,21.0s,MS5.4
BBSR BB Station 130.12 335 PFAKE 18 00 50.0 +15
BBSR LR LR
comp=Z,1µm,20.0s,MS5.7
WVT Waverly 131.08 1 PFAKE 18 00 50.0 +13
WVT LR LR
comp=Z,406nm,22.0s,MS5.1
WMOK Wichita Mounta 131.13 13 PFAKE 18 00 50.0 +13
WMOK LR LR
comp=Z,526nm,20.0s,MS5.2
MNTX Cornudas Mount 132.07 21 *e*PKP PKPdf 18 00 38.9 0.0
MNTX LR LR
comp=Z,38nm,22.0s,MS4.1
PLAL Pickwick Lake 132.22 1 PFAKE 18 00 50.0 +11
PLAL LR LR
comp=Z,477nm,21.0s,MS5.2
MIAR Mount Ida 132.23 8 *e*PKP PKPdf 18 00 40.7 +1.5
MIAR LR LR
comp=Z,446nm,20.0s,MS5.2
OXF Oxford 132.64 3 PFAKE 18 00 50.0 +10
OXF LR LR
comp=Z,666nm,20.0s,MS5.3
LRAL Lakeview Retre 134.17 0 PFAKE 18 01 00.0 +17
LRAL LR LR
comp=Z,573nm,20.0s,MS5.3
TXAR Lajitas Array 134.83 21 PKP PKPdf 18 00 46.1 +1.9
comp=Z,1.5nm,0.4s,baz=270,slow=1.3,SNR=14
TXAR PP PP 18 03 16.6 -5.8
comp=Z,0.5nm,0.3s,baz=315,slow=1.8,SNR=4.4
TXAR SKPbc 18 04 14.5
comp=Z,8.7nm,0.9s,baz=315,slow=1.8,SNR=14
JCT Junction City 134.95 16 *e*PKP PKPdf 18 00 46.3 +1.9
JCT *e* 18 00 57.2
JCT LR LR
comp=Z,598nm,20.0s,MS5.3
HKT Hockley 136.37 11 PFAKE 18 01 00.0 +13
HKT LR LR
comp=Z,151nm,19.0s,MS4.7
DWPF Disney 138.75 353 PFAKE 18 01 00.0 +8.6
DWPF LR LR
comp=Z,105nm,20.0s,MS4.6
BDFB Brasilia 142.36 261 PKhKP 18 00 53.9
comp=Z,1.1nm,0.4s,baz=60,slow=8.1,SNR=3.4
BDFB PKP PKPdf 18 00 59.7 +1.6
comp=Z,5.9nm,0.8s,baz=127,slow=4.4,SNR=6.1
SJG San Juan 142.93 326 PFAKE 18 01 10.0 +11
SJG LR LR
comp=Z,289nm,20.0s,MS5.0
MOIG Morelia 144.53 24 *i*P PKPbc 18 01 02.7 +1.2
UNM Universidad Na 145.59 21 *e*P PKPbc 18 01 05.0 +0.7
PPM Popocatepetl 146.03 20 *e*P PKPbc 18 01 08.0 +2.6
LVIG Laguna Verde 146.09 16 *i*P PKPbc 18 01 07.0 +1.5
ZIIG Zihuatanejo 146.28 26 *i*P PKPbc 18 01 08.1 +2.1
TRQA Tornquist 146.71 217 *e*PKPdf PKPdf 18 01 06.9 +1.9
CAIG El Cayaco 147.27 24 *i*P PKPdf 18 01 10.8 +4.3
PLCA Paso Flores 148.96 204 PKPdf PKPdf 18 01 11.4 +2.9
PLCA PKPdf PKPdf 18 01 15.2 +6.6
PLCA Paso Flores 148.96 204 PKP PKPdf 18 01 11.2 +2.7
comp=Z,12nm,0.8s,baz=151,slow=2.4,SNR=8.2
PLCA PKPbc PKPdf 18 01 14.5 +6.0

comp=Z,12nm,0.8s,baz=170,slow=1.3,SNR=19
PLCA Paso Flores 148.96 204 *e*PKPdf PKPdf 18 01 11.0 +2.5
PLCA LR LR
comp=Z,222nm,19.0s,MS5.0
CPUP Villa Florida 149.35 240 PKP PKPdf 18 01 11.0 +1.4
comp=Z,5.4nm,1.0s,baz=29,slow=2.0,SNR=6.7
CPUP Villa Florida 149.35 240 *e*PKPdf PKPdf 18 01 10.8 +1.2
CPUP LR LR
comp=Z,245nm,19.0s,MS5.0
ROSC El Rosal 158.31 324 PKP PKPdf 18 01 24.4 +1.9
comp=Z,20nm,0.9s,baz=123,slow=22,SNR=7.0
ROSC PKPab PKPab 18 01 59.1 0.0
comp=Z,8.1nm,0.5s,baz=126,slow=21,SNR=6.0
LPAZ La Paz 161.65 258 PKPdf PKPdf 18 01 28.8 +2.9
LPAZ La Paz 161.65 258 PKP PKPdf 18 01 27.7 +1.8
comp=Z,5.2nm,0.9s,baz=66,slow=1.7,SNR=18
LPAZ PKPab PKPab 18 02 13.6 +0.1
comp=Z,4.8nm,1.0s,baz=87,slow=4.7,SNR=4.5
LPAZ La Paz 161.65 258 *e*PKP PKPdf 18 01 28.4 +2.4
LPAZ LR LR
comp=Z,282nm,19.0s
OTAV Otavalo 164.41 327 *e*PKP PKPdf 18 01 31.8 +2.9

MEX 03 17:51:07.6±0.3, 13.79N×92.49W, h105km±131km, MD4.1, Off coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**2.50**	**8**	*e*P	P	17 51 46.0	-1.6
CCIG				*i* S	S	17 52 15.9	-1.8
SCX	**San Cristobal**	**2.93**	**357**	*e*P	P	17 51 51.8	-1.7
SCX				*i* S	S	17 52 26.3	-1.8
CMIG	**Matias Romero**	**4.01**	**325**	*e*P	P	17 52 06.1	-2.1
CMIG				*i* S	S	17 52 51.8	-2.7

*LDG **03** 18:06:57.3±0.1, 42.66N×1.03E, h9km, Md2.5/3, Ml2.5/11, Error ellipse: s-maj=2.0km s-min=0.9km az=171.0*
*STR **03** 18:06:57.1±0.1, 42.69N×1.03E, h10km±1km, Ml2.2, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
*NEIC **03** 18:06:57.1, 42.69N×1.03E, h10km, ML2.5(LDG), ML2.2(STR), After STR.*

ISC 03 18:06:57.0±0.5, 42.81N±0.03×1.05E±0.02, h9km, n18, σ1°29/38, Pyrenees

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SALF	**Salau**	**0.11**	**113**	Pg	**Pg**	**18 07 01.2**	**+1.4**
SALF				Sg	**Sg**	**18 07 03.6**	**+2.0**
MLS	**Moulis**	**0.16**	**12**	Pg	**Pg**	**18 07 03.5**	**+3.0**
MLS				Sg	**Sg**	**18 07 07.8**	**+4.9**
MELF	**Melles**	**0.22**	**288**	Pg	**Pg**	**18 07 03.5**	**+1.7**
MELF				Sg	**Sg**	**18 07 07.4**	**+2.5**
RESF	**Ens**	**0.52**	**271**	Pg	**Pg**	**18 07 07.5**	**-0.1**
RESF				Sg	**Sg**	**18 07 14.9**	**+0.3**
EPF	**Esparros**	**0.57**	**294**	*e*Pg	**Pg**	**18 07 09.2**	**+0.7**
EPF				*e*Sg	**Sg**	**18 07 16.8**	**+0.7**
	32nm,0.2s						
LABF	**Labassere**	**0.76**	**289**	Pg	**Pg**	**18 07 12.4**	**+0.2**
LABF				Sg	**Sg**	**18 07 23.1**	**+0.8**
VIEF	**Viey**	**0.76**	**276**	Pg	**Pg**	**18 07 11.9**	**-0.3**
VIEF				Sg	**Sg**	**18 07 22.0**	**-0.4**
CARF	**Carcanieres**	**0.78**	**96**	Pg	**Pg**	**18 07 12.4**	**-0.3**
CARF				Sg	**Sg**	**18 07 22.8**	**-0.4**
MTLF	**Montolieu**	**1.01**	**58**	*e*Pg	**Pg**	**18 07 18.1**	**+0.8**
MTLF				*e*Sg	**Sg**	**18 07 33.1**	**+2.3**
	5.9nm,0.2s						
ETSF	**Etsaut**	**1.19**	**275**	*e*Pg	**Pg**	**18 07 19.6**	**-1.2**
ETSF				*e*Sg	**Sg**	**18 07 34.8**	**-1.8**
	13nm,0.2s						
SJPF	**Ste Jean**	**1.70**	**281**	*e*Pg	**Pg**	**18 07 29.3**	**-1.6**
SJPF				*e*Sg	**Sg**	**18 07 52.5**	**-1.1**
	5.0nm,0.2s						
LFF	**La Frestale**	**2.15**	**354**	*e*Pg	**Pg**	**18 07 39.6**	**-0.3**
LFF				*e*Sg	**Sg**	**18 08 09.6**	**+1.1**
	7.4nm,0.3s						
CAF	**Calviac**	**2.24**	**19**	*e*Pn	**Pn**	**18 07 36.3**	**+1.4**
CAF				*e*Pg	**Pg**	**18 07 41.5**	**-0.3**
CAF				*e*Sn	**Sn**	**18 08 03.0**	**0.0**
CAF				*e*Sg	**Sg**	**18 08 12.3**	**+0.5**
	3.8nm,0.2s						
LASF	**Ste Croix**	**2.41**	**57**	*e*Pg	**Pg**	**18 07 43.8**	**-1.3**
LASF				*e*Sg	**Sg**	**18 08 15.5**	**-1.7**
	1.9nm,0.2s						
RJF	**Les Rejaudoux**	**2.52**	**8**	*e*Pg	**Pg**	**18 07 47.1**	**-0.3**
RJF				*e*Sg	**Sg**	**18 08 21.6**	**+0.6**
	5.6nm,0.2s						
VIVF	**Saint-Julien-l**	**3.33**	**51**	*e*Pg	**Pg**	**18 08 01.0**	**-2.5**
VIVF				*e*Sg	**Sg**	**18 08 45.4**	**-2.5**
	0.7nm,0.2s						
MFF	**Saint Martin d**	**3.89**	**348**	*e*Pg	**Pg**	**18 08 13.1**	**-1.6**
MFF				*e*Sg	**Sg**	**18 09 03.0**	**-3.6**
	1.3nm,0.2s						
BGF	**Bois d'Agland**	**3.96**	**18**	*e*Pg	**Pg**	**18 08 12.4**	**-3.8**
BGF				*e*Sg	**Sg**	**18 09 04.6**	**-4.5**
	7.1nm,0.4s						

TIF 03 18:36:43.9, 41.23N×44.01E, h8km, Mpv3.5, 2C-1D, Western Caucasus

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STE	**Stepanavan**	**0.37**	**128**	*i* P	Pg	18 36 51.2	-0.3
STE				*e*S	Sg	18 36 56.0	-0.5
AKH	**Akhalkalaki**	**0.43**	**295**	⇑*i* P	Pg	18 36 52.7	+0.1
AKH				*i* S	Sg	18 36 59.2	+0.8
TBLG	**Delisi**	**0.74**	**47**	*i* P	Pb	18 37 00.0	+1.4
TBLG				*i* S	Sg	18 37 11.4	+2.7
MTA	**Mtatsminda**	**0.75**	**52**	⇓*i* P	Pb	18 36 59.4	+0.6
MTA				*i* S	Sb	18 37 10.5	+1.6
DUS	**Dusheti**	**1.00**	**31**	*i* P	Pb	18 37 05.6	+2.5
DUS				*i* S	Sb	18 37 21.5	+5.2
DGRG	**David-gareji**	**1.05**	**77**	⇑*i* P	Pb	18 37 04.8	+0.9
DGRG				*i* S	Sb	18 37 19.3	+1.7

*INMG **03** 19:03:31.1±1.2, 39.69N×6.41W, ML1.7, Error ellipse: s-maj=3.3km s-min=2.3km az=38.0*
*NEIC **03** 19:03:31.4, 39.73N×6.36W, MN1.8(MDD), After MDD.*
*MDD **03** 19:03:31.1±0.4, 39.71N×6.39W, mbLg1.8/9, Error ellipse: s-maj=4.4km s-min=3.6km az=45.0, PRXIMO*

ISC 03 19:03:28.5±0.4, 39.71N±0.03×6.35W±0.03, n26, σ1°04/49, Spain

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCBR	**Castelo Branco**	**0.88**	**279**	*e*P	**Pg**	**19 03 46.4**	**+0.4**
PCBR				*e*S	**Sg**	**19 03 57.3**	**-0.3**
	7.3nm,0.2s						
PCBR	**Castelo Branco**	**0.88**	**279**	P	**Pg**	**19 03 46.4**	**+0.4**
PCBR				S	**Sg**	**19 03 57.3**	**-0.3**
	3.7nm,0.2s						
MTE	**Manteigas**	**1.14**	**307**	*e*P	**Pb**	**19 03 51.7**	**+0.9**
MTE				*e*S	**Sb**	**19 04 06.9**	**+0.9**
	8.1nm,0.4s						
MTE	**Manteigas**	**1.14**	**307**	P	**Pb**	**19 03 51.7**	**+0.9**
MTE				S	**Sb**	**19 04 06.9**	**+0.9**
	4.1nm,0.4s						
PVIS	**Viseu**	**1.55**	**311**	*e*P	**Pn**	**19 03 58.6**	**+1.2**
PVIS				S	**Sb**	**19 04 18.1**	**+0.3**
	7.8nm,0.1s						
PVIS	**Viseu**	**1.55**	**311**	P	**Pn**	**19 03 58.6**	**+1.2**
PVIS				S	**Sb**	**19 04 18.1**	**+0.3**
	3.9nm,0.1s						
PTOM	**Tomar**	**1.59**	**267**	*e*Pg	**Pg**	**19 03 59.5**	**-0.8**
PTOM				*e*Sn	**Sn**	**19 04 18.7**	**-0.9**
	9.3nm,0.2s						
PTOM	**Tomar**	**1.59**	**267**	Pg	**Pg**	**19 03 59.5**	**-0.8**
PTOM				Sn	**Sn**	**19 04 18.7**	**-0.9**
	4.7nm,0.2s						
ESDC	**Sonseca Array**	**1.84**	**90**	Pg	**Pg**	**19 04 05.3**	**0.0**
	0.9nm,0.3s,baz=279,slow=17,SNR=14						
ESDC				Lg		19 04 29.6	
	1.3nm,0.4s,baz=272,slow=30,SNR=12						
GUD	**Guadarrama**	**1.92**	**60**	Pg	**Pg**	**19 04 06.6**	**-0.2**
	2.6nm,0.2s,SNR=6.8						
GUD				Lg		19 04 32.3	
	5.0nm,0.2s,SNR=5.0						
GUD	**Guadarrama**	**1.92**	**60**	Pg	**Pg**	**19 04 06.6**	**-0.2**
GUD				Lg		19 04 32.3	
MOE	**Montemor**	**1.96**	**233**	*e*Sg	**Sg**	**19 04 31.6**	**-2.0**
EMIN	**Mina Concepcio**	**1.96**	**187**	Pn	**Pn**	**19 04 04.7**	**+1.4**
	0.2nm,0.1s,SNR=9.6						
EMIN				Pg	**Pg**	**19 04 07.3**	**-0.3**
	0.7nm,0.2s,SNR=7.9						
EMIN				Lg		19 04 31.8	
	2.0nm,0.1s,SNR=5.0						
EMIN	**Mina Concepcio**	**1.96**	**187**	Pn	**Pn**	**19 04 04.7**	**+1.4**
EMIN				Sn	**Sn**	**19 04 31.7**	**+2.7**
EADA	**Adamuz**	**2.08**	**138**	Pn	**Pn**	**19 04 06.5**	**+1.5**
	0.1nm,0.1s,SNR=7.9						
EADA				Pg	**Pg**	**19 04 09.7**	**-0.2**
	1.0nm,0.2s,SNR=8.3						
EADA				Sn	**Sn**	**19 04 31.9**	**0.0**
	0.4nm,0.1s,SNR=4.0						
EADA				Lg		19 04 37.3	
	1.8nm,0.2s,SNR=7.9						
EADA	**Adamuz**	**2.08**	**138**	Pn	**Pn**	**19 04 06.5**	**+1.5**
EADA				Pg	**Pg**	**19 04 09.7**	**-0.2**
EADA				Sn	**Sn**	**19 04 31.4**	**-0.4**
EADA				Lg		19 04 37.2	
ECAL	**Calabor**	**2.24**	**353**	Pn	**Pn**	**19 04 08.6**	**+1.2**
	0.3nm,0.2s,SNR=4.0						
ECAL				Pg	**Pg**	**19 04 12.4**	**-0.9**
	0.5nm,0.2s,SNR=7.9						
ECAL				Lg		19 04 41.6	
	3.2nm,0.2s,SNR=7.9						
ECAL	**Calabor**	**2.24**	**353**	Pn	**Pn**	**19 04 08.6**	**+1.2**
ECAL				Pg	**Pg**	**19 04 12.1**	**-1.2**
ECAL				Lg		19 04 41.6	
EGRO	**El Granado**	**2.35**	**202**	Pn	**Pn**	**19 04 09.2**	**+0.3**
	0.4nm,0.1s,SNR=4.0						
EGRO				Pg	**Pg**	**19 04 13.2**	**-2.2**
	0.6nm,0.1s,SNR=7.9						
EGRO	**El Granado**	**2.35**	**202**	Pn	**Pn**	**19 04 09.2**	**+0.3**
EGRO				Pg	**Pg**	**19 04 14.4**	**-1.0**
EGRO				Sn	**Sn**	**19 04 39.1**	**+0.2**
EGRO				Lg		19 04 45.7	
PALC	**Alcoutim**	**2.41**	**202**	*e*Pn	**Pn**	**19 04 09.9**	**+0.1**
ELOB	**Lobios**	**2.51**	**329**	Pg	**Pg**	**19 04 18.0**	**-0.6**
	1.4nm,0.2s,SNR=7.9						
ELOB				Sn	**Sn**	**19 04 42.1**	**-0.8**
	0.7nm,0.2s,SNR=5.0						
ELOB				Lg		19 04 50.9	
	2.7nm,0.3s,SNR=5.0						
ELOB	**Lobios**	**2.51**	**329**	Pn	**Pn**	**19 04 12.5**	**+1.3**
ELOB				Pg	**Pg**	**19 04 17.7**	**-0.9**
ELOB				Sn	**Sn**	**19 04 40.0**	**-2.9**
ELOB				Lg		19 04 48.3	
EQES	**Quesada**	**3.20**	**126**	Lg		19 05 14.8	
	0.7nm,0.2s,SNR=4.0						
EQES	**Quesada**	**3.20**	**126**	Pn	**Pn**	**19 04 22.1**	**+1.1**
EQES				Pg	**Pg**	**19 04 31.8**	**-0.6**
EQES				Sn	**Sn**	**19 04 59.7**	**-0.7**
EQES				Lg		19 05 13.9	
ETOR	**Torete**	**3.47**	**70**	Sn	**Sn**	**19 05 05.4**	**-1.9**
	0.5nm,0.2s,SNR=7.9						
ETOR				Lg		19 05 22.3	
	1.1nm,0.3s,SNR=7.9						

*WEL **03** 19:25:44.3±0.5, 39.32S×175.03E, h131km±4km, ML3.6/1, Error ellipse: s-maj=4.0km s-min=1.6km az=90.0*

ISC 03 19:25:43.7±1.6, 39.38S±0.07×175.1E±0.1, h134km±17km, n17, σ0°60/22, 2C, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CNZ	**Chateau**	**0.41**	**64**	PN	**P**	**19 26 02.9**	**0.0**
NGZ	**Ngauruhoe**	**0.46**	**64**	PN	**P**	**19 26 03.0**	**-0.2**
TUVZ	**Tukino**	**0.47**	**76**	PN	**P**	**19 26 03.4**	**+0.2**
MGZ	**Maungaku**	**0.53**	**44**	PN	**P**	**19 26 03.2**	**-0.4**
TSZ	**Takapari Road**	**0.97**	**135**	PN	**P**	**19 26 07.7**	**+0.9**
MRZ	**Mangatainoka R**	**1.34**	**163**	PN	**P**	**19 26 11.4**	**+0.6**
MRZ				SN	**S**	**19 26 31.4**	**0.0**
PWZ	**Pawanui**	**1.53**	**116**	SN	**S**	**19 26 34.4**	**-0.6**
BFZ	**Birch Farm**	**1.58**	**146**	PN	**P**	**19 26 13.7**	**+0.3**
BFZ				SN	**S**	**19 26 36.3**	**+0.2**
CAW	**Cannon Point**	**1.73**	**180**	PN	**P**	**19 26 15.6**	**+0.5**
MTW	**Mount Morrison**	**1.81**	**170**	PN	**P**	**19 26 16.1**	**+0.2**
MRW	**Makara Radio**	**1.87**	**189**	PN	**P**	**19 26 17.0**	**+0.3**
SNZO	**South Karori**	**1.95**	**188**	⇑PN	**P**	**19 26 17.7**	**+0.1**
MSWZ	**Moikau Station**	**2.04**	**176**	⇑PN	**P**	**19 26 18.8**	**+0.1**
MSWZ				SN	**S**	**19 26 44.4**	**-1.1**
NNZ	**Nelson**	**2.25**	**215**	PN	**P**	**19 26 20.6**	**-0.8**
NNZ				SN	**S**	**19 26 50.5**	**+0.3**
THZ	**Tophouse**	**2.90**	**214**	PN	**P**	**19 26 28.5**	**-1.4**
THZ				SN	**S**	**19 27 05.9**	**+0.8**
LTZ	**Lake Taylor**	**4.00**	**211**	SN	**S**	**19 27 27.0**	**-4.3**
MQZ	**McQueen's Vall**	**4.69**	**202**	SN	**S**	**19 27 42.2**	**-5.4**

*IDC **03** 19:27:34.2±1.8, 20.91S×177.44W, mb3.6/3, mb1 4.0/4, mb1mx3.8/14, ML4.6/1, Error ellipse: s-maj=103.0km s-min=31.9km az=165.0*

ISC 03 19:27:37.1±1.2, 21.3S±0.5×177.4W±0.2, h33km, n4, σ0°25/4, mb3.5/3, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**16.39**	**93**	Pn	**P**	**19 31 26.2**	**0.0**
	2.0nm,0.3s,baz=45,slow=9.4,SNR=3.6						
ASAR	**Alice Springs**	**44.94**	**257**	P	**P**	**19 35 51.1**	**+0.2**
	0.3nm,0.7s,mb3.2,baz=90,slow=7.3,SNR=5.9						
WRA	**Warramunga Arr**	**45.10**	**263**	P	**P**	**19 35 52.1**	**-0.2**
	0.6nm,1.0s,mb3.4,baz=96,slow=7.7,SNR=5.2						
YKA	**Yellowknife Ar**	**96.96**	**25**	P	**P**	**19 41 06.0**	**0.0**
	0.5nm,1.2s,mb3.8,baz=257,slow=8.2,SNR=4.6						

*MOS **03** 19:33:13.6±0.9, 17.93S×172.53W, h33km, mb6.0/45, MS5.1/13, Error ellipse: s-maj=11.0km s-min=6.9km az=57.5*
*SYO **03** 19:33:16.3, 18.04S×172.55W, h50km, MB5.8, MS5.3*
*HRVD **03** 19:33:16.4±0.1, 18.01S×172.22W, h54km, MW5.6/65, Centroid moment Tensor Solution. LP body waves: s64,c123;Mantle waves: s65,c136; Half duration: 1s5 Moment tensor: Scale 10^17Nm; Mrr2.36±.04; Mθθ0.29±.04; Mφφ-2.65±.04; Mrθ-0.20±.03; Mθφ-0.68±.03; Mφr-1.32±.03; Best double couple: M0 2.91×10^17 NP1:φs15°, δ31°, λ94°. NP2:φs190°, δ59°, λ88°. Principal axes: T 2.69, Plg76°, Azm93°; N .44, Plg2°, Azm192°; P -3.12, Plg14°, Azm282°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **03** 19:33:16.4±0.1, 18.04S×172.55W, h50km, mb5.8/79, MS5.3/9, MW5.7 Error ellipse: s-maj=5.8km s-min=3.0km az=144.0, Moment Tensor Solution. s33 Moment tensor: Scale 10^17Nm; Mrr1.36; Mθθ0.55; Mφφ-1.91; Mrθ1.05; Mθφ-2.70; Mφr-2.52; Best double couple: M0 4.2×10^17 NP1:φs71°, δ47°, λ161°. NP2:φs174°, δ76°, λ44°. Principal axes: T 4.24, Plg41°, Azm42°; N -.08, Plg44°, Azm188°; P -4.16, Plg18°, Azm296°;*
*BJI **03** 19:33:17.0, 17.51S×171.65W, h69km, mB5.7, mb5.5, Ms5.2, Ms25.0*
*IDC **03** 19:33:19.2±0.5, 18.08S×172.65W, h76km±4km, mb5.3/23, mb1 5.5/24, mb1mx5.5/25, MS5.0/24, Ms1 5.0/24, ms1mx4.9/27, Error ellipse: s-maj=14.4km s-min=8.6km az=143.0*

ISC 03 19:33:17.6±0.1, 17.88S±0.04×172.35W±0.04, h63km, h63km±3.8km: pP-P, n763, σ1°02/327, mb5.8/116, 82C-20D, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**12.31**	**108**	P	**P**	**19 36 03.9**	**-8.3**
	45nm,0.3s,baz=258,slow=7.4,SNR=56						
RAR				S	**S**	**19 38 10.7**	**-18**
	12nm,0.3s,baz=47,slow=22,SNR=3.0						
RAR				LR	LR	19 39 42.7	
	comp=Z,9μm,19.6s,baz=339,slow=31						
RAR	**Rarotonga**	**12.31**	**108**	*e*P	**P**	**19 36 04.3**	**-7.9**
	2μm,1.2s						
BKM	**Butte a Klehm**	**18.48**	**268**	⇑*i* P	**P**	**19 37 26.9**	**-4.0**
DZM	**Mont Dzumac**	**20.35**	**255**	*e*P	**P**	**19 37 45.1**	**-6.3**
DZM	**Mont Dzumac**	**20.35**	**255**	*e*P	**P**	**19 37 45.1**	**-6.3**
NOUC	**Port Laguerre**	**20.49**	**255**	*e*P	**P**	**19 37 46.3**	**-6.4**
PAE	**Paea**	**21.69**	**93**	*e*P	**P**	**19 38 03.8**	**-1.1**
	636nm,1.3s,mb5.9						
PPT	**Papeete**	**21.70**	**93**	*e*P	**P**	**19 38 03.8**	**-1.2**
	244nm,1.3s,mb5.5						
PPT	**Papeete**	**21.70**	**93**	*e*L		19 42 20.5	
PPT				*e*R		19 42 58.8	
	18μm,27.8s						
PPT	**Papeete**	**21.70**	**93**	P	**P**	**19 38 03.6**	**-1.3**
	127nm,1.2s,mb5.2,baz=214,slow=16,SNR=3.3						
PUZ	**Puketiti**	**21.73**	**200**	*e*P	**P**	**19 38 01.6**	**-3.6**
TVO	**Taravao**	**21.99**	**93**	*e*P	**P**	**19 38 06.9**	**-1.0**
	999nm,1.4s,mb6.1						
URZ	**Urewera**	**22.30**	**202**	P	**P**	**19 38 06.4**	**-4.4**
	131nm,0.6s,mb5.6,baz=360,slow=5.2,SNR=24						
URZ				S	**S**	**19 42 06.0**	**-1.0**
	19nm,0.4s,baz=281,slow=23,SNR=6.8						
URZ	**Urewera**	**22.30**	**202**	P	**P**	**19 38 06.8**	**-3.9**
KNZ	**Kokohu**	**22.78**	**200**	*e*P	**P**	**19 38 17.8**	**+2.3**
PMOR	**Pomariorio Ree**	**23.63**	**87**	*e*P	**P**	**19 38 22.2**	**-1.7**
	455nm,1.3s,mb5.7						
NGZ	**Ngauruhoe**	**23.66**	**204**	P	**P**	**19 38 25.0**	**+1.0**
TUVZ	**Tukino**	**23.73**	**204**	P	**P**	**19 38 25.2**	**+0.6**
BFZ	**Birch Farm**	**24.76**	**201**	P	**P**	**19 38 31.7**	**-3.0**
BFZ				*e*S	**S**	**19 42 53.0**	**+3.4**
SNZO	**South Karori**	**25.86**	**203**	P	**P**	**19 38 46.9**	**+1.9**
	238nm,1.0s,mb5.7						
QRZ	**Quartz Range**	**26.31**	**207**	P	**P**	**19 38 51.3**	**+2.1**
THZ	**Tophouse**	**26.94**	**205**	P	**P**	**19 38 57.5**	**+2.5**
THZ				*e*S	**S**	**19 43 34.3**	**+8.7**
KHZ	**Kahutara**	**27.25**	**203**	P	**P**	**19 39 00.1**	**+2.3**
KHZ				S	**S**	**19 43 44.2**	**+14**
LTZ	**Lake Taylor**	**28.05**	**205**	P	**P**	**19 39 07.9**	**+2.8**
WVZ	**Waitaha Valley**	**28.92**	**206**	P	**P**	**19 39 15.0**	**+2.2**
RPZ	**Rata Peaks**	**29.32**	**205**	P	**P**	**19 39 20.8**	**+4.5**
	130nm,0.5s,mb5.9,baz=283,slow=1.0,SNR=46						
RPZ	**Rata Peaks**	**29.32**	**205**	*e*P	**P**	**19 39 19.3**	**+2.9**
BWZ	**Berwen**	**30.47**	**205**	P	**P**	**19 39 28.1**	**+1.6**
AXZ	**Alexandra**	**31.30**	**205**	P	**P**	**19 39 36.3**	**+2.5**
MSZ	**Milford Sound**	**31.41**	**208**	P	**P**	**19 39 37.9**	**+3.1**
WHZ	**Wether Hill Ro**	**32.37**	**206**	P	**P**	**19 39 48.3**	**+5.1**
ARMA	**Armidale**	**35.01**	**242**	*e*P	**P**	**19 40 01.7**	**-4.3**
RKT	**Rikitea**	**35.33**	**105**	*e*P	**P**	**19 40 06.8**	**-2.1**
	375nm,1.3s,mb6.2						
CNB	**Canberra Magne**	**38.10**	**235**	*e*P	**P**	**19 40 29.1**	**-2.9**
	201nm,1.1s,mb5.8						
CTA	**Charters Tower**	**39.13**	**260**	*e*P	**P**	**19 40 36.3**	**-4.4**
	112nm,0.8s,mb5.7						
CTA				*e*S	**S**	**19 46 29.5**	**-6.2**
CTA	**Charters Tower**	**39.13**	**260**	LR	LR	19 54 40.9	
	comp=Z,4μm,21.9s,baz=95,slow=33						
CTA	**Charters Tower**	**39.13**	**260**	*e*P	**P**	**19 40 36.3**	**-4.4**
CTA				*e*S	**S**	**19 46 29.5**	**-6.2**
CTA				pmax	pmax		
	comp=Z,112nm,0.8s						
CTAO	**Charters Tower**	**39.13**	**260**	P	**P**	**19 40 36.2**	**-4.5**
CTAO	**Charters Tower**	**39.13**	**260**	*e*P	**P**	**19 40 36.3**	**-4.4**
CTAO				pmax	pmax		
	comp=Z,186nm,0.9s,mb5.8						
CTAO	**Charters Tower**	**39.13**	**260**	*e*P	**P**	**19 40 36.3**	**-4.4**
	comp=Z,186nm,0.9s,mb5.8						
PMG	**Port Moresby**	**40.16**	**277**	P	**P**	**19 40 46.6**	**-2.7**
	comp=Z,128nm,0.8s,mb5.7,baz=105,slow=4.5,SNR=27						
PMG				LR	LR	19 54 16.2	
	comp=Z,1μm,19.2s,baz=294,slow=32						
PMG	**Port Moresby**	**40.16**	**277**	*e*P	**P**	**19 40 46.6**	**-2.7**
PMG				pmax	pmax		
	comp=Z,130nm,0.9s						
PMG	**Port Moresby**	**40.16**	**277**	*e*P	**P**	**19 40 46.7**	**-2.6**
WAU	**Wau**	**41.20**	**279**	*e*P	**P**	**19 40 56.2**	**-1.7**
KIP	**Kipapa**	**41.51**	**20**	*e*P	**P**	**19 41 00.2**	**-0.2**
KIP				pmax	pmax		
	comp=Z,361nm,1.0s,mb6.0						
KIP	**Kipapa**	**41.51**	**20**	*e*P	**P**	**19 41 00.2**	**-0.3**
	comp=Z,361nm,1.0s,mb6.0						
TOO	**Toolangi**	**41.73**	**233**	*e*P	**P**	**19 40 59.3**	**-2.8**
	comp=Z,88nm,1.0s,mb5.3						
TOO	**Toolangi**	**41.73**	**233**	*e*P	**P**	**19 40 59.3**	**-2.8**
TOO				pmax	pmax		
	comp=Z,88nm,1.0s,mb5.3						
STKA	**Stephens Creek**	**43.73**	**242**	*e*P	**P**	**19 41 14.0**	**-4.4**
	comp=Z,82nm,1.1s,mb5.4						
STKA				*e*S	**S**	**19 47 41.9**	**-1.6**
STKA	**Stephens Creek**	**43.73**	**242**	P	**P**	**19 41 14.6**	**-3.8**
	comp=Z,75nm,0.9s,mb5.4,baz=84,slow=8.1,SNR=65						
STKA				pP	pP	19 41 32.0	-2.5
	comp=Z,29nm,0.9s,baz=29,slow=12,SNR=3.4						
STKA				LR	LR	19 59 01.4	
	comp=Z,3μm,18.3s,baz=70,slow=36						
WB2	**Warramunga Arr**	**50.29**	**259**	*e*P	**P**	**19 42 05.4**	**-4.7**
WB2				*e*S	**S**	**19 49 11.0**	**-5.5**
WRAB	**Tennant Creek**	**50.29**	**259**	⇓*i* P	**P**	**19 42 05.4**	**-4.7**
	comp=Z,784nm,1.1s,mb6.7						
WRA	**Warramunga Arr**	**50.30**	**259**	P	**P**	**19 42 05.6**	**-4.6**
	comp=Z,198nm,1.0s,mb6.1,baz=94,slow=7.2,SNR=280						
WRA				pP	pP	19 42 24.5	-2.0
	comp=Z,49nm,0.9s,baz=96,slow=7.7,SNR=3.7						
WRA				S	**S**	**19 49 11.6**	**-5.0**
	comp=Z,2.7nm,1.1s,baz=102,slow=13,SNR=4.4						
WRA				LR	LR	20 02 08.7	
	comp=Z,3μm,20.8s,baz=90,slow=35						
AS12	**Alice Springs**	**50.34**	**254**	⇓*i* P	**P**	**19 42 06.2**	**-4.2**
	comp=Z,721nm,1.0s,mb6.7						
AS12				*e*	pP	19 42 23.6	-3.2
AS12				*e*S	**S**	**19 49 12.5**	**-4.7**
ASAR	**Alice Springs**	**50.34**	**254**	P	**P**	**19 42 06.5**	**-3.9**
	comp=Z,421nm,0.7s,mb6.6,baz=86,slow=8.7,SNR=632						
ASAR				pP	pP	19 42 24.4	-2.4
	comp=Z,279nm,1.0s,baz=90,slow=9.0,SNR=6.7						
ASAR				S	**S**	**19 49 12.5**	**-4.7**
	comp=Z,6.7nm,1.0s,baz=89,slow=14,SNR=9.6						
ASAR				LR	LR	20 03 13.2	
	comp=Z,801nm,19.2s,baz=89,slow=36						
ASAR				PKPPKP		20 12 58.5	
	comp=Z,1.1nm,1.2s,baz=307,slow=4.5,SNR=3.0						
FITZ	**Fitzroy Crossi**	**58.71**	**259**	⇓*i* P

comp=Z,276nm,1.4s,mb6.0
PAS Pasadena 73.04 45 P **P 19 44 42.6 -0.3**
TGY Tagaytay City 73.06 291 LR LR 20 14 32.8
comp=Z,794nm,19.4s,baz=212,slow=34
MWC Mount Wilson 73.16 45 *eP* **P 19 44 43.4 -0.2**
BAR Barrett 73.21 47 *eP* **P 19 44 43.3 -0.6**
SDN Sand Point 73.62 7 *eP* **P 19 44 44.4 -1.4**
SDPT Sand Point 73.63 7 *eP* **P 19 44 43.7 -2.2**
KHMM Horse Mountain 73.83 36 P **P 19 44 47.6 +0.2**
PFO Pinyon Flat Ob 73.89 46⇑*iP* **P 19 44 47.4 -0.5**
PFO pmax pmax
comp=Z,141nm,1.1s,mb5.8
PFO Pinyon Flat Ob 73.89 46⇑*iP* **P 19 44 47.4 -0.4**
comp=Z,141nm,1.1s,mb5.8
CMB Columbia Colle 73.97 40 *eP* **P 19 44 48.0 -0.2**
CMB pmax pmax
comp=Z,136nm,1.1s,mb5.8
CMB Columbia Colle 73.97 40 *eP* **P 19 44 48.0 -0.3**
comp=Z,136nm,1.1s,mb5.8
OHCM Honcut 74.13 39 *eP* **P 19 44 48.6 -0.5**
KRMB Red Mountain 74.17 36 *eP* **P 19 44 49.9 +0.6**
WDC Whiskeytown Da 74.32 37 *eP* **P 19 44 50.0 -0.2**
WDC pmax pmax
comp=Z,99nm,1.1s,mb5.7
WDC Whiskeytown Da 74.32 37 *eP* **P 19 44 50.0 -0.2**
comp=Z,99nm,1.1s,mb5.7
DAC Darwin (Calif) 74.68 43 *eP* **P 19 44 52.3 0.0**
DAC pmax pmax
comp=Z,83nm,1.3s,mb5.5
DAC Darwin (Calif) 74.68 43 *eP* **P 19 44 52.3 0.0**
comp=Z,83nm,1.3s,mb5.5
MTUM Tungsten Hills 74.70 42 *eP* **P 19 44 53.2 +0.8**
KEBM Edson Butte 74.85 34 *eP* **P 19 44 53.4 +0.2**
PET Petropavlovsk 74.93 342 *eP* **P 19 44 52.4 -1.0**
PET pmax pmax
comp=Z,47nm,1.1s,mb5.3
PET Petropavlovsk 74.93 342 *eP* **P 19 44 52.4 -1.0**
comp=Z,47nm,1.1s,mb5.3
YBH Yreka Blue Hor 74.98 36 *eP* **P 19 44 54.2 +0.3**
YBH pmax pmax
comp=Z,175nm,1.1s
YBH Yreka Blue Hor 74.98 36 *eP* **P 19 44 54.2 +0.3**
comp=Z,175nm,1.1s,mb5.9
BEKR Beckwourth 75.14 39 *eP* **P 19 44 54.9 0.0**
comp=Z,112nm,1.0s,mb5.8
WCN Washoe City 75.15 40 *eP* **P 19 44 55.3 +0.3**
WCN pmax pmax
comp=Z,199nm,1.2s,mb5.9
WCN Washoe City 75.15 40 *eP* **P 19 44 55.2 +0.3**
comp=Z,199nm,1.2s,mb5.9
HUMO Hull Mountain 75.42 35 P **P 19 44 56.8 +0.4**
NVAR Mina Array Bea 75.51 41 P **P 19 44 57.3 +0.2**
comp=Z,73nm,0.8s,mb5.6,baz=216,slow=7.5,SNR=272
NVAR pP pP 19 45 17.9 +3.5
comp=Z,16nm,0.8s,baz=219,slow=7.6,SNR=4.2
NVAR sP sP 19 45 27.7 +6.4
comp=Z,20nm,0.9s,baz=218,slow=6.9,SNR=2.6
NVAR LR LR 20 13 44.0
comp=Z,1μm,18.9s,baz=285,slow=32
NVAR Mina Array Bea 75.51 41 P **P 19 44 57.3 +0.2**
NVAR pP pP 19 45 17.9 +3.5
NVAR sP sP 19 45 27.7 +6.4
NVAR LR LR 20 13 44.0
MIR Mirnyy 75.59 204⇑*eP* **P 19 44 54.5 -2.4**
MIR pmax pmax
comp=Z,140nm,1.6s,mb5.6
DBO Dodson Butte 75.61 35 P **P 19 44 57.7 +0.2**
PAHR Pah Rah Range 75.63 39 *eP* **P 19 44 58.3 +0.6**
comp=Z,65nm,1.1s,mb5.5
LDFC Landfair 75.64 45 *eP* **P 19 44 58.2 +0.4**
HSO Harness Mounta 75.96 35 *eP* **P 19 45 00.9 +1.4**
TPH Tonopah 75.98 42 *eP* **P 19 45 00.0 +0.3**
TPH pmax pmax
comp=Z,231nm,1.3s,mb6.0
TPH Tonopah 75.98 42 *eP* **P 19 44 60.0 +0.2**
comp=Z,231nm,1.3s,mb6.0
YSS Yuzh-Sakhalins 76.12 330 *eP* **P 19 45 00.0 -0.3**
YSS *e* 19 45 09.6
YSS pmax pmax
comp=Z,110nm,1.1s,mb5.7
YSS pmax pmax
comp=E,70nm,1.0s
YSS MLR MLR
comp=Z,500nm,19.0s
YSS MLR MLR
comp=N,500nm,20.0s
YSS MLR MLR
comp=E,500nm,18.0s
YSS Yuzh-Sakhalins 76.12 330⇑*iP* **P 19 45 00.4 +0.1**
comp=E,190nm,1.1s,mb5.9
NEN Nelson 76.14 45⇑*iP* **P 19 45 00.7 0.0**
MOD Modoc 76.46 37 P **P 19 45 02.2 -0.1**
COR Corvallis 76.56 34⇑*iP* **P 19 45 02.8 0.0**
KDAK Kodiak Island 77.15 11 *eP* **P 19 45 05.4 -0.5**
comp=E,557nm,1.4s,mb6.3
SSOR Sweet Springs 77.18 34 *eP* **P 19 45 06.7 +0.3**
TUC Tucson 77.20 50⇑*iP* **P 19 45 06.9 +0.2**
TUC pmax pmax
comp=Z,112nm,1.0s,mb5.8
TUC Tucson 77.20 50⇑*iP* **P 19 45 06.9 +0.2**
comp=Z,112nm,1.0s,mb5.8
BMN Battle Mountai 77.38 40 *eP* **P 19 45 07.7 +0.1**
BMN pmax pmax
comp=Z,217nm,1.4s,mb5.9
BMN Battle Mountai 77.38 40 *eP* **P 19 45 07.7 +0.1**
comp=Z,217nm,1.4s,mb5.9
WVOR Wild Horse Val 77.76 38 *eP* **P 19 45 09.6 0.0**
WVOR pmax pmax
comp=Z,199nm,1.3s,mb5.9
WVOR Wild Horse Val 77.76 38 *eP* **P 19 45 09.6 0.0**
comp=Z,200nm,1.3s,mb5.9
BMW Boistfort Moun 77.87 32 *eP* **P 19 45 10.5 +0.4**
SHW Mount Saint He 78.19 33 P **P 19 45 08.7 -3.1**
OCWA Octopus Mounta 78.27 31 *eP* **P 19 45 12.9 +0.6**
comp=Z,190nm,1.0s,mb6.0
WUAZ Wupatki 78.44 47⇑*iP* **P 19 45 13.8 +0.4**
comp=Z,112nm,1.1s,mb5.7
VGB Gordon Butte 78.51 34 *eP* **P 19 45 14.5 +0.9**
KS15 Wonju Array Si 78.64 315 *eP* **P 19 45 15.8 +1.3**
LON Longmire 78.78 33 P **P 19 45 14.6 -0.5**
GNW Green Mountain 78.81 32 P **P 19 45 15.1 -0.1**
PGC Sidney 79.24 31 *eP* **P 19 45 17.3 -0.2**
comp=Z,386nm,1.0s,mb6.3
SNB Saturna Island 79.46 31 P **P 19 45 19.1 +0.3**
MVU Marysvale 79.47 44 *eP* **P 19 45 20.1 +1.1**
comp=Z,157nm,1.1s,mb5.9
TTW Tolt Reservoir 79.47 32 P **P 19 45 18.6 -0.2**
MSU Marysvale 79.50 44 *eP* **P 19 45 20.7 +1.5**
INCN Inchon 79.50 315 *eP* **P 19 45 20.2 +0.9**
comp=Z,123nm,1.0s,mb5.8
BBB Bella Bella 79.66 26 P **P 19 45 19.7 0.0**
comp=Z,132nm,1.0s,mb5.8,baz=237,slow=3.8,SNR=18
BBB LR LR 20 13 24.8
comp=Z,622nm,19.9s,baz=224,slow=30
RSO Redoubt South 79.66 10 *eP* **P 19 45 19.1 -0.5**
SVW Sparrevohn 79.86 8 *eP* **P 19 45 19.8 -0.8**
MID Middleton Isla 79.91 13 *eP* **P 19 45 27.5 +6.5**
WRW Wenatchee Ridg 79.99 32 P **P 19 45 21.2 -0.4**
RPW Rockport 80.06 32 *eP* **P 19 45 22.3 +0.3**
LNOR Lincton Mounta 80.09 35 *eP* **P 19 45 22.3 +0.1**
SLKM Skilak Lake 80.14 11 *eP* **P 19 45 22.3 +0.2**
SSE Sheshan 80.25 307 P **P 19 45 25.9 +2.6**
SSE S S 19 55 29.1 +7.0
SSE AMB AMB
comp=Z,47nm,0.7s,mb5.5
SSE LR LR
comp=N,602nm,30.0s
SSE LR LR
comp=E,655nm,30.0s
SSE LR LR
comp=Z,1μm,30.0s
BGU Big Grassy Mou 80.27 41 *eP* **P 19 45 23.3 0.0**
NLU North Lily Min 80.34 43 *eP* **P 19 45 24.2 +0.5**
NLW Nelson Butte 80.41 32 *eP* **P 19 45 24.0 +0.1**
SPU Mount Spurr 80.46 10 *eP* **P 19 45 23.1 -0.8**
SAW Saint Andrews 80.65 33 P **P 19 45 24.8 -0.3**
MPU Maple Canyon 80.66 43 *eP* **P 19 45 25.9 +0.5**
SIT Sitka 80.80 19 *eP* **P 19 45 25.5 -0.2**
SIT Sitka 80.80 19 *eP* **P 19 45 25.4 -0.3**
SPUT South Promonto 80.85 41 *eP* **P 19 45 26.3 0.0**
GOU Gould Hall 80.85 11 *eP* **P 19 45 24.9 -1.0**
HVU Hansel Valley 80.90 41 P **P 19 45 26.7 +0.1**
HVU Hansel Valley 80.90 41 *eP* **P 19 45 26.3 -0.3**
SRU San Rafael 80.91 44 P **P 19 45 27.1 +0.4**
SRU San Rafael 80.91 44 *eP* **P 19 45 27.0 +0.3**

MNTX Cornudas Mount 80.91 53⇑*iP* **P 19 45 26.9 0.0**
comp=Z,8.3nm,1.1s,mb4.6
HLID Hailey 80.92 39⇑*iP* **P 19 45 27.0 +0.3**
comp=Z,1.4nm,0.8s
PMS Palmer South 80.94 11 *eP* **P 19 45 25.6 -0.8**
CTU Camp Tracy 80.95 42 *eP* **P 19 45 27.4 +0.5**
JLU Jordanelle 81.10 42 *eP* **P 19 45 27.9 +0.2**
DAU Daniels Canyon 81.12 43 *eP* **P 19 45 28.2 +0.4**
TXAR Lajitas Array 81.17 55 P **P 19 45 28.9 +0.6**
comp=Z,43nm,0.9s,mb5.4,baz=217,slow=6.3,SNR=136
TXAR pP pP 19 45 49.1 +3.2
comp=Z,7.7nm,0.9s,baz=238,slow=8.5,SNR=1.7
TXAR LR LR 20 16 15.7
comp=Z,830nm,18.5s,baz=250,slow=32
PMR Palmer 81.34 11⇑*iP* **P 19 45 27.3 -1.2**
PMR pmax pmax
comp=Z,250nm,1.3s,mb6.0
PMR Palmer 81.34 11 *eP* **P 19 45 27.7 -0.8**
DPW Davenport 81.38 34 *eP* **P 19 45 28.5 -0.5**
TCUT Toone Canyon 81.40 42 *eP* **P 19 45 29.6 +0.4**
PV10 Paradox Valley 81.52 45 *eP* **P 19 45 30.7 +0.8**
HWUT Hardware Ranch 81.57 41 *eP* **P 19 45 29.8 -0.3**
comp=Z,17nm,0.7s,mb5.1
PNT Penticton 81.57 32 P **P 19 45 29.8 -0.2**
MDJ Mudanjiang 81.59 322 *eP* **P 19 45 30.7 +0.6**
comp=Z,58nm,1.2s,mb5.4
ANMO Albuquerque 81.64 49*c iP* **P 19 45 31.4 +0.8**
ANMO Albuquerque 81.64 49 *eP* **P 19 45 31.3 +0.7**
comp=Z,92nm,1.1s,mb5.6
PV01 Paradox Valley 81.72 46 *eP* **P 19 45 32.0 +1.1**
NEW Newport 82.19 34 LR LR 20 14 25.0
comp=Z,2μm,21.9s,baz=232,slow=30
NEW Newport 82.19 34 *eP* **P 19 45 32.5 -0.7**
comp=Z,106nm,1.3s,mb5.6
ANM Nome 82.36 3 *eP* **P 19 45 34.0 +0.3**
RW3 Ridgway 82.38 46 *eP* **P 19 45 36.2 +1.9**
TOA Tolsona 82.38 12 *eP* **P 19 45 34.6 +0.8**
NJ2 Nanjing 82.45 307 *eP* **P 19 45 34.9 +0.1**
NJ2 S S 19 55 47.0 +2.3
NJ2 SKS SKS 19 55 49.0 +3.2
NJ2 AMB AMB
comp=Z,300nm,1.0s,mb6.2
NJ2 AMB AMB
comp=Z,1μm,5.6s
NJ2 LR LR
comp=N,640nm,22.0s
NJ2 LR LR
comp=E,2μm,21.0s
AHID Auburn Hatcher 82.48 41 *eP* **P 19 45 35.1 +0.3**
comp=E,148nm,1.3s,mb5.8
AHID *e*pP pP 19 45 48.5 -3.9
MCMT McKenzie Canyo 82.56 38 *eP* **P 19 45 36.4 +1.3**
MA2 Magadan 82.82 342 *eP* **P 19 45 35.4 -0.7**
MA2 pmax pmax
comp=Z,151nm,1.2s,mb5.9
MA2 Magadan 82.82 342 *eP* **P 19 45 35.4 -0.7**
comp=Z,151nm,1.2s,mb5.9
MSO Missoula 83.07 36 *eP* **P 19 45 36.9 -0.7**
comp=Z,250nm,1.6s,mb6.0
BSMT Bassoo Peak 83.20 35 P **P 19 45 37.9 -0.4**
KSWY Kelly School 83.23 40 *eP* **P 19 45 37.4 -1.1**
USHA Ushuaia 83.32 146 P **P 19 45 37.8 -0.9**
comp=Z,58nm,0.9s,mb5.6,baz=217,slow=7.1,SNR=23
USHA pP pP 19 45 58.6 +2.2
comp=Z,38nm,1.2s,baz=234,slow=8.7,SNR=2.7
QLMT Earthquake Lak 83.40 39 *eP* **P 19 45 41.1 +1.8**
BW06 Boulder Array 83.45 41⇑*iP* **P 19 45 39.2 -0.5**
comp=Z,109nm,1.0s,mb5.8
PDAR Pinedale Array 83.45 41 P **P 19 45 39.5 -0.1**
comp=Z,70nm,0.8s,mb5.7,baz=207,slow=3.3,SNR=329
PDAR LR LR 20 19 44.0
comp=Z,563nm,18.1s,baz=241,slow=33
CHMT Chamberlain Mo 83.51 36⇑*eP* **P 19 45 39.4 -0.5**
YMR Madison River 83.59 39 *eP* **P 19 45 41.5 +1.1**
CN2 Changchun 83.62 320 *eP* **P 19 45 40.9 +0.4**
CN2 *e*AP pP 19 45 54.6 -3.6
CN2 *e*S S 19 56 00.0 +3.8
CN2 *e*SS SS 20 01 30.0 +3.3
CN2 AMB AMB
comp=Z,60nm,1.1s,mb5.6
CN2 AMB AMB
comp=Z,200nm,4.0s
CN2 LR LR
comp=N,400nm,22.0s
CN2 LR LR
comp=E,600nm,22.0s
CN2 LR LR
comp=Z,600nm,21.0s
DL2 Dalian 83.62 314 P **P 19 45 40.9 +0.3**
DL2 AP pP 19 45 55.5 -2.8
DL2 S S 19 56 01.2 +4.8
DLBC Dease Lake 83.64 21 P **P 19 45 40.4 +0.2**
comp=Z,44nm,1.0s,mb5.5,baz=212,slow=6.1,SNR=67
DLBC LR LR 20 15 23.6
comp=Z,380nm,20.7s,baz=246,slow=30
DLBC Dease Lake 83.64 21 *eP* **P 19 45 40.4 +0.2**
SDCO Great Sand Dun 83.64 47 *eP* **P 19 45 41.2 +0.4**
comp=Z,105nm,1.1s,mb5.9
LCCM Lewis and Clar 83.69 38 P **P 19 45 40.9 +0.1**
BOZ Bozeman (W) 83.73 38 *eP* **P 19 45 41.1 +0.1**
BOZ pmax pmax
comp=Z,150nm,1.1s,mb6.0
BOZ Bozeman (W) 83.73 38 *eP* **P 19 45 41.1 0.0**
comp=Z,435nm,1.6s,mb6.3
SNY Shenyang 83.77 317⇑*iP* **P 19 45 42.5 +1.2**
SNY AMB AMB
comp=Z,80nm,1.3s,mb5.7
SNY LR LR
comp=N,260nm,14.4s
LKWY Lake 83.88 39 *eP* **P 19 45 43.8 +2.0**
comp=N,79nm,1.0s,mb5.8
HRY Holter Researc 84.20 37 *eP* **P 19 45 44.2 +0.8**
WALA Waterton Lakes 84.38 34 *eP* **P 19 45 43.9 -0.3**
comp=N,367nm,1.8s,mb6.2
ISCO Idaho Springs 84.54 45 *eP* **P 19 45 45.7 +0.5**
comp=N,162nm,1.8s,mb5.8
COLA College 84.61 10 P **P 19 45 44.5 -0.4**
COLA PcP PcP 19 45 54.4 +5.6
COLA College 84.61 10 *eP* **P 19 45 44.4 -0.5**
ILAR Eielson Array 84.68 11 P **P 19 45 44.6 -0.7**
comp=N,64nm,1.1s,mb5.7,baz=219,slow=5.2,SNR=156
ILAR PP PP 19 48 55.0 -8.3
comp=N,4.8nm,1.0s,baz=224,slow=7.8,SNR=4.8
ILAR PKPPKP 20 11 56.3
comp=N,0.9nm,1.0s,baz=26,slow=2.3,SNR=6.7
ILAR LR LR 20 17 50.4
comp=N,462nm,21.1s,baz=234,slow=32
JCT Junction City 84.69 56 P **P 19 45 46.1 -0.1**
JCT pmax pmax
comp=Z,47nm,1.0s,mb5.6
JCT Junction City 84.69 56 *eP* **P 19 45 46.0 -0.2**
comp=Z,58nm,1.1s,mb5.6
QIZ Qiongzhong 84.75 292 P **P 19 45 47.2 +0.4**
QIZ S S 19 56 11.2 +3.2
QIZ PS PS 19 57 07.1 -5.3
QIZ SS SS 20 01 43.5 -0.4
QIZ LR LR
comp=N,242nm,27.2s
QIZ LR LR
comp=E,554nm,26.3s
QIZ LR LR
comp=Z,1μm,26.0s
IMA Indian Mountai 84.87 8 *eP* **P 19 45 46.6 +0.4**
comp=Z,745nm,1.4s,mb6.6
IMA *e* 19 45 56.8
KGM Kluang 85.22 274‖*eP* **P 19 45 49.0 -0.2**
TIA Tai'an 85.57 310 *eP* **P 19 45 51.0 +0.6**
DAWY Dawson 85.57 14 *eP* **P 19 45 50.0 +0.3**
MAW Mawson 85.77 198 *eP* **P 19 45 48.4 -2.2**
comp=Z,20nm,1.1s,mb5.3
MAW *e* 19 45 59.4
MAW Mawson 85.77 198 P **P 19 45 48.6 -2.1**
comp=Z,25nm,1.1s,mb5.4,baz=107,slow=4.9,SNR=23
MAW LR LR 20 25 01.0
comp=Z,500nm,18.8s,baz=110,slow=36
MAW Mawson 85.77 198 *eP* **P 19 45 48.9 -1.8**
MAW pmax pmax
comp=Z,77nm,1.3s
BILL Bilibino 87.09 352*c iP* **P 19 45 57.1 0.0**
BILL *i* 19 46 07.6
BILL *i* 19 49 22.4
BILL *e* 19 51 18.0
BILL *i*S S 19 56 12.0 -17
BILL *i*SS SS 20 02 16.9 +0.1
BILL *e* 20 05 47.3

BILL pmax pmax
comp=Z,107nm,1.2s,mb6.0
BILL Bilibino 87.09 352⇑*iP* **P 19 45 56.6 -0.5**
comp=Z,79nm,1.0s,mb5.9
PLCA Paso Flores 87.11 132 P **P 19 45 57.7 -0.2**
PLCA Paso Flores 87.11 132 P **P 19 45 57.8 -0.1**
comp=Z,33nm,1.0s,mb5.5,baz=245,slow=5.2,SNR=18
PLCA PKKPbc 20 03 49.9
comp=Z,0.8nm,0.7s,baz=160,slow=7.4,SNR=2.9
PLCA LR LR 20 18 21.7
comp=Z,2μm,18.2s,baz=218,slow=31
PLCA Paso Flores 87.11 132 *eP* **P 19 45 57.7 -0.1**
comp=Z,42nm,1.3s,mb5.5
WMOK Wichita Mounta 87.21 52 P **P 19 45 58.1 -0.4**
WMOK pmax pmax
comp=Z,90nm,1.4s,mb5.8
WMOK Wichita Mounta 87.21 52 *eP* **P 19 45 58.0 -0.5**
comp=Z,90nm,1.4s,mb5.8
RSSD Black Hills 87.61 42 P **P 19 45 59.6 -0.6**
RSSD Black Hills 87.61 42 P **P 19 45 59.7 -0.5**
RSSD pmax pmax
comp=Z,58nm,1.0s,mb5.8
RSSD Black Hills 87.61 42 *eP* **P 19 45 59.6 -0.6**
comp=Z,71nm,1.0s,mb5.8
HKT Hockley 87.65 58 P **P 19 46 01.3 +0.6**
HKT Hockley 87.65 58 P **P 19 46 01.2 +0.5**
HKT pmax pmax
comp=Z,240nm,1.7s,mb6.2
HKT Hockley 87.65 58 *eP* **P 19 46 01.0 +0.3**
comp=Z,272nm,1.7s,mb6.2
BJT Baijiatuau 87.89 313 *eP* **P 19 46 02.0 +0.4**
comp=Z,155nm,1.2s,mb6.1
BJI Beijing 87.89 313 P **P 19 46 02.5 +0.9**
BJI S S 19 56 46.5 +8.9
BJI AMB AMB
comp=Z,103nm,1.5s,mb5.8
BJI LR LR
comp=N,336nm,19.4s
BJI LR LR
comp=E,307nm,19.4s
BJI LR LR
comp=Z,592nm,24.9s
IPM Ipoh 88.18 275‖*eP* **P 19 46 04.0 +0.4**
ENH Enshi 89.08 302 *eP* **P 19 46 07.7 +0.1**
comp=Z,111nm,1.4s,mb6.0
TIY Taiyuan 89.61 310 *eP* **P 19 46 10.0 +0.2**
HIA Hailar 89.77 323 *eP* **P 19 46 10.4 +0.1**
comp=Z,59nm,1.1s,mb5.8
GYA Guiyang 90.08 298⇑*iP* **P 19 46 13.2 +0.9**
GYA PS ScS 19 57 15.0 +14
GYA AMB AMB
comp=Z,40nm,1.3s,mb5.6
GYA LR LR
comp=N,1μm,19.5s
GYA LR LR
comp=E,940nm,20.0s
GYA LR LR
comp=Z,540nm,19.5s
KKTK Khon Kaen 90.16 287 P **P 19 46 13.0 +0.2**
VNA3 Neumayer Olymp 90.31 174⇑*iP* **P 19 46 11.9 -0.4**
VNA3 Neumayer Olymp 90.31 174⇑*i* **P 19 46 25.5 +13**
VNA3 Neumayer Olymp 90.31 174⇑*i* **P 19 46 29.9 +18**
SYO Syowa Base 90.37 191⇑P **P 19 46 08.4 -4.2**
SYO Syowa Base 90.37 191⇑PcP PcP 19 46 10.4 -3.6
SYO Syowa Base 90.37 191⇑pP pP 19 46 26.1 -4.5
SYO Syowa Base 90.37 191⇑*eP* **P 19 46 08.4 -4.2**
SYO *e*PcP PcP 19 46 10.4 -3.6
SYO *e*pP pP 19 46 26.1 -4.5
SNAA Sanae 90.39 177⇑*iP* **P 19 46 10.7 -2.0**
SNAA Sanae 90.39 177⇑*i* **P 19 46 24.5 +12**
SNAA Sanae 90.39 177 **P 19 46 29.2 +17**
INK Inuvik 90.43 13 P **P 19 46 12.6 -0.3**
comp=Z,41nm,1.0s,mb5.7,baz=215,slow=5.8,SNR=75
INK PP PP 19 49 46.1 -4.1
comp=Z,2.3nm,0.9s,baz=234,slow=17,SNR=5.1
INK LR LR 20 20 44.7
comp=Z,550nm,19.8s,baz=224,slow=31
INK Inuvik 90.43 13 *eP* **P 19 46 12.5 -0.4**
comp=Z,236nm,1.6s,mb6.3
KSU1 Kansas State U 90.53 49 *eP* **P 19 46 13.9 -0.2**
TEIG Tepich 90.72 69 P **P 19 46 15.7 +0.3**
comp=Z,42nm,0.9s,mb5.8,baz=236,slow=6.5,SNR=4.2
VNA2 Neumayer--Watz 90.81 175⇑*iP* **P 19 46 14.8 +0.1**
VNA2 Neumayer--Watz 90.81 175⇑*i* **P 19 46 28.0 +13**
VNA2 Neumayer--Watz 90.81 175⇑*i* **P 19 46 34.3 +20**
CLNS Chul'man 90.88 331 *eP* **P 19 46 15.9 +0.6**
CLNS pmax pmax
comp=Z,10.0nm,1.0s,mb5.1
CLNS pmax pmax
comp=N,20nm,1.1s
CLNS pmax pmax
comp=E,20nm,0.9s
CLNS pmax pmax
comp=N,4.0nm,0.9s
CLNS pmax pmax
comp=Z,5.0nm,0.9s,mb4.8
CLNS pmax pmax
comp=E,6.0nm,0.8s
XAN Xi'an 90.88 305 P **P 19 46 16.4 +0.5**
XAN AMB AMB
comp=Z,32nm,1.4s,mb5.5
VNA1 Neumayer--Stat 91.01 175⇑*iP* **P 19 46 16.0 +0.4**
VNA1 Neumayer--Stat 91.01 175‖*i* **P 19 46 30.2 +15**
VNA1 Neumayer--Stat 91.01 175⇑*i* pP 19 46 35.8 +2.2
MIAR Mount Ida 91.11 54 P **P 19 46 17.3 +0.4**
MIAR pmax pmax
comp=Z,130nm,1.4s,mb6.1
MIAR Mount Ida 91.11 54 *eP* **P 19 46 17.2 +0.3**
comp=Z,148nm,1.5s,mb6.1
MDZ Mendoza 91.27 125 *eP* **P 19 46 19.4 +1.7**
HHC Hu-ho-hao-te 91.44 313⇑P **P 19 46 19.2 +0.9**
HHC PP PP 19 50 02.0 +3.0
HHC S S 19 57 15.2 +5.4
HHC AMB AMB
comp=Z,47nm,1.1s,mb5.7
HHC AMB AMB
comp=Z,193nm,7.1s
HHC LR LR
comp=N,162nm,16.9s
HHC LR LR
comp=E,152nm,18.3s
YAK Yakutsk 91.78 336 *eP* **P 19 46 17.9 -1.4**
YAK *e**PP pP 19 46 35.0 -2.3
YAK *e* 19 49 56.3
YAK *e*S S 19 57 06.5 -5.7
YAK pmax pmax
comp=N,7.0nm,1.0s
YAK pmax pmax
comp=Z,40nm,1.0s,mb5.7
YAK pmax pmax
comp=E,10.0nm,1.1s
YAK pmax pmax
comp=Z,4.0nm,0.9s,mb4.8
YAK pmax pmax
comp=N,3.0nm,1.0s
YAK pmax pmax
comp=E,3.0nm,1.2s
YAK smax
comp=N,2.0nm,1.1s
YAK smax
comp=E,3.0nm,0.9s
YKA Yellowknife Ar 91.97 23 P **P 19 46 19.8 -0.3**
comp=E,18nm,0.9s,mb5.4,baz=236,slow=4.3,SNR=10
YKA PP PP 19 49 52.8 -10
comp=E,1.1nm,1.0s,baz=235,slow=8.3,SNR=3.8
YKA PKKPbc 20 03 33.3
comp=E,0.3nm,0.6s,baz=57,slow=2.8,SNR=4.7
YKA PKPPKP 20 11 43.7
comp=E,0.1nm,0.5s,baz=51,slow=2.3,SNR=3.6
YKA LR LR 20 20 16.3
comp=E,454nm,21.1s,baz=230,slow=30
YKA Yellowknife Ar 91.97 23 P **P 19 46 19.8 -0.3**
YKA PP PP 19 49 52.9 -10
YKA PKKPbc 20 03 33.4
YKA P'P' 20 11 43.7
YKA LR LR 20 20 16.3
YKW3 Yellowknife Ar 92.00 23 *eP* **P 19 46 19.8 -0.5**
UALR University of 92.14 54 *eP* **P 19 46 22.3 +0.6**
comp=E,136nm,1.3s,mb6.1
NST Nakhon Sawan 92.41 286 P **P 19 46 24.8 +1.5**
BTO Baotou 92.43 312 *eP* **P 19 46 23.9 +1.0**
BTO AMB AMB
comp=Z,58nm,1.1s,mb5.8
NANT Nan 92.85 289 P **P 19 46 25.3 +0.1**
comp=Z,94nm,0.8s,mb6.3

KMI **Kunming** 92.99 295 *e*P P 19 46 27.2 +1.4
KMI SKS SKS 19 56 54.2 +1.7
KMI S S 19 57 26.3 +2.5
KMI SS SS 20 03 45.7 +2.3
KMI AMB AMB
comp=Z,159nm,5.4s
KMI LR LR
comp=N,252nm,27.0s
KMI LR LR
comp=E,506nm,23.6s
KMI LR LR
comp=Z,937nm,28.3s
BDT Bhumibol Dam 93.92 287 P P **19 46 31.0 +0.9**
CD2 Chengdu 93.95 301 P P **19 46 31.1 +1.1**
CD2 PP PP 19 50 22.8 +3.5
CD2 S S 19 57 31.4 -0.5
CD2 AMB AMB
comp=Z,20nm,1.3s,mb5.4
CD2 AMB AMB
comp=Z,390nm,10.1s
CD2 LR LR
comp=E,580nm,21.2s
CD2 LR LR
comp=Z,580nm,23.4s
CCM Cathedral Cave 94.08 51 P P **19 46 29.6 -0.8**
CCM Cathedral Cave 94.08 51 *e*P P **19 46 29.7 -0.7**
comp=Z,122nm,1.2s,mb6.2
OXF Oxford 94.33 55 P P **19 46 32.4 +0.8**
OXF Oxford 94.33 55 *e*P P **19 46 31.6 0.0**
comp=Z,101nm,1.3s,mb6.1
CM31 Chiang Mai Arr 94.33 288 *e*P P **19 46 33.3 +1.4**
comp=Z,7.0nm,0.8s,mb5.1
CM31 *e*pP pP 19 46 46.9 -3.1
CMAR Chiang Mai Arr 94.33 288 P P **19 46 31.1 -0.9**
comp=Z,11nm,1.0s,mb5.2,baz=100,slow=3.1,SNR=52
CMAR PP PP 19 50 20.7 -1.6
comp=Z,1.2nm,1.0s,baz=100,slow=5.5,SNR=3.7
CMAR PKKPbc 20 03 31.6
comp=Z,1.2nm,1.0s,baz=277,slow=5.7,SNR=6.0
CMAR LR LR 20 23 30.4
comp=Z,337nm,20.1s,baz=95,slow=32
CHG Chiang Mai 94.44 288 ⇑P P **19 46 32.9 +0.5**
comp=Z,21nm,1.0s,mb5.5
FVM French Village 94.67 52 P P **19 46 33.0 -0.1**
FVM pmax pmax
comp=Z,180nm,1.1s,mb6.4
FVM French Village 94.67 52 *e*P P **19 46 33.0 -0.1**
comp=Z,390nm,1.5s,mb6.6
SLM Saint Louis 95.02 51 P P **19 46 34.7 0.0**
SLM Saint Louis 95.02 51 *e*P P **19 46 34.5 -0.2**
comp=Z,109nm,1.2s,mb6.2
LVC Limon Verde 95.04 116 P P **19 46 36.1 +0.9**
comp=Z,16nm,0.9s,mb5.4,baz=256,slow=4.3,SNR=21
LVC LR LR 20 20 46.8
comp=Z,1μm,18.9s,baz=216,slow=30
LVC Limon Verde 95.04 116 *e*P P **19 46 36.6 +1.4**
comp=Z,32nm,1.1s,mb5.7
ULM Lac du Bonnet 95.22 39 P P **19 46 34.0 -1.3**
baz=252,slow=4.9
ULM LR LR 20 23 11.8
comp=Z,1μm,21.2s,baz=84,slow=31
ULM Lac du Bonnet 95.22 39 *e*P P **19 46 33.9 -1.4**
comp=Z,61nm,1.1s,mb5.9
LZH Lanzhou 95.49 306 P P **19 46 38.1 +1.2**
LZH AP pP 19 46 52.0 -2.9
LZH PP PP 19 50 32.6 +2.1
LZH SKS SKS 19 57 09.0 +3.1
LZH S S 19 57 49.0 +4.1
LZH SS SS 20 04 24.0 +5.9
LZH AMB AMB
comp=Z,56nm,1.5s,mb5.8
LZH AMB AMB
comp=Z,146nm,4.0s
LZH LR LR
comp=E,274nm,16.2s
LZH LR LR
comp=Z,500nm,19.6s
PLAL Pickwick Lake 95.52 55 *e*P P **19 46 36.7 -0.3**
comp=Z,32nm,1.3s,mb5.6
WVT Waverly 96.06 54 *e*P P **19 46 39.1 -0.4**
comp=Z,18nm,0.9s,mb5.5
JFWS Jewell Farm 96.37 47 P P **19 46 40.0 -0.7**
JFWS pmax pmax
comp=Z,50nm,1.0s,mb5.9
JFWS Jewell Farm 96.37 47 *e*P P **19 46 39.9 -0.8**
comp=Z,36nm,0.8s,mb5.9
BOD Bodaibo 96.56 329 *e*P P **19 46 40.0 -1.2**
ULN Ulaanbaatar 96.94 318 P P **19 46 43.6 +0.4**
ULN pmax pmax
comp=Z,6.0nm,1.0s,mb5.0
ULN Ulaanbaatar 96.94 318 *e*P P **19 46 43.6 +0.4**
comp=Z,6.4nm,1.0s,mb5.0
SWET Sewanee 97.27 55 *e*P P **19 46 43.9 -1.1**
SONM Songino Array 97.35 318 P P **19 46 44.6 -0.5**
comp=Z,2.0nm,0.8s,mb4.6,baz=108,slow=3.9,SNR=13
SONM PP PP 19 50 39.3 -5.8
comp=Z,0.5nm,0.8s,baz=135,slow=8.2,SNR=4.3
SONM PKKPbc 20 03 21.3
comp=Z,0.7nm,1.1s,baz=225,slow=1.7,SNR=3.8
SONM PKPPKP 20 11 40.9
comp=Z,3.4nm,1.5s,baz=104,slow=5.1,SNR=3.8
TIXI Tiksi 97.65 344 *e*P P **19 46 44.9 -1.0**
TIXI *e* 19 50 40.9
TIXI *e*S S 19 57 58.6 -3.7
TIXI *e* 20 04 44.0
TIXI pmax pmax
comp=Z,159nm,1.1s,mb6.5
TIXI Tiksi 97.65 344 *e*P P **19 46 45.3 -0.6**
comp=Z,40nm,1.7s,mb5.7
LPAZ La Paz 98.03 110 PcP PcP 19 46 49.5 +0.5
LPAZ La Paz 98.03 110 P P **19 46 49.8 +1.0**
comp=Z,4.1nm,1.0s,mb4.9,baz=279,slow=3.8,SNR=14
LPAZ PKKPbc 20 03 21.2
comp=Z,1.1nm,0.8s,baz=62,slow=7.3,SNR=3.6
LPAZ LR LR 20 22 43.8
comp=Z,933nm,19.4s,baz=294,slow=30
LPAZ La Paz 98.03 110 P P **19 46 50.2 +1.4**
LPAZ pmax pmax
comp=Z,9.0nm,1.5s
LPAZ La Paz 98.03 110 *e*P P **19 46 49.8 +1.0**
comp=Z,8.5nm,1.4s,mb5.1
CPCT Cooper Cave 98.44 56 *e*P P **19 46 49.7 -0.6**
ROSC El Rosal 99.10 88 LR LR 20 22 40.6
comp=Z,385nm,21.3s,baz=36,slow=30
FCC Fort Churchill 99.18 31 P P **19 46 52.6 -0.5**
FCC pmax pmax
comp=Z,20nm,1.1s,mb5.6
FCC Fort Churchill 99.18 31 *e*P P **19 46 52.5 -0.6**
comp=Z,26nm,1.2s,mb5.6
GTA Gaotai 99.50 308 *e*P P **19 46 55.4 +0.4**
GTA PP PP 19 51 01.5 0.0
GTA SKS SKS 19 57 28.6 +2.0
GTA S S 19 58 20.3 +1.7
GTA PS PS 19 59 58.0 -0.6
GTA SS SS 20 05 14.0 -0.1
GTA AMB AMB
comp=Z,46nm,3.8s
GTA LR LR
comp=N,128nm,19.0s
GTA LR LR
comp=E,290nm,21.3s
GTA LR LR
comp=Z,411nm,23.9s
ZAK Zakamensk 100.05 320 *e*P P 19 46 56.3 -1.0
TLY Talaya 100.19 321 *e*P P 19 46 57.7 -0.1
TLY *e* 19 57 35.5
TLY *e*SS SS 20 05 32.7 +9.3
TLY pmax pmax
comp=Z,71nm,1.5s
SHL Shillong 102.55 293 *e*P Pdif 19 47 11.0 +2.0
ALLY Alegheny Colle 103.27 50 *e*Pdif Pdif 19 47 25.0 +13
RES Resolute Bay 103.84 15 P Pdif 19 47 13.8 +0.2
RES pmax pmax
comp=Z,8.0nm,1.0s
RES Resolute Bay 103.84 15 *e*Pdif Pdif 19 47 13.9 +0.3
comp=Z,21nm,1.5s
SADO Sadowa 104.61 47 PKiKP 19 51 33.2
comp=Z,2.8nm,0.7s,baz=312,slow=11,SNR=3.6
GUN Gumba 108.30 294 *e*P 19 51 39.1
comp=Z,139nm,1.9s
KKN Kakani 108.80 294 *e*P 19 51 39.2
comp=Z,16nm,1.2s
DMN Daman 108.92 294 *e*P 19 51 39.6
WMQ Urumqi 109.25 311 PDIF Pdif 19 47 38.1 0.0
WMQ PP PP 19 52 14.7 -0.4
WMQ S 19 59 42.4
WMQ PS PS 20 01 35.3 -1.1
WMQ SS SS 20 07 29.1 +1.6
WMQ LR LR
comp=Z,4μm,28.6s
DANN Dangsing 110.22 294 *e*P PKPdf 19 51 44.2 +1.7
KOLN Koldanda 110.26 294 *e*P PKPdf 19 51 42.5 -0.1
ZAL Zalesovo 111.80 322 Pdiff Pdif 19 47 48.7 -0.3
comp=Z,0.6nm,0.7s,baz=299,slow=11,SNR=4.8
ZAL PKiKP 19 51 44.9
comp=Z,1.1nm,0.7s,baz=19,slow=3.8,SNR=7.8
ZAL Zalesovo 111.80 322 Pdif Pdif 19 47 48.7 -0.3
ZAL PKPdf PKPdf 19 51 44.9 -0.1
NVS Novosibirsk 112.71 323 *e*PKIKP PKPdf 19 51 44.5 -2.2
NVS pmax pmax
comp=N,5.0nm,1.4s
NVS pmax pmax
comp=E,6.0nm,1.4s
NVS pmax pmax
comp=Z,12nm,1.4s
NVS pmax pmax
comp=N,15nm,2.3s
NVS pmax pmax
comp=E,12nm,2.3s
MKAR Makanchi Array 113.27 314 PKiKP 19 51 47.7
comp=E,4.3nm,0.6s,baz=90,slow=1.1,SNR=31
MKAR PKKPbc 20 02 33.9
comp=E,1.8nm,0.9s,baz=297,slow=5.4,SNR=7.4
MKAR Makanchi Array 113.27 314 *i* PKIKP PKPdf 19 51 47.7 -0.3
MKAR pmax pmax
comp=Z,15nm,1.0s
SCHQ Schefferville 113.35 37 *e*PKP PKPdf 19 51 30.0 -18
KURK Kurchatov 115.65 318 *i* PKIKP PKPdf 19 51 52.2 -0.5
KURK pmax pmax
comp=Z,14nm,1.3s
KURK Kurchatov 115.65 318 *e*PKP PKPdf 19 51 52.2 -0.4
ULHL Ulahol 117.55 309 P PKPdf 19 51 57.4 +0.9
SNR=5.6
KSH Kashi 117.74 306 *e*PKP PKPdf 19 51 55.8 -1.1
KSH *e*PKS PKS 19 55 31.5 -1.3
KSH *e*SKS SKS 19 59 03.3 +19
KSH PP PP
comp=Z,230nm,2.8s
TKM2 Tokmak 2 118.01 310 P PKPdf 19 51 57.0 -0.3
SNR=13
KZA Kyzart 118.29 309 P PKPdf 19 51 58.9 +1.0
SNR=11
KBK Karagaybulak 118.50 309 P PKPdf 19 51 58.8 +0.5
SNR=12
CHMS Chumysh 118.63 310 P PKPdf 19 51 58.8 +0.2
SNR=6.6
FRU Bishkek 118.74 309 *e*PKIKP PKPdf 19 52 09.0 +10
USP Ospenovka 118.81 310 P PKPdf 19 51 59.1 +0.2
SNR=8.1
UCH Uchtor 118.83 309 P PKPdf 19 52 00.1 +1.1
SNR=19
AAK Ala-Archa 118.83 309 P PKPdf 19 51 59.5 +0.5
SNR=7.5
KBS Kingsbay 118.88 359 *e*PKIKP PKPdf 19 51 58.9 +0.6
EKS2 Erkin-Say 119.36 309 P PKPdf 19 52 00.9 +0.9
SNR=12
AML Almayashu 119.44 309 P PKPdf 19 52 01.2 +1.0
SNR=14
SPB4 Spitsbergen Ar 119.52 358 *e*PKP PKPdf 19 52 01.1 +1.5
DAG Danmarks Havn 119.58 7⇑ *i*P PKPdf 19 51 59.3 -0.4
comp=Z,4.7nm,0.6s
VOSK Vostochnaya 120.14 321 PKIKP PKPdf 19 52 01.0 -0.3
VOSK pmax pmax
comp=Z,39nm,1.3s
BRVK Borovoye 120.50 322 *e*PKIKP PKPdf 19 52 01.7 -0.3
ZRNK Zerenda 121.28 322 *e*PKIKP PKPdf 19 52 03.1 -0.4
ZRNK *e* 19 52 14.0
KKAR Karatay Array 121.73 310 *i* PKIKP PKPdf 19 52 04.2 -0.4
KKAR pmax pmax
comp=Z,25nm,1.2s
SVE Sverdlovsk 124.75 328⇑ *e*PKIKP PKPdf 19 52 10.3 +0.2
SVE *e* 19 54 05.2
SVE pmax pmax
comp=Z,40nm,1.7s
QUE Quetta 125.00 295 *e*P PKPdf 19 52 13.0 +1.7
ARU Arti 125.97 328 *c* *i*PKIKP PKPdf 19 52 12.3 -0.1
ARU Arti 125.97 328 *e*PKP PKPdf 19 52 12.6 +0.2
KEV Kevo 126.79 352 PKPdf PKPdf 19 52 14.2 +0.5
KEV Kevo 126.79 352 *e*p PKPdf 19 52 13.6 0.0
comp=Z,0.4nm,0.4s
ARCES ARCESS Array B 127.19 352 PKP PKPdf 19 52 14.8 +0.4
comp=Z,31nm,0.8s,slow=1.2,SNR=56
ARCES ARCESS Array B 127.19 352 PKP PKPdf 19 52 14.8 +0.4
APA Apatity 127.66 348⇓ *i*PKIKP PKPdf 19 52 15.0 -0.4
APA pmax pmax
comp=Z,18nm,0.8s
AB31 Akbulak array 127.74 319 *i* PKIKP PKPdf 19 52 15.6 -0.5
AB31 pmax pmax
comp=Z,50nm,1.3s
JOF Joensuu 132.11 346 *e*p PKPdf 19 52 24.5 +0.5
comp=Z,1.7nm,0.4s
JOF Joensuu 132.11 346 *e*PKIKP PKPdf 19 52 24.5 +0.5
JOF pmax pmax
comp=Z,2.0nm,0.4s
KAF Kangasniemi 133.91 348 *e*p PKPdf 19 52 26.7 -0.7
comp=Z,20nm,0.8s
KAF Kangasniemi 133.91 348 *e*PKIKP PKPdf 19 52 26.7 -0.7
KAF pmax pmax
comp=Z,20nm,0.8s
FINES FINESS Array B 134.57 348 PKhKP 19 52 17.4
comp=Z,1.0nm,0.8s,baz=170,slow=24,SNR=3.8
FINES PKP PKPdf 19 52 27.5 -1.1
comp=Z,15nm,0.8s,baz=90,slow=1.9,SNR=33
MOS Moscow 135.91 336 *e*PKIKP PKPdf 19 52 30.9 -0.3
MOS pmax pmax
comp=Z,60nm,0.9s
OBN Obninsk 136.78 336 *ke*PKHKP 19 52 23.0
OBN *i* 19 52 32.1
OBN 19 55 14.0
OBN *e* 20 05 36.2
OBN SS SS 20 13 24.0 +7.8
OBN *e*SSS SSS 20 18 27.2 +4.6
OBN pmax pmax
comp=Z,11nm,1.1s
OBN pmax pmax
comp=Z,55nm,1.1s
OBN Obninsk 136.78 336 *e*PKP PKPdf 19 52 32.6 -0.2
NB2 NORSAR Subarra 136.82 357 PKPdf PKPdf 19 52 24.9 -7.8
comp=Z,17nm,1.2s,baz=14,slow=1.8
NB2 NORSAR Subarra 136.82 357 PKPd 19 52 24.9
baz=14,slow=1.8
NOA NORSAR Array B 136.82 357 PKhKP 19 52 23.9
comp=Z,3.1nm,1.1s,baz=41,slow=2.4,SNR=5.4
NOA PKP PKPdf 19 52 33.0 +0.3
comp=Z,7.6nm,0.8s,baz=13,slow=4.0,SNR=11
VOR Voronezh 138.04 331 PKIKP PKPdf 19 52 36.0 +0.7
VOR pmax pmax
comp=Z,50nm,1.6s
KONO Kongsberg 138.26 359 *e*PKIKP PKPdf 19 52 35.9 +0.5
GOF Gofitskoye 139.96 320⇓ *i*PKIKP PKPdf 19 52 35.0 -3.9
GOF pmax pmax
comp=Z,40nm,1.2s
ZEI Tsey 140.53 317 *i* PKIKP PKPdf 19 52 36.9 -3.1
ZEI pmax pmax
comp=Z,100nm,7.0s
ZEI MLR MLR
comp=Z,500nm,21.0s
KIV Kislovodsk 140.73 319 *c* *i*PKIKP PKPdf 19 52 37.0 -3.4
KIV *e* 19 55 39.0
KIV *e*SS SS 20 14 10.4 +7.6
KIV pmax pmax
comp=Z,16nm,1.3s
KIV MLR MLR
comp=Z,300nm,22.0s
KIV Kislovodsk 140.73 319 *e*PKP PKPdf 19 52 36.7 -3.7
GNI Garni 141.10 313 *e*PKIKP PKPdf 19 52 38.6 -2.5
GNI Garni 141.10 313 *e*PKPpre 19 52 38.3
GNI *e*PKPdf PKPdf 19 52 41.9 +0.8
MUD Monsted U'grnd 141.47 359 *i* P PKPdf 19 52 36.4 -4.8
comp=Z,22nm,1.0s
SUW Suwalki 141.99 345 *e*PKP PKPdf 19 52 37.1 -5.1
SUW MLR MLR 20 50 59.3
comp=Z,600nm,24.0s
COP Copenhagen 142.09 356 *i* P PKPdf 19 52 46.4 +4.1
comp=Z,10nm,0.6s
COP Copenhagen 142.09 356 *e*P PKPdf 19 52 46.4 +4.1
BSD Bornholm Skovb 142.42 353⇓ *i*P PKPdf 19 52 39.0 -3.9
comp=Z,26nm,1.0s
VANB Van 142.68 311 P PKPdf 19 52 40.5 -3.4
DLF Lyons Farm 142.97 14 *e*P PKPdf 19 52 39.3 -4.6
AKASG Malin Array Be 143.00 337 PKhKP 19 52 40.3
comp=Z,18nm,0.9s,baz=38,slow=3.5,SNR=48
AKASG PP PP 19 55 48.0 -10
comp=Z,4.1nm,1.0s,baz=33,slow=5.7,SNR=5.3
ERZM Erzurum 143.54 314 *i* P PKPbc 19 52 44.8 +0.8
EZM Erzurum 143.64 314 *i* P PKPbc 19 52 44.6 +0.4
LHO Holmfirth 143.65 10 *e*P PKPbc 19 52 44.2 +0.4
VRT Varto 143.78 313 P PKPbc 19 52 46.2 +1.5
BSEG Bad Segeberg 143.96 357 *e*PKIKP PKPdf 19 52 44.9 -0.6
WAR Warsaw 144.13 346 *e*PKP PKPdf 19 52 45.7 -0.2
KWF1 Weaver Farm 144.16 10⇑ *e*P PKPbc 19 52 44.9 -0.4
BTMT Batman 144.21 311 *i* P PKPbc 19 52 46.9 +0.9
KSY Syston 144.40 9⇑ *e*P PKPbc 19 52 45.6 -0.4
HLM1 Long Mynd 144.46 11 *e*P PKPbc 19 52 45.9 -0.3
HLM1 AMB AMB 19 52 50.2
comp=Z,137nm,1.6s
MZLS Mizel 144.47 286 P PKPbc 19 52 48.1 +0.9
BEST Besiri 144.49 311 *i* P PKPbc 19 52 47.4 +0.6
SSP1 Stoney Pound 144.51 11⇑ *e*P PKPbc 19 52 46.9 +0.5
SSP1 AMB AMB 19 52 49.5
comp=Z,161nm,1.8s
GUMT Gumushane 144.55 316 P PKPbc 19 52 48.4 +1.6
BINT Bingol 144.62 313 P PKPbc 19 52 48.6 +1.5
EZC Erzincan 144.67 315 *i* P PKPbc 19 52 49.9 +2.7
HTR Trewern Hill 144.81 12 *e*P PKPdf 19 52 47.0 -0.1
HTR AMB AMB 19 52 49.4
comp=Z,196nm,1.3s
KELT Kelkit 144.85 316 *i* P PKPdf 19 52 48.5 +0.9
MCH1 Michaelchurch 144.94 11⇑ *e*P PKPdf 19 52 47.4 0.0
HAE Alders End 144.98 11⇑ *i*P PKPdf 19 52 47.8 +0.4
HAE AMB AMB 19 52 51.0
comp=Z,549nm,1.7s
KTG1 Tilbrook Grang 145.05 9⇑ *e*P PKPdf 19 52 47.5 -0.1
KAMS Al Khamasin 145.06 280 P PKPdf 19 52 48.8 +0.2
SIM Simferopol' 145.11 326 *c* *i*PKIKP PKPdf 19 52 49.0 +1.1
SIM *i* 19 52 58.0
SIM *e* 19 56 10.0
SIM pmax pmax
comp=Z,120nm,18.5s
SIM MLR MLR
comp=Z,510nm,22.6s
WIT Witteveen 145.13 1 *e*PKiKP 19 52 49.3
RUE Ruedersdorf 145.14 353 *e*PKP PKPdf 19 52 48.2 +0.6
DIY Diyarbakir 145.24 312 P PKPdf 19 52 50.3 +2.0
KMBO Kilima Mbogo 145.27 240 PKPdf PKPdf 19 52 50.0 +0.8
KMBO pPKPbc 19 53 00.3
KMBO sPKPab 19 53 11.7
KMBO Kilima Mbogo 145.27 240 PKP PKPdf 19 52 49.5 +0.4
comp=Z,65nm,0.9s,baz=67,slow=3.0,SNR=92
KMBO Kilima Mbogo 145.27 240 *e*PKP PKPdf 19 52 50.0 +0.9
HTL Hartland 145.58 14⇑ *e*P PKPdf 19 52 49.0 +0.5
SKP1 Kophill 145.58 9⇑ *e*P PKPdf 19 52 49.5 +1.0
SWN1 Swindon 145.62 10⇑ *e*P PKPdf 19 52 49.9 +1.3
ELZG Elazig 145.83 313 *i* P PKPdf 19 52 51.5 +2.2
SWK Warminster 145.89 11⇑ *e*P PKPdf 19 52 50.5 +1.5
SBD Saint Breward 145.93 14⇑ *e*P PKPdf 19 52 46.3 -2.8
WTSB Winterswijk 145.98 1 *e*PKiKP 19 52 50.9
TATS Tathlith 146.06 279 P PKPdf 19 52 51.8 +1.6
KWP Kalwaria 146.08 342 *e*PKP PKPdf 19 52 50.8 +1.4
KWP *e*PKIKP PKPdf 19 52 52.9 +3.5
KWP *e* 19 53 01.4
KWP MLR MLR 20 50 39.6
comp=Z,700nm,27.1s
KWP Kalwaria 146.08 342 *i* PKP2 PKPab 19 52 52.9 -0.3
KWP MLR MLR
comp=Z,700nm,27.1s
CPZ Penzance 146.09 15⇑ *e*P PKPdf 19 52 51.3 +1.9
CPZ AMB AMB 19 52 54.7
comp=Z,305nm,1.7s
ARSS Ar Rass 146.11 290 P PKPdf 19 52 51.1 +0.9
KIS Kishinev 146.13 334 *α* *i*PKIKP PKPdf 19 52 50.0 +0.4
KIS *i* 19 53 01.0
KIS *e* 19 56 22.0
KIS pmax pmax
comp=Z,500nm,1.5s
KIS MLR MLR
comp=Z,400nm,20.0s
KIS MLR MLR
comp=Z,400nm,20.0s
CST1 Stithians 146.16 15 *e*P PKPdf 19 52 51.7 +2.2
CRQ2 Rosemanowes 2 146.19 15⇑ *e*P PKPdf 19 52 51.6 +2.0
CGH1 Goonhilly 146.30 15⇑ *e*P PKPdf 19 52 51.9 +2.2
OJC Ojcow 146.30 346 *e*PKP(df) 19 52 51.1
OJC *e*PP PP 19 56 22.7 +5.2
OJC *e*SKS(df) 19 59 56.1
OJC *e*SKKS 20 09 04.2
OJC *e*SS SS 20 15 13.2 +6.8
OJC MLR MLR 20 54 38.2
comp=Z,600nm,22.6s
OJC Ojcow 146.30 346 *e*PKP2 PKPab 19 52 51.1 -2.9
OJC *e* 19 56 22.7
OJC *e* 19 59 56.1
OJC *e*SS SS 20 15 13.2 +6.8
OJC MLR MLR
comp=Z,600nm,22.6s
MYA Malataya 146.30 313 P PKPdf 19 52 53.7 +3.6
CLL Collm 146.38 354 *e* PKPdf 19 52 51.0 +1.2
CLL *i* PKP1 PKPbc 19 52 52.5 +1.4
CLL *i* *PPKP 19 53 02.9
CLL *e* 19 53 07.0
CLL *i* 19 53 15.1
CLL *e* 19 53 27.0
CLL *e*SKSP 20 06 24.0
CLL *e*SS SS 20 15 06.0 -1.4
CLL *e*SSS SSS 20 20 48.0 +8.9
CLL Collm 146.38 354 *i* PKP2 PKPab 19 52 52.5 -1.8
CLL pmax pmax
comp=Z,559nm,1.2s
CLL Collm 146.38 354 *i* PKP PKPdf 19 52 52.5 +2.7
CLL *i* 19 53 02.3
KSP Ksiaz 146.40 350 *e*PKP PKPdf 19 52 51.2 +1.3
KSP *e*PKIKP PKPdf 19 52 53.2 +3.3
KSP *e* 19 53 03.0
KSP MLR MLR 20 54 09.9
comp=Z,800nm,22.6s
KSP Ksiaz 146.40 350 *e*PKP2 PKPab 19 52 52.9 -1.5
KSP *e*SS SS 20 15 11.0 +3.4
KSP MLR MLR
comp=Z,1μm,22.0s
KSP Ksiaz 146.40 350 *e*PKPdf PKPdf 19 52 51.1 +1.2
KSP *e*PKPab PKPab 19 52 52.9 -1.5
KSP *ep*PKP 19 53 02.2
KSP *e* 19 53 14.1
KSP *e*SS SS 20 15 11.0 +3.4
KSP LR LR
comp=Z,1μm,22.0s
SVSK Karacayir 146.45 317 *e*P PKPdf 19 52 52.9 +2.5
AFFS 'Afif 146.49 286 P PKPdf 19 52 51.8 +0.9
TOKT Tokat 146.53 318 *e*P PKPdf 19 52 54.1 +3.6
SVST Sivas 146.56 317 *i* P PKPdf 19 52 52.7 +2.2
BRG Berggiesshubel 146.70 353 *i* PKIKP PKPdf 19 52 51.5 +1.1
BRG *i* 19 52 54.0
BRG *e* 19 53 04.2
BRG *e*SS SS 20 15 14.0 +2.7
BRG pmax pmax
comp=Z,144nm,0.9s
BRG MLR MLR
comp=N,510nm,26.7s
BRG MLR MLR
comp=E,250nm,26.7s
BRG MLR MLR
comp=Z,490nm,26.7s
BRG Berggiesshubel 146.70 353 *i* PKP PKPdf 19 52 51.5 +1.1
BRG *i* 19 52 54.0
BRG *e* 19 53 04.2
BRG *e* 19 53 16.7
BRG *e*SS SS 20 15 14.0 +2.7
BRG LR LR
comp=Z,490nm,26.7s
UPC Upice 146.77 350 *e*PKP PKPdf 19 52 53.5 +3.0
UPC *ex* x 19 53 02.7
RAC Raciborz 146.78 348 *e*PKP(df) 19 52 52.7
RAC *e*PP PP 19 56 15.9 -4.5
RAC MLR MLR 20 53 12.6
comp=Z,600nm,24.0s
DPC Dobruska-Polom 146.87 350 *e*PKP PKPdf 19 52 51.9 +1.2
DPC *ex* x 19 52 54.4
DPC *ep*PKP 19 53 03.6
BOYT Boyabat 146.91 321 *i* P PKPdf 19 52 52.9 +1.8
NIE Niedzica 146.92 345 *e*PKP PKPdf 19 52 52.4 +1.6
PVCC Panska Ves 146.96 352 *e*PKP PKPdf 19 52 51.9 +1.0
PVCC *ex* x 19 52 54.5
PVCC *ep*PKP 19 53 04.7

BYBT	**Boyabat**	**146.96**	**321**	*e*P	PKPdf	19 52 55.4	+4.2
OKC	**Ostrava-Krasne**	**147.02**	**347**	*e*PKP	PKPdf	19 52 51.5	+0.5
OKC				*ex*	x	19 52 54.3	
CRVS	**Cervenica-Dubn**	**147.09**	**343**	*e*PKP	PKPdf	19 52 52.8	+1.7
CRVS				*i*		19 52 57.2	
BZK	**Bozkurt**	**147.11**	**322**	P	PKPdf	19 52 55.1	+3.7
MOX	**Moxa**	**147.16**	**355**	*i* P	PKPdf	19 52 52.5	+1.3
	comp=Z,logA/T=2.1						
MOX				PP2		19 52 56.0	
MOX	**Moxa**	**147.16**	**355**	*e*PKIKP	PKPdf	19 52 52.5	+1.3
MOX				pmax	pmax		
	comp=Z,184nm,1.4s						
MOX				MLR	MLR		
	comp=Z,300nm,22.0s						
HGN	**Heimansgroeve**	**147.16**	**2**	*e*PKiKP		19 52 52.4	
	comp=Z,60nm,1.7s						
HGN				*e*PP	PP	19 56 20.6	-2.1
HILS	**Ha'il**	**147.19**	**293**	P	PKPdf	19 52 53.3	+1.3
MORC	**Moravsky Berou**	**147.20**	**348**	*e*PKPdf	PKPdf	19 52 52.2	+0.9
MORC				*e*PKPab	PKPab	19 52 55.7	-1.8
MORC				*e*		19 53 05.5	
GZT	**Gaziantep**	**147.36**	**313**	*i* P	PKPdf	19 52 52.5	+0.6
CTKT	**Corum**	**147.45**	**320**	*i* P	PKPdf	19 52 52.9	+1.0
PRU	**Pruhonice**	**147.49**	**352**	*e*PKP	PKPdf	19 52 52.7	+1.0
PRU				*ex*	x	19 52 55.7	
PRU				*e*pPKP		19 53 06.0	
LIKS	**Likavka**	**147.55**	**346**	*e*PKP	PKPdf	19 52 57.4	+5.6
LIKS				*e*		19 53 01.1	
YOZ	**Yozgat**	**147.69**	**318**	*i* P	PKPdf	19 52 56.7	+4.3
GAZ	**Gaziantep**	**147.70**	**312**	P	PKPdf	19 52 57.4	+4.9
KECS	**Kecovo**	**147.74**	**344**	*e*PKP	PKPdf	19 52 56.5	+4.3
KECS				*e*		19 52 59.2	
BALT	**Daday**	**147.74**	**322**	*i* P	PKPdf	19 52 55.9	+3.5
BNN	**Bunyan**	**147.78**	**316**	P	PKPdf	19 52 57.6	+5.1
GIVF	**Givet**	**147.78**	**3**	*e*PKIKP	PKPdf	19 52 53.2	+1.0
	comp=Z,57nm,1.1s						
BAIF	**Baives**	**147.78**	**4**	*e*PKIKP	PKPdf	19 52 53.1	+0.9
	comp=Z,37nm,1.1s						
ABH	**Alteburg**	**148.08**	**0**	*e*P	PKPdf	19 52 53.6	+0.9
VYHS	**Vyhne**	**148.13**	**346**	*e*PKP	PKPdf	19 52 53.9	+1.1
VYHS				*i*		19 52 57.9	
VYHS				*e*		19 53 01.0	
GRA1	**Grafenberg Arr**	**148.14**	**356**	*e*PKPdf	PKPdf	19 52 53.8	+1.0
GRA1				*e*PKPbc	PKPdf	19 52 57.9	+5.1
GRA1				*e*pPKPbc		19 53 08.2	
GRA1				LR	LR		
	comp=Z,400nm,20.2s						
GRF	**Grafenberg Arr**	**148.14**	**356**	*e*PKIKP	PKPdf	19 52 53.8	+1.0
KOLL	**Kolacno**	**148.15**	**346**	*e*PKP	PKPdf	19 52 55.0	+2.2
KOLL				*e*		19 52 58.2	
KOLL				*i*		19 53 01.5	
KOLL				*e*		19 53 29.8	
CANT	**Cankiri**	**148.18**	**321**	*i* P	PKPdf	19 52 58.8	+5.7
RUP	**Ruppelstein**	**148.25**	**1**	*e*P	PKPdf	19 52 54.3	+1.4
RUP	**Ruppelstein**	**148.25**	**1**	PKP	PKPdf	19 52 54.5	+1.6
WLF	**Walferdange**	**148.27**	**2**	PKIKP	PKPdf	19 52 55.0	+2.0
WLF	**Walferdange**	**148.27**	**2**	*e*PKPdf	PKPdf	19 52 55.1	+2.1
WLF				*e*PKPbc	PKPdf	19 52 58.3	+5.4
HARR	**Harsova**	**148.32**	**332**	⇓*i* P	PKPdf	19 53 12.6	+19
HARR	**Harsova**	**148.32**	**332**	⇓*i* P	PKPdf	19 53 12.6	+19
SAFT	**Safranbolu**	**148.33**	**323**	*i* P	PKPdf	19 52 58.4	+5.1
TOD	**Tromm**	**148.34**	**359**	*e*P	PKPdf	19 52 53.9	+0.8
TOD	**Tromm**	**148.34**	**359**	PKP	PKPdf	19 52 54.3	+1.2
ROSF	**Rostrenen**	**148.34**	**14**	*e*PKIKP	PKPdf	19 52 53.8	+0.7
	comp=Z,60nm,1.2s						
ELDT	**Eldivan**	**148.36**	**321**	*i* P	PKPdf	19 52 54.7	+1.2
PSZ	**Piszkesteto**	**148.41**	**344**	⇓*e*PKP/F		19 52 54.1	
PSZ				*e*		19 52 58.0	
PSZ	**Piszkesteto**	**148.41**	**344**	*e*PKPdf	PKPdf	19 52 54.1	+0.8
PSZ				*e*PKPbc	PKPdf	19 52 58.2	+4.9
KHC	**Kasperske Hory**	**148.46**	**353**	*e*PKP	PKPdf	19 52 54.4	+1.1
KHC				*ex*	x	19 52 58.5	
KHC				*e*pPKP		19 53 09.1	
AVNT	**Avonos**	**148.47**	**317**	*i* P	PKPdf	19 52 53.9	+0.3
FLN	**La Foliniere**	**148.50**	**10**	*e*PKIKP	PKPdf	19 52 54.3	+0.9
	comp=Z,84nm,1.0s						
FLN				*e*R			
	comp=Z,805nm,21.0s						
MLR	**Muntele Rosu**	**148.53**	**335**	⇑*i* P	PKPdf	19 53 07.7	+14
WET	**Wettzell**	**148.53**	**353**	*e*PKPdf	PKPdf	19 52 54.3	+0.9
WET				*e*PKPbc	PKPdf	19 52 58.8	+5.4
FURI	**Furi**	**148.56**	**258**	PKPdf	PKPdf	19 52 57.2	+2.7
FURI				PKIKP		19 53 00.9	
SIND	**Sindeldorf**	**148.57**	**358**	*e*P	PKPdf	19 52 54.4	+0.9
SGMF	**Saint Gilles**	**148.58**	**13**	*e*PKIKP	PKPdf	19 52 54.2	+0.7
	comp=Z,135nm,1.3s						
ISR	**Istrita**	**148.59**	**334**	⇑*i* P	PKPdf	19 53 12.9	+19
ISR	**Istrita**	**148.59**	**334**	⇑*i* P	PKPdf	19 53 12.9	+19
KTD	**Kalmit**	**148.64**	**359**	*e*P	PKPdf	19 52 55.1	+1.5
COBT	**Iskenderun**	**148.68**	**312**	*i* P	PKPdf	19 52 59.3	+5.3
BRTR	**Keskin Array B**	**148.69**	**319**	PKP	PKPdf	19 52 54.4	+0.4
	comp=Z,17nm,1.1s,baz=135,slow=1.7,SNR=22						
BRTR				PKPbc	PKPdf	19 52 58.1	+4.2
	comp=Z,44nm,0.9s,baz=129,slow=2.2,SNR=127						
LDF	**La Druitiere**	**148.72**	**10**	*e*PKIKP	PKPdf	19 52 54.8	+1.1
	comp=Z,83nm,1.1s						
GEC2	**GERESS Array S**	**148.73**	**352**	*e*PKPdf	PKPdf	19 52 54.4	+0.7
GEC2				*e*PKPbc	PKPdf	19 52 59.2	+5.5
GERES	**GERESS Array B**	**148.73**	**352**	PKP	PKPdf	19 52 54.9	+1.2
	comp=Z,38nm,0.8s,baz=90,slow=1.3,SNR=28						
GERES				PKPbc	PKPdf	19 52 58.8	+5.1
	comp=Z,37nm,0.8s,baz=27,slow=2.2,SNR=148						
QUIF	**Quistinic**	**148.76**	**14**	*e*PKIKP	PKPdf	19 52 54.9	+1.1
	comp=Z,40nm,1.2s						
GRR	**Gorron**	**148.79**	**11**	*e*PKIKP	PKPdf	19 52 54.9	+1.1
	comp=Z,54nm,1.0s						
ZST	**Bratislava**	**148.79**	**348**	*e*PKP	PKPdf	19 52 55.7	+1.8
ZST				*i*		19 52 59.7	
ZST				*i*		19 53 03.9	
ZST				*e*		19 53 08.8	
ZST				*e*		19 53 36.3	
CEYT	**Ceyhan**	**148.80**	**313**	P	PKPdf	19 53 00.1	+5.9
KAMT	**Kaman**	**148.86**	**319**	P	PKPdf	19 52 55.5	+1.2
VKA	**Vienna**	**148.88**	**349**	⇑*i* PKP	PKPdf	19 52 55.2	+1.2
SRO	**Srobarova**	**148.90**	**346**	*e*PKP	PKPdf	19 52 55.7	+1.7
SRO				*i*		19 53 00.1	
SRO				*i*		19 53 04.5	
SRO				*e*		19 53 10.5	
HTV	**Hatay**	**148.96**	**312**	*i* P	PKPdf	19 53 00.5	+6.0
LANF	**Langenberg**	**148.98**	**360**	PKP	PKPdf	19 52 55.6	+1.5
NIG	**Nigde**	**148.99**	**316**	P	PKPdf	19 53 00.2	+5.7
BUD	**Budapest**	**149.03**	**345**	*e*PKP/Fc		19 52 59.7	
ANTO	**Ankara**	**149.13**	**320**	*i* P	PKPdf	19 52 59.9	+5.2
ANTO	**Ankara**	**149.13**	**320**	PKPdf	PKPdf	19 52 55.6	+0.9
ANTO				PKPbc	PKPdf	19 53 00.5	+5.8
ANTO				pPKPdf		19 53 11.0	
LOD	**Lodumlu**	**149.13**	**320**	*i* P	PKPdf	19 53 00.4	+5.7
STU	**Stuttgart**	**149.16**	**358**	*e*PKPdf	PKPdf	19 52 55.0	+0.6
STU				*e*PKPbc	PKPdf	19 52 59.7	+5.3
LBG	**Lerchenberg**	**149.28**	**359**	*e*P	PKPdf	19 52 55.9	+1.3
HDH	**Heidenheim**	**149.31**	**357**	*e*P	PKPdf	19 52 55.3	+0.6
STR	**Strasbourg**	**149.38**	**360**	PKP	PKPdf	19 52 57.3	+2.5
MEZF	**Maizieres J'vi**	**149.39**	**3**	*e*PKIKP	PKPdf	19 52 56.1	+1.3
	comp=Z,109nm,1.1s						
SOP	**Sopron**	**149.39**	**348**	*e*PKP/F		19 52 55.9	
SOP				*e*		19 53 00.7	
BUCH	**Bad Urach**	**149.48**	**358**	*e*P	PKPdf	19 52 55.0	0.0
WLS	**Welschbruch**	**149.55**	**0**	PKP	PKPdf	19 52 56.0	+0.9
CDF	**Champ du Feu**	**149.55**	**0**	*e*PKIKP	PKPdf	19 52 56.0	+0.9
	comp=Z,76nm,1.6s						
MOA	**Molln**	**149.62**	**351**	⇑*i* PKP	PKPdf	19 52 55.5	+0.3
MOA				*i*		19 53 01.2	
MOA				*i*		19 53 10.3	
HENT	**Hendek**	**149.62**	**324**	*i* P	PKPdf	19 52 56.1	+0.6
BFO	**Black Forest**	**149.62**	**359**	*e*PKPdf	PKPdf	19 52 55.9	+0.7
BFO				*e*PKPbc	PKPdf	19 53 01.4	+6.2
BFO				*e*pPKPbc		19 53 12.1	
FUR	**Furstenfeldbru**	**149.65**	**355**	*e*PKPdf	PKPdf	19 52 56.1	+0.9
FUR				*e*PKPbc	PKPdf	19 53 01.5	+6.3
KBRS	**Khaybar**	**149.67**	**291**	P	PKPdf	19 52 57.3	+1.3
MDU	**Mudurnu**	**149.68**	**323**	P	PKPdf	19 53 01.7	+6.1
THEF	**They Montfort**	**149.70**	**2**	PKP	PKPdf	19 52 56.5	+1.2
ECH	**Echery**	**149.74**	**1**	PKP	PKPdf	19 52 56.5	+1.1
LIBD	**Limburg**	**149.81**	**0**	*e*P	PKPdf	19 52 56.4	+0.9
SPAK	**Spaichingen**	**149.84**	**358**	*e*P	PKPdf	19 52 55.9	+0.3
SPAK	**Spaichingen**	**149.84**	**358**	PKP	PKPdf	19 52 56.4	+0.8
GUT	**Gutenstein**	**149.87**	**358**	*e*P	PKPdf	19 52 56.2	+0.6
HAU	**Haudompre**	**149.94**	**2**	*e*PKIKP	PKPdf	19 52 56.6	+0.9
	comp=Z,109nm,1.5s						
HAU				*e*R			
	comp=Z,461nm,19.5s						
DUSS	**Damascus Unive**	**149.99**	**307**	*i* P	PKPdf	19 52 57.7	+1.4
ARSA	**Arzberg**	**150.00**	**349**	⇑*i* PKP	PKPdf	19 52 56.0	+0.2
ARSA				*i*		19 53 01.9	
ARSA				*i*		19 53 12.2	
KIZ	**Kirchzarten**	**150.00**	**360**	*e*P	PKPdf	19 52 55.9	+0.1
FELD	**Feldberg**	**150.08**	**360**	*e*P	PKPdf	19 52 56.8	+0.9
MOF	**Molkenrain**	**150.11**	**1**	PKP	PKPdf	19 52 56.5	+0.5
HINF	**Hinteralfeld**	**150.14**	**1**	*e*PKIKP	PKPdf	19 52 56.7	+0.7
	comp=Z,108nm,1.5s						
UBR	**Uberruh**	**150.21**	**357**	*e*P	PKPdf	19 52 56.8	+0.7
KIZT	**Kizilcal**	**150.29**	**320**	*i* P	PKPdf	19 53 03.2	+6.6
HRT	**Hereke**	**150.31**	**325**	*i* P	PKPdf	19 53 02.9	+6.4
LRYF	**La Roche-sur-Y**	**150.39**	**15**	PKP	PKPdf	19 52 57.4	+1.0
HYF	**Humbligny**	**150.40**	**7**	*e*PKIKP	PKPdf	19 52 57.9	+1.5
WATA	**Walderalm**	**150.45**	**355**	⇑*i* PKP	PKPdf	19 52 57.1	+0.6
WATA				*i*		19 53 03.0	
WATA				*i*		19 53 10.0	
LCHF	**La Chataignera**	**150.47**	**12**	PKP	PKPdf	19 52 56.0	-0.6
ISK	**Istanbul-Kandi**	**150.47**	**326**	*e*P	PKPdf	19 53 03.5	+6.7
MOTA	**Moosalm**	**150.48**	**355**	⇑*i* PKP	PKPdf	19 52 57.2	+0.6
MOTA				*i*		19 53 03.2	
MOTA				*i*		19 53 10.1	
BBS	**Basel-Blauen**	**150.50**	**0**	*e*P	PKPdf	19 52 57.5	+0.9
BBS	**Basel-Blauen**	**150.50**	**0**	PKP	PKPdf	19 52 57.8	+1.2
KBA	**Koelnbreinsper**	**150.51**	**352**	⇑*i* PKP	PKPdf	19 52 56.6	0.0
KBA				*i*		19 53 02.8	
KBA				*i*		19 53 10.4	
ESKT	**Eskisehir**	**150.51**	**322**	*i* P	PKPdf	19 53 03.8	+6.9
WTTA	**Wattenberg**	**150.51**	**354**	⇑*i* PKP	PKPdf	19 52 57.6	+1.0
WTTA				*i*		19 53 03.6	
WTTA				*i*		19 53 08.6	
HRI	**Mount Hermon**	**150.52**	**307**	P	PKPdf	19 52 57.2	+0.1
LOR	**Lormes**	**150.53**	**5**	*e*PKIKP	PKPdf	19 52 57.9	+1.3
	comp=Z,175nm,1.3s						
LOR				*e*R			
	comp=Z,614nm,20.2s						
KONT	**Konya--Tatoy**	**150.55**	**318**	*e*P	PKPdf	19 53 03.6	+6.6
KSHT	**Keshet**	**150.57**	**306**	P	PKPdf	19 52 57.3	+0.1
BADT	**Buyukada**	**150.59**	**326**	P	PKPdf	19 53 03.4	+6.5
SQTA	**Sankt Quirin**	**150.59**	**355**	⇓*i* PKP	PKPdf	19 52 57.6	+0.9
SQTA				*i*		19 53 03.4	
SQTA				*i*		19 53 11.3	
LOMF	**Lomont**	**150.60**	**1**	PKP	PKPdf	19 52 58.2	+1.5
IKL	**Isikli**	**150.62**	**314**	*e*P	PKPdf	19 53 04.0	+6.9
DAVA	**Damuels**	**150.62**	**357**	⇑*i* PKP	PKPdf	19 52 57.8	+1.0
DAVA				*i*		19 53 03.9	
DAVA				*i*		19 53 14.7	
MFF	**Saint Martin d**	**150.64**	**11**	*e*PKIKP	PKPdf	19 52 57.9	+1.1
	comp=Z,134nm,1.5s						
YLV	**Yalova**	**150.65**	**325**	*e*P	PKPdf	19 52 56.9	-0.1
JMB	**Yambol**	**150.67**	**331**	*e*P	PKPdf	19 52 58.0	+1.0
SSF	**Saint Saulge**	**150.70**	**6**	*e*PKIKP	PKPdf	19 52 58.1	+1.2
	comp=Z,159nm,1.4s						
CTT	**Catalca**	**150.74**	**327**	P	PKPdf	19 53 03.7	+6.5
OBKA	**Obir**	**150.89**	**350**	⇑*i* PKP	PKPdf	19 52 57.2	0.0
OBKA				*i*		19 53 03.5	
OBKA				*i*		19 53 11.6	
AVF	**Avril sur Loir**	**150.95**	**6**	*e*PKIKP	PKPdf	19 52 58.1	+0.8
	comp=Z,78nm,1.5s						
PHNC	**Paralimni**	**151.00**	**311**	⇑P	PKPdf	19 53 04.5	+6.8
	comp=Z,2.9nm,0.9s						
PHNC	**Paralimni**	**151.00**	**311**	⇑*e*P	PKPdf	19 53 04.5	+6.8
YNBS	**Yanbu' al Bahr**	**151.01**	**288**	P	PKPdf	19 52 59.4	+1.4
HNTI	**Hanita**	**151.02**	**307**	P	PKPdf	19 52 57.6	-0.2
HDMB	**Hadim**	**151.03**	**316**	P	PKPdf	19 53 04.5	+6.8
FVI	**Forni Avoltri**	**151.05**	**353**	*e*PKP	PKPdf	19 53 03.8	+6.4
EDRB	**Edirne**	**151.07**	**330**	*e*P	PKPdf	19 53 04.4	+6.8
ULDT	**Uludag**	**151.07**	**325**	*i* P	PKPdf	19 52 58.2	+0.5
BEO	**Belgrade**	**151.07**	**341**	⇑*i* PKP	PKPdf	19 52 58.4	+0.9
HMDT	**Nahal Hemdat**	**151.08**	**305**	P	PKPdf	19 52 58.4	+0.5
BGF	**Bois d'Agland**	**151.13**	**7**	*e*PKIKP	PKPdf	19 52 58.6	+1.1
	comp=Z,105nm,1.3s						
SMF	**Signal de Mont**	**151.14**	**5**	*e*PKIKP	PKPdf	19 52 58.4	+0.8
	comp=Z,88nm,1.4s						
PTCC	**Patocco-Chiusa**	**151.17**	**352**	*e*PKP	PKPdf	19 53 03.9	+6.3
ALT	**Altintas**	**151.25**	**322**	*i* P	PKPdf	19 53 05.6	+7.6
LEGS	**Legarje**	**151.29**	**349**	*e*PKPdf	PKPdf	19 52 58.5	+0.7
LEGS				*e*		19 53 32.6	
EMAZ	**Mazaricos**	**151.30**	**26**	PKP	PKPdf	19 53 05.4	+7.5
TCF	**Toulx Ste Croi**	**151.32**	**8**	*e*PKIKP	PKPdf	19 52 59.0	+1.2
	comp=Z,118nm,1.4s						
CABF	**La Chapelle**	**151.32**	**2**	*e*PKIKP	PKPdf	19 52 59.8	+2.0
	comp=Z,319nm,1.6s						
LJU	**Ljubljana**	**151.34**	**350**	*e*PKPdf	PKPdf	19 52 58.8	+0.9
LJU				*e*PKPbc	PKPdf	19 53 05.0	+7.1
LJU				*e*PKPab	PKPab	19 53 15.0	+0.4
LJU				*e*		19 53 27.3	
BOLS	**Boljevac**	**151.45**	**338**	⇑*i* PKP	PKPdf	19 52 58.1	0.0
VOY	**Vojsko**	**151.45**	**351**	*e*PKPdf	PKPdf	19 52 58.3	+0.2
VOY				*e*PKPbc	PKPdf	19 53 04.8	+6.7
SLTI	**Sal'it**	**151.47**	**305**	P	PKPdf	19 52 59.0	+0.5
MAMC	**Mammari**	**151.49**	**312**	⇑P	PKPdf	19 53 05.7	+7.2
MAMC	**Mammari**	**151.49**	**312**	⇑*e*P	PKPdf	19 53 05.7	+7.2
CSS	**Prodhromos**	**151.52**	**312**	⇑P	PKPdf	19 53 05.7	+7.2
	comp=Z,1.7nm,1.0s						
CSS	**Prodhromos**	**151.52**	**312**	⇑*e*P	PKPdf	19 53 05.7	+7.2
STS	**Santiago**	**151.53**	**25**	PKP	PKPdf	19 52 59.8	+1.5
SISC	**Sisak**	**151.54**	**347**	*i* PKP	PKPdf	19 52 57.5	-0.8
TBUS	**Tabuk**	**151.55**	**296**	P	PKPdf	19 52 59.8	+1.2
MZDA	**Masada**	**151.57**	**303**	P	PKPdf	19 52 59.2	+0.5
BNT	**Bandirma**	**151.58**	**326**	P	PKPdf	19 53 05.5	+7.1
OG01	**Vacheresse**	**151.62**	**1**	PKP	PKPdf	19 53 00.1	+1.8
AGO	**Saint Agoulin**	**151.66**	**7**	PKP	PKPdf	19 52 59.9	+1.5
PGB	**Panagyurishte**	**151.68**	**334**	*e*P	PKPdf	19 53 00.0	+1.5
EPON	**Pontenova**	**151.71**	**23**	PKP	PKPdf	19 53 03.9	+5.3
SART	**Tekirdag**	**151.72**	**328**	*i* P	PKPdf	19 53 05.2	+6.6
BOJS	**Bojanci**	**151.74**	**349**	*e*PKPdf	PKPdf	19 52 59.6	+1.1
BOJS				*e*PKPbc	PKPdf	19 53 06.2	+7.7
BOJS				*e*PKPab	PKPab	19 53 16.7	+0.4
LEF	**Lefka**	**151.75**	**312**	*i* P	PKPdf	19 53 06.4	+7.5
ISP	**Isparta**	**151.78**	**319**	*e*P	PKPdf	19 52 57.5	-1.3
GRUS	**Gruza**	**151.83**	**340**	⇑*i* PKP	PKPdf	19 52 60.0	+1.3
OG05	**Jujurieux**	**151.86**	**3**	PKP	PKPdf	19 53 00.5	+1.8
DIVS	**Divcibare**	**151.87**	**341**	⇓*i* PKP	PKPdf	19 52 59.3	+0.6
ALFC	**Alevga**	**151.93**	**313**	⇑P	PKPdf	19 53 06.0	+6.9
	comp=Z,2.9nm,0.8s						
ALFC	**Alevga**	**151.93**	**313**	⇑*e*P	PKPdf	19 53 06.0	+6.9
JMQS	**Jabal Moqyreh**	**151.94**	**298**	P	PKPdf	19 53 00.2	+0.8
SZAC	**Souni-Zanaja**	**151.94**	**312**	P	PKPdf	19 53 06.4	+7.2
PYM	**Petit Puy Mans**	**151.94**	**7**	PKP	PKPdf	19 52 58.5	-0.3
PYM				PKP	PKPdf	19 53 00.3	+1.5
PYM				PKP	PKPdf	19 53 00.8	+2.0
ZFRI	**Zfri**	**151.99**	**302**	P	PKPdf	19 53 00.2	+0.9
VTS	**Vitosha**	**152.03**	**335**	*e*P	PKPdf	19 53 00.0	+1.0
KHL	**Karahalli**	**152.07**	**321**	*e*P	PKPdf	19 53 07.1	+7.9
EZAM	**Zamans**	**152.08**	**27**	PKP	PKPdf	19 53 06.2	+7.1
BALB	**Balikesir**	**152.11**	**325**	*i* P	PKPdf	19 53 06.8	+7.6
ALN	**Alexandroupoli**	**152.13**	**329**	*e*P	PKPdf	19 53 06.7	+7.5
RZN	**Rozhen**	**152.13**	**332**	*e*P	PKPdf	19 53 00.0	+0.8
RJF	**Les Rejaudoux**	**152.18**	**9**	*e*PKIKP	PKPdf	19 53 00.2	+1.0
	comp=Z,96nm,1.3s						
RJF				*e*R			
	comp=Z,753nm,20.8s						
PRNI	**Paran**	**152.19**	**302**	P	PKPdf	19 53 00.7	+1.0
EINC	**Incio**	**152.20**	**24**	PKP	PKPdf	19 53 05.2	+6.0
ORO	**Oropa**	**152.33**	**359**	*e*PKP	PKPdf	19 53 05.8	+6.5
LFF	**La Frestale**	**152.41**	**11**	*e*PKIKP	PKPdf	19 53 00.6	+1.1
	comp=Z,66nm,1.3s						
LPL	**La Plagne**	**152.44**	**1**	*e*PKIKP	PKPdf	19 53 00.5	+1.0
	comp=Z,43nm,1.1s						
LPG	**La Plagne**	**152.45**	**1**	*e*PKIKP	PKPdf	19 53 01.1	+1.6
	comp=Z,45nm,1.0s						
MBH	**Mount Berech**	**152.46**	**301**	P	PKPdf	19 53 01.1	+1.1
EIL	**Elat**	**152.47**	**300**	P	PKPdf	19 53 01.1	+1.0
LBL	**Lubilhac**	**152.48**	**7**	PKP	PKPdf	19 53 02.2	+2.6
KZIT	**Kziot**	**152.49**	**303**	P	PKPdf	19 53 01.2	+1.1
LSD	**Ceresole Reale**	**152.50**	**1**	P	PKPdf	19 53 01.3	+1.7
KMTI	**Karmit**	**152.51**	**301**	P	PKPdf	19 53 01.0	+0.9
ERUA	**La Rua**	**152.51**	**24**	PKP	PKPdf	19 53 05.4	+5.7
ELOB	**Lobios**	**152.58**	**26**	PKP	PKPdf	19 53 04.7	+4.9
CAF	**Calviac**	**152.63**	**9**	*e*PKIKP	PKPdf	19 53 00.0	+0.2
	comp=Z,44nm,1.2s						
AYUS	**'Aynunah**	**152.65**	**297**	P	PKPdf	19 53 00.7	+0.3
MMB	**Musomiste**	**152.65**	**333**	*e*P	PKPdf	19 53 00.0	+0.1
AKS	**Akhisar**	**152.69**	**324**	*i* P	PKPdf	19 53 08.1	+8.0
KKB	**Krupnik**	**152.69**	**334**	*e*P	PKPdf	19 53 01.0	+1.0
DENT	**Denizli**	**152.74**	**321**	*e*P	PKPdf	19 53 09.3	+9.1
RSP	**Reno Superiore**	**152.81**	**1**	P	PKPdf	19 53 01.6	+1.5
ELL	**Elmali**	**152.83**	**318**	P	PKPdf	19 53 08.7	+8.4
FENE	**Fenestrelle**	**152.93**	**1**	P	PKPdf	19 53 00.3	+0.1
VIVF	**Saint-Julien-l**	**152.99**	**5**	*e*PKIKP	PKPdf	19 53 01.8	+1.5
	comp=Z,210nm,1.7s						
ORIF	**Oris-en-Rattie**	**153.00**	**3**	*e*PKIKP	PKPdf	19 53 01.4	+1.1
	comp=Z,46nm,1.1s						
ORIF				*e*R			
	comp=Z,607nm,20.0s						
RRL	**Cesana Torines**	**153.03**	**1**	P	PKPdf	19 53 01.7	+1.4
ECAL	**Calabor**	**153.05**	**24**	PKP	PKPdf	19 53 04.2	+3.7
SRS	**Serrai**	**153.09**	**333**	*e*P	PKPdf	19 53 07.5	+6.9
BHB	**Bricherasio**	**153.12**	**1**	P	PKPdf	19 53 01.2	+0.7
BOB	**Bobbio (Coli)**	**153.15**	**357**	*e*PKP	PKPdf	19 53 09.2	+8.7
PBRG	**Braganca**	**153.17**	**24**	*e*PKPab	PKPab	19 53 21.5	-0.9
PMRL	**Vila Real**	**153.21**	**26**	*e*PKPdf	PKPdf	19 53 02.5	+1.8
MBDF	**Montbardon**	**153.22**	**1**	*e*PKIKP	PKPdf	19 53 02.3	+1.7
	comp=Z,102nm,1.3s						
SKO	**Skopje**	**153.25**	**337**	*i* PKIKP	PKPdf	19 53 02.0	+1.3
SKO				*i* PKHKP		19 53 09.4	
SKO				⇓*i* PKP2	PKPab	19 53 22.2	-0.6
	comp=Z,0.1nm,1.3s						
KDAG	**Bornova**	**153.32**	**324**	*i* P	PKPdf	19 53 07.4	+6.5
IZM	**Izmir**	**153.33**	**324**	*i* P	PKPdf	19 53 09.5	+8.5
KNT	**Kendrikon**	**153.35**	**334**	*e*P	PKPdf	19 53 08.6	+7.7
VAY	**Valandovo**	**153.36**	**334**	*i* PKHKP		19 53 08.8	
VAY				⇓*i*		19 53 22.1	
GRAM		**153.39**	**356**	P	PKPdf	19 53 01.6	+0.7
PCP	**Pian Castagno**	**153.41**	**359**	P	PKPdf	19 53 01.9	+1.0
SOH	**Sokhos**	**153.44**	**333**	*e*P	PKPdf	19 52 54.1	-6.9
ERBM	**Eremo**	**153.44**	**356**	*e*PKP	PKPdf	19 53 09.2	+8.3
PZZ	**Prazzo**	**153.45**	**1**	P	PKPdf	19 53 01.9	+1.0
ZCCA	**Zocca**	**153.46**	**355**	*e*PKP	PKPdf	19 53 11.2	+10
GSCL	**Gusciola**	**153.50**	**355**	*e*PKP	PKPdf	19 53 09.4	+8.4
CODM		**153.51**	**356**	P	PKPdf	19 53 01.6	+0.

CLCH	**Cerro Calan**	**5.30**	**32**⇑	*i* P		**Pn**	**20 25 56.5**	**-0.2**
FCH	**Farellones**	**5.46**	**33**	*i* P		**Pn**	**20 25 57.5**	**-1.5**

*IDC **03** 20:38:59.8±0.6, 13.30S×166.41E, mb4.3/11, mb1 4.5/12, mb1mx4.4/16, ML3.6/1, MS3.9/7, Ms1 3.9/7, ms1mx3.7/24, Error ellipse: s-maj=25.5km s-min=17.8km az=142.0*
*LDG **03** 20:39:01.0±0.3, 12.96S×166.63E, h10km, Mb4.5/4, Error ellipse: s-maj=30.6km s-min=9.5km az=84.0*
*MOS **03** 20:39:03.9±1.3, 13.28S×166.27E, h30km, mb5.0/6, Error ellipse: s-maj=15.4km s-min=14.1km az=171.7*
*BJI **03** 20:39:09.5, 13.46S×166.49E, h90km, mb4.5*
*NEIC **03** 20:39:09.8±4.2, 13.29S×166.23E, h73km±35km, mb4.8/16, Error ellipse: s-maj=18.2km s-min=11.8km az=73.0*

ISC 03 20:39:02.7±4.6, 13.25S±0.07×166.22E±0.08, h22km±32km, n82, σ1s04/53, mb4.6/27, MS3.9/7, 3C, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**4.81**	**156**	*i* P		**Pn**		**20 40 16.1**	**+0.3**
BKM				S		**Sn**		**20 41 11.8**	**+0.3**
PMG	**Port Moresby**	**19.07**	**280**	P		**P**		**20 43 27.6**	**+1.1**
	0.5nm,0.3s,baz=96,slow=10,SNR=2.7								
CTA	**Charters Tower**	**20.28**	**248**	P		**P**		**20 43 38.8**	**-1.1**
	5.3nm,0.9s,baz=83,slow=16,SNR=3.0								
CTA				LR		LR		20 50 37.1	
	comp=Z,449nm,19.9s,MS3.8,baz=51,slow=34								
CTAO	**Charters Tower**	**20.28**	**248**	P		**P**		**20 43 40.7**	**+0.8**
CTAO				pmax		pmax			
	comp=Z,31nm,1.1s								
CTAO	**Charters Tower**	**20.28**	**248**	P		**P**		**20 43 40.7**	**+0.8**
	comp=Z,31nm,1.1s								
ARMA	**Armidale**	**21.76**	**216**	*e*P		**P**		**20 43 56.0**	**+1.2**
STKA	**Stephens Creek**	**29.21**	**227**	*e*P		**P**		**20 45 05.8**	**+0.7**
	comp=Z,2.8nm,0.6s,mb4.2								
STKA	**Stephens Creek**	**29.21**	**227**	P		**P**		**20 45 05.1**	**0.0**
	comp=Z,4.9nm,1.0s,mb4.2,baz=45,slow=13,SNR=8.7								
STKA				LR		LR		20 57 02.0	
	comp=Z,459nm,18.1s,MS4.1,baz=39,slow=37								
RPZ	**Rata Peaks**	**30.64**	**173**	P		**P**		**20 45 16.6**	**-1.1**
	comp=Z,27nm,1.1s,mb5.0,baz=225,slow=1.4,SNR=3.5								
RPZ				LR		LR		20 55 40.8	
	comp=Z,276nm,18.5s,MS3.9,baz=162,slow=33								
WB2	**Warramunga Arr**	**31.22**	**253**	*e*P		**P**		**20 45 21.2**	**-1.8**
WRAB	**Tennant Creek**	**31.22**	**253**	*e*P		**P**		**20 45 21.7**	**-1.3**
	comp=Z,21nm,1.1s,mb4.9								
WRA	**Warramunga Arr**	**31.23**	**253**	P		**P**		**20 45 21.7**	**-1.4**
	comp=Z,3.6nm,0.9s,mb4.2,baz=83,slow=8.6,SNR=15								
WRA				PcP		PcP		20 48 16.3	-1.3
	comp=Z,1.7nm,0.8s,baz=79,slow=2.8,SNR=7.1								
AS12	**Alice Springs**	**32.28**	**247**	*e*P		**P**		**20 45 30.5**	**-1.8**
	comp=Z,5.2nm,0.8s,mb4.4								
ASAR	**Alice Springs**	**32.28**	**247**	P		**P**		**20 45 30.5**	**-1.8**
	comp=Z,2.8nm,0.6s,mb4.3,baz=72,slow=9.4,SNR=41								
ASAR				PcP		PcP		20 48 19.0	-1.4
	comp=Z,2.0nm,1.0s,baz=109,slow=3.3,SNR=5.5								
ASAR				LR		LR		20 58 39.7	
	comp=Z,256nm,18.5s,MS3.9,baz=57,slow=36								
TGY	**Tagaytay City**	**52.44**	**300**	LR		LR		21 07 10.7	
	comp=Z,57nm,19.0s,MS3.6,baz=278,slow=32								
JNU	**Nakatsue**	**57.13**	**325**	LR		LR		21 09 10.9	
	comp=Z,72nm,20.1s,MS3.8,baz=235,slow=32								
NJ2	**Nanjing**	**63.91**	**316**	*e*P		**P**		**20 49 40.5**	**+4.0**
NJ2				AMB		AMB			
	comp=Z,10.0nm,1.0s,mb4.8								
SBA	**Scott Base**	**64.61**	**180**	*e*P		**P**		**20 49 40.5**	**+0.2**
SBA				pmax		pmax			
	comp=Z,13nm,0.9s,mb5.0								
SBA	**Scott Base**	**64.61**	**180**	*e*P		**P**		**20 49 40.5**	**+0.1**
	comp=Z,13nm,0.9s,mb5.0								
ENH	**Enshi**	**69.64**	**310**	*e*P		**P**		**20 50 12.3**	**-0.5**
	comp=Z,6.3nm,0.9s,mb4.5								
CMAR	**Chiang Mai Arr**	**73.42**	**294**	P		**P**		**20 50 36.8**	**+1.1**
	comp=Z,2.9nm,0.7s,mb4.3,baz=124,slow=5.0,SNR=24								
CMAR				LR		LR		21 19 12.2	
	comp=Z,46nm,21.0s,MS3.7,baz=195,slow=33								
HHC	**Hu-ho-hao-te**	**73.80**	**320**	*e*P		**P**		**20 50 35.0**	**-2.5**
HHC				AMB		AMB			
	comp=Z,9.0nm,1.0s,mb4.7								
QSPA	**South Pole Qui**	**76.77**	**180**	*e*P		**P**		**20 50 53.2**	**-0.5**
	comp=Z,18nm,1.0s,mb5.0								
YAK	**Yakutsk**	**80.33**	**343**	*e*P		**P**		**20 51 13.6**	**+0.2**
YAK				pmax		pmax			
	comp=Z,38nm,0.8s,mb5.4								
YAK	**Yakutsk**	**80.33**	**343**	*e*P		**P**		**20 51 13.6**	**+0.2**
	comp=Z,38nm,0.8s,mb5.4								
ULN	**Ulaanbaatar**	**80.34**	**324**	*e*P		**P**		**20 51 15.5**	**+1.7**
ULN				pmax		pmax			
	comp=Z,3.0nm,0.7s,mb4.3								
ULN	**Ulaanbaatar**	**80.34**	**324**	*e*P		**P**		**20 51 15.5**	**+1.7**
	comp=Z,2.8nm,0.7s,mb4.3								
SONM	**Songino Array**	**80.70**	**324**	P		**P**		**20 51 16.6**	**+1.0**
	comp=Z,0.4nm,0.3s,mb3.8,baz=130,slow=4.4,SNR=4.0								
GTA	**Gaotai**	**80.91**	**314**	*e*P		**P**		**20 51 19.0**	**+2.1**
GTA				AMB		AMB			
	comp=Z,5.0nm,1.1s,mb4.4								
BILL	**Bilibino**	**81.07**	**0**	*c i*P		**P**		**20 51 17.6**	**+0.4**
BILL				*i*				20 54 26.2	
BILL				pmax		pmax			
	comp=Z,16nm,0.9s,mb5.0								
BILL	**Bilibino**	**81.07**	**0**	*e*P		**P**		**20 51 17.8**	**+0.6**
	comp=Z,25nm,1.2s,mb5.0								
PMR	**Palmer**	**82.46**	**20**	P		**P**		**20 51 24.6**	**+0.1**
PMR				pmax		pmax			
	comp=Z,6.0nm,0.5s,mb4.8								
PMR	**Palmer**	**82.46**	**20**	P		**P**		**20 51 24.6**	**+0.1**
	comp=Z,6.0nm,0.5s,mb4.8								
BOD	**Bodaibo**	**82.71**	**335**	*e*P		**P**		**20 51 21.1**	**-4.8**
ZAK	**Zakamensk**	**83.76**	**325**	*e*P		**P**		**20 51 32.1**	**+0.6**
COLA	**College**	**85.23**	**18**	*e*P		**P**		**20 51 36.9**	**-1.6**
COLA				pmax		pmax			
	comp=Z,9.0nm,0.9s,mb4.9								
COLA	**College**	**85.23**	**18**	*e*P		**P**		**20 51 36.9**	**-1.6**
	comp=Z,8.8nm,0.9s,mb4.9								
ILAR	**Eielson Array**	**85.45**	**18**	P		**P**		**20 51 38.4**	**-1.2**
	comp=Z,4.4nm,0.8s,mb4.7,baz=247,slow=5.6,SNR=38								
NVAR	**Mina Array Bea**	**87.09**	**50**	P		**P**		**20 51 48.4**	**+0.1**
	comp=Z,0.2nm,0.4s,mb3.7,baz=229,slow=9.6,SNR=3.0								
GUN	**Gumba**	**87.79**	**299**	*e*P		**P**		**20 51 52.2**	**+0.3**
KKN	**Kakani**	**88.26**	**299**	*e*P		**P**		**20 51 54.2**	**0.0**
	comp=Z,6.7nm,0.8s,mb4.9								
KKN	**Kakani**	**88.26**	**299**	*e*P		**P**		**20 51 54.2**	**0.0**
KKN				pmax		pmax			
	comp=Z,3.0nm,0.8s,mb4.6								
TIXI	**Tiksi**	**88.33**	**349**	*e*P		**P**		**20 51 53.4**	**-0.1**
TIXI				pmax		pmax			
	comp=Z,69nm,1.2s								
TIXI	**Tiksi**	**88.33**	**349**	*e*P		**P**		**20 51 53.5**	**0.0**
	comp=Z,11nm,1.3s,mb4.9								
DMN	**Daman**	**88.36**	**299**	*e*P		**P**		**20 51 55.0**	**+0.3**
	comp=Z,14nm,0.8s,mb5.2								
GKN	**Gorkha**	**88.87**	**299**	*e*P		**P**		**20 51 57.3**	**+0.2**
	comp=Z,11nm,0.8s,mb5.2								
KOLN	**Koldanda**	**89.69**	**299**	*e*P		**P**		**20 52 01.2**	**+0.2**
	comp=Z,6.8nm,1.1s,mb4.9								
SNAA	**Sanae**	**94.96**	**183**⇑	*i*P		**P**		**20 52 24.7**	**+0.5**
MKAR	**Makanchi Array**	**95.43**	**317**	P		**P**		**20 52 26.7**	**-0.2**
	comp=Z,1.0nm,0.6s,mb4.5,baz=100,slow=7.4,SNR=13								
MKAR	**Makanchi Array**	**95.43**	**317**	*e*P		**P**		**20 52 28.0**	**+1.1**
VNA3	**Neumayer Olymp**	**95.66**	**181**	P		**P**		**20 52 28.0**	**+0.6**
VNA2	**Neumayer--Watz**	**95.92**	**182**⇑	*i*P		**P**		**20 52 29.5**	**+0.9**
YKA	**Yellowknife Ar**	**96.71**	**27**	P		**P**		**20 52 29.9**	**-2.4**
	comp=Z,0.4nm,0.7s,mb4.0,baz=259,slow=4.8,SNR=9.4								
YKA	**Yellowknife Ar**	**96.71**	**27**	P		**P**		**20 52 29.9**	**-2.4**
ARCES	**ARCESS Array B**	**118.57**	**345**	PKP		PKPdf		20 57 49.0	-3.9
	comp=Z,1.6nm,0.5s,baz=79,slow=1.8,SNR=32								
LPAZ	**La Paz**	**118.79**	**117**	PKP		PKPdf		20 57 51.2	-3.4
	comp=Z,0.9nm,0.6s,baz=257,slow=4.3,SNR=4.4								
LPAZ	**La Paz**	**118.79**	**117**	PKP		PKPdf		20 57 51.2	-3.4
CPUP	**Villa Florida**	**122.20**	**133**	PKP		PKPdf		20 57 55.6	-5.4
	comp=Z,1.1nm,0.5s,baz=73,slow=17,SNR=3.0								
ZEI	**Tsey**	**122.51**	**312**	*e*PKIKP		PKPdf		20 57 59.8	-1.3
ZEI				*i*				20 59 42.6	
FINES	**FINESS Array B**	**123.98**	**338**	PKP		PKPdf		20 57 59.8	-3.8
	comp=Z,1.9nm,0.9s,slow=1.9,SNR=6.5								
NOA	**NORSAR Array B**	**128.94**	**345**	PKP		PKPdf		20 58 09.4	-3.7
	comp=Z,0.3nm,0.7s,baz=283,slow=10,SNR=2.9								
AKASG	**Malin Array Be**	**128.94**	**326**	PKP		PKPdf		20 58 08.1	-5.3
	comp=Z,0.3nm,0.5s,baz=50,slow=1.8,SNR=7.4								
BDFB	**Brasilia**	**135.61**	**129**	PKP		PKPdf		20 58 22.4	-4.4
	comp=Z,1.8nm,0.4s,baz=198,slow=5.9,SNR=4.2								
BRG	**Berggiesshubel**	**136.24**	**335**	PKIKP		PKPdf		20 58 24.7	-2.3
GERES	**GERESS Array B**	**137.87**	**333**	PKP		PKPdf		20 58 26.8	-3.3
	comp=Z,0.8nm,0.8s,baz=180,slow=1.3,SNR=5.4								
SSF	**Saint Saulge**	**143.31**	**340**	*e*PKP1		PKPbc		20 58 34.0	+0.3
	comp=Z,8.8nm,0.7s								
LPG	**La Plagne**	**143.44**	**336**	*e*PKP1		PKPbc		20 58 34.9	+0.8
	comp=Z,45nm,1.4s								
AVF	**Avril sur Loir**	**143.59**	**340**	*e*PKP1		PKPbc		20 58 34.2	-0.4
	comp=Z,8.0nm,1.0s								
BGF	**Bois d'Agland**	**143.96**	**340**	*e*PKP1		PKPbc		20 58 35.8	+0.1
	comp=Z,26nm,1.0s								
ORIF	**Oris-en-Rattie**	**144.27**	**336**	*e*PKP1		PKPbc		20 58 37.3	+0.7
	comp=Z,45nm,0.9s								
QUIF	**Quistinic**	**144.32**	**348**	*e*PKP1		PKPbc		20 58 36.4	-0.2
	comp=Z,20nm,0.9s								
TCF	**Toulx Ste Croi**	**144.41**	**341**	*e*PKP1		PKPbc		20 58 37.4	+0.5
	comp=Z,36nm,0.9s								
SBF	**Sospel**	**144.47**	**333**	*e*PKP1		PKPbc		20 58 37.4	+0.2
	comp=Z,46nm,0.8s								
PGF	**Pioggiola**	**144.77**	**330**	*e*PKP1		PKPbc		20 58 38.7	+0.6
	comp=Z,50nm,1.0s								
VIVF	**Saint-Julien-l**	**144.79**	**337**	*e*PKP1		PKPbc		20 58 39.1	+1.1
	comp=Z,93nm,1.2s								
MFF	**Saint Martin d**	**144.82**	**344**	*e*PKP1		PKPbc		20 58 38.6	+0.5
	comp=Z,83nm,1.0s								
FRF	**La Foret Royal**	**145.06**	**334**	*e*PKP1		PKPbc		20 58 37.7	-1.1
	comp=Z,162nm,1.5s								
RJF	**Les Rejaudoux**	**145.50**	**341**	*e*PKP1		PKPbc		20 58 41.5	+1.6
	comp=Z,68nm,1.1s								
CAF	**Calviac**	**145.66**	**340**	*e*PKP1		PKPbc		20 58 42.5	+2.2
LFF	**La Frestale**	**146.08**	**341**	*e*PKP1		PKPbc		20 58 42.7	+1.4
	comp=Z,20nm,0.7s								
MTLF	**Montolieu**	**147.00**	**338**	*e*PKP1		PKPbc		20 58 45.5	+2.0
	comp=Z,40nm,1.0s								
ESDC	**Sonseca Array**	**152.29**	**344**	PKPab		PKPab		20 59 09.0	-0.4
	comp=Z,2.6nm,0.6s,baz=14,slow=4.1,SNR=11								

*INMG **03** 20:40:07.8±0.9, 37.47N×6.82W, h2km±4km, ML1.5, Error ellipse: s-maj=2.5km s-min=1.6km az=29.0*
*NEIC **03** 20:40:07.9, 37.47N×6.83W, MN1.3(MDD), After MDD.*
*MDD **03** 20:40:07.9±0.4, 37.48N×6.83W, mbLg1.5/7, Error ellipse: s-maj=4.1km s-min=2.0km az=155.0, PRXIMO*

ISC 03 20:40:06.7±0.8, 37.46N±0.07×6.81W±0.04, h6km±7km, n16, σ0s34/21, Spain

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
EMIN	**Mina Concepcio**	**0.33**	**19**	Pg		**Pg**		**20 40 13.7**	**+0.3**
	16nm,0.1s,SNR=159								
EMIN				Lg				20 40 17.8	
	11nm,0.1s,SNR=7.9								
EMIN	**Mina Concepcio**	**0.33**	**19**	Pg		**Pg**		**20 40 13.8**	**+0.4**
EMIN				Lg				20 40 17.9	
PALC	**Alcoutim**	**0.53**	**271**	*e*Pg		**Pg**		**20 40 17.5**	**+0.1**
PALC				*e*Sg		**Sg**		**20 40 24.6**	**+0.1**
	7.8nm,0.1s								
PALC	**Alcoutim**	**0.53**	**271**	Pg		**Pg**		**20 40 17.5**	**+0.1**
PALC				Lg				20 40 24.6	
	3.9nm,0.1s								
EGRO	**El Granado**	**0.54**	**279**	Pg		**Pg**		**20 40 17.6**	**0.0**
	3.5nm,0.1s,SNR=20								
EGRO				Lg				20 40 24.2	
	5.9nm,0.1s,SNR=7.9								
EGRO	**El Granado**	**0.54**	**279**	Pg		**Pg**		**20 40 17.6**	**0.0**
EGRO				Lg				20 40 24.2	
ESPR	**Espera**	**0.96**	**127**	Pg		**Pg**		**20 40 25.9**	**0.0**
	0.9nm,0.1s,SNR=9.9								
ESPR				Lg				20 40 39.1	
	5.7nm,0.2s,SNR=7.9								
ESPR	**Espera**	**0.96**	**127**	Pg		**Pg**		**20 40 26.2**	**+0.3**
ESPR				Lg				20 40 38.5	
PBEJ	**Beja**	**1.01**	**305**	*e*P		**Pb**		**20 40 26.0**	**-0.3**
PBEJ				*e*S		**Sb**		**20 40 39.5**	**-0.2**
	5.4nm,0.1s								
PBEJ	**Beja**	**1.01**	**305**	P		**Pb**		**20 40 26.0**	**-0.3**
PBEJ				S		**Sb**		**20 40 39.5**	**-0.2**
	2.7nm,0.1s								
ELIJ	**Sierra de Lija**	**1.26**	**115**	Pg		**Pg**		**20 40 31.2**	**-0.7**
	0.2nm,0.2s,SNR=7.9								
ELIJ				Lg				20 40 48.4	
	1.1nm,0.2s,SNR=7.9								
ELIJ	**Sierra de Lija**	**1.26**	**115**	Pg		**Pg**		**20 40 31.1**	**-0.9**
ELIJ				Lg				20 40 48.4	
PTEO	**Sao Teotonio**	**1.53**	**274**	*e*P		**Pn**		**20 40 35.1**	**+0.4**
PTEO				*e*S		**Sb**		**20 40 54.6**	**+0.1**
	9.3nm,0.7s								
PTEO	**Sao Teotonio**	**1.53**	**274**	P		**Pn**		**20 40 35.1**	**+0.4**
PTEO				S		**Sb**		**20 40 54.6**	**+0.1**
	4.7nm,0.7s								
MOE	**Montemor**	**1.62**	**312**	*e*S		**Sb**		**20 40 56.8**	**-0.4**
EADA	**Adamuz**	**1.91**	**67**	Sn		**Sn**		**20 41 05.0**	**+0.3**
	0.4nm,0.1s,SNR=7.9								

*NEIC **03** 20:41:34.4, 16.29N×94.60W, h191km, MD4.0(MEX), After MEX.*

MEX 03 20:41:35.1±1.1, 15.46N×94.73W, h5km±13km, MD3.9, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
HUIG	**Huatulco**	**1.36**	**283**	*i* P		Pb		20 41 57.5	-3.3
HUIG				*i* S		Sb		20 42 13.7	-4.6
CMIG	**Matias Romero**	**1.63**	**355**	*e*P		Pn		20 42 01.2	-3.6
CMIG				*i* S		Sb		20 42 21.1	-5.0
SCX	**San Cristobal**	**2.38**	**57**	*i* P		Pn		20 42 12.8	-2.7
OXX	**Oaxaca**	**2.50**	**310**	*i* P		Pn		20 42 16.7	-0.5
OXX				*i* S		Sn		20 42 43.0	-5.5
VHO	**Vista Hermosa**	**2.50**	**310**	*e*P		Pn		20 42 12.3	-4.9
VHO				*i* S		Sn		20 42 44.5	-4.0
CCIG	**Comitan**	**2.63**	**71**	*e*P		Pn		20 42 15.2	-3.8
CCIG				*i* S		Sn		20 42 47.0	-4.7

*NEIC **03** 20:48:31.6, 28.83S×70.13W, h129km, After GUC.*

GUC 03 20:48:31.6±0.4, 28.83S×70.13W, h129km±7km, ML3.9, 2C, Central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
VACH	**Vallenar**	**0.60**	**294**⇑	*i* P		P		20 48 52.6	+1.3
VACH				*i* S		S		20 49 08.1	+1.8
VACH				AMP				20 49 09.3	
	comp=N,8μm,0.1s								
VACH	**Vallenar**	**0.60**	**294**⇑	*i* P		P		20 48 52.6	+1.3
VACH				*i* S		S		20 49 07.6	+1.3
TLL	**Tololo Astrono**	**1.46**	**204**	*i* P		P		20 49 00.1	+0.5
TLL				*i* S		S		20 49 21.7	+0.8
TLL				AMP				20 49 25.7	
	comp=E,168nm,0.2s								
CPCH	**Copiapo**	**1.47**	**352**	*e*P		P		20 48 59.7	0.0
CPCH				*i* S		S		20 49 20.8	-0.4
CPCH				AMP				20 49 23.8	
	comp=E,6μm,0.1s								
OVCH	**Ovalle**	**2.00**	**207**	*i* P		P		20 49 05.7	-0.3
OVCH				*i* S		S		20 49 31.9	-0.2
OVCH				AMP				20 49 34.8	
	comp=E,188nm,0.3s								

*ATH **03** 21:40:58.0, 39.38N×19.77E, h26km±13km, MD2.9/3*
*NEIC **03** 21:40:58.0, 39.38N×19.77E, h26km, MD2.9(ATH), After ATH.*
*THE **03** 21:41:01.0, 39.54N×19.81E, h18km, ML2.3*

ISC 03 21:40:59.6±1.1, 39.55N±0.05×19.70E±0.08, h33km±12km, n11, σ0s97/20, Greece-Albania border region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
KEK	**Kerkira**	**0.18**	**25**	*e*Pb		**P**		**21 41 06.0**	**0.0**
KEK				*e*Sb		**S**		**21 41 11.0**	**+0.5**
IGT	**Igoumenitsa**	**0.49**	**91**	*e*Pg		**P**		**21 41 08.8**	**-1.2**
IGT				*e*Sg		**S**		**21 41 15.6**	**-1.8**
JAN	**Janina**	**0.90**	**83**	*e*PN		**P**		**21 41 15.5**	**-0.2**
JAN				*e*SN		**S**		**21 41 27.0**	**-0.7**
LKD	**Levkas**	**1.12**	**138**	*e*Pg		**P**		**21 41 19.8**	**+0.9**
LKD				*e*Sg		**S**		**21 41 34.5**	**+1.1**
MEV	**Metsovon**	**1.21**	**78**	*e*Pg		**P**		**21 41 21.1**	**+0.9**
MEV				*e*Sg		**S**		**21 41 35.7**	**0.0**
VLS	**Valsamata**	**1.53**	**153**	*e*PN		**P**		**21 41 23.5**	**-1.4**
FNA	**Florina**	**1.79**	**46**	*e*Pb		**P**		**21 41 29.2**	**+0.8**
FNA				*e*Sb		**S**		**21 41 51.4**	**+1.1**
AGG	**Agios Georgios**	**2.11**	**104**	*e*Pn		**P**		**21 41 34.0**	**+0.9**
AGG				*e*Sn		**S**		**21 41 58.3**	**-0.2**
LIT	**Litokhoron**	**2.22**	**75**	*e*Pn		**P**		**21 41 35.8**	**+1.1**
LIT				*e*Sn		**S**		**21 42 00.4**	**-0.9**
GRG	**Griva**	**2.50**	**55**	*e*Pn		**P**		**21 41 39.2**	**+0.5**
STON	**Ston**	**3.65**	**336**	*i* Pn		**P**		**21 41 53.3**	**-1.8**
STON				*i* Sn		**S**		**21 42 32.5**	**-5.0**

IDC 03 22:06:30.9±6.5, 19.98S×175.36W, mb3.7/3, mb1 4.0/3, mb1mx3.8/15, Error ellipse: s-maj=359.0km s-min=37.1km az=149.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**47.05**	**256**	P		P		22 15 05.3	-1.0
	1.0nm,0.8s,baz=90,slow=7.7,SNR=9.1								
WRA	**Warramunga Arr**	**47.13**	**261**	P		P		22 15 04.0	-3.0
	0.7nm,0.7s,baz=99,slow=7.1,SNR=3.2								
YKA	**Yellowknife Ar**	**95.02**	**24**	P		P		22 19 54.5	-1.9
	0.2nm,0.8s,baz=236,slow=4.1,SNR=5.9								
AKASG	**Malin Array Be**	**143.71**	**333**	PKP		PKPdf		22 26 05.9	-3.6
	0.5nm,0.4s,baz=37,slow=4.1,SNR=7.6								
BRTR	**Keskin Array B**	**148.28**	**315**	PKPbc		PKPdf		22 26 20.3	+2.7
	0.4nm,0.5s,baz=45,slow=1.7,SNR=4.1								

IDC 03 22:45:07.0±6.0, 19.72S×175.36W, mb3.8/3, mb1 4.2/3, mb1mx3.9/14, Error ellipse: s-maj=431.0km s-min=28.7km az=153.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**47.12**	**256**	P		P		22 53 41.5	-1.4
	1.0nm,0.8s,baz=100,slow=8.8,SNR=7.1								
WRA	**Warramunga Arr**	**47.17**	**261**	P		P		22 53 41.4	-2.1
	0.4nm,0.5s,baz=99,slow=7.4,SNR=3.5								
NVAR	**Mina Array Bea**	**78.77**	**42**	P		P		22 57 12.1	-1.2
	2.1nm,0.9s,baz=225,slow=7.7,SNR=12								
AKASG	**Malin Array Be**	**143.48**	**334**	PKP		PKPdf		23 04 41.9	-3.4
	1.0nm,0.7s,baz=40,slow=3.9,SNR=5.8								

*IDC **03** 22:46:45.0±0.6, 29.39S×177.22W, mb4.7/13, mb1 4.9/16, mb1mx4.9/18, ML4.5/3, MS4.6/14, Ms1 4.6/14, ms1mx4.5/21, Error ellipse: s-maj=24.8km s-min=13.9km az=160.0*
*MOS **03** 22:46:50.9±2.7, 29.50S×177.44W, h33km, mb5.3/4, Error ellipse: s-maj=24.9km s-min=22.8km az=33.7*
*HRVD **03** 22:46:50.2±0.3, 29.26S×176.85W, h32km, MW5.2/51, Centroid moment Tensor Solution. LP body waves: s41,c68;Mantle waves: s51,c83; Half duration: 1s0 Moment tensor: Scale 10^{16}Nm; M_{rr}5.55±.25; $M_{\theta\theta}$-0.11±.19; $M_{\phi\phi}$-5.44±. 17; $M_{r\theta}$0.53±.30; $M_{\theta\phi}$-2.24±.15; $M_{\phi r}$4.23±.25; Best double couple: $M_0$7.29×10^{16} NP1: φs209°, δ28°, λ106°. NP2:φs12°, δ63°, λ82°. Principal axes: T 7, Plg71°, Azm264°; N .58, Plg7°, Azm16°; P -7.58, Plg18°, Azm108°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*BJI **03** 22:46:50.2, 29.20S×177.30W, h30km, mB4.7, mb5.3*
*NEIC **03** 22:46:50.2±0.3, 29.25S×177.28W, h30km, mb5.1/14, MS4.7/1, Error ellipse: s-maj=16.0km s-min=10.2km az=161.0*

ISC 03 22:46:46.0±3.0, 29.59S±0.07×177.34W±0.09, h10km±18km, n152, σ1s27/46, mb4.9/23, MS4.7/16, 11C-8D, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**9.80**	**207**	Pn		**P**		**22 49 09.5**	**-0.7**
	0.9nm,0.3s,baz=125,slow=15,SNR=4.6								
URZ				Sn		**Sn**		**22 50 59.4**	**-2.0**
	4.4nm,0.3s,baz=143,slow=20,SNR=5.4								
NOUC	**Port Laguerre**	**16.50**	**293**	*e*P		**P**		**22 50 44.9**	**+5.7**
NOUC	**Port Laguerre**	**16.50**	**293**	*e*P		**P**		**22 50 44.9**	**+5.7**
RPZ	**Rata Peaks**	**16.88**	**210**	P		**P**		**22 50 43.6**	**-0.3**
	3.5nm,0.3s,baz=256,slow=2.4,SNR=22								
RPZ				S		**S**		**22 53 39.8**

NVAR LR LR 23 33 59.4
comp=Z,546nm,19.4s,MS5.0,baz=205,slow=33
TPH Tonopah 87.66 43 *e*P **P 22 59 36.1 +0.1**
comp=Z,23nm,1.7s,mb5.1
TUC Tucson 88.15 51 *e*P **P 22 59 39.2 +0.7**
comp=Z,3.2nm,1.0s,mb4.5
CN2 Changchun 89.84 323 *e*P **P 22 59 45.7 -0.6**
CN2 AMB AMB
comp=Z,20nm,0.8s,mb5.5
MSU Marysvale 91.00 45 P **P 22 59 52.7 +0.9**
TXAR Lajitas Array 91.46 57 P **P 22 59 53.8 -0.3**
comp=Z,0.4nm,0.3s,mb4.2,baz=171,slow=40,SNR=2.1
TXAR LR LR 23 35 53.9
comp=Z,130nm,18.4s,MS4.4,baz=240,slow=32
ENH Enshi 91.62 304 *e*P **P 22 59 55.8 +1.1**
comp=Z,20nm,1.1s,mb5.4
SPU Mount Spurr 92.75 12 *e*P **P 22 59 56.3 -2.9**
CMAR Chiang Mai Arr 93.68 289 P **P 23 00 04.5 +0.1**
comp=Z,0.9nm,0.7s,mb4.3,baz=153,slow=3.2,SNR=4.0
CMAR LR LR 23 37 22.8
comp=Z,117nm,21.7s,MS4.3,baz=152,slow=32
PDAR Pinedale Array 95.15 43 P **P 23 00 08.8 -1.9**
comp=Z,1.3nm,1.0s,mb4.3,baz=180,slow=1.5,SNR=5.2
PDAR LR LR 23 41 02.2
comp=Z,283nm,18.0s,MS4.8,baz=242,slow=34
ILAR Eielson Array 97.00 13 P **P 23 00 16.3 -2.3**
comp=Z,1.4nm,0.8s,mb4.4,baz=219,slow=5.6,SNR=12
ILAR LR LR 23 39 15.1
comp=Z,100nm,18.0s,MS4.3,baz=4.2,slow=32
LPAZ La Paz 97.95 114 LR LR 23 36 41.6
comp=Z,143nm,20.7s,MS4.4,baz=161,slow=31
YKA Yellowknife Ar 104.46 25 PKiKP 23 05 05.9
comp=Z,0.1nm,0.6s,baz=252,slow=1.5,SNR=3.7
YKA PKKPbc 23 16 38.9
comp=Z,0.4nm,0.7s,baz=34,slow=3.2,SNR=8.0
MKAR Makanchi Array 117.69 310 PKP PKPdf 23 05 32.5 -2.9
comp=Z,1.0nm,0.6s,baz=154,slow=1.3,SNR=16
KURK Kurchatov 120.90 314 *e*PKiKP PKPdf 23 05 38.0 -3.6
FRB Frobisher Bay 124.38 31 PKKPbc 23 15 29.1
comp=Z,1.3nm,0.6s,baz=122,slow=4.3,SNR=5.8
BRVK Borovoye 126.29 316 *e*PKiKP PKPdf 23 05 49.1 -2.7
ZRNK Zerenda 127.06 316 *e*PKiKP PKPdf 23 05 49.4 -3.8
SVE Sverdlovsk 131.63 321⇑ *e*PKiKP PKPdf 23 06 02.0 +0.1
SVE *e* 23 08 22.3
ARCES ARCESS Array B 137.91 348 PKhKP 23 06 02.8
comp=Z,0.8nm,0.6s,SNR=6.2
ARCES PKP PKPdf 23 06 09.7 -3.6
comp=Z,5.3nm,0.7s,baz=45,slow=1.3,SNR=10
KAMS Al Khamasin 141.06 266 P PKPdf 23 06 15.7 -4.6
TATS Tathlith 141.73 264 P PKPdf 23 06 18.9 -2.6
MZLS Mizel 141.78 272 P PKPdf 23 06 19.3 -2.2
JOF Joensuu 141.87 339 *e*pkp PKPdf 23 06 18.2 -2.2
BLJS Baljurashi 143.49 264 P PKPbc 23 06 24.1 +4.1
AFFS 'Afif 143.68 271 P PKPbc 23 06 22.7 +2.2
KAF Kangasniemi 143.97 341 *e*pkp PKPdf 23 06 19.5 -4.5
baz=353,slow=3.8
MOS Moscow 143.98 327 *e*PKHKP 23 06 18.8
MOS *e* 23 12 47.3
MOS pmax pmax
comp=Z,50nm,0.8s
ARSS Ar Rass 144.03 274 P PKPbc 23 06 22.4 +1.0
GNI Garni 144.20 299 *e*PKiKP PKPdf 23 06 21.7 -3.4
ZEI Tsey 144.56 303 *i* PKiKP PKPdf 23 06 22.0 -3.7
ZEI *e* 23 13 33.0
ZEI pmax pmax
comp=Z,100nm,5.0s
ZEI MLR MLR
comp=Z,200nm,17.0s,MS5.0
FINES FINESS Array B 144.57 341 PKP PKPdf 23 06 19.9 -5.2
comp=Z,17nm,0.7s,baz=63,slow=4.3,SNR=69
GOF Gofitskoye 144.77 307⇑ *i* PKiKP PKPdf 23 06 22.5 -3.5
GOF pmax pmax
comp=Z,50nm,1.5s
OBN Obninsk 144.83 326⇓ *i* PKiKP PKPdf 23 06 21.5 -4.2
OBN *e* 23 34 01.4
OBN pmax pmax
comp=Z,57nm,1.0s
OBN Obninsk 144.83 326 *e*PKPdf PKPdf 23 06 21.4 -4.4
VOR Voronezh 145.08 320 PKiKP PKPdf 23 06 23.0 -3.3
VOR pmax pmax
comp=E,30nm,1.5s
VOR pmax pmax
comp=Z,50nm,1.5s
KIV Kislovodsk 145.24 305α *i* PKiKP PKPdf 23 06 24.6 -2.2
KIV pmax pmax
comp=Z,37nm,1.2s
KIV MLR MLR
comp=Z,100nm,19.0s,MS4.6
KIV Kislovodsk 145.24 305 *e*PKPdf PKPdf 23 06 24.3 -2.5
TVAN Van 145.32 296 *i* P PKPbc 23 06 25.2 +0.6
HILS Ha'il 145.65 276 P PKPbc 23 06 26.6 +0.9
ERZM Erzurum 146.80 299 *i* P PKPbc 23 06 29.3 +1.2
BESI Besiri 147.03 295 *i* P PKPdf 23 06 29.9 -0.2
KBRS Khaybar 147.46 272 P PKPdf 23 06 33.6 +2.4
NB2 NORSAR Subarra 148.03 352 PKP PKPdf 23 06 30.0 -0.9
comp=Z,14nm,0.8s,baz=12,slow=2.9
NOA NORSAR Array B 148.03 352 P PKPbc PKPdf 23 06 28.5 -2.4
comp=Z,6.6nm,0.7s,baz=14,slow=4.6,SNR=24
YNBS Yanbu' al Bahr 148.16 269 P PKPdf 23 06 35.3 +3.0
NAO01 NORSAR Array S 148.26 352 *e*PKPbc PKPdf 23 06 32.1 +0.8
ELZG Elazig 148.78 296 *i* P PKPdf 23 06 35.2 +2.3
KONO Kongsberg 149.57 353 *e*PKPbc PKPdf 23 06 35.3 +1.9
GZT Gaziantep 150.00 294 *i* P PKPdf 23 06 37.4 +2.5
QURS Qurayyt al Mil 150.15 282 P PKPdf 23 06 39.4 +4.1
SVST Sivas 150.19 299 *i* P PKPdf 23 06 38.7 +3.6
TBKS Tabuk 150.37 276 P PKPdf 23 06 39.9 +4.2
SIM Simferopol' 150.87 310 PKiKP PKPdf 23 06 40.0 +4.1
AKASG Malin Array Be 150.99 324 PKPbc PKPdf 23 06 37.8 +1.9
comp=Z,7.7nm,0.6s,baz=44,slow=2.6,SNR=61
JMQS Jabal Moqyreh 151.06 277 P PKPdf 23 06 41.3 +4.6
COBT Iskenderun 151.11 293 *i* P PKPdf 23 06 41.0 +4.5
BOYT Boyabat 151.38 303 *i* P PKPdf 23 06 39.9 +3.2
SUW Suwalki 151.40 334 *e*PKPbc PKPdf 23 06 39.6 +3.2
SUW *e*PKPab PKPab 23 06 47.5 -2.5
AYUS 'Aynunah 151.47 275 P PKPdf 23 06 42.0 +4.7
KSHT Keshet 151.54 285 P PKPdf 23 06 42.0 +4.7
HRI Mount Hermon 151.61 286 P PKPdf 23 06 42.1 +4.7
BDAS Al Bad' 151.66 276 P PKPdf 23 06 42.4 +4.8
HMDT Nahal Hemdat 151.74 284 P PKPdf 23 06 42.4 +4.8
JMOS Jabal al Moail 151.77 277 P PKPdf 23 06 43.3 +5.5
DRGI Dragot 151.81 282 P PKPdf 23 06 42.1 +4.4
MZDA Masada 151.81 282 P PKPdf 23 06 42.1 +4.4
ALWS Ilw as Safayha 151.83 278 P PKPdf 23 06 43.9 +6.0
ZFRI Zfri 151.90 280 P PKPdf 23 06 42.4 +4.5
HAQS Haql 151.91 277 P PKPdf 23 06 43.2 +5.2
AVNT Avonos 151.95 298 *i* P PKPdf 23 06 41.2 +3.4
PRNI Paran 152.02 280 P PKPdf 23 06 42.8 +4.7
HNTI Hanita 152.07 286 P PKPdf 23 06 43.2 +5.1
SLTI Sal'it 152.15 284 P PKPdf 23 06 43.2 +4.9
OFRI 'Ofer 152.22 285 P PKPdf 23 06 43.5 +5.2
BALT Daday 152.46 304 *i* P PKPdf 23 06 42.6 +4.3
KZIT Kziot 152.60 281 P PKPdf 23 06 43.9 +5.0
ELDT Eldivan 152.69 302 *i* P PKPdf 23 06 43.0 +4.3
BRTR Keskin Array B 152.71 300 PKPbc PKPdf 23 06 42.8 +4.0
comp=Z,7.2nm,0.8s,baz=130,slow=2.8,SNR=31
CRVS Cervenica-Dubn 155.95 329 *e*PKP PKPab 23 07 07.9 -1.5
CRVS *e* 23 07 11.6
CRVS *e* 23 07 19.5
DBIC Dimbokro 156.13 161 PKP PKPdf 23 06 42.3 -1.8
comp=Z,3.7nm,0.9s,baz=256,slow=4.7,SNR=3.8
KSP Ksiaz 156.43 338 *e*PKiKP PKPdf 23 06 48.7 +5.3
KSP *e* 23 07 09.2
OKC Ostrava-Krasne 156.62 334 *e*PKPab PKPab 23 07 10.7 -1.5
UPC Upice 156.81 338 *e*PKPab PKPab 23 07 11.2 -1.9
DPC Dobruska-Polom 156.84 337 *e*PKPab PKPab 23 07 11.6 -1.6
CLL Collm 156.96 343 *e* PKPdf 23 06 52.0 +7.9
CLL *i* PKP2 PKPab 23 07 11.3 -2.4
BRG Berggiesshubel 157.11 341 *e*PKiKP PKPdf 23 06 49.3 +5.0
BRG *e* 23 07 11.9
BRG pmax pmax
comp=Z,10.0nm,1.1s
PVCC Panska Ves 157.24 340 *e*PKPab PKPab 23 07 12.9 -2.0
VYHS Vyhne 157.41 331 *e*PKP PKPab 23 07 14.0 -1.7
VYHS *e* 23 07 16.4
VYHS *e* 23 07 20.5
PRU Pruhonice 157.72 339 *e*PKPab PKPab 23 07 14.7 -2.3
comp=Z,24nm,1.7s
PRU Pruhonice 157.72 339 *e*PKP2 PKPab 23 07 14.7 -2.3
PRU pmax pmax
comp=Z,24nm,1.7s
MOX Moxa 157.91 345 *e*PKP2 PKPab 23 07 15.5 -2.3
MOX pmax pmax
comp=Z,26nm,1.8s
ZST Bratislava 158.35 333 *e* PKPab 23 07 15.9 -3.9
KHC Kasperske Hory 158.78 340 *e*PKPab PKPab 23 07 19.4 -2.2
GRF Grafenberg Arr 158.89 344 *e*PKP2 PKPab 23 07 21.1 -0.9
GERES GERESS Array B 158.99 339 PKP PKPdf 23 06 43.8 -2.9
comp=Z,0.2nm,0.3s,baz=45,slow=1.9,SNR=4.5
GERES PKPab PKPab 23 07 20.8 -1.7
comp=Z,1.5nm,0.8s,baz=45,slow=3.8,SNR=9.2
BAIF Baives 159.52 357 *e*PKP2 PKPab 23 07 22.1 -2.6
comp=Z,7.2nm,0.8s
MOA Molln 159.68 337⇑ *i*PKP PKPab 23 07 24.0 -1.5
SKO Skopje 160.44 314 *e*P PKPab 23 07 22.0 -6.9
KBA Koelnbreinsper 160.66 338⇑ *i*PKP PKPab 23 07 28.4 -1.3
CDF Champ du Feu 160.87 351 *e*PKP2 PKPab 23 07 27.8 -2.8
WATA Walderalm 160.98 341⇑ *i*PKP PKPab 23 07 30.0 -1.1
MEZF Maizieres J'vi 161.02 355 *e*PKP2 PKPab 23 07 28.8 -2.4
WTTA Wattenberg 161.03 341⇑ *i*PKP PKPab 23 07 29.6 -1.7
MOTA Moosalm 161.10 342⇓ *i*PKP PKPab 23 07 29.8 -1.8
SQTA Sankt Quirin 161.18 342⇓ *i*PKP PKPab 23 07 30.3 -1.7
DAVA Damuels 161.46 344⇑ *i*PKP PKPab 23 07 31.8 -1.4
LOR Lormes 162.32 357 *e*PKP2 PKPab 23 07 33.9 -3.1
SSF Saint Saulge 162.54 358 *e*PKP2 PKPab 23 07 35.2 -2.7
comp=Z,22nm,1.2s
SMF Signal de Mont 162.94 357 *e*PKP2 PKPab 23 07 36.8 -2.9
comp=Z,42nm,1.3s
BGF Bois d'Agland 163.05 360 *e*PKP2 PKPab 23 07 37.2 -2.9

BJI ***03*** *23:04:17.1,24.32N×97.40E,h33km,mB4.5,mb4.3,ML4.4, Ms4.5,Ms2.3.9*
IDC ***03*** *23:04:18.1±0.8,24.81N×97.24E,mb3.9/9,mb1 4.1/10, mb1mx3.9/20,ML4.1/1,MS3.5/1,Ms1 3.5/1,ms1mx2.9/29, Error ellipse: s-maj=56.2km s-min=15.5km az=61.0*
NEIC ***03*** *23:04:24.0±0.8,24.71N×97.26E,h41km±9km, Error ellipse: s-maj=13.5km s-min=7.0km az=223.0*
ISC 03 23:04:18.0±0.4,24.85N±0.05×97.63E±0.06,h10km,n37, σ1§29/46,mb4.0/10,MS3.5/1,1C-2D,Myanmar-China border region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
IMP	**Imphal**	**3.36**	**270**	*e*P		**Pn**	**23 05 14.0**	**+2.4**
IMP				*e*S		**Sn**	**23 06 04.0**	**+12**
KMI	**Kunming**	**4.65**	**86**⇑	*e*PG		**Pg**	**23 05 48.9**	**-1.9**
KMI				SG		**Sg**	**23 06 43.2**	**-9.5**
KMI				S		Sn		
	comp=N,525nm,0.9s							
KMI				S		Sn		
	comp=E,524nm,1.0s							
KMI				LR		LR		
	comp=N,4μm,7.5s							
KMI				LR		LR		
	comp=E,1μm,5.9s							
KMI				LR		LR		
	comp=Z,490nm,4.1s							
SHL	**Shillong**	**5.25**	**279**	*e*P		**Pn**	**23 05 38.5**	**0.0**
CHRT	**Chiangrai**	**5.34**	**158**	⇓PN		**Pn**	**23 05 39.0**	**-0.7**
CHRT				PG		**Pg**	**23 06 05.0**	**+0.5**
CHRT				SG		**Sg**	**23 07 08.0**	**-7.7**
CHG	**Chiang Mai**	**6.12**	**168**	PN		**Pn**	**23 05 52.0**	**+1.2**
CHG				PG		**Pg**	**23 06 13.5**	**-6.8**
CHG				SG		**Sg**	**23 07 33.6**	**-8.3**
CM31	**Chiang Mai Arr**	**6.47**	**169**	*e*Pn		**Pn**	**23 05 55.1**	**-0.6**
	comp=Z,4.8nm,0.6s							
CM31				*e*S		Sn	23 07 33.6	+23
CMAR	**Chiang Mai Arr**	**6.47**	**169**	Pn		**Pn**	**23 05 55.4**	**-0.3**
	comp=Z,1.1nm,0.3s,baz=340,slow=13,SNR=20							
CMAR				Pg		**Pg**	**23 06 19.9**	**-7.4**
	comp=Z,2.6nm,0.3s,baz=346,slow=17,SNR=36							
CMAR				Lg			23 07 39.8	
	comp=Z,6.8nm,0.3s,baz=304,slow=38,SNR=10							
NANT	**Nan**	**6.66**	**154**	PN		**Pn**	**23 05 57.5**	**-0.8**
NANT				PG		**Pg**	**23 06 25.0**	**-5.9**
NANT				SG		**Sg**	**23 07 50.0**	**-10**
LSA	**Lhasa**	**7.52**	**311**	P		**Pn**	**23 06 10.6**	**+0.1**
LSA	**Lhasa**	**7.52**	**311**	*e*Pn		**Pn**	**23 06 09.5**	**-0.9**
BDT	**Bhumibol Dam**	**7.67**	**170**	PG		**Pn**	**23 06 12.0**	**-0.5**
BDT				SG		Sx	23 08 17.0	
GYA	**Guiyang**	**8.31**	**77**⇓	*i*P		**P**	**23 06 21.3**	**-0.1**
GYA				AMB		AMB		
	comp=Z,10.0nm,0.8s							
GYA				LR		LR		
	comp=N,4μm,10.5s							
GYA				LR		LR		
	comp=E,1μm,9.9s							
GYA				LR		LR		
	comp=Z,560nm,8.1s							
GUN	**Gumba**	**10.97**	**289**	*e*P		**P**	**23 06 54.6**	**-3.5**
	comp=Z,40nm,0.8s							
KKN	**Kakani**	**11.46**	**287**	*e*P		**P**	**23 07 02.6**	**-2.2**
	comp=Z,11nm,0.4s							
DMN	**Daman**	**11.57**	**286**	*e*P		**P**	**23 07 05.3**	**-1.1**
	comp=Z,8.3nm,0.4s							
ENH	**Enshi**	**11.82**	**60**	*e*P		**P**	**23 07 15.2**	**+5.4**
	comp=Z,13nm,1.0s							
GKN	**Gorkha**	**12.06**	**288**	*e*P		**P**	**23 07 08.9**	**-4.0**
	comp=Z,21nm,0.7s							
KOLN	**Koldanda**	**12.92**	**286**	*e*P		**P**	**23 07 20.7**	**-3.7**
	comp=Z,16nm,0.9s							
WMQ	**Urumqi**	**20.60**	**339**	*e*P		**P**	**23 08 58.7**	**-1.1**
KSH	**Kashi**	**23.37**	**314**	*e*P		**P**	**23 09 29.1**	**+1.6**
KSH				eXP			23 09 42.4	
KSH				AMB		AMB		
	comp=Z,10.0nm,0.7s,mb4.3							
KSH				AMB		AMB		
	comp=Z,110nm,5.4s							
KSH				LR		LR		
	comp=N,130nm,4.9s							
KSH				LR		LR		
	comp=E,100nm,5.8s							
SONM	**Songino Array**	**23.97**	**15**	P		**P**	**23 09 34.9**	**+1.6**
	comp=E,0.9nm,0.8s,mb3.3,baz=198,slow=7.8,SNR=3.8							
ULHL	**Ulahol**	**24.77**	**320**	P		**P**	**23 09 42.1**	**+1.0**
	SNR=13							
MKAR	**Makanchi Array**	**25.10**	**335**	P		**P**	**23 09 44.9**	**+0.6**
	comp=E,5.2nm,0.6s,mb4.2,baz=143,slow=9.8,SNR=44							
KZA	**Kyzart**	**25.26**	**318**	P		**P**	**23 09 47.1**	**+1.3**
	SNR=5.6							
KBK	**Karagaybulak**	**25.78**	**319**	P		**P**	**23 09 52.1**	**+1.4**
	SNR=10.0							
AAK	**Ala-Archa**	**26.04**	**319**	P		**P**	**23 09 54.1**	**+1.0**
	SNR=7.6							
EKS2	**Erkin-Say**	**26.48**	**318**	P		**P**	**23 09 58.0**	**+0.8**
	SNR=14							
BRVK	**Borovoye**	**34.89**	**331**	*e*P		**P**	**23 11 07.3**	**-4.2**
ZRNK	**Zerenda**	**35.39**	**330**	P		**P**	**23 11 11.1**	**-4.7**
FITZ	**Fitzroy Crossi**	**50.66**	**145**	P		**P**	**23 13 21.0**	**+1.2**
	comp=E,4.5nm,1.1s,mb4.3,baz=333,slow=6.8,SNR=3.0							
WRA	**Warramunga Arr**	**57.08**	**138**	P		**P**	**23 14 07.9**	**+0.9**
	comp=E,0.8nm,0.5s,mb4.0,baz=325,slow=7.3,SNR=3.8							
ASAR	**Alice Springs**	**59.68**	**141**	P		**P**	**23 14 26.2**	**+1.0**
	comp=E,0.5nm,0.7s,mb3.6,baz=317,slow=6.3,SNR=5.5							
FINES	**FINESS Array B**	**59.70**	**328**	P		**P**	**23 14 22.3**	**-2.5**
	comp=E,1.1nm,0.7s,mb4.0,baz=90,slow=6.9,SNR=3.9							
FINES				LR		LR	23 42 15.5	
	comp=E,37nm,20.6s,MS3.5,baz=176,slow=38							
NB2	**NORSAR Subarra**	**66.88**	**328**	P		**P**	**23 15 10.7**	**-1.4**
	comp=E,0.9nm,0.8s,mb3.9,baz=82,slow=6.5							
NOA	**NORSAR Array B**	**66.88**	**328**	P		**P**	**23 15 10.8**	**-1.4**
	comp=E,1.7nm,0.9s,mb4.0,baz=82,slow=6.5,SNR=3.9							
GERES	**GERESS Array B**	**67.84**	**315**	P		**P**	**23 15 16.3**	**-2.1**
	comp=E,0.5nm,0.8s,mb3.6,baz=72,slow=3.1,SNR=4.4							
STKA	**Stephens Creek**	**70.32**	**141**	P		**P**	**23 15 34.5**	**+0.5**
	comp=E,3.0nm,1.1s,mb4.2,baz=321,slow=15,SNR=3.0							

ZUR ***03*** *23:14:45.9,46.28N×7.19E,h9km,ML2.4/7*
STR ***03*** *23:14:46.6±0.3,46.30N×7.21E,h10km±1km,Ml2.6, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
NEIC ***03*** *23:14:46.0,46.30N×7.20E,h6km,ML2.8(LDG), ML2.7(GEN),ML2.6(STR),ML2.6(VIE),ML2.4(ZUR),After ZUR.*
LDG ***03*** *23:14:47.0±0.1,46.31N×7.19E,h2km,Md2.9/3,Ml2.8/28, Error ellipse: s-maj=1.5km s-min=1.0km az=123.0*
ISC 03 23:14:44.9±0.2,46.321N±0.010×7.14E±0.02,h9km,n82, σ1§33/164,11C-10D,Switzerland

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
GRYON	**Gryon**	**0.07**	**195**⇓	*i*Pg		**Pg**	**23 14 48.2**	**+1.2**
	75nm,0.3s							
GRYON				*i* Sg		**Sg**	**23 14 49.6**	**+1.1**
	75nm,0.3s							
SENIN	**Lac Senin**	**0.12**	**69**⇑	*i*Pg		**Pg**	**23 14 48.9**	**+1.1**
	82nm,0.3s							
SENIN				*i* Sg		**Sg**	**23 14 50.9**	**+1.2**
	82nm,0.3s							
AIGLE	**Aigle**	**0.13**	**279**⇓	*i*Pg		**Pg**	**23 14 49.8**	**+1.9**
	163nm,0.3s							
AIGLE				*e*Sg		**Sg**	**23 14 52.5**	**+2.6**
	27nm,0.6s							
SALAN	**Lac Salanfe**	**0.21**	**213**⇑	*i*Pg		**Pg**	**23 14 50.5**	**+1.1**
	33nm,0.2s							
SALAN				*i* Sg		**Sg**	**23 14 53.4**	**+1.0**
	33nm,0.2s							
DIX	**Grande Dixence**	**0.31**	**142**⇓	*i*Pg		**Pg**	**23 14 51.7**	**+0.5**
	84nm,2.0s							
DIX				*i* Sg		**Sg**	**23 14 55.2**	**-0.2**
	16nm,0.4s							
EMV	**Vieux Emosson**	**0.31**	**213**⇑	*i*Pg		**Pg**	**23 14 52.2**	**+1.0**
	147nm,2.0s							
EMV				*e*Sg		**Sg**	**23 14 56.3**	**+0.9**
	14nm,0.2s							
LKBD	**Leukerbad**	**0.34**	**79**⇑	*i*Pg		**Pg**	**23 14 52.4**	**+0.4**
	55nm,0.5s							
LKBD				*e*Sg		**Sg**	**23 14 56.9**	**+0.2**
	55nm,0.5s							
WIMIS	**Wimmis**	**0.48**	**44**⇑	*i*Pg		**Pg**	**23 14 55.5**	**+0.9**
	32nm,2.0s							
WIMIS				*e*Sg		**Sg**	**23 15 02.7**	**+1.6**
	11nm,0.7s							
MMK	**Mattmark**	**0.63**	**115**⇓	*i*Pg		**Pg**	**23 14 57.2**	**-0.5**
	13nm,2.0s							
GIMEL	**Gimel**	**0.64**	**290**⇓	*i*Pg		**Pg**	**23 15 00.1**	**+2.3**
	58nm,0.3s							
MCGN	**Macugnaga**	**0.69**	**121**	*e*Pg		**Pg**	**23 14 58.5**	**-0.4**
MCGN				*e*Sg		**Sg**	**23 15 07.3**	**-0.8**
RSL	**Roselend**	**0.73**	**210**	Pg		**Pg**	**23 14 59.6**	**+0.1**
BRANT	**Les Verrieres**	**0.77**	**324**⇓	*i*Pg		**Pg**	**23 15 02.1**	**+1.8**
	45nm,2.0s							
CABF	**La Chapelle**	**0.78**	**292**	*e*Pg		**Pg**	**23 15 02.3**	**+1.7**
CABF				*e*Sg		**Sg**	**23 15 13.3**	**+2.2**
	42nm,0.2s							
LPL	**La Plagne**	**0.85**	**200**	*e*Pg		**Pg**	**23 15 02.1**	**+0.1**
LPL				*e*Sg		**Sg**	**23 15 15.5**	**+2.1**
	17nm,0.3s							
LSD	**Ceresole Reale**	**0.86**	**179**	P		**Pb**	**23 15 02.0**	**+0.4**
LSD				S		**Sb**	**23 15 12.2**	**-0.9**
LPG	**La Plagne**	**0.87**	**198**	*e*Pg		**Pg**	**23 15 02.4**	**+0.1**
LPG				*e*Sg		**Sg**	**23 15 15.2**	**+1.3**
	16nm,0.2s							
ORO	**Oropa**	**0.91**	**139**	*e*Pg		**Pg**	**23 15 02.5**	**-0.6**
ORO				*e*Sg		**Sg**	**23 15 13.8**	**-1.5**
BNALP	**Bannalp**	**1.04**	**58**	*e*Pg		**Pg**	**23 15 05.8**	**0.0**
	26nm,2.0s							
BNALP	**Bannalp**	**1.04**	**58**⇓	*e*P		**Pg**	**23 15 05.8**	**0.0**
LOMF	**Lomont**	**1.05**	**348**	Pg		**Pg**	**23 15 07.8**	**+1.8**
LOMF				Sg		**Sg**	**23 15 21.8**	**+1.8**
FUSIO	**Fusio**	**1.06**	**82**⇓	*i*Pg		**Pg**	**23 15 05.7**	**-0.5**
	17nm,2.0s							
BOURR	**Bourrignon**	**1.07**	**3**	*e*Pg		**Pg**	**23 15 07.4**	**+1.0**
	26nm,2.0s							
BOURR	**Bourrignon**	**1.07**	**3**⇑	*e*P		**Pg**	**23 15 07.4**	**+1.0**
BALST	**Balsthal**	**1.08**	**20**	*e*Pg		**Pg**	**23 15 07.1**	**+0.5**
	38nm,2.0s							
BBS	**Basel-Blauen**	**1.17**	**12**⇓	*e*P		**Pb**	**23 15 09.6**	**+2.7**
BBS	**Basel-Blauen**	**1.17**	**12**	SG		**Sg**	**23 15 26.4**	**+2.4**
BBS	**Basel-Blauen**	**1.17**	**12**	Pg		**Pg**	**23 15 09.4**	**+1.0**
BBS				Sg		**Sg**	**23 15 24.9**	**+0.9**
RSP	**Reno Superiore**	**1.17**	**176**	P		**Pb**	**23 15 07.7**	**+0.8**
RSP				S		**Sb**	**23 15 21.2**	**-0.9**
OG05	**Jujurieux**	**1.20**	**257**	Pg		**Pg**	**23 15 10.6**	**+1.7**
OG05				Sg		**Sg**	**23 15 27.1**	**+2.2**
MUO	**Muotathal**	**1.22**	**57**	*e*Pg		**Pg**	**23 15 09.9**	**+0.6**
	34nm,2.0s							
VAI	**Varese**	**1.22**	**111**	*e*Pg		**Pg**	**23 15 08.2**	**-1.1**
VAI				*e*Sg		**Sg**	**23 15 24.0**	**-1.7**
FENE	**Fenestrelle**	**1.29**	**182**	P		**Pb**	**23 15 09.6**	**+0.7**
FENE				S		**Sb**	**23 15 24.5**	**-1.0**
MUGIO	**Muggio**	**1.38**	**106**⇑	*i*Pg		**Pg**	**23 15 11.4**	**-1.1**
	21nm,0.3s							
MUGIO	**Muggio**	**1.38**	**106**⇑	*i*P		**Pn**	**23 15 11.3**	**+0.8**
RRL	**Cesana Torines**	**1.42**	**190**	P		**Pn**	**23 15 12.4**	**+1.4**
RRL				S		**Sb**	**23 15 29.4**	**+0.1**
ZUR	**Zurich**	**1.44**	**43**⇑	*e*P		**Pn**	**23 15 13.6**	**+2.3**
BHB	**Bricherasio**	**1.48**	**177**	P		**Pn**	**23 15 12.9**	**+1.0**
BHB				S		**Sb**	**23 15 30.1**	**-0.9**
HINF	**Hinteralfeld**	**1.51**	**353**	*e*Pn		**Pn**	**23 15 13.4**	**+1.1**
HINF				*e*Pg		**Pg**	**23 15 14.8**	**-0.3**
HINF				*e*Sg		**Sg**	**23 15 34.9**	**-0.3**
	43nm,0.2s							
MOF	**Molkenrain**	**1.53**	**360**	Pn		**Pn**	**23 15 13.5**	**+0.9**
MOF				Pg		**Pg**	**23 15 15.9**	**+0.4**
MBDF	**Montbardon**	**1.61**	**189**	*e*Pn		**Pn**	**23 15 15.7**	**+1.9**
MBDF				*e*Sg		**Sg**	**23 15 38.1**	**-0.6**
	26nm,0.5s							
ORIF	**Oris-en-Rattie**	**1.66**	**213**	*e*Pn		**Pn**	**23 15 16.3**	**+1.9**
ORIF				*e*Pg		**Pg**	**23 15 18.0**	**0.0**
ORIF				*e*Sg		**Sg**	**23 15 39.8**	**-0.3**
	11nm,0.2s							
FELD	**Feldberg**	**1.67**	**20**	*e*PN		**Pn**	**23 15 14.8**	**+0.3**
FELD				*i* PG		**Pg**	**23 15 18.0**	**-0.2**
FELD				*e*SG		**Sg**	**23 15 40.7**	**+0.3**
FELD	**Feldberg**	**1.67**	**20**	Pn		**Pn**	**23 15 14.7**	**+0.2**
FELD				Pg		**Pg**	**23 15 17.9**	**-0.3**
FELD				Sg		**Sg**	**23 15 40.6**	**+0.2**
KIZ	**Kirchzarten**	**1.72**	**18**	*e*PN		**Pn**	**23 15 15.3**	**0.0**
KIZ				*e*PG		**Pg**	**23 15 18.9**	**-0.4**
KIZ				SN		**Sn**	**23 15 36.5**	**-1.1**
HAU	**Haudompre**	**1.77**	**343**	*e*Pn		**Pn**	**23 15 17.2**	**+1.2**
HAU				*e*Pg		**Pg**	**23 15 20.1**	**-0.2**
HAU				*e*Sg		**Sg**	**23 15 43.1**	**-0.8**
	48nm,0.3s							
PZZ	**Prazzo**	**1.82**	**181**	P		**Pn**	**23 15 17.8**	**+1.1**
PCP	**Pian Castagno**	**2.04**	**150**	P		**Pn**	**23 15 21.8**	**+2.0**
STV	**Sta Anna Valdi**	**2.08**	**176**	P		**Pn**	**23 15 21.6**	**+1.1**
ROB	**Roburent**	**2.09**	**165**	P		**Pn**	**23 15 22.1**	**+1.5**
CDF	**Champ du Feu**	**2.10**	**3**	*e*

MOTA	**Moosalm**	**2.91**	**68**	⇓*i*PG	**Pg**	**23 15 40.6**	**-2.4**
MOTA				*i* SG	**Sg**	**23 16 15.3**	**-6.5**
	3.8nm,0.5s						
SQTA	**Sankt Quirin**	**2.94**	**71**	⇑*i*PG	**Pg**	**23 15 41.0**	**-2.6**
SQTA				*i* SG	**Sg**	**23 16 15.9**	**-6.9**
	5.5nm,0.4s						
BGF	**Bois d'Agland**	**2.98**	**276**	*e*Pn	**Pn**	**23 15 34.1**	**+0.8**
BGF				*e*Pg	**Pg**	**23 15 42.5**	**-1.9**
BGF				*e*Sg	**Sg**	**23 16 22.2**	**-1.8**
	17nm,0.4s						
LMR	**La Mourre**	**3.02**	**189**	*e*Pn	**Pn**	**23 15 33.7**	**-0.2**
LMR				*e*Pg	**Pg**	**23 15 42.1**	**-3.1**
LMR				*e*Sn	**Sn**	**23 16 08.5**	**-2.1**
	1.1nm,0.2s						
LASF	**Ste Croix**	**3.23**	**227**	*e*Pn	**Pn**	**23 15 37.4**	**+0.6**
LASF				*e*Pg	**Pg**	**23 15 46.7**	**-2.6**
LASF				*e*Sn	**Sn**	**23 16 13.7**	**-2.1**
LASF				*e*Sg	**Sg**	**23 16 27.0**	**-5.4**
	8.8nm,0.4s						
HYF	**Humbligny**	**3.23**	**289**	*e*Pn	**Pn**	**23 15 37.7**	**+0.8**
HYF				*e*Pg	**Pg**	**23 15 47.3**	**-2.1**
HYF				*e*Sg	**Sg**	**23 16 29.6**	**-2.9**
TCF	**Toulx Ste Croi**	**3.42**	**271**	*e*Pn	**Pn**	**23 15 40.0**	**+0.5**
TCF				*e*Pg	**Pg**	**23 15 50.9**	**-2.2**
TCF				*e*Sn	**Sn**	**23 16 18.7**	**-1.9**
TCF				*e*Sg	**Sg**	**23 16 34.9**	**-3.8**
	3.5nm,0.3s						
SIND	**Sindeldorf**	**3.46**	**28**	PG	**Pg**	**23 15 51.7**	**-2.2**
SIND				SG	**Sg**	**23 16 37.0**	**-3.0**
CAF	**Calviac**	**3.82**	**250**	*e*Pn	**Pn**	**23 15 45.8**	**+0.5**
CAF				*e*Sg	**Sg**	**23 16 47.7**	**-4.5**
	6.2nm,0.3s						
RJF	**Les Rejaudoux**	**4.06**	**258**	*e*Sg	**Sg**	**23 16 54.2**	**-5.9**
	7.6nm,0.4s						
BAIF	**Baives**	**4.22**	**333**	*e*Pn	**Pn**	**23 15 51.2**	**+0.2**
BAIF				*e*Sn	**Sn**	**23 16 37.2**	**-3.9**
	1.1nm,0.3s						
MTLF	**Montolieu**	**4.60**	**231**	*e*Pn	**Pn**	**23 15 55.8**	**-0.5**
MTLF				*e*Pg	**Pg**	**23 16 11.9**	**-4.8**
MTLF				*e*Sg	**Sg**	**23 17 10.8**	**-7.1**
	2.6nm,0.3s						
MFF	**Saint Martin d**	**5.04**	**276**	*e*Pn	**Pn**	**23 16 02.0**	**-0.6**
MFF				*e*Sn	**Sn**	**23 16 57.4**	**-4.3**
	1.3nm,0.3s						
KHC	**Kasperske Hory**	**5.17**	**55**	*e*PG	**Pg**	**23 16 27.0**	**-1.2**
KHC				*e*SN	**Sn**	**23 17 00.0**	**-5.1**
KHC				*ex*	x	23 17 29.0	
FLN	**La Foliniere**	**5.71**	**298**	*e*Sn	**Sn**	**23 17 13.7**	**-4.8**
	3.0nm,0.4s						

*STR **03** 23:18:54.7±0.4, 46.27N×7.24E, h10km±1km, Ml2.3, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
*NEIC **03** 23:18:54.9, 46.30N×7.20E, h8km, ML2.5(LDG), ML2.4(VIE), ML2.3(STR), ML2.3(GEN), ML1.9(ZUR), After ZUR.*
*ZUR **03** 23:18:54.9, 46.28N×7.20E, h8km, ML1.9/12*
*LDG **03** 23:18:56.0±0.1, 46.31N×7.16E, h2km, Md2.5/3, Ml2.5/25, Error ellipse: s-maj=2.0km s-min=1.1km az=103.0*

ISC 03 23:18:54.1±0.2, 46.31N±0.01×7.11E±0.02, h12km±2km, n54, σ1§33/114, 7C-5D, Switzerland

Code	Station Name	Δ°	AZ°	Phase ID		ISC	Time	Res
				Op			h m s	ISC
GRYON	**Gryon**	**0.06**	**179**	⇑*i*Pg		**Pg**	**23 18 57.2**	**+0.7**
GRYON	27nm,0.1s			*i* Sg		**Sg**	**23 18 58.6**	**+0.5**
	27nm,0.1s							
AIGLE	**Aigle**	**0.11**	**287**	⇓*i*Pg		**Pg**	**23 18 58.8**	**+1.6**
AIGLE	65nm,0.2s			*e*Sg		**Sg**	**23 19 01.4**	**+2.2**
	5.8nm,0.3s							
SENIN	**Lac Senin**	**0.14**	**67**	⇑*i*Pg		**Pg**	**23 18 57.9**	**+0.3**
SENIN	382nm,2.0s			*i* Sg		**Sg**	**23 18 59.8**	**-0.2**
	32nm,0.2s							
SALAN	**Lac Salanfe**	**0.19**	**210**	⇑*i*Pg		**Pg**	**23 18 59.5**	**+1.1**
SALAN	15nm,0.2s			*i* Sg		**Sg**	**23 19 02.4**	**+1.1**
	15nm,0.2s							
EMV	**Vieux Emosson**	**0.29**	**211**	⇑*i*Pg		**Pg**	**23 19 01.1**	**+0.9**
EMV	64nm,2.0s			*e*Sg		**Sg**	**23 19 05.2**	**+1.0**
	3.8nm,0.1s							
OG01	**Vacheresse**	**0.30**	**274**	Pg		**Pg**	**23 19 02.3**	**+1.9**
DIX	**Grande Dixence**	**0.31**	**137**	⇓*i*Pg		**Pg**	**23 19 00.7**	**+0.1**
DIX	45nm,2.0s			*i* Sg		**Sg**	**23 19 04.2**	**-0.8**
	8.5nm,0.4s							
LKBD	**Leukerbad**	**0.37**	**77**	⇓*i*Pg		**Pg**	**23 19 01.5**	**-0.2**
LKBD	18nm,0.5s			*i* Sg		**Sg**	**23 19 05.8**	**-1.0**
	18nm,0.5s							
WIMIS	**Wimmis**	**0.50**	**45**	⇑*i*Pg		**Pg**	**23 19 04.5**	**+0.1**
WIMIS	16nm,0.2s			*e*Sg		**Sg**	**23 19 11.7**	**+0.5**
	3.1nm,0.5s							
GIMEL	**Gimel**	**0.63**	**291**	⇓*i*Pg		**Pg**	**23 19 09.1**	**+2.3**
	12nm,0.2s							
MMK	**Mattmark**	**0.65**	**113**	⇓*e*Pg		**Pg**	**23 19 06.1**	**-1.1**
	10.0nm,0.2s							
RSL	**Roselend**	**0.71**	**209**	Pg		**Pg**	**23 19 08.6**	**+0.3**
RSL				Sg		**Sg**	**23 19 18.0**	**+0.1**
BRANT	**Les Verrieres**	**0.77**	**325**	⇑*i*Pg		**Pg**	**23 19 11.3**	**+1.8**
	16nm,0.2s							
CABF	**La Chapelle**	**0.77**	**294**	*e*Pg		**Pg**	**23 19 11.3**	**+1.7**
CABF				*e*Sg		**Sg**	**23 19 21.8**	**+1.9**
	13nm,0.2s							
LPL	**La Plagne**	**0.83**	**199**	*e*Pg		**Pg**	**23 19 11.0**	**+0.1**
LPL				*e*Sg		**Sg**	**23 19 23.4**	**+1.3**
	4.8nm,0.2s							
LPG	**La Plagne**	**0.85**	**197**	*e*Pg		**Pg**	**23 19 11.3**	**+0.1**
LPG				*e*Sg		**Sg**	**23 19 23.8**	**+1.2**
	6.5nm,0.2s							
LSD	**Ceresole Reale**	**0.85**	**178**	P		**Pb**	**23 19 10.9**	**+0.5**
LSD				S		**Sb**	**23 19 19.9**	**-1.6**
LOMF	**Lomont**	**1.06**	**350**	Pg		**Pg**	**23 19 17.1**	**+1.7**
LOMF				Sg		**Sg**	**23 19 30.8**	**+1.2**
BNALP	**Bannalp**	**1.07**	**58**	*e*Pg		**Pg**	**23 19 15.0**	**-0.5**
	2.8nm,0.2s							
RSP	**Reno Superiore**	**1.16**	**175**	P		**Pb**	**23 19 16.4**	**+0.8**
RSP				S		**Sb**	**23 19 28.9**	**-1.6**
OG05	**Jujurieux**	**1.18**	**257**	Pg		**Pg**	**23 19 19.8**	**+2.1**
OG05				Sg		**Sg**	**23 19 35.8**	**+2.3**
BBS	**Basel-Blauen**	**1.19**	**13**	Pg		**Pg**	**23 19 18.4**	**+0.5**
BBS				Sg		**Sg**	**23 19 35.4**	**+1.6**
FENE	**Fenestrelle**	**1.28**	**181**	P		**Pb**	**23 19 19.0**	**+1.4**
FENE				S		**Sb**	**23 19 33.0**	**-0.9**
RRL	**Cesana Torines**	**1.41**	**189**	P		**Pn**	**23 19 20.9**	**+1.2**
RRL				S		**Sb**	**23 19 36.4**	**-1.2**
BHB	**Bricherasio**	**1.47**	**176**	P		**Pn**	**23 19 22.0**	**+1.4**
BHB				S		**Sb**	**23 19 38.1**	**-1.4**
HINF	**Hinteralfeld**	**1.52**	**353**	*e*Pn		**Pn**	**23 19 22.0**	**+0.7**
HINF				*e*Pg		**Pg**	**23 19 23.7**	**-0.8**
HINF				*e*Sg		**Sg**	**23 19 43.8**	**-1.0**
	17nm,0.2s							
MOF	**Molkenrain**	**1.54**	**1**	Pg		**Pg**	**23 19 24.9**	**-0.1**
MBDF	**Montbardon**	**1.60**	**189**	*e*Pg		**Pg**	**23 19 24.8**	**-1.3**
MBDF				*e*Sg		**Sg**	**23 19 46.8**	**-0.7**
	8.2nm,0.5s							
ORIF	**Oris-en-Rattie**	**1.64**	**212**	*e*Pn		**Pn**	**23 19 25.0**	**+2.0**
ORIF				*e*Pg		**Pg**	**23 19 26.7**	**-0.1**
ORIF				*e*Sg		**Sg**	**23 19 48.5**	**-0.2**
	3.7nm,0.2s							
FELD	**Feldberg**	**1.68**	**21**	Pg		**Pg**	**23 19 26.0**	**-1.8**
FELD				Sg		**Sg**	**23 19 49.6**	**-0.6**
HAU	**Haudompre**	**1.77**	**343**	*e*Pn		**Pn**	**23 19 25.8**	**+0.8**
HAU				*e*Pg		**Pg**	**23 19 29.0**	**-0.6**
HAU				*e*Sg		**Sg**	**23 19 52.1**	**-1.2**
	14nm,0.2s							
PZZ	**Prazzo**	**1.80**	**180**	P		**Pn**	**23 19 26.6**	**+1.3**
ECH	**Echery**	**1.91**	**1**	Pg		**Pg**	**23 19 31.2**	**-1.0**
CDF	**Champ du Feu**	**2.11**	**3**	*e*Pn		**Pn**	**23 19 29.9**	**+0.2**
CDF				*e*Pg		**Pg**	**23 19 34.8**	**-1.4**
CDF				*e*Sg		**Sg**	**23 20 01.8**	**-2.5**
	4.8nm,0.3s							
DAVA	**Damuels**	**2.14**	**62**	⇑*i*PG		**Pg**	**23 19 35.0**	**-1.9**
DAVA				*i* SG		**Sg**	**23 20 00.9**	**-4.5**
	6.1nm,0.4s							
VIVF	**Saint-Julien-l**	**2.24**	**231**	*e*Pn		**Pn**	**23 19 33.0**	**+1.3**
VIVF				*e*Pg		**Pg**	**23 19 37.8**	**-1.1**
VIVF				*e*Sn		**Sn**	**23 19 59.9**	**+0.4**
VIVF				*e*Sg		**Sg**	**23 20 05.9**	**-3.0**
	5.3nm,0.2s							
SMF	**Signal de Mont**	**2.28**	**280**	*e*Pn		**Pn**	**23 19 33.6**	**+1.4**
SMF				*e*Pg		**Pg**	**23 19 38.6**	**-1.1**
SMF				*e*Sn		**Sn**	**23 20 00.7**	**+0.2**
SMF				*e*Sg		**Sg**	**23 20 08.1**	**-2.1**
	4.4nm,0.2s							
LOR	**Lormes**	**2.43**	**294**	*e*Pn		**Pn**	**23 19 35.9**	**+1.6**
LOR				*e*Pg		**Pg**	**23 19 41.4**	**-1.3**
LOR				*e*Sg		**Sg**	**23 20 13.2**	**-1.9**
	2.1nm,0.2s							
SBF	**Sospel**	**2.46**	**174**	*e*Pn		**Pn**	**23 19 36.6**	**+1.9**
SBF				*e*Sg		**Sg**	**23 20 10.9**	**-5.0**
	16nm,0.5s							
SMRF	**Simiane la Rot**	**2.57**	**206**	*e*Pn		**Pn**	**23 19 37.4**	**+1.0**
SMRF				*e*Pg		**Pg**	**23 19 43.9**	**-1.6**
SMRF				*e*Sg		**Sg**	**23 20 17.7**	**-2.1**
SSF	**Saint Saulge**	**2.59**	**288**	*e*Pn		**Pn**	**23 19 38.0**	**+1.3**
SSF				*e*Pg		**Pg**	**23 19 44.7**	**-1.2**
SSF				*e*Sg		**Sg**	**23 20 18.2**	**-2.3**
	3.4nm,0.4s							
MEZF	**Maizieres J'vi**	**2.60**	**328**	*e*Pn		**Pn**	**23 19 37.4**	**+0.6**
MEZF				*e*Sg		**Sg**	**23 20 17.7**	**-3.1**
	6.9nm,0.5s							
AVF	**Avril sur Loir**	**2.64**	**282**	*e*Pn		**Pn**	**23 19 38.7**	**+1.4**
AVF				*e*Sn		**Sn**	**23 20 09.3**	**-0.2**
AVF				*e*Sg		**Sg**	**23 20 19.4**	**-2.5**
	1.2nm,0.2s							
FRF	**La Foret Royal**	**2.77**	**187**	*e*Pn		**Pn**	**23 19 40.5**	**+1.3**
FRF				*e*Pg		**Pg**	**23 19 46.9**	**-2.5**
FRF				*e*Sn		**Sn**	**23 20 12.8**	**0.0**
FRF				*e*Sg		**Sg**	**23 20 23.5**	**-2.8**
	1.6nm,0.3s							
BGF	**Bois d'Agland**	**2.96**	**276**	*e*Pn		**Pn**	**23 19 42.9**	**+1.0**
BGF				*e*Sg		**Sg**	**23 20 30.1**	**-2.5**
	3.4nm,0.3s							
LMR	**La Mourre**	**3.00**	**188**	*e*Pn		**Pn**	**23 19 42.7**	**+0.2**
LMR				*e*Sn		**Sn**	**23 20 17.5**	**-1.3**
	2.0nm,0.3s							
LASF	**Ste Croix**	**3.21**	**227**	*e*Pn		**Pn**	**23 19 46.1**	**+0.7**
LASF				*e*Pg		**Pg**	**23 19 55.7**	**-2.4**
LASF				*e*Sn		**Sn**	**23 20 22.5**	**-1.4**
LASF				*e*Sg		**Sg**	**23 20 35.6**	**-5.2**
	2.7nm,0.3s							
HYF	**Humbligny**	**3.22**	**289**	*e*Pn		**Pn**	**23 19 46.7**	**+1.2**
HYF				*e*Sg		**Sg**	**23 20 38.3**	**-3.0**
	20nm,0.3s							
TCF	**Toulx Ste Croi**	**3.40**	**271**	*e*Pn		**Pn**	**23 19 48.9**	**+0.8**
TCF				*e*Sn		**Sn**	**23 20 27.7**	**-1.0**
TCF				*e*Sg		**Sg**	**23 20 43.7**	**-3.5**
	1.2nm,0.3s							
CAF	**Calviac**	**3.80**	**250**	*e*Pn		**Pn**	**23 19 54.6**	**+0.8**
CAF				*e*Sg		**Sg**	**23 20 55.6**	**-5.1**
	1.3nm,0.2s							
RJF	**Les Rejaudoux**	**4.04**	**258**	*e*Sg		**Sg**	**23 21 02.8**	**-5.8**
	0.9nm,0.3s							
BAIF	**Baives**	**4.22**	**334**	*e*Pn		**Pn**	**23 20 00.0**	**+0.1**
MFF	**Saint Martin d**	**5.02**	**276**	*e*Pn		**Pn**	**23 20 11.1**	**-0.1**
MFF				*e*Sn		**Sn**	**23 21 06.2**	**-3.7**
	0.5nm,0.3s							
FLN	**La Foliniere**	**5.70**	**298**	*e*Sn		**Sn**	**23 21 22.1**	**-4.7**
	0.8nm,0.3s							

*NEIC **03** 23:26:40.2, 46.30N×7.20E, h8km, ML2.2(LDG), ML1.7(ZUR), After ZUR.*
*LDG **03** 23:26:41.2±0.1, 46.32N×7.18E, h2km, Md2.4/3, Ml2.2/21, Error ellipse: s-maj=2.5km s-min=1.3km az=85.0*

ZUR 03 23:26:40.2, 46.28N×7.20E, h8km, ML1.7/10, 6C-4D, Switzerland

Code	Station Name	Δ°	AZ°	Phase ID		ISC	Time	Res
				Op			h m s	ISC
GRYON	**Gryon**	**0.07**	**240**	⇑*i*Pg		**Pg**	**23 26 42.5**	**+0.3**
GRYON	18nm,0.1s			*i* Sg		**Sg**	**23 26 43.9**	**+0.3**
	18nm,0.1s							
SENIN	**Lac Senin**	**0.11**	**42**	⇑*i*Pg		**Pg**	**23 26 43.2**	**+0.4**
SENIN	241nm,2.0s			*i* Sg		**Sg**	**23 26 45.2**	**+0.6**
	20nm,0.2s							
AIGLE	**Aigle**	**0.18**	**289**	⇓*i*Pg		**Pg**	**23 26 44.1**	**+0.1**
AIGLE	39nm,0.2s			*i* Sg		**Sg**	**23 26 46.7**	**+0.1**
	7.5nm,0.5s							
SALAN	**Lac Salanfe**	**0.21**	**228**	⇑*i*Pg		**Pg**	**23 26 44.8**	**+0.2**
	8.5nm,0.2s							
SALAN				*i* Sg		**Sg**	**23 26 47.7**	**+0.1**
	8.5nm,0.2s							
DIX	**Grande Dixence**	**0.25**	**144**	⇓*i*Pg		**Pg**	**23 26 46.0**	**+0.5**
DIX	25nm,2.0s			*i* Sg		**Sg**	**23 26 49.5**	**+0.5**
	4.6nm,0.4s							
EMV	**Vieux Emosson**	**0.30**	**223**	⇑*i*Pg		**Pg**	**23 26 46.4**	**0.0**
EMV	38nm,2.0s			*e*Sg		**Sg**	**23 26 50.5**	**-0.1**
	3.9nm,0.2s							
LKBD	**Leukerbad**	**0.32**	**71**	⇓*i*Pg		**Pg**	**23 26 46.8**	**+0.1**
	12nm,0.5s							
LKBD				*i* Sg		**Sg**	**23 26 51.3**	**+0.3**
	12nm,0.5s							
WIMIS	**Wimmis**	**0.48**	**38**	⇑*i*Pg		**Pg**	**23 26 49.8**	**-0.2**
	9.3nm,0.2s							
MMK	**Mattmark**	**0.58**	**113**	⇑*i*Pg		**Pg**	**23 26 51.6**	**-0.3**
	4.9nm,0.2s							
GIMEL	**Gimel**	**0.69**	**292**	⇓*i*Pg		**Pg**	**23 26 54.4**	**+0.3**
	7.6nm,0.2s							
LSD	**Ceresole Reale**	**0.83**	**182**	P		**Pb**	**23 26 59.4**	**+3.1**
CABF	**La Chapelle**	**0.83**	**294**	*e*Pg		**Pg**	**23 26 56.9**	**0.0**
CABF				*e*Sg		**Sg**	**23 27 07.5**	**-0.5**
	9.6nm,0.2s							
LPL	**La Plagne**	**0.83**	**203**	*e*Pg		**Pg**	**23 26 56.3**	**-0.6**
LPL				*e*Sg		**Sg**	**23 27 09.5**	**+1.5**
	5.2nm,0.4s							
LPG	**La Plagne**	**0.84**	**202**	*e*Pg		**Pg**	**23 26 56.6**	**-0.5**
LPG				*e*Sg		**Sg**	**23 27 09.4**	**+0.9**
	5.4nm,0.2s							
RSP	**Reno Superiore**	**1.13**	**178**	P		**Pb**	**23 27 01.9**	**+0.4**
RRL	**Cesana Torines**	**1.39**	**192**	P		**Pn**	**23 27 06.5**	**+0.5**
RRL				S		**Sb**	**23 27 22.6**	**-1.2**
BHB	**Bricherasio**	**1.44**	**178**	P		**Pn**	**23 27 08.0**	**+1.3**
HINF	**Hinteralfeld**	**1.55**	**351**	*e*Pg		**Pg**	**23 27 09.0**	**-2.2**
HINF				*e*Sg		**Sg**	**23 27 29.0**	**-2.9**
	11nm,0.2s							
MBDF	**Montbardon**	**1.58**	**191**	*e*Pn		**Pn**	**23 27 09.8**	**+1.1**
MBDF				*e*Sn		**Sn**	**23 27 28.8**	**-0.7**
MBDF				*e*Sg		**Sg**	**23 27 32.6**	**-0.4**
	2.3nm,0.2s							
ORIF	**Oris-en-Rattie**	**1.65**	**215**	*e*Pn		**Pn**	**23 27 10.5**	**+0.9**
ORIF				*e*Pg		**Pg**	**23 27 12.2**	**-0.9**
ORIF				*e*Sn		**Sn**	**23 27 30.4**	**-0.7**
ORIF				*e*Sg		**Sg**	**23 27 34.0**	**-1.1**
	4.7nm,0.3s							
PZZ	**Prazzo**	**1.78**	**182**	P		**Pn**	**23 27 13.6**	**+2.0**
HAU	**Haudompre**	**1.82**	**342**	*e*Pg		**Pg**	**23 27 14.2**	**-2.3**
HAU				*e*Sg		**Sg**	**23 27 37.5**	**-3.2**
	6.1nm,0.2s							
CDF	**Champ du Feu**	**2.13**	**1**	*e*Pg		**Pg**	**23 27 20.0**	**-2.7**
CDF				*e*Sg		**Sg**	**23 27 47.0**	**-4.2**
	1.3nm,0.2s							
VIVF	**Saint-Julien-l**	**2.27**	**232**	*e*Pn		**Pn**	**23 27 18.2**	**-0.4**
VIVF				*e*Pg		**Pg**	**23 27 23.0**	**-2.6**
VIVF				*e*Sn		**Sn**	**23 27 45.3**	**-1.8**
VIVF				*e*Sg		**Sg**	**23 27 50.6**	**-5.4**
	4.2nm,0.2s							
SMF	**Signal de Mont**	**2.35**	**280**	*e*Pn		**Pn**	**23 27 19.0**	**-0.6**
SMF				*e*Pg		**Pg**	**23 27 24.3**	**-2.8**
SMF				*e*Sg		**Sg**	**23 27 54.0**	**-4.3**
	3.0nm,0.2s							
SBF	**Sospel**	**2.43**	**176**	*e*Pn		**Pn**	**23 27 21.8**	**+1.0**
SBF				*e*Sg		**Sg**	**23 27 57.6**	**-3.4**
	2.1nm,0.3s							
LOR	**Lormes**	**2.50**	**294**	*e*Pn		**Pn**	**23 27 21.0**	**-0.7**
LOR				*e*Pg		**Pg**	**23 27 26.8**	**-3.2**
LOR				*e*Sg		**Sg**	**23 27 58.1**	**-5.2**
	3.5nm,0.3s							
SMRF	**Simiane la Rot**	**2.58**	**207**	*e*Pn		**Pn**	**23 27 22.4**	**-0.5**
SMRF				*e*Pg		**Pg**	**23 27 29.0**	**-2.7**
SMRF				*e*Sg		**Sg**	**23 28 02.7**	**-3.3**
	0.8nm,0.3s							
MEZF	**Maizieres J'vi**	**2.65**	**328**	*e*Pg		**Pg**	**23 27 30.6**	**-2.6**
MEZF				*e*Sg		**Sg**	**23 28 03.2**	**-5.4**
	6.4nm,0.4s							
SSF	**Saint Saulge**	**2.66**	**288**	*e*Pn		**Pn**	**23 27 23.4**	**-0.7**
SSF				*e*Pg		**Pg**	**23 27 29.8**	**-3.5**
SSF				*e*Sg		**Sg**	**23 28 03.2**	**-5.5**
	0.9nm,0.3s							
AVF	**Avril sur Loir**	**2.70**	**282**	*e*Pn		**Pn**	**23 27 24.0**	**-0.7**
AVF				*e*Sg		**Sg**	**23 28 04.7**	**-5.4**
	1.0nm,0.3s							
FRF	**La Foret Royal**	**2.75**	**188**	*e*Pn		**Pn**	**23 27 26.0**	**+0.6**
FRF				*e*Pg		**Pg**	**23 27 32.2**	**-2.9**
FRF				*e*Sg		**Sg**	**23 28 08.8**	**-3.0**
	1.3nm,0.3s							
LMR	**La Mourre**	**2.99**	**190**	*e*Pn		**Pn**	**23 27 27.9**	**-0.9**
LMR				*e*Pg		**Pg**	**23 27 36.2**	**-3.7**
BGF	**Bois d'Agland**	**3.02**	**277**	*e*Pn		**Pn**	**23 27 28.1**	**-1.1**
BGF				*e*Pg		**Pg**	**23 27 37.0**	**-3.5**
BGF				*e*Sg		**Sg**	**23 28 16.1**	**-4.7**
	3.9nm,0.4s							
LASF	**Ste Croix**	**3.23**	**228**	*e*Pg		**Pg**	**23 27 40.7**	**-4.0**
LASF				*e*Sg		**Sg**	**23 28 20.9**	**-6.9**
	1.5nm,0.3s							
TCF	**Toulx Ste Croi**	**3.46**	**272**	*e*Pn		**Pn**	**23 27 34.1**	**-1.3**
TCF				*e*Sg		**Sg**	**23 28 29.0**	**-6.3**
	0.7nm,0.2s							

SKHL 03 23:43:02.2±0.1, 53.09N×128.90E, h7km±1km, mb3.8/6, 2C-2D, Southeastern Siberia

Code	Station Name	Δ°	AZ°	Phase ID		ISC	Time	Res
				Op			h m s	ISC
YASR	**Yasnyy**	**0.59**	**290**	⇓*i*Pg		**Pg**	**23 43 12.5**	**-1.5**
YASR				AMB	AMB		23 43 12.9	
	10.0nm,0.5s							
YASR				AMB	AMB		23 43 12.9	
	25nm,0.5s							
YASR				pPg			23 43 14.1	
YASR				sPg			23 43 17.6	
YASR				*i* Sg		Sg	23 43 19.9	-2.0
YASR				A			23 43 22.1	
	600nm,0.2s							
YASR				A			23 43 22.1	
	200nm,0.2s							
ZEA	**Zeya**	**1.18**	**304**	*i* Pg		Pg	23 43 23.8	-2.0
ZEA				AMB	AMB		23 43 23.9	
	40nm,0.2s							
ZEA				AMB	AMB		23 43 23.9	
	53nm,0.2s							
ZEA				pPg			23 43 25.9	
ZEA				*i* Sg		Sg	23 43 39.4	-2.2
ZEA				A			23 43 40.8	
	280nm,0.2s							
BMKR	**Bomnak**	**1.62**	**359**	*i* Pn		Pn	23 43 30.9	-0.5
BMKR				⇑*i*Pg		Pg	23 43 31.5	-3.2
BMKR				AMB	AMB		23 43 31.9	
	110nm,0.4s							
BMKR				AMB	AMB		23 43 31.9	
	40nm,0.4s							
BMKR				AMB	AMB		23 43 31.9	
	175nm,0.4s							
BMKR				*i* Sg		Sg	23 43 53.0	-3.3
BMKR				A			23 43 54.8	
	422nm,0.5s							
BMKR				A			23 43 54.8	
	180nm,0.5s							
KROS	**Kirovskiy**	**1.77**	**320**	⇓*i*Pn		Pn	23 43 33.2	-0.3
KROS				⇑*i*Pg		Pg	23 43 34.0	-3.5
KROS				AMB	AMB		23 43 34.9	
	38nm,0.5s							
KROS				AMB	AMB		23 43 34.9	
	29nm,0.5s							
KROS				AMB	AMB		23 43 34.9	
	45nm,0.5s							
KROS				*i* Sg		Sg	23 43 57.3	-3.8
KROS				A			23 43 59.5	
	47nm,0.5s							
KROS				A			23 43 59.5	
	170nm,0.5s							
EKMR	**Ekimchan**	**2.44**	**89**	*e*Pn		Pn	23 43 42.0	-1.2
EKMR				*e*Pg		Pg	23 43 45.9	-5.1
EKMR				AMB	AMB		23 43 46.6	
	12nm,0.5s							
EKMR				AMB	AMB		23 43 46.6	
	11nm,0.5s							
EKMR				pPg			23 43 50.0	
EKMR				*e*Sg		Sg	23 44 17.5	-6.1
EKMR				A			23 44 25.7	
	53nm,0.5s							
EKMR				A			23 44 25.7	
	49nm,0.5s							
GRNR	**Gornyy**	**5.20**	**114**	*e*Sg		Sg	23 45 43.5	-12
TUP	**Tupik**	**5.47**	**288**	*e*Pn		Pn	23 44 24.3	-1.9
TUP				*e*Pg		Pg	23 44 40.3	-11
TUP				AMB	AMB		23 44 44.5	
	3.0nm,0.3s							
TUP				*e*Sn		Sn	23 45 27.6	-2.6
TUP				*e*Sg		Sg	23 45 52.7	-12
TUP				A			23 45 56.9	
	13nm,1.0s							

*IDC **03** 23:43:30.9±1.0, 18.81N×145.88E, mb3.7/5, mb1 4.0/5, mb1mx3.7/17, Error ellipse: s-maj=52.6km s-min=21.9km az=106.0*

ISC 03 23:43:34.1±1.0, 18.8N±0.2×145.8E±0.4, h33km, n5, σ0§74/5, mb3.6/5, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID		ISC	Time	Res

SPA0	**Spitsbergen Ar**	**6.99**	**173**	Pn	**Pn**	**00 17 32.6**	**-2.1**
	baz=1.4,slow=14						
SPITS	**Spitsbergen Ar**	**6.99**	**173**	Pn	**Pn**	**00 17 32.5**	**-2.1**
	comp=Z,55nm,0.3s,baz=1.8,slow=12,SNR=862						
SPITS				Sn	**Sn**	**00 18 50.6**	**-4.4**
	baz=84,slow=4.2,SNR=1.7						
DAG	**Danmarks Havn**	**9.44**	**227**⇑	*iP*	**P**	**00 18 09.0**	**+0.2**
	comp=Z,18nm,0.6s						
DAG	**Danmarks Havn**	**9.44**	**227**⇑	*iP*	**P**	**00 18 09.0**	**+0.2**
DAG				pmax	pmax		
	comp=Z,18nm,0.6s						
ARA0	**ARCESS Array S**	**15.82**	**163**	Pn	**P**	**00 19 28.9**	**-4.7**
	baz=353,slow=12						
ARCES	**ARCESS Array B**	**15.82**	**163**	Pn	**P**	**00 19 31.1**	**-2.6**
	comp=Z,1.3nm,0.3s,baz=356,slow=7.9,SNR=61						
ARCES				Sn	**S**	**00 22 20.5**	**-8.9**
	comp=Z,0.4nm,0.3s,baz=7.6,slow=18,SNR=3.8						
ARCES				LR	LR	00 25 01.3	
	comp=Z,219nm,20.4s,baz=176,slow=34						
ARE0	**ARCESS Array S**	**15.82**	**163**	*eP*	**P**	**00 19 32.8**	**-0.9**
KTK1	**Kautokeino**	**16.30**	**166**	*ePn*	**P**	**00 19 39.1**	**-0.6**
RES	**Resolute Bay**	**17.51**	**303**	*eP*	**P**	**00 19 50.7**	**-4.3**
RES				pmax	pmax		
	comp=Z,20nm,1.4s						
RES	**Resolute Bay**	**17.51**	**303**	*eP*	**P**	**00 19 50.7**	**-4.3**
	comp=Z,20nm,1.4s						
LVZ	**Lovozero**	**17.76**	**152**	*eP*	**P**	**00 19 56.4**	**-1.8**
LVZ				*eS*	**S**	**00 23 12.1**	**-1.8**
LVZ				pmax	pmax		
	comp=N,30nm,0.9s						
LVZ				pmax	pmax		
	comp=Z,30nm,0.9s						
LVZ				pmax	pmax		
	comp=E,10.0nm,0.8s						
APA0	**Apatity Array**	**17.99**	**154**	P	**P**	**00 19 58.4**	**-2.6**
	baz=348,slow=9.3						
APA	**Apatity**	**18.04**	**154**⇑	*iP*	**P**	**00 19 58.5**	**-3.2**
APA				pmax	pmax		
	comp=Z,16nm,0.6s						
APA				MLR	MLR		
	comp=Z,800nm,15.0s						
TIXI	**Tiksi**	**21.11**	**52**	*eP*	**P**	**00 20 35.2**	**-1.1**
FIA0	**FINESS Array S**	**23.95**	**164**	P	**P**	**00 21 06.4**	**+2.2**
	baz=2.2,slow=14						
FINES	**FINESS Array B**	**23.95**	**164**	P	**P**	**00 21 06.4**	**+2.2**
	comp=Z,16nm,0.9s,mb4.5,baz=9.5,slow=12,SNR=44						
FINES				LR	LR	00 29 52.2	
	comp=Z,132nm,20.9s,MS3.4,baz=184,slow=35						
NB2	**NORSAR Subarra**	**24.19**	**181**	P	**P**	**00 21 08.9**	**+2.4**
	comp=Z,18nm,0.9s,mb4.5,baz=2.0,slow=9.3						
NB2	**NORSAR Subarra**	**24.19**	**181**	P	**P**	**00 21 09.3**	**+2.8**
NOA	**NORSAR Array B**	**24.19**	**181**	P	**P**	**00 21 08.9**	**+2.4**
	comp=Z,14nm,1.0s,mb4.4,baz=360,slow=9.4,SNR=16						
HFS	**Hagfors**	**25.10**	**179**	P	**P**	**00 21 16.8**	**+1.5**
	baz=341,slow=18						
HFS	**Hagfors**	**25.10**	**179**	P	**P**	**00 21 16.9**	**+1.6**
	comp=Z,12nm,0.8s,mb4.5,baz=22,slow=8.0,SNR=18						
INK	**Inuvik**	**26.05**	**332**	P	**P**	**00 21 22.7**	**-1.4**
	comp=Z,3.2nm,0.7s,mb4.0,baz=4.1,slow=11,SNR=14						
INK				PcP	PcP	00 24 50.1	-2.5
	comp=Z,1.8nm,0.9s,baz=336,slow=2.2,SNR=3.3						
INK				LR	LR	00 31 11.3	
	comp=Z,169nm,20.1s,MS3.6,baz=258,slow=36						
INK	**Inuvik**	**26.05**	**332**	P	**P**	**00 21 22.7**	**-1.4**
INK						00 24 50.2	
INK				pmax	pmax		
	comp=Z,3.0nm,0.7s						
INK				pmax	pmax		
	comp=Z,2.0nm,0.9s						
INK				MLR	MLR		
	comp=Z,169nm,20.1s						
INK	**Inuvik**	**26.05**	**332**	*eP*	**P**	**00 21 23.4**	**-0.7**
INK				pmax	pmax		
	comp=Z,11nm,1.1s						
INK	**Inuvik**	**26.05**	**332**	*eP*	**P**	**00 21 23.4**	**-0.7**
	comp=Z,11nm,1.1s,mb4.3						
FRB	**Frobisher Bay**	**26.06**	**271**	P	**P**	**00 21 24.1**	**-0.1**
	comp=Z,3.1nm,1.0s,mb3.8,baz=17,slow=6.8,SNR=6.5						
FRB				LR	LR	00 31 25.6	
	comp=Z,124nm,20.9s,MS3.4,baz=155,slow=36						
BILL	**Bilibino**	**26.61**	**22**	*eP*	**P**	**00 21 28.6**	**-0.6**
BILL				pmax	pmax		
	comp=Z,8.0nm,0.9s,mb4.2						
BILL	**Bilibino**	**26.61**	**22**	*eP*	**P**	**00 21 28.6**	**-0.7**
	comp=Z,8.1nm,0.9s,mb4.2						
ILAR	**Eielson Array**	**30.04**	**342**	P	**P**	**00 22 00.1**	**-0.2**
	comp=Z,2.2nm,0.8s,mb3.9,baz=358,slow=7.5,SNR=25						
ILAR				PcP	PcP	00 25 00.1	-2.3
	comp=Z,0.9nm,0.7s,baz=330,slow=3.2,SNR=7.4						
ILAR				LR	LR	00 32 57.9	
	comp=Z,155nm,19.6s,MS3.6,baz=299,slow=34						
EKA	**Eskdalemuir Ar**	**30.12**	**198**	P	**P**	**00 22 03.2**	**+2.1**
	comp=Z,1.2nm,0.7s,mb3.8,baz=6.3,slow=7.6,SNR=4.2						
DAWY	**Dawson**	**30.52**	**336**	*eP*	**P**	**00 22 03.8**	**-0.7**
OBN	**Obninsk**	**30.62**	**153**	*eP*	**P**	**00 22 05.9**	**+0.4**
OBN				pmax	pmax		
	comp=Z,12nm,0.7s,mb4.8						
OBN				MLR	MLR		
	comp=Z,100nm,20.0s,MS3.5						
YAK	**Yakutsk**	**30.68**	**55**	*eP*	**P**	**00 22 04.6**	**-1.3**
YAK				pmax	pmax		
	comp=Z,37nm,0.8s,mb5.3						
YAK	**Yakutsk**	**30.68**	**55**	*eP*	**P**	**00 22 04.6**	**-1.3**
	comp=Z,37nm,0.8s,mb5.3						
YKW3	**Yellowknife Ar**	**30.80**	**314**	*eP*	**P**	**00 22 06.1**	**-0.9**
YKA	**Yellowknife Ar**	**30.87**	**314**	P	**P**	**00 22 06.7**	**-0.9**
	comp=Z,1.2nm,0.8s,mb3.8,baz=7.3,slow=8.2,SNR=33						
YKA				PcP	PcP	00 25 02.7	-1.9
	comp=Z,0.6nm,0.6s,baz=359,slow=2.6,SNR=12						
YKA				LR	LR	00 34 05.9	
	comp=Z,90nm,20.8s,MS3.4,baz=5.0,slow=36						
YKA	**Yellowknife Ar**	**30.87**	**314**	P	**P**	**00 22 06.7**	**-0.9**
YKA				PcP	PcP	00 25 02.7	-1.9
YKA				LR	LR	00 34 05.9	
BOD	**Bodaibo**	**33.66**	**71**	*eP*	**P**	**00 22 28.3**	**-3.7**
CLL	**Collm**	**33.95**	**179**	P	**P**	**00 22 36.0**	**+1.4**
CLL	**Collm**	**33.95**	**179**	*eP*	**P**	**00 22 36.0**	**+1.4**
NVS	**Novosibirsk**	**34.00**	**102**	*eP*	**P**	**00 22 35.1**	**+0.1**
MOX	**Moxa**	**34.61**	**181**	*eP*	**P**	**00 22 42.0**	**+1.6**
ZRNK	**Zerenda**	**34.73**	**118**	*eP*	**P**	**00 22 44.8**	**+3.5**
BVAR	**Borovoye Array**	**34.76**	**116**	P	**P**	**00 22 43.3**	**+1.7**
	comp=Z,1.0nm,0.7s,mb3.9,baz=326,slow=5.2,SNR=5.7						
AKASG	**Malin Array Be**	**34.79**	**161**	P	**P**	**00 22 42.0**	**+0.2**
	comp=Z,2.2nm,0.7s,mb4.2,baz=354,slow=8.7,SNR=14						
ZAL	**Zalesovo**	**35.03**	**101**	P	**P**	**00 22 45.2**	**+1.4**
	comp=Z,0.5nm,0.4s,mb3.8,baz=35,slow=12,SNR=2.1						
ZAL				LR	LR	00 39 15.9	
	comp=Z,98nm,21.4s,MS3.5,baz=46,slow=40						
ZAL	**Zalesovo**	**35.03**	**101**	P	**P**	**00 22 45.2**	**+1.3**
ZAL				LR	LR	00 39 15.9	
OJC	**Ojcow**	**35.08**	**172**	*eP*	**P**	**00 22 46.2**	**+1.8**
GRF	**Grafenberg Arr**	**35.57**	**181**	*eP*	**P**	**00 22 51.2**	**+2.7**
GRF				pmax	pmax		
	comp=Z,39nm,1.8s,mb5.0						
DLBC	**Dease Lake**	**35.76**	**327**	*eP*	**P**	**00 22 51.4**	**+1.4**
GERES	**GERESS Array B**	**36.41**	**179**	P	**P**	**00 22 58.4**	**+2.7**
	comp=Z,0.7nm,0.7s,mb3.7,baz=8.1,slow=9.4,SNR=8.5						
MOY	**Mondy**	**38.66**	**85**	*eP*	**P**	**00 23 15.6**	**+1.0**
ZAK	**Zakamensk**	**40.13**	**83**	*eP*	**P**	**00 23 26.6**	**-0.2**
ULM	**Lac du Bonnet**	**41.71**	**294**	P	**P**	**00 23 39.0**	**-0.5**
MKAR	**Makanchi Array**	**41.91**	**105**	P	**P**	**00 23 42.9**	**+1.8**
	comp=Z,0.6nm,0.7s,mb3.4,baz=350,slow=7.4,SNR=5.4						
MKAR				LR	LR	00 44 04.8	
	comp=Z,66nm,20.0s,MS3.5,baz=337,slow=40						
MKAR	**Makanchi Array**	**41.91**	**105**	P	**P**	**00 23 42.9**	**+1.8**
MKAR				LR	LR	00 44 04.8	
KIV	**Kislovodsk**	**42.03**	**147**	*eP*	**P**	**00 23 37.0**	**-5.3**
KIV				*eS*	**S**	**00 29 59.1**	**-1.9**
KIV				MLR	MLR		
	comp=Z,110nm,19.0s,MS3.8						
KIV				MLR	MLR		
	comp=E,50nm,18.0s						
SONM	**Songino Array**	**42.93**	**81**	P	**P**	**00 23 50.9**	**+1.4**
	comp=E,2.4nm,0.9s,mb3.9,baz=342,slow=7.8,SNR=6.6						
ZEI	**Tsey**	**43.27**	**146**	*eP*	**P**	**00 23 57.8**	**+5.4**
ZEI				*e*		00 25 31.9	
NEW	**Newport**	**45.20**	**313**	P	**P**	**00 24 07.8**	**-0.1**
	comp=E,1.3nm,0.5s,mb4.0,baz=83,slow=3.1,SNR=2.4						
WMQ	**Urumqi**	**45.31**	**100**	*eP*	**P**	**00 24 10.8**	**+2.0**
WMQ				AP	pP	00 24 14.8	+3.0
WMQ				XP	sP	00 24 17.3	+4.2
WMQ				PP	PP	00 25 57.3	+1.7
WMQ				S	**S**	**00 30 49.6**	**+0.9**
WMQ				AMB	AMB		
	comp=Z,5.0nm,1.2s,mb4.2						
WMQ				AMB	AMB		
	comp=Z,36nm,5.1s						
WMQ				LR	LR		
	comp=N,103nm,20.2s,MS3.9						
WMQ				LR	LR		
	comp=E,111nm,20.0s,MS3.9						
WMQ				LR	LR		
	comp=Z,163nm,20.3s,MS4.0						
ESDC	**Sonseca Array**	**45.80**	**198**	P	**P**	**00 24 15.1**	**+2.4**
	comp=Z,1.1nm,0.6s,mb4.0,baz=358,slow=8.7,SNR=4.9						
BRTR	**Keskin Array B**	**45.89**	**157**	P	**P**	**00 24 15.8**	**+2.3**
	comp=Z,3.2nm,0.9s,mb4.2,baz=356,slow=5.3,SNR=14						
BRTR				LR	LR	00 45 48.0	
	comp=Z,85nm,18.2s,MS3.7,baz=235,slow=39						
VAE	**Valguarnera**	**47.78**	**178**	P	**P**	**00 24 33.4**	**+4.9**
	comp=Z,84nm,1.4s,baz=263,slow=20,SNR=2.4						
RSSD	**Black Hills**	**48.43**	**300**	*eP*	**P**	**00 24 33.2**	**-0.1**
RSSD				*e*		00 24 42.2	
RSSD				pmax	pmax		
	comp=Z,4.0nm,0.8s,mb4.5						
RSSD	**Black Hills**	**48.43**	**300**	*eP*	**P**	**00 24 33.2**	**-0.1**
	comp=Z,3.6nm,0.8s,mb4.5						
RSSD				*e*		00 24 42.2	
PDAR	**Pinedale Array**	**50.17**	**306**	P	**P**	**00 24 46.2**	**-0.6**
	comp=Z,1.0nm,0.8s,mb3.9,baz=18,slow=4.7,SNR=7.4						
PDAR				LR	LR	00 45 24.8	
	comp=Z,82nm,21.6s,MS3.7,baz=214,slow=36						
GTA	**Gaotai**	**50.73**	**89**	*eP*	**P**	**00 24 52.2**	**+1.2**
GTA				AMB	AMB		
	comp=Z,6.0nm,0.7s,mb4.6						
NVAR	**Mina Array Bea**	**55.07**	**313**	LR	LR	00 48 44.1	
	comp=Z,54nm,19.0s,MS3.6,baz=110,slow=36						
NEN	**Nelson**	**57.61**	**310**	*eP*	**P**	**00 25 41.5**	**-0.1**
DANN	**Dangsing**	**60.34**	**106**	*eP*	**P**	**00 26 01.0**	**+0.4**
GKN	**Gorkha**	**60.75**	**105**	*eP*	**P**	**00 26 03.0**	**-0.5**
	comp=Z,22nm,0.9s,mb5.3						
KOLN	**Koldanda**	**60.90**	**106**	*eP*	**P**	**00 26 03.5**	**-1.0**
	comp=Z,7.4nm,0.8s,mb4.9						
KKN	**Kakani**	**61.02**	**105**	*eP*	**P**	**00 26 04.3**	**-1.0**
	comp=Z,14nm,0.6s,mb5.2						
KKN	**Kakani**	**61.02**	**105**	*eP*	**P**	**00 26 04.3**	**-1.0**
KKN				pmax	pmax		
	comp=Z,7.0nm,0.6s,mb5.0						
DMN	**Daman**	**61.18**	**105**	*eP*	**P**	**00 26 03.8**	**-2.6**
TXAR	**Lajitas Array**	**63.09**	**298**	P	**P**	**00 26 18.0**	**-1.2**
	comp=Z,0.8nm,0.6s,mb4.0,baz=356,slow=3.9,SNR=14						
TXAR				LR	LR	00 52 31.9	
	comp=Z,79nm,21.6s,MS3.9,baz=355,slow=35						
CMAR	**Chiang Mai Arr**	**71.43**	**92**	P	**P**	**00 27 11.1**	**-0.6**
	comp=Z,1.3nm,0.6s,mb4.1,baz=350,slow=7.3,SNR=7.3						
CMAR				LR	LR	01 01 01.1	
	comp=Z,88nm,18.9s,MS4.0,baz=90,slow=38						
ASAR	**Alice Springs**	**116.03**	**61**	PKP	PKPdf	00 34 32.0	-3.3
	comp=Z,0.3nm,0.5s,baz=18,slow=1.8,SNR=5.9						

IDC 04 00:22:01.9±4.8, 84.87N×20.82E, mb3.5/2, mb1 3.7/4, mb1mx3.3/22, ML3.5/2, Error ellipse: s-maj=151.0km s-min=46.2km az=99.0, North of Svalbard

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SPITS	**Spitsbergen Ar**	**6.76**	**188**	Pn	Pn	00 23 39.9	-4.9
	4.1nm,0.3s,baz=13,slow=12,SNR=27						
SPITS				Sn	Sn	00 24 54.8	-8.6
	0.2nm,0.3s,baz=48,slow=2.2,SNR=2.5						
ARCES	**ARCESS Array B**	**15.45**	**174**	Pn	P	00 25 38.9	-3.3
	0.2nm,0.3s,baz=2.1,slow=9.4,SNR=6.9						
ARCES				Sn	S	00 28 24.2	-11
	0.1nm,0.3s,baz=27,slow=5.4,SNR=2.6						
FINES	**FINESS Array B**	**23.58**	**174**	P	P	00 27 12.8	-1.4
	2.3nm,1.0s,baz=22,slow=10,SNR=4.7						
BRTR	**Keskin Array B**	**45.44**	**166**	P	P	00 30 22.3	-1.3
	0.3nm,0.5s,baz=349,slow=6.3,SNR=3.7						

DJA 04 00:39:56.1±0.8, 9.06S×117.43E, h33km, MD4.9/4, ML4.7/4, 5C-5D, Error ellipse: s-maj=32.4km s-min=16.3km az=11.0, Sumbawa region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KEDI	**Kedomdong**	**1.42**	**294**⇓	*e*Pn	Pn	00 40 19.2	-0.8
	1μm,0.2s						
KEDI	**Kedomdong**	**1.42**	**294**⇑	*e*P	P	00 40 19.6	-0.2
KEDI				⇓*i*Sn	Sn	00 40 35.5	-2.1
RATI	**Rata**	**1.90**	**280**⇓	*e*Pn	Pn	00 40 25.7	-1.2
	827nm,0.2s						
RATI	**Rata**	**1.90**	**280**⇑	*e*P	P	00 40 26.1	-0.6
RATI				⇑*i*Sn	Sn	00 40 47.1	-2.8
INGI	**Ingas**	**2.27**	**276**⇓	*i*Pn	Pn	00 40 30.7	-1.4
	596nm,0.2s						
INGI				⇓*e*Sn	Sn	00 40 55.1	-4.1
KELI	**Kelakatan**	**3.02**	**286**⇑	*i*Pn	Pn	00 40 42.4	-0.4
	72nm,0.2s						
KELI				⇑*i*Sn	Sn	00 41 15.2	-3.1

*IDC **04** 00:56:29.2±7.3, 1.52N×127.67E, h629km±135km, mb2.8/5, mb1 3.0/6, mb1mx2.8/17, Error ellipse: s-maj=68.7km s-min=22.7km az=103.0*

ISC 04 00:56:19.9±0.8, 1.7N±0.1×127.3E±0.3, h500km, n7, σ0§80/7, mb3.4/5, Halmahera

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**19.71**	**185**	P	**P**	**01 00 17.6**	**+1.1**
	0.2nm,0.3s,baz=10,slow=11,SNR=4.0						
WRA	**Warramunga Arr**	**22.57**	**162**	P	**P**	**01 00 42.5**	**-0.7**
	0.9nm,0.4s,mb3.5,baz=343,slow=11,SNR=8.0						
ASAR	**Alice Springs**	**26.00**	**166**	P	**P**	**01 01 13.5**	**-0.3**
	0.6nm,0.5s,mb3.2,baz=356,slow=8.0,SNR=6.8						
CBIJ	**Chichi jima**	**29.05**	**28**	P	**P**	**01 01 41.1**	**+0.6**
	68nm,0.8s,baz=296,slow=22,SNR=3.6						
MKAR	**Makanchi Array**	**59.54**	**326**	P	**P**	**01 05 37.0**	**+0.7**
	0.6nm,0.4s,mb3.4,baz=115,slow=7.9,SNR=16						
ZAL	**Zalesovo**	**62.65**	**333**	P	**P**	**01 05 55.2**	**-1.4**
	0.9nm,0.2s,mb3.9,baz=257,slow=3.9,SNR=2.7						
BVAR	**Borovoye Array**	**69.32**	**327**	P	**P**	**01 06 38.0**	**0.0**
	0.2nm,0.4s,mb3.0,baz=108,slow=9.1,SNR=2.8						

IDC 04 00:58:34.6±2.3, 2.33S×128.68E, mb3.5/2, mb1 3.8/3, mb1mx3.6/15, ML3.8/1, Error ellipse: s-maj=141.0km s-min=28.4km az=68.0, Ceram Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**18.36**	**163**	P	P	01 02 50.1	-2.4
	0.3nm,0.3s,baz=342,slow=12,SNR=7.3						
ASAR	**Alice Springs**	**21.80**	**167**	P	P	01 03 28.4	-2.0
	1.3nm,0.5s,baz=345,slow=11,SNR=8.2						
MKAR	**Makanchi Array**	**63.63**	**326**	P	P	01 09 07.9	-1.9
	0.3nm,0.7s,baz=124,slow=10,SNR=3.1						

IDC 04 01:36:03.9±6.6, 34.64N×82.94E, mb3.3/2, mb1 3.6/3, mb1mx3.2/19, ML2.8/1, Error ellipse: s-maj=308.0km s-min=83.5km az=77.0, Xizang

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MKAR	**Makanchi Array**	**12.15**	**358**	Pn	P	01 38 58.6	-2.6
	0.1nm,0.3s,baz=183,slow=14,SNR=3.8						
ILAR	**Eielson Array**	**73.54**	**20**	P	P	01 47 38.3	-1.5
	0.4nm,0.8s,baz=305,slow=4.6,SNR=4.6						
YKA	**Yellowknife Ar**	**82.17**	**8**	P	P	01 48 26.3	-1.1
	0.1nm,0.5s,baz=335,slow=4.9,SNR=4.6						

*NIED **04** 01:49:00.20.10N×121.80E, h26km, Mw4.0 Best double couple: Ms1.16×10^15 NP1:φs107°, δ81°, λ78°. NP2:φs342°, δ15°, λ144°.*

*IDC **04** 01:49:23.0±0.7, 19.77N×121.42E, mb3.9/14, mb1 4.1/15, mb1mx4.0/22, ML3.8/1, MS3.3/6, Ms1 3.4/6, ms1mx3.2/25, Error ellipse: s-maj=26.8km s-min=15.8km az=65.0*

*BJI **04** 01:49:26.1, 19.70N×121.40E, h45km, mb4.4, ML3.6*

*MAN **04** 01:49:28.0, 19.93N×121.49E, h44km, mb4.6, ML3.5, MS3.4*

*NEIC **04** 01:49:28.9±0.5, 19.74N×121.40E, h45km, mb4.4/3, Error ellipse: s-maj=14.3km s-min=11.1km az=71.0*

ISC 04 01:49:28.7±0.6, 19.91N±0.04×121.51E±0.09, h58km±7km, n36, σ1§41/36, mb3.9/16, MS3.2/4, 6C, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BBP	**Basco**	**0.68**	**39**⇑	*e*P	**P**	**01 49 43.0**	**+0.4**
BBP				*e*S	**S**	**01 49 53.0**	**0.0**
SGCP	**Mt. Cagua**	**1.74**	**163**⇑	*e*P	**P**	**01 49 57.6**	**+0.4**
APYP	**Conner**	**2.06**	**187**⇑	*e*P	**P**	**01 50 00.5**	**-1.2**
APYP				*e*S	**S**	**01 50 26.9**	**+0.9**
CVP	**Callao Caves**	**2.22**	**172**	*e*P	**P**	**01 50 04.0**	**+0.1**
CVP				*e*S	**S**	**01 50 31.0**	**+0.9**
ABRA	**Dolores**	**2.38**	**199**⇑	*e*P	**P**	**01 50 05.5**	**-0.7**
BOLP	**Bolinao**	**3.83**	**204**⇑	*e*P	**P**	**01 50 34.6**	**+8.0**
BALP	**Baler**	**4.15**	**179**⇑	*e*P	**P**	**01 50 33.0**	**+1.8**
JOW	**Kunigami**	**9.27**	**41**	Pn	**P**	**01 51 41.1**	**-1.1**
	1.9nm,0.3s,baz=172,slow=15,SNR=5.9						
JOW				LR	LR	01 55 25.3	
	comp=Z,214nm,20.8s,baz=106,slow=38						
QIZ	**Qiongzhong**	**11.04**	**267**	*e*P	**P**	**01 52 00.2**	**-6.2**
	29nm,1.3s						
QIZ				*e*S	**S**	**01 53 50.0**	**-19**
JNU	**Nakatsue**	**15.59**	**31**	LR	LR	01 59 06.6	
	comp=Z,96nm,20.1s,baz=214,slow=37						
CD2	**Chengdu**	**19.39**	**308**	*e*P	**P**	**01 53 51.6**	**-1.1**
CD2				AMB	AMB		
	comp=Z,20nm,1.0s						
CBIJ	**Chichi jima**	**20.24**	**65**	LR	LR	02 01 53.1	
	comp=Z,58nm,18.6s,MS3.0,baz=120,slow=37						
BJT	**Baijiatuan**	**20.56**	**348**	*e*P	**P**	**01 54 02.7**	**-2.3**
	comp=Z,30nm,0.8s						
BJT				*e*		01 54 14.8	
BJI	**Beijing**	**20.58**	**348**	P	**P**	**01 54 02.8**	**-2.4**
CMAR	**Chiang Mai Arr**	**21.36**	**270**	P	**P**	**01 54 12.2**	**-1.1**
	comp=Z,2.2nm,1.0s,mb3.5,baz=71,slow=9.3,SNR=11						
CMAR				LR	LR	02 01 40.3	
	comp=Z,53nm,19.7s,MS2.9,baz=85,slow=35						
ASAJ	**Asahikawa**	**29.86**	**31**	LR	LR	02 08 28.1	
	comp=Z,45nm,18.8s,MS3.1,baz=11,slow=38						
ULN	**Ulaanbaatar**	**30.25**	**341**	*e*P	**P**	**01 55 38.7**	**+2.4**
	comp=Z,1.7nm,0.7s,mb3.9						
WRAB	**Tennant Creek**	**41.55**	**162**	*e*P	**P**	**01 57 10.2**	**-2.2**
	comp=Z,6.9nm,0.6s,mb4.5						
WRA	**Warramunga Arr**	**41.55**	**162**	P	**P**	**01 57 10.6**	**-1.9**
	comp=Z,4.1nm,1.0s,mb4.0,baz=342,slow=9.0,SNR=11						
WB2	**Warramunga Arr**	**41.56**	**162**	*e*P	**P**	**01 57 10.7**	**-1.9**
MKAR	**Makanchi Array**	**41.68**	**319**	P	**P**	**01 57 13.8**	**+0.6**
	comp=Z,2.4nm,0.8s,mb3.9,baz=113,slow=9.2,SNR=8.5						
ZAL	**Zalesovo**	**44.03**	**329**	P	**P**	**01 57 32.3**	**0.0**
	comp=Z,0.7nm,0.6s,mb3.6,baz=259,slow=6.4,SNR=4.2						
ASAR	**Alice Springs**	**44.97**	**164**	P	**P**	**01 57 39.5**	**-0.7**
	comp=Z,0.7nm,0.3s,mb3.9,baz=344,slow=7.8,SNR=9.8						
KURK	**Kurchatov**	**45.61**	**323**	P	**P**	**01 57 42.2**	**-2.7**
STKA	**Stephens Creek**	**54.98**	**159**	P	**P**	**01 58 55.5**	**-1.0**
	comp=Z,1.5nm,0.7s,mb4.1,baz=336,slow=12,SNR=2.7						
ILAR	**Eielson Array**	**72.87**	**27**	P	**P**	**02 00 54.4**	**+1.4**
	comp=Z,0.3nm,0.6s,mb3.4,baz=270,slow=6.0,SNR=6.3						
SPITS	**Spitsbergen Ar**	**73.70**	**348**	P	**P**	**02 00 58.9**	**+1.3**
	comp=Z,9.0nm,0.9s,mb4.7,baz=98,slow=6.4,SNR=3.7						
FINES	**FINESS Array B**	**75.28**	**330**	P	**P**	**02 01 07.4**	**+0.4**
	comp=Z,1.0nm,0.7s,mb3.8,baz=45,slow=7.9,SNR=3.5						
BRTR	**Keskin Array B**	**75.97**	**307**	P	**P**	**02 01 12.1**	**+0.7**
	comp=Z,0.7nm,1.0s,mb3.5,baz=180,slow=6.2,SNR=3.6						
AKASG	**Malin Array Be**	**76.27**	**319**	P	**P**	**02 01 12.7**	**-0.2**
	comp=Z,0.2nm,0.3s,mb3.5,baz=59,slow=5.6,SNR=4.2						
MLR	**Muntele Rosu**	**79.84**	**315**	P	**P**	**02 01 34.2**	**+1.5**
NOA	**NORSAR Array B**	**82.13**	**333**	LR	LR	02 42 25.3	
	comp=Z,34nm,18.9s,MS3.7,baz=170,slow=39						
VRAC	**Vranov**	**84.41**	**321**	P	**P**	**02 01 57.8**	**+1.7**
	comp=Z,1.0nm,0.5s,mb4.2,baz=56,slow=3.6,SNR=3.9						
GERES	**GERESS Array B**	**86.33**	**321**	P	**P**	**02 02 08.5**	**+2.9**
	comp=Z,0.1nm,0.3s,mb3.5,baz=56,slow=11,SNR=3.0						
GERES	**GERESS Array B**	**86.33**	**321**	P	**P**	**02 02 08.5**	**+2.9**
YKA	**Yellowknife Ar**	**86.77**	**23**	P	**P**	**02 02 10.2**	**+2.8**
	comp=Z,0.5nm,0.6s,mb3.9,baz=308,slow=4.7,SNR=21						

*NNC **04** 01:50:11.6±5.3, 38.57N×69.09E, h19km±27km, mpv3.9, Error ellipse: s-maj=31.4km s-min=25.4km az=46.0*

*NEIC **04** 01:50:14.1±5.3, 37.69N×70.10E, h118km±40km, mb4.7/3, Error ellipse: s-maj=46.6km s-min=19.0km az=176.0*

*IDC **04** 01:50:15.3±7.6, 37.93N×69.86E, h104km±85km, mb3.5/6, mb1 3.7/9, mb1mx3.4/24, ML4.0/3, MS2.9/1, Ms

mb1mx3.8/13,ML3.7/2,MS2.9/3,Ms1 2.9/3,ms1mx2.8/18, Error ellipse: s-maj=49.4km s-min=17.6km az=60.0
GUC ***04*** *01:54:26.8±0.8,37.84S×73.75W,h15km±8km,ML4.0*
NEIC ***04*** *01:54:26.8,37.84S×73.75W,h15km,ML4.0(GUC),After GUC.*

ISC 04 01:54:27.9±2.7,37.88S±0.04×73.6W±0.1,h31km±20km, n18,σ1§01/20,mb4.8/5,1C,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TMCH	**Temuco**	**1.18**	**137**	⇑*i*P	**Pn**	**01 54 48.0**	**-0.4**
TMCH				*i* S	**Sn**	**01 55 03.6**	**+0.1**
TMCH				AMP		01 55 08.9	
	comp=E,4μm,0.7s						
CCHI	**Chillan**	**1.78**	**45**	*i* P	**Pn**	**01 54 57.7**	**+0.6**
CCHI				*i* S	**Sn**	**01 55 20.5**	**+1.7**
CCHI				AMP		01 55 26.5	
	comp=E,4μm,0.5s						
COCH	**Cobquecura**	**1.88**	**21**	*i* P	**Pn**	**01 54 57.7**	**-0.7**
COCH				*i* S	**Sn**	**01 55 22.3**	**+1.1**
COCH				AMP		01 55 32.6	
	comp=N,1μm,0.4s						
VLCH	**Valdivia**	**1.94**	**171**	*i* P	**Pn**	**01 55 00.3**	**+0.9**
VLCH				*i* S	**Sn**	**01 55 25.7**	**+2.8**
VLCH				AMP		01 55 39.3	
	comp=E,4μm,0.5s						
PLCA	**Paso Flores**	**3.72**	**141**	Pn	**Pn**	**01 55 25.2**	**+0.6**
	comp=E,0.8nm,0.3s,baz=314,slow=13,SNR=12						
PLCA				Pg	**Pn**	**01 55 32.6**	**+7.9**
	comp=E,2.9nm,0.3s,baz=317,slow=16,SNR=20						
PLCA				Lg		01 56 21.6	
	comp=E,5.6nm,0.3s,baz=59,slow=23,SNR=4.0						
PLCA				LR	LR	01 57 06.7	
	comp=E,119nm,20.7s,baz=180,slow=44						
TRQA	**Tornquist**	**9.21**	**95**	*e*Pn	**P**	**01 56 40.1**	**-1.6**
TRQA				*e*Sn	Sx	01 59 20.5	
LVC	**Limon Verde**	**15.75**	**16**	LR	LR	02 03 56.8	
	comp=E,64nm,20.3s,baz=89,slow=36						
CPUP	**Villa Florida**	**17.96**	**55**	P	**P**	**01 58 35.3**	**-1.6**
	comp=E,0.2nm,0.3s,baz=221,slow=14,SNR=3.3						
CPUP				LR	LR	02 04 51.8	
	comp=E,41nm,21.6s,baz=58,slow=35						
LPAZ	**La Paz**	**22.05**	**14**	P	**P**	**01 59 22.7**	**+0.9**
	comp=E,0.6nm,0.6s,baz=194,slow=8.3,SNR=2.5						
LPAZ	**La Paz**	**22.05**	**14**	P	**P**	**01 59 22.7**	**+0.9**
SNAA	**Sanae**	**48.52**	**156**	*e*P	**P**	**02 03 09.0**	**-0.3**
TXAR	**Lajitas Array**	**72.53**	**333**	P	**P**	**02 05 53.9**	**+0.1**
	comp=E,0.3nm,0.5s,mb3.5,baz=150,slow=8.6,SNR=5.1						
LIC	**Lamto**	**77.23**	**72**	*e*P	**P**	**02 06 20.2**	**-0.7**
	comp=E,44nm,1.7s,mb5.1						
TIC	**Toumodi**	**77.51**	**71**	*e*P	**P**	**02 06 21.7**	**-0.8**
	comp=E,102nm,1.5s,mb5.5						
KIC	**Kosan Boka**	**77.53**	**72**	*e*P	**P**	**02 06 22.0**	**-0.6**
	comp=E,26nm,0.8s,mb5.2						
DBIC	**Dimbokro**	**77.65**	**71**	P	**P**	**02 06 22.7**	**-0.5**
	comp=E,3.9nm,0.7s,mb4.5,baz=178,slow=7.3,SNR=9.8						
BVAR	**Borovoye Array**	**150.94**	**47**	PKPbc	PKPdf	02 14 17.5	+1.4
	comp=E,1.2nm,0.7s,baz=297,slow=3.2,SNR=6.1						
MKAR	**Makanchi Array**	**160.16**	**56**	PKPab	PKPab	02 15 04.8	-1.0
	comp=E,0.5nm,0.7s,baz=252,slow=3.8,SNR=4.2						

IDC ***04*** *02:01:12.7±1.7,44.96N×28.06W,mb3.5/7,mb1 3.8/7, mb1mx3.6/25,MS3.4/1,Ms1 3.3/1,ms1mx2.6/25,Error ellipse: s-maj=65.0km s-min=21.9km az=13.0*

ISC 04 02:01:12.9±1.6,45.0N±0.4×28.1W±0.2,h10km,n9,σ0§29/7, mb3.5/7,MS3.4/1,Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FRB	**Frobisher Bay**	**29.35**	**324**	P	**P**	**02 07 17.4**	**-0.2**
	2.0nm,0.9s,mb3.9,baz=113,slow=10,SNR=4.3						
IDI	**Anoyia**	**41.00**	**85**	P	**P**	**02 08 57.3**	**-0.2**
	1.7nm,0.8s,mb3.8,baz=315,slow=14,SNR=3.7						
ULM	**Lac du Bonnet**	**44.53**	**302**	LR	LR	02 26 03.1	
	comp=Z,49nm,20.0s,MS3.4,baz=18,slow=33						
BRTR	**Keskin Array B**	**44.94**	**74**	P	**P**	**02 09 29.9**	**+0.3**
	0.5nm,0.8s,mb3.4,baz=287,slow=8.3,SNR=5.0						
YKA	**Yellowknife Ar**	**49.86**	**323**	P	**P**	**02 10 08.1**	**+0.4**
	0.3nm,0.9s,mb3.3,baz=74,slow=6.8,SNR=4.2						
YKA				PcP	PcP	02 11 27.0	-1.5
	0.2nm,0.8s,baz=68,slow=4.2,SNR=3.7						
PDAR	**Pinedale Array**	**56.31**	**299**	P	**P**	**02 10 56.1**	**+0.3**
	0.4nm,0.9s,mb3.5,baz=69,slow=7.7,SNR=2.8						
TXAR	**Lajitas Array**	**60.13**	**283**	P	**P**	**02 11 22.6**	**-0.2**
	0.4nm,0.8s,mb3.5,baz=83,slow=7.3,SNR=5.3						
ILAR	**Eielson Array**	**60.60**	**334**	P	**P**	**02 11 25.2**	**-0.3**
	0.2nm,0.4s,mb3.6,baz=54,slow=5.8,SNR=6.2						
WRA	**Warramunga Arr**	**151.04**	**36**	PKPbc	PKPdf	02 21 07.0	+3.7
	0.5nm,0.4s,baz=324,slow=2.5,SNR=11						

GUC ***04*** *02:39:26.2±1.0,28.74S×68.89W,h130km,ML3.9*
NEIC ***04*** *02:39:26.2,28.74S×68.89W,h130km,After GUC.*

ISC 04 02:39:26.1±2.1,28.74S±0.06×68.9W±0.2,h130km,n5, σ0§71/10,3C-2D,La Rioja Province

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
VACH	**Vallenar**	**1.65**	**275**	⇑*i*P	**P**	**02 39 56.7**	**+0.4**
VACH				*i* S	**S**	**02 40 19.3**	**-0.1**
VACH				AMP		02 40 21.5	
	comp=N,2μm,0.1s						
CPCH	**Copiapo**	**1.89**	**316**	⇑*i*P	**P**	**02 39 59.2**	**0.0**
CPCH				*i* S	**S**	**02 40 24.0**	**-0.3**
CPCH				AMP		02 40 28.1	
	comp=E,2μm,0.1s						
TLL	**Tololo Astrono**	**2.19**	**229**	⇑*i*P	**P**	**02 40 03.9**	**+1.0**
TLL				*i* S	**S**	**02 40 32.4**	**+1.4**
TLL				AMP		02 40 33.9	
	comp=N,228nm,0.2s						
OVCH	**Ovalle**	**2.74**	**227**	⇓*i*P	**P**	**02 40 09.5**	**-0.6**
OVCH				*i* S	**S**	**02 40 42.3**	**-1.3**
OVCH				AMP		02 40 42.9	
	comp=E,211nm,0.6s						
CMCH	**Combarbala**	**3.04**	**217**	⇓*i*P	**P**	**02 40 13.7**	**-0.4**
CMCH				*i* S	**S**	**02 40 50.4**	**-0.1**
CMCH				AMP		02 40 55.5	
	comp=E,488nm,0.6s						

BJI ***04*** *03:28:56.3,45.63N×149.24E,h147km,mB5.0,mb4.8*
MOS ***04*** *03:28:57.3±1.1,45.91N×149.20E,h155km,mb4.9/25, Error ellipse: s-maj=8.5km s-min=5.6km az=79.4*
NEIC ***04*** *03:28:58.4±0.1,45.85N×149.28E,mb5.0/103,Error ellipse: s-maj=4.7km s-min=2.7km az=164.0*
HRVD ***04*** *03:28:58.4±0.4,45.80N×149.33E,h160km±3km, MW5.0/58,Centroid moment Tensor Solution. LP body waves: s16,c17;Mantle waves: s58,c94; Half duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr2.98±.16; Mθθ-2.35±.22; Mϕϕ-0.63±.18; Mrθ2.58±.16; Mrϕ-2.81±.16; Mθϕ0.48±.13; Best double couple: Mo4.63×10¹⁶ NP1: ϕs208°,δ34°,λ51°. NP2:ϕs73°,δ65°,λ113°. Principal axes: T 4.12, Plg63°, Azm21°; N 1.01, Plg21°, Azm243°; P -5.13, Plg17°, Azm146°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
SYO ***04*** *03:28:58.3,45.85N×149.28E,h152km,MB5.0*
SKHL ***04*** *03:28:58.2±0.6,45.81N×149.40E,h147km±7km,mb6.1/3, mbh6.1/1,msh5.8/3*
IDC ***04*** *03:28:59.1±0.5,45.88N×149.19E,h159km±4km,mb4.4/28, mb1 4.5/33,mb1mx4.5/34,MS3.6/7,Ms1 3.7/7, ms1mx3.3/31,Error ellipse: s-maj=10.0km s-min=6.7km az=132.0*
NIED ***04*** *03:29:00,45.20N×149.40E,h125km,Mw5.0 Best double couple: Mo3.32×10¹⁶ NP1:ϕs71°,δ73°,λ87°. NP2:ϕs262°, δ18°,λ101°.*
JMA ***04*** *03:29:00.3±0.5,45.20N×149.38E,h165km,M4.7*

ISC 04 03:28:56.0±0.3,45.78N±0.03×149.36E±0.03,h145km±3km, h151km±2.3km;pP-P,n437,σ1§05/448,mb4.8/142,22C-17D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KUR	**Kuril'sk**	**1.18**	**243**	⇑*i*P	**P**	**03 29 25.0**	**+2.7**
KUR				⇑*i*P		03 29 25.0	
KUR				⇑*i*P		03 29 25.0	
KUR				AMB	AMB	03 29 25.5	
	2μm,1.8s						
KUR				AMB	AMB	03 29 25.5	
	912nm,0.5s						
KUR				AMB	AMB	03 29 25.5	
	2μm,0.5s						
KUR				AMB	AMB	03 29 25.5	
	9μm,0.5s						
KUR				AMB	AMB	03 29 26.0	
	30μm,1.8s						
KUR				AMB	AMB	03 29 28.0	
	10μm,1.8s						
KUR				AMB	AMB	03 29 28.0	
	21μm,1.8s						
KUR				*i* S	**S**	**03 29 45.0**	**+2.6**
KUR				A		03 29 46.0	
	5μm,2.0s						
KUR				A		03 29 46.0	
	4μm,2.0s						
KUR				A		03 29 46.0	
	897nm,0.6s						
KUR				A		03 29 46.0	
	426nm,0.6s						
KUR				A		03 29 46.5	
	54μm,2.0s						
KUR				A		03 29 46.5	
	81μm,2.0s						
KUR	**Kuril'sk**	**1.18**	**243**	⇓*i*PN	**P**	**03 29 25.0**	**+2.7**
KUR				*e*S	**S**	**03 29 45.0**	**+2.6**
KUR				pmax	pmax		
	comp=N,910nm,0.5s						
KUR				pmax	pmax		
	comp=E,2μm,0.5s						
KUR				pmax	pmax		
	comp=Z,9μm,0.5s						
KUR				smax			
	comp=N,9μm,0.6s						
KUR				smax			
	comp=E,4μm,0.6s						
KUR				smax			
	comp=N,10μm,1.8s						
KUR				smax			
	comp=E,21μm,1.8s						
KUR				smax			
	comp=Z,25μm,1.8s						
KUR				smax			
	comp=N,54μm,2.0s						
KUR				smax			
	comp=E,81μm,2.0s						
YUK	**Yuzh-Kuril'sk**	**3.04**	**236**	⇑*i*P	**P**	**03 29 45.4**	**+1.0**
YUK				AMB	AMB	03 29 46.4	
	comp=E,10μm,1.0s						
YUK				AMB	AMB	03 29 46.4	
	comp=E,700nm,0.4s						
YUK				AMB	AMB	03 29 46.4	
	comp=E,490nm,0.4s						
YUK				AMB	AMB	03 29 46.4	
	comp=E,5μm,0.4s						
YUK				*i* S	**S**	**03 30 21.3**	**0.0**
YUK				A		03 30 23.0	
	comp=E,12μm,2.0s						
YUK				A		03 30 23.0	
	comp=E,18μm,2.0s						
YUK				A		03 30 25.1	
	comp=E,4μm,0.5s						
YUK				A		03 30 25.1	
	comp=E,7μm,0.5s						
YUK	**Yuzh-Kuril'sk**	**3.04**	**236**	⇑*i*PN	**P**	**03 29 45.4**	**+1.0**
YUK				*i* S	**S**	**03 30 21.3**	**0.0**
YUK				pmax	pmax		
	comp=Z,10μm,1.0s						
YUK				pmax	pmax		
	comp=N,700nm,0.4s						
YUK				pmax	pmax		
	comp=E,490nm,0.4s						
YUK				pmax	pmax		
	comp=Z,5μm,0.4s						
YUK				smax			
	comp=N,12μm,2.0s						
YUK				smax			
	comp=E,18μm,2.0s						
YUK				smax			
	comp=N,4μm,0.5s						
YUK				smax			
	comp=E,7μm,0.5s						
JRA	**Rausu**	**3.53**	**240**	P	**P**	**03 29 52.6**	**+1.7**
JRA				*e*S	**S**	**03 30 33.9**	**+1.0**
NEM2	**Nemuro 2**	**3.54**	**228**	P	**P**	**03 29 50.8**	**-0.1**
NEM2				*e*S	**S**	**03 30 29.6**	**-3.4**
JNK	**Nakash**	**3.97**	**238**	P	**P**	**03 29 58.1**	**+1.5**
JTKR	**Abashiri--Toko**	**4.28**	**247**	P	**P**	**03 30 02.6**	**+1.9**
JAK	**Akkeshi**	**4.35**	**232**	P	**P**	**03 30 01.5**	**-0.1**
JAK				*e*S	**S**	**03 30 48.6**	**-3.5**
JMP	**Maruseppu**	**4.62**	**250**	P	**P**	**03 30 07.3**	**+2.1**
JAR	**Ashorobuto**	**4.70**	**240**	P	**P**	**03 30 08.0**	**+1.6**
YSS	**Yuzh-Sakhalins**	**4.72**	**287**	⇓*i*P	**P**	**03 30 08.0**	**+1.4**
YSS				AMB	AMB	03 30 09.8	
	comp=E,100nm,1.0s						
YSS				AMB	AMB	03 30 09.8	
	comp=E,150nm,1.0s						
YSS				*e*sP		03 30 41.8	
YSS				*e*S	**S**	**03 31 00.0**	**-1.0**
YSS				A		03 31 09.0	
	comp=E,270nm,1.2s						
YSS				A		03 31 09.0	
	comp=E,150nm,1.0s						
YSS				A		03 31 12.0	
	comp=E,3μm,4.0s						
YSS				AMS	AMS	03 32 07.0	
	comp=E,900nm,5.0s						
YSS	**Yuzh-Sakhalins**	**4.72**	**287**	⇓*i*PN	**P**	**03 30 08.0**	**+1.4**
YSS				*e*S	**S**	**03 31 00.0**	**-1.0**
YSS				pmax	pmax		
	comp=E,150nm,1.0s						
YSS				pmax	pmax		
	comp=Z,100nm,1.0s						
YSS	**Yuzh-Sakhalins**	**4.72**	**287**	*e*P	**P**	**03 30 07.9**	**+1.3**
JSE	**Soyaes**	**4.85**	**263**	P	**P**	**03 30 11.0**	**+2.8**
JOB	**Onbets**	**4.89**	**236**	P	**P**	**03 30 09.7**	**+0.8**
JOB				*e*S	**S**	**03 31 02.8**	**-2.3**
JKK2	**Kamakawa 2**	**5.08**	**250**	P	**P**	**03 30 13.9**	**+2.6**
JKK2				*e*S	**S**	**03 31 11.8**	**+2.4**
ASAJ	**Asahikawa**	**5.08**	**253**	P	**P**	**03 30 14.3**	**+3.0**
	comp=Z,12nm,0.3s,baz=85,slow=14,SNR=125						
ASAJ				S	**S**	**03 31 11.6**	**+2.0**
	comp=Z,12nm,0.3s,baz=65,slow=24,SNR=3.1						
ASAJ				LR	LR	03 31 51.0	
	comp=Z,544nm,20.5s,baz=9.2,slow=34						
ASAJ	**Asahikawa**	**5.08**	**253**	P	**P**	**03 30 14.3**	**+2.9**
ASAJ	**Asahikawa**	**5.08**	**253**	PN	**P**	**03 30 14.4**	**+3.0**
ASAJ				S	**S**	**03 31 11.6**	**+2.1**
ASAJ				pmax	pmax		
	comp=Z,12nm,0.3s						
ASAJ				smax			
	comp=N,12nm,0.3s						
ASAJ				MLR	MLR		
	comp=Z,545nm,20.5s						
JWK2	**Keihoku**	**5.26**	**268**	P	**P**	**03 30 17.6**	**+3.8**
JCH	**Churui**	**5.35**	**236**	P	**P**	**03 30 14.8**	**-0.1**
JCH				S	**S**	**03 31 11.2**	**-4.7**
JSS	**Shosan**	**5.49**	**258**	P	**P**	**03 30 21.9**	**+5.1**
JFR	**Furan**	**5.50**	**244**	P	**P**	**03 30 19.2**	**+2.3**
JAB	**Ashibetsu**	**5.58**	**249**	P	**P**	**03 30 20.9**	**+3.0**
JBT2	**Biratori 2**	**5.85**	**242**	P	**P**	**03 30 22.5**	**+0.9**
JBT2				*e*S	**S**	**03 31 25.5**	**-2.5**
JEM	**Erimo**	**5.85**	**232**	P	**P**	**03 30 21.5**	**-0.1**
JNBK	**Urakawa-nobuka**	**5.91**	**236**	P	**P**	**03 30 21.4**	**-1.0**
JNBK				*e*S	**S**	**03 31 23.8**	**-5.6**
UGL	**Uglegorsk**	**5.95**	**306**	*e*P	**P**	**03 30 25.0**	**+2.1**
UGL				⇓*i*P		03 30 25.0	
UGL				AMB	AMB	03 30 26.0	
	comp=Z,2μm,3.0s						
UGL				AMB	AMB	03 30 26.5	
	comp=Z,269nm,1.0s						
UGL				AMB	AMB	03 30 26.5	
	comp=Z,69nm,0.5s						
UGL				AMB	AMB	03 30 26.5	
	comp=Z,193nm,0.5s						
UGL				*e*S	**S**	**03 31 30.5**	**+0.1**
UGL				A		03 31 38.0	
	comp=Z,3μm,4.0s						
UGL				A		03 31 38.0	
	comp=Z,731nm,1.5s						
UGL				A		03 31 38.0	
	comp=Z,2μm,6.0s						
UGL				A		03 31 38.0	
	comp=Z,2μm,6.0s						
UGL				*e*rx	rx	03 31 52.0	
JEW	**Eniwo**	**6.39**	**245**	P	**P**	**03 30 30.8**	**+1.9**
SKR	**Severo-Kuril's**	**6.67**	**40**	*e*P	**P**	**03 30 32.5**	**-0.1**
SKR				AMB	AMB	03 30 34.6	
	comp=Z,140nm,0.4s						
SKR				AMB	AMB	03 30 34.6	
	comp=Z,150nm,0.4s						
SKR				AMB	AMB	03 30 34.6	
	comp=Z,240nm,0.4s						
SKR				*e*S	**S**	**03 31 45.0**	**-2.7**
SKR				A		03 31 52.5	
	comp=Z,100nm,0.5s						
SKR				A		03 31 52.5	
	comp=Z,220nm,0.5s						
SKR				A		03 31 52.5	
	comp=Z,80nm,0.5s						
TYV	**Tymovskoe**	**6.77**	**321**	*e*P	**P**	**03 30 33.0**	**-1.1**
TYV				AMB	AMB	03 30 36.7	
	comp=Z,381nm,1.8s						
JSK	**Shakotan**	**6.79**	**252**	P	**P**	**03 30 39.0**	**+4.7**
JNB	**Noboribetsu**	**6.84**	**244**	P	**P**	**03 30 36.0**	**+1.0**
JNB				*e*S	**S**	**03 31 49.0**	**-2.9**
JKB	**Kayabe**	**7.17**	**240**	P	**P**	**03 30 38.1**	**-1.3**
JKB				*e*S	**S**	**03 31 52.7**	**-7.0**
JSH	**Shimam**	**7.39**	**248**	P	**P**	**03 30 43.6**	**+1.3**
JYM2	**Yakumo 2**	**7.45**	**244**	P	**P**	**03 30 43.0**	**-0.1**
JYM2				*e*S	**S**	**03 32 03.6**	**-2.9**
JSR	**Shiriuchi**	**7.75**	**240**	P	**P**	**03 30 47.0**	**-0.2**
JTM	**Tenmabayashi**	**7.84**	**233**	P	**P**	**03 30 46.0**	**-2.3**
JTM				*e*S	**S**	**03 32 06.3**	**-10**
JANG	**Nango**	**7.88**	**230**	P	**P**	**03 30 46.3**	**-2.6**
JANG				*e*S	**S**	**03 32 06.7**	**-10**
JTH	**Tanohata**	**8.02**	**226**	P	**P**	**03 30 47.9**	**-2.9**
JTH				*e*S	**S**	**03 32 09.3**	**-11**
JOSM	**Okushiri--Mats**	**8.03**	**246**	P	**P**	**03 30 51.5**	**+0.6**
OFUJ	**Ofunato**	**8.78**	**223**	P	**P**	**03 30 59.0**	**-1.8**
OFUJ				*e*S	**S**	**03 32 30.3**	**-8.0**
OKH	**Okha**	**8.82**	**334**	*e*rx	rx	03 32 42.4	
TEY	**Ternei**	**9.01**	**270**	*e*P	**P**	**03 31 09.5**	**+5.6**
TEY				AMB	AMB	03 31 10.0	
	comp=Z,10.0nm,1.0s						
JRG	**Rokugo**	**9.06**	**228**	P	**P**	**03 31 02.7**	**-1.8**
JRG				*e*S	**S**	**03 32 38.4**	**-6.5**
NKL	**Nikolayevsk**	**9.29**	**326**	*e*P	**P**	**03 31 06.0**	**-1.6**
NKL				*e*rx	rx	03 32 54.0	
JIO	**Ouri**	**9.43**	**222**	P	**P**	**03 31 07.0**	**-2.4**
JIO				*e*S	**S**	**03 32 43.7**	**-10**
PET	**Petropavlovsk**	**9.44**	**36**	*e*PN	**P**	**03 31 08.7**	**-0.9**
PET				*e*S	**S**	**03 33 00.7**	**+6.5**
PET				pmax	pmax		
	comp=Z,52nm,0.6s						
PET				pmax	pmax		
	comp=Z,120nm,12.4s						
PET				smax			
	comp=E,261nm,12.2s						
PET				MLR	MLR		
	comp=Z,98nm,13.0s						
PET	**Petropavlovsk**	**9.44**	**36**	*e*P	**P**	**03 31 07.8**	**-1.8**
	comp=Z,27nm,0.3s						
JYA	**Atsumi**	**10.13**	**228**	P	**P**	**03 31 17.8**	**-0.8**
JYA				*e*S	**S**	**03 33 03.3**	**-7.1**
JFK	**Kawauchi**	**10.53**	**220**	P	**P**	**03 31 21.3**	**-2.6**
JFK				*e*S	**S**	**03 33 10.9**	**-8.9**
JFY	**Yanaizu**	**11.05**	**224**	P	**P**	**03 31 29.6**	**-1.1**
JFY				*e*S	**S**	**03 33 24.8**	**-7.2**
MAJO	**Matsushiro**	**12.47**	**226**	*e*PN	**P**	**03 31 48.0**	**-1.3**
MAJO				pmax	pmax		
	comp=Z,16nm,0.7s						
MAJO	**Matsushiro**	**12.47**	**226**	*e*P	**P**	**03 31 48.0**	**-1.3**
	comp=Z,16nm,0.7s						
MAT	**Matsushiro**	**12.47**	**226**	P	**P**	**03 31 48.3**	**-1.0**
MAT				S	**S**	**03 34 02.0**	**-3.4**
MAT	**Matsushiro**	**12.47**	**226**	*e*PN	**P**	**03 31 48.0**	**-1.3**
MAT				pmax	pmax		
	comp=Z,15nm,0.8s						
MAT	**Matsushiro**	**12.47**	**226**	*e*P	**P**	**03 31 48.0**	**-1.3**
	comp=Z,15nm,0.8s						
MAT				*e*S	**S**	**03 34 02.0**	**-3.4**
MA2	**Magadan**	**13.85**	**3**	*e*P	**P**	**03 32 06.3**	**-0.5**
MA2	**Magadan**	**13.85**	**3**	*e*P	**P**	**03 32 06.7**	**-0.1**
	comp=Z,141nm,1.6s						
MDJ	**Mudanjiang**	**13.99**	**272**	P	**P**	**03 32 05.3**	**-3.4**
MDJ				XP		03 32 42.1	
MDJ				S	**S**	**03 34 33.3**	**-7.4**
MDJ				PCP	PcP	03 37 20.7	+0.7
MDJ				SCP		03 40 35.7	
MDJ				PCS		03 40 54.5	
MDJ				SCS	ScS	03 44 15.4	+0.7
MDJ				AMB	AMB		
	comp=Z,49nm,3.8s						
MDJ				LR	LR		
	comp=N,421nm,25.6s						
MDJ				LR	LR		
	comp=E,175nm,41.2s						
MDJ				LR	LR		
	comp=Z,208nm,14.2s						
MDJ	**Mudanjiang**	**13.99**	**272**	*e*P	**P**	**03 32 08.8**	**+0.2**
	comp=Z,13nm,1.0s						
JHJ	**Hachijo jima 2**	**14.63**	**214**	P	**P**	**03 32 22.3**	**+5.4**
	comp=Z,6.8nm,0.3s,baz=6.7,slow=9.8,SNR=3.6						
ZEA	**Zeya**	**16.31**	**307**	*e*P	**P**	**03 32 38.6**	**+0.9**
ZEA				AMB	AMB	03 32 39.9	
	comp=Z,56nm,1.4s						
ZEA				AMB	AMB	03 32 39.9	
	comp=Z,37nm,1.4s						
ZEA				AMB	AMB	03 32 39.9	
	comp=Z,64nm,1.4s						
ZEA				sP		03 33 21.1	
ZEA				AMS	AMS	03 36 25.0	
	comp=Z,200nm,11.0s						
FX1	**Attu Island--F**	**17.02**	**57**	P	**P**	**03 32 48.1**	**+1.8**
	comp=Z,24nm,0.3s,baz=321,slow=3.6,SNR=36						
FX1				S	**S**	**03 35 45.1**	**-4.0**
	comp=Z,4.1nm,0.3s,baz=165,slow=20,SNR=8.1						
FX1	**Attu Island--F**	**17.02**	**57**	P	**P**	**03 32 48.1**	**+1.8**
FX1				S	**S**	**03 35 45.1**	**-4.1**
FX1				pmax	pmax		
	comp=Z,24nm,0.3s						
FX1				smax			
	comp=N,4.0nm,0.3s						
FX1	**Attu Island--F**	**17.02**	**57**	*e*P	**P**	**03 32 47.3**	**+1.0**
CN2	**Changchun**	**17.08**	**272**	*e*P	**P**	**03 32 45.8**	**-1.4**
CN2				*e*S	**S**	**03 35 49.0**	**-1.7**
CN2				AMB	AMB		
	comp=Z,200nm,4.0s						
CN2				LR	LR		
	comp=N,800nm,20.0s						
CN2				LR	LR		
	comp=E,500nm,20.0s						
CN2				LR	LR		
	comp=Z,300nm,14.0s						
SEY	**Seymchan**	**17.28**	**5**	*e*P	**P**	**03 32 48.6**	**-0.9**
SEY				*e*S	**S**	**03 35 53.1**	**-2.0**
SEY				pmax	pmax		
	comp=Z,420nm,1.1s						
SEY				pmax	pmax		
	comp=N,170nm,1.0s						
SEY				pmax	pmax		
	comp=E,60nm,1.0s						
SMY	**Shemya**	**17.53**	**58**	*e*P	**P**	**03 32 49.6**	**-2.9**
CLNS	**Chul'man**	**18.77**	**315**	*e*P	**P**	**03 32 59.1**	**-7.0**
CLNS				*e*		03 36 26.3	
CLNS				pmax	pmax		
	comp=Z,10.0nm,1.0s						
CLNS				pmax	pmax		
	comp=N,10.0nm,0.9s						
CLNS				pmax	pmax		
	comp=E,10.0nm,0.9s						
CLNS				pmax	pmax		
	comp=N,10.0nm,1.0s						
CLNS				pmax	pmax		
	comp=Z,3.0nm,0.8s						
CLNS				pmax	pmax		
	comp=E,10.0nm,1.0s						
JNU	**Nakatsue**	**19.01**	**235**	P	**P**	**03 33 08.8**	**0.0**
	comp=E,0.3nm,0.3s,baz=76,slow=14,SNR=4.3						
JNU				LR	LR	03 40 01.4	
	comp=E,120nm,20.4s,baz=274,slow=35						
CBIJ	**Chichi jima**	**19.50**	**199**	P	**P**	**03 33 14.5**	**+0.5**
	comp=E,4.9nm,0.3s,baz=64,slow=9.1,

YAK smax
comp=E,10.0nm,1.2s
YAK smax
comp=N,8.0nm,1.0s
YAK Yakutsk 19.85 332 *e*P **P 03 33 15.8 -1.6**
comp=N,38nm,0.4s
HIA Hailar 20.24 291 *e*P **P 03 33 18.0 -3.4**
HIA pmax pmax
comp=Z,89nm,1.1s
HIA Hailar 20.24 291 *e*P **P 03 33 18.0 -3.5**
comp=Z,89nm,1.1s
BILL Bilibino 23.98 16 *e*P **P 03 33 56.0 -1.7**
BILL pmax pmax
comp=Z,2.0nm,0.4s,mb4.0
BILL Bilibino 23.98 16 *e*P **P 03 33 56.0 -1.7**
comp=Z,1.6nm,0.4s,mb3.9
BOD Bodaibo 24.66 312 *e*P **P 03 34 01.7 -2.5**
BOD *e* 03 34 32.2
BJI Beijing 24.86 269 P **P 03 34 07.2 +0.9**
BJI AP 03 34 35.7
BJI XP 03 34 49.6
BJI S **S 03 38 17.9 +2.0**
BJI AMB AMB
comp=Z,18nm,1.0s,mb4.6
BJI AMB AMB
comp=Z,145µm,3.0s
BJT Baijiatuau 24.87 269 *e*P **P 03 34 07.1 +0.7**
BJT pmax pmax
comp=Z,11nm,0.6s
BJT Baijiatuau 24.87 269 *e*P **P 03 34 07.1 +0.7**
comp=Z,11nm,0.6s,mb4.6
JOW Kunigami 25.29 229 P **P 03 34 11.1 +0.6**
comp=Z,19nm,0.9s,mb4.6,baz=92,slow=26,SNR=3.0
SSE Sheshan 26.32 246 P **P 03 34 15.5 -4.5**
SSE AMB AMB
comp=Z,38nm,0.7s,mb5.1
SSE LR LR
comp=N,34nm,17.0s
SSE LR LR
comp=E,48nm,17.0s
SSE LR LR
comp=Z,40nm,17.5s
NJ2 Nanjing 27.22 250 *e*P **P 03 34 23.0 -5.2**
NJ2 AP pP 03 34 56.1 -2.3
NJ2 XP sP 03 35 15.0 -0.2
NJ2 PP PP 03 35 16.7 -3.8
NJ2 S **S 03 38 51.0 -3.7**
NJ2 XS 03 39 48.0
NJ2 AMB AMB
comp=Z,460nm,4.6s
NJ2 LR LR
comp=N,250nm,19.8s
NJ2 LR LR
comp=E,360nm,14.1s
NJ2 LR LR
comp=Z,720nm,13.8s
TIXI Tiksi 27.73 346 *e*P **P 03 34 28.9 -3.5**
TIXI pmax pmax
comp=Z,61nm,0.6s,mb5.5
TIXI MLR MLR
comp=Z,600nm,13.0s
TIXI Tiksi 27.73 346 *e*P **P 03 34 29.0 -3.5**
comp=Z,14nm,0.5s,mb5.0
TIXI *e* 03 35 04.7
ULN Ulaanbaatar 28.77 290 *e*P **P 03 34 41.6 -0.3**
ULN Ulaanbaatar 28.77 290 *e*P **P 03 34 41.5 -0.4**
comp=Z,5.5nm,1.1s,mb4.2
SONM Songino Array 29.21 290 P **P 03 34 47.0 +1.2**
comp=Z,4.4nm,0.9s,mb4.2,baz=80,slow=8.8,SNR=3.4
TNA Tin City 30.29 34 *e*P **P 03 34 54.8 -0.5**
comp=Z,30nm,0.9s,mb5.0
ZAK Zakamensk 30.74 296 *e*P **P 03 34 59.3 -0.1**
ZAK *e* pP 03 35 34.1 +3.8
ANM Nome 31.02 37 *e*P **P 03 35 02.0 +0.3**
SVW Sparrevohn 34.99 44 *e*P **P 03 35 37.0 +1.2**
LZH Lanzhou 35.31 270 *e*P **P 03 35 39.8 +1.1**
LZH AP pP 03 36 12.1 +1.7
LZH XP sP 03 36 28.5 +1.2
LZH PP PP 03 37 04.3 +1.5
LZH *e*S **S 03 40 59.0 -2.2**
LZH XS 03 41 54.1
LZH SS SS 03 43 27.0 -1.5
LZH AMB AMB
comp=Z,57nm,1.6s,mb5.0
LZH AMB AMB
comp=Z,132nm,4.1s
IMA Indian Mountai 36.12 35⇑ *i*P **P 03 35 46.1 +0.9**
RSO Redoubt South 36.41 45 *e*P **P 03 35 48.3 +0.6**
GTA Gaotai 36.54 278⇑ P **P 03 35 49.9 +0.8**
GTA PCP PcP 03 38 11.5 +1.6
GTA S **S 03 41 18.8 -1.2**
GTA AMB AMB
comp=Z,20nm,1.1s,mb4.7
GTA LR LR
comp=N,119nm,13.3s
GTA LR LR
comp=E,86nm,11.8s
GTA LR LR
comp=Z,74nm,8.8s
SPU Mount Spurr 36.72 44 *e*P **P 03 35 51.0 +0.7**
KDAK Kodiak Island 36.73 49 *e*P **P 03 35 49.4 -1.0**
comp=Z,122nm,0.8s,mb5.6
SLKM Skilak Lake 37.66 45 *e*P **P 03 35 57.8 -0.4**
PMS Palmer South 37.92 44 *e*P **P 03 36 00.3 -0.1**
MCK McKinley 38.07 39 *e*P **P 03 36 01.5 -0.1**
MCK pmax pmax
comp=Z,34nm,1.1s,mb4.9
MCK McKinley 38.07 39 *e*P **P 03 36 01.5 -0.2**
comp=Z,34nm,1.1s,mb4.9
PMR Palmer 38.10 43 *e*P **P 03 36 02.7 +0.8**
CD2 Chengdu 38.19 263 *e*P **P 03 36 03.6 +0.6**
CD2 AMB AMB
comp=Z,10.0nm,0.9s,mb4.5
SML Sawmill 38.46 43 *e*P **P 03 36 05.0 +0.1**
COLA College 38.51 38 *e*P **P 03 36 06.0 +0.7**
ILAR Eielson Array 38.92 38 P **P 03 36 08.6 -0.1**
comp=Z,38nm,1.0s,mb5.0,baz=270,slow=7.6,SNR=245
ILAR PcP PcP 03 38 15.0 -2.0
comp=Z,2.1nm,0.6s,baz=281,slow=3.7,SNR=4.7
ILAR LR LR 03 54 40.3
comp=Z,38nm,19.3s,baz=23,slow=40
GYA Guiyang 38.96 255 P **P 03 36 09.0 -0.4**
GYA AP pP 03 36 42.0 +0.5
GYA XP sP 03 36 56.6 -2.0
GYA PCP PcP 03 38 17.0 -0.5
GYA S **S 03 41 58.0 +1.3**
GYA AMB AMB
comp=Z,20nm,1.0s,mb4.7
TOA Tolsona 39.45 42 *e*P **P 03 36 14.6 +1.6**
TGY Tagaytay City 39.63 226 P **P 03 36 15.0 0.0**
comp=Z,259nm,0.3s,baz=148,slow=0.6,SNR=2.1
EYAK Cordova Ski Ar 39.85 44 *e*P **P 03 36 16.7 +0.3**
ZAL Zalesovo 41.08 306 P **P 03 36 25.0 -1.5**
comp=Z,1.3nm,0.6s,mb3.7,baz=316,slow=8.7,SNR=3.6
ZAL PcP PcP 03 38 22.7 -1.3
comp=Z,5.0nm,0.6s,baz=289,slow=5.2,SNR=9.5
ZAL S **S 03 42 12.2 -16**
comp=Z,1.3nm,0.6s,baz=86,slow=21,SNR=4.4
NVS Novosibirsk 41.71 307 *e*P **P 03 36 32.2 +0.6**
NVS *e* pP 03 37 07.3 +3.4
NVS *e* 03 38 23.8
DAWY Dawson 42.23 38 *e*P **P 03 36 35.7 0.0**
KMI Kunming 42.50 257 *e*P **P 03 36 38.6 +0.2**
KMI AP pP 03 37 12.0 +1.2
KMI XP sP 03 37 26.5 -1.3
KMI PP PP 03 38 21.0 -0.4
KMI S **S 03 42 47.7 -1.3**
KMI XS 03 43 46.7
KMI AMB AMB
comp=Z,13nm,1.1s,mb4.5
KMI LR LR
comp=Z,46nm,16.6s
WMQ Urumqi 42.84 290 *e*P **P 03 36 41.5 +0.6**
WMQ AP pP 03 37 13.0 -0.4
WMQ XP sP 03 37 29.1 -1.2
WMQ PP PP 03 38 25.3 +0.7
WMQ PCP PcP 03 38 30.7 +0.8
WMQ SCP 03 42 07.2
WMQ PCS 03 42 21.9
WMQ S **S 03 42 54.5 +0.7**
WMQ XS 03 43 49.6
WMQ SS SS 03 46 03.2 +0.4
WMQ SCS ScS 03 46 25.1 +1.2
WMQ AMB AMB
comp=Z,121nm,2.4s,mb5.1
WMQ AMB AMB
comp=Z,607nm,9.6s
INK Inuvik 43.86 32 *e*P **P 03 36 48.9 +0.1**
INK pmax pmax
comp=Z,54nm,0.9s
INK Inuvik 43.86 32 *e*P **P 03 36 48.9 +0.2**
comp=Z,54nm,0.9s,mb5.2
MKAR Makanchi Array 45.06 297 P **P 03 36 57.6 -1.1**
comp=Z,2.7nm,0.6s,mb4.1,baz=71,slow=5.9,SNR=25
MKAR PcP PcP 03 38 36.8 -0.7
comp=Z,4.2nm,0.6s,baz=89,slow=1.0,SNR=8.6
KURK Kurchatov 45.73 303 *e*P **P 03 37 01.7 -2.2**
DLBC Dease Lake 48.12 44 P **P 03 37 24.2 +1.7**
comp=Z,8.9nm,0.6s,mb4.6,baz=264,slow=4.8,SNR=36
DLBC Dease Lake 48.12 44 *e*P **P 03 37 23.8 +1.3**
NANT Nan 48.19 253 P **P 03 37 24.0 +0.5**
VOSK Vostochnaya 49.26 308 P **P 03 37 29.0 -2.3**
VOSK pmax pmax
comp=Z,1.0nm,0.6s
CHG Chiang Mai 49.35 254 P **P 03 37 32.3 -0.2**
BVAR Borovoye Array 49.45 309 P **P 03 37 31.1 -1.7**
comp=Z,1.7nm,0.6s,mb3.9,baz=68,slow=8.0,SNR=8.4
BVAR pP pP 03 38 11.7 +5.7
comp=Z,3.4nm,0.8s,baz=74,slow=11,SNR=3.2
BVAR PcP PcP 03 38 51.8 -1.2
comp=Z,3.2nm,0.3s,baz=81,slow=4.1,SNR=11
CMAR Chiang Mai Arr 49.60 254 P **P 03 37 35.0 +0.5**
comp=Z,1.7nm,0.5s,mb3.9,baz=40,slow=7.9,SNR=12
CMAR pP pP 03 38 08.7 +1.1
comp=Z,4.9nm,1.1s,baz=39,slow=8.5,SNR=3.1
CMAR LR LR 04 00 23.2
comp=Z,54nm,18.1s,baz=309,slow=38
SHL Shillong 49.73 267⇑ *i*P **P 03 37 35.0 -0.3**
ZRNK Zerenda 50.24 309 *e*P **P 03 37 36.6 -2.2**
BBB Bella Bella 51.77 51 P **P 03 37 50.9 +0.5**
comp=Z,9.5nm,0.7s,mb4.5,baz=240,slow=8.1,SNR=3.8
GUN Gumba 52.48 273 *e*P **P 03 37 56.0 0.0**
comp=Z,26nm,0.4s,mb5.2
RES Resolute Bay 52.57 18 *e*P **P 03 37 54.3 -1.8**
RES *e* 03 39 02.9
RES pmax pmax
comp=Z,76nm,1.0s,mb5.4
RES Resolute Bay 52.57 18 *e*P **P 03 37 54.3 -1.8**
comp=Z,76nm,1.0s,mb5.4
RES *e*PcP PcP 03 39 02.9 -1.4
KSH Kashi 52.60 291 *e*P **P 03 37 58.1 +1.4**
KSH *e*AP pP 03 38 30.4 +0.1
KSH *e*XP sP 03 38 45.8 -0.4
SVE Sverdlovsk 52.76 316⇑ *e*P **P 03 37 55.0 -2.7**
SVE pmax pmax
comp=Z,40nm,1.9s,mb4.8
KKN Kakani 52.97 273 *e*P **P 03 37 59.6 0.0**
comp=Z,35nm,1.0s,mb5.1
KKN Kakani 52.97 273 *e*P **P 03 37 59.6 0.0**
KKN pmax pmax
comp=Z,17nm,1.0s,mb4.7
DMN Daman 53.20 273 *e*P **P 03 38 01.3 0.0**
comp=Z,34nm,0.7s,mb5.2
YKW3 Yellowknife Ar 53.20 35 *e*P **P 03 37 59.7 -1.1**
YKA Yellowknife Ar 53.24 35 P **P 03 38 00.7 -0.4**
comp=Z,13nm,0.6s,mb4.9,baz=300,slow=7.0,SNR=184
YKA PcP PcP 03 39 06.6 -0.3
comp=Z,3.2nm,0.8s,baz=299,slow=4.2,SNR=6.4
YKA Yellowknife Ar 53.24 35 P **P 03 38 00.7 -0.4**
YKA 03 39 06.6
YKA pmax pmax
comp=Z,13nm,0.6s
YKA pmax pmax
comp=Z,3.0nm,0.8s
YKA Yellowknife Ar 53.24 35 P **P 03 38 00.8 -0.4**
YKA PcP PcP 03 39 06.6 -0.3
GKN Gorkha 53.29 274 *e*P **P 03 38 01.6 -0.4**
comp=Z,63nm,1.0s,mb5.3
DANN Dangsing 53.69 275 *e*P **P 03 38 05.5 +0.6**
ARU Arti 53.95 317 *e*P **P 03 38 04.5 -1.9**
ARU pmax pmax
comp=Z,24nm,0.9s,mb4.9
KOLN Koldanda 54.15 275 *e*P **P 03 38 08.3 0.0**
comp=Z,26nm,0.7s,mb5.1
KKAR Karatay Array 54.17 298 P **P 03 38 07.2 -1.0**
KKAR pmax pmax
comp=Z,1.0nm,0.4s,mb3.9
AB31 Akbulak array 57.03 309 *i* P **P 03 38 26.6 -2.0**
AB31 pmax pmax
comp=Z,4.0nm,0.4s,mb4.6
RPW Rockport 57.31 52 *e*P **P 03 38 29.7 -0.9**
KEV Kevo 57.37 340 *e*p **P 03 38 27.0 -3.7**
PNT Penticton 57.87 51 P **P 03 38 34.1 -0.3**
ARCES ARCESS Array B 57.89 340 P **P 03 38 32.2 -2.2**
comp=Z,2.5nm,0.5s,mb4.3,baz=41,slow=7.6,SNR=39
ARCES PcP PcP 03 39 24.1 -0.7
comp=Z,2.8nm,0.6s,baz=52,slow=5.0,SNR=6.6
ARCES LR LR 04 10 08.2
comp=Z,69nm,18.7s,baz=237,slow=43
NDI New Delhi 58.02 280 *e*P **P 03 38 34.0 -1.8**
COR Corvallis 58.47 57 *e*P **P 03 38 39.3 +0.6**
COR pmax pmax
comp=Z,47nm,0.9s,mb5.3
COR Corvallis 58.47 57 *e*P **P 03 38 39.3 +0.5**
comp=Z,47nm,0.9s,mb5.3
SSOR Sweet Springs 58.81 56 *e*P **P 03 38 41.4 +0.3**
KTK1 Kautokeino 58.83 340 *e*P **P 03 38 38.2 -2.7**
KTK1 AMb AMB 03 38 41.0
comp=Z,36nm,1.8s,mb4.9
VLL Laurance Lake 58.91 55 P **P 03 38 42.6 +0.8**
HSO Harness Mounta 59.21 58 *e*P **P 03 38 43.9 0.0**
DPW Davenport 59.46 51 *e*P **P 03 38 44.8 -0.8**
REDWA Red Mountain 59.70 53 P **P 03 38 48.4 +1.2**
NEW Newport 59.82 50 P **P 03 38 47.8 -0.2**
comp=Z,66nm,1.3s,mb5.3,baz=315,slow=4.7,SNR=19
NEW Newport 59.82 50 *e*P **P 03 38 47.3 -0.7**
NEW pmax pmax
comp=Z,38nm,1.2s
NEW Newport 59.82 50 *e*P **P 03 38 47.3 -0.7**
comp=Z,38nm,1.2s,mb5.1
HUMO Hull Mountain 59.82 59 *e*P **P 03 38 47.7 -0.4**
YBH Yreka Blue Hor 60.49 59 *e*P **P 03 38 52.6 0.0**
comp=Z,12nm,0.8s,mb4.8
LNOR Lincton Mounta 60.60 53 *e*P **P 03 38 53.0 -0.3**
JOF Joensuu 61.03 333 *e*p **P 03 38 53.0 -3.0**
WALA Waterton Lakes 61.05 48 *e*P **P 03 38 56.1 -0.2**
comp=Z,30nm,0.6s,mb5.3
WDC Whiskeytown Da 61.28 60 *e*P **P 03 38 57.5 -0.5**
comp=Z,22nm,1.1s,mb4.9
LOF Lofoten 61.69 343 *e*P **P 03 38 59.0 -1.4**
LOF AMb AMB 03 39 00.9
comp=Z,43nm,1.5s,mb5.1
MOD Modoc 61.82 58 *e*P **P 03 39 01.3 -0.4**
comp=Z,44nm,1.1s,mb5.2
MSO Missoula 62.40 50 *e*P **P 03 39 05.0 -0.4**
comp=Z,87nm,1.2s,mb5.5
WVOR Wild Horse Val 62.48 57 *e*P **P 03 39 05.5 -0.5**
comp=Z,31nm,1.1s,mb5.0
OHCM Honcut 62.68 61 *e*P **P 03 39 06.8 -0.6**
CHMT Chamberlain Mo 62.72 50 *e*P **P 03 39 06.8 -0.7**
BEKR Beckwourth 63.04 60 *e*P **P 03 39 09.1 -0.7**
comp=Z,26nm,1.0s,mb5.0
KAF Kangasniemi 63.20 334 *e*p **P 03 39 08.2 -2.2**
comp=Z,1.3nm,0.3s,mb4.2,baz=40,slow=6.2
FCC Fort Churchill 63.48 31 *e*P **P 03 39 10.9 -1.3**
comp=Z,20nm,0.5s,mb5.2
HRY Holter Researc 63.61 49 *e*P **P 03 39 12.9 -0.3**
WCN Washoe City 63.75 60 *e*P **P 03 39 14.4 +0.1**
comp=Z,26nm,1.1s,mb5.0
FINES FINESS Array B 63.78 333 P **P 03 39 11.1 -3.0**
comp=Z,8.5nm,0.6s,mb4.8,baz=34,slow=8.0,SNR=90
FINES pP pP 03 39 50.6 +1.7
comp=Z,4.0nm,0.5s,baz=56,slow=5.0,SNR=4.1
FINES LR LR 04 12 39.7
comp=Z,74nm,21.5s,baz=355,slow=41
FINES FINESS Array B 63.78 333 P **P 03 39 11.1 -3.0**
FINES *PP pP 03 39 50.6 +1.7
FINES pmax pmax
comp=Z,9.0nm,0.6s
FINES pmax pmax
comp=N,4.0nm,0.5s
LCCM Lewis and Clar 64.14 50 P **P 03 39 16.8 +0.2**
CMB Columbia Colle 64.16 61 *e*P **P 03 39 16.3 -0.7**
comp=N,23nm,1.1s,mb4.9
CMB *e*pP pP 03 39 47.5 -4.3
HLID Hailey 64.19 53 *e*P **P 03 39 17.1 0.0**
comp=N,13nm,0.9s,mb4.8
HLID *e*pP pP 03 39 50.3 -1.6
MCMT McKenzie Canyo 64.26 52 *e*P **P 03 39 16.9 -0.6**
BOZ Bozeman (W) 64.39 50 *e*P **P 03 39 18.6 +0.2**
comp=N,32nm,0.7s,mb5.3
OBN Obninsk 64.61 324 *e*P **P 03 39 17.3 -2.3**
OBN *e**PP pP 03 39 56.7 +2.3
OBN pmax pmax
comp=Z,16nm,1.2s,mb4.7
LRV Little Rabbit 64.79 63 P **P 03 39 21.6 +0.6**
QLMT Earthquake Lak 65.03 51 *e*P **P 03 39 22.8 +0.3**
NVAR Mina Array Bea 65.18 60 P **P 03 39 24.2 +0.6**
comp=Z,18nm,0.8s,mb4.9,baz=304,slow=5.9,SNR=72
NVAR Mina Array Bea 65.18 60 P **P 03 39 24.2 +0.6**
YMR Madison River 65.39 51 *e*P **P 03 39 24.9 +0.1**
MTUM Tungsten Hills 65.71 61 *e*P **P 03 39 26.9 -0.1**
LKWY Lake 65.76 50 *e*P **P 03 39 29.0 +1.8**
comp=Z,11nm,0.9s,mb4.7
TPH Tonopah 66.06 60 *e*P **P 03 39 29.1 -0.1**
comp=Z,39nm,1.2s,mb5.1
KSWY Kelly School 66.25 51 *e*P **P 03 39 30.8 +0.5**
HVU Hansel Valley 66.27 54 *e*P **P 03 39 30.5 +0.1**
REDW Red Top Meadow 66.30 52 *e*P **P 03 39 31.0 +0.3**
AHID Auburn Hatcher 66.56 52 *e*P **P 03 39 32.4 +0.1**
comp=Z,14nm,1.0s,mb4.8
SPUT South Promonto 66.76 54 *e*P **P 03 39 33.3 -0.3**
FRB Frobisher Bay 66.79 17 P **P 03 39 31.4 -2.0**
comp=Z,12nm,0.5s,mb5.0,baz=332,slow=7.2,SNR=52
FRB Frobisher Bay 66.79 17 P **P 03 39 31.4 -2.0**
FRB pmax pmax
comp=Z,12nm,0.5s
WRAB Tennant Creek 66.80 195 *e*P **P 03 39 32.3 -1.8**
comp=Z,82nm,1.4s,mb5.4
WB2 Warramunga Arr 66.81 195 *e*P **P 03 39 33.2 -1.0**
WB2 *e* pP 03 40 08.0 -1.3
WRA Warramunga Arr 66.81 195 P **P 03 39 33.4 -0.8**
comp=Z,8.2nm,0.7s,mb4.7,baz=14,slow=6.7,SNR=43
WRA PcP PcP 03 40 02.0 +0.3
comp=Z,1.8nm,0.8s,baz=12,slow=5.2,SNR=3.2
WRA pP pP 03 40 08.9 -0.3
comp=Z,8.8nm,0.9s,baz=14,slow=6.7,SNR=7.9
WRA Warramunga Arr 66.81 195 P **P 03 39 33.4 -0.8**
WRA 03 40 02.0
WRA *PP pP 03 40 08.9 -0.4
WRA pmax pmax
comp=Z,8.0nm,0.7s
WRA pmax pmax
comp=Z,2.0nm,0.8s
WRA pmax pmax
comp=N,9.0nm,0.9s
HWUT Hardware Ranch 67.06 54 *e*P **P 03 39 35.5 0.0**
comp=N,23nm,1.0s,mb5.0
FITZ Fitzroy Crossi 67.12 205 *e*P **P 03 39 36.3 +0.1**
comp=N,6.1nm,0.9s,mb4.4
BW06 Boulder Array 67.41 52 *e*P **P 03 39 37.1 -0.5**
comp=N,16nm,0.8s,mb4.9
PDAR Pinedale Array 67.41 52 P **P 03 39 37.6 +0.1**
comp=N,16nm,0.8s,mb4.9,baz=292,slow=1.7,SNR=102
PDAR pP pP 03 40 14.9 +2.3
comp=N,2.4nm,0.7s,baz=297,slow=2.0,SNR=2.4
TCUT Toone Canyon 67.47 54 *e*P **P 03 39 38.1 0.0**
JLU Jordanelle 67.79 54 *e*P **P 03 39 40.0 -0.1**
NLU North Lily Min 67.87 55 *e*P **P 03 39 40.4 -0.1**
DAU Daniels Canyon 68.03 54 *e*P **P 03 39 41.9 +0.4**
MPU Maple Canyon 68.08 55 *e*P **P 03 39 41.6 -0.2**
NB2 NORSAR Subarra 68.27 340 P **P 03 39 40.3 -2.3**
comp=N,6.3nm,0.5s,mb4.6,baz=28,slow=6.5
NB2 NORSAR Subarra 68.27 340 P **P 03 39 40.3 -2.3**
baz=28,slow=6.5
NOA NORSAR Array B 68.27 340 P **P 03 39 40.5 -2.1**
comp=N,5.9nm,0.5s,mb4.6,baz=28,slow=6.6,SNR=36
NOA PcP PcP 03 40 06.8 -0.4
comp=N,1.3nm,0.6s,baz=28,slow=3.0,SNR=4.0
NOA NORSAR Array B 68.27 340 P **P 03 39 40.5 -2.1**
NOA 03 40 06.8
NOA pmax pmax
comp=Z,6.0nm,0.5s
NOA pmax pmax
comp=Z,1.0nm,0.6s
NOA NORSAR Array B 68.27 340 P **P 03 39 40.5 -2.1**
NOA PcP PcP 03 40 06.8 -0.4
MVU Marysvale 68.75 56 *e*P **P 03 39 46.3 +0.4**
comp=Z,10nm,0.9s,mb4.5
MSU Marysvale 68.77 56 *e*P **P 03 39 46.5 +0.5**
ULM Lac du Bonnet 68.94 39 P **P 03 39 46.2 -0.7**
comp=Z,8.9nm,0.5s,mb4.8,baz=315,slow=7.1,SNR=17
ULM PcP PcP 03 40 09.2 -0.9
comp=Z,7.1nm,1.1s,baz=262,slow=3.5,SNR=3.8
ULM Lac du Bonnet 68.94 39 P **P 03 39 46.2 -0.7**
ULM PcP PcP 03 40 09.2 -0.9
NEN Nelson 69.09 60 *e*P **P 03 39 48.1 +0.1**
LDFC Landfair 69.31 61 *e*P **P 03 39 49.0 -0.4**
SRU San Rafael 69.32 55 *e*P **P 03 39 49.5 +0.2**
RSSD Black Hills 69.42 47 *e*P **P 03 39 49.4 -0.6**
comp=Z,62nm,1.4s,mb5.2
KIV Kislovodsk 69.58 312 *e*P **P 03 39 49.8 -1.1**
KIV *e* 03 40 12.2
KIV *e* 03 42 24.8
KIV *e*PPP PPP 03 44 07.3 -0.6
KIV *i* S S 03 48 45.7 +0.2
KIV *e*SS SS 03 53 16.6 -1.3
KIV pmax pmax
comp=Z,10.0nm,0.9s,mb4.5
KIV Kislovodsk 69.58 312 *e*P **P 03 39 50.6 -0.2**
comp=Z,16nm,0.8s,mb4.8
BORG Borgarnes 69.58 356 P **P 03 39 51.2 +0.7**
comp=Z,23nm,0.9s,mb4.9,baz=337,slow=4.7,SNR=3.0
ZEI Tsey 69.77 311 *e*P **P 03 39 51.6 -0.4**
BAR Barrett 69.94 64 *e*P **P 03 39 52.2 -1.1**
AS12 Alice Springs 70.52 195 *e*P **P 03 39 56.9 0.0**
comp=Z,9.4nm,0.9s,mb4.5
ASAR Alice Springs 70.52 195 P **P 03 39 57.4 +0.4**
comp=Z,9.9nm,0.7s,mb4.6,baz=13,slow=6.1,SNR=97
ASAR pP pP 03 40 32.6 +0.3
comp=Z,6.0nm,1.0s,baz=13,slow=5.1,SNR=4.7
PV10 Paradox Valley 70.67 55 *e*P **P 03 39 58.2 +0.6**
AKASG Malin Array Be 70.87 324 P **P 03 39 56.9 -1.6**
comp=Z,8.9nm,0.4s,mb4.9,baz=37,slow=6.1,SNR=63
PV01 Paradox Valley 71.11 55 *e*P **P 03 40 00.4 +0.3**
GNI Garni 71.14 308 *e*P **P 03 40 00.7 +0.4**
GNI pmax pmax
comp=Z,40nm,1.4s
GNI Garni 71.14 308 *e*P **P 03 40 01.3 +0.9**
comp=Z,60nm,1.4s,mb5.1
WUAZ Wupatki 71.27 58 *e*P **P 03 40 01.3 +0.1**
comp=Z,45nm,1.5s,mb5.0
ISCO Idaho Springs 71.60 52 *e*P **P 03 40 03.6 +0.5**
comp=Z,35nm,1.3s,mb4.9
TVAN Van 73.01 308 *i* P **P 03 40 11.9 +0.6**
SDCO Great Sand Dun 73.11 53 *e*P **P 03 40 11.9 -0.1**
comp=Z,26nm,1.4s,mb4.8
ERZM Erzurum 73.14 310 *i* P **P 03 40 12.4 +0.3**
TUC Tucson 73.83 60 *e*P **P 03 40 15.9 -0.4**
comp=Z,15nm,1.1s,mb4.6
KWP Kalwaria 74.28 327 *e*P **P 03 40 18.7 +0.2**
ANMO Albuquerque 74.54 56 *e*P **P 03 40 20.5 +0.2**
comp=Z,24nm,1.3s,mb4.7
BEST Besiri 74.64 309 *i* P **P 03 40 22.1 +1.3**
OJC Ojcow 74.87 329 *e*P **P 03 40 22.0 +0.2**
SCHQ Schefferville 75.18 21 P **P 03 40 23.2 -0.2**
comp=Z,9.7nm,0.5s,mb4.7,baz=330,slow=6.8,SNR=57
SCHQ Schefferville 75.18 21 *e*P **P 03 40 22.2 -1.3**
comp=Z,21nm,0.8s,mb4.8
CRVS Cervenica-Dubn 75.35 327 *e*P **P 03 40 24.6 +0.1**
CRVS *e* 03 40 27.2
NIE Niedzica 75.35 328 *e*P **P 03 40 26.0 +1.5**
BOYT Boyabat 75.36 315 *i* P **P 03 40 25.5 +0.8**
KSP Ksiaz 75.56 331 *e*P **P 03 40 25.1 -0.6**
KSP *e*PcP PcP 03 40 38.4 +0.1
KSP Ksiaz 75.56 331 *e*P **P 03 40 24.8 -0.9**
OKC Ostrava-Krasne 75.78 330 *e*P **P 03 40 27.5 +0.6**
UPC Upice 75.94 331 *e*P **P 03 40 28.1 +0.3**
DPC Dobruska-Polom 75.97 331 *e*P **P 03 40 28.2 +0.2**
CTKT Corum 76.01 314 *i* P **P 03 40 28.8 +0.3**
BALT Daday 76.02 316 *i* P **P 03 40 29.3 +0.9**
MORC Moravsky Berou 76.04 330 *e*P **P 03 40 27.3 -1.1**
comp=Z,21nm,1.1s,mb4.7
CLL Collm 76.23 334 P **P 03 40 28.5 -0.9**
comp=Z,logA/T=1.6,mb5.0
CLL *e*PCP Px 03 42 35.0
CLL Collm 76.23 334 *i* P **P 03 40 28.5 -0.9**
CLL pmax pmax
comp=Z,20nm,0.5s,mb5.0
CLL Collm 76.23 334 *i* P **P 03 40 28.5 -0.9**
comp=Z,20nm,0.5s,mb5.0
BRG Berggiesshubel 76.31 333 *e*P **P 03 40 25.1 -4.8**
BRG pmax pmax
comp=Z,4.0nm,0.8s,mb4.1
BRG pmax pmax

comp=Z,4.0nm,0.8s,mb4.1
BRG Berggiesshubel 76.31 333 *e*P P 03 40 25.1 -4.8
comp=Z,4.0nm,0.8s,mb4.1
BRG *e* 03 40 29.5
VYHS Vyhne 76.66 329 *e*P P 03 40 32.1 +0.2
PSZ Piszkesteto 76.75 328⇑*e*P P 03 40 32.3 -0.1
PSZ Piszkesteto 76.75 328 *e*P P 03 40 32.5 +0.1
comp=Z,34nm,1.5s,mb4.8
ELDT Eldivan 76.79 315 *i*P P 03 40 33.4 +0.6
PRU Pruhonice 76.88 332 *e*P P 03 40 32.4 -0.7
comp=Z,18nm,0.8s,mb4.8
PRU Pruhonice 76.88 332 *e*P P 03 40 32.4 -0.7
PRU pmax pmax
comp=Z,18nm,0.8s,mb4.8
KSU1 Kansas State U 76.89 47 *e*P P 03 40 31.9 -1.5
GZT Gaziantep 77.03 311 *i*P P 03 40 33.8 -0.4
MOX Moxa 77.23 334 *i*P P 03 40 34.6 -0.5
comp=Z,logA/T=1.4,mb4.8
MOX Moxa 77.23 334 *e*P P 03 40 34.6 -0.5
MOX pmax pmax
comp=Z,45nm,1.6s,mb4.8
MOX Moxa 77.23 334 *e*P P 03 40 34.6 -0.5
comp=Z,45nm,1.6s,mb4.8
BRTR Keskin Array B 77.27 315 P P 03 40 36.1 +0.7
comp=Z,13nm,1.0s,mb4.5,baz=72,slow=3.9,SNR=40
WTSB Winterswijk 77.45 337 *e*P P 03 40 35.6 -0.6
comp=Z,20nm,1.0s,mb4.7
MNTX Cornudas Mount 77.50 57 *e*P P 03 40 36.5 -0.4
ZST Bratislava 77.53 330 *e*P P 03 40 37.5 +0.8
STKA Stephens Creek 77.61 187 P P 03 40 38.3 +0.8
comp=Z,3.5nm,0.9s,mb4.0,baz=22,slow=7.8,SNR=4.0
STKA pP pP 03 41 16.8 +3.2
comp=Z,5.5nm,0.9s,baz=26,slow=4.6,SNR=4.1
STKA LR LR 04 14 21.5
comp=Z,112nm,19.1s,baz=26,slow=35
KHC Kasperske Hory 77.93 332 *e*P P 03 40 38.5 -0.4
GEC2 GERESS Array S 78.14 332 *e*P P 03 40 39.9 -0.2
GEC2 pmax pmax
comp=Z,13nm,0.9s,mb4.6
GERES GERESS Array B 78.14 332 P P 03 40 39.6 -0.4
comp=Z,4.5nm,0.5s,mb4.4,baz=37,slow=5.5,SNR=50
GERES GERESS Array B 78.14 332 P P 03 40 39.6 -0.5
GERES pmax pmax
comp=Z,5.0nm,0.5s
WET Wettzell 78.15 332 *e*P P 03 40 40.5 +0.4
WET pmax pmax
comp=Z,29nm,1.1s,mb4.8
GRF Grafenberg Arr 78.19 334 *e*P P 03 40 40.7 +0.4
GRF pmax pmax
comp=Z,36nm,0.9s,mb5.0
COBT Iskenderun 78.35 311 *i*P P 03 40 42.2 +0.7
HGN Heimansgroeve 78.77 337 *e*P P 03 40 43.1 -0.3
comp=Z,16nm,1.3s,mb4.5
MOA Molln 78.81 331⇑*i*P P 03 40 44.1 +0.4
comp=Z,6.0nm,0.8s,mb4.3
ARSA Arzberg 78.89 330⇑*i*P P 03 40 44.5 +0.3
comp=Z,22nm,1.6s,mb4.5
TOD Tromm 79.00 335 *e*P P 03 40 45.7 +1.0
WMOK Wichita Mounta 79.02 51 *e*P P 03 40 44.6 -0.5
comp=Z,16nm,0.9s,mb4.7
ULDT Uludag 79.13 318 *i*P P 03 40 45.9 +0.3
RUP Ruppelstein 79.42 336 *e*P P 03 40 45.7 -1.2
PERS Pernice 79.56 330 *i*P P 03 40 47.9 +0.1
KBA Koelnbreinsper 79.79 331⇑*i*P P 03 40 49.7 +0.7
comp=Z,39nm,1.2s,mb4.9
LANF Langenberg 79.85 335 *e*P P 03 40 49.1 -0.2
OBKA Obir 79.87 330⇑*i*P P 03 40 49.1 -0.4
comp=Z,17nm,0.8s,mb4.7
CRES Cresnjevec ost 80.14 329 *i*P P 03 40 50.6 -0.4
WATA Walderalm 80.15 332⇑*i*P P 03 40 51.3 +0.3
comp=Z,29nm,1.2s,mb4.8
WTTA Wattenberg 80.20 332⇓*i*P P 03 40 51.8 +0.6
comp=Z,36nm,0.9s,mb5.1
TXAR Lajitas Array 80.23 58 P P 03 40 52.5 +0.7
comp=Z,15nm,0.5s,mb4.9,baz=292,slow=4.8,SNR=358
TXAR pP pP 03 41 31.1 +3.1
comp=Z,2.8nm,0.7s,baz=304,slow=4.5,SNR=2.8
TXAR Lajitas Array 80.23 58 P P 03 40 52.5 +0.7
TXAR pP pP 03 41 31.1 +3.1
LJU Ljubljana 80.28 330 *i*P P 03 40 52.0 +0.3
MOTA Moosalm 80.30 333⇑*i*P P 03 40 52.0 +0.3
comp=Z,31nm,1.1s,mb4.8
SPAK Spaichingen 80.35 334 *e*P P 03 40 52.0 0.0
CCM Cathedral Cave 80.37 44 *e*P P 03 40 51.6 -0.7
comp=Z,31nm,0.9s,mb4.9
CCM *e*pP pP 03 41 29.9 +1.3
SQTA Sankt Quirin 80.37 333⇑*i*P P 03 40 52.6 +0.5
comp=Z,34nm,1.3s,mb4.8
BOJS Bojanci 80.49 329 *i*P P 03 40 52.6 -0.2
WLS Welschbruch 80.50 335 *e*P P 03 40 51.7 -1.1
CDF Champ du Feu 80.52 335 *e*P P 03 40 52.9 0.0
comp=Z,69nm,1.2s,mb4.8
CEY Cerknica 80.58 330 *i*P P 03 40 53.0 -0.3
ECH Echery 80.73 335 *e*P P 03 40 54.6 +0.6
DAVA Damuels 80.74 333⇓*i*P P 03 40 54.2 +0.1
comp=Z,29nm,1.2s,mb4.8
FELD Feldberg 80.79 335 *e*P P 03 40 53.7 -0.6
FVM French Village 80.83 44 *e*P P 03 40 53.9 -0.9
comp=Z,19nm,0.6s,mb4.9
THEF They Montfort 81.06 336 *e*P P 03 40 56.6 +0.9
MOF Molkenrain 81.06 335 *e*P P 03 40 55.6 -0.2
MEZF Maizieres J'vi 81.07 337 *e*P P 03 40 56.1 +0.3
SKO Skopje 81.08 323 *i*P P 03 40 56.6 +0.6
HRI Mount Hermon 81.09 309 P P 03 40 57.0 +0.8
VAY Valandovo 81.14 322⇑*i*P P 03 40 56.5 +0.2
HAU Haudompre 81.15 336 *e*P P 03 40 56.4 +0.2
HAU *e*R
comp=Z,83nm,21.5s
HINF Hinteralfeld 81.18 335 *e*P P 03 40 56.7 +0.3
comp=Z,8.6nm,0.6s,mb4.2
BRMO Bormio 81.30 333 *e*P P 03 40 57.7 +0.7
LOMF Lomont 81.61 335 *e*P P 03 40 58.3 -0.3
SIUC Southern Illin 81.62 43 *e*P P 03 40 58.6 -0.3
comp=Z,74nm,0.9s,mb5.3
JCT Junction City 81.63 55 *e*P P 03 40 58.9 -0.2
comp=Z,22nm,0.6s,mb5.0
MIAR Mount Ida 81.93 48 *e*P P 03 41 00.3 -0.3
comp=Z,40nm,1.1s,mb5.0
HMDT Nahal Hemdat 81.97 308 P P 03 41 02.1 +1.3
HILS Ha'il 82.02 301 P P 03 41 02.2 +1.0
FLN La Foliniere 82.24 340 *e*P P 03 41 02.0 +0.2
comp=Z,17nm,0.4s,mb4.7
FLN *e*R
comp=Z,74nm,22.0s
ARSS Ar Rass 82.24 299 P P 03 41 03.4 +1.0
LDF La Druitiere 82.31 340 *e*P P 03 41 02.3 +0.1
comp=Z,24nm,0.7s,mb4.7
MZLS Mizel 82.38 297 P P 03 41 04.1 +1.0
CABF La Chapelle 82.49 335 *e*P P 03 41 03.7 +0.5
MCGN Macugnaga 82.51 334 *e*P P 03 41 04.1 +0.8
LOR Lormes 82.52 337 *e*P P 03 41 03.4 +0.1
comp=Z,26nm,0.6s,mb4.8
LOR *e*R
comp=Z,88nm,19.2s
WCI Wyandotte Cave 82.58 41 *e*P P 03 41 03.6 -0.2
comp=Z,31nm,1.0s,mb5.0
HBAR Harrisburg 82.63 45 *e*P P 03 41 05.0 +0.8
GRR Gorron 82.67 341 *e*P P 03 41 04.5 +0.4
comp=Z,70nm,0.6s,mb5.3
GLAT Glass 82.74 44 *e*P P 03 41 05.3 +0.7
SSF Saint Saulge 82.81 337 *e*P P 03 41 04.9 +0.1
comp=Z,9.5nm,0.6s,mb4.4
HYF Humbligny 82.85 338 *e*P P 03 41 05.5 +0.5
SFI Santa Sofia 83.08 331 *e*P P 03 41 07.7 +1.5
AVF Avril sur Loir 83.10 337 *e*P P 03 41 06.4 +0.2
comp=Z,12nm,0.4s,mb4.6
SMF Signal de Mont 83.10 337 *e*P P 03 41 06.5 +0.2
comp=Z,65nm,1.0s,mb5.0
SGMF Saint Gilles 83.19 342 *e*P P 03 41 07.3 +0.6
comp=Z,22nm,0.3s,mb5.0
ROSF Rostrenen 83.27 342 *e*P P 03 41 07.7 +0.6
comp=Z,123nm,1.0s,mb5.3
LPL La Plagne 83.29 335 *e*P P 03 41 08.2 +0.9
comp=Z,38nm,1.0s,mb4.8
LPG La Plagne 83.30 335 *e*P P 03 41 08.3 +1.0
comp=Z,44nm,0.9s,mb4.9
BGF Bois d'Agland 83.45 337 *e*P P 03 41 08.5 +0.5
comp=Z,21nm,0.8s,mb4.6
ZFRI Zfri 83.46 308 P P 03 41 09.4 +1.0
WVT Waverly 83.55 43 *e*P P 03 41 08.8 0.0
comp=Z,14nm,0.6s,mb4.9
KZIT Kziot 83.62 308 P P 03 41 10.1 +0.9
QUIF Quistinic 83.64 342 *e*P P 03 41 09.0 +0.1
comp=Z,25nm,0.7s,mb4.8
PRNI Paran 83.71 308 P P 03 41 10.8 +1.2

AFFS 'Afif 83.82 298 P P 03 41 11.5 +1.2
TCF Toulx Ste Croi 83.86 338 *e*P P 03 41 10.7 +0.7
MBDF Montbardon 83.99 334 *e*P P 03 41 11.2 +0.5
comp=Z,15nm,0.6s,mb4.6
OXF Oxford 84.08 45 *e*P P 03 41 11.3 -0.1
comp=Z,37nm,0.5s,mb5.4
ORIF Oris-en-Rattie 84.09 335 *e*P P 03 41 12.3 +1.1
comp=Z,54nm,0.9s,mb5.0
ORIF *e*R
comp=Z,68nm,19.2s
MFF Saint Martin d 84.17 339 *e*P P 03 41 12.5 +0.9
comp=Z,92nm,1.0s,mb5.2
MBH Mount Berech 84.19 307 P P 03 41 13.1 +1.1
EIL Elat 84.26 307 P P 03 41 13.3 +0.9
JMQS Jabal Moqyreh 84.34 306 P P 03 41 14.1 +1.3
PLAL Pickwick Lake 84.36 44 *e*P P 03 41 12.3 -0.5
comp=Z,15nm,0.6s,mb4.9
TBKS Tabuk 84.46 305 P P 03 41 14.7 +1.2
ALWS Ilw as Safayha 84.47 307 P P 03 41 14.8 +1.3
VIVF Saint-Julien-l 84.50 336 *e*P P 03 41 14.2 +1.0
comp=Z,64nm,1.3s,mb4.9
JMOS Jabal al Moall 84.56 307 P P 03 41 15.2 +1.3
SBF Sospel 84.57 333 *e*P P 03 41 14.0 +0.4
comp=Z,22nm,0.6s,mb4.8
KBRS Khaybar 84.71 302 P P 03 41 16.0 +1.3
HAQS Haql 84.74 307 P P 03 41 16.1 +1.2
KRIS Kristallenia 84.83 317 *e*P P 03 41 14.7 -0.4
comp=Z,84nm,0.9s,mb5.5
KRIS *e*pP pP 03 41 53.7 +1.9
RJF Les Rejaudoux 84.96 338 *e*P P 03 41 16.4 +0.9
comp=Z,64nm,1.0s,mb5.0
RJF *e*R
comp=Z,56nm,17.2s
BDAS Al Bad' **85.12 306** P P 03 41 18.0 +1.3
CAF Calviac 85.16 337 *e*P P 03 41 18.0 +1.5
SWET Sewanee 85.20 42 *e*P P 03 41 16.6 -0.4
AYUS 'Aynunah 85.21 306 P P 03 41 18.5 +1.3
PGF Pioggiola 85.24 332 *e*P P 03 41 17.1 +0.1
LMR La Mourre 85.33 334 *e*P P 03 41 17.7 +0.3
comp=Z,31nm,0.7s,mb4.8
LASF Ste Croix 85.45 336 *e*P P 03 41 18.6 +0.6
LFF La Frestale 85.50 338 *e*P P 03 41 19.4 +1.2
comp=Z,79nm,0.7s,mb5.3
FWV Forest Hill 85.55 38 *e*P P 03 41 18.9 +0.3
PWV Princeton 85.65 38 *e*P P 03 41 19.2 +0.1
LRAL Lakeview Retre 86.45 44 *e*P P 03 41 23.1 0.0
MTLF Montolieu 86.59 337 *e*P P 03 41 25.1 +1.6
comp=Z,26nm,0.9s,mb4.8
EPF Esparros 87.39 338 *e*P P 03 41 27.4 +0.1
SJPF Ste Jean 87.71 339 *e*P P 03 41 29.7 +0.8
ETSF Etsaut 87.74 338 *e*P P 03 41 29.5 +0.4
comp=Z,18nm,0.6s,mb4.8
ESDC Sonseca Array 91.63 340 P P 03 41 46.8 -0.6
comp=Z,0.5nm,0.4s,mb3.9,baz=7.6,slow=4.7,SNR=8.2
SDV Santo Domingo 114.85 44 PKP PKPdf 03 47 20.5 +0.8
comp=Z,1.0nm,0.3s,baz=330,slow=18,SNR=3.0
DBIC Dimbokro 122.93 329 PKP PKPdf 03 47 36.0 +0.8
comp=Z,3.1nm,0.4s,baz=36,slow=3.0,SNR=14
DBIC Dimbokro 122.93 329 PKIKP PKPdf 03 47 36.1 +0.9
DBIC pmax pmax
comp=Z,3.0nm,0.4s
TIC Toumodi 123.01 329 *e*PKIKP PKPdf 03 47 35.9 +0.5
comp=Z,8.5nm,0.3s
KIC Kosan Boka 123.17 329 *e*PKIKP PKPdf 03 47 36.0 +0.3
comp=Z,58nm,1.3s
LIC Lamto 123.40 329 *e*PKIKP PKPdf 03 47 36.3 +0.1
comp=Z,20nm,0.9s
MAW Mawson 130.04 210 PKP PKPdf 03 47 48.9 +1.4
comp=Z,1.5nm,0.7s,baz=258,slow=5.4,SNR=3.4
MAW Mawson 130.04 210 PKIKP PKPdf 03 47 48.9 +1.4
MAW pmax pmax
comp=Z,2.0nm,0.7s
QSPA South Pole Qui 135.51 180 *e*PKP PKPdf 03 48 00.1 +2.6
LPAZ La Paz 137.09 59 PKP PKPdf 03 48 05.4 +3.5
comp=Z,0.8nm,0.5s,baz=210,slow=3.7,SNR=4.8
LPAZ La Paz 137.09 59 PKIKP PKPdf 03 48 05.4 +3.4
LPAZ pmax pmax
comp=Z,1.0nm,0.5s
SYO Syowa Base 138.73 211 ⇓Pdiff Pdif 03 45 20.0 +4.8
SYO Syowa Base 138.73 211 ⇓PKiKP PKPdf 03 48 08.0 +4.4
SYO Syowa Base 138.73 211 ⇓*e*Pdif Pdif 03 45 20.0 +4.8
SYO *e*PKPdf PKPdf 03 48 08.0 +4.4
BDFB Brasilia 146.60 32 PKPbc PKPbc 03 48 22.2 +2.0
comp=Z,11nm,0.6s,baz=320,slow=4.1,SNR=21
BDFB pPKPbc 03 49 03.5
comp=Z,8.8nm,0.9s,baz=22,slow=3.8,SNR=3.1
BDFB Brasilia 146.60 32 PKP2 PKPab 03 48 22.3 -1.8
BDFB pmax pmax
comp=Z,11nm,0.6s
BDFB pmax pmax
comp=N,9.0nm,0.9s
PLCA Paso Flores 150.72 95 PKPbc PKPdf 03 48 32.5 +8.0
comp=N,9.0nm,0.7s,baz=261,slow=3.0,SNR=16
PLCA pPKPbc 03 49 12.8
comp=N,7.0nm,0.8s,baz=205,slow=2.0,SNR=4.5
PLCA Paso Flores 150.72 95 PKIKP PKPdf 03 48 32.5 +8.0
PLCA 03 49 12.8
PLCA pmax pmax
comp=Z,9.0nm,0.7s
PLCA pmax pmax
comp=N,7.0nm,0.8s
PLCA Paso Flores 150.72 95 *e*PKPbc PKPdf 03 48 31.9 +7.3
PLCA *e*pPKPdf 03 49 10.6
SNAA Sanae 150.86 198 ⇓*i* PKPdf 03 48 31.4 +7.6
SNAA Sanae 150.86 198 ⇓*i* 03 49 10.9
SNAA Sanae 150.86 198 ⇓*i*P PKPdf 03 48 31.4 +7.6
SNAA *e* PKPab 03 48 41.4 +1.6
CPUP Villa Florida 151.19 57 PKPbc PKPdf 03 48 33.4 +7.7
comp=N,3.6nm,0.6s,baz=15,slow=7.1,SNR=5.9
CPUP Villa Florida 151.19 57 PKIKP PKPdf 03 48 33.4 +7.7
CPUP pmax pmax
comp=Z,4.0nm,0.6s
VNA2 Neumayer--Watz 152.37 196⇑*i* PKPdf 03 48 36.0 +10
VNA2 Neumayer--Watz 152.37 196 *e* PKPab 03 48 45.7 -0.4
VNA2 Neumayer--Watz 152.37 196 ⇓*i* 03 49 15.6
VNA2 Neumayer--Watz 152.37 196⇑*i*P PKPdf 03 48 36.0 +10
VNA2 *e* PKPab 03 48 45.7 -0.4
VNA3 Neumayer Olymp 152.53 195 ⇓*i* PKPdf 03 48 36.3 +10
VNA3 Neumayer Olymp 152.53 195⇑*i* 03 49 16.3
VNA3 Neumayer Olymp 152.53 195 ⇓*i*P PKPdf 03 48 36.3 +10
VNA3 *e* PKPab 03 48 46.3 -0.5
VNA1 Neumayer--Stat 152.76 196 ⇓*i* PKPdf 03 48 37.3 +11
VNA1 Neumayer--Stat 152.76 196 *e* PKPab 03 48 46.8 -1.0
VNA1 Neumayer--Stat 152.76 196⇑*i* 03 49 17.3
VNA1 Neumayer--Stat 152.76 196 ⇓*i*P PKPdf 03 48 37.3 +11
VNA1 *e* PKPab 03 48 46.8 -1.0
USHA Ushuaia 154.50 125 PKPab PKPab 03 48 54.4 -1.1
comp=Z,5.9nm,0.9s,baz=20,slow=19,SNR=2.6

*GUC **04** 03:41:39.2±0.7,32.74S×71.53W,h34km±2km, MD4.2, ML3.9*
*NEIC **04** 03:41:39.1±0.5,32.72S×71.58W,h30km, ML3.9(GUC), Error ellipse: s-maj=10.8km s-min=5.6km az=82.0*
NEIC Felt [III] at Quillota and [II] at Panquehue.
*IDC **04** 03:41:42.0±3.1,32.74S×71.22W,h60km±28km, mb3.6/5, mb1 3.6/9,mb1mx3.6/15,ML3.8/4,MS2.7/1,Ms1 2.7/1, ms1mx2.5/21,Error ellipse: s-maj=30.4km s-min=19.7km az=87.0*

ISC 04 03:41:39.1±0.4,32.74S±0.02×71.62W±0.05,h34km,n45, σ1ᵍ08/63,mb3.7/5,11C-10D,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
PACH	**Papudo**	**0.26**	**37**⇑	*i*P	**P**		**03 41 46.6**	**+0.2**
IHA	**Instituto Hidr**	**0.28**	**183**⇑	*i*P	**P**		**03 41 46.9**	**+0.3**
IHA				*i* S	**S**		**03 41 52.2**	**+0.2**
ROCH	**El Roble**	**0.56**	**114**⇑	*i*P	**P**		**03 41 50.0**	**-0.6**
ROCH				*i* S	**S**		**03 41 56.8**	**-1.9**
LCCH	**Las Cruces**	**0.73**	**177**⇓	*i*P	**P**		**03 41 53.1**	**+0.1**
LCCH				*i* S	**S**		**03 42 02.4**	**-0.7**
PTCH	**Petorca**	**0.76**	**51**⇑	*i*P	**P**		**03 41 52.7**	**-0.5**
PTCH				*i* S	**S**		**03 42 02.7**	**-1.0**
PTCH				AMP			03 42 05.9	
comp=E,8μm,0.3s								
JACH	**Jahuel**	**0.87**	**86**⇑	*i*P	**P**		**03 41 54.2**	**-0.7**
PEL	**Peldehue**	**0.88**	**117**⇑	*i*P	**P**		**03 41 54.9**	**-0.2**
PEL				*i* S	**S**		**03 42 06.3**	**-0.6**
PEL				AMP			03 42 07.0	
comp=E,15μm,0.3s								
RCDM	**Rinconada Maip**	**1.01**	**138**⇓	*i*P	**P**		**03 41 56.6**	**-0.4**
RCDM				*i* S	**S**		**03 42 09.5**	**-0.7**
RCDM				AMP			03 42 13.6	
comp=E,4μm,0.2s								
TACH	**Talagante**	**1.07**	**148**⇑	*i*P	**P**		**03 41 58.0**	**+0.2**
TACH				*i* S	**S**		**03 42 11.7**	**-0.1**
CLCH	**Cerro Calan**	**1.12**	**126**⇓	*i*P	**P**		**03 41 58.3**	**-0.2**
CLCH				*i* S	**S**		**03 42 12.6**	**-0.3**
CLCH				AMP			03 42 17.6	
comp=N,4μm,0.6s								
CLCH				AMP			03 42 18.2	
comp=N,5μm,0.5s								
ILCH	**Illapel**	**1.17**	**19**⇓	*i*P	**P**		**03 41 59.6**	**+0.5**
ILCH				*i* S	**S**		**03 42 14.8**	**+0.7**
ILCH				AMP			03 42 18.0	
comp=E,5μm,0.3s								
ANTU	**Antumapu**	**1.17**	**135**⇑	*i*P	**P**		**03 41 59.3**	**+0.2**
ANTU				*i* S	**S**		**03 42 14.4**	**+0.2**
ANTU				AMP			03 42 18.5	
comp=N,4μm,0.4s								
FSR	**Penalolen**	**1.18**	**129**⇓	*i*P	**P**		**03 41 59.2**	**0.0**
FSR				*i* S	**S**		**03 42 14.3**	**-0.1**
FSR				AMP			03 42 19.2	
comp=N,3μm,0.3s								
LLCH	**Llolleo**	**1.21**	**136**	*i*P	**P**		**03 41 54.2**	**-5.6**
LLCH				*i* S	**S**		**03 42 06.0**	**-9.2**
LNV	**Longovilo**	**1.22**	**172**⇑	*i*P	**P**		**03 42 00.1**	**+0.2**
FCH	**Farellones**	**1.26**	**118**⇓	*i*P	**P**		**03 42 00.4**	**-0.1**
FCH				*i* S	**S**		**03 42 16.6**	**0.0**
FCH				AMP			03 42 18.4	
comp=E,2μm,0.3s								
PCH	**Pirque**	**1.28**	**134**⇑	*i*P	**P**		**03 42 00.9**	**+0.2**
PCH				*i* S	**S**		**03 42 17.1**	**+0.2**
CHCH	**Chadas Angostu**	**1.44**	**146**⇑	*i*P	**P**		**03 42 03.8**	**+0.7**
CHCH				*i* S	**S**		**03 42 22.4**	**+1.3**
CACH	**El Canelo**	**1.61**	**148**⇓	*i*P	**P**		**03 42 07.3**	**+1.7**
CACH				*i* S	**S**		**03 42 28.7**	**+3.3**
LMEL	**Las Melosas**	**1.62**	**133**⇓	*i*P	**P**		**03 42 06.0**	**+0.4**
LMEL				*i* S	**S**		**03 42 27.2**	**+1.6**
LMEL				AMP			03 42 30.5	
comp=N,4μm,0.1s								
CMCH	**Combarbala**	**1.65**	**19**⇓	*i*P	**P**		**03 42 06.9**	**+0.8**
CMCH				*i* S	**S**		**03 42 28.3**	**+2.0**
CICH	**Cipreses**	**1.87**	**148**	*e*P	**S**		**03 42 10.5**	**+1.3**
CICH				*i* S	**S**		**03 42 33.2**	**+1.4**
SFDO	**San Fernando**	**1.94**	**165**⇓	*i*P	**P**		**03 42 10.7**	**+0.5**
OVCH	**Ovalle**	**2.16**	**10**	*e*P	**P**		**03 42 14.0**	**+0.6**
OVCH				*i* S	**S**		**03 42 40.5**	**+1.3**
OVCH				AMP			03 42 50.0	
comp=E,3μm,0.4s								
MDZ	**Mendoza**	**2.34**	**94**	*e*P	**P**		**03 42 18.7**	**+2.7**
MDZ				*e*			03 42 30.4	
MDZ				S	**S**		**03 42 55.7**	**+12**
TLL	**Tololo Astrono**	**2.66**	**15**	*i*P	**P**		**03 42 21.4**	**+0.9**
TLL				AMP			03 43 02.3	
comp=N,2μm,0.6s								
PLCA	**Paso Flores**	**8.02**	**174**	P	**P**		**03 43 33.9**	**-2.2**
comp=N,0.2nm,0.3s,baz=347,slow=14,SNR=3.1								
PLCA				LR	LR		03 46 47.2	
comp=N,57nm,21.3s,baz=1.0,slow=38								
PLCA	**Paso Flores**	**8.02**	**174**	P	**P**		**03 43 33.9**	**-2.2**
PLCA				LR	LR		03 46 47.2	
TRQA	**Tornquist**	**9.49**	**127**	*e*P	**P**		**03 43 54.0**	**-2.4**
LVC	**Limon Verde**	**10.37**	**14**	P	**P**		**03 44 08.7**	**0.0**
comp=N,0.3nm,0.3s,baz=284,slow=17,SNR=3.7								
LVC	**Limon Verde**	**10.37**	**14**	P	**P**		**03 44 02.7**	**-6.0**
LVC				P			03 44 08.7	
CPUP	**Villa Florida**	**13.98**	**66**	P	**P**		**03 44 53.0**	**-4.1**
comp=N,0.1nm,0.3s,baz=235,slow=16,SNR=4.0								
CPUP				S	**S**		**03 47 28.8**	**-3.2**
comp=N,0.0nm,0.3s,baz=242,slow=9.6,SNR=4.8								
LPAZ	**La Paz**	**16.68**	**12**	P	**P**		**03 45 31.2**	**-0.8**
comp=N,0.1nm,0.3s,baz=202,slow=11,SNR=2.7								
LPAZ	**La Paz**	**16.68**	**12**	*e*P	**P**		**03 45 31.1**	**-0.8**
comp=N,0.6nm,0.8s								
LPAZ				P			03 45 31.2	
BDFB	**Brasilia**	**27.35**	**57**	P	**P**		**03 47 18.7**	**-4.6**
comp=N,1.2nm,0.5s,mb3.6,baz=236,slow=4.9,SNR=4.7								
ROSC	**El Rosal**	**37.48**	**356**	P	**P**		**03 48 49.3**	**-2.2**
comp=N,2.4nm,0.3s,mb4.5,baz=54,slow=22,SNR=3.1								
TXAR	**Lajitas Array**	**68.81**	**330**	P	**P**		**03 52 41.0**	**-1.2**
comp=N,0.3nm,0.8s,mb3.3,baz=159,slow=7.6,SNR=4.3								
ELN	**Prospectdale**	**70.13**	**352**	*e*P	**P**		**03 52 48.3**	**-1.7**
ELN				*e*PcP	PcP		03 53 12.9	+0.8
ELN				*e*			03 53 33.5	
ELN				*e*			03 53 44.3	
MAW	**Mawson**	**74.28**	**164**	P	**P**		**03 53 12.4**	**-1.7**
comp=N,1.0nm,0.6s,mb3.9,baz=108,slow=7.5,SNR=2.9								
PDAR	**Pinedale Array**	**82.80**	**333**	P	**P**		**03 54 02.1**	**+0.9**
comp=N,0.3nm,0.8s,mb3.4,baz=162,slow=5.7,SNR=2.7								
OCWA	**Octopus Mounta**	**92.95**	**328**	P	**P**		**03 54 46.2**	**-3.6**
OCWA				*e*pP	pP		03 54 55.5	-5.1
OCWA				*e*PP	PP		03 58 28.7	-6.7
COLA	**College**	**113.65**	**333**	PKPdf	PKPdf		04 00 16.4	+3.0
COLA				*e*PP	PP		04 01 09.3	-1.6
ZAL	**Zalesovo**	**152.97**	**31**	PKPbc	PKPdf		04 01 31.7	+6.8
comp=N,0.9nm,0.3s,baz=109,slow=7.7,SNR=3.0								
ZAL	**Zalesovo**	**152.97**	**31**	PKPbc	PKPdf		04 01 31.7	+6.8
MKAR	**Makanchi Array**	**155.67**	**47**	PKPab	PKPab		04 01 51.8	-5.7
comp=N,0.1nm,0.4s,baz=111,slow=27,SNR=2.0								

*NEIC **04** 03:42:43.7, 17.93N×68.92W, h25km, MD3.5(RSPR), After RSPR.*

RSPR 04 03:42:43.7, 17.93N×68.92W, h25km±31km, M3.5, 12C-1D, Mona Passage

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
MGP	**Maguayo**	**1.74**	**87**⇑	*e*P	Pn		03 43 09.5	-3.4
MGP				S	Sn		03 43 29.4	-5.1
LSP	**Las Mesas**	**1.76**	**82**⇑	*e*P	Pn		03 43 10.4	-2.7
LSP				S	Sn		03 43 30.0	-4.9
LRS	**Lares**	**2.00**	**79**⇑	*e*P	Pn		03 43 13.5	-3.1
LRS				S	Sn		03 43 36.1	-5.1
AOPR	**Arecibo Observ**	**2.10**	**78**⇓	*e*P	Pn		03 43 14.7	-3.4
AOPR	**Arecibo Observ**	**2.10**	**78**	S	Sn		03 43 37.8	-5.8
PORP	**Portuguez**	**2.17**	**86**⇑	*e*P	Pn		03 43 15.8	-3.2
OBIP	**Obispado Ponce**	**2.20**	**87**⇑	*e*P	Pn		03 43 16.1	-3.4
OBIP	**Obispado Ponce**	**2.20**	**87**	S	Sn		03 43 41.0	-5.2
CELP	**Cerrillos**	**2.23**	**86**⇑	*e*P	Pn		03 43 16.8	-3.1
CELP				S	Sn		03 43 41.1	-5.8
SJG	**San Juan**	**2.64**	**86**⇑	*e*P	Pn		03 43 22.9	-2.8
SJG	**San Juan**	**2.64**	**86**⇑	*e*P	Pn		03 43 22.9	-2.9
SJG	**San Juan**	**2.64**	**86**	S	Sn		03 43 50.9	-6.4
SJG	**San Juan**	**2.64**	**86**⇑	*e*P	Pn		03 43 22.9	-2.9
SJG				S	Sn		03 43 50.9	-6.4
CSB	**Colonia Sabana**	**2.65**	**82**⇑	*e*P	Pn		03 43 22.1	-3.8
CSB				S	Sn		03 43 51.5	-6.0
HUMP	**Col San Antoni**	**2.93**	**85**⇑	*e*P	Pn		03 43 26.3	-3.5
HUMP				S	Sn		03 43 57.8	-6.8
CBYP	**Canovanas**	**2.93**	**83**⇑	*e*P	Pn		03 43 26.4	-3.4
CBYP				S	Sn		03 43 59.2	-5.5

*IDC **04** 03:51:40.5±1.2,37.74S×73.53W,mb3.8/5,mb1 4.1/8, mb1mx4.0/14,ML3.8/3,MS3.8/6,Ms1 3.8/6,ms1mx3.6/18, Error ellipse: s-maj=33.8km s-min=15.5km az=62.0*
*NEIC **04** 03:51:45.9±4.7,37.66S×73.47W,h30km±34km,mb4.2/2, Error ellipse: s-maj=21.7km s-min=9.3km az=86.0*

ISC 04 03:51:45.0±2.4,37.64S±0.06×73.4W±0.2,h33km±20km, n26,σ0ᵍ97/28,mb4.0/8,MS3.9/3,3C-1D,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
PLCA	**Paso Flores**	**3.79**	**145**	Pn	**P**		**03 52 42.0**	**-0.5**
1.2nm,0.3s,baz=318,slow=13

comp=Z,342nm,19.9s,baz=156,slow=42
CPUP Villa Florida 17.65 55 P **P** 03 55 50.4 +0.5
0.1nm,0.3s,baz=231,slow=12,SNR=4.1
CPUP LR LR 04 03 26.6
comp=Z,631nm,18.6s,baz=245,slow=40
CPUP Villa Florida 17.65 55 P **P** 03 55 49.1 -0.7
ARE Arequipa 21.16 5 *eP* **P** 03 56 31.0 +1.4
LPAZ La Paz 21.77 14 P **P** 03 56 37.0 +1.3
1.0nm,0.6s,mb3.4,baz=182,slow=1.3,SNR=4.2
BDFB Brasilia 31.34 52 P **P** 03 58 04.5 -0.3
0.6nm,0.4s,mb3.8,baz=180,slow=5.1,SNR=2.6
BDFB LR LR 04 12 03.1
comp=Z,374nm,18.1s,MS4.1,baz=232,slow=39
OTAV Otavalo 37.98 352 P **P** 03 58 59.9 -1.7
2.9nm,1.1s,mb3.9
VNA3 Neumayer Olymp 46.44 156⇑*i* **P** 04 00 10.1 +0.2
VNA1 Neumayer--Stat 46.79 155⇑*i* **P** 04 00 13.9 +1.3
VNA2 Neumayer--Watz 47.12 156⇓*i* **P** 04 00 15.6 +0.4
PCRV Puerto La Cruz 48.26 12 LR LR 04 20 25.9
comp=Z,69nm,18.2s,MS3.7,baz=167,slow=36
SNAA Sanae 48.66 157⇑*i* **P** 04 00 26.1 -1.1
QSPA South Pole Qui 52.60 180 *eP* **P** 04 00 59.9 +2.8
4.8nm,1.0s,mb4.4
TXAR Lajitas Array 72.41 332 P **P** 04 03 09.1 -0.7
0.5nm,0.8s,mb3.5,baz=162,slow=8.6,SNR=4.0
TXAR LR LR 04 29 26.2
comp=Z,63nm,20.6s,MS3.9,baz=160,slow=31
MNTX Cornudas Mount 75.18 332 *eP* **P** 04 03 26.5 +0.7
LIC Lamto 76.95 72 *eP* **P** 04 03 36.0 -0.3
29nm,1.1s,mb5.1
TIC Toumodi 77.23 71 *eP* **P** 04 03 37.6 -0.3
2μm,2.9s
KIC Kosan Boka 77.26 72 *eP* **P** 04 03 37.9 -0.1
2μm,3.0s
DBIC Dimbokro 77.37 71 P **P** 04 03 38.0 -0.6
5.2nm,0.8s,mb4.5,baz=211,slow=5.5,SNR=7.2
PDAR Pinedale Array 86.53 334 P **P** 04 04 24.9 -0.6
0.4nm,0.9s,mb3.7,baz=143,slow=4.5,SNR=2.9
BRTR Keskin Array B 124.49 63 PKP PKPdf 04 10 41.6 +0.7
0.3nm,0.6s,baz=180,slow=2.5,SNR=3.6
MKAR Makanchi Array 159.85 55 PKPab PKPab 04 12 20.2 -1.1
1.0nm,0.8s,baz=284,slow=5.0,SNR=6.7

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*NEIC **04** 04:05:11.5±0.4, 7.46S×75.70W, h120km, mb4.3/5, Error ellipse: s-maj=15.8km s-min=7.1km az=72.0*
*IDC **04** 04:05:11.7±0.8, 7.49S×75.74W, h124km±6km, mb3.7/13, mb1 3.8/17, mb1mx3.7/22, Error ellipse: s-maj=22.0km s-min=12.5km az=61.0*
ISC 04 04:05:11.0±1.3**, 7.45S**±0.06×**75.7W**±0.1**, h131**km±12km**, h123**km±2.3km**:pP-P, n38,** σ**0.96/33, mb4.0**/17**, 2C-2D, Northern Peru**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
OTAV	**Otavalo**	**8.12**	**340**	⇑*e*Pn		**P**		**04 07 07.2**	**0.0**
	13nm,0.4s								
OTAV				Sn		**S**		**04 08 38.1**	**+0.2**
LPAZ	**La Paz**	**11.46**	**141**	P		**P**		**04 07 50.9**	**-0.8**
	0.3nm,0.3s,baz=9.5,slow=6.1,SNR=11								
ROSC	**El Rosal**	**12.29**	**6**	P		**P**		**04 08 05.4**	**+2.8**
	1.6nm,0.3s,baz=149,slow=23,SNR=5.2								
LVC	**Limon Verde**	**16.42**	**157**	P		**P**		**04 08 54.0**	**-1.1**
	0.1nm,0.3s,baz=276,slow=10,SNR=2.9								
LVC	**Limon Verde**	**16.42**	**157**	P		**P**		**04 08 56.6**	**+1.5**
	3.7nm,0.6s								
SDV	**Santo Domingo**	**16.98**	**17**	P		**P**		**04 09 01.3**	**-0.8**
	1.4nm,0.3s,baz=279,slow=7.8,SNR=8.8								
PCRV	**Puerto La Cruz**	**20.66**	**32**	P		**P**		**04 09 42.3**	**+0.1**
	22nm,1.2s,baz=7.4,slow=11,SNR=2.1								
CPUP	**Villa Florida**	**25.63**	**139**	P		**P**		**04 10 29.0**	**-1.2**
	0.9nm,0.6s,mb3.6,baz=55,slow=20,SNR=3.8								
SJG	**San Juan**	**27.07**	**20**	P		**P**		**04 10 42.9**	**-0.5**
	3.5nm,0.4s,mb4.3,baz=58,slow=23,SNR=2.6								
BDFB	**Brasilia**	**28.26**	**109**	P		**P**		**04 10 55.0**	**+0.8**
	1.5nm,0.7s,mb3.9,baz=218,slow=14,SNR=3.4								
PLCA	**Paso Flores**	**33.46**	**173**	P		**P**		**04 11 39.8**	**+0.2**
	1.0nm,0.7s,mb3.6,baz=360,slow=14,SNR=2.9								
TXAR	**Lajitas Array**	**45.43**	**325**	P		**P**		**04 13 18.5**	**-0.1**
	0.2nm,0.5s,mb3.0,baz=146,slow=9.8,SNR=4.5								
TXAR				pP		pP		04 13 45.3	-3.2
	0.6nm,0.7s,baz=144,slow=9.8,SNR=3.9								
TXAR				PcP		PcP		04 14 55.8	-0.2
	0.3nm,0.5s,baz=135,slow=5.1,SNR=5.2								
PDAR	**Pinedale Array**	**58.73**	**331**	P		**P**		**04 14 57.1**	**-0.3**
	0.3nm,0.7s,mb3.2,baz=101,slow=4.6,SNR=3.6								
PDAR				PcP		PcP		04 15 44.4	-1.1
	0.5nm,0.5s,baz=117,slow=4.0,SNR=4.6								
HWUT	**Hardware Ranch**	**58.85**	**329**	*eP*		**P**		**04 14 57.5**	**-0.8**
	1.2nm,0.7s,mb3.8								
ULM	**Lac du Bonnet**	**60.08**	**345**	P		**P**		**04 15 04.8**	**-1.9**
	1.2nm,0.5s,mb4.0,baz=65,slow=18,SNR=2.7								
NVAR	**Mina Aray Bea**	**60.45**	**322**	pP		pP		04 15 41.1	+0.4
	0.8nm,0.8s,baz=136,slow=6.8,SNR=3.7								
SCHQ	**Schefferville**	**62.48**	**6**	P		**P**		**04 15 23.4**	**+0.7**
	1.8nm,0.8s,mb4.0,baz=130,slow=18,SNR=2.4								
SCHQ	**Schefferville**	**62.48**	**6**	P		**P**		**04 15 23.4**	**+0.7**
WVOR	**Wild Horse Val**	**63.22**	**326**	P		**P**		**04 15 28.2**	**+0.4**
	3.1nm,0.8s,mb4.2								
LIC	**Lamto**	**71.75**	**81**	*eP*		**P**		**04 16 21.1**	**-0.3**
	48nm,1.7s,mb5.0								
TIC	**Toumodi**	**71.83**	**81**	*eP*		**P**		**04 16 21.8**	**-0.1**
	80nm,1.5s								
DBIC	**Dimbokro**	**72.00**	**81**	P		**P**		**04 16 23.1**	**+0.2**
	3.0nm,0.4s,mb4.4,baz=267,slow=9.3,SNR=15								
DBIC				pP		pP		04 16 54.5	-0.8
	2.2nm,0.8s,baz=236,slow=6.6,SNR=2.4								
DBIC	**Dimbokro**	**72.00**	**81**	P		**P**		**04 16 23.1**	**+0.2**
DBIC				pP		pP		04 16 54.5	-0.9
KIC	**Kosan Boka**	**72.06**	**81**	*eP*		**P**		**04 16 23.3**	**+0.1**
	18nm,0.7s,mb4.9								
VNA3	**Neumayer Olymp**	**75.39**	**162**⇓*i*			**P**		**04 16 34.2**	**-7.3**
YKA	**Yellowknife Ar**	**75.87**	**342**	P		**P**		**04 16 43.7**	**-0.6**
	0.6nm,0.4s,mb3.5,baz=140,slow=6.1,SNR=24								
YKA				pP		pP		04 17 15.5	-1.7
	0.2nm,0.5s,baz=139,slow=6.2,SNR=3.9								
YKA	**Yellowknife Ar**	**75.87**	**342**	P		**P**		**04 16 43.7**	**-0.6**
YKA				pP		pP		04 17 15.5	-1.7
VNA2	**Neumayer--Watz**	**75.98**	**162**⇓*i*			**P**		**04 16 47.0**	**+2.2**
SNAA	**Sanae**	**77.60**	**162**⇑*i*			**P**		**04 16 52.5**	**-1.3**
QSPA	**South Pole Qui**	**82.66**	**180**	*eP*		**P**		**04 17 22.7**	**+2.1**
	6.4nm,0.9s,mb4.3								
DIV	**Divide**	**87.07**	**333**	*eP*		**P**		**04 17 42.2**	**-0.5**
DIV				*e*pP		pP		04 18 13.2	-3.2
DIV				*e*sP		sP		04 18 27.7	-2.9
ILAR	**Eielson Array**	**88.83**	**336**	P		**P**		**04 17 51.2**	**+0.2**
	0.8nm,0.8s,mb3.7,baz=121,slow=3.4,SNR=8.9								
ILAR				pP		pP		04 18 24.1	-0.6
	0.6nm,0.9s,baz=136,slow=3.2,SNR=4.4								
NOA	**NORSAR Array B**	**94.94**	**29**	P		**P**		**04 18 20.2**	**+1.0**
	0.8nm,0.8s,mb4.0,baz=266,slow=5.4,SNR=3.4								
STKA	**Stephens Creek**	**127.15**	**220**	PKP		PKPdf		04 24 01.6	+1.1
	3.0nm,0.7s,baz=328,slow=5.2,SNR=5.6								
ZAL	**Zalesovo**	**131.03**	**15**	PKP		PKPdf		04 24 08.1	+0.9
	1.2nm,0.4s,baz=158,slow=8.1,SNR=3.3								
MKAR	**Makanchi Array**	**136.47**	**22**	PKP		PKPdf		04 24 19.2	+1.7
	0.3nm,0.4s,baz=288,slow=3.4,SNR=4.7								
ASAR	**Alice Springs**	**137.69**	**222**	PKhKP				04 24 12.9	
	0.3nm,0.4s,baz=110,slow=2.3,SNR=4.8								
ASAR				PKP		PKPdf		04 24 21.9	+1.4
	0.9nm,0.5s,baz=123,slow=1.8,SNR=7.0								
WRA	**Warramunga Arr**	**139.85**	**227**	PKP		PKPdf		04 24 26.1	+1.7
	1.4nm,0.6s,baz=133,slow=1.7,SNR=7.4								

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*NEIC **04** 04:12:40.2, 38.27S×71.28W, ML3.4(GUC), After GUC.*
GUC 04 04:12:41.7±0.9**, 38.42S**×**71.47W, h100**km**, ML3.6, 1C-2D, Southern Chile-Argentina border region**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
TMCH	**Temuco**	**0.95**	**250**	*eP*		P		04 13 02.6	+0.7
TMCH				*i* S		S		04 13 18.5	+1.4
TMCH				AMP				04 13 25.2	
	comp=N,714nm,0.5s								
CCHI	**Chillan**	**1.88**	**345**	*i* S		S		04 13 37.0	+0.5
CCHI				AMP				04 13 45.6	
	comp=N,1μm,0.4s								
CCHI	**Chillan**	**1.88**	**345**	⇓*i* P		P		04 13 11.8	-1.4
CCHI				*i* S		S		04 13 36.5	-0.1
VLCH	**Valdivia**	**1.95**	**224**	⇓*i* P		P		04 13 14.4	+0.3
VLCH				*i* S		S		04 13 38.5	+0.4
VLCH				AMP				04 13 53.6	
	comp=E,853nm,0.5s								
VLCH	**Valdivia**	**1.95**	**224**	*i* P		P		04 13 18.5	+4.4
VLCH				*i* S		S		04 13 47.2	+9.1
PLCA	**Paso Flores**	**2.41**	**163**	*eP*		P		04 13 39.1	+19
PLCA				*eS*		S		04 14 31.1	+42
CHCH	**Chadas Angostu**	**4.53**	**9**⇑	*i* P		P		04 13 48.3	-1.1
CHCH	**Chadas Angostu**	**4.53**	**9**	*i* P		P		04 13 48.5	-0.8
FCH	**Farellones**	**5.17**	**11**	*i* P		P		04 13 57.9	-0.2
FCH				*i* S		S		04 14 56.8	-0.3

IDC 04 04:45:23.7±27.0**, 22.32S**×**173.45W, mb4.2**/4**, mb1 4.3**/4**, mb1mx3.9**/16**, Error ellipse: s-maj=500.0km s-min=156.3km az=77.0, Tonga Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**37.56**	**266**	P		P		04 52 40.3	-1.4
	3.6nm,0.4s,baz=92,slow=11,SNR=7.5								
STKA	**Stephens Creek**	**40.89**	**247**	P		P		04 53 07.7	-1.6
	2.0nm,0.8s,baz=86,slow=14,SNR=3.3								
ASAR	**Alice Springs**	**48.25**	**258**	P		P		04 54 07.0	-1.6
	0.9nm,0.5s,baz=98,slow=6.7,SNR=13								
WRA	**Warramunga Arr**	**48.56**	**263**	P		P		04 54 08.6	-2.4
	0.8nm,0.3s,baz=102,slow=8.4,SNR=39								

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*BJI **04** 05:04:54.7, 37.52N×96.65E, h13km, mB5.5, mb5.3, ML5.7, Ms5.5, Msz5.4*
*IDC **04** 05:04:56.0±0.3, 37.58N×96.81E, mb5.1/32, mb1 5.1/36, mb1mx5.1/36, ML4.2/3, MS4.8/21, Ms1 4.8/21, ms1mx4.8/23, Error ellipse: s-maj=11.1km s-min=7.7km az=45.0*
*CSEM **04** 05:04:57.3, 37.64N×96.77E, h17km, mb5.6*
*NEIC **04** 05:04:58.4±2.7, 37.51N×96.76E, h14km±16km, mb5.4/106, MS5.2/23, MW5.5, Error ellipse: s-maj=5.1km s-min=3.5km az=200.0, Moment Tensor Solution. s3 Moment tensor: Scale 10^{17}Nm; M_{rr}0.16; $M_{\theta\theta}$-2.04; $M_{\phi\phi}$1.89; $M_{r\theta}$0.31; $M_{\theta\phi}$0.19; $M_{\phi r}$-0.05; Best double couple: $M_o2\times10^{17}$ NP1: ϕ_s227°, δ83°, λ-5°. NP2:ϕ_s318°, δ85°, λ-173°. Principal axes: T 1.9, Plg1°, Azm93°; N .2, Plg82°, Azm354°; P -2.09, Plg8°, Azm183°;*
NEIC More than 3,100 houses damaged and thousands of people homeless in the Delingha area.
*HRVD **04** 05:04:58.3±0.2, 37.60N×96.65E, h19km, MW5.4/68, Centroid moment Tensor Solution. LP body waves: s46,c64;Mantle waves: s68,c139; Half duration: 1s2 Moment tensor: Scale 10^{17}Nm; M_{rr}-0.20±.02; $M_{\theta\theta}$-1.12±.02; $M_{\phi\phi}$1.32±.03; $M_{r\theta}$-0.08±.05; $M_{\theta\phi}$0.48±.02; $M_{\phi r}$-0.24±.05; Best double couple: $M_o1.33\times10^{17}$ NP1: ϕ_s145°, δ83°, λ175°. NP2:ϕ_s236°, δ85°, λ7°. Principal axes: T 1.45, Plg9°, Azm101°; N -.24, Plg81°, Azm269°; P -1.21, Plg2°, Azm11°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*SYO **04** 05:04:58.3, 37.51N×96.76E, h14km, MB5.4, MS5.2*
*MOS **04** 05:04:59.3±1.1, 37.49N×96.78E, h33km, mb5.5/41, MS5.2/31, Error ellipse: s-maj=7.5km s-min=4.7km az=116.7*
*NNC **04** 05:05:04.0±3.0, 38.15N×95.91E, Error ellipse: s-maj=52.8km s-min=33.9km az=65.0*
ISC 04 05:04:56.5±0.1**, 37.45N**±0.02×**96.70E**±0.02**, h14**km**, (h16**km±2.3km**:pP-P), n577,** σ**1§24/595, mb5.4**/166**, MS5.1/77, 52C-21D, Qinghai**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
LZH	**Lanzhou**	**5.89**	**101**	⇑P		**Pn**		**05 06 26.9**	**+1.3**
LZH				S		**Sn**		**05 07 34.0**	**+0.3**
LZH				LR		LR			
	comp=N,56μm,8.0s								
CD2	**Chengdu**	**8.76**	**136**	P		**P**		**05 07 07.8**	**+2.1**
CD2				S		**Sn**		**05 08 44.0**	**-1.2**
CD2				AMB		AMB			
	comp=Z,170nm,1.2s								
CD2				AMB		AMB			
	comp=Z,490nm,4.3s								
CD2				LR		LR			
	comp=Z,40μm,11.0s								
LSA	**Lhasa**	**9.01**	**213**	P		**P**		**05 07 10.2**	**+1.0**
LSA				LR		LR			
	comp=N,10μm,11.0s								
LSA				LR		LR			
	comp=E,16μm,9.1s								
LSA				LR		LR			
	comp=Z,19μm,9.0s								
LSA	**Lhasa**	**9.01**	**213**	*eP*		**P**		**05 07 10.7**	**+1.4**
WMQ	**Urumqi**	**9.34**	**316**	P		**P**		**05 07 12.7**	**-1.1**
WMQ				AP				05 07 15.7	
WMQ				XP				05 07 18.2	
WMQ				S		**Sn**		**05 08 57.3**	**-2.4**
WMQ				XS				05 09 02.3	
WMQ				PCP		PcP		05 13 33.2	+0.5
WMQ				SCP				05 17 03.4	
WMQ				PCS				05 17 05.2	
WMQ				SCS		ScS		05 20 36.4	+0.2
WMQ				AMB		AMB			
	comp=Z,792nm,4.8s								
WMQ				S		Sn			
	comp=N,2μm,1.0s								
WMQ				S		Sn			
	comp=E,2μm,1.8s								
WMQ				LR		LR			
	comp=Z,17μm,5.3s								
XAN	**Xi'an**	**10.50**	**105**	P		**P**		**05 07 25.8**	**-3.9**
XAN				AP				05 07 32.3	
XAN				AMB		AMB			
	comp=Z,43nm,0.9s								
XAN				LR		LR			
	comp=N,13μm,10.0s								
XAN				LR		LR			
	comp=E,8μm,9.5s								
XAN				LR		LR			
	comp=Z,12μm,12.2s								
BTO	**Baotou**	**10.83**	**69**	*eP*		**P**		**05 07 33.6**	**-0.6**
BTO				S		**S**		**05 09 33.1**	**-3.1**
HHC	**Hu-ho-hao-te**	**12.03**	**69**	⇑P		**P**		**05 07 49.1**	**-1.4**
HHC				AP				05 07 52.4	
HHC				XP				05 07 56.0	
HHC				PP		PP		05 07 58.7	-1.5
HHC				S		**S**		**05 10 03.1**	**-2.3**
HHC				SS		SS		05 10 18.9	-1.0
HHC				AMB		AMB			
	comp=Z,233nm,1.5s								
HHC				LR		LR			
	comp=N,17μm,10.7s								
HHC				LR		LR			
	comp=E,10μm,10.5s								
HHC				LR		LR			
	comp=Z,8μm,10.9s								
TIY	**Taiyuan**	**12.48**	**84**	⇓P		**P**		**05 07 53.0**	**-3.6**
TIY				S		**S**		**05 10 15.0**	**-1.5**
TIY				LR		LR			
	comp=N,9μm,8.0s								
TIY				LR		LR			
	comp=Z,13μm,8.0s								
SHL	**Shillong**	**12.54**	**200**	*eP*		**P**		**05 07 53.5**	**-3.9**
SHL				*eS*		**S**		**05 10 09.5**	**-8.4**
SONM	**Songino Array**	**12.58**	**31**	Pn		**P**		**05 07 57.0**	**-0.9**
	comp=Z,13nm,0.3s,baz=216,slow=14,SNR=166								
SONM				Sn		**S**		**05 10 21.5**	**+2.7**
	comp=Z,0.8nm,0.3s,baz=217,slow=23,SNR=2.2								
SONM				Lg				05 11 28.3	
	comp=Z,1.4nm,0.3s,baz=213,slow=34,SNR=3.1								
ENH	**Enshi**	**12.80**	**120**	*eP*		**P**		**05 07 59.5**	**-1.4**
IMP	**Imphal**	**12.85**	**191**	*eP*		**P**		**05 08 01.0**	**-0.5**
GUN	**Gumba**	**13.17**	**227**	*eP*		**P**		**05 08 03.2**	**-2.5**
	comp=Z,625nm,1.4s								
KMI	**Kunming**	**13.32**	**156**	*eP*		**P**		**05 08 07.2**	**-0.6**
KMI				AP				05 08 12.9	
KMI				XP				05 08 18.0	
KMI				PPP		PPP		05 08 22.5	-2.9
KMI				S		**S**		**05 10 33.5**	**-3.2**
KMI				XS				05 10 41.5	
KMI				SS		SS		05 10 47.4	-5.0
KMI				AMB		AMB			
	comp=Z,55nm,1.6s								
KMI				AMB		AMB			
	comp=Z,294nm,3.1s								
KMI				LR		LR			
	comp=N,15μm,15.7s								
KMI				LR		LR			
	comp=E,25μm,16.8s								
KMI				LR		LR			
	comp=Z,9μm,11.2s								
KKN	**Kakani**	**13.61**	**228**	*eP*		**P**		**05 08 08.6**	**-3.0**
	comp=Z,101nm,0.7s								
KKN	**Kakani**	**13.61**	**228**	*eP*		**P**		**05 08 08.6**	**-3.0**
KKN				pmax		pmax			
	comp=Z,50nm,0.7s								
ZAK	**Zakamensk**	**13.76**	**18**	*eP*		**P**		**05 08 13.9**	**+0.5**
GYA	**Guiyang**	**13.83**	**140**⇑	*i*P		**P**		**05 08 13.8**	**-0.7**
GYA				AP				05 08 20.4	
GYA				XP				05 08 24.6	
GYA				PPP		PPP		05 08 34.2	+1.7
GYA				S		**S**		**05 10 46.2**	**-2.7**
GYA				SS		SS		05 11 10.0	+4.9
GYA				AMB		AMB			
	comp=Z,170nm,0.8s								
GYA				AMB		AMB			
	comp=Z,700nm,4.2s								
GYA				LR		LR			
	comp=Z,24μm,10.8s								
GKN	**Gorkha**	**13.84**	**231**	*eP*		**P**		**05 08 11.8**	**-2.8**
	comp=Z,674nm,1.4s								
DMN	**Daman**	**13.85**	**228**	*eP*		**P**		**05 08 12.2**	**-2.5**
	comp=Z,774nm,1.3s								
DANN	**Dangsing**	**14.15**	**234**	*eP*		**P**		**05 08 15.5**	**-3.2**
MK31	**Makanchi Array**	**14.18**	**316**	⇑Pn		**P**		**05 08 14.6**	**-4.3**
	comp=Z,207nm,1.1s,baz=129,slow=14,SNR=466								
MK31				⇑Sn		**S**		**05 10 48.6**	**-8.3**
	comp=Z,96nm,0.8s,baz=119,slow=25,SNR=6.5								
MKAR	**Makanchi Array**	**14.18**	**316**	Pn		**P**		**05 08 14.4**	**-4.5**
	comp=Z,3.3nm,0.3s,baz=131,slow=13,SNR=120								
MKAR				Sn		**S**		**05 10 49.0**	**-7.9**
	baz=107,slow=20,SNR=2.2								
MKAR				Lg				05 12 30.4	
	baz=139,slow=22,SNR=3.4								
MKAR				LR		LR		05 14 06.4	
	comp=Z,10μm,20.2s,baz=125,slow=39								
MKAR	**Makanchi Array**	**14.18**	**316**	*i* P		**P**		**05 08 13.8**	**-5.1**
MKAR				pmax		pmax			
	comp=Z,250nm,1.1s								
AGT	**Agartala**	**14.31**	**201**	*e*		**P**		**05 08 15.0**	**-5.8**
MOY	**Mondy**	**14.53**	**11**	*eP*		**P**		**05 08 25.2**	**+1.6**
KOLN	**Koldanda**	**14.65**	**233**	*eP*		**P**		**05 08 21.4**	**-3.9**
	comp=Z,140nm,0.9s								
TLY	**Talaya**	**15.05**	**17**⇑	*i*P		**P**		**05 08 32.2**	**+1.9**
TLY				*i* S		**S**		**05 11 18.4**	**+0.8**
TLY				pmax		pmax			
	comp=Z,382nm,1.4s								
TLY				MLR		MLR			
	comp=Z,51μm,15.0s								
BJT	**Baijiatuau**	**15.41**	**74**	*eP*		**P**		**05 08 34.9**	**-0.1**
BJT				pmax		pmax			
	comp=Z,338nm,0.9s								
BJT	**Baijiatuau**	**15.41**	**74**	*eP*		**P**		**05 08 34.9**	**-0.2**
	comp=Z,338nm,0.9s								
BJI	**Beijing**	**15.41**	**74**	P		**P**		**05 08 34.1**	**-1.0**
BJI				AMB		AMB			
	comp=Z,352nm,2.1s								
BJI				LR		LR			
	comp=Z,7μm,23.3s								
IRK	**Irkutsk**	**15.72**	**17**	*eP*		**P**		**05 08 39.4**	**+0.4**
WHN	**Wuhan**	**16.16**	**110**	P		**P**		**05 08 43.4**	**-1.5**
WHN				AP				05 08 49.2	
WHN				S		**S**		**05 11 43.8**	**0.0**
WHN				LR		LR			
	comp=N,5μm,7.0s								
WHN				LR		LR			
	comp=E,6μm,13.0s								
WHN				LR		LR			
	comp=Z,17μm,12.9s								
KSH	**Kashi**	**16.36**	**284**	*eP*		**P**		**05 08 43.1**	**-4.2**
KSH				*e*AP				05 08 49.1	
KSH				*e*XP				05 08 53.3	
KSH				*e*PP		PP		05 08 56.1	-4.8
KSH				*e*S		**S**		**05 11 37.6**	**-11**
KSH				*e*PCP		PcP		05 13 42.0	+0.8
KSH				*e*SCP				05 17 13.1	
KSH				*e*PCS				05 17 16.5	
KSH				AMB		AMB			
	comp=Z,350nm,1.2s								
KSH				LR		LR			
	comp=N,8μm,11.5s								
KSH				LR		LR			
	comp=E,7μm,7.3s								
TIA	**Tai'an**	**16.40**	**88**	P		**P**		**05 08 45.5**	**-2.3**
TIA				AP				05 08 53.0	
TIA				LR		LR			
	comp=N,810nm,8.0s								
TIA				LR		LR			
	comp=E,6μm,8.0s								
ULHL	**Ulahol**	**16.42**	**293**	P		**P**		**05 08 44.3**	**-3.7**
	SNR=74								
CAL	**Calcutta**	**16.52**	**208**	*eP*		**P**		**05 08 45.9**	**-3.6**
CAL				*e*				05 12 08.4	
CAL				*e*				05 12 59.0	
CAL				*e*				05 15 23.6	
TKM2	**Tokmak 2**	**17.01**	**295**	P		**P**		**05 08 53.3**	**-2.2**
	SNR=280								
KZA	**Kyzart**	**17.12**	**292**	P		**P**		**05 08 55.0**	**-1.9**
	SNR=8.1								
KBK	**Karagaybulak**	**17.43**	**294**	P		**P**		**05 08 58.3**	**-2.5**
	SNR=131								
CHMS	**Chumysh**	**17.64**	**295**	P		**P**		**05 09 00.7**	**-2.6**
	SNR=51								
UCH	**Uchtor**	**17.68**	**293**	P		**P**		**05 09 02.0**	**-1.9**
	SNR=158								
FRU	**Bishkek**	**17.70**	**295**	*eP*		**P**		**05 09 02.0**	**-2.2**
FRU				pmax		pmax			
	comp=Z,260nm,2.2s								
AAK	**Ala-Archa**	**17.76**	**294**	P		**P**		**05 09 02.4**	**-2.5**
	SNR=82								
USP	**Ospenovka**	**17.87**	**296**	P		**P**		**05 09 04.5**	**-1.7**
	SNR=6.2								
AML	**Almayashu**	**18.27**	**292**	P		**P**		**05 09 10.0**	**-1.3**
	SNR=70								
EKS2	**Erkin-Say**	**18.29**	**294**	P		**P**		**05 09 10.1**	**-1.4**
	SNR=67								
ZAL	**Zalesovo**	**18.42**	**337**	P		**P**		**05 09 11.1**	**-2.0**
	comp=Z,0.9nm,0.3s,baz=233,slow=14,SNR=30								
ZAL				Lg				05 14 39.2	
	comp=Z,0.4nm,0.3s,baz=333,slow=24,SNR=4.1								
ZAL				LR		LR		05 16 57.5	
	comp=Z,2μm,19.7s,baz=226,slow=39								
ZAL	**Zalesovo**	**18.42**	**337**	P		**P**		**05 09 11.1**	**-2.0**
ZAL				Lg				05 14 39.2	
ZAL				LR		L

comp=E,2µm,14.7s
DL2 LR LR
comp=Z,3µm,11.6s
NVS Novosibirsk 19.68 336 *i* P **P** **05 09 25.7 -2.1**
NVS *e*S **S** **05 13 06.0 +2.7**
NVS pmax pmax
comp=Z,229nm,1.5s
NVS pmax pmax
comp=N,387nm,1.6s
NVS pmax pmax
comp=E,126nm,1.6s
NVS smax
comp=N,141nm,1.7s
BLSP Bilaspur 19.79 224 *e*P **P** **05 09 27.6 -1.7**
BLSP *e*S **S** **05 13 12.8 +6.8**
JBP Jabalpur 20.23 230⇓ *i*P **P** **05 09 33.9 -0.1**
JBP *i*S **S** **05 13 19.9 +4.6**
BDT Bhumibol Dam 20.23 174 P **P** **05 09 35.0 +0.9**
comp=N,24nm,1.0s
GZH Guangzhou 20.24 130 P **P** **05 09 31.6 -2.5**
GZH S **S** **05 13 08.5 -7.0**
GZH AMB AMB
comp=Z,81nm,0.9s
GZH LR LR
comp=Z,15µm,13.5s,MS5.5
HIA Hailar 20.41 47 *e*P **P** **05 09 35.1 -0.6**
HIA pmax pmax
comp=Z,77nm,1.0s
HIA Hailar 20.41 47 *e*P **P** **05 09 35.1 -0.6**
comp=Z,77nm,1.0s
CEP Cherat 20.46 267 P **P** **05 09 34.0 -2.3**
KK31 Karatay Array 20.72 294⇑ P **P** **05 09 36.8 -2.2**
comp=Z,102nm,0.8s,baz=93,slow=10.0,SNR=700
KKAR Karatay Array 20.72 294 *i* P **P** **05 09 36.8 -2.2**
KKAR pmax pmax
comp=Z,115nm,0.9s
THW Thamme Wali 20.92 265 P **P** **05 09 39.4 -1.7**
SNY Shenyang 21.12 70⇑⇑ P **P** **05 09 43.0 0.0**
SNY AP 05 09 47.0
SNY XP 05 09 49.9
SNY S **S** **05 13 34.2 +1.5**
SNY XS 05 13 45.0
SNY LR LR
comp=N,5µm,9.4s
SNY LR LR
comp=E,8µm,14.3s
SNY LR LR
comp=Z,8µm,15.3s,MS5.2
SSE Sheshan 21.17 100 P **P** **05 09 44.5 +0.8**
SSE S **S** **05 13 34.3 +0.5**
SSE XS 05 13 43.6
SSE AMB AMB
comp=Z,147nm,1.0s,mb5.3
SSE AMB AMB
comp=Z,679nm,7.5s
SSE LR LR
comp=N,2µm,11.0s,MS5.1
SSE LR LR
comp=E,4µm,11.0s,MS5.1
SSE LR LR
comp=Z,4µm,9.5s
HKC Hong Kong 21.33 130⇑ *e*P **P** **05 09 46.0 +0.7**
TAS Tashkent 21.50 289 *de*P **P** **05 09 43.0 -3.9**
TAS *e*S **S** **05 13 43.0 +3.1**
TAS pmax pmax
comp=Z,3µm,4.0s
QIZ Qiongzhong 21.66 144⇑ *i*P **P** **05 09 49.2 +0.6**
QIZ AP 05 09 58.3
QIZ XP 05 10 01.6
QIZ S **S** **05 13 49.2 +6.2**
QIZ AMB AMB
comp=Z,73nm,1.0s,mb5.1
QIZ AMB AMB
comp=Z,258nm,5.5s
QIZ LR LR
comp=N,5µm,12.1s,MS5.3
QIZ LR LR
comp=E,6µm,11.2s,MS5.3
QIZ LR LR
comp=Z,9µm,11.2s,MS5.4
QIZ Qiongzhong 21.66 144 *e*P **P** **05 09 49.3 +0.7**
comp=Z,89nm,0.8s,mb5.2
KKTK Khon Kaen 21.72 164 P **P** **05 09 50.0 +0.7**
SBDP Sheikh Budin 21.83 264 P **P** **05 09 49.0 -1.3**
NST Nakhon Sawan 21.91 171 P **P** **05 09 53.0 +1.9**
comp=E,67nm,1.0s,mb5.0
QZH Quanzhou 22.43 118⇑ *i*P **P** **05 09 56.9 +0.5**
QZH S **S** **05 14 05.4 +8.1**
QZH AMB AMB
comp=Z,430nm,1.7s,mb5.6
QZH LR LR
comp=Z,10µm,22.4s,MS5.2
CN2 Changchun 22.65 65 *e*P **P** **05 09 57.6 -0.7**
CN2 *e*AP 05 10 04.9
CN2 PP PP 05 10 26.7 -0.1
CN2 *e*S **S** **05 14 01.1 0.0**
CN2 LR LR
comp=Z,6µm,12.0s,MS5.3
BOD Bodaibo 23.34 24⇑ *i*P **P** **05 10 05.4 +0.5**
BOD *e* 05 10 13.5
VOSK Vostochnaya 23.55 319⇑⇑ P **P** **05 10 06.8 -0.2**
comp=Z,402nm,1.2s,mb5.7
VOSK Vostochnaya 23.55 319 P **P** **05 10 06.8 -0.2**
VOSK pmax pmax
comp=Z,482nm,1.2s,mb5.8
INCN Inchon 23.71 81 *e*P **P** **05 10 09.5 +0.8**
comp=E,241nm,1.1s,mb5.5
BVA0 Borovoye Array 24.01 319⇑ P **P** **05 10 11.6 +0.1**
BVA0 Borovoye Array 24.01 319 P **P** **05 10 11.5 0.0**
BVAR Borovoye Array 24.01 319 P **P** **05 10 11.8 +0.3**
comp=Z,91nm,0.8s,mb5.3,baz=113,slow=9.9,SNR=98
BVAR S **S** **05 14 32.1 +7.3**
comp=Z,1.2nm,0.6s,baz=169,slow=7.6,SNR=2.1
BVAR Lg 05 17 38.8
comp=Z,4.0nm,1.1s,baz=107,slow=13,SNR=2.3
BVAR LR LR 05 20 09.4
comp=Z,6µm,21.4s,MS5.0,baz=155,slow=38
BRVK Borovoye 24.08 319⇑⇑ P **P** **05 10 12.5 +0.4**
comp=Z,236nm,1.1s,mb5.5
BRVK Borovoye 24.08 319 *e*P **P** **05 10 12.3 +0.1**
KGD Kothagudem 24.31 220 *e*P **P** **05 10 15.3 +0.5**
KGD *e* 05 10 53.7
KGD *e*S **S** **05 14 39.2 +8.8**
KGD *e* 05 17 05.9
KGD *e* 05 18 12.0
KS15 Wonju Array Si 24.70 80 *e*P **P** **05 10 19.2 +0.9**
ZRNK Zerenda 24.71 318⇑⇑ P **P** **05 10 17.2 -1.1**
comp=Z,150nm,1.2s,mb5.4
ZRNK Zerenda 24.71 318 *e*P **P** **05 10 17.6 -0.6**
NNT Nongplab 24.91 173 P **P** **05 10 22.5 +2.0**
HYB Hyderabad 25.56 224 *i*P **P** **05 10 28.0 +1.3**
comp=E,60nm,1.0s,mb5.1
HYB *e*sP sP 05 10 34.0 +1.6
HYB *e*S **S** **05 15 00.0 +8.6**
HYB LR LR 05 21 08.0
comp=Z,5.4nm,16.0s
HYB Hyderabad 25.56 224 *e*P **P** **05 10 28.0 +1.3**
HYB *e*S **S** **05 14 53.0 +1.6**
HYB pmax pmax
comp=Z,60nm,1.0s,mb5.1
HYB Hyderabad 25.56 224 *e*P **P** **05 10 28.0 +1.3**
comp=E,60nm,1.0s,mb5.1
HYB *e*S **S** **05 14 53.0 +1.6**
QUE Quetta 25.69 262 *e*P **P** **05 10 28.5 +0.7**
QUE *e*S S 05 15 14.0 +21
MDJ Mudanjiang 25.70 63 P **P** **05 10 27.0 -0.7**
MDJ AP pP 05 10 33.0 +1.4
MDJ XP sP 05 10 35.7 +2.3
MDJ PCP PcP 05 13 57.8 -0.9
MDJ S **S** **05 14 52.6 -0.8**
MDJ XS 05 15 03.8
MDJ SCP 05 17 35.1
MDJ PCS 05 17 38.9
MDJ SCS ScS 05 21 24.4 +0.1
MDJ AMB AMB
comp=Z,48nm,1.4s,mb4.8
MDJ AMB AMB
comp=Z,316nm,6.7s
MDJ LR LR
comp=N,12µm,14.8s,MS5.6
MDJ LR LR
comp=E,3µm,12.1s,MS5.6
MDJ LR LR
comp=Z,3µm,11.8s,MS5.0
MDJ Mudanjiang 25.70 63 *e*P **P** **05 10 28.6 +0.9**

comp=Z,37nm,0.9s,mb4.9
CLNS Chul'man 26.95 35 *e*P **P** **05 10 39.0 -0.2**
CLNS *e*PPP PPP 05 11 28.0 -8.9
CLNS *e* 05 14 00.5
CLNS *e*S **S** **05 15 14.7 +0.7**
CLNS *e* 05 21 22.6
CLNS pmax pmax
comp=E,30nm,1.1s
CLNS pmax pmax
comp=Z,30nm,1.1s,mb4.7
CLNS pmax pmax
comp=N,20nm,1.0s
CLNS smax
comp=N,600nm,12.9s
CLNS smax
comp=Z,500nm,11.9s
CLNS smax
comp=E,400nm,11.5s
CLNS MLR MLR
comp=E,1µm,12.0s,MS4.8
CLNS MLR MLR
comp=Z,2µm,12.0s,MS5.0
CLNS MLR MLR
comp=N,800nm,10.0s,MS4.8
POO Poona 27.49 233 *e*P **P** **05 10 43.7 -0.8**
CUD Cuddapah 27.89 220 *e*P **P** **05 10 47.8 -0.3**
CUD *e*PcP PcP 05 14 01.5 -2.5
CUD *e*S **S** **05 15 38.4 +8.8**
CUD *e*SnSn 05 16 49.5
JNU Nakatsue 28.14 88 P **P** **05 10 48.7 -1.4**
JNU LR LR 05 22 13.4
comp=N,3µm,20.4s,MS4.9,baz=152,slow=37
JOW Kunigami 28.63 102 P **P** **05 10 52.4 -2.3**
JOW LR LR 05 22 37.2
comp=N,651nm,21.6s,MS4.2,baz=318,slow=37
AB31 Akbulak array 28.93 306⇑ P **P** **05 10 56.3 -0.9**
comp=N,31nm,1.1s,mb5.0
AB31 Akbulak array 28.93 306 P **P** **05 10 56.2 -1.0**
AB31 pmax pmax
comp=Z,43nm,1.1s,mb5.1
VAN Vannovskaya 30.40 283 *i* P **P** **05 11 11.8 +1.4**
SVE Sverdlovsk 30.74 321⇑⇑ *e*P **P** **05 11 12.0 -1.2**
SVE *e*PPP PPP 05 12 20.0 -9.0
SVE *e*S **S** **05 16 09.0 -5.6**
SVE *e*SSS SSS 05 18 22.0 +3.4
SVE pmax pmax
comp=Z,340nm,2.0s,mb5.8
SVE MLR MLR
comp=N,2µm,15.0s,MS5.2
SVE MLR MLR
comp=E,3µm,15.0s,MS5.2
SVE MLR MLR
comp=Z,4µm,15.0s,MS5.2
ARU Arti 31.66 319 *e*P **P** **05 11 20.4 -0.9**
ARU pmax pmax
comp=Z,14nm,0.8s,mb4.8
ARU Arti 31.66 319 *e*P **P** **05 11 20.4 -0.9**
comp=Z,14nm,0.8s,mb4.8
ARU *e*pP pP 05 11 40.0 +15
YAK Yakutsk 31.92 29*c* *i*P **P** **05 11 22.1 -1.4**
YAK *e**PP pP 05 11 29.8 +2.3
YAK *e* 05 12 23.4
YAK *e* 05 14 08.4
YAK *e*S **S** **05 16 33.7 +0.7**
YAK 05 21 51.5
YAK pmax pmax
comp=Z,10.0nm,0.8s,mb4.7
YAK pmax pmax
comp=N,8.0nm,1.0s
YAK pmax pmax
comp=E,8.0nm,0.9s
YAK pmax pmax
comp=Z,7.0nm,0.9s,mb4.5
YAK pmax pmax
comp=N,3.0nm,1.1s
YAK pmax pmax
comp=E,4.0nm,1.0s
YAK smax
comp=N,3.0nm,1.1s
YAK smax
comp=E,4.0nm,1.0s
YAK MLR MLR
comp=Z,2µm,15.0s,MS5.0
YAK MLR MLR
comp=N,1µm,13.0s,MS4.9
YAK MLR MLR
comp=E,1µm,16.0s,MS4.9
YAK Yakutsk 31.92 29 *e*P **P** **05 11 22.3 -1.2**
comp=E,54nm,0.8s,mb5.4
IPM Ipoh 32.95 172⇓ *e*P **P** **05 11 34.0 +1.0**
MAJO Matsushiro 32.97 79 *e*P **P** **05 11 30.5 -2.4**
MAJO pmax pmax
comp=Z,19nm,0.7s,mb5.1
MAJO Matsushiro 32.97 79 *e*P **P** **05 11 30.5 -2.4**
comp=Z,19nm,0.7s,mb5.1
MAT Matsushiro 32.97 79 P **P** **05 11 29.3 -3.6**
MAT S **S** **05 16 46.0 -3.6**
MAT Matsushiro 32.97 79 *e*P **P** **05 11 29.0 -3.9**
MAT *e*S **S** **05 16 46.0 -3.6**
MAT pmax pmax
comp=Z,19nm,0.8s,mb5.1
MAT MLR MLR
comp=Z,2µm,18.0s,MS5.0
MAT Matsushiro 32.97 79 *e*P **P** **05 11 29.0 -3.9**
comp=Z,19nm,0.8s,mb5.1
MAT *e*S **S** **05 16 46.0 -3.6**
MAT LR LR
comp=Z,2µm,18.0s,MS5.0
ASAJ Asahikawa 35.02 64 P **P** **05 11 50.5 -0.1**
comp=Z,48nm,1.1s,mb5.3,baz=299,slow=18,SNR=6.4
ASAJ Asahikawa 35.02 64 P **P** **05 11 50.5 0.0**
ASAJ pmax pmax
comp=Z,48nm,1.1s
KKM Kota Kinabalu 35.97 146 *e*P **P** **05 12 00.1 +1.2**
MAK Makhachkala 37.54 294 *e*P **P** **05 12 14.0 +2.2**
MAK *e* 05 13 40.0
MAK S **S** **05 18 08.0 +7.9**
MAK pmax pmax
comp=Z,600nm,4.0s
TIXI Tiksi 38.03 16 *e*P **P** **05 12 14.1 -1.5**
TIXI *e* 05 13 44.3
TIXI *e*S **S** **05 17 59.2 -8.0**
TIXI *e* 05 20 39.2
TIXI pmax pmax
comp=Z,102nm,0.8s,mb5.6
TIXI MLR MLR
comp=Z,8µm,12.0s,MS5.8
TIXI Tiksi 38.03 16 *e*P **P** **05 12 14.4 -1.3**
comp=Z,26nm,1.2s,mb4.8
PECR Pechory 39.47 316 *e*P **P** **05 12 29.5 +1.7**
PECR *e* 05 14 03.0
PECR *e*S **S** **05 18 34.0 +5.0**
PECR pmax pmax
comp=Z,500nm,2.0s,mb5.9
PECR smax
comp=E,1µm,16.0s
PECR MLR MLR
comp=Z,2µm,17.0s,MS5.1
PECR MLR MLR
comp=N,6µm,15.0s,MS5.7
PECR MLR MLR
comp=E,7µm,16.0s,MS5.7
CBIJ Chichi jima 39.49 92 P **P** **05 12 28.0 -0.3**
comp=E,58nm,0.9s,mb5.3,baz=272,slow=19,SNR=3.0
GNI Garni 40.11 290 *e*P **P** **05 12 36.0 +2.7**
GNI pmax pmax
comp=Z,68nm,1.1s
GNI Garni 40.11 290 *e*P **P** **05 12 36.0 +2.7**
comp=Z,68nm,1.1s,mb5.3
ZEI Tsey 40.19 295 *e*P **P** **05 12 35.8 +1.9**
ZEI *i* 05 14 08.0
ZEI *i*S **S** **05 18 40.0 0.0**
ZEI pmax pmax
comp=Z,50nm,2.0s,mb4.9
ZEI pmax pmax
comp=Z,200nm,6.0s
ZEI smax
comp=E,200nm,14.0s
ZEI MLR MLR
comp=Z,2µm,16.0s,MS5.2
GOF Gofitskoye 40.42 298⇑ *i*P **P** **05 12 37.0 +1.2**
GOF *i* 05 14 10.0
GOF pmax pmax
comp=Z,160nm,1.4s,mb5.6
GOF pmax pmax
comp=Z,1µm,4.0s
GOF pmax pmax
comp=Z,100nm,1.5s,mb5.3
GOF MLR MLR
comp=E,7µm,16.0s
GOF MLR MLR
comp=Z,4µm,16.0s,MS5.3
PYA Pyatigorsk 40.56 297*d* *i*P **P** **05 12 38.0 +1.0**
PYA MLR MLR
comp=E,3µm,16.0s
PYA MLR MLR
comp=Z,3µm,16.0s,MS5.3
MA2 Magadan 40.63 39 *e*P **P** **05 12 36.1 -1.3**
MA2 *e*pP pP 05 12 56.4 +15
KIV Kislovodsk 40.84 297 *e*P **P** **05 12 40.6 +1.3**
KIV *e* 05 14 15.2
KIV *e* 05 14 39.9
KIV *e*PPP PPP 05 14 42.4 -3.1
KIV *e*S **S** **05 18 50.5 +0.7**
KIV pmax pmax
comp=Z,40nm,0.9s,mb5.0
KIV MLR MLR
comp=Z,2µm,20.0s,MS5.0
KIV MLR MLR
comp=E,2µm,18.0s
KIV Kislovodsk 40.84 297 *e*P **P** **05 12 40.8 +1.5**
comp=E,65nm,1.0s,mb5.2
VANB Van 41.52 289 *e*P **P** **05 12 46.1 +1.2**
VANT Van 41.56 288 *e*P **P** **05 12 48.6 +3.4**
HASS Wahat al Ahsa' 41.59 267 D 05 12 46.8
SEY Seymchan 41.95 34 *e*P **P** **05 12 48.3 +0.2**
SEY *e* 05 14 28.7
SEY *e* 05 14 45.6
SEY *e*S **S** **05 19 04.9 -1.0**
SEY SS SS 05 22 09.6 +2.3
SEY *e*SSS SSS 05 22 46.2 -4.2
SEY pmax pmax
comp=Z,40nm,1.1s,mb5.0
SEY pmax pmax
comp=E,20nm,1.0s
SEY MLR MLR
comp=Z,3µm,17.0s,MS5.2
ERZM Erzurum 42.69 291 *i* P **P** **05 12 56.3 +1.9**
VRT Varto 42.77 290 *i* P **P** **05 12 56.2 +1.1**
EZM Erzurum 42.79 291 *i* P **P** **05 12 56.9 +1.6**
MOS Moscow 43.06 315 *i* P **P** **05 12 58.3 +1.1**
MOS *e* 05 13 12.5
MOS *e* 05 14 39.4
MOS *e*S **S** **05 19 21.2 -1.0**
MOS *e*SS SS 05 22 26.9 -1.3
MOS pmax pmax
comp=Z,1µm,1.1s,mb6.5
MOS MLR MLR
comp=E,5µm,22.0s
MOS MLR MLR
comp=Z,7µm,22.0s,MS5.5
BTMT Batman 43.06 289 *e*P **P** **05 12 59.5 +2.0**
BEST Besiri 43.32 288 *i* P **P** **05 13 01.3 +1.7**
OBN Obninsk 43.67 314*d* *i*P **P** **05 13 03.2 +1.0**
OBN *i* 05 13 13.8
OBN *i* 05 14 45.8
OBN *i* 05 14 50.9
OBN *i*S **S** **05 19 34.9 +3.7**
OBN *e*SS SS 05 22 55.6 +16
OBN pmax pmax
comp=Z,279nm,1.2s,mb5.9
OBN MLR MLR
comp=Z,4µm,18.0s,MS5.4
OBN Obninsk 43.67 314 *e*P **P** **05 12 59.4 -2.9**
comp=Z,314nm,1.3s,mb5.9
OBN *e*P pP 05 13 03.6 -2.7
EZC Erzincan 43.88 291 *e*P **P** **05 13 08.1 +4.0**
GUMT Gumushane 43.94 292 *i* P **P** **05 13 05.8 +1.3**
ANN Anapa 44.38 299*c* *i*P **P** **05 13 10.1 +2.0**
ANN *e* 05 15 00.0
ANN *e*S **S** **05 19 42.4 +0.8**
ANN MLR MLR
comp=Z,880nm,20.0s,MS4.7
ANN MLR MLR
comp=N,660nm,12.0s
ANN MLR MLR
comp=E,580nm,13.0s
PET Petropavlovsk 44.88 49 *e*P **P** **05 13 03.0 -9.0**
PET pmax pmax
comp=Z,195nm,13.0s
PET MLR MLR
comp=Z,3µm,16.0s,MS5.2
MYA Malataya 45.33 290 *e*P **P** **05 13 18.2 +2.4**
LVZ Lovozero 45.44 332 *i* P **P** **05 13 17.0 +0.7**
LVZ *e*S **S** **05 19 59.7 +3.2**
LVZ pmax pmax
comp=Z,280nm,1.6s,mb5.8
LVZ pmax pmax
comp=N,80nm,1.7s
LVZ pmax pmax
comp=E,90nm,1.4s
LVZ pmax pmax
comp=Z,100nm,1.1s,mb5.6
LVZ pmax pmax
comp=N,30nm,1.4s
LVZ pmax pmax
comp=E,100nm,1.8s
LVZ smax
comp=N,270nm,3.0s
LVZ smax
comp=E,180nm,3.0s
LVZ MLR MLR
comp=Z,4µm,16.0s,MS5.4
LVZ MLR MLR
comp=N,810nm,10.0s
LVZ MLR MLR
comp=E,2µm,18.0s
SVSK Karacayir 45.91 292 *e*P **P** **05 13 20.7 +0.3**
GZT Gaziantep 46.28 289 *i* P **P** **05 13 24.9 +1.6**
ARSS Ar Rass 46.40 272 P **P** **05 13 24.3 -0.1**
GAZ Gaziantep 46.61 289 *e*P **P** **05 13 28.5 +2.6**
SIM Simferopol' 46.65 300 *e*P **P** **05 13 27.0 +0.9**
SIM *e*S **S** **05 20 23.9 +10**
SIM pmax pmax
comp=Z,50nm,0.8s,mb5.5
HILS Ha'il 46.86 274 P **P** **05 13 28.6 +0.6**
PUL Pulkovo 46.88 321 *e*P **P** **05 13 29.2 +1.5**
PUL *e*S **S** **05 20 14.7 -2.5**
PUL pmax pmax
comp=Z,270nm,1.3s,mb6.0
PUL pmax pmax
comp=N,30nm,0.6s
PUL pmax pmax
comp=E,310nm,0.8s
PUL pmax pmax
comp=Z,260nm,0.8s,mb6.2
PUL pmax pmax
comp=E,1µm,1.3s
PUL smax
comp=N,90nm,0.5s
PUL smax
comp=E,20nm,0.3s
PUL MLR MLR
comp=Z,2µm,12.0s,MS5.3
PUL MLR MLR
comp=E,3µm,15.0s
PUL Pulkovo 46.88 321 *e*P **P** **05 13 29.1 +1.4**
BOYT Boyabat 47.01 295 *i* P **P** **05 13 28.8 -0.2**
BNN Bunyan 47.09 291 P **P** **05 13 31.8 +2.1**
BYBT Boyabat 47.09 295 *e*P **P** **05 13 30.8 +1.1**
YOZ Yozgat 47.23 293 *i* P **P** **05 13 30.5 -0.3**
CTKT Corum 47.32 294 *i* P **P** **05 13 30.1 -1.4**
BZK Bozkurt 47.50 296 *e*P **P** **05 13 33.8 +0.9**
AFFS 'Afif 47.52 269 P **P** **05 13 35.2 +1.9**
COBT Iskenderun 47.55 288 *i* P **P** **05 13 33.4 0.0**
TOS Tosya 47.75 295 *e*P **P** **05 13 35.4 +0.5**
CEYT Ceyhan 47.76 289 *e*P **P** **05 13 37.5 +2.5**
HTY Hatay 47.78 288 *e*P **P** **05 13 36.8 +1.6**
AVNT Avonos 47.84 292 *i* P **P** **05 13 35.4 -0.3**
BALT Daday 48.07 296 *i* P **P** **05 13 37.3 0.0**
KAMS Al Khamasin 48.12 264 P **P** **05 13 38.1 +0.1**
CANT Cankiri 48.17 294 *e*P **P** **05 13 40.0 +1.8**
NIG Nigde 48.24 291 *i* P **P** **05 13 39.8 +1.0**
BILL Bilibino 48.28 28 *e*P **P** **05 13 38.2 -0.4**
BILL pmax pmax
comp=Z,20nm,0.8s,mb5.2
BILL Bilibino 48.28 28 *e*P **P** **05 13 38.2 -0.4**
comp=Z,20nm,0.8s,mb5.2
ELDT Eldivan 48.35 294 *i* P **P** **05 13 39.5 0.0**
BRTR Keskin Array B 48.44 293 P **P** **05 13 39.5 -0.7**

comp=Z,32nm,0.7s,mb5.5,baz=96,slow=7.3,SNR=44
BRTR PP PP 05 15 35.1 +2.4
comp=Z,12nm,0.9s,baz=91,slow=5.3,SNR=5.3
BRTR LR LR 05 36 59.6
comp=Z,776nm,19.1s,MS4.7,baz=50,slow=40
KAMT Kaman 48.49 293 P **P** **05 13 40.7 0.0**
AKASG Malin Array Be 48.61 308 P **P** **05 13 39.9 -1.6**
comp=Z,26nm,0.7s,mb5.4,baz=68,slow=6.9,SNR=92
AKASG S **S** **05 20 45.1 +3.3**
comp=Z,0.1nm,0.3s,baz=74,slow=24,SNR=2.1
AKASG LR LR 05 34 15.3
comp=Z,980nm,18.2s,MS4.8,baz=85,slow=36
KIEV Kiev 48.62 308 P **P** **05 13 40.0 -1.5**
SAFT Safranbolu 48.66 295 *eP* **P** **05 13 42.2 +0.3**
ASF Jabal al Asfar 48.68 283 P **P** **05 13 43.2 +1.0**
comp=Z,59nm,1.0s,mb5.6,baz=315,slow=2.6,SNR=46
ASF PP PP 05 15 40.4 +5.2
comp=Z,5.4nm,1.0s,baz=327,slow=2.9,SNR=4.4
ASF S **S** **05 20 47.5 +4.5**
comp=Z,1.1nm,0.4s,baz=318,slow=14,SNR=1.8
MNK Minsk 48.76 314⇑ *eP* **P** **05 13 43.0 +0.5**
MNK pmax pmax
comp=E,370nm,1.0s
MNK pmax pmax
comp=Z,390nm,1.0s,mb6.4
VSU Vasula 48.82 319⇓ *iP* **P** **05 13 43.0 +0.1**
VSU P 05 13 43.2
FINES FINESS Array B 48.86 323 P **P** **05 13 42.5 -0.7**
comp=Z,32nm,0.9s,mb5.4,baz=90,slow=7.6,SNR=51
FINES PcP PcP 05 15 08.9 +0.8
comp=Z,8.3nm,0.8s,baz=104,slow=5.7,SNR=3.4
FINES LR LR 05 35 29.3
comp=Z,1μm,18.2s,MS5.0,baz=93,slow=38
ARCES ARCESS Array B 48.93 334 P **P** **05 13 43.2 -0.4**
comp=Z,10nm,0.6s,mb5.0,baz=78,slow=7.9,SNR=39
ARCES PcP PcP 05 15 07.0 -1.3
comp=Z,8.3nm,0.8s,baz=104,slow=3.7,SNR=5.5
ARCES LR LR 05 34 08.0
comp=Z,2μm,19.7s,MS5.0,baz=98,slow=36
ARCES ARCESS Array B 48.93 334 P **P** **05 13 43.2 -0.4**
ARCES PcP PcP 05 15 07.0 -1.3
ARCES LR LR 05 34 08.0
ANTO Ankara 49.01 294 *eP* **P** **05 13 43.9 -0.7**
ANTO Ankara 49.01 294 P **P** **05 13 46.8 +2.2**
HRI Mount Hermon 49.15 284 P **P** **05 13 44.8 -1.0**
KSHT Keshet 49.20 284 P **P** **05 13 45.5 -0.7**
TATS Tathlith 49.41 264 P **P** **05 13 49.0 +1.1**
KBRS Khaybar 49.60 274 P **P** **05 13 51.2 +1.9**
HNTI Hanita 49.65 284 P **P** **05 13 48.5 -1.2**
HMDT Nahal Hemdat 49.71 283 P **P** **05 13 49.0 -1.1**
KIS Kishinev 49.72 304 *keP* **P** **05 13 50.0 0.0**
KIS *e* 05 14 02.0
KIS *e* 05 15 46.0
KIS *e* 05 16 37.0
KIS *eS* **S** **05 20 55.0 -2.3**
KIS *ePS* PS 05 21 05.0 -2.1
KIS pmax pmax
comp=Z,400nm,1.6s,mb6.2
KIS pmax pmax
comp=N,290nm,2.0s
KIS pmax pmax
comp=E,120nm,1.8s
KIS pmax pmax
comp=Z,400nm,1.6s,mb6.2
KIS MLR MLR
comp=Z,1μm,16.0s,MS5.0
KIS MLR MLR
comp=N,600nm,13.0s
KIS MLR MLR
comp=E,1μm,19.0s
KIS MLR MLR
comp=Z,1μm,18.0s
MDU Mudurnu 49.96 295 *eP* **P** **05 13 50.8 -1.1**
KONT Konya--Tatoy 49.97 291 *eP* **P** **05 13 51.7 -0.3**
OFRI 'Ofer 49.98 284 P **P** **05 13 51.1 -1.1**
KIZT Kizilcal 50.00 293 *iP* **P** **05 13 51.0 -1.3**
HENT Hendek 50.07 295 *iP* **P** **05 13 51.8 -1.0**
DRGI Dragot 50.08 283 P **P** **05 13 51.8 -1.2**
HDMB Hadim 50.22 290 *eP* **P** **05 13 53.5 -0.5**
CSS Prodhromos 50.33 287 *eP* **P** **05 13 55.9 +1.1**
DJNS Zahran al Janu 50.37 262 D 05 12 57.2
ESKT Eskisehir 50.54 294 *iP* **P** **05 13 55.3 -1.0**
LEF Lefka 50.60 288 *eP* **P** **05 13 54.5 -2.4**
TBKS Tabuk 50.63 278 P **P** **05 13 59.9 +2.7**
ZFRI Zfri 50.69 281 P **P** **05 13 56.5 -1.1**
TIRR Tirgusor 50.70 301 P **P** **05 13 59.5 +2.0**
BLJS Baljurashi 50.72 266 P **P** **05 13 59.5 +1.5**
JMQS Jabal Moqyreh 50.86 279 P **P** **05 14 00.4 +1.4**
PRNI Paran 50.91 281 P **P** **05 13 58.2 -1.1**
HRT Hereke 50.95 296 *iP* **P** **05 13 59.9 +0.4**
HARR Harsova 50.96 301⇑ *iP* **P** **05 14 15.1 +16**
HARR Harsova 50.96 301⇑ *iP* **P** **05 14 15.1 +16**
AQBJ Aqaba 51.14 281 P **P** **05 13 59.8 -1.3**
KZIT Kziot 51.14 282 P **P** **05 13 59.6 -1.5**
MBH Mount Berech 51.22 281 P **P** **05 14 00.3 -1.3**
KMTI Karmit 51.23 281 P **P** **05 14 00.3 -1.4**
ALT Altintas 51.24 294 *eP* **P** **05 14 01.3 -0.4**
EIL Elat 51.24 281 P **P** **05 14 00.4 -1.4**
YLV Yalova 51.25 296 *eP* **P** **05 14 00.5 -1.2**
YNBS Yanbu' al Bahr 51.30 273 P **P** **05 14 04.3 +2.0**
ALWS Ilw as Safayha 51.31 280 P **P** **05 14 03.9 +1.6**
ISP Isparta 51.37 292 *iP* **P** **05 14 02.3 -0.4**
ISP Isparta 51.37 292 P **P** **05 14 04.3 +1.6**
VRI Vrincioaia 51.42 303⇑ *iP* **P** **05 14 19.0 +16**
VRI Vrincioaia 51.42 303⇑ *iP* **P** **05 14 19.1 +16**
HAQS Haql 51.53 280 P **P** **05 14 05.4 +1.4**
SUW Suwalki 51.54 314 *eP* **P** **05 14 04.1 +0.4**
comp=Z,300nm,1.3s,mb6.1
SUW Suwalki 51.54 314 *eP* **P** **05 14 04.1 +0.4**
ULDT Uludag 51.56 295 *iP* **P** **05 14 03.6 -0.6**
AYUS 'Aynunah 51.65 279 P **P** **05 14 05.9 +0.9**
BDAS Al Bad' 51.67 279 P **P** **05 14 06.0 +0.9**
SPB4 Spitsbergen Ar 51.69 345 *eP* **P** **05 14 03.4 -1.2**
CTT Catalca 51.73 297 *eP* **P** **05 14 05.9 +0.5**
ISR Istrita 51.77 302⇑ *iP* **P** **05 14 20.7 +15**
ISR Istrita 51.77 302⇑ *iP* **P** **05 14 20.7 +15**
MLR Muntele Rosu 52.06 303⇑ *iP* **P** **05 14 21.9 +14**
MLR Muntele Rosu 52.06 303⇑ *iP* **P** **05 14 21.9 +14**
LVV L'vov 52.06 308 *eP* **P** **05 14 09.6 +1.9**
DST Dursunbey 52.12 295 *iP* **P** **05 14 07.5 -0.8**
ELL Elmali 52.22 291 *eP* **P** **05 14 08.3 -0.9**
BNT Bandirma 52.36 296 *iP* **P** **05 14 10.1 -0.1**
DENT Denizli 52.49 292 *eP* **P** **05 14 11.4 +0.2**
DNZL Cakiroluk 52.51 292 *iP* **P** **05 14 10.1 -1.2**
KBS Kingsbay 52.55 346 *eS* **S** **05 21 34.9 -1.0**
KBS *eSS* SS 05 25 16.8 +3.9
KBS AMS AMS 05 41 08.7
comp=Z,1μm,16.0s,MS5.1
BALB Balikesir 52.65 295 *eP* **P** **05 14 12.4 +0.1**
EDRB Edirne 52.68 298 *eP* **P** **05 14 11.6 -1.0**
KWP Kalwaria 52.94 308 *eP* **P** **05 14 14.5 +0.2**
comp=Z,300nm,0.9s,mb6.2
KWP Kalwaria 52.94 308 *eP* **P** **05 14 14.5 +0.2**
KWP *e**PP pP 05 14 21.3 +2.8
KWP MLR MLR
comp=Z,2μm,21.0s,MS5.0
KWP Kalwaria 52.94 308⇓ *iP* **P** **05 14 14.1 -0.2**
comp=Z,175nm,0.8s,mb6.0
KWP *eP* 05 14 14.5
KWP *epP* pP 05 14 21.3 +2.8
AKS Akhisar 52.97 294 *eP* **P** **05 14 13.9 -0.8**
WAR Warsaw 53.23 312 *eP* **P** **05 14 17.9 +1.4**
WAR *epP* pP 05 14 23.6 +3.0
WAR *ePcP* PcP 05 15 27.1 +2.8
WAR MLR MLR 05 37 36.0
comp=Z,4μm,19.6s,MS5.4
YER Yerkesik 53.28 292 *eP* **P** **05 14 15.9 -1.1**
LOF Lofoten 53.35 332 *eP* **P** **05 14 17.5 +0.4**
LOF *epP* pP 05 14 19.7 -1.6
LOF AMb AMB 05 14 23.3
comp=Z,127nm,1.6s,mb5.6
MOR8 Moi Rana 53.36 330 *eP* **P** **05 14 15.1 -2.1**
MOR8 AMb AMB 05 14 19.6
comp=Z,90nm,1.5s,mb5.5
FX1 Attu Island--F 53.52 47 P **P** **05 14 16.9 -1.7**
comp=Z,28nm,0.5s,mb5.4,baz=268,slow=5.6,SNR=12
FX1 Attu Island--F 53.52 47 P **P** **05 14 16.9 -1.7**
FX1 pmax pmax
comp=Z,28nm,0.5s
FX1 Attu Island--F 53.52 47 *eP* **P** **05 14 16.8 -1.8**
KDAG Bornova 53.54 294 *iP* **P** **05 14 18.7 -0.3**
IZM Izmir 53.55 294 *eP* **P** **05 14 17.7 -1.3**
MLSB Milas 53.59 292 *eP* **P** **05 14 19.1 -0.2**

KDZ Kurdzhali 53.68 298 *eP* **P** **05 14 22.0 +2.1**
BDRM Kayabasi 53.93 292 *iP* **P** **05 14 20.3 -1.4**
CRVS Cervenica-Dubn 53.93 308 *eP* **P** **05 14 21.1 -0.5**
CRVS *e* 05 14 22.9
CRVS *epP* pP 05 14 25.7 0.0
RZN Rozhen 54.16 299 *iP* **P** **05 14 23.8 +0.4**
NIE Niedzica 54.49 309⇓ *eP* **P** **05 14 25.5 -0.2**
OJC Ojcow 54.56 310 *eP* **P** **05 14 25.5 -0.7**
OJC *iS* **S** **05 22 17.0 +14**
OJC *iSS* SS 05 25 48.8 +2.9
OJC MLR MLR 05 37 58.4
comp=Z,3μm,20.7s,MS5.4
NSS Namsos 54.72 328 *eP* **P** **05 14 24.6 -2.6**
NSS AMS AMS 05 39 31.0
comp=Z,1μm,16.9s,MS5.0
VTS Vitosha 54.88 300 *iP* **P** **05 14 27.0 -1.7**
MMB Musomiste 54.89 299 *iP* **P** **05 14 27.0 -1.8**
KKB Krupnik 55.23 299 *iP* **P** **05 14 30.0 -1.3**
PSZ Piszkesteto 55.24 307⇑ *iP* **P** **05 14 32.9 +1.7**
PSZ Piszkesteto 55.24 307 *eP* **P** **05 14 32.8 +1.6**
comp=Z,54nm,1.3s,mb5.4
BOLS Boljevac 55.29 302⇑ *iP* **P** **05 14 32.7 +1.0**
APE Apeiranthos 55.33 293⇓ *iP* **P** **05 14 31.9 -0.2**
SANT Santorini 55.66 292 *eP* **P** **05 14 34.0 -0.5**
OKC Ostrava-Krasne 55.69 310 *eP* **P** **05 14 33.7 -0.8**
OKC *ex* x 05 14 35.8
OKC L 05 38 50.0
VYHS Vyhne 55.71 308 *eP* **P** **05 14 34.4 -0.2**
VYHS *i* 05 14 36.5
VYHS *epP* pP 05 14 38.2 -0.6
BSD Bornholm Skovb 55.88 317⇓ *iP* **P** **05 14 35.6 -0.2**
BSD pmax pmax
comp=Z,48nm,1.1s,mb5.4
BSD Bornholm Skovb 55.88 317⇓ *iP* **P** **05 14 35.6 -0.2**
comp=Z,48nm,1.1s,mb5.4
BSD *i* 05 15 34.1
BEO Belgrade 55.94 303⇑ *iP* **P** **05 14 37.1 +0.7**
KOLL Kolacno 55.95 308 *eP* **P** **05 14 36.6 +0.2**
KOLL *e* 05 14 38.4
KOLL *epP* pP 05 14 40.9 +0.4
KOLL *esP* sP 05 14 43.5 +1.4
NB2 NORSAR Subarra 55.98 324 P **P** **05 14 34.6 -1.8**
comp=Z,81nm,1.2s,mb5.6,baz=71,slow=7.0
NB2 NORSAR Subarra 55.98 324 P **P** **05 14 34.6 -1.8**
baz=71,slow=7.4
NB2 NORSAR Subarra 55.98 324 P **P** **05 14 34.9 -1.5**
NOA NORSAR Array B 55.98 324 P **P** **05 14 35.0 -1.4**
comp=Z,18nm,0.7s,mb5.2,baz=73,slow=7.2,SNR=38
NOA LR LR 05 38 57.2
comp=Z,1μm,20.5s,MS5.0,baz=55,slow=36
NOA NORSAR Array B 55.98 324 P **P** **05 14 35.0 -1.4**
NOA pmax pmax
comp=Z,18nm,0.7s
NOA MLR MLR
comp=Z,1μm,20.5s
NOA NORSAR Array B 55.98 324 P **P** **05 14 35.0 -1.4**
NOA LR LR 05 38 57.2
MORC Moravsky Berou 56.08 310 *eP* **P** **05 14 36.7 -0.5**
comp=Z,50nm,1.0s,mb5.5
GRUS Gruza 56.11 302⇑ *iP* **P** **05 14 37.0 -0.6**
KRIS Kristallenia 56.13 291 *eP* **P** **05 14 37.2 -0.6**
comp=Z,55nm,0.8s,mb5.6
NAO01 NORSAR Array S 56.20 324 *eP* **P** **05 14 36.5 -1.5**
comp=Z,56nm,1.1s,mb5.5
SKO Skopje 56.33 300 *iP* **P** **05 14 40.2 +1.0**
KSP Ksiaz 56.47 311 *eP* **P** **05 14 40.7 +0.6**
comp=Z,300nm,1.8s,mb6.0
KSP Ksiaz 56.47 311 *eP* **P** **05 14 40.4 +0.3**
KSP *eS* **S** **05 22 27.0 -2.0**
KSP MLR MLR
comp=Z,6μm,22.9s,MS5.6
KSP Ksiaz 56.47 311 *eP* **P** **05 14 40.4 +0.3**
KSP *eS* **S** **05 22 27.0 -2.0**
KSP *eSS* SS 05 26 28.0 +11
KSP LR LR
comp=Z,6μm,22.9s,MS5.6
DIVS Divcibare 56.52 303⇑ *iP* **P** **05 14 40.7 +0.2**
IDI Anoyia 56.53 291 P **P** **05 14 38.9 -1.9**
comp=Z,29nm,0.8s,mb5.3,baz=32,slow=7.6,SNR=26
IDI S **S** **05 22 32.4 +2.4**
comp=Z,1.2nm,0.6s,baz=272,slow=13,SNR=2.5
DPC Dobruska-Polom 56.62 311 *eP* **P** **05 14 40.6 -0.6**
DPC *ex* x 05 14 42.8
DPC L 05 39 20.0
comp=Z,3.8nm,16.4s
DPC Dobruska-Polom 56.62 311 *eP* **P** **05 14 40.6 -0.6**
DPC MLR MLR
comp=Z,4μm,16.4s,MS5.6
DOMB Dombas 56.67 326 *eP* **P** **05 14 39.6 -1.7**
DOMB AMb AMB 05 14 44.8
comp=Z,87nm,1.3s,mb5.6
UPC Upice 56.76 311 *eP* **P** **05 14 41.5 -0.6**
UPC *ex* x 05 14 43.7
ZST Bratislava 56.90 308 *eP* **P** **05 14 42.7 -0.5**
ZST *e* 05 14 44.7
ZST *e* 05 15 01.3
ZST Bratislava 56.90 308 *eP* **P** **05 14 42.7 -0.5**
ZST *e* 05 15 01.3
NVSS Nova Varos 2 56.93 302⇑ *iP* **P** **05 14 44.5 +1.0**
MOL Molde 57.17 327 *eP* **P** **05 14 47.5 +2.6**
MOL AMb AMB 05 14 52.0
comp=Z,132nm,2.0s,mb5.6
KONO Kongsberg 57.18 323 *eS* **S** **05 22 38.9 +0.7**
KONO AMS AMS 05 40 39.6
comp=Z,1μm,18.0s,MS5.0
KONO Kongsberg 57.18 323 *eP* **P** **05 14 45.3 +0.3**
comp=Z,36nm,0.9s,mb5.4
RUE Ruedersdorf 57.38 314 *eP* **P** **05 14 47.8 +1.3**
PVCC Panska Ves 57.61 312 *eP* **P** **05 14 47.9 -0.3**
PVCC *ex* x 05 14 49.6
PVCC L 05 40 20.0
comp=Z,3.1nm,17.6s
PVCC Panska Ves 57.61 312 *eP* **P** **05 14 47.9 -0.3**
PVCC MLR MLR
comp=Z,3μm,17.6s,MS5.5
PRU Pruhonice 57.82 311 *eP* **P** **05 14 49.0 -0.6**
comp=Z,80nm,1.2s,mb5.6
PRU *ex* x 05 14 50.6
PRU L 05 40 10.0
comp=Z,2.9nm,16.0s
PRU Pruhonice 57.82 311 *eP* **P** **05 14 49.0 -0.6**
PRU pmax pmax
comp=Z,80nm,1.2s,mb5.6
PRU MLR MLR
comp=Z,3μm,16.0s,MS5.5
BRG Berggiesshubel 57.86 312 *eP* **P** **05 14 49.1 -0.8**
BRG pmax pmax
comp=Z,69nm,1.2s,mb5.6
BRG MLR MLR
comp=N,7μm,26.0s,MS5.7
BRG MLR MLR
comp=E,2μm,26.0s,MS5.7
BRG MLR MLR
comp=Z,3μm,20.1s
BRG Berggiesshubel 57.86 312 *eP* **P** **05 14 49.1 -0.8**
comp=Z,69nm,1.2s,mb5.6
BRG *i* pP 05 14 51.3 -2.8
BRG LR LR
comp=Z,3μm,20.1s,MS5.4
PRA Prague 57.86 311 L 05 40 30.0
ARSA Arzberg 58.24 308⇑ *iP* **P** **05 14 51.4 -1.2**
comp=Z,35nm,1.1s,mb5.3
CLL Collm 58.25 313 P **P** **05 14 51.0 -1.6**
CLL *i* pP 05 14 53.3 -3.5
CLL *i **PP pP 05 14 58.8 +2.0
CLL *e* 05 15 08.0
CLL *i* PCP PcP 05 15 44.2 +0.5
CLL *ePP PP 05 17 01.0 -2.4
CLL *ePPP 05 18 08.0 -18
CLL Collm 58.25 313 *iP* **P** **05 14 53.3 +0.7**
CLL *i **PP pP 05 14 58.8 +2.0
CLL *i* 05 15 44.2
CLL pmax pmax
comp=Z,68nm,1.2s,mb5.5
CLL Collm 58.25 313 *iP* **P** **05 14 53.3 +0.7**
comp=Z,68nm,1.2s,mb5.5
CLL *i* pP pP 05 14 58.8 +2.0
CLL *i* PcP PcP 05 15 44.2 +0.5
MUD Monsted U'grnd 58.49 319 *iP* **P** **05 14 55.4 +1.2**
comp=Z,53nm,1.1s,mb5.5
comp=Z,1μm,18.0s
MUD Monsted U'grnd 58.49 319 *iP* **P** **05 14 55.4 +1.2**
MUD pmax pmax
comp=Z,53nm,1.1s,mb5.5

MUD MLR MLR
comp=Z,1μm,18.0s,MS5.1
KHC Kasperske Hory 58.73 310 *eP* **P** **05 14 54.9 -1.1**
KHC *ex* x 05 14 57.0
KHC L 05 40 30.0
comp=Z,3.0nm,19.6s
KHC Kasperske Hory 58.73 310 *eP* **P** **05 14 54.9 -1.1**
KHC MLR MLR
comp=Z,3μm,19.6s,MS5.4
PERS Pernice 58.73 307 P **P** **05 14 55.3 -0.7**
GEC2 GERESS Array S 58.76 310 *eP* **P** **05 14 56.9 +0.7**
GEC2 pmax pmax
comp=Z,56nm,1.3s,mb5.4
GERES GERESS Array B 58.76 310 P **P** **05 14 55.7 -0.5**
comp=Z,11nm,0.8s,mb4.9,baz=63,slow=6.0,SNR=55
GERES PcP PcP 05 15 47.3 +1.5
comp=Z,4.3nm,0.9s,baz=56,slow=4.8,SNR=3.5
GERES GERESS Array B 58.76 310 P **P** **05 14 55.7 -0.5**
GERES 05 15 47.3
GERES pmax pmax
comp=Z,11nm,0.8s
MOA Molln 58.80 309⇓ *iP* **P** **05 14 56.0 -0.5**
comp=Z,45nm,1.6s,mb5.2
BSEG Bad Segeberg 58.80 316 *eP* **P** **05 14 57.5 +1.1**
BSEG pmax pmax
comp=Z,86nm,1.1s,mb5.7
WET Wettzell 59.15 310 *eP* **P** **05 14 59.7 +0.8**
WET pmax pmax
comp=Z,57nm,1.3s,mb5.4
MOX Moxa 59.31 312 *iP* **P** **05 14 59.1 -0.9**
comp=Z,logA/T=1.8,mb5.6
MOX PP PP 05 16 54.0 -19
MOX S **S** **05 23 07.0 +0.7**
MOX L 05 41 36.0
MOX Moxa 59.31 312 *eP* **P** **05 14 59.1 -0.9**
MOX pmax pmax
comp=Z,101nm,1.8s,mb5.5
MOX MLR MLR
comp=Z,2μm,21.0s,MS5.2
MOX Moxa 59.31 312 *eP* **P** **05 14 59.1 -0.9**
comp=Z,101nm,1.8s,mb5.5
MOX *e* 05 16 53.6
MOX LR LR
comp=Z,2μm,21.0s,MS5.2
KBA Koelnbreinsper 59.67 308⇑ *iP* **P** **05 15 02.2 -0.4**
comp=Z,38nm,1.4s,mb5.2
JMIC Jan Mayen 59.76 339 AMS AMS 05 40 26.2
comp=Z,668nm,22.0s,MS4.7
GRF Grafenberg Arr 59.92 312 *eP* **P** **05 15 05.3 +1.1**
GRF pmax pmax
comp=Z,120nm,1.1s,mb5.8
ANM Nome 60.08 30 *eP* **P** **05 15 04.4 -0.7**
FUR Furstenfeldbru 60.51 310 *eP* **P** **05 15 09.4 +1.1**
FUR pmax pmax
comp=Z,224nm,1.4s,mb6.1
WTTA Wattenberg 60.66 309⇑ *iP* **P** **05 15 08.5 -0.8**
comp=Z,80nm,1.0s,mb5.8
WATA Walderalm 60.67 309⇑ *iP* **P** **05 15 08.2 -1.2**
comp=Z,45nm,1.1s,mb5.5
SQTA Sankt Quirin 60.95 309⇑ *iP* **P** **05 15 10.8 -0.4**
comp=Z,64nm,1.2s,mb5.6
MOTA Moosalm 60.96 309⇑ *iP* **P** **05 15 10.5 -0.8**
comp=Z,56nm,1.2s,mb5.6
WIT Witteveen 61.26 316 *eP* **P** **05 15 15.4 +2.2**
comp=Z,218nm,1.3s,mb6.1
TOD Tromm 61.39 312 *eP* **P** **05 15 15.4 +1.2**
STU Stuttgart 61.51 311 *eP* **P** **05 15 16.1 +1.0**
STU *epP* pP 05 15 41.8 +23
SNTG Esanatoglia 61.54 304 *eP* **P** **05 15 15.2 -0.1**
WTSB Winterswijk 61.54 315 *eP* **P** **05 15 16.6 +1.4**
comp=Z,41nm,1.2s,mb5.4
FITZ Fitzroy Crossi 61.61 148 *eP* **P** **05 15 15.4 -0.7**
comp=Z,19nm,1.0s,mb5.2
DAVA Damuels 61.73 309⇑ *iP* **P** **05 15 15.9 -0.7**
comp=Z,25nm,1.6s,mb5.1
DAVOX Davos 61.95 309 P **P** **05 15 16.9 -1.2**
comp=Z,28nm,0.7s,mb5.5,baz=69,slow=5.6,SNR=23
SFI Santa Sofia 61.97 305 *eP* **P** **05 15 19.7 +1.5**
SPAK Spaichingen 62.05 311 *eP* **P** **05 15 20.1 +1.4**
VMG Vicchio 62.14 306 *eP* **P** **05 15 21.4 +2.1**
MBWA Marble Bar 62.20 156 P **P** **05 15 19.7 -0.3**
BFO Black Forest 62.22 311 *eP* **P** **05 15 20.1 +0.2**
BFO pmax pmax
comp=Z,64nm,1.3s,mb5.6
LANF Langenberg 62.25 312 *eP* **P** **05 15 21.2 +1.2**
VDL Val di Lei 62.34 309⇓ *iP* **P** **05 15 19.8 -0.9**
SLE Schleitheim 62.37 310⇑ *iP* **P** **05 15 20.5 -0.4**
LLS Linth-Limmern 62.46 309⇑ *iP* **P** **05 15 22.4 +0.9**
HGN Heimansgroeve 62.55 314⇑ *eP* **P** **05 15 23.0 +1.0**
comp=Z,25nm,1.1s,mb5.3
WLS Welschbruch 62.77 311 *eP* **P** **05 15 24.6 +1.1**
CDF Champ du Feu 62.82 312 *eP* **P** **05 15 22.9 -0.9**
comp=Z,86nm,1.2s,mb5.5
WLF Walferdange 62.92 313 *eP* **P** **05 15 25.6 +1.1**
comp=Z,103nm,1.2s,mb5.8
ECH Echery 62.98 311 *eP* **P** **05 15 25.8 +1.0**
VAI Varese 63.05 308 *eP* **P** **05 15 23.6 -1.7**
BBS Basel-Blauen 63.10 310 *eP* **P** **05 15 26.9 +1.2**
VAE Valguarnera 63.14 298 LR LR 05 43 37.6
comp=Z,825nm,19.9s,MS4.9,baz=299,slow=37
MOF Molkenrain 63.16 311 *eP* **P** **05 15 27.2 +1.2**
HINF Hinteralfeld 63.34 311 *eP* **P** **05 15 26.2 -1.0**
comp=Z,48nm,1.1s,mb5.2
MMK Mattmark 63.47 309⇓ *iP* **P** **05 15 28.1 0.0**
GIVF Givet 63.48 314 *eP* **P** **05 15 27.5 -0.6**
comp=Z,52nm,0.8s,mb5.4
LKBD Leukerbad 63.52 309⇑ *iP* **P** **05 15 27.9 -0.5**
HAU Haudompre 63.55 311 *eP* **P** **05 15 27.7 -0.9**
comp=Z,77nm,1.2s,mb5.3
HAU *eR* 05 15 28.6
comp=Z,3μm,21.0s
LOMF Lomont 63.57 311 *eP* **P** **05 15 29.7 +1.0**
IMA Indian Mountai 63.65 25 *eP* **P** **05 15 28.3 -0.6**
IMA ⇑ *iP* 05 15 28.6
THEF They Montfort 63.67 312 *eP* **P** **05 15 30.8 +1.5**
DIX Grande Dixence 63.80 309⇑ *iP* **P** **05 15 32.0 +1.8**
BAIF Baives 63.86 314 *eP* **P** **05 15 30.1 -0.4**
comp=Z,126nm,1.2s,mb5.5
MEZF Maizieres J'vi 64.09 312 *eP* **P** **05 15 31.7 -0.4**
CABF La Chapelle 64.36 310 *eP* **P** **05 15 32.9 -1.0**
comp=Z,63nm,1.4s,mb5.2
PGF Pioggiola 64.44 305 *eP* **P** **05 15 34.0 -0.5**
comp=Z,185nm,1.2s,mb5.7
LPG La Plagne 64.47 309 *eP* **P** **05 15 34.6 -0.1**
comp=Z,114nm,1.1s,mb5.5
LPL La Plagne 64.48 309 *eP* **P** **05 15 34.6 -0.1**
comp=Z,127nm,1.2s,mb5.5
IMI Imperia 64.51 307 *eP* **P** **05 15 34.2 -0.7**
SAOF Saorge 64.69 307 *eP* **P** **05 15 35.7 -0.4**
SBF Sospel 64.82 307 *eP* **P** **05 15 36.1 -0.8**
comp=Z,205nm,1.1s,mb5.8
MBDF Montbardon 64.83 308 *eP* **P** **05 15 36.4 -0.6**
comp=Z,21nm,0.8s,mb5.0
ORIF Oris-en-Rattie 65.29 309 *eP* **P** **05 15 39.0 -1.0**
comp=Z,82nm,1.0s,mb5.4
ORIF *eR* 05 15 39.1
comp=Z,2μm,20.0s
LOR Lormes 65.39 312 *eP* **P** **05 15 39.1 -1.4**
comp=Z,78nm,1.3s,mb5.3
LOR *eR* 05 15 39.2
comp=Z,3μm,22.8s
FRF La Foret Royal 65.47 307 *eP* **P** **05 15 40.2 -0.9**
comp=Z,39nm,0.9s,mb5.1
LMR La Mourre 65.67 307 *eP* **P** **05 15 40.5 -1.9**
comp=Z,104nm,1.2s,mb5.4
SVW Sparrevohn 65.67 31 *eP* **P** **05 15 41.7 -0.4**
SSF Saint Saulge 65.70 311 *eP* **P** **05 15 41.3 -1.2**
SMF Signal de Mont 65.70 311 *eP* **P** **05 15 41.5 -1.0**
comp=Z,133nm,1.1s,mb5.6
AVF Avril sur Loir 65.92 311 *eP* **P** **05 15 43.0 -0.9**
comp=Z,98nm,1.1s,mb5.4
VIVF Saint-Julien-l 66.07 309 *eP* **P** **05 15 44.2 -0.7**
comp=Z,100nm,1.3s,mb5.4
HYF Humbligny 66.11 312 *eP* **P** **05 15 44.5 -0.6**
PMG Port Moresby 66.32 124 P **P** **05 15 46.2 -0.8**
comp=Z,27nm,1.0s,mb5.2,baz=291,slow=2.3,SNR=4.0
PMG Port Moresby 66.32 124 P **P** **05 15 46.2 -0.8**
PMG pmax pmax
comp=Z,27nm,1.0s
PMG Port Moresby 66.32 124 *eP* **P** **05 15 47.2 +0.2**
comp=Z,55nm,1.2s,mb5.5
COLA College 66.33 25 *eP* **P** **05 15 45.7 -0.5**
COLA MLR MLR
comp=Z,1μm,20.0s,MS5.0
COLA College 66.33 25⇑ *iP* **P** **05 15 45.5 -0.7**

BGF Bois d'Agland 66.34 311 *e*P P **05 15 45.6 -1.0**
AGO Saint Agoulin 66.42 311 *e*P P **05 15 48.6 +1.4**
PYM Petit Puy Mans 66.65 310 *e*P P **05 15 50.3 +1.7**
PYM Petit Puy Mans 66.65 310 *e*P P **05 15 50.8 +2.2**
MCK McKinley 66.66 26 *e*P P **05 15 47.2 -1.1**
comp=Z,7.8nm,1.0s,mb4.7
ILAR Eielson Array 66.71 25 P P **05 15 47.4 -1.3**
comp=Z,7.8nm,0.7s,mb4.8,baz=299,slow=5.5,SNR=82
ILAR LR LR 05 48 11.3
comp=Z,610nm,18.7s,MS4.8,baz=200,slow=39
ILAR Eielson Array 66.71 25 P P **05 15 47.4 -1.3**
ILAR pmax pmax
comp=Z,8.0nm,0.7s
ILAR MLR MLR
comp=Z,610nm,18.7s
LBL Lubilhac 66.76 310 *e*P P **05 15 50.8 +1.5**
TCF Toulx Ste Croi 66.86 311 *e*P P **05 15 49.4 -0.5**
comp=Z,221nm,1.3s,mb5.7
KMBO Kilima Mbogo 66.88 249 P P **05 15 51.5 +0.8**
comp=Z,15nm,0.9s,mb5.0,baz=42,slow=10.0,SNR=19
KMBO LR LR 05 47 49.1
comp=Z,335nm,19.8s,MS4.6,baz=279,slow=38
KMBO Kilima Mbogo 66.88 249 *e*P P **05 15 51.9 +1.3**
comp=Z,22nm,1.1s,mb5.1
LASF Ste Croix 66.97 309 *e*P P **05 15 49.3 -1.4**
comp=Z,104nm,1.2s,mb5.5
LDF La Druitiere 67.05 314 *e*P P **05 15 50.1 -1.0**
comp=Z,66nm,1.1s,mb5.3
SPU Mount Spurr 67.05 29 P P **05 15 51.5 +0.6**
FLN La Foliniere 67.16 315 *e*P P **05 15 50.9 -0.9**
comp=Z,100nm,1.2s,mb5.4
FLN *e*R
comp=Z,3µm,22.8s
WRAB Tennant Creek 67.19 141 *e*P P **05 15 52.0 -0.5**
comp=Z,82nm,0.8s,mb5.8
WRA Warramunga Arr 67.19 141 P P **05 15 51.2 -1.3**
comp=Z,25nm,0.9s,mb5.2,baz=339,slow=6.5,SNR=107
WRA PKP2bc 05 44 18.7
comp=Z,1.9nm,0.9s,baz=152,slow=2.4,SNR=7.3
WRA Warramunga Arr 67.19 141 P P **05 15 51.2 -1.3**
WRA pmax pmax
comp=Z,25nm,0.9s
WRA pmax pmax
comp=Z,2.0nm,1.0s
WRA Warramunga Arr 67.19 141 P P **05 15 51.2 -1.3**
WRA ⇑*e* 05 44 18.7
RSO Redoubt South 67.20 30 *e*P P **05 15 51.6 -0.2**
RSO *e* 05 16 20.1
WB2 Warramunga Arr 67.20 141 *e*P P **05 15 51.8 -0.8**
BORG Borgarnes 67.26 336 P P **05 15 53.1 +0.9**
comp=Z,16nm,0.8s,mb5.1,baz=18,slow=3.3,SNR=2.6
GRR Gorron 67.57 314 *e*P P **05 15 53.4 -1.0**
comp=Z,123nm,1.0s,mb5.6
CAF Calviac 67.64 310 *e*P P **05 15 54.7 -0.2**
comp=Z,107nm,1.3s,mb5.4
RJF Les Rejaudoux 67.78 311 *e*P P **05 15 55.6 -0.2**
RJF *e*R
comp=Z,2µm,22.5s
DMUB Kingscourt 67.84 322 *e*P P **05 15 55.9 -0.1**
RES Resolute Bay 67.88 3 *e*P P **05 15 54.5 -1.4**
comp=Z,36nm,1.4s,mb5.2
PMR Palmer 67.92 28 *e*P P **05 15 55.4 -1.0**
comp=Z,24nm,0.9s,mb5.2
PMR *e*pP pP 05 16 12.7 +12
PMR LR LR
comp=Z,1µm,17.0s,MS5.2
PMS Palmer South 67.97 29 *e*P P **05 15 58.0 +1.3**
DLF Lyons Farm 67.98 321 *e*P P **05 15 56.6 -0.3**
SML Sawmill 68.08 28 *e*P P **05 15 56.5 -0.8**
MFF Saint Martin d 68.09 312 *e*P P **05 15 57.0 -0.7**
comp=Z,114nm,1.2s,mb5.5
INK Inuvik 68.11 18 P P **05 15 56.7 -0.8**
comp=Z,37nm,0.7s,mb5.5,baz=338,slow=6.8,SNR=136
INK Inuvik 68.11 18 P P **05 15 56.7 -0.8**
INK pmax pmax
comp=Z,37nm,0.7s
INK Inuvik 68.11 18 *e*P P **05 15 56.7 -0.8**
comp=Z,52nm,0.9s,mb5.6
MTLF Montolieu 68.36 309 *e*P P **05 15 58.5 -1.0**
comp=Z,20nm,0.9s,mb4.9
LFF La Frestale 68.44 311 *e*P P **05 15 58.8 -1.1**
comp=Z,91nm,1.1s,mb5.4
SGMF Saint Gilles 68.60 315 *e*P P **05 16 00.1 -0.8**
comp=Z,135nm,1.1s,mb5.5
KDAK Kodiak Island 68.87 32 *e*P P **05 16 00.8 -1.5**
comp=Z,62nm,1.1s,mb5.5
ROSF Rostrenen 68.96 315 *e*P P **05 16 02.2 -0.9**
comp=Z,193nm,1.4s,mb5.5
QUIF Quistinic 69.13 315 *e*P P **05 16 03.2 -0.9**
comp=Z,97nm,1.1s,mb5.4
DAWY Dawson 69.60 23 *e*P P **05 16 06.1 -0.6**
EPF Esparros 69.69 309 *e*P P **05 16 06.5 -1.1**
comp=Z,51nm,1.2s,mb5.0
EYAK Cordova Ski Ar 69.85 28 *e*P P **05 16 08.3 0.0**
AS12 Alice Springs 70.15 144 *e*P P **05 16 10.4 -0.3**
comp=Z,32nm,1.1s,mb5.2
ASAR Alice Springs 70.15 144 P P **05 16 10.4 -0.3**
comp=Z,19nm,0.9s,mb5.0,baz=328,slow=5.8,SNR=118
ASAR PKPPKP 05 44 10.7
comp=Z,1.2nm,0.9s,baz=124,slow=3.3,SNR=3.6
ASAR LR LR 05 48 11.1
comp=Z,315nm,19.9s,MS4.6,baz=320,slow=37
ASAR Alice Springs 70.15 144 P P **05 16 10.4 -0.3**
ASAR P'P' 05 44 10.7
ASAR LR LR 05 48 11.1
ETSF Etsaut 70.32 309 *e*P P **05 16 10.7 -0.8**
comp=Z,167nm,1.5s,mb5.5
SJPF Ste Jean 70.61 310 *e*P P **05 16 12.1 -1.1**
comp=Z,35nm,1.0s,mb5.0
MUN Mundaring 71.43 163⇓*i*P P **05 16 18.4 0.0**
comp=Z,22nm,0.7s,mb5.2
KLBR Kellerberin 71.45 161 *e*P P **05 16 17.8 -0.7**
comp=Z,30nm,0.7s,mb5.3
EMOS Mosqueruela 71.66 307 P P **05 16 21.3 +1.7**
comp=Z,1µm,2.7s,mb6.3
ELAN Lanestosa 71.89 311 P P **05 16 22.7 +1.8**
comp=Z,251nm,1.9s,mb5.8
NWAO Narrogin (SRO) 72.59 162 *e*P P **05 16 25.3 0.0**
comp=Z,51nm,1.1s,mb5.4
GUD Guadarrama 73.81 309 P P **05 16 32.6 +0.3**
comp=Z,14nm,1.0s,mb4.7
CTA Charters Tower 73.83 132 *e*P P **05 16 32.7 0.0**
comp=Z,18nm,1.2s,mb4.9
CTA Charters Tower 73.83 132 P P **05 16 32.9 +0.2**
comp=Z,18nm,0.8s,mb5.0,baz=321,slow=7.2,SNR=10
CTA Charters Tower 73.83 132 P P **05 16 32.9 +0.2**
CTA pmax pmax
comp=Z,18nm,0.9s
CTAO Charters Tower 73.83 132 P P **05 16 32.7 0.0**
CTAO Charters Tower 73.83 132 *e*P P **05 16 33.1 +0.4**
comp=Z,48nm,1.3s,mb5.3
CTAO LR LR
comp=Z,537nm,22.0s,MS4.8
EVIA Vianos 73.93 306 P P **05 16 35.2 +2.3**
comp=Z,107nm,1.5s,mb5.5
ESDC Sonseca Array 74.26 308 P P **05 16 34.4 -0.4**
comp=Z,7.0nm,0.7s,mb4.7,baz=48,slow=5.9,SNR=19
ESDC LR LR 05 50 58.8
comp=Z,616nm,19.1s,MS4.9,baz=25,slow=37
ESDC Sonseca Array 74.26 308 P P **05 16 34.5 -0.4**
comp=Z,6.2nm,0.6s,mb4.7
ESLA Sonseca Array 74.26 308 *e*P P **05 16 34.5 -0.3**
comp=Z,10nm,1.2s,mb4.6
EINC Incio 74.56 312 P P **05 16 39.5 +3.0**
comp=Z,354nm,3.1s
ERUA La Rua 74.59 312 P P **05 16 38.8 +2.1**
comp=Z,170nm,2.2s,mb5.6
ECAL Calabor 74.62 311 P P **05 16 39.2 +2.3**
comp=Z,548nm,3.4s
EQES Quesada 74.78 306 P P **05 16 40.1 +2.2**
comp=Z,2µm,4.7s
EBAN Banos Encina 75.03 307 P P **05 16 41.1 +1.8**
comp=Z,33nm,1.0s,mb5.2
ELUQ Luque 75.69 306 P P **05 16 44.9 +1.8**
comp=Z,24nm,1.0s,mb5.1
ERON Agron 75.71 306 P P **05 16 45.0 +1.7**
comp=Z,7.5nm,0.7s,mb4.7
ELOJ Sierra Loja 75.86 306 P P **05 16 45.0 +1.0**
DLBC Dease Lake 75.82 23 P P **05 16 50.0 +1.0**
comp=Z,10.0nm,1.0s,mb4.7,baz=325,slow=6.1,SNR=20
DLBC Dease Lake 76.82 23 *e*P P **05 16 49.9 +0.9**
EMIN Mina Concepcio 77.09 308 P P **05 16 53.6 +2.7**
comp=Z,66nm,1.9s,mb5.2
ESPR Espera 77.12 307 P P **05 16 53.4 +2.3**
comp=Z,7.7nm,0.9s,mb4.6
YKW3 Yellowknife Ar 77.19 14 *e*P P **05 16 50.3 -0.7**
YKA Yellowknife Ar 77.26 14 P P **05 16 50.6 -0.8**
comp=Z,111nm,0.9s,mb4.8,baz=339,slow=5.6,SNR=94
YKA S S 05 26 39.2 -0.1
comp=Z,0.3nm,0.9s,baz=73,slow=3.4,SNR=3.1
YKA PKKPbc 05 35 56.5
comp=Z,0.1nm,0.8s,baz=143,slow=3.1,SNR=3.6
YKA LR LR 05 55 12.8
comp=Z,571nm,19.1s,MS4.9,baz=340,slow=39
EVO Evora 77.46 309 *e*P P **05 16 52.5 -0.5**
comp=Z,55nm,1.1s,mb5.1
EVO *e*R
comp=Z,640nm,20.0s
STKA Stephens Creek 80.71 143 *e*P P **05 17 10.4 -0.3**
comp=Z,15nm,0.7s,mb5.0
STKA Stephens Creek 80.71 143 P P **05 17 10.5 -0.3**
comp=Z,18nm,0.7s,mb5.1,baz=326,slow=6.8,SNR=20
STKA LR LR 05 54 21.4
comp=Z,313nm,20.7s,MS4.7,baz=173,slow=37
FCC Fort Churchill 83.72 6 *e*P P **05 17 25.0 -0.7**
comp=Z,23nm,1.1s,mb5.2
ARMA Armidale 84.84 135 *e*P P **05 17 33.2 +1.2**
SCHQ Schefferville 87.00 351 P P **05 17 41.7 -0.4**
comp=Z,13nm,0.7s,mb5.3,baz=14,slow=6.2,SNR=17
SCHQ S S 05 28 11.4 -7.3
comp=Z,2.2nm,0.9s,baz=300,slow=18,SNR=1.8
SCHQ LR LR 05 58 35.3
comp=Z,542nm,20.4s,MS4.9,baz=18,slow=37
SCHQ Schefferville 87.00 351 *e*P P **05 17 41.8 -0.3**
comp=Z,19nm,0.8s,mb5.4
PGC Sidney 87.14 25 *e*P P **05 17 44.2 +1.3**
comp=Z,30nm,0.8s,mb5.6
VDB Vedder Mountai 87.27 24 P P **05 17 43.8 +0.3**
MCW Mount Constitu 87.33 25 P P **05 17 45.4 +1.5**
CMW Cultus Mountai 87.79 25 P P **05 17 47.5 +1.5**
RPW Rockport 87.97 24 *e*P P **05 17 47.4 +0.5**
NLW Nelson Butte 88.67 24 P P **05 17 51.6 +1.3**
ETW Entiat 89.09 24 P P **05 17 53.4 +1.1**
RVC Mount Rainier- 89.12 25 P P **05 17 54.2 +1.7**
WTV Waterville 89.13 24 P P **05 17 53.4 +0.9**
FMW Mount Fremont 89.23 25 P P **05 17 54.4 +1.4**
NEW Newport 89.50 22 P P **05 17 54.8 +0.5**
comp=Z,12nm,0.7s,mb5.3,baz=328,slow=4.6,SNR=24
NEW Newport 89.50 22 P P **05 17 54.8 +0.6**
NEW pmax pmax
comp=Z,12nm,0.7s
NEW Newport 89.50 22 P P **05 17 54.8 +0.5**
NEW *e*P 05 17 55.2
DPW Davenport 89.53 23 *e*P P **05 17 56.2 +1.8**
WALA Waterton Lakes 89.68 20 *e*P P **05 17 55.0 0.0**
comp=Z,24nm,1.3s,mb5.4
WAH2 Wahluke Slope 90.09 24 P P **05 17 58.3 +1.4**
SNIWA Snively Ranch 90.31 24 P P **05 17 59.6 +1.6**
H2OWA Water 90.45 24 P P **05 18 00.2 +1.5**
BSMT Bassoo Peak 90.55 21 P P **05 18 00.5 +1.4**
MSO Missoula 91.72 20 *e*P P **05 18 04.8 +0.3**
comp=Z,26nm,1.3s,mb5.4
CHMT Chamberlain Mo 91.83 20 *e*P P **05 18 05.7 +0.7**
ULM Lac du Bonnet 91.97 8 P P **05 18 04.4 -1.2**
ULM Lac du Bonnet 91.97 8 *e*P P **05 18 04.4 -1.1**
comp=Z,14nm,0.9s,mb5.3
HRY Holter Researc 92.39 19 *e*P P **05 18 08.6 +1.0**
TSUM Tsumeb 93.21 248 P P **05 18 14.1 +2.1**
comp=Z,3.4nm,1.0s,mb4.7,baz=77,slow=5.5,SNR=4.5
YBH Yreka Blue Hor 93.36 28 P P **05 18 13.2 +1.0**
comp=Z,1.2nm,0.9s,mb4.3,baz=183,slow=7.4,SNR=3.6
BOZ Bozeman (W) 93.43 19 *e*P P **05 18 12.9 +0.5**
comp=Z,11nm,1.1s,mb5.2
BOZ LR LR
comp=Z,705nm,22.0s,MS5.1
MCMT McKenzie Canyo 93.86 21 P P **05 18 15.4 +1.1**
QLMT Earthquake Lak 94.24 20 P P **05 18 17.3 +1.2**
HLID Hailey 94.56 22 *e*P P **05 18 17.8 +0.1**
comp=Z,5.3nm,0.9s,mb5.0
LKWY Lake 94.76 19 *e*P P **05 18 21.3 +2.7**
comp=Z,11nm,0.7s,mb5.4
DBIC Dimbokro 95.08 282 P P **05 18 21.9 +1.2**
comp=Z,5.9nm,0.8s,mb5.0,baz=21,slow=8.6,SNR=7.5
DBIC LR LR 06 08 03.1
comp=Z,711nm,18.8s,MS5.2,baz=33,slow=40
KIC Kosan Boka 95.18 282 *e*PKP1 P **05 18 22.1 +0.9**
comp=Z,54nm,1.0s,mb5.9
TIC Toumodi 95.22 282 *e*PKP1 P **05 18 22.8 +1.4**
comp=Z,187nm,1.8s,mb6.2
LIC Lamto 95.49 282 *e*PKP1 P **05 18 22.9 +0.3**
comp=Z,23nm,0.9s,mb5.6
KSWY Kelly School 95.58 20 P P **05 18 24.0 +1.7**
AHID Auburn Hatcher 96.24 20 PFAKE 05 18 40.0 +15
AHID LR LR
comp=Z,451nm,20.0s,MS5.0
BMN Battle Mountai 96.48 25 PFAKE 05 18 40.0 +13
BMN LR LR
comp=Z,464nm,19.0s,MS5.0
BW06 Boulder Array 96.66 19 PFAKE 05 18 40.0 +13
BW06 LR LR
comp=Z,852nm,21.0s,MS5.2
PDAR Pinedale Array 96.66 19 P P **05 18 27.1 -0.2**
comp=Z,1.4nm,0.8s,mb4.4,baz=17,slow=4.4,SNR=10
PDAR LR LR 06 07 21.4
comp=Z,636nm,19.1s,MS5.1,baz=154,slow=39
RSSD Black Hills 96.66 15 *e*P P **05 18 27.8 +0.6**
comp=Z,7.9nm,0.7s,mb5.2
HWUT Hardware Ranch 97.19 21 *e*P P **05 18 30.6 +1.0**
comp=Z,4.8nm,0.8s,mb5.0
CMB Columbia Colle 97.46 29 PFAKE 05 18 40.0 +9.0
CMB LR LR
comp=Z,386nm,21.0s,MS4.9
NVAR Mina Array Bea 97.89 27 P P **05 18 34.0 +1.2**
comp=Z,2.1nm,0.9s,mb4.7,baz=324,slow=2.7,SNR=12
NVAR LR LR 06 06 16.6
comp=Z,299nm,18.2s,MS4.8,baz=280,slow=38
MSU Marysvale 99.86 23 P P **05 18 43.9 +2.1**
BINY Binghamton 100.45 354 PFAKE 05 19 00.0 +16
BINY LR LR
comp=Z,554nm,19.0s,MS5.1
AAM Ann Arbor 100.62 0 PFAKE 05 19 00.0 +15
AAM LR LR
comp=Z,770nm,19.0s,MS5.2
PV10 Paradox Valley 100.90 20 P P 05 18 49.8 +3.2
PV01 Paradox Valley 101.25 20 *e*P P 05 18 49.0 +0.9
CBKS Cedar Bluff 102.61 13 PFAKE 05 19 10.0 +16
CBKS LR LR
comp=Z,596nm,19.0s,MS5.1
ACSO Alum Creek Sta 102.69 360 PFAKE 05 19 10.0 +15
ACSO LR LR
comp=Z,599nm,20.0s,MS5.1
CCM Cathedral Cave 104.51 6 PFAKE 05 19 10.0 +7.4
CCM LR LR
comp=Z,471nm,19.0s,MS5.0
CBN Corbin 104.52 355 PFAKE 05 19 10.0 +7.3
CBN LR LR
comp=Z,559nm,20.0s,MS5.1
ANMO Albuquerque 104.82 20 PFAKE 05 19 20.0 +16
ANMO LR LR
comp=Z,750nm,22.0s,MS5.2
BLA Blacksburg 105.66 358 PFAKE 05 23 30.0
BLA LR LR
comp=Z,1µm,21.0s,MS5.4
BBSR BB Station 108.40 343 PFAKE 05 23 40.0
BBSR LR LR
comp=Z,2µm,21.0s,MS5.7
TXAR Lajitas Array 110.88 19 PKiKP 05 23 30.6
comp=Z,0.5nm,0.8s,baz=153,slow=2.0,SNR=3.8
TXAR PKKPab 05 34 40.1
comp=Z,0.6nm,1.0s,baz=180,slow=5.4,SNR=3.9
SYO Syowa Base 114.15 199⇓Pdiff Pdif 05 19 46.0 +1.7
SYO Syowa Base 114.15 199⇓*e*Pdif Pdif 05 19 46.0 +1.7
SJG San Juan 122.42 341 PKP PKPdf 05 23 52.8 -2.5
comp=Z,19nm,0.9s,baz=137,slow=4.2,SNR=3.0
SJG San Juan 122.42 341 PKIKP PKPdf 05 23 52.8 -2.5
SJG pmax pmax
comp=Z,19nm,0.9s
SJG San Juan 122.42 341 PKP PKPdf 05 23 52.8 -2.5
QSPA South Pole Qui 127.22 180 *e*PKP PKPdf 05 23 59.5 -3.5
QSPA LR LR
comp=Z,180nm,21.5s,MS4.7
SNAA Sanae 128.03 203 *e* PKPdf 05 23 57.6 -7.2
VNA2 Neumayer--Watz 129.46 204 *e* PKPdf 05 24 04.4 -3.2
VNA3 Neumayer Olymp 130.21 204 *e* PKPdf 05 24 07.2 -1.8
ROSC El Rosal 137.09 347 PKhKP 05 24 11.4
comp=Z,3.5nm,0.6s,baz=208,slow=20,SNR=2.7
ROSC PKP PKPdf 05 24 23.1 -0.2
comp=Z,14nm,0.7s,baz=146,slow=10,SNR=7.6
BDFB Brasilia 142.01 295 PKhKP 05 24 27.4
comp=Z,4.6nm,0.8s,baz=138,slow=2.1,SNR=6.5
BDFB Brasilia 142.01 295 PKIKP PKPdf 05 24 27.4 -4.7
BDFB pmax pmax
comp=Z,5.0nm,0.9s
OTAV Otavalo 142.23 352 *e*PKP PKPdf 05 24 27.3 -5.2
LPAZ La Paz 155.02 323 PKP PKPdf 05 24 50.7 -1.8
comp=Z,2.7nm,0.9s,baz=33,slow=9.0,SNR=7.2
LPAZ PKPab PKPab 05 25 14.6 -1.4
comp=Z,5.0nm,0.9s,baz=34,slow=8.1,SNR=9.5
LPAZ La Paz 155.02 323 PKIKP PKPdf 05 24 50.7 -1.9
LPAZ 05 25 14.6
LPAZ pmax pmax
comp=Z,3.0nm,0.9s
LPAZ pmax pmax
comp=Z,5.0nm,0.9s
LPAZ La Paz 155.02 323 *e*PKPdf PKPdf 05 24 51.3 -1.2
CPUP Villa Florida 155.40 289 PKP PKPdf 05 24 49.9 -2.9
comp=Z,3.3nm,0.8s,baz=110,slow=4.0,SNR=5.8
CPUP Villa Florida 155.40 289 PKIKP PKPdf 05 24 49.9 -2.9
CPUP pmax pmax
comp=Z,3.0nm,0.8s
CPUP Villa Florida 155.40 289 PKP PKPdf 05 24 49.9 -2.9
USHA Ushuaia 159.87 206 PKP PKPdf 05 24 54.8 -2.7
comp=Z,3.6nm,0.7s,baz=213,slow=19,SNR=2.6
LVC Limon Verde 160.70 316 PKP PKPdf 05 24 59.0 -0.4
comp=Z,2.7nm,0.8s,baz=248,slow=2.4,SNR=5.5
LVC PKPab PKPab 05 25 41.0 +0.7
comp=Z,8.9nm,0.7s,baz=44,slow=3.1,SNR=14
LVC Limon Verde 160.70 316 PKP PKPdf 05 24 59.0 -0.4
LVC PKPab PKPab 05 25 41.0 +0.7
PLCA Paso Flores 169.57 248 PKP PKPdf 05 25 06.3 0.0
comp=Z,2.6nm,1.0s,baz=58,slow=6.3,SNR=4.5
PLCA PKPab PKPab 05 26 20.4 +1.9
comp=Z,2.6nm,1.0s,baz=122,slow=3.1,SNR=3.3

*NEIC **04** 06:02:01.2, 37.91S×73.67W, h8km, ML3.7(GUC), After GUC.*

GUC 04 06:02:01.2±1.2, 37.91S×73.67W, h8km±12km, ML3.7, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
TMCH	**Temuco**	**1.18**	**136**	*i* P		Pb		06 02 21.5	-1.9
TMCH				*i* S		Sb		06 02 37.6	-1.0
TMCH				AMP				06 02 41.3	
comp=N,998nm,0.4s									
TMCH	**Temuco**	**1.18**	**136**	*e*P		Pb		06 02 21.1	-2.3
TMCH				*i* S		Sb		06 02 38.0	-0.6
TMCH				AMP				06 02 41.3	
comp=N,998nm,0.4s									
CCHI	**Chillan**	**1.82**	**45**	*i* P		Pn		06 02 32.5	-0.7
CCHI				*i* S		Sn		06 02 56.0	-0.6
CCHI				AMP				06 03 00.6	
comp=E,2µm,0.6s									
CCHI	**Chillan**	**1.82**	**45**	*i* P		Pn		06 02 30.7	-2.5
CCHI				*i* S		Sn		06 02 56.2	-0.4
CCHI				AMP				06 03 00.6	
comp=E,2µm,0.6s									
CCHI	**Chillan**	**1.82**	**45**	*i* P		Pn		06 02 30.7	-2.5
CCHI				*i* S		Sn		06 02 56.2	-0.4
COCH	**Cobquecura**	**1.91**	**22**	*i* P		Pn		06 02 34.3	-0.1
COCH				*i* S		Sn		06 02 59.4	+0.6
COCH				AMP				06 03 05.2	
comp=E,755nm,0.6s									
COCH	**Cobquecura**	**1.91**	**22**	*i* P		Pn		06 02 31.0	-3.4
COCH				*i* S		Sn		06 02 59.1	+0.3
COCH				AMP				06 03 05.2	
comp=E,755nm,0.6s									
COCH	**Cobquecura**	**1.91**	**22**	*i* P		Pn		06 02 34.3	-0.1
COCH				*i* S		Sn		06 02 59.4	+0.6
COCH	**Cobquecura**	**1.91**	**22**	P		Pn		06 02 31.0	-3.4
COCH				S		Sn		06 02 59.1	+0.3
VLCH	**Valdivia**	**1.92**	**170**	*i* P		Pn		06 02 34.3	-0.3
VLCH				*i* S		Sn		06 02 58.9	-0.3
VLCH				AMP				06 03 07.0	
comp=N,2µm,0.4s									
VLCH	**Valdivia**	**1.92**	**170**	*i* P		Pn		06 02 27.3	-7.3
VLCH				AMP				06 03 07.0	
comp=N,2µm,0.4s									
VLCH	**Valdivia**	**1.92**	**170**	*i* P		Pn		06 02 34.3	-0.3
VLCH				*i* S		Sn		06 02 58.9	-0.3
VLCH	**Valdivia**	**1.92**	**170**	*i* P		Pn		06 02 27.3	-7.3
PLCA	**Paso Flores**	**3.71**	**140**	*e*P		Pn		06 02 58.4	-1.8
SFDO	**San Fernando**	**3.93**	**34**	*i* P		Pn		06 02 58.2	-4.9
LNV	**Longovilo**	**4.35**	**26**	*i* P		Pn		06 03 03.6	-5.6
CICH	**Cipreses**	**4.44**	**37**	*i* P		Pn		06 03 06.3	-4.2
CHCH	**Chadas Angostu**	**4.66**	**33**	*i* P		Pn		06 03 07.8	-5.8
CHCH				*i* S		Sn		06 04 04.2	-4.4
TACH	**Talagante**	**4.79**	**28**	*i* P		Pn		06 03 10.4	-5.0
PCH	**Pirque**	**4.99**	**32**	*i* P		Pn		06 03 12.6	-5.6
FCH	**Farellones**	**5.34**	**32**	*e*P		Pn		06 03 17.4	-5.8

*IDC **04** 06:17:48.4±3.4, 30.65S×138.09E, mb1 3.5/5, mb1mx3.4/12, ML2.9/5, Error ellipse: s-maj=61.1km s-min=16.0km az=38.0*
*NEIC **04** 06:17:49.7±0.8, 30.57S×138.23E, h10km, Error ellipse: s-maj=13.7km s-min=10.3km az=225.0*

ISC 04 06:17:48.1±0.7, 30.56S±0.07×138.14E±0.08, h10km, n11, σ0s98/15, South Australia

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**3.24**	**115**	Pn		**Pn**		**06 18 40.5**	**+0.4**
0.3nm,0.3s,baz=297,slow=13,SNR=5.0									
STKA				Sn		**Sn**		**06 19 19.8**	**+0.8**
1.6nm,0.3s,baz=209,slow=21,SNR=4.9									
STKA				Lg				06 19 32.2	
2.8nm,0.3s,baz=200,slow=23,SNR=5.8									
STKA	**Stephens Creek**	**3.24**	**115**	Pn		**Pn**		**06 18 40.5**	**+0.4**
STKA				Sn		**Sn**		**06 19 19.8**	**+0.8**
STKA				Lg				06 19 32.2	
ASAR	**Alice Springs**	**7.83**	**330**	Pn		**Pn**		**06 19 46.2**	**+1.3**
0.1nm,0.3s,baz=152,slow=13,SNR=4.0									
ASAR				Sn		**Sn**		**06 21 17.4**	**+2.8**
0.1nm,0.3s,baz=153,slow=22,SNR=4.0									
WRA	**Warramunga Arr**	**11.12**	**341**	Pn		**P**		**06 20 29.3**	**-1.0**
0.1nm,0.3s,baz=153,slow=15,SNR=4.6									
WRA				Sn		**S**		**06 22 34.8**	**-0.9**
0.0nm,0.3s,baz=164,slow=24,SNR=3.3									
WRAB	**Tennant Creek**	**11.12**	**341**	*e*P		**P**		**06 20 29.6**	**-0.7**
62nm,1.8s									
CTA	**Charters Tower**	**12.74**	**37**	Pn		**P**		**06 20 51.8**	**-0.4**
0.2nm,0.3s,baz=225,slow=10.0,SNR=2.1									
CTAO	**Charters Tower**	**12.74**	**37**	*e*P		**P**		**06 20 48.0**	**-4.2**
26nm,1.6s									
TAU	**Tasmania Unive**	**14.34**	**152**	*e*P		**P**		**06 21 12.1**	**-1.2**
194nm,1.8s									
FITZ	**Fitzroy Crossi**	**16.82**	**315**	Pn		**P**		**06 21 44.9**	**-0.5**
0.1nm,0.3s,baz=153,slow=16,SNR=1.7									
NWAO	**Narrogin (SRO)**	**17.94**	**257**	*e*P		**P**		**06 21 59.6**	**+0.3**
16nm,1.2s									
MBWA	**Marble Bar**	**19.01**	**295**	*e*P		**P**		**06 22 12.8**	**+0.3**
0.1nm,0.8s									

*JMA **04** 06:28:02.3±0.3, 33.03N×142.10E, M3.7*

ISC 04 06:28:05.2±2.3, 33.34N±0.10×142.7E±0.2, h33km, n9, σ0s75/13, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
BSO3	**Boso 3**	**2.30**	**310**	P		**P**		**06 28 41.0**	**-0.5**
JHJ2	**Mitsune**	**2.39**	**265**	P		**P**		**06 28 36.9**	**-5.9**
BSO4	**Boso 4**	**2.53**	**311**	P		**P**		**06 28 44.7**	**-0.1**
JOD2	**Odawara 2**	**3.52**	**304**	P		**P**		**06 28 57.4**	**-1.5**
JAG	**Ashikaga**	**4.05**	**320**	P		**P**		**06 29 07.6**	**+1.2**
JAG				*e*S		**S**		**06 29 53.4**	**+0.1**
JFK	**Kawauchi**	**4.27**	**341**	P		**P**		**06 29 09.5**	**-0.1**
JFK				*e*S		**S**		**06 29 59.4**	**+0.5**
JMM	**Marumori**	**4.76**	**342**	P		**P**		**06 29 16.8**	**+0.3**
JMM				*e*S		**S**		**06 30 11.8**	**+0.5**
MAT	**Matsushiro**	**4.85**	**312**	P		**P**		**06 29 18.5**	**+0.7**
JMK	**Ichinoseki**	**5.72**	**349**	P		**P**		**06 29 30.0**	**+0.1**
JMK				*e*S		**S**		**06 30 33.9**	**-1.4**

MAN 04 06:30:44.4, 13.38N×121.61E, h4km, mb4.3, ML3.1, MS2.9, 10C-1D, Mindoro

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
BOAC	**Boac**	**0.24**	**71**⇑	*e*P		Pg		06 30 50.0	+0.8
BOAC				*e*S		Sg		06 30 54.1	+1.6
PGP	**Puerto Galera**	**0.65**	**281**⇑	*i*P		Pg		06 30 58.0	+0.6
PGP				*i* S		Sg		06 31 03.0	-3.1
LQP	**Lukban**	**0.73**	**355**	*e*P		Pg		06 30 58.5	-0.5

GQP	**Guinayangan**	**0.96**	**57**⇓	*e*P	Pb	06 31 01.7	-1.6
GQP				*e*S	Sb	06 31 15.5	-0.8
TGY	**Tagaytay City**	**0.97**	**318**⇑	*i*P	Pb	06 30 59.0	-4.4
TGY				*e*S	Sb	06 31 06.0	-10
SJMP	**San Jose**	**1.03**	**208**⇑	*e*P	Pb	06 31 04.4	0.0
SJMP				*e*S	Sb	06 31 23.1	+4.9
AUQP	**San Andres**	**1.04**	**93**⇑	*e*P	Pb	06 31 04.8	+0.2
AUQP				*e*S	Sb	06 31 21.5	+3.1
OTRP	**Odiongan**	**1.09**	**158**⇑	*e*P	Pb	06 31 04.5	-1.0
OTRP				*e*S	Sb	06 31 19.8	-0.1
LUBP	**Lubang**	**1.37**	**285**⇑	*e*P	Pb	06 31 09.8	-0.5
LUBP				*e*S	Sb	06 31 29.1	+1.1
POLP	**Polilio Island**	**1.38**	**13**⇑	*e*P	Pb	06 31 09.4	-0.9
POLP				*e*S	Sb	06 31 27.5	-0.7
BUSP	**Coron**	**1.94**	**225**⇑	*e*P	Pn	06 31 18.3	-0.3
BUSP				*e*S	Sn	06 31 45.7	+2.0
BALP	**Baler**	**2.35**	**359**⇑	*e*P	Pn	06 31 24.5	+0.1
BALP				*e*S	Sn	06 31 58.6	+4.7

*IDC **04** 07:00:08.9±2.3,11.85N×82.17W,mb3.3/3,mb1 3.7/4, mb1mx3.5/20,ML2.9/1,Error ellipse: s-maj=89.0km s-min=33.8km az=33.0*
*CASC **04** 07:00:15.6±2.6,11.41N×81.92W,MD4.3*
*NEIC **04** 07:00:16.8,11.72N×82.15W,h17km,MD4.2(CASC), After CASC.*

ISC 04 07:00:13.3±0.7,11.52N±0.06×81.76W±0.04,h10km,n37, σ1§47/47,mb3.1/3,7C-8D,North of Panama

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
TRTC	**Tortuguero**	**2.13**	**244**⇓	*e*P	**Pn**	**07 00 47.5**	**-2.0**
ICR	**Volcan Irazu**	**2.55**	**233**⇓	*e*P	**Pn**	**07 00 55.1**	**-0.3**
ICR	**Volcan Irazu**	**2.55**	**233**	*e*P	**Pn**	**07 00 55.3**	**-0.1**
URSC	**Urasca**	**2.60**	**230**⇑	*e*P	**Pn**	**07 00 55.8**	**-0.3**
URSC	**Urasca**	**2.60**	**230**⇑	*e*P	**Pn**	**07 00 56.0**	**-0.1**
SJS	**Escuela Geolog**	**2.75**	**235**⇑	*e*P	**Pn**	**07 00 57.0**	**-1.3**
SJS				*e*S	**Sn**	**07 01 30.1**	**-1.8**
SJS	**Escuela Geolog**	**2.75**	**235**	*e*P	**Pn**	**07 00 56.9**	**-1.3**
SJS				*e*P		07 00 58.2	
SJS				*e*S	**Sn**	**07 01 29.5**	**-2.4**
VPS2	**Volcan Poas 2**	**2.77**	**242**	*e*P	**Pn**	**07 00 58.0**	**-0.5**
VPS2	**Volcan Poas 2**	**2.77**	**242**	*e*P	**Pn**	**07 00 58.4**	**-0.2**
BUS	**Buena Vista**	**2.77**	**225**⇑	*i*P	**Pn**	**07 00 59.1**	**+0.6**
BUS				*e*S	**Sn**	**07 01 34.4**	**+2.0**
BUS	**Buena Vista**	**2.77**	**225**	*e*P	**Pn**	**07 00 59.1**	**+0.5**
LCR2	**La Lucha 2**	**2.83**	**231**⇓	*e*P	**Pn**	**07 00 59.3**	**-0.1**
LCR2				*e*S	**Sn**	**07 01 35.9**	**+2.0**
LAJ	**Bijagual**	**2.84**	**235**⇓	*e*P	**Pn**	**07 01 06.5**	**+6.8**
LAJ				*e*S	**Sn**	**07 01 47.0**	**+13**
LAJ	**Bijagual**	**2.84**	**235**	*e*P	**Pn**	**07 01 06.4**	**+6.7**
LAJ				*e*S	**Sn**	**07 01 43.8**	**+9.5**
FORC	**Fortuna**	**3.04**	**250**	*e*P	**Pn**	**07 01 00.2**	**-2.2**
FORC	**Fortuna**	**3.04**	**250**	*e*P	**Pn**	**07 01 00.6**	**-1.8**
CGA2	**Cerro Gallo 2**	**3.05**	**241**⇓	*e*P	**Pn**	**07 01 02.0**	**-0.6**
CGA2				*e*S	**Sn**	**07 01 39.7**	**+0.2**
CGA2	**Cerro Gallo 2**	**3.05**	**241**	*e*P	**Pn**	**07 01 02.0**	**-0.6**
ACR	**Cerro Adams**	**3.17**	**206**	*e*P	**Pn**	**07 01 07.0**	**+2.7**
JCR	**Jicaral**	**3.69**	**244**⇓	*i*P	**Pn**	**07 01 10.6**	**-1.1**
JCR				*e*S	**Sn**	**07 01 54.8**	**-0.9**
JCR	**Jicaral**	**3.69**	**244**⇓	*e*P	**Pn**	**07 01 10.6**	**-1.1**
CONN	**Concepcion**	**3.79**	**271**⇑	*e*P	**Pn**	**07 01 14.8**	**+1.8**
CONN				*e*S	**Sn**	**07 02 00.3**	**+2.1**
CRZC	**La Cruz**	**3.80**	**262**	*e*P	**Pn**	**07 01 10.4**	**-2.9**
AZU	**Azuero**	**3.99**	**158**	*e*P	Pn	07 01 43.3	+27
AZU				*e*S	**Sn**	**07 02 09.8**	**+6.6**
APON	**Apoyo**	**4.23**	**276**⇑	*e*P	**Pn**	**07 01 20.4**	**+1.0**
APON				*e*S	**Sn**	**07 02 07.2**	**-2.2**
COPN	**Cofrada**	**4.30**	**279**⇑	*e*P	**Pn**	**07 01 21.4**	**+1.0**
PYTN	**Playitas**	**4.32**	**284**	*e*P	**Pn**	**07 01 20.9**	**+0.3**
WILN	**Americas 2**	**4.38**	**279**	*e*S	**Sn**	**07 02 10.3**	**-2.8**
MGAN	**Managua**	**4.43**	**278**⇓	*e*P	**Pn**	**07 01 23.6**	**+1.3**
MGAN				*e*S	**Sn**	**07 02 14.3**	**-0.2**
COPN	**Copaltepe**	**4.77**	**278**	*e*P	**Pn**	**07 01 28.8**	**+1.8**
TEL3	**Telica 3**	**5.08**	**282**	*e*P	**Pn**	**07 01 32.2**	**+0.8**
SDV	**Santo Domingo**	**11.26**	**102**	Pn	**P**	**07 02 58.8**	**+1.3**
	0.1nm,0.3s,baz=311,slow=10,SNR=2.1						
SDV				Sn	**S**	**07 05 02.5**	**-2.0**
	0.9nm,0.3s,baz=10,slow=16,SNR=6.4						
TXAR	**Lajitas Array**	**27.03**	**314**	P	**P**	**07 05 49.9**	**-7.8**
	0.5nm,0.9s,mb3.1,baz=139,slow=12,SNR=5.3						
PDAR	**Pinedale Array**	**39.40**	**327**	P	**P**	**07 07 36.2**	**-8.8**
	0.6nm,1.1s,mb3.2,baz=187,slow=7.3,SNR=3.1						
YKA	**Yellowknife Ar**	**56.07**	**342**	P	**P**	**07 09 45.8**	**-8.9**
	0.2nm,0.9s,mb3.1,baz=136,slow=7.4,SNR=3.4						
ASAR	**Alice Springs**	**144.03**	**246**	PKP	PKPdf	07 19 45.6	-7.3
	0.3nm,0.6s,baz=108,slow=4.0,SNR=4.5						
WRA	**Warramunga Arr**	**144.32**	**252**	PKP	PKPdf	07 19 46.2	-7.4
	0.7nm,0.9s,baz=94,slow=3.3,SNR=3.4						

TAP 04 07:03:54.0,21.21N×121.88E,h170km±1km,ML4.2, Taiwan region

IDC 04 07:11:42.3±5.5,18.99S×175.58W,mb3.6/3,mb1 4.0/3, mb1mx3.7/14,Error ellipse: s-maj=393.0km s-min=29.4km az=153.0,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**47.09**	**260**	P	P	07 20 16.7	-1.4
	0.2nm,0.3s,baz=96,slow=9.6,SNR=12						
ASAR	**Alice Springs**	**47.10**	**255**	P	P	07 20 15.8	-2.3
	0.7nm,0.7s,baz=93,slow=7.8,SNR=5.7						
NVAR	**Mina Array Bea**	**78.37**	**42**	P	P	07 23 45.0	-1.3
	0.8nm,0.7s,baz=225,slow=8.9,SNR=8.5						

*NEIC **04** 07:19:55.8±0.5,17.09S×178.98W,h565km,mb4.3/2, Error ellipse: s-maj=22.6km s-min=10.8km az=158.0*
*IDC **04** 07:20:03.1±4.6,17.53S×178.95W,h672km±72km, mb3.3/10,mb1 3.5/10,mb1mx3.4/16,Error ellipse: s-maj=47.2km s-min=13.3km az=171.0*

ISC 04 07:20:00.3±0.6,17.5S±0.2×179.0W±0.1,h650km,n15, σ0§25/15,mb3.9/10,1D,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**20.98**	**189**	P	**P**	**07 24 02.3**	**-0.2**
	9.1nm,0.9s,baz=20,slow=7.9,SNR=2.5						
PPT	**Papeete**	**28.03**	**95**	P	**P**	**07 25 04.6**	**+0.2**
	15nm,0.4s,mb4.9,baz=30,slow=20,SNR=3.2						
CTA	**Charters Tower**	**32.98**	**260**	P	**P**	**07 25 46.8**	**+0.6**
	3.8nm,0.6s,mb4.1,baz=312,slow=23,SNR=4.7						
STKA	**Stephens Creek**	**38.36**	**241**	*e*P	**P**	**07 26 30.2**	**0.0**
	2.9nm,0.6s,mb3.9						
STKA	**Stephens Creek**	**38.36**	**241**	P	**P**	**07 26 30.3**	**+0.1**
	4.2nm,0.6s,mb4.1,baz=38,slow=7.1,SNR=14						
WB2	**Warramunga Arr**	**44.17**	**259**	*i*P	**P**	**07 27 15.9**	**-0.3**
WRAB	**Tennant Creek**	**44.17**	**259**	*e*P	**P**	**07 27 16.3**	**+0.1**
	7.7nm,0.5s,mb4.3						
WRA	**Warramunga Arr**	**44.18**	**259**	P	**P**	**07 27 16.1**	**-0.1**
	3.4nm,0.5s,mb3.9,baz=95,slow=7.1,SNR=118						
AS12	**Alice Springs**	**44.39**	**254**	*e*P	**P**	**07 27 17.8**	**0.0**
	12nm,0.6s,mb4.4						
ASAR	**Alice Springs**	**44.39**	**254**	P	**P**	**07 27 17.9**	**+0.1**
	19nm,0.6s,mb4.6,baz=87,slow=8.5,SNR=318						
NVAR	**Mina Array Bea**	**79.50**	**44**	P	**P**	**07 31 03.1**	**+0.1**
	0.7nm,0.7s,mb3.3,baz=213,slow=7.5,SNR=6.0						
ILAR	**Eielson Array**	**85.60**	**13**	P	**P**	**07 31 32.4**	**-0.4**
	0.3nm,0.4s,mb3.3,baz=232,slow=4.7,SNR=7.2						
TXAR	**Lajitas Array**	**86.23**	**58**	P	**P**	**07 31 36.7**	**+0.2**
	0.6nm,0.7s,mb3.3,baz=222,slow=6.5,SNR=8.7						
TXAR	**Lajitas Array**	**86.23**	**58**	P	**P**	**07 31 36.7**	**+0.2**
PDAR	**Pinedale Array**	**87.42**	**44**	P	**P**	**07 31 41.6**	**-0.2**
	0.5nm,0.6s,mb3.3,baz=225,slow=4.2,SNR=5.3						

*NEIC **04** 07:57:27.9±4.4,8.00S×130.62E,h61km±46km,mb4.4/1, Error ellipse: s-maj=45.7km s-min=26.1km az=211.0*
*IDC **04** 07:57:29.2±7.8,8.07S×130.47E,h74km±85km,mb4.0/1, mb1 4.0/4,mb1mx3.8/11,ML3.8/3,MS3.6/1,Ms1 3.5/1, ms1mx2.6/19,Error ellipse: s-maj=57.3km s-min=45.4km az=42.0*

ISC 04 07:57:24.9±2.7,8.00S±0.08×130.5E±0.1,h43km±30km, n10,σ0§94/15,mb4.3/1,Tanimbar Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**11.10**	**205**	*e*P	**P**	**08 00 04.1**	**+0.1**
	2.7nm,0.2s						
FITZ				*e*S	**S**	**08 02 08.2**	**+0.4**
FITZ	**Fitzroy Crossi**	**11.10**	**205**	P	**P**	**08 00 04.5**	**+0.5**
	1.5nm,0.3s,baz=20,slow=9.6,SNR=45						
FITZ				S	**S**	**08 02 08.2**	**+0.4**
	0.8nm,0.3s,baz=177,slow=12,SNR=4.9						
WRAB	**Tennant Creek**	**12.43**	**163**	*e*Pn	**P**	**08 00 23.0**	**+1.0**
	9.3nm,0.7s						
WRAB				Sn	**S**	**08 02 40.0**	**+0.1**
WRA	**Warramunga Arr**	**12.44**	**163**	P	**P**	**08 00 21.2**	**-0.8**
	0.6nm,0.3s,baz=337,slow=14,SNR=23						
WRA				S	**S**	**08 02 39.2**	**-0.9**
	0.5nm,0.3s,baz=336,slow=22,SNR=4.4						
WB2	**Warramunga Arr**	**12.44**	**163**	*e*P	**P**	**08 00 21.0**	**-1.0**
WB2				*e*S	**S**	**08 02 38.9**	**-1.3**
AS12	**Alice Springs**	**15.91**	**169**	*e*P	**P**	**08 01 07.7**	**+0.2**
	3.1nm,0.4s						
ASAR	**Alice Springs**	**15.91**	**169**	P	**P**	**08 01 07.9**	**+0.5**
	0.3nm,0.3s,baz=346,slow=14,SNR=20						
ASAR				S	**S**	**08 04 03.4**	**+1.0**
	0.1nm,0.3s,baz=346,slow=23,SNR=2.5						
CTAO	**Charters Tower**	**19.41**	**130**	*e*P	**P**	**08 01 52.2**	**+1.9**
	48nm,1.8s						
STKA	**Stephens Creek**	**25.90**	**158**	LR	LR	08 14 41.0	
	comp=Z,116nm,19.0s,baz=204,slow=40						
MKAR	**Makanchi Array**	**69.34**	**327**	P	**P**	**08 08 29.1**	**-0.9**
	2.1nm,0.6s,mb4.3,baz=128,slow=8.0,SNR=22						

*NAO **04** 07:58:35.4±9.3,59.34N×26.98E,h9km±43km*
*BER **04** 07:58:35.0±2.8,59.33N×27.22E,ML2.2(NAO)*

HEL 04 07:58:34.2±0.3,59.32N×27.16E,ML1.8,Explosion, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PVF	**Pernaja**	**1.40**	**333**	*e*P	Pb	07 58 58.8	-2.1
PVF				*e*S	Sb	07 59 17.3	-1.9
MEF	**Metsahovi**	**1.67**	**304**	*e*P	Pn	07 59 03.9	-0.9
MEF				*e*S	Sb	07 59 25.1	-1.8
FIA0	**FINESS Array S**	**2.20**	**346**	*e*P	Pn	07 59 11.3	-1.2
FIA0				*e*SG	Sg	07 59 41.8	-5.8
FIA0				MSG		07 59 43.9	
	comp=Z,5.3nm,0.2s						
FIA0	**FINESS Array S**	**2.20**	**346**	Pn	Pn	07 59 11.6	-0.9
	baz=165,slow=18						
FIA0				Lg		07 59 43.5	
	baz=169,slow=28						
FIA0				Rg		07 59 55.8	
	baz=165,slow=37						
KAF	**Kangasniemi**	**2.84**	**352**	*e*P	Pn	07 59 21.0	-0.6
KAF				*e*SG	Sg	08 00 01.6	-7.1
KAF				MSG		08 00 03.9	
	comp=Z,2.6nm,0.2s						
HFS	**Hagfors**	**6.86**	**283**	*e*S	Sn	08 01 31.1	-7.2
HFS				*e*SG	Sg	08 02 06.3	-16
HFS	**Hagfors**	**6.86**	**283**	Sn	Sn	08 01 31.1	-7.2
	baz=102,slow=37						
HFS				Lg		08 02 06.3	
	baz=88,slow=28						
ARA0	**ARCESS Array S**	**10.29**	**357**	Pn	P	08 01 00.4	-5.5
	baz=168,slow=16						
ARA0				Sn	S	08 02 51.6	-12
	baz=176,slow=28						
ARA0	**ARCESS Array S**	**10.29**	**357**	*e*P	P	08 01 00.4	-5.5
ARA0				*e*S	S	08 02 51.6	-12

*IDC **04** 08:13:27.3±3.6,25.41N×142.66E,h49km±35km,mb2.9/3, mb1 3.2/3,mb1mx3.0/21,Error ellipse: s-maj=54.3km s-min=23.9km az=93.0*

ISC 04 08:13:25.8±3.9,25.4N±0.2×142.7E±0.5,h52km±34km,n4, σ1§78/5,mb3.1/3,Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CBIJ	**Chichi jima**	**1.76**	**346**	P	**P**	**08 13 53.4**	**-1.0**
	19nm,0.3s,baz=251,slow=22,SNR=19						
CBIJ				S	**S**	**08 14 16.6**	**+1.0**
	53nm,0.3s,baz=258,slow=23,SNR=13						
WRA	**Warramunga Arr**	**45.77**	**191**	P	**P**	**08 21 45.0**	**+0.8**
	0.5nm,0.8s,mb3.5,baz=7.6,slow=9.8,SNR=8.3						
MKAR	**Makanchi Array**	**51.89**	**311**	P	**P**	**08 22 30.4**	**-0.7**
	0.1nm,0.5s,mb3.0,baz=90,slow=7.2,SNR=2.9						
YKA	**Yellowknife Ar**	**73.45**	**28**	P	**P**	**08 24 53.8**	**-0.1**
	0.1nm,0.6s,mb2.9,baz=295,slow=6.4,SNR=3.4						

*IDC **04** 08:15:01.3±0.6,10.34N×124.83E,mb3.9/12,mb1 4.1/12, mb1mx4.0/21,MS3.5/2,Ms1 3.6/2,ms1mx3.0/23,Error ellipse: s-maj=34.7km s-min=15.0km az=71.0*
*MAN **04** 08:15:04.0,10.31N×124.08E,h2km,mb4.9,ML3.8,MS3.8 MAN F SOGOD S LEYTE III MAASIN S LEYTE III MANDAUE CITY INTENSITY II.*
*NEIC **04** 08:15:08.2±2.5,10.24N×124.74E,h50km±23km,mb4.3/2, Error ellipse: s-maj=23.8km s-min=9.2km az=71.0*
NEIC Felt [III PIVS] at Maasin and Sogod. Felt [II PIVS] at Mandaue City, Cebu.

ISC 04 08:15:05.3±0.3,10.28N±0.03×124.88E±0.04,h33km,n37, σ1§22/47,mb4.0/14,MS3.6/2,11C-3D,Leyte

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MSLP	**Maasin**	**0.14**	**188**⇑	*e*P	**P**	**08 15 08.5**	**-2.8**
MSLP				*e*S	**S**	**08 15 12.2**	**-3.4**
SCPH	**Surigao**	**0.78**	**129**	*e*P	**P**	**08 15 19.0**	**-0.8**
SCPH				*e*S	**S**	**08 15 30.6**	**+0.3**
OCLP	**Ormoc**	**0.81**	**341**⇑	*e*P	**P**	**08 15 19.4**	**-0.8**
OCLP				*e*S	**S**	**08 15 32.6**	**+1.4**
PLP	**Palo**	**0.89**	**6**	*e*P	**P**	**08 15 20.5**	**-0.8**
PLP				*i* S	**S**	**08 15 34.4**	**+1.3**
TBP	**Tagbilaran**	**1.16**	**240**⇓	*i*P	**P**	**08 15 24.9**	**-0.4**
TBP				*i* S	**S**	**08 15 40.6**	**+0.5**
BESP	**Borongan**	**1.42**	**23**⇑	*e*P	**P**	**08 15 29.4**	**+0.3**
BESP				*e*S	**S**	**08 15 51.2**	**+4.5**
BUTP	**Butuan**	**1.49**	**151**⇑	*e*P	**P**	**08 15 33.3**	**+3.3**
CGP	**Cagayan de Oro**	**1.82**	**186**⇓	*e*P	**P**	**08 15 35.5**	**+0.8**
CGP				*e*S	**S**	**08 15 58.4**	**+1.5**
SNPH	**Sibulan**	**1.87**	**240**⇑	*e*P	**P**	**08 15 37.0**	**+1.6**
SNPH				*i* S	**S**	**08 16 04.0**	**+6.0**
CNP	**Catarman**	**2.23**	**355**⇑	*e*P	**P**	**08 15 41.5**	**+1.0**
CNP				*e*S	**S**	**08 16 16.0**	**+8.8**
DCPH	**Dipolog City**	**2.26**	**222**⇑	*e*P	**P**	**08 15 41.5**	**+0.6**
DCPH				*e*S	**S**	**08 16 07.2**	**-0.8**
RCP	**Roxas**	**2.45**	**301**⇑	*i*P	**P**	**08 15 44.8**	**+1.0**
BIPH	**Bislig**	**2.54**	**145**⇑	*i*P	**P**	**08 15 46.7**	**+1.7**
BIPH				*i* S	**S**	**08 16 15.8**	**+0.7**
PAGZ	**Pagadian**	**2.83**	**212**⇑	*e*P	**P**	**08 15 51.4**	**+2.2**
KALP	**Kalibo**	**2.86**	**299**⇓	*e*P	**P**	**08 15 49.0**	**-0.5**
KALP						12 37 26.7	
AAP	**Anini-y**	**2.89**	**273**	*e*P	**P**	**08 15 50.0**	**0.0**
DAV	**Davao City (W)**	**3.26**	**168**	*e*P	**S**	**08 16 23.8**	**-10**
PVCP	**Virac**	**3.37**	**348**⇑	*e*P	**P**	**08 15 59.1**	**+2.3**
PVCP				*e*S	**S**	**08 16 30.7**	**-5.5**
TATO	**Taipei**	**14.97**	**348**	*e*P	**P**	**08 18 36.6**	**+0.4**
	623nm,1.8s						
ENH	**Enshi**	**24.52**	**326**	*e*P	**P**	**08 20 24.0**	**+0.8**
	3.5nm,0.4s,mb4.2						
CMAR	**Chiang Mai Arr**	**26.38**	**291**	P	**P**	**08 20 37.8**	**-2.9**
	0.7nm,0.3s,mb3.6,baz=90,slow=8.1,SNR=2.9						
CMAR				PcP	PcP	08 24 06.6	+0.3
	0.5nm,0.4s,SNR=5.2						
FITZ	**Fitzroy Crossi**	**28.21**	**178**	P	**P**	**08 20 55.9**	**-1.5**
	2.7nm,1.1s,mb3.8,baz=350,slow=6.1,SNR=2.1						
WRA	**Warramunga Arr**	**31.44**	**163**	P	**P**	**08 21 24.3**	**-1.8**
	0.8nm,0.7s,mb3.6,baz=340,slow=9.7,SNR=5.1						
WRA				PcP	PcP	08 24 18.1	-0.9
	1.5nm,0.6s,baz=336,slow=2.7,SNR=15						
ASAR	**Alice Springs**	**34.87**	**165**	P	**P**	**08 21 55.5**	**-0.3**
	0.6nm,0.4s,mb3.9,baz=341,slow=7.1,SNR=13						
ASAR				PcP	PcP	08 24 27.2	-1.2
	1.1nm,0.7s,baz=342,slow=2.8,SNR=9.7						
ULN	**Ulaanbaatar**	**40.37**	**341**	*e*P	**P**	**08 22 42.2**	**+0.6**
	2.8nm,0.5s,mb4.2						
STKA	**Stephens Creek**	**44.87**	**160**	P	**P**	**08 23 18.4**	**-0.1**
	2.9nm,0.8s,mb4.2,baz=328,slow=11,SNR=4.7						
MKAR	**Makanchi Array**	**51.20**	**323**	P	**P**	**08 24 07.3**	**-0.3**
	1.8nm,0.6s,mb4.2,baz=121,slow=8.2,SNR=19						
ZAL	**Zalesovo**	**53.97**	**332**	P	**P**	**08 24 24.9**	**-3.2**
	1.0nm,0.7s,mb3.9,baz=109,slow=10,SNR=3.6						
ZAL				LR	LR	08 49 43.5	
	comp=Z,38nm,19.2s,MS3.5,baz=36,slow=39						
KURK	**Kurchatov**	**55.29**	**326**	*e*P	**P**	**08 24 36.7**	**-1.1**
KURK				*e*PP	PP	08 26 34.1	-8.8
BVAR	**Borovoye Array**	**60.88**	**326**	P	**P**	**08 25 15.6**	**-1.4**
	1.2nm,0.7s,mb4.1,baz=233,slow=37,SNR=3.9						
ZRNK	**Zerenda**	**61.63**	**325**	*e*P	**P**	**08 25 20.3**	**-1.7**
ILAR	**Eielson Array**	**80.03**	**26**	P	**P**	**08 27 11.8**	**-1.0**
	0.5nm,0.7s,mb3.5,baz=258,slow=4.6,SNR=8.9						
BRTR	**Keskin Array B**	**84.47**	**309**	P	**P**	**08 27 35.2**	**-1.1**
	0.6nm,0.7s,mb3.8,baz=53,slow=7.2,SNR=2.9						
INK	**Inuvik**	**84.78**	**21**	P	**P**	**08 27 37.0**	**-0.2**
	1.3nm,0.7s,mb4.2,baz=259,slow=4.9,SNR=7.9						
NOA	**NORSAR Array B**	**92.14**	**334**	LR	LR	09 11 27.8	
	comp=Z,30nm,19.0s,MS3.8,baz=260,slow=37						
YKA	**Yellowknife Ar**	**94.30**	**24**	P	**P**	**08 28 22.1**	**-0.1**
	0.3nm,0.6s,mb3.9,baz=303,slow=4.4,SNR=9.6						
PLCA	**Paso Flores**	**146.74**	**158**	PKPbc	PKPbc	08 34 46.1	+2.3
	3.5nm,0.7s,baz=97,slow=1.1,SNR=5.7						

*NAO **04** 08:18:50.5±1.1,67.78N×20.64E,ML2.2*
*BER **04** 08:18:50.9±3.7,67.86N×20.34E,ML2.0,ML2.2(NAO), Suspected explosion*

HEL 04 08:18:50.4±0.2,67.87N×20.36E,ML2.1,ML2.0(BER), ML2.2(NAO),Explosion,Sweden

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KIF	**Kilpisjarvi**	**1.16**	**8**	*e*P	Pb	08 19 11.4	-1.6
KIF				*e*S	Sb	08 19 27.1	-1.2
KTK1	**Kautokeino**	**1.57**	**41**	*e*P	Pn	08 19 18.3	-1.3
KTK1				*e*SN	Sn	08 19 41.5	+0.5
KTK1				AML	AML	08 19 45.0	
	comp=Z,20nm,0.3s						
SGF	**Sodankyl**	**2.40**	**97**	*e*P	Pn	08 19 31.6	+0.1
SGF				*e*S	Sn	08 20 00.5	-1.5
SGF				*e*SG	Sg	08 20 05.3	-4.9
SGF				MSG		08 20 08.4	
	comp=Z,9.5nm,0.3s						
ARA0	**ARCESS Array S**	**2.52**	**46**	*e*P	Pn	08 19 32.1	-1.1
ARA0				*e*SG	Sg	08 20 08.1	-6.2
ARA0	**ARCESS Array S**	**2.52**	**46**	Pn	Pn	08 19 32.1	-1.1
	baz=235,slow=14						
ARA0				Lg		08 20 08.1	
	baz=227,slow=28						
LOF	**Lofoten**	**2.58**	**279**	*e*SG	Sg	08 20 10.7	-5.7
LOF				AML	AML	08 20 13.0	
	comp=Z,12nm,0.4s						
MOR8	**Moi Rana**	**2.88**	**237**	*e*SG	Sg	08 20 13.8	-12
MOR8				AML	AML	08 20 14.6	
	comp=Z,22nm,0.4s						
KEV	**Kevo**	**3.07**	**49**	*e*P	Pn	08 19 39.4	-1.7
KEV				*e*S	Sn	08 20 17.6	-1.5
MSF	**Maaselka**	**3.94**	**116**	*e*S	Sn	08 20 37.3	-3.9
NSS	**Namsos**	**4.77**	**229**	*e*SG	Sg	08 21 16.8	-12
NSS				AML	AML	08 21 21.0	
	comp=Z,7.9nm,0.4s						
APA0	**Apatity Array**	**4.81**	**87**	Pn	Pn	08 20 02.5	-3.4
	baz=274,slow=10						
APA0				Sn	Sn	08 20 56.3	-6.9
	baz=279,slow=28						
APA0				Lg		08 21 16.4	
	baz=265,slow=28						
APA0	**Apatity Array**	**4.81**	**87**	*e*P	Pn	08 20 02.5	-3.4
APA0				*e*S	Sn	08 20 56.3	-6.9
APA0				*e*SG	Sg	08 21 16.4	-14
FIA0	**FINESS Array S**	**6.90**	**156**	*e*P	Pn	08 20 32.1	-3.1
FIA0				*e*SG	Sg	08 22 23.6	-16
FIA0	**FINESS Array S**	**6.90**	**156**	Pn	Pn	08 20 32.1	-3.1
	baz=330,slow=14						
FIA0				Lg		08 22 23.6	
	baz=339,slow=28						
HFS	**Hagfors**	**8.29**	**204**	Pn	P	08 20 47.8	-6.9
	baz=30,slow=11						
HFS				Sn	Sn	08 22 20.7	-10
	baz=14,slow=28						
HFS				Lg		08 23 09.0	
	baz=19,slow=28						
HFS	**Hagfors**	**8.29**	**204**	*e*P	P	08 20 47.8	-6.9
HFS				*e*S	Sn	08 22 20.7	-10
HFS				*e*		08 23 09.0	
SPA0	**Spitsbergen Ar**	**10.43**	**355**	Pn	P	08 21 20.9	-3.1
	baz=166,slow=8.6						
SPA0	**Spitsbergen Ar**	**10.43**	**355**	*e*P	P	08 21 20.9	-3.1

*IDC **04** 08:49:57.7±14.0,7.36S×132.12E,h129km±154km, mb3.0/1,mb1 3.2/4,mb1mx3.2/12,ML3.4/3,MS3.3/1, Ms1 3.3/1,ms1mx2.6/8,Error ellipse: s-maj=86.3km s-min=48.3km az=16.0*

**ISC 04 08:49:56.1±3.5,7.3S±0.1×132.

1.9nm,0.7s,mb3.9,baz=334,slow=7.0,SNR=16
CTA Charters Tower 45.50 144 P **P** 09 41 35.4 -0.4
4.1nm,0.8s,mb4.2,baz=216,slow=11,SNR=3.2
CTAO Charters Tower 45.50 144 *eP* **P** 09 41 34.8 -1.0
13nm,1.2s,mb4.5
KURK Kurchatov 46.58 325 *eP* **P** 09 41 43.8 -0.1
STKA Stephens Creek 53.32 157 P **P** 09 42 35.9 +0.2
3.6nm,0.8s,mb4.5,baz=310,slow=13,SNR=4.9
STKA Stephens Creek 53.32 157 P **P** 09 42 35.9 +0.2
YKA Yellowknife Ar 89.77 22 P **P** 09 46 13.6 +0.7
0.3nm,0.6s,mb3.6,baz=312,slow=4.6,SNR=15
SDV Santo Domingo 151.99 22 PKPbc PKPdf 09 53 11.8 +9.1
1.8nm,0.6s,baz=342,slow=10.0,SNR=3.9

*IDC **04** 09:37:01.0±7.8,28.16N×52.64E,h44km±61km,mb3.5/8, mb1 3.7/10,mb1mx3.6/22,ML3.6/2,Error ellipse: s-maj=83.5km s-min=35.0km az=172.0*
ISC 04 09:36:58.8±2.5,28.0N±0.1×52.4E±0.1,h49km±29km,n20, σ1§11/21,mb3.7/8,Southern Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HASS	**Wahat al Ahsa'**	**3.65**	**222**	P	**P**	**09 37 56.3**	**+2.0**
MZLS	**Mizel**	**7.54**	**240**	P	**P**	**09 38 48.5**	**-0.2**
MZLS				S	**S**	**09 40 13.1**	**-0.5**
ARSS	**Ar Rass**	**8.41**	**258**	P	**P**	**09 38 60.0**	**-0.8**
AFFS	**'Afif**	**9.34**	**247**	P	**P**	**09 39 12.6**	**-0.9**
HILS	**Ha'il**	**9.40**	**269**	P	**P**	**09 39 12.9**	**-1.5**
TATS	**Tathlith**	**11.67**	**226**	P	**P**	**09 39 44.3**	**-1.1**
KBRS	**Khaybar**	**11.90**	**263**	P	**P**	**09 39 48.6**	**+0.2**
BLJS	**Baljurashi**	**12.71**	**233**	P	**P**	**09 39 59.7**	**+0.5**
NAMS	**An Nimas**	**12.77**	**229**	P	**P**	**09 40 01.0**	**+0.9**
ASF	**Jabal al Asfar**	**14.05**	**291**	P	**P**	**09 40 17.9**	**+1.1**
	0.3nm,0.3s,baz=212,slow=18,SNR=2.8						
BRTR	**Keskin Array B**	**19.45**	**312**	P	**P**	**09 41 25.0**	**+0.9**
	0.1nm,0.3s,baz=131,slow=10,SNR=4.7						
IDI	**Anoyia**	**24.47**	**294**	P	**P**	**09 42 17.5**	**+3.0**
	2.1nm,0.4s,mb3.9,baz=148,slow=14,SNR=3.5						
AKASG	**Malin Array Be**	**28.71**	**329**	P	**P**	**09 42 53.1**	**-0.3**
	0.2nm,0.2s,mb3.4,baz=116,slow=6.2,SNR=5.9						
MKAR	**Makanchi Array**	**30.05**	**43**	P	**P**	**09 43 03.8**	**-1.6**
	0.2nm,0.5s,mb3.1,baz=214,slow=5.2,SNR=3.0						
ZAL	**Zalesovo**	**35.16**	**33**	P	**P**	**09 43 50.8**	**+1.0**
	1.4nm,0.5s,mb4.2,baz=112,slow=5.4,SNR=3.2						
FINES	**FINESS Array B**	**37.82**	**340**	P	**P**	**09 44 11.1**	**-0.9**
	0.8nm,0.5s,mb3.7,baz=144,slow=11,SNR=5.7						
NB2	**NORSAR Subarra**	**42.99**	**332**	P	**P**	**09 44 58.8**	**+4.1**
	0.8nm,0.6s,mb3.6,baz=121,slow=7.9						
NOA	**NORSAR Array B**	**42.99**	**332**	P	**P**	**09 44 56.7**	**+2.0**
	0.7nm,0.6s,mb3.5,baz=120,slow=8.2,SNR=3.9						
ARCES	**ARCESS Array B**	**44.44**	**347**	P	**P**	**09 45 05.3**	**-1.0**
	1.7nm,0.8s,mb3.8,baz=141,slow=7.8,SNR=9.2						
YKA	**Yellowknife Ar**	**89.27**	**354**	P	**P**	**09 49 50.4**	**+0.1**
	0.3nm,0.7s,mb3.8,baz=4.4,slow=5.1,SNR=9.7						

*IDC **04** 09:37:04.9±1.0,2.16N×84.65W,mb3.9/11,mb1 4.1/12, mb1mx4.0/21,ML3.6/1,MS3.5/10,Ms1 3.5/10, ms1mx3.3/26,Error ellipse: s-maj=54.9km s-min=15.6km az=53.0*
*NEIC **04** 09:37:12.8±4.4,2.05N×84.82W,h64km±41km,mb3.9/3, Error ellipse: s-maj=29.1km s-min=11.0km az=54.0*
ISC 04 09:37:04.5±0.7,2.0N±0.1×85.0W±0.1,h10km,n24, σ1§08/19,mb3.8/13,MS3.5/9,Off coast of Ecuador

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OTAV	**Otavalo**	**6.74**	**105**	*eP*	**Pn**	**09 38 41.0**	**-5.0**
	23nm,0.7s						
ROSC	**El Rosal**	**10.99**	**75**	LR	LR	09 43 23.8	
	comp=Z,164nm,19.1s,baz=349,slow=36						
SDV	**Santo Domingo**	**15.82**	**64**	Pn	**P**	**09 40 50.3**	**+1.2**
	0.2nm,0.3s,baz=267,slow=10,SNR=4.7						
PCRV	**Puerto La Cruz**	**21.77**	**67**	LR	LR	09 50 23.6	
	comp=Z,55nm,18.8s,MS3.0,baz=79,slow=37						
SJG	**San Juan**	**24.44**	**48**	LR	LR	09 51 06.5	
	comp=Z,82nm,20.1s,MS3.2,baz=111,slow=35						
LPAZ	**La Paz**	**24.62**	**138**	*eP*	**P**	**09 42 28.1**	**+1.5**
	6.8nm,0.8s,mb4.2,baz=335,slow=12,SNR=23						
LPAZ				LR	LR	09 52 58.1	
	comp=Z,139nm,19.3s,MS3.5,baz=69,slow=39						
LPAZ	**La Paz**	**24.62**	**138**	*eP*	**P**	**09 42 27.8**	**+1.2**
	9.1nm,1.2s,mb4.2						
LPAZ				P		09 42 28.1	
LPAZ				LR	LR	09 52 58.1	
HKT	**Hockley**	**29.66**	**341**	P	**P**	**09 43 09.8**	**-2.9**
	1.8nm,0.8s,mb3.9						
TXAR	**Lajitas Array**	**32.50**	**329**	P	**P**	**09 43 38.8**	**+1.1**
	1.0nm,1.1s,mb3.6,baz=146,slow=9.0,SNR=5.4						
TXAR				LR	LR	09 55 23.5	
	comp=Z,59nm,18.0s,MS3.3,baz=95,slow=34						
TXAR	**Lajitas Array**	**32.50**	**329**	P	**P**	**09 43 38.8**	**+1.1**
TXAR				LR	LR	09 55 23.5	
RPN	**Rapa Nui**	**37.28**	**217**	P	**P**	**09 44 12.9**	**-5.6**
	5µm,1.7s						
TUC	**Tucson**	**38.73**	**324**	*eP*	**P**	**09 44 31.1**	**+0.4**
	1.1nm,0.8s,mb3.6						
CPUP	**Villa Florida**	**38.80**	**138**	LR	LR	10 02 39.0	
	comp=Z,59nm,19.6s,MS3.4,baz=214,slow=40						
BDFB	**Brasilia**	**40.51**	**117**	P	**P**	**09 44 44.6**	**-1.0**
	1.7nm,0.6s,mb3.9,baz=128,slow=9.4,SNR=2.6						
BDFB				LR	LR	10 02 35.4	
	comp=Z,101nm,19.1s,MS3.7,baz=228,slow=38						
PLCA	**Paso Flores**	**44.51**	**164**	P	**P**	**09 45 18.0**	**-0.1**
	2.1nm,0.8s,mb4.0,baz=354,slow=14,SNR=4.3						
PDAR	**Pinedale Array**	**46.17**	**335**	P	**P**	**09 45 31.4**	**+0.2**
	0.3nm,0.9s,mb3.8,baz=150,slow=7.3,SNR=3.8						
NVAR	**Mina Array Bea**	**47.38**	**324**	P	**P**	**09 45 42.3**	**+1.4**
	1.7nm,1.1s,mb3.9,baz=134,slow=8.1,SNR=5.4						
NVAR				LR	LR	10 04 27.5	
	comp=Z,49nm,18.3s,MS3.5,baz=175,slow=35						
NEW	**Newport**	**53.77**	**334**	LR	LR	10 08 59.5	
	comp=Z,60nm,18.4s,MS3.7,baz=195,slow=36						
YKA	**Yellowknife Ar**	**64.29**	**345**	P	**P**	**09 47 40.4**	**-1.7**
	0.5nm,0.8s,mb3.6,baz=141,slow=6.6,SNR=12						
YKA	**Yellowknife Ar**	**64.29**	**345**	P	**P**	**09 47 40.4**	**-1.7**
DLBC	**Dease Lake**	**66.38**	**336**	P	**P**	**09 47 55.4**	**-0.3**
	0.5nm,0.5s,mb3.9,baz=194,slow=8.3,SNR=3.0						
INK	**Inuvik**	**73.86**	**343**	P	**P**	**09 48 40.9**	**-0.1**
	0.7nm,0.8s,mb3.6,baz=133,slow=3.2,SNR=2.9						
ILAR	**Eielson Array**	**76.54**	**337**	P	**P**	**09 48 56.5**	**+0.1**
	0.8nm,1.1s,mb3.6,baz=120,slow=3.0,SNR=4.4						
ILAR				LR	LR	10 23 21.8	
	comp=Z,42nm,18.8s,MS3.8,baz=166,slow=36						
DBIC	**Dimbokro**	**79.95**	**84**	P	**P**	**09 49 14.9**	**-1.2**
	7.5nm,1.2s,mb4.5,baz=214,slow=8.0,SNR=2.8						

*NEIC **04** 09:42:55.2±2.4,28.32N×139.88E,h282km±22km,mb4.4/1, Error ellipse: s-maj=27.1km s-min=19.2km az=115.0*
*IDC **04** 09:42:58.0±3.3,28.53N×140.08E,h300km±208km, mb3.1/3,mb1 3.2/4,mb1mx2.8/22,Error ellipse: s-maj=496.0km s-min=62.9km az=0.0*
ISC 04 09:42:56.0±0.8,28.4N±0.1×139.8E±0.2,h302km±11km,n9, σ0§86/10,mb3.6/4,Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**2.51**	**120**	P	**P**	**09 43 48.6**	**+1.0**
	22nm,0.3s,baz=259,slow=16,SNR=24						
CBIJ				S	**S**	**09 44 27.6**	**-0.3**
	31nm,0.3s,baz=121,slow=23,SNR=16						
MAJO	**Matsushiro**	**8.24**	**351**	*eP*	**P**	**09 44 53.3**	**+0.1**
KS15	**Wonju Array Si**	**13.44**	**315**	*eP*	**P**	**09 45 55.6**	**-1.5**
YSS	**Yuzh-Sakhalins**	**18.68**	**6**	*eP*	**P**	**09 46 53.7**	**-0.3**
ENH	**Enshi**	**26.42**	**281**	P	**P**	**09 48 08.6**	**+1.2**
WRAB	**Tennant Creek**	**48.32**	**187**	*eP*	**P**	**09 51 08.2**	**-1.2**
	23nm,1.3s,mb4.3						
ARCES	**ARCESS Array B**	**71.61**	**340**	P	**P**	**09 53 46.3**	**+0.5**
	1.8nm,0.9s,mb3.7,baz=90,slow=8.1,SNR=3.9						
YKA	**Yellowknife Ar**	**72.02**	**28**	P	**P**	**09 53 47.8**	**-0.5**
	0.1nm,0.5s,mb2.7,baz=300,slow=6.0,SNR=4.0						
FINES	**FINESS Array B**	**75.83**	**333**	P	**P**	**09 54 11.2**	**+0.9**
	0.7nm,0.6s,mb3.5,baz=72,slow=4.4,SNR=5.2						

*IDC **04** 09:43:13.9±10.0,6.82S×129.78E,h108km±94km,mb3.9/1, mb1 3.6/4,mb1mx3.4/13,ML3.6/3,Error ellipse: s-maj=101.0km s-min=56.1km az=59.0*
*NEIC **04** 09:43:16.3±4.2,6.94S×129.61E,h121km±42km,mb4.4/2, Error ellipse: s-maj=29.7km s-min=23.1km az=184.0*
ISC 04 09:43:19.0±2.7,7.12S±0.10×129.6E±0.1,h169km±31km, n10,σ0§98/15,mb3.9/1,Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**11.59**	**199**	*eP*	**P**	**09 45 59.3**	**-0.9**
	2.9nm,0.7s						
FITZ				*eS*	**S**	**09 48 05.6**	**-1.2**
FITZ	**Fitzroy Crossi**	**11.59**	**199**	P	**P**	**09 45 59.7**	**-0.6**
	0.4nm,0.3s,baz=21,slow=12,SNR=16						
FITZ				S	**S**	**09 48 06.6**	**-0.3**
	0.6nm,0.3s,baz=327,slow=17,SNR=5.4						
WRAB	**Tennant Creek**	**13.54**	**161**	P	**P**	**09 46 27.1**	**+1.7**
	31nm,1.3s						
WRA	**Warramunga Arr**	**13.55**	**161**	P	**P**	**09 46 24.7**	**-0.7**
	0.4nm,0.3s,baz=342,slow=13,SNR=16						
WRA				S	**S**	**09 48 51.8**	**-0.5**
	0.7nm,0.3s,baz=333,slow=22,SNR=7.6						
WB2	**Warramunga Arr**	**13.55**	**161**	*eP*	**P**	**09 46 26.0**	**+0.5**
WB2				*eS*	**S**	**09 48 52.6**	**+0.2**
ASAR	**Alice Springs**	**16.96**	**166**	P	**P**	**09 47 09.6**	**+1.8**
	0.2nm,0.3s,baz=339,slow=9.1,SNR=14						
ASAR				S	**S**	**09 50 19.8**	**+10**
	0.2nm,0.3s,baz=356,slow=27,SNR=4.6						
PMG	**Port Moresby**	**17.50**	**99**	P	**P**	**09 47 12.6**	**-1.5**
	24nm,1.3s						
CTAO	**Charters Tower**	**20.65**	**130**	*eP*	**P**	**09 47 41.6**	**-5.3**
STKA	**Stephens Creek**	**27.05**	**157**	P	**P**	**09 48 47.8**	**+0.1**
	3.5nm,1.0s,mb3.9,baz=323,slow=10,SNR=6.1						
KURK	**Kurchatov**	**72.42**	**329**	*eP*	**P**	**09 54 28.7**	**+0.2**

*NIED **04** 10:02:00,41.70N×143.60E,h44km,Mw4.2 Best double couple: M0 2.45×10^15 NP1:φ=268°,δ=54°,λ=-96°. NP2:φ=97°, δ=37°,λ=-82°.*
*MOS **04** 10:02:53.0±1.6,41.59N×143.47E,h33km,mb4.9/2,Error ellipse: s-maj=18.1km s-min=9.2km az=76.8*
*NEIC **04** 10:02:57.4±0.4,41.58N×143.38E,mb4.4/3,Error ellipse: s-maj=13.3km s-min=8.3km az=128.0*
NEIC Recorded [1 JMA] in southern Hokkaido. Also recorded [1 JMA] in Iwate Prefecture, Honshu.
*IDC **04** 10:02:57.6±0.6,41.55N×143.39E,h63km±5km,mb3.8/16, mb1 4.0/19,mb1mx3.9/27,MS3.1/1,Ms1 3.1/1, ms1mx2.3/37,Error ellipse: s-maj=16.7km s-min=12.7km az=106.0*
*JMA **04** 10:02:58.5±0.1,41.73N×143.62E,h52km±2km,M4.4*
JMA Felt I J1.
ISC 04 10:02:54.5±0.6,41.51N±0.04×143.60E±0.07,h52km±5km, h63km±1.4km:pP-P,n56,σ1§33/64,mb4.1/19,8C-4D, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JEM	**Erimo**	**0.61**	**327**	P	**P**	**10 03 09.2**	**+2.0**
JEM				*eS*	**S**	**10 03 16.8**	**+0.3**
JNBK	**Urakawa-nobuka**	**1.00**	**321**	⇑P	**P**	**10 03 14.5**	**+2.0**
JNBK				*eS*	**S**	**10 03 25.4**	**-0.4**
JCH	**Churui**	**1.12**	**351**	⇑P	**P**	**10 03 15.3**	**+1.2**
JCH				*eS*	**S**	**10 03 26.7**	**-2.0**
JOB	**Onbets**	**1.40**	**7**	⇑P	**P**	**10 03 19.6**	**+1.3**
JOB				*eS*	**S**	**10 03 34.5**	**-1.3**
JBT2	**Biratori 2**	**1.57**	**324**	⇑P	**P**	**10 03 22.2**	**+1.7**
JAK	**Akkeshi**	**1.69**	**28**	⇑P	**P**	**10 03 23.1**	**+0.8**
JAK				*eS*	**S**	**10 03 40.4**	**-2.4**
JAR	**Ashorobuto**	**1.79**	**4**	⇑P	**P**	**10 03 24.2**	**+0.6**
JFR	**Furan**	**1.81**	**336**	⇑P	**P**	**10 03 23.9**	**-0.1**
ASAJ	**Asahikawa**	**2.71**	**344**	P	**P**	**10 03 37.4**	**+0.7**
	33nm,0.3s,baz=192,slow=10,SNR=172						
ASAJ				LR	LR	10 05 05.6	
	comp=Z,408nm,21.8s,baz=172,slow=49						
YUK	**Yuzh-Kuril'sk**	**3.02**	**33**	⇓*iP*	**P**	**10 03 40.7**	**-0.4**
YUK				*i* S	**S**	**10 04 13.3**	**-3.0**
YUK				pmax	pmax		
	comp=Z,1µm,0.3s						
YUK				smax			
	comp=N,2µm,0.5s						
YUK				smax			
	comp=E,2µm,0.5s						
YUK				smax			
	comp=N,6µm,1.0s						
YUK				smax			
	comp=E,6µm,1.0s						
KUR	**Kuril'sk**	**4.85**	**38**	⇓*iP*	**P**	**10 04 05.0**	**-1.8**
KUR				*i* S	**S**	**10 04 58.0**	**-4.3**
KUR				pmax	pmax		
	comp=Z,730nm,0.4s						
KUR				smax			
	comp=N,280nm,0.4s						
KUR				smax			
	comp=E,240nm,0.4s						
YSS	**Yuzh-Sakhalins**	**5.48**	**354**	*eP*	**P**	**10 04 14.5**	**-1.0**
YSS	**Yuzh-Sakhalins**	**5.48**	**354**	*eP*	**P**	**10 04 13.8**	**-1.7**
MAJO	**Matsushiro**	**6.50**	**222**	*eP*	**P**	**10 04 30.5**	**+0.6**
MAJO				pmax	pmax		
	comp=Z,40nm,0.9s						
MAJO	**Matsushiro**	**6.50**	**222**	*eP*	**P**	**10 04 30.5**	**+0.6**
	comp=Z,40nm,0.9s						
MAT	**Matsushiro**	**6.50**	**222**	P	**P**	**10 04 30.4**	**+0.5**
MAT				*eS*	**S**	**10 05 52.1**	**+8.6**
MAT	**Matsushiro**	**6.50**	**222**	*eP*	**P**	**10 04 30.0**	**+0.1**
MAT				pmax	pmax		
	comp=Z,39nm,1.1s						
MAT	**Matsushiro**	**6.50**	**222**	*eP*	**P**	**10 04 30.0**	**+0.1**
	comp=Z,39nm,1.1s						
MAT				S	**S**	**10 05 31.0**	**-12**
JHJ	**Hachijo jima 2**	**8.91**	**201**	P	**P**	**10 05 01.6**	**-1.6**
	comp=Z,12nm,0.3s,baz=260,slow=20,SNR=8.3						
JHJ				S	**S**	**10 06 33.5**	**-10**
	comp=Z,16nm,0.3s,baz=58,slow=19,SNR=3.4						
KS15	**Wonju Array Si**	**12.80**	**257**	*eP*	**P**	**10 05 49.6**	**-6.4**
CBIJ	**Chichi jima**	**14.43**	**185**	P	**P**	**10 06 15.4**	**-1.9**
	comp=Z,3.9nm,0.3s,baz=282,slow=20,SNR=9.5						
CBIJ				S	**S**	**10 08 42.1**	**-14**
	comp=Z,2.5nm,0.3s,baz=285,slow=18,SNR=2.0						
BOD	**Bodaibo**	**24.88**	**321**	*eP*	**P**	**10 08 11.1**	**-2.3**
ZAK	**Zakamensk**	**29.10**	**302**	*eP*	**P**	**10 08 53.4**	**+1.3**
ENH	**Enshi**	**29.65**	**259**	*eP*	**P**	**10 08 54.9**	**-2.3**
ZAL	**Zalesovo**	**40.32**	**309**	P	**P**	**10 10 25.9**	**-2.1**
	comp=Z,0.8nm,0.4s,mb3.8,baz=323,slow=4.9,SNR=3.0						
ZAL	**Zalesovo**	**40.32**	**309**	P	**P**	**10 10 25.9**	**-2.1**
IMA	**Indian Mountai**	**41.99**	**33**	*eP*	**P**	**10 10 43.5**	**+1.9**
IMA				pmax	pmax		
	comp=Z,12nm,0.7s,mb4.6						
IMA	**Indian Mountai**	**41.99**	**33**	*eP*	**P**	**10 10 43.5**	**+1.9**
	comp=Z,12nm,0.7s,mb4.7						
MKAR	**Makanchi Array**	**43.33**	**299**	P	**P**	**10 10 52.8**	**0.0**
	comp=Z,1.3nm,0.8s,mb3.7,baz=81,slow=9.3,SNR=8.0						
MKAR				PcP	PcP	10 12 40.8	-0.6
	comp=Z,0.6nm,0.7s,baz=63,slow=3.2,SNR=2.7						
COLA	**College**	**44.41**	**35**	*eP*	**P**	**10 11 03.8**	**+2.5**
COLA				pmax	pmax		
	comp=Z,5.0nm,0.8s,mb4.3						
COLA	**College**	**44.41**	**35**	*eP*	**P**	**10 11 03.8**	**+2.6**
	comp=Z,5.1nm,0.8s,mb4.3						
KURK	**Kurchatov**	**44.64**	**305**	*eP*	**P**	**10 11 02.6**	**-0.7**
ILAR	**Eielson Array**	**44.83**	**35**	P	**P**	**10 11 05.3**	**+0.7**
	comp=Z,1.8nm,0.7s,mb4.0,baz=270,slow=7.1,SNR=21						
BVAR	**Borovoye Array**	**48.91**	**310**	P	**P**	**10 11 37.2**	**+0.4**
	comp=Z,2.6nm,0.3s,mb4.7,baz=72,slow=9.4,SNR=19						
ZRNK	**Zerenda**	**49.73**	**310**	*eP*	**P**	**10 11 42.7**	**-0.5**
YKA	**Yellowknife Ar**	**59.10**	**32**	P	**P**	**10 12 51.0**	**-0.3**
	comp=Z,0.4nm,0.7s,mb3.6,baz=303,slow=6.3,SNR=10						
YKA	**Yellowknife Ar**	**59.10**	**32**	P	**P**	**10 12 51.0**	**-0.3**
ARCES	**ARCESS Array B**	**60.42**	**339**	P	**P**	**10 13 02.1**	**+1.8**
	comp=Z,1.5nm,0.8s,mb4.1,baz=45,slow=7.7,SNR=3.3						
WRA	**Warramunga Arr**	**61.74**	**190**	P	**P**	**10 13 09.1**	**-0.8**
	comp=Z,1.8nm,0.7s,mb4.3,baz=7.0,slow=6.8,SNR=19						
WRA				pP	pP	10 13 26.5	+2.1
	comp=Z,1.7nm,0.8s,baz=6.6,slow=7.5,SNR=4.8						
ASAR	**Alice Springs**	**65.47**	**190**	P	**P**	**10 13 34.3**	**0.0**
	comp=Z,1.1nm,0.7s,mb4.0,baz=2.6,slow=5.2,SNR=12						
ASAR				pP	pP	10 13 50.6	+1.6
	comp=Z,1.0nm,0.8s,baz=12,slow=7.3,SNR=4.8						
FINES	**FINESS Array B**	**65.66**	**332**	P	**P**	**10 13 33.9**	**-1.0**
	comp=Z,2.4nm,0.6s,mb4.4,baz=45,slow=11,SNR=9.1						
HFS	**Hagfors**	**70.71**	**336**	P	**P**	**10 14 05.0**	**-1.2**
	comp=Z,0.7nm,0.7s,mb3.7,baz=56,slow=43,SNR=3.7						
NB2	**NORSAR Subarra**	**70.71**	**338**	P	**P**	**10 14 11.3**	**+5.0**
	comp=Z,1.0nm,0.8s,mb3.8,baz=34,slow=6.2						
NOA	**NORSAR Array B**	**70.71**	**338**	P	**P**	**10 14 05.1**	**-1.1**
	comp=Z,1.0nm,0.9s,mb3.8,baz=277,slow=9.5,SNR=2.3						
NVAR	**Mina Array Bea**	**71.00**	**55**	P	**P**	**10 14 09.9**	**+1.6**
	comp=Z,2.3nm,0.8s,mb4.2,baz=299,slow=4.9,SNR=16						
NVAR				sP	sP	10 14 33.9	+5.0
	comp=Z,0.8nm,0.8s,baz=277,slow=8.3,SNR=3.5						
AKASG	**Malin Array Be**	**71.80**	**322**	P	**P**	**10 14 12.5**	**-0.4**
	comp=Z,0.2nm,0.2s,mb3.6,baz=42,slow=5.4,SNR=5.4						
PDAR	**Pinedale Array**	**73.35**	**47**	P	**P**	**10 14 23.2**	**+1.0**
	comp=Z,1.8nm,0.7s,mb4.1,baz=289,slow=1.8,SNR=15						
PDAR				pP	pP	10 14 41.1	+4.0
	comp=Z,0.9nm,0.7s,baz=283,slow=2.6,SNR=4.3						
MVU	**Marysvale**	**74.64**	**52**	*eP*	**P**	**10 14 28.3**	**-1.5**
	comp=Z,2.2nm,0.7s,mb4.2						
SRU	**San Rafael**	**75.23**	**51**	*eP*	**P**	**10 14 33.4**	**+0.3**
SRU				*e*PP	pP	10 14 51.8	+3.7
PV10	**Paradox Valley**	**76.58**	**50**	*eP*	**P**	**10 14 42.6**	**+1.8**
PV10				*ep*P	pP	10 14 59.1	+3.3
PV01	**Paradox Valley**	**77.02**	**50**	P	**P**	**10 14 44.0**	**+0.7**
SCHQ	**Schefferville**	**80.57**	**17**	P	**P**	**10 15 02.5**	**+0.2**
	comp=Z,5.9nm,1.1s,mb4.5,baz=291,slow=18,SNR=3.7						
TXAR	**Lajitas Array**	**86.08**	**54**	P	**P**	**10 15 32.6**	**+1.8**
	comp=Z,1.3nm,0.7s,mb4.3,baz=290,slow=3.6,SNR=22						
TXAR				pP	pP	10 15 49.5	+3.5
	comp=Z,1.0nm,0.7s,baz=287,slow=3.3,SNR=7.5						
SNAA	**Sanae**	**145.52**	**198**	⇓*i*	PKPdf	10 22 24.8	-0.6
VNA2	**Neumayer--Watz**	**147.09**	**197**	⇓*i*	PKPdf	10 22 31.9	+3.8
VNA3	**Neumayer Olymp**	**147.33**	**196**	⇑*i*	PKPdf	10 22 33.1	+4.6

*TAP **04** 10:14:59.2,24.50N×122.70E,h92km,ML3.5*
*JMA **04** 10:15:00.1±0.2,24.63N×122.65E,h90km±2km,M2.2*
ISC 04 10:14:60.0±2.5,24.6N±0.3×122.6E±0.1,h90km±16km,n6, σ0§37/11,Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**0.36**	**106**	P	**P**	**10 15 14.0**	**+0.2**
YOJ				S	**S**	**10 15 24.2**	**-0.1**
IRIF	**Iriomote-Funau**	**1.02**	**103**	P	**P**	**10 15 20.1**	**-0.1**
IRIF				S	**S**	**10 15 35.6**	**+0.2**
HATJ	**Hateruma jima**	**1.18**	**115**	S	**S**	**10 15 39.1**	**+0.4**
JKRS	**Kuro-shima**	**1.29**	**104**	P	**P**	**10 15 23.8**	**+0.2**
JKRS				S	**S**	**10 15 41.2**	**-0.1**
JIJ	**Ishigaki jima**	**1.39**	**98**	P	**P**	**10 15 24.3**	**-0.5**
JIJ				S	**S**	**10 15 42.3**	**-0.9**
JTJ	**Tarama**	**1.88**	**87**	P	**P**	**10 15 31.4**	**+0.2**
JTJ				S	**S**	**10 15 54.6**	**+0.5**

*GUC **04** 10:26:41.1±0.8,32.67S×71.66W,h30km±5km,MD3.3, ML2.6*
*NEIC **04** 10:26:41.1,32.67S×71.66W,h30km,ML2.6(GUC),After GUC.*
ISC 04 10:26:41.0±0.9,32.68S±0.03×71.71W±0.07,h25km±4km, n15,σ0§52/27,3C-6D,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PACH	**Papudo**	**0.27**	**58**	⇓*iP*	**Pb**	**10 26 48.0**	**+0.4**
PACH				*i* S	**Sb**	**10 26 52.5**	**+0.4**
IHA	**Instituto Hidr**	**0.35**	**171**	⇓*iP*	**Pb**	**10 26 49.1**	**+0.3**
IHA				*i* S	**Sb**	**10 26 54.8**	**+0.8**
ROCH	**El Roble**	**0.66**	**117**	⇑*iP*	**Pb**	**10 26 53.5**	**-0.3**
ROCH				*i* S	**Sb**	**10 27 02.5**	**+0.1**
PTCH	**Petorca**	**0.78**	**58**	⇓*iP*	**Pb**	**10 26 55.3**	**-0.5**
PTCH				*i* S	**Sb**	**10 27 05.7**	**-0.2**
PTCH				AMP		10 27 09.2	
	comp=N,312nm,0.1s						
LCCH	**Las Cruces**	**0.80**	**172**	⇓*iP*	**Pb**	**10 26 55.7**	**-0.5**
PEL	**Peldehue**	**0.98**	**119**	*eP*	**Pb**	**10 26 58.3**	**-0.8**
PEL				*i* S	**Sb**	**10 27 11.5**	**-0.1**
PEL				AMP		10 27 13.1	
	comp=E,580nm,0.2s						
RCDM	**Rinconada Maip**	**1.11**	**137**	*eP*	**Pn**	**10 27 00.6**	**-0.4**
RCDM				*i* S	**Sb**	**10 27 14.9**	**-0.5**
RCDM				AMP		10 27 16.6	
	comp=N,226nm,0.1s						
TACH	**Talagante**	**1.17**	**147**	*eP*	**Pn**	**10 27 01.1**	**-0.8**
CLCH	**Cerro Calan**	**1.22**	**126**	⇓*iP*	**Pn**	**10 27 02.1**	**-0.4**
CLCH				*i* S	**Sn**	**10 27 17.9**	**-0.5**
CLCH				AMP		10 27 19.1	
	comp=N,270nm,0.5s						
LNV	**Longovilo**	**1.30**	**169**	⇑*iP*	**Pn**	**10 27 03.1**	**-0.7**
FCH	**Farellones**	**1.35**	**119**	⇓*iP*	**Pn**	**10 27 04.3**	**-0.3**
FCH				*i* S	**Sn**	**10 27 21.9**	**0.0**
FCH				AMP		10 27 23.5	
	comp=N,130nm,0.2s						
PCH

YER	**Yerkesik**	**2.26**	**115**	*i* PN	**Pn**	**10 32 22.0**	**+0.3**
MANT	**Manisa**	**2.26**	**80**	⇑P	**Pn**	**10 32 21.7**	**0.0**
MANT				*i* S	**Sn**	**10 32 55.4**	**+5.5**
BALB	**Balikesir**	**2.27**	**47**	*e*PN	**Pn**	**10 32 22.0**	**+0.2**
NEO	**Neokhori**	**2.28**	**302**	*e*P	**Pn**	**10 32 22.3**	**+0.3**
XOR	**Xorichti**	**2.34**	**303**	*e*Pn	**Pn**	**10 32 23.1**	**+0.4**
LPK	**Lapseki**	**2.39**	**19**	*i* PN	**Pn**	**10 32 23.3**	**-0.2**
OUR	**Ouranopolis**	**2.59**	**329**	*e*Pn	**Pn**	**10 32 26.3**	**-0.1**
DNZL	**Cakiroluk**	**2.67**	**98**	⇑*i*P	**Pn**	**10 32 27.8**	**+0.3**
DNZL				*e*S	**Sn**	**10 33 09.1**	**+8.9**
DST	**Dursunbey**	**2.71**	**56**	*e*PN	**Pn**	**10 32 28.1**	**0.0**
EDC	**Edincik**	**2.78**	**36**	*e*PN	**Pn**	**10 32 28.8**	**-0.2**
ALN	**Alexandroupoli**	**2.78**	**5**	*e*Pn	**Pn**	**10 32 28.1**	**-1.0**
SART	**Tekirdag**	**2.80**	**23**	⇑P	**Pn**	**10 32 28.8**	**-0.7**
SART				S	**Sn**	**10 33 00.5**	**-3.1**
AGG	**Agios Georgios**	**2.81**	**290**	*e*Pn	**Pn**	**10 32 30.2**	**+0.8**
BNT	**Bandirma**	**2.81**	**37**	*e*PN	**Pn**	**10 32 28.8**	**-0.7**
KARP	**Karpathos**	**2.82**	**155**	*e*P	**Pn**	**10 32 28.4**	**-1.2**
KYTH	**Kithira**	**2.82**	**230**	*e*P	**Pn**	**10 32 29.5**	**-0.2**
NPS	**Neapolis**	**2.85**	**182**	*e*P	**Pn**	**10 32 29.5**	**-0.7**
KRIS	**Kristallenia**	**2.94**	**183**	*e*Pn	**Pn**	**10 32 29.9**	**-1.5**
KRIS				*e*S	**Sn**	**10 33 03.8**	**-3.4**
KCT	**Karacabey**	**2.96**	**43**	*i* PN	**Pn**	**10 32 31.5**	**-0.2**
RDO	**Rodhopi**	**3.02**	**357**	*e*P	**Pn**	**10 32 31.7**	**-0.9**
ITM	**Ithomi**	**3.15**	**254**	*e*P	**Pn**	**10 32 34.0**	**-0.4**
LIT	**Litokhoron**	**3.20**	**309**	*e*Pn	**Pn**	**10 32 35.9**	**+0.9**
XRY	**Khrisi**	**3.24**	**180**	*e*P	**Pn**	**10 32 35.2**	**-0.4**
ULDT	**Uludag**	**3.33**	**52**	⇑P	**Pn**	**10 32 37.6**	**+0.6**
ULDT				S	**Sn**	**10 33 25.7**	**+8.6**
KDZ	**Kurdzhali**	**3.53**	**356**	*i* P	**Pn**	**10 32 39.0**	**-0.8**
RZN	**Rozhen**	**3.65**	**348**	*i* P	**Pn**	**10 32 41.5**	**+0.1**
CTT	**Catalca**	**3.67**	**34**	*e*PN	**Pn**	**10 32 41.5**	**-0.3**
MMB	**Musomiste**	**3.79**	**337**	*i* P	**Pn**	**10 32 43.0**	**-0.4**
GRG	**Griva**	**3.82**	**319**	*e*Pn	**Pn**	**10 32 44.5**	**+0.6**
MEV	**Metsovon**	**3.88**	**297**	*e*Pn	**Pn**	**10 32 45.5**	**+0.9**
KKB	**Krupnik**	**4.25**	**332**	*e*P	**Pn**	**10 32 51.0**	**+1.0**
VTS	**Vitosha**	**4.86**	**338**	*e*P	**Pn**	**10 33 01.0**	**+2.4**

NEIC ***04*** *10:34:46.1±0.2,21.23S×179.33W,mb4.5/18, Error ellipse: s-maj=9.2km s-min=5.0km az=140.0*
IDC ***04*** *10:34:47.0±0.5,21.29S×179.32W,h641km±5km,mb3.9/24, mb1 4.0/25,mb1mx4.0/26, Error ellipse: s-maj=13.7km s-min=8.0km az=153.0*

ISC 04 10:34:44.1±1.3,21.39S±0.07×179.33W±0.06, h626km±17km,h635km±5.4km:pP-P,n147,σ1$03/104, mb4.5/42,7C-11D,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUZ	**Kuaotunu**	**15.90**	**195**	P	**P**	**10 39 02.6**	**+2.3**
PUZ	**Puketiti**	**16.76**	**187**	P	**P**	**10 38 07.9**	**-0.3**
PUZ				S	**S**	**10 40 50.0**	**-2.3**
URZ	**Urewera**	**17.09**	**190**	P	**P**	**10 38 09.3**	**-2.0**
	13nm,0.3s,baz=354,slow=1.3,SNR=63						
URZ				S	**S**	**10 40 53.5**	**-4.4**
	3.4nm,0.3s,baz=203,slow=23,SNR=10						
URZ	**Urewera**	**17.09**	**190**	P	**P**	**10 38 09.2**	**-2.1**
NGZ	**Ngauruhoe**	**18.25**	**193**	*e*P	**P**	**10 38 21.7**	**-0.5**
SNZO	**South Karori**	**20.49**	**193**	*e*P	**P**	**10 38 41.3**	**-1.3**
QRZ	**Quartz Range**	**20.57**	**198**	P	**P**	**10 38 43.9**	**+0.6**
THZ	**Tophouse**	**21.34**	**196**	P	**P**	**10 38 49.4**	**-0.9**
KHZ	**Kahutara**	**21.80**	**194**	P	**P**	**10 38 52.9**	**-1.6**
RPZ	**Rata Peaks**	**23.66**	**198**	P	**P**	**10 39 12.0**	**+1.0**
	20nm,0.5s,mb5.1,baz=59,slow=2.2,SNR=13						
BWZ	**Berwen**	**24.74**	**199**	P	**P**	**10 39 19.0**	**-1.5**
AXZ	**Alexandra**	**25.58**	**199**	*e*P	**P**	**10 39 27.2**	**-0.6**
ARMA	**Armidale**	**27.56**	**245**	*e*P	**P**	**10 39 47.3**	**+2.2**
CTA	**Charters Tower**	**32.17**	**266**	*e*P	**P**	**10 40 25.9**	**+1.5**
	7.0nm,0.6s,mb4.5						
CTA	**Charters Tower**	**32.17**	**266**	P	**P**	**10 40 26.0**	**+1.7**
	8.4nm,0.6s,mb4.5,baz=101,slow=10,SNR=19						
CTA	**Charters Tower**	**32.17**	**266**	P	**P**	**10 40 26.0**	**+1.7**
PMG	**Port Moresby**	**34.35**	**285**	P	**P**	**10 40 43.0**	**+0.5**
	10nm,0.6s,mb4.6,baz=122,slow=13,SNR=6.3						
STKA	**Stephens Creek**	**36.28**	**245**	⇑*i*P	**P**	**10 41 00.2**	**+1.9**
	16nm,1.0s,mb4.5						
STKA	**Stephens Creek**	**36.28**	**245**	P	**P**	**10 41 00.3**	**+2.0**
	16nm,0.5s,mb4.8,baz=91,slow=10.0,SNR=92						
STKA				ScP		10 45 57.0	
	4.7nm,0.8s,baz=104,slow=4.4,SNR=5.4						
AS12	**Alice Springs**	**43.11**	**258**	*e*P	**P**	**10 41 53.8**	**+0.8**
	12nm,0.5s,mb4.7						
AS12				*e*S	**S**	**10 47 35.9**	**-0.3**
ASAR	**Alice Springs**	**43.11**	**258**	P	**P**	**10 41 53.9**	**+0.9**
	18nm,0.5s,mb4.9,baz=99,slow=7.4,SNR=313						
ASAR				ScP		10 46 24.1	
	0.8nm,0.5s,baz=108,slow=4.0,SNR=4.7						
ASAR				S	**S**	**10 47 35.9**	**-0.3**
	2.8nm,0.6s,baz=94,slow=16,SNR=32						
WB2	**Warramunga Arr**	**43.24**	**263**	*e*P	**P**	**10 41 54.2**	**+0.1**
WB2				*e*S	**S**	**10 47 36.0**	**-2.1**
WB2				*e*ScS	ScS	10 50 46.6	+3.6
WRAB	**Tennant Creek**	**43.24**	**263**	*e*P	**P**	**10 41 54.6**	**+0.5**
	34nm,0.9s,mb4.9						
WRA	**Warramunga Arr**	**43.25**	**263**	P	**P**	**10 41 54.4**	**+0.3**
	5.7nm,0.4s,mb4.5,baz=97,slow=7.4,SNR=267						
WRA				S	**S**	**10 47 37.0**	**-1.3**
	1.1nm,0.6s,baz=97,slow=14,SNR=6.7						
FITZ	**Fitzroy Crossi**	**51.68**	**263**	*e*P	**P**	**10 42 57.7**	**+0.5**
	2.9nm,0.4s,mb4.0						
FITZ	**Fitzroy Crossi**	**51.68**	**263**	P	**P**	**10 42 57.7**	**+0.6**
	4.3nm,0.6s,mb4.0,baz=149,slow=4.5,SNR=23						
KLBR	**Kellerberrin**	**56.55**	**246**	*e*P	**P**	**10 43 31.1**	**+0.1**
	25nm,0.9s,mb4.5						
SBA	**Scott Base**	**56.91**	**183**	*e*P	**P**	**10 43 35.2**	**+2.4**
	91nm,1.5s,mb4.8						
MUN	**Mundaring**	**57.82**	**245**	*e*P	**P**	**10 43 39.3**	**-0.3**
	16nm,1.1s,mb4.0						
CBIJ	**Chichi jima**	**60.91**	**321**	P	**P**	**10 43 59.4**	**-0.7**
	80nm,0.7s,mb5.1,baz=300,slow=18,SNR=7.5						
JHJ	**Hachijo jima 2**	**66.79**	**323**	P	**P**	**10 44 36.6**	**-0.4**
	88nm,0.6s,mb5.4,baz=52,slow=19,SNR=3.3						
QSPA	**South Pole Qui**	**68.68**	**180**	*e*P	**P**	**10 44 49.2**	**+1.5**
	147nm,0.3s,mb5.9						
JOW	**Kunigami**	**69.79**	**311**	P	**P**	**10 44 55.6**	**+0.5**
	18nm,0.9s,mb4.5,baz=306,slow=26,SNR=4.7						
MAT	**Matsushiro**	**70.20**	**325**	P	**P**	**10 44 56.3**	**-1.0**
MAT	**Matsushiro**	**70.20**	**325**	*e*P	**P**	**10 44 56.0**	**-1.3**
	9.3nm,0.6s,mb4.4						
JNU	**Nakatsue**	**72.08**	**318**	P	**P**	**10 45 07.8**	**-0.4**
	5.9nm,0.8s,mb4.2,baz=225,slow=4.3,SNR=3.2						
ASAJ	**Asahikawa**	**73.92**	**332**	P	**P**	**10 45 19.7**	**+1.3**
	9.6nm,0.6s,mb4.5,baz=194,slow=28,SNR=9.3						
SDN	**Sand Point**	**78.09**	**11**	*e*P	**P**	**10 45 39.0**	**-1.9**
SDPT	**Sand Point**	**78.11**	**11**	*e*P	**P**	**10 45 39.3**	**-1.7**
MAW	**Mawson**	**80.31**	**200**	P	**P**	**10 45 53.4**	**+1.2**
	3.4nm,0.4s,mb4.0,baz=147,slow=7.5,SNR=9.3						
MAW	**Mawson**	**80.31**	**200**	*e*P	**P**	**10 45 53.3**	**+1.1**
	5.2nm,0.7s,mb4.0						
CMB	**Columbia Colle**	**80.96**	**43**	*e*P	**P**	**10 45 56.3**	**+0.1**
	8.9nm,1.0s,mb4.2						
WDC	**Whiskeytown Da**	**81.15**	**40**	*e*P	**P**	**10 45 57.3**	**+0.3**
	21nm,1.1s,mb4.5						
MTUM	**Tungsten Hills**	**81.74**	**45**	*e*P	**P**	**10 46 00.8**	**+0.7**
YBH	**Yreka Blue Hor**	**81.76**	**39**	P	**P**	**10 46 01.2**	**+1.0**
	14nm,0.8s,mb4.5,baz=130,slow=0.8,SNR=35						
YBH	**Yreka Blue Hor**	**81.76**	**39**	*e*P	**P**	**10 46 00.6**	**+0.5**
	16nm,0.9s,mb4.6						
WCN	**Washoe City**	**82.10**	**42**	*e*P	**P**	**10 46 02.2**	**+0.3**
	15nm,0.9s,mb4.5						
HUMO	**Hull Mountain**	**82.16**	**38**	*e*P	**P**	**10 46 02.9**	**+0.8**
NVAR	**Mina Array Bea**	**82.53**	**44**	P	**P**	**10 46 04.4**	**+0.3**
	5.1nm,0.6s,mb4.2,baz=215,slow=6.3,SNR=52						
NVAR				pP	pP	10 48 16.7	+0.8
	1.1nm,0.8s,baz=213,slow=6.2,SNR=5.0						
TPH	**Tonopah**	**83.03**	**45**	*e*P	**P**	**10 46 06.9**	**+0.3**
	14nm,0.9s,mb4.5						
MOD	**Modoc**	**83.30**	**40**	*e*P	**P**	**10 46 08.2**	**+0.4**
	11nm,0.8s,mb4.5						
NEN	**Nelson**	**83.31**	**48**	*e*P	**P**	**10 46 08.4**	**+0.4**
RSO	**Redoubt South**	**84.37**	**13**	*e*P	**P**	**10 46 11.3**	**-1.3**
SVW	**Sparrevohn**	**84.41**	**11**	*e*P	**P**	**10 46 11.5**	**-1.3**
TUC	**Tucson**	**84.51**	**52**	*e*P	**P**	**10 46 14.8**	**+0.8**
	5.1nm,0.8s,mb4.2						
WVOR	**Wild Horse Val**	**84.61**	**40**	*e*P	**P**	**10 46 14.6**	**+0.3**
	10nm,1.0s,mb4.4						
LVP	**Lakeview Peak**	**84.62**	**36**	P	**P**	**10 46 14.7**	**+0.5**
SLKM	**Skilak Lake**	**84.96**	**14**	*e*P	**P**	**10 46 14.0**	**-1.5**
GNW	**Green Mountain**	**85.33**	**35**	*e*P	**P**	**10 46 17.7**	**+0.2**
FMW	**Mount Fremont**	**85.55**	**36**	P	**P**	**10 46 19.4**	**+0.7**
WUAZ	**Wupatki**	**85.67**	**49**	*e*P	**P**	**10 46 20.1**	**+0.7**
	6.6nm,1.0s,mb4.2						
PMS	**Palmer South**	**85.77**	**14**	*e*P	**P**	**10 46 18.7**	**-0.6**
PWA	**Palmer West**	**86.06**	**14**	*e*P	**P**	**10 46 19.4**	**-1.3**
EBG	**Ellensburg**	**86.14**	**36**	P	**P**	**10 46 22.1**	**+0.7**
PMR	**Palmer**	**86.17**	**14**	*e*P	**P**	**10 46 19.6**	**-1.6**
GBL	**Gable Mountain**	**86.56**	**37**	P	**P**	**10 46 23.9**	**+0.5**
ETW	**Entiat**	**86.68**	**36**	P	**P**	**10 46 24.3**	**+0.3**
EPH	**Ephrata**	**86.94**	**36**	P	**P**	**10 46 25.2**	**+0.1**
WTV	**Waterville**	**86.94**	**36**	P	**P**	**10 46 25.3**	**+0.1**
NLW	**Nelson Butte**	**86.97**	**35**	P	**P**	**10 46 25.3**	**0.0**
SNAA	**Sanae**	**87.16**	**179**	⇓*i*	**P**	**10 46 23.8**	**-1.8**
SNAA	**Sanae**	**87.16**	**179**	⇓*i*	pP	10 48 42.3	+3.2
VNA3	**Neumayer Olymp**	**87.34**	**177**	⇓*i*	**P**	**10 46 27.3**	**+0.8**
VNA3	**Neumayer Olymp**	**87.34**	**177**	⇓*i*	pP	10 48 41.8	+1.7
MPU	**Maple Canyon**	**87.74**	**45**	*e*P	**P**	**10 46 21.2**	**-8.0**
VNA2	**Neumayer--Watz**	**87.76**	**177**	⇓*i*	**P**	**10 46 28.6**	**+0.1**
VNA2	**Neumayer--Watz**	**87.76**	**177**	⇓*i*	pP	10 48 45.0	+2.8
HLID	**Hailey**	**87.81**	**41**	*e*P	**P**	**10 46 30.0**	**+0.6**
	9.2nm,0.9s,mb4.5						
HVU	**Hansel Valley**	**87.90**	**43**	*e*P	**P**	**10 46 30.3**	**+0.5**
VNA1	**Neumayer--Stat**	**88.00**	**177**	⇓*i*	pP	10 48 47.4	+4.0
SRU	**San Rafael**	**88.03**	**47**	*e*P	**P**	**10 46 30.7**	**+0.2**
MCK	**McKinley**	**88.11**	**13**	*e*P	**P**	**10 46 29.1**	**-1.2**
	6.9nm,0.7s,mb4.5						
JLU	**Jordanelle**	**88.16**	**45**	*e*P	**P**	**10 46 31.6**	**+0.5**
TCUT	**Toone Canyon**	**88.45**	**44**	*e*P	**P**	**10 46 32.9**	**+0.5**
TXAR	**Lajitas Array**	**88.58**	**58**	P	**P**	**10 46 34.0**	**+0.6**
	4.3nm,0.8s,mb4.3,baz=218,slow=5.8,SNR=56						
TXAR				pP	pP	10 48 49.2	+1.9
	0.9nm,0.9s,baz=214,slow=4.5,SNR=5.3						
TXAR	**Lajitas Array**	**88.58**	**58**	P	**P**	**10 46 34.0**	**+0.6**
TXAR				pP	pP	10 48 49.2	+1.9
HWUT	**Hardware Ranch**	**88.59**	**44**	*e*P	**P**	**10 46 32.9**	**-0.1**
	4.7nm,0.7s,mb4.4						
NEW	**Newport**	**88.82**	**36**	P	**P**	**10 46 33.8**	**-0.2**
	2.8nm,1.0s,mb4.1,baz=229,slow=7.8,SNR=4.9						
CMAR	**Chiang Mai Arr**	**89.24**	**290**	P	**P**	**10 46 38.7**	**+2.1**
	4.4nm,0.4s,mb4.6,baz=121,slow=5.3,SNR=5.4						
IMA	**Indian Mountai**	**89.33**	**10**	*e*P	**P**	**10 46 35.4**	**-0.5**
COLA	**College**	**89.34**	**13**	*e*P	**P**	**10 46 33.9**	**-2.1**
DLBC	**Dease Lake**	**89.36**	**24**	P	**P**	**10 46 36.7**	**+0.6**
	2.8nm,0.8s,mb4.1,baz=211,slow=7.4,SNR=8.2						
DLBC	**Dease Lake**	**89.36**	**24**	P	**P**	**10 46 36.7**	**+0.6**
MCMT	**McKenzie Canyo**	**89.44**	**41**	P	**P**	**10 46 37.7**	**+0.8**
ILAR	**Eielson Array**	**89.46**	**13**	P	**P**	**10 46 35.0**	**-1.4**
	5.3nm,0.6s,mb4.5,baz=216,slow=5.1,SNR=102						
ILAR				pP	pP	10 48 50.0	-0.7
	0.9nm,0.8s,baz=232,slow=6.3,SNR=4.9						
PLCA	**Paso Flores**	**89.56**	**134**	P	**P**	**10 46 38.9**	**+1.3**
	2.5nm,0.5s,mb4.3,baz=262,slow=3.4,SNR=6.1						
CHMT	**Chamberlain Mo**	**90.28**	**39**	*e*P	**P**	**10 46 40.5**	**-0.3**
PDAR	**Pinedale Array**	**90.46**	**44**	P	**P**	**10 46 41.6**	**0.0**
	4.7nm,1.0s,mb4.3,baz=204,slow=2.8,SNR=27						
INK	**Inuvik**	**95.46**	**16**	P	**P**	**10 47 02.6**	**-1.1**
	1.2nm,0.6s,mb4.2,baz=234,slow=4.8,SNR=11						
SONM	**Songino Array**	**95.61**	**319**	P	**P**	**10 47 04.3**	**-0.7**
	1.3nm,0.4s,mb4.5,baz=105,slow=14,SNR=2.7						
YKA	**Yellowknife Ar**	**97.84**	**25**	P	**P**	**10 47 13.6**	**-1.0**
	0.7nm,0.8s,mb4.1,baz=246,slow=4.4,SNR=19						
YKA				pP	pP	10 49 32.5	+2.7
	0.2nm,0.6s,baz=244,slow=4.4,SNR=4.5						
YKA				PKKPbc		11 03 45.5	
	0.2nm,0.5s,baz=44,slow=2.4,SNR=10.0						
YKA	**Yellowknife Ar**	**97.84**	**25**	P	**P**	**10 47 13.6**	**-1.0**
YKA				pP	pP	10 49 32.5	+2.7
YKA				PKKPbc		11 03 45.5	
MKAR	**Makanchi Array**	**110.90**	**313**	Pdiff	Pdif	10 48 15.7	+3.0
	0.2nm,0.5s,baz=123,slow=3.1,SNR=2.8						
MKAR				PKiKP		10 52 07.6	
	0.5nm,0.4s,baz=117,slow=1.5,SNR=15						
MKAR				PKKPbc		11 03 08.4	
	0.3nm,0.4s,baz=323,slow=1.6,SNR=6.7						
MKAR	**Makanchi Array**	**110.90**	**313**	Pdif	Pdif	10 48 15.7	+3.0
MKAR				PKPdf	PKPdf	10 52 07.6	+0.5
MKAR				PKKPbc		11 03 08.4	
SPITS	**Spitsbergen Ar**	**122.67**	**356**	PKKPbc		11 02 26.7	
	22nm,1.4s,baz=162,slow=5.7,SNR=6.2						
ARCES	**ARCESS Array B**	**129.56**	**349**	PKhKP		10 52 31.2	
	1.0nm,0.8s,baz=13,slow=1.9,SNR=7.3						
ARCES				PKP	PKPdf	10 52 43.0	+0.4
	2.6nm,0.4s,baz=49,slow=1.2,SNR=29						
ARCES				pPKP		10 55 09.7	
	13nm,0.7s,baz=34,slow=4.4,SNR=20						
ARCES	**ARCESS Array B**	**129.56**	**349**	PKP	PKPdf	10 52 31.2	-11
ARCES				PKP	PKPdf	10 52 43.0	+0.4
ARCES				pPKP		10 55 09.7	
JOF	**Joensuu**	**133.58**	**341**	*ep*	PKPdf	10 52 50.0	-0.3
KAF	**Kangasniemi**	**135.65**	**343**	*ep*	PKPdf	10 52 55.8	+1.7
	1.2nm,0.3s						
FINES	**FINESS Array B**	**136.26**	**343**	PKhKP		10 52 43.2	
	0.5nm,0.3s,baz=68,slow=4.8,SNR=7.0						
FINES				PKP	PKPdf	10 52 57.6	+2.4
	1.6nm,0.3s,baz=112,slow=2.7,SNR=12						
FINES				SKP		10 55 31.1	
	2.9nm,0.5s,baz=90,slow=3.8,SNR=12						
FINES	**FINESS Array B**	**136.26**	**343**	PKP	PKPdf	10 52 43.2	-12
FINES				PKP	PKPdf	10 52 57.6	+2.4
FINES				SKP		10 55 31.1	
NB2	**NORSAR Subarra**	**139.70**	**352**	PKP		10 52 54.5	
	0.9nm,0.4s,baz=19,slow=4.1						
NOA	**NORSAR Array B**	**139.70**	**352**	PKhKP		10 52 54.9	
	1.0nm,0.6s,baz=11,slow=4.5,SNR=5.0						
NOA				SKPbc		10 55 41.7	
	2.0nm,0.7s,baz=15,slow=4.3,SNR=4.7						
NOA	**NORSAR Array B**	**139.70**	**352**	PKP	PKPdf	10 52 54.9	-6.6
NOA				SKPbc		10 55 41.7	
AKASG	**Malin Array Be**	**143.16**	**330**	PKP	PKPdf	10 53 06.7	-1.1
	22nm,0.5s,baz=42,slow=4.1,SNR=118						
AKASG				SKPbc		10 55 50.0	
	2.3nm,0.7s,baz=44,slow=2.0,SNR=12						
MALT	**Malatya**	**143.46**	**306**	*e*P	PKPbc	10 52 55.0	-13
EKA	**Eskdalemuir Ar**	**145.99**	**4**	PKPbc	PKPbc	10 53 15.7	+1.5
	8.4nm,0.7s,baz=344,slow=2.6,SNR=7.5						
BRTR	**Keskin Array B**	**146.49**	**311**	PKP	PKPdf	10 53 15.1	+1.2
	3.5nm,0.6s,baz=101,slow=6.3,SNR=18						
BRTR				PKPbc	PKPbc	10 53 17.8	+1.9
	3.6nm,0.6s,baz=130,slow=4.0,SNR=18						
BRTR				pPKPbc		10 55 43.0	
	2.5nm,1.1s,baz=108,slow=3.9,SNR=4.5						
BRTR				SKPbc		10 55 58.2	
	1.0nm,0.8s,baz=112,slow=6.7,SNR=3.7						
CRVS	**Cervenica-Dubn**	**147.92**	**334**	*e*PKP	PKPdf	10 53 21.9	+6.1
CRVS				*e*		10 55 42.1	
KSP	**Ksiaz**	**148.15**	**341**	*e*P	PKPdf	10 53 21.9	+5.8
KSP				*e*		10 53 27.5	
UPC	**Upice**	**148.53**	**341**	⇓*e*PKPBC	PKPdf	10 53 23.1	+6.4
UPC				*e*PKPAB	PKPab	10 53 29.3	-0.7
DPC	**Dobruska-Polom**	**148.57**	**341**	⇑*e*PKPB		10 53 23.2	
DPC				*e*PKPAB	PKPab	10 53 29.6	-0.5
CLL	**Collm**	**148.62**	**345**	⇓*i*PKP1	PKPdf	10 53 22.8	+6.0
CLL				*i* PKP2	PKPab	10 53 28.8	-1.5
CLL				*e**PPKP		10 55 49.0	
CLL				*e*		10 56 03.0	
BRG	**Berggiesshubel**	**148.78**	**344**	*e*P	PKPdf	10 53 22.5	+5.4
BRG				*i*		10 53 23.7	
BRG				*e*		10 55 59.4	
PVCC	**Panska Ves**	**148.93**	**343**	⇓*e*PKPBC	PKPdf	10 53 24.1	+6.8
PVCC				*e*PKPAB	PKPab	10 53 32.8	+1.2
VYHS	**Vyhne**	**149.29**	**336**	*e*PKP	PKPdf	10 53 24.8	+6.8
VYHS				*e*		10 55 47.1	
PRU	**Pruhonice**	**149.42**	**342**	⇓*e*PKPBC	PKPdf	10 53 25.0	+6.9
	17nm,0.9s						
PRU				*e*PKPAB	PKPab	10 53 32.6	-1.0
MOX	**Moxa**	**149.56**	**346**	*e*PKP	PKPdf	10 53 25.0	+6.7
KHC	**Kasperske Hory**	**150.47**	**343**	⇑*e*PKPB		10 53 27.5	
KHC				*e*PKPAB	PKPab	10 53 37.6	-0.4
GERES	**GERESS Array B**	**150.69**	**342**	PKPbc	PKPdf	10 53 27.6	+7.5
	4.9nm,0.6s,baz=45,slow=1.9,SNR=22						
GERES				PKPab	PKPab	10 53 37.0	-1.9
	1.4nm,0.7s,baz=22,slow=5.3,SNR=4.7						
GERES				pPKPbc		10 55 53.7	
	1.7nm,0.8s,SNR=3.8						
GIVF	**Givet**	**151.16**	**354**	*e*PKP1	PKPdf	10 53 28.9	+8.2
	34nm,0.8s						
BAIF	**Baives**	**151.25**	**355**	*e*PKP1	PKPdf	10 53 29.2	+8.3
	15nm,0.6s						
MOA	**Molln**	**151.42**	**341**	⇑*i*PKP	PKPdf	10 53 29.5	+8.3
MOA				*i*		10 53 41.7	
CDF	**Champ du Feu**	**152.52**	**350**	*e*PKP1	PKPdf	10 53 31.8	+9.1
WTTA	**Wattenberg**	**152.70**	**344**	⇓*i*PKP	PKPdf	10 53 32.2	+9.2
WTTA				*i*		10 53 46.4	
MEZF	**Maizieres J'vi**	**152.72**	**354**	*e*PKP1	PKPdf	10 53 32.5	+10
MOTA	**Moosalm**	**152.76**	**344**	⇑*i*PKP	PKPdf	10 53 32.4	+9.3
MOTA				*i*		10 53 46.7	
HAU	**Haudompre**	**153.05**	**352**	*e*PKP1	PKPdf	10 53 32.8	+9.4
DAVA	**Damuels**	**153.11**	**346**	⇑*i*PKP	PKPdf	10 53 34.5	+11
DAVA				*i*		10 53 48.2	
HINF	**Hinteralfeld**	**153.17**	**351**	*e*PKP1	PKPdf	10 53 32.7	+9.1
DAVOX	**Davos**	**153.59**	**346**	PKPbc	PKPdf	10 53 33.9	+10
	baz=280,slow=6.1						
DAVOX				PKPab	PKPab	10 53 50.5	-0.7
	baz=204,slow=20						
LOR	**Lormes**	**154.05**	**355**	*e*PKP1	PKPdf	10 53 35.1	+10
SSF	**Saint Saulge**	**154.29**	**356**	*e*PKP1	PKPdf	10 53 35.6	+10
MFF	**Saint Martin d**	**154.84**	**1**	*e*PKP1	PKPdf	10 53 37.9	+12
	46nm,1.2s						
TCF	**Toulx Ste Croi**	**155.13**	**357**	*e*PKP1	PKPdf	10 53 39.1	+13
ESDC	**Sonseca Array**	**161.35**	**11**	PKPab	PKPab	10 54 23.4	-1.3
	1.3nm,0.6s,baz=357,slow=6.2,SNR=5.3						
DBIC	**Dimbokro**	**164.42**	**159**	PKPbc	PKPab	10 54 38.8	-0.1
	3.8nm,0.8s,baz=167,slow=6.4,SNR=8.6						

NEIC ***04*** *11:01:03.8±0.9,57.47N×9.53E,h10km, Error ellipse: s-maj=18.6km s-min=7.3km az=90.0*
BER ***04*** *11:01:03.7±2.5,57.35N×9.59E,MD2.3,ML1.8, ML2.6(NAO)*
NAO ***04*** *11:01:04.4±2.6,57.39N×9.82E,h7km±24km,ML2.6*
IDC ***04*** *11:01:05.0±2.6,57.47N×9.53E,mb1 3.0/4,mb1mx2.9/21, ML2.9/3, Error ellipse: s-maj=25.0km s-min=20.4km az=149.0*

ISC 04 11:01:03.4±0.5,57.51N±0.03×9.63E±0.08,h10km,n21, σ1$32/32,Denmark

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MUD	**Monsted U'grnd**	**1.08**	**193**	*i* P	**Pb**	**11 01 23.6**	**-0.2**
MUD				*i*		11 01 24.2	
MUD				*i* S	**Sb**	**11 01 40.1**	**+2.3**
MUD	**Monsted U'grnd**	**1.08**	**193**	*e*P	**Pb**	**11 01 23.6**	**-0.2**
MUD				*i*		11 01 24.2	
MUD				*i* S	**Sb**	**11 01 40.1**	**+2.3**
SNART	**Snartemo**	**1.54**	**304**	*e*P	**Pn**	**11 01 31.2**	**+0.1**
SNART				*e*S	**Sb**	**11 01 51.7**	**+0.8**
SNART				AML	AML	11

az=42.0
*NEIC **04** 11:36:03.0±0.1,37.47N×96.91E,h10km,mb5.3/70, MS4.8/82,Error ellipse: s-maj=4.4km s-min=3.4km az=200.0*
*HRVD **04** 11:36:03.0±0.2,37.61N×96.62E,h22km±1km,MW5.2/65, Centroid moment Tensor Solution. LP body waves: s34,c44;Mantle waves: s65,c121; Half duration: 1s0 Moment tensor: Scale 10^{17}Nm; M_{rr}-0.17±.02; $M_{\theta\theta}$-0.67±.02; $M_{\phi\phi}$0.84±.02; $M_{r\theta}$-0.03±.03; $M_{\theta\phi}$0.13±.01; $M_{\phi r}$-0.01±.03; Best double couple: M_o.77×10^{17} NP1: ϕ_s140°,δ87°,λ-178°. NP2:ϕ_s50°,δ88°,λ-3°. Principal axes: T.85, Plg1°, Azm95°; N-.17, Plg87°, Azm198°; P -.68, Plg3°, Azm5°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*MOS **04** 11:36:04.3±0.9,37.42N×96.87E,h33km,mb5.3/38, MS4.8/29 Error ellipse: s-maj=7.9km s-min=5.0km az=114.1*
ISC 04 11:36:01.2±0.1,**37.44N**±0.02×**96.79E**±0.02,**h9**km, **(h13**km±3.2km**:pP-P),n489,**σ1§**16**/462,**mb5.1**/126, **MS4.8**/122,**29C-20D,Qinghai**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op	ISC		h m s	ISC
GTA	**Gaotai**	**3.08**	**49**	PG	**Pn**		**11 36 54.6**	**+3.6**
GTA				S	**Sn**		**11 37 33.4**	**+5.0**
GTA				SG	**Sg**		**11 37 40.8**	**-3.1**
GTA				S	Sn			
	comp=N,5μm,0.9s							
GTA				S	Sn			
	comp=E,2μm,1.0s							
GTA				LR	LR			
	comp=Z,21μm,6.8s							
LZH	**Lanzhou**	**5.82**	**101**	⇑P	**Pn**		**11 37 31.6**	**+1.8**
LZH				S	**Sn**		**11 38 39.0**	**+1.6**
LZH				LR	LR			
	comp=N,21μm,8.0s							
LZH				LR	LR			
	comp=Z,26μm,8.2s							
CD2	**Chengdu**	**8.70**	**136**	P	**P**		**11 38 12.5**	**+2.4**
CD2				S	**Sn**		**11 39 50.7**	**+1.4**
CD2				AMB	AMB			
	comp=Z,60nm,1.1s							
CD2				LR	LR			
	comp=Z,19μm,10.4s							
LSA	**Lhasa**	**9.04**	**213**	P	**P**		**11 38 15.0**	**+0.2**
LSA				LR	LR			
	comp=N,4μm,9.6s							
LSA				LR	LR			
	comp=E,6μm,9.0s							
LSA				LR	LR			
	comp=Z,5μm,8.5s							
LSA	**Lhasa**	**9.04**	**213**	*e*P	**P**		**11 38 14.9**	**+0.1**
LSA				pmax	pmax			
	comp=Z,38nm,0.8s							
LSA	**Lhasa**	**9.04**	**213**	*e*P	**P**		**11 38 14.9**	**+0.1**
	comp=Z,38nm,0.8s							
WMQ	**Urumqi**	**9.40**	**316**	P	**P**		**11 38 19.0**	**-0.9**
WMQ				AP			11 38 22.0	
WMQ				XP			11 38 24.5	
WMQ				S	**Sn**		**11 40 03.6**	**-3.3**
WMQ				XS			11 40 08.6	
WMQ				PCP	PcP		11 44 39.5	+1.3
WMQ				SCP			11 48 09.7	
WMQ				PCS			11 48 11.5	
WMQ				SCS	ScS		11 51 42.7	+0.5
WMQ				S	Sn			
	comp=N,618nm,1.2s							
WMQ				S	Sn			
	comp=E,782nm,1.0s							
WMQ				LR	LR			
	comp=Z,8μm,7.9s							
XAN	**Xi'an**	**10.42**	**105**	P	**P**		**11 38 30.5**	**-3.4**
XAN				AP			11 38 35.8	
XAN				LR	LR			
	comp=N,5μm,11.0s							
XAN				LR	LR			
	comp=E,3μm,11.5s							
XAN				LR	LR			
	comp=Z,6μm,11.9s							
BTO	**Baotou**	**10.77**	**69**	*e*P	**P**		**11 38 38.3**	**-0.3**
BTO				S	**S**		**11 40 39.7**	**-0.6**
BTO				AMB	AMB			
	comp=Z,242nm,1.1s							
HHC	**Hu-ho-hao-te**	**11.96**	**69**	⇑P	**P**		**11 38 53.9**	**-1.0**
HHC				AP			11 38 57.1	
HHC				XP			11 39 00.1	
HHC				PP	PP		11 39 03.9	-0.6
HHC				S	**S**		**11 41 08.9**	**-0.6**
HHC				XS			11 41 13.8	
HHC				SS	SS		11 41 23.7	-0.1
HHC				AMB	AMB			
	comp=Z,103nm,1.5s							
HHC				LR	LR			
	comp=N,8μm,11.3s							
HHC				LR	LR			
	comp=E,5μm,10.3s							
HHC				LR	LR			
	comp=Z,4μm,11.4s							
TIY	**Taiyuan**	**12.41**	**84**	⇓P	**P**		**11 38 59.0**	**-1.9**
TIY				S	**S**		**11 41 21.0**	**+0.5**
TIY				LR	LR			
	comp=E,5μm,10.0s							
TIY				LR	LR			
	comp=Z,6μm,9.0s							
SHL	**Shillong**	**12.55**	**201**	*e*P	**P**		**11 39 01.0**	**-1.8**
SHL				*e*S	Sx		11 41 08.5	
SONM	**Songino Array**	**12.55**	**31**	Pn	**P**		**11 39 02.3**	**-0.5**
	comp=Z,4.5nm,0.3s,baz=216,slow=14,SNR=106							
SONM				Lg			11 42 35.3	
	comp=Z,0.9nm,0.3s,baz=180,slow=27,SNR=4.4							
ENH	**Enshi**	**12.73**	**120**	*e*P	**P**		**11 39 04.2**	**-1.1**
	comp=Z,197nm,0.9s							
IMP	**Imphal**	**12.85**	**192**	*e*P	**P**		**11 39 03.0**	**-3.8**
ULN	**Ulaanbaatar**	**12.86**	**33**	*e*P	**P**		**11 39 07.0**	**+0.2**
ULN				pmax	pmax			
	comp=Z,31nm,0.7s							
ULN	**Ulaanbaatar**	**12.86**	**33**	*e*P	**P**		**11 39 07.0**	**+0.2**
	comp=Z,30nm,0.7s							
GUN	**Gumba**	**13.21**	**227**	*e*P	**P**		**11 39 08.4**	**-3.1**
	comp=Z,502nm,1.5s							
KMI	**Kunming**	**13.28**	**156**	*e*P	**P**		**11 39 12.1**	**-0.4**
KMI				AP			11 39 15.8	
KMI				PP	PP		11 39 21.9	-1.1
KMI				PPP	PPP		11 39 30.3	+0.3
KMI				S	**S**		**11 41 41.0**	**-0.4**
KMI				XS			11 41 46.6	
KMI				SS	SS		11 41 57.4	+0.6
KMI				SSS	SSS		11 42 08.6	-0.3
KMI				AMB	AMB			
	comp=Z,32nm,1.2s							
KMI				LR	LR			
	comp=N,7μm,15.4s							
KMI				LR	LR			
	comp=E,12μm,17.3s							
KMI				LR	LR			
	comp=Z,5μm,11.9s							
KKN	**Kakani**	**13.65**	**229**	*e*P	**P**		**11 39 14.4**	**-3.0**
	comp=Z,216nm,1.3s							
KKN	**Kakani**	**13.65**	**229**	*e*P	**P**		**11 39 14.4**	**-3.0**
KKN				pmax	pmax			
	comp=Z,108nm,1.3s							
ZAK	**Zakamensk**	**13.75**	**18**	*e*P	**P**		**11 39 19.5**	**+0.9**
GYA	**Guiyang**	**13.77**	**140**	⇑*i*P	**P**		**11 39 18.5**	**-0.5**
GYA				AP			11 39 25.8	
GYA				XP			11 39 27.6	
GYA				PPP	PPP		11 39 29.4	-7.5
GYA				S	**S**		**11 41 51.1**	**-2.0**
GYA				SS	SS		11 42 14.0	+4.9
GYA				AMB	AMB			
	comp=Z,70nm,1.1s							
GYA				LR	LR			
	comp=N,5μm,10.2s							
GYA				LR	LR			
	comp=E,5μm,10.5s							
GYA				LR	LR			
	comp=Z,10μm,9.3s							
GKN	**Gorkha**	**13.89**	**231**	*e*P	**P**		**11 39 17.1**	**-3.4**
	comp=Z,539nm,1.4s							
DMN	**Daman**	**13.89**	**228**	*e*P	**P**		**11 39 17.1**	**-3.4**
	comp=Z,426nm,1.4s							
DANN	**Dangsing**	**14.20**	**234**	*e*P	**P**		**11 39 24.2**	**-0.4**
MK31	**Makanchi Array**	**14.24**	**316**	Pn	**P**		**11 39 20.1**	**-4.9**
	comp=Z,47nm,0.8s,baz=123,slow=13,SNR=158							
MK31				⇑Sn	**S**		**11 42 03.0**	**-1.1**
	comp=Z,76nm,0.9s,baz=130,slow=24,SNR=3.6							
MK31				⇑Lg			11 43 28.7	
	comp=Z,246nm,1.4s							
MKAR	**Makanchi Array**	**14.24**	**316**	Pn	**P**		**11 39 19.2**	**-5.7**
	comp=Z,4.2nm,0.3s,baz=128,slow=14,SNR=94							
MKAR				Sn	**S**		**11 41 57.6**	**-6.5**
	baz=117,slow=24,SNR=3.6							
MKAR				Lg			11 43 34.9	
	comp=Z,0.3nm,0.3s,baz=111,slow=38,SNR=3.7							
MKAR				LR	LR		11 45 10.9	
	comp=Z,4μm,20.1s,baz=125,slow=38							
MKAR	**Makanchi Array**	**14.24**	**316**	Pn	**P**		**11 39 19.2**	**-5.7**
MKAR				Sn	**S**		**11 41 57.6**	**-6.5**
MKAR				Lg			11 43 34.9	
MKAR				LR	LR		11 45 10.9	
AGT	**Agartala**	**14.32**	**201**	*e*	**P**		**11 39 20.0**	**-6.2**
MOY	**Mondy**	**14.54**	**10**	*e*P	**P**		**11 39 31.0**	**+2.2**
KOLN	**Koldanda**	**14.70**	**233**	*e*P	**P**		**11 39 26.4**	**-4.8**
	comp=Z,173nm,1.2s							
TLY	**Talaya**	**15.04**	**17**	⇑*i*P	**P**		**11 39 37.3**	**+1.8**
TLY				*i*S	**S**		**11 42 23.6**	**+0.5**
TLY				pmax	pmax			
	comp=Z,202nm,1.4s							
TLY				MLR	MLR			
	comp=Z,27μm,16.0s							
BJT	**Baijiatuan**	**15.34**	**74**	*e*P	**P**		**11 39 39.8**	**+0.3**
BJT				pmax	pmax			
	comp=Z,372nm,1.6s							
BJT	**Baijiatuan**	**15.34**	**74**	*e*P	**P**		**11 39 39.8**	**+0.3**
	comp=Z,372nm,1.6s							
BJI	**Beijing**	**15.35**	**74**	P	**P**		**11 39 39.1**	**-0.4**
BJI				S	**S**		**11 42 40.4**	**+10**
BJI				AMB	AMB			
	comp=Z,142nm,1.9s							
BJI				LR	LR			
	comp=N,14μm,14.1s							
BJI				LR	LR			
	comp=E,2μm,14.9s							
BJI				LR	LR			
	comp=Z,4μm,25.9s							
IRK	**Irkutsk**	**15.71**	**17**	*e*P	**P**		**11 39 45.8**	**+1.6**
WHN	**Wuhan**	**16.09**	**110**	P	**P**		**11 39 48.7**	**-0.5**
WHN				AP			11 39 54.5	
WHN				S	**S**		**11 42 52.0**	**+4.2**
WHN				XS			11 43 01.0	
WHN				LR	LR			
	comp=N,5μm,11.7s							
WHN				LR	LR			
	comp=E,8μm,10.2s							
WHN				LR	LR			
	comp=Z,10μm,11.6s							
TIA	**Tai'an**	**16.33**	**88**	P	**P**		**11 39 51.6**	**-0.6**
TIA				LR	LR			
	comp=N,2μm,6.9s							
TIA				LR	LR			
	comp=E,2μm,8.8s							
KSH	**Kashi**	**16.44**	**284**	*e*P	**P**		**11 39 49.3**	**-4.2**
KSH				*e*AP			11 39 54.7	
KSH				*e*XP			11 39 59.3	
KSH				*e*PP	PP		11 40 02.4	-4.7
KSH				*e*S	**S**		**11 42 43.4**	**-12**
KSH				*e*PCP	PcP		11 44 48.3	+1.6
KSH				*e*SCP			11 48 20.0	
KSH				*e*PCS			11 48 22.5	
KSH				*e*SCS	ScS		11 51 57.2	-0.8
KSH				AMB	AMB			
	comp=Z,190nm,1.0s							
KSH				LR	LR			
	comp=N,4μm,10.8s							
KSH				LR	LR			
	comp=E,4μm,10.6s							
ULHL	**Ulahol**	**16.49**	**293**	P	**P**		**11 39 49.0**	**-5.2**
	SNR=8.0							
KALG	**Kalgarh**	**16.99**	**248**	*e*	**P**		**11 39 48.6**	**-12**
KALG				*e*			11 39 50.3	
KALG				*e*			11 40 00.4	
	comp=Z,169nm,1.1s							
TKM2	**Tokmak 2**	**17.09**	**295**	P	**P**		**11 39 57.8**	**-3.9**
	SNR=235							
KZA	**Kyzart**	**17.19**	**292**	P	**P**		**11 39 59.0**	**-4.1**
	SNR=158							
KBK	**Karagaybulak**	**17.50**	**294**	P	**P**		**11 40 02.9**	**-4.1**
	SNR=149							
CHRT	**Chiangrai**	**17.70**	**171**	⇓P	**P**		**11 40 11.0**	**+1.5**
CHMS	**Chumysh**	**17.71**	**295**	P	**P**		**11 40 06.5**	**-3.0**
	SNR=35							
UCH	**Uchtor**	**17.75**	**293**	P	**P**		**11 40 06.9**	**-3.2**
	SNR=110							
FRU	**Bishkek**	**17.78**	**295**	*e*P	**P**		**11 40 07.0**	**-3.3**
FRU				pmax	pmax			
	comp=Z,260nm,1.8s							
AAK	**Ala-Archa**	**17.83**	**294**	P	**P**		**11 40 07.5**	**-3.6**
	SNR=67							
USP	**Ospenovka**	**17.94**	**296**	P	**P**		**11 40 08.7**	**-3.7**
	SNR=68							
ASOR	**Ausora**	**18.11**	**247**	*e*P	**P**		**11 40 10.4**	**-4.2**
KKR	**Kurukshetra**	**18.20**	**252**	*e*P	**P**		**11 40 14.0**	**-1.7**
AML	**Almayashu**	**18.34**	**292**	P	**P**		**11 40 15.0**	**-2.5**
	SNR=49							
EKS2	**Erkin-Say**	**18.36**	**294**	P	**P**		**11 40 15.5**	**-2.1**
	SNR=44							
ZAL	**Zalesovo**	**18.46**	**337**	P	**P**		**11 40 15.9**	**-2.9**
	comp=Z,1.4nm,0.3s,baz=230,slow=12,SNR=29							
ZAL				Lg			11 45 47.0	
	comp=Z,0.2nm,0.3s,baz=141,slow=22,SNR=6.2							
ZAL				LR	LR		11 48 11.5	
	comp=Z,1μm,19.4s,baz=226,slow=40							
KURK	**Kurchatov**	**18.55**	**321**	⇑P	**P**		**11 40 15.6**	**-4.4**
	comp=Z,227nm,1.9s							
KURK				⇑Lg			11 45 47.1	
	comp=Z,104nm,1.7s,baz=190,slow=16,SNR=3.4							
KURK	**Kurchatov**	**18.55**	**321**	*e*P	**P**		**11 40 15.6**	**-4.3**
NDI	**New Delhi**	**18.56**	**248**	*e*P	**P**		**11 40 14.0**	**-6.2**
NDI				*e*			11 42 38.0	
CHG	**Chiang Mai**	**18.65**	**174**	⇓P	**P**		**11 40 24.0**	**+2.6**
	comp=Z,14nm,1.2s							
AYAN	**Aya Nagar**	**18.74**	**247**	*e*P	**P**		**11 40 16.6**	**-5.7**
BHGR	**Bahadurgarh**	**18.76**	**248**	*e*P	**P**		**11 40 18.2**	**-4.4**
NANT	**Nan**	**18.88**	**168**	P	**P**		**11 40 25.0**	**+0.9**
	comp=Z,75nm,1.2s							
NJ2	**Nanjing**	**18.89**	**100**	*e*P	**P**		**11 40 26.0**	**+1.8**
NJ2				AP			11 40 33.9	
NJ2				PP	PP		11 40 41.6	+1.0
NJ2				S	**S**		**11 43 49.0**	**-2.7**
NJ2				XS			11 43 59.0	
NJ2				AMB	AMB			
	comp=Z,1μm,4.1s							
NJ2				LR	LR			
	comp=N,4μm,13.3s							
NJ2				LR	LR			
	comp=E,5μm,11.5s							
NJ2				LR	LR			
	comp=Z,5μm,13.1s							
SONA	**Sohna**	**18.90**	**247**	*e*P	**P**		**11 40 18.9**	**-5.4**
RTK	**Rohtak**	**18.97**	**250**	*e*P	**P**		**11 40 20.5**	**-4.6**
CM31	**Chiang Mai Arr**	**19.00**	**174**	*e*P	**P**		**11 40 26.8**	**+1.2**
	comp=Z,26nm,0.8s							
CMAR	**Chiang Mai Arr**	**19.00**	**174**	P	**P**		**11 40 26.0**	**+0.4**
	comp=Z,0.3nm,0.3s,baz=344,slow=10,SNR=22							
CMAR				LR	LR		11 47 20.2	
	comp=Z,444nm,18.5s,baz=355,slow=36							
CMAR				ScP			11 48 25.1	
	comp=Z,0.2nm,0.3s,baz=340,slow=3.6,SNR=4.2							
KUDL	**Kundal**	**19.39**	**247**	*e*P	**P**		**11 40 27.6**	**-2.5**
CHCP	**Chirah Chowk**	**19.50**	**266**	P	**P**		**11 40 28.0**	**-3.4**
CHCP				S	**S**		**11 44 12.0**	**+6.6**
DL2	**Dalian**	**19.57**	**78**	P	**P**		**11 40 32.5**	**+0.4**
DL2				AMB	AMB			
	comp=Z,60nm,1.0s							
DL2				AMB	AMB			
	comp=Z,200nm,4.7s							
DL2				LR	LR			
	comp=N,3μm,15.7s							
DL2				LR	LR			
	comp=E,1μm,13.7s							
DL2				LR	LR			
	comp=Z,1μm,12.1s							
NVS	**Novosibirsk**	**19.72**	**336**	*i*P	**P**		**11 40 30.5**	**-3.1**
NVS				*i*S	**S**		**11 44 11.2**	**+1.2**
NVS				pmax	pmax			
	comp=Z,157nm,1.7s							
NVS				pmax	pmax			
	comp=N,276nm,1.8s							
NVS				pmax	pmax			
	comp=E,102nm,1.8s							
NVS				smax				
	comp=N,158nm,2.5s							
NVS				smax				
	comp=E,63nm,2.5s							
BLSP	**Bilaspur**	**19.83**	**224**	*i*P	**P**		**11 40 32.7**	**-2.4**
BLSP				*e*			11 46 52.7	
KHET	**Khetri**	**19.93**	**248**	*e*P	**P**		**11 40 32.0**	**-4.2**
KHET				*e*			11 40 37.5	
	comp=Z,189nm,1.1s							
GZH	**Guangzhou**	**20.18**	**130**	P	**P**		**11 40 36.6**	**-2.2**
GZH				S	**S**		**11 44 15.4**	**-4.5**
GZH				LR	LR			
	comp=Z,6μm,13.9s,MS5.1							
BDT	**Bhumibol Dam**	**20.21**	**174**	P	**P**		**11 40 39.0**	**-0.2**
JBP	**Jabalpur**	**20.27**	**230**	⇓*i*	**P**		**11 40 43.3**	**+3.5**
JBP				*i*S	**S**		**11 44 24.1**	**+2.2**
HIA	**Hailar**	**20.36**	**47**	*e*P	**P**		**11 40 40.4**	**-0.2**
HIA				pmax	pmax			
	comp=Z,109nm,1.5s							
HIA				MLR	MLR			
	comp=Z,477nm,19.0s							
HIA	**Hailar**	**20.36**	**47**	*e*P	**P**		**11 40 40.4**	**-0.2**
	comp=Z,109nm,1.5s							
HIA				LR	LR			
	comp=Z,477nm,19.0s,MS3.9							
CEP	**Cherat**	**20.53**	**267**	⇓P	**P**		**11 40 39.3**	**-3.1**
KK31	**Karatay Array**	**20.80**	**294**	⇑P	**P**		**11 40 42.6**	**-2.5**
	comp=Z,75nm,0.8s,baz=92,slow=11,SNR=405							
KKAR	**Karatay Array**	**20.80**	**294**	*i*P	**P**		**11 40 42.2**	**-2.9**
KKAR				pmax	pmax			
	comp=Z,44nm,0.7s							
THW	**Thamme Wali**	**20.99**	**265**	P	**P**		**11 40 46.0**	**-1.1**
SNY	**Shenyang**	**21.05**	**70**	⇑P	**P**		**11 40 47.7**	**-0.1**
SNY				XP			11 40 54.9	
SNY				S	**S**		**11 44 36.6**	**-0.7**
SNY				XS			11 44 50.8	
SNY				AMB	AMB			
	comp=Z,140nm,0.8s,mb5.3							
SNY				LR	LR			
	comp=N,2μm,9.3s							
SNY				LR	LR			
	comp=E,4μm,14.4s							
SNY				LR	LR			
	comp=Z,4μm,14.7s,MS5.0							
SSE	**Sheshan**	**21.10**	**100**	P	**P**		**11 40 48.9**	**+0.6**
SSE				S	**S**		**11 44 39.3**	**+1.0**
SSE				AMB	AMB			
	comp=Z,69nm,0.9s,mb5.0							
SSE				AMB	AMB			
	comp=Z,246nm,2.8s,mb5.0							
SSE				LR	LR			
	comp=N,665nm,10.0s,MS4.9							
SSE				LR	LR			
	comp=E,2μm,10.0s,MS4.9							
SSE				LR	LR			
	comp=Z,2μm,10.0s,MS4.9							
QIZ	**Qiongzhong**	**21.60**	**145**	P	**P**		**11 40 53.5**	**0.0**
QIZ				S	**S**		**11 44 54.5**	**+6.7**
QIZ				XS			11 45 03.2	
QIZ				LR	LR			
	comp=N,2μm,15.6s,MS5.0							
QIZ				LR	LR			
	comp=E,4μm,16.0s,MS5.0							
QIZ				LR	LR			
	comp=Z,4μm,11.4s,MS5.1							
QIZ	**Qiongzhong**	**21.60**	**145**	*e*P	**P**		**11 40 54.3**	**+0.8**
	comp=Z,78nm,1.0s,mb5.1							
KKTK	**Khon Kaen**	**21.68**	**164**	P	**P**		**11 40 55.0**	**+0.7**
	comp=Z,741nm,0.5s							
BHPL	**Bhopal**	**21.84**	**235**	*e*P	**P**		**11 40 53.7**	**-2.2**
BHPL				*e*pP			11 40 55.5	
BHPL				*e*			11 40 57.8	
	comp=Z,179nm,0.4s							
NST	**Nakhon Sawan**	**21.88**	**171**	P	**P**		**11 40 56.0**	**-0.2**
	comp=Z,42nm,1.0s,mb4.8							
CN2	**Changchun**	**22.59**	**65**	*e*P	**P**		**11 41 04.2**	**+1.1**
CN2				*e*AP			11 41 09.8	
CN2				PP	PP		11 41 32.8	+1.6
CN2				PPP	PPP		11 41 42.5	+1.3
CN2				*e*S	**S**		**11 45 06.2**	**+0.4**
CN2				SS	SS		11 45 48.2	+0.6
CN2				PCS			11 48 35.7	
CN2				AMB	AMB			
	comp=Z,70nm,0.9s,mb5.1							
CN2				AMB	AMB			
	comp=Z,200nm,4.0s							
CN2				LR	LR			
	comp=N,3μm,10.0s,MS5.2							
CN2				LR	LR			
	comp=E,4μm,10.0s,MS5.2							
CN2				LR	LR			
	comp=Z,4μm,14.0s,MS5.0							
BOD	**Bodaibo**	**23.33**	**24**	*e*P	**P**		**11 41 09.8**	**-0.4**
VOSK	**Vostochnaya**	**23.61**	**319**	⇓P	**P**		**11 41 11.4**	**-1.6**
	comp=Z,264nm,1.4s,mb5.5							
VOSK	**Vostochnaya**	**23.61**	**319**	P	**P**		**11 41 11.3**	**-1.6**
VOSK				pmax	pmax			
	comp=Z,357nm,1.4s,mb5.6							
INCN	**Inchon**	**23.64**	**81**	*e*P	**P**		**11 41 15.5**	**+2.0**
	comp=Z,66nm,0.9s,mb5.1							
INCN				LR	LR			
	comp=Z,1μm,20.0s,MS4.3							
BVA0	**Borovoye Array**	**24.07**	**319**	⇑P	**P**		**11 41 16.5**	**-0.9**
	comp=Z,1.2nm,0.8s,baz=120,slow=11,SNR=484							
BVA0	**Borovoye Array**	**24.07**	**319**	*i*P	**P**		**11 41 16.5**	**-0.9**
BVA0				pmax	pmax			
	comp=Z,1.0nm,0.8s							
BVAR	**Borovoye Array**	**24.07**	**319**	P	**P**		**11 41 16.5**	**-1.0**
	comp=Z,53nm,0.7s,mb5.0,baz=116,slow=9.0,SNR=74							
BVAR				LR	LR		11 50 41.2	
	comp=Z,2μm,19.0s,MS4.7,baz=325,slow=36							
BRVK	**Borovoye**	**24.14**	**319**	⇑P	**P**		**11 41 17.3**	**-0.8**
	comp=Z,182nm,1.5s,mb5.3							
BRVK	**Borovoye**	**24.14**	**319**	*e*P	**P**		**11 41 17.7**	**-0.4**
JASL	**Jaisalmer**	**24.22**	**252**	*e*P	**P**		**11 41 17.6**	**-1.6**
KGD	**Kothagudem**	**24.35**	**220**	*e*P	**P**		**11 41 20.2**	**-0.3**
KGD				*e*sP			11 41 29.2	
KGD				*e*S	**S**		**11 45 47.4**	**+11**
KGD				*e*			11 48 02.2	
KGD				*e*			11 49 08.8	
TATO	**Taipei**	**24.42**	**114**	PFAKE			11 41 30.0	+8.8
TATO				LR	LR			
	comp=Z,2μm,19.0s,MS4.5							
KS15	**Wonju Array Si**	**24.63**	**80**	*e*P	**P**		**11 41 23.9**	**+0.8**
ZRNK	**Zerenda**	**24.77**	**318**	⇓P	**P**		**11 41 22.9**	**-1.3**
	comp=Z,76nm,1.2s,mb5.1							
ZRNK	**Zerenda**	**24.77**	**318**	*e*P	**P**		**11 41 23.1**	**-1.1**
NNT	**Nongplab**	**24.88**	**173**	P	**P**		**11 41 28.0**	**+2.3**
HYB	**Hyderabad**	**25.60**	**224**	*i*P	**P**		**11 41 32.0**	**-0.4**
	comp=Z,40nm,1.0s,mb4.9							
HYB				*e*S	**S**		**11 46 12.0**	**+14**
HYB				LR	LR		11 52 08.0	
	comp=Z,2.7nm,16.0s							
HYB	**Hyderabad**	**25.60**	**224**	*e*P	**P**		**11 41 32.0**	**-0.4**
HYB				pmax	pmax			
	comp=Z,40nm,1.0s,mb4.9							
HYB	**Hyderabad**	**25.60**	**224**	*e*P	**P**		**11 41 32.0**	**-0.4**
	comp=Z,40nm,1.0s,mb4.9							
HYB				*e*S	**S**		**11 46 12.0**	**+14**
MDJ	**Mudanjiang**	**25.64**	**63**	P	**P**		**11 41 32.2**	**-0.3**
MDJ				AP	pP		11 41 38.4	+3.3
MDJ				XP	sP		11 41 40.8	+4.5
MDJ				PCP	PcP		11 45 00.7	-3.3
MDJ				S	**S**		**11 45 58.7**	**+0.4**
MDJ				XS			11 46 11.9	
MDJ				SCP			11 48 38.5	
MDJ				PCS			11 48 40.8	
MDJ				SCS	ScS		11 52 29.5	-0.6
MDJ				LR	LR			
	comp=N,6μm,13.8s,MS5.3							
MDJ				LR	LR			
	comp=E,716nm,12.8s,MS5.3							
MDJ				LR	LR			
	comp=Z,2μm,11.7s,MS4.8							
MDJ	**Mudanjiang**	**25.64**	**63**	*e*P	**P**		**11 41 33.3**	**+0.8**
	comp=Z,11nm,0.9s,mb4.4							
MDJ				LR	LR			
	comp=Z,770nm,21.

CLNS pmax pmax
comp=Z,10.0nm,0.9s,mb4.3
CLNS pmax pmax
comp=E,9.0nm,1.0s
CLNS pmax pmax
comp=Z,10.0nm,0.9s,mb4.3
CLNS pmax pmax
comp=N,9.0nm,1.0s
CLNS pmax pmax
comp=E,9.0nm,1.0s
CLNS MLR MLR
comp=N,1µm,11.0s,MS4.7
CLNS MLR MLR
comp=E,500nm,11.0s,MS4.7
CLNS MLR MLR
comp=Z,1µm,11.0s,MS4.8
KLR Kul'dur 27.78 54 *e*P **P 11 41 50.8 -1.3**
KLR MLR MLR
comp=E,3µm,10.0s
KLR MLR MLR
comp=Z,5µm,10.0s,MS5.4
CUD Cuddapah 27.93 220 *e*P **P 11 41 53.3 -0.5**
CUD *e*S **S 11 46 40.5 +4.5**
JNU Nakatsue 28.06 89 P **P 11 41 54.1 -0.8**
comp=Z,9.1nm,0.9s,mb4.4,baz=286,slow=7.9,SNR=3.4
JNU LR LR 11 53 18.9
comp=Z,1µm,21.5s,MS4.5,baz=278,slow=37
JOW Kunigami 28.56 103 P **P 11 41 58.0 -1.3**
comp=Z,11nm,0.5s,mb4.8,baz=170,slow=18,SNR=6.1
JOW LR LR 11 54 24.0
comp=Z,410nm,18.1s,MS4.1,baz=258,slow=39
AB31 Akbulak array 29.00 306 ⇑P **P 11 42 03.3 +0.1**
comp=Z,31nm,1.3s,mb4.9
AB31 Akbulak array 29.00 306 P **P 11 42 03.2 +0.1**
AB31 pmax pmax
comp=Z,9.0nm,0.8s,mb4.5
SVE Sverdlovsk 30.80 321⇓ *e*P **P 11 42 16.5 -2.6**
SVE *e*S **S 11 47 27.0 +5.6**
SVE *e*SSS SSS 11 49 28.0 +2.5
SVE pmax pmax
comp=Z,180nm,1.9s,mb5.6
SVE MLR MLR
comp=Z,2µm,18.0s,MS4.8
SVE MLR MLR
comp=N,1µm,16.0s,MS4.8
SVE MLR MLR
comp=E,2µm,16.0s,MS4.8
TGY Tagaytay City 31.65 131 LR LR 11 54 44.4
comp=E,1µm,20.4s,MS4.5,baz=320,slow=36
ARU Arti 31.72 319⇓ *i*P **P 11 42 26.9 -0.3**
ARU *e*PPP PPP 11 43 40.5 -6.6
ARU *e* 11 45 16.0
ARU *e*S **S 11 47 36.8 +1.1**
ARU *e*SS SS 11 49 29.4 +3.9
ARU *e* 11 53 01.2
ARU pmax pmax
comp=Z,106nm,1.0s,mb5.6
ARU MLR MLR
comp=Z,1µm,17.0s,MS4.6
ARU MLR MLR
comp=E,800nm,16.0s
ARU Arti 31.72 319 *e*P **P 11 42 25.9 -1.3**
comp=E,125nm,1.1s,mb5.7
ARU LR LR
comp=Z,1µm,20.0s,MS4.6
YAK Yakutsk 31.90 29 *e*P **P 11 42 29.6 +0.9**
YAK pmax pmax
comp=Z,7.0nm,0.9s,mb4.5
YAK pmax pmax
comp=N,2.0nm,1.0s
YAK pmax pmax
comp=E,2.0nm,1.0s
YAK MLR MLR
comp=N,420nm,11.0s,MS4.6
YAK MLR MLR
comp=E,520nm,11.0s,MS4.6
YAK MLR MLR
comp=Z,760nm,11.0s,MS4.6
YAK Yakutsk 31.90 29 PFAKE 11 42 40.0 +11
YAK LR LR
comp=Z,262nm,21.0s,MS3.9
MAJO Matsushiro 32.90 79 PFAKE 11 42 50.0 +12
MAJO LR LR
comp=Z,774nm,22.0s,MS4.4
MAT Matsushiro 32.90 79 P **P 11 42 34.0 -3.7**
MAT S **S 11 47 57.0 +2.6**
MAT Matsushiro 32.90 79 *e*P **P 11 42 34.0 -3.7**
MAT *e*S **S 11 47 57.0 +2.6**
MAT pmax pmax
comp=Z,9.0nm,0.6s,mb4.9
MAT MLR MLR
comp=Z,1µm,19.0s,MS4.6
MAT Matsushiro 32.90 79 *e*P **P 11 42 34.0 -3.7**
comp=Z,8.7nm,0.6s,mb4.9
MAT *e*S **S 11 47 57.0 +2.6**
MAT LR LR
comp=Z,1µm,19.0s,MS4.6
IPM Ipoh 32.93 172 *e*P **P 11 42 38.0 -0.2**
YSS Yuzh-Sakhalins 34.91 59 PFAKE 11 43 10.0 +15
YSS LR LR
comp=Z,1µm,20.0s,MS4.6
ASAJ Asahikawa 34.96 64 P **P 11 42 54.8 -0.6**
comp=Z,9.8nm,0.7s,mb4.8,baz=270,slow=11,SNR=3.2
ASAJ Asahikawa 34.96 64 P **P 11 42 54.8 -0.6**
ASAJ pmax pmax
comp=Z,10.0nm,0.7s
TIXI Tiksi 38.02 16 *e*P **P 11 43 19.1 -1.9**
TIXI *e* 11 44 44.1
TIXI *e*S **S 11 49 06.3 -6.7**
TIXI *e* 11 51 41.4
TIXI pmax pmax
comp=Z,73nm,0.9s,mb5.4
TIXI MLR MLR
comp=Z,4µm,12.0s,MS5.5
TIXI Tiksi 38.02 16 *e*P **P 11 43 20.1 -0.9**
comp=Z,15nm,1.1s,mb4.7
TIXI LR LR
comp=Z,677nm,19.0s,MS4.5
PECR Pechory 39.53 316 *e*P **P 11 43 35.0 +1.3**
PECR *e*S **S 11 49 39.5 +3.6**
PECR MLR MLR
comp=Z,1µm,17.0s,MS4.8
PECR MLR MLR
comp=N,2µm,15.0s,MS5.4
PECR MLR MLR
comp=E,4µm,16.0s,MS5.4
GNI Garni 40.19 290 *e*P **P 11 43 41.8 +2.5**
GNI pmax pmax
comp=Z,45nm,1.1s
GNI MLR MLR
comp=Z,784nm,21.0s
GNI Garni 40.19 290 *e*P **P 11 43 41.8 +2.5**
comp=Z,45nm,1.1s,mb5.1
GNI LR LR
comp=Z,784nm,21.0s,MS4.5
ZEI Tsey 40.26 295 *e*P **P 11 43 40.0 +0.1**
ZEI *e*S **S 11 49 45.0 -2.0**
ZEI pmax pmax
comp=Z,50nm,2.0s,mb4.9
ZEI MLR MLR
comp=Z,900nm,17.0s,MS4.7
GOF Gofitskoye 40.49 298⇓ *i*P **P 11 43 42.5 +0.7**
GOF *i* 11 45 15.0
GOF pmax pmax
comp=Z,120nm,1.4s,mb5.4
GOF pmax pmax
comp=Z,70nm,1.5s,mb5.2
GOF MLR MLR
comp=E,3µm,14.0s
GOF MLR MLR
comp=Z,2µm,14.0s,MS5.0
MA2 Magadan 40.60 39 PFAKE 11 43 50.0 +7.5
MA2 LR LR
comp=Z,797nm,20.0s,MS4.6
KIV Kislovodsk 40.91 297 *e*P **P 11 43 46.0 +0.7**
KIV *e* 11 45 20.4
KIV *e* 11 45 45.8
KIV *e*PPP PPP 11 45 48.4 -3.4
KIV *e*S **S 11 49 56.4 -0.4**
KIV *e*SS SS 11 53 00.2 +6.8
KIV pmax pmax
comp=Z,30nm,1.2s,mb4.8
KIV MLR MLR
comp=Z,830nm,19.0s,MS4.6
KIV MLR MLR
comp=E,680nm,18.0s

KIV Kislovodsk 40.91 297 *e*P **P 11 43 46.5 +1.2**
comp=E,45nm,1.0s,mb5.0
KIV LR LR
comp=Z,991nm,21.0s,MS4.7
VANB Van 41.59 289 *e*P **P 11 43 47.5 -3.4**
SEY Seymchan 41.92 34 *e*P **P 11 43 52.4 -0.8**
SEY pmax pmax
comp=Z,30nm,1.4s,mb4.7
SEY MLR MLR
comp=Z,4µm,19.0s,MS5.3
VOR Voronezh 42.33 309 *e*P **P 11 43 56.5 -0.2**
VOR *e* 11 45 33.0
VOR pmax pmax
comp=Z,250nm,1.7s,mb5.6
VOR pmax pmax
comp=E,150nm,1.6s
ERZM Erzurum 42.76 291 P **P 11 44 03.0 +2.5**
VRT Varto 42.84 290 P **P 11 44 03.9 +2.8**
EZM Erzurum 42.86 291 P **P 11 44 02.7 +1.4**
MOS Moscow 43.12 315 *i* P **P 11 44 04.0 +0.9**
MOS *e* 11 45 44.1
MOS *e*S **S 11 50 28.3 -0.8**
MOS pmax pmax
comp=Z,630nm,1.1s
MOS MLR MLR
comp=Z,2µm,16.0s
MOS MLR MLR
comp=E,2µm,15.0s
BEST Besiri 43.39 288 P **P 11 44 07.6 +2.0**
OBN Obninsk 43.74 314 *d i*P **P 11 44 08.0 -0.1**
OBN *i* 11 44 17.7
OBN *e* 11 45 49.7
OBN *e* 11 45 54.0
OBN pmax pmax
comp=Z,171nm,1.2s,mb5.7
OBN MLR MLR
comp=Z,2µm,18.0s,MS4.9
OBN Obninsk 43.74 314 *e*P **P 11 44 07.1 -1.0**
comp=Z,125nm,1.1s,mb5.6
OBN LR LR
comp=Z,2µm,19.0s,MS5.0
EZC Erzincan 43.95 291 P **P 11 44 13.6 +3.5**
GUMT Gumushane 44.01 292 P **P 11 44 11.8 +1.3**
KELT Kelkit 44.26 292 *e*P **P 11 44 15.7 +3.1**
ANN Anapa 44.45 299 *c i*P **P 11 44 14.1 0.0**
ANN *e* 11 46 02.2
ANN *e* 11 46 02.2
ANN *e*PPP PPP 11 46 39.3 +1.6
ANN *e*S **S 11 50 47.4 -1.1**
ANN pmax pmax
comp=Z,40nm,1.0s,mb5.1
ANN MLR MLR
comp=Z,410nm,15.0s,MS4.5
ANN MLR MLR
comp=N,290nm,11.0s
ANN MLR MLR
comp=E,680nm,23.0s
PET Petropavlovsk 44.83 49 *e*P **P 11 44 03.7 -13**
PET MLR MLR
comp=Z,1µm,17.0s,MS5.0
PET Petropavlovsk 44.83 49 PFAKE 11 44 30.0 +13
PET LR LR
comp=Z,673nm,20.0s,MS4.6
ELZG Elazig 44.93 290 P **P 11 44 20.3 +2.3**
LVZ Lovozero 45.49 332 *e*P **P 11 44 21.0 -1.1**
LVZ pmax pmax
comp=Z,44nm,1.4s,mb5.1
LVZ MLR MLR
comp=Z,1µm,15.0s,MS5.0
MZLS Mizel 45.79 268 P **P 11 44 25.6 +0.6**
GZT Gaziantep 46.35 289 P **P 11 44 31.0 +1.7**
ARSS Ar Rass 46.47 272 P **P 11 44 31.4 +1.0**
GAZ Gaziantep 46.68 289 *e*P **P 11 44 31.6 -0.3**
SIM Simferopol' 46.72 300 *e*P **P 11 44 33.0 +1.0**
SIM pmax pmax
comp=Z,54nm,0.9s,mb5.5
HILS Ha'il 46.93 274 P **P 11 44 33.7 -0.3**
PUL Pulkovo 46.93 321 *e*P **P 11 44 33.4 -0.2**
PUL pmax pmax
comp=Z,180nm,1.0s,mb6.0
PUL pmax pmax
comp=E,240nm,0.8s
PUL MLR MLR
comp=Z,980nm,13.0s,MS5.0
PUL MLR MLR
comp=N,560nm,11.0s,MS5.2
PUL MLR MLR
comp=E,1µm,13.0s,MS5.2
BOYT Boyabat 47.08 295 P **P 11 44 35.4 +0.4**
YOZ Yozgat 47.30 293 *e*P **P 11 44 36.9 +0.1**
CTKT Corum 47.39 294 P **P 11 44 39.0 +1.5**
BZK Bozkurt 47.57 296 P **P 11 44 38.9 0.0**
AFFS 'Afif 47.59 270 P **P 11 44 39.7 +0.4**
COBT Iskenderun 47.62 288 P **P 11 44 40.5 +1.2**
AVNT Avonos 47.91 292 *i* P **P 11 44 42.8 +1.2**
BALT Daday 48.14 296 P **P 11 44 44.0 +0.8**
KAMS Al Khamasin 48.19 264 P **P 11 44 43.3 -0.7**
BILL Bilibino 48.26 28 *e*P **P 11 44 42.8 -1.0**
BILL pmax pmax
comp=Z,14nm,1.0s,mb5.0
BILL Bilibino 48.26 28 *e*P **P 11 44 42.8 -1.1**
comp=Z,14nm,1.0s,mb4.9
NIG Nigde 48.32 291 P **P 11 44 46.8 +2.1**
ELDT Eldivan 48.42 294 P **P 11 44 45.7 +0.2**
BRTR Keskin Array B 48.51 293 P **P 11 44 45.7 -0.5**
comp=Z,52nm,1.2s,mb5.5,baz=101,slow=6.3,SNR=71
BRTR PP PP 11 46 39.8 +1.0
comp=Z,7.3nm,0.9s,baz=90,slow=8.6,SNR=4.5
BRTR LR LR 12 08 04.6
comp=Z,441nm,19.4s,MS4.5,baz=10.0,slow=40
KAMT Kaman 48.57 293 P **P 11 44 47.1 +0.5**
AKASG Malin Array Be 48.68 308 P **P 11 44 45.5 -1.9**
comp=Z,9.8nm,0.6s,mb5.0,baz=68,slow=6.9,SNR=80
AKASG LR LR 12 05 20.2
comp=Z,541nm,18.3s,MS4.6,baz=95,slow=36
SAFT Safranbolu 48.73 295 P **P 11 44 49.0 +1.2**
ASF Jabal al Asfar 48.75 283 P **P 11 44 51.1 +2.9**
comp=Z,37nm,1.0s,mb5.4,baz=306,slow=2.2,SNR=28
MNK Minsk 48.83 314 *e*P **P 11 44 48.0 -0.4**
FINES FINESS Array B 48.92 323 P **P 11 44 48.0 -1.0**
comp=Z,26nm,0.9s,mb5.2,baz=104,slow=7.9,SNR=28
FINES LR LR 12 06 35.1
comp=Z,610nm,18.5s,MS4.6,baz=148,slow=38
ARCES ARCESS Array B 48.97 334 P **P 11 44 50.3 +0.9**
comp=Z,8.5nm,0.8s,mb4.8,baz=67,slow=9.2,SNR=8.9
ARCES LR LR 12 05 13.3
comp=Z,770nm,20.8s,MS4.7,baz=99,slow=36
ANTO Ankara 49.08 294 *e*P **P 11 44 49.9 -0.7**
TATS Tathlith 49.48 264 P **P 11 44 55.0 +1.0**
KBRS Khaybar 49.67 274 P **P 11 44 57.7 +2.3**
HMDT Nahal Hemdat 49.78 283 P **P 11 44 57.5 +1.4**
KIS Kishinev 49.79 304⇑ *e*P **P 11 44 56.0 +0.1**
KIS *e* 11 46 52.0
KIS pmax pmax
comp=Z,220nm,1.6s,mb5.9
KIS MLR MLR
comp=Z,500nm,16.0s,MS4.6
MKRJ Makawir 49.98 282 P **P 11 44 59.2 +1.6**
MDU Mudurnu 50.03 295 *e*P **P 11 44 57.7 -0.2**
OFRI 'Ofer 50.05 284 P **P 11 44 59.8 +1.6**
KIZT Kizilcal 50.07 293 P **P 11 44 57.4 -0.8**
DRGI Dragot 50.16 283 P **P 11 45 00.4 +1.4**
SLTI Sal'it 50.16 284 P **P 11 45 00.6 +1.6**
HDMB Hadim 50.30 290 *e*P **P 11 44 59.7 -0.3**
CSS Prodhromos 50.40 288 *e*P **P 11 44 59.9 -0.9**
ESKT Eskisehir 50.61 294 *i* P **P 11 45 00.8 -1.5**
TBKS Tabuk 50.70 278 P **P 11 45 05.0 +1.8**
ZFRI Zfri 50.76 281 P **P 11 45 05.0 +1.4**
BLJS Baljurashi 50.79 266 P **P 11 45 05.0 +1.1**
JMQS Jabal Moqyreh 50.94 279 P **P 11 45 06.2 +1.3**
PRNI Paran 50.98 281 P **P 11 45 06.8 +1.6**
HARR Harsova 51.02 301⇑ *i*P **P 11 45 19.8 +14**
HRT Hereke 51.02 296 P **P 11 45 04.7 -0.7**
AQBJ Aqaba 51.21 281 P **P 11 45 08.4 +1.4**
KZIT Kziot 51.22 282 P **P 11 45 08.2 +1.2**
MBH Mount Berech 51.29 281 P **P 11 45 09.1 +1.5**
KMTI Karmit 51.30 281 P **P 11 45 09.0 +1.3**
ALT Altintas 51.31 294 *e*P **P 11 45 07.7 +0.1**
EIL Elat 51.32 281 P **P 11 45 09.0 +1.2**
YNBS Yanbu' al Bahr 51.38 273 P **P 11 45 10.3 +2.0**
ISK Istanbul-Kandi 51.38 296 *e*P **P 11 45 07.6 -0.5**
BRD Bordesti 51.38 302⇓ *i*P **P 11 45 24.4 +16**
ALWS Ilw as Safayha 51.38 280 P **P 11 45 09.9 +1.6**
JMOS Jabal al Moall 51.41 280 P **P 11 45 09.5 +0.9**

ISP Isparta 51.45 292 *e*P **P 11 45 07.1 -1.6**
VRI Vrincioaia 51.49 303⇑ *i*P **P 11 45 23.7 +15**
SUW Suwalki 51.60 314 *e*P **P 11 45 09.8 +0.2**
SUW MLR MLR 12 07 35.0
comp=Z,1µm,22.3s,MS4.9
HAQS Haql 51.60 280 P **P 11 45 10.3 +0.3**
ULDT Uludag 51.64 295 P **P 11 45 09.6 -0.5**
SPITS Spitsbergen Ar 51.71 345 P **P 11 45 10.5 +0.2**
comp=Z,24nm,1.0s,mb5.1,baz=97,slow=16,SNR=5.7
SPB4 Spitsbergen Ar 51.72 345 *e*P **P 11 45 12.1 +1.8**
BDAS Al Bad' 51.75 279 P **P 11 45 11.8 +0.7**
ISR Istrita 51.84 302⇑ *i*P **P 11 45 27.5 +16**
MLR Muntele Rosu 52.13 303 P **P 11 45 14.8 +1.1**
comp=Z,22nm,0.9s,mb5.1,baz=355,slow=12,SNR=24
MLR PP PP 11 47 17.0 +4.1
comp=Z,15nm,0.9s,baz=34,slow=7.7,SNR=7.5
MLR LR LR 12 08 25.1
comp=Z,758nm,18.6s,MS4.8,baz=56,slow=37
MLR Muntele Rosu 52.13 303⇑ *i*P **P 11 45 28.5 +15**
KBS Kingsbay 52.58 346 *e*S **S 11 52 45.1 +2.9**
KBS *e*SS SS 11 56 25.5 +6.3
KBS AMS AMS 12 12 21.9
comp=Z,659nm,18.0s,MS4.7
KBS Kingsbay 52.58 346 PFAKE 11 45 30.0 +13
KBS LR LR
comp=Z,769nm,20.0s,MS4.7
DNZL Cakiroluk 52.58 292 P **P 11 45 16.8 -0.5**
KWP Kalwaria 53.00 308 *e*P **P 11 45 19.9 -0.3**
KWP *e* pP 11 45 21.3 -1.7
KWP MLR MLR 12 07 55.3
comp=Z,800nm,20.8s,MS4.8
KWP Kalwaria 53.00 308 *e*P **P 11 45 19.0 -1.2**
KWP pmax pmax
comp=Z,178nm,1.0s,mb6.0
KWP Kalwaria 53.00 308 *e*P **P 11 45 19.0 -1.2**
comp=Z,178nm,1.0s,mb6.0
KDAG Bornova 53.62 294 P **P 11 45 23.2 -1.7**
IZM Izmir 53.62 294 P **P 11 45 24.0 -0.9**
KDZ Kurdzhali 53.75 298 *i* P **P 11 45 27.0 +1.2**
BOZC Bozcaada 53.96 296 P **P 11 45 22.0 -5.3**
CRVS Cervenica-Dubn 54.00 308 *e*P **P 11 45 27.0 -0.5**
CRVS *e* 11 45 34.5
CRVS *e*PP PP 11 47 45.8 +15
SMY Shemya 54.06 47 PFAKE 11 45 40.0 +12
SMY LR LR
comp=Z,2µm,20.0s,MS5.2
RZN Rozhen 54.23 299 *i* P **P 11 45 30.0 +0.7**
NIE Niedzica 54.55 309 *e*P **P 11 45 33.7 +2.1**
OJC Ojcow 54.62 310 *e*P **P 11 45 32.4 +0.3**
OJC *e*S **S 11 53 24.3 +14**
OJC *e*SS SS 11 57 06.8 +14
OJC MLR MLR 12 13 18.4
comp=Z,400nm,17.6s,MS4.5
OJC Ojcow 54.62 310 *e*P **P 11 45 32.4 +0.3**
OJC *e*S **S 11 53 24.3 +14**
OJC MLR MLR
comp=Z,400nm,17.6s,MS4.5
NSS Namsos 54.77 328 AMS AMS 12 10 33.8
comp=Z,621nm,20.4s,MS4.7
VTS Vitosha 54.95 300 *i* P **P 11 45 34.0 -0.7**
MMB Musomiste 54.96 299 *i* P **P 11 45 35.0 +0.3**
HFS Hagfors 55.12 323 P **P 11 45 35.6 0.0**
comp=Z,10nm,0.5s,mb5.1,baz=59,slow=8.6,SNR=14
PSZ Piszkesteto 55.30 307 *e*P **P 11 45 38.0 +0.9**
PSZ pmax pmax
comp=Z,32nm,1.2s,mb5.2
PSZ Piszkesteto 55.30 307 *e*P **P 11 45 38.0 +0.9**
comp=Z,32nm,1.2s,mb5.2
KKB Krupnik 55.30 299 *i* P **P 11 45 36.2 -1.0**
BOLS Boljevac 55.36 302⇑ *i*P **P 11 45 36.3 -1.3**
OKC Ostrava-Krasne 55.75 310 *e*P **P 11 45 40.6 +0.3**
OKC L 12 09 50.0
VYHS Vyhne 55.78 308 *i* P **P 11 45 40.2 -0.3**
VYHS *e* pP 11 45 41.6 -1.7
BSD Bornholm Skovb 55.94 317 *i* P **P 11 45 42.0 +0.4**
comp=Z,29nm,1.0s,mb5.3
BSD Bornholm Skovb 55.94 317 *e*P **P 11 45 42.0 +0.4**
BSD pmax pmax
comp=Z,29nm,1.0s,mb5.3
BSD Bornholm Skovb 55.94 317 *e*P **P 11 45 42.0 +0.4**
comp=Z,29nm,1.0s,mb5.3
KOLL Kolacno 56.02 308 *e*P **P 11 45 40.6 -1.7**
KOLL *e* pP 11 45 43.4 -1.6
NB2 NORSAR Subarra 56.04 324 P **P 11 45 39.8 -2.4**
comp=Z,39nm,1.1s,mb5.3,baz=72,slow=7.0
NB2 NORSAR Subarra 56.04 324 P **P 11 45 39.8 -2.4**
baz=72,slow=6.9
NOA NORSAR Array B 56.04 324 P **P 11 45 40.1 -2.1**
comp=Z,21nm,1.0s,mb5.1,baz=73,slow=7.2,SNR=11
NOA LR LR 12 09 37.3
comp=Z,671nm,20.4s,MS4.7,baz=50,slow=36
MORC Moravsky Berou 56.14 310 *e*P **P 11 45 43.2 +0.1**
comp=Z,33nm,1.0s,mb5.3
GRUS Gruza 56.18 302 *e*P **P 11 45 43.6 +0.2**
KRIS Kristallenia 56.20 291 *e*P **P 11 45 44.0 +0.2**
comp=Z,147nm,1.5s,mb5.8
NAO01 NORSAR Array S 56.25 324 P **P 11 45 43.7 0.0**
comp=Z,11nm,0.8s,mb5.0
SKO Skopje 56.40 300 *i* P **P 11 45 45.0 -0.1**
KSP Ksiaz 56.54 311 *e*P **P 11 45 46.4 +0.4**
KSP MLR MLR 12 10 31.3
comp=Z,3µm,20.2s,MS5.3
IDI Anoyia 56.61 291 P **P 11 45 45.7 -1.0**
comp=Z,11nm,0.5s,mb5.1,baz=36,slow=12,SNR=7.8
DPC Dobruska-Polom 56.69 311 *e*P **P 11 45 47.1 0.0**
DPC L 12 10 10.0
comp=Z,1.8nm,16.3s
UPC Upice 56.82 311 *e*P **P 11 45 48.2 +0.2**
VRAC Vranov 56.89 310 P **P 11 45 49.3 +0.9**
comp=Z,14nm,1.0s,mb5.0,baz=80,slow=8.9,SNR=12
ZST Bratislava 56.96 308 *e*P **P 11 45 49.9 +0.8**
KONO Kongsberg 57.23 323 AMS AMS 12 11 44.9
comp=Z,428nm,18.0s,MS4.6
KONO Kongsberg 57.23 323⇓ *e*P **P 11 45 50.1 -0.7**
KONO Kongsberg 57.23 323 *e*P **P 11 45 51.2 +0.4**
comp=Z,39nm,1.2s,mb5.3
KONO LR LR
comp=Z,735nm,20.0s,MS4.8
PVCC Panska Ves 57.68 312 *e*P **P 11 45 53.7 -0.3**
PVCC L 12 11 00.0
comp=Z,1.3nm,15.9s
PRU Pruhonice 57.89 311 *e*P **P 11 45 55.1 -0.4**
comp=Z,48nm,1.3s,mb5.4
PRU *i* pP pP 11 46 01.3 +3.0
PRU L 12 11 10.0
PRU Pruhonice 57.89 311 *e*P **P 11 45 55.1 -0.4**
PRU *i* 11 46 01.3
PRU pmax pmax
comp=Z,48nm,1.3s,mb5.4
BRG Berggiesshubel 57.92 312 *i* P **P 11 45 55.6 -0.1**
BRG pmax pmax
comp=Z,49nm,1.2s,mb5.4
BRG MLR MLR
comp=E,1µm,25.6s
BRG MLR MLR
comp=Z,1µm,21.1s,MS4.9
BRG Berggiesshubel 57.92 312 *i* P **P 11 45 55.6 -0.1**
comp=Z,49nm,1.2s,mb5.4
ARSA Arzberg 58.30 308⇓ *i*P **P 11 45 57.9 -0.6**
comp=Z,20nm,1.1s,mb5.1
CLL Collm 58.32 313 ⇑P **P 11 45 58.7 +0.2**
comp=Z,logA/T=1.6,mb5.4
CLL *e*PP PP 11 48 06.0 -3.4
CLL *e*PPP Px 11 49 12.0
CLL Collm 58.32 313⇑ *i*P **P 11 45 58.7 +0.2**
CLL pmax pmax
comp=Z,44nm,1.1s,mb5.4
CLL Collm 58.32 313⇑ *i*P **P 11 45 58.7 +0.2**
comp=Z,44nm,1.1s,mb5.4
MUD Monsted U'grnd 58.55 319 *i* P **P 11 46 01.3 +1.3**
comp=Z,28nm,1.0s,mb5.2
MUD Monsted U'grnd 58.55 319 *i* P **P 11 46 01.3 +1.3**
MUD pmax pmax
comp=Z,28nm,1.0s,mb5.2
TNA Tin City 58.67 29 PFAKE 11 46 10.0 +9.2
TNA LR LR
comp=Z,489nm,22.0s,MS4.6
KHC Kasperske Hory 58.79 310 *e*P **P 11 46 00.3 -1.5**
KHC L 12 11 20.0
comp=Z,1.4nm,18.9s
PERS Pernice 58.80 307 *i* P **P 11 46 01.9 0.0**
GEC2 GERESS Array S 58.83 310 *e*P **P 11 46 02.7 +0.6**
GEC2 pmax pmax
comp=Z,65nm,1.8s,mb5.4
GERES GERESS Array B 58.83 310 P **P 11 46 02.8 +0.7**

comp=Z,8.5nm,0.9s,mb4.8,baz=63,slow=6.0,SNR=26
GERES GERESS Array B 58.83 310 P **P** **11 46 02.8 +0.7**
GERES pmax pmax
comp=Z,9.0nm,0.9s
MOA Molln 58.86 309⇓*i*P **P** **11 46 01.4 -0.9**
comp=Z,28nm,1.7s,mb5.0
BSEG Bad Segeberg 58.86 316 *e*P **P** **11 46 02.4 +0.1**
BSEG pmax pmax
comp=Z,42nm,1.0s,mb5.4
OBKA Obir 59.21 307⇓*i*P **P** **11 46 04.2 -0.6**
comp=Z,26nm,1.2s,mb5.1
WET Wettzell 59.21 311 *e*P **P** **11 46 05.6 +0.8**
WET pmax pmax
comp=Z,32nm,1.3s,mb5.2
VISS Visnje 59.30 306 *i*P **P** **11 46 04.9 -0.6**
MOX Moxa 59.38 313 *i*P **P** **11 46 06.3 +0.4**
comp=Z,logA/T=1.5,mb5.3
MOX L 12 12 28.0
MOX Moxa 59.38 313 *e*P **P** **11 46 06.3 +0.4**
MOX pmax pmax
comp=Z,51nm,1.6s,mb5.3
MOX MLR MLR
comp=Z,700nm,20.0s,MS4.8
MOX Moxa 59.38 313 *e*P **P** **11 46 06.3 +0.4**
comp=Z,51nm,1.6s,mb5.3
MOX LR LR
comp=Z,700nm,20.0s,MS4.8
CEY Cerknica 59.59 306 *i*P **P** **11 46 08.3 +0.8**
KBA Koelnbreinsper 59.74 308⇑*i*P **P** **11 46 09.0 +0.6**
comp=Z,22nm,1.4s,mb5.0
GRF Grafenberg Arr 59.99 312 *e*P **P** **11 46 10.4 +0.3**
GRF *e*S **S** **11 54 21.6 +0.7**
GRF pmax pmax
comp=Z,87nm,1.2s,mb5.7
GRF MLR MLR
comp=Z,1μm,22.0s,MS5.1
WTTA Wattenberg 60.73 309⇓*i*P **P** **11 46 14.8 -0.4**
comp=Z,52nm,1.1s,mb5.6
WATA Walderalm 60.73 309⇓*i*P **P** **11 46 15.6 +0.4**
comp=Z,27nm,1.1s,mb5.3
SQTA Sankt Quirin 61.01 309⇑*i*P **P** **11 46 17.5 +0.4**
comp=Z,40nm,1.2s,mb5.4
MOTA Moosalm 61.02 309⇑*i*P **P** **11 46 17.4 +0.2**
comp=Z,22nm,1.0s,mb5.2
FITZ Fitzroy Crossi 61.56 149 *e*P **P** **11 46 19.9 -1.3**
comp=Z,7.8nm,0.9s,mb4.8
DAVA Damuels 61.80 310⇑*i*P **P** **11 46 24.3 +1.8**
comp=Z,14nm,0.9s,mb5.1
DAVOX Davos 62.02 309 P **P** **11 46 24.3 +0.3**
comp=Z,18nm,0.6s,mb5.4,baz=84,slow=5.8,SNR=19
BFO Black Forest 62.29 311 *e*P **P** **11 46 25.9 +0.2**
BFO pmax pmax
comp=Z,31nm,1.2s,mb5.3
WAKE Wake Island 62.77 86 PFAKE 11 46 40.0 +11
WAKE LR LR
comp=Z,4μm,22.0s,MS5.5
CDF Champ du Feu 62.88 312 *e*P **P** **11 46 29.6 0.0**
comp=Z,71nm,1.3s,mb5.3
VAI Varese 63.12 308 *e*P **P** **11 46 27.8 -3.4**
HINF Hinteralfeld 63.40 311 *e*P **P** **11 46 33.0 -0.1**
comp=Z,68nm,1.3s,mb5.3
GIVF Givet 63.55 314 *e*P **P** **11 46 34.3 +0.4**
comp=Z,94nm,1.2s,mb5.4
HAU Haudompre 63.62 311 *e*P **P** **11 46 34.4 0.0**
HAU *e*R
comp=Z,1μm,22.2s
IMA Indian Mountai 63.63 25 *e*P **P** **11 46 32.8 -1.4**
BAIF Baives 63.92 314 *e*P **P** **11 46 36.8 +0.4**
UNV Unalaska Valle 64.37 41 PFAKE 11 46 50.0 +11
UNV LR LR
comp=Z,1μm,20.0s,MS5.1
CABF La Chapelle 64.42 310 *e*P **P** **11 46 39.5 -0.2**
comp=Z,55nm,1.4s,mb5.1
PGF Pioggiola 64.50 305 *e*P **P** **11 46 39.4 -0.9**
comp=Z,225nm,1.4s,mb5.7
LPG La Plagne 64.54 309 *e*P **P** **11 46 40.5 0.0**
comp=Z,67nm,1.0s,mb5.3
LPL La Plagne 64.54 309 *e*P **P** **11 46 40.4 -0.1**
comp=Z,72nm,1.1s,mb5.3
IMI Imperia 64.58 307 *e*P **P** **11 46 40.4 -0.4**
SBF Sospel 64.89 307 *e*P **P** **11 46 42.5 -0.3**
comp=Z,56nm,0.8s,mb5.3
MBDF Montbardon 64.89 308 *e*P **P** **11 46 43.5 +0.7**
comp=Z,50nm,1.2s,mb5.1
EKA Eskdalemuir Ar 65.28 322 P **P** **11 46 45.4 +0.2**
comp=Z,7.5nm,0.9s,mb4.7,baz=41,slow=7.7,SNR=8.6
EKA Eskdalemuir Ar 65.28 322 P **P** **11 46 45.4 +0.3**
EKA pmax pmax
comp=Z,8.0nm,0.9s
ORIF Oris-en-Rattie 65.36 309 *e*P **P** **11 46 45.2 -0.6**
comp=Z,16nm,0.8s,mb4.8
ORIF *e*R
comp=Z,1μm,22.0s
LOR Lormes 65.45 312 *e*P **P** **11 46 45.9 -0.5**
LOR *e*R
comp=Z,1μm,22.5s
SVW Sparrevohn 65.65 31 *e*P **P** **11 46 46.7 -0.7**
SSF Saint Saulge 65.76 312 *e*P **P** **11 46 48.4 0.0**
SMF Signal de Mont 65.77 311 *e*P **P** **11 46 48.3 -0.1**
comp=Z,142nm,1.3s,mb5.5
AVF Avril sur Loir 65.99 311 *e*P **P** **11 46 49.7 -0.1**
comp=Z,27nm,0.9s,mb5.0
VIVF Saint-Julien-l 66.14 309 *e*P **P** **11 46 50.8 0.0**
comp=Z,93nm,1.4s,mb5.3
COLA College 66.31 25 *e*P **P** **11 46 50.1 -1.4**
COLA LR LR
comp=Z,513nm,20.0s,MS4.7
BGF Bois d'Agland 66.41 311 *e*P **P** **11 46 52.4 -0.1**
comp=Z,42nm,1.2s,mb5.0
MCK McKinley 66.64 26 *e*P **P** **11 46 52.3 -1.3**
comp=Z,5.8nm,1.1s,mb4.5
MCK LR LR
comp=Z,324nm,19.0s,MS4.6
ILAR Eielson Array 66.69 25 P **P** **11 46 52.0 -2.0**
comp=Z,5.7nm,0.8s,mb4.7,baz=296,slow=5.3,SNR=54
ILAR LR LR 12 15 47.4
comp=Z,349nm,20.4s,MS4.6,baz=117,slow=36
ILAR Eielson Array 66.69 25 P **P** **11 46 52.0 -2.0**
ILAR pmax pmax
comp=Z,6.0nm,0.8s
ILAR MLR MLR
comp=Z,349nm,20.4s
TCF Toulx Ste Croi 66.92 311 *e*P **P** **11 46 56.1 +0.3**
comp=Z,101nm,1.3s,mb5.4
KMBO Kilima Mbogo 66.95 249 P **P** **11 46 56.4 -0.1**
comp=Z,15nm,1.1s,mb4.9,baz=39,slow=11,SNR=12
KMBO LR LR 12 17 23.6
comp=Z,164nm,20.9s,MS4.2,baz=92,slow=37
KMBO Kilima Mbogo 66.95 249 *e*P **P** **11 46 56.1 -0.3**
comp=Z,20nm,1.3s,mb5.0
KMBO LR LR
comp=Z,174nm,22.0s,MS4.2
SPU Mount Spurr 67.03 29 *e*P **P** **11 46 54.8 -1.3**
LASF Ste Croix 67.03 309 *e*P **P** **11 46 57.0 +0.5**
comp=Z,46nm,1.1s,mb5.1
LDF La Druitiere 67.11 314 *e*P **P** **11 46 56.8 -0.1**
comp=Z,91nm,1.2s,mb5.4
WRAB Tennant Creek 67.14 142 *e*P **P** **11 46 56.8 -0.8**
comp=Z,96nm,1.1s,mb5.7
WRAB LR LR
comp=Z,296nm,19.0s,MS4.5
WRA Warramunga Arr 67.14 142 P **P** **11 46 56.3 -1.3**
comp=Z,9.9nm,0.9s,mb4.9,baz=340,slow=6.4,SNR=50
WRA Warramunga Arr 67.14 142 P **P** **11 46 56.3 -1.3**
WRA pmax pmax
comp=Z,10.0nm,0.9s
WB2 Warramunga Arr 67.14 142 *e*P **P** **11 46 56.0 -1.6**
RSO Redoubt South 67.17 30 *e*P **P** **11 46 56.6 -0.5**
FLN La Foliniere 67.22 315 *e*P **P** **11 46 58.1 +0.4**
FLN *e*R
comp=Z,1μm,22.2s
PWA Palmer West 67.58 28 *e*P **P** **11 46 57.9 -1.8**
GRR Gorron 67.63 314 *e*P **P** **11 47 00.3 +0.1**
CAF Calviac 67.70 310 *e*P **P** **11 47 01.6 +0.8**
comp=Z,117nm,1.5s,mb5.4
FIB Fire Island 67.76 29 PFAKE 11 47 10.0 +9.2
FIB LR LR
comp=Z,2μm,22.0s,MS5.3
RJF Les Rejaudoux 67.84 311 *e*P **P** **11 47 02.3 +0.7**
RJF *e*R
comp=Z,1μm,22.0s
PMR Palmer 67.89 28 *e*P **P** **11 46 59.5 -2.1**
PMR LR LR
comp=Z,617nm,19.0s,MS4.8
PMS Palmer South 67.95 29 *e*P **P** **11 47 00.6 -1.4**
SML Sawmill 68.06 28 *e*P **P** **11 47 01.3 -1.4**

INK Inuvik 68.10 18 P **P** **11 47 01.4 -1.5**
comp=Z,18nm,0.6s,mb5.3,baz=338,slow=7.0,SNR=108
INK Inuvik 68.10 18 P **P** **11 47 01.4 -1.5**
INK pmax pmax
comp=Z,18nm,0.6s
MFF Saint Martin d 68.16 312 *e*P **P** **11 47 03.8 +0.3**
MTLF Montolieu 68.43 309 *e*P **P** **11 47 05.4 +0.1**
comp=Z,26nm,1.1s,mb4.9
LFF La Frestale 68.50 311 *e*P **P** **11 47 06.4 +0.7**
SGMF Saint Gilles 68.66 315 *e*P **P** **11 47 07.2 +0.5**
comp=Z,104nm,1.1s,mb5.4
KDAK Kodiak Island 68.84 33 PFAKE 11 47 20.0 +12
KDAK LR LR
comp=Z,1μm,21.0s,MS5.0
ROSF Rostrenen 69.02 315 *e*P **P** **11 47 09.6 +0.7**
QUIF Quistinic 69.19 315 *e*P **P** **11 47 10.4 +0.5**
comp=Z,120nm,1.2s,mb5.4
EPF Esparros 69.76 309 *e*P **P** **11 47 13.3 -0.2**
AS12 Alice Springs 70.10 144 *e*P **P** **11 47 14.9 -1.0**
comp=Z,19nm,1.0s,mb5.0
ASAR Alice Springs 70.10 144 P **P** **11 47 15.1 -0.8**
comp=Z,6.6nm,0.7s,mb4.7,baz=329,slow=5.9,SNR=67
ASAR LR LR 12 21 45.2
comp=Z,145nm,18.9s,MS4.2,baz=323,slow=39
ETSF Etsaut 70.39 309 *e*P **P** **11 47 17.4 +0.1**
SJPF Ste Jean 70.68 310 *e*P **P** **11 47 19.5 +0.4**
MUN Mundaring 71.40 163 *e*P **P** **11 47 22.9 -0.7**
comp=Z,13nm,1.1s,mb4.8
NWAO Narrogin (SRO) 72.55 162 *e*P **P** **11 47 29.8 -0.7**
comp=Z,15nm,0.9s,mb4.9
NWAO LR LR
comp=Z,339nm,21.0s,MS4.6
CTA Charters Tower 73.76 132 *e*P **P** **11 47 37.3 -0.5**
comp=Z,8.7nm,0.9s,mb4.7
CTA Charters Tower 73.76 132 P **P** **11 47 37.6 -0.2**
comp=Z,7.4nm,0.8s,mb4.7,baz=332,slow=6.2,SNR=5.3
CTA Charters Tower 73.76 132 P **P** **11 47 37.6 -0.2**
CTA pmax pmax
comp=Z,7.0nm,0.8s
CTAO Charters Tower 73.76 132 PFAKE
CTAO LR LR 11 47 50.0 +12
comp=Z,277nm,19.0s,MS4.6
ESDC Sonseca Array 74.32 308 P **P** **11 47 41.6 +1.0**
comp=Z,6.1nm,0.8s,mb4.6,baz=54,slow=5.3,SNR=14
ESDC LR LR 12 21 53.4
comp=Z,360nm,19.3s,MS4.7,baz=10.0,slow=37
ESLA Sonseca Array 74.32 308 PFAKE
ESLA LR LR 11 47 50.0 +9.4
comp=Z,3μm,19.0s,MS5.6
SIT Sitka 76.12 26 PFAKE 11 48 00.0 +9.5
SIT LR LR
comp=Z,679nm,20.0s,MS5.0
YKA Yellowknife Ar 77.25 14 P **P** **11 47 55.3 -1.5**
comp=Z,13nm,1.1s,mb4.8,baz=329,slow=5.3,SNR=47
YKA LR LR 12 25 35.4
comp=Z,274nm,19.0s,MS4.6,baz=325,slow=39
YKA Yellowknife Ar 77.25 14 P **P** **11 47 55.3 -1.5**
YKA pmax pmax
comp=Z,13nm,1.1s
YKA MLR MLR
comp=Z,274nm,19.0s
YKA Yellowknife Ar 77.25 14 P **P** **11 47 55.3 -1.5**
YKA LR LR 12 25 35.4
FRB Frobisher Bay 78.48 353 P **P** **11 48 01.5 -2.0**
comp=Z,13nm,0.9s,mb4.8,baz=4.3,slow=5.8,SNR=20
FRB Frobisher Bay 78.48 353 P **P** **11 48 01.5 -2.0**
FRB pmax pmax
comp=Z,13nm,0.9s
FRB Frobisher Bay 78.48 353 P **P** **11 48 01.5 -2.0**
STKA Stephens Creek 80.65 143 *e*P **P** **11 48 14.9 -1.0**
comp=Z,11nm,0.7s,mb4.9
STKA Stephens Creek 80.65 143 P **P** **11 48 14.8 -1.1**
comp=Z,7.8nm,0.7s,mb4.8,baz=335,slow=9.3,SNR=14
STKA LR LR 12 29 57.3
comp=Z,163nm,18.9s,MS4.4,baz=351,slow=40
ARMA Armidale 84.78 135 *e*P **P** **11 48 37.9 +0.8**
SCHQ Schefferville 87.03 351 P **P** **11 48 46.6 -1.0**
comp=Z,10nm,0.8s,mb5.1,baz=40,slow=5.3,SNR=11
SCHQ LR LR 12 29 40.3
comp=Z,282nm,20.8s,MS4.7,baz=18,slow=37
SCHQ Schefferville 87.03 351 *e*P **P** **11 48 46.6 -1.1**
comp=Z,20nm,1.0s,mb5.3
SCHQ LR LR
comp=Z,526nm,20.0s,MS4.9
RPW Rockport 87.95 24 *e*P **P** **11 48 52.5 +0.2**
NLW Nelson Butte 88.66 24 *e*P **P** **11 48 55.9 +0.2**
ETW Entiat 89.07 24 P **P** **11 48 58.0 +0.4**
WTV Waterville 89.11 24 P **P** **11 48 58.1 +0.3**
FMW Mount Fremont 89.22 25 P **P** **11 48 59.0 +0.7**
LON Longmire 89.33 25 *e*P **P** **11 48 59.3 +0.5**
TBM Table Mountain 89.37 24 P **P** **11 48 59.6 +0.5**
NEW Newport 89.49 22 P **P** **11 49 00.0 +0.4**
comp=Z,9.4nm,0.7s,mb5.2,baz=333,slow=4.8,SNR=18
NEW LR LR 12 32 16.2
comp=Z,265nm,18.4s,MS4.7,baz=330,slow=38
NEW Newport 89.49 22 P **P** **11 49 00.0 +0.4**
NEW pmax pmax
comp=Z,9.0nm,0.7s
NEW MLR MLR
comp=Z,265nm,18.5s
NEW Newport 89.49 22 *e*P **P** **11 49 00.2 +0.6**
comp=Z,9.4nm,0.8s,mb5.2
NEW LR LR
comp=Z,315nm,20.0s,MS4.7
DPW Davenport 89.51 23 *e*P **P** **11 49 00.5 +0.8**
ERK Elk Rock 89.53 26 P **P** **11 49 00.8 +1.0**
GBL Gable Mountain 90.24 24 P **P** **11 49 04.1 +1.0**
BSMT Bassoo Peak 90.53 21 P **P** **11 49 05.1 +0.6**
VGB Gordon Butte 90.75 25 P **P** **11 49 07.0 +1.4**
MSO Missoula 91.70 21 *e*P **P** **11 49 09.2 -0.6**
comp=Z,9.1nm,0.9s,mb5.1
MSO LR LR
comp=Z,453nm,21.0s,MS4.9
CHMT Chamberlain Mo 91.82 20 *e*P **P** **11 49 10.1 -0.3**
ULM Lac du Bonnet 91.98 8 P **P** **11 49 09.2 -1.8**
comp=Z,4.6nm,0.8s,mb4.8,baz=328,slow=4.2,SNR=5.0
ULM LR LR 12 37 53.0
comp=Z,211nm,18.2s,MS4.6,baz=44,slow=40
HRY Holter Researc 92.38 19 *e*P **P** **11 49 13.2 +0.2**
LCCM Lewis and Clar 93.18 20 P **P** **11 49 16.6 -0.1**
BOZ Bozeman (W) 93.42 20 *e*P **P** **11 49 17.7 -0.1**
comp=Z,5.0nm,0.9s,mb4.9
BOZ LR LR
comp=Z,428nm,21.0s,MS4.9
MCMT McKenzie Canyo 93.84 21 P **P** **11 49 20.1 +0.3**
MOD Modoc 94.08 27 PFAKE 11 49 30.0 +9.1
MOD LR LR
comp=Z,348nm,21.0s,MS4.8
WVOR Wild Horse Val 94.20 25 *e*P **P** **11 49 21.8 +0.4**
comp=Z,6.1nm,1.1s,mb4.9
WVOR LR LR
comp=Z,474nm,20.0s,MS5.0
HLID Hailey 94.55 22 *e*P **P** **11 49 23.1 +0.1**
comp=Z,4.4nm,0.8s,mb4.9
HLID LR LR
comp=Z,385nm,21.0s,MS4.8
LKWY Lake 94.75 19 *e*P **P** **11 49 26.0 +2.1**
comp=Z,13nm,0.8s,mb5.4
DBIC Dimbokro 95.15 282 P **P** **11 49 27.1 +0.6**
comp=Z,5.9nm,0.9s,mb5.0,baz=51,slow=3.9,SNR=6.6
DBIC LR LR 12 39 17.0
comp=Z,331nm,18.3s,MS4.8,baz=31,slow=40
PQI Presque Isle 95.17 350 PFAKE 11 49 40.0 +14
PQI LR LR
comp=Z,2μm,20.0s,MS5.6
KIC Kosan Boka 95.25 282 *e*PKP1 **P** **11 49 28.6 +1.6**
comp=Z,29nm,0.9s,mb5.7
TIC Toumodi 95.30 282 *e*PKP1 **P** **11 49 27.8 +0.6**
comp=Z,8.9nm,0.2s,mb5.8
LIC Lamto 95.56 282 *e*PKP1 **P** **11 49 27.9 -0.5**
comp=Z,5.7nm,0.2s,mb5.8
AHID Auburn Hatcher 96.23 20 PFAKE 11 49 40.0 +9.2
AHID LR LR
comp=Z,335nm,20.0s,MS4.8
BMN Battle Mountai 96.47 25 PFAKE 11 49 40.0 +8.1
BMN LR LR
comp=Z,256nm,21.0s,MS4.7
BW06 Boulder Array 96.65 19 PFAKE 11 49 40.0 +7.3
BW06 LR LR
comp=Z,608nm,22.0s,MS5.0
PDAR Pinedale Array 96.65 19 P **P** **11 49 32.4 -0.3**
comp=Z,1.0nm,0.8s,mb4.3,baz=18,slow=4.7,SNR=8.5
PDAR LR LR 12 38 17.0
comp=Z,316nm,19.8s,MS4.8,baz=157,slow=39
RSSD Black Hills 96.66 15 *e*P **P** **11 49 32.4 -0.3**
comp=Z,9.3nm,0.9s,mb5.2

EMMW East Machias 97.00 349 PFAKE 11 49 50.0 +16
EMMW LR LR
comp=Z,2μm,20.0s,MS5.6
HWUT Hardware Ranch 97.17 21 *e*P **P** **11 49 36.5 +1.4**
comp=Z,3.0nm,0.8s,mb4.8
HWUT LR LR
comp=Z,301nm,20.0s,MS4.8
CMB Columbia Colle 97.44 29 PFAKE 11 49 50.0 +14
CMB LR LR
comp=Z,259nm,19.0s,MS4.7
NVAR Mina Array Bea 97.86 27 P **P** **11 49 39.1 +0.9**
comp=Z,1.1nm,0.8s,mb4.4,baz=290,slow=5.6,SNR=6.4
NVAR LR LR 12 35 51.4
comp=Z,153nm,18.8s,MS4.5,baz=80,slow=37
LBNH Lisbon 98.06 352 PFAKE 11 49 50.0 +11
LBNH LR LR
comp=Z,376nm,20.0s,MS4.9
SADO Sadowa 98.09 357 LR LR 12 35 37.0
comp=Z,340nm,19.5s,MS4.8,baz=41,slow=36
SAO San Andreas Ge 98.12 30 PFAKE 11 49 50.0 +11
SAO LR LR
comp=Z,406nm,19.0s,MS4.9
NCB Newcomb 98.56 353 PFAKE 11 49 50.0 +8.8
NCB LR LR
comp=Z,395nm,22.0s,MS4.9
TPH Tonopah 98.57 27 PFAKE 11 49 50.0 +8.6
TPH LR LR
comp=Z,257nm,19.0s,MS4.7
JFWS Jewell Farm 99.77 5 PFAKE 11 50 00.0 +13
JFWS LR LR
comp=Z,609nm,21.0s,MS5.1
MVU Marysvale 99.84 23 PFAKE 11 50 00.0 +13
MVU LR LR
comp=Z,234nm,19.0s,MS4.7
MSU Marysvale 99.84 23 *e*Pdif **P** **11 49 52.3 +5.1**
DAC Darwin (Calif) 100.03 28 PFAKE 11 50 00.0 +12
DAC LR LR
comp=Z,284nm,21.0s,MS4.8
ISCO Idaho Springs 100.43 17 PFAKE 11 50 00.0 +10
ISCO LR LR
comp=Z,269nm,21.0s,MS4.7
BINY Binghamton 100.47 355 PFAKE 11 50 00.0 +10
BINY LR LR
comp=Z,1μm,22.0s,MS5.4
AAM Ann Arbor 100.64 0 PFAKE 11 50 00.0 +9.3
AAM LR LR
comp=Z,452nm,22.0s,MS4.9
ERPA Erie 100.77 358 PFAKE 11 50 00.0 +8.7
ERPA LR LR
comp=Z,536nm,19.0s,MS5.1
PV01 Paradox Valley 101.24 20 *e*Pdif P 11 49 58.9 +5.4
SDCO Great Sand Dun 102.41 18 PFAKE 11 50 10.0 +11
SDCO LR LR
comp=Z,426nm,20.0s,MS5.0
CBKS Cedar Bluff 102.61 13 PFAKE 11 50 10.0 +10
CBKS LR LR
comp=Z,245nm,20.0s,MS4.7
ACSO Alum Creek Sta 102.71 360 PFAKE 11 50 10.0 +10
ACSO LR LR
comp=Z,511nm,20.0s,MS5.0
PFO Pinyon Flat Ob 102.83 28 PFAKE 11 50 10.0 +9.2
PFO LR LR
comp=Z,359nm,20.0s,MS4.9
MCWV Mont Chateau 103.22 357 PFAKE 11 50 10.0 +7.7
MCWV LR LR
comp=Z,2μm,22.0s,MS5.5
CCM Cathedral Cave 104.52 7 PFAKE 11 50 20.0 +12
CCM LR LR
comp=Z,368nm,19.0s,MS4.9
CBN Corbin 104.54 355 PFAKE 11 50 20.0 +12
CBN LR LR
comp=Z,270nm,21.0s,MS4.8
WCI Wyandotte Cave 104.65 3 PFAKE 11 50 20.0 +11
WCI LR LR
comp=Z,1μm,19.0s,MS5.5
ANMO Albuquerque 104.81 20 PFAKE 11 50 20.0 +11
ANMO LR LR
comp=Z,316nm,20.0s,MS4.8
BLA Blacksburg 105.68 358 PFAKE 11 54 40.0
BLA LR LR
comp=Z,477nm,21.0s,MS5.0
TUC Tucson 105.99 24 PFAKE 11 54 40.0
TUC LR LR
comp=Z,208nm,20.0s,MS4.7
WVT Waverly 106.68 4 PFAKE 11 54 40.0
WVT LR LR
comp=Z,361nm,19.0s,MS5.0
WMOK Wichita Mounta 106.75 13 PFAKE 11 54 40.0
WMOK LR LR
comp=Z,309nm,20.0s,MS4.9
MIAR Mount Ida 107.74 9 PFAKE 11 54 40.0
MIAR LR LR
comp=Z,302nm,21.0s,MS4.8
PLAL Pickwick Lake 107.81 4 PFAKE 11 54 40.0
PLAL LR LR
comp=Z,221nm,19.0s,MS4.7
MYNC Murphy 107.85 1 PFAKE 11 54 40.0
MYNC LR LR
comp=Z,337nm,19.0s,MS4.9
LRAL Lakeview Retre 109.80 3 PFAKE 11 54 50.0
LRAL LR LR
comp=Z,385nm,19.0s,MS5.0
JCT Junction City 110.67 15 PFAKE 11 54 50.0 +13
JCT LR LR
comp=Z,379nm,20.0s,MS5.0
HKT Hockley 111.93 12 PFAKE 11 54 50.0 +11
HKT LR LR
comp=Z,582nm,19.0s,MS5.2
DWPF Disney 114.78 358 PFAKE 11 55 00.0 +15
DWPF LR LR
comp=Z,558nm,21.0s,MS5.1
SBA Scott Base 122.26 166 PFAKE 11 55 10.0 +11
SBA LR LR
comp=Z,546nm,19.0s,MS5.2
QSPA South Pole Qui 127.20 180 *e*PKP PKPdf 11 55 06.5 -1.4
SNAA Sanae 128.05 203⇑*i* PKPdf 11 55 03.7 -6.1
VNA2 Neumayer--Watz 129.48 204⇓*i* PKPdf 11 55 11.7 -0.8
VNA1 Neumayer--Stat 129.76 205⇑*i* PKPdf 11 55 12.0 -1.1
VNA3 Neumayer Olymp 130.22 204⇓*i* PKPdf 11 55 11.5 -2.4
BDFB Brasilia 142.08 295 PKHKP 11 55 33.3
comp=Z,1.7nm,0.4s,baz=182,slow=6.6,SNR=2.8
BDFB Brasilia 142.08 295 PKIKP PKPdf 11 55 33.3 -3.8
BDFB pmax pmax
comp=Z,2.0nm,0.4s
OTAV Otavalo 142.26 352 *e*PKP PKPdf 11 55 39.4 +1.8
LPAZ La Paz 155.07 324 PKP PKPdf 11 55 58.0 +0.4
comp=Z,1.0nm,0.8s,baz=353,slow=8.1,SNR=4.6
LPAZ PKPab PKPab 11 56 21.1 -0.5
comp=Z,5.3nm,1.1s,baz=42,slow=1.5,SNR=6.3
LPAZ La Paz 155.07 324 PKIKP PKPdf 11 55 58.0 +0.4
LPAZ pmax pmax
comp=Z,1.0nm,0.8s
LPAZ pmax pmax
comp=Z,5.0nm,1.1s
CPUP Villa Florida 155.47 289 PKP PKPdf 11 55 58.3 +0.5
comp=Z,2.1nm,0.8s,baz=119,slow=11,SNR=4.5
CPUP Villa Florida 155.47 289 PKIKP PKPdf 11 55 58.3 +0.4
CPUP pmax pmax
comp=Z,2.0nm,0.8s
PLCA Paso Flores 169.63 248 PKP PKPdf 11 56 13.0 +1.7
comp=Z,1.8nm,0.7s,baz=264,slow=9.9,SNR=4.0
PLCA Paso Flores 169.63 248 PKP PKPdf 11 56 13.0 +1.7
PLCA LR LR
comp=Z,110nm,19.0s

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*IDC **04** 11:41:22.2± 1.4, 69.14N× 9.49E, mb3.6/1, mb1 3.6/6, mb1mx3.4/24, ML3.5/5, Error ellipse: s-maj=17.8km s-min=10.5km az=100.0*
*NAO **04** 11:41:23.0± 1.6, 69.17N× 9.43E, ML3.1*
*BER **04** 11:41:24.9± 4.7, 69.19N× 9.37E, h7km± 32km, MD3.3, ML2.7, ML3.1(NAO)*

ISC 04 11:41:22.9± 1.1, **69.04N**± 0.05× **9.8E**± 0.2, **h10**km, **n23, σ1s26/39, mb3.4/1, Norwegian Sea**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LOF	**Lofoten**	**1.67**	**122**	*e*P	**Pn**	**11 41 57.3**	**+4.9**
LOF				*e*S	**Sn**	**11 42 15.2**	**+1.3**
LOF				AML	AML	11 42 38.0	
	comp=Z,116nm,0.6s						
STOK	**Stokkvaagen**	**2.99**	**154**	*e*P	**Pn**	**11 42 13.6**	**+2.2**
STOK				*e*S	**Sn**	**11 42 48.7**	**+1.0**
STOK				AML	AML	11 42 59.9	
	comp=Z,46nm,0.4s						

TRO	**Tromso**	**3.31**	**75**	*e*P	**Pn**	**11 42 17.0**	**+1.2**
TRO				*e*S	**Sn**	**11 42 53.3**	**-2.4**
MOR8	**Moi Rana**	**3.40**	**146**	*e*P	**Pn**	**11 42 18.9**	**+1.9**
MOR8				*e*S	**Sn**	**11 42 57.6**	**-0.2**
MOR8				AML	AML	11 43 11.1	
	comp=Z,51nm,0.3s						
NSS	**Namsos**	**4.62**	**168**	*e*P	**Pn**	**11 42 34.7**	**+0.2**
NSS				*e*S	**Sn**	**11 43 27.8**	**-1.0**
NSS				AML	AML	11 43 33.8	
	comp=Z,33nm,0.5s						
KTK1	**Kautokeino**	**4.85**	**84**	*e*P	**Pn**	**11 42 39.4**	**+1.7**
KTK1				*e*S	**Sn**	**11 43 34.1**	**-0.5**
KTK1				AML	AML	11 43 49.2	
	comp=Z,13nm,0.8s						
ARA0	**ARCESS Array S**	**5.61**	**78**	Pn	**Pn**	**11 42 49.2**	**+0.7**
	baz=268,slow=11						
ARA0				Sn	**Sn**	**11 43 49.8**	**-4.0**
	baz=268,slow=22						
ARCES	**ARCESS Array B**	**5.61**	**78**	Pn	**Pn**	**11 42 48.9**	**+0.4**
	comp=Z,0.7nm,0.3s,baz=266,slow=12,SNR=23						
ARCES				Sn	**Sn**	**11 43 50.0**	**-3.9**
	comp=Z,1.4nm,0.3s,baz=272,slow=21,SNR=3.3						
KEV	**Kevo**	**6.13**	**75**	*e*p	**Pn**	**11 42 55.9**	**+0.1**
MOL	**Molde**	**6.56**	**189**	*e*P	**Pn**	**11 43 03.2**	**+1.3**
MOL				*e*S	**Sn**	**11 44 12.3**	**-5.3**
MOL				AML	AML	11 44 17.5	
	comp=Z,12nm,0.4s						
DOMB	**Dombas**	**7.04**	**183**	*e*P	**Pn**	**11 43 06.7**	**-1.9**
DOMB				*e*S	**Sn**	**11 44 23.0**	**-6.4**
DOMB				AML	AML	11 44 28.6	
	comp=Z,14nm,0.4s						
NB2	**NORSAR Subarra**	**8.06**	**175**	Pn	**P**	**11 43 21.8**	**-1.1**
NOA	**NORSAR Array B**	**8.06**	**175**	Pn	**P**	**11 43 21.9**	**-1.0**
	comp=Z,0.6nm,0.3s,baz=352,slow=13,SNR=4.1						
NOA				Sn	**Sn**	**11 44 49.9**	**-5.2**
	comp=Z,1.1nm,0.3s,baz=180,slow=6.3,SNR=3.9						
APA0	**Apatity Array**	**8.70**	**89**	Pn	**P**	**11 43 31.3**	**-0.5**
	baz=299,slow=12						
APA0				Sn	**Sn**	**11 45 06.4**	**-4.6**
	baz=292,slow=28						
HFS	**Hagfors**	**9.10**	**167**	Pn	**P**	**11 43 35.5**	**-1.8**
	baz=7.1,slow=14						
HFS				Sn	**Sn**	**11 45 16.7**	**-4.3**
	baz=345,slow=28						
HFS	**Hagfors**	**9.10**	**167**	Pn	**P**	**11 43 35.4**	**-1.9**
	comp=Z,0.2nm,0.3s,baz=12,slow=14,SNR=9.1						
HFS				Sn	**Sn**	**11 45 16.7**	**-4.2**
	comp=Z,0.3nm,0.3s,baz=346,slow=24,SNR=5.9						
SPA0	**Spitsbergen Ar**	**9.36**	**8**	Pn	**P**	**11 43 34.8**	**-6.1**
	baz=172,slow=16						
SPITS	**Spitsbergen Ar**	**9.36**	**8**	Pn	**P**	**11 43 35.6**	**-5.4**
	comp=Z,1.2nm,0.3s,baz=180,slow=15,SNR=70						
KAF	**Kangasniemi**	**9.73**	**128**	*ep*	**P**	**11 43 45.7**	**-0.1**
	baz=325,slow=12						
FIA0	**FINESS Array S**	**10.21**	**130**	Pn	**P**	**11 43 52.6**	**+0.3**
	baz=325,slow=11						
FIA0				Sn	**S**	**11 45 41.8**	**-6.2**
	baz=325,slow=22						
FINES	**FINESS Array B**	**10.21**	**130**	Pn	**P**	**11 43 52.7**	**+0.3**
	comp=Z,0.5nm,0.3s,baz=323,slow=10,SNR=12						
FINES				Sn	**S**	**11 45 41.8**	**-6.2**
	comp=Z,0.4nm,0.3s,baz=328,slow=21,SNR=3.1						
JOF	**Joensuu**	**10.67**	**115**	*ep*	**P**	**11 43 57.2**	**-1.5**
MKAR	**Makanchi Array**	**41.23**	**84**	P	**P**	**11 49 09.1**	**0.0**
	comp=Z,0.8nm,0.9s,mb3.4,baz=337,slow=6.2,SNR=3.5						

*BER **04** 11:41:57.8±1.9,59.86N×14.63E,ML2.5(NAO)*
NAO 04 11:41:55.6±2.4,59.82N×14.71E,ML2.5,Sweden

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HFS	**Hagfors**	**0.60**	**302**	Pg	Pg	11 42 06.7	-0.9
	baz=122,slow=18						
HFS				Lg		11 42 14.4	
	baz=125,slow=37						
HFS				Rg		11 42 18.1	
	baz=113,slow=37						
NC6	**NORSAR Subarra**	**1.87**	**301**	Pn	Pn	11 42 28.4	-0.7
NC6				Lg		11 42 53.2	
NB2	**NORSAR Subarra**	**2.12**	**307**	Pn	Pn	11 42 32.4	-0.4
NB2				Lg		11 43 02.5	

*NAO **04** 11:49:58.3±3.6,57.39N×9.01E,ML2.5*
*BER **04** 11:49:59.1±4.1,57.08N×9.12E,h12km±64km,MD2.0, ML1.9,ML2.5(NAO)*
ISC 04 11:49:58.2±0.6,57.37N±0.04×9.52E±0.10,h10km,n10, σ1§24/14,Denmark

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MUD	**Monsted U'grnd**	**0.93**	**192**	*i* P	**Pb**	**11 50 15.1**	**-0.9**
MUD				*i*		11 50 16.4	
MUD				*i* S	**Sb**	**11 50 27.8**	**-0.4**
	comp=Z,270nm,17.0s						
MUD	**Monsted U'grnd**	**0.93**	**192**	*e*	**Pb**	**11 50 15.1**	**-0.9**
MUD				*i*		11 50 16.4	
MUD				*i*		11 50 27.8	
SNART	**Snartemo**	**1.58**	**309**	*e*P	**Pn**	**11 50 25.9**	**-0.4**
SNART				*e*S	**Sb**	**11 50 46.5**	**-0.3**
SNART				AML	AML	11 50 53.3	
	comp=Z,26nm,0.6s						
KONO	**Kongsberg**	**2.29**	**1**	*e*P	**Pn**	**11 50 38.1**	**+1.5**
BLS5	**Blasjo**	**2.62**	**323**	*e*P	**Pn**	**11 50 42.4**	**+1.1**
ODD1	**Odda**	**2.97**	**331**	*e*P	**Pn**	**11 50 45.4**	**-0.8**
HFS	**Hagfors**	**3.53**	**36**	Pn	**Pn**	**11 50 56.5**	**+2.4**
	baz=226,slow=16						
HFS				Pg	**Pg**	**11 51 03.9**	**-4.7**
	baz=221,slow=18						
HFS				Sg	**Sg**	**11 51 52.6**	**-3.0**
	baz=214,slow=28						
BSD	**Bornholm Skovb**	**3.76**	**125**	*i* P	**Pn**	**11 50 58.1**	**+0.6**
BSD				*i* S	Sx	11 52 30.4	
	comp=Z,770nm,18.0s						
FIA0	**FINESS Array S**	**9.37**	**57**	Pn	**P**	**11 52 16.5**	**+0.2**
	baz=251,slow=12						
FIA0				Lg		11 55 01.1	
	baz=264,slow=28						
ARA0	**ARCESS Array S**	**14.07**	**23**	Pn	**P**	**11 53 15.2**	**-4.2**
	baz=208,slow=14						

*IGQ **04** 11:56:06.5,1.32S×78.98W,h134km±4km,mb4.0,Error ellipse: s-maj=2.1km s-min=1.5km az=114.1*
ISC 04 11:56:07.1±2.0,1.3S±0.1×79.0W±0.1,h131km±18km,n20, σ0§37/21,7C-3D,Ecuador

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IGUA	**Igualata**	**0.42**	**111**	P	**P**	**11 56 26.9**	**+0.8**
QIL1	**Quilotoa**	**0.50**	**11**	⇑P	**P**	**11 56 26.5**	**0.0**
ARRY	**Arrayan**	**0.60**	**106**	P	**P**	**11 56 26.8**	**-0.2**
PATA	**Patacocha**	**0.62**	**105**	P	**P**	**11 56 27.4**	**+0.3**
RUN2	**Runtun**	**0.62**	**98**	⇓P	**P**	**11 56 26.9**	**-0.3**
ULBA	**Ulba**	**0.63**	**100**	P	**P**	**11 56 26.9**	**-0.4**
NAS1	**Nasa**	**0.89**	**38**	⇑P	**P**	**11 56 29.6**	**+0.4**
TAMB	**Tambo**	**0.92**	**46**	⇓P	**P**	**11 56 29.4**	**-0.1**
TAMB				S	**S**	**11 56 46.4**	**-0.2**
VC1	**Cotopaxi 1**	**0.93**	**42**	⇓P	**P**	**11 56 29.7**	**+0.1**
JUA2	**San Juan 2**	**1.19**	**21**	⇑P	**P**	**11 56 32.2**	**-0.1**
CGGP	**Crater GGP**	**1.23**	**20**	⇑P	**P**	**11 56 33.1**	**+0.5**
GGP	**Refugio Guagua**	**1.23**	**21**	⇑P	**P**	**11 56 33.2**	**+0.5**
ANTI	**Antisana**	**1.24**	**44**	P	**P**	**11 56 32.2**	**-0.5**
PINO	**Pino**	**1.25**	**20**	⇑P	**P**	**11 56 33.0**	**+0.2**
YANA	**Yana**	**1.29**	**21**	⇑P	**P**	**11 56 33.2**	**-0.2**
JAMA	**Jama**	**1.59**	**312**	P	**P**	**11 56 36.2**	**-0.5**
CAYR	**Refugio Cayamb**	**1.69**	**37**	P	**P**	**11 56 38.2**	**+0.4**
CAYA	**Cayambe**	**1.74**	**37**	P	**P**	**11 56 38.4**	**0.0**
COTA	**Cotacachi**	**1.80**	**23**	P	**P**	**11 56 39.3**	**+0.2**
CONE	**Cono NE Rev Vo**	**1.87**	**48**	P	**P**	**11 56 39.4**	**-0.6**

BJI 04 12:01:22.5,37.58N×96.66E,h13km,ML3.6,Ms3.3, Msz3.1,Qinghai

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GTA	**Gaotai**	**3.08**	**53**	PG	Pg	12 02 17.9	-6.1
GTA				SG	Sg	12 02 58.7	-6.3
GTA				S	Sn		
	comp=N,72nm,0.7s						
GTA				S	Sn		
	comp=E,47nm,0.7s						
GTA				LR	LR		
	comp=N,468nm,10.6s						
GTA				LR	LR		
	comp=E,286nm,8.4s						
GTA				LR	LR		
	comp=Z,117nm,8.0s						
LZH	**Lanzhou**	**5.95**	**102**	*e*PG	Pg	12 03 10.3	-11
LZH				SG	Sg	12 04 26.7	-14
LZH				S	Sn		
	comp=N,52nm,0.6s						
LZH				S	Sn		
	comp=E,61nm,0.8s						
LZH				LR	LR		
	comp=N,271nm,7.8s						
LZH				LR	LR		
	comp=Z,304nm,8.2s						

*IDC **04** 12:23:50.1±4.3,36.98N×96.73E,mb3.4/3,mb1 3.5/5, mb1mx3.4/22,ML3.6/2,Error ellipse: s-maj=94.0km s-min=39.5km az=13.0*
*BJI **04** 12:23:56.8,37.47N×96.79E,h12km,mb3.6,ML3.4*
ISC 04 12:23:55.4±1.9,37.9N±0.2×96.63E±0.07,h12km,n6, σ1§37/8,mb3.4/3,Qinghai

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GTA	**Gaotai**	**2.94**	**57**	PG	**Pg**	**12 24 52.5**	**-1.6**
GTA				SG	**Sg**	**12 25 33.5**	**+0.2**
GTA				S	Sn		
	comp=N,24nm,0.9s						
GTA				S	Sn		
	comp=E,16nm,0.8s						
SONM	**Songino Array**	**12.28**	**32**	Pn	**P**	**12 26 55.6**	**+2.7**
	comp=E,0.2nm,0.3s,baz=216,slow=14,SNR=4.6						
MKAR	**Makanchi Array**	**13.86**	**315**	Pn	**P**	**12 27 12.2**	**-1.7**
	comp=E,0.1nm,0.3s,baz=121,slow=8.4,SNR=5.5						
MKAR				Sn	**S**	**12 29 48.4**	**-0.2**
	comp=E,0.0nm,0.3s,baz=16,slow=8.8,SNR=2.7						
BVAR	**Borovoye Array**	**23.68**	**318**	P	**P**	**12 29 09.7**	**+2.3**
	comp=E,0.7nm,0.8s,mb3.2,baz=121,slow=8.6,SNR=4.3						
INK	**Inuvik**	**67.75**	**18**	P	**P**	**12 34 54.0**	**-0.4**
	comp=E,1.1nm,0.8s,mb3.9,baz=308,slow=3.7,SNR=6.9						
YKA	**Yellowknife Ar**	**76.89**	**14**	P	**P**	**12 35 48.5**	**+0.1**
	comp=E,0.1nm,0.4s,mb3.1,baz=339,slow=5.3,SNR=3.7						

*DJA **04** 12:41:31.1±0.9,7.97S×120.20E,h645km±23km,MD4.5/4, ML5.0/1,Error ellipse: s-maj=178.4km s-min=50.8km az=2.0*
*BJI **04** 12:41:36.8,7.41S×120.87E,h589km,mB4.6,mb4.6*
*IDC **04** 12:41:37.9±1.4,7.20S×120.57E,h542km±17km,mb3.8/13, mb1 3.8/15,mb1mx3.7/23,Error ellipse: s-maj=16.9km s-min=6.7km az=64.0*
*NEIC **04** 12:41:38.8±0.3,7.30S×120.35E,mb4.5/14,Error ellipse: s-maj=11.7km s-min=6.7km az=56.0*
ISC 04 12:41:37.3±0.3,7.33S±0.04×120.30E±0.06,h559km±6km, n81,σ0§93/84,mb4.5/26,24C-7D,Flores Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEDI	**Kedomdong**	**4.31**	**254**	⇓*e*Pn	**P**	**12 43 03.0**	**+0.3**
KEDI				⇓*i*Sn	**S**	**12 44 11.3**	**+0.8**
RATI	**Rata**	**4.92**	**253**	⇓*e*Pn	**P**	**12 43 07.4**	**-0.2**
RATI				⇓*e*Sn	**S**	**12 44 18.8**	**-0.5**
RATI	**Rata**	**4.92**	**253**	⇓*e*Pn	**P**	**12 43 07.4**	**-0.2**
RATI				*e*Sn	**S**	**12 44 19.0**	**-0.3**
INGI	**Ingas**	**5.32**	**253**	⇓*e*Pn	**P**	**12 43 10.9**	**-0.1**
INGI				⇓*e*Sn	**S**	**12 44 23.5**	**-1.9**
INGI	**Ingas**	**5.32**	**253**	⇓*e*Pn	**P**	**12 43 11.4**	**+0.4**
INGI				*e*Sn	**S**	**12 44 24.3**	**-1.1**
KELI	**Kelakatan**	**5.83**	**261**	⇑*e*Pn	**P**	**12 43 16.2**	**+0.7**
	140nm,0.2s						
KELI				⇓*i*Sn	**S**	**12 44 31.6**	**-1.9**
KELI	**Kelakatan**	**5.83**	**261**	⇑*e*Pn	**P**	**12 43 16.2**	**+0.7**
KELI				*e*Sn	**S**	**12 44 31.6**	**-1.9**
FITZ	**Fitzroy Crossi**	**11.90**	**155**	⇑*i*P	**P**	**12 44 15.2**	**-0.1**
	45nm,0.6s						
FITZ				*e*S	**S**	**12 46 24.4**	**+2.2**
FITZ	**Fitzroy Crossi**	**11.90**	**155**	P	**P**	**12 44 15.2**	**0.0**
	5.5nm,0.3s,baz=354,slow=8.2,SNR=159						
FITZ				S	**S**	**12 46 24.1**	**+1.9**
	0.9nm,0.3s,baz=2.6,slow=21,SNR=8.7						
KKM	**Kota Kinabalu**	**13.89**	**343**	⇑*e*P	**P**	**12 44 34.7**	**-0.7**
	103nm,0.7s						
PAGZ	**Pagadian**	**15.38**	**12**	⇑*e*P	**P**	**12 44 51.0**	**+0.9**
BATP	**Bataraza**	**16.21**	**351**	⇑*e*P	**P**	**12 44 59.4**	**+1.3**
PPR	**Puerto Princes**	**17.06**	**355**	⇑*i*P	**P**	**12 45 08.1**	**+1.7**
	18nm,0.5s						
TBP	**Tagbilaran**	**17.27**	**12**	⇑*e*P	**P**	**12 45 08.5**	**+0.1**
MSLP	**Maasin**	**17.93**	**15**	⇑*e*P	**P**	**12 45 15.5**	**+0.9**
CUYO	**Cuyo Island**	**18.07**	**2**	⇑*e*P	**P**	**12 45 17.1**	**+1.1**
ENPP	**El Nido**	**18.43**	**357**	⇑*e*P	**P**	**12 45 20.8**	**+1.4**
WRA	**Warramunga Arr**	**18.51**	**134**	P	**P**	**12 45 18.5**	**-1.6**
	2.1nm,0.3s,baz=314,slow=11,SNR=105						
WRA				S	**S**	**12 48 19.1**	**-0.3**
	0.4nm,0.3s,baz=307,slow=17,SNR=7.7						
WRAB	**Tennant Creek**	**18.51**	**134**	*e*P	**P**	**12 45 21.2**	**+1.1**
	106nm,0.9s						
WB2	**Warramunga Arr**	**18.52**	**134**	*e*P	**P**	**12 45 19.4**	**-0.8**
WB2				*e*S	**S**	**12 48 18.5**	**-1.0**
KALP	**Kalibo**	**18.99**	**6**	*e*P	**P**	**12 45 24.6**	**-0.1**
BUSP	**Coron**	**19.20**	**360**	⇑*e*P	**P**	**12 45 27.8**	**+1.1**
BESP	**Borongan**	**19.49**	**15**	⇑*e*P	**P**	**12 45 30.2**	**+0.9**
OTRP	**Odiongan**	**19.64**	**5**	⇑*e*P	**P**	**12 45 31.1**	**+0.4**
SJMP	**San Jose**	**19.68**	**2**	⇑*e*P	**P**	**12 45 32.1**	**+1.0**
AS12	**Alice Springs**	**20.84**	**143**	*e*P	**P**	**12 45 41.2**	**-0.6**
	3.0nm,0.4s						
ASAR	**Alice Springs**	**20.84**	**143**	P	**P**	**12 45 41.7**	**-0.1**
	3.1nm,0.4s,baz=318,slow=8.9,SNR=40						
ASAR				S	**S**	**12 48 58.9**	**+0.7**
	3.7nm,0.9s,baz=335,slow=24,SNR=4.4						
ASAR				PcP	PcP	12 49 25.8	-0.8
	2.6nm,0.5s,baz=296,slow=1.3,SNR=8.1						
LUBP	**Lubang**	**20.92**	**360**	⇑*e*P	**P**	**12 45 43.1**	**+0.5**
PVCP	**Virac**	**21.14**	**10**	⇑*e*P	**P**	**12 45 43.5**	**-1.0**
TGY	**Tagaytay City**	**21.30**	**2**	P	**P**	**12 45 46.4**	**+0.3**
	239nm,0.8s,baz=151,slow=10,SNR=4.2						
BOLP	**Bolinao**	**23.56**	**359**	⇑*e*P	**P**	**12 46 05.1**	**-1.4**
CAUP	**Cauayan**	**24.16**	**4**	⇑*e*P	**P**	**12 46 11.0**	**-1.0**
PALP	**Palanan**	**24.32**	**5**	⇑*e*P	**P**	**12 46 07.7**	**-5.7**
APYP	**Conner**	**25.05**	**2**	⇑*e*P	**P**	**12 46 19.7**	**-0.1**
NWAO	**Narrogin (SRO)**	**25.63**	**186**	P	**P**	**12 46 26.0**	**+1.2**
	4.5nm,0.8s,mb4.2,baz=173,slow=21,SNR=2.7						
NWAO	**Narrogin (SRO)**	**25.63**	**186**	P	**P**	**12 46 26.0**	**+1.2**
PMG	**Port Moresby**	**26.25**	**96**	P	**P**	**12 46 32.7**	**-1.2**
	14nm,0.8s,mb4.6,baz=195,slow=5.3,SNR=3.6						
CTAO	**Charters Tower**	**28.17**	**119**	*e*P	**P**	**12 46 46.8**	**-0.3**
	10nm,1.0s,mb4.4						
STKA	**Stephens Creek**	**31.47**	**144**	*e*P	**P**	**12 47 15.6**	**+0.4**
	4.1nm,0.4s,mb4.3						
STKA	**Stephens Creek**	**31.47**	**144**	P	**P**	**12 47 15.7**	**+0.5**
	5.4nm,0.4s,mb4.4,baz=330,slow=6.8,SNR=32						
STKA				PcP	PcP	12 49 50.9	-0.7
	2.9nm,0.5s,baz=4.8,slow=4.1,SNR=4.7						
STKA				S	**S**	**12 51 46.0**	**+0.6**
	3.0nm,0.7s,baz=128,slow=19,SNR=5.3						
CMAR	**Chiang Mai Arr**	**33.17**	**321**	P	**P**	**12 47 30.2**	**+0.5**
	6.4nm,0.9s,mb4.2,baz=143,slow=6.5,SNR=28						
CHG	**Chiang Mai**	**33.44**	**321**	P	**P**	**12 47 32.5**	**+0.6**
JOW	**Kunigami**	**34.83**	**13**	P	**P**	**12 47 42.4**	**-1.0**
	12nm,0.7s,mb4.6,baz=166,slow=5.2,SNR=3.0						
KMI	**Kunming**	**36.51**	**333**	*e*P	**P**	**12 47 58.8**	**+1.5**
KMI				AMB	AMB		
	comp=Z,24nm,1.2s,mb4.6						
WHN	**Wuhan**	**38.09**	**352**	P	**P**	**12 48 10.5**	**+0.4**
ENH	**Enshi**	**38.80**	**345**	*e*P	**P**	**12 48 15.4**	**-0.5**
	comp=Z,25nm,0.9s,mb4.8						
CBIJ	**Chichi jima**	**40.25**	**31**	P	**P**	**12 48 26.1**	**-1.6**
	comp=Z,41nm,0.6s,mb5.2,baz=189,slow=16,SNR=3.6						
CD2	**Chengdu**	**41.19**	**338**	*e*P	**P**	**12 48 35.2**	**+0.1**
CD2				AMB	AMB		
	comp=Z,50nm,1.1s,mb5.0						
JHJ	**Hachijo jima 2**	**44.28**	**24**	P	**P**	**12 48 56.4**	**-3.1**
	comp=Z,101nm,0.8s,mb5.4,baz=90,slow=21,SNR=3.5						
LSA	**Lhasa**	**46.27**	**324**	P	**P**	**12 49 15.6**	**+0.8**
LSA	**Lhasa**	**46.27**	**324**	*e*P	**P**	**12 49 15.7**	**+0.9**
	comp=Z,16nm,0.6s,mb4.7						
MAT	**Matsushiro**	**46.76**	**20**	P	**P**	**12 49 15.1**	**-3.3**
MAT	**Matsushiro**	**46.76**	**20**	*e*P	**P**	**12 49 15.0**	**-3.4**
	comp=Z,14nm,1.2s,mb4.4						
BJT	**Baijiatuau**	**47.26**	**356**	*e*P	**P**	**12 49 21.0**	**-1.2**
	comp=Z,18nm,0.7s,mb4.7						
GUN	**Gumba**	**48.31**	**318**	*e*P	**P**	**12 49 30.1**	**-0.2**
	comp=Z,64nm,1.0s,mb5.1						
DMN	**Daman**	**48.63**	**317**	*e*P	**P**	**12 49 32.5**	**-0.2**
	comp=Z,15nm,0.6s,mb4.7						
KKN	**Kakani**	**48.63**	**317**	*e*P	**P**	**12 49 32.1**	**-0.6**
	comp=Z,18nm,0.6s,mb4.8						
GKN	**Gorkha**	**49.20**	**317**	*e*P	**P**	**12 49 36.7**	**-0.2**
	comp=Z,20nm,0.5s,mb4.9						
KOLN	**Koldanda**	**49.76**	**316**	*e*P	**P**	**12 49 40.8**	**-0.3**
	comp=Z,22nm,0.7s,mb4.7						
DANN	**Dangsing**	**50.02**	**317**	*e*P	**P**	**12 49 43.1**	**+0.2**
ASAJ	**Asahikawa**	**55.03**	**19**	P	**P**	**12 50 17.3**	**-1.2**
	comp=Z,8.2nm,0.9s,mb3.9,baz=247,slow=14,SNR=3.9						
ULN	**Ulaanbaatar**	**56.19**	**349**	*e*P	**P**	**12 50 25.5**	**-0.9**
	comp=Z,7.2nm,1.0s,mb3.9						
SONM	**Songino Array**	**56.28**	**349**	P	**P**	**12 50 26.6**	**-0.5**
	comp=Z,7.8nm,0.8s,mb4.0,baz=167,slow=7.7,SNR=32						
MKAR	**Makanchi Array**	**63.58**	**332**	P	**P**	**12 51 15.8**	**+0.4**
	comp=Z,6.7nm,0.8s,mb4.1,baz=139,slow=7.9,SNR=35						
ZAL	**Zalesovo**	**67.96**	**338**	P	**P**	**12 51 41.5**	**-0.8**
	comp=Z,5.8nm,0.4s,mb4.5,baz=257,slow=4.4,SNR=3.5						
KURK	**Kurchatov**	**68.09**	**333**	⇓*i*P	**P**	**12 51 43.4**	**+0.2**
KURK				*e*		12 52 26.2	
KURK				*e*pP	pP	12 53 39.4	+1.1
KURK				*e*		12 54 47.5	
MAW	**Mawson**	**71.24**	**200**	*e*P	**P**	**12 52 01.5**	**-0.1**
	comp=Z,11nm,1.2s,mb4.3						
MAW				*e*pP	pP	12 53 57.6	-0.4
BVAR	**Borovoye Array**	**73.45**	**331**	P	**P**	**12 52 14.3**	**-0.2**
	comp=Z,0.6nm,0.3s,baz=127,slow=7.4,SNR=7.1						
BRVK	**Borovoye**	**73.52**	**331**	*e*P	**P**	**12 52 14.7**	**-0.1**
ZRNK	**Zerenda**	**74.07**	**331**	*e*P	**P**	**12 52 17.7**	**-0.2**
QSPA	**South Pole Qui**	**82.66**	**180**	*e*P	**P**	**12 53 04.7**	**+1.8**
	comp=Z,4.3nm,0.6s,mb4.2						
YKA	**Yellowknife Ar**	**112.15**	**24**	PKiKP		12 59 10.6	
	comp=Z,0.2nm,0.8s,baz=298,slow=1.7,SNR=4.2						
NVAR	**Mina Array Bea**	**118.96**	**50**	PKP	PKPdf	12 59 26.3	+3.4
	comp=Z,0.6nm,0.7s,baz=277,slow=1.3,SNR=5.4						
PDAR	**Pinedale Array**	**123.82**	**43**	PKP	PKPdf	12 59 34.7	+2.5
	comp=Z,0.4nm,0.9s,baz=315,slow=3.8,SNR=3.2						
DBIC	**Dimbokro**	**125.59**	**273**	PKP	PKPdf	12 59 38.9	+2.5
	comp=Z,0.9nm,0.6s,baz=275,slow=21,SNR=3.2						
PLCA	**Paso Flores**	**131.15**	**169**	PKP	PKPdf	12 59 50.7	+4.4
	comp=Z,2.0nm,0.9s,baz=293,slow=7.6,SNR=3.0						
SCHQ	**Schefferville**	**132.28**	**6**	PKP	PKPdf	12 59 50.9	+2.9
	comp=Z,2.2nm,0.9s,baz=130,slow=18,SNR=2.1						
TXAR	**Lajitas Array**	**133.25**	**56**	PKP	PKPdf	12 59 53.9	+3.4
	comp=Z,0.5nm,0.3s,baz=135,slow=1.8,SNR=3.8						
TXAR	**Lajitas Array**	**133.25**	**56**	PKP	PKPdf	12 59 53.9	+3.4
CPUP	**Villa Florida**	**146.47**	**184**	PKPbc	PKPbc	13 00 19.6	+3.6
	comp=Z,7.0nm,0.8s,baz=218,slow=3.2,SNR=8.0						
LPAZ	**La Paz**	**155.10**	**160**	PKPab	PKPab	13 00 59.0	+1.4
	comp=Z,3.5nm,0.9s,baz=166,slow=3.6,SNR=8.0						

*NEIC **04** 13:36:56.4±0.8,11.48N×144.42E,h10km,mb4.7/3,Error ellipse: s-maj=44.0km s-min=12.2km az=93.0*
*IDC **04** 13:36:56.7±1.1,11.49N×143.71E,mb3.7/8,mb1 3.9/8, mb1mx3.8/21,Error ellipse: s-maj=47.5km s-min=18.1km az=91.0*
ISC 04 13:36:55.3±0.7,11.49N±0.08×144.0E±0.2,h10km,n13, σ1§14/13,mb3.8/9,South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**2.24**	**21**	*e*P	**Pn**	**13 37 31.1**	**-1.9**
PMG	**Port Moresby**	**21.00**	**171**	*e*P	**P**	**13 41 37.7**	**-3.8**
	16nm,0.9s						
MAJO	**Matsushiro**	**25.49**	**349**	*e*P	**P**	**13 42 27.1**	**+1.7**
	17nm,1.3s,mb4.4						
CTAO	**Charters Tower**	**31.46**	**176**	P	**P**	**13 43 19.4**	**0.0**
	117nm,2.1s						
WRAB	**Tennant Creek**	**32.65**	**197**	P	**P**	**13 43 29.2**	**-0.7**
WRA	**Warramunga Arr**	**32.66**	**197**	P	**P**	**13 43 30.7**	**+0.7**
	1.0nm,0.9s,mb3.7,baz=18,slow=9.5,SNR=4.5						
FITZ	**Fitzroy Crossi**	**34.56**	**212**	P	**P**	**13 43 45.0**	**-1.4**
	4.8nm,1.1s,mb4.3,baz=233,slow=23,SNR=2.3						
ASAR	**Alice Springs**	**36.32**	**196**	P	**P**	**13 44 02.2**	**+0.9**
	0.3nm,0.7s,mb3.4,baz=17,slow=9.5,SNR=4.4						
STKA	**Stephens Creek**	**43.19**	**183**	P	**P**	**13 44 58.5**	**+0.3**
	1.3nm,0.7s,mb3.8,baz=90,slow=19,SNR=2.5						
SONM	**Songino Array**	**47.99**	**326**	P	**P**	**13 45 36.1**	**-0.2**
	0.6nm,0.7s,mb3.8,baz=117,slow=6.4,SNR=2.4						
MKAR	**Makanchi Array**	**62.44**	**317**	P	**P**	**13 47 21.1**	**+0.1**

SAPN	Saipan	1.16	28	⇑	*i* P	Pn	14 02 04.7	+1.1
CBIJ	Chichi jima	13.15	348		LR	LR	14 08 07.0	
	comp=Z,79nm,19.7s,baz=123,slow=30							
TGY	Tagaytay City	23.52	273		P	P	14 06 55.5	+3.6
	45nm,0.3s,mb5.3,baz=262,slow=16,SNR=2.5							
PMG	Port Moresby	23.52	175		LR	LR	14 14 14.7	
	comp=Z,58nm,20.1s,MS3.0,baz=16,slow=32							
PMG	Port Moresby	23.52	175		P	P	14 06 48.6	-3.4
ASAJ	Asahikawa	29.91	356		LR	LR	14 18 38.9	
	comp=Z,46nm,20.6s,MS3.1,baz=285,slow=34							
WRA	Warramunga Arr	35.55	198		P	P	14 08 39.8	-0.3
	1.5nm,0.9s,mb3.9,baz=21,slow=9.6,SNR=5.4							
FITZ	Fitzroy Crossi	37.43	212		P	P	14 08 56.0	+0.1
	2.4nm,1.0s,mb4.0,baz=152,slow=12,SNR=2.2							
ASAR	Alice Springs	39.20	196		P	P	14 09 11.5	+0.8
	0.3nm,0.5s,mb3.2,baz=22,slow=12,SNR=5.3							
ASAR					LR	LR	14 26 49.3	
	comp=Z,60nm,18.1s,MS3.5,baz=292,slow=38							
CMAR	Chiang Mai Arr	44.50	282		P	P	14 09 55.8	+1.6
	1.4nm,0.7s,mb3.8,baz=81,slow=5.9,SNR=9.3							
STKA	Stephens Creek	45.92	184		P	P	14 10 05.8	+0.3
	2.7nm,0.9s,mb4.2,baz=302,slow=20,SNR=3.5							
SONM	Songino Array	46.43	324		P	P	14 10 07.7	-1.4
	2.0nm,0.9s,mb4.0,baz=135,slow=7.0,SNR=5.9							
LSA	Lhasa	52.01	297		P	P	14 10 52.6	+0.2
	3.5nm,0.7s,mb4.4							
LSA					LR	LR		
	comp=Z,21nm,16.8s,MS3.2							
GUN	Gumba	56.53	294		*e*P	P	14 11 25.4	-0.2
	comp=Z,46nm,1.3s,mb5.3							
DMN	Daman	57.21	294		*e*P	P	14 11 30.7	+0.2
GKN	Gorkha	57.63	294		*e*P	P	14 11 33.3	-0.1
	comp=Z,36nm,1.2s,mb5.3							
DANN	Dangsing	58.41	295		*e*P	P	14 11 39.9	+1.1
KOLN	Koldanda	58.55	294		*e*P	P	14 11 39.8	0.0
	comp=Z,19nm,1.0s,mb5.1							
MKAR	Makanchi Array	61.28	316		P	P	14 11 58.6	+0.3
	comp=Z,4.9nm,0.6s,mb4.8,baz=92,slow=8.8,SNR=50							
ZAL	Zalesovo	61.33	324		P	P	14 11 58.5	-0.1
	comp=Z,0.6nm,0.6s,mb3.9,baz=298,slow=8.8,SNR=3.8							
KURK	Kurchatov	64.33	320		*e*P	P	14 12 18.6	+0.2
ILAR	Eielson Array	67.90	25		P	P	14 12 38.1	-2.9
	comp=Z,0.9nm,1.0s,mb3.8,baz=255,slow=5.6,SNR=6.8							
BRVK	Borovoye	69.72	322		*e*P	P	14 12 51.2	-1.2
ZRNK	Zerenda	70.49	321		*e*P	P	14 12 56.6	-0.5
YKA	Yellowknife Ar	82.19	27		P	P	14 14 01.1	-1.5
	comp=Z,0.4nm,0.8s,mb3.4,baz=286,slow=5.2,SNR=5.9							
NVAR	Mina Array Bea	86.31	51		P	P	14 14 25.6	+1.6
	comp=Z,1.6nm,0.5s,mb4.5,baz=272,slow=4.4,SNR=15							
ARCES	ARCESS Array B	86.62	342		P	P	14 14 24.6	-0.2
	comp=Z,2.2nm,0.8s,mb4.4,baz=53,slow=9.0,SNR=3.3							
HWUT	Hardware Ranch	90.32	47		*e*P	P	14 14 43.3	+0.2
	comp=Z,3.9nm,1.3s,mb4.6							
FINES	FINESS Array B	90.76	335		P	P	14 14 43.2	-1.3
	comp=Z,0.8nm,0.6s,mb4.2,baz=76,slow=7.9,SNR=4.7							
PDAR	Pinedale Array	91.33	45		P	P	14 14 49.1	+1.4
	comp=Z,0.2nm,0.4s,mb3.8,baz=236,slow=3.3,SNR=2.4							
LPAZ	La Paz	147.80	98		PKPbc	PKPdf	14 21 29.2	+1.0
	comp=Z,0.9nm,0.5s,baz=56,slow=3.6,SNR=3.2							

IDC 04 14:19:58.0±39.0, 8.15N×126.51E, mb3.7/3, mb1 3.9/3, mb1mx3.5/18, MS3.9/1, Ms1 3.9/1, ms1mx3.0/24, Error ellipse: s-maj=663.0km s-min=194.6km az=160.0, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JOW	Kunigami	18.66	5	LR	LR	14 30 23.1	
	comp=Z,340nm,20.1s,baz=77,slow=34						
WRA	Warramunga Arr	28.96	165	P	P	14 25 59.6	-1.9
	0.3nm,0.3s,baz=345,slow=10.0,SNR=5.9						
ASAR	Alice Springs	32.44	167	P	P	14 26 30.0	-2.2
	0.3nm,0.4s,baz=352,slow=7.6,SNR=16						
STKA	Stephens Creek	42.33	161	P	P	14 27 53.7	-1.9
	0.7nm,0.5s,baz=331,slow=10,SNR=3.7						

*NEIC **04** 14:44:48.1±0.8, 76.64N×8.75E, h10km, Error ellipse: s-maj=14.5km s-min=11.2km az=77.0*
*NAO **04** 14:44:52.0±7.2, 76.62N×10.79E, h24km±59km, ML3.0*
*IDC **04** 14:44:52.2±4.6, 76.59N×9.29E, h22km±33km, mb3.5/5, mb1 3.7/9, mb1mx3.6/23, ML3.2/4, MS3.4/4, Ms1 3.4/4, ms1mx2.7/32, Error ellipse: s-maj=15.8km s-min=10.2km az=74.0*
*BER **04** 14:44:53.3±4.1, 76.91N×10.47E, h14km±58km, MD2.6, ML2.5, ML3.0(NAO)*

ISC 04 14:44:48.9±2.7, 76.61N±0.04×9.7E±0.3, h15km±19km, n28, σ1§47/34, mb3.5/5, MS3.5/3, Svalbard region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SPB4	Spitsbergen Ar	2.15	40	*e*P	Pn	14 45 25.7	+1.0
SPB4				*e*S	Sn	14 45 49.5	-1.8
SPA0	Spitsbergen Ar	2.15	40	Pn	Pn	14 45 25.6	+0.9
	baz=224,slow=16						
SPA0				Lg		14 45 53.1	
	baz=239,slow=28						
SPITS	Spitsbergen Ar	2.15	40	Pn	Pn	14 45 25.6	+0.8
	27nm,0.3s,baz=217,slow=16,SNR=1928						
SPITS				Sn	Sn	14 45 52.3	+1.0
	29nm,0.3s,baz=232,slow=21,SNR=16						
KBS	Kingsbay	2.38	11	Pn	Pn	14 45 25.8	-2.3
KBS				Sn	Sn	14 45 51.0	-6.2
KBS	Kingsbay	2.38	11	*e*P	Pn	14 45 25.7	-2.3
KBS				*e*Sg	Sg	14 45 52.1	-16
KBS				AML	AML	14 45 55.0	
	comp=Z,99nm,0.5s						
KBS	Kingsbay	2.38	11	*e*P	Pn	14 45 25.7	-2.4
KBS				*e*S	Sn	14 45 47.4	-10
BJO	Bjornoya	3.18	127	*e*P	Pn	14 45 42.0	+2.6
BJO				*e*S	Sn	14 46 16.3	-1.1
BJO				AML	AML	14 46 19.7	
	comp=Z,17nm,0.8s						
DAG	Danmarks Havn	6.51	285	*i* P	Pn	14 46 20.0	-6.5
DAG				*i*		14 47 24.5	
DAG	Danmarks Havn	6.51	285	*e*P	Pn	14 46 20.0	-6.5
DAG				*i*		14 47 24.5	
ARA0	ARCESS Array S	8.43	139	Pn	P	14 46 48.8	-4.6
	baz=332,slow=12						
ARA0				Sn	Sn	14 48 20.2	-9.0
	baz=334,slow=22						
ARCES	ARCESS Array B	8.43	139	Pn	P	14 46 51.2	-2.2
	comp=Z,0.4nm,0.3s,baz=337,slow=9.2,SNR=50						
ARCES				Sn	Sn	14 48 20.9	-8.3
	comp=Z,0.8nm,0.3s,baz=340,slow=21,SNR=6.7						
ARCES				LR	LR	14 50 24.6	
	comp=Z,98nm,18.4s,baz=289,slow=39						
KTK1	Kautokeino	8.59	146	*e*P	P	14 46 55.8	+0.2
KTK1				*e*S	Sn	14 48 25.6	-7.5
KTK1				AML	AML	14 48 31.5	
	comp=Z,4.8nm,0.7s						
LOF	Lofoten	8.60	170	*e*P	P	14 46 55.8	+0.1
NAO01	NORSAR Array S	15.85	178	P	P	14 48 28.8	-3.8
FIA0	FINESS Array S	16.20	151	P	P	14 48 37.6	+0.5
	baz=2.2,slow=18						
FINES	FINESS Array B	16.20	151	Pn	P	14 48 36.7	-0.4
	comp=Z,0.1nm,0.3s,baz=16,slow=14,SNR=5.0						
HFS	Hagfors	16.61	173	P	P	14 48 42.6	+0.3
HFS	Hagfors	16.61	173	Pn	P	14 48 42.1	-0.2
	comp=Z,0.0nm,0.3s,baz=8.1,slow=10,SNR=2.5						
FRB	Frobisher Bay	26.86	285	LR	LR	15 00 36.2	
	comp=Z,114nm,19.3s,MS3.5,baz=94,slow=35						
AKASG	Malin Array Be	27.10	152	P	P	14 50 33.0	+0.6
	comp=Z,0.1nm,0.2s,mb2.9,baz=339,slow=9.4,SNR=2.7						
KURK	Kurchatov	36.49	94	*e*P	P	14 51 56.8	+2.1
YKA	Yellowknife Ar	36.84	320	P	P	14 51 56.2	-1.3
	comp=Z,0.4nm,0.8s,mb3.3,baz=13,slow=8.8,SNR=5.6						
YKA	Yellowknife Ar	36.84	320	P	P	14 51 56.2	-1.3
ILAR	Eielson Array	38.10	344	P	P	14 52 09.3	+1.2
	comp=Z,1.1nm,0.7s,mb3.7,baz=4.3,slow=6.9,SNR=20						
MKAR	Makanchi Array	41.02	93	P	P	14 52 35.8	+3.3
	comp=Z,1.9nm,1.0s,mb3.7,baz=339,slow=7.6,SNR=8.6						
SADO	Sadowa	46.70	282	LR	LR	15 12 23.4	
	comp=Z,42nm,20.1s,MS3.4,baz=123,slow=35						
NVAR	Mina Array Bea	60.71	315	P	P	14 55 01.1	-0.4
	comp=Z,1.2nm,0.9s,mb4.0,baz=32,slow=5.5,SNR=7.0						
TXAR	Lajitas Array	66.84	299	LR	LR	15 23 36.0	
	comp=Z,49nm,20.1s,MS3.7,baz=285,slow=35						

*IDC **04** 14:47:10.0±9.5, 7.55S×128.25E, h91km±106km, mb3.9/2, mb1 4.1/5, mb1mx3.7/13, ML4.2/3, MS3.3/1, Ms1 3.3/1, ms1mx2.7/20, Error ellipse: s-maj=67.7km s-min=57.0km az=29.0*
*NEIC **04** 14:47:14.8±0.8, 7.74S×128.35E, h145km, Error ellipse: s-maj=41.0km s-min=11.0km az=68.0*

ISC 04 14:47:17.7±2.9, 8.0S±0.1×128.3E±0.1, h199km±32km, n12, σ0§71/16, mb3.8/2, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FITZ	Fitzroy Crossi	10.40	194	*e*P	P	14 49 42.4	-0.6
	5.5nm,0.3s						
FITZ				*e*S	S	14 51 36.6	-0.2
FITZ	Fitzroy Crossi	10.40	194	P	P	14 49 42.7	-0.3
	2.8nm,0.3s,baz=20,slow=9.3,SNR=90						
FITZ				S	S	14 51 37.2	+0.4
	2.4nm,0.3s,baz=158,slow=9.5,SNR=5.1						
WRAB	Tennant Creek	13.23	155	*e*P	P	14 50 18.5	-0.5
	86nm,1.5s						
WRA	Warramunga Arr	13.23	155	P	P	14 50 19.6	+0.5
	1.3nm,0.3s,baz=342,slow=12,SNR=19						
WRA				S	S	14 52 42.3	+0.3
	2.6nm,0.3s,baz=330,slow=23,SNR=11						
WB2	Warramunga Arr	13.24	155	*e*P	P	14 50 19.1	0.0
WB2				*e*S	S	14 52 41.4	-0.8
AS12	Alice Springs	16.48	162	*e*P	P	14 51 02.4	+3.1
	2.2nm,0.5s						
ASAR	Alice Springs	16.48	162	P	P	14 51 02.4	+3.1
	0.6nm,0.3s,baz=334,slow=11,SNR=38						
ASAR				S	S	14 54 02.4	+7.2
	0.7nm,0.3s,baz=321,slow=17,SNR=5.7						
JNU	Nakatsue	40.95	3	LR	LR	15 12 35.1	
	comp=Z,40nm,19.0s,baz=275,slow=38						
MKAR	Makanchi Array	68.16	328	P	P	14 57 58.4	+0.1
	0.7nm,0.4s,mb3.7,baz=124,slow=8.0,SNR=24						
ZAL	Zalesovo	71.75	335	P	P	14 58 19.1	-0.8
	1.0nm,0.3s,mb3.9,baz=334,slow=2.0,SNR=3.8						
KURK	Kurchatov	72.51	329	*e*P	P	14 58 24.5	+0.1
ZRNK	Zerenda	78.71	328	*e*P	P	14 58 59.7	+0.4

*IDC **04** 15:25:11.1±8.2, 6.33S×151.35E, h160km±53km, mb2.8/3, mb1 3.0/4, mb1mx2.9/13, Error ellipse: s-maj=97.7km s-min=37.9km az=104.0*

ISC 04 15:25:06.2±6.5, 6.5S±0.4×151.8E±0.5, h141km±46km, n4, σ0§24/5, mb3.1/3, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PMG	Port Moresby	5.41	237	P	P	15 26 25.9	0.0
	0.3nm,0.3s,baz=159,slow=19,SNR=2.2						
PMG				S	S	15 27 27.6	0.0
	1.0nm,0.3s,baz=137,slow=21,SNR=4.1						
WRA	Warramunga Arr	21.58	230	P	P	15 29 45.4	-0.2
	0.5nm,0.9s,mb2.9,baz=49,slow=10.0,SNR=2.1						
ASAR	Alice Springs	24.23	223	P	P	15 30 11.4	+0.1
	0.2nm,0.5s,mb2.9,baz=57,slow=9.0,SNR=7.6						
MKAR	Makanchi Array	80.90	319	P	P	15 37 06.1	0.0
	0.5nm,0.6s,mb3.3,baz=90,slow=5.8,SNR=5.7						

*NEIC **04** 15:27:50.4, 31.44S×71.69W, h53km, MD3.7(GUC), After GUC.*

GUC 04 15:27:50.4±0.8, 31.44S×71.69W, h53km±10km, MD3.7, ML3.3, 8C-3D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ILCH	Illapel	0.48	114	⇓ *i* P	P	15 28 02.1	+0.5
ILCH				*i* S	S	15 28 10.7	+0.9
ILCH				AMP		15 28 11.2	
	comp=N,2μm,0.2s						
CMCH	Combarbala	0.64	66	⇑ *i* P	P	15 28 04.4	+0.8
CMCH				*i* S	S	15 28 14.6	+1.2
CMCH				AMP		15 28 15.3	
	comp=E,6μm,0.5s						
OVCH	Ovalle	0.93	27	⇑ *i* P	P	15 28 07.8	+0.4
OVCH				*i* S	S	15 28 20.6	+0.5
OVCH				AMP		15 28 21.8	
	comp=E,1μm,0.3s						
PTCH	Petorca	1.04	142	⇑ *i* P	P	15 28 09.6	+0.6
PTCH				*i* S	S	15 28 23.1	+0.3
PTCH				AMP		15 28 25.0	
	comp=E,3μm,0.1s						
PACH	Papudo	1.11	169	⇑ *i* P	P	15 28 09.9	0.0
TLL	Tololo Astrono	1.48	31	⇓ *i* P	P	15 28 15.4	+0.2
TLL				*i* S	S	15 28 34.0	+0.4
TLL				AMP		15 28 37.5	
	comp=N,326nm,0.5s						
JACH	Jahuel	1.55	143	⇓ *i* P	P	15 28 16.6	+0.5
JACH				*i* S	S	15 28 35.6	+0.5
ROCH	El Roble	1.63	160	*i* P	P	15 28 17.3	0.0
PEL	Peldehue	1.90	154	*i* P	P	15 28 21.2	+0.2
LCCH	Las Cruces	2.03	177	⇑ *i* P	P	15 28 22.5	-0.4
RCDM	Rinconada Maip	2.17	160	*i* P	P	15 28 24.9	-0.1
RCDM				AMP		15 28 58.4	
	comp=E,302nm,0.2s						
CLCH	Cerro Calan	2.18	154	⇑ *i* P	P	15 28 25.1	+0.1
CLCH				AMP		15 29 05.0	
	comp=E,189nm,0.7s						
FCH	Farellones	2.22	148	⇑ *i* P	P	15 28 26.0	+0.4
FCH				AMP		15 28 56.2	
	comp=E,156nm,0.3s						
TACH	Talagante	2.29	164	*i* P	P	15 28 26.7	+0.1
PCH	Pirque	2.39	156	*i* P	P	15 28 28.0	0.0
CHCH	Chadas Angostu	2.63	161	*i* P	P	15 28 31.1	-0.4
LMEL	Las Melosas	2.71	153	*i* P	P	15 28 33.0	+0.5
LMEL				*i* S	S	15 29 04.5	+0.4
LMEL				AMP		15 29 12.3	
	comp=N,187nm,0.1s						
CICH	Cipreses	3.06	160	*i* P	P	15 28 37.4	-0.1
SFDO	San Fernando	3.21	170	⇑ *i* P	P	15 28 39.2	-0.5

KRSC 04 15:32:52.5±0.8, 52.79N×159.03E, h95km±2km, ML3.9, Off east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PET	Petropavlovsk	0.33	316	*i* P	P	15 33 07.0	+0.3
PET				*i* S	S	15 33 17.0	-0.5
NLC	Nalytchevo	0.43	26	*i* P	P	15 33 08.0	+0.6
NLC				*i* S	S	15 33 19.4	+0.9
UGLR	Uglovaya	0.44	344	*e*P	P	15 33 08.0	+0.6
UGLR				*i* S	S	15 33 19.5	+0.8
RUS	Russkaya	0.48	222	*e*P	P	15 33 08.2	+0.4
RUS				*i* S	S	15 33 19.5	+0.4
SMAR	Somma	0.49	344	*e*P	P	15 33 08.6	+0.7
SMAR				*e*S	S	15 33 20.9	+1.5
SDLR	Sedlovina	0.50	350	*e*P	P	15 33 08.2	+0.3
SDLR				*i* S	S	15 33 19.8	+0.4
AVH	Avacha	0.51	340	*i* P	P	15 33 08.7	+0.7
AVH				*i* S	S	15 33 20.7	+1.2
KRMR	Karymshinskiy	0.55	275	*i* P	P	15 33 08.3	0.0
KRMR				*i* S	S	15 33 20.3	+0.2
KOK	Koryaka	0.56	335	*e*P	P	15 33 09.0	+0.6
KOK				*i* S	S	15 33 20.8	+0.6
GRL	Gorelyy	0.63	248	*i* P	P	15 33 10.2	+1.2
GRL				*i* S	S	15 33 23.5	+2.2
SPN	Mys Shipunski	0.68	62	*i* P	P	15 33 10.0	+0.6
SPN				*i* S	S	15 33 22.5	+0.4
GNL	Ganaly	1.12	325	*i* P	P	15 33 14.1	-0.1
GNL				*i* S	S	15 33 30.2	-0.3
APC	Apacha	1.14	278	*i* P	P	15 33 15.3	+0.7
APC				*i* S	S	15 33 31.8	+0.8
APC				Smax			
	440nm,1.0s						
KII	Karymskiy	1.27	11	*e*P	P	15 33 16.5	+0.3
KII				*i* S	S	15 33 34.2	+0.3
MIPR	Malaya Ipel'ka	1.48	251	*i* P	P	15 33 19.8	+1.1
MIPR				*e*S	S	15 33 40.1	+2.0
PAU	Pauzhetka	1.90	227	*i* P	P	15 33 25.7	+1.6
PAU				*e*S	S	15 33 49.7	+2.3
PAU				Smax			
	220nm,0.6s						
MKZ	Mys Kozlova	2.39	41	*e*P	P	15 33 30.3	-0.5
MKZ				*e*S	S	15 33 57.9	-1.3
TUMR	Tumrok	2.58	14	*i* P	P	15 33 34.6	+1.2
TUMR				*e*S	S	15 34 05.9	+1.9
SKR	Severo-Kuril's	2.78	222	*e*P	P	15 33 36.9	+0.7
SKR				*e*S	S	15 34 09.1	+0.2
ALID	Alaid	2.89	230	*e*P	P	15 33 37.8	+0.1
ALID				*e*S	S	15 34 11.9	+0.3
KMNR	Kamenistaya	3.06	13	*e*P	P	15 33 41.0	+1.1
KMNR				*e*S	S	15 34 16.8	+1.2
ESO	Esso	3.15	357	*i* P	P	15 33 41.1	-0.1
ESO				*e*S	S	15 34 17.9	0.0
ESO				Smax			
	40nm,1.3s						
KPT	Kopyto	3.26	12	*i* P	P	15 33 43.4	+0.7
KPT				*e*S	S	15 34 21.5	+0.9
KOZ	Kozyrevsk	3.31	8	*e*P	S	15 33 43.7	+0.2
KOZ				*e*S	S	15 34 21.6	-0.3
ZLN	Zelenaya	3.40	17	*i* P	P	15 33 45.9	+1.3
ZLN				*e*S	S	15 34 25.2	+1.2
LGNR	Loginova	3.44	16	*e*P	P	15 33 46.8	+1.6
LGNR				*e*S	S	15 34 27.2	+2.1
CIRR	Tsirk	3.48	16	*e*P	P	15 33 47.6	+1.8
CIRR				*e*S	S	15 34 28.8	+2.7
SRDR	Sredinnyy	3.56	6	*e*P	P	15 33 46.5	-0.3
KLY	Klyuchi	3.66	14	*e*P	P	15 33 49.5	+1.3
KLY				*e*S	S	15 34 31.7	+1.3
SVLR	Shiveluch	4.00	18	*e*P	P	15 33 53.9	+1.0
SVLR				*e*S	S	15 34 39.0	+0.1
KBTR	Krutoberegovo	4.08	31	*e*P	P	15 33 53.6	-0.3
KBTR				*e*S	S	15 34 39.3	-1.4
KBG	Krutoberegovo	4.08	30	*e*P	P	15 33 56.7	+2.7
KBG				*e*S	S	15 34 43.2	+2.4
KBG				Smax			
	300nm,1.1s						
BKI	Bering	4.76	57	*i* P	P	15 34 01.7	-1.6
BKI				*i* S	S	15 34 50.7	-6.9
BKI				Smax			
	40nm,0.3s						

*NIED **04** 15:36:00, 44.80N×149.40E, h35km, Mw3.9 Best double couple: M0 7.33×10^14 NP1:φs280°, δ83°, λ-137°. NP2: φs184°, δ47°, λ-9°.*
*MOS **04** 15:36:34.9±1.0, 44.77N×149.25E, h73km, mb4.8/2, Error ellipse: s-maj=14.7km s-min=12.7km az=64.5*
*SKHL **04** 15:36:35.4±1.0, 44.78N×149.34E, h51km±18km, mb5.3/3, msh4.5/1*
*NEIC **04** 15:36:38.1±1.8, 44.82N×149.18E, h79km±16km, mb4.3/3, Error ellipse: s-maj=14.1km s-min=9.9km az=146.0*
*IDC **04** 15:36:38.3±3.7, 44.82N×149.18E, h80km±34km, mb3.4/9, mb1 3.7/11, mb1mx3.5/24, Error ellipse: s-maj=25.0km s-min=16.4km az=130.0*

ISC 04 15:36:34.8±1.1, 44.85N±0.08×149.22E±0.08, h64km±9km, n34, σ0§86/39, mb3.9/12, 1C-5D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KUR	Kuril'sk	1.03	292	⇑ *i* P	P	15 36 53.9	+0.1
KUR				AMB	AMB	15 36 54.5	
	2μm,6.0s						
KUR				AMB	AMB	15 36 54.5	
	510nm,0.4s						
KUR				AMB	AMB	15 36 54.5	
	320nm,0.4s						
KUR				AMB	AMB	15 36 54.5	
	1μm,0.4s						
KUR				*i* S	S	15 37 08.5	+0.8
KUR				A		15 37 09.5	
	5μm,0.5s						
KUR				A		15 37 09.5	
	3μm,0.5s						
KUR				A		15 37 10.4	
	10μm,3.0s						
KUR				A		15 37 10.4	
	12μm,3.0s						
KUR	Kuril'sk	1.03	292	⇓ *i* PN	P	15 36 53.9	+0.1
KUR				*i* S	S	15 37 08.5	+0.8
KUR				pmax	pmax		
	comp=N,510nm,0.4s						
KUR				pmax	pmax		
	comp=E,320nm,0.4s						
KUR				pmax	pmax		
	comp=Z,1μm,0.4s						
KUR				smax			
	comp=N,5μm,0.4s						
KUR				smax			
	comp=E,3μm,0.4s						
KUR				smax			
	comp=Z,2μm,6.0s						
KUR				smax			
	comp=N,10μm,3.0s						
KUR				smax			
	comp=E,12μm,3.0s						
YUK	Yuzh-Kuril'sk	2.54	252	⇓ *i* P	P	15 37 14.5	-0.2
YUK				AMB	AMB	15 37 17.5	
	comp=E,570nm,0.2s						
YUK				*i* S	S	15 37 43.1	-1.3
YUK				A		15 37 46.5	
	comp=E,570nm,0.5s						
YUK				A		15 37 46.5	
	comp=E,1μm,0.5s						
YUK				A		15 37 49.0	
	comp=E,3μm,1.0s						
YUK	Yuzh-Kuril'sk	2.54	252	⇓ *i* PN	P	15 37 14.5	-0.2
YUK				*i* S	S	15 37 43.1	-1.3
YUK				pmax	pmax		
	comp=Z,570nm,0.3s						
YUK				smax			
	comp=N,570nm,0.5s						
YUK				smax			
	comp=E,1μm,0.5s						
YUK				smax			
	comp=N,3μm,1.0s						
ASAJ	Asahikawa	4.79	264	P	P	15 37 47.9	+1.6
	comp=N,2.6nm,0.3s,baz=270,slow=28,SNR=13						
ASAJ	Asahikawa	4.79	264	PN	P	15 37 47.9	+1.6
ASAJ				pmax	pmax		
	comp=Z,3.0nm,0.3s						
YSS	Yuzh-Sakhalins	4.98	297	*e*P	P	15 37 52.2	+3.4
YSS				*e*S	S	15 38 44.8	-0.9
YSS				A		15 38 51.0	
	comp=Z,30nm,0.5s						
YSS	Yuzh-Sakhalins	4.98	297	*e*P	P	15 37 50.2	+1.4
SKR	Severo-Kuril's	7.46	36	*e*P	P	15 38 21.9	-1.4
SKR				AMB	AMB	15 38 26.7	
	comp=Z,60nm,0.5s						
SKR				AMB	AMB	15 38 26.7	
	comp=Z,50nm,0.5s						
SKR				AMB	AMB	15 38 26.7	
	comp=Z,80nm,0.5s						
SKR				*e*S	S	15 39 46.0	-1.2
SKR				A		15 39 50.9	
	comp=Z,60nm,0.5s						
SKR				A		15 39 50.9	
	comp=Z,30nm,0.5s						
SKR	Severo-Kuril's	7.46	36	*e*PN	P	15 38 21.9	-1.4
SKR				*e*S	S	15 39 46.0	-1.2
SKR				pmax	pmax		
	comp=N,60nm,0.5s						
SKR				pmax	pmax		
	comp=E,50nm,0.5s						
SKR				pmax	pmax		
	comp=Z,80nm,0.5s						
FX

WRA	**Warramunga Arr**	**65.89**	**195**	P	**P**	**15 47 14.5 -1.6**
	comp=Z,1.0nm,0.7s,mb4.0,baz=15,slow=6.7,SNR=4.9					
BW06	**Boulder Array**	**68.06**	**51**	P	**P**	**15 47 29.5 +0.2**
	comp=Z,0.4nm,0.5s,mb3.7					
PDAR	**Pinedale Array**	**68.06**	**51**	P	**P**	**15 47 29.9 +0.5**
	comp=Z,0.5nm,0.5s,mb3.8,baz=283,slow=3.6,SNR=5.7					
NOA	**NORSAR Array B**	**69.10**	**340**	P	**P**	**15 47 35.9 +0.4**
	comp=Z,0.5nm,0.7s,mb3.5,baz=35,slow=5.8,SNR=2.3					
ASAR	**Alice Springs**	**69.60**	**195**	P	**P**	**15 47 39.0 -0.2**
	comp=Z,1.3nm,1.0s,mb3.8,baz=12,slow=5.4,SNR=12					
PV10	**Paradox Valley**	**71.29**	**54**	P	**P**	**15 47 50.1 +1.0**
SNAA	**Sanae**	**149.95**	**197**⇓*i*		PKPdf	15 56 23.0 +12
VNA2	**Neumayer--Watz**	**151.45**	**196**		PKPdf	15 56 23.8 +10
VNA3	**Neumayer Olymp**	**151.61**	**194**		PKPdf	15 56 24.1 +10
VNA1	**Neumayer--Stat**	**151.85**	**196**⇓*i*		PKPdf	15 56 23.3 +9.0

OTT 04 15:41:15.3±0.0, 47.94N×70.67W, h22km, MN3.5/27, 1C-4D, Southern Quebec

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DAQ	**Lac Daran**	**0.39**	**274**	⇓PG	Pb	15 41 23.1	-0.4
DAQ				SG	Sb	15 41 28.9	-0.1
DAQ				Trac		15 41 29.8	
	comp=Z,448nm,0.0s						
LMQ	**La Malbaie**	**0.45**	**149**	PG	Pb	15 41 24.2	-0.3
LMQ				SG	Sb	15 41 30.7	-0.1
LMQ				Trac		15 41 31.0	
	comp=Z,871nm,0.1s						
A61	**Sainte Mathild**	**0.46**	**122**	⇓PG	Pb	15 41 24.2	-0.5
A61				SG	Sb	15 41 30.6	-0.4
A61				Trac		15 41 31.1	
	comp=Z,388nm,0.1s						
A54	**Misere**	**0.51**	**160**	⇑PG	Pb	15 41 25.0	-0.5
A54				SG	Sb	15 41 32.5	0.0
A54				Trac		15 41 32.6	
	comp=Z,279nm,0.0s						
A64	**Saint Simeon**	**0.53**	**102**	⇓PG	Pb	15 41 25.4	-0.5
A64				SG	Sb	15 41 32.8	-0.3
A64				Trac		15 41 33.0	
	comp=Z,433nm,0.1s						
A16	**Riviere Ouelle**	**0.65**	**136**	PG	Pb	15 41 27.5	-0.3
A16				SG	Sb	15 41 36.5	+0.2
A16				Trac		15 41 36.8	
	comp=Z,259nm,0.1s						
A21	**Saint Andre**	**0.70**	**109**	⇓PG	Pb	15 41 28.3	-0.4
A21				SG	Sb	15 41 38.0	+0.2
A21				Trac		15 41 38.2	
	comp=Z,297nm,0.1s						
A11	**Saint Roch-des**	**0.77**	**155**	PG	Pb	15 41 29.5	-0.3
A11				SG	Sb	15 41 40.0	+0.2
A11				Trac		15 41 40.2	
	comp=Z,48nm,0.1s						
QCQ	**Quebec**	**1.23**	**200**	PG	Pn	15 41 37.1	-0.3
QCQ				SG	Sb	15 41 53.6	+0.4
QCQ				Trac		15 41 55.9	
	comp=Z,298nm,0.2s						
DPQ	**Saint Jean**	**1.91**	**230**	PN	Pn	15 41 47.3	+0.2
DPQ				SN	Sn	15 42 11.5	+0.8
DPQ				Trac		15 42 14.9	
	comp=Z,87nm,0.1s						
CNQ	**Baie Comeau**	**2.20**	**51**	PN	Pn	15 41 50.6	-0.6
CNQ				SN	Sn	15 42 16.2	-1.8
CNQ				Trac		15 42 27.1	
	comp=Z,91nm,0.1s						
GSQ	**Grosses Roches**	**2.56**	**66**	PN	Pn	15 41 56.1	-0.4
GSQ				SN	Sn	15 42 25.0	-2.3
GSQ				Trac		15 42 43.7	
	comp=Z,32nm,0.2s						
ICQ	**Pointe Anglais**	**2.75**	**54**	PN	Pn	15 41 57.9	-1.2
ICQ				SN	Sn	15 42 29.6	-2.4
ICQ				Trac		15 42 41.0	
	comp=Z,71nm,0.2s						
MOQ	**Mont Orford**	**2.84**	**203**	PN	Pn	15 41 59.9	-0.5
MOQ				SN	Sn	15 42 30.8	-3.7
MOQ				Trac		15 42 45.0	
	comp=Z,29nm,0.2s						
MNQ	**Manicouagan**	**2.88**	**25**	PN	Pn	15 41 59.8	-1.1
MNQ				SN	Sn	15 42 32.2	-3.1
MNQ				Trac		15 42 50.3	
	comp=Z,49nm,0.2s						
TRQ	**Mont Tremblant**	**3.16**	**239**	PN	Pn	15 42 03.6	-1.4
TRQ				SN	Sn	15 42 38.9	-3.6
TRQ				Trac		15 42 56.2	
	comp=Z,35nm,0.1s						
MNT	**Montreal**	**3.17**	**221**	PN	Pn	15 42 04.2	-1.0
MNT				SN	Sn	15 42 39.6	-3.1
MNT				Trac		15 42 54.5	
	comp=Z,26nm,0.1s						
SMQ	**Clarke City**	**3.47**	**47**	PN	Pn	15 42 07.6	-1.7
SMQ				SN	Sn	15 42 46.3	-3.8
SMQ				Trac		15 42 50.8	
	comp=Z,30nm,0.2s						
ALFO	**Alfred**	**3.71**	**233**	PN	Pn	15 42 10.8	-1.8
ALFO				SN	Sn	15 42 52.0	-4.2
ALFO				Trac		15 43 11.7	
	comp=Z,51nm,0.1s						
LBNH	**Lisbon**	**3.80**	**194**	PN	Pn	15 42 11.8	-2.2
LBNH				SN	Sn	15 42 54.0	-4.7
LBNH				Trac		15 43 13.6	
	comp=Z,12nm,0.1s						
GGN	**Saint George**	**3.86**	**135**	PN	Pn	15 42 13.2	-1.7
GGN				SN	Sn	15 42 56.2	-4.0
GGN				Trac		15 43 01.3	
	comp=Z,8.2nm,0.1s						
GAC	**Glen Almond**	**3.99**	**238**	PN	Pn	15 42 15.1	-1.6
GAC				SN	Sn	15 42 58.9	-4.4
GAC				Trac		15 43 19.6	
	comp=Z,42nm,0.2s						
WBO	**Williamsburg**	**4.33**	**229**	PN	Pn	15 42 20.3	-1.3
WBO				SN	Sn	15 43 08.8	-3.3
WBO				Trac		15 43 36.5	
	comp=Z,27nm,0.2s						
LMN	**Caledonia Moun**	**4.53**	**115**	PN	Pn	15 42 21.8	-2.6
LMN				SN	Sn	15 43 11.6	-5.4
LMN				Trac		15 43 14.6	
	comp=Z,2.4nm,0.1s						
VLDQ	**Val d'Or**	**4.56**	**275**	PN	Pn	15 42 25.1	+0.4
VLDQ				SN	Sn	15 43 16.8	-1.0
VLDQ				Trac		15 43 52.7	
	comp=Z,6.8nm,0.1s						
CRLO	**Chalk River**	**4.97**	**250**	PN	Pn	15 42 27.1	-3.5
CRLO				SN	Sn	15 43 22.0	-6.2
CRLO				Trac		15 43 54.9	
	comp=Z,20nm,0.2s						
EEO	**Eldee**	**5.87**	**260**	PN	Pn	15 42 40.0	-3.3
EEO				SN	Sn	15 43 42.8	-7.8
EEO				Trac		15 44 19.5	
	comp=Z,18nm,0.3s						
DELO	**Deloro Mine**	**5.91**	**237**	PN	Pn	15 42 40.8	-3.1
DELO				SN	Sn	15 43 44.1	-7.6
KILO	**Kirkland Lake**	**6.08**	**279**	PN	Pn	15 42 43.1	-3.2
KILO				Trac		15 43 53.5	
	comp=Z,4.6nm,0.1s						
LG4Q	**La Grande 4**	**6.10**	**340**	PN	Pn	15 42 42.8	-3.7
LG4Q				SN	Sn	15 43 48.7	-7.7
LG4Q				Trac		15 44 26.9	
	comp=Z,9.5nm,0.3s						
SADO	**Sadowa**	**6.67**	**245**	PN	Pn	15 42 50.8	-3.7
SADO				SN	Sn	15 44 01.9	-8.7
SADO				Trac		15 44 49.5	
	comp=Z,7.8nm,0.2s						
SCHQ	**Schefferville**	**7.31**	**18**	PN	Pn	15 42 59.5	-4.1
SCHQ				SN	Sn	15 44 17.1	-10
SCHQ				Trac		15 45 09.0	
	comp=Z,3.1nm,0.2s						
KAPO	**Kapuskasing**	**7.98**	**285**	PN	Pn	15 43 08.8	-4.1
KAPO				SN	Sn	15 44 32.8	-11
KAPO				Trac		15 44 36.4	
	comp=Z,3.8nm,0.1s						
DRLN	**Deer Lake**	**8.83**	**77**	PN	P	15 43 20.1	-4.5
DRLN				SN	Sn	15 44 53.4	-11
DRLN				Trac		15 46 13.8	
	comp=Z,1.4nm,0.3s						
VIMO	**Victor Mine**	**9.67**	**305**	PN	P	15 43 29.4	-6.8
VIMO				Trac		15 46 18.3	
	comp=Z,3.2nm,0.3s						
SILO	**Sutton Inlier**	**11.07**	**312**	PN	P	15 43 48.6	-6.7
SILO				Trac		15 46 18.6	
	comp=Z,1.8nm,0.3s						

*NAO **04** 15:52:58.6±1.9, 62.57N×23.56E, ML2.0*

*BER **04** 15:52:59.9±2.9, 62.58N×23.64E, ML2.0(NAO), Suspected explosion*
*HEL **04** 15:53:00.1±0.1, 62.61N×23.75E, ML1.8, ML1.4(UPP), ML2.0(NAO), Explosion*

ISC 04 15:52:58.5±0.6, 62.66N±0.03×23.84E±0.08, n15, σ0°98/20, Finland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VAF	**Ylistaro**	**0.66**	**306**	*e*P	**Pg**	**15 53 11.5**	**-0.2**
VAF				*e*S	**Sg**	**15 53 20.2**	**-0.3**
KEF	**Keuruu**	**0.69**	**135**	*e*P	**Pg**	**15 53 11.9**	**-0.4**
KEF				*e*S	**Sg**	**15 53 20.8**	**-0.6**
SUF	**Sumiainen**	**1.07**	**86**	*e*P	**Pb**	**15 53 20.1**	**+0.6**
SUF				*e*S	**Sb**	**15 53 33.8**	**-0.1**
KAF	**Kangasniemi**	**1.27**	**114**	*e*P	**Pb**	**15 53 23.2**	**+0.1**
KAF				*e*S	**Sb**	**15 53 40.1**	**+0.2**
FIA0	**FINESS Array S**	**1.61**	**138**	*e*P	**Pn**	**15 53 28.7**	**+0.3**
FIA0				*e*S	**Sb**	**15 53 49.6**	**-0.1**
FIA0	**FINESS Array S** baz=323,slow=18	**1.61**	**138**	Pn	**Pn**	**15 53 28.6**	**+0.2**
FIA0				Lg		15 53 49.8	
	baz=325,slow=37						
FIA0				Rg		15 53 59.3	
	baz=327,slow=37						
KJN	**Kajaani**	**2.26**	**49**	*e*P	**Pn**	**15 53 40.6**	**+2.9**
KJN				*e*SG	**Sg**	**15 54 11.6**	**-2.2**
KJN				MSG		15 54 12.2	
	comp=Z,4.4nm,0.2s						
PVF	**Pernaja**	**2.33**	**155**	*e*P	**Pn**	**15 53 40.2**	**+1.5**
PVF				*e*S	**Sn**	**15 54 09.3**	**+0.9**
MEF	**Metsahovi**	**2.46**	**174**	*e*SB	**Sb**	**15 54 13.0**	**-1.4**
MEF				MSG		15 54 13.8	
	comp=Z,4.2nm,0.2s						
OUL	**Oulu**	**2.60**	**20**	*e*SB	**Sb**	**15 54 19.9**	**+1.3**
VJF	**Virojoki**	**2.77**	**138**	*e*SB	**Sb**	**15 54 23.3**	**-0.1**
HFS	**Hagfors**	**5.49**	**247**	Lg		15 55 44.4	
	baz=61,slow=28						
HFS	**Hagfors**	**5.49**	**247**	*e*SG		15 55 44.4	
HFS	**Hagfors** baz=61,slow=28	**5.49**	**247**	Lg		15 55 44.4	
ARA0	**ARCESS Array S** baz=178,slow=12	**6.94**	**5**	Pn	**Pn**	**15 54 43.0**	**-1.1**
ARA0				Sn	**Sn**	**15 55 59.7**	**-5.0**
	baz=182,slow=28						
ARA0				Lg		15 56 35.5	
	baz=189,slow=37						

*NEIC **04** 15:57:54.6±2.5, 5.81S×128.86E, h281km±29km, mb3.8/9, Error ellipse: s-maj=18.0km s-min=8.8km az=214.0*
*IDC **04** 15:57:59.3±2.8, 6.03S×128.79E, h331km±26km, mb3.4/3, mb1 3.6/5, mb1mx3.4/12, Error ellipse: s-maj=74.0km s-min=10.6km az=65.0*

ISC 04 15:57:53.0±1.9, 5.86S±0.08×128.9E±0.1, h280km±21km, n19, σ0°67/23, mb3.8/10, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi** 1.3nm,0.3s	**12.57**	**194**	*e*P	**P**	**16 00 44.8**	**+0.8**
FITZ				*e*S	**S**	**16 03 05.3**	**+6.0**
WRAB	**Tennant Creek** 11nm,0.3s	**14.98**	**160**	*e*P	**P**	**16 01 13.1**	**-0.2**
WRA	**Warramunga Arr** 1.2nm,0.3s,baz=334,slow=13,SNR=88	**14.98**	**160**	P	**P**	**16 01 13.1**	**-0.3**
WRA				S	**S**	**16 03 51.9**	**-0.4**
	0.3nm,0.3s,baz=342,slow=21,SNR=6.4						
WB2	**Warramunga Arr**	**14.99**	**160**	*e*P	**P**	**16 01 13.6**	**+0.2**
WB2				*e*S	**S**	**16 03 51.3**	**-1.1**
AS12	**Alice Springs** 6.8nm,0.8s	**18.36**	**165**	*e*P	**P**	**16 01 50.4**	**+0.9**
ASAR	**Alice Springs** 1.3nm,0.3s,baz=342,slow=11,SNR=144	**18.36**	**165**	P	**P**	**16 01 50.5**	**+1.0**
ASAR				S	**S**	**16 05 00.8**	**+0.7**
	0.6nm,0.3s,baz=347,slow=25,SNR=17						
ASAR				ScP		16 09 09.8	
	0.1nm,0.3s,baz=344,slow=1.9,SNR=9.9						
PMG	**Port Moresby**	**18.48**	**102**	P	**P**	**16 01 50.2**	**-0.5**
CTAO	**Charters Tower**	**22.04**	**132**	P	**P**	**16 02 27.0**	**+1.2**
STKA	**Stephens Creek**	**28.50**	**157**	P	**P**	**16 03 24.3**	**-0.7**
	2.9nm,1.1s,mb3.6,baz=336,slow=12,SNR=3.7						
CM31	**Chiang Mai Arr** 0.8nm,0.4s,mb3.5	**38.13**	**310**	*e*P	**P**	**16 04 47.7**	**+0.4**
CMAR	**Chiang Mai Arr** 1.6nm,0.7s,mb3.6,baz=136,slow=7.0,SNR=14	**38.13**	**310**	P	**P**	**16 04 48.0**	**+0.7**
GUN	**Gumba** 9.3nm,0.6s,mb4.3	**53.35**	**311**	*e*P	**P**	**16 06 45.9**	**0.0**
KKN	**Kakani** 8.6nm,1.0s,mb4.0	**53.74**	**311**	*e*P	**P**	**16 06 47.6**	**-1.1**
DMN	**Daman** 5.6nm,0.6s,mb4.1	**53.77**	**310**	*e*P	**P**	**16 06 48.7**	**-0.3**
GKN	**Gorkha** 6.3nm,0.4s,mb4.3	**54.33**	**311**	*e*P	**P**	**16 06 52.0**	**-1.0**
KOLN	**Koldanda** 1.4nm,0.3s,mb3.9	**55.00**	**310**	*e*P	**P**	**16 06 57.3**	**-0.5**
ULN	**Ulaanbaatar** 0.5nm,0.5s,mb3.2	**56.84**	**343**	*e*P	**P**	**16 07 11.1**	**+0.6**
MKAR	**Makanchi Array** 1.5nm,0.6s,mb3.9,baz=120,slow=8.1,SNR=21	**66.65**	**327**	P	**P**	**16 08 15.6**	**+0.1**
MCK	**McKinley**	**91.76**	**26**	P	**P**	**16 10 30.4**	**+0.5**

*JMA **04** 16:07:54.3±0.3, 33.21N×127.27E, M2.6*
*KMA **04** 16:07:56.3, 33.45N×127.28E, ML2.2*

ISC 04 16:07:55.8±0.6, 33.31N±0.05×127.26E±0.03, h10km, n8, σ0°86/14, South Korea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSJJU	**Jeju**	**0.61**	**282**	P	**Pb**	**16 08 08.1**	**+0.1**
KSJJU				S	**Sg**	**16 08 16.7**	**+0.5**
KSSGP	**Seogwipo**	**0.64**	**266**	P	**Pb**	**16 08 08.7**	**+0.2**
KSSGP				S	**Sg**	**16 08 17.8**	**+0.6**
KSWAN	**Wando**	**1.17**	**337**	P	**Pb**	**16 08 16.6**	**-1.1**
KSWAN				S	**Sb**	**16 08 32.2**	**-0.6**
JFU	**Fukue jima 2**	**1.41**	**117**	P	**Pn**	**16 08 20.1**	**-1.5**
JFU				S	**Sb**	**16 08 38.4**	**-1.3**
KSKWJ	**Gwangju**	**1.86**	**353**	P	**Pn**	**16 08 27.6**	**-0.5**
KSKWJ				S	**Sn**	**16 08 51.6**	**-0.2**
JII	**Iki**	**2.12**	**76**	*e*S	**Sn**	**16 08 59.0**	**+0.6**
JTU	**Tsushima**	**2.15**	**55**	P	**Pn**	**16 08 32.9**	**+0.6**
JTU				S	**Sn**	**16 09 00.5**	**+1.2**
NGSJ	**Nagasaki 2**	**2.24**	**107**	*e*S	**Sn**	**16 09 02.8**	**+1.3**

*IDC **04** 16:12:30.4±1.0, 6.61N×74.36W, mb3.7/2, mb1 3.9/4, mb1mx3.6/22, ML3.8/2, Error ellipse: s-maj=24.0km s-min=12.8km az=103.0*
*NEIC **04** 16:12:34.0±3.4, 6.53N×74.37W, h27km±27km, mb3.6/1, Error ellipse: s-maj=16.9km s-min=9.2km az=119.0*

ISC 04 16:12:33.6±0.7, 6.63N±0.08×74.34W±0.08, h33km, n12, σ0°75/12, mb3.7/3, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ROSC	**El Rosal** 34nm,0.3s,baz=354,slow=19,SNR=33	**1.76**	**180**	Pn	**Pn**	**16 13 03.1**	**+0.8**
ROSC				Lg		16 13 26.3	
	175nm,0.3s,baz=71,slow=22,SNR=8.3						
SDV	**Santo Domingo** 7.3nm,0.3s,baz=325,slow=4.2,SNR=22	**4.30**	**58**	Pn	**Pn**	**16 13 38.6**	**+0.2**
SDV				Sn	**Sn**	**16 14 28.5**	**+0.4**
	29nm,0.3s,baz=322,slow=10.0,SNR=8.6						
SDV				Lg		16 14 46.1	
	30nm,0.3s,baz=300,slow=20,SNR=4.9						
OTAV	**Otavalo**	**7.56**	**213**	P	**P**	**16 14 20.6**	**-3.6**
PCRV	**Puerto La Cruz** 0.5nm,0.3s,baz=18,slow=21,SNR=2.5	**10.22**	**69**	Pn	**P**	**16 14 59.9**	**-1.3**
PCRV				Sn	**S**	**16 16 50.5**	**-5.2**
	0.7nm,0.3s,baz=37,slow=6.9,SNR=2.3						
LPAZ	**La Paz**	**23.58**	**165**	P	**P**	**16 17 42.4**	**0.0**
WMOK	**Wichita Mounta**	**35.92**	**324**	P	**P**	**16 19 32.6**	**-0.3**
MNTX	**Cornudas Mount** 0.5nm,0.5s,mb3.5	**38.24**	**315**	P	**P**	**16 19 52.8**	**+0.4**
SCHQ	**Schefferville** 2.0nm,0.8s,mb4.2,baz=117,slow=19,SNR=2.5	**48.44**	**6**	P	**P**	**16 21 15.3**	**+0.7**
YKA	**Yellowknife Ar** 0.2nm,0.5s,mb3.5,baz=134,slow=6.4,SNR=6.4	**63.03**	**340**	P	**P**	**16 22 59.2**	**-0.3**
YKA	**Yellowknife Ar**	**63.03**	**340**	P	**P**	**16 22 59.2**	**-0.3**
ASAR	**Alice Springs** 0.2nm,0.7s,baz=136,slow=3.2,SNR=2.5	**148.02**	**235**	PKPbc	PKPdf	16 32 18.4	+5.1
WRA	**Warramunga Arr** 0.7nm,1.1s,baz=107,slow=2.5,SNR=3.0	**149.19**	**242**	PKPbc	PKPdf	16 32 19.5	+4.2

*IDC **04** 16:22:08.3±1.5, 73.66N×8.17E, mb3.0/3, mb1 3.4/5, mb1mx3.3/21, ML3.5/2, MS3.2/3, Ms1 3.2/3, ms1mx2.9/11, Error ellipse: s-maj=55.4km s-min=13.8km az=45.0*
*NEIC **04** 16:22:09.7±1.0, 73.69N×8.43E, h10km, mb4.0/1, Error ellipse: s-maj=38.6km s-min=10.0km az=47.0*
*BER **04** 16:22:10.4±2.5, 73.87N×9.05E, h6km±31km, ML2.1, ML2.3(NAO)*
*NAO **04** 16:22:13.0±6.5, 74.13N×10.81E, ML2.3*

ISC 04 16:22:08.5±0.8, 73.95N±0.07×9.6E±0.3, h10km, n14, σ1°29/18, mb3.1/4, MS3.7/1, Greenland Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BJO	**Bjornoya**	**2.68**	**73**	*e*P	**Pn**	**16 22 55.0**	**+2.4**
BJO				*e*S	**Sn**	**16 23 25.0**	**-0.4**
BJO				AML	AML	16 23 29.3	
	comp=Z,17nm,0.6s						
SPA0	**Spitsbergen Ar** baz=201,slow=14	**4.55**	**18**	Pn	**Pn**	**16 23 19.6**	**+0.5**
KBS	**Kingsbay**	**5.03**	**5**	Pn	**Pn**	**16 23 24.9**	**-1.0**
KBS				Sn	**Sn**	**16 24 22.0**	**-3.0**
KBS	**Kingsbay**	**5.03**	**5**	*e*P	**Pn**	**16 23 25.2**	**-0.8**
ARA0	**ARCESS Array S** baz=323,slow=14	**6.66**	**124**	Pn	**Pn**	**16 23 48.1**	**-0.8**
ARA0				Sn	**Sn**	**16 25 01.1**	**-4.7**
	baz=310,slow=22						
ARCES	**ARCESS Array B**	**6.66**	**124**	Pn	**Pn**	**16 23 49.1**	**+0.2**
	comp=Z,1.8nm,0.3s,baz=320,slow=12,SNR=55						
ARCES				Sn	**Sn**	**16 24 57.6**	**-8.2**
	comp=Z,0.2nm,0.3s,baz=315,slow=20,SNR=2.6						
ARCES				LR	LR	16 26 45.1	
	comp=Z,108nm,18.9s,baz=165,slow=40						
APA0	**Apatity Array** baz=310,slow=14	**9.92**	**118**	Pn	**P**	**16 24 33.2**	**-0.9**
FIA0	**FINESS Array S** baz=341,slow=16	**13.94**	**146**	Pn	**P**	**16 25 27.1**	**-0.9**
FINES	**FINESS Array B**	**13.94**	**146**	Pn	**P**	**16 25 26.4**	**-1.6**
	comp=Z,0.1nm,0.3s,baz=339,slow=12,SNR=5.3						
FINES				LR	LR	16 31 04.9	
	comp=Z,37nm,18.6s,baz=127,slow=38						
ARU	**Arti** comp=Z,2.2nm,0.6s,mb3.9	**25.83**	**106**	P	**P**	**16 27 43.3**	**+2.3**
INK	**Inuvik** baz=10,slow=11	**36.01**	**338**	P	**P**	**16 29 10.3**	**-0.6**
INK				LR	LR	16 44 15.0	
	comp=Z,139nm,21.2s,MS3.7,baz=0.4,slow=37						
YKA	**Yellowknife Ar**	**38.91**	**322**	P	**P**	**16 29 35.9**	**+0.5**
	comp=Z,0.1nm,0.4s,mb2.9,baz=23,slow=9.4,SNR=3.1						
ILAR	**Eielson Array**	**40.67**	**345**	P	**P**	**16 29 50.4**	**+0.5**
	comp=Z,0.2nm,0.7s,mb2.9,baz=350,slow=5.5,SNR=5.1						
MKAR	**Makanchi Array**	**41.00**	**89**	P	**P**	**16 29 55.5**	**+2.7**
	comp=Z,0.1nm,0.5s,mb2.7,baz=339,slow=8.2,SNR=4.1						

*NEIC **04** 16:28:36.8, 36.78N×27.61E, h26km, MD3.5(ATH), After ATH.*
*ISK **04** 16:28:36.5, 36.85N×27.56E, h6km, MD3.4*
*ATH **04** 16:28:36.8, 36.78N×27.61E, h26km±3km, MD3.5/7*

ISC 04 16:28:36.1±0.8, 36.77N±0.03×27.57E±0.04, h6km±5km, n30, σ0°84/38, 1C, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BDRM	**Kayabasi**	**0.32**	**342**	*i* P	**Pg**	**16 28 43.0**	**+0.5**
BDRM				S	**Sg**	**16 28 48.0**	**+1.2**
NISR	**Nisiros**	**0.38**	**247**	*e*PB	**Pb**	**16 28 45.8**	**+0.9**
MLSB	**Milas**	**0.56**	**18**	PG	**Pg**	**16 28 46.6**	**-0.6**
YER	**Yerkesik**	**0.68**	**57**	*i* PG	**Pg**	**16 28 49.2**	**-0.6**
ARG	**Arkhangelos**	**0.71**	**140**	*e*PN	**Pn**	**16 28 50.9**	**-1.5**
AYDN	**Tasoluk**	**0.93**	**16**	*i* P	**Pb**	**16 28 53.9**	**-0.3**
AYDN				*i* S	**Sb**	**16 29 06.3**	**-0.3**
SMG	**Samos**	**1.11**	**328**	*e*PN	**Pn**	**16 28 57.5**	**-0.5**
SMG				*e*SN	**Sn**	**16 29 14.2**	**+0.5**
KARP	**Karpathos**	**1.26**	**195**	*e*PN	**Pn**	**16 29 00.9**	**+0.7**
KARP				*e*SN	**Sn**	**16 29 18.5**	**+0.9**
DNZL	**Cakiroluk**	**1.50**	**52**	*i* P	**Pn**	**16 29 04.4**	**+0.8**
DNZL				S	**Sb**	**16 29 23.7**	**+0.6**
DENT	**Denizli**	**1.53**	**49**	PN	**Pn**	**16 29 04.7**	**+0.6**
DENT				SN	**Sn**	**16 29 24.5**	**0.0**
IZM	**Izmir**	**1.65**	**352**	*e*PN	**Pn**	**16 29 04.8**	**-1.0**
KDAG	**Bornova**	**1.65**	**352**⇑	*i*P	**Pn**	**16 29 05.0**	**-0.8**
KDAG				S	**Sb**	**16 29 30.6**	**+3.1**
APE	**Apeiranthos**	**1.66**	**281**	*e*PB	**Pb**	**16 29 06.2**	**-0.5**
THR4	**Thira Island,**	**1.77**	**261**	*e*P	**Pn**	**16 29 13.8**	**+6.2**
THR3	**Thira Island,**	**1.78**	**259**	*e*P	**Pn**	**16 29 11.4**	**+3.8**
THR6	**Thira Island,**	**1.79**	**257**	*e*P	**Pn**	**16 29 12.6**	**+4.7**
THR5	**Thira Island,**	**1.82**	**260**	*e*P	**Pn**	**16 29 14.4**	**+6.2**
ELL	**Elmali**	**1.88**	**90**	*e*PN	**Pn**	**16 29 10.4**	**+1.3**
MANT	**Manisa**	**1.89**	**24**	P	**Pn**	**16 29 08.5**	**-0.8**
MANT				S	**Sn**	**16 29 32.8**	**-0.9**
AKS	**Akhisar**	**2.12**	**5**	*e*PN	**Pn**	**16 29 12.4**	**-0.1**
NPS	**Neapolis**	**2.18**	**227**	*e*PB	**Pb**	**16 29 15.0**	**-0.6**
KRIS	**Kristallenia**	**2.31**	**227**	*e*P	**Pn**	**16 29 13.6**	**-1.6**
XRY	**Khrisi**	**2.42**	**219**	*e*PB	**Pb**	**16 29 20.0**	**+0.2**
ISP	**Isparta**	**2.58**	**64**	*e*PN	**Pn**	**16 29 19.2**	**+0.1**
BALB	**Balikesir**	**2.88**	**5**	*e*PN	**Pn**	**16 29 23.7**	**+0.3**
KCT	**Karacabey**	**3.55**	**10**	*e*PN	**Pn**	**16 29 32.4**	**-0.5**
ULDT	**Uludag**	**3.59**	**20**	*e*P	**Pg**	**16 29 47.5**	**-0.2**
BNT	**Bandirma**	**3.60**	**4**	*e*PN	**Pn**	**16 29 32.8**	**-0.8**
HDMB	**Hadim**	**3.95**	**86**	*e*PN	**Pn**	**16 29 39.6**	**+1.0**
KIZT	**Kizilcal**	**4.01**	**57**	PN	**Pn**	**16 29 39.7**	**+0.2**

*MOS **04** 16:29:50.0±1.5, 75.56N×157.64E, h10km, mb4.2/3, Error ellipse: s-maj=42.7km s-min=18.1km az=87.6*
*IDC **04** 16:29:51.3±1.5, 75.59N×157.67E, mb3.7/9, mb1 3.9/9, mb1mx3.7/24, MS3.7/6, Ms1 3.7/6, ms1mx3.2/29, Error ellipse: s-maj=41.6km s-min=18.1km az=11.0*
*NEIC **04** 16:29:52.5±0.6, 75.54N×157.64E, h10km, mb4.2/3, Error ellipse: s-maj=13.9km s-min=7.8km az=212.0*

**ISC 04 16:29:50.9±0.5, 75.53N±0.08×157.8E±0.2, h10km, n26, σ0°90/25, mb3.7/9, MS3.6/6, 1D, East

SPITS	**Spitsbergen Ar**	**24.98**	**342**	P	**P**	**16 35 14.5**	**-0.7**
	comp=Z,9.4nm,1.0s,mb4.3,baz=69,slow=7.7,SNR=3.1						
YKA	**Yellowknife Ar**	**30.44**	**66**	P	**P**	**16 36 04.4**	**-0.7**
	comp=Z,0.1nm,0.5s,mb2.8,baz=332,slow=9.7,SNR=3.1						
YKA	**Yellowknife Ar**	**30.44**	**66**	P	**P**	**16 36 04.4**	**-0.7**
SHRR	**Shira**	**32.66**	**269**	*eP*	**P**	**16 36 25.3**	**+0.7**
SHRR				pmax	pmax		
	comp=Z,10.0nm,1.0s,mb4.7						
ZAL	**Zalesovo**	**34.52**	**274**	LR	LR	16 53 06.6	
	comp=Z,142nm,21.5s,MS3.7,baz=0.1,slow=40						
FINES	**FINESS Array B**	**39.80**	**326**	P	**P**	**16 37 25.5**	**+0.4**
	comp=Z,0.7nm,0.8s,mb3.4,slow=8.3,SNR=2.9						
FINES				LR	LR	16 57 58.9	
	comp=Z,53nm,19.7s,MS3.4,baz=0.8,slow=42						
MKAR	**Makanchi Array**	**41.72**	**271**	P	**P**	**16 37 41.0**	**+0.2**
	comp=Z,0.5nm,0.6s,mb3.3,baz=29,slow=4.9,SNR=4.9						
MKAR				LR	LR	16 56 45.2	
	comp=Z,105nm,19.1s,MS3.7,baz=16,slow=39						
NOA	**NORSAR Array B**	**41.99**	**336**	P	**P**	**16 37 41.9**	**-0.9**
	comp=Z,1.4nm,1.1s,mb3.5,baz=16,slow=8.2,SNR=2.6						
ULM	**Lac du Bonnet**	**45.84**	**59**	LR	LR	16 57 23.1	
	comp=Z,101nm,18.2s,MS3.8,baz=25,slow=36						
SCHQ	**Schefferville**	**46.70**	**34**	P	**P**	**16 38 22.1**	**+1.4**
	comp=Z,2.8nm,0.8s,mb4.2,baz=321,slow=14,SNR=5.5						
NVAR	**Mina Array Bea**	**51.67**	**85**	P	**P**	**16 38 59.7**	**+0.2**
	comp=Z,0.2nm,0.4s,mb3.4,baz=346,slow=7.4,SNR=3.1						
NVAR				LR	LR	17 06 38.0	
	comp=Z,59nm,18.4s,MS3.6,baz=20,slow=43						

*IDC **04** 16:50:11.9±0.6, 14.24N×145.51E, mb4.3/17, mb1 4.4/17, mb1mx4.4/22, MS3.9/13, Ms1 3.9/13, ms1mx3.8/21, Error ellipse: s-maj=21.0km s-min=14.2km az=94.0*
*BJI **04** 16:50:13.6, 14.26N×145.17E, h9km, mB5.1, mb5.0, Ms4.1, Msz4.1*
*NEIC **04** 16:50:15.6±1.5, 14.13N×145.33E, h21km±11km, mb4.9/12, Error ellipse: s-maj=10.1km s-min=6.9km az=104.0*
NEIC Felt on Guam.
*MOS **04** 16:50:15.2±1.1, 14.08N×145.38E, h33km, mb5.1/7, Error ellipse: s-maj=31.4km s-min=10.6km az=124.2*
*HRVD **04** 16:50:15.6±0.4, 14.04N×145.15E, h12km, MW4.7/46, Centroid moment Tensor Solution. LP body waves: s14,c16;Mantle waves: s46,c67; Half duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-1.29±.08; $M_{\theta\theta}$1.31±.05; $M_{\phi\phi}$-0.01±.09; $M_{r\theta}$-0.13±.20; $M_{\theta\phi}$-0.18±.07; $M_{\phi r}$0.01±.24; Best double couple: $M_0$1.32×10^{16} NP1:ϕ_s278°, δ42°, λ-89°. NP2:ϕ_s97°, δ48°, λ-91°. Principal axes: T 1.34, Plg3°, Azm188°; N -.04, Plg1°, Azm98°; P -1.3, Plg87°, Azm357°; nsta1 refers to body waves, cutoff=50s. nsta2 refers to surface waves, cutoff=40s.*

ISC 04 16:50:16.1±1.0, 14.11N±0.05×145.24E±0.07, h34km±9km, n76, σ1§04/69, mb4.7/37, MS4.0/17, 1C-1D, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**0.63**	**215**	⇑*iP*	**P**	**16 50 28.4**	**-0.1**
SAPN	**Saipan**	**1.20**	**24**	*eP*	**P**	**16 50 37.0**	**+0.3**
SARN	**Sarigan**	**2.62**	**11**	*eP*	**P**	**16 50 57.1**	**+0.1**
JOW	**Kunigami**	**20.29**	**311**	P	**P**	**16 54 51.0**	**-0.7**
	13nm,0.8s,baz=151,slow=13,SNR=2.2						
JNU	**Nakatsue**	**23.00**	**328**	P	**P**	**16 55 19.1**	**+0.1**
	25nm,0.8s,mb4.7,baz=147,slow=13,SNR=4.3						
JNU				LR	LR	17 02 16.4	
	comp=Z,134nm,18.2s,MS3.4,baz=322,slow=32						
MAJO	**Matsushiro**	**23.21**	**346**	*eP*	**P**	**16 55 21.6**	**+0.6**
PMG	**Port Moresby**	**23.44**	**175**	LR	LR	17 02 22.7	
	comp=Z,277nm,19.9s,MS3.7,baz=170,slow=31						
SSE	**Sheshan**	**27.81**	**311**	P	**P**	**16 56 02.4**	**-2.0**
SSE				AMB	AMB		
	comp=Z,23nm,0.7s,mb4.9						
ASAJ	**Asahikawa**	**29.99**	**356**	LR	LR	17 06 47.3	
	comp=Z,276nm,20.6s,MS3.9,baz=3.8,slow=33						
NJ2	**Nanjing**	**30.00**	**311**	*eP*	**P**	**16 56 23.1**	**-0.9**
NJ2				AP	pP	16 56 32.7	-1.1
NJ2				XP	sP	16 56 36.7	-1.6
NJ2				PP	PP	16 57 22.2	-0.2
NJ2				S	**S**	**17 01 19.0**	**+0.6**
NJ2				XS		17 01 34.0	
NJ2				AMB	AMB		
	comp=Z,20nm,0.8s,mb4.9						
NJ2				AMB	AMB		
	comp=Z,500nm,7.2s						
NJ2				LR	LR		
	comp=N,520nm,19.1s,MS4.3						
NJ2				LR	LR		
	comp=E,240nm,14.7s,MS4.3						
NJ2				LR	LR		
	comp=Z,310nm,14.8s,MS4.1						
WRAB	**Tennant Creek**	**35.49**	**198**	*eP*	**P**	**16 57 10.6**	**-1.2**
WB2	**Warramunga Arr**	**35.49**	**198**	*eP*	**P**	**16 57 11.9**	**0.0**
WRA	**Warramunga Arr**	**35.50**	**198**	P	**P**	**16 57 11.5**	**-0.4**
	comp=Z,1.7nm,0.7s,mb4.1,baz=18,slow=9.2,SNR=11						
FITZ	**Fitzroy Crossi**	**37.39**	**212**	P	**P**	**16 57 27.6**	**-0.3**
	comp=Z,1.3nm,0.4s,mb4.1,baz=352,slow=12,SNR=6.4						
ASAR	**Alice Springs**	**39.15**	**197**	P	**P**	**16 57 42.9**	**+0.5**
	comp=Z,1.1nm,0.5s,mb3.8,baz=23,slow=11,SNR=14						
ASAR				PcP	PcP	16 59 53.2	+1.0
	comp=Z,0.7nm,0.7s,baz=34,slow=3.3,SNR=5.3						
ASAR				LR	LR	17 12 25.1	
	comp=Z,176nm,21.6s,MS3.9,baz=352,slow=34						
HIA	**Hailar**	**40.83**	**334**	*eP*	**P**	**16 57 56.9**	**+0.7**
	comp=Z,18nm,1.1s,mb4.6						
CM31	**Chiang Mai Arr**	**44.56**	**282**	*eP*	**P**	**16 58 28.0**	**+1.1**
	comp=Z,11nm,1.0s,mb4.6						
CMAR	**Chiang Mai Arr**	**44.56**	**282**	P	**P**	**16 58 27.9**	**+0.9**
	comp=Z,2.5nm,0.8s,mb4.1,baz=81,slow=6.3,SNR=20						
CMAR				LR	LR	17 16 03.1	
	comp=Z,53nm,19.6s,MS3.5,baz=120,slow=35						
STKA	**Stephens Creek**	**45.86**	**184**	P	**P**	**16 58 37.8**	**+0.6**
	comp=Z,2.0nm,0.4s,mb4.4,baz=50,slow=2.5,SNR=10						
STKA				LR	LR	17 17 51.1	
	comp=Z,229nm,21.3s,MS4.1,baz=21,slow=36						
ULN	**Ulaanbaatar**	**46.16**	**325**	*d iP*	**P**	**16 58 40.2**	**+0.8**
ULN	**Ulaanbaatar**	**46.16**	**325**	*eP*	**P**	**16 58 40.2**	**+0.9**
	comp=Z,16nm,1.3s,mb4.8						
SONM	**Songino Array**	**46.52**	**324**	P	**P**	**16 58 42.1**	**0.0**
	comp=Z,6.3nm,1.0s,mb4.5,baz=135,slow=5.2,SNR=12						
GTA	**Gaotai**	**47.10**	**311**	*eP*	**P**	**16 58 47.5**	**+0.7**
GTA				AP	pP	16 58 51.6	-5.3
GTA				XP	sP	16 58 54.4	-6.7
GTA				AMB	AMB		
	comp=Z,7.0nm,1.6s,mb4.3						
GTA				AMB	AMB		
	comp=Z,138nm,6.1s						
GTA				LR	LR		
	comp=N,75nm,13.7s,MS3.9						
GTA				LR	LR		
	comp=E,67nm,16.0s,MS3.9						
GTA				LR	LR		
	comp=Z,82nm,16.0s,MS3.8						
YAK	**Yakutsk**	**49.13**	**350**	*eP*	**P**	**16 59 04.0**	**+1.7**
YAK				pmax	pmax		
	comp=Z,7.0nm,0.8s,mb4.7						
BOD	**Bodaibo**	**49.56**	**339**	*eP*	**P**	**16 59 04.1**	**-1.6**
ZAK	**Zakamensk**	**49.61**	**326**	*eP*	**P**	**16 59 05.3**	**-0.8**
TLY	**Talaya**	**50.11**	**327**	*eP*	**P**	**16 59 10.5**	**+0.5**
TLY				*e*		17 00 26.5	
TLY				*e*		17 01 03.7	
TLY				pmax	pmax		
	comp=Z,199nm,1.6s,mb5.9						
TLY				MLR	MLR		
	comp=Z,500nm,17.0s,MS4.6						
MOY	**Mondy**	**51.51**	**326**	*eP*	**P**	**16 59 20.7**	**+0.1**
LSA	**Lhasa**	**52.08**	**297**	P	**P**	**16 59 26.4**	**+1.2**
LSA	**Lhasa**	**52.08**	**297**	*eP*	**P**	**16 59 25.8**	**+0.7**
	comp=Z,10nm,0.8s,mb4.8						
GUN	**Gumba**	**56.61**	**294**	*eP*	**P**	**16 59 58.4**	**+0.1**
	comp=Z,130nm,1.4s,mb5.8						
WMQ	**Urumqi**	**57.04**	**313**	P	**P**	**17 00 01.0**	**-0.2**
KKN	**Kakani**	**57.14**	**294**	*eP*	**P**	**17 00 01.4**	**-0.7**
	comp=Z,96nm,1.6s,mb5.6						
DMN	**Daman**	**57.29**	**294**	*eP*	**P**	**17 00 03.0**	**-0.2**
	comp=Z,75nm,1.4s,mb5.5						
GKN	**Gorkha**	**57.71**	**294**	*eP*	**P**	**17 00 05.5**	**-0.6**
	comp=Z,153nm,1.4s,mb5.8						
DANN	**Dangsing**	**58.48**	**295**	*eP*	**P**	**17 00 11.3**	**-0.2**
KOLN	**Koldanda**	**58.62**	**294**	*eP*	**P**	**17 00 12.1**	**-0.4**
	comp=Z,36nm,1.0s,mb5.3						
MKAR	**Makanchi Array**	**61.37**	**316**	P	**P**	**17 00 31.2**	**+0.1**
	comp=Z,11nm,0.5s,mb5.2,baz=90,slow=8.8,SNR=62						
MKAR	**Makanchi Array**	**61.37**	**316**	*i* P	**P**	**17 00 31.3**	**+0.2**
MKAR				pmax	pmax		
	comp=Z,6.0nm,0.6s						
ZAL	**Zalesovo**	**61.42**	**324**	P	**P**	**17 00 30.3**	**-1.0**
	comp=Z,1.6nm,0.7s,mb4.3,baz=272,slow=7.8,SNR=7.4						
ZAL				LR	LR	17 28 24.6	
	comp=Z,101nm,18.1s,MS4.0,baz=42,slow=37						
NVS	**Novosibirsk**	**62.55**	**325**	*i* P	**P**	**17 00 38.6**	**-0.2**
NVS				*e*		17 01 19.6	
NVS				pmax	pmax		
	comp=Z,29nm,1.9s,mb5.1						
NVS				pmax	pmax		
	comp=N,9.0nm,1.7s						
NVS				pmax	pmax		
	comp=E,12nm,1.7s						
KURK	**Kurchatov**	**64.42**	**320**	*eP*	**P**	**17 00 50.5**	**-0.7**
ULHL	**Ulahol**	**65.14**	**310**	P	**P**	**17 00 57.0**	**+1.0**
	SNR=10.0						
TKM2	**Tokmak 2**	**65.65**	**311**	P	**P**	**17 01 00.3**	**+1.1**
	SNR=11						
KZA	**Kyzart**	**65.86**	**310**	P	**P**	**17 01 02.6**	**+2.0**
	SNR=17						
KBK	**Karagaybulak**	**66.11**	**311**	P	**P**	**17 01 03.2**	**+1.0**
	SNR=7.8						
UCH	**Uchtor**	**66.42**	**310**	P	**P**	**17 01 06.0**	**+1.9**
	SNR=13						
USP	**Ospenovka**	**66.47**	**311**	P	**P**	**17 01 04.9**	**+0.5**
	SNR=6.1						
EKS2	**Erkin-Say**	**66.98**	**311**	P	**P**	**17 01 08.6**	**+0.9**
	SNR=6.6						
AML	**Almayashu**	**67.02**	**310**	P	**P**	**17 01 08.9**	**+1.0**
	SNR=9.3						
ILAR	**Eielson Array**	**67.94**	**25**	P	**P**	**17 01 10.4**	**-2.9**
	comp=E,1.3nm,1.0s,mb3.9,baz=258,slow=4.2,SNR=8.0						
ILAR				LR	LR	17 28 14.9	
	comp=E,53nm,20.2s,MS3.8,baz=262,slow=34						
VOSK	**Vostochnaya**	**69.37**	**321**	P	**P**	**17 01 20.9**	**-1.5**
VOSK				pmax	pmax		
	comp=Z,35nm,2.9s,mb4.8						
KKAR	**Karatay Array**	**69.38**	**311**	*i* P	**P**	**17 01 22.9**	**+0.3**
BVA0	**Borovoye Array**	**69.75**	**322**	P	**P**	**17 01 23.4**	**-1.2**
BRVK	**Borovoye**	**69.81**	**322**	*eP*	**P**	**17 01 24.4**	**-0.6**
ZRNK	**Zerenda**	**70.58**	**321**	P	**P**	**17 01 28.4**	**-1.3**
ZRNK				pmax	pmax		
	comp=Z,19nm,1.9s,mb4.7						
ZRNK	**Zerenda**	**70.58**	**321**	*eP*	**P**	**17 01 29.2**	**-0.5**
INK	**Inuvik**	**73.75**	**23**	P	**P**	**17 01 45.9**	**-2.4**
	comp=Z,1.8nm,1.1s,mb3.9,baz=244,slow=9.0,SNR=4.3						
AB31	**Akbulak array**	**76.40**	**318**	P	**P**	**17 02 03.3**	**-0.6**
ARU	**Arti**	**76.55**	**325**	*eP*	**P**	**17 02 05.2**	**+0.7**
ARU				pmax	pmax		
	comp=Z,4.0nm,1.2s,mb4.2						
ARU				MLR	MLR		
	comp=Z,100nm,17.0s,MS4.2						
YKA	**Yellowknife Ar**	**82.23**	**27**	P	**P**	**17 02 33.6**	**-1.5**
	comp=Z,2.8nm,1.1s,mb4.1,baz=287,slow=4.8,SNR=9.8						
YKA				LR	LR	17 38 33.8	
	comp=Z,72nm,18.4s,MS4.1,baz=320,slow=35						
CMB	**Columbia Colle**	**84.82**	**52**	*eP*	**P**	**17 02 50.2**	**+1.4**
	comp=Z,3.9nm,0.6s,mb4.7						
NVAR	**Mina Array Bea**	**86.31**	**51**	P	**P**	**17 02 56.8**	**+0.7**
	comp=Z,2.7nm,0.5s,mb4.7,baz=272,slow=4.3,SNR=20						
ARCES	**ARCESS Array B**	**86.70**	**342**	P	**P**	**17 02 56.3**	**-1.0**
	comp=Z,1.6nm,0.8s,mb4.3,baz=63,slow=8.1,SNR=3.9						
ARCES				LR	LR	17 42 36.3	
	comp=Z,75nm,19.7s,MS4.1,baz=151,slow=36						
TPH	**Tonopah**	**87.23**	**52**	*eP*	**P**	**17 03 01.7**	**+1.2**
	comp=Z,2.2nm,0.3s,mb4.9						
HLID	**Hailey**	**87.72**	**46**	*eP*	**P**	**17 03 04.5**	**+1.7**
	comp=Z,5.9nm,1.1s,mb4.7						
NEN	**Nelson**	**89.74**	**53**	*eP*	**P**	**17 03 14.8**	**+2.2**
FINES	**FINESS Array B**	**90.84**	**335**	P	**P**	**17 03 15.1**	**-2.0**
	comp=Z,1.3nm,0.7s,mb4.4,baz=63,slow=4.3,SNR=9.5						
FINES				LR	LR	17 46 22.0	
	comp=Z,79nm,18.0s,MS4.2,baz=182,slow=37						
BW06	**Boulder Array**	**91.34**	**45**	P	**P**	**17 03 19.1**	**-0.8**
PDAR	**Pinedale Array**	**91.34**	**45**	P	**P**	**17 03 17.9**	**-2.0**
	comp=Z,0.6nm,0.8s,mb4.0,baz=198,slow=4.7,SNR=4.2						
PDAR				LR	LR	17 39 14.7	
	comp=Z,43nm,19.8s,MS3.9,baz=70,slow=32						
NOA	**NORSAR Array B**	**96.69**	**339**	LR	LR	17 48 32.4	
	comp=Z,84nm,20.0s,MS4.2,baz=15,slow=36						
TXAR	**Lajitas Array**	**100.77**	**56**	P	P	17 04 00.3	-2.8
	comp=Z,0.2nm,0.3s,baz=297,slow=2.0,SNR=4.4						
TXAR				PKiKP		17 08 29.4	
	comp=Z,0.2nm,0.3s,baz=158,slow=4.9,SNR=4.2						
DBIC	**Dimbokro**	**143.85**	**303**	PKP	PKPdf	17 09 51.0	+2.1
	comp=Z,1.1nm,0.5s,baz=140,slow=5.7,SNR=2.8						
LVC	**Limon Verde**	**146.57**	**110**	PKPbc	PKPbc	17 09 58.6	+3.9
	comp=Z,5.1nm,0.7s,baz=276,slow=3.7,SNR=9.6						
LVC	**Limon Verde**	**146.57**	**110**	PKPbc	PKPbc	17 09 58.6	+3.9
LPAZ	**La Paz**	**147.74**	**98**	PKPbc	PKPdf	17 09 59.6	+4.2
	comp=Z,2.3nm,0.7s,baz=252,slow=4.9,SNR=8.2						

*NEIC **04** 17:02:27.4±1.0, 23.98S×66.79W, h184km±19km, Error ellipse: s-maj=28.9km s-min=14.8km az=83.0*
*IDC **04** 17:02:27.4±3.9, 23.92S×66.81W, h176km±32km, mb1 3.1/3, mb1mx3.0/14, Error ellipse: s-maj=67.1km s-min=35.3km az=176.0*

ISC 04 17:02:26.4±1.1, 24.0S±0.1×66.8W±0.1, h184km, n5, σ0§99/5, Jujuy Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LVC	**Limon Verde**	**2.38**	**305**	P	**P**	**17 03 09.2**	**+0.8**
	1.5nm,0.3s,baz=109,slow=9.0,SNR=51						
LVC				S	**S**	**17 03 39.8**	**-0.9**
	12nm,0.3s,baz=25,slow=21,SNR=35						
LPAZ	**La Paz**	**7.76**	**350**	P	**P**	**17 04 18.1**	**+0.7**
	0.5nm,0.3s,baz=163,slow=12,SNR=10						
TRQA	**Tornquist**	**14.62**	**165**	P	**P**	**17 05 45.6**	**+0.1**
BDFB	**Brasilia**	**19.51**	**68**	P	**P**	**17 06 40.9**	**-0.7**
	0.4nm,0.3s,baz=240,slow=12,SNR=5.1						
MKAR	**Makanchi Array**	**146.40**	**40**	PKPbc	PKPbc	17 21 46.5	+1.3
	0.3nm,0.7s,baz=273,slow=1.9,SNR=2.4						

*JMA **04** 17:15:31.5±0.4, 33.28N×127.17E, M2.7*
*KMA **04** 17:15:35.7, 33.43N×127.28E, h7km, ML2.2*

ISC 04 17:15:35.0±0.6, 33.32N±0.05×127.29E±0.03, h7km, n8, σ1§09/13, South Korea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSJJU	**Jeju**	**0.63**	**280**	P	**Pg**	**17 15 47.9**	**+0.3**
KSJJU				S	**Sg**	**17 15 56.7**	**+0.7**
KSSGP	**Seogwipo**	**0.66**	**265**	P	**Pg**	**17 15 48.6**	**+0.2**
KSSGP				S	**Sg**	**17 15 57.6**	**+0.4**
KSWAN	**Wando**	**1.17**	**336**	P	**Pb**	**17 15 56.2**	**-0.9**
KSWAN				S	**Sb**	**17 16 11.8**	**-0.5**
JFU	**Fukue jima 2**	**1.40**	**118**	P	**Pn**	**17 15 59.2**	**-1.8**
JFU				*eS*	**Sb**	**17 16 18.3**	**-0.7**
KSKWJ	**Gwangju**	**1.85**	**352**	P	**Pn**	**17 16 07.1**	**-0.4**
JII	**Iki**	**2.10**	**76**	P	**Pn**	**17 16 09.5**	**-1.5**
JII				*eS*	**Sn**	**17 16 38.0**	**+0.4**
JTU	**Tsushima**	**2.12**	**55**	S	**Sn**	**17 16 40.4**	**+2.1**
NGSJ	**Nagasaki 2**	**2.22**	**107**	*eS*	**Sn**	**17 16 42.9**	**+2.1**

NEIC 04 17:25:13.4, 35.52N×120.84W, h4km, MD2.8(NCEDC), After NCEDC., Central California

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LRV	**Little Rabbit**	**0.91**	**351**	*eP*	Pb	17 25 30.7	-0.7
SAC	**San Andreas**	**2.42**	**329**	*eP*	Pn	17 25 53.5	-0.7
LKC	**Lake Chabot**	**2.42**	**336**	*eP*	Pn	17 25 53.1	-1.3
CMB	**Columbia Colle**	**2.53**	**8**	*eP*	Pn	17 25 54.7	-1.3
MTUM	**Tungsten Hills**	**2.59**	**44**	*eP*	Pn	17 25 56.9	+0.2
MWC	**Mount Wilson**	**2.62**	**119**	*eP*	Pn	17 25 54.5	-2.7
DAC	**Darwin (Calif)**	**2.74**	**73**	Pn	Pn	17 26 00.3	+1.4
TPH	**Tonopah**	**3.86**	**48**	*eP*	Pn	17 26 12.2	-2.5
NEN	**Nelson**	**4.88**	**87**	Pn	Pn	17 26 27.5	-1.9

NEIC 04 17:25:31.7, 36.70N×121.29W, h6km, MD3.5(NCEDC), After NCEDC., Central California

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SAO	**San Andreas Ge**	**0.14**	**296**	*eP*	Pg	17 25 34.0	-0.6
LRV	**Little Rabbit**	**0.35**	**142**	*eP*	Pg	17 25 39.0	+0.2
CMB	**Columbia Colle**	**1.51**	**28**	*eP*	Pn	17 25 58.3	-1.2
NSHM	**Saint Helena R**	**2.09**	**330**	*ePn*	Pn	17 26 05.7	-2.1
MTUM	**Tungsten Hills**	**2.28**	**73**	*ePn*	Pn	17 26 11.3	+0.9
OHCM	**Honcut**	**2.63**	**357**	*ePn*	Pn	17 26 14.4	-1.1
WCN	**Washoe City**	**2.86**	**25**	*ePn*	Pn	17 26 18.7	-0.1
BEKR	**Beckwourth**	**3.24**	**13**	*ePn*	Pn	17 26 23.4	-0.8
PAHR	**Pah Rah Range**	**3.35**	**26**	Pn	Pn	17 26 25.6	-0.2
TPH	**Tonopah**	**3.52**	**66**	Pn	Pn	17 26 25.6	-2.5
WDC	**Whiskeytown Da**	**3.99**	**346**	*ePn*	Pn	17 26 31.4	-3.4
BMN	**Battle Mountai**	**4.90**	**39**	Pn	Pn	17 26 46.6	-1.2
LDFC	**Landfair**	**5.27**	**106**	Pn	Pn	17 26 51.2	-1.7
NEN	**Nelson**	**5.32**	**99**	Pn	Pn	17 26 53.5	-0.1
MVU	**Marysvale**	**7.43**	**73**	Pn	Pn	17 27 22.5	-0.9
MSU	**Marysvale**	**7.46**	**73**	Pn	Pn	17 27 25.8	+2.1
HWUT	**Hardware Ranch**	**9.00**	**54**	Pn	P	17 27 43.5	-1.7

*IDC **04** 18:19:38.2±4.9, 24.01N×122.77E, mb3.5/3, mb1 3.7/3, mb1mx3.4/20, MS3.2/1, Ms1 3.4/1, ms1mx2.7/21, Error ellipse: s-maj=321.0km s-min=27.4km az=60.0*
*TAP **04** 18:19:45.0, 22.89N×120.62E, h13km, ML4.0*
TAP Felt II J at Sandimen, I J at Jiashian, I J at Shoushan, I J at Jiouru, I J at Tauyuan, II J at Shinhua, I J at Nanshi, I J at Dapu, I J at Taimali, I J at Jiali, I J at Szhu.

ISC 04 18:19:45.7±0.3, 22.88N±0.01×120.58E±0.02, h12km±2km, n62, σ1§09/101, mb3.5/3, MS2.9/1, 10C-9D, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SSD	**Sandimen**	**0.14**	**160**	⇑*iP*	**Pg**	**18 19 49.3**	**+0.1**
SSD				S	**Sg**	**18 19 52.4**	**+0.8**
TWM1	**Shoushan**	**0.15**	**250**	⇓*iP*	**Pg**	**18 19 50.4**	**+0.9**
SGLT	**Jiouru**	**0.17**	**209**	⇓*iP*	**Pg**	**18 19 50.8**	**+1.1**
SGLT				S	**Sg**	**18 19 55.9**	**+3.4**
SGST	**Jiashian**	**0.20**	**1**	⇓*iP*	**Pg**	**18 19 50.0**	**-0.3**
SGST				S	**Sg**	**18 19 53.6**	**+0.2**
CHN3	**Shinhua**	**0.28**	**315**	⇑*iP*	**Pg**	**18 19 52.7**	**+1.0**
CHN3				S	**Sg**	**18 19 59.3**	**+3.5**
CHN1	**Nanshi**	**0.31**	**351**	⇓*iP*	**Pg**	**18 19 52.0**	**-0.2**
CHN1				S	**Sg**	**18 19 57.2**	**+0.5**
STYT	**Tauyuan**	**0.33**	**30**	⇑*iP*	**Pg**	**18 19 51.9**	**-0.7**
STYT				S	**Sg**	**18 19 57.4**	**+0.2**
TAI1	**Yung-k'ang**	**0.36**	**297**	*eP*	**Pg**	**18 19 53.4**	**+0.1**
WTP	**Ta-pu**	**0.37**	**5**	⇑*iP*	**Pg**	**18 19 52.9**	**-0.5**
WTP				S	**Sg**	**18 19 58.2**	**-0.3**
KAU	**Kaohsiung**	**0.40**	**219**	*eP*	**Pg**	**18 19 54.1**	**+0.2**
TWK	**Hsinying**	**0.40**	**348**	⇑*iP*	**Pg**	**18 19 53.5**	**-0.4**
TWK				S	**Sg**	**18 19 59.8**	**+0.3**
ECL	**Taimali**	**0.44**	**129**	⇑*iP*	**Pg**	**18 19 54.2**	**-0.6**
ECL				S	**Sg**	**18 20 00.6**	**-0.3**
TWG	**Pinlang**	**0.46**	**97**	⇑*iP*	**Pg**	**18 19 54.5**	**-0.6**
TWG				S	**Sg**	**18 20 01.2**	**-0.2**
SCLT	**Jiali**	**0.46**	**310**	*eP*	**Pg**	**18 19 55.0**	**-0.2**
SCLT				S	**Sg**	**18 20 03.3**	**+1.8**
CHN4	**Tsaushan**	**0.47**	**1**	⇑*iP*	**Pg**	**18 19 54.4**	**-0.9**
CHN4				S	**Sg**	**18 20 01.6**	**-0.2**
SCZT	**Fangliau**	**0.50**	**176**	⇓*iP*	**Pb**	**18 19 55.5**	**-0.4**
ELDTW	**Lidau**	**0.51**	**52**	⇑*iP*	**Pb**	**18 19 55.2**	**-0.8**
ELDTW				S	**Sb**	**18 20 02.5**	**-0.5**
TTN	**Taitung**	**0.54**	**103**	*eP*	**Pb**	**18 19 56.5**	**0.0**
TTN				S	**Sb**	**18 20 04.1**	**+0.3**
EAST	**Anshuo**	**0.55**	**153**	⇓*iP*	**Pb**	**18 19 56.4**	**-0.3**
EAST				S	**Sb**	**18 20 05.1**	**+0.8**
TWP	**Hsiaoliuchiu**	**0.56**	**201**	*eP*	**Pb**	**18 19 59.3**	**+2.3**
CHN8	**Yiju**	**0.58**	**324**	*eP*	**Pb**	**18 19 56.8**	**-0.4**
CHN8				S	**Sb**	**18 20 06.4**	**+1.4**
TAW	**Tawu**	**0.59**	**150**	*eP*	**Pb**	**18 19 56.6**	**-0.9**
TAW				S	**Sb**	**18 20 06.0**	**+0.5**
CHY	**Chiayi**	**0.64**	**347**	*eP*	**Pb**	**18 19 57.5**	**-0.7**
CHY				S	**Sb**	**18 20 06.6**	**-0.1**
CHN2	**Minshiung**	**0.66**	**352**	*eP*	**Pb**	**18 19 57.9**	**-0.7**
CHN2				S	**Sb**	**18 20 08.6**	**+1.2**
ALS	**Alishan**	**0.66**	**18**	P	**Pb**	**18 19 57.8**	**-0.9**
ALS				S	**Sb**	**18 20 07.9**	**+0.4**
YUS	**Yu-Shan**	**0.70**	**29**	*eP*	**Pb**	**18 19 58.4**	**-0.9**
YUS				S	**Sb**	**18 20 08.9**	**+0.3**
CHN5	**Tsauling**	**0.72**	**7**	*eP*	**Pb**	**18 19 58.5**	**-1.2**
CHN5				S	**Sb**	**18 20 10.5**	**+1.3**
CHKT	**Chengkung**	**0.76**	**73**	⇓*iP*	**Pb**	**18 19 59.8**

baz=248,slow=12
FIA0 Sn **Sn** **18 26 50.0 +0.8**
baz=252,slow=28
FIA0 Lg 18 27 08.7
baz=253,slow=22
FIA0 FINESS Array S 4.43 58 *eP* **Pn** **18 25 56.8 +0.6**
FIA0 *eS* **Sn** **18 26 49.9 +0.7**
KAF Kangasniemi 4.84 52 *eP* **Pn** **18 26 02.2 +0.1**
KAF *eS* **Sn** **18 26 59.6 -0.1**
SUF Sumiainen 5.12 45 *eP* **Pn** **18 26 06.1 0.0**
SUF *eS* **Sn** **18 27 07.9 +1.0**
APA0 Apatity Array 10.56 32 Pn **P** **18 27 19.7 -2.1**
baz=227,slow=14
APA0 Apatity Array 10.56 32 *eP* **P** **18 27 19.7 -2.1**
ARA0 ARCESS Array S 10.69 14 Pn **P** **18 27 20.4 -3.1**
baz=190,slow=14
ARA0 ARCESS Array S 10.69 14 *eP* **P** **18 27 20.4 -3.1**

*MOS **04** 18:26:27.5±1.2,76.73N×7.64E,h10km,mb4.6/5,Error ellipse: s-maj=49.5km s-min=16.4km az=90.9*
*NAO **04** 18:26:28.0±2.3,76.68N×9.58E,ML3.2*
*IDC **04** 18:26:28.1±0.5,76.64N×8.84E,mb4.0/18,mb1 4.2/24, mb1mx4.2/29,ML3.8/6,MS3.5/11,Ms1 3.5/11, ms1mx3.3/26,Error ellipse: s-maj=13.1km s-min=8.7km az=57.0*
*NEIC **04** 18:26:29.6±0.2,76.69N×8.73E,h10km,mb4.3/9,Error ellipse: s-maj=5.8km s-min=5.2km az=223.0*
*BJI **04** 18:26:29.6,76.70N×8.70E,h10km,mb4.6*
*BER **04** 18:26:31.9±5.2,76.77N×9.75E,h10km,MD2.6,ML2.9, ML3.2(NAO)*

ISC 04 18:26:27.7±0.2,76.62N±0.03×8.7E±0.2,h10km,n100, σ1§34/103,mb4.1/31,MS3.5/10,3C-4D,Svalbard region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
SPB4	**Spitsbergen Ar**	**2.29**	**43**	*eP*		**Pn**	**Pn**	**18 27 04.7**	**-1.5**
SPA0	**Spitsbergen Ar**	**2.29**	**43**	Pn		**Pn**	**Pn**	**18 27 04.6**	**-1.6**
	baz=224,slow=16								
SPA0						Sn	**Sn**	**18 27 31.7**	**-3.0**
	baz=237,slow=22								
SPITS	**Spitsbergen Ar**	**2.29**	**43**	Pn		**Pn**	**Pn**	**18 27 04.7**	**-1.5**
	123nm,0.3s,baz=216,slow=15,SNR=6620								
SPITS						Sn	**Sn**	**18 27 30.2**	**-4.6**
	128nm,0.3s,baz=234,slow=19,SNR=17								
KBS	**Kingsbay**	**2.42**	**15**	Pn		**Pn**	**Pn**	**18 27 04.8**	**-3.2**
KBS						Sn	**Sn**	**18 27 29.9**	**-8.0**
KBS	**Kingsbay**	**2.42**	**15**	*eP*		**Pn**	**Pn**	**18 27 04.7**	**-3.3**
KBS				*eS*		**Sn**	**Sn**	**18 27 31.6**	**-6.3**
KBS				AML		AML	AML	18 27 34.2	
	comp=Z,298nm,0.5s								
KBS	**Kingsbay**	**2.42**	**15**	*eP*		**Pn**	**Pn**	**18 27 04.7**	**-3.3**
BJO	**Bjornoya**	**3.37**	**124**	*eP*		**Pn**	**Pn**	**18 27 21.1**	**-0.3**
BJO				*eS*		**Sn**	**Sn**	**18 27 55.2**	**-6.7**
BJO				AML		AML	AML	18 28 00.0	
	comp=Z,27nm,0.4s								
DAG	**Danmarks Havn**	**6.29**	**285**	⇓*iP*		**Pn**	**Pn**	**18 27 58.9**	**-3.9**
	comp=Z,6.8nm,0.7s								
DAG				*i*				18 29 03.5	
DAG	**Danmarks Havn**	**6.29**	**285**	⇓*iP*		**Pn**	**Pn**	**18 27 58.9**	**-3.9**
DAG				*i*				18 29 03.5	
DAG				pmax	pmax				
	comp=Z,7.0nm,0.7s								
JMIC	**Jan Mayen**	**7.39**	**229**	LR		LR	LR	18 30 19.2	
	comp=Z,213nm,20.3s,baz=144,slow=31								
ARA0	**ARCESS Array S**	**8.58**	**137**	Pn		**P**	**P**	**18 28 30.3**	**-4.6**
	baz=335,slow=12								
ARA0						Sn	**Sn**	**18 29 59.9**	**-13**
	baz=341,slow=22								
ARCES	**ARCESS Array B**	**8.58**	**137**	Pn		**P**	**P**	**18 28 30.4**	**-4.6**
	comp=Z,2.3nm,0.3s,baz=334,slow=12,SNR=78								
ARCES						Sn	**Sn**	**18 29 59.1**	**-14**
	comp=Z,2.3nm,0.3s,baz=332,slow=19,SNR=5.1								
ARCES				LR		LR	LR	18 31 54.1	
	comp=Z,145nm,20.7s,baz=161,slow=38								
ARE0	**ARCESS Array S**	**8.58**	**137**	*eP*		**P**	**P**	**18 28 30.9**	**-4.1**
LOF	**Lofoten**	**8.65**	**168**	*eP*		**P**	**P**	**18 28 34.6**	**-1.2**
KTK1	**Kautokeino**	**8.72**	**143**	*eP*		**P**	**P**	**18 28 33.6**	**-3.3**
KTK1				*eS*		**Sn**	**Sn**	**18 30 06.4**	**-10**
KTK1				AML		AML	AML	18 30 09.0	
	comp=Z,12nm,0.6s								
STOK	**Stokkvaagen**	**10.42**	**170**	*eP*		**P**	**P**	**18 28 58.3**	**-1.7**
SCO	**Scoresbysund**	**10.50**	**250**	*iP*		**P**	**P**	**18 28 58.5**	**-2.6**
	comp=Z,7.9nm,1.0s								
SCO				*i*				18 30 43.0	
SCO	**Scoresbysund**	**10.50**	**250**	*iP*		**P**	**P**	**18 28 58.5**	**-2.6**
SCO				pmax	pmax				
	comp=Z,8.0nm,1.0s								
SCO	**Scoresbysund**	**10.50**	**250**	*iP*		**P**	**P**	**18 28 58.5**	**-2.6**
	comp=Z,7.9nm,1.0s								
SCO				*i*				18 30 43.1	
MOR8	**Moi Rana**	**10.65**	**167**	*eP*		**P**	**P**	**18 29 00.9**	**-2.2**
APA0	**Apatity Array**	**11.58**	**128**	Pn		**P**	**P**	**18 29 11.1**	**-4.8**
	baz=309,slow=11								
APA0						Sn	**S**	**18 31 14.5**	**-12**
	baz=354,slow=28								
LVZ	**Lovozero**	**11.64**	**125**	*eP*		**P**	**P**	**18 29 11.1**	**-5.5**
LVZ				pmax	pmax				
	comp=Z,10.0nm,0.8s								
LVZ				pmax	pmax				
	comp=N,10.0nm,1.0s								
LVZ				pmax	pmax				
	comp=E,9.0nm,0.9s								
NSS	**Namsos**	**12.19**	**173**	*eP*		**P**	**P**	**18 29 23.1**	**-1.0**
BORG	**Borgarnes**	**15.21**	**235**	Pn		**P**	**P**	**18 30 04.0**	**+0.3**
	comp=E,0.8nm,0.3s,baz=27,slow=11,SNR=2.1								
JOF	**Joensuu**	**15.62**	**139**	*ep*		**P**	**P**	**18 30 00.5**	**-8.5**
NB2	**NORSAR Subarra**	**15.68**	**176**	P		**P**	**P**	**18 30 11.0**	**+1.2**
	baz=356,slow=14								
NOA	**NORSAR Array B**	**15.68**	**176**	Pn		**P**	**P**	**18 30 10.9**	**+1.1**
	comp=E,0.3nm,0.3s,slow=14,SNR=2.9								
KAF	**Kangasniemi**	**15.70**	**148**	*ep*		**P**	**P**	**18 30 07.3**	**-2.8**
	comp=E,3.5nm,0.4s,baz=345,slow=13								
FIA0	**FINESS Array S**	**16.32**	**149**	P		**P**	**P**	**18 30 16.8**	**-1.3**
	baz=355,slow=16								
FINES	**FINESS Array B**	**16.32**	**149**	Pn		**P**	**P**	**18 30 15.0**	**-3.0**
	comp=E,0.4nm,0.3s,slow=13,SNR=14								
FINES						Sn	**S**	**18 33 09.7**	**-9.2**
	comp=E,0.2nm,0.3s,baz=350,slow=24,SNR=3.0								
FINES				LR		LR	LR	18 36 25.5	
	comp=E,89nm,20.6s,baz=150,slow=37								
FINES	**FINESS Array B**	**16.32**	**149**	*eP*		**P**	**P**	**18 30 16.4**	**-1.7**
FINES	**FINESS Array B**	**16.32**	**149**	Pn		**P**	**P**	**18 30 15.0**	**-3.0**
FINES				Sn		**S**	**S**	**18 33 09.7**	**-9.2**
FINES				LR		LR	LR	18 36 25.5	
HFS	**Hagfors**	**16.65**	**171**	P		**P**	**P**	**18 30 23.5**	**+1.2**
	baz=0.8,slow=14								
HFS	**Hagfors**	**16.65**	**171**	Pn		**P**	**P**	**18 30 22.9**	**+0.6**
	comp=E,0.1nm,0.3s,baz=22,slow=8.0,SNR=7.1								
EKA	**Eskdalemuir Ar**	**21.82**	**198**	P		**P**	**P**	**18 31 22.6**	**+1.1**
	comp=E,3.0nm,0.9s,mb3.7,baz=326,slow=18,SNR=4.2								
RES	**Resolute Bay**	**22.64**	**318**	*eP*		**P**	**P**	**18 31 29.4**	**+0.1**
	comp=E,12nm,1.3s,mb4.2								
MNK	**Minsk**	**23.32**	**151**	*eP*		**P**	**P**	**18 31 39.0**	**+2.9**
MOS	**Moscow**	**23.46**	**137**	*eP*		**P**	**P**	**18 31 40.3**	**+2.9**
OBN	**Obninsk**	**23.89**	**139**	*eP*		**P**	**P**	**18 31 43.9**	**+2.2**
OBN				pmax	pmax				
	comp=Z,24nm,1.2s,mb4.5								
OBN				MLR	MLR				
	comp=Z,100nm,18.0s,MS3.3								
CLL	**Collm**	**25.46**	**174**	P		**P**	**P**	**18 32 00.0**	**+3.2**
BRG	**Berggiesshubel**	**25.93**	**172**	*eP*		**P**	**P**	**18 32 02.1**	**+1.0**
BRG				*e*				18 32 07.7	
BRG				pmax	pmax				
	comp=Z,37nm,2.0s,mb4.6								
BRG	**Berggiesshubel**	**25.93**	**172**	*eP*		**P**	**P**	**18 32 02.1**	**+1.0**
	comp=Z,37nm,1.9s,mb4.6								
BRG				*e*				18 32 07.7	
MOX	**Moxa**	**26.10**	**176**	*eP*		**P**	**P**	**18 32 04.0**	**+1.3**
MOX				*e*			pP	18 32 08.0	+2.4
FRB	**Frobisher Bay**	**26.64**	**285**	P		**P**	**P**	**18 32 07.0**	**-0.6**
	comp=Z,1.9nm,0.8s,mb3.7,baz=11,slow=5.2,SNR=2.3								
FRB				LR		LR	LR	18 42 03.3	
	comp=Z,162nm,20.4s,MS3.6,baz=322,slow=35								
FRB	**Frobisher Bay**	**26.64**	**285**	P		**P**	**P**	**18 32 07.0**	**-0.6**
FRB				LR		LR	LR	18 42 03.3	
ARU	**Arti**	**26.86**	**110**	⇓*iP*		**P**	**P**	**18 32 10.7**	**+1.0**
ARU				*e*				18 32 54.7	
ARU				*eS*		**S**	**S**	**18 36 48.0**	**+3.7**
ARU				*eSS*		SS	SS	18 37 58.7	+1.7
ARU				pmax	pmax				
	comp=Z,5.0nm,0.9s,mb4.0								
ARU				MLR	MLR				
	comp=Z,100nm,18.0s,MS3.4								
ARU				MLR	MLR				
	comp=N,100nm,17.0s,MS3.5								
ARU				MLR	MLR				
	comp=E,40nm,16.0s,MS3.5								
ARU	**Arti**	**26.86**	**110**	*eP*		**P**	**P**	**18 32 09.7**	**0.0**
	comp=E,5.1nm,0.9s,mb4.0								
SVE	**Sverdlovsk**	**26.96**	**107**	⇓*eP*		**P**	**P**	**18 32 15.0**	**+4.5**
AKASG	**Malin Array Be**	**27.22**	**151**	P		**P**	**P**	**18 32 12.6**	**-0.4**
	comp=E,0.6nm,0.5s,mb3.4,baz=339,slow=9.3,SNR=4.4								
VRAC	**Vranov**	**27.59**	**169**	P		**P**	**P**	**18 32 17.5**	**+1.1**
	comp=E,5.2nm,1.1s,mb4.1,baz=318,slow=4.7,SNR=3.9								
TIXI	**Tiksi**	**27.70**	**36**	*eP*		**P**	**P**	**18 32 18.8**	**+1.6**
TIXI				pmax	pmax				
	comp=Z,7.0nm,1.1s,mb4.2								
TIXI	**Tiksi**	**27.70**	**36**	*eP*		**P**	**P**	**18 32 18.4**	**+1.1**
GERES	**GERESS Array B**	**27.95**	**173**	P		**P**	**P**	**18 32 20.7**	**+1.1**
	comp=Z,1.1nm,0.8s,mb3.5,baz=9.5,slow=8.1,SNR=5.6								
MLR	**Muntele Rosu**	**32.03**	**157**	LR		LR	LR	18 46 28.9	
	comp=Z,92nm,19.3s,MS3.5,baz=23,slow=38								
ZRNK	**Zerenda**	**32.42**	**101**	*eP*		**P**	**P**	**18 32 58.4**	**-0.9**
BRVK	**Borovoye**	**32.61**	**100**	*eP*		**P**	**P**	**18 33 01.9**	**+0.9**
SCHQ	**Schefferville**	**34.23**	**275**	P		**P**	**P**	**18 33 15.0**	**0.0**
SCHQ	**Schefferville**	**34.23**	**275**	P		**P**	**P**	**18 33 15.0**	**0.0**
YKA	**Yellowknife Ar**	**36.69**	**320**	P		**P**	**P**	**18 33 35.5**	**-0.4**
	comp=Z,0.7nm,0.6s,mb3.7,baz=7.0,slow=8.9,SNR=19								
YKA				PcP		PcP	PcP	18 35 57.4	-1.6
	comp=Z,0.4nm,0.6s,baz=13,slow=3.1,SNR=7.6								
YKA				LR		LR	LR	18 48 11.5	
	comp=Z,29nm,18.5s,MS3.1,baz=10.0,slow=36								
YKA	**Yellowknife Ar**	**36.69**	**320**	P		**P**	**P**	**18 33 35.5**	**-0.4**
YKA				PcP		PcP	PcP	18 35 57.4	-1.6
YKA				LR		LR	LR	18 48 11.5	
KURK	**Kurchatov**	**36.72**	**93**	*eP*		**P**	**P**	**18 33 36.6**	**+0.4**
YAK	**Yakutsk**	**36.76**	**42**	*eP*		**P**	**P**	**18 33 37.9**	**+1.4**
YAK				pmax	pmax				
	comp=Z,8.0nm,1.0s,mb4.5								
ZEI	**Tsey**	**37.04**	**135**	*eP*		**P**	**P**	**18 33 45.0**	**+6.0**
ZEI				*e*				18 35 10.0	
ZEI				pmax	pmax				
	comp=Z,50nm,6.0s								
ESDC	**Sonseca Array**	**37.46**	**196**	P		**P**	**P**	**18 33 43.7**	**+1.1**
	comp=Z,0.2nm,0.3s,mb3.4,baz=8.1,slow=8.9,SNR=3.2								
BOD	**Bodaibo**	**37.94**	**57**	*eP*		**P**	**P**	**18 33 45.6**	**-0.8**
ILAR	**Eielson Array**	**38.03**	**343**	P		**P**	**P**	**18 33 48.4**	**+1.3**
	comp=Z,3.3nm,0.7s,mb4.2,baz=3.6,slow=6.9,SNR=48								
BRTR	**Keskin Array B**	**38.56**	**149**	P		**P**	**P**	**18 33 53.6**	**+1.8**
	comp=Z,0.6nm,0.5s,mb3.6,slow=6.2,SNR=3.7								
BRTR				LR		LR	LR	18 51 30.5	
	comp=Z,46nm,18.0s,MS3.3,baz=30,slow=39								
MOY	**Mondy**	**40.96**	**72**	*eP*		**P**	**P**	**18 34 14.6**	**+3.0**
MKAR	**Makanchi Array**	**41.25**	**92**	P		**P**	**P**	**18 34 15.2**	**+1.3**
	comp=Z,2.5nm,0.6s,mb4.0,baz=352,slow=6.2,SNR=32								
MKAR				LR		LR		18 55 24.1	
	comp=Z,70nm,18.1s,MS3.6,baz=318,slow=42								
MKAR	**Makanchi Array**	**41.25**	**92**	*iP*		**P**	**P**	**18 34 15.1**	**+1.2**
MKAR				pmax	pmax				
	comp=Z,1.0nm,0.5s								
DLBC	**Dease Lake**	**42.70**	**329**	P		**P**	**P**	**18 34 27.4**	**+1.9**
	comp=Z,1.0nm,0.5s,mb3.9,baz=228,slow=19,SNR=4.1								
ULM	**Lac du Bonnet**	**44.94**	**298**	P		**P**	**P**	**18 34 43.4**	**-0.4**
	comp=Z,5.1nm,0.9s,mb4.3,baz=17,slow=10.0,SNR=4.3								
ULM				LR		LR	LR	18 52 42.9	
	comp=Z,89nm,21.0s,MS3.7,baz=351,slow=35								
SONM	**Songino Array**	**45.76**	**69**	P		**P**	**P**	**18 34 50.8**	**+0.5**
	comp=Z,0.8nm,0.8s,mb3.7,baz=338,slow=6.7,SNR=6.2								
ULN	**Ulaanbaatar**	**45.87**	**68**	*eP*		**P**	**P**	**18 34 53.2**	**+2.0**
ULN	**Ulaanbaatar**	**45.87**	**68**	*eP*		**P**	**P**	**18 34 51.7**	**+0.5**
	comp=Z,5.3nm,1.0s,mb4.4								
SADO	**Sadowa**	**46.47**	**281**	LR		LR	LR	18 53 42.8	
	comp=Z,125nm,18.3s,MS3.9,baz=141,slow=35								
NEW	**Newport**	**50.78**	**316**	P		**P**	**P**	**18 35 28.6**	**-0.7**
	comp=Z,2.4nm,0.7s,mb4.3,baz=46,slow=9.8,SNR=3.7								
CHMT	**Chamberlain Mo**	**51.43**	**312**	*eP*		**P**	**P**	**18 35 33.6**	**-0.7**
MSO	**Missoula**	**51.63**	**313**	*eP*		**P**	**P**	**18 35 35.3**	**-0.5**
	comp=Z,7.2nm,1.0s,mb4.6								
GTA	**Gaotai**	**52.30**	**78**	*eP*		**P**	**P**	**18 35 42.1**	**+1.1**
GTA				AP		pP		18 35 47.2	+3.1
GTA				XP		sP		18 35 50.3	+5.1
GTA				AMB		AMB			
	comp=Z,2.0nm,1.2s,mb3.9								
CN2	**Changchun**	**53.49**	**54**	*eP*		**P**	**P**	**18 35 51.4**	**+1.6**
CN2				AMB		AMB			
	comp=Z,10.0nm,0.7s,mb4.8								
BW06	**Boulder Array**	**54.78**	**307**	*eP*		**P**	**P**	**18 35 58.5**	**-0.8**
	comp=Z,2.7nm,0.9s,mb4.3								
PDAR	**Pinedale Array**	**54.78**	**307**	P		**P**	**P**	**18 35 59.1**	**-0.2**
	comp=Z,1.0nm,0.9s,mb3.9,baz=37,slow=4.5,SNR=4.0								
HLID	**Hailey**	**54.88**	**312**	*eP*		**P**	**P**	**18 35 59.2**	**-0.8**
	comp=Z,0.8nm,0.5s,mb4.0								
YBH	**Yreka Blue Hor**	**58.03**	**319**	P		**P**	**P**	**18 36 22.1**	**-0.4**
	comp=Z,0.5nm,0.3s,mb4.0,baz=38,slow=13,SNR=2.8								
PV01	**Paradox Valley**	**59.09**	**305**	*eP*		**P**	**P**	**18 36 29.9**	**0.0**
MSU	**Marysvale**	**59.39**	**309**	*eP*		**P**	**P**	**18 36 32.8**	**+0.8**
LSA	**Lhasa**	**59.59**	**90**	P		**P**	**P**	**18 36 33.7**	**+0.2**
WMOK	**Wichita Mounta**	**60.40**	**295**	*eP*		**P**	**P**	**18 36 38.4**	**-0.6**
	comp=Z,3.2nm,0.8s,mb4.4								
NVAR	**Mina Array Bea**	**60.54**	**314**	P		**P**	**P**	**18 36 40.2**	**+0.3**
	comp=Z,2.6nm,0.8s,mb4.4,baz=38,slow=4.7,SNR=11								
TXAR	**Lajitas Array**	**66.64**	**298**	P		**P**	**P**	**18 37 19.6**	**-0.4**
	comp=Z,7.3nm,1.1s,mb4.6,baz=45,slow=5.3,SNR=11								
TXAR				LR		LR	LR	19 07 38.7	
	comp=Z,102nm,19.6s,MS4.0,baz=205,slow=37								
TIC	**Toumodi**	**70.33**	**195**	*e*PKP1		**P**	**P**	**18 37 45.6**	**+2.4**
	comp=Z,201nm,1.6s								
KIC	**Kosan Boka**	**70.60**	**194**	*e*PKP1		**P**	**P**	**18 37 44.5**	**-0.3**
	comp=Z,29nm,0.8s								
LIC	**Lamto**	**70.75**	**195**	*e*PKP1		**P**	**P**	**18 37 44.8**	**-0.9**
	comp=Z,77nm,1.9s								
WRA	**Warramunga Arr**	**117.22**	**59**	PKP		PKPdf	PKPdf	18 45 14.8	-0.9
	comp=Z,2.7nm,1.4s,baz=318,slow=2.3,SNR=3.2								
ASAR	**Alice Springs**	**120.74**	**61**	PKP		PKPdf	PKPdf	18 45 19.9	-2.6
	comp=Z,0.7nm,0.7s,baz=340,slow=0.8,SNR=9.4								
VNA1	**Neumayer--Stat**	**147.42**	**190**	⇑*i*		PKPdf	PKPdf	18 46 12.5	+2.5
VNA2	**Neumayer--Watz**	**147.66**	**190**			PKPdf	PKPdf	18 46 14.0	+3.6
VNA3	**Neumayer Olymp**	**148.07**	**191**	⇑*i*		PKPdf	PKPdf	18 46 15.0	+4.0
SNAA	**Sanae**	**148.25**	**187**	⇑*i*		PKPdf	PKPdf	18 46 13.7	+2.4

*NIED **04** 19:20:00,31.80N×141.90E,h5km,Mw3.8 Best double couple: M0 5.44×10^14 NP1:φs26°,δ59°,λ124°. NP2:φs154°, δ45°,λ47°.*
*IDC **04** 19:20:54.7±0.9,31.64N×141.76E,mb3.9/8,mb1 3.9/11, mb1mx3.8/24,ML3.7/3,MS3.0/3,Ms1 3.0/3,ms1mx2.7/32, Error ellipse: s-maj=33.0km s-min=15.0km az=76.0*
*JMA **04** 19:20:56.5±0.2,31.75N×141.89E,h24km,M3.8*
*NEIC **04** 19:20:59.9±4.5,31.59N×141.76E,h35km±32km,mb4.1/2, Error ellipse: s-maj=28.2km s-min=10.6km az=83.0*

ISC 04 19:20:56.9±1.9,31.69N±0.04×141.88E±0.08,h32km±15km, n29,σ1§02/35,mb3.9/10,Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JHJ2	**Mitsune**	**2.25**	**310**	P		**Pn**	**Pn**	**19 21 32.8**	**0.0**
JHJ	**Hachijo jima 2**	**2.28**	**309**	Pn		**Pn**	**Pn**	**19 21 32.8**	**-0.3**
	35nm,0.3s,baz=261,slow=22,SNR=8.9								
JHJ						Sn	**Sn**	**19 22 00.0**	**-0.4**
	43nm,0.3s,baz=83,slow=21,SNR=4.1								
JHJ				LR		LR	LR	19 22 00.6	
	comp=Z,1μm,21.5s,baz=287,slow=30								
BSO1	**Boso 1**	**3.05**	**346**	P		**Pn**	**Pn**	**19 21 44.1**	**-0.1**
BSO3	**Boso 3**	**3.31**	**340**	P		**Pn**	**Pn**	**19 21 48.0**	**+0.2**
JOD2	**Odawara 2**	**4.26**	**328**	P		**Pn**	**Pn**	**19 22 01.8**	**+0.5**
CBIJ	**Chichi jima**	**4.59**	**177**	Pn		**Pn**	**Pn**	**19 22 06.5**	**+0.5**
	8.9nm,0.3s,baz=264,slow=21,SNR=8.2								
CBIJ						Sn	**Sn**	**19 22 56.5**	**-2.5**
	4.0nm,0.3s,baz=300,slow=20,SNR=2.3								
CBIJ				LR		LR	LR	19 24 00.4	
	comp=Z,105nm,18.6s,baz=1.9,slow=41								
CBIJ	**Chichi jima**	**4.59**	**177**	P		**Pn**	**Pn**	**19 22 07.5**	**+1.5**
JHU	**Hanno**	**4.68**	**333**	P		**Pn**	**Pn**	**19 22 07.1**	**-0.2**
JYN	**Shimodo**	**4.71**	**325**	P		**Pn**	**Pn**	**19 22 09.1**	**+1.4**
JRY	**Ryogami san**	**4.98**	**331**	P		**Pn**	**Pn**	**19 22 11.7**	**+0.2**
JHO	**Hitachi**	**5.03**	**348**	P		**Pn**	**Pn**	**19 22 11.0**	**-1.2**
JHO				*eS*		**Sn**	**Sn**	**19 23 07.1**	**-2.8**
JAG	**Ashikaga**	**5.13**	**338**	P		**Pn**	**Pn**	**19 22 13.2**	**-0.5**
JAG				*eS*		**Sn**	**Sn**	**19 23 11.5**	**-1.1**
MAJO	**Matsushiro**	**5.72**	**329**	*eP*		**Pn**	**Pn**	**19 22 22.5**	**+0.6**
	9.2nm,0.4s								
MAT	**Matsushiro**	**5.72**	**329**	P		**Pn**	**Pn**	**19 22 22.6**	**+0.7**
MAT				*eS*		**Sn**	**Sn**	**19 23 26.6**	**-0.7**
MAT	**Matsushiro**	**5.72**	**329**	*eP*		**Pn**	**Pn**	**19 22 23.0**	**+1.1**
	9.3nm,0.6s								
MAT				S		**Sn**	**Sn**	**19 23 27.0**	**-0.3**
JNU	**Nakatsue**	**9.41**	**282**	Sn		**Sn**	**Sn**	**19 24 59.2**	**0.0**
	0.4nm,0.3s,baz=163,slow=6.6,SNR=2.8								
JNU				LR		LR		19 26 16.1	
	comp=Z,42nm,19.4s,baz=235,slow=34								
ASAJ	**Asahikawa**	**12.42**	**2**	Pn		**P**	**P**	**19 23 51.4**	**-3.0**
	0.6nm,0.3s,baz=199,slow=34,SNR=3.8								
ULN	**Ulaanbaatar**	**30.94**	**312**	P		**P**	**P**	**19 27 13.8**	**+0.7**
	0.7nm,0.5s,mb3.8								
SONM	**Songino Array**	**31.35**	**311**	P		**P**	**P**	**19 27 17.3**	**+0.6**
	0.5nm,0.5s,mb3.6,baz=119,slow=9.8,SNR=3.6								
MKAR	**Makanchi Array**	**47.44**	**306**	P		**P**	**P**	**19 29 30.9**	**+0.5**
	0.7nm,0.5s,mb3.9,baz=80,slow=8.8,SNR=18								
MKAR	**Makanchi Array**	**47.44**	**306**	P		**P**	**P**	**19 29 30.9**	**+0.5**
WRAB	**Tennant Creek**	**51.84**	**189**	*eP*		**P**	**P**	**19 30 03.0**	**-1.5**
	3.4nm,0.5s,mb4.5								
WRA	**Warramunga Arr**	**51.84**	**189**	P		**P**	**P**	**19 30 03.9**	**-0.6**
	1.5nm,0.5s,mb4.2,baz=5.6,slow=7.6,SNR=28								
AS12	**Alice Springs**	**55.57**	**189**	*eP*		**P**	**P**	**19 30 31.9**	**0.0**
	3.5nm,1.0s,mb4.3								
ASAR	**Alice Springs**	**55.57**	**189**	P		**P**	**P**	**19 30 31.2**	**-0.7**
	0.9nm,0.6s,mb4.0,baz=18,slow=14,SNR=30								
INK	**Inuvik**	**58.99**	**26**	P		**P**	**P**	**19 30 56.8**	**+1.3**
	0.3nm,0.5s,mb3.5,baz=178,slow=4.7,SNR=2.8								
FINES	**FINESS Array B**	**73.73**	**333**	P		**P**	**P**	**19 32 29.9**	**+0.7**
	4.3nm,1.2s,mb4.2,baz=76,slow=5.7,SNR=6.1								
AKASG	**Malin Array Be**	**78.78**	**323**	P		**P**	**P**	**19 32 59.4**	**+1.6**
	0.4nm,0.3s,mb3.8,baz=48,slow=5.3,SNR=4.0								
NOA	**NORSAR Array B**	**79.26**	**338**	P		**P**	**P**	**19 33 01.5**	**+1.2**
	0.4nm,0.7s,mb3.5,baz=60,slow=4.4,SNR=2.6								

*NIED **04** 19:23:00,27.70N×128.70E,h20km,Mw3.3 Best double couple: M0 1.06×10^14 NP1:φs252°,δ82°,λ141°. NP2: φs349°,δ51°,λ10°.*
*JMA **04** 19:23:30.4±0.1,27.67N×128.66E,h46km±2km,M3.6*

ISC 04 19:23:29.9±0.6,27.73N±0.09×128.6E±0.1,h44km±17km, n10,σ0§52/18,Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JTK	**Tokunoshima**	**0.31**	**79**	P		**P**	**P**	**19 23 39.0**	**+0.4**
JTK				S		**S**	**S**	**19 23 44.7**	**0.0**
JIH	**Iheya**	**0.89**	**220**	P		**P**	**P**	**19 23 46.6**	**+0.5**
JIH				S		**S**	**S**	**19 23 57.8**	**-0.3**
JOW	**Kunigami**	**0.94**	**198**	P		**P**	**P**	**19 23 46.8**	**0.0**
JOW				S		**S**	**S**	**19 23 58.1**	**-1.2**
JAM	**Amami Oshima**	**1.12**	**52**	P		**P**	**P**	**19 23 49.8**	**+0.5**
JAM				S		**S**	**S**	**19 24 03.3**	**-0.4**
JAGN	**Aguni-jima**	**1.66**	**227**	P		**P**	**P

MOX				*e*Sg		**Sg**	**19 26 58.1**	**-2.7**
	SNR=2.9							
MOX	**Moxa**	**2.02**	**73**	*i* P		**Pn**	**19 26 28.6**	**+0.5**
MOX				Pg		**Pg**	**19 26 32.0**	**-1.9**
MOX				*i*			19 26 53.0	
MOX				Sg		**Sg**	**19 26 59.0**	**-1.8**
MOX	**Moxa**	**2.02**	**73**	*e*Pn		**Pn**	**19 26 28.6**	**+0.5**
MOX				*e*Pg		**Pg**	**19 26 32.5**	**-1.4**
MOX				Sn		**Sn**	**19 26 53.3**	**-0.3**
MOX				*e*Sg		**Sg**	**19 26 58.6**	**-2.2**
GUT	**Gutenstein**	**2.05**	**170**⇓	*e*Pn		**Pn**	**19 26 29.5**	**+0.9**
ECH	**Echery**	**2.10**	**207**	Pn		**Pn**	**19 26 29.6**	**+0.3**
KIZ	**Kirchzarten**	**2.18**	**192**	Pn		**Pn**	**19 26 31.2**	**+0.7**
KIZ				Sg		**Sg**	**19 27 06.0**	**-0.2**
KIZ	**Kirchzarten**	**2.18**	**192**	S		**Sg**	**19 27 06.0**	**-0.2**
WTSB	**Winterswijk**	**2.19**	**330**	*e*Pg		**Pg**	**19 26 36.8**	**-0.7**
	5.4nm,0.5s							
WTSB				*e*Sg		**Sg**	**19 27 04.0**	**-2.7**
FELD	**Feldberg**	**2.25**	**190**	Pn		**Pn**	**19 26 32.1**	**+0.7**
IBBN	**Ibbenburen**	**2.28**	**347**	*e*Sg		**Sg**	**19 27 10.4**	**+0.8**
WERD	**Werda**	**2.41**	**80**	*e*Pg		**Pg**	**19 26 38.9**	**-2.9**
WERD				*e*Sg		**Sg**	**19 27 10.6**	**-3.4**
SISB	**Singen-Sch Ber**	**2.42**	**174**⇓	*e*Pn		**Pn**	**19 26 34.6**	**+0.7**
SISB				Sg		**Sg**	**19 27 13.7**	**-0.5**
GUNZ	**Gunzen**	**2.42**	**82**	*e*Pg		**Pg**	**19 26 41.2**	**-0.7**
GIVF	**Givet**	**2.42**	**272**	*e*Pn		**Pn**	**19 26 35.4**	**+1.4**
GIVF				*e*Pg		**Pg**	**19 26 41.9**	**-0.2**
GIVF				*e*Sg		**Sg**	**19 27 10.6**	**-3.8**
	38nm,0.3s							
RFYF	**Reffroy**	**2.51**	**235**	*e*Pn		**Pn**	**19 26 36.5**	**+1.3**
RFYF				*e*Pg		**Pg**	**19 26 44.4**	**+0.7**
	baz=44							
RFYF				*e*Sg		**Sg**	**19 27 15.4**	**-1.7**
	32nm,0.2s							
THEF	**They Montfort**	**2.53**	**223**	Pn		**Pn**	**19 26 35.7**	**+0.3**
HINF	**Hinteralfeld**	**2.55**	**207**	*e*Pn		**Pn**	**19 26 36.0**	**+0.3**
HINF				*e*Pg		**Pg**	**19 26 44.3**	**-0.2**
HINF				*e*Sg		**Sg**	**19 27 17.0**	**-1.5**
	29nm,0.3s							
HAU	**Haudompre**	**2.55**	**216**	*e*Pn		**Pn**	**19 26 35.3**	**-0.5**
HAU				*e*Pg		**Pg**	**19 26 45.9**	**+1.3**
HAU				*e*Sg		**Sg**	**19 27 15.0**	**-3.7**
	57nm,0.4s							
FUR	**Furstenfeldbru**	**2.61**	**136**	*e*Sg		**Sg**	**19 27 18.5**	**-2.2**
	SNR=5.6							
MEZF	**Maizieres J'vi**	**2.81**	**237**	*e*Pn		**Pn**	**19 26 39.3**	**-0.2**
MEZF				*e*Pg		**Pg**	**19 26 50.8**	**+1.1**
MEZF				*e*Sg		**Sg**	**19 27 24.5**	**-2.6**
	23nm,0.3s							
BAIF	**Baives**	**2.82**	**271**	*e*Pn		**Pn**	**19 26 41.2**	**+1.5**
BAIF				*e*Pg		**Pg**	**19 26 49.0**	**-1.0**
BAIF				*e*Sg		**Sg**	**19 27 23.8**	**-3.8**
	23nm,0.3s							
DAVA	**Damuels**	**2.93**	**163**⇑	*i*PN		**Pn**	**19 26 42.7**	**+1.5**
DAVA				*i* SN		**Sn**	**19 27 18.6**	**+1.7**
DAVA				*i* SG		**Sg**	**19 27 31.3**	**0.0**
	16nm,0.5s							
WET	**Wettzell**	**2.95**	**107**	*e*Pn		**Pn**	**19 26 43.4**	**+1.9**
	SNR=4.8							
WET				*e*Sg		**Sg**	**19 27 27.3**	**-4.4**
WET	**Wettzell**	**2.95**	**107**	*e*Pn		**Pn**	**19 26 43.3**	**+1.9**
SFTF	**Sexfontaines**	**3.00**	**232**	*e*Pn		**Pn**	**19 26 42.9**	**+0.7**
SFTF				*e*Sg		**Sg**	**19 27 30.3**	**-3.2**
	19nm,0.3s							
CLL	**Collm**	**3.06**	**65**	*e*Pn		**Pn**	**19 26 43.0**	**0.0**
CLL				*e*Pg		**Pg**	**19 26 52.1**	**-2.6**
	SNR=3.1							
CLL				*e*Sg		**Sg**	**19 27 30.0**	**-5.5**
MOTA	**Moosalm**	**3.21**	**148**⇓	*i*PN		**Pn**	**19 26 46.2**	**+1.0**
MOTA				*i* SN		**Sn**	**19 27 24.2**	**+0.2**
MOTA				*i* SG		**Sg**	**19 27 39.0**	**-1.6**
	5.2nm,0.3s							
SQTA	**Sankt Quirin**	**3.36**	**148**⇑	*i*PN		**Pn**	**19 26 48.3**	**+1.1**
SQTA				*i* SN		**Sn**	**19 27 27.2**	**-0.4**
SQTA				*i* SG		**Sg**	**19 27 43.9**	**-1.5**
	5.0nm,0.3s							
KHC	**Kasperske Hory**	**3.38**	**105**	*e*PN		**Pn**	**19 26 48.8**	**+1.2**
KHC				*e*PG		**Pg**	**19 26 53.8**	**-7.4**
KHC				*ex*		x	19 27 00.0	
KHC				*e*SN		**Sn**	**19 27 27.7**	**-0.6**
KHC				*e*SG		**Sg**	**19 27 39.7**	**-6.6**
WATA	**Walderalm**	**3.39**	**143**⇑	*i*PN		**Pn**	**19 26 48.7**	**+0.9**
WATA				*i* SN		**Sn**	**19 27 28.3**	**-0.2**
WATA				*i* SG		**Sg**	**19 27 43.9**	**-2.7**
	8.2nm,0.3s							
WTTA	**Wattenberg**	**3.48**	**143**⇑	*i*PN		**Pn**	**19 26 49.7**	**+0.8**
WTTA				*i* SN		**Sn**	**19 27 30.9**	**+0.3**
WTTA				*i* SG		**Sg**	**19 27 48.8**	**-0.6**
	5.5nm,0.3s							
BRG	**Berggiesshubel**	**3.51**	**75**	*e*Pg		**Pg**	**19 27 00.4**	**-3.3**
	SNR=1.3							
BRG				*e*Sg		**Sg**	**19 27 42.8**	**-7.7**
GEC2	**GERESS Array S**	**3.56**	**109**	*e*Pn		**Pn**	**19 26 51.5**	**+1.3**
	SNR=7.1							
GEC2				*e*Pg		**Pg**	**19 27 03.1**	**-1.7**
	SNR=1.9							
SCE	**Schlegeis**	**3.69**	**145**⇑	*i*Pn		**Pn**	**19 26 53.9**	**+1.9**
PRU	**Pruhonice**	**3.84**	**89**	*e*SG		**Sg**	**19 27 55.4**	**-6.1**
CABF	**La Chapelle**	**3.86**	**207**	*e*Pn		**Pn**	**19 26 53.7**	**-0.7**
CABF				*e*Pg		**Pg**	**19 27 07.5**	**-3.2**
CABF				*e*Sg		**Sg**	**19 27 57.4**	**-4.8**
	20nm,0.7s							
LOR	**Lormes**	**4.22**	**230**	*e*Pn		**Pn**	**19 26 58.4**	**-1.1**
LOR				*e*Sn		**Sn**	**19 27 45.4**	**-4.0**
LOR				*e*Sg		**Sg**	**19 28 08.5**	**-5.6**
	8.5nm,0.3s							
MOA	**Molln**	**4.36**	**119**⇑	*i*PN		**Pn**	**19 27 02.4**	**+0.9**
MOA				*i* SN		**Sn**	**19 27 53.2**	**+0.2**
MOA				*i* SG		**Sg**	**19 28 18.5**	**-0.3**
	4.3nm,0.5s							
KBA	**Koelnbreinsper**	**4.36**	**132**⇑	*i*PN		**Pn**	**19 27 03.6**	**+2.0**
KBA				*i* SN		**Sn**	**19 27 53.3**	**+0.2**
KBA				*i* SG		**Sg**	**19 28 15.8**	**-3.2**
	4.2nm,0.4s							
SSF	**Saint Saulge**	**4.53**	**230**	*e*Pn		**Pn**	**19 27 02.6**	**-1.4**
SSF				*e*Sn		**Sn**	**19 27 53.9**	**-3.5**
SSF				*e*Sg		**Sg**	**19 28 18.6**	**-6.0**
	8.8nm,0.4s							
SMF	**Signal de Mont**	**4.68**	**224**	*e*Pn		**Pn**	**19 27 04.5**	**-1.5**
SMF				*e*Sg		**Sg**	**19 28 22.9**	**-6.5**
	7.8nm,0.3s							
LPL	**La Plagne**	**4.74**	**196**	*e*Pn		**Pn**	**19 27 06.1**	**-0.9**
LPL				*e*Sg		**Sg**	**19 28 24.0**	**-7.6**
	3.5nm,0.6s							
LPG	**La Plagne**	**4.76**	**196**	*e*Pn		**Pn**	**19 27 05.4**	**-1.8**
LPG				*e*Sg		**Sg**	**19 28 24.7**	**-7.4**
	1.6nm,0.3s							
AVF	**Avril sur Loir**	**4.80**	**229**	*e*Pn		**Pn**	**19 27 06.3**	**-1.4**
AVF				*e*Sn		**Sn**	**19 27 59.3**	**-4.8**
AVF				*e*Sg		**Sg**	**19 28 26.5**	**-6.9**
	3.4nm,0.4s							
DPC	**Dobruska-Polom**	**4.97**	**84**	*e*SG		**Sg**	**19 28 31.8**	**-7.4**
BGF	**Bois d'Agland**	**5.21**	**229**	*e*Pn		**Pn**	**19 27 10.1**	**-3.4**
BGF				*e*Sn		**Sn**	**19 28 10.0**	**-4.5**
BGF				*e*Sg		**Sg**	**19 28 39.3**	**-7.8**
	18nm,0.4s							
VIVF	**Saint-Julien-l**	**5.87**	**208**	*e*Pn		**Pn**	**19 27 20.7**	**-2.1**
VIVF				*e*Sg		**Sg**	**19 29 00.0**	**-9.1**
	1.5nm,0.3s							
LDF	**La Druitiere**	**5.89**	**259**	*e*Pn		**Pn**	**19 27 22.9**	**-0.2**
LDF				*e*Pg		**Pg**	**19 27 45.0**	**-6.2**
LDF				*e*Sn		**Sn**	**19 28 24.9**	**-6.5**
LDF				*e*Sg		**Sg**	**19 29 01.3**	**-8.3**
	3.8nm,0.3s							
FLN	**La Foliniere**	**6.07**	**261**	*e*Pn		**Pn**	**19 27 24.8**	**-0.8**
FLN				*e*Sn		**Sn**	**19 28 29.8**	**-6.1**
FLN				*e*Sg		**Sg**	**19 29 07.5**	**-8.1**
	6.0nm,0.4s							
GRR	**Gorron**	**6.42**	**258**	*e*Pn		**Pn**	**19 27 30.2**	**-0.4**
GRR				*e*Sn		**Sn**	**19 28 37.9**	**-6.8**
GRR				*e*Sg		**Sg**	**19 29 18.3**	**-9.0**
	2.8nm,0.3s							
MFF	**Saint Martin d**	**6.79**	**242**	*e*Pn		**Pn**	**19 27 33.5**	**-2.3**
MFF				*e*Pg		**Pg**	**19 28 02.6**	**-6.5**
SGMF	**Saint Gilles**	**7.53**	**260**	*e*Pn		**Pn**	**19 27 43.5**	**-2.8**
SGMF				*e*Sn		**Sn**	**19 29 03.7**	**-8.9**
ROSF	**Rostrenen**	**7.96**	**262**	*e*Pn		**Pn**	**19 27 50.8**	**-1.5**
ROSF				*e*Sn		**Sn**	**19 29 15.1**	**-8.3**
QUIF	**Quistinic**	**8.03**	**259**	*e*Pn		**P**	**19 27 50.9**	**-2.3**
QUIF				*e*Sn		**Sn**	**19 29 16.5**	**-8.5**

NEIC ***04*** *19:36:22.1±1.5,5.62S×149.11E,h163km±10km,mb4.4/2,*

Error ellipse: s-maj=23.3km s-min=10.9km az=87.0
IDC ***04*** *19:36:23.4±2.2,5.68S×149.12E,h173km±18km,mb3.8/5, mb1 3.9/6,mb1mx3.6/15,Error ellipse: s-maj=42.9km s-min=15.9km az=109.0*

ISC 04 19:36:18.5±1.6,5.54S±0.10×149.4E±0.2,h156km±11km, n15,σ0991/18,mb4.2/4,New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
WAU	**Wau**	**3.20**	**236**	*e*P		**P**	**19 37 08.8**	**-0.5**
PMG	**Port Moresby**	**4.43**	**210**	P		**P**	**19 37 25.0**	**-0.3**
	16nm,0.3s,baz=29,slow=7.6,SNR=42							
PMG				S		**S**	**19 38 17.3**	**+0.5**
	9.2nm,0.3s,baz=188,slow=19,SNR=4.8							
PMG	**Port Moresby**	**4.43**	**210**	*e*P		**P**	**19 37 26.1**	**+0.8**
CTAO	**Charters Tower**	**14.78**	**192**	P		**P**	**19 39 42.2**	**+1.2**
WRAB	**Tennant Creek**	**20.45**	**224**	*e*P		**P**	**19 40 44.5**	**-0.9**
	17nm,0.6s							
WB2	**Warramunga Arr**	**20.46**	**224**	*e*P		**P**	**19 40 44.5**	**-1.0**
WB2				*e*S		**S**	**19 44 21.7**	**+1.1**
WRA	**Warramunga Arr**	**20.47**	**224**	P		**P**	**19 40 44.8**	**-0.8**
	5.9nm,0.6s,baz=50,slow=10,SNR=49							
WRA				S		**S**	**19 44 22.2**	**+1.5**
	1.0nm,0.8s,baz=46,slow=21,SNR=3.3							
AS12	**Alice Springs**	**23.39**	**218**	*e*P		**P**	**19 41 14.5**	**+0.3**
	5.5nm,0.3s,mb4.5							
ASAR	**Alice Springs**	**23.39**	**218**	P		**P**	**19 41 14.7**	**+0.5**
	4.5nm,0.3s,mb4.3,baz=51,slow=8.6,SNR=90							
FITZ	**Fitzroy Crossi**	**26.33**	**240**	*e*P		**P**	**19 41 40.5**	**-1.4**
	3.3nm,0.6s,mb4.1							
FITZ	**Fitzroy Crossi**	**26.33**	**240**	P		**P**	**19 41 40.9**	**-1.0**
	3.6nm,0.5s,mb4.2,baz=54,slow=5.2,SNR=38							
STKA	**Stephens Creek**	**27.20**	**195**	P		**P**	**19 41 49.0**	**-0.6**
	1.2nm,0.5s,mb3.8,baz=22,slow=13,SNR=6.3							
TAU	**Tasmania Unive**	**37.26**	**182**	*e*P		**P**	**19 43 16.5**	**-0.2**
JNU	**Nakatsue**	**42.26**	**337**	P		**P**	**19 44 00.0**	**+1.8**
	6.6nm,1.0s,mb4.2,baz=256,slow=22,SNR=2.5							
ULN	**Ulaanbaatar**	**64.87**	**330**	*e*P		**P**	**19 46 43.1**	**-0.1**

NEIC ***04*** *19:37:34.5,38.38S×176.13E,h155km,After WEL.*

WEL 04 19:37:34.6±0.2,38.34S×176.13E,h151km±2km,ML4.0/6, 7C-3D,Error ellipse: s-maj=1.7km s-min=1.6km az=0.0, North Island

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
URZ	**Urewera**	**0.78**	**84**	⇑PN		P	19 37 57.7	-0.4
URZ				SN		S	19 38 15.2	-0.9
URZ	**Urewera**	**0.78**	**84**	P		P	19 37 57.7	-0.4
MGZ	**Maungaku**	**0.80**	**215**	⇑PN		P	19 37 58.3	+0.1
MGZ	**Maungaku**	**0.80**	**215**	P		P	19 37 58.2	0.0
BKZ	**Black Stump Fm**	**0.87**	**161**	PN		P	19 37 58.7	0.0
BKZ				SN		S	19 38 16.7	-0.5
BKZ	**Black Stump Fm**	**0.87**	**161**	P		P	19 37 58.7	0.0
BKZ				S		S	19 38 16.6	-0.6
WTVZ	**West Tongariro**	**0.88**	**208**	PN		P	19 37 58.6	-0.1
NGZ	**Ngauruhoe**	**0.93**	**206**	PN		P	19 37 58.7	-0.3
NGZ	**Ngauruhoe**	**0.93**	**206**	P		P	19 37 59.2	+0.1
CNZ	**Chateau**	**0.97**	**208**	PN		P	19 37 59.2	-0.1
CNZ	**Chateau**	**0.97**	**208**	P		P	19 37 59.3	-0.1
WPVZ	**Whakapapa**	**0.97**	**208**	PN		P	19 37 59.5	+0.1
TUVZ	**Tukino**	**1.00**	**202**	PN		P	19 37 59.7	+0.1
TUVZ	**Tukino**	**1.00**	**202**	P		P	19 37 59.7	+0.1
FWVZ	**Far West T-bar**	**1.02**	**206**	PN		P	19 37 59.6	-0.1
FWVZ	**Far West T-bar**	**1.02**	**206**	P		P	19 37 59.6	-0.2
MWZ	**Matawai**	**1.10**	**90**	PN		P	19 38 00.6	0.0
MWZ				SN		S	19 38 19.8	-0.7
MWZ	**Matawai**	**1.10**	**90**	P		P	19 38 00.6	0.0
MWZ				S		S	19 38 20.2	-0.4
VRZ	**Vera Road**	**1.33**	**233**	⇑PN		P	19 38 02.4	-0.4
VRZ	**Vera Road**	**1.33**	**233**	P		P	19 38 02.4	-0.4
KNZ	**Kokohu**	**1.39**	**120**	PN		P	19 38 03.5	+0.1
KNZ				SN		S	19 38 24.3	-1.3
KNZ	**Kokohu**	**1.39**	**120**	*e*P		P	19 38 03.5	+0.1
KUZ	**Kuaotunu**	**1.62**	**348**	PN		P	19 38 05.0	-0.9
WAZ	**Wanganui**	**1.67**	**212**	PN		P	19 38 05.2	-1.2
WAZ	**Wanganui**	**1.67**	**212**	P		P	19 38 05.5	-0.9
PUZ	**Puketiti**	**1.70**	**82**	⇓PN		P	19 38 06.1	-0.6
PUZ				SN		S	19 38 29.8	-1.7
PUZ	**Puketiti**	**1.70**	**82**	P		P	19 38 06.1	-0.6
PUZ				S		S	19 38 29.9	-1.6
TSZ	**Takapari Road**	**1.72**	**184**	⇑PN		P	19 38 06.0	-0.9
TSZ				SN		S	19 38 29.5	-2.3
TSZ	**Takapari Road**	**1.72**	**184**	P		P	19 38 06.0	-0.9
TSZ				S		S	19 38 29.8	-2.1
PWZ	**Pawanui**	**1.78**	**162**	⇓PN		P	19 38 07.1	-0.5
PWZ				SN		S	19 38 31.7	-1.3
PWZ	**Pawanui**	**1.78**	**162**	P		P	19 38 07.1	-0.5
PWZ				S		S	19 38 31.6	-1.4
NEZ	**North Egmont**	**1.84**	**239**	PN		P	19 38 08.1	-0.2
NEZ	**North Egmont**	**1.84**	**239**	P		P	19 38 08.1	-0.1
DFE	**Dawson Falls**	**1.86**	**237**	PN		P	19 38 08.1	-0.4
DFE	**Dawson Falls**	**1.86**	**237**	P		P	19 38 08.1	-0.4
MXZ	**Matakaoa Point**	**1.89**	**66**	PN		P	19 38 08.5	-0.3
MXZ				SN		S	19 38 34.1	-1.1
MXZ	**Matakaoa Point**	**1.89**	**66**	*e*P		P	19 38 08.5	-0.3
BFZ	**Birch Farm**	**2.34**	**178**	PN		P	19 38 12.4	-1.9
BFZ	**Birch Farm**	**2.34**	**178**	P		P	19 38 12.5	-1.8
MRZ	**Mangatainoka R**	**2.35**	**190**	⇑PN		P	19 38 12.3	-2.2
MRZ				SN		S	19 38 40.9	-4.3
KIW	**Kapiti Island**	**2.69**	**200**	PN		P	19 38 15.8	-2.9
KIW	**Kapiti Island**	**2.69**	**200**	P		P	19 38 15.9	-2.8
CAW	**Cannon Point**	**2.88**	**196**	PN		P	19 38 18.0	-3.2
CAW	**Cannon Point**	**2.88**	**196**	P		P	19 38 18.0	-3.2
MRW	**Makara Radio**	**3.09**	**200**	⇑PN		P	19 38 20.2	-3.6
MSWZ	**Moikau Station**	**3.14**	**192**	PN		P	19 38 21.0	-3.6
SNZO	**South Karori**	**3.16**	**200**	PN		P	19 38 20.9	-3.9
SNZO				SN		S	19 38 57.2	-6.0
SNZO	**South Karori**	**3.16**	**200**	P		P	19 38 21.1	-3.7
BHW	**Baring Head**	**3.21**	**197**	PN		P	19 38 21.6	-3.8
BHW	**Baring Head**	**3.21**	**197**	P		P	19 38 21.6	-3.8
NNZ	**Nelson**	**3.57**	**216**	PN		P	19 38 25.8	-4.2
NNZ				SN		S	19 39 07.2	-5.5
NNZ	**Nelson**	**3.57**	**216**	*e*P		P	19 38 25.8	-4.3
QRZ	**Quartz Range**	**3.73**	**227**	PN		P	19 38 27.2	-4.9
QRZ				SN		S	19 39 10.9	-5.5
QRZ	**Quartz Range**	**3.73**	**227**	P		P	19 38 27.2	-4.9
BSWZ	**Blackbirch Sta**	**3.79**	**206**	PN		P	19 38 28.8	-4.1
THZ	**Tophouse**	**4.22**	**215**	PN		P	19 38 33.5	-5.0
THZ				SN		S	19 39 23.2	-4.6
THZ	**Tophouse**	**4.22**	**215**	*e*P		P	19 38 33.5	-5.1
KHZ	**Kahutara**	**4.53**	**205**	PN		P	19 38 37.8	-4.8
KHZ				SN		S	19 39 29.2	-5.8
KHZ	**Kahutara**	**4.53**	**205**	P		P	19 38 37.9	-4.7
DSZ	**Denniston Nort**	**4.75**	**223**	SN		S	19 39 32.8	-7.5
LTZ	**Lake Taylor**	**5.32**	**212**	PN		P	19 38 47.5	-5.6
LTZ	**Lake Taylor**	**5.32**	**212**	*e*P		P	19 38 47.0	-6.1
MQZ	**McQueen's Vall**	**5.97**	**205**	PN		P	19 38 55.0	-6.8
MQZ				SN		S	19 39 58.2	-11
MQZ	**McQueen's Vall**	**5.97**	**205**	*e*P		P	19 38 55.0	-6.8
ODZ	**Otahua Downs**	**7.85**	**210**	PN		P	19 39 20.3	-6.7
ODZ	**Otahua Downs**	**7.85**	**210**	*e*P		P	19 39 20.4	-6.6
SNAA	**Sanae**	**70.29**	**180**			P	19 48 30.2	-2.5
VNA3	**Neumayer Olymp**	**70.64**	**178**⇑	*i*		P	19 48 27.6	-7.3
VNA2	**Neumayer--Watz**	**71.01**	**179**⇓	*i*		P	19 48 28.6	-8.5

NEIC ***04*** *19:54:24.8±0.4,13.06N×88.52W,mb4.4/7,MD4.9(SNET), Error ellipse: s-maj=14.4km s-min=6.3km az=54.0*
NEIC Felt [III] at San Salvador.
IDC ***04*** *19:54:24.9±0.8,13.10N×88.46W,h65km±6km,mb4.1/14, mb1 4.3/17,mb1mx4.1/25,MS3.5/11,Ms1 3.5/11, ms1mx3.4/25,Error ellipse: s-maj=24.4km s-min=11.6km az=50.0*
CASC ***04*** *19:54:25.5±1.6,12.97N×88.73W,h54km±11km,MD4.4, ML4.7,mb4.4(NEIC)*

ISC 04 19:54:23.6±0.3,12.92N±0.04×88.71W±0.04,h66km, h66km±.7km:pP-P,n83,σ1&32/84,mb4.3/20,4C-13D,Off coast of central America

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
VSM	**San Miguel**	**0.66**	**40**⇓	*i*P		**P**	**19 54 39.1**	**+1.1**
BLLM	**Bellamira**	**0.70**	**41**	*e*P		**P**	**19 54 39.1**	**+0.8**
BLLM				*e*P			19 54 51.1	
SNVI	**San Vicente**	**0.70**	**350**⇓	*i*P		**P**	**19 54 39.1**	**+0.7**
SNVI				*e*S		**S**	**19 54 50.0**	**+0.5**
LCBS	**La Ceiba**	**0.78**	**341**⇓	*i*P		**P**	**19 54 39.7**	**+0.3**
LFRS	**El Faro**	**0.78**	**334**⇓	*i*P		**P**	**19 54 39.7**	**+0.3**
LBRS	**Las Brisas**	**0.88**	**338**⇑	*e*P		**P**	**19 54 41.5**	**+0.9**
LBRS				*e*S		**S**	**19 54 52.8**	**-0.4**
LFU	**La Fuente**	**0.92**	**335**⇓	*i*P		**P**	**19 54 41.8**	**+0.7**
SNET	**Serv Nac Est T**	**0.92**	**327**	*e*P		**P**	**19 54 41.5**	**+0.4**
SNET				*e*S		**S**	**19 54 53.8**	**-0.3**
SNET				*e*			19 54 55.0	
	comp=Z,31μm,0.3s							
CNCH	**Conchagua**	**0.93**	**67**⇓	*i*P		**P**	**19 54 42.1**	**+0.9**
CAHU	**Cacaouatique**	**0.98**	**30**⇓	*e*P		**P**	**19 54 42.9**	**+1.0**
CAHU				*e*S		**S**	**19 54 57.1**	**+1.6**
BOQS	**Boqueron**	**0.98**	**326**⇓	*i*P		**P**	**19 54 42.7**	**+0.7**
SBLS	**San Blas**	**1.28**	**316**⇓	*e*P		**P**	**19 54 46.8**	**+0.9**
SNJE	**San Jose**	**1.29**	**318**⇓	*e*P		**P**	**19 54 46.8**	**+0.7**
RTR	**El Retiro**	**1.33**	**317**⇓	*e*P		**P**	**19 54 47.6**	**+0.8**
RBDL	**Robledal**	**1.52**	**322**⇓	*e*P		**P**	**19 54 50.0**	**+0.6**
RBDL				*e*S		**S**	**19 55 08.6**	**+0.3**
CUSS	**Cusmapa**	**1.56**	**310**⇓	*e*P		**P**	**19 54 50.3**	**+0.5**
CUSS				*e*S		**S**	**19 55 10.0**	**+0.9**
MTO2	**Montecristo 2**	**1.60**	**337**⇓	*i*P		**P**	**19 54 51.2**	**+0.8**
CHIN	**Chinandega**	**1.67**	**99**	*e*P		**P**	**19 54 38.9**	**-12**
CHIN				*e*S		S	19 54 49.3	-22
CHIN				*i*			19 54 55.5	
	comp=Z,36μm,0.5s							
IXG	**Ixpaco**	**2.11**	**307**	*e*P		**P**	**19 54 57.8**	**+0.4**
IXG				*e*S		**S**	**19 55 21.7**	**-0.7**
IXG				AML	AML		19 55 25.4	
	comp=N,19μm,0.4s							
NBG	**Las Nubes**	**2.30**	**316**	*e*P		**P**	**19 55 01.2**	**+1.1**
PCG	**Pacaya**	**2.36**	**309**	*e*P		**P**	**19 55 06.2**	**+5.3**
FUG	**Fuego 3**	**2.57**	**307**	*e*P		**P**	**19 55 05.2**	**+1.2**
TP2	**Tecpan 2**	**2.91**	**310**	*e*P		**P**	**19 55 11.1**	**+2.4**
JAT	**Jato**	**3.17**	**296**	*e*P		**P**	**19 55 12.8**	**+0.5**
JAT				*e*S		**S**	**19 55 47.0**	**-2.1**
JAT				AML	AML		19 56 04.8	
	comp=N,2μm,0.3s							
CRZC	**La Cruz**	**3.62**	**122**⇑	*e*P		**P**	**19 55 20.2**	**+1.6**
JCR	**Jicaral**	**4.66**	**130**	*e*P		**P**	**19 55 34.7**	**+1.5**
CGA2	**Cerro Gallo 2**	**5.06**	**124**	*e*P		**P**	**19 55 41.0**	**+2.2**
CGA2				*e*S		**S**	**19 56 34.1**	**-2.4**
PRS1	**Puriscal**	**5.21**	**124**	*e*P		**P**	**19 55 43.5**	**+2.8**
PRS1				*e*S		**S**	**19 56 38.8**	**-1.3**
LAJ	**Bijagual**	**5.43**	**124**⇑	*e*P		**P**	**19 55 42.3**	**-1.5**
LAJ				*e*S		**S**	**19 56 36.9**	**-8.7**
SJS	**Escuela Geolog**	**5.44**	**122**	*e*S		**S**	**19 56 46.7**	**+0.7**
LCR2	**La Lucha 2**	**5.59**	**124**	*e*P		**P**	**19 55 48.4**	**+2.4**
ICR	**Volcan Irazu**	**5.60**	**121**	*e*P		**P**	**19 55 50.5**	**+4.3**
URSC	**Urasca**	**5.72**	**122**	*e*P		**P**	**19 55 50.3**	**+2.4**
URSC				*e*S		**S**	**19 56 52.8**	**-0.2**
BUS	**Buena Vista**	**5.90**	**124**	*e*P		**P**	**19 55 53.1**	**+2.9**
ACR	**Cerro Adams**	**6.90**	**127**	*e*P		**P**	**19 56 05.5**	**+1.1**
TEIG	**Tepich**	**7.28**	**3**	P		**P**	**19 56 10.4**	**+0.8**
	comp=N,10nm,0.3s,baz=173,slow=13,SNR=12							
TEIG	**Tepich**	**7.28**	**3**	*e*P		**P**	**19 56 07.4**	**-2.2**
OTAV	**Otavalo**	**16.19**	**140**	P		**P**	**19 58 08.5

comp=N,0.4nm,0.9s,baz=314,slow=54,SNR=3.5
WRA PKP PKPdf 20 13 44.5 +2.3
comp=N,1.3nm,0.6s,baz=88,slow=2.3,SNR=17
WRA pPKP 20 14 01.5
comp=N,0.5nm,0.6s,baz=90,slow=1.6,SNR=3.9
ASAR Alice Springs 138.29 249 PKhKP 20 13 36.2
comp=N,0.1nm,0.4s,baz=102,slow=29,SNR=3.9
ASAR PKP PKPdf 20 13 44.5 +2.2
comp=N,0.4nm,0.7s,baz=92,slow=2.4,SNR=4.7
ASAR pPKP 20 14 01.8
comp=N,1.0nm,1.0s,baz=73,slow=1.7,SNR=3.2
FITZ Fitzroy Crossi 146.53 257 *eP* PKPdf 20 14 00.7 +3.8
comp=N,4.5nm,0.9s
CMAR Chiang Mai Arr 147.93 346 PKPbc PKPdf 20 14 00.6 +1.5
comp=N,1.4nm,0.7s,baz=340,slow=2.9,SNR=9.3
CMAR pPKPbc 20 14 18.7
comp=N,0.5nm,0.5s,baz=342,slow=2.8,SNR=2.1

WEL 04 20:10:53.7±0.4, 37.87S×176.18E, h194km±3km, ML3.8/1, 1D, Error ellipse: s-maj=4.7km s-min=4.1km az=0.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**0.83**	**118**	⇓PN	P	20 11 21.6	-0.3
URZ				SN	S	20 11 43.3	-0.5
MWZ	**Matawai**	**1.16**	**114**	PN	P	20 11 24.0	-0.2
MWZ				SN	S	20 11 47.6	-0.3
MGZ	**Maungaku**	**1.24**	**204**	PN	P	20 11 24.9	0.0
BKZ	**Black Stump Fm**	**1.32**	**169**	SN	S	20 11 48.3	-1.9
KNZ	**Kokohu**	**1.64**	**135**	PN	P	20 11 28.3	-0.2
KNZ				SN	S	20 11 55.1	-0.3
PUZ	**Puketiti**	**1.65**	**98**	PN	P	20 11 28.1	-0.6
PUZ				SN	S	20 11 54.8	-0.8
MXZ	**Matakaoa Point**	**1.71**	**80**	PN	P	20 11 28.6	-0.6
MXZ				SN	S	20 11 56.6	+0.1
TSZ	**Takapari Road**	**2.19**	**184**	PN	P	20 11 32.7	-1.5
PWZ	**Pawanui**	**2.22**	**166**	PN	P	20 11 33.5	-1.0
PWZ				SN	S	20 12 03.9	-2.1
MRZ	**Mangatainoka R**	**2.83**	**189**	PN	P	20 11 38.3	-3.2
THZ	**Tophouse**	**4.63**	**212**	PN	P	20 12 00.6	-3.3
MQZ	**McQueen's Vall**	**6.42**	**204**	*e*SN	S	20 13 29.4	-10

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*NEIC **04** 20:12:18.2±0.8,29.32S×178.02W,h10km,mb4.5/2, Error ellipse: s-maj=23.2km s-min=15.4km az=214.0*
*IDC **04** 20:12:18.2±3.8,28.85S×178.27W,mb4.3/3,mb1 4.5/3, mb1mx4.2/12, Error ellipse: s-maj=171.0km s-min=35.4km az=152.0*
ISC 04 20:12:15.6±5.9, 29.2S±0.8×177.9W±0.8, h10km, n13, σ0≤34/9, mb4.3/4, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTAO	**Charters Tower**	**33.73**	**277**	P	**P**	**20 18 59.0**	**-0.4**
STKA	**Stephens Creek**	**34.85**	**255**	*e*P	**P**	**20 19 08.8**	**-0.2**
	3.3nm,0.6s,mb4.4						
STKA	**Stephens Creek**	**34.85**	**255**	P	**P**	**20 19 08.9**	**-0.1**
	3.7nm,0.6s,mb4.5,baz=99,slow=7.9,SNR=14						
ASAR	**Alice Springs**	**43.28**	**266**	P	**P**	**20 20 19.1**	**-0.1**
	1.0nm,0.4s,mb3.9,baz=105,slow=7.8,SNR=15						
WB2	**Warramunga Arr**	**44.16**	**271**	*e*P	**P**	**20 20 26.9**	**+0.6**
WRAB	**Tennant Creek**	**44.16**	**271**	*e*P	**P**	**20 20 26.0**	**-0.4**
WRA	**Warramunga Arr**	**44.16**	**271**	P	**P**	**20 20 26.9**	**+0.5**
	2.6nm,0.3s,mb4.4,baz=110,slow=8.1,SNR=35						
SBA	**Scott Base**	**49.21**	**184**	P	**P**	**20 21 05.6**	**+0.1**
QSPA	**South Pole Qui**	**60.88**	**180**	*e*P	**P**	**20 22 30.0**	**-0.2**
	4.3nm,0.8s,mb4.6						
FINES	**FINESS Array B**	**144.08**	**341**	PKP	PKPdf	20 31 53.0	-0.8
	1.6nm,0.3s,baz=39,slow=3.8,SNR=17						
NB2	**NORSAR Subarra**	**147.61**	**352**	PKP		20 32 03.8	
	0.6nm,0.6s,baz=33,slow=3.4						
NOA	**NORSAR Array B**	**147.61**	**352**	PKPbc	PKPdf	20 32 03.0	+3.3
	0.7nm,0.8s,baz=18,slow=3.9,SNR=2.9						
AKASG	**Malin Array Be**	**150.42**	**324**	PKPbc	PKPdf	20 32 10.0	+5.4
	1.3nm,0.6s,baz=46,slow=2.4,SNR=7.6						
AKASG				PKPab	PKPab	20 32 14.1	-1.5
	1.4nm,0.6s,baz=46,slow=2.9,SNR=6.7						

DJA 04 20:21:32.2±0.8, 8.68S×115.41E, h50km±7km, MD5.1/4, 8C, Error ellipse: s-maj=22.0km s-min=6.7km az=177.0, Bali region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RATI	**Rata**	**0.12**	**110**	⇑*e*Pn	P	20 21 39.7	-0.3
RATI				⇑*e*Sn	S	20 21 45.2	-0.5
INGI	**Ingas**	**0.30**	**243**	⇑*e*Pn	P	20 21 40.9	-0.4
	944nm,0.2s						
INGI				⇑*e*Sn	S	20 21 46.8	-1.0
KEDI	**Kedomdong**	**0.72**	**75**	⇑*e*Pn	P	20 21 45.1	-1.1
KEDI				⇑*e*Sn	S	20 21 54.8	-1.8
KELI	**Kelakatan**	**1.02**	**297**	⇑*e*Pn	P	20 21 49.6	-0.8
KELI				⇑*e*Sn	S	20 22 02.3	-1.6

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*JMA **04** 20:35:15.3±0.2,24.37N×122.54E,h50km,M2.2*
*TAP **04** 20:35:15.1,24.04N×122.65E,h25km±1km,ML3.1*
ISC 04 20:35:14.9±2.9, 24.5N±0.4×122.5E±0.2, h53km±17km, n5, σ0≤62/9, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**0.43**	**94**	P	**P**	**20 35 25.8**	**+0.2**
YOJ				S	**S**	**20 35 33.3**	**-0.1**
IRIF	**Iriomote-Funau**	**1.10**	**98**	P	**P**	**20 35 34.3**	**+0.1**
IRIF				S	**S**	**20 35 48.3**	**-0.3**
HATJ	**Hateruma jima**	**1.23**	**110**	S	**S**	**20 35 51.5**	**-0.5**
JKRS	**Kuro-shima**	**1.36**	**100**	P	**P**	**20 35 38.1**	**0.0**
JKRS				S	**S**	**20 35 57.0**	**+1.7**
JIJ	**Ishigaki jima**	**1.47**	**95**	P	**P**	**20 35 39.2**	**-0.3**
JIJ				S	**S**	**20 35 57.2**	**-0.6**

KRSC 04 21:00:20.4±0.8, 49.03N×155.77E, h43km±29km, ML4.0, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**1.67**	**8**	*e*P	P	21 00 47.4	-0.3
SKR				*e*S	S	21 01 06.5	-1.6
ALID	**Alaid**	**1.85**	**356**	*e*P	P	21 00 50.9	+0.7
ALID				*e*S	S	21 01 12.3	-0.2
PAU	**Pauzhetka**	**2.53**	**15**	P	P	21 01 00.5	+0.5
PAU				*e*S	S	21 01 29.4	-0.4
PAU				Smax			
	300nm,0.3s						
MIPR	**Malaya Ipel'ka**	**3.31**	**11**	*e*P	P	21 01 11.4	+0.3
MIPR				*e*S	S	21 01 48.7	-0.9
GRL	**Gorelyy**	**3.82**	**22**	*e*P	P	21 01 18.8	+0.6
GRL				*e*S	S	21 02 01.4	-1.0
RUS	**Russkaya**	**3.83**	**26**	*e*P	P	21 01 18.1	-0.3
RUS				*e*S	S	21 02 00.8	-1.9
UGLR	**Uglovaya**	**4.61**	**24**	*e*P	P	21 01 30.9	+1.5
UGLR				*e*S	S	21 02 21.9	-0.4
KOK	**Koryaka**	**4.63**	**22**	*e*P	P	21 01 31.7	+1.9
KOK				*e*S	S	21 02 23.8	+0.8
AVH	**Avacha**	**4.63**	**23**	*e*P	P	21 01 31.5	+1.7
AVH				*e*S	S	21 02 23.3	+0.3
SMAR	**Somma**	**4.65**	**23**	*e*P	P	21 01 30.2	+0.2
SMAR				*e*S	S	21 02 22.6	-0.8
SDLR	**Sedlovina**	**4.68**	**24**	*e*P	P	21 01 31.0	+0.5
SDLR				*e*S	S	21 02 22.4	-1.9
NLC	**Nalytchevo**	**4.72**	**27**	*e*P	P	21 01 30.6	-0.4
NLC				*e*S	S	21 02 22.0	-3.1
GNL	**Ganaly**	**4.87**	**15**	*e*P	P	21 01 33.5	+0.4
SPN	**Mys Shipunski**	**4.88**	**32**	*e*P	P	21 01 33.0	-0.2
SPN				*e*S	S	21 02 26.3	-2.8
MKZ	**Mys Kozlova**	**6.65**	**31**	*e*P	P	21 01 56.9	-1.2
MKZ				*e*S	S	21 03 07.3	-6.2
KBTR	**Krutoberegovo**	**8.37**	**28**	*e*P	P	21 02 21.2	-0.7

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*NNC **04** 21:29:27.8±1.8,38.94N×70.24E,h10km±5km,mpv2.8, Error ellipse: s-maj=14.7km s-min=11.5km az=94.0*
ISC 04 21:29:24.4±2.5, 38.5N±0.2×69.9E±0.1, h33km, n7, σ0≤56/9, 3C-2D, Tajikistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KK31	**Karatay Array**	**4.60**	**6**	⇑Pn	**Pn**	**21 30 33.8**	**+0.3**
	0.8nm,0.3s,baz=167,slow=10,SNR=38						
KK31				⇑Sn	**Sn**	**21 31 26.8**	**+0.3**
	1.4nm,0.3s						
KK31				⇓Lg		21 31 40.3	
	8.1nm,0.7s						
AML	**Almayashu**	**4.64**	**38**	P	**P**	**21 30 33.5**	**-0.5**
	SNR=7.0						
UCH	**Uchtor**	**5.13**	**42**	P	**P**	**21 30 40.0**	**-0.8**
	SNR=7.4						
KZA	**Kyzart**	**5.44**	**48**	P	**P**	**21 30 45.7**	**+0.5**
	SNR=7.1						
KBK	**Karagaybulak**	**5.66**	**42**	P	**P**	**21 30 49.1**	**+0.8**
	SNR=13						
TKM2	**Tokmak 2**	**6.18**	**43**	P	**P**	**21 30 55.2**	**-0.5**
	SNR=7.0						
AB31	**Akbulak array**	**12.87**	**330**	⇑Pn	**P**	**21 32 28.2**	**+0.5**
	0.5nm,0.4s,baz=151,slow=11,SNR=15						
AB31				⇓Sn	**S**	**21 34 50.1**	**-0.6**
	1.2nm,0.8s,baz=153,slow=22,SNR=2.5						

TAP 04 21:34:44.0,24.18N×121.92E,h16km, ML3.5, Taiwan

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*NEIC **04** 21:35:40.7±0.2, 11.12S×73.63W,mb4.8/39, Error ellipse: s-maj=7.8km s-min=3.5km az=67.0*
NEIC Felt [III] at San Martin de Pangoa.
*SYO **04** 21:35:40.7, 11.12S×73.63W,h109km,MB4.8*
*BJI **04** 21:35:40.9, 11.54S×73.79W,h112km,mB4.5*
*IDC **04** 21:35:40.9±0.5, 11.14S×73.67W,h110km±3km, mb4.4/18, mb1 4.6/21,mb1mx4.5/22,MS3.6/5,Ms1 3.6/5, ms1mx3.3/21, Error ellipse: s-maj=16.9km s-min=9.4km az=60.0*
ISC 04 21:35:39.9±1.1, 11.08S±0.05×73.67W±0.07, h115km±11km, h109km±7km; pP-P, n140, σ0≤80/114, mb4.8/54, 4C-4D, Central Peru

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ARE	**Arequipa**	**5.75**	**159**	⇓*i*P	**P**	**21 37 04.0**	**-0.1**
LPAZ	**La Paz**	**7.47**	**134**	P	**P**	**21 37 27.7**	**+0.2**
	2.1nm,0.3s,baz=320,slow=12,SNR=74						
LPAZ				LR	LR	21 40 43.0	
	comp=Z,326nm,18.8s,baz=292,slow=41						
LPAZ	**La Paz**	**7.47**	**134**	*e*P	**P**	**21 37 27.4**	**-0.2**
	8.4nm,0.6s						
OTAV	**Otavalo**	**12.21**	**337**	*e*P	**P**	**21 38 32.8**	**+1.9**
	17nm,0.8s						
LVC	**Limon Verde**	**12.34**	**159**	P	**P**	**21 38 32.9**	**+0.2**
	0.7nm,0.3s,baz=323,slow=7.8,SNR=9.1						
LVC				S	**S**	**21 40 40.8**	**-7.2**
	0.3nm,0.3s,baz=311,slow=23,SNR=4.0						
LVC				LR	LR	21 44 11.1	
	comp=Z,142nm,20.9s,baz=308,slow=42						
LVC	**Limon Verde**	**12.34**	**159**	P	**P**	**21 38 32.9**	**+0.2**
	0.9nm,0.7s						
LVC				S	**S**	**21 40 40.8**	**-7.2**
LVC				LR	LR	21 44 11.1	
ROSC	**El Rosal**	**15.84**	**358**	P	**P**	**21 39 23.5**	**+5.8**
	5.3nm,0.3s,baz=130,slow=15,SNR=12						
SDV	**Santo Domingo**	**20.06**	**9**	P	**P**	**21 40 06.0**	**-0.3**
	9.1nm,0.4s,baz=225,slow=6.0,SNR=22						
CPUP	**Villa Florida**	**21.63**	**137**	P	**P**	**21 40 21.3**	**-0.7**
	31nm,0.7s,mb4.7,baz=341,slow=9.6,SNR=51						
CPUP				sP		21 40 56.2	
	31nm,0.8s,baz=338,slow=9.8,SNR=7.4						
CPUP	**Villa Florida**	**21.63**	**137**	*e*P	**P**	**21 40 20.5**	**-1.5**
	21nm,0.8s,mb4.5						
MDZ	**Mendoza**	**22.15**	**169**	*e*P	**P**	**21 40 28.8**	**+1.8**
PCRV	**Puerto La Cruz**	**22.95**	**23**	P	**P**	**21 40 35.9**	**+0.9**
	33nm,0.9s,mb4.7,baz=126,slow=1.0,SNR=9.0						
BDFB	**Brasilia**	**25.36**	**103**	P	**P**	**21 40 58.5**	**+0.4**
	5.6nm,0.8s,mb4.1,baz=270,slow=13,SNR=7.6						
BDFB				pP	pP	21 41 23.3	+0.7
	39nm,1.0s,baz=273,slow=9.1,SNR=15						
TRQA	**Tornquist**	**28.84**	**161**	*e*P	**P**	**21 41 26.0**	**-3.5**
	2.5nm,1.1s,mb3.8						
PLCA	**Paso Flores**	**29.66**	**175**	P	**P**	**21 41 35.0**	**-1.9**
	54nm,1.1s,mb5.1,baz=347,slow=10.0,SNR=49						
PLCA				PcP	PcP	21 44 38.5	0.0
	2.6nm,0.8s,baz=34,slow=4.5,SNR=3.3						
PLCA	**Paso Flores**	**29.66**	**175**	*e*P	**P**	**21 41 34.6**	**-2.2**
	22nm,1.0s,mb4.8						
USHA	**Ushuaia**	**43.84**	**176**	P	**P**	**21 43 34.8**	**-1.2**
	9.4nm,0.8s,mb4.5,baz=148,slow=7.1,SNR=6.2						
TWB	**Tillmans-White**	**44.37**	**352**	*e*P	**P**	**21 43 41.7**	**+1.0**
CPCT	**Cooper Cave**	**47.40**	**348**	*e*P	**P**	**21 44 03.5**	**-1.0**
SWET	**Sewanee**	**47.48**	**346**	*e*P	**P**	**21 44 03.4**	**-1.7**
ELN	**Prospectdale**	**48.51**	**352**	*e*P	**P**	**21 44 13.3**	**+0.2**
PWV	**Princeton**	**48.65**	**352**	*e*P	**P**	**21 44 14.6**	**+0.4**
PWV				*e*pP	pP	21 44 39.2	-2.0
FWV	**Forest Hill**	**48.86**	**352**	*e*P	**P**	**21 44 16.1**	**+0.3**
TXAR	**Lajitas Array**	**49.51**	**325**	P	**P**	**21 44 21.1**	**+0.2**
	2.3nm,0.6s,mb4.3,baz=151,slow=8.9,SNR=11						
TXAR				pP	pP	21 44 47.7	-0.3
	10.0nm,0.7s,baz=145,slow=8.9,SNR=14						
MCWV	**Mont Chateau**	**50.80**	**354**	*e*P	**P**	**21 44 30.6**	**0.0**
	15nm,0.7s,mb5.1						
MVL	**Millersville**	**50.88**	**357**	*e*P	**P**	**21 44 31.6**	**+0.4**
MVL				*e*pP	pP	21 44 58.5	+0.1
WMOK	**Wichita Mounta**	**51.41**	**333**	*e*P	**P**	**21 44 34.0**	**-1.2**
	3.7nm,0.8s,mb4.5						
CCM	**Cathedral Cave**	**51.57**	**342**	*e*P	**P**	**21 44 35.0**	**-1.5**
	3.9nm,0.8s,mb4.5						
SSPA	**Standing Stone**	**51.60**	**356**	*e*P	**P**	**21 44 36.7**	**+0.1**
	79nm,1.6s,mb5.5						
SSPA				*e*pP	pP	21 45 03.3	-0.6
ACSO	**Alum Creek Sta**	**51.77**	**351**	*e*P	**P**	**21 44 36.5**	**-1.4**
	30nm,1.0s,mb5.3						
MNTX	**Cornudas Mount**	**52.27**	**325**	*e*P	**P**	**21 44 41.0**	**-0.8**
ALLY	**Alegheny Colle**	**52.80**	**354**	*e*P	**P**	**21 44 45.2**	**-0.3**
BINY	**Binghamton**	**53.06**	**358**	*e*P	**P**	**21 44 47.9**	**+0.4**
	103nm,0.9s,mb5.9						
BINY				*e*pP	pP	21 45 14.1	-0.7
ERPA	**Erie**	**53.25**	**354**	*e*P	**P**	**21 44 48.2**	**-0.6**
	25nm,0.7s,mb5.3						
ACCN	**Adirondack Com**	**54.20**	**0**	*e*P	**P**	**21 44 55.7**	**-0.1**
KSU1	**Kansas State U**	**54.30**	**338**	*e*P	**P**	**21 44 56.4**	**-0.2**
MIV	**Mineville/With**	**54.89**	**0**	*e*P	**P**	**21 45 00.2**	**-0.6**
ANMO	**Albuquerque**	**55.32**	**327**	P	**P**	**21 45 04.2**	**+0.1**
ANMO				*e*pP	pP	21 45 29.8	-1.9
MSNY	**Massena**	**55.82**	**359**	*e*P	**P**	**21 45 07.4**	**-0.2**
MSNY				*e*pP	pP	21 45 34.4	-0.8
TUC	**Tucson**	**55.85**	**322**	*e*P	**P**	**21 45 07.3**	**-0.7**
	2.7nm,0.8s,mb4.3						
TUC				*e*pP	pP	21 45 34.4	-1.3
SDCO	**Great Sand Dun**	**56.99**	**330**	*e*P	**P**	**21 45 15.6**	**-0.3**
	5.4nm,0.9s,mb4.6						
SDCO				*e*pP	pP	21 45 42.4	-1.3
WUAZ	**Wupatki**	**58.45**	**324**	*e*P	**P**	**21 45 26.3**	**+0.1**
	22nm,0.9s,mb5.2						
WUAZ				*e*pP	pP	21 45 53.7	-0.4
SRU	**San Rafael**	**60.58**	**328**	*e*P	**P**	**21 45 40.1**	**-0.6**
NEN	**Nelson**	**60.59**	**322**	*e*P	**P**	**21 45 41.0**	**+0.2**
NEN				*e*pP	pP	21 46 07.7	-1.3
MSU	**Marysvale**	**61.04**	**326**	*e*P	**P**	**21 45 44.1**	**+0.3**
MSU				*e*pP	pP	21 46 11.6	-0.4
RSSD	**Black Hills**	**61.47**	**336**	*e*P	**P**	**21 45 46.9**	**+0.2**
	3.0nm,0.6s,mb4.5						
DAU	**Daniels Canyon**	**61.92**	**328**	*e*P	**P**	**21 45 48.8**	**-0.9**
PDAR	**Pinedale Array**	**62.84**	**331**	P	**P**	**21 45 55.5**	**-0.4**
	1.4nm,0.7s,mb4.0,baz=153,slow=6.6,SNR=10						
PDAR				pP	pP	21 46 21.9	-2.3
	1.4nm,0.6s,baz=146,slow=5.3,SNR=3.4						
PDAR				LR	LR	22 18 03.7	
	comp=Z,53nm,19.2s,baz=66,slow=40						
HWUT	**Hardware Ranch**	**62.96**	**329**	*e*P	**P**	**21 45 55.7**	**-1.0**
	7.6nm,0.9s,mb4.6						
HWUT				*e*pP	pP	21 46 23.5	-1.4
TPH	**Tonopah**	**63.63**	**323**	*e*P	**P**	**21 46 01.3**	**-0.2**
	8.8nm,1.0s,mb4.5						
TPH				*e*pP	pP	21 46 28.4	-1.0
ULM	**Lac du Bonnet**	**64.08**	**344**	P	**P**	**21 46 02.8**	**-1.0**
	14nm,0.7s,mb4.9,baz=155,slow=6.7,SNR=30						
ULM				pP	pP	21 46 29.4	-2.7
	9.6nm,0.8s,baz=145,slow=6.5,SNR=4.1						
ULM				LR	LR	22 17 17.8	
	comp=Z,43nm,19.1s,baz=24,slow=39						
ULM	**Lac du Bonnet**	**64.08**	**344**	*e*P	**P**	**21 46 02.5**	**-1.4**
	14nm,0.6s,mb5.0						
ULM				*e*pP	pP	21 46 29.4	-2.7
NVAR	**Mina Array Bea**	**64.50**	**322**	P	**P**	**21 46 07.8**	**+1.0**
	4.0nm,0.9s,mb4.2,baz=138,slow=7.9,SNR=12						
NVAR				pP	pP	21 46 34.4	-0.8
	5.1nm,0.9s,baz=132,slow=7.2,SNR=5.3						
HLID	**Hailey**	**65.82**	**329**	*e*P	**P**	**21 46 14.7**	**-0.5**
	2.5nm,0.8s,mb4.1						
SCHQ	**Schefferville**	**65.91**	**4**	P	**P**	**21 46 15.3**	**-0.3**
	26nm,0.8s,mb5.1,baz=176,slow=4.5,SNR=19						
SCHQ				pP	pP	21 46 43.2	-0.9
	32nm,1.1s,baz=173,slow=2.5,SNR=5.2						
SCHQ	**Schefferville**	**65.91**	**4**	*e*P	**P**	**21 46 14.4**	**-1.1**
	53nm,1.1s,mb5.3						
SCHQ				*e*pP	pP	21 46 41.8	-2.3
BOZ	**Bozeman (W)**	**65.99**	**332**	*e*P	**P**	**21 46 16.1**	**-0.2**
	2.2nm,0.6s,mb4.2						
HRY	**Holter Researc**	**66.88**	**332**	P	**P**	**21 46 21.2**	**-0.7**
MSO	**Missoula**	**67.95**	**331**	*e*P	**P**	**21 46 29.1**	**+0.7**
	10nm,1.1s,mb4.6						
MSO				*e*pP	pP	21 46 56.1	-1.0
LNOR	**Lincton Mounta**	**69.41**	**328**	*e*P	**P**	**21 46 37.5**	**0.0**
FFC	**Flin Flon**	**69.77**	**343**	*e*P	**P**	**21 46 38.6**	**-0.9**
	1.7nm,0.7s,mb4.0						
LIC	**Lamto**	**70.44**	**79**	*e*P	**P**	**21 46 43.1**	**-1.1**
	25nm,1.0s,mb4.7						
LIC				*e*R			
	56nm,21.8s						
LIC	**Lamto**	**70.44**	**79**	*e*P	**P**	**21 46 42.9**	**-1.3**
	34nm,1.0s,mb5.1						
LIC				*e*PcP	PcP	21 47 09.8	+4.8
LIC	**Lamto**	**70.44**	**79**	*e*P	**P**	**21 46 43.1**	**-1.1**
	13nm,1.0s,mb4.7						
LIC				LR	LR		
	comp=Z,30nm,21.8s						
TIC	**Toumodi**	**70.55**	**79**	*e*P	**P**	**21 46 43.9**	**-1.0**
	comp=Z,40nm,0.9s,mb5.3						
TIC				*e*PcP	PcP	21 47 09.8	+4.4
DBIC	**Dimbokro**	**70.71**	**79**	P	**P**	**21 46 45.1**	**-0.8**
	comp=Z,9.5nm,0.7s,mb4.7,baz=256,slow=6.9,SNR=20						
DBIC				pP	pP	21 47 13.4	-1.3
	comp=Z,31nm,0.9s,baz=228,slow=6.9,SNR=14						
KIC	**Kosan Boka**	**70.75**	**79**	*e*P	**P**	**21 46 45.2**	**-0.9**
	comp=Z,93nm,0.9s,mb5.6						
KIC				*e*PcP	PcP	21 47 11.9	+5.6
SSOR	**Sweet Springs**	**70.99**	**326**	*e*P	**P**	**21 46 46.3**	**-0.6**
VNA3	**Neumayer Olymp**	**71.35**	**162**		**P**	**21 46 49.8**	**+1.1**
WTV	**Waterville**	**71.49**	**329**	P	**P**	**21 46 51.1**	**+1.2**
FCC	**Fort Churchill**	**71.55**	**349**	*e*P	**P**	**21 46 49.6**	**-0.5**
	comp=Z,9.4nm,0.8s,mb4.7						
VNA1	**Neumayer--Stat**	**71.57**	**161**	⇓*i*	**P**	**21 46 51.6**	**+1.6**
ETW	**Entiat**	**71.62**	**329**	P	**P**	**21 46 52.2**	**+1.5**
VNA2	**Neumayer--Watz**	**71.93**	**162**	⇑*i*	**P**	**21 46 53.3**	**+1.1**
KMOR	**Kings Mountain**	**72.04**	**326**	P	**P**	**21 46 55.0**	**+1.8**
RMW	**Rattlesnake Mo**	**72.28**	**328**	*e*P	**P**	**21 46 54.7**	**+0.1**
RPW	**Rockport**	**72.77**	**329**	*e*P	**P**	**21 46 57.3**	**-0.2**
CMW	**Cultus Mountai**	**73.06**	**329**	P	**P**	**21 47 00.0**	**+0.9**
VDB	**Vedder Mountai**	**73.44**	**329**	P	**P**	**21 47 02.1**	**+0.7**
SNAA	**Sanae**	**73.56**	**162**	⇓*i*	**P**	**21 47 01.1**	**-0.5**
EVO	**Evora**	**78.53**	**47**	*e*P	**P**	**21 47 29.9**	**-0.3**
	comp=Z,30nm,1.0s,mb4.8						
EVO				*e*R			
	comp=Z,98nm,17.5s						
QSPA	**South Pole Qui**	**79.05**	**180**	*e*P	**P**	**21 47 32.7**	**+0.4**
	comp=Z,24nm,0.9s,mb5.0						
YKA	**Yellowknife Ar**	**79.91**	**342**	P	**P**	**21 47 37.5**	**+0.3**
	comp=Z,4.4nm,0.8s,mb4.3,baz=137,slow=5.8,SNR=46						
YKA				pP	pP	21 48 05.0	-1.7
	comp=Z,7.7nm,0.8s,baz=136,slow=6.1,SNR=8.9						
YKA	**Yellowknife Ar**	**79.91**	**342**	P	**P**	**21 47 37.5**	**+0.3**
YKA				pP	pP	21 48 05.0	-1.7
YKW3	**Yellowknife Ar**	**79.96**	**342**	*e*P	**P**	**21 47 37.1**	**-0.4**
ESDC	**Sonseca Array**	**81.87**	**47**	P	**P**	**21 47 49.3**	**+1.3**
	comp=Z,6.8nm,1.1s,mb4.4,baz=254,slow=5.9,SNR=10						
ESDC				pP	pP	21 48 15.6	-2.0
	comp=Z,4.9nm,0.9s,baz=253,slow=5.2,SNR=5.5						
DLBC	**Dease Lake**	**82.89**	**334**	*e*P	**P**	**21 47 53.8**	**+0.9**
DLBC				*e*pP	pP	21 48 22.5	-0.1
MFF	**Saint Martin d**	**86.92**	**41**	*e*P	**P**	**21 48 13.2**	**+0.2**
	comp=Z,45nm,1.1s,mb5.0						
GRR	**Gorron**	**87.07**	**40**	*e*P	**P**	**21 48 14.1**	**+0.4**
	comp=Z,39nm,0.7s,mb5.1						
FLN	**La Foliniere**	**87.44**	**39**	*e*P	**P**	**21 48 15.7**	**+0.2**
	comp=Z,54nm,0.9s,mb5.2						
LDF	**La Druitiere**	**87.61**	**40**	*e*P	**P**	**21 48 16.7**	**+0.4**
	comp=Z,62nm,0.9s,mb5.3						
SYO	**Syowa Base**	**87.80**	**161**	⇑P	**P**	**21 48 16.4**	**-0.3**
SYO	**Syowa Base**	**87.80**	**161**	⇓sP	sP	21 48 58.0	-1.3
SYO	**Syowa Base**	**87.80**	**161**	⇑*e*P	**P**	**21 48 16.4**	**-0.3**
SYO				*e*sP	sP	21 48 58.0	-1.3
SYO				*e*PP	PP	21 51 38.1	-8.0
BGF	**Bois d'Agland**	**88.87**	**42**	*e*P	**P**	**21 48 22.5**	**+0.2**
	comp=Z,16nm,0.7s,mb4.8						
AVF	**Avril sur Loir**	**89.27**	**42**	*e*P	**P**	**21 48 24.2**	**0.0**
SSF	**Saint Saulge**	**89.45**	**42**	*e*P	**P**	**21 48 24.8**	**-0.2**
SSF				*e*pP	pP	21 48 52.7	-2.5
SMF	**Signal de

comp=Z,3.3nm,0.8s,baz=301,slow=1.4,SNR=5.4
CN2 Changchun 143.44 337 *e*PKP PKPdf 21 55 03.0 +2.1
WMQ Urumqi 143.61 23 *e*PKP PKPdf 21 55 03.1 +1.9
FITZ Fitzroy Crossi 145.30 214 *e*PKP PKPdf 21 55 05.5 +0.6
comp=Z,41nm,1.0s
FITZ *e* 21 55 39.2
BJI Beijing 149.86 345 PKP PKPdf 21 55 18.4 +6.7
BJT Baijiatuan 149.89 345 *e*PKPbc PKPdf 21 55 18.0 +6.2
GTA Gaotai 151.19 11 ⇑PKP PKPdf 21 55 17.0 +3.3
KOLN Koldanda 152.97 49 *e*P PKPdf 21 55 19.2 +2.5
GKN Gorkha 153.59 47 *e*P PKPdf 21 55 19.4 +1.9
comp=Z,13nm,0.7s
DMN Daman 154.16 47 *e*P PKPdf 21 55 20.2 +1.9
KKN Kakani 154.18 47 *e*P PKPdf 21 55 19.5 +1.2
GUN Gumba 154.53 46 *e*P PKPdf 21 55 20.5 +1.7
CMAR Chiang Mai Arr 169.76 43 PKP PKPdf 21 55 36.0 +1.8
comp=Z,4.7nm,1.1s,baz=300,slow=1.5,SNR=14
CMAR pPKP 21 56 06.7
comp=Z,0.6nm,0.4s,baz=296,slow=2.0,SNR=2.6
CMAR sPKP 21 56 19.4
comp=Z,2.1nm,0.9s,baz=318,slow=1.1,SNR=6.1
CMAR PKPab PKPab 21 56 50.7 -0.4
comp=Z,1.4nm,1.0s,baz=296,slow=5.1,SNR=3.3
CMAR pPKPab 21 57 18.8
comp=Z,2.0nm,0.9s,baz=326,slow=5.5,SNR=5.3
CMAR Chiang Mai Arr 169.76 43 PKP PKPdf 21 55 36.0 +1.8
CMAR pPKP 21 56 06.7
CMAR sPKP 21 56 19.4
CMAR PKPab PKPab 21 56 50.7 -0.4
CMAR pPKPab 21 57 18.8

NEIC 04 21:41:08.7,51.19N×179.79W,h1km,ML3.5(AEIC)**, After AEIC., Andreanof Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KIMD	**Kanaga Island**	**1.69**	**69**	P	Pn	21 41 37.0	-2.6
KIMD				S	Sb	21 41 59.8	-2.3
KIKV	**Kanaga Island**	**1.77**	**66**	P	Pn	21 41 38.6	-2.1
KIKV				S	Sn	21 42 03.2	-1.0
KIWB	**Kanaga Island**	**1.77**	**67**	P	Pn	21 41 38.5	-2.2
KINC	**Kanaga Island**	**1.82**	**65**	P	Pn	21 41 40.1	-1.2
KIRH	**Kanaga Island**	**1.82**	**66**	P	Pn	21 41 40.1	-1.4
KIRH				S	Sn	21 42 04.1	-1.4
ADK	**Adak**	**2.06**	**69**	P	Pn	21 41 43.2	-1.6
ADK				S	Sn	21 42 08.7	-2.7
ADAG	**Mount Adagdak**	**2.14**	**67**	P	Pn	21 41 44.4	-1.5
ETKA	**Kagalaska Isla**	**2.21**	**71**	P	Pn	21 41 45.8	-1.3
ETKA				S	Sn	21 42 12.3	-3.1
GSTD	**Great Sitkin T**	**2.43**	**68**	P	Pn	21 41 48.4	-1.7
GSTD				S	Sn	21 42 20.1	-0.8
GSMY	**Great Sitkin M**	**2.48**	**68**	P	Pn	21 41 48.6	-2.2
GSIG	**Igitkin Island**	**2.54**	**70**	P	Pn	21 41 50.3	-1.3
ATKA	**Atka Island**	**3.62**	**72**	P	Pn	21 42 05.3	-1.7

*RSPR **04** 22:15:01.7, 18.97N×64.81W, h25km≤31km, M3.5*
*NEIC **04** 22:15:01.7, 18.97N×64.81W, h25km, MD3.5(RSPR), After RSPR.*

ISC 04 22:15:01.1±1.5, 19.0N±0.1×65.0W±0.1, h25km, n17, σ0≤37/27, 9C-4D, Puerto Rico region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBYP	**Canovanas**	**1.05**	**229**	⇓*e*P	**Pn**	**22 15 20.2**	**-0.1**
CBYP				S	**Sb**	**22 15 34.1**	**+0.3**
HUMP	**Col San Antoni**	**1.13**	**224**	⇓*e*P	**Pn**	**22 15 21.5**	**-0.1**
HUMP				S	**Sb**	**22 15 36.2**	**0.0**
CSB	**Colonia Sabana**	**1.27**	**238**	⇑*e*P	**Pn**	**22 15 23.0**	**-0.5**
CSB				S	**Sn**	**22 15 40.2**	**+0.3**
SJG	**San Juan**	**1.36**	**232**	⇑*e*P	**Pn**	**22 15 24.9**	**0.0**
SJG				S	**Sn**	**22 15 41.6**	**-0.7**
SJG	**San Juan**	**1.36**	**232**	⇑*e*P	**Pn**	**22 15 24.8**	**-0.1**
SJG	**San Juan**	**1.36**	**232**	S	**Sn**	**22 15 42.2**	**-0.1**
SJG	**San Juan**	**1.36**	**232**	⇑*e*P	**Pn**	**22 15 24.8**	**-0.1**
SJG				S	**Sn**	**22 15 42.2**	**-0.1**
CELP	**Cerrillos**	**1.72**	**240**	⇑*e*P	**Pn**	**22 15 30.4**	**+0.4**
CELP				S	**Sn**	**22 15 51.8**	**+0.4**
AOPR	**Arecibo Observ**	**1.75**	**250**	⇑*e*P	**Pn**	**22 15 30.8**	**+0.4**
AOPR	**Arecibo Observ**	**1.75**	**250**	S	**Sn**	**22 15 52.0**	**-0.1**
OBIP	**Obispado Ponce**	**1.76**	**239**	⇓*e*P	**Pn**	**22 15 31.0**	**+0.4**
OBIP	**Obispado Ponce**	**1.76**	**239**	S	**Sn**	**22 15 53.0**	**+0.6**
ICM	**Isla Caja Muer**	**1.78**	**234**	S	**Sn**	**22 15 52.4**	**-0.3**
PORP	**Portuguez**	**1.78**	**240**	⇑*e*P	**Pn**	**22 15 31.1**	**+0.3**
PORP				S	**Sn**	**22 15 52.0**	**-0.8**
LRS	**Lares**	**1.85**	**249**	⇑*e*P	**Pn**	**22 15 31.9**	**+0.1**
LRS				S	**Sn**	**22 15 55.0**	**+0.3**
LSP	**Las Mesas**	**2.11**	**249**	⇓*e*P	**Pn**	**22 15 35.4**	**-0.1**
LSP				S	**Sn**	**22 16 00.9**	**-0.3**
MGP	**Maguayo**	**2.18**	**245**	⇑*e*P	**Pn**	**22 15 35.9**	**-0.7**
MGP				S	**Sn**	**22 16 02.8**	**-0.2**

IDC 04 22:20:50.5±5.8, 3.71S×132.35E, mb3.6/1, mb1 3.7/3, mb1mx3.5/12, ML3.1/2, Error ellipse: s-maj=384.0km s-min=29.5km az=74.0, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**16.25**	**173**	Pn	P	22 24 40.6	-1.3
	0.1nm,0.3s,baz=354,slow=13,SNR=3.2						
ASAR	**Alice Springs**	**19.89**	**176**	P	P	22 25 23.6	-2.9
	0.1nm,0.3s,baz=351,slow=9.7,SNR=9.1						
MKAR	**Makanchi Array**	**66.83**	**325**	P	P	22 31 44.3	-2.1
	0.4nm,0.6s,baz=112,slow=7.8,SNR=7.7						

GUC 04 22:28:15.6±0.8, 31.20S×72.70W, h36km±6km, MD3.6, ML3.2, 2C, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ILCH	**Illapel**	**1.38**	**109**	*i*P	P	22 28 39.5	+0.8
ILCH				*i*S	S	22 28 57.8	+1.8
ILCH				AMP		22 28 58.4	
	comp=N,401nm,0.2s						
OVCH	**Ovalle**	**1.42**	**66**	*i*P	P	22 28 40.2	+0.9
OVCH				*i*S	S	22 28 58.6	+1.6
OVCH				AMP		22 29 01.1	
	comp=E,272nm,0.2s						
CMCH	**Combarbala**	**1.46**	**89**	⇑*i*P	P	22 28 41.3	+1.5
CMCH				*i*S	S	22 29 00.6	+2.6
CMCH				AMP		22 29 02.5	
	comp=N,2μm,0.3s						
TLL	**Tololo Astrono**	**1.93**	**58**	⇑*i*P	P	22 28 47.8	+1.2
TLL				*i*S	S	22 29 12.5	+2.6
TLL				AMP		22 29 14.4	
	comp=N,261nm,0.6s						

*LDG **04** 22:35:58.2±0.3, 19.08S×168.72E, h10km, Mb5.2/4, Error ellipse: s-maj=32.1km s-min=12.9km az=10.0*
*MOS **04** 22:36:22.3±1.2, 19.03S×169.27E, h224km, mb5.1/7, Error ellipse: s-maj=18.5km s-min=13.5km az=44.6*
*IDC **04** 22:36:23.9±0.7, 18.83S×168.90E, h207km±6km, mb4.6/21, mb1 4.7/21, mb1mx4.6/23, Error ellipse: s-maj=10.0km s-min=8.8km az=168.0*
*NEIC **04** 22:36:28.6±1.8, 18.84S×168.89E, h256km±17km, mb4.8/44, Error ellipse: s-maj=6.9km s-min=6.1km az=168.0*
*BJI **04** 22:36:28.2, 18.23S×168.78E, h237km, mB5.1, mb4.9*
*SYO **04** 22:36:28.6, 18.84S×168.89E, h256km, MB4.8*

ISC 04 22:36:22.6±0.6, 18.76S±0.04×168.87E±0.05, h208km±6km, h201km±4.0km: pP-P, n323, σ0≤90/137, mb4.8/72, 33C-12D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**1.24**	**331**	⇓*i*P	**P**	**22 36 54.8**	**-0.4**
DZM	**Mont Dzumac**	**4.00**	**214**	⇑*i*P	**P**	**22 37 24.9**	**-0.4**
DZM				*e*S	**S**	**22 38 14.2**	**+0.3**
NOUC	**Port Laguerre**	**4.10**	**215**	⇑*e*P	**P**	**22 37 26.3**	**-0.3**
URZ	**Urewera**	**20.71**	**161**	P	**P**	**22 40 47.3**	**-0.5**
	31nm,0.4s,baz=324,slow=1.9,SNR=19						
MGZ	**Maungaku**	**20.98**	**165**	P	**P**	**22 40 52.2**	**+1.7**
FWVZ	**Far West T-bar**	**21.23**	**166**	*e*P	**P**	**22 40 54.6**	**+1.7**
CTA	**Charters Tower**	**21.37**	**263**	*e*P	**P**	**22 40 57.1**	**+2.8**
	14nm,0.6s,mb4.7						
CTA				*i*S	Sx	22 45 31.5	
CTA	**Charters Tower**	**21.37**	**263**	P	**P**	**22 40 57.1**	**+2.8**
	14nm,0.6s,mb4.7,baz=93,slow=12,SNR=23						
CTAO	**Charters Tower**	**21.37**	**263**	*e*P	**P**	**22 40 57.2**	**+2.9**
	16nm,0.7s,mb4.7						
KIW	**Kapiti Island**	**22.63**	**168**	P	**P**	**22 41 06.0**	**-0.5**
PMG	**Port Moresby**	**23.00**	**291**	P	**P**	**22 41 12.5**	**+2.2**
	102nm,1.1s,mb5.3,baz=118,slow=5.5,SNR=10						
PMG	**Port Moresby**	**23.00**	**291**	*e*P	**P**	**22 41 12.6**	**+2.3**
	75nm,1.0s,mb5.2						
THZ	**Tophouse**	**23.18**	**172**	P	**P**	**22 41 11.3**	**-0.5**
CNB	**Canberra Magne**	**23.88**	**222**	*e*P	**P**	**22 41 19.8**	**+1.3**
	98nm,0.7s,mb5.5						
RPZ	**Rata Peaks**	**24.95**	**176**	P	**P**	**22 41 27.9**	**-0.4**
	22nm,0.5s,mb5.1,baz=18,slow=11,SNR=7.1						
BWZ	**Berwen**	**25.71**	**178**	P	**P**	**22 41 33.4**	**-2.0**
STKA	**Stephens Creek**	**27.81**	**237**	⇓*i*P	**P**	**22 41 54.9**	**+0.3**
	10nm,0.4s,mb4.8						
STKA				*e*	pP	22 42 36.6	+0.3
STKA				*i*		22 45 04.7	
STKA	**Stephens Creek**	**27.81**	**237**	P	**P**	**22 41 54.5**	**0.0**
	13nm,0.5s,mb4.8,baz=67,slow=8.8,SNR=29						
STKA				pP	pP	22 42 36.8	+0.5
	13nm,0.8s,baz=63,slow=8.1,SNR=4.2						
STKA				PcP	PcP	22 45 04.6	-0.7
	5.1nm,0.6s,baz=62,slow=2.4,SNR=4.8						
STKA				ScP		22 48 27.1	
	2.7nm,0.9s,baz=104,slow=7.9,SNR=3.4						
RAR	**Rarotonga**	**29.55**	**100**	P	**P**	**22 42 10.5**	**+0.4**
	17nm,0.7s,mb4.8,baz=347,slow=16,SNR=2.6						
WB2	**Warramunga Arr**	**32.56**	**262**	*e*P	**P**	**22 42 35.1**	**-1.2**
WB2				*e*S	**S**	**22 42 33.2**	**-2.0**
WRAB	**Tennant Creek**	**32.56**	**262**	*e*P	**P**	**22 42 35.6**	**-0.8**
	33nm,0.8s,mb4.9						
WRA	**Warramunga Arr**	**32.57**	**262**	P	**P**	**22 42 35.7**	**-0.8**
	14nm,0.7s,mb4.6,baz=97,slow=8.4,SNR=75						
WRA				PcP	PcP	22 45 16.7	-1.1
	1.6nm,0.6s,baz=88,slow=2.6,SNR=4.6						
WRA				S	**S**	**22 47 34.2**	**-1.2**
	3.8nm,0.9s,baz=92,slow=15,SNR=14						
WRA				ScP		22 48 43.5	
	11nm,1.4s,baz=95,slow=4.9,SNR=5.9						
WRA				PKiKP		22 52 42.2	
	0.6nm,0.6s,baz=80,slow=0.7,SNR=7.3						
AS12	**Alice Springs**	**32.91**	**255**	*e*P	**P**	**22 42 38.5**	**-0.8**
	65nm,0.5s,mb5.4						
ASAR	**Alice Springs**	**32.91**	**255**	P	**P**	**22 42 38.8**	**-0.5**
	52nm,0.5s,mb5.4,baz=82,slow=8.8,SNR=649						
ASAR				pP	pP	22 43 21.6	-0.7
	9.9nm,0.7s,baz=82,slow=9.0,SNR=2.2						
ASAR				S	**S**	**22 47 40.2**	**-0.4**
	3.3nm,0.8s,baz=86,slow=18,SNR=9.9						
ASAR				ScP		22 48 44.5	
	2.4nm,1.0s,baz=96,slow=3.6,SNR=8.2						
ASAR				PKiKP		22 52 42.6	
	0.3nm,0.6s,baz=91,slow=2.1,SNR=4.2						
FITZ	**Fitzroy Crossi**	**40.95**	**264**	*e*P	**P**	**22 43 47.0**	**+0.5**
	23nm,0.4s,mb5.0						
FITZ	**Fitzroy Crossi**	**40.95**	**264**	P	**P**	**22 43 47.4**	**+0.9**
	baz=126,slow=4.1						
KLBR	**Kellerberrin**	**47.60**	**244**	*e*P	**P**	**22 44 38.2**	**-1.2**
	8.5nm,0.5s,mb4.3						
NWAO	**Narrogin (SRO)**	**48.12**	**242**	P	**P**	**22 44 42.9**	**-0.5**
	baz=82,slow=11						
NWAO				pP	pP	22 45 26.5	-2.6
	2.6nm,0.3s,baz=91,slow=14,SNR=1.8						
CBIJ	**Chichi jima**	**52.42**	**330**	P	**P**	**22 45 15.1**	**-0.7**
	73nm,0.4s,mb5.5,baz=186,slow=19,SNR=13						
TGY	**Tagaytay City**	**57.41**	**301**	P	**P**	**22 45 51.9**	**0.0**
	98nm,0.3s,baz=269,slow=3.6,SNR=3.2						
JHJ	**Hachijo jima 2**	**58.60**	**331**	P	**P**	**22 45 59.6**	**-0.3**
	118nm,0.7s,mb5.6,baz=234,slow=22,SNR=2.9						
SBA	**Scott Base**	**59.14**	**181**	*e*P	**P**	**22 46 02.1**	**-1.0**
	44nm,1.3s,mb4.9						
JOW	**Kunigami**	**60.04**	**318**	P	**P**	**22 46 10.5**	**+0.7**
	27nm,0.9s,mb4.9,baz=120,slow=9.4,SNR=3.8						
MAJO	**Matsushiro**	**62.17**	**332**	*e*P	**P**	**22 46 23.2**	**-0.8**
	22nm,0.4s,mb5.1						
MAT	**Matsushiro**	**62.17**	**332**	P	**P**	**22 46 22.9**	**-1.1**
MAT	**Matsushiro**	**62.17**	**332**	*e*P	**P**	**22 46 23.0**	**-1.0**
	17nm,0.6s,mb4.8						
JNU	**Nakatsue**	**63.08**	**325**	P	**P**	**22 46 29.7**	**-0.3**
	23nm,0.4s,mb5.1,baz=53,slow=3.1,SNR=33						
ASAJ	**Asahikawa**	**67.03**	**340**	P	**P**	**22 46 56.0**	**+0.8**
	22nm,0.5s,mb5.0,baz=232,slow=8.3,SNR=22						
YSS	**Yuzh-Sakhalins**	**69.52**	**341**	⇑*i*P	**P**	**22 47 11.0**	**+0.6**
YSS				pmax	pmax		
	comp=Z,30nm,0.8s,mb5.0						
YSS	**Yuzh-Sakhalins**	**69.52**	**341**	*e*P	**P**	**22 47 11.4**	**+1.0**
	comp=Z,40nm,0.8s,mb5.1						
NJ2	**Nanjing**	**69.62**	**316**	*e*P	**P**	**22 47 11.6**	**+0.3**
NJ2				AMB	AMB		
	comp=Z,40nm,1.0s,mb5.0						
QSPA	**South Pole Qui**	**71.29**	**180**	*e*P	**P**	**22 47 19.1**	**-1.5**
	comp=Z,11nm,1.1s,mb4.4						
QSPA				*e*	pP	22 48 05.5	-4.5
FX1	**Attu Island--F**	**71.44**	**3**	*e*P	**P**	**22 47 21.3**	**-0.6**
WHN	**Wuhan**	**71.77**	**312**	*e*P	**P**	**22 47 24.0**	**-0.3**
PET	**Petropavlovsk**	**72.03**	**354**	⇑*i*P	**P**	**22 47 24.8**	**-0.6**
PET				*e*S	S	22 56 33.3	+4.8
PET				pmax	pmax		
	comp=Z,55nm,0.5s,mb5.4						
PET				pmax	pmax		
	comp=Z,145nm,16.8s						
PET				smax			
	comp=E,86nm,16.1s						
PET				MLR	MLR		
	comp=Z,56nm,17.0s						
PET	**Petropavlovsk**	**72.03**	**354**	*e*P	**P**	**22 47 24.9**	**-0.5**
	comp=Z,34nm,0.5s,mb5.2						
MDJ	**Mudanjiang**	**72.54**	**332**	P	**P**	**22 47 29.0**	**+0.4**
MDJ				AMB	AMB		
	comp=Z,23nm,1.5s,mb4.6						
MDJ				AMB	AMB		
	comp=Z,126nm,5.7s						
MDJ	**Mudanjiang**	**72.54**	**332**	*e*P	**P**	**22 47 29.3**	**+0.8**
	comp=Z,15nm,0.8s,mb4.7						
CN2	**Changchun**	**73.87**	**329**	*e*P	**P**	**22 47 36.2**	**-0.2**
CN2				AMB	AMB		
	comp=Z,60nm,0.6s,mb5.4						
ENH	**Enshi**	**75.10**	**310**	*e*P	**P**	**22 47 43.7**	**0.0**
	comp=Z,8.4nm,0.4s,mb4.7						
KLR	**Kul'dur**	**75.29**	**336**	*e*P	**P**	**22 47 44.2**	**-0.1**
KLR				pmax	pmax		
	comp=Z,35nm,1.8s,mb4.7						
UNV	**Unalaska Valle**	**75.35**	**15**	*e*P	**P**	**22 47 43.0**	**-1.6**
	comp=Z,97nm,0.8s,mb5.5						
BJT	**Baijiatuan**	**76.34**	**321**	*e*P	**P**	**22 47 51.4**	**+1.0**
	comp=Z,26nm,0.7s,mb5.0						
BJI	**Beijing**	**76.35**	**321**	P	**P**	**22 47 50.7**	**+0.3**
BJI				AMB	AMB		
	comp=Z,32nm,0.8s,mb5.0						
KMI	**Kunming**	**77.72**	**302**	*e*P	**P**	**22 48 00.0**	**+1.7**
KMI				AMB	AMB		
	comp=Z,28nm,1.1s,mb4.8						
KMI				LR	LR		
	comp=Z,66nm,19.2s						
CM31	**Chiang Mai Arr**	**77.99**	**294**	*e*P	**P**	**22 48 01.8**	**+1.9**
	comp=Z,37nm,1.4s,mb4.8						
CMAR	**Chiang Mai Arr**	**77.99**	**294**	P	**P**	**22 48 01.2**	**+1.4**
	comp=Z,4.5nm,0.5s,mb4.3,baz=130,slow=4.3,SNR=41						
SDN	**Sand Point**	**78.27**	**17**	*e*P	**P**	**22 47 59.4**	**-1.2**
SDPT	**Sand Point**	**78.28**	**17**	*e*P	**P**	**22 47 59.1**	**-1.6**
SDPT				LR	LR		
	comp=Z,100nm,18.0s						
MAW	**Mawson**	**78.74**	**202**	P	**P**	**22 48 03.9**	**+0.9**
	comp=Z,6.0nm,0.6s,mb4.4,baz=163,slow=4.5,SNR=5.5						
MA2	**Magadan**	**79.44**	**351**	*e*P	**P**	**22 48 06.1**	**-0.8**
HHC	**Hu-ho-hao-te**	**79.63**	**320**	⇑P	**P**	**22 48 09.2**	**+0.9**
HHC				AMB	AMB		
	comp=Z,20nm,1.4s,mb4.5						
HHC				AMB	AMB		
	comp=Z,98nm,6.3s						
CD2	**Chengdu**	**79.67**	**308**	*e*P	**P**	**22 48 09.9**	**+1.2**
CD2				AMB	AMB		
	comp=Z,10.0nm,1.0s,mb4.4						
HIA	**Hailar**	**80.53**	**330**	*e*P	**P**	**22 48 13.3**	**+0.5**
	comp=Z,20nm,1.3s,mb4.6						
KDAK	**Kodiak Island**	**82.70**	**20**	*e*P	**P**	**22 48 24.3**	**+0.4**
	comp=Z,34nm,0.7s,mb5.2						
CLNS	**Chul'man**	**83.82**	**337**	*e*P	**P**	**22 48 29.7**	**+0.2**
CLNS				pmax	pmax		
	comp=Z,10.0nm,0.9s,mb4.5						
CLNS				pmax	pmax		
	comp=N,10.0nm,1.0s						
CLNS				pmax	pmax		
	comp=E,10.0nm,0.7s						
SVW	**Sparrevohn**	**84.54**	**16**	*e*P	**P**	**22 48 33.4**	**+0.4**
RSO	**Redoubt South**	**84.81**	**18**	*e*P	**P**	**22 48 33.0**	**-1.4**
SYO	**Syowa Base**	**85.29**	**196**	⇑P	pP	22 49 23.9	-3.8
SYO	**Syowa Base**	**85.29**	**196**	⇓pP	pP	22 49 34.1	+6.4
ANM	**Nome**	**85.40**	**11**	*e*P	**P**	**22 48 38.1**	**+0.9**
SLKM	**Skilak Lake**	**85.61**	**19**	*e*P	**P**	**22 48 37.2**	**-1.1**
TNA	**Tin City**	**85.89**	**9**	*e*P	**P**	**22 48 39.8**	**+0.1**
	comp=E,9.2nm,0.8s,mb4.6						
ULN	**Ulaanbaatar**	**86.27**	**324**	*c i*P	**P**	**22 48 42.8**	**+0.9**
ULN	**Ulaanbaatar**	**86.27**	**324**	*e*P	**P**	**22 48 42.6**	**+0.7**
	comp=E,10nm,0.4s,mb4.9						
YAK	**Yakutsk**	**86.31**	**343**	*e*P	**P**	**22 48 40.8**	**-0.9**
YAK				pmax	pmax		
	comp=Z,10.0nm,0.9s,mb4.5						
YAK				pmax	pmax		
	comp=N,4.0nm,1.5s						
YAK				pmax	pmax		
	comp=E,3.0nm,1.2s						
PMS	**Palmer South**	**86.39**	**19**	*e*P	**P**	**22 48 42.1**	**0.0**
GTA	**Gaotai**	**86.55**	**314**	⇑P	**P**	**22 48 44.6**	**+1.2**
GTA				AMB	AMB		
	comp=Z,19nm,1.0s,mb4.8						
BILL	**Bilibino**	**86.57**	**359**	*c i*P	**P**	**22 48 42.6**	**-0.2**
BILL				pmax	pmax		
	comp=Z,26nm,1.0s,mb4.9						
BILL	**Bilibino**	**86.57**	**359**	*e*P	**P**	**22 48 42.9**	**+0.1**
	comp=Z,20nm,0.8s,mb4.9						
SONM	**Songino Array**	**86.63**	**323**	P	**P**	**22 48 44.4**	**+0.8**
	comp=Z,8.9nm,0.5s,mb4.7,baz=154,slow=6.2,SNR=121						
WDC	**Whiskeytown Da**	**86.77**	**45**	*e*P	**P**	**22 48 44.6**	**+0.1**
	comp=Z,7.3nm,0.7s,mb4.5						
CMB	**Columbia Colle**	**87.10**	**48**	*e*P	**P**	**22 48 45.6**	**-0.5**
	comp=Z,16nm,0.9s,mb4.7						
YBH	**Yreka Blue Hor**	**87.20**	**44**	*e*P	**P**	**22 48 46.7**	**+0.2**
	comp=Z,11nm,0.8s,mb4.6						
HUMO	**Hull Mountain**	**87.45**	**43**	*e*P	**P**	**22 48 48.5**	**+0.9**
BEKR	**Beckwourth**	**87.93**	**47**	*e*P	**P**	**22 48 50.3**	**+0.3**
	comp=Z,8.2nm,0.7s,mb4.7						
MCK	**McKinley**	**88.51**	**17**	*e*P	**P**	**22 48 50.4**	**-1.7**
	comp=Z,3.2nm,0.7s,mb4.3						
NVAR	**Mina Array Bea**	**88.75**	**49**	P	**P**	**22 48 54.2**	**+0.4**
	comp=Z,5.2nm,0.8s,mb4.4,baz=215,slow=5.9,SNR=18						
BOD	**Bodaibo**	**88.75**	**334**	*e*P	**P**	**22 48 52.1**	**-1.3**
SSOR	**Sweet Springs**	**88.83**	**42**	*e*P	**P**	**22 48 54.2**	**+0.1**
LSA	**Lhasa**	**88.98**	**302**	P	**P**	**22 48 56.4**	**+1.2**
LSA	**Lhasa**	**88.98**	**302**	*e*P	**P**	**22 48 56.9**	**+1.7**
	comp=Z,6.2nm,0.8s,mb4.5						
IMA	**Indian Mountai**	**89.14**	**14**	*e*P	**P**	**22 48 54.9**	**-0.1**
	comp=Z,12nm,0.7s,mb4.8						
TPH	**Tonopah**	**89.37**	**49**	*e*P	**P**	**22 48 57.0**	**+0.3**
	comp=Z,20nm,1.3s,mb4.8						
SNAA	**Sanae**	**89.62**	**183**	⇓*i*	**P**	**22 48 55.7**	**-1.5**
SNAA	**Sanae**	**89.62**	**183**	⇑*i*	**P**	**22 48 56.5**	**-0.7**
SNAA	**Sanae**	**89.62**	**183**	⇑*i*	pP	22 49 44.5	-4.1
SNAA	**Sanae**	**89.62**	**183**		pP	22 49 54.6	+6.0
SNAA	**Sanae**	**89.62**	**183**	⇓*i*	sP	22 50 18.1	+7.6
COLA	**College**	**89.69**	**17**	⇓*e*P	**P**	**22 48 56.2**	**-1.4**
ZAK	**Zakamensk**	**89.71**	**324**	*e*P	**P**	**22 48 58.3**	**+0.3**
HDW	**Hoodsport**	**89.79**	**39**	P	**P**	**22 48 59.3**	**+0.8**
ILAR	**Eielson Array**	**89.88**	**17**	P	**P**	**22 48 56.5**	**-2.0**
	comp=Z,6.7nm,0.6s,mb4.6,baz=239,slow=4.9,SNR=88						
LON	**Longmire**	**90.11**	**40**	*e*P	**P**	**22 48 60.0**	**-0.1**
NEN	**Nelson**	**90.14**	**52**	*e*P	**P**	**22 49 00.8**	**+0.4**
TLY	**Talaya**	**90.17**	**326**	*e*P	**P**	**22 49 00.3**	**+0.1**
TLY				*e*		22 52 40.5	
TLY				pmax	pmax		
	comp=Z,140nm,0.9s,mb5.8						
TLY				MLR	MLR		
	comp=Z,400nm,15.0s						
WVOR	**Wild Horse Val**	**90.22**	**45**	*e*P	**P**	**22 49 01.3**	**+0.7**
	comp=Z,88nm,1.6s,mb5.3						
VNA3	**Neumayer Olymp**	**90.23**	**180**	⇑*i*	**P**	**22 49 00.7**	**+0.7**
VNA3	**Neumayer Olymp**	**90.23**	**180**	⇓*i*	pP	22 49 48.5	-3.0
VNA3	**Neumayer Olymp**	**90.23**	**180**	⇑*i*	pP	22 49 55.3	+3.8
VNA3	**Neumayer Olymp**	**90.23**	**180**	⇓*i*	sP	22 50 22.8	+9.4
WPW	**White Pass**	**90.25**	**40**	P	**P**	**22 49 01.1**	**+0.4**
FMW	**Mount Fremont**	**90.28**	**40**	P	**P**	**22 49 01.3**	**+0.5**
BMN	**Battle Mountai**	**90.35**	**47**	*e*P	**P**	**22 49 01.6**	**+0.3**
	comp=Z,14nm,0.8s,mb4.8						
MCW	**Mount Constitu**	**90.41**	**38**	P	**P**	**22 49 02.1**	**+0.8**
RMW	**Rattlesnake Mo**	**90.45**	**39**	P	**P**	**22 49 02.1**	**+0.5**
VNA2	**Neumayer--Watz**	**90.51**	**181**	⇑*i*	**P**	**22 49 01.9**	**+0.6**
VNA2	**Neumayer--Watz**	**90.51**	**181**	⇑*i*	**P**	**22 49 02.9**	**+1.6**
VNA2	**Neumayer--Watz**	**90.51**	**181**	⇑*i*	pP	22 49 50.9	-2.0
VNA2	**Neumayer--Watz**	**90.51**	**181**	⇑*i*	pP	22 49 59.4	+6.5
VNA2	**Neumayer--Watz**	**90.51**	**181**	⇑*i*	sP	22 50 21.3	+6.6
VNA1	**Neumayer--Stat**	**90.81**	**181**	⇑*i*	**P**	**22 49 03.0**	**+0.3**
VNA1	**Neumayer--Stat**	**90.81**	**

NB2	NORSAR Subarra	134.89 345	PKPdf	PKPdf	22 55 17.3	+1.0		
	comp=Z,0.7nm,0.6s,baz=31,slow=1.9							
NOA	NORSAR Array B	134.89 345	PKP	PKPdf	22 55 16.1	-0.2		
	comp=Z,0.7nm,0.5s,baz=28,slow=2.1,SNR=4.7							
AKASG	Malin Array Be	134.90 324	PKP	PKPdf	22 55 16.9	+0.3		
	comp=Z,1.4nm,0.4s,baz=50,slow=2.0,SNR=8.5							
AKASG			SKPbc		22 58 29.9			
	comp=Z,0.4nm,0.4s,baz=43,slow=3.9,SNR=5.9							
BRTR	Keskin Array B	136.25 308	PKP	PKPdf	22 55 20.8	+1.3		
	comp=Z,0.7nm,0.5s,baz=119,slow=2.9,SNR=6.9							
BRTR			SKPbc		22 58 32.9			
	comp=Z,0.8nm,0.8s,baz=180,slow=3.7,SNR=5.4							
CRVS	Cervenica-Dubn	140.08 326	*e*PKP	PKPdf	22 55 30.0	+3.8		
DPC	Dobruska-Polom	141.64 332	*e*PKP	PKPdf	22 55 26.1	-2.7		
UPC	Upice	141.67 332	*e*PKP	PKPdf	22 55 24.7	-4.1		
VYHS	Vyhne	141.70 328	*e*	PKPdf	22 55 26.0	-3.0		
PVCC	Panska Ves	142.28 333	*e*PKP	PKPdf	22 55 27.3	-2.6		
BRG	Berggiesshubel	142.29 334	*e*PKIKP	PKPdf	22 55 27.2	-2.7		
BRG			pmax	pmax				
	comp=Z,2.0nm,0.4s							
CLL	Collm	142.34 335	*e*	PKPdf	22 55 27.0	-2.9		
PRU	Pruhonice	142.69 333	*e*PKP	PKPdf	22 55 28.1	-2.5		
ZST	Bratislava	142.76 328	*e*PKP	PKPdf	22 55 29.5	-1.3		
SRS	Serrai	142.92 314	*e*P	PKPdf	22 55 29.1	-2.2		
OUR	Ouranopolis	143.00 313	*e*P	PKPdf	22 55 29.6	-1.9		
SOH	Sokhos	143.22 314	*e*P	PKPbc	22 55 29.3	-1.0		
KNT	Kendrikon	143.37 315	*e*P	PKPbc	22 55 30.5	-0.2		
MOX	Moxa	143.41 336	*i* P	PKPbc	22 55 30.6	+0.1		
	comp=Z,logA/T=1.4							
MOX	Moxa	143.41 336	*e*PKIKP	PKPdf	22 55 30.6	-1.2		
MOX			pmax	pmax				
	comp=Z,36nm,1.4s							
THE	Thessaloniki	143.57 314	*e*P	PKPbc	22 55 29.0	-2.3		
KRIS	Kristallenia	143.73 304	*e*PKP	PKPdf	22 55 32.5	-0.4		
KHC	Kasperske Hory	143.75 332	*e*PKP	PKPdf	22 55 32.0	-0.5		
GRG	Griva	143.80 315	*e*P	PKPbc	22 55 31.4	-0.6		
GEC2	GERESS Array S	143.91 332	*e*PKIKP	PKPdf	22 55 32.5	-0.3		
GERES	GERESS Array B	143.91 332	PKP	PKPdf	22 55 32.5	-0.3		
	comp=Z,7.9nm,0.5s,baz=36,slow=3.3,SNR=68							
GERES			pPKP		22 56 26.1			
	comp=Z,0.8nm,0.5s,baz=156,slow=26,SNR=1.2							
SKO	Skopje	143.94 317	⇑*i*P	PKPbc	22 55 33.4	+1.0		
XOR	Xorichti	143.96 312	*e*P	PKPbc	22 55 32.1	-0.5		
WTSB	Winterswijk	143.99 341	*e*P	PKPbc	22 55 31.9	-0.3		
	comp=Z,15nm,1.6s							
WET	Wettzell	144.05 333	*e*PKIKP	PKPdf	22 55 33.0	0.0		
LIT	Litokhoron	144.13 314	*e*P	PKPbc	22 55 32.9	-0.1		
ARSA	Arzberg	144.19 329	⇓*i*PKP	PKPdf	22 55 33.4	+0.1		
GRF	Grafenberg Arr	144.31 335	*e*PKIKP	PKPdf	22 55 33.6	+0.1		
MOA	Molln	144.37 330	⇑*i*PKP	PKPdf	22 55 34.4	+0.8		
FNA	Florina	144.57 315	*e*P	PKPdf	22 55 34.2	0.0		
AGG	Agios Georgios	144.71 312	*e*P	PKPdf	22 55 34.1	-0.4		
OHR	Ohrid	144.79 316	⇑*i*P	PKPdf	22 55 35.5	+0.9		
PERS	Pernice	144.81 328	*i* PKPbc	PKPbc	22 55 35.3	+0.6		
SISC	Sisak	144.94 326	*i* PKP	PKPdf	22 55 36.6	+2.0		
MEV	Metsovon	145.13 314	*e*P	PKPdf	22 55 36.9	+1.7		
OBKA	Obir	145.18 328	⇓*i*PKP	PKPdf	22 55 36.1	+1.0		
SIND	Sindeldorf	145.22 336	⇑*e*P	PKPdf	22 55 36.4	+1.4		
HGN	Heimansgroeve	145.31 341	*e*P	PKPdf	22 55 36.3	+1.1		
	comp=Z,20nm,1.2s							
TOD	Tromm	145.31 337	*e*P	PKPdf	22 55 37.1	+1.9		
KBA	Koelnbreinsper	145.36 330	⇑*i*PKP	PKPdf	22 55 36.5	+1.2		
FUR	Furstenfeldbru	145.48 333	*e*PKP2	PKPab	22 55 37.9	-0.9		
BOJS	Bojanci	145.51 327	*i* PKPbc	PKPbc	22 55 38.1	+1.5		
LJU	Ljubljana	145.52 328	*i* PKPbc	PKPbc	22 55 37.7	+1.2		
VISS	Visnje	145.52 327	*i* PKPbc	PKPbc	22 55 37.8	+1.2		
ABH	Alteburg	145.53 339	*e*P	PKPdf	22 55 37.9	+2.4		
HDH	Heidenheim	145.60 335	*e*P	PKPdf	22 55 37.7	+2.0		
VOY	Vojsko	145.84 328	*e*PKPbc	PKPbc	22 55 38.3	+1.0		
RUP	Ruppelstein	145.85 339	*e*P	PKPdf	22 55 38.2	+2.1		
IGT	Igoumenitsa	145.87 314	*e*P	PKPdf	22 55 38.8	+2.4		
WATA	Walderalm	145.98 332	⇑*i*PKP	PKPdf	22 55 38.9	+2.5		
GMNA	Gemona	145.99 329	*e*PKP	PKPdf	22 55 38.4	+2.0		
WTTA	Wattenberg	146.01 332	⇑*i*PKP	PKPdf	22 55 39.2	+2.8		
LKD	Levkas	146.03 312	*e*P	PKPdf	22 55 39.7	+2.9		
BUCH	Bad Urach	146.05 335	⇑*e*P	PKPdf	22 55 39.4	+2.9		
LBG	Lerchenberg	146.09 336	⇑*e*P	PKPdf	22 55 39.4	+2.9		
MOTA	Moosalm	146.19 332	⇑*i*PKP	PKPdf	22 55 39.5	+2.8		
LANF	Langenberg	146.20 337	PKP	PKPdf	22 55 39.8	+3.1		
GIVF	Givet	146.23 341	*e*PKP1	PKPbc	22 55 39.4	+1.3		
SQTA	Sankt Quirin	146.23 332	⇑*i*PKP	PKPdf	22 55 39.9	+3.1		
NVLJ	Novalja	146.34 326	*i* P	PKPdf	22 55 39.6	+2.5		
UBR	Uberruh	146.35 334	⇑*e*P	PKPdf	22 55 40.1	+3.1		
GUT	Gutenstein	146.45 335	⇑*e*P	PKPdf	22 55 40.0	+2.9		
BAIF	Baives	146.45 342	*e*PKP1	PKPbc	22 55 40.2	+1.6		
	comp=Z,30nm,0.8s							
BFO	Black Forest	146.54 336	*e*PKP2	PKPab	22 55 40.6	-2.3		
SPAK	Spaichingen	146.55 336	*e*P	PKPdf	22 55 40.5	+3.2		
DAVA	Damuels	146.76 334	⇑*i*PKP	PKPdf	22 55 41.2	+3.5		
WLS	Welschbruch	146.84 337	PKP	PKPdf	22 55 41.4	+3.6		
CDF	Champ du Feu	146.87 337	*e*PKP1	PKPbc	22 55 41.4	+1.7		
	comp=Z,54nm,0.8s							
CTI	Castel Tesino	146.91 330	*e*PKP	PKPdf	22 55 41.4	+3.4		
LIBD	Limburg	146.96 337	*e*P	PKPdf	22 55 42.0	+4.0		
LIBD	Limburg	146.96 337	PKP	PKPdf	22 55 41.8	+3.8		
KIZ	Kirchzarten	147.01 336	*e*P	PKPdf	22 55 41.5	+3.4		
FELD	Feldberg	147.04 336	*e*P	PKPdf	22 55 41.9	+3.8		
ECH	Echery	147.07 337	PKP	PKPdf	22 55 41.7	+3.5		
BRMO	Bormio	147.17 332	*e*PKP	PKPdf	22 55 42.6	+4.3		
THEF	They Montfort	147.48 339	PKP	PKPdf	22 55 43.1	+4.3		
HINF	Hinteralfeld	147.52 337	*e*PKP1	PKPdf	22 55 42.8	+3.9		
	comp=Z,17nm,0.7s							
HAU	Haudompre	147.54 338	*e*PKP1	PKPdf	22 55 43.1	+4.2		
	comp=Z,28nm,0.6s							
MEZF	Maizieres J'vi	147.56 340	*e*PKP1	PKPdf	22 55 43.6	+4.6		
LOMF	Lomont	147.92 337	PKP	PKPdf	22 55 44.4	+4.8		
FSSB	Fossombrone	148.04 326	*e*PKP	PKPdf	22 55 45.2	+5.3		
ARV	Arcevia	148.09 326	*e*PKP	PKPdf	22 55 45.4	+5.4		
SNTG	Esanatoglia	148.25 326	*e*PKP	PKPdf	22 55 45.6	+5.4		
VAI	Varese	148.35 333	*e*PKP	PKPdf	22 55 44.8	+4.5		
MRLC	Muro Lucano	148.36 320	*e*PKP	PKPdf	22 55 45.7	+5.2		
VMG	Vicchio	148.49 328	*e*PKP	PKPdf	22 55 46.3	+5.7		
SLCN	Sala Consilina	148.49 319	*e*PKP	PKPdf	22 55 46.1	+5.3		
CSSN	Cassano Irpino	148.59 320	*e*PKP	PKPdf	22 55 45.6	+4.7		
SGO	Sicignano	148.59 319	*e*PKP	PKPdf	22 55 45.9	+5.0		
AQU	L'Aquila	148.60 324	*e*PKPbc	PKPdf	22 55 46.6	+5.8		
MCGN	Macugnaga	148.60 334	*e*PKP	PKPdf	22 55 46.6	+5.9		
GSCL	Gusciola	148.68 329	*e*PKP	PKPdf	22 55 46.7	+5.8		
MGR	Morigerati	148.68 319	*e*PKP	PKPdf	22 55 45.5	+4.4		
SDI	San Donato	148.78 322	*e*PKP	PKPdf	22 55 46.2	+5.0		
CABF	La Chapelle	148.82 337	*e*PKP1	PKPdf	22 55 46.9	+5.9		
	comp=Z,53nm,0.6s							
GRAM		148.82 330	P	PKPdf	22 55 46.7	+5.6		
VALM		148.84 330	P	PKPdf	22 55 46.5	+5.3		
FLN	La Foliniere	148.85 346	*e*PKP1	PKPdf	22 55 46.1	+5.1		
	comp=Z,25nm,0.4s							
SARO	Sassorosso	148.89 329	P	PKPdf	22 55 45.9	+4.7		
LDF	La Druitiere	148.93 346	*e*PKP1	PKPdf	22 55 46.1	+4.9		
	comp=Z,19nm,0.6s							
CSNT	Castellina Chi	148.96 327	*e*PKP	PKPdf	22 55 45.8	+4.5		
BACM		148.98 330	P	PKPdf	22 55 46.3	+4.9		
CODM		149.00 330	P	PKPdf	22 55 46.2	+4.8		
LOR	Lormes	149.03 340	*e*PKP1	PKPdf	22 55 46.9	+5.5		
	comp=Z,44nm,0.7s							
MAIM		149.04 329	P	PKPdf	22 55 46.2	+4.7		
GRR	Gorron	149.29 347	*e*PKP1	PKPdf	22 55 47.3	+5.5		
	comp=Z,21nm,0.5s							
SSF	Saint Saulge	149.32 340	*e*PKP1	PKPdf	22 55 47.7	+5.8		
	comp=Z,40nm,0.7s							
LSD	Ceresole Reale	149.35 334	P	PKPdf	22 55 48.5	+6.5		
GENL	Genova Univers	149.40 331	P	PKPdf	22 55 47.2	+5.1		
LPL	La Plagne	149.48 335	*e*PKP1	PKPdf	22 55 48.6	+6.5		
	comp=Z,26nm,0.6s							
PCP	Pian Castagno	149.48 332	P	PKPdf	22 55 47.8	+5.6		
LPG	La Plagne	149.48 335	*e*PKP1	PKPdf	22 55 48.8	+6.6		
	comp=Z,32nm,0.6s							
RSP	Reno Superiore	149.56 334	P	PKPdf	22 55 47.7	+5.4		
SMF	Signal de Mont	149.58 339	*e*PKP1	PKPdf	22 55 47.8	+5.5		
AVF	Avril sur Loir	149.61 340	*e*PKP1	PKPdf	22 55 48.1	+5.8		
	comp=Z,9.7nm,0.7s							
FENE	Fenestrelle	149.74 334	P	PKPdf	22 55 48.5	+6.0		
SGMF	Saint Gilles	149.77 349	*e*PKP1	PKPdf	22 55 48.1	+5.6		
BHB	Bricherasio	149.81 333	P	PKPdf	22 55 47.8	+5.1		
ROSF	Rostrenen	149.82 350	*e*PKP1	PKPdf	22 55 48.2	+5.6		
BNI	Bardonecchia	149.88 334	*e*PKPbc	PKPdf	22 55 49.7	+6.9		
FIN	Finale Ligure	149.89 332	P	PKPdf	22 55 48.1	+5.2		
ROB	Roburent	149.98 332	P	PKPdf	22 55 48.4	+5.4		
BGF	Bois d'Agland	149.98 341	*e*PKP1	PKPdf	22 55 49.1	+6.2		
	comp=Z,25nm,0.7s							
RORO		150.03 332	P	PKPdf	22 55 48.8	+5.7		
MBDF	Montbardon	150.10 334	*e*PKP1	PKPdf	22 55 49.5	+6.3		
	comp=Z,30nm,0.8s							
PZZ	Prazzo	150.14 333	P	PKPdf	22 55 48.7	+5.4		
MONE	Monesi	150.20 332	P	PKPdf	22 55 49.7	+6.4		
QUIF	Quistinic	150.20 349	*e*PKP1	PKPdf	22 55 49.0	+5.8		
ENR	Entracque	150.23 333	P	PKPdf	22 55 48.2	+4.8		
STV2	Anna di Valdie	150.25 333	P	PKPdf	22 55 48.5	+5.1		
STV	Sta Anna Valdi	150.26 333	P	PKPdf	22 55 48.7	+5.3		
IMI	Imperia	150.27 332	P	PKPdf	22 55 49.5	+6.0		
ORIF	Oris-en-Rattie	150.31 335	*e*PKP1	PKPdf	22 55 50.3	+6.8		
	comp=Z,51nm,0.7s							
AGO	Saint Agoulin	150.34 340	PKP	PKPdf	22 55 49.9	+6.4		
SAOF	Saorge	150.36 332	PKP	PKPdf	22 55 49.7	+6.1		
NEGI	Negi	150.40 332	P	PKPdf	22 55 49.6	+6.0		
TCF	Toulx Ste Croi	150.42 341	*e*PKP1	PKPdf	22 55 50.2	+6.6		
	comp=Z,26nm,0.8s							
SBF	Sospel	150.51 332	*e*PKP1	PKPdf	22 55 50.1	+6.3		
	comp=Z,52nm,0.7s							
PYM	Petit Puy Mans	150.64 340	PKP	PKPdf	22 55 51.1	+7.2		
PGF	Pioggiola	150.79 329	*e*PKP1	PKPdf	22 55 51.3	+7.0		
	comp=Z,137nm,0.6s							
MFF	Saint Martin d	150.80 344	*e*PKP1	PKPdf	22 55 50.7	+6.6		
	comp=Z,30nm,0.9s							
VIVF	Saint-Julien-l	150.83 337	*e*PKP1	PKPdf	22 55 51.3	+7.1		
	comp=Z,20nm,0.8s							
CALN	Calern	150.84 333	PKP	PKPdf	22 55 51.3	+7.0		
LBL	Lubilhac	151.02 339	PKP	PKPdf	22 55 52.5	+8.0		
FRF	La Foret Royal	151.10 333	*e*PKP1	PKPdf	22 55 51.6	+6.9		
	comp=Z,33nm,0.7s							
SMRF	Simiane la Rot	151.21 334	*e*PKP1	PKPdf	22 55 52.4	+7.6		
	comp=Z,26nm,0.7s							
LMR	La Mourre	151.34 333	*e*PKP1	PKPdf	22 55 52.2	+7.1		
	comp=Z,46nm,0.8s							
RJF	Les Rejaudoux	151.52 341	*e*PKP1	PKPdf	22 55 52.6	+7.3		
	comp=Z,9.3nm,0.7s							
CAF	Calviac	151.68 340	*e*PKP1	PKPdf	22 55 53.3	+7.8		
LASF	Ste Croix	151.80 337	*e*PKP1	PKPdf	22 55 53.6	+7.9		
	comp=Z,9.7nm,0.6s							
LFF	La Frestale	152.08 342	*e*PKP1	PKPdf	22 55 54.5	+8.4		
	comp=Z,24nm,0.7s							
MTLF	Montolieu	153.03 338	*e*PKP1	PKPdf	22 55 56.2	+8.7		
ESDC	Sonseca Array	158.26 345	PKPab	PKPab	22 56 31.4	-0.7		
	comp=Z,1.1nm,0.5s,baz=17,slow=4.3,SNR=7.3							
EVO	Evora	160.11 353	*e*PKIKP	PKPdf	22 55 57.5	+0.9		
	comp=Z,9.2nm,0.8s							
DBIC	Dimbokro	166.52 208	PKPab	PKPab	22 57 08.2	-0.5		
	comp=Z,7.9nm,1.1s,baz=144,slow=4.3,SNR=5.0							

*GUC **04** 22:42:04.6±0.7, 37.80S×73.94W, h25km, ML4.5*
*NEIC **04** 22:42:04.6, 37.80S×73.94W, h25km, ML4.5(GUC), After GUC.*

ISC 04 22:42:03.6±2.0, 37.84S±0.05×73.9W±0.1, h23km±18km, n16, σ1°08/24, mb5.2/1, 1D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
TMCH	Temuco	1.38	131		*e*P	Pn	22 42 28.0	+0.2
TMCH					*i* S	Sn	22 42 45.1	-0.5
CCHI	Chillan	1.93	51		*e*P	Pn	22 42 36.8	+1.1
CCHI					*i* S	Sn	22 43 01.2	+1.6
CCHI					AMP		22 43 04.5	
	comp=E,5μm,0.4s							
CCHI					AMP		22 43 04.6	
	comp=E,8μm,0.5s							
COCH	Cobquecura	1.94	29		*e*P	Pn	22 42 38.0	+2.3
COCH					*i* S	Sn	22 43 02.2	+2.5
COCH					AMP		22 43 12.6	
	comp=E,1μm,0.5s							
TALC	Talca	3.06	38		⇓*i*P	Pn	22 42 52.5	+0.7
TALC					*i* S	Sn	22 43 28.0	-0.2
TALC					AMP		22 43 43.2	
	comp=E,4μm,0.3s							
SFDO	San Fernando	3.99	37		*i* P	Pn	22 43 04.9	-0.2
SFDO					*i* S	Sn	22 43 51.5	-0.2
LNV	Longovilo	4.38	29		*e*P	Pn	22 43 10.3	-0.4
CACH	El Canelo	4.60	37		*e*P	Pn	22 43 13.4	-0.2
CHCH	Chadas Angostu	4.72	35		*e*P	Pn	22 43 15.0	-0.4
TACH	Talagante	4.84	31		*i* P	Pn	22 43 16.5	-0.5
LMEL	Las Melosas	5.01	38		*e*P	Pn	22 43 19.4	-0.1
LMEL					*i* S	Sn	22 44 16.5	-0.9
RCDM	Rinconada Maip	5.03	31		*e*P	Pn	22 43 19.1	-0.7
RCDM					*i* S	Sn	22 44 13.0	-5.0
FCH	Farellones	5.39	35		*e*P	Pn	22 43 24.3	-0.6
FCH					*i* S	Sn	22 44 24.9	-2.2
JACH	Jahuel	5.83	29		*e*P	Pn	22 43 30.2	-0.8
LIC	Lamto	77.44	72		*e*P	P	22 54 00.8	+1.6
	comp=E,50nm,1.7s							
TIC	Toumodi	77.72	72		*e*P	P	22 53 58.8	-1.9
	comp=E,7.7nm,0.2s,mb5.2							
KIC	Kosan Boka	77.75	72		*e*P	P	22 54 01.6	+0.8
	comp=E,16nm,0.7s							

*LDG **04** 23:28:28.1±0.3, 44.35N×11.20E, h10km, Ml2.8/13, Error ellipse: s-maj=5.6km s-min=3.0km az=101.0*
*ROM **04** 23:28:29.8±0.2, 44.30N×10.96E, h18km±2km, MD2.6/11, ML2.2/8, Error ellipse: s-maj=1.6km s-min=1.3km az=0.0*
*NEIC **04** 23:28:29.8, 44.30N×10.96E, h18km, MD2.6(ROM), ML2.9(VIE), ML2.8(LDG), ML2.7(GEN), After ROM.*
*STR **04** 23:28:39.6±0.2, 44.01N×10.14E, h10km±1km, Ml2.7, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*

ISC 04 23:28:28.8±0.3, 44.35N±0.02×11.00E±0.02, h30km±2km, n92, σ1°03/143, 7C-4D, Northern Italy

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
ZCCA	Zocca	0.02	278		⇑*i*PG	Pn	23 28 33.7	+0.9
ZCCA	Zocca	0.02	278		⇑*i*Pg	Pn	23 28 33.7	+0.9
FNVD	Fontana Vidola	0.20	154		*e*PG	Pb	23 28 34.8	-0.2
FNVD					SG	Sb	23 28 39.7	+0.4
FNVD	Fontana Vidola	0.20	154		*e*Pg	Pb	23 28 34.8	-0.3
FNVD					*e*Sg	Sb	23 28 39.7	+0.4
GSCL	Gusciola	0.30	271		*e*PG	Pb	23 28 35.5	-0.7
GSCL					SG	Sb	23 28 40.9	-0.4
	146nm,0.5s							
GSCL	Gusciola	0.30	271		*e*Pg	Pb	23 28 35.5	-0.7
GSCL					*e*Sg	Sb	23 28 40.9	-0.4
SEI	Scarperia	0.39	139		*e*PG	Pb	23 28 37.6	+0.1
SEI					SG	Sb	23 28 43.3	-0.2
	309nm,0.3s							
SEI	Scarperia	0.39	139		*e*Pg	Pb	23 28 37.6	+0.1
SEI					*e*Sg	Sb	23 28 43.3	-0.1
BDI	Bagni Di Lucca	0.41	226		*e*PG	Pb	23 28 37.3	-0.5
BDI					SG	Sb	23 28 44.5	+0.5
	223nm,0.3s							
BDI	Bagni Di Lucca	0.41	226		*e*Pg	Pb	23 28 37.4	-0.4
BDI					*e*Sg	Sb	23 28 44.5	+0.5
ERBM	Eremo	0.43	280		*e*PG	Pb	23 28 37.6	-0.5
ERBM					SG	Sb	23 28 45.5	+1.1
	70nm,0.4s							
ERBM	Eremo	0.43	280		*e*Pg	Pb	23 28 37.6	-0.5
ERBM					*e*Sg	Sb	23 28 45.5	+1.0
SARO	Sassorosso	0.46	249		P	Pb	23 28 38.0	-0.5
SARO					S	Sb	23 28 44.4	-0.9
VLC	Villacollemand	0.48	247		*e*P	Pb	23 28 40.8	+1.9
VALM		0.54	270		P	Pb	23 28 39.5	-0.3
VALM					S	Sb	23 28 47.1	-0.3
VMG	Vicchio	0.55	134		*e*PG	Pb	23 28 40.4	+0.4
	91nm,0.5s							
VMG	Vicchio	0.55	134		*e*Pg	Pb	23 28 40.4	+0.4
MAIM		0.57	220		P	Pb	23 28 39.7	-0.6
MAIM					S	Sb	23 28 47.1	-1.1
VINC	Vinca	0.64	252		P	Pb	23 28 41.6	+0.1
VINC					S	Sb	23 28 49.9	-0.4
BACM		0.67	264		P	Pb	23 28 42.1	+0.2
BACM					S	Sb	23 28 50.5	-0.5
GRAM		0.69	282		P	Pb	23 28 42.3	+0.1
GRAM					S	Sb	23 28 51.5	+0.1
PII	Pisa	0.71	209		*e*PG	Pb	23 28 42.6	-0.1
PII					SG	Sb	23 28 53.0	+0.8
	89nm,0.2s							
PII	Pisa	0.71	209		*e*Pn	Pn	23 28 42.6	-0.2
PII					*e*Sn	Sn	23 28 53.0	+0.2
SFI	Santa Sofia	0.75	126		*e*PG	Pb	23 28 44.8	+1.5
	70nm,0.4s							
CODM		0.83	273		P	Pn	23 28 44.9	+0.5
CODM					S	Sb	23 28 55.5	+0.2
CSNT	Castellina Chi	0.90	166		*e*PN	Pn	23 28 46.5	+1.1
	92nm,0.4s							
CSNT	Castellina Chi	0.90	166		*e*Pn	Pn	23 28 46.5	+1.1
BOB	Bobbio (Coli)	1.19	291		*e*PN	Pn	23 28 52.3	+2.8
SAL	Salo	1.30	345		*e*PN	Pn	23 28 53.3	+2.1
SAL					SN	Sn	23 29 11.1	+3.4
	142nm,0.4s							
SAL	Salo	1.30	345		*e*Pn	Pn	23 28 53.3	+2.1
SAL					*e*Sn	Sn	23 29 11.1	+3.4
GENL	Genova Univers	1.46	273		P	Pn	23 28 52.9	-0.6
GENL					S	Sn	23 29 08.6	-3.0
PCP	Pian Castagno	1.77	277		P	Pn	23 28 58.0	+0.2
FIN	Finale Ligure	2.01	267		*e*PN	Pn	23 29 02.5	+1.2
	21nm,0.2s							
FIN	Finale Ligure	2.01	267		*e*Pn	Pn	23 29 02.5	+1.2
RORO		2.12	265		P	Pn	23 29 01.9	-1.0
ROB	Roburent	2.25	270		P	Pn	23 29 04.5	-0.2
IMI	Imperia	2.28	260		P	Pn	23 29 04.1	-1.1
PGF	Pioggiola	2.32	220		*e*Pn	Pn	23 29 06.0	+0.3
PGF					*e*Sn	Sn	23 29 32.7	-0.7
	5.5nm,0.2s							
MONE	Monesi	2.35	265		P	Pn	23 29 06.2	0.0
NEGI	Negi	2.43	259		P	Pn	23 29 06.2	-1.1
SAOF	Saorge	2.50	263		Pn	Pn	23 29 10.2	+1.8
SAOF					Sg	Sn	23 29 40.7	+2.4
ENR	Entracque	2.57	269		P	Pn	23 29 09.4	0.0
ROBS	Robic	2.59	42		*i* Pn	Pn	23 29 09.3	-0.4
SBF	Sospel	2.61	261		*e*Pn	Pn	23 29 10.8	+0.9
SBF					*e*Sn	Sn	23 29 40.2	-0.8
	12nm,0.3s							
STV2	Anna di Valdie	2.64	269		P	Pn	23 29 10.3	0.0
STV	Sta Anna Valdi	2.64	269		P	Pn	23 29 10.3	0.0
VOY	Vojsko	2.65	50		*e*Pn	Pn	23 29 10.0	-0.5
VOY					*e*Sn	Sn	23 29 41.0	-0.9
AURF	Auriere	2.69	261		Pn	Pn	23 29 12.3	+1.3
AURF	Auriere	2.69	261		P	Pn	23 29 12.6	+1.6
CADS	Cadrg	2.69	45		*i* Pn	Pn	23 29 10.6	-0.5
BHB	Bricherasio	2.71	282		P	Pn	23 29 11.1	-0.3
TOUF	Mont Tournerai	2.72	264		Pn	Pn	23 29 13.3	+1.8
TOUF					Sg	Sn	23 29 47.9	+4.2
NVLJ	Novalja	2.78	84		*i* Pn	Pn	23 29 13.1	+0.8
NVLJ					*i* Sn	Sn	23 29 44.4	-0.8
RSP	Reno Superiore	2.79	288		P	Pn	23 29 11.4	-1.0
CEY	Cerknica	2.80	59		*i* Pn	Pn	23 29 12.0	-0.5
PZZ	Prazzo	2.80	275		P	Pn	23 29 12.4	-0.2
MVIF	Mont Vial	2.81	262		Pn	Pn	23 29 14.4	+1.7
MVIF	Mont Vial	2.81	262		P	Pn	23 29 14.7	+2.0
SQTA	Sankt Quirin	2.88	3		⇑*i*PN	Pn	23 29 15.2	+1.5
SQTA					*i* SN	Sn	23 29 48.5	+0.9
WTTA	Wattenberg	2.95	8		⇑*i*PN	Pn	23 29 15.8	+1.1
WTTA					*i* SN	Sn	23 29 49.7	+0.2
MOTA	Moosalm	3.00	1		⇓*i*PN	Pn	23 29 17.0	+1.6
MOTA					*i* SN	Sn	23 29 51.7	+1

ARA0	**ARCESS Array S**	**2.75**	**45**	Pn	**Pn**	**23 34 44.6**	**+0.7**
	baz=227,slow=14							
ARA0				Sn	**Sn**	**23 35 18.3**	**0.0**
	baz=225,slow=28							
ARA0	**ARCESS Array S**	**2.75**	**45**	*eP*	**Pn**	**23 34 44.6**	**+0.7**
ARA0				*eS*	**Sn**	**23 35 18.3**	**0.0**
KEV	**Kevo**	**3.30**	**48**	*eP*	**Pn**	**23 34 52.2**	**+0.4**
KEV				*eS*	**Sn**	**23 35 30.9**	**-1.4**
MSF	**Maaselka**	**4.03**	**112**	*eP*	**Pn**	**23 35 04.6**	**+2.5**
MSF				*eS*	**Sn**	**23 35 49.7**	**-1.0**
APA0	**Apatity Array**	**4.99**	**85**	Pn	**Pn**	**23 35 14.6**	**-1.1**
	baz=289,slow=14							
APA0	**Apatity Array**	**4.99**	**85**	*eP*	**Pn**	**23 35 14.6**	**-1.1**
HFS	**Hagfors**	**8.07**	**203**	Lg		23 38 21.5	
	baz=6.0,slow=37							
HFS	**Hagfors**	**8.07**	**203**	*e*		23 38 21.5	
HFS	**Hagfors**	**8.07**	**203**	Lg		23 38 21.5	
	baz=6.0,slow=37							

IDC ***04*** *23:45:55.8±2.7, 4.20S×131.66E, mb3.6/1, mb1 3.8/4, mb1mx3.6/14, ML3.3/3, Error ellipse: s-maj=134.0km s-min=15.6km az=78.0*

ISC 04 23:46:02.5±4.8, 4.4S±0.1×131.5E±0.2, h69km±50km, n4, σ1§16/7, mb3.5/1, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**14.79**	**202**	Pn	**P**	**23 49 29.6**	**+0.3**
	0.1nm,0.3s,baz=14,slow=12,SNR=6.7						
FITZ				Sn	**S**	**23 52 11.8**	**-0.1**
	0.1nm,0.3s,baz=6.7,slow=17,SNR=2.4						
WRA	**Warramunga Arr**	**15.70**	**170**	Pn	**P**	**23 49 40.1**	**-0.9**
	0.1nm,0.3s,baz=355,slow=13,SNR=3.4						
WRA				Sn	**S**	**23 52 32.5**	**-0.4**
	0.2nm,0.3s,baz=353,slow=24,SNR=3.9						
ASAR	**Alice Springs**	**19.30**	**173**	P	**P**	**23 50 26.4**	**+1.7**
	0.2nm,0.3s,baz=351,slow=10.0,SNR=13						
ASAR				S	**S**	**23 54 05.2**	**+11**
	0.1nm,0.3s,baz=192,slow=28,SNR=3.8						
MKAR	**Makanchi Array**	**66.91**	**326**	P	**P**	**23 56 49.3**	**-0.5**
	0.6nm,0.8s,mb3.5,baz=117,slow=6.4,SNR=6.8						

IDC ***05*** *00:05:28.1±1.8, 51.47N×174.57W, mb3.3/3, mb1 3.7/5, mb1mx3.4/24, ML3.2/2, Error ellipse: s-maj=57.1km s-min=16.6km az=1.0*

NEIC ***05*** *00:05:39.7, 52.46N×173.54W, h75km, After AEIC.*

ISC 05 00:05:39.3±1.6, 51.8N±0.2×173.5W±0.2, h60km±16km, n14, σ0§61/18, mb3.2/3, Andreanof Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ATKA	**Atka Island**	**0.59**	**316**	P	**P**	**00 05 52.3**	**0.0**
ATKA				S	**S**	**00 06 02.0**	**+0.2**
GSIG	**Igitkin Island**	**1.50**	**279**	P	**P**	**00 06 03.5**	**-1.0**
GSIG				S	**S**	**00 06 22.2**	**-0.8**
GSMY	**Great Sitkin M**	**1.58**	**280**	P	**P**	**00 06 05.2**	**-0.4**
GSMY				S	**S**	**00 06 25.3**	**+0.2**
GSTR	**Great Sitkin T**	**1.59**	**282**	P	**P**	**00 06 06.0**	**+0.2**
GSTD	**Great Sitkin T**	**1.64**	**281**	P	**P**	**00 06 06.0**	**-0.5**
GSTD				S	**S**	**00 06 27.0**	**+0.5**
ETKA	**Kagalaska Isla**	**1.78**	**274**	P	**P**	**00 06 08.8**	**+0.4**
ADK	**Adak**	**1.96**	**274**	P	**P**	**00 06 10.7**	**-0.1**
KIKV	**Kanaga Island**	**2.26**	**274**	P	**P**	**00 06 15.9**	**+0.8**
KIMD	**Kanaga Island**	**2.30**	**271**	P	**P**	**00 06 16.2**	**+0.5**
FX1	**Attu Island--F**	**8.22**	**283**	Pn	**P**	**00 07 19.9**	**-18**
	0.5nm,0.3s,baz=140,slow=17,SNR=2.3						
ILAR	**Eielson Array**	**18.92**	**36**	P	**P**	**00 09 56.8**	**-0.6**
	0.1nm,0.3s,baz=226,slow=8.5,SNR=6.7						
INK	**Inuvik**	**25.26**	**34**	P	**P**	**00 11 01.2**	**+0.4**
	0.3nm,0.4s,mb3.2,baz=248,slow=14,SNR=5.0						
PDAR	**Pinedale Array**	**43.04**	**76**	P	**P**	**00 13 35.5**	**+1.2**
	0.3nm,0.4s,mb3.4,baz=318,slow=4.2,SNR=4.7						
TXAR	**Lajitas Array**	**55.34**	**85**	P	**P**	**00 15 08.2**	**-0.9**
	0.1nm,0.5s,mb3.1,baz=342,slow=2.9,SNR=2.5						

NIED ***05*** *00:09:00, 30.30N×138.60E, h460km, Mw4.5 Best double couple: M0 7.19×10^15 NP1:φs292°, δ85°, λ-45°. NP2:φs27°, δ45°, λ-173°.*

JMA ***05*** *00:09:18.2±0.3, 30.34N×138.56E, h478km±5km, M4.5*

MOS ***05*** *00:09:19.3±0.8, 30.40N×138.07E, h453km, mb4.7/11, Error ellipse: s-maj=13.7km s-min=7.0km az=100.6*

BJI ***05*** *00:09:19.8, 30.34N×138.11E, h460km, mB4.8, mb5.2*

IDC ***05*** *00:09:20.6±0.5, 30.40N×138.13E, h452km±5km, mb3.9/26, mb1 4.1/31, mb1mx4.1/34, Error ellipse: s-maj=9.0km s-min=7.1km az=102.0*

NEIC ***05*** *00:09:21.0±0.5, 30.42N×138.13E, h455km±5km, mb4.8/27, Error ellipse: s-maj=5.6km s-min=3.9km az=129.0*

ISC 05 00:09:19.7±0.4, 30.39N±0.04×138.19E±0.04, h454km±3km, h446km±4.1km: pP-P, n156, σ1§03/173, mb4.4/57, 4C-6D, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHJ	**Hachijo jima 2**	**3.04**	**26**	P	**P**	**00 10 27.4**	**-0.5**
	332nm,0.3s,baz=95,slow=3.0,SNR=40						
JHJ				S	**S**	**00 11 22.3**	**+0.6**
	239nm,0.3s,baz=275,slow=23,SNR=6.6						
JHJ2	**Mitsune**	**3.04**	**27**	P	**P**	**00 10 27.9**	**0.0**
JHJ2				*eS*	**S**	**00 11 21.6**	**-0.2**
TK02	**Tokai 2**	**3.56**	**354**	P	**P**	**00 10 34.1**	**+2.1**
JWZ	**Kozaga**	**3.77**	**327**	P	**P**	**00 10 35.7**	**+2.0**
JWZ				S	**S**	**00 11 35.2**	**+3.0**
JIE	**Ise**	**4.18**	**343**	P	**P**	**00 10 39.3**	**+2.0**
JIM2	**Oshima 3**	**4.44**	**13**	P	**P**	**00 10 38.9**	**-0.8**
JIM2				*eS*	**S**	**00 11 42.9**	**0.0**
CBIJ	**Chichi jima**	**4.81**	**132**	P	**P**	**00 10 40.0**	**-3.2**
	71nm,0.3s,baz=36,slow=3.3,SNR=50						
CBIJ				S	**S**	**00 11 44.5**	**-4.6**
	444nm,0.3s,baz=275,slow=23,SNR=33						
CBIJ	**Chichi jima**	**4.81**	**132**	P	**P**	**00 10 40.2**	**-3.0**
CBIJ				S	**S**	**00 11 43.8**	**-5.2**
BSO1	**Boso 1**	**4.86**	**28**	P	**P**	**00 10 41.6**	**-2.1**
BSO1				*eS*	**S**	**00 11 47.5**	**-2.4**
JOD2	**Odawara 2**	**4.92**	**9**	P	**P**	**00 10 43.4**	**-0.8**
JOD2				S	**S**	**00 11 51.1**	**+0.2**
JTO	**Tosashimizu**	**5.21**	**300**	P	**P**	**00 10 49.3**	**+2.2**
JRY	**Ryogami san**	**5.64**	**6**	P	**P**	**00 10 51.1**	**-0.3**
JRY				*eS*	**S**	**00 12 00.9**	**-2.8**
MAJO	**Matsushiro**	**6.13**	**0**	*eP*	**P**	**00 10 55.2**	**-1.2**
MAJO				pmax	pmax		
	comp=Z,61nm,0.6s						
MAJO	**Matsushiro**	**6.13**	**0**	*eP*	**P**	**00 10 55.2**	**-1.2**
	comp=Z,62nm,0.6s						
MAT	**Matsushiro**	**6.13**	**0**	P	**P**	**00 10 55.5**	**-0.9**
MAT				S	**S**	**00 12 10.9**	**-1.9**
MAT	**Matsushiro**	**6.13**	**0**	*eP*	**P**	**00 10 56.0**	**-0.4**
MAT				*eS*	**S**	**00 12 11.0**	**-1.8**
MAT				pmax	pmax		
	comp=Z,49nm,0.7s						
MAT	**Matsushiro**	**6.13**	**0**	*eP*	**P**	**00 10 56.0**	**-0.4**
	comp=Z,49nm,0.7s						
MAT				*eS*	**S**	**00 12 11.0**	**-1.8**
JHS	**Saijyo**	**6.27**	**318**	P	**P**	**00 10 59.6**	**+1.7**
JNU	**Nakatsue**	**6.79**	**295**	P	**P**	**00 11 03.9**	**+0.5**
	comp=Z,2.3nm,0.3s,baz=99,slow=8.7,SNR=19						
JSJ	**Shimokoshiki**	**7.38**	**282**	P	**P**	**00 11 11.6**	**+1.9**
JAM	**Amami Oshima**	**7.74**	**257**	P	**P**	**00 11 14.8**	**+1.2**
JMK	**Ichinoseki**	**8.89**	**15**	P	**P**	**00 11 25.5**	**-0.8**
JMK				*eS*	**S**	**00 13 02.3**	**-4.3**
JOW	**Kunigami**	**9.40**	**250**	P	**P**	**00 11 32.5**	**+0.7**
	comp=Z,51nm,0.3s,baz=79,slow=9.0,SNR=89						
JOW	**Kunigami**	**9.40**	**250**	*eP*	**P**	**00 11 33.4**	**+1.5**
JKE	**Kume jima 2**	**10.83**	**251**	P	**P**	**00 11 47.7**	**+0.2**
KS15	**Wonju Array Si**	**11.07**	**312**	*eP*	**P**	**00 11 50.1**	**0.0**
JOT	**Ohata**	**11.21**	**11**	P	**P**	**00 11 51.3**	**-0.3**
JKB	**Kayabe**	**11.70**	**11**	P	**P**	**00 11 56.4**	**-0.5**
ASAJ	**Asahikawa**	**14.14**	**13**	P	**P**	**00 12 23.1**	**+0.3**
	comp=Z,8.5nm,0.3s,baz=231,slow=11,SNR=35						
ASAJ				S	**S**	**00 14 53.9**	**+3.5**
	comp=Z,0.6nm,0.3s,baz=96,slow=33,SNR=5.7						
MDJ	**Mudanjiang**	**15.74**	**337**	P	**P**	**00 12 39.0**	**-0.1**
MDJ				AMB	AMB		
	comp=Z,33nm,0.7s						
MDJ				AMB	AMB		
	comp=Z,110nm,3.9s						
MDJ	**Mudanjiang**	**15.74**	**337**	*eP*	**P**	**00 12 39.2**	**+0.1**
	comp=Z,48nm,1.1s						
SNY	**Shenyang**	**16.39**	**318**	⇑P	**P**	**00 12 46.7**	**+0.9**
SNY				AMB	AMB		
	comp=Z,50nm,0.5s						
CN2	**Changchun**	**16.78**	**326**	*eP*	**P**	**00 12 50.1**	**+0.5**
CN2				AMB	AMB		
	comp=Z,10.0nm,0.7s						
YSS	**Yuzh-Sakhalins**	**16.91**	**11**	⇑*iP*	**P**	**00 12 51.8**	**+0.8**
YSS				pmax	pmax		
	comp=Z,20nm,0.6s						
YSS				pmax	pmax		
	comp=Z,80nm,0.9s						
YSS	**Yuzh-Sakhalins**	**16.91**	**11**	*eP*	**P**	**00 12 51.7**	**+0.8**
	comp=Z,63nm,0.7s						
KLR	**Kul'dur**	**19.44**	**347**	*eP*	**P**	**00 13 16.8**	**+1.0**
KLR				pmax	pmax		
	comp=Z,52nm,0.8s						
KLR				pmax	pmax		
	comp=E,20μm,0.8s						
WHN	**Wuhan**	**20.54**	**276**	*eP*	**P**	**00 13 27.0**	**+0.6**
TGY	**Tagaytay City**	**22.70**	**228**	P	**P**	**00 13 46.4**	**-0.3**
	comp=E,143nm,0.3s,baz=244,slow=4.7,SNR=3.3						
HIA	**Hailar**	**23.47**	**329**	*eP*	**P**	**00 13 53.1**	**-0.1**
HIA				pmax	pmax		
	comp=Z,20nm,0.8s						
HIA	**Hailar**	**23.47**	**329**	*eP*	**P**	**00 13 53.1**	**-0.2**
	comp=Z,20nm,0.8s,mb4.6						
ENH	**Enshi**	**24.75**	**277**	*eP*	**P**	**00 14 04.0**	**-1.0**
	comp=Z,79nm,0.4s,mb5.5						
XAN	**Xi'an**	**24.99**	**286**	P	**P**	**00 14 06.5**	**-0.6**
XAN				AMB	AMB		
	comp=Z,49nm,0.7s,mb5.0						
CLNS	**Chul'man**	**28.03**	**344**	*eP*	**P**	**00 14 34.1**	**+0.3**
CLNS				pmax	pmax		
	comp=Z,20nm,0.6s,mb4.7						
CLNS				pmax	pmax		
	comp=N,10.0nm,0.7s						
CLNS				pmax	pmax		
	comp=E,10.0nm,0.8s						
ULN	**Ulaanbaatar**	**29.52**	**315**	*eP*	**P**	**00 14 46.5**	**-0.4**
CD2	**Chengdu**	**29.56**	**280**	⇓*iP*	**P**	**00 14 47.1**	**-0.3**
SONM	**Songino Array**	**29.91**	**315**	P	**P**	**00 14 50.4**	**+0.2**
	comp=E,4.2nm,0.6s,mb4.0,baz=125,slow=8.1,SNR=37						
SONM				ScP		00 20 36.4	
	comp=E,1.1nm,0.7s,baz=153,slow=2.8,SNR=5.7						
MA2	**Magadan**	**30.40**	**13**	*eP*	**P**	**00 14 53.5**	**-0.9**
MA2				pmax	pmax		
	comp=Z,62nm,0.8s,mb5.1						
MA2	**Magadan**	**30.40**	**13**	*eP*	**P**	**00 14 53.5**	**-0.9**
	comp=Z,62nm,0.8s,mb5.1						
KMI	**Kunming**	**31.72**	**269**	*eP*	**P**	**00 15 04.8**	**-1.2**
KMI				AMB	AMB		
	comp=Z,16nm,0.8s,mb4.5						
BOD	**Bodaibo**	**32.11**	**336**	*eP*	**P**	**00 15 08.1**	**-0.9**
YAK	**Yakutsk**	**32.13**	**352**	*eP*	**P**	**00 15 07.6**	**-1.5**
YAK				pmax	pmax		
	comp=Z,20nm,0.8s,mb4.6						
YAK				pmax	pmax		
	comp=N,8.0nm,1.2s						
YAK	**Yakutsk**	**32.13**	**352**	*eP*	**P**	**00 15 07.4**	**-1.7**
	comp=N,51nm,0.6s,mb5.1						
GTA	**Gaotai**	**32.53**	**297**	⇑P	**P**	**00 15 13.3**	**+0.6**
GTA				S	**S**	**00 19 52.7**	**-2.8**
GTA				AMB	AMB		
	comp=Z,14nm,0.5s,mb4.7						
ZAK	**Zakamensk**	**32.82**	**317**	⇑*iP*	**P**	**00 15 15.3**	**+0.2**
FX1	**Attu Island--F**	**33.95**	**38**	P	**P**	**00 15 24.9**	**+0.3**
	comp=Z,13nm,0.4s,mb4.7,baz=265,slow=5.8,SNR=11						
FX1	**Attu Island--F**	**33.95**	**38**	*eP*	**P**	**00 15 24.9**	**+0.3**
MOY	**Moody**	**34.66**	**319**	*eP*	**P**	**00 15 30.7**	**+0.1**
CM31	**Chiang Mai Arr**	**37.48**	**261**	*eP*	**P**	**00 15 54.7**	**+0.4**
	comp=Z,33nm,0.7s,mb4.9						
CMAR	**Chiang Mai Arr**	**37.48**	**261**	P	**P**	**00 15 54.6**	**+0.3**
	comp=Z,16nm,0.6s,mb4.6,baz=59,slow=6.4,SNR=92						
SHL	**Shillong**	**40.96**	**275**	*eP*	**P**	**00 16 23.0**	**+0.4**
BILL	**Bilibino**	**41.13**	**16**	*eP*	**P**	**00 16 23.8**	**+0.2**
BILL				pmax	pmax		
	comp=Z,30nm,0.9s,mb4.7						
BILL	**Bilibino**	**41.13**	**16**	*eP*	**P**	**00 16 23.8**	**+0.1**
	comp=Z,30nm,0.9s,mb4.7						
TIXI	**Tiksi**	**41.62**	**356**	*eP*	**P**	**00 16 26.6**	**-0.8**
TIXI				pmax	pmax		
	comp=Z,9.0nm,0.3s,mb4.7						
TIXI	**Tiksi**	**41.62**	**356**	*eP*	**P**	**00 16 26.6**	**-0.8**
	comp=Z,8.8nm,0.3s,mb4.7						
ZAL	**Zalesovo**	**44.71**	**318**	P	**P**	**00 16 50.8**	**-1.2**
	comp=Z,2.4nm,0.5s,mb3.9,baz=296,slow=7.1,SNR=15						
ZAL				ScP		00 21 31.7	
	comp=Z,1.8nm,0.4s,baz=13,slow=21,SNR=4.1						
GUN	**Gumba**	**45.42**	**281**	*eP*	**P**	**00 16 58.7**	**+0.8**
	comp=Z,84nm,0.5s,mb5.5						
MKAR	**Makanchi Array**	**45.68**	**307**	P	**P**	**00 16 59.2**	**-0.4**
	comp=Z,2.7nm,0.4s,mb4.0,baz=93,slow=9.2,SNR=41						
MKAR				ScP		00 21 36.8	
	comp=Z,6.8nm,0.9s,baz=79,slow=6.2,SNR=19						
MKAR				S	**S**	**00 23 08.3**	**-0.1**
	comp=Z,0.5nm,0.8s,baz=85,slow=17,SNR=4.1						
MKAR	**Makanchi Array**	**45.68**	**307**	P	**P**	**00 16 59.2**	**-0.4**
MKAR				ScP		00 21 36.8	
MKAR				S	**S**	**00 23 08.3**	**-0.1**
KKN	**Kakani**	**45.96**	**281**	*eP*	**P**	**00 17 02.3**	**+0.2**
	comp=Z,28nm,0.3s,mb5.1						
KKN	**Kakani**	**45.96**	**281**	*eP*	**P**	**00 17 02.3**	**+0.2**
KKN				pmax	pmax		
	comp=Z,14nm,0.3s,mb4.9						
DMN	**Daman**	**46.16**	**280**	*eP*	**P**	**00 17 03.8**	**+0.2**
	comp=Z,39nm,0.6s,mb5.0						
GKN	**Gorkha**	**46.45**	**281**	*eP*	**P**	**00 17 06.0**	**+0.2**
	comp=Z,28nm,0.3s,mb5.2						
DANN	**Dangsing**	**47.09**	**282**	*eP*	**P**	**00 17 11.5**	**+0.7**
KOLN	**Koldanda**	**47.39**	**281**	*eP*	**P**	**00 17 13.4**	**+0.3**
	comp=Z,33nm,0.4s,mb5.1						
TNA	**Tin City**	**47.96**	**27**	*eP*	**P**	**00 17 16.5**	**-0.4**
KURK	**Kurchatov**	**48.18**	**313**	*eP*	**P**	**00 17 17.4**	**-1.3**
FITZ	**Fitzroy Crossi**	**49.70**	**196**	⇓*iP*	**P**	**00 17 30.3**	**-0.3**
	comp=Z,8.2nm,0.5s,mb4.3						
FITZ	**Fitzroy Crossi**	**49.70**	**196**	P	**P**	**00 17 29.5**	**-1.1**
	comp=Z,13nm,0.6s,mb4.4,baz=13,slow=6.5,SNR=45						
WRAB	**Tennant Creek**	**50.17**	**185**	*eP*	**P**	**00 17 32.9**	**-1.2**
	comp=Z,42nm,0.7s,mb4.9						
WB2	**Warramunga Arr**	**50.18**	**185**	⇓*iP*	**P**	**00 17 33.2**	**-0.9**
WB2				*eS*	**S**	**00 24 08.2**	**-2.5**
WRA	**Warramunga Arr**	**50.18**	**185**	P	**P**	**00 17 32.7**	**-1.5**
	comp=Z,17nm,0.4s,mb4.7,baz=1.6,slow=7.8,SNR=76						
WRA				pP	pP	00 19 01.0	-2.8
	comp=Z,6.0nm,0.9s,baz=5.0,slow=8.2,SNR=9.0						
ULHL	**Ulahol**	**50.29**	**302**	P	**P**	**00 17 34.8**	**+0.1**
	SNR=8.0						
TKM2	**Tokmak 2**	**50.67**	**303**	P	**P**	**00 17 38.1**	**+0.6**
	SNR=8.6						
KZA	**Kyzart**	**51.04**	**302**	P	**P**	**00 17 41.4**	**+1.2**
	SNR=7.5						
KBK	**Karagaybulak**	**51.18**	**302**	P	**P**	**00 17 41.5**	**+0.3**
	SNR=7.2						
VIS	**Vishakhapatnam**	**51.22**	**269**	*eP*	**P**	**00 17 42.0**	**+0.2**
VIS				AMb	AMB	00 17 42.9	
	comp=Z,31nm,0.7s,mb4.8						
AML	**Almayashu**	**52.18**	**302**	P	**P**	**00 17 49.6**	**+1.0**
	SNR=12						
BVA0	**Borovoye Array**	**53.24**	**316**	*i* P	**P**	**00 17 55.2**	**-0.9**
BVAR	**Borovoye Array**	**53.24**	**316**	P	**P**	**00 17 55.3**	**-0.8**
	comp=Z,5.7nm,0.5s,mb4.2,baz=104,slow=7.6,SNR=73						
BVAR				pP	pP	00 19 26.2	-1.0
	comp=Z,0.7nm,0.4s,baz=98,slow=8.0,SNR=1.4						
BVAR				ScP		00 22 08.6	
	comp=Z,0.8nm,0.5s,baz=103,slow=3.0,SNR=5.5						
BVAR				S	**S**	**00 24 48.6**	**-2.9**
	comp=Z,0.6nm,0.5s,baz=84,slow=13,SNR=6.5						
BRVK	**Borovoye**	**53.31**	**316**	*eP*	**P**	**00 17 55.1**	**-1.4**
IMA	**Indian Mountai**	**53.78**	**28**	*eP*	**P**	**00 17 59.7**	**0.0**
RSO	**Redoubt South**	**53.82**	**35**	*eP*	**P**	**00 17 59.8**	**-0.3**
AS12	**Alice Springs**	**53.91**	**185**	⇓*iP*	**P**	**00 18 00.3**	**-0.9**
	comp=Z,13nm,0.6s,mb4.4						
ASAR	**Alice Springs**	**53.91**	**185**	P	**P**	**00 18 00.2**	**-0.9**
	comp=Z,7.7nm,0.5s,mb4.3,baz=16,slow=12,SNR=93						
ASAR				PcP	PcP	00 18 59.9	+0.1
	comp=Z,1.5nm,0.9s,baz=352,slow=4.0,SNR=4.2						
ZRNK	**Zerenda**	**54.09**	**316**	*eP*	**P**	**00 18 00.7**	**-1.4**
BHPL	**Bhopal**	**54.15**	**278**	*eP*	**P**	**00 18 01.6**	**-1.3**
BHPL				AMb	AMB	00 18 03.4	
	comp=Z,38nm,1.1s,mb4.7						
KKAR	**Karatay Array**	**54.33**	**303**	*i* P	**P**	**00 18 03.5**	**-0.4**
KKAR				pmax	pmax		
	comp=Z,1.0nm,0.4s,mb3.5						
SML	**Sawmill**	**55.97**	**33**	*eP*	**P**	**00 18 14.7**	**-0.5**
ILAR	**Eielson Array**	**56.56**	**30**	P	**P**	**00 18 18.0**	**-1.2**
	comp=Z,1.4nm,0.3s,mb3.8,baz=244,slow=5.8,SNR=20						
POO	**Poona**	**59.07**	**274**	*eP*	**P**	**00 18 35.4**	**-1.4**
POO				AMb	AMB	00 18 37.8	
	comp=Z,32nm,1.0s,mb4.6						
ARU	**Arti**	**59.67**	**321**	*eP*	**P**	**00 18 38.8**	**-1.5**
ARU				pmax	pmax		
	comp=Z,17nm,0.9s,mb4.5						
ARU	**Arti**	**59.67**	**321**	*eP*	**P**	**00 18 38.8**	**-1.5**
	comp=Z,18nm,0.9s,mb4.5						
DAWY	**Dawson**	**59.85**	**30**	*eP*	**P**	**00 18 40.9**	**-0.6**
AB31	**Akbulak array**	**60.29**	**312**	P	**P**	**00 18 43.9**	**-0.7**
AB31				pmax	pmax		
	comp=Z,2.0nm,0.3s,mb4.0						
BHUJ	**Bhuj**	**60.76**	**281**	*eP*	**P**	**00 18 48.4**	**+0.3**
BHUJ				AMb	AMB	00 18 51.5	
	comp=Z,45nm,1.2s,mb4.8						
INK	**Inuvik**	**61.52**	**25**	P	**P**	**00 18 52.0**	**-0.4**
	comp=Z,7.3nm,0.6s,mb4.3,baz=296,slow=6.7,SNR=81						
INK	**Inuvik**	**61.52**	**25**	*eP*	**P**	**00 18 51.9**	**-0.5**
INK				pmax	pmax		
	comp=Z,5.0nm,0.5s						
INK	**Inuvik**	**61.52**	**25**	*eP*	**P**	**00 18 51.9**	**-0.6**
	comp=Z,4.9nm,0.5s,mb4.2						
FORT	**Forrest**	**61.59**	**190**	⇓*iP*	**P**	**00 18 53.0**	**-0.4**
	comp=Z,72nm,0.5s,mb5.4						
STKA	**Stephens Creek**	**62.01**	**177**	⇓*iP*	**P**	**00 18 55.7**	**-0.5**
	comp=Z,4.4nm,0.6s,mb4.1						
STKA	**Stephens Creek**	**62.01**	**177**	P	**P**	**00 18 55.6**	**-0.6**
	comp=Z,4.1nm,0.4s,mb4.2,baz=358,slow=6.6,SNR=11						
DLBC	**Dease Lake**	**65.55**	**35**	P	**P**	**00 19 19.4**	**+1.1**
	comp=Z,3.3nm,0.6s,mb4.1,baz=281,slow=7.1,SNR=9.0						
DLBC	**Dease Lake**	**65.55**	**35**	P	**P**	**00 19 19.4**	**+1.1**
KEV	**Kevo**	**68.70**	**340**	*ep*	**P**	**00 19 36.4**	**-1.1**
ARCES	**ARCESS Array B**	**69.27**	**340**	P	**P**	**00 19 40.9**	**0.0**
	comp=Z,16nm,0.4s,mb4.9,baz=65,slow=9.0,SNR=296						
RES	**Resolute Bay**	**69.67**	**13**	*eP*	**P**	**00 19 42.6**	**-0.7**
RES				pmax	pmax		
	comp=Z,8.0nm,0.8s,mb4.3						
RES	**Resolute Bay**	**69.67**	**13**	*eP*	**P**	**00 19 42.6**	**-0.7**
	comp=Z,8.3nm,0.8s,mb4.3						
JOF	**Joensuu**	**70.56**	**332**	*ep*	**P**	**00 19 47.4**	**-1.3**
YKW3	**Yellowknife Ar**	**70.87**	**28**	*eP*	**P**	**00 19 49.6**	**-0.9**
YKA	**Yellowknife Ar**	**70.90**	**28**	P	**P**	**00 19 50.7**	**0.0**
	comp=Z,3.4nm,0.5s,mb4.1,baz=298,slow=6.0,SNR=81						
YKA				pP	pP	00 21 28.8	-0.4
	comp=Z,0.2nm,0.5s,baz=284,slow=6.3,SNR=2.2						
YKA	**Yellowknife Ar**	**70.90**	**28**	P	**P**	**00 19 50.7**	**0.0**
YKA				pP	pP	00 21 28.8	-0.4
ZEI	**Tsey**	**72.96**	**310**	*eP*	**P**	**00 20 03.0**	**-0.1**
KAF	**Kangasniemi**	**72.97**	**333**	*ep*	**P**	**00 20 02.0**	**-0.7**
	comp=Z,8.3nm,0.3s,mb4.7,baz=56,slow=5.6						
KAF	**Kangasniemi**	**72.97**	**333**	*eP*	**P**	**00 20 02.0**	**-0.7**
KAF				pmax	pmax		
	comp=Z,8.0nm,0.3s,mb4.7						
FINES	**FINESS Array B**	**73.43**	**332**	P	**P**	**00 20 05.0**	**-0.3**
	comp=Z,8.7nm,0.4s,mb4.7,baz=71,slow=5.6,SNR=262						
JCW	**Jim Creek**	**74.05**	**43**	P	**P**	**00 20 10.7**	**+1.5**
FMW	**Mount Fremont**	**74.79**	**44**	P	**P**	**00 20 15.2**	**+1.8**
NLW	**Nelson Butte**	**75.04**	**43**	*eP*	**P**	**00 20 15.4**	**+0.7**
ETW	**Entiat**	**75.27**	**43**	P	**P**	**00 20 17.4**	**+1.4**
WTV	**Waterville**	**75.45**	**43**	P	**P**	**00 20 18.0**	**+1.0**
DPW	**Davenport**	**76.39**	**42**	*eP*	**P**	**00 20 23.0**	**+0.8**
YBH	**Yreka Blue Hor**	**76.61**	**49**	P	**P**	**00 20 24.3**	**+0.8**
	comp=Z,2.4nm,1.0s,mb3.7,baz=349,slow=2.2,SNR=5.5						
NEW	**Newport**	**76.82**	**42**	P	**P**	**00 20 25.6**	**+1.1**
	comp=Z,4.6nm,0.5s,mb4.2,baz=328,slow=3.2,SNR=6.3						
AKASG	**Malin Array Be**	**77.88**	**322**	P	**P**	**00 20 29.6**	**-0.7**
	comp=Z,2.1nm,0.3s,mb4.0,baz=50,slow=5.3,SNR=32						
WALA	**Waterton Lakes**	**78.20**	**40**	*eP*	**P**	**00 20 33.0**	**+1.0**
NB2	**NORSAR Subarra**	**79.23**	**337**	P	**P**	**00 20 37.0**	**-0.2**
	comp=Z,11nm,0.6s,mb4.6,baz=45,slow=5.0						
NB2	**NORSAR Subarra**	**79.23**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBS	**Kingsbay**	**1.57**	**17**	Pn	Pn	00 28 58.7	-2.5
KBS				S	Sb	00 29 16.4	-5.5
SPA0	**Spitsbergen Ar** baz=231,slow=14	**1.62**	**60**	Pn	Pn	00 29 02.8	+0.8
SPA0				Sn	Sn	00 29 25.3	+1.4
ARA0	**ARCESS Array S** baz=323,slow=11	**9.10**	**142**	Pn	P	00 30 42.9	-4.6
ARA0				Sn	Sn	00 32 18.7	-13

baz=348,slow=22

PRU ***05*** *00:33:09.5,50.36N×18.75E*

WAR 05 00:33:09.6,50.26N×18.88E,h1km,2D,Location given by Central Institute of Mining, origin time based upon OJC,Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAC	**Raciborz**	**0.47**	**249**	*e*PG	Pg	00 33 19.0	0.0
RAC				*e*(SG)	Sg	00 33 27.0	+1.7
OJC	**Ojcow**	**0.59**	**93**	⇓*i*PG	Pg	00 33 21.0	-0.4
OJC				⇓*i*SG	Sg	00 33 30.1	+0.8
OKC	**Ostrava-Krasne**	**0.63**	**228**	*e*PG	Pg	00 33 21.6	-0.6
OKC				*e*SG	Sg	00 33 33.2	+2.6
NIE	**Niedzica**	**1.25**	**131**	*e*Pg	Pg	00 33 33.2	-1.4
NIE				*e*Sg	Sg	00 33 51.2	-0.1
DPC	**Dobruska-Polom**	**1.64**	**274**	*e*PG	Pg	00 33 38.7	-3.6
DPC				*e*SG	Sg	00 33 59.6	-4.6
KSP	**Ksiaz**	**1.75**	**291**	*e*PG	Pg	00 33 42.0	-2.5
KSP				*e*(SG)	Sg	00 34 04.0	-3.8
VYHS	**Vyhne**	**1.77**	**181**	*e*PN	Pn	00 33 43.0	+1.5
VYHS				*e*SN	Sn	00 34 02.4	-2.5
UPC	**Upice**	**1.85**	**279**	*e*SG	Sg	00 34 07.4	-3.8
CRVS	**Cervenica-Dubn**	**2.16**	**128**	*i*PN	Pn	00 33 49.8	+2.6
CRVS				*e*SN	Sn	00 34 17.8	+2.8
PRU	**Pruhonice** 3.5nm,0.5s	**2.80**	**266**	*e*SG	Sg	00 34 35.6	-7.3
KHC	**Kasperske Hory**	**3.62**	**254**	*e*PG	Pg	00 34 12.5	-9.3
KHC				*e*SG	Sg	00 35 03.3	-6.8

IDC ***05*** *00:35:05.8±1.7,13.89S×167.48E,mb4.1/7,mb1 4.2/7, mb1mx4.1/15,Error ellipse: s-maj=86.5km s-min=22.3km az=140.0*

NEIC ***05*** *00:35:23.9±0.5,14.42S×167.44E,h150km,mb4.0/1,Error ellipse: s-maj=23.2km s-min=13.3km az=137.0*

ISC 05 00:35:16.4±0.8,14.3S±0.2×167.5E±0.2,h100km,n25, σ1℗01/13,mb3.9/8,3C-1D,Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek** 3.9nm,0.5s,mb4.3,baz=57,slow=7.8,SNR=22	**29.43**	**229**	P	**P**	**00 41 14.2**	**+1.4**
WRAB	**Tennant Creek** 1.1nm,0.5s,mb3.8	**32.12**	**255**	*e*P	**P**	**00 41 35.9**	**-0.6**
WRA	**Warramunga Ar** 0.4nm,0.4s,mb3.5,baz=86,slow=9.2,SNR=6.3	**32.13**	**255**	P	**P**	**00 41 35.7**	**-0.8**
ASAR	**Alice Springs** 0.4nm,0.4s,mb3.6,baz=80,slow=9.4,SNR=9.2	**33.02**	**249**	P	**P**	**00 41 44.0**	**-0.3**
FITZ	**Fitzroy Crossi** 1.5nm,0.6s,mb4.0,baz=134,slow=23,SNR=6.2	**40.29**	**259**	P	**P**	**00 42 46.1**	**+0.6**
ILAR	**Eielson Array** 0.7nm,0.7s,mb3.7,baz=232,slow=5.9,SNR=9.3	**86.05**	**18**	P	**P**	**00 47 46.6**	**0.0**
SNAA	**Sanae**	**93.99**	**183**	⇑*i*	**P**	**00 48 16.7**	**-7.0**
VNA3	**Neumayer Olymp**	**94.65**	**181**	⇑*i*	**P**	**00 48 28.4**	**+1.7**
VNA2	**Neumayer--Watz**	**94.92**	**182**	⇑*i*	**P**	**00 48 27.7**	**-0.3**
VNA1	**Neumayer--Stat**	**95.22**	**181**	⇓*i*	**P**	**00 48 26.9**	**-2.4**
MKAR	**Makanchi Array** 0.5nm,0.6s,mb4.2,baz=97,slow=5.2,SNR=5.7	**97.03**	**316**	P	**P**	**00 48 38.6**	**+0.5**
YKA	**Yellowknife Ar** 0.2nm,0.6s,mb3.7,baz=254,slow=5.0,SNR=5.1	**97.07**	**27**	P	**P**	**00 48 38.0**	**+0.1**
YKA	**Yellowknife Ar**	**97.07**	**27**	P	**P**	**00 48 38.0**	**+0.1**
ARCES	**ARCESS Array B** 1.1nm,0.5s,baz=74,slow=1.8,SNR=15	**119.88**	**346**	PKP	PKPdf	00 53 55.6	+1.0
FINES	**FINESS Array B** 0.7nm,0.6s,baz=204,slow=14,SNR=5.7	**125.39**	**338**	PKP	PKPdf	00 54 07.2	+1.7
CDF	**Champ du Feu**	**142.25**	**338**	*e*PKP1	PKPdf	00 54 39.2	+2.1
HINF	**Hinteralfeld** 3.6nm,0.4s	**142.90**	**338**	*e*PKP1	PKPdf	00 54 40.2	+2.0
LOR	**Lormes**	**144.40**	**341**	*e*PKP1	PKPbc	00 54 43.1	+2.6
SSF	**Saint Saulge** 7.1nm,0.7s	**144.69**	**341**	*e*PKP1	PKPbc	00 54 42.8	+1.5
LPL	**La Plagne**	**144.88**	**336**	*e*PKP1	PKPbc	00 54 43.8	+1.9
LPG	**La Plagne** 17nm,1.1s	**144.89**	**336**	*e*PKP1	PKPbc	00 54 43.9	+2.0
AVF	**Avril sur Loir** 27nm,1.1s	**144.98**	**341**	*e*PKP1	PKPbc	00 54 43.4	+1.2
BGF	**Bois d'Agland** 27nm,0.9s	**145.35**	**341**	*e*PKP1	PKPbc	00 54 44.8	+1.7
ORIF	**Oris-en-Rattie** 24nm,1.0s	**145.71**	**337**	*e*PKP1	PKPbc	00 54 45.5	+1.5
MFF	**Saint Martin d** 32nm,1.1s	**146.16**	**345**	*e*PKP1	PKPbc	00 54 47.1	+2.0

BER ***05*** *00:35:24.6±5.3,78.26N×7.97E,MD2.1,ML2.9, ML2.5(NAO)*

NAO ***05*** *00:35:27.2±5.4,78.45N×8.34E,h29km±36km,ML2.5*

ISC 05 00:35:21.5±2.4,78.3N±0.1×7.5E±0.7,h10km,n4,σ0℗73/7, Svalbard region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBS	**Kingsbay**	**1.09**	**53**	Pn	**Pn**	**00 35 42.8**	**0.0**
KBS				Lg		00 35 54.7	
KBS	**Kingsbay**	**1.09**	**53**	*e*P	**Pb**	**00 35 42.6**	**+0.6**
KBS				*e*S	**Sb**	**00 35 55.2**	**-0.9**
KBS	comp=Z,407nm,0.5s			AML	AML	00 35 59.7	
SPA0	**Spitsbergen Ar** baz=264,slow=14	**1.83**	**90**	Pn	**Pn**	**00 35 54.4**	**+1.0**
SPA0				Sn	**Sn**	**00 36 17.1**	**+0.3**
ARA0	**ARCESS Array S** baz=345,slow=10	**10.05**	**141**	Pn	**P**	**00 37 47.9**	**-0.9**
ARA0				Sn	**S**	**00 39 31.6**	**-11**

baz=355,slow=22

NEIC ***05*** *00:47:13.9±1.4,5.19S×151.39E,h42km±17km,mb4.1/1, Error ellipse: s-maj=68.5km s-min=12.0km az=128.0*

IDC ***05*** *00:47:17.4±6.1,5.32S×151.27E,h70km±51km,mb3.5/6, mb1 3.7/7,mb1mx3.6/13,ML2.8/1,Error ellipse: s-maj=61.0km s-min=30.3km az=115.0*

ISC 05 00:47:12.6±1.4,5.1S±0.2×151.2E±0.3,h36km±18km,n12, σ0℗82/13,mb3.7/6,New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAB	**Rabaul**	**1.32**	**45**	*i*P	**P**	**00 47 34.5**	**-0.4**
PMG	**Port Moresby** 1.6nm,0.3s,baz=27,slow=4.6,SNR=4.8	**5.86**	**223**	P	**P**	**00 48 40.2**	**+1.1**
PMG				S	**S**	**00 49 45.6**	**-0.4**
WB2	**Warramunga Arr**	**22.05**	**227**	*e*P	**P**	**00 52 07.2**	**+1.2**
WRA	**Warramunga Arr** 1.8nm,0.6s,mb3.7,baz=52,slow=9.9,SNR=8.4	**22.06**	**227**	P	**P**	**00 52 05.7**	**-0.4**
AS12	**Alice Springs** 8.0nm,1.4s,mb4.1	**24.86**	**220**	*e*P	**P**	**00 52 33.4**	**-0.1**
ASAR	**Alice Springs** 3.0nm,0.7s,mb4.0,baz=56,slow=9.0,SNR=26	**24.86**	**220**	P	**P**	**00 52 32.7**	**-0.8**
FITZ	**Fitzroy Crossi** 5.0nm,1.2s,mb4.0	**28.13**	**241**	*e*P	**P**	**00 53 01.1**	**-2.6**
FITZ	**Fitzroy Crossi** 1.3nm,0.5s,mb3.8,baz=45,slow=8.6,SNR=5.7	**28.13**	**241**	P	**P**	**00 53 02.4**	**-1.2**
SONM	**Songino Array** 0.4nm,0.4s,mb3.9,baz=148,slow=4.5,SNR=5.2	**65.77**	**329**	P	**P**	**00 57 56.2**	**0.0**
MKAR	**Makanchi Array** 0.2nm,0.6s,mb3.2,baz=93,slow=5.8,SNR=2.6	**79.54**	**319**	P	**P**	**00 59 18.0**	**+0.5**
YKA	**Yellowknife Ar** 0.1nm,0.4s,mb3.6,baz=270,slow=4.3,SNR=2.6	**96.45**	**28**	P	**P**	**01 00 39.3**	**+0.3**
YKA	**Yellowknife Ar**	**96.45**	**28**	P	**P**	**01 00 39.3**	**+0.3**

NEIC ***05*** *02:08:16.9±0.9,17.27S×178.38W,h570km,mb3.7/2, Error ellipse: s-maj=61.2km s-min=12.3km az=155.0*

IDC ***05*** *02:08:16.2±5.6,17.32S×178.32W,h562km±62km,mb3.2/7, mb1 3.6/7,mb1mx3.4/13,Error ellipse: s-maj=82.9km s-min=21.5km az=152.0*

ISC 05 02:08:14.4±1.4,17.2S±0.6×178.4W±0.3,h550km,n17, σ0℗45/11,mb3.6/9,1D,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr** 0.6nm,0.4s,mb3.5,baz=95,slow=7.4,SNR=9.4	**44.75**	**259**	P	**P**	**02 15 40.9**	**0.0**
ASAR	**Alice Springs** 3.4nm,0.6s,mb4.0,baz=88,slow=8.6,SNR=40	**44.97**	**254**	P	**P**	**02 15 42.5**	**0.0**
ASAR	0.8nm,0.5s,baz=103,slow=3.9,SNR=7.6			PcP	PcP	02 17 10.6	-1.6
NVAR	**Mina Array Bea** 1.5nm,0.7s,mb3.4,baz=219,slow=6.7,SNR=5.4	**78.94**	**44**	P	**P**	**02 19 22.5**	**+0.1**
HLID	**Hailey** 1.0nm,0.7s,mb3.5	**84.12**	**41**	*e*P	**P**	**02 19 49.2**	**+0.6**
MNTX	**Cornudas Mount** 3.3nm,1.3s,mb3.7	**85.19**	**55**	*e*P	**P**	**02 19 53.8**	**-0.4**
ILAR	**Eielson Array** 0.7nm,0.4s,mb3.5,baz=220,slow=5.0,SNR=16	**85.22**	**13**	P	**P**	**02 19 53.3**	**-0.2**
TXAR	**Lajitas Array** 1.1nm,0.7s,mb3.6,baz=219,slow=6.1,SNR=16	**85.64**	**58**	P	**P**	**02 19 56.5**	**+0.1**
MCMT	**McKenzie Canyo**	**85.72**	**41**	*e*P	**P**	**02 19 57.2**	**+0.8**
PDAR	**Pinedale Array** 0.8nm,0.7s,mb3.5,baz=244,slow=3.4,SNR=6.8	**86.86**	**43**	P	**P**	**02 20 01.0**	**-0.8**
YKA	**Yellowknife Ar** 0.3nm,0.5s,mb3.7,baz=243,slow=4.4,SNR=8.0	**93.71**	**25**	P	**P**	**02 20 32.8**	**-0.2**
YKA	**Yellowknife Ar**	**93.71**	**25**	P	**P**	**02 20 32.8**	**-0.2**
ARCES	**ARCESS Array B** 6.0nm,1.2s,baz=27,slow=2.7,SNR=6.5	**125.64**	**350**	PKP	PKPdf	02 26 12.8	0.0
ARCES	**ARCESS Array B**	**125.64**	**350**	PKP	PKPdf	02 26 12.8	-0.1
BRTR	**Keskin Array B** 1.5nm,0.6s,baz=121,slow=3.5,SNR=10	**144.28**	**315**	PKP	PKPdf	02 26 49.4	+1.5
CLL	**Collm**	**144.79**	**348**	*i*P	PKPdf	02 26 50.3	+2.0
GERES	**GERESS Array B** 2.3nm,0.7s,baz=23,slow=3.5,SNR=15	**146.94**	**345**	PKPbc	PKPbc	02 26 56.0	+1.7
DAVOX	**Davos** 3.6nm,0.4s,baz=138,slow=3.2,SNR=7.9	**149.73**	**349**	PKPbc	PKPdf	02 27 03.4	+6.9

IDC ***05*** *02:14:05.2±0.6,24.81S×179.90E,h495km±6km,mb4.2/18, mb1 4.2/20,mb1mx4.2/21,Error ellipse: s-maj=16.7km s-min=8.7km az=165.0*

NEIC ***05*** *02:14:06.5±0.2,24.81S×179.89E,mb4.6/23,Error ellipse: s-maj=8.1km s-min=4.9km az=158.0*

SYO ***05*** *02:14:06.5,24.81S×179.89E,h510km,MB4.6*

BJI ***05*** *02:14:06.5,24.80S×179.90E,h509km,mB5.1,mb4.6*

ISC 05 02:14:04.8±1.4,24.79S±0.07×179.84E±0.06, h497km±15km,h499km±3.1km:pP-P,n106,σ0℗92/86, mb4.6/38,9C-13D,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**12.59**	**280**	*e*P	**P**	**02 16 54.0**	**+3.4**
DZM				*e*S	**S**	**02 19 10.2**	**+6.3**
NOUC	**Port Laguerre**	**12.71**	**279**	*e*P	**P**	**02 16 54.2**	**+2.4**
NOUC	**Port Laguerre**	**12.71**	**279**	*e*P	**P**	**02 16 54.2**	**+2.4**
URZ	**Urewera** 1.5nm,0.3s,baz=346,slow=10,SNR=6.3	**13.63**	**189**	P	**P**	**02 17 00.5**	**-0.8**
URZ	0.7nm,0.3s,baz=241,slow=20,SNR=7.2			S	**S**	**02 19 26.6**	**+3.0**
RAR	**Rarotonga** 1.3nm,0.3s,baz=243,slow=5.7,SNR=3.9	**19.10**	**83**	P	**P**	**02 17 54.2**	**-1.5**
RPZ	**Rata Peaks** 9.8nm,0.7s,baz=337,slow=14,SNR=5.4	**20.21**	**199**	P	**P**	**02 18 05.6**	**-0.4**
RPZ	**Rata Peaks**	**20.21**	**199**	P	**P**	**02 18 05.6**	**-0.4**
PPT	**Papeete** 41nm,0.8s,mb4.9,baz=238,slow=9.5,SNR=2.8	**29.36**	**82**	P	**P**	**02 19 26.0**	**-2.3**
CTA	**Charters Tower** 109nm,0.6s,mb5.5	**31.35**	**272**	⇓*i*P	**P**	**02 19 46.2**	**+0.9**
CTA	**Charters Tower** 122nm,0.6s,mb5.5,baz=99,slow=10,SNR=164	**31.35**	**272**	P	**P**	**02 19 46.0**	**+0.7**
CTAO	**Charters Tower** 0.7s,mb5.5	**31.35**	**272**	⇓*i*P	**P**	**02 19 46.2**	**+0.9**
TOO	**Toolangi** 8.3nm,0.7s,mb4.3	**31.85**	**238**	*e*P	**P**	**02 19 50.0**	**+0.6**
STKA	**Stephens Creek** 16nm,0.6s,mb4.6	**34.27**	**249**	⇓*i*P	**P**	**02 20 10.4**	**+0.6**
STKA	**Stephens Creek** 18nm,0.7s,mb4.7,baz=92,slow=9.4,SNR=51	**34.27**	**249**	P	**P**	**02 20 10.2**	**+0.4**
PMG	**Port Moresby** 52nm,0.7s,mb5.1,baz=120,slow=6.0,SNR=13	**34.66**	**290**	P	**P**	**02 20 13.4**	**+0.2**
PMG	**Port Moresby** 83nm,0.9s,mb5.2	**34.66**	**290**	⇓*i*P	**P**	**02 20 13.3**	**+0.1**
WAU	**Wau**	**36.10**	**293**	*e*P	**P**	**02 20 25.7**	**+0.5**
AS12	**Alice Springs** 59nm,1.1s,mb4.9	**41.76**	**262**	⇓*i*P	**P**	**02 21 11.2**	**0.0**
ASAR	**Alice Springs** 65nm,1.1s,mb5.0,baz=99,slow=8.2,SNR=168	**41.76**	**262**	P	**P**	**02 21 11.2**	**+0.1**
ASAR	3.9nm,0.9s,baz=89,slow=7.1,SNR=3.3			pP	pP	02 22 40.9	-2.4
WB2	**Warramunga Arr**	**42.20**	**267**	⇓*i*P	**P**	**02 21 14.3**	**-0.4**
WB2				*e*S	**S**	**02 26 59.2**	**+0.1**
WRAB	**Tennant Creek** 159nm,0.8s,mb5.5	**42.20**	**267**	⇓*i*P	**P**	**02 21 14.2**	**-0.5**
WRA	**Warramunga Arr** 65nm,0.6s,mb5.2,baz=102,slow=8.3,SNR=58	**42.21**	**267**	P	**P**	**02 21 13.7**	**-1.2**
WRA	11nm,0.9s,baz=103,slow=14,SNR=6.2			S	**S**	**02 26 57.3**	**-1.9**
FORT	**Forrest** 304nm,0.7s	**45.87**	**250**	⇓*i*P	**P**	**02 21 42.1**	**-1.2**
KAKA	**Kakadu** 0.4nm,0.6s,mb5.1	**46.29**	**276**	⇓*i*P	**P**	**02 21 45.3**	**-1.4**
FITZ	**Fitzroy Crossi** 58nm,0.8s,mb5.0	**50.62**	**266**	⇓*i*P	**P**	**02 22 18.7**	**-0.6**
FITZ	**Fitzroy Crossi** 64nm,0.7s,mb5.1,baz=164,slow=5.9,SNR=84	**50.62**	**266**	P	**P**	**02 22 18.8**	**-0.5**
SBA	**Scott Base**	**53.49**	**183**	*e*P	**P**	**02 22 40.2**	**+0.9**
KLBR	**Kellerberrin** 52nm,0.7s,mb5.0	**54.52**	**248**	⇓*i*P	**P**	**02 22 45.7**	**-1.4**
NWAO	**Narrogin (SRO)** 48nm,1.3s,mb4.7,baz=93,slow=11,SNR=4.1	**54.74**	**246**	P	**P**	**02 22 47.1**	**-1.6**
NWAO	**Narrogin (SRO)**	**54.74**	**246**	*e*P	**P**	**02 22 47.7**	**-1.0**
MUN	**Mundaring** 22nm,0.9s,mb4.5	**55.75**	**247**	⇑*i*P	**P**	**02 22 54.9**	**-0.9**
QSPA	**South Pole Qui** 3.6nm,0.8s,mb4.0	**65.30**	**180**	*e*P	**P**	**02 23 58.5**	**+0.5**
QSPA				*e*		02 25 47.4	
JOW	**Kunigami** 24nm,0.7s,mb4.8,baz=162,slow=2.5,SNR=5.4	**71.48**	**312**	P	**P**	**02 24 35.8**	**-0.4**
MAJO	**Matsushiro**	**72.55**	**326**	*e*P	**P**	**02 24 41.3**	**-0.9**
MAT	**Matsushiro**	**72.55**	**326**	P	**P**	**02 24 41.5**	**-0.7**
MAT	**Matsushiro** 9.7nm,0.8s,mb4.4	**72.55**	**326**	*e*P	**P**	**02 24 42.0**	**-0.2**
JNU	**Nakatsue** 12nm,1.0s,mb4.4,baz=83,slow=14,SNR=4.7	**74.09**	**319**	P	**P**	**02 24 50.6**	**-0.4**
SYO	**Syowa Base**	**82.12**	**193**	⇑P	**P**	**02 25 31.5**	**-1.6**
SNAA	**Sanae**	**83.79**	**179**	⇑*i*P	**P**	**02 25 41.1**	**-0.2**
SNAA				*e*	pP	02 27 32.3	+0.8
PFO	**Pinyon Flat Ob**	**83.89**	**49**	*e*P	**P**	**02 25 43.1**	**+0.3**
CMB	**Columbia Colle** 15nm,1.2s,mb4.4	**83.94**	**43**	⇑*e*P	**P**	**02 25 42.8**	**-0.1**
VNA3	**Neumayer Olymp**	**84.00**	**177**	⇓*i*P	**P**	**02 25 41.1**	**-1.3**
VNA3				*e*	pP	02 27 32.1	-0.6
WDC	**Whiskeytown Da** 10nm,1.0s,mb4.3	**84.22**	**40**	*e*P	**P**	**02 25 44.4**	**+0.2**
VNA2	**Neumayer--Watz**	**84.42**	**178**	⇓*i*P	**P**	**02 25 45.3**	**+0.8**
VNA2				*e*	pP	02 27 36.3	+1.5
VNA1	**Neumayer--Stat**	**84.66**	**177**	⇑*i*P	**P**	**02 25 47.6**	**+2.0**
VNA1				*e*	pP	02 27 37.9	+1.8
YBH	**Yreka Blue Hor** 3.0nm,0.9s,mb3.9,baz=140,slow=17,SNR=6.8	**84.86**	**39**	P	**P**	**02 25 47.5**	**+0.3**
HUMO	**Hull Mountain**	**85.28**	**39**	*e*P	**P**	**02 25 49.9**	**+0.6**
NVAR	**Mina Array Bea** 5.7nm,0.9s,mb4.2,baz=208,slow=6.5,SNR=18	**85.48**	**44**	P	**P**	**02 25 50.7**	**+0.3**
LDFC	**Landfair**	**85.64**	**48**	⇑*i*P	**P**	**02 25 51.9**	**+0.6**
TPH	**Tonopah** 9.3nm,0.9s,mb4.4	**85.96**	**45**	⇑*e*P	**P**	**02 25 52.6**	**-0.1**
NEN	**Nelson**	**86.14**	**48**	*e*P	**P**	**02 25 53.8**	**+0.2**
ENH	**Enshi** 21nm,1.1s,mb4.8	**86.83**	**305**	*e*P	**P**	**02 25 57.6**	**+0.6**
SSOR	**Sweet Springs**	**86.99**	**37**	*e*P	**P**	**02 25 57.5**	**+0.1**
TUC	**Tucson** 22nm,1.3s,mb4.7	**87.17**	**53**	⇑*e*P	**P**	**02 25 59.6**	**+1.0**
TUC				*e*pP	pP	02 27 54.0	+4.3
WVOR	**Wild Horse Val** 14nm,1.1s,mb4.6	**87.67**	**41**	*e*P	**P**	**02 26 01.1**	**+0.4**
PLCA	**Paso Flores** 2.9nm,0.9s,mb4.0,baz=282,slow=1.9,SNR=4.2	**87.75**	**134**	P	**P**	**02 26 02.1**	**+1.0**
PLCA	**Paso Flores**	**87.75**	**134**	*e*P	**P**	**02 26 01.8**	**+0.7**
SLKM	**Skilak Lake**	**88.42**	**14**	*e*P	**P**	**02 26 02.9**	**-0.8**
WUAZ	**Wupatki** 4.4nm,1.1s,mb4.1	**88.44**	**50**	*e*P	**P**	**02 26 05.3**	**+0.8**
RMW	**Rattlesnake Mo**	**89.00**	**35**	*e*P	**P**	**02 26 07.0**	**+0.2**
MSU	**Marysvale**	**89.49**	**47**	*e*P	**P**	**02 26 10.2**	**+0.9**
KMI	**Kunming**	**89.55**	**298**	*e*P	**P**	**02 26 11.7**	**+1.8**
KMI	comp=Z,11nm,1.2s,mb4.6			AMB	AMB		

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RPW	**Rockport**	**89.78**	**35**	*e*P	**P**	**02 26 09.9**	**-0.5**
NLU	**North Lily Min**	**90.34**	**45**	*e*P	**P**	**02 26 13.5**	**+0.4**
SPUT	**South Promonto**	**90.83**	**44**	*e*P	**P**	**02 26 15.7**	**+0.4**
MNTX	**Cornudas Mount** comp=Z,0.2nm,0.8s	**90.83**	**55**	*e*P	**P**	**02 26 15.8**	**+0.2**
MNTX				*e*pP	pP	02 28 09.5	+2.0
HLID	**Hailey** comp=Z,6.2nm,1.1s,mb4.5	**90.85**	**42**	*e*P	**P**	**02 26 15.8**	**+0.4**
SRU	**San Rafael**	**90.91**	**47**	⇑*e*P	**P**	**02 26 15.9**	**+0.1**
TXAR	**Lajitas Array** comp=Z,5.2nm,0.7s,mb4.5,baz=212,slow=6.6,SNR=74	**91.02**	**58**	P	**P**	**02 26 16.9**	**+0.4**
TXAR				pP	pP	02 28 08.0	-0.4
	comp=Z,0.7nm,1.0s,baz=214,slow=6.5,SNR=3.1						
TXAR				PP	PP	02 30 00.1	-2.8
	comp=Z,0.4nm,0.9s,baz=233,slow=6.3,SNR=3.5						
TXAR	**Lajitas Array**	**91.02**	**58**	P	**P**	**02 26 16.9**	**+0.4**
TXAR				pP	pP	02 28 08.0	-0.4
TXAR				PP	PP	02 30 00.1	-2.8
CD2	**Chengdu**	**91.44**	**303**	P	**P**	**02 26 20.2**	**+1.8**
CD2				AMB	AMB		
	comp=Z,30nm,0.8s,mb5.3						
CD2				AMB	AMB		
	comp=Z,100nm,4.5s						
PV10	**Paradox Valley**	**91.52**	**48**	*e*P	**P**	**02 26 18.3**	**-0.3**
HWUT	**Hardware Ranch** comp=Z,1.9nm,0.6s,mb4.2	**91.55**	**44**	*e*P	**P**	**02 26 18.3**	**-0.4**
ANMO	**Albuquerque** comp=Z,9.2nm,1.3s,mb4.5	**91.61**	**52**	*e*P	**P**	**02 26 18.6**	**-0.5**
PV01	**Paradox Valley**	**91.72**	**48**	*e*P	**P**	**02 26 19.4**	**-0.1**
ILAR	**Eielson Array** comp=Z,0.4nm,0.6s,mb3.6,baz=230,slow=5.1,SNR=9.0	**92.92**	**14**	P	**P**	**02 26 23.2**	**-1.2**
ILAR				pP	pP	02 28 17.0	+0.5
	comp=Z,0.3nm,0.8s,baz=214,slow=5.9,SNR=2.4						
BW06	**Boulder Array** comp=Z,1.9nm,0.9s,mb4.1	**93.42**	**44**	*e*P	**P**	**02 26 26.8**	**-0.5**
PDAR	**Pinedale Array** comp=Z,1.7nm,0.8s,mb4.1,baz=225,slow=2.1,SNR=11	**93.42**	**44**	P	**P**	**02 26 27.1**	**-0.2**
PDAR				PP	PP	02 30 16.4	-5.1
	comp=Z,0.2nm,0.3s,baz=225,slow=4.2,SNR=3.7						
BOZ	**Bozeman (W)**	**93.65**	**41**	*e*P	**P**	**02 26 28.0**	**-0.3**
LZH	**Lanzhou**	**93.80**	**308**	*e*P	**P**	**02 26 30.6**	**+1.4**
LZH				AMB	AMB		
	comp=Z,25nm,1.2s,mb5.1						
LZH				AMB	AMB		
	comp=Z,113nm,5.2s						
SONM	**Songino Array** comp=Z,0.3nm,0.7s,mb3.7,baz=52,slow=36,SNR=2.5	**97.68**	**319**	P	**P**	**02 26 46.8**	**+0.4**
SONM				pP	pP	02 28 36.9	-1.7
	comp=Z,0.3nm,0.8s,baz=104,slow=5.9,SNR=2.7						
INK	**Inuvik**	**98.92**	**16**	*e*P	**P**	**02 26 50.8**	**-0.7**
MKAR	**Makanchi Array** comp=Z,0.6nm,0.6s,baz=283,slow=4.0,SNR=6.0	**112.64**	**312**	PKKPbc		02 42 34.8	
BVAR	**Borovoye Array** comp=Z,1.9nm,0.5s,baz=304,slow=2.2,SNR=6.6	**121.00**	**318**	PKP	PKPdf	02 31 59.9	0.0
ARCES	**ARCESS Array B** 1.2nm,0.8s,baz=4.9,SNR=4.9	**132.72**	**348**	PKP	PKPdf	02 32 21.7	-0.1
ARCES	comp=Z,3.9nm,0.8s,baz=27,slow=2.7,SNR=9.1			SKPbc		02 35 03.0	
FINES	**FINESS Array B** comp=Z,5.2nm,0.8s,baz=90,slow=3.8,SNR=15	**139.23**	**341**	SKPbc		02 35 23.1	
ERZM	**Erzurum**	**142.17**	**304**	P	PKPdf	02 32 38.7	-1.0
NB2	**NORSAR Subarra** comp=Z,0.7nm,0.7s,baz=18,slow=3.7	**142.93**	**351**	PKP		02 32 37.8	
NOA	**NORSAR Array B** comp=Z,0.9nm,0.7s,baz=15,slow=4.8,SNR=3.6	**142.93**	**351**	PKP	PKPdf	02 32 39.9	-0.5
ELZG	**Elazig**	**144.25**	**302**	*i*P	PKPdf	02 32 45.6	+2.2
SVST	**Sivas**	**145.52**	**305**	*e*P	PKPdf	02 32 49.2	+3.7
GZT	**Gaziantep**	**145.57**	**300**	P	PKPdf	02 32 48.7	+3.0
AKASG	**Malin Array Be** comp=Z,4.9nm,0.6s,baz=43,slow=4.1,SNR=30	**145.63**	**326**	PKPbc	PKPbc	02 32 46.8	+0.2
AKASG				pPKPbc		02 34 41.5	
	comp=Z,1.0nm,0.6s,baz=44,slow=4.3,SNR=3.5						
AKASG				SKPbc		02 35 39.0	
	comp=Z,0.7nm,0.5s,baz=50,slow=2.4,SNR=4.6						
SUW	**Suwalki**	**146.01**	**335**	*e*PKP	PKPdf	02 32 50.2	+4.3
ASF	**Jabal al Asfar** comp=Z,8.6nm,0.8s,baz=19,slow=1.8,SNR=11	**146.73**	**291**	PKPbc	PKPbc	02 32 51.7	+1.9
COBT	**Iskenderun**	**146.75**	**299**	P	PKPdf	02 32 52.1	+4.5
AVNT	**Avonos**	**147.34**	**304**	P	PKPdf	02 32 52.9	+4.4
BALT	**Daday**	**147.58**	**309**	P	PKPdf	02 32 53.5	+4.7
ELDT	**Eldivan**	**147.90**	**307**	P	PKPdf	02 32 54.6	+5.2
BRTR	**Keskin Array B** comp=Z,3.7nm,0.8s,baz=128,slow=3.5,SNR=18	**147.99**	**306**	PKPbc	PKPdf	02 32 54.2	+4.7
CSS	**Prodhromos**	**149.37**	**297**	*e*PKPbc	PKPdf	02 32 57.9	+

NWAO	**Narrogin (SRO)**	**23.80**	**174**	*e*P		**P**	**02 25 52.7**	**+0.5**
	41nm,0.8s,mb4.8								
NWAO				*e*			02 26 07.3		
FORT	**Forrest**	**25.07**	**151**	*e*P		**P**	**02 26 04.0**	**-0.4**
	38nm,0.5s,mb5.1								
FORT				*i*		pP	02 26 26.4	+2.0
FORT				*e*S		S	02 30 41.9	+22
PMG	**Port Moresby**	**32.48**	**93**	LR		LR	02 42 54.5		
	comp=Z,100nm,18.6s,baz=202,slow=41								
CTA	**Charters Tower**	**32.76**	**113**	*j*P		**P**	**02 27 13.2**	**-0.2**
	6.0nm,0.6s,mb4.6								
CTA	**Charters Tower**	**32.76**	**113**	P		**P**	**02 27 12.2**	**-1.3**
	8.6nm,0.7s,mb4.7,baz=285,slow=9.4,SNR=7.4								
CTA				LR		LR	02 38 52.3		
	comp=Z,114nm,21.3s,baz=49,slow=33								
CTAO	**Charters Tower**	**32.76**	**113**	*e*P		**P**	**02 27 12.8**	**-0.6**
STKA	**Stephens Creek**	**33.98**	**136**	*j*P		**P**	**02 27 22.9**	**-0.9**
	19nm,0.4s,mb5.3								
STKA	**Stephens Creek**	**33.98**	**136**	P		**P**	**02 27 22.7**	**-1.1**
	28nm,0.5s,mb5.3,baz=311,slow=8.9,SNR=74								
STKA				PcP		PcP	02 29 59.7	-0.5	
	2.3nm,0.7s,baz=321,slow=1.8,SNR=2.9								
STKA				LR		LR	02 42 28.5		
	comp=Z,119nm,18.2s,baz=206,slow=38								
KMI	**Kunming**	**35.88**	**342**	*e*P		**P**	**02 27 42.3**	**+2.2**
KMI				S		**S**	**02 33 17.9**	**+7.3**
KMI				AMB		AMB			
	comp=Z,13nm,1.0s,mb4.8								
ENH	**Enshi**	**39.48**	**354**	*e*P		**P**	**02 28 08.9**	**-1.2**
SSE	**Sheshan**	**40.59**	**9**	P		**P**	**02 28 19.1**	**0.0**
SSE				S		**S**	**02 34 24.1**	**+2.5**
SSE				XS			02 34 56.6		
SSE				SS		SS	02 37 29.6	+10	
SSE				AMB		AMB			
	comp=Z,23nm,0.7s,mb5.1								
SSE				AMB		AMB			
	comp=Z,46nm,4.1s								
SSE				LR		LR			
	comp=Z,58nm,21.5s								
SHL	**Shillong**	**40.81**	**328**	*e*P		**P**	**02 28 22.8**	**+1.7**
CD2	**Chengdu**	**41.10**	**346**	*e*P		**P**	**02 28 23.8**	**+0.4**
CD2				AMB		AMB			
	comp=Z,20nm,0.3s,mb5.4								
NJ2	**Nanjing**	**41.22**	**6**	*e*P		**P**	**02 28 25.1**	**+0.7**
NJ2				AMB		AMB			
	comp=Z,10.0nm,0.7s,mb4.8								
LSA	**Lhasa**	**44.58**	**331**	*e*P		**P**	**02 28 53.5**	**+1.7**
	comp=Z,5.0nm,0.6s,mb4.4								
GUN	**Gumba**	**45.95**	**324**	*e*P		**P**	**02 29 03.2**	**+0.5**
	comp=Z,126nm,0.5s								
LZH	**Lanzhou**	**46.06**	**348**	*e*P		**P**	**02 29 05.5**	**+2.0**
LZH				AP		pP	02 29 24.0	-1.2	
LZH				XP		sP	02 29 33.0	-2.4	
LZH				AMB		AMB			
	comp=Z,30nm,1.5s,mb4.8								
DMN	**Daman**	**46.18**	**323**	*e*P		**P**	**02 29 04.7**	**+0.2**
	comp=Z,141nm,0.6s								
KKN	**Kakani**	**46.21**	**324**	*e*P		**P**	**02 29 05.1**	**+0.3**
GKN	**Gorkha**	**46.75**	**323**	*e*P		**P**	**02 29 08.9**	**-0.1**
	comp=Z,128nm,0.3s								
KOLN	**Koldanda**	**47.20**	**322**	*e*P		**P**	**02 29 12.4**	**-0.2**
	comp=Z,103nm,0.5s,mb5.8								
DANN	**Dangsing**	**47.53**	**323**	*e*P		**P**	**02 29 15.3**	**+0.2**
BJI	**Beijing**	**48.99**	**2**	*e*P		**P**	**02 29 28.5**	**+2.2**
BJI				AMB		AMB			
	comp=Z,9.0nm,1.1s,mb4.6								
CN2	**Changchun**	**53.69**	**10**	*e*P		**P**	**02 30 06.8**	**+5.1**
CN2				AMB		AMB			
	comp=Z,10.0nm,1.2s,mb4.7								
MDJ	**Mudanjiang**	**55.30**	**13**	P		**P**	**02 30 12.7**	**-0.7**
MDJ				AMB		AMB			
	comp=Z,79nm,4.2s								
ULN	**Ulaanbaatar**	**57.14**	**354**	*e*P		**P**	**02 30 24.8**	**-1.6**
	comp=Z,2.0nm,0.8s,mb4.2								
SONM	**Songino Array**	**57.18**	**354**	P		**P**	**02 30 25.0**	**-1.7**
	comp=Z,1.7nm,0.4s,mb4.5,baz=173,slow=8.9,SNR=28								
RPZ	**Rata Peaks**	**59.94**	**135**	P		**P**	**02 30 43.7**	**-2.2**
	comp=Z,69nm,1.3s,mb5.5,baz=90,slow=2.0,SNR=2.7								
KSH	**Kashi**	**60.04**	**326**	*e*P		**P**	**02 30 49.7**	**+3.1**
KSH				*e*AP		pP	02 31 09.3	0.0	
KSH				*e*XP		sP	02 31 17.5	-2.0	
KSH				*e*PCP		PcP	02 31 33.3	+1.9	
KSH				*e*PP		PP	02 33 05.0	+3.1	
KSH				*e*SCP			02 35 26.7		
KSH				*e*PCS			02 35 34.9		
KSH				*e*S		**S**	**02 38 55.4**	**+4.9**
KSH				*e*XS			02 39 30.2		
KSH				*e*SCS		ScS	02 40 29.6	+4.9	
KSH				*e*SS		SS	02 42 56.5	+6.8	
KSH				LR		LR			
	comp=N,200nm,5.6s								
KSH				LR		LR			
	comp=E,130nm,5.0s								
ZAK	**Zakamensk**	**60.06**	**352**	*e*P		**P**	**02 30 45.0**	**-1.6**
ULHL	**Ulahol**	**61.85**	**329**	P		**P**	**02 30 58.6**	**-0.2**
	SNR=5.8								
KZA	**Kyzart**	**62.25**	**328**	P		**P**	**02 31 01.6**	**+0.2**
	SNR=10								
MKAR	**Makanchi Array**	**62.57**	**336**	P		**P**	**02 31 02.3**	**-1.3**
	comp=E,9.3nm,0.4s,mb5.1,baz=147,slow=7.4,SNR=80								
MKAR				pP		pP	02 31 22.7	-3.7	
	comp=E,1.7nm,0.4s,baz=149,slow=9.7,SNR=3.2								
MKAR	**Makanchi Array**	**62.57**	**336**	*e*P		**P**	**02 31 02.4**	**-1.2**
MKAR				pmax		pmax			
	comp=Z,3.0nm,0.5s								
TKM2	**Tokmak 2**	**62.67**	**329**	P		**P**	**02 31 03.9**	**-0.4**
	SNR=13								
KBK	**Karagaybulak**	**62.81**	**328**	P		**P**	**02 31 04.8**	**-0.5**
	SNR=11								
AAK	**Ala-Archa**	**63.03**	**328**	P		**P**	**02 31 06.7**	**0.0**
	SNR=7.9								
AML	**Almayashu**	**63.11**	**327**	P		**P**	**02 31 07.4**	**+0.2**
	SNR=8.1								
EKS2	**Erkin-Say**	**63.43**	**328**	P		**P**	**02 31 09.5**	**+0.1**
	SNR=7.3								
USP	**Ospenovka**	**63.48**	**329**	P		**P**	**02 31 08.9**	**-0.8**
	SNR=6.5								
KKAR	**Karatay Array**	**65.49**	**326**	*j*P		**P**	**02 31 21.4**	**-1.3**
BOD	**Bodaibo**	**66.75**	**360**	*e*P		**P**	**02 31 27.4**	**-3.0**
KURK	**Kurchatov**	**67.16**	**336**	*e*P		**P**	**02 31 31.8**	**-1.3**
ZAL	**Zalesovo**	**67.62**	**342**	P		**P**	**02 31 33.8**	**-2.2**
	comp=Z,2.8nm,0.3s,mb4.5,baz=229,slow=3.3,SNR=7.1								
VOSK	**Vostochnaya**	**71.84**	**334**	P		**P**	**02 31 58.1**	**-3.5**
VOSK				pmax		pmax			
	comp=Z,1.0nm,0.7s,mb3.8								
BVA0	**Borovoye Array**	**72.30**	**334**	*j*P		**P**	**02 32 03.7**	**-0.7**
BVAR	**Borovoye Array**	**72.30**	**334**	P		**P**	**02 32 03.5**	**-0.8**
	comp=Z,2.4nm,0.5s,mb4.3,baz=137,slow=8.0,SNR=17								
BRVK	**Borovoye**	**72.37**	**334**	P		**P**	**02 32 03.3**	**-1.5**
ZRNK	**Zerenda**	**72.86**	**333**	P		**P**	**02 32 06.9**	**-0.7**
ZRNK				pmax		pmax			
	comp=Z,2.0nm,0.7s,mb4.1								
ZRNK	**Zerenda**	**72.86**	**333**	*e*P		**P**	**02 32 06.9**	**-0.7**
AB31	**Akbulak array**	**75.05**	**327**	P		**P**	**02 32 19.9**	**-0.5**
AB31				pmax		pmax			
	comp=Z,2.0nm,0.6s,mb4.0								
SYO	**Syowa Base**	**76.00**	**201**	⇑P		**P**	**02 32 26.9**	**+1.5**
SYO	**Syowa Base**	**76.00**	**201**	⇓PcP		PcP	02 32 42.8	+5.1	
SYO	**Syowa Base**	**76.00**	**201**	⇑*e*P		**P**	**02 32 26.9**	**+1.5**
SYO				*e*PcP		PcP	02 32 42.8	+5.1	
KMBO	**Kilima Mbogo**	**76.97**	**271**	P		**P**	**02 32 32.4**	**+0.4**
	comp=Z,1.3nm,0.4s,mb4.0,baz=210,slow=24,SNR=4.5								
KMBO	**Kilima Mbogo**	**76.97**	**271**	P		**P**	**02 32 33.7**	**+1.8**
QSPA	**South Pole Qui**	**80.83**	**180**	*e*P		**P**	**02 32 52.0**	**+0.4**
	comp=Z,9.5nm,1.0s,mb4.6								
QSPA				*e*		pP	02 33 17.8	+2.3	
TIXI	**Tiksi**	**81.23**	**5**	*e*P		**P**	**02 32 52.4**	**-1.5**
TIXI				pmax		pmax			
	comp=Z,65nm,1.4s,mb5.3								
TIXI	**Tiksi**	**81.23**	**5**	*e*P		**P**	**02 32 52.4**	**-1.5**
ZEI	**Tsey**	**82.09**	**316**	*e*P		**P**	**02 33 01.6**	**+2.7**
ASF	**Jabal al Asfar**	**84.28**	**304**	P		**P**	**02 33 11.6**	**+1.4**
	comp=Z,2.1nm,0.5s,mb4.2,baz=298,slow=1.4,SNR=3.7								
LBTB	**Lobatse**	**84.96**	**246**	*e*P		**P**	**02 33 15.3**	**+1.5**
BRTR	**Keskin Array B**	**88.65**	**310**	P		**P**	**02 33 31.8**	**+0.5**
	comp=Z,3.1nm,0.8s,mb4.4,baz=122,slow=6.2,SNR=6.5								
BRTR				pP		pP	02 33 55.0	-0.7	
	comp=Z,3.2nm,0.8s,baz=127,slow=6.2,SNR=4.4								
SNAA	**Sanae**	**89.54**	**196**	⇑*j*P		**P**	**02 33 36.5**	**+1.7**
SNAA				*e*		pP	02 34 02.6	+3.5	
SNAA				*e*			02 37 00.2		
VNA2	**Neumayer--Watz**	**91.19**	**196**	⇓*j*P		**P**	**02 33 45.7**	**+3.2**
VNA2				*e*		pP	02 34 11.5	+4.6	
VNA2				*e*			02 37 09.4		
VNA1	**Neumayer--Stat**	**91.58**	**196**	⇑*j*P		**P**	**02 33 47.4**	**+3.1**
VNA1				*e*		pP	02 34 13.5	+4.8	
VNA1				*e*			02 37 11.1		
VNA3	**Neumayer Olymp**	**91.63**	**196**	⇑*j*P		**P**	**02 33 47.1**	**+2.6**
VNA3				*e*		pP	02 34 13.0	+4.0	
VNA3				*e*			02 37 10.5		
FINES	**FINESS Array B**	**97.10**	**331**	P		**P**	**02 34 09.3**	**-0.3**
	comp=Z,0.5nm,0.5s,mb4.2,baz=124,slow=6.2,SNR=4.4								
FINES				pP		pP	02 34 31.9	-2.3	
	comp=Z,1.8nm,1.0s,baz=192,slow=35,SNR=2.1								
ARCES	**ARCESS Array B**	**98.08**	**99**	PKiKP			02 38 47.0		
	comp=Z,1.2nm,0.7s,baz=153,slow=2.7,SNR=5.1								
ILAR	**Eielson Array**	**102.02**	**26**	PKKPbc			02 50 36.1		
	comp=Z,0.4nm,0.7s,baz=89,slow=1.1,SNR=6.8								
CLL	**Collm**	**104.12**	**321**	*e**PP			02 35 06.0		
YKA	**Yellowknife Ar**	**116.23**	**23**	PKP	PKPdf		02 39 20.1	+0.8	
	comp=Z,1.5nm,0.5s,baz=313,slow=1.9,SNR=45								
YKA				pPKP			02 39 44.6		
	comp=Z,0.5nm,0.5s,baz=309,slow=1.9,SNR=4.5								
DBIC	**Dimbokro**	**119.68**	**272**	PKP	PKPdf		02 39 28.1	+0.9	
	comp=Z,2.2nm,0.6s,baz=52,slow=5.0,SNR=9.0								
DBIC				pPKP			02 39 52.9		
	comp=Z,2.0nm,0.8s,baz=57,slow=8.1,SNR=2.3								
DBIC	**Dimbokro**	**119.68**	**272**	PKP	PKPdf		02 39 28.1	+0.9	
DBIC				pPKP			02 39 52.9		
NVAR	**Mina Array Bea**	**124.73**	**49**	PKP	PKPdf		02 39 38.7	+2.2	
	comp=Z,1.7nm,0.7s,baz=227,slow=1.5,SNR=6.9								
NVAR	**Mina Array Bea**	**124.73**	**49**	PKP	PKPdf		02 39 38.7	+2.2	
CHMT	**Chamberlain Mo**	**124.94**	**38**	*e*PKPdf	PKPdf		02 39 38.2	+1.6	
HLID	**Hailey**	**125.66**	**42**	*e*PKPdf	PKPdf		02 39 41.1	+3.0	
PDAR	**Pinedale Array**	**129.19**	**41**	PKP	PKPdf		02 39 47.1	+2.2	
	comp=Z,0.4nm,0.4s,baz=105,slow=0.7,SNR=4.4								
PV10	**Paradox Valley**	**131.52**	**46**	*e*PKPdf	PKPdf		02 39 52.3	+2.8	
RSSD	**Black Hills**	**131.92**	**37**	*e*PKPdf	PKPdf		02 39 52.2	+2.1	
ULM	**Lac du Bonnet**	**132.05**	**26**	PKP	PKPdf		02 39 51.7	+1.5	
	comp=Z,1.0nm,0.5s,baz=270,slow=1.0,SNR=2.4								
ULM				SKPbc			02 43 07.8		
	comp=Z,3.5nm,0.6s,baz=280,slow=4.2,SNR=8.2								
ULM	**Lac du Bonnet**	**132.05**	**26**	PKP	PKPdf		02 39 51.7	+1.5	
ULM				SKPbc			02 43 07.8		
SCHQ	**Schefferville**	**134.45**	**1**	PKP	PKPdf		02 39 56.2	+1.8	
	comp=Z,2.4nm,0.6s,baz=289,slow=19,SNR=6.7								
TXAR	**Lajitas Array**	**139.24**	**55**	PKhKP			02 39 57.4		
	comp=Z,0.4nm,0.5s,baz=214,slow=3.2,SNR=8.1								
TXAR				SKPbc			02 43 32.1		
	comp=Z,0.4nm,0.7s,baz=268,slow=2.4,SNR=5.6								
CPUP	**Villa Florida**	**143.78**	**193**	PKP	PKPdf		02 40 11.7	-0.4	
	comp=Z,2.5nm,0.7s,baz=129,slow=5.2,SNR=5.9								
CPUP				pPKP			02 40 37.5		
	comp=Z,5.4nm,0.9s,baz=211,slow=4.7,SNR=4.2								
ACSO	**Alum Creek Sta**	**145.48**	**24**	*e*PKPbc	PKPbc		02 40 16.2	+0.9	
WCI	**Wyandotte Cave**	**145.67**	**29**	*e*PKPbc	PKPbc		02 40 16.6	+0.8	
WCI				*e*			02 40 41.8		
WVT	**Waverly**	**146.48**	**33**	*e*PKPbc	PKPbc		02 40 19.3	+1.4	
WVT				*e*			02 40 44.5		
OXF	**Oxford**	**146.74**	**37**	*e*PKPbc	PKPbc		02 40 20.0	+1.5	
PLAL	**Pickwick Lake**	**147.19**	**35**	*e*PKPbc	PKPdf		02 40 20.6	+3.0	
PLAL				*e*			02 40 45.6		
SWET	**Sewanee**	**148.19**	**32**	*e*PKPbc	PKPdf		02 40 23.7	+4.4	
LVC	**Limon Verde**	**148.26**	**174**	*e*PKPbc	PKPdf		02 40 27.1	+7.3	
ELN	**Prospectdale**	**148.94**	**24**	*e*PKPbc	PKPdf		02 40 25.7	+5.3	
ELN				*e*			02 40 50.9		
LRAL	**Lakeview Retre**	**149.20**	**36**	*e*PKPbc	PKPdf		02 40 26.7	+5.7	
LRAL				*e*			02 40 51.4		
MYNC	**Murphy**	**149.23**	**30**	*e*PKPbc	PKPdf		02 40 27.2	+6.3	
BDFB	**Brasilia**	**149.72**	**216**	PKPbc	PKPdf		02 40 29.6	+7.4	
	comp=Z,14nm,0.8s,baz=166,slow=2.5,SNR=18								
TRSB	**Teresina**	**153.12**	**240***c*	*i*P		PKPdf	02 40 37.5	+10	
TRSB				*i*			02 40 49.4		
LPAZ	**La Paz**	**154.60**	**175**	PKPbc		PKPdf	02 40 40.3	+11	
	comp=Z,1.2nm,0.6s,baz=12,slow=9.7,SNR=7.5								
LPAZ				PKPab		PKPab	02 40 55.8	+0.6	
	comp=Z,3.5nm,0.5s,baz=177,slow=2.5,SNR=14								
LPAZ	**La Paz**	**154.60**	**175**	PKPbc		PKPdf	02 40 40.3	+11	
LPAZ				PKPab		PKPab	02 40 55.8	+0.6	
LPAZ				*e*PKPab		PKPab	02 40 56.1	+0.8	

*IDC **05** 02:23:13.1±4.0,33.74N×89.33E,mb3.6/6,mb1 3.7/8, mb1mx3.6/20,ML3.3/2,MS3.2/1,Ms1 3.2/1,ms1mx2.6/26, Error ellipse: s-maj=74.4km s-min=36.0km az=148.0*

ISC 05 02:23:18.0±2.5,34.1N±0.3×89.3E±0.2,h33km,n8,σ0§73/8, mb3.6/5,MS3.1/1,Xizang

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MKAR	**Makanchi Array**	**13.76**	**339**	Pn	**P**	**02 26 32.2**	**-0.7**
	0.1nm,0.3s,baz=155,slow=14,SNR=3.4						
SONM	**Songino Array**	**18.80**	**38**	P	**P**	**02 27 37.1**	**0.0**
	0.1nm,0.3s,baz=230,slow=11,SNR=2.6						
ZAL	**Zalesovo**	**20.11**	**352**	P	**P**	**02 27 51.3**	**-0.2**
	1.9nm,0.4s,baz=213,slow=9.5,SNR=9.1						
BVAR	**Borovoye Array**	**23.24**	**330**	P	**P**	**02 28 24.9**	**+2.0**
	0.8nm,0.7s,mb3.2,baz=135,slow=8.4,SNR=4.9						
BVAR				LR	LR	02 38 44.7	
	comp=Z,60nm,19.0s,MS3.1,baz=80,slow=40						
BRTR	**Keskin Array B**	**44.26**	**294**	P	**P**	**02 31 25.7**	**-0.3**
	0.8nm,1.0s,mb3.4,baz=90,slow=5.8,SNR=3.4						
AKASG	**Malin Array Be**	**46.06**	**310**	P	**P**	**02 31 40.0**	**-0.3**
	0.9nm,0.7s,mb3.8,baz=80,slow=7.2,SNR=5.4						
NOA	**NORSAR Array B**	**55.20**	**325**	P	**P**	**02 32 49.1**	**-0.4**
	0.7nm,0.9s,mb3.7,baz=84,slow=5.7,SNR=3.4						
GERES	**GERESS Array B**	**56.27**	**310**	P	**P**	**02 32 57.5**	**+0.1**
	0.9nm,0.7s,mb3.9,baz=90,slow=5.3,SNR=7.7						

*IDC **05** 02:33:32.6±1.3,10.36S×66.36E,mb4.0/9,mb1 4.1/9, mb1mx4.0/18,MS3.6/2,Ms1 3.6/2,ms1mx3.1/22,Error ellipse: s-maj=42.0km s-min=23.5km az=44.0*
*NEIC **05** 02:33:34.0±0.6,10.42S×66.29E,h10km,mb4.4/2,Error ellipse: s-maj=19.6km s-min=17.7km az=130.0*

ISC 05 02:33:32.1±0.8,10.4S±0.1×66.3E±0.1,h10km,n26, σ1§00/17,mb4.1/11,MS3.6/2,Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KMBO	**Kilima Mbogo**	**30.31**	**286**	LR	LR	02 49 31.3	
	comp=Z,87nm,19.3s,MS3.4,baz=96,slow=32						
LBTB	**Lobatse**	**41.26**	**244**	P	**P**	**02 41 20.0**	**+0.8**
	3.2nm,1.1s,mb3.9						
CMAR	**Chiang Mai Arr**	**43.09**	**49**	P	**P**	**02 41 35.0**	**+0.7**
	0.7nm,0.4s,mb3.8,baz=238,slow=8.5,SNR=4.5						
LSA	**Lhasa**	**46.46**	**30**	P	**P**	**02 42 04.7**	**+3.4**
BRTR	**Keskin Array B**	**58.34**	**331**	P	**P**	**02 43 28.6**	**-1.3**
	1.0nm,0.7s,mb4.0,baz=159,slow=11,SNR=5.7						
MKAR	**Makanchi Array**	**58.66**	**13**	P	**P**	**02 43 30.9**	**-1.1**
	1.5nm,0.9s,mb4.0,baz=201,slow=3.3,SNR=9.2						
MKAR	**Makanchi Array**	**58.66**	**13**	P	**P**	**02 43 30.9**	**-1.1**
KURK	**Kurchatov**	**61.76**	**9**	*e*P	**P**	**02 43 53.8**	**+0.6**
ZRNK	**Zerenda**	**63.10**	**2**	*e*P	**P**	**02 44 02.4**	**+0.4**
BVAR	**Borovoye Array**	**63.23**	**3**	P	**P**	**02 44 01.5**	**-1.4**
	1.7nm,0.7s,mb4.3,baz=228,slow=40,SNR=5.3						
BRVK	**Borovoye**	**63.26**	**3**	*e*P	**P**	**02 44 02.8**	**-0.3**
ASAR	**Alice Springs**	**65.46**	**111**	P	**P**	**02 44 16.8**	**-1.1**
	0.5nm,0.6s,mb3.7,baz=277,slow=5.6,SNR=6.2						
ASAR				LR	LR	03 10 51.4	
	comp=Z,56nm,18.5s,MS3.8,baz=44,slow=34						
ZAL	**Zalesovo**	**65.94**	**12**	P	**P**	**02 44 19.6**	**-0.8**
	1.2nm,0.8s,mb4.0,baz=167,slow=7.1,SNR=5.1						
WRA	**Warramunga Arr**	**65.98**	**107**	P	**P**	**02 44 21.3**	**0.0**
	3.0nm,1.2s,mb4.2,baz=277,slow=6.7,SNR=4.6						
SONM	**Songino Array**	**67.97**	**28**	P	**P**	**02 44 34.5**	**+1.1**
	2.2nm,0.9s,mb4.2,baz=225,slow=5.2,SNR=13						
ULN	**Ulaanbaatar**	**68.29**	**28**	P	**P**	**02 44 36.8**	**+1.3**
	12nm,2.1s,mb4.6						
AKASG	**Malin Array Be**	**68.83**	**336**	P	**P**	**02 44 39.8**	**+1.1**
	1.9nm,0.7s,mb4.2,baz=142,slow=5.4,SNR=12						
TIXI	**Tiksi**	**91.48**	**16**	*e*P	**P**	**02 46 38.7**	**-0.8**
YKA	**Yellowknife Ar**	**127.96**	**1**	PKP	PKPdf	02 52 40.8	-0.4
	0.2nm,0.7s,baz=355,slow=2.0,SNR=5.0						
YKA				PP	PP	02 54 42.5	-2.4
	0.1nm,0.4s,baz=344,slow=6.7,SNR=4.2						
YKA	**Yellowknife Ar**	**127.96**	**1**	PKP	PKPdf	02 52 40.9	-0.4
YKA				PP	PP	02 54 42.5	-2.4
RSSD	**Black Hills**	**145.34**	**348**	*e*PKPdf	PKPdf	02 53 13.1	-0.3
MCMT	**McKenzie Canyo**	**145.65**	**359**	*e*PKPdf	PKPdf	02 53 15.0	+1.1
PDAR	**Pinedale Array**	**147.52**	**354**	PKPbc	PKPdf	02 53 18.5	+1.4
	0.8nm,0.8s,baz=90,slow=1.5,SNR=5.2						
NVAR	**Mina Array Bea**	**151.75**	**8**	PKP	PKPdf	02 53 23.2	-0.6
	0.2nm,0.3s,baz=204,slow=18,SNR=2.0						
NVAR				PKPbc	PKPdf	02 53 30.3	+6.4
	1.5nm,0.7s,baz=35,slow=1.4,SNR=6.4						
NVAR	**Mina Array Bea**	**151.75**	**8**	PKP	PKPdf	02 53 23.2	-0.6
NVAR				PKPbc	PKPdf	02 53 30.3	+6.4
TXAR	**Lajitas Array**	**158.93**	**335**	PKPab	PKPab	02 54 09.3	0.0
	0.4nm,0.9s,slow=3.8,SNR=4.2						

IDC 05 03:04:23.7±48.0,15.49S×172.81W,mb4.0/3,mb1 4.2/3, mb1mx3.7/15,Error ellipse: s-maj=932.0km s-min=190.8km az=79.0,Samoa Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**44.49**	**240**	P	P	03 12 37.0	-1.8
	1.3nm,0.6s,baz=68,slow=10.0,SNR=4.5						
WRA	**Warramunga Arr**	**50.38**	**257**	P	P	03 13 23.0	-2.0
	0.4nm,0.6s,baz=92,slow=6.9,SNR=7.9						
ASAR	**Alice Springs**	**50.63**	**252**	P	P	03 13 24.9	-1.9
	3.4nm,0.5s,baz=89,slow=8.2,SNR=64						

*NEIC **05** 03:06:59.1,15.61N×97.57W,h7km,MD4.0(MEX),After MEX.*

MEX 05 03:06:59.2±0.7,15.57N×97.57W,h11km±15km,MD4.0, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PNIG	**Pinotepa**	**0.98**	**327**	*i*P	Pb	03 07 15.0	-2.7
PNIG				*i*S	Sb	03 07 27.5	-2.9
HUIG	**Huatulco**	**1.42**	**82**	*i*P	Pn	03 07 19.9	-5.2
HUIG				*i*S	Sb	03 07 39.2	-3.9
VHO	**Vista Hermosa**	**1.69**	**28**	*i*P	Pn	03 07 25.5	-3.5
VHO				*i*S	Sn	03 07 45.7	-5.1
OXX	**Oaxaca**	**1.70**	**28**	*i*P	Pn	03 07 25.3	-3.9
OXX				*i*S	Sn	03 07 44.2	-6.9
CMIG	**Matias Romero**	**2.98**	**59**	*i*P	Pn	03 07 43.5	-3.9
CMIG				*i*S	Sn	03 08 18.9	-4.6
IISM	**Ciudad Serdan**	**3.40**	**3**	*i*P	Pn	03 07 58.0	+4.6
PPM	**Popocatepetl**	**3.62**	**344**	*i*P	Pn	03 07 51.8	-4.7
PPM				*i*S	Sn	03 08 36.2	-3.5

JMA 05 03:07:58.1±0.2,25.74N×124.13E,h169km,M3.5, Northeast of Taiwan

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JTJ	**Tarama**	**1.21**	**155**	P	P	03 08 26.9	+0.2
JTJ				S	S	03 08 48.2	-0.6
JIJ	**Ishigaki jima**	**1.37**	**180**	P	P	03 08 27.6	-0.6
JIJ				S	S	03 08 50.1	-1.4
JMJ	**Miyako jima 2**	**1.40**	**131**	P	P	03 08 28.5	0.0
JMJ				S	S	03 08 51.1	-0.9
IRIF	**Iriomote-Funau**	**1.45**	**195**	P	P	03 08 28.5	-0.5
IRIF				S	S	03 08 52.4	-0.4
JKRS	**Kuro-shima**	**1.50**	**184**	P	P	03 08 29.3	-0.2
JKRS				S	S	03 08 52.9	-0.9
JOGS	**Gusukube**	**1.51**	**130**	P	P	03 08 29.8	+0.2
JOGS				S	S	03 08 53.6	-0.4
YOJ	**Yonaguni jima**	**1.63**	**219**	P	P	03 08 31.0	+0.2
YOJ				S	S	03 08

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSSGP	**Seogwipo**	**1.21**	**38**	P	**Pb**	**03 22 46.4**	**+0.1**
KSSGP				S	**Sb**	**03 23 01.3**	**-0.5**
KSJJU	**Jeju**	**1.37**	**35**	P	**Pn**	**03 22 49.6**	**+0.6**
JFU	**Fukue jima 2**	**2.68**	**82**	P	**Pn**	**03 23 07.4**	**-0.2**
JFU				S	**Sn**	**03 23 44.8**	**+4.4**
KSKWJ	**Gwangju**	**3.08**	**22**	P	**Pn**	**03 23 18.9**	**+5.5**
JSJ	**Shimokoshiki**	**3.54**	**99**	P	**Pn**	**03 23 19.4**	**-0.6**
JTU	**Tsushima**	**3.87**	**54**	P	**Pn**	**03 23 24.6**	**0.0**

*TAP **05** 03:44:04.1,23.05N×121.24E,h9km,ML3.5*
*JMA **05** 03:44:05.6±0.6,22.93N×121.44E,h75km,M2.8*
ISC 05 03:44:05.1±2.3,23.0N±0.2×121.5E±0.2,h9km,n6, σ0s56/11,Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**1.96**	**43**	P	**Pn**	**03 44 39.5**	**+0.5**
YOJ				S	**Sn**	**03 45 03.6**	**-0.3**
HATJ	**Hateruma jima**	**2.32**	**64**	S	**Sn**	**03 45 13.5**	**+0.5**
IRIF	**Iriomote-Funau**	**2.39**	**57**	P	**Pn**	**03 44 44.7**	**-0.5**
IRIF				S	**Sn**	**03 45 15.5**	**+0.6**
JKRS	**Kuro-shima**	**2.56**	**62**	P	**Pn**	**03 44 47.8**	**+0.2**
JKRS				S	**Sn**	**03 45 19.1**	**-0.2**
JIJ	**Ishigaki jima**	**2.73**	**61**	P	**Pn**	**03 44 49.8**	**-0.3**
JIJ				S	**Sn**	**03 45 22.2**	**-1.3**
JTJ	**Tarama**	**3.31**	**61**	P	**Pn**	**03 44 58.2**	**0.0**
JTJ				S	**Sn**	**03 45 38.9**	**+0.7**

*ISK **05** 03:44:09.7,41.83N×26.50E,h26km,MD3.4*
*SOF **05** 03:44:10.4,41.65N×26.59E,h14km,MD3.0*
*THE **05** 03:44:11.9,41.48N×26.83E,h20km,ML3.7*
ISC 05 03:44:10.6±0.5,41.63N±0.03×26.59E±0.03,h9km±4km, n33,σ0s88/40,3C,Greece-Bulgaria border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EDRB	**Edirne**	**0.25**	**28**	PG	**Pg**	**03 44 16.3**	**+0.5**
EDRB				SG	**Sg**	**03 44 19.6**	**+0.3**
ALN	**Alexandroupoli**	**0.84**	**209**	*e*Pg	**Pg**	**03 44 27.4**	**0.0**
ALN				*e*Sg	**Sg**	**03 44 38.7**	**+0.1**
JMB	**Yambol**	**0.84**	**360**	*i* Pg	**Pg**	**03 44 27.7**	**+0.3**
KDZ	**Kurdzhali**	**0.88**	**272**	*i* Pg	**Pg**	**03 44 28.8**	**+0.6**
DIM	**Dimitrovgrad**	**0.89**	**299**	*i* Pg	**Pg**	**03 44 27.7**	**-0.8**
LPK	**Lapseki**	**1.26**	**174**	*i* PN	**Pn**	**03 44 35.5**	**+1.1**
MRMT	**Marmara Adasi**	**1.28**	**143**	PN	**Pn**	**03 44 34.9**	**+0.3**
KGT	**Karabiga**	**1.29**	**155**	*e*PN	**Pn**	**03 44 35.1**	**+0.2**
RZN	**Rozhen**	**1.40**	**273**	*i* P	**Pn**	**03 44 36.7**	**+0.3**
CTT	**Catalca**	**1.47**	**108**	*i* PN	**Pn**	**03 44 36.8**	**-0.5**
CTT				SN	**Sn**	**03 44 57.3**	**+0.5**
PLD	**Plovdiv**	**1.49**	**289**	P	**Pn**	**03 44 37.5**	**-0.1**
BNT	**Bandirma**	**1.62**	**141**	PN	**Pn**	**03 44 39.9**	**+0.3**
PRD	**Provadia**	**1.68**	**21**	*i* P	**Pn**	**03 44 40.0**	**-0.4**
SZH	**Strazhica**	**1.71**	**344**	Pg	**Pg**	**03 44 44.7**	**0.0**
PVL	**Pavlikeni**	**1.84**	**330**	P	**Pn**	**03 44 46.3**	**+3.6**
KCT	**Karacabey**	**1.91**	**135**	PN	**Pn**	**03 44 43.5**	**-0.2**
ISK	**Istanbul-Kandi**	**1.94**	**106**	*e*PN	**Pn**	**03 44 43.9**	**-0.3**
PGB	**Panagyurishte**	**2.02**	**298**	P	**Pn**	**03 44 45.5**	**+0.2**
MMB	**Musomiste**	**2.14**	**270**	P	**Pn**	**03 44 49.0**	**+2.0**
BALB	**Balikesir**	**2.22**	**153**	*e*PN	**Pn**	**03 44 48.3**	**+0.2**
SRS	**Serrai**	**2.31**	**258**	*e*Pn	**Pn**	**03 44 49.7**	**+0.3**
	comp=Z,8.3nm,0.5s						
SRS				*e*Sn	**Sn**	**03 45 18.6**	**+0.4**
OUR	**Ouranopolis**	**2.36**	**238**	*e*Pn	**Pn**	**03 44 49.5**	**-0.6**
OUR				*e*Sn	**Sn**	**03 45 17.6**	**-1.7**
HRT	**Hereke**	**2.46**	**108**	*e*PN	**Pn**	**03 44 50.6**	**-0.9**
SOH	**Sokhos**	**2.57**	**253**	*e*Pn	**Pn**	**03 44 53.6**	**+0.5**
SOH				*e*Sn	**Sn**	**03 45 24.2**	**-0.5**
KKB	**Krupnik**	**2.63**	**276**	P	**Pn**	**03 44 58.0**	**+4.0**
VTS	**Vitosha**	**2.69**	**292**	P	**Pn**	**03 44 55.7**	**+0.8**
KNT	**Kendrikon**	**2.81**	**262**	*e*Pn	**Pn**	**03 44 57.1**	**+0.6**
KNT				*e*Sn	**Sn**	**03 45 31.2**	**+0.2**
HARR	**Harsova**	**3.21**	**17⇑**	*i*P	**Pg**	**03 45 16.1**	**+1.3**
GRG	**Griva**	**3.22**	**259**	*e*Pn	**Pn**	**03 45 03.1**	**+0.7**
XOR	**Xorichti**	**3.44**	**230**	*e*Pn	**Pn**	**03 45 03.9**	**-1.6**
CFR	**Carcaliu**	**3.72**	**17⇑**	*i*P	**Pg**	**03 45 22.4**	**-2.6**
MLR	**Muntele Rosu**	**3.89**	**353⇑**	*i*P	**Pg**	**03 45 26.5**	**-1.8**
AGG	**Agios Georgios**	**4.17**	**233**	*e*Pn	**Pn**	**03 45 14.4**	**-1.4**

*NEIC **05** 03:59:60.0±1.3,24.08S×176.59W,h10km,mb4.5/3,Error ellipse: s-maj=31.6km s-min=17.6km az=217.0*
*IDC **05** 04:00:01.5±29.0,24.19S×177.00W,mb4.0/3,mb1 4.3/4, mb1mx4.0/14,ML4.5/1,MS3.3/1,Ms1 3.3/1,ms1mx2.8/20, Error ellipse: s-maj=534.0km s-min=68.1km az=75.0*
ISC 05 04:00:36.1±5.6,25.8S±0.2×178.1W±0.3,h252km±43km, n11,σ0s90/12,mb3.7/6,2C-2D,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**13.04**	**197**	Pn	**P**	**04 03 33.5**	**+0.1**
	1.9nm,0.3s,baz=333,slow=2.8,SNR=8.4						
URZ				Sn	**S**	**04 05 53.3**	**-0.4**
	2.7nm,0.3s,baz=345,slow=23,SNR=9.8						
URZ				LR	LR	04 09 07.7	
	comp=Z,107nm,18.1s,baz=27,slow=37						
STKA	**Stephens Creek**	**35.69**	**251**	P	**P**	**04 07 13.3**	**+1.1**
	1.8nm,0.8s,mb3.7,baz=86,slow=9.8,SNR=5.9						
ASAR	**Alice Springs**	**43.48**	**262**	P	**P**	**04 08 16.8**	**+0.4**
	0.9nm,0.5s,mb3.5,baz=90,slow=7.6,SNR=15						
WRAB	**Tennant Creek**	**44.04**	**268**	*e*P	**P**	**04 08 20.5**	**-0.5**
	2.0nm,0.4s,mb3.8						
WRA	**Warramunga Arr**	**44.05**	**267**	P	**P**	**04 08 20.2**	**-0.8**
	2.1nm,0.7s,mb3.6,baz=104,slow=8.1,SNR=12						
SBA	**Scott Base**	**52.56**	**184**	*e*P	**P**	**04 09 28.5**	**+3.2**
	2.9nm,0.7s,mb3.8						
QSPA	**South Pole Qui**	**64.25**	**180**	*e*P	**P**	**04 10 46.9**	**+1.2**
	2.6nm,0.7s,mb4.0						
SNAA	**Sanae**	**82.70**	**178⇓**	*i*	**P**	**04 12 31.0**	**-1.2**
VNA3	**Neumayer Olymp**	**82.84**	**176⇓**	*i*	**P**	**04 12 32.7**	**-0.2**
VNA2	**Neumayer--Watz**	**83.28**	**177⇑**	*i*	**P**	**04 12 35.4**	**+0.2**
VNA1	**Neumayer--Stat**	**83.51**	**177⇑**	*i*	**P**	**04 12 35.4**	**-0.8**

*IDC **05** 04:04:59.0±0.5,31.65N×141.72E,mb4.4/19,mb1 4.5/23, mb1mx4.5/25,ML4.0/4,MS3.8/7,Ms1 3.8/7,ms1mx3.4/26, Error ellipse: s-maj=17.2km s-min=12.7km az=74.0*
*NIED **05** 04:05:00,31.70N×141.90E,h8km,Mw4.4 Best double couple: M0 5.18×10^15 NP1:φs264°,δ81°,λ-154°. NP2: φs169°,δ64°,λ-10°.*
*JMA **05** 04:05:01.2±0.3,31.66N×141.89E,h42km,M4.2*
*MOS **05** 04:05:02.4±1.1,31.78N×141.81E,h33km,mb4.9/26,Error ellipse: s-maj=13.4km s-min=5.8km az=109.7*
*BJI **05** 04:05:02.8,31.69N×141.81E,h49km,mB4.8,mb4.4, Ms4.2,Msz3.9*
*NEIC **05** 04:05:04.8±1.2,31.68N×141.69E,h40km±10km,mb4.7/32, Error ellipse: s-maj=7.5km s-min=6.0km az=93.0*
ISC 05 04:04:58.6±1.2,31.60N±0.03×141.74E±0.04,h10km±7km, n156,σ1s03/166,mb4.6/64,MS4.1/13,5C-4D,Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHJ2	**Mitsune**	**2.22**	**313**	P	**Pn**	**04 05 37.4**	**+1.4**
JHJ2				*e*S	**Sn**	**04 06 05.0**	**+1.3**
JHJ	**Hachijo jima 2**	**2.24**	**313**	Pn	**Pn**	**04 05 35.2**	**-1.1**
	75nm,0.3s,baz=73,slow=23,SNR=32						
JHJ				Sn	**Sn**	**04 06 04.5**	**+0.2**
	102nm,0.3s,baz=224,slow=23,SNR=5.8						
JHJ				LR	LR	04 06 29.3	
	comp=Z,2µm,20.1s,baz=164,slow=41						
BSO1	**Boso 1**	**3.11**	**348**	P	**Pn**	**04 05 48.8**	**0.0**
BSO1				*e*S	**Sn**	**04 06 22.8**	**-3.6**
BSO3	**Boso 3**	**3.36**	**342**	P	**Pn**	**04 05 53.5**	**+1.3**
BSO4	**Boso 4**	**3.58**	**341**	P	**Pn**	**04 05 56.8**	**+1.4**
JOD2	**Odawara 2**	**4.27**	**330**	P	**Pn**	**04 06 06.0**	**+0.7**
CBIJ	**Chichi jima**	**4.51**	**175**	Pn	**Pn**	**04 06 08.9**	**+0.4**
	30nm,0.3s,baz=283,slow=14,SNR=20						
CBIJ				Sn	**Sn**	**04 07 01.1**	**-0.7**
	43nm,0.3s,baz=281,slow=22,SNR=4.3						
CBIJ	**Chichi jima**	**4.51**	**175**	P	**Pn**	**04 06 08.7**	**+0.1**
CBIJ				*e*S	**Sn**	**04 07 00.1**	**-1.6**
JHU	**Hanno**	**4.71**	**335**	P	**Pn**	**04 06 11.8**	**+0.3**
JHU				*e*S	**Sn**	**04 07 06.5**	**-0.4**
JYT	**Yasato**	**4.79**	**345**	P	**Pn**	**04 06 12.0**	**-0.6**
JRY	**Ryogami san**	**5.00**	**333**	P	**Pn**	**04 06 16.5**	**+0.9**
JHO	**Hitachi**	**5.09**	**349**	P	**Pn**	**04 06 15.2**	**-1.7**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAG	**Ashikaga**	**5.17**	**339**	P	**Pn**	**04 06 18.1**	**+0.1**
MAJO	**Matsushiro**	**5.74**	**330**	*e*P	**Pn**	**04 06 26.4**	**+0.5**
MAJO				pmax	pmax		
	comp=Z,18nm,0.4s						
MAJO	**Matsushiro**	**5.74**	**330**	*e*Pn	**Pn**	**04 06 26.4**	**+0.5**
	comp=Z,18nm,0.4s						
MAT	**Matsushiro**	**5.74**	**330**	P	**Pn**	**04 06 26.7**	**+0.8**
MAT				*e*S	**Sn**	**04 07 33.5**	**+0.9**
MAT	**Matsushiro**	**5.74**	**330**	*e*P	**Pn**	**04 06 27.0**	**+1.1**
MAT				S	**Sn**	**04 07 34.0**	**+1.4**
MAT				pmax	pmax		
	comp=Z,15nm,0.8s						
MAT	**Matsushiro**	**5.74**	**330**	*e*P	**Pn**	**04 06 27.0**	**+1.1**
	comp=Z,15nm,0.8s						
MAT				S	**Sn**	**04 07 34.0**	**+1.4**
JFK	**Kawauchi**	**5.80**	**353**	P	**Pn**	**04 06 24.2**	**-2.6**
JNU	**Nakatsue**	**9.31**	**282**	Pn	**P**	**04 07 20.6**	**+4.7**
	comp=Z,0.4nm,0.3s,baz=78,slow=15,SNR=9.4						
JNU				LR	LR	04 10 34.6	
	comp=Z,388nm,20.1s,baz=91,slow=36						
ASAJ	**Asahikawa**	**12.52**	**3**	Pn	**P**	**04 07 56.2**	**-3.4**
	comp=Z,1.6nm,0.3s,baz=344,slow=3.5,SNR=6.8						
ASAJ				Sn	**S**	**04 10 09.4**	**-11**
	comp=Z,0.3nm,0.3s,baz=65,slow=33,SNR=5.7						
ASAJ				LR	LR	04 13 45.0	
	comp=Z,295nm,19.5s,baz=192,slow=42						
ASAJ	**Asahikawa**	**12.52**	**3**	P	**P**	**04 07 56.2**	**-3.4**
ASAJ						04 10 09.4	
ASAJ				pmax	pmax		
	comp=Z,2.0nm,0.3s						
ASAJ				MLR	MLR		
	comp=Z,295nm,19.5s						
JOW	**Kunigami**	**12.68**	**251**	LR	LR	04 12 58.6	
	comp=Z,368nm,18.4s,baz=119,slow=38						
KS15	**Wonju Array Si**	**12.82**	**301**	*e*P	**P**	**04 08 11.6**	**+7.9**
KS15				*e*		04 08 20.8	
YSS	**Yuzh-Sakhalins**	**15.36**	**3**	*e*P	**P**	**04 08 34.0**	**-3.0**
YSS				pmax	pmax		
	comp=Z,20nm,1.0s						
YSS				MLR	MLR		
	comp=Z,500nm,17.0s						
YSS				MLR	MLR		
	comp=N,500nm,18.0s						
YSS				MLR	MLR		
	comp=E,500nm,14.0s						
YSS	**Yuzh-Sakhalins**	**15.36**	**3**	P	**P**	**04 08 34.2**	**-2.8**
	comp=E,30nm,1.0s						
MDJ	**Mudanjiang**	**16.11**	**327**	P	**P**	**04 08 47.1**	**+0.4**
MDJ				AMB	AMB		
	comp=Z,9.0nm,0.9s						
MDJ				AMB	AMB		
	comp=Z,126nm,4.8s						
MDJ				LR	LR		
	comp=N,174nm,20.0s						
MDJ				LR	LR		
	comp=E,183nm,19.3s						
MDJ				LR	LR		
	comp=Z,170nm,18.5s						
MDJ	**Mudanjiang**	**16.11**	**327**	P	**P**	**04 08 46.2**	**-0.5**
	comp=Z,8.5nm,0.7s						
SSE	**Sheshan**	**17.56**	**274**	P	**P**	**04 09 07.6**	**+2.4**
SSE				AP		04 09 15.7	
SSE				S	**S**	**04 12 18.3**	**-0.6**
SSE				XS		04 12 37.3	
SSE				AMB	AMB		
	comp=Z,24nm,0.7s						
SSE				AMB	AMB		
	comp=Z,97nm,13.9s						
SSE				LR	LR		
	comp=N,198nm,18.3s						
SSE				LR	LR		
	comp=E,274nm,18.3s						
SSE				LR	LR		
	comp=Z,396nm,18.5s						
CN2	**Changchun**	**17.70**	**318**	*e*P	**P**	**04 09 05.6**	**-1.1**
CN2				AMB	AMB		
	comp=Z,10.0nm,1.1s						
CN2				AMB	AMB		
	comp=Z,200nm,5.0s						
CN2				LR	LR		
	comp=N,500nm,16.0s						
CN2				LR	LR		
	comp=E,700nm,16.0s						
CN2				LR	LR		
	comp=Z,500nm,16.0s						
SNY	**Shenyang**	**17.75**	**310**	⇓P	**P**	**04 09 08.2**	**+0.8**
SNY				AMB	AMB		
	comp=Z,20nm,0.9s						
SNY				LR	LR		
	comp=N,420nm,12.9s						
SNY				LR	LR		
	comp=Z,370nm,16.6s						
GUMO	**Guam**	**18.15**	**170**	P	**P**	**04 09 15.7**	**+3.1**
KLR	**Kul'dur**	**19.15**	**340**	*e*P	**P**	**04 09 21.4**	**-3.1**
NJ2	**Nanjing**	**19.45**	**277**	*e*P	**P**	**04 09 28.9**	**+0.8**
NJ2				AP		04 09 37.3	
NJ2				XP		04 09 41.2	
NJ2				PP	PP	04 09 46.9	+1.2
NJ2				PPP	PPP	04 09 55.3	+0.6
NJ2				S	**S**	**04 13 01.0**	**-0.6**
NJ2				XS		04 13 12.0	
NJ2				SS	SS	04 13 31.0	+2.9
NJ2				AMB	AMB		
	comp=Z,30nm,0.8s						
NJ2				AMB	AMB		
	comp=Z,300nm,5.9s						
NJ2				LR	LR		
	comp=N,690nm,20.1s						
NJ2				LR	LR		
	comp=E,730nm,20.0s						
NJ2				LR	LR		
	comp=Z,470nm,15.6s						
BJI	**Beijing**	**22.32**	**299**	*e*P	**P**	**04 09 56.9**	**-0.9**
BJI				S	**S**	**04 14 01.8**	**+3.6**
BJI				AMB	AMB		
	comp=Z,9.0nm,1.2s,mb4.1						
BJI				LR	LR		
	comp=N,255nm,11.4s						
BJI				LR	LR		
	comp=E,390nm,17.1s						
BJI				LR	LR		
	comp=Z,249nm,17.2s						
BJT	**Baijiatuau**	**22.32**	**299**	*e*P	**P**	**04 09 56.5**	**-1.3**
BJT				pmax	pmax		
	comp=Z,11nm,0.7s						
BJT	**Baijiatuau**	**22.32**	**299**	*e*P	**P**	**04 09 56.5**	**-1.4**
	comp=Z,11nm,0.7s,mb4.4						
HIA	**Hailar**	**24.18**	**323**	*e*P	**P**	**04 10 15.3**	**-0.6**
HIA				pmax	pmax		
	comp=Z,26nm,0.9s						
HIA	**Hailar**	**24.18**	**323**	*e*P	**P**	**04 10 15.3**	**-0.6**
	comp=Z,26nm,0.9s,mb4.7						
PET	**Petropavlovsk**	**24.68**	**25**	*e*P	**P**	**04 10 35.2**	**+15**
PET				MLR	MLR		
	comp=Z,172nm,15.0s,MS3.7						
HHC	**Hu-ho-hao-te**	**25.93**	**299**	*e*P	**P**	**04 10 31.8**	**-0.8**
HHC				PP	PP	04 11 13.6	+0.1
HHC				PCP	PcP	04 14 01.5	-0.5
HHC				S	**S**	**04 15 00.7**	**+0.2**
HHC				SS	SS	04 16 06.8	+0.7
HHC				PCS		04 17 42.6	
HHC				AMB	AMB		
	comp=Z,11nm,1.4s,mb4.2						
HHC				AMB	AMB		
	comp=Z,93nm,5.1s						
HHC				LR	LR		
	comp=N,199nm,13.0s,MS4.0						
HHC				LR	LR		
	comp=E,264nm,13.0s,MS4.0						
HHC				LR	LR		
	comp=Z,163nm,13.5s,MS3.7						
BTO	**Baotou**	**27.04**	**298**	*e*P	**P**	**04 10 39.9**	**-3.0**
BTO				AMB	AMB		
	comp=Z,24nm,0.9s,mb4.7						
XAN	**Xi'an**	**27.62**	**284**	P	**P**	**04 10 46.9**	**-1.4**
XAN				AMB	AMB		
	comp=Z,17nm,1.2s,mb4.5						
ENH	**Enshi**	**27.64**	**276**	*e*P	**P**	**04 10 51.1**	**+2.6**
	comp=Z,9.0nm,1.0s,mb4.3						
CLNS	**Chul'man**	**27.82**	**340**	*e*P	**P**	**04 10 48.7**	**-1.1**
CLNS				pmax	pmax		
	comp=Z,10.0nm,0.9s,mb4.5						
CLNS				pmax	pmax		
	comp=N,5.0nm,0.8s						
CLNS				pmax	pmax		
	comp=E,6.0nm,0.9s						

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ULN	**Ulaanbaatar**	**30.91**	**312**	*e*P	**P**	**04 11 18.8**	**+1.3**
ULN				*e*		04 11 32.2	
ULN				pmax	pmax		
	comp=Z,8.0nm,0.8s,mb4.6						
ULN	**Ulaanbaatar**	**30.91**	**312**	*e*P	**P**	**04 11 18.8**	**+1.3**
	comp=Z,7.7nm,0.8s,mb4.6						
ULN				*e*		04 11 32.1	
SONM	**Songino Array**	**31.32**	**311**	P	**P**	**04 11 21.4**	**+0.2**
	comp=Z,3.0nm,0.7s,mb4.2,baz=113,slow=9.4,SNR=18						
BOD	**Bodaibo**	**32.36**	**332**	*e*P	**P**	**04 11 28.7**	**-1.5**
BOD				*e*		04 11 36.8	
ZAK	**Zakamensk**	**34.07**	**315**	*e*P	**P**	**04 11 45.6**	**+0.5**
TLY	**Talaya**	**34.30**	**317**	*c i*P	**P**	**04 11 47.9**	**+0.9**
TLY				*i*		04 11 59.4	
TLY				pmax	pmax		
	comp=Z,91nm,0.9s,mb5.7						
TLY				MLR	MLR		
	comp=Z,2µm,15.0s,MS4.9						
GTA	**Gaotai**	**34.76**	**295**	*e*P	**P**	**04 11 51.0**	**-0.1**
GTA				PP	PP	04 13 02.9	-5.4
GTA				S	**S**	**04 17 11.5**	**-9.0**
GTA				AMB	AMB		
	comp=Z,4.0nm,0.9s,mb4.3						
GTA				AMB	AMB		
	comp=Z,101nm,4.2s						
GTA				LR	LR		
	comp=N,135nm,16.3s,MS4.0						
GTA				LR	LR		
	comp=E,170nm,17.1s,MS4.0						
GTA				LR	LR		
	comp=Z,165nm,15.6s,MS3.9						
BILL	**Bilibino**	**39.19**	**14**	*e*P	**P**	**04 12 26.3**	**-1.8**
BILL				pmax	pmax		
	comp=Z,13nm,1.3s,mb4.5						
BILL	**Bilibino**	**39.19**	**14**	*e*P	**P**	**04 12 26.3**	**-1.9**
	comp=Z,14nm,1.3s,mb4.5						
TIXI	**Tiksi**	**40.71**	**354**	*e*P	**P**	**04 12 40.2**	**-0.5**
TIXI				*e*S	**S**	**04 18 52.3**	**+1.6**
TIXI				pmax	pmax		
	comp=Z,20nm,0.9s,mb4.8						
TIXI				MLR	MLR		
	comp=Z,600nm,16.0s,MS4.5						
WMQ	**Urumqi**	**43.74**	**302**	P	**P**	**04 13 04.5**	**-1.2**
WMQ				PP	PP	04 14 48.1	-1.4
WMQ				S	**S**	**04 19 32.5**	**-3.1**
WMQ				AMB	AMB		
	comp=Z,6.0nm,1.2s,mb4.2						
WMQ				AMB	AMB		
	comp=Z,76nm,5.1s						
WMQ				LR	LR		
	comp=N,103nm,20.2s,MS3.9						
WMQ				LR	LR		
	comp=E,111nm,20.0s,MS3.9						
WMQ				LR	LR		
	comp=Z,162nm,20.3s,MS3.9						
ZAL	**Zalesovo**	**45.91**	**316**	P	**P**	**04 13 22.6**	**-0.4**
NVS	**Novosibirsk**	**46.91**	**318**	*e*P	**P**	**04 13 30.7**	**-0.1**
NVS				pmax	pmax		
	comp=E,5.0nm,1.0s						
NVS				pmax	pmax		
	comp=Z,7.0nm,1.0s,mb4.5						
MKAR	**Makanchi Array**	**47.40**	**307**	P	**P**	**04 13 34.4**	**-0.5**
	comp=Z,8.2nm,0.9s,mb4.7,baz=91,slow=9.7,SNR=45						
MKAR				LR	LR	04 34 57.1	
	comp=Z,103nm,18.6s,MS3.8,baz=207,slow=38						
MKAR	**Makanchi Array**	**47.40**	**307**	*i* P	**P**	**04 13 35.1**	**+0.3**
MKAR				pmax	pmax		
	comp=Z,4.0nm,0.7s						
GUN	**Gumba**	**48.19**	**281**	*e*P	**P**	**04 13 41.0**	**-0.3**
	comp=Z,66nm,1.0s,mb5.6						
KKN	**Kakani**	**48.73**	**281**	*e*P	**P**	**04 13 45.6**	**+0.1**
	comp=Z,33nm,0.8s,mb5.4						
KKN	**Kakani**	**48.73**	**281**	*e*P	**P**	**04 13 45.6**	**+0.1**
KKN				pmax	pmax		
	comp=Z,17nm,0.8s,mb5.1						
DMN	**Daman**	**48.94**	**281**	*e*P	**P**	**04 13 46.6**	**-0.5**
GKN	**Gorkha**	**49.20**	**281**	*e*P	**P**	**04 13 48.8**	**-0.3**
	comp=Z,14nm,0.6s,mb5.2						
KURK	**Kurchatov**	**49.63**	**312**	*e*P	**P**	**04 13 51.0**	**-1.0**
KOLN	**Koldanda**	**50.15**	**281**	*e*P	**P**	**04 13 55.9**	**-0.4**
	comp=Z,22nm,1.0s,mb5.1						
WRAB	**Tennant Creek**	**51.72**	**189**	*e*P	**P**	**04 14 07.8**	**-0.6**
	comp=Z,53nm,0.9s,mb5.5						
WB2	**Warramunga Arr**	**51.73**	**189⇑**	*i*P	**P**	**04 14 08.2**	**-0.3**
WRA	**Warramunga Arr**	**51.73**	**189**	P	**P**	**04 14 08.2**	**-0.3**
	comp=Z,18nm,0.7s,mb5.1,baz=6.6,slow=7.8,SNR=154						
FITZ	**Fitzroy Crossi**	**51.77**	**200⇓**	*i*P	**P**	**04 14 08.7**	**-0.1**
	comp=Z,3.3nm,0.9s,mb4.3						
PMR	**Palmer**	**52.90**	**34**	*e*P	**P**	**04 14 16.2**	**-0.5**
PMR				pmax	pmax		
	comp=Z,6.0nm,1.0s,mb4.5						
PMR	**Palmer**	**52.90**	**34**	*e*P	**P**	**04 14 16.2**	**-0.5**
	comp=Z,6.2nm,1.0s,mb4.5						
PMR				*e*		04 14 37.9	
MCK	**McKinley**	**53.06**	**31**	P	**P**	**04 14 22.9**	**+5.1**
MCK				pmax	pmax		
	comp=Z,8.0nm,1.3s,mb4.5						
MCK	**McKinley**	**53.06**	**31**	P	**P**	**04 14 22.9**	**+5.1**
	comp=Z,7.5nm,1.3s,mb4.5						
ILAR	**Eielson Array**	**53.99**	**30**	P	**P**	**04 14 23.6**	**-1.1**
	comp=Z,0.6nm,0.6s,mb3.7,baz=262,slow=6.6,SNR=10						
BRVK	**Borovoye**	**54.58**	**315**	*e*P	**P**	**04 14 27.6**	**-1.5**
BRVK				*e*		04 14 39.3	
ZRNK	**Zerenda**	**55.36**	**315**	*e*P	**P**	**04 14 34.3**	**-0.6**
ZRNK				*e*		04 14 44.1	
AS12	**Alice Springs**	**55.46**	**189⇓**	*i*P	**P**	**04 14 35.8**	**-0.2**
	comp=Z,9.1nm,0.5s,mb5.1						
ASAR	**Alice Springs**	**55.46**	**189**	P	**P**	**04 14 35.6**	**-0.3**
	comp=Z,5.8nm,0.5s,mb4.8,baz=16,slow=14,SNR=76						
KKAR	**Karatay Array**	**56.21**	**303**	*i* P	**P**	**04 14 40.8**	**-0.3**
KKAR				pmax	pmax		
	comp=Z,10.0nm,0.9s,mb4.8						
INK	**Inuvik**	**59.13**	**26**	P	**P**	**04 15 00.2**	**-1.1**
	comp=Z,3.6nm,1.0s,mb4.4,baz=281,slow=6.5,SNR=17						
INK	**Inuvik**	**59.13**	**26**	*e*P	**P**	**04 15 00.8**	**-0.5**
INK				pmax	pmax		
	comp=Z,4.0nm,0.9s						
INK	**Inuvik**	**59.13**	**26**	*e*P	**P**	**04 15 00.8**	**-0.5**
	comp=Z,4.1nm,0.9s,mb4.5						
ARU	**Arti**	**60.67**	**321⇑**	*i*P	**P**	**04 15 11.5**	**-0.5**
ARU				*e*		04 17 23.6	
ARU				*e*S	**S**	**04 23 26.6**	**-0.2**
ARU				*e*SS	SS	04 27 21.9	-4.8
ARU				*e*SSS	SSS	04 30 01.1	-0.9
ARU				pmax	pmax		
	comp=Z,28nm,0.7s,mb5.5						
ARU				M

comp=Z,3.6nm,0.8s,mb4.4,baz=72,slow=6.0,SNR=14
ZEI Tsey 74.51 311 *e*P P **04 16 39.9 +0.8**
ZEI *e* 04 19 25.0
ZEI *e*S S 04 26 09.0 -3.9
ZEI *e*PS PS 04 26 36.0 -13
ZEI pmax pmax
comp=Z,50nm,5.0s
ZEI MLR MLR
comp=Z,200nm,18.0s,MS4.5
KIV Kislovodsk 74.71 312 *e*P P **04 16 40.3 +0.1**
KIV *e* 04 16 53.6
KIV *e* 04 19 28.6
KIV *e*PPP PPP 04 21 12.3 -2.1
KIV *e*SS SS 04 31 01.5 -3.3
KIV pmax pmax
comp=Z,7.0nm,0.8s,mb4.6
KIV MLR MLR
comp=N,40nm,17.0s
KIV MLR MLR
comp=Z,80nm,17.0s,MS4.1
WALA Waterton Lakes 75.31 41 *e*P P **04 16 43.7 +0.1**
comp=Z,7.0nm,0.9s,mb4.6
CMB Columbia Colle 76.85 53 *e*P P **04 16 53.3 +0.8**
CMB pmax pmax
comp=Z,4.0nm,1.0s,mb4.3
CMB Columbia Colle 76.85 53 *e*P P **04 16 53.3 +0.8**
comp=Z,3.7nm,1.0s,mb4.3
HRY Holter Researc 77.75 42 *e*P P **04 16 58.0 +0.7**
NVAR Mina Array Bea 78.06 52 P P **04 16 59.9 +0.7**
comp=Z,1.7nm,0.7s,mb4.1,baz=302,slow=4.3,SNR=6.0
FCC Fort Churchill 78.75 26 *e*P P **04 17 02.1 -0.4**
FCC pmax pmax
comp=Z,2.0nm,0.8s,mb4.1
FCC Fort Churchill 78.75 26 *e*P P **04 17 02.1 -0.4**
comp=Z,2.5nm,0.8s,mb4.2
AKASG Malin Array Be 78.78 323 P P **04 17 03.1 +0.3**
comp=Z,2.6nm,0.5s,mb4.5,baz=46,slow=5.3,SNR=17
NB2 NORSAR Subarra 79.30 338 P P **04 17 05.3 -0.2**
comp=Z,6.3nm,0.9s,mb4.5,baz=41,slow=5.3
NOA NORSAR Array B 79.30 338 P P **04 17 05.9 +0.4**
comp=Z,3.5nm,0.7s,mb4.4,baz=41,slow=5.5,SNR=14
NOA LR LR 04 53 36.6
comp=Z,83nm,20.0s,MS4.1,baz=20,slow=37
HVU Hansel Valley 79.88 47 *e*P P **04 17 07.8 -1.2**
HWUT Hardware Ranch 80.73 47 *e*P P **04 17 14.6 +1.0**
comp=Z,3.4nm,0.8s,mb4.3
HWUT *e* 04 17 24.5
PDAR Pinedale Array 81.30 45 P P **04 17 17.4 +0.9**
comp=Z,1.1nm,0.6s,mb3.9,baz=293,slow=3.1,SNR=11
BRTR Keskin Array B 82.68 312 P P **04 17 25.2 +1.6**
comp=Z,3.5nm,1.0s,mb4.4,baz=117,slow=2.8,SNR=16
KWP Kalwaria 82.71 325 *e*P P **04 17 24.9 +1.3**
KWP *e* 04 17 37.6
KWP pmax pmax
comp=Z,22nm,1.0s,mb5.1
KWP Kalwaria 82.71 325 *e*P P **04 17 24.9 +1.3**
comp=Z,22nm,1.0s,mb5.2
KWP *e* 04 17 37.6
SRU San Rafael 82.80 48 *e*P P **04 17 23.8 -0.6**
OJC Ojcow 83.71 327 *e*P P **04 17 30.2 +1.5**
RSSD Black Hills 83.71 41 P P **04 17 26.7 -2.2**
RSSD pmax pmax
comp=Z,2.0nm,0.7s,mb4.4
RSSD Black Hills 83.71 41 P P **04 17 26.7 -2.2**
comp=Z,1.5nm,0.7s,mb4.2
ULM Lac du Bonnet 83.90 33 P P **04 17 30.0 +0.3**
comp=Z,1.0nm,0.5s,mb4.2,baz=313,slow=5.9,SNR=3.2
NIE Niedzica 84.01 326 *e*P P **04 17 32.8 +2.5**
PV10 Paradox Valley 84.17 48 *e*P P **04 17 33.1 +1.7**
PV10 *e* 04 17 41.3
WUAZ Wupatki 84.30 52 P P **04 17 33.4 +1.3**
comp=Z,2.2nm,0.6s,mb4.5
PV01 Paradox Valley 84.61 48 *e*P P **04 17 34.6 +1.0**
PV01 *e* 04 17 44.0
OKC Ostrava-Krasne 84.74 327 *e*P P **04 17 35.2 +1.3**
DPC Dobruska-Polom 85.21 328 *e*P P **04 17 37.5 +1.3**
CLL Collm 85.94 331 P P **04 17 40.8 +0.9**
comp=Z,logA/T=1.0,mb5.0
CLL Collm 85.94 331 *i* P P **04 17 40.8 +0.9**
CLL pmax pmax
comp=Z,8.0nm,0.8s,mb5.0
CLL Collm 85.94 331 *i* P P **04 17 40.8 +0.9**
comp=Z,8.0nm,0.8s,mb5.0
PRU Pruhonice 86.26 329 *e*pP pP 04 17 52.1 +7.5
GERES GERESS Array B 87.47 329 P P **04 17 49.2 +1.8**
comp=Z,1.0nm,0.8s,mb4.4,baz=6,3,slow=12,SNR=4.0
CDF Champ du Feu 90.54 332 *e*P P **04 18 01.1 -0.8**
HAU Haudompre 91.24 332 *e*P P **04 18 04.8 -0.3**
WMOK Wichita Mounta 92.87 46 *e*P P **04 18 12.9 -0.1**
WMOK pmax pmax
comp=Z,1.0nm,0.6s,mb4.4
WMOK Wichita Mounta 92.87 46 *e*P P **04 18 12.9 -0.1**
comp=Z,0.7nm,0.6s,mb4.3
LPL La Plagne 93.07 330 *e*P P **04 18 13.9 +0.3**
comp=Z,12nm,0.9s,mb5.0
LPL La Plagne 93.07 330 *e*P P **04 18 13.9 +0.3**
LPL pmax pmax
comp=Z,6.0nm,0.9s,mb5.0
LPG La Plagne 93.07 330 *e*P P **04 18 13.5 -0.1**
comp=Z,11nm,0.9s,mb5.0
LPG La Plagne 93.07 330 *e*P P **04 18 13.5 -0.1**
LPG pmax pmax
comp=Z,5.0nm,0.9s,mb4.9
SSF Saint Saulge 93.13 333 *e*P P **04 18 13.2 -0.7**
SSF pmax pmax
comp=Z,15nm,1.2s,mb5.3
SSF Saint Saulge 93.13 333 *e*P P **04 18 13.2 -0.7**
comp=Z,15nm,1.2s,mb5.3
TXAR Lajitas Array 93.21 53 P P **04 18 16.1 +1.5**
comp=Z,2.5nm,0.7s,mb4.8,baz=298,slow=3.1,SNR=39
AVF Avril sur Loir 93.41 333 *e*P P **04 18 15.2 0.0**
comp=Z,14nm,0.9s,mb5.1
AVF Avril sur Loir 93.41 333 *e*P P **04 18 15.2 0.0**
AVF pmax pmax
comp=Z,7.0nm,0.9s,mb5.1
MBDF Montbardon 93.68 330 *e*P P **04 18 16.0 -0.5**
comp=Z,16nm,0.9s,mb5.2
MBDF Montbardon 93.68 330 *e*P P **04 18 16.0 -0.5**
MBDF pmax pmax
comp=Z,8.0nm,0.9s,mb5.2
ORIF Oris-en-Rattie 93.91 330 *e*P P **04 18 16.9 -0.6**
VIVF Saint-Julien-l 94.46 331 *e*P P **04 18 20.2 +0.1**
QSPA South Pole Qui 121.35 180 *e*PKP PKPdf 04 23 53.2 -1.2
SNAA Sanae 135.61 195 PKPdf 04 24 46.7 +25
VNA2 Neumayer--Watz 137.16 194 ⇓*i* PKPdf 04 24 25.4 +1.1
VNA3 Neumayer Olymp 137.37 193 ⇑*i* PKPdf 04 24 20.0 -4.7
LPAZ La Paz 148.87 68 PKPbc PKPdf 04 24 47.6 +1.5
comp=Z,1.5nm,0.9s,baz=350,slow=7.4,SNR=5.2
PLCA Paso Flores 152.51 118 PKPbc PKPdf 04 24 58.0 +7.0
comp=Z,2.0nm,0.6s,baz=45,slow=1.6,SNR=4.6
PLCA PKPab PKPab 04 25 09.2 +1.5
comp=Z,2.9nm,0.9s,baz=222,slow=3.8,SNR=4.5

TIF 05 04:31:28.8, 42.09N×45.98E, h20km, Mpv3.8, 4D, Eastern Caucasus

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DGRG	**David-gareji**	**0.78**	**216**	⇓*i*P	Pb	04 31 47.1	+3.5
DGRG				*e*S	Sb	04 31 59.8	+6.1
DUS	**Dusheti**	**0.95**	**270**	⇓*i*P	Pb	04 31 48.2	+1.8
DUS				*i* S	Sb	04 32 02.7	+4.1
MTA	**Mtatsminda**	**0.97**	**246**	⇓*i*P	Pb	04 31 48.9	+2.1
MTA				*i* S	Sb	04 32 03.4	+4.3
TBLG	**Delisi**	**0.99**	**249**	*i* P	Pb	04 31 49.0	+1.8
TBLG				*e*S	Sb	04 32 04.5	+4.7
STE	**Stepanavan**	**1.61**	**228**	*i* P	Pn	04 31 59.0	+2.5
STE				*i* S	Sn	04 32 21.5	+4.6
VAD	**Vardenisi**	**1.91**	**186**	*e*P	Pn	04 32 07.0	+6.2
AKH	**Akhalkalaki**	**1.98**	**251**	⇓*i*P	Pn	04 32 05.9	+4.1
AKH				*e*S	Sn	04 32 32.6	+6.3

*IDC **05** 04:57:51.4±0.4,58.21S×11.49W,mb5.1/19,mb1 5.1/19, mb1mx5.0/22,MS5.4/18,Ms1 5.4/18,ms1mx5.3/24,Error ellipse: s-maj=21.4km s-min=13.4km az=30.0*
*NEIC **05** 04:57:52.6±0.2,58.18S×11.39W,h10km,mb5.4/20, MS5.4/99,MW5.7,Error ellipse: s-maj=7.0km s-min=5.1km az=54.0,Moment Tensor Solution. s7 Moment tensor: Scale 10^{17}Nm; M_{rr}1.47; $M_{\theta\theta}$-2.37; $M_{\phi\phi}$0.90; $M_{r\theta}$-0.58; $M_{\theta\phi}$4.10; $M_{\phi r}$-0.02; Best double couple: M_o4.5×10^{17} NP1: ϕ_s169°,δ81°,λ177°. NP2:ϕ_d260°,δ87°,λ9°. Principal axes: T 3.73, Plg9°, Azm125°; N 1.45, Plg80°, Azm279°; P -5.19, Plg4°, Azm34°;*
*MOS **05** 04:57:52.3±1.8,58.15S×11.47W,h10km,mb5.7/12 Error ellipse: s-maj=34.7km s-min=17.5km az=103.5*
*SYO **05** 04:57:52.6,58.18S×11.39W,h10km,MB5.4,MS5.4*
*BJI **05** 04:57:52.6,58.20S×11.40W,h10km,mB5.4,Ms5.7, Msz5.4*
*HRVD **05** 04:57:52.6±0.1,58.32S×11.36W,h12km,MW5.9/74, Centroid moment Tensor Solution. LP body waves: s70,c164;Mantle waves: s74,c171; Half duration: 2±1 Moment tensor: Scale 10^{17}Nm; M_{rr}0.27±.08; $M_{\theta\theta}$-2.04±.10; $M_{\phi\phi}$1.76±.08; $M_{r\theta}$2.33±.23; $M_{\theta\phi}$7.08±.07; $M_{\phi r}$-1.27±.20; Best double couple: M_o7.75×10^{17} NP1: ϕ_s354°,δ75°,λ-170°. NP2:ϕ_d261°,δ81°,λ-15°. Principal axes: T 7.22, Plg4°, Azm308°; N 1.05, Plg73°, Azm50°; P -8.28, Plg17°, Azm217°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 05 04:57:51.6±1.9, 58.14S±0.05×11.4W±0.1, h12km±11km, n249,σ0§91/84,mb5.2/35,MS5.5/117, 26C-9D, East of South Sandwich Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
VNA1	**Neumayer--Stat**	**12.63**	**175**	*e*	P	**05 00 55.2**	**+1.5**
VNA1	**Neumayer--Stat**	**12.63**	**175**	*e*	P	**05 00 58.2**	**+4.5**
VNA1	**Neumayer--Stat**	**12.63**	**175**	⇓*i*P	P	**05 00 52.3**	**-1.4**
VNA1				*e*		05 00 55.2	
VNA1				*e*		05 00 58.2	
VNA1				*e*		05 03 03.0	
VNA2	**Neumayer--Watz**	**12.95**	**174**	*e*	P	**05 01 00.2**	**+2.3**
VNA2	**Neumayer--Watz**	**12.95**	**174**	*e*	P	**05 01 04.1**	**+6.2**
VNA2	**Neumayer--Watz**	**12.95**	**174**	⇑*i*P	P	**05 00 57.2**	**-0.7**
VNA2				*e*		05 01 00.2	
VNA2				*e*		05 01 04.1	
VNA2				*e*		05 03 07.9	
VNA3	**Neumayer Olymp**	**13.18**	**178**	*e*	P	**05 01 01.7**	**+0.7**
VNA3	**Neumayer Olymp**	**13.18**	**178**	*e*	P	**05 01 07.0**	**+6.0**
VNA3	**Neumayer Olymp**	**13.18**	**178**	⇓*i*P	P	**05 00 58.7**	**-2.3**
VNA3				*e*		05 01 01.7	
VNA3				*e*		05 01 07.0	
VNA3				*e*		05 03 09.4	
SNAA	**Sanae**	**14.03**	**169**	*e*	P	**05 01 12.1**	**+0.1**
SNAA	**Sanae**	**14.03**	**169**	*e*	P	**05 01 16.6**	**+4.6**
SNAA	**Sanae**	**14.03**	**169**	⇓*i*P	P	**05 01 08.9**	**-3.1**
SNAA				*e*		05 01 12.1	
SNAA				*e*		05 01 16.6	
SNAA				*e*		05 03 19.8	
MAIT	**Maitri**	**15.95**	**152**	*e*P	P	**05 01 35.6**	**-1.5**
MAIT				*e*S	S	**05 04 33.4**	**-0.5**
SYO	**Syowa Base**	**24.33**	**137**	⇓P	P	**05 03 09.5**	**-0.1**
SYO	**Syowa Base**	**24.33**	**137**	⇑P	P	**05 03 11.1**	**+1.5**
SYO	**Syowa Base**	**24.33**	**137**	⇑pP		05 03 12.7	
SYO	**Syowa Base**	**24.33**	**137**	⇑PnPn		05 03 32.8	
SYO	**Syowa Base**	**24.33**	**137**	⇓*e*P	P	**05 03 09.5**	**-0.1**
SYO				⇑*i*P		05 03 11.1	
SYO				*e*pP		05 03 12.7	
SYO				*e*PnPn		05 03 32.8	
PMSA	**Palmer Station**	**25.34**	**233**	P	P	**05 03 18.4**	**-1.0**
EFI	**East Falkland**	**27.14**	**263**	*e*P	P	**05 03 36.7**	**+0.6**
	234nm,1.3s,mb5.5						
EFI				LR	LR		
comp=Z,5μm,22.0s,MS5.0							
USHA	**Ushuaia**	**30.88**	**251**	P	P	**05 04 08.3**	**-1.2**
comp=Z,24nm,1.1s,mb4.9,baz=103,slow=7.4,SNR=3.8							
USHA				LR	LR	05 13 48.1	
comp=Z,5μm,19.1s,MS5.2,baz=90,slow=31							
QSPA	**South Pole Qui**	**32.10**	**180**	*e*P	P	**05 04 20.6**	**+0.5**
comp=Z,71nm,1.0s,mb5.5							
QSPA				LR	LR		
comp=Z,8μm,20.6s,MS5.4							
MAW	**Mawson**	**33.05**	**137**	⇑*i*P	P	**05 04 29.0**	**+0.6**
comp=Z,106nm,0.9s,mb5.8							
MAW				*e*S	S	**05 09 45.6**	**-0.1**
MAW	**Mawson**	**33.05**	**137**	P	P	**05 04 29.3**	**+1.0**
comp=Z,148nm,1.0s,mb5.9,baz=244,slow=8.5,SNR=64							
MAW				LR	LR	05 15 55.5	
comp=Z,6μm,19.0s,MS5.3,baz=253,slow=33							
MAW	**Mawson**	**33.05**	**137**	⇑*i*P	P	**05 04 28.8**	**+0.4**
MAW				pmax	pmax		
comp=Z,240nm,1.0s							
SUR	**Sutherland**	**33.73**	**54**	P	P	**05 04 36.9**	**+2.2**
comp=Z,19nm,0.8s,mb5.1,baz=212,slow=8.6,SNR=11							
SUR				LR	LR	05 14 52.5	
comp=Z,6μm,21.1s,MS5.3,baz=206,slow=30							
SUR	**Sutherland**	**33.73**	**54**	*e*P	P	**05 04 36.8**	**+2.1**
comp=Z,56nm,1.3s,mb5.3							
SUR				LR	LR		
comp=Z,7μm,21.0s,MS5.4							
TRQA	**Tornquist**	**38.18**	**279**	⇑*e*P	P	**05 05 11.5**	**-0.9**
comp=Z,8.7nm,1.3s,mb4.3							
TRQA				*e*PP	PP	05 06 37.7	-5.3
LPA	**La Plata**	**38.50**	**287**	*ce*P	P	**05 05 15.0**	**-0.1**
LPA				*e*PP	PP	05 06 40.0	-6.8
LPA				*e*PP	PP	05 06 49.0	+2.2
LPA				*e*PCP	PcP	05 07 23.0	-5.6
LPA				*e*S	S	**05 11 10.0**	**+0.1**
LPA				*e*pS		05 11 15.0	
comp=Z,6μm,18.0s							
PLCA	**Paso Flores**	**40.75**	**269**	P	P	**05 05 34.1**	**+0.4**
comp=Z,208nm,1.6s,mb5.5,baz=141,slow=8.4,SNR=14							
PLCA				LR	LR	05 20 01.4	
comp=Z,4μm,19.4s,MS5.2,baz=132,slow=33							
PLCA	**Paso Flores**	**40.75**	**269**	⇑*e*P	P	**05 05 34.1**	**+0.4**
PLCA				pmax	pmax		
comp=Z,68nm,1.4s							
PLCA	**Paso Flores**	**40.75**	**269**	⇑*e*P	P	**05 05 34.1**	**+0.4**
comp=Z,68nm,1.5s,mb5.0							
PLCA				*e*PcP	PcP	05 07 27.9	-7.7
PLCA				LR	LR		
comp=Z,2μm,20.0s,MS5.0							
LBTB	**Lobatse**	**42.18**	**54**	⇑*e*P	P	**05 05 46.0**	**+0.4**
LBTB				pmax	pmax		
comp=Z,38nm,1.2s,mb4.9							
LBTB	**Lobatse**	**42.18**	**54**	⇑*e*P	P	**05 05 46.0**	**+0.4**
comp=Z,38nm,1.3s,mb4.9							
LBTB				*e*		05 06 01.4	
LBTB				LR	LR		
comp=Z,4μm,21.0s,MS5.3							
MIR	**Mirnyy**	**43.60**	**146**	⇑*e*P	P	**05 05 57.0**	**+0.5**
MIR				*e*		05 07 38.0	
MIR				*e*PPP	PPP	05 08 11.0	-5.2
MIR				*e*S	S	**05 12 25.0**	**-0.2**
MIR				*e*SS	SS	05 15 42.0	+9.1
MIR				pmax	pmax		
comp=Z,140nm,1.8s,mb5.4							
MIR				smax			
comp=N,4μm,12.0s							
MIR				smax			
comp=E,4μm,13.0s							
SBA	**Scott Base**	**44.26**	**179**	⇑*e*P	P	**05 06 03.9**	**+2.1**
SBA				pmax	pmax		
comp=Z,110nm,1.0s,mb5.5							
SBA	**Scott Base**	**44.26**	**179**	⇑*e*P	P	**05 06 03.9**	**+2.1**
comp=Z,105nm,1.1s,mb5.5							
SBA				*e*		05 06 31.5	
SBA				*e*ScP		05 11 42.6	
SBA				LR	LR		
comp=Z,5μm,19.0s,MS5.5							
CCHI	**Chillan**	**44.59**	**272**	⇑*i*P	P	**05 06 07.8**	**+2.8**
CPUP	**Villa Florida**	**45.18**	**295**	P	P	**05 06 08.8**	**-1.0**
comp=Z,26nm,1.1s,mb5.0,baz=158,slow=6.8,SNR=10							
CPUP				LR	LR	05 23 11.7	
comp=Z,4μm,19.4s,MS5.4,baz=174,slow=34							
CPUP	**Villa Florida**	**45.18**	**295**	⇑*e*P	P	**05 06 08.7**	**-1.1**
comp=Z,39nm,1.2s,mb5.1							
CPUP				LR	LR		
comp=Z,3μm,20.0s,MS5.2							
LMEL	**Las Melosas**	**45.70**	**276**	⇓*i*P	P	**05 06 14.2**	**+0.3**
MDZ	**Mendoza**	**45.73**	**278**	*e*P	P	**05 06 17.5**	**+3.4**
FCH	**Farellones**	**46.15**	**276**	⇑*i*P	P	**05 06 17.1**	**-0.3**
CLCH	**Cerro Calan**	**46.23**	**276**	⇑*i*P	P	**05 06 17.8**	**-0.2**
CMCH	**Combarbala**	**48.20**	**277**	⇑*i*P	P	**05 06 33.3**	**-0.3**
BDFB	**Brasilia**	**50.42**	**312**	P	P	**05 06 50.6**	**-0.2**
comp=Z,19nm,1.2s,mb5.0,baz=150,slow=6.2,SNR=17							
BDFB				LR	LR	05 24 00.2	
comp=Z,3μm,18.3s,MS5.3,baz=170,slow=31							
LVC	**Limon Verde**	**54.05**	**286**	P	P	**05 07 18.0**	**+0.1**
comp=Z,100nm,1.1s,mb5.7,baz=139,slow=4.3,SNR=75							
LVC				LR	LR	05 26 51.0	
comp=Z,2μm,20.9s,MS5.1,baz=156,slow=32							
LVC	**Limon Verde**	**54.05**	**286**	⇑*i*P	P	**05 07 17.9**	**0.0**
comp=Z,111nm,1.1s,mb5.7							
LVC				LR	LR		
comp=Z,2μm,20.0s,MS5.2							
TRSB	**Teresina**	**58.48**	**323**	⇓*i*P	P	**05 07 48.6**	**-1.2**
LPAZ	**La Paz**	**58.97**	**290**	P	P	**05 07 53.0**	**-0.2**
comp=Z,27nm,0.7s,mb5.4,baz=150,slow=6.1,SNR=104							
LPAZ				LR	LR	05 31 57.4	
comp=Z,2μm,21.5s,MS5.3,baz=141,slow=35							
LPAZ	**La Paz**	**58.97**	**290**	⇑*i*P	P	**05 07 52.7**	**-0.5**
LPAZ				pmax	pmax		
comp=Z,69nm,1.1s							
LPAZ	**La Paz**	**58.97**	**290**	⇑*i*P	P	**05 07 52.7**	**-0.5**
comp=Z,69nm,1.2s,mb5.6							
LPAZ				*e*PP	PP	05 09 57.1	-8.3
LPAZ				LR	LR		
comp=Z,1μm,20.0s,MS5.0							
ARE	**Arequipa**	**60.51**	**287**	⇑*i*P	P	**05 08 03.7**	**-0.1**
LIC	**Lamto**	**64.36**	**7**	*e*P	P	**05 08 29.5**	**+0.1**
comp=Z,149nm,1.4s,mb5.8							
KIC	**Kosan Boka**	**64.51**	**7**	*e*P	P	**05 08 29.7**	**-0.7**
comp=Z,87nm,0.9s,mb5.8							
TIC	**Toumodi**	**64.77**	**7**	*e*P	P	**05 08 31.3**	**-0.8**
comp=Z,74nm,0.8s,mb5.7							
DBIC	**Dimbokro**	**64.81**	**7**	P	P	**05 08 31.8**	**-0.6**
comp=Z,6.2nm,0.7s,mb4.8,baz=172,slow=8.7,SNR=10							
DBIC				LR	LR	05 29 10.0	
comp=Z,2μm,19.6s,MS5.3,baz=164,slow=29							
DBIC	**Dimbokro**	**64.81**	**7**	*e*P	P	**05 08 31.6**	**-0.8**
comp=Z,24nm,1.3s,mb5.1							
DBIC				LR	LR		
comp=Z,1μm,20.0s,MS5.0							
KMBO	**Kilima Mbogo**	**68.46**	**54**	LR	LR	05 35 19.7	
comp=Z,3μm,19.3s,MS5.6,baz=188,slow=33							
KMBO	**Kilima Mbogo**	**68.46**	**54**	P	P	**05 08 54.4**	**-1.2**
comp=Z,2.3nm,0.8s,mb4.3							
KMBO				LR	LR		
comp=Z,2μm,19.0s,MS5.4							
RPN	**Rapa Nui**	**71.40**	**249**	P	P	**05 09 12.8**	**-0.5**
comp=Z,841nm,1.0s							
TAU	**Tasmania Unive**	**77.76**	**164**	*e*P	P	**05 09 49.2**	**-0.2**
comp=Z,104nm,1.2s,mb5.6							
TAU				LR	LR		
comp=Z,7μm,21.0s,MS5.9							
OTAV	**Otavalo**	**78.28**	**290**	⇑*e*P	P	**05 09 53.6**	**+0.7**
comp=Z,56nm,1.4s,mb5.3							
NWAO	**Narrogin (SRO)**	**79.61**	**138**	P	P	**05 09 60.0**	**+0.1**
comp=Z,25nm,0.9s,mb5.2,baz=234,slow=4.6,SNR=9.7							
NWAO	**Narrogin (SRO)**	**79.61**	**138**	*e*P	P	**05 09 59.8**	**0.0**
comp=Z,34nm,1.0s,mb5.2							
NWAO				*e*		05 10 14.4	
NWAO				LR	LR		
comp=Z,993nm,21.0s,MS5.1							
MUN	**Mundaring**	**80.10**	**137**	*e*P	P	**05 10 02.0**	**-0.4**
comp=Z,17nm,0.8s,mb5.0							
ROSC	**El Rosal**	**80.27**	**296**	P	P	**05 10 04.3**	**+0.6**
comp=Z,11nm,0.8s,mb4.8,baz=230,slow=20,SNR=8.1							
ROSC				LR	LR	05 43 54.0	
comp=Z,4μm,20.0s,MS5.8,baz=186,slow=34							
PCRV	**Puerto La Cruz**	**80.59**	**307**	P	P	**05 10 06.5**	**+1.2**
comp=Z,21nm,1.0s,mb5.0,baz=56,slow=2.4,SNR=5.9							
PCRV				LR	LR	05 42 42.2	
comp=Z,4μm,21.0s,MS5.7,baz=335,slow=33							
SNZO	**South Karori**	**80.78**	**185**	PFAKE		05 10 20.0	+14
SNZO				LR	LR		
comp=Z,2μm,20.0s,MS5.5							
KLBR	**Kellerberrin**	**81.01**	**138**	*e*P	P	**05 10 07.1**	**-0.1**
comp=Z,41nm,1.3s,mb5.2							
SDV	**Santo Domingo**	**82.08**	**301**	P	P	**05 10 13.6**	**+0.4**
comp=Z,6.6nm,0.6s,mb4.7,baz=184,slow=5.9,SNR=9.5							
SDV				LR	LR	05 43 38.6	
comp=Z,5μm,21.6s,MS5.8,baz=193,slow=34							
URZ	**Urewera**	**83.70**	**187**	P	P	**05 10 22.0**	**+1.0**
comp=Z,8.5nm,0.9s,mb4.9,baz=236,slow=3.6,SNR=2.3							
FORT	**Forrest**	**85.13**	**146**	*e*P	P	**05 10 28.5**	**+0.2**
comp=Z,57nm,0.7s,mb5.3,baz=195,slow=3.8,SNR=14							
STKA	**Stephens Creek**	**87.50**	**157**	⇓*i*P	P	**05 10 40.5**	**+0.6**
comp=Z,15nm,1.1s,mb5.1							
STKA	**Stephens Creek**	**87.50**	**157**	P	P	**05 10 40.4**	**+0.5**
comp=Z,7.7nm,0.7s,mb5.0,baz=195,slow=3.8,SNR=14							
STKA				LR	LR	05 45 25.7	
comp=Z,2μm,21.4s,MS5.5,baz=188,slow=33							
SJG	**San Juan**	**88.34**	**309**	P	P	**05 10 43.4**	**-0.8**
comp=Z,8.0nm,0.8s,mb5.0,baz=114,slow=10.0,SNR=2.4							
SJG	**San Juan**	**88.34**	**309**	P	P	**05 10 47.8**	**+3.6**
SJG				pmax	pmax		
comp=Z,38nm,1.0s							
SJG	**San Juan**	**88.34**	**309**	P	P	**05 10 43.4**	**-0.8**
SJG				LR	LR		
comp=Z,1μm,20.0s,MS5.3							
COCO	**West Island**	**89.09**	**112**	PFAKE		05 11 00.0	+12
COCO				LR	LR		
comp=Z,3μm,21.0s,MS5.6							
JTS	**JuntasAbangare**	**90.17**	**289**	P	P	**05 10 54.2**	**+1.2**
comp=Z,7.8nm,0.8s,mb5.1,baz=256,slow=4.2,SNR=4.0							
AS12	**Alice Springs**	**93.52**	**148**	*e*P	P	**05 11 08.4**	**+0.2**
comp=Z,21nm,1.3s,mb5.4							
ASAR	**Alice Springs**	**93.52**	**148**	P	P	**05 11 08.0**	**-0.2**
comp=Z,3.6nm,0.7s,mb4.9,baz=196,slow=4.5,SNR=32							
EIL	**Elat**	**95.66**	**39**	LR	LR	05 53 08.4	
comp=Z,3μm,19.4s,MS5.7,baz=197,slow=35							
WRA	**Warramunga Arr**	**97.17**	**148**	P	P	**05 11 24.2**	**-0.7**
comp=Z,1.6nm,0.6s,mb4.6,baz=204,slow=4.1,SNR=12							
WRA				LR	LR	05 56 26.9	
comp=Z,873nm,18.1s,MS5.3,baz=180,slow=36							
WB2	**Warramunga Arr**	**97.17**	**148**	*e*P	P	**05 11 24.2**	**-0.7**
WRAB	**Tennant Creek**	**97.18**	**148**	*e*P	P	**05 11 20.3**	**-4.7**
comp=Z,9.0nm,0.8s,mb5.2							
WRAB				LR	LR		
comp=Z,1μm,21.0s,MS5.3							
ESDC	**Sonseca Array**	**97.65**	**6**	LR	LR	05 49 41.9	
comp=Z,942nm,20.0s,MS5.3,baz=165,slow=32							
ESLA	**Sonseca Array**	**97.65**	**6**	PFAKE		05 11 40.0	+13
ESLA				LR	LR		
comp=Z,12μm,20.0s,MS6.4							
ASF	**Jabal al Asfar**	**98.61**	**40**	LR	LR	05 53 20.7	
comp=Z,1μm,18.8s,MS5.5,baz=77,slow=34							
CTAO	**Charters Tower**	**99.88**	**159**	PFAKE		05 11 50.0	+13
CTAO				LR	LR		
comp=Z,3μm,19.0s,MS5.8							
BBSR	**BB Station**	**100.58**	**316**	PFAKE		05 11 50.0	+10
BBSR				LR	LR		
comp=Z,5μm,20.0s,MS6.0							
DWPF	**Disney**	**103.75**	**301**	PFAKE		05 12 10.0	+16
DWPF				LR	LR		
comp=Z,2μm,19.0s,MS5.6							
BRTR	**Keskin Array B**	**104.50**	**34**	PP	PP	05 16 12.7	-6.5
comp=Z,0.3nm,0.4s,baz=217,slow=9.0,SNR=3.0							
GNI	**Garni**	**108.53**	**42**	PFAKE		05 16 30.0	
GNI				LR	LR		
comp=Z,1μm,20.0s,MS5.5							
LRAL	**Lakeview

WVL LR LR
comp=Z,7μm,21.0s,MS6.2
WVT Waverly 113.40 301 PFAKE 05 16 40.0 +7.9
WVT LR LR
comp=Z,765nm,19.0s,MS5.3
BINY Binghamton 113.48 313 PFAKE 05 16 40.0 +7.9
BINY LR LR
comp=Z,1μm,21.0s,MS5.5
LBNH Lisbon 113.70 317 PFAKE 05 16 40.0 +7.5
LBNH LR LR
comp=Z,914nm,20.0s,MS5.4
NCB Newcomb 114.32 315 PFAKE 05 16 40.0 +6.3
NCB LR LR
comp=Z,1μm,20.0s,MS5.6
WCI Wyandotte Cave 114.44 303 PFAKE 05 16 40.0 +5.9
WCI LR LR
comp=Z,3μm,21.0s,MS5.9
PQI Presque Isle 114.45 321 PFAKE 05 16 40.0 +6.1
PQI LR LR
comp=Z,4μm,21.0s,MS6.0
JCT Junction City 114.54 288 PFAKE 05 16 40.0 +5.6
JCT LR LR
comp=Z,610nm,22.0s,MS5.2
ACSO Alum Creek Sta 114.67 307 PFAKE 05 16 40.0 +5.6
ACSO LR LR
comp=Z,951nm,20.0s,MS5.4
MIAR Mount Ida 114.78 296 PFAKE 05 16 40.0 +5.2
MIAR LR LR
comp=Z,927nm,19.0s,MS5.4
ERPA Erie 115.00 310 PFAKE 05 16 40.0 +5.0
ERPA LR LR
comp=Z,985nm,21.0s,MS5.4
TXAR Lajitas Array 115.58 285 PKP PKPdf 05 16 33.9 -2.6
comp=Z,1.0nm,1.1s,baz=162,slow=2.9,SNR=3.9
CM31 Chiang Mai Arr 116.20 97 PFAKE 05 16 50.0 +12
CM31 LR LR
comp=Z,484nm,19.0s,MS5.1
CCM Cathedral Cave 116.54 300 PFAKE 05 16 50.0 +12
CCM LR LR
comp=Z,2μm,22.0s,MS5.6
AAM Ann Arbor 116.66 308 PFAKE 05 16 50.0 +12
AAM LR LR
comp=Z,1μm,22.0s,MS5.5
WMOK Wichita Mounta 117.46 292 PFAKE 05 16 50.0 +10
WMOK LR LR
comp=Z,451nm,20.0s,MS5.1
SHL Shillong 118.27 87 *e* PKPdf 05 16 53.0 +11
KONO Kongsberg 118.61 12 *e* PS 05 27 49.6 +6.6
KONO *e*SS SS 05 34 08.5 -5.8
KONO AMS AMS 06 01 19.9
comp=Z,427nm,24.0s,MS5.0
KONO Kongsberg 118.61 12 PFAKE 05 16 50.0 +8.3
KONO LR LR
comp=Z,1μm,22.0s,MS5.4
OBN Obninsk 119.32 29 PFAKE 05 16 50.0 +6.9
OBN LR LR
comp=Z,657nm,21.0s,MS5.2
JFWS Jewell Farm 120.00 304 PFAKE 05 16 50.0 +5.3
JFWS LR LR
comp=Z,1μm,21.0s,MS5.5
NB2 NORSAR Subarra120.15 12 PKPdf PKPdf 05 16 42.9 -1.6
comp=Z,7.3nm,1.2s,baz=188,slow=1.9
NB2 NORSAR Subarra120.15 12 PKPd 05 16 42.9
baz=188,slow=1.9
NOA NORSAR Array B120.15 12 PKP PKPdf 05 16 42.8 -1.8
comp=Z,0.6nm,0.7s,baz=192,slow=2.6,SNR=2.8
CBKS Cedar Bluff 121.16 294 PFAKE 05 17 00.0 +13
CBKS LR LR
comp=Z,881nm,22.0s,MS5.4
SCHQ Schefferville 121.16 326 PFAKE 05 17 00.0 +13
SCHQ LR LR
comp=Z,1μm,21.0s,MS5.6
LSA Lhasa 121.19 83 PFAKE 05 17 00.0 +13
LSA LR LR
comp=Z,828nm,21.0s,MS5.3
ANMO Albuquerque 121.47 286 PFAKE 05 17 00.0 +12
ANMO LR LR
comp=Z,372nm,21.0s,MS5.0
TUC Tucson 121.63 281 PFAKE 05 17 00.0 +12
TUC LR LR
comp=Z,825nm,20.0s,MS5.4
FINES FINESS Array B 122.76 20 PKP PKPdf 05 16 47.1 -2.5
comp=Z,2.6nm,0.5s,baz=177,slow=1.3,SNR=19
SDCO Great Sand Dun 123.17 289 PKPdf PKPdf 05 16 48.3 -2.7
SDCO LR LR
comp=Z,843nm,21.0s,MS5.4
KAF Kangasniemi 123.42 20 *ep* PKPdf 05 16 41.6 -9.3
KMI Kunming 123.66 96 *e*PKP PKPdf 05 16 50.9 -1.4
KMI XPKP 05 16 58.2
KMI PP PP 05 18 40.1 +4.0
KMI SKS SKS 05 23 59.0 +3.9
KMI SKKS 05 25 29.2
KMI SS SS 05 35 25.0 +4.7
KMI PP PP
comp=Z,67nm,5.9s
KMI LR LR
comp=N,363nm,20.8s,MS5.2
KMI LR LR
comp=E,460nm,21.4s,MS5.2
KMI LR LR
comp=Z,678nm,26.8s
WUAZ Wupatki 124.44 283 PFAKE 05 17 00.0 +6.4
WUAZ LR LR
comp=Z,716nm,21.0s,MS5.3
ISCO Idaho Springs 124.80 291 PFAKE 05 17 00.0 +5.9
ISCO LR LR
comp=Z,668nm,21.0s,MS5.3
PV01 Paradox Valley 125.01 287 *e*PKPdf PKPdf 05 16 51.9 -2.6
JOF Joensuu 125.12 22 *ep* PKPdf 05 16 51.2 -2.8
PV10 Paradox Valley 125.44 287 *e*PKPdf PKPdf 05 16 53.0 -2.3
PFO Pinyon Flat Ob 125.61 278 PFAKE 05 17 10.0 +14
PFO LR LR
comp=Z,812nm,20.0s,MS5.4
NEN Nelson 126.34 281 *e*PKPdf PKPdf 05 16 57.9 +0.8
SRU San Rafael 126.75 287 *e*PKIKP PKPdf 05 16 54.9 -2.8
MSU Marysvale 127.14 285 *e*PKIKP PKPdf 05 16 57.0 -1.5
ARU Arti 127.14 41 PFAKE 05 17 10.0 +12
ARU LR LR
comp=Z,837nm,19.0s,MS5.4
MVU Marysvale 127.15 285 *e*PKPdf PKPdf 05 16 56.4 -2.1
MVU LR LR
comp=Z,1μm,20.0s,MS5.5
RSSD Black Hills 127.29 295 *e*PKPdf PKPdf 05 16 54.9 -3.7
RSSD LR LR
comp=Z,2μm,22.0s,MS5.8
DAU Daniels Canyon 128.10 287 *e*PKPdf PKPdf 05 16 55.3 -5.1
DAU *e* 05 17 04.6
DAU *e* 05 17 10.8
ULM Lac du Bonnet 128.13 306 PKP PKPdf 05 16 56.5 -3.7
comp=Z,7.5nm,1.1s,baz=159,slow=1.3,SNR=5.7
ULM Lac du Bonnet 128.13 306 PKP PKPdf 05 16 56.5 -3.7
ULM LR LR
comp=Z,2μm,22.0s,MS5.8
NLU North Lily Min 128.17 286 *e*PKPdf PKPdf 05 16 58.1 -2.4
SVE Sverdlovsk 128.17 42‖ *e*PKIKP PKPdf 05 16 58.0 -2.1
DAC Darwin (Calif) 128.26 279 PFAKE 05 17 10.0 +9.2
DAC LR LR
comp=Z,593nm,22.0s,MS5.2
ZRNK Zerenda 128.41 50 *e*PKIKP PKPdf 05 16 58.1 -2.5
TCUT Toone Canyon 128.70 288 *e*PKPdf PKPdf 05 16 58.3 -3.2
JMIC Jan Mayen 128.85 1 AMS AMS 06 02 48.2
comp=Z,486nm,18.4s,MS5.2
BW06 Boulder Array 128.99 290 PFAKE 05 17 10.0 +8.0
BW06 LR LR
comp=Z,740nm,20.0s,MS5.4
PDAR Pinedale Array 128.99 290 PKP PKPdf 05 16 59.2 -2.8
comp=Z,2.1nm,1.0s,baz=135,slow=3.8,SNR=6.9
BRVK Borovoye 129.01 50 *e*PKIKP PKPdf 05 16 59.4 -2.4
BVAR Borovoye Array 129.03 50 PKP PKPdf 05 16 59.9 -1.9
comp=Z,1.2nm,0.6s,baz=233,slow=1.7,SNR=9.7
HWUT Hardware Ranch 129.14 288 *e*PKPdf PKPdf 05 16 59.6 -2.8
HWUT LR LR
comp=Z,716nm,21.0s,MS5.3
TPH Tonopah 129.42 281 PFAKE 05 17 10.0 +7.0
TPH LR LR
comp=Z,795nm,19.0s,MS5.4
MKAR Makanchi Array 129.73 63 PKP PKPdf 05 17 01.6 -1.7
comp=Z,1.2nm,0.9s,baz=256,slow=3.6,SNR=5.4
AHID Auburn Hatcher 129.76 289 *e*PKPdf PKPdf 05 17 02.5 -1.0
AHID LR LR
comp=Z,764nm,21.0s,MS5.4
ARCES ARCESS Array B 130.12 16 PKP PKPdf 05 17 01.4 -2.1
comp=Z,2.5nm,0.7s,baz=205,slow=1.9,SNR=17
WUWY Wally Ulrich 130.15 290 *e*PKPdf PKPdf 05 17 02.8 -1.4
KSWY Kelly School 130.15 290 *e*PKPpre 05 16 56.2
KSWY *e*PKPdf PKPdf 05 17 00.6 -3.6
WMQ Urumqi 130.19 69 PKP PKPdf 05 17 02.8 -1.5
WMQ PP PP 05 19 20.2 +2.0
WMQ PKS PKS 05 20 37.8 +1.6
WMQ SKS SKS 05 24 09.1 -3.9
WMQ SKKS 05 26 08.0
WMQ SS SS 05 36 41.2 +0.1
NVAR Mina Array Bea 130.25 280 PKP PKPdf 05 17 03.2 -1.4
comp=Z,0.6nm,0.3s,baz=144,slow=7.8,SNR=3.6
NVAR Mina Array Bea 130.25 280 PKP PKPdf 05 17 03.2 -1.4
SAO San Andreas Ge 130.65 276 PFAKE 05 17 10.0 +4.6
SAO LR LR
comp=Z,815nm,20.0s,MS5.4
CMB Columbia Colle 131.04 278 PFAKE 05 17 20.0 +14
CMB LR LR
comp=Z,518nm,20.0s,MS5.2
BMN Battle Mountai 131.17 283 PFAKE 05 17 20.0 +14
BMN LR LR
comp=Z,741nm,20.0s,MS5.4
ENH Enshi 131.34 98 PFAKE 05 17 20.0 +13
ENH LR LR
comp=Z,618nm,20.0s,MS5.3
QLMT Earthquake Lak 131.42 291 *e*PKPdf PKPdf 05 17 05.5 -1.1
HLID Hailey 132.00 288 PFAKE 05 17 20.0 +12
HLID LR LR
comp=Z,518nm,21.0s,MS5.2
GUMO Guam 132.06 148 PFAKE 05 17 20.0 +11
GUMO LR LR
comp=Z,952nm,22.0s,MS5.5
BOZ Bozeman (W) 132.10 292 *e*PKPdf PKPdf 05 17 06.1 -1.7
BOZ LR LR
comp=Z,1μm,21.0s,MS5.6
MCMT McKenzie Canyo 132.12 290 *eP* Pdif 05 14 08.8 +10
MCMT *e*PKPdf PKPdf 05 17 11.7 +3.8
HRY Holter Researc 132.95 292 *e*PKPdf PKPdf 05 17 07.1 -2.4
TATO Taipei 133.11 114 PFAKE 05 17 20.0 +10
TATO LR LR
comp=Z,475nm,21.0s,MS5.2
HOPS Hopland 133.17 277 PFAKE 05 17 20.0 +10
HOPS LR LR
comp=Z,768nm,21.0s,MS5.4
WVOR Wild Horse Val 133.35 284 PFAKE 05 17 20.0 +10
WVOR LR LR
comp=Z,711nm,19.0s,MS5.4
FCC Fort Churchill 133.51 315 *e*PKIKP PKPdf 05 17 07.9 -2.1
CHMT Chamberlain Mo 133.79 292 *e*PKPdf PKPdf 05 17 08.2 -2.7
MOD Modoc 133.83 282 PFAKE 05 17 20.0 +8.9
MOD LR LR
comp=Z,603nm,20.0s,MS5.3
WDC Whiskeytown Da 134.05 279 PFAKE 05 17 20.0 +8.5
WDC LR LR
comp=Z,543nm,21.0s,MS5.2
MSO Missoula 134.07 291 *e*PKPdf PKPdf 05 17 09.0 -2.4
MSO LR LR
comp=Z,1μm,19.0s,MS5.7
DAG Danmarks Havn 134.73 358 *i* P PKPdf 05 17 10.0 -2.0
DAG Danmarks Havn 134.73 358 *eP* PKPdf 05 17 10.0 -2.0
YBH Yreka Blue Hor 134.97 280 PFAKE 05 17 20.0 +6.7
YBH LR LR
comp=Z,541nm,19.0s,MS5.3
HAWA Hanford 136.58 287 PFAKE 05 17 30.0 +14
HAWA LR LR
comp=Z,796nm,21.0s,MS5.4
COR Corvallis 137.28 282 PFAKE 05 17 30.0 +13
COR LR LR
comp=Z,2μm,20.0s,MS5.9
KBS Kingsbay 137.53 7 *e* PP 05 20 15.2 +11
KBS *e*SS SS 05 38 10.8 +1.8
KBS AMS AMS 06 09 51.8
comp=Z,242nm,20.0s,MS4.9
KBS Kingsbay 137.53 7 PFAKE 05 17 30.0 +13
KBS LR LR
comp=Z,368nm,20.0s,MS5.1
NJ2 Nanjing 137.61 106 *e*PKP PKPdf 05 17 13.9 -4.5
NJ2 PP PP 05 20 09.0 +3.5
NJ2 PKS PKS 05 20 50.0 -0.1
NJ2 SS SS 05 38 11.0 -0.1
NJ2 LR LR
comp=N,560nm,26.5s,MS5.5
NJ2 LR LR
comp=E,950nm,22.2s,MS5.5
NJ2 LR LR
comp=Z,490nm,26.4s,MS5.1
SSE Sheshan 138.02 109 PKP PKPdf 05 17 20.1 +0.9
SSE PP PP 05 20 10.7 +2.3
SSE SS SS 05 38 21.2 +5.1
SSE PP PP
comp=Z,64nm,14.7s
SSE LR LR
comp=N,586nm,29.3s,MS5.3
SSE LR LR
comp=E,558nm,29.4s,MS5.3
SSE LR LR
comp=Z,795nm,25.8s,MS5.3
OCWA Octopus Mounta 139.85 285 PFAKE 05 17 30.0 +8.0
OCWA LR LR
comp=Z,1μm,19.0s,MS5.7
WAKE Wake Island 141.17 177 PFAKE 05 17 30.0 +4.9
WAKE LR LR
comp=Z,8μm,19.0s,MS6.5
MOY Mondy 142.09 70 *e*PKIKP PKPdf 05 17 31.0 +5.3
BJT Baijiatuan 142.29 95 PFAKE 05 17 40.0 +14
BJT LR LR
comp=Z,562nm,22.0s,MS5.3
ZAK Zakamensk 142.45 73 *e*PKIKP PKPdf 05 17 23.6 -2.8
SONM Songino Array 142.46 78 PKhKP 05 17 21.5
comp=Z,1.3nm,0.6s,baz=326,slow=4.5,SNR=3.8
TLY Talaya 143.42 71 *e*PKIKP PKPdf 05 17 23.5 -4.4
TLY pmax pmax
comp=Z,108nm,1.3s
TLY MLR MLR
comp=Z,7μm,22.0s,MS6.4
YKA Yellowknife Ar 143.82 310 PKhKP 05 17 22.7
comp=Z,1.5nm,0.6s,baz=113,slow=3.2,SNR=40
YKA PP PP 05 20 42.3 +0.2
comp=Z,2.1nm,0.9s,baz=107,slow=6.0,SNR=4.0
YKA Yellowknife Ar 143.82 310 PKP PKPdf 05 17 22.8 -5.6
YKA PP PP 05 20 42.3 +0.2
YKW3 Yellowknife Ar 143.86 310 *e*PKPdf PKPdf 05 17 23.0 -5.4
JNU Nakatsue 144.39 118 PKP PKPdf 05 17 27.0 -3.3
comp=Z,5.1nm,0.8s,baz=135,slow=2.9,SNR=3.8
INCN Inchon 145.82 109 PFAKE 05 17 40.0 +10
INCN LR LR
comp=Z,508nm,20.0s,MS5.3
SNY Shenyang 147.49 100 ⇑PKP PKPdf 05 17 33.9 -1.4
DLBC Dease Lake 148.74 297 PKPbc PKPdf 05 17 39.1 +2.4
comp=Z,17nm,1.1s,baz=170,slow=3.1,SNR=11
DLBC Dease Lake 148.74 297 *e*PKPbc PKPdf 05 17 38.0 +1.3
DLBC *e*SKP 05 20 56.7
CN2 Changchun 149.85 99 *e*PKP PKPdf 05 17 41.6 +2.6
CN2 PKP2 PKPab 05 17 55.4 +7.2
CN2 PP PP 05 21 15.4 -2.5
CN2 *e*SS SS 05 40 35.5 +4.8
CN2 PP PP
comp=Z,200nm,7.0s
CN2 LR LR
comp=N,300nm,20.0s,MS5.4
CN2 LR LR
comp=E,600nm,20.0s,MS5.4
CN2 LR LR
comp=Z,800nm,21.0s,MS5.5
HIA Hailar 150.34 86 *e*PKPdf PKPdf 05 17 41.1 +1.5
HIA LR LR
comp=Z,717nm,19.0s,MS5.5
MAJO Matsushiro 150.56 124 *e*PKPbc PKPdf 05 17 43.9 +3.6
MAJO LR LR
comp=Z,555nm,22.0s,MS5.3
MAT Matsushiro 150.56 124 PKP PKPdf 05 17 43.3 +3.0
MAT Matsushiro 150.56 124 *e*PKP PKPdf 05 17 43.0 +2.7
SIT Sitka 150.68 292 PFAKE 05 17 50.0 +10
SIT LR LR
comp=Z,2μm,22.0s,MS5.8
BOD Bodaibo 151.70 67 *e*PKIKP PKPdf 05 17 40.1 -1.2
MDJ Mudanjiang 152.57 102 PKP PKPdf 05 17 41.3 -1.7
MDJ PKS PKS 05 21 15.7 +2.7
MDJ PP PP 05 21 33.6 +0.4
MDJ SKS SKS 05 24 48.5 -1.0
MDJ SS SS 05 41 07.4 +6.8
MDJ LR LR
comp=N,431nm,31.5s
MDJ LR LR
comp=E,232nm,25.2s
MDJ LR LR
comp=Z,459nm,18.9s
MDJ Mudanjiang 152.57 102 PFAKE 05 17 50.0 +7.0
MDJ LR LR
comp=Z,492nm,20.0s,MS5.3
INK Inuvik 153.12 316 PKPbc PKPdf 05 17 47.8 +4.8
comp=Z,4.7nm,0.9s,baz=113,slow=4.1,SNR=5.9
INK Inuvik 153.12 316 *e*PKPdf PKPdf 05 17 42.9 -0.1
INK PKPbc PKPdf 05 17 47.8 +4.8
DAWY Dawson 154.83 305 *e*PKP PKPdf 05 17 50.8 +5.3
KLR Kul'dur 156.68 96 *e*PKIKP PKPdf 05 17 52.2 +3.9
CLNS Chul'man 156.76 74 *e*PKIKP PKPdf 05 17 52.1 +3.9
CLNS pmax pmax
comp=Z,10.0nm,1.2s
CLNS pmax pmax
comp=N,7.0nm,0.8s
CLNS pmax pmax
comp=E,6.0nm,0.9s
CLNS pmax pmax
comp=N,70nm,12.8s
CLNS pmax pmax
comp=Z,70nm,11.4s
ILAR Eielson Array 158.15 306 PKP PKPdf 05 17 48.4 -1.4
comp=Z,1.4nm,0.9s,baz=283,slow=2.1,SNR=11
ILAR PKPab PKPab 05 18 23.2 +0.5
comp=Z,3.0nm,0.9s,baz=104,slow=3.3,SNR=9.2
COLA College 158.56 306 PFAKE 05 18 00.0 +10
COLA LR LR
comp=Z,639nm,22.0s,MS5.4
ASAJ Asahikawa 158.65 120 PKPab PKPab 05 18 25.2 -0.3
comp=Z,4.0nm,0.5s,baz=354,slow=5.8,SNR=3.8
PMR Palmer 158.80 297 PFAKE 05 18 00.0 +9.3
PMR LR LR
comp=Z,925nm,20.0s,MS5.6
TIXI Tiksi 158.94 34 *e*PKIKP PKPdf 05 17 51.9 +1.3
TIXI *e* 05 24 48.5
TIXI pmax pmax
comp=Z,9.0nm,1.1s
TIXI Tiksi 158.94 34 PFAKE 05 18 00.0 +9.4
TIXI LR LR
comp=Z,583nm,21.0s,MS5.4
MCK McKinley 158.97 303 PFAKE 05 18 00.0 +9.2
MCK LR LR
comp=Z,633nm,22.0s,MS5.4
KDAK Kodiak Island 159.61 286 PFAKE 05 18 00.0 +8.3
KDAK LR LR
comp=Z,1μm,20.0s,MS5.7
YAK Yakutsk 160.41 62 PFAKE 05 18 00.0 +7.6
YAK LR LR
comp=Z,949nm,21.0s
YSS Yuzh-Sakhalins 160.82 114 PFAKE 05 18 00.0 +6.7
YSS LR LR
comp=Z,735nm,22.0s
IMA Indian Mountai 160.95 310 *e*PKPdf PKPdf 05 17 50.6 -2.3
UNV Unalaska Valle 165.48 263 PFAKE 05 18 10.0 +12
UNV LR LR
comp=Z,4μm,22.0s
TNA Tin City 166.74 314 PFAKE 05 18 10.0 +12
TNA LR LR
comp=Z,545nm,22.0s
ADK Adak 169.51 240 PFAKE 05 18 10.0 +10
ADK LR LR
comp=Z,333nm,21.0s
BILL Bilibino 170.01 5 *e*PKIKP PKPdf 05 18 00.0 -0.2
BILL *e* 05 23 14.9
BILL *i* SS Sx 05 45 09.1
BILL pmax pmax
comp=Z,5.0nm,1.2s
MA2 Magadan 170.63 74 PFAKE 05 18 10.0 +9.1
MA2 LR LR
comp=Z,861nm,21.0s
SEY Seymchan 170.68 52 *e*PKIKP PKPdf 05 18 01.9 +1.1
SEY *e* 05 23 11.2
PET Petropavlovsk 172.37 128 PFAKE 05 18 10.0 +7.9
PET LR LR
comp=Z,648nm,21.0s
SMY Shemya 173.75 212 PFAKE 05 18 10.0 +7.4
SMY LR LR
comp=Z,1μm,19.0s

*NEIC **05** 05:05:23.9, 37.40S×177.94E, h57km, ML3.8(WEL), After WEL.*
WEL 05 05:05:24.0±0.3, 37.41S×177.94E, h55km±3km, ML3.7/2, 2C-2D, Error ellipse: s-maj=1.8km s-min=1.6km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MXZ	**Matakaoa Point**	**0.33**	**118**	⇑P*	P	05 05 33.6	-0.4
MXZ				S*	S	05 05 41.4	+0.2
MXZ	**Matakaoa Point**	**0.33**	**118**	P	P	05 05 33.6	-0.3
MXZ				S	S	05 05 41.7	+0.5
WIZ	**White Island**	**0.61**	**258**	P*	P	05 05 36.6	-0.3
WIZ	**White Island**	**0.61**	**258**	P	P	05 05 36.6	-0.3
PUZ	**Puketiti**	**0.71**	**159**	PN	P	05 05 37.9	-0.2
PUZ				SN	S	05 05 49.3	+0.6
PUZ	**Puketiti**	**0.71**	**159**	P	P	05 05 37.9	-0.2
PUZ				S	S	05 05 49.3	+0.6
MWZ	**Matawai**	**0.98**	**199**	⇓P*	P	05 05 41.5	-0.3
MWZ				S*	S	05 05 54.2	-0.8
MWZ	**Matawai**	**0.98**	**199**	P	P	05 05 41.5	-0.3
URZ	**Urewera**	**1.07**	**217**	⇓P*	P	05 05 42.5	-0.7
URZ				S*	S	05 05 56.4	-0.9
URZ	**Urewera**	**1.07**	**217**	P	P	05 05 42.5	-0.6
MARZ	**Manawahe**	**1.16**	**240**	P*	P	05 05 43.6	-0.6
MARZ	**Manawahe**	**1.16**	**240**	P	P	05 05 43.7	-0.5
EDRZ	**Edgecumbe**	**1.18**	**233**	⇑P*	P	05 05 44.2	-0.3
EDRZ	**Edgecumbe**	**1.18**	**233**	P	P	05 05 44.2	-0.3
LIRZ	**Lichensteins R**	**1.37**	**244**	P*	P	05 05 47.2	-0.1
LIRZ	**Lichensteins R**	**1.37**	**244**	P	P	05 05 47.2	-0.1
TAZ	**Tarawera**	**1.40**	**234**	P*	P	05 05 47.3	-0.5
TAZ	**Tarawera**	**1.40**	**234**	P	P	05 05 47.5	-0.3
KNZ	**Kokohu**	**1.62**	**187**	PN	P	05 05 49.1	-1.7
KNZ	**Kokohu**	**1.62**	**187**	*eP*	P	05 05 49.1	-1.7
KUZ	**Kuaotunu**	**1.89**	**290**	PN	P	05 05 54.1	-0.4
KUZ				SN	S	05 06 16.4	-0.8
KUZ	**Kuaotunu**	**1.89**	**290**	P	P	05 05 54.2	-0.3
KUZ				S	S	05 06 16.4	-0.8
BKZ	**Black Stump Fm**	**2.09**	**212**	P*	P	05 05 56.4	-1.0
BKZ				S*	S	05 06 21.3	-0.9
BKZ	**Black Stump Fm**	**2.09**	**212**	*eP*	P	05 05 56.7	-0.7
MKAZ	**Moumakai**	**2.23**	**277**	PN	P	05 05 59.2	-0.1
OTAZ	**Otara**	**2.45**	**280**	PN	P	05 06 02.7	+0.2
OTAZ	**Otara**	**2.45**	**280**	P	P	05 06 02.8	+0.3
MTAZ	**Motutapu**	**2.50**	**283**	PN	P	05 06 03.3	+0.1
MTAZ	**Motutapu**	**2.50**	**283**	P	P	05 06 03.4	+0.2
KAAZ	**Kauri Point**	**2.65**	**282**	PN	P	05 06 01.8	-3.5
WTAZ	**Waiatarua**	**2.73**	**279**	P	P	05 06 07.1	+0.7
PWZ	**Pawanui**	**2.75**	**197**	PN	P	05 06 03.7	-3.1
PWZ				SN	S	05 06 34.3	-4.6
TSZ	**Takapari Road**	**3.07**	**210**	PN	P	05 06 08.1	-3.1
TSZ	**Takapari Road**	**3.07**	**210**	*eP*	P	05 06 08.8	-2.4
WCZ	**Waipu Caves**	**3.24**	**296**	PN	P	05 06 13.5	-0.1
WCZ	**Waipu Caves**	**3.24**	**296**	*eP*	P	05 06 13.6	0.0

*IDC **05** 05:10:06.8±2.0, 4.11S×131.12E, mb4.0/2, mb1 4.2/5, mb1mx4.1/13, ML3.8/3, Error ellipse: s-maj=85.5km s-min=27.3km az=76.0*
ISC 05 05:10:06.3±3.0, 4.17S±0.10×131.3E±0.2, h15km±21km, n9, σ1§13/15, mb3.9/2, 1C, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KAKA	**Kakadu** 13nm,0.5s	**8.54**	**173**	*eP*	**P**	**05 12 13.2**	**+0.8**
KAKA				*eS*	**Sn**	**05 13 49.6**	**+0.1**
FITZ	**Fitzroy Crossi** 7.1nm,1.6s	**14.91**	**201**	*eP*	**P**	**05 13 38.8**	**+0.2**
FITZ				*eS*	**S**	**05 16 24.0**	**-0.3**
FITZ	**Fitzroy Crossi** 0.3nm,0.3s,baz=21,slow=12,SNR=21	**14.91**	**201**	Pn	**P**	**05 13 38.5**	**-0.1**
FITZ				Sn	**S**	**05 16 24.6**	**+0.2**
	0.5nm,0.3s,baz=157,slow=13,SNR=4.3						
WRA	**Warramunga Arr** 0.4nm,0.3s,baz=357,slow=13,SNR=13	**15.95**	**170**	Pn	**P**	**05 13 48.9**	**-3.2**
WRA				Sn	**S**	**05 16 41.5**	**-7.1**
	0.4nm,0.3s,baz=350,slow=24,SNR=6.0						
WB2	**Warramunga Arr** 8.4nm,0.8s	**15.95**	**170**	*eP*	**P**	**05 13 50.3**	**-1.8**
WB2				*eS*	**S**	**05 16 42.0**	**-6.7**
AS12	**Alice Springs** 0.5nm,0.3s,baz=350,slow=10,SNR=32	**19.54**	**173**	⇑*iP*	**P**	**05 14 38.7**	**+2.3**
ASAR	**Alice Springs**	**19.54**	**173**	P	**P**	**05 14 38.5**	**+2.2**

ASAR				S		**S**	**05 18 10.2**	**-0.2**
	0.1nm,0.3s,baz=354,slow=28,SNR=2.9							
STKA	**Stephens Creek**	**29.20**	**162**	P		**P**	**05 16 10.3**	**+0.6**
	2.7nm,0.9s,mb4.0,baz=353,slow=11,SNR=3.0							
MKAR	**Makanchi Array**	**66.62**	**326**	P		**P**	**05 20 58.2**	**-0.3**
	0.6nm,0.6s,mb3.8,baz=123,slow=8.8,SNR=4.0							

NIED ***05*** *05:19:00,35.60N×140.10E,h62km,Mw3.7 Best double couple: M₀3.77×10¹⁴ NP1:φ₀226°,δ51°,λ71°. NP2:φ₀75°, δ43°,λ112°.*
JMA ***05*** *05:19:33.1±0.2,35.64N×140.08E,h68km±2km,M3.9 Broadband fault plane solution: P waves. NP1:φ₀191°, δ51°,λ-139°. NP2:φ₀72°,δ59°,λ-47°. Principal axes: T Plg5°, Azm133°; N Plg36°, Azm227°; P Plg54°, Azm36°;*
JMA Felt II J1.
IDC ***05*** *05:19:33.8±2.3,35.49N×140.03E,h63km±23km,mb3.3/7, mb1 3.6/9,mb1mx3.4/25,ML4.3/2 Error ellipse: s-maj=31.0km s-min=15.8km az=100.0*
NEIC ***05*** *05:19:34.1±1.6,35.50N×140.00E,h66km±15km,mb3.8/1, Error ellipse: s-maj=20.1km s-min=9.8km az=101.0*
NEIC Felt at Tokyo. Recorded [1 JMA] in Chiba, Tokyo and Yokohama Prefectures.

ISC 05 05:19:33.1±0.4,35.51N±0.04×140.04E±0.05,h75km±3km, n28,σ0§69/40,mb3.8/9,4C-4D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JCN	**Nagara**	**0.17**	**124**	⇓P	**P**	**05 19 44.3**	**+0.2**
JCN				S	**S**	**05 19 52.7**	**+0.3**
TOK	**Tokyo**	**0.28**	**308**	⇓P	**P**	**05 19 44.6**	**-0.2**
TOK				S	**S**	**05 19 53.0**	**-0.6**
BSO3	**Boso 3**	**0.81**	**151**	⇓P	**P**	**05 19 49.8**	**0.0**
BSO3				S	**S**	**05 20 03.4**	**+1.2**
JOD2	**Odawara 2**	**0.81**	**253**	⇓P	**P**	**05 19 50.1**	**+0.3**
JOD2				S	**S**	**05 20 01.9**	**-0.4**
JIM2	**Oshima 3**	**0.93**	**212**	P	**P**	**05 19 51.4**	**+0.1**
JAG	**Ashikaga**	**1.03**	**333**	⇑P	**P**	**05 19 51.2**	**-1.2**
JRY	**Ryogami san**	**1.05**	**299**	⇑P	**P**	**05 19 52.7**	**0.0**
JRY				S	**S**	**05 20 07.3**	**-0.1**
BSO1	**Boso 1**	**1.15**	**138**	P	**P**	**05 19 53.5**	**-0.5**
JYN	**Shimob**	**1.22**	**270**	P	**P**	**05 19 55.2**	**+0.3**
JYN				S	**S**	**05 20 11.4**	**+0.2**
JIZS	**Izushimoda**	**1.23**	**230**	P	**P**	**05 19 55.7**	**+0.6**
JIZS				S	**S**	**05 20 11.6**	**0.0**
JKT	**Katashina**	**1.41**	**333**	⇑P	**P**	**05 19 56.1**	**-1.4**
MAJO	**Matsushiro**	**1.80**	**305**	⇑iPn	**P**	**05 20 02.7**	**-0.1**
MAJO				*e*Sn	**S**	**05 20 25.6**	**+0.9**
MAT	**Matsushiro**	**1.80**	**305**	P	**P**	**05 20 02.7**	**-0.1**
MAT				S	**S**	**05 20 25.4**	**+0.7**
MAT	**Matsushiro**	**1.80**	**305**	*e*P	**P**	**05 20 03.0**	**+0.2**
MAT				*e*S	**S**	**05 20 25.0**	**+0.3**
JHJ	**Hachijo jima 2**	**2.40**	**185**	P	**P**	**05 20 11.4**	**+0.4**
	90nm,0.3s,baz=177,slow=23,SNR=32						
JHJ				S	**S**	**05 20 38.9**	**-0.4**
	185nm,0.3s,baz=91,slow=23,SNR=19						
CBIJ	**Chichi jima**	**8.59**	**167**	P	**P**	**05 21 33.3**	**-3.5**
	17nm,0.3s,baz=297,slow=23,SNR=16						
CBIJ				S	**S**	**05 23 02.1**	**-11**
	1.1nm,0.3s,baz=274,slow=21,SNR=2.2						
MKAR	**Makanchi Array**	**44.00**	**303**	P	**P**	**05 27 35.2**	**+0.7**
	0.4nm,0.4s,mb3.5,baz=76,slow=5.9,SNR=8.1						
ILAR	**Eielson Array**	**51.37**	**32**	P	**P**	**05 28 32.6**	**+0.9**
	0.3nm,0.9s,mb3.3,baz=280,slow=5.9,SNR=3.5						
FITZ	**Fitzroy Crossi**	**55.04**	**197**	P	**P**	**05 28 59.3**	**-0.2**
	3.2nm,1.1s,mb4.2,baz=27,slow=11,SNR=3.8						
WRAB	**Tennant Creek**	**55.40**	**187**	P	**P**	**05 29 01.5**	**-0.5**
WRA	**Warramunga Arr**	**55.41**	**187**	P	**P**	**05 29 01.1**	**-1.0**
	0.5nm,0.3s,mb4.0,baz=1.9,slow=7.6,SNR=12						
CTA	**Charters Tower**	**55.61**	**173**	P	**P**	**05 29 03.0**	**-0.5**
	9.1nm,0.7s,mb4.9,baz=316,slow=4.2,SNR=5.8						
INK	**Inuvik**	**56.25**	**27**	P	**P**	**05 29 06.7**	**-0.8**
	0.6nm,1.0s,mb3.6,baz=280,slow=6.1,SNR=3.6						
INK	**Inuvik**	**56.25**	**27**	*e*P	**P**	**05 29 07.0**	**-0.5**
YKA	**Yellowknife Ar**	**65.68**	**29**	P	**P**	**05 30 11.2**	**0.0**
	0.2nm,0.7s,mb3.1,baz=301,slow=6.7,SNR=3.9						
FINES	**FINESS Array B**	**69.64**	**332**	P	**P**	**05 30 35.5**	**-0.4**
	1.6nm,0.9s,mb3.9,baz=82,slow=9.8,SNR=4.5						
BOZ	**Bozeman (W)**	**76.58**	**43**	*e*P	**P**	**05 31 17.3**	**+0.5**
	1.0nm,0.9s,mb3.5						
PV10	**Paradox Valley**	**82.62**	**48**	*e*P	**P**	**05 31 51.3**	**+1.9**

TAP ***05*** *05:22:33.7,23.04N×121.27E,h12km,ML3.9*
TAP Felt II J at Chenggung, I J at Tauyuan.
JMA ***05*** *05:22:35.0±0.5,23.24N×121.37E,h121km,M2.9*

ISC 05 05:22:33.0±0.4,22.97N±0.02×121.37E±0.02,h19km±4km, n54,σ1§06/78,8C-1D,Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHKT	**Chengkung**	**0.12**	**0**	⇓*i*P	**Pb**	**05 22 37.3**	**+0.2**
CHKT				S	**Sb**	**05 22 40.2**	**+0.3**
TTN	**Taitung**	**0.30**	**223**	*e*P	**Pb**	**05 22 40.5**	**+0.8**
TWG	**Pinlang**	**0.31**	**241**	⇑*i*P	**Pb**	**05 22 39.7**	**-0.1**
TWG				S	**Sb**	**05 22 44.6**	**+0.1**
TWF1	**Yuli**	**0.38**	**351**	⇑*i*P	**Pb**	**05 22 40.5**	**-0.5**
TWF1				S	**Sb**	**05 22 45.5**	**-0.9**
ELDTW	**Lidau**	**0.39**	**304**	⇑*i*P	**Pb**	**05 22 39.7**	**-1.3**
ELDTW				S	**Sb**	**05 22 44.0**	**-2.5**
EHY	**Hungye**	**0.53**	**356**	*e*P	**Pb**	**05 22 43.6**	**+0.1**
ECL	**Taimali**	**0.53**	**225**	*e*P	**Pb**	**05 22 43.0**	**-0.6**
STYT	**Tauyuan**	**0.59**	**289**	⇑*i*P	**Pb**	**05 22 43.5**	**-1.1**
STYT				S	**Sb**	**05 22 50.6**	**-1.8**
YUS	**Yu-Shan**	**0.64**	**324**	⇑*i*P	**Pb**	**05 22 44.6**	**-0.7**
YUS				S	**Sb**	**05 22 52.1**	**-1.7**
SSD	**Sandimen**	**0.71**	**252**	*e*P	**Pb**	**05 22 45.8**	**-0.9**
SSD				S	**Sb**	**05 22 54.0**	**-1.9**
SGST	**Jiashian**	**0.73**	**279**	P	**Pb**	**05 22 46.7**	**-0.2**
SGST				S	**Sb**	**05 22 57.0**	**+0.6**
ALS	**Alishan**	**0.74**	**316**	⇑*i*P	**Pb**	**05 22 46.7**	**-0.4**
ALS				S	**Sb**	**05 22 55.5**	**-1.2**
WTP	**Ta-pu**	**0.74**	**292**	⇑*i*P	**Pb**	**05 22 46.7**	**-0.4**
WTP				S	**Sb**	**05 22 56.4**	**-0.3**
EAST	**Anshuo**	**0.76**	**219**	*e*P	**Pb**	**05 22 46.9**	**-0.5**
CHN1	**Nanshi**	**0.80**	**285**	*i* P	**Pb**	**05 22 48.2**	**+0.1**
CHN1				S	**Sb**	**05 22 59.3**	**+0.9**
CHN4	**Tsaushan**	**0.80**	**298**	⇑*i*P	**Pb**	**05 22 48.0**	**-0.2**
CHN4				S	**Sb**	**05 22 58.9**	**+0.4**
ESL	**Shilin**	**0.84**	**4**	*e*P	**Pb**	**05 22 49.4**	**+0.6**
TWK	**Hsinying**	**0.86**	**290**	*e*P	**Pb**	**05 22 48.6**	**-0.4**
TWK				S	**Sb**	**05 23 00.1**	**0.0**
TWM1	**Shoushan**	**0.88**	**260**	*e*P	**Pb**	**05 22 50.7**	**+1.2**
CHN5	**Tsauling**	**0.89**	**315**	*e*P	**Pb**	**05 22 49.5**	**0.0**
CHN5				S	**Sb**	**05 23 00.8**	**-0.1**
SCZT	**Fangliau**	**0.91**	**229**	*e*P	**Pb**	**05 22 49.6**	**-0.4**
CHN3	**Shinhua**	**0.93**	**276**	*e*P	**Pb**	**05 22 51.3**	**+1.1**
LAY	**Lan-yu**	**0.95**	**169**	*e*P	**Pb**	**05 22 50.5**	**0.0**
CHN2	**Minshiung**	**0.99**	**304**	*e*P	**Pb**	**05 22 51.8**	**+0.4**
SMLT	**Sun Moon Lake**	**1.00**	**335**	*e*P	**Pb**	**05 22 51.2**	**-0.3**
CHY	**Chiayi**	**1.01**	**301**	*e*P	**Pb**	**05 22 51.9**	**+0.2**
CHY				S	**Sb**	**05 23 05.6**	**+1.1**
HWA	**Hwalien**	**1.02**	**12**	*e*P	**Pb**	**05 22 54.0**	**+2.2**
TYC	**Yuchr**	**1.04**	**333**	*e*P	**Pb**	**05 22 52.1**	**0.0**
WNT	**Mingjian**	**1.10**	**325**	*e*P	**Pb**	**05 22 53.6**	**+0.5**
WNT				S	**Sb**	**05 23 08.4**	**+1.4**
TWP	**Hsiaoliuchiu**	**1.12**	**236**	*e*P	**Pb**	**05 22 56.8**	**+3.3**
TWD	**Chiawan**	**1.12**	**11**	*e*P	**Pb**	**05 22 55.0**	**+1.5**
HEN	**Hengchun**	**1.12**	**211**	*e*P	**Pb**	**05 22 55.2**	**+1.6**
TWK1	**Hengchun**	**1.15**	**207**	*e*P	**Pb**	**05 22 56.0**	**+2.0**
TWT	**Tachien**	**1.28**	**352**	*e*P	**Pb**	**05 22 55.9**	**-0.3**
TCU	**Taichung**	**1.33**	**332**	*e*P	**Pb**	**05 22 58.4**	**+1.6**
NNS	**Nan Shan**	**1.46**	**0**	*e*P	**Pn**	**05 22 58.2**	**+0.4**
TWQ1	**Liyutan**	**1.47**	**338**	*e*P	**Pn**	**05 23 00.1**	**+1.2**
TWQ1				S	**Sn**	**05 23 19.8**	**+2.1**
ENA	**Nanau**	**1.49**	**13**	*e*P	**Pn**	**05 22 57.1**	**-2.0**
NSY	**Sanyi**	**1.54**	**339**	*e*P	**Pn**	**05 23 01.1**	**+1.3**
NSY				S	**Sn**	**05 23 21.8**	**+2.4**
WDGT	**Dungji**	**1.59**	**281**	*e*P	**Pn**	**05 22 59.9**	**-0.8**
WDGT				S	**Sn**	**05 23 19.0**	**-1.8**
ENTT	**Nioudou**	**1.67**	**6**	*e*P	**Pn**	**05 23 00.3**	**-1.4**
NSTT	**Nanjuang**	**1.68**	**349**	*e*P	**Pn**	**05 23 02.5**	**+0.6**
TWC	**Suao**	**1.69**	**15**	*e*P	**Pn**	**05 23 02.5**	**+0.6**
NSK	**Sanguang**	**1.69**	**360**	*e*P	**Pn**	**05 23 01.7**	**-0.3**
TWE	**Neicheng**	**1.76**	**9**	*e*P	**Pn**	**05 23 05.3**	**+2.3**
PNG	**Penghu**	**1.77**	**290**	*e*P	**Pn**	**05 23 02.3**	**-0.8**
TWA	**Mucha**	**2.01**	**6**	*e*P	**Pn**	**05 23 08.8**	**+2.3**
YOJ	**Yonaguni jima**	**2.11**	**45**	P	**Pn**	**05 23 08.2**	**+0.2**
YOJ				S	**Sn**	**05 23 33.1**	**-0.9**
NWF	**Wu-fen Shan**	**2.12**	**10**	*e*P	**Pn**	**05 23 08.7**	**+0.5**
HATJ	**Hateruma jima**	**2.48**	**64**	S	**Sn**	**05 23 42.6**	**-0.9**
IRIF	**Iriomote-Funau**	**2.56**	**58**	P	**Pn**	**05 23 14.3**	**-0.1**
IRIF				S	**Sn**	**05 23 44.7**	**-0.6**
JKRS	**Kuro-shima**	**2.73**	**62**	P	**Pn**	**05 23 17.4**	**+0.5**
JKRS				S	**Sn**	**05 23 49.7**	**0.0**
JIJ	**Ishigaki jima**	**2.90**	**61**	P	**Pn**	**05 23 18.7**	**-0.5**
JIJ				S	**Sn**	**05 23 51.7**	**-2.2**
JTJ	**Tarama**	**3.48**	**61**	P	**Pn**	**05 23 26.9**	**-0.6**
JTJ				S	**Sn**	**05 24 07.6**	**-1.0**

MOS ***05*** *05:24:17.8±0.9,7.15S×13.58W,h10km,mb5.1/7,MS4.8/7, Error ellipse: s-maj=62.4km s-min=11.6km az=67.5*
IDC ***05*** *05:24:17.7±0.7,7.37S×13.41W,mb4.4/15,mb1 4.5/16, mb1mx4.4/22,ML3.4/1,MS4.6/3,Ms1 4.6/3,ms1mx4.1/25, Error ellipse: s-maj=28.2km s-min=16.2km az=143.0*
NEIC ***05*** *05:24:18.7±0.2,7.41S×13.48W,mb4.9/39,MS4.9/3,Error ellipse: s-maj=9.1km s-min=5.4km az=127.0*
SYO ***05*** *05:24:18.6,7.41S×13.48W,h9km,MB4.9,MS4.9*
BJI ***05*** *05:24:18.6,7.40S×13.50W,h8km,Ms5.1,Msz5.0*
HRVD ***05*** *05:24:18.7±1.1,7.32S×13.66W,h12km,MW5.2/28, Centroid moment Tensor Solution. LP body waves: s6,c7; Mantle waves: s28,c31; Half duration: 1s0 Moment tensor: Scale 10¹⁶Nm; Mrr-1.42±.73; Mθθ-0.44±.54; Mφφ1.86±.47; Mrθ-1.50±2.23; Mrφ-3.08±.45; Mθφ6.01±1.71; Best double couple: M₀6.96×10¹⁶ NP1:φ₀283°,δ22°, λ-156°. NP2:φ₀170°,δ81°,λ-70°. Principal axes: T 7.82, Plg33°, Azm243°; N -1.71, Plg20°, Azm347°; P -6.11, Plg50°, Azm103°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 05 05:24:17.3±0.3,7.36S±0.06×13.48W±0.07,h10km,n103, σ0§81/93,mb4.7/51,MS4.7/9,5C-4D,Ascension Island region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
LIC	**Lamto**	**15.91**	**32**	*e*P	**P**	**05 28 04.2**	**+1.0**
	84nm,1.1s						
LIC	**Lamto**	**15.91**	**32**	*e*P	**P**	**05 28 04.6**	**+1.4**
	94nm,1.1s						
KIC	**Kosan Boka**	**16.18**	**33**	*e*P	**P**	**05 28 06.9**	**+0.3**
	75nm,1.0s						
TIC	**Toumodi**	**16.27**	**31**	*e*P	**P**	**05 28 07.6**	**-0.1**
	215nm,1.3s						
DBIC	**Dimbokro**	**16.38**	**32**	Pn	**P**	**05 28 09.4**	**+0.3**
	0.1nm,0.3s,baz=185,slow=15,SNR=7.0						
DBIC	**Dimbokro**	**16.38**	**32**	*e*P	**P**	**05 28 08.3**	**-0.8**
	15nm,1.2s						
BDFB	**Brasilia**	**34.79**	**253**	P	**P**	**05 31 10.4**	**0.0**
	2.7nm,1.0s,mb4.1,baz=67,slow=17,SNR=3.6						
BDFB				LR	LR	05 42 31.0	
	comp=Z,958nm,18.1s,MS4.6,baz=54,slow=31						
SUR	**Sutherland**	**40.42**	**133**	P	**P**	**05 31 57.8**	**+0.2**
	3.4nm,0.8s,mb4.1,baz=267,slow=6.1,SNR=4.9						
SUR	**Sutherland**	**40.42**	**133**	*e*P	**P**	**05 31 57.1**	**-0.5**
	14nm,1.0s,mb4.7						
LBTB	**Lobatse**	**41.22**	**120**	P	**P**	**05 32 04.9**	**+0.7**
	4.9nm,1.2s,mb4.0						
SFS	**San Fernando**	**44.13**	**8**	*e*P	**P**	**05 32 29.6**	**+1.8**
CPUP	**Villa Florida**	**45.73**	**240**	P	**P**	**05 32 41.5**	**+0.7**
	4.3nm,1.0s,mb4.3,baz=100,slow=7.8,SNR=5.9						
CPUP	**Villa Florida**	**45.73**	**240**	*e*P	**P**	**05 32 40.7**	**-0.1**
	3.4nm,0.9s,mb4.3						
CART	**Cartagena**	**46.21**	**14**	*e*P	**P**	**05 32 37.8**	**-6.7**
KMBO	**Kilima Mbogo**	**50.93**	**85**	LR	LR	05 52 48.6	
	comp=Z,267nm,18.4s,MS4.3,baz=7.1,slow=34						
SJPF	**Ste Jean**	**51.46**	**11**	*e*P	**P**	**05 33 25.4**	**+0.5**
	67nm,1.2s,mb5.1						
TRQA	**Tornquist**	**53.35**	**227**	*e*P	**P**	**05 33 38.1**	**-1.1**
	1.9nm,1.1s,mb3.9						
LPAZ	**La Paz**	**54.09**	**255**	P	**P**	**05 33 45.0**	**+0.1**
	1.2nm,0.7s,mb4.0,baz=150,slow=3.7,SNR=6.7						
LPAZ	**La Paz**	**54.09**	**255**	*e*P	**P**	**05 33 44.7**	**-0.2**
	3.1nm,1.1s,mb4.2						
ORIF	**Oris-en-Rattie**	**54.88**	**17**	*e*P	**P**	**05 33 51.1**	**+0.8**
	5.3nm,0.6s,mb4.5						
MBDF	**Montbardon**	**54.97**	**18**	*e*P	**P**	**05 33 51.7**	**+0.7**
	12nm,1.8s,mb4.7						
TCF	**Toulx Ste Croi**	**55.22**	**13**	*e*P	**P**	**05 33 52.7**	**-0.1**
	41nm,1.3s,mb5.0						
LVC	**Limon Verde**	**55.34**	**248**	P	**P**	**05 33 53.2**	**-0.8**
	2.7nm,0.9s,mb4.3						
BGF	**Bois d'Agland**	**55.62**	**14**	*e*P	**P**	**05 33 56.4**	**+0.7**
	13nm,0.8s,mb4.7						
LPG	**La Plagne**	**55.66**	**17**	*e*P	**P**	**05 33 57.0**	**+1.0**
	31nm,1.2s,mb4.9						
LPL	**La Plagne**	**55.67**	**17**	*e*P	**P**	**05 33 57.1**	**+1.0**
	9.2nm,0.7s,mb4.6						
CABF	**La Chapelle**	**56.49**	**16**	*e*P	**P**	**05 34 01.4**	**-0.5**
	18nm,0.8s,mb4.9						
LOR	**Lormes**	**56.52**	**14**	*e*P	**P**	**05 34 02.3**	**+0.1**
DAVA	**Damuels**	**58.22**	**19**	⇓*i*P	**P**	**05 34 13.1**	**-1.0**
	16nm,0.9s,mb5.0						
CEY	**Cerknica**	**58.46**	**23**	*e*P	**P**	**05 34 16.0**	**+0.1**
SQTA	**Sankt Quirin**	**58.59**	**19**	⇓*i*P	**P**	**05 34 15.9**	**-0.8**
	27nm,1.3s,mb5.1						
MOTA	**Moosalm**	**58.66**	**19**	⇓*i*P	**P**	**05 34 17.0**	**-0.2**
	11nm,1.1s,mb4.8						
VISS	**Visnje**	**58.68**	**23**	*e*P	**P**	**05 34 17.6**	**+0.3**
WTTA	**Wattenberg**	**58.77**	**20**	⇑*i*P	**P**	**05 34 17.6**	**-0.4**
	25nm,0.8s,mb5.3						
KBA	**Koelnbreinsper**	**59.20**	**21**	⇑*i*P	**P**	**05 34 19.8**	**-1.2**
	12nm,1.3s,mb4.8						
MOA	**Molln**	**60.18**	**21**	⇑*i*P	**P**	**05 34 26.9**	**-0.8**
	12nm,1.1s,mb4.8						
GRF	**Grafenberg Arr**	**60.76**	**18**	*e*P	**P**	**05 34 30.4**	**-1.2**
GRF				pmax	pmax		
	comp=Z,8.0nm,0.7s,mb5.0						
GERES	**GERESS Array B**	**60.83**	**20**	P	**P**	**05 34 31.5**	**-0.6**
	comp=Z,5.7nm,0.8s,mb4.7,baz=194,slow=5.5,SNR=24						
KHC	**Kasperske Hory**	**61.04**	**20**	*e*P	**P**	**05 34 33.2**	**-0.3**
KHC				L		05 59 00.0	
	comp=Z,0.8nm,19.0s						
ROSC	**El Rosal**	**61.92**	**279**	P	**P**	**05 34 42.3**	**+2.3**
	comp=Z,2.7nm,0.5s,mb4.7,baz=227,slow=20,SNR=5.6						
PSZ	**Piszkesteto**	**62.42**	**25**	*e*P	**P**	**05 34 41.9**	**-0.9**
	comp=Z,14nm,1.1s,mb5.0						
VYHS	**Vyhne**	**62.45**	**24**	*i* P	**P**	**05 34 42.6**	**-0.4**
VYHS				*e*		05 34 51.2	
PVCC	**Panska Ves**	**62.56**	**20**	*e*P	**P**	**05 34 43.2**	**-0.6**
PVCC				L		05 59 50.0	
	comp=Z,0.9nm,13.7s						
BRG	**Berggiesshubel**	**62.65**	**19**	*e*P	**P**	**05 34 43.9**	**-0.5**
BRG				pmax	pmax		
	comp=Z,15nm,1.4s,mb4.9						
BRG				MLR	MLR		
	comp=N,640nm,18.8s,MS4.9						
BRG				MLR	MLR		
	comp=E,420nm,18.8s,MS4.9						
BRG				MLR	MLR		
	comp=Z,840nm,18.8s,MS4.9						
BRG	**Berggiesshubel**	**62.65**	**19**	*e*P	**P**	**05 34 43.9**	**-0.5**
	comp=Z,15nm,1.4s,mb4.9						
BRG				LR	LR		
	comp=Z,840nm,18.8s,MS4.9						
CLL	**Collm**	**62.73**	**18**	P	**P**	**05 34 46.0**	**+1.2**
MORC	**Moravsky Berou**	**62.99**	**22**	*e*P	**P**	**05 34 45.9**	**-0.7**
	comp=Z,10nm,1.0s,mb4.9						
DPC	**Dobruska-Polom**	**63.02**	**21**	*e*P	**P**	**05 34 46.4**	**-0.4**
DPC				L		06 02 40.0	
	comp=Z,0.6nm,20.0s						
OKC	**Ostrava-Krasne**	**63.27**	**22**	*e*P	**P**	**05 34 48.0**	**-0.4**
OKC				L		06 01 00.0	
	comp=Z,0.5nm,21.0s						
KSP	**Ksiaz**	**63.42**	**21**	*e*P	**P**	**05 34 49.3**	**-0.1**
KSP				MLR	MLR	05 52 10.5	
	comp=Z,12μm,18.1s						
NIE	**Niedzica**	**63.77**	**24**	*e*P	**P**	**05 34 52.7**	**+0.9**
CRVS	**Cervenica-Dubn**	**63.84**	**25**	*i* P	**P**	**05 34 52.9**	**+0.7**
BRTR	**Keskin Array B**	**63.92**	**39**	P	**P**	**05 34 53.6**	**+0.7**
	comp=Z,3.5nm,0.9s,mb4.4,baz=217,slow=6.2,SNR=16						
OJC	**Ojcow**	**64.20**	**23**	*e*P	**P**	**05 34 54.6**	**0.0**
SNAA	**Sanae**	**64.58**	**176**	*e*P	**P**	**05 34 56.0**	**-0.7**
KWP	**Kalwaria**	**64.92**	**25**	*e*P	**P**	**05 34 57.7**	**-1.5**
KWP				*e*pP	pP	05 35 00.0	-2.4
KWP				*e*PP	PP	05 37 20.8	-3.3
KWP				MLR	MLR	06 04 38.2	
	comp=Z,800nm,22.3s,MS4.9						
OTAV	**Otavalo**	**65.23**	**274**	*e*P	**P**	**05 35 01.6**	**-0.3**
	comp=Z,10nm,1.3s,mb4.7						
OTAV				*e*		05 35 11.8	
OTAV				*e*		05 35 17.5	
SUW	**Suwalki**	**68.48**	**22**	*e*P	**P**	**05 35 21.4**	**-0.3**
SUW				*e*pP	pP	05 35 24.4	-0.5
SUW				MLR	MLR	06 00 44.8	
	comp=Z,600nm,25.1s,MS4.7						
AKASG	**Malin Array Be**	**68.57**	**28**	P	**P**	**05 35 21.1**	**-1.3**
	comp=Z,5.2nm,0.8s,mb4.5,baz=228,slow=7.2,SNR=28						
SYO	**Syowa Base**	**70.52**	**162**	⇑P	**P**	**05 35 33.8**	**-0.2**
SYO	**Syowa Base**	**70.52**	**162**	⇓PcP	PcP	05 35 51.4	-4.0
SYO	**Syowa Base**	**70.52**	**162**	⇑*e*P	**P**	**05 35 33.8**	**-0.2**
SYO				*e*PcP	PcP	05 35 51.4	-4.0
NB2	**NORSAR Subarra**	**70.89**	**12**	P	**P**	**05 35 35.9**	**-0.5**
	comp=Z,6.1nm,1.1s,mb4.4,baz=205,slow=6.5						
NOA	**NORSAR Array B**	**70.89**	**12**	P	**P**	**05 35 36.3**	**-0.1**
	comp=Z,1.6nm,0.7s,mb4.0,baz=221,slow=7.6,SNR=6.0						
GNI	**Garni**	**71.42**	**43**	*e*P	**P**	**05 35 41.3**	**+1.4**
GNI				pmax	pmax		
	comp=Z,22nm,1.7s						
KIV	**Kislovodsk**	**71.89**	**39**	*e*P	**P**	**05 35 43.4**	**+0.7**
KIV				*e*S	S	05 45 04.9	+2.7
KIV				pmax	pmax		
	comp=Z,7.0nm,0.9s,mb4.6						
KIV	**Kislovodsk**	**71.89**	**39**	P	**P**	**05 35 44.5**	**+1.9**
	comp=Z,11nm,0.7s,mb4.9						
BRNJ	**Basking Ridge**	**73.62**	**316**	*e*P	**P**	**05 35 47.1**	**-5.9**
OBN	**Obninsk**	**74.82**	**27**	*e*P	**P**	**05 35 59.7**	**+0.1**
OBN				pmax	pmax		
	comp=Z,20nm,1.4s,mb4.8						
OBN				MLR	MLR		
	comp=Z,300nm,17.0s,MS4.7						
FINES	**FINESS Array B**	**75.18**	**18**	P	**P**	**05 36 01.7**	**+0.2**
	comp=Z,6.1nm,0.6s,mb4.7,baz=207,slow=4.3,SNR=28						
FINES	**FINESS Array B**	**75.18**	**18**	*e*P	**P**	**05 36 01.5**	**0.0**
KAF	**Kangasniemi**	**75.75**	**18**	*e*p	**P**	**05 36 02.3**	**-2.5**
	comp=Z,12nm,0.7s,mb5.0,baz=225,slow=6.2						
KAF	**Kangasniemi**	**75.75**	**18**	*e*P	**P**	**05 36 02.3**	**-2.5**
KAF				pmax	pmax		
	comp=Z,13nm,0.7s,mb5.0						
SCHQ	**Schefferville**	**76.19**	**331**	P	**P**	**05 36 07.9**	**+0.5**
	comp=Z,4.1nm,0.8s,mb4.4,baz=112,slow=10,SNR=4.3						
SCHQ	**Schefferville**	**76.19**	**331**	P	**P**	**05 36 08.0**	**+0.5**
	comp=Z,12nm,1.0s,mb4.8						
JOF	**Joensuu**	**77.94**	**19**	*e*p	**P**	**05 36 15.0**	**-1.9**
SWET	**Sewanee**	**80.11**	**308**	*e*P	**P**	**05 36 29.5**	**+0.1**
ARCES	**ARCESS Array B**	**81.26**	**13**	P	**P**	**05 36 35.1**	**+0.5**
	comp=Z,4.9nm,0.6s,mb4.6,baz=217,slow=4.1,SNR=34						
ARCES				LR	LR	06 15 06.7	
	comp=Z,470nm,19.3s,MS4.9,baz=222,slow=38						
ARE0	**ARCESS Array S**	**81.26**	**13**	*e*P	**P**	**05 36 34.7**	**0.0**
WVT	**Waverly**	**81.85**	**308**	*e*P	**P**	**05 36 38.7**	**+0.2**
	comp=Z,10nm,1.0s,mb4.7						
LVZ	**Lovozero**	**82.37**	**17**	*e*P	**P**	**05 36 40.4**	**-0.1**
LVZ				pmax	pmax		
	comp=Z,22nm,0.8s,mb5.1						
QSPA	**South Pole Qui**	**82.75**	**180**	*e*P	**P**	**05 36 42.9**	**+0.6**
	comp=Z,16nm,1.0s,mb5.0						
SIUC	**Southern Illin**	**83.33**	**309**	P	**P**	**05 36 46.0**	**-0.1**
	comp=Z,15nm,1.0s,mb5.0						
FVM	**French Village**	**84.32**	**309**	*e*P	**P**	**05 36 50.5**	**-0.6**
	comp=Z,8.6nm,0.7s,mb5.0						
FVM				*e*		05 36 58.9	
CCM	**Cathedral Cave**	**84.97**	**309**	*e*P	**P**	**05 36 53.9**	**-0.5**
	comp=Z

KUZ	**Kuaotunu**	**1.27 337**	⇓PN	**P**	**05 47 27.1**	**-1.8**
KUZ	**Kuaotunu**	**1.27 337**	P	**P**	**05 47 27.1**	**-1.8**
KAVZ	**Karewarewa**	**1.30 205**	PN	**P**	**05 47 30.5**	**+1.4**
KAVZ	**Karewarewa**	**1.30 205**	P	**P**	**05 47 30.9**	**+1.8**
HIZ	**Hauiti**	**1.31 243**	⇑PN	**P**	**05 47 31.1**	**+1.9**
WTVZ	**West Tongariro**	**1.33 206**	⇑PN	**P**	**05 47 31.2**	**+1.8**
NGZ	**Ngauruhoe**	**1.38 205**	PN	**P**	**05 47 31.8**	**+2.0**
NGZ	**Ngauruhoe**	**1.38 205**	P	**P**	**05 47 31.9**	**+2.1**
CNZ	**Chateau**	**1.42 206**	PN	**P**	**05 47 31.7**	**+1.5**
CNZ	**Chateau**	**1.42 206**	P	**P**	**05 47 32.1**	**+1.9**
WPVZ	**Whakapapa**	**1.43 206**	PN	**P**	**05 47 31.8**	**+1.6**
TUVZ	**Tukino**	**1.45 202**	PN	**P**	**05 47 32.1**	**+1.7**
TUVZ	**Tukino**	**1.45 202**	P	**P**	**05 47 32.3**	**+1.9**
FWVZ	**Far West T-bar**	**1.47 205**	PN	**P**	**05 47 32.4**	**+1.8**
FWVZ			SN	**S**	**05 47 59.6**	**+3.1**
FWVZ	**Far West T-bar**	**1.47 205**	P	**P**	**05 47 32.4**	**+1.8**
DRZ	**Dome Shelter**	**1.48 204**	PN	**P**	**05 47 32.9**	**+2.2**
DRZ	**Dome Shelter**	**1.48 204**	P	**P**	**05 47 33.0**	**+2.3**
OTAZ	**Otara**	**1.49 310**	PN	**P**	**05 47 30.3**	**-0.5**
OTAZ	**Otara**	**1.49 310**	P	**P**	**05 47 30.0**	**-0.7**
KNZ	**Kokohu**	**1.52 137**	⇑PN	**P**	**05 47 31.7**	**+0.6**
KNZ			SN	**S**	**05 47 56.1**	**-1.2**
KNZ	**Kokohu**	**1.52 137**	P	**P**	**05 47 31.7**	**+0.7**
WNVZ	**Wahianoa**	**1.52 202**	PN	**P**	**05 47 32.9**	**+1.9**
WNVZ			SN	**S**	**05 47 59.8**	**+2.5**
PUZ	**Puketiti**	**1.52 96**	PN	**P**	**05 47 29.6**	**-1.5**
PUZ			SN	**S**	**05 47 53.7**	**-3.6**
PUZ	**Puketiti**	**1.52 96**	P	**P**	**05 47 29.7**	**-1.4**
PUZ			S	**S**	**05 47 53.9**	**-3.5**
MXZ	**Matakaoa Point**	**1.60 78**	PN	**P**	**05 47 29.6**	**-2.1**
MXZ			SN	**S**	**05 47 55.5**	**-3.1**
MXZ	**Matakaoa Point**	**1.60 78**	P	**P**	**05 47 29.8**	**-2.0**
MTAZ	**Motutapu**	**1.61 314**	⇓PN	**P**	**05 47 31.1**	**-0.7**
MTAZ	**Motutapu**	**1.61 314**	P	**P**	**05 47 31.2**	**-0.6**
KAAZ	**Kauri Point**	**1.70 310**	PN	**P**	**05 47 31.6**	**-1.2**
KAAZ	**Kauri Point**	**1.70 310**	P	**P**	**05 47 31.9**	**-0.9**
WTAZ	**Waiatarua**	**1.72 304**	PN	**P**	**05 47 32.4**	**-0.5**
VRZ	**Vera Road**	**1.73 225**	⇑PN	**P**	**05 47 35.4**	**+2.5**
VRZ			SN	**S**	**05 48 05.7**	**+4.9**
VRZ	**Vera Road**	**1.73 225**	P	**P**	**05 47 35.5**	**+2.5**
RAEZ	**Rainy Point**	**2.05 228**	PN	**P**	**05 47 39.1**	**+2.9**
RAEZ	**Rainy Point**	**2.05 228**	P	**P**	**05 47 39.1**	**+2.9**
WAZ	**Wanganui**	**2.12 210**	⇑PN	**P**	**05 47 38.7**	**+1.8**
WAZ	**Wanganui**	**2.12 210**	P	**P**	**05 47 38.8**	**+1.9**
PWZ	**Pawanui**	**2.14 169**	PN	**P**	**05 47 38.5**	**+1.3**
PWZ	**Pawanui**	**2.14 169**	P	**P**	**05 47 38.6**	**+1.4**
TSZ	**Takapari Road**	**2.16 188**	⇑PN	**P**	**05 47 38.6**	**+1.2**
TSZ	**Takapari Road**	**2.16 188**	P	**P**	**05 47 38.7**	**+1.3**
NEZ	**North Egmont**	**2.22 232**	PN	**P**	**05 47 41.2**	**+3.1**
NEZ	**North Egmont**	**2.22 232**	P	**P**	**05 47 41.2**	**+3.2**
DFE	**Dawson Falls**	**2.25 231**	PN	**P**	**05 47 41.1**	**+2.8**
DFE	**Dawson Falls**	**2.25 231**	P	**P**	**05 47 41.3**	**+2.9**
NWEZ	**Newall Road**	**2.36 234**	PN	**P**	**05 47 42.7**	**+3.0**
NWEZ	**Newall Road**	**2.36 234**	P	**P**	**05 47 42.7**	**+3.0**
WCZ	**Waipu Caves**	**2.54 320**	⇓PN	**P**	**05 47 40.4**	**-1.3**
BFZ	**Birch Farm**	**2.76 181**	PN	**P**	**05 47 45.0**	**+0.8**
BFZ			SN	**S**	**05 48 21.2**	**+0.6**
MRZ	**Mangatainoka R**	**2.80 192**	⇑PN	**P**	**05 47 45.4**	**+0.7**
MRZ			SN	**S**	**05 48 21.6**	**+0.1**
CAW	**Cannon Point**	**3.33 197**	PN	**P**	**05 47 51.1**	**+0.1**
CAW			SN	**S**	**05 48 31.7**	**-1.2**
MRW	**Makara Radio**	**3.54 200**	PN	**P**	**05 47 53.1**	**-0.5**
MRW			SN	**S**	**05 48 36.7**	**-0.6**
MRW	**Makara Radio**	**3.54 200**	P	**P**	**05 47 53.6**	**0.0**
WEL	**Wellington**	**3.57 199**	PN	**P**	**05 47 51.8**	**-2.2**
WEL			SN	**S**	**05 48 36.4**	**-1.6**
MSWZ	**Moikau Station**	**3.59 193**	PN	**P**	**05 47 53.9**	**-0.4**
MSWZ			SN	**S**	**05 48 36.9**	**-1.5**
SNZO	**South Karori**	**3.61 200**	PN	**P**	**05 47 54.4**	**-0.1**
SNZO			SN	**S**	**05 48 38.3**	**-0.7**
SNZO	**South Karori**	**3.61 200**	P	**P**	**05 47 54.4**	**-0.1**
SNZO			S	**S**	**05 48 38.3**	**-0.6**
BHW	**Baring Head**	**3.66 198**	PN	**P**	**05 47 54.7**	**-0.4**
BHW			SN	**S**	**05 48 38.2**	**-1.9**
BHW	**Baring Head**	**3.66 198**	P	**P**	**05 47 54.8**	**-0.3**
TUWZ	**Tuamarina**	**3.96 207**	PN	**P**	**05 47 58.7**	**-0.1**
TUWZ			SN	**S**	**05 48 46.3**	**-0.4**
NNZ	**Nelson**	**4.01 214**	PN	**P**	**05 47 58.6**	**-0.8**
NNZ			SN	**S**	**05 48 48.2**	**+0.5**
NNZ	**Nelson**	**4.01 214**	*eP*	**P**	**05 47 59.0**	**-0.4**
QRZ	**Quartz Range**	**4.14 224**	PN	**P**	**05 48 00.1**	**-1.0**
QRZ			SN	**S**	**05 48 50.6**	**-0.1**
QRZ	**Quartz Range**	**4.14 224**	*eP*	**P**	**05 48 00.2**	**-0.9**
CMWZ	**Cape Campbell**	**4.16 203**	SN	**S**	**05 48 51.2**	**+0.1**
BSWZ	**Blackbirch Sta**	**4.24 206**	PN	**P**	**05 48 01.9**	**-0.4**
BSWZ			SN	**S**	**05 48 52.0**	**-0.8**
THZ	**Tophouse**	**4.66 213**	PN	**P**	**05 48 06.4**	**-1.3**
THZ	**Tophouse**	**4.66 213**	*eP*	**P**	**05 48 06.9**	**-0.8**
KHZ	**Kahutara**	**4.98 205**	PN	**P**	**05 48 11.1**	**-0.6**
KHZ			SN	**S**	**05 49 08.1**	**-1.6**
KHZ	**Kahutara**	**4.98 205**	P	**P**	**05 48 11.4**	**-0.3**
DSZ	**Denniston Nort**	**5.18 221**	PN	**P**	**05 48 13.0**	**-1.3**
DSZ			SN	**S**	**05 49 12.4**	**-1.9**
DSZ	**Denniston Nort**	**5.18 221**	*eP*	**P**	**05 48 13.4**	**-0.9**
LTZ	**Lake Taylor**	**5.77 211**	PN	**P**	**05 48 20.8**	**-1.1**
LTZ	**Lake Taylor**	**5.77 211**	*eP*	**P**	**05 48 20.9**	**-1.0**
CRLZ	**Canterbury Las**	**6.32 205**	PN	**P**	**05 48 27.2**	**-1.8**
CRLZ	**Canterbury Las**	**6.32 205**	*eP*	**P**	**05 48 27.8**	**-1.2**
MQZ	**McQueen's Vall**	**6.42 205**	PN	**P**	**05 48 28.0**	**-2.4**
MQZ			SN	**S**	**05 49 39.0**	**-4.3**
MQZ	**McQueen's Vall**	**6.42 205**	*eP*	**P**	**05 48 28.1**	**-2.3**
WVZ	**Waitaha Valley**	**6.69 218**	PN	**P**	**05 48 32.2**	**-1.8**
WVZ	**Waitaha Valley**	**6.69 218**	*eP*	**P**	**05 48 32.2**	**-1.7**
RPZ	**Rata Peaks**	**7.04 213**	P	**P**	**05 48 37.5**	**-1.0**
	6.1nm,0.3s,baz=319,slow=0.6,SNR=29					
RPZ			S	**S**	**05 49 54.3**	**-3.4**
	43nm,0.3s,baz=32,slow=22,SNR=25					
RPZ	**Rata Peaks**	**7.04 213**	PN	**P**	**05 48 36.0**	**-2.5**
RPZ	**Rata Peaks**	**7.04 213**	P	**P**	**05 48 36.0**	**-2.5**
LMZ	**Lake Moeraki**	**7.89 221**	PN	**P**	**05 48 48.9**	**-0.7**
BWZ	**Berwen**	**8.20 214**	PN	**P**	**05 48 51.4**	**-2.3**
ODZ	**Otahua Downs**	**8.30 209**	PN	**P**	**05 48 53.3**	**-1.6**
ODZ	**Otahua Downs**	**8.30 209**	*eP*	**P**	**05 48 53.9**	**-1.1**
TUZ	**Tuapeka**	**9.45 210**	PN	**P**	**05 49 09.1**	**-0.8**
TUZ	**Tuapeka**	**9.45 210**	*eP*	**P**	**05 49 09.3**	**-0.6**
ASAR	**Alice Springs**	**38.79 279**	P	**P**	**05 54 03.8**	**-0.2**
	3.4nm,0.3s,mb4.0,baz=124,slow=8.4,SNR=20					
SBA	**Scott Base**	**40.24 183**	*eP*	**P**	**05 54 19.8**	**+4.4**
	5.7nm,0.9s,mb4.0					
WRAB	**Tennant Creek**	**40.50 284**	*eP*	**P**	**05 54 17.0**	**-1.1**
	16nm,0.8s,mb4.5					
WRA	**Warramunga Arr**	**40.50 284**	P	**P**	**05 54 17.6**	**-0.5**
	4.3nm,0.7s,mb4.0,baz=124,slow=6.9,SNR=17					
QSPA	**South Pole Qui**	**52.20 180**	*eP*	**P**	**05 55 50.3**	**+1.5**
	29nm,0.7s,mb4.8					
SYO	**Syowa Base**	**68.69 195**	⇑P	**P**	**05 57 41.0**	**+0.7**
SYO	**Syowa Base**	**68.69 195**	⇑*eP*	**P**	**05 57 41.0**	**+0.7**
SNAA	**Sanae**	**70.71 180**	⇑*iP*	**P**	**05 57 53.0**	**+0.5**
	0.1nm,0.8s					
VNA3	**Neumayer Olymp**	**71.06 178**	⇓*i*	**P**	**05 57 55.6**	**+1.1**
VNA2	**Neumayer--Watz**	**71.43 179**	⇑*i*	**P**	**05 57 58.1**	**+1.3**
VNA1	**Neumayer--Stat**	**71.69 178**	⇓*i*	**P**	**05 58 00.1**	**+1.8**
PLCA	**Paso Flores**	**80.68 135**	*eP*	**P**	**05 58 50.3**	**+1.3**
	1.1nm,0.8s,mb3.5					
ARCES	**ARCESS Array B**	**144.66 343**	PKP	PKPdf	06 06 06.7	-2.0
	2.1nm,0.9s,baz=45,slow=3.4,SNR=8.4					
ARCES	**ARCESS Array B**	**144.66 343**	PKP	PKPdf	06 06 06.7	-2.0
LIC	**Lamto**	**148.42 177**	*eP*	PKPdf	06 06 23.7	+7.2
	24nm,0.8s					
KIC	**Kosan Boka**	**148.57 178**	*eP*	PKPdf	06 06 25.6	+8.8
	33nm,0.8s					
TIC	**Toumodi**	**148.84 177**	*eP*	PKPdf	06 06 25.7	+8.5
	9.8nm,0.3s					
FINES	**FINESS Array B**	**150.08 331**	PKPbc	PKPdf	06 06 21.7	+4.0
	0.3nm,0.3s,baz=90,slow=1.9,SNR=5.2					
FINES	**FINESS Array B**	**150.08 331**	PKPbc	PKPdf	06 06 21.7	+4.0

*IDC **05** 05:47:45.9±2.2,4.17S×130.75E,mb3.9/3,mb1 4.2/6, mb1mx4.0/14,ML3.9/3,Error ellipse: s-maj=112.0km s-min=25.4km az=82.0*
*NEIC **05** 05:47:56.1±2.7,4.63S×131.28E,h110km±26km,mb4.4/4, Error ellipse: s-maj=37.6km s-min=19.9km az=75.0*
ISC 05 05:47:48.4±3.9,4.3S±0.1×131.3E±0.2,h50km±40km,n12, σ1§23/17,mb4.1/4,Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
KAKA	**Kakadu**	**8.45**	**173**	*eP*	**P**	**P**	**05 49 50.8**	**0.0**
	14nm,0.6s							
KAKA				*eS*	**S**	**S**	**05 51 27.5**	**+1.8**
FITZ	**Fitzroy Crossi**	**14.81**	**201**	*eP*	**P**		**05 51 16.1**	**-0.4**
	2.6nm,0.6s							
FITZ				*eS*	**S**		**05 54 04.3**	**+4.6**
FITZ	**Fitzroy Crossi**	**14.81**	**201**	Pn	**P**		**05 51 16.3**	**-0.1**
	0.4nm,0.3s,baz=36,slow=11,SNR=10							
FITZ				Sn	**S**		**05 53 59.8**	**+0.1**
	0.2nm,0.3s,baz=169,slow=7.1,SNR=3.1							
WRAB	**Tennant Creek**	**15.85**	**169**	*eP*	**P**		**05 51 29.2**	**-0.5**
	12nm,0.7s							
WRA	**Warramunga Arr**	**15.86**	**169**	Pn	**P**		**05 51 29.1**	**-0.8**
	0.5nm,0.3s,baz=356,slow=13,SNR=15							
WB2	**Warramunga Arr**	**15.86**	**169**	*eP*	**P**		**05 51 28.7**	**-1.2**
WB2				*eS*	**S**		**05 54 17.6**	**-6.4**
AS12	**Alice Springs**	**19.45**	**173**	*eP*	**P**		**05 52 16.6**	**+3.0**
	6.5nm,0.7s							
ASAR	**Alice Springs**	**19.45**	**173**	P	**P**		**05 52 16.1**	**+2.4**
	0.7nm,0.3s,baz=350,slow=9.8,SNR=35							
ASAR				S	**S**		**05 55 49.5**	**+4.4**
	0.1nm,0.3s,baz=352,slow=26,SNR=2.9							
MKAR	**Makanchi Array**	**66.68**	**326**	P	**P**		**05 58 36.3**	**+0.1**
	1.1nm,0.7s,mb4.0,baz=116,slow=7.9,SNR=12							
ZAL	**Zalesovo**	**69.74**	**333**	P	**P**		**05 58 56.5**	**+1.5**
	1.2nm,0.5s,mb4.1,baz=105,slow=13,SNR=3.6							
BVAR	**Borovoye Array**	**76.47**	**327**	P	**P**		**05 59 34.7**	**+0.2**
	0.4nm,0.6s,mb3.5,baz=135,slow=4.1,SNR=4.1							
MAW	**Mawson**	**77.94**	**201**	*eP*	**P**		**05 59 39.6**	**-2.9**
	4.9nm,0.6s,mb4.6							

*GRAL **05** 05:57:29.9±2.2,35.95N×37.28E,h15km±999km,MD3.4*
*ISK **05** 05:57:31.0,36.04N×35.86E,h1km,MD3.4*
*NSSC **05** 05:57:32.8,36.11N×35.95E,h9km±2km*
ISC 05 05:57:31.5±0.7,36.09N±0.02×35.83E±0.05,h4km±5km, n16,σ0§98/29,1C-1D,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
HTY	**Hatay**	**0.25**	**83**	*i* PG	**Pg**		**05 57 36.5**	**-0.1**
HTY				SG	**Sg**		**05 57 40.4**	**+0.4**
ARNB	**Al Arnab**	**0.26**	**153**	⇑P	**Pg**		**05 57 37.9**	**+1.2**
BTCH	**Batrach**	**0.51**	**96**	⇑P	**Pg**		**05 57 41.5**	**-0.3**
BTCH				⇓S	**Sg**		**05 57 48.0**	**-0.7**
COBT	**Iskenderun**	**0.55**	**39**	⇑*i*P	**Pg**		**05 57 41.5**	**-1.0**
COBT				*i* S	**Sg**		**05 57 50.2**	**+0.4**
SLNF	**Slenfeh**	**0.59**	**147**	⇑P	**Pg**		**05 57 43.6**	**+0.4**
SLNF				⇑S	**Sg**		**05 57 52.4**	**+1.2**
WRDH	**Warideh**	**0.75**	**141**	⇑P	**Pg**		**05 57 46.7**	**+0.2**
WRDH				⇑S	**Sg**		**05 57 56.8**	**+0.3**
DRWC	**Darouich**	**0.86**	**52**	⇑P	**Pb**		**05 57 47.5**	**-1.2**
DRWC				⇑S	**Sg**		**05 57 58.7**	**-1.4**
CEYT	**Ceyhan**	**0.92**	**356**	PG	**Pg**		**05 57 49.9**	**0.0**
CEYT				SG	**Sg**		**05 58 04.2**	**+2.1**
BIDA	**Albida**	**1.15**	**159**	⇑P	**Pb**		**05 57 53.6**	**+0.1**
BIDA				⇑S	**Sb**		**05 58 09.6**	**+1.0**
KFRA	**Kufra**	**1.18**	**138**	⇑P	**Pb**		**05 57 54.0**	**-0.1**
KFRA				⇑S	**Sb**		**05 58 09.8**	**+0.2**
GAZ	**Gaziantep**	**1.55**	**45**	PN	**Pn**		**05 57 58.7**	**-1.3**
GAZ				SN	**Sn**		**05 58 20.4**	**-0.4**
IKL	**Isikli**	**1.74**	**275**	PN	**Pn**		**05 58 02.7**	**-0.1**
HWQ	**Hawqa**	**1.81**	**177**	*i* PG	**Pn**		**05 58 03.5**	**-0.3**
	baz=33,slow=4.1							
HWQ				*i* SG	**Sn**		**05 58 27.0**	**-0.5**
GZT	**Gaziantep**	**1.88**	**47**	*i* P	**Pn**		**05 58 06.4**	**+1.6**
GZT				*i* S	**Sn**		**05 58 31.2**	**+2.0**
BHL	**Bhannes**	**2.19**	**184**	*i* SG	**Sg**		**05 58 42.3**	**-2.0**
ELZG	**Elazig**	**3.48**	**45**	*i* P	**Pn**		**05 58 26.2**	**-1.4**
ELZG				*i* S	**Sg**		**05 59 20.8**	**-6.5**

IDC 05 06:05:02.8±3.0,3.80S×131.90E,mb3.8/2,mb1 3.9/4, mb1mx3.8/12,ML3.7/2,Error ellipse: s-maj=251.0km s-min=28.2km az=69.0,Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**16.22**	**172**	Pn	**P**		06 08 48.0	-5.8
	0.3nm,0.3s,baz=353,slow=14,SNR=7.7							
WRA				Sn	**S**		06 11 38.0	-16
	0.2nm,0.3s,baz=345,slow=21,SNR=3.8							
AS12	**Alice Springs**	**19.84**	**175**	*eP*	**P**		06 09 35.8	-2.5
	3.3nm,0.8s							
ASAR	**Alice Springs**	**19.84**	**175**	P	**P**		06 09 35.6	-2.7
	0.5nm,0.3s,baz=349,slow=8.9,SNR=22							
STKA	**Stephens Creek**	**29.38**	**163**	P	**P**		06 11 07.7	-2.3
	0.7nm,0.3s,baz=320,slow=7.9,SNR=3.1							
MKAR	**Makanchi Array**	**66.65**	**325**	P	**P**		06 15 55.4	-2.1
	0.4nm,0.6s,baz=108,slow=7.7,SNR=4.3							

CASC 05 06:16:53.1±2.0,13.70N×91.39W,h5km±10km,MD3.7, ML3.4,2D,Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
JAT	**Jato**	**0.66**	**339**	⇓*eP*	**Pg**		06 17 05.3	-1.1
JAT				*eS*	Sg		06 17 16.8	+1.6
JAT				AML	AML		06 17 18.1	
	comp=N,2μm,0.2s							
FUG	**Fuego 3**	**0.92**	**35**	*eP*	Pb		06 17 11.4	+0.3
IXG	**Ixpaco**	**1.03**	**62**	*eP*	Pb		06 17 12.4	-0.6
RBDL	**Robledal**	**1.71**	**76**	*eP*	Pn		06 17 23.8	0.0
RBDL				*eS*	Sn		06 17 48.5	+2.3
RTR	**El Retiro**	**1.71**	**83**	*eP*	Pn		06 17 24.8	+1.0
RTR				*eS*	Sn		06 17 46.6	+0.4
SBLS	**San Blas**	**1.73**	**85**	*eP*	Pn		06 17 22.9	-1.1
SBLS				*eS*	Sn		06 17 46.9	+0.2
SNJE	**San Jose**	**1.74**	**84**	*eP*	Pn		06 17 24.1	-0.2
SNJE				*eS*	Sn		06 17 47.2	+0.1
LFU	**La Fuente**	**2.21**	**88**	*eP*	Pn		06 17 30.3	-0.7
LFU				*eS*	Sn		06 18 00.1	+1.0
LFRS	**El Faro**	**2.27**	**92**	*eP*	Pn		06 17 29.9	-1.9
LFRS				*eS*	Sn		06 18 00.5	+0.1
LCBS	**La Ceiba**	**2.35**	**91**	⇓*eP*	Pn		06 17 31.7	-1.2
LCBS				*eS*	Sn		06 18 02.9	+0.4
SNVI	**San Vicente**	**2.48**	**92**	*eS*	Sn		06 18 05.7	-0.3

*IDC **05** 06:52:14.0±2.0, 17.86S×69.57W,h134km±17km,mb3.1/2, mb1 3.3/4,mb1mx3.1/16,Error ellipse: s-maj=41.1km s-min=10.4km az=102.0*
ISC 05 06:52:14.3±1.9,17.90S±0.09×69.5W±0.3,h147km±15km, n4,σ1§51/6,mb3.0/1,Peru-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
LPAZ	**La Paz**	**2.08**	**40**	P	**P**		**06 52 51.3**	**+0.8**
	8.1nm,0.3s,baz=236,slow=7.3,SNR=105							
LPAZ				S	**S**		**06 53 17.5**	**-0.8**
	4.0nm,0.3s,baz=302,slow=25,SNR=21							
LVC	**Limon Verde**	**4.73**	**173**	P	**P**		**06 53 26.2**	**+1.3**
	3.1nm,0.3s,baz=5.9,slow=7.8,SNR=26							
LVC				S	**S**		**06 54 18.3**	**-1.0**
	13nm,0.3s,baz=103,slow=19,SNR=22							
BDFB	**Brasilia**	**20.71**	**87**	P	**P**		**06 56 44.9**	**+0.4**
	0.9nm,0.3s,baz=259,slow=7.6,SNR=5.2							
YKA	**Yellowknife Ar**	**87.61**	**341**	P	**P**		**07 04 45.9**	**-0.7**
	0.1nm,0.4s,mb3.0,baz=135,slow=4.8,SNR=6.3							

*IDC **05** 06:57:33.4±6.7,6.03S×151.61E,h56km±56km,mb3.4/4, mb1 3.7/5,mb1mx3.5/13,ML2.8/1,Error ellipse: s-maj=121.0km s-min=35.1km az=129.0*
ISC 05 06:57:35.2±4.7,5.6S±0.7×150.9E±0.8,h69km±40km,n5, σ1§85/6,mb3.4/4,New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**5.25**	**224**	P	**P**		**06 58 53.8**	**+0.9**
	1.9nm,0.3s,baz=34,slow=3.6,SNR=4.2							
PMG				S	**S**		**06 59 51.3**	**-1.4**
	2.3nm,0.3s,baz=107,slow=19,SNR=5.2							
WRA	**Warramunga Arr**	**21.46**	**227**	P	**P**		**07 02 19.2**	**-0.6**
	2.4nm,1.1s,mb3.4,baz=56,slow=11,SNR=5.0							
ASAR	**Alice Springs**	**24.25**	**221**	P	**P**		**07 02 48.0**	**+1.0**
	2.1nm,1.0s,mb3.4,baz=58,slow=8.8,SNR=8.6							
FITZ	**Fitzroy Crossi**	**27.57**	**241**	P	**P**		**07 03 19.2**	**+1.1**
	1.2nm,0.7s,mb3.6,baz=84,slow=10,SNR=4.1							
ILAR	**Eielson Array**	**83.65**	**22**	P	**P**		**07 09 56.0**	**-1.2**
	0.3nm,0.6s,mb3.3,baz=267,slow=4.6,SNR=5.0							

*NEIC **05** 07:02:48.4,35.16N×3.96W,MG3.5(MDD),After MDD.*
MDD 05 07:02:47.7±1.9,35.26N×4.06W,mb3.5/3,Error ellipse: s-maj=15.3km s-min=4.5km az=31.0,AftershockPLICA

PRXIMO,Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
EMEL	**Melilla**	**0.90**	**87**	P	**P**	Pg	07 03 03.5	-2.2
	121nm,0.1s,SNR=4.0							
EMEL				S	**S**	Sg	07 03 15.7	-2.1
	159nm,0.1s,SNR=7.9							
MELI	**Melilla**	**0.92**	**87**	P	**P**	Pg	07 03 04.3	-1.7
MELI				S	**S**	Sg	07 03 17.2	-1.2
EBER	**Berja**	**1.89**	**30**	P	**P**	Pn	07 03 19.9	-1.6
	1.8nm,0.1s,SNR=7.9							
EBER				S	**S**	Sn	07 03 45.1	-1.3
	8.8nm,0.3s,SNR=7.9							
EBER	**Berja**	**1.89**	**30**	P	**P**	Pn	07 03 19.9	-1.6
EBER				S	**S**	Sn	07 03 45.0	-1.4
ECOG	**Cogollos-Vega**	**2.06**	**11**	P	**P**	Pn	07 03 25.8	+2.0
EQES	**Quesada**	**2.66**	**17**	P	**P**	Pn	07 03 33.7	+1.1
	2.3nm,0.2s,SNR=5.0							
EQES				S	**S**	Sn	07 04 05.8	-0.2
	9.5nm,0.4s,SNR=7.9							
EADA	**Adamuz**	**2.93**	**352**	P	**P**	Pn	07 03 37.2	+0.8
	0.6nm,0.2s,SNR=7.9							
EADA				S	**S**	Sn	07 04 12.8	-0.1
	1.0nm,0.2s,SNR=7.9							
EADA	**Adamuz**	**2.93**	**352**	P	**P**	Pn	07 03 37.4	+1.0
EADA				S	**S**	Sn	07 04 12.8	-0.1
EMIN	**Mina Concepcio**	**3.27**	**321**	P	**P**	Pn	07 03 41.0	-0.2
	0.5nm,0.2s,SNR=7.9							
EMIN				S	**S**	Sn	07 04 19.4	-2.0
	0.4nm,0.2s,SNR=7.9							
EMIN	**Mina Concepcio**	**3.27**	**321**	P	**P**	Pn	07 03 40.9	-0.3
EMIN				S	**S**	Sn	07 04 19.3	-2.1
ETOB	**Tobarra**	**3.93**	**30**	P	**P**	Pn	07 03 50.9	+0.3
	1.5nm,0.3s,SNR=5.0							
ETOB	**Tobarra**	**3.93**	**30**	P	**P**	Pn	07 03 50.4	-0.2

*IDC **05** 07:53:51.1±1.7,10.69S×165.59E,mb4.1/8,mb1 4.3/8, mb1mx4.1/15,MS3.6/4,Ms1 3.6/4,ms1mx3.2/22,Error ellipse: s-maj=82.5km s-min=21.4km az=137.0*
*NEIC **05** 07:53:54.8±4.8,11.2S±0.2×165.8E±0.1,h48km±42km,n19, σ0§88/19,mb4.3/11,MS3.5/4,Santa Cruz Islands*
ISC 05 07:53:54.8±4.8,11.2S±0.2×165.8E±0.1,h48km±42km,n19, σ0§88/19,mb4.3/11,MS3.5/4,Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**10.87**	**177**	*eP*	**P**		**07 56 30.1**	**-0.6**
DZM				*eS*	**S**		**07 58 16.0**	**-16**
NOUC	**Port Laguerre**	**10.90**	**178**	*eP*	**P**		**07 56 31.4**	**+0.4**
CTA	**Charters Tower**	**20.82**	**242**	P	**P**		**07 58 36.0**	**+1.2**
	3.5nm,0.6s,baz=57,slow=11,SNR=6.2							
CTA				LR	LR		08 05 26.5	
	comp=Z,127nm,21.8s,MS3.2,baz=237,slow=33							
CTAO	**Charters Tower**	**20.82**	**242**	*eP*	**P**		**07 58 35.8**	**+0.9**
	12nm,1.0s							
STKA	**Stephens Creek**	**30.42**	**224**	P	**P**		**08 00 06.0**	**+0.9**
	2.0nm,0.7s,mb4.0,baz=356,slow=9.3,SNR=3.6							
WRAB	**Tennant Creek**	**31.51**	**250**	*eP*	**P**		**08 00 14.0**	**-0.9**
	22nm,0.9s,mb5.0							
WB2	**Warramunga Arr**	**31.52**	**250**	*eP*	**P**		**08 00 14.8**	**0.0**
WRA	**Warramunga Arr**	**31.53**	**250**	P	**P**		**08 00 14.4**	**-0.6**
	5.3nm,0.7s,mb4.5,baz=82,slow=9.1,SNR=40							
RPZ	**Rata Peaks**	**32.76**	**173**

2.9nm,0.8s,baz=94,slow=6.9,SNR=5.5
ILAR Eielson Array 70.98 25 P P 08 22 32.9 -2.4
0.1nm,0.5s,baz=248,slow=5.4,SNR=4.6
YKA Yellowknife Ar 85.31 27 P P 08 23 53.4 -0.5
0.6nm,0.6s,baz=286,slow=5.0,SNR=19

BER ***05*** *08:21:00.5±3.2,59.35N×27.18E,ML2.1(NAO), Suspected explosion*
NAO ***05*** *08:21:01.4±2.8,59.42N×26.99E,ML2.1*
HEL 05 08:20:59.5±0.2, 59.29N×27.14E, ML1.6, ML2.1(NAO), **Explosion, Baltic States - Belarus - Northwestern Russia**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
VJF	**Virojoki**	**1.27**	**9**	*e*P	Pb	08 21 22.1	-2.0
VJF				*e*S	Sb	08 21 38.8	-2.0
PVF	**Pernaja**	**1.42**	**333**	*e*P	Pb	08 21 24.8	-1.8
PVF				*e*S	Sb	08 21 42.9	-2.2
MEF	**Metsahovi**	**1.67**	**305**	*e*P	Pn	08 21 29.4	-0.9
MEF				*e*S	Sb	08 21 50.6	-1.9
FIA0	**FINESS Array S**	**2.23**	**347**	*e*P	Pn	08 21 37.3	-0.9
FIA0				*e*S	Sn	08 22 05.8	-1.0
FIA0				MSG		08 22 09.7	
	comp=Z,2.8nm,0.2s						
FIA0	**FINESS Array S**	**2.23**	**347**	Pn	Pn	08 21 37.2	-0.9
	baz=164,slow=18						
FIA0				Lg		08 22 07.3	
	baz=170,slow=28						
FIA0				Rg		08 22 22.1	
	baz=167,slow=37						
KAF	**Kangasniemi**	**2.86**	**352**	*e*SG	Sg	08 22 27.7	-7.2
KAF				MSG		08 22 28.2	
	comp=Z,1.6nm,0.3s						
JOF	**Joensuu**	**4.17**	**27**	*e*SG	Sg	08 23 07.8	-10
JOF				MSG		08 23 10.1	
	comp=Z,1.3nm,0.3s						
HFS	**Hagfors**	**6.86**	**283**	*e*P	Pn	08 22 40.7	-3.1
HFS				*e*S	Sn	08 23 56.4	-7.1
HFS				*e*SG	Sg	08 24 31.0	-17
HFS	**Hagfors**	**6.86**	**283**	Pn	Pn	08 22 40.7	-3.1
HFS				Sn	Sn	08 23 56.4	-7.1
	baz=103,slow=28						
HFS				Lg		08 24 31.0	
	baz=98,slow=37						
ARA0	**ARCESS Array S**	**10.31**	**357**	Pn	P	08 23 25.9	-5.7
	baz=161,slow=14						
ARA0				Sn	S	08 25 17.2	-12
	baz=182,slow=28						
ARA0				Lg		08 26 15.2	
	baz=180,slow=37						
ARA0	**ARCESS Array S**	**10.31**	**357**	*e*P	P	08 23 25.9	-5.7
ARA0				*e*S	S	08 25 17.2	-12
ARA0				*e*SG	S	08 26 15.2	+46

BJI ***05*** *08:41:59.8,0.57S×124.18E,h238km,mB4.9,mb4.5*
IDC ***05*** *08:42:05.8±2.6,0.45N×123.85E,h214km±26km,mb4.0/11, mb1 4.1/12,mb1mx4.0/18,MS3.3/1,Ms1 3.3/1, ms1mx2.8/19,Error ellipse: s-maj=24.4km s-min=9.9km az=71.0*
NEIC ***05*** *08:42:07.9±2.9,0.43N×123.94E,h238km±31km,mb4.5/13, Error ellipse: s-maj=21.2km s-min=8.0km az=73.0*
ISC 05 08:42:05.2±2.8, 0.44N±0.07×123.9E±0.1, h226km±29km, n38, σ0§97/37, mb4.4/22, 2C-4D, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TGY	**Tagaytay City**	**13.89**	**348**	LR	LR	08 51 43.2	
	comp=Z,116nm,18.4s,baz=124,slow=42						
KAKA	**Kakadu**	**15.54**	**147**	⇑ *i*P		**P**	**08 45 33.2**	**-1.1**
	59nm,0.6s						
FITZ	**Fitzroy Crossi**	**18.50**	**175**	⇓ *i*P		**P**	**08 46 05.8**	**-1.1**
	20nm,0.7s						
FITZ	**Fitzroy Crossi**	**18.50**	**175**	P		**P**	**08 46 05.9**	**-1.0**
	3.3nm,0.3s,baz=9.1,slow=8.2,SNR=201						
WRAB	**Tennant Creek**	**22.69**	**154**	*e*P		**P**	**08 46 49.2**	**+0.6**
	89nm,0.7s,mb5.4						
WRA	**Warramunga Arr**	**22.69**	**154**	P		**P**	**08 46 49.1**	**+0.5**
	26nm,0.4s,mb5.1,baz=337,slow=10,SNR=296						
WB2	**Warramunga Arr**	**22.70**	**154**	⇓ *i*P		**P**	**08 46 48.8**	**+0.1**
AS12	**Alice Springs**	**25.86**	**159**	⇑ *i*P		**P**	**08 47 18.5**	**+0.4**
	6.5nm,0.5s,mb4.5						
ASAR	**Alice Springs**	**25.86**	**159**	P		**P**	**08 47 18.4**	**+0.3**
	5.2nm,0.6s,mb4.3,baz=338,slow=8.1,SNR=52						
ASAR				ScP		08 54 01.6	
	1.1nm,0.9s,baz=341,slow=2.8,SNR=6.7						
CMAR	**Chiang Mai Arr**	**30.35**	**308**	P		**P**	**08 47 59.2**	**+0.9**
	1.6nm,0.7s,mb3.8,baz=135,slow=7.7,SNR=4.7						
FORT	**Forrest**	**31.30**	**173**	⇓ *i*P		**P**	**08 48 06.0**	**-0.4**
	79nm,0.5s						
CBIJ	**Chichi jima**	**31.80**	**32**	P		**P**	**08 48 10.7**	**-0.2**
	68nm,0.4s,mb5.5,baz=312,slow=22,SNR=16						
ENH	**Enshi**	**32.68**	**337**	*e*P		**P**	**08 48 18.8**	**+0.4**
	12nm,1.0s,mb4.4						
STKA	**Stephens Creek**	**36.25**	**154**	⇓ *i*P		**P**	**08 48 49.2**	**+0.6**
	5.0nm,0.4s,mb4.4						
STKA	**Stephens Creek**	**36.25**	**154**	P		**P**	**08 48 49.2**	**+0.7**
	6.7nm,0.5s,mb4.4,baz=327,slow=9.9,SNR=50						
MAJO	**Matsushiro**	**38.30**	**19**	*e*P		**P**	**08 49 04.9**	**-0.8**
	7.7nm,0.8s,mb4.3						
BJT	**Baijiatuan**	**40.02**	**351**	*e*P		**P**	**08 49 21.5**	**+1.7**
	9.0nm,0.6s,mb4.4						
MDJ	**Mudanjiang**	**44.28**	**6**	P		**P**	**08 49 56.1**	**+1.9**
MDJ				AMB	AMB		
	comp=Z,11nm,0.7s,mb4.3						
MDJ				AMB	AMB		
	comp=Z,115nm,5.0s						
MDJ	**Mudanjiang**	**44.28**	**6**	P		**P**	**08 49 55.5**	**+1.2**
	comp=Z,11nm,0.8s,mb4.2						
GTA	**Gaotai**	**44.60**	**333**	P		**P**	**08 49 58.8**	**+2.0**
GTA				AMB	AMB		
	comp=Z,14nm,0.8s,mb4.3						
ASAJ	**Asahikawa**	**46.57**	**19**	P		**P**	**08 50 12.8**	**+0.6**
	comp=Z,7.6nm,0.9s,mb4.0,baz=225,slow=19,SNR=4.4						
HIA	**Hailar**	**48.77**	**356**	*e*P		**P**	**08 50 28.6**	**-0.5**
	comp=Z,9.4nm,0.9s,mb4.1						
ULN	**Ulaanbaatar**	**49.45**	**345**	*e*P		**P**	**08 50 34.1**	**-0.2**
	comp=Z,3.7nm,0.6s,mb3.9						
ULN				*e*PcP	PcP	08 51 43.1	-10
SONM	**Songino Array**	**49.60**	**345**	P	P	**08 50 35.2**	**-0.2**
	comp=Z,4.7nm,0.7s,mb3.9,baz=161,slow=8.0,SNR=32						
WMQ	**Urumqi**	**53.89**	**328**	*e*P		**P**	**08 51 08.1**	**+0.8**
MKAR	**Makanchi Array**	**58.72**	**328**	P		**P**	**08 51 40.7**	**-0.7**
	comp=Z,9.4nm,0.5s,mb4.7,baz=127,slow=8.3,SNR=51						
MKAR				PcP	PcP	08 52 28.3	-0.3
	comp=Z,1.5nm,0.5s,baz=153,slow=2.6,SNR=5.3						
MKAR	**Makanchi Array**	**58.72**	**328**	P		**P**	**08 51 40.7**	**-0.7**
MKAR				PcP	PcP	08 52 28.3	-0.3
YAK	**Yakutsk**	**61.59**	**3**	P		**P**	**08 51 58.2**	**-2.4**
	comp=Z,36nm,0.6s,mb5.2						
MA2	**Magadan**	**62.58**	**15**	*e*P		**P**	**08 52 08.3**	**+1.1**
	comp=Z,11nm,0.6s,mb4.7						
KURK	**Kurchatov**	**63.05**	**330**	*e*P		**P**	**08 52 09.3**	**-1.1**
BVAR	**Borovoye Array**	**68.57**	**329**	P		**P**	**08 52 44.5**	**-0.9**
	comp=Z,2.6nm,0.6s,mb4.1,baz=138,slow=9.3,SNR=16						
BRVK	**Borovoye**	**68.65**	**329**	*e*P		**P**	**08 52 44.9**	**-0.9**
ZRNK	**Zerenda**	**69.26**	**328**	*e*P		**P**	**08 52 48.4**	**-1.1**
TIXI	**Tiksi**	**71.17**	**2**	*e*P		**P**	**08 52 59.9**	**-0.9**
	comp=Z,8.3nm,0.9s,mb4.4						
ILAR	**Eielson Array**	**89.28**	**25**	P		**P**	**08 54 36.5**	**0.0**
	comp=Z,0.2nm,0.5s,baz=262,slow=3.8,SNR=4.6						
QSPA	**South Pole Qui**	**90.37**	**180**	*e*P		**P**	**08 54 43.2**	**+1.9**
ARCES	**ARCESS Array B**	**92.53**	**340**	P		**P**	**08 54 51.1**	**-0.4**
	comp=Z,2.2nm,1.1s,mb4.1,baz=76,slow=5.0,SNR=5.5						
FINES	**FINESS Array B**	**93.36**	**332**	P		**P**	**08 54 55.1**	**-0.4**
	comp=Z,1.7nm,0.8s,mb4.1,baz=96,slow=4.8,SNR=3.4						

IDC 05 08:57:43.1±6.8, 32.66S×57.16E, mb3.4/2, mb1 3.7/2, mb1mx3.5/17, Error ellipse: s-maj=488.0km s-min=46.3km az=31.0, Southwest Indian Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ASAR	**Alice Springs**	**66.94**	**104**	P	P	09 08 37.8	-2.0
	0.4nm,0.7s,baz=238,slow=6.2,SNR=6.4						
WRA	**Warramunga Arr**	**69.01**	**101**	P	P	09 08 51.0	-1.8
	0.3nm,0.8s,baz=239,slow=5.5,SNR=7.0						
ILAR	**Eielson Array**	**144.63**	**18**	PKP	PKPdf	09 17 19.8	-2.9
	0.4nm,0.6s,baz=304,slow=3.3,SNR=6.0						
YKA	**Yellowknife Ar**	**149.69**	**352**	PKPbc	PKPdf	09 17 33.7	+2.6
	0.8nm,0.9s,baz=13,slow=2.2,SNR=16						

JMA ***05*** *09:05:10.3±0.5,23.23N×121.68E,h107km*
TAP 05 09:05:06.8, 23.20N×121.35E, h22km, ML3.3, Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
YOJ	**Yonaguni jima**	**1.97**	**50**	P	Pn	09 05 40.3	+0.8
YOJ				*e*S	Sn	09 06 02.1	-1.7
HATJ	**Hateruma jima**	**2.41**	**69**	*e*S	Sn	09 06 11.2	-3.7
IRIF	**Iriomote-Funau**	**2.46**	**62**	P	Pn	09 05 45.7	-0.8
IRIF				*e*S	Sn	09 06 13.6	-2.5
JKRS	**Kuro-shima**	**2.65**	**67**	P	Pn	09 05 48.8	-0.4
JKRS				S	Sn	09 06 18.1	-2.9
JIJ	**Ishigaki jima**	**2.81**	**65**	P	Pn	09 05 50.0	-1.5
JIJ				S	Sn	09 06 20.4	-4.6
JTJ	**Tarama**	**3.39**	**64**	P	Pn	09 05 58.1	-1.6
JTJ				*e*S	Sn	09 06 36.9	-2.8

NDI ***05*** *09:07:00.7±2.1,26.92N×91.54E,h21km±21km,MD3.0*
IDC ***05*** *09:07:02.6±4.3,27.10N×92.97E,mb3.5/3,mb1 3.7/3, mb1mx3.3/19,Error ellipse: s-maj=363.0km s-min=28.2km az=61.0*
ISC 05 09:07:06.8±2.0, 26.7N±0.2×92.1E±0.2, h62km±22km, n7, σ0§29/8, mb3.5/3, Northeastern India

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SHL	**Shillong**	**1.17**	**188**	*i* P	**P**	**09 07 27.0**	**-0.4**
SHL				*e*S	**S**	**09 07 43.0**	**+0.2**
IMP	**Imphal**	**2.56**	**139**	*e*P	**P**	**09 07 47.0**	**+0.1**
AGT	**Agartala**	**2.93**	**195**	*e*SG	**S**	**09 08 32.0**	**+5.8**
GTK	**Gangtok**	**3.14**	**282**	*e*P	**P**	**09 07 42.0**	**-13**
MKAR	**Makanchi Array**	**21.47**	**341**	P	**P**	**09 11 51.9**	**+0.1**
	1.5nm,0.6s,mb3.5,baz=151,slow=11,SNR=14						
WRA	**Warramunga Arr**	**61.90**	**134**	P	**P**	**09 17 22.4**	**0.0**
	0.2nm,0.8s,mb3.3,baz=326,slow=6.8,SNR=9.2						
ASAR	**Alice Springs**	**64.38**	**137**	P	**P**	**09 17 38.6**	**-0.1**
	0.6nm,0.7s,mb3.8,baz=317,slow=6.3,SNR=12						

NEIC ***05*** *09:12:54.6±0.8,50.08N×18.42E,h5km,MG2.1(WAR), Error ellipse: s-maj=12.2km s-min=7.7km az=169.0*
WAR ***05*** *09:12:54.9,50.06N×18.42E,h1km,Location given by Central Institute of Mining, origin time based upon RAC*
PRU ***05*** *09:12:56.3,50.08N×18.33E*
ISC 05 09:12:53.8±0.5, 50.09N±0.03×18.39E±0.03, n15, σ1§10/29, Poland

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAC	**Raciborz**	**0.13**	**269**	*e*Pg	**Pg**	**09 12 58.5**	**+2.2**
RAC				*e*Sg	**Sg**	**09 13 01.5**	**+3.5**
OKC	**Ostrava-Krasne**	**0.29**	**212**	*e*PG	**Pg**	**09 13 00.7**	**+1.0**
OKC				*e*SG	**Sg**	**09 13 05.3**	**+1.7**
MORC	**Moravsky Berou**	**0.63**	**241**	*e*Pg	**Pg**	**09 13 06.4**	**0.0**
MORC				*e*Sg	**Sg**	**09 13 14.0**	**-0.8**
OJC	**Ojcow**	**0.92**	**81**	*e*Pg	**Pg**	**09 13 11.7**	**-0.4**
OJC				*e*Sg	**Sg**	**09 13 25.3**	**+1.0**
OJC	**Ojcow**	**0.92**	**81**	*e*PG	**Pg**	**09 13 12.0**	**-0.1**
OJC				*e*SG	**Sg**	**09 13 25.0**	**+0.7**
LIKS	**Likavka**	**1.14**	**156**	*e*PG	**Pg**	**09 13 17.0**	**+0.5**
DPC	**Dobruska-Polom**	**1.35**	**282**	*e*PG	**Pg**	**09 13 20.3**	**-0.6**
DPC				*e*SG	**Sg**	**09 13 38.7**	**-0.2**
NIE	**Niedzica**	**1.41**	**117**	*e*Pg	**Pg**	**09 13 21.0**	**-1.0**
NIE				*e*Sg	**Sg**	**09 13 40.4**	**-0.5**
KOLL	**Kolacno**	**1.51**	**180**	*e*PN	**Pn**	**09 13 23.3**	**+1.1**
KOLL				*e*PG	**Pg**	**09 13 24.1**	**+0.2**
KOLL				*e*SG	**Sg**	**09 13 43.6**	**-0.4**
KSP	**Ksiaz**	**1.54**	**300**	*e*PG	**Pg**	**09 13 24.0**	**-0.6**
KSP				*e*SG	**Sg**	**09 13 46.0**	**+0.9**
UPC	**Upice**	**1.58**	**286**	*e*PG	**Pg**	**09 13 24.2**	**-1.2**
UPC				*e*SG	**Sg**	**09 13 46.2**	**-0.3**
VYHS	**Vyhne**	**1.62**	**169**	*e*PN	**Pn**	**09 13 23.8**	**0.0**
VYHS				*e*PG	**Pg**	**09 13 26.0**	**-0.1**
VYHS				*e*SG	**Sg**	**09 13 46.2**	**-1.5**
CRVS	**Cervenica-Dubn**	**2.33**	**119**	*e*PG	**Pg**	**09 13 38.8**	**-1.4**
CRVS				*e*SB	**Sb**	**09 14 08.7**	**+3.0**
PRU	**Pruhonice**	**2.48**	**269**	*e*SG	**Sg**	**09 14 13.2**	**-3.3**
KHC	**Kasperske Hory**	**3.27**	**255**	*e*SG	**Sg**	**09 14 38.3**	**-4.5**

MOS 05 09:14:34.9±2.6, 42.61N×46.08E, h10km, mb3.7/1, 1C, Error ellipse: s-maj=53.7km s-min=38.1km az=162.2, Eastern Caucasus

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
XNZR	**Khunzakh**	**0.47**	**98**	⇑ *i*PG	Pg	09 14 46.0	+1.6
XNZR				*e*S	Sg	09 14 55.5	+4.8
XNZR				pmax	pmax		
	comp=Z,101nm,0.5s						
KRNR	**Karanay**	**0.65**	**70**	*e*PG	Pg	09 14 49.3	+1.4
KRNR				*e*S	Sb	09 14 58.3	+1.7
KRNR				pmax	pmax		
	comp=Z,53nm,0.2s						
DBC	**Dubki**	**0.69**	**53**	*i* PG	Pg	09 14 50.5	+1.8
DBC				*i* S	Sb	09 15 01.5	+3.7
GOF	**Gofitskoye**	**3.29**	**319**	*e*PN	Pn	09 15 33.0	+5.4

IDC ***05*** *09:32:43.2±1.4,4.60S×102.19E,h48km±7km,mb4.0/12, mb1 4.1/12,mb1mx3.9/18,MS3.2/1,Ms1 3.2/1, ms1mx2.8/28,Error ellipse: s-maj=53.6km s-min=11.8km az=52.0*
NEIC ***05*** *09:32:44.3±3.2,4.50S×102.30E,h59km±26km,mb4.7/5, Error ellipse: s-maj=32.6km s-min=6.2km az=54.0*
ISC 05 09:32:41.2±1.0, 4.6S±0.2×102.2E±0.2, h49km, h49km±.9km: pP-P, n28, σ0§77/22, mb4.3/16, MS3.1/1, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CM31	**Chiang Mai Arr**	**23.11**	**352**	P	**P**	**09 37 44.5**	**+0.6**
	12nm,1.0s,mb4.3						
CMAR	**Chiang Mai Arr**	**23.11**	**352**	P	**P**	**09 37 45.1**	**+1.3**
	4.1nm,0.8s,mb3.9,baz=186,slow=9.0,SNR=21						
FITZ	**Fitzroy Crossi**	**26.55**	**122**	P	**P**	**09 38 16.3**	**-0.4**
	1.6nm,0.5s,mb3.8,baz=11,slow=2.9,SNR=7.6						
FITZ				LR	LR	09 48 30.2	
	comp=Z,53nm,20.1s,MS3.1,baz=347,slow=36						
WRA	**Warramunga Arr**	**34.80**	**119**	P	**P**	**09 39 29.4**	**-0.1**
	0.7nm,0.3s,mb4.1,baz=321,slow=11,SNR=41						
WRA				pP	pP	09 39 41.8	-0.6
	0.6nm,0.5s,baz=309,slow=9.1,SNR=3.7						
WRA				PcP	PcP	09 42 02.5	+0.2
	0.4nm,0.4s,baz=306,slow=1.8,SNR=5.4						
WRAB	**Tennant Creek**	**34.80**	**119**	*e*P	**P**	**09 39 29.4**	**-0.2**
	15nm,1.0s,mb4.9						
ASAR	**Alice Springs**	**35.96**	**125**	P	**P**	**09 39 39.8**	**+0.4**
	0.5nm,0.4s,mb3.8,baz=300,slow=7.8,SNR=10						
ASAR				PcP	PcP	09 42 06.4	+0.8
	0.4nm,0.4s,baz=316,slow=2.3,SNR=4.1						
CTA	**Charters Tower**	**45.51**	**114**	P	**P**	**09 40 58.2**	**+0.1**
	4.7nm,1.0s,mb4.4,baz=296,slow=11,SNR=3.4						
CTA	**Charters Tower**	**45.51**	**114**	P	**P**	**09 40 58.2**	**+0.1**
CTAO	**Charters Tower**	**45.51**	**114**	P	**P**	**09 40 57.9**	**-0.2**
	15nm,1.1s,mb4.8						
STKA	**Stephens Creek**	**45.79**	**131**	P	**P**	**09 41 00.7**	**+0.5**
	1.4nm,0.7s,mb4.0,baz=352,slow=22,SNR=4.4						
SONM	**Songino Array**	**52.31**	**4**	P	**P**	**09 41 50.7**	**+0.6**
	3.6nm,0.7s,mb4.4,baz=182,slow=8.8,SNR=33						
SONM				pP	pP	09 42 04.5	+1.0
	1.8nm,0.7s,baz=182,slow=9.1,SNR=6.7						
SONM				PcP	PcP	09 43 00.8	-0.1
	0.9nm,0.4s,baz=182,slow=3.9,SNR=6.1						
ULN	**Ulaanbaatar**	**52.38**	**4**	*e*P	**P**	**09 41 50.9**	**+0.2**
	2.1nm,0.6s,mb4.2						
MKAR	**Makanchi Array**	**54.10**	**343**	P	**P**	**09 42 03.2**	**-0.2**
	4.7nm,0.5s,mb4.7,baz=151,slow=8.9,SNR=55						
MKAR				pP	pP	09 42 16.9	-0.1
	2.1nm,0.6s,baz=151,slow=8.2,SNR=7.3						
MKAR	**Makanchi Array**	**54.10**	**343**	P	**P**	**09 42 03.2**	**-0.2**
MKAR				pP	pP	09 42 16.9	-0.1
ZAL	**Zalesovo**	**60.09**	**348**	P	**P**	**09 42 44.7**	**-1.1**
	3.3nm,0.6s,mb4.6,baz=216,slow=4.7,SNR=8.4						
ZAL				pP	pP	09 42 58.5	-1.0
	1.7nm,0.4s,baz=245,slow=5.7,SNR=2.4						
ZAL	**Zalesovo**	**60.09**	**348**	P	**P**	**09 42 44.7**	**-1.1**
ZAL				pP	pP	09 42 58.5	-1.0
BVAR	**Borovoye Array**	**63.35**	**339**	P	**P**	**09 43 06.6**	**-1.1**
	2.0nm,0.5s,mb4.5,baz=136,slow=9.8,SNR=12						
ZRNK	**Zerenda**	**63.79**	**338**	*e*P	**P**	**09 43 09.3**	**-1.2**
YAK	**Yakutsk**	**69.67**	**13**	*e*P	**P**	**09 43 46.2**	**-1.3**
	18nm,0.8s,mb5.0						
BRTR	**Keskin Array B**	**76.69**	**312**	P	**P**	**09 44 29.8**	**+0.7**
	1.6nm,0.8s,mb4.0,baz=137,slow=5.7,SNR=5.1						
ARCES	**ARCESS Array B**	**89.63**	**340**	P	**P**	**09 45 35.7**	**+1.1**
	1.5nm,0.8s,mb4.4,baz=90,slow=4.9,SNR=8.4						
ARCES	**ARCESS Array B**	**89.63**	**340**	P	**P**	**09 45 35.7**	**+1.1**
TXAR	**Lajitas Array**	**145.24**	**42**	PKPbc	PKPbc	09 52 16.5	+1.9
	2.5nm,0.4s,baz=307,slow=0.8,SNR=88						
TXAR	**Lajitas Array**	**145.24**	**42**	PKPbc	PKPbc	09 52 16.5	+1.9
SIUC	**Southern Illin**	**145.39**	**16**	*e*PKPdf	PKPdf	09 52 15.6	+1.5
WCI	**Wyandotte Cave**	**145.60**	**12**	*e*PKPdf	PKPdf	09 52 16.1	+1.5
MIAR	**Mount Ida**	**146.76**	**24**	*e*PKPdf	PKPdf	09 52 17.7	+1.1
MIAR				*e*PKPbc	PKPbc	09 52 20.3	+2.2
JCT	**Junction City**	**146.89**	**36**	*e*PKPbc	PKPbc	09 52 20.9	+2.4

IDC 05 09:44:10.0±5.1, 7.02S×155.94E, mb3.9/4, mb1 4.1/4, mb1mx3.9/12, MS3.2/1, Ms1 3.2/1, ms1mx2.6/18, Error ellipse: s-maj=150.0km s-min=31.4km az=110.0, Bougainville - Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CTA	**Charters Tower**	**16.03**	**215**	LR	LR	09 53 21.3	
	comp=Z,80nm,18.2s,baz=225,slow=34						
WRA	**Warramunga Arr**	**24.58**	**236**	P	P	09 49 33.0	-0.1
	4.3nm,1.1s,baz=63,slow=9.5,SNR=9.2						
ASAR	**Alice Springs**	**26.86**	**230**	P	P	09 49 52.1	-2.4
	1.8nm,1.0s,baz=58,slow=9.3,SNR=8.7						
SONM	**Songino Array**	**69.87**	**327**	P	P	09 55 23.3	-1.4
	0.8nm,1.0s,baz=135,slow=4.1,SNR=4.5						
MKAR	**Makanchi Array**	**84.05**	**318**	P	P	09 56 42.2	-1.8
	1.2nm,0.7s,baz=101,slow=6.2,SNR=12						

WEL 05 09:44:26.7±0.5, 38.50S×176.11E, h158km±4km, ML3.7/2, Error ellipse: s-maj=3.9km s-min=3.3km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MGZ	**Maungaku**	**0.67**	**222**	PN	P	09 44 49.7	-0.5
BKZ	**Black Stump Fm**	**0.73**	**156**	PN	P	09 44 50.6	+0.1
BKZ				SN	S	09 45 08.1	-0.7
NGZ	**Ngauruhoe**	**0.79**	**210**	PN	P	09 44 51.4	+0.5
URZ	**Urewera**	**0.82**	**73**	PN	P	09 44 50.6	-0.4
URZ				SN	S	09 45 08.8	-1.0
CNZ	**Chateau**	**0.83**	**212**	PN	P	09 44 51.2	+0.1
TUVZ	**Tukino**	**0.85**	**205**	PN	P	09 44 51.1	-0.2
WNVZ	**Wahianoa**	**0.92**	**206**	PN	P	09 44 51.4	-0.3
KNZ	**Kokohu**	**1.33**	**114**	PN	P	09 44 55.9	+0.5
WAZ	**Wanganui**	**1.53**	**215**	PN	P	09 44 56.5	-1.0
TSZ	**Takapari Road**	**1.56**	**184**	PN	P	09 44 57.4	-0.5
TSZ				SN	S	09 45 20.5	-1.4
PUZ	**Puketiti**	**1.74**	**76**	PN	P	09 44 59.4	-0.3
PUZ				SN	S	09 45 23.8	-1.4
BFZ	**Birch Farm**	**2.18**	**177**	PN	P	09 45 03.9	-0.8
MRZ	**Mangatainoka R**	**2.20**	**191**	PN	P	09 45 03.4	-1.6
MRZ				SN	S	09 45 31.9	-2.5
CAW	**Cannon Point**	**2.73**	**197**	PN	P	09 45 09.0	-2.5
MRW	**Makara Radio**	**2.94**	**201**	PN	P	09 45 11.0	-3.2
MSWZ	**Moikau Station**	**2.99**	**193**	PN	P	09 45 11.8	-3.0
SNZO	**South Karori**	**3.01**	**201**	PN	P	09 45 11.8	-3.3
SNZO				SN	S	09 45 48.0	-4.2
BHW	**Baring Head**	**3.06**	**198**	PN	P	09 45 12.4	-3.3
TUWZ	**Tuamarina**	**3.37**	**209**	PN	P	09 45 16.0	-3.8
NNZ	**Nelson**	**3.44**	**217**	PN	P	09 45 16.4	-4.2
NNZ				SN	S	09 45 57.2	-4.8
QRZ	**Quartz Range**	**3.61**	**229**	PN	P	09 45 17.9	-5.0
THZ	**Tophouse**	**4.08**	**216**	PN	P	09 45 24.3	-4.7
THZ				SN	S	09 46 12.3	-4.7
KHZ	**Kahutara**	**4.38**	**206**	PN	P	09 45 28.2	-4.7
LTZ	**Lake Taylor**	**5.18**	**213**	PN	P	09 45 37.6	-5.8
MQZ	**McQueen's Vall**	**5.82**	**206**	PN	P	09 45 45.9	-6.1

IDC ***05*** *09:49:34.3±10.0,48.43N×153.33E,h486km±125km, mb2.7/8,mb1 2.9/8,mb1mx2.7/23,Error ellipse: s-maj=30.8km s-min=26.9km az=62.0*
ISC 05 09:49:30.0±1.1, 48.4N±0.2×153.3E±0.3, h450km, n8, σ0§62/8, mb3.0/8, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ILAR	**Eielson Array**	**35.19**	**40**	P	**P**	**09 55 45.3**	**+0.1**
	0.3nm,1.0s,mb2.7,baz=263,slow=7.3,SNR=3.0						
YKA	**Yellowknife Ar**	**49.53**	**38**	P	**P**	**09 57 38.9**	**-0.2**
	0.2nm,0.6s,mb2.6,baz=295,slow=6.9,SNR=5.6						
FINES	**FINESS Array B**	**62.57**	**334**	P	**P**	**09 59 09.6**	**-0.3**
	0.7nm,0.7s,mb3.3,baz=

9.9nm,1.0s

*IDC **05** 10:16:23.4±3.2,25.98S×131.07E,mb1 3.6/3, mb1mx3.4/10,ML3.1/3,Error ellipse: s-maj=26.8km s-min=23.5km az=31.0*
*NEIC **05** 10:16:26.0,25.69S×131.05E,h5km,ML3.1(AUST),After AUST.*
*AUST **05** 10:16:26.9,25.69S×131.05E,h5km,ML2.9*
ISC 05 10:16:22.1±1.3,25.97S±0.08×131.17E±0.08,h10km,n8, σ1s26/17,Northern Territory

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
AS12	**Alice Springs**	**3.38**	**48**	*e*PN		**Pn**	**10 17 19.6**	**+3.6**
AS12				*i* PG		**Pg**	**10 17 30.1**	**+0.6**
AS12				*i* SN		**Sn**	**10 18 12.3**	**+16**
ASAR	**Alice Springs**	**3.38**	**48**	Pn		**Pn**	**10 17 19.6**	**+3.6**
	0.2nm,0.3s,baz=229,slow=11,SNR=12							
ASAR				Pg		**Pg**	**10 17 27.4**	**-2.1**
	0.1nm,0.3s,baz=220,slow=14,SNR=4.0							
ASAR				Lg			10 18 12.3	
	2.1nm,0.3s,baz=227,slow=28,SNR=29							
WRA	**Warramunga Arr**	**6.67**	**27**	Pn		**Pn**	**10 18 04.0**	**+1.5**
	0.4nm,0.3s,baz=205,slow=14,SNR=21							
WRA				Sn		**Sn**	**10 19 19.2**	**-0.2**
	0.4nm,0.3s,baz=210,slow=24,SNR=9.2							
WRA				Lg			10 19 57.4	
	0.2nm,0.3s,baz=204,slow=28,SNR=3.2							
WB2	**Warramunga Arr**	**6.67**	**27**	*e*P		**Pn**	**10 18 04.0**	**+1.4**
WB2				*e*S		**Sn**	**10 19 18.2**	**-1.3**
WRAB	**Tennant Creek**	**6.68**	**27**	*e*Pn		**Pn**	**10 18 03.5**	**+0.8**
WRAB				*e*Sn		**Sn**	**10 19 16.2**	**-3.5**
FITZ	**Fitzroy Crossi**	**9.36**	**326**	Pn		**P**	**10 18 38.6**	**-1.4**
	0.1nm,0.3s,baz=150,slow=20,SNR=2.6							
FITZ				Sn		**Sn**	**10 20 26.6**	**+0.2**
	0.1nm,0.3s,baz=352,slow=18,SNR=2.5							
STKA	**Stephens Creek**	**10.86**	**125**	Pn		**P**	**10 19 00.1**	**-0.7**
	0.2nm,0.3s,baz=312,slow=15,SNR=3.0							
STKA				Sn		**S**	**10 20 58.7**	**-4.7**
	0.2nm,0.3s,baz=82,slow=15,SNR=3.0							
STKA	**Stephens Creek**	**10.86**	**125**	Pn		**P**	**10 19 00.1**	**-0.7**
STKA				Sn		**S**	**10 20 58.7**	**-4.7**

*GUC **05** 10:29:25.1±0.7,26.83S×71.04W,h47km±8km,ML4.5*
*NEIC **05** 10:29:25.1,26.83S×71.04W,h47km,After GUC.*
*IDC **05** 10:29:27.3±1.4,26.84S×67.75W,mb4.0/1,mb1 3.8/3, mb1mx3.6/14,ML3.6/2,MS3.4/1,Ms1 3.5/1,ms1mx3.0/16, Error ellipse: s-maj=105.0km s-min=29.7km az=77.0*
ISC 05 10:29:23.0±2.4,26.82S±0.03×71.2W±0.2,h22km±18km, n25,σ1s01/24,2C-6D,Off coast of northern Chile

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
CPCH	**Copiapo**	**0.93**	**126**	⇓*i*P		**Pb**	**10 29 40.4**	**0.0**
CPCH				*i* S		**Sb**	**10 29 52.5**	**+2.0**
CPCH				AMP			10 29 54.9	
	comp=E,43μm,0.1s							
VACH	**Vallenar**	**1.80**	**167**	*e*P		**Pn**	**10 29 53.9**	**+0.7**
VACH				*i* S		**Sn**	**10 30 15.2**	**-0.3**
VACH				AMP			10 30 24.9	
	comp=E,6μm,0.4s							
CPN1	**Cerro Paranal**	**2.30**	**18**	*e*P		**Pn**	**10 30 01.4**	**+1.0**
CPN1				*i* S		**Sn**	**10 30 29.0**	**+0.7**
CPN1				AMP			10 30 44.6	
	comp=E,3μm,0.5s							
ANCH	**Antofagasta**	**3.20**	**13**	*e*P		**Pn**	**10 30 12.7**	**-0.6**
ANCH				*i* S		**Sn**	**10 30 49.4**	**-1.8**
ANCH				AMP			10 31 14.6	
	comp=N,655nm,0.6s							
TLL	**Tololo Astrono**	**3.36**	**174**	*e*P		**Pn**	**10 30 15.9**	**+0.4**
TLL				*i* S		**Sn**	**10 30 54.6**	**-0.5**
TLL				AMP			10 31 21.0	
	comp=N,992nm,0.6s							
LVC	**Limon Verde**	**4.67**	**27**	*e*P		**Pn**	**10 30 35.1**	**+0.9**
LVC	**Limon Verde**	**4.67**	**27**	Pn		**Pn**	**10 30 35.8**	**+1.6**
	comp=N,1.4nm,0.3s,baz=214,slow=12,SNR=17							
LVC				Pg		**Pn**	**10 30 45.6**	**+11**
	comp=N,8.7nm,0.3s,baz=156,slow=14,SNR=31							
LVC				Lg			10 31 54.3	
	comp=N,70nm,0.3s,baz=133,slow=19,SNR=15							
LVC	**Limon Verde**	**4.67**	**27**	Pn		**Pn**	**10 30 35.8**	**+1.6**
LVC				Pg		**Pn**	**10 30 45.6**	**+11**
LVC				Lg			10 31 54.3	
FCH	**Farellones**	**6.54**	**173**	*e*P		**Pn**	**10 30 49.5**	**-11**
CLCH	**Cerro Calan**	**6.58**	**175**	*e*P		**Pn**	**10 31 00.3**	**-0.8**
LPAZ	**La Paz**	**10.86**	**16**	Pn		**P**	**10 31 59.9**	**-0.5**
	comp=N,0.1nm,0.3s,baz=180,slow=6.1,SNR=3.6							
LPAZ				LR		LR	10 36 36.8	
	comp=N,180nm,19.1s,baz=300,slow=41							
LPAZ	**La Paz**	**10.86**	**16**	*e*P		**P**	**10 31 59.7**	**-0.8**
	comp=N,0.6nm,0.5s							
TRQA	**Tornquist**	**13.64**	**148**	*e*P		**P**	**10 32 36.3**	**-1.4**
VNA3	**Neumayer Olymp**	**55.78**	**160**	⇓*i*		**P**	**10 39 06.6**	**+6.3**
VNA3	**Neumayer Olymp**	**55.78**	**160**	⇓*i*		pP	10 39 12.1	+5.0
VNA1	**Neumayer--Stat**	**56.04**	**159**	⇑*i*		**P**	**10 39 06.1**	**+3.9**
VNA1	**Neumayer--Stat**	**56.04**	**159**	⇑*i*		pP	10 39 12.3	+3.3
VNA2	**Neumayer--Watz**	**56.40**	**159**	⇓*i*		**P**	**10 39 06.8**	**+2.1**
VNA2	**Neumayer--Watz**	**56.40**	**159**	⇓*i*		pP	10 39 13.1	+1.5
SNAA	**Sanae**	**58.00**	**160**	⇓*i*		**P**	**10 39 07.7**	**-8.4**
YKA	**Yellowknife Ar**	**95.50**	**341**	P		pP	10 42 58.1	+4.0
	comp=N,0.3nm,0.9s,baz=143,slow=4.8,SNR=5.5							
WRA	**Warramunga Arr**	**127.33**	**211**	PKP		PKPdf	10 48 37.8	+6.6
	comp=N,0.5nm,0.7s,baz=161,slow=1.4,SNR=4.8							
ZAL	**Zalesovo**	**147.63**	**27**	PKPbc		PKPdf	10 49 08.6	+1.7
	comp=N,2.0nm,0.8s,baz=83,slow=3.1,SNR=9.3							
MKAR	**Makanchi Array**	**151.10**	**39**	PKPbc		PKPdf	10 49 17.2	+4.6
	comp=N,2.8nm,0.8s,baz=304,slow=2.1,SNR=22							
SONM	**Songino Array**	**158.93**	**5**	PKP		PKPdf	10 49 23.6	+0.5
	comp=N,0.9nm,1.2s,slow=1.2,SNR=4.4							

*IDC **05** 10:52:11.1±1.1,24.38S×179.80W,h465km±10km, mb4.2/15,mb1 4.4/16,mb1mx4.3/18,Error ellipse: s-maj=15.6km s-min=9.8km az=158.0*
*NEIC **05** 10:52:13.2±0.2,24.35S×179.83W,mb4.6/24,Error ellipse: s-maj=9.1km s-min=5.0km az=153.0*
*SYO **05** 10:52:13.1,24.35S×179.83W,h492km,MB4.6*
*BJI **05** 10:52:13.1,24.30S×179.80W,h492km,mB4.9,mb4.8*
ISC 05 10:52:11.6±1.2,24.43S±0.05×179.84W±0.06, h484km±13km,h481km±7.6km:pP-P,n136,σ1s08/91, mb4.6/36,10C-17D,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
WCZ	**Waipu Caves**	**12.52**	**202**	P		**P**	**10 54 58.8**	**+1.9**
DZM	**Mont Dzumac**	**12.82**	**278**	*e*P		**P**	**10 55 02.7**	**+2.6**
NOUC	**Port Laguerre**	**12.95**	**278**	*e*P		**P**	**10 55 03.4**	**+2.1**
NOUC	**Port Laguerre**	**12.95**	**278**	*e*P		**P**	**10 55 03.4**	**+2.0**
PUZ	**Puketiti**	**13.70**	**186**	P		**P**	**10 55 08.2**	**-0.9**
URZ	**Urewera**	**14.03**	**190**	P		**P**	**10 55 10.0**	**-2.6**
	6.3nm,0.3s,baz=6.4,slow=4.0,SNR=20							
URZ				S		**S**	**10 57 40.6**	**+2.1**
	7.9nm,0.3s,baz=182,slow=19,SNR=17							
URZ	**Urewera**	**14.03**	**190**	P		**P**	**10 55 08.7**	**-3.9**
KNZ	**Kokohu**	**14.70**	**188**	P		**P**	**10 55 22.7**	**+3.3**
KNZ				S		**S**	**10 57 56.0**	**+4.9**
BFZ	**Birch Farm**	**16.53**	**191**	P		**P**	**10 55 36.2**	**-1.6**
SNZO	**South Karori**	**17.44**	**194**	*e*P		**P**	**10 55 45.2**	**-1.6**
	200nm,1.3s							
SNZO				*e*S		**S**	**10 58 35.7**	**-5.0**
THZ	**Tophouse**	**18.31**	**198**	P		**P**	**10 55 53.9**	**-1.4**
THZ				S		**S**	**10 58 55.1**	**-0.9**
LTZ	**Lake Taylor**	**19.43**	**198**	P		**P**	**10 56 04.8**	**-1.3**
RPZ	**Rata Peaks**	**20.64**	**199**	P		**P**	**10 56 16.8**	**-0.7**
	18nm,0.6s,baz=40,slow=8.9,SNR=6.2							
CTA	**Charters Tower**	**31.63**	**271**	⇓*i*P		**P**	**10 57 56.0**	**+0.7**
	198nm,0.5s							
CTA	**Charters Tower**	**31.63**	**271**	P		**P**	**10 57 56.1**	**+0.9**
	211nm,0.5s,baz=96,slow=10,SNR=269							
CTAO	**Charters Tower**	**31.63**	**271**	*e*P		**P**	**10 57 55.8**	**+0.5**
	339nm,0.7s							
TOO	**Toolangi**	**32.29**	**238**	⇓*i*P		**P**	**10 58 01.5**	**+0.8**
	14nm,0.7s,mb4.5							
STKA	**Stephens Creek**	**34.66**	**249**	⇓*i*P		**P**	**10 58 21.5**	**+0.8**
	27nm,0.4s,mb5.0							
STKA	**Stephens Creek**	**34.66**	**249**	P		**P**	**10 58 21.6**	**+0.9**
	39nm,0.5s,mb5.1,baz=94,slow=10,SNR=118							
STKA				PcP		PcP	11 00 42.7	+0.5
	7.6nm,0.7s,baz=90,slow=3.0,SNR=3.8							
STKA				ScP			11 03 43.5	
	3.6nm,0.9s,baz=152,slow=5.0,SNR=2.9							
PMG	**Port Moresby**	**34.81**	**290**	P		**P**	**10 58 22.4**	**+0.4**
	109nm,0.7s,mb5.4,baz=103,slow=5.4,SNR=34							
PMG	**Port Moresby**	**34.81**	**290**	*e*P		**P**	**10 58 22.2**	**+0.2**
WAU	**Wau**	**36.23**	**292**	*e*P		**P**	**10 58 34.3**	**+0.4**
AS12	**Alice Springs**	**42.09**	**261**	⇓*i*P		**P**	**10 59 21.5**	**0.0**
	44nm,1.2s,mb4.8							
AS12				*i* PCP		PcP	11 01 05.5	-0.3
AS12				*i* SCP			11 04 12.6	
ASAR	**Alice Springs**	**42.09**	**261**	P		**P**	**10 59 21.6**	**+0.1**
	16nm,0.5s,mb4.7,baz=102,slow=7.8,SNR=156							
ASAR				PcP		PcP	11 01 05.7	-0.2
	5.1nm,0.6s,baz=110,slow=4.5,SNR=6.9							
ASAR				ScP			11 04 12.9	
	3.8nm,0.9s,baz=116,slow=4.2,SNR=12							
ASAR				S		**S**	**11 05 08.3**	**+2.4**
	1.9nm,1.0s,baz=104,slow=15,SNR=4.9							
WB2	**Warramunga Arr**	**42.51**	**267**	⇓*i*P		**P**	**10 59 24.3**	**-0.5**
WB2				*i* PCP		PcP	11 01 07.1	-0.2
WB2				*i* SCP			11 04 15.2	
WB2				*i* S		**S**	**11 05 11.0**	**-0.9**
WRAB	**Tennant Creek**	**42.51**	**267**	*e*P		**P**	**10 59 23.8**	**-1.0**
	101nm,0.6s,mb5.4							
WRAB				*e*PcP		PcP	11 01 06.9	-0.4
WRAB				*e*PP		PP	11 01 14.4	+1.8
WRAB				*e*ScP			11 04 15.0	
WRA	**Warramunga Arr**	**42.52**	**267**	P		**P**	**10 59 24.5**	**-0.5**
	31nm,0.4s,mb5.1,baz=99,slow=8.2,SNR=395							
WRA				PcP		PcP	11 01 06.0	-1.3
	8.3nm,0.8s,baz=100,slow=3.3,SNR=7.1							
WRA				ScP			11 04 15.2	
	14nm,0.9s,baz=102,slow=4.1,SNR=25							
WRA				S		**S**	**11 05 09.7**	**-2.4**
	2.7nm,0.9s,baz=98,slow=14,SNR=6.2							
WRA	**Warramunga Arr**	**42.52**	**267**	P		**P**	**10 59 24.5**	**-0.5**
WRA				PcP		PcP	11 01 06.0	-1.3
WRA				ScP			11 04 15.2	
WRA				S		**S**	**11 05 09.7**	**-2.4**
FORT	**Forrest**	**46.27**	**250**	⇓*i*P		**P**	**10 59 53.0**	**-1.0**
	300nm,0.4s							
KAKA	**Kakadu**	**46.54**	**276**	⇓*i*P		**P**	**10 59 55.0**	**-1.4**
	52nm,0.6s,mb5.1							
POHA	**Pohakuloa**	**49.90**	**30**	*e*P		**P**	**11 00 20.4**	**-1.2**
	121nm,1.2s,mb5.1							
FITZ	**Fitzroy Crossi**	**50.94**	**266**	⇓*i*P		**P**	**11 00 28.8**	**-0.5**
	46nm,0.7s,mb4.9							
FITZ	**Fitzroy Crossi**	**50.94**	**266**	P		**P**	**11 00 28.9**	**-0.4**
	65nm,0.7s,mb5.0,baz=162,slow=5.6,SNR=118							
KLBR	**Kellerberrin**	**54.92**	**248**	⇓*i*P		**P**	**11 00 56.5**	**-1.3**
	30nm,0.5s,mb4.9							
NWAO	**Narrogin (SRO)**	**55.15**	**246**	P		**P**	**11 00 58.4**	**-1.0**
	10nm,0.6s,mb4.4,baz=121,slow=7.8,SNR=14							
MUN	**Mundaring**	**56.16**	**247**	⇓*i*P		**P**	**11 01 05.5**	**-0.9**
	14nm,0.6s,mb4.5							
QSPA	**South Pole Qui**	**65.66**	**180**	*e*P		**P**	**11 02 08.9**	**+0.9**
	21nm,0.7s,mb4.9							
QSPA				*e*		pP	11 03 52.5	+2.6
MAT	**Matsushiro**	**72.42**	**326**	P		**P**	**11 02 48.2**	**-1.1**
MAT	**Matsushiro**	**72.42**	**326**	*e*P		**P**	**11 02 48.0**	**-1.3**
	13nm,0.9s,mb4.5							
MAW	**Mawson**	**77.31**	**200**	⇓*i*P		**P**	**11 03 16.8**	**+0.9**
	14nm,0.6s,mb4.7							
MAW	**Mawson**	**77.31**	**200**	P		**P**	**11 03 16.9**	**+1.0**
	20nm,0.6s,mb4.8,baz=126,slow=7.1,SNR=23							
YSS	**Yuzh-Sakhalins**	**78.67**	**335**	*e*P		**P**	**11 03 24.6**	**+0.9**
	21nm,0.8s,mb4.7							
KGM	**Kluang**	**78.87**	**277**	⇓*e*P		**P**	**11 03 25.8**	**+0.4**
SYO	**Syowa Base**	**82.53**	**193**	⇑P		**P**	**11 03 42.6**	**-0.5**
SYO	**Syowa Base**	**82.53**	**193**	⇑PcP		PcP	11 03 46.3	-1.1
SYO	**Syowa Base**	**82.53**	**193**	⇓pP		pP	11 05 28.3	-2.4
SYO	**Syowa Base**	**82.53**	**193**	⇓*e*P		**P**	**11 03 42.6**	**-0.5**
SYO				*e*PcP		PcP	11 03 46.3	-1.1
SYO				*e*pP		pP	11 05 28.3	-2.4
CMB	**Columbia Colle**	**83.48**	**43**	*e*P		**P**	**11 03 48.3**	**-0.2**
	7.3nm,0.8s,mb4.3							
OHCM	**Honcut**	**83.61**	**42**	*e*P		**P**	**11 03 49.3**	**+0.2**
WDC	**Whiskeytown Da**	**83.77**	**40**	*e*P		**P**	**11 03 50.3**	**+0.4**
	14nm,1.1s,mb4.4							
SNAA	**Sanae**	**84.14**	**179**	⇑*i*		**P**	**11 03 51.0**	**0.0**
MTUM	**Tungsten Hills**	**84.23**	**45**	*e*P		**P**	**11 03 51.5**	**-0.7**
VNA3	**Neumayer Olymp**	**84.34**	**177**	⇑*i*		**P**	**11 03 54.2**	**+2.2**
YBH	**Yreka Blue Hor**	**84.40**	**39**	P		**P**	**11 03 53.6**	**+0.6**
	3.3nm,0.8s,mb3.9,baz=212,slow=1.8,SNR=14							
VNA2	**Neumayer--Watz**	**84.76**	**178**	⇑*i*		**P**	**11 03 56.5**	**+2.4**
VNA1	**Neumayer--Stat**	**85.00**	**177**	⇑*i*		**P**	**11 03 57.7**	**+2.5**
NVAR	**Mina Array Bea**	**85.03**	**44**	P		**P**	**11 03 56.5**	**+0.3**
	3.4nm,0.9s,mb4.0,baz=210,slow=6.3,SNR=12							
NVAR	**Mina Array Bea**	**85.03**	**44**	P		**P**	**11 03 56.5**	**+0.3**
TPH	**Tonopah**	**85.51**	**45**	*e*P		**P**	**11 03 58.5**	**0.0**
	4.6nm,0.7s,mb4.2							
NEN	**Nelson**	**85.69**	**48**	*e*P		**P**	**11 03 59.5**	**+0.1**
NEN				*e*PP		PP	11 07 24.3	-3.0
MOD	**Modoc**	**85.91**	**40**	*e*P		**P**	**11 04 00.3**	**0.0**
	7.4nm,0.9s,mb4.3							
MOD				*e*pP		pP	11 05 43.4	-5.4
ENH	**Enshi**	**86.86**	**305**	*e*P		**P**	**11 04 05.8**	**+0.6**
	27nm,0.9s,mb5.0							
ENH				*e*			11 04 11.3	
WVOR	**Wild Horse Val**	**87.22**	**41**	*e*P		**P**	**11 04 06.3**	**-0.2**
	5.5nm,0.9s,mb4.3							
SPU	**Mount Spurr**	**88.23**	**13**	P		**P**	**11 04 09.3**	**-1.5**
RMW	**Rattlesnake Mo**	**88.55**	**35**	*e*P		**P**	**11 04 12.9**	**+0.3**
MSU	**Marysvale**	**89.04**	**47**	*e*P		**P**	**11 04 16.3**	**+1.1**
PMR	**Palmer**	**89.22**	**14**	*e*P		**P**	**11 04 14.5**	**-0.9**
	4.7nm,0.9s,mb4.3							
KMI	**Kunming**	**89.64**	**298**	*e*P		**P**	**11 04 19.9**	**+1.7**
KMI				AMB		AMB		
	comp=Z,15nm,1.0s,mb4.8							
HLID	**Hailey**	**90.39**	**41**	*e*P		**P**	**11 04 21.8**	**+0.6**
	comp=Z,5.5nm,0.9s,mb4.4							
MNTX	**Coudas Mount**	**90.39**	**55**	*e*P		**P**	**11 04 21.5**	**0.0**
	comp=Z,0.3nm,0.7s							
MNTX				*e*pP		pP	11 06 11.9	+0.9
SRU	**San Rafael**	**90.45**	**47**	*e*P		**P**	**11 04 21.8**	**+0.1**
TXAR	**Lajitas Array**	**90.59**	**58**	P		**P**	**11 04 23.4**	**+0.9**
	comp=Z,4.1nm,0.7s,mb4.5,baz=213,slow=6.7,SNR=68							
TXAR				PKKPbc			11 21 48.4	
	comp=Z,0.4nm,0.6s,baz=80,slow=3.7,SNR=7.7							
PV10	**Paradox Valley**	**91.07**	**48**	*e*P		**P**	**11 04 24.3**	**-0.2**
HWUT	**Hardware Ranch**	**91.09**	**44**	*e*P		**P**	**11 04 23.9**	**-0.7**
	comp=Z,4.1nm,0.7s,mb4.5							
ANMO	**Albuquerque**	**91.17**	**52**	*e*P		**P**	**11 04 25.3**	**+0.2**
	comp=Z,2.6nm,0.8s,mb4.2							
PV01	**Paradox Valley**	**91.27**	**48**	*e*P		**P**	**11 04 25.1**	**-0.3**
CD2	**Chengdu**	**91.49**	**303**	*e*P		**P**	**11 04 28.5**	**+1.9**
CD2				AMB		AMB		
	comp=Z,30nm,0.8s,mb5.3							
MCMT	**McKenzie Canyo**	**92.03**	**41**	*e*P		**P**	**11 04 29.2**	**+0.4**
COLA	**College**	**92.40**	**13**	*e*P		**P**	**11 04 29.1**	**-0.9**
	comp=Z,1.6nm,0.6s,mb4.1							
ILAR	**Eielson Array**	**92.51**	**13**	P		**P**	**11 04 29.4**	**-1.1**
	comp=Z,1.3nm,1.1s,mb3.9,baz=220,slow=5.2,SNR=5.9							
WUWY	**Wally Ulrich**	**92.63**	**43**	*e*P		**P**	**11 04 32.2**	**+0.6**
PDAR	**Pinedale Array**	**92.97**	**44**	P		**P**	**11 04 33.0**	**-0.1**
	comp=Z,1.5nm,0.8s,mb4.1,baz=225,slow=4.2,SNR=12							
SONM	**Songino Array**	**97.60**	**319**	P		**P**	**11 04 53.7**	**-0.4**
	comp=Z,0.6nm,0.7s,mb4.0,baz=135,slow=3.5,SNR=6.4							
INK	**Inuvik**	**98.50**	**16**	P		**P**	**11 04 56.5**	**-1.1**
	comp=Z,0.4nm,0.6s,mb3.9,baz=180,slow=8.5,SNR=4.9							
INK	**Inuvik**	**98.50**	**16**	P		**P**	**11 04 56.5**	**-1.1**
YKA	**Yellowknife Ar**	**100.78**	**25**	PP		PP	11 09 18.6	-6.1
	comp=Z,0.8nm,1.1s,baz=245,slow=7.7,SNR=4.2							
YKA				PKKPbc			11 21 18.3	
	comp=Z,0.3nm,0.5s,baz=40,slow=2.5,SNR=10							
MKAR	**Makanchi Array**	**112.62**	**312**	PKiKP			11 09 52.0	
	comp=Z,1.5nm,0.7s,baz=72,slow=1.5,SNR=14							
MKAR				PKKPbc			11 20 43.6	
	comp=Z,0.5nm,0.7s,baz=315,slow=1.7,SNR=4.4							
BVAR	**Borovoye Array**	**120.93**	**318**	PKP		PKPdf	11 10 08.2	+0.4
	comp=Z,2.4nm,0.5s,baz=90,slow=1.5,SNR=21							
BRVK	**Borovoye**	**121.00**	**319**	*e*PKPdf		PKPdf	11 10 07.7	-0.2
ZRNK	**Zerenda**	**121.77**	**318**	*e*PKPdf		PKPdf	11 10 09.2	-0.2
ARCES	**ARCESS Array B**	**132.43**	**348**	PKP		PKPdf	11 10 28.9	-0.5
	comp=Z,2.6nm,0.8s,baz=90,slow=1.2,SNR=9.0							
ARCES				SKPbc			11 13 12.8	
	comp=Z,4.6nm,0.8s,baz=45,slow=5.1,SNR=12							
ARCES	**ARCESS Array B**	**132.43**	**348**	PKP		PKPdf	11 10 28.9	-0.5
ARCES				SKPbc			11 13 12.8	
FINES	**FINESS Array B**	**138.99**	**341**	PKhKP			11 10 33.5	
	comp=Z,0.5nm,0.4s,baz=45,slow=5.4,SNR=7.5							
FINES				PKP		PKPdf	11 10 43.4	+1.8
	comp=Z,1.6nm,0.6s,baz=90,slow=3.8,SNR=5.0							
FINES				SKPbc			11 13 32.8	
	comp=Z,3.6nm,0.7s,baz=45,slow=5.4,SNR=13							
NOA	**NORSAR Array B**	**142.62**	**351**	PKhKP			11 10 44.4	
	comp=Z,2.2nm,0.8s,baz=12,slow=2.3,SNR=6.4							
NOA				PKP		PKPdf	11 10 49.9	+2.0
	comp=Z,0.3nm,0.5s,baz=7.1,slow=1.1,SNR=3.2							
NOA				SKPbc			11 13 42.1	
	comp=Z,1.6nm,0.9s,baz=14,slow=4.1,SNR=4.4							
ELZG	**Elazig**	**144.31**	**303**	*i* P		PKPdf	11 10 53.8	+2.2
AKASG	**Malin Array Be**	**145.49**	**327**	PKPbc		PKPbc	11 10 54.8	+0.5
	comp=Z,4.7nm,0.4s,baz=44,slow=3.7,SNR=37							
AKASG				SKPbc			11 13 49.8	
	comp=Z,1.2nm,0.5s,baz=40,slow=2.9,SNR=5.1							
GZT	**Gaziantep**	**145.63**	**301**	*i* P		PKPdf	11 10 57.0	+3.1
BOYT	**Boyabat**	**146.55**	**309**	*i* P		PKPdf	11 10 58.6	+3.4
COBT	**Iskenderun**	**146.82**	**300**	*i* P		PKPdf	11 11 00.3	+4.4
ASF	**Jabal al Asfar**	**146.87**	**292**	PKPbc		PKPbc	11 11 02.5	+4.3
	comp=Z,19nm,0.7s,baz=351,slow=1.9,SNR=25							
CTKT	**Corum**	**146.89**	**308**	*i* P		PKPdf	11 10 59.3	+3.5
AVNT	**Avonos**	**147.38**	**304**	*i* P		PKPdf	11 11 01.1	+4.4
BALT	**Daday**	**147.58**	**310**	*i* P		PKPdf	11 11 00.8	+3.9
KSHT	**Keshet**	**147.71**	**293**	P		PKPdf	11 11 03.4	+6.0
ELDT	**Eldivan**	**147.91**	**308**	*i* P		PKPdf	11 11 02.5	+5.1
MKRJ	**Makawir**	**147.98**	**291**	P		PKPdf	11 11 04.0	+6.2
BRTR	**Keskin Array B**	**148.01**	**307**	PKPbc		PKPdf	11 11 02.8	+5.1
	comp=Z,7.0nm,0.6s,baz=143,slow=4.0,SNR=14							
BRTR				PKPab		PKPab	11 11 07.9	-0.4
	comp=Z,10.0nm,0.5s,baz=101,slow=4.1,SNR=26							
HMDT	**Nahal Hemdat**	**148.02**	**292**	P		PKPdf	11 11 04.2	+6.3
DRGI	**Dragot**	**148.19**	**291**	P		PKPdf	11 11 04.2	+6.0
MZDA	**Masada**	**148.23**	**290**	P		PKPdf	11 11 04.4	+6.1
ZFRI	**Zfri**	**148.43**	**289**	P		PKPdf	11 11 05.0	+6.4
SLTI	**Sal'it**	**148.43**	**292**	P		PKPdf	11 11 05.0	+6.4
OFRI	**'Ofer**	**148.44**	**293**	P		PKPdf	11 11 04.7	+6.1
PRNI	**Paran**	**148.59**	**289**	P		PKPdf	11 11 05.4	+6.5
PRNI	**Paran**	**148.59**	**289**	⇓P		PKPdf	11 11 05.4	+6.5
EIL	**Elat**	**148.65**	**287**	P		PKPdf	11 11 05.6	+6.6
EIL	**Elat**	**148.65**	**287**	⇓P		PKPdf	11 11 05.6	+6.6
MBH	**Mount Berech**	**148.68**	**288**	P		PKPdf	11 11 05.7	+6.7
MBH	**Mount Berech**	**148.68**	**288**	⇓P		PKPdf	11 11 05.7	+6.7
KMTI	**Karmit**	**148.84**	**288**	P		PKPdf	11 11 05.7	+6.4
KZIT	**Kziot**	**149.08**	**290**	P		PKPdf	11 11 06.5	+6.9
KZIT	**Kziot**	**149.08**	**290**	⇓P		PKPdf	11 11 06.5	+6.9
KWP	**Kalwaria**	**149.30**	**331**	*e*PKPbc		PKPdf	11 11 05.5	+6.1
CSS	**Prodhromos**	**149.46**	**298**	*e*PKPbc		PKPdf	11 11 06.6	+6.5
CSS				*e*PKPab		PKPab	11 11 13.4	-1.0
CRVS	**Cervenica-Dubn**	**150.39**	**331**	*e*PKP		PKPdf	11 11 08.2	+7.1
**

KLY	**Klyuchi**	**3.03**	**299**	*e*P	**P**	**11 28 35.8**	**+0.2**
KLY				*i* S	**S**	**11 29 09.5**	**-1.7**
KLY	**Klyuchi**	**3.03**	**299**	PN	**P**	**11 28 35.7**	**+0.1**
KLY				S	**S**	**11 29 09.5**	**-1.7**
KRSR	**Krestovskiy**	**3.04**	**297**	*e*P	**P**	**11 28 36.4**	**+0.7**
KRSR				*e*S	**S**	**11 29 10.8**	**-0.5**
TUMR	**Tumrok**	**3.05**	**279**	*e*P	**P**	**11 28 36.8**	**+0.9**
TUMR				*e*S	**S**	**11 29 12.3**	**+0.7**
KMNR	**Kamenistaya**	**3.07**	**287**	*e*P	**P**	**11 28 37.9**	**+1.7**
KMNR				*i* S	**S**	**11 29 13.4**	**+1.3**
KPT	**Kopyto**	**3.13**	**291**	*e*P	**P**	**11 28 38.2**	**+1.1**
KPT				*e*S	**S**	**11 29 14.0**	**+0.3**
KOZ	**Kozyrevsk**	**3.35**	**292**	*e*P	**P**	**11 28 41.3**	**+1.2**
KOZ				*e*S	**S**	**11 29 18.9**	**-0.3**
KOZ	**Kozyrevsk**	**3.35**	**292**	PN	**P**	**11 28 41.4**	**+1.3**
KOZ				S	**S**	**11 29 19.1**	**-0.1**
SRDR	**Sredinnyy**	**3.52**	**295**	*e*P	**P**	**11 28 44.2**	**+1.7**
SRDR				*e*S	**S**	**11 29 24.5**	**+1.1**
KII	**Karymskiy**	**3.60**	**258**	*e*P	**P**	**11 28 45.5**	**+1.8**
KII				*e*S	**S**	**11 29 26.4**	**+0.8**
KII	**Karymskiy**	**3.60**	**258**	PN	**P**	**11 28 45.6**	**+1.9**
KII				S	**S**	**11 29 26.6**	**+1.0**
SPN	**Mys Shipunski**	**3.69**	**242**	*e*P	**P**	**11 28 44.6**	**-0.3**
SPN				*i* S	**S**	**11 29 25.6**	**-2.1**
SPN	**Mys Shipunski**	**3.69**	**242**	PN	**P**	**11 28 44.7**	**-0.2**
ESO	**Esso**	**3.95**	**287**	*e*P	**P**	**11 28 49.6**	**+0.9**
ESO				*e*S	**S**	**11 29 32.9**	**-1.7**
ESO				Smax			
	20nm,0.8s						
NLC	**Nalytchevo**	**4.00**	**246**	*e*P	**P**	**11 28 49.3**	**0.0**
NLC				*i* S	**S**	**11 29 34.1**	**-1.6**
NLC	**Nalytchevo**	**4.00**	**246**	PN	**P**	**11 28 49.4**	**+0.1**
SDLR	**Sedlovina**	**4.20**	**249**	*e*P	**P**	**11 28 52.7**	**+0.6**
SDLR				*i* S	**S**	**11 29 39.1**	**-1.6**
SMAR	**Somma**	**4.25**	**249**	*e*P	**P**	**11 28 53.8**	**+0.9**
SMAR				*e*S	**S**	**11 29 41.0**	**-1.0**
AVH	**Avacha**	**4.28**	**250**	*e*P	**P**	**11 28 54.8**	**+1.5**
AVH				*i* S	**S**	**11 29 41.7**	**-1.1**
KOK	**Koryaka**	**4.32**	**250**	*e*P	**P**	**11 28 55.0**	**+1.0**
KOK				*e*S	**S**	**11 29 41.3**	**-2.6**
PET	**Petropavlovsk**	**4.44**	**247**	*e*P	**P**	**11 28 56.4**	**+0.8**
PET				*e*S	**S**	**11 29 44.1**	**-2.6**
PET	**Petropavlovsk**	**4.44**	**247**	PN	**P**	**11 28 56.5**	**+0.9**
OSSR	**Ossora**	**4.50**	**344**	*e*P	**P**	**11 28 55.5**	**-1.0**
OSSR				*e*S	**S**	**11 29 45.3**	**-3.1**
OSSR				Smax			
	80nm,0.8s						
GNL	**Ganaly**	**4.56**	**257**	*e*P	**P**	**11 28 59.2**	**+1.9**
RUS	**Russkaya**	**4.82**	**241**	*e*P	**P**	**11 29 01.3**	**+0.3**
RUS				*e*S	**S**	**11 29 53.3**	**-3.0**
RUS	**Russkaya**	**4.82**	**241**	PN	**P**	**11 29 01.4**	**+0.4**
GRL	**Gorelyy**	**4.98**	**244**	*e*P	**P**	**11 29 04.4**	**+1.2**
GRL				*e*S	**S**	**11 29 59.1**	**-1.3**
FX1	**Attu Island--F**	**5.02**	**111**	Pn	**P**	**11 29 03.8**	**0.0**
	3.8nm,0.3s,baz=336,slow=6.8,SNR=16						
FX1				Sn	**S**	**11 30 00.9**	**-0.5**
	3.3nm,0.3s,baz=270,slow=20,SNR=3.2						
ILAR	**Eielson Array**	**25.25**	**48**	P	**P**	**11 33 11.8**	**-1.1**
	1.1nm,1.0s,mb3.3,baz=254,slow=8.0,SNR=10						
ILAR	**Eielson Array**	**25.25**	**48**	P	**P**	**11 33 11.8**	**-1.0**
ILAR				pmax	pmax		
	comp=Z,1.0nm,1.0s						
INK	**Inuvik**	**30.45**	**40**	P	**P**	**11 33 59.6**	**-0.3**
	comp=Z,0.6nm,0.8s,mb3.4,baz=288,slow=8.2,SNR=5.6						
INK	**Inuvik**	**30.45**	**40**	P	**P**	**11 33 59.6**	**-0.3**
INK				pmax	pmax		
	comp=Z,1.0nm,0.9s						
YKA	**Yellowknife Ar**	**39.64**	**46**	P	**P**	**11 35 18.7**	**+0.3**
	comp=Z,0.7nm,1.0s,mb3.4,baz=298,slow=7.9,SNR=7.2						
YKA	**Yellowknife Ar**	**39.64**	**46**	P	**P**	**11 35 18.7**	**+0.3**
YKA				pmax	pmax		
	comp=Z,1.0nm,1.0s						
SVE	**Sverdlovsk**	**53.03**	**318**	⇓*e*P	**P**	**11 37 06.0**	**+1.9**
TXAR	**Lajitas Array**	**67.04**	**71**	P	**P**	**11 38 40.7**	**+0.4**
	comp=Z,0.2nm,0.6s,mb3.3,baz=295,slow=4.3,SNR=4.0						

*MAN **05** 11:37:22.7, 13.44N×120.09E, h8km, mb4.4, ML3.3, MS3.1*
*NEIC **05** 11:37:27.7±1.0, 13.56N×120.47E, h68km±10km, Error ellipse: s-maj=18.6km s-min=8.2km az=61.0*
*IDC **05** 11:37:28.0±1.7, 13.52N×120.37E, h70km±16km, mb3.6/9, mb1 3.8/9, mb1mx3.6/19, Error ellipse: s-maj=32.1km s-min=15.4km az=68.0*

ISC 05 11:37:19.8±0.5, 13.50N±0.03×119.88E±0.04, h8km, n25, σ1§22/32, mb4.0/9, 11C-1D, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LUBP	**Lubang**	**0.42**	**56**	⇑*e*P	**Pg**	**11 37 29.3**	**+0.9**
LUBP				*e*S	**Sg**	**11 37 33.1**	**-1.1**
PGP	**Puerto Galera**	**1.04**	**89**	⇓*i*P	**Pb**	**11 37 39.0**	**-0.6**
PGP				*i* S	**Sb**	**11 37 45.0**	**-8.2**
TGY	**Tagaytay City**	**1.19**	**59**	⇑*e*P	**Pb**	**11 37 42.4**	**+0.2**
TGY				*i* S	**Sb**	**11 37 57.5**	**0.0**
TGY	**Tagaytay City**	**1.19**	**59**	P	**Pb**	**11 37 42.6**	**+0.4**
	420nm,0.3s,baz=247,slow=1.4,SNR=41						
TGY				S	**Sb**	**11 37 57.2**	**-0.3**
	574nm,0.3s,baz=330,slow=20,SNR=23						
BUSP	**Coron**	**1.51**	**168**	⇑*e*P	**Pn**	**11 37 49.3**	**+1.9**
BUSP				*e*S	**Sb**	**11 38 07.4**	**+0.4**
SJMP	**San Jose**	**1.58**	**130**	⇑*e*P	**Pn**	**11 37 48.7**	**+0.3**
QVPH	**Quezon City--P**	**1.62**	**45**	⇑*i*P	**Pn**	**11 37 49.8**	**+0.9**
QVPH				*e*S	**Sb**	**11 38 11.0**	**+0.9**
LQP	**Lukban**	**1.72**	**69**	⇑*i*P	**Sn**	**11 38 13.0**	**+0.3**
BOAC	**Boac**	**1.91**	**91**	⇑*e*P	**Pn**	**11 37 52.8**	**-0.2**
ENPP	**El Nido**	**2.32**	**191**	⇑*e*P	**Pn**	**11 38 01.6**	**+2.7**
ENPP				*e*S	**Sn**	**11 38 28.5**	**+0.6**
BALP	**Baler**	**2.77**	**36**	⇑*e*P	**Pn**	**11 38 07.2**	**+1.9**
CUYO	**Cuyo Island**	**2.85**	**157**	⇑*e*P	**Pn**	**11 38 06.9**	**+0.4**
CMAR	**Chiang Mai Arr**	**20.72**	**287**	P	**P**	**11 42 08.4**	**+5.0**
	1.7nm,1.0s,baz=94,slow=9.7,SNR=5.1						
SONM	**Songino Array**	**36.03**	**345**	P	**P**	**11 44 23.0**	**-0.5**
	0.4nm,0.7s,mb3.5,baz=161,slow=11,SNR=6.8						
WRAB	**Tennant Creek**	**36.14**	**157**	*e*P		**11 44 22.0**	**-2.7**
	12nm,0.6s,mb5.0						
WRA	**Warramunga Arr**	**36.14**	**157**	P	**P**	**11 44 22.2**	**-2.5**
	5.1nm,0.7s,mb4.6,baz=336,slow=9.5,SNR=48						
WB2	**Warramunga Arr**	**36.15**	**157**	⇑*i*P	**P**	**11 44 22.2**	**-2.5**
ASAR	**Alice Springs**	**39.40**	**160**	P	**P**	**11 44 50.6**	**-1.4**
	2.5nm,0.7s,mb4.1,baz=341,slow=7.3,SNR=41						
MKAR	**Makanchi Array**	**45.73**	**324**	P	**P**	**11 45 44.8**	**+1.5**
	0.5nm,0.8s,mb3.5,baz=124,slow=8.7,SNR=4.2						
BVAR	**Borovoye Array**	**55.50**	**326**	P	**P**	**11 46 58.2**	**+0.7**
	0.6nm,0.6s,mb3.8,baz=121,slow=8.6,SNR=4.3						
BRVK	**Borovoye**	**55.57**	**326**	P	**P**	**11 46 58.0**	**-0.1**
ZRNK	**Zerenda**	**56.22**	**326**	*e*P	**P**	**11 47 02.4**	**-0.3**
ARCES	**ARCESS Array B**	**78.99**	**339**	P	**P**	**11 49 24.6**	**-0.8**
	3.7nm,1.2s,mb4.2,baz=79,slow=6.2,SNR=6.2						
INK	**Inuvik**	**83.57**	**21**	P	**P**	**11 49 47.1**	**-2.3**
	0.7nm,0.9s,mb3.8,baz=277,slow=6.5,SNR=2.7						
NOA	**NORSAR Array B**	**87.08**	**333**	P	**P**	**11 50 06.4**	**-0.6**
	0.6nm,0.6s,mb4.0,baz=233,slow=23,SNR=3.5						

*NIED **05** 11:38:00, 26.50N×130.00E, h5km, Mw3.8 Best double couple: M₀5.98×10¹⁴ NP1:φ=66°, δ73°, λ-80°. NP2:φ=215°, δ20°, λ-120°.*
*IDC **05** 11:38:19.1±1.0, 26.54N×129.86E, mb3.7/6, mb1 3.8/7, mb1mx3.6/22, ML3.4/1, Error ellipse: s-maj=25.9km s-min=20.0km az=53.0*
*JMA **05** 11:38:21.3, 26.53N×129.95E, h45km, M3.9*

ISC 05 11:38:21.4±1.9, 26.56N±0.04×129.93E±0.04, h33km±15km, n22, σ0§95/33, mb3.6/6, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JMZ	**Minamidaito 2**	**1.38**	**122**	P	**Pn**	**11 38 44.0**	**-0.7**
JMZ				*e*S	**Sn**	**11 39 00.6**	**-1.4**
JTK	**Tokunoshima**	**1.50**	**325**	P	**Pn**	**11 38 47.1**	**+0.7**
JTK				*e*S	**Sn**	**11 39 05.0**	**0.0**
JOW	**Kunigami**	**1.50**	**281**	Pn	**Pn**	**11 38 46.6**	**+0.2**
	75nm,0.3s,baz=113,slow=26,SNR=360						
JOW				Sn	**Sn**	**11 39 05.1**	**0.0**
	209nm,0.3s,baz=135,slow=26,SNR=37						
JOW	**Kunigami**	**1.50**	**281**	P	**Pn**	**11 38 46.9**	**+0.4**
JOW				S	**Sn**	**11 39 05.0**	**-0.1**
JZK	**Kikaishima**	**1.75**	**1**	P	**Pn**	**11 38 51.0**	**+1.0**
JZK				S	**Sn**	**11 39 12.4**	**+1.1**
JIH	**Iheya**	**1.81**	**285**	P	**Pn**	**11 38 51.5**	**+0.6**
JIH				S	**Sn**	**11 39 13.4**	**+0.4**
JAM	**Amami Oshima**	**1.86**	**351**	P	**Pn**	**11 38 52.0**	**+0.3**
JAM				S	**Sn**	**11 39 13.1**	**-1.2**
JJT2	**Tamagusuku 2**	**2.00**	**258**	P	**Pn**	**11 38 54.1**	**+0.5**
JJT2				*e*S	**Sn**	**11 39 17.8**	**+0.1**
NAH1	**Naha**	**2.04**	**260**	P	**Pn**	**11 38 54.5**	**+0.3**
NAH1				*e*S	**Sn**	**11 39 18.2**	**-0.5**
JAGN	**Aguni-jima**	**2.40**	**271**	P	**Pn**	**11 38 59.7**	**+0.3**
JAGN				*e*S	**Sn**	**11 39 26.5**	**-1.5**
JKE	**Kume jima 2**	**2.82**	**266**	P	**Pn**	**11 39 04.5**	**-0.9**
JKE				*e*S	**Sn**	**11 39 37.3**	**-1.4**
JNN	**Nakanoshima**	**3.27**	**359**	*e*S	**Sn**	**11 39 47.5**	**-2.4**
JKC	**Kuchinoerabu**	**3.89**	**3**	*e*S	**Sn**	**11 40 00.5**	**-5.2**
JTN	**Tanegashima 3**	**4.18**	**13**	*e*S	**Sn**	**11 40 09.6**	**-3.4**
JNU	**Nakatsue**	**6.59**	**7**	Pn	**Pn**	**11 39 58.0**	**-0.6**
	0.8nm,0.3s,baz=308,slow=7.6,SNR=4.5						
PGP	**Puerto Galera**	**15.48**	**215**	*e*P	**P**	**11 41 50.0**	**-9.2**
WRA	**Warramunga Arr**	**46.42**	**174**	P	**P**	**11 46 47.1**	**-0.1**
	0.8nm,0.8s,mb3.7,baz=353,slow=8.4,SNR=5.1						
ASAR	**Alice Springs**	**50.08**	**175**	P	**P**	**11 47 16.2**	**+0.8**
	0.4nm,0.6s,mb3.6,baz=5.7,slow=12,SNR=6.2						
BVAR	**Borovoye Array**	**51.04**	**318**	P	**P**	**11 47 23.5**	**+1.2**
	0.6nm,0.7s,mb3.6,baz=135,slow=6.1,SNR=4.2						
FINES	**FINESS Array B**	**73.32**	**331**	P	**P**	**11 49 52.3**	**+1.0**
	0.8nm,0.5s,mb4.0,baz=72,slow=6.0,SNR=8.5						
YKA	**Yellowknife Ar**	**77.58**	**25**	P	**P**	**11 50 16.2**	**+0.8**
	0.2nm,0.6s,mb3.2,baz=301,slow=5.2,SNR=5.5						
BRTR	**Keskin Array B**	**78.03**	**308**	P	**P**	**11 50 19.7**	**+1.3**
	0.9nm,0.8s,mb3.8,baz=45,slow=2.0,SNR=3.8						

*NEIC **05** 12:07:29.9, 52.26N×171.28W, h32km, ML3.5(AEIC), After AEIC.*
*IDC **05** 12:07:36.4±6.2, 52.54N×171.64W, h104km±61km, mb3.3/5, mb1 3.6/6, mb1mx3.3/25, Error ellipse: s-maj=72.8km s-min=20.8km az=149.0*

ISC 05 12:07:28.3±1.0, 52.3N±0.2×171.3W±0.1, h39km±11km, n19, σ0§88/24, mb3.6/5, Fox Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NIKO	**Nikolski**	**1.63**	**65**	P	**P**	**12 07 55.4**	**+0.3**
NIKO				S	**S**	**12 08 13.5**	**-1.5**
ATKA	**Atka Island**	**1.78**	**268**	P	**P**	**12 07 57.4**	**+0.2**
ATKA				S	**S**	**12 08 18.6**	**-0.2**
GSIG	**Igitkin Island**	**2.87**	**265**	P	**P**	**12 08 13.0**	**+0.3**
GSMY	**Great Sitkin M**	**2.94**	**267**	P	**P**	**12 08 14.1**	**+0.3**
GSTD	**Great Sitkin T**	**2.99**	**267**	P	**P**	**12 08 14.9**	**+0.4**
GSTD				S	**S**	**12 08 50.3**	**+0.7**
MSW	**Makushin Switc**	**3.16**	**58**	P	**P**	**12 08 17.9**	**+1.1**
ETKA	**Kagalaska Isla**	**3.18**	**264**	P	**P**	**12 08 16.3**	**-0.9**
UNV	**Unalaska Valle**	**3.27**	**60**	P	**P**	**12 08 19.3**	**+0.8**
UNV				S	**S**	**12 08 55.9**	**-0.9**
ADAG	**Mount Adagdak**	**3.28**	**266**	P	**P**	**12 08 18.3**	**-0.3**
ADK	**Adak**	**3.35**	**265**	P	**P**	**12 08 18.8**	**-0.7**
ADK				S	**S**	**12 08 56.7**	**-1.9**
KIKV	**Kanaga Island**	**3.65**	**265**	P	**P**	**12 08 22.9**	**+0.1**
KIMD	**Kanaga Island**	**3.71**	**264**	P	**P**	**12 08 25.4**	**+0.7**
FX1	**Attu Island--F**	**9.48**	**280**	P	**P**	**12 09 46.4**	**+1.1**
	1.6nm,0.3s,baz=119,slow=22,SNR=8.2						
DLBC	**Dease Lake**	**23.93**	**59**	P	**P**	**12 12 42.5**	**+3.4**
	2.1nm,0.8s,mb3.6,baz=288,slow=9.5,SNR=7.2						
INK	**Inuvik**	**24.05**	**34**	P	**P**	**12 12 40.5**	**+0.3**
	1.2nm,0.7s,mb3.4,baz=235,slow=9.8,SNR=17						
YKA	**Yellowknife Ar**	**31.17**	**49**	P	**P**	**12 13 44.4**	**-0.9**
	0.2nm,0.4s,mb3.3,baz=275,slow=8.0,SNR=11						
YKA	**Yellowknife Ar**	**31.17**	**49**	P	**P**	**12 13 44.4**	**-0.9**
PDAR	**Pinedale Array**	**41.58**	**78**	P	**P**	**12 15 14.6**	**+1.0**
	0.3nm,0.5s,mb3.2,baz=297,slow=3.3,SNR=3.9						
ASAR	**Alice Springs**	**89.46**	**229**	P	**P**	**12 20 21.5**	**-0.8**
	0.8nm,0.6s,mb4.2,baz=33,slow=5.1,SNR=15						

*IDC **05** 12:32:24.5±7.3, 34.30S×179.23W, h56km±66km, mb3.8/4, mb1 4.0/6, mb1mx3.8/16, ML3.8/2, Error ellipse: s-maj=56.2km s-min=47.7km az=156.0*

NEIC 05 12:32:16.4±1.5, 34.12S×178.82W, h10km, 3D, Error ellipse: s-maj=31.6km s-min=16.9km az=105.0, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**4.60**	**210**	P	Pn	**12 33 28.2**	**+0.5**
PUZ				S	Sn	**12 34 18.1**	**-3.7**
URZ	**Urewera**	**5.28**	**217**	P	Pn	**12 33 36.6**	**-0.7**
	3.2nm,0.3s,baz=248,slow=4.2,SNR=39						
URZ				S	Sn	**12 34 32.6**	**-6.4**
	15nm,0.3s,baz=84,slow=22,SNR=18						
KNZ	**Kokohu**	**5.64**	**209**	P	Pn	**12 33 40.9**	**-1.6**
KNZ				S	Sn	**12 34 36.2**	**-12**
OUZ	**Omahuta**	**6.34**	**258**	P	Pn	**12 33 54.3**	**+2.0**
PWZ	**Pawanui**	**6.83**	**209**	P	Pn	**12 33 53.4**	**-5.8**
PWZ				S	Sn	**12 35 05.6**	**-12**
BFZ	**Birch Farm**	**7.63**	**209**	P	Pn	**12 34 06.3**	**-4.1**
BFZ				S	Sn	**12 35 26.0**	**-12**
MRZ	**Mangatainoka R**	**7.90**	**213**	P	Pn	**12 34 09.9**	**-4.3**
THZ	**Tophouse**	**10.04**	**218**	P	P	**12 34 39.5**	**-4.3**
THZ				S	S	**12 36 18.4**	**-19**
RPZ	**Rata Peaks**	**12.39**	**216**	P	P	**12 35 12.0**	**-3.8**
	0.7nm,0.3s,baz=256,slow=19,SNR=3.6						
RPZ				S	S	**12 37 14.6**	**-20**
	1.8nm,0.3s,baz=75,slow=14,SNR=15						
CTA	**Charters Tower**	**33.90**	**285**	*e*P	P	**12 39 00.5**	**-1.2**
	4.3nm,0.7s,baz=317,slow=15,SNR=7.3						
CTAO	**Charters Tower**	**33.90**	**285**	*e*P	P	**12 39 00.7**	**-1.0**
ASAR	**Alice Springs**	**42.35**	**271**	P	P	**12 40 10.3**	**-2.2**
	0.9nm,0.6s,baz=115,slow=7.6,SNR=15						
WRAB	**Tennant Creek**	**43.68**	**277**	*e*P	P	**12 40 21.1**	**-2.2**
WRA	**Warramunga Arr**	**43.68**	**276**	P	P	**12 40 21.1**	**-2.3**
	1.8nm,0.6s,baz=117,slow=7.9,SNR=17						
FITZ	**Fitzroy Crossi**	**51.76**	**273**	P	P	**12 41 24.0**	**-2.5**
	1.3nm,0.9s,baz=149,slow=5.9,SNR=8.4						
SNAA	**Sanae**	**74.46**	**179**	⇓*i*	P	**12 44 04.4**	**+8.4**
VNA3	**Neumayer Olymp**	**74.65**	**176**		P	**12 44 07.6**	**+11**
VNA2	**Neumayer--Watz**	**75.07**	**177**	⇓*i*	P	**12 44 10.0**	**+10**
VNA1	**Neumayer--Stat**	**75.31**	**177**	⇓*i*	P	**12 44 11.2**	**+10**
ARCES	**ARCESS Array B**	**142.05**	**346**	PKP	PKPdf	**12 51 46.6**	**-4.2**
	0.7nm,0.8s,baz=43,slow=1.5,SNR=5.1						
FINES	**FINESS Array B**	**148.35**	**337**	PKPbc	PKPdf	**12 52 03.6**	**+1.9**
	0.4nm,0.4s,baz=45,slow=5.4,SNR=7.1						

*IDC **05** 12:36:17.7±10.0, 48.32N×142.36E, mb3.7/4, mb1 4.0/4, mb1mx3.5/21, Error ellipse: s-maj=442.0km s-min=25.9km az=175.0*
*JMA **05** 12:36:35.8±0.2, 45.18N×142.21E, h275km±2km, M3.4*
*SKHL **05** 12:36:37.0±0.0, 45.25N×141.88E, h260km±14km, mb4.3/3, msh4.1/1*

ISC 05 12:36:35.6±0.6, 45.02N±0.07×142.3E±0.1, h281km±5km, n22, σ1§08/29, mb3.3/4, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JSE	**Soyaes**	**0.23**	**106**	P	**P**	**12 37 11.3**	**-0.4**
JWK2	**Keihoku**	**0.39**	**318**	P	**P**	**12 37 11.3**	**-0.7**
JWK2				*e*S	**S**	**12 37 38.6**	**-1.9**
JRR	**Rishiri**	**0.69**	**280**	P	**P**	**12 37 12.3**	**-0.5**
JSS	**Shosan**	**0.69**	**205**	P	**P**	**12 37 13.0**	**+0.2**
JYG	**Yagishiri**	**0.85**	**225**	P	**P**	**12 37 13.4**	**0.0**
JYG				*e*S	**S**	**12 37 42.7**	**-0.3**
ASAJ	**Asahikawa**	**0.94**	**165**	P	**P**	**12 37 14.3**	**+0.5**
ASAJ				*e*S	**S**	**12 37 44.6**	**+0.9**
JKK2	**Kamakawa 2**	**1.20**	**163**	P	**P**	**12 37 16.0**	**+0.8**
JKK2				*e*S	**S**	**12 37 47.3**	**+1.1**
JMP	**Maruseppu**	**1.28**	**142**	P	**P**	**12 37 16.2**	**+0.5**
JMP				*e*S	**S**	**12 37 48.1**	**+1.0**
JAB	**Ashibetsu**	**1.52**	**181**	P	**P**	**12 37 17.9**	**+0.6**
JTKR	**Abashiri--Toko**	**1.58**	**131**	P	**P**	**12 37 18.4**	**+0.7**
JFR	**Furan**	**1.88**	**173**	P	**P**	**12 37 20.6**	**+0.7**
JAR	**Ashorobuto**	**2.04**	**147**	P	**P**	**12 37 22.4**	**+1.2**
JAR				*e*S	**S**	**12 37 58.4**	**+1.6**
JEW	**Eniwo**	**2.26**	**195**	*e*S	**S**	**12 38 02.0**	**+1.6**
JCH	**Churui**	**2.54**	**161**	*e*S	**S**	**12 38 03.3**	**-1.6**
JAK	**Akkeshi**	**2.68**	**138**	*e*S	**S**	**12 38 05.7**	**-1.7**
JNBK	**Urakawa-nobuka**	**2.77**	**173**	*e*S	**S**	**12 38 07.7**	**-1.2**
NEM2	**Nemuro 2**	**3.00**	**122**	*e*S	**S**	**12 38 10.8**	**-2.3**
JKB	**Kayabe**	**3.26**	**196**	P	**P**	**12 37 33.5**	**+0.3**
JKB				*e*S	**S**	**12 38 16.4**	**-1.7**
SONM	**Songino Array**	**24.75**	**289**	P	**P**	**12 41 33.5**	**+0.4**
	0.5nm,0.3s,mb3.4,baz=86,slow=8.4,SNR=5.3						
MKAR	**Makanchi Array**	**40.88**	**295**	P	**P**	**12 43 50.6**	**-1.2**
	1.1nm,0.6s,mb3.3,baz=81,slow=8.9,SNR=12						
NVAR	**Mina Array Bea**	**69.81**	**56**	P	**P**	**12 47 18.5**	**+1.4**
	0.5nm,0.7s,mb3.4,baz=278,slow=6.8,SNR=4.6						
PDAR	**Pinedale Array**	**71.70**	**47**	P	**P**	**12 47 27.6**	**-0.8**
	0.3nm,0.4s,mb3.2,baz=315,slow=2.6,SNR=3.6						

*INMG **05** 12:37:51.2±1.0, 35.18N×3.92W, h20km±18km, ML2.7, Error ellipse: s-maj=17.8km s-min=3.5km az=168.0*
*NEIC **05** 12:37:51.2, 35.28N×3.94W, MG3.6(MDD), After MDD.*
*MDD **05** 12:37:52.2±0.9, 35.41N×3.93W, mb3.6/10, Error ellipse: s-maj=7.8km s-min=2.8km az=33.0, PRXIMO AftershockPLICA*

ISC 05 12:37:49.1±0.7, 35.24N±0.05×4.05W±0.03, h10km, n42, σ1§37/71, 1D, Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EMEL	**Melilla**	**0.90**	**86**	⇓P	**Pb**	**12 38 05.9**	**-0.5**
	635nm,0.2s,SNR=18						
EMEL				S	**Sb**	**12 38 17.7**	**-0.5**
	692nm,0.2s						
MELI	**Melilla**	**0.92**	**86**	P	**Pb**	**12 38 06.3**	**-0.4**
MELI				S	**Sb**	**12 38 18.8**	**+0.1**
EMAL	**Malaga-Limoner**	**1.55**	**349**	P	**Pn**	**12 38 17.4**	**+0.4**
	2.7nm,0.2s,SNR=7.9						
EMAL				S	**Sb**	**12 38 37.4**	**+0.2**
	8.2nm,0.2s,SNR=4.0						
EMAL	**Malaga-Limoner**	**1.55**	**349**	P	**Pn**	**12 38 17.3**	**+0.3**
EMAL				S	**Sb**	**12 38 38.9**	**+1.7**
EJIF	**Jimena Fronter**	**1.67**	**317**	P	**Pn**	**12 38 20.3**	**+1.5**
	6.0nm,0.2s,SNR=12						
EJIF	**Jimena Fronter**	**1.67**	**317**	P	**Pn**	**12 38 20.2**	**+1.5**
EJIF				S	**Sn**	**12 38 39.3**	**-1.1**
ERON	**Agron**	**1.79**	**6**	P	**Pn**	**12 38 21.1**	**+0.7**
	2.1nm,0.2s,SNR=4.7						
ERON				S	**Sn**	**12 38 43.5**	**+0.2**
	7.7nm,0.2s,SNR=6.3						
ERON	**Agron**	**1.79**	**6**	P	**Pn**	**12 38 21.0**	**+0.6**
ERON				S	**Sn**	**12 38 42.6**	**-0.7**
EBER	**Berja**	**1.91**	**29**	P	**Pn**	**12 38 21.3**	**-0.8**
	9.5nm,0.2s,SNR=20						
EBER				S	**Sn**	**12 38 44.6**	**-1.7**
	76nm,0.3s,SNR=10						
ELOJ	**Sierra Loja**	**1.91**	**358**	S	**Sn**	**12 38 45.5**	**-0.9**
	7.0nm,0.4s,SNR=5.0						
ELOJ	**Sierra Loja**	**1.91**	**358**	P	**Pn**	**12 38 24.5**	**+2.4**
ELOJ				S	**Sn**	**12 38 51.6**	**+5.2**
ELIJ	**Sierra de Lija**	**1.99**	**328**	P	**Pn**	**12 38 26.5**	**+3.1**
	6.8nm,0.2s,SNR=12						
ELIJ				S	**Sn**	**12 38 52.3**	**+3.7**
	10nm,0.3s,SNR=5.0						
ELIJ	**Sierra de Lija**	**1.99**	**328**	P	**Pn**	**12 38 26.3**	**+3.0**
ELIJ				S	**Sn**	**12 38 51.4**	**+2.8**
LIJA	**Lijar**	**2.00**	**327**	P	**Pn**	**12 38 26.2**	**+2.9**
LIJA				S	**Sn**	**12 38 49.0**	**+0.5**
ECOG	**Cogollos-Vega**	**2.08**	**11**	P	**Pn**	**12 38 26.4**	**+2.0**
	2.4nm,0.2s,SNR=4.0						
ECOG	**Cogollos-Vega**	**2.08**	**11**	P	**Pn**	**12 38 26.4**	**+2.0**
ECOG				S	**Sn**	**12 38 53.2**	**+2.6**
ESPR	**Espera**	**2.19**	**319**	S	**Sn**	**12 38 57.6**	**+4.1**
	24nm,0.4s,SNR=7.9						
ESPR	**Espera**	**2.19**	**319**	P	**Pn**	**12 38 32.0**	**+5.9**
ESPR				S	**Sn**	**12 38 56.5**	**+3.0**
ELUQ	**Luque**	**2.33**	**356**	P	**Pn**	**12 38 31.0**	**+3.0**
	4.5nm,0.2s,SNR=4.0						
EQES	**Quesada**	**2.68**	**17**	P	**Pn**	**12 38 35.3**	**+2.1**
	6.6nm,0.2s,SNR=14						
EQES				S	**S

comp=Z,0.7nm,0.3s,baz=198,slow=27,SNR=14
CMAR Chiang Mai Arr 18.33 132 Pn **P** 12 56 55.1 -1.2
comp=Z,0.2nm,0.3s,baz=317,slow=11,SNR=11
CMAR LR LR 13 04 10.3
comp=Z,108nm,20.2s,baz=320,slow=38
KURK Kurchatov 19.70 349 *eP* **P** 12 57 10.3 -2.1
SONM Songino Array 23.24 39 P **P** 12 57 48.2 0.0
comp=Z,3.2nm,1.0s,mb3.7,baz=230,slow=9.6,SNR=11
BVAR Borovoye Array 23.86 338 P **P** 12 57 54.5 +0.2
comp=Z,0.9nm,0.7s,mb3.3,baz=142,slow=9.3,SNR=6.2
BVAR LR LR 13 08 04.1
comp=Z,81nm,18.0s,MS3.2,baz=225,slow=39
BRVK Borovoye 23.92 338 *eP* **P** 12 57 55.1 +0.3
ZRNK Zerenda 24.25 337 *eP* **P** 12 58 00.0 +2.0
JNU Nakatsue 38.86 75 LR LR 13 17 12.5
comp=Z,56nm,19.0s,MS3.4,baz=239,slow=38
AKASG Malin Array Be 44.80 312 P **P** 13 00 56.6 +1.0
comp=Z,0.5nm,0.3s,mb3.8,baz=87,slow=6.1,SNR=4.6
TIXI Tiksi 46.59 18 *eP* **P** 13 01 10.6 +1.1
FINES FINESS Array B 47.92 326 LR LR 13 22 36.8
comp=Z,67nm,18.6s,MS3.6,baz=8.3,slow=37
ARCES ARCESS Array B 50.14 337 P **P** 13 01 36.5 -0.6
comp=Z,1.9nm,0.6s,mb4.3,baz=91,slow=7.6,SNR=18
HFS Hagfors 53.86 324 P **P** 13 02 04.5 -0.6
comp=Z,7.9nm,1.1s,mb4.5,baz=90,slow=8.6,SNR=2.8
NB2 NORSAR Subarra 55.05 325 P **P** 13 02 13.7 -0.2
comp=Z,1.6nm,0.6s,mb4.2,baz=87,slow=7.0
NOA NORSAR Array B 55.05 325 P **P** 13 02 13.3 -0.6
comp=Z,2.0nm,0.7s,mb4.2,baz=87,slow=7.1,SNR=8.0
NOA NORSAR Array B 55.05 325 P **P** 13 02 13.3 -0.6
FITZ Fitzroy Crossi 63.09 136 P **P** 13 03 10.0 -0.2
comp=Z,1.9nm,0.9s,mb4.2,baz=329,slow=12,SNR=3.2
WRA Warramunga Arr 69.91 130 P **P** 13 03 51.8 -1.8
comp=Z,1.2nm,0.5s,mb4.0,baz=324,slow=6.2,SNR=10
WB2 Warramunga Arr 69.92 130 *eP* **P** 13 03 55.7 +2.1
ASAR Alice Springs 72.33 133 P **P** 13 04 06.5 -1.6
comp=Z,1.8nm,0.9s,mb4.0,baz=324,slow=6.0,SNR=14
ILAR Eielson Array 75.90 20 P **P** 13 04 28.9 +0.5
comp=Z,0.5nm,0.6s,mb3.6,baz=315,slow=5.1,SNR=6.2
YKA Yellowknife Ar 85.05 9 P **P** 13 05 17.1 +0.7
comp=Z,0.4nm,0.8s,mb3.6,baz=337,slow=5.2,SNR=7.9

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*NEIC **05** 12:58:43.9±2.0, 17.96N×167.38E, h30km, Error ellipse: s-maj=38.5km s-min=19.0km az=63.0*
*IDC **05** 12:58:45.9±3.0, 17.33N×166.36E, mb4.1/6, mb1 4.3/6, mb1mx4.1/13, MS3.7/9, Ms1 3.7/9, ms1mx3.5/24, Error ellipse: s-maj=88.3km s-min=32.5km az=133.0*
ISC 05 12:58:42.3±1.5, 17.87S±0.08×167.4E±0.2, h30km, n16, σ1s00/11, mb4.0/7, MS3.7/9, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
DZM	**Mont Dzumac**	**4.26**	**191**	*eP*		**Pn**	**12 59 45.4**	**-1.6**
DZM				eS		**Sn**	**13 00 37.4**	**+1.0**
PMG	**Port Moresby**	**21.33**	**291**	LR	LR		13 09 30.5	
	comp=Z,226nm,18.9s,MS3.6,baz=119,slow=32							
RPZ	**Rata Peaks**	**25.95**	**174**	LR	LR		13 13 25.4	
	comp=Z,223nm,20.1s,MS3.7,baz=197,slow=33							
STKA	**Stephens Creek**	**27.12**	**234**	P		**P**	**13 04 25.9**	**+1.2**
	3.9nm,1.0s,mb3.9,baz=70,slow=11,SNR=4.7							
STKA				LR		LR	13 15 22.2	
	comp=Z,137nm,19.9s,MS3.5,baz=204,slow=37							
STKA	**Stephens Creek**	**27.12**	**234**	P		**P**	**13 04 25.9**	**+1.2**
STKA				LR		LR	13 15 22.2	
RAR	**Rarotonga**	**31.13**	**102**	LR		LR	13 16 57.6	
	comp=Z,119nm,18.2s,MS3.6,baz=265,slow=34							
WRA	**Warramunga Arr**	**31.27**	**261**	P		**P**	**13 05 00.6**	**-1.4**
	1.8nm,1.2s,mb3.8,baz=90,slow=7.7,SNR=4.6							
WRA				LR		LR	13 15 54.4	
	comp=Z,123nm,21.9s,MS3.5,baz=155,slow=34							
AS12	**Alice Springs**	**31.75**	**254**	*eP*		**P**	**13 05 05.3**	**-0.8**
	11nm,1.4s,mb4.5							
ASAR	**Alice Springs**	**31.75**	**254**	P		**P**	**13 05 05.5**	**-0.7**
	2.1nm,0.6s,mb4.1,baz=80,slow=8.7,SNR=35							
ASAR				LR		LR	13 16 52.6	
	comp=Z,206nm,19.4s,MS3.8,baz=84,slow=35							
FITZ	**Fitzroy Crossi**	**39.61**	**263**	P		**P**	**13 06 13.6**	**+0.5**
	3.9nm,0.8s,mb4.2,baz=113,slow=6.5,SNR=5.1							
FITZ				LR		LR	13 21 24.7	
	comp=Z,87nm,18.8s,MS3.6,baz=103,slow=35							
CBIJ	**Chichi jima**	**50.33**	**331**	LR		LR	13 26 58.8	
	comp=Z,114nm,19.6s,MS3.9,baz=121,slow=34							
JNU	**Nakatsue**	**61.52**	**325**	LR		LR	13 31 51.7	
	comp=Z,59nm,18.1s,MS3.8,baz=233,slow=33							
QSPA	**South Pole Qui**	**72.17**	**180**	*eP*		**P**	**13 10 05.3**	**-0.4**
	4.4nm,1.1s,mb4.3							
CMAR	**Chiang Mai Arr**	**76.31**	**295**	P		**P**	**13 10 30.9**	**+0.2**
	1.2nm,0.9s,mb3.8,baz=144,slow=2.7,SNR=7.6							
SONM	**Songino Array**	**85.06**	**324**	P		**P**	**13 11 17.5**	**+1.1**
	0.8nm,1.0s,mb3.8,baz=124,slow=4.5,SNR=5.5							
YKA	**Yellowknife Ar**	**100.29**	**27**	P		P	13 12 34.9	+8.0
	1.4nm,1.3s,baz=250,slow=3.6,SNR=5.1							

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*HEL **05** 13:04:17.1±0.3, 60.92N×29.16E, ML1.9, Explosion*
*IDC **05** 13:04:18.4±1.8, 60.90N×29.04E, mb1 3.2/3, mb1mx3.0/19, ML3.0/3, Error ellipse: s-maj=17.4km s-min=11.6km az=174.0*
ISC 05 13:04:15.0±1.2, 60.91N±0.07×29.2E±0.1, n9, σ1s30/16, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
VJF	**Virojoki**	**0.87**	**245**	*eP*		**Pg**	**13 04 33.0**	**+0.7**
VJF				eS		**Sg**	**13 04 44.4**	**+0.5**
FIA0	**FINESS Array S**	**1.59**	**291**	*eP*		**Pn**	**13 04 44.9**	**+0.5**
FIA0				eS		**Sb**	**13 05 05.6**	**+0.2**
FINES	**FINESS Array B**	**1.59**	**291**	Pg		**Pg**	**13 04 45.0**	**-1.7**
	3.7nm,0.3s,baz=112,slow=15,SNR=52							
FINES				Lg			13 05 06.9	
	8.5nm,0.3s,baz=108,slow=28,SNR=53							
FINES				Rg			13 05 14.0	
	18nm,0.6s,baz=98,slow=28,SNR=29							
PVF	**Pernaja**	**1.66**	**259**	*eP*		**Pn**	**13 04 46.0**	**+0.6**
PVF				eS		**Sb**	**13 05 08.0**	**+0.5**
KAF	**Kangasniemi**	**1.82**	**313**	*eP*		**Pn**	**13 04 49.7**	**+1.9**
KAF				eS		**Sn**	**13 05 12.7**	**+0.7**
KAF				MSG			13 05 16.0	
	comp=Z,10nm,0.2s							
JOF	**Joensuu**	**2.26**	**26**	*eP*		**Pn**	**13 04 55.8**	**+1.7**
JOF				eS		**Sn**	**13 05 23.4**	**+0.3**
JOF				eSG		**Sg**	**13 05 25.7**	**-4.5**
JOF				MSG			13 05 26.8	
	comp=Z,4.9nm,0.2s							
HFS	**Hagfors**	**7.67**	**271**	Pn		**Pn**	**13 06 08.5**	**-2.1**
	comp=Z,0.1nm,0.3s,baz=78,slow=14,SNR=6.4							
HFS				Sn		**Sn**	**13 07 32.2**	**-7.1**
	comp=Z,0.0nm,0.3s,baz=87,slow=30,SNR=3.0							
NOA	**NORSAR Array B**	**8.72**	**279**	Pn		**P**	**13 06 23.3**	**-2.0**
	comp=Z,0.2nm,0.3s,baz=83,slow=13,SNR=2.3							
NOA				Lg			13 08 47.1	
	comp=Z,0.3nm,0.3s,baz=62,slow=12,SNR=3.4							
ARCES	**ARCESS Array B**	**8.80**	**352**	Pn		**P**	**13 06 24.1**	**-2.2**
	comp=Z,0.1nm,0.3s,baz=168,slow=11,SNR=9.4							
ARCES				Lg			13 08 45.9	
	comp=Z,0.4nm,0.3s,baz=155,slow=35,SNR=4.9							

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*IDC **05** 13:07:36.0±0.9, 14.15N×145.39E, mb3.8/8, mb1 4.0/8, mb1mx3.9/18, Error ellipse: s-maj=30.5km s-min=24.1km az=82.0*
*NEIC **05** 13:07:37.9±1.4, 14.10N×145.37E, h12km±9km, Error ellipse: s-maj=17.0km s-min=8.6km az=114.0*
ISC 05 13:07:38.8±1.6, 14.08N±0.09×145.3E±0.1, h31km±12km, n16, σ0s77/16, mb3.7/8, 2C, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
GUMO	**Guam**	**0.65**	**221**	⇑*iP*		**Pb**	**13 07 51.5**	**-0.1**
SAPN	**Saipan**	**1.21**	**21**	⇑*iP*		**Pn**	**13 08 00.2**	**+0.3**
SAPN				eS		**Sn**	**13 08 15.2**	**-0.1**
WRA	**Warramunga Arr**	**35.49**	**198**	P		**P**	**13 14 34.0**	**-1.0**
	0.5nm,0.6s,mb3.6,baz=19,slow=9.2,SNR=2.4							
ASAR	**Alice Springs**	**39.14**	**197**	P		**P**	**13 15 06.5**	**+0.8**
	0.3nm,0.7s,mb3.1,baz=26,slow=11,SNR=3.1							
CMAR	**Chiang Mai Arr**	**44.62**	**282**	P		**P**	**13 15 52.1**	**+1.4**
	1.2nm,0.7s,mb3.8,baz=73,slow=6.8,SNR=6.1							
ULN	**Ulaanbaatar**	**46.22**	**325**	*eP*		**P**	**13 16 03.4**	**+0.4**
SONM	**Songino Array**	**46.58**	**324**	P		**P**	**13 16 06.3**	**+0.6**
	0.7nm,0.6s,mb3.8,baz=140,slow=9.1,SNR=7.8							
LSA	**Lhasa**	**52.15**	**297**	*eP*		**P**	**13 16 48.9**	**-0.1**
MKAR	**Makanchi Array**	**61.43**	**316**	P		**P**	**13 17 54.0**	**-0.7**
	2.8nm,0.6s,mb4.6,baz=90,slow=8.6,SNR=31							
KURK	**Kurchatov**	**64.48**	**320**	*eP*		**P**	**13 18 14.2**	**-0.6**
BVAR	**Borovoye Array**	**69.81**	**322**	P		**P**	**13 18 47.2**	**-1.1**
	0.7nm,0.6s,mb3.6,baz=111,slow=7.8,SNR=6.5							
YKA	**Yellowknife Ar**	**82.23**	**27**	P		**P**	**13 19 57.4**	**-0.8**
	0.1nm,0.6s,mb2.9,baz=288,slow=5.1,SNR=3.9							
YKA	**Yellowknife Ar**	**82.23**	**27**	P		**P**	**13 19 57.4**	**-0.8**
NVAR	**Mina Array Bea**	**86.29**	**51**	P		**P**	**13 20 20.4**	**+1.1**
	0.9nm,0.5s,mb4.3,baz=272,slow=5.0,SNR=8.2							
NVAR	**Mina Array Bea**	**86.29**	**51**	P		**P**	**13 20 20.4**	**+1.1**
LPAZ	**La Paz**	**147.68**	**98**	PKPbc		PKPdf	13 27 24.4	+0.7
	0.4nm,0.4s,baz=304,slow=3.6,SNR=2.3							

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*IDC **05** 13:20:47.0±1.8, 36.72N×140.97E, h57km±18km, mb3.5/9, mb1 3.7/12, mb1mx3.5/26, ML3.8/3, Error ellipse: s-maj=21.7km s-min=10.5km az=100.0*
*MOS **05** 13:20:49.0±1.8, 36.83N×141.06E, h100km, mb4.0/1, Error ellipse: s-maj=18.2km s-min=15.3km az=118.9*
*JMA **05** 13:20:49.7±0.1, 36.69N×141.02E, h87km±1km, M3.8 Broadband fault plane solution: P waves. NP1:φs82°, δ31°, λ-49°. NP2:φs217°, δ67°, λ-112°. Principal axes: T Plg19°, Azm323°; N Plg20°, Azm226°; P Plg62°, Azm93°;*
JMA Felt II J1.
*NEIC **05** 13:20:50.2±1.4, 36.75N×141.02E, h88km±12km, mb4.3/1 Error ellipse: s-maj=18.8km s-min=12.1km az=131.0*
NEIC Recorded [1 JMA] in eastern Fukushima, Ibaraki and Tochigi Prefectures.
*BJI **05** 13:20:50.1, 36.70N×141.00E, h88km, mB4.6, mb4.5, Ms4.0, Msz3.8*
*NIED **05** 13:21:00, 36.70N×141.10E, h83km, Mw3.8 Best double couple: M0 6.49×10^14 NP1:φs216°, δ66°, λ-102°. NP2: φs64°, δ27°, λ-65°.*
ISC 05 13:20:47.8±0.5, 36.64N±0.04×141.14E±0.06, h90km±3km, n38, σ0s97/55, mb3.8/11, 2C-8D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
JHO	**Hitachi**	**0.46**	**267**	⇓*iP*		**P**	**13 21 03.4**	**+1.0**
JHO				eS		**S**	**13 21 13.2**	**-0.2**
ONAJ	**Iwakimizuishiy**	**0.54**	**329**	⇓*iP*		**P**	**13 21 03.6**	**+0.6**
ONAJ				eS		**S**	**13 21 14.4**	**0.0**
JFK	**Kawauchi**	**0.76**	**344**	⇓*iP*		**P**	**13 21 05.7**	**+0.6**
JFK				eS		**S**	**13 21 17.5**	**-0.4**
JFT	**Otama**	**1.09**	**324**	P		**P**	**13 21 09.4**	**+0.6**
JFT				eS		**S**	**13 21 23.9**	**-0.7**
JMM	**Marumori**	**1.25**	**347**	⇑*iP*		**P**	**13 21 11.4**	**+0.5**
JMM				eS		**S**	**13 21 27.4**	**-0.8**
JAG	**Ashikaga**	**1.38**	**262**	⇓*iP*		**P**	**13 21 13.0**	**+0.5**
JAG				eS		**S**	**13 21 30.2**	**-0.6**
JFY	**Yanaizu**	**1.38**	**304**	⇓*iP*		**P**	**13 21 13.1**	**+0.6**
JFY				eS		**S**	**13 21 30.3**	**-0.6**
JKT	**Katashina**	**1.53**	**275**	⇓*iP*		**P**	**13 21 15.2**	**+0.8**
JKT				eS		**S**	**13 21 34.7**	**+0.7**
JOU	**Okura**	**1.76**	**348**	⇑*iP*		**P**	**13 21 17.8**	**+0.4**
JOU				eS		**S**	**13 21 38.6**	**-0.6**
JHK	**Hiroka**	**1.81**	**290**	⇓*iP*		**P**	**13 21 18.5**	**+0.5**
JHK				eS		**S**	**13 21 40.1**	**-0.1**
JNS	**Sasagawa**	**1.87**	**309**	P		**P**	**13 21 19.0**	**+0.2**
JRY	**Ryogami san**	**1.91**	**252**	⇓*iP*		**P**	**13 21 20.1**	**+0.7**
JRY				S		**S**	**13 21 42.8**	**+0.1**
MAJO	**Matsushiro**	**2.37**	**269**	*eP*		**P**	**13 21 26.6**	**+1.0**
MAT	**Matsushiro**	**2.37**	**269**	P		**P**	**13 21 26.6**	**+1.0**
MAT				S		**S**	**13 21 52.9**	**-0.8**
MAT	**Matsushiro**	**2.37**	**269**	*eP*		**P**	**13 21 27.0**	**+1.4**
MAT				eS		**S**	**13 21 53.0**	**-0.7**
JHJ	**Hachijo jima 2**	**3.69**	**198**	P		**P**	**13 21 43.5**	**-0.4**
	16nm,0.3s,baz=248,slow=23,SNR=6.3							
JHJ				S		**S**	**13 22 25.1**	**-1.2**
	75nm,0.3s,baz=105,slow=22,SNR=12							
ASAJ	**Asahikawa**	**7.55**	**8**	P		**P**	**13 22 34.6**	**-2.4**
	2.2nm,0.3s,baz=243,slow=9.7,SNR=12							
ASAJ				S		**S**	**13 23 53.9**	**-7.7**
	0.8nm,0.3s,baz=253,slow=31,SNR=4.0							
CBIJ	**Chichi jima**	**9.56**	**174**	P		**P**	**13 23 02.0**	**-2.2**
	2.1nm,0.3s,baz=270,slow=20,SNR=6.1							
CBIJ				S		**S**	**13 24 41.7**	**-9.0**
	3.2nm,0.3s,baz=252,slow=19,SNR=3.6							
YSS	**Yuzh-Sakhalins**	**10.38**	**6**	*eP*		**P**	**13 23 12.0**	**-3.2**
YSS	**Yuzh-Sakhalins**	**10.38**	**6**	*eP*		**P**	**13 23 12.5**	**-2.7**
	13nm,0.8s							
ENH	**Enshi**	**27.09**	**266**	*eP*		**P**	**13 26 22.9**	**-1.0**
	7.2nm,0.7s,mb4.3							
ULN	**Ulaanbaatar**	**27.40**	**305**	*eP*		**P**	**13 26 25.9**	**-0.7**
BOD	**Bodaibo**	**27.75**	**328**	*eP*		**P**	**13 26 24.6**	**-5.1**
SONM	**Songino Array**	**27.83**	**305**	P		**P**	**13 26 29.7**	**-0.8**
	1.5nm,0.5s,mb3.8,baz=106,slow=9.1,SNR=14							
ZAK	**Zakamensk**	**30.35**	**309**	*eP*		**P**	**13 26 52.1**	**-0.8**
WMQ	**Urumqi**	**40.83**	**297**	*eP*		**P**	**13 28 23.9**	**+2.1**
WMQ					AP	pP	13 28 41.9	-1.4
WMQ					XP	sP	13 28 50.9	-2.9
WMQ					PP	PP	13 30 00.3	-0.1
WMQ					S	**S**	**13 34 21.6**	**-4.2**
WMQ					AMB	AMB		
	comp=Z,7.0nm,1.0s,mb4.5							
WMQ					AMB	AMB		
	comp=Z,40nm,4.3s							
WMQ					LR	LR		
	comp=N,96nm,19.8s							
WMQ					LR	LR		
	comp=E,99nm,19.1s							
WMQ					LR	LR		
	comp=Z,146nm,19.5s							
MKAR	**Makanchi Array**	**44.15**	**302**	P		**P**	**13 28 48.5**	**-0.3**
	comp=Z,1.8nm,0.7s,mb3.9,baz=87,slow=9.2,SNR=14							
MKAR	**Makanchi Array**	**44.15**	**302**	P		**P**	**13 28 48.5**	**-0.4**
KURK	**Kurchatov**	**46.01**	**308**	*eP*		**P**	**13 29 02.9**	**-0.6**
ILAR	**Eielson Array**	**49.94**	**32**	P		**P**	**13 29 35.3**	**+1.3**
	comp=Z,0.6nm,0.7s,mb3.6,baz=266,slow=7.1,SNR=10							
BVAR	**Borovoye Array**	**50.68**	**313**	P		**P**	**13 29 39.4**	**-0.4**
	comp=Z,0.6nm,0.4s,mb4.0,baz=76,slow=6.1,SNR=4.7							
ZRNK	**Zerenda**	**51.51**	**313**	*eP*		**P**	**13 29 46.1**	**+0.1**
INK	**Inuvik**	**54.84**	**27**	P		**P**	**13 30 10.8**	**+0.4**
	comp=Z,0.2nm,0.3s,mb3.6,baz=284,slow=3.6,SNR=3.9							
WRA	**Warramunga Arr**	**56.64**	**188**	P		**P**	**13 30 23.5**	**-0.5**
	comp=Z,1.1nm,0.6s,mb4.1,baz=5.2,slow=7.5,SNR=17							
ASAR	**Alice Springs**	**60.37**	**188**	P		**P**	**13 30 50.0**	**+0.2**
	comp=Z,0.5nm,0.8s,mb3.6,baz=3.5,slow=7.3,SNR=6.2							
NVAR	**Mina Array Bea**	**75.40**	**53**	P		**P**	**13 32 25.9**	**+2.7**
	comp=Z,0.6nm,0.8s,mb3.4,baz=270,slow=5.9,SNR=4.8							
NVAR	**Mina Array Bea**	**75.40**	**53**	P		**P**	**13 32 25.9**	**+2.7**
PDAR	**Pinedale Array**	**78.10**	**45**	P		**P**	**13 32 40.6**	**+2.4**
	comp=Z,0.3nm,0.5s,mb3.2,baz=243,slow=2.0,SNR=3.2							

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*IGIL **05** 13:39:19.8, 38.60N×14.80E, h2km, mb5.8*
*BJI **05** 13:39:40.7, 38.91N×14.58E, h222km, mB5.4, mb5.7*
*BGS **05** 13:39:42.2±2.5, 38.53N×14.78E, h229km*
*CSEM **05** 13:39:43.6, 38.57N×14.81E, h243km, mb5.3*
*LDG **05** 13:39:43.3±0.2, 38.69N×14.99E, h233km, Mb5.9/46, Ms3.7/8, Error ellipse: s-maj=8.3km s-min=4.5km az=40.0*
*MOS **05** 13:39:43.7±0.8, 38.58N×14.89E, h246km, mb5.5/53, Error ellipse: s-maj=4.2km s-min=2.6km az=82.7*
*ZUR_RM **05** 13:39:43, 38.51N×14.81E, h255km, Mw5.5/31, Moment Tensor Solution. s31 Moment tensor: Scale 10^17Nm; Mrr-0.82; Mθθ-0.12; Mφφ0.94; Mrθ-1.28; Mθφ0.89; Mφr-0.13; Best double couple: M0 1.8×10^17 NP1:φs65°, δ73°, λ-54°. NP2:φs177°, δ40°, λ-152°. Principal axes: T 1.718, Plg19°, Azm129°; N 155, Plg35°, Azm233°; P -1.873, Plg49°, Azm15°;*
*HRVD **05** 13:39:43.9±0.2, 38.61N×14.75E, h239km±1km, MW5.5/72, Centroid moment Tensor Solution. LP body waves: s61,c122;Mantle waves: s72,c153; Half duration: 1s3 Moment tensor: Scale 10^17Nm; Mrr-0.89±.03; Mθθ0.05±.03; Mφφ0.84±.03; Mrθ-1.48±.03; Mθφ0.93±.03; Mφr-0.04±.03; Best double couple: M0 1.94×10^17 NP1: φs183°, δ36°, λ-152°. NP2:φs70°, δ74°, λ-57°. Principal axes: T 1.8, Plg22°, Azm135°; N .27, Plg32°, Azm240°; P -2.07, Plg50°, Azm17°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*MED_RC **05** 13:39:43.9±0.1, 38.56N×14.76E, h236km±1km, MW5.5/23, Moment Tensor Solution. Body waves: s23,c32; Duration: 1s0 Moment tensor: Scale 10^17Nm; Mrr-0.77±.04; Mθθ0.19±.04; Mφφ0.58±.07; Mrθ-1.52±.02; Mθφ0.75±.04; Mφr0.02±.06; Best double couple: M0 1.81×10^17 NP1:φs190°, δ30°, λ-153°. NP2:φs77°, δ77°, λ-63°. Principal axes: T 1.65, Plg27°, Azm145°; N .31, Plg26°, Azm250°; P -1.97, Plg51°, Azm17°; nsta1 refers to waves, cutoff=35s.*
*NEIC **05** 13:39:43.9±0.1, 38.51N×14.81E, mb5.4/161, MW5.5 Error ellipse: s-maj=2.5km s-min=1.5km az=21.0, Moment Tensor Solution. s19 Moment tensor: Scale 10^17Nm; Mrr-1.14; Mθθ-0.21; Mφφ1.35; Mrθ-0.96; Mθφ0.84; Mφr-0.08; Best double couple: M0 1.8×10^17 NP1:φs174°, δ46°, λ-141°. NP2:φs54°, δ63°, λ-52°. Principal axes: T 1.79, Plg10°, Azm117°; N 0, Plg34°, Azm214°; P -1.79, Plg55°, Azm13°;*
*ROM **05** 13:39:43.2±0.2, 38.51N×14.88E, h240km±1km, ML5.3 Error ellipse: s-maj=1.2km s-min=1.2km az=90.0*
*DUSS **05** 13:39:45.6±0.3, 37.57N×16.06E, h15km*
*ZUR **05** 13:39:45.1, 38.60N×14.80E, h228km, ML5.8/12, Ms3.8*
*IDC **05** 13:39:46.1±1.0, 38.76N×14.74E, h252km±8km, mb5.1/32, mb1 5.1/42, mb1mx5.1/42, Error ellipse: s-maj=7.7km s-min=7.0km az=175.0*
ISC 05 13:39:42.9±0.1, 38.55N±0.01×14.79E±0.01, h229km, h229km±1.7km: pP-P, n1220, σ1s34/1300, mb5.4/174, 156C-188D, Sicily

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
SLNA	**Salina**	**0.04**	**63**	⇓*iP*		**P**	**13 40 14.7**	**+2.0**
SLNA	**Salina**	**0.04**	**63**	⇓*iP*		**P**	**13 40 14.7**	**+2.0**
MSI	**Messina ING**	**0.69**	**119**	⇓*iP*		**P**	**13 40 15.1**	**+0.8**
MSI	**Messina ING**	**0.69**	**119**	⇓*iP*		**P**	**13 40 15.1**	**+0.8**
SCLL	**Scilla**	**0.78**	**112**	⇓*iP*		**P**	**13 40 15.6**	**+0.9**
SCLL	**Scilla**	**0.78**	**112**	⇓*iP*		**P**	**13 40 15.6**	**+0.8**
GIB	**Gibilmanna**	**0.82**	**228**	⇓*iP*		**P**	**13 40 16.4**	**+1.5**
GIB				S		**S**	**13 40 41.1**	**+1.4**
GIB	**Gibilmanna**	**0.82**	**228**	⇓*iP*		**P**	**13 40 16.4**	**+1.5**
GIB				eS		**S**	**13 40 41.1**	**+1.4**
CSLB	**Castelbuono**	**0.84**	**224**	⇓*iP*		**P**	**13 40 16.3**	**+1.3**
CSLB	**Castelbuono**	**0.84**	**224**	⇓*iP*		**P**	**13 40 16.3**	**+1.4**
MTTG	**Motta San Giov**	**0.89**	**127**	⇓*iP*		**P**	**13 40 15.8**	**+0.5**
MTTG	**Motta San Giov**	**0.89**	**127**	⇓*iP*		**P**	**13 40 15.8**	**+0.6**
SOI	**Samo**	**1.10**	**115**	⇓*iP*		**P**	**13 40 18.0**	**+1.5**
SOI				S		**S**	**13 40 43.2**	**+0.6**
SOI	**Samo**	**1.10**	**115**	⇓*iP*		**P**	**13 40 18.0**	**+1.5**
SOI				eS		**S**	**13 40 43.2**	**+0.6**
VAE	**Valguarnera**	**1.11**	**196**	P		**P**	**13 40 19.2**	**+2.6**
	352nm,0.3s,baz=108,slow=4.4,SNR=158							
MPG	**Monte Pellegri**	**1.19**	**252**	⇓*iP*		**P**	**13 40 19.1**	**+1.9**
MPG	**Monte Pellegri**	**1.19**	**252**	⇓*iP*		**P**	**13 40 19.1**	**+1.9**
USI	**Ustica**	**1.27**	**278**	⇓*iP*		**P**	**13 40 20.1**	**+2.3**
USI	**Ustica**	**1.27**	**278**	⇓*iP*		**P**	**13 40 20.1**	**+2.3**
MCT	**Mte Cammarata**	**1.29**	**225**	⇑*iP*		**P**	**13 40 20.9**	**+2.9**
GRI	**Girifalco**	**1.30**	**77**	⇓*iP*		**P**	**13 40 19.2**	**+1.2**
GRI				S		**S**	**13 40 45.7**	**+0.5**
GRI	**Girifalco**	**1.30**	**77**	⇓*iP*		**P**	**13 40 19.2**	**+1.2**
GRI				eS		**S**	**13 40 45.7**	**+0.5**
AGST	**Augusta-Monte**	**1.33**	**165**	⇓*iP*		**P**	**13 40 19.6**	**+1.3**
AGST	**Augusta-Monte**	**1.33**	**165**	⇓*iP*		**P**	**13 40 19.6**	**+1.4**
MEU	**Monte Lauro**	**1.45**	**176**	⇑*iP*		**P**	**13 40 21.0**	**+1.8**
PZI	**Palazzolo**	**1.49**	**175**	⇓*iP*		**P**	**13 40 21.5**	**+2.0**
PZI	**Palazzolo**	**1.49**	**175**	⇓*iP*		**P**	**13 40 21.5**	**+1.9**
FAVR	**Favara**	**1.56**	**215**	⇓*iP*		**P**	**13 40 22.8**	**+2.7**
FAVR	**Favara**	**1.56**	**215**	⇓*iP*		**P**	**13 40 22.8**	**+2.8**
CLTB	**Caltabellotta**	**1.58**	**233**	⇓*iP*		**P**	**13 40 22.1**	**+1.9**
TDS	**Terranova Siba**	**1.64**	**47**	⇓*iP*		**P**	**13 40 22.0**	**+1.3**
MGR	**Morigerati**	**1.69**	**20**	⇓*iP*		**P**	**13 40 22.8**	**+1.6**
MGR	**Morigerati**	**1.69**	**20**	⇑*iP*		**P**	**13 40 22.8**	**+1.6**
ERC	**Erice**	**1.81**	**254**	⇓*iP*		**P**	**13 40 23.5**	**+1.3**
ERC	**Erice**	**1.81**	**254**	⇓*iP*		**P**	**13 40 23.5**	**+1.3**
SCHR	**S. Chirico Rap**	**1.93**	**31**	⇑*iP*		**P**	**13 40 24.9**	**+1.6**
SCHR				S		**S**	**13 40 56.1**	**+2.1**
SLCN	**Sala Consilina**	**1.95**	**19**	*eP*		**P**	**13 40 25.2**	**+1.7**
SLCN	**Sala Consilina**	**1.95**	**19**	*eP*		**P**	**13 40 25.2**	**+1.7**
ORI	**Oriolo Calabro**	**1.99**	**40**	*eP*		**P**	**13 40 25.6**	**+1.8**
ORI	**Oriolo Calabro**	**1.99**	**40**	*eP*		**P**	**13 40 25.6**	**+1.7**
SGO	**Sicignano**	**2.05**	**11**	⇑*iP*		**P

BIA *i* Sn **S** 13 42 09.9 -1.3
PVY Plav 5.65 43 ⇓*i* Pn **P** 13 41 07.4 +0.5
PVY *e* Sn **S** 13 42 10.7 -1.6
RSM Repubblica di 5.66 343 *e* P **P** 13 41 10.0 +3.0
KZN Kozani 5.68 70 *e* P **P** 13 41 08.4 +1.1
SFI Santa Sofia 5.79 338 *e* P **P** 13 41 10.7 +2.0
IVA Berane 5.80 40 ⇓*i* Pn **P** 13 41 09.8 +0.9
IVA *e* Sn **S** 13 42 14.7 -1.1
PGD Poggio Sodo 5.80 337 *e* P **P** 13 41 10.9 +2.1
ITM Ithomi 5.81 101 *e* P **P** 13 41 10.0 +1.1
ITM Ithomi 5.81 101 P **P** 13 41 09.8 +0.9
AGG Agios Georgios 5.91 83 *e* S **S** 13 42 11.5 -6.6
AGG Agios Georgios 5.91 83 P **S** 13 41 11.7 +1.5
AGG S **S** 13 42 21.5 +3.3
PLE Pljevlja 5.91 35 ⇓*i* Pn **P** 13 41 11.2 +1.0
PLE *e* Sn **S** 13 42 17.0 -1.2
VMG Vicchio 5.94 337 *e* P **P** 13 41 13.2 +2.6
PGF Pioggiola 5.95 314 *e* P **P** 13 41 12.2 +1.5
1µm,0.7s
NVLJ Novalja 6.01 1 *i* P **P** 13 41 12.0 +0.6
SEI Scarperia 6.08 336 *e* P **P** 13 41 15.1 +2.8
BRSN Barisano 6.08 341 *e* P **P** 13 41 15.6 +3.3
PII Pisa 6.09 329 ⇑*i* P **P** 13 41 14.9 +2.4
SKO Skopje 6.13 54 ⇓*i* Pn **P** 13 41 12.8 -0.1
SKO *i* Pb **P** 13 41 26.5 +14
SKO *i* Sn **S** 13 42 20.4 -2.7
SKO Lg 13 42 35.0
comp=Z,0.3nm,0.8s
SKO Skopje 6.13 54 ⇓*i* P **P** 13 41 12.8 -0.1
SKO *i* 13 42 20.4
SKO pmax pmax
comp=Z,270nm,0.8s
SKO Skopje 6.13 54 ⇓*i* Pn **P** 13 41 12.8 -0.1
comp=Z,270nm,0.8s
SKO *i* Pb **P** 13 41 26.5 +14
SKO *i* Sn **S** 13 42 20.4 -2.7
SKO Lg 13 42 35.0
LIT Litokhoron 6.17 73 *e* P **P** 13 41 13.9 +0.4
NVSS Nova Varos 2 6.19 35 ⇑*i* Pn **P** 13 41 14.1 +0.4
NVSS Sn **S** 13 42 20.0 -4.6
MAIM 6.26 330 ⇑P **P** 13 41 17.4 +2.7
GRG Griva 6.34 65 *e* P **P** 13 41 15.3 -0.3
BDI Bagni Di Lucca 6.35 332 *e* P **P** 13 41 18.6 +2.3
LKR Lokris 6.43 87 *e* P **P** 13 41 17.8 +1.0
ZCCA Zocca 6.47 335 ⇑*i* P **P** 13 41 20.8 +3.5
VLC Villacollemand 6.51 331 ⇑*i* P **P** 13 41 20.3 +2.5
SARO Sassorosso 6.53 331 ⇑P **P** 13 41 20.6 +2.6
VAY Valandovo 6.59 63 *i* Pn **P** 13 41 18.3 -0.5
VAY ⇓*i* Sn **S** 13 42 29.8 -3.9
VINC Vinca 6.59 329 ⇑P **P** 13 41 21.2 +2.4
XOR Xorichti 6.60 80 *e* P **P** 13 41 19.7 +0.8
XOR Xorichti 6.60 80 P **P** 13 41 20.0 +1.1
GSCL Gusciola 6.60 333 *e* P **P** 13 41 22.2 +3.3
NEO Neokhori 6.62 81 *e* P **P** 13 41 20.0 +0.8
THE Thessaloniki 6.65 69 *e* P **P** 13 41 19.0 -0.6
VLI Veliai 6.72 103 *e* P **P** 13 41 22.5 +2.1
ERBM Eremo 6.72 332 *e* P **P** 13 41 24.0 +3.5
VALM 6.73 331 ⇑P **P** 13 41 23.4 +2.8
BACM 6.74 330 ⇑P **P** 13 41 23.4 +2.7
KNT Kendrikon 6.76 60 *e* P **P** 13 41 20.6 -0.4
DIVS Divcibare 6.79 34 ⇑*i* Pn **P** 13 41 20.8 +0.6
DIVS Sn **S** 13 42 28.8 -9.5
GRAM 6.92 331 ⇑P **P** 13 41 26.1 +3.1
CODM 6.92 329 ⇑P **P** 13 41 25.6 +2.6
KYTH Kithira 6.94 106 *e* P **P** 13 41 24.5 +1.2
PLG Polygyros 6.94 72 *e* P **P** 13 41 23.0 -0.3
GRUS Gruza 6.96 38 ⇑*i* Pn **P** 13 41 22.9 -0.6
GRUS Sn **S** 13 42 38.5 -3.6
BOJS Bojanci 6.96 3 *e* P **P** 13 41 24.6 +1.0
BOJS *e* 13 41 27.6
SOH Sokhos 6.98 68 *e* P **P** 13 41 23.9 0.0
SISC Sisak 7.02 9 *i* P **P** 13 41 24.4 +0.1
SISC Sisak 7.02 9 *i* P **P** 13 41 24.4 +0.1
ATH Athens Observa 7.05 92 *e* P **P** 13 41 25.0 +0.3
AOS Alonnisos 7.12 82 *e* P **P** 13 41 25.9 +0.3
PTL Penteli 7.15 91 *e* P **P** 13 41 26.5 +0.5
CEY Cerknica 7.19 358 *i* P **P** 13 41 26.8 +0.2
TRI Trieste 7.20 354 *e* P **P** 13 41 27.2 +0.6
SRS Serrai 7.24 66 *e* P **P** 13 41 26.8 -0.4
SRS Serrai 7.24 66 P **P** 13 41 26.7 -0.5
VISS Visnje 7.25 0 *e* P **P** 13 41 28.0 +0.7
comp=Z,8µm,3.6s
CRES Cresnjevec ost 7.29 4 *e* P **P** 13 41 28.5 +0.7
CRES *e* S **S** 13 42 50.9 +1.1
comp=Z,5µm,3.2s
CRES Cresnjevec ost 7.29 4 *e* P **P** 13 41 28.5 +0.7
comp=Z,5µm,3.2s
CRES *e* S **S** 13 42 50.9 +1.1
GENL Genova Univers 7.30 325 ⇑P **P** 13 41 30.3 +2.4
OUR Ouranopolis 7.33 73 *e* P **P** 13 41 28.8 +0.4
GCIS Gornji Cirnik 7.34 4 *e* P **P** 13 41 29.1 +0.7
comp=Z,4µm,2.6s
BOB Bobbio (Coli) 7.39 329 *e* P **P** 13 41 32.7 +3.6
LEGS Legarje 7.41 3 *e* S **S** 13 42 53.2 +0.7
comp=Z,6µm,3.1s
LEGS Legarje 7.41 3 *e* P **P** 13 41 30.1 +0.8
comp=Z,11µm,3.1s
LEGS *e* S **S** 13 42 53.2 +0.7
IMI Imperia 7.47 318 *e* P **P** 13 41 31.1 +1.0
GOLS Golise 7.48 4 *e* P **P** 13 41 30.9 +0.6
GOLS *i* S **S** 13 42 55.1 +0.8
comp=Z,4µm,3.1s
GOLS Golise 7.48 4 *e* P **P** 13 41 30.9 +0.6
comp=Z,8µm,3.1s
GOLS *i* S **S** 13 42 55.1 +0.8
LJU Ljubljana 7.49 359 *e* P **P** 13 41 31.1 +0.7
LJU *i* 13 41 33.4
LJU *e* S **S** 13 42 55.8 +1.3
LJU Ljubljana 7.49 359 *e* P **P** 13 41 31.1 +0.7
LJU *e* S **S** 13 42 55.8 +1.3
MMB Musomiste 7.50 63 ⇓*i* P **P** 13 41 30.3 -0.1
SVIS Svilajnac 7.50 38 ⇑*i* Pn **P** 13 41 30.0 -0.6
SVIS Sn **S** 13 42 50.0 -4.8
NVR Nevrokopi 7.51 65 *e* P **P** 13 41 30.9 +0.3
VOY Vojsko 7.51 355 ⇓*e* P **P** 13 41 30.9 +0.3
FIN Finale Ligure 7.51 321 ⇑*i* P **P** 13 41 31.9 +1.2
RORO 7.52 320 ⇑P **P** 13 41 32.3 +1.6
NEGI Negi 7.52 317 ⇓P **P** 13 41 31.0 +0.2
PDKS Podkum 7.53 1 *e* P **P** 13 41 31.6 +0.8
PDKS *i* 13 41 33.5
PDKS *e* S **S** 13 42 55.7 +0.4
PDKS Podkum 7.53 1 *e* P **P** 13 41 31.6 +0.8
PDKS *e* S **S** 13 42 55.7 +0.4
BOLS Boljevac 7.55 43 ⇑*i* Pn **P** 13 41 30.6 -0.6
BOLS Sn **S** 13 42 52.5 -3.4
VTS Vitosha 7.57 55 ⇓*i* P **P** 13 41 31.7 +0.3
VTS Vitosha 7.57 55 P **P** 13 41 31.8 +0.4
PCP Pian Castagno 7.60 324 ⇑P **P** 13 41 34.1 +2.3
DOBS Dobrina 7.61 4 *i* P **P** 13 41 32.5 +0.5
comp=Z,6µm,4.2s
DOBS Dobrina 7.61 4 *i* P **P** 13 41 32.5 +0.5
comp=Z,6µm,4.2s
REVF Revere 7.63 315 P **P** 13 41 33.7 +1.5
MONE Monesi 7.65 318 ⇓P **P** 13 41 33.4 +1.0
CAE Caneva 7.66 348 ⇑*e* P **P** 13 41 33.0 +0.5
SBF Sospel 7.68 316 *e* P **P** 13 41 33.7 +0.9
comp=Z,2µm,0.6s
SAOF Saorge 7.69 317 P **P** 13 41 34.1 +1.1
CADS Cadrg 7.72 355 *i* P **P** 13 41 33.4 +0.2
comp=Z,2µm,2.1s
SAL Salo 7.73 337 *e* P **P** 13 41 34.1 +0.6
ROB Roburent 7.75 320 ⇑P **P** 13 41 35.4 +1.7
AURF Auriere 7.75 316 P **P** 13 41 34.9 +1.2
ROBS Robic 7.75 353 *i* P **P** 13 41 33.7 0.0
comp=Z,1µm,2.0s
ROBS Robic 7.75 353 *i* P **P** 13 41 33.7 0.0
comp=Z,1µm,2.0s
MLNI Malnisio 7.77 349 ⇑*e* P **P** 13 41 34.4 +0.5
AUTN L'Aution 7.77 317 P **P** 13 41 35.8 +1.8
MPRI Monte Prat 7.80 351 ⇑*e* P **P** 13 41 35.0 +0.6
GMNA Gemona 7.81 352 *e* P **P** 13 41 34.7 +0.2
CTI Castel Tesino 7.85 344 *e* P **P** 13 41 35.8 +0.8
BOO Bordano 7.87 351 ⇓*i* P **P** 13 41 34.9 -0.3
TOUF Mont Tournerai 7.88 316 P **P** 13 41 37.1 +1.7
LMR La Mourre 7.88 310 *e* P **P** 13 41 36.1 +0.7
comp=Z,451nm,0.5s
CALF Calern 7.89 314 P **P** 13 41 36.1 +0.6
CALN Calern 7.91 314 P **P** 13 41 37.3 +1.5
PTCC Patocco-Chiusa 7.92 353 *e* P **P** 13 41 35.9 -0.1
GROS Grobnik 7.93 4 *i* P **P** 13 41 36.3 +0.3
ENR Entracque 7.93 318 ⇑P **P** 13 41 37.7 +1.7

FRF La Foret Royal 7.93 312 *e* P **P** 13 41 36.8 +0.7
comp=Z,772nm,0.6s
CSO Casso 7.93 348 ⇑*i* P **P** 13 41 36.8 +0.7
OBKA Obir 7.96 359 ⇓*i* P **P** 13 41 36.5 +0.1
comp=Z,164nm,0.6s
OBKA *i* 13 41 39.1
comp=Z,546nm,0.5s
OBKA *i* 13 41 45.3
comp=Z,998nm,0.6s
LSR Lussari 7.98 354 ⇓*i* P **P** 13 41 37.0 +0.3
STV Sta Anna Valdi 7.99 318 ⇓P **P** 13 41 38.6 +1.8
STV2 Anna di Valdie 7.99 318 ⇓P **P** 13 41 38.3 +1.5
PERS Pernice 8.09 2 *e* P **P** 13 41 38.7 +0.6
PERS 13 41 46.4
PERS *i* 13 41 46.4
PERS *e* S **S** 13 43 07.3 -0.9
PERS Pernice 8.09 2 *e* P **P** 13 41 38.7 +0.6
PERS *e* S **S** 13 43 07.3 -0.9
PLRO Paularo 8.09 352 ⇓*e* P **P** 13 41 38.6 +0.5
LOS Limnos 8.11 77 P **P** 13 41 39.4 +1.1
CSMI Casera Mimoias 8.12 349 ⇓*e* P **P** 13 41 39.4 +1.0
ZOU Zoufplan 8.12 351 ⇑*i* P **P** 13 41 39.0 +0.6
VAM Vamos 8.15 110 ⇓*i* P **P** 13 41 40.5 +1.6
PKSM Moragy 8.17 19 P **P** 13 41 38.5 -0.6
FVI Forni Avoltri 8.18 350 *e* P **P** 13 41 39.6 +0.4
PGB Panagyurishte 8.18 58 *i* P **P** 13 41 36.5 -2.7
AFL Alpe Faloria 8.21 347 ⇑*e* P **P** 13 41 40.8 +1.2
DOI San Damiano 8.21 319 *e* P **P** 13 41 41.7 +2.1
RZN Rozhen 8.22 64 *i* P **P** 13 41 40.0 +0.2
PZZ Prazzo 8.29 318 ⇓P **P** 13 41 41.8 +1.2
TAVF Tavernes 8.31 310 P **P** 13 41 42.5 +1.5
PLD Plovdiv 8.36 62 *i* P **P** 13 41 42.5 +0.9
BERF Bertagne 8.37 308 P **P** 13 41 42.7 +1.0
BHB Bricherasio 8.44 321 ⇑P **P** 13 41 43.5 +0.9
PUYF Puyloubier 8.48 309 P **P** 13 41 44.1 +0.9
MUGIO Muggio 8.51 332 *e* Pn **P** 13 41 43.3 -0.2
comp=Z,3µm,0.5s
BRMO Bormio 8.57 339 *e* P **P** 13 41 45.7 +1.5
VAI Varese 8.57 331 *e* P **P** 13 41 44.2 -0.1
GELF Grande-Etoile 8.57 307 P **P** 13 41 45.1 +0.8
KBA Koelnbreinsper 8.59 353 ⇑*i* P **P** 13 41 45.2 +0.6
comp=Z,23nm,0.6s
KBA *i* 13 41 48.8
comp=Z,214nm,0.4s
MBDF Montbardon 8.61 318 *e* P **P** 13 41 47.1 +2.3
comp=Z,5µm,0.7s
BERNI Berninapass 8.61 337 ⇑*i* Pn **P** 13 41 45.9 +1.1
comp=Z,2µm,0.7s
APE Apeiranthos 8.63 97 ⇑*i* P **P** 13 41 45.1 +0.1
APE Apeiranthos 8.63 97 P **P** 13 41 43.0 -2.0
VILF Villemus 8.65 311 P **P** 13 41 47.0 +1.7
THR5 Thira Island, 8.66 101 *e* P **P** 13 41 45.4 0.0
RDO Rodhopi 8.66 69 *e* P **P** 13 41 45.5 0.0
RSP Reno Superiore 8.67 322 ⇑P **P** 13 41 46.5 +1.0
FENE Fenestrelle 8.67 321 ⇑P **P** 13 41 47.4 +1.8
THR4 Thira Island, 8.68 101 *e* P **P** 13 41 46.4 +0.7
THR4 Thira Island, 8.68 101 P **P** 13 41 46.2 +0.5
ARBF Arbois 8.69 308 P **P** 13 41 47.7 +1.9
THR3 Thira Island, 8.70 101 *e* P **P** 13 41 45.8 -0.2
THR3 Thira Island, 8.70 101 P **P** 13 41 47.3 +1.3
KDZ Kurdzhali 8.71 66 P **P** 13 41 45.0 -1.1
THR6 Thira Island, 8.71 101 P **P** 13 41 46.4 +0.3
ARSA Arzberg 8.71 3 ⇑*i* P **P** 13 41 46.4 +0.3
comp=Z,405nm,0.6s
IDI Anoyia 8.72 109 P **P** 13 41 44.8 -1.4
comp=Z,35nm,0.3s,baz=304,slow=15,SNR=125
IDI S **S** 13 43 23.9 +1.3
comp=Z,13nm,0.3s,baz=143,slow=20,SNR=3.9
IDI ScP 13 50 57.7
comp=Z,0.6nm,0.3s,baz=90,slow=2.2,SNR=7.5
TREF Trevaresse 8.73 309 P **P** 13 41 47.2 +0.9
FUORN Ofenpass 8.73 339 ⇑*i* Pn **P** 13 41 47.5 +1.2
comp=Z,3µm,0.6s
RRL Cesana Torines 8.74 319 ⇓P **P** 13 41 48.7 +2.3
SANT Santorini 8.76 101 *e* P **P** 13 41 46.6 0.0
SMRF Simiane la Rot 8.81 311 *e* P **P** 13 41 48.9 +1.6
comp=Z,1µm,0.7s
VDL Val di Lei 8.85 335 ⇑*i* Pn **P** 13 41 49.0 +1.1
comp=Z,779nm,0.4s
TUE Stuetta 8.88 335 P **P** 13 41 49.0 +0.8
BNI Bardonecchia 8.88 320 *e* P **P** 13 41 50.8 +2.5
DIM Dimitrovgrad 8.92 64 *i* P **P** 13 41 49.0 +0.2
LSD Ceresole Reale 8.94 323 ⇑P **P** 13 41 50.6 +1.5
PRAF Pradon 8.95 309 P **P** 13 41 50.5 +1.3
MCGN Macugnaga 8.96 328 P **P** 13 41 49.0 -0.2
PRK Paraskevi 8.98 82 *e* P **P** 13 41 50.1 +0.6
ALN Alexandroupoli 8.98 71 *e* P **P** 13 41 50.0 +0.4
DAVOX Davos 8.99 338 P **P** 13 41 51.1 +1.4
comp=Z,55nm,0.3s,baz=151,slow=11,SNR=108
DAVOX S **S** 13 43 30.0 +1.2
baz=124,slow=15,SNR=0.9
DAVOX Davos 8.99 338 ⇑*e* Pn **P** 13 41 50.9 +1.3
comp=Z,3µm,1.1s
WTTA Wattenberg 9.01 346 ⇑*i* P **P** 13 41 50.5 +0.5
comp=Z,3.4nm,0.3s
WTTA *i* 13 41 54.0
WTTA *i* 13 43 34.2
comp=Z,2µm,2.6s
WTTA Wattenberg 9.01 346 ⇑*i* P **P** 13 41 50.5 +0.5
comp=Z,3.4nm,0.3s
WTTA *i* 13 43 34.2
MMK Mattmark 9.04 328 ⇑*e* Pn **P** 13 41 51.7 +1.4
comp=Z,2µm,0.7s
EZN Ezine 9.05 78 P **P** 13 41 51.3 +0.9
SQTA Sankt Quirin 9.06 344 ⇓*i* P **P** 13 41 53.2 +2.7
comp=Z,264nm,0.5s
SQTA *i* 13 41 55.0
comp=Z,3µm,0.6s
WATA Walderalm 9.09 346 ⇑*i* P **P** 13 41 53.3 +2.3
comp=Z,37nm,0.6s
WATA *i* 13 41 55.0
comp=Z,1µm,0.6s
FUSIO Fusio 9.10 332 ⇑*i* Pn **P** 13 41 51.3 +0.2
comp=Z,3µm,0.6s
LPG La Plagne 9.16 322 *e* P **P** 13 41 54.5 +2.6
comp=Z,2µm,0.6s
LPL La Plagne 9.19 322 *e* P **P** 13 41 54.9 +2.7
comp=Z,2µm,0.7s
MOTA Mosalm 9.20 344 ⇓*i* P **P** 13 41 54.9 +2.6
comp=Z,399nm,0.6s
ORIF Oris-en-Rattie 9.21 317 *e* P **P** 13 41 54.8 +2.3
comp=Z,3µm,0.6s
ORIF *e* R 13 41 55.2
comp=Z,2µm,19.5s
KRIS Kristallenia 9.22 108 *e* P **P** 13 41 52.6 0.0
SOP Sopron 9.22 7 ⇓*i* P **P** 13 41 53.2 +0.6
SOP *e* Sn **S** 13 43 35.1 +0.9
PVL Pavlikeni 9.24 56 *i* P **P** 13 41 51.3 -1.6
NPS Neapolis 9.27 107 *e* P **P** 13 41 53.0 -0.2
DIX Grande Dixence 9.30 326 ⇑*i* Pn **P** 13 41 56.4 +2.8
comp=Z,1µm,0.6s
MOA Mollin 9.31 358 ⇓*i* P **P** 13 41 54.1 +0.4
comp=Z,39nm,0.5s
MOA *i* 13 41 56.1
comp=Z,789nm,0.6s
LLS Linth-Limmern 9.32 335 ⇑*i* Pn **P** 13 41 55.0 +1.1
comp=Z,1µm,0.8s
PLONS Plons 9.38 337 ⇑*i* Pn **P** 13 41 56.3 +1.7
comp=Z,2µm,0.6s
LPK Lapseki 9.44 75 *e* P **P** 13 41 56.7 +1.4
LPK Lapseki 9.44 75 P **P** 13 41 54.6 -0.7
DAVA Damuels 9.45 339 ⇑*i* P **P** 13 41 57.3 +1.8
comp=Z,128nm,0.5s
DAVA *i* 13 41 59.7
comp=Z,1µm,0.5s
LKBD Leukerbad 9.45 328 ⇑*i* Pn **P** 13 41 57.0 +1.5
XRY Khrisi 9.49 109 *e* P **P** 13 41 56.5 +0.5
EMV Vieux Emosson 9.51 325 ⇑*e* Pn **P** 13 41 58.6 +2.3
SALAN Lac Salanfe 9.54 325 ⇑*i* Pn **P** 13 41 58.9 +2.2
BNALP Bannalp 9.54 333 ⇑*e* Pn **P** 13 41 57.6 +0.9
HASLI Hasliberg 9.55 331 ⇑*i* Pn **P** 13 41 57.7 +1.0
MUO Muotathal 9.55 334 ⇑*i* Pn **P** 13 41 58.5 +1.7
GRYON Gryon 9.56 326 ⇑*i* Pn **P** 13 41 58.8 +1.9
SENIN Lac Senin 9.57 327 ⇑*i* Pn **P** 13 41 58.7 +1.7
SZH Strazhica 9.66 57 *i* P **P** 13 41 59.0 +0.8
WIMIS Wimmis 9.68 329 ⇑*e* Pn **P** 13 41 59.5 +1.1
AIGLE Aigle 9.70 326 ⇑*i* Pn **P** 13 42 00.0 +1.3
comp=Z,3µm,0.6s
EDRB Edirne 9.72 66 *i* P **P** 13 41 59.2 +0.3
EDRB Edirne 9.72 66 P **P** 13 41 57.8 -1.1
UBR Uberruh 9.75 341 ⇓*e* P **P** 13 42 00.7 +1.4
VKA Vienna 9.78 6 ⇓*i* P **P** 13 42 01.2 +1.6
comp=Z,4µm,2.0s
VKA *i* 13 43 53.0
comp=Z,4µm,5.0s

IZM Izmir 9.78 87 *i* P **P** 13 42 01.2 +1.4
IZM Izmir 9.78 87 P **P** 13 42 00.9 +1.1
KDAG Bornova 9.79 87 *i* P **P** 13 42 01.1 +1.3
ZST Bratislava 9.79 9 *e* PN **P** 13 41 59.9 +0.1
ZST *e* 13 43 46.9
JMB Yambol 9.79 63 *i* P **P** 13 41 59.0 -0.9
OG01 Vacheresse 9.81 325 P **P** 13 42 01.6 +1.5
VIVF Saint-Julien-l 9.84 313 *e* P **P** 13 42 01.9 +1.4
comp=Z,4µm,1.1s
WILA Wila 9.85 336 ⇑*i* Pn **P** 13 42 01.6 +1.0
comp=Z,2µm,0.7s
KGT Karabiga 9.86 75 *e* P **P** 13 42 01.2 +0.5
EJON La Jonquera 9.87 297 P **P** 13 41 59.7 -1.1
comp=Z,74nm,0.8s
MFT Murefte 9.89 73 P **P** 13 41 56.4 -4.7
LASF Ste Croix 9.90 307 *e* P **P** 13 42 01.6 +0.3
comp=Z,1µm,0.9s
ZUR Zurich 9.92 335 ⇑*i* Pn **P** 13 42 02.4 +0.9
comp=Z,947nm,0.4s
WEIN Weingarten 9.93 337 ⇑*i* Pn **P** 13 42 02.7 +1.1
comp=Z,1µm,0.5s
FUR Furstenfeldbru 9.95 346 *e* P **P** 13 42 03.1 +1.3
FUR Furstenfeldbru 9.95 346 P **P** 13 42 03.3 +1.5
TORNY Torny 10.04 327 ⇑*i* Pn **P** 13 42 03.6 +0.6
comp=Z,969nm,0.4s
SISB Singen-Sch Ber 10.07 337 P **P** 13 42 04.6 +1.1
PSZ Piszkesteto 10.08 20 ⇓*i* P **P** 13 42 03.2 -0.3
PSZ Piszkesteto 10.08 20 *e* P **P** 13 42 02.9 -0.6
STEIN Stein am Rhein 10.09 337 ⇑*i* Pn **P** 13 42 04.4 +0.7
comp=Z,4µm,0.6s
MRMT Marmara Adasi 10.10 74 *e* P **P** 13 42 00.4 -3.4
FLACH Flaach 10.10 335 ⇑*i* Pn **P** 13 42 04.5 +0.7
comp=Z,2µm,0.6s
BDRM Kayabasi 10.12 94 *i* P **P** 13 42 04.3 +0.2
TRULL Truellikon 10.13 336 ⇑*e* Pn **P** 13 42 05.1 +0.9
comp=Z,2µm,0.5s
MTUR Matau 10.15 46 ⇓*i* P **P** 13 42 06.6 +2.1
MTUR Matau 10.15 46 ⇓*i* P **P** 13 42 06.5 +2.1
GIMEL Gimel 10.16 325 ⇑*i* Pn **P** 13 42 05.5 +1.0
comp=Z,1µm,0.7s
AKS Akhisar 10.18 84 *e* P **P** 13 42 05.3 +0.4
AKS Akhisar 10.18 84 P **P** 13 42 04.9 0.0
BALST Balsthal 10.20 332 ⇑*i* Pn **P** 13 42 05.2 +0.1
comp=Z,8µm,1.1s
BUC1 Bucharest 10.23 52 ⇓*i* P **P** 13 42 06.0 +0.5
BUC1 Bucharest 10.23 52 ⇓*i* P **P** 13 42 06.0 +0.5
BALB Balikesir 10.23 80 *e* P **P** 13 42 06.7 +1.2
SLE Schleitheim 10.29 336 ⇑*i* Pn **P** 13 42 06.5 +0.2
comp=Z,1µm,0.6s
CABF La Chapelle 10.30 324 *e* P **P** 13 42 07.4 +1.1
comp=Z,4µm,0.7s
BNT Bandirma 10.31 76 *e* P **P** 13 42 06.5 0.0
BNT Bandirma 10.31 76 P **P** 13 42 05.3 -1.2
GERES GERESS Array B 10.32 356 P **P** 13 42 06.6 0.0
comp=Z,47nm,0.3s,baz=170,slow=15,SNR=944
GERES S **S** 13 43 58.5 -1.0
baz=222,slow=20,SNR=1.5
GERES PcP PcP 13 47 50.2 -2.4
comp=Z,1.6nm,0.3s,baz=154,slow=1.1,SNR=8.1
GERES ScP 13 50 58.2
comp=Z,0.6nm,0.3s,baz=163,slow=1.1,SNR=12
KARP Karpathos 10.33 103 ⇑*i* P **P** 13 42 05.6 -1.2
MLSB Milas 10.34 93 *e* P **P** 13 42 08.2 +1.4
AYDN Tasoluk 10.35 91 *i* P **P** 13 42 08.8 +1.7
KOLL Kolacno 10.36 13 *e* PN **P** 13 42 06.8 -0.3
KOLL *e* 13 42 13.8
VYHS Vyhne 10.37 15 *e* PN **P** 13 42 06.8 -0.4
VYHS *e* 13 42 13.4
VYHS *e* 13 43 58.6
VYHS Vyhne 10.37 15 *e* P **P** 13 42 06.8 -0.4
VYHS *e* S **S** 13 43 58.6 -1.8
BRANT Les Verrieres 10.37 327 ⇑*i* Pn **P** 13 42 07.9 +0.6
comp=Z,709nm,0.3s
GUT Gutenstein 10.38 338 ⇓*e* P **P** 13 42 08.0 +0.7
BBS Basel-Blauen 10.38 331 *e* P **P** 13 42 07.5 +0.1
BBS Basel-Blauen 10.38 331 P **P** 13 42 08.5 +1.1
BOURR Bourrignon 10.43 330 ⇑*i* Pn **P** 13 42 08.2 +0.2
comp=Z,3µm,1.3s
SPAK Spaichingen 10.50 337 ⇓*e* P **P** 13 42 09.7 +0.8
EIBI Ibiza 10.51 277 P **P** 13 42 10.7 +1.6
comp=Z,82nm,0.7s
JAVC Velka Javorina 10.52 10 P **P** 13 42 09.8 +0.7
FELD Feldberg 10.55 334 *e* P **P** 13 42 10.1 +0.5
LOMF Lomont 10.55 329 P **P** 13 42 10.0 +0.4
HDH Heidenheim 10.57 343 *e* P **P** 13 42 10.1 +0.3
HDH Heidenheim 10.57 343 P **P** 13 42 10.0 +0.2
KHC Kasperske Hory 10.62 356 ⇓*i* P **P** 13 42 10.2 -0.2
KHC *e* S **S** 13 44 06.5 +0.3
MTLF Montolieu 10.65 301 *e* P **P** 13 42 11.0 +0.2
comp=Z,408nm,0.9s
KIZ Kirchzarten 10.65 334 *e* P **P** 13 42 10.7 -0.1
KIZ Kirchzarten 10.65 334 P **P** 13 42 11.1 +0.3
BUCH Bad Urach 10.65 340 ⇓*e* P **P** 13 42 11.5 +0.6
BUCH Bad Urach 10.65 340 P **P** 13 42 11.4 +0.5
WET Wettzell 10.68 353 *e* P **P** 13 42 11.7 +0.5
WET *e* S **S** 13 44 08.9 +1.1
WET MLR MLR
comp=Z,3µm,20.5s
WET Wettzell 10.68 353 P **P** 13 42 11.0 -0.2
EMIR Miracle 10.69 293 P **P** 13 42 11.3 0.0
comp=Z,76nm,1.0s
FBB Freiburg 10.71 334 P **P** 13 42 15.9 +4.3
KECS Kecovo 10.75 21 *e* PN **P** 13 42 12.5 +0.4
KECS *e* 13 42 17.6
YER Yerkesik 10.76 93 *i* P **P** 13 42 14.1 +1.8
YER Yerkesik 10.76 93 P **P** 13 42 14.0 +1.7
MANT Manisa 10.79 86 *i* P **P** 13 42 13.9 +1.3
CTT Catalca 10.80 72 *e* P **P** 13 42 13.1 +0.3
CTT Catalca 10.80 72 P **P** 13 42 12.9 +0.1
MLR Muntele Rosu 10.81 47 P **P** 13 42 13.8 +1.0
comp=Z,20nm,0.3s,baz=223,slow=7.2,SNR=198
MLR S **S** 13 44 14.9 +4.3
baz=131,slow=19,SNR=6.4
MLR ScP 13 50 58.8
comp=Z,0.2nm,0.3s,baz=127,slow=3.3,SNR=3.8
MLR Muntele Rosu 10.81 47 ⇓*i* P **P** 13 42 13.9 +1.1
MLR Muntele Rosu 10.81 47 ⇓P **P** 13 42 13.8 +0.9
DST Dursunbey 10.81 80 *i* P **P** 13 42 13.5 +0.6
DST Dursunbey 10.81 80 P **P** 13 42 09.8 -3.1
VRAC Vranov 10.84 6 P **P** 13 42 13.4 +0.2
comp=Z,62nm,0.3s,baz=192,slow=13,SNR=356
VRAC S **S** 13 44 10.5 -0.8
baz=158,slow=19,SNR=1.8
VRAC ScP 13 50 59.6
comp=Z,0.6nm,0.3s,baz=102,slow=15,SNR=3.7
BFO Black Forest 10.84 336 *e* P **P** 13 42 13.4 +0.1
BFO *e* S **S** 13 44 13.6 +2.1
BFO pmax pmax
comp=Z,1µm,0.6s
BFO MLR MLR
comp=Z,4µm,18.3s
MOF Molkenrain 10.84 332 P **P** 13 42 13.6 +0.3
ARG Arkhangelos 10.86 98 ⇑*i* P **P** 13 42 13.0 -0.6
EPOB Poblet 10.89 289 P **P** 13 42 13.2 -0.7
comp=Z,43nm,0.5s
HINF Hinteralfeld 10.92 331 *e* P **P** 13 42 14.0 -0.3
comp=Z,193nm,0.4s
LIBD Limburg 10.93 334 *e* P **P** 13 42 14.7 +0.4
LIBD Limburg 10.93 334 P **P** 13 42 14.9 +0.6
ISR Istrita 10.95 49 ⇑*i* P **P** 13 42 15.8 +1.2
ISR Istrita 10.95 49 ⇑*i* P **P** 13 42 15.8 +1.2
LIKS Likavka 10.95 15 *e* PN **P** 13 42 16.5 +1.9
LIKS *e* 13 42 22.1
STU Stuttgart 10.99 340 *e* P **P** 13 42 15.0 -0.1
LBG Lerchenberg 11.01 339 *e* P **P** 13 42 15.9 +0.6
LBG Lerchenberg 11.01 339 P **P** 13 42 16.1 +0.8
ORLT Orhaneli 11.03 78 *e* P **P** 13 42 17.3 +1.6
ORLT Orhaneli 11.03 78 P **P** 13 42 14.7 -1.0
ECH Echery 11.14 333 P **P** 13 42 17.4 +0.4
ULDT Uludag 11.22 77 *i* P **P** 13 42 19.6 +1.5
WLS Welschbruch 11.24 334 P **P** 13 42 18.8 +0.5
DENT Denizli 11.24 90 P **P** 13 42 19.8 +1.4
DENT Denizli 11.24 90 P **P** 13 42 16.5 -1.9
EBR Ebro Roquetas 11.25 286 *e* PN **P** 13 42 18.5 0.0
ISK Istanbul-Kandi 11.26 73 *e* P **P** 13 42 19.1 +0.5
CDF Champ du Feu 11.26 334 *e* P **P** 13 42 18.4 -0.2
comp=Z,1µm,0.6s
DNZL Cakiroluk 11.26 90 *i* P **P** 13 42 20.2 +1.6
CFF Clermont-Ferra 11.27 314 P **P** 13 42 21.1 +2.4
HAU Haudompre 11.27 330 *e* P **P** 13 42 18.4 -0.3
comp=Z,812nm,0.5s
HAU *e* R 13 42 22.2
comp=Z,2µm,20.5s

BADT	Buyukada	11.28	74	eP	P	13 42 24.5	+5.7
MLS	Moulis	11.28	297	P	P	13 42 19.9	+1.0
PSN	Preselentsi	11.33	59	iP	P	13 42 19.0	-0.4
ERTA	Horta de San J	11.39	287	P	P	13 42 19.7	-0.5
	comp=Z,98nm,1.1s						
MORC	Moravsky Berou	11.40	9	eP	P	13 42 20.3	0.0
CRVS	Cervenica-Dubn	11.41	23	ePN	P	13 42 20.3	-0.2
CRVS				e		13 42 26.0	
SMF	Signal de Mont	11.42	319	eP	P	13 42 20.5	-0.1
	comp=Z,602nm,0.5s						
SIND	Sindeldorf	11.42	343	eP	P	13 42 20.1	-0.5
SIND	Sindeldorf	11.42	343	P	P	13 42 20.2	-0.4
GRF	Grafenberg Arr	11.43	348	eP	P	13 42 21.3	+0.6
GRF				pmax	pmax		
	comp=Z,812nm,0.7s						
GRF				MLR	MLR		
	comp=Z,2µm,20.9s						
YLV	Yalova	11.44	75	eP	P	13 42 21.2	+0.4
YLV	Yalova	11.44	75	P	P	13 42 20.5	-0.3
PRU	Pruhonice	11.44	359	⇓iP	P	13 42 20.6	-0.2
PRU				ix	x	13 42 26.0	
PRU				iS	S	13 44 21.1	-4.0
PRU				ix	x	13 44 36.1	
PRU	Pruhonice	11.44	359	⇓iP	P	13 42 20.6	-0.2
PRU				iS	S	13 44 21.1	-4.0
CAF	Calviac	11.44	308	eP	P	13 42 21.9	+1.1
	comp=Z,518nm,0.7s						
UZH	Uzhgorod	11.45	26	eP	P	13 42 22.0	+1.1
BRD	Bordesti	11.47	48	⇑iP	P	13 42 23.5	+2.3
BRD	Bordesti	11.47	48	⇑iP	P	13 42 23.5	+2.3
VRI	Vrincioaia	11.47	47	⇑iP	P	13 42 22.0	+0.8
VRI	Vrincioaia	11.47	47	⇑iP	P	13 42 22.0	+0.7
PRA	Prague	11.52	359	⇓P	P	13 42 23.0	+1.1
PRA				ex	x	13 42 28.0	
PRA				ex	x	13 45 30.0	
PRA				ex	x	13 46 00.0	
OKC	Ostrava-Krasne	11.54	11	⇓iP	P	13 42 22.0	-0.1
OKC				eS	S	13 44 26.9	-0.5
KHL	Karahalli	11.56	87	eP	P	13 42 24.5	+2.2
NIE	Niedzica	11.57	18	eP	P	13 42 22.9	+0.5
NIE				e		13 42 28.4	
LANF	Langenberg	11.58	336	P	P	13 42 22.9	+0.3
HARR	Harsova	11.59	54	⇓iP	P	13 42 22.9	+0.2
HARR	Harsova	11.59	54	⇓iP	P	13 42 22.8	+0.2
THEF	They Montfort	11.60	329	P	P	13 42 23.1	+0.3
EGRA	Graus	11.63	293	P	P	13 42 22.0	-1.2
HRT	Hereke	11.69	74	iP	P	13 42 23.6	-0.3
HRT	Hereke	11.69	74	P	P	13 42 27.2	+3.3
HRT	Hereke	11.69	74	P	P	13 42 24.5	+0.6
EBEN	Beniarda	11.75	275	P	P	13 42 26.4	+1.6
	comp=Z,83nm,0.6s						
AVF	Avril sur Loir	11.77	318	eP	P	13 42 24.9	-0.1
	comp=Z,1µm,0.6s						
RAC	Raciborz	11.79	11	eP	P	13 42 25.8	+0.6
RAC				eS	S	13 44 37.2	+4.2
RAC				eSS	SS	13 44 48.6	-12
TIRR	Tirgusor	11.79	56	P	P	13 42 26.4	+1.2
KTD	Kalmit	11.80	338	eP	P	13 42 25.7	+0.4
KTD	Kalmit	11.80	338	P	P	13 42 27.1	+1.8
LOR	Lormes	11.83	321	eP	P	13 42 25.3	-0.4
	comp=Z,781nm,0.6s						
LOR				eR			
	comp=Z,536nm,19.2s						
EPF	Esparros	11.83	297	eP	P	13 42 27.4	+1.6
	comp=Z,236nm,0.7s						
DPC	Dobruska-Polom	11.85	5	⇓iP	P	13 42 25.7	-0.3
DPC				eS	S	13 44 35.1	+0.6
TOD	Tromm	11.86	341	eP	P	13 42 27.1	+1.0
TOD	Tromm	11.86	341	P	P	13 42 27.3	+1.2
SSF	Saint Saulge	11.87	319	eP	P	13 42 25.9	-0.3
	comp=Z,1µm,0.6s						
BGF	Bois d'Agland	11.89	316	eP	P	13 42 27.2	+0.7
	comp=Z,5µm,0.8s						
EMOS	Mosqueruela	11.94	284	P	P	13 42 29.6	+2.4
	comp=Z,163nm,0.9s						
CFR	Carcaliu	11.95	52	⇓iP	P	13 42 27.1	-0.1
CFR	Carcaliu	11.95	52	⇓iP	P	13 42 27.0	-0.1
RJF	Les Rejaudoux	11.96	309	eP	P	13 42 28.6	+1.2
	comp=Z,1µm,0.8s						
RJF				eR			
	comp=Z,776nm,21.0s						
ALT	Altintas	11.97	83	eP	P	13 42 27.9	+0.4
ALT	Altintas	11.97	83	P	P	13 42 24.1	-3.4
PVCC	Panska Ves	11.98	359	⇓iP	P	13 42 27.7	+0.1
PVCC				eS	S	13 44 40.3	+2.9
UPC	Upice	11.99	4	⇓iP	P	13 42 27.8	+0.1
UPC				eS	S	13 44 39.3	+1.6
KSL	Kastellorizon	12.01	97	⇓iP	P	13 42 27.0	-1.1
TCF	Toulx Ste Croi	12.09	314	eP	P	13 42 30.0	+1.1
	comp=Z,2µm,0.7s						
ESAC	San Caprasio	12.10	290	P	P	13 42 29.8	+0.6
	comp=Z,127nm,0.6s						
ELL	Elmali	12.12	94	iP	P	13 42 30.2	+0.8
ELL	Elmali	12.12	94	P	P	13 42 29.4	0.0
GPA	Golpazari	12.13	77	iP	P	13 42 36.2	+6.7
GPA	Golpazari	12.13	77	P	P	13 42 29.9	+0.4
MEZF	Maizieres J'vi	12.19	328	eP	P	13 42 30.9	+0.6
	comp=Z,883nm,0.7s						
OJC	Ojcow	12.20	15	⇓iP	P	13 42 30.6	+0.2
OJC				e		13 42 34.2	
OJC				iS	S	13 44 45.6	+3.1
OJC	Ojcow	12.20	15	⇓iP	P	13 42 30.6	+0.2
OJC				iS	S	13 44 45.6	+3.1
LFF	La Frestale	12.28	306	eP	P	13 42 32.7	+1.4
	comp=Z,930nm,0.5s						
MOX	Moxa	12.30	350	iP	P	13 42 31.5	-0.1
	comp=Z,logA/T=2.9						
MOX				L		13 47 10.0	
MOX	Moxa	12.30	350	eP	P	13 42 31.5	-0.1
MOX				pmax	pmax		
	comp=Z,945nm,1.1s						
MOX				MLR	MLR		
	comp=Z,900nm,16.0s						
MOX	Moxa	12.30	350	eP	P	13 42 31.5	-0.1
	comp=Z,945nm,1.1s						
BRG	Berggiesshubel	12.34	357	iP	P	13 42 32.7	+0.6
BRG				iS	S	13 44 45.0	-0.6
BRG				pmax	pmax		
	comp=Z,1µm,0.7s						
BRG				MLR	MLR		
	comp=N,950nm,16.3s						
BRG				MLR	MLR		
	comp=E,2µm,16.3s						
BRG				MLR	MLR		
	comp=Z,2µm,16.3s						
BRG	Berggiesshubel	12.34	357	iP	P	13 42 32.7	+0.6
	comp=Z,1µm,0.7s						
BRG				i		13 42 36.5	
BRG				i		13 42 45.2	
BRG				iS	S	13 44 45.0	-0.6
BRG				ScP		13 52 32.3	
KSP	Ksiaz	12.34	4	eP	P	13 42 32.7	+0.6
KSP				e		13 42 36.2	
KSP				eS	S	13 44 50.1	+4.5
KSP	Ksiaz	12.34	4	⇓eP	P	13 42 32.7	+0.6
KSP				eS	S	13 44 49.5	+3.9
KSP	Ksiaz	12.34	4	⇓eP	P	13 42 32.7	+0.6
KSP				e		13 42 34.8	
KSP				eS	S	13 44 49.5	+3.9
ISP	Isparta	12.39	88	iP	P	13 42 34.3	+1.5
ETSF	Etsaut	12.43	295	eP	P	13 42 34.4	+1.2
	comp=Z,355nm,0.4s						
KWP	Kalwaria	12.45	25	eP	P	13 42 35.0	+1.6
	comp=Z,2µm,0.0s						
KWP				e		13 42 38.4	
KWP				eS	S	13 44 59.3	+11
RUP	Ruppelstein	12.45	336	eP	P	13 42 34.1	+0.6
RUP	Ruppelstein	12.45	336	P	P	13 42 34.8	+1.3
HYF	Humbligny	12.45	318	eP	P	13 42 33.6	+0.1
ABH	Alteburg	12.46	338	eP	P	13 42 34.3	+0.7
ABH	Alteburg	12.46	338	P	P	13 42 35.0	+1.4
ESKT	Eskisehir	12.53	81	iP	P	13 42 36.1	+1.6
ESKT	Eskisehir	12.53	81	P	P	13 42 35.2	+0.7
HENT	Hendek	12.62	75	iP	P	13 42 38.1	+2.5
EMUR	La Murta	12.64	272	P	P	13 42 37.1	+1.3
	comp=Z,343nm,1.3s						
ANTB	Antalya	12.67	93	eP	P	13 42 39.2	+3.0
WLF	Walferdange	12.72	334	eP	P	13 42 37.5	+0.7
ETOB	Tobarra	12.79	276	P	P	13 42 39.1	+1.4
	comp=Z,90nm,0.9s						
CLL	Collm	12.82	355	⇓P	P	13 42 38.8	+0.7
	comp=Z,logA/T=3.1						
CLL				i		13 42 42.1	
CLL				eS	S	13 44 53.0	-3.5
CLL				e		13 45 23.0	
CLL				e		13 45 49.0	
CLL				e		13 46 49.0	
CLL				eSCP		13 51 03.0	
CLL	Collm	12.82	355	⇓iP	P	13 42 38.8	+0.7
CLL				eS	S	13 44 53.0	-3.5
CLL				pmax	pmax		
	comp=Z,2µm,1.9s						
CLL	Collm	12.82	355	⇓iP	P	13 42 38.8	+0.7
	comp=Z,2µm,1.9s						
CLL				i		13 42 42.1	
CLL				eS	S	13 44 53.0	-3.5
MDU	Mudurnu	12.83	76	eP	P	13 42 40.4	+2.2
MDU	Mudurnu	12.83	76	P	P	13 42 39.7	+1.5
SJPF	Ste Jean	12.96	296	eP	P	13 42 40.6	+0.8
	comp=Z,651nm,0.7s						
OSSF	Osses	13.02	296	P	P	13 42 40.5	-0.1
LVV	L'vov	13.06	27	eP	P	13 42 39.9	-1.2
KMPD	K-Podol'skiy	13.09	36	P	P	13 42 41.0	-0.5
ETOR	Torete	13.18	285	P	P	13 42 44.0	+1.5
	comp=Z,62nm,0.5s						
EALK	Alkurruntz	13.18	296	P	P	13 42 44.1	+1.5
	comp=Z,159nm,0.5s						
KIS	Kishinev	13.31	46	eP	P	13 42 42.0	-2.1
KIS				S	S	13 45 10.0	+2.6
KIZT	Kizilcal	13.35	83	iP	P	13 42 47.5	+2.8
KIZT	Kizilcal	13.35	83	P	P	13 42 47.4	+2.7
EVIA	Vianos	13.53	276	P	P	13 42 47.0	+0.1
	comp=Z,47nm,0.6s						
GIVF	Givet	13.56	332	eP	P	13 42 47.1	-0.1
MFF	Saint Martin d	13.62	311	eP	P	13 42 48.8	+0.8
	comp=Z,1µm,0.7s						
HGN	Heimansgroeve	13.73	336	⇑eP	P	13 42 50.7	+1.4
	comp=Z,615nm,1.3s						
HGN				eS	S	13 45 23.1	+6.2
HGN				eScP		13 51 03.6	
HGN				ex	x	13 54 15.9	
BAIF	Baives	13.76	330	eP	P	13 42 49.3	-0.4
	comp=Z,257nm,0.6s						
KONT	Konya--Tatoy	13.82	87	P	P	13 42 52.2	+1.6
KONT	Konya--Tatoy	13.82	87	P	P	13 42 52.1	+1.5
RUE	Ruedersdorf	13.95	357	eP	P	13 42 52.8	+0.7
LOD	Lodumlu	14.00	79	eP	P	13 42 54.6	+1.9
SAFT	Safranbolu	14.00	73	iP	P	13 42 54.8	+2.1
SAFT	Safranbolu	14.00	73	P	P	13 42 55.3	+2.6
ANTO	Ankara	14.02	79	eP	P	13 42 53.9	+0.9
ANTO	Ankara	14.02	79	P	P	13 42 54.4	+1.4
EQES	Quesada	14.08	273	P	P	13 42 55.5	+1.8
	comp=Z,43nm,0.6s						
HDMB	Hadim	14.09	91	eP	P	13 42 55.8	+1.9
HDMB	Hadim	14.09	91	P	P	13 42 53.1	-0.8
EBER	Berja	14.10	269	P	P	13 42 57.7	+3.7
	comp=Z,23nm,0.6s						
WAR	Warsaw	14.37	16	eP	P	13 42 58.4	+1.2
	comp=Z,5µm,2.0s						
WAR				e		13 43 10.3	
WAR				eS	S	13 45 39.0	+8.0
WAR	Warsaw	14.37	16	eP	P	13 42 58.4	+1.2
WAR				eS	S	13 45 39.0	+8.0
WAR				pmax	pmax		
	comp=Z,5.0nm,2.0s						
WAR	Warsaw	14.37	16	eP	P	13 42 58.4	+1.2
	comp=Z,4.7nm,2.0s						
WAR				eS	S	13 45 39.0	+8.0
AKMC	Akamas	14.49	99	⇑P	P	13 42 56.1	-2.7
AKMC	Akamas	14.49	99	⇑iP	P	13 42 56.1	-2.7
ELDT	Eldivan	14.52	76	iP	P	13 43 00.9	+1.8
WTSB	Winterswijk	14.54	340	⇓eP	P	13 43 00.1	+0.8
	comp=Z,819nm,1.1s						
PPCY	Paphos	14.54	99	P	P	13 42 56.7	-2.8
ECOG	Cogollos-Vega	14.55	271	P	P	13 43 00.6	+1.0
	comp=Z,44nm,0.9s						
BALT	Daday	14.55	72	iP	P	13 43 01.2	+1.7
ELAN	Lanestosa	14.55	295	P	P	13 43 00.1	+0.6
	comp=Z,232nm,0.8s						
ESDC	Sonseca Array	14.61	280	P	P	13 43 00.7	+0.5
	comp=Z,3.3nm,0.3s,baz=80,slow=12,SNR=103						
ESDC				S	S	13 45 41.5	+5.0
	comp=Z,0.5nm,0.3s,baz=46,slow=11,SNR=2.1						
ESDC				PcP	PcP	13 47 56.0	-1.7
	baz=9.7,slow=2.9,SNR=4.8						
ESDC	Sonseca Array	14.61	280	P	P	13 42 59.8	-0.5
	comp=Z,43nm,0.7s						
ESLA	Sonseca Array	14.61	280	eP	P	13 42 59.8	-0.5
ALFC	Alevga	14.65	98	⇓P	P	13 42 58.5	-2.3
	comp=Z,22nm,0.4s						
ALFC	Alevga	14.65	98	⇓iP	P	13 42 58.5	-2.3
CANT	Cankiri	14.67	76	eP	P	13 43 01.8	+0.8
CANT	Cankiri	14.67	76	P	P	13 43 02.0	+1.0
BRTR	Keskin Array B	14.68	79	P	P	13 43 02.6	+1.6
	comp=Z,5.4nm,0.3s,baz=268,slow=13,SNR=154						
BRTR				S	S	13 45 42.4	+4.4
	comp=Z,0.4nm,0.3s,baz=214,slow=5.6,SNR=2.4						
BRTR				ScP		13 51 06.2	
	comp=Z,0.1nm,0.3s,baz=180,slow=2.5,SNR=6.9						
BRTR				PKiKP		13 55 50.2	
	comp=Z,0.1nm,0.3s,baz=200,slow=1.0,SNR=7.4						
LDF	La Druitiere	14.73	318	eP	P	13 43 01.3	-0.4
	comp=Z,1µm,0.6s						
KAMT	Kaman	14.75	81	P	P	13 43 04.2	+2.2
KAMT	Kaman	14.75	81	P	P	13 43 03.3	+1.3
GUD	Guadarrama	14.76	284	P	P	13 43 02.5	+0.5
	comp=Z,36nm,0.6s						
ERON	Agon	14.79	270	P	P	13 43 02.1	-0.3
	comp=Z,23nm,0.6s						
LEF	Lefka	14.89	98	eP	P	13 43 01.8	-1.9
TOS	Tosya	14.99	74	P	P	13 43 06.8	+1.9
TOS	Tosya	14.99	74	P	P	13 43 06.9	+2.0
GRR	Gorron	15.00	316	eP	P	13 43 04.4	-0.6
	comp=Z,692nm,0.6s						
SZAC	Souni-Zanaja	15.01	99	P	P	13 43 02.6	-2.5
FLN	La Foliniere	15.02	318	eP	P	13 43 04.4	-0.8
	comp=Z,2µm,0.7s						
FLN				eR			
	comp=Z,810nm,18.5s						
ELOJ	Sierra Loja	15.04	271	P	P	13 43 06.3	+0.8
	comp=Z,17nm,0.8s						
ELUQ	Luque	15.05	272	P	P	13 43 07.1	+1.4
	comp=Z,114nm,0.8s						
BZK	Bozkurt	15.06	71	iP	P	13 43 07.4	+1.7
BZK	Bozkurt	15.06	71	P	P	13 43 06.9	+1.2
MAMC	Mammari	15.13	97	P	P	13 43 06.0	-0.6
IKL	Isikli	15.20	93	iP	P	13 43 07.6	+0.2
EADA	Adamuz	15.21	275	P	P	13 43 06.7	-0.9
	comp=Z,32nm,0.6s						
CSS	Prodhromos	15.28	98	⇑P	P	13 43 07.1	-1.4
	comp=Z,8.6nm,0.7s						
CSS	Prodhromos	15.28	98	eP	P	13 43 07.0	-1.5
WIT	Witteveen	15.34	341	eP	P	13 43 09.8	+0.7
	comp=Z,1µm,1.7s						
CTKT	Corum	15.56	76	iP	P	13 43 13.5	+1.7
NIG	Nigde	15.56	85	iP	P	13 43 15.3	+3.4
NIG	Nigde	15.56	85	P	P	13 43 13.6	+1.7
BYBT	Boyabat	15.58	73	iP	P	13 43 14.2	+2.2
BYBT	Boyabat	15.58	73	P	P	13 43 12.7	+0.7
AVNT	Avonos	15.68	83	iP	P	13 43 14.7	+1.5
BOYT	Boyabat	15.68	73	iP	P	13 43 14.5	+1.2
SIM	Simferopol'	15.76	60	⇓iP	P	13 43 13.8	-0.4
SIM				iS	S	13 46 01.8	-0.3
PHNC	Paralimni	15.82	97	⇑P	P	13 43 14.6	-0.3
PHNC	Paralimni	15.82	97	⇑iP	P	13 43 14.6	-0.3
EARI	Arriondas	15.84	294	P	P	13 43 16.4	+1.3
	comp=Z,93nm,0.7s						
KIEV	Kiev	15.86	35	P	P	13 43 13.0	-2.4
KIEV				S	S	13 46 05.0	+0.7
AKASG	Malin Array Be	15.88	35	P	P	13 43 12.6	-2.9
	comp=Z,180nm,0.3s,baz=226,slow=12,SNR=222						
AKASG				S	S	13 46 02.7	-1.9
	baz=226,slow=20,SNR=6.3						
AKASG				PKiKP		13 55 49.7	
	comp=Z,0.2nm,0.3s,baz=326,slow=0.3,SNR=5.0						
YOZ	Yozgat	15.98	80	iP	P	13 43 18.2	+1.4
YOZ	Yozgat	15.98	80	P	P	13 43 16.7	-0.1
RGN	Rugen	16.04	357	eP	P	13 43 14.2	-3.2
ELIJ	Sierra de Lija	16.05	270	P	P	13 43 17.5	-0.1
	comp=Z,48nm,0.7s						
TEB	Eastbourne	16.06	325	eP	P	13 43 16.5	-1.1
QUIF	Quistinic	16.06	311	eP	P	13 43 16.6	-1.1
	comp=Z,3µm,0.7s						
JQE	Queens East	16.11	317	⇓eP	P	13 43 16.2	-2.0
JRS	Jersey	16.13	317	eP	P	13 43 16.4	-2.2
JLP	Les Platons	16.17	317	eP	P	13 43 16.8	-2.2
JSA	Saint Aubin	16.17	317	eP	P	13 43 16.9	-2.1
JVM	Valle D.L. Mar	16.21	317	⇓eP	P	13 43 17.3	-2.1
ROSF	Rostrenen	16.33	313	eP	P	13 43 19.2	-1.7
	comp=Z,2µm,0.5s						
TSA1	Sevenoaks	16.35	326	⇓eP	P	13 43 20.4	-0.7
ESPR	Espera	16.43	271	P	P	13 43 21.8	-0.3
	comp=Z,58nm,0.5s						
BNN	Bunyan	16.44	82	iP	P	13 43 24.1	+1.9
SUW	Suwalki	16.50	18	eP	P	13 43 20.0	-2.8
	comp=Z,2µm,0.8s						
SUW				e		13 43 22.8	
SUW				eS	S	13 46 17.7	-0.5
SUW	Suwalki	16.50	18	eP	P	13 43 20.0	-2.8
SUW				eS	S	13 46 17.7	-0.5
SUW				pmax	pmax		
	comp=Z,2.0nm,0.8s						
BSD	Bornholm Skovb	16.57	0	⇓iP	P	13 43 20.2	-3.4
	comp=Z,808nm,0.6s						
BSD				i		13 44 24.3	
BSD				i		13 46 22.5	
BSD				i		13 48 35.5	
BSD	Bornholm Skovb	16.57	0	⇓iP	P	13 43 20.2	-3.4
BSD				i		13 46 22.5	
BSD				pmax	pmax		
	comp=Z,810nm,0.6s						
CEYT	Ceyhan	16.64	89	eP	P	13 43 24.4	-0.1
PBRG	Braganca	16.77	288	eP	P	13 43 26.1	+0.1
	comp=Z,154nm,0.9s						
PBRG	Braganca	16.77	288	eP	P	13 43 26.0	0.0
ECAL	Calabor	16.78	288	P	P	13 43 26.2	+0.1
	comp=Z,144nm,0.6s						
TOKT	Tokat	16.90	77	iP	P	13 43 28.5	+1.1
TOKT	Tokat	16.90	77	P	P	13 43 28.4	+1.0
EMIN	Mina Concepcio	16.90	274	P	P	13 43 27.2	-0.3
	comp=Z,137nm,0.6s						
AEU	East Anglia Un	16.93	331	eP	P	13 43 25.9	-1.8
AWI1	Witton	17.02	331	⇓eP	P	13 43 26.9	-1.7
SKP1	Kophill	17.12	325	eP	P	13 43 27.3	-2.3
COBT	Iskenderun	17.14	90	iP	P	13 43 29.8	-0.3
HTY	Hatay	17.15	92	iP	P	13 43 30.3	+0.2
HTY	Hatay	17.15	92	P	P	13 43 29.7	-0.4
COP	Copenhagen	17.22	355	⇓iP	P	13 43 28.1	-2.6
	comp=Z,489nm,0.9s						
COP				i		13 44 30.3	
COP				i		13 46 36.9	
COP				i		13 48 44.4	
	comp=Z,710nm,18.0s						
COP	Copenhagen	17.22	355	⇓iP	P	13 43 28.1	-2.6
COP				i		13 46 36.9	
COP				pmax	pmax		
	comp=Z,490nm,0.9s						
COP				MLR	MLR		
	comp=Z,710nm,18.0s						
SVST	Sivas	17.23	79	iP	P	13 43 31.4	+0.5
EPON	Pontenova	17.24	293	P	P	13 43 30.9	-0.1
	comp=Z,69nm,0.5s						
SVSK	Karacayir	17.26	78	eP	P	13 43 31.5	+0.3
SVSK	Karacayir	17.26	78	P	P	13 43 31.0	-0.2
EINC	Incio	17.30	291	P	P	13 43 31.4	-0.2
	comp=Z,190nm,0.6s						
PCBR	Castelo Branco	17.31	281	eP	P	13 43 31.4	-0.4
	comp=Z,147nm,1.0s						
PCBR	Castelo Branco	17.31	281	eP	P	13 43 31.3	-0.5
MTE	Manteigas	17.34	283	eP	P	13 43 31.8	-0.3
	comp=Z,264nm,1.0s						
MTE				eS	S	13 46 41.6	+5.8
MTE	Manteigas	17.34	283	eP	P	13 43 31.3	-0.8
KTG1	Tilbrook Grang	17.37	327	eP	P	13 43 30.7	-1.6
HNTI	Hanita	17.40	102	P	P	13 43 32.7	-0.1
HNTI	Hanita	17.40	102	⇑P	P	13 43 32.7	-0.1
SWK	Warminster	17.40	322	eP	P	13 43 30.4	-2.2
HAF	Haifa	17.41	103	P	P	13 43 32.6	-0.3
SWN1	Swindon	17.43	323	eP	P	13 43 30.8	-2.1
OFRI	'Ofer	17.45	104	P	P	13 43 32.6	-0.7
OFRI	'Ofer	17.45	104	⇑P	P	13 43 32.6	-0.7
PVRL	Vila Real	17.48	286	eP	P	13 43 33.3	-0.2
	comp=Z,96nm,0.6s						
PVRL	Vila Real	17.48	286	eP	P	13 43 33.2	-0.3
EGRO	El Granado	17.57	274	P	P	13 43 33.6	-1.0
	comp=Z,82nm,0.5s						
PALC	Alcoutim	17.58	273	eP	P	13 43 33.8	-0.9
	comp=Z,182nm,0.6s						
PALC				eS	S	13 46 43.5	+2.8
PALC	Alcoutim	17.58	273	eP	P	13 43 33.5	-1.2
PALC				eS	S	13 46 40.0	-0.7
PVIS	Viseu	17.60	284	eP	P	13 43 34.7	-0.2
	comp=Z,290nm,1.2s						
SLTI	Sal'it	17.65	105	P	P	13 43 35.6	+0.2
SLTI	Sal'it	17.65	105	⇑P	P	13 43 35.6	+0.2
KSDI	Kefar Szold	17.73	101	P	P	13 43 37.0	+0.8
KSDI	Kefar Szold	17.73	101	⇑P	P	13 43 37.0	+0.8
GAZ	Gaziantep	17.75	87	iP	P	13 43 37.9	+1.4
GAZ	Gaziantep	17.75	87	P	P	13 43 36.4	-0.1
HRI	Mount Hermon	17.75	101	P	P	13 43 37.3	+0.8
HRI	Mount Hermon	17.75	101	⇑P	P	13 43 37.3	+0.8
ELOB	Lobios	17.76	288	P	P	13 43 36.8	+0.4
	comp=Z,114nm,0.6s						
PBEJ	Beja	17.79	275	eP	P	13 43 36.3	-0.6
	comp=Z,150nm,0.8s						
PBEJ				eS	S	13 46 47.4	+2.5
PBEJ	Beja	17.79	275	eP	P	13 43 36.3	-0.6
PBEJ				eS	S	13 46 46.9	+2.0
KZIT	Kziot	17.81	109	P	P	13 43 36.9	-0.2
KZIT	Kziot	17.81	109	⇑P	P	13 43 36.9	-0.2
EVO	Evora	17.84	277	⇓iP	P	13 43 37.4	+0.1
	comp=Z,115nm,0.7s						
EVO				epP		13 44 11.6	
EVO				eR			
	comp=Z,315nm,21.8s						
KSY	Syston	17.91	329	⇓eP	P	13 43 35.8	-2.3
KSHT	Keshet	17.93	102	P	P	13 43 39.5	+1.2
KSHT	Keshet	17.93	102	⇑P	P	13 43 39.5	+1.2
RTMM	Retamin	17.95	109	P	P	13 43 38.3	-0.2
RTMM	Retamin	17.95	109	⇑P	P	13 43 38.3	-0.2
SVTA	Shivta	17.96	109	P	P	13 43 38.7	+0.1
SVTA	Shivta	17.96	109

SBD Saint Breward 18.29 317⇓ eP P 13 43 47.9 +6.0
MUD Monsted U'grnd 18.30 350⇓ iP P 13 43 39.0 -3.0
comp=E,226nm,0.5s
MUD i 13 44 42.1
MUD i 13 46 57.6
MUD i 13 47 06.6
MUD Monsted U'grnd 18.30 350⇓ iP P 13 43 39.0 -3.0
MUD i 13 46 57.6
MUD pmax pmax
comp=Z,230nm,0.5s
MCH1 Michaelchurch 18.31 323 eP P 13 43 40.1 -2.0
MZDA Masada 18.33 107 P P 13 43 42.4 0.0
MKRJ Makawir 18.42 106 P P 13 43 44.2 +0.8
KMTI Karmit 18.47 111 P P 13 43 44.3 +0.5
KMTI Karmit 18.47 111 ⇑P P 13 43 44.3 +0.5
KWE Weaver Farm 18.48 327⇓ eP P 13 43 41.7 -2.0
HTR Trewern Hill 18.49 323⇓ eP P 13 43 41.6 -2.3
HTR AMB AMB 13 43 46.1
comp=Z,770nm,1.4s
IIGN Ignalina 18.49 21⇓ iP P 13 43 41.4 -2.5
IIGN AMPb AMB 13 43 44.3
comp=Z,683nm,1.0s
MYA Malataya 18.51 83 P P 13 43 45.6 +1.4
MYA Malataya 18.51 83 P P 13 43 44.0 -0.2
MALT Malatya 18.51 83 P P 13 43 27.9 -16
KBI1 Birley Grange 18.52 328⇓ eP P 13 43 42.0 -2.2
EMAZ Mazaricos 18.52 291 P P 13 43 44.4 +0.2
comp=Z,106nm,0.7s
PRNI Paran 18.54 110 P P 13 43 45.2 +0.6
PRNI Paran 18.54 110 ⇑P P 13 43 45.2 +0.6
PTEO Sao Teotonio 18.54 274 eP P 13 43 44.5 -0.1
comp=Z,167nm,0.5s
PTEO eS S 13 47 02.0 +2.6
PTEO Sao Teotonio 18.54 274 eP P 13 43 44.4 -0.2
PTEO eS S 13 47 00.4 +1.0
ZFRI Zfri 18.57 109 P P 13 43 45.0 +0.2
ZFRI Zfri 18.57 109 ⇑P P 13 43 45.0 +0.2
HLM1 Long Mynd 18.59 324 eP P 13 43 42.8 -2.2
HLM1 AMB AMB 13 43 46.8
comp=Z,1μm,1.5s
IDID Didziasalis 18.61 22⇓ iP P 13 43 42.4 -2.6
IDID AMPb AMB 13 43 44.6
comp=Z,281nm,0.8s
IDID eSP 13 44 49.0
SSP1 Stoney Pound 18.64 324 eP P 13 43 43.3 -2.1
ISAL Salakas 18.66 20⇓ iP P 13 43 43.1 -2.4
ISAL AMPb AMB 13 43 45.9
comp=Z,557nm,0.8s
PLOU Loures 18.68 279 eP P 13 43 45.4 -0.5
comp=Z,397nm,1.2s
PLOU eS S 13 47 07.7 +5.7
LIS Lisbon 18.70 278 eP P 13 43 42.0 -4.1
LIS eS S 13 47 07.7 +5.4
LIS eS S 13 47 07.9 +5.6
LIS AMb AMB 13 47 11.8
comp=N,852nm,1.9s
MBH Mount Berech 18.77 112 P P 13 43 47.7 +0.7
MBH Mount Berech 18.77 112 ⇑P P 13 43 47.7 +0.7
IZAR Zarasai 18.84 20⇓ iP P 13 43 45.1 -2.4
IZAR AMPb AMB 13 43 47.5
comp=Z,790nm,0.9s
LHO Holmfirth 18.86 328 iP P 13 43 46.5 -1.2
EIL Elat 18.87 112 P P 13 43 48.7 +0.8
EIL Elat 18.87 112 ⇑P P 13 43 48.7 +0.8
AQBJ Aqaba 18.91 112 P P 13 43 49.5 +1.2
ELZG Elazig 18.92 83 iP P 13 43 49.4 +0.9
KELT Kelkit 18.98 77 iP P 13 43 49.3 +0.4
ASF Jabal al Asfar 19.10 103 P P 13 43 52.6 +2.3
comp=Z,6.9nm,0.3s,baz=167,slow=7.2,SNR=98
ASF S S 13 47 15.2 +5.3
comp=Z,0.2nm,0.3s,baz=158,slow=11,SNR=1.8
GUMT Gumushane 19.13 76 eP P 13 43 52.0 +1.4
GUMT Gumushane 19.13 76 P P 13 43 49.8 -0.8
ALWS Ilw as Safayha 19.15 113 P P 13 43 52.0 +1.2
HAQS Haql 19.19 114 P P 13 43 52.5 +1.2
JMOS Jabal al Moall 19.26 113 P P 13 43 53.1 +1.2
EZC Erzincan 19.43 79 iP P 13 43 51.5 -2.1
WPM1 Penmaenmawr 19.55 325⇓ eP P 13 43 53.4 -1.3
WPM1 AMB AMB 13 43 56.4
comp=Z,3μm,0.9s
YRE Yr Eifl 19.61 324 eP P 13 43 54.4 -0.9
YRE AMB AMB 13 43 59.2
comp=Z,1μm,1.8s
BDAS Al Bad' 19.68 115 P P 13 43 57.6 +1.4
QURS Qurayyt al Mil 19.77 104 P P 13 44 00.7 +3.6
WLF1 Llynfaes 19.80 324 eP P 13 43 56.0 -1.1
WLF1 AMB AMB 13 43 58.3
comp=Z,2μm,0.9s
WME Myndd Eilian 19.82 325 eP P 13 43 56.4 -1.1
WME AMB AMB 13 43 58.4
comp=Z,231nm,0.8s
WCB1 Church Bay 19.92 324 eP P 13 43 56.9 -1.5
WCB1 AMB AMB 13 44 00.5
comp=Z,2μm,1.5s
JMQS Jabal Moqyreh 19.97 113 P P 13 44 01.3 +2.1
DIY Diyarbakir 19.98 84 eP P 13 44 00.4 +1.2
BINT Bingol 20.04 81 iP P 13 44 02.8 +3.0
BINT Bingol 20.04 81 P P 13 44 02.7 +2.9
SNART Snartemo 20.41 348 eP P 13 44 02.1 -1.2
SNART AMb AMB 13 44 07.4
comp=Z,291nm,1.8s
WIM Isle of Man 20.48 326⇓ eP P 13 44 02.6 -1.4
WIM AMB AMB 13 44 06.3
comp=Z,970nm,1.1s
EZM Erzurum 20.50 78 eP P 13 44 07.6 +3.2
ERZM Erzurum 20.61 78 iP P 13 44 07.2 +1.8
EKA Eskdalemuir Ar 20.68 330 P P 13 44 04.1 -1.9
comp=Z,388nm,0.7s,baz=144,slow=12,SNR=524
EKA PcP PcP 13 48 05.3 -2.3
comp=Z,10nm,0.6s,baz=140,slow=3.1,SNR=4.7
EKA ScP 13 51 18.6
comp=Z,2.4nm,0.7s,baz=104,slow=3.4,SNR=4.2
ESK Eskdalemuir 20.69 330 eP P 13 44 03.9 -2.2
ESK pmax pmax
comp=Z,510nm,0.7s
ESK Eskdalemuir 20.69 330 eP P 13 44 03.9 -2.2
comp=Z,510nm,0.6s
BCA Borcka 20.73 73 eP P 13 44 06.1 -0.5
BEST Besiri 20.80 84 iP P 13 44 08.6 +1.4
DLF Lyons Farm 20.80 322 eP P 13 44 05.8 -1.4
VRT Varto 20.81 80 iP P 13 44 10.0 +2.6
VRT Varto 20.81 80 P P 13 44 10.8 +3.4
TBKS Tabuk 20.83 113 P P 13 44 10.0 +2.3
ESY Stoneypath 20.91 332 eP P 13 44 06.3 -2.0
ESY AMB AMB 13 44 09.4
comp=Z,2μm,0.8s
BTMT Batman 20.91 83 eP P 13 44 09.5 +1.1
GAL1 Galloway 20.99 327⇓ eP P 13 44 07.2 -1.8
GMM Mts of Mourne 21.11 325⇓ eP P 13 44 08.9 -1.4
EDI Edinburgh 21.13 331⇓ iP P 13 44 08.5 -1.9
EDI AMB AMB 13 44 10.9
comp=Z,976nm,1.0s,mb6.3
EAU Auchinoon 21.17 331⇓ eP P 13 44 08.8 -2.0
EAU AMB AMB 13 44 13.9
comp=Z,492nm,1.4s,mb5.8
DCN Croghan 21.19 321 eP P 13 44 08.9 -2.1
STAV Stavanger 21.23 347 eP P 13 44 08.3 -3.1
STAV AMb AMB 13 44 12.5
comp=Z,297nm,1.5s,mb5.6
DMUB Kingscourt 21.34 323 eP P 13 44 10.7 -1.8
KONO Kongsberg 21.38 353 eP P 13 44 10.0 -2.8
KONO AMb AMB 13 44 12.7
comp=Z,519nm,0.9s,mb6.1
KONO AMS AMS 13 45 57.0
comp=Z,475nm,18.0s
KONO eS S 13 47 53.1 +2.1
KONO Kongsberg 21.38 353 eP P 13 44 09.8 -3.0
KONO pmax pmax
comp=Z,550nm,1.0s,mb6.0
KONO Kongsberg 21.38 353 eP P 13 44 09.8 -3.0
comp=Z,548nm,1.0s,mb6.0
PCA1 Carrot 21.38 330⇓ eP P 13 44 11.1 -1.7
EBH Black Hill 21.49 331⇓ eP P 13 44 12.0 -1.9
EBH AMB AMB 13 44 14.5
comp=Z,571nm,0.9s,mb6.1
PCOU Corrie 21.53 330⇓ eP P 13 44 12.3 -1.9
POB1 Observatory 21.55 330 eP P 13 44 13.3 -1.3
VOR Voronezh 21.56 44 eP P 13 44 13.0 -1.6
VOR eS S 13 47 55.0 +0.9
VOR pmax pmax
comp=N,900nm,1.5s
VOR pmax pmax
comp=E,4μm,1.5s
VOR smax
comp=E,580nm,1.6s
VOR smax
comp=Z,210nm,1.6s
VOR smax
comp=N,600nm,2.2s
BLS5 Blasjo 21.57 348⇓ iP P 13 44 13.2 -1.4
BLS5 AMb AMB 13 44 14.6
comp=Z,359nm,0.6s,mb6.1
KMY Karmoy 21.57 347⇓ iP P 13 44 12.1 -2.5
KMY AMb AMB 13 44 13.5
comp=Z,487nm,0.7s,mb6.2
KIV Kislovodsk 21.60 67 i P P 13 44 15.5 +0.4
KIV eS S 13 47 59.8 +4.8
KIV pmax pmax
comp=Z,420nm,1.3s,mb5.8
KIV pmax pmax
comp=N,10.0nm,0.6s
KIV pmax pmax
comp=E,180nm,1.2s
KIV smax
comp=N,3μm,4.7s
KIV smax
comp=E,870nm,2.6s
KIV Kislovodsk 21.60 67 eP P 13 44 15.1 +0.1
comp=E,705nm,1.4s,mb6.0
HFS Hagfors 21.62 359 P P 13 44 12.8 -2.3
comp=E,685nm,0.5s,mb6.4,baz=180,slow=5.9,SNR=580
HFS Hagfors 21.62 359 P P 13 44 12.8 -2.3
HFS pmax pmax
comp=Z,685nm,0.5s
GMK Mull of Kintyr 21.68 327⇓ eP P 13 44 14.5 -1.3
GCL Cushendall 21.73 326⇓ eP P 13 44 14.9 -1.4
EAB Aberfoyle 21.77 330 eP P 13 44 14.6 -2.0
EAB AMB AMB 13 44 19.1
comp=Z,622nm,1.2s,mb6.0
KARS Kars 21.88 76 eP P 13 44 20.5 +2.8
PYA Pyatigorsk 21.88 66 eP P 13 44 18.0 +0.3
PYA iS S 13 48 04.0 +4.3
PYA pmax pmax
comp=Z,1μm,3.0s
PYA smax
comp=N,4μm,9.0s
AGRT Agri 21.88 78 eP P 13 44 18.6 +0.8
GOF Gofitskoye 21.97 64⇓ iP P 13 44 18.0 -0.6
GOF iS S 13 48 06.0 +4.7
GOF i 13 48 13.0
GOF pmax pmax
comp=Z,4μm,2.0s
GOF pmax pmax
comp=Z,1μm,1.5s,mb6.2
GOF smax
comp=N,500nm,1.1s
VAL Valentia 22.00 316 eP P 13 44 17.7 -1.1
ODD1 Odda 22.01 349 eP P 13 44 15.7 -3.2
ODD1 AMb AMB 13 44 18.8
comp=Z,604nm,1.5s,mb5.9
MME1 Meikle Cairn 22.11 334⇓ iP P 13 44 17.5 -2.4
OBN Obninsk 22.13 34κ iP P 13 44 18.2 -2.0
OBN i 13 45 36.2
OBN iS S 13 48 03.7 -0.4
OBN i 13 48 06.2
OBN pmax pmax
comp=Z,2μm,1.5s,mb6.4
OBN pmax pmax
comp=Z,500nm,6.3s
OBN Obninsk 22.13 34 eP P 13 44 17.8 -2.3
comp=Z,810nm,0.5s,mb6.5
VANB Van 22.33 81 eP P 13 44 24.8 +2.7
VANB Van 22.33 81 P P 13 44 22.3 +0.2
TVAN Van 22.35 81 iP P 13 44 24.6 +2.2
VANT Van 22.35 81 eP P 13 44 23.7 +1.3
VANT Van 22.35 81 P P 13 44 21.8 -0.6
MCD Coleburn Disti 22.41 334⇓ eP P 13 44 20.4 -2.4
ZEI Tsey 22.43 70d iP P 13 44 25.0 +1.9
ZEI iS S 13 48 14.0 +4.9
ZEI pmax pmax
comp=Z,600nm,2.0s,mb5.8
NAO01 NORSAR Array S 22.45 355 eP P 13 44 20.8 -2.4
comp=Z,180nm,0.4s,mb6.0
EGD Espegrend 22.57 348 eP P 13 44 22.2 -2.1
EGD AMb AMB 13 44 24.8
comp=Z,184nm,1.3s,mb5.4
NB2 NORSAR Subarra 22.63 355 P P 13 44 22.5 -2.3
comp=Z,340nm,0.7s,mb6.0,baz=171,slow=10
NB2 NORSAR Subarra 22.63 355 P P 13 44 22.5 -2.3
baz=171,slow=10
NB2 NORSAR Subarra 22.63 355 P P 13 44 22.9 -1.9
NOA NORSAR Array B 22.63 355 P P 13 44 22.4 -2.4
comp=Z,288nm,0.7s,mb6.0,baz=171,slow=11,SNR=714
NOA PcP PcP 13 48 08.6 -2.7
comp=Z,12nm,0.6s,baz=135,slow=3.0,SNR=3.9
NOA NORSAR Array B 22.63 355 P P 13 44 22.4 -2.4
NOA 13 48 08.6
NOA pmax pmax
comp=Z,288nm,0.7s
BER Bergen 22.66 348 eP P 13 44 23.1 -2.0
BER AMb AMB 13 44 25.6
comp=Z,141nm,1.1s,mb5.4
RUND Rundenannen 22.68 348 eP P 13 44 23.9 -1.5
RUND AMb AMB 13 44 26.6
comp=Z,702nm,1.4s,mb6.0
MDO Dochfour 22.70 333⇓ eP P 13 44 22.3 -3.2
ASK Askoy 22.78 348 eP P 13 44 24.0 -2.2
ASK AMb AMB 13 44 27.0
comp=Z,151nm,1.1s,mb5.4
KAR1 Arisaig 22.87 330⇓ eP P 13 44 25.2 -1.9
KSB Sheil Bridge 22.92 331⇓ eP P 13 44 25.3 -2.3
MOS Moscow 23.00 34 iP P 13 44 27.4 -1.0
MOS e*PP 13 45 12.9
MOS eS S 13 48 18.1 -0.5
MOS pmax pmax
comp=Z,6μm,1.5s
MVH1 Achvaich 23.00 334⇓ eP P 13 44 25.7 -2.6
MLA1 Latheron 23.01 335⇓ eP P 13 44 25.6 -3.0
KPL Plockton 23.10 331⇓ iP P 13 44 27.2 -2.1
GNI Garni 23.17 77 eP P 13 44 31.1 +0.9
GNI pmax pmax
comp=Z,370nm,1.1s
GNI Garni 23.17 77 eP P 13 44 31.1 +0.9
comp=Z,373nm,1.1s,mb5.8
OBR Brabster 23.19 336⇓ iP P 13 44 27.7 -2.5
HYA Hoyanger 23.27 349 eP P 13 44 29.7 -1.2
HYA AMb AMB 13 44 34.5
comp=Z,207nm,1.0s,mb5.6
ORE Reay 23.33 335 eP P 13 44 28.8 -2.8
OST Stronsay 23.38 337⇓ eP P 13 44 29.3 -2.7
OHO Hoy 23.39 336⇓ eP P 13 44 29.6 -2.5
SUE Sulen 23.39 348 eP P 13 44 30.2 -1.8
SUE AMb AMB 13 44 33.5
comp=Z,151nm,0.8s,mb5.6
PUL Pulkovo 23.42 20 iP P 13 44 31.2 -1.2
PUL Pulkovo 23.42 20 iPr 13 44 31.2
OTO Tongue 23.50 334⇓ eP P 13 44 30.3 -2.8
RRR Rubha Reidh 23.53 332⇓ eP P 13 44 30.5 -2.9
REB Eisghbrachaidh 23.53 333⇓ eP P 13 44 30.8 -2.6
KSK Scoval 23.59 330⇓ eP P 13 44 32.0 -2.0
OWE Westray 23.71 337 eP P 13 44 32.5 -2.6
SAN1 Sandwick 23.77 340 eP P 13 44 33.5 -2.1
DOMB Dombas 23.79 353 eP P 13 44 33.7 -2.1
DOMB AMb AMB 13 44 37.2
comp=Z,616nm,1.1s,mb6.1
FOO Floro 23.86 348 eP P 13 44 33.1 -3.3
FOO AMb AMB 13 44 35.9
comp=Z,134nm,0.8s,mb5.6
LRW Lerwick 23.86 340 eP P 13 44 34.7 -1.8
RRH Rhenigidale 23.90 331⇓ eP P 13 44 34.5 -2.4
FINES FINESS Array B 23.97 13 P P 13 44 35.2 -2.3
comp=Z,488nm,0.7s,mb6.2,baz=180,slow=9.5,SNR=890
FINES PKiKP 13 55 53.8
comp=Z,1.4nm,0.7s,baz=135,slow=2.7,SNR=4.0
FINES FINESS Array B 23.97 13 P P 13 44 35.2 -2.3
RTO Tolsta 24.05 332 eP P 13 44 36.1 -2.2
WAL1 Walls 24.08 340 eP P 13 44 36.6 -1.9
YEL1 Yell 24.18 341⇓ eP P 13 44 37.4 -2.0
KBRS Khaybar 24.22 114 P P 13 44 42.6 +2.4
MOL Molde 24.46 352 eP P 13 44 42.4 +0.4
MOL AMb AMB 13 44 57.0
comp=Z,120nm,1.6s,mb5.3
KAF Kangasniemi 24.63 13 ep P 13 44 40.9 -2.8
comp=Z,167nm,0.6s,mb5.8,baz=199,slow=9.1
KAF Kangasniemi 24.63 13 eP P 13 44 40.9 -2.8
KAF pmax pmax
comp=Z,167nm,0.6s,mb5.8
MAK Makhachkala 25.08 69 eP P 13 44 47.2 -0.8
MAK i S S 13 48 50.5 -2.8
MAK pmax pmax
comp=N,290nm,1.0s
MAK pmax pmax
comp=E,160nm,1.0s
MAK pmax pmax
comp=Z,850nm,1.0s,mb6.3
MAK pmax pmax
comp=Z,2μm,2.0s,mb6.3
MAK smax
comp=N,2μm,3.0s
MAK smax
comp=E,2μm,3.0s
TRON Trondheim 25.08 355 eP P 13 44 47.0 -0.8
HILS Ha'il 25.15 108 P P 13 44 51.4 +2.6
NSS Namsos 26.07 357⇓ iP P 13 44 52.4 -4.4
NSS AMb AMB 13 44 54.5
comp=Z,470nm,0.8s,mb6.2
JOF Joensuu 26.38 17 ep P 13 44 56.0 -3.7
ARSS Ar Rass 27.06 109 P P 13 45 08.3 +2.1
MOR8 Moi Rana 27.67 360 eP P 13 45 08.6 -2.8
MOR8 AMb AMB 13 45 10.8
comp=Z,86nm,0.5s,mb5.7
STOK Stokkvaagen 27.85 358 eP P 13 45 09.6 -3.4
STOK AMb AMB 13 45 18.2
comp=Z,181nm,1.5s,mb5.5
AFFS 'Afif 28.04 113 P P 13 45 16.7 +1.6
LOF Lofoten 29.65 359⇓ iP P 13 45 27.3 -1.6
LOF AMb AMB 13 45 29.9
comp=Z,418nm,1.5s,mb5.8
BLJS Baljurashi 29.72 121 P P 13 45 31.1 +1.1
KTK1 Kautokeino 30.87 6⇓ iP P 13 45 36.0 -3.6
KTK1 AMb AMB 13 45 37.3
comp=Z,291nm,0.6s,mb6.1
APA Apatity 30.88 14⇑ iP P 13 45 36.7 -2.9
APA i pP 13 46 27.5 +1.7
APA i 13 46 48.1
APA i 13 48 24.1
APA pmax pmax
comp=Z,72nm,0.7s,mb5.4
APA MLR MLR
comp=Z,800nm,13.0s
TRO Tromso 31.23 3⇓ iP P 13 45 39.1 -3.5
TRO AMb AMB 13 45 40.6
comp=Z,295nm,0.7s,mb6.0
LVZ Lovozero 31.40 14 eP P 13 45 38.0 -6.2
LVZ pmax pmax
comp=N,100nm,0.8s
LVZ pmax pmax
comp=E,70nm,0.8s
LVZ pmax pmax
comp=Z,250nm,0.8s,mb5.9
LVZ Lovozero 31.40 14 i Pr 13 45 41.2
ARCES ARCESS Array B 31.58 7 P P 13 45 41.9 -3.8
comp=Z,198nm,0.5s,mb5.9,baz=191,slow=9.9,SNR=1202
ARCES PcP PcP 13 48 29.1 -3.3
comp=Z,59nm,1.1s,baz=180,slow=2.4,SNR=4.7
ARCES PKiKP 13 55 57.8
comp=Z,0.8nm,0.5s,baz=315,slow=1.7,SNR=3.7
ARE0 ARCESS Array S 31.58 7 eP P 13 45 41.8 -3.9
KEV Kevo 31.95 8 ep P 13 45 44.8 -4.1
BORG Borgarnes 33.66 333 P P 13 46 02.0 -1.6
comp=Z,39nm,0.6s,mb5.1,baz=129,slow=7.1,SNR=8.5
AB31 Akbulak array 33.78 57 i P P 13 46 03.7 -1.1
AB31 pmax pmax
comp=Z,100nm,0.5s,mb5.6
ARU Arti 33.84 44d iP P 13 46 03.4 -1.8
ARU pmax pmax
comp=Z,1μm,1.7s,mb6.1
ARU Arti 33.84 44 eP P 13 46 03.2 -2.1
comp=Z,511nm,0.6s,mb6.2
JMIC Jan Mayen 34.68 347 P P 13 46 10.7 -1.6
comp=Z,151nm,0.6s,mb5.7,baz=250,slow=2.0,SNR=8.4
SVE Sverdlovsk 35.05 43κ iP P 13 46 14.0 -1.4
SVE e pP 13 47 01.8 -0.8
SVE pmax pmax
comp=Z,580nm,1.8s,mb5.8
SVE MLR MLR
comp=Z,700nm,15.0s
SVE MLR MLR
comp=N,300nm,14.0s
SVE MLR MLR
comp=E,500nm,14.0s
DBIC Dimbokro 36.38 214 P P 13 46 27.2 +0.1
comp=E,44nm,0.9s,mb5.0,baz=8.4,slow=9.9,SNR=55
DBIC PcP PcP 13 48 44.6 -2.0
comp=E,12nm,0.5s,baz=8.5,slow=6.7,SNR=4.5
DBIC S S 13 51 50.2 -0.6
comp=E,4.4nm,0.7s,baz=212,slow=19,SNR=7.0
DBIC Dimbokro 36.38 214 P P 13 46 27.2 +0.1
DBIC 13 48 44.6
DBIC S S 13 51 50.3 -0.5
DBIC pmax pmax
comp=Z,44nm,0.9s
DBIC Dimbokro 36.38 214 eP P 13 46 27.0 -0.1
comp=Z,13nm,0.6s,mb4.6
LBOS 36.46 124 eP P 13 46 29.8 +2.0
TIC Toumodi 36.47 215⇑ iP P 13 46 27.8 -0.1
comp=Z,29nm,0.2s,mb5.4
KIC Kosan Boka 36.60 214⇑ iP P 13 46 29.1 +0.1
comp=Z,140nm,0.6s,mb5.7
LIC Lamto 36.85 214⇑ iP P 13 46 31.2 +0.2
comp=Z,103nm,0.6s,mb5.3
LIC epP pP 13 47 19.9 +1.3
LIC eR
comp=Z,350nm,19.2s
LIC Lamto 36.85 214⇑ iP P 13 46 31.1 +0.1
comp=Z,180nm,0.6s,mb5.8
LIC Lamto 36.85 214⇑ iP P 13 46 31.2 +0.2
comp=Z,52nm,0.6s,mb5.2
LIC epP pP 13 47 19.9 +1.3
LIC LR LR
comp=Z,180nm,19.3s
SCO Scoresbysund 37.28 341 iP P 13 46 33.7 -0.4
SCO pmax pmax
comp=Z,79nm,0.7s,mb5.3
SCO Scoresbysund 37.28 341 iP P 13 46 33.7 -0.4
comp=Z,79nm,0.7s,mb5.3
SCO i 14 04 43.2
ZRNK Zerenda 39.51 50 eP P 13 46 51.9 -0.7
SPB4 Spitsbergen Ar 39.75 1 eP P 13 46 52.6 -1.8
BRVK Borovoye 40.28 50 eP P 13 46 58.1 -0.9
BVA0 Borovoye Array 40.34 50 iP P 13 46 58.9 -0.6
BVAR Borovoye Array 40.34 50 P P 13 46 58.9 -0.6
comp=Z,246nm,0.7s,mb5.8,baz=250,slow=6.6,SNR=802
BVAR PP PP 13 48 34.2 -4.4
comp=Z,21nm,0.6s,baz=256,slow=12,SNR=3.3
BVAR S S 13 52 46.7 -3.2
comp=Z,1.4nm,0.6s,baz=240,slow=23,SNR=2.8
KBS Kingsbay 40.51 359 P P 13 46 59.2 -1.5
KBS Kingsbay 40.51 359 eP P 13 46 59.0 -1.7
KBS AMb AMB 13 47 01.1
comp=Z,177nm,0.6s,mb5.7
KBS eS S 13 52 43.7 -8.4
KBS AMS AMS 14 04 44.7
comp=Z,202nm,16.0s
KBS Kingsbay 40.51 359 eP P 13 46 58.1 -2.6
KBS pmax pmax
comp=Z,150nm,0.8s,mb5.5
KBS Kingsbay 40.51 359 eP P 13 46 58.1 -2.6
comp=Z,150nm,0.8s,mb5.5
VOSK Vostochnaya 40.71 51 P P 13 47 01.6 -0.9
VOSK pmax pmax
comp=Z,196nm,1.1s,mb5.5
VOSK Vostochnaya 40.71 51 iP P 13 47 01.6 -0.9
DAG Danmarks Havn 41.01 349⇑ iP P 13 47 02.9 -1.9
comp=Z,154nm,0.5s,mb5.7
DAG i 13 48 58.3
DAG Danmarks Havn 41.01 349⇑ iP P 13 47 02.9 -1.9
DAG i 13 48 58.3
DAG pmax pmax
comp=Z,150nm,0.5s,mb5.7
KKAR Karatay Array 41.75 65 iP P 13 47 10.3 -0.8
KKAR pmax pmax
comp=Z,42nm,0.5s,mb5.1
QUE Quetta 43.36 85 eP P 13 47 25.0 +0.7
QUE eS S 13 53 38.0 +3.9
EKS2 Erkin-Say 44.19 65 P P 13 47 30.8 +0.1
SNR=112
AML Almayashu 44.27 66 P P 13 47 31.5 +0.2
SNR=70
USP Ospenovka 44.54 64 P P 13 47 32.3 -1.2
SNR=43
KMBO Kilima Mbogo 44.57 147 P P 13 47 35.9 +1.9
comp=Z,29nm,0.7s,mb4.7,baz=344,slow=8.8,SNR=54

KMBO PP PP 13 49 29.7 +8.2
comp=Z,1.8nm,0.6s,baz=30,slow=11,SNR=3.1
KMBO Kilima Mbogo 44.57 147 *e*P **P 13 47 35.5 +1.5**
comp=Z,22nm,0.8s,mb4.5
AAK Ala-Archa 44.71 65 P **P 13 47 34.7 -0.1**
SNR=74
FRU Bishkek 44.74 65 *i* P **P 13 47 35.0 0.0**
FRU pmax pmax
comp=Z,420nm,1.4s,mb5.6
CHMS Chumysh 44.79 64 P **P 13 47 34.7 -0.7**
SNR=49
UCH Uchtor 44.83 65 P **P 13 47 35.8 +0.1**
SNR=121
KBK Karagaybulak 45.02 65 P **P 13 47 37.2 -0.1**
SNR=56
KZA Kyzart 45.40 65 P **P 13 47 40.9 +0.7**
SNR=217
TKM2 Tokmak 2 45.41 64 P **P 13 47 39.6 -0.7**
SNR=81
KURK Kurchatov 45.66 53 *i* P **P 13 47 40.8 -1.4**
KURK pmax pmax
comp=Z,134nm,0.7s,mb5.4
KURK Kurchatov 45.66 53 *e*P **P 13 47 40.9 -1.2**
SFJ Sondre 45.66 330 P **P 13 47 40.0 -2.0**
ULHL Ulahol 46.06 65 P **P 13 47 45.4 +0.1**
SNR=15
KSH Kashi 46.71 69 *e*P **P 13 47 51.3 +0.8**
KSH *e*AP pP 13 48 39.0 -0.8
KSH *e*XP sP 13 49 03.9 -1.9
KSH *e*PCP PcP 13 49 21.5 +1.0
KSH *e*PP PP 13 49 43.1 +0.9
KSH *e*PCS 13 53 15.1
KSH *e*S **S 13 54 21.9 +0.3**
KSH *e*SCS ScS 13 57 19.0 +1.0
KSH *e*SS SS 13 57 46.7 0.0
KSH AMB AMB
comp=Z,120nm,0.5s,mb5.5
KSH LR LR
comp=N,280nm,4.3s
KSH LR LR
comp=E,290nm,4.2s
NVS Novosibirsk 47.71 47 *i* P **P 13 47 57.0 -1.0**
NVS *e* 13 49 46.2
NVS *e*S **S 13 54 32.4 -3.1**
NVS pmax pmax
comp=Z,301nm,0.9s,mb5.6
NVS pmax pmax
comp=E,83nm,0.7s
NVS pmax pmax
comp=Z,88nm,1.1s,mb5.0
NVS pmax pmax
comp=E,54nm,1.4s
NVS smax
comp=N,205nm,2.2s
NVS smax
comp=E,41nm,1.7s
MKAR Makanchi Array 48.92 57 P **P 13 48 06.1 -1.3**
comp=E,256nm,0.5s,mb5.8,baz=284,slow=6.4,SNR=2069
MKAR PcP PcP 13 49 26.6 -1.7
comp=E,37nm,0.6s,baz=289,slow=4.2,SNR=5.7
MKAR PP PP 13 50 05.9 +3.2
comp=E,43nm,1.0s,baz=288,slow=7.7,SNR=4.1
MKAR S **S 13 54 50.8 -1.7**
comp=E,2.0nm,0.7s,baz=288,slow=9.8,SNR=3.6
AJM Ajmer 51.08 85 *e*P **P 13 48 24.0 0.0**
AJM *e* 13 48 25.4
comp=Z,116nm,1.5s
NDI New Delhi 52.03 81 *e*P **P 13 48 29.0 -1.9**
NDI *e*S **S 13 55 32.0 -3.3**
WMQ Urumqi 53.48 59⇓ *i*P **P 13 48 40.6 -0.8**
WMQ PCP PcP 13 49 44.3 -1.1
WMQ PP PP 13 50 46.0 +0.3
WMQ SCP 13 53 15.8
WMQ PCS 13 53 42.0
WMQ S **S 13 55 52.0 -2.7**
WMQ SCS ScS 13 58 00.3 -3.5
WMQ SS SS 13 59 36.4 -1.9
WMQ AMB AMB
comp=Z,292nm,1.3s,mb5.5
WMQ AMB AMB
comp=Z,2μm,6.2s
POO Poona 54.65 94 *e*P **P 13 48 49.2 -1.0**
POO *e* 13 48 50.3
comp=Z,46nm,0.6s
BHPL Bhopal 54.90 87 *e*P **P 13 48 50.0 -1.9**
BHPL *e* 13 48 51.6
comp=Z,148nm,0.6s
SCHQ Schefferville 55.09 316 P **P 13 48 50.5 -2.4**
baz=87,slow=9.1
SCHQ Schefferville 55.09 316 *e*P **P 13 48 50.0 -2.9**
comp=Z,186nm,0.8s,mb5.7
KAD Karad 55.60 95 *e*P **P 13 48 56.0 -1.0**
KAD *e* 13 48 58.6
comp=Z,87nm,1.2s
DANN Dangsing 57.23 78 *e*P **P 13 49 07.6 -0.8**
comp=Z,56nm,0.7s,mb5.3
KOLN Koldanda 57.40 79 *e*P **P 13 49 07.9 -1.7**
comp=Z,77nm,0.6s,mb5.5
GKN Gorkha 58.08 78 *e*P **P 13 49 12.8 -1.6**
comp=Z,338nm,0.6s,mb6.2
DMN Daman 58.63 78 *e*P **P 13 49 17.2 -1.0**
comp=Z,372nm,0.7s,mb6.1
KKN Kakani 58.68 78 *e*P **P 13 49 17.1 -1.4**
comp=Z,363nm,0.6s,mb6.2
KKN Kakani 58.68 78 *e*P **P 13 49 17.1 -1.4**
KKN pmax pmax
comp=Z,182nm,0.6s,mb5.9
GUN Gumba 59.08 77 *e*P **P 13 49 20.2 -1.0**
comp=Z,776nm,0.9s,mb6.4
TLY Talaya 60.30 46*d i*P **P 13 49 28.3 -0.9**
TLY *i* 13 51 43.4
TLY *i* 13 53 12.9
TLY *i*S **S 13 57 28.6 +4.8**
TLY *i*SS SS 14 01 23.2 -3.4
TLY pmax pmax
comp=Z,1μm,0.8s
TLY MLR MLR
comp=Z,2μm,16.0s
IRK Irkutsk 60.41 45 *e*P **P 13 49 27.1 -2.8**
IRK *e* 13 53 11.5
ZAK Zakamensk 60.66 47⇑ *e*P **P 13 49 30.2 -1.4**
ZAK *e* 13 50 12.0
ZAK *e* 13 51 41.8
CUD Cuddapah 60.83 95 *e*P **P 13 49 31.7 -1.5**
CUD *e*PcP PcP 13 50 10.4 -4.2
TIXI Tiksi 60.84 19 *e*P **P 13 49 30.2 -2.3**
TIXI *e* pP 13 50 25.1 +0.3
TIXI *e*S **S 13 57 25.9 -4.4**
TIXI pmax pmax
comp=Z,569nm,0.8s,mb6.2
TIXI MLR MLR
comp=Z,3μm,20.0s
TIXI Tiksi 60.84 19 *e*P **P 13 49 29.7 -2.8**
comp=Z,78nm,0.8s,mb5.4
LSA Lhasa 62.17 73 P **P 13 49 41.0 -1.0**
LSA *e*S **S 13 57 44.6 -3.0**
LSA AMB AMB
comp=Z,60nm,0.8s,mb5.3
LSA Lhasa 62.17 73⇓ *i*P **P 13 49 41.1 -0.9**
comp=Z,35nm,0.8s,mb5.0
LSA *e*PcP PcP 13 50 18.7 -1.1
BOD Bodaibo 62.80 36⇓ *i*P **P 13 49 42.7 -3.1**
HNH Hanover 62.85 306 *e*P **P 13 49 44.7 -1.6**
WES Weston 62.86 304 *e*P **P 13 49 44.5 -1.9**
comp=Z,72nm,0.7s,mb5.4
HRV Harvard--Oak R 62.96 304 *e*P **P 13 49 45.2 -1.8**
HRV pmax pmax
comp=Z,36nm,1.0s,mb5.0
HRV Harvard--Oak R 62.96 304 *e*P **P 13 49 45.2 -1.8**
comp=Z,36nm,1.0s,mb5.0
GTA Gaotai 63.57 60⇓ P **P 13 49 50.0 -1.0**
GTA PCP PcP 13 50 25.4 0.0
GTA AP pP 13 50 42.6 -1.2
GTA XP sP 13 51 07.1 -1.1
GTA PP PP 13 52 11.7 -3.4
GTA SCP 13 54 04.7
GTA PCS 13 54 27.0
GTA S **S 13 58 03.1 -1.7**
GTA SCS ScS 13 59 20.3 +2.4
GTA SS SS 14 02 14.5 -3.9
GTA AMB AMB
comp=Z,102nm,0.6s,mb5.6
GTA AMB AMB
comp=Z,229nm,6.8s
GTA LR LR
comp=N,94nm,13.3s
GTA LR LR
comp=E,86nm,20.5s
GTA LR LR
comp=Z,84nm,13.7s
SONM Songino Array 63.65 49 P **P 13 49 50.1 -1.3**
comp=Z,143nm,0.6s,mb5.8,baz=288,slow=7.7,SNR=902
SONM PcP PcP 13 50 24.1 -1.4
comp=Z,40nm,1.2s,baz=280,slow=4.1,SNR=4.7
SONM PP PP 13 52 08.8 -6.8
comp=Z,5.1nm,0.6s,baz=304,slow=8.9,SNR=4.8
SONM PKPPKP 14 18 44.5
comp=Z,0.4nm,0.7s,baz=90,slow=1.2,SNR=6.2
MSNY Massena 63.85 308 *e*P **P 13 49 52.3 -0.5**
ACCN Adirondack Com 63.89 306 *e*P **P 13 49 51.1 -1.9**
NCB Newcomb 63.95 307 *e*P **P 13 49 52.0 -1.4**
comp=Z,20nm,1.3s,mb4.6
ULN Ulaanbaatar 64.03 48 *e*P **P 13 49 52.1 -1.7**
ULN pmax pmax
comp=Z,75nm,1.0s,mb5.3
ULN Ulaanbaatar 64.03 48 *e*P **P 13 49 52.1 -1.7**
comp=Z,75nm,0.9s,mb5.3
LBTB Lobatse 64.03 169 *e*P **P 13 49 53.8 -0.5**
comp=Z,16nm,0.6s,mb4.8
SHL Shillong 64.88 77⇓ *i*P **P 13 49 59.0 -0.7**
SHL *e* 13 57 15.5
PAL Palisades 65.22 304 *e*P **P 13 49 59.5 -2.1**
PAL pmax pmax
comp=Z,28nm,0.7s,mb5.0
PAL Palisades 65.22 304 *e*P **P 13 49 59.5 -2.1**
comp=Z,28nm,0.6s,mb5.1
CPNY Central Park 65.37 303 *e*P **P 13 50 01.4 -1.1**
BINY Binghamton 65.96 306 *e*P **P 13 50 04.4 -1.9**
comp=Z,31nm,0.6s,mb5.1
YAK Yakutsk 66.94 28 *e*P **P 13 50 09.4 -2.7**
YAK pmax pmax
comp=Z,20nm,0.8s,mb4.8
YAK pmax pmax
comp=N,5.0nm,0.9s
YAK pmax pmax
comp=E,6.0nm,1.1s
YAK Yakutsk 66.94 28 *e*P **P 13 50 09.0 -3.1**
comp=E,122nm,0.6s,mb5.7
MVL Millersville 67.34 304 *e*P **P 13 50 13.8 -1.1**
SSPA Standing Stone 68.00 305 *e*P **P 13 50 16.9 -2.1**
comp=E,23nm,0.8s,mb4.8
LZH Lanzhou 68.01 61⇓ P **P 13 50 18.5 -0.7**
LZH PCP PcP 13 50 43.1 -0.9
LZH AP pP 13 51 12.1 -0.6
LZH XP sP 13 51 36.8 0.0
LZH PP PP 13 52 53.6 -0.1
LZH S S 13 58 57.1 -1.5
LZH XS 14 00 32.0
LZH SS SS 14 03 26.2 -0.9
LZH AMB AMB
comp=Z,173nm,1.1s,mb5.6
LZH AMB AMB
comp=Z,418nm,4.0s
CLNS Chul'man 68.26 34*c i*P **P 13 50 18.6 -1.8**
CLNS *e*PPP PPP 13 54 32.3 -2.5
CLNS *e*S S 13 58 57.9 -3.3
CLNS *e* 13 59 39.4
CLNS pmax pmax
comp=Z,110nm,0.8s,mb5.5
CLNS pmax pmax
comp=N,30nm,1.0s
CLNS pmax pmax
comp=E,30nm,0.9s
CLNS smax
comp=N,80nm,13.3s
CLNS smax
comp=Z,30nm,12.8s
CLNS smax
comp=E,20nm,22.1s
ERPA Erie 68.53 307 *e*P **P 13 50 20.2 -2.1**
comp=E,109nm,1.0s,mb5.4
BTO Baotou 69.64 54 *e*P **P 13 50 28.3 -0.8**
BTO AMB AMB
comp=Z,119nm,0.8s,mb5.6
MCWV Mont Chateau 69.79 305 *e*P **P 13 50 29.1 -0.9**
comp=Z,78nm,1.0s,mb5.3
HIA Hailar 70.34 42 *e*P **P 13 50 32.2 -0.9**
comp=Z,170nm,0.7s,mb5.8
HHC Hu-ho-hao-te 70.48 53⇓ P **P 13 50 33.2 -0.9**
HHC AMB AMB
comp=Z,130nm,1.1s,mb5.5
HHC AMB AMB
comp=Z,468nm,2.9s,mb5.6
AAM Ann Arbor 70.69 309 P **P 13 50 33.8 -1.6**
CD2 Chengdu 70.77 66 P **P 13 50 35.3 -0.8**
CD2 PP PP 13 53 17.3 -0.1
CD2 PPP PPP 13 54 58.0 -2.1
CD2 S S 13 59 28.5 -2.3
CD2 SKS SKS 14 00 14.8 +3.2
CD2 SS SS 14 04 06.2 -4.0
CD2 AMB AMB
comp=Z,140nm,1.0s,mb5.5
CD2 AMB AMB
comp=Z,340nm,8.7s
CD2 LR LR
comp=N,290nm,6.3s
CD2 LR LR
comp=Z,200nm,6.3s
SUR Sutherland 70.79 175 *e*P **P 13 50 36.5 +0.4**
comp=Z,25nm,0.6s,mb5.0
INK Inuvik 70.85 348 PKP2ab 14 18 26.5
comp=Z,1.9nm,1.1s,baz=315,slow=4.8,SNR=3.4
YKA Yellowknife Ar 71.42 338 P **P 13 50 37.6 -1.8**
comp=Z,31nm,0.6s,mb5.1,baz=41,slow=5.4,SNR=607
YKA PcP PcP 13 50 55.8 -2.1
comp=Z,11nm,0.8s,baz=37,slow=5.3,SNR=5.8
YKA PKPPKP 14 18 24.3
comp=Z,0.1nm,0.7s,baz=218,slow=3.1,SNR=3.7
YKA Yellowknife Ar 71.42 338 P **P 13 50 37.6 -1.8**
YKA PcP PcP 13 50 55.8 -2.1
YKA P'P' 14 18 24.3
ACSO Alum Creek Sta 71.45 307 *e*P **P 13 50 38.2 -1.8**
comp=Z,87nm,1.0s,mb5.3
FWV Forest Hill 71.58 304 *e*P **P 13 50 39.3 -1.5**
BILL Bilibino 71.59 11*k i*P **P 13 50 38.3 -2.0**
BILL *e* 13 50 55.1
BILL *e**PP pP 13 51 38.4 +4.2
BILL 13 53 24.0
BILL *e* 13 55 05.6
BILL pmax pmax
comp=Z,87nm,1.1s,mb5.3
BILL MLR MLR
comp=Z,100nm,15.0s
BILL Bilibino 71.59 11 *e*P **P 13 50 38.1 -2.3**
comp=Z,53nm,0.9s,mb5.2
ELN Prospectdale 71.74 303 *e*P **P 13 50 39.9 -1.8**
PWV Princeton 71.87 303 *e*P **P 13 50 40.5 -2.1**
SJG San Juan 71.99 279 P **P 13 50 43.0 -0.6**
FFC Flin Flon 72.51 327 *e*P **P 13 50 44.1 -1.8**
FFC pmax pmax
comp=Z,37nm,1.0s,mb5.0
FFC Flin Flon 72.51 327 *e*P **P 13 50 44.1 -1.8**
comp=Z,37nm,0.9s,mb5.0
XAN Xi'an 72.61 60 P **P 13 50 46.2 -0.8**
XAN PP PP 13 53 31.8 -1.1
XAN PPP PPP 13 55 12.8 -4.4
XAN S S 13 59 46.9 -4.7
XAN AMB AMB
comp=Z,214nm,1.1s,mb5.7
XAN AMB AMB
comp=Z,246nm,5.0s
XAN LR LR
comp=N,147nm,19.6s
XAN LR LR
comp=Z,149nm,23.2s
ULM Lac du Bonnet 72.65 321 P **P 13 50 44.9 -2.0**
comp=Z,42nm,0.7s,mb5.2,baz=57,slow=5.8,SNR=42
ULM Lac du Bonnet 72.65 321 *e*P **P 13 50 44.0 -2.9**
comp=Z,58nm,0.8s,mb5.3
KMI Kunming 73.29 71 *e*P **P 13 50 50.3 -0.9**
KMI AP pP 13 51 42.5 -2.7
KMI XP sP 13 52 09.2 -0.1
KMI PP PP 13 53 35.7 -3.2
KMI S S 13 59 55.6 -3.8
KMI SKS SKS 14 00 29.3 -1.0
KMI SS SS 14 04 44.2 -5.0
KMI AMB AMB
comp=Z,57nm,1.4s,mb5.0
KMI AMB AMB
comp=Z,298nm,3.6s
KMI LR LR
comp=N,161nm,17.7s
KMI LR LR
comp=E,143nm,21.2s
KMI LR LR
comp=Z,145nm,23.7s
SEY Seymchan 73.32 19 *e*P **P 13 50 49.9 -0.7**
SEY *e* 13 51 03.5
SEY *e* pP 13 51 45.9 +1.3
SEY *e* 13 59 54.1
SEY pmax pmax
comp=N,40nm,1.1s
SEY pmax pmax
comp=E,30nm,1.1s
SEY pmax pmax
comp=Z,160nm,1.1s,mb5.6
JSC Jenkinsville 73.77 301 *e*P **P 13 50 51.9 -1.9**
BJI Beijing 73.81 52 *e*P **P 13 50 52.8 -1.1**
BJI AP pP 13 51 47.2 -0.8
BJI XP sP 13 52 12.9 +0.9
BJI PP PP 13 53 46.4 +3.6
BJI S S 14 00 02.4 -2.4
BJT Baijiatuau 73.82 52 *e*P **P 13 50 52.6 -1.3**
comp=Z,157nm,0.8s,mb5.7
CHTO Chiang Mai 74.06 79 P **P 13 50 54.6 -1.1**
CHTO S S 14 00 05.7 -2.3
CHRT Chiangrai 74.09 77⇓ P **P 13 50 55.5 -0.4**
comp=Z,671nm,0.8s,mb6.3
JFWS Jewell Farm 74.24 313 *e*P **P 13 50 54.0 -2.3**
JFWS pmax pmax
comp=Z,34nm,0.7s,mb5.1
JFWS Jewell Farm 74.24 313 *e*P **P 13 50 54.0 -2.3**
comp=Z,34nm,0.7s,mb5.1
CM31 Chiang Mai Arr 74.27 79 *e*P **P 13 50 55.8 -1.1**
comp=Z,53nm,0.7s,mb5.3
CMAR Chiang Mai Arr 74.27 79 P **P 13 50 56.0 -1.0**
comp=Z,46nm,0.7s,mb5.2,baz=306,slow=7.0,SNR=221
CMAR Chiang Mai Arr 74.27 79 P **P 13 50 56.0 -0.9**
CMAR pmax pmax
comp=Z,46nm,0.7s
BLO Bloomington 74.29 308 *e*P **P 13 50 54.6 -2.0**
comp=Z,33nm,0.8s,mb5.0
WCI Wyandotte Cave 74.71 307 *e*P **P 13 50 57.4 -1.7**
WCI pmax pmax
comp=Z,53nm,0.9s,mb5.2
WCI Wyandotte Cave 74.71 307 *e*P **P 13 50 57.4 -1.7**
comp=Z,53nm,0.9s,mb5.2
BDT Bhumibol Dam 75.02 80 P **P 13 51 04.0 +2.8**
ENH Enshi 75.18 63⇓ *e*P **P 13 51 00.7 -1.2**
comp=Z,127nm,0.5s,mb5.8
CPCT Cooper Cave 75.24 304 *e*P **P 13 51 00.0 -2.1**
IMA Indian Mountai 75.33 355 *e*P **P 13 51 01.7 -0.3**
GYA Guiyang 75.40 66⇓ *i*P **P 13 51 02.0 -1.2**
GYA AP pP 13 51 55.8 -1.7
GYA XP sP 13 52 18.6 -2.9
GYA PP PP 13 53 57.2 +0.4
GYA S S 14 00 23.0 +0.4
GYA SKS SKS 14 00 46.4 +0.7
GYA XS 14 01 56.0
NANT Nan 75.42 78⇓ P **P 13 51 02.3 -1.1**
comp=Z,165nm,0.8s,mb5.7
MA2 Magadan 75.69 21 *e*P **P 13 51 02.9 -1.2**
MA2 pmax pmax
comp=Z,137nm,0.8s,mb5.6
MA2 Magadan 75.69 21 *e*P **P 13 51 02.9 -1.2**
comp=Z,137nm,0.8s,mb5.6
USIN University of 75.73 307 *e*P **P 13 51 02.8 -2.1**
comp=Z,124nm,0.9s,mb5.5
ILAR Eielson Array 76.02 352 P **P 13 51 04.3 -1.5**
comp=Z,21nm,0.7s,mb4.9,baz=352,slow=3.4,SNR=172
ILAR PKKPbc 14 10 17.2
comp=Z,0.5nm,0.9s,baz=241,slow=1.8,SNR=4.6
ILAR PKPPKP 14 18 20.9
comp=Z,0.9nm,0.7s,baz=236,slow=3.4,SNR=10
COLA College 76.02 352 *e*P **P 13 51 05.0 -0.8**
COLA MLR MLR
comp=Z,100nm,17.0s
TNA Tin City 76.20 1 *e*P **P 13 51 04.7 -2.1**
comp=Z,37nm,0.8s,mb5.1
SWET Sewanee 76.30 304 *e*P **P 13 51 05.6 -2.4**
KLR Kul'dur 76.37 37⇑ *i*P **P 13 51 06.5 -1.6**
KLR pmax pmax
comp=N,36nm,1.0s
KLR pmax pmax
comp=E,36nm,1.0s
KLR pmax pmax
comp=Z,60nm,1.0s,mb5.2
TIA Tai'an 76.73 54⇓ P **P 13 51 09.4 -1.0**
TIA AMB AMB
comp=Z,88nm,0.8s,mb5.4
CN2 Changchun 76.83 44 *e*P **P 13 51 09.8 -1.0**
CN2 PCP PcP 13 51 20.5 -0.9
CN2 AP pP 13 52 02.9 -2.3
CN2 PP PP 13 54 04.8 -3.1
CN2 *e*S S 14 00 36.0 -1.8
CN2 AMB AMB
comp=Z,20nm,0.7s,mb4.9
CN2 AMB AMB
comp=Z,200nm,3.0s
SIUC Southern Illin 76.85 308 *e*P **P 13 51 08.8 -2.2**
comp=Z,64nm,0.8s,mb5.3
WVT Waverly 76.96 306 *e*P **P 13 51 08.5 -3.1**
WVT pmax pmax
comp=Z,33nm,0.8s,mb5.0
WVT Waverly 76.96 306 *e*P **P 13 51 08.5 -3.1**
comp=Z,33nm,0.8s,mb5.0
ANM Nome 77.23 0 *e*P **P 13 51 11.2 -1.3**
MCK McKinley 77.24 353 *e*P **P 13 51 10.9 -1.7**
MCK pmax pmax
comp=Z,66nm,1.0s,mb5.2
MCK McKinley 77.24 353 *e*P **P 13 51 10.9 -1.7**
comp=Z,66nm,1.1s,mb5.2
FVM French Village 77.43 309 *e*P **P 13 51 12.1 -2.1**
FVM pmax pmax
comp=Z,70nm,1.0s,mb5.2
FVM French Village 77.43 309 *e*P **P 13 51 12.1 -2.1**
comp=Z,70nm,1.0s,mb5.2
DL2 Dalian 77.82 50 P **P 13 51 15.8 -0.5**
DL2 AMB AMB
comp=Z,110nm,0.6s,mb5.7
PLAL Pickwick Lake 77.83 305 *e*P **P 13 51 13.5 -3.0**
comp=Z,65nm,1.0s,mb5.2
CCM Cathedral Cave 77.88 309 *e*P **P 13 51 14.4 -2.3**
CCM pmax pmax
comp=Z,42nm,0.9s,mb5.1
CCM Cathedral Cave 77.88 309 *e*P **P 13 51 14.4 -2.3**
comp=Z,42nm,0.8s,mb5.1
LRAL Lakeview Retre 78.34 303 *e*P **P 13 51 16.9 -2.3**
comp=Z,42nm,0.7s,mb5.2
LRAL *e*pP pP 13 52 08.7 -5.3
NNT Nongplab 78.35 83 P **P 13 51 20.0 +0.4**
WHN Wuhan 78.38 60 P **P 13 51 18.2 -1.3**
WHN AMB AMB
comp=Z,64nm,1.0s,mb5.2
GNAR Gosnell 78.45 307 P **P 13 51 18.4 -1.4**
MDJ Mudanjiang 78.49 41 P **P 13 51 18.4 -1.4**
MDJ AP pP 13 52 10.7 -3.9
MDJ XP sP 13 52 34.0 -4.4
MDJ PP PP 13 54 17.9 -4.2
MDJ S S 14 00 54.0 -1.3
MDJ XS 14 02 26.6
MDJ SS SS 14 06 03.3 -4.0
MDJ AMB AMB
comp=Z,60nm,1.0s,mb5.2
MDJ AMB AMB
comp=Z,201nm,4.7s
MDJ LR LR
comp=N,89nm,22.1s
MDJ LR LR
comp=E,126nm,23.5s
MDJ LR LR
comp=Z,114nm,23.5s
MDJ Mudanjiang 78.49 41 *e*P **P 13 51 18.8 -1.0**
comp=Z,44nm,0.8s,mb5.1
KKTK Khon Kaen 78.50 78 P **P 13 51 20.3 -0.1**
comp=Z,864nm,0.7s,mb6.5
TOA Tolsona 78.52 351 *e*P **P 13 51 19.4 -0.2**
OXF Oxford 78.98 305 *e*P **P 13 51 19.9 -2.8**
OXF pmax pmax
comp=Z,170nm,1.0s,mb5.6
OXF Oxford 78.98 305 *e*P **P 13 51 19.9 -2.8**
comp=Z,168nm,1.0s,mb5.6
SML Sawmill 79.06 352 *e*P **P 13 51 21.3 -1.2**
PMR Palmer 79.36 352 *e*P **P 13 51 22.1 -2.0**
PMR pmax pmax

comp=Z,61nm,1.0s,mb5.2
PMR Palmer 79.36 352 *e*P **P** **13 51 22.8 -1.3**
BDFB Brasilia 79.69 241 P **P** **13 51 27.8 +1.1**
comp=Z,23nm,0.6s,mb5.0,baz=49,slow=5.1,SNR=34
BDFB Brasilia 79.69 241 P **P** **13 51 27.8 +1.0**
BDFB pmax pmax
comp=Z,23nm,0.6s
PMS Palmer South 79.74 352 *e*P **P** **13 51 25.4 -0.7**
GOU Gould Hall 79.82 352 *e*P **P** **13 51 26.4 -0.2**
FIB Fire Island 79.88 353 *e*P **P** **13 51 25.6 -1.2**
EYAK Cordova Ski Ar 79.97 350 *e*P **P** **13 51 26.5 -0.9**
SPU Mount Spurr 80.04 354 *e*P **P** **13 51 25.5 -2.2**
KSU1 Kansas State U 80.38 313 *e*P **P** **13 51 28.4 -1.6**
SVW Sparrevohn 80.39 355 *e*P **P** **13 51 29.2 -0.4**
NJ2 Nanjing 80.45 57 *e*P **P** **13 51 29.9 -0.6**
NJ2 AP pP 13 52 24.9 -0.7
NJ2 XP sP 13 52 48.9 -0.4
NJ2 PP PP 13 54 36.9 -1.5
NJ2 PPP PPP 13 56 30.6 +0.1
NJ2 S S 14 01 15.0 -1.0
NJ2 XS 14 02 49.0
NJ2 AMB AMB
comp=Z,540nm,5.4s
NJ2 LR LR
comp=N,190nm,20.8s
NJ2 LR LR
comp=E,210nm,19.4s
NJ2 LR LR
comp=Z,340nm,23.7s
SLKM Skilak Lake 80.53 353 *e*P **P** **13 51 29.1 -1.2**
UALR University of 80.67 307 *e*P **P** **13 51 29.9 -1.7**
comp=Z,35nm,0.8s,mb5.0
RSO Redoubt South 80.81 354 *e*P **P** **13 51 30.2 -1.6**
RSSD Black Hills 80.90 320 *e*P **P** **13 51 32.0 -0.6**
RSSD pmax pmax
comp=Z,16nm,0.9s,mb4.7
RSSD Black Hills 80.90 320 *e*P **P** **13 51 32.0 -0.6**
comp=Z,16nm,0.8s,mb4.7
SDV Santo Domingo 80.97 274 P **P** **13 51 33.0 -0.6**
comp=Z,29nm,0.5s,mb5.1,baz=154,slow=3.9,SNR=26
SIT Sitka 81.47 344 *e*P **P** **13 51 34.9 -0.4**
SIT pmax pmax
comp=Z,100nm,1.0s,mb5.4
SIT Sitka 81.47 344 *e*P **P** **13 51 35.9 +0.6**
MIAR Mount Ida 81.58 308 *e*P **P** **13 51 35.1 -1.3**
MIAR pmax pmax
comp=Z,91nm,1.0s,mb5.4
MIAR Mount Ida 81.58 308 *e*P **P** **13 51 35.1 -1.3**
comp=Z,91nm,1.0s,mb5.4
INCN Inchon 81.72 48 *e*P **P** **13 51 36.1 -0.9**
comp=Z,83nm,0.8s,mb5.4
QIZ Qiongzhong 82.19 72 ⇑P **P** **13 51 39.5 -0.2**
QIZ S S 14 01 35.0 +1.0
QIZ AMB AMB
comp=Z,77nm,1.4s,mb5.1
QIZ Qiongzhong 82.19 72 *e*P **P** **13 51 39.5 -0.2**
CBKS Cedar Bluff 82.35 314 *e*P **P** **13 51 39.1 -1.1**
comp=Z,181nm,1.4s,mb5.5
KS15 Wonju Array Si 82.48 48 *e*P **P** **13 51 39.9 -0.9**
SSE Sheshan 82.58 56 P **P** **13 51 40.7 -0.9**
SSE AP pP 13 52 35.1 -1.8
SSE PP PP 13 54 51.5 -4.3
SSE S S 14 01 35.1 -2.6
SSE SS SS 14 07 05.0 -3.5
SSE AMB AMB
comp=Z,69nm,0.8s,mb5.4
SSE LR LR
comp=N,93nm,21.8s
SSE LR LR
comp=E,75nm,21.8s
SSE LR LR
comp=Z,60nm,26.5s
HRY Holter Researc 82.62 326 *e*P **P** **13 51 40.8 -0.7**
BSMT Bassoo Peak 82.98 328 P **P** **13 51 42.9 -0.4**
YSS Yuzh-Sakhalins 83.01 33 ⇓*i*P **P** **13 51 42.0 -1.5**
YSS pmax pmax
comp=Z,240nm,0.9s,mb5.9
YSS Yuzh-Sakhalins 83.01 33 *e*P **P** **13 51 42.3 -1.2**
comp=Z,193nm,0.8s,mb5.9
CHMT Chamberlain Mo 83.08 327 *e*P **P** **13 51 42.1 -1.6**
BOZ Bozeman (W) 83.36 325 *e*P **P** **13 51 44.9 -0.3**
BOZ pmax pmax
comp=Z,38nm,1.0s,mb5.1
BOZ Bozeman (W) 83.36 325 *e*P **P** **13 51 44.9 -0.3**
comp=Z,38nm,1.0s,mb5.1
BOZ *e*pP pP 13 52 38.6 -2.0
MSO Missoula 83.44 327 *e*P **P** **13 51 44.1 -1.5**
comp=Z,9.8nm,0.7s,mb4.7
KDAK Kodiak Island 83.45 353 *e*P **P** **13 51 44.5 -0.9**
comp=Z,216nm,0.9s,mb5.9
PET Petropavlovsk 83.57 21 *d*⇓P **P** **13 51 44.7 -1.3**
PET *e*PPP PPP 13 56 56.0 -2.6
PET *e* 14 03 16.2
PET pmax pmax
comp=Z,118nm,15.4s
PET MLR MLR
comp=Z,191nm,22.0s
PET Petropavlovsk 83.57 21 *e*P **P** **13 51 44.6 -1.5**
NEW Newport 83.59 330 P **P** **13 51 45.6 -0.7**
comp=Z,34nm,0.9s,mb5.1,baz=47,slow=6.3,SNR=10
NEW Newport 83.59 330 P **P** **13 51 45.6 -0.7**
NEW pmax pmax
comp=Z,34nm,0.9s
LKWY Lake 83.63 324 *e*P **P** **13 51 46.2 -0.4**
LKWY pmax pmax
comp=Z,31nm,0.8s,mb5.1
LKWY Lake 83.63 324 *e*P **P** **13 51 46.2 -0.4**
comp=Z,31nm,0.8s,mb5.1
YMR Madison River 83.81 324 *e*P **P** **13 51 47.8 +0.4**
QLMT Earthquake Lak 83.90 325 *e*P **P** **13 51 48.3 +0.4**
DPW Davenport 84.33 330 *e*P **P** **13 51 49.4 -0.6**
DPW *e*pP pP 13 52 43.1 -2.4
KSWY Kelly School 84.46 324 *e*P **P** **13 51 51.2 +0.5**
MCMT McKenzie Canyo 84.53 326 *e*P **P** **13 51 50.6 -0.5**
WUWY Wally Ulrich 84.58 324 *e*P **P** **13 51 51.4 +0.1**
PDAR Pinedale Array 84.60 322 P **P** **13 51 50.9 -0.6**
comp=Z,32nm,0.9s,mb5.0,baz=60,slow=3.4,SNR=131
BW06 Boulder Array 84.61 322 *e*P **P** **13 51 50.1 -1.4**
comp=Z,26nm,0.8s,mb5.0
WMOK Wichita Mounta 84.62 311 *e*P **P** **13 51 51.0 -0.8**
WMOK *e**PP pP 13 52 48.5 +1.2
WMOK pmax pmax
comp=Z,89nm,1.2s,mb5.4
WMOK Wichita Mounta 84.62 311 *e*P **P** **13 51 51.0 -0.7**
comp=Z,89nm,1.3s,mb5.3
WMOK *e*pP pP 13 52 48.5 +1.2
QZH Quanzhou 84.81 62 ⇑*i*P **P** **13 51 52.3 -0.6**
QZH S S 14 01 57.8 -2.0
ISCO Idaho Springs 84.84 318 *e*P **P** **13 51 52.2 -0.5**
ISCO *e**PP pP 13 52 47.1 -1.1
ISCO pmax pmax
comp=Z,26nm,0.8s,mb5.0
ISCO Idaho Springs 84.84 318 *e*P **P** **13 51 52.2 -0.5**
comp=Z,26nm,0.8s,mb5.0
ISCO *e*pP pP 13 52 47.1 -1.1
SAW Saint Andrews 84.93 331 P **P** **13 51 53.1 +0.1**
NLW Nelson Butte 84.97 332 P **P** **13 51 53.0 -0.2**
RPW Rockport 85.09 333 P **P** **13 51 52.8 -1.0**
ASAJ Asahikawa 85.16 35 P **P** **13 51 53.2 -1.0**
comp=Z,18nm,0.5s,mb5.0,baz=310,slow=5.3,SNR=27
ASAJ Asahikawa 85.16 35 P **P** **13 51 53.3 -0.9**
ASAJ pmax pmax
comp=Z,18nm,0.5s
AHID Auburn Hatcher 85.34 323 *e*P **P** **13 51 54.2 -0.9**
comp=Z,8.1nm,0.6s,mb4.6
JCW Jim Creek 85.46 333 P **P** **13 51 54.3 -1.2**
LNOR Lincton Mounta 86.00 329 *e*P **P** **13 51 57.2 -1.1**
RMW Rattlesnake Mo 86.03 332 *e*P **P** **13 51 57.6 -0.8**
SNIWA Snively Ranch 86.05 330 P **P** **13 51 59.4 +0.8**
HAWA Hanford 86.06 330 *e*P **P** **13 51 58.5 -0.1**
comp=Z,60nm,1.0s,mb5.3
HKT Hockley 86.07 305 *e*P **P** **13 51 58.9 -0.1**
HKT pmax pmax
comp=Z,53nm,1.1s,mb5.2
HKT Hockley 86.07 305 *e*P **P** **13 51 58.9 -0.1**
comp=Z,53nm,1.1s,mb5.2
RSW Rattlesnake Hi 86.08 330 P **P** **13 51 59.6 +0.9**
HLID Hailey 86.22 326 *e*P **P** **13 51 59.1 -0.3**
SDCO Great Sand Dun 86.29 317 *e*P **P** **13 51 59.2 -0.7**
comp=Z,8.8nm,0.7s,mb4.6
SDCO *e*pP pP 13 52 56.8 +1.3
GNW Green Mountain 86.31 333 *e*P **P** **13 51 59.0 -0.8**
ROSC El Rosal 86.32 273 P **P** **13 52 00.4 -0.2**
comp=Z,22nm,0.7s,mb5.0,baz=185,slow=22,SNR=7.8

SDPT Sand Point 86.39 357 *e*P **P** **13 51 58.9 -1.0**
SDN Sand Point 86.39 357 *e*P **P** **13 51 58.5 -1.4**
SDN pmax pmax
comp=Z,200nm,0.7s,mb6.0
SDN Sand Point 86.39 357 *e*P **P** **13 51 58.9 -1.0**
HWUT Hardware Ranch 86.45 323 *e*P **P** **13 51 59.2 -1.4**
comp=Z,27nm,0.8s,mb5.0
HWUT *e*pP pP 13 52 57.5 +1.3
LON Longmire 86.63 332 *e*P **P** **13 52 00.5 -0.8**
OCWA Ocoopus Mounta 86.63 334 *e*P **P** **13 52 01.2 0.0**
comp=Z,52nm,1.0s,mb5.2
TCUT Toone Canyon 86.75 322 *e*P **P** **13 52 00.8 -1.2**
HVU Hansel Valley 86.89 324 *e*P **P** **13 52 01.8 -0.8**
FX1 Attu Island--F 87.03 13 P **P** **13 52 01.4 -1.6**
comp=Z,36nm,0.4s,mb5.4,baz=252,slow=4.1,SNR=21
FX1 Attu Island--F 87.03 13 P **P** **13 52 01.4 -1.6**
FX1 pmax pmax
comp=Z,36nm,0.4s
FX1 Attu Island--F 87.03 13 *e*P **P** **13 52 00.5 -2.5**
RW3 Ridgway 87.07 318 *e*P **P** **13 52 03.0 -0.6**
JLU Jordanelle 87.17 322 *e*P **P** **13 52 03.1 -1.0**
DAU Daniels Canyon 87.22 322 *e*P **P** **13 52 03.4 -0.9**
JNU Nakatsue 87.24 49 P **P** **13 52 03.6 -0.9**
comp=Z,40nm,0.8s,mb5.2,baz=40,slow=4.5,SNR=16
VGB Gordon Butte 87.27 330 *e*P **P** **13 52 04.4 0.0**
BMW Boistfort Moun 87.38 332 *e*P **P** **13 52 03.8 -1.1**
KGM Kluang 87.60 89 ⇑*e*P **P** **13 52 07.0 +0.3**
PV01 Paradox Valley 87.62 319 *e*P **P** **13 52 05.4 -0.8**
BGU Big Grassy Mou 87.67 323 *e*P **P** **13 52 05.0 -1.4**
PV10 Paradox Valley 87.68 319 *e*P **P** **13 52 06.2 -0.3**
SRU San Rafael 87.87 321 *e*P **P** **13 52 05.7 -1.6**
NLU North Lily Min 87.98 322 *e*P **P** **13 52 07.4 -0.4**
JCT Junction City 88.20 308 *e*P **P** **13 52 08.9 -0.2**
JCT pmax pmax
comp=Z,17nm,0.9s,mb4.9
JCT Junction City 88.20 308 *e*P **P** **13 52 08.9 -0.2**
comp=Z,17nm,0.9s,mb4.9
MAJO Matsushiro 88.85 42 *e*P **P** **13 52 09.8 -2.2**
MAJO pmax pmax
comp=Z,20nm,1.0s,mb4.9
MAJO Matsushiro 88.85 42 *e*P **P** **13 52 09.8 -2.1**
comp=Z,20nm,0.9s,mb5.0
MAT Matsushiro 88.85 42 P **P** **13 52 10.2 -1.8**
MAT Matsushiro 88.85 42 *e*P **P** **13 52 10.0 -2.0**
comp=Z,19nm,0.9s,mb4.9
ANMO Albuquerque 88.87 315 *d*⇓P **P** **13 52 12.6 +0.5**
ANMO *i**PP pP 13 53 15.6 +7.5
ANMO Albuquerque 88.87 315 *e*P **P** **13 52 11.8 -0.3**
comp=Z,7.9nm,0.8s,mb4.6
WVOR Wild Horse Val 88.96 327 *e*P **P** **13 52 11.7 -0.7**
WVOR pmax pmax
comp=Z,18nm,0.8s,mb5.0
WVOR Wild Horse Val 88.96 327 *e*P **P** **13 52 11.7 -0.7**
comp=Z,18nm,0.8s,mb5.0
WVOR *e*pP pP 13 53 06.1 -2.2
MSU Marysvale 89.15 321 *e*P **P** **13 52 12.9 -0.5**
MSU *e**PP pP 13 53 10.1 +0.8
MVU Marysvale 89.17 321 *e*P **P** **13 52 13.2 -0.3**
comp=Z,37nm,0.8s,mb5.3
MVU *e*pP pP 13 53 07.5 -1.9
HSO Harness Mounta 89.84 331 *e*P **P** **13 52 16.1 -0.4**
JOW Kunigami 90.03 55 P **P** **13 52 17.3 -0.5**
comp=Z,33nm,0.5s,mb5.5,baz=328,slow=5.8,SNR=25
MOD Modoc 90.10 328 *e*P **P** **13 52 17.9 +0.1**
comp=Z,16nm,0.7s,mb5.0
HUMO Hull Mountain 90.57 330 *e*P **P** **13 52 18.8 -1.1**
MNTX Cornudas Mount 90.66 313 *e*P **P** **13 52 19.1 -1.5**
MNTX *e*pP pP 13 53 17.2 +0.6
WUAZ Wupatki 91.06 319 *e*P **P** **13 52 21.6 -0.7**
comp=Z,22nm,0.9s,mb5.1
JTS UntasAbangare 91.17 284 PKKPbc 14 09 44.0
comp=Z,6.2nm,0.8s,baz=323,slow=22,SNR=8.0
YBH Yreka Blue Hor 91.22 330 P **P** **13 52 21.6 -1.3**
comp=Z,12nm,1.1s,mb4.7,baz=44,slow=3.2,SNR=17
YBH PKKPbc 14 09 43.8
comp=Z,1.1nm,0.6s,baz=150,slow=5.0,SNR=4.6
TXAR Lajitas Array 91.36 310 P **P** **13 52 24.2 +0.3**
comp=Z,7.3nm,0.7s,mb4.7,baz=65,slow=3.7,SNR=42
TXAR Lajitas Array 91.36 310 P **P** **13 52 24.2 +0.3**
WCN Washoe City 92.02 326 *e*P **P** **13 52 26.9 +0.1**
NVAR Mina Array Bea 92.10 325 P **P** **13 52 26.7 -0.5**
comp=Z,3.0nm,0.7s,baz=50,slow=5.3,SNR=15
NVAR PP PP 13 56 02.7 -9.3
comp=Z,1.2nm,0.7s,baz=59,slow=6.9,SNR=5.4
NVAR PKKPbc 14 09 43.1
comp=Z,1.6nm,0.7s,baz=215,slow=6.5,SNR=12
NVAR Mina Array Bea 92.10 325 P **P** **13 52 26.7 -0.5**
NVAR PP PP 13 56 02.7 -9.3
NVAR PKKPbc 14 09 43.1
WDC Whiskeytown Da 92.12 329 *e*P **P** **13 52 26.2 -1.0**
OTAV Otavalo 92.40 272 *e*P **P** **13 52 29.4 +0.3**
comp=Z,25nm,1.0s,mb5.1
NEN Nelson 92.71 321 *e*P **P** **13 52 29.5 -0.5**
TUC Tucson 93.22 316 *e*P **P** **13 52 32.3 -0.1**
TUC pmax pmax
comp=Z,9.0nm,0.9s,mb4.8
TUC Tucson 93.22 316 *e*P **P** **13 52 32.3 -0.1**
comp=Z,9.4nm,0.8s,mb4.9
CPUP Villa Florida 93.31 239 P **P** **13 52 32.8 -0.2**
comp=Z,2.1nm,0.7s,baz=117,slow=11,SNR=4.4
CPUP Villa Florida 93.31 239 *e*P **P** **13 52 32.3 -0.7**
LPAZ La Paz 94.60 253 P **P** **13 52 38.4 -0.5**
comp=Z,3.2nm,0.8s,mb4.5,baz=37,slow=4.3,SNR=12
LPAZ PKKPbc 14 09 37.3
comp=Z,1.3nm,0.6s,baz=231,slow=1.0,SNR=8.2
LPAZ La Paz 94.60 253 *e*P **P** **13 52 37.7 -1.3**
comp=Z,2.9nm,1.1s
LPAZ *e*pP pP 13 53 33.9 -1.2
PFO Pinyon Flat Ob 95.14 321 *e*P **P** **13 52 41.2 +0.1**
PFO pmax pmax
comp=Z,15nm,0.9s,mb5.1
PFO Pinyon Flat Ob 95.14 321 *e*P **P** **13 52 41.2 +0.1**
comp=Z,15nm,0.8s,mb5.2
CBIJ Chichi jima 98.24 46 P **P** **13 52 52.4 -3.0**
comp=Z,50nm,0.9s,mb5.9,baz=294,slow=19,SNR=3.3
LVC Limon Verde 99.08 248 P **P** **13 52 58.8 -0.5**
comp=Z,1.9nm,0.6s,mb4.6,baz=339,slow=3.0,SNR=6.0
LVC PKKPbc 14 09 21.7
comp=Z,1.8nm,0.5s,baz=214,slow=4.7,SNR=3.7
LVC Limon Verde 99.08 248 *e*Pdif **P** **13 52 59.0 -0.3**
VNA2 Neumayer--Watz 110.33 188 ⇓*i* Pdif 13 53 46.5 -1.3
VNA2 Neumayer--Watz 110.33 188 ⇓*i* PKPdf 13 57 52.7 +6.3
PLCA Paso Flores 110.79 234 PKiKP 13 57 49.0
comp=Z,2.4nm,0.7s,baz=183,slow=10,SNR=3.2
PLCA Paso Flores 110.79 234 *i* PKiKP PKPdf 13 57 49.1 +1.0
PLCA pmax pmax
comp=Z,2.0nm,0.7s
PLCA Paso Flores 110.79 234 *e*PKP PKPdf 13 57 49.2 +1.2
VNA3 Neumayer Olymp 110.87 188 ⇑*i* Pdif 13 53 47.5 -2.7
VNA3 Neumayer Olymp 110.87 188 ⇑*i* PKPdf 13 57 51.4 +3.9
FITZ Fitzroy Crossi 117.20 92 *e*PKP PKPdf 13 58 01.3 +0.3
comp=Z,5.0nm,0.5s
FITZ Fitzroy Crossi 117.20 92 PKP PKPdf 13 58 01.3 +0.3
comp=Z,7.1nm,0.6s,baz=350,slow=2.3,SNR=24
MUN Mundaring 117.32 110 *e*PKP PKPdf 13 58 00.8 -0.2
comp=Z,9.2nm,0.6s
KLBR Kellerberrin 118.27 109 *e*PKP PKPdf 13 58 02.4 -0.4
comp=Z,17nm,0.5s
NWAO Narrogin (SRO) 118.54 111 PKP PKPdf 13 58 03.6 +0.2
comp=Z,15nm,0.6s,baz=292,slow=0.7,SNR=19
NWAO Narrogin (SRO) 118.54 111 PKIKP PKPdf 13 58 03.6 +0.2
NWAO pmax pmax
comp=Z,15nm,0.6s
KAKA Kakadu 119.35 83 *e*PKP PKPdf 13 58 05.2 -0.1
comp=Z,18nm,0.6s
WRA Warramunga Arr 125.04 88 PKhKP 13 58 09.0
comp=Z,0.9nm,0.7s,baz=314,slow=1.2,SNR=8.9
WRA PKP PKPdf 13 58 16.2 0.0
comp=Z,13nm,0.6s,baz=305,slow=2.0,SNR=72
WRA PP PP 14 00 00.6 -11
comp=Z,4.4nm,0.9s,baz=317,slow=5.7,SNR=5.5
WRA PKKPbc 14 07 58.5
comp=Z,0.3nm,0.4s,baz=115,slow=3.5,SNR=6.0
WRA PKKP PKKP 14 08 37.4 +25
comp=Z,1.3nm,0.5s,baz=117,slow=2.0,SNR=15
WRAB Tennant Creek 125.05 88 *e*PKP PKPdf 13 58 15.8 -0.5
WB2 Warramunga Arr 125.05 88 *e*PKP PKPdf 13 58 16.2 -0.1
FORT Forrest 125.63 103 *e*PKP PKPdf 13 58 17.5 +0.4
comp=Z,137nm,0.5s
AS12 Alice Springs 126.69 93 *e*PKP PKPdf 13 58 19.6 +0.3
comp=Z,23nm,1.1s
ASAR Alice Springs 126.69 93 PKhKP 13 58 07.4
comp=Z,0.8nm,0.8s,baz=345,slow=1.9,SNR=6.4
ASAR PKP PKPdf 13 58 18.8 -0.5
comp=Z,13nm,0.6s,baz=321,slow=1.5,SNR=65

ASAR PP PP 14 00 12.8 -10
comp=Z,1.5nm,0.7s,baz=315,slow=5.8,SNR=4.0
ASAR PKKPbc 14 07 51.6
comp=Z,0.4nm,0.8s,baz=117,slow=3.4,SNR=4.7
ASAR PKKP PKKP 14 08 34.5 +26
comp=Z,0.6nm,0.5s,baz=115,slow=2.0,SNR=15
QSPA South Pole Qui 128.41 180 *e*PKP PKPdf 13 58 21.8 +0.6
CTA Charters Tower 134.42 80 *e*PKP PKPdf 13 58 33.5 -0.5
comp=Z,13nm,0.7s
CTA Charters Tower 134.42 80 PKP PKPdf 13 58 34.2 +0.2
comp=Z,30nm,1.0s,baz=307,slow=2.2,SNR=16
CTA Charters Tower 134.42 80 PKIKP PKPdf 13 58 34.3 +0.3
CTA pmax pmax
comp=Z,30nm,1.0s
CTAO Charters Tower 134.42 80 *e*PKIKP PKPdf 13 58 33.8 -0.2
STKA Stephens Creek 136.53 98 *e*PKP PKPdf 13 58 27.5 -10
comp=Z,4.0nm,0.6s
STKA *e* 13 58 37.8
STKA *e* 14 01 47.8
STKA *e* 14 02 10.2
STKA Stephens Creek 136.53 98 PKhKP 13 58 25.6
comp=Z,6.0nm,0.8s,baz=306,slow=5.8,SNR=13
STKA PKP PKPdf 13 58 37.8 +0.2
comp=Z,17nm,0.8s,baz=350,slow=3.5,SNR=5.9
STKA SKP 14 01 48.0
comp=Z,2.7nm,0.5s,baz=299,slow=3.8,SNR=5.1
STKA Stephens Creek 136.53 98 *e*PKP PKPdf 13 58 27.5 -10
STKA PKP PKPdf 13 58 37.8 +0.2
STKA *e* 14 01 47.8
STKA SKP 14 01 48.0
STKA *e* 14 02 10.2
SBA Scott Base 138.86 171 *e*PKP PKPdf 13 58 40.9 +0.2
TOO Toolangi 141.54 104 *e*PKP PKPdf 13 58 41.7 -4.7
comp=Z,11nm,0.7s
ARMA Armidale 143.78 90 *e*PKP PKPdf 13 58 49.6 -0.9
CNB Canberra Magne 143.82 99 *e*PKP PKPdf 13 58 49.6 -0.9
comp=Z,10nm,0.8s
RIV Riverview 144.72 96 *e*PKP PKPdf 13 58 52.6 +0.6
NOUC Port Laguerre 150.61 64 *e*P PKPdf 13 59 08.9 +6.9
NOUC Port Laguerre 150.61 64 *e*P PKPdf 13 59 08.9 +6.9
DZM Mont Dzumac 150.69 64 *e*P PKPdf 13 59 09.0 +6.9
DZM Mont Dzumac 150.69 64 *e*P PKPdf 13 59 09.0 +6.9
MCQ Macquarie Isla 151.03 135 *e*PKP PKPdf 13 59 09.2 +7.6
comp=Z,8.6nm,0.9s
PPT Papeete 155.03 322 PKPab PKPab 13 59 34.8 -1.5
comp=Z,21nm,0.6s,baz=272,slow=6.6,SNR=3.1
PPT Papeete 155.03 322 PKP2 PKPab 13 59 34.8 -1.5
PPT pmax pmax
comp=Z,21nm,0.6s
RPZ Rata Peaks 161.41 114 PKPab PKPab 14 00 03.2 +0.2
comp=Z,26nm,1.1s,baz=26,slow=18,SNR=5.3
URZ Urewera 166.13 94 PKPab PKPab 14 00 21.1 -2.7
comp=Z,21nm,0.7s,baz=345,slow=4.9,SNR=13

IDC 05 13:54:00.4±4.3, 0.82S×14.09W, mb3.7/4, mb1 3.9/5, mb1mx3.7/21, ML3.6/1, Error ellipse: s-maj=121.0km s-min=69.5km az=156.0, North of Ascension Island

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DBIC	**Dimbokro**	**11.84**	**51**	Pn	P	13 56 50.5	-3.2
	0.4nm,0.3s,baz=226,slow=15,SNR=9.1						
DBIC				Sn	S	13 58 56.0	-12
	0.2nm,0.3s,baz=122,slow=1.2,SNR=1.9						
GERES	**GERESS Array B**	**54.99**	**22**	P	P	14 03 32.6	-3.2
	0.3nm,0.3s,baz=211,slow=7.8,SNR=4.9						
BRTR	**Keskin Array B**	**59.35**	**42**	P	P	14 04 05.3	-1.6
	0.3nm,0.6s,baz=229,slow=13,SNR=3.6						
FINES	**FINESS Array B**	**69.22**	**19**	P	P	14 05 08.8	-2.1
	0.6nm,0.5s,baz=211,slow=8.1,SNR=2.8						
ARCES	**ARCESS Array B**	**75.06**	**13**	P	P	14 05 44.3	-1.2
	1.5nm,1.1s,baz=236,slow=3.3,SNR=2.2						
ASAR	**Alice Springs**	**140.51**	**130**	PKP	PKPdf	14 13 31.0	-3.6
	0.4nm,0.9s,baz=231,slow=1.9,SNR=4.3						

*IDC **05** 14:14:49.9±2.5, 0.43S×131.80E, mb4.3/2, mb1 4.3/4, mb1mx3.8/15, ML3.9/2, Error ellipse: s-maj=122.0km s-min=23.0km az=76.0*

ISC 05 14:14:54.4±1.4, 0.7S±0.1×131.2E±0.3, h33km, n6, σ1°19/9, mb4.3/2, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**18.17**	**197**	P	**P**	**14 19 08.5**	**+2.4**
	0.2nm,0.3s,baz=14,slow=12,SNR=6.7						
FITZ				S	**S**	**14 22 23.7**	**-0.9**
	0.1nm,0.3s,slow=20,SNR=3.4						
WRA	**Warramunga Arr**	**19.42**	**171**	P	**P**	**14 19 19.3**	**-1.5**
	0.5nm,0.3s,baz=353,slow=11,SNR=18						
WRA				S	**S**	**14 22 46.9**	**-5.8**
	0.2nm,0.3s,baz=354,slow=23,SNR=5.2						
WB2	**Warramunga Arr**	**19.42**	**171**	*e*P	**P**	**14 19 20.7**	**-0.2**
AS12	**Alice Springs**	**23.03**	**174**	*e*P	**P**	**14 19 59.4**	**+1.6**
	6.8nm,0.5s,mb4.3						
ASAR	**Alice Springs**	**23.03**	**174**	P	**P**	**14 19 58.3**	**+0.5**
	6.1nm,0.5s,mb4.3,baz=0.1,slow=9.1,SNR=77						
ASAR				S	**S**	**14 24 02.5**	**+0.4**
	0.4nm,0.9s,baz=6.7,slow=15,SNR=3.0						
MKAR	**Makanchi Array**	**63.67**	**325**	P	**P**	**14 25 24.4**	**-0.5**
	1.0nm,0.3s,mb4.3,baz=113,slow=8.1,SNR=24						

IDC 05 14:33:12.0±6.4, 6.91S×155.73E, mb3.7/3, mb1 3.9/3, mb1mx3.6/12, Error ellipse: s-maj=194.0km s-min=41.6km az=112.0, Bougainville - Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**24.46**	**236**	P	P	14 38 33.9	-0.1
	0.9nm,0.6s,baz=63,slow=9.4,SNR=6.2						
ASAR	**Alice Springs**	**25.77**	**229**	P	P	14 38 53.0	-2.6
	0.5nm,0.8s,baz=58,slow=9.8,SNR=4.7						
MKAR	**Makanchi Array**	**83.82**	**319**	P	P	14 45 43.4	-1.4
	1.0nm,0.8s,baz=111,slow=6.1,SNR=6.6						

*IDC **05** 14:57:40.3±1.8, 15.02S×167.89E, mb4.2/7, mb1 4.3/7, mb1mx4.1/14, Error ellipse: s-maj=59.7km s-min=30.1km az=131.0*
*LDG **05** 14:57:45.2±0.3, 14.05S×167.56E, h10km, Mb4.4/2, Error ellipse: s-maj=46.8km s-min=9.9km az=88.0*
*NEIC **05** 14:57:57.7±0.4, 15.03S×167.35E, h120km, mb4.5/2, Error ellipse: s-maj=16.7km s-min=10.8km az=100.0*

ISC 05 14:57:59.9±3.7, 15.2S±0.2×167.2E±0.2, h148km±28km, n37, σ0°77/18, mb4.0/9, 3C-1D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**6.92**	**186**	*e*P	**P**	**14 59 39.8**	**0.0**
DZM				*e*S	**S**	**15 00 57.6**	**+0.1**
DZM	**Mont Dzumac**	**6.92**	**186**	*e*P	**P**	**14 59 39.8**	**0.0**
DZM				*e*S	**S**	**15 00 57.5**	**+0.1**
STKA	**Stephens Creek**	**28.67**	**230**	P	**P**	**15 03 45.9**	**+0.9**
	7.7nm,0.7s,mb4.5,baz=40,slow=6.8,SNR=18						
STKA				PcP	PcP	15 06 50.7	-1.3
	2.0nm,0.8s,baz=34,slow=3.1,SNR=5.8						
STKA	**Stephens Creek**	**28.67**	**230**	P	**P**	**15 03 45.9**	**+0.9**
STKA				PcP	PcP	15 06 50.7	-1.4
WRA	**Warramunga Arr**	**31.66**	**257**	P	**P**	**15 04 10.1**	**-1.4**
	0.8nm,0.7s,mb3.5,baz=90,slow=9.4,SNR=5.5						
ASAR	**Alice Springs**	**32.46**	**250**	P	**P**	**15 04 18.1**	**-0.3**
	4.2nm,0.8s,mb4.2,baz=79,slow=8.9,SNR=30						
ASAR				PcP	PcP	15 07 01.1	-1.0
	0.5nm,0.8s,baz=85,slow=2.3,SNR=3.5						
FITZ	**Fitzroy Crossi**	**39.87**	**260**	P	**P**	**15 05 21.1**	**+0.3**
	3.1nm,0.9s,mb4.0,baz=107,slow=1.9,SNR=3.8						
SBA	**Scott Base**	**62.71**	**180**	*e*P	**P**	**15 08 10.5**	**-0.4**
	5.8nm,0.8s,mb4.5						
QSPA	**South Pole Qui**	**74.87**	**180**	*e*P	**P**	**15 09 24.8**	**-0.5**
	6.9nm,0.8s,mb4.3						
CMAR	**Chiang Mai Arr**	**75.06**	**294**	P	**P**	**15 09 28.8**	**+1.2**
	1.1nm,0.8s,mb3.5,baz=132,slow=4.7,SNR=6.6						
SONM	**Songino Array**	**82.80**	**324**	P	**P**	**15 10 08.4**	**-0.4**
	1.1nm,1.0s,mb3.5,baz=153,slow=5.5,SNR=5.9						
SNAA	**Sanae**	**93.12**	**183**	⇑*i*	**P**	**15 10 56.3**	**-1.3**
VNA3	**Neumayer Olymp**	**93.79**	**181**	⇓*i*	**P**	**15 11 01.5**	**+0.9**
VNA2	**Neumayer--Watz**	**94.05**	**182**	⇑*i*	**P**	**15 11 02.7**	**+0.9**
VNA1	**Neumayer--Stat**	**94.35**	**182**	⇑*i*	**P**	**15 10 57.7**	**-5.5**
MKAR	**Makanchi Array**	**97.47**	**316**	P	**P**	**15 11 17.8**	**-0.1**
	0.8nm,0.7s,mb4.2,baz=92,slow=5.7,SNR=9.5						
ARCES	**ARCESS Array B**	**120.65**	**345**	PKP	PKPdf	15 16 33.0	-0.7
	1.2nm,0.5s,baz=95,slow=1.0,SNR=18						

ARCES	ARCESS Array B	120.65	345	PKP	PKPdf	15 16 33.0	-0.7	
CABF	La Chapelle 20nm,0.9s	144.89	337	*e*PKP1	PKPbc	15 17 20.0	+0.6	
FLN	La Foliniere	144.99	346	*e*PKP1	PKPbc	15 17 19.2	-0.4	
LDF	La Druitiere	145.06	345	*e*PKP1	PKPbc	15 17 19.6	-0.2	
LOR	Lormes 32nm,1.1s	145.12	340	*e*PKP1	PKPbc	15 17 20.2	+0.2	
SSF	Saint Saulge 34nm,0.9s	145.41	340	*e*PKP1	PKPbc	15 17 21.4	+0.7	
GRR	Gorron	145.43	346	*e*PKP1	PKPbc	15 17 20.9	+0.2	
LPL	La Plagne 11nm,0.9s	145.55	335	*e*PKP1	PKPbc	15 17 22.4	+1.3	
LPG	La Plagne 17nm,0.9s	145.56	335	*e*PKP1	PKPbc	15 17 22.6	+1.4	
SMF	Signal de Mont	145.66	340	*e*PKP1	PKPbc	15 17 23.0	+1.6	
AVF	Avril sur Loir	145.70	340	*e*PKP1	PKPbc	15 17 22.4	+0.9	
SGMF	Saint Gilles	145.93	348	*e*PKP1	PKPbc	15 17 22.2	+0.2	
BGF	Bois d'Agland 17nm,0.6s	146.07	341	*e*PKP1	PKPbc	15 17 23.2	+0.8	
ORIF	Oris-en-Rattie	146.39	336	*e*PKP1	PKPbc	15 17 24.3	+1.1	
TCF	Toulx Ste Croi	146.51	341	*e*PKP1	PKPbc	15 17 24.3	+0.9	
MFF	Saint Martin d 30nm,0.7s	146.91	344	*e*PKP1	PKPbc	15 17 25.3	+1.0	
FRF	La Foret Royal 29nm,1.0s	147.18	333	*e*PKP1	PKPdf	15 17 25.3	+2.2	
CAF	Calviac	147.77	340	*e*PKP1	PKPdf	15 17 28.1	+4.0	
LFF	La Frestale	148.18	342	*e*PKP1	PKPdf	15 17 29.1	+4.3	
ETSF	Etsaut 11nm,0.7s	150.42	342	*e*PKP1	PKPdf	15 17 35.0	+6.7	

IDC 05 15:06:33.2±5.5, 7.27S×156.43E, mb3.7/5, mb1 3.9/5, mb1mx3.8/12, Error ellipse: s-maj=152.0km s-min=32.4km az=110.0, Bougainville - Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	Warramunga Arr 2.3nm,1.1s,baz=64,slow=9.4,SNR=5.6	24.85	237	P	P	15 11 58.4	-0.5
ASAR	Alice Springs 0.4nm,0.6s,baz=53,slow=9.0,SNR=4.3	27.08	231	P	P	15 12 17.2	-2.5
CMAR	Chiang Mai Arr 0.8nm,0.8s,baz=104,slow=4.8,SNR=4.8	62.19	295	P	P	15 16 56.9	-2.4
SONM	Songino Array 0.4nm,0.8s,baz=146,slow=5.2,SNR=3.0	70.34	327	P	P	15 17 49.6	-1.2
MKAR	Makanchi Array 1.6nm,0.8s,baz=102,slow=6.2,SNR=11	84.56	318	P	P	15 19 07.8	-1.9

*NEIC **05** 15:12:25.0, 61.96N×150.80W, h65km, ML3.8(PMR), ML3.7(AEIC), After AEIC.*
*IDC **05** 15:12:25.3±6.1, 62.22N×150.84W, h88km±46km, mb3.3/4, mb1 3.5/6, mb1mx3.3/19, Error ellipse: s-maj=55.3km s-min=43.5km az=157.0*

ISC 05 15:12:23.4±0.2, 61.99N±0.02×150.78W±0.05, h65km, n74, σ0§95/87, mb3.6/4, Southern Alaska

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SKT	Skwentna	0.36	269	P	P	15 12 34.9	+0.3
CUT	Chulitna	0.48	29	P	P	15 12 36.9	+1.3
SUA	Susitna One	0.53	178	P	P	15 12 37.1	+1.0
PWA	Palmer West	0.54	128	P	P	15 12 37.4	+1.1
FIB	Fire Island	0.87	161	P	P	15 12 41.8	+1.6
PMR	Palmer	0.88	116	P	P	15 12 40.7	+0.5
PMR				S	S	15 12 53.5	+0.7
GHO	Glory Hole Cre	0.90	103	P	P	15 12 41.7	+1.1
GHO				S	S	15 12 54.9	+1.5
GOU	Gould Hall	0.93	149	*e*P	P	15 12 41.3	+0.3
PMS	Palmer South	0.94	142	P	P	15 12 41.6	+0.5
SPU	Mount Spurr	1.01	218	P	P	15 12 42.3	+0.2
RC01	Rabbit Creek A	1.03	151	P	P	15 12 42.3	0.0
RC01				S	S	15 12 57.5	+1.2
CKL	Chakachamna La	1.09	224	P	P	15 12 43.4	+0.3
HUR	Hurricane	1.12	28	P	P	15 12 44.7	+1.2
HUR				S	S	15 13 00.1	+1.6
BKG	Blockade Glaci	1.17	218	P	P	15 12 44.3	+0.3
BKG				S	S	15 13 00.1	+0.7
SML	Sawmill	1.17	98	P	P	15 12 44.8	+0.7
KNK	Knik Glacier	1.25	117	P	P	15 12 46.0	+0.8
TRF	Thorofare Moun	1.48	8	P	P	15 12 49.4	+0.8
SLKM	Skilak Lake	1.51	170	P	P	15 12 49.1	+0.3
KTH	Kantishna Hill	1.57	358	P	P	15 12 50.6	+0.9
KTH				S	S	15 13 09.8	+0.7
RDT	Redoubt	1.62	210	P	P	15 12 50.9	+0.5
SCM	Sheep Creek Mo	1.64	94	P	P	15 12 51.1	+0.5
MPA	Moose Pass	1.65	155	P	P	15 12 50.4	-0.5
RND	Reindeer	1.68	31	P	P	15 12 51.7	+0.5
DFR	Drift River	1.68	218	P	P	15 12 51.3	+0.1
REF	Redoubt East F	1.77	213	P	P	15 12 53.1	+0.7
REF				S	S	15 13 14.7	+0.9
RSO	Redoubt South	1.81	213	*e*P	P	15 12 53.1	+0.2
DHY	Denali Highway	1.92	54	P	P	15 12 55.1	+0.7
MCK	McKinley	1.94	25	P	P	15 12 55.6	+0.8
MCK				S	S	15 13 19.7	+1.7
SEW	Seward	2.00	161	P	P	15 12 55.8	+0.3
SEW				S	S	15 13 17.5	-1.8
TOA	Tolsona	2.17	85	P	P	15 12 59.0	+1.0
ILIM	Iliamna	2.19	210	P	P	15 12 58.3	0.0
JPK	Jack Peak	2.21	113	P	P	15 12 58.0	-0.5
BRLK	Bradley Lake	2.23	181	P	P	15 12 58.1	-0.7
ILW	Iliamna West	2.25	212	P	P	15 12 59.2	+0.1
ILW				S	S	15 13 28.1	+2.4
BWN	Browne	2.27	15	P	P	15 12 59.7	+0.3
VLZ	Valdez	2.29	110	P	P	15 12 58.8	-0.9
VLZ				S	S	15 13 26.3	-0.5
KLU	Klutina	2.36	100	P	P	15 13 00.4	-0.3
CNPM	China Poot	2.48	185	P	P	15 13 01.6	-0.8
SVW	Sparrevohn	2.48	251	P	P	15 13 01.8	-0.6
TZL	Tazlina	2.52	86	P	P	15 13 03.4	+0.4
TT01	Tatalina	2.61	293	P	P	15 13 03.5	-0.7
HIN	Hinchinbrook I	2.61	126	P	P	15 13 03.0	-1.3
PAX	Paxson	2.65	66	P	P	15 13 05.2	+0.4
PAX				S	S	15 13 36.6	+0.7
NEA	Nenana	2.71	16	P	P	15 13 05.2	-0.5
EYAK	Cordova Ski Ar	2.83	119	P	P	15 13 05.8	-1.5
HDA	Harding Lake	2.98	34	P	P	15 13 09.6	+0.1
CCB	Clear Creek Bu	2.99	25	P	P	15 13 09.2	-0.3
MLY	Manley	3.06	0	P	P	15 13 10.2	-0.3
BMRM	Bremner River	3.13	106	P	P	15 13 09.7	-1.9
WANC	Wrangell North	3.16	87	P	P	15 13 12.1	+0.1
COLA	College	3.18	23	P	P	15 13 12.0	-0.2
MDM	Murphy Dome	3.19	20	P	P	15 13 12.1	-0.3
IL1	Eielson Array	3.30	30	P	P	15 13 13.5	-0.4
ILAR	Eielson Array 3.2nm,0.3s,baz=216,slow=14,SNR=105	3.30	30	P	P	15 13 13.4	-0.4
ILAR				S	S	15 13 48.7	-3.4
	12nm,0.3s,baz=222,slow=22,SNR=15						
GLB	Gilahina Butte	3.36	96	P	P	15 13 13.9	-0.9
DOT	Dot Lake	3.50	59	P	P	15 13 16.6	-0.2
KARR	Katmai Rainbow	4.01	211	P	P	15 13 22.7	-1.1
BALM	Baldy	4.15	100	P	P	15 13 24.2	-1.6
IM3	Indian Mountai	4.22	343	P	P	15 13 25.8	-1.0
PRP	Porcupine Dome	4.24	31	P	P	15 13 27.1	0.0
IMA	Indian Mountai	4.29	344	*e*P	P	15 13 27.0	-0.8
BCA3	Beaver Creek A	4.30	72	P	P	15 13 27.1	-0.9
KDAK	Kodiak Island	4.32	193	P	P	15 13 26.7	-1.5
CTGM	Chitina Glacie	4.64	99	P	P	15 13 32.0	-0.7
PNL	Peninsula	6.03	108	P	P	15 13 50.6	-1.3
BM3	Burnt Mountain	6.06	23	P	P	15 13 51.5	-0.7
ANM	Nome	7.07	298	P	P	15 14 06.1	-0.4
TNA	Tin City	8.39	303	P	P	15 14 24.2	-0.4
YKA	Yellowknife Ar 0.2nm,0.3s,baz=282,slow=12,SNR=30	16.72	72	P	P	15 16 12.2	-2.0
YKA	Yellowknife Ar	16.72	72	P	P	15 16 12.2	-2.0
ARCES	ARCESS Array B 0.6nm,0.7s,mb3.7,baz=352,slow=6.4,SNR=3.5	48.74	2	P	P	15 20 59.5	-3.0
SONM	Songino Array 0.4nm,0.6s,mb3.6,baz=34,slow=8.9,SNR=3.8	54.49	306	P	P	15 21 42.8	-3.3
MKAR	Makanchi Array 0.5nm,0.6s,mb3.5,baz=32,slow=7.7,SNR=6.4	63.54	322	P	P	15 22 43.2	-5.4
AKASG	Malin Array Be 0.2nm,0.3s,mb3.4,baz=5.5,slow=7.0,SNR=4.7	67.66	0	P	P	15 23 11.2	-3.6

*IDC **05** 15:15:32.9±14.0, 19.39S×169.53E, h182km±131km, mb3.6/7, mb1 3.8/7, mb1mx3.8/12, Error ellipse: s-maj=69.6km s-min=38.6km az=169.0*
*NEIC **05** 15:15:37.6±1.6, 19.53S×169.48E, h228km±15km, Error ellipse: s-maj=34.6km s-min=18.4km az=155.0*

ISC 05 15:15:37.7±1.8, 19.5S±0.2×169.3E±0.2, h234km±16km, n30, σ1§03/19, mb3.7/7, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	Mont Dzumac	3.68	226	*e*P	P	15 16 38.0	+0.5
DZM				*e*S	S	15 17 22.1	-2.0
DZM	Mont Dzumac	3.68	226	*e*P	P	15 16 38.0	+0.5
DZM				*e*S	S	15 17 22.1	-2.0
NOUC	Port Laguerre	3.80	227	*e*P	P	15 16 39.5	+0.6
NOUC				*e*S	S	15 17 27.5	+1.0
NOUC	Port Laguerre	3.80	227	*e*P	P	15 16 39.5	+0.6
NOUC				*e*S	S	15 17 27.4	+1.0
STKA	Stephens Creek 0.9nm,0.8s,mb3.5,baz=108,slow=9.6,SNR=2.3	27.74	238	P	P	15 21 07.0	+0.1
WRAB	Tennant Creek	32.87	263	P	P	15 21 51.3	-0.5
WRA	Warramunga Arr 0.7nm,0.6s,mb3.4,baz=98,slow=8.5,SNR=7.2	32.88	263	P	P	15 21 50.9	-1.0
AS12	Alice Springs 5.6nm,0.6s,mb4.3	33.12	256	*e*P	P	15 21 53.8	-0.1
ASAR	Alice Springs 5.3nm,0.6s,mb4.2,baz=84,slow=9.1,SNR=113	33.12	256	P	P	15 21 54.1	+0.2
CMAR	Chiang Mai Arr 1.3nm,0.8s,mb3.6,baz=137,slow=5.0,SNR=9.0	78.68	294	P	P	15 27 17.4	+1.6
ULN	Ulaanbaatar	87.14	323	P	P	15 27 59.5	+1.2
SONM	Songino Array 2.1nm,0.8s,mb3.9,baz=144,slow=5.2,SNR=15	87.49	323	P	P	15 27 59.6	-0.3
SNAA	Sanae	88.87	182	*e*P	P	15 28 06.2	+0.3
NVAR	Mina Array Bea 0.7nm,0.6s,mb3.6,baz=209,slow=5.6,SNR=7.2	88.95	48	P	P	15 28 07.0	+0.1
ILAR	Eielson Array 0.7nm,0.7s,mb3.6,baz=237,slow=5.4,SNR=6.9	90.49	17	P	P	15 28 11.1	-2.5
YKA	Yellowknife Ar 0.2nm,0.6s,baz=251,slow=4.8,SNR=5.2	100.90	27	P	P	15 29 00.9	-0.2
YKA	Yellowknife Ar	100.90	27	P	P	15 29 00.9	-0.2
ZRNK	Zerenda	111.51	320	*e*PKP	PKPdf	15 33 42.6	-1.0
ARCES	ARCESS Array B 1.0nm,0.7s,baz=135,slow=1.7,SNR=7.1	125.37	345	PKP	PKPdf	15 34 09.4	-0.7
GERES	GERESS Array B 3.5nm,0.7s,baz=27,slow=3.0,SNR=22	144.78	332	PKP	PKPdf	15 34 47.8	+1.5
CDF	Champ du Feu 26nm,1.2s	147.73	337	*e*PKP1	PKPdf	15 34 57.6	+6.3
LOR	Lormes	149.89	340	*e*PKP1	PKPdf	15 35 03.2	+8.4
SSF	Saint Saulge	150.19	340	*e*PKP1	PKPdf	15 35 03.7	+8.5
LPL	La Plagne 8.2nm,0.8s	150.34	335	*e*PKP1	PKPdf	15 35 02.3	+6.8
LPG	La Plagne 14nm,1.0s	150.35	335	*e*PKP1	PKPdf	15 35 03.3	+7.8
MBDF	Montbardon	150.97	334	*e*PKP1	PKPdf	15 35 03.8	+7.3
ORIF	Oris-en-Rattie 14nm,0.9s	151.18	335	*e*PKP1	PKPdf	15 35 03.9	+7.1
FRF	La Foret Royal 17nm,0.9s	151.97	333	*e*PKP1	PKPdf	15 35 05.2	+7.2
SMRF	Simiane la Rot	152.08	334	*e*PKP1	PKPdf	15 35 06.0	+7.8
LMR	La Mourre	152.21	332	*e*PKP1	PKPdf	15 35 06.7	+8.3

*IDC **05** 15:21:51.4±2.2, 11.75S×166.60E, mb3.9/5, mb1 4.0/5, mb1mx3.8/13, Error ellipse: s-maj=85.4km s-min=33.0km az=140.0*

ISC 05 15:21:54.1±2.7, 12.0S±0.6×166.7E±0.5, h33km, n5, σ0§57/5, mb3.8/5, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	Warramunga Arr 0.9nm,0.9s,mb3.6,baz=83,slow=9.1,SNR=3.2	32.02	252	P	P	15 28 19.3	-0.7
ASAR	Alice Springs 0.7nm,0.7s,mb3.7,baz=74,slow=9.0,SNR=9.3	33.19	245	P	P	15 28 30.6	+0.6
ASAR				PcP	PcP	15 31 14.2	+1.7
	0.2nm,0.4s,baz=84,slow=2.2,SNR=4.6						
CMAR	Chiang Mai Arr 0.8nm,0.7s,mb3.7,baz=131,slow=4.4,SNR=5.8	73.33	294	P	P	15 33 24.9	0.0
MKAR	Makanchi Array 0.9nm,0.6s,mb4.4,baz=98,slow=6.5,SNR=12	94.84	317	P	P	15 35 14.1	+0.2
YKA	Yellowknife Ar 0.1nm,0.4s,mb3.6,baz=263,slow=5.0,SNR=3.1	95.41	27	P	P	15 35 15.9	-0.1

*BGR **05** 16:09:53.0±0.8, 51.51N×16.24E, h1km, ML3.4/7, Error ellipse: s-maj=10.0km s-min=6.7km az=164.0*
*NEIC **05** 16:09:53.9±0.7, 51.58N×16.06E, h5km, ML3.3(VIE), ML2.9(BRG), ML2.9(CLL), Error ellipse: s-maj=8.8km s-min=6.7km az=50.0*
*WAR **05** 16:09:55.4, 51.54N×16.06E, h1km, Location given by Polkowice mine, origin time based upon KSP*
*PRU **05** 16:09:55.3, 51.51N×16.07E, Felt In Harrachov*
*IDC **05** 16:09:55.3±0.7, 51.56N×15.97E, mb3.4/1, mb1 3.5/8, mb1mx3.4/22, ML3.2/7, Error ellipse: s-maj=13.0km s-min=6.7km az=104.0*

ISC 05 16:09:52.5±0.5, 51.54N±0.03×16.07E±0.03, n47, σ1§34/94, mb3.5/1, 3C-1D, Poland

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KSP	Ksiaz	0.71	169	*e*Pg	Pg	16 10 08.4	+1.8
KSP				*e*Sg	Sg	16 10 17.9	+1.9
KSP	Ksiaz	0.71	169	*i* Pg	Pg	16 10 08.4	+1.8
KSP				*e*Sg	Sg	16 10 18.4	+2.4
KSP	Ksiaz	0.71	169	*i* Pg	Pg	16 10 08.4	+1.8
KSP				*e*		16 10 10.8	
KSP				*e*Sg	Sg	16 10 17.6	+1.6
KSP				*e*		16 10 21.8	
UPC	Upice	1.03	182	*e*PG	Pg	16 10 14.2	+1.2
DPC	Dobruska-Polom	1.20	172	*e*PG	Pg	16 10 17.1	+0.8
DPC				*e*SG	Sg	16 10 32.4	+0.1
PVCC	Panska Ves	1.39	224	*e*PG	Pg	16 10 20.4	+0.3
BRG	Berggiesshubel	1.50	245	*e*Pg	Pg	16 10 21.4	-0.9
BRG				*e*Sg	Sg	16 10 43.0	+0.8
BRG	Berggiesshubel	1.50	245	*e*Pn	Pn	16 10 21.8	+1.2
BRG				*i* Pg	Pg	16 10 23.1	+0.8
RUE	Ruedersdorf	1.70	305	*e*Pn	Pn	16 10 24.0	+0.3
RUE				*e*Sn	Sn	16 10 48.8	+2.3
PRU	Pruhonice	1.83	213	*i* PN	Pn	16 10 26.3	+0.9
PRU				*i* PG	Pg	16 10 28.3	-0.7
PRU				*i* x	x	16 10 30.1	
PRU				*i* x	x	16 10 45.2	
PRU				*e*SG	Sg	16 10 52.3	-1.0
	147nm,0.4s						
PRU	Pruhonice	1.83	213	*i* Pn	Pn	16 10 26.3	+0.9
PRU				*i* Pg	Pg	16 10 28.3	-0.7
PRU				*i*		16 10 45.2	
PRU				*e*Sg	Sg	16 10 52.3	-1.0
CLL	Collm	1.94	264	*e*Pn	Pn	16 10 27.4	+0.4
CLL				*e*Sg	Sg	16 10 57.0	+0.1
CLL	Collm logA/T=2.0	1.94	264	⇓ *i*PN	Pn	16 10 27.3	+0.4
CLL				*e*PG	Pg	16 10 30.0	-1.1
CLL				*i*		16 10 34.4	
CLL				*i* SG	Sg	16 10 57.0	+0.1
CLL				*i*		16 11 04.6	
CLL	Collm	1.94	264	*i* Pn	Pn	16 10 27.3	+0.4
CLL				*e*Pg	Pg	16 10 30.0	-1.1
CLL				*i* Sg	Sg	16 10 57.0	+0.1
RAC	Raciborz	1.98	136	*e*Pg	Pg	16 10 32.7	+0.7
RAC				*e*Sg	Sg	16 10 58.1	-0.3
RAC	Raciborz	1.98	136	*e*P	Pn	16 10 33.0	+5.4
RAC				*e*S	Sn	16 10 58.0	+4.5
MORC	Moravsky Berou	1.99	151	*e*Pn	Pn	16 10 28.6	+0.8
MORC				*e*Sn	Sn	16 10 56.6	+2.8
OKC	Ostrava-Krasne	2.15	141	*e*PG	Pg	16 10 34.7	-0.7
OKC				*e*SG	Sg	16 11 01.9	-2.2
VRAC	Vranov 3.8nm,0.3s,baz=335,slow=12,SNR=16	2.25	171	Pn	Pn	16 10 33.8	+2.3
VRAC				Pg	Pg	16 10 39.0	+1.6
	5.7nm,0.3s,baz=348,slow=17,SNR=13						
VRAC				Lg		16 11 06.2	
	8.0nm,0.3s,baz=55,slow=22,SNR=11						
TANN	Tannenbergstha	2.54	245	*e*Pn	Pn	16 10 36.8	+1.1
TANN				*e*Sg	Sg	16 11 16.0	-1.2
WERD	Werda	2.62	247	*e*Pn	Pn	16 10 37.3	+0.6
WERD				*e*Sg	Sg	16 11 19.2	-0.4
OJC	Ojcow	2.70	118	*e*Pg	Pg	16 10 45.1	-1.3
OJC				*e*Sg	Sg	16 11 19.8	-2.6
OJC	Ojcow	2.70	118	*e*PG	Pg	16 10 45.0	-1.4
OJC				*e*SG	Sg	16 11 20.0	-2.4
KHC	Kasperske Hory	2.89	215	*e*PN	Pn	16 10 41.0	+0.4
KHC				*e*PG	Pg	16 10 47.3	-2.8
KHC				*e*SN	Sn	16 11 18.0	+1.5
KHC				*e*SG	Sg	16 11 27.2	-1.4
MOX	Moxa	2.95	254	*e*Pn	Pn	16 10 41.7	+0.3
MOX				*e*Sg	Sg	16 11 29.7	-0.9
MOX	Moxa	2.95	254	*i* P	Pn	16 10 43.1	+1.7
MOX				Pg	Pg	16 10 50.0	-1.3
MOX				Sg	Sg	16 11 30.0	-0.6
MOX	Moxa	2.95	254	*e*Pn	Pn	16 10 43.1	+1.7
MOX				*e*Pg	Pg	16 10 49.9	-1.4
MOX				*e*Sg	Sg	16 11 29.8	-0.8
GERES	GERESS Array B 3.3nm,0.3s,baz=29,slow=13,SNR=78	3.09	210	Pn	Pn	16 10 45.1	+1.6
GERES				Pg	Pg	16 10 51.8	-2.5
	7.1nm,0.3s,baz=25,slow=16,SNR=33						
GERES				Lg		16 11 30.3	
	9.6nm,0.3s,baz=28,slow=26,SNR=11						
WET	Wettzell	3.15	222	*e*Pn	Pn	16 10 45.2	+0.9
WET				*e*Sg	Sg	16 11 33.5	-3.8
KOLL	Kolacno	3.32	152	*e*PG	Pg	16 10 58.7	0.0
KOLL				*e*SG	Sg	16 11 43.3	+0.4
ZST	Bratislava	3.41	168	*e*PG	Pg	16 10 58.6	-1.9
ZST				*e*SG	Sg	16 11 45.2	-0.7
NIE	Niedzica	3.44	126	*e*P	Pn	16 10 59.1	+11
NIE				*e*		16 11 02.3	
NIE				*e*Sg	Sg	16 11 45.4	-1.5
VYHS	Vyhne	3.53	149	*e*PN	Pn	16 10 50.0	+0.4
VYHS				*e*PG	Pg	16 11 02.0	-0.9
VYHS				*e*SG	Sg	16 11 50.8	+0.9
GRF	Grafenberg Arr	3.60	241	*e*Sg	Sg	16 11 50.3	-2.0
BSD	Bornholm Skovb	3.65	349	*i* P	Pn	16 10 50.3	-1.1
BSD				*i* S	Sn	16 11 30.5	-5.4
MOA	Molln	3.87	198	⇑ *i*PN	Pn	16 10 55.5	+1.0
MOA				*i* SG	Sg	16 11 58.5	-2.8
	40nm,0.8s						
ARSA	Arzberg	4.30	185	⇑ *i*PN	Pn	16 11 00.3	-0.4
ARSA				*i* SG	Sg	16 12 08.7	-7.0
	25nm,0.7s						
CRVS	Cervenica-Dubn	4.35	125	*e*PN	Pn	16 11 04.2	+2.9
CRVS				*e*PB	Pb	16 11 15.9	+6.3
CRVS				*e*SB	Sb	16 12 12.6	+9.5
KWP	Kalwaria	4.64	112	*e*Pg	Pg	16 11 20.1	-4.9
KBA	Koelnbreinsper	4.80	203	⇑ *i*PN	Pn	16 11 08.6	+0.8
KBA				*i* SG	Sg	16 12 28.4	-4.0
	20nm,0.7s						
DAVOX	Davos	6.25	223	Pn	Pn	16 11 23.6	-4.7
	0.2nm,0.3s,baz=342,slow=18,SNR=2.2						
DAVOX				Lg		16 13 15.9	
	0.8nm,0.3s,baz=316,slow=22,SNR=5.5						
AKASG	Malin Array Be 1.5nm,0.3s,baz=279,slow=12,SNR=6.6	8.32	91	Pn	P	16 11 53.4	-3.8
HFS	Hagfors 0.0nm,0.3s,baz=162,slow=14,SNR=3.0	8.72	352	Pn	P	16 11 58.6	-4.2
FINES	FINESS Array B 0.3nm,0.3s,baz=202,slow=10,SNR=13	11.35	25	Pn	P	16 12 34.8	-4.0
FINES				Sn	S	16 14 37.0	-11
	0.3nm,0.3s,baz=207,slow=22,SNR=3.9						
KAF	Kangasniemi	11.97	24	*e*p	P	16 12 38.7	-8.5
ARCES	ARCESS Array B 0.1nm,0.3s,baz=196,slow=13,SNR=7.0	18.60	10	Pn	P	16 14 08.8	-4.1
YKA	Yellowknife Ar 0.3nm,0.7s,mb3.5,baz=28,slow=6.7,SNR=7.4	59.83	336	P	P	16 20 00.8	-0.5

*MAN **05** 16:15:51.7, 11.45N×125.48E, h24km, mb4.1, ML2.9, MS2.6*

ISC 05 16:15:52.3±1.8, 11.45N±0.06×125.5E±0.1, h39km±13km, n8, σ0§87/11, 6C, Samar

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BESP	Borongan	0.16	339	⇑ *e*P	P	16 15 58.5	-0.7
BESP				*e*S	S	16 16 04.7	+0.6
PLP	Palo	0.58	241	*e*P	P	16 16 03.1	-1.1
PLP				*i* S	S	16 16 12.4	-0.3
OCLP	Ormoc	0.96	246	⇑ *e*P	P	16 16 08.9	-0.5
CNP	Catarman	1.34	322	⇑ *e*P	P	16 16 14.8	-0.1
CNP				*e*S	S	16 16 32.4	+0.6
MSLP	Maasin	1.45	206	⇑ *e*P	P	16 16 16.7	+0.1
TBP	Tagbilaran	2.37	223	*e*P	P	16 16 32.4	+2.7
PVCP	Virac	2.51	329	⇑ *e*P	P	16 16 30.8	-0.8
KALP	Kalibo	3.11	275	⇑ *e*P	P	16 16 40.6	+0.5

*IDC **05** 16:16:34.0±3.1, 15.99S×168.01E, h180km±27km, mb4.3/13, mb1 4.3/13, mb1mx4.1/19, MS4.1/2, Ms1 4.1/2, ms1mx3.2/20, Error ellipse: s-maj=20.1km s-min=14.1km az=78.0*
*NEIC **05** 16:16:35.9±1.5, 16.00S×167.93E, h201km±13km, mb4.6/13, Error ellipse: s-maj=13.5km s-min=9.3km az=222.0*
*SYO **05** 16:16:35.9, 16.00S×167.93E, h201km, MB4.6*
*BJI **05** 16:16:35.2, 15.68S×168.14E, h198km, mB4.9, mb4.8*

ISC 05 16:16:35.8±1.7, 16.06S±0.09×167.8E±0.1, h206km±15km, n52, σ0§95/48, mb4.5/27, 3C-2D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	Mont Dzumac	6.12	192	*e*P	P	16 18 04.8	-0.6
DZM				*e*S	S	16 19 15.0	-0.2
DZM	Mont Dzumac	6.12	192	*e*P	P	16 18 04.8	-0.6
DZM				*e*S	S	16 19 15.0	-0.2
NOUC	Port Laguerre	6.18	193	*e*P	P	16 18 07.1	+1.0
NOUC	Port Laguerre	6.18	193	*e*P	P	16 18 07.1	+1.0
CTA	Charters Tower 25nm,0.6s	20.88	256	*e*P	P	16 21 05.1	+2.1
CTA	Charters Tower 27nm,0.6s,baz=89,slow=12,SNR=40	20.88	256	P	P	16 21 04.9	+2.0
CTAO	Charters Tower 28nm,0.6s	20.88	256	*

comp=Z,7.5nm,0.8s,mb4.5
SONM Songino Array 83.88 323 P **P** **16 28 44.1 +0.6**
comp=Z,3.6nm,0.9s,mb4.1,baz=143,slow=6.2,SNR=16
GTA Gaotai 83.97 314 *e*P **P** **16 28 44.6 +0.4**
GTA AMB AMB
comp=Z,7.0nm,1.0s,mb4.3
LSA Lhasa 86.71 302 *e*P **P** **16 28 59.5 +1.6**
comp=Z,4.0nm,0.6s,mb4.3
SYO Syowa Base 87.59 196 ⇑sP pP 16 29 49.8 -2.1
ILAR Eielson Array 87.62 18 P **P** **16 28 59.0 -2.4**
comp=Z,0.4nm,0.6s,baz=236,slow=4.8,SNR=4.9
GUN Gumba 90.50 299 *e*P **P** **16 29 16.0 +0.3**
comp=Z,19nm,1.2s,mb4.8
KKN Kakani 90.97 299 *e*P **P** **16 29 18.1 +0.2**
comp=Z,7.1nm,0.6s,mb4.8
DMN Daman 91.06 298 *e*P **P** **16 29 18.8 +0.5**
comp=Z,20nm,1.0s,mb5.0
GKN Gorkha 91.57 299 *e*P **P** **16 29 20.4 -0.3**
comp=Z,1.7nm,0.2s,mb4.7
KOLN Koldanda 92.38 298 *e*P **P** **16 29 23.7 -0.8**
comp=Z,5.5nm,0.9s,mb4.5
VNA3 Neumayer Olymp 92.90 181⇑*i* **P** **16 29 27.4 +1.6**
VNA2 Neumayer--Watz 93.17 182⇓*i* **P** **16 29 28.6 +1.5**
VNA1 Neumayer--Stat 93.47 181⇓*i* **P** **16 29 27.0 -1.4**
WMQ Urumqi 94.03 314 *e*P **P** **16 29 33.2 +1.6**
MKAR Makanchi Array 98.53 316 P **P** **16 29 52.6 +0.7**
comp=Z,2.7nm,1.1s,mb4.5,baz=92,slow=5.9,SNR=9.0
ARCES ARCESS Array B 121.67 345 PKP PKPdf 16 35 04.6 +0.1
comp=Z,0.5nm,0.4s,baz=78,slow=2.1,SNR=14
GERES GERESS Array B 141.06 333 PKhKP 16 35 38.6
comp=Z,0.2nm,0.5s,baz=18,slow=4.2,SNR=5.0
DAVOX Davos 144.30 334 PKP PKPdf 16 35 48.2 +1.2
comp=Z,7.5nm,0.6s,baz=192,slow=2.1,SNR=16
DAVOX Davos 144.30 334 PKP PKPdf 16 35 48.2 +1.2

NEIC 05 16:57:19.2, 35.70N×121.01W, h4km, ML3.5(NCEDC), **After NCEDC., Central California**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
LRV	**Little Rabbit**	**0.73**	**359**	*e*P	Pg	16 57 33.4	-0.3
SAO	**San Andreas Ge**	**1.12**	**342**	*e*P	Pb	16 57 39.6	-1.2
LKC	**Lake Chabot**	**2.21**	**338**	*e*Pn	Pn	16 57 55.0	-2.1
CMB	**Columbia Colle**	**2.38**	**12**	*e*Pn	Pn	16 57 58.2	-1.5
CMB				*e*S	Sn	16 58 25.5	-4.3
MTUM	**Tungsten Hills**	**2.57**	**49**	*e*Pn	Pn	16 58 01.4	-0.9
MWC	**Mount Wilson**	**2.83**	**120**	*e*Pn	Pn	16 58 04.2	-1.9
NSHM	**Saint Helena R**	**3.10**	**336**	*e*Pn	Pn	16 58 07.5	-2.3
TPH	**Tonopah**	**3.85**	**51**	*e*Pn	Pn	16 58 18.5	-2.0
BEKR	**Beckwourth**	**4.19**	**7**	*e*Pn	Pn	16 58 23.5	-1.9
NEN	**Nelson**	**5.02**	**89**	Pn	Pn	16 58 36.9	-0.2

*NIED **05** 17:11:00.25.70N×143.00E,h68km,Mw4.8 Best double couple: M0 1.81×10^16 NP1:φs330°, δ86°, λ-87°. NP2: φs107°, δ5°, λ-133°.*
*JMA **05** 17:11:48.1,25.70N×142.98E,h130km,M4.3*
*NEIC **05** 17:11:50.5±0.4,25.61N×143.14E,mb4.2/2,Error ellipse: s-maj=18.0km s-min=7.2km az=94.0*
*IDC **05** 17:11:50.4±0.8,25.61N×143.19E,h49km±6km,mb3.7/10, mb1 4.0/10,mb1mx3.8/18,MS3.4/12,Ms1 3.5/12, ms1mx3.4/24,Error ellipse: s-maj=18.4km s-min=9.2km az=60.0*
*BJI **05** 17:11:50.5,25.60N×143.10E,h49km,mb4.2*
ISC 05 17:11:48.2±2.1, 25.58N±0.07×143.3E±0.2, h47km±18km, h49km±1.4km:pP-P,n37,σ0§90/30,mb4.1/13,MS3.6/8, Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JHHJ	**Haha-jima-NKT**	**1.46**	**316**	P	**P**	**17 12 12.9**	**+0.2**
JHHJ				*e*S	**S**	**17 12 31.9**	**+1.1**
CBIJ	**Chichi jima**	**1.82**	**326**	P	**P**	**17 12 17.2**	**-0.4**
	75nm,0.3s,baz=103,slow=23,SNR=64						
CBIJ				S	**S**	**17 12 39.6**	**+0.1**
	558nm,0.3s,baz=90,slow=20,SNR=25						
CBIJ				LR	LR	17 13 10.7	
	comp=Z,1μm,18.1s,baz=207,slow=46						
CBIJ	**Chichi jima**	**1.82**	**326**	P	**P**	**17 12 17.2**	**-0.4**
CBIJ				*e*S	**S**	**17 12 39.2**	**-0.3**
JHJ	**Hachijo jima 2**	**8.12**	**339**	LR	LR	17 15 37.5	
	comp=Z,120nm,21.9s,baz=290,slow=28						
MAJO	**Matsushiro**	**11.77**	**339**	P	**P**	**17 14 34.8**	**-1.3**
JNU	**Nakatsue**	**13.19**	**308**	LR	LR	17 19 39.9	
	comp=Z,102nm,19.2s,baz=54,slow=36						
JOW	**Kunigami**	**13.56**	**279**	LR	LR	17 18 54.1	
	comp=Z,89nm,18.7s,baz=167,slow=32						
ASAJ	**Asahikawa**	**18.50**	**358**	LR	LR	17 22 50.9	
	comp=Z,70nm,18.4s,baz=349,slow=36						
TGY	**Tagaytay City**	**23.90**	**246**	LR	LR	17 25 57.9	
	comp=Z,57nm,19.7s,MS3.0,baz=205,slow=36						
SONM	**Songino Array**	**36.51**	**317**	P	**P**	**17 18 49.7**	**-1.1**
	0.4nm,0.6s,mb3.4,baz=101,slow=7.3,SNR=3.0						
GTA	**Gaotai**	**38.83**	**302**	*e*P	**P**	**17 19 12.0**	**+1.8**
GTA				AMB	AMB		
	comp=Z,3.0nm,0.6s,mb4.2						
WRAB	**Tennant Creek**	**46.07**	**192**	*e*P	**P**	**17 20 09.9**	**+0.3**
	comp=Z,27nm,0.6s						
WB2	**Warramunga Arr**	**46.08**	**192**	*e*P	**P**	**17 20 09.1**	**-0.5**
WRA	**Warramunga Arr**	**46.08**	**192**	P	**P**	**17 20 10.1**	**+0.4**
	comp=Z,7.9nm,0.6s,mb4.8,baz=13,slow=8.7,SNR=65						
FITZ	**Fitzroy Crossi**	**46.70**	**203**	*e*P	**P**	**17 20 14.5**	**0.0**
	comp=Z,3.2nm,0.9s,mb4.2						
AS12	**Alice Springs**	**49.80**	**191**	*e*P	**P**	**17 20 39.2**	**+0.7**
	comp=Z,8.4nm,1.4s,mb4.6						
ASAR	**Alice Springs**	**49.80**	**191**	P	**P**	**17 20 38.5**	**-0.1**
	comp=Z,1.8nm,0.7s,mb4.2,baz=15,slow=9.5,SNR=23						
ASAR				LR	LR	17 42 08.8	
	comp=Z,53nm,21.6s,MS3.5,baz=223,slow=36						
MKAR	**Makanchi Array**	**52.22**	**310**	P	**P**	**17 20 55.0**	**-1.5**
	comp=Z,0.8nm,1.1s,mb3.6,baz=100,slow=8.8,SNR=2.9						
MKAR				pP	pP	17 21 09.4	-0.2
	comp=Z,1.7nm,0.8s,baz=90,slow=8.5,SNR=8.5						
MKAR				LR	LR	17 41 45.6	
	comp=Z,50nm,19.3s,MS3.6,baz=295,slow=34						
KURK	**Kurchatov**	**54.77**	**315**	*e*P	**P**	**17 21 21.6**	**+6.3**
STKA	**Stephens Creek**	**57.16**	**182**	*e*P	**P**	**17 21 31.5**	**-1.3**
	comp=Z,3.0nm,1.2s,mb4.2						
STKA	**Stephens Creek**	**57.16**	**182**	P	**P**	**17 21 32.1**	**-0.7**
	comp=Z,1.1nm,0.6s,mb4.0,baz=84,slow=24,SNR=4.0						
ILAR	**Eielson Array**	**58.56**	**28**	P	**P**	**17 21 41.5**	**-0.6**
	comp=Z,1.9nm,0.8s,mb4.2,baz=262,slow=6.0,SNR=20						
ILAR				pP	pP	17 21 55.3	0.0
	comp=Z,2.1nm,0.9s,baz=262,slow=5.9,SNR=10						
BVAR	**Borovoye Array**	**59.84**	**318**	pP	pP	17 22 02.9	-1.5
	comp=Z,1.8nm,0.5s,baz=90,slow=7.7,SNR=7.3						
BVAR				LR	LR	17 48 40.8	
	comp=Z,76nm,20.3s,MS3.8,baz=105,slow=37						
INK	**Inuvik**	**63.99**	**24**	P	**P**	**17 22 18.8**	**+0.2**
	comp=Z,2.6nm,1.1s,mb4.2,baz=243,slow=2.3,SNR=5.5						
INK				pP	pP	17 22 32.5	+0.6
	comp=Z,1.6nm,0.9s,baz=289,slow=6.4,SNR=3.1						
INK	**Inuvik**	**63.99**	**24**	P	**P**	**17 22 18.8**	**+0.2**
INK				pP	pP	17 22 32.5	+0.6
DLBC	**Dease Lake**	**66.87**	**35**	LR	LR	17 52 15.6	
	comp=Z,78nm,19.5s,MS3.9,baz=175,slow=36						
YKA	**Yellowknife Ar**	**72.99**	**28**	P	**P**	**17 23 14.8**	**+0.5**
	comp=Z,1.0nm,1.0s,mb3.7,baz=292,slow=5.8,SNR=9.6						
YKA				pP	pP	17 23 28.2	+0.3
	comp=Z,0.6nm,0.9s,baz=291,slow=5.8,SNR=4.6						
ARCES	**ARCESS Array B**	**75.30**	**341**	sP	sP	17 23 48.6	+2.2
	comp=Z,1.5nm,0.8s,baz=72,slow=8.6,SNR=2.3						
ARCES				LR	LR	18 00 23.4	
	comp=Z,49nm,18.8s,MS3.8,baz=216,slow=39						
JOF	**Joensuu**	**76.88**	**334**	*e*p	**P**	**17 23 42.6**	**+5.9**
KAF	**Kangasniemi**	**79.27**	**335**	*e*p	**P**	**17 23 58.9**	**+9.1**
FINES	**FINESS Array B**	**79.75**	**334**	P	**P**	**17 23 52.4**	**0.0**
	comp=Z,0.7nm,0.5s,mb3.9,baz=63,slow=4.3,SNR=7.6						
FINES	**FINESS Array B**	**79.75**	**334**	P	**P**	**17 23 52.4**	**0.0**
NVAR	**Mina Array Bea**	**80.66**	**52**	P	**P**	**17 23 59.7**	**+1.9**
	comp=Z,2.1nm,1.1s,mb4.0,baz=278,slow=7.5,SNR=5.1						
NVAR	**Mina Array Bea**	**80.66**	**52**	P	**P**	**17 23 59.7**	**+1.9**
NB2	**NORSAR Subarra**	**85.39**	**339**	P	**P**	**17 24 31.5**	**+10**
	comp=Z,3.3nm,1.1s,mb4.4,baz=43,slow=5.3						
NOA	**NORSAR Array B**	**85.39**	**339**	pP	pP	17 24 35.0	-0.3
	comp=Z,1.7nm,1.1s,baz=53,slow=4.5,SNR=2.9						
NOA				LR	LR	18 02 01.2	
	comp=Z,30nm,20.8s,MS3.7,baz=240,slow=35						
BRTR	**Keskin Array B**	**87.77**	**313**	LR	LR	18 08 18.5	
	comp=Z,25nm,18.0s,MS3.7,baz=105,slow=39						

*GUC **05** 17:16:19.2±0.8,37.75S×74.21W,h20km,ML4.5*

*IDC **05** 17:16:22.9±2.7,37.71S×73.34W,mb4.3/3,mb1 4.2/7, mb1mx4.1/16,ML4.1/4,MS3.6/3,Ms1 3.6/3,ms1mx3.4/12, Error ellipse: s-maj=62.7km s-min=17.3km az=76.0*
*NEIC **05** 17:16:24.2±4.5,37.61S×73.63W,h11km±29km, ML4.5(GUC),Error ellipse: s-maj=20.7km s-min=6.9km az=89.0*
ISC 05 17:16:22.1±0.8, 37.65S±0.03×73.6W±0.1, h10km, n38, σ0§99/40, mb4.7/5, MS3.8/1, 10C-4D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
TMCH	**Temuco**	**1.36**	**144**	⇑*i*P	**Pn**	**17 16 45.8**	**-1.3**
TMCH				*i* S	**Sb**	**17 17 04.9**	**+0.4**
TMCH				AMP		17 17 09.7	
	comp=N,7μm,0.8s						
CCHI	**Chillan**	**1.63**	**50**	⇑*i*P	**Pn**	**17 16 53.8**	**+2.8**
CCHI				*i* S	**Sn**	**17 17 19.7**	**+7.5**
CCHI				AMP		17 17 29.7	
	comp=N,8μm,0.5s						
COCH	**Cobquecura**	**1.66**	**24**	AMP		17 17 27.5	
	comp=N,2μm,0.5s						
VLCH	**Valdivia**	**2.17**	**172**	AMP		17 17 42.3	
	comp=N,9μm,0.6s						
SFDO	**San Fernando**	**3.70**	**36**	⇑*i*P	**Pn**	**17 17 21.2**	**+0.6**
PLCA	**Paso Flores**	**3.90**	**143**	Pn	**Pn**	**17 17 23.4**	**0.0**
	comp=N,1.6nm,0.3s,baz=317,slow=12,SNR=19						
PLCA				Pg	**Pg**	**17 17 30.1**	**-10**
	comp=N,5.9nm,0.3s,baz=320,slow=17,SNR=33						
PLCA				Lg		17 18 20.1	
	comp=N,5.1nm,0.3s,baz=36,slow=17,SNR=5.4						
PLCA	**Paso Flores**	**3.90**	**143**	*e*Pn	**Pn**	**17 17 23.3**	**-0.1**
PLCA				*e*Pb	**Pb**	**17 17 30.0**	**-0.7**
PLCA				*e*Sb	**Sb**	**17 17 18.5**	**+0.3**
LNV	**Longovilo**	**4.11**	**27**	*i* P	**Pn**	**17 17 26.3**	**0.0**
CICH	**Cipreses**	**4.22**	**39**	⇑*i*P	**Pn**	**17 17 29.3**	**+1.2**
CACH	**El Canelo**	**4.30**	**36**	⇓*i*P	**Pn**	**17 17 29.5**	**+0.4**
CHCH	**Chadas Angostu**	**4.43**	**34**	⇓*i*P	**Pn**	**17 17 30.9**	**-0.1**
LCCH	**Las Cruces**	**4.49**	**23**	⇓*i*P	**Pn**	**17 17 30.9**	**-0.9**
LMEL	**Las Melosas**	**4.71**	**37**	⇓*i*P	**Pn**	**17 17 35.9**	**+1.0**
PCH	**Pirque**	**4.76**	**33**	⇑*i*P	**Pn**	**17 17 35.5**	**-0.1**
PEL	**Peldehue**	**5.10**	**29**	*i* P	**Pn**	**17 17 40.6**	**+0.2**
FCH	**Farellones**	**5.11**	**33**	⇑*i*P	**Pn**	**17 17 40.8**	**+0.3**
ROCH	**El Roble**	**5.14**	**25**	⇑*i*P	**Pn**	**17 17 40.7**	**-0.2**
PACH	**Papudo**	**5.41**	**20**	⇑*i*P	**Pn**	**17 17 43.3**	**-1.5**
JACH	**Jahuel**	**5.55**	**28**	⇑*i*P	**Pn**	**17 17 45.9**	**-0.8**
TRQA	**Tornquist**	**9.23**	**96**	*e*Pn	**P**	**17 18 37.6**	**-0.7**
	comp=N,1.6nm,1.1s						
LVC	**Limon Verde**	**15.53**	**17**	Pn	**P**	**17 20 04.9**	**+2.1**
	comp=N,0.4nm,0.3s,baz=186,slow=8.8,SNR=6.7						
LVC				LR	LR	17 25 44.2	
	comp=N,132nm,20.7s,baz=43,slow=36						
LVC	**Limon Verde**	**15.53**	**17**	*e*P	**P**	**17 20 02.1**	**-0.7**
	comp=N,2.5nm,0.8s						
USHA	**Ushuaia**	**17.55**	**170**	P	**P**	**17 20 29.5**	**+1.3**
	comp=N,0.3nm,0.3s,baz=336,slow=12,SNR=2.1						
CPUP	**Villa Florida**	**17.82**	**55**	Pn	**P**	**17 20 32.2**	**+0.4**
	comp=N,0.2nm,0.3s,baz=251,slow=9.5,SNR=5.2						
CPUP				LR	LR	17 28 00.1	
	comp=N,205nm,19.2s,baz=245,slow=40						
CPUP	**Villa Florida**	**17.82**	**55**	P	**P**	**17 20 30.5**	**-1.3**
LPAZ	**La Paz**	**21.83**	**14**	P	**P**	**17 21 17.9**	**+1.4**
	comp=N,8.4nm,1.3s,mb4.0,baz=162,slow=12,SNR=4.5						
LPAZ	**La Paz**	**21.83**	**14**	*e*P	**P**	**17 21 18.1**	**+1.7**
	comp=N,2.1nm,1.0s						
BDFB	**Brasilia**	**31.52**	**53**	P	**P**	**17 22 45.5**	**-1.1**
	comp=N,1.2nm,0.4s,mb4.1,baz=222,slow=8.3,SNR=2.3						
BDFB				LR	LR	17 36 44.0	
	comp=N,206nm,18.6s,MS3.8,baz=280,slow=39						
VNA3	**Neumayer Olymp**	**46.51**	**156**		**P**	**17 24 52.0**	**+1.2**
VNA1	**Neumayer--Stat**	**46.87**	**155**		**P**	**17 24 55.6**	**+2.0**
VNA2	**Neumayer--Watz**	**47.19**	**156**	⇑*i*	**P**	**17 24 57.0**	**+0.8**
SNAA	**Sanae**	**48.73**	**157**		**P**	**17 25 07.0**	**-1.2**
MAIT	**Maitri**	**53.48**	**156**	*e*P	**P**	**17 25 43.1**	**-1.0**
LIC	**Lamto**	**77.16**	**72**	*e*P	**P**	**17 28 17.1**	**-0.8**
	comp=N,51nm,1.1s,mb5.4						
TIC	**Toumodi**	**77.43**	**71**	*e*P	**P**	**17 28 18.9**	**-0.6**
	comp=N,22nm,0.2s						
KIC	**Kosan Boka**	**77.46**	**72**	*e*P	**P**	**17 28 18.6**	**-1.0**
	comp=N,54nm,1.0s,mb5.4						
DBIC	**Dimbokro**	**77.57**	**71**	P	**P**	**17 28 19.8**	**-0.4**
	comp=N,6.5nm,0.9s,mb4.5,baz=207,slow=8.2,SNR=5.8						
MKAR	**Makanchi Array**	**160.03**	**55**	PKPab	PKPab	17 37 01.0	-1.8
	comp=N,1.0nm,0.7s,baz=280,slow=3.6,SNR=9.8						

*MOS **05** 17:34:29.6±1.7,51.11N×178.78E,h33km,mb5.1/1,Error ellipse: s-maj=17.9km s-min=12.3km az=81.7*
*NEIC **05** 17:34:34.3±0.5,51.36N×178.77E,mb4.5/8,ML3.9(AEIC), Error ellipse: s-maj=13.6km s-min=4.7km az=181.0*
*BJI **05** 17:34:34.2,51.40N×178.80E,h42km,mB4.8,mb4.7, Ms4.1,Msz4.0*
*IDC **05** 17:34:34.6±0.8,51.57N×178.77E,h45km±5km,mb3.7/12, mb1 4.0/12,mb1mx3.8/23,ML3.9/1,MS3.3/2,Ms1 3.4/2, ms1mx2.9/33,Error ellipse: s-maj=26.1km s-min=12.5km az=176.0*
ISC 05 17:34:33.3±0.5, 51.6N±0.1×178.76E±0.05, h41km, h41km±1.0km:pP-P,n54,σ1§13/57, mb4.3/21, MS3.5/3, 2C, Rat Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KIMD	**Kanaga Island**	**2.50**	**85**	P	**P**	**17 35 13.4**	**+1.0**
KIKV	**Kanaga Island**	**2.54**	**83**	P	**P**	**17 35 14.2**	**+1.2**
KIWB	**Kanaga Island**	**2.55**	**83**	P	**P**	**17 35 14.3**	**+1.1**
ADK	**Adak**	**2.84**	**83**	P	**P**	**17 35 17.9**	**+0.6**
ADK				S	**S**	**17 35 49.4**	**-1.2**
ADK	**Adak**	**2.84**	**83**	P	**P**	**17 35 17.0**	**+0.6**
ADK				S	**S**	**17 35 49.5**	**-1.2**
ETKA	**Kagalaska Isla**	**3.02**	**84**	P	**P**	**17 35 20.5**	**+0.7**
ETKA				S	**S**	**17 35 54.0**	**-1.0**
SMY	**Shemya**	**3.07**	**293**	P	**P**	**17 35 23.0**	**+2.4**
GSTD	**Great Sitkin T**	**3.19**	**80**	P	**P**	**17 35 23.3**	**+1.0**
GSMY	**Great Sitkin M**	**3.24**	**81**	P	**P**	**17 35 23.5**	**+0.5**
GSIG	**Igitkin Island**	**3.32**	**82**	P	**P**	**17 35 24.4**	**+0.4**
FX1	**Attu Island--F**	**3.66**	**292**	P	**P**	**17 35 30.4**	**+1.5**
	32nm,0.3s,baz=219,slow=0.8,SNR=82						
FX1				S	**S**	**17 36 20.9**	**+10**
	96nm,0.3s,baz=308,slow=23,SNR=10.0						
FX1	**Attu Island--F**	**3.66**	**292**	P	**P**	**17 35 30.6**	**+1.7**
ATKA	**Atka Island**	**4.40**	**80**	P	**P**	**17 35 39.4**	**0.0**
UNV	**Unalaska Vale**	**9.22**	**70**	P	**P**	**17 36 48.2**	**+1.7**
BILL	**Bilibino**	**17.55**	**344**	α *i*P	**P**	**17 38 41.4**	**+5.3**
BILL				pmax	pmax		
	comp=Z,9.0nm,0.7s						
BILL	**Bilibino**	**17.55**	**344**	*e*P	**P**	**17 38 40.6**	**+4.6**
	comp=Z,13nm,1.1s						
SLKM	**Skilak Lake**	**19.29**	**51**	P	**P**	**17 38 57.0**	**-0.1**
IMA	**Indian Mountai**	**20.06**	**33**	*e*P	**P**	**17 39 07.6**	**+2.3**
IMA				pmax	pmax		
	comp=Z,21nm,0.9s						
IMA	**Indian Mountai**	**20.06**	**33**	*e*P	**P**	**17 39 07.6**	**+2.3**
	comp=Z,21nm,0.9s						
SML	**Sawmill**	**20.50**	**47**	*e*P	**P**	**17 39 09.2**	**-0.8**
ILAR	**Eielson Array**	**22.02**	**40**	P	**P**	**17 39 26.5**	**+1.2**
	comp=Z,1.3nm,0.5s,mb3.7,baz=238,slow=8.5,SNR=22						
DAWY	**Dawson**	**24.98**	**44**	*e*P	**P**	**17 39 53.6**	**-0.4**
ASAJ	**Asahikawa**	**25.19**	**267**	LR	LR	17 49 58.0	
	comp=Z,39nm,18.1s,MS3.0,baz=350,slow=37						
INK	**Inuvik**	**28.14**	**36**	P	**P**	**17 40 22.7**	**-0.4**
	comp=Z,0.5nm,0.4s,mb3.5,baz=250,slow=8.1,SNR=7.1						
CN2	**Changchun**	**36.00**	**279**	*e*P	**P**	**17 41 36.0**	**+4.0**
YKA	**Yellowknife Ar**	**36.16**	**46**	P	**P**	**17 41 32.5**	**-0.6**
	comp=Z,1.6nm,0.5s,mb4.2,baz=282,slow=8.2,SNR=29						
YKA				pP	pP	17 41 44.5	-0.1
	comp=Z,1.4nm,0.5s,baz=280,slow=8.0,SNR=12						
YKA	**Yellowknife Ar**	**36.16**	**46**	P	**P**	**17 41 32.5**	**-0.6**
YKA				pP	pP	17 41 44.5	-0.1
BOD	**Bodaibo**	**36.60**	**306**	*e*P	**P**	**17 41 35.3**	**-1.5**
NEW	**Newport**	**40.22**	**69**	*e*P	**P**	**17 42 06.5**	**-0.6**
HLID	**Hailey**	**44.34**	**73**	P	**P**	**17 42 41.8**	**+1.1**
NVAR	**Mina Array Bea**	**45.03**	**81**	P	**P**	**17 42 46.8**	**+0.4**
	comp=Z,1.8nm,0.7s,mb4.0,baz=302,slow=7.1,SNR=8.2						
NVAR				pP	pP	17 42 58.2	+0.2
	comp=Z,1.8nm,0.7s,baz=304,slow=6.3,SNR=8.0						
SONM	**Songino Array**	**45.17**	**295**	P	**P**	**17 42 48.0**	**+0.7**
	comp=Z,2.1nm,0.7s,mb4.0,baz=62,slow=8.4,SNR=12						
SONM				sP	sP	17 43 05.2	+1.3
	comp=Z,1.0nm,0.6s,baz=59,slow=7.2,SNR=3.9						
BW06	**Boulder Array**	**47.68**	**71**	*e*P	**P**	**17 43 05.4**	**-1.8**
	comp=Z,1.2nm,0.5s,mb4.2						
BW06				*e*pP	pP	17 43 17.2	-1.7
PDAR	**Pinedale Array**	**47.68**	**71**	P	**P**	**17 43 06.0**	**-1.2**
	comp=Z,1.5nm,0.5s,mb4.3,baz=331,slow=3.7,SNR=14						
PDAR				pP	pP	17 43 17.9	-0.9
	comp=Z,3.0nm,0.6s,baz=311,slow=4.4,SNR=16						
LZH	**Lanzhou**	**53.85**	**284**	*e*P	**P**	**17 43 55.9**	**+1.8**
LZH				AP	pP	17 44 06.8	+0.9
LZH				XP	sP	17 44 11.5	+0.7
LZH				AMB	AMB		
	comp=Z,12nm,1.1s,mb4.7						
GTA	**Gaotai**	**54.05**	**290**	*e*P	**P**	**17 43 55.7**	**+0.1**
GTA				AMB	AMB		
	comp=Z,6.0nm,0.5s,mb4.8						
MNTX	**Cornudas Mount**	**57.41**	**79**	*e*P	**P**	**17 44 18.4**	**-1.4**
MNTX				*e*pP	pP	17 44 30.1	-1.7
ARCES	**ARCESS Array B**	**57.58**	**349**	P	**P**	**17 44 18.4**	**-2.1**
	comp=Z,0.7nm,0.7s,mb3.8,baz=21,slow=8.2,SNR=5.2						
KURK	**Kurchatov**	**57.74**	**312**	*e*P	**P**	**17 44 20.7**	**-1.2**
WMQ	**Urumqi**	**57.92**	**301**	*e*P	**P**	**17 44 28.0**	**+4.8**
WMQ				XP	sP	17 44 38.1	-1.9
WMQ				AMB	AMB		
	comp=Z,5.0nm,1.2s,mb4.4						
WMQ				AMB	AMB		
	comp=Z,24nm,5.0s						
WMQ				LR	LR		
	comp=N,62nm,18.1s,MS3.9						
WMQ				LR	LR		
	comp=E,67nm,18.0s,MS3.9						
WMQ				LR	LR		
	comp=Z,101nm,18.6s,MS4.0						
MKAR	**Makanchi Array**	**58.67**	**307**	P	**P**	**17 44 27.0**	**-1.5**
	comp=Z,1.7nm,0.5s,mb4.3,baz=51,slow=5.9,SNR=26						
BRVK	**Borovoye**	**59.72**	**318**	*e*P	**P**	**17 44 34.9**	**-0.7**
TXAR	**Lajitas Array**	**60.12**	**80**	P	**P**	**17 44 37.7**	**-1.0**
	comp=Z,1.0nm,0.3s,mb4.3,baz=300,slow=4.5,SNR=5.8						
TXAR				pP	pP	17 44 50.0	-0.6
	comp=Z,1.4nm,0.5s,baz=304,slow=4.5,SNR=2.9						
TXAR				LR	LR	18 08 26.2	
	comp=Z,47nm,20.5s,MS3.6,baz=180,slow=34						
TXAR	**Lajitas Array**	**60.12**	**80**	P	**P**	**17 44 37.7**	**-1.0**
TXAR				pP	pP	17 44 50.0	-0.6
TXAR				LR	LR	18 08 26.2	
ZRNK	**Zerenda**	**60.33**	**319**	*e*P	**P**	**17 44 39.1**	**-0.7**
FINES	**FINESS Array B**	**65.19**	**346**	P	**P**	**17 45 09.4**	**-2.3**
	comp=Z,0.8nm,0.7s,mb3.9,baz=56,slow=6.9,SNR=5.0						
CMAR	**Chiang Mai Arr**	**69.47**	**274**	P	**P**	**17 45 38.2**	**-1.1**
	comp=Z,1.1nm,0.9s,mb3.8,baz=32,slow=7.8,SNR=6.8						
CMAR				PcP	PcP	17 46 00.8	-1.7
	comp=Z,0.4nm,0.5s,baz=23,slow=4.2,SNR=4.3						
GUN	**Gumba**	**70.34**	**290**	*e*P	**P**	**17 45 45.1**	**+0.7**
	comp=Z,20nm,0.5s,mb5.3						
KKN	**Kakani**	**70.78**	**291**	*e*P	**P**	**17 45 47.5**	**+0.4**
	comp=Z,11nm,0.5s,mb5.0						
KKN	**Kakani**	**70.78**	**291**	*e*P	**P**	**17 45 47.5**	**+0.4**
KKN				pmax	pmax		
	comp=Z,5.0nm,0.5s,mb4.7						
GKN	**Gorkha**	**71.00**	**291**	*e*P	**P**	**17 45 48.6**	**+0.2**
	comp=Z,12nm,0.5s,mb5.1						
DMN	**Daman**	**71.02**	**291**	*e*P	**P**	**17 45 49.1**	**+0.5**
	comp=Z,4.8nm,0.5s,mb4.7						
KOLN	**Koldanda**	**71.78**	**292**	*e*P	**P**	**17 45 53.0**	**-0.1**
	comp=Z,3.7nm,0.6s,mb4.5						
ASAR	**Alice Springs**	**84.66**	**221**	P	**P**	**17 47 03.0**	**-0.7**
	comp=Z,0.5nm,0.7s,mb3.8,baz=28,slow=5.5,SNR=5.2						

*BJI **05** 17:46:28.6,55.92N×110.51E,h10km,mB4.6,mb4.1, Ms4.3,Msz4.1*
*MOS **05** 17:46:30.9±1.0,55.83N×110.19E,h14km,mb4.6/1,Error ellipse: s-maj=10.7km s-min=6.4km az=63.8*
*IDC **05** 17:46:30.7±0.8,55.79N×110.13E,mb3.8/8,mb1 4.0/10, mb1mx3.8/23,ML3.9/2,MS3.5/1,Ms1 3.5/1,ms1mx2.7/28, Error ellipse: s-maj=17.5km s-min=16.8km az=164.0*
*BYKL **05** 17:46:32.0±0.2,55.78N×110

comp=E,11μm,0.9s
SVKR Severomuysk 1.90 74⇑ *e*PN **Pn** 17 47 03.9 +0.9
SVKR *i* 17 47 06.3
SYVR Suvo 1.99 185 *e*Pn **Pn** 17 47 08.1 +3.9
SYVR *e*Pg **Pg** 17 47 09.9 +0.3
SYVR Pmax 17 47 12.8
comp=E,614nm,0.9s
SYVR *e*Sg **Sg** 17 47 39.2 +3.2
SYVR Smax 17 47 40.7
comp=E,7μm,0.8s
SYVR Suvo 1.99 185 *e*PN **Pn** 17 47 09.8 +5.6
SYVR *e* 17 47 38.6
SYVR pmax pmax
comp=Z,338nm,0.6s
SYVR smax
comp=E,6μm,0.7s
OGRR Ongureny 2.54 219 *e*Pn **Pn** 17 47 15.6 +3.5
OGRR *e*Pg **Pg** 17 47 19.5 -1.0
OGRR Pmax 17 47 22.8
comp=E,92nm,0.2s
OGRR *e*Sn **Sn** 17 47 47.6 +4.1
OGRR *e*Sg **Sg** 17 47 53.0 -1.4
OGRR Smax 17 47 58.0
comp=E,780nm,0.2s
OGRR Ongureny 2.54 219 *e*Pn **Pn** 17 47 15.7 +3.6
OGRR *e* 17 47 18.6
MXMB Maximikha 2.54 202 *e*Pn **Pn** 17 47 16.5 +4.4
MXMB *e*Pg **Pg** 17 47 21.6 +1.0
MXMB Pmax 17 47 22.0
comp=E,163nm,0.5s
MXMB *e*Sn **Sn** 17 47 48.6 +5.0
MXMB *e*Sg **Sg** 17 47 55.5 +1.0
MXMB Smax 17 48 05.1
comp=E,3μm,0.8s
BOD Bodaibo 3.00 41 *e*Pn **Pn** 17 47 19.5 +0.9
BOD *e*Pg **Pg** 17 47 24.7 -5.0
BOD Pmax 17 47 29.1
comp=E,103nm,0.8s
BOD *e*Sn **Sn** 17 47 54.5 -0.6
BOD *e*Sg **Sg** 17 48 02.2 -7.5
BOD Smax 17 48 15.0
comp=E,445nm,0.8s
BOD Bodaibo 3.00 41 *e*PN **Pn** 17 47 18.6 0.0
BOD *e*S **Sn** 17 47 52.3 -2.8
NLYR Nelyaty 3.15 72 *e*Pn **Pn** 17 47 22.7 +1.9
NLYR max 17 47 38.0
comp=E,21nm,0.8s
NLYR *e*Sg **Sg** 17 48 09.3 -5.5
NLYR Smax 17 48 20.0
comp=E,1μm,1.2s
NLYR Nelyaty 3.15 72⇑ *i*PN **Pn** 17 47 22.7 +1.9
NLYR *e* 17 47 31.0
NLYR *e* 17 48 09.3
NLYR pmax pmax
comp=Z,135nm,0.7s
NLYR smax
comp=E,1μm,1.0s
ZRHB Zarechye 3.60 212 Pmax 17 47 25.8
comp=E,317nm,0.8s
ZRHB *e*Pn **Pn** 17 47 30.3 +3.2
ZRHB *e*Pg **Pg** 17 47 39.2 -2.5
ZRHB *e*Sg **Sg** 17 48 25.8 -3.9
ZRHB Smax 17 48 56.5
comp=E,2μm,1.3s
TRG Tyrgan 3.70 220⇓ *i*Pn **Pn** 17 47 31.4 +2.9
TRG max 17 47 44.3
comp=E,125nm,1.0s
TRG *e*Sn **Sn** 17 48 16.0 +3.2
TRG *e*Sg **Sg** 17 48 28.8 -4.1
TRG Smax 17 48 33.3
comp=E,492nm,0.7s
TRG Tyrgan 3.70 220⇓ *i*PN **Pn** 17 47 31.5 +3.0
TRG *e* 17 47 40.4
TRG *e* 17 48 29.3
TRG pmax pmax
comp=Z,125nm,1.1s
TRG smax
comp=E,499nm,0.6s
TRTB Turuntaevo 3.76 206 *e*Pn **Pn** 17 47 32.4 +3.0
TRTB *e*Pg **Pg** 17 47 41.8 -3.1
TRTB Pmax 17 47 47.7
comp=E,78nm,0.9s
TRTB *e*Sg **Sg** 17 48 30.9 -4.0
TRTB Smax 17 48 43.6
comp=E,284nm,1.1s
CIT Chita 4.10 151 *e*Pn **Pn** 17 47 36.6 +2.3
CIT *e*Pg **Pg** 17 47 47.9 -3.8
CIT Pmax 17 47 48.7
comp=E,165nm,0.8s
CIT *e*Sn **Sn** 17 48 26.7 +3.6
CIT *e*Sg **Sg** 17 48 43.5 -2.9
CIT Smax 17 48 54.2
comp=E,402nm,1.2s
CIT Chita 4.10 151 *e*PN **Pn** 17 47 36.6 +2.3
CIT *e* 17 47 47.8
CIT *e*S **Sn** 17 48 25.8 +2.7
CIT *e* 17 48 43.3
CIT pmax pmax
comp=Z,165nm,0.6s
CIT smax
comp=N,502nm,1.0s
FFNB Fofonovo 4.16 212 *e*Pn **Pn** 17 47 37.8 +2.7
FFNB max 17 48 00.1
comp=N,96nm,0.2s
FFNB *e*Sn **Sn** 17 48 14.2 -10
FFNB *e*Sg **Sg** 17 48 42.5 -5.8
FFNB Smax 17 48 50.0
comp=N,768nm,0.8s
KAB Kabansk 4.19 213 *e*Pg **Pg** 17 47 50.0 -3.5
KAB Pmax 17 47 57.1
comp=N,195nm,0.5s
KAB *e*Sg **Sg** 17 48 45.9 -3.4
KAB Smax 17 49 00.1
comp=N,1μm,0.8s
KAB Kabansk 4.19 213 *e*PN **Pn** 17 47 49.2 +14
KAB *e* 17 48 45.9
KAB pmax pmax
comp=Z,153nm,0.5s
KAB smax
comp=E,963nm,0.9s
HRMR Khuramsha 4.48 208⇑ *i*Pn **Pn** 17 47 42.6 +2.9
HRMR *e*Pg **Pg** 17 47 54.3 -5.0
HRMR Pmax 17 48 04.2
comp=E,78nm,0.4s
HRMR *e*Sg **Sg** 17 48 53.2 -5.8
HRMR Smax 17 49 10.4
comp=E,1μm,0.8s
BTMB Babushkin 4.75 216 *e*Pn **Pn** 17 47 46.1 +2.6
BTMB *e*Pg **Pg** 17 47 58.1 -6.6
BTMB Pmax 17 48 11.3
comp=E,27nm,0.5s
BTMB *e*Sg **Sg** 17 49 01.4 -6.6
BTMB Smax 17 49 15.3
comp=E,281nm,0.8s
IRK Irkutsk 4.92 229 *e*Pn **Pn** 17 47 46.8 +0.9
IRK *e*Sn **Sn** 17 48 42.2 -1.6
IRK *e*Sg **Sg** 17 49 05.2 -8.4
IRK Irkutsk 4.92 229 *e*PN **Pn** 17 47 46.8 +0.9
IRK *e*S **Sn** 17 48 42.3 -1.5
IRK *e* 17 49 05.2
IRK smax
comp=E,710nm,0.5s
LSTR Listvyanka 4.97 223 *e*Pn **Pn** 17 47 48.5 +1.8
LSTR max 17 47 55.2
comp=E,20nm,0.4s
LSTR *e*Sn **Sn** 17 48 44.7 -0.4
LSTR *e*Sg **Sg** 17 49 08.0 -7.4
LSTR Smax 17 49 13.4
comp=E,335nm,1.2s
LSTR Listvyanka 4.97 223 *e*PN **Pn** 17 47 48.6 +1.9
LSTR *e* 17 48 01.1
LSTR *e*S **Sn** 17 48 44.9 -0.2
LSTR *e* 17 49 07.7
LSTR pmax pmax
comp=Z,25nm,0.8s
LSTR smax
comp=N,339nm,1.4s
TLY Talaya 5.59 228 *e*Pn **Pn** 17 47 56.4 +1.0
TLY *e*Pg **Pg** 17 48 12.8 -8.8
TLY Pmax 17 48 17.6
comp=N,26nm,0.6s
TLY *e*Sn **Sn** 17 48 59.3 -1.4
TLY *e*Sg **Sg** 17 49 26.3 -10
TLY Smax 17 49 35.2
comp=N,226nm,0.7s
TLY Talaya 5.59 228⇑ *i*PN **Pn** 17 47 56.5 +1.1
TLY *e* 17 48 13.5
TLY *e* 17 49 26.4
TLY pmax pmax
comp=E,27nm,0.4s
TLY smax
comp=E,227nm,0.6s
TUP Tupik 5.69 98 *e*Pn **Pn** 17 47 58.0 +1.3
TUP *e*Pg **Pg** 17 48 15.6 -7.8
TUP Pmax 17 48 19.3
comp=E,38nm,0.7s
TUP *e*Sn **Sn** 17 49 01.4 -1.6
TUP *e*Sg **Sg** 17 49 30.4 -8.8
TUP Smax 17 49 51.1
comp=E,478nm,1.9s
TUP Tupik 5.69 98 *e*PN **Pn** 17 47 57.9 +1.2
TUP *e* 17 48 15.6
TUP *e*S **Sn** 17 49 02.4 -0.6
TUP *e* 17 49 30.8
TUP pmax pmax
comp=Z,38nm,0.7s
TUP smax
comp=E,208nm,0.9s
ARS Arshan 5.97 235⇑ *i*Pn **Pn** 17 48 01.6 +0.9
ARS max 17 48 08.2
comp=E,64nm,0.7s
ARS *e*Sn **Sn** 17 49 07.3 -2.8
ARS *e*Sg **Sg** 17 49 36.8 -12
ARS Smax 17 49 44.1
comp=E,730nm,1.1s
ARS Arshan 5.97 235 *e*PN **Pn** 17 48 01.4 +0.7
KPC Khapcheranga 6.07 167 *e*Pn **Pn** 17 48 04.1 +1.9
KPC *e*Pg **Pg** 17 48 24.8 -6.3
KPC Pmax 17 48 25.6
comp=E,30nm,0.6s
KPC *e*Sn **Sn** 17 49 13.7 +1.0
KPC *e*Sg **Sg** 17 49 46.0 -6.0
KPC Smax 17 49 57.9
comp=E,292nm,1.4s
KPC Khapcheranga 6.07 167 *e*PG **Pg** 17 48 24.9 -6.2
KPC *e*S Sn 17 49 42.4 +30
KPC smax
comp=E,210nm,1.0s
ZAK Zakamensk 6.75 222 *e*Pn **Pn** 17 48 13.4 +1.7
ZAK max 17 48 16.6
comp=E,10.0nm,1.1s
ZAK *e*Sn **Sn** 17 49 28.1 -1.5
ZAK *e*Sg **Sg** 17 50 03.4 -11
ZAK Smax 17 50 11.4
comp=E,191nm,1.1s
ZAK Zakamensk 6.75 222 *e*PN **Pn** 17 48 13.0 +1.3
ZAK *e* 17 49 30.0
MOY Mondy 6.81 238 *i* Pn **Pn** 17 48 14.5 +2.0
MOY max 17 48 26.4
comp=E,79nm,0.9s
MOY *e*Sn **Sn** 17 49 28.7 -2.4
MOY *e*Sg **Sg** 17 50 03.4 -13
MOY Smax 17 50 13.1
comp=E,223nm,1.4s
MOY Mondy 6.81 238 *e*PN **Pn** 17 48 14.5 +2.0
MOY *e* 17 48 37.0
MOY *e*S **Sn** 17 49 29.2 -1.9
MOY *e* 17 50 03.0
MOY pmax pmax
comp=E,26nm,0.8s
MOY smax
comp=E,231nm,1.4s
ORL Orlik 6.90 248 *e* **Pn** 17 48 18.0 +4.1
ORL *e* 17 49 33.3
ORL *e*Sg **Sg** 17 50 07.7 -12
ORL Smax 17 50 20.0
comp=E,121nm,1.3s
ORL Orlik 6.90 248 *e*PN **Pn** 17 48 16.0 +2.1
ORL *e* 17 48 38.4
ORL *e* 17 50 08.0
ORL pmax pmax
comp=E,28nm,0.8s
ORL smax
comp=N,188nm,1.2s
ULN Ulaanbaatar 8.03 196 *e*P **P** 17 48 29.4 -0.4
ULN *e*Sb **Sb** 17 50 46.5 +20
SONM Songino Array 8.18 199 Pn **P** 17 48 32.6 +0.9
comp=N,0.4nm,0.3s,baz=11,slow=13,SNR=5.6
SONM Pg P 17 49 03.5 +32
comp=N,1.1nm,0.3s,baz=12,slow=16,SNR=7.3
SONM Lg 17 50 53.8
comp=N,8.1nm,0.3s,baz=16,slow=27,SNR=13
CLNS Chul'man 8.22 76 *e*Pn **P** 17 48 32.7 +0.3
CLNS *e*Sg **Sg** 17 50 45.9 -18
TNDR Tynda 8.23 87 *e*Pn **P** 17 48 31.6 -0.8
TNDR *e*Sg **Sg** 17 50 47.4 -16
HIA Hailar 8.59 134 PN **P** 17 48 36.7 -0.8
HIA 17 50 11.6
HIA pmax pmax
comp=Z,3.0nm,0.5s
HIA Hailar 8.59 134 P **P** 17 48 36.7 -0.8
comp=Z,2.6nm,0.5s
HIA Sn **Sn** 17 50 11.6 -4.0
TDJR Todzha 8.96 255 *e*Pn **P** 17 48 43.6 +1.0
TDJR *e*Sg **Sg** 17 51 08.1 -20
ARDR Aradan 10.36 260 *e*Sg Sx 17 51 50.8
SHRR Shira 11.59 273 *e*P **P** 17 49 16.7 -1.9
SHRR *e* 17 51 35.2
SHRR pmax pmax
comp=Z,18nm,0.5s
YAK Yakutsk 11.88 49 *e*P **P** 17 49 19.9 -2.5
YAK *e*S **S** 17 51 36.8 +0.5
YAK pmax pmax
comp=Z,3.0nm,0.8s
YAK pmax pmax
comp=N,2.0nm,0.7s
YAK pmax pmax
comp=E,1.0nm,0.7s
YAK smax
comp=N,8.0nm,0.9s
YAK smax
comp=Z,7.0nm,0.9s
YAK smax
comp=E,5.0nm,0.6s
YAK MLR MLR
comp=Z,30nm,16.0s
NVS Novosibirsk 15.42 278 *e*P **P** 17 50 12.7 +3.6
NVS pmax pmax
comp=Z,6.0nm,1.6s
MDJ Mudanjiang 16.51 124 P **P** 17 50 20.6 -2.5
MDJ AMB AMB
comp=Z,8.0nm,1.4s
MDJ AMB AMB
comp=Z,91nm,3.5s
TIXI Tiksi 17.91 19 P **P** 17 50 38.6 -2.0
TIXI pmax pmax
comp=Z,8.0nm,0.2s
TIXI Tiksi 17.91 19 P **P** 17 50 38.6 -2.0
comp=Z,8.3nm,0.2s
TIXI *e*Sn **S** 17 53 41.3 -17
WMQ Urumqi 18.69 240 *e*P **P** 17 50 52.6 +2.2
WMQ AP 17 50 57.4
WMQ XP 17 51 01.1
WMQ PP PP 17 51 08.8 +2.4
WMQ S **S** 17 54 18.5 +2.6
WMQ AMB AMB
comp=Z,8.0nm,0.8s
WMQ AMB AMB
comp=Z,46nm,4.3s
WMQ LR LR
comp=N,356nm,15.5s
WMQ LR LR
comp=E,302nm,12.8s
WMQ LR LR
comp=Z,485nm,15.9s
KURK Kurchatov 19.51 269 *e*P **P** 17 50 58.7 -1.3
MKAR Makanchi Array 19.53 255 P **P** 17 50 59.8 -0.5
comp=Z,0.4nm,0.3s,baz=64,slow=9.8,SNR=31
MKAR Makanchi Array 19.53 255 *i* P **P** 17 50 59.4 -0.9
MKAR pmax pmax
comp=Z,1.0nm,0.5s
BVAR Borovoye Array 23.20 280 P **P** 17 51 38.9 +1.3
comp=Z,1.5nm,0.4s,mb3.7,baz=59,slow=8.6,SNR=19
BVAR S **S** 17 55 49.0 +3.7
comp=Z,0.4nm,0.7s,baz=66,slow=17,SNR=3.5
BRVK Borovoye 23.24 280 *e*P **P** 17 51 38.7 +0.7
ZRNK Zerenda 24.00 281 *e*P **P** 17 51 46.3 +1.0
FINES FINESS Array B 41.43 314 P **P** 17 54 17.1 -0.8
comp=Z,3.8nm,1.2s,mb3.9,baz=82,slow=9.8,SNR=3.9
FINES LR LR 18 12 07.3
comp=Z,61nm,18.9s,MS3.5,baz=238,slow=37
IMA Indian Mountai 43.30 36 *e*P **P** 17 54 34.1 +1.0
KIV Kislovodsk 43.47 284 *e*P **P** 17 54 34.5 -0.2
KIV pmax pmax
comp=Z,5.0nm,1.0s,mb4.2
KIV pmax pmax
comp=N,4.0nm,0.7s
AKASG Malin Array Be 46.24 300 P **P** 17 54 56.5 -0.3
comp=N,0.2nm,0.3s,mb3.5,baz=42,slow=8.2,SNR=6.1
ILAR Eielson Array 46.35 35 P **P** 17 54 57.9 +0.4
comp=N,1.6nm,0.8s,mb4.0,baz=300,slow=6.7,SNR=12
NOA NORSAR Array B 47.47 319 P **P** 17 55 05.5 -0.9
comp=N,1.0nm,1.0s,mb3.7,baz=51,slow=7.2,SNR=3.6
INK Inuvik 47.81 27 P **P** 17 55 08.1 -0.9
YKA Yellowknife Ar 57.11 23 P **P** 17 56 16.6 -1.9
comp=N,0.9nm,0.7s,mb3.9,baz=331,slow=7.1,SNR=15
YKA Yellowknife Ar 57.11 23 P **P** 17 56 16.6 -1.9
WRA Warramunga Arr 78.00 157 P **P** 17 58 31.2 +1.0
comp=N,0.7nm,0.7s,mb3.7,baz=347,slow=6.2,SNR=3.7
ASAR Alice Springs 81.51 158 P **P** 17 58 50.5 +1.5
comp=N,0.4nm,0.7s,mb3.5,baz=354,slow=5.2,SNR=8.0
SNAA Sanae 148.41 214⇑ *i* PKPdf 18 06 17.8 +3.4
VNA2 Neumayer--Watz 149.83 215⇑ *i* PKPdf 18 06 23.1 +6.4
VNA1 Neumayer--Stat 150.10 216⇓ *i* PKPdf 18 06 19.2 +2.1
VNA3 Neumayer Olymp 150.57 215⇓ *i* PKPdf 18 06 24.9 +7.1

ISC 05 17:47:13.4±1.3, 46.35N±0.07×15.07E±0.06, n5, σ0²68/7, 2C, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
PERS	**Pernice**	**0.29**	**6**	*e*Sg		**Sg**	**17 47 23.9**	**+0.7**
GROS	**Grobnik**	**0.32**	**69**	*i* Sg		**Sg**	**17 47 24.7**	**+0.6**
	comp=Z,45nm,0.6s							
OBKA	**Obir**	**0.40**	**295**⇑	*i*PG		**Pg**	**17 47 20.7**	**-0.7**
OBKA				*i* SG		**Sg**	**17 47 27.2**	**+0.6**
	comp=Z,25nm,0.6s							
VOY	**Vojsko**	**0.88**	**249**	*e*Pg		**Pg**	**17 47 31.2**	**+0.3**
VOY				*e*			17 47 43.3	
ARSA	**Arzberg**	**0.96**	**19**⇑	*i*PG		**Pg**	**17 47 31.4**	**-1.2**
ARSA				*i* SG		**Sg**	**17 47 44.9**	**-0.4**
	comp=Z,6.1nm,0.5s							

*IDC **05** 18:14:46.0±4.4,23.47S×177.34W,mb4.3/2,mb1 4.5/2, mb1mx4.0/12,MS3.6/2,Ms1 3.5/2,ms1mx3.2/16,Error ellipse: s-maj=229.0km s-min=42.9km az=153.0*

NEIC 05 18:14:46.8±1.1, 23.64S×177.20W, h10km, mb4.4/2, 1C, Error ellipse: s-maj=31.2km s-min=22.1km az=191.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
CTA	**Charters Tower**	**34.04**	**269**	*e*P		P	18 21 32.6	-0.8
	6.0nm,0.4s							
CTA	**Charters Tower**	**34.04**	**269**	LR		LR	18 32 41.1	
	comp=Z,87nm,18.4s,baz=46,slow=32							
CTAO	**Charters Tower**	**34.04**	**269**	*e*P		P	18 21 32.8	-0.6
	8.4nm,0.6s							
STKA	**Stephens Creek**	**37.20**	**248**	LR		LR	18 35 47.6	
	comp=Z,90nm,22.0s,baz=205,slow=34							
AS12	**Alice Springs**	**44.61**	**260**	*e*P		P	18 22 59.5	-1.8
	7.4nm,1.0s							
ASAR	**Alice Springs**	**44.61**	**260**	P		P	18 22 59.6	-1.6
	2.7nm,0.8s,baz=94,slow=8.6,SNR=22							
WB2	**Warramunga Arr**	**44.97**	**265**⇑	*i*P		P	18 23 02.2	-2.0
WRAB	**Tennant Creek**	**44.98**	**265**	*e*P		P	18 23 02.0	-2.3
	16nm,0.8s							
WRAB				*e*			18 23 07.6	
WRA	**Warramunga Arr**	**44.98**	**265**	P		P	18 23 02.1	-2.2
	2.9nm,0.6s,baz=104,slow=8.4,SNR=22							
SBA	**Scott Base**	**54.81**	**184**	*e*P		P	18 24 16.6	-2.2
	1.1nm,0.7s							
USHA	**Ushuaia**	**81.11**	**146**	LR		LR	18 54 43.4	
	comp=Z,2μm,21.7s,baz=181,slow=30							
ARCES	**ARCESS Array B**	**132.13**	**349**	PKP		PKPdf	18 34 00.1	-3.5
	0.6nm,0.7s,SNR=3.6							
NB2	**NORSAR Subarra**	**142.17**	**353**	PKP			18 34 15.6	
	0.4nm,0.6s,baz=17,slow=2.6							
AKASG	**Malin Array Be**	**146.09**	**330**	PKPbc		PKPbc	18 34 26.1	-0.9
	1.8nm,0.8s,baz=42,slow=3.8,SNR=13							
BRTR	**Keskin Array B**	**149.44**	**309**	PKPbc		PKPdf	18 34 36.6	+1.8
	1.0nm,0.6s,baz=117,slow=3.2,SNR=6.0							

*ATH **05** 18:46:39.4,38.54N×27.06E,h2km,MD3.0/3*
*ISK **05** 18:46:40.1,38.51N×26.84E,h5km,MD2.9*

ISC 05 18:46:40.4±0.8, 38.46N±0.04×26.78E±0.05, h6km±7km, n10, σ0²80/17, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
IZM	**Izmir**	**0.39**	**99**	*i* PG		**Pg**	**18 46 48.0**	**-0.1**
IZM					SG	**Sg**	**18 46 54.1**	**+0.8**
KDAG	**Bornova**	**0.39**	**98**	*i* P		**Pg**	**18 46 48.4**	**+0.2**
KDAG				*i* S		**Sg**	**18 46 54.1**	**+0.7**
SMG	**Samos**	**0.75**	**176**	*e*PG		**Pg**	**18 46 55.1**	**-0.2**
PRK	**Paraskevi**	**0.88**	**334**	*e*PG		**Pg**	**18 46 57.6**	**-0.4**
PRK				*e*SG		**Sg**	**18 47 10.0**	**+0.3**
AKS	**Akhisar**	**0.91**	**62**	PG		**Pg**	**18 46 57.5**	**-1.1**
AKS				SG		**Sg**	**18 47 09.9**	**-0.9**
AYDN	**Tasoluk**	**1.18**	**132**	*e*P		**Pb**	**18 47 02.5**	**-0.3**
AYDN				*i* S		**Sb**	**18 47 18.2**	**+0.1**
MANT	**Manisa**	**1.40**	**88**	*i* P		**Pn**	**18 47 07.9**	**+1.4**
MANT				*i* S		**Sb**	**18 47 24.1**	**-0.4**
BALB	**Balikesir**	**1.46**	**36**	*e*PN		**Pn**	**18 47 07.5**	**+0.1**
BDRM	**Kayabasi**	**1.49**	**159**	*e*P		**Pn**	**18 47 09.2**	**+1.4**
BDRM				*i* S		**Sb**	**18 47 25.6**	**-1.5**
APE	**Apeiranthos**	**1.70**	**216**	*e*PN		**Pn**	**18 47 15.5**	**+4.6**

IDC 05 18:48:27.6±27.0, 21.05S×171.46W, mb4.0/4, mb1 4.1/4, mb1mx3.9/15, Error ellipse: s-maj=507.0km s-min=173.6km az=74.0, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
CTA	**Charters Tower**	**39.52**	**264**	P		P	18 55 60.0	-2.1
	3.4nm,0.4s,baz=94,slow=7.1,SNR=10							
STKA	**Stephens Creek**	**43.10**	**245**	P		P	18 56 29.2	-2.2
	0.8nm,0.7s,baz=97,slow=15,SNR=3.6							
ASAR	**Alice Springs**	**50.34**	**256**	P		P	18 57 26.9	-1.6
	0.7nm,0.5s,baz=100,slow=7.1,SNR=16							
WRA	**Warramunga Arr**	**50.58**	**261**	P		P	18 57 28.8	-1.6
	0.5nm,0.3s,baz=90,slow=5.9,SNR=14							

IDC 05 19:16:13.6±51.0, 15.36S×169.26W, mb3.9/3, mb1 4.0/3, mb1mx3.7/14, MS3.7/2, Ms1 3.8/2, ms1mx3.2/20, Error ellipse: s-maj=1027.0km s-min=202.1km az=80.0, Samoa Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
CTA	**Charters Tower**	**42.54**	**257**	LR		LR	19 37 24.6	
	comp=Z,52nm,18.6s,baz=227,slow=30							
STKA	**Stephens Creek**	**47.53**	**241**	P		P	19 24 51.1	-1.7
	3.2nm,1.1s,baz=89,slow=8.0,SNR=5.1							
WRA	**Warramunga Arr**	**53.74**	**256**	P		P	19 25 37.6	-2.5
	0.2nm,0.4s,baz=95,slow=6.6,SNR=4.7							
ASAR	**Alice Springs**	**53.92**	**252**	P		P	19 25 39.4	-2.0
	1.3nm,0.7s,baz=90,slow=7.8,SNR=24							
NVAR	**Mina Array Bea**	**71.68**	**40**	LR		LR	19 51 54.0	
	comp=Z,81nm,19.2s,baz=290,slow=30							

CASC 05 19:16:27.8±1.5, 13.65N×90.84W, h43km±37km, MD3.5, ML3.6, 4C-2D, Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
IXG	**Ixpaco**	**0.64**	**35**	*e*P		P	19 16 41.1	+0.6
IXG				*e*S		S	19 16 51.1	+1.2
IXG				AML		AML	19 16 53.5	
	comp=E,4μm,0.4s							
PCG	**Pacaya**	**0.78**	**17**	*e*P		P	19 16 43.2	+0.9
PCG				*e*S		S	19 16 54.7	+1.7
FUG	**Fuego 3**	**0.80**	**360**	*e*P		P	19 16 43.2	+0.5
CUSS	**Cusmapa**	**0.90**	**73**⇑	*e*P		P	19 16 44.4	+0.2
CUSS				*e*S		S	19 16 56.7	+0.4
JAT	**Jato**	**1.02**	**311**	*e*P		P	19 16 47.2	+1.3
JAT				*e*S		S	19 16 58.7	-0.6
JAT				AML		AML	19 17 03.4	
	comp=N,991nm,0.2s							

NBG	**Las Nubes**	**1.05**	**27**	*e*P		P		19 16 46.7	+0.4
NBG				*e*S		S		19 17 01.8	+1.8
NBG					AML	AML		19 17 05.1	
	comp=E,3µm,0.4s								
RTR	**El Retiro**	**1.19**	**78**⇓	*e*P		P		19 16 48.8	+0.7
RTR				*e*S		S		19 17 04.5	+1.2
SBLS	**San Blas**	**1.20**	**81**⇓	*e*P		P		19 16 48.7	+0.4
SBLS				*e*S		S		19 17 04.5	+0.8
RBDL	**Robledal**	**1.21**	**67**⇑	*e*P		P		19 16 48.5	0.0
RBDL				*e*S		S		19 17 04.7	+0.7
SNJE	**San Jose**	**1.22**	**79**	*e*P		P		19 16 48.9	+0.3
SNJE				*e*S		S		19 17 04.4	+0.2
BOQS	**Boqueron**	**1.52**	**86**	*e*P		P		19 16 52.9	-0.1
BOQS				*e*S		S		19 17 12.5	+0.8
MTO2	**Montecristo 2**	**1.62**	**62**	*e*P		P		19 16 53.5	-0.9
MTO2				*e*S		S		19 17 16.1	+1.9
LFU	**La Fuente**	**1.68**	**86**	*e*P		P		19 16 54.9	-0.3
LFRS	**El Faro**	**1.73**	**91**⇑	*e*P		P		19 16 55.5	-0.5
LFRS				*e*S		S		19 17 17.0	+0.1
LBRS	**Las Brisas**	**1.75**	**87**⇑	*e*P		P		19 16 55.8	-0.4
LCBS	**La Ceiba**	**1.81**	**89**	*e*P		P		19 16 56.5	-0.5
LCBS				*e*S		S		19 17 19.3	+0.4
SNVI	**San Vicente**	**1.94**	**91**	*e*P		P		19 16 58.6	-0.4
SNVI				*e*P				19 16 59.0	
SNVI				*e*S		S		19 17 22.5	+0.2

*IDC **05** 19:41:19.1±2.2,53.24N×161.78W,mb3.5/5,mb1 3.7/6, mb1mx3.6/22,MS3.0/1,Ms1 3.0/1,ms1mx2.6/23,Error ellipse: s-maj=46.5km s-min=30.5km az=174.0*
*NEIC **05** 19:41:24.4,53.20N×161.74W,h55km,ML3.5(AEIC),After AEIC.*

ISC 05 19:41:21.8±1.2,53.14N±0.07×161.7W±0.1,h33km±13km, n18,σ0°63/23,mb3.5/4,MS2.9/1,South of Alaska

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op	ISC		h m s	ISC
DRIA	**Deer Island**	**1.87**	**350**	P		**P**	**19 41 52.4**	**+0.5**
DRIA				S		**S**	**19 42 14.6**	**0.0**
FALS	**False Pass**	**2.01**	**330**	P		**P**	**19 41 54.0**	**+0.1**
FALS				S		**S**	**19 42 17.0**	**-1.1**
DTNA	**Dutton South F**	**2.05**	**351**	P		**P**	**19 41 54.9**	**+0.4**
DTNA				S		**S**	**19 42 19.6**	**+0.5**
WESE	**West Dahl East**	**2.19**	**309**	P		**P**	**19 41 56.9**	**+0.3**
WESE				S		**S**	**19 42 22.7**	**0.0**
WESS	**West Dahl Sout**	**2.25**	**308**	P		**P**	**19 41 57.7**	**+0.2**
WESS				S		**S**	**19 42 24.7**	**+0.3**
BLHA	**Black Hill**	**2.58**	**355**	P		**P**	**19 42 03.4**	**+1.1**
AHB	**Akutan Harbor**	**2.66**	**293**	P		**P**	**19 42 03.0**	**-0.2**
UNV	**Unalaska Valle**	**2.97**	**286**	P		**P**	**19 42 07.0**	**-0.7**
MTBL	**Makushin Table**	**3.10**	**288**	P		**P**	**19 42 09.4**	**-0.2**
MCIR	**Makushin Cirqu**	**3.22**	**287**	P		**P**	**19 42 11.4**	**+0.2**
CAHL	**Cahill**	**6.11**	**34**	P		**P**	**19 42 50.3**	**-1.8**
ILAR	**Eielson Array**	**13.89**	**27**	Pn		**P**	**19 44 33.2**	**-5.0**
	baz=238,slow=8.5,SNR=2.4							
INK	**Inuvik**	**20.21**	**31**	P		**P**	**19 45 55.5**	**-0.8**
	1.1nm,0.5s,baz=237,slow=13,SNR=6.5							
YKA	**Yellowknife Ar**	**26.18**	**50**	P		**P**	**19 46 55.0**	**+0.4**
	0.2nm,0.4s,mb3.0,baz=265,slow=8.4,SNR=8.0							
YKA				LR		LR	19 58 05.8	
	comp=Z,33nm,18.4s,MS2.9,baz=65,slow=38							
YKA	**Yellowknife Ar**	**26.18**	**50**	P		**P**	**19 46 55.0**	**+0.4**
YKA				LR		LR	19 58 05.8	
PDAR	**Pinedale Array**	**35.67**	**85**	P		**P**	**19 48 19.1**	**+0.5**
	0.4nm,0.6s,mb3.5,baz=297,slow=3.3,SNR=3.5							
MKAR	**Makanchi Array**	**66.53**	**318**	P		**P**	**19 52 09.7**	**-0.3**
	0.4nm,0.8s,mb3.5,baz=45,slow=7.9,SNR=5.3							
AKASG	**Malin Array Be**	**76.13**	**353**	P		**P**	**19 53 07.8**	**+0.4**
	0.8nm,0.4s,mb4.0,baz=8.7,slow=6.1,SNR=5.2							

*BJI **05** 19:51:41.9,7.99S×117.60E,h314km,mB4.4,mb4.3*
*NEIC **05** 19:51:43.6±0.4,7.61S×117.32E,h288km±5km,mb4.2/16, MD4.5(DJA),Error ellipse: s-maj=11.2km s-min=5.2km az=225.0*
*SYO **05** 19:51:43.5,7.61S×117.32E,h288km,MB4.2*
*IDC **05** 19:51:46.7±2.3,7.53S×117.49E,h315km±22km,mb4.0/12, mb1 4.0/13,mb1mx3.9/18,Error ellipse: s-maj=20.9km s-min=7.9km az=54.0*

ISC 05 19:51:42.5±0.5,7.60S±0.06×117.32E±0.06,h290km±5km, n73,σ0°88/73,mb4.3/27,5C-5D,Bali Sea

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op	ISC		h m s	ISC
KEDI	**Kedomdong**	**1.49**	**233**⇑	*i*Pn		**P**	**19 52 25.4**	**+0.6**
KEDI				*i* Sn		**S**	**19 52 58.2**	**+0.3**
RATI	**Rata**	**2.09**	**238**⇑	*i*Pn		**P**	**19 52 29.5**	**+0.1**
INGI	**Ingas**	**2.47**	**240**⇓	*i*Pn		**P**	**19 52 32.7**	**-0.1**
KELI	**Kelakatan**	**2.87**	**257**⇓	*i*Pn		**P**	**19 52 37.5**	**+0.9**
KELI				*i* Sn		**S**	**19 53 17.0**	**-1.7**
FITZ	**Fitzroy Crossi**	**13.22**	**143**⇑	*i*P		**P**	**19 54 41.1**	**-0.1**
	7.0nm,0.4s							
FITZ				eS		**S**	**19 57 08.8**	**+6.1**
FITZ	**Fitzroy Crossi**	**13.22**	**143**	P		**P**	**19 54 41.2**	**0.0**
	2.7nm,0.3s,baz=354,slow=6.3,SNR=84							
FITZ				S		**S**	**19 57 10.6**	**+7.9**
	4.6nm,0.3s,baz=187,slow=15,SNR=9.3							
KAKA	**Kakadu**	**15.69**	**110**	*e*P		**P**	**19 55 09.4**	**-1.0**
	39nm,0.6s							
KAKA				eS		**S**	**19 57 55.8**	**-0.7**
WRA	**Warramunga Arr**	**20.56**	**128**	P		**P**	**19 56 00.5**	**+0.3**
	6.2nm,0.5s,baz=302,slow=11,SNR=69							
WRA				S		**S**	**19 59 30.7**	**+2.3**
	4.2nm,1.1s,baz=297,slow=19,SNR=4.7							
WRAB	**Tennant Creek**	**20.57**	**128**	*e*P		**P**	**19 56 00.1**	**-0.2**
	33nm,0.8s							
WB2	**Warramunga Arr**	**20.57**	**128**⇓	*i*P		**P**	**19 56 00.5**	**+0.2**
TGY	**Tagaytay City**	**21.85**	**9**	P		**P**	**19 56 12.8**	**0.0**
	79nm,0.3s,baz=104,slow=17,SNR=2.0							
AS12	**Alice Springs**	**22.55**	**137**	*e*P		**P**	**19 56 18.8**	**-0.7**
	15nm,0.7s,mb4.4							
ASAR	**Alice Springs**	**22.55**	**137**	P		**P**	**19 56 19.9**	**+0.3**
	14nm,0.4s,mb4.6,baz=313,slow=9.4,SNR=391							
ASAR				S		**S**	**20 00 03.5**	**+0.8**
	2.4nm,0.7s,baz=309,slow=15,SNR=6.9							
CTA	**Charters Tower**	**30.65**	**117**	*e*P		**P**	**19 57 33.1**	**+0.4**
	10nm,1.1s,mb4.3							
CTA	**Charters Tower**	**30.65**	**117**	P		**P**	**19 57 33.6**	**+0.9**
	8.9nm,0.9s,mb4.3,baz=285,slow=11,SNR=6.8							
CTAO	**Charters Tower**	**30.65**	**117**	*e*P		**P**	**19 57 32.6**	**0.0**
CM31	**Chiang Mai Arr**	**31.61**	**325**	*e*P		**P**	**19 57 42.1**	**+1.2**
	9.6nm,0.4s,mb4.7							
STKA	**Stephens Creek**	**33.09**	**140**⇓	*i*P		**P**	**19 57 53.5**	**0.0**
	3.5nm,0.4s,mb4.2							
STKA	**Stephens Creek**	**33.09**	**140**	P		**P**	**19 57 53.5**	**0.0**
	5.4nm,0.5s,mb4.4,baz=313,slow=8.3,SNR=35							
STKA				PcP		PcP	20 00 28.5	-1.2
	1.6nm,0.5s,baz=312,slow=3.3,SNR=2.8							
KMI	**Kunming**	**35.48**	**337**⇓	*e*P		**P**	**19 58 16.9**	**+3.1**
KMI					AMB	AMB		
	comp=Z,15nm,1.0s,mb4.5							
KMI					AMB	AMB		
	comp=Z,77nm,5.2s							
CD2	**Chengdu**	**40.43**	**342**	*e*P		**P**	**19 58 56.2**	**+1.5**
CD2					AMB	AMB		
	comp=Z,40nm,0.6s,mb4.9							
CBIJ	**Chichi jima**	**42.06**	**34**	P		**P**	**19 59 07.5**	**-0.6**
	comp=Z,42nm,0.5s,mb5.0,baz=281,slow=19,SNR=5.6							
LSA	**Lhasa**	**44.81**	**327**	P		**P**	**19 59 31.8**	**+1.8**
LSA	**Lhasa**	**44.81**	**327**	*e*P		**P**	**19 59 31.3**	**+1.4**
	comp=Z,6.0nm,0.9s,mb3.8							
GUN	**Gumba**	**46.58**	**321**	*e*P		**P**	**19 59 44.1**	**+0.3**
	comp=Z,30nm,0.7s,mb4.8							
DMN	**Daman**	**46.86**	**320**	*e*P		**P**	**19 59 46.0**	**0.0**
	comp=Z,15nm,0.6s,mb4.5							
KKN	**Kakani**	**46.87**	**320**	*e*P		**P**	**19 59 45.9**	**-0.2**
	comp=Z,12nm,0.8s,mb4.3							
BJI	**Beijing**	**47.41**	**359**	*e*P		**P**	**19 59 50.7**	**+0.7**
GKN	**Gorkha**	**47.43**	**320**	*e*P		**P**	**19 59 50.0**	**-0.4**
	comp=Z,16nm,0.5s,mb4.7							
KOLN	**Koldanda**	**47.95**	**319**	*e*P		**P**	**19 59 53.9**	**-0.5**
	comp=Z,12nm,0.6s,mb4.4							
MAJO	**Matsushiro**	**48.08**	**23**	*e*P		**P**	**19 59 54.5**	**-0.8**
	comp=Z,4.8nm,0.5s,mb4.1							
MAT	**Matsushiro**	**48.08**	**23**	P		**P**	**19 59 55.0**	**-0.3**
MAT	**Matsushiro**	**48.08**	**23**	*e*P		**P**	**19 59 55.0**	**-0.3**
	comp=Z,6.8nm,0.7s,mb4.1							
HHC	**Hu-ho-hao-te**	**48.49**	**354**	*e*P		**P**	**19 59 55.3**	**-3.1**
HHC					AMB	AMB		
	comp=Z,9.0nm,1.0s,mb4.0							
GTA	**Gaotai**	**49.50**	**342**	⇑P		**P**	**20 00 07.7**	**+1.7**
GTA					AMB	AMB		
	comp=Z,11nm,0.8s,mb4.2							

CN2	**Changchun**	**51.68**	**8**	*e*P		**P**		**20 00 22.5**	**+0.4**
CN2					AMB	AMB			
	comp=Z,10.0nm,0.6s,mb4.3								
ULN	**Ulaanbaatar**	**55.96**	**352**	*e*P		**P**		**20 00 53.2**	**+0.3**
	comp=Z,8.7nm,0.8s,mb4.2								
SONM	**Songino Array**	**56.03**	**351**	P		**P**		**20 00 54.1**	**+0.8**
	comp=Z,16nm,0.7s,mb4.6,baz=169,slow=8.9,SNR=84								
HIA	**Hailar**	**56.66**	**2**	*e*P		**P**		**20 00 57.4**	**-0.4**
	comp=Z,7.4nm,1.1s,mb4.0								
MKAR	**Makanchi Array**	**62.46**	**334**	P		**P**		**20 01 37.0**	**-0.2**
	comp=Z,6.5nm,0.4s,mb4.6,baz=151,slow=6.3,SNR=94								
KZA	**Kyzart**	**62.60**	**326**	P		**P**		**20 01 36.4**	**-1.7**
	SNR=7.9								
TKM2	**Tokmak 2**	**62.97**	**327**	P		**P**		**20 01 40.3**	**-0.2**
	SNR=6.1								
KBK	**Karagaybulak**	**63.15**	**326**	P		**P**		**20 01 42.1**	**+0.4**
	SNR=5.5								
AAK	**Ala-Archa**	**63.39**	**326**	P		**P**		**20 01 43.6**	**+0.4**
	SNR=5.2								
AML	**Almayashu**	**63.51**	**325**	P		**P**		**20 01 44.5**	**+0.4**
	SNR=7.1								
EKS2	**Erkin-Say**	**63.80**	**326**	P		**P**		**20 01 46.4**	**+0.3**
	SNR=7.0								
MAW	**Mawson**	**69.99**	**199**	P		**P**		**20 02 24.4**	**+0.2**
BVAR	**Borovoye Array**	**72.28**	**332**	P		**P**		**20 02 37.6**	**-0.5**
	comp=Z,4.4nm,0.7s,mb4.2,baz=143,slow=7.4,SNR=38								
BRVK	**Borovoye**	**72.35**	**332**	*e*P		**P**		**20 02 37.7**	**-0.9**
ZRNK	**Zerenda**	**72.88**	**332**	*e*P		**P**		**20 02 40.6**	**-1.1**
KAMS	**Al Khamasin**	**76.66**	**293**	P		**P**		**20 03 01.6**	**-2.1**
TATS	**Tathlith**	**77.49**	**292**	P		**P**		**20 03 07.6**	**-0.8**
SYO	**Syowa Base**	**78.56**	**201**	⇑PcP		PcP		20 03 21.1	-0.4
ARSS	**Ar Rass**	**79.17**	**298**	P		**P**		**20 03 16.5**	**-0.8**
TIXI	**Tiksi**	**79.45**	**4**	*e*P		**P**		**20 03 17.5**	**-0.3**
KMBO	**Kilima Mbogo**	**80.00**	**270**	P		**P**		**20 03 22.5**	**+0.5**
	comp=Z,1.0nm,0.3s,mb4.0,baz=20,slow=22,SNR=4.5								
KMBO	**Kilima Mbogo**	**80.00**	**270**	*e*P		**P**		**20 03 22.1**	**+0.2**
HILS	**Ha'il**	**80.78**	**299**	P		**P**		**20 03 26.2**	**+0.5**
ASF	**Jabal al Asfar**	**85.97**	**303**	P		**P**		**20 03 54.8**	**+3.0**
	comp=Z,2.5nm,0.5s,mb4.3,baz=301,slow=2.4,SNR=6.2								
JMQS	**Jabal Moqyreh**	**86.20**	**300**	P		**P**		**20 03 53.8**	**+0.8**
AYUN	**'Ayunuah**	**86.60**	**299**	P		**P**		**20 03 55.3**	**+0.3**
BDAS	**Al Badi'**	**86.79**	**299**	P		**P**		**20 03 55.7**	**+0.1**
JMOS	**Jabal al Moall**	**86.91**	**300**	P		**P**		**20 03 56.3**	**-0.1**
HAQS	**Haql**	**87.05**	**300**	P		**P**		**20 03 57.1**	**0.0**
BRTR	**Keskin Array B**	**89.97**	**310**	P		**P**		**20 04 09.7**	**-0.8**
	comp=Z,0.6nm,0.7s,mb3.5,baz=104,slow=5.9,SNR=3.4								
SNAA	**Sanae**	**91.89**	**196**	*e*P		**P**		**20 04 19.1**	**+0.3**
FINES	**FINESS Array B**	**97.21**	**331**	P		**P**		**20 04 41.9**	**-1.3**
	comp=Z,0.9nm,0.8s,mb4.0,baz=135,slow=5.9,SNR=3.4								
NVAR	**Mina Array Bea**	**121.39**	**49**	PKP		PKPdf		20 10 04.6	+2.8
	comp=Z,0.6nm,0.5s,baz=236,slow=1.2,SNR=3.6								
NVAR				PP		PP		20 11 40.1	-0.2
	comp=Z,0.9nm,0.8s,baz=286,slow=11,SNR=4.1								
SSPA	**Standing Stone**	**144.41**	**20**	*e*PKP		PKPdf		20 10 43.4	-1.0
CPUP	**Villa Florida**	**145.88**	**189**	PKPbc		PKPbc		20 10 50.7	+2.1
	comp=Z,12nm,0.9s,baz=185,slow=3.0,SNR=16								
CPUP	**Villa Florida**	**145.88**	**189**	*e*PKP		PKPdf		20 10 50.1	+2.7
LRAL	**Lakeview Retre**	**146.11**	**38**	*e*PKP		PKPdf		20 10 49.9	+2.2
BDFB	**Brasilia**	**152.72**	**212**	PKPbc		PKPdf		20 11 07.4	+9.1
	comp=Z,3.2nm,0.5s,baz=163,slow=2.7,SNR=5.1								
BDFB				PKPab		PKPab		20 11 20.6	+0.5
	comp=Z,5.0nm,0.8s,baz=149,slow=4.0,SNR=5.0								

IDC 05 20:04:59.8±55.0,13.77S×177.42E,mb3.8/3,mb1 4.0/3, mb1mx3.9/13,MS2.5/1,Ms1 2.5/1,ms1mx2.5/18,Error ellipse: s-maj=979.0km s-min=156.6km az=71.0,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op	ISC		h m s	ISC
STKA	**Stephens Creek**	**37.39**	**235**	P		P	20 12 15.4	-0.9
	4.2nm,1.1s,baz=54,slow=8.7,SNR=4.0							
WRA	**Warramunga Arr**	**41.60**	**255**	P		P	20 12 49.8	-1.7
	0.1nm,0.4s,baz=93,slow=7.6,SNR=5.2							
ASAR	**Alice Springs**	**42.23**	**250**	P		P	20 12 54.4	-2.2
	2.6nm,0.7s,baz=81,slow=8.5,SNR=45							
NWAO	**Narrogin (SRO)**	**57.71**	**240**	LR		LR	20 36 54.2	
	comp=Z,4.0nm,19.3s,baz=222,slow=33							

*NEIC **05** 20:05:28.3,62.50N×150.75W,h75km, After AEIC.*
*IDC **05** 20:05:29.6±5.4,62.76N×150.76W,h94km±49km,mb3.2/2, mb1 3.4/5,mb1mx3.2/20,Error ellipse: s-maj=47.1km s-min=21.9km az=37.0*

ISC 05 20:05:26.2±0.3,62.50N±0.02×150.68W±0.06,h91km±4km, n75,σ0°73/88,mb3.5/2,Central Alaska

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op	ISC		h m s	ISC
CUT	**Chulitna**	**0.21**	**117**	P		**P**	**20 05 39.2**	**-0.2**
SKT	**Skwentna**	**0.66**	**218**	P		**P**	**20 05 42.1**	**-0.6**
SKT				S		**S**	**20 05 53.2**	**-1.7**
HUR	**Hurricane**	**0.68**	**45**	P		**P**	**20 05 43.0**	**+0.1**
HUR				S		**S**	**20 05 54.5**	**-0.7**
PWA	**Palmer West**	**0.94**	**156**	P		**P**	**20 05 45.7**	**+0.2**
TRF	**Thorofare Moun**	**0.97**	**11**	P		**P**	**20 05 46.4**	**+0.5**
SUA	**Susitna One**	**1.04**	**182**	P		**P**	**20 05 47.1**	**+0.3**
KTH	**Kantishna Hill**	**1.06**	**354**	P		**P**	**20 05 47.2**	**+0.3**
KTH				S		**S**	**20 06 01.6**	**-0.9**
GHO	**Glory Hole Cre**	**1.10**	**131**	P		**P**	**20 05 48.3**	**+0.8**
PMR	**Palmer**	**1.17**	**141**	*e*P		**P**	**20 05 48.7**	**+0.3**
RND	**Reindeer**	**1.23**	**42**	P		**P**	**20 05 49.5**	**+0.4**
SML	**Sawmill**	**1.30**	**121**	P		**P**	**20 05 50.8**	**+0.8**
FIB	**Fire Island**	**1.36**	**170**	P		**P**	**20 05 50.2**	**-0.6**
PMS	**Palmer South**	**1.37**	**157**	P		**P**	**20 05 51.1**	**+0.3**
PMS				S		**S**	**20 06 09.3**	**+0.2**
GOU	**Gould Hall**	**1.38**	**162**	*e*P		**P**	**20 05 52.6**	**+1.6**
CRP	**Crater Peak**	**1.43**	**210**	P		**P**	**20 05 51.5**	**-0.1**
CRP				S		**S**	**20 06 10.4**	**+0.2**
MCK	**McKinley**	**1.47**	**32**	P		**P**	**20 05 52.6**	**+0.6**
MCK				S		**S**	**20 06 11.6**	**+0.4**
SPU	**Mount Spurr**	**1.48**	**207**	P		**P**	**20 05 52.0**	**-0.2**
RC01	**Rabbit Creek A**	**1.49**	**162**	P		**P**	**20 05 52.1**	**-0.3**
RC01				S		**S**	**20 06 11.5**	**-0.1**
KNK	**Knik Glacier**	**1.52**	**135**	P		**P**	**20 05 53.2**	**+0.5**
CKL	**Chakachamna La**	**1.53**	**212**	P		**P**	**20 05 52.9**	**0.0**
BKG	**Blockade Glaci**	**1.62**	**208**	P		**P**	**20 05 54.0**	**-0.1**
BKG				S		**S**	**20 06 16.0**	**+1.4**
DHY	**Denali Highway**	**1.62**	**68**	P		**P**	**20 05 54.6**	**+0.5**
DHY				S		**S**	**20 06 15.8**	**+1.2**
SCM	**Sheep Creek Mo**	**1.71**	**112**	P		**P**	**20 05 55.7**	**+0.5**
BWN	**Browne**	**1.76**	**18**	P		**P**	**20 05 56.5**	**+0.7**
SLKM	**Skilak Lake**	**2.02**	**174**	*e*P		**P**	**20 05 59.6**	**+0.4**
MPA	**Moose Pass**	**2.12**	**162**	P		**P**	**20 06 00.2**	**-0.4**
TOA	**Tolsona**	**2.14**	**99**	P		**P**	**20 06 02.3**	**+1.4**
NEA	**Nenana**	**2.20**	**18**	P		**P**	**20 06 01.4**	**-0.3**
REF	**Redoubt East F**	**2.24**	**207**	P		**P**	**20 06 02.9**	**+0.5**
RSO	**Redoubt South**	**2.28**	**207**	*e*P		**P**	**20 06 03.0**	**+0.1**
JPK	**Jack Peak**	**2.42**	**125**	P		**P**	**20 06 04.6**	**-0.3**
PAX	**Paxson**	**2.44**	**77**	P		**P**	**20 06 06.5**	**+1.3**
KLU	**Klutina**	**2.46**	**112**	P		**P**	**20 06 05.2**	**-0.2**
SEW	**Seward**	**2.48**	**166**	P		**P**	**20 06 05.3**	**-0.3**
SEW				S		**S**	**20 06 33.5**	**-1.5**
VLZ	**Valdez**	**2.48**	**122**	P		**P**	**20 06 04.8**	**-0.8**
VLZ				S		**S**	**20 06 35.1**	**+0.1**
CCB	**Clear Creek Bu**	**2.51**	**30**	P		**P**	**20 06 05.8**	**-0.2**
MLY	**Manley**	**2.54**	**359**	P		**P**	**20 06 06.1**	**-0.4**
HDA	**Harding Lake**	**2.54**	**40**	P		**P**	**20 06 06.7**	**+0.3**
ILIM	**Iliamna**	**2.67**	**205**	P		**P**	**20 06 07.9**	**-0.3**
COLA	**College**	**2.69**	**27**	P		**P**	**20 06 08.6**	**0.0**
MDM	**Murphy Dome**	**2.69**	**23**	P		**P**	**20 06 08.6**	**0.0**
ILW	**Iliamna West**	**2.72**	**207**	P		**P**	**20 06 09.6**	**+0.5**
SVW	**Sparrevohn**	**2.73**	**241**	P		**P**	**20 06 08.7**	**-0.4**
BRLK	**Bradley Lake**	**2.75**	**182**	P		**P**	**20 06 10.2**	**+0.8**
ILAR	**Eielson Array**	**2.84**	**35**	P		**P**	**20 06 10.6**	**0.0**
	12nm,0.3s,baz=221,slow=14,SNR=925							
ILAR				S		**S**	**20 06 42.5**	**-1.4**
	27nm,0.3s,baz=226,slow=25,SNR=35							
GLM	**Gilmore Dome**	**2.89**	**29**	P		**P**	**20 06 11.5**	**+0.1**
HIN	**Hinchinbrook I**	**2.92**	**135**	P		**P**	**20 06 11.1**	**-0.6**
CNPM	**China Poot**	**3.00**	**185**	P		**P**	**20 06 13.5**	**+0.6**
EYAK	**Cordova Ski Ar**	**3.07**	**128**	P		**P**	**20 06 13.1**	**-0.7**
WANC	**Wrangell North**	**3.13**	**96**	P		**P**	**20 06 15.5**	**+0.9**
DOT	**Dot Lake**	**3.22**	**66**	P		**P**	**20 06 16.4**	**+0.5**
BMRM	**Bremner River**	**3.28**	**115**	P		**P**	**20 06 15.4**	**-1.2**
GLB	**Gilahina Butte**	**3.41**	**105**	P		**P**	**20 06 18.0**	**-0.5**
PRP	**Porcupine Dome**	**3.78**	**35**	P		**P**	**20 06 23.6**	**0.0**
IMA	**Indian Mountai**	**3.81**	**341**	P		**P**	**20 06 23.8**	**-0.2**
TGL	**Tana Glacier**	**4.14**	**112**	P		**P**	**20 06 27.3**	**-1.1**
BALM	**Baldy**	**4.22**	**107**	P		**P**	**20 06 28.8**	**-0.9**
KAPH	**Katmai Pasha**	**4.32**	**206**	P		**P**	**20 06 31.4**	**+0.5**
SNH	**Sunshine Point**	**4.44**	**118**	P		**P**	**20 06 32.2**	**-0.4**
KARR	**Katmai Rainbow**	**4.48**	**208**	P		**P**	**20 06 34.1**	**+0.9**
KAIC	**Katmai Ikaglui**	**4.57**	**210**	P		**P**	**20 06 35.4**	**+0.9**
CTGM	**Chitina Glacie**	**4.71**	**105**	P		**P**	**20 06 36.0**	**-0.3**
YAH	**Yahtse**	**4.80**	**113**	P		**P**	**20 06 36.5**	**-1.0**
KDAK	**Kodiak Island**	**4.83**	**192**	P		**P**	**20 06 36.3**	**-1.7**
ANCK	**Angle Creek**	**4.94**	**211**	P		**P**	**20 06 40.1**	**+0.6**
CHX	**Chaix Hills**	**5.22**	**114**	P		**P**	**20 06 43.1**	**-0.2**
DAWY	**Dawson**	**5.33**	**68**	P		**P**	**20 06 44.5**	**-0.2**
BM3	**Burnt Mountain**	**5.57**	**25**	P		**P**	**20 06 48.0**	**0.0**
PNL	**Peninsula**	**6.17**	**112**	P		**P**	**20 06 55.6**	**-0.8**
ANM	**Nome**	**6.88**	**294**	*e*P		**P**	**20 07 05.3**	**-1.0**
WHY	**Whitehorse**	**7.76**	**97**	P		**P**	**20 07 17.3**	**-1.0**
INK	**Inuvik**	**9.20**	**43**	P		**P**	**20 07 38.0**	**+0.3**
	0.6nm,0.3s,baz=244,slow=17,SNR=24							
INK				S		**S**	**20 09 16.1**	**-4.2**
	0.4nm,0.3s,baz=298,slow=31,SNR=3.5							
YKA	**Yellowknife Ar**	**16.53**	**74**	P		**P**	**20 09 15.2**	**+2.0**
	0.1nm,0.3s,baz=284,slow=10,SNR=9.0							
SONM	**Songino Array**	**54.23**	**306**	P		**P**	**20 14 45.0**	**+0.8**
	0.8nm,0.7s,mb3.9,baz=22,slow=6.7,SNR=3.9							
MKAR	**Makanchi Array**	**63.16**	**322**	P		**P**	**20 15 44.8**	**-1.4**
	0.1nm,0.4s,mb3.1,baz=43,slow=7.5,SNR=6.6							

*IDC **05** 20:49:51.9±1.3,49.83N×28.91W,mb3.7/13,mb1 3.9/14, mb1mx3.8/26,ML3.6/1,MS3.5/6,Ms1 3.5/6,ms1mx3.2/29, Error ellipse: s-maj=38.6km s-min=15.0km az=10.0*
*NEIC **05** 20:49:53.5±0.6,49.84N×28.93W,h10km,mb4.3/9,Error ellipse: s-maj=18.0km s-min=5.3km az=193.0*

ISC 05 20:49:51.5±0.8,49.8N±0.2×28.93W±0.10,h10km,n31, σ0°88/28,mb4.0/20,MS3.4/6,Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op	ISC		h m s	ISC
EKA	**Eskdalemuir Ar**	**16.56**	**61**	Pn		**P**	**20 53 45.0**	**-0.1**
	0.1nm,0.3s,baz=342,slow=19,SNR=3.3							
MFF	**Saint Martin d**	**19.39**	**88**	*e*P		**P**	**20 54 19.5**	**-0.6**
	24nm,0.9s							
ESDC	**Sonseca Array**	**20.33**	**110**	P		**P**	**20 54 29.6**	**-0.8**
	0.2nm,0.3s,baz=315,slow=14,SNR=3.3							
TCF	**Toulx Ste Croi**	**21.03**	**88**	*e*P		**P**	**20 54 37.4**	**-0.2**
	16nm,0.9s,mb4.1							
BAIF	**Baives**	**21.24**	**77**	*e*P		**P**	**20 54 39.1**	**-0.6**
	14nm,0.8s,mb4.0							
BGF

TRQA eScP 21 12 24.8
QSPA South Pole Qui 33.02 180 eP **P** **21 06 09.7 -1.4**
56nm,0.6s,mb5.7
QSPA e 21 12 38.7
QSPA LR LR
comp=Z,2µm,21.3s,MS4.9
PLCA Paso Flores 33.11 280 P **P** **21 06 10.2 -2.0**
comp=Z,18nm,0.9s,mb5.0,baz=140,slow=8.8,SNR=29
PLCA PcP PcP 21 08 54.4 -0.5
comp=Z,4.3nm,0.7s,baz=131,slow=2.2,SNR=4.2
PLCA ScP 21 12 33.9
comp=Z,3.2nm,0.9s,baz=342,slow=2.6,SNR=5.2
PLCA LR LR 21 18 26.1
comp=Z,2µm,21.4s,MS4.8,baz=127,slow=34
PLCA Paso Flores 33.11 280 eP **P** **21 06 09.6 -2.6**
comp=Z,11nm,0.9s,mb4.8
PLCA ePcP PcP 21 08 53.5 -1.5
PLCA LR LR
comp=Z,1µm,22.0s,MS4.6
CAM4 Nova Friburgo 36.99 333 eP **P** **21 06 55.1 +10**
CAM4 i 21 06 57.1
CAM4 i 21 07 01.8
CAM4 i 21 07 02.8
CAM4 i pP 21 07 09.5 +12
CAM3 Guarapari 38.09 337 (P) **P** **21 06 56.4 +1.7**
CAM3 Guarapari 38.09 337 P **P** **21 06 56.4 +1.7**
CPUP Villa Florida 38.27 310 P **P** **21 06 55.6 -0.6**
comp=Z,27nm,0.9s,mb5.0,baz=178,slow=8.5,SNR=30
CPUP PcP PcP 21 09 09.8 -0.6
comp=Z,13nm,1.1s,baz=160,slow=3.2,SNR=4.1
CPUP ScP 21 12 53.0
comp=Z,5.4nm,1.0s,baz=191,slow=8.7,SNR=3.4
CPUP LR LR 21 21 52.1
comp=Z,917nm,20.1s,MS4.6,baz=177,slow=35
CPUP Villa Florida 38.27 310 eP **P** **21 06 54.7 -1.5**
comp=Z,25nm,1.1s,mb4.9
CPUP ePcP PcP 21 09 08.9 -1.4
CPUP LR LR
comp=Z,611nm,21.0s,MS4.4
MAW Mawson 38.66 142 eP **P** **21 07 00.9 +1.9**
comp=Z,6.0nm,0.8s,mb4.4
MAW Mawson 38.66 142 P **P** **21 06 59.8 +0.8**
comp=Z,8.4nm,1.1s,mb4.4,baz=223,slow=5.9,SNR=6.9
MAW PcP PcP 21 09 10.6 -0.5
comp=Z,4.9nm,0.7s,baz=286,slow=4.0,SNR=4.1
MAW LR LR 21 20 42.1
comp=Z,2µm,20.2s,MS5.0,baz=250,slow=33
SUR Sutherland 40.10 72 P **P** **21 07 12.6 +1.3**
comp=Z,7.8nm,0.9s,mb4.4,baz=125,slow=10,SNR=4.3
SUR LR LR 21 20 15.3
comp=Z,5µm,19.9s,MS5.4,baz=272,slow=31
BDFB Brasilia 44.84 329 P **P** **21 07 51.4 +1.3**
comp=Z,109nm,1.2s,mb5.5,baz=165,slow=5.4,SNR=12
BDFB LR LR 21 25 24.6
comp=Z,2µm,19.2s,MS5.0,baz=173,slow=34
SBA Scott Base 44.97 184 eP **P** **21 07 50.5 +0.1**
comp=Z,15nm,0.8s,mb4.9
SBA LR LR
comp=Z,1µm,19.0s,MS4.9
LVC Limon Verde 46.68 299 P **P** **21 08 04.6 0.0**
comp=Z,38nm,0.6s,mb5.5,baz=153,slow=4.9,SNR=33
LVC PcP PcP 21 09 38.8 +0.6
comp=Z,18nm,0.8s,baz=211,slow=2.0,SNR=4.1
LVC Limon Verde 46.68 299 eP **P** **21 08 03.5 -1.1**
comp=Z,48nm,0.8s,mb5.5
LVC ePcP PcP 21 09 37.9 -0.3
LVC LR LR
comp=Z,847nm,19.0s,MS4.7
MIR Mirnyy 48.32 152‖ eP **P** **21 08 15.8 -1.1**
MIR pmax pmax
comp=Z,35nm,1.4s,mb5.2
LBTB Lobatse 48.51 71 eP **P** **21 08 15.7 -3.2**
comp=Z,15nm,1.4s,mb4.8
LBTB LR LR
comp=Z,2µm,20.0s,MS5.0
LPAZ La Paz 51.80 304 P **P** **21 08 44.8 +0.7**
comp=Z,52nm,0.5s,mb5.7,baz=142,slow=6.6,SNR=176
LPAZ La Paz 51.80 304 eP **P** **21 08 43.8 -0.3**
comp=Z,46nm,0.8s,mb5.5
LPAZ LR LR
comp=Z,324nm,20.0s,MS4.4
ARE Arequipa 53.19 301 eP **P** **21 08 54.0 -0.5**
TRSB Teresina 53.95 339c *i*P **P** **21 09 00.3 +0.1**
LIC Lamto 65.41 23 eP **P** **21 10 18.0 -0.9**
comp=Z,37nm,0.8s,mb5.5
KIC Kosan Boka 65.60 23 eP **P** **21 10 19.0 -1.2**
comp=Z,60nm,0.9s,mb5.6
TIC Toumodi 65.82 22 eP **P** **21 10 20.7 -0.8**
comp=Z,101nm,0.9s,mb5.8
DBIC Dimbokro 65.88 23 P **P** **21 10 21.4 -0.5**
comp=Z,7.3nm,1.1s,mb4.6,baz=165,slow=7.1,SNR=6.0
DBIC LR LR 21 31 52.4
comp=Z,1µm,21.5s,MS5.0,baz=171,slow=29
DBIC Dimbokro 65.88 23 eP **P** **21 10 17.8 -4.1**
comp=Z,7.5nm,1.0s,mb4.7
DBIC LR LR
comp=Z,595nm,21.0s,MS4.8
OTAV Otavalo 71.07 302 eP **P** **21 10 54.4 +0.3**
comp=Z,59nm,1.0s,mb5.5
ROSC El Rosal 73.36 309 P **P** **21 11 08.3 +0.7**
comp=Z,49nm,0.7s,mb5.5,baz=173,slow=6.0,SNR=19
ROSC LR LR 21 45 36.4
comp=Z,914nm,19.8s,MS5.1,baz=42,slow=38
PCRV Puerto La Cruz 74.44 320 P **P** **21 11 14.6 +0.8**
comp=Z,74nm,0.6s,mb5.8,baz=134,slow=2.6,SNR=30
KMBO Kilima Mbogo 74.63 67 P **P** **21 11 16.8 +1.8**
comp=Z,0.7nm,0.3s,mb4.0,baz=222,slow=24,SNR=1.6
KMBO LR LR 21 40 29.3
comp=Z,1µm,21.8s,MS5.1,baz=276,slow=33
KMBO Kilima Mbogo 74.63 67 eP **P** **21 11 13.8 -1.2**
comp=Z,53nm,2.1s,mb5.1
KMBO LR LR
comp=Z,777nm,22.0s,MS5.0
SDV Santo Domingo 75.49 314 P **P** **21 11 20.0 +0.1**
comp=Z,94nm,0.9s,mb5.7,baz=194,slow=3.2,SNR=74
BBL Barber's Block 78.39 325 eP **P** **21 11 36.5 +0.5**
PAG Le Parnasse 78.93 325 eP **P** **21 11 40.5 +1.5**
SFG Saint Francois 78.99 325 eP **P** **21 11 40.6 +1.2**
DEG La Desirade 79.00 325 eP **P** **21 11 39.5 +0.1**
SEG Port Louis 79.22 325 eP **P** **21 11 41.9 +1.3**
SJG San Juan 82.34 321 P **P** **21 11 55.5 -1.5**
comp=Z,16nm,0.8s,mb5.0,baz=54,slow=1.6,SNR=4.3
SJG San Juan 82.34 321 P **P** **21 11 55.5 -1.5**
SJG LR LR
comp=Z,526nm,19.0s,MS4.9
NWAO Narrogin (SRO) 84.85 149 PFAKE 21 12 20.0 +11
NWAO LR LR
comp=Z,473nm,19.0s,MS4.9
MUN Mundaring 85.45 148 eP **P** **21 12 12.5 +0.1**
comp=Z,13nm,1.3s,mb4.9
KLBR Kellerberrin 86.25 149 eP **P** **21 12 16.3 0.0**
comp=Z,19nm,1.1s,mb5.2
TBI Tubuai 87.04 230 eS S 21 22 52.4 -2.0
TBI eL 21 36 15.7
TBI eR 21 39 57.7
comp=Z,21nm,20.0s
FORT Forrest 89.54 157 eP **P** **21 12 32.6 +0.5**
comp=Z,72nm,0.8s,mb6.0
STKA Stephens Creek 90.58 169 eP **P** **21 12 37.0 0.0**
comp=Z,6.9nm,0.9s,mb5.0
STKA Stephens Creek 90.58 169 P **P** **21 12 36.8 -0.2**
comp=Z,3.4nm,0.8s,mb4.7,baz=166,slow=4.9,SNR=6.1
STKA LR LR 21 53 19.1
comp=Z,873nm,18.9s,MS5.2,baz=198,slow=36
BBSR BB Station 95.18 328 PFAKE 21 13 10.0 +12
BBSR LR LR
comp=Z,3µm,19.0s,MS5.8
DWPF Disney 97.12 313 PFAKE 21 13 20.0 +13
DWPF LR LR
comp=Z,792nm,21.0s,MS5.2
ASAR Alice Springs 97.58 161 P **P** **21 13 08.6 -0.6**
comp=Z,2.9nm,0.9s,mb4.8,baz=192,slow=4.5,SNR=18
ASAR PP PP 21 17 10.2 +0.4
comp=Z,2.0nm,0.9s,baz=178,slow=7.4,SNR=6.1
ASAR LR LR 21 52 09.0
comp=Z,437nm,20.9s,MS4.9,baz=191,slow=32
ESDC Sonseca Array 98.23 17 P **P** **21 13 10.5 -1.2**
comp=Z,0.3nm,0.3s,mb4.2,baz=161,slow=16,SNR=1.4
ESDC LR LR 21 54 55.2
comp=Z,253nm,19.1s,MS4.7,baz=175,slow=34
WRA Warramunga Arr 101.30 161 P **P** **21 13 25.6 -0.5**
comp=Z,0.7nm,0.7s,baz=198,slow=4.6,SNR=4.2
WRA PP PP 21 17 40.1 +1.8
comp=Z,2.1nm,1.1s,baz=185,slow=5.8,SNR=4.7
WRAB Tennant Creek 101.31 161 PFAKE 21 13 40.0 +14
WRAB LR LR
comp=Z,918nm,21.0s,MS5.3

CTAO Charters Tower 102.68 172 PFAKE 21 13 40.0 +7.8
CTAO LR LR
comp=Z,896nm,20.0s,MS5.3
LRAL Lakeview Retre 103.71 311 PFAKE 21 13 50.0 +14
LRAL LR LR
comp=Z,734nm,19.0s,MS5.2
CBN Corbin 104.60 320 PFAKE 21 13 50.0 +10
CBN LR LR
comp=Z,454nm,21.0s,MS5.0
BLA Blacksburg 104.81 318 PFAKE 21 13 50.0 +8.8
BLA LR LR
comp=Z,234nm,20.0s,MS4.7
HKT Hockley 104.93 302 PFAKE 21 13 50.0 +8.1
HKT LR LR
comp=Z,249nm,21.0s,MS4.7
PLAL Pickwick Lake 105.84 311 PFAKE 21 18 10.0
PLAL LR LR
comp=Z,662nm,22.0s,MS5.1
HRV Harvard--Oak R 106.60 326 PFAKE 21 18 10.0
HRV LR LR
comp=Z,107nm,21.0s,MS4.4
WVT Waverly 106.73 312 PFAKE 21 18 10.0
WVT LR LR
comp=Z,603nm,22.0s,MS5.1
MCWV Mont Chateau 106.77 319 PFAKE 21 18 10.0
MCWV LR LR
comp=Z,485nm,21.0s,MS5.0
SSPA Standing Stone 106.95 321 PFAKE 21 18 10.0
SSPA LR LR
comp=Z,2µm,20.0s,MS5.6
JCT Junction City 107.23 300 PFAKE 21 18 10.0
JCT LR LR
comp=Z,202nm,19.0s,MS4.7
BINY Binghamton 107.71 323 PFAKE 21 18 10.0
BINY LR LR
comp=Z,205nm,19.0s,MS4.7
MIAR Mount Ida 107.81 306 PFAKE 21 18 10.0
MIAR LR LR
comp=Z,246nm,21.0s,MS4.7
WCI Wyandotte Cave 107.93 314 PFAKE 21 18 10.0
WCI LR LR
comp=Z,2µm,21.0s,MS5.6
LBNH Lisbon 108.29 327 PFAKE 21 18 10.0
LBNH LR LR
comp=Z,448nm,20.0s,MS5.0
ACSO Alum Creek Sta 108.41 317 PFAKE 21 18 10.0
ACSO LR LR
comp=Z,474nm,20.0s,MS5.0
ERPA Erie 108.99 320 PFAKE 21 18 10.0
ERPA LR LR
comp=Z,523nm,22.0s,MS5.1
PQI Presque Isle 109.41 330 PFAKE 21 18 20.0
PQI LR LR
comp=Z,2µm,21.0s,MS5.7
CCM Cathedral Cave 109.79 310 PFAKE 21 18 20.0
CCM LR LR
comp=Z,674nm,20.0s,MS5.2
WMOK Wichita Mounta 110.30 303 PFAKE 21 18 20.0 +15
WMOK LR LR
comp=Z,238nm,20.0s,MS4.8
AAM Ann Arbor 110.46 318 PFAKE 21 18 20.0 +15
AAM LR LR
comp=Z,383nm,21.0s,MS5.0
GERES GERESS Array B 110.59 27 PKKPbc 21 29 06.2
comp=Z,0.7nm,0.8s,baz=315,slow=1.9,SNR=5.3
MNTX Cornudas Mount 110.92 296 PFAKE 21 18 20.0 +14
MNTX LR LR
comp=Z,46nm,19.0s,MS4.1
PMG Port Moresby 113.33 172 PFAKE 21 18 20.0 +8.4
PMG LR LR
comp=Z,748nm,20.0s,MS5.3
GNI Garni 113.47 52 PFAKE 21 18 20.0 +8.8
GNI LR LR
comp=Z,342nm,20.0s,MS4.9
JFWS Jewell Farm 113.49 314 PFAKE 21 18 20.0 +8.8
JFWS LR LR
comp=Z,389nm,20.0s,MS5.0
ANMO Albuquerque 114.08 297 PFAKE 21 18 30.0 +17
ANMO LR LR
comp=Z,481nm,19.0s,MS5.1
CBKS Cedar Bluff 114.09 305 PFAKE 21 18 20.0 +7.5
CBKS LR LR
comp=Z,332nm,21.0s,MS4.9
TUC Tucson 114.09 292 *e*PKP PKPdf 21 18 14.3 +1.6
TUC LR LR
comp=Z,311nm,20.0s,MS4.9
ZEI Tsey 115.28 50 *e*PKIKP PKPdf 21 18 27.0 +12
KIV Kislovodsk 115.76 48 PFAKE 21 18 30.0 +14
KIV LR LR
comp=Z,393nm,21.0s,MS5.0
SDCO Great Sand Dun 115.88 300 PFAKE 21 18 30.0 +14
SDCO LR LR
comp=Z,283nm,19.0s,MS4.9
AKASG Malin Array Be 116.62 36 PKP PKPdf 21 18 17.2 +0.1
comp=Z,2.5nm,0.9s,baz=238,slow=2.1,SNR=8.6
SCHO Schefferville 116.62 335 PFAKE 21 18 30.0 +13
SCHQ LR LR
comp=Z,818nm,20.0s,MS5.3
WUAZ Wupatki 116.95 294 PFAKE 21 18 30.0 +12
WUAZ LR LR
comp=Z,381nm,19.0s,MS5.0
ISCO Idaho Springs 117.57 301 PFAKE 21 18 30.0 +11
ISCO LR LR
comp=Z,375nm,19.0s,MS5.0
PFO Pinyon Flat Ob 118.01 289 PFAKE 21 18 30.0 +10
PFO LR LR
comp=Z,618nm,21.0s,MS5.2
SRU San Rafael 119.36 297 *e*PKP PKPdf 21 18 23.7 +1.0
MSU Marysvale 119.70 296 *e*PKP PKPdf 21 18 25.2 +1.8
MVU Marysvale 119.71 296 PFAKE 21 18 40.0 +17
MVU LR LR
comp=Z,292nm,19.0s,MS4.9
RSSD Black Hills 120.27 305 *e*Pdif Pdif 21 14 43.2 -5.9
RSSD *e*PKP PKPdf 21 18 24.3 -0.1
RSSD LR LR
comp=Z,729nm,22.0s,MS5.3
DAC Darwin (Calif) 120.67 290 PFAKE 21 18 40.0 +15
DAC LR LR
comp=Z,337nm,20.0s,MS5.0
NLU North Lily Min 120.77 297 *e*PKP PKPdf 21 18 26.4 +0.9
HFS Hagfors 121.04 22 PKP PKPdf 21 18 25.5 0.0
comp=Z,3.6nm,1.1s,baz=221,slow=45,SNR=2.8
NB2 NORSAR Subarra121.40 20 PKPdf PKPdf 21 18 26.8 +0.7
comp=Z,1.5nm,0.8s,baz=195,slow=1.8
NOA NORSAR Array B121.40 20 PKP PKPdf 21 18 26.8 +0.6
comp=Z,2.8nm,0.9s,baz=199,slow=1.8,SNR=7.3
NOA PKKPbc 21 28 28.4
comp=Z,2.5nm,0.8s,baz=23,slow=3.4,SNR=9.3
ULM Lac du Bonnet 121.73 315 PKP PKPdf 21 18 27.2 +0.2
comp=Z,5.8nm,0.9s,baz=113,slow=3.2,SNR=5.1
ULM Lac du Bonnet 121.73 315 *e*PKP PKPdf 21 18 25.3 -1.7
ULM LR LR
comp=Z,571nm,20.0s,MS5.2
BW06 Boulder Array 121.74 301 PFAKE 21 18 40.0 +13
BW06 LR LR
comp=Z,415nm,21.0s,MS5.1
PDAR Pinedale Array 121.74 301 PKP PKPdf 21 18 27.9 +0.6
comp=Z,1.3nm,0.6s,baz=117,slow=3.3,SNR=10
PDAR PP PP 21 20 02.0 -2.9
comp=Z,3.7nm,1.2s,baz=124,slow=5.3,SNR=6.1
HWUT Hardware Ranch 121.80 298 *e*PKP PKPdf 21 18 28.1 +0.8
HWUT LR LR
comp=Z,492nm,19.0s,MS5.2
TPH Tonopah 121.87 292 PFAKE 21 18 40.0 +12
TPH LR LR
comp=Z,269nm,19.0s,MS4.9
BGU Big Grassy Mou 121.98 297 *e*PKP PKPdf 21 18 28.6 +0.8
SPUT South Promonto 121.99 298 *e*PKP PKPdf 21 18 28.8 +1.0
AHID Auburn Hatcher 122.46 300 PFAKE 21 18 40.0 +11
AHID LR LR
comp=Z,369nm,20.0s,MS5.0
NVAR Mina Array Bea 122.69 291 PKP PKPdf 21 18 31.6 +2.4
comp=Z,3.7nm,0.8s,baz=122,slow=3.3,SNR=18
OBN Obninsk 122.72 37 *e*PKIKP PKPdf 21 18 29.2 +0.3
OBN pmax pmax
comp=Z,9.0nm,0.9s
OBN Obninsk 122.72 37 PFAKE 21 18 40.0 +11
OBN LR LR
comp=Z,272nm,19.0s,MS4.9
KOLN Koldanda 123.15 89 *e*P PKPdf 21 18 30.1 -0.3
comp=Z,19nm,0.9s
CMB Columbia Colle 123.45 289 *e*PKP PKPdf 21 18 31.7 +1.0
CMB LR LR
comp=Z,343nm,20.0s,MS5.0
BMN Battle Mountai 123.67 294 PFAKE 21 18 40.0 +8.9
BMN LR LR
comp=Z,378nm,19.0s,MS5.1
CM31 Chiang Mai Arr 123.80 110 *e*PKP PKPdf 21 18 31.5 -0.3
CM31 LR LR
comp=Z,493nm,19.0s,MS5.2
DMN Daman 123.85 91 *e*P PKPdf 21 18 32.1 +0.4
comp=Z,16nm,0.9s
GKN Gorkha 123.90 90 *e*P PKPdf 21 18 31.6 -0.2
comp=Z,20nm,0.9s
KKN Kakani 124.08 91 *e*P PKPdf 21 18 32.4 +0.2
comp=Z,12nm,0.8s
GUN Gumba 124.50 91 *e*P PKPdf 21 18 33.0 +0.1
comp=Z,20nm,0.9s
HLID Hailey 124.65 298 *e*PKP PKPdf 21 18 32.2 -0.6
HLID LR LR
comp=Z,265nm,21.0s,MS4.9
BEKR Beckwourth 124.82 291 *e*PKP PKPdf 21 18 34.4 +1.3
BOZ Bozeman (W) 124.90 301 PFAKE 21 18 50.0 +17
BOZ LR LR
comp=Z,450nm,22.0s,MS5.1
FINES FINESS Array B 125.00 27 PKP PKPdf 21 18 33.9 +1.0
comp=Z,7.2nm,0.7s,baz=135,slow=2.7,SNR=40
KAF Kangasniemi 125.63 27 *e*pkp PKPdf 21 18 32.0 -2.1
HRY Holter Researc 125.78 302 *e*PKP PKPdf 21 18 36.0 +1.2
WVOR Wild Horse Val 125.87 294 PFAKE 21 18 50.0 +15
WVOR LR LR
comp=Z,429nm,21.0s,MS5.1
SHL Shillong 125.90 98 *e*P PKPdf 21 18 38.0 +2.4
MOD Modoc 126.31 293 PFAKE 21 18 50.0 +14
MOD LR LR
comp=Z,385nm,21.0s,MS5.0
WDC Whiskeytown Da 126.46 290 *e*PKP PKPdf 21 18 36.7 +0.3
WDC LR LR
comp=Z,115nm,19.0s,MS4.6
CHMT Chamberlain Mo 126.59 301 *e*PKP PKPdf 21 18 37.0 +0.6
MSO Missoula 126.85 301 *e*PKP PKPdf 21 18 37.7 +0.8
MSO LR LR
comp=Z,609nm,20.0s,MS5.3
YBH Yreka Blue Hor 127.40 291 *e*PKP PKPdf 21 18 38.1 0.0
FFC Flin Flon 127.56 315 *e*PKP PKPdf 21 18 37.3 -0.8
JOF Joensuu 127.59 29 *e*pkp PKPdf 21 18 36.7 -1.2
FCC Fort Churchill 127.77 322 *e*PKP PKPdf 21 18 37.3 -1.1
HUMO Hull Mountain 128.16 291 *e*PKP PKPdf 21 18 40.4 +0.8
WALA Waterton Lakes 128.46 303 *e*PKP PKPdf 21 18 39.5 -0.4
AML Almayashu 128.73 70 P PKPdf 21 18 42.3 +1.6
SNR=7.1
LSA Lhasa 128.77 94 PKP PKPdf 21 18 43.2 +2.1
LSA Lhasa 128.77 94 *e*PKP PKPdf 21 18 42.5 +1.4
LSA LR LR
comp=Z,288nm,21.0s,MS4.9
HSO Harness Mounta 128.90 292 *e*PKP PKPdf 21 18 40.0 -0.9
EKS2 Erkin-Say 129.16 70 P PKPdf 21 18 42.7 +1.3
SNR=12
HAWA Hanford 129.19 297 PFAKE 21 18 50.0 +8.6
HAWA LR LR
comp=Z,489nm,19.0s,MS5.2
UCH Uchtor 129.22 71 P PKPdf 21 18 43.5 +2.0
SNR=5.2
NEW Newport 129.37 300 PFAKE 21 18 50.0 +8.3
NEW LR LR
comp=Z,444nm,20.0s,MS5.2
KZA Kyzart 129.50 71 P PKPdf 21 18 43.9 +1.9
SNR=8.9
AAK Ala-Archa 129.51 70 P PKPdf 21 18 43.5 +1.4
SNR=7.9
SSOR Sweet Springs 129.53 294 *e*PKP PKPdf 21 18 41.9 -0.2
QIZ Qiongzhong 129.66 120 PKP PKPdf 21 18 47.3 +4.3
QIZ *e*PP PP 21 21 04.0 +5.9
QIZ SS SS 21 38 20.0 +4.8
QIZ LR LR
comp=N,384nm,19.5s,MS5.2
QIZ LR LR
comp=E,268nm,18.7s,MS5.2
QIZ LR LR
comp=Z,520nm,19.1s,MS5.2
USP Ospenovka 129.96 70 P PKPdf 21 18 43.6 +0.6
SNR=6.0
LON Longmire 130.56 296 *e*PKP PKPdf 21 18 44.1 +0.1
NLW Nelson Butte 130.77 298 *e*PKP PKPdf 21 18 44.8 +0.5
BMW Boistfort Moun 131.06 295 *e*PKP PKPdf 21 18 45.7 +0.7
KMI Kunming 131.28 109 *e*PKP PKPdf 21 18 46.0 +0.1
KMI PP PP 21 21 11.1 +2.4
KMI SKS SKS 21 25 51.2 +1.2
KMI PP PP
comp=Z,129nm,11.7s
KMI LR LR
comp=N,226nm,21.0s,MS5.0
KMI LR LR
comp=E,226nm,22.2s,MS5.0
KMI LR LR
comp=Z,265nm,22.8s,MS4.9
RPW Rockport 131.59 298 *e*PKP PKPdf 21 18 46.2 +0.4
ARCES ARCESS Array B 131.70 21 PKP PKPdf 21 18 46.4 +0.9
comp=Z,3.3nm,0.7s,baz=204,slow=1.4,SNR=21
ARCES SKP 21 22 17.4
comp=Z,2.4nm,1.1s,baz=198,slow=3.8,SNR=3.9
ARU Arti 131.81 48‖ *i*PKIKP PKPdf 21 18 46.6 +0.5
ARU *e* 21 21 19.9
ARU eSS SS 21 38 48.1 +7.4
ARU pmax pmax
comp=Z,5.0nm,0.9s
ARU MLR MLR
comp=Z,400nm,19.0s,MS5.1
ARU MLR MLR
comp=N,200nm,21.0s,MS4.9
ARU MLR MLR
comp=E,100nm,20.0s,MS4.9
ARU Arti 131.81 48 *e*PKP PKPdf 21 18 46.7 +0.7
ARU LR LR
comp=Z,469nm,21.0s,MS5.2
SVE Sverdlovsk 132.92 49‖ *e*PKIKP PKPdf 21 18 49.0 +0.8
ZRNK Zerenda 133.96 57 *e*PKIKP PKPdf 21 18 49.3 -0.9
GUMO Guam 135.84 167 PFAKE 21 19 10.0 +15
GUMO LR LR
comp=Z,678nm,20.0s,MS5.4
MKAR Makanchi Array 136.39 72 PKhKP 21 18 46.2
comp=Z,0.8nm,0.9s,SNR=5.4
MKAR PKP PKPdf 21 18 54.1 -0.7
comp=Z,8.1nm,1.1s,baz=270,slow=2.4,SNR=13
MKAR PKKP PKKP 21 28 32.8 +7.1
comp=Z,0.6nm,0.7s,baz=45,slow=3.4,SNR=5.1
KURK Kurchatov 137.08 65 *e*PKIKP PKPdf 21 18 56.4 +0.4
WMQ Urumqi 137.24 78 PKP PKPdf 21 18 57.3 +0.8
YKA Yellowknife Ar 137.66 316 PKhKP 21 18 47.4
comp=Z,0.2nm,0.4s,baz=119,slow=2.9,SNR=9.4
YKA PKP PKPdf 21 18 57.8 +1.1
comp=Z,38nm,1.1s,baz=130,slow=2.2,SNR=79
YKA PP PP 21 21 44.1 -3.4
comp=Z,5.1nm,0.9s,baz=122,slow=6.5,SNR=4.7
YKA SKP 21 22 28.0
comp=Z,5.6nm,1.0s,baz=126,slow=2.1,SNR=12
YKW3 Yellowknife Ar 137.70 317 *e*PKP PKPdf 21 18 57.3 +0.5
KBS Kingsbay 137.72 10 PFAKE 21 19 10.0 +13
KBS LR LR
comp=Z,327nm,20.0s,MS5.1
ENH Enshi 138.91 111 *e*PKP PKPdf 21 19 01.5 +1.6
ENH LR LR
comp=Z,311nm,21.0s,MS5.0
RES Resolute Bay 139.29 338 *e*PKP PKPdf 21 18 50.7 -8.7
TATO Taipei 140.03 130 PFAKE 21 19 10.0 +7.9
TATO LR LR
comp=Z,315nm,19.0s,MS5.1
GTA Gaotai 140.75 93 *e*PKP PKPdf 21 18 59.5 -3.4
XAN Xi'an 141.62 107 PKP PKPdf 21 19 05.4 +0.8
DLBC Dease Lake 141.75 305 *e*PKP PKPdf 21 18 59.1 -4.8
NVS Novosibirsk 141.79 62 *e*PKIKP PKPdf 21 19 07.3 +3.1
NVS *e* 21 22 10.2
NVS pmax pmax
comp=Z,14nm,1.0s
SIT Sitka 143.46 300 PFAKE 21 19 20.0 +15
SIT LR LR
comp=Z,570nm,21.0s,MS5.3
NJ2 Nanjing 144.95 121 *e*PKP PKPdf 21 19 11.4 +1.0
NJ2 LR LR
comp=N,130nm,22.3s,MS5.0
NJ2 LR LR
comp=E,260nm,18.3s,MS5.0
NJ2 LR LR
comp=Z,320nm,20.8s,MS5.1
SSE Sheshan 145.22 124 PKP PKPdf 21 19 11.9 +1.0
SSE PP PP 21 22 37.1 +3.1
SSE LR LR
comp=N,204nm,20.1s,MS5.1
SSE LR LR
comp=E,283nm,20.1s,MS5.1

SSE					LR	LR			
	comp=Z,440nm,21.0s,MS5.2								
BTO	**Baotou**	**147.10**	**101**	*e*PKP	PKPdf		21 19 17.9	+4.1	
INK	**Inuvik**	**147.29**	**319**	PKPbc	PKPdf		21 19 17.4	+4.2	
	comp=Z,55nm,0.9s,baz=102,slow=3.4,SNR=80								
INK	**Inuvik**	**147.29**	**319**	*e*PKPbc	PKPdf		21 19 16.6	+3.4	
TIA	**Tai'an**	**147.49**	**114**	PKP	PKPdf		21 19 17.7	+3.2	
HHC	**Hu-ho-hao-te**	**148.10**	**102**	⇑PKP	PKPdf		21 19 19.9	+4.6	
DAWY	**Dawson**	**148.26**	**310**	*e*PKPbc	PKPdf		21 19 18.9	+4.1	
MOY	**Mondy**	**149.11**	**77**	*e*PKP2	PKPab		21 19 22.8	-4.5	
ZAK	**Zakamensk**	**149.64**	**81**	*e*PKIKP	PKPdf		21 19 18.0	+0.5	
ZAK				*i*			21 19 23.6		
EYAK	**Cordova Ski Ar**	**149.86**	**302**	*e*PKPbc	PKPdf		21 19 24.0	+6.4	
SONM	**Songino Array**	**149.88**	**87**	PKPbc	PKPdf		21 19 24.7	+6.8	
	comp=Z,26nm,0.9s,baz=225,slow=1.7,SNR=51								
BJT	**Baijiatuan**	**149.91**	**108**	*e*PKPbc	PKPdf		21 19 24.2	+5.9	
BJT					LR	LR			
	comp=Z,325nm,20.0s,MS5.1								
BJI	**Beijing**	**149.93**	**108**	PKP	PKPdf		21 19 24.0	+5.7	
BJI					LR	LR			
	comp=N,204nm,19.5s,MS5.1								
BJI					LR	LR			
	comp=E,217nm,18.6s,MS5.1								
BJI					LR	LR			
	comp=Z,197nm,24.9s								
ULN	**Ulaanbaatar**	**150.25**	**88**	*e*PKPbc	PKPdf		21 19 24.5	+6.0	
ULN					LR	LR			
	comp=Z,312nm,21.0s,MS5.1								
TLY	**Talaya**	**150.53**	**79**	*c i*PKIKP	PKPdf		21 19 25.6	+6.8	
TLY				pmax	pmax				
	comp=Z,232μm,1.0s								
IRK	**Irkutsk**	**151.15**	**78**	*e*PKIKP	PKPdf		21 19 25.8	+6.1	
IRK				*e*			21 19 34.4		
SML	**Sawmill**	**151.45**	**303**	*e*PKPbc	PKPdf		21 19 27.3	+7.4	
ILAR	**Eielson Array**	**151.58**	**310**	PKPbc	PKPdf		21 19 28.6	+8.5	
	comp=Z,247nm,0.3s,baz=127,slow=3.0,SNR=1.2								
ILAR					PKPab	PKPab	21 19 36.9	-0.3	
	comp=Z,192nm,0.3s,baz=56,slow=5.2,SNR=1.5								
PMR	**Palmer**	**151.75**	**303**	*e*PKPbc	PKPdf		21 19 28.5	+8.1	
PMR					LR	LR			
	comp=Z,415nm,19.0s,MS5.3								
SLKM	**Skilak Lake**	**151.93**	**300**	*e*PKPbc	PKPdf		21 19 27.7	+7.0	
COLA	**College**	**152.00**	**310**	*e*PKPbc	PKPdf		21 19 28.4	+7.8	
COLA				*e*PKPab	PKPab		21 19 38.9	-0.2	
COLA					LR	LR			
	comp=Z,449nm,20.0s,MS5.3								
FIB	**Fire Island**	**152.11**	**302**	*e*PKPbc	PKPdf		21 19 30.1	+9.2	
KDAK	**Kodiak Island**	**152.15**	**294**	*e*PKPbc	PKPdf		21 19 29.0	+7.9	
KDAK					LR	LR			
	comp=Z,760nm,22.0s,MS5.5								
MCK	**McKinley**	**152.22**	**307**	*e*PKPbc	PKPdf		21 19 29.1	+8.1	
MCK					LR	LR			
	comp=Z,147nm,20.0s,MS4.8								
SPU	**Mount Spurr**	**152.99**	**301**	*e*PKPbc	PKPdf		21 19 30.2	+8.1	
INCN	**Inchon**	**153.01**	**125**	PFAKE			21 19 30.0	+7.1	
INCN					LR	LR			
	comp=Z,514nm,20.0s,MS5.3								
RSO	**Redoubt South**	**153.12**	**299**	*e*PKPbc	PKPdf		21 19 31.1	+8.8	
IMA	**Indian Mountai**	**154.58**	**312**	*e*PKPbc	PKPdf		21 19 34.8	+11	
MAJO	**Matsushiro**	**156.63**	**145**	PFAKE			21 19 40.0	+12	
MAJO					LR	LR			
	comp=Z,341nm,22.0s,MS5.1								
CN2	**Changchun**	**157.39**	**114**	*e*PKP	PKPdf		21 19 25.5	-3.1	
CN2					PP	PP	21 23 39.6	-3.1	
HIA	**Hailar**	**157.95**	**96**	PFAKE			21 19 40.0	+11	
HIA					LR	LR			
	comp=Z,405nm,21.0s,MS5.2								
BOD	**Bodaibo**	**158.49**	**71**	*e*PKIKP	PKPdf		21 19 28.7	-0.8	
MDJ	**Mudanjiang**	**160.01**	**118**	PKP	PKPdf		21 19 32.8	+1.1	
MDJ				PKS	PKS		21 23 06.3	+2.2	
MDJ				PP	PP		21 23 55.1	-1.3	
MDJ					LR	LR			
	comp=N,212nm,24.0s								
MDJ					LR	LR			
	comp=E,130nm,24.0s								
MDJ					LR	LR			
	comp=Z,249nm,24.0s								
MDJ	**Mudanjiang**	**160.01**	**118**	PFAKE			21 19 40.0	+8.3	
MDJ					LR	LR			
	comp=Z,423nm,21.0s								
TNA	**Tin City**	**160.45**	**311**	PFAKE			21 19 40.0	+8.6	
TNA					LR	LR			
	comp=Z,246nm,21.0s								
TIXI	**Tiksi**	**162.05**	**26**	PFAKE			21 19 40.0	+7.1	
TIXI					LR	LR			
	comp=Z,425nm,20.0s								
ADK	**Adak**	**162.52**	**265**	PFAKE			21 19 50.0	+16	
ADK					LR	LR			
	comp=Z,107nm,20.0s								
YAK	**Yakutsk**	**166.62**	**59**	PFAKE			21 19 50.0	+13	
YAK					LR	LR			
	comp=Z,358nm,21.0s								
YSS	**Yuzh-Sakhalins**	**167.46**	**140**	PFAKE			21 19 50.0	+12	
YSS					LR	LR			
	comp=Z,376nm,21.0s								
SMY	**Shemya**	**167.87**	**257**	PFAKE			21 19 50.0	+12	
SMY					LR	LR			
	comp=Z,912nm,19.0s								
BILL	**Bilibino**	**167.90**	**338**	*i* PKIKP	PKPdf		21 19 45.3	+7.2	
BILL				pmax	pmax				
	comp=Z,2.0nm,0.8s								
BILL				pmax	pmax				
	comp=Z,100nm,16.9s								
BILL				pmax	pmax				
	comp=Z,5μm,1.0s								
PET	**Petropavlovsk**	**175.15**	**211**	PFAKE			21 19 50.0	+7.9	
PET					LR	LR			
	comp=Z,407nm,19.0s								
MA2	**Magadan**	**176.94**	**38**	*e*PKIKP	PKPdf		21 19 50.6	+8.2	
MA2	**Magadan**	**176.94**	**38**	PFAKE			21 19 50.0	+7.6	
MA2					LR	LR			
	comp=Z,414nm,21.0s								

NEIC ***05*** *21:28:51.6, 17.77N×94.82W, h111km, MD4.1(MEX), After MEX.*
MEX ***05*** *21:28:53.2±1.7, 17.09N×94.89W, h128km±13km, MD4.1*
ISC 05 21:28:51.7±1.0, 17.09N±0.08×94.89W±0.04, h124km±10km, n11, σ0§97/19, Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CMIG	**Matias Romero**	**0.01**	**66**	*i*	P	**P**		**21 29 09.2**	**+0.5**
CMIG				*i*	S	**S**		**21 29 21.7**	**+0.3**
EVV	**El Vigia**	**1.43**	**342**	*e*	P	**P**		**21 29 18.3**	**-0.8**
OXX	**Oaxaca**	**1.75**	**270**	*i*	P	**P**		**21 29 23.7**	**+0.9**
OXX				*i*	S	**S**		**21 29 46.7**	**+0.4**
HUIG	**Huatulco**	**1.75**	**222**	*i*	P	**P**		**21 29 21.5**	**-1.4**
HUIG				*i*	S	**S**		**21 29 45.9**	**-0.5**
VHO	**Vista Hermosa**	**1.76**	**270**	*i*	P	**P**		**21 29 23.2**	**+0.3**
VHO				*i*	S	**S**		**21 29 46.9**	**+0.4**
SCX	**San Cristobal**	**2.19**	**99**	*i*	P	**P**		**21 29 29.7**	**+1.4**
SCX				*i*	S	**S**		**21 29 54.0**	**-2.0**
CCIG	**Comitan**	**2.76**	**106**	*i*	P	**P**		**21 29 37.1**	**+1.3**
CCIG				*i*	S	**S**		**21 30 09.3**	**+0.1**
POHV	**Veracruz**	**3.01**	**311**	*i*	P	**P**		**21 29 38.0**	**-1.1**
IISM	**Ciudad Serdan**	**3.03**	**309**	*i*	P	**P**		**21 29 43.0**	**+3.6**
PPM	**Popocatepetl**	**4.06**	**300**	*i*	P	**P**		**21 29 53.0**	**-0.3**
PPM				*e*	P			21 29 55.0	
PPM				*i*	S	**S**		**21 30 39.9**	**-0.5**
PPM	**Popocatepetl**	**4.06**	**300**	*i*	P	**P**		**21 29 48.6**	**-4.7**
PPM				*i*	S	**S**		**21 30 30.9**	**-9.4**

NEIC ***05*** *21:38:32.0±2.1, 5.04S×148.04E, h155km±19km, Error ellipse: s-maj=56.5km s-min=21.0km az=131.0*
IDC ***05*** *21:38:35.0±4.0, 5.61S×148.61E, h192km±42km, mb3.4/3, mb1 3.6/5, mb1mx3.3/13, Error ellipse: s-maj=82.8km s-min=27.4km az=136.0*
ISC 05 21:38:32.2±2.2, 5.2S±0.2×148.1E±0.2, h165km±15km, n8, σ0§78/10, mb3.6/3, New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
WAU	**Wau**	**2.50**	**213**	*e*	P	**P**		**21 39 14.9**	**+0.3**
WAU				*e*	S	**S**		**21 39 46.6**	**-0.7**
PMG	**Port Moresby**	**4.24**	**193**	P		**P**		**21 39 38.5**	**+1.8**
	1.0nm,0.3s,baz=254,slow=20,SNR=2.8								
PMG				S		**S**		**21 40 25.6**	**-0.9**
	4.5nm,0.3s,baz=21,slow=20,SNR=7.2								
WRAB	**Tennant Creek**	**19.81**	**221**	*e*	P	**P**		**21 42 51.7**	**-0.2**
WB2	**Warramunga Arr**	**19.82**	**221**	*e*	P	**P**		**21 42 51.9**	**-0.1**
WRA	**Warramunga Arr**	**19.82**	**221**	P		**P**		**21 42 52.0**	**-0.1**
	0.5nm,0.3s,baz=50,slow=11,SNR=18								
ASAR	**Alice Springs**	**22.86**	**215**	P		**P**		**21 43 22.9**	**+0.7**
	0.5nm,0.5s,mb3.2,baz=49,slow=9.4,SNR=7.7								
FITZ	**Fitzroy Crossi**	**25.40**	**238**	P		**P**		**21 43 46.6**	**+0.4**
	3.8nm,0.4s,mb4.3,baz=46,slow=7.6,SNR=24								
ILAR	**Eielson Array**	**84.36**	**23**	P		**P**		**21 50 45.6**	**-1.0**
	0.7nm,0.7s,mb3.5,baz=251,slow=5.0,SNR=5.3								

NEIC ***05*** *21:44:24.8±1.7, 51.49N×16.09E, h5km, ML2.9(VIE), ML2.3(BRG), Error ellipse: s-maj=17.6km s-min=7.5km az=209.0*
WAR ***05*** *21:44:25.6, 51.49N×16.09E, h1km, Location given by Rudna mine, origin time based upon KSP*
PRU ***05*** *21:44:25.8, 51.44N×16.09E*
ISC 05 21:44:23.3±0.8, 51.46N±0.04×16.08E±0.04, n14, σ1§16/30, 2C, Poland

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.63**	**168**	*i*	Pg	**Pg**		**21 44 37.6**	**+1.7**
KSP					eSg	**Sg**		**21 44 46.2**	**+1.9**
KSP	**Ksiaz**	**0.63**	**168**	*i*	PG	**Pg**		**21 44 37.6**	**+1.7**
KSP					eSG	**Sg**		**21 44 46.6**	**+2.3**
UPC	**Upice**	**0.95**	**183**	*e*	Pg	**Pg**		**21 44 43.7**	**+1.4**
DPC	**Dobruska-Polom**	**1.12**	**172**	*e*	Pg	**Pg**		**21 44 46.4**	**+0.8**
DPC					eSG	**Sg**		**21 45 01.1**	**+0.5**
PVCC	**Panska Ves**	**1.33**	**226**	*e*	PG	**Pg**		**21 44 50.9**	**+1.0**
BRG	**Berggiesshubel**	**1.47**	**247**	*e*	Pn	**Pn**		**21 44 52.1**	**+1.0**
BRG				*i*	Pg	**Pg**		**21 44 53.0**	**+0.4**
BRG				*i*	Sg	**Sg**		**21 45 13.1**	**+0.9**
PRU	**Pruhonice**	**1.77**	**214**	*i*	PG	**Pg**		**21 44 58.2**	**-0.4**
PRU				*i*	x	x		21 45 01.6	
PRU				*i*	x	x		21 45 14.9	
PRU					SG	**Sg**		**21 45 22.2**	**0.0**
	26nm,0.3s								
CLL	**Collm**	**1.94**	**267**	*e*	PN	**Pn**		**21 44 58.0**	**+0.2**
CLL				*i*	PG	**Pg**		**21 45 01.0**	**-0.9**
CLL				*i*	SG	**Sg**		**21 45 26.7**	**-1.0**
CLL				*i*				21 45 30.6	
OKC	**Ostrava-Krasne**	**2.09**	**140**	*e*	PG	**Pg**		**21 45 04.5**	**-0.5**
OKC					eSG	**Sg**		**21 45 31.7**	**-1.1**
OJC	**Ojcow**	**2.66**	**116**	*e*	Pg	**Pg**		**21 45 15.5**	**-0.9**
OJC					eSg	**Sg**		**21 45 50.6**	**-1.3**
OJC	**Ojcow**	**2.66**	**116**	*e*	PG	**Pg**		**21 45 15.0**	**-1.4**
OJC					eSG	**Sg**		**21 45 51.0**	**-0.9**
KHC	**Kasperske Hory**	**2.83**	**216**	*e*	PN	**Pn**		**21 45 11.3**	**+0.7**
KHC					ePG	**Pg**		**21 45 17.4**	**-2.4**
KHC					eSN	**Sn**		**21 45 45.0**	**-0.9**
KHC					eSG	**Sg**		**21 45 54.9**	**-2.6**
MOA	**Molln**	**3.80**	**199**	⇑ *i*	PN	**Pn**		**21 45 25.3**	**+0.9**
MOA				*i*	SG	**Sg**		**21 46 28.4**	**-1.4**
	3.3nm,0.3s								
ARSA	**Arzberg**	**4.23**	**185**	⇑ *i*	PN	**Pn**		**21 45 31.3**	**+0.9**
ARSA				*i*	SG	**Sg**		**21 46 39.8**	**-4.2**
	5.0nm,0.5s								

NEIC ***05*** *22:24:35.8, 36.83S×177.39E, h222km, After WEL.*
WEL ***05*** *22:24:35.9±0.4, 36.85S×177.40E, h222km±4km, ML4.1/3, Error ellipse: s-maj=6.1km s-min=4.9km az=90.0*
ISC 05 22:24:36.2±2.0, 36.9S±0.2×177.4E±0.3, h219km±11km, n28, σ0§35/14, 1D, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**1.36**	**152**	PN		**P**		**22 25 10.6**	**-0.2**
PUZ				SN		**S**		**22 25 37.6**	**0.0**
PUZ	**Puketiti**	**1.36**	**152**	*e*	P	**P**		**22 25 10.6**	**-0.2**
PUZ				S		**S**		**22 25 37.6**	**0.0**
URZ	**Urewera**	**1.40**	**191**	PN		**P**		**22 25 10.8**	**-0.4**
URZ				SN		**S**		**22 25 38.0**	**-0.2**
URZ	**Urewera**	**1.40**	**191**	P		**P**		**22 25 10.9**	**-0.3**
MWZ	**Matawai**	**1.46**	**177**	PN		**P**		**22 25 11.9**	**+0.2**
MWZ				SN		**S**		**22 25 39.8**	**+0.8**
MWZ	**Matawai**	**1.46**	**177**	P		**P**		**22 25 11.9**	**+0.3**
KNZ	**Kokohu**	**2.15**	**175**	PN		**P**		**22 25 17.9**	**-0.1**
KNZ				SN		**S**		**22 25 49.9**	**-0.4**
KNZ	**Kokohu**	**2.15**	**175**	*e*	P	**P**		**22 25 18.0**	**0.0**
NGZ	**Ngauruhoe**	**2.72**	**212**	PN		Px		22 25 23.5	
NGZ	**Ngauruhoe**	**2.72**	**212**	P		Px		22 25 24.1	
CNZ	**Chateau**	**2.76**	**212**	PN		Px		22 25 25.0	
FWVZ	**Far West T-bar**	**2.80**	**212**	PN		Px		22 25 24.9	
FWVZ	**Far West T-bar**	**2.80**	**212**	P		Px		22 25 24.9	
PWZ	**Pawanui**	**3.18**	**188**	PN		Px		22 25 28.3	
PWZ				SN		Sx		22 26 09.6	
PWZ	**Pawanui**	**3.18**	**188**	*e*	P	Px		22 25 28.5	
PWZ				S		Sx		22 26 29.0	
TSZ	**Takapari Road**	**3.38**	**200**	PN		Px		22 25 30.4	
TSZ	**Takapari Road**	**3.38**	**200**	P		Px		22 25 30.4	
BFZ	**Birch Farm**	**3.91**	**193**	PN		Px		22 25 36.6	
MRZ	**Mangatainoka R**	**4.05**	**201**	PN		Px		22 25 37.6	
MTW	**Mount Morrison**	**4.53**	**199**	PN		Px		22 25 42.8	
CAW	**Cannon Point**	**4.61**	**203**	PN		Px		22 25 43.8	
MSWZ	**Moikau Station**	**4.84**	**200**	PN		Px		22 25 46.2	
TUWZ	**Tuamarina**	**5.30**	**210**	PN		Px		22 25 51.8	
NNZ	**Nelson**	**5.36**	**215**	PN		Px		22 25 52.5	
BSWZ	**Blackbirch Sta**	**5.56**	**209**	PN		Px		22 25 55.6	
THZ	**Tophouse**	**6.01**	**214**	PN		Px		22 26 01.2	
KHZ	**Kahutara**	**6.30**	**207**	PN		Px		22 26 04.4	
KHZ				SN		Sx		22 27 16.2	
SYO	**Syowa Base**	**69.93**	**195**	⇓	P	**P**		**22 35 24.9**	**+0.2**

IDC 05 22:25:02.6±2.3, 6.07S×151.41E, mb3.4/3, mb1 3.7/3, mb1mx3.5/10, Error ellipse: s-maj=150.0km s-min=31.4km az=127.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**21.58**	**229**	P		P		22 29 53.3	-2.8
	0.9nm,0.7s,baz=55,slow=11,SNR=3.3								
ASAR	**Alice Springs**	**24.29**	**222**	P		P		22 30 22.9	0.0
	0.3nm,0.4s,baz=56,slow=9.7,SNR=5.5								
ILAR	**Eielson Array**	**83.84**	**22**	P		P		22 37 33.6	-1.4
	0.3nm,0.5s,baz=250,slow=5.5,SNR=4.1								

RSPR ***05*** *22:55:19.1, 19.46N×64.21W, h25km±31km, M3.8*
NEIC ***05*** *22:55:19.1, 19.46N×64.21W, h25km, MD3.8(RSPR), After RSPR.*
ISC 05 22:55:18.8±1.7, 19.4N±0.1×64.4W±0.1, h25km, n14, σ0§51/19, 9C, Virgin Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
MTP	**Monte Pirata**	**1.68**	**220**	⇑ *e*	P	**Pn**		**22 55 47.3**	**+0.3**
MTP					S	**Sn**		**22 56 08.6**	**+0.6**
CBYP	**Canovanas**	**1.75**	**231**		S	**Sn**		**22 56 09.7**	**-0.2**
HUMP	**Col San Antoni**	**1.83**	**228**	⇑ *e*	P	**Pn**		**22 55 49.5**	**+0.2**
HUMP					S	**Sn**		**22 56 12.5**	**+0.6**
CPD	**Cerro la Pandu**	**1.95**	**227**		S	**Sn**		**22 56 14.2**	**-0.7**
CSB	**Colonia Sabana**	**1.97**	**236**	⇑ *e*	P	**Pn**		**22 55 50.9**	**-0.3**
CSB					S	**Sn**		**22 56 15.4**	**0.0**
SJG	**San Juan**	**2.07**	**232**	⇑ *e*	P	**Pn**		**22 55 52.6**	**-0.1**
SJG					S	**Sn**		**22 56 17.4**	**-0.5**
CELP	**Cerrillos**	**2.42**	**238**	⇑ *e*	P	**Pn**		**22 55 57.7**	**-0.1**
AOPR	**Arecibo Observ**	**2.43**	**245**	⇑ *e*	P	**Pn**		**22 55 58.7**	**+0.8**
AOPR	**Arecibo Observ**	**2.43**	**245**		S	**Sn**		**22 56 28.1**	**+1.0**
OBIP	**Obispado Ponce**	**2.46**	**237**	⇑ *e*	P	**Pn**		**22 55 58.1**	**-0.2**
OBIP	**Obispado Ponce**	**2.46**	**237**		S	**Sn**		**22 56 27.4**	**-0.4**
PORP	**Portuguez**	**2.48**	**236**	⇑ *e*	P	**Pn**		**22 55 58.8**	**+0.2**
LSP	**Las Mesas**	**2.79**	**245**		S	**Sn**		**22 56 36.6**	**+0.3**
MGP	**Maguayo**	**2.87**	**242**	⇑ *e*	P	**Pn**		**22 56 03.3**	**-0.9**
MGP					S	**Sn**		**22 56 37.8**	**-0.5**

IDC ***05*** *23:12:16.9±1.1, 19.38N×143.39E, mb3.8/6, mb1 4.0/6, mb1mx3.7/19, Error ellipse: s-maj=48.5km s-min=29.6km az=92.0*
ISC 05 23:12:20.0±1.1, 19.3N±0.2×143.5E±0.3, h33km, n6, σ1§09/6, mb3.7/6, Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**50.93**	**182**	P		**P**		**23 21 20.4**	**0.0**
	1.6nm,0.5s,mb4.2,baz=339,slow=19,SNR=6.1								
MKAR	**Makanchi Array**	**56.51**	**314**	P		**P**		**23 22 02.0**	**+0.6**
	0.2nm,0.6s,mb3.4,baz=76,slow=5.9,SNR=3.4								
ILAR	**Eielson Array**	**64.04**	**27**	P		**P**		**23 22 51.6**	**-0.8**
	0.4nm,0.8s,mb3.5,baz=249,slow=5.8,SNR=4.9								
YKA	**Yellowknife Ar**	**78.43**	**28**	P		**P**		**23 24 20.2**	**+1.4**
	0.5nm,0.6s,mb3.6,baz=290,slow=5.8,SNR=11								
ARCES	**ARCESS Array B**	**81.25**	**342**	P		**P**		**23 24 33.3**	**-0.6**
	0.5nm,0.6s,mb3.7,baz=63,slow=5.4,SNR=7.3								
FINES	**FINESS Array B**	**85.43**	**335**	P		**P**		**23 24 54.6**	**-0.5**
	0.5nm,0.4s,mb4.0,baz=66,slow=4.5,SNR=9.4								

IDC ***05*** *23:27:21.4±1.3, 17.35N×147.13E, mb3.7/5, mb1 3.9/5, mb1mx3.7/17, MS3.5/1, Ms1 3.5/1, ms1mx2.8/23, Error ellipse: s-maj=56.0km s-min=23.9km az=96.0*
ISC 05 23:27:25.0±1.2, 17.3N±0.2×147.0E±0.4, h33km, n5, σ0§94/5, mb3.7/5, MS3.5/1, Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**39.07**	**199**	P		**P**		**23 34 50.1**	**-0.7**
	1.2nm,0.5s,mb3.9,baz=24,slow=9.3,SNR=9.1								
ASAR	**Alice Springs**	**42.70**	**198**	P		**P**		**23 35 21.6**	**+0.7**
	0.4nm,0.7s,mb3.3,baz=20,slow=13,SNR=3.7								
ASAR				LR		LR		23 52 41.5	
	comp=Z,64nm,20.6s,MS3.5,baz=293,slow=36								
MKAR	**Makanchi Array**	**60.31**	**314**	P		**P**		**23 37 32.4**	**-0.5**
	0.7nm,0.7s,mb3.8,baz=89,slow=7.8,SNR=12								
YKA	**Yellowknife Ar**	**78.61**	**28**	P		**P**		**23 39 24.5**	**-0.4**
	0.2nm,0.6s,mb3.2,baz=287,slow=5.3,SNR=5.6								
FINES	**FINESS Array B**	**88.65**	**336**	P		**P**		**23 40 16.7**	**+0.9**
	1.4nm,1.0s,mb4.2,baz=63,slow=6.2,SNR=3.6								

NEIC ***05*** *23:31:59.7, 35.53N×23.58E, h5km, MD3.5(ATH), After ATH.*
ATH 05 23:31:59.7, 35.53N×23.58E, h5km, MD3.5/5, Crete

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
VAM	**Vamos**	**0.52**	**103**	*e*	PB	Pb		23 32 08.6	-2.3
KYTH	**Kithira**	**0.87**	**330**	*e*	PB	Pb		23 32 15.0	-1.9
VLI	**Velial**	**1.29**	**336**	*e*	PB	Pb		23 32 25.1	+0.9
KRIS	**Kristallenia**	**1.61**	**102**	*e*	P	Pn		23 32 27.7	-1.3
NPS	**Neapolis**	**1.68**	**99**	*e*	PB	Pb		23 32 33.0	+2.2
ITM	**Ithomi**	**2.12**	**321**	*e*	PG	Pg		23 32 40.0	-2.0

IDC ***05*** *23:35:55.7±2.0, 25.39N×142.24E, mb3.8/3, mb1 4.0/3, mb1mx3.5/20, Error ellipse: s-maj=87.6km s-min=21.1km az=90.0*
ISC 05 23:35:56.1±1.7, 25.3N±0.1×142.0E±0.5, h10km, n4, σ1§14/5, mb3.8/3, Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**1.82**	**5**	Pn		**Pn**		**23 36 27.0**	**-0.8**
	34nm,0.3s,baz=331,slow=22,SNR=42								
CBIJ				Sn		**Sn**		**23 36 51.8**	**+0.8**
	44nm,0.3s,baz=102,slow=24,SNR=11								
WRA	**Warramunga Arr**	**45.56**	**190**	P		**P**		**23 44 18.9**	**+0.7**
	1.1nm,0.3s,mb4.2,baz=9.9,slow=8.6,SNR=9.5								
MKAR	**Makanchi Array**	**51.51**	**311**	P		**P**		**23 45 04.5**	**+0.4**
	0.4nm,0.7s,mb3.5,baz=97,slow=8.0,SNR=6.4								
FINES	**FINESS Array B**	**79.50**	**334**	P		**P**		**23 48 03.0**	**-1.2**
	0.3nm,0.3s,mb3.6,baz=66,slow=6.1,SNR=10								

JMA ***06*** *00:12:52.1±0.1, 26.04N×126.83E, h55km±2km, M3.1*
IDC ***06*** *00:12:54.7±5.9, 26.29N×126.85E, h57km±37km, mb3.4/5, mb1 3.5/5, mb1mx3.2/22, Error ellipse: s-maj=117.0km s-min=30.1km az=172.0*
ISC 06 00:12:51.7±0.4, 26.07N±0.07×126.82E±0.06, h58km±5km, n20, σ0§87/30, mb3.6/5, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JKE	**Kume jima 2**	**0.26**	**353**	P		**P**		**00 13 01.5**	**+0.2**
JKE				S		**S**		**00 13 08.7**	**+0.3**
JAGN	**Aguni-jima**	**0.64**	**36**	P		**P**		**00 13 05.6**	**+0.4**
JAGN				S		**S**		**00 13 15.6**	**+0.4**
NAH1	**Naha**	**0.79**	**80**	P		**P**		**00 13 07.2**	**+0.1**
NAH1				eS		**S**		**00 13 17.7**	**-0.9**
JJT2	**Tamagusuku 2**	**0.84**	**85**	P		**P**		**00 13 08.0**	**+0.3**
JIH	**Iheya**	**1.41**	**47**	P		**P**		**00 13 16.1**	**+0.4**
JIH				eS		**S**		**00 13 32.7**	**-0.7**
JOW	**Kunigami**	**1.51**	**59**	P		**P**		**00 13 17.9**	**+0.8**
	13nm,0.3s,baz=184,slow=11,SNR=74								
JOW				S		**S**		**00 13 35.2**	**-0.6**
	23nm,0.3s,baz=128,slow=29,SNR=18								
JOW	**Kunigami**	**1.51**	**59**	P		**P**		**00 13 17.9**	**+0.8**
JOW				eS		**S**		**00 13 36.6**	**+0.8**
JOGS	**Gusukube**	**1.82**	**225**	eS		**S**		**00 13 44.7**

NEIC Felt at Oaxaca.
*MEX **06** 00:19:50.1±0.9, 17.40N×95.71W, h69km±11km, MD4.4*
*BJI **06** 00:19:52.6, 17.58N×95.50W, h55km, mB4.6, Ms4.6, Msz4.2*
*IDC **06** 00:19:55.0±4.5, 17.97N×95.29W, h76km±8km, mb3.7/7, mb1 4.1/9, mb1mx3.8/23, Error ellipse: s-maj=90.2km s-min=18.5km az=3.0*

ISC 06 00:19:48.2±0.3, 17.37N±0.04×95.69W±0.02, h66km±5km, h75km±1.7km:pP-P, n60, σ1§27/87, mb3.9/9, 1C, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID	Time	Res
				Op ISC	h m s	ISC
CMIG	**Matias Romero**	**0.82**	**109**	*i* P **P**	**00 20 05.0**	**+0.5**
CMIG				*i* S **S**	**00 20 16.9**	**+0.4**
OXX	**Oaxaca**	**1.02**	**254**	*i* P **P**	**00 20 07.9**	**+0.8**
VHO	**Vista Hermosa**	**1.04**	**254**	*i* P **P**	**00 20 07.8**	**+0.5**
VHO				*i* S **S**	**00 20 21.2**	**-0.2**
EVV	**El Vigia**	**1.13**	**17⇑**	*i*P **P**	**00 20 08.0**	**-0.5**
TUIG	**Tuzandepetl**	**1.38**	**61**	*i* P **P**	**00 20 12.7**	**+0.6**
TUIG				*i* S **S**	**00 20 29.3**	**-0.3**
HUIG	**Huatulco**	**1.64**	**194**	*i* P **P**	**00 20 15.3**	**-0.2**
HUIG				*i* S **S**	**00 20 36.6**	**+1.0**
POHV	**Veracruz**	**2.27**	**319**	*i* P **P**	**00 20 23.4**	**-0.8**
IISM	**Ciudad Serdan**	**2.27**	**315**	*i* P **P**	**00 20 23.0**	**-1.3**
PNIG	**Pinotepa**	**2.52**	**248**	*i* P **P**	**00 20 26.8**	**-1.0**
PNIG				*i* S **S**	**00 20 55.7**	**-1.8**
SCX	**San Cristobal**	**2.99**	**102**	*e*P **P**	**00 20 39.5**	**+5.0**
PPM	**Popocatepetl**	**3.26**	**302**	*e*P **P**	**00 20 39.5**	**+1.3**
PPM				*i* P	00 20 39.7	
PPM				*e*P	00 20 39.9	
PPM				*i* S **S**	**00 21 16.4**	**+0.4**
PPM				*i* S **S**	**00 21 17.7**	**+1.7**
PPM	**Popocatepetl**	**3.26**	**302**	*e*P **P**	**00 20 39.5**	**+1.3**
PPM				*i* S **S**	**00 21 16.4**	**+0.4**
PPM				*i* S **S**	**00 21 17.7**	**+1.7**
YAIG	**Yautepec**	**3.54**	**295**	*e*P **P**	**00 20 42.5**	**+0.5**
CCIG	**Comitan**	**3.57**	**107**	*e*P **P**	**00 20 43.4**	**+0.8**
CCIG				*i* S **S**	**00 21 21.7**	**-2.1**
CHVM	**Chichinautzin**	**3.70**	**298**	*i* P **P**	**00 20 45.4**	**+1.1**
CHVM				*i* S **S**	**00 21 28.3**	**+1.2**
PLIG	**Platanillo**	**3.77**	**286**	*e*P **P**	**00 20 45.8**	**+0.5**
PLIG				*i* S **S**	**00 21 25.0**	**-3.7**
IIZ	**Mezontepec**	**3.83**	**299**	*i* P **P**	**00 20 46.5**	**+0.3**
IIZ				*i* S **S**	**00 21 24.4**	**-5.8**
UNM	**Universidad Na**	**3.84**	**301**	*e*P **P**	**00 20 47.0**	**+0.7**
PTVM	**Pico Tres Padr**	**3.93**	**305**	*i* P **P**	**00 20 49.6**	**+2.0**
PTVM				*i* S **S**	**00 21 30.8**	**-1.9**
SZVM	**Salazar**	**4.01**	**300**	*i* P **P**	**00 20 47.4**	**-1.3**
SZVM				*i* S **S**	**00 21 33.1**	**-1.6**
ACX	**Acapulco**	**4.07**	**264**	*i* P **P**	**00 20 46.0**	**-3.5**
ACX				*i* S **S**	**00 21 35.6**	**-0.7**
CAIG	**El Cayaco**	**4.38**	**267**	*e*P **P**	**00 20 52.0**	**-1.9**
ZIIG	**Zihuatanejo**	**5.51**	**273**	*i* S **S**	**00 22 08.6**	**-3.7**
MOIG	**Morelia**	**5.70**	**295**	*i* P **P**	**00 21 12.5**	**+0.4**
MOIG				*i* S **S**	**00 22 12.4**	**-4.5**
MOIG	**Morelia**	**5.70**	**295**	*i* P **P**	**00 21 13.5**	**+1.4**
MOIG				*i* S **S**	**00 22 17.6**	**+0.6**
TEIG	**Tepich**	**7.58**	**67**	P **P**	**00 21 34.7**	**-3.5**
	34nm,0.3s,baz=176,slow=12,SNR=34					
TEIG				S **S**	**00 22 53.7**	**-10**
	74nm,0.3s,baz=349,slow=23,SNR=21					
TEIG	**Tepich**	**7.58**	**67**	*e*Pn **P**	**00 21 34.4**	**-3.9**
TEIG				*e*Sn **S**	**00 22 48.3**	**-15**
SFJM	**Santa Fe**	**7.61**	**295**	*i* P **P**	**00 21 40.0**	**+1.2**
COLM	**Colima**	**7.81**	**285**	*i* S **S**	**00 23 07.9**	**-1.2**
JCT	**Junction City**	**13.58**	**345**	*e*P **P**	**00 23 00.9**	**+1.6**
TXAR	**Lajitas Array**	**13.97**	**330**	P **P**	**00 23 05.9**	**+1.4**
	0.3nm,0.3s,baz=142,slow=15,SNR=8.2					
MNTX	**Cornudas Mount**	**16.76**	**330**	*e*P **P**	**00 23 41.9**	**+1.9**
	0.3nm,0.7s					
MIAR	**Mount Ida**	**17.21**	**6**	*e*P **P**	**00 23 46.8**	**+1.1**
	47nm,0.4s					
MIAR				*e*S **S**	**00 26 36.8**	**-16**
LRAL	**Lakeview Retre**	**17.46**	**25**	*e*P **P**	**00 23 45.5**	**-3.3**
	8.6nm,0.4s					
LRAL				*e*S **S**	**00 26 39.8**	**-19**
WMOK	**Wichita Mounta**	**17.52**	**352**	*e*P **P**	**00 23 49.3**	**-0.3**
	12nm,0.6s					
WMOK				*e*S **S**	**00 26 48.6**	**-11**
UALR	**University of**	**17.59**	**9**	*e*P **P**	**00 23 50.3**	**-0.2**
	17nm,0.5s					
OXF	**Oxford**	**17.98**	**17**	*e*P **P**	**00 23 55.8**	**+0.6**
	28nm,0.5s					
OXF				*e*S **S**	**00 26 56.0**	**-14**
PLAL	**Pickwick Lake**	**18.81**	**20**	*e*P **P**	**00 24 04.2**	**-0.9**
	6.5nm,0.6s					
PLAL				*e*S **S**	**00 27 16.6**	**-12**
SWET	**Sewanee**	**19.79**	**24**	P **P**	**00 24 14.4**	**-1.4**
SWET				*e*S **S**	**00 27 41.3**	**-8.6**
WVT	**Waverly**	**19.95**	**19**	*e*P **P**	**00 24 15.2**	**-2.2**
	13nm,0.7s					
WVT				*e*S **S**	**00 27 48.9**	**-4.2**
ANMO	**Albuquerque**	**19.97**	**333**	*e*P **P**	**00 24 18.1**	**+0.4**
	11nm,0.6s					
TUC	**Tucson**	**20.18**	**320**	*e*P **P**	**00 24 20.8**	**+0.9**
	21nm,1.3s					
TUC				*e*PcP PcP	00 28 39.9	+7.8
CPCT	**Cooper Cave**	**20.57**	**27**	*e*P **P**	**00 24 29.9**	**+1.0**
CPCT				*e*S **S**	**00 28 03.1**	**-2.1**
CCM	**Cathedral Cave**	**20.98**	**10**	*e*P **P**	**00 24 24.9**	**-3.1**
	9.6nm,0.7s					
CCM				*e*S **S**	**00 27 56.4**	**-16**
SIUC	**Southern Illin**	**21.05**	**14**	P **P**	**00 24 28.0**	**-0.8**
	28nm,0.9s,mb4.6					
KSU1	**Kansas State U**	**21.67**	**358**	P **P**	**00 24 35.6**	**+0.7**
NEN	**Nelson**	**24.92**	**321**	*e*P **P**	**00 25 08.5**	**+1.8**
MSU	**Marysvale**	**25.53**	**329**	*e*P **P**	**00 25 16.6**	**+4.2**
PDAR	**Pinedale Array**	**27.94**	**338**	P **P**	**00 25 35.0**	**+0.6**
	0.5nm,0.9s,mb3.0,baz=140,slow=14,SNR=3.6					
NVAR	**Mina Array Bea**	**28.83**	**321**	P **P**	**00 25 44.3**	**+1.8**
	1.8nm,0.8s,mb3.7,baz=153,slow=6.0,SNR=4.1					
NVAR				pP pP	00 26 02.6	+4.2
	3.8nm,0.8s,baz=129,slow=10,SNR=6.9					
YBH	**Yreka Blue Hor**	**33.54**	**322**	P **P**	**00 26 23.1**	**-0.6**
	0.9nm,0.6s,mb3.8,baz=128,slow=5.8,SNR=3.4					
LPAZ	**La Paz**	**43.08**	**139**	*e*P **P**	**00 27 49.8**	**+6.1**
	1.0nm,0.9s,mb3.5					
YKA	**Yellowknife Ar**	**46.98**	**348**	P **P**	**00 28 14.0**	**-0.2**
	1.2nm,0.8s,mb3.7,baz=153,slow=7.2,SNR=23					
YKA				pP pP	00 28 32.5	+1.5
	0.9nm,0.7s,baz=152,slow=7.4,SNR=7.2					
YKA	**Yellowknife Ar**	**46.98**	**348**	P **P**	**00 28 14.0**	**-0.2**
YKA				pP pP	00 28 32.5	+1.5
INK	**Inuvik**	**56.23**	**344**	P **P**	**00 29 23.8**	**+0.1**
	4.7nm,0.6s,mb4.7,baz=134,slow=7.1,SNR=30					
INK				pP pP	00 29 43.0	+2.0
	2.3nm,0.7s,baz=128,slow=7.3,SNR=5.4					
INK	**Inuvik**	**56.23**	**344**	*e*P **P**	**00 29 23.6**	**-0.1**
	5.4nm,0.7s,mb4.7					
INK				*e* pP	00 29 42.2	+1.2
ILAR	**Eielson Array**	**58.36**	**337**	P **P**	**00 29 39.0**	**+0.3**
	1.3nm,0.6s,mb4.1,baz=132,slow=4.0,SNR=14					
ARCES	**ARCESS Array B**	**84.05**	**18**	P **P**	**00 32 13.6**	**+1.3**
	1.7nm,0.9s,mb3.9,baz=297,slow=5.4,SNR=7.5					
WMQ	**Urumqi**	**119.03**	**357**	*e*PKP PKPdf	00 38 33.3	+3.7
NJ2	**Nanjing**	**120.75**	**326**	*e*PKP PKPdf	00 38 40.7	+7.4

*THR **06** 00:43:44.9±0.5, 34.74N×47.35E, MD4.1*
*SNSN **06** 00:43:49.8, 33.79N×47.38E*
*IDC **06** 00:43:51.0±4.0, 34.67N×46.99E, h70km±38km, mb3.4/8, mb1 3.6/12, mb1mx3.5/21, ML4.2/3, MS2.9/1, Ms1 2.9/1, ms1mx2.4/16, Error ellipse: s-maj=34.5km s-min=20.6km az=153.0*
*NEIC **06** 00:43:52.2±3.2, 34.76N×47.01E, h81km±23km, mb4.0/1, Error ellipse: s-maj=33.6km s-min=14.9km az=156.0*

ISC 06 00:43:42.7±2.1, 34.47N±0.05×47.14E±0.05, h26km±19km, n30, σ1§36/35, mb3.6/8, Western Iran

Code	Station Name	Δ°	AZ°	Phase ID	Time	Res
				Op ISC	h m s	ISC
DAMV	**Damavand**	**4.13**	**72**	*e*PN **Pn**	**00 44 44.2**	**-1.5**
DAMV				SN **Sn**	**00 45 28.2**	**-5.6**
NASN	**Na'in**	**5.01**	**108**	*e*PN **Pn**	**00 44 58.5**	**+0.3**
NASN				SN **Sn**	**00 45 53.8**	**-2.2**
TVAN	**Van**	**5.05**	**324**	*i* P **Pn**	**00 45 06.4**	**+7.7**
MAKU	**Maku**	**5.26**	**339**	*e*PN **Pn**	**00 45 00.8**	**-0.9**
MAKU				SN **Sn**	**00 45 56.7**	**-5.6**
BEST	**Besiri**	**5.85**	**307**	*i* P **Pn**	**00 45 08.9**	**-1.1**
GNI	**Garni**	**5.98**	**342**	*e*Pn **Pn**	**00 45 14.1**	**+2.2**
GNI				*e*	00 45 28.7	
ELZG	**Elazig**	**7.70**	**304**	*i* P **Pn**	**00 45 34.1**	**-2.0**
GZT	**Gaziantep**	**8.29**	**293**	*i* P **P**	**00 45 43.8**	**-0.4**
HILS	**Ha'il**	**8.42**	**214**	P **P**	**00 45 48.0**	**+1.9**
ASF	**Jabal al Asfar**	**8.87**	**258**	P **P**	**00 45 55.6**	**+3.2**
	0.8nm,0.3s,baz=200,slow=4.7,SNR=7.4					
ASF				S **Sn**	**00 47 31.5**	**-1.0**
	0.4nm,0.3s,baz=297,slow=17,SNR=1.8					
ASF				LR LR	00 49 45.0	
	comp=Z,70nm,20.1s,baz=314,slow=40					
COBT	**Iskenderun**	**9.11**	**286**	*i* P **P**	**00 45 54.4**	**-1.2**
ARSS	**Ar Rass**	**9.20**	**203**	P **P**	**00 45 56.7**	**-0.2**
ARSS				S **Sn**	**00 47 36.8**	**-3.8**
HASS	**Wahat al Ahsa'**	**9.51**	**166**	P **P**	**00 46 03.2**	**+2.1**
MZLS	**Mizel**	**10.54**	**190**	P **P**	**00 46 14.5**	**-0.8**
AFFS	**'Afif**	**11.11**	**200**	P **P**	**00 46 21.9**	**-1.1**
BRTR	**Keskin Array B**	**11.99**	**300**	P **P**	**00 46 36.9**	**+2.0**
	0.1nm,0.3s,baz=128,slow=14,SNR=7.6					
IDI	**Anoyia**	**18.28**	**279**	P **P**	**00 47 57.1**	**+0.8**
	0.4nm,0.3s,baz=319,slow=6.4,SNR=3.3					
MLR	**Muntele Rosu**	**19.56**	**311**	P **P**	**00 48 12.3**	**+1.0**
	0.4nm,0.3s,baz=3.0,slow=3.2,SNR=13					
MLR	**Muntele Rosu**	**19.56**	**311**	P **P**	**00 48 12.3**	**+1.0**
AKASG	**Malin Array Be**	**20.82**	**327**	P **P**	**00 48 24.2**	**-0.3**
	2.8nm,0.8s,baz=134,slow=12,SNR=14					
ARU	**Arti**	**23.32**	**16**	*e*P **P**	**00 48 48.5**	**-0.7**
	8.2nm,1.2s,mb4.0					
ZRNK	**Zerenda**	**24.15**	**33**	*e*P **P**	**00 48 59.3**	**+1.9**
ZRNK				*e*	00 49 16.8	
BVAR	**Borovoye Array**	**24.83**	**35**	P **P**	**00 49 05.2**	**+1.2**
	0.4nm,0.6s,mb3.2,baz=233,slow=7.2,SNR=4.3					
GERES	**GERESS Array B**	**28.55**	**310**	P **P**	**00 49 36.9**	**-1.3**
	0.4nm,0.6s,mb3.3,baz=98,slow=9.4,SNR=4.0					
MKAR	**Makanchi Array**	**29.13**	**54**	P **P**	**00 49 44.9**	**+1.4**
	0.4nm,0.7s,mb3.3,baz=254,slow=7.7,SNR=4.6					
FINES	**FINESS Array B**	**30.17**	**340**	P **P**	**00 49 52.4**	**-0.2**
	1.6nm,1.0s,mb3.7,baz=158,slow=20,SNR=3.4					
NOA	**NORSAR Array B**	**35.14**	**330**	P **P**	**00 50 33.8**	**-2.0**
	0.6nm,0.9s,mb3.5,baz=117,slow=9.7,SNR=3.2					
ARCES	**ARCESS Array B**	**37.11**	**348**	P **P**	**00 50 53.0**	**+0.6**
	0.5nm,0.7s,mb3.5,baz=130,slow=9.5,SNR=4.0					
DBIC	**Dimbokro**	**55.23**	**252**	P **P**	**00 53 17.4**	**+1.4**
	3.8nm,0.9s,mb4.4,baz=0.7,slow=9.6,SNR=3.7					
DBIC	**Dimbokro**	**55.23**	**252**	P **P**	**00 53 17.4**	**+1.4**

IDC 06 00:55:58.9±1.5, 2.56N×128.00E, mb3.8/5, mb1 4.0/5, mb1mx3.8/15, Error ellipse: s-maj=135.0km s-min=19.1km az=67.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID	Time	Res
				Op ISC	h m s	ISC
WRA	**Warramunga Arr**	**23.21**	**165**	P **P**	**01 01 08.2**	**-0.5**
	1.7nm,0.3s,baz=344,slow=10,SNR=8.8					
WB2	**Warramunga Arr**	**23.22**	**165**	*e*P P	**01 01 09.0**	**+0.3**
ASAR	**Alice Springs**	**26.70**	**168**	P P	**01 01 40.0**	**-1.8**
	0.3nm,0.5s,baz=1.6,slow=8.5,SNR=5.4					
STKA	**Stephens Creek**	**36.60**	**160**	P P	**01 03 05.9**	**-2.9**
	1.6nm,0.5s,baz=336,slow=10.0,SNR=6.6					
MKAR	**Makanchi Array**	**59.23**	**325**	P P	**01 06 02.8**	**-1.6**
	0.5nm,0.4s,baz=112,slow=8.1,SNR=11					
BVAR	**Borovoye Array**	**68.98**	**327**	P P	**01 07 05.8**	**-2.4**
	0.4nm,0.4s,baz=108,slow=9.1,SNR=3.7					

*NEIC **06** 00:58:45.9±1.2, 32.51N×57.10E, h35km, Error ellipse: s-maj=27.3km s-min=13.6km az=188.0*
*THR **06** 00:58:48.6±1.9, 33.63N×57.01E, h17km±14km, MD3.7*
*IDC **06** 00:58:51.3±7.2, 32.59N×57.09E, h87km±66km, mb3.5/9, mb1 3.7/9, mb1mx3.5/20, Error ellipse: s-maj=38.9km s-min=18.9km az=13.0*

ISC 06 00:58:43.8±0.7, 32.5N±0.1×57.13E±0.06, h33km, n20, σ0§89/22, mb4.0/11, Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase ID	Time	Res
				Op ISC	h m s	ISC
NASN	**Na'in**	**3.66**	**277**	*e*PN **Pn**	**00 59 41.9**	**+2.2**
	baz=72,slow=5.9					
NASN				SN **Sn**	**01 00 22.4**	**+0.1**
NASN				LG	01 00 40.7	
DAMV	**Damavand**	**5.33**	**308**	*e*PN **Pn**	**00 59 57.8**	**-5.5**
DAMV				SN **Sn**	**01 00 46.6**	**-18**
DAMV				LG	01 01 10.6	
MAKU	**Maku**	**12.21**	**308**	*e*PN **P**	**01 01 29.6**	**-8.7**
BRTR	**Keskin Array B**	**20.29**	**298**	P **P**	**01 03 18.8**	**-0.6**
	3.4nm,0.7s,baz=108,slow=13,SNR=26					
ZRNK	**Zerenda**	**22.21**	**19**	*e*P **P**	**01 03 32.5**	**-6.2**
BRVK	**Borovoye**	**22.67**	**21**	*e*P **P**	**01 03 44.2**	**+0.9**
BVAR	**Borovoye Array**	**22.68**	**21**	P P	**01 03 44.1**	**+0.8**
	2.5nm,0.6s,mb3.9,baz=202,slow=9.2,SNR=13					
KOLN	**Koldanda**	**23.34**	**95**	*e*P **P**	**01 03 50.8**	**+0.7**
MKAR	**Makanchi Array**	**23.96**	**46**	P **P**	**01 03 56.6**	**+0.7**
	1.8nm,0.7s,mb3.6,baz=229,slow=8.4,SNR=15					
GKN	**Gorkha**	**24.15**	**93**	*e*P **P**	**01 03 57.7**	**-0.2**
	9.3nm,0.4s,mb4.5					
KURK	**Kurchatov**	**24.17**	**35**	*e*P **P**	**01 03 58.4**	**+0.5**
DMN	**Daman**	**24.66**	**94**	*e*P **P**	**01 04 02.8**	**-0.1**
KKN	**Kakani**	**24.75**	**93**	*e*P **P**	**01 04 02.9**	**-0.9**
	16nm,0.7s,mb4.6					
GUN	**Gumba**	**25.23**	**93**	*e*P **P**	**01 04 07.3**	**-1.0**
	27nm,1.0s,mb4.7					
AKASG	**Malin Array Be**	**27.46**	**320**	P **P**	**01 04 27.4**	**-1.4**
	0.3nm,0.4s,mb3.2,baz=126,slow=8.2,SNR=5.3					
FINES	**FINESS Array B**	**35.27**	**335**	P **P**	**01 05 36.3**	**-0.9**
	2.3nm,0.8s,mb4.2,baz=150,slow=15,SNR=7.7					
GERES	**GERESS Array B**	**36.24**	**310**	P **P**	**01 05 45.2**	**-0.3**
	0.8nm,0.8s,mb3.7,baz=108,slow=8.4,SNR=6.9					
GERES				PcP PcP	01 08 09.0	-1.7
	0.5nm,0.8s,baz=90,slow=2.7,SNR=3.7					
CMAR	**Chiang Mai Arr**	**39.99**	**100**	P **P**	**01 06 18.2**	**+1.1**
	1.0nm,0.5s,mb3.8,baz=292,slow=9.1,SNR=6.2					
ARCES	**ARCESS Array B**	**41.11**	**344**	P **P**	**01 06 26.1**	**-0.1**
	1.0nm,0.6s,mb3.6,baz=144,slow=10,SNR=7.2					
YKA	**Yellowknife Ar**	**85.15**	**356**	P **P**	**01 11 16.1**	**-1.1**
	0.3nm,0.5s,mb3.6,baz=0.3,slow=5.3,SNR=13					

*IDC **06** 01:11:26.7±14.0, 71.42N×7.64W, mb3.2/1, mb1 3.6/3, mb1mx3.2/21, ML3.4/2, Error ellipse: s-maj=225.0km s-min=52.6km az=135.0*
*NAO **06** 01:11:30.7±2.0, 70.91N×7.45W*
*NEIC **06** 01:11:31.2, 71.31N×7.96W, h2km, mb3.4/1, ML3.3(BER), After BER.*
*BER **06** 01:11:32.6±1.6, 71.23N×7.99W, h10km, MD2.7, ML3.3*

ISC 06 01:11:27.6±0.4, 70.96N±0.07×7.09W±0.07, h10km, n24, σ1§04/33, mb3.0/1, 1C-3D, Jan Mayen Island region

Code	Station Name	Δ°	AZ°	Phase ID	Time	Res
				Op ISC	h m s	ISC
JNE	**Jan Mayen East**	**0.40**	**275⇓**	*i*P **Pg**	**01 11 36.7**	**+1.0**
JNE				*e*S **Sg**	**01 11 40.9**	**-0.2**
JNE				AML AML	01 11 42.9	
	comp=Z,5μm,0.5s					
JNW	**Jan Mayen West**	**0.45**	**280⇓**	*i*P **Pg**	**01 11 37.2**	**+0.6**
JNW				*e*S **Sg**	**01 11 41.8**	**-0.9**
JNW				AML AML	01 11 42.8	
	comp=Z,6μm,0.4s					
JMIC	**Jan Mayen**	**0.47**	**274**	Pg **Pg**	**01 11 37.5**	**+0.4**
JMIC				Lg	01 11 42.6	
JMI	**Jan Mayen**	**0.54**	**268⇓**	*i*P **Pg**	**01 11 39.1**	**+0.6**
JMI				*e*S **Sg**	**01 11 45.0**	**-0.8**
JMI				AML AML	01 11 47.9	
	comp=Z,4μm,0.4s					
DAG	**Danmarks Havn**	**6.65**	**337⇑**	*i*P **Pn**	**01 13 04.6**	**-3.2**
	comp=Z,16nm,0.4s					
DAG				*i*	01 14 16.1	
LOF	**Lofoten**	**7.74**	**102**	*e*P **Pn**	**01 13 26.1**	**+3.0**
LOF				*e*S **Sn**	**01 14 50.2**	**-1.6**
LOF				AML AML	01 14 53.4	
	comp=Z,8.5nm,0.7s					
STOK	**Stokkvaagen**	**8.65**	**113**	*e*P **P**	**01 13 36.1**	**+0.4**
STOK				*e*S **Sn**	**01 15 08.8**	**-5.5**
STOK				AML AML	01 15 11.8	
	comp=Z,14nm,0.4s					
TRO	**Tromso**	**8.85**	**86**	*e*P **P**	**01 13 37.3**	**-1.3**
TRO				*e*S **Sn**	**01 15 13.5**	**-5.9**
TRO				AML AML	01 15 20.8	
	comp=Z,1.7nm,0.4s					
MOR8	**Moi Rana**	**9.19**	**111**	*e*S **Sn**	**01 15 22.4**	**-5.3**
MOR8				AML AML	01 15 32.3	
	comp=Z,12nm,0.4s					
KBS	**Kingsbay**	**9.33**	**23**	Pn **P**	**01 13 43.9**	**-1.3**
KBS				Sn **Sn**	**01 15 22.0**	**-9.3**
SPB4	**Spitsbergen Ar**	**9.46**	**30**	*e*Pn **P**	**01 13 47.4**	**+0.4**
SPA0	**Spitsbergen Ar**	**9.46**	**30**	Pn **P**	**01 13 48.0**	**+1.0**
	baz=226,slow=16					
NSS	**Namsos**	**9.64**	**123**	*e*P **P**	**01 13 48.7**	**-0.5**
NSS				*e*S **Sn**	**01 15 30.5**	**-8.2**
NSS				AML AML	01 15 36.6	
	comp=Z,13nm,0.4s					
MOL	**Molde**	**10.18**	**139**	*e*S **S**	**01 15 47.1**	**-4.7**
KTK1	**Kautokeino**	**10.51**	**86**	*e*P **P**	**01 14 01.3**	**+0.3**
FOO	**Floro**	**10.56**	**147**	*e*P **P**	**01 14 01.5**	**-0.3**
FOO				*e*S **S**	**01 15 52.6**	**-8.6**
FOO				AML AML	01 15 58.3	
	comp=Z,10nm,0.3s					
ARA0	**ARCESS Array S**	**11.04**	**82**	Pn **P**	**01 14 08.3**	**0.0**
	baz=290,slow=11					
ARCES	**ARCESS Array B**	**11.04**	**82**	Pn **P**	**01 14 08.3**	**0.0**
	comp=Z,0.2nm,0.3s,baz=294,slow=12,SNR=20					
ARE0	**ARCESS Array S**	**11.04**	**82**	*e*P **P**	**01 14 08.7**	**+0.4**
HFS	**Hagfors**	**13.75**	**132**	Pn **P**	**01 14 44.0**	**-0.5**
	baz=348,slow=14					
KAF	**Kangasniemi**	**15.74**	**107**	*e*p **P**	**01 15 13.5**	**+3.0**
	comp=Z,0.7nm,0.2s					
FIA0	**FINESS Array S**	**16.17**	**109**	P **P**	**01 15 18.6**	**+2.5**
	baz=318,slow=12					
FINES	**FINESS Array B**	**16.17**	**109**	Pn **P**	**01 15 18.7**	**+2.6**
	comp=Z,0.3nm,0.3s,baz=319,slow=13,SNR=11					
GERES	**GERESS Array B**	**24.24**	**145**	P **P**	**01 16 49.3**	**+4.3**
	comp=Z,0.2nm,0.3s,mb3.0,baz=339,slow=8.4,SNR=3.5					

*NEIC **06** 01:31:04.7±0.9, 17.07N×105.70W, h10km, mb3.8/9, Error ellipse: s-maj=16.2km s-min=13.5km az=53.0*
*IDC **06** 01:31:04.8±7.8, 17.23N×105.70W, mb3.7/4, mb1 4.1/5, mb1mx3.9/19, ML3.5/1, MS3.3/2, Ms1 3.2/2, ms1mx3.0/16, Error ellipse: s-maj=148.0km s-min=83.0km az=135.0*

ISC 06 01:31:03.2±1.2, 17.1N±0.1×105.6W±0.1, h10km, n23, σ1§01/22, mb3.8/9, MS3.7/1, Off coast of Jalisco

Code	Station Name	Δ°	AZ°	Phase ID	Time	Res
				Op ISC	h m s	ISC
SFJM	**Santa Fe**	**4.18**	**35**	*i* P **Pn**	**01 32 10.7**	**+2.2**
ZAIG	**Zacatecas**	**6.35**	**26**	*e*P **Pn**	**01 32 38.3**	**-0.9**
TXAR	**Lajitas Array**	**12.33**	**8**	Pn **P**	**01 34 01.4**	**-0.5**
	0.1nm,0.3s,baz=190,slow=12,SNR=15					
TXAR				LR LR	01 37 56.4	
	comp=Z,72nm,21.8s,baz=235,slow=34					
JCT	**Junction City**	**14.36**	**21**	*e*P **P**	**01 34 30.8**	**+2.1**
HKT	**Hockley**	**15.63**	**33**	P **P**	**01 34 44.4**	**-1.0**
	2.4nm,0.8s					
TUC	**Tucson**	**15.87**	**344**	*e*P **P**	**01 34 47.0**	**-1.4**
	4.6nm,1.1s					
TUC				*e*	01 34 52.0	
ANMO	**Albuquerque**	**17.82**	**358**	*e*P **P**	**01 35 08.2**	**-4.8**
	2.9nm,1.1s					
WMOK	**Wichita Mounta**	**18.62**	**18**	*e*P **P**	**01 35 19.4**	**-3.6**
	2.9nm,1.0s					
PV10	**Paradox Valley**	**21.43**	**353**	*e*P **P**	**01 35 52.2**	**-1.4**
MSU	**Marysvale**	**22.12**	**346**	*e*P **P**	**01 36 01.3**	**+0.8**
SRU	**San Rafael**	**22.37**	**350**	*e*P **P**	**01 36 03.0**	**0.0**
TPH	**Tonopah**	**23.27**	**336**	*e*P **P**	**01 36 12.4**	**+0.5**
	4.9nm,0.8s,mb4.0					
DAU	**Daniels Canyon**	**23.76**	**349**	*e*P **P**	**01 36 11.0**	**-5.6**
NVAR	**Mina Array Bea**	**24.00**	**335**	P **P**	**01 36 19.6**	**+0.6**
	1.4nm,0.9s,mb3.4,baz=153,slow=10,SNR=5.2					
CMB	**Columbia Colle**	**24.58**	**331**	*e*P **P**	**01 36 24.7**	**+0.1**
	2.9nm,0.9s,mb3.8					
HWUT	**Hardware Ranch**	**24.98**	**349**	P **P**	**01 36 27.8**	**-0.6**
	2.6nm,0.8s,mb3.8					
PDAR	**Pinedale Array**	**25.83**	**353**	P **P**	**01 36 37.0**	**+0.6**
	1.4nm,0.9s,mb3.5,baz=168,slow=8.3,SNR=8.7					
HLID	**Hailey**	**27.44**	**346**	*e*P **P**	**01 36 51.5**	**+0.3**
	4.7nm,1.1s,mb3.9					
MCMT	**McKenzie Canyo**	**28.33**	**349**	*e*P **P**	**01 37 00.3**	**+1.1**
YKA	**Yellowknife Ar**	**45.81**	**354**	P **P**	**01 39 26.5**	**-0.2**
	0.6nm,0.7s,mb3.6,baz=168,slow=7.4,SNR=20					
LVC	**Limon Verde**	**53.35**	**136**	P **P**	**01 40 24.9**	**-0.3**
	4.7nm,1.1s,mb4.3					
ILAR	**Eielson Array**	**55.13**	**340**	P **P**	**01 40 37.4**	**-0.4**
	3.1nm,1.2s,mb4.2,baz=154,slow=5.0,SNR=9.5					
FINES	**FINESS Array B**	**92.86**	**21**	LR LR	02 23 15.6	
	comp=Z,25nm,20.1s,MS3.7,baz=128,slow=34					

*

PPM	**Popocatepetl**	**2.07**	**52**	*i* P	P	02 09 36.2	-2.0
PPM				*i* S	S	02 10 00.8	-1.9

NEIC ***06*** *02:09:36.2±1.2,5.69S×146.65E,h10km, Error ellipse: s-maj=23.2km s-min=15.8km az=83.0*
IDC ***06*** *02:09:44.8±5.4,6.07S×146.93E,h83km±51km, mb3.6/4, mb1 3.8/7,mb1mx3.6/14,ML3.6/3,MS3.1/3,Ms1 3.1/3, ms1mx2.9/13,Error ellipse: s-maj=48.5km s-min=30.2km az=132.0*

ISC 06 02:09:42.1±2.5,6.0S±0.1×146.8E±0.2,h68km±22km,n12, σ0°73/14,mb3.6/4,1D,Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time	Res
WAU	**Wau**	**1.34**	**182**	ǁ*eP*		**P**		**02 10 05.6**	**+0.2**
PMG	**Port Moresby**	**3.41**	**173**	P		**P**		**02 10 33.7**	**-0.5**
	17nm,0.3s,baz=17,slow=9.9,SNR=26								
PMG				S		**S**		**02 11 13.9**	**+0.2**
	32nm,0.3s,baz=186,slow=21,SNR=11								
PMG				LR		LR		02 12 08.7	
	comp=Z,182nm,18.0s,baz=282,slow=43								
PMG	**Port Moresby**	**3.41**	**173**	*eP*		**P**		**02 10 33.7**	**-0.5**
PMG				*eS*		**S**		**02 11 13.7**	**0.0**
CTA	**Charters Tower**	**14.02**	**182**	P		**P**		**02 12 59.6**	**+0.7**
	0.3nm,0.3s,baz=354,slow=10,SNR=2.6								
CTA				LR		LR		02 17 27.7	
	comp=Z,72nm,18.6s,baz=229,slow=33								
CTAO	**Charters Tower**	**14.02**	**182**	*eP*		**P**		**02 13 00.3**	**+1.4**
	2.8nm,0.6s								
WRAB	**Tennant Creek**	**18.37**	**220**	*eP*		**P**		**02 13 52.7**	**-1.1**
WRA	**Warramunga Arr**	**18.39**	**220**	P		**P**		**02 13 53.5**	**-0.4**
	0.3nm,0.3s,baz=44,slow=12,SNR=5.8								
ASAR	**Alice Springs**	**21.49**	**214**	P		**P**		**02 14 27.7**	**+0.7**
	1.3nm,0.5s,mb3.5,baz=56,slow=9.0,SNR=15								
FITZ	**Fitzroy Crossi**	**23.87**	**238**	P		**P**		**02 14 51.2**	**+0.9**
	12nm,1.4s,mb4.0,baz=38,slow=5.0,SNR=7.1								
STKA	**Stephens Creek**	**26.20**	**190**	P		**P**		**02 15 11.3**	**-1.0**
	0.7nm,0.3s,mb3.5,baz=358,slow=9.1,SNR=7.1								
STKA				LR		LR		02 24 52.6	
	comp=Z,67nm,18.6s,baz=21,slow=35								
STKA	**Stephens Creek**	**26.20**	**190**	P		**P**		**02 15 11.3**	**-1.0**
STKA				LR		LR		02 24 52.5	
ILAR	**Eielson Array**	**85.57**	**23**	P		**P**		**02 22 13.8**	**0.0**
	0.4nm,0.6s,mb3.5,baz=250,slow=4.7,SNR=6.4								

IDC ***06*** *02:23:40.4±2.1,5.97S×146.79E,mb3.6/3,mb1 3.8/4, mb1mx3.7/12,ML3.3/1,MS3.1/1,Ms1 3.1/1,ms1mx2.8/12, Error ellipse: s-maj=125.0km s-min=29.3km az=127.0*
NEIC ***06*** *02:23:42.6±1.3,5.78S×146.63E,h10km, Error ellipse: s-maj=26.0km s-min=17.0km az=86.0*

ISC 06 02:23:41.4±1.4,5.8S±0.1×146.5E±0.2,h10km,n8,σ0°99/8, mb3.5/3,MS2.9/1,Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time	Res
WAU	**Wau**	**1.55**	**173**	*eP*		**Pn**		**02 24 10.0**	**+0.7**
PMG	**Port Moresby**	**3.64**	**170**	*ePn*		**Pn**		**02 24 37.9**	**-1.2**
CTAO	**Charters Tower**	**14.21**	**181**	P		**P**		**02 27 05.9**	**+0.8**
	2.1nm,0.6s								
WB2	**Warramunga Arr**	**18.39**	**219**	*eP*		**P**		**02 27 59.2**	**+0.8**
WRA	**Warramunga Arr**	**18.39**	**219**	P		**P**		**02 27 55.5**	**-3.0**
	0.1nm,0.3s,baz=40,slow=11,SNR=3.9								
ASAR	**Alice Springs**	**21.53**	**213**	P		**P**		**02 28 32.6**	**-0.3**
	0.6nm,0.5s,mb3.3,baz=51,slow=9.3,SNR=7.6								
ASAR				LR		LR		02 37 47.2	
	comp=Z,50nm,20.9s,MS2.9,baz=249,slow=39								
FITZ	**Fitzroy Crossi**	**23.79**	**237**	P		**P**		**02 28 55.8**	**+0.4**
	5.3nm,1.1s,mb3.9,baz=52,slow=12,SNR=4.6								
ILAR	**Eielson Array**	**85.48**	**23**	P		**P**		**02 36 20.4**	**0.0**
	0.2nm,0.6s,mb3.4,baz=262,slow=5.2,SNR=4.4								

IDC 06 02:32:42.5±8.3,23.33S×177.47W,mb3.8/2,mb1 4.1/2, mb1mx3.8/13,Error ellipse: s-maj=353.0km s-min=63.3km az=148.0,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time	Res
ASAR	**Alice Springs**	**44.42**	**259**	P		P		02 40 55.4	-1.7
	1.6nm,1.0s,baz=90,slow=8.5,SNR=7.2								
WRA	**Warramunga Arr**	**44.77**	**265**	P		P		02 40 57.9	-1.9
	0.9nm,0.6s,baz=104,slow=8.3,SNR=3.2								
AKASG	**Malin Array Be**	**145.70**	**330**	PKPbc		PKPbc		02 52 22.2	-1.2
	0.2nm,0.4s,baz=36,slow=3.2,SNR=4.1								

PLV 06 03:06:49.9±0.9,22.77N×103.67E,h15km±6km,MD3.5, Yunnan

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time	Res
DHV	**Doan Hung**	**1.80**	**129**	*ePN*			Pn	03 07 20.5	-0.3
DHV				*ePG*			Pn	03 07 24.6	+3.8
DHV				*eSG*			Sn	03 07 48.8	+5.3
TDV	**Tam Dao**	**2.24**	**125**	*ePN*			Pn	03 07 26.6	-0.5
TDV				*ePG*			Pn	03 07 33.8	+6.7
TDV				*eSG*			Sn	03 08 01.6	+7.0
BVV	**Ba Vi**	**2.29**	**136**	*ePN*			Pn	03 07 28.2	+0.5
BVV				*ePG*			Pn	03 07 33.9	+6.2
BVV				*eSG*			Sn	03 08 04.3	+8.5
HNV	**Hanoi**	**2.61**	**131**	*ePG*			Pn	03 07 40.4	+8.0
HNV				*eSG*			Sn	03 08 14.5	+10
MTZV	**Met**	**2.76**	**116**	*ePN*			Pn	03 07 33.8	-0.7
MTZV				*ePG*			Pn	03 07 43.1	+8.6
MTZV				*eSG*			Sn	03 08 19.5	+12
BGV	**Bac-Giang**	**2.79**	**121**	*ePN*			Pn	03 07 33.8	-1.1
BGV				*ePG*			Pn	03 07 43.3	+8.4
BGV				*eSG*			Sn	03 08 19.5	+11
DSV	**Doi Son**	**3.05**	**135**	*ePN*			Pn	03 07 37.2	-1.4
DSV				*ePG*			Pn	03 07 48.0	+9.4
DSV				*eSG*			Sn	03 08 27.1	+12
YTV	**Yen Tu**	**3.25**	**119**	*ePN*			Pn	03 07 40.6	-0.8
YTV				*ePG*			Pn	03 07 52.0	+11
YTV				*eSG*			Sn	03 08 35.6	+15

BJI ***06*** *03:57:51.6,4.20S×142.83E,h124km,mB5.0,mb5.0*
IDC ***06*** *03:57:52.9±0.5,4.20S×142.58E,h109km±4km,mb4.4/14, mb1 4.6/17,mb1mx4.6/17,MS3.7/8,Ms1 3.6/8, ms1mx3.5/17,Error ellipse: s-maj=15.9km s-min=10.6km az=75.0*
NEIC ***06*** *03:57:53.0±0.2,4.20S×142.52E,mb4.7/26,Error ellipse: s-maj=7.6km s-min=4.9km az=89.0*
SYO ***06*** *03:57:53.0,4.20S×142.52E,h113km,MB4.7*

ISC 06 03:57:51.0±0.9,4.19S±0.04×142.56E±0.05,h105km±9km, h114km±1.4km:pP-P,n119,σ1°15/95,mb4.8/41,4C-4D, New Guinea

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time	Res
PIAM	**Paiam**	**1.39**	**155**	ǁ*iP*		**P**		**03 58 19.0**	**+2.3**
WAU	**Wau**	**5.19**	**127**	*eP*		**P**		**03 59 10.2**	**+2.6**
PMG	**Port Moresby**	**6.91**	**139**	P		**P**		**03 59 32.5**	**+1.3**
	40nm,0.3s,baz=353,slow=5.4,SNR=90								
PMG				S		**S**		**04 00 46.8**	**-1.9**
	baz=147,slow=18,SNR=1.9								
PMG				LR		LR		04 01 57.6	
	comp=Z,404nm,18.4s,baz=149,slow=36								
PMG	**Port Moresby**	**6.91**	**139**	*eP*		**P**		**03 59 32.9**	**+1.7**
KAKA	**Kakadu**	**13.12**	**229**	*eP*		**P**		**04 00 52.2**	**-2.3**
	57nm,0.5s								
KAKA				*eS*		**S**		**04 03 11.0**	**-7.3**
CTA	**Charters Tower**	**16.20**	**167**	*eP*		**P**		**04 01 36.9**	**+3.1**
	8.0nm,0.8s								
CTA	**Charters Tower**	**16.20**	**167**	P		**P**		**04 01 34.5**	**+0.7**
	0.2nm,0.3s,baz=322,slow=2.9,SNR=2.4								
CTA				LR		LR		04 07 42.2	
	comp=Z,127nm,19.2s,baz=146,slow=36								
CTAO	**Charters Tower**	**16.20**	**167**	*eP*		**P**		**04 01 33.9**	**0.0**
	18nm,1.0s								
WRAB	**Tennant Creek**	**17.57**	**206**	*eP*		**P**		**04 01 49.2**	**-1.6**
	302nm,0.7s								
WRAB				*e*				04 02 03.8	
WB2	**Warramunga Arr**	**17.58**	**206**	*eP*		**P**		**04 01 48.8**	**-2.1**
WB2				*eS*		**S**		**04 05 07.1**	**+6.5**
WRA	**Warramunga Arr**	**17.59**	**206**	P		**P**		**04 01 49.0**	**-2.0**
	6.2nm,0.3s,baz=24,slow=12,SNR=54								
WRA				S		**S**		**04 05 03.3**	**+2.5**
	baz=22,slow=23,SNR=5.2								
WRA				LR		LR		04 09 19.8	
	comp=Z,279nm,19.3s,baz=305,slow=39								
GUMO	**Guam**	**17.81**	**7**	P		**P**		**04 01 50.9**	**-2.8**
	30nm,0.6s								
AS12	**Alice Springs**	**21.09**	**203**	*eP*		**P**		**04 02 27.8**	**-0.8**
	25nm,0.7s,mb4.7								
ASAR	**Alice Springs**	**21.09**	**203**	P		**P**		**04 02 27.9**	**-0.8**
	14nm,0.7s,mb4.4,baz=28,slow=11,SNR=50								
ASAR				pP				04 02 50.9	
	22nm,0.7s,baz=32,slow=10.0,SNR=5.4								
ASAR				sP				04 03 01.6	
	43nm,0.8s,baz=34,slow=11,SNR=7.5								
ASAR				S		**S**		**04 06 12.5**	**+0.5**
	9.0nm,1.2s,baz=22,slow=21,SNR=2.3								
ASAR				LR		LR		04 11 13.1	
	comp=Z,198nm,18.4s,baz=20,slow=38								
FITZ	**Fitzroy Crossi**	**21.57**	**229**	*eP*		**P**		**04 02 32.4**	**-1.0**
	32nm,0.7s,mb4.8								
FITZ				*eS*		**S**		**04 06 27.2**	**+6.3**
FITZ	**Fitzroy Crossi**	**21.57**	**229**	P		**P**		**04 02 32.6**	**-0.8**
	14nm,0.7s,mb4.4,baz=24,slow=10,SNR=26								
FITZ				S		**S**		**04 06 20.7**	**-0.1**
	13nm,0.9s,baz=193,slow=15,SNR=3.0								
FITZ				LR		LR		04 11 45.2	
	comp=Z,73nm,18.8s,baz=72,slow=39								
ARMA	**Armidale**	**27.46**	**163**	*eP*		**P**		**04 03 33.0**	**+3.7**
STKA	**Stephens Creek**	**27.55**	**182**	ǁ*iP*		**P**		**04 03 29.3**	**-0.9**
	11nm,0.9s,mb4.4								
STKA	**Stephens Creek**	**27.55**	**182**	P		**P**		**04 03 29.3**	**-0.9**
	13nm,0.8s,mb4.5,baz=356,slow=8.6,SNR=26								
STKA				LR		LR		04 16 18.4	
	comp=Z,133nm,18.6s,baz=20,slow=40								
FORT	**Forrest**	**29.77**	**206**	*eP*		**P**		**04 03 48.8**	**-1.2**
	50nm,0.6s,mb5.3								
TOO	**Toolangi**	**33.33**	**176**	*eP*		**P**		**04 04 21.8**	**+0.8**
	6.9nm,0.9s,mb4.5								
JOW	**Kunigami**	**33.79**	**337**	LR		LR		04 16 01.7	
	comp=Z,111nm,21.0s,baz=52,slow=32								
NWAO	**Narrogin (SRO)**	**37.11**	**217**	P		**P**		**04 04 53.0**	**0.0**
	7.7nm,1.0s,mb4.6,baz=298,slow=20,SNR=3.8								
NWAO	**Narrogin (SRO)**	**37.11**	**217**	*eP*		**P**		**04 04 53.5**	**+0.4**
	5.7nm,0.7s,mb4.6								
SSE	**Sheshan**	**40.59**	**331**	P		**P**		**04 05 23.6**	**+1.7**
SSE				AP		pP		04 05 50.7	+4.4
SSE				XP		sP		04 06 03.4	+4.7
SSE				PP		PP		04 07 00.7	+0.4
SSE				S		**S**		**04 11 24.6**	**+1.4**
SSE				XS				04 12 11.6	
SSE				AMB		AMB			
	comp=Z,22nm,0.7s,mb5.1								
SSE				AMB		AMB			
	comp=Z,61nm,7.8s								
SSE				LR		LR			
	comp=N,33nm,27.2s								
SSE				LR		LR			
	comp=E,38nm,27.6s								
SSE				LR		LR			
	comp=Z,52nm,25.8s								
MAJO	**Matsushiro**	**40.73**	**355**	*eP*		**P**		**04 05 21.6**	**-1.4**
	comp=Z,5.2nm,0.6s,mb4.5								
NJ2	**Nanjing**	**42.51**	**330**	*eP*		**P**		**04 05 39.7**	**+1.9**
NJ2				AP		pP		04 06 05.4	+3.1
NJ2				XP		sP		04 06 18.2	+3.6
NJ2				PP		PP		04 07 18.2	-2.4
NJ2				S		**S**		**04 11 53.0**	**+1.4**
NJ2				SS		SS		04 15 00.0	+2.2
NJ2				AMB		AMB			
	comp=Z,30nm,0.7s,mb5.1								
NJ2				LR		LR			
	comp=N,310nm,23.7s								
NJ2				LR		LR			
	comp=E,380nm,22.9s								
NJ2				LR		LR			
	comp=Z,140nm,18.7s								
KS15	**Wonju Array Si**	**43.62**	**343**	P		**P**		**04 05 47.1**	**+0.4**
GYA	**Guiyang**	**46.20**	**313**	ǁ*iP*		**P**		**04 06 08.7**	**+1.3**
GYA				XP		sP		04 06 47.6	+3.5
GYA				S		**S**		**04 12 49.7**	**+4.8**
GYA				AMB		AMB			
	comp=Z,10.0nm,0.7s,mb4.7								
GYA				AMB		AMB			
	comp=Z,270nm,5.4s								
URZ	**Urewera**	**46.26**	**142**	P		**P**		**04 06 08.9**	**+1.2**
	comp=Z,15nm,1.0s,mb4.7,baz=56,slow=3.0,SNR=4.5								
RPZ	**Rata Peaks**	**46.72**	**152**	LR		LR		04 23 16.5	
	comp=Z,281nm,18.2s,baz=184,slow=33								
KMI	**Kunming**	**48.41**	**309**	*eP*		**P**		**04 06 26.0**	**+1.3**
KMI				AP		pP		04 06 52.5	+2.8
KMI				S		**S**		**04 13 18.9**	**+2.9**
KMI				AMB		AMB			
	comp=Z,11nm,1.3s,mb4.5								
KMI				AMB		AMB			
	comp=Z,90nm,4.7s								
KMI				LR		LR			
	comp=Z,34nm,23.7s								
CMAR	**Chiang Mai Arr**	**48.51**	**299**	P		**P**		**04 06 25.5**	**0.0**
	comp=Z,3.6nm,0.9s,mb4.3,baz=118,slow=7.0,SNR=9.6								
CMAR				pP		pP		04 06 52.3	+1.8
	comp=Z,3.7nm,0.9s,baz=120,slow=6.3,SNR=3.5								
MDJ	**Mudanjiang**	**49.96**	**348**	P		**P**		**04 06 36.8**	**+0.5**
MDJ				PP		PP		04 08 31.4	-1.5
MDJ				S		**S**		**04 13 37.4**	**+0.1**
MDJ				AMB		AMB			
	comp=Z,9.0nm,1.1s,mb4.6								
MDJ				AMB		AMB			
	comp=Z,155nm,3.9s								
MDJ				LR		LR			
	comp=E,67nm,52.8s								
MDJ				LR		LR			
	comp=Z,59nm,30.1s								
MDJ	**Mudanjiang**	**49.96**	**348**	*eP*		**P**		**04 06 33.5**	**-2.8**
	comp=Z,6.8nm,0.6s,mb4.8								
CN2	**Changchun**	**50.20**	**344**	*eP*		**P**		**04 06 38.2**	**0.0**
CN2				*eAP*		pP		04 07 07.4	+4.1
CN2				PCP		PcP		04 07 55.1	-1.0
CN2				AMB		AMB			
	comp=Z,10.0nm,0.7s,mb4.8								
BJT	**Baijiatuau**	**50.24**	**334**	P		**P**		**04 06 37.3**	**-1.2**
	comp=Z,14nm,0.8s,mb4.9								
BJI	**Beijing**	**50.25**	**334**	*eP*		**P**		**04 06 35.8**	**-2.8**
BJI				AP		pP		04 07 05.3	+1.6
BJI				AMB		AMB			
	comp=Z,17nm,0.8s,mb5.0								
CD2	**Chengdu**	**50.88**	**316**	*eP*		**P**		**04 06 44.0**	**+0.5**
CD2				AMB		AMB			
	comp=Z,20nm,0.8s,mb5.2								
HHC	**Hu-ho-hao-te**	**53.04**	**331**	*eP*		**P**		**04 06 55.6**	**-4.0**
HHC				AMB		AMB			
	comp=Z,8.0nm,1.1s,mb4.7								
HHC				AMB		AMB			
	comp=Z,109nm,6.9s								
HIA	**Hailar**	**56.81**	**342**	*eP*		**P**		**04 07 25.9**	**-0.8**
	comp=Z,5.9nm,0.8s,mb4.7								
HIA				*epP*		pP		04 07 53.4	+1.0
GTA	**Gaotai**	**58.57**	**322**	*eP*		**P**		**04 07 39.5**	**+0.4**
GTA				AP		pP		04 08 06.4	+1.5
GTA				AMB		AMB			
	comp=Z,8.0nm,1.2s,mb4.6								
LSA	**Lhasa**	**59.64**	**308**	*eP*		**P**		**04 07 47.5**	**+0.9**
	comp=Z,5.5nm,0.6s,mb4.8								
ULN	**Ulaanbaatar**	**60.46**	**333**	*eP*		**P**		**04 07 51.8**	**-0.2**
	comp=Z,4.5nm,0.7s,mb4.6								
ULN				*epP*		pP		04 08 20.7	+2.7
ULN				*esP*		sP		04 08 31.3	+1.6
SONM	**Songino Array**	**60.73**	**333**	P		**P**		**04 07 53.1**	**-0.8**
	comp=Z,2.5nm,0.8s,mb4.3,baz=153,slow=8.3,SNR=4.5								
GUN	**Gumba**	**63.19**	**304**	*eP*		**P**		**04 08 10.8**	**+0.2**
	comp=Z,35nm,0.8s,mb5.3								
KKN	**Kakani**	**63.64**	**304**	*eP*		**P**		**04 08 13.7**	**+0.1**
	comp=Z,32nm,0.8s,mb5.2								
DMN	**Daman**	**63.72**	**303**	*eP*		**P**		**04 08 14.3**	**+0.1**
GKN	**Gorkha**	**64.25**	**304**	*eP*		**P**		**04 08 17.3**	**-0.3**
	comp=Z,31nm,0.8s,mb5.2								
KOLN	**Koldanda**	**65.03**	**303**	*eP*		**P**		**04 08 22.5**	**-0.2**
	comp=Z,25nm,0.9s,mb5.0								
DANN	**Dangsing**	**65.10**	**304**	*eP*		**P**		**04 08 21.5**	**-1.5**
PPT	**Papeete**	**67.65**	**107**	P		**P**		**04 08 39.0**	**-0.3**
	comp=Z,38nm,0.9s,mb5.2,baz=349,slow=8.2,SNR=2.7								
WMQ	**Urumqi**	**68.57**	**321**	P		**P**		**04 08 45.5**	**+0.9**
WMQ				PCP		PcP		04 09 09.8	+0.9
WMQ				AP		pP		04 09 13.1	+2.0
WMQ				PP		PP		04 11 20.6	+1.2
WMQ				SCP				04 13 01.7	
WMQ				PCS				04 13 13.4	
WMQ				AMB		AMB			
	comp=Z,8.0nm,1.4s,mb4.4								
WMQ				AMB		AMB			
	comp=Z,35nm,4.8s								
WMQ				LR		LR			
	comp=N,128nm,18.2s								
WMQ				LR		LR			
	comp=E,104nm,17.8s								
WMQ				LR		LR			
	comp=Z,183nm,19.2s								
MKAR	**Makanchi Array**	**73.32**	**321**	P		**P**		**04 09 13.0**	**0.0**
	comp=Z,14nm,0.9s,mb4.8,baz=110,slow=7.3,SNR=85								
MKAR				pP		pP		04 09 40.6	+0.8
	comp=Z,9.3nm,0.7s,baz=117,slow=8.1,SNR=9.2								
BILL	**Bilibino**	**73.97**	**9**	*eP*		**P**		**04 09 15.7**	**-0.6**
	comp=Z,9.7nm,0.8s,mb4.6								
SBA	**Scott Base**	**74.71**	**175**	*eP*		**P**		**04 09 21.3**	**+0.8**
	comp=Z,8.5nm,1.1s,mb4.4								
KZA	**Kyzart**	**76.23**	**315**	P		**P**		**04 09 31.4**	**+1.6**
	SNR=17								
TKM2	**Toknak 2**	**76.26**	**316**	P		**P**		**04 09 30.4**	**+0.5**
	SNR=8.2								
UCH	**Uchtor**	**76.80**	**315**	P		**P**		**04 09 34.3**	**+1.4**
	SNR=9.4								
USP	**Ospenovka**	**77.14**	**316**	*eP*		**P**		**04 09 35.1**	**+0.3**
	SNR=9.8								
KURK	**Kurchatov**	**77.14**	**324**	*eP*		**P**		**04 09 33.5**	**-1.2**
AML	**Almayashu**	**77.35**	**315**	P		**P**		**04 09 37.0**	**+1.0**
	SNR=7.6								
EKS2	**Erkin-Say**	**77.45**	**315**	P		**P**		**04 09 37.3**	**+0.7**
	SNR=7.2								
TNA	**Tin City**	**78.27**	**19**	*eP*		**P**		**04 09 40.6**	**0.0**
	comp=Z,7.3nm,0.8s,mb4.5								
TNA				*es*P		sP		04 10 16.7	-2.6
SVW	**Sparrevohn**	**80.49**	**26**	*eP*		**P**		**04 09 53.7**	**+1.1**
RSO	**Redoubt South**	**81.48**	**27**	*eP*		**P**		**04 09 57.4**	**-0.5**
RSO				*epP*		pP		04 10 27.0	+1.8
MAW	**Mawson**	**82.21**	**202**	ǁ*iP*		**P**		**04 10 02.3**	**+0.8**
	comp=Z,8.0nm,1.2s,mb4.4								
MAW	**Mawson**	**82.21**	**202**	P		**P**		**04 10 02.4**	**+0.9**
	comp=Z,7.7nm,0.8s,mb4.6,baz=65,slow=4.2,SNR=15								
BVAR	**Borovoye Array**	**82.73**	**325**	P		**P**		**04 10 04.3**	**-0.1**
	comp=Z,12nm,0.7s,mb4.9,baz=108,slow=4.7,SNR=86								
BVAR				pP		pP		04 10 32.8	+0.9
	comp=Z,4.5nm,0.6s,baz=112,slow=6.2,SNR=4.2								
BRVK	**Borovoye**	**82.80**	**325**	*eP*		**P**		**04 10 04.8**	**0.0**
BRVK				*epP*		pP		04 10 33.5	+1.3
PMS	**Palmer South**	**83.22**	**27**	*eP*		**P**		**04 10 06.5**	**-0.3**
PWA	**Palmer West**	**83.23**	**26**	*eP*		**P**		**04 10 06.4**	**-0.4**
IMA	**Indian Mountai**	**83.48**	**22**	*eP*		**P**		**04 10 08.8**	**+0.8**
	comp=Z,43nm,1.0s,mb5.2								
IMA				*es*P		sP		04 10 53.6	+6.5
IMA				*e*				04 11 13.6	
ZRNK	**Zerenda**	**83.51**	**324**	*eP*		**P**		**04 10 08.1**	**-0.2**
ZRNK				*epP*		pP		04 10 37.3	+1.5
ZRNK				*es*P		sP		04 10 49.3	+1.9
PMR	**Palmer**	**83.54**	**27**	*eP*		**P**		**04 10 08.1**	**-0.2**
SML	**Sawmill**	**83.97**	**26**	*eP*		**P**		**04 10 10.2**	**-0.2**
SML				*epP*		pP		04 10 39.2	+1.2
MID	**Middleton Isla**	**84.11**	**29**	*eP*		**P**		**04 10 08.5**	**-2.7**
MCK	**McKinley**	**84.40**	**25**	*eP*		**P**		**04 10 12.1**	**-0.5**
	comp=Z,11nm,0.8s,mb4.8								
MCK				*epP*		pP		04 10 40.6	+0.5
EYAK	**Cordova Ski Ar**	**84.74**	**28**	*eP*		**P**		**04 10 13.8**	**-0.6**
EYAK				*epP*		pP		04 10 44.5	+2.6
COLA	**College**	**85.25**	**24**	*eP*		**P**		**04 10 15.9**	**-0.9**
ILAR	**Eielson Array**	**85.60**	**24**	P		**P**		**04 10 17.4**	**-1.2**
	comp=Z,16nm,0.7s,mb5.1,baz=265,slow=5.2,SNR=176								
ILAR				pP		pP		04 10 46.1	-0.1
	comp=Z,6.4nm,1.1s,baz=267,slow=3.2,SNR=4.0								
SYO	**Syowa Base**	**90.74**	**201**	ǁ*eP*		**P**		**04 10 38.5**	**-4.4**
SYO	**Syowa Base**	**90.74**	**201**	⇑PcP		PcP		04 10 47.8	+3.7
SYO	**Syowa Base**	**90.74**	**201**	⇑pP		pP		04 11 13.2	+2.3
SYO	**Syowa Base**	**90.74**	**201**	ǁ*eP*		**P**		**04 10 38.5**	**-4.4**
SYO				*e*PcP		PcP		04 10 47.8	+3.7
SYO				*epP*		pP		04 11 13.2	+2.3
YKA	**Yellowknife Ar**	**99.62**	**27**	P		**P**		**04 11 23.0**	**-0.6**
	comp=Z,0.7nm,0.7s,mb4.4,baz=282,slow=4.9,SNR=17								
YKA				PKIKP				04 15 51.5	
	comp=Z,0.1nm,0.5s,baz=284,slow=1.7,SNR=6.0								
YKA				PKKPbc				04 27 44.6	
	comp=Z,0.1nm,0.6s,baz=104,slow=3.2,SNR=4.8								
NVAR	**Mina Array Bea**	**99.75**	**52**	P		**P**		**04 11 25.3**	**+0.5**
	comp=Z,0.5nm,0.6s,mb4.3,baz=248,slow=12,SNR=3.6								
PMSA	**Palmer Station**	**108.45**	**168**	*ePdif*		Pdif		04 11 59.2	-3.3
TXAR	**Lajitas Array**	**112.74**	**60**	PKiKP				04 16 17.4	
	comp=Z,0.5nm,0.8s,baz=315,slow=1.3,SNR=6.8								
TXAR				PKKPab				04 27 14.9	
	comp=Z,0.9nm,0.9s,baz=127,slow=6.3,SNR=8.6								
JCT	**Junction City**	**115.85**	**58**	*e*PKPdf		PKPdf		04 16 22.8	+1.0
GERES	**GERESS Array B**

MAJO	**Matsushiro**	**23.16 346**	P		**P**	**04 11 25.3**	**+1.4**
PMG	**Port Moresby**	**23.48 175**	LR		LR	04 20 08.6	
	comp=Z,64nm,20.4s,MS3.1,baz=248,slow=35						
BJT	**Baijiatuau**	**36.19 321**	P		**P**	**04 13 21.6**	**+0.8**
	6.9nm,0.6s,mb4.8						
ASAR	**Alice Springs**	**39.16 196**	P		**P**	**04 13 48.5**	**+2.6**
	0.7nm,0.8s,mb3.5,baz=23,slow=12,SNR=2.2						
HIA	**Hailar**	**40.77 334**	*eP*		**P**	**04 13 59.5**	**+0.5**
	10nm,0.9s,mb4.5						
CMAR	**Chiang Mai Arr**	**44.48 282**	P		**P**	**04 14 31.6**	**+1.9**
	1.0nm,0.4s,mb3.9,baz=89,slow=6.6,SNR=7.1						
ULN	**Ulaanbaatar**	**46.10 325**	*eP*		**P**	**04 14 42.7**	**+0.6**
	5.6nm,1.1s,mb4.4						
SONM	**Songino Array**	**46.45 324**	P		**P**	**04 14 45.4**	**+0.5**
	2.9nm,0.8s,mb4.3,baz=135,slow=7.0,SNR=5.7						
GUN	**Gumba**	**56.53 294**	*eP*		**P**	**04 16 00.9**	**-0.2**
	14nm,0.7s,mb5.1						
WMQ	**Urumqi**	**56.97 313**	P		**P**	**04 16 04.5**	**+0.4**
KKN	**Kakani**	**57.06 294**	*eP*		**P**	**04 16 04.0**	**-0.9**
DMN	**Daman**	**57.21 294**	*eP*		**P**	**04 16 06.2**	**+0.2**
	14nm,0.3s						
GKN	**Gorkha**	**57.63 294**	*eP*		**P**	**04 16 08.5**	**-0.4**
DANN	**Dangsing**	**58.41 295**	*eP*		**P**	**04 16 13.9**	**-0.4**
KOLN	**Koldanda**	**58.55 294**	*eP*		**P**	**04 16 14.8**	**-0.5**
	28nm,1.2s,mb5.2						
MKAR	**Makanchi Array**	**61.30 316**	P		**P**	**04 16 33.8**	**-0.1**
	6.1nm,0.7s,mb4.9,baz=93,slow=8.7,SNR=51						
KURK	**Kurchatov**	**64.35 320**	*eP*		**P**	**04 16 53.8**	**-0.3**
ILAR	**Eielson Array**	**67.95 225**	P		**P**	**04 17 12.4**	**-4.4**
	0.8nm,0.8s,mb3.8,baz=257,slow=4.8,SNR=6.7						
BVAR	**Borovoye Array**	**69.68 322**	P		**P**	**04 17 26.6**	**-1.0**
	1.3nm,0.6s,mb4.0,baz=90,slow=7.4,SNR=8.0						
BRVK	**Borovoye**	**69.74 322**	P		**P**	**04 17 27.2**	**-0.8**
INK	**Inuvik**	**73.75 23**	P		**P**	**04 17 48.9**	**-2.7**
	0.9nm,0.9s,mb3.7,baz=309,slow=4.0,SNR=4.0						
INK	**Inuvik**	**73.75 23**	P		**P**	**04 17 48.9**	**-2.7**
YKA	**Yellowknife Ar**	**82.24 27**	P		**P**	**04 18 36.5**	**-1.9**
	0.1nm,0.4s,baz=290,slow=5.3,SNR=7.3						
YKA	**Yellowknife Ar**	**82.24 27**	P		**P**	**04 18 36.5**	**-1.9**
YBH	**Yreka Blue Hor**	**82.30 49**	P		**P**	**04 18 39.8**	**+0.7**
	2.4nm,0.8s,mb4.2,baz=242,slow=1.4,SNR=9.5						
CMB	**Columbia Colle**	**84.86 52**	*eP*		**P**	**04 18 52.8**	**+0.5**
	6.7nm,1.1s,mb4.7						
NVAR	**Mina Array Bea**	**86.35 51**	P		**P**	**04 19 00.2**	**+0.5**
	2.0nm,0.7s,mb4.4,baz=276,slow=4.3,SNR=11						
NVAR	**Mina Array Bea**	**86.35 51**	P		**P**	**04 19 00.2**	**+0.5**
ARCES	**ARCESS Array B**	**86.65 342**	LR		LR	04 58 12.9	
	comp=Z,43nm,19.7s,MS3.9,baz=100,slow=36						
TPH	**Tonopah**	**87.27 52**	*eP*		**P**	**04 19 04.5**	**+0.3**
	2.4nm,0.8s,mb4.5						
HWUT	**Hardware Ranch**	**90.37 47**	P		**P**	**04 19 19.7**	**+0.9**
	2.5nm,0.9s,mb4.5						
FINES	**FINESS Array B**	**90.79 335**	P		**P**	**04 19 18.0**	**-2.1**
	0.3nm,0.4s,mb3.9,baz=34,slow=5.0,SNR=3.9						
FINES			LR		LR	05 03 20.8	
	comp=Z,41nm,20.6s,MS3.9,baz=187,slow=38						
NOA	**NORSAR Array B**	**96.64 339**	LR		LR	05 07 17.5	
	comp=Z,26nm,18.1s,MS3.8,baz=170,slow=38						

*NEIC **06** 05:14:46.9±2.1,4.59S×153.23E,h103km±14km,mb4.5/3, Error ellipse: s-maj=31.5km s-min=19.0km az=112.0*
*IDC **06** 05:14:51.5±6.5,4.70S×153.03E,h137km±49km,mb3.6/5, mb1 3.8/6,mb1mx3.6/13,Error ellipse: s-maj=49.1km s-min=35.4km az=93.0*

ISC 06 05:14:45.5±2.5,4.6S±0.2×153.3E±0.2,h104km±18km,n16, σ0§80/15,mb3.8/8,1C,New Ireland region

Code	Station Name	Δ°	AZ°	Phase ID		ISC	Time	Res
				Op			h m s	ISC
RAB	**Rabaul**	**1.20**	**291**	*eP*		**P**	**05 15 08.5**	**-0.3**
PMG	**Port Moresby**	**7.71**	**232**	P		**P**	**05 16 37.4**	**+0.7**
	7.4nm,0.3s,baz=21,slow=3.5,SNR=13							
PMG				S		**S**	**05 18 02.8**	**-0.2**
	3.5nm,0.3s,baz=344,slow=15,SNR=4.4							
KAKA	**Kakadu**	**22.13**	**247**	*eP*		**P**	**05 19 34.0**	**+0.5**
	15nm,0.5s,mb4.6							
WRAB	**Tennant Creek**	**23.91**	**229**	*eP*		**P**	**05 19 51.9**	**+1.1**
	20nm,0.7s,mb4.6							
WRAB				*e*			05 19 56.8	
WB2	**Warramunga Arr**	**23.91**	**229**	⇑*i*	P	**P**	**05 19 51.9**	**+1.1**
WRA	**Warramunga Array**	**23.92**	**229**		P	**P**	**05 19 49.2**	**-1.7**
	4.5nm,0.4s,mb4.1,baz=54,slow=10.0,SNR=22							
ASAR	**Alice Springs**	**25.60**	**225**		P	**P**	**05 20 15.8**	**-0.4**
	0.8nm,0.8s,mb3.3,baz=51,slow=8.6,SNR=5.6							
STKA	**Stephens Creek**	**29.24**	**201**		P	**P**	**05 20 39.5**	**-0.4**
	1.3nm,0.8s,mb3.6,baz=34,slow=11,SNR=3.1							
FITZ	**Fitzroy Crossi**	**30.17**	**241**	*eP*		**P**	**05 20 47.0**	**-1.2**
	1.9nm,0.4s,mb4.1							
FITZ	**Fitzroy Crossi**	**30.17**	**241**	P		**P**	**05 20 47.4**	**-0.8**
	1.9nm,0.4s,mb4.1,baz=41,slow=8.7,SNR=20							
MBWA	**Marble Bar**	**36.47**	**240**	P		**P**	**05 21 38.1**	**-4.4**
	0.1nm,0.4s,mb3.1							
MKAR	**Makanchi Array**	**80.51**	**319**	P		**P**	**05 26 48.0**	**+0.3**
	0.2nm,0.4s,mb3.3,baz=102,slow=7.8,SNR=4.9							
MKAR	**Makanchi Array**	**80.51**	**319**	P		**P**	**05 26 48.0**	**+0.3**
QSPA	**South Pole Qui**	**85.33**	**180**	*eP*		**P**	**05 27 11.6**	**+0.1**
MOX	**Moxa**	**124.03**	**332**	*eP*		PKPdf	05 33 38.0	+6.2
BDFB	**Brasilia**	**150.84**	**134**	PKPbc		PKPdf	05 34 29.4	+8.5
	1.1nm,0.5s,baz=225,slow=4.3,SNR=3.1							

*IDC **06** 05:20:43.4±1.3,22.35S×169.57E,mb4.5/11,mb1 4.7/11, mb1mx4.6/16,MS4.1/10,Ms1 4.1/10,ms1mx3.9/17,Error ellipse: s-maj=64.2km s-min=18.2km az=155.0*
*NEIC **06** 05:20:45.0±0.3,22.19S×169.47E,h10km,mb5.1/13, MS4.3/7,Error ellipse: s-maj=12.5km s-min=7.1km az=159.0*
*SYO **06** 05:20:45.0,22.19S×169.47E,h10km,MB5.1,MS4.3*
*HRVD **06** 05:20:45.0±0.7,22.03S×169.22E,h29km±1km,MW4.9/39, Centroid moment Tensor Solution. LP body waves: s14,c14;Mantle waves: s39,c47; Half duration: 0 Moment tensor: Scale 10^16^Nm; Mrr=.2.74±.37; Mθθ 1.01±.22; Mϕϕ 1.74±.21; Mrθ.78±.32; Mrϕ=.0.65±.08; Mθϕ 1.07±.26; Best double couple: M☐2.68×10^16^ NP1:☐s317°,δ40°, λ-117°. NP2:☐s170°,δ55°,λ-69°. Principal axes: T 2.19, Plg8°, Azm246°; N 1, Plg17°, Azm338°; P -3.18, Plg72°, Azm132°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*BJI **06** 05:20:45.1,22.20S×169.50E,h10km,mB5.0,mb5.0, Ms4.7,Msz4.9*

ISC 06 05:20:43.8±0.3,22.21S±0.07×169.41E±0.05,h10km,n71, σ1§08/53,mb4.9/28,MS4.2/18,6C-4D,Southeast of Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID		ISC	Time	Res
				Op			h m s	ISC
DZM	**Mont Dzumac**	**2.75**	**272**	⇑*eP*		**Pn**	**05 21 29.7**	**+0.8**
DZM				*eS*		**Sn**	**05 22 00.4**	**-2.1**
DZM	**Mont Dzumac**	**2.75**	**272**	⇑*eP*		**Pn**	**05 21 29.7**	**+0.8**
DZM				*eS*		**Sn**	**05 22 00.4**	**-2.1**
NOUC	**Port Laguerre**	**2.88**	**271**	*eP*		**Pn**	**05 21 30.4**	**-0.2**
NOUC	**Port Laguerre**	**2.88**	**271**	*eP*		**Pn**	**05 21 30.4**	**-0.3**
BKM	**Butte a Klehm**	**4.64**	**346**	⇑*iP*		**Pn**	**05 21 54.4**	**-1.3**
BKM				S		**Sn**	**05 22 45.9**	**-4.6**
URZ	**Urewera**	**17.32**	**159**	LR		LR	05 30 03.8	
	comp=Z,354nm,21.7s,baz=231,slow=33							
ARMA	**Armidale**	**17.90**	**239**	*eP*		**P**	**05 24 57.4**	**+2.8**
CTA	**Charters Tower**	**21.70**	**271**	P		**P**	**05 25 38.3**	**+1.3**
	15nm,1.2s,mb4.3,baz=97,slow=15,SNR=3.2							
CTA				LR		LR	05 33 06.6	
	comp=Z,508nm,20.7s,MS3.9,baz=235,slow=34							
CTAO	**Charters Tower**	**21.70**	**271**	*eP*		**P**	**05 25 37.6**	**+0.6**
	30nm,1.2s,mb4.6							
CTAO				LR		LR		
	comp=Z,736nm,19.0s,MS4.1							
PMG	**Port Moresby**	**24.86**	**297**	LR		LR	05 34 21.3	
	comp=Z,199nm,19.0s,MS3.6,baz=252,slow=33							
STKA	**Stephens Creek**	**26.52**	**243**	P		**P**	**05 26 24.1**	**+0.6**
	comp=Z,6.0nm,1.0s,mb4.1,baz=80,slow=12,SNR=5.9							
STKA				LR		LR	05 36 41.8	
	comp=Z,562nm,18.4s,MS4.2,baz=21,slow=36							
RAR	**Rarotonga**	**28.63**	**94**	LR		LR	05 35 18.7	
	comp=Z,208nm,20.8s,MS3.7,baz=98,slow=31							
ASAR	**Alice Springs**	**32.68**	**260**	P		**P**	**05 27 18.0**	**-0.6**
	comp=Z,3.9nm,0.8s,mb4.4,baz=86,slow=9.1,SNR=29							
ASAR				LR		LR	05 41 26.8	
	comp=Z,231nm,18.4s,MS3.9,baz=89,slow=38							
WRAB	**Tennant Creek**	**32.75**	**267**	*eP*		**P**	**05 27 17.9**	**-1.3**
	comp=Z,40nm,1.4s,mb5.2							
WRAB				LR		LR		
	comp=Z,727nm,20.0s,MS4.4							
WRA	**Warramunga Arr**	**32.76**	**267**	P		**P**	**05 27 17.8**	**-1.4**
	comp=Z,2.9nm,1.0s,mb4.2,baz=97,slow=8.3,SNR=7.3							
WRA				LR		LR	05 41 11.1	
	comp=Z,572nm,18.3s,MS4.3,baz=110,slow=37							
FITZ	**Fitzroy Crossi**	**41.19**	**268**	⇑*iP*		**P**	**05 28 31.0**	**+0.6**
	comp=Z,15nm,0.9s,mb4.6							
FITZ	**Fitzroy Crossi**	**41.19**	**268**	P		**P**	**05 28 31.1**	**+0.7**
	comp=Z,14nm,0.7s,mb4.8,baz=150,slow=6.8,SNR=37							
NWAO	**Narrogin (SRO)**	**47.06**	**245**	P		**P**	**05 29 17.4**	**-0.2**
	comp=Z,18nm,1.1s,mb4.9,baz=88,slow=8.0,SNR=4.7							
NWAO	**Narrogin (SRO)**	**47.06**	**245**	*eP*		**P**	**05 29 17.0**	**-0.7**
	comp=Z,16nm,1.1s,mb4.8							
NWAO				LR		LR		
	comp=Z,287nm,19.0s,MS4.3							
SBA	**Scott Base**	**55.71**	**181**	*eP*		**P**	**05 30 22.8**	**+0.4**
	comp=Z,6.8nm,1.1s,mb4.6							
MAJO	**Matsushiro**	**65.44**	**333**	P		**P**	**05 31 27.7**	**-1.5**
QSPA	**South Pole Qui**	**67.86**	**180**	*eP*		**P**	**05 31 43.6**	**-0.3**
	comp=Z,74nm,1.0s,mb5.7							
SSE	**Sheshan**	**70.33**	**317**	P		**P**	**05 32 01.1**	**+1.2**
SSE				AMB		AMB		
	comp=Z,38nm,0.7s,mb5.4							
SSE				AMB		AMB		
	comp=Z,68nm,9.3s							
NJ2	**Nanjing**	**72.45**	**317**	*eP*		**P**	**05 32 14.2**	**+1.6**
NJ2				S		S	05 41 31.0	-4.2
NJ2				SS		SS	05 46 15.0	-0.9
NJ2				AMB		AMB		
	comp=Z,20nm,0.5s,mb5.3							
NJ2				LR		LR		
	comp=N,380nm,22.2s,MS4.7							
NJ2				LR		LR		
	comp=E,220nm,23.0s,MS4.7							
NJ2				LR		LR		
	comp=Z,260nm,20.9s,MS4.5							
MAW	**Mawson**	**75.76**	**202**	LR		LR	05 59 28.0	
	comp=Z,158nm,18.3s,MS4.4,baz=233,slow=31							
MDJ	**Mudanjiang**	**75.80**	**332**	P		**P**	**05 32 32.4**	**+0.6**
MDJ				PP		PP	05 35 23.1	-0.6
MDJ				S		S	05 42 05.3	-7.1
MDJ				SS		SS	05 47 10.4	+3.2
MDJ				AMB		AMB		
	comp=Z,85nm,4.7s							
MDJ				LR		LR		
	comp=N,48nm,40.0s,MS3.6							
MDJ				LR		LR		
	comp=E,47nm,40.0s,MS3.6							
CN2	**Changchun**	**77.07**	**329**	*eP*		**P**	**05 32 39.4**	**+0.5**
CN2				*eS*		S	05 42 21.4	-4.8
CN2				AMB		AMB		
	comp=Z,20nm,1.0s,mb5.0							
ENH	**Enshi**	**77.68**	**310**	PFAKE			05 32 50.0	+7.4
ENH				LR		LR		
	comp=Z,98nm,20.0s,MS4.1							
BJI	**Beijing**	**79.33**	**321**	*eP*		**P**	**05 32 53.2**	**+1.8**
BJI				AMB		AMB		
	comp=Z,9.0nm,1.2s,mb4.6							
CMAR	**Chiang Mai Arr**	**79.87**	**295**	P		**P**	**05 32 57.0**	**+2.3**
	comp=Z,0.6nm,0.3s,mb4.0,baz=90,slow=5.4,SNR=3.4							
KMI	**Kunming**	**79.98**	**302**	*eP*		**P**	**05 32 55.4**	**+0.2**
KMI				AMB		AMB		
	comp=Z,8.0nm,0.6s,mb4.8							
SYO	**Syowa Base**	**82.14**	**196**	⇓P		**P**	**05 33 03.1**	**-2.6**
SYO	**Syowa Base**	**82.14**	**196**	⇑pP		pP	05 33 27.4	+19
SYO	**Syowa Base**	**82.14**	**196**	⇓*eP*		**P**	**05 33 03.1**	**-2.6**
SYO				*e*pP		pP	05 33 27.4	+19
SYO				*e*PP		PP	05 36 11.2	-4.8
HHC	**Hu-ho-hao-te**	**82.57**	**320**	*eP*		**P**	**05 33 09.7**	**+1.2**
HHC				AMB		AMB		
	comp=Z,13nm,1.3s,mb4.8							
SNAA	**Sanae**	**86.22**	**182**	⇑*i*		**P**	**05 33 26.4**	**+0.2**
VNA3	**Neumayer Olymp**	**86.80**	**180**	⇑*i*		**P**	**05 33 25.7**	**-3.3**
VNA2	**Neumayer--Watz**	**87.10**	**181**	⇓*i*		**P**	**05 33 30.6**	**+0.1**
VNA1	**Neumayer--Stat**	**87.39**	**181**	⇓*i*		**P**	**05 33 30.3**	**-1.6**
CMB	**Columbia Colle**	**89.01**	**48**	*eP*		**P**	**05 33 40.2**	**-0.2**
	comp=Z,16nm,1.2s,mb5.2							
YBH	**Yreka Blue Hor**	**89.31**	**44**	P		**P**	**05 33 42.1**	**+0.4**
	comp=Z,4.6nm,0.8s,mb4.8,baz=184,slow=1.8,SNR=13							
ULN	**Ulaanbaatar**	**89.33**	**323**	*eP*		**P**	**05 33 42.5**	**+0.9**
	comp=Z,13nm,1.2s,mb5.1							
HUMO	**Hull Mountain**	**89.60**	**43**	*eP*		**P**	**05 33 43.3**	**+0.2**
SONM	**Songino Array**	**89.68**	**323**	P		**P**	**05 33 44.4**	**+1.1**
	comp=Z,2.2nm,0.8s,mb4.5,baz=135,slow=3.5,SNR=11							
MTUM	**Tungsten Hills**	**89.95**	**49**	*eP*		**P**	**05 33 45.2**	**+0.3**
BILL	**Bilibino**	**90.00**	**359**	*eP*		**P**	**05 33 43.2**	**-1.2**
	comp=Z,19nm,1.6s,mb5.2							
NVAR	**Mina Array Bea**	**90.64**	**48**	P		**P**	**05 33 48.0**	**0.0**
	comp=Z,6.2nm,0.8s,mb5.0,baz=212,slow=6.2,SNR=40							
MOD	**Modoc**	**90.95**	**45**	*eP*		**P**	**05 33 49.3**	**0.0**
	comp=Z,14nm,1.1s,mb5.2							
TPH	**Tonopah**	**91.23**	**49**	*eP*		**P**	**05 33 51.0**	**+0.2**
	comp=Z,23nm,1.3s,mb5.3							
LDFC	**Landfair**	**91.40**	**53**	*eP*		**P**	**05 33 51.7**	**+0.1**
NEN	**Nelson**	**91.84**	**52**	*eP*		**P**	**05 33 53.3**	**-0.3**
WVOR	**Wild Horse Val**	**92.30**	**45**	*eP*		**P**	**05 33 55.1**	**-0.4**
	comp=Z,13nm,1.2s,mb5.1							
RMW	**Rattlesnake Mo**	**92.78**	**39**	*eP*		**P**	**05 33 57.7**	**+0.1**
COLA	**College**	**92.82**	**17**	*eP*		**P**	**05 33 55.3**	**-2.1**
	comp=Z,7.8nm,1.1s,mb5.0							
ILAR	**Eielson Array**	**93.00**	**17**	P		**P**	**05 33 57.0**	**-1.2**
	comp=Z,1.7nm,0.6s,mb4.7,baz=237,slow=5.1,SNR=31							
ILAR				LR		LR	06 12 15.2	
	comp=Z,52nm,20.3s,MS4.0,baz=250,slow=33							
TXAR	**Lajitas Array**	**98.03**	**62**	LR		LR	06 10 47.1	
	comp=Z,106nm,18.8s,MS4.4,baz=320,slow=31							
WMQ	**Urumqi**	**99.36**	**313**	*eP*		**P**	**05 34 27.8**	**+0.1**
WMQ				PP		PP	05 38 33.3	+0.1
WMQ				S		S	05 45 49.1	-6.9
WMQ				AMB		AMB		
	comp=Z,11nm,1.9s,mb5.1							
WMQ				AMB		AMB		
	comp=Z,77nm,8.2s							
WMQ				LR		LR		
	comp=Z,645nm,23.2s,MS5.1							
WMOK	**Wichita Mounta**	**103.72**	**58**	PFAKE			05 35 00.0	+13
WMOK				LR		LR		
	comp=Z,87nm,19.0s,MS4.3							
ARU	**Arti**	**119.71**	**323**	PFAKE			05 39 50.0	+13
ARU				LR		LR		
	comp=Z,215nm,19.0s,MS4.8							
KMBO	**Kilima Mbogo**	**127.92**	**250**	PFAKE			05 40 00.0	+5.9
KMBO				LR		LR		
	comp=Z,68nm,19.0s,MS4.3							
ARCES	**ARCESS Array B**	**127.96**	**345**	PKP		PKPdf	05 39 50.2	-2.5
	comp=Z,0.7nm,0.6s,SNR=12							
AKASG	**Malin Array Be**	**127.96**	**323**	PKP		PKPdf	05 40 10.3	-1.5
	comp=Z,0.7nm,0.7s,baz=41,slow=2.4,SNR=4.5							
PSZ	**Piszkesteto**	**144.61**	**324**	*e*PKPdf		PKPdf	05 40 21.7	-1.9
VYHS	**Vyhne**	**144.83**	**325**	*e*PKP		PKPdf	05 40 22.4	-1.6
VYHS				*e*			05 40 31.5	
VYHS	**Vyhne**	**144.83**	**325**	*eP*		PKPbc	05 40 13.4	-7.6
VYHS				*e*			05 40 22.4	
VYHS				*e*			05 40 31.5	
BRG	**Berggiesshubel**	**145.57**	**332**	*i* PKP		PKPdf	05 40 24.2	-1.0
CLL	**Collm**	**145.65**	**334**	*i* PKP1		PKPbc	05 40 23.9	+0.9
CLL				*i* *PPKP			05 40 35.5	
ZST	**Bratislava**	**145.92**	**326**	*eP*		PKPbc	05 40 25.5	+1.7
ZST				*e*PcP			05 42 54.2	
SKO	**Skopje**	**146.74**	**314**	*i* PKP		PKPdf	05 40 28.0	+0.5
KHC	**Kasperske Hory**	**147.00**	**330**	*e*PKPbc			05 40 29.0	
GERES	**GERESS Array B**	**147.15**	**330**	PKPbc		PKPdf	05 40 28.6	+0.7
	comp=Z,1.3nm,0.6s,baz=45,slow=1.9,SNR=10							

*IDC **06** 05:38:12.4±9.5,32.19S×179.71W,h259km±101km, mb3.1/2,mb1 3.4/3,mb1mx3.2/13,Error ellipse: s-maj=102.0km s-min=47.4km az=1.0*

ISC 06 05:38:13.0±5.8,32.1S±0.1×179.9E±0.9,h250km,n4, σ0§45/4,mb3.3/2,South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID		ISC	Time	Res
				Op			h m s	ISC
URZ	**Urewera**	**6.57**	**199**	P		**P**	**05 39 48.9**	**0.0**
	0.7nm,0.3s,baz=199,slow=11,SNR=3.9							
URZ				S		**S**	**05 41 03.9**	**0.0**
	1.6nm,0.3s,baz=228,slow=22,SNR=7.0							
ASAR	**Alice Springs**	**41.25**	**270**	P		**P**	**05 45 35.7**	**+0.3**
	0.4nm,0.4s,mb3.2,baz=101,slow=7.6,SNR=6.2							
WRA	**Warramunga Arr**	**42.40**	**275**	P		**P**	**05 45 44.4**	**-0.3**
	0.6nm,0.4s,mb3.4,baz=113,slow=8.2,SNR=4.9							
FINES	**FINESS Array B**	**146.05**	**338**	PKPbc		PKPbc	05 57 20.7	-1.8
	0.5nm,0.5s,baz=63,slow=3.1,SNR=5.1							

IDC 06 05:45:02.2±5.7,22.75S×169.96E,mb3.9/2,mb1 4.2/2, mb1mx3.8/12,Error ellipse: s-maj=380.0km

s-min=41.0km az=159.0,Southeast of Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID		ISC	Time	Res
				Op			h m s	ISC
DZM	**Mont Dzumac**	**3.32**	**281**	*eP*		Pn	05 45 52.1	-4.4
DZM				*eS*		Sn	05 46 22.9	-14
NOUC	**Port Laguerre**	**3.44**	**280**	*eP*		Pn	05 45 54.0	-4.2
ASAR	**Alice Springs**	**33.09**	**261**	P		P	05 51 40.0	-2.2
	0.9nm,0.8s,baz=88,slow=8.7,SNR=4.8							
NVAR	**Mina Array Bea**	**90.62**	**48**	P		P	05 58 06.8	-1.3
	0.8nm,0.7s,baz=236,slow=10,SNR=4.8							
GERES	**GERESS Array B**	**147.87**	**330**	PKPbc		PKPdf	06 04 48.9	+1.0
	0.6nm,0.5s,baz=45,slow=3.8,SNR=6.5							

IDC 06 05:59:49.3±3.6,30.45S×138.25E,mb1 3.1/3, mb1mx3.1/9,ML2.7/3,Error ellipse: s-maj=82.0km s-min=16.3km az=41.0,South Australia

Code	Station Name	Δ°	AZ°	Phase ID		ISC	Time	Res
				Op			h m s	ISC
STKA	**Stephens Creek**	**3.20**	**117**	Pn		Pn	06 00 40.0	-1.9
	0.3nm,0.3s,baz=298,slow=12,SNR=4.4							
STKA				Pg		Pg	06 00 48.6	-4.6
	1.4nm,0.3s,baz=301,slow=13,SNR=18							
STKA				Sn		Sn	06 01 20.1	-1.2
	1.1nm,0.3s,baz=199,slow=22,SNR=4.8							
STKA				Lg			06 01 31.1	
	2.9nm,0.3s,baz=202,slow=23,SNR=8.7							
ASAR	**Alice Springs**	**7.79**	**329**	Pn		Pn	06 01 44.9	-1.8
	0.1nm,0.3s,baz=148,slow=12,SNR=4.2							
ASAR				Sn		Sn	06 03 14.3	-2.3
	0.1nm,0.3s,baz=150,slow=22,SNR=3.1							
WRA	**Warramunga Arr**	**11.05**	**340**	Pn		P	06 02 27.9	-3.8
	0.2nm,0.3s,baz=167,slow=11,SNR=5.6							

*NEIC **06** 06:17:10.6±0.5,24.04S×66.73W,h186km±5km,mb4.6/28, Error ellipse: s-maj=7.9km s-min=4.8km az=62.0*
*SYO **06** 06:17:10.5,24.04S×66.73W,h186km,MB4.6*
*BJI **06** 06:17:11.0,24.00S×66.70W,h185km,mB4.6*
*IDC **06** 06:17:11.4±1.0,24.00S×66.74W,h193km±8km,mb4.0/9, mb1 4.3/14,mb1mx4.2/16,Error ellipse: s-maj=16.4km s-min=11.5km az=56.0*
*GUC **06** 06:17:12.1±0.9,24.26S×66.79W,h150km,ML5.3*

ISC 06 06:17:09.7±0.5,24.10S±0.03×66.81W±0.05,h194km±5km, h202km±6.7km:pP-P,n98,σ1§23/91,mb4.5/34,9C-7D,Salta Province

Code	Station Name	Δ°	AZ°	Phase ID		ISC	Time	Res
				Op			h m s	ISC
LVC	**Limon Verde**	**2.44**	**307**	⇑*iP*		**P**	**06 17 55.1**	**+2.1**
LVC				*i* S		**S**	**06 18 27.5**	**+1.1**
LVC				AMP			06 18 30.3	
	comp=N,5μm,0.4s							
LVC	**Limon Verde**	**2.44**	**307**	P		**P**	**06 17 55.3**	**+2.3**
	comp=N,243nm,0.3s,baz=123,slow=8.9,SNR=2626							
LVC				S		**S**	**06 18 28.0**	**+1.6**
	comp=N,496nm,0.3s,baz=194,slow=4.1,SNR=48							
LVC	**Limon Verde**	**2.44**	**307**	*eP*n		**P**	**06 17 54.9**	**+1.9**
LVC				*eS*		**S**	**06 18 22.4**	**-3.9**
CPN1	**Cerro Paranal**	**3.32**	**260**	*iP*		**P**	**06 18 04.7**	**+1.2**
CPN1				*i* S		**S**	**06 18 44.8**	**-0.2**
CPN1				AMP			06 18 47.2	
	comp=E,5μm,0.9s							
ANCH	**Antofagasta**	**3.32**	**277**	*i* P		**P**	**06 18 04.8**	**+1.3**
ANCH				*i* S		**S**	**06 18 44.0**	**-1.0**
ANCH				AMP			06 18 46.9	
	comp=N,7μm,0.2s							
CPCH	**Copiapo**	**4.55**	**224**	⇓*i*P		**P**	**06 18 18.4**	**-0.5**
CPCH				*i* S		**S**	**06 19 10.5**	**-2.0**
VACH	**Vallenar**	**5.69**	**218**	*i* S		**S**	**06 19 36.7**	**-2.2**
LPAZ	**La Paz**	**7.87**	**351**	P		**P**	**06 19 03.2**	**+1.1**
	comp=N,3.3nm,0.3s,baz=174,slow=8.1,SNR=64							
LPAZ				S		**S**	**06 20 29.8**	**-0.2**
	comp=N,3.2nm

WUAZ					*e*			06 28 28.2	
PV01	**Paradox Valley**	**73.27**	**327**		*e*P		**P**	**06 28 22.8**	**+1.1**
SYO	**Syowa Base**	**73.39**	**159**		⇑P		**P**	**06 28 22.3**	**+0.6**
SYO	**Syowa Base**	**73.39**	**159**		⇑P		**P**	**06 28 27.8**	**+6.1**
SYO	**Syowa Base**	**73.39**	**159**		⇑PcP	PcP		06 28 39.0	+1.9
SYO	**Syowa Base**	**73.39**	**159**		⇓pP	pP		06 29 02.8	-5.4
SYO	**Syowa Base**	**73.39**	**159**		⇑*i*P		**P**	**06 28 22.3**	**+0.6**
SYO					⇑*e*P			06 28 27.8	
SYO					*e*PcP	PcP		06 28 39.0	+1.9
SYO					*e*pP	pP		06 29 02.8	-5.4
SBA	**Scott Base**	**73.63**	**190**		*e*P		**P**	**06 28 24.6**	**+1.7**
	comp=N,18nm,1.3s,mb4.5								
PV10	**Paradox Valley**	**73.69**	**327**		*e*P		**P**	**06 28 24.6**	**+0.5**
NEN	**Nelson**	**74.81**	**321**		*e*P		**P**	**06 28 31.3**	**+0.8**
SRU	**San Rafael**	**75.00**	**326**		*e*P		**P**	**06 28 32.4**	**+0.8**
SRU					*e*			06 29 27.8	
MVU	**Marysvale**	**75.43**	**325**		*e*P		**P**	**06 28 35.5**	**+1.5**
	comp=N,7.6nm,0.9s,mb4.3								
SUR	**Sutherland**	**75.61**	**119**		P		**P**	**06 28 36.7**	**+1.6**
	comp=N,9.1nm,1.1s,mb4.3								
RSSD	**Black Hills**	**75.98**	**333**		*e*P		**P**	**06 28 36.9**	**0.0**
	comp=N,11nm,1.0s,mb4.4								
PDAR	**Pinedale Array**	**77.33**	**329**		P		**P**	**06 28 44.5**	**+0.1**
	comp=N,1.9nm,0.8s,mb3.8,baz=124,slow=5.3,SNR=12								
HWUT	**Hardware Ranch**	**77.41**	**327**		*e*P		**P**	**06 28 45.7**	**+0.8**
	comp=N,7.4nm,0.9s,mb4.3								
ULM	**Lac du Bonnet**	**78.38**	**341**		P		**P**	**06 28 49.5**	**-0.5**
	comp=N,8.7nm,0.7s,mb4.5,baz=154,slow=5.2,SNR=13								
ULM	**Lac du Bonnet**	**78.38**	**341**		*e*P		**P**	**06 28 49.1**	**-0.8**
	comp=N,14nm,0.8s,mb4.6								
ULM					*e*		pP	06 29 36.8	-0.3
KSWY	**Kelly School**	**78.48**	**329**		*e*P		**P**	**06 28 52.1**	**+1.4**
SCHQ	**Schefferville**	**78.61**	**360**		P		**P**	**06 28 50.5**	**-0.7**
	comp=N,3.5nm,0.7s,mb4.1,baz=124,slow=19,SNR=9.1								
SCHQ	**Schefferville**	**78.61**	**360**		*e*P		**P**	**06 28 50.4**	**-0.8**
	comp=N,7.4nm,0.8s,mb4.4								
NVAR	**Mina Array Bea**	**78.73**	**321**		P		**P**	**06 28 53.1**	**+1.0**
	comp=N,1.4nm,0.7s,mb3.7,baz=141,slow=7.0,SNR=13								
YMR	**Madison River**	**79.44**	**330**		*e*P		**P**	**06 28 57.5**	**+1.7**
QLMT	**Earthquake Lak**	**79.78**	**329**		*e*P		**P**	**06 28 59.3**	**+1.7**
HLID	**Hailey**	**80.27**	**327**		*e*P		**P**	**06 29 01.7**	**+1.4**
	comp=N,16nm,0.9s,mb4.7								
HLID					*e*		pP	06 29 53.8	+6.3
MCMT	**McKenzie Canyo**	**80.44**	**329**		*e*P		**P**	**06 29 03.0**	**+1.9**
MAW	**Mawson**	**81.29**	**163**		⇓*i*P		**P**	**06 29 06.2**	**+1.1**
	comp=N,12nm,0.6s,mb4.7								
MAW	**Mawson**	**81.29**	**163**		P		**P**	**06 29 06.4**	**+1.3**
	comp=N,17nm,0.7s,mb4.8,baz=213,slow=6.5,SNR=34								
HRY	**Holter Researc**	**81.38**	**331**		*e*P		**P**	**06 29 07.2**	**+1.1**
LBTB	**Lobatse**	**82.19**	**114**		*e*P		**P**	**06 29 10.8**	**+0.2**
	comp=N,8.9nm,1.3s,mb4.2								
DPW	**Davenport**	**85.20**	**328**		*e*P		**P**	**06 29 25.9**	**+0.6**
ESDC	**Sonseca Array**	**86.35**	**43**		P		**P**	**06 29 32.0**	**+0.9**
	comp=N,0.5nm,0.4s,mb3.6,baz=225,slow=4.2,SNR=4.5								
RMW	**Rattlesnake Mo**	**86.71**	**326**		*e*P		**P**	**06 29 32.7**	**+0.1**
AS12	**Alice Springs**	**128.44**	**204**		*e*P	PKPdf		06 35 55.3	+1.3
	comp=N,5.6nm,0.8s								
ASAR	**Alice Springs**	**128.44**	**204**		PKP	PKPdf		06 35 55.2	+1.2
	comp=N,5.1nm,0.7s,baz=148,slow=2.3,SNR=43								
WB2	**Warramunga Arr**	**131.61**	**207**		*e*P	PKPdf		06 36 01.7	+1.6
WRA	**Warramunga Arr**	**131.62**	**207**		PKP	PKPdf		06 36 01.6	+1.5
	comp=N,2.5nm,0.6s,baz=174,slow=1.7,SNR=19								
ZRNK	**Zerenda**	**136.04**	**37**		*e*PKPdf	PKPdf		06 36 09.9	+2.4
BVAR	**Borovoye Array**	**136.77**	**37**		PKP	PKPdf		06 36 10.8	+2.0
	comp=N,1.7nm,0.7s,baz=270,slow=3.0,SNR=12								
MKAR	**Makanchi Array**	**146.49**	**40**		PKPbc	PKPbc		06 36 28.1	+0.6
	comp=N,16nm,0.7s,baz=314,slow=1.5,SNR=100								
WMQ	**Urumqi**	**151.31**	**40**		PKP	PKPdf		06 36 34.9	+1.2
MDJ	**Mudanjiang**	**155.55**	**331**		PKP	PKPdf		06 36 41.3	+1.8
SONM	**Songino Array**	**155.71**	**11**		PKP	PKPdf		06 36 42.1	+2.5
	comp=N,1.7nm,1.0s,baz=270,slow=1.2,SNR=8.1								
SONM					PKPab	PKPab		06 37 09.0	-0.6
	comp=N,2.1nm,0.7s,baz=323,slow=4.4,SNR=8.3								
CN2	**Changchun**	**157.92**	**336**		*e*PKP	PKPdf		06 36 47.0	+4.3
CMAR	**Chiang Mai Arr**	**165.58**	**110**		PKP	PKPdf		06 36 53.2	+1.9
	comp=N,0.5nm,0.3s,baz=207,slow=2.0,SNR=4.3								
CMAR					PKPab	PKPab		06 37 53.2	+0.1
	comp=N,0.6nm,0.4s,baz=252,slow=4.5,SNR=4.4								
NJ2	**Nanjing**	**170.64**	**329**		*e*PKP	PKPdf		06 36 53.4	-0.8

*MOS **06** 06:33:14.2±1.2,35.65N×69.67E,h98km,mb4.7/20,Error ellipse: s-maj=10.5km s-min=6.4km az=109.5*
*NEIC **06** 06:33:15.6±0.2,35.66N×69.79E,mb4.7/53,Error ellipse: s-maj=7.8km s-min=3.9km az=214.0*
NEIC Felt at Kabul and Kondoz.
*BJI **06** 06:33:16.5,35.82N×69.62E,h121km,mB5.0,mb4.9*
*IDC **06** 06:33:16.0±0.5,35.66N×69.58E,h102km±3km,mb4.2/16, mb1 4.3/18,mb1mx4.3/21,Error ellipse: s-maj=16.5km s-min=9.9km az=31.0*
*NNC **06** 06:33:26.0±5.8,36.46N×69.09E,h142km±53km,mpv5.7, Error ellipse: s-maj=48.9km s-min=40.1km az=48.0*

ISC 06 06:33:14.1±0.2,35.60N±0.02×69.72E±0.03,h102km, h102km±1.1km;pP-P,n207,σ1s16/235,mb4.6/75,14C-11D, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
CEP	**Cherat**	**2.53**	**134**	⇓P			**P**	**06 33 57.5**	**+3.1**
THW	**Thamme Wali**	**3.26**	**148**	⇓P			**P**	**06 34 05.9**	**+1.4**
SBDP	**Sheikh Budin**	**3.41**	**164**	P			**P**	**06 34 07.7**	**+1.2**
CHCP	**Chirah Chowk**	**3.50**	**122**	⇑P			**P**	**06 34 10.4**	**+2.6**
KSH	**Kashi**	**6.32**	**50**	*e*P			**P**	**06 34 50.3**	**+4.0**
KSH				S			**S**	**06 36 01.7**	**+4.1**
AML	**Almayashu**	**7.22**	**24**	P			**P**	**06 34 59.0**	**+0.3**
	SNR=309								
KK31	**Karatay Array**	**7.52**	**4**	⇑P			**P**	**06 35 02.0**	**-0.7**
	284nm,0.5s,baz=199,slow=15,SNR=5010								
KK31				⇑S			**S**	**06 36 18.5**	**-8.4**
	78nm,0.4s,baz=194,slow=26,SNR=5.0								
KKAR	**Karatay Array**	**7.52**	**4**	*i* PN			**P**	**06 35 02.0**	**-0.7**
KKAR				pmax		pmax			
	comp=Z,158nm,0.4s								
UCH	**Uchtor**	**7.60**	**28**	P			**P**	**06 35 04.3**	**+0.5**
	SNR=677								
EKS2	**Erkin-Say**	**7.72**	**23**	P			**P**	**06 35 05.7**	**+0.2**
	SNR=142								
KZA	**Kyzart**	**7.78**	**32**	P			**P**	**06 35 06.4**	**+0.2**
	SNR=79								
KBK	**Karagaybulak**	**8.13**	**28**	P			**P**	**06 35 11.6**	**+0.6**
	SNR=227								
FRU	**Bishkek**	**8.16**	**26**	⇑*e*PN			**P**	**06 35 12.2**	**+0.8**
FRU				pmax		pmax			
	comp=Z,520nm,1.7s								
CHMS	**Chumysh**	**8.35**	**26**	P			**P**	**06 35 14.0**	**+0.1**
	SNR=290								
ULHL	**Ulahol**	**8.36**	**35**	P			**P**	**06 35 14.3**	**+0.3**
	SNR=116								
USP	**Ospenovka**	**8.50**	**24**	P			**P**	**06 35 15.5**	**-0.4**
	SNR=188								
TKM2	**Tokmak 2**	**8.61**	**30**	P			**P**	**06 35 17.7**	**+0.3**
	SNR=20								
JASL	**Jaisalmer**	**8.71**	**173**	*e*P			**P**	**06 35 17.6**	**-1.1**
KHET	**Khetri**	**9.11**	**144**	*e*P			**P**	**06 35 22.7**	**-1.5**
KHET				AMb		AMB	AMB	06 35 25.2	
	comp=Z,8.9nm,0.2s								
NDI	**New Delhi**	**9.37**	**135**	*e*P			**P**	**06 35 24.8**	**-2.9**
NDI				*e*S			**S**	**06 37 02.0**	**-10**
KUDL	**Kundal**	**9.40**	**140**	*e*P			**P**	**06 35 26.8**	**-1.2**
KUDL				AMb		AMB	AMB	06 35 30.2	
	comp=Z,20nm,0.2s								
AYAN	**Aya Nagar**	**9.48**	**136**	*e*P			**P**	**06 35 28.5**	**-0.6**
AYAN				AMb		AMB	AMB	06 35 30.1	
	comp=Z,54nm,0.4s								
VAN	**Vannovskaya**	**9.61**	**288**	P			**P**	**06 35 28.0**	**-2.8**
SONA	**Sohna**	**9.63**	**137**	*e*P			**P**	**06 35 30.9**	**-0.3**
SONA				AMb		AMB	AMB	06 35 31.9	
	comp=Z,32nm,0.3s								
SONA				*e*S			**S**	**06 37 09.9**	**-8.3**
KALG	**Kalgarh**	**9.74**	**126**	*e*P			**P**	**06 35 28.6**	**-4.2**
AJM	**Ajmer**	**10.02**	**154**	*e*P			**P**	**06 35 35.0**	**-1.4**
AJM				*i* S			**S**	**06 37 19.0**	**-8.6**
PTH	**Pithoragarh**	**10.71**	**121**	*e*P			**P**	**06 35 46.0**	**+0.3**
PTH				*e*S			**S**	**06 37 35.0**	**-9.1**
LGTI	**Lohaghat**	**10.79**	**122**	*e*P			**P**	**06 35 45.5**	**-1.2**
LGTI				*e*				06 37 40.5	
JHNI	**Jhansi**	**12.63**	**141**	⇓*i*			**P**	**06 36 06.0**	**-5.2**
JHNI				*e*S			**S**	**06 38 19.0**	**-11**
DANN	**Dangsing**	**13.93**	**117**	*e*P			**P**	**06 36 26.3**	**-1.7**
DANN				*e*S			**S**	**06 38 53.5**	**-6.9**
BHPL	**Bhopal**	**14.02**	**149**	*e*P			**P**	**06 36 27.4**	**-1.8**
BHPL				AMb		AMB	AMB	06 36 29.4	
	comp=Z,22nm,0.5s								
BHPL				*i*				06 38 54.4	
KOLN	**Koldanda**	**14.15**	**120**	*e*P			**P**	**06 36 29.5**	**-1.4**
	comp=Z,88nm,0.5s								
KOLN				*e*S			**S**	**06 38 58.0**	**-7.7**
MKAR	**Makanchi Array**	**14.63**	**36**	P			**P**	**06 36 37.0**	**+0.1**
	comp=Z,1.1nm,0.3s,baz=235,slow=15,SNR=26								
MKAR	**Makanchi Array**	**14.63**	**36**	P			**P**	**06 36 37.0**	**+0.1**
MKAR				pmax		pmax			
	comp=Z,1.0nm,0.3s								
MKAR	**Makanchi Array**	**14.63**	**36**	P			**P**	**06 36 37.0**	**+0.1**
GKN	**Gorkha**	**14.76**	**117**	*e*P			**P**	**06 36 37.2**	**-1.5**
	comp=Z,527nm,0.7s								
GKN				*e*S			**S**	**06 39 11.9**	**-8.1**
DMN	**Daman**	**15.33**	**117**	*e*P			**P**	**06 36 44.2**	**-1.7**
	comp=Z,460nm,0.7s								
DMN				*e*S			**S**	**06 39 26.2**	**-6.8**
KKN	**Kakani**	**15.35**	**116**	*e*P			**P**	**06 36 44.9**	**-1.3**
	comp=Z,590nm,0.6s								
KKN				*e*S			**S**	**06 39 26.6**	**-6.9**
AB31	**Akbulak array**	**15.42**	**335**	⇓P			**P**	**06 36 44.8**	**-2.2**
	comp=Z,40nm,0.3s,baz=159,slow=12,SNR=1919								
AB31				⇑S			**S**	**06 39 22.1**	**-13**
	comp=Z,38nm,0.5s								
AB31	**Akbulak array**	**15.42**	**335**	*e*P			**P**	**06 36 44.7**	**-2.2**
AB31				pmax		pmax			
	comp=Z,14nm,0.3s								
PKI	**Pulchoki**	**15.57**	**117**	*e*P			**P**	**06 36 47.8**	**-1.2**
	comp=Z,590nm,0.7s								
PKI				*e*S			**S**	**06 39 31.8**	**-6.7**
GUN	**Gumba**	**15.73**	**115**	*e*P			**P**	**06 36 49.1**	**-1.8**
	comp=Z,200nm,0.4s								
WMQ	**Urumqi**	**16.07**	**54**	P			**P**	**06 36 57.3**	**+2.2**
WMQ				XP				06 37 29.0	
WMQ				S			**S**	**06 39 51.0**	**+1.3**
WMQ				PCP		PcP		06 41 48.8	+2.3
WMQ				SCP				06 45 11.6	
WMQ				PCS				06 45 23.0	
WMQ				SCS		ScS		06 48 49.2	+1.4
WMQ				AMB		AMB			
	comp=Z,50nm,0.8s								
WMQ				AMB		AMB			
	comp=Z,337nm,4.3s								
WMQ				LR		LR			
	comp=N,932nm,12.3s								
WMQ				LR		LR			
	comp=E,901nm,12.1s								
WMQ				LR		LR			
	comp=Z,1μm,13.1s								
KURK	**Kurchatov**	**16.43**	**20**	P			**P**	**06 36 58.2**	**-1.3**
	comp=Z,27nm,1.0s,baz=202,slow=9.2,SNR=29								
KURK	**Kurchatov**	**16.43**	**20**	*e*P			**P**	**06 36 57.4**	**-2.1**
BOM	**Bombay**	**16.86**	**170**	*e*			**S**	**06 40 04.6**	**-3.3**
VOSK	**Vostochnaya**	**17.14**	**3**	⇑P			**P**	**06 37 06.7**	**-1.8**
	comp=Z,19nm,0.6s								
BLSP	**Bilaspur**	**17.25**	**138**	*e*			**S**	**06 40 07.7**	**-8.8**
ZRNK	**Zerenda**	**17.36**	**359**	⇑P			**P**	**06 37 09.6**	**-1.5**
	comp=Z,32nm,0.4s								
ZRNK	**Zerenda**	**17.36**	**359**	*e*P			**P**	**06 37 09.9**	**-1.1**
POO	**Poona**	**17.39**	**167**	*e*P			**P**	**06 37 12.5**	**+0.8**
POO				AMb		AMB	AMB	06 37 32.8	
	comp=Z,30nm,1.0s								
POO				*e*S			**S**	**06 40 27.0**	**+7.3**
BVA0	**Borovoye Array**	**17.43**	**1**	⇑P			**P**	**06 37 10.4**	**-1.5**
	comp=Z,7.6nm,0.8s								
BVAR	**Borovoye Array**	**17.43**	**1**	P			**P**	**06 37 10.9**	**-1.1**
	comp=Z,10nm,0.3s,baz=173,slow=13,SNR=132								
BRVK	**Borovoye**	**17.46**	**1**	⇑*e*P			**P**	**06 37 10.9**	**-1.4**
LATR	**Latur**	**18.16**	**159**	*e*			Px	06 38 07.4	
LATR				*e*			**S**	**06 40 31.4**	**-5.2**
KAD	**Karad**	**18.64**	**167**	*i*			**S**	**06 40 34.1**	**-13**
LSA	**Lhasa**	**18.97**	**102**	*e*P			**P**	**06 37 33.7**	**+3.8**
LSA	**Lhasa**	**18.97**	**102**	*e*P			**P**	**06 37 33.4**	**+3.5**
	comp=Z,63nm,0.5s								
HYB	**Hyderabad**	**19.74**	**154**	*i* P			**P**	**06 37 39.0**	**+0.9**
	comp=Z,115nm,0.8s								
HYB				*e*S			**S**	**06 41 10.0**	**+0.1**
HYB	**Hyderabad**	**19.74**	**154**	*e*P			**P**	**06 37 39.0**	**+0.9**
	comp=Z,115nm,0.8s								
HYB				*e*S			**S**	**06 41 10.0**	**+0.1**
HASS	**Wahat al Ahsa'**	**20.11**	**244**	P			**P**	**06 37 44.8**	**+2.8**
GNI	**Garni**	**20.21**	**290**	*d* iP			**P**	**06 37 42.9**	**0.0**
GNI				pmax		pmax			
	comp=Z,86nm,1.0s								
GNI	**Garni**	**20.21**	**290**	⇑*e*P			**P**	**06 37 44.9**	**+2.0**
	comp=Z,49nm,0.8s								
KGD	**Kothagudem**	**20.41**	**149**	*e*P			**P**	**06 37 47.8**	**+2.7**
KGD				*e*S			**S**	**06 41 23.0**	**+0.1**
ZEI	**Tsey**	**21.21**	**298**	*e*P			**P**	**06 37 54.4**	**+1.5**
ZEI				*e*PP				06 38 15.0	
ZEI				*e*				06 41 40.0	
ZEI				pmax		pmax			
	comp=Z,50nm,1.0s,mb4.8								
NVS	**Novosibirsk**	**21.40**	**22**	*e*P			**P**	**06 37 55.1**	**+0.4**
NVS				*i* S			**S**	**06 41 45.3**	**+4.4**
NVS				pmax		pmax			
	comp=Z,65nm,1.1s,mb4.9								
NVS				pmax		pmax			
	comp=N,59nm,1.5s								
NVS				pmax		pmax			
	comp=E,13nm,0.6s								
NVS				smax					
	comp=N,34nm,1.3s								
NVS				smax					
	comp=E,8.0nm,1.1s								
SHL	**Shillong**	**21.50**	**112**	⇓*i*P			**P**	**06 37 57.0**	**+1.0**
SHL				*e*S			**S**	**06 41 48.0**	**+5.0**
AGT	**Agartala**	**21.99**	**116**	*e*P			**P**	**06 38 00.0**	**-0.8**
SVE	**Sverdlovsk**	**22.11**	**347**	⇑*i*P			**P**	**06 38 02.0**	**+0.3**
SVE				*e*				06 38 26.0	
SVE				pmax		pmax			
	comp=Z,60nm,1.7s,mb4.7								
ARU	**Arti**	**22.17**	**343**	⇓*i*P			**P**	**06 38 02.8**	**+0.4**
ARU				*e*				06 38 21.0	
ARU				*e*S			**S**	**06 41 59.2**	**+4.3**
ARU				pmax		pmax			
	comp=Z,39nm,0.8s,mb4.8								
ARU	**Arti**	**22.17**	**343**	*e*P			**P**	**06 38 02.7**	**+0.3**
	comp=Z,28nm,0.8s,mb4.7								
KIV	**Kislovodsk**	**22.32**	**300**	*e*P			**P**	**06 38 04.3**	**+0.5**
KIV				*e*S			**S**	**06 42 01.4**	**+3.9**
KIV				pmax		pmax			
	comp=N,10.0nm,0.8s								
KIV				pmax		pmax			
	comp=Z,20nm,0.8s,mb4.5								
KIV				MLR		MLR			
	comp=N,10.0nm,18.0s								
KIV				MLR		MLR			
	comp=Z,40nm,18.0s								
KIV				MLR		MLR			
	comp=E,70nm,19.0s								
KIV	**Kislovodsk**	**22.32**	**300**	*e*P			**P**	**06 38 04.3**	**+0.5**
	comp=E,27nm,0.8s,mb4.6								
GOF	**Gofitskoye**	**22.35**	**303**	⇑*i*P			**P**	**06 38 05.5**	**+1.4**
GOF				pmax		pmax			
	comp=Z,40nm,1.2s,mb4.6								
CUD	**Cuddapah**	**22.55**	**157**	*e*P			**P**	**06 38 09.9**	**+3.6**
CUD				*e*				06 38 19.7	
CUD				*e*				06 38 23.8	
CUD				*e*				06 38 32.7	
CUD				*e*S			**S**	**06 42 05.4**	**+3.6**
IMP	**Imphal**	**23.48**	**111**	*i* P			**P**	**06 38 19.0**	**+3.8**
GTA	**Gaotai**	**24.12**	**72**	⇓*i*P			**P**	**06 38 24.8**	**+3.5**
GTA				AP				06 38 51.6	
GTA				XP				06 39 04.0	
GTA				AMB		AMB			
	comp=Z,43nm,0.6s,mb5.0								
MZLS	**Mizel**	**24.12**	**248**	P			**P**	**06 38 22.7**	**+1.3**
SOC	**Sochi**	**24.36**	**298**	*e*P			**P**	**06 38 25.7**	**+2.1**
SOC				*e*				06 38 55.5	
SOC				*e*S			**S**	**06 42 30.5**	**-2.2**
SOC				pmax		pmax			
	comp=Z,16nm,0.7s,mb4.5								
SOC				pmax		pmax			
	comp=N,5.0nm,0.4s								
SOC				pmax		pmax			
	comp=E,10.0nm,0.4s								
SOC				MLR		MLR			
	comp=Z,91nm,20.0s								
SOC				MLR		MLR			
	comp=N,98nm,19.0s								
SOC				MLR		MLR			
	comp=E,81nm,20.0s								
AFFS	**'Afif**	**25.86**	**251**	P			**P**	**06 38 37.9**	**-0.1**
KAMS	**Al Khamasin**	**26.82**	**242**	P			**P**	**06 38 48.6**	**+1.8**
TATS	**Tathlith**	**28.11**	**242**	P			**P**	**06 38 57.3**	**-1.2**
ZAK	**Zakamensk**	**28.36**	**48**	*e*P			**P**	**06 39 01.9**	**+1.4**
ZAK				*e*				06 39 31.3	
BRTR	**Keskin Array B**	**28.73**	**289**	P			**P**	**06 39 03.6**	**-0.2**
	baz=91,slow=8.6,SNR=15								
BRTR				pP		pP		06 39 26.6	+0.1
	comp=E,3.1nm,0.7s,baz=95,slow=9.1,SNR=5.0								
CD2	**Chengdu**	**28.76**	**90**	P			**P**	**06 39 06.3**	**+2.1**
CD2				PP		PP		06 40 04.4	+3.6
CD2				S			**S**	**06 43 48.0**	**+3.3**
CD2				XS				06 44 31.5	
CD2				SS		SS		06 45 25.1	+5.6
CD2				AMB		AMB			
	comp=Z,10.0nm,1.0s,mb4.4								
CD2				AMB		AMB			
	comp=Z,130nm,4.5s								
CD2				LR		LR			
	comp=N,180nm,7.7s								
CD2				LR		LR			
	comp=Z,180nm,5.5s								
SONM	**Songino Array**	**29.70**	**54**	P			**P**	**06 39 14.1**	**+1.6**
	comp=Z,2.8nm,0.7s,mb4.0,baz=260,slow=9.9,SNR=18								
EIL	**Elat**	**29.77**	**269**	P			**P**	**06 39 07.1**	**-6.1**
	comp=Z,2.7nm,0.7s,mb4.0								
OBN	**Obninsk**	**29.96**	**321**	⇑*e*P			**P**	**06 39 13.8**	**-0.9**
OBN				*e**PP		pP		06 39 36.0	-1.5
OBN				*e*				06 39 45.5	
OBN				*e*				06 40 12.4	
OBN				*e*S			**S**	**06 44 03.6**	**+0.1**
OBN				pmax		pmax			
	comp=Z,31nm,1.1s,mb4.8								
OBN				MLR		MLR			
	comp=Z,100nm,21.0s								
ULN	**Ulaanbaatar**	**30.14**	**54**	P			**P**	**06 39 16.2**	**-0.1**
	comp=Z,2.0nm,0.5s,mb4.0								
KMI	**Kunming**	**30.22**	**101**	*e*P			**P**	**06 39 19.0**	**+1.8**
KMI				S			**S**	**06 44 06.7**	**-1.1**
KMI				AMB		AMB			
	comp=Z,12nm,0.7s,mb4.6								
KMI				LR		LR			
	comp=Z,62nm,20.5s								
CM31	**Chiang Mai Arr**	**30.97**	**116**	*e*P			**P**	**06 39 24.8**	**+0.9**
	comp=Z,7.5nm,0.4s,mb4.8								
CMAR	**Chiang Mai Arr**	**30.97**	**116**	P			**P**	**06 39 24.6**	**+0.7**
	comp=Z,3.7nm,0.5s,mb4.3,baz=294,slow=9.7,SNR=18								
CMAR	**Chiang Mai Arr**	**30.97**	**116**	P			**P**	**06 39 24.6**	**+0.7**
CMAR				pmax		pmax			
	comp=Z,4.0nm,0.5s								
AKASG	**Malin Array Be**	**32.72**	**310**	P			**P**	**06 39 37.4**	**-1.3**
	comp=Z,8.6nm,0.6s,mb4.8,baz=87,slow=7.1,SNR=68								
AKASG				pP		pP		06 40 00.3	-1.7
	comp=Z,12nm,0.8s,baz=90,slow=7.5,SNR=8.6								
ENH	**Enshi**	**33.63**	**88**	*e*P			**P**	**06 39 48.8**	**+1.9**
	comp=Z,12nm,0.8s,mb4.8								
MLR	**Muntele Rosu**	**34.33**	**300**	⇓*i*P			**P**	**06 39 54.7**	**+2.1**
SANT	**Santorini**	**35.59**	**285**	*e*P			**P**	**06 39 59.4**	**-4.0**
JOF	**Joensuu**	**36.14**	**331**	*e*p			**P**	**06 40 06.9**	**-1.0**
	comp=Z,4.0nm,0.3s,mb4.8								
JOF	**Joensuu**	**36.14**	**331**	*e*P			**P**	**06 40 06.9**	**-1.0**
JOF				pmax		pmax			
	comp=Z,4.0nm,0.3s,mb4.8								
BJI	**Beijing**	**36.64**	**69**	*e*P			**P**	**06 40 13.0**	**+0.7**
BJI				AMB		AMB			
	comp=Z,11nm,0.6s,mb5.0								
BOD	**Bodaibo**	**36.70**	**39**	*e*P			**P**	**06 40 12.3**	**-0.3**
BOD				*e*			pP	06 40 36.9	+0.7
KWP	**Kalwaria**	**36.72**	**307**	*e*P			**P**	**06 40 13.2**	**+0.4**
	comp=Z,19nm,0.7s,mb5.1								
KWP				*e*pP		pP		06 40 36.8	+0.4
SUW	**Suwalki**	**37.00**	**315**	P			**P**	**06 40 12.7**	**-2.4**
FINES	**FINESS Array B**	**37.66**	**327**	P			**P**	**06 40 20.2**	**-0.4**
	comp=Z,4.6nm,0.8s,mb4.4,baz=113,slow=8.4,SNR=15								
FINES				pP		pP		06 40 42.5	-1.7
	comp=Z,5.5nm,0.8s,baz=117,slow=8.5,SNR=6.4								
FINES	**FINESS Array B**	**37.66**	**327**	P			**P**	**06 40 20.2**	**-0.4**
FINES				*PP		pP		06 40 42.5

GRF					*e*PP	pP	06 41 39.2	+1.1
GRF					pmax	pmax		
	comp=Z,7.0nm,1.0s,mb4.3							
NB2	**NORSAR Subarra**	**44.48**	**324**		P	**P**	**06 41 15.4**	**-1.1**
	comp=Z,11nm,0.8s,mb4.6,baz=99,slow=7.9							
NB2	**NORSAR Subarra**	**44.48**	**324**		P	**P**	**06 41 15.4**	**-1.1**
	baz=99,slow=7.9							
NOA	**NORSAR Array B**	**44.48**	**324**		P	**P**	**06 41 15.5**	**-1.0**
	comp=Z,8.9nm,0.8s,mb4.5,baz=99,slow=7.9,SNR=22							
NOA					pP	pP	06 41 38.9	-1.5
	comp=Z,3.8nm,0.5s,baz=99,slow=8.0,SNR=5.2							
NOA					sP	sP	06 41 50.1	-2.1
	comp=Z,3.5nm,0.6s,baz=99,slow=8.0,SNR=3.3							
NOA	**NORSAR Array B**	**44.48**	**324**		P	**P**	**06 41 15.5**	**-1.0**
NOA					*PP	pP	06 41 38.9	-1.5
NOA					*SP	sP	06 41 50.1	-2.1
NOA					pmax	pmax		
	comp=Z,9.0nm,0.9s							
NOA					pmax	pmax		
	comp=N,4.0nm,0.5s							
NOA					pmax	pmax		
	comp=N,4.0nm,0.6s							
NOA	**NORSAR Array B**	**44.48**	**324**		P	**P**	**06 41 15.5**	**-1.0**
NOA					pP	pP	06 41 38.9	-1.5
NOA					sP	sP	06 41 50.1	-2.1
NAO01	**NORSAR Array S**	**44.62**	**323**		P	**P**	**06 41 16.2**	**-1.4**
	comp=N,9.8nm,0.9s,mb4.5							
MDJ	**Mudanjiang**	**45.75**	**60**		P	**P**	**06 41 26.4**	**-0.4**
MDJ					AMB	AMB		
	comp=Z,10.0nm,0.9s,mb4.5							
MDJ					AMB	AMB		
	comp=Z,78nm,4.6s							
KLR	**Kul'dur**	**46.51**	**53**	*e*P		**P**	**06 41 33.3**	**+0.6**
TIXI	**Tiksi**	**47.00**	**22**	*e*P		**P**	**06 41 36.3**	**+0.1**
TIXI				*e*		pP	06 42 01.3	+0.9
TIXI				*e*S		**S**	**06 48 10.9**	**-8.1**
TIXI				pmax		pmax		
	comp=Z,46nm,0.9s,mb5.2							
TIXI	**Tiksi**	**47.00**	**22**	*e*P		**P**	**06 41 36.2**	**0.0**
	comp=Z,7.5nm,1.0s,mb4.4							
TIXI				*e*pP		pP	06 42 01.0	+0.6
HINF	**Hinteralfeld**	**47.27**	**305**	*e*P		**P**	**06 41 39.1**	**+0.5**
HAU	**Haudompre**	**47.57**	**306**	*e*P		**P**	**06 41 40.7**	**-0.3**
SBF	**Sospel**	**47.60**	**300**	*e*P		**P**	**06 41 41.0**	**-0.3**
	comp=Z,30nm,0.9s,mb4.8							
LPG	**La Plagne**	**47.74**	**302**	*e*P		**P**	**06 41 42.8**	**+0.4**
LPL	**La Plagne**	**47.75**	**302**	*e*P		**P**	**06 41 43.0**	**+0.5**
	comp=Z,5.2nm,0.4s,mb4.4							
MBDF	**Montbardon**	**47.88**	**301**	*e*P		**P**	**06 41 44.1**	**+0.6**
	comp=Z,4.5nm,0.5s,mb4.2							
ORIF	**Oris-en-Rattie**	**48.46**	**302**	*e*P		**P**	**06 41 48.0**	**0.0**
BAIF	**Baives**	**48.64**	**309**	*e*P		**P**	**06 41 49.5**	**+0.3**
VIVF	**Saint-Julien-l**	**49.31**	**302**	*e*P		**P**	**06 41 54.4**	**-0.1**
	comp=Z,5.0nm,0.5s,mb4.4							
LOR	**Lormes**	**49.36**	**305**	*e*P		**P**	**06 41 55.7**	**+0.9**
SMF	**Signal de Mont**	**49.50**	**304**	*e*P		**P**	**06 41 55.2**	**-0.7**
	comp=Z,5.4nm,0.4s,mb4.5							
AVF	**Avril sur Loir**	**49.80**	**304**	*e*P		**P**	**06 41 57.7**	**-0.5**
	comp=Z,3.4nm,0.4s,mb4.3							
JNU	**Nakatsue**	**49.83**	**74**	P		**P**	**06 42 00.0**	**+1.3**
	comp=Z,5.2nm,0.4s,mb4.8,baz=270,slow=8.1,SNR=6.7							
TCF	**Toulx Ste Croi**	**50.67**	**304**	*e*P		**P**	**06 42 04.5**	**-0.4**
	comp=Z,3.4nm,0.5s,mb4.4							
MTLF	**Montolieu**	**51.40**	**300**	*e*P		**P**	**06 42 10.5**	**0.0**
	comp=Z,4.6nm,0.6s,mb4.4							
LDF	**La Druitiere**	**51.70**	**307**	*e*P		**P**	**06 42 12.2**	**-0.4**
	comp=Z,4.8nm,0.3s,mb4.7							
FLN	**La Foliniere**	**51.89**	**308**	*e*P		**P**	**06 42 13.0**	**-1.0**
	comp=Z,4.2nm,0.4s,mb4.5							
LFF	**La Frestale**	**52.01**	**303**	*e*P		**P**	**06 42 14.3**	**-0.6**
	comp=Z,13nm,0.5s,mb4.9							
ETSF	**Etsaut**	**53.48**	**301**	*e*P		**P**	**06 42 25.7**	**-0.2**
	comp=Z,6.4nm,0.6s,mb4.6							
YSS	**Yuzh-Sakhalins**	**54.19**	**54**⇑	*e*P		**P**	**06 42 31.0**	**-0.1**
YSS	**Yuzh-Sakhalins**	**54.19**	**54**	*e*P		**P**	**06 42 31.2**	**+0.1**
	comp=Z,18nm,0.7s,mb5.2							
MAJO	**Matsushiro**	**54.25**	**67**	*e*P		**P**	**06 42 31.2**	**-0.5**
	comp=Z,9.0nm,0.7s,mb4.9							
DAG	**Danmarks Havn**	**55.30**	**344**	*i* P		**P**	**06 42 37.0**	**-1.8**
DAG	**Danmarks Havn**	**55.30**	**344**	*e*P		**P**	**06 42 37.0**	**-1.8**
MA2	**Magadan**	**55.71**	**37**	*e*P		**P**	**06 42 42.3**	**+0.4**
	comp=Z,22nm,1.3s,mb5.0							
BILL	**Bilibino**	**59.87**	**26**	*e*P		**P**	**06 43 09.3**	**-1.6**
BILL				*e*PP		pP	06 43 37.5	+1.4
BILL				pmax		pmax		
	comp=Z,4.0nm,0.9s,mb4.5							
BILL	**Bilibino**	**59.87**	**26**	*e*P		**P**	**06 43 09.8**	**-1.1**
	comp=Z,2.7nm,0.7s,mb4.4							
IMA	**Indian Mountai**	**73.29**	**17**	*e*P		**P**	**06 44 36.2**	**+0.7**
	comp=Z,12nm,0.8s,mb4.8							
LBTB	**Lobatse**	**73.31**	**221**	*e*P		**P**	**06 44 36.9**	**+0.4**
	comp=Z,3.8nm,0.6s,mb4.4							
DBIC	**Dimbokro**	**73.61**	**266**	P		**P**	**06 44 37.2**	**-1.2**
	comp=Z,2.7nm,0.6s,mb4.2,baz=60,slow=12,SNR=12							
DBIC				pP		pP	06 45 02.8	-1.8
	comp=Z,3.4nm,0.8s,baz=334,slow=3.9,SNR=4.0							
DBIC	**Dimbokro**	**73.61**	**266**	P		**P**	**06 44 37.2**	**-1.2**
DBIC				*PP		pP	06 45 02.8	-1.8
DBIC				pmax		pmax		
	comp=Z,3.0nm,0.6s							
DBIC				pmax		pmax		
	comp=N,3.0nm,0.8s							
DBIC	**Dimbokro**	**73.61**	**266**	*e*P		**P**	**06 44 37.4**	**-1.0**
	comp=N,3.2nm,0.9s,mb4.0							
KIC	**Kosan Boka**	**73.69**	**266**	*e*P		**P**	**06 44 37.8**	**-1.1**
	comp=N,41nm,1.0s,mb5.1							
KIC				*e*PcP		pP	06 45 02.6	-2.5
TIC	**Toumodi**	**73.76**	**267**	*e*P		**P**	**06 44 38.1**	**-1.2**
	comp=N,15nm,0.3s,mb5.3							
TIC				*e*PcP		pP	06 45 03.7	-1.8
LIC	**Lamto**	**74.00**	**266**	*e*P		**P**	**06 44 39.4**	**-1.3**
	comp=N,36nm,0.8s,mb5.1							
LIC				*e*PcP		pP	06 45 04.3	-2.7
INK	**Inuvik**	**74.96**	**9**	P		**P**	**06 44 45.6**	**+0.5**
	comp=N,2.5nm,0.6s,mb4.1,baz=345,slow=4.6,SNR=27							
INK				pP		pP	06 45 11.8	+0.4
	comp=N,5.5nm,0.6s,baz=0.1,slow=6.6,SNR=8.0							
INK	**Inuvik**	**74.96**	**9**	P		**P**	**06 44 45.6**	**+0.5**
INK				*PP		pP	06 45 11.8	+0.4
INK				pmax		pmax		
	comp=Z,3.0nm,0.6s							
INK				pmax		pmax		
	comp=N,6.0nm,0.6s							
INK	**Inuvik**	**74.96**	**9**	P		**P**	**06 44 45.6**	**+0.5**
INK				pP		pP	06 45 11.8	+0.4
FITZ	**Fitzroy Crossi**	**75.20**	**125**	*e*P		**P**	**06 44 48.4**	**+1.0**
	comp=N,5.0nm,0.9s,mb4.2							
COLA	**College**	**75.63**	**16**	*e*P		**P**	**06 44 49.4**	**+0.5**
COLA	**College**	**75.63**	**16**	*e*P		**P**	**06 44 48.5**	**-0.4**
	comp=N,14nm,1.1s,mb4.6							
COLA				*e*pP		pP	06 45 15.5	+0.2
ILAR	**Eielson Array**	**75.92**	**15**	P		**P**	**06 44 50.2**	**-0.4**
	comp=N,1.0nm,0.8s,mb3.6,baz=320,slow=4.5,SNR=11							
ILAR				pP		pP	06 45 16.4	-0.6
	comp=N,2.5nm,1.0s,baz=318,slow=5.1,SNR=6.6							
ILAR	**Eielson Array**	**75.92**	**15**	P		**P**	**06 44 50.3**	**-0.3**
ILAR				*PP		pP	06 45 16.4	-0.6
ILAR				pmax		pmax		
	comp=Z,1.0nm,0.9s							
ILAR				pmax		pmax		
	comp=N,3.0nm,1.0s							
KAKA	**Kakadu**	**76.21**	**117**	*e*P		**P**	**06 44 53.9**	**+0.7**
	comp=N,14nm,0.6s,mb4.9							
PMR	**Palmer**	**78.15**	**18**	P		**P**	**06 45 01.8**	**-1.2**
	comp=N,2.8nm,0.8s,mb4.0							
SUR	**Sutherland**	**81.70**	**220**	*e*P		**P**	**06 45 24.0**	**+1.3**
	comp=N,14nm,1.0s,mb4.7							
YKA	**Yellowknife Ar**	**82.19**	**2**	P		**P**	**06 45 25.1**	**+0.5**
	comp=N,1.1nm,0.7s,mb3.8,baz=351,slow=5.4,SNR=30							
YKA				pP		pP	06 45 50.9	-0.3
	comp=N,2.4nm,0.7s,baz=350,slow=5.3,SNR=8.5							
YKA	**Yellowknife Ar**	**82.19**	**2**	P		**P**	**06 45 25.1**	**+0.5**
YKA				*PP		pP	06 45 50.9	-0.3
YKA				pmax		pmax		
	comp=Z,1.0nm,0.7s							
YKA				pmax		pmax		
	comp=N,2.0nm,0.7s							
WRA	**Warramunga Arr**	**82.41**	**121**	P		**P**	**06 45 27.2**	**+0.7**
	comp=N,11nm,0.7s,mb4.8,baz=322,slow=5.0,SNR=53							
WRA				pP		pP	06 45 54.6	+1.4
	comp=N,5.9nm,0.8s,baz=322,slow=4.9,SNR=5.7							
WRA				sP		sP	06 46 05.9	+1.4
	comp=N,2.3nm,0.6s,baz=323,slow=5.2,SNR=2.4							
WRA	**Warramunga Arr**	**82.41**	**121**	P		**P**	**06 45 27.2**	**+0.7**
WRA				*PP		pP	06 45 54.6	+1.4
WRA				*SP		sP	06 46 05.9	+1.4
WRA				pmax		pmax		
	comp=Z,11nm,0.7s							
WRA				pmax		pmax		
	comp=N,6.0nm,0.8s							
WRA				pmax		pmax		
	comp=N,2.0nm,0.6s							
WRAB	**Tennant Creek**	**82.41**	**121**	*e*P		**P**	**06 45 27.1**	**+0.5**
	comp=N,22nm,0.6s,mb5.2							
WRAB				*e*pP		pP	06 45 54.8	+1.6
WRAB				*e*sP		sP	06 46 05.6	+1.2
WB2	**Warramunga Arr**	**82.42**	**121**	*i* P		**P**	**06 45 27.1**	**+0.5**
SCHQ	**Schefferville**	**82.51**	**336**	P		**P**	**06 45 26.1**	**-0.3**
	comp=N,2.5nm,0.8s,mb4.1,baz=131,slow=19,SNR=3.8							
SCHQ	**Schefferville**	**82.51**	**336**	*e*P		**P**	**06 45 25.9**	**-0.4**
	comp=N,4.7nm,0.9s,mb4.3							
AS12	**Alice Springs**	**84.60**	**124**	*e*P		**P**	**06 45 38.3**	**+0.8**
	comp=N,13nm,0.9s,mb4.8							
ASAR	**Alice Springs**	**84.60**	**124**	P		**P**	**06 45 38.5**	**+1.0**
	comp=N,16nm,0.9s,mb4.9,baz=308,slow=5.6,SNR=81							
ASAR				pP		pP	06 46 05.6	+1.2
	comp=N,5.3nm,0.7s,baz=320,slow=5.2,SNR=6.0							
ASAR				sP		sP	06 46 17.4	+2.0
	comp=N,5.9nm,0.9s,baz=322,slow=5.1,SNR=4.1							
FORT	**Forrest**	**85.81**	**133**	*e*P		**P**	**06 45 44.7**	**+1.4**
	comp=N,44nm,0.5s,mb5.6							
CTA	**Charters Tower**	**91.12**	**114**	*e*P		**P**	**06 46 09.7**	**+0.9**
	comp=N,44nm,0.4s,mb4.9							
CTAO	**Charters Tower**	**91.12**	**114**	*e*P		**P**	**06 46 09.4**	**+0.6**
	comp=N,6.7nm,0.6s,mb5.0							
STKA	**Stephens Creek**	**95.10**	**126**	P		**P**	**06 46 27.1**	**+0.4**
	comp=N,1.0nm,0.4s,mb4.6,baz=43,slow=4.5,SNR=5.2							
QSPA	**South Pole Qui**	**125.40**	**180**	*e*PKP		PKPdf	06 52 03.9	+1.9
QSPA				*e*pPKP			06 52 32.2	
PLCA	**Paso Flores**	**148.54**	**249**	PKPbc		PKPdf	06 52 51.8	+6.8
	comp=N,5.3nm,0.8s,baz=126,slow=4.6,SNR=13							
PLCA	**Paso Flores**	**148.54**	**249**	PKP2		PKPab	06 52 51.8	-2.8
PLCA				pmax		pmax		
	comp=Z,5.0nm,0.8s							

IDC 06 06:33:46.2±4.4, 18.01N×147.54E, mb3.7/3, mb1 4.1/3, mb1mx3.7/18, Error ellipse: s-maj=324.0km s-min=33.8km az=122.0, Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WB2	**Warramunga Arr**	**39.87**	**200**	*e*P		06 41 21.7	-1.8
WRA	**Warramunga Arr**	**39.88**	**200**	P		06 41 21.6	-1.9
	2.2nm,0.7s,baz=23,slow=9.0,SNR=11						
ASAR	**Alice Springs**	**43.50**	**198**	P		06 41 51.8	-1.6
	0.2nm,0.5s,baz=16,slow=9.1,SNR=4.7						
NVAR	**Mina Array Bea**	**82.19**	**52**	P		06 46 09.7	-0.9
	0.4nm,0.6s,baz=277,slow=4.5,SNR=3.6						

KRSC 06 06:38:13.2±1.0, 54.93N×165.35E, h38km±9km, ML3.9, Komandorsky Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BKI	**Bering**	**0.45**	**52**	*i* P		06 38 22.0	-1.2
BKI				*i* S		06 38 28.2	-2.0
BKI				Smax			
	1μm,0.4s						
KBTR	**Krutoberegovo**	**1.93**	**313**	*e*P		06 38 43.3	-0.8
KBTR				*e*S		06 39 04.9	-2.4
KBG	**Krutoberegovo**	**2.00**	**313**	*e*P		06 38 44.9	-0.4
KBG				*e*S		06 39 07.5	-1.8
KBG				Smax			
	200nm,0.4s						
MKZ	**Mys Kozlova**	**2.13**	**261**	*e*P		06 38 46.9	-0.2
MKZ				*i* S		06 39 10.9	-1.6
ZLN	**Zelenaya**	**2.81**	**295**	*e*P		06 38 57.2	+0.5
ZLN				*e*S		06 39 30.5	+0.8
SVLR	**Shiveluch**	**2.86**	**307**	*e*P		06 38 58.9	+1.4
SVLR				*e*S		06 39 32.1	+1.1
CIRR	**Tsirk**	**2.87**	**296**	*e*P		06 38 58.0	+0.3
CIRR				*i* S		06 39 31.4	0.0
LGNR	**Loginova**	**2.89**	**295**	*e*P		06 38 58.6	+0.7
LGNR				*e*S		06 39 33.1	+1.3
KLY	**Klyuchi**	**3.00**	**299**	*e*P		06 38 58.0	-1.5
KLY				*e*S		06 39 31.5	-3.2
KRSR	**Krestovskiy**	**3.01**	**297**	*e*P		06 38 58.7	-0.9
KRSR				*e*S		06 39 32.8	-2.0
TUMR	**Tumrok**	**3.01**	**279**	*e*P		06 39 00.2	+0.6
TUMR				*i* S		06 39 35.3	+0.4
KMNR	**Kamenistaya**	**3.04**	**288**	*e*P		06 39 00.9	+0.9
KMNR				*e*S		06 39 36.4	+0.9
KPT	**Kopyto**	**3.10**	**292**	*e*P		06 39 01.9	+1.0
KPT				*e*S		06 39 38.3	+1.2
KOZ	**Kozyrevsk**	**3.31**	**292**	*e*P		06 39 05.1	+1.2
KOZ				*i* S		06 39 43.5	+0.9
SRDR	**Sredinnyy**	**3.48**	**296**	*e*P		06 39 05.6	-0.7
SRDR				*e*S		06 39 43.7	-3.2
SPN	**Mys Shipunski**	**3.64**	**242**	*e*P		06 39 07.5	-1.0
SPN				*i* S		06 39 47.1	-3.7
ESO	**Esso**	**3.92**	**287**	*e*P		06 39 12.5	0.0
ESO				*e*S		06 39 54.7	-3.2
ESO				Smax			
	30nm,1.0s						
NLC	**Nalytchevo**	**3.95**	**246**	*e*P		06 39 12.5	-0.5
NLC				*e*S		06 39 55.3	-3.5
SDLR	**Sedlovina**	**4.15**	**249**	*e*P		06 39 16.3	+0.5
SDLR				*e*S		06 40 01.1	-2.7
SMAR	**Somma**	**4.20**	**249**	*e*P		06 39 16.8	+0.3
SMAR				*e*S		06 40 02.7	-2.4
UGLR	**Uglovaya**	**4.21**	**249**	*e*P		06 39 17.5	+0.8
UGLR				*e*S		06 40 03.4	-1.9
AVH	**Avacha**	**4.24**	**250**	*e*P		06 39 17.8	+0.8
AVH				*e*S		06 40 03.8	-2.1
KOK	**Koryaka**	**4.28**	**250**	*e*P		06 39 18.2	+0.6
KOK				*e*S		06 40 04.5	-2.5
PET	**Petropavlovsk**	**4.39**	**247**	*e*P		06 39 19.2	0.0
PET				*e*S		06 40 06.7	-3.1
GNL	**Ganaly**	**4.51**	**257**	*e*P		06 39 21.4	+0.5
GNL				*e*S		06 40 11.3	-1.6
KRMR	**Karymshinskiy**	**4.76**	**247**	*e*S		06 40 16.4	-2.8
RUS	**Russkaya**	**4.77**	**241**	*e*P		06 39 24.1	-0.5
RUS				*e*S		06 40 14.8	-4.6
KAMR	**Kamenskoye**	**7.56**	**3**	*e*P		06 40 03.2	-0.5

*NEIC **06** 06:56:57.3, 16.18N×98.37W, h5km, MD4.0(MEX), After MEX.*
*MEX **06** 06:56:57.7±0.6, 16.21N×98.37W, h6km±5km, MD4.0*
ISC 06 06:56:52.2±1.1, 16.00N±0.07×98.37W±0.04, h6km, n15, σ1§35/27, Off coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PNIG	**Pinotepa**	**0.46**	**30**	*i* P		**06 57 03.0**	**+1.7**
PNIG				*i* S		**06 57 07.8**	**+0.3**
ACX	**Acapulco**	**1.72**	**300**	*i* P		**06 57 23.3**	**+0.4**
ACX				*i* S		**06 57 42.8**	**-2.6**
VHO	**Vista Hermosa**	**1.90**	**56**	*e*P		**06 57 25.8**	**+0.4**
VHO				*i* S		**06 57 48.7**	**-1.2**
OXX	**Oaxaca**	**1.91**	**55**	*i* P		**06 57 26.8**	**+1.2**
OXX				*i* S		**06 57 48.5**	**-1.7**
CAIG	**El Cayaco**	**2.10**	**300**	*i* P		**06 57 28.3**	**0.0**
CAIG				*i* S		**06 57 52.7**	**-2.4**
PLIG	**Platanillo**	**2.62**	**336**	*i* P		**06 57 36.1**	**+0.4**
PLIG				*i* S		**06 58 02.5**	**-5.7**
PLIG	**Platanillo**	**2.62**	**336**	*i* P		**06 57 39.1**	**+3.3**
PLIG				*i* S		**06 58 07.9**	**-0.3**
YAIG	**Yautepec**	**2.92**	**347**	*i* P		**06 57 41.5**	**+1.4**
YAIG				*i* S		**06 58 11.3**	**-4.7**
YAIG	**Yautepec**	**2.92**	**347**	*i* P		**06 57 42.3**	**+2.1**
YAIG				*i* S		**06 58 15.8**	**-0.2**
PPM	**Popocatepetl**	**3.06**	**355**	*i* P		**06 57 43.0**	**+0.9**
PPM				*i* P		06 57 44.7	
PPM				*i* S		**06 58 15.1**	**-4.4**
IISM	**Ciudad Serdan**	**3.12**	**17**	*e*P		**06 57 42.0**	**-0.9**
IISM				*i* S		**06 58 20.0**	**-0.9**
POHV	**Veracruz**	**3.23**	**19**	*i* P		**06 57 47.0**	**+2.6**
IIZ	**Mezontepec**	**3.28**	**345**	*e*P		**06 57 51.0**	**+0.5**
UNM	**Universidad Na**	**3.40**	**347**	*e*P		**06 58 01.5**	**+1.4**
CMIG	**Matias Romero**	**3.51**	**71**	*i* P		**06 57 48.6**	**+0.1**
CMIG				*e*S		**06 58 28.6**	**-2.3**

*NEIC **06** 07:17:54.7, 37.25S×176.70E, h224km, After WEL.*
WEL 06 07:17:54.7±0.1, 37.28S×176.71E, h225km±1km, ML4.3/7,

4C, Error ellipse: s-maj=1.8km s-min=1.8km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**1.03**	**162**	PN	P	07 18 27.3	-0.2
URZ				SN	S	07 18 52.6	-0.3
URZ	**Urewera**	**1.03**	**162**	P	P	07 18 27.3	-0.2
MWZ	**Matawai**	**1.24**	**149**	⇑PN	P	07 18 28.8	-0.2
MWZ				SN	S	07 18 55.0	-0.6
MXZ	**Matakaoa Point**	**1.30**	**103**	PN	P	07 18 29.2	-0.3
MXZ				SN	S	07 18 55.9	-0.5
PUZ	**Puketiti**	**1.46**	**123**	PN	P	07 18 30.6	-0.2
PUZ				SN	S	07 18 57.4	-1.2
PUZ	**Puketiti**	**1.46**	**123**	P	P	07 18 30.6	-0.2
PUZ				S	S	07 18 57.4	-1.2
RATZ	**Rangitukua**	**1.75**	**205**	PN	P	07 18 33.5	+0.3
RATZ	**Rangitukua**	**1.75**	**205**	P	P	07 18 33.6	+0.4
BKZ	**Black Stump Fm**	**1.89**	**185**	⇑PN	P	07 18 34.2	-0.3
BKZ				SN	S	07 19 05.0	-0.2
KNZ	**Kokohu**	**1.90**	**157**	PN	P	07 18 34.4	-0.1
KNZ				SN	S	07 19 04.4	-0.8
KNZ	**Kokohu**	**1.90**	**157**	P	P	07 18 34.4	-0.2
MGZ	**Maungaku**	**1.95**	**208**	⇑PN	P	07 18 35.7	+0.6
MGZ	**Maungaku**	**1.95**	**208**	P	P	07 18 35.6	+0.6
WTVZ	**West Tongariro**	**2.04**	**205**	PN	P	07 18 36.0	+0.2
NGZ	**Ngauruhoe**	**2.08**	**204**	PN	P	07 18 36.7	+0.4
CNZ	**Chateau**	**2.12**	**205**	PN	P	07 18 36.8	+0.1
CNZ	**Chateau**	**2.12**	**205**	P	P	07 18 36.9	+0.2
WPVZ	**Whakapapa**	**2.13**	**205**	PN	P	07 18 37.0	+0.2
TUVZ	**Tukino**	**2.15**	**202**	PN	P	07 18 37.2	+0.1
FWVZ	**Far West T-bar**	**2.17**	**204**	PN	P	07 18 37.6	+0.3
FWVZ				SN	S	07 19 09.5	-0.6
FWVZ	**Far West T-bar**	**2.17**	**204**	P	P	07 18 37.6	+0.3
VRZ	**Vera Road**	**2.40**	**219**	PN	P	07 18 40.3	+0.7
VRZ	**Vera Road**	**2.40**	**219**	P	P	07 18 40.3	+0.7
PWZ	**Pawanui**	**2.75**	**178**	PN	P	07 18 42.6	-0.8
PWZ				SN	S	07 19 20.0	-1.1
WAZ	**Wanganui**	**2.82**	**208**	PN	P	07 18 43.8	-0.4
WAZ				SN	S	07 19 23.2	+0.8
WAZ	**Wanganui**	**2.82**	**208**	P	P	07 18 43.8	-0.3
TSZ	**Takapari Road**	**2.84**	**192**	PN	P	07 18 43.3	-1.0
TSZ				SN	S	07 19 22.3	-0.5
TSZ	**Takapari Road**	**2.84**	**192**	P	P	07 18 43.4	-0.9
BFZ	**Birch Farm**	**3.42**	**186**	PN	P	07 18 49.6	-1.4
BFZ	**Birch Farm**	**3.42**	**186**	P	P	07 18 49.7	-1.3
MRZ	**Mangatainoka R**	**3.49**	**194**	⇑PN	P	07 18 50.0	-2.0
MRZ				SN	S	07 19 33.3	-2.9
KIW	**Kapiti Island**	**3.84**	**201**	PN	P	07 18 53.9	-2.2
KIW	**Kapiti Island**	**3.84**	**201**	P	P	07 18 53.9	-2.2
CAW	**Cannon Point**	**4.03**	**198**	PN	P	07 18 55.8	-2.5
CAW				SN	S	07 19 44.6	-3.1
CAW	**Cannon Point**	**4.03**	**198**	P	P	07 18 55.9	-2.5
MRW	**Makara Radio**	**4.24**	**201**	PN	P	07 18 58.4	-2.6
MRW				SN	S	07 19 49.2	-3.1
MRW	**Makara Radio**	**4.24**	**201**	P	P	07 18 58.4	-2.6
WEL	**Wellington**	**4.28**	**200**	PN	P	07 18 58.6	-2.7
WEL	**Wellington**	**4.28**	**200**	P	P	07 18 59.0	-2.4
SNZO	**South Karori**	**4.32**	**200**	PN	P	07 18 56.8	-5.1
SNZO				SN	S	07 19 50.3	-3.7
BHW	**Baring Head**	**4.36**	**198**	PN	P	07 18 59.6	-2.9
BHW	**Baring Head**	**4.36**	**198**	P	P	07 18 59.6	-2.9
TUWZ	**Tuamarina**	**4.67**	**206**	PN	P	07 19 03.2	-3.0
NNZ	**Nelson**	**4.71**	**212**	PN	P	07 19 03.4	-3.3
NNZ	**Nelson**	**4.71**	**212**	*e*P	P	07 19 03.8	-2.9
QRZ	**Quartz Range**	**4.81**	**221**	PN	P	07 19 04.8	-3.2
BSWZ	**Blackbirch Sta**	**4.94**	**205**	PN	P	07 19 06.7	-2.9
THZ	**Tophouse**	**5.36**	**212**	PN	P	07 19 11.3	-3.6
THZ	**Tophouse**	**5.36**	**212**	*e*P	P	07 19 12.0	-2.9
KHZ	**Kahutara**	**5.68**	**204**	PN	P	07 19 16.1	-2.9
KHZ	**Kahutara**	**5.68**	**204**	P	P	07 19 16.1	-2.9
DSZ	**Denniston Nort**	**5.85**	**219**	PN	P	07 19 25.7	-4.0
LTZ	**Lake Taylor**	**6.46**	**210**	PN	P	07 19 25.4	-3.6
LTZ				SN	S	07 20 35.9	-6.7
LTZ	**Lake Taylor**	**6.46**	**210**	*e*P	P	07 19 25.8	-3.2
CRLZ	**Canterbury Las**	**7.02**	**205**

FLN	**La Foliniere**	**146.98**	**8**	*e*PKP1	PKPbc	07 50 06.3	+3.4
CDF	**Champ du Feu**	**147.81**	**359**	*e*PKP1	PKPdf	07 50 08.4	+5.7
	15nm,0.8s						
HAU	**Haudompre**	**148.23**	**0**	*e*PKP1	PKPdf	07 50 09.4	+6.0
	7.2nm,0.5s						
LOR	**Lormes**	**148.89**	**3**	*e*PKP1	PKPdf	07 50 11.6	+7.1
	8.2nm,0.6s						
CABF	**La Chapelle**	**149.62**	**0**	*e*PKP1	PKPdf	07 50 13.4	+7.7
LPL	**La Plagne**	**150.72**	**360**	*e*PKP1	PKPdf	07 50 16.0	+8.6
LPG	**La Plagne**	**150.73**	**360**	*e*PKP1	PKPdf	07 50 16.2	+8.8
	6.6nm,0.6s						
ORIF	**Oris-en-Rattie**	**151.31**	**1**	*e*PKP1	PKPdf	07 50 16.2	+7.9
	10nm,0.8s						
MBDF	**Montbardon**	**151.50**	**359**	*e*PKP1	PKPdf	07 50 18.5	+10
	20nm,1.0s						

WEL 06 07:35:09.3±0.2, 41.42S×172.97E, h107km±2km, ML3.6/5, 3C-8D, Error ellipse: s-maj=1.7km s-min=1.6km az=0.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THZ	**Tophouse**	**0.35**	**188**	⇑PN	P	07 35 25.2	+0.1
THZ				SN	S	07 35 35.8	-1.1
NNZ	**Nelson**	**0.37**	**57**	⇓PN	P	07 35 25.1	-0.1
NNZ				SN	S	07 35 36.5	-0.6
QRZ	**Quartz Range**	**0.68**	**331**	⇓PN	P	07 35 27.6	+0.2
QRZ				SN	S	07 35 39.8	-1.1
TUWZ	**Tuamarina**	**0.73**	**91**	PN	P	07 35 27.9	0.0
TUWZ				SN	S	07 35 41.2	-0.5
BSWZ	**Blackbirch Sta**	**0.74**	**114**	⇓PN	P	07 35 28.0	+0.1
BSWZ				SN	S	07 35 41.6	-0.3
DSZ	**Denniston Nort**	**0.93**	**249**	PN	P	07 35 29.4	-0.4
DSZ				SN	S	07 35 43.4	-1.9
KHZ	**Kahutara**	**1.08**	**157**	⇑PN	P	07 35 31.4	-0.1
KHZ				SN	S	07 35 46.4	-1.8
SNZO	**South Karori**	**1.31**	**86**	⇓PN	P	07 35 33.4	-0.8
SNZO				SN	S	07 35 51.4	-1.4
MRW	**Makara Radio**	**1.32**	**82**	⇓PN	P	07 35 33.6	-0.6
MRW				SN	S	07 35 51.7	-1.2
WEL	**Wellington**	**1.36**	**85**	PN	P	07 35 34.0	-0.8
BHW	**Baring Head**	**1.43**	**90**	⇓PN	P	07 35 34.5	-1.1
BHW				SN	S	07 35 53.4	-1.9
LTZ	**Lake Taylor**	**1.46**	**201**	⇑PN	P	07 35 35.5	-0.4
LTZ				SN	S	07 35 53.9	-1.9
CAW	**Cannon Point**	**1.61**	**80**	⇓PN	P	07 35 36.8	-1.0
CAW				SN	S	07 35 58.0	-1.0
MRZ	**Mangatainoka R**	**2.11**	**70**	⇓PN	P	07 35 42.7	-1.5
CRLZ	**Canterbury Las**	**2.17**	**187**	PN	P	07 35 43.5	-1.5
CRLZ				SN	S	07 36 07.7	-4.0
NRZ	**Ngariki Road**	**2.21**	**20**	PN	P	07 35 46.8	+1.4
NWEZ	**Newall Road**	**2.25**	**18**	PN	P	07 35 47.1	+1.1
WAZ	**Wanganui**	**2.26**	**43**	PN	P	07 35 46.7	+0.6
WAZ				SN	S	07 36 15.7	+1.9
DFE	**Dawson Falls**	**2.26**	**23**	PN	P	07 35 47.3	+1.1
MQZ	**McQueen's Vall**	**2.30**	**186**	PN	P	07 35 44.5	-2.2
MQZ				SN	S	07 36 10.2	-4.5
PKE	**Pukeiti**	**2.35**	**20**	PN	P	07 35 48.3	+0.8
PKE				SN	S	07 36 16.1	+0.1
RAEZ	**Rainy Point**	**2.39**	**28**	PN	P	07 35 49.2	+1.3
BFZ	**Birch Farm**	**2.59**	**75**	*e*SN	S	07 36 19.1	-2.5
TSZ	**Takapari Road**	**2.65**	**60**	PN	P	07 35 49.6	-1.8
VRZ	**Vera Road**	**2.67**	**31**	PN	P	07 35 52.3	+0.6
VRZ				SN	S	07 36 23.0	-0.6
FWVZ	**Far West T-bar**	**2.93**	**43**	PN	P	07 35 55.5	+0.3
CNZ	**Chateau**	**2.97**	**42**	*e*PN	P	07 35 55.5	-0.3
NGZ	**Ngauruhoe**	**3.01**	**43**	PN	P	07 35 55.9	-0.4
HIZ	**Hauiti**	**3.24**	**27**	PN	P	07 35 59.3	-0.3
HIZ				SN	S	07 36 34.8	-2.8
PWZ	**Pawanui**	**3.27**	**66**	SN	S	07 36 35.3	-2.8
BKZ	**Black Stump Fm**	**3.51**	**51**	PN	P	07 36 00.6	-2.5
ODZ	**Otahua Downs**	**4.00**	**204**	PN	P	07 36 07.4	-2.4
ODZ				SN	S	07 36 50.2	-5.8
URZ	**Urewera**	**4.49**	**47**	SN	S	07 37 02.4	-5.4
MWZ	**Matawai**	**4.67**	**50**	PN	P	07 36 16.9	-2.0

WEL 06 07:36:25.1±0.4, 45.05S×167.58E, h114km±2km, ML3.6/5, 3C, Error ellipse: s-maj=3.8km s-min=1.9km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSZ	**Milford Sound**	**0.45**	**33**	⇑PN	P	07 36 41.9	-0.4
MSZ				SN	S	07 36 54.5	-0.6
MLZ	**Mavora Lakes**	**0.51**	**125**	⇑PN	P	07 36 42.1	-0.4
MLZ				SN	S	07 36 55.4	-0.4
WHZ	**Wether Hill Ro**	**0.88**	**163**	PN	P	07 36 45.2	-0.5
WHZ				SN	S	07 37 00.2	-0.9
AXZ	**Alexandra**	**1.26**	**100**	⇑PN	P	07 36 49.6	-0.1
AXZ				SN	S	07 37 06.9	-1.3
TUZ	**Tuapeka**	**1.70**	**123**	PN	P	07 36 54.7	-0.3
TUZ				SN	S	07 37 15.4	-2.1
BWZ	**Berwen**	**1.72**	**73**	PN	P	07 36 54.0	-1.2
ODZ	**Otahua Downs**	**2.17**	**91**	PN	P	07 37 00.1	-0.9
ODZ				SN	S	07 37 24.9	-3.1

*CASC **06** 07:42:18.8±1.8, 12.03N×88.27W, h32km±14km, MD3.8*
ISC 06 07:42:17.2±1.3, 11.99N±0.06×88.28W±0.04, h22km±12km, n22, σ0⁰66/40, 8C-5D, Off coast of central America

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PYN	**Poneloya**	**1.29**	**72**	⇑*e*P	**Pn**	**07 42 40.1**	**0.0**
PYN				*e*S	**Sb**	**07 42 56.7**	**0.0**
CNCH	**Conchagua**	**1.35**	**19**	⇑*e*P	**Pn**	**07 42 40.3**	**-0.7**
CNCH				*e*S	**Sn**	**07 42 59.0**	**+0.6**
LEON	**Leon**	**1.42**	**73**	⇑*e*P	**Pn**	**07 42 41.8**	**-0.2**
BLLM	**Bellamira**	**1.44**	**2**	*e*P	**Pn**	**07 42 39.2**	**-3.1**
BLLM				*e*S	**Sn**	**07 43 01.1**	**+0.4**
TEL3	**Telica 3**	**1.52**	**67**	⇓*e*P	**Pn**	**07 42 43.2**	**-0.1**
MIRN	**Miramar**	**1.59**	**74**	*e*P	**Pn**	**07 42 44.6**	**+0.2**
MIRN				*e*S	**Sn**	**07 43 03.4**	**-1.2**
COPN	**Copaltepe**	**1.66**	**83**	⇓*e*P	**Pn**	**07 42 45.6**	**+0.2**
SNVI	**San Vicente**	**1.70**	**341**	*e*P	**Pn**	**07 42 46.9**	**+0.8**
SNVI				*e*S	**Sn**	**07 43 07.1**	**-0.1**
MOMJ	**Momotombo**	**1.75**	**76**	⇓*e*P	**Pn**	**07 42 46.4**	**-0.3**
MOMJ				*e*S	**Sn**	**07 43 07.9**	**-0.6**
CAHU	**Cacacuatique**	**1.77**	**2**	*e*P	**Pn**	**07 42 47.9**	**+0.9**
CAHU				*e*S	**Sn**	**07 43 10.7**	**+1.0**
LCBS	**La Ceiba**	**1.79**	**338**	⇑*e*P	**Pn**	**07 42 46.5**	**-0.8**
LCBS				*e*S	**Sn**	**07 43 09.1**	**-0.4**
LFRS	**El Faro**	**1.79**	**335**	⇑*e*P	**Pn**	**07 42 46.5**	**-0.9**
LFRS				*e*S	**Sn**	**07 43 09.4**	**-0.2**
LBRS	**Las Brisas**	**1.89**	**337**	*e*P	**Pn**	**07 42 49.6**	**+0.9**
LFU	**La Fuente**	**1.93**	**335**	⇑*e*P	**Pn**	**07 42 48.7**	**-0.5**
LFU				*e*S	**Sn**	**07 43 12.3**	**-0.7**
BOQS	**Boqueron**	**1.99**	**331**	*e*P	**Pn**	**07 42 50.0**	**-0.1**
BOQS				*e*S	**Sn**	**07 43 13.4**	**-1.1**
MGAN	**Managua**	**1.99**	**85**	*e*P	**Pn**	**07 42 50.9**	**+0.7**
MGAN				*e*S	**Sn**	**07 43 14.1**	**-0.6**
TICN	**Ticuantepe**	**2.00**	**89**	⇑*e*P	**Pn**	**07 42 51.1**	**+0.8**
TICN				*e*S	**Sn**	**07 43 15.8**	**+0.9**
WILN	**Americas 2**	**2.05**	**85**	*e*P	**Pn**	**07 42 51.2**	**+0.1**
WILN				*e*S	**Sn**	**07 43 16.4**	**+0.2**
SBLS	**San Blas**	**2.26**	**325**	⇓*e*P	**Pn**	**07 42 53.8**	**-0.1**
SBLS				*e*S	**Sn**	**07 43 21.9**	**+0.6**
SNJE	**San Jose**	**2.27**	**325**	*e*P	**Pn**	**07 42 54.0**	**-0.2**
SNJE				*e*S	**Sn**	**07 43 22.0**	**+0.2**
RTR	**El Retiro**	**2.31**	**325**	⇓*e*P	**Pn**	**07 42 54.8**	**-0.1**
RTR				*e*S	**Sn**	**07 43 23.7**	**+0.8**
RBDL	**Robledal**	**2.52**	**327**	⇑*e*P	**Pn**	**07 42 57.9**	**+0.3**
RBDL				*e*S	**Sn**	**07 43 28.3**	**+0.4**

*IDC **06** 07:42:25.1±2.1, 24.71N×97.32E, mb3.4/3, mb1 3.5/3, mb1mx3.3/17, Error ellipse: s-maj=93.4km s-min=29.1km az=67.0*
ISC 06 07:42:21.9±1.7, 24.4N±0.2×94.1E±0.2, h80km±16km, n5, σ1⁰17/5, mb3.2/2, 1C-1D, Myanmar-India border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IMP	**Imphal**	**0.43**	**341**	⇓*i*P	**P**	**07 42 35.0**	**-0.2**
SHL	**Shillong**	**2.33**	**301**	⇑*i*P	**P**	**07 43 00.0**	**+1.0**
SHL				*e*S	**S**	**07 43 26.0**	**-0.6**
MKAR	**Makanchi Array**	**24.29**	**340**	P		07 47 51.5	
	1.2nm,1.0s,baz=153,slow=11,SNR=5.7						
SONM	**Songino Array**	**25.37**	**20**	P	**P**	**07 47 43.2**	**+0.1**
	0.3nm,0.5s,mb3.0,baz=201,slow=11,SNR=3.7						
ASAR	**Alice Springs**	**61.42**	**138**	P	**P**	**07 52 32.0**	**-0.3**
	0.5nm,1.0s,mb3.5,baz=322,slow=6.9,SNR=5.4						

MEX 06 07:44:07.3±0.5, 16.70N×99.72W, h6km±4km, MD3.5, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ACX	**Acapulco**	**0.25**	**311**	*i* P	Pg	07 44 11.8	-0.6
ACX				*i* S	Sg	07 44 15.7	-0.1
CAIG	**El Cayaco**	**0.63**	**304**	*i* P	Pg	07 44 18.7	-1.1
CAIG				*i* S	Sg	07 44 27.5	-0.8
ZIIG	**Zihuatanejo**	**1.90**	**299**	*i* P	Pn	07 44 37.5	-3.1
ZIIG				*i* S	Sn	07 44 58.5	-6.5

WEL 06 08:16:28.0±0.8, 45.13S×167.55E, h91km±6km, ML3.6/3, 1C-2D, Error ellipse: s-maj=7.8km s-min=4.8km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSZ	**Milford Sound**	**0.54**	**31**	PN	P	08 16 42.3	-1.0
MSZ				SN	S	08 16 54.7	0.0
AXZ	**Alexandra**	**1.27**	**97**	⇓PN	P	08 16 51.3	-0.1
AXZ				SN	S	08 17 08.2	-0.7
TUZ	**Tuapeka**	**1.68**	**120**	PN	P	08 16 55.8	-0.7
TUZ				SN	S	08 17 16.5	-1.2
BWZ	**Berwen**	**1.77**	**71**	⇑PN	P	08 16 57.2	-0.6
ODZ	**Otahua Downs**	**2.20**	**89**	⇓PN	P	08 17 02.6	-0.9
ODZ				SN	S	08 17 27.5	-2.3

IDC 06 08:53:34.0±26.0, 15.67S×171.10W, mb4.4/4, mb1 4.6/4, mb1mx4.0/17, MS3.8/2, Ms1 3.8/2, ms1mx3.3/19, Error ellipse: s-maj=497.0km s-min=174.2km az=70.0, Samoa Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**12.07**	**119**	LR	LR	08 59 39.7	
	comp=2,801nm,19.1s,baz=117,slow=30						
CTA	**Charters Tower**	**40.75**	**257**	P	P	09 01 16.8	-1.8
	1.1nm,0.2s,baz=88,slow=11,SNR=6.1						
STKA	**Stephens Creek**	**45.83**	**241**	*e*P	P	09 01 58.2	-1.6
	2.5nm,0.6s						
STKA	**Stephens Creek**	**45.83**	**241**	P	P	09 01 58.6	-1.2
	3.4nm,0.6s,baz=89,slow=11,SNR=7.0						
WRA	**Warramunga Arr**	**51.94**	**257**	P	P	09 02 46.3	-0.9
	2.7nm,0.5s,baz=96,slow=7.2,SNR=6.6						
ASAR	**Alice Springs**	**52.14**	**252**	P	P	09 02 45.1	-3.6
	9.4nm,0.3s,baz=88,slow=7.0,SNR=14						
TXAR	**Lajitas Array**	**78.93**	**55**	LR	LR	09 31 01.8	
	comp=Z,28nm,20.1s,baz=200,slow=28						

*IDC **06** 08:53:53.5±0.8, 7.32S×125.88E, mb4.2/7, mb1 4.4/10, mb1mx4.3/15, ML3.9/3, MS3.2/3, Ms1 3.2/3, ms1mx3.0/14, Error ellipse: s-maj=50.6km s-min=16.5km az=60.0*
*NEIC **06** 08:53:55.0±0.3, 7.38S×125.79E, h10km, mb4.7/15, Error ellipse: s-maj=14.3km s-min=5.7km az=60.0*
ISC 06 08:53:57.6±2.2, 7.70S±0.07×125.73E±0.09, h57km±22km, n32, σ1⁰01/39, mb4.6/20, MS3.5/1, 1C, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAKA	**Kakadu**	**8.23**	**128**	*e*P	**P**	**08 55 57.4**	**+0.6**
	11nm,0.6s						
KAKA				*e*S	**S**	**08 57 30.1**	**+0.8**
FITZ	**Fitzroy Crossi**	**10.34**	**180**	*e*P	**P**	**08 56 26.3**	**+0.5**
	4.2nm,0.5s						
FITZ				*e*S	**S**	**08 58 20.9**	**-0.2**
FITZ	**Fitzroy Crossi**	**10.34**	**180**	Pn	**P**	**08 56 26.8**	**+1.0**
	0.7nm,0.3s,baz=5.6,slow=9.7,SNR=10.0						
FITZ				Sn	**S**	**08 58 19.6**	**-1.5**
	1.0nm,0.3s,baz=349,slow=16,SNR=7.6						
FITZ				LR	LR	09 00 36.2	
	comp=Z,53nm,21.0s,baz=15,slow=38						
WRAB	**Tennant Creek**	**14.75**	**146**	*e*P	**P**	**08 57 20.5**	**-4.1**
	40nm,1.0s						
WRAB				*e*S	**S**	**08 59 57.9**	**-9.1**
WRA	**Warramunga Arr**	**14.75**	**146**	Pn	**P**	**08 57 22.8**	**-1.8**
	0.4nm,0.3s,baz=318,slow=13,SNR=16						
WRA				Sn	**S**	**09 00 00.4**	**-6.6**
	0.7nm,0.3s,baz=317,slow=25,SNR=6.6						
WRA				LR	LR	09 02 07.5	
	comp=Z,98nm,21.7s,baz=335,slow=33						
WB2	**Warramunga Arr**	**14.76**	**146**	*e*P	**P**	**08 57 21.5**	**-3.1**
WB2				*e*S	**S**	**09 00 01.4**	**-5.7**
AS12	**Alice Springs**	**17.70**	**155**	*e*P	**P**	**08 58 07.0**	**+5.1**
	24nm,0.7s						
ASAR	**Alice Springs**	**17.70**	**155**	P	**P**	**08 58 03.8**	**+1.9**
	1.6nm,0.3s,baz=337,slow=12,SNR=64						
ASAR				S	**S**	**09 01 14.6**	**0.0**
	0.2nm,0.3s,baz=314,slow=18,SNR=4.3						
PMG	**Port Moresby**	**21.26**	**96**	P	**P**	**08 58 44.8**	**+3.6**
	57nm,1.2s,mb4.8						
FORT	**Forrest**	**23.06**	**175**	*e*P	**P**	**08 59 03.9**	**+5.0**
	27nm,0.7s,mb4.8						
CTA	**Charters Tower**	**23.38**	**124**	P	**P**	**08 59 05.9**	**+3.8**
	1.9nm,0.6s,mb3.7,baz=302,slow=15,SNR=2.9						
CTAO	**Charters Tower**	**23.38**	**124**	P	**P**	**08 59 05.6**	**+3.5**
	4.7nm,0.7s,mb4.0						
STKA	**Stephens Creek**	**28.23**	**151**	⇑*i*P	**P**	**08 59 51.4**	**+4.0**
	2.7nm,0.3s,mb4.3						
STKA	**Stephens Creek**	**28.23**	**151**	P	**P**	**08 59 51.4**	**+3.9**
	3.1nm,0.5s,mb4.2,baz=325,slow=9.6,SNR=29						
STKA				LR	LR	09 11 57.9	
	comp=Z,146nm,21.7s,MS3.5,baz=24,slow=38						
CMAR	**Chiang Mai Arr**	**37.07**	**315**	P	**P**	**09 01 05.3**	**+1.1**
	2.4nm,0.8s,mb4.1,baz=143,slow=7.1,SNR=12						
MAJO	**Matsushiro**	**45.54**	**14**	*e*P	**P**	**09 02 11.1**	**-2.5**
	4.3nm,0.7s,mb4.5						
MDJ	**Mudanjiang**	**52.19**	**3**	P	**P**	**09 03 04.2**	**-0.6**
	6.9nm,0.8s,mb4.6						
GUN	**Gumba**	**52.31**	**314**	*e*P	**P**	**09 03 06.3**	**+0.4**
	21nm,0.8s,mb5.1						
PKI	**Pulchoki**	**52.45**	**314**	*e*P	**P**	**09 03 07.0**	**+0.1**
	10nm,0.7s,mb4.9						
KKN	**Kakani**	**52.67**	**314**	*e*P	**P**	**09 03 08.8**	**+0.2**
	9.3nm,0.5s,mb5.0						
DMN	**Daman**	**52.69**	**313**	*e*P	**P**	**09 03 09.0**	**+0.3**
	23nm,1.0s,mb5.1						
GKN	**Gorkha**	**53.25**	**314**	*e*P	**P**	**09 03 13.0**	**0.0**
	19nm,0.7s,mb5.1						
KOLN	**Koldanda**	**53.87**	**313**	*e*P	**P**	**09 03 17.7**	**+0.2**
	32nm,0.8s,mb5.3						
ULN	**Ulaanbaatar**	**57.74**	**345**	*e*P	**P**	**09 03 44.7**	**-0.3**
	8.9nm,1.1s,mb4.7						
SONM	**Songino Array**	**57.88**	**345**	P	**P**	**09 03 45.0**	**-1.0**
	2.9nm,0.9s,mb4.3,baz=162,slow=7.8,SNR=18						
SONM				PcP	PcP	09 04 37.7	+0.1
	1.7nm,0.9s,baz=169,slow=4.6,SNR=6.6						
MKAR	**Makanchi Array**	**66.56**	**329**	P	**P**	**09 04 43.5**	**-0.4**
	2.0nm,0.6s,mb4.3,baz=129,slow=7.8,SNR=15						
MKAR	**Makanchi Array**	**66.56**	**329**	P	**P**	**09 04 43.5**	**-0.4**
BVAR	**Borovoye Array**	**76.45**	**329**	P	**P**	**09 05 43.3**	**+0.5**
	0.5nm,0.5s,mb3.8,baz=166,slow=5.9,SNR=6.1						
ZRNK	**Zerenda**	**77.11**	**329**	*e*P	**P**	**09 05 47.0**	**+0.4**
QSPA	**South Pole Qui**	**82.28**	**180**	*e*P	**P**	**09 06 18.5**	**+4.7**
	24nm,0.6s,mb5.3						
PMR	**Palmer**	**94.40**	**29**	*e*P	**P**	**09 07 12.2**	**+0.1**
	3.2nm,1.0s,mb4.7						
ILAR	**Eielson Array**	**95.79**	**25**	P	**P**	**09 07 18.7**	**+0.4**
	0.5nm,0.7s,mb4.1,baz=240,slow=5.6,SNR=7.4						

*IDC **06** 08:58:15.2±1.0, 7.38S×125.74E, mb4.0/5, mb1 4.3/8, mb1mx4.2/14, ML4.1/3, Error ellipse: s-maj=58.4km s-min=17.6km az=59.0*
*NEIC **06** 08:58:17.0±0.5, 7.35S×125.79E, h10km, mb4.5/5, Error ellipse: s-maj=17.0km s-min=8.5km az=66.0*
ISC 06 08:58:15.0±3.2, 7.56S±0.07×125.7E±0.1, h14km±20km, n19, σ1⁰37/22, mb4.2/8, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAKA	**Kakadu**	**8.38**	**128**	*e*P	**P**	**09 00 19.0**	**+0.1**
	9.6nm,0.4s						
FITZ	**Fitzroy Crossi**	**10.48**	**180**	*e*P	**P**	**09 00 48.5**	**+0.5**
	3.5nm,0.3s						
FITZ	**Fitzroy Crossi**	**10.48**	**180**	Pn	**P**	**09 00 48.7**	**+0.7**
	0.8nm,0.3s,baz=355,slow=23,SNR=6.9						
FITZ				Sn	**S**	**09 02 45.2**	**-0.9**
	0.7nm,0.3s,baz=170,slow=19,SNR=3.5						
MBWA	**Marble Bar**	**14.68**	**202**	P	**P**	**09 01 49.7**	**+5.5**
	0.1nm,0.7s						
WRAB	**Tennant Creek**	**14.91**	**146**	*e*P	**P**	**09 01 45.5**	**-1.8**
WRA	**Warramunga Arr**	**14.91**	**146**	Pn	**P**	**09 01 45.0**	**-2.3**
	0.9nm,0.3s,baz=318,slow=15,SNR=7.4						
WRA				Sn	**S**	**09 04 23.5**	**-10**
	0.4nm,0.3s,baz=320,slow=25,SNR=3.8						
AS12	**Alice Springs**	**17.86**	**155**	*e*P	**P**	**09 02 29.3**	**+4.4**
	23nm,1.1s						
ASAR	**Alice Springs**	**17.86**	**155**	P	**P**	**09 02 25.9**	**+1.0**
	1.4nm,0.3s,baz=338,slow=12,SNR=20						
ASAR				S	**S**	**09 05 41.3**	**0.0**
	0.2nm,0.3s,baz=312,slow=22,SNR=5.0						
CTA	**Charters Tower**	**23.53**	**124**	P	**P**	**09 03 28.2**	**+2.5**
	6.1nm,1.0s,mb4.0,baz=299,slow=13,SNR=2.8						
CTAO	**Charters Tower**	**23.53**	**124**	P	**P**	**09 03 28.0**	**+2.2**
	2.2nm,0.6s,mb3.8						
STKA	**Stephens Creek**	**28.39**	**151**	*e*P	**P**	**09 04 12.9**	**+1.8**
	3.1nm,0.6s,mb4.1						
STKA	**Stephens Creek**	**28.39**	**151**	P	**P**	**09 04 12.8**	**+1.7**
	3.2nm,0.5s,mb4.2,baz=331,slow=8.5,SNR=15						
CMAR	**Chiang Mai Arr**	**36.92**	**315**	P	**P**	**09 05 26.9**	**+1.5**
	0.4nm,0.4s,mb3.6,baz=143,slow=6.3,SNR=5.3						
ULN	**Ulaanbaatar**	**57.58**	**345**	*e*P	**P**	**09 08 05.3**	**-1.4**
	2.4nm,0.9s,mb4.2						
SONM	**Songino Array**	**57.72**	**345**	P	**P**	**09 08 06.6**	**-1.1**
	0.4nm,0.5s,mb3.7,baz=158,slow=6.7,SNR=5.2						
MKAR	**Makanchi Array**	**66.41**	**329**	P	**P**	**09 09 04.4**	**-1.4**
	0.7nm,0.7s,mb3.8,baz=124,slow=8.7,SNR=5.8						
MA2	**Magadan**	**69.86**	**13**	*e*P	**P**	**09 09 27.2**	**+0.1**
	19nm,1.2s,mb4.9						
ZRNK	**Zerenda**	**76.95**	**329**	P	**P**	**09 10 08.9**	**+0.2**
QSPA	**South Pole Qui**	**82.42**	**180**	*e*P	**P**	**09 10 39.8**	**+2.2**
	14nm,0.6s,mb5.0						
QSPA				*e*		09 10 48.2	

*IGQ **06** 09:42:23.4, 0.98S×79.29W, h129km±3km, mb4.0, Error ellipse: s-maj=2.5km s-min=1.4km az=1.4*
ISC 06 09:42:24.2±1.3, 0.99S±0.07×79.3W±0.1, h123km±15km, n22, σ0⁰32/26, 12C-3D, Ecuador

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
QIL1	**Quilotoa**	**0.41**	**70**	⇓P	**P**	**09 42 41.8**	**-0.4**
IGUA	**Igualata**	**0.84**	**126**	P	**P**	**09 42 45.9**	**+0.6**
NAS1	**Nasa**	**0.91**	**67**	⇑P	**P**	**09 42 46.0**	**0.0**
CUSU	**Cusua**	**0.95**	**118**	P	**P**	**09 42 46.9**	**+0.5**
JUIV	**Juive**	**0.96**	**117**	P	**P**	**09 42 46.3**	**-0.1**
VC1	**Cotopaxi 1**	**0.98**	**69**	⇑P	**P**	**09 42 46.5**	**-0.1**
TAMB	**Tambo**	**1.00**	**73**	⇑P	**P**	**09 42 46.7**	**-0.1**
RUN2	**Runtun**	**1.00**	**115**	P	**P**	**09 42 46.6**	**-0.3**
ARRY	**Arrayan**	**1.01**	**121**	⇓P	**P**	**09 42 46.6**	**-0.2**
ULBA	**Ulba**	**1.02**	**117**	⇓P	**P**	**09 42 46.9**	**-0.2**
PATA	**Patacocha**	**1.02**	**120**	P	**P**	**09 42 47.2**	**+0.1**
JUA2	**San Juan 2**	**1.05**	**43**	⇑P	**P**	**09 42 47.1**	**-0.2**
JUA2				S	**S**	**09 43 04.5**	**-0.1**
CGGP	**Crater GGP**	**1.08**	**41**	⇑P	**P**	**09 42 47.5**	**-0.1**
CGGP				S	**S**	**09 43 05.7**	**+0.6**
GGP	**Refugio Guagua**	**1.09**	**42**	⇑P	**P**	**09 42 47.5**	**-0.2**
PINO	**Pino**	**1.09**	**41**	⇑P	**P**	**09 42 47.5**	**-0.2**
JAMA	**Jama**	**1.14**	**309**	P	**P**	**09 42 48.6**	**+0.3**
YANA	**Yana**	**1.15**	**41**	⇑P	**P**	**09 42 47.8**	**-0.5**
YANA				S	**S**	**09 43 05.8**	**-0.5**
ANTI	**Antisana**	**1.28**	**65**	⇑P	**P**	**09 42 49.6**	**-0.2**
COTA	**Cotacachi**	**1.64**	**37**	⇑P	**P**	**09 42 54.0**	**+0.1**
COTA				S	**S**	**09 43 17.1**	**+0.6**
CAYR	**Refugio Cayamb**	**1.65**	**53**	⇑P	**P**	**09 42 54.3**	**+0.3**
CAYA	**Cayambe**	**1.70**	**52**	⇑P	**P**	**09 42 54.5**	**-0.1**
CONE	**Cono NE Rev Vo**	**1.91**	**61**	P	**P**	**09 42 57.4**	**+0.3**

*IDC **06** 10:03:24.5±2.4, 47.17N×35.54E, mb3.4/1, mb1 3.6/4, mb1mx3.4/19, ML3.4/3, Error ellipse: s-maj=32.3km s-min=21.5km az=112.0*
ISC 06 10:03:24.7±2.4, 47.3N±0.2×35.4E±0.3, h10km, n4, σ0⁰08/5, mb3.4/1, Ukraine - Moldova - Southwestern Russia region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKASG	**Malin Array Be**	**5.30**	**313**	Pn	**Pn**	**10 04 45.9**	**0.0**
	2.1nm,0.3s,baz=127,slow=14,SNR=4.9						
AKASG				Sn	**Sn**	**10 05 47.8**	**0.0**
	1.8nm,0.3s,baz=126,slow=24,SNR=4.2						
AKASG				Lg		10 06 09.9	
	1.9nm,0.3s,

WRA	**Warramunga Arr**	**30.71**	**118**	P	**P**	**10 22 03.4**	**-0.3**
	5.3nm,0.6s,mb4.5,baz=288,slow=10,SNR=43						
WRA				S	**S**	**10 27 01.6**	**+2.1**
	1.0nm,0.7s,baz=288,slow=19,SNR=3.3						
WRAB	**Tennant Creek**	**30.72**	**118**	*e*P	**P**	**10 22 03.7**	**-0.1**
	29nm,0.7s,mb5.1						
WB2	**Warramunga Arr**	**30.73**	**118**	*e*P	**P**	**10 22 03.2**	**-0.6**
FORT	**Forrest**	**31.76**	**142**	*e*P	**P**	**10 22 11.7**	**-1.0**
	24nm,0.6s,mb5.1						
KMI	**Kunming**	**31.86**	**355**	*e*P	**P**	**10 22 17.2**	**+3.6**
KMI				AP	pP	10 22 38.0	+5.9
KMI				XP	sP	10 22 47.0	+5.6
KMI				PCP	PcP	10 25 05.2	+2.4
KMI				S	**S**	**10 27 22.0**	**+4.6**
KMI				SCS	ScS	10 32 32.9	-2.0
KMI				AMB	AMB		
	comp=Z,54nm,6.4s						
KMI				LR	LR		
	comp=N,328nm,19.8s						
KMI				LR	LR		
	comp=E,234nm,19.0s						
KMI				LR	LR		
	comp=Z,379nm,17.7s						
AS12	**Alice Springs**	**31.87**	**125** ⇓	*i*P	**P**	**10 22 13.3**	**-0.4**
	comp=Z,3.7nm,0.5s,mb4.4						
ASAR	**Alice Springs**	**31.87**	**125**	P	**P**	**10 22 13.3**	**-0.4**
	comp=Z,2.6nm,0.4s,mb4.3,baz=304,slow=8.2,SNR=110						
ASAR				S	**S**	**10 27 18.6**	**+1.0**
	comp=Z,3.3nm,1.0s,baz=292,slow=17,SNR=5.5						
ASAR				LR	LR	10 34 36.1	
	comp=Z,165nm,18.7s,baz=284,slow=35						
ASAR	**Alice Springs**	**31.87**	**125**	P	**P**	**10 22 13.3**	**-0.4**
ASAR				S	**S**	**10 27 18.6**	**+1.0**
ASAR				LR	LR	10 34 36.1	
GYA	**Guiyang**	**33.07**	**2**	P	**P**	**10 22 24.4**	**+0.2**
GYA				XP	sP	10 22 56.4	+4.2
GYA				S	**S**	**10 27 41.0**	**+4.7**
GYA				AMB	AMB		
	comp=Z,10.0nm,0.6s,mb4.8						
GYA				AMB	AMB		
	comp=Z,130nm,6.3s						
ENH	**Enshi**	**37.04**	**5**	*e*P	**P**	**10 22 57.5**	**-0.4**
LSA	**Lhasa**	**38.88**	**340**	*e*P	**P**	**10 23 14.1**	**+0.9**
KAD	**Karad**	**39.28**	**308**	*e*P	**P**	**10 23 16.8**	**+0.1**
KAD				*e*		10 23 18.9	
	comp=Z,22nm,1.0s						
PKI	**Pulchoki**	**39.40**	**331**	*e*P	**P**	**10 23 16.4**	**-1.1**
	comp=Z,12nm,0.5s,mb5.0						
GUN	**Gumba**	**39.46**	**332**	*e*P	**P**	**10 23 17.2**	**-0.8**
	comp=Z,38nm,0.4s,mb5.6						
DMN	**Daman**	**39.57**	**331**	*e*P	**P**	**10 23 18.6**	**-0.4**
	comp=Z,10nm,0.3s,mb5.2						
KKN	**Kakani**	**39.64**	**331**	*e*P	**P**	**10 23 18.8**	**-0.7**
	comp=Z,37nm,0.8s,mb5.3						
JOW	**Kunigami**	**39.96**	**32**	P	**P**	**10 23 24.6**	**+2.4**
	comp=Z,7.4nm,0.4s,mb4.9,baz=202,slow=8.5,SNR=8.5						
GKN	**Gorkha**	**40.13**	**330**	*e*P	**P**	**10 23 22.6**	**-1.0**
	comp=Z,33nm,0.3s,mb5.7						
POO	**Poona**	**40.24**	**309**	*e*P	**P**	**10 23 23.7**	**-0.9**
POO				*e*		10 23 25.6	
	comp=Z,16nm,0.6s						
KOLN	**Koldanda**	**40.46**	**329**	*e*P	**P**	**10 23 25.3**	**-1.0**
	comp=Z,28nm,0.6s,mb5.2						
SSE	**Sheshan**	**40.49**	**21**	P	**P**	**10 23 28.9**	**+2.4**
SSE				PP	PP	10 25 04.2	-0.1
SSE				S	**S**	**10 29 30.5**	**+1.1**
SSE				XS		10 30 07.1	
SSE				AMB	AMB		
	comp=Z,18nm,0.7s,mb5.0						
NJ2	**Nanjing**	**40.62**	**17**	*e*P	**P**	**10 23 29.3**	**+1.7**
NJ2				AP	pP	10 23 51.7	+5.1
NJ2				PP	PP	10 25 08.1	+2.5
NJ2				S	**S**	**10 29 33.0**	**+1.7**
NJ2				SS	SS	10 32 32.0	+2.7
NJ2				AMB	AMB		
	comp=Z,30nm,0.8s,mb5.2						
NJ2				LR	LR		
	comp=N,250nm,13.5s						
NJ2				LR	LR		
	comp=E,290nm,17.7s						
NJ2				LR	LR		
	comp=Z,220nm,15.6s						
BHPL	**Bhopal**	**40.68**	**318**	*e*P	**P**	**10 23 28.1**	**0.0**
BHPL				*e*		10 23 29.2	
	comp=Z,30nm,0.5s						
DANN	**Dangsing**	**40.85**	**330**	*e*P	**P**	**10 23 28.1**	**-1.4**
PMG	**Port Moresby**	**41.12**	**96**	P	**P**	**10 23 34.0**	**+2.1**
	comp=Z,33nm,0.8s,mb5.2,baz=300,slow=8.9,SNR=7.9						
PMG	**Port Moresby**	**41.12**	**96**	*e*P	**P**	**10 23 30.8**	**-1.1**
	comp=Z,40nm,0.8s,mb5.3						
STKA	**Stephens Creek**	**41.74**	**131** ⇓	*i*P	**P**	**10 23 37.6**	**+0.7**
	comp=Z,28nm,0.6s,mb5.2						
STKA	**Stephens Creek**	**41.74**	**131**	P	**P**	**10 23 37.7**	**+0.8**
	comp=Z,29nm,0.6s,mb5.2,baz=306,slow=7.6,SNR=84						
STKA				LR	LR	10 42 17.1	
	comp=Z,312nm,20.1s,baz=109,slow=38						
NDI	**New Delhi**	**44.69**	**323**	*e*P	**P**	**10 23 57.5**	**-3.4**
NDI				*e*S	**S**	**10 30 31.0**	**+0.1**
AJM	**Ajmer**	**44.73**	**319**	*e*P	**P**	**10 24 00.8**	**-0.4**
AJM				*e*		10 24 01.7	
	comp=Z,20nm,0.6s						
GTA	**Gaotai**	**46.29**	**354**	*e*P	**P**	**10 24 13.1**	**-0.3**
GTA				PCP	PcP	10 25 49.0	+0.9
GTA				AMB	AMB		
	comp=Z,6.0nm,0.5s,mb4.6						
JNU	**Nakatsue**	**46.36**	**30**	P	**P**	**10 24 15.1**	**+1.0**
	comp=Z,5.9nm,0.6s,mb4.5,baz=293,slow=7.9,SNR=6.7						
BJT	**Baijiatuau**	**47.58**	**11**	*e*P	**P**	**10 24 23.7**	**+0.2**
	comp=Z,11nm,0.6s,mb4.9						
BJI	**Beijing**	**47.60**	**11**	*e*P	**P**	**10 24 23.6**	**-0.1**
BJI				S	**S**	**10 31 10.0**	**-2.1**
BJI				AMB	AMB		
	comp=Z,14nm,0.7s,mb4.9						
BJI				LR	LR		
	comp=N,164nm,18.3s						
BJI				LR	LR		
	comp=E,104nm,17.8s						
HHC	**Hu-ho-hao-te**	**47.72**	**6**	P	**P**	**10 24 26.8**	**+2.2**
KS15	**Wonju Array Si**	**48.65**	**24**	*e*P	**P**	**10 24 33.0**	**+1.1**
MAJO	**Matsushiro**	**52.80**	**33**	*e*P	**P**	**10 25 00.9**	**-2.5**
	comp=E,6.8nm,0.7s,mb4.8						
MAT	**Matsushiro**	**52.80**	**33**	P	**P**	**10 25 01.6**	**-1.7**
MAT	**Matsushiro**	**52.80**	**33**	*e*P	**P**	**10 25 02.0**	**-1.3**
WMQ	**Urumqi**	**52.95**	**344**	*e*P	**P**	**10 25 05.6**	**+1.2**
WMQ				PP	PP	10 27 06.7	+0.7
WMQ				S	**S**	**10 32 29.8**	**+3.8**
WMQ				AMB	AMB		
	comp=Z,18nm,0.8s,mb5.2						
WMQ				AMB	AMB		
	comp=Z,139nm,5.0s						
WMQ				LR	LR		
	comp=N,542nm,17.5s						
WMQ				LR	LR		
	comp=E,412nm,17.6s						
WMQ				LR	LR		
	comp=Z,771nm,18.5s						
CN2	**Changchun**	**53.44**	**18**	*e*P	**P**	**10 25 07.3**	**-0.7**
CN2				*e*AP	pP	10 25 31.8	+4.1
CN2				PCP	PcP	10 26 14.8	+0.7
CN2				*e*S	**S**	**10 32 31.3**	**-1.4**
CN2				AMB	AMB		
	comp=Z,30nm,0.9s,mb5.3						
CN2				LR	LR		
	comp=Z,200nm,20.0s						
SONM	**Songino Array**	**54.40**	**1**	P	**P**	**10 25 15.0**	**+0.1**
	comp=Z,3.2nm,0.4s,mb4.8,baz=179,slow=9.5,SNR=44						
SONM				PcP	PcP	10 26 18.1	+0.5
	comp=Z,4.2nm,0.5s,baz=181,slow=4.1,SNR=16						
SONM				ScP		10 30 09.8	
	comp=Z,1.5nm,0.9s,baz=180,slow=3.7,SNR=6.0						
ULN	**Ulaanbaatar**	**54.44**	**1**	*e*P	**P**	**10 25 15.1**	**-0.1**
	comp=Z,3.4nm,0.6s,mb4.5						
MDJ	**Mudanjiang**	**55.52**	**21**	P	**P**	**10 25 23.1**	**0.0**
MDJ				SCP		10 30 17.3	
MDJ				PCS		10 30 22.2	
MDJ				S	**S**	**10 33 07.3**	**+6.7**
MDJ				SCS	ScS	10 35 08.5	+7.3
MDJ				SS	SS	10 36 50.2	+3.8
MDJ				AMB	AMB		
	comp=Z,16nm,0.9s,mb5.0						
MDJ				AMB	AMB		
	comp=Z,112nm,4.6s						
MDJ	**Mudanjiang**	**55.52**	**21**	*e*P	**P**	**10 25 22.5**	**-0.7**
	comp=Z,12nm,0.8s,mb5.0						
ZAK	**Zakamensk**	**56.98**	**358**	*e*P	**P**	**10 25 33.0**	**-0.5**
ZAK				*e*		10 26 27.8	
HIA	**Hailar**	**57.16**	**11**	*e*P	**P**	**10 25 33.4**	**-1.4**
	comp=Z,6.4nm,0.6s,mb4.8						
MKAR	**Makanchi Array**	**57.26**	**341**	P	**P**	**10 25 33.9**	**-1.7**
	comp=Z,6.5nm,0.4s,mb5.0,baz=153,slow=8.6,SNR=64						
MKAR				LR	LR	10 54 31.6	
	comp=Z,77nm,20.9s,baz=158,slow=40						
MKAR	**Makanchi Array**	**57.26**	**341**	*i*P	**P**	**10 25 33.8**	**-1.7**
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.4s						
KKAR	**Karatay Array**	**59.04**	**331**	P	**P**	**10 25 46.9**	**-1.0**
KURK	**Kurchatov**	**61.87**	**341**	*e*P	**P**	**10 26 05.3**	**-1.8**
YSS	**Yuzh-Sakhalins**	**62.80**	**28**	P	**P**	**10 26 12.2**	**-1.1**
YSS	**Yuzh-Sakhalins**	**62.80**	**28**	*e*P	**P**	**10 26 11.2**	**-2.1**
	comp=Z,32nm,0.9s,mb5.2						
NVS	**Novosibirsk**	**64.22**	**346**	*i*P	**P**	**10 26 20.9**	**-1.6**
NVS				pmax	pmax		
	comp=N,4.0nm,0.9s						
NVS				pmax	pmax		
	comp=E,4.0nm,0.9s						
NVS				pmax	pmax		
	comp=Z,12nm,0.9s,mb4.7						
BOD	**Bodaibo**	**64.75**	**5**	*e*P	**P**	**10 26 24.5**	**-1.4**
KAMS	**Al Khamasin**	**65.81**	**296**	P	**P**	**10 26 32.5**	**-0.8**
MZLS	**Mizel**	**66.44**	**300**	P	**P**	**10 26 37.2**	**-0.1**
TATS	**Tathlith**	**66.58**	**295**	P	**P**	**10 26 38.6**	**+0.4**
BVA0	**Borovoye Array**	**66.68**	**338**	*i*P	**P**	**10 26 37.7**	**-0.6**
BVA0				pmax	pmax		
	comp=Z,1.0nm,0.5s,mb3.9						
BVAR	**Borovoye Array**	**66.68**	**338**	P	**P**	**10 26 37.5**	**-0.8**
	comp=Z,18nm,0.4s,mb5.2,baz=145,slow=9.1,SNR=100						
BRVK	**Borovoye**	**66.75**	**338**	*e*P	**P**	**10 26 38.0**	**-0.8**
ZRNK	**Zerenda**	**67.15**	**337**	*e*P	**P**	**10 26 40.2**	**-1.0**
MAW	**Mawson**	**67.19**	**196**	P	**P**	**10 26 40.6**	**-0.6**
	comp=Z,7.8nm,0.6s,mb4.7,baz=42,slow=6.3,SNR=23						
MAW				LR	LR	10 49 44.3	
	comp=Z,181nm,21.1s,baz=252,slow=30						
MAW	**Mawson**	**67.19**	**196**	*e*P	**P**	**10 26 40.3**	**-0.9**
	comp=Z,24nm,1.1s,mb4.9						
AB31	**Akbulak array**	**68.58**	**330**	P	**P**	**10 26 49.7**	**-0.5**
AB31				pmax	pmax		
	comp=Z,6.0nm,0.4s,mb4.8						
YAK	**Yakutsk**	**71.09**	**12**	*e*P	**P**	**10 27 04.0**	**-1.3**
YAK				pmax	pmax		
	comp=Z,20nm,1.0s,mb4.9						
YAK				pmax	pmax		
	comp=N,9.0nm,1.2s						
YAK				pmax	pmax		
	comp=E,4.0nm,1.1s						
YAK	**Yakutsk**	**71.09**	**12**	*e*P	**P**	**10 27 04.1**	**-1.2**
	comp=E,41nm,0.5s,mb5.5						
GNI	**Garni**	**72.89**	**315**	*e*P	**P**	**10 27 19.0**	**+2.6**
GNI				pmax	pmax		
	comp=Z,8.0nm,1.2s						
SVE	**Sverdlovsk**	**73.29**	**336** ⇑	*e*P	**P**	**10 27 19.0**	**+0.7**
SVE				pmax	pmax		
	comp=Z,120nm,1.4s,mb5.5						
ARU	**Arti**	**73.88**	**335** ⇓	*i*P	**P**	**10 27 21.7**	**-0.1**
ARU				*e*		10 27 35.9	
ARU				*e*		10 30 06.2	
ARU				*e*S	S	10 36 21.5	-24
ARU				pmax	pmax		
	comp=Z,47nm,1.2s,mb5.1						
ARU	**Arti**	**73.88**	**335**	*e*P	**P**	**10 27 21.5**	**-0.3**
	comp=Z,37nm,0.9s,mb5.1						
ZEI	**Tsey**	**74.57**	**318**	*e*P	**P**	**10 27 27.1**	**+1.0**
MA2	**Magadan**	**75.19**	**22** *c*	*i*P	**P**	**10 27 29.7**	**+0.5**
MA2				pmax	pmax		
	comp=Z,18nm,0.9s,mb4.8						
MA2	**Magadan**	**75.19**	**22**	*e*P	**P**	**10 27 29.4**	**+0.2**
	comp=Z,20nm,0.9s,mb4.8						
SYO	**Syowa Base**	**75.25**	**200** ⇓	P	**P**	**10 27 29.1**	**-0.3**
SYO	**Syowa Base**	**75.25**	**200** ⇑	PcP	PcP	10 27 45.8	+3.0
SYO	**Syowa Base**	**75.25**	**200** ⇓	*e*P	**P**	**10 27 29.1**	**-0.3**
SYO				*e*PcP	PcP	10 27 45.8	+3.0
JMQS	**Jabal Moqyreh**	**75.87**	**302**	P	**P**	**10 27 34.7**	**+0.9**
BDAS	**Al Bad'**	**76.41**	**301**	P	**P**	**10 27 37.3**	**+0.5**
JMOS	**Jabal al Moall**	**76.60**	**302**	P	**P**	**10 27 38.5**	**+0.6**
HAQS	**Haql**	**76.72**	**302**	P	**P**	**10 27 39.5**	**+0.9**
GZT	**Gaziantep**	**77.07**	**311**	*i*P	**P**	**10 27 41.2**	**+0.9**
SBA	**Scott Base**	**77.49**	**169**	*e*P	**P**	**10 27 42.3**	**+0.4**
	comp=Z,3.8nm,0.8s,mb4.2						
SOC	**Sochi**	**77.70**	**317**	*e*P	**P**	**10 27 43.4**	**-0.3**
SOC				*e*	pP	10 28 00.3	-4.3
SOC				*e*		10 37 18.5	
SOC				*e*SS	SS	10 42 20.0	-12
SOC				pmax	pmax		
	comp=Z,16nm,0.8s,mb4.8						
SOC				pmax	pmax		
	comp=N,3.0nm,0.3s						
SOC				pmax	pmax		
	comp=E,22nm,0.6s						
BOYT	**Boyabat**	**80.31**	**314**	*i*P	**P**	**10 27 58.8**	**+0.9**
BRTR	**Keskin Array B**	**80.72**	**312**	P	**P**	**10 28 00.2**	**+0.1**
	comp=E,6.6nm,0.7s,mb4.6,baz=138,slow=6.9,SNR=33						
BRTR				LR	LR	11 05 35.6	
	comp=E,39nm,20.0s,baz=155,slow=37						
BALT	**Daday**	**81.43**	**314**	*i*P	**P**	**10 28 04.8**	**+1.0**
QSPA	**South Pole Qui**	**83.19**	**180**	*e*P	**P**	**10 28 12.3**	**+0.2**
	comp=E,69nm,1.3s,mb5.3						
QSPA				*e*	pP	10 28 30.6	-2.7
OBN	**Obninsk**	**83.85**	**327** ⇓	*e*P	**P**	**10 28 17.1**	**+1.2**
OBN				*e*PP	Px	10 29 29.6	
OBN				*e*S	x	10 38 10.0	
OBN				pmax	pmax		
	comp=Z,30nm,1.0s,mb5.1						
ULDT	**Uludag**	**84.17**	**311**	*i*P	**P**	**10 28 18.9**	**+1.0**
BILL	**Bilibino**	**85.73**	**19** *c*	*i*P	**P**	**10 28 25.3**	**+0.4**
BILL				pmax	pmax		
	comp=Z,13nm,1.8s,mb4.6						
BILL	**Bilibino**	**85.73**	**19**	*e*P	**P**	**10 28 23.3**	**-1.6**
	comp=Z,4.1nm,0.8s,mb4.4						
AKASG	**Malin Array Be**	**86.73**	**322**	P	**P**	**10 28 30.7**	**+0.5**
	comp=Z,2.2nm,0.5s,mb4.4,baz=90,slow=4.6,SNR=14						
MLR	**Muntele Rosu**	**87.66**	**316** ⇑	*i*P	**P**	**10 28 36.7**	**+1.8**
JOF	**Joensuu**	**88.98**	**334**	*e*p	**P**	**10 28 41.1**	**+0.5**
	comp=Z,9.3nm,0.5s,mb5.1						
JOF	**Joensuu**	**88.98**	**334**	*e*P	**P**	**10 28 41.1**	**+0.5**
JOF				pmax	pmax		
	comp=Z,9.0nm,0.5s,mb5.1						
LVZ	**Lovozero**	**89.24**	**339** ⇓	*e*P	**P**	**10 28 42.1**	**+0.3**
LVZ				pmax	pmax		
	comp=Z,11nm,0.9s,mb4.9						
SNAA	**Sanae**	**89.33**	**197** ⇑	*i*	**P**	**10 28 43.4**	**+1.3**
VNA2	**Neumayer--Watz**	**90.97**	**198**		**P**	**10 28 42.4**	**-7.5**
FINES	**FINESS Array B**	**90.98**	**332**	P	**P**	**10 28 51.0**	**+0.9**
	comp=Z,2.4nm,0.5s,mb4.6,baz=109,slow=5.2,SNR=19						
FINES				LR	LR	11 16 36.3	
	comp=Z,37nm,19.7s,baz=166,slow=40						
FINES	**FINESS Array B**	**90.98**	**332**	*e*P	**P**	**10 28 52.0**	**+1.9**
KAF	**Kangasniemi**	**91.02**	**332**	*e*p	**P**	**10 28 50.8**	**+0.6**
	comp=Z,1.8nm,0.4s,mb4.5,baz=109,slow=4.3						
KAF	**Kangasniemi**	**91.02**	**332**	*e*P	**P**	**10 28 50.8**	**+0.6**
KAF				pmax	pmax		
	comp=Z,2.0nm,0.4s,mb4.6						
VNA1	**Neumayer--Stat**	**91.35**	**198** ⇑	*i*	**P**	**10 28 36.0**	**-16**
ARCES	**ARCESS Array B**	**92.89**	**340**	P	**P**	**10 28 59.2**	**+0.4**
	comp=Z,4.2nm,0.5s,mb5.1,baz=93,slow=6.4,SNR=73						
ARCES				LR	LR	11 17 50.7	
	comp=Z,50nm,21.1s,baz=106,slow=40						
ARCES	**ARCESS Array B**	**92.89**	**340**	P	**P**	**10 28 59.2**	**+0.4**
ARCES				LR	LR	11 17 50.7	
MOX	**Moxa**	**97.79**	**320**	*e*P	**P**	**10 29 16.0**	**-5.4**
MOX				pP	pP	10 29 30.0	-13
NOA	**NORSAR Array B**	**98.07**	**331**	LR	LR	11 16 28.0	
	comp=Z,36nm,16.5s,baz=60,slow=37						
YKA	**Yellowknife Ar**	**117.12**	**20**	PKP	PKPdf	10 34 31.1	+1.6
	comp=Z,0.4nm,0.6s,baz=347,slow=2.0,SNR=20						
WVOR	**Wild Horse Val**	**127.23**	**41**	*e*PKPdf	PKPdf	10 34 52.9	+3.3
NVAR	**Mina Array Bea**	**129.34**	**45**	PKP	PKPdf	10 34 57.2	+3.5
	comp=Z,0.8nm,0.7s,baz=270,slow=1.8,SNR=8.6						
BOZ	**Bozeman (W)**	**129.63**	**34**	*e*PKPdf	PKPdf	10 34 56.8	+2.6
QLMT	**Earthquake Lak**	**130.25**	**34**	*e*SKP		10 38 17.6	
LKWY	**Lake**	**130.99**	**34**	*e*SKP		10 38 21.7	
SCHQ	**Schefferville**	**131.73**	**354**	PKP	PKPdf	10 35 00.9	+3.0
	slow=2.1						
HWUT	**Hardware Ranch**	**132.11**	**38**	*e*SKP		10 38 23.4	
PDAR	**Pinedale Array**	**132.59**	**35**	PKP	PKPdf	10 35 02.1	+2.3
	comp=Z,0.7nm,0.5s,baz=270,slow=0.9,SNR=7.0						
NLU	**North Lily Min**	**132.74**	**40**	*e*SKP		10 38 26.1	
JLU	**Jordanelle**	**132.76**	**39**	*e*SKP		10 38 24.0	
DAU	**Daniels Canyon**	**133.00**	**39**	*e*SKP		10 38 27.2	
NEN	**Nelson**	**133.07**	**46**	*e*PKPdf	PKPdf	10 35 04.9	+3.9
NEN				*e*SKP		10 38 27.7	
ULM	**Lac du Bonnet**	**133.08**	**19**	PKP	PKPdf	10 35 03.3	+2.8
	comp=Z,1.8nm,0.8s,baz=332,slow=3.0,SNR=2.6						
MSU	**Marysvale**	**133.47**	**42**	*e*PKPdf	PKPdf	10 35 03.3	+1.7
MSU				*e*SKP		10 38 29.2	
RSSD	**Black Hills**	**134.64**	**30**	*e*PKPdf	PKPdf	10 35 06.2	+2.6
RSSD				*e*SKP		10 38 31.7	
PV10	**Paradox Valley**	**135.58**	**40**	*e*PKPdf	PKPdf	10 35 08.6	+3.1
PV10				*e*SKP		10 38 35.8	
WUAZ	**Wupatki**	**135.60**	**45**	*e*SKP		10 38 36.7	
PV01	**Paradox Valley**	**136.02**	**40**	*e*PKPdf	PKPdf	10 35 08.4	+2.1
PV01				*e*SKP		10 38 37.2	
ANMO	**Albuquerque**	**139.26**	**42**	*i*PKIKP	PKPdf	10 35 16.6	+4.3
WMOK	**Wichita Mounta**	**144.20**	**36**	*e*PKPdf	PKPdf	10 35 21.2	+0.2
TXAR	**Lajitas Array**	**144.40**	**47**	PKP	PKPdf	10 35 23.4	+1.9
	comp=Z,5.9nm,0.4s,baz=310,slow=1.2,SNR=166						
TXAR	**Lajitas Array**	**144.40**	**47**	PKP	PKPdf	10 35 23.4	+1.9
CCM	**Cathedral Cave**	**145.30**	**24**	*e*PKPdf	PKPdf	10 35 24.7	+1.8
FVM	**French Village**	**145.68**	**23**	*e*PKPdf	PKPdf	10 35 25.6	+2.1
BDFB	**Brasilia**	**145.71**	**229**	PKPbc	PKPbc	10 35 26.9	+1.9
	comp=Z,1.8nm,0.4s,baz=315,slow=4.3,SNR=2.5						
ACSO	**Alum Creek Sta**	**145.81**	**12**	*e*PKPdf	PKPdf	10 35 26.5	+2.8
BLO	**Bloomington**	**145.94**	**17**	*e*PKPdf	PKPdf	10 35 26.7	+2.8
SSPA	**Standing Stone**	**146.16**	**5**	*e*PKPdf	PKPdf	10 35 27.1	+2.9
SIUC	**Southern Illin**	**146.37**	**22**	*e*PKPbc	PKPbc	10 35 27.6	+1.6
JCT	**Junction City**	**146.43**	**42**	*e*PKPbc	PKPbc	10 35 28.2	+1.8
WCI	**Wyandotte Cave**	**146.88**	**17**	*e*PKPdf	PKPdf	10 35 24.9	-0.6
WCI				*e*PKPbc	PKPbc	10 35 29.1	+2.0
MVL	**Millersville**	**146.89**	**3**	*e*PKPbc	PKPbc	10 35 28.8	+1.7
MCWV	**Mont Chateau**	**146.91**	**8**	*e*PKPbc	PKPbc	10 35 29.0	+1.8
MIAR	**Mount Ida**	**147.16**	**30**	*e*PKPbc	PKPbc	10 35 30.6	+4.6
HBAR	**Harrisburg**	**147.68**	**25**	*e*PKPdf	PKPdf	10 35 29.4	+2.5
WVT	**Waverly**	**148.29**	**21**	*e*PKPbc	PKPdf	10 35 33.5	+5.7
FWV	**Forest Hill**	**148.79**	**10**	*e*PKPdf	PKPdf	10 35 30.1	+1.5
FWV				*e*PKPbc	PKPdf	10 35 34.2	+5.6
PWV	**Princeton**	**148.99**	**10**	*e*PKPbc	PKPdf	10 35 34.0	+5.0
OXF	**Oxford**	**149.10**	**25**	*e*PKPdf	PKPdf	10 35 33.0	+3.8
PLAL	**Pickwick Lake**	**149.22**	**22**	*e*PKPdf	PKPdf	10 35 31.5	+2.2
PLAL				*e*PKPbc	PKPdf	10 35 35.1	+5.7
SWET	**Sewanee**	**149.76**	**19**	*e*PKPbc	PKPdf	10 35 36.7	+6.5
CPCT	**Cooper Cave**	**149.98**	**17**	*e*PKPbc	PKPdf	10 35 37.8	+7.2
LRAL	**Lakeview Retre**	**151.36**	**23**	*e*PKPdf	PKPdf	10 35 36.4	+3.7
LRAL				*e*PKPbc	PKPdf	10 35 40.6	+7.8
JSC	**Jenkinsville**	**151.91**	**12**	*e*PKPdf	PKPdf	10 35 37.1	+3.6
JSC				*e*PKPbc	PKPdf	10 35 42.3	+8.8

*IDC **06** 10:30:32.0±3.0, 49.17S×125.06E, mb4.0/3, mb1 4.2/4, mb1mx4.0/10, ML1.9/1, MS3.6/2, Ms1 3.6/2, ms1mx3.3/9, Error ellipse: s-maj=63.1km s-min=48.1km az=176.0*

ISC 06 10:30:32.0±4.2, 49.2S±0.5×125.1E±0.4, h10km, n7, σ0.51/5, mb3.8/3, MS3.4/2, Western Indian-Antarctic Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
NWAO	**Narrogin (SRO)**	**17.25**	**337**	P	**P**		**10 34 34.7**	**+0.2**
	0.2nm,0.3s,baz=159,slow=8.6,SNR=3.8							
STKA	**Stephens Creek**	**21.24**	**42**	*e*P	**P**		**10 35 20.9**	**+0.6**
	5.8nm,1.0s,mb3.9							
STKA	**Stephens Creek**	**21.24**	**42**	P	**P**		**10 35 20.5**	**+0.2**
	7.5nm,1.0s,mb4.0,baz=198,slow=12,SNR=10							
ASAR	**Alice Springs**	**26.36**	**18**	P	**P**		**10 36 09.4**	**-0.6**
	2.0nm,0.7s,mb3.8,baz=194,slow=8.9,SNR=21							
ASAR				LR	LR		10 46 51.5	
	comp=Z,88nm,18.5s,MS3.3,baz=188,slow=37							
WRA	**Warramunga Arr**	**30.07**	**17**	LR	LR		10 48 16.8	
	comp=Z,125nm,20.1s,MS3.5,baz=260,slow=35							
CMAR	**Chiang Mai Arr**	**71.22**	**334**	P	**P**		**10 41 53.2**	**0.0**
	0.6nm,0.5s,mb3.8,baz=190,slow=5.7,SNR=4.4							
YKA	**Yellowknife Ar**	**145.25**	**45**	PKPbc	PKPbc		10 50 09.0	0.0
	0.3nm,0.7s,baz=273,slow=3.3,SNR=7.1							

SKHL 06 11:09:56.6±0.7, 48.24N×142.19E, h10km, mb3.9/2, Sakhalin Island

*IDC **06** 11:14:03.3±1.0, 1.02N×125.88E, mb4.0/6, mb1 4.2/7, mb1mx3.9/17, ML3.9/1, Error ellipse: s-maj=66.1km s-min

az=87.0

ISC 06 11:29:12.3±5.5, 21.4N±0.2×144.6E±0.9, h65km±42km, n6, σ0§86/6, mb3.5/4, Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**6.08**	**339**	P		**P**	**11 30 41.8**	**+0.3**
	3.5nm,0.3s,baz=334,slow=21,SNR=3.3							
CBIJ				S		**S**	**11 31 50.1**	**-0.4**
	6.1nm,0.3s,baz=312,slow=23,SNR=3.9							
ASAJ	**Asahikawa**	**22.72**	**356**	LR		LR	11 42 53.3	
	comp=Z,27nm,18.7s,baz=304,slow=36							
WRA	**Warramunga Arr**	**42.29**	**194**	P		**P**	**11 37 01.1**	**-0.2**
	0.4nm,0.4s,mb3.5,baz=15,slow=8.7,SNR=4.6							
FITZ	**Fitzroy Crossi**	**43.42**	**207**	P		**P**	**11 37 11.3**	**+0.7**
	1.6nm,0.7s,mb3.8,baz=27,slow=10.0,SNR=8.7							
ASAR	**Alice Springs**	**45.98**	**194**	P		**P**	**11 37 30.2**	**-0.7**
	0.2nm,0.4s,mb3.2,baz=14,slow=7.0,SNR=4.1							
FINES	**FINESS Array B**	**84.01**	**335**	P		**P**	**11 41 36.7**	**+0.3**
	0.3nm,0.4s,mb3.5,baz=201,slow=43,SNR=2.9							
FINES				pP		pP	11 41 50.2	-4.4
	0.3nm,0.3s,baz=68,slow=7.5,SNR=1.9							

*IDC **06** 11:29:44.1±1.2,3.66N×127.02E,mb3.7/6,mb1 3.9/6, mb1mx3.7/17,MS3.2/1,Ms1 3.2/1,ms1mx2.6/31,Error ellipse: s-maj=90.6km s-min=18.3km az=71.0*
*NEIC **06** 11:29:45.5±0.7,3.63N×127.00E,h10km,mb4.3/2,Error ellipse: s-maj=61.5km s-min=10.1km az=73.0*

ISC 06 11:29:47.0±0.8, 3.6N±0.2×126.8E±0.5, h33km, n10, σ0§62/9, mb3.8/8, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
TGY	**Tagaytay City**	**11.94**	**331**	LR		LR	11 37 05.1	
	comp=Z,113nm,19.8s,baz=21,slow=37							
FITZ	**Fitzroy Crossi**	**21.59**	**183**	P		**P**	**11 34 36.5**	**+0.4**
	3.9nm,1.1s,mb3.8,baz=16,slow=11,SNR=5.9							
WRAB	**Tennant Creek**	**24.53**	**163**	*e*P		**P**	**11 35 05.2**	**+0.2**
	13nm,0.7s,mb4.6							
WRA	**Warramunga Arr**	**24.53**	**163**	P		**P**	**11 35 05.8**	**+0.7**
	6.5nm,0.9s,mb4.2,baz=344,slow=10,SNR=21							
WB2	**Warramunga Arr**	**24.54**	**163**	*e*P		**P**	**11 35 04.1**	**-1.0**
ASAR	**Alice Springs**	**27.96**	**166**	P		**P**	**11 35 36.0**	**-1.0**
	0.2nm,0.3s,mb3.2,baz=353,slow=8.2,SNR=5.3							
STKA	**Stephens Creek**	**37.98**	**159**	P		**P**	**11 37 04.3**	**+0.7**
	0.5nm,0.3s,mb3.7,baz=1.4,slow=8.7,SNR=4.0							
ULN	**Ulaanbaatar**	**47.27**	**342**	*e*P		**P**	**11 38 18.9**	**-0.2**
	0.8nm,0.6s,mb3.8							
SONM	**Songino Array**	**47.45**	**341**	P		**P**	**11 38 20.9**	**+0.4**
	0.2nm,0.4s,mb3.4,baz=153,slow=6.4,SNR=2.3							
MKAR	**Makanchi Array**	**57.71**	**325**	P		**P**	**11 39 36.6**	**-0.3**
	0.6nm,0.4s,mb4.0,baz=119,slow=7.7,SNR=8.5							

ISC 06 11:39:14.7±0.6, 47.13N±0.03×14.61E±0.05, h10km, n6, σ0§31/12, 4C, Austria

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
BISS	**Bistriski jare**	**0.60**	**144**	*e*Pg		**Pg**	**11 39 26.8**	**+0.1**
BISS				*i* Sg		**Sg**	**11 39 35.0**	**+0.3**
	comp=Z,24nm,0.1s							
PERS	**Pernice**	**0.60**	**145**	*e*Pg		**Pg**	**11 39 27.1**	**+0.3**
PERS				*i* Sg		**Sg**	**11 39 34.9**	**-0.1**
	comp=Z,11nm,0.2s							
OBKA	**Obir**	**0.62**	**184**	⇑*i*PG		**Pg**	**11 39 27.2**	**0.0**
OBKA				*i* SG		**Sg**	**11 39 35.7**	**+0.1**
	comp=Z,4.2nm,0.1s							
ARSA	**Arzberg**	**0.63**	**79**	⇑*i*PG		**Pg**	**11 39 27.2**	**-0.2**
ARSA				*i* SG		**Sg**	**11 39 35.6**	**-0.3**
	comp=Z,6.2nm,0.2s							
MOA	**Molln**	**0.76**	**342**	⇑*i*PG		**Pg**	**11 39 30.1**	**+0.1**
MOA				*i* SG		**Sg**	**11 39 40.6**	**+0.5**
	comp=Z,2.9nm,0.3s							
KBA	**Koelnbreinsper**	**0.87**	**267**	⇑*i*PG		**Pg**	**11 39 31.4**	**-0.7**
KBA				*i* SG		**Sg**	**11 39 43.8**	**0.0**
	comp=Z,2.9nm,0.2s							

SKHL 06 11:44:57.9±0.1, 48.21N×142.02E, h10km, mb4.0/3, Sakhalin Island

*NEIC **06** 11:46:20.5±0.6,4.65S×149.39E,h584km±6km,mb4.4/14, Error ellipse: s-maj=11.6km s-min=5.7km az=90.0*
*SYO **06** 11:46:20.5,4.65S×149.39E,h584km,MB4.4*
*BJI **06** 11:46:20.2,4.60S×149.40E,h584km,mB4.3,mb4.2*
*IDC **06** 11:46:20.4±1.1,4.74S×149.40E,h581km±11km,mb3.5/13, mb1 3.6/15,mb1mx3.6/19,Error ellipse: s-maj=21.0km s-min=9.2km az=106.0*

ISC 06 11:46:20.1±0.7, 4.67S±0.06×149.3E±0.1, h591km±8km, n53, σ0§72/54, mb4.1/26, 2C-7D, Bismarck Sea

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
WAU	**Wau**	**3.70**	**224**	⇑*i*P		**P**	**11 47 42.9**	**-0.5**
PMG	**Port Moresby**	**5.16**	**204**	P		**P**	**11 47 54.6**	**+0.4**
	8.0nm,0.3s,baz=16,slow=6.0,SNR=29							
PMG				S		**S**	**11 49 08.3**	**-0.7**
	3.2nm,0.3s,baz=152,slow=20,SNR=14							
PMG	**Port Moresby**	**5.16**	**204**	*e*P		**P**	**11 47 54.7**	**+0.5**
PMG				*e*S		**S**	**11 49 09.9**	**+0.9**
PIAM	**Paiam**	**6.18**	**262**	P		**P**	**11 47 54.5**	**-8.4**
CTA	**Charters Tower**	**15.61**	**191**	⇓*i*P		**P**	**11 49 36.0**	**+1.7**
	16nm,0.4s							
CTA	**Charters Tower**	**15.61**	**191**	P		**P**	**11 49 36.0**	**+1.7**
	6.0nm,0.3s,baz=5.4,slow=11,SNR=58							
CTAO	**Charters Tower**	**15.61**	**191**	*e*P		**P**	**11 49 35.9**	**+1.6**
	25nm,0.6s							
GUMO	**Guam**	**18.67**	**346**	*e*P		**P**	**11 50 02.8**	**-0.5**
	81nm,0.8s							
WRAB	**Tennant Creek**	**21.03**	**223**	*e*P		**P**	**11 50 24.8**	**-0.1**
	16nm,0.5s,mb4.9							
WB2	**Warramunga Arr**	**21.03**	**223**	⇓*i*P		**P**	**11 50 25.1**	**+0.1**
WB2				*i*			11 50 36.3	
WB2				*e*S		**S**	**11 53 40.7**	**-0.8**
WRA	**Warramunga Arr**	**21.04**	**223**	P		**P**	**11 50 25.2**	**+0.1**
	7.0nm,0.6s,mb4.5,baz=47,slow=9.2,SNR=7.7							
WRA				S		**S**	**11 53 41.3**	**-0.3**
	2.1nm,0.7s,baz=45,slow=15,SNR=7.8							
WRA				PcP		PcP	11 54 06.4	-0.3
	1.8nm,0.8s,baz=39,slow=2.0,SNR=5.4							
WRA				ScP			11 56 49.1	
	0.4nm,0.6s,baz=43,slow=3.1,SNR=7.0							
AS12	**Alice Springs**	**24.02**	**217**	⇓*i*P		**P**	**11 50 51.4**	**-0.5**
	6.8nm,0.6s,mb4.5							
ASAR	**Alice Springs**	**24.02**	**217**	P		**P**	**11 50 51.5**	**-0.4**
	11nm,0.8s,mb4.5,baz=50,slow=8.1,SNR=138							
ASAR				tx		tx	11 52 21.9	
	4.0nm,0.9s,baz=42,slow=10,SNR=4.4							
ASAR				S		**S**	**11 54 27.8**	**-1.6**
	0.7nm,0.6s,baz=39,slow=13,SNR=4.7							
ASAR				ScP			11 56 57.5	
	1.0nm,0.7s,baz=46,slow=3.6,SNR=5.3							
ASAR	**Alice Springs**	**24.02**	**217**	P		**P**	**11 50 51.5**	**-0.4**
ASAR				S		**S**	**11 54 27.8**	**-1.6**
ASAR				ScP			11 56 57.5	
ARMA	**Armidale**	**25.70**	**175**	*e*P		**P**	**11 51 07.1**	**+0.4**
FITZ	**Fitzroy Crossi**	**26.71**	**238**	P		**P**	**11 51 15.0**	**-0.7**
	1.0nm,0.4s,mb3.8,baz=54,slow=6.5,SNR=7.5							
STKA	**Stephens Creek**	**28.01**	**194**	*e*P		**P**	**11 51 25.3**	**-1.4**
	2.9nm,0.6s,mb4.1							
STKA	**Stephens Creek**	**28.01**	**194**	P		**P**	**11 51 25.3**	**-1.4**
	4.1nm,0.6s,mb4.2,baz=12,slow=11,SNR=13							
STKA				tx		tx	11 52 58.2	
	1.8nm,0.8s,baz=350,slow=6.4,SNR=3.5							
JOW	**Kunigami**	**37.35**	**328**	P		**P**	**11 52 45.7**	**+0.7**
	21nm,0.6s,mb4.8,baz=102,slow=8.4,SNR=6.6							
JNU	**Nakatsue**	**41.45**	**336**	P		**P**	**11 53 17.6**	**-0.3**
	3.9nm,0.4s,mb4.3,baz=13,slow=9.3,SNR=3.9							
MAJO	**Matsushiro**	**42.30**	**347**	*e*P		**P**	**11 53 22.5**	**-2.2**
	9.1nm,0.7s,mb4.4							
KS15	**Wonju Array Si**	**46.41**	**336**	*e*P		**P**	**11 53 55.8**	**-0.6**
ASAJ	**Asahikawa**	**48.94**	**354**	P		**P**	**11 54 14.7**	**-0.7**
	7.5nm,0.9s,mb4.1,baz=190,slow=11,SNR=4.4							
MDJ	**Mudanjiang**	**52.16**	**342**	P		**P**	**11 54 38.7**	**0.0**
MDJ				AMB		AMB		
	comp=Z,8.0nm,1.2s,mb3.9							
MDJ				AMB		AMB		
	comp=Z,69nm,3.5s							
CN2	**Changchun**	**52.83**	**338**	*e*P		**P**	**11 54 44.0**	**+0.5**
KMI	**Kunming**	**54.05**	**306**	*e*P		**P**	**11 54 53.7**	**+1.4**
KMI				AMB		AMB		
	comp=Z,7.0nm,0.8s,mb4.0							

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
CM31	**Chiang Mai Arr**	**54.69**	**296**	P		**P**	**11 54 48.8**	**-8.1**
	comp=Z,4.1nm,0.7s,mb3.9							
CMAR	**Chiang Mai Arr**	**54.69**	**296**	P		**P**	**11 54 57.4**	**+0.6**
	comp=Z,1.6nm,0.4s,mb3.7,baz=125,slow=5.8,SNR=14							
HIA	**Hailar**	**59.55**	**338**	*e*P		**P**	**11 55 28.8**	**-0.7**
	comp=Z,9.9nm,0.7s,mb4.2							
ULN	**Ulaanbaatar**	**64.09**	**330**	*e*P		**P**	**11 55 58.9**	**+0.1**
	comp=Z,8.9nm,0.7s,mb3.7							
SONM	**Songino Array**	**64.40**	**329**	P		**P**	**11 56 01.0**	**+0.3**
	comp=Z,3.0nm,0.6s,mb3.8,baz=141,slow=5.3,SNR=30							
LSA	**Lhasa**	**65.31**	**306**	*e*P		**P**	**11 56 06.9**	**+0.1**
	comp=Z,3.8nm,0.5s,mb4.1							
GUN	**Gumba**	**69.09**	**302**	*e*P		**P**	**11 56 30.4**	**+0.7**
	comp=Z,9.2nm,0.4s,mb4.5							
PKI	**Pulchoki**	**69.39**	**302**	*e*P		**P**	**11 56 31.2**	**-0.3**
KKN	**Kakani**	**69.56**	**302**	*e*P		**P**	**11 56 32.5**	**0.0**
DMN	**Daman**	**69.66**	**302**	*e*P		**P**	**11 56 33.6**	**+0.5**
	comp=Z,8.4nm,0.6s,mb4.4							
GKN	**Gorkha**	**70.17**	**302**	*e*P		**P**	**11 56 36.4**	**+0.3**
KOLN	**Koldanda**	**70.98**	**301**	*e*P		**P**	**11 56 41.1**	**+0.3**
	comp=Z,7.4nm,0.6s,mb4.4							
WMQ	**Urumqi**	**73.31**	**318**	*e*P		**P**	**11 56 54.7**	**+0.8**
WMQ				AP		pP	11 58 59.1	+2.6
WMQ				S		S	12 05 36.4	+0.5
WMQ				AMB		AMB		
	comp=Z,16nm,2.1s,mb4.2							
WMQ				AMB		AMB		
	comp=Z,89nm,9.8s							
MKAR	**Makanchi Array**	**77.96**	**320**	P		**P**	**11 57 19.8**	**+0.4**
	comp=Z,0.7nm,0.4s,mb3.4,baz=108,slow=6.5,SNR=12							
MKAR	**Makanchi Array**	**77.96**	**320**	P		**P**	**11 57 19.8**	**+0.4**
QSPA	**South Pole Qui**	**85.28**	**180**	*e*P		**P**	**11 57 56.1**	**+0.4**
	comp=Z,11nm,0.4s,mb4.8							
INK	**Inuvik**	**89.59**	**21**	P		**P**	**11 58 15.2**	**-1.1**
	comp=Z,2.5nm,1.1s,mb4.0,baz=249,slow=7.2,SNR=8.6							
SYO	**Syowa Base**	**92.62**	**200**	⇓P		**P**	**11 58 38.0**	**+8.0**
SYO	**Syowa Base**	**92.62**	**200**	⇓P		PcP	11 58 47.2	+17
SYO	**Syowa Base**	**92.62**	**200**	⇑pP		pP	12 00 38.3	-0.7
SYO	**Syowa Base**	**92.62**	**200**	⇓P		sP	12 01 24.7	-12
SYO	**Syowa Base**	**92.62**	**200**	⇓*e*P		**P**	**11 58 38.0**	**+8.0**
SYO				*e*pP		pP	12 00 38.3	-0.7
NVAR	**Mina Array Bea**	**94.75**	**52**	P		**P**	**11 58 40.7**	**+0.3**
	comp=Z,0.6nm,0.9s,mb3.7,baz=279,slow=2.8,SNR=4.6							
NVAR	**Mina Array Bea**	**94.75**	**52**	P		**P**	**11 58 40.7**	**+0.3**
YKA	**Yellowknife Ar**	**96.94**	**28**	P		**P**	**11 58 49.8**	**+0.2**
	comp=Z,0.2nm,0.6s,mb3.5,baz=275,slow=4.9,SNR=5.6							
ARCES	**ARCESS Array B**	**105.71**	**342**	PKiKP			12 03 37.3	
	comp=Z,0.8nm,0.9s,baz=72,slow=2.4,SNR=5.5							
GERES	**GERESS Array B**	**122.09**	**327**	PKP		PKPdf	12 04 09.4	+1.1
	comp=Z,1.0nm,0.6s,baz=117,slow=3.0,SNR=6.1							

*IDC **06** 11:52:22.1±2.1,18.15S×175.78E,mb4.0/8,mb1 4.3/8, mb1mx4.2/14,MS2.9/1,Ms1 2.9/1,ms1mx2.6/22,Error ellipse: s-maj=103.0km s-min=21.9km az=148.0*

ISC 06 11:52:25.6±1.7, 18.2S±0.5×175.8E±0.4, h33km, n10, σ1§01/8, mb4.0/8, MS2.7/1, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**23.23**	**101**	LR		LR	12 04 43.2	
	comp=Z,26nm,19.2s,MS2.7,baz=88,slow=32							
STKA	**Stephens Creek**	**33.64**	**240**	P		**P**	**11 59 05.2**	**-0.1**
	3.1nm,0.9s,mb4.2,baz=92,slow=10,SNR=5.4							
WRA	**Warramunga Arr**	**39.10**	**261**	P		**P**	**11 59 50.5**	**-1.1**
	2.5nm,0.9s,mb3.9,baz=92,slow=7.9,SNR=11							
ASAR	**Alice Springs**	**39.35**	**255**	P		**P**	**11 59 53.6**	**0.0**
	3.9nm,0.8s,mb4.2,baz=84,slow=8.6,SNR=32							
FITZ	**Fitzroy Crossi**	**47.49**	**262**	P		**P**	**12 01 00.1**	**+0.4**
	7.6nm,1.0s,mb4.6,baz=134,slow=4.6,SNR=5.0							
NVAR	**Mina Array Bea**	**83.58**	**46**	P		**P**	**12 04 53.1**	**+1.1**
	0.8nm,1.0s,mb3.8,baz=224,slow=6.6,SNR=4.9							
CMAR	**Chiang Mai Arr**	**83.80**	**292**	P		**P**	**12 04 55.5**	**+1.9**
	1.1nm,0.9s,mb4.0,baz=135,slow=4.0,SNR=6.9							
ILAR	**Eielson Array**	**87.54**	**15**	P		**P**	**12 05 09.6**	**-1.4**
	0.7nm,1.0s,mb3.9,baz=240,slow=5.9,SNR=5.2							
YKA	**Yellowknife Ar**	**97.00**	**26**	P		**P**	**12 05 54.1**	**-0.6**
	0.1nm,0.5s,mb3.5,baz=246,slow=3.3,SNR=3.8							
GERES	**GERESS Array B**	**146.17**	**339**	PKPbc		PKPbc	12 12 03.9	+1.5
	0.3nm,0.3s,baz=27,slow=3.0,SNR=4.9							

*IDC **06** 11:59:31.2±1.5,8.71S×130.23E,mb3.9/2,mb1 4.3/5, mb1mx4.0/12,ML4.2/3,Error ellipse: s-maj=63.4km s-min=23.7km az=71.0*

ISC 06 11:59:40.5±2.0, 9.18S±0.09×130.3E±0.1, h109km±22km, n11, σ1§16/18, mb4.0/3, 1C-1D, Timor Sea

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
KAKA	**Kakadu**	**4.08**	**149**	*e*P		**P**	**12 00 43.0**	**+1.0**
	40nm,0.3s							
KAKA				*e*S		**S**	**12 01 33.7**	**+4.7**
FITZ	**Fitzroy Crossi**	**9.94**	**206**	⇑*i*P		**P**	**12 02 01.7**	**+0.1**
	12nm,0.3s							
FITZ				*e*S		**S**	**12 03 53.1**	**+1.3**
FITZ	**Fitzroy Crossi**	**9.94**	**206**	Pn		**P**	**12 02 01.7**	**+0.1**
	8.3nm,0.3s,baz=23,slow=10,SNR=188							
FITZ				Sn		**S**	**12 03 49.8**	**-2.0**
	5.0nm,0.3s,baz=191,slow=13,SNR=6.5							
WRA	**Warramunga Arr**	**11.40**	**160**	Pn		**P**	**12 02 20.4**	**-0.7**
	1.3nm,0.3s,baz=343,slow=13,SNR=27							
WRA				Sn		**S**	**12 04 25.7**	**-1.0**
	4.1nm,0.3s,baz=343,slow=23,SNR=11							
WB2	**Warramunga Arr**	**11.40**	**160**	⇓*i*P		**P**	**12 02 20.3**	**-0.8**
WB2				*e*S		**S**	**12 04 25.7**	**-1.1**
AS12	**Alice Springs**	**14.82**	**167**	*e*P		**P**	**12 03 07.2**	**+1.5**
	3.6nm,0.3s							
AS12				*e*S		**S**	**12 05 49.8**	**+2.6**
ASAR	**Alice Springs**	**14.82**	**167**	Pn		**P**	**12 03 06.3**	**+0.6**
	0.6nm,0.3s,baz=344,slow=13,SNR=25							
ASAR				Sn		**S**	**12 05 49.5**	**+2.2**
	0.7nm,0.3s,baz=348,slow=26,SNR=5.7							
FORT	**Forrest**	**21.59**	**185**	*e*P		**P**	**12 04 30.0**	**+7.3**
	37nm,0.6s,mb4.9							
STKA	**Stephens Creek**	**24.91**	**157**	*e*P		**P**	**12 05 02.2**	**+7.3**
	1.8nm,0.6s,mb3.7							
STKA	**Stephens Creek**	**24.91**	**157**	P		**P**	**12 05 00.7**	**+5.8**
	1.4nm,0.5s,mb3.6,baz=348,slow=9.3,SNR=5.7							
MKAR	**Makanchi Array**	**70.19**	**327**	P		**P**	**12 10 43.2**	**-0.2**
	0.4nm,0.4s,mb3.6,baz=117,slow=6.4,SNR=11							

*MOS **06** 12:01:21.5±0.9,5.02S×149.61E,h409km,mb4.9/5,Error ellipse: s-maj=46.7km s-min=14.9km az=109.7*
*BJI **06** 12:01:37.5,4.50S×149.71E,h578km,mB4.6,mb4.8*
*NEIC **06** 12:01:39.3±0.1,4.60S×149.46E,mb4.9/39,Error ellipse: s-maj=5.7km s-min=4.1km az=113.0*
*SYO **06** 12:01:39.2,4.60S×149.46E,h574km,MB4.9*
*HRVD **06** 12:01:39.3±0.3,4.61S×149.52E,h572km±2km,MW5.5/59, Centroid moment Tensor Solution. LP body waves: s59,c120; Half duration: 1s Moment tensor: Scale 10^17 Nm; Mrr1.31±.06; Mθθ-2.39±.07; Mφφ1.08±.09; Mrθ0.46±.09; Mθφ-0.54±.08; Mφr-1.44±.09; Best double couple: Mo2.61×10^17 NP1:φs227°,δ56°,λ34°. NP2:φs116°, δ63°,λ140°. Principal axes: T 2.74, Plg46°, Azm79°; N -.25, Plg43°, Azm267°; P -2.49, Plg4°, Azm173°; nsta1 refers to body waves, cutoff=40s.*
*IDC **06** 12:01:40.3±0.5,4.64S×149.34E,h582km±5km,mb4.3/22, mb1 4.4/24,mb1mx4.4/24 Error ellipse: s-maj=9.3km s-min=6.6km az=94.0*

ISC 06 12:01:38.2±0.4, 4.59S±0.04×149.43E±0.04, h571km±4km, h573km±3.1km:pP-P,n221,σ0§96/172, mb4.8/75, 9C-10D, Bismarck Sea

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
KMBE	**Kimbe**	**1.20**	**143**	*e*P		**P**	**12 02 46.4**	**-1.0**
KMBE				*e*S		**S**	**12 03 41.2**	**-1.1**
RAB	**Rabaul**	**2.75**	**82**	*e*P		**P**	**12 02 54.3**	**+0.3**
PMG	**Port Moresby**	**5.29**	**205**	P		**P**	**12 03 14.4**	**+2.1**
	104nm,0.3s,baz=58,slow=6.1,SNR=279							
PMG				S		**S**	**12 04 28.2**	**+1.1**
	36nm,0.3s,baz=148,slow=22,SNR=24							
PMG				PKiKP			12 17 07.6	
	0.9nm,0.3s,baz=76,slow=4.2,SNR=3.4							
PMG	**Port Moresby**	**5.29**	**205**	⇑*i*P		**P**	**12 03 14.5**	**+2.2**
PMG				*e*S		**S**	**12 04 29.7**	**+2.7**
PIAM	**Paiam**	**6.32**	**262**	*e*P		**P**	**12 03 17.6**	**-3.8**
CTA	**Charters Tower**	**15.71**	**191**	⇓*i*P		**P**	**12 04 55.9**	**+2.0**
	727nm,1.5s							
CTA				*e*S		**S**	**12 07 36.1**	**+4.6**
CTA	**Charters Tower**	**15.71**	**191**	P		**P**	**12 04 55.9**	**+2.0**
	41nm,0.3s,baz=3.0,slow=11,SNR=325							
CTAO	**Charters Tower**	**15.71**	**191**	*e*P		**P**	**12 04 55.8**	**+1.8**
	956nm,1.2s							
GUMO	**Guam**	**18.62**	**346**	*e*P		**P**	**12 05 21.9**	**+0.3**
	173nm,0.6s							
KAKA	**Kakadu**	**18.66**	**243**	⇑*i*P		**P**	**12 05 22.0**	**0.0**
	41nm,0.3s							
KAKA				*e*S		**S**	**12 08 29.3**	**+7.3**
WRAB	**Tennant Creek**	**21.18**	**223**	*e*P		**P**	**12 05 44.8**	**-0.5**
	214nm,0.5s							
WB2	**Warramunga Arr**	**21.18**	**223**	⇓*i*P		**P**	**12 05 45.6**	**+0.3**
WB2				*e*S		**S**	**12 09 00.5**	**-3.2**
WRA	**Warramunga Arr**	**21.19**	**223**	P		**P**	**12 05 45.2**	**-0.2**
	77nm,0.5s,mb5.6,baz=48,slow=9.5,SNR=81							
WRA				tx		tx	12 07 07.7	
	8.7nm,0.5s,baz=46,slow=12,SNR=8.0							
WRA				S		**S**	**12 09 01.7**	**-2.1**
	30nm,0.9s,baz=46,slow=14,SNR=9.2							
WRA				PcP		PcP	12 09 26.3	-0.8
	11nm,0.7s,baz=52,slow=2.6,SNR=4.8							
WRA				ScP			12 12 09.3	
	15nm,0.9s,baz=43,slow=2.8,SNR=9.6							
WRA				PKiKP			12 17 10.8	
	0.8nm,1.0s,baz=320,slow=1.1,SNR=7.6							
WRA	**Warramunga Arr**	**21.19**	**223**	P		**P**	**12 05 45.2**	**-0.2**
WRA				S		**S**	**12 09 01.7**	**-2.1**
WRA				PcP		PcP	12 09 26.3	-0.8
WRA				ScP			12 12 09.3	
AS12	**Alice Springs**	**24.17**	**217**	⇑*i*P		**P**	**12 06 11.6**	**-0.7**
	99nm,0.6s,mb5.6							
AS12				*e*pP			12 07 42.7	
AS12				*e*S		**S**	**12 09 49.4**	**-2.2**
ASAR	**Alice Springs**	**24.17**	**217**	P		**P**	**12 06 11.5**	**-0.8**
	84nm,0.5s,mb5.7,baz=51,slow=8.1,SNR=202							
ASAR				tx		tx	12 07 42.9	
	24nm,0.6s,baz=42,slow=9.0,SNR=6.9							
ASAR				S		**S**	**12 09 47.9**	**-3.7**
	8.9nm,0.7s,baz=47,slow=12,SNR=4.9							
ASAR				ScP			12 12 17.6	
	7.8nm,0.8s,baz=42,slow=3.2,SNR=7.2							
ASAR	**Alice Springs**	**24.17**	**217**	P		**P**	**12 06 11.5**	**-0.8**
ASAR				S		**S**	**12 09 47.9**	**-3.7**
ASAR				ScP			12 12 17.6	
FITZ	**Fitzroy Crossi**	**26.87**	**238**	*e*P		**P**	**12 06 34.8**	**-1.3**
	18nm,0.5s,mb4.9							
FITZ				*e*pP			12 08 06.1	
FITZ	**Fitzroy Crossi**	**26.87**	**238**	P		**P**	**12 06 35.0**	**-1.1**
	21nm,0.6s,mb5.0,baz=44,slow=5.6,SNR=5.1							
FITZ				tx		tx	12 08 02.0	
	25nm,1.1s,baz=20,slow=12,SNR=2.8							
STKA	**Stephens Creek**	**28.12**	**194**	⇓*i*P		**P**	**12 06 45.3**	**-1.6**
	48nm,0.6s,mb5.3							
STKA				*e*pP			12 08 19.2	
STKA				*e*S			12 13 48.1	
STKA	**Stephens Creek**	**28.12**	**194**	P		**P**	**12 06 45.4**	**-1.5**
	60nm,0.7s,mb5.4,baz=353,slow=8.3,SNR=71							
STKA				tx		tx	12 08 19.0	
	30nm,0.9s,baz=13,slow=12,SNR=6.6							
STKA				S		**S**	**12 10 49.7**	**-3.7**
	9.7nm,0.8s,baz=136,slow=20,SNR=3.0							
STKA	**Stephens Creek**	**28.12**	**194**	*e*S		**S**	**12 10 48.6**	**-4.8**
RIV	**Riverview**	**29.14**	**177**	*e*P		**P**	**12 06 55.9**	**+0.3**
KALP	**Kalibo**	**31.43**	**301**	⇑*e*P		**P**	**12 07 15.2**	**0.0**
CBIJ	**Chichi jima**	**32.27**	**348**	P		**P**	**12 07 20.6**	**-1.5**
	178nm,0.9s,mb5.6,baz=133,slow=4.1,SNR=14							
FORT	**Forrest**	**32.92**	**215**	⇓*i*P		**P**	**12 07 26.6**	**-1.1**
	277nm,0.5s							
FORT				*i* S			12 15 10.2	
FORT	**Forrest**	**32.92**	**215**	*e*S		**S**	**12 12 00.4**	**-6.9**
TOO	**Toolangi**	**33.02**	**186**	⇓*i*P		**P**	**12 07 28.8**	**+0.3**
	40nm,0.6s,mb5.1							
TOO				*e*pP			12 09 01.3	
TGY	**Tagaytay City**	**33.82**	**304**	P		**P**	**12 07 36.4**	**+1.1**
	62nm,0.3s,mb5.6,baz=106,slow=7.4,SNR=2.9							
JOW	**Kunigami**	**37.

KMI AP pP 12 12 01.1 -0.1
KMI PP PP 12 12 27.3 +5.0
KMI S **S** **12 17 07.2 +1.0**
KMI SCS ScS 12 18 57.4 -2.6
KMI SS SS 12 21 01.5 +0.1
KMI AMB AMB
comp=Z,27nm,0.8s,mb4.6
KMI AMB AMB
comp=Z,100nm,3.8s
CHRT Chiangrai 54.51 298 ||P **P** **12 10 16.0 +0.8**
CM31 Chiang Mai Arr 54.76 296 *eP* **P** **12 10 16.9 -0.1**
comp=Z,16nm,0.6s,mb4.4
CMAR Chiang Mai Arr 54.76 296 P **P** **12 10 17.6 +0.7**
comp=Z,17nm,0.8s,mb4.3,baz=125,slow=5.6,SNR=88
CMAR pP pP 12 12 06.5 +0.2
comp=Z,3.4nm,0.8s,baz=119,slow=5.9,SNR=5.5
CHG Chiang Mai 54.88 297 ||P **P** **12 10 18.0 +0.2**
comp=Z,15nm,0.9s,mb4.2
KLR Kul'dur 55.77 346 *eP* **P** **12 10 22.7 -0.8**
HHC Hu-ho-hao-te 56.96 326 *eP* **P** **12 10 27.0 -4.8**
HHC AMB AMB
comp=Z,166nm,5.2s
LZH Lanzhou 58.77 317 P **P** **12 10 45.1 +0.9**
LZH S **S** **12 18 06.0 0.0**
LZH SS SS 12 22 16.0 +1.5
LZH AMB AMB
comp=Z,70nm,1.2s,mb4.8
LZH AMB AMB
comp=Z,330nm,6.0s
HKL Haleakala 58.90 63 *eP* **P** **12 10 45.8 +0.6**
POHA Pohakuloa 59.24 64 *eP* **P** **12 10 46.7 -0.8**
comp=Z,176nm,1.0s,mb5.2
HIA Hailar 59.52 338 *eP* **P** **12 10 48.7 -0.2**
comp=Z,57nm,0.7s,mb5.0
PPT Papeete 60.99 107 *eP* **P** **12 11 00.5 +1.5**
comp=Z,91nm,1.4s,mb4.9
PPT Papeete 60.99 107 *eS* **S** **12 18 30.6 -3.2**
PPT Papeete 60.99 107 P **P** **12 11 00.3 +1.3**
comp=Z,46nm,0.8s,mb4.9,baz=236,slow=2.7,SNR=8.6
PAE Paea 60.99 108 *eP* **P** **12 11 00.1 +1.1**
comp=Z,227nm,1.5s,mb5.3
TVO Taravao 61.31 108 *eP* **P** **12 11 02.5 +1.4**
comp=Z,112nm,0.9s,mb5.2
TBI Tubuai 61.70 114 *eS* **S** **12 18 42.1 -0.5**
PMOR Pomariorio Ree 62.44 104 *eP* **P** **12 11 09.7 +1.3**
comp=Z,159nm,0.9s,mb5.4
VAH Vaihoa 62.71 105 *eP* **P** **12 11 11.0 +0.9**
comp=Z,124nm,1.2s,mb5.2
VAH epP pP 12 12 54.4 -10
comp=Z,101nm,1.1s
MA2 Magadan 63.97 1 *eP* **P** **12 11 17.8 +0.3**
MA2 pmax pmax
comp=Z,10.0nm,0.9s,mb4.2
ULN Ulaanbaatar 64.08 330 *d iP* **P** **12 11 18.3 -0.1**
ULN Ulaanbaatar 64.08 330 *eP* **P** **12 11 18.8 +0.4**
comp=Z,15nm,1.3s,mb4.2
SONM Songino Array 64.39 329 P **P** **12 11 20.9 +0.5**
comp=Z,18nm,0.5s,mb4.7,baz=145,slow=4.1,SNR=49
SONM pP pP 12 13 15.8 +0.2
comp=Z,1.3nm,0.8s,baz=141,slow=6.1,SNR=1.7
LSA Lhasa 65.37 305 *eP* **P** **12 11 27.6 +0.7**
comp=Z,12nm,0.6s,mb4.5
ZAK Zakamensk 67.60 330‖ *eP* **P** **12 11 39.9 -0.3**
YAK Yakutsk 68.15 350 *eP* **P** **12 11 43.7 +0.5**
YAK pmax pmax
comp=Z,9.0nm,1.1s,mb4.2
YAK pmax pmax
comp=N,4.0nm,1.2s
BOD Bodaibo 68.43 341 *eP* **P** **12 11 43.5 -1.5**
GUN Gumba 69.15 302 *eP* **P** **12 11 50.3 +0.4**
comp=N,42nm,0.6s,mb5.2
PKI Pulchoki 69.45 302 *eP* **P** **12 11 51.6 -0.1**
comp=N,7.1nm,0.4s,mb4.5
MOY Mondy 69.53 330 *eP* **P** **12 11 52.7 +1.0**
KKN Kakani 69.62 302 *eP* **P** **12 11 52.8 +0.1**
comp=N,21nm,0.5s,mb4.9
DMN Daman 69.72 301 *eP* **P** **12 11 53.7 +0.5**
comp=N,52nm,0.8s,mb5.1
GKN Gorkha 70.23 302 *eP* **P** **12 11 56.2 0.0**
comp=N,16nm,0.3s,mb5.0
KOLN Koldanda 71.05 301 *eP* **P** **12 12 01.0 0.0**
comp=N,51nm,0.8s,mb5.1
DANN Dangsing 71.07 302 *eP* **P** **12 11 59.7 -1.4**
SDN Sand Point 72.52 27 *eP* **P** **12 12 08.6 -0.4**
comp=N,107nm,0.9s,mb5.3
WMQ Urumqi 73.33 318 *eP* **P** **12 12 13.6 -0.3**
WMQ PP PP 12 15 07.7 -0.1
WMQ S S 12 20 58.7 +1.5
WMQ SKS SKS 12 21 24.0 +1.8
WMQ SCS ScS 12 21 28.9 +1.9
WMQ AMB AMB
comp=Z,65nm,2.1s,mb4.7
WMQ AMB AMB
comp=Z,354nm,9.8s
BILL Bilibino 73.42 7 *c iP* **P** **12 12 14.4 +0.5**
BILL *e* 12 14 25.0
BILL *e* 12 21 01.7
BILL pmax pmax
comp=Z,51nm,1.2s,mb4.8
BILL Bilibino 73.42 7 *eP* **P** **12 12 13.9 +0.1**
comp=Z,45nm,1.1s,mb4.8
RKT Rikitea 74.97 113 *eP* **P** **12 12 24.1 +0.7**
comp=Z,198nm,1.1s,mb5.5
TNA Tin City 76.54 17 *eP* **P** **12 12 30.9 -0.2**
comp=Z,8.0nm,1.0s,mb4.1
KDAK Kodiak Island 77.52 28 *eP* **P** **12 12 36.5 -0.1**
comp=Z,76nm,1.3s,mb4.9
MKAR Makanchi Array 77.98 320 P **P** **12 12 39.5 +0.3**
comp=Z,7.8nm,0.8s,mb4.1,baz=96,slow=7.6,SNR=25
MKAR pP pP 12 14 41.8 +1.4
comp=Z,12nm,1.2s,baz=101,slow=6.2,SNR=3.8
MKAR PP PP 12 15 44.2 -2.3
comp=Z,2.0nm,0.7s,baz=111,slow=10,SNR=2.4
MKAR PKKPbc 12 31 34.2
comp=Z,0.5nm,0.6s,baz=269,slow=1.7,SNR=5.0
MKAR Makanchi Array 77.98 320 *eP* **P** **12 12 39.6 +0.3**
MKAR pmax pmax
comp=Z,5.0nm,0.7s
MKAR Makanchi Array 77.98 320 P **P** **12 12 39.5 +0.3**
MKAR pP pP 12 14 41.8 +1.4
MKAR PP PP 12 15 44.1 -2.3
MKAR PKKPbc 12 31 34.2
RSO Redoubt South 78.81 25 *eP* **P** **12 12 42.6 -0.7**
ZAL Zalesovo 79.14 327 P **P** **12 12 44.0 -1.2**
comp=Z,2.8nm,0.6s,mb3.8,baz=276,slow=5.2,SNR=9.4
ZAL pP pP 12 14 46.2 -0.7
comp=Z,0.8nm,0.3s,baz=296,slow=4.0,SNR=1.4
ZAL S S 12 22 01.2 +2.7
comp=Z,2.5nm,0.3s,baz=12,slow=17,SNR=3.6
ZAL Zalesovo 79.14 327 P **P** **12 12 44.0 -1.2**
ZAL pP pP 12 14 46.2 -0.7
ZAL S S 12 22 01.2 +2.7
SPU Mount Spurr 79.47 25 *eP* **P** **12 12 45.6 -1.2**
SLKM Skilak Lake 79.92 26 *eP* **P** **12 12 49.1 0.0**
FIB Fire Island 80.25 25 *eP* **P** **12 12 51.1 +0.2**
NVS Novosibirsk 80.33 328 *i P* **P** **12 12 50.7 -0.7**
NVS pmax pmax
comp=N,16nm,1.4s
NVS pmax pmax
comp=E,28nm,1.4s
NVS pmax pmax
comp=Z,33nm,1.4s,mb4.5
GOU Gould Hall 80.43 25 *eP* **P** **12 12 52.7 +0.9**
PMR Palmer 80.90 25 *eP* **P** **12 12 53.9 -0.3**
comp=Z,64nm,1.4s,mb4.9
PMR LR LR
comp=Z,100nm,18.0s
MID Middleton Isla 81.18 28 *eP* **P** **12 12 53.7 -2.0**
SML Sawmill 81.34 25 *eP* **P** **12 12 56.4 0.0**
SML epP pP 12 14 57.5 -1.3
TKM2 Tokmak 2 81.38 314 P **P** **12 12 58.1 +1.1**
SNR=7.5
IMA Indian Mountai 81.40 20 *eP* **P** **12 12 57.2 +0.6**
comp=Z,57nm,1.4s,mb4.8
KZA Kyzart 81.42 314 P **P** **12 12 59.3 +2.0**
SNR=23
KURK Kurchatov 81.55 323 *eP* **P** **12 12 57.3 -0.4**
KURK epP pP 12 15 00.5 +0.3
EYAK Cordova Ski Ar 81.92 27 *eP* **P** **12 12 58.5 -0.9**
MCK McKinley 81.97 23 *eP* **P** **12 12 58.9 -0.7**
comp=Z,14nm,0.3s,mb3.9
UCH Uchtor 81.99 314 P **P** **12 13 02.4 +2.3**
SNR=12
CHMS Chumysh 82.00 314 P **P** **12 13 01.2 +1.1**
SNR=6.6
FRU Bishkek 82.06 314 *eP* **P** **12 13 02.0 +1.5**
FRU pmax pmax
comp=Z,70nm,2.0s,mb4.7
USP Ospenovka 82.24 315 P **P** **12 13 02.7 +1.3**
SNR=13
TOA Tolsona 82.39 25 *eP* **P** **12 13 02.5 +0.8**
comp=Z,51nm,0.4s,mb5.3
AML Almayashu 82.56 313 P **P** **12 13 04.8 +1.8**
SNR=29
EKS2 Erkin-Say 82.62 314 P **P** **12 13 05.1 +1.8**
SNR=10.0
COLA College 82.92 22 *eP* **P** **12 13 03.2 -1.2**
COLA pmax pmax
comp=Z,75nm,1.3s,mb5.1
COLA MLR MLR
comp=Z,100nm,17.0s
COLA College 82.92 22 *eP* **P** **12 13 03.2 -1.2**
comp=Z,75nm,1.3s,mb5.1
COLA LR LR
comp=Z,100nm,17.0s
ILAR Eielson Array 83.24 23 P **P** **12 13 04.8 -1.2**
comp=Z,32nm,0.6s,mb5.0,baz=252,slow=5.0,SNR=363
ILAR pP pP 12 15 09.7 +0.6
comp=Z,1.9nm,0.7s,baz=258,slow=5.3,SNR=3.1
ILAR PKKPbc 12 31 19.9
comp=Z,0.3nm,0.6s,baz=357,slow=1.5,SNR=6.4
MAW Mawson 84.47 203 P **P** **12 13 11.6 -0.3**
comp=Z,3.5nm,0.7s,mb4.0,baz=105,slow=7.4,SNR=7.1
KKAR Karatay Array 85.06 314 *i P* **P** **12 13 15.5 +0.2**
KKAR pmax pmax
comp=Z,7.0nm,0.8s,mb4.2
QSPA South Pole Qui 85.37 180 *eP* **P** **12 13 15.9 -0.1**
comp=Z,82nm,0.7s,mb5.4
QSPA *e*pP pP 12 15 16.8 -3.1
BVAR Borovoye Array 87.07 324 P **P** **12 13 23.8 -0.8**
comp=Z,1.0nm,0.4s,mb3.8,baz=124,slow=5.3,SNR=14
BVAR pP pP 12 15 28.9 0.0
comp=Z,3.3nm,0.7s,baz=124,slow=5.3,SNR=7.4
BVAR S S 12 22 53.6 -22
comp=Z,1.8nm,1.1s,baz=76,slow=6.1,SNR=4.8
ZRNK Zerenda 87.88 323 *eP* **P** **12 13 26.5 -2.0**
ZRNK *e*pP pP 12 15 31.9 -1.1
INK Inuvik 89.47 21 P **P** **12 13 35.1 -0.4**
comp=Z,28nm,1.1s,mb5.0,baz=268,slow=3.0,SNR=57
INK pP pP 12 15 44.1 +3.6
comp=Z,9.0nm,1.1s,baz=255,slow=6.0,SNR=9.2
INK PKIKP 12 18 28.5
comp=Z,0.7nm,0.6s,baz=137,slow=0.9,SNR=3.6
INK S S 12 23 09.3 -27
comp=Z,0.9nm,0.9s,baz=40,slow=31,SNR=14
INK PKKP PKKP 12 31 04.9 +62
comp=Z,0.4nm,0.6s,baz=90,slow=3.0,SNR=3.6
YBH Yreka Blue Hor 91.42 48 P **P** **12 13 45.9 +0.8**
comp=Z,10nm,0.9s,mb4.7,baz=249,slow=1.8,SNR=23
YBH Yreka Blue Hor 91.42 48 *eP* **P** **12 13 45.2 +0.1**
comp=Z,28nm,1.3s,mb5.0
WDC Whiskeytown Da 91.45 50 *eP* **P** **12 13 45.5 +0.2**
comp=Z,51nm,1.6s,mb5.2
RMW Rattlesnake Mo 92.51 43 *eP* **P** **12 13 50.8 +0.9**
SYO Syowa Base 92.74 200 ||P **P** **12 13 47.8 -2.7**
SYO Syowa Base 92.74 200‖ *eP* **P** **12 13 47.8 -2.7**
BEKR Beckwourth 93.07 50 *eP* **P** **12 13 52.1 -0.6**
comp=Z,15nm,1.1s,mb4.9
AB31 Akbulak array 93.11 319 *i P* **P** **12 13 51.5 -1.1**
WCN Washoe City 93.50 51 *eP* **P** **12 13 54.9 +0.2**
comp=Z,14nm,1.2s,mb5.0
NLW Nelson Butte 93.53 42 *eP* **P** **12 13 54.2 -0.4**
MTUM Tungsten Hills 94.34 53 *eP* **P** **12 13 59.0 +0.5**
WVOR Wild Horse Va 94.49 48 *eP* **P** **12 13 59.1 +0.1**
comp=Z,12nm,1.4s,mb4.8
NVAR Mina Array Bea 94.59 52 P **P** **12 14 00.6 +1.0**
comp=Z,4.4nm,1.0s,mb4.5,baz=243,slow=4.8,SNR=21
NVAR PP PP 12 17 57.5 -1.4
comp=Z,1.1nm,1.0s,baz=245,slow=7.2,SNR=4.3
MWC Mount Wilson 94.62 56 *eP* **P** **12 14 00.4 +0.5**
NEW Newport 95.69 42 *eP* **P** **12 14 04.0 -0.4**
comp=Z,5.2nm,0.6s,mb4.9
YKA Yellowknife Ar 96.80 28 PKKP PKKP 12 30 47.5 +57
comp=Z,0.5nm,0.6s,baz=88,slow=2.9,SNR=17
NEN Nelson 97.30 55 *eP* **P** **12 14 12.7 +0.8**
CHMT Chamberlain Mo 98.33 43 *eP* **P** **12 14 16.0 -0.3**
BOZ Bozeman (W) 99.51 45 *eP* **P** **12 14 21.1 -0.6**
comp=Z,5.9nm,1.2s,mb4.9
PDAR Pinedale Array 101.18 47 P P 12 14 29.0 -0.2
comp=Z,3.9nm,1.0s,baz=225,slow=2.1,SNR=14
PDAR PKiKP 12 18 50.3
comp=Z,1.1nm,0.8s,baz=288,slow=4.7,SNR=4.0
PV10 Paradox Valley 101.87 52 *e*Pdif P 12 14 32.3 0.0
SPITS Spitsbergen Ar 102.60 351 PKiKP 12 18 52.0
comp=Z,4.6nm,1.1s,baz=104,slow=3.7,SNR=5.6
MNTX Cornudas Mount 105.31 59 *e*PKP 12 18 57.6
MNTX *e*PP PP 12 19 15.9 -3.4
ARCES ARCESS Array B 105.67 342 Pdiff Pdif 12 14 48.4 +0.1
comp=Z,0.5nm,0.7s,baz=84,slow=7.5,SNR=5.3
ARCES PKiKP 12 18 57.4
comp=Z,3.6nm,0.9s,baz=95,slow=2.1,SNR=22
ARCES PKKPbc 12 30 20.2
comp=Z,0.8nm,0.4s,baz=243,slow=4.0,SNR=15
ARCES ARCESS Array B 105.67 342 Pdif Pdif 12 14 48.4 +0.1
ARCES PKPdif 12 18 57.4
ARCES PKKPbc 12 30 20.2
TXAR Lajitas Array 106.96 61 PKiKP 12 19 01.5
comp=Z,0.4nm,0.3s,baz=342,slow=4.0,SNR=5.7
TXAR PKKPab 12 30 38.3
comp=Z,0.5nm,0.3s,baz=121,slow=5.3,SNR=4.5
SOC Sochi 107.40 314 *e*P Pdif 12 15 00.8 +4.3
SOC *e* 12 19 40.9
SOC *e*PPP PPP 12 21 51.9 -4.2
SOC *e*SS SS 12 34 14.5 +14
SOC *e*SSS SSS 12 38 20.2 +7.6
SOC pmax pmax
comp=Z,5.0nm,0.6s
SOC pmax pmax
comp=N,2.0nm,0.2s
SOC pmax pmax
comp=E,9.0nm,0.5s
ULM Lac du Bonnet 109.16 38 PKiKP 12 19 03.9
baz=270,slow=9.1
FINES FINESS Array B 109.45 335 Pdiff Pdif 12 15 05.3 +0.2
comp=E,0.2nm,0.3s,baz=72,slow=6.0,SNR=4.6
FINES PKiKP 12 19 04.5
comp=E,1.4nm,0.8s,baz=121,slow=3.4,SNR=7.6
AKASG Malin Array Be 112.35 324 PKiKP 12 19 09.9
comp=E,2.5nm,0.6s,baz=59,slow=2.0,SNR=5.9
BRTR Keskin Array B 112.65 311 PKiKP 12 19 11.4
comp=E,0.8nm,0.5s,baz=135,slow=3.5,SNR=4.2
BRTR PKKPbc 12 30 02.5
comp=E,1.1nm,0.8s,baz=243,slow=2.8,SNR=4.7
FRB Frobisher Bay 114.87 18 PKP PKPdf 12 19 14.4 +0.4
comp=E,2.2nm,0.5s,baz=37,slow=4.3,SNR=4.8
NOA NORSAR Array B 115.54 339 PKP PKPdf 12 19 16.3 +0.9
comp=E,1.4nm,0.7s,baz=45,slow=1.3,SNR=6.0
NOA PKKPbc 12 29 51.8
comp=E,2.1nm,0.9s,baz=52,slow=3.7,SNR=4.4
CCM Cathedral Cave 115.73 50 *e*PKP PKPdf 12 19 16.0 -0.3
WVT Waverly 118.89 51 *e*PKP PKPdf 12 19 21.5 -1.0
WCI Wyandotte Cave 119.41 48 *e*PKP PKPdf 12 19 23.4 -0.1
LRAL Lakeview Retre 120.41 54 *e*PKP PKPdf 12 19 25.4 -0.1
IDI Anoyia 120.54 309 PKP PKPdf 12 19 27.0 +1.3
comp=E,9.9nm,0.8s,baz=108,slow=0.9,SNR=3.8
BRG Berggiesshubel 120.79 329 *e*Sg PKPdf 12 19 21.8 -4.0
BRG Berggiesshubel 120.79 329 *e*PKIKP PKPdf 12 19 27.2 +1.4
BRG pmax pmax
comp=Z,7.0nm,0.5s
PRU Pruhonice 120.98 328 *e*PKPdf PKPdf 12 19 27.5 +1.3
CLL Collm 121.01 330 *i* PKIKP PKPdf 12 19 26.9 +0.7
CLL pmax pmax
comp=Z,12nm,0.8s
ACSO Alum Creek Sta 121.10 45 *e*PKP PKPdf 12 19 26.9 +0.2
SADO Sadowa 121.71 39 PKP PKPdf 12 19 28.0 +0.3
baz=293,slow=1.6
PLCA Paso Flores 121.92 145 PKP PKPdf 12 19 30.1 +1.8
comp=Z,6.9nm,0.6s,baz=214,slow=2.7,SNR=24
KHC Kasperske Hory 121.99 327 *e*PKPdf PKPdf 12 19 29.5 +1.3
SCHQ Scheffervile 121.99 24 PKP PKPdf 12 19 29.2 +1.2
comp=Z,5.4nm,0.7s,baz=8.2,slow=3.6,SNR=15
GERES GERESS Array B 122.09 327 PKP 12 19 29.3 +0.9
comp=Z,8.1nm,0.6s,baz=78,slow=1.4,SNR=45
GRF Grafenberg Arr 122.90 329 *e*PKIKP PKPdf 12 19 31.4 +1.5
PWV Princeton 123.61 48 *e*PKP PKPdf 12 19 31.8 +0.1
ELN Prospectdale 123.87 48 *e*PKP PKPdf 12 19 32.2 +0.1
SSPA Standing Stone 124.46 43 *e*PKP PKPdf 12 19 33.2 +0.1
EKA Eskdalemuir Ar 124.81 341 PKP PKPdf 12 19 34.7 +1.3
comp=Z,4.0nm,0.5s,baz=20,slow=3.5,SNR=17
DAVOX Davos 125.39 327 PKP PKPdf 12 19 36.6 +1.8
comp=Z,13nm,0.7s,baz=125,slow=3.0,SNR=9.7
CDF Champ du Feu 125.71 330 *e*PKP1 PKPdf 12 19 36.5 +1.1
GIVF Givet 125.74 333 *e*PKP1 PKPdf 12 19 37.1 +1.7
MVL Millersville 125.79 43 *e*PKP PKPdf 12 19 36.1 +0.3
BAIF Baives 126.05 333 *e*PKP1 PKPdf 12 19 37.9 +1.9
HINF Hinteralfeld 126.32 329 *e*PKP1 PKPdf 12 19 37.8 +1.2
comp=Z,13nm,0.6s
HAU Haudompre 126.45 330 *e*PKP1 PKPdf 12 19 38.2 +1.4
comp=Z,18nm,0.8s
HNH Hanover 126.46 37 *e*PKP PKPdf 12 19 38.4 +1.4
CABF La Chapelle 127.51 329 *e*PKP1 PKPdf 12 19 40.0 +1.1
comp=Z,42nm,1.0s
LPL La Plagne 127.88 327 *e*PKP1 PKPdf 12 19 41.7 +2.0
comp=Z,12nm,0.7s
LPG La Plagne 127.89 327 *e*PKP1 PKPdf 12 19 41.7 +2.0
comp=Z,25nm,0.9s
LOR Lormes 128.18 331 *e*PKP1 PKPdf 12 19 42.0 +1.8
MBDF Montbardon 128.37 327 *e*PKP1 PKPdf 12 19 41.5 +0.9
SSF Saint Saulge 128.50 331 *e*PKP1 PKPdf 12 19 42.7 +1.9
SMF Signal de Mont 128.62 330 *e*PKP1 PKPdf 12 19 42.8 +1.7
ORIF Oris-en-Rattie 128.73 327 *e*PKP1 PKPdf 12 19 43.1 +1.8
comp=Z,16nm,0.7s
BGF Bois d'Agland 129.18 331 *e*PKP1 PKPdf 12 19 44.0 +1.9
LMR La Mourre 129.40 325 *e*PKP1 PKPdf 12 19 43.5 +0.9
comp=Z,33nm,0.9s
VIVF Saint-Julien-l 129.41 328 *e*PKP1 PKPdf 12 19 44.5 +1.9
SMRF Simiane la Rot 129.51 327 *e*PKP1 PKPdf 12 19 45.1 +2.3
TCF Toulx Ste Croi 129.68 331 *e*PKP1 PKPdf 12 19 44.4 +1.3
MFF Saint Martin d 130.56 333 *e*PKP1 PKPdf 12 19 45.8 +1.0
CAF Calviac 130.72 330 *e*PKP1 PKPdf 12 19 47.4 +2.3
OTAV Otavalo 131.98 94 *e*PKP PKPdf 12 19 49.6 +1.3
ROSC El Rosal 136.39 88 PKP PKPdf 12 19 58.7 +2.3
comp=Z,34nm,0.6s,baz=16,slow=18,SNR=4.7
LPAZ La Paz 137.45 120 PKhKP 12 19 49.3
comp=Z,2.8nm,0.5s,baz=261,slow=7.1,SNR=13
LPAZ PKP PKPdf 12 20 00.1 +1.9
comp=Z,12nm,1.1s,baz=294,slow=2.2,SNR=8.6
LPAZ La Paz 137.45 120 PKP PKPdf 12 19 49.3 -9.0
LPAZ PKP PKPdf 12 19 59.4 +1.1
CPUP Villa Florida 139.79 141 PKhKP 12 19 57.0
comp=Z,4.4nm,0.7s,baz=241,slow=4.7,SNR=12
CPUP PKP PKPdf 12 20 04.8 +2.6
comp=Z,8.5nm,0.7s,baz=319,slow=1.0,SNR=10
CPUP Villa Florida 139.79 141 PKP PKPdf 12 19 57.0 -5.3
CPUP PKP PKPdf 12 20 04.8 +2.6
SJG San Juan 142.71 66 *e*PKP PKPdf 12 20 04.9 -2.7
DEG La Desirade 147.89 66 *eP* PKPdf 12 20 21.8 +5.4
CAM4 Nova Friburgo 150.76 157 *eP* PKPdf 12 20 28.7 +8.0
CAM4 *i* 12 20 31.7
CAM4 *i* 12 20 38.7
CAM4 Nova Friburgo 150.76 157 *eP* PKPdf 12 20 28.7 +8.0
CAM4 *i* 12 20 31.7
CAM4 *i* 12 20 38.7
CAM3 Guarapari 153.01 159 (P) PKPdf 12 20 32.3 +8.4
CAM3 Guarapari 153.01 159 P PKPdf 12 20 32.3 +8.4
BDFB Brasilia 153.50 140 PKP PKPdf 12 20 27.5 +2.8
comp=Z,10nm,1.0s,baz=222,slow=2.8,SNR=8.7
BDFB PKPbc PKPdf 12 20 35.0 +10
comp=Z,15nm,0.6s,baz=290,slow=0.7,SNR=17
BDFB PKPab PKPab 12 20 49.9 -0.9
comp=Z,16nm,0.8s,baz=196,slow=2.3,SNR=5.5
DBIC Dimbokro 154.33 276 PKP PKPdf 12 20 26.9 +1.1
comp=Z,4.4nm,0.9s,baz=190,slow=3.1,SNR=3.4
DBIC PKPbc PKPdf 12 20 36.3 +10
comp=Z,5.4nm,0.7s,baz=86,slow=2.2,SNR=9.6
DBIC PKPab PKPab 12 20 53.9 -0.5
comp=Z,6.2nm,0.7s,baz=102,slow=3.7,SNR=9.0
DBIC SKP 12 23 04.6
comp=Z,7.5nm,1.0s,baz=124,slow=2.8,SNR=3.7
DBIC Dimbokro 154.33 276 PKP PKPdf 12 20 26.9 +1.1
DBIC PKPbc PKPdf 12 20 36.3 +10
DBIC PKPab PKPab 12 20 53.9 -0.5
DBIC SKP 12 23 04.6

NIED ***06*** *12:05:00,26.00N×125.70E,h8km,Mw4.2 Best double couple: M0 2.47×10^15 NP1:φs238°,δ67°,λ-104°. NP2: φs91°,δ27°,λ-60°.*
IDC ***06*** *12:05:09.1±0.8,25.90N×125.81E,mb4.1/10,mb1 4.2/11, mb1mx4.1/24,ML4.0/1,MS3.6/3,Ms1 3.6/3,ms1mx3.1/29, Error ellipse: s-maj=23.3km s-min=18.1km az=69.0*
JMA ***06*** *12:05:10.1±0.2,26.00N×125.74E,h14km±2km,M4.7*
ISC 06 12:05:11.4±1.0,25.95N±0.05×125.76E±0.05,h22km±8km, n32,σ0s80/42,mb4.0/10,MS3.9/2,Southwestern Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JKE	**Kume jima 2**	**0.99**	**68**	P		P	**Pb**	**12 05 28.7**	**-1.1**
JKE				S		S	**Sb**	**12 05 41.7**	**-0.7**
JMJ	**Miyako jima 2**	**1.21**	**201**	P		P	**Pn**	**12 05 32.8**	**-0.4**
JMJ				S		S	**Sb**	**12 05 48.7**	**+0.1**
JOGS	**Gusukube**	**1.23**	**195**	P		P	**Pn**	**12 05 33.1**	**-0.4**
JOGS				S		S	**Sb**	**12 05 49.9**	**+0.7**
JAGN	**Aguni-jima**	**1.47**	**64**	P		P	**Pn**	**12 05 36.4**	**-0.6**
JAGN				*e*S		S	**Sn**	**12 05 55.7**	**0.0**
JTJ	**Tarama**	**1.62**	**216**	P		P	**Pn**	**12 05 38.9**	**-0.1**
JTJ				S		S	**Sn**	**12 05 59.6**	**+0.2**
NAH1	**Naha**	**1.75**	**81**	P		P	**Pn**	**12 05 41.3**	**+0.3**
NAH1				S		S	**Sn**	**12 06 03.2**	**+0.4**
JJT2	**Tamagusuku 2**	**1.80**	**84**	P		P	**Pn**	**12 05 41.6**	**0.0**
JJT2				S		S	**Sn**	**12 06 05.2**	**+1.2**
JIJ	**Ishigaki jima**	**2.16**	**223**	P		P	**Pn**	**12 05 46.2**	**-0.5**
JIH	**Iheya**	**2.25**	**61**	P		P	**Pn**	**12 05 48.3**	**+0.2**
JIH				S		S	**Sn**	**12 06 19.6**	**+4.1**
JKRS	**Kuro-shima**	**2.33**	**223**	P		P	**Pn**	**12 05 49.8**	**+0.6**
JOW	**Kunigami**	**2.42**	**68**	Pn		**Pn**		**12 05 50.6**	**+0.1**
	51nm,0.3s,baz=251,slow=11,SNR=120								
JOW				Sn			**Sn**	**12 06 21.9**	**+2.2**
	83nm,0.3s,baz=113,slow=25,SNR=7.7								
JOW				LR		LR		12 06 50.9	
	comp=Z,276nm,19.9s,baz=163,slow=42								
JOW	**Kunigami**	**2.42**	**68**	P		**Pn**		**12 05 50.0**	**-0.5**
JOW				S		S	**Sn**	**12 06 23.5**	**+3.8**
IRIF	**Iriomote-Funau**	**2.44**	**229**	P		P	**Pn**	**12 05 50.7**	**-0.2**
HATJ	**Hateruma jima**	**2.59**	**224**	P		P	**Pn**	**12 05 54.1**	**+1.2**
YOJ	**Yonaguni jima**	**2.90**	**240**	P		P	**Pn**	**12 05 59.1**	**+1.8**
JTK	**Tokunoshima**	**3.38**	**57**	P		P	**Pn**	**12 06 04.3**	**+0.1**
JTK				S		S	**Sn**	**12 06 44.5**	**+0.3**
JAM	**Amami Oshima**	**4.21**	**54**	P		P	**Pn**	**12 06 16.1**	**+0.1**
JZK	**Kikaishima**	**4.43**	**57**	P		P	**Pn**	**12 06 19.3**	**+0.2**
JMZ	**Minamidaito 2**	**4.92**	**90**	P		P	**Pn**	**12 06 21.2**	**-4.8**
JMZ				S		S	**Sn**	**12 07 15.1**	**-7.9**
CMAR	**Chiang Mai Arr**	**25.89**	**259**	P		P		**12 10 44.4**	**+0.8**
	1.3nm,0.7s,mb3.6,baz=79,slow=9.2,SNR=4.2								
SONM	**Songino Array**	**26.63**	**330**	P		P		**12 10 51.1**	**+0.9**
	5.3nm,1.1s,mb4.0,baz=145,slow=10,SNR=18								
PMG	**Port Moresby**	**40.85**	**147**	LR		LR		12 26 32.0	
	comp=Z,129nm,22.0s,MS3.7,baz=104,slow=32								
FITZ	**Fitzroy Crossi**	**43.79**	**180**	P		P		**12 13 15.5**	**-2.0**
	5.8nm,0.6s,mb4.5,baz=7.6,slow=13,SNR=3.9								
WRA	**Warramunga Arr**	**46.38**	**169**	P		P		**12 13 36.3**	**-1.8**
	2.0nm,0.7s,mb4.2,baz=352,slow=8.3,SNR=5.2								
BVAR	**Borovoye Array**	**49.01**	**319**	P		P		**12 13 58.0**	**-0.3**
	0.5nm,0.5s,mb3.8,baz=100,slow=8.8,SNR=2.3								
CTA	**Charters Tower**	**49.91**	**155**	LR		LR		12 32 50.2	
	comp=Z,145nm,18.6s,MS4.0,baz=47,slow=33								
ASAR	**Alice Springs**	**49.95**	**170**	P		P		**12 14 05.4**	**-0.6**
	1.8nm,0.9s,mb4.1,baz=355,slow=11,SNR=4.2								
FINES	**FINESS Array B**	**72.00**	**330**	P		P		**12 16 34.4**	**-0.8**
	1.3nm,0.8s,mb3.9,baz=76,slow=7.9,SNR=5.7								
BRTR	**Keskin Array B**	**75.44**	**307**	P		P		**12 16 55.4**	**-0.2**
	1.1nm,0.8s,mb3.9,baz=90,slow=3.7,SNR=4.7								
HFS	**Hagfors**	**78.02**	**332**	P		P		**12 17 09.6**	**+0.2**
	0.8nm,0.5s,mb3.9,baz=207,slow=6.6,SNR=3.7								
NB2	**NORSAR Subarra**	**78.57**	**333**	P		P		**12 17 11.5**	**-0.9**
	1.0nm,0.7s,mb3.9,baz=58,slow=6.2								
NOA	**NORSAR Array B**	**78.57**	**333**	P		P		**12 17 11.4**	**-1.1**
	1.4nm,0.8s,mb4.0,baz=57,slow=5.6,SNR=4.6								

IDC ***06*** *12:17:57.6±2.3,49.60N×29.03W,mb3.7/6,mb1 3.9/7, mb1mx3.6/28,ML3.6/1,MS3.3/2,Ms1 3.4/2,ms1mx2.9/28, Error ellipse: s-maj=70.4km s-min=25.3km az=4.0*
ISC 06 12:17:58.3±3.6,49.8N±0.6×29.1W±0.2,h10km,n11, σ0s32/7,mb3.8/6,MS3.1/2,Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
EKA	**Eskdalemuir Ar**	**16.64**	**61**	Pn		P		**12 21 53.0**	**+0.2**
	0.1nm,0.3s,baz=263,slow=12,SNR=5.2								
ESDC	**Sonseca Array**	**20.40**	**110**	LR		LR		12 29 39.8	
	comp=Z,73nm,18.0s,MS3.1,baz=300,slow=34								
NOA	**NORSAR Array B**	**25.05**	**48**	LR		LR	

YKA	Yellowknife Ar	45.75	320	P	P	12	26	21.2	+0.3
	0.6nm,0.8s,mb3.6,baz=64,slow=8.0,SNR=7.5								
INK	Inuvik	49.70	332	P	P	12	26	51.1	-0.6
	0.4nm,0.7s,mb3.6,baz=42,slow=13,SNR=3.6								
PDAR	Pinedale Array	53.56	295	P	P	12	27	21.2	+0.1
	0.7nm,0.7s,mb3.7,baz=59,slow=8.6,SNR=5.8								
ILAR	Eielson Array	56.06	333	P	P	12	27	39.4	+0.3
	0.5nm,0.8s,mb3.6,baz=35,slow=6.2,SNR=9.0								
BVAR	Borovoye Array	57.13	45	P	P	12	27	46.9	0.0
	1.2nm,0.6s,mb4.1,baz=307,slow=7.2,SNR=9.4								
MKAR	Makanchi Array	66.97	44	P	P	12	28	52.4	-0.3
	1.3nm,0.7s,mb4.1,baz=337,slow=5.5,SNR=12								
WRA	Warramunga Arr	147.40	30	PKPbc	PKPdf	12	37	42.7	-0.1
	0.5nm,0.7s,baz=337,slow=3.4,SNR=5.2								
ASAR	Alice Springs	150.70	33	PKPbc	PKPdf	12	37	51.7	+3.8
	1.5nm,0.8s,baz=331,slow=1.7,SNR=14								

IDC 06 12:55:00.5±42.0, 5.13S×149.22E, h660km±308km, mb2.5/3, mb1 2.8/4, mb1mx2.5/12, Error ellipse: s-maj=572.0km s-min=64.1km az=28.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID		Time			Res
				Op		ISC	h	m	s	ISC
CTA	Charters Tower	15.14	191	P		P	12	58	08.1	-1.2
	0.5nm,0.3s,baz=8.4,slow=13,SNR=5.8									
WRA	Warramunga Arr	20.65	223	P		P	12	58	58.0	-1.5
	0.5nm,0.3s,baz=47,slow=9.1,SNR=16									
ASAR	Alice Springs	23.61	217	P		P	12	59	24.2	-1.8
	1.1nm,0.6s,baz=48,slow=8.0,SNR=15									
STKA	Stephens Creek	27.55	194	P		P	12	59	58.2	-1.8
	0.5nm,0.4s,baz=10,slow=11,SNR=3.2									

*MAN **06** 13:24:20.4, 16.73N×119.75E, h29km, mb4.5, ML3.3, MS3.2*

*IDC **06** 13:24:26.8±3.1, 16.50N×119.98E, h104km±30km, mb3.2/6, mb1 3.4/7, mb1mx3.3/18, Error ellipse: s-maj=78.2km s-min=20.1km az=68.0*

ISC 06 13:24:19.7±0.7, 16.81N±0.04×119.74E±0.06, h29km, n15, σ1$12/21, mb3.4/6, 7C, Luzon

Code	Station Name	Δ°	AZ°	Phase	ID		Time			Res
				Op		ISC	h	m	s	ISC
BOLP	Bolinao	0.46	159	⇑eP		Pb	13	24	30.2	+0.7
BOLP				eS		Sb	13	24	35.5	-0.6
SCZP	Santa Cruz	1.04	171	⇑eP		Pn	13	24	38.0	-0.6
ABRA	Dolores	1.25	48	⇑eP		Pn	13	24	42.4	+0.9
ABRA				eS		Sn	13	24	57.9	+0.4
APYP	Conner	1.78	54	⇑eP		Pn	13	24	49.3	+0.3
APYP				eS		Sn	13	25	09.8	-1.0
PCPH	Palayan	1.80	133	⇑eP		Pn	13	24	48.8	-0.7
PCPH				eS		Sn	13	25	10.0	-1.5
CAUP	Cauayan	2.00	86	⇑eP		Pn	13	24	54.0	+1.7
BALP	Baler	2.06	121	⇑eP		Pn	13	24	53.3	+0.1
CVP	Callao Caves	2.18	66	eP		Pn	13	24	56.0	+1.2
CVP				eS		Sn	13	25	20.5	-0.6
TGY	Tagaytay City	2.93	157	P		Pn	13	25	07.3	+1.8
	46nm,0.3s,baz=106,slow=8.1,SNR=4.0									
TGY				S		Sn	13	25	43.5	+3.3
	52nm,0.3s,baz=80,slow=8.8,SNR=3.9									
SONM	Songino Array	32.83	343	P		P	13	30	53.0	+0.1
	0.2nm,0.4s,mb3.4,baz=166,slow=10,SNR=3.5									
WRA	Warramunga Arr	39.24	158	P		P	13	31	41.6	-6.1
	0.5nm,0.8s,mb3.3,baz=331,slow=10,SNR=4.0									
ASAR	Alice Springs	42.54	161	P		P	13	32	09.2	-5.6
	0.5nm,0.8s,mb3.3,baz=346,slow=6.9,SNR=4.5									
MKAR	Makanchi Array	43.00	322	P		P	13	32	19.1	+0.8
	0.5nm,0.8s,mb3.3,baz=112,slow=7.8,SNR=2.2									
MKAR				PcP		PcP	13	34	06.7	-2.2
	0.8nm,0.9s,baz=104,slow=5.0,SNR=4.2									
ARCES	ARCESS Array B	75.86	339	P		P	13	36	02.9	-2.0
	0.6nm,0.8s,mb3.6,baz=51,slow=7.8,SNR=4.0									
YKA	Yellowknife Ar	90.27	22	P		P	13	37	16.9	-1.9
	0.5nm,0.9s,mb3.9,baz=313,slow=4.2,SNR=10									

*IDC **06** 13:29:23.9±0.9, 13.10N×88.28W, h72km±7km, mb3.8/6, mb1 4.2/9, mb1mx3.9/21, MS3.6/2, Ms1 3.5/2, ms1mx2.9/24, Error ellipse: s-maj=33.0km s-min=19.8km az=49.0*

*CASC **06** 13:29:24.2±2.1, 12.84N×88.58W, h51km±25km, MD4.2, ML4.3, mb4.0(NEIC)*

*NEIC **06** 13:29:25.3±1.2, 12.95N×88.36W, h93km±12km, mb4.0/15, MD4.3(SNET), Error ellipse: s-maj=18.0km s-min=8.7km az=52.0*

NEIC Felt [II] at San Salvador.

ISC 06 13:29:23.2±0.3, 12.92N±0.04×88.56W±0.03, h82km±2km, n80, σ1$05/111, mb4.0/18, 15C-17D, Off coast of central America

Code	Station Name	Δ°	AZ°	Phase	ID		Time			Res
				Op		ISC	h	m	s	ISC
VSM	San Miguel	0.57	29	⇓iP		P	13	29	38.1	+0.1
VSM				eS		S	13	29	49.1	+0.1
BLLM	Bellamira	0.60	31	⇓eP		P	13	29	38.0	-0.3
BLLM				eS		S	13	29	49.4	0.0
SNVI	San Vicente	0.74	338	⇓eP		P	13	29	39.5	-0.2
SNVI				eS		S	13	29	52.1	+0.2
CNCH	Conchagua	0.79	63	⇓eP		P	13	29	39.6	-0.6
CNCH				eS		S	13	29	52.6	-0.3
LCBS	La Ceiba	0.84	331	⇓iP		P	13	29	40.7	0.0
LCBS				eS		S	13	29	54.8	+1.0
LFRS	El Faro	0.85	325	⇓iP		P	13	29	40.8	-0.1
LFRS				eS		S	13	29	52.8	-1.3
CAHU	Cacacuatique	0.91	22	⇓eP		P	13	29	42.6	+1.1
CAHU				eS		S	13	29	56.8	+1.5
LBRS	Las Brisas	0.94	330	⇑eP		P	13	29	42.4	+0.5
LBRS				eS		S	13	29	54.4	-1.5
LFU	La Fuente	0.98	327	⇓eP		P	13	29	42.7	+0.3
LFU				eS		S	13	29	57.1	+0.3
SNET	Serv Nac Est T	1.00	319	⇑eP		P	13	29	42.6	0.0
SNET				eS		S	13	29	56.4	-0.9
SNET				i			13	30	00.2	
	comp=Z,7μm,0.3s									
BOQS	Boqueron	1.07	319	⇓iP		P	13	29	43.9	+0.5
BOQS				eS		S	13	29	58.4	-0.3
SBLS	San Blas	1.38	312	⇓eP		P	13	29	48.0	+0.5
SBLS				eS		S	13	30	03.2	-2.3
SNJE	San Jose	1.39	313	⇑eP		P	13	29	48.3	+0.7
SNJE				eS		S	13	30	06.4	+0.7
RTR	El Retiro	1.44	313	⇓eP		P	13	29	48.9	+0.7
RTR				eS		S	13	30	05.2	-1.5
CRIN	San Cristobal	1.49	98	⇓eP		P	13	29	49.6	+0.7
CRIN				eS		S	13	30	08.1	+0.1
PYN	Poneloya	1.59	109	⇑eP		P	13	29	49.8	-0.5
PYN				eS		S	13	30	09.8	-0.4
RBDL	Robledal	1.61	317	⇑eP		P	13	29	51.4	+0.8
MTO2	Montecristo 2	1.67	332	⇓eP		P	13	29	52.2	+0.9
MTO2				eS		S	13	30	09.2	-2.8
CUSS	Cusmapa	1.67	306	⇑eP		P	13	29	51.8	+0.5
CUSS				eS		S	13	30	11.9	-0.1
LEON	Leon	1.70	107	⇑eP		P	13	29	51.3	-0.5
LEON				eS		S	13	30	07.7	-5.1
TEL3	Telica 3	1.71	102	⇑eP		P	13	29	51.9	+0.1
TEL3				eS		S	13	30	13.2	+0.3
TELN	Telica	1.71	100	⇑eP		P	13	29	51.8	-0.1
TELN				eS		S	13	30	12.7	-0.3
CNGN	Cerro Negro	1.86	103	⇑eP		P	13	29	53.8	0.0
CNGN				eS		S	13	30	15.7	-0.7
MIRN	Miramar	1.86	105	⇑eP		P	13	29	53.6	-0.2
MIRN				eS		S	13	30	16.8	+0.3
SOMN	Somoto	1.96	75	⇑iP		P	13	29	57.5	+2.4
SOMN				eS		S	13	30	23.9	+5.2
MOMJ	Momotombo	2.04	104	⇓eP		P	13	29	56.0	-0.2
MOMJ				eS		S	13	30	20.5	-0.1
COPN	Copaltepe	2.06	111	⇑eP		P	13	29	56.0	-0.5
COPN				eS		S	13	30	19.7	-1.4
QUIN	Quiabu	2.10	84	⇑eP		P	13	29	57.6	+0.5
QUIN				eS		S	13	30	23.7	+1.6
APYN	Apoyegue	2.26	107	eP		P	13	29	59.9	+0.6
XAVN	Gruta Xavier	2.31	109	eP		P	13	29	59.9	-0.1
XAVN				eS		S	13	30	27.8	+0.4
MGAN	Managua	2.38	109	eP		P	13	30	00.9	-0.2
MGAN				eS		S	13	30	27.9	-1.4
CRUN	El Crucero	2.40	113	eP		P	13	30	02.0	+0.8
WILN	Americas 2	2.44	108	eP		P	13	29	58.3	-3.5
WILN				eS		S	13	30	29.4	-1.1
TICN	Ticuantepe	2.44	111	⇓eP		P	13	30	02.1	+0.2
TICN				eS		S	13	30	28.3	-2.3
PYTN	Playitas	2.47	99	eP		P	13	30	02.2	0.0
APON	Apoyo	2.63	112	eP		P	13	30	05.7	+1.2
APON				eS		S	13	30	35.9	+0.4
CRZC	La Cruz	3.50	124	eP		P	13	30	17.6	+1.1
JTS	JuntasAbangare	4.39	126	P		P	13	30	27.6	-1.4
	comp=Z,2.7nm,0.3s,baz=311,slow=16,SNR=16									
JTS				S		S	13	31	13.3	-6.0
	baz=329,slow=18,SNR=1.6									
JCR	Jicaral	4.55	132	⇓eP		P	13	30	31.1	-0.1
CGA2	Cerro Gallo 2	4.94	125	⇑eP		P	13	30	37.8	+1.3
CGA2				eS		S	13	31	31.6	-1.3
PRS1	Puriscal	5.08	125	eP		P	13	30	40.6	+2.2
PRS1				eS		S	13	31	36.2	-0.3
LAJ	Bijagual	5.31	124	eP		P	13	30	39.2	-2.3
LCR2	La Lucha 2	5.47	125	eP		P	13	30	45.7	+1.9
URSC	Urasca	5.60	123	eP		P	13	30	48.4	+2.8
BUS	Buena Vista	5.78	125	⇓eP		P	13	30	49.9	+2.0
TEIG	Tepich	7.27	2	P		P	13	31	09.7	+1.1
	comp=Z,5.0nm,0.3s,baz=180,slow=12,SNR=6.1									
TEIG	Tepich	7.27	2	ePn		P	13	31	08.8	+0.1
SDV	Santo Domingo	18.05	101	P		P	13	33	28.2	-2.0
	comp=Z,1.1nm,0.3s,baz=307,slow=4.2,SNR=7.8									
HKT	Hockley	18.24	339	P		P	13	33	30.0	-2.2
	comp=Z,7.2nm,1.1s									
JCT	Junction City	20.33	331	eP		P	13	33	53.8	-1.3
	comp=Z,5.3nm,0.6s									
TXAR	Lajitas Array	21.53	322	P		P	13	34	08.8	+1.6
	comp=Z,1.5nm,0.4s,mb3.7,baz=135,slow=7.1,SNR=5.7									
TXAR	Lajitas Array	21.53	322	P		P	13	34	08.8	+1.6
MIAR	Mount Ida	22.00	349	eP		P	13	34	12.4	+0.5
	comp=Z,9.9nm,0.9s,mb4.1									
MIAR				e			13	34	31.8	
MIAR				e			13	34	41.1	
JSC	Jenkinsville	22.27	16	eP		P	13	34	16.1	+1.6
JSC				e			13	34	32.2	
WVT	Waverly	23.12	2	eP		P	13	34	22.6	-0.1
	comp=Z,3.6nm,0.8s,mb3.8									
WMOK	Wichita Mounta	23.61	339	eP		P	13	34	28.2	+0.8
	comp=Z,4.0nm,0.9s,mb3.8									
CCM	Cathedral Cave	25.15	355	eP		P	13	34	41.3	-0.9
	comp=Z,4.6nm,0.6s,mb4.1									
SDCO	Great Sand Dun	28.98	332	P		P	13	35	17.1	-0.1
	comp=Z,2.5nm,0.7s,mb4.0									
PV10	Paradox Valley	31.21	328	eP		P	13	35	37.2	+0.2
RSSD	Black Hills	33.81	340	eP		P	13	35	59.3	-0.1
	comp=Z,1.5nm,0.5s,mb4.1									
BW06	Boulder Array	34.85	332	eP		P	13	36	08.2	-0.1
	comp=Z,1.7nm,0.9s,mb3.9									
PDAR	Pinedale Array	34.85	332	P		P	13	36	08.3	0.0
	comp=Z,1.0nm,0.6s,mb3.8,baz=127,slow=10,SNR=8.1									
HWUT	Hardware Ranch	34.91	329	P		P	13	36	10.2	+1.3
	comp=Z,3.2nm,0.9s,mb4.2									
NVAR	Mina Array Bea	36.64	319	P		P	13	36	25.3	+1.8
	comp=Z,1.2nm,0.9s,mb3.8,baz=121,slow=8.4,SNR=8.9									
ULM	Lac du Bonnet	37.70	352	P		P	13	36	30.8	-1.5
	baz=168,slow=12									
ULM				LR		LR	13	55	16.4	
	comp=Z,92nm,19.3s,baz=141,slow=41									
ULM	Lac du Bonnet	37.70	352	P		P	13	36	30.8	-1.5
ULM				LR		LR	13	55	16.4	
HLID	Hailey	37.78	329	P		P	13	36	34.2	+1.3
	comp=Z,0.9nm,0.6s,mb3.8									
MCMT	McKenzie Canyo	37.95	332	eP		P	13	36	35.8	+1.3
BOZ	Bozeman (W)	38.04	334	eP		P	13	36	35.5	+0.4
	comp=Z,4.2nm,0.7s,mb4.4									
LVC	Limon Verde	40.22	151	LR		LR	13	53	11.8	
	comp=Z,61nm,20.6s,baz=210,slow=36									
FFC	Flin Flon	43.02	349	eP		P	13	37	15.4	-0.6
	comp=Z,4.3nm,0.5s,mb4.4									
SCHQ	Schefferville	45.15	18	P		P	13	37	31.3	-1.9
	comp=Z,5.3nm,0.6s,mb4.5,baz=316,slow=19,SNR=8.9									
SCHQ	Schefferville	45.15	18	eP		P	13	37	31.1	-2.1
	comp=Z,8.1nm,0.7s,mb4.6									
YKA	Yellowknife Ar	52.88	345	P		P	13	38	31.1	-1.5
	comp=Z,2.9nm,0.6s,mb4.5,baz=139,slow=7.8,SNR=97									
YKA				pP		pP	13	38	49.7	-3.4
	comp=Z,1.4nm,1.0s,baz=140,slow=7.7,SNR=3.6									
YKA				PcP		PcP	13	39	38.6	-2.0
	comp=Z,0.5nm,0.7s,baz=144,slow=4.6,SNR=5.9									
YKA	Yellowknife Ar	52.88	345	P		P	13	38	31.1	-1.5
YKA				pP		pP	13	38	49.7	-3.4
YKA				PcP		PcP	13	39	38.6	-2.0
ILAR	Eielson Array	65.16	336	P		P	13	39	56.0	-1.4
	comp=Z,1.8nm,0.9s,mb3.9,baz=132,slow=4.2,SNR=20									
MCK	McKinley	65.58	335	eP		P	13	39	58.7	-1.5
	comp=Z,1.6nm,0.8s,mb3.9									
WRA	Warramunga Arr	138.36	255	PKP	PKPdf		13	48	44.4	+4.4
	comp=Z,0.8nm,0.4s,baz=89,slow=2.6,SNR=17									
WRA				pPKP			13	49	02.8	
	comp=Z,0.6nm,0.6s,baz=87,slow=2.2,SNR=3.3									
ASAR	Alice Springs	138.43	249	PKhKP			13	48	34.2	
	comp=Z,0.3nm,0.7s,baz=109,slow=3.4,SNR=4.6									
ASAR				PKP	PKPdf		13	48	44.0	+3.9
	comp=Z,0.5nm,0.5s,baz=92,slow=2.4,SNR=7.6									
ASAR				pPKP			13	49	02.4	
	comp=Z,0.6nm,0.9s,baz=111,slow=1.8,SNR=2.7									
FITZ	Fitzroy Crossi	146.68	257	PKPbc	PKPbc		13	48	58.0	+1.9
	comp=Z,3.5nm,0.9s,baz=104,slow=1.6,SNR=5.2									
FITZ				pPKPbc			13	49	18.3	
	comp=Z,3.4nm,0.8s,baz=43,slow=0.8,SNR=2.7									

*NIED **06** 13:40:00, 42.50N×145.10E, h32km, Mw5.3 Best double couple: M0 8.86×10^16 NP1:φs19°, δ68°, λ64°. NP2:φs250°, δ34°, λ137°.*

*BJI **06** 13:40:16.1, 42.52N×144.91E, h22km, mB5.4, mb5.3, Ms5.1, Msz4.9*

*NEIC **06** 13:40:18.2±0.1, 42.49N×145.02E, mb5.3/113, MS4.9/1, Error ellipse: s-maj=3.3km s-min=2.1km az=161.0*

NEIC Felt [II] at Yuzhno-Kuril'sk, Kunashir.

*SYO **06** 13:40:18.1, 42.49N×145.02E, h28km, MB5.3, MS4.9*

*JMA **06** 13:40:18.3, 42.48N×145.12E, h44km±1km, M5.4*

JMA Felt II J1.

*IDC **06** 13:40:18.2±0.3, 42.51N×144.98E, h27km±2km, mb4.9/26, mb1 5.0/30, mb1mx5.0/31, ML4.7/4, MS5.4/1, Ms1 5.5/1, ms1mx4.1/23, Error ellipse: s-maj=12.5km s-min=8.9km az=132.0*

*SKHL **06** 13:40:18.6±3.0, 42.52N×145.02E, h34km±1km, mb5.7/4, mbh5.6/3, Ms5.0/2, msh5.9/3*

SKHL Felt (I-II) at Yushno-Kurilsk.

*HRVD **06** 13:40:18.2±0.3, 42.47N×145.21E, h39km, MW5.3/64, Centroid moment Tensor Solution. LP body waves: s53,c91;Mantle waves: s64,c126; Half duration: 1s1 Moment tensor: Scale 10^17Nm; Mrr 0.74±.04; Mθθ 0.40±.03; Mφφ 0.34±.03; Mrθ 0.40±.04; Mrφ 0.63±.02; Mθφ 0.67±.03; Best double couple: M0 1.18×10^17 NP1: φs244°, δ27°, λ118°. NP2:φs34°, δ67°, λ77°. Principal axes: T 1.07, Plg66°, Azm281°; N .21, Plg12°, Azm39°; P -1.28, Plg21°, Azm133°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*CSEM **06** 13:40:20.2, 43.32N×145.56E, h33km, mb5.6*

*MOS **06** 13:40:20.1±0.8, 42.70N×144.98E, h50km, mb5.6/37, MS4.7/11, Error ellipse: s-maj=10.2km s-min=5.0km az=107.6*

MOS Felt (II) at Yuzhno-Kuril'sk.

ISC 06 13:40:15.7±0.7, 42.43N±0.02×145.07E±0.03, h24km±4km, h29km±.8km: pP-P, n495, σ0$90/502, mb5.3/176, MS5.2/16, 59C-30D, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase	ID		Time			Res
				Op		ISC	h	m	s	ISC
JAK	Akkeshi	0.63	334	⇓P		Pb	13	40	30.5	+2.4
JAK				eS		Sb	13	40	39.9	+3.4
JOB	Onbets	1.03	298	⇓P		Pb	13	40	36.8	+2.0
NEM2	Nemuro 2	1.06	27	⇑P		Pn	13	40	35.8	+0.5
NEM2				eS		Sb	13	40	48.5	-0.3
JNK	Nakash	1.19	348	⇓P		Pn	13	40	37.8	+0.7
JNK				eS		Sb	13	40	52.4	0.0
JCH	Churui	1.28	279	⇓P		Pn	13	40	40.9	+2.5
JCH				eS		Sn	13	40	58.8	+3.9
JAR	Ashorobuto	1.29	313	⇓P		Pn	13	40	39.9	+1.3
JAR				eS		Sn	13	40	56.3	+1.0
JEM	Erimo	1.48	255	⇑P		Pn	13	40	44.6	+3.3
JRA	Rausu	1.51	1	⇓P		Pn	13	40	42.5	+0.8
JRA				eS		Sn	13	41	00.3	-0.5
YUK	Yuzh-Kuril'sk	1.71	19	⇓iP		Pn	13	40	44.5	0.0
YUK					AMB	AMB	13	40	45.5	
	1μm,0.4s									
YUK					AMB	AMB	13	40	45.5	
	1μm,0.4s									
YUK					AMB	AMB	13	40	45.5	
	5μm,0.5s									
YUK					AMB	AMB	13	40	46.0	
	12μm,1.0s									
YUK					AMB	AMB	13	40	46.0	
	8μm,1.3s									
YUK					AMB	AMB	13	40	46.0	
	4μm,0.8s									
YUK				*i*	S	Sn	13	41	03.9	-1.9
YUK					A		13	41	04.9	
	79μm,1.0s									
YUK					A		13	41	04.9	
	237μm,0.7s									
YUK	Yuzh-Kuril'sk	1.71	19	⇓iPN		Pn	13	40	44.5	0.0
YUK				*i*	S	Sn	13	41	03.9	-1.9
YUK					pmax	pmax				
	comp=Z,5μm,0.5s									
YUK					pmax	pmax				
	comp=N,1μm,0.4s									
YUK					pmax	pmax				
	comp=E,1μm,0.4s									
YUK					pmax	pmax				
	comp=Z,12μm,1.0s									
YUK					pmax	pmax				
	comp=N,8μm,1.3s									
YUK					pmax	pmax				
	comp=E,4μm,0.8s									
YUK					smax					
	comp=E,237μm,0.7s									
YUK					smax					
	comp=N,79μm,1.0s									
ASAJ	Asahikawa	2.48	314	Pn		Pn	13	40	57.9	+2.4
	comp=N,847nm,0.3s,baz=180,slow=6.4,SNR=1310									
ASAJ				Sn		Sn	13	41	30.9	+5.6
	comp=N,436nm,0.3s,baz=66,slow=29,SNR=7.4									
KUR	Kuril'sk	3.46	35	⇓iP		Pn	13	41	10.1	+0.6
KUR					AMB	AMB	13	41	36.8	
	comp=N,3μm,1.0s									
KUR					AMB	AMB	13	41	36.8	
	comp=N,1μm,1.0s									
KUR					AMB	AMB	13	41	36.8	
	comp=N,7μm,1.0s									
KUR				*i*	S	Sn	13	41	49.2	-1.0
KUR					A		13	42	04.5	
	comp=N,6μm,0.9s									
KUR					A		13	42	04.5	
	comp=N,8μm,0.9s									
KUR					A		13	42	14.0	
	comp=N,47μm,2.0s									
KUR					A		13	42	14.0	
	comp=N,30μm,2.0s									
KUR					A		13	42	14.0	
	comp=N,25μm,2.0s									
KUR					A		13	42	14.0	
	comp=N,15μm,2.0s									
KUR	Kuril'sk	3.46	35	⇓iPN		Pn	13	41	10.1	+0.6
KUR				*i*	S	Sn	13	41	49.2	-1.0
KUR					pmax	pmax				
	comp=N,3μm,1.0s									
KUR					pmax	pmax				
	comp=E,1μm,1.0s									
KUR					pmax	pmax				
	comp=Z,7μm,1.0s									
KUR					smax					
	comp=N,6μm,0.9s									
KUR					smax					
	comp=E,8μm,0.9s									
KUR					smax					
	comp=N,47μm,2.0s									
KUR					smax					
	comp=E,30μm,2.0s									
YSS	Yuzh-Sakhalins	4.82	341	⇑iP		Pn	13	41	29.7	+0.9
YSS					AMB	AMB	13	41	30.7	
	comp=E,120nm,0.4s									
YSS					AMB	AMB	13	41	30.7	
	comp=E,70nm,0.4s									
YSS					AMB	AMB	13	41	30.7	
	comp=E,170nm,0.4s									
YSS				*e*sP			13	41	40.0	
YSS				*e*S		Sn	13	42	23.0	-1.6
YSS					A		13	42	25.0	
	comp=E,220nm,0.9s									
YSS					A		13	42	25.0	
	comp=E,340nm,0.9s									
YSS				*e*LQ			13	42	47.0	
YSS				*e*LR		LR	13	43	10.0	
YSS					AMS	AMS	13	43	33.0	
	comp=E,8μm,17.0s									
YSS					AMS	AMS	13	43	33.0	
	comp=E,23μm,16.0s									
YSS					AMS	AMS	13	43	33.0	
	comp=E,21μm,15.0s									
YSS	Yuzh-Sakhalins	4.82	341	⇑iP		Pn	13	41	29.7	+0.9
YSS				*e*S		Sn	13	42	23.0	-1.6
YSS					pmax	pmax				
	comp=N

SKR AMB AMB 13 43 08.5
comp=Z,80nm,0.6s
SKR AMB AMB 13 43 08.5
comp=Z,100nm,0.6s
SKR AMB AMB 13 43 08.5
comp=Z,50nm,0.5s
SKR sP 13 43 11.7
SKR AMB AMB 13 43 25.0
comp=Z,2μm,4.0s
SKR AMB AMB 13 43 25.0
comp=Z,2μm,4.0s
SKR AMB AMB 13 43 25.0
comp=Z,3μm,4.0s
SKR *e*S **S** **13 44 57.5 -5.8**
SKR A 13 45 18.5
comp=Z,180nm,1.0s
SKR A 13 45 18.5
comp=Z,220nm,1.0s
SKR A 13 45 18.5
comp=Z,170nm,1.0s
SKR Severo-Kuril's 11.22 39 *e*PN **P** **13 42 57.0 -0.7**
SKR pmax pmax
comp=N,80nm,0.6s
SKR pmax pmax
comp=Z,100nm,0.6s
SKR pmax pmax
comp=E,50nm,0.5s
SKR pmax pmax
comp=N,2μm,4.0s
SKR pmax pmax
comp=E,2μm,4.0s
SKR pmax pmax
comp=Z,3μm,4.0s
SKR MLR MLR
comp=N,6μm,16.0s
SKR MLR MLR
comp=E,9μm,16.0s
SKR MLR MLR
comp=Z,7μm,16.0s
OKH Okha 11.22 353 *e*P **P** **13 42 58.0 +0.2**
OKH *e*P 13 42 58.9
OKH AMB AMB 13 43 07.8
comp=Z,600nm,7.0s
OKH A 13 45 28.2
comp=Z,1μm,5.0s
OKH Okha 11.22 353 *e*PN **P** **13 42 58.0 +0.2**
OKH pmax pmax
comp=Z,600nm,7.0s
OKH MLR MLR
comp=Z,7μm,17.0s
MDJ Mudanjiang 11.45 286 P **P** **13 43 01.4 +0.4**
MDJ PP PP 13 43 10.9 +1.3
MDJ S **S** **13 45 04.3 -4.9**
MDJ AMB AMB
comp=Z,63nm,1.2s
MDJ AMB AMB
comp=Z,499nm,7.0s
MDJ LR LR
comp=N,973nm,16.2s
MDJ LR LR
comp=E,4μm,26.6s
MDJ LR LR
comp=Z,4μm,20.8s
MDJ Mudanjiang 11.45 286 *e*P **P** **13 43 01.5 +0.6**
KLR Kul'dur 11.51 311⇓ *e*PN **P** **13 43 01.8 +0.1**
KLR *e* 13 45 14.0
KLR pmax pmax
comp=N,28nm,1.6s
KLR pmax pmax
comp=E,74nm,1.6s
KLR pmax pmax
comp=Z,94nm,1.6s
KLR pmax pmax
comp=N,1μm,5.0s
KLR pmax pmax
comp=E,1μm,5.0s
KLR pmax pmax
comp=Z,1μm,5.0s
KLR MLR MLR
comp=E,9μm,14.0s
KLR MLR MLR
comp=Z,14μm,14.0s
PET Petropavlovsk 13.97 36 *e*P **P** **13 43 51.4 +17**
PET MLR MLR
comp=Z,6μm,19.0s
KS15 Wonju Array Si 14.09 255 *e*P **P** **13 43 35.2 -0.9**
CN2 Changchun 14.40 282 *e*P **P** **13 43 36.3 -3.8**
CN2 *e*S **S** **13 46 15.2 -4.7**
CN2 AMB AMB
comp=Z,40nm,0.9s
CN2 LR LR
comp=N,2μm,17.0s
CN2 LR LR
comp=E,5μm,17.0s
CN2 LR LR
comp=Z,6μm,17.0s
JNU Nakatsue 14.55 235 Pn **P** **13 43 40.3 -1.8**
comp=Z,1.3nm,0.3s,baz=58,slow=18,SNR=6.2
INCN Inchon 14.97 257 *e*P **P** **13 43 46.6 -0.9**
comp=Z,67nm,1.3s
CBIJ Chichi jima 15.48 190 Pn **P** **13 43 51.6 -2.6**
comp=Z,3.6nm,0.3s,baz=294,slow=20,SNR=4.5
CBIJ Sn **S** **13 46 31.0 -14**
comp=Z,21nm,0.3s,baz=271,slow=22,SNR=8.6
SNY Shenyang 15.96 275⇑ P **P** **13 43 59.7 -0.6**
SNY S **S** **13 46 54.3 -2.2**
SNY AMB AMB
comp=Z,70nm,1.1s
SNY AMB AMB
comp=Z,340nm,4.1s
SNY LR LR
comp=N,4μm,14.0s
SNY LR LR
comp=E,4μm,21.5s
SNY LR LR
comp=Z,7μm,22.5s
ZEA Zeya 16.38 320 *e*P **P** **13 44 05.7 +0.2**
ZEA AMB AMB 13 44 08.9
comp=Z,83nm,1.0s
ZEA AMB AMB 13 44 08.9
comp=Z,120nm,1.2s
ZEA AMB AMB 13 44 08.9
comp=Z,180nm,1.2s
ZEA AMB AMB 13 44 17.0
comp=Z,600nm,6.0s
ZEA AMB AMB 13 44 17.0
comp=Z,700nm,6.0s
ZEA AMB AMB 13 44 17.0
comp=Z,900nm,7.0s
MA2 Magadan 17.53 10 *e*P **P** **13 44 18.4 -1.6**
MA2 *e* 13 47 26.5
MA2 pmax pmax
comp=Z,20nm,1.1s
MA2 pmax pmax
comp=E,2.0nm,0.8s
MA2 pmax pmax
comp=N,2.0nm,1.0s
MA2 Magadan 17.53 10 *e*P **P** **13 44 17.8 -2.3**
comp=N,59nm,1.3s
DL2 Dalian 18.12 267⇑ P **P** **13 44 26.1 -1.4**
DL2 AMB AMB
comp=Z,300nm,6.3s
DL2 LR LR
comp=E,3μm,19.8s
DL2 LR LR
comp=Z,3μm,20.9s
HIA Hailar 18.87 300 *e*P **P** **13 44 33.8 -2.8**
comp=Z,167nm,1.0s
CLNS Chul'man 19.35 325 *e*P **P** **13 44 40.4 -1.8**
CLNS *e* 13 48 04.6
CLNS pmax pmax
comp=E,10.0nm,0.9s
CLNS pmax pmax
comp=Z,20nm,0.9s
CLNS pmax pmax
comp=N,10.0nm,1.1s
CLNS MLR MLR
comp=Z,6μm,16.0s
CLNS MLR MLR
comp=N,5μm,14.0s
CLNS MLR MLR
comp=E,600nm,12.0s
JOW Kunigami 20.75 227 P **P** **13 44 57.0 -0.3**
comp=E,76nm,1.0s,baz=25,slow=10,SNR=11
SEY Seymchan 20.99 9 *e*P **P** **13 44 55.1 -4.4**
SEY pmax pmax
comp=N,30nm,0.9s

SEY pmax pmax
comp=Z,50nm,0.9s
FX1 Attu Island--F 21.49 51 P **P** **13 45 05.5 +0.9**
comp=Z,123nm,0.9s,mb5.2,baz=310,slow=4.5,SNR=13
FX1 Attu Island--F 21.49 51 P **P** **13 45 05.5 +0.9**
FX1 pmax pmax
comp=Z,123nm,0.9s
FX1 Attu Island--F 21.49 51 *e*P **P** **13 45 04.7 +0.1**
YAK Yakutsk 21.67 340 *e*P **P** **13 45 01.6 -4.8**
YAK *e* 13 45 20.4
YAK *e*PPP PPP 13 45 29.5 -12
YAK *e*S **S** **13 48 56.0 -4.1**
YAK pmax pmax
comp=Z,20nm,0.8s,mb4.6
YAK pmax pmax
comp=N,7.0nm,0.9s
YAK pmax pmax
comp=E,5.0nm,0.9s
YAK smax
comp=N,80nm,1.1s
YAK smax
comp=Z,70nm,1.1s
YAK smax
comp=E,50nm,1.0s
YAK MLR MLR
comp=Z,4μm,17.0s,MS4.9
YAK Yakutsk 21.67 340 *e*P **P** **13 45 00.8 -5.6**
comp=Z,40nm,0.6s,mb5.0
BJI Beijing 21.82 273 P **P** **13 45 06.1 -2.0**
BJI AMB AMB
comp=Z,89nm,1.4s,mb5.0
BJI LR LR
comp=N,2μm,14.0s
BJI LR LR
comp=E,3μm,21.7s
BJI LR LR
comp=Z,4μm,22.5s
BJT Baijiatuan 21.83 273 *e*P **P** **13 45 06.1 -2.1**
comp=Z,102nm,0.9s,mb5.2
SSE Sheshan 22.15 247 P **P** **13 45 10.7 -0.7**
SSE XP 13 45 22.8
SSE LR LR
comp=N,3μm,17.0s,MS5.1
SSE LR LR
comp=E,5μm,17.0s,MS5.1
SSE LR LR
comp=Z,7μm,18.7s,MS5.1
TIA Tai'an 22.44 263 *e*P **P** **13 45 12.8 -1.4**
TIA S **S** **13 49 09.5 -4.9**
TIA AMB AMB
comp=Z,145nm,1.3s,mb5.2
TIA LR LR
comp=N,1μm,12.0s
TIA LR LR
comp=E,2μm,9.0s
NJ2 Nanjing 23.22 252 *e*P **P** **13 45 22.0 +0.1**
NJ2 AP 13 45 30.1
NJ2 XP 13 45 33.4
NJ2 PP PP 13 45 54.0 +1.2
NJ2 AMB AMB
comp=Z,2μm,6.3s
NJ2 LR LR
comp=N,12μm,20.2s,MS5.6
NJ2 LR LR
comp=E,16μm,18.1s,MS5.6
NJ2 LR LR
comp=Z,16μm,18.8s,MS5.5
BOD Bodaibo 24.88 319 *e*P **P** **13 45 35.2 -2.5**
BOD *e* 13 45 48.1
HHC Hu-ho-hao-te 25.00 278⇑ P **P** **13 45 39.0 -0.1**
HHC AP pP 13 45 49.4 +3.4
HHC XP sP 13 45 52.5 +3.3
HHC PP PP 13 46 17.8 +1.0
HHC AMB AMB
comp=Z,100nm,1.3s,mb5.2
HHC AMB AMB
comp=Z,899nm,5.8s
HHC LR LR
comp=N,748nm,16.6s,MS4.5
HHC LR LR
comp=E,1μm,18.2s,MS4.5
HHC LR LR
comp=Z,2μm,18.4s,MS4.5
TIY Taiyuan 25.32 270⇑ P **P** **13 45 43.0 +0.9**
TIY LR LR
comp=E,2μm,20.0s
TIY LR LR
comp=Z,2μm,15.0s,MS4.7
BTO Baotou 26.20 278 *e*P **P** **13 45 51.1 +0.8**
ULN Ulaanbaatar 27.16 295 P **P** **13 45 58.8 -0.3**
ULN P 13 48 53.4
ULN Ulaanbaatar 27.16 295*c* *i*P **P** **13 45 58.6 -0.4**
ULN pmax pmax
comp=Z,212nm,1.4s,mb5.5
ULN Ulaanbaatar 27.16 295 *e*P **P** **13 45 58.3 -0.7**
comp=Z,148nm,1.1s,mb5.4
WHN Wuhan 27.25 254⇑ P **P** **13 46 00.8 +0.8**
WHN AP pP 13 46 12.5 +5.5
WHN AMB AMB
comp=Z,126nm,1.2s,mb5.3
SONM Songino Array 27.61 295 P **P** **13 46 02.9 -0.2**
comp=Z,61nm,0.6s,mb5.4,baz=82,slow=8.7,SNR=237
QZH Quanzhou 27.93 240⇑ P **P** **13 46 07.6 +1.4**
QZH XP sP 13 46 22.2 +5.9
QZH AMB AMB
comp=Z,290nm,1.6s,mb5.7
QZH LR LR
comp=N,2μm,13.7s
QZH LR LR
comp=E,5μm,19.4s
QZH LR LR
comp=Z,6μm,17.5s,MS5.3
BILL Bilibino 28.06 17⇑ *e*P **P** **13 46 03.2 -3.8**
BILL Bilibino 28.06 17 *e*P **P** **13 46 01.6 -5.3**
comp=Z,8.5nm,0.8s,mb4.4
IRK Irkutsk 28.99 304 *e*P **P** **13 46 14.2 -1.3**
XAN Xi'an 29.43 266 P **P** **13 46 19.8 +0.2**
XAN P 13 49 14.2
XAN Xi'an 29.43 266 P **P** **13 46 19.7 +0.1**
XAN AP pP 13 46 26.9 +0.3
XAN AMB AMB
comp=Z,31nm,1.5s,mb4.8
ZAK Zakamensk 29.57 300⇓ *i*P **P** **13 46 19.9 -0.8**
ENH Enshi 30.90 259 *e*P **P** **13 46 32.5 -0.2**
comp=Z,179nm,1.3s,mb5.7
MOY Mondy 31.00 303 *e*P **P** **13 46 33.4 0.0**
LZH Lanzhou 32.30 273⇑ P **P** **13 46 46.0 +1.1**
LZH AP pP 13 46 56.0 +4.0
LZH LR LR
comp=E,7μm,17.0s
LZH LR LR
comp=Z,9μm,17.4s,MS5.5
GTA Gaotai 34.03 280 *e*P **P** **13 46 59.6 -0.3**
GTA AP pP 13 47 06.6 -0.3
GTA XP sP 13 47 10.3 +0.3
GTA PP PP 13 48 15.2 +1.1
GTA PPP PPP 13 48 34.5 +2.4
GTA PCP PCP 13 49 38.1 +0.5
GTA AMB AMB
comp=Z,289nm,5.7s
GTA LR LR
comp=N,686nm,16.0s,MS4.7
GTA LR LR
comp=E,836nm,15.6s,MS4.7
GTA LR LR
comp=Z,1μm,16.7s,MS4.7
CD2 Chengdu 34.76 264 *e*P **P** **13 47 06.0 -0.3**
CD2 AMB AMB
comp=Z,90nm,1.0s,mb5.7
TNA Tin City 34.79 32 *e*P **P** **13 47 04.6 -1.5**
comp=Z,30nm,1.2s,mb5.1
GYA Guiyang 35.12 255⇑ *i*P **P** **13 47 10.0 +0.6**
GYA AP pP 13 47 20.1 +3.6
GYA AMB AMB
comp=Z,70nm,1.1s,mb5.5
GYA AMB AMB
comp=Z,380nm,7.5s
GYA LR LR
comp=N,2μm,24.9s,MS4.8
GYA LR LR
comp=E,1μm,24.9s,MS4.8
GYA LR LR
comp=Z,2μm,26.1s,MS4.8
ANM Nome 35.54 34 *e*P **P** **13 47 13.1 +0.5**
QIZ Qiongzhong 37.81 243 P **P** **13 47 33.0 +0.8**

QIZ AMB AMB
comp=Z,26nm,1.6s,mb4.7
QIZ AMB AMB
comp=Z,230nm,5.5s
KMI Kunming 38.74 257⇑ *i*P **P** **13 47 41.2 +1.3**
KMI AP pP 13 47 49.1 +2.1
KMI XP sP 13 47 52.5 +2.5
KMI PP PP 13 49 10.1 -2.4
KMI PCP PcP 13 49 53.0 +1.2
KMI AMB AMB
comp=Z,80nm,1.5s,mb5.2
KMI AMB AMB
comp=Z,408nm,3.1s
KMI LR LR
comp=N,1μm,25.9s
KMI LR LR
comp=E,3μm,19.1s
KMI LR LR
comp=Z,4μm,18.4s
SVW Sparrevohn 39.55 41 *e*P **P** **13 47 46.3 +0.1**
IMA Indian Mountai 40.63 33 *e*P **P** **13 47 55.2 +0.1**
RSO Redoubt South 40.97 42 *e*P **P** **13 47 58.0 +0.1**
WMQ Urumqi 41.18 292⇑ *i*P **P** **13 48 00.3 +0.5**
WMQ AP pP 13 48 07.7 +0.8
WMQ XP sP 13 48 11.1 +1.2
WMQ PP PP 13 49 38.5 +0.6
WMQ PCP PcP 13 50 00.7 +1.3
WMQ AMB AMB
comp=Z,41nm,0.7s,mb5.2
WMQ AMB AMB
comp=Z,340nm,4.6s
WMQ LR LR
comp=N,1μm,16.2s,MS5.2
WMQ LR LR
comp=E,3μm,15.3s,MS5.2
WMQ LR LR
comp=Z,3μm,17.4s,MS5.3
KDAK Kodiak Island 41.27 46 *e*P **P** **13 47 58.5 -1.8**
comp=Z,31nm,0.8s,mb5.0
SPU Mount Spurr 41.27 41 *e*P **P** **13 48 00.5 +0.1**
NVS Novosibirsk 41.37 310 *i* P **P** **13 48 00.2 -1.1**
NVS *e* 13 49 58.4
NVS pmax pmax
comp=N,51nm,1.5s
NVS pmax pmax
comp=E,176nm,1.5s
NVS pmax pmax
comp=Z,208nm,1.5s,mb5.5
SLKM Skilak Lake 42.22 42 *e*P **P** **13 48 07.3 -0.7**
PMS Palmer South 42.48 41 *e*P **P** **13 48 10.2 0.0**
MCK McKinley 42.61 37 *e*P **P** **13 48 10.3 -0.9**
comp=Z,23nm,1.0s,mb4.9
PMR Palmer 42.65 40 *e*P **P** **13 48 10.9 -0.7**
comp=Z,14nm,1.0s,mb4.7
SML Sawmill 43.01 40 *e*P **P** **13 48 14.0 -0.5**
COLA College 43.03 35 *e*P **P** **13 48 14.9 +0.2**
COLA MLR MLR
comp=Z,1μm,19.0s,MS4.9
ILAR Eielson Array 43.45 35 P **P** **13 48 17.5 -0.6**
comp=Z,42nm,0.8s,mb5.2,baz=262,slow=6.3,SNR=100
ILAR Eielson Array 43.45 35 P **P** **13 48 17.5 -0.6**
ILAR pmax pmax
comp=Z,42nm,0.8s
MKAR Makanchi Array 43.86 298 P **P** **13 48 21.3 -0.3**
comp=Z,25nm,0.7s,mb5.0,baz=82,slow=9.5,SNR=210
MKAR PcP PcP 13 50 07.5 -0.7
comp=Z,21nm,1.1s,baz=90,slow=3.6,SNR=3.8
MKAR Makanchi Array 43.86 298 P **P** **13 48 21.3 -0.3**
MKAR 13 50 07.6
MKAR pmax pmax
comp=Z,25nm,0.7s
MKAR pmax pmax
comp=Z,21nm,1.1s
MKAR Makanchi Array 43.86 298 P **P** **13 48 21.3 -0.3**
MKAR PcP PcP 13 50 07.5 -0.7
NANT Nan 44.22 252⇑ P **P** **13 48 25.5 +0.6**
comp=Z,74nm,0.9s,mb5.4
EYAK Cordova Ski Ar 44.41 41 *e*P **P** **13 48 25.8 -0.1**
KKTK Khon Kaen 44.43 247 P **P** **13 48 27.5 +0.9**
LSA Lhasa 44.71 272 P **P** **13 48 30.3 +1.5**
LSA Lhasa 44.71 272 P **P** **13 48 30.4 +1.7**
LSA AP pP 13 48 42.5 +6.6
LSA AMB AMB
comp=Z,210nm,12.0s
LSA Lhasa 44.71 272 *e*P **P** **13 48 30.2 +1.4**
comp=Z,28nm,0.8s,mb5.1
KURK Kurchatov 45.02 305 *e*P **P** **13 48 30.1 -0.8**
CHG Chiang Mai 45.45 253⇓ P **P** **13 48 35.8 +1.0**
comp=Z,34nm,1.0s,mb5.1
CM31 Chiang Mai Arr 45.69 253 *e*P **P** **13 48 36.8 +0.2**
comp=Z,6.0nm,0.6s,mb4.7
CMAR Chiang Mai Arr 45.69 253 P **P** **13 48 37.8 +1.2**
comp=Z,7.9nm,0.8s,mb4.7,baz=44,slow=7.4,SNR=41
CMAR sP sP 13 48 49.2 +2.5
comp=Z,8.2nm,0.8s,baz=44,slow=7.0,SNR=13
CMAR PcP PcP 13 50 15.5 +0.6
comp=Z,3.5nm,0.9s,slow=4.5,SNR=3.6
CMAR PP PP 13 50 28.4 +4.3
comp=Z,3.1nm,0.8s,baz=349,slow=1.7,SNR=4.4
CMAR Chiang Mai Arr 45.69 253 P **P** **13 48 37.8 +1.2**
CMAR *SP sP 13 48 49.2 +2.5
CMAR 13 50 15.5
CMAR 13 50 28.4
CMAR pmax pmax
comp=Z,8.0nm,0.8s
SHL Shillong 46.43 266 *e*P **P** **13 48 42.0 -0.5**
SHL AMb AMB 13 48 44.5
comp=Z,43nm,1.4s,mb5.2
NST Nakhon Sawan 46.74 249 P **P** **13 48 46.5 +1.5**
INK Inuvik 48.31 29 P **P** **13 48 56.2 -0.4**
comp=Z,25nm,0.6s,mb5.5,baz=297,slow=6.6,SNR=168
INK Inuvik 48.31 29 P **P** **13 48 56.2 -0.4**
INK pmax pmax
comp=Z,25nm,0.6s
INK Inuvik 48.31 29 P **P** **13 48 56.2 -0.4**
BVA0 Borovoye Array 49.17 310 *i* P **P** **13 49 02.8 -0.6**
BVAR Borovoye Array 49.17 310 P **P** **13 49 02.9 -0.6**
comp=Z,39nm,0.4s,mb5.8,baz=79,slow=8.4,SNR=414
NNT Nongplab 49.18 247 P **P** **13 49 06.4 +2.4**
BRVK Borovoye 49.22 310 *e*P **P** **13 49 02.5 -1.3**
ULHL Ulahol 49.55 295 P **P** **13 49 06.4 -0.1**
SNR=17
GUN Gumba 49.57 273 *e*P **P** **13 49 07.1 +0.3**
comp=Z,102nm,0.5s,mb6.2
TKM2 Tokmak 2 49.70 296 P **P** **13 49 08.0 +0.3**
SNR=36
ZRNK Zerenda 49.98 310 *e*P **P** **13 49 09.2 -0.5**
KKN Kakani 50.08 273 *e*P **P** **13 49 10.9 +0.2**
comp=Z,104nm,0.9s,mb5.9
PKI Pulchoki 50.10 273 *e*P **P** **13 49 11.0 +0.1**
KBK Karagaybulak 50.25 296 P **P** **13 49 11.8 0.0**
SNR=19
USP Ospenovka 50.29 296 P **P** **13 49 12.2 0.0**
SNR=14
KZA Kyzart 50.29 295 P **P** **13 49 13.2 +1.0**
SNR=23
DMN Daman 50.30 273 *e*P **P** **13 49 12.4 -0.1**
comp=Z,113nm,1.0s,mb5.8
FRU Bishkek 50.39 296⇑ *e*P **P** **13 49 13.0 +0.1**
FRU pmax pmax
comp=Z,70nm,2.0s,mb5.3
FRU MLR MLR
comp=Z,6μm,19.0s,MS5.6
GKN Gorkha 50.43 274 *e*P **P** **13 49 13.3 -0.2**
SIT Sitka 50.51 44 *e*P **P** **13 49 13.3 -0.3**
comp=Z,64nm,1.5s,mb5.3
UCH Uchtor 50.72 295 P **P** **13 49 15.8 +0.3**
SNR=6.0
DANN Dangsing 50.89 275 *e*P **P** **13 49 17.6 +0.7**
KSH Kashi 50.93 291 P **P** **13 49 17.2 +0.1**
KSH *e*AP pP 13 49 25.3 +1.0
KSH *e*XP sP 13 49 28.1 +0.9
KSH *e*PCP PcP 13 50 34.0 +0.5
KSH *e*PP PP 13 51 14.5 +0.2
KSH AMB AMB
comp=Z,80nm,1.0s,mb5.6
KSH AMB AMB
comp=Z,270nm,3.6s
KSH LR LR
comp=N,470nm,6.3s
KSH LR LR
comp=E,880nm,12.1s
EKS2 Erkin-Say 51.02 296 P **P** **13 49 17.5 -0.2**
SNR=19
AML Almayashu 51.31 295 P **P** **13 49 22.0 +2.1**

SNR=11
KOLN Koldanda 51.33 274 *e*P **P 13 49 20.2 -0.1**
comp=E,136nm,0.9s,mb5.9
DLBC Dease Lake 52.68 41 P **P 13 49 31.0 +0.9**
comp=E,4.5nm,0.7s,mb4.5,baz=301,slow=7.3,SNR=16
PTH Pithoragarh 52.85 278 *e*P **P 13 49 31.0 -0.7**
KKAR Karatay Array 52.99 298 *i* P **P 13 49 31.4 -1.1**
KKAR pmax pmax
comp=Z,15nm,0.7s,mb5.0
SVE Sverdlovsk 53.06 317⇑ *i*P **P 13 49 32.0 -0.9**
SVE *e* 13 49 46.8
SVE pmax pmax
comp=Z,340nm,2.1s,mb5.9
ARU Arti 54.27 317⇑ *i*P **P 13 49 40.6 -1.1**
ARU *i* 13 50 41.8
ARU *e* 13 51 42.8
ARU *e*S **S 13 57 19.0 +2.8**
ARU *e* 13 59 22.0
ARU pmax pmax
comp=Z,138nm,1.3s,mb5.7
ARU Arti 54.27 317 *e*P **P 13 49 40.2 -1.5**
comp=Z,82nm,0.8s,mb5.7
NDI New Delhi 55.52 279 *e*P **P 13 49 50.5 -0.8**
NDI AMb AMB 13 49 51.9
comp=Z,111nm,1.1s,mb5.8
SPB4 Spitsbergen Ar 55.79 349 *e*P **P 13 49 49.7 -2.9**
KBS Kingsbay 55.83 350 *e*P **P 13 49 51.5 -1.4**
KBS AMb AMB 13 49 52.7
comp=Z,71nm,1.2s,mb5.6
KBS Kingsbay 55.83 350 *e*P **P 13 49 50.7 -2.2**
comp=Z,63nm,1.1s,mb5.6
KAKA Kakadu 56.08 195⇑ *i*P **P 13 49 54.7 -0.7**
comp=Z,17nm,0.7s,mb5.2
KAKA *i* pP pP 13 50 09.8 +7.1
AB31 Akbulak array 56.70 309 *i* P **P 13 49 58.5 -1.0**
AB31 pmax pmax
comp=Z,5.0nm,0.4s,mb4.9
YKA Yellowknife Ar 57.74 33 P **P 13 50 05.4 -1.2**
comp=Z,17nm,0.7s,mb5.2,baz=304,slow=6.8,SNR=54
YKA Yellowknife Ar 57.74 33 P **P 13 50 05.4 -1.2**
YKA pmax pmax
comp=Z,17nm,0.7s
YKA Yellowknife Ar 57.74 33 P **P 13 50 05.4 -1.2**
LVZ Lovozero 58.37 335 *e*P **P 13 50 08.5 -2.5**
LVZ pmax pmax
comp=Z,40nm,1.0s,mb5.4
LVZ pmax pmax
comp=N,10.0nm,1.2s
LVZ pmax pmax
comp=E,10.0nm,1.1s
LVZ pmax pmax
comp=Z,120nm,1.5s,mb5.7
LVZ pmax pmax
comp=N,20nm,1.3s
BHPL Bhopal 58.48 274 *e*P **P 13 50 11.3 -1.0**
AJM Ajmer 58.64 279 *e*P **P 13 50 12.0 -1.4**
APA Apatity 58.95 335⇓ *i*P **P 13 50 12.4 -2.6**
APA *i* 13 50 35.7
APA *i* 13 50 57.9
APA *e*S **S 13 58 03.0 -15**
APA pmax pmax
comp=Z,83nm,1.2s,mb5.6
KEV Kevo 59.41 339 P **P 13 50 16.6 -1.6**
KEV Kevo 59.41 339 *e*p **P 13 50 16.5 -1.7**
comp=Z,38nm,0.8s,mb5.5
KEV Kevo 59.41 339 *e*P **P 13 50 16.5 -1.7**
KEV pmax pmax
comp=Z,38nm,0.8s,mb5.5
ARCES ARCESS Array B 59.95 339 P **P 13 50 20.3 -1.6**
comp=Z,26nm,1.0s,mb5.2,baz=38,slow=7.4,SNR=117
ARCES ARCESS Array B 59.95 339 P **P 13 50 20.3 -1.6**
ARCES pmax pmax
comp=Z,26nm,1.0s
ARE0 ARCESS Array S 59.95 339 *e*P **P 13 50 19.6 -2.3**
AKL Akola 60.31 272 *e*P **P 13 50 24.8 -0.2**
DAG Danmarks Havn 60.63 356⇓ *i*P **P 13 50 24.6 -1.9**
comp=Z,35nm,0.7s,mb5.6
DAG Danmarks Havn 60.63 356⇓ *e*P **P 13 50 24.6 -1.9**
DAG pmax pmax
comp=Z,35nm,0.7s,mb5.6
DAG Danmarks Havn 60.63 356⇓ *e*P **P 13 50 24.6 -1.9**
comp=Z,35nm,0.7s,mb5.6
KTK1 Kautokeino 60.90 339⇑ *i*P **P 13 50 26.8 -1.6**
KTK1 AMb AMB 13 50 28.3
comp=Z,71nm,1.4s,mb5.6
CMW Cultus Mountai 61.50 49 P **P 13 50 33.3 +0.6**
TRO Tromso 61.53 341⇑ *i*P **P 13 50 31.1 -1.5**
TRO AMb AMB 13 50 33.1
comp=Z,103nm,1.4s,mb5.8
RPW Rockport 61.83 49 P **P 13 50 34.8 -0.1**
BMW Boistfort Moun 61.93 52 *e*P **P 13 50 35.4 -0.3**
LATR Latur 62.06 270 *e*P **P 13 50 35.9 -0.9**
LATR AMb AMB 13 50 37.2
comp=Z,53nm,0.8s,mb5.8
QUE Quetta 62.08 286 *e*P **P 13 50 35.0 -1.9**
RMW Rattlesnake Mo 62.20 50 *e*P **P 13 50 36.9 -0.5**
CTA Charters Tower 62.21 179 *e*P **P 13 50 37.0 -0.8**
comp=Z,6.1nm,1.0s,mb4.7
CTA *i* pP pP 13 50 50.7 +5.4
CTAO Charters Tower 62.21 179 *e*P **P 13 50 36.1 -1.7**
JOF Joensuu 62.54 332 *e*p **P 13 50 37.6 -1.9**
comp=Z,35nm,0.6s,mb5.7
JOF Joensuu 62.54 332 *e*P **P 13 50 37.6 -1.9**
JOF pmax pmax
comp=Z,35nm,0.6s,mb5.7
LON Longmire 62.59 51 *e*P **P 13 50 39.4 -0.6**
NLW Nelson Butte 62.69 49 *e*P **P 13 50 40.3 -0.4**
WRAB Tennant Creek 62.83 191 *e*P **P 13 50 40.6 -1.4**
comp=Z,72nm,1.3s,mb5.7
FITZ Fitzroy Crossi 62.84 201⇑ *i*P **P 13 50 41.8 -0.2**
comp=Z,12nm,1.0s,mb5.0
FITZ Fitzroy Crossi 62.84 201 P **P 13 50 42.1 +0.1**
baz=42,slow=4.2
WB2 Warramunga Arr 62.84 191⇑ *i*P **P 13 50 40.6 -1.4**
WB2 *i* pP pP 13 50 55.4 +6.0
WRA Warramunga Arr 62.84 191 P **P 13 50 40.9 -1.1**
comp=Z,11nm,1.0s,mb4.9,baz=13,slow=7.0,SNR=39
WRA sP sP 13 50 54.5 +2.3
comp=Z,30nm,0.9s,baz=7.9,slow=6.8,SNR=21
WRA Warramunga Arr 62.84 191 P **P 13 50 40.9 -1.1**
WRA *SP sP 13 50 54.5 +2.4
WRA pmax pmax
comp=Z,11nm,1.0s
COR Corvallis 62.92 53 P **P 13 50 41.3 -0.9**
WTV Waterville 63.11 49 P **P 13 50 43.4 -0.1**
HSO Harness Mounta 63.64 54 *e*P **P 13 50 47.3 +0.4**
LOF Lofoten 63.94 342 *e*P **P 13 50 48.1 -0.4**
LOF AMb AMB 13 50 52.1
comp=Z,66nm,1.6s,mb5.4
LOF Lofoten 63.94 342 *e*P **P 13 50 49.0 +0.5**
DPW Davenport 63.99 48 *e*P **P 13 50 48.8 -0.3**
POO Poona 64.00 272 *e* **P 13 50 54.0 +4.3**
HUMO Hull Mountain 64.24 55 *e*P **P 13 50 50.9 0.0**
NEW Newport 64.35 47 P **P 13 50 51.5 0.0**
comp=Z,11nm,0.8s,mb4.9,baz=317,slow=5.2,SNR=16
NEW pP pP 13 51 00.0 +1.1
comp=Z,16nm,0.9s,baz=305,slow=6.4,SNR=10
NEW Newport 64.35 47 P **P 13 50 51.5 0.0**
NEW pmax pmax
comp=Z,11nm,0.8s
NEW pmax pmax
comp=N,16nm,0.9s
NEW Newport 64.35 47 *e*P **P 13 50 50.7 -0.8**
comp=N,32nm,1.1s,mb5.3
NEW *ep*P pP 13 50 59.4 +0.5
KAD Karad 64.51 271⇑ *i*P **P 13 50 52.1 -0.9**
MOS Moscow 64.61 323 *i* P **P 13 50 52.2 -0.8**
MOS *e* 13 51 02.5
MOS *e* 13 53 10.4
MOS *e*S **S 13 59 30.9 +1.2**
MOS pmax pmax
comp=Z,420nm,1.5s,mb6.2
KAF Kangasniemi 64.81 333 *ep* **P 13 50 52.6 -1.6**
comp=Z,33nm,0.6s,mb5.5,baz=46,slow=6.3
KAF Kangasniemi 64.81 333 *e*P **P 13 50 52.6 -1.6**
KAF pmax pmax
comp=Z,33nm,0.6s,mb5.5
YBH Yreka Blue Hor 64.89 56 P **P 13 50 56.4 +1.3**
comp=Z,12nm,0.8s,mb4.9,baz=320,slow=2.1,SNR=33
YBH Yreka Blue Hor 64.89 56 *e*P **P 13 50 55.2 0.0**
comp=Z,16nm,1.0s,mb5.0
LNOR Lincton Mounta 65.10 50 *e*P **P 13 50 56.4 0.0**
MOR8 Moi Rana 65.27 340⇓ *i*P **P 13 50 54.6 -2.5**
MOR8 AMb AMB 13 50 55.4
comp=Z,107nm,0.6s,mb6.0
SUMG Summit 65.28 1 *e*P **P 13 50 56.5 -0.5**
FINES FINESS Array B 65.35 332 P **P 13 50 56.4 -1.4**
comp=Z,45nm,0.5s,mb5.7,baz=51,slow=7.8,SNR=302
FINES FINESS Array B 65.35 332 P **P 13 50 56.4 -1.3**
FINES pmax pmax
comp=Z,45nm,0.5s
OBN Obninsk 65.47 323 *c i*P **P 13 50 57.2 -1.4**
OBN *i* *PP pP 13 51 08.3 +2.3
OBN pmax pmax
comp=Z,160nm,1.3s,mb5.9
OBN Obninsk 65.47 323 *e*P **P 13 50 57.0 -1.7**
comp=Z,158nm,1.1s,mb6.0
WDC Whiskeytown Da 65.67 57 *e*P **P 13 51 00.0 -0.1**
comp=Z,14nm,1.0s,mb4.9
GOA Goa 65.93 269 *e*P **P 13 50 59.0 -3.1**
GOA AMb AMB 13 51 04.5
comp=Z,90nm,1.7s,mb5.5
MOD Modoc 66.26 54 *e*P **P 13 51 03.7 -0.1**
comp=Z,13nm,1.0s,mb4.9
HOPS Hopland 66.26 58 *e*P **P 13 51 04.5 +0.5**
VOR Voronezh 66.40 319 *e*P **P 13 51 02.5 -2.1**
VOR *e*SP sP 13 51 14.0 -0.7
VOR pmax pmax
comp=N,70nm,1.4s
VOR pmax pmax
comp=E,100nm,1.4s
VOR pmax pmax
comp=Z,140nm,1.4s,mb5.8
AS12 Alice Springs 66.56 191⇓ *i*P **P 13 51 06.2 +0.1**
comp=Z,16nm,1.3s,mb4.9
AS12 *i* pP pP 13 51 19.2 +5.6
ASAR Alice Springs 66.56 191 P **P 13 51 05.8 -0.3**
comp=Z,6.3nm,1.0s,mb4.6,baz=9.5,slow=5.1,SNR=34
ASAR sP sP 13 51 18.3 +2.1
comp=Z,13nm,1.0s,baz=8.2,slow=6.3,SNR=14
KOD Kodaikanal 66.65 262 *e*P **P 13 51 07.1 +0.2**
KOD AMb AMB 13 51 09.3
comp=Z,117nm,1.7s,mb5.7
NSHM Saint Helena R 66.84 58 *e*P **P 13 51 07.3 -0.3**
WVOR Wild Horse Val 66.93 53 *e*P **P 13 51 08.3 +0.1**
comp=Z,14nm,1.0s,mb5.0
MSO Missoula 66.94 47 *e*P **P 13 51 07.8 -0.3**
comp=Z,30nm,1.2s,mb5.2
MSO *ep*P pP 13 51 16.2 +0.7
OHCM Honcut 67.06 57 *e*P **P 13 51 08.1 -0.9**
CHMT Chamberlain Mo 67.26 47 *e*P **P 13 51 09.2 -0.9**
CHMT *ep*P pP 13 51 18.2 +0.6
MAK Makhachkala 67.37 308 *e*P **P 13 51 10.0 -0.9**
BEKR Beckwourth 67.44 56 *e*P **P 13 51 11.3 -0.1**
comp=Z,20nm,0.9s,mb5.2
FFC Flin Flon 67.67 35 *e*P **P 13 51 11.4 -1.2**
comp=Z,26nm,1.0s,mb5.2
PAHR Pah Rah Range 68.13 56 *e*P **P 13 51 16.1 +0.4**
comp=Z,24nm,1.0s,mb5.2
HRY Holter Researc 68.14 46 *e*P **P 13 51 15.6 -0.2**
WCN Washoe City 68.15 56 *e*P **P 13 51 16.3 +0.4**
comp=Z,18nm,1.0s,mb5.1
CMB Columbia Colle 68.52 58 *e*P **P 13 51 18.1 -0.1**
comp=Z,13nm,1.1s,mb4.8
GOF Gofitskoye 68.61 312⇑ *i*P **P 13 51 18.0 -0.6**
GOF *i* 13 51 29.0
GOF pmax pmax
comp=Z,150nm,1.5s,mb5.7
GOF MLR MLR
comp=N,7μm,18.0s,MS6.0
GOF MLR MLR
comp=E,5μm,18.0s,MS6.0
GOF MLR MLR
comp=Z,6μm,18.0s,MS5.9
SAO San Andreas Ge 68.63 59 *e*P **P 13 51 18.6 -0.3**
comp=Z,8.4nm,0.8s,mb4.7
HLID Hailey 68.69 50 *e*P **P 13 51 19.2 0.0**
comp=Z,12nm,1.0s,mb4.8
HLID *ep*P pP 13 51 28.0 +1.4
MCMT McKenzie Canyo 68.78 48 *e*P **P 13 51 19.3 -0.4**
BOZ Bozeman (W) 68.93 47 *e*P **P 13 51 20.8 +0.2**
comp=Z,32nm,0.8s,mb5.3
BMN Battle Mountai 69.00 54 *e*P **P 13 51 21.4 +0.3**
comp=Z,16nm,1.0s,mb4.9
KIV Kislovodsk 69.50 311 *i* P **P 13 51 24.3 +0.2**
KIV *e* 13 51 46.7
KIV *e* 13 53 58.4
KIV *e*S S 14 00 31.8 +3.0
KIV pmax pmax
comp=Z,90nm,1.0s,mb5.7
KIV Kislovodsk 69.50 311 *e*P **P 13 51 24.2 +0.1**
comp=Z,132nm,1.1s,mb5.8
QLMT Earthquake Lak 69.56 48 *e*P **P 13 51 24.5 0.0**
ZEI Tsey 69.57 310 *e*P **P 13 51 24.2 -0.3**
NVAR Mina Array Bea 69.58 56 P **P 13 51 25.6 +0.9**
comp=Z,12nm,0.8s,mb4.8,baz=294,slow=4.6,SNR=90
NVAR pP pP 13 51 32.6 +0.5
comp=Z,13nm,0.8s,baz=301,slow=3.6,SNR=22
MNK Minsk 69.62 326 *e*P **P 13 51 23.0 -1.6**
MNK pmax pmax
comp=Z,280nm,1.1s,mb6.1
MNK MLR MLR
comp=Z,5μm,18.0s,MS5.8
YMR Madison River 69.91 48 *e*P **P 13 51 27.1 +0.5**
MTUM Tungsten Hills 70.08 57 *e*P **P 13 51 28.3 +0.5**
NB2 NORSAR Subarra 70.28 338 P **P 13 51 27.6 -0.9**
comp=Z,74nm,1.0s,mb5.6,baz=34,slow=6.2
NB2 NORSAR Subarra 70.28 338 P **P 13 51 27.6 -0.9**
baz=34,slow=6.5
NOA NORSAR Array B 70.28 338 P **P 13 51 27.6 -1.0**
comp=Z,39nm,0.8s,mb5.4,baz=36,slow=6.1,SNR=99
NOA LR LR 14 30 26.6
comp=Z,3μm,18.1s,MS5.5,baz=5.0,slow=43
LKWY Lake 70.29 47 *e*P **P 13 51 29.8 +0.9**
comp=Z,9.1nm,0.9s,mb4.7
TPH Tonopah 70.46 56 *e*P **P 13 51 30.5 +0.4**
comp=Z,21nm,1.0s,mb5.0
NAO01 NORSAR Array S 70.53 338 *e*P **P 13 51 28.3 -1.8**
comp=Z,33nm,0.9s,mb5.3
GNI Garni 70.74 307 *e*P **P 13 51 33.6 +1.9**
GNI Garni 70.74 307 *e*P **P 13 51 32.0 +0.3**
comp=Z,75nm,1.4s,mb5.4
HVU Hansel Valley 70.76 51 *e*P **P 13 51 32.2 +0.4**
WUWY Wally Ulrich 70.77 48 *e*P **P 13 51 32.5 +0.7**
KSWY Kelly School 70.78 48 *e*P **P 13 51 32.8 +0.9**
REDW Red Top Meadow 70.82 49 *e*P **P 13 51 32.6 +0.5**
AHID Auburn Hatcher 71.07 49 *e*P **P 13 51 33.6 0.0**
SOC Sochi 71.38 312 *i* P **P 13 51 34.5 -1.1**
SOC *e* 13 51 52.7
SOC *e* 13 54 15.2
SOC *e*S S 14 00 48.2 -2.6
SOC *e* 14 01 32.1
SOC *e*SS SS 14 05 26.6 -0.8
SOC *e*SSS SSS 14 08 35.6 +1.0
SOC pmax pmax
comp=Z,70nm,1.6s,mb5.3
SOC pmax pmax
comp=N,21nm,1.2s
SOC pmax pmax
comp=E,45nm,0.8s
SOC MLR MLR
comp=E,3μm,27.0s,MS5.5
SOC MLR MLR
comp=Z,2μm,27.0s,MS5.3
SOC MLR MLR
comp=N,2μm,23.0s,MS5.5
HWUT Hardware Ranch 71.56 50 *e*P **P 13 51 37.3 +0.6**
AKASG Malin Array Be 71.73 323 P **P 13 51 36.4 -1.1**
comp=N,21nm,0.5s,mb5.3,baz=39,slow=5.9,SNR=106
SUW Suwalki 71.84 328 *e*P **P 13 51 37.1 -1.0**
PDAR Pinedale Array 71.93 48 P **P 13 51 39.0 +0.2**
comp=N,14nm,0.9s,mb4.9,baz=270,slow=3.0,SNR=75
PDAR pP pP 13 51 47.6 +1.3
comp=N,9.4nm,0.8s,baz=284,slow=0.9,SNR=14
TCUT Toone Canyon 71.97 51 *e*P **P 13 51 39.5 +0.4**
TCUT *ep*P pP 13 51 48.5 +1.9
CTU Camp Tracy 72.05 51 *e*P **P 13 51 39.3 -0.3**
JLU Jordanelle 72.28 51 *e*P **P 13 51 41.6 +0.6**
JLU *ep*P pP 13 51 49.6 +1.2
NLU North Lily Min 72.34 52 P **P 13 51 41.8 +0.4**
MWC Mount Wilson 72.37 60 *e*P **P 13 51 41.0 -0.6**
DAU Daniels Canyon 72.52 51 *e*P **P 13 51 42.4 +0.1**
MPU Maple Canyon 72.56 52 *e*P **P 13 51 43.3 +0.8**
MVU Marysvale 73.21 53 *e*P **P 13 51 47.1 +0.6**
comp=N,7.0nm,0.9s,mb4.6
MSU Marysvale 73.23 53 *e*P **P 13 51 47.3 +0.8**
SIM Simferopol' 73.43 316 *e*P **P 13 51 46.0 -1.5**
SIM pmax pmax
comp=Z,54nm,2.8s,mb5.0
ULM Lac du Bonnet 73.47 36 P **P 13 51 47.0 -0.7**
baz=317,slow=7.9
ULM Lac du Bonnet 73.47 36 *e*P **P 13 51 46.6 -1.1**
comp=Z,6.5nm,0.8s,mb4.6
NEN Nelson 73.48 57 *e*P **P 13 51 48.2 +0.1**
LDFC Landfair 73.68 57 *e*P **P 13 51 49.8 +0.5**
PFO Pinyon Flat Ob 73.78 59 *e*P **P 13 51 49.8 -0.1**
comp=Z,6.1nm,0.9s,mb4.5
SRU San Rafael 73.80 52 *e*P **P 13 51 50.0 +0.2**
RSSD Black Hills 73.97 44 P **P 13 51 50.9 +0.2**
RSSD P 13 54 45.4
RSSD P 13 54 53.9
RSSD S S 14 01 19.9 -0.2
RSSD S x 14 04 14.2
RSSD sS 14 04 34.5
RSSD Black Hills 73.97 44 *e*P **P 13 51 50.1 -0.6**
comp=Z,8.7nm,0.8s,mb4.7
BSD Bornholm Skovb 73.99 333⇑ *i*P **P 13 51 49.8 -0.8**
comp=Z,38nm,0.7s,mb5.4
BSD Bornholm Skovb 73.99 333⇑ *e*P **P 13 51 49.8 -0.8**
BSD pmax pmax
comp=Z,38nm,0.7s,mb5.4
BSD Bornholm Skovb 73.99 333⇑ *e*P **P 13 51 49.8 -0.8**
comp=Z,38nm,0.7s,mb5.4
STKA Stephens Creek 74.01 183 *e*P **P 13 51 51.9 +0.7**
comp=Z,3.9nm,0.8s,mb4.4
STKA *i* pP pP 13 52 05.1 +6.4
STKA Stephens Creek 74.01 183 P **P 13 51 51.6 +0.5**
comp=Z,2.8nm,0.7s,mb4.3,baz=326,slow=9.7,SNR=5.8
STKA pP pP 13 51 58.9 +0.2
comp=Z,8.4nm,1.1s,baz=7.3,slow=7.0,SNR=5.6
STKA sP sP 13 52 04.1 +2.9
comp=Z,9.6nm,0.9s,baz=356,slow=6.2,SNR=8.8
WAR Warsaw 74.03 328 *e*P **P 13 51 51.4 +0.5**
BAR Barrett 74.25 60 *e*P **P 13 51 52.4 -0.2**
FORT Forrest 74.51 195 *e*P **P 13 51 59.5 +5.4**
comp=Z,30nm,0.7s,mb5.3
MUD Monsted U'grnd 74.70 336 *i* P **P 13 51 54.5 -0.2**
comp=Z,18nm,0.7s,mb5.1
MUD Monsted U'grnd 74.70 336 *e*P **P 13 51 54.5 -0.2**
MUD pmax pmax
comp=Z,18nm,0.7s,mb5.1
MUD Monsted U'grnd 74.70 336 *e*P **P 13 51 54.5 -0.2**
comp=Z,18nm,0.7s,mb5.1
PV10 Paradox Valley 75.15 51 *e*P **P 13 51 58.4 +0.8**
PV10 *ep*P pP 13 52 06.7 +1.6
KWP Kalwaria 75.35 325 *e*P **P 13 51 58.8 +0.3**
PV01 Paradox Valley 75.59 51 *e*P **P 13 52 00.2 0.0**
WUAZ Wupatki 75.69 55 *e*P **P 13 52 01.6 +0.8**
comp=Z,31nm,1.1s,mb5.2
RW3 Ridgway 76.02 51 *e*P **P 13 52 03.0 +0.4**
OJC Ojcow 76.09 327⇑ *i*P **P 13 52 02.8 +0.1**
ISCO Idaho Springs 76.12 48 *e*P **P 13 52 03.8 +0.7**
comp=Z,26nm,1.5s,mb4.9
CFR Carcaliu 76.24 320⇓ *i*P **P 13 52 03.6 -0.1**
CFR Carcaliu 76.24 320⇓ *i*P **P 13 52 03.6 0.0**
VRI Vrincioaia 76.40 321⇓ *i*P **P 13 52 05.5 +1.0**
VRI Vrincioaia 76.40 321⇑ *i*P **P 13 52 06.3 +1.7**
CRVS Cervenica-Dubn 76.43 326 *e*P **P 13 52 05.2 +0.5**
BSEG Bad Segeberg 76.48 334 *e*P **P 13 52 05.1 +0.3**
BSEG pmax pmax
comp=Z,54nm,1.1s,mb5.4
NIE Niedzica 76.50 327 *e*P **P 13 52 05.4 +0.3**
HARR Harsova 76.69 319⇓ *i*P **P 13 52 06.6 +0.4**
HARR Harsova 76.69 319⇓ *i*P **P 13 52 06.6 +0.4**
KSP Ksiaz 76.95 330 *e*P **P 13 52 07.6 +0.1**
KSP Ksiaz 76.95 330⇑ *e*P **P 13 52 07.7 +0.2**
KSP *e*PP pP 13 52 16.8 +1.7
ISR Istrita 77.04 320⇓ *i*P **P 13 52 09.4 +1.3**
MLR Muntele Rosu 77.04 321⇓ *i*P **P 13 52 08.8 +0.6**
MLR Muntele Rosu 77.04 321⇓ *i*P **P 13 52 08.8 +0.6**
OKC Ostrava-Krasne 77.04 328⇑ *i*P **P 13 52 08.2 +0.1**
OKC *ep*P pP 13 52 18.2 +2.6
HASS Wahat al Ahsa' 77.19 292 P **P 13 52 08.7 -0.7**
UPC Upice 77.33 329⇑ *i*P **P 13 52 09.8 +0.2**
UPC *ep*P pP 13 52 19.3 +2.1
MORC Moravsky Berou 77.33 328 *e*P **P 13 52 09.5 -0.2**
comp=Z,64nm,1.2s,mb5.4
BRTR Keskin Array B 77.34 313 P **P 13 52 10.2 +0.2**
comp=Z,7.2nm,0.7s,mb4.7,baz=72,slow=3.5,SNR=33
BRTR sP sP 13 52 21.8 +1.7
comp=Z,8.2nm,0.8s,baz=69,slow=2.6,SNR=10
DPC Dobruska-Polom 77.34 329⇑ *i*P **P 13 52 10.2 +0.5**
DPC *ep*P pP 13 52 21.7 +4.5
SDCO Great Sand Dun 77.61 50 *e*P **P 13 52 12.0 +0.5**
comp=Z,3.1nm,0.8s,mb4.3
SDCO *ep*P pP 13 52 20.4 +1.4
CLL Collm 77.77 332⇑ P **P 13 52 11.6 -0.4**
comp=Z,logA/T=1.8,mb5.5
CLL *i* *PP pP 13 52 20.0 +0.4
CLL *i* *SP sP 13 52 25.0 +2.9
CLL Collm 77.77 332 *i*P **P 13 52 11.6 -0.4**
CLL *i* *PP pP 13 52 20.0 +0.4
CLL pmax pmax
comp=Z,62nm,1.1s,mb5.5
CLL Collm 77.77 332⇑ *i*P **P 13 52 11.6 -0.4**
comp=Z,62nm,1.1s,mb5.5
CLL *i* pP pP 13 52 20.0 +0.4
BRG Berggiesshubel 77.79 331 *e*P **P 13 52 11.8 -0.4**
BRG pmax pmax
comp=Z,25nm,1.2s,mb5.0
BRG Berggiesshubel 77.79 331 *e*P **P 13 52 11.8 -0.4**
comp=Z,25nm,1.1s,mb5.0
KLBR Kellerberrin 77.82 204 *e*P **P 13 52 13.1 +0.4**
comp=Z,16nm,1.1s,mb4.9
VYHS Vyhne 77.83 327 *e*P **P 13 52 13.2 +0.8**
VYHS *e* pP 13 52 21.6 +1.6
PVCC Panska Ves 77.85 330⇑ *i*P **P 13 52 12.6 +0.1**
PSZ Piszkesteto 77.85 326 *i* Pc 13 52 13.3
PSZ *i* PP PP 13 55 07.8 -2.6
PSZ Piszkesteto 77.85 326 *e*P **P 13 52 12.5 0.0**
comp=Z,78nm,1.5s,mb5.4
TUC Tucson 78.21 57 *e*P **P 13 52 15.0 +0.1**
comp=Z,2.5nm,0.8s,mb4.2
PRU Pruhonice 78.30 330⇑ *i*P **P 13 52 15.2 +0.2**
comp=Z,52nm,1.1s,mb5.4
PRU *ep*P pP 13 52 26.1 +3.6
PRU Pruhonice 78.30 330⇑ *i*P **P 13 52 15.2 +0.2**
PRU *e*PP pP 13 52 26.1 +3.6
PRU pmax pmax
comp=Z,52nm,1.1s,mb5.4
ZST Bratislava 78.77 327 *e*P **P 13 52 19.0 +1.4**
MOX Moxa 78.81 332 *i* P **P 13 52 17.5 -0.3**
comp=Z,logA/T=1.5,mb5.2
MOX Moxa 78.81 332 *e*P **P 13 52 17.5 -0.3**
MOX pmax pmax
comp=Z,46nm,1.6s,mb5.2
MOX Moxa 78.81 332 *e*P **P 13 52 17.5 -0.3**
comp=Z,46nm,1.6s,mb5.2
ESK Eskdalemuir 78.96 342 *e*P **P 13 52 17.3 -1.2**
comp=Z,31nm,1.2s,mb5.1
ANMO Albuquerque 79.01 53 *e*P **P 13 52 19.8 +0.6**
comp=Z,15nm,1.1s,mb4.8
ANMO *ep*P pP 13 52 28.7 +1.9
KHC Kasperske Hory 79.36 330⇑ *i*P **P 13 52 21.1 +0.3**
KHC *ep*P pP 13 52 31.9 +3.5
SCHQ Schefferville 79.36 18 P **P 13 52 20.8 +0.1**
baz=332,slow=10
SCHQ Schefferville 79.36 18 *e*P **P 13 52 19.8 -0.8**
comp=Z,33nm,1.1s,mb5.2
SOP Sopron 79.40 327 *e*P **P 13 52 22.0 +1.0**
SOP *i* PP PP 13 55 16.6 -6.3
GERES GERESS Array B 79.55 330 P **P 13 52 21.9 0.0**
comp=Z,7.3nm,0.9s,mb4.6,baz=34,slow=4.8,SNR=22
GERES GERESS Array B 79.55 330 P **P 13 52 21.9 +0.1**
GERES pmax pmax
comp=Z,7.0nm,0.9s
WET Wettzell 79.61 330 *e*P **P 13 52 22.7 +0.6**
WET pmax pmax
comp=Z,62nm,1.4s,mb5.3
GRF Grafenberg Arr 79.75 332 *e*P **P 13 52 23.2 +0.3**
GRF pmax pmax
comp=Z,136nm,1.6s,mb5.6
MOA Molln 80.16 329⇑ *i*P **P 13 52 25.4 +0.3**
comp=Z,314nm,3.7s
ARSA Arzberg 80.16 328⇑ *i*P **P 13 52 25.7 +0.6**
comp=Z,99nm,2.0s,mb5.4
HGN Heimansgroeve 80.59 335⇑ *e*P **P 13 52 26.9 -0.4**
comp=Z,16nm,1.9s,mb4.6
HGN ⇑ *e*P 13 55 21.6
comp=Z,39nm,1.2s
TOD Tromm 80.65 333 *e*P **P 13 52 27.6 -0.1**
DIVS Divcibare 80.82 323⇓ *i*P **P 13 52 28.7 0.0**
CSS Prodhromos 80.90 309 *e*P **P 13 52 29.0 -0.3**
HILS Ha'il 81.01 299 P **P 13 52 30.9 +0.9**

FUR	**Furstenfeldbru**	**81.01**	**331**	*e*P		**P**	**13 52 30.6**	**+1.0**
FUR				pmax		pmax			
	comp=Z,70nm,1.1s,mb5.5								
MZLS	**Mizel**	**81.02**	**294**	P		**P**	**13 52 30.7**	**+0.6**
KBA	**Koelnbreinsper**	**81.15**	**329**⇑	*i*P		**P**	**13 52 30.8**	**+0.5**
	comp=Z,100nm,1.6s,mb5.5								
RUP	**Ruppelstein**	**81.15**	**334**	*e*P		**P**	**13 52 30.1**	**-0.2**
GIVF	**Givet**	**81.51**	**335**	*e*P		**P**	**13 52 31.6**	**-0.6**
HMDT	**Nahal Hemdat**	**81.54**	**306**	P		**P**	**13 52 33.7**	**+1.0**
WATA	**Walderalm**	**81.60**	**330**⇓	*i*P		**P**	**13 52 33.3**	**+0.6**
	comp=Z,24nm,1.1s,mb5.0								
OFRI	**'Ofer**	**81.60**	**307**	P		**P**	**13 52 33.7**	**+0.7**
WTTA	**Wattenberg**	**81.64**	**330**⇑	*i*P		**P**	**13 52 33.6**	**+0.7**
	comp=Z,109nm,2.0s,mb5.4								
PTCC	**Patocco-Chiusa**	**81.70**	**329**	*e*P		**P**	**13 52 32.4**	**-0.9**
BAIF	**Baives**	**81.74**	**336**	*e*P		**P**	**13 52 33.0**	**-0.3**
MOTA	**Moosalm**	**81.77**	**330**⇑	*i*P		**P**	**13 52 34.2**	**+0.7**
	comp=Z,38nm,1.1s,mb5.2								
VAY	**Valandovo**	**81.81**	**320**⇑	*i*P		**P**	**13 52 34.4**	**+0.5**
SQTA	**Sankt Quirin**	**81.83**	**330**⇑	*i*P		**P**	**13 52 34.4**	**+0.5**
	comp=Z,41nm,1.3s,mb5.2								
SKO	**Skopje**	**81.83**	**321**⇑	*i*P		**P**	**13 52 35.0**	**+1.0**
	comp=Z,0.1nm,1.0s								
SKO				*i*			13 52 48.7		
SLTI	**Sal'it**	**81.84**	**306**	P		**P**	**13 52 35.1**	**+0.8**
STR	**Strasbourg**	**81.88**	**333**	*e*P		**P**	**13 52 30.4**	**-3.7**
BFO	**Black Forest**	**81.91**	**332**	*e*P		**P**	**13 52 34.1**	**-0.2**
BFO				pmax		pmax			
	comp=Z,62nm,1.6s,mb5.3								
MNTX	**Cornudas Mount**	**81.93**	**54**	*e*P		**P**	**13 52 35.2**	**+0.4**
SPAK	**Spaichingen**	**81.95**	**332**	*e*P		**P**	**13 52 34.8**	**+0.3**
MKRJ	**Makawir**	**81.97**	**306**	P		**P**	**13 52 36.1**	**+1.2**
WLS	**Welschbruch**	**82.17**	**333**	*e*P		**P**	**13 52 35.9**	**+0.3**
CDF	**Champ du Feu**	**82.19**	**333**	*e*P		**P**	**13 52 35.5**	**-0.2**
	comp=Z,85nm,1.3s,mb5.2								
DAVA	**Damuels**	**82.26**	**331**⇑	*i*P		**P**	**13 52 36.3**	**+0.2**
	comp=Z,60nm,1.4s,mb5.3								
LIBD	**Limburg**	**82.31**	**333**	*e*P		**P**	**13 52 36.5**	**+0.1**
ECH	**Echery**	**82.40**	**333**	*e*P		**P**	**13 52 36.9**	**+0.1**
AFFS	**'Afif**	**82.57**	**296**	P		**P**	**13 52 39.0**	**+0.8**
MOF	**Molkenrain**	**82.73**	**333**	*e*P		**P**	**13 52 38.4**	**-0.1**
BRMO	**Bormio**	**82.77**	**330**	*e*P		**P**	**13 52 39.6**	**+0.9**
MEZF	**Maizieres J'vi**	**82.84**	**334**	*e*P		**P**	**13 52 39.4**	**+0.3**
HINF	**Hinteralfeld**	**82.85**	**333**	*e*P		**P**	**13 52 38.5**	**-0.7**
HAU	**Haudompre**	**82.86**	**333**	*e*P		**P**	**13 52 38.8**	**-0.4**
BBS	**Basel-Blauen**	**82.94**	**333**	*e*P		**P**	**13 52 39.7**	**+0.1**
ZFRI	**Zfri**	**82.96**	**305**	P		**P**	**13 52 41.1**	**+1.0**
PRNI	**Paran**	**83.20**	**305**	P		**P**	**13 52 42.5**	**+1.1**
PRNI	**Paran**	**83.20**	**305**⇑	P		**P**	**13 52 42.5**	**+1.1**
LOMF	**Lomont**	**83.27**	**333**	*e*P		**P**	**13 52 41.5**	**+0.2**
WMOK	**Wichita Mounta**	**83.54**	**48**	*e*P		**P**	**13 52 43.5**	**+0.5**
	comp=Z,14nm,1.2s,mb5.0								
WMOK				*e*pP		pP	13 52 51.8	+1.2	
KMTI	**Karmit**	**83.55**	**305**	P		**P**	**13 52 43.8**	**+0.7**
KMTI	**Karmit**	**83.55**	**305**⇑	P		**P**	**13 52 43.8**	**+0.7**
AQBJ	**Aqaba**	**83.62**	**305**	P		**P**	**13 52 44.5**	**+1.0**
MBH	**Mount Berech**	**83.66**	**305**	P		**P**	**13 52 44.7**	**+1.0**
JMQS	**Jabal Moqyreh**	**83.71**	**304**	P		**P**	**13 52 44.9**	**+0.9**
EIL	**Elat**	**83.72**	**305**	P		**P**	**13 52 45.0**	**+1.0**
EIL	**Elat**	**83.72**	**305**⇑	P		**P**	**13 52 45.0**	**+1.0**
KBRS	**Khaybar**	**83.74**	**299**	P		**P**	**13 52 45.4**	**+1.2**
TBKS	**Tabuk**	**83.76**	**303**	P		**P**	**13 52 45.4**	**+1.2**
VAI	**Varese**	**83.87**	**331**	*e*P		**P**	**13 52 44.2**	**-0.2**
ALWS	**Ilw as Safayha**	**83.91**	**304**	P		**P**	**13 52 46.1**	**+1.1**
JMOS	**Jabal al Moall**	**83.98**	**304**	P		**P**	**13 52 46.3**	**+0.9**
MCGN	**Macugnaga**	**84.07**	**331**	*e*P		**P**	**13 52 46.1**	**+0.8**
CABF	**La Chapelle**	**84.16**	**333**	*e*P		**P**	**13 52 46.0**	**+0.2**
HAQS	**Haql**	**84.17**	**304**	P		**P**	**13 52 47.1**	**+0.8**
FSSB	**Fossombrone**	**84.19**	**327**	*e*P		**P**	**13 52 46.5**	**+0.4**
FLN	**La Foliniere**	**84.26**	**338**	*e*P		**P**	**13 52 46.7**	**+0.4**
	comp=Z,57nm,1.1s,mb5.3								
LOR	**Lormes**	**84.31**	**335**	*e*P		**P**	**13 52 46.5**	**0.0**
	comp=Z,61nm,1.1s,mb5.4								
LDF	**La Druitiere**	**84.32**	**338**	*e*P		**P**	**13 52 46.9**	**+0.4**
	comp=Z,17nm,0.7s,mb5.0								
SFI	**Santa Sofia**	**84.38**	**328**	*e*P		**P**	**13 52 48.3**	**+1.3**
SEI	**Scarperia**	**84.44**	**328**	*e*P		**P**	**13 52 49.2**	**+1.9**
VMG	**Vicchio**	**84.45**	**328**	*e*P		**P**	**13 52 49.1**	**+1.8**
PGD	**Poggio Sodo**	**84.45**	**328**	*e*P		**P**	**13 52 48.9**	**+1.5**
SNTG	**Esanatoglia**	**84.49**	**327**	*e*P		**P**	**13 52 47.8**	**+0.3**
GSCL	**Gusciola**	**84.49**	**329**	*e*P		**P**	**13 52 48.6**	**+1.1**
ERBM	**Eremo**	**84.50**	**329**	*e*P		**P**	**13 52 47.4**	**-0.1**
BDAS	**Al Bad'**	**84.51**	**304**	P		**P**	**13 52 48.7**	**+0.7**
SSF	**Saint Saulge**	**84.61**	**335**	*e*P		**P**	**13 52 47.9**	**-0.1**
	comp=Z,30nm,1.1s,mb5.0								
TXAR	**Lajitas Array**	**84.66**	**55**	P		**P**	**13 52 49.7**	**+1.0**
	comp=Z,2.2nm,0.4s,mb4.6,baz=288,slow=4.0,SNR=9.4								
TXAR				pP		pP	13 52 58.2	+1.9	
	comp=Z,6.8nm,0.7s,baz=225,slow=1.8,SNR=5.3								
HYF	**Humbligny**	**84.69**	**335**	*e*P		**P**	**13 52 48.7**	**+0.3**
GRR	**Gorron**	**84.71**	**338**	*e*P		**P**	**13 52 48.7**	**+0.2**
DBAS	**Duba**	**84.84**	**302**	P		**P**	**13 52 50.2**	**+0.5**
SMF	**Signal de Mont**	**84.87**	**334**	*e*P		**P**	**13 52 49.5**	**+0.2**
	comp=Z,64nm,1.0s,mb5.4								
LPL	**La Plagne**	**84.89**	**332**	*e*P		**P**	**13 52 50.2**	**+0.7**
	comp=Z,46nm,1.0s,mb5.3								
AVF	**Avril sur Loir**	**84.89**	**335**	*e*P		**P**	**13 52 49.7**	**+0.2**
	comp=Z,63nm,1.0s,mb5.4								
LPG	**La Plagne**	**84.90**	**332**	*e*P		**P**	**13 52 50.4**	**+0.9**
	comp=Z,35nm,0.7s,mb5.3								
CCM	**Cathedral Cave**	**84.93**	**41**	*e*P		**P**	**13 52 49.8**	**-0.1**
	comp=Z,26nm,0.9s,mb5.4								
KRIS	**Kristallenia**	**85.06**	**314**	*e*P		**P**	**13 52 50.2**	**-0.3**
	comp=Z,131nm,1.0s,mb6.0								
TATS	**Tathlith**	**85.23**	**292**	P		**P**	**13 52 53.2**	**+1.4**
BGF	**Bois d'Agland**	**85.26**	**335**	*e*P		**P**	**13 52 51.8**	**+0.5**
SGMF	**Saint Gilles**	**85.29**	**339**	*e*P		**P**	**13 52 51.8**	**+0.4**
IDI	**Anoyia**	**85.30**	**315**	P		**P**	**13 52 51.2**	**-0.6**
	comp=Z,24nm,0.5s,mb5.6,baz=28,slow=10,SNR=20								
CPI2	**Carpinone**	**85.31**	**325**	*e*P		**P**	**13 52 52.6**	**+1.0**
BNI	**Bardonecchia**	**85.31**	**332**	*e*P		**P**	**13 52 51.5**	**-0.2**
MNS	**Montasola**	**85.32**	**327**	*e*P		**P**	**13 52 50.2**	**-1.5**
FVM	**French Village**	**85.38**	**41**	*e*P		**P**	**13 52 51.8**	**-0.3**
	comp=Z,8.0nm,0.8ns,mb4.9								
ROSF	**Rostrenen**	**85.41**	**339**	*e*P		**P**	**13 52 52.6**	**+0.6**
	comp=Z,138nm,1.1s,mb5.7								
MBDF	**Montbardon**	**85.56**	**332**	*e*P		**P**	**13 52 52.9**	**0.0**
	comp=Z,15nm,0.6s,mb5.1								
AGO	**Saint Agoulin**	**85.62**	**334**	*e*P		**P**	**13 52 53.9**	**+0.8**
TCF	**Toulx Ste Croi**	**85.70**	**335**	*e*P		**P**	**13 52 53.8**	**+0.3**
	comp=Z,116nm,1.6s,mb5.6								
ORIF	**Oris-en-Rattie**	**85.71**	**332**	*e*P		**P**	**13 52 54.2**	**+0.6**
	comp=Z,51nm,1.0s,mb5.4								
QUIF	**Quistinic**	**85.77**	**339**	*e*P		**P**	**13 52 53.5**	**-0.3**
	comp=Z,46nm,1.0s,mb5.3								
PYM	**Petit Puy Mans**	**85.93**	**334**	*e*P		**P**	**13 52 55.5**	**+0.8**
SBF	**Sospel**	**86.08**	**331**	*e*P		**P**	**13 52 55.0**	**-0.4**
	comp=Z,126nm,1.0s,mb5.8								
JCT	**Junction City**	**86.11**	**52**	*e*P		**P**	**13 52 56.3**	**+0.4**
	comp=Z,5.8nm,0.6s,mb5.0								
JCT				*e*pP		pP	13 53 04.3	+0.7	
MFF	**Saint Martin d**	**86.13**	**337**	*e*P		**P**	**13 52 56.1**	**+0.5**
	comp=Z,59nm,0.9s,mb5.5								
SIUC	**Southern Illin**	**86.17**	**40**	*e*P		**P**	**13 52 56.4**	**+0.3**
	comp=Z,64nm,0.9s,mb5.8								
VIVF	**Saint-Julien-l**	**86.17**	**333**	*e*P		**P**	**13 52 56.5**	**+0.6**
	comp=Z,59nm,1.0s,mb5.5								
BLJS	**Baljurashi**	**86.28**	**293**	P		**P**	**13 52 58.5**	**+1.5**
MIAR	**Mount Ida**	**86.48**	**45**	*e*P		**P**	**13 52 58.2**	**+0.6**
	comp=Z,30nm,0.9s,mb5.5								
MIAR				*e*pP		pP	13 53 07.3	+2.0	
FRF	**La Foret Royal**	**86.62**	**331**	*e*P		**P**	**13 52 58.1**	**0.0**
	comp=Z,51nm,0.9s,mb5.5								
SMRF	**Simiane la Rot**	**86.64**	**332**	*e*P		**P**	**13 52 58.9**	**+0.7**
RJF	**Les Rejaudoux**	**86.80**	**335**	*e*P		**P**	**13 52 59.5**	**+0.6**
	comp=Z,123nm,1.3s,mb5.7								
LMR	**La Mourre**	**86.87**	**331**	*e*P		**P**	**13 52 59.4**	**+0.1**
	comp=Z,87nm,1.0s,mb5.7								
ALLY	**Alegheny Colle**	**86.90**	**32**	*e*P		**P**	**13 52 59.4**	**-0.1**
CAF	**Calviac**	**86.97**	**335**	*e*P		**P**	**13 53 00.9**	**+1.1**
	comp=Z,176nm,1.2s,mb5.9								
WCI	**Wyandotte Cave**	**87.13**	**38**	*e*P		**P**	**13 53 00.7**	**0.0**
WCI				*e*pP		pP	13 53 09.3	+0.9	
LASF	**Ste Croix**	**87.14**	**333**	*e*P		**P**	**13 53 01.5**	**+0.9**
	comp=Z,83nm,1.2s,mb5.5								
GLAT	**Glass**	**87.29**	**41**	P		**P**	**13 53 01.6**	**0.0**
LFF	**La Frestale**	**87.37**	**336**	*e*P		**P**	**13 53 02.5**	**+0.8**
	comp=Z,70nm,0.9s,mb5.6								
ACCN	**Adirondack Com**	**87.77**	**27**	*e*P		**P**	**13 53 03.1**	**-0.6**
ACCN				*e*pP		pP	13 53 12.5	+1.2	
WVT	**Waverly**	**88.11**	**40**	*e*P		**P**	**13 53 05.4**	**-0.1**
	comp=Z,12nm,0.8s,mb5.2								
WVT				*e*pP		pP	13 53 13.4	+0.3	
MTLF	**Montolieu**	**88.33**	**334**	*e*P		**P**	**13 53 07.3**	**+0.9**
OXF	**Oxford**	**88.63**	**42**	*e*P		**P**	**13 53 08.0**	**-0.1**
	comp=Z,12nm,0.7s,mb5.3								
OXF				*e*pP		pP	13 53 16.5	+0.8	
SSPA	**Standing Stone**	**88.64**	**31**	*e*P		**P**	**13 53 07.6**	**-0.3**
	comp=Z,10nm,0.8s,mb5.2								
MCWV	**Mont Chateau**	**88.71**	**33**	*e*P		**P**	**13 53 08.8**	**+0.6**
	comp=Z,22nm,0.9s,mb5.5								
HKT	**Hockley**	**88.77**	**49**	P		**P**	**13 53 10.3**	**+1.5**
HKT				*e*pP		pP	13 53 18.9	+2.4	
PLAL	**Pickwick Lake**	**88.91**	**41**	*e*P		**P**	**13 53 08.6**	**-0.7**
	comp=Z,3.4nm,0.8s,mb4.7								
PLAL				*e*pP		pP	13 53 18.4	+1.4	
EPF	**Esparros**	**89.21**	**335**	*e*P		**P**	**13 53 10.8**	**+0.2**
ETSF	**Etsaut**	**89.61**	**335**	*e*P		**P**	**13 53 12.7**	**+0.2**
	comp=Z,29nm,0.8s,mb5.3								
CPCT	**Cooper Cave**	**90.22**	**38**	*e*P		**P**	**13 53 15.2**	**-0.2**
ELN	**Prospectdale**	**90.40**	**35**	*e*P		**P**	**13 53 15.8**	**-0.5**
ELN				*e*pP		pP	13 53 24.8	+0.9	
ESDC	**Sonseca Array**	**93.59**	**337**	P		**P**	**13 53 30.9**	**0.0**
	comp=Z,1.4nm,0.5s,mb4.6,baz=36,slow=2.8,SNR=7.3								
DBIC	**Dimbokro**	**123.98**	**323**	PKP	PKPdf		13 59 13.4	-3.6	
	comp=Z,2.0nm,0.7s,baz=25,slow=3.9,SNR=7.4								
DBIC	**Dimbokro**	**123.98**	**323**	PKIKP	PKPdf		13 59 13.4	-3.7	
DBIC				pmax	pmax				
	comp=Z,2.0nm,0.7s								
TIC	**Toumodi**	**124.08**	**323**	*e*PKP1	PKPdf		13 59 12.8	-4.5	
	comp=Z,89nm,1.1s								
KIC	**Kosan Boka**	**124.20**	**323**	*e*PKP1	PKPdf		13 59 13.3	-4.2	
	comp=Z,56nm,1.0s								
LIC	**Lamto**	**124.45**	**323**	*e*PKP1	PKPdf		13 59 14.0	-4.0	
	comp=Z,55nm,1.5s								
MAW	**Mawson**	**125.61**	**208**	PKP	PKPdf		13 59 16.2	-2.6	
	comp=Z,3.5nm,0.8s,baz=270,slow=1.0,SNR=5.6								
MAW	**Mawson**	**125.61**	**208**	PKIKP	PKPdf		13 59 16.2	-2.6	
MAW				pmax	pmax				
	comp=Z,4.0nm,0.8s								
SYO	**Syowa Base**	**134.28**	**209**⇑	Pdiff	Pdif		13 56 37.2	+7.0	
SYO	**Syowa Base**	**134.28**	**209**⇑	*e*Pdif	Pdif		13 56 37.2	+7.0	
LPAZ	**La Paz**	**141.47**	**58**	PKP	PKPdf		13 59 45.8	-3.9	
	comp=Z,3.2nm,0.8s,baz=38,slow=8.5,SNR=8.4								
LPAZ	**La Paz**	**141.47**	**58**	PKIKP	PKPdf		13 59 45.8	-3.9	
LPAZ				pmax	pmax				
	comp=Z,3.0nm,0.8s								
LPAZ	**La Paz**	**141.47**	**58**	*e*PKP	PKPdf		13 59 45.9	-3.7	
LVC	**Limon Verde**	**145.51**	**66**	*e*PKP	PKPdf		13 59 54.9	-1.7	
SNAA	**Sanae**	**146.73**	**198**	*e*PKP	PKPdf		13 59 54.0	-3.1	
BDFB	**Brasilia**	**151.03**	**27**	PKPbc	PKPdf		14 00 09.0	+3.5	
	comp=Z,28nm,0.8s,baz=294,slow=1.7,SNR=27								
BDFB				PKPab	PKPab		14 00 15.6	-1.1	
	comp=Z,16nm,0.9s,baz=323,slow=3.0,SNR=8.2								
BDFB	**Brasilia**	**151.03**	**27**	PKIKP	PKPdf		14 00 09.0	+3.5	
BDFB							14 00 15.6		
BDFB				pmax	pmax				
	comp=Z,28nm,0.8s								
BDFB				pmax	pmax				
	comp=Z,16nm,0.9s								
MDZ	**Mendoza**	**151.66**	**82**	*e*P	PKPdf		14 00 20.1	+14	
PLCA	**Paso Flores**	**153.41**	**98**	PKPbc	PKPdf		14 00 13.6	+5.3	
	baz=240,slow=4.4								

NIED ***06*** *13:43:00,42.60N×145.00E,h32km,Mw5.5 Best double couple: M₀1.87×10¹⁷ NP1:φs21°,δ65°,λ71°. NP2:φs241°, δ31°,λ125°.*

BJI ***06*** *13:43:10.8, 42.49N×144.93E, h24km, mB5.8, mb5.8, Ms5.3, Msz5.2*

NEIC ***06*** *13:43:12.9±0.1, 42.53N×145.02E, mb5.6/160, MS5.1/95, MW5.5, Error ellipse: s-maj=3.6km s-min=2.2km az=163.0, Moment Tensor Solution. s18 Moment tensor: Scale 10¹⁷ Nm; Mrr1.17; Mθθ-0.61; Mφφ-0.55; Mrθ0.71; Mθφ-0.76; Mφr1.41; Best double couple: M₀2×10¹⁷ NP1:φs243°,δ22°, λ121°. NP2:φs31°,δ71°,λ78°. Principal axes: T 1.98, Plg62°, Azm283°; N .08, Plg11°, Azm34°; P -2.06, Plg25°, Azm130°;*

NEIC Recorded [3 JMA] in parts of eastern and southern Hokkaido; [2 JMA] in south-central Hokkaido; [1 JMA] in central and western Hokkaido. Also recorded [1 JMA] in eastern Aomori Prefecture, Honshu.

SKHL ***06*** *13:43:12.4±1.0, 42.46N×145.09E, h41km±3km, mb6.1/3, mbh5.9/1, Ms5.5/4, msh6.7/1*

SKHL Felt (II-III) at Yushno-Kurilsk.

HRVD ***06*** *13:43:12.9±0.2, 42.45N×145.10E, h32km, MW5.5/70, Centroid moment Tensor Solution. LP body waves: s55,c104;Mantle waves: s70,c158; Half duration: 1±4 Moment tensor: Scale 10¹⁷Nm; Mrr1.02±.04; Mθθ-0.55±.03; Mφφ-0.47±.03; Mrθ0.88±.04; Mθφ-0.85±.02; Mφr1.43±.04; Best double couple: M₀2.07×10¹⁷ NP1: φs245°,δ20°,λ121°. NP2:φs33°,δ73°,λ80°. Principal axes: T 1.93, Plg61°, Azm288°; N .27, Plg10°, Azm36°; P -2.2, Plg27°, Azm131°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

CSEM ***06*** *13:43:13.6, 43.01N×145.32E, h33km, mb5.9*

IDC ***06*** *13:43:13.1±0.4, 42.54N×144.97E, h28km±2km, mb5.3/28, mb1 5.4/30,mb1mx5.4/31,ML5.6/2,MS4.8/12,Ms1 4.8/12, ms1mx4.6/26,Error ellipse: s-maj=14.0km s-min=7.8km az=136.0*

JMA ***06*** *13:43:13.1, 42.48N×145.12E, h43km±1km, M5.7 Broadband fault plane solution: P waves. NP1:φs248°, δ16°,λ121°. NP2:φs36°,δ76°,λ82°. Principal axes: T Plg58°, Azm295°; N Plg8°, Azm38°; P Plg31°, Azm133°;*

JMA Felt III J1.

MOS ***06*** *13:43:15.2±0.8, 42.72N×144.95E, h52km, mb6.0/38, MS5.5/34 Error ellipse: s-maj=10.6km s-min=5.0km az=107.7*

ISC 06 13:43:10.7±0.6, 42.43N±0.02×145.09E±0.02, h26km±4km, h29km±.8km: pP-P, n877, σ0s89/866, mb5.6/238, MS5.2/136, 159C-31D, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JAK	**Akkeshi**	**0.64**	**333**	⇓P		**Pb**		**13 43 25.2**	**+2.0**
JAK				*e*S		**Sb**		**13 43 34.5**	**+2.7**
JOB	**Onbets**	**1.04**	**298**	⇓P		**Pn**		**13 43 31.5**	**+1.7**
NEM2	**Nemuro 2**	**1.05**	**27**	⇓P		**Pn**		**13 43 30.9**	**+0.9**
NEM2				*e*S		**Sb**		**13 43 43.4**	**-0.2**
JNK	**Nakash**	**1.19**	**347**	⇓P		**Pn**		**13 43 32.6**	**+0.7**
JNK				S		**Sn**		**13 43 47.1**	**-0.2**
JCH	**Churui**	**1.29**	**279**	⇓P		**Pn**		**13 43 35.7**	**+2.4**
JCH				*e*S		**Sn**		**13 43 52.6**	**+2.7**
JAR	**Ashorobuto**	**1.30**	**312**	⇓P		**Pn**		**13 43 34.6**	**+1.1**
JEM	**Erimo**	**1.49**	**255**	P		**Pn**		**13 43 39.2**	**+3.0**
JRA	**Rausu**	**1.51**	**1**	P		**Pn**		**13 43 37.4**	**+0.9**
JRA				*e*S		**Sn**		**13 43 55.5**	**0.0**
YUK	**Yuzh-Kuril'sk**	**1.70**	**19**⇓	*i*P		**Pn**		**13 43 39.0**	**-0.3**
YUK					AMB	AMB		13 43 41.1	
	5μm,0.3s								
YUK					AMB	AMB		13 43 41.1	
	2μm,0.4s								
YUK					AMB	AMB		13 43 41.1	
	999μm,0.3s								
YUK					AMB	AMB		13 43 41.1	
	16μm,0.3s								
YUK					AMB	AMB		13 43 43.0	
	18μm,0.7s								
YUK				sP				13 43 55.5	
YUK				*i*	S	**Sn**		**13 43 58.9**	**-1.5**
YUK	**Yuzh-Kuril'sk**	**1.70**	**19**⇓	*i*P	N	**Pn**		**13 43 39.0**	**-0.3**
YUK				*i*	S	**Sn**		**13 43 58.9**	**-1.5**
YUK					pmax	pmax			
	comp=E,2μm,0.4s								
YUK					pmax	pmax			
	comp=Z,16μm,0.4s								
YUK					pmax	pmax			
	comp=N,5μm,0.3s								
ASAJ	**Asahikawa**	**2.48**	**314**		Pn	**Pn**		**13 43 52.6**	**+2.2**
	comp=N,2μm,0.3s,baz=159,slow=11,SNR=48								
ASAJ					Sn	**Sn**		**13 44 27.1**	**+6.9**
	comp=N,1μm,0.3s,baz=105,slow=34,SNR=9.2								
KUR	**Kuril'sk**	**3.45**	**35**	*e*P		**Pn**		**13 44 05.0**	**+0.8**
KUR					AMB	AMB		13 44 29.7	
	comp=N,3μm,0.8s								
KUR					AMB	AMB		13 44 29.7	
	comp=N,1μm,0.8s								
KUR					AMB	AMB		13 44 29.7	
	comp=N,5μm,0.8s								
KUR				*i*	S	**Sn**		**13 44 45.2**	**+0.5**
KUR					A			13 44 53.0	
	comp=N,17μm,0.9s								
KUR					A			13 44 53.0	
	comp=N,12μm,0.9s								
KUR					A			13 45 02.4	
	comp=N,98μm,2.0s								
KUR					A			13 45 02.4	
	comp=N,90μm,2.0s								
KUR					A			13 45 03.0	
	comp=N,40μm,2.0s								
KUR					A			13 45 03.0	
	comp=N,25μm,2.0s								
KUR	**Kuril'sk**	**3.45**	**35**		PN	**Pn**		**13 44 05.0**	**+0.8**
KUR				*i*	S	**Sn**		**13 44 45.2**	**+0.5**
KUR					pmax	pmax			
	comp=N,3μm,0.8s								
KUR					pmax	pmax			
	comp=E,1μm,0.8s								
KUR					pmax	pmax			
	comp=Z,5μm,0.8s								
KUR					smax				
	comp=N,17μm,0.9s								
KUR					smax				
	comp=E,12μm,0.9s								
KUR					smax				
	comp=N,98μm,2.0s								
KUR					smax				
	comp=E,90μm,2.0s								
YSS	**Yuzh-Sakhalins**	**4.82**	**341**⇓	*i*P		**Pn**		**13 44 24.0**	**+0.4**
YSS					AMB	AMB		13 44 25.8	
	comp=E,510nm,0.8s								
YSS					AMB	AMB		13 44 25.8	
	comp=E,620nm,1.0s								
YSS					AMB	AMB		13 44 25.8	
	comp=E,410nm,0.5s								
YSS					sP			13 44 41.2	
YSS					*e*S	**Sn**		**13 45 17.0**	**-2.4**
YSS					A			13 45 19.0	
	comp=E,540nm,0.8s								
YSS					A			13 45 19.0	
	comp=E,910nm,0.9s								
YSS					*e*LQ			13 45 40.0	
YSS					*e*LR	LR		13 46 03.0	
YSS					AMS	AMS		13 46 28.0	
	comp=E,20μm,17.0s								
YSS					AMS	AMS		13 46 28.0	
	comp=E,36μm,17.0s								
YSS					AMS	AMS		13 46 28.0	
	comp=E,44μm,15.0s								
YSS					AMS	AMS		13 46 28.0	
	comp=E,46μm,17.0s								
YSS					AMS	AMS		13 46 28.0	
	comp=E,42μm,15.0s								
YSS					AMS	AMS		13 46 28.0	
	comp=E,21μm,17.0s								
YSS	**Yuzh-Sakhalins**	**4.82**	**341**⇓	*i*PN		**Pn**		**13 44 24.0**	**+0.4**
YSS				*e*S		**Sn**		**13 45 17.0**	**-2.4**
YSS					pmax	pmax			
	comp=Z,620nm,1.0s								
YSS					pmax	pmax			
	comp=N,410nm,0.5s								
YSS					pmax	pmax			
	comp=E,510nm,0.8s								
YSS					smax				
	comp=N,540nm,0.8s								
YSS					smax				
	comp=E,910nm,0.9s								
YSS					MLR	MLR			
	comp=N,20μm,17.0s								
YSS					MLR	MLR			
	comp=Z,36μm,17.0s								
YSS					MLR	MLR			
	comp=E,44μm,15.0s								
YSS	**Yuzh-Sakhalins**	**4.82**	**341**	*e*P		**Pn**		**13 44 23.9**	**+0.3**
TEY	**Ternei**	**6.68**	**296**	*e*P		**Pn**		**13 44 51.0**	**+1.2**
TEY					AMS	AMS		13 47 36.0	
	comp=E,18μm,14.0s								
TEY					AMS	AMS		13 47 36.0	
	comp=E,11μm,15.0s								
TEY					AMS	AMS		13 47 36.0	
	comp=E

MDJ SCP 13 55 17.7
MDJ PCS 13 55 20.2
MDJ SCS ScS 13 58 53.5 +2.7
MDJ AMB AMB
comp=Z,246nm,1.0s
MDJ AMB AMB
comp=Z,971nm,6.3s
MDJ LR LR
comp=N,1μm,17.8s
MDJ LR LR
comp=E,6μm,16.1s
MDJ LR LR
comp=Z,8μm,17.8s
MDJ Mudanjiang 11.46 286⇑ *i*P **P 13 45 55.2 -0.7**
comp=Z,298nm,1.0s
KLR Kul'dur 11.52 311 *e*PN **P 13 45 56.0 -0.6**
KLR *e* 13 48 14.4
KLR MLR MLR
comp=E,17μm,15.0s
KLR MLR MLR
comp=Z,16μm,15.0s
PET Petropavlovsk 13.96 36 *e*P **P 13 46 40.6 +12**
PET pmax pmax
comp=Z,49nm,0.7s
PET MLR MLR
comp=Z,6μm,19.0s
KS15 Wonju Array Si 14.10 255 *e*P **P 13 46 29.8 -1.2**
CN2 Changchun 14.41 282 *e*P **P 13 46 31.3 -3.7**
CN2 *e*S **S 13 49 10.4 -4.4**
CN2 AMB AMB
comp=Z,210nm,0.8s
CN2 AMB AMB
comp=Z,1μm,4.0s
CN2 LR LR
comp=N,3μm,18.0s
CN2 LR LR
comp=E,9μm,18.0s
CN2 LR LR
comp=Z,11μm,18.0s
JNU Nakatsue 14.56 235 Pn **P 13 46 35.1 -1.9**
baz=70,slow=8.7
JNU LR LR 13 52 20.3
comp=Z,6μm,21.1s,baz=195,slow=38
INCN Inchon 14.98 257 *e*P **P 13 46 41.3 -1.2**
comp=Z,47nm,0.8s
CBIJ Chichi jima 15.48 190 Sn **S 13 49 24.0 -16**
comp=Z,35nm,0.3s,baz=290,slow=22,SNR=7.3
CBIJ LR LR 13 52 34.3
comp=Z,1μm,21.6s,baz=117,slow=36
ZEA Zeya 16.38 320 *e*P **P 13 47 00.5 +0.1**
ZEA AMB AMB 13 47 03.5
comp=Z,350nm,0.9s
ZEA AMB AMB 13 47 03.5
comp=Z,260nm,0.9s
ZEA AMB AMB 13 47 03.5
comp=Z,530nm,0.9s
ZEA AMB AMB 13 47 12.0
comp=Z,2μm,6.0s
ZEA AMB AMB 13 47 12.0
comp=Z,1μm,6.0s
ZEA AMB AMB 13 47 12.0
comp=Z,2μm,7.0s
ZEA sP 13 47 20.1
MA2 Magadan 17.53 10⇑ *e*P **P 13 47 13.3 -1.4**
MA2 pmax pmax
comp=Z,98nm,0.9s
MA2 Magadan 17.53 10 *e*P **P 13 47 12.0 -2.7**
comp=Z,88nm,0.9s
DL2 Dalian 18.13 267 ⇑P **P 13 47 20.2 -2.2**
DL2 AP 13 47 30.2
DL2 *e*S **S 13 50 40.4 -0.4**
DL2 AMB AMB
comp=Z,80nm,0.9s
DL2 LR LR
comp=E,3μm,19.8s
DL2 LR LR
comp=Z,3μm,19.8s
HIA Hailar 18.88 300⇑ *e*P **P 13 47 27.2 -4.2**
comp=Z,332nm,0.8s
JOW Kunigami 20.76 227 P **P 13 47 52.0 -0.1**
comp=Z,154nm,0.9s,baz=18,slow=10,SNR=18
JOW S **S 13 51 41.7 +4.1**
comp=Z,30nm,1.2s,baz=32,slow=19,SNR=3.8
SEY Seymchan 20.98 9 *e*P **P 13 47 49.9 -4.3**
SEY *e* 13 51 58.5
SEY pmax pmax
comp=N,60nm,0.9s
SEY pmax pmax
comp=E,30nm,0.9s
SEY pmax pmax
comp=Z,110nm,0.9s
FX1 Attu Island--F 21.48 51 P **P 13 48 00.3 +1.1**
comp=Z,335nm,0.8s,mb5.7,baz=261,slow=2.9,SNR=19
FX1 Attu Island--F 21.48 51 P **P 13 48 00.3 +1.1**
FX1 pmax pmax
comp=Z,335nm,0.8s
FX1 Attu Island--F 21.48 51 *e*P **P 13 48 00.1 +0.9**
YAK Yakutsk 21.68 340 *e*P **P 13 47 55.8 -5.3**
YAK *e*PPP PPP 13 48 21.6 -14
YAK *e*S **S 13 51 47.6 -7.1**
YAK *e* 13 51 57.9
YAK *e*SSS SSS 13 52 25.1 -21
YAK pmax pmax
comp=E,10.0nm,0.8s
YAK pmax pmax
comp=Z,130nm,0.8s,mb5.4
YAK pmax pmax
comp=N,20nm,1.2s
YAK pmax pmax
comp=N,30nm,0.8s
YAK pmax pmax
comp=Z,150nm,0.8s,mb5.5
YAK pmax pmax
comp=E,40nm,0.9s
YAK smax
comp=E,70nm,1.1s
YAK smax
comp=N,80nm,1.0s
YAK MLR MLR
comp=N,4μm,17.0s,MS4.9
YAK MLR MLR
comp=Z,4μm,17.0s,MS4.9
YAK MLR MLR
comp=E,2μm,18.0s,MS4.9
YAK Yakutsk 21.68 340 *e*P **P 13 47 55.9 -5.3**
comp=E,305nm,0.8s,mb5.8
YAK LR LR
comp=Z,7μm,19.0s,MS5.1
BJI Beijing 21.83 274 *e*P **P 13 48 00.8 -2.1**
BJI S **S 13 51 57.4 -0.3**
BJI AMB AMB
comp=Z,291nm,0.9s,mb5.7
BJI LR LR
comp=N,3μm,15.6s,MS5.1
BJI LR LR
comp=E,7μm,19.9s,MS5.1
BJI LR LR
comp=Z,8μm,22.2s,MS5.1
BJT Baijiatuau 21.84 273⇑ *i*P **P 13 48 00.5 -2.5**
comp=Z,289nm,0.8s,mb5.8
BJT LR LR
comp=Z,10μm,22.0s,MS5.2
SMY Shemya 21.97 52 PFAKE 13 48 20.0 +16
SMY LR LR
comp=Z,5μm,20.0s,MS4.9
SSE Sheshan 22.16 247 P **P 13 48 06.3 +0.1**
SSE XP 13 48 19.5
SSE S **S 13 52 02.9 -1.0**
SSE XS 13 52 12.8
SSE AMB AMB
comp=Z,150nm,1.4s,mb5.2
SSE LR LR
comp=N,3μm,17.0s,MS5.1
SSE LR LR
comp=E,5μm,17.0s,MS5.1
SSE LR LR
comp=Z,7μm,18.7s,MS5.1
NJ2 Nanjing 23.23 252 *e*P **P 13 48 15.9 -0.8**
NJ2 AP 13 48 24.8
NJ2 XP 13 48 28.2
NJ2 PP PP 13 48 48.7 +1.0
NJ2 S **S 13 52 25.0 +2.0**
NJ2 XS 13 52 38.0
NJ2 SS SS 13 53 11.0 +1.6
NJ2 AMB AMB
comp=Z,310nm,1.0s,mb5.7
NJ2 AMB AMB
comp=Z,2μm,12.0s
BOD Bodaibo 24.89 319 *e*P **P 13 48 29.2 -3.3**
HHC Hu-ho-hao-te 25.02 278 ⇑P **P 13 48 33.7 -0.2**
HHC AP pP 13 48 44.4 +2.9
HHC XP sP 13 48 47.0 +2.0
HHC PP PP 13 49 11.6 0.0
HHC PCP PcP 13 52 08.6 -0.8
HHC S **S 13 52 54.6 +1.1**
HHC XS 13 53 09.8
HHC SS SS 13 53 53.4 +0.2
HHC SCP 13 55 40.6
HHC PCS 13 55 47.0
HHC AMB AMB
comp=Z,244nm,1.3s,mb5.6
HHC AMB AMB
comp=Z,2μm,5.6s
HHC LR LR
comp=N,2μm,13.7s,MS4.8
HHC LR LR
comp=E,1μm,12.9s,MS4.8
HHC LR LR
comp=Z,2μm,13.4s,MS4.8
TIY Taiyuan 25.34 270 ⇑P **P 13 48 37.0 +0.1**
TIY S **S 13 52 52.0 -6.9**
TIY LR LR
comp=N,2μm,18.0s
TIY LR LR
comp=Z,4μm,19.0s,MS4.9
TATO Taipei 26.10 236 *e*P **P 13 48 45.5 +1.3**
comp=Z,112nm,0.8s,mb5.5
TATO LR LR
comp=Z,7μm,19.0s,MS5.2
BTO Baotou 26.21 278 *e*P **P 13 48 45.7 +0.7**
BTO S **S 13 53 16.4 +3.0**
BTO LR LR
comp=N,5μm,14.7s,MS5.5
BTO LR LR
comp=E,8μm,15.5s,MS5.5
ULN Ulaanbaatar 27.18 295 *e*P **P 13 48 53.2 -0.6**
ULN LR LR
comp=Z,6μm,20.0s,MS5.1
WHN Wuhan 27.26 254 ⇑P **P 13 48 55.5 +0.7**
WHN AP pP 13 49 05.7 +3.2
WHN S **S 13 53 36.0 +5.4**
WHN AMB AMB
comp=Z,319nm,1.0s,mb5.8
WHN AMB AMB
comp=Z,2μm,4.0s
WHN LR LR
comp=N,4μm,16.0s,MS5.2
WHN LR LR
comp=E,4μm,17.0s,MS5.2
WHN LR LR
comp=Z,14μm,19.8s,MS5.5
SONM Songino Array 27.62 295 P **P 13 48 57.4 -0.4**
comp=Z,411nm,0.9s,mb6.1,baz=82,slow=7.6,SNR=63
SONM ScP 13 55 52.2
comp=Z,2.6nm,0.9s,baz=90,slow=2.5,SNR=3.6
QZH Quanzhou 27.94 240⇑ *i*P **P 13 49 02.1 +1.1**
QZH S **S 13 53 44.0 +2.4**
QZH AMB AMB
comp=Z,270nm,1.2s,mb5.8
QZH LR LR
comp=N,2μm,13.1s
QZH LR LR
comp=E,8μm,19.0s
QZH LR LR
comp=Z,7μm,18.5s
BILL Bilibino 28.06 17 *e*P **P 13 48 57.3 -4.3**
comp=Z,39nm,1.1s,mb5.0
GUMO Guam 28.73 180 PFAKE 13 49 20.0 +12
GUMO LR LR
comp=Z,2μm,20.0s,MS4.7
IRK Irkutsk 29.00 304⇑ *i*P **P 13 49 08.8 -1.4**
IRK *e* 13 54 01.4
WAKE Wake Island 29.42 135 PFAKE 13 49 30.0 +16
WAKE LR LR
comp=Z,2μm,22.0s,MS4.8
XAN Xi'an 29.44 266 P **P 13 49 14.3 -0.1**
XAN S **S 13 53 55.6 -10**
XAN AMB AMB
comp=Z,102nm,1.0s,mb5.5
XAN AMB AMB
comp=Z,806nm,8.9s
XAN LR LR
comp=N,432nm,12.3s,MS5.0
XAN LR LR
comp=E,3μm,17.2s,MS5.0
XAN LR LR
comp=Z,3μm,18.2s,MS4.9
ENH Enshi 30.91 259⇑ *i*P **P 13 49 27.1 -0.3**
comp=Z,295nm,1.1s,mb6.0
ENH LR LR
comp=Z,4μm,21.0s,MS5.1
MOY Mondy 31.01 303 *e*P **P 13 49 27.4 -0.7**
LZH Lanzhou 32.32 273 ⇑P **P 13 49 40.5 +0.8**
LZH AP pP 13 49 50.3 +2.8
LZH XP sP 13 49 54.6 +3.7
LZH LR LR
comp=E,7μm,17.0s
LZH LR LR
comp=Z,9μm,17.4s,MS5.5
GZH Guangzhou 32.66 244 P **P 13 49 38.0 -4.8**
GZH LR LR
comp=N,3μm,16.6s,MS5.3
GZH LR LR
comp=E,4μm,16.0s,MS5.3
GZH LR LR
comp=Z,7μm,18.5s,MS5.4
UNV Unalaska Valle 33.63 53 PFAKE 13 50 00.0 +9.1
UNV LR LR
comp=Z,4μm,21.0s,MS5.1
GTA Gaotai 34.04 280 *e*P **P 13 49 54.1 -0.6**
GTA AP pP 13 49 58.2 -4.2
GTA XP sP 13 50 01.2 -4.6
GTA PP PP 13 51 10.7 +1.8
GTA PPP PPP 13 51 29.8 +2.9
GTA PCP PcP 13 52 32.7 +0.5
GTA S **S 13 55 21.1 +3.7**
GTA SCP 13 56 12.5
GTA PCS 13 56 18.6
GTA SCS ScS 14 00 14.9 +0.2
GTA AMB AMB
comp=Z,54nm,1.1s,mb5.4
GTA AMB AMB
comp=Z,289nm,5.7s
GTA LR LR
comp=N,612nm,14.8s,MS4.9
GTA LR LR
comp=E,2μm,16.7s,MS4.9
GTA LR LR
comp=Z,2μm,15.6s,MS4.8
CD2 Chengdu 34.77 264 P **P 13 50 01.2 +0.2**
CD2 XP sP 13 50 15.0 +2.8
CD2 PP PP 13 51 13.7 -4.9
CD2 PPP PPP 13 51 32.7 -3.9
CD2 S **S 13 55 23.8 -5.1**
CD2 XS 13 55 39.6
CD2 AMB AMB
comp=Z,240nm,1.4s,mb5.9
CD2 AMB AMB
comp=Z,630nm,6.6s
CD2 LR LR
comp=N,4μm,16.1s
CD2 LR LR
comp=Z,3μm,15.9s,MS5.1
TNA Tin City 34.78 32 *e*P **P 13 49 59.7 -1.1**
comp=Z,56nm,1.2s,mb5.4
TNA LR LR
comp=Z,1μm,20.0s,MS4.7
TGY Tagaytay City 35.09 224 P **P 13 50 05.5 +1.6**
comp=Z,105nm,0.4s,mb6.1,baz=137,slow=4.2,SNR=5.6
TGY Tagaytay City 35.09 224 P **P 13 50 05.5 +1.6**
TGY pmax pmax
comp=Z,105nm,0.4s
GYA Guiyang 35.13 256⇑ *i*P **P 13 50 04.5 +0.4**
GYA AP pP 13 50 12.7 +0.7
GYA XP sP 13 50 15.1 -0.2
GYA PP PP 13 51 20.2 -2.9
GYA S **S 13 55 30.1 -4.4**
GYA AMB AMB
comp=Z,179nm,1.1s,mb5.9
GYA AMB AMB
comp=Z,470nm,7.2s
GYA LR LR
comp=N,3μm,19.2s,MS5.2
GYA LR LR
comp=E,4μm,21.3s,MS5.2
GYA LR LR
comp=Z,5μm,20.7s,MS5.2
ANM Nome 35.54 34 *e*P **P 13 50 07.0 -0.2**
KALP Kalibo 36.48 220⇓ *e*P **P 13 50 17.3 +1.6**
TBP Tagbilaran 37.55 216 *e*P **P 13 50 22.1 -2.5**
QIZ Qiongzhong 37.83 243 P **P 13 50 26.4 -0.5**
QIZ S **S 13 56 16.2 +0.3**
QIZ AMB AMB
comp=Z,294nm,5.2s
QIZ LR LR
comp=E,3μm,17.2s
QIZ LR LR
comp=Z,5μm,17.2s,MS5.4
QIZ Qiongzhong 37.83 243 *e*P **P 13 50 29.0 +2.1**
comp=Z,111nm,1.4s,mb5.4
KMI Kunming 38.75 257⇑ *i*P **P 13 50 35.8 +1.1**
KMI AP pP 13 50 42.8 +0.3
KMI XP sP 13 50 47.8 +2.0
KMI PP PP 13 52 06.3 -1.0
KMI PCP PcP 13 52 47.8 +1.3
KMI S **S 13 56 29.5 -0.4**
KMI PCS 13 56 38.0
KMI XS 13 56 42.3
KMI SS SS 13 59 13.2 +0.6
KMI AMB AMB
comp=Z,257nm,1.1s,mb5.9
KMI AMB AMB
comp=Z,916nm,3.1s
KMI LR LR
comp=N,2μm,17.2s,MS5.4
KMI LR LR
comp=E,4μm,18.4s,MS5.4
KMI LR LR
comp=Z,6μm,17.8s,MS5.4
SVW Sparrevohn 39.54 41 *e*P **P 13 50 41.6 +0.8**
IMA Indian Mountai 40.62 33 *e*P **P 13 50 49.9 +0.3**
comp=Z,475nm,0.8s,mb6.2
RSO Redoubt South 40.96 42 *e*P **P 13 50 52.6 +0.1**
WMQ Urumqi 41.19 292⇑ *i*P **P 13 50 55.5 +0.9**
WMQ AP pP 13 51 02.9 +0.5
WMQ XP sP 13 51 06.3 +0.6
WMQ PP PP 13 52 33.7 +1.1
WMQ PCP PcP 13 52 55.9 +1.8
WMQ SCP 13 56 42.7
WMQ PCS 13 56 45.6
WMQ S **S 13 57 06.7 +0.5**
WMQ XS 13 57 18.4
WMQ SS SS 14 00 04.0 -1.0
WMQ SCS ScS 14 00 56.4 +1.5
WMQ AMB AMB
comp=Z,117nm,0.8s,mb5.6
WMQ AMB AMB
comp=Z,890nm,4.8s
WMQ LR LR
comp=Z,7μm,17.6s,MS5.6
KDAK Kodiak Island 41.26 46 *e*P **P 13 50 54.1 -0.9**
comp=Z,81nm,1.1s,mb5.3
KDAK LR LR
comp=Z,3μm,20.0s,MS5.1
SPU Mount Spurr 41.27 41 *e*P **P 13 50 55.2 +0.2**
NVS Novosibirsk 41.38 310 *i* P **P 13 50 54.8 -1.2**
NVS *e*SS ScS 14 00 57.6 +1.6
NVS pmax pmax
comp=N,72nm,1.2s
NVS pmax pmax
comp=E,156nm,1.2s
NVS pmax pmax
comp=Z,236nm,1.2s,mb5.7
SLKM Skilak Lake 42.21 42 *e*P **P 13 51 02.8 +0.1**
GOU Gould Hall 42.36 41 P **P 13 51 04.0 +0.1**
PMS Palmer South 42.47 41 *e*P **P 13 51 04.4 -0.4**
MCK McKinley 42.60 37 *e*P **P 13 51 05.3 -0.6**
comp=Z,60nm,0.9s,mb5.3
MCK LR LR
comp=Z,699nm,21.0s,MS4.5
PMR Palmer 42.65 40 *e*P **P 13 51 05.8 -0.4**
SML Sawmill 43.01 40 *e*P **P 13 51 08.6 -0.5**
COLA College 43.03 35 *e*P **P 13 51 09.0 -0.3**
ILAR Eielson Array 43.45 35 P **P 13 51 12.2 -0.5**
comp=Z,105nm,0.9s,mb5.6,baz=268,slow=6.4,SNR=49
ILAR S **S 13 57 40.3 +1.3**
comp=Z,1.1nm,1.1s,baz=280,slow=11,SNR=3.7
ILAR Eielson Array 43.45 35 P **P 13 51 12.2 -0.5**
ILAR S **S 13 57 40.3 +1.3**
ILAR pmax pmax
comp=Z,105nm,0.9s
UBT Ubonrachathani 43.73 244 ⇓P **P 13 51 17.5 +1.9**
MKAR Makanchi Array 43.87 298 P **P 13 51 16.1 -0.3**
comp=Z,37nm,0.8s,mb5.2,baz=190,slow=28,SNR=5.8
MKAR PcP PcP 13 53 02.1 -0.8
comp=Z,41nm,0.9s,baz=72,slow=3.8,SNR=4.4
MKAR LR LR 14 09 52.7
comp=Z,3μm,20.5s,MS5.1,baz=68,slow=37
MKAR Makanchi Array 43.87 298 P **P 13 51 16.1 -0.2**
MKAR 13 53 02.2
MKAR pmax pmax
comp=Z,37nm,0.8s
MKAR pmax pmax
comp=Z,41nm,0.9s
MKAR MLR MLR
comp=Z,3μm,20.5s
NANT Nan 44.23 252 ⇑P **P 13 51 20.0 +0.3**
comp=Z,238nm,1.0s,mb5.9
MID Middleton Isla 44.28 43 *e*P **P 13 51 22.2 +2.7**
EYAK Cordova Ski Ar 44.40 41 *e*P **P 13 51 20.2 -0.2**
LSA Lhasa 44.72 272 P **P 13 51 25.1 +1.6**
LSA S **S 13 58 03.1 +5.1**
LSA AMB AMB
comp=Z,110nm,1.0s,mb5.6
LSA LR LR
comp=N,510nm,22.0s,MS4.9
LSA LR LR
comp=E,2μm,21.0s,MS4.9
LSA LR LR
comp=Z,4μm,21.0s,MS5.3
LSA Lhasa 44.72 272⇑ *i*P **P 13 51 24.8 +1.3**
comp=Z,73nm,0.8s,mb5.6
LSA LR LR
comp=Z,3μm,20.0s,MS5.2
KURK Kurchatov 45.03 305⇑ *e*P **P 13 51 24.7 -0.9**
IMP Imphal 45.39 264 *e*P **P 13 51 27.0 -1.8**
CM31 Chiang Mai Arr 45.70 253 *e*P **P 13 51 31.8 +0.5**
comp=Z,32nm,0.8s,mb5.3
CMAR Chiang Mai Arr 45.70 253 P **P 13 51 32.4 +1.0**
comp=Z,26nm,0.8s,mb5.2,baz=43,slow=7.4,SNR=38
CMAR sP sP 13 51 44.4 +1.9
comp=Z,42nm,0.9s,baz=44,slow=6.8,SNR=15
CMAR PcP PcP 13 53 10.6 +1.0
comp=Z,7.1nm,0.8s,baz=0.6,slow=1.0,SNR=3.4
CMAR LR LR 14 12 10.2
comp=Z,4μm,18.8s,MS5.4,baz=55,slow=38
CMAR Chiang Mai Arr 45.70 253 P **P 13 51 32.4 +1.0**
CMAR *SP sP 13 51 44.4 +1.9
CMAR 13 53 10.6
CMAR pmax pmax
comp=Z,26nm,0.8s
CMAR MLR MLR
comp=Z,4μm,18.8s
SHL Shillong 46.45 266⇓ *i*P **P 13 51 37.0 -0.2**
SHL *e* 13 57 39.6
BDT Bhumibol Dam 46.47 252 P **P 13 51 38.0 +0.6**
comp=Z,20nm,0.8s,mb5.1
NST Nakhon Sawan 46.75 249 P **P 13 51 40.5 +0.8**
INK Inuvik 48.30 29 P **P 13 51 50.9 -0.3**
comp=Z,58nm,0.5s,mb5.8,baz=292,slow=6.8,SNR=55
INK S **S 13 58 46.5 -1.9**
comp=Z,2.1nm,1.0s,baz=154,slow=18,SNR=4.1
INK Inuvik 48.30 29 P **P 13 51 50.9 -0.3**
INK S **S 13 58 46.6 -1.8**
INK pmax pmax
comp=Z,58nm,0.5s
INK smax
comp=N,2.0nm,1.0s
AAA Alma-Ata 48.67 295*c* *i*P **P 13 51 54.0 -0.4**
AAA MLR MLR
comp=Z,2μm,16.0s,MS5.2
VOSK Vostochnaya 48.94 309 P **P 13 51 55.5 -0.8**
VOSK pmax pmax
comp=Z,176nm,0.8s,mb6.1
VOSK Vostochnaya 48.94 309 *i* P **P 13 51 55.6 -0.7**
BVA0 Borovoye Array 49.18 310 P **P 13 51 57.6 -0.6**

BVAR Borovoye Array 49.18 310 P **P** **13 51 57.5 -0.7**
comp=Z,123nm,0.5s,mb6.2,baz=78,slow=8.1,SNR=160
BVAR PcP PcP 13 53 20.5 -1.0
comp=Z,22nm,0.7s,baz=90,slow=2.9,SNR=3.1
NNT Nongplab 49.19 247 P **P** **13 52 01.0 +2.2**
BRVK Borovoye 49.23 310 *e*P **P** **13 51 57.6 -1.0**
ULHL Ulahol 49.56 295 P **P** **13 52 01.1 -0.2**
SNR=14
GUN Gumba 49.58 273 *e*P **P** **13 52 01.7 +0.1**
comp=Z,313nm,0.5s,mb6.6
TKM2 Tokmak 2 49.71 296 P **P** **13 52 02.5 +0.1**
SNR=32
ZRNK Zerenda 49.99 310⇑ *e*P **P** **13 52 03.9 -0.5**
KKN Kakani 50.09 273 *e*P **P** **13 52 05.4 -0.1**
comp=Z,390nm,0.9s,mb6.5
PKI Pulchoki 50.11 273 *e*P **P** **13 52 05.4 -0.3**
comp=Z,151nm,0.6s,mb6.2
CHMS Chumysh 50.24 296 P **P** **13 52 05.8 -0.6**
SNR=7.6
KBK Karagaybulak 50.26 296 P **P** **13 52 06.5 -0.1**
SNR=26
USP Ospenovka 50.30 296 P **P** **13 52 06.5 -0.4**
SNR=20
KZA Kyzart 50.30 295 P **P** **13 52 07.8 +0.9**
SNR=17
DMN Daman 50.32 273 *e*P **P** **13 52 07.3 +0.1**
comp=Z,297nm,0.9s,mb6.3
FRU Bishkek 50.40 296 *i* P **P** **13 52 12.5 +4.8**
GKN Gorkha 50.45 274 *e*P **P** **13 52 07.0 -1.2**
comp=Z,161nm,0.7s,mb6.2
SIT Sitka 50.50 44 *e*P **P** **13 52 09.1 +0.9**
DANN Dangsing 50.90 275 *e*P **P** **13 52 12.2 +0.5**
comp=Z,326nm,0.8s,mb6.3
KSH Kashi 50.94 291 *e*P **P** **13 52 12.4 +0.6**
KSH *e*AP pP 13 52 20.0 +0.2
KSH *e*XP sP 13 52 23.1 +0.2
KSH *e*PCP PcP 13 53 29.0 +0.9
KSH *e*PP PP 13 54 09.5 +0.5
KSH *e*SCP 13 57 22.0
KSH *e*PCS 13 57 24.8
KSH *e*S **S** **13 59 25.1 -0.3**
KSH *e*PS PS 13 59 37.0 -0.3
KSH *e*XS 13 59 38.1
KSH *e*SCS ScS 14 01 58.8 +1.3
KSH *e*SS SS 14 02 57.2 -1.0
KSH AMB AMB
comp=Z,220nm,1.2s,mb6.0
KSH AMB AMB
comp=Z,600nm,3.9s
KSH LR LR
comp=N,2μm,18.2s,MS5.3
KSH LR LR
comp=E,2μm,15.1s,MS5.3
EKS2 Erkin-Say 51.04 296 P **P** **13 52 11.9 -0.5**
SNR=17
AML Almayashu 51.32 295 P **P** **13 52 15.0 +0.3**
SNR=18
KOLN Koldanda 51.34 274 *e*P **P** **13 52 15.2 +0.2**
comp=E,443nm,0.8s,mb6.5
PMG Port Moresby 51.61 177 LR LR 14 10 21.7
comp=E,719nm,21.9s,MS4.7,baz=0.4,slow=32
PMG Port Moresby 51.61 177 PFAKE 13 52 30.0 +13
PMG LR LR
comp=Z,700nm,21.0s,MS4.7
KIP Kipapa 51.62 95 PFAKE 13 52 30.0 +13
KIP LR LR
comp=Z,4μm,21.0s,MS5.4
DLBC Dease Lake 52.67 41 P **P** **13 52 25.6 +1.0**
comp=Z,15nm,0.9s,mb4.9,baz=278,slow=10,SNR=8.3
KKAR Karatay Array 53.00 298 P **P** **13 52 26.0 -1.3**
KKAR pmax pmax
comp=Z,84nm,0.8s,mb5.7
SVE Sverdlovsk 53.07 317α *i*P **P** **13 52 27.0 -0.6**
SVE *e* PP 13 54 30.0 +1.0
SVE *e*SSS SS 14 03 33.0 -0.1
SVE pmax pmax
comp=Z,600nm,2.0s,mb6.2
SVE MLR MLR
comp=N,500nm,17.0s,MS5.4
SVE MLR MLR
comp=E,3μm,17.0s,MS5.4
SVE MLR MLR
comp=Z,4μm,17.0s,MS5.6
BWNR Bhubaneshwar 54.07 265 *e*P **P** **13 52 35.0 -0.4**
BWNR AMb AMB 13 52 37.0
comp=Z,96nm,0.5s,mb6.0
ARU Arti 54.28 317⇑ *i*P **P** **13 52 35.2 -1.3**
ARU *i* 13 53 38.3
ARU *i* 13 54 35.3
ARU *i* PPP PPP 13 55 47.2 -3.3
ARU *e*S **S** **14 00 12.7 +1.9**
ARU *i* 14 02 19.1
ARU *e*SS SS 14 03 53.5 +1.1
ARU pmax pmax
comp=Z,363nm,0.9s,mb6.3
ARU MLR MLR
comp=N,2μm,17.0s,MS5.5
ARU MLR MLR
comp=E,4μm,17.0s,MS5.5
ARU MLR MLR
comp=Z,4μm,17.0s,MS5.6
ARU Arti 54.28 317⇑ *i*P **P** **13 52 35.0 -1.5**
comp=Z,452nm,0.9s,mb6.4
IPM Ipoh 54.29 239⇓ *e*P **P** **13 52 37.5 +0.4**
POHA Pohakuloa 54.48 95 PFAKE 13 52 50.0 +12
POHA LR LR
comp=Z,3μm,21.0s,MS5.4
KGM Kluang 54.88 234⇓ *e*P **P** **13 52 43.0 +1.5**
NDI New Delhi 55.53 279 *e*P **P** **13 52 44.8 -1.2**
NDI *e*S **S** **14 00 27.9 +0.1**
NDI New Delhi 55.53 279 *e*S **S** **14 00 26.5 -1.4**
BLSP Bilaspur 55.68 270 *e*P **P** **13 52 45.7 -1.4**
SPB4 Spitsbergen Ar 55.79 349 *e*P **P** **13 52 44.6 -2.7**
KBS Kingsbay 55.84 350 *e*S **S** **14 00 32.6 +1.3**
KBS AMS AMS 14 19 18.7
comp=Z,851nm,20.0s,MS4.8
KBS Kingsbay 55.84 350 *e*P **P** **13 52 44.8 -2.7**
comp=Z,192nm,1.0s,mb6.1
KBS LR LR
comp=Z,1μm,20.0s,MS5.0
KAKA Kakadu 56.08 195 *e*P **P** **13 52 49.4 -0.7**
comp=Z,17nm,0.6s,mb5.3
KAKA *i* pP pP 13 53 04.2 +6.0
AB31 Akbulak array 56.71 309 *e*P **P** **13 52 53.2 -1.0**
AB31 pmax pmax
comp=Z,35nm,0.5s,mb5.7
YKA Yellowknife Ar 57.74 33 P **P** **13 53 00.2 -1.0**
comp=Z,40nm,0.7s,mb5.6,baz=304,slow=6.9,SNR=50
YKA Yellowknife Ar 57.74 33 P **P** **13 53 00.2 -1.0**
YKA pmax pmax
comp=Z,40nm,0.7s
YKA Yellowknife Ar 57.74 33 P **P** **13 53 00.2 -1.1**
LVZ Lovozero 58.38 335 *e*P **P** **13 53 03.2 -2.4**
LVZ pmax pmax
comp=E,20nm,1.0s
LVZ pmax pmax
comp=Z,120nm,1.0s,mb5.9
LVZ pmax pmax
comp=N,30nm,0.9s
LVZ pmax pmax
comp=N,70nm,1.2s
LVZ pmax pmax
comp=Z,230nm,1.2s,mb6.1
LVZ pmax pmax
comp=E,180nm,2.7s
BHPL Bhopal 58.50 274 *e*P **P** **13 53 05.4 -1.7**
BHPL AMb AMB 13 53 07.6
comp=Z,198nm,0.5s,mb6.4
AJM Ajmer 58.66 279 *i* P **P** **13 53 07.0 -1.2**
APA Apatity 58.96 335⇓ *i*P **P** **13 53 06.2 -3.5**
APA *i* 13 53 57.0
APA *e*S **S** **14 01 08.0 -4.5**
APA *e*PS PS 14 01 29.0 -1.2
APA pmax pmax
comp=Z,230nm,1.2s,mb6.1
APA MLR MLR
comp=Z,3μm,15.0s,MS5.5
KEV Kevo 59.42 339 *e*p **P** **13 53 11.2 -1.7**
comp=Z,70nm,0.7s,mb5.8
KEV Kevo 59.42 339 *e*P **P** **13 53 11.2 -1.7**
KEV pmax pmax
comp=Z,70nm,0.7s,mb5.8
KGD Kothagudem 59.56 266 *e*P **P** **13 53 13.8 -0.8**
KGD *e* 14 01 27.9
ARCES ARCESS Array B 59.96 339 P **P** **13 53 14.9 -1.6**
comp=Z,73nm,0.9s,mb5.7,baz=38,slow=7.4,SNR=46
ARCES ARCESS Array B 59.96 339 P **P** **13 53 15.0 -1.6**
ARCES pmax pmax
comp=Z,73nm,0.9s
ARE0 ARCESS Array S 59.96 339 *e*P **P** **13 53 14.4 -2.2**
DAG Danmarks Havn 60.63 356⇓ *i*P **P** **13 53 19.0 -2.1**
comp=Z,157nm,0.9s,mb6.1
DAG Danmarks Havn 60.63 356⇓ *i*P **P** **13 53 19.0 -2.1**
DAG pmax pmax
comp=Z,160nm,0.9s,mb6.2
OCWA Octopus Mounta 60.69 51 PFAKE 13 53 30.0 +8.2
OCWA LR LR
comp=Z,1μm,20.0s,MS5.0
KTK1 Kautokeino 60.91 339⇑ *i*P **P** **13 53 21.4 -1.6**
KTK1 AMb AMB 13 53 22.8
comp=Z,179nm,1.3s,mb6.0
HYB Hyderabad 61.22 268 *i* P **P** **13 53 24.0 -1.9**
comp=Z,210nm,1.0s,mb6.2
HYB Hyderabad 61.22 268 *e*P **P** **13 53 24.0 -1.9**
comp=Z,210nm,1.0s,mb6.2
PECR Pechory 61.35 321*c* *i*P **P** **13 53 25.0 -1.2**
PECR *e*S **S** **14 01 56.0 +13**
PECR pmax pmax
comp=Z,500nm,5.0s
PECR MLR MLR
comp=Z,1μm,18.0s,MS5.0
PECR MLR MLR
comp=N,2μm,16.0s,MS5.7
PECR MLR MLR
comp=E,4μm,17.0s,MS5.7
PECR MLR MLR
comp=E,3μm,15.0s
PECR MLR MLR
comp=Z,1μm,15.0s
PECR MLR MLR
comp=N,4μm,14.0s
TRO Tromso 61.53 341⇑ *i*P **P** **13 53 25.6 -1.7**
TRO AMb AMB 13 53 27.1
comp=Z,257nm,1.2s,mb6.2
TRO AMS AMS 14 25 29.6
comp=Z,2μm,18.2s,MS5.3
RPW Rockport 61.82 49 P **P** **13 53 29.5 0.0**
BMW Boistfort Moun 61.92 52 *e*P **P** **13 53 30.5 +0.3**
QUE Quetta 62.09 286 *e*P **P** **13 53 30.0 -1.6**
RMW Rattlesnake Mo 62.19 50 *e*P **P** **13 53 32.1 +0.1**
CTA Charters Tower 62.21 179 *e*P **P** **13 53 32.1 -0.4**
comp=Z,12nm,1.2s,mb4.9
CTA *i* pP pP 13 53 45.4 +4.7
CTAO Charters Tower 62.21 179 P **P** **13 53 31.6 -0.9**
CTAO LR LR
comp=Z,755nm,22.0s,MS4.8
JOF Joensuu 62.55 332 *e*p **P** **13 53 32.4 -1.8**
comp=Z,72nm,0.7s,mb5.9
JOF Joensuu 62.55 332 *e*P **P** **13 53 32.4 -1.8**
JOF pmax pmax
comp=Z,73nm,0.7s,mb5.9
FMW Mount Fremont 62.56 50 P **P** **13 53 34.9 +0.4**
LON Longmire 62.58 51 *e*P **P** **13 53 34.0 -0.6**
NLW Nelson Butte 62.68 49 *e*P **P** **13 53 34.9 -0.3**
WPW White Pass 62.76 51 P **P** **13 53 36.6 +0.8**
WRAB Tennant Creek 62.83 191 *e*P **P** **13 53 35.1 -1.5**
comp=Z,46nm,1.1s,mb5.5
WRAB LR LR
comp=Z,526nm,21.0s,MS4.7
FITZ Fitzroy Crossi 62.84 201 *i*P **P** **13 53 36.7 0.0**
comp=Z,19nm,1.2s,mb5.1
FITZ *i* pP pP 13 53 50.7 +5.8
WB2 Warramunga Arr 62.84 191 *e*P **P** **13 53 35.3 -1.4**
WB2 *i* pP pP 13 53 50.5 +5.6
WB2 *e*S **S** **14 02 01.3 -1.4**
WRA Warramunga Arr 62.84 191 P **P** **13 53 35.4 -1.2**
comp=Z,15nm,1.1s,mb5.0,baz=7.3,slow=6.8,SNR=8.6
WRA sP sP 13 53 49.7 +1.9
comp=Z,76nm,1.1s,baz=10,slow=7.0,SNR=26
WRA S **S** **14 02 01.5 -1.3**
comp=Z,5.0nm,1.3s,baz=15,slow=12,SNR=7.1
WRA Warramunga Arr 62.84 191 P **P** **13 53 35.4 -1.3**
WRA *SP sP 13 53 49.7 +1.9
WRA S **S** **14 02 01.5 -1.2**
WRA pmax pmax
comp=Z,15nm,1.2s
COR Corvallis 62.91 53 *e*P **P** **13 53 36.6 -0.2**
comp=Z,32nm,1.0s,mb5.4
COR LR LR
comp=Z,4μm,19.0s,MS5.6
WTV Waterville 63.10 49 P **P** **13 53 38.0 0.0**
HSO Harness Mounta 63.63 54 *e*P **P** **13 53 42.3 +0.8**
LOF Lofoten 63.95 342⇑ *i*P **P** **13 53 43.3 +0.1**
LOF AMb AMB 13 53 46.1
comp=Z,127nm,1.5s,mb5.7
DPW Davenport 63.98 48 *e*P **P** **13 53 43.2 -0.5**
DPW *e*pP pP 13 53 50.2 -1.7
GBL Gable Mountain 64.00 50 P **P** **13 53 44.2 +0.3**
POO Poona 64.01 272 *e*P **P** **13 53 43.2 -1.2**
POO AMb AMB 13 53 44.5
comp=Z,91nm,0.0s
HAWA Hanford 64.08 50 PFAKE 13 54 00.0 +16
HAWA LR LR
comp=Z,1μm,22.0s,MS5.0
BHUJ Bhuj 64.21 279 *e*P **P** **13 53 45.6 -0.1**
BHUJ AMb AMB 13 53 47.1
comp=Z,171nm,0.6s,mb6.2
HUMO Hull Mountain 64.23 55 *e*P **P** **13 53 45.3 -0.2**
HUMO *e*pP pP 13 53 53.9 +0.2
NEW Newport 64.34 47 P **P** **13 53 46.1 +0.1**
comp=Z,16nm,0.9s,mb5.1,baz=313,slow=6.2,SNR=9.7
NEW LR LR 14 22 57.7
comp=Z,885nm,19.8s,MS5.0,baz=323,slow=37
NEW Newport 64.34 47 P **P** **13 53 46.2 +0.1**
NEW pmax pmax
comp=Z,16nm,0.9s
NEW MLR MLR
comp=Z,885nm,19.8s
NEW Newport 64.34 47 *e*P **P** **13 53 45.5 -0.6**
comp=Z,26nm,1.1s,mb5.2
NEW *e*pP pP 13 53 52.5 -1.8
NEW LR LR
comp=Z,1μm,21.0s,MS5.0
KAD Karad 64.53 271 *e*P **P** **13 53 46.5 -1.3**
KAD AMb AMB 13 54 10.8
comp=Z,6.1nm,1.2s
KAD *e*S **S** **14 02 26.3 +2.6**
YPT Yellepit 64.60 50 P **P** **13 53 48.5 +0.7**
MOS Moscow 64.62 323 *i* P **P** **13 53 46.6 -1.1**
MOS *e* pP 13 53 56.2 +0.3
MOS *e* 13 56 06.3
MOS *e*S **S** **14 02 22.9 -1.3**
MOS pmax pmax
comp=Z,790nm,1.4s,mb6.5
MOS MLR MLR
comp=Z,4μm,15.0s,MS5.7
KAF Kangasniemi 64.81 333 *e*p **P** **13 53 47.3 -1.6**
comp=Z,82nm,0.7s,mb5.9,baz=46,slow=6.3
KAF Kangasniemi 64.81 333 *e*P **P** **13 53 47.3 -1.6**
KAF pmax pmax
comp=Z,82nm,0.7s,mb5.9
YBH Yreka Blue Hor 64.88 56 P **P** **13 53 50.8 +1.1**
comp=Z,16nm,0.9s,mb5.0,baz=326,slow=2.6,SNR=16
YBH Yreka Blue Hor 64.88 56 *e*P **P** **13 53 50.1 +0.4**
comp=Z,13nm,0.8s,mb5.0
YBH LR LR
comp=Z,699nm,21.0s,MS4.8
PUL Pulkovo 64.99 330 *e*P **P** **13 53 47.4 -2.7**
PUL pmax pmax
comp=Z,460nm,0.8s,mb6.6
PUL MLR MLR
comp=N,2μm,18.0s,MS5.8
PUL MLR MLR
comp=Z,4μm,18.0s,MS5.7
PUL MLR MLR
comp=E,5μm,20.0s,MS5.8
LNOR Lincton Mounta 65.09 50 P **P** **13 53 51.8 +0.8**
SUMG Summit 65.27 1 *e*P **P** **13 53 51.0 -0.7**
SUMG *e*pP pP 13 54 00.5 +0.6
MOR8 Moi Rana 65.28 340⇓ *i*P **P** **13 53 49.1 -2.7**
MOR8 AMb AMB 13 53 50.1
comp=Z,311nm,0.7s,mb6.5
MOR8 *e*pP pP 13 53 59.4 -0.7
JMIC Jan Mayen 65.31 351 AMS AMS 14 27 34.7
comp=Z,410nm,16.8s,MS4.7
FINES FINESS Array B 65.36 332 P **P** **13 53 51.0 -1.4**
comp=Z,186nm,0.6s,mb6.3,baz=45,slow=8.1,SNR=122
FINES LR LR 14 22 38.9
comp=Z,2μm,19.0s,MS5.3,baz=231,slow=36
FINES FINESS Array B 65.36 332 P **P** **13 53 51.0 -1.4**
FINES pmax pmax
comp=Z,186nm,0.6s
FINES MLR MLR
comp=Z,2μm,19.0s
OBN Obninsk 65.48 323*c* *i*P **P** **13 53 51.9 -1.4**
OBN *i* 13 54 03.0
OBN *e*S S 14 02 52.5 +18
OBN pmax pmax
comp=Z,391nm,1.1s,mb6.3
OBN Obninsk 65.48 323⇑ *i*P **P** **13 53 51.7 -1.6**
comp=Z,421nm,1.1s,mb6.4
WDC Whiskeytown Da 65.66 57 *e*P **P** **13 53 54.8 +0.2**
comp=Z,18nm,0.8s,mb5.2
WDC LR LR
comp=Z,697nm,22.0s,MS4.8
MOD Modoc 66.25 54 *e*P **P** **13 53 58.6 +0.2**
comp=Z,16nm,0.9s,mb5.1
MOD *e*pP pP 13 54 06.6 0.0
MOD LR LR
comp=Z,709nm,19.0s,MS4.9
HOPS Hopland 66.25 58 *e*P **P** **13 53 58.3 -0.2**
comp=Z,24nm,1.2s,mb5.1
HOPS LR LR
comp=Z,1μm,21.0s,MS5.1
VOR Voronezh 66.40 319 *e*P **P** **13 53 58.0 -1.3**
VOR *e**SP sP 13 54 09.0 -1.4
VOR pmax pmax
comp=N,150nm,1.5s
VOR pmax pmax
comp=E,170nm,1.5s
VOR pmax pmax
comp=Z,320nm,1.5s,mb6.1
AS12 Alice Springs 66.57 191⇓ *i*P **P** **13 54 00.8 0.0**
comp=Z,25nm,1.1s,mb5.2
AS12 *i* pP pP 13 54 15.5 +6.5
ASAR Alice Springs 66.57 191 P **P** **13 54 00.5 -0.3**
comp=Z,22nm,1.3s,mb5.0,baz=4.7,slow=5.3,SNR=11
ASAR sP sP 13 54 14.2 +2.3
comp=Z,32nm,1.1s,baz=13,slow=5.7,SNR=18
ASAR LR LR 14 22 57.1
comp=Z,162nm,18.8s,MS4.3,baz=3.6,slow=36
NSHM Saint Helena R 66.83 58 *e*P **P** **13 54 02.1 -0.1**
WVOR Wild Horse Val 66.92 53 *e*P **P** **13 54 02.8 0.0**
comp=Z,19nm,1.0s,mb5.1
WVOR LR LR
comp=Z,881nm,19.0s,MS5.0
MSO Missoula 66.93 47 *e*P **P** **13 54 02.3 -0.4**
comp=Z,38nm,1.1s,mb5.3
MSO *e*pP pP 13 54 08.7 -2.2
MSO LR LR
comp=Z,869nm,21.0s,MS5.0
SCO Scoresbysund 67.01 355 *i* P **P** **13 54 02.3 -0.5**
comp=Z,25nm,0.7s,mb5.3
SCO Scoresbysund 67.01 355 *i* P **P** **13 54 02.3 -0.5**
SCO pmax pmax
comp=Z,25nm,0.7s,mb5.3
OHCM Honcut 67.05 57 *e*P **P** **13 54 03.5 -0.1**
OHCM *e*pP pP 13 54 10.0 -1.8
NSS Namsos 67.22 340 *e*P **P** **13 54 01.4 -2.8**
NSS AMb AMB 13 54 03.0
comp=Z,146nm,1.0s,mb6.0
NSS AMS AMS 14 29 06.5
comp=Z,3μm,20.7s,MS5.5
CHMT Chamberlain Mo 67.25 47 *e*P **P** **13 54 03.6 -1.1**
MAK Makhachkala 67.38 308⇓ *i*P **P** **13 54 05.2 -0.4**
MAK *e* 13 54 33.0
MAK *i* 13 56 36.0
MAK *e*S S 14 02 58.0 0.0
MAK pmax pmax
comp=Z,900nm,4.0s
MAK smax
comp=N,500nm,6.0s
BEKR Beckwourth 67.42 56 *e*P **P** **13 54 06.0 0.0**
comp=N,29nm,0.9s,mb5.3
LKC Lake Chabot 67.64 59 *e*P **P** **13 54 07.8 +0.5**
FFC Flin Flon 67.66 35 *e*P **P** **13 54 05.5 -1.6**
comp=N,48nm,1.0s,mb5.5
FFC LR LR
comp=Z,759nm,20.0s,MS4.9
PAHR Pah Rah Range 68.12 56 *e*P **P** **13 54 10.5 +0.2**
comp=Z,33nm,1.0s,mb5.3
HRY Holter Researc 68.14 46 *e*P **P** **13 54 10.4 +0.1**
WCN Washoe City 68.14 56 *e*P **P** **13 54 10.8 +0.3**
comp=Z,26nm,1.0s,mb5.2
CMB Columbia Colle 68.51 58 *e*P **P** **13 54 12.3 -0.5**
comp=Z,13nm,1.0s,mb4.8
CMB LR LR
comp=Z,616nm,20.0s,MS4.8
SAO San Andreas Ge 68.61 59 *e*P **P** **13 54 12.8 -0.7**
comp=Z,15nm,1.0s,mb4.9
SAO LR LR
comp=Z,684nm,20.0s,MS4.9
GOF Gofitskoye 68.62 312⇓ *i*P **P** **13 54 13.0 -0.3**
GOF *i* 13 54 23.5
GOF *e*S S 14 03 17.5 +4.7
GOF pmax pmax
comp=Z,250nm,1.4s,mb6.0
GOF pmax pmax
comp=Z,2μm,3.0s
GOF smax
comp=E,180nm,1.6s
GOF MLR MLR
comp=N,14μm,18.0s,MS6.3
GOF MLR MLR
comp=E,7μm,18.0s,MS6.3
GOF MLR MLR
comp=Z,14μm,18.0s,MS6.2
LCCM Lewis and Clar 68.66 47 P **P** **13 54 13.9 +0.3**
HLID Hailey 68.68 50 *e*P **P** **13 54 13.8 0.0**
comp=Z,16nm,1.0s,mb4.9
HLID *e*pP pP 13 54 20.6 -1.4
HLID LR LR
comp=Z,910nm,21.0s,MS5.0
MCMT McKenzie Canyo 68.77 48 *e*P **P** **13 54 13.6 -0.6**
BOZ Bozeman (W) 68.92 47 *e*P **P** **13 54 15.1 0.0**
comp=Z,48nm,0.8s,mb5.5
BOZ LR LR
comp=Z,685nm,21.0s,MS4.9
BMN Battle Mountai 68.99 54 *e*P **P** **13 54 16.3 +0.6**
comp=Z,21nm,0.9s,mb5.1
BMN LR LR
comp=Z,538nm,20.0s,MS4.8
PYA Pyatigorsk 69.25 311*c* *i*P **P** **13 54 16.0 -1.2**
PYA *e* 14 03 42.0
PYA MLR MLR
comp=E,4μm,20.0s
PYA MLR MLR
comp=Z,6μm,19.0s,MS5.8
IZAR Zarasai 69.36 328 *i* P **P** **13 54 16.7 -1.0**
IZAR AMPb AMB 13 54 18.0
comp=Z,51nm,0.7s,mb5.6
IZAR *e*sP sP 13 54 28.2 -0.7
IDID Didziasalis 69.48 328⇑ *i*P **P** **13 54 17.7 -0.8**
IDID AMPb AMB 13 54 19.4
comp=Z,78nm,1.0s,mb5.6
IDID *e*sP sP 13 54 29.1 -0.5
KIV Kislovodsk 69.51 311 *i* P **P** **13 54 18.8 0.0**
KIV *e* 13 54 40.7
KIV *e* 13 56 52.8
KIV *e*PPP PPP 13 58 34.8 +1.2
KIV *i* S S 14 03 25.9 +2.5
KIV *e*SS SS 14 07 55.5 +2.8
KIV pmax pmax
comp=Z,260nm,0.9s,mb6.2
KIV pmax pmax
comp=N,140nm,1.0s
KIV MLR MLR
comp=N,4μm,18.0s,MS5.8
KIV MLR MLR
comp=E,2μm,18.0s,MS5.8
KIV MLR MLR
comp=Z,6μm,18.0s,MS5.9
KIV Kislovodsk 69.51 311 *e*P **P** **13 54 18.6 -0.2**
comp=Z,287nm,0.9s,mb6.2
KIV LR LR
comp=Z,5μm,19.0s,MS5.7
ISAL Salakas 69.54 328 *i* P **P** **13 54 17.8 -0.9**
ISAL AMPb AMB 13 54 19.8
comp=Z,98nm,1.0s,mb5.7
ISAL *e*sP sP 13 54 29.6 -0.3
QLMT Earthquake Lak 69.55 48 *e*P **P** **13 54 19.3 +0.3**
NVAR Mina Array Bea 69.57 56 P **P** **13 54 20.2 +1.0**
comp=Z,19nm,0.9s,mb5.0,baz=294,slow=4.6,SNR=18
NVAR pP pP 13 54 27.9 +0.5
comp=Z,16nm,0.8s,baz=294,slow=6.4,SNR=12
NVAR sP sP 13 54 33.1 +2.7

comp=Z,37nm,0.7s,baz=286,slow=6.6,SNR=19
NVAR LR LR 14 20 04.7
comp=Z,489nm,22.0s,MS4.7,baz=330,slow=32
NVAR Mina Array Bea 69.57 56 P **P 13 54 20.2 +1.0**
NVAR pP pP 13 54 27.9 +0.5
NVAR sP sP 13 54 33.1 +2.7
NVAR LR LR 14 20 04.7
ZEI Tsey 69.58 310⇑ *i*P **P 13 54 18.0 -1.2**
ZEI *e* 13 56 58.0
ZEI *e*S S 14 03 22.0 -2.2
ZEI *e*PS PS 14 03 48.0 -5.8
ZEI pmax pmax
comp=Z,100nm,1.0s,mb5.7
ZEI MLR MLR
comp=Z,4μm,19.0s,MS5.6
IIGN Ignalina 69.66 328⇑ *i*P **P 13 54 18.8 -0.7**
IIGN AMPb AMB 13 54 20.6
comp=Z,103nm,1.1s,mb5.7
IIGN *e*sP sP 13 54 30.5 -0.1
YMR Madison River 69.91 48 *e*P **P 13 54 21.9 +0.7**
MOL Molde 69.95 341⇑ *i*P **P 13 54 23.4 +2.2**
MOL AMb AMB 13 54 24.9
comp=Z,146nm,1.9s,mb5.6
MTUM Tungsten Hills 70.07 57 *e*P **P 13 54 22.5 +0.2**
MTUM *e*pP pP 13 54 28.5 -2.0
LKWY Lake 70.28 47 *e*P **P 13 54 24.8 +1.3**
comp=Z,15nm,0.9s,mb4.9
LKWY *e*pP pP 13 54 33.8 +2.1
NB2 NORSAR Subarra 70.28 338 P **P 13 54 22.3 -0.9**
comp=Z,176nm,0.8s,mb6.0,baz=34,slow=6.2
NB2 NORSAR Subarra 70.28 338 P **P 13 54 22.3 -0.9**
baz=34,slow=6.5
NOA NORSAR Array B 70.28 338 P **P 13 54 22.1 -1.0**
comp=Z,132nm,0.8s,mb5.9,baz=35,slow=6.1,SNR=97
NOA NORSAR Array B 70.28 338 P **P 13 54 22.2 -1.0**
NOA pmax pmax
comp=Z,132nm,0.8s
TPH Tonopah 70.45 56 *e*P **P 13 54 25.1 +0.4**
comp=Z,23nm,0.9s,mb5.1
TPH LR LR
comp=Z,619nm,22.0s,MS4.8
NAO01 NORSAR Array S 70.53 338 *e*P **P 13 54 23.0 -1.8**
comp=Z,99nm,0.8s,mb5.8
GNI Garni 70.75 307*c i*P **P 13 54 27.1 +0.7**
GNI pmax pmax
comp=Z,159nm,1.7s
GNI MLR MLR
comp=Z,2μm,18.0s
GNI Garni 70.75 307 *e*P **P 13 54 25.9 -0.5**
comp=Z,75nm,0.8s,mb5.7
GNI LR LR
comp=Z,2μm,21.0s,MS5.2
HVU Hansel Valley 70.75 51 *e*P **P 13 54 26.6 +0.2**
WUWY Wally Ulrich 70.76 48 *e*P **P 13 54 26.4 0.0**
KSWY Kelly School 70.77 48 *e*P **P 13 54 27.1 +0.6**
REDW Red Top Meadow 70.81 49 *e*P **P 13 54 27.1 +0.4**
AHID Auburn Hatcher 71.06 49 *e*P **P 13 54 28.4 +0.2**
comp=Z,23nm,1.0s,mb5.1
AHID LR LR
comp=Z,800nm,21.0s,MS5.0
SPUT South Promonto 71.24 51 *e*P **P 13 54 29.6 +0.2**
DAC Darwin (Calif) 71.35 58 PFAKE 13 54 40.0 +10
DAC LR LR
comp=Z,580nm,22.0s,MS4.8
SOC Sochi 71.39 312 *i*P **P 13 54 28.7 -1.5**
SOC *e* 13 54 47.3
SOC *e*S S 14 03 43.9 -1.4
SOC *e* 14 04 25.6
SOC *e*SS SS 14 08 20.0 -1.9
SOC pmax pmax
comp=Z,58nm,0.7s,mb5.6
SOC pmax pmax
comp=N,27nm,0.9s
SOC pmax pmax
comp=E,139nm,1.1s
SOC MLR MLR
comp=Z,4μm,20.0s,MS5.6
SOC MLR MLR
comp=N,2μm,21.0s,MS5.7
SOC MLR MLR
comp=E,3μm,19.0s,MS5.7
HWUT Hardware Ranch 71.55 50 *e*P **P 13 54 30.6 -0.6**
comp=E,24nm,1.1s,mb5.0
HWUT *e*pP pP 13 54 40.1 +0.6
HWUT LR LR
comp=Z,819nm,21.0s,MS5.0
BCA Borcka 71.72 310 *i*P **P 13 54 32.1 -0.2**
BCA Borcka 71.72 310 P **P 13 54 32.7 +0.4**
AKASG Malin Array Be 71.74 323 P **P 13 54 31.1 -1.1**
comp=Z,53nm,0.6s,mb5.7,baz=40,slow=5.8,SNR=32
SUW Suwalki 71.84 328 *e*P **P 13 54 31.5 -1.3**
comp=Z,300nm,1.1s,mb6.1
SUW Suwalki 71.84 328 *e*P **P 13 54 31.5 -1.3**
SUW MLR MLR
comp=Z,3μm,19.2s,MS5.6
SUW Suwalki 71.84 328 *e*P **P 13 54 31.5 -1.3**
SUW *e*pP pP 13 54 37.1 -3.9
KONO Kongsberg 71.89 338 *e* **P 13 54 25.6 -7.3**
KONO *e*S S 14 03 44.7 -6.1
KONO AMS AMS 14 31 40.5
comp=Z,2μm,20.0s,MS5.4
KONO Kongsberg 71.89 338 *e*P **P 13 54 31.3 -1.7**
comp=Z,40nm,0.9s,mb5.3
KONO LR LR
comp=Z,3μm,19.0s,MS5.5
BW06 Boulder Array 71.92 48 *e*P **P 13 54 33.2 -0.3**
comp=Z,33nm,1.1s,mb5.2
BW06 *e*pP pP 13 54 40.7 -1.0
BW06 LR LR
comp=Z,775nm,20.0s,MS5.0
PDAR Pinedale Array 71.92 48 P **P 13 54 33.8 +0.3**
comp=Z,22nm,0.9s,mb5.1,baz=271,slow=2.4,SNR=28
PDAR pP pP 13 54 41.1 -0.5
comp=Z,14nm,0.6s,baz=255,slow=3.9,SNR=10
TCUT Toone Canyon 71.96 51 *e*P **P 13 54 33.7 0.0**
CTU Camp Tracy 72.04 51 *e*P **P 13 54 33.7 -0.5**
CTU *e*pP pP 13 54 43.4 +1.0
JLU Jordanelle 72.27 51 *e*P **P 13 54 35.7 +0.1**
NLU North Lily Min 72.33 52 *e*P **P 13 54 36.5 +0.6**
RUND Rundenannen 72.35 340⇑ *i*P **P 13 54 35.6 -0.1**
RUND AMb AMB 13 54 36.9
comp=Z,541nm,1.0s,mb6.4
MWC Mount Wilson 72.36 60 *e*P **P 13 54 35.9 -0.2**
BER Bergen 72.38 340 *e*P **P 13 54 39.5 +3.7**
DAU Daniels Canyon 72.51 51 *e*P **P 13 54 37.1 +0.2**
MPU Maple Canyon 72.55 52 *e*P **P 13 54 37.8 +0.6**
TVAN Van 72.58 306 *i*P **P 13 54 38.6 +1.3**
VANT Van 72.64 306 *e*P **P 13 54 40.0 +2.2**
VANT Van 72.64 306 P **P 13 54 40.0 +2.3**
ERZM Erzurum 72.88 309 *i*P **P 13 54 40.4 +1.3**
EZM Erzurum 72.96 309 *e*P **P 13 54 40.2 +0.6**
MVU Marysvale 73.20 53 *e*P **P 13 54 41.9 +0.9**
comp=Z,9.5nm,0.9s,mb4.7
MVU LR LR
comp=Z,344nm,20.0s,MS4.6
MSU Marysvale 73.22 53 *e*P **P 13 54 41.8 +0.7**
VRT Varto 73.29 308 *i*P **P 13 54 42.9 +1.4**
VRT Varto 73.29 308 P **P 13 54 42.9 +1.4**
SIM Simferopol' 73.44 316*c i*P **P 13 54 41.9 -0.3**
SIM *e* 13 57 26.0
SIM S S 14 04 10.0 +1.5
SIM pmax pmax
comp=Z,88nm,1.0s,mb5.6
SIM MLR MLR
comp=Z,3μm,16.0s,MS5.7
SIM Simferopol' 73.44 316⇑ *i*P **P 13 54 41.9 -0.3**
ULM Lac du Bonnet 73.46 36 P **P 13 54 41.5 -0.8**
comp=Z,12nm,0.8s,mb4.9,baz=312,slow=6.1,SNR=9.1
ULM Lac du Bonnet 73.46 36 *e*P **P 13 54 40.1 -2.1**
comp=Z,12nm,0.8s,mb4.9
ULM LR LR
comp=Z,1μm,20.0s,MS5.1
NEN Nelson 73.47 57 *e*P **P 13 54 42.4 -0.2**
GUMT Gumushane 73.59 310 *i*P **P 13 54 44.1 +0.9**
GUMT Gumushane 73.59 310 P **P 13 54 44.1 +0.9**
LDFC Landfair 73.67 57 *e*P **P 13 54 44.2 +0.4**
PFO Pinyon Flat Ob 73.77 59 *e*P **P 13 54 44.8 +0.4**
comp=Z,103nm,1.4s,mb5.6
PFO LR LR
comp=Z,1μm,19.0s,MS5.3
SRU San Rafael 73.79 52 *e*P **P 13 54 44.5 0.0**
EZC Erzincan 73.88 309 *e*P **P 13 54 47.4 +2.5**
EZC Erzincan 73.88 309 P **P 13 54 47.4 +2.5**
BTMT Batman 73.94 307 *e*P **P 13 54 46.1 +0.8**
RSSD Black Hills 73.96 44 *e*P **P 13 54 44.6 -0.7**

comp=Z,17nm,0.8s,mb5.0
RSSD LR LR
comp=Z,1μm,22.0s,MS5.1
BSD Bornholm Skovb 74.00 333⇑ *i*P **P 13 54 44.3 -0.9**
comp=Z,162nm,0.8s,mb6.0
BSD *e* 14 01 20.2
BSD *i*S S 14 04 15.1 +0.6
comp=Z,2μm,17.0s
BSD Bornholm Skovb 74.00 333⇑ *i*P **P 13 54 44.3 -0.9**
BSD *i*S S 14 04 15.1 +0.6
BSD pmax pmax
comp=Z,160nm,0.8s,mb6.0
BSD MLR MLR
comp=Z,2μm,17.0s,MS5.5
STKA Stephens Creek 74.01 183 *e*P **P 13 54 46.6 +0.8**
comp=Z,8.9nm,0.8s,mb4.8
STKA *i*pP pP 13 55 01.3 +7.2
STKA Stephens Creek 74.01 183 P **P 13 54 46.4 +0.5**
comp=Z,5.1nm,1.0s,baz=352,slow=7.7,SNR=3.6
STKA LR LR 14 29 34.3
comp=Z,592nm,20.4s,MS4.9,baz=9.2,slow=38
WAR Warsaw 74.04 328 *e*P **P 13 54 45.8 +0.3**
WAR *e*pP pP 13 54 52.3 -1.5
WAR *e*PcP PcP 13 54 59.1 -1.8
WAR MLR MLR 14 28 25.8
comp=Z,3μm,21.6s,MS5.5
WAR Warsaw 74.04 328 *e*P **P 13 54 45.8 +0.3**
WAR *e* 13 54 59.1
WAR MLR MLR
comp=Z,3μm,21.6s,MS5.5
BINT Bingol 74.07 308 *e*P **P 13 54 47.1 +1.1**
BAR Barrett 74.23 60 *e*P **P 13 54 47.1 0.0**
BEST Besiri 74.27 307 *i*P **P 13 54 47.9 +0.7**
COP Copenhagen 74.34 334⇑ *i*P **P 13 54 46.9 -0.3**
comp=Z,75nm,0.8s,mb5.7
COP Copenhagen 74.34 334⇑ *i*P **P 13 54 46.9 -0.3**
COP pmax pmax
comp=Z,75nm,0.8s,mb5.7
FORT Forrest 74.51 195 *e*P **P 13 54 49.4 +0.6**
comp=Z,42nm,0.7s,mb5.5
FORT *e*pP pP 13 55 05.3 +8.3
LVV L'vov 74.65 325 *e*P **P 13 54 47.7 -1.5**
LVV *e*S S 14 04 20.0 -2.0
LVV MLR MLR
comp=Z,3μm,18.6s,MS5.6
MUD Monsted U'grnd 74.70 336⇑ *i*P **P 13 54 49.0 -0.3**
comp=Z,57nm,0.8s,mb5.5
MUD *i*S S 14 04 23.2 +0.7
comp=Z,2μm,18.0s
MUD Monsted U'grnd 74.70 336⇑ *i*P **P 13 54 49.0 -0.3**
MUD *i*S S 14 04 23.2 +0.7
MUD pmax pmax
comp=Z,57nm,0.8s,mb5.5
MUD MLR MLR
comp=Z,2μm,18.0s,MS5.4
DIY Diyarbakir 74.88 308 *i*P **P 13 54 51.8 +1.1**
DIY Diyarbakir 74.88 308 P **P 13 54 51.8 +1.0**
PV10 Paradox Valley 75.14 51 *e*P **P 13 54 53.1 +0.9**
ELZG Elazig 75.19 309 *i*P **P 13 54 53.5 +1.0**
TOKT Tokat 75.33 311 *e*P **P 13 54 53.7 +0.4**
KWP Kalwaria 75.36 325 *e*P **P 13 54 53.4 +0.2**
comp=Z,600nm,1.1s,mb6.4
KWP Kalwaria 75.36 325 *e*P **P 13 54 53.4 +0.2**
KWP *e* 13 55 04.5
KWP MLR MLR
comp=Z,3μm,19.5s,MS5.7
KWP Kalwaria 75.36 325 *e*P **P 13 54 53.4 +0.2**
KWP *e*pP pP 13 55 00.5 -1.0
KWP *e*PcP PcP 13 55 04.5 -2.2
SVSK Karacayir 75.36 311 P **P 13 54 54.9 +1.5**
SVSK Karacayir 75.36 311 P **P 13 54 54.9 +1.4**
BOYT Boyabat 75.47 313 *i*P **P 13 54 54.7 +0.6**
BYBT Boyabat 75.51 313 *e*P **P 13 54 54.7 +0.4**
BYBT Boyabat 75.51 313 P **P 13 54 54.7 +0.4**
BZK Bozkurt 75.58 314 *i*P **P 13 54 55.1 +0.5**
BZK Bozkurt 75.58 314 P **P 13 54 55.1 +0.4**
PV01 Paradox Valley 75.58 51 *e*P **P 13 54 55.0 +0.2**
MYA Malataya 75.63 309 *i*P **P 13 54 56.5 +1.4**
MYA Malataya 75.63 309 P **P 13 54 56.5 +1.4**
WUAZ Wupatki 75.68 55 *e*P **P 13 54 56.3 +0.9**
comp=Z,33nm,1.0s,mb5.2
WUAZ *e*pP pP 13 55 04.2 +0.5
WUAZ LR LR
comp=Z,608nm,22.0s,MS4.9
RW3 Ridgway 76.01 51 *e*P **P 13 54 58.3 +1.1**
CTKT Corum 76.09 313 *i*P **P 13 54 58.1 +0.5**
OJC Ojcow 76.09 327⇑ *i*P **P 13 54 57.4 0.0**
OJC *i*PcP PcP 13 55 08.2 -1.6
OJC *e*S S 14 04 37.8 -0.1
OJC MLR MLR 14 30 32.3
comp=Z,3μm,20.8s,MS5.5
ISCO Idaho Springs 76.11 49 *e*P **P 13 54 57.9 +0.2**
comp=Z,15nm,1.0s,mb4.9
ISCO *e*pP pP 13 55 06.8 +0.7
ISCO LR LR
comp=Z,965nm,21.0s,MS5.1
BALT Daday 76.21 314 *i*P **P 13 54 58.8 +0.6**
TOS Tosya 76.22 313 *i*P **P 13 54 59.3 +1.0**
TOS Tosya 76.22 313 P **P 13 54 59.3 +1.0**
CFR Carcaliu 76.24 320⇑ *i*P **P 13 54 58.1 -0.2**
CFR Carcaliu 76.24 320⇑ P **P 13 54 58.1 -0.2**
VRI Vrincioaia 76.40 321⇑ *i*P **P 13 55 00.8 +1.6**
VRI Vrincioaia 76.40 321⇑ P **P 13 55 00.8 +1.6**
CRVS Cervenica-Dubn 76.44 326 *i*P **P 13 54 59.6 +0.2**
BSEG Bad Segeberg 76.48 334 *e*P **P 13 54 59.5 0.0**
BSEG pmax pmax
comp=Z,135nm,1.0s,mb5.8
YOZ Yozgat 76.48 312 *e*P **P 13 55 00.0 +0.2**
YOZ Yozgat 76.48 312 P **P 13 55 00.0 +0.2**
NIE Niedzica 76.51 327⇑ *e*P **P 13 55 00.1 +0.4**
NIE *e*PcP PcP 13 55 11.1 -0.6
RUE Ruedersdorf 76.53 332 *e*P **P 13 54 59.3 -0.5**
HARR Harsova 76.70 319⇑ *i*P **P 13 55 01.0 +0.1**
HARR Harsova 76.70 319⇑ *i*P **P 13 55 01.0 +0.1**
BNN Bunyan 76.74 311 *i*P **P 13 55 02.4 +1.1**
SAFT Safranbolu 76.78 314 *i*P **P 13 55 02.0 +0.5**
SAFT Safranbolu 76.78 314 P **P 13 55 02.0 +0.6**
GZT Gaziantep 76.80 309 *i*P **P 13 55 02.2 +0.7**
RAC Raciborz 76.84 328 *e*P **P 13 55 02.2 +0.7**
RAC *e*PcP PcP 13 55 12.5 -0.5
RAC MLR MLR 14 31 44.9
comp=Z,3μm,18.4s,MS5.7
ELDT Eldivan 76.92 313 *i*P **P 13 55 02.8 +0.5**
KSP Ksiaz 76.96 330 *e*P **P 13 55 02.3 +0.1**
comp=Z,500nm,1.4s,mb6.2
KSP Ksiaz 76.96 330⇑ *i*P **P 13 55 02.3 +0.1**
KSP *e**PP pP 13 55 12.4 +1.9
KSP *e*S S 14 04 43.0 -4.3
KSP *e* 14 05 05.0
KSP *e*SP SP 14 05 31.0 +4.6
KSP MLR MLR
comp=Z,8μm,18.8s,MS6.1
ISR Istrita 77.05 320⇑ *i*P **P 13 55 03.5 +0.7**
ISR Istrita 77.05 320⇑ *i*P **P 13 55 03.6 +0.8**
MLR Muntele Rosu 77.05 321⇑ *i*P **P 13 55 03.1 +0.3**
MLR Muntele Rosu 77.05 321⇑ *i*P **P 13 55 03.1 +0.2**
OKC Ostrava-Krasne 77.05 328⇑ *i*P **P 13 55 02.8 +0.1**
OKC *e*pP pP 13 55 13.6 +2.6
OKC *e*S S 14 04 46.8 -1.5
OKC *e*x x 14 05 04.7
OKC L L 14 31 50.0
comp=Z,2.5nm,17.9s
GAZ Gaziantep 77.12 309 *e*P **P 13 55 04.5 +1.1**
GAZ Gaziantep 77.12 309 P **P 13 55 04.5 +1.1**
HASS Wahat al Ahsa' 77.21 292 P **P 13 55 03.1 -1.0**
LIKS Likavka 77.29 327 *e*P **P 13 55 05.2 +1.1**
PSN Preselentsi 77.32 318 *i*P **P 13 55 05.0 +0.6**
UPC Upice 77.33 329⇑ *i*P **P 13 55 04.5 +0.2**
UPC *e*pP pP 13 55 14.9 +2.3
MORC Moravsky Berou 77.33 328 *e*P **P 13 55 03.7 -0.6**
comp=Z,138nm,1.0s,mb5.8
AVNT Avonos 77.34 311 *i*P **P 13 55 04.7 +0.1**
DPC Dobruska-Polom 77.34 329⇑ *i*P **P 13 55 04.8 +0.5**
DPC *e*pP pP 13 55 15.6 +2.9
DPC *e*S S 14 04 47.9 -3.6
DPC *e*SKS SKS 14 05 09.7 -8.5
DPC L 14 32 00.0
comp=Z,3.3nm,17.6s
BRTR Keskin Array B 77.35 313 P **P 13 55 04.7 +0.1**
comp=Z,31nm,0.8s,mb5.3,baz=75,slow=3.3,SNR=49
BRTR PP PP 13 57 57.6 -3.0
comp=Z,15nm,0.9s,baz=65,slow=7.3,SNR=7.5
KAMT Kaman 77.56 312 *i*P **P 13 55 06.2 +0.4**

SDCO Great Sand Dun 77.60 50 *e*P **P 13 55 06.5 +0.4**
comp=Z,6.4nm,1.0s
SDCO *e*pP pP 13 55 15.0 +0.6
SDCO LR LR
comp=Z,664nm,20.0s,MS5.0
ANTO Ankara 77.70 313 *e*P **P 13 55 06.8 +0.2**
ANTO Ankara 77.70 313 P **P 13 55 06.8 +0.2**
LOD Lodumlu 77.70 313 *e*P **P 13 55 07.2 +0.6**
LOD Lodumlu 77.70 313 P **P 13 55 07.2 +0.6**
CLL Collm 77.78 332⇑ P **P 13 55 06.4 -0.3**
comp=Z,logA/T=2.2,mb5.9
CLL *i* *SP sP 13 55 17.0 -0.8
CLL *e* 13 55 35.0
CLL *e*S S 14 04 51.0 -5.1
CLL Collm 77.78 332⇑ *i*P **P 13 55 06.4 -0.3**
CLL *i* *PP pP 13 55 17.0 +2.0
CLL *e*S S 14 04 51.0 -5.1
CLL pmax pmax
comp=Z,170nm,1.0s,mb5.9
CLL Collm 77.78 332⇑ *i*P **P 13 55 06.4 -0.3**
comp=Z,170nm,1.0s,mb5.9
CLL *i*pP pP 13 55 17.0 +2.0
CLL *e*S S 14 04 51.0 -5.1
BRG Berggiesshubel 77.80 331 *i*P **P 13 55 06.7 -0.1**
BRG *i* pP 13 55 16.4 +1.2
BRG *e* 13 57 56.8
BRG *i*S S 14 05 13.0 +17
BRG *e* 14 05 50.0
BRG pmax pmax
comp=Z,56nm,1.1s,mb5.4
BRG MLR MLR
comp=N,3μm,18.2s,MS5.7
BRG MLR MLR
comp=E,2μm,18.2s,MS5.7
BRG MLR MLR
comp=Z,5μm,18.2s,MS5.8
BRG Berggiesshubel 77.80 331 *i*P **P 13 55 06.7 -0.1**
comp=Z,56nm,1.1s,mb5.4
BRG *i*PcP PcP 13 55 16.4 -0.8
BRG *e*PP PP 13 57 56.8 -7.6
BRG *i*S S 14 05 13.0 +17
BRG *e* 14 05 50.0
BRG LR LR
comp=Z,5μm,18.2s,MS5.8
KLBR Kellerberrin 77.83 204⇓ *i*P **P 13 55 07.8 +0.4**
comp=Z,8.8nm,0.8s,mb4.7
KLBR *i*pP pP 13 55 21.5 +5.8
VYHS Vyhne 77.84 327 *i*P **P 13 55 07.7 +0.6**
PVCC Panska Ves 77.85 330⇑ *i*P **P 13 55 07.4 +0.3**
PVCC *e*pP pP 13 55 18.3 +2.8
PVCC L 14 32 50.0
comp=Z,4.6nm,16.9s
PSZ Piszkesteto 77.86 326 *e*P **P 13 55 07.2 -0.1**
comp=Z,103nm,1.0s,mb5.7
KOLL Kolacno 77.95 327 *i*P **P 13 55 08.4 +0.7**
NIG Nigde 77.95 311 *i*P **P 13 55 09.0 +1.1**
NIG Nigde 77.95 311 P **P 13 55 09.0 +1.0**
HENT Hendek 78.03 315 *i*P **P 13 55 08.1 -0.2**
CEYT Ceyhan 78.08 309 *e*P **P 13 55 10.1 +1.4**
CEYT Ceyhan 78.08 309 P **P 13 55 10.1 +1.5**
MDU Mudurnu 78.12 315 *i*P **P 13 55 09.1 +0.3**
COBT Iskenderun 78.13 309 *i*P **P 13 55 09.7 +0.8**
TUC Tucson 78.20 57 *e*P **P 13 55 10.0 +0.6**
comp=Z,15nm,1.1s,mb4.8
TUC LR LR
comp=Z,556nm,19.0s,MS4.9
ESY Stoneypath 78.28 342⇑ *i*P **P 13 55 09.1 -0.3**
ESY AMB AMB 13 55 22.3
comp=Z,94nm,1.3s,mb5.6
PRU Pruhonice 78.31 330⇑ *i*P **P 13 55 09.7 +0.1**
comp=Z,114nm,1.0s,mb5.8
PRU *e*pP pP 13 55 20.5 +2.5
PRU *e*x x 14 05 10.5
PRU L L 14 32 50.0
comp=Z,3.4nm,18.0s
PRU Pruhonice 78.31 330⇑ *i*P **P 13 55 09.7 +0.1**
PRU *e**PP pP 13 55 20.5 +2.5
PRU *e* 14 05 10.5
PRU pmax pmax
comp=Z,115nm,1.0s,mb5.8
PRU MLR MLR
comp=Z,3μm,18.0s,MS5.7
EDI Edinburgh 78.40 342⇑ *e*P **P 13 55 09.8 -0.2**
EDI AMB AMB 13 55 14.1
comp=Z,70nm,2.7s,mb5.1
EAB Aberfoyle 78.41 343⇑ *i*P **P 13 55 10.2 +0.1**
EAB AMB AMB 13 55 13.1
comp=Z,205nm,1.7s,mb5.8
HTY Hatay 78.47 309 *e*P **P 13 55 11.5 +0.6**
HTY Hatay 78.47 309 P **P 13 55 11.5 +0.7**
EAU Auchinoon 78.53 343⇑ *e*P **P 13 55 10.9 +0.1**
EAU AMB AMB 13 55 15.4
comp=Z,148nm,1.0s,mb5.8
SRO Srobarova 78.59 327 *i*P **P 13 55 12.5 +1.2**
HRT Hereke 78.67 316 *i*P **P 13 55 09.4 -2.4**
HRT Hereke 78.67 316 *i*P **P 13 55 10.1 -1.7**
HRT Hereke 78.67 316 P **P 13 55 10.1 -1.7**
GPA Golpazari 78.72 315 *e*P **P 13 55 10.5 -1.6**
GPA Golpazari 78.72 315 P **P 13 55 10.5 -1.6**
SZH Strazhica 78.72 319 *i*P **P 13 55 12.0 -0.1**
ZST Bratislava 78.78 327 *i*P **P 13 55 13.1 +0.8**
MOX Moxa 78.81 332 *i*P **P 13 55 12.2 -0.2**
comp=Z,logA/T=1.8,mb5.5
MOX S S 14 05 04.0 -3.3
MOX L 14 34 03.0
MOX Moxa 78.81 332 *e*P **P 13 55 12.2 -0.2**
MOX pmax pmax
comp=Z,89nm,1.5s,mb5.5
MOX MLR MLR
comp=Z,3μm,18.0s,MS5.7
MOX Moxa 78.81 332 *e*P **P 13 55 12.2 -0.2**
comp=Z,89nm,1.5s,mb5.5
MOX LR LR
comp=Z,3μm,18.0s,MS5.7
KIZT Kizilcal 78.91 313 *e*P **P 13 55 13.2 0.0**
KIZT Kizilcal 78.91 313 P **P 13 55 13.2 0.0**
BADT Buyukada 78.93 316 *i*P **P 13 55 13.1 -0.2**
ESK Eskdalemuir 78.96 342 *e*P **P 13 55 12.2 -0.9**
comp=Z,39nm,0.9s,mb5.3
ESK LR LR
comp=Z,987nm,20.0s,MS5.1
ESKT Eskisehir 79.00 314 *i*P **P 13 55 13.6 -0.1**
ESKT Eskisehir 79.00 314 P **P 13 55 13.6 0.0**
ANMO Albuquerque 79.00 53 *e*P **P 13 55 14.9 +1.1**
comp=Z,14nm,1.0s,mb4.9
ANMO *e*pP pP 13 55 23.9 +1.7
ANMO LR LR
comp=Z,752nm,22.0s,MS5.0
JMB Yambol 79.01 319 *i*P **P 13 55 14.0 +0.3**
YLV Yalova 79.01 316 *e*P **P 13 55 13.1 -0.6**
PVL Pavlikeni 79.05 320 *i*P **P 13 55 14.5 +0.6**
CTT Catalca 79.06 317 *e*P **P 13 55 13.8 -0.2**
CTT Catalca 79.06 317 P **P 13 55 13.8 -0.2**
NWAO Narrogin (SRO) 79.23 204 *e*P **P 13 55 15.2 +0.2**
comp=Z,50nm,1.4s,mb5.2
NWAO LR LR
comp=Z,295nm,21.0s,MS4.6
WTSB Winterswijk 79.28 335⇑ *e*P **P 13 55 14.5 -0.4**
comp=Z,52nm,0.9s,mb5.4
KONT Konya-~Tatoy 79.31 312 *e*P **P 13 55 15.6 +0.2**
SCHQ Schefferville 79.36 18 P **P 13 55 15.2 -0.1**
comp=Z,38nm,0.9s,mb5.3,baz=347,slow=5.8,SNR=21
SCHQ Schefferville 79.36 18 *e*P **P 13 55 14.2 -1.1**
comp=Z,65nm,1.0s,mb5.5
SCHQ LR LR
comp=Z,1μm,22.0s,MS5.3
KHC Kasperske Hory 79.37 330⇑ *i*P **P 13 55 15.8 +0.3**
KHC *e*pP pP 13 55 26.5 +2.7
KHC L 14 33 30.0
comp=Z,4.4nm,18.1s
EDRB Edirne 79.39 318 *e*P **P 13 55 15.8 0.0**
EDRB Edirne 79.39 318 P **P 13 55 15.8 0.0**
ULDT Uludag 79.44 315 *i*P **P 13 55 16.5 +0.4**
GERES GERESS Array B 79.56 330 P **P 13 55 16.5 0.0**
comp=Z,17nm,0.8s,mb5.0,baz=34,slow=4.8,SNR=33
GERES GERESS Array B 79.56 330 P **P 13 55 16.5 0.0**
GERES pmax pmax
comp=Z,17nm,0.8s
WET Wettzell 79.61 330 *e*P **P 13 55 17.4 +0.6**
WET pmax pmax
comp=Z,102nm,1.1s,mb5.7
ALT Altintas 79.73 314 *e*P **P 13 55 17.8 +0.2**
ALT Altintas 79.73 314 P **P 13 55 17.8 +0.2**
GRF Grafenberg Arr 79.75 332 *e*P **P 13 55 18.1 +0.6**

GRF *e* 13 55 29.0
GRF *e* 13 58 19.2
GRF *eS* S 14 05 21.2 +4.0
GRF pmax pmax
comp=Z,137nm,1.0s,mb5.8
GRF MLR MLR
comp=Z,2µm,19.3s,MS5.5
IKL Isikli 79.80 310 *i* P **P 13 55 17.9 -0.2**
IKL Isikli 79.80 310 P **P 13 55 17.9 -0.2**
BNT Bandirma 79.91 316 *eP* **P 13 55 19.1 +0.5**
BNT Bandirma 79.91 316 P **P 13 55 19.1 +0.6**
CBKS Cedar Bluff 80.01 46 PFAKE 13 55 30.0 +11
CBKS LR LR
comp=Z,454nm,20.0s,MS4.8
PGB Panagyurishte 80.11 320 *i* P **P 13 55 20.0 +0.4**
SVIS Svilajnac 80.12 323 ⇑*iP* **P 13 55 19.3 -0.3**
BOLS Boljevac 80.15 322 ⇑*iP* **P 13 55 19.1 -0.7**
MOA Molln 80.17 329 ⇑*iP* **P 13 55 20.2 +0.4**
comp=Z,155nm,2.1s,mb5.6
ARSA Arzberg 80.17 328 ⇑*iP* **P 13 55 20.4 +0.6**
comp=Z,246nm,2.2s,mb5.8
KDZ Kurdzhali 80.19 319 *i* P **P 13 55 20.5 +0.4**
PLD Plovdiv 80.19 319 *i* P **P 13 55 18.0 -2.1**
LHO Holmfirth 80.27 341 *i* P **P 13 55 19.2 -1.0**
ALN Alexandroupoli 80.45 318 *eP* **P 13 55 21.5 +0.1**
RZN Rozhen 80.51 319 *i* P **P 13 55 22.0 +0.3**
VTS Vitosha 80.53 321 *i* P **P 13 55 22.0 +0.2**
SIND Sindeldorf 80.61 332⇑*eP* **P 13 55 21.8 -0.3**
TOD Tromm 80.66 333⇑*eP* **P 13 55 22.3 0.0**
TOD Tromm 80.66 333 *eP* **P 13 55 22.4 +0.1**
DIVS Divcibare 80.83 323 ⇓*iP* **P 13 55 23.1 -0.2**
PERS Pernice 80.83 328 *i* P **P 13 55 23.3 0.0**
PERS *epP* pP 13 55 34.3 +2.6
ABH Alteburg 80.84 334⇑*eP* **P 13 55 23.3 0.0**
KSHT Keshet 80.87 307 P **P 13 55 24.4 +0.6**
KSHT Keshet 80.87 307 ⇑P **P 13 55 24.4 +0.6**
CSS Prodhromos 80.91 309 *eP* **P 13 55 23.4 -0.5**
MANT Manisa 80.96 315 *i* P **P 13 55 24.5 +0.3**
FUR Furstenfeldbru 81.02 331 *eP* **P 13 55 24.7 +0.4**
FUR pmax pmax
comp=Z,142nm,1.0s,mb5.8
HILS Ha'il 81.02 299 P **P 13 55 25.4 +0.7**
MZLS Mizel 81.03 294 P **P 13 55 25.3 +0.4**
HDH Heidenheim 81.05 332 *eP* **P 13 55 24.2 -0.2**
LEF Lefka 81.05 310 *eP* **P 13 55 24.7 0.0**
LEF Lefka 81.05 310 P **P 13 55 24.7 0.0**
MMB Musomiste 81.06 320 *i* P **P 13 55 25.0 +0.4**
AKS Akhisar 81.06 315 *eP* **P 13 55 24.9 +0.2**
AKS Akhisar 81.06 315 P **P 13 55 24.9 +0.1**
DMUB Kingscourt 81.09 344⇑*iP* **P 13 55 25.0 +0.5**
KTD Kalmit 81.15 333 *eP* **P 13 55 24.8 -0.1**
KKB Krupnik 81.15 320 *i* P **P 13 55 25.0 -0.1**
RUP Ruppelstein 81.16 334⇑*eP* **P 13 55 24.8 -0.1**
RUP Ruppelstein 81.16 334 *eP* **P 13 55 24.9 0.0**
KBA Koelnbreinsper 81.16 329⇑*iP* **P 13 55 25.3 +0.3**
comp=Z,166nm,1.3s,mb5.8
OBKA Obir 81.16 328⇑*iP* **P 13 55 25.1 +0.1**
comp=Z,499nm,3.9s
HNTI Hanita 81.17 307 P **P 13 55 26.1 +0.7**
HNTI Hanita 81.17 307 ⇑P **P 13 55 26.1 +0.7**
STU Stuttgart 81.24 332 *eP* **P 13 55 24.8 -0.6**
DNZL Cakiroluk 81.30 314 *i* P **P 13 55 26.5 +0.6**
NVSS Nova Varos 2 81.42 323⇑*iP* **P 13 55 19.3 -7.2**
KSU1 Kansas State U 81.43 44 *eP* **P 13 55 25.8 -0.8**
BUCH Bad Urach 81.46 332⇑*eP* **P 13 55 27.0 +0.4**
LBG Lerchenberg 81.47 332 *eP* **P 13 55 26.7 +0.1**
WLF Walferdange 81.48 334 *eP* **P 13 55 25.5 -1.1**
SRS Serrai 81.49 319 *eP* **P 13 55 28.1 +1.2**
GIVF Givet 81.51 335 *eP* **P 13 55 26.4 -0.4**
ELL Elmali 81.52 313 *eP* **P 13 55 27.7 +0.5**
ELL Elmali 81.52 313 P **P 13 55 27.6 +0.5**
LANF Langenberg 81.53 333 *eP* **P 13 55 27.0 +0.1**
LJU Ljubljana 81.55 328 *eP* **P 13 55 26.7 -0.4**
LJU *epP* pP 13 55 37.3 +1.8
HMDT Nahal Hemdat 81.55 306 P **P 13 55 28.3 +0.9**
HMDT Nahal Hemdat 81.55 306 ⇑P **P 13 55 28.3 +0.9**
JFWS Jewell Farm 81.57 38 *eP* **P 13 55 25.9 -1.4**
comp=Z,20nm,1.0s,mb5.0
JFWS LR LR
comp=Z,1µm,20.0s,MS5.2
DLF Lyons Farm 81.57 343⇑*iP* **P 13 55 27.5 +0.5**
WATA Walderalm 81.61 330⇓*iP* **P 13 55 27.8 +0.5**
comp=Z,76nm,1.1s,mb5.5
OFRI 'Ofer 81.61 307 P **P 13 55 28.2 +0.5**
OFRI 'Ofer 81.61 307 ⇑P **P 13 55 28.2 +0.5**
WTTA Wattenberg 81.64 330⇑*iP* **P 13 55 28.1 +0.6**
comp=Z,488nm,3.0s
LOS Limnos 81.66 318 *eP* **P 13 55 29.6 +1.8**
DCN Croghan 81.69 344⇑*iP* **P 13 55 28.2 +0.6**
PLE Pljevlja 81.70 323⇑*iP* **P 13 55 28.8 +0.9**
BOJS Bojanci 81.70 327 *eP* **P 13 55 27.6 -0.3**
BOJS *epP* pP 13 55 38.1 +1.8
KDAG Bornova 81.70 315 *i* P **P 13 55 27.5 -0.6**
PTCC Patocco-Chiusa 81.71 329 *eP* **P 13 55 27.1 -0.8**
BAIF Baives 81.74 336⇑*iP* **P 13 55 27.6 -0.4**
comp=Z,55nm,1.0s,mb5.1
MOTA Moosalm 81.77 330⇑*iP* **P 13 55 28.7 +0.5**
comp=Z,85nm,1.0s,mb5.6
FVI Forni Avoltri 81.77 329 *eP* **P 13 55 27.3 -0.9**
KNT Kendrikon 81.78 320 *eP* **P 13 55 28.6 +0.2**
VOY Vojsko 81.81 328 *eP* **P 13 55 27.5 -0.9**
VOY *epP* pP 13 55 35.9 -0.9
VAY Valandovo 81.82 320⇑*iP* **P 13 55 29.1 +0.5**
VAY ⇑*i* 13 55 39.9
SQTA Sankt Quirin 81.84 330⇑*iP* **P 13 55 29.2 +0.6**
comp=Z,72nm,1.1s,mb5.5
IVA Berane 81.84 323 ⇓*iP* **P 13 55 29.3 +0.7**
CEY Cerknica 81.84 328 *eP* **P 13 55 28.2 -0.4**
CEY *epP* pP 13 55 39.0 +2.1
SKO Skopje 81.84 321⇑*iP* **P 13 55 29.7 +1.0**
comp=Z,0.2nm,0.8s
SKO ⇑*i* 13 55 40.5
UBR Uberruh 81.85 331⇑*eP* **P 13 55 28.5 -0.1**
SLTI Sal'it 81.85 306 P **P 13 55 29.7 +0.8**
SLTI Sal'it 81.85 306 ⇑P **P 13 55 29.7 +0.8**
GMNA Gemona 81.86 329 *eP* **P 13 55 27.8 -0.9**
GUT Gutenstein 81.87 332⇑*eP* **P 13 55 28.7 0.0**
OUR Ouranopolis 81.90 319 *eP* **P 13 55 29.1 +0.1**
MENF Mencas 81.90 337 *eP* **P 13 55 28.5 -0.3**
BFO Black Forest 81.92 332 *eP* **P 13 55 29.2 +0.3**
BFO pmax pmax
comp=Z,152nm,1.8s,mb5.6
MNTX Cornudas Mount 81.92 54 *eP* **P 13 55 28.9 -0.4**
MNTX *epP* pP 13 55 37.9 +0.2
SPAK Spaichingen 81.95 332⇑*eP* **P 13 55 29.4 +0.3**
MKRJ Makawir 81.98 306 P **P 13 55 30.5 +0.9**
UPM Unac-Piva 82.02 323⇑*iP* **P 13 55 29.2 -0.3**
PVY Plav 82.02 322⇑*iP* **P 13 55 29.1 -0.5**
DRGI Dragot 82.10 306 P **P 13 55 30.9 +0.7**
DRGI Dragot 82.10 306 ⇑P **P 13 55 30.9 +0.7**
YER Yerkesik 82.11 314 P **P 13 55 31.8 +1.6**
YER Yerkesik 82.11 314 P **P 13 55 31.8 +1.5**
THE Thessaloniki 82.16 319 *eP* **P 13 55 29.8 -0.5**
WLS Welschbruch 82.17 333 *eP* **P 13 55 30.3 0.0**
GRG Griva 82.18 320 *eP* **P 13 55 30.3 -0.2**
CDF Champ du Feu 82.20 333⇑*iP* **P 13 55 30.4 0.0**
comp=Z,155nm,1.1s,mb5.6
DAVA Damuels 82.26 331⇑*iP* **P 13 55 31.2 +0.4**
comp=Z,86nm,1.1s,mb5.6
NKY Niksic 82.29 323⇑*iP* **P 13 55 30.3 -0.7**
LIBD Limburg 82.32 333⇑*eP* **P 13 55 31.4 +0.4**
LIBD Limburg 82.32 333 *eP* **P 13 55 31.2 +0.2**
KIZ Kirchzarten 82.38 333⇑*eP* **P 13 55 31.1 -0.2**
ECH Echery 82.41 333 *eP* **P 13 55 31.5 0.0**
FELD Feldberg 82.42 332⇑*eP* **P 13 55 31.5 0.0**
BRY Bratogost 82.42 323 *eP* **P 13 55 30.7 -1.0**
TTG Podgorica 82.47 323⇑*iP* **P 13 55 31.2 -0.8**
AFFS 'Afif 82.58 296 P **P 13 55 33.6 +0.7**
BDRM Kayabasi 82.61 314 *iP* **P 13 55 33.1 +0.3**
NVLJ Novalja 82.63 327 *iP* **P 13 55 31.9 -0.8**
MOF Molkenrain 82.73 333 *eP* **P 13 55 33.1 -0.1**
BUM Brajici-Budva 82.74 323⇑*iP* **P 13 55 32.6 -0.7**
BRMO Bormio 82.77 330 *eP* **P 13 55 34.2 +0.7**
THEF They Montfort 82.79 334 *eP* **P 13 55 33.4 -0.1**
HCY Herceg Novi 82.80 323⇑*iP* **P 13 55 33.2 -0.4**
FNA Florina 82.80 320 *eP* **P 13 55 31.2 -2.5**
LIT Litokhoron 82.80 319 *eP* **P 13 55 33.2 -0.5**
OHR Ohrid 82.81 321⇑*iP* **P 13 55 33.7 -0.1**
AOS Alonnisos 82.84 318 *eP* **P 13 55 33.7 -0.2**
MEZF Maizieres J'vi 82.85 334 *eP* **P 13 55 33.9 +0.1**
ULC Ulcinj 82.85 322⇑*iP* **P 13 55 33.8 -0.2**

HINF Hinteralfeld 82.86 333⇑*iP* **P 13 55 33.3 -0.5**
comp=Z,43nm,1.0s,mb5.1
HAU Haudompre 82.86 333⇑*iP* **P 13 55 33.5 -0.4**
comp=Z,73nm,1.0s,mb5.3
HAU *eR*
comp=Z,3µm,19.0s
BBS Basel-Blauen 82.94 333⇑*eP* **P 13 55 34.3 0.0**
ZFRI Zfri 82.97 305 P **P 13 55 35.5 +0.7**
ZFRI Zfri 82.97 305 ⇑P **P 13 55 35.5 +0.7**
XOR Xorichti 83.03 318 *eP* **P 13 55 34.1 -0.8**
PRNI Paran 83.21 305 P **P 13 55 37.0 +0.9**
PRNI Paran 83.21 305 ⇑P **P 13 55 37.0 +0.9**
LOMF Lomont 83.27 333 *eP* **P 13 55 36.2 +0.2**
WMOK Wichita Mounta 83.53 48 *eP* **P 13 55 37.8 +0.2**
comp=Z,18nm,1.0s,mb5.2
WMOK *epP* pP 13 55 46.3 +0.4
WMOK LR LR
comp=Z,832nm,19.0s,MS5.1
KMTI Karmit 83.56 305 P **P 13 55 38.5 +0.7**
KMTI Karmit 83.56 305 ⇑P **P 13 55 38.5 +0.7**
AQBJ Aqaba 83.63 305 P **P 13 55 38.9 +0.7**
MBH Mount Berech 83.67 305 P **P 13 55 39.2 +0.8**
MBH Mount Berech 83.67 305 ⇑P **P 13 55 39.2 +0.8**
AGG Agios Georgios 83.72 319 *eP* **P 13 55 37.0 -1.4**
JMQS Jabal Moqyreh 83.72 304 P **P 13 55 39.6 +0.9**
EIL Elat 83.73 305 P **P 13 55 39.4 +0.7**
EIL Elat 83.73 305 ⇑P **P 13 55 39.4 +0.7**
KBRS Khaybar 83.75 299 P **P 13 55 40.0 +1.1**
TBKS Tabuk 83.77 303 P **P 13 55 39.9 +1.0**
VAI Varese 83.88 331 *eP* **P 13 55 38.7 -0.3**
KARP Karpathos 83.90 314 *eP* **P 13 55 39.2 -0.2**
ALWS Ilw as Safayha 83.92 304 P **P 13 55 40.4 +0.8**
JAN Janina 83.94 320 *eP* **P 13 55 39.8 +0.3**
KAMS Al Khamasin 83.96 292 P **P 13 55 40.5 +0.4**
JMOS Jabal al Moall 83.99 304 P **P 13 55 40.6 +0.6**
EVR Evrytania 84.06 319 *eP* **P 13 55 39.0 -1.1**
MCGN Macugnaga 84.08 331 *eP* **P 13 55 40.4 +0.4**
RSM Repubblica di 84.13 328 *eP* **P 13 55 41.3 +1.0**
CABF La Chapelle 84.17 333⇑*iP* **P 13 55 40.5 0.0**
comp=Z,31nm,0.8s,mb5.2
HAQS Haql 84.18 304 P **P 13 55 41.8 +0.8**
FSSB Fossombrone 84.19 327 *eP* **P 13 55 41.2 +0.5**
OG01 Vacheresse 84.21 332 *eP* **P 13 55 40.9 +0.2**
FLN La Foliniere 84.22 338⇑*iP* **P 13 55 40.7 -0.2**
comp=Z,145nm,1.1s,mb5.7
FLN *eR*
comp=Z,2µm,20.8s
IGT Igoumenitsa 84.28 320 *eP* **P 13 55 41.1 -0.1**
ARV Arcevia 84.29 327 *eP* **P 13 55 41.6 +0.4**
LOR Lormes 84.32 335⇑*iP* **P 13 55 41.1 -0.1**
comp=Z,164nm,1.0s,mb5.8
LOR *eR*
comp=Z,2µm,22.0s
LDF La Druitiere 84.32 338 *eP* **P 13 55 41.5 +0.3**
comp=Z,67nm,0.9s,mb5.5
ZCCA Zocca 84.35 329 *eP* **P 13 55 43.0 +1.6**
SFI Santa Sofia 84.39 328 *eP* **P 13 55 44.4 +2.8**
KEK Kerkira 84.39 321 *eP* **P 13 55 42.0 +0.2**
SEI Scarperia 84.45 328 *eP* **P 13 55 43.5 +1.5**
VMG Vicchio 84.46 328 *eP* **P 13 55 43.5 +1.5**
PGD Poggio Sodo 84.46 328 *eP* **P 13 55 43.4 +1.4**
GSCL Gusciola 84.50 329 *eP* **P 13 55 43.2 +1.1**
SNTG Esanatoglia 84.50 327 *eP* **P 13 55 42.6 +0.4**
ERBM Eremo 84.50 329 *eP* **P 13 55 43.6 +1.4**
FGMS Monte Sant'Ang 84.51 324 *eP* **P 13 55 42.2 -0.2**
BDAS Al Bad 84.52 304 P **P 13 55 43.3 +0.6**
BOB Bobbio (Coli) 84.57 330 *eP* **P 13 55 42.9 +0.4**
GRAM 84.57 329 P **P 13 55 42.0 -0.6**
CRE Caprese Michel 84.58 328 *eP* **P 13 55 43.4 +0.8**
SSF Saint Saulge 84.61 335⇑*iP* **P 13 55 42.6 -0.1**
comp=Z,70nm,0.9s,mb5.5
VALM 84.63 329 P **P 13 55 43.1 +0.3**
TXAR Lajitas Array 84.64 55 P **P 13 55 44.3 +1.0**
comp=Z,6.6nm,0.8s,mb4.8,baz=288,slow=4.0,SNR=9.3
TXAR *pP* pP 13 55 52.3 +0.6
comp=Z,6.4nm,0.6s,baz=297,slow=2.8,SNR=5.0
TXAR LR LR 14 30 20.7
comp=Z,560nm,20.8s,MS4.9,baz=280,slow=33
MURB Monte Urbino 84.66 327 *eP* **P 13 55 44.4 +1.4**
PPT Papeete 84.66 119 *eSS* SS 14 11 36.6 -5.8
PPT *eR* 14 22 05.8
comp=Z,3µm,22.8s,baz=320
HYF Humbligny 84.70 335 *eP* **P 13 55 43.4 +0.3**
RGNG Rignano Grg 84.70 325 *eP* **P 13 55 43.1 -0.1**
SARO Sassorosso 84.71 329 P **P 13 55 43.4 +0.1**
GRR Gorron 84.71 338 *eP* **P 13 55 43.6 +0.4**
comp=Z,155nm,1.1s,mb5.8
VLC Villacollemand 84.73 329 *eP* **P 13 55 42.5 -0.9**
BDI Bagni Di Lucca 84.74 329 *eP* **P 13 55 42.9 -0.5**
TERO Teramo 84.75 326 *eP* **P 13 55 44.1 +0.6**
BACM 84.75 329 P **P 13 55 43.5 0.0**
LSD Ceresole Reale 84.80 332 P **P 13 55 44.5 +0.8**
VINC Vinca 84.84 329 P **P 13 55 43.0 -0.9**
DBAS Duba 84.85 302 P **P 13 55 44.9 +0.5**
SMF Signal de Mont 84.87 334⇑*iP* **P 13 55 44.1 +0.1**
comp=Z,183nm,0.9s,mb5.9
LPL La Plagne 84.90 332⇑*iP* **P 13 55 44.9 +0.8**
comp=Z,118nm,0.9s,mb5.7
AVF Avril sur Loir 84.90 335⇑*iP* **P 13 55 44.3 +0.2**
comp=Z,135nm,0.9s,mb5.8
MAIM 84.90 329 P **P 13 55 42.8 -1.4**
LPG La Plagne 84.91 332⇑*iP* **P 13 55 45.0 +0.8**
comp=Z,109nm,0.7s,mb5.8
CCM Cathedral Cave 84.92 41 *eP* **P 13 55 44.5 0.0**
comp=Z,39nm,0.8s,mb5.6
CCM LR LR
comp=Z,943nm,21.0s,MS5.2
AAM Ann Arbor 84.92 34 PFAKE 13 56 00.0 +16
AAM LR LR
comp=Z,927nm,20.0s,MS5.2
NPS Neapolis 84.94 314 *eP* **P 13 55 43.6 -1.0**
CSNT Castellina Chi 84.97 328 *eP* **P 13 55 44.0 -0.5**
RSP Reno Superiore 85.03 332 P **P 13 55 44.3 -0.5**
AQU L'Aquila 85.06 326 *eP* **P 13 55 46.1 +1.1**
KRIS Kristallenia 85.06 314 *eP* **P 13 55 44.7 -0.6**
comp=Z,366nm,0.8s,mb6.6
PCP Pian Castagno 85.09 330 P **P 13 55 45.4 +0.2**
FG5 Orsara di Pugl 85.16 324 *eP* **P 13 55 46.2 +0.7**
CII Carovilli 85.20 325 *eP* **P 13 55 46.4 +0.6**
FENE Fenestrelle 85.20 332 P **P 13 55 45.4 -0.3**
VLI Veliai 85.21 317 *eP* **P 13 55 44.0 -1.9**
VLS Valsamata 85.23 319 *eP* **P 13 55 45.1 -0.9**
TATS Tathlith 85.24 292 P **P 13 55 47.8 +1.3**
BGF Bois d'Agland 85.27 335 *eP* **P 13 55 46.2 +0.2**
comp=Z,59nm,0.9s,mb5.4
RNI2 Rionero Sannit 85.28 325 *eP* **P 13 55 47.5 +1.3**
BHB Bricherasio 85.30 331 P **P 13 55 44.6 -1.6**
SGMF Saint Gilles 85.30 339⇑*iP* **P 13 55 46.5 +0.4**
comp=Z,210nm,1.1s,mb5.9
IDI Anoyia 85.30 315 P **P 13 55 45.3 -1.2**
comp=Z,103nm,0.8s,mb6.0,baz=37,slow=8.5,SNR=29
CPI2 Carpinone 85.31 325 *eP* **P 13 55 47.3 +1.0**
BNI Bardonecchia 85.32 332 *eP* **P 13 55 46.5 +0.2**
MNS Montasola 85.33 327 *eP* **P 13 55 45.9 -0.4**
PTQR Pietraquaria 85.33 326 *eP* **P 13 55 46.9 +0.5**
ITM Ithomi 85.36 318 *eP* **P 13 55 45.6 -1.0**
GRFL Gerfalco 85.36 328 *eP* **P 13 55 46.2 -0.3**
FVM French Village 85.37 41 *eP* **P 13 55 46.7 0.0**
comp=Z,16nm,0.9s,mb5.2
GDM Grand'Maison 85.38 332 *eP* **P 13 55 47.4 +0.8**
GDM Grand'Maison 85.38 332 *eP* **P 13 55 47.5 +0.9**
RRL Cesana Torines 85.40 332 P **P 13 55 46.8 +0.2**
ROSF Rostrenen 85.41 339⇑*iP* **P 13 55 47.2 +0.6**
comp=Z,213nm,1.0s,mb5.9
SDI San Donato 85.42 326 *eP* **P 13 55 46.8 -0.1**
PTRP Pietrapertosa 85.43 324 *eP* **P 13 55 47.5 +0.6**
GRN Grenoble 85.48 333 *eP* **P 13 55 47.9 +0.9**
MRLC Muro Lucano 85.49 324 *eP* **P 13 55 47.2 -0.1**
KYTH Kithira 85.50 317 *eP* **P 13 55 46.1 -1.3**
FIN Finale Ligure 85.50 330 P **P 13 55 46.3 -0.9**
PLDF La Plantade 85.54 334 *eP* **P 13 55 48.1 +0.7**
ROB Roburent 85.55 331 P **P 13 55 46.8 -0.7**
MBDF Montbardon 85.57 332 *eP* **P 13 55 47.5 0.0**
comp=Z,129nm,1.0s,mb5.8
VAM Vamos 85.57 315 *eP* **P 13 55 45.5 -2.3**
AGO Saint Agoulin 85.63 335 *eP* **P 13 55 48.6 +0.8**
ORI Oriolo Calabro 85.64 323 *eP* **P 13 55 48.9 +0.9**
RORO 85.64 330 P **P 13 55 47.0 -0.9**
PZZ Prazzo 85.65 331 P **P 13 55 46.2 -1.7**
TCF Toulx Ste Croi 85.71 335⇑*iP* **P 13 55 48.5 +0.3**
comp=Z,217nm,1.5s,mb5.9
ORIF Oris-en-Rattie 85.71 332⇑*iP* **P 13 55 48.9 +0.7**
comp=Z,108nm,0.8s,mb5.8

ORIF *eR*
comp=Z,2µm,18.2s
QUIF Quistinic 85.77 339 *eP* **P 13 55 48.8 +0.4**
comp=Z,94nm,0.9s,mb5.7
SURF Saint Ours 85.77 331 *eP* **P 13 55 49.2 +0.7**
ENR Entracque 85.77 331 P **P 13 55 46.4 -2.2**
MONE Monesi 85.78 331 P **P 13 55 48.0 -0.6**
STV2 Anna di Valdie 85.79 331 P **P 13 55 46.3 -2.3**
STV Sta Anna Valdi 85.79 331 P **P 13 55 46.5 -2.2**
IMI Imperia 85.88 331 *eP* **P 13 55 49.0 -0.1**
COLF Collangettes 85.92 334 *eP* **P 13 55 50.2 +1.0**
SAOF Saorge 85.93 331 *eP* **P 13 55 49.1 -0.3**
PYM Petit Puy Mans 85.93 334 *eP* **P 13 55 50.2 +0.9**
AUTN L'Aution 85.97 331 *eP* **P 13 55 50.0 +0.5**
TDS Terranova Siba 86.02 323 *eP* **P 13 55 50.2 +0.3**
TOUF Mont Tournerai 86.02 331 *eP* **P 13 55 50.0 +0.2**
SBF Sospel 86.08 331⇑*iP* **P 13 55 49.8 -0.3**
comp=Z,216nm,0.9s,mb6.1
AURF Auriere 86.10 331 *eP* **P 13 55 50.1 -0.1**
JCT Junction City 86.10 52 *eP* **P 13 55 50.8 +0.3**
comp=Z,8.2nm,0.6s,mb5.1
JCT LR LR
comp=Z,548nm,21.0s,MS4.9
OG25 Le Caire 86.13 332 *eP* **P 13 55 50.7 +0.4**
MFF Saint Martin d 86.13 337⇑*iP* **P 13 55 50.8 +0.5**
comp=Z,222nm,1.1s,mb6.0
MVIF Mont Vial 86.16 331 *eP* **P 13 55 50.5 0.0**
SIUC Southern Illin 86.17 40 *eP* **P 13 55 50.9 +0.3**
comp=Z,124nm,0.9s,mb6.1
VIVF Saint-Julien-l 86.18 333⇑*iP* **P 13 55 51.1 +0.5**
comp=Z,127nm,0.9s,mb5.8
OCF Saint Nazaire 86.21 332 *eP* **P 13 55 51.6 +0.9**
OG26 St.-Nazaire-De 86.21 332 *eP* **P 13 55 51.6 +0.9**
REVF Revere 86.21 331 *eP* **P 13 55 51.4 +0.6**
LCHF La Chataignera 86.24 337 *eP* **P 13 55 49.9 -0.9**
BLJS Baljurashi 86.29 293 P **P 13 55 53.0 +1.3**
LBL Lubilhac 86.32 334 *eP* **P 13 55 52.1 +0.9**
CALN Calern 86.38 331 *eP* **P 13 55 51.5 0.0**
FRNF Fournols 86.40 335 *eP* **P 13 55 52.7 +1.1**
MIAR Mount Ida 86.47 45 *eP* **P 13 55 52.4 +0.1**
comp=Z,30nm,0.9s,mb5.5
MIAR *epP* pP 13 56 01.5 +0.9
MIAR LR LR
comp=Z,1µm,22.0s,MS5.2
ERPA Erie 86.55 32 *eP* **P 13 55 52.7 +0.2**
ERPA LR LR
comp=Z,833nm,21.0s,MS5.1
FRF La Foret Royal 86.63 331 *eP* **P 13 55 52.5 -0.3**
PGF Pioggiola 86.64 329 *eP* **P 13 55 52.7 -0.1**
SMRF Simiane la Rot 86.64 332 *eP* **P 13 55 53.4 +0.5**
GRI Girifalco 86.66 322 *eP* **P 13 55 53.3 +0.2**
VILF Villemus 86.70 332 *eP* **P 13 55 53.6 +0.5**
TAVF Tavernes 86.79 332 *eP* **P 13 55 54.2 +0.6**
RJF Les Rejaudoux 86.80 335⇑*iP* **P 13 55 54.2 +0.6**
comp=Z,182nm,1.1s,mb5.9
RJF *eR*
comp=Z,2µm,20.8s
LMR La Mourre 86.88 331⇑*iP* **P 13 55 53.9 -0.1**
comp=Z,264nm,1.0s,mb6.1
ACSO Alum Creek Sta 86.92 35 *eP* **P 13 55 54.4 +0.1**
comp=Z,30nm,0.8s,mb5.6
ACSO LR LR
comp=Z,881nm,21.0s,MS5.1
PRAF Pradon 86.94 332 *eP* **P 13 55 55.4 +1.1**
CAF Calviac 86.97 335⇑*iP* **P 13 55 55.6 +1.2**
comp=Z,324nm,1.0s,mb6.2
PUYF Puyloubier 86.99 332 *eP* **P 13 55 55.1 +0.6**
TREF Trevaresse 87.02 332 *eP* **P 13 55 55.6 +0.9**
NCB Newcomb 87.05 27 PFAKE 13 56 10.0 +15
NCB LR LR
comp=Z,480nm,21.0s,MS4.9
WCI Wyandotte Cave 87.12 38 *eP* **P 13 55 55.4 0.0**
WCI *epP* pP 13 56 06.3 +2.5
WCI LR LR
comp=Z,4µm,22.0s,MS5.8
LASF Ste Croix 87.14 333⇑*iP* **P 13 55 56.2 +0.9**
comp=Z,159nm,1.1s,mb5.8
BERF Bertagne 87.19 332 *eP* **P 13 55 56.0 +0.5**
GELF Grande-Etoile 87.22 332 *eP* **P 13 55 56.2 +0.6**
GLAT Glass 87.28 41 P **P 13 55 56.4 +0.2**
LFF La Frestale 87.37 336⇑*iP* **P 13 55 57.2 +0.9**
comp=Z,318nm,1.2s,mb6.1
SOI Samo 87.44 322 *eP* **P 13 55 56.5 -0.3**
WVL Waterville 87.98 24 *eP* **P 13 55 59.2 -0.1**
comp=Z,168nm,1.4s,mb6.1
WVL LR LR
comp=Z,4µm,21.0s,MS5.8
BINY Binghamton 87.99 29 *eP* **P 13 55 59.6 +0.2**
comp=Z,28nm,1.1s,mb5.4
BINY LR LR
comp=Z,611nm,20.0s,MS5.0
WVT Waverly 88.10 40 *eP* **P 13 55 60.0 -0.1**
comp=Z,21nm,0.8s,mb5.4
WVT LR LR
comp=Z,943nm,20.0s,MS5.2
MTLF Montolieu 88.34 334 *eP* **P 13 56 01.8 +0.8**
comp=Z,110nm,1.0s,mb5.7
OXF Oxford 88.62 42 *eP* **P 13 56 02.1 -0.5**
comp=Z,29nm,0.9s,mb5.6
OXF LR LR
comp=Z,681nm,20.0s,MS5.1
SSPA Standing Stone 88.64 31 *eP* **P 13 56 02.4 -0.1**
comp=Z,17nm,0.8s,mb5.4
SSPA *epP* pP 13 56 11.2 +0.3
SSPA LR LR
comp=Z,2µm,19.0s,MS5.6
MCWV Mont Chateau 88.70 33 *eP* **P 13 56 03.0 +0.1**
comp=Z,27nm,0.8s,mb5.6
MCWV *epP* pP 13 56 13.8 +2.5
MCWV LR LR
comp=Z,1µm,21.0s,MS5.2
HKT Hockley 88.77 49 P **P 13 56 03.6 +0.3**
HKT LR LR
comp=Z,1µm,22.0s,MS5.2
PLAL Pickwick Lake 88.91 41 *eP* **P 13 56 03.7 -0.2**
comp=Z,7.4nm,0.8s,mb5.1
PLAL *epP* pP 13 56 13.7 +1.3
PLAL LR LR
comp=Z,1µm,21.0s,MS5.2
TBI Tubuai 88.98 123 *eSS* SS 14 12 33.2 -12
TBI *eR* 14 23 56.2
comp=Z,26nm,22.8s
EPF Esparros 89.22 335 *eP* **P 13 56 05.4 +0.2**
HRV Harvard--Oak R 89.24 26 *eP* **P 13 56 05.7 +0.4**
comp=Z,26nm,1.1s,mb5.5
HRV LR LR
comp=Z,146nm,19.0s,MS4.4
EBIE Bielsa 89.59 335 P **P 13 56 08.2 +1.2**
comp=Z,1.6nm,0.3s,mb4.8
EALK Alkurruntz 89.61 336 P **P 13 56 05.3 -1.7**
comp=Z,50nm,1.1s,mb5.8
ETSF Etsaut 89.62 336 *eP* **P 13 56 07.9 +0.8**
comp=Z,39nm,0.7s,mb5.6
MVL Millersville 89.77 31 *eP* **P 13 56 07.6 -0.3**
MVL *epP* pP 13 56 16.3 -0.1
PAL Palisades 89.78 28 *eP* **P 13 56 07.9 0.0**
comp=Z,12nm,0.8s,mb5.3
EMIR Miracle 89.84 334 P **P 13 56 09.4 +1.2**
comp=Z,8.9nm,0.6s,mb5.3
CPNY Central Park 89.95 29 *eP* **P 13 56 08.7 0.0**
EGRA Graus 89.98 335 P **P 13 56 09.6 +0.7**
comp=Z,26nm,0.7s,mb5.7
FWV Forest Hill 90.07 35 *eP* **P 13 56 09.2 -0.1**
ELAN Lanestosa 90.16 338 P **P 13 56 09.0 -0.6**
comp=Z,71nm,1.1s,mb5.9
PWV Princeton 90.17 35 *eP* **P 13 56 09.9 0.0**
CPCT Cooper Cave 90.21 38 *eP* **P 13 56 10.3 +0.2**
ELN Prospectdale 90.39 35 *eP* **P 13 56 10.8 -0.1**
EPOB Poblet 90.49 334 P **P 13 56 11.5 +0.3**
comp=Z,87nm,1.3s,mb5.9
BLA Blacksburg 90.54 35 PFAKE 13 56 20.0 +8.4
BLA LR LR
comp=Z,727nm,19.0s,MS5.1
EARI Arriondas 90.58 339 P **P 13 56 09.4 -2.2**
ESAC San Caprasio 90.66 335 P **P 13 56 13.1 +1.2**
comp=Z,211nm,1.1s,mb6.4
CBN Corbin 90.94 32 PFAKE 13 56 20.0 +6.7
CBN LR LR
comp=Z,2µm,21.0s,MS5.5
LRAL Lakeview Retre 91.00 42 *eP* **P 13 56 13.5 -0.2**
comp=Z,4.5nm,0.7s,mb4.9
LRAL LR LR
comp=Z,926nm,19.0s,MS5.2
EPON Pontenova 91.06 340 P **P 13 56 10.7 -3.0**
EBR Ebro Roquetas 91.17 334 *eP* **P 13 56 14.3 0.0**

EINC	**Incio**	**91.74**	**340**	P		**P**	**13 56 15.9**	**-1.0**
	comp=Z,91nm,1.3s,mb5.9								
EMOS	**Mosqueruela**	**91.89**	**334**	P		**P**	**13 56 17.8**	**+0.2**
	comp=Z,33nm,0.9s,mb5.7								
ERUA	**La Rua**	**91.94**	**340**	P		**P**	**13 56 17.2**	**-0.6**
	comp=Z,13nm,0.8s,mb5.3								
ETOR	**Torete**	**91.97**	**336**	P		**P**	**13 56 18.1**	**+0.1**
	comp=Z,49nm,1.1s,mb5.8								
ECAL	**Calabor**	**92.26**	**339**	P		**P**	**13 56 18.6**	**-0.8**
	comp=Z,37nm,1.2s,mb5.6								
EZAM	**Zamans**	**92.56**	**341**	P		**P**	**13 56 19.7**	**-1.0**
	comp=Z,19nm,0.7s,mb5.6								
JSC	**Jenkinsville**	**92.66**	**37**	*e*P		**P**	**13 56 21.4**	**+0.1**
ELOB	**Lobios**	**92.66**	**340**	P		**P**	**13 56 20.4**	**-0.7**
	comp=Z,56nm,1.1s,mb5.9								
ECHE	**Chera**	**92.75**	**334**	P		**P**	**13 56 20.7**	**-0.9**
GUD	**Guadarrama**	**92.75**	**337**	P		**P**	**13 56 21.5**	**-0.1**
	comp=Z,16nm,1.0s,mb5.4								
EBEN	**Beniarda**	**93.31**	**334**	P		**P**	**13 56 28.8**	**+4.5**
	comp=Z,44nm,1.2s,mb5.8								
ESDC	**Sonseca Array**	**93.59**	**337**	P		**P**	**13 56 25.4**	**-0.1**
	comp=Z,5.1nm,0.6s,mb5.1,baz=13,slow=4.1,SNR=17								
ESDC	**Sonseca Array**	**93.59**	**337**	P		**P**	**13 56 25.2**	**-0.3**
	comp=Z,14nm,0.8s,mb5.5								
ETOB	**Tobarra**	**93.80**	**334**	P		**P**	**13 56 25.5**	**-1.0**
EVIA	**Vianos**	**94.10**	**335**	P		**P**	**13 56 28.6**	**+0.7**
	comp=Z,21nm,1.0s,mb5.5								
EMUR	**La Murta**	**94.43**	**334**	P		**P**	**13 56 28.5**	**-0.9**
EQES	**Quesada**	**95.05**	**335**	P		**P**	**13 56 30.9**	**-1.3**
EADA	**Adamuz**	**95.17**	**336**	P		**P**	**13 56 31.0**	**-1.8**
EVO	**Evora**	**95.79**	**339**	*e*P		**P**	**13 56 35.5**	**-0.1**
	comp=Z,41nm,1.1s,mb5.5								
EVO				*e*R					
	comp=Z,1μm,17.8s								
ELOJ	**Sierra Loja**	**95.98**	**336**	P		**P**	**13 56 34.9**	**-1.6**
EMIN	**Mina Concepcio**	**96.14**	**338**	P		**P**	**13 56 34.9**	**-2.4**
ELIJ	**Sierra de Lija**	**96.56**	**337**	P		**P**	**13 56 39.0**	**-0.1**
	comp=Z,14nm,1.0s,mb5.3								
EGRO	**El Granado**	**96.58**	**338**	P		**P**	**13 56 38.6**	**-0.7**
	comp=Z,27nm,1.1s,mb5.6								
ESPR	**Espera**	**96.75**	**337**	P		**P**	**13 56 38.7**	**-1.3**
	comp=Z,58nm,1.6s,mb5.8								
DWPF	**Disney**	**97.76**	**40**	PFAKE			13 57 00.0	+15	
DWPF				LR	LR				
	comp=Z,725nm,20.0s,MS5.2								
KMBO	**Kilima Mbogo**	**103.88**	**281**	Pdiff		Pdif	13 57 13.6	+1.1	
	comp=Z,0.7nm,0.3s,baz=39,slow=18,SNR=3.2								
KMBO	**Kilima Mbogo**	**103.88**	**281**	Pdif		Pdif	13 57 13.6	+1.1	
KMBO				LR	LR				
	comp=Z,728nm,19.0s,MS5.2								
SJG	**San Juan**	**113.23**	**32**	PFAKE			14 02 00.0	+9.1	
SJG				LR	LR				
	comp=Z,735nm,20.0s,MS5.3								
SBA	**Scott Base**	**120.74**	**175**	PFAKE			14 02 10.0	+5.8	
SBA				LR	LR				
	comp=Z,461nm,22.0s,MS5.1								
DBIC	**Dimbokro**	**123.99**	**323**	PKP		PKPdf	14 02 08.1	-3.8	
	comp=Z,13nm,0.7s,baz=342,slow=2.4,SNR=12								
DBIC	**Dimbokro**	**123.99**	**323**	PKIKP		PKPdf	14 02 08.1	-3.8	
DBIC				pmax	pmax				
	comp=Z,13nm,0.7s								
TIC	**Toumodi**	**124.08**	**323**	*e*PKIKP		PKPdf	14 02 08.1	-4.0	
	comp=Z,83nm,0.9s								
KIC	**Kosan Boka**	**124.21**	**323**	*e*PKIKP		PKPdf	14 02 08.3	-4.1	
	comp=Z,54nm,0.8s								
LIC	**Lamto**	**124.46**	**323**	⇑*i*PKIKP		PKPdf	14 02 08.6	-4.2	
	comp=Z,26nm,0.8s								
LIC				*e*R					
	comp=Z,1μm,22.2s								
LIC	**Lamto**	**124.46**	**323**	*e*PKIKP		PKPdf	14 02 08.6	-4.2	
	comp=Z,40nm,0.8s								
LIC	**Lamto**	**124.46**	**323**	⇑*i*PKPdf		PKPdf	14 02 08.6	-4.2	
LIC				LR	LR				
	comp=Z,620nm,22.3s,MS5.2								
MAW	**Mawson**	**125.62**	**208**	PKP		PKPdf	14 02 11.2	-2.4	
	comp=Z,4.9nm,0.8s,baz=326,slow=2.0,SNR=4.6								
MAW	**Mawson**	**125.62**	**208**	PKIKP		PKPdf	14 02 11.2	-2.4	
MAW				pmax	pmax				
	comp=Z,5.0nm,0.9s								
MAW	**Mawson**	**125.62**	**208**	*e*PKP		PKPdf	14 02 10.6	-3.0	
MAW				LR	LR				
	comp=Z,722nm,20.0s,MS5.3								
LBTB	**Lobatse**	**127.83**	**269**	*e*PKP		PKPdf	14 02 15.2	-3.9	
SYO	**Syowa Base**	**134.29**	**209**	⇑P		Pdif	13 59 12.0	-13	
LPAZ	**La Paz**	**141.46**	**58**	PKP		PKPdf	14 02 43.0	-1.6	
	comp=Z,5.9nm,0.9s,baz=12,slow=6.5,SNR=8.1								
LPAZ	**La Paz**	**141.46**	**58**	PKIKP		PKPdf	14 02 43.0	-1.5	
LPAZ				pmax	pmax				
	comp=Z,6.0nm,0.9s								
LPAZ	**La Paz**	**141.46**	**58**	*e*PKP		PKPdf	14 02 34.7	-10	
LPAZ				*e*PKPdf		PKPdf	14 02 42.1	-2.4	
LPAZ				PKP		PKPdf	14 02 43.0	-1.6	
LVC	**Limon Verde**	**145.50**	**66**	PKPbc		PKPbc	14 02 50.0	+2.8	
LVC	**Limon Verde**	**145.50**	**66**	*e*PKP		PKPdf	14 02 49.5	-1.8	
LVC				LR	LR				
	comp=Z,708nm,20.0s,MS5.4								
SNAA	**Sanae**	**146.73**	**198**	⇑*i*		PKPbc	14 02 48.8	+0.1	
SNAA	**Sanae**	**146.73**	**198**	⇓*i*		PKPbc	14 02 52.2	+3.5	
SNAA	**Sanae**	**146.73**	**198**	⇓*i*		PKPbc	14 02 57.1	+8.4	
SNAA	**Sanae**	**146.73**	**198**	⇓*i*		PKPbc	14 03 04.7	+16	
VNA2	**Neumayer--Watz**	**148.28**	**197**			PKPdf	14 02 57.5	+3.0	
VNA2	**Neumayer--Watz**	**148.28**	**197**			PKPdf	14 03 01.3	+6.8	
VNA2	**Neumayer--Watz**	**148.28**	**197**			PKPdf	14 03 03.5	+9.0	
VNA2	**Neumayer--Watz**	**148.28**	**197**			PKPdf	14 03 11.7	+17	
VNA3	**Neumayer Olymp**	**148.50**	**195**	⇑*i*		PKPdf	14 02 55.6	+0.8	
VNA3	**Neumayer Olymp**	**148.50**	**195**	⇑*i*		PKPdf	14 02 59.3	+4.5	
VNA3	**Neumayer Olymp**	**148.50**	**195**	⇑*i*		PKPdf	14 03 01.5	+6.7	
VNA3	**Neumayer Olymp**	**148.50**	**195**	⇑*i*		PKPdf	14 03 12.1	+17	
VNA1	**Neumayer--Stat**	**148.68**	**197**	⇑*i*		PKPdf	14 02 57.8	+2.7	
VNA1	**Neumayer--Stat**	**148.68**	**197**	⇑*i*		PKPdf	14 03 02.0	+6.9	
VNA1	**Neumayer--Stat**	**148.68**	**197**	⇑*i*		PKPdf	14 03 09.4	+14	
VNA1	**Neumayer--Stat**	**148.68**	**197**	⇓*i*		PKPdf	14 03 13.0	+18	
TLL	**Tololo Astrono**	**148.82**	**79**	⇑*e*P		PKPdf	14 02 57.9	+1.3	
BDFB	**Brasilia**	**151.03**	**27**	PKPbc		PKPdf	14 03 03.6	+3.2	
	comp=Z,53nm,0.8s,baz=281,slow=1.2,SNR=28								
BDFB	**Brasilia**	**151.03**	**27**	PKIKP		PKPdf	14 03 03.6	+3.2	
BDFB				pmax	pmax				
	comp=Z,53nm,0.8s								
PLCA	**Paso Flores**	**153.40**	**98**	PKPbc		PKPdf	14 03 09.1	+5.9	
	comp=Z,12nm,1.2s,baz=252,slow=4.1,SNR=4.8								
PLCA	**Paso Flores**	**153.40**	**98**	PKIKP		PKPdf	14 03 09.1	+6.0	
PLCA				pmax	pmax				
	comp=Z,12nm,1.2s								

*CASC **06** 13:45:03.4±1.8, 13.88N×91.36W, h7^{km}±13^{km}, MD4.3, ML4.6, mb4.3(NEIC)*
*IDC **06** 13:45:04.3±10.0, 13.61N×91.90W, h77^{km}±86^{km}, mb1 4.0/2, mb1mx3.6/19, ML3.3/1, Error ellipse: s-maj=149.0km s-min=31.4km az=42.0*
*NEIC **06** 13:45:08.0±3.0, 14.18N×90.93W, h139^{km}±27^{km}, mb4.3/11, Error ellipse: s-maj=25.3km s-min=16.0km az=48.0*

ISC 06 13:45:01.9±0.5, 14.00N±0.04×91.57W±0.04, h75^{km}±4^{km}, h74^{km}±5.7^{km}; pP-P, n66, σ1°03/79, mb4.0/10, 21C-5D, Guatemala

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
JAT	**Jato**	**0.32**	**349**	⇓*e*P		**P**	**13 45 12.8**	**-1.0**
JAT				*e*S		**S**	**13 45 23.0**	**+0.3**
JAT				AML		AML	13 45 23.5	
	comp=N,118μm,0.5s							
FUG	**Fuego 3**	**0.84**	**58**	⇑*i*P		**P**	**13 45 18.2**	**-0.6**
TP2	**Tecpan 2**	**0.94**	**35**	⇑*e*P		**P**	**13 45 20.5**	**+0.3**
TP2				*e*S		**S**	**13 45 35.7**	**+1.9**
TP2				AML		AML	13 45 39.1	
	comp=N,15μm,0.5s							
PCG	**Pacaya**	**1.01**	**67**	⇓*e*P		**P**	**13 45 20.7**	**-0.4**
GCG	**Guatemala City**	**1.16**	**60**	*e*P		**P**	**13 45 23.6**	**+0.7**
GCG				*e*S		**S**	**13 45 39.5**	**+0.8**
CUSS	**Cusmapa**	**1.58**	**93**	⇓*e*P		**P**	**13 45 27.5**	**-1.1**
CUSS				*e*S		**S**	**13 45 47.5**	**-0.8**
RBDL	**Robledal**	**1.83**	**86**	⇑*e*P		**P**	**13 45 32.3**	**+0.4**
RTR	**El Retiro**	**1.88**	**93**	⇑*e*P		**P**	**13 45 32.6**	**+0.1**
SBLS	**San Blas**	**1.90**	**95**	⇑*e*P		**P**	**13 45 32.9**	**0.0**
SBLS				*e*S		**S**	**13 45 56.0**	**+0.2**
SNJE	**San Jose**	**1.92**	**94**	⇑*e*P		**P**	**13 45 33.0**	**-0.1**
SNJE				*e*S		**S**	**13 45 56.5**	**+0.4**
MTO2	**Montecristo 2**	**2.18**	**79**	⇑*e*P		**P**	**13 45 36.9**	**+0.1**
MTO2				*e*S		**S**	**13 46 04.1**	**+1.5**
BOQS	**Boqueron**	**2.24**	**97**	⇑*e*P		**P**	**13 45 37.4**	**-0.3**
BOQS				*e*S		**S**	**13 46 03.1**	**-1.1**
SNET	**Serv Nac Est T**	**2.30**	**98**	*e*P		**P**	**13 45 38.0**	**-0.4**
SNET				*e*S		**S**	**13 46 05.8**	**+0.3**
SNET				*i*			13 46 09.0	
	comp=Z,4μm,0.3s							
LFU	**La Fuente**	**2.40**	**96**	⇑*e*P		**P**	**13 45 39.8**	**-0.1**
LFRS	**El Faro**	**2.47**	**99**	⇑*e*P		**P**	**13 45 40.8**	**0.0**
LFRS				*e*S		**S**	**13 46 08.7**	**-1.2**
LBRS	**Las Brisas**	**2.47**	**96**	⇑*e*P		**P**	**13 45 40.9**	**0.0**
LBRS				*e*S		**S**	**13 46 10.4**	**+0.5**
LCBS	**La Ceiba**	**2.54**	**98**	*e*P		**P**	**13 45 42.0**	**+0.1**
LCBS				*e*S		**S**	**13 46 11.3**	**-0.5**
SNVI	**San Vicente**	**2.69**	**98**	*e*P		**P**	**13 45 43.9**	**0.0**
SNVI				⇑*e*P			13 45 44.4	
SNVI				*e*S		**S**	**13 46 15.9**	**+0.7**
VSM	**San Miguel**	**3.26**	**100**	*e*P		**P**	**13 45 49.0**	**-2.9**
CAHU	**Cacacuatique**	**3.27**	**94**	⇑*e*P		**P**	**13 45 51.6**	**-0.5**
BLLM	**Bellamira**	**3.29**	**99**	*e*S		**S**	**13 46 32.7**	**+2.3**
CNCH	**Conchagua**	**3.71**	**101**	⇑*e*P		**P**	**13 45 57.4**	**-0.7**
CNCH				*e*S		**S**	**13 46 41.5**	**+0.7**
PYN	**Poneloya**	**4.72**	**109**	⇑*e*P		**P**	**13 46 10.6**	**-1.6**
TEL3	**Telica 3**	**4.82**	**107**	⇓*e*P		**P**	**13 46 13.3**	**-0.2**
LEON	**Leon**	**4.82**	**109**	⇓*e*P		**P**	**13 46 13.6**	**0.0**
CNGN	**Cerro Negro**	**4.98**	**107**	⇓*e*P		**P**	**13 46 15.2**	**-0.5**
MIRN	**Miramar**	**4.98**	**108**	⇑*e*P		**P**	**13 46 15.8**	**-0.1**
MOMJ	**Momotombo**	**5.15**	**107**	*e*P		**P**	**13 46 17.3**	**-0.9**
COPN	**Copaltepe**	**5.18**	**110**	⇑*e*P		**P**	**13 46 17.8**	**-0.7**
XAVN	**Gruta Xavier**	**5.43**	**109**	*e*P		**P**	**13 46 22.0**	**0.0**
MGAN	**Managua**	**5.51**	**109**	*e*P		**P**	**13 46 23.3**	**+0.3**
CRUN	**El Crucero**	**5.52**	**111**	*e*P		**P**	**13 46 23.8**	**+0.7**
TICN	**Ticuantepe**	**5.56**	**110**	⇑*e*P		**P**	**13 46 25.3**	**+1.5**
TICN				*e*S		**S**	**13 47 24.0**	**-3.0**
TEIG	**Tepich**	**6.94**	**27**	*e*Pn		**P**	**13 46 42.6**	**-0.5**
TEIG				*e*			13 46 51.8	
TEIG				*e*Sn		**S**	**13 47 59.0**	**-2.1**
JCR	**Jicaral**	**7.55**	**122**	*e*P		**P**	**13 46 50.7**	**-0.6**
CGA2	**Cerro Gallo 2**	**8.00**	**119**	*e*P		**P**	**13 46 58.8**	**+1.3**
PRS1	**Puriscal**	**8.15**	**119**	*e*P		**P**	**13 47 00.1**	**+0.5**
LAJ	**Bijagual**	**8.37**	**119**	⇑*e*P		**P**	**13 46 58.8**	**-3.8**
LCR2	**La Lucha 2**	**8.53**	**119**	*e*P		**P**	**13 47 05.3**	**+0.6**
URSC	**Urasca**	**8.68**	**118**	⇑*e*P		**P**	**13 47 06.9**	**+0.1**
BUS	**Buena Vista**	**8.84**	**119**	*e*P		**P**	**13 47 08.9**	**0.0**
ACR	**Cerro Adams**	**9.81**	**122**	*e*P		**P**	**13 47 23.6**	**+1.4**
TXAR	**Lajitas Array**	**18.92**	**326**	P		**P**	**13 49 20.8**	**+1.4**
	baz=155,slow=13,SNR=5.0							
TXAR	**Lajitas Array**	**18.92**	**326**	P		**P**	**13 49 20.8**	**+1.4**
ROSC	**El Rosal**	**19.27**	**116**	P		**P**	**13 49 24.8**	**+1.6**
	comp=Z,1.8nm,0.3s,baz=149,slow=19,SNR=4.6							
LRAL	**Lakeview Retre**	**19.40**	**12**	P		**P**	**13 49 20.9**	**-3.6**
	comp=Z,14nm,0.8s							
LRAL				*e*			13 49 28.3	
LRAL				*e*			13 49 41.8	
OXF	**Oxford**	**20.51**	**5**	*e*P		**P**	**13 49 47.4**	**+11**
OXF				*e*			13 49 55.1	
MIAR	**Mount Ida**	**20.53**	**355**	*e*P		**P**	**13 49 37.5**	**+1.1**
	comp=Z,44nm,1.4s							
MIAR				*e*			13 49 53.7	
PLAL	**Pickwick Lake**	**21.12**	**8**	P		**P**	**13 49 45.5**	**+3.1**
	comp=Z,15nm,0.8s,mb4.4							
WMOK	**Wichita Mounta**	**21.65**	**344**	*e*P		**P**	**13 49 48.2**	**+0.6**
	comp=Z,3.5nm,0.8s,mb3.7							
MNTX	**Cornudas Mount**	**21.69**	**327**	*e*P		**P**	**13 49 48.7**	**+0.6**
	comp=Z,0.8nm,1.0s,mb3.0							
MNTX				*e*			13 50 02.3	
CPCT	**Cooper Cave**	**22.28**	**15**	P		**P**	**13 49 51.4**	**-2.4**
WVT	**Waverly**	**22.29**	**8**	*e*P		**P**	**13 49 50.7**	**-3.2**
	comp=Z,9.9nm,0.9s,mb4.1							
WVT				*e*			13 50 05.0	
SIUC	**Southern Illin**	**23.71**	**5**	P		**P**	**13 50 08.1**	**+0.4**
	comp=Z,51nm,1.1s,mb4.8							
SIUC				*e*			13 50 21.8	
CCM	**Cathedral Cave**	**23.96**	**1**	*e*P		**P**	**13 50 08.1**	**-2.0**
	comp=Z,9.6nm,0.8s,mb4.2							
CCM				*e*			13 50 23.7	
CCM				*e*			13 50 34.1	
ANMO	**Albuquerque**	**24.81**	**330**	P		**P**	**13 50 17.1**	**-1.3**
	comp=Z,1.7nm,0.6s,mb3.6							
PWV	**Princeton**	**25.06**	**20**	*e*P		**P**	**13 50 21.5**	**+0.7**
TUC	**Tucson**	**25.30**	**319**	*e*P		**P**	**13 50 24.7**	**+1.6**
	comp=Z,3.8nm,0.9s,mb3.8							
TUC				*e*	pP		13 50 39.9	-0.4
FWV	**Forest Hill**	**25.36**	**20**	*e*P		**P**	**13 50 17.2**	**-6.4**
NEN	**Nelson**	**30.03**	**320**	*e*P		**P**	**13 51 06.9**	**+1.0**
NEN				*e*	pP		13 51 22.4	-1.3
HWUT	**Hardware Ranch**	**32.53**	**332**	P		**P**	**13 51 27.2**	**-0.6**
HWUT				*e*	pP		13 51 46.1	+0.3
BW06	**Boulder Array**	**32.59**	**335**	P		**P**	**13 51 26.8**	**-1.5**
	comp=Z,16nm,0.9s,mb4.9							
BW06				*e*			13 51 38.8	
BW06				*e*	pP		13 51 47.5	+1.2
LPAZ	**La Paz**	**37.98**	**142**	*e*P		**P**	**13 52 09.7**	**-4.6**
	comp=Z,0.8nm,0.5s,mb3.8							
WRA	**Warramunga Arr**	**135.80**	**256**	PKP	PKPdf		14 04 15.9	+1.1
	comp=Z,0.4nm,0.5s,baz=86,slow=3.7,SNR=4.5							
ASAR	**Alice Springs**	**136.06**	**250**	PKP	PKPdf		14 04 16.4	+1.2
	comp=Z,0.5nm,0.9s,baz=75,slow=1.0,SNR=3.9							
CMAR	**Chiang Mai Arr**	**146.12**	**342**	PKPbc	PKPbc		14 04 36.5	+2.1
	comp=Z,5.0nm,0.8s,baz=333,slow=3.5,SNR=23							

*HEL **06** 14:00:14.1±0.2, 61.98N×23.69E, ML2.1, Explosion*
*NAO **06** 14:00:15.2±4.3, 62.18N×24.01E, ML2.0*
*BER **06** 14:00:17.9±22.0, 62.25N×27.82E, ML2.0(NAO), Suspected explosion*

ISC 06 14:00:12.1±0.8, 62.00N±0.03×23.7E±0.1, n12, σ0°72/18, Finland

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
KEF	**Keuruu**	**0.59**	**73**	*e*P		**Pg**	**14 00 24.4**	**+0.5**
KEF				*e*S		**Sg**	**14 00 32.6**	**+0.8**
VAF	**Ylistaro**	**1.15**	**337**	*e*P		**Pb**	**14 00 35.3**	**+0.8**
KAF	**Kangasniemi**	**1.25**	**84**	*e*P		**Pb**	**14 00 36.3**	**0.0**
KAF				*e*S		**Sb**	**14 00 52.8**	**0.0**
FIA0	**FINESS Array S**	**1.28**	**115**	*e*P		**Pb**	**14 00 36.8**	**+0.1**
FIA0				*e*S		**Sb**	**14 00 52.8**	**-0.8**
FIA0	**FINESS Array S**	**1.28**	**115**	Pg		**Pg**	**14 00 37.0**	**-0.7**
	baz=303,slow=18							
FIA0				Lg			14 00 54.1	
	baz=304,slow=37							
FIA0				Rg			14 01 00.5	
	baz=311,slow=37							
SUF	**Sumiainen**	**1.37**	**57**	*e*P		**Pb**	**14 00 38.3**	**0.0**
SUF				*e*S		**Sb**	**14 00 56.7**	**+0.5**
PVF	**Pernaja**	**1.80**	**143**	*e*P		**Pn**	**14 00 45.2**	**+0.5**
PVF				*e*S		**Sn**	**14 01 08.2**	**-0.4**
MEF	**Metsahovi**	**1.82**	**168**	*e*P		**Pn**	**14 00 46.4**	**+1.4**
MEF				*e*S		**Sn**	**14 01 09.0**	**-0.1**
KJN	**Kajaani**	**2.79**	**40**	*e*PB		**Pb**	**14 01 02.0**	**-0.6**
KJN				*e*SB		**Sb**	**14 01 37.6**	**0.0**
KJN				MSG			14 01 38.3	
	comp=Z,6.8nm,0.2s							
OUL	**Oulu**	**3.26**	**17**	MSG			14 01 57.8	
	comp=Z,2.8nm,0.2s							
MSF	**Maaselka**	**4.59**	**29**	MSG			14 02 36.4	
	comp=Z,3.1nm,0.3s							
ARA0	**ARCESS Array S**	**7.61**	**5**	Pn		**Pn**	**14 02 05.0**	**-2.0**
	baz=180,slow=16							
ARA0				Sn		**Sn**	**14 03 25.9**	**-9.0**
	baz=180,slow=28							
ARA0				Lg			14 04 05.4	
	baz=179,slow=37							

*IDC **06** 14:01:23.5±1.1, 14.05N×144.82E, mb3.6/5, mb1 3.9/5, mb1mx3.7/17, Error ellipse: s-maj=48.4km s-min=23.0km az=103.0*
*NEIC **06** 14:01:41.6±1.1, 13.87N×144.69E, h156^{km}±10^{km}, mb3.5/2, Error ellipse: s-maj=43.6km s-min=17.9km az=106.0*

ISC 06 14:01:39.6±1.1, 13.9N±0.2×144.6E±0.3, h150^{km}±10^{km}, n8, σ1°26/9, mb3.4/7, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**0.42**	**134**	*e*Pg		**P**	**14 02 03.0**	**+2.0**
GUMO				*e*S		**S**	**14 02 16.2**	**-1.2**
WRAB	**Tennant Creek**	**35.07**	**197**	P		**P**	**14 08 19.5**	**-0.8**
	6.5nm,0.9s,mb4.3							
WRA	**Warramunga Arr**	**35.09**	**197**	P		**P**	**14 08 20.0**	**-0.4**
	0.6nm,0.4s,mb3.5,baz=20,slow=9.2,SNR=8.2							
ASAR	**Alice Springs**	**38.75**	**196**	P		**P**	**14 08 51.9**	**+0.8**
	0.3nm,0.4s,mb3.2,baz=17,slow=13,SNR=11							
MBWA	**Marble Bar**	**42.51**	**215**	P		**P**	**14 09 16.8**	**-5.2**
	0.1nm,0.6s,mb2.6							
MKAR	**Makanchi Array**	**61.07**	**316**	P		**P**	**14 11 40.0**	**+0.1**
	0.1nm,0.3s,mb3.1,baz=89,slow=8.6,SNR=3.9							
ILAR	**Eielson Array**	**68.43**	**25**	P		**P**	**14 12 24.8**	**-2.3**
	0.2nm,0.4s,mb3.2,baz=255,slow=6.0,SNR=5.0							
NVAR	**Mina Array Bea**	**86.97**	**51**	P		**P**	**14 14 10.6**	**+1.4**
	0.6nm,0.7s,mb3.5,baz=270,slow=6.3,SNR=4.1							

IDC 06 14:06:28.2±10.0, 17.52S×178.93W, h569^{km}±117^{km}, mb3.4/4, mb1 3.6/14, mb1mx3.2/14, Error ellipse: s-maj=104.0km s-min=47.3km az=150.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**38.38**	**241**	P		P	14 13 01.6	-1.1
	2.4nm,0.5s,baz=93,slow=11,SNR=13							
WRA	**Warramunga Arr**	**44.21**	**259**	P		P	14 13 47.6	-1.7
	1.7nm,0.6s,baz=95,slow=6.9,SNR=19							
ASAR	**Alice Springs**	**44.42**	**254**	P		P	14 13 49.2	-1.5
	16nm,0.6s,baz=88,slow=8.2,SNR=339							
ASAR				PcP		PcP	14 15 20.4	-1.9
	0.6nm,0.7s,baz=108,slow=3.8,SNR=4.0							
PDAR	**Pinedale Array**	**87.42**	**44**	P		P	14 18 15.8	-0.7
	0.4nm,0.6s,baz=207,slow=6.6,SNR=3.6							

CASC 06 14:25:07.6±2.2, 13.99N×91.51W, h60^{km}±19^{km}, MD3.8, ML3.8, 2C-5D, Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
JAT	**Jato**	**0.35**	**340**	*e*P		P	14 25 17.1	-1.1
JAT				*e*S		S	14 25 27.3	+1.4
JAT				AML		AML	14 25 27.9	
	comp=N,12μm,0.3s							
FUG	**Fuego 3**	**0.80**	**55**	⇑*e*P		P	14 25 22.8	-0.3
TP2	**Tecpan 2**	**0.92**	**31**	*e*P		P	14 25 25.1	+0.3
TP2				*e*S		S	14 25 40.3	+2.7
TP2				AML		AML	14 25 43.6	
	comp=N,1μm,0.3s							
PCG	**Pacaya**	**0.97**	**65**	*e*P		P	14 25 25.8	+0.4
PCG				*e*S		S	14 25 41.0	+2.4
CUSS	**Cusmapa**	**1.52**	**93**	⇓*e*P		P	14 25 32.6	-0.6
CUSS				*e*S		S	14 25 52.1	+0.1
RBDL	**Robledal**	**1.78**	**86**	⇓*e*P		P	14 25 37.2	+0.6
RBDL				*e*S		S	14 25 59.8	+1.7
RTR	**El Retiro**	**1.81**	**93**	⇑*e*P		P	14 25 37.5	+0.4
RTR				*e*S		S	14 25 59.0	0.0
SBLS	**San Blas**	**1.84**	**94**	⇓*e*P		P	14 25 37.4	-0.1
SBLS				*e*S		S	14 26 00.8	+1.2
SNJE	**San Jose**	**1.85**	**93**	*e*P		P	14 25 38.0	+0.4
SNJE				*e*S		S	14 25 58.8	-1.2
MTO2	**Montecristo 2**	**2.13**	**79**	*e*P		P	14 25 41.8	+0.2
BOQS	**Boqueron**	**2.18**	**96**	*e*P		P	14 25 42.6	+0.3
BOQS				*e*S		S	14 26 09.2	+1.1
LFU	**La Fuente**	**2.34**	**95**	⇓*i*P		P	14 25 46.7	+2.1
LFU				*e*S		S	14 26 15.3	+3.1
LFRS	**El Faro**	**2.41**	**98**	⇓*e*P		P	14 25 45.5	0.0
LFRS				*e*S		S	14 26 14.2	+0.4
LCBS	**La Ceiba**	**2.48**	**97**	*e*P		P	14 25 46.7	+0.1
LCB

*CSEM **06** 15:15:55.6, 15.52S×175.21W,h33km,mb5.7*
*MOS **06** 15:16:19.7±0.8, 15.67S×175.05W,h252km,mb5.4/32, Error ellipse: s-maj=11.0km s-min=7.3km az=63.3*
*BJI **06** 15:16:21.2, 15.47S×174.44W,h276km,mB5.6,mb5.5*
*NEIC **06** 15:16:22.3±0.1, 15.76S×175.07W,mb5.4/67,MW5.7, Error ellipse: s-maj=6.2km s-min=3.1km az=148.0, Moment Tensor Solution. s20 Moment tensor: Scale 10^17 Nm; Mrr=2.10; Mθθ0.07; Mϕϕ2.04; Mrθ-1.43; Mθϕ0.71; Mϕr-2.94; Best double couple: Mo3.9×10^17 NP1:ϕs190°, δ17°,λ-104°. NP2:ϕs25°,δ73°,λ-86°. Principal axes: T:4, Plg28°, Azm111°; N:-.13, Plg4°, Azm203°; P:3.86, Plg62°, Azm301°;*
*IDC **06** 15:16:22.9±0.7, 15.74S×175.03W,h267km±6km,mb5.1/24, mb1 5.2/25,mb1mx5.2/25 Error ellipse: s-maj=11.5km s-min=8.5km az=159.0*
*HRVD **06** 15:16:22.3±0.1, 15.76S×174.74W,h289km,MW5.6/76, Centroid moment Tensor Solution. LP body waves: s72,c141;Mantle waves: s76,c164; Half duration: 1s6 Moment tensor: Scale 10^17Nm; Mrr-1.47±.04; Mθθ-0.28±.04; Mϕϕ1.74±.04; Mrθ-1.35±.04; Mθϕ0.09±.04; Mϕr-2.85±.04; Best double couple: Mo3.55×10^17 NP1: ϕs161°,δ17°,λ-130°. NP2:ϕs23°,δ77°,λ-79°. Principal axes: T:3.56, Plg32°, Azm104°; N:-.04, Plg11°, Azm200°; P:-3.53, Plg56°, Azm307°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*SYO **06** 15:16:22.3, 15.76S×175.07W,h267km,MB5.4*

ISC 06 15:16:21.1±0.2, 15.79S±0.04×175.03W±0.03, h267km, h267km±1.9km; pP-P, n720, o087/295, mb5.5/118, 35C-103D, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**15.44**	**113**	P		**P**	**15 19 46.9**	**-0.3**
	4.2nm,0.3s,baz=252,slow=7.1,SNR=39							
RAR				S		**S**	**15 22 25.0**	**-6.4**
	1.9nm,0.3s,baz=176,slow=14,SNR=2.9							
RAR	**Rarotonga**	**15.44**	**113**	*e*P		**P**	**15 19 46.3**	**-1.0**
RAR				pmax		pmax		
	comp=Z,1μm,1.6s							
RAR	**Rarotonga**	**15.44**	**113**	*e*P		**P**	**15 19 46.3**	**-1.0**
	comp=Z,1μm,1.6s							
DZM	**Mont Dzumac**	**18.60**	**248**	*e*P		**P**	**15 20 18.8**	**-2.0**
NOUC	**Port Laguerre**	**18.73**	**248**	*e*P		**P**	**15 20 21.1**	**-1.1**
PUZ	**Puketiti**	**22.97**	**194**	P		**P**	**15 21 04.1**	**+0.4**
URZ	**Urewera**	**23.43**	**196**	P		**P**	**15 21 05.6**	**-2.4**
	comp=Z,26nm,0.4s,mb4.9,baz=27,slow=3.2,SNR=40							
URZ				S		**S**	**15 25 00.5**	**+1.5**
	comp=Z,32nm,0.9s,baz=102,slow=15,SNR=5.3							
URZ	**Urewera**	**23.43**	**196**	P		**P**	**15 21 06.0**	**-2.0**
PAE	**Paea**	**24.44**	**98**	⇑*i*P		**P**	**15 21 16.9**	**-0.6**
	comp=Z,600nm,1.4s,mb5.7							
PPT	**Papeete**	**24.44**	**98**	⇑*i*P		**P**	**15 21 17.2**	**-0.3**
	comp=Z,206nm,1.5s,mb5.2							
PPT	**Papeete**	**24.44**	**98**	*es*S			15 26 43.5	
PPT	**Papeete**	**24.44**	**98**	P		**P**	**15 21 17.1**	**-0.4**
	comp=Z,96nm,0.9s,mb5.1,baz=288,slow=2.4,SNR=6.9							
TVO	**Taravao**	**24.75**	**98**	⇑*i*P		**P**	**15 21 20.1**	**-0.3**
	comp=Z,710nm,1.2s,mb6.0							
TBI	**Tubuai**	**25.21**	**111**	⇑*i*P		**P**	**15 21 24.7**	**+0.2**
	comp=Z,314nm,0.9s,mb5.7							
TBI				*e*pP		pP	15 22 12.8	-2.0
	comp=Z,376nm,1.3s							
TBI				*es*S			15 26 53.7	
PMOR	**Pomariorio Ree**	**26.17**	**92**	⇑*i*P		**P**	**15 21 33.1**	**-0.2**
	comp=Z,856nm,0.9s,mb6.2							
VAH	**Vaihoa**	**26.41**	**93**	⇑*i*P		**P**	**15 21 34.8**	**-0.6**
	comp=Z,747nm,1.0s,mb6.1							
RPZ	**Rata Peaks**	**30.25**	**200**	P		**P**	**15 22 10.9**	**+1.4**
	comp=Z,18nm,0.5s,mb4.9,baz=31,slow=11,SNR=5.8							
BWZ	**Berwen**	**31.37**	**201**	*e*P		**P**	**15 22 15.8**	**-3.3**
AXZ	**Alexandra**	**32.20**	**201**	P		**P**	**15 22 24.4**	**-1.9**
ARMA	**Armidale**	**33.80**	**239**	*e*P		**P**	**15 22 39.1**	**-1.0**
ARMA				*e*			15 22 48.6	
ARMA				*e*			15 23 26.6	
RAB	**Rabaul**	**34.24**	**286**	*e*P		**P**	**15 22 42.9**	**-1.1**
RIV	**Riverview**	**35.34**	**233**	*e*P		**P**	**15 22 52.7**	**-0.4**
RIV				*e*			15 23 01.5	
CTA	**Charters Tower**	**37.02**	**257**	*e*P		**P**	**15 23 06.4**	**-0.9**
	comp=Z,86nm,0.6s,mb5.4							
CTA				*e*PCP		PcP	15 25 22.3	-0.2
CTA				*e*SCP			15 28 45.0	
CTA	**Charters Tower**	**37.02**	**257**	P		**P**	**15 23 06.8**	**-0.5**
	comp=Z,103nm,0.6s,mb5.5,baz=86,slow=10,SNR=101							
CTA				PcP		PcP	15 25 22.6	+0.1
	comp=Z,35nm,0.8s,baz=21,slow=1.9,SNR=5.2							
CTA				ScP			15 28 44.5	
	comp=Z,14nm,0.9s,baz=48,slow=5.6,SNR=3.9							
CTAO	**Charters Tower**	**37.02**	**257**	P		**P**	**15 23 06.8**	**-0.5**
CTAO	**Charters Tower**	**37.02**	**257**	*e*P		**P**	**15 23 06.3**	**-1.0**
CTAO				pmax		pmax		
	comp=Z,190nm,1.0s,mb5.5							
CTAO	**Charters Tower**	**37.02**	**257**	*e*P		**P**	**15 23 06.2**	**-1.1**
	comp=Z,187nm,0.9s,mb5.5							
CNB	**Canberra Magne**	**37.27**	**232**	⇓*i*P		**P**	**15 23 09.3**	**0.0**
	comp=Z,183nm,0.6s,mb5.7							
CNB				*e*			15 23 17.7	
CNB				*e*PCP		PcP	15 25 23.2	+0.1
PMG	**Port Moresby**	**37.40**	**275**	P		**P**	**15 23 12.0**	**+1.5**
	comp=Z,283nm,0.9s,mb5.7,baz=84,slow=5.7,SNR=35							
PMG	**Port Moresby**	**37.40**	**275**	*e*P		**P**	**15 23 11.5**	**+1.0**
PMG				pmax		pmax		
	comp=Z,250nm,0.9s							
PMG	**Port Moresby**	**37.40**	**275**	*e*P		**P**	**15 23 11.9**	**+1.4**
WAU	**Wau**	**38.35**	**278**	⇓*i*P		**P**	**15 23 20.2**	**+1.8**
RKT	**Rikitea**	**38.37**	**107**	⇑*i*P		**P**	**15 23 18.8**	**+0.3**
	comp=Z,460nm,0.9s,mb5.9							
WAKE	**Wake Island**	**39.23**	**332**	*e*P		**P**	**15 23 24.7**	**-0.9**
	comp=Z,54nm,0.8s,mb5.0							
KIP	**Kipapa**	**40.58**	**25**	*e*P		**P**	**15 23 36.7**	**+0.1**
KIP				pmax		pmax		
	comp=Z,440nm,1.1s,mb5.6							
KIP	**Kipapa**	**40.58**	**25**	*e*P		**P**	**15 23 36.7**	**+0.1**
	comp=Z,437nm,1.1s,mb5.6							
HKL	**Haleakala**	**40.69**	**28**	*e*P		**P**	**15 23 37.9**	**+0.4**
TOO	**Toolangi**	**41.01**	**230**	⇓*i*P		**P**	**15 23 39.9**	**0.0**
	comp=Z,110nm,1.1s,mb5.0							
PIAM	**Paiam**	**42.28**	**279**	*e*P		**P**	**15 23 44.8**	**-5.8**
STKA	**Stephens Creek**	**42.48**	**240**	⇓*i*P		**P**	**15 23 51.9**	**-0.1**
	comp=Z,45nm,0.7s,mb4.8							
STKA				*i*			15 24 00.3	
STKA				*e*PCP		PcP	15 25 40.3	+0.3
STKA				*e*SCP			15 29 07.5	
STKA	**Stephens Creek**	**42.48**	**240**	P		**P**	**15 23 51.9**	**-0.1**
	comp=Z,43nm,0.5s,mb4.9,baz=84,slow=8.9,SNR=146							
STKA				PcP		PcP	15 25 40.4	+0.4
	comp=Z,36nm,0.7s,baz=82,slow=3.4,SNR=4.7							
STKA				ScP			15 29 07.7	
	comp=Z,11nm,0.8s,baz=81,slow=2.8,SNR=6.4							
WB2	**Warramunga Arr**	**48.21**	**257**	⇓*i*P		**P**	**15 24 36.3**	**-0.8**
WB2				*e*PCS			15 29 54.5	
WB2				*e*S		**S**	**15 31 10.1**	**-4.8**
WB2				*e*SCS		ScS	15 34 02.1	+3.5
WRAB	**Tennant Creek**	**48.22**	**257**	*e*P		**P**	**15 24 36.2**	**-1.0**
	comp=Z,938nm,0.9s,mb6.1							
WRA	**Warramunga Arr**	**48.23**	**257**	P		**P**	**15 24 36.3**	**-1.0**
	comp=Z,327nm,0.9s,mb5.7,baz=90,slow=6.9,SNR=536							
WRA				PcP		PcP	15 25 60.0	-0.3
	comp=Z,42nm,0.7s,baz=90,slow=3.7,SNR=7.7							
WRA				ScP			15 29 29.3	
	comp=Z,3.4nm,0.8s,baz=97,slow=4.5,SNR=6.0							
WRA				S		**S**	**15 31 12.4**	**-2.6**
	comp=Z,5.3nm,0.8s,baz=95,slow=15,SNR=7.6							
AS12	**Alice Springs**	**48.50**	**252**	⇓*i*P		**P**	**15 24 38.8**	**-0.5**
	comp=Z,1μm,0.7s,mb6.3							
AS12				*e*			15 24 47.7	
AS12				*e*S		**S**	**15 31 17.5**	**-1.2**
ASAR	**Alice Springs**	**48.50**	**252**	P		**P**	**15 24 38.9**	**-0.4**
	comp=Z,1μm,0.6s,mb6.4,baz=88,slow=7.8,SNR=9187							
ASAR				PcP		PcP	15 26 01.3	0.0
	comp=Z,46nm,0.7s,baz=90,slow=4.9,SNR=4.6							
ASAR				ScP			15 29 31.7	
	comp=Z,7.2nm,0.8s,baz=101,slow=4.4,SNR=4.4							
ASAR				S		**S**	**15 31 17.1**	**-1.6**
	comp=Z,5.8nm,0.6s,baz=86,slow=15,SNR=19							
GUMO	**Guam**	**49.24**	**304**	*e*P		**P**	**15 24 44.1**	**-0.9**
KAKA	**Kakadu**	**50.94**	**266**	⇓*i*P		**P**	**15 24 57.0**	**-0.7**
	comp=Z,303nm,0.6s,mb5.8							
KAKA				*e*S		**S**	**15 31 53.3**	**+0.8**
FORT	**Forrest**	**53.84**	**243**	⇓*i*P		**P**	**15 25 17.6**	**-1.1**
	comp=Z,1μm,0.8s,mb6.2							
FITZ	**Fitzroy Crossi**	**56.59**	**259**	⇓*i*P		**P**	**15 25 38.3**	**-0.2**
	comp=Z,26nm,0.6s,mb4.8							
FITZ				*e*S		**S**	**15 33 08.9**	**+1.0**
FITZ	**Fitzroy Crossi**	**56.59**	**259**	S		**S**	**15 33 08.5**	**+0.5**
	comp=Z,8.5nm,1.2s,baz=351,slow=17,SNR=3.2							
CBIJ	**Chichi jima**	**59.51**	**315**	P		**P**	**15 25 57.9**	**-0.8**
	comp=Z,278nm,0.8s,mb5.8,baz=190,slow=1.8,SNR=18							
KLBR	**Kellerberrin**	**62.67**	**242**	*e*P		**P**	**15 26 18.1**	**-1.5**
	comp=Z,373nm,0.9s,mb6.0							
SBA	**Scott Base**	**62.74**	**184**	*e*P		**P**	**15 26 20.7**	**+1.2**
SBA				pmax		pmax		
	comp=Z,34nm,0.8s,mb5.0							
SBA	**Scott Base**	**62.74**	**184**	*e*P		**P**	**15 26 20.7**	**+1.2**
	comp=Z,34nm,0.8s,mb5.0							
NWAO	**Narrogin (SRO)**	**63.06**	**241**	P		**P**	**15 26 21.8**	**-0.4**
NWAO				S		**S**	**15 34 29.5**	**-0.6**
NWAO	**Narrogin (SRO)**	**63.06**	**241**	*e*P		**P**	**15 26 20.9**	**-1.2**
NWAO				pmax		pmax		
	comp=Z,230nm,1.2s							
NWAO	**Narrogin (SRO)**	**63.06**	**241**	*e*P		**P**	**15 26 20.9**	**-1.2**
	comp=Z,229nm,1.3s,mb5.7							
MUN	**Mundaring**	**63.97**	**242**	*e*P		**P**	**15 26 27.3**	**-0.8**
	comp=Z,109nm,0.7s,mb5.6							
SCPH	**Surigao**	**64.14**	**289**	*i* P		**P**	**15 26 29.5**	**0.0**
SCPH				*i* S		Px	15 26 36.9	
JHJ	**Hachijo jima 2**	**65.01**	**319**	P		**P**	**15 26 34.5**	**-0.3**
	comp=Z,1μm,0.7s,baz=181,slow=8.7,SNR=28							
TBP	**Tagbilaran**	**65.58**	**289**	⇓*i*P		**P**	**15 26 38.8**	**+0.1**
KEDI	**Kedomdong**	**67.47**	**267**	⇓*e*P		**P**	**15 26 49.6**	**-1.0**
KALP	**Kalibo**	**67.72**	**290**	⇓*e*P		**P**	**15 26 51.6**	**-0.5**
RATI	**Rata**	**67.97**	**267**	⇓*e*P		**P**	**15 26 53.4**	**-0.3**
MAJO	**Matsushiro**	**68.23**	**321**	*e*P		**P**	**15 26 54.2**	**-0.7**
MAJO				pmax		pmax		
	comp=Z,190nm,1.1s,mb5.7							
MAJO	**Matsushiro**	**68.23**	**321**	*e*P		**P**	**15 26 54.2**	**-0.7**
	comp=Z,187nm,1.1s,mb5.7							
MAT	**Matsushiro**	**68.23**	**321**	P		**P**	**15 26 54.4**	**-0.5**
MAT				S		S	15 35 47.0	+14
MAT	**Matsushiro**	**68.23**	**321**	*e*P		**P**	**15 26 54.0**	**-0.9**
	comp=Z,161nm,1.1s,mb5.7							
MAT				*e*S		S	15 35 48.0	+15
INGI	**Ingas**	**68.32**	**267**	⇓*e*P		**P**	**15 26 55.5**	**-0.3**
NIKO	**Nikolski**	**68.69**	**4**	*e*P		**P**	**15 26 55.1**	**-2.3**
KELI	**Kelakatan**	**69.09**	**267**	⇓*e*P		**P**	**15 26 59.8**	**-0.7**
FX1	**Attu Island--F**	**69.14**	**352**	P		**P**	**15 26 59.1**	**-1.0**
	comp=Z,230nm,0.8s,mb6.0,baz=149,slow=3.2,SNR=31							
JOW	**Kunigami**	**69.45**	**307**	P		**P**	**15 27 03.4**	**+0.8**
	baz=134,slow=15							
UNV	**Unalaska Valle**	**69.74**	**5**	*e*P		**P**	**15 27 02.3**	**-1.5**
	comp=Z,306nm,0.7s,mb6.1							
TGY	**Tagaytay City**	**69.91**	**292**	P		**P**	**15 27 05.7**	**+0.2**
	comp=Z,262nm,0.6s,mb6.2,baz=246,slow=20,SNR=5.3							
SKR	**Severo-Kuril's**	**70.86**	**341**	*e*P		**P**	**15 27 09.5**	**-1.1**
SKR				pmax		pmax		
	comp=E,150nm,0.7s							
SKR				pmax		pmax		
	comp=Z,130nm,0.7s,mb5.7							
JNU	**Nakatsue**	**70.93**	**314**	P		**P**	**15 27 11.3**	**0.0**
	comp=Z,274nm,0.8s,mb6.0,baz=79,slow=5.5,SNR=133							
ASAJ	**Asahikawa**	**71.05**	**329**	P		**P**	**15 27 12.8**	**+0.9**
	comp=Z,187nm,0.9s,mb5.7,baz=219,slow=6.9,SNR=47							
KKM	**Kota Kinabalu**	**71.42**	**282**	⇓*e*P		**P**	**15 27 14.9**	**+0.3**
	comp=Z,223nm,0.7s,mb5.9							
SDN	**Sand Point**	**71.91**	**9**	*e*P		**P**	**15 27 15.2**	**-1.6**
SDN				pmax		pmax		
	comp=Z,490nm,1.0s,mb6.1							
SDN	**Sand Point**	**71.91**	**9**	*e*P		**P**	**15 27 15.5**	**-1.3**
SDPT	**Sand Point**	**71.92**	**9**	*e*P		**P**	**15 27 15.0**	**-1.9**
PET	**Petropavlovsk**	**72.19**	**344**	*e*P		**P**	**15 27 17.3**	**-1.3**
PET				*e*S		S	15 36 13.3	-4.7
PET				*e*			15 37 25.6	
PET				*e*SS		SS	15 41 04.0	+0.7
PET				pmax		pmax		
	comp=Z,942nm,4.6s							
PET				pmax		pmax		
	comp=Z,163nm,1.3s,mb5.5							
PET				pmax		pmax		
	comp=Z,215nm,19.8s							
PET				pmax		pmax		
	comp=Z,210nm,13.3s							
PET				smax				
	comp=N,261nm,18.8s							
PET				smax				
	comp=E,281nm,14.9s							
PET	**Petropavlovsk**	**72.19**	**344**	*e*P		**P**	**15 27 16.2**	**-2.4**
SAO	**San Andreas Ge**	**72.67**	**43**	*e*P		**P**	**15 27 21.6**	**-0.1**
SAO				pmax		pmax		
	comp=Z,58nm,1.0s,mb5.2							
SAO	**San Andreas Ge**	**72.67**	**43**	*e*P		**P**	**15 27 21.6**	**-0.2**
	comp=Z,58nm,1.0s,mb5.2							
LRV	**Little Rabbit**	**72.76**	**43**	*e*P		**P**	**15 27 22.7**	**+0.5**
LKC	**Lake Chabot**	**72.85**	**41**	*e*P		**P**	**15 27 22.9**	**+0.2**
HOPS	**Hopland**	**72.97**	**40**	*e*P		**P**	**15 27 23.0**	**-0.4**
	comp=Z,98nm,1.1s,mb5.3							
NSHM	**Saint Helena R**	**72.97**	**41**	*e*P		**P**	**15 27 23.2**	**-0.2**
YSS	**Yuzh-Sakhalins**	**73.06**	**331**	*e*P		**P**	**15 27 23.0**	**-0.7**
YSS				pmax		pmax		
	comp=Z,400nm,1.0s,mb6.0							
YSS	**Yuzh-Sakhalins**	**73.06**	**331**	*e*P		**P**	**15 27 23.0**	**-0.7**
	comp=Z,397nm,1.0s,mb6.0							
MWC	**Mount Wilson**	**73.54**	**46**	*e*P		**P**	**15 27 26.3**	**-0.5**
KHMM	**Horse Mountain**	**73.73**	**38**	*e*P		**P**	**15 27 28.6**	**+0.8**
TATO	**Taipei**	**73.94**	**302**	*e*P		**P**	**15 27 28.5**	**-0.8**
	comp=Z,332nm,0.9s,mb6.0							
CMB	**Columbia Colle**	**74.10**	**42**	*e*P		**P**	**15 27 29.7**	**-0.3**
CMB				*e**PP		pP	15 28 30.5	-1.9
CMB				pmax		pmax		
	comp=Z,43nm,0.9s,mb5.1							
CMB	**Columbia Colle**	**74.10**	**42**	*e*P		**P**	**15 27 29.7**	**-0.3**
	comp=Z,43nm,0.8s,mb5.1							
CMB				*e*pP		pP	15 28 30.5	-1.9
OHCM	**Honcut**	**74.16**	**40**	*e*P		**P**	**15 27 29.9**	**-0.4**
WDC	**Whiskeytown Da**	**74.26**	**39**	*e*P		**P**	**15 27 30.6**	**-0.3**
WDC				pmax		pmax		
	comp=Z,49nm,1.0s,mb5.1							
WDC	**Whiskeytown Da**	**74.26**	**39**	*e*P		**P**	**15 27 30.6**	**-0.3**
	comp=Z,49nm,0.9s,mb5.1							
PFO	**Pinyon Flat Ob**	**74.34**	**48**	*e*P		**P**	**15 27 31.1**	**-0.4**
PFO				pmax		pmax		
	comp=Z,23nm,1.0s,mb4.8							
PFO	**Pinyon Flat Ob**	**74.34**	**48**	*e*P		**P**	**15 27 31.1**	**-0.3**
	comp=Z,23nm,0.9s,mb4.8							
YBH	**Yreka Blue Hor**	**74.86**	**38**	P		**P**	**15 27 35.0**	**+0.7**
	comp=Z,67nm,0.6s,mb5.4,baz=181,slow=1.9,SNR=237							
YBH				pP		pP	15 28 37.8	+1.0
	comp=Z,17nm,1.2s,baz=227,slow=4.6,SNR=1.3							
YBH	**Yreka Blue Hor**	**74.86**	**38**	*e*P		**P**	**15 27 34.7**	**+0.4**
YBH				*e**PP		pP	15 28 37.5	+0.7
YBH				pmax		pmax		
	comp=Z,80nm,0.8s							
YBH	**Yreka Blue Hor**	**74.86**	**38**	*e*P		**P**	**15 27 34.7**	**+0.5**
	comp=Z,80nm,0.8s,mb5.4							
YBH				*e*pP		pP	15 28 37.5	+0.7
MTUM	**Tungsten Hills**	**74.90**	**43**	*e*P		**P**	**15 27 35.0**	**+0.4**
MTUM				*e*pP		pP	15 28 36.4	-0.8
DAC	**Darwin (Calif)**	**74.97**	**45**	*e*P		**P**	**15 27 35.3**	**+0.3**
BEKR	**Beckwourth**	**75.18**	**41**	*e*P		**P**	**15 27 35.9**	**-0.1**
	comp=Z,50nm,0.9s,mb5.2							
WCN	**Washoe City**	**75.23**	**41**	*e*P		**P**	**15 27 36.6**	**+0.2**
WCN				pmax		pmax		
	comp=Z,88nm,1.0s,mb5.3							
WCN	**Washoe City**	**75.23**	**41**	*e*P		**P**	**15 27 36.5**	**+0.2**
	comp=Z,88nm,1.0s,mb5.3							
HUMO	**Hull Mountain**	**75.26**	**37**	*e*P		**P**	**15 27 36.6**	**+0.1**
KDAK	**Kodiak Island**	**75.62**	**12**	*e*P		**P**	**15 27 37.6**	**-0.6**
	comp=Z,199nm,1.0s,mb5.7							
NVAR	**Mina Array Bea**	**75.67**	**43**	P		**P**	**15 27 39.3**	**+0.4**
	comp=Z,45nm,0.8s,mb5.2,baz=218,slow=7.7,SNR=277							
NVAR				pP		pP	15 28 41.5	0.0
	comp=Z,6.3nm,0.8s,baz=225,slow=8.9,SNR=2.1							
NVAR				PKKPbc			15 46 56.1	
	comp=Z,1.3nm,1.1s,baz=70,slow=4.6,SNR=4.0							
HSO	**Harness Mounta**	**75.75**	**36**	*e*P		**P**	**15 27 39.4**	**+0.2**
LDFC	**Landfair**	**76.05**	**47**	*e*P		**P**	**15 27 41.5**	**+0.4**
TPH	**Tonopah**	**76.19**	**43**	*e*P		**P**	**15 27 41.9**	**+0.1**
TPH				*e**PP		pP	15 28 44.3	-0.2
TPH				pmax		pmax		
	comp=Z,41nm,0.8s,mb5.1							
TPH	**Tonopah**	**76.19**	**43**	*e*P		**P**	**15 27 41.9**	**+0.2**
	comp=Z,41nm,0.8s,mb5.1							
TPH				*e*pP		pP	15 28 44.3	-0.1
INCN	**Inchon**	**76.22**	**316**	*e*P		**P**	**15 27 42.5**	**+0.6**
	comp=Z,439nm,1.0s,mb6.0							
COR	**Corvallis**	**76.29**	**35**	*e*P		**P**	**15 27 42.5**	**+0.3**
QZH	**Quanzhou**	**76.30**	**301**	*i* PR			15 27 43.1	
QZH				XP		sP	15 29 18.1	+4.9
MIR	**Mirnyy**	**76.43**	**204**	⇓*e*P		**P**	**15 27 42.5**	**0.0**
MIR				pmax		pmax		
	comp=Z,115nm,1.6s,mb5.3							
NEN	**Nelson**	**76.53**	**47**	*e*P		**P**	**15 27 43.6**	**-0.1**
KMOR	**Kings Mountain**	**76.85**	**34**	P		**P**	**15 27 45.7**	**+0.4**
SSOR	**Sweet Springs**	**76.93**	**35**	*e*P		**P**	**15 27 45.1**	**-0.6**
SSOR	**Sweet Springs**	**76.93**	**35**	P		**P**	**15 27 45.8**	**+0.1**
SSE	**Sheshan**	**76.94**	**308**	P		**P**	**15 27 46.0**	**-0.1**
SSE				XP		sP	15 29 16.6	-0.1
SSE				S		S	15 37 10.2	-0.3
SSE				AMB		AMB		
	comp=Z,81nm,0.9s,mb5.5							
SSE				LR		LR		
	comp=N,249nm,28.0s							
SSE				LR		LR		
	comp=E,226nm,28.2s							
SSE				LR		LR		
	comp=Z,301nm,20.7s							
BMN	**Battle Mountai**	**77.48**	**41**	*e*P		**P**	**15 27 48.9**	**+0.1**
BMN				*e**PP		pP	15 28 50.7	-1.0
BMN				pmax		pmax		
	comp=Z,48nm,0.8s,mb5.3							
BMN	**Battle Mountai**	**77.48**	**41**	*e*P		**P**	**15 27 48.9**	**+0.1**
	comp=Z,48nm,0.8s,mb5.3							
BMN				*e*pP		pP	15 28 50.7	-1.0
BMW	**Boistfort Moun**	**77.53**	**34**	*e*P		**P**	**15 27 48.6**	**-0.3**
WVOR	**Wild Horse Val**	**77.72**	**39**	*e*P		**P**	**15 27 50.0**	**-0.1**
WVOR				pmax		pmax		
	comp=Z,62nm,1.0s,mb5.3							
WVOR	**Wild Horse Val**	**77.72**	**39**	*e*P		**P**	**15 27 50.0**	**-0.1**
	comp=Z,62nm,0.9s,mb5.3							
OCWA	**Octopus Mounta**	**77.84**	**32**	*e*P		**P**	**15 27 51.0**	**+0.4**
	comp=Z,141nm,1.1s,mb5.6							
TUC	**Tucson**	**77.86**	**51**	*e*P		**P**	**15 27 51.4**	**+0.3**
TUC				*e**PP		pP	15 28 54.2	+0.2
TUC				pmax		pmax		
	comp=Z,20nm,1.0s,mb4.8							
TUC	**Tucson**	**77.86**	**51**	*e*P		**P**	**15 27 51.4**	**+0.3**
	comp=Z,20nm,0.9s,mb4.8							
TUC				*e*pP		pP	15 28 54.2	+0.1
RSO	**Redoubt South**	**78.08**	**11**	*e*P		**P**	**15 27 50.6**	**-1.1**
SVW	**Sparrevohn**	**78.19**	**9**	*e*P		**P**	**15 27 51.7**	**-0.6**
VGB	**Gordon Butte**	**78.28**	**36**	*e*P		**P**	**15 27 52.9**	**-0.2**
MDJ	**Mudanjiang**	**78.38**	**323**	P		**P**	**15 27 54.3**	**+0.7**
MDJ				AP		pP	15 28 55.3	-1.4
MDJ				XP		sP	15 29 23.0	-1.4
MDJ				PP		PP	15 30 55.3	-0.9
MDJ				S		S	15 37 28.3	+2.8
MDJ				SCS		ScS	15 37 49.2	+3.3
MDJ				XS			15 39 23.1	
MDJ				SS		SS	15 42 38.7	+1.2
MDJ				AMB		AMB		
	comp=Z,115nm,1.7s,mb5.3							
MDJ				AMB		AMB		
	comp=Z,451nm,4.7s							
MDJ	**Mudanjiang**	**78.38**	**323**	*e*P		**P**	**15 27 54.2**	**+0.6**
	comp=Z,157nm,1.1s,mb5.7							
GNW	**Green Mountain**	**78.43**	**33**	*e*P		**P**	**15 27 53.4**	**-0.5**
LON	**Longmire**	**78.46**	**34**	*e*P		**P**	**15 27 53.5**	**-0.5**
LON	**Longmire**	**78.46**	**34**	P		**P**	**15 27 53.8**	**-0.2**
MID	**Middleton Isla**	**78.50**	**15**	*e*P		**P**	**15 27 53.6**	**-0.4**
SLKM	**Skilak Lake**	**78.61**	**12**	*e*P		**P**	**15 27 53.6**	**-0.9**
FMW	**Mount Fremont**	**78.65**	**34**	P		**P**	**15 27 55.5**	**+0.4**
JBO	**Jordan Butte**	**78.78**	**36**	P		**P**	**15 27 55.9**	**+0.1**
SPU	**Mount Spurr**	**78.88**	**11**	*e*P		**P**	**15 27 54.1**	**-1.8**
RMW	**Rattlesnake Mo**	**78.90**	**34**	*e*P		**P**	**15 27 56.2**	**-0.1**
WUAZ

comp=Z,110nm,0.9s,mb5.6
PV10 Paradox Valley 81.91 46 *e*P P **15 28 12.5 +0.2**
NEW Newport 81.92 35 P P **15 28 12.0 -0.1**
comp=Z,16nm,0.8s,mb4.8,baz=227,slow=4.1,SNR=20
NEW Newport 81.92 35 *e*P P **15 28 11.3 -0.8**
NEW pmax pmax
comp=Z,16nm,0.8s
NEW Newport 81.92 35 *e*P P **15 28 11.3 -0.8**
comp=Z,16nm,0.8s,mb4.8
PV01 Paradox Valley 82.13 47 *e*P P **15 28 13.8 +0.3**
TXAR Lajitas Array 82.14 57 P P **15 28 14.8 +1.1**
comp=Z,11nm,0.9s,mb4.6,baz=233,slow=6.3,SNR=20
TXAR pP pP 15 29 17.6 +0.3
comp=Z,1.0nm,0.4s,baz=252,slow=5.7,SNR=1.1
ANMO Albuquerque 82.26 51 *e*P P **15 28 14.4 +0.3**
ANMO pmax pmax
comp=Z,50nm,1.2s
ANMO Albuquerque 82.26 51 *e*P P **15 28 14.4 +0.3**
comp=Z,50nm,1.3s,mb5.1
ANMO *e*pP pP 15 29 19.7 +1.9
TIA Tai'an 82.27 311 P P **15 28 14.8 +0.6**
TIA AMB AMB
comp=Z,185nm,1.3s,mb5.7
SEY Seymchan 82.49 346 *i* P P **15 28 14.7 -0.1**
SEY PS Px 15 39 05.3
SEY *e*SPP SPP 15 39 33.3 +9.4
KGM Kluang 82.52 274⇓*i*P P **15 28 17.1 +1.2**
comp=Z,468nm,1.1s,mb6.2
MCMT McKenzie Canyo 82.55 39 *e*P P **15 28 16.1 +0.7**
AHID Auburn Hatcher 82.61 42 *e*P P **15 28 15.8 0.0**
comp=Z,70nm,1.3s,mb5.3
RW3 Ridgway 82.80 47 *e*P P **15 28 17.3 +0.4**
MSO Missoula 82.94 37 *e*P P **15 28 16.3 -1.1**
comp=Z,91nm,1.4s,mb5.4
BSMT Bassoo Peak 83.00 36 P P **15 28 17.6 0.0**
COLA College 83.04 11 *i* P P **15 28 16.9 -0.6**
COLA College 83.04 11 *e*P P **15 28 17.0 -0.5**
REDW Red Top Meadow 83.06 41 *e*P P **15 28 18.1 +0.1**
ILAR Eielson Array 83.14 12 P P **15 28 17.3 -0.7**
comp=Z,54nm,0.7s,mb5.5,baz=229,slow=5.4,SNR=277
IMA Indian Mountai 83.17 9 *e*P P **15 28 18.6 +0.4**
WUWY Wally Ulrich 83.22 41 *e*P P **15 28 19.2 +0.4**
KSWY Kelly School 83.33 41 *e*P P **15 28 20.1 +0.7**
CHMT Chamberlain Mo 83.38 37 *e*P P **15 28 19.1 -0.5**
QLMT Earthquake Lak 83.42 40 *e*P P **15 28 20.9 +1.1**
BW06 Boulder Array 83.61 42 *e*P P **15 28 20.5 -0.4**
comp=Z,36nm,0.8s,mb5.2
BW06 *e*pP pP 15 29 24.7 0.0
YMR Madison River 83.63 40 *e*P P **15 28 21.9 +1.0**
LCCM Lewis and Clar 83.65 39 P P **15 28 21.5 +0.5**
BOZ Bozeman (W) 83.70 39 *e*P P **15 28 21.3 0.0**
BOZ *e**PP pP 15 29 24.6 -0.5
BOZ pmax pmax
comp=Z,51nm,1.1s,mb5.3
BOZ Bozeman (W) 83.70 39 *e*P P **15 28 21.3 +0.1**
comp=Z,51nm,1.1s,mb5.3
BOZ *e*pP pP 15 29 24.6 -0.6
LKWY Lake 83.93 41 *e*P P **15 28 24.1 +1.7**
LKWY pmax pmax
comp=Z,31nm,1.0s,mb5.1
LKWY Lake 83.93 41 *e*P P **15 28 24.1 +1.7**
comp=Z,31nm,1.1s,mb5.0
HRY Holter Researc 84.12 38 *e*P P **15 28 23.1 -0.2**
SDCO Great Sand Dun 84.14 48 *e*P P **15 28 23.9 +0.2**
comp=Z,9.1nm,1.0s,mb4.6
BJT Baijiatuau 84.60 314 *e*P P **15 28 26.8 +1.0**
comp=Z,608nm,1.2s,mb6.3
BJI Beijing 84.60 314 *e*P P **15 28 27.1 +1.2**
BJI AP pP 15 29 34.8 +4.9
BJI XP sP 15 30 02.1 +4.9
BJI S S 15 38 20.7 -7.8
BJI XS 15 40 29.7
BILL Bilibino 84.69 353*d i*P P **15 28 25.8 +0.1**
BILL *e* 15 31 44.8
BILL *e*S S 15 38 35.5 +6.7
BILL pmax pmax
comp=Z,318nm,1.1s,mb6.1
BILL Bilibino 84.69 353⇓*i*P P **15 28 25.7 0.0**
comp=Z,304nm,1.1s,mb6.0
UBT Ubonrachathani 84.75 287 P P **15 28 29.0 +1.9**
ISCO Idaho Springs 84.93 46 *e*P P **15 28 27.6 +0.1**
ISCO pmax pmax
comp=Z,3.0nm,0.7s
ISCO Idaho Springs 84.93 46 *e*P P **15 28 27.6 +0.1**
comp=Z,3.2nm,0.6s
IPM Ipoh 85.42 276⇓*e*P P **15 28 31.0 +0.4**
comp=Z,120nm,0.6s,mb5.9
JCT Junction City 85.67 57 *e*P P **15 28 31.2 -0.2**
JCT pmax pmax
comp=Z,14nm,0.8s,mb4.8
JCT Junction City 85.67 57 *e*P P **15 28 31.2 -0.2**
comp=Z,14nm,0.8s,mb4.8
ENH Enshi 85.81 303 *e*P P **15 28 32.9 +0.8**
comp=Z,316nm,1.0s,mb6.1
USHA Ushuaia 86.48 146 P P **15 28 36.4 +1.7**
comp=Z,12nm,0.8s,mb4.8,baz=233,slow=7.6,SNR=5.1
HIA Hailar 86.56 323 *e*P P **15 28 35.4 +0.2**
comp=Z,129nm,0.8s,mb5.8
GYA Guiyang 86.84 298⇓*i*P P **15 28 39.0 +1.8**
GYA AP pP 15 29 39.6 -1.6
GYA XP sP 15 30 09.5 +0.8
GYA SKS SKS 15 38 32.6 -3.2
GYA AMB AMB
comp=Z,180nm,1.2s,mb5.8
MAW Mawson 86.92 199⇓*i*P P **15 28 37.4 +0.9**
comp=Z,34nm,0.9s,mb5.2
MAW Mawson 86.92 199 P P **15 28 37.5 +1.0**
comp=Z,35nm,0.7s,mb5.3,baz=128,slow=6.3,SNR=65
MAW Mawson 86.92 199 *e*P P **15 28 37.2 +0.7**
MAW pmax pmax
comp=Z,64nm,0.9s
KKTK Khon Kaen 87.09 288 P P **15 28 40.0 +1.5**
XAN Xi'an 87.59 306 P P **15 28 41.7 +1.2**
XAN AMB AMB
comp=Z,262nm,1.3s,mb5.9
RSSD Black Hills 87.81 43 P P **15 28 41.1 -0.2**
RSSD SKSac 15 38 45.5
RSSD S S 15 39 00.4 +1.6
RSSD Black Hills 87.81 43 *e*P P **15 28 40.6 -0.7**
RSSD pmax pmax
comp=Z,10.0nm,0.8s,mb4.7
RSSD Black Hills 87.81 43 *e*P P **15 28 40.6 -0.7**
comp=Z,10.0nm,0.8s,mb4.7
CLNS Chul'man 87.82 332 *e*P P **15 28 41.6 +0.6**
CLNS pmax pmax
comp=Z,40nm,1.2s,mb5.1
CLNS pmax pmax
comp=N,20nm,1.0s
CLNS pmax pmax
comp=E,20nm,0.9s
WMOK Wichita Mounta 87.99 53 *e*P P **15 28 41.8 -0.6**
WMOK *e**PP pP 15 29 46.9 +0.1
WMOK pmax pmax
comp=Z,5.0nm,1.1s,mb4.3
WMOK Wichita Mounta 87.99 53 *e*P P **15 28 41.8 -0.5**
comp=Z,5.0nm,1.1s,mb4.3
WMOK *e*pP pP 15 29 46.9 +0.1
HHC Hu-ho-hao-te 88.14 313⇓P P **15 28 44.8 +1.9**
HHC SKS SKS 15 38 48.5 +4.8
HHC AMB AMB
comp=Z,323nm,1.4s,mb6.0
HHC AMB AMB
comp=Z,1μm,3.1s
HHC LR LR
comp=N,45nm,19.0s
HHC LR LR
comp=E,77nm,20.2s
HHC LR LR
comp=Z,95nm,17.1s
HKT Hockley 88.72 59 *e*P P **15 28 45.5 -0.4**
HKT pmax pmax
comp=Z,21nm,1.5s,mb4.8
HKT Hockley 88.72 59 *e*P P **15 28 45.5 -0.4**
comp=Z,21nm,1.5s,mb4.8
YAK Yakutsk 88.86 337*d i*P P **15 28 44.5 -1.2**
YAK *e* 15 32 20.9
YAK *e*S S 15 39 03.3 -4.6
YAK pmax pmax
comp=N,9.0nm,0.9s
YAK pmax pmax
comp=Z,60nm,0.9s,mb5.4
YAK pmax pmax
comp=E,10.0nm,1.1s
YAK pmax pmax
comp=Z,10.0nm,1.0s,mb4.6
YAK pmax pmax
comp=N,8.0nm,1.1s
YAK pmax pmax
comp=E,7.0nm,1.0s
YAK smax
comp=N,4.0nm,1.0s
YAK smax
comp=E,4.0nm,1.3s
YAK Yakutsk 88.86 337 *e*P P **15 28 44.0 -1.7**
comp=E,140nm,0.8s,mb5.8
NNT Nongplab 88.88 283 P P **15 28 49.2 +2.2**
BTO Baotou 89.14 313 *e*P P **15 28 49.2 +1.6**
BTO AMB AMB
comp=Z,274nm,1.3s,mb5.9
NST Nakhon Sawan 89.38 286 P P **15 28 51.0 +1.7**
comp=Z,83nm,1.4s,mb5.4
NANT Nan 89.75 290⇓P P **15 28 52.0 +1.0**
comp=Z,108nm,1.0s,mb5.6
KMI Kunming 89.78 296⇓*i*P P **15 28 53.5 +2.5**
KMI XP sP 15 30 27.4 +4.5
KMI SKS SKS 15 38 57.3 +3.3
KMI S S 15 39 15.1 -2.1
KMI SS SS 15 45 27.1 +2.3
KMI AMB AMB
comp=Z,130nm,1.5s,mb5.5
KMI AMB AMB
comp=Z,621nm,3.2s
KMI LR LR
comp=N,157nm,22.2s
KMI LR LR
comp=E,200nm,19.4s
KMI LR LR
comp=Z,210nm,36.0s
PLCA Paso Flores 90.41 133 P P **15 28 55.0 +1.4**
comp=Z,8.8nm,0.8s,mb4.6,baz=222,slow=4.7,SNR=18
PLCA PKKPbc 15 46 21.3
comp=Z,5.2nm,0.8s,baz=112,slow=0.8,SNR=8.1
PLCA Paso Flores 90.41 133 P P **15 28 55.0 +1.4**
PLCA PKKPbc 15 46 21.3
CD2 Chengdu 90.68 302 P P **15 28 56.3 +1.3**
CD2 SKS SKS 15 39 00.4 +1.3
CD2 S S 15 39 21.5 -3.5
CD2 AMB AMB
comp=Z,70nm,1.1s,mb5.4
CD2 AMB AMB
comp=Z,390nm,4.9s
CD2 LR LR
comp=N,190nm,13.9s
CD2 LR LR
comp=Z,220nm,8.9s
BDT Bhumibol Dam 90.86 288⇓P P **15 28 52.0 -4.1**
comp=Z,19nm,1.0s,mb4.9
BDT Bhumibol Dam 90.86 288⇓P P **15 28 58.0 +1.9**
comp=Z,38nm,0.9s,mb5.2
CHRT Chiangrai 90.88 290⇓P P **15 28 58.0 +1.8**
comp=Z,460nm,0.7s,mb6.4
YKA Yellowknife Ar 91.08 24 P P **15 28 55.8 -0.3**
comp=Z,24nm,1.0s,mb5.0,baz=236,slow=4.3,SNR=148
YKA pP pP 15 30 02.0 +1.2
comp=Z,1.0nm,0.8s,baz=225,slow=5.2,SNR=1.3
YKA PP PP 15 32 33.4 -4.8
comp=Z,1.1nm,0.8s,baz=235,slow=8.2,SNR=4.1
YKA PKKP PKKP 15 46 17.5 +34
comp=Z,0.2nm,0.4s,baz=40,slow=2.2,SNR=7.6
YKA Yellowknife Ar 91.08 24 P P **15 28 55.8 -0.3**
YKA pP pP 15 30 02.0 +1.2
YKA PP PP 15 32 33.4 -4.8
YKA PKKP PKKP 15 46 17.5 +34
CMAR Chiang Mai Arr 91.25 289 P P **15 28 59.6 +1.7**
comp=Z,48nm,0.8s,mb5.4,baz=92,slow=2.7,SNR=235
CMAR PKIKP 15 33 49.3
comp=Z,5.3nm,1.1s,baz=172,slow=1.1,SNR=4.8
CHG Chiang Mai 91.34 289⇓P P **15 28 59.9 +1.5**
comp=Z,96nm,0.9s,mb5.6
SYO Syowa Base 91.90 192⇓P P **15 28 59.0 -0.8**
SYO Syowa Base 91.90 192⇑pP pP 15 30 06.3 +1.7
SYO Syowa Base 91.90 192⇑sP sP 15 30 30.9 -0.9
SYO Syowa Base 91.90 192⇓*e*P P **15 28 59.0 -0.8**
SYO *e*pP pP 15 30 06.3 +1.7
SYO *e*sP sP 15 30 30.9 -0.9
MIAR Mount Ida 91.98 55 *e*P P **15 29 00.9 -0.1**
MIAR pmax pmax
comp=Z,7.0nm,1.0s,mb4.5
MIAR Mount Ida 91.98 55 *e*P P **15 29 00.8 -0.2**
comp=Z,7.4nm,1.0s,mb4.6
LZH Lanzhou 92.19 307⇓P P **15 29 03.5 +1.5**
LZH AP pP 15 30 14.0 +7.2
LZH XP sP 15 30 36.2 +2.2
LZH SKS SKS 15 39 10.3 +2.7
LZH S S 15 39 40.0 +1.8
LZH SS SS 15 46 01.0 +2.5
LZH AMB AMB
comp=Z,320nm,1.2s,mb6.1
LZH AMB AMB
comp=Z,780nm,4.0s
LZH LR LR
comp=N,450nm,17.6s
LZH LR LR
comp=Z,410nm,20.6s
SNAA Sanae 92.59 178⇓*i* P **15 29 07.4 +4.4**
VNA3 Neumayer Olymp 92.61 175⇑*i* P **15 29 10.8 +7.7**
VNA2 Neumayer--Watz 93.08 176 P **15 29 09.2 +4.0**
VNA1 Neumayer--Stat 93.29 176⇑*i* P **15 29 10.5 +4.3**
FFC Flin Flon 93.30 34 *e*P P **15 29 05.8 -0.8**
comp=Z,22nm,1.3s,mb4.9
BOD Bodaibo 93.46 330 *e*P P **15 29 05.7 -1.5**
ULN Ulaanbaatar 93.68 319 *e*P P **15 29 08.5 0.0**
ULN pmax pmax
comp=Z,47nm,1.0s,mb5.5
ULN Ulaanbaatar 93.68 319 *e*P P **15 29 08.5 0.0**
comp=Z,47nm,1.0s,mb5.5
SONM Songino Array 94.09 319 P P **15 29 10.5 +0.2**
comp=Z,12nm,0.8s,mb5.0,baz=126,slow=3.7,SNR=97
SONM PP PP 15 32 57.5 -4.9
comp=Z,11nm,1.1s,baz=121,slow=7.2,SNR=10
ULM Lac du Bonnet 95.22 39 P P **15 29 14.7 -0.8**
comp=Z,5.8nm,0.8s,mb4.8,baz=233,slow=5.2,SNR=6.2
GTA Gaotai 96.20 309⇓*i*P P **15 29 20.8 +0.7**
GTA PP PP 15 33 19.1 +0.7
GTA SKS SKS 15 39 26.8 -2.5
GTA S S 15 40 15.0 +2.6
GTA AMB AMB
comp=Z,48nm,1.0s,mb5.6
GTA AMB AMB
comp=Z,217nm,3.5s
GTA LR LR
comp=N,70nm,10.3s
GTA LR LR
comp=E,72nm,5.3s
GTA LR LR
comp=Z,113nm,7.6s
ZAK Zakamensk 96.81 320⇑*e*P P **15 29 21.6 -1.0**
LVC Limon Verde 98.26 116 PP PP 15 33 32.8 -2.0
comp=Z,1.3nm,0.4s,baz=253,slow=11,SNR=4.9
LVC PKKPbc 15 46 00.8
comp=Z,4.0nm,0.7s,baz=64,slow=2.4,SNR=6.1
MOY Mondy 98.55 329 *e*P 15 29 30.7
SHL Shillong 99.37 294 *e*P P **15 29 35.0 +0.1**
LSA Lhasa 100.90 298 *e*P P 15 29 42.8 +1.1
GUN Gumba 105.10 295 *e*P 15 34 13.3
comp=Z,101nm,1.3s
GUN Gumba 105.10 295 *e*P Pdif 15 30 00.7 +0.5
comp=Z,18nm,1.0s
PKI Pulchoki 105.45 295 *e*P 15 34 13.1
PKI Pulchoki 105.45 295 *e*P Pdif 15 30 00.6 -1.2
comp=Z,48nm,1.6s
KKN Kakani 105.60 295 *e*P 15 34 12.8
comp=Z,48nm,1.3s
KKN Kakani 105.60 295 *e*P Pdif 15 30 02.9 +0.4
comp=Z,19nm,1.1s
DMN Daman 105.72 295 *e*P 15 34 13.5
DMN Daman 105.72 295 *e*P Pdif 15 30 02.3 -0.7
comp=Z,19nm,1.0s
WMQ Urumqi 105.95 312 PDIF Pdif 15 30 03.8 +0.2
WMQ PP PP 15 34 32.3 +0.4
WMQ PP PP
comp=Z,517nm,9.8s
GKN Gorkha 106.20 295 *e*P 15 34 14.2
GKN Gorkha 106.20 295 *e*P Pdif 15 30 08.5 +3.4
CPUP Villa Florida 106.40 124 PKKPbc 15 45 35.6
comp=Z,3.7nm,1.0s,baz=245,slow=4.9,SNR=3.6
CPUP PKKPab 15 45 53.6
comp=Z,3.9nm,1.0s,baz=160,slow=5.0,SNR=3.9
KOLN Koldanda 107.07 295 *e*P 15 34 13.0
comp=Z,12nm,0.9s
KOLN Koldanda 107.07 295 *e*P Pdif 15 30 13.9 +5.0
comp=Z,11nm,1.1s
NVS Novosibirsk 109.50 323 *i*P Pdif 15 30 18.1 -0.8
NVS *i* 15 40 33.5
NVS pmax pmax
comp=N,4.0nm,1.4s
NVS pmax pmax
comp=E,13nm,1.4s
NVS pmax pmax
comp=Z,18nm,1.4s
NVS pmax pmax
comp=N,13nm,1.9s
NVS pmax pmax
comp=E,45nm,1.9s
NVS pmax pmax
comp=Z,61nm,1.9s
NVS pmax pmax
comp=N,16nm,1.8s
NVS pmax pmax
comp=E,31nm,1.8s
MKAR Makanchi Array 109.98 314 Pdiff Pdif 15 30 20.9 -0.3
comp=E,3.6nm,0.9s,baz=90,slow=4.9,SNR=17
MKAR PKiKP 15 34 21.5
comp=E,19nm,0.8s,baz=67,slow=1.8,SNR=55
MKAR PP PP 15 34 50.3 -12
comp=E,7.7nm,1.0s,baz=101,slow=6.2,SNR=3.6
MKAR PKKPbc 15 45 25.6
comp=E,1.0nm,1.0s,baz=270,slow=2.9,SNR=3.8
MKAR PKKPab 15 45 37.0
comp=E,2.0nm,0.8s,baz=272,slow=3.3,SNR=9.1
MKAR Makanchi Array 109.98 314 PKiKP 15 34 21.0
MKAR pmax pmax
comp=Z,19nm,0.9s
KURK Kurchatov 112.40 319 *e*PKiKP PKPdf 15 34 25.1 +0.1
ULHL Ulahol 114.25 310 P PKPdf 15 34 30.4 +1.4
SNR=16
KSH Kashi 114.44 307 PKP PKPdf 15 34 29.4 +0.1
KSH PP PP 15 35 40.0 +6.0
KSH XPKP 15 36 10.6
TKM2 Tokmak 2 114.71 310 P PKPdf 15 34 30.7 +0.9
SNR=12
KZA Kyzart 114.99 309 P PKPdf 15 34 32.6 +2.3
SNR=8.7
KBK Karagaybulak 115.20 310 P PKPdf 15 34 31.9 +1.2
SNR=11
CHMS Chumysh 115.33 310 P PKPdf 15 34 31.1 +0.1
SNR=8.4
FRU Bishkek 115.44 310 *e*PKiKP PKPdf 15 34 32.0 +0.8
FRU *e* 15 35 38.0
USP Ospenovka 115.51 311 P PKPdf 15 34 32.2 +0.8
SNR=6.7
UCH Uchtor 115.53 310 P PKPdf 15 34 33.4 +2.0
SNR=9.9
EKS2 Erkin-Say 116.06 310 P PKPdf 15 34 34.0 +1.5
SNR=6.3
AML Almayashu 116.14 309 P PKPdf 15 34 34.3 +1.7
SNR=23
BVA0 Borovoye Array 117.22 322 PKiKP PKPdf 15 34 35.1 +0.7
BRVK Borovoye 117.28 322 *e*PKiKP PKPdf 15 34 35.0 +0.5
DAG Danmarks Havn 117.79 6⇑*i*P PKPdf 15 34 34.5 -0.5
comp=Z,6.0nm,0.8s
DAG *e* 15 35 48.0
DAG Danmarks Havn 117.79 6⇑*e*PKiKP PKPdf 15 34 34.5 -0.5
DAG pmax pmax
comp=Z,6.0nm,0.8s
DAG Danmarks Havn 117.79 6⇑*e*P PKPdf 15 34 34.5 -0.5
DAG *e* 15 35 48.0
KKAR Karatay Array 118.43 311 *i* PKiKP PKPdf 15 34 37.5 +0.5
SVE Sverdlovsk 121.63 328⇓*i*PKiKP PKPdf 15 34 44.0 +1.1
SVE *e* 15 36 09.1
SVE pmax pmax
comp=Z,60nm,1.3s
ARU Arti 122.84 328⇓*i*PKiKP PKPdf 15 34 46.1 +0.9
ARU *i* 15 36 24.7
ARU pmax pmax
comp=Z,74nm,0.8s
ARU Arti 122.84 328 *e*PKPdf PKPdf 15 34 45.8 +0.7
AB31 Akbulak array 124.50 319 PKiKP PKPdf 15 34 49.2 +0.6
AB31 pmax pmax
comp=Z,28nm,0.9s
ARCES ARCESS Array B 124.77 351 PKhKP 15 34 44.4
comp=Z,1.8nm,0.5s,baz=194,slow=0.6,SNR=12
ARCES PKP PKPdf 15 34 49.3 +0.7
comp=Z,66nm,0.7s,slow=0.9,SNR=190
ARCES ARCESS Array B 124.77 351 PKP PKPdf 15 34 44.4 -4.2
ARCES PKP PKPdf 15 34 49.3 +0.7
APA Apatity 125.07 347⇑*i*PKiKP PKPdf 15 34 49.8 +0.6
APA *i* 15 35 55.6
APA *i* 15 36 46.8
APA pmax pmax
comp=Z,60nm,0.8s
JOF Joensuu 129.44 345 *e*pkp PKPdf 15 34 56.7 -1.0
KAF Kangasniemi 131.32 347 *e*pkp PKPdf 15 35 00.8 -0.5
baz=39,slow=2.1
FINES FINESS Array B 131.97 347 PKhKP 15 34 50.8
comp=Z,3.1nm,0.5s,baz=46,slow=2.6,SNR=25
FINES PKP PKPdf 15 35 03.3 +0.7
comp=Z,12nm,0.6s,baz=63,slow=4.3,SNR=29
FINES PP PP 15 37 23.8 -6.9
comp=Z,3.0nm,0.8s,baz=27,slow=3.1,SNR=3.9
FINES SKPab 15 38 06.2
comp=Z,3.9nm,0.9s,baz=90,slow=5.7,SNR=4.1
FINES FINESS Array B 131.97 347 PKP PKPdf 15 34 50.8 -12
FINES PKP PKPdf 15 35 03.3 +0.7
FINES PP PP 15 37 23.8 -6.9
FINES SKPab 15 38 06.2
MOS Moscow 132.96 335 *e*PKiKP PKPdf 15 35 04.5 0.0
MOS *e* 15 37 30.3
MOS pmax pmax
comp=Z,110nm,0.8s
OBN Obninsk 133.82 335*c i*PKiKP PKPdf 15 35 07.3 +1.1
OBN *e* 15 37 38.3
OBN pmax pmax
comp=Z,58nm,1.1s
OBN Obninsk 133.82 335⇑*i*PKP PKPdf 15 35 07.4 +1.2
VSU Vasula 134.43 344⇓*e*PKP PKPdf 15 35 07.0 -0.2
NB2 NORSAR Subarra134.59 356 PKPdf PKPdf 15 34 54.3 -13
comp=Z,20nm,1.1s,baz=14,slow=1.8
NB2 NORSAR Subarra134.59 356 PKPd 15 34 54.3
baz=14,slow=1.8
NOA NORSAR Array B 134.59 356 PKhKP 15 34 55.5
comp=Z,3.5nm,0.7s,baz=33,slow=2.0,SNR=11
NOA PKP PKPdf 15 35 08.3 +0.9
comp=Z,16nm,0.8s,baz=14,slow=4.1,SNR=21
NOA PP PP 15 37 41.0 -6.3
comp=Z,5.9nm,1.1s,baz=1.2,slow=5.3,SNR=5.9
NOA SKPbc 15 38 14.8
comp=Z,2.1nm,0.9s,baz=30,slow=2.9,SNR=3.4
NOA NORSAR Array B 134.59 356 PKP PKPdf 15 34 55.5 -12
NOA PKP PKPdf 15 35 08.3 +0.9
NOA PP PP 15 37 41.0 -6.3
NOA SKPbc 15 38 14.8
VOR Voronezh 134.97 330 *e*PKiKP PKPdf 15 35 10.0 +1.6
VOR pmax pmax
comp=Z,100nm,2.0s
HFS Hagfors 135.27 354 PKhKP 15 34 55.2
comp=Z,4.3nm,0.6s,slow=1.5,SNR=9.2
HFS PKP PKPdf 15 35 09.2 +0.6
comp=Z,20nm,0.7s,baz=90,slow=1.5,SNR=16
HFS PP PP 15 37 43.0 -8.4
comp=Z,7.4nm,1.0s,baz=34,slow=5.3,SNR=4.1
KONO Kongsberg 136.08 357*c i*PKiKP PKPdf 15 35 11.5 +1.4
KONO Kongsberg 136.08 357 *e*PKP PKPdf 15 35 10.2 0.0
GOF Gofitskoye 136.72 320⇓*i*PKiKP PKPdf 15 35 14.0 +2.2
GOF *i* 15 37 54.5
GOF pmax pmax
comp=Z,70nm,1.3s
HASS Wahat al Ahsa' 137.24 290 P PKPdf 15 35 14.7 +1.5
ZEI Tsey 137.26 317 *i* PKHKP 15 35 05.7
ZEI *e* 15 42 04.0
KIV Kislovodsk 137.48 319 *i* PKiKP PKPdf 15 35 14.2 +1.0
KIV *e*PPP PPP 15 41 03.4 -5.2
KIV *e* 15 42 02.3
KIV *e*SS SS 15 55 46.3 -3.4
KIV pmax pmax
comp=Z,20nm,0.9s
KIV Kislovodsk 137.48 319 *e*PKP PKPdf 15 35 14.0 +0.8
GNI Garni 137.80 313*d i*PKiKP PKPdf 15 35 15.9 +2.0
GNI Garni 137.80 313 *e*PKP PKPdf 15 35 14.8 +0.9
MUD Monsted U'grnd 139.29 356 *i* P PKPdf 15 35 13.6 -2.5
comp=Z,30nm,1.1s
MUD Monsted U'grnd 139.29 356 *e*PKiKP PKPdf 15 35 13.6 -2.5
MUD pmax pmax
comp=Z,30nm,1.1s
SUW Suwalki 139.29 344 *e*PKP PKPdf 15 35 17.4 +1.2
SUW *e* 15 38 29.4

SOC Sochi 139.52 320 *i* PKIKP PKPdf 15 35 18.2 +1.3
SOC *e* 15 38 12.9
SOC *e*PPP PPP 15 41 22.5 -1.8
BSD Bornholm Skovb 140.01 351 *i* P PKPdf 15 35 15.0 -2.4
comp=Z,43nm,1.0s
BSD Bornholm Skovb 140.01 351 *e*PKIKP PKPdf 15 35 15.0 -2.4
BSD pmax pmax
comp=Z,43nm,1.0s
EKA Eskdalemuir Ar 140.04 7 PKhKP 15 35 10.3
comp=Z,4.7nm,0.9s,baz=337,slow=2.7,SNR=7.8
AKASG Malin Array Be 140.07 336 PKhKP 15 35 10.3
comp=Z,7.6nm,0.5s,baz=40,slow=4.0,SNR=16
AKASG PP PP 15 38 12.8 -8.6
comp=Z,0.6nm,0.4s,baz=38,slow=5.9,SNR=5.7
AKASG SKPbc 15 38 30.9
comp=Z,1.7nm,0.7s,baz=19,slow=1.7,SNR=9.0
ANN Anapa 140.19 323 *i* PKHKP 15 35 12.2
ANN *e* 15 38 18.0
ANN pmax pmax
comp=Z,10.0nm,0.8s
EZM Erzurum 140.35 315 P PKPdf 15 35 21.0 +2.5
VRT Varto 140.48 313 *e*P PKPdf 15 35 15.2 -3.6
GUMT Gumushane 141.27 316 *e*P PKPdf 15 35 20.4 +0.3
EZC Erzincan 141.39 315 P PKPdf 15 35 18.4 -2.0
BSEG Bad Segeberg 141.71 355 *e*PKHKP 15 35 16.1
LHO Holmfirth 141.95 7 *e*P PKPdf 15 35 21.0 +0.2
SIM Simferopol' 141.95 326 *e*PKIKP PKPdf 15 35 20.0 -1.1
LVV L'vov 142.70 340 *e*PKHKP 15 35 19.0
LVV *e* 15 38 36.0
MYA Malataya 143.01 314 *i* P PKPbc 15 35 23.0 +1.6
WIT Witteveen 143.04 358 *e*P PKPbc 15 35 23.2 +2.2
comp=Z,401nm,1.0s
SVSK Karacayir 143.19 317 P PKPbc 15 35 23.2 +1.3
TOKT Tokat 143.26 318 *e*P PKPbc 15 35 23.4 +1.3
KWP Kalwaria 143.29 341 *e*PKP PKPdf 15 35 21.6 -1.7
KWP *e* 15 38 34.2
OJC Ojcow 143.62 344 *e*PKP PKPdf 15 35 22.8 -1.0
BYBT Boyabat 143.73 321 *i* P PKPbc 15 35 24.8 +1.3
KSP Ksiaz 143.87 348 *e*PKP PKPdf 15 35 24.0 -0.2
KSP *e* 15 38 41.8
KSP Ksiaz 143.87 348‖ *e*PKIKP PKPdf 15 35 23.8 -0.4
KSP *e* 15 38 41.0
KSP Ksiaz 143.87 348‖ *e*PKP PKPdf 15 35 23.8 -0.4
KSP *ep*PKP 15 36 37.8
KSP *e*PP PP 15 38 41.0 -2.8
WTSB Winterswijk 143.88 358‖ *e*P PKPbc 15 35 23.8 +0.3
comp=Z,99nm,0.9s
WTSB *ex* x 15 35 50.8
BZK Bozkurt 143.90 322 *i* P PKPbc 15 35 24.7 +0.8
KMBO Kilima Mbogo 143.95 245 PKPbc PKPbc 15 35 26.7 +1.8
KMBO PKPbc PKPbc 15 35 26.7 +1.8
KMBO Kilima Mbogo 143.95 245 PKP PKPdf 15 35 26.8 +1.3
comp=Z,166nm,1.0s,baz=69,slow=5.2,SNR=182
KMBO Kilima Mbogo 143.95 245 *e*PKP PKPdf 15 35 26.6 +1.1
CLL Collm 143.99 351‖ *i* PKPbc 15 35 23.8 -0.1
CLL *i* 15 35 29.4
CLL *i* PP PP 15 38 41.1 -3.5
CLL *e*PKS PKS 15 39 07.0 +8.8
CLL *e* 15 39 20.0
CLL Collm 143.99 351 *i* PKIKP PKPdf 15 35 23.8 -0.6
CLL *i* 15 38 41.1
CLL pmax pmax
comp=Z,90nm,0.7s
HILS Ha'il 144.00 295 P PKPbc 15 35 26.3 +1.6
RAC Raciborz 144.15 345 *e*PKP(df) 15 35 25.5
RAC *e*PP PP 15 38 40.1 -5.5
NIE Niedzica 144.20 343‖ *i*PKP PKPdf 15 35 25.3 +0.4
UPC Upice 144.24 348‖ *i*PKP PKPdf 15 35 25.2 +0.3
UPC *e*SKP 15 38 42.8
BRG Berggiesshubel 144.27 350 *i* PKIKP PKPdf 15 35 24.9 0.0
BRG *i* 15 38 42.6
BRG *e*SS SS 15 57 04.0 -3.9
BRG pmax pmax
comp=Z,96nm,1.1s
BRG Berggiesshubel 144.27 350 *i* PKP PKPdf 15 35 24.9 0.0
BRG *i* 15 35 29.6
BRG *i* PP PP 15 38 42.6 -3.6
BRG *e*SS SS 15 57 04.0 -3.9
UZH Uzhgorod 144.30 340 *e*PKIKP PKPdf 15 35 26.0 +0.9
CRVS Cervenica-Dubn 144.32 341 *i* PKP PKPdf 15 35 25.7 +0.6
DPC Dobruska-Polom 144.33 348‖ *i*PKP PKPdf 15 35 26.0 +1.0
DPC *ep*PKP 15 36 42.9
DPC *e*SKP 15 38 41.9
DPC Dobruska-Polom 144.33 348‖ *i*PKIKP PKPdf 15 35 26.0 +1.0
DPC *e* 15 38 41.9
FRSS Farasan al Kab 144.36 277 P PKPbc 15 35 28.0 +2.1
OKC Ostrava-Krasne 144.39 345‖ *i*PKP PKPdf 15 35 25.8 +0.6
OKC *ep*PKP 15 36 42.9
OKC *e*SKP 15 38 41.7
OKC Ostrava-Krasne 144.39 345‖ *i*PKIKP PKPdf 15 35 25.8 +0.6
OKC *e* 15 38 41.7
GAZ Gaziantep 144.40 313 *i* P PKPbc 15 35 27.2 +1.7
YOZ Yozgat 144.43 318 *i* P PKPbc 15 35 27.1 +1.6
TOS Tosya 144.44 321 P PKPbc 15 35 27.7 +2.2
PVCC Panska Ves 144.49 349‖ *i*PKP PKPdf 15 35 26.1 +0.8
PVCC *ep*PKP 15 36 43.9
PVCC *e*SKP 15 38 42.9
PVCC Panska Ves 144.49 349‖ *e*PKIKP PKPdf 15 35 26.1 +0.8
PVCC *e* 15 38 42.9
BNN Bunyan 144.50 316 *i* P PKPdf 15 35 27.2 +1.4
MOX Moxa 144.82 353‖ *i*P PKPdf 15 35 27.0 +1.1
comp=Z,logA/T=2.4
MOX pPKP 15 36 40.0
MOX Moxa 144.82 353 *i* PKIKP PKPdf 15 35 27.0 +1.1
MOX pmax pmax
comp=Z,314nm,1.3s
LIKS Likavka 144.87 344 *e*PKP PKPdf 15 35 28.3 +2.2
BLJS Baljurashi 144.94 282 P PKPdf 15 35 29.5 +2.4
CANT Cankiri 144.94 321 *i* P PKPdf 15 35 28.8 +2.3
KECS Kecovo 144.99 342 *e*PKP PKPdf 15 35 28.4 +2.1
KECS *e* 15 36 45.0
PRU Pruhonice 145.02 349‖ *i*PKP PKPdf 15 35 27.8 +1.5
comp=Z,491nm,1.0s
PRU *ep*PKP 15 36 45.2
PRU *e*SKP 15 38 43.9
PRU Pruhonice 145.02 349‖ *i*PKIKP PKPdf 15 35 27.8 +1.5
PRU *e* 15 38 43.9
PRU pmax pmax
comp=Z,491nm,1.0s
HGN Heimansgroeve 145.11 359‖ *i*P PKPdf 15 35 28.0 +1.6
comp=Z,181nm,1.0s
SAFT Safranbolu 145.12 322 P PKPdf 15 35 28.3 +1.6
MENF Mencas 145.25 3 PKP PKPdf 15 35 26.4 -0.2
VRAC Vranov 145.25 347 PKPbc PKPbc 15 35 28.6 +1.1
comp=Z,170nm,1.0s,baz=20,slow=4.9,SNR=30
BRTR Keskin Array B 145.45 319 SKPbc 15 38 42.8
comp=Z,5.0nm,1.0s,baz=49,slow=0.3,SNR=6.0
VYHS Vyhne 145.45 344 *e*PKP PKPdf 15 35 28.9 +1.9
VYHS *e* 15 36 46.6
KOLL Kolacno 145.49 344 *e*PKP PKPdf 15 35 29.7 +2.6
KOLL *e* 15 36 47.8
CEYT Ceyhan 145.51 314 *i* P PKPdf 15 35 29.6 +2.1
KAMT Kaman 145.61 319 *i* P PKPdf 15 35 29.1 +1.5
HTY Hatay 145.66 312 P PKPdf 15 35 30.1 +2.3
PSZ Piszkesteto 145.68 342‖ *e*PKP/p 15 35 29.6
NIG Nigde 145.72 316 P PKPdf 15 35 31.0 +3.1
GRF Grafenberg Arr 145.81 353 *e*PKP2 PKPab 15 35 31.2 -0.8
ANTO Ankara 145.89 320 P PKPdf 15 35 29.7 +1.6
LOD Lodumlu 145.90 320 *e*P PKPdf 15 35 30.4 +2.3
ABH Alteburg 145.93 357‖ *e*P PKPdf 15 35 30.8 +3.0
ABH Alteburg 145.93 357 PKP PKPdf 15 35 30.1 +2.3
KHC Kasperske Hory 146.01 350‖ *i*PKP PKPdf 15 35 29.4 +1.4
KHC *ep*PKP 15 36 48.3
KHC *e*SKP 15 38 46.3
WET Wettzell 146.11 351 *e*PKP2 PKPab 15 35 31.3 -1.9
TOD Tromm 146.13 356‖ *e*P PKPdf 15 35 31.3 +3.1
TOD Tromm 146.13 356 PKP PKPdf 15 35 30.2 +2.0
RUP Ruppelstein 146.14 358‖ *e*P PKPdf 15 35 31.6 +3.4
RUP Ruppelstein 146.14 358 PKP PKPdf 15 35 30.4 +2.2
JLP Les Platons 146.14 8‖ *i*P PKPdf 15 35 30.9 +2.6
JLP AMB AMB 15 35 31.7
comp=Z,370nm,0.9s
JVM Valle D.L. Mar 146.15 8‖ *i*P PKPdf 15 35 30.9 +2.6
JVM AMB AMB 15 35 31.7
comp=Z,317nm,0.8s
ZST Bratislava 146.17 345 *e*PKP PKPdf 15 35 31.8 +3.4
ZST *e* 15 36 43.1
JSA Saint Aubin 146.19 8‖ *i*P PKPdf 15 35 31.1 +2.7
JSA AMB AMB 15 35 31.8
comp=Z,379nm,0.9s
JQE Queens East 146.19 8‖ *i*P PKPdf 15 35 31.0 +2.6
JQE AMB AMB 15 35 32.3
comp=Z,293nm,0.8s
JRS Jersey 146.19 8‖ *i*P PKPdf 15 35 31.0 +2.6
JRS AMB AMB 15 35 32.2
comp=Z,301nm,0.8s
SRO Srobarova 146.22 344 *e*PKP PKPdf 15 35 32.7 +4.2
GERES GERESS Array B 146.27 350 PKPbc PKPbc 15 35 30.3 +0.4
comp=Z,62nm,0.6s,baz=24,slow=3.3,SNR=266
VKA Vienna 146.29 346‖ *i*PKP PKPdf 15 35 30.9 +2.3
SIND Sindeldorf 146.32 355‖ *e*P PKPdf 15 35 31.7 +3.1
BUD Budapest 146.32 343 *e*PKP/pd 15 35 31.7
FURI Furi 146.40 262 PKPbc PKPbc 15 35 33.9 +2.6
FURI PKPab PKPab 15 35 35.6 +0.3
KTD Kalmit 146.46 356 *e*P PKPdf 15 35 32.4 +3.5
KTD Kalmit 146.46 356 PKP PKPdf 15 35 32.1 +3.2
MDU Mudurnu 146.47 322 *i* P PKPdf 15 35 32.4 +3.2
KBRS Khaybar 146.52 293 P PKPdf 15 35 31.3 +1.6
PRD Provadia 146.64 330 *e*P PKPdf 15 35 30.0 +0.6
DUSS Damascus Unive 146.69 308 *i* P PKPdf 15 35 32.9 +3.0
ASF Jabal al Asfar 146.75 305 PKPbc PKPbc 15 35 33.4 +1.9
comp=Z,82nm,0.8s,baz=309,slow=1.7,SNR=91
SOP Sopron 146.78 346‖ *e*PKP/p 15 35 33.4
FLN La Foliniere 146.82 7 *e*PKIKP PKPdf 15 35 31.0 +1.4
comp=Z,104nm,1.1s
HDH Heidenheim 147.01 354‖ *e*P PKPdf 15 35 33.9 +4.0
LDF La Druitiere 147.02 6 *e*PKIKP PKPdf 15 35 31.3 +1.4
comp=Z,69nm,1.1s
KIZT Kizilcal 147.05 320 P PKPdf 15 35 32.0 +1.7
LBG Lerchenberg 147.06 355‖ *e*P PKPdf 15 35 34.1 +4.1
GPA Golpazari 147.12 323 *e*P PKPdf 15 35 34.4 +4.1
MOA Molln 147.12 348‖ *i*PKP PKPdf 15 35 31.4 +1.3
MOA *i* 15 35 34.4
HRT Hereke 147.13 324 *e*P PKPdf 15 35 33.3 +3.0
HRT Hereke 147.13 324 P PKPdf 15 35 34.2 +3.9
HRT Hereke 147.13 324 P PKPdf 15 35 34.2 +3.9
GRR Gorron 147.14 7 *e*PKIKP PKPdf 15 35 31.7 +1.6
HRI Mount Hermon 147.22 308 P PKPdf 15 35 30.9 +0.2
BUCH Bad Urach 147.23 355‖ *e*P PKPdf 15 35 34.8 +4.6
KSHT Keshet 147.28 307 P PKPdf 15 35 31.0 +0.2
ESKT Eskisehir 147.29 321 P PKPdf 15 35 32.3 +1.7
KONT Konya--Tatoy 147.29 318 *i* P PKPdf 15 35 34.8 +4.2
FUR Furstenfeldbru 147.30 352 *e*PKP2 PKPab 15 35 34.8 -3.0
ISK Istanbul-Kandi 147.30 325 *e*P PKPdf 15 35 34.4 +3.8
IKL Isikli 147.33 314 P PKPdf 15 35 34.7 +4.0
MEZF Maizieres J'vi 147.38 360 *e*PKIKP PKPdf 15 35 32.6 +2.2
WLS Welschbruch 147.41 357 PKP PKPdf 15 35 32.5 +2.0
CDF Champ du Feu 147.41 357 *e*PKIKP PKPdf 15 35 32.1 +1.6
ARSA Arzberg 147.43 347‖ *i*PKP PKPdf 15 35 32.1 +1.6
ARSA *i* 15 35 35.3
BFO Black Forest 147.43 356 *e*PKP2 PKPab 15 35 34.9 -3.4
YLV Yalova 147.47 324 *e*P PKPdf 15 35 34.9 +4.1
CTT Catalca 147.59 326 *i* P PKPdf 15 35 35.5 +4.5
PVL Pavlikeni 147.60 332 *e*P PKPdf 15 35 33.0 +2.1
ECH Echery 147.62 357 PKP PKPdf 15 35 32.5 +1.7
SPAK Spaichingen 147.63 355 *e*P PKPdf 15 35 35.5 +4.7
SPAK Spaichingen 147.63 355 PKP PKPdf 15 35 32.4 +1.6
GUT Gutenstein 147.63 355‖ *e*P PKPdf 15 35 35.3 +4.5
THEF They Montfort 147.64 359 PKP PKPdf 15 35 32.6 +1.8
LIBD Limburg 147.66 357 *e*P PKPdf 15 35 35.8 +5.0
PHNC Paralimni 147.70 312 ‖P PKPdf 15 35 35.9 +4.6
PHNC Paralimni 147.70 312‖ *e*P PKPdf 15 35 35.9 +4.6
HNTI Hanita 147.72 308 P PKPdf 15 35 31.6 +0.2
HDMB Hadim 147.76 316 P PKPdf 15 35 35.6 +4.3
HMDT Nahal Hemdat 147.79 306 P PKPdf 15 35 32.3 +0.8
KIZ Kirchzarten 147.83 356‖ *e*P PKPdf 15 35 35.8 +4.7
HAU Haudompre 147.86 358 *e*PKIKP PKPdf 15 35 32.9 +1.8
FELD Feldberg 147.91 356‖ *e*P PKPdf 15 35 36.2 +5.0
FELD Feldberg 147.91 356 PKP PKPdf 15 35 33.0 +1.8
UBR Uberruh 147.92 353‖ *e*P PKPdf 15 35 35.9 +4.7
HAF Haifa 147.96 307 P PKPdf 15 35 32.1 +0.3
EDRB Edirne 147.97 328 P PKPdf 15 35 29.4 -2.1
MKRJ Makawir 147.97 305 P PKPdf 15 35 32.7 +0.9
MOF Molkenrain 147.98 357 PKP PKPdf 15 35 33.3 +2.0
ALT Altintas 148.03 321 *i* P PKPdf 15 35 36.7 +5.0
HINF Hinteralfeld 148.03 358 *e*PKIKP PKPdf 15 35 33.1 +1.7
KBA Koelnbreinsper 148.04 349‖ *i*PKP PKPdf 15 35 32.6 +1.2
KBA *i* 15 35 36.6
OFRI 'Ofer 148.06 307 P PKPdf 15 35 32.4 +0.5
WATA Walderalm 148.07 351‖ *i*PKP PKPdf 15 35 33.3 +1.8
WATA *i* 15 35 36.6
ORLT Orhaneli 148.09 324 P PKPdf 15 35 36.9 +5.2
PERS Pernice 148.10 347 *e*PKPdf PKPdf 15 35 32.4 +0.9
PERS *e*PKPbc PKPdf 15 35 36.1 +4.5
PERS *ep*PKPbc 15 36 44.4
MOTA Moosalm 148.13 352‖ *i*PKP PKPdf 15 35 33.2 +1.6
MOTA *i* 15 35 36.8
WTTA Wattenberg 148.13 351‖ *i*PKP PKPdf 15 35 33.5 +1.9
WTTA *i* 15 35 37.2
DRGI Dragot 148.15 305 P PKPdf 15 35 33.0 +0.9
SLTI Sal'it 148.17 306 P PKPdf 15 35 33.0 +0.9
CSS Prodhromos 148.22 312 ‖P PKPdf 15 35 37.3 +5.2
comp=Z,3.3nm,1.0s
CSS Prodhromos 148.22 312‖ *e*P PKPdf 15 35 37.3 +5.2
SQTA Sankt Quirin 148.24 352‖ *i*PKP PKPdf 15 35 33.6 +1.9
SQTA *i* 15 35 37.1
BEO Belgrade 148.24 339‖ *i*PKP PKPdf 15 35 36.9 +5.1
MZDA Masada 148.28 305 P PKPdf 15 35 33.3 +1.0
TBKS Tabuk 148.32 298 P PKPdf 15 35 34.2 +1.7
DAVA Damuels 148.33 354‖ *i*PKP PKPdf 15 35 33.6 +1.7
DAVA *i* 15 35 37.7
OBKA Obir 148.35 347‖ *i*PKP PKPdf 15 35 33.3 +1.4
OBKA *i* 15 35 36.9
BBS Basel-Blauen 148.35 357‖ *e*P PKPdf 15 35 37.4 +5.5
BBS Basel-Blauen 148.35 357 PKP PKPdf 15 35 33.9 +2.0
DIM Dimitrovgrad 148.41 330 *e*P PKPdf 15 35 33.0 +0.8
BNT Bandirma 148.42 325 *i* P PKPdf 15 35 37.5 +5.2
SVIS Svilajnac 148.42 337‖ *i*PKP PKPdf 15 35 33.6 +1.4
MRMT Marmara Adasi 148.42 326 *e*P PKPdf 15 35 36.9 +4.6
LEF Lefka 148.46 313 *i* P PKPdf 15 35 37.9 +5.4
ISP Isparta 148.53 319 P PKPdf 15 35 35.6 +3.1
BOLS Boljevac 148.54 336‖ *i*PKP PKPdf 15 35 29.1 -3.2
HYF Humbligny 148.55 3 *e*PKIKP PKPdf 15 35 34.6 +2.3
LOR Lormes 148.60 1 *e*PKIKP PKPdf 15 35 34.5 +2.2
comp=Z,86nm,1.3s
FVI Forni Avoltri 148.60 350 *e*PKP PKPdf 15 35 33.0 +0.7
ALFC Alevga 148.64 313 ‖P PKPdf 15 35 38.0 +5.2
comp=Z,5.7nm,0.7s
ALFC Alevga 148.64 313‖ *e*P PKPdf 15 35 38.0 +5.2
SZAC Souni-Zanaja 148.64 312 ‖P PKPdf 15 35 38.3 +5.5
SZAC Souni-Zanaja 148.64 312‖ *e*P PKPdf 15 35 38.3 +5.5
PGB Panagyurishte 148.66 332 *e*P PKPdf 15 35 34.0 +1.4
PTCC Patocco-Chiusa 148.68 349 *e*PKP PKPdf 15 35 33.0 +1.3
JMQS Jabal Moqyreh 148.69 300 P PKPdf 15 35 34.8 +1.7
ZFRI Zfri 148.71 303 P PKPdf 15 35 34.5 +1.5
KDZ Kurdzhali 148.77 330 *e*P PKPdf 15 35 34.0 +1.2
LJU Ljubljana 148.79 347 *e*PKPdf PKPdf 15 35 34.1 +1.4
LJU *e*PKPbc PKPdf 15 35 38.2 +5.5
LJU *ep*PKPbc 15 36 47.8
SSF Saint Saulge 148.80 2 *e*PKIKP PKPdf 15 35 34.8 +2.2
comp=Z,76nm,1.2s
ROBS Robic 148.81 349 *e*PKPdf PKPdf 15 35 33.4 +0.7
ROBS *e*PKPbc PKPdf 15 35 37.4 +4.7
GMNA Gemona 148.83 349 *e*PKP PKPdf 15 35 34.0 +1.3
DAVOX Davos 148.83 353 PKP PKPdf 15 35 34.8 +2.1
comp=Z,169nm,0.7s,baz=349,slow=5.2,SNR=1.5
DAVOX PKPbc PKPdf 15 35 39.2 +6.5
comp=Z,160nm,0.7s,baz=359,slow=5.4,SNR=14
KHL Karahalli 148.84 321 P PKPdf 15 35 39.0 +6.0
MASH Mash'abbe Sade 148.86 304 P PKPdf 15 35 34.6 +1.3
SISC Sisak 148.90 344 *i* PKP PKPdf 15 35 39.0 +6.1
AKMC Akamas 148.90 313 ‖P PKPdf 15 35 38.1 +4.9
AKMC Akamas 148.90 313‖ *e*P PKPdf 15 35 38.1 +4.9
PRNI Paran 148.92 303 P PKPdf 15 35 35.1 +1.7
VOY Vojsko 148.94 348 *e*PKPdf PKPdf 15 35 33.9 +1.0
VOY *e*PKPbc PKPdf 15 35 38.3 +5.4
MFF Saint Martin d 148.99 7 *e*PKIKP PKPdf 15 35 34.8 +1.8
comp=Z,97nm,1.1s
SVTA Shivta 149.01 304 P PKPdf 15 35 35.2 +1.7
ALN Alexandroupoli 149.02 328 *e*P PKPdf 15 35 38.4 +5.2
LPK Lapseki 149.03 327 *i* P PKPdf 15 35 39.2 +6.0
DIVS Divcibare 149.03 339‖ *i*PKP PKPdf 15 35 39.1 +6.0
VTS Vitosha 149.05 333 *e*P PKPdf 15 35 34.0 +0.8
AVF Avril sur Loir 149.06 2 *e*PKIKP PKPdf 15 35 34.9 +1.8
BRMO Bormio 149.07 353 *e*PKP PKPdf 15 35 39.6 +6.5
AQBJ Aqaba 149.10 302 P PKPdf 15 35 35.4 +1.7
BOJS Bojanci 149.14 346 *e*PKPdf PKPdf 15 35 34.3 +1.0
BOJS *e*PKPbc PKPdf 15 35 39.5 +6.3
BOJS *e*PKPab PKPab 15 35 44.1 -1.2
MBH Mount Berech 149.19 302 P PKPdf 15 35 35.7 +1.9
KZIT Kziot 149.20 304 P PKPdf 15 35 35.6 +1.8
EIL Elat 149.20 302 P PKPdf 15 35 35.7 +1.9
SMF Signal de Mont 149.22 2 *e*PKIKP PKPdf 15 35 35.4 +2.1

ALWS Ilw as Safayha 149.23 301 P PKPdf 15 35 35.5 +1.6
KMTI Karmit 149.23 303 P PKPdf 15 35 35.5 +1.6
JMOS Jabal al Moall 149.24 301 P PKPdf 15 35 35.4 +1.5
CABF La Chapelle 149.26 358 *e*PKIKP PKPdf 15 35 35.0 +1.6
BGF Bois d'Agland 149.27 3 *e*PKIKP PKPdf 15 35 35.5 +2.1
CTI Castel Tesino 149.32 351 *e*PKP PKPdf 15 35 35.1 +1.6
HAQS Haql 149.42 301 P PKPdf 15 35 35.7 +1.6
BDAS Al Bad' 149.48 299 P PKPdf 15 35 35.7 +1.4
AKS Akhisar 149.49 323 P PKPdf 15 35 40.1 +6.1
DENT Denizli 149.50 320 P PKPdf 15 35 40.8 +6.8
OG01 Vacheresse 149.52 358 PKP PKPdf 15 35 36.5 +2.7
ELL Elmali 149.57 318 P PKPdf 15 35 40.4 +6.2
MMB Musomiste 149.62 332 *e*P PKPdf 15 35 34.0 -0.1
NVSS Nova Varos 2 149.65 339‖ *i*PKP PKPdf 15 35 40.9 +6.8
KKB Krupnik 149.69 333 *e*P PKPdf 15 35 35.0 +0.8
AGO Saint Agoulin 149.79 3 PKP PKPdf 15 35 36.5 +2.3
VAI Varese 149.85 355 *e*PKP PKPdf 15 35 36.0 +1.7
PLDF La Plantade 149.89 2 PKP PKPdf 15 35 36.9 +2.6
PLE Pljevlja 149.91 339‖ *i*PKP PKPdf 15 35 41.6 +7.1
SRS Serrai 150.05 331 *e*P PKPdf 15 35 40.5 +5.8
VERF Verneugheol 150.06 3 PKP PKPdf 15 35 37.0 +2.4
PYM Petit Puy Mans 150.09 3 PKP PKPdf 15 35 37.2 +2.6
PRK Paraskevi 150.10 326 *e*P PKPdf 15 35 41.5 +6.6
NVLJ Novalja 150.12 346 *i* PKP PKPdf 15 35 41.2 +6.5
IVA Berane 150.13 338‖ *i*PKP PKPdf 15 35 41.9 +7.1
IZM Izmir 150.13 323 *i* P PKPdf 15 35 41.7 +6.7
KSL Kastellorizon 150.14 317 *e*P PKPdf 15 35 40.5 +5.5
UPM Unac-Piva 150.19 339‖ *i*PKP PKPdf 15 35 41.6 +6.7
SKO Skopje 150.30 335‖ *i*PKHKP PKPdf 15 35 42.3 +7.2
comp=Z,0.2nm,1.0s
LPL La Plagne 150.33 357 *e*PKIKP PKPdf 15 35 38.1 +3.1
comp=Z,8.2nm,0.7s
KNT Kendrikon 150.33 332 *e*P PKPdf 15 35 41.5 +6.3
PVY Plav 150.35 337‖ *i*PKP PKPdf 15 35 42.1 +7.0
LPG La Plagne 150.35 357 *e*PKIKP PKPdf 15 35 38.3 +3.3
comp=Z,12nm,0.8s
VAY Valandovo 150.35 333‖ *i*PKHKP PKPdf 15 35 41.8 +6.6
VAY ‖ *i* 15 35 49.7
YER Yerkesik 150.36 320 *i* P PKPdf 15 35 42.9 +7.6
LSD Ceresole Reale 150.37 357 P PKPdf 15 35 43.0 +7.9
SOH Sokhos 150.40 331 *e*P PKPdf 15 35 41.1 +5.9
EMAZ Mazaricos 150.42 21 PKP PKPdf 15 35 41.6 +6.4
FRNF Fournols 150.43 3 PKP PKPdf 15 35 38.0 +2.8
RJF Les Rejaudoux 150.44 5 *e*PKIKP PKPdf 15 35 37.4 +2.2
OUR Ouranopolis 150.47 330 *e*P PKPdf 15 35 41.7 +6.3
NKY Niksic 150.51 339‖ *i*PKP PKPdf 15 35 42.6 +7.3
BRY Bratogost 150.59 339‖ *i*PKP PKPdf 15 35 42.5 +7.1
LBL Lubilhac 150.61 2 PKP PKPdf 15 35 38.3 +2.8
STS Santiago 150.62 21 PKP PKPdf 15 35 42.5 +7.0
GRN Grenoble 150.63 359 PKP PKPdf 15 35 38.5 +3.0
RSP Reno Superiore 150.67 357 P PKPdf 15 35 42.7 +7.2
EPON Pontenova 150.67 18 PKP PKPdf 15 35 42.6 +7.0
PLG Polygyros 150.70 330 *e*P PKPdf 15 35 42.0 +6.2
GRG Griva 150.72 332 *e*P PKPdf 15 35 42.5 +6.7
LFF La Frestale 150.72 6 *e*PKIKP PKPdf 15 35 37.7 +2.1
THE Thessaloniki 150.72 331 *e*P PKPdf 15 35 41.8 +6.0
TTG Podgorica 150.75 338‖ *i*PKP PKPdf 15 35 43.0 +7.2
FENE Fenestrelle 150.80 357 P PKPdf 15 35 43.1 +7.4
CAF Calviac 150.85 4 *e*PKIKP PKPdf 15 35 38.4 +2.6
RRL Cesana Torines 150.92 357 P PKPdf 15 35 44.1 +8.2
BHB Bricherasio 150.98 357 P PKPdf 15 35 42.4 +6.4
BUM Brajici-Budva 150.99 338‖ *i*PKP PKPdf 15 35 43.3 +7.2
HCV Hercog Novi 151.00 339‖ *i*PKP PKPdf 15 35 43.2 +7.1
VIVF Saint-Julien-l 151.03 0 *e*PKIKP PKPdf 15 35 38.7 +2.6
ARG Arkhangelos 151.03 319 *e*P PKPdf 15 35 44.0 +7.6
GRAM 151.07 352 P PKPdf 15 35 43.6 +7.5
ZCCA Zocca 151.08 351 *e*PKP PKPdf 15 35 45.0 +8.8
MBDF Montbardon 151.12 357 *e*PKIKP PKPdf 15 35 38.8 +2.6
comp=Z,37nm,1.1s
GSCL Gusciola 151.14 352 *e*PKP PKPdf 15 35 36.9 +0.7
ULC Ulcinj 151.16 338‖ *i*PKP PKPdf 15 35 43.7 +7.3
PCP Pian Castagno 151.18 355 P PKPdf 15 35 43.0 +6.7
VALM 151.18 352 P PKPdf 15 35 43.5 +7.2
EINC Incio 151.21 19 PKP PKPdf 15 35 44.4 +8.0
EZAM Zamans 151.22 21 PKP PKPdf 15 35 43.6 +7.1
EARI Arriondas 151.24 16 PKP PKPdf 15 35 43.4 +6.9
BAAM 151.28 352 P PKPdf 15 35 43.4 +6.9
OHR Ohrid 151.28 335‖ *i*PKHKP PKPdf 15 35 44.3 +7.7
OSH Qafa e Shtames 151.29 336 *ep* PKPdf 15 35 43.0 +6.4
OCF Saint Nazaire 151.30 360 PKP PKPdf 15 35 38.1 +1.6
OG26 St.-Nazaire-De 151.30 360 PKP PKPdf 15 35 38.1 +1.6
FNA Florina 151.31 333 *e*P PKPdf 15 35 44.2 +7.6
PZZ Prazzo 151.32 357 P PKPdf 15 35 43.8 +7.2
SARO Sassorosso 151.32 352 P PKPdf 15 35 43.2 +6.6
SURF Saint Ours 151.36 357 PKP PKPdf 15 35 39.6 +3.0
LIT Litokhoron 151.37 331 *e*P PKPdf 15 35 43.7 +7.0
VINC Vinca 151.40 352 P PKPdf 15 35 43.1 +6.4
FSSB Fossombrone 151.41 348 *e*PKP PKPdf 15 35 44.9 +8.2
AOS Alonnisos 151.41 328 *e*P PKPdf 15 35 43.7 +6.9
ROB Roburent 151.48 356 P PKPdf 15 35 44.0 +7.2
ERUA La Rua 151.52 19 PKP PKPdf 15 35 44.3 +7.4
FIN Finale Ligure 151.54 355 P PKPdf 15 35 43.5 +6.7
STV2 Anna di Valdie 151.57 356 P PKPdf 15 35 43.4 +6.5
STV Sta Anna Valdi 151.57 356 P PKPdf 15 35 43.3 +6.4
MAIM 151.58 352 P PKPdf 15 35 43.3 +6.3
ENR Entracque 151.58 356 P PKPdf 15 35 43.6 +6.6
RORO 151.65 355 P PKPdf 15 35 44.1 +7.0
ELOB Lobios 151.69 21 PKP PKPdf 15 35 45.7 +8.5
MONE Monesi 151.70 356 P PKPdf 15 35 44.7 +7.5
ELAN Lanestosa 151.72 13 PKP PKPdf 15 35 45.6 +8.4
LASF Ste Croix 151.79 2 *e*PKIKP PKPdf 15 35 39.9 +2.6
comp=Z,95nm,1.2s
IMI Imperia 151.86 356 *e*PKP PKPdf 15 35 45.5 +8.1
SMRF Simiane la Rot 151.90 359 *e*PKIKP PKPdf 15 35 40.2 +2.8
comp=Z,67nm,1.2s
SBF Sospel 151.94 356 *e*PKIKP PKPdf 15 35 40.4 +2.9
ECAL Calabor 152.06 19 PKP PKPdf 15 35 45.2 +7.5
KARP Karpathos 152.06 319 *e*P PKPdf 15 35 46.0 +8.1
EALK Alkurruntz 152.11 10 PKP PKPdf 15 35 44.8 +9.0
MEV Metsovon 152.19 332 *e*P PKPdf 15 35 47.3 +9.3
SJPF Ste Jean 152.26 10 *e*PKIKP PKPdf 15 35 40.6 +2.6
FRF La Foret Royal 152.28 357 *e*PKIKP PKPdf 15 35 41.1 +3.1
AGG Agios Georgios 152.29 330 *e*P PKPdf 15 35 45.5 +7.4
MTLF Montolieu 152.44 4 *e*PKIKP PKPdf 15 35 40.5 +2.3
comp=Z,42nm,1.0s
JAN Janina 152.47 333 *e*P PKPdf 15 35 47.4 +9.0
FGMS Monte Sant'Ang 152.49 342 *e*PKP PKPdf 15 35 46.9 +8.5
LMR La Mourre 152.52 358 *e*PKIKP PKPdf 15 35 41.3 +3.0
AQU L'Aquila 152.55 346 *e*PKP PKPdf 15 35 47.5 +9.0
EPF Esparros 152.56 7 *e*PKIKP PKPdf 15 35 40.9 +2.5
ETSF Etsaut 152.57 9 *e*PKIKP PKPdf 15 35 41.2 +2.8
THR3 Thira Island, 152.57 322 *e*P PKPdf 15 35 46.0 +7.4
THR6 Thira Island, 152.61 322 *e*P PKPdf 15 35 46.3 +7.6
RGNG Rignano Grg 152.63 343 *e*PKP PKPdf 15 35 47.0 +8.5
EVR Evrytania 152.63 331 *e*P PKPdf 15 35 46.0 +1.4
VIEF Viey 152.67 8 PKP PKPdf 15 35 42.7 +4.1
MNS Montasola 152.68 347 *e*PKP PKPdf 15 35 46.7 +8.1
MLS Moulis 152.72 6 PKP PKPdf 15 35 43.0 +4.4
IGT Igoumenitsa 152.80 333 *e*P PKPdf 15 35 44.8 +6.0
CII Carovilli 152.93 345 *e*PKP PKPdf 15 35 47.1 +8.2
PGF Pioggiola 153.11 353 *e*PKIKP PKPdf 15 35

ESDC				PP	PP	15 39 43.3	-4.1		
EMOS	**Mosqueruela**	**155.06**	**10**	PKP	PKPdf	15 35 52.8	+11		
EQES	**Quesada**	**156.95**	**16**	PKP	PKPdf	15 35 46.1	+1.6		
ELIJ	**Sierra de Lija**	**157.04**	**22**	PKP	PKPdf	15 35 46.9	+2.3		
LIC	**Lamto**	**166.34**	**133**	*e*PKIKP	PKPdf	15 35 55.3	+0.4		
	comp=Z,51nm,1.1s								
LIC	**Lamto**	**166.34**	**133**	*e*PKIKP	PKPdf	15 35 55.1	+0.2		
	comp=Z,61nm,1.1s								
LIC				*e*PKP1	PKPab	15 36 58.7	-1.2		
KIC	**Kosan Boka**	**166.64**	**133**	*e*PKIKP	PKPdf	15 35 55.2	+0.1		
	comp=Z,466nm,1.9s								
KIC				*e*PKP1	PKPab	15 37 00.1	-1.0		
TIC	**Toumodi**	**166.64**	**132**	*e*PKIKP	PKPdf	15 35 55.5	+0.4		
	comp=Z,176nm,1.3s								
TIC				*e*PKP1	PKPab	15 36 59.9	-1.2		
DBIC	**Dimbokro**	**166.78**	**132**	PKP	PKPdf	15 35 55.8	+0.6		
	comp=Z,14nm,1.1s,baz=84,slow=3.3,SNR=6.2								
DBIC				PKPab	PKPab	15 37 01.1	-0.6		
	comp=Z,5.1nm,0.6s,baz=173,slow=4.0,SNR=10								

MOS ***06*** *15:20:05.4±1.5,55.31N×162.57E,h16km,mb3.5/1,Error ellipse: s-maj=19.6km s-min=9.9km az=75.0*
KRSC ***06*** *15:20:05.4±1.2,55.33N×162.47E,h9km±2km,ML4.2*
IDC ***06*** *15:20:13.4±5.8,55.71N×163.20E,h35km±62km,mb3.0/3, mb1 3.4/4,mb1mx3.2/20,ML3.3/1,Error ellipse: s-maj=56.5km s-min=23.5km az=12.0*

ISC 06 15:20:07.3±0.7,55.32N±0.02×162.62E±0.05,h31km±7km, n47,σ1§10/88,mb3.1/3,Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KBTR	**Krutoberegovo**	**0.89**	**7**	P	**Pb**	**15 20 25.2**	**+1.0**
KBTR				S	**Sb**	**15 20 39.7**	**+3.9**
KBTR	**Krutoberegovo**	**0.89**	**7**	*i* P	**Pb**	**15 20 23.8**	**-0.4**
KBTR				*i* S	**Sb**	**15 20 38.7**	**+2.9**
MKZ	**Mys Kozlova**	**0.93**	**214**	P	**Pn**	**15 20 23.1**	**-1.2**
MKZ				S	**Sb**	**15 20 35.8**	**-0.9**
MKZ	**Mys Kozlova**	**0.93**	**214**	*e*P	**Pn**	**15 20 23.1**	**-1.2**
MKZ				*i* S	**Sb**	**15 20 35.6**	**-1.1**
KBG	**Krutoberegovo**	**0.94**	**3**	*i* P	**Pn**	**15 20 24.2**	**-0.2**
KBG				*i* S	**Sb**	**15 20 39.5**	**+2.5**
KBG				Smax			
	6μm,0.1s						
ZLN	**Zelenaya**	**1.24**	**305**	*i* P	**Pn**	**15 20 28.0**	**-0.8**
ZLN				*e*S	**Sn**	**15 20 44.6**	**-0.1**
CIRR	**Tsirk**	**1.32**	**308**	*i* P	**Pn**	**15 20 29.7**	**-0.3**
CIRR				*e*S	**Sn**	**15 20 48.1**	**+1.3**
LGNR	**Loginova**	**1.33**	**306**	*e*P	**Pn**	**15 20 29.7**	**-0.4**
LGNR				*e*S	**Sn**	**15 20 47.0**	**0.0**
TUMR	**Tumrok**	**1.42**	**269**	*e*P	**Pn**	**15 20 30.7**	**-0.6**
TUMR				*e*S	**Sn**	**15 20 49.1**	**0.0**
KMNR	**Kamenistaya**	**1.42**	**289**	*i* P	**Pn**	**15 20 31.0**	**-0.4**
KMNR				*i* S	**Sn**	**15 20 49.1**	**-0.2**
KRSR	**Krestovskiy**	**1.47**	**308**	*e*P	**Pn**	**15 20 31.5**	**-0.6**
KRSR				*e*S	**Sn**	**15 20 51.0**	**+0.6**
SVLR	**Shiveluch**	**1.48**	**328**	*e*P	**Pn**	**15 20 32.2**	**-0.1**
SVLR				*e*S	**Sn**	**15 20 51.6**	**+0.8**
KLY	**Klyuchi**	**1.49**	**313**	P	**Pn**	**15 20 30.5**	**-1.9**
KLY				S	**Sn**	**15 20 48.8**	**-2.2**
KLY	**Klyuchi**	**1.49**	**313**	*i* P	**Pn**	**15 20 30.3**	**-2.1**
KLY				*i* S	**Sn**	**15 20 47.8**	**-3.2**
KPT	**Kopyto**	**1.51**	**296**	*i* P	**Pn**	**15 20 32.7**	**+0.1**
KPT				*e*S	**Sn**	**15 20 52.7**	**+1.4**
KOZ	**Kozyrevsk**	**1.72**	**296**	P	**Pn**	**15 20 35.7**	**0.0**
KOZ				S	**Sn**	**15 20 58.1**	**+1.3**
KOZ	**Kozyrevsk**	**1.72**	**296**	*e*P	**Pn**	**15 20 36.0**	**+0.3**
KOZ				*i* S	**Sn**	**15 20 57.0**	**+0.2**
SRDR	**Sredinnyy**	**1.92**	**302**	*e*P	**Pn**	**15 20 38.6**	**+0.1**
SRDR				*e*S	**Sn**	**15 21 03.3**	**+1.5**
BKI	**Bering**	**1.92**	**92**	*e*P	**Pn**	**15 20 39.3**	**+0.8**
BKI				*i* S	**Sn**	**15 21 03.0**	**+1.1**
BKI				Smax			
	530nm,0.9s						
KII	**Karymskiy**	**2.25**	**236**	P	**Pn**	**15 20 43.1**	**-0.1**
KII				S	**Sn**	**15 21 10.5**	**+0.3**
KII	**Karymskiy**	**2.25**	**236**	*e*P	**Pn**	**15 20 42.9**	**-0.3**
KII				*e*S	**Sn**	**15 21 10.7**	**+0.5**
ESO	**Esso**	**2.31**	**287**	*e*P	**Pn**	**15 20 43.4**	**-0.6**
ESO				*e*S	**Sn**	**15 21 09.6**	**-2.1**
ESO				Smax			
	230nm,1.1s						
SPN	**Mys Shipunski**	**2.70**	**215**	P	**Pn**	**15 20 48.2**	**-1.5**
SPN				S	**Sn**	**15 21 18.8**	**-2.9**
SPN	**Mys Shipunski**	**2.70**	**215**	*e*P	**Pn**	**15 20 48.3**	**-1.4**
SPN				*e*S	**Sn**	**15 21 20.1**	**-1.6**
NLC	**Nalytchevo**	**2.89**	**223**	P	**Pn**	**15 20 51.5**	**-0.9**
NLC				S	**Sn**	**15 21 25.1**	**-1.4**
NLC	**Nalytchevo**	**2.89**	**223**	*e*P	**Pn**	**15 20 51.5**	**-0.9**
NLC				*i* S	**Sn**	**15 21 25.0**	**-1.5**
SDLR	**Sedlovina**	**3.00**	**228**	*e*P	**Pn**	**15 20 54.2**	**+0.3**
SDLR				*e*S	**Sn**	**15 21 29.2**	**-0.1**
SMAR	**Somma**	**3.05**	**229**	*e*P	**Pn**	**15 20 53.4**	**-1.2**
SMAR				*e*S	**Sn**	**15 21 27.9**	**-2.5**
AVH	**Avacha**	**3.07**	**229**	*e*P	**Pn**	**15 20 55.4**	**+0.5**
AVH				*e*S	**Sn**	**15 21 32.7**	**+1.6**
UGLR	**Uglovaya**	**3.07**	**228**	*e*P	**Pn**	**15 20 55.0**	**0.0**
UGLR				*e*S	**Sn**	**15 21 30.6**	**-0.5**
KOK	**Koryaka**	**3.10**	**231**	*e*P	**Pn**	**15 20 56.6**	**+1.3**
KOK				*e*S	**Sn**	**15 21 33.8**	**+2.1**
GNL	**Ganaly**	**3.18**	**241**	*e*P	**Pn**	**15 20 56.1**	**-0.4**
GNL				*e*S	**Sn**	**15 21 32.6**	**-1.2**
PET	**Petropavlovsk**	**3.28**	**227**	P	**Pn**	**15 20 58.0**	**+0.1**
PET				S	**Sn**	**15 21 36.6**	**+0.3**
PET	**Petropavlovsk**	**3.28**	**227**	*e*P	**Pn**	**15 20 57.9**	**0.0**
PET				*i* S	**Sn**	**15 21 36.3**	**0.0**
PET	**Petropavlovsk**	**3.28**	**227**	*e*PN	**Pn**	**15 21 00.4**	**+2.5**
PET				*e*S	**Sn**	**15 21 36.0**	**-0.3**
PET				pmax	pmax		
	comp=Z,92nm,0.8s						
PET				smax			
	comp=N,338nm,0.6s						
PET				smax			
	comp=E,306nm,0.8s						
KRMR	**Karymshinskiy**	**3.64**	**229**	*e*P	**Pn**	**15 21 04.9**	**+1.9**
KRMR				*e*S	**Sn**	**15 21 47.5**	**+2.1**
RUS	**Russkaya**	**3.78**	**222**	P	**Pn**	**15 21 05.5**	**+0.5**
RUS				S	**Sn**	**15 21 49.2**	**+0.2**
RUS	**Russkaya**	**3.78**	**222**	*e*P	**Pn**	**15 21 05.3**	**+0.4**
RUS				*e*S	**Sn**	**15 21 49.7**	**+0.7**
GRL	**Gorelyy**	**3.87**	**226**	*e*P	**Pn**	**15 21 07.4**	**+1.2**
GRL				*e*S	**Sn**	**15 21 52.8**	**+1.7**
OSSR	**Ossora**	**3.94**	**3**	*e*P	**Pn**	**15 21 07.1**	**-0.2**
OSSR				*e*S	**Sn**	**15 21 51.5**	**-1.7**
OSSR				Smax			
	comp=E,50nm,0.8s						
MIPR	**Malaya Ipel'ka**	**4.63**	**231**	*e*P	**Pn**	**15 21 18.6**	**+1.6**
SKR	**Severo-Kuril's**	**6.08**	**223**	*e*S	**Sn**	**15 22 43.1**	**-3.8**
FX1	**Attu Island--F**	**6.66**	**107**	Pn	**Pn**	**15 21 45.6**	**-0.2**
	comp=E,2.0nm,0.3s,baz=295,slow=6.8,SNR=3.3						
FX1				Sn	**Sn**	**15 22 56.0**	**-5.4**
	comp=E,4.2nm,0.3s,baz=130,slow=22,SNR=6.3						
ILAR	**Eielson Array**	**26.20**	**48**	P	**P**	**15 25 39.7**	**-0.9**
	comp=E,0.5nm,0.7s,mb3.1,baz=269,slow=8.7,SNR=7.1						
ILAR	**Eielson Array**	**26.20**	**48**	P	**P**	**15 25 39.7**	**-0.9**
ILAR				pmax	pmax		
	comp=Z,1.0nm,0.7s						
YKA	**Yellowknife Ar**	**40.52**	**45**	P	**P**	**15 27 44.2**	**-0.5**
	comp=Z,0.1nm,0.6s,mb2.6,baz=298,slow=7.7,SNR=4.3						
MKAR	**Makanchi Array**	**48.54**	**295**	P	**P**	**15 28 53.5**	**+4.4**
	comp=Z,0.4nm,0.7s,mb3.5,baz=45,slow=4.1,SNR=4.7						

KRSC 06 15:29:17.1±1.4,55.32N×162.64E,h24km±5km,ML4.2, Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KBTR	**Krutoberegovo**	**0.90**	**6**	P	**Pb**	15 29 36.2	+2.4
KBTR				S	Sb	15 29 49.2	+3.8
KBTR	**Krutoberegovo**	**0.90**	**6**	*e*P	Pb	15 29 34.7	+0.9
KBTR				*e*S	Sb	15 29 48.7	+3.3
MKZ	**Mys Kozlova**	**0.93**	**215**	P	Pb	15 29 34.0	-0.4
MKZ				S	Sb	15 29 45.6	-0.7
MKZ	**Mys Kozlova**	**0.93**	**215**	*e*P	Pb	15 29 34.1	-0.3
MKZ				*e*S	Sb	15 29 46.7	+0.4
KBG	**Krutoberegovo**	**0.94**	**2**	*i* P	Pb	15 29 34.9	+0.3
KBG				*i* S	Sb	15 29 50.3	+3.7
KBG				Smax			
	6μm,0.8s						
ZLN	**Zelenaya**	**1.25**	**305**	*e*P	Pn	15 29 39.2	-0.2
ZLN				*e*S	Sn	15 29 54.8	-0.8
CIRR	**Tsirk**	**1.33**	**307**	*e*P	Pn	15 29 40.5	0.0
CIRR				*e*S	Sn	15 29 56.8	-0.8
LGNR	**Loginova**	**1.34**	**306**	*e*P	Pn	15 29 40.8	+0.2
LGNR				*e*S	Sn	15 29 57.4	-0.5
TUMR	**Tumrok**	**1.43**	**270**	*e*P	Pn	15 29 41.5	-0.3
TUMR				*e*S	Sn	15 29 58.7	-1.3
KMNR	**Kamenistaya**	**1.43**	**289**	*i* P	Pn	15 29 41.9	-0.1
KMNR				*i* S	Sn	15 29 59.8	-0.4
KRSR	**Krestovskiy**	**1.48**	**308**	*e*P	Pn	15 29 42.2	-0.4
KRSR				*e*S	Sn	15 30 00.6	-0.7
SVLR	**Shiveluch**	**1.49**	**328**	*e*P	Pn	15 29 43.1	+0.3
SVLR				*e*S	Sn	15 30 01.5	-0.1
KLY	**Klyuchi**	**1.50**	**312**	P	Pn	15 29 41.4	-1.5
KLY				S	Sn	15 29 58.7	-3.1
KLY	**Klyuchi**	**1.50**	**312**	*i* P	Pn	15 29 41.4	-1.5
KLY				*i* S	Sn	15 29 58.6	-3.2
KPT	**Kopyto**	**1.52**	**296**	*e*P	Pn	15 29 43.6	+0.5
KPT				*e*S	Sn	15 30 02.6	+0.3
KOZ	**Kozyrevsk**	**1.73**	**296**	P	Pn	15 29 46.5	+0.3
KOZ				S	Sn	15 30 07.6	-0.2
KOZ	**Kozyrevsk**	**1.73**	**296**	*e*P	Pn	15 29 46.5	+0.3
KOZ				*e*S	Sn	15 30 08.0	+0.2
BKI	**Bering**	**1.91**	**92**	*e*P	Pn	15 29 46.3	-2.5
BKI				*e*S	Sn	15 30 09.0	-3.3
BKI				Smax			
	330nm,0.8s						
SRDR	**Sredinnyy**	**1.93**	**302**	*e*P	Pn	15 29 49.4	+0.4
SRDR				*e*S	Sn	15 30 12.8	+0.1
ESO	**Esso**	**2.31**	**287**	*e*P	Pn	15 29 56.3	+1.7
ESO				*e*S	Sn	15 30 22.2	-0.4
ESO				Smax			
	170nm,0.9s						
SPN	**Mys Shipunski**	**2.71**	**216**	P	Pn	15 29 59.5	-0.6
SPN				S	Sn	15 30 29.5	-3.0
SPN	**Mys Shipunski**	**2.71**	**216**	*e*P	Pn	15 29 59.5	-0.6
SPN				*e*S	Sn	15 30 29.6	-2.9
NLC	**Nalytchevo**	**2.89**	**223**	P	Pn	15 30 02.8	0.0
NLC				S	Sn	15 30 35.7	-1.5
NLC	**Nalytchevo**	**2.89**	**223**	*e*P	Pn	15 30 02.7	-0.1
NLC				*e*S	Sn	15 30 35.8	-1.4
SDLR	**Sedlovina**	**3.00**	**229**	*e*P	Pn	15 30 04.5	+0.1
SDLR				*e*S	Sn	15 30 39.9	-0.1
SMAR	**Somma**	**3.05**	**229**	*e*P	Pn	15 30 05.7	+0.7
SMAR				*e*S	Sn	15 30 41.2	0.0
AVH	**Avacha**	**3.08**	**230**	*e*P	Pn	15 30 06.0	+0.6
AVH				*e*S	Sn	15 30 42.5	+0.6
UGLR	**Uglovaya**	**3.08**	**228**	*e*P	Pn	15 30 06.1	+0.7
UGLR				*e*S	Sn	15 30 41.3	-0.6
KOK	**Koryaka**	**3.10**	**231**	*e*P	Pn	15 30 07.6	+1.8
KOK				*e*S	Sn	15 30 44.2	+1.7
GNL	**Ganaly**	**3.19**	**241**	*e*P	Pn	15 30 06.8	-0.2
GNL				*e*S	Sn	15 30 43.3	-1.3
PET	**Petropavlovsk**	**3.28**	**227**	P	Pn	15 30 09.1	+0.8
PET				S	Sn	15 30 45.9	-1.2
PET	**Petropavlovsk**	**3.28**	**227**	*e*P	Pn	15 30 09.1	+0.8
PET				*e*S	Sn	15 30 46.0	-1.1
KRMR	**Karymshinskiy**	**3.64**	**229**	*e*P	Pn	15 30 15.2	+1.7
KRMR				*e*S	Sn	15 30 57.7	+1.5
RUS	**Russkaya**	**3.79**	**222**	P	Pn	15 30 16.5	+1.0
RUS				S	Sn	15 30 59.0	-0.8
RUS	**Russkaya**	**3.79**	**222**	*e*P	Pn	15 30 16.4	+0.9
RUS				*e*S	Sn	15 30 59.1	-0.7
GRL	**Gorelyy**	**3.87**	**226**	*e*P	Pn	15 30 18.2	+1.5
GRL				*e*S	Sn	15 31 02.5	+0.6
OSSR	**Ossora**	**3.95**	**3**	*e*P	Pn	15 30 18.0	+0.2
OSSR				*e*S	Sn	15 31 02.4	-1.5
OSSR				Smax			
	70nm,0.8s						
APC	**Apacha**	**4.02**	**236**	*e*P	Pn	15 30 20.2	+1.4
APC				*e*S	Sn	15 31 06.7	+1.0
APC				Smax			
	60nm,0.9s						

IDC ***06*** *15:29:39.3±2.7,39.52S×73.00W,mb4.6/1,mb1 4.2/4, mb1mx4.0/12,ML3.8/3,MS3.1/1,Ms1 3.1/1,ms1mx2.9/11, Error ellipse: s-maj=52.4km s-min=21.9km az=50.0*
GUC ***06*** *15:29:46.3±0.7,39.73S×73.18W,h64km±5km,ML4.6*
NEIC ***06*** *15:29:46.3,39.73S×73.18W,h64km,mb4.1/2,After GUC.*
NEIC Felt [IV] at Lanco, Mafil, Panguipulli, Pucon, San Jose, Tolten and Valdivia; [III] at Temuco and Villarica; [II] at Curacautin.
SYO ***06*** *15:29:46.3,39.73S×73.18W,h65km,MB4.1*

ISC 06 15:29:46.2±0.5,39.71S±0.03×72.8W±0.1,h58km±7km,n21, σ1§18/25,mb4.2/2,2C-3D,Central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
VLCH	**Valdivia**	**0.33**	**252**	*e*P	**P**	**15 29 56.1**	**-0.3**
VLCH				*i* S	**S**	**15 30 03.0**	**-1.0**
VLCH				AMP		15 30 06.8	
	comp=E,31μm,0.2s						
OSCH	**Osorno**	**0.90**	**194**	*e*P	**P**	**15 30 02.9**	**-0.1**
OSCH				*i* S	**S**	**15 30 15.3**	**-0.2**
OSCH				AMP		15 30 18.7	
	comp=N,41μm,0.5s						
TMCH	**Temuco**	**0.97**	**10**	⇓*i*P	**P**	**15 30 05.3**	**+1.4**
TMCH				*i* S	**S**	**15 30 19.2**	**+2.1**
TMCH				AMP		15 30 24.5	
	comp=N,24μm,0.6s						
PLCA	**Paso Flores**	**2.03**	**121**	Pn	**P**	**15 30 19.2**	**+0.6**
	comp=N,5.7nm,0.3s,baz=297,slow=15,SNR=55						
PLCA				Lg		15 30 49.6	
	comp=N,119nm,0.3s,baz=210,slow=12,SNR=24						
PLCA				LR	LR	15 31 22.5	
	comp=N,498nm,21.8s,baz=169,slow=46						
CCHI	**Chillan**	**3.15**	**11**	*e*P	**P**	**15 30 34.9**	**+0.2**
CCHI				*i* S	**S**	**15 31 12.0**	**+0.7**
CCHI				AMP		15 31 39.2	
	comp=N,2μm,0.6s						
COCH	**Cobquecura**	**3.57**	**1**	*i* P	**P**	**15 30 40.7**	**+0.3**
COCH				*i* S	**S**	**15 31 21.7**	**0.0**
COCH				AMP		15 31 48.4	
	comp=N,774nm,0.8s						
LMEL	**Las Melosas**	**6.21**	**21**	*e*P	**P**	**15 31 16.3**	**-1.1**
LMEL				*i* S	**S**	**15 32 26.4**	**-1.5**
FCH	**Farellones**	**6.69**	**19**	*e*P	**P**	**15 31 21.2**	**-2.8**
FCH				*i* S	**S**	**15 32 35.8**	**-3.8**
TRQA	**Tornquist**	**8.62**	**82**	*e*Pn	**P**	**15 31 50.3**	**-0.4**
USHA	**Ushuaia**	**15.42**	**170**	Pn	**P**	**15 33 21.6**	**+0.4**
	comp=N,0.4nm,0.3s,baz=338,slow=16,SNR=4.0						
EFI	**East Falkland**	**15.77**	**144**	*e*P	**P**	**15 33 27.7**	**+2.0**
	comp=N,8.8nm,0.6s						
CPUP	**Villa Florida**	**18.59**	**49**	P	**P**	**15 33 59.2**	**-1.7**
	comp=N,0.1nm,0.3s,baz=234,slow=14,SNR=2.0						
ARE	**Arequipa**	**23.19**	**3**	*e*P	**P**	**15 34 51.0**	**+2.5**
OTAV	**Otavalo**	**40.08**	**351**	P	**P**	**15 37 18.4**	**+0.8**
	comp=N,2.1nm,0.6s,mb4.0						
VNA3	**Neumayer Olymp**	**44.38**	**156**	⇑*i*	sP	15 38 14.6	+0.7
VNA2	**Neumayer--Watz**	**45.06**	**155**		sP	15 38 14.2	-5.2
SNAA	**Sanae**	**46.60**	**156**	⇓*i*	**P**	**15 38 09.2**	**-0.4**
SYO	**Syowa Base**	**60.82**	**158**	⇓P	**P**	**15 39 47.0**	**-7.1**
SYO	**Syowa Base**	**60.82**	**158**	⇑sP	sP	15 40 16.2	-0.4
TEIG	**Tepich**	**61.34**	**343**	P	**P**	**15 39 49.5**	**-8.8**
DBIC	**Dimbokro**	**77.65**	**71**	P	**P**	**15 41 37.5**	**-0.8**
	comp=N,2.8nm,0.5s,mb4.5,baz=212,slow=4.8,SNR=7.9						

MOS 06 16:00:18.4±1.6,54.99N×110.72E,h10km,mb4.3/1,3C, Error ellipse: s-maj=38.1km s-min=18.0km az=55.0, Lake Baykal region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
YLYR	**Ulyunkhan**	**0.28**	**114**	⇑*i*PG	Pg	16 00 24.0	-0.3
YLYR				*e*		16 00 28.3	
YLYR				pmax	pmax		
	comp=Z,582nm,0.1s						
YLYR				smax			
	comp=E,3μm,0.3s						
YOA	**Uoyan**	**1.28**	**26**	*e*PG	Pg	16 00 41.4	-2.6
YOA				*e*		16 00 58.8	
YOA				pmax	pmax		
	comp=Z,59nm,0.4s						
YOA				smax			
	comp=N,770nm,0.6s						
SVKR	**Severomuysk**	**1.97**	**54**	⇑*e*PN	Pn	16 00 51.5	-0.7
SVKR				*i*		16 00 53.8	
SVKR				*e*S	Sn	16 01 18.4	+1.2
SVKR				*e*		16 01 20.4	
SVKR				pmax	pmax		
	comp=Z,215nm,0.4s						
SVKR				smax			
	comp=N,1μm,0.5s						
OGRR	**Ongureny**	**2.27**	**235**	*e*PN	Pn	16 01 00.3	+3.7
OGRR				*e*		16 01 28.2	
OGRR				pmax	pmax		
	comp=Z,46nm,0.4s						
OGRR				smax			
	comp=N,476nm,0.4s						
NLYR	**Nelyaty**	**3.19**	**60**	⇑*i*PN	Pn	16 01 09.3	-0.4
NLYR				*e*		16 01 14.2	
NLYR				*e*		16 01 56.5	
NLYR				pmax	pmax		
	comp=Z,15nm,0.3s						
NLYR				smax			
	comp=N,198nm,0.9s						
ARS	**Arshan**	**5.83**	**242**	*e*PN	Pn	16 02 03.5	+16
ARS				*e*		16 03 16.7	
ARS				pmax	pmax		
	comp=Z,10.0nm,0.4s						
ARS				smax			
	comp=E,110nm,0.7s						
MOY	**Mondy**	**6.71**	**244**	*e*PN	Pn	16 01 59.7	+0.2
MOY				*e*		16 02 21.7	
MOY				*e*		16 03 46.4	
MOY				pmax	pmax		
	comp=Z,2.0nm,0.3s						
MOY				smax			
	comp=E,43nm,1.4s						

WEL 06 16:01:00.7±0.2,45.18S×167.03E,h20km,ML3.5/6,Error ellipse: s-maj=2.1km s-min=2.1km az=90.0,South Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MSZ	**Milford Sound**	**0.81**	**52**	P*	Pb	16 01 15.5	-0.5
MSZ				S*	Sb	16 01 27.1	+0.6
MLZ	**Mavora Lakes**	**0.82**	**102**	P*	Pb	16 01 15.9	-0.3
MLZ				S*	Sb	16 01 26.9	+0.1
WHZ	**Wether Hill Ro**	**0.96**	**138**	P*	Pb	16 01 18.1	-0.5
WHZ				S*	Sb	16 01 31.7	+0.8
AXZ	**Alexandra**	**1.63**	**94**	PN	Pn	16 01 29.2	+0.6
AXZ				SN	Sn	16 01 49.9	+0.7
TUZ	**Tuapeka**	**1.98**	**114**	PN	Pn	16 01 34.3	+0.5
BWZ	**Berwen**	**2.13**	**73**	PN	Pn	16 01 35.8	-0.1
ODZ	**Otahua Downs**	**2.56**	**88**	PN	Pn	16 01 41.1	-1.0

NAO ***06*** *16:11:03.8±2.0,61.60N×16.48E,ML2.2*

BER 06 16:11:04.9±4.0,61.65N×16.35E,ML2.2(NAO),Sweden

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HFS	**Hagfors**	**2.00**	**222**	Pn	Pn	16 11 39.6	-0.7
	baz=43,slow=16						
HFS				Lg		16 12 06.4	
	baz=42,slow=28						
NB2	**NORSAR Subarra**	**2.55**	**258**	Lg		16 12 22.4	
NB2	**NORSAR Subarra**	**2.55**	**258**	Lg		16 12 22.4	
FIA0	**FINESS Array S**	**4.66**	**88**	Sn	Sn	16 13 08.7	-5.1
	baz=284,slow=22						
FIA0				Lg		16 13 26.0	
	baz=271,slow=28						

NEIC ***06*** *16:14:21.0,34.14S×71.30W,h61km,MD3.7(GUC),After GUC.*

GUC 06 16:14:21.0±0.6,34.14S×71.30W,h61km±3km,MD3.7, ML3.5,6C-6D,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LNV	**Longovilo**	**0.20**	**333**	⇓*i*P	P	16 14 30.8	+0.2
LNV				*i* S	S	16 14 37.9	+0.2
SFDO	**San Fernando**	**0.53**	**154**	⇑*i*P	P	16 14 33.9	+0.4
SFDO				*i* S	S	16 14 43.6	+0.9
TACH	**Talagante**	**0.57**	**32**	⇑*i*P	P	16 14 34.0	+0.1
TACH				*i* S	S	16 14 44.0	+0.6
CHCH	**Chadas Angostu**	**0.57**	**69**	⇓*i*P	P	16 14 34.2	+0.3
CHCH				*i* S	S	16 14 43.9	+0.4
CACH	**El Canelo**	**0.58**	**88**	⇑*i*P	P	16 14 34.8	+0.7
CACH				*i* S	S	16 14 45.3	+1.7
LCCH	**Las Cruces**	**0.70**	**341**	⇑*i*P	P	16 14 35.6	+0.2
LCCH				*i* S	S	16 14 46.4	+0.3
CICH	**Cipreses**	**0.75**	**104**	⇓*i*P	P	16 14 36.4	+0.4
CICH				*i* S	S	16 14 47.8	+0.6
RCDM	**Rinconada Maip**	**0.77**	**33**	*e*P	P	16 14 36.1	-0.2
RCDM				*i* S	S	16 14 48.1	+0.6
RCDM				AMP		16 14 49.9	
	comp=N,5μm,0.1s						
ANTU	**Antumapu**	**0.79**	**45**	*e*P	P	16 14 36.8	+0.2
ANTU				*i* S	S	16 14 48.7	+0.6
ANTU				AMP		16 14 50.1	
	comp=N,3μm,0.5s						
PCH	**Pirque**	**0.83**	**52**	⇑*i*P	P	16 14 37.4	+0.3
PCH				*i* S	S	16 14 49.6	+0.5
LMEL	**Las Melosas**	**0.96**	**73**	⇑*i*P	P	16 14 39.2	+0.4
LMEL				*i* S	S	16 14 53.3	+1.4
LMEL				AMP		16 14 54.6	
	comp=N,3μm,0.2s						
CLCH	**Cerro Calan**	**0.97**	**41**	⇓*i*P	P	16 14 39.4	+0.4
CLCH				*i* S	S	16 14 53.3	+1.0
CLCH				AMP		16 14 54.3	
	comp=N,3μm,0.6s						
PEL	**Peldehue**	**1.12**	**28**	*i* P	P	16 14 41.2	+0.3
PEL				*i* S	S	16 14 56.5

OJC	**Ojcow**	**0.90**	**79**	*e*Pg	Pg	16 38 46.5	-1.1
OJC				*i* Sg	Sg	16 38 59.6	0.0
DPC	**Dobruska-Polom**	**1.38**	**283**	*e*PG	Pg	16 38 54.9	-2.2
DPC				*e*SG	Sg	16 39 13.9	-1.6
	47nm,0.4s						
NIE	**Niedzica**	**1.39**	**117**‖	*e*Pg	Pg	16 38 55.9	-1.3
NIE				*e*Sg	Sg	16 39 15.1	-0.6
NIE	**Niedzica**	**1.39**	**117**	*e*PG	Pg	16 38 56.0	-1.2
NIE				*e*SG	Sg	16 39 15.0	-0.7
KOLL	**Kolacno**	**1.48**	**180**	*e*PG	Pg	16 38 58.7	-0.5
KOLL				*e*SG	Sg	16 39 17.9	-1.0
KSP	**Ksiaz**	**1.57**	**301**	*e*PN	Pn	16 38 57.0	-1.7
KSP				*e*SN	Sn	16 39 19.0	-0.9
KSP	**Ksiaz**	**1.57**	**301**	*e*PG	Pg	16 38 57.3	-3.6
KSP				*e*		16 38 59.6	-
KSP				*e*Sg	Sg	16 39 18.7	-3.1
VYHS	**Vyhne**	**1.59**	**170**	*e*PG	Pg	16 38 58.8	-2.5
VYHS				*e*SB	Sb	16 39 21.0	+1.0
UPC	**Upice**	**1.61**	**287**	*e*PG	Pg	16 38 59.7	-2.0
UPC				*e*SG	Sg	16 39 20.7	-2.4
ZST	**Bratislava**	**2.06**	**205**	*e*PN	Pn	16 39 04.6	-1.1
ZST				*e*SN	Sn	16 39 31.8	-0.5
CRVS	**Cervenica-Dubn**	**2.30**	**119**	*e*PN	Pn	16 39 10.7	+1.6
CRVS				*e*SB	Sb	16 39 45.6	+5.1
PRU	**Pruhonice**	**2.50**	**270**	*e*PG	Pg	16 39 13.9	-5.6
PRU				*e*SG	Sg	16 39 47.2	-5.7
	11nm,0.5s						
PVCC	**Panska Ves**	**2.51**	**282**	*e*PG	Pg	16 39 15.5	-4.3
BRG	**Berggiesshubel**	**2.97**	**288**	*e*Pg	Pg	16 39 23.8	-5.2
BRG				*e*Sg	Sg	16 40 03.0	-5.6
KHC	**Kasperske Hory**	**3.28**	**255**	*e*PN	Pn	16 39 21.0	-2.2
KHC				*e*PG	Pg	16 39 29.8	-5.3
KHC				*e*SG	Sg	16 40 12.3	-6.6
MOA	**Molln**	**3.52**	**233**↑	*i* PN	Pn	16 39 24.5	-2.0
MOA				*i* SG	Sg	16 40 20.3	-6.5
	8.3nm,0.7s						
CLL	**Collm**	**3.67**	**292**	*e*PG	Pg	16 39 39.0	-3.7
CLL				*e*SG	Sg	16 40 29.0	-2.6

*IDC **06** 16:38:54.7±2.8,5.90S×146.39E,h80km±31km,mb3.5/5, mb1 3.7/7,mb1mx3.6/13,Error ellipse: s-maj=34.0km s-min=15.9km az=102.0*
*NEIC **06** 16:38:55.1±1.0,5.76S×146.07E,h70km±12km,mb4.0/4, Error ellipse: s-maj=12.5km s-min=10.7km az=111.0*
ISC 06 16:38:53.7±1.0,**5.78S**±0.07×**146.07E**±0.08,**h73**km±12km, **n21**,σ1°**09**/25,**mb3.6**/5,**2D**,**Eastern New Guinea region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WAU	**Wau**	**1.69**	**157**‖	*i*P	**P**	**16 39 22.4**	**+0.6**
PIAM	**Paiam**	**2.92**	**276**	*e*P	**P**	**16 39 38.4**	**-0.6**
PMG	**Port Moresby**	**3.77**	**163**	P	**P**	**16 39 49.1**	**-1.7**
	29nm,0.3s,baz=22,slow=11,SNR=113						
PMG				S	**S**	**16 40 28.9**	**-5.2**
	38nm,0.3s,baz=149,slow=22,SNR=21						
PMG	**Port Moresby**	**3.77**	**163**‖	*e*P	**P**	**16 39 49.2**	**-1.6**
PMG				*e*S	**S**	**16 40 28.8**	**-5.4**
RAB	**Rabaul**	**6.28**	**76**	*e*P	**P**	**16 40 26.2**	**+0.7**
CTA	**Charters Tower**	**14.23**	**179**	*e*P	**P**	**16 42 14.8**	**+1.8**
	23nm,0.5s						
CTA	**Charters Tower**	**14.23**	**179**	P	**P**	**16 42 15.2**	**+2.2**
	6.0nm,0.3s,baz=359,slow=15,SNR=70						
CTAO	**Charters Tower**	**14.23**	**179**	*e*P	**P**	**16 42 14.9**	**+1.9**
	29nm,0.5s						
KAKA	**Kakadu**	**15.13**	**242**	*e*P	**P**	**16 42 27.0**	**+2.3**
	14nm,0.4s						
WRAB	**Tennant Creek**	**18.11**	**218**	*e*P	**P**	**16 43 00.8**	**-1.1**
	12nm,0.9s						
WB2	**Warramunga Arr**	**18.11**	**218**	*e*P	**P**	**16 43 01.6**	**-0.3**
WRA	**Warramunga Arr**	**18.12**	**218**	P	**P**	**16 43 01.2**	**-0.8**
	0.3nm,0.3s,baz=41,slow=11,SNR=19						
WRA				S	**S**	**16 46 18.0**	**-0.4**
	0.1nm,0.3s,baz=35,slow=22,SNR=4.7						
GUMO	**Guam**	**19.27**	**356**	P	**P**	**16 43 14.8**	**-0.5**
	119nm,0.8s						
ASAR	**Alice Springs**	**21.30**	**212**	P	**P**	**16 43 36.0**	**-0.2**
	0.8nm,0.6s,mb3.2,baz=45,slow=9.2,SNR=18						
ASAR				S	**S**	**16 47 29.5**	**+6.2**
	0.1nm,0.4s,baz=36,slow=20,SNR=4.6						
FITZ	**Fitzroy Crossi**	**23.41**	**237**	*e*P	**P**	**16 43 58.0**	**+1.1**
	2.4nm,0.6s,mb3.7						
FITZ	**Fitzroy Crossi**	**23.41**	**237**	P	**P**	**16 43 57.7**	**+0.8**
	3.2nm,0.6s,mb3.8,baz=39,slow=7.9,SNR=15						
STKA	**Stephens Creek**	**26.30**	**189**	*e*P	**P**	**16 44 24.3**	**-0.1**
	1.0nm,0.4s,mb3.6						
STKA	**Stephens Creek**	**26.30**	**189**	P	**P**	**16 44 23.4**	**-1.1**
	1.0nm,0.4s,mb3.6,baz=5.6,slow=9.9,SNR=7.6						
CMAR	**Chiang Mai Arr**	**52.33**	**298**	P	**P**	**16 48 01.5**	**+1.0**
	1.7nm,0.7s,mb4.2,baz=120,slow=5.9,SNR=17						
MAW	**Mawson**	**82.10**	**203**	*e*P	**P**	**16 51 08.4**	**+1.1**
ILAR	**Eielson Array**	**85.64**	**23**	P	**P**	**16 51 23.4**	**-1.8**
	0.2nm,0.5s,mb3.3,baz=244,slow=4.7,SNR=4.2						

*IDC **06** 16:39:18.2±2.1,4.38N×62.58E,mb3.6/5,mb1 3.8/5, mb1mx3.6/16,Error ellipse: s-maj=67.4km s-min=28.5km az=58.0*
ISC 06 16:39:18.3±1.9,**4.4N**±0.3×**62.6E**±0.4,**h10**km,**n5**,σ0°**05**/5, **mb3.5**/5,**Carlsberg Ridge**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BRTR	**Keskin Array B**	**43.82**	**327**	P	**P**	**16 47 26.2**	**0.0**
	0.5nm,0.6s,mb3.4,baz=159,slow=12,SNR=4.4						
MKAR	**Makanchi Array**	**45.49**	**19**	P	**P**	**16 47 39.6**	**0.0**
	0.3nm,0.6s,mb3.3,baz=209,slow=8.6,SNR=2.5						
SONM	**Songino Array**	**57.18**	**34**	P	**P**	**16 49 07.9**	**0.0**
	0.3nm,0.6s,mb3.5,baz=240,slow=5.7,SNR=4.3						
WRA	**Warramunga Arr**	**74.44**	**112**	P	**P**	**16 50 59.1**	**0.0**
	1.2nm,0.7s,mb3.9,baz=291,slow=5.0,SNR=8.0						
ASAR	**Alice Springs**	**74.76**	**116**	P	**P**	**16 51 00.8**	**0.0**
	0.6nm,0.8s,mb3.6,baz=289,slow=6.1,SNR=5.1						

*NEIC **06** 17:04:10.7±2.0,13.86N×91.73W,h30km±13km,mb4.7/30, MD4.8(MEX),Error ellipse: s-maj=8.5km s-min=6.9km az=185.0*
*BJI **06** 17:04:10.6,13.90N×91.70W,h30km,Ms4.7,Msz4.4*
*CASC **06** 17:04:12.6±2.0,13.87N×91.81W,h9km±31km,MD4.6, ML4.8,mb4.7(NEIC)*
*MEX **06** 17:04:17.8±0.9,13.98N×92.28W,h18km±999km,MD4.8*
*IDC **06** 17:04:17.8±2.9,14.08N×91.62W,h84km±24km,mb3.9/11, mb1 4.1/14,mb1mx4.0/22,MS4.0/14,Ms1 4.0/14, ms1mx3.9/27,Error ellipse: s-maj=29.9km s-min=15.9km az=49.0*
ISC 06 17:04:11.8±0.5,**13.88N**±0.04×**91.99W**±0.03,**h52**km±4km, **n153**,σ1°**12**/150,**mb4.5**/39,**MS4.1**/12,**9C-8D**,**Near coast of Guatemala**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GCG	**Guatemala City**	**1.58**	**63**	*e*P	**P**	**17 04 39.0**	**+1.0**
GCG				*e*S	**S**	**17 04 57.7**	**+0.3**
GCG				AML	AML	17 05 08.2	
	comp=E,12μm,0.8s						
NBG	**Las Nubes**	**1.74**	**66**	*e*P	**P**	**17 04 41.8**	**+1.5**
NBG				*e*S	**S**	**17 05 04.5**	**+3.1**
NBG				AML	AML	17 05 10.1	
	comp=N,30μm,0.5s						
CUSS	**Cusmapa**	**1.98**	**89**‖	*e*P	**P**	**17 04 43.5**	**-0.2**
RBDL	**Robledal**	**2.25**	**84**‖	*e*P	**P**	**17 04 47.5**	**0.0**
RBDL				*e*S	**S**	**17 05 14.5**	**+0.4**
RTR	**El Retiro**	**2.28**	**89**‖	*e*P	**P**	**17 04 47.8**	**-0.1**
SBLS	**San Blas**	**2.30**	**91**‖	*e*P	**P**	**17 04 47.3**	**-0.8**
SBLS				*e*S	**S**	**17 05 16.1**	**+0.8**
SNJE	**San Jose**	**2.32**	**90**‖	*e*P	**P**	**17 04 47.8**	**-0.6**
CCIG	**Comitan**	**2.40**	**357**‖	*i*P	**P**	**17 04 51.5**	**+1.9**
CCIG				*i* S	**S**	**17 05 18.2**	**+0.5**
MTO2	**Montecristo 2**	**2.60**	**78**↑	*i*P	**P**	**17 04 52.7**	**+0.3**
MTO2				*e*S	**S**	**17 05 21.9**	**-1.1**
BOQS	**Boqueron**	**2.64**	**93**	*e*P	**P**	**17 04 52.8**	**-0.2**
BOQS				*e*S	**S**	**17 05 24.1**	**+0.2**
SNET	**Serv Nac Est T**	**2.69**	**94**	*e*S	**S**	**17 05 26.2**	**+1.1**
LFU	**La Fuente**	**2.80**	**92**‖	*e*P	**P**	**17 04 55.2**	**-0.1**
LFRS	**El Faro**	**2.86**	**95**↑	*e*P	**P**	**17 04 55.5**	**-0.6**
LFRS				*e*S	**S**	**17 05 30.6**	**+1.2**
LBRS	**Las Brisas**	**2.87**	**92**↑	*e*P	**P**	**17 04 56.0**	**-0.2**
SCX	**San Cristobal**	**2.91**	**348**	*i* P	**P**	**17 05 00.3**	**+3.5**
SCX				*i* S	**S**	**17 05 31.2**	**+0.4**
LCBS	**La Ceiba**	**2.94**	**94**↑	*e*P	**P**	**17 04 56.8**	**-0.4**
SNVI	**San Vicente**	**3.07**	**95**‖	*e*P	**P**	**17 04 58.9**	**-0.2**
SNVI				*e*S	**S**	**17 05 34.0**	**-1.0**
BLLM	**Bellamira**	**3.67**	**96**	*e*S	**S**	**17 05 53.3**	**+3.2**
CAHU	**Cacacuatique**	**3.67**	**91**	*e*P	**P**	**17 05 09.9**	**+2.3**
CNCH	**Conchagua**	**4.09**	**98**	*e*P	**P**	**17 05 12.6**	**-0.8**
CMIG	**Matias Romero**	**4.24**	**319**	*i* P	**P**	**17 05 15.5**	**-0.1**
CMIG				*i* S	**S**	**17 06 00.2**	**-4.2**
HUIG	**Huatulco**	**4.40**	**296**	*i* P	**P**	**17 05 15.4**	**-2.5**
HUIG				*i* S	**S**	**17 06 04.5**	**-4.0**
PYN	**Poneloya**	**5.06**	**106**	*e*P	**P**	**17 05 26.7**	**-0.4**
LEON	**Leon**	**5.17**	**106**	*e*P	**P**	**17 05 27.1**	**-1.5**
TEL3	**Telica 3**	**5.18**	**104**‖	*e*P	**P**	**17 05 28.6**	**0.0**
CNGN	**Cerro Negro**	**5.33**	**104**	*e*P	**P**	**17 05 30.1**	**-0.8**
MIRN	**Miramar**	**5.34**	**105**‖	*e*P	**P**	**17 05 30.0**	**-0.9**
MOMJ	**Momotombo**	**5.51**	**105**	*e*P	**P**	**17 05 32.7**	**-0.6**
COPN	**Copaltepe**	**5.53**	**107**‖	*e*P	**P**	**17 05 32.7**	**-0.8**
OXX	**Oaxaca**	**5.56**	**306**	*i* P	**P**	**17 05 34.5**	**+0.4**
VHO	**Vista Hermosa**	**5.57**	**305**	*i* P	**P**	**17 05 33.6**	**-0.5**
VHO				*i* S	**S**	**17 06 32.4**	**-5.2**
EVV	**El Vigia**	**5.58**	**325**	*e*P	**P**	**17 05 30.5**	**-3.8**
XAVN	**Gruta Xavier**	**5.78**	**107**	*e*P	**P**	**17 05 37.3**	**+0.2**
MGAN	**Managua**	**5.86**	**106**	*e*S	**S**	**17 06 45.4**	**+0.6**
TICN	**Ticuantepe**	**5.91**	**107**	*e*P	**P**	**17 05 38.6**	**-0.2**
POHV	**Veracruz**	**7.24**	**316**	*i* P	**P**	**17 05 57.2**	**-0.3**
TEIG	**Tepich**	**7.25**	**29**	P	**P**	**17 05 57.7**	**+0.1**
	comp=N,67nm,0.3s,baz=189,slow=3.2,SNR=29						
TEIG				S	**S**	**17 07 19.2**	**-0.1**
	comp=N,7.5nm,0.3s,baz=163,slow=21,SNR=3.6						
TEIG	**Tepich**	**7.25**	**29**	*e*P	**P**	**17 05 57.7**	**+0.1**
IISM	**Ciudad Serdan**	**7.25**	**315**	*i* P	**P**	**17 06 00.2**	**+2.6**
JTS	**JuntasAbangare**	**7.75**	**117**	P	**P**	**17 06 05.4**	**+0.8**
	comp=N,2.2nm,0.3s,baz=305,slow=16,SNR=5.8						
JTS				LR	LR	17 09 18.8	
	comp=N,971nm,20.2s,slow=40						
PPM	**Popocatepetl**	**8.19**	**310**	*e*P	**P**	**17 06 11.4**	**+0.7**
PPM				*i* P		17 06 13.0	
PPM				*i* S	**S**	**17 07 38.5**	**-4.4**
PPM	**Popocatepetl**	**8.19**	**310**	*e*P	**P**	**17 06 11.4**	**+0.7**
PPM				*i* S	**S**	**17 07 38.5**	**-4.4**
ACX	**Acapulco**	**8.20**	**292**	*e*P	**P**	**17 06 04.0**	**-6.8**
YAIG	**Yautepec**	**8.41**	**307**	*e*P	**P**	**17 06 12.7**	**-1.0**
YAIG				*i* S	**S**	**17 07 42.6**	**-5.5**
PLIG	**Platanillo**	**8.50**	**303**	*i* S	**S**	**17 07 45.3**	**-5.1**
CAIG	**El Cayaco**	**8.58**	**293**	*i* P	**P**	**17 06 14.3**	**-1.7**
CAIG				*i* S	**S**	**17 07 46.5**	**-5.9**
ZIIG	**Zihuatanejo**	**9.85**	**293**	*i* P	**P**	**17 06 32.0**	**-1.5**
MOIG	**Morelia**	**10.53**	**304**	*i* P	**P**	**17 06 42.4**	**-0.4**
TXAR	**Lajitas Array**	**18.80**	**327**	P	**P**	**17 08 31.1**	**+1.4**
	comp=N,0.7nm,0.3s,baz=153,slow=11,SNR=41						
TXAR				LR	LR	17 16 55.1	
	comp=N,191nm,19.4s,baz=145,slow=40						
OTAV	**Otavalo**	**19.06**	**134**	*e*P	**P**	**17 08 33.4**	**+0.6**
ROCO	**El Rosal**	**19.58**	**116**	P	**P**	**17 08 40.9**	**+2.4**
	comp=N,1.9nm,0.3s,baz=49,slow=22,SNR=11						
LRAL	**Lakeview Retre**	**19.61**	**13**	*e*P	**P**	**17 08 37.4**	**-1.2**
	comp=N,29nm,0.9s						
MIAR	**Mount Ida**	**20.63**	**356**	*e*P	**P**	**17 08 46.9**	**-2.5**
	comp=N,14nm,0.7s						
UALR	**University of**	**20.81**	**359**	*e*P	**P**	**17 08 50.2**	**-1.1**
	comp=N,21nm,0.7s						
PLAL	**Pickwick Lake**	**21.31**	**9**	*e*P	**P**	**17 08 55.4**	**-0.9**
	comp=N,7.3nm,0.6s,mb4.2						
SDV	**Santo Domingo**	**21.51**	**101**	P	**P**	**17 08 54.4**	**-4.1**
	comp=N,2.0nm,0.4s,mb3.9,baz=303,slow=9.2,SNR=3.8						
MNTX	**Cornudas Mount**	**21.57**	**328**	*e*P	**P**	**17 08 58.9**	**0.0**
WMOK	**Wichita Mounta**	**21.66**	**345**	*e*P	**P**	**17 08 57.7**	**-2.1**
	comp=N,18nm,0.9s,mb4.5						
SWET	**Sewanee**	**21.94**	**13**	*e*P	**P**	**17 09 01.7**	**-0.9**
WVT	**Waverly**	**22.47**	**9**	*e*P	**P**	**17 09 05.9**	**-1.9**
	comp=N,13nm,0.8s,mb4.4						
CPCT	**Cooper Cave**	**22.51**	**16**	*e*P	**P**	**17 09 08.1**	**-0.1**
JSC	**Jenkinsville**	**22.52**	**24**	*e*P	**P**	**17 09 07.1**	**-1.2**
SIUC	**Southern Illin**	**23.87**	**5**	*e*P	**P**	**17 09 20.1**	**-1.3**
	comp=N,85nm,0.7s,mb5.3						
CCM	**Cathedral Cave**	**24.09**	**1**	*e*P	**P**	**17 09 21.8**	**-1.8**
	comp=N,11nm,0.7s,mb4.4						
ANMO	**Albuquerque**	**24.72**	**331**	*e*P	**P**	**17 09 31.3**	**+1.6**
	comp=N,17nm,0.7s,mb4.7						
WCI	**Wyandotte Cave**	**24.78**	**11**	*e*P	**P**	**17 09 28.2**	**-2.0**
TUC	**Tucson**	**25.13**	**320**	*e*P	**P**	**17 09 35.0**	**+1.2**
	comp=N,3.1nm,0.7s,mb4.0						
PWV	**Princeton**	**25.32**	**21**	*e*P	**P**	**17 09 33.9**	**-1.6**
ELN	**Prospectdale**	**25.33**	**21**	*e*P	**P**	**17 09 34.5**	**-1.0**
KSU1	**Kansas State U**	**25.45**	**352**	*e*P	**P**	**17 09 36.5**	**-0.1**
FWV	**Forest Hill**	**25.62**	**21**	*e*P	**P**	**17 09 36.7**	**-1.6**
WUAZ	**Wupatki**	**27.72**	**324**	*e*P	**P**	**17 09 58.9**	**+1.3**
	comp=N,15nm,0.9s,mb4.6						
PV01	**Paradox Valley**	**28.29**	**332**	*e*P	**P**	**17 10 04.4**	**+1.8**
PV10	**Paradox Valley**	**28.70**	**331**	*e*P	**P**	**17 10 06.9**	**+0.6**
SRU	**San Rafael**	**29.99**	**330**	*e*P	**P**	**17 10 18.8**	**+1.0**
MSU	**Marysvale**	**30.36**	**328**	*e*P	**P**	**17 10 22.6**	**+1.6**
DAU	**Daniels Canyon**	**31.36**	**331**	*e*P	**P**	**17 10 31.3**	**+1.5**
CTU	**Camp Tracy**	**31.81**	**331**	*e*P	**P**	**17 10 34.8**	**+1.0**
RSSD	**Black Hills**	**31.85**	**343**	*e*P	**P**	**17 10 33.4**	**-0.8**
	comp=N,4.9nm,0.8s,mb4.4						
HWUT	**Hardware Ranch**	**32.45**	**332**	*e*P	**P**	**17 10 40.0**	**+0.6**
	comp=N,15nm,0.9s,mb4.8						
PDAR	**Pinedale Array**	**32.53**	**336**	P	**P**	**17 10 40.4**	**+0.3**
	comp=N,1.3nm,0.6s,mb4.0,baz=134,slow=8.8,SNR=11						
PDAR				PcP	PcP	17 13 27.2	+1.3
	comp=N,1.2nm,0.6s,baz=153,slow=4.9,SNR=7.9						
PDAR				LR	LR	17 25 50.8	
	comp=N,168nm,18.8s,MS3.8,baz=153,slow=40						
BW06	**Boulder Array**	**32.54**	**336**	*e*P	**P**	**17 10 40.9**	**+0.8**
	comp=N,2.1nm,0.9s,mb4.1						
TPH	**Tonopah**	**32.89**	**322**	*e*P	**P**	**17 10 44.5**	**+1.2**
	comp=N,4.4nm,0.9s,mb4.4						
HVU	**Hansel Valley**	**33.14**	**331**	*e*P	**P**	**17 10 46.6**	**+1.2**
AHID	**Auburn Hatcher**	**33.17**	**334**	*e*P	**P**	**17 10 46.2**	**+0.5**
	comp=N,9.3nm,0.8s,mb4.8						
NVAR	**Mina Array Bea**	**33.77**	**321**	P	**P**	**17 10 53.2**	**+2.4**
	comp=N,8.8nm,0.7s,mb4.8,baz=130,slow=9.6,SNR=90						
NVAR				PcP	PcP	17 13 31.0	+1.6
	comp=N,1.5nm,0.7s,baz=118,slow=4.0,SNR=4.5						
NVAR	**Mina Array Bea**	**33.77**	**321**	P	**P**	**17 10 53.2**	**+2.4**
NVAR				PcP	PcP	17 13 31.0	+1.6
BMN	**Battle Mountai**	**34.46**	**325**	*e*P	**P**	**17 10 58.2**	**+1.6**
	comp=N,6.4nm,0.7s,mb4.7						
QLMT	**Earthquake Lak**	**35.00**	**336**	*e*P	**P**	**17 11 03.1**	**+1.8**
HLID	**Hailey**	**35.29**	**331**	*e*P	**P**	**17 11 04.5**	**+0.8**
	comp=N,15nm,1.0s,mb4.9						
MCMT	**McKenzie Canyo**	**35.59**	**334**	*e*P	**P**	**17 11 08.2**	**+1.9**
BOZ	**Bozeman (W)**	**35.76**	**336**	*e*P	**P**	**17 11 08.1**	**+0.3**
	comp=N,7.1nm,1.1s,mb4.5						
BEKR	**Beckwourth**	**35.92**	**321**	*e*P	**P**	**17 11 09.8**	**+0.7**
	comp=N,7.3nm,0.8s,mb4.7						
ULM	**Lac du Bonnet**	**36.41**	**356**	LR	LR	17 30 41.7	
	comp=N,178nm,18.4s,MS3.9,baz=202,slow=44						
WVOR	**Wild Horse Val**	**36.60**	**326**	*e*P	**P**	**17 11 15.7**	**+0.8**
	comp=N,11nm,0.7s,mb4.8						
WVOR				*e*PcP	PcP	17 13 38.0	+0.4
MOD	**Modoc**	**37.17**	**324**	*e*P	**P**	**17 11 20.2**	**+0.6**
	comp=N,10nm,1.0s,mb4.6						
MSO	**Missoula**	**37.65**	**335**	*e*P	**P**	**17 11 24.0**	**+0.4**
	comp=N,15nm,1.2s,mb4.6						
LPAZ	**La Paz**	**38.13**	**141**	P	**P**	**17 11 28.1**	**+0.2**
	comp=N,1.0nm,0.7s,mb3.7,baz=352,slow=10,SNR=3.6						
LPAZ				LR	LR	17 26 13.0	
	comp=N,171nm,21.2s,MS3.8,baz=200,slow=35						
YBH	**Yreka Blue Hor**	**38.47**	**322**	P	**P**	**17 11 30.8**	**+0.3**
	comp=N,1.2nm,0.5s,mb3.9,baz=129,slow=8.3,SNR=5.0						
LNOR	**Lincton Mounta**	**38.84**	**330**	*e*P	**P**	**17 11 34.4**	**+0.9**
NEW	**Newport**	**40.11**	**334**	P	**P**	**17 11 44.4**	**+0.4**
	comp=N,2.3nm,0.5s,mb4.2,baz=156,slow=9.7,SNR=5.0						
NEW				LR	LR	17 30 49.0	
	comp=N,296nm,18.8s,MS4.2,baz=237,slow=40						
NEW	**Newport**	**40.11**	**334**	P	**P**	**17 11 44.4**	**+0.4**
NEW				LR	LR	17 30 49.0	
DPW	**Davenport**	**40.28**	**333**	*e*P	**P**	**17 11 46.3**	**+0.8**
LON	**Longmire**	**41.20**	**329**	*e*P	**P**	**17 11 54.0**	**+0.9**
NLW	**Nelson Butte**	**41.41**	**331**	*e*P	**P**	**17 11 55.4**	**+0.7**
RPW	**Rockport**	**42.23**	**331**	*e*P	**P**	**17 12 01.6**	**+0.1**
PGC	**Sidney**	**43.30**	**330**	*e*P	**P**	**17 12 11.0**	**+0.7**
	comp=N,34nm,0.8s,mb5.1						
FCC	**Fort Churchill**	**44.83**	**358**	*e*P	**P**	**17 12 20.4**	**-2.0**
FCC				*e*PcP	PcP	17 14 02.8	-1.2
SCHQ	**Schefferville**	**45.33**	**20**	P	**P**	**17 12 24.3**	**-2.2**
SCHQ				PcP	PcP	17 14 05.0	-0.8
	comp=N,3.6nm,0.6s,baz=225,slow=7.1,SNR=4.7						
YKA	**Yellowknife Ar**	**51.15**	**347**	P	**P**	**17 13 10.4**	**-1.1**
	comp=N,6.7nm,0.6s,mb4.8,baz=148,slow=7.5,SNR=128						
YKA				PcP	PcP	17 14 26.4	-0.2
	comp=N,2.7nm,0.7s,baz=149,slow=4.0,SNR=16						
YKW3	**Yellowknife Ar**	**51.21**	**347**	*e*P	**P**	**17 13 10.2**	**-1.8**
CPUP	**Villa Florida**	**52.28**	**140**	LR	LR	17 37 26.1	
	comp=N,184nm,19.1s,MS4.1,baz=356,slow=38						
FRB	**Frobisher Bay**	**52.43**	**13**	LR	LR	17 37 21.0	
	comp=N,391nm,18.7s,MS4.5,baz=192,slow=38						
DLBC	**Dease Lake**	**52.77**	**336**	LR	LR	17 39 51.8	
	comp=N,169nm,19.3s,MS4.1,baz=129,slow=40						
DLBC	**Dease Lake**	**52.77**	**336**	*e*P	**P**	**17 13 24.8**	**+1.1**
PLCA	**Paso Flores**	**57.85**	**161**	LR	LR	17 33 32.0	
	comp=N,203nm,19.9s,MS4.2,baz=3.7,slow=30						
TRQA	**Tornquist**	**58.83**	**153**	P	**P**	**17 14 07.4**	**-0.2**
DAWY	**Dawson**	**59.80**	**338**	*e*P	**P**	**17 14 13.0**	**-0.9**
INK	**Inuvik**	**60.56**	**344**	*e*P	**P**	**17 14 18.0**	**-1.0**
	comp=N,23nm,1.1s,mb5.2						
EYAK	**Cordova Ski Ar**	**60.60**	**333**	*e*P	**P**	**17 14 19.8**	**+0.4**
RES	**Resolute Bay**	**60.82**	**359**	*e*P	**P**	**17 14 17.4**	**-3.4**
	comp=N,4.3nm,0.6s,mb4.8						
TOA	**Tolsona**	**61.47**	**334**	*e*P	**P**	**17 14 26.4**	**+1.1**
SML	**Sawmill**	**62.27**	**333**	*e*P	**P**	**17 14 30.1**	**-0.5**
PMS	**Palmer South**	**62.58**	**333**	*e*P	**P**	**17 14 32.9**	**+0.2**
KDAK	**Kodiak Island**	**62.83**	**328**	*e*P	**P**	**17 14 34.0**	**-0.4**
	comp=N,11nm,0.6s,mb5.2						
ILAR	**Eielson Array**	**62.96**	**337**	P	**P**	**17 14 34.8**	**-0.4**
	comp=N,43nm,1.3s,mb5.4,baz=126,slow=4.3,SNR=74						
MCK	**McKinley**	**63.31**	**335**	*e*P	**P**	**17 14 37.2**	**-0.3**
	comp=N,8.0nm,1.1s,mb4.8						
SPU	**Mount Spurr**	**63.69**	**332**	*e*P	**P**	**17 14 39.8**	**-0.2**
RSO	**Redoubt South**	**63.77**	**331**	*e*P	**P**	**17 14 40.5**	**0.0**
SVW	**Sparrevohn**	**65.30**	**331**	*e*P	**P**	**17 14 50.0**	**-0.5**
IMA	**Indian Mountai**	**66.08**	**337**	*e*P	**P**	**17 14 55.0**	**-0.3**
	comp=N,21nm,1.1s,mb5.1						
ESDC	**Sonseca Array**	**79.79**	**52**	P	**P**	**17 16 14.6**	**-1.8**
	comp=N,0.4nm,0.4s,mb3.7,baz=288,slow=4.7,SNR=4.6						
BILL	**Bilibino**	**81.58**	**338**	*e*P	**P**	**17 16 26.1**	**+0.9**
	comp=N,47nm,1.2s,mb5.3						
NB2	**NORSAR Subarra**	**84.25**	**28**	P	**P**	**17 16 38.6**	**-0.3**
	comp=N,2.3nm,0.9s,mb4.3,baz=289,slow=5.3						
NOA	**NORSAR Array B**	**84.25**	**28**	P	**P**	**17 16 38.4**	**-0.5**
	comp=N,1.4nm,0.7s,mb4.2,baz=290,slow=5.2,SNR=4.7						
NOA				LR	LR	17 54 43.7	
	comp=N,59nm,19.9s,MS4.0,baz=90,slow=36						
ARCES	**ARCESS Array B**	**86.25**	**18**	P	**P**	**17 16 48.0**	**-0.6**
	comp=N,1.2nm,0.5s,mb4.4,baz=304,slow=4.4,SNR=21						
ARCES				LR	LR	17 54 36.0	
	comp=N,159nm,21.8s,MS4.4,baz=4.0,slow=35						
FINES	**FINESS Array B**	**90.61**	**25**	P	**P**	**17 17 08.0**	**-1.6**
	comp=N,0.4nm,0

σ0$83/13, **1C, Jan Mayen Island region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JNE	**Jan Mayen East**	**0.55**	**270**	*e*P	**Pg**	**17 27 31.5**	**+0.8**
JNE				*e*S	**Sg**	**17 27 38.1**	**+0.1**
JNE				AML	AML	17 27 42.1	
	comp=Z,1μm,0.5s						
JNW	**Jan Mayen West**	**0.59**	**274**	⇑*i*P	**Pg**	**17 27 31.9**	**+0.4**
JNW				*e*S	**Sg**	**17 27 38.6**	**-0.8**
JNW				AML	AML	17 27 41.4	
	comp=Z,905nm,0.3s						
JMIC	**Jan Mayen**	**0.62**	**270**	Pg	**Pg**	**17 27 32.3**	**+0.3**
JMIC				Lg		17 27 39.5	
JMI	**Jan Mayen**	**0.69**	**265**	*e*P	**Pb**	**17 27 33.9**	**+0.6**
JMI				*e*S	**Sb**	**17 27 41.7**	**-0.9**
JMI				AML	AML	17 27 44.5	
	comp=Z,2μm,0.3s						
KBS	**Kingsbay**	**9.23**	**23**	Pn	**P**	**17 29 35.6**	**-0.3**
SPA0	**Spitsbergen Ar**	**9.35**	**30**	Pn	**P**	**17 29 37.6**	**+0.1**
	baz=219,slow=16						
NSS	**Namsos**	**9.54**	**124**	*e*P	**P**	**17 29 38.0**	**-1.9**
ARA0	**ARCESS Array S**	**10.88**	**82**	Pn	**P**	**17 29 57.5**	**-0.7**
	baz=308,slow=11						
HFS	**Hagfors**	**13.66**	**133**	Pn	**P**	**17 30 35.7**	**+0.3**
	baz=308,slow=22						
FIA0	**FINESS Array S**	**16.05**	**110**	P	**P**	**17 31 08.1**	**+1.6**
	baz=268,slow=12						

*NEIC **06** 17:36:33.9±0.2, 10.00S×74.71W, mb4.8/14, Error ellipse: s-maj=9.1km s-min=4.6km az=65.0*
NEIC Felt [III] at Puerto Bermudez.
*SYO **06** 17:36:33.9, 10.00S×74.71W, h19km, MB4.8*
*IDC **06** 17:36:33.9±0.7, 9.94S×74.71W, h17km±2km, mb4.2/14, mb1 4.3/18, mb1mx4.3/23, ML3.8/4, MS3.6/5, Ms1 3.6/5, ms1mx3.4/18, Error ellipse: s-maj=31.2km s-min=15.7km az=63.0*
*BJI **06** 17:36:35.9, 10.00S×74.70W, h19km, mB4.6, Ms4.8, Msz4.5*

ISC 06 17:36:32.5±0.3, 9.92S±0.06×74.74W±0.09, h19km, h19km±.3km: pP-P, n90, σ0$89/67, mb4.5/29, MS3.7/3, 2C-1D, Central Peru

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ARE	**Arequipa**	**7.23**	**154**	P	**Pn**	**17 38 22.0**	**+2.1**
LPAZ	**La Paz**	**9.03**	**135**	Pn	**P**	**17 38 45.9**	**+1.0**
	0.3nm,0.3s,baz=318,slow=14,SNR=11						
LPAZ				Lg		17 41 15.2	
	1.8nm,0.3s,baz=180,slow=12,SNR=3.8						
LPAZ				LR	LR	17 42 56.1	
	comp=Z,148nm,19.8s,baz=40,slow=42						
OTAV	**Otavalo**	**10.75**	**340**	*e*P	**P**	**17 39 09.3**	**+0.6**
	10nm,0.6s						
LVC	**Limon Verde**	**13.80**	**157**	Pn	**P**	**17 39 51.6**	**+1.9**
	0.3nm,0.3s,baz=356,slow=13,SNR=3.6						
LVC				LR	LR	17 45 58.9	
	comp=Z,65nm,21.6s,baz=273,slow=41						
LVC	**Limon Verde**	**13.80**	**157**	*e*P	**P**	**17 39 48.1**	**-1.6**
LVC				LR	LR	17 45 58.9	
ROSC	**El Rosal**	**14.69**	**2**	Pn	**P**	**17 40 05.5**	**+4.1**
	1.3nm,0.3s,baz=126,slow=20,SNR=2.8						
ROSC				Lg		17 44 23.9	
	1.6nm,0.3s,baz=201,slow=21,SNR=5.3						
SDV	**Santo Domingo**	**19.13**	**12**	P	**P**	**17 40 58.1**	**+0.9**
	1.8nm,0.3s,baz=298,slow=9.5,SNR=9.2						
PCRV	**Puerto La Cruz**	**22.36**	**27**	LR	LR	17 51 03.1	
	comp=Z,270nm,18.6s,MS3.7,baz=50,slow=39						
CPUP	**Villa Florida**	**23.19**	**137**	P	**P**	**17 41 38.9**	**-0.4**
	4.0nm,1.0s,mb3.8,baz=267,slow=9.5,SNR=4.0						
CPUP				LR	LR	17 53 09.5	
	comp=Z,163nm,21.8s,MS3.4,baz=348,slow=43						
BDFB	**Brasilia**	**26.66**	**105**	LR	LR	17 53 16.3	
	comp=Z,407nm,18.2s,MS4.0,baz=294,slow=38						
TRQA	**Tornquist**	**30.27**	**160**	*e*P	**P**	**17 42 42.1**	**-2.6**
PLCA	**Paso Flores**	**30.91**	**174**	P	**P**	**17 42 49.8**	**-0.5**
	3.5nm,0.8s,mb4.2,baz=339,slow=11,SNR=7.6						
TXAR	**Lajitas Array**	**47.97**	**325**	P	**P**	**17 45 13.1**	**+0.8**
	1.1nm,0.3s,mb4.3,baz=149,slow=10,SNR=4.7						
TXAR				sP	sP	17 45 19.1	-1.2
	1.2nm,0.3s,baz=166,slow=5.2,SNR=1.5						
MVL	**Millersville**	**49.69**	**358**	*e*P	**P**	**17 45 25.8**	**+0.5**
MVL				*e*	pP	17 45 31.9	+0.8
CCM	**Cathedral Cave**	**50.16**	**343**	P	**P**	**17 45 27.1**	**-1.9**
BINY	**Binghamton**	**51.88**	**359**	*e*P	**P**	**17 45 42.1**	**+0.2**
BINY				*e*	pP	17 45 48.0	+0.2
ANMO	**Albuquerque**	**53.78**	**328**	*e*P	**P**	**17 45 56.4**	**+0.1**
SDCO	**Great Sand Dun**	**55.47**	**331**	P	**P**	**17 46 08.9**	**+0.3**
	4.9nm,0.8s,mb4.6						
WUAZ	**Wupatki**	**56.91**	**324**	*e*P	**P**	**17 46 19.4**	**+0.5**
WUAZ				*e*	pP	17 46 25.9	+1.1
PV01	**Paradox Valley**	**57.31**	**329**	*e*P	**P**	**17 46 22.0**	**+0.3**
PV01				*e*	pP	17 46 27.6	+0.1
BW06	**Boulder Array**	**61.33**	**331**	*e*P	**P**	**17 46 49.1**	**-0.2**
	1.9nm,0.7s,mb4.3						
BW06				*e*pP	pP	17 46 55.4	+0.1
PDAR	**Pinedale Array**	**61.33**	**331**	P	**P**	**17 46 49.1**	**-0.2**
	0.8nm,0.6s,mb4.0,baz=135,slow=8.4,SNR=8.3						
PDAR				pP	pP	17 46 55.0	-0.3
	2.0nm,0.9s,baz=135,slow=6.3,SNR=8.1						
HWUT	**Hardware Ranch**	**61.43**	**329**	*e*P	**P**	**17 46 49.9**	**-0.2**
	5.9nm,0.6s,mb4.9						
HWUT				*e*pP	pP	17 46 55.4	-0.6
ULM	**Lac du Bonnet**	**62.70**	**345**	P	**P**	**17 46 57.5**	**-0.9**
	7.3nm,0.7s,mb4.9,baz=148,slow=5.3,SNR=6.0						
ULM				pP	pP	17 47 03.1	-1.2
	8.2nm,0.9s,baz=189,slow=5.7,SNR=4.7						
ULM	**Lac du Bonnet**	**62.70**	**345**	*e*P	**P**	**17 46 56.7**	**-1.7**
	13nm,0.9s,mb5.0						
NVAR	**Mina Array Bea**	**62.95**	**323**	P	**P**	**17 46 59.9**	**-0.4**
	0.4nm,0.6s,mb3.7,baz=136,slow=8.4,SNR=4.8						
NVAR				sP	sP	17 47 07.7	-0.6
	1.6nm,0.9s,baz=132,slow=6.7,SNR=7.7						
NVAR	**Mina Array Bea**	**62.95**	**323**	P	**P**	**17 46 59.9**	**-0.4**
NVAR				sP	sP	17 47 07.7	-0.6
HLID	**Hailey**	**64.30**	**329**	*e*P	**P**	**17 47 09.3**	**+0.3**
	1.2nm,0.8s,mb4.0						
MCMT	**McKenzie Canyo**	**64.44**	**331**	*e*P	**P**	**17 47 10.5**	**+0.5**
BOZ	**Bozeman (W)**	**64.48**	**332**	*e*P	**P**	**17 47 09.8**	**-0.5**
	1.5nm,0.8s,mb4.1						
YBH	**Yreka Blue Hor**	**67.65**	**323**	P	**P**	**17 47 30.0**	**-0.6**
	1.2nm,0.8s,mb4.0,baz=58,slow=4.0,SNR=4.5						
YBH				pP	pP	17 47 36.0	-0.5
	2.8nm,0.8s,baz=55,slow=6.5,SNR=4.9						
WALA	**Waterton Lakes**	**68.07**	**333**	*e*P	**P**	**17 47 32.8**	**-0.2**
	2.7nm,0.8s,mb4.3						
WALA				*e*pP	pP	17 47 38.6	-0.3
FFC	**Flin Flon**	**68.36**	**343**	*e*P	**P**	**17 47 33.4**	**-1.4**
	2.8nm,0.8s,mb4.3						
FFC				*e*pP	pP	17 47 40.1	-0.6
FCC	**Fort Churchill**	**70.22**	**349**	*e*P	**P**	**17 47 44.5**	**-1.6**
NLW	**Nelson Butte**	**70.41**	**329**	*e*P	**P**	**17 47 47.7**	**+0.2**
NLW				*e*pP	pP	17 47 53.7	+0.3
LIC	**Lamto**	**71.27**	**80**	*e*P	**P**	**17 47 52.0**	**-1.2**
	49nm,1.5s,mb5.2						
TIC	**Toumodi**	**71.36**	**80**	*e*P	**P**	**17 47 52.2**	**-1.6**
	32nm,0.9s,mb5.2						
DBIC	**Dimbokro**	**71.53**	**80**	P	**P**	**17 47 53.4**	**-1.4**
	3.4nm,0.6s,mb4.4,baz=192,slow=9.5,SNR=3.3						
KIC	**Kosan Boka**	**71.57**	**80**	*e*P	**P**	**17 47 53.5**	**-1.6**
	43nm,0.8s,mb5.4						
VNA3	**Neumayer Olymp**	**72.76**	**162**	⇑*i*	**P**	**17 48 04.2**	**+3.1**
VNA2	**Neumayer--Watz**	**73.36**	**162**		**P**	**17 48 00.4**	**-4.2**
FRB	**Frobisher Bay**	**73.60**	**3**	P	**P**	**17 48 06.2**	**+0.1**
	6.6nm,0.7s,mb4.7,baz=189,slow=6.7,SNR=10						
FRB				pP	pP	17 48 11.9	-0.2
	2.5nm,0.7s,baz=204,slow=6.8,SNR=2.8						
SNAA	**Sanae**	**74.98**	**162**	⇓*i*	**P**	**17 48 13.6**	**-0.3**
YKA	**Yellowknife Ar**	**78.49**	**342**	P	**P**	**17 48 33.6**	**-0.1**
	1.0nm,0.6s,mb3.9,baz=140,slow=6.3,SNR=35						
YKA				pP	pP	17 48 39.2	-0.5
	2.2nm,0.8s,baz=137,slow=6.3,SNR=18						
YKA	**Yellowknife Ar**	**78.49**	**342**	P	**P**	**17 48 33.6**	**-0.1**
YKA				pP	pP	17 48 39.2	-0.5
YKW3	**Yellowknife Ar**	**78.55**	**342**	*e*P	**P**	**17 48 33.6**	**-0.4**
YKW3				*e*pP	pP	17 48 39.5	-0.6
DLBC	**Dease Lake**	**81.40**	**334**	P	**P**	**17 48 50.4**	**+1.0**
	2.5nm,1.1s,mb4.1,baz=134,slow=9.2,SNR=5.1						
DLBC	**Dease Lake**	**81.40**	**334**	*e*P	**P**	**17 48 49.6**	**+0.3**
ROSF	**Rostrenen**	**85.33**	**39**	*e*P	**P**	**17 49 10.2**	**+0.6**
SBA	**Scott Base**	**86.12**	**191**	P	**P**	**17 49 13.7**	**+0.7**
MFF	**Saint Martin d**	**86.76**	**42**	*e*P	**P**	**17 49 17.5**	**+0.7**
	14nm,0.6s,mb5.1						
GRR	**Gorron**	**86.86**	**40**	*e*P	**P**	**17 49 17.6**	**+0.4**
	16nm,0.7s,mb5.1						
FLN	**La Foliniere**	**87.22**	**40**	*e*P	**P**	**17 49 19.5**	**+0.5**
DAWY	**Dawson**	**88.18**	**337**	*e*P	**P**	**17 49 23.4**	**+0.2**
INK	**Inuvik**	**88.23**	**341**	P	**P**	**17 49 24.1**	**+0.8**
	5.1nm,0.7s,mb4.9,baz=111,slow=4.8,SNR=30						
INK				pP	pP	17 49 29.9	+0.5
	5.2nm,0.6s,baz=108,slow=4.3,SNR=15						
INK	**Inuvik**	**88.23**	**341**	*e*P	**P**	**17 49 23.4**	**+0.1**
	3.5nm,0.6s,mb4.8						
INK				*e*pP	pP	17 49 29.1	-0.3
TCF	**Toulx Ste Croi**	**88.23**	**43**	*e*P	**P**	**17 49 23.7**	**-0.1**
BGF	**Bois d'Agland**	**88.73**	**42**	*e*P	**P**	**17 49 26.3**	**+0.1**
	21nm,0.7s,mb5.3						
AVF	**Avril sur Loir**	**89.12**	**42**	*e*P	**P**	**17 49 27.8**	**-0.3**
	7.8nm,0.6s,mb4.9						
SYO	**Syowa Base**	**89.23**	**161**	⇑pP	pP	17 49 34.9	+0.7
SMF	**Signal de Mont**	**89.41**	**42**	*e*P	**P**	**17 49 29.4**	**-0.1**
LOR	**Lormes**	**89.58**	**42**	*e*P	**P**	**17 49 29.9**	**-0.4**
	10nm,0.8s,mb4.9						
ORIF	**Oris-en-Rattie**	**90.37**	**45**	*e*P	**P**	**17 49 34.6**	**+0.6**
CABF	**La Chapelle**	**90.90**	**43**	*e*P	**P**	**17 49 36.7**	**+0.3**
GIVF	**Givet**	**90.92**	**39**	*e*P	**P**	**17 49 36.7**	**+0.3**
LPL	**La Plagne**	**91.09**	**44**	*e*P	**P**	**17 49 38.4**	**+1.1**
LPG	**La Plagne**	**91.10**	**44**	*e*P	**P**	**17 49 38.6**	**+1.3**
ILAR	**Eielson Array**	**91.44**	**336**	P	**P**	**17 49 38.8**	**+0.4**
	0.6nm,0.8s,mb4.0,baz=136,slow=2.8,SNR=6.7						
CDF	**Champ du Feu**	**92.09**	**41**	*e*P	**P**	**17 49 42.0**	**+0.2**
NOA	**NORSAR Array B**	**96.65**	**29**	P	**P**	**17 50 03.4**	**+1.0**
	1.1nm,0.8s,mb4.3,baz=258,slow=4.5,SNR=3.3						
ASAR	**Alice Springs**	**136.42**	**220**	PKP	PKPdf	17 55 55.2	-2.8
	0.8nm,0.7s,baz=131,slow=2.4,SNR=7.2						
MKAR	**Makanchi Array**	**138.39**	**24**	PKP	PKPdf	17 55 58.4	-2.7
	0.5nm,0.7s,baz=272,slow=0.9,SNR=6.2						
MKAR	**Makanchi Array**	**138.39**	**24**	PKP	PKPdf	17 55 58.4	-2.7
WRA	**Warramunga Arr**	**138.76**	**224**	PKP	PKPdf	17 55 59.9	-2.5
	0.7nm,0.5s,baz=133,slow=1.5,SNR=11						
MDJ	**Mudanjiang**	**139.55**	**333**	PKP	PKPdf	17 56 00.3	-2.9
CN2	**Changchun**	**141.96**	**336**	*e*PKP	PKPdf	17 56 01.6	-5.9
SONM	**Songino Array**	**142.20**	**359**	PKhKP		17 56 00.7	
	0.4nm,0.6s,baz=307,slow=2.0,SNR=5.0						
WMQ	**Urumqi**	**142.94**	**21**	*e*PKP	PKPdf	17 56 06.1	-3.1
KAKA	**Kakadu**	**144.90**	**231**	*e*PKP	PKPdf	17 56 08.9	-4.6
	9.2nm,0.6s						
FITZ	**Fitzroy Crossi**	**145.65**	**216**	*e*PKP	PKPdf	17 56 12.5	-2.1
	10.0nm,0.9s						
FITZ	**Fitzroy Crossi**	**145.65**	**216**	PKPbc	PKPbc	17 56 12.6	+1.2
	13nm,0.9s,baz=182,slow=5.2,SNR=13						
BJI	**Beijing**	**148.47**	**344**	*e*PKP	PKPdf	17 56 19.5	+0.8
GTA	**Gaotai**	**150.24**	**9**	*e*PKP	PKPdf	17 56 24.9	+3.4
KOLN	**Koldanda**	**152.97**	**46**	*e*P	PKPab	17 56 42.6	-0.3
	13nm,0.9s						
GKN	**Gorkha**	**153.55**	**44**	*e*P	PKPab	17 56 45.4	+0.1
	21nm,0.9s						
DMN	**Daman**	**154.12**	**44**	*e*P	PKPab	17 56 48.2	+0.5
	31nm,0.8s						
KKN	**Kakani**	**154.12**	**44**	*e*P	PKPab	17 56 47.8	+0.1
	15nm,0.7s						
PKI	**Pulchoki**	**154.35**	**44**	*e*P	PKPab	17 56 48.8	+0.1
	15nm,0.7s						
GUN	**Gumba**	**154.45**	**43**	*e*P	PKPab	17 56 49.8	+0.7
	34nm,1.1s						
NJ2	**Nanjing**	**154.64**	**332**	*e*PKP	PKPdf	17 56 21.6	-6.4

*NEIC **06** 18:00:25.9, 39.81N×6.44W, MN1.9(MDD), After MDD.*
*MDD **06** 18:00:26.8±0.5, 39.76N×6.36W, mbLg1.6/8, Error ellipse: s-maj=6.0km s-min=4.3km az=26.0, PRXIMO*
*INMG **06** 18:00:27.1±0.9, 39.73N×6.39W, ML1.5, Error ellipse: s-maj=2.7km s-min=1.8km az=73.0*

ISC 06 18:00:24.8±0.6, 39.70N±0.04×6.35W±0.04, n15, σ0$65/25, Spain

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCBR	**Castelo Branco**	**0.88**	**279**	*e*P	**Pg**	**18 00 42.8**	**+0.5**
PCBR				*e*S	**Sg**	**18 00 53.7**	**-0.3**
	4.6nm,0.2s						
PCBR	**Castelo Branco**	**0.88**	**279**	P	**Pg**	**18 00 42.8**	**+0.5**
PCBR				S	**Sg**	**18 00 53.7**	**-0.3**
	2.3nm,0.2s						
MTE	**Manteigas**	**1.15**	**308**	*e*P	**Pb**	**18 00 47.4**	**+0.2**
MTE				*e*S	**Sb**	**18 01 02.4**	**-0.1**
	4.7nm,0.1s						
MTE	**Manteigas**	**1.15**	**308**	P	**Pb**	**18 00 47.4**	**+0.2**
MTE				S	**Sb**	**18 01 02.4**	**-0.1**
	2.3nm,0.1s						
PVIS	**Viseu**	**1.56**	**311**	*e*P	**Pn**	**18 00 54.6**	**+0.8**
PVIS				*e*S	**Sb**	**18 01 14.2**	**-0.1**
	5.9nm,0.2s						
PVIS	**Viseu**	**1.56**	**311**	P	**Pn**	**18 00 54.6**	**+0.8**
PVIS				S	**Sb**	**18 01 14.2**	**-0.1**
	3.0nm,0.2s						
ESDC	**Sonseca Array**	**1.84**	**90**	Pg	**Pg**	**18 01 01.0**	**-0.6**
	1.1nm,0.2s,baz=279,slow=17,SNR=5.1						
ESDC				Lg		18 01 25.2	
	1.0nm,0.3s,baz=278,slow=28,SNR=7.9						
GUD	**Guadarrama**	**1.93**	**60**	Pg	**Pg**	**18 01 02.5**	**-0.8**
	2.8nm,0.2s,SNR=6.9						
GUD				Lg		18 01 27.6	
	2.7nm,0.2s,SNR=5.0						
EMIN	**Mina Concepcio**	**1.95**	**187**	Pn	**Pn**	**18 00 59.9**	**+0.5**
	0.1nm,0.2s,SNR=5.0						
EMIN				Pg	**Pg**	**18 01 03.7**	**0.0**
	0.3nm,0.1s,SNR=8.0						
EMIN				Lg		18 01 30.0	
	2.1nm,0.1s,SNR=5.0						
EMIN	**Mina Concepcio**	**1.95**	**187**	Pn	**Pn**	**18 00 59.9**	**+0.5**
EMIN				Pg	**Pg**	**18 01 04.0**	**+0.4**
EMIN				Lg		18 01 30.0	
MOE	**Montemor**	**1.95**	**233**	*e*Sg	**Sg**	**18 01 28.7**	**-1.0**
EADA	**Adamuz**	**2.07**	**137**	Pn	**Pn**	**18 01 02.5**	**+1.4**
	0.2nm,0.2s,SNR=7.9						
EADA				Pg	**Pg**	**18 01 05.4**	**-0.6**
	0.5nm,0.1s,SNR=11						
EADA				Lg		18 01 32.6	
	3.4nm,0.1s,SNR=11						
EADA	**Adamuz**	**2.07**	**137**	Pn	**Pn**	**18 01 02.5**	**+1.4**
EADA				Pg	**Pg**	**18 01 05.4**	**-0.7**
EADA				Lg		18 01 32.6	
ECAL	**Calabor**	**2.26**	**353**	Pg	**Pg**	**18 01 04.1**	**-5.7**
	0.7nm,0.4s,SNR=7.9						
ECAL				Lg		18 01 35.3	
	4.2nm,0.4s,SNR=4.7						
ECAL	**Calabor**	**2.26**	**353**	Pg	**Pg**	**18 01 04.0**	**-5.9**
ECAL				Lg		18 01 35.3	

*IDC **06** 18:01:20.8±0.9, 28.97N×102.34E, mb3.8/8, mb1 3.9/10, mb1mx3.8/18, ML3.6/2, MS3.2/1, Ms1 3.2/1, ms1mx2.7/21, Error ellipse: s-maj=53.0km s-min=16.8km az=64.0*
*BJI **06** 18:01:24.3, 29.03N×102.44E, h18km, ML3.8, Ms3.7, Msz3.7*

ISC 06 18:01:20.7±0.6, 28.96N±0.04×102.50E±0.06, h10km, n16, σ0$96/25, mb3.8/8, MS3.0/1, Sichuan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CD2	**Chengdu**	**2.23**	**29**	P	**Pn**	**18 02 03.5**	**+5.2**
CD2				PG	**Pg**	**18 02 05.0**	**-0.3**
CD2				S	**Sn**	**18 02 31.8**	**+5.7**
CD2				SG	**Sg**	**18 02 34.8**	**-0.2**
CD2				S	Sn		
	comp=N,3μm,0.6s						
CD2				S	Sn		
	comp=E,4μm,0.6s						
KMI	**Kunming**	**3.83**	**177**	*e*P	**Pn**	**18 02 25.1**	**+4.0**
KMI				PG	**Pg**	**18 02 36.1**	**-1.1**
KMI				S	**Sn**	**18 03 10.4**	**+3.7**
KMI				SG	**Sg**	**18 03 22.3**	**-6.0**
KMI				S	Sn		
	comp=N,113nm,1.4s						
KMI				S	Sn		
	comp=E,115nm,1.2s						
KMI				LR	LR		
	comp=N,347nm,3.8s						
KMI				LR	LR		
	comp=E,641nm,6.1s						
GYA	**Guiyang**	**4.46**	**123**	P	**Pn**	**18 02 35.4**	**+5.4**
GYA				PG	**Pg**	**18 02 49.7**	**0.0**
GYA				S	**Sn**	**18 03 28.5**	**+5.9**
GYA				SG	**Sg**	**18 03 48.8**	**-0.4**
GYA				S	Sn		
	comp=N,160nm,0.9s						
GYA				S	Sn		
	comp=E,120nm,0.9s						
XAN	**Xi'an**	**7.46**	**46**	P	**Pn**	**18 03 13.4**	**+1.0**
XAN				S	**Sn**	**18 04 38.2**	**+0.3**
XAN				S	Sn		
	comp=N,48nm,0.7s						
XAN				S	Sn		
	comp=E,70nm,0.8s						
CMAR	**Chiang Mai Arr**	**10.95**	**198**	Pn	**P**	**18 04 04.0**	**+3.4**
	comp=E,0.0nm,0.3s,baz=13,slow=12,SNR=4.1						
SONM	**Songino Array**	**19.09**	**8**	P	**P**	**18 05 46.5**	**+0.6**
	comp=E,0.2nm,0.3s,baz=190,slow=12,SNR=12						
MKAR	**Makanchi Array**	**23.79**	**324**	P	**P**	**18 06 35.3**	**+1.1**
	comp=E,0.7nm,0.4s,mb3.4,baz=120,slow=11,SNR=12						
JNU	**Nakatsue**	**24.64**	**73**	LR	LR	18 17 04.8	
	comp=E,50nm,19.1s,MS3.0,baz=55,slow=38						
WRA	**Warramunga Arr**	**57.52**	**144**	P	**P**	**18 11 12.9**	**0.0**
	comp=E,1.2nm,0.5s,mb4.2,baz=328,slow=8.6,SNR=42						
WB2	**Warramunga Arr**	**57.53**	**144**	*e*P	**P**	**18 11 12.7**	**-0.2**
FINES	**FINESS Array B**	**58.58**	**327**	P	**P**	**18 11 18.1**	**-1.6**
	comp=E,2.7nm,1.1s,mb4.2,baz=90,slow=6.9,SNR=5.8						
ARCES	**ARCESS Array B**	**58.65**	**336**	P	**P**	**18 11 18.2**	**-1.8**
	comp=E,1.4nm,0.8s,mb4.0,baz=89,slow=7.7,SNR=6.1						
ASAR	**Alice Springs**	**60.43**	**147**	P	**P**	**18 11 33.1**	**+0.1**
	comp=E,0.6nm,0.8s,mb3.7,baz=329,slow=6.3,SNR=16						
STKA	**Stephens Creek**	**71.01**	**145**	P	**P**	**18 12 40.9**	**+0.1**
	comp=E,0.9nm,0.7s,mb3.8,baz=125,slow=23,SNR=3.5						
ILAR	**Eielson Array**	**72.36**	**25**	P	**P**	**18 12 48.4**	**0.0**
	comp=E,0.5nm,1.0s,mb3.4,baz=292,slow=7.7,SNR=4.2						
YKA	**Yellowknife Ar**	**84.14**	**16**	P	**P**	**18 13 53.2**	**+0.4**
	comp=E,0.3nm,0.7s,mb3.5,baz=327,slow=4.5,SNR=7.9						

IDC 06 19:02:51.2±2.4, 6.35S×130.50E, mb3.5/1, mb1 3.4/3, mb1mx3.2/11, ML3.1/2, Error ellipse: s-maj=140.0km s-min=32.0km az=70.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**14.02**	**165**	Pn	P	19 06 10.6	-2.9
	0.2nm,0.3s,baz=348,slow=14,SNR=24						
WRA				Sn	S	19 08 31.8	-19
	0.1nm,0.3s,baz=336,slow=22,SNR=5.2						
ASAR	**Alice Springs**	**17.52**	**170**	P	P	19 06 57.6	-1.0
	0.1nm,0.3s,baz=341,slow=9.0,SNR=6.2						
MKAR	**Makanchi Array**	**67.96**	**326**	P	P	19 13 52.0	-2.1
	0.2nm,0.3s,baz=116,slow=8.2,SNR=5.6						

*LDG **06** 19:47:34.5±0.3, 42.83N×1.51W, h2km, Md2.6/2, Ml2.8/1, Error ellipse: s-maj=4.5km s-min=3.1km az=68.0*
*NEIC **06** 19:47:34.5, 42.83N×1.51W, h2km, ML2.8(LDG), ML2.4(STR), After LDG.*
*STR **06** 19:47:34.1±0.9, 42.83N×1.49W, h10km±1km, Ml2.4, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
*MDD **06** 19:47:36.7±0.4, 42.88N×1.39W, mbLg1.9/9, Error ellipse: s-maj=3.2km s-min=2.5km az=49.0, PRXIMO*

ISC 06 19:47:34.9±0.6, 42.81N±0.03×1.38W±0.05, h2km, n24, σ0$93/35, 2D, Pyrenees

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SJPF	**Ste Jean**	**0.32**	**21**	*e*Pg	**Pg**	**19 47 41.0**	**-0.4**
SJPF				*e*Sg	**Sg**	**19 47 45.3**	**-0.4**
	87nm,0.3s						
LARF	**Larrau**	**0.37**	**52**	Pg	**Pg**	**19 47 42.3**	**0.0**
LARF				Sg	**Sg**	**19 47 48.3**	**+1.0**
EALK	**Alkurruntz**	**0.42**	**348**	Pg	**Pg**	**19 47 43.1**	**-0.2**
	3.0nm,0.2s,SNR=16						
EALK				Lg		19 47 48.4	
	112nm,0.3s,SNR=5.0						
EALK	**Alkurruntz**	**0.42**	**348**	Pg	**Pg**	**19 47 43.1**	**-0.2**
EALK				Lg		19 47 49.0	
OSSF	**Osses**	**0.45**	**11**	Pg	**Pg**	**19 47 43.4**	**-0.6**
OSSF				Sg	**Sg**	**19 47 49.2**	**-0.9**
OSSF	**Osses**	**0.45**	**11**	P	**Pg**	**19 47 43.4**	**-0.6**
OSSF				S	**Sg**	**19 47 50.2**	**+0.1**
ORDF	**Ordiarp**	**0.52**	**39**	Pg	**Pg**	**19 47 45.2**	**-0.1**
ORDF				Sg	**Sg**	**19 47 53.3**	**+1.0**
ETSF	**Etsaut**	**0.61**	**81**	*e*Pg	**Pg**	**19 47 46.9**	**-0.3**
ETSF				*e*Pn	**Pn**	**19 47 49.7**	**-0.6**
ETSF				*e*Sg	**Sg**	**19 47 56.4**	**+1.0**
	29nm,0.3s						
ETSF	**Etsaut**	**0.61**	**81**	Pg	**Pg**	**19 47 46.9**	**-0.3**
ETSF				Lg		19 47 56.4	
	15nm,0.3s						
ESAC	**San Caprasio**	**1.28**	**148**	⇓Pn	**Pn**	**19 48 01.3**	**+1.4**
	32nm,0.3s,SNR=18						
ESAC				Lg

PBEJ	**Beja**	**1.98**	**44**	Pn		**Pn**	**20 07 40.3**	**+0.1**
PBEJ				Sn		**Sn**	**20 08 05.3**	**0.0**
	0.9nm,0.1s							
MOE	**Montemor**	**2.15**	**27**	*e*Pn		**Pn**	**20 07 43.1**	**+0.4**
MOE				*e*Sn		**Sn**	**20 08 09.6**	**-0.1**
PLOU	**Loures**	**2.30**	**9**	*e*Pn		**Pn**	**20 07 42.7**	**-2.0**
PLOU				*e*Sn		**Sn**	**20 08 11.7**	**-1.6**
	5.6nm,0.1s							
PLOU	**Loures**	**2.30**	**9**	Pn		**Pn**	**20 07 42.7**	**-2.0**
PLOU				Sn		**Sn**	**20 08 11.7**	**-1.6**
	2.8nm,0.1s							
EMIN	**Mina Concepcio**	**2.61**	**63**	Pn		**Pn**	**20 07 49.4**	**+0.2**
	0.4nm,0.1s,SNR=12							
EMIN				Sn		**Sn**	**20 08 21.4**	**0.0**
	0.3nm,0.1s,SNR=7.9							
EMIN	**Mina Concepcio**	**2.61**	**63**	P		**Pn**	**20 07 49.4**	**+0.1**
EMIN				S		**Sn**	**20 08 20.3**	**-1.0**
ESPR	**Espera**	**3.03**	**84**	Pn		**Pn**	**20 07 55.4**	**+0.3**
	0.1nm,0.0s,SNR=7.9							
ESPR				Sn		**Sn**	**20 08 31.0**	**-0.8**
	9.1nm,0.2s,SNR=7.9							
ESPR	**Espera**	**3.03**	**84**	P		**Pn**	**20 07 55.2**	**0.0**
ESPR				S		**Sn**	**20 08 31.2**	**-0.6**
ELIJ	**Sierra de Lija**	**3.41**	**84**	Pn		**Pn**	**20 08 01.8**	**+1.3**
	0.1nm,0.1s,SNR=4.0							
ELIJ				Sn		**Sn**	**20 08 39.3**	**-2.2**
	0.3nm,0.2s,SNR=7.9							
ELIJ	**Sierra de Lija**	**3.41**	**84**	P		**Pn**	**20 08 01.8**	**+1.2**
ELIJ				S		**Sn**	**20 08 40.3**	**-1.2**
EADA	**Adamuz**	**4.30**	**67**	Pn		**Pn**	**20 08 13.0**	**-0.2**
	0.2nm,0.1s,SNR=7.9							
EADA				Sn		**Sn**	**20 09 02.0**	**-2.0**
	0.5nm,0.1s,SNR=5.0							
EADA	**Adamuz**	**4.30**	**67**	P		**Pn**	**20 08 13.1**	**-0.1**
EADA				S		**Sn**	**20 09 01.7**	**-2.3**

*IDC **06** 20:21:32.7±1.1,10.20S×73.67W,h36km±9km,mb3.8/7, mb1 4.0/10,mb1mx3.9/19,ML4.0/3,MS3.6/6,Ms1 3.7/6, ms1mx3.4/23,Error ellipse: s-maj=29.1km s-min=19.3km az=62.0*

*NEIC **06** 20:21:34.2±1.1,10.29S×73.76W,h56km±12km,mb4.3/4, Error ellipse: s-maj=23.2km s-min=7.9km az=64.0*

NEIC Felt [III] at Atalaya.

ISC 06 20:21:30.8±0.6,**10.22S**±0.09×**73.7W**±0.1,**h38**km, **h38**km±1.4km**:pP-P,n22,**σ0§**86**/16,**mb4.1**/11,**MS3.6**/4, **Central Peru**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
ARE	**Arequipa**	**6.57**	**161**	*e*P		**P**	**20 23 08.0**	**+0.6**
LPAZ	**La Paz**	**8.11**	**139**	Pn		**P**	**20 23 29.9**	**+1.0**
	0.5nm,0.3s,baz=344,slow=15,SNR=12							
LPAZ				Lg			20 25 45.4	
	12nm,0.3s,baz=199,slow=16,SNR=6.0							
LPAZ				LR		LR	20 27 00.3	
	comp=Z,378nm,20.8s,baz=60,slow=40							
OTAV	**Otavalo**	**11.41**	**335**	*e*P		**P**	**20 24 15.5**	**+1.2**
LVC	**Limon Verde**	**13.15**	**160**	Pn		**P**	**20 24 33.0**	**-4.7**
	0.2nm,0.3s,baz=250,slow=21,SNR=3.3							
ROSC	**El Rosal**	**14.99**	**358**	Lg			20 29 24.8	
	2.2nm,0.3s,baz=180,slow=20,SNR=2.8							
ROSC				LR		LR	20 31 35.6	
	comp=Z,100nm,19.6s,baz=234,slow=40							
SDV	**Santo Domingo**	**19.23**	**9**	P		**P**	**20 25 54.7**	**0.0**
	0.6nm,0.3s,baz=225,slow=10,SNR=11							
SDV				Lg			20 31 41.6	
	1.0nm,0.3s,baz=3.6,slow=16,SNR=2.4							
PCRV	**Puerto La Cruz**	**22.18**	**24**	Lg			20 33 23.7	
	16nm,0.8s,baz=131,slow=20,SNR=3.5							
PCRV				LR		LR	20 35 46.2	
	comp=Z,233nm,18.0s,MS3.6,baz=30,slow=38							
CPUP	**Villa Florida**	**22.29**	**138**	LR		LR	20 37 23.5	
	comp=Z,176nm,21.2s,MS3.5,baz=346,slow=43							
CPUP	**Villa Florida**	**22.29**	**138**	*e*P		**P**	**20 26 25.2**	**-1.0**
	9.2nm,1.3s,mb4.0							
BDFB	**Brasilia**	**25.60**	**105**	P		**P**	**20 26 59.9**	**+1.4**
	3.1nm,0.7s,mb4.0,baz=272,slow=14,SNR=5.2							
BDFB				pP		pP	20 27 09.7	+0.8
	6.7nm,0.5s,baz=281,slow=14,SNR=6.7							
BDFB				LR		LR	20 37 40.4	
	comp=Z,383nm,19.2s,MS3.9,baz=284,slow=38							
SJG	**San Juan**	**29.12**	**15**	LR		LR	20 38 48.8	
	comp=Z,102nm,19.0s,MS3.5,baz=276,slow=36							
PLCA	**Paso Flores**	**30.52**	**175**	P		**P**	**20 27 41.9**	**-0.8**
	1.6nm,0.8s,mb3.9,baz=348,slow=7.0,SNR=3.2							
PLCA				pP		pP	20 27 53.1	-0.2
	4.0nm,1.1s,baz=348,slow=8.8,SNR=3.5							
WMOK	**Wichita Mounta**	**50.63**	**333**	P		**P**	**20 30 27.8**	**-0.7**
	1.3nm,0.6s,mb4.0							
SDCO	**Great Sand Dun**	**56.24**	**330**	*e*P		**P**	**20 31 09.8**	**0.0**
	4.8nm,1.3s,mb4.4							
PDAR	**Pinedale Array**	**62.08**	**331**	P		**P**	**20 31 50.5**	**+0.4**
	0.6nm,0.5s,mb4.0,baz=135,slow=6.3,SNR=5.1							
HWUT	**Hardware Ranch**	**62.21**	**329**	*e*P		**P**	**20 31 50.6**	**-0.4**
	5.9nm,0.8s,mb4.8							
NVAR	**Mina Array Bea**	**63.81**	**322**	P		**P**	**20 32 02.5**	**+0.9**
	1.7nm,1.0s,mb4.0,baz=135,slow=7.7,SNR=5.3							
SCHQ	**Schefferville**	**65.06**	**4**	P		**P**	**20 32 08.5**	**-1.0**
	3.0nm,0.8s,mb4.3,baz=302,slow=19,SNR=3.7							
DBIC	**Dimbokro**	**70.58**	**79**	P		**P**	**20 32 43.2**	**-1.4**
	1.9nm,0.6s,mb4.2,baz=212,slow=11,SNR=4.5							
DBIC				pP		pP	20 32 54.7	-1.4
	5.0nm,1.1s,baz=196,slow=16,SNR=2.2							
YKA	**Yellowknife Ar**	**79.09**	**342**	P		**P**	**20 33 32.5**	**-0.1**
	0.3nm,0.4s,mb3.6,baz=135,slow=5.9,SNR=11							
WRA	**Warramunga Arr**	**139.25**	**223**	PKP		PKPdf	20 40 56.3	+1.5
	0.3nm,0.3s,baz=129,slow=1.9,SNR=25							
SONM	**Songino Array**	**142.51**	**360**	PKhKP			20 40 57.8	
	0.2nm,0.6s,baz=332,slow=3.1,SNR=3.4							

*NEIC **06** 20:39:37.0,42.83N×2.45E,h10km,ML2.2(LDG), ML2.1(STR),After STR.*

*STR **06** 20:39:37.0±0.2,42.83N×2.45E,h10km±1km,Ml2.1,Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*

*LDG **06** 20:39:38.0±0.1,42.81N×2.43E,h4km,Md2.3/1,Ml2.2/9, Error ellipse: s-maj=1.2km s-min=0.7km az=116.0*

*MDD **06** 20:39:38.7±0.4,42.81N×2.46E,h14km±6km,mbLg1.5/11, Error ellipse: s-maj=4.6km s-min=3.0km az=61.0,PRXIMO*

ISC 06 20:39:36.3±0.3,**42.87N**±0.02×**2.42E**±0.03,**h12**km±3km, **n21,**σ1§**22/39,Pyrenees**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
LRDF	**Laroque-de-Fa**	**0.11**	**51**	Pg		**Pg**	**20 39 40.8**	**+1.4**
LRDF				Sg		**Sg**	**20 39 43.4**	**+2.0**
CARF	**Carcanieres**	**0.28**	**237**	Pg		**Pg**	**20 39 43.0**	**+0.8**
CARF				Sg		**Sg**	**20 39 47.5**	**+1.4**
FILF	**Fillols**	**0.32**	**161**	Pg		**Pg**	**20 39 42.7**	**-0.4**
FILF				Sg		**Sg**	**20 39 46.5**	**-1.1**
MTLF	**Montolieu**	**0.50**	**343**	*e*Pg		**Pg**	**20 39 48.4**	**+2.0**
MTLF				*e*Pn		**Pn**	**20 39 51.5**	**+2.6**
MTLF				*e*Sg		**Sg**	**20 39 56.4**	**+3.2**
	6.6nm,0.3s							
MTLF	**Montolieu**	**0.50**	**343**	Pg		**Pg**	**20 39 48.4**	**+2.0**
MTLF				Lg			20 39 56.4	
	3.3nm,0.3s							
SJAF	**Saint Jean de**	**0.51**	**138**	Pg		**Pg**	**20 39 46.6**	**-0.1**
SJAF				Sg		**Sg**	**20 39 53.1**	**-0.6**
EJON	**La Jonquera**	**0.54**	**140**	Pg		**Pg**	**20 39 47.4**	**+0.1**
	0.4nm,0.0s,SNR=7.9							
EJON				Lg			20 39 54.0	
	2.1nm,0.1s,SNR=7.9							
VALF	**Valcebollere**	**0.55**	**213**	Pg		**Pg**	**20 39 47.7**	**+0.2**
VALF				Sg		**Sg**	**20 39 55.2**	**+0.2**
EPF	**Esparros**	**1.54**	**277**	*e*Pn		**Pn**	**20 40 04.7**	**+0.9**
EPF				*e*Pg		**Pg**	**20 40 06.9**	**-0.1**
EPF				*e*Sg		**Sg**	**20 40 27.0**	**-0.5**
	4.0nm,0.2s							
LASF	**Ste Croix**	**1.60**	**40**	*e*Pn		**Pn**	**20 40 05.9**	**+1.2**
LASF				*e*Pg		**Pg**	**20 40 08.7**	**+0.4**
LASF				*e*Sn		**Sn**	**20 40 25.8**	**+0.4**
LASF				*e*Sg		**Sg**	**20 40 30.4**	**+0.8**
	3.9nm,0.3s							
EPOB	**Poblet**	**1.81**	**214**	Pg		**Pg**	**20 40 11.2**	**-1.4**
	2.7nm,0.2s,SNR=7.9							
EPOB				Lg			20 40 34.0	
	2.3nm,0.2s,SNR=7.9							
CAF	**Calviac**	**2.07**	**353**	*e*Pn		**Pn**	**20 40 12.5**	**+1.0**
CAF				*e*Pg		**Pg**	**20 40 17.9**	**+0.1**
CAF				*e*Sn		**Sn**	**20 40 37.5**	**0.0**
CAF				*e*Sg		**Sg**	**20 40 45.1**	**-0.3**
	2.5nm,0.2s							

ETSF	**Etsaut**	**2.19**	**272**	*e*Pn		**Pn**	**20 40 13.4**	**+0.3**
ETSF				*e*Pg		**Pg**	**20 40 18.7**	**-1.3**
ETSF				*e*Sg		**Sg**	**20 40 47.1**	**-2.2**
	3.3nm,0.4s							
LFF	**La Frestale**	**2.40**	**330**	*e*Sg		**Sg**	**20 40 54.7**	**-1.6**
	6.6nm,0.4s							
ESAC	**San Caprasio**	**2.43**	**243**	Lg			20 40 55.1	
	7.7nm,0.4s,SNR=4.0							
ERTA	**Horta de San J**	**2.46**	**220**	Lg			20 40 53.3	
	1.3nm,0.3s,SNR=7.9							
RJF	**Les Rejaudoux**	**2.52**	**345**	*e*Pn		**Pn**	**20 40 19.0**	**+1.1**
RJF				*e*Sg		**Sg**	**20 40 58.7**	**-1.6**
	3.5nm,0.2s							
SMRF	**Simiane la Rot**	**2.55**	**63**	*e*Sg		**Sg**	**20 40 59.8**	**-1.6**
	1.1nm,0.2s							
VIVF	**Saint-Julien-l**	**2.57**	**39**	*e*Pg		**Pg**	**20 40 26.8**	**-0.9**
VIVF				*e*Sn		**Sn**	**20 40 49.0**	**-1.1**
VIVF				*e*Sg		**Sg**	**20 40 59.8**	**-2.2**
VIVF	**Saint-Julien-l**	**2.57**	**39**	Sn		**Sn**	**20 40 49.0**	**-1.1**
VIVF				Lg			20 40 59.8	
TCF	**Toulx Ste Croi**	**3.42**	**358**	*e*Sg		**Sg**	**20 41 27.4**	**-2.9**
	1.0nm,0.3s							

*CASC **06** 21:08:00.3±1.8,8.36N×82.90W,h8km±6km,MD4.5, mb4.5(NEIC)*

*NEIC **06** 21:08:01.9±1.1,8.33N×82.93W,h53km±11km,mb4.5/11, Error ellipse: s-maj=16.5km s-min=8.9km az=219.0*

NEIC Felt at Durika, Las Pangas, Laurel, Los Indios and San Vito, Costa Rica.

*IDC **06** 21:08:02.3±1.9,8.40N×82.84W,h56km±15km,mb4.0/9, mb1 4.2/13,mb1mx4.0/25,MS3.6/14,Ms1 3.6/14, ms1mx3.5/26,Error ellipse: s-maj=27.7km s-min=11.0km az=30.0*

*BJI **06** 21:08:03.8,8.30N×82.90W,h53km,Ms4.7,Msz4.4*

ISC 06 21:07:58.4±0.5,**8.18N**±0.07×**82.84W**±0.04,**h33**km,**n85,** σ1§**06/78,mb4.5/20,MS3.7**/11,**11C-8D,Panama-Costa Rica border region**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
PTP1	**Petroterminal**	**0.41**	**87**	*e*P		**P**	**21 08 06.4**	**-1.1**
DVD	**David**	**0.46**	**57**	*i*P		**P**	**21 08 09.4**	**+1.2**
ACR	**Cerro Adams**	**0.57**	**325**	*i*P		**P**	**21 08 08.6**	**-1.3**
BRU2	**Volcan**	**0.62**	**13**	*e*P		**P**	**21 08 10.8**	**+0.2**
BUS	**Buena Vista**	**1.64**	**326**	*e*P		**P**	**21 08 25.2**	**0.0**
URSC	**Urasca**	**1.89**	**331**	*e*P		**P**	**21 08 28.9**	**+0.2**
LCR2	**La Lucha 2**	**1.93**	**323**	*e*P		**P**	**21 08 29.6**	**+0.3**
ICR	**Volcan Irazu**	**2.04**	**331**	*e*P		**P**	**21 08 31.5**	**+0.6**
SJS	**Escuela Geolog**	**2.12**	**326**	*e*P		**P**	**21 08 34.4**	**+1.3**
SJS				*e*S		**S**	**21 08 59.0**	**+1.5**
PRS1	**Puriscal**	**2.31**	**321**	*i*P		**P**	**21 08 34.7**	**-0.1**
VPS2	**Volcan Poas 2**	**2.42**	**325**	*e*P		**P**	**21 08 38.0**	**+1.6**
CGA2	**Cerro Gallo 2**	**2.43**	**319**	*e*P		**P**	**21 08 37.3**	**+0.8**
TRTC	**Tortuguero**	**2.53**	**340**	*i*P		**P**	**21 08 38.4**	**+0.4**
AZU	**Azuero**	**2.57**	**99**	*e*P		**P**	**21 08 42.2**	**+3.7**
AZU				*e*S		**S**	**21 09 17.3**	**+8.4**
FORC	**Fortuna**	**2.91**	**322**	*e*P		**P**	**21 08 44.4**	**+1.1**
FORC				*e*S		**S**	**21 09 21.1**	**+3.7**
JTS	**JuntasAbangare**	**2.96**	**315**	P		**P**	**21 08 43.6**	**-0.5**
	150nm,0.3s,baz=106,slow=14,SNR=163							
JTS				S		**S**	**21 09 17.9**	**-0.8**
	307nm,0.3s,baz=342,slow=22,SNR=15							
JTS				LR		LR	21 09 36.1	
	comp=Z,194nm,21.4s,baz=179,slow=34							
JTS	**JuntasAbangare**	**2.96**	**315**	*e*Pn		**Pn**	**21 08 43.5**	**-0.7**
JTS				*e*Sn		**Sn**	**21 09 08.6**	**-10**
UPA	**Univ. de Panam**	**3.36**	**76**	*e*P		**P**	**21 08 52.7**	**+2.9**
VCR	**Vista de Mar**	**3.37**	**305**	*e*P		**P**	**21 08 49.1**	**-0.7**
CRZC	**La Cruz**	**3.87**	**316**	*e*P		**P**	**21 08 57.5**	**+0.5**
CONN	**Concepcion**	**4.34**	**321**	*e*P		**P**	**21 09 04.2**	**+0.4**
TICN	**Ticuantepe**	**5.08**	**319**	*e*P		**P**	**21 09 14.6**	**+0.5**
WILN	**Americas 2**	**5.15**	**320**	*e*P		**P**	**21 09 15.6**	**+0.4**
MGAN	**Managua**	**5.17**	**320**	*e*P		**P**	**21 09 16.2**	**+0.7**
COPN	**Copaltepe**	**5.42**	**317**	*e*P		**P**	**21 09 18.9**	**-0.1**
MOMJ	**Momotombo**	**5.56**	**319**	*e*P		**P**	**21 09 21.2**	**+0.4**
LEON	**Leon**	**5.80**	**317**	*e*P		**P**	**21 09 24.4**	**+0.2**
PYN	**Poneloya**	**5.86**	**316**	*e*P		**P**	**21 09 25.6**	**+0.5**
TEL3	**Telica 3**	**5.88**	**318**	*e*P		**P**	**21 09 26.0**	**+0.6**
CNCH	**Conchagua**	**7.05**	**316**	*e*P		**P**	**21 09 43.2**	**+1.3**
CNCH				*e*S		**S**	**21 11 01.0**	**-0.7**
BLLM	**Bellamira**	**7.45**	**315**	*e*P		**P**	**21 09 48.0**	**+0.7**
VSM	**San Miguel**	**7.46**	**315**	*e*P		**P**	**21 09 48.1**	**+0.5**
SNVI	**San Vicente**	**7.99**	**313**	*e*P		**P**	**21 09 55.4**	**+0.5**
SNVI				*e*S		**S**	**21 11 22.7**	**-2.4**
LCBS	**La Ceiba**	**8.12**	**313**	*e*P		**P**	**21 09 56.8**	**+0.1**
LFRS	**El Faro**	**8.16**	**312**	*e*P		**P**	**21 09 57.3**	**0.0**
BOQS	**Boqueron**	**8.39**	**312**	*e*P		**P**	**21 10 01.0**	**+0.5**
SBLS	**San Blas**	**8.71**	**311**	*e*P		**P**	**21 10 05.7**	**+0.7**
SNJE	**San Jose**	**8.72**	**311**	*e*P		**P**	**21 10 05.6**	**+0.5**
MTO2	**Montecristo 2**	**8.89**	**315**	*e*P		**P**	**21 10 07.6**	**+0.2**
RBDL	**Robledal**	**8.94**	**312**	*e*P		**P**	**21 10 08.1**	**0.0**
OTAV	**Otavalo**	**9.02**	**151**	*e*Pn		**P**	**21 10 12.1**	**+2.9**
OTAV				*e*			21 13 24.9	
ROSC	**El Rosal**	**9.07**	**111**	P		**P**	**21 10 14.3**	**+4.3**
	2.3nm,0.3s,baz=263,slow=13,SNR=3.0							
ROSC				LR		LR	21 13 19.9	
	comp=Z,492nm,21.9s,baz=338,slow=35							
SDV	**Santo Domingo**	**12.09**	**86**	P		**P**	**21 10 51.6**	**+0.3**
	0.4nm,0.3s,baz=286,slow=8.1,SNR=7.8							
SDV				S		**S**	**21 13 05.4**	**-0.6**
	0.6nm,0.3s,baz=3.9,slow=18,SNR=2.4							
TEIG	**Tepich**	**13.08**	**337**	P		**P**	**21 10 56.2**	**-8.3**
PCRV	**Puerto La Cruz**	**18.08**	**82**	P		**P**	**21 12 10.1**	**+1.3**
	2.2nm,0.3s,baz=234,slow=2.9,SNR=8.6							
SJG	**San Juan**	**18.99**	**57**	P		**P**	**21 12 19.2**	**-0.8**
	3.9nm,0.3s,baz=264,slow=5.6,SNR=21							
SJG				LR		LR	21 18 52.0	
	comp=Z,186nm,19.6s,baz=94,slow=34							
SJG	**San Juan**	**18.99**	**57**	*e*P		**P**	**21 12 20.6**	**+0.6**
	90nm,0.9s							
SJG				*e*			21 12 35.0	
HKT	**Hockley**	**24.85**	**332**	P		**P**	**21 13 16.8**	**-2.6**
	5.3nm,0.9s,mb4.1							
LRAL	**Lakeview Retre**	**25.03**	**352**	*e*P		**P**	**21 13 20.8**	**-0.3**
	22nm,1.0s,mb4.6							
LRAL				*e*		pP	21 13 32.0	+1.7
JCT	**Junction City**	**27.28**	**327**	P		**P**	**21 13 39.4**	**-2.5**
	4.9nm,0.6s,mb4.2							
JCT				*e*			21 13 46.1	
MIAR	**Mount Ida**	**28.03**	**341**	P		**P**	**21 13 46.9**	**-1.9**
	2.6nm,0.6s,mb4.0							
TXAR	**Lajitas Array**	**28.74**	**320**	LR		LR	21 25 49.2	
	comp=Z,52nm,20.4s,MS3.1,baz=200,slow=37							
SADO	**Sadowa**	**36.59**	**4**	LR		LR	21 30 03.0	
	comp=Z,123nm,19.4s,MS3.7,baz=25,slow=36							
BDFB	**Brasilia**	**41.84**	**124**	LR		LR	21 34 10.4	
	comp=Z,117nm,18.2s,MS3.8,baz=115,slow=37							
ULM	**Lac du Bonnet**	**43.32**	**348**	P		**P**	**21 15 55.7**	**-3.2**
	7.0nm,0.7s,mb4.5,baz=142,slow=4.7,SNR=5.9							
ULM	**Lac du Bonnet**	**43.32**	**348**	*e*P		**P**	**21 15 55.8**	**-3.1**
NVAR	**Mina Array Bea**	**43.88**	**319**	P		**P**	**21 16 02.8**	**-0.8**
	0.7nm,0.5s,mb3.7,baz=122,slow=7.7,SNR=6.3							
WVOR	**Wild Horse Val**	**46.41**	**323**	*e*P		**P**	**21 16 23.0**	**-0.7**
	3.2nm,0.6s,mb4.4							
SCHQ	**Schefferville**	**48.25**	**12**	P		**P**	**21 16 35.1**	**-2.8**
	5.5nm,0.9s,mb4.6,baz=303,slow=19,SNR=6.2							
FFC	**Flin Flon**	**48.88**	**345**	*e*P		**P**	**21 16 42.1**	**-0.6**
	10nm,0.9s,mb4.8							
FFC				*e*		pP	21 16 54.0	+1.3
PLCA	**Paso Flores**	**49.97**	**168**	P		**P**	**21 16 51.6**	**+0.2**
	3.1nm,1.1s,mb4.3,baz=191,slow=17,SNR=3.3							
PLCA	**Paso Flores**	**49.97**	**168**	P		**P**	**21 16 51.5**	**0.0**
	3.6nm,1.3s,mb4.2							
FRB	**Frobisher Bay**	**56.41**	**8**	P		**P**	**21 17 34.8**	**-3.9**
	4.6nm,0.7s,mb4.7,baz=200,slow=8.2,SNR=8.4							
FRB				LR		LR	21 42 00.5	
	comp=Z,123nm,18.3s,MS4.0,baz=169,slow=36							
YKA	**Yellowknife Ar**	**58.94**	**343**	P		**P**	**21 17 54.9**	**-1.7**
	1.9nm,0.7s,mb4.2,baz=137,slow=6.9,SNR=28							
YKA				LR		LR	21 44 39.0	
	comp=Z,38nm,19.7s,MS3.5,baz=115,slow=37							
DLBC	**Dease Lake**	**61.70**	**334**	LR		LR	21 44 49.0	
	comp=Z,54nm,21.1s,MS3.7,baz=140,slow=36							
RES	**Resolute Bay**	**66.82**	**357**	*e*P		**P**	**21 18 45.4**	**-3.2**
	5.1nm,0.8s,mb4.6							
INK	**Inuvik**	**68.62**	**342**	P		**P**	**21 18 58.4**	**-1.6**
	1.2nm,0.4s,mb4.2,baz=148,slow=11,SNR=9.3							
INK	**Inuvik**	**68.62**	**342**	*e*P		**P**	**21 18 58.8**	**-1.1**
	12nm,1.4s,mb4.6							
ILAR	**Eielson Array**	**71.73**	**336**	P		**P**	**21 19 18.1**	**-0.8**
	1.4nm,0.6s,mb4.1,baz=119,slow=4.4,SNR=19							
ILAR				LR		LR	21 54 40.7	
	comp=Z,26nm,19.0s,MS3.5,baz=296,slow=39							
IMA	**Indian Mountai**	**74.83**	**336**	*e*P		**P**	**21 19 37.4**	**+0.5**
	14nm,0.9s,mb4.9							
TIC	**Toumodi**	**77.07**	**85**	*e*P		**P**	**21 19 50.6**	**-0.2**
	71nm,1.3s,mb5.4							
LIC	**Lamto**	**77.11**	**85**	*e*P		**P**	**21 19 50.9**	**-0.1**
	0.8nm,0.2s,mb4.2							
DBIC	**Dimbokro**	**77.23**	**85**	P		**P**	**21 19 50.9**	**-0.8**
	3.2nm,1.0s,mb4.2,baz=314,slow=8.8,SNR=3.9							
KIC	**Kosan Boka**	**77.38**	**85**	*e*P		**P**	**21 19 52.5**	**0.0**
	42nm,1.1s,mb5.3							
NOA	**NORSAR Array B**	**84.87**	**29**	LR		LR	21 56 21.4	
	comp=Z,23nm,18.5s,MS3.6,baz=190,slow=34							
ARCES	**ARCESS Array B**	**88.69**	**20**	LR		LR	22 00 03.2	
	comp=Z,38nm,19.1s,MS3.8,baz=221,slow=35							
FINES	**FINESS Array B**	**91.73**	**27**	LR		LR	21 56 30.5	
	comp=Z,52nm,21.9s,MS3.9,baz=98,slow=32							
AKASG	**Malin Array Be**	**97.31**	**36**	LR		LR	22 02 27.9	
	comp=Z,43nm,18.3s,MS4.0,baz=245,slow=34							
MDJ	**Mudanjiang**	**119.85**	**334**	PKP		PKPdf	21 26 46.0	+0.3
CN2	**Changchun**	**122.25**	**336**	*e*PKP		PKPdf	21 26 53.0	+2.7
WMQ	**Urumqi**	**127.53**	**9**	*e*PKP		PKPdf	21 27 00.8	+0.2
ASAR	**Alice Springs**	**141.61**	**242**	PKhKP			21 27 22.7	
	0.5nm,0.6s,baz=126,slow=3.6,SNR=8.2							
WRA	**Warramunga Arr**	**142.19**	**248**	PKhKP			21 27 25.2	
	0.3nm,0.8s,baz=360,slow=6.0,SNR=7.2							
WRA				PKP		PKPdf	21 27 29.5	+1.2
	0.6nm,0.7s,baz=90,slow=1.6,SNR=7.4							
GYA	**Guiyang**	**144.35**	**345**	PKP		PKPdf	21 27 36.8	+4.9
GYA				APKP			21 27 46.2	
GYA				PP		PP	21 30 47.7	-3.6
CMAR	**Chiang Mai Arr**	**153.47**	**356**	PKPbc		PKPdf	21 27 54.2	+7.8
	0.9nm,0.8s,baz=326,slow=4.8,SNR=5.6							
CMAR				PKPab		PKPab	21 28 06.0	-2.8
	0.4nm,0.6s,baz=338,slow=2.6,SNR=4.2							

*IDC **06** 22:03:43.0±1.1,16.89S×69.37W,h192km±8km,mb3.5/4, mb1 3.7/5,mb1mx3.5/15,Error ellipse: s-maj=26.6km s-min=13.8km az=101.0*

ISC 06 22:03:42.3±1.2,**16.88S**±0.08×**69.4W**±0.2,**h203**km±9km,**n9,** σ1§**15/8,mb3.6**/3,**Peru-Bolivia border region**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
LPAZ	**La Paz**	**1.34**	**64**	P		**P**	**22 04 16.1**	**+0.8**
	223nm,0.3s,baz=286,slow=7.6,SNR=3563							
LPAZ				S		**S**	**22 04 40.0**	**-0.7**
	36nm,0.3s,baz=169,slow=25,SNR=17							
LVC	**Limon Verde**	**5.72**	**176**	P		**P**	**22 05 07.8**	**+1.0**
	9.5nm,0.3s,baz=359,slow=10,SNR=288							
LVC				S		**S**	**22 06 11.6**	**-0.8**
	6.9nm,0.3s,baz=122,slow=16,SNR=10							
BDFB	**Brasilia**	**20.56**	**90**	P		**P**	**22 08 07.6**	**+1.0**
	4.9nm,0.7s,baz=236,slow=8.1,SNR=5.5							
DBIC	**Dimbokro**	**67.93**	**75**	P		**P**	**22 14 20.5**	**-1.1**
	1.2nm,0.5s,mb3.8,baz=211,slow=6.1,SNR=4.6							
PDAR	**Pinedale Array**	**69.91**	**330**	P		**P**	**22 14 32.8**	**-0.4**
	0.3nm,0.3s,baz=117,slow=6.6,SNR=4.5							
YKA	**Yellowknife Ar**	**86

σθ**80**/14, **mb3.6**/1, **Banda Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**11.77**	**200**	*e*P	**P**	**22 42 11.4**	**+0.5**
	6.6nm,1.2s						
FITZ				*e*S	**S**	**22 44 18.4**	**-0.5**
FITZ	**Fitzroy Crossi**	**11.77**	**200**	Pn	**P**	**22 42 10.9**	**0.0**
	0.5nm,0.3s,baz=3.7,slow=3.3,SNR=23						
FITZ				Sn	**S**	**22 44 18.9**	**0.0**
	1.1nm,0.3s,baz=158,slow=11,SNR=8.5						
WRAB	**Tennant Creek**	**13.58**	**162**	*e*P	**P**	**22 42 33.9**	**+0.1**
	20nm,1.1s						
WRAB				*e*S	**S**	**22 45 00.4**	**0.0**
WRA	**Warramunga Arr**	**13.59**	**162**	Pn	**P**	**22 42 33.1**	**-0.8**
	0.7nm,0.3s,baz=346,slow=14,SNR=31						
WRA				Sn	**S**	**22 44 59.7**	**-0.9**
	0.8nm,0.3s,baz=336,slow=22,SNR=9.0						
WB2	**Warramunga Arr**	**13.59**	**162**	*e*P	**P**	**22 42 33.7**	**-0.2**
WB2				*e*S	**S**	**22 45 01.2**	**+0.6**
ASAR	**Alice Springs**	**17.03**	**167**	P	**P**	**22 43 18.8**	**+2.9**
	0.4nm,0.3s,baz=349,slow=11,SNR=20						
ASAR				S	**S**	**22 46 24.7**	**+7.4**
	0.1nm,0.3s,baz=360,slow=24,SNR=3.4						
MKAR	**Makanchi Array**	**68.14**	**327**	P	**P**	**22 50 08.0**	**-0.3**
	0.7nm,0.4s,mb3.6,baz=123,slow=8.1,SNR=21						
MKAR	**Makanchi Array**	**68.14**	**327**	P	**P**	**22 50 08.0**	**-0.3**

IDC ***06*** *22:52:37.3±4.0, 19.18N×145.65E, h145km±36km, mb3.8/13, mb1 4.0/14, mb1mx3.9/23, Error ellipse: s-maj=25.7km s-min=10.7km az=101.0*

NEIC ***06*** *22:52:39.0±1.6, 19.13N×145.62E, h161km±15km, mb4.4/5, Error ellipse: s-maj=21.8km s-min=9.3km az=101.0*

ISC 06 22:52:37.3±1.6, 19.17N±0.06×145.6E±0.2, h160km±14km, **n22,** σθ**72/23, mb4.0**/16, **Mariana Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**5.58**	**187**	*e*Pn	**P**	**22 53 59.9**	**+0.6**
CBIJ	**Chichi jima**	**8.47**	**339**	P	**P**	**22 54 37.2**	**-0.6**
	4.2nm,0.3s,baz=266,slow=19,SNR=5.0						
CBIJ				S	**S**	**22 56 06.2**	**-5.9**
	4.2nm,0.3s,baz=287,slow=19,SNR=3.6						
WRAB	**Tennant Creek**	**40.38**	**196**	*e*P	**P**	**23 00 01.1**	**-0.1**
	33nm,0.7s,mb5.1						
WB2	**Warramunga Arr**	**40.39**	**196**	*e*P	**P**	**23 00 01.1**	**-0.2**
WRA	**Warramunga Arr**	**40.39**	**196**	P	**P**	**23 00 00.8**	**-0.5**
	5.1nm,0.4s,mb4.5,baz=14,slow=8.2,SNR=85						
FITZ	**Fitzroy Crossi**	**41.88**	**209**	*e*P	**P**	**23 00 13.5**	**-0.1**
	1.5nm,0.2s,mb4.3						
FITZ	**Fitzroy Crossi**	**41.88**	**209**	P	**P**	**23 00 13.9**	**+0.3**
	1.8nm,0.3s,mb4.2,baz=14,slow=7.6,SNR=94						
SONM	**Songino Array**	**42.69**	**321**	P	**P**	**23 00 20.8**	**+0.9**
	0.4nm,0.4s,mb3.4,baz=132,slow=7.2,SNR=6.2						
ASAR	**Alice Springs**	**44.06**	**195**	P	**P**	**23 00 30.9**	**-0.2**
	1.3nm,0.4s,mb3.9,baz=16,slow=7.9,SNR=21						
BILL	**Bilibino**	**50.59**	**10**	*e*P	**P**	**23 01 21.9**	**+0.6**
	4.5nm,0.6s,mb4.3						
STKA	**Stephens Creek**	**50.89**	**184**	P	**P**	**23 01 24.1**	**-0.1**
	1.2nm,0.5s,mb3.8,baz=21,slow=7.8,SNR=5.8						
MKAR	**Makanchi Array**	**58.04**	**314**	P	**P**	**23 02 15.9**	**+0.2**
	0.2nm,0.6s,mb3.1,baz=98,slow=8.6,SNR=3.5						
NWAO	**Narrogin (SRO)**	**58.44**	**208**	P	**P**	**23 02 18.6**	**-0.2**
	8.9nm,0.8s,mb4.6,baz=38,slow=7.2,SNR=6.6						
NWAO	**Narrogin (SRO)**	**58.44**	**208**	*e*P	**P**	**23 02 18.4**	**-0.3**
	6.8nm,0.7s,mb4.6						
ILAR	**Eielson Array**	**63.29**	**26**	P	**P**	**23 02 49.0**	**-2.0**
	1.6nm,0.6s,mb4.0,baz=250,slow=6.2,SNR=16						
BVAR	**Borovoye Array**	**66.03**	**320**	P	**P**	**23 03 09.0**	**+0.2**
	0.6nm,0.3s,mb3.9,baz=94,slow=7.6,SNR=4.5						
INK	**Inuvik**	**69.00**	**23**	P	**P**	**23 03 26.7**	**-0.3**
	3.9nm,0.8s,mb4.2,baz=268,slow=6.4,SNR=16						
INK	**Inuvik**	**69.00**	**23**	*e*P	**P**	**23 03 26.8**	**-0.2**
	3.1nm,0.7s,mb4.2						
YKA	**Yellowknife Ar**	**77.65**	**28**	P	**P**	**23 04 17.2**	**+0.1**
	2.3nm,0.6s,mb4.0,baz=290,slow=5.5,SNR=45						
ARCES	**ARCESS Array B**	**82.01**	**342**	P	**P**	**23 04 41.2**	**+0.9**
	1.4nm,0.8s,mb3.7,baz=14,slow=5.0,SNR=3.7						
NVAR	**Mina Array Bea**	**82.97**	**52**	P	**P**	**23 04 47.4**	**+1.5**
	3.5nm,0.8s,mb4.2,baz=275,slow=3.9,SNR=6.3						
FINES	**FINESS Array B**	**86.40**	**335**	P	**P**	**23 05 01.5**	**-0.9**
	0.8nm,0.5s,mb3.7,baz=70,slow=4.7,SNR=14						

LDG ***06*** *22:55:53.8±0.3, 42.93N×0.85W, h2km, Md1.8/2, Ml1.6/2, Error ellipse: s-maj=14.3km s-min=2.4km az=15.0*

NEIC ***06*** *22:55:53.8, 42.93N×0.85W, h2km, ML1.6(LDG), After LDG.*

MDD ***06*** *22:55:54.3±0.4, 43.00N×0.81W, mbLg0.8/3, Error ellipse: s-maj=10.0km s-min=2.1km az=22.0, PRXIMO*

ISC 06 22:55:53.3±0.7, 43.06N±0.08×0.77W±0.04, h10km, **n6,** σθ**73**/9, **Pyrenees**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ETSF	**Etsaut**	**0.22**	**137**	*e*Pg	**Pg**	**22 55 57.9**	**-0.2**
ETSF				*e*Sg	**Sg**	**22 56 01.0**	**-0.3**
	17nm,0.3s						
SJPF	**Ste Jean**	**0.34**	**279**	*e*Pg	**Pg**	**22 56 00.0**	**-0.3**
SJPF				*e*Sg	**Sg**	**22 56 05.2**	**+0.2**
	12nm,0.3s						
EALK	**Alkurruntz**	**0.56**	**286**	Pg	**Pg**	**22 56 04.3**	**-0.3**
	0.2nm,0.1s,SNR=7.9						
EALK				Lg		22 56 11.9	
	0.6nm,0.1s,SNR=10						
EPF	**Esparros**	**0.81**	**92**	*e*Pg	**Pg**	**22 56 10.6**	**+1.0**
EPF				*e*Sg	**Sg**	**22 56 21.4**	**+0.9**
	2.6nm,0.3s						
ESAC	**San Caprasio**	**1.36**	**171**	Lg		22 56 36.4	
	11nm,0.4s,SNR=7.9						
MTLF	**Montolieu**	**2.20**	**82**	*e*Pn	**Pn**	**22 56 30.8**	**+0.4**
MTLF				*e*Sg	**Sg**	**22 57 05.0**	**-1.6**
	0.3nm,0.2s						

NEIC ***06*** *23:03:59.0, 30.96S×71.70W, h22km, ML3.2(GUC), After GUC.*

GUC 06 23:03:59.0±0.8, 30.96S×71.70W, h22km×7km, **MD3.6, ML3.2, 3C-1D, Near coast of central Chile**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OVCH	**Ovalle**	**0.56**	**51**	⇑*i*P	Pb	23 04 09.9	-0.2
OVCH				*i* S	Sb	23 04 17.9	+0.4
OVCH				AMP		23 04 18.1	
	comp=E,2μm,0.1s						
CMCH	**Combarbala**	**0.64**	**109**	⇑*i*P	Pb	23 04 11.5	+0.1
CMCH				*i* S	Sb	23 04 20.5	+0.6
CMCH				AMP		23 04 20.8	
	comp=N,4μm,0.1s						
ILCH	**Illapel**	**0.81**	**146**	⇑*i*P	Pb	23 04 13.7	-0.7
ILCH				*i* S	Sb	23 04 24.6	-0.2
ILCH				AMP		23 04 24.8	
	comp=N,882nm,0.2s						
TLL	**Tololo Astrono**	**1.11**	**45**	*e*P	Pn	23 04 18.9	-0.5
TLL				*i* S	Sb	23 04 33.7	+0.3
TLL				AMP		23 04 35.6	
	comp=E,384nm,0.5s						
PTCH	**Petorca**	**1.46**	**153**	*e*P	Pn	23 04 23.8	-0.5
PTCH				*i* S	Sn	23 04 42.6	-0.3
PTCH				AMP		23 04 46.1	
	comp=N,788nm,0.1s						
PEL	**Peldehue**	**2.34**	**159**	AMP		23 05 12.9	
	comp=N,231nm,0.3s						
CLCH	**Cerro Calan**	**2.62**	**158**	AMP		23 05 24.6	
	comp=E,209nm,0.7s						
FCH	**Farellones**	**2.65**	**153**	⇓*i*P	Pn	23 04 41.8	+0.4
FCH				AMP		23 05 28.4	
	comp=E,82nm,0.5s						
LMEL	**Las Melosas**	**3.15**	**157**	*e*P	Pn	23 04 49.1	+0.7
LMEL				*e*S	Sn	23 05 26.5	+0.8
LMEL				AMP		23 05 40.9	
	comp=N,82nm,0.2s						

NEIC 06 23:09:25.6, 54.07N×163.63W, h22km, **ML3.6**(PMR), **ML3.2**(AEIC), **After AEIC., Unimak Island region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WESE	**West Dahl East**	**0.69**	**306**	P	Pb	23 09 37.8	-1.1
WESN	**West Dahl Nort**	**0.75**	**312**	P	Pb	23 09 38.9	-0.9
WESN				S	Sb	23 09 49.1	-0.4
SSLW	**Shishaldin Wes**	**0.76**	**338**	P	Pb	23 09 38.7	-1.3
WESS	**West Dahl Sout**	**0.76**	**303**	P	Pb	23 09 38.6	-1.4
WESS				S	Sb	23 09 49.7	-0.2
FALS	**False Pass**	**0.80**	**9**	P	Pb	23 09 38.7	-2.0
FALS				S	Sb	23 09 50.0	-1.1
WPOG	**Pogromni**	**0.84**	**310**	P	Pb	23 09 39.9	-1.5
WPOG				S	Sb	23 09 52.1	0.0
WTUG	**Tugumok**	**0.89**	**331**	P	Pb	23 09 40.7	-1.6
WTUG				S	Sb	23 09 53.9	+0.1
DRIA	**Deer Island**	**1.20**	**41**	P	Pn	23 09 43.8	-3.6
DRIA				S	Sb	23 09 58.9	-3.8
BALA	**Baldy Mountain**	**1.23**	**23**	P	Pn	23 09 46.5	-1.2
AKA	**Akutan**	**1.26**	**274**	P	Pn	23 09 45.8	-2.4
AKA				S	Sb	23 10 02.3	-2.0
AHB	**Akutan Harbor**	**1.29**	**273**	P	Pn	23 09 46.4	-2.1
DT1	**Dutton Round H**	**1.30**	**37**	P	Pn	23 09 46.8	-2.0
DOL	**Dolgoi Island**	**1.49**	**43**	P	Pn	23 09 49.1	-2.4
HAG	**Hague Volcano**	**1.60**	**38**	P	Pn	23 09 51.5	-1.5
PN7A	**Pavlof North-7**	**1.66**	**34**	P	Pn	23 09 52.8	-1.1
PVV	**Pavlof Volcano**	**1.69**	**39**	P	Pn	23 09 52.6	-1.7
PN6	**Pavlof North-6**	**1.71**	**35**	P	Pn	23 09 52.9	-1.6
UNV	**Unalaska Valle**	**1.71**	**264**	P	Pn	23 09 52.3	-2.2
UNV				S	Sn	23 10 12.8	-3.1
PS1A	**Pavlof South-1**	**1.74**	**38**	P	Pn	23 09 53.5	-1.5
MTBL	**Makushin Table**	**1.80**	**268**	P	Pn	23 09 54.0	-1.8
MTBL				S	Sn	23 10 16.8	-1.4
MNAT	**Makushin Natee**	**1.81**	**265**	P	Pn	23 09 53.4	-2.7
MSW	**Makushin Switc**	**1.87**	**266**	P	Pn	23 09 53.7	-3.1
MSW				S	Sn	23 10 18.3	-1.6
BLHA	**Black Hill**	**1.87**	**28**	P	Pn	23 09 54.9	-2.0
BLHA				S	Sn	23 10 19.8	-0.2
MCIR	**Makushin Cirqu**	**1.93**	**268**	P	Pn	23 09 55.7	-1.9
MGOD	**Makushin Gods**	**1.94**	**263**	P	Pn	23 09 55.3	-2.5
SDN	**Sand Point**	**2.22**	**54**	P	Pn	23 09 59.6	-2.3
SDPT	**Sand Point**	**2.24**	**54**	P	Pn	23 09 59.4	-2.8
SDPT				S	Sn	23 10 27.0	-2.3

NIED ***06*** *23:16:00, 42.50N×145.10E, h29km, Mw4.4 Best double couple: M0 5×10^15 NP1:φ=28°, δ70°, λ68°. NP2:φ=257°, δ30°, λ135°.*

SKHL ***06*** *23:16:22.5±1.9, 42.20N×145.22E, h55km±12km, mb4.9/2, Ms4.1/2*

JMA ***06*** *23:16:25.2, 42.46N×145.11E, h41km±1km, M4.5 Broadband fault plane solution: P waves. NP1:φ=246°, δ16°, λ121°. NP2:φ=34°, δ76°, λ82°. Principal axes: T Plg58°, Azm293°; N Plg8°, Azm36°; P Plg31°, Azm131°; JMA Felt I J1.*

BJI ***06*** *23:16:25.4, 42.49N×144.87E, h37km, mB4.7, mb4.7, Ms4.1, Msz3.8*

NEIC ***06*** *23:16:26.7±0.9, 42.50N×144.94E, h40km±7km, mb4.7/28, Error ellipse: s-maj=8.2km s-min=5.8km az=139.0*

NEIC Recorded [1 JMA] in parts of eastern Hokkaido.

MOS ***06*** *23:16:27.1±1.2, 42.65N×145.12E, h60km, mb4.9/10, Error ellipse: s-maj=19.7km s-min=9.4km az=107.5*

IDC ***06*** *23:16:29.5±3.3, 42.54N×144.92E, h63km±28km, mb3.9/16, mb1 4.1/18, mb1mx4.0/24, ML4.4/2, MS3.5/8, Ms1 3.6/8, ms1mx3.3/23, Error ellipse: s-maj=19.3km s-min=15.0km az=140.0*

ISC 06 23:16:25.3±0.6, 42.48N±0.04×144.97E±0.05, h45km±4km, **h35**km±2.1km:**pP-P, n112,** σθ**18**/126, **mb4.5**/51, **MS3.9**/12, **8C-8D, Hokkaido region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAK	**Akkeshi**	**0.56**	**339**	⇓P	**P**	**23 16 37.4**	**+0.4**
JOB	**Onbets**	**0.94**	**297**	⇓P	**P**	**23 16 43.6**	**+1.3**
NEM2	**Nemuro 2**	**1.05**	**32**	⇓P	**P**	**23 16 43.2**	**-0.6**
NEM2				*e*S	**S**	**23 16 56.5**	**-1.1**
JNK	**Nakash**	**1.12**	**351**	⇓P	**P**	**23 16 45.0**	**+0.2**
JNK				*e*S	**S**	**23 17 00.2**	**+0.9**
JCH	**Churui**	**1.20**	**277**	⇓P	**P**	**23 16 47.7**	**+1.8**
JAR	**Ashorobuto**	**1.21**	**313**	⇓P	**P**	**23 16 46.7**	**+0.7**
JEM	**Erimo**	**1.43**	**252**	P	**P**	**23 16 50.7**	**+1.5**
JRA	**Rausu**	**1.46**	**4**	⇓P	**P**	**23 16 49.6**	**-0.2**
JRA				*e*S	**S**	**23 17 08.0**	**+0.1**
YUK	**Yuzh-Kuril'sk**	**1.69**	**22**	⇑*i*P	**P**	**23 16 51.6**	**-1.3**
YUK				*i*		23 17 11.0	
YUK				pmax	pmax		
	comp=E,2μm,0.7s						
YUK				pmax	pmax		
	comp=E,1μm,0.3s						
YUK				pmax	pmax		
	comp=N,600nm,0.2s						
YUK				pmax	pmax		
	comp=E,470nm,0.2s						
YUK				smax			
	comp=N,10μm,0.7s						
YUK				smax			
	comp=E,29μm,0.7s						
YUK				smax			
	comp=N,5μm,0.5s						
YUK				smax			
	comp=E,16μm,0.6s						
ASAJ	**Asahikawa**	**2.39**	**314**	P	**P**	**23 17 05.2**	**+2.3**
	comp=E,86nm,0.3s,baz=160,slow=11,SNR=108						
ASAJ				S	**S**	**23 17 39.5**	**+8.4**
	comp=E,46nm,0.3s,baz=32,slow=30,SNR=17						
ASAJ				LR	LR	23 18 19.7	
	comp=E,1μm,20.2s,baz=325,slow=48						
KUR	**Kuril'sk**	**3.46**	**36**	*e*P	**P**	**23 17 17.7**	**-0.4**
KUR				AMB	AMB	23 17 20.0	
	comp=E,60nm,0.7s						
KUR				AMB	AMB	23 17 20.0	
	comp=E,43nm,0.7s						
KUR				AMB	AMB	23 17 20.0	
	comp=E,86nm,0.7s						
KUR				*e*S	**S**	**23 18 00.5**	**+2.2**
KUR				A		23 18 03.4	
	comp=E,646nm,0.6s						
KUR				A		23 18 03.4	
	comp=E,403nm,0.6s						
KUR	**Kuril'sk**	**3.46**	**36**	*e*PN	**P**	**23 17 17.7**	**-0.4**
KUR				*e*S	**S**	**23 18 00.5**	**+2.2**
KUR				pmax	pmax		
	comp=N,30nm,0.7s						
KUR				pmax	pmax		
	comp=E,40nm,0.7s						
KUR				pmax	pmax		
	comp=Z,90nm,0.7s						
KUR				smax			
	comp=N,650nm,0.6s						
KUR				smax			
	comp=E,400nm,0.6s						
YSS	**Yuzh-Sakhalins**	**4.75**	**341**	⇑*i*P	**P**	**23 17 36.8**	**+0.5**
YSS				sP		23 17 55.2	
YSS				*e*S	**S**	**23 18 30.0**	**-0.7**
YSS				A		23 18 35.9	
	comp=E,70nm,0.9s						
YSS				*e*LQ		23 19 10.0	
YSS				*e*LR	LR	23 19 30.0	
YSS				AMS	AMS	23 19 50.0	
	comp=E,1μm,14.0s						
YSS				AMS	AMS	23 19 50.0	
	comp=E,1μm,15.0s						
YSS				AMS	AMS	23 19 50.0	
	comp=E,500nm,15.0s						
YSS	**Yuzh-Sakhalins**	**4.75**	**341**	⇑*i*PN	**P**	**23 17 36.8**	**+0.5**
YSS				S	**S**	**23 18 30.0**	**-0.7**
YSS				smax			
	comp=E,70nm,0.9s						
YSS				MLR	MLR		
	comp=N,500nm,15.0s						
YSS				MLR	MLR		
	comp=Z,1μm,15.0s						
YSS				MLR	MLR		
	comp=E,1μm,14.0s						
YSS	**Yuzh-Sakhalins**	**4.75**	**341**	*e*P	**P**	**23 17 36.9**	**+0.6**
UGL	**Uglegorsk**	**6.91**	**344**	*e*rx	rx	23 18 43.5	
UGL				AMS	AMS	23 21 08.0	
	comp=E,400nm,14.0s						
UGL				AMS	AMS	23 21 08.0	
	comp=E,900nm,14.0s						
MAJO	**Matsushiro**	**7.90**	**224**	*e*P	**P**	**23 18 18.2**	**-2.1**
	comp=E,27nm,0.6s						
MAJO				*e*		23 18 31.9	
MAT	**Matsushiro**	**7.90**	**224**	P	**P**	**23 18 18.7**	**-1.6**
MAT				S	**S**	**23 19 46.3**	**-3.1**
MAT	**Matsushiro**	**7.90**	**224**	*e*P	**P**	**23 18 19.0**	**-1.3**
	comp=E,19nm,0.8s						
MAT				*e*S	**S**	**23 19 46.0**	**-3.4**
TYV	**Tymovskoe**	**8.54**	**350**	*e*P	**P**	**23 18 27.3**	**-1.8**
JHJ	**Hachijo jima 2**	**10.20**	**205**	P	**P**	**23 18 46.1**	**-5.9**
	comp=E,5.2nm,0.3s,baz=52,slow=19,SNR=2.7						
JHJ				S	**S**	**23 20 33.8**	**-12**
	comp=E,15nm,0.3s,baz=90,slow=20,SNR=5.9						
MDJ	**Mudanjiang**	**11.37**	**286**	P	**P**	**23 19 04.8**	**-3.0**
MDJ				S	**S**	**23 21 10.1**	**-4.4**
MDJ				PCP	PcP	23 24 56.9	-1.9
MDJ				SCP		23 28 27.0	
MDJ				PCS		23 28 31.1	
MDJ				SCS	ScS	23 32 02.0	+1.3
MDJ				AMB	AMB		
	comp=Z,6.0nm,1.2s						
MDJ				AMB	AMB		
	comp=Z,45nm,4.6s						
MDJ	**Mudanjiang**	**11.37**	**286**	P	**P**	**23 19 05.2**	**-2.6**
	comp=Z,6.0nm,0.6s						
KLR	**Kul'dur**	**11.42**	**311**	*e*PN	**P**	**23 19 10.8**	**+2.3**
CN2	**Changchun**	**14.32**	**282**	*e*P	**P**	**23 19 45.6**	**-1.3**
CN2				*e*XP		23 20 00.6	
CN2				*e*S	**S**	**23 22 22.5**	**-2.6**
CN2				AMB	AMB		
	comp=Z,10.0nm,0.8s						
CN2				LR	LR		
	comp=N,170nm,17.0s						
CN2				LR	LR		
	comp=E,310nm,17.0s						
CN2				LR	LR		
	comp=Z,320nm,18.0s						
JNU	**Nakatsue**	**14.52**	**235**	LR	LR	23 25 33.6	
	comp=Z,162nm,21.8s,baz=240,slow=38						
CBIJ	**Chichi jima**	**15.52**	**189**	LR	LR	23 25 45.8	
	comp=Z,59nm,19.7s,baz=124,slow=36						
HIA	**Hailar**	**18.78**	**300**	*e*P	**P**	**23 20 40.6**	**-2.6**
	comp=Z,10nm,0.7s						
BJI	**Beijing**	**21.74**	**273**	*e*P	**P**	**23 21 14.3**	**-0.2**
BJI				S	**S**	**23 25 01.3**	**-6.1**
BJI				AMB	AMB		
	comp=Z,12nm,0.8s,mb4.4						
BJI				LR	LR		
	comp=N,101nm,14.8s,MS3.6						
BJI				LR	LR		
	comp=E,191nm,17.1s,MS3.6						
BJI				LR	LR		
	comp=Z,216nm,22.5s						
BJT	**Baijiatuau**	**21.75**	**273**	P	**P**	**23 21 13.9**	**-0.7**
	comp=Z,12nm,0.8s,mb4.4						
BOD	**Bodaibo**	**24.79**	**319**	*e*P	**P**	**23 21 38.6**	**-5.5**
HHC	**Hu-ho-hao-te**	**24.93**	**278**	*e*P	**P**	**23 21 47.2**	**+1.6**
HHC				AMB	AMB		
	comp=Z,9.0nm,1.3s,mb4.1						
HHC				AMB	AMB		
	comp=Z,91nm,6.8s						
BTO	**Baotou**	**26.12**	**278**	*e*P	**P**	**23 21 57.2**	**+0.4**
BTO				AMB	AMB		
	comp=Z,32nm,0.6s,mb5.0						
ULN	**Ulaanbaatar**	**27.08**	**295**	*e*P	**P**	**23 22 04.8**	**-0.7**
	comp=Z,19nm,1.0s,mb4.6						
WHN	**Wuhan**	**27.20**	**254**	⇑P	**P**	**23 22 07.5**	**+0.8**
SONM	**Songino Array**	**27.52**	**295**	P	**P**	**23 22 09.8**	**+0.3**
	comp=Z,11nm,0.7s,mb4.6,baz=85,slow=7.9,SNR=58						
ZAK	**Zakamensk**	**29.48**	**300**	⇑*i*P	**P**	**23 22 27.0**	**0.0**
ZAK				*e*		23 23 32.0	
TIXI	**Tiksi**	**30.31**	**350**	P	**P**	**23 22 31.7**	**-2.5**
TIXI				MLR	MLR		
	comp=Z,500nm,13.0s,MS4.3						
ENH	**Enshi**	**30.84**	**258**	*e*P	**P**	**23 22 38.4**	**-0.9**
	comp=Z,26nm,1.2s,mb4.9						
GYA	**Guiyang**	**35.06**	**255**	P	**P**	**23 23 16.7**	**+0.8**
GYA				AP	pP	23 23 28.4	+0.4
GYA				XP	sP	23 23 34.2	+0.5
GYA				AMB	AMB		
	comp=Z,10.0nm,0.9s,mb4.8						
GYA				LR	LR		
	comp=N,100nm,6.5s						
GYA				LR	LR		
	comp=E,90nm,5.0s						
GYA				LR	LR		
	comp=Z,150nm,6.6s						
KMI	**Kunming**	**38.68**	**257**	*e*P	**P**	**23 23 47.4**	**+1.0**
KMI				AP	pP	23 23 57.0	-1.5
KMI				S	**S**	**23 29 38.8**	**-1.0**
KMI				PCS		23 29 47.6	
KMI				SS	SS	23 32 21.0	-2.0
KMI				AMB	AMB		
	comp=Z,9.0nm,0.9s,mb4.5						
KMI				LR	LR		
	comp=N,76nm,7.2s						
KMI				LR	LR		
	comp=E,137nm,12.6s						
KMI				LR	LR		
	comp=Z,155nm,13.8s,MS4.0						
IMA	**Indian Mountai**	**40.62**	**33**	*e*P	**P**	**23 24 02.5**	**+0.4**
	comp=Z,51nm,0.9s,mb5.2						
WMQ	**Urumqi**	**41.09**	**292**	*e*P	**P**	**23 24 04.0**	**-2.1**
WMQ				AP	pP	23 24 16.3	-2.1
WMQ				XP	sP	23 24 21.7	-2.1
WMQ				PP	PP	23 25 42.5	-1.7
WMQ				PCP	PcP	23 26 04.1	-1.7
WMQ				SCP		23 29 48.7	
WMQ				S	**S**	**23 30 13.4**	**-2.2**
WMQ				XS		23 30 33.5	
WMQ				SS	SS	23 33 11.7	-3.1
WMQ				SCS	ScS	23 34 02.5	-2.0
WMQ				AMB	AMB		
	comp=Z,84nm,1.0s,mb5.3						
WMQ				AMB	AMB		
	comp=Z,60nm,5.4s						
WMQ				LR	LR		
	comp=N,211nm,15.6s,MS4.2						
WMQ				LR	LR		
	comp=E,195nm,16.6s,MS4.2						
WMQ				LR	LR		
	comp=Z,336nm,17.4s,MS4.3						
NVS	**Novosibirsk**	**41.28**	**309**	*e*P	**P**	**23 24 06.4**	**-1.2**
NVS				pmax	pmax		
	comp=N,3.0nm,1.2s						
NVS				pmax	pmax		
	comp=E,5.0nm,1.2s						
NVS				pmax	pmax		
	comp=Z,7.0nm,1.2s,mb4.2						
COLA	**College**	**43.03**	**35**	*e*P	**P**	**23 24 20.2**	**-1.5**
COLA	**College**	**43.03**	**35**	P	**P**	**23 24 23.3**	**+1.6**
	comp=Z,9.5nm,0.7s,mb4.6						
ILAR	**Eielson Array**	**43.45**	**35**	P	**P**	**23 24 25.1**	**0.0**
	comp=Z,4.4nm,0.6s,mb4.3,baz=258,slow=6.0,SNR=37						
ILAR				LR	LR	23 44 11.1	
	comp=Z,24nm,20.7s,MS3.1,baz=44,slow=38						
MKAR	**Makanchi Array**	**43.77**	**298**	P	**P**	**23 24 28.0**	**0.0**
	comp=Z,5.0nm,0.9s,mb4.2,baz=79,slow=8.9,SNR=40						
MKAR				LR	LR	23 43 39.5	
	comp=Z,49nm,21.7s,MS3.4,baz=99,slow=37						
MKAR	**Makanchi Array**	**43.77**	**298**	*i* P	**P**	**23 24 28.1**	**+0.1**
MKAR				pmax	pmax		
	comp=Z,5.0nm,0.9s						
LSA	**Lhasa**	**44.63**	**272**	*e*P	**P**	**23 24 36.9**	**+1.7**
	comp=Z,3.2nm,0.7s,mb4.3						
LSA				*e*		23 24 43.2	
KURK	**Kurchatov**	**44.93**	**304**	*e*P	**P**	**23 24 37.1**	**-0.1**
CMAR

BRVK	**Borovoye**	**49.13**	**310**	*eP*		**P**	**23 25 10.1**	**0.0**
GUN	**Gumba**	**49.49**	**273**	*eP*		**P**	**23 25 13.9**	**+0.6**
	comp=Z,43nm,0.9s,mb5.5							
KKN	**Kakani**	**50.00**	**273**	*eP*		**P**	**23 25 17.5**	**+0.3**
	comp=Z,21nm,0.9s,mb5.2							
PKI	**Pulchoki**	**50.03**	**273**	*eP*		**P**	**23 25 17.2**	**-0.2**
	comp=Z,4.6nm,0.6s,mb4.7							
GKN	**Gorkha**	**50.36**	**274**	*eP*		**P**	**23 25 20.0**	**+0.1**
DANN	**Dangsing**	**50.81**	**275**	*eP*		**P**	**23 25 24.3**	**+0.9**
KSH	**Kashi**	**50.84**	**291**	*eP*		**P**	**23 25 26.0**	**+2.6**
KSH				*eAP*		*pP*	23 25 38.5	+2.7
KSH				*eXP*		*sP*	23 25 43.5	+2.4
KSH				*ePCP*		*PcP*	23 26 41.0	+1.2
KSH				*ePP*		*PP*	23 27 24.5	+3.9
KSH				*eSCP*			23 30 32.0	
KSH				*ePCS*			23 30 37.2	
KSH				*ePS*		*PS*	23 32 35.2	-15
KSH				*eS*		**S**	**23 32 39.4**	**+4.6**
KSH				*eSCS*		*ScS*	23 35 09.1	+2.1
KSH				LR		LR		
	comp=N,230nm,4.8s							
KSH				LR		LR		
	comp=E,230nm,6.2s							
KOLN	**Koldanda**	**51.25**	**274**	*eP*		**P**	**23 25 27.1**	**+0.4**
	comp=E,26nm,0.8s,mb5.2							
SVE	**Sverdlovsk**	**52.98**	**317**↑	*eP*		**P**	**23 25 39.0**	**-0.2**
SVE				*e*			23 26 04.9	
SVE				pmax		pmax		
	comp=Z,20nm,2.3s,mb4.6							
ARU	**Arti**	**54.19**	**317**↓	*iP*		**P**	**23 25 47.2**	**-0.9**
ARU				*e*			23 26 52.2	
ARU				*eS*		**S**	**23 33 19.7**	**-0.5**
ARU				*eSS*		SS	23 36 57.0	-4.8
ARU				pmax		pmax		
	comp=Z,12nm,0.9s,mb4.8							
ARU				MLR		MLR		
	comp=N,40nm,16.0s,MS4.0							
ARU				MLR		MLR		
	comp=E,100nm,16.0s,MS4.0							
ARU				MLR		MLR		
	comp=Z,100nm,16.0s,MS4.0							
ARU	**Arti**	**54.19**	**317**	*eP*		**P**	**23 25 47.1**	**-1.0**
	comp=Z,12nm,0.8s,mb4.9							
RES	**Resolute Bay**	**56.64**	**16**	*eP*		**P**	**23 26 04.2**	**-1.4**
	comp=Z,5.3nm,0.6s,mb4.8							
RES				*e*		*pP*	23 26 14.4	-3.9
YKA	**Yellowknife Ar**	**57.74**	**33**	P		**P**	**23 26 13.0**	**-0.5**
	comp=Z,1.9nm,0.7s,mb4.2,baz=303,slow=6.8,SNR=49							
ARCES	**ARCESS Array B**	**59.88**	**339**	P		**P**	**23 26 27.1**	**-1.2**
	comp=Z,2.6nm,0.9s,mb4.2,baz=34,slow=8.7,SNR=6.1							
JOF	**Joensuu**	**62.46**	**332**	*ep*		**P**	**23 26 44.0**	**-1.8**
WRA	**Warramunga Arr**	**62.88**	**191**	P		**P**	**23 26 48.2**	**-1.0**
	comp=Z,0.6nm,0.7s,mb3.8,baz=14,slow=7.4,SNR=5.2							
KAF	**Kangasniemi**	**64.73**	**333**	*ep*		**P**	**23 26 59.4**	**-1.1**
	comp=Z,3.8nm,0.7s,mb4.5,baz=46,slow=6.3							
KAF	**Kangasniemi**	**64.73**	**333**	*eP*		**P**	**23 26 59.4**	**-1.1**
KAF				pmax		pmax		
	comp=Z,4.0nm,0.7s,mb4.6							
FINES	**FINESS Array B**	**65.27**	**332**	P		**P**	**23 27 03.5**	**-0.6**
	comp=Z,8.4nm,0.7s,mb4.9,baz=51,slow=7.7,SNR=50							
FINES				LR		LR	23 58 37.9	
	comp=Z,83nm,18.4s,MS4.0,baz=278,slow=39							
FINES	**FINESS Array B**	**65.27**	**332**	*iP*		**P**	**23 27 03.5**	**-0.6**
FINES				pmax		pmax		
	comp=Z,8.0nm,0.7s							
OBN	**Obninsk**	**65.39**	**323***c*	*iP*		**P**	**23 27 03.8**	**-1.1**
OBN				pmax		pmax		
	comp=Z,10.0nm,1.1s,mb4.8							
OBN				MLR		MLR		
	comp=Z,100nm,16.0s,MS4.1							
OBN	**Obninsk**	**65.39**	**323**	*eP*		**P**	**23 27 02.6**	**-2.3**
	comp=Z,15nm,1.0s,mb5.0							
ASAR	**Alice Springs**	**66.60**	**191**	P		**P**	**23 27 13.3**	**+0.1**
	comp=Z,0.3nm,0.6s,mb3.5,slow=5.4,SNR=3.4							
FCC	**Fort Churchill**	**67.91**	**29**	*eP*		**P**	**23 27 19.7**	**-1.1**
	comp=Z,2.5nm,0.8s,mb4.3							
BOZ	**Bozeman (W)**	**68.94**	**47**	*eP*		**P**	**23 27 27.8**	**+0.3**
	comp=Z,4.0nm,0.8s,mb4.4							
KIV	**Kislovodsk**	**69.41**	**311**	*eP*		**P**	**23 27 31.5**	**+1.2**
KIV				pmax		pmax		
	comp=Z,8.0nm,0.8s,mb4.7							
KIV				MLR		MLR		
	comp=N,100nm,18.0s,MS4.2							
KIV				MLR		MLR		
	comp=E,60nm,18.0s,MS4.2							
KIV				MLR		MLR		
	comp=Z,150nm,18.0s,MS4.3							
KIV	**Kislovodsk**	**69.41**	**311**	*eP*		**P**	**23 27 30.9**	**+0.6**
	comp=Z,9.6nm,0.7s,mb4.8							
KIV				*e*		*pP*	23 27 39.3	-4.0
ZEI	**Tsey**	**69.48**	**310**	*eP*		**P**	**23 27 27.2**	**-3.6**
NVAR	**Mina Array Bea**	**69.61**	**56**	P		**P**	**23 27 34.0**	**+2.3**
	comp=Z,0.6nm,0.4s,mb3.9,baz=299,slow=9.3,SNR=2.7							
NB2	**NORSAR Subarra**	**70.20**	**338**	P		**P**	**23 27 34.3**	**-0.5**
	comp=Z,7.7nm,0.8s,mb4.7,baz=37,slow=6.2							
NOA	**NORSAR Array B**	**70.20**	**338**	P		**P**	**23 27 34.6**	**-0.2**
	comp=Z,5.2nm,0.8s,mb4.5,baz=35,slow=6.1,SNR=18							
GNI	**Garni**	**70.65**	**307**	*eP*		**P**	**23 27 39.5**	**+1.6**
GNI				pmax		pmax		
	comp=Z,7.0nm,1.1s							
GNI				MLR		MLR		
	comp=Z,100nm,21.0s							
SOC	**Sochi**	**71.29**	**312**	*eP*		**P**	**23 27 39.1**	**-2.7**
SOC				*e*			23 28 05.2	
SOC				*e*			23 30 29.2	
SOC				*eS*		S	23 36 50.1	-4.6
SOC				*e*			23 37 43.4	
SOC				*eSSS*		SSS	23 44 31.2	-7.2
SOC				pmax		pmax		
	comp=Z,12nm,0.7s,mb4.9							
SOC				pmax		pmax		
	comp=N,16nm,0.8s							
SOC				pmax		pmax		
	comp=E,37nm,0.8s							
AKASG	**Malin Array Be**	**71.65**	**323**	P		**P**	**23 27 43.1**	**-0.6**
	comp=E,2.4nm,0.6s,mb4.2,baz=43,slow=6.2,SNR=13							
PDAR	**Pinedale Array**	**71.95**	**48**	P		**P**	**23 27 46.0**	**+0.4**
	comp=E,0.9nm,0.7s,mb3.8,baz=297,slow=3.3,SNR=7.6							
RSSD	**Black Hills**	**73.98**	**44**	P		**P**	**23 27 56.8**	**-0.8**
	comp=E,2.1nm,0.8s,mb4.1							
OJC	**Ojcow**	**76.00**	**327**	*eP*		**P**	**23 28 09.7**	**+0.7**
OJC				*ePcP*		*PcP*	23 28 20.3	-1.2
NIE	**Niedzica**	**76.42**	**326**	*eP*		**P**	**23 28 13.6**	**+2.2**
UPC	**Upice**	**77.25**	**329**	*epP*		*pP*	23 28 26.6	-2.5
UPC				*ex*		x	23 28 39.2	
BRTR	**Keskin Array B**	**77.25**	**313**	P		**P**	**23 28 17.3**	**+1.0**
	comp=E,1.4nm,0.9s,mb3.9,baz=88,slow=3.5,SNR=5.6							
BRTR				LR		LR	00 06 54.1	
	comp=E,49nm,18.7s,MS3.9,baz=350,slow=39							
DPC	**Dobruska-Polom**	**77.26**	**329**	*eP*		**P**	**23 28 17.3**	**+1.2**
DPC				*epP*		*pP*	23 28 27.7	-1.5
CLL	**Collm**	**77.69**	**331**	P		**P**	**23 28 18.8**	**+0.3**
CLL				*i *PP*		*pP*	23 28 29.4	-2.2
CLL	**Collm**	**77.69**	**331**	*eP*		**P**	**23 28 18.8**	**+0.3**
CLL				*i*		*pP*	23 28 29.4	-2.2
PRU	**Pruhonice**	**78.22**	**330**	*eP*		**P**	**23 28 22.1**	**+0.7**
PRU				*epP*		*pP*	23 28 31.7	-2.8
KHC	**Kasperske Hory**	**79.28**	**330**	*eP*		**P**	**23 28 27.9**	**+0.7**
KHC				*epP*		*pP*	23 28 37.0	-3.4
GERES	**GERESS Array B**	**79.47**	**330**	P		**P**	**23 28 28.5**	**+0.2**
	comp=E,0.3nm,0.5s,mb3.5,slow=4.0,SNR=3.5							
LOR	**Lormes**	**84.23**	**335**	*eP*		**P**	**23 28 53.4**	**+0.5**
	comp=E,23nm,1.2s,mb4.9							
LOR				*eR*				
	comp=E,63nm,22.8s							
SSF	**Saint Saulge**	**84.53**	**335**	*eP*		**P**	**23 28 54.9**	**+0.5**
	comp=E,5.1nm,0.8s,mb4.4							
SMF	**Signal de Mont**	**84.79**	**334**	*eP*		**P**	**23 28 56.2**	**+0.5**
	comp=E,45nm,1.5s,mb5.1							
LPL	**La Plagne**	**84.81**	**332**	*eP*		**P**	**23 28 56.8**	**+0.9**
	comp=E,42nm,1.5s,mb5.0							
AVF	**Avril sur Loir**	**84.82**	**335**	*eP*		**P**	**23 28 56.4**	**+0.6**
	comp=E,11nm,1.0s,mb4.6							
LPG	**La Plagne**	**84.82**	**332**	*eP*		**P**	**23 28 57.0**	**+1.1**
	comp=E,6.4nm,0.8s,mb4.5							
MBDF	**Montbardon**	**85.48**	**332**	*eP*		**P**	**23 29 00.0**	**+0.8**
	comp=E,16nm,1.0s,mb4.8							
ORIF	**Oris-en-Rattie**	**85.63**	**332**	*eP*		**P**	**23 28 59.9**	**0.0**
	comp=E,22nm,1.0s,mb5.0							
ORIF				*eR*				
	comp=E,82nm,19.8s							
SMRF	**Simiane la Rot**	**86.56**	**332**	*eP*		**P**	**23 29 05.1**	**+0.6**
BDFB	**Brasilia**	**151.02**	**27**	PKPbc		PKPdf	23 36 15.3	+7.7
	comp=E,3.7nm,0.8s,baz=239,slow=11,SNR=5.0							

*MDD **06** 23:58:27.0±1.2,35.18N×4.14W,mb3.3/9,Error ellipse: s-maj=12.1km s-min=5.9km az=17.0,PRXIMO AftershockPLICA*

*NEIC **06** 23:58:27.7,35.22N×4.10W,MG3.5(MDD),After MDD.*

ISC 06 23:58:27.0±1.0,35.24N±0.05×4.12W±0.04,h10km,n31,
σ1§22/61,Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
EMEL	**Melilla**	**0.96**	**86**	P		P	**Pb**	**23 58 44.5**	**-0.7**
	60nm,0.1s,SNR=18								
EMEL				S		S	**Sb**	**23 58 58.5**	**+0.8**
	259nm,0.1s,SNR=7.9								
EJIF	**Jimena Fronter**	**1.63**	**318**	P		P	**Pn**	**23 58 56.1**	**+0.2**
	1.0nm,0.2s,SNR=5.0								
EJIF	**Jimena Fronter**	**1.63**	**318**	P		P	**Pn**	**23 58 55.6**	**-0.4**
EJIF				S		S	**Sn**	**23 59 19.6**	**+2.4**
ERON	**Agron**	**1.79**	**8**	P		P	**Pn**	**23 58 59.6**	**+1.3**
	1.5nm,0.2s,SNR=7.9								
ERON				S		S	**Sn**	**23 59 20.8**	**-0.5**
	5.0nm,0.2s,SNR=7.9								
ERON	**Agron**	**1.79**	**8**	P		P	**Pn**	**23 58 58.7**	**+0.4**
ERON				S		S	**Sn**	**23 59 20.4**	**-1.0**
ELOJ	**Sierra Loja**	**1.91**	**359**	P		P	**Pn**	**23 58 59.6**	**-0.3**
	1.3nm,0.3s,SNR=4.6								
ELOJ				S		S	**Sn**	**23 59 25.2**	**+1.1**
	3.0nm,0.2s,SNR=4.0								
ELOJ	**Sierra Loja**	**1.91**	**359**	P		P	**Pn**	**23 58 59.0**	**-0.9**
ELOJ				S		S	**Sn**	**23 59 24.4**	**+0.2**
EBER	**Berja**	**1.93**	**31**	P		P	**Pn**	**23 58 59.0**	**-1.3**
	1.5nm,0.2s,SNR=10.0								
EBER				S		S	**Sn**	**23 59 25.1**	**+0.2**
	14nm,0.4s,SNR=7.9								
EBER	**Berja**	**1.93**	**31**	P		P	**Pn**	**23 58 59.0**	**-1.3**
EBER				S		S	**Sn**	**23 59 22.7**	**-2.2**
ELIJ	**Sierra de Lija**	**1.96**	**329**	P		P	**Pn**	**23 59 02.3**	**+1.6**
	1.3nm,0.2s,SNR=24								
ELIJ				S		S	**Sn**	**23 59 26.3**	**+0.7**
	1.4nm,0.2s								
ELIJ	**Sierra de Lija**	**1.96**	**329**	P		P	**Pn**	**23 59 02.2**	**+1.5**
ELIJ				S		S	**Sn**	**23 59 26.2**	**+0.7**
ECOG	**Cogollos-Vega**	**2.08**	**12**	P		P	**Pn**	**23 59 03.5**	**+1.1**
	1.8nm,0.2s,SNR=7.5								
ECOG				S		S	**Sn**	**23 59 29.4**	**+0.7**
	5.0nm,0.3s								
ECOG	**Cogollos-Vega**	**2.08**	**12**	P		P	**Pn**	**23 59 03.3**	**+0.9**
ECOG				S		S	**Sn**	**23 59 29.6**	**+1.0**
ESPR	**Espera**	**2.15**	**320**	P		P	**Pn**	**23 59 02.4**	**-1.0**
	0.7nm,0.1s,SNR=5.0								
ESPR				S		S	**Sn**	**23 59 28.6**	**-1.8**
	6.0nm,0.3s								
ESPR	**Espera**	**2.15**	**320**	P		P	**Pn**	**23 59 05.3**	**+1.9**
ESPR				S		S	**Sn**	**23 59 32.2**	**+1.9**
ELUQ	**Luque**	**2.32**	**357**	P		P	**Pn**	**23 59 05.8**	**-0.1**
	1.0nm,0.2s,SNR=7.9								
ELUQ				S		S	**Sn**	**23 59 36.8**	**+2.2**
	3.9nm,0.2s,SNR=7.9								
ELUQ	**Luque**	**2.32**	**357**	P		P	**Pn**	**23 59 06.4**	**+0.6**
ELUQ				S		S	**Sn**	**23 59 36.6**	**+1.9**
EQES	**Quesada**	**2.69**	**18**	P		P	**Pn**	**23 59 12.3**	**+1.0**
	3.0nm,0.2s,SNR=26								
EQES				S		S	**Sn**	**23 59 43.4**	**-0.8**
	6.7nm,0.3s								
EQES	**Quesada**	**2.69**	**18**	P		P	**Pn**	**23 59 12.0**	**+0.8**
EQES				S		S	**Sn**	**23 59 43.5**	**-0.7**
EHUE	**Huescar**	**2.85**	**25**	P		P	**Pn**	**23 59 14.6**	**+1.1**
	0.9nm,0.2s,SNR=8.4								
EHUE				S		S	**Sn**	**23 59 48.9**	**+0.8**
	1.7nm,0.2s								
EHUE	**Huescar**	**2.85**	**25**	P		P	**Pn**	**23 59 14.6**	**+1.1**
EHUE				S		S	**Sn**	**23 59 47.8**	**-0.4**
EADA	**Adamuz**	**2.94**	**353**	P		P	**Pn**	**23 59 15.0**	**+0.2**
	0.4nm,0.1s,SNR=13								
EADA				S		S	**Sn**	**23 59 50.8**	**+0.2**
	3.5nm,0.3s								
EADA	**Adamuz**	**2.94**	**353**	P		P	**Pn**	**23 59 14.9**	**+0.2**
EADA				S		S	**Sn**	**23 59 48.3**	**-2.3**
EMIN	**Mina Concepcio**	**3.25**	**322**	P		P	**Pn**	**23 59 17.9**	**-1.2**
	0.5nm,0.1s,SNR=10								
EMIN				S		S	**Sn**	**23 59 56.4**	**-2.0**
	0.6nm,0.1s,SNR=7.9								
EMIN	**Mina Concepcio**	**3.25**	**322**	P		P	**Pn**	**23 59 18.5**	**-0.6**
EMIN				S		S	**Sn**	**23 59 56.0**	**-2.4**
EGRO	**El Granado**	**3.55**	**311**	P		P	**Pn**	**23 59 21.8**	**-1.5**
	0.3nm,0.1s,SNR=7.9								
EGRO				S		S	**Sn**	**00 00 02.5**	**-3.3**
	6.3nm,0.2s,SNR=7.9								
EGRO	**El Granado**	**3.55**	**311**	P		P	**Pn**	**23 59 22.0**	**-1.4**
EGRO				S		S	**Sn**	**00 00 01.4**	**-4.4**
ETOB	**Tobarra**	**3.98**	**30**	P		P	**Pn**	**23 59 30.1**	**+0.7**
	1.5nm,0.2s,SNR=7.9								
ETOB				S		S	**Sn**	**00 00 14.6**	**-2.0**
	1.5nm,0.4s,SNR=7.9								
ETOB	**Tobarra**	**3.98**	**30**	P		P	**Pn**	**23 59 29.9**	**+0.5**
ETOB				S		S	**Sn**	**00 00 14.6**	**-2.0**
ESDC	**Sonseca Array**	**4.43**	**2**	P		P	**Pn**	**23 59 34.9**	**-0.9**
	0.5nm,0.1s,baz=178,slow=12,SNR=12								
ESDC				S		S	**Sn**	**00 00 23.6**	**-4.5**
	0.2nm,0.3s,baz=182,slow=22,SNR=3.9								
ESDC	**Sonseca Array**	**4.43**	**2**	P		P	**Pn**	**23 59 34.9**	**-0.9**
ESDC				S		S	**Sn**	**00 00 23.6**	**-4.5**

IDC 07 00:07:50.0±13.0,30.15S×179.91E,h300km±133km,
mb3.4/3,mb1 3.6/4,mb1mx3.5/13,MS4.3/1,Ms1 4.3/1,
ms1mx3.4/6,Error ellipse: s-maj=156.0km
s-min=45.1km az=10.0,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**8.41**	**195**	P		P	P	00 09 48.5	-0.9
	6.8nm,0.3s,baz=347,slow=3.2,SNR=34								
URZ				S		S	S	00 11 11.0	-12
	4.9nm,0.3s,baz=80,slow=23,SNR=20								
STKA	**Stephens Creek**	**32.77**	**257**	P		P	P	00 13 55.2	-2.0
	1.1nm,0.5s,baz=86,slow=13,SNR=3.5								
PMG	**Port Moresby**	**36.88**	**297**	LR		LR	LR	00 25 55.6	
	comp=Z,407nm,18.3s,baz=194,slow=29								
ASAR	**Alice Springs**	**41.31**	**268**	P		P	P	00 15 06.8	-1.6
	1.2nm,0.7s,baz=102,slow=7.5,SNR=10								
WRA	**Warramunga Arr**	**42.28**	**273**	P		P	P	00 15 15.2	-1.0
	2.0nm,0.5s,baz=112,slow=7.9,SNR=34								
KAF	**Kangasniemi**	**143.70**	**339**	*ep*			PKPbc	00 26 46.6	-0.8
	0.3nm,0.3s								
FINES	**FINESS Array B**	**144.28**	**339**	PKP			PKPdf	00 26 48.9	-0.5
	0.7nm,0.5s,baz=45,slow=3.9,SNR=17								

*IDC **07** 00:28:38.0±0.8,11.71N×143.17E,mb3.9/10,mb1 4.1/10, mb1mx4.0/17,MS3.2/2,Ms1 3.2/2,ms1mx2.8/24,Error ellipse: s-maj=38.5km s-min=18.3km az=95.0*

*NEIC **07** 00:28:40.1±7.2,11.69N×143.17E,h12km±46km,Error ellipse: s-maj=23.7km s-min=10.3km az=103.0*

ISC 07 00:28:38.3±0.6,11.69N±0.09×143.2E±0.1,h12km,n16,
σ0§91/16,mb3.9/10,MS3.1/2,South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**2.53**	**42**	*eP*		n	**Pn**	**00 29 20.8**	**+0.8**
GUMO				*eSn*			**Sn**	**00 29 50.0**	**-0.9**
JHJ	**Hachijo jima 2**	**21.55**	**352**	LR		LR	LR	00 39 31.6	
	comp=Z,64nm,19.9s,MS3.0,baz=88,slow=30								
WRAB	**Tennant Creek**	**32.59**	**195**	*eP*			**P**	**00 35 12.0**	**-0.1**
WRA	**Warramunga Arr**	**32.60**	**196**	P		P	**P**	**00 35 11.2**	**-1.0**
	2.5nm,0.6s,mb4.3,baz=19,slow=9.7,SNR=23								
ASAR	**Alice Springs**	**36.28**	**194**	P		P	**P**	**00 35 44.5**	**+0.8**
	0.5nm,0.7s,mb3.6,baz=14,slow=12,SNR=4.9								
ASAR				LR		LR	LR	00 50 41.4	
	comp=Z,42nm,20.1s,MS3.2,baz=355,slow=36								
STKA	**Stephens Creek**	**43.34**	**182**	P		P	**P**	**00 36 41.6**	**-0.7**
	1.0nm,0.7s,mb3.6,baz=15,slow=12,SNR=2.9								
SONM	**Songino Array**	**47.35**	**327**	P		P	**P**	**00 37 13.1**	**-0.9**
	0.2nm,0.4s,mb3.4,baz=148,slow=6.8,SNR=3.3								
MKAR	**Makanchi Array**	**61.70**	**317**	P		P	**P**	**00 38 59.3**	**+0.5**
	0.4nm,0.7s,mb3.7,baz=102,slow=6.9,SNR=5.7								
KURK	**Kurchatov**	**64.96**	**321**	*eP*			**P**	**00 39 20.3**	**+0.1**
ILAR	**Eielson Array**	**70.99**	**25**	P		P	**P**	**00 39 56.2**	**-1.4**
	0.8nm,0.5s,mb3.9,baz=252,slow=5.9,SNR=16								
YKA	**Yellowknife Ar**	**85.31**	**27**	P		P	**P**	**00 41 17.5**	**+1.4**
	0.3nm,0.5s,mb3.7,baz=287,slow=5.0,SNR=13								
ARCES	**ARCESS Array B**	**88.36**	**342**	P		P	**P**	**00 41 31.5**	**+0.6**
	0.8nm,0.5s,mb4.2,baz=68,slow=6.5,SNR=7.9								
ARCES	**ARCESS Array B**	**88.36**	**342**	P		P	**P**	**00 41 31.5**	**+0.6**
NVAR	**Mina Array Bea**	**89.42**	**51**	P		P	**P**	**00 41 38.2**	**+1.5**
	0.7nm,0.5s,mb4.3,baz=258,slow=4.7,SNR=3.5								
NVAR	**Mina Array Bea**	**89.42**	**51**	P		P	**P**	**00 41 38.2**	**+1.5**
FINES	**FINESS Array B**	**92.16**	**335**	P		P	**P**	**00 41 48.0**	**-0.7**
	0.5nm,0.5s,mb4.1,baz=45,slow=5.4,SNR=4.4								

*NEIC **07** 00:31:18.4±0.7,19.97S×178.27W,h555km,Error ellipse: s-maj=28.6km s-min=18.5km az=152.0*

*IDC **07** 00:31:22.0±15.0,19.81S×178.52W,h583km±135km, mb3.4/5,mb1 3.6/5,mb1mx3.2/15,Error ellipse: s-maj=215.0km s-min=41.3km az=135.0*

ISC 07 00:31:21.3±1.3,20.0S±0.3×178.5W±0.2,h600km,n10,
σ0§53/6,mb3.9/6,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**33.11**	**264**	P		P	**P**	**00 37 11.2**	**+0.4**
	5.0nm,0.8s,mb4.2,baz=74,slow=10,SNR=4.8								
ASAR	**Alice Springs**	**44.21**	**256**	P		P	**P**	**00 38 40.8**	**+0.4**
	3.3nm,0.6s,mb4.0,baz=94,slow=7.7,SNR=39								
ASAR				PcP		PcP	PcP	00 40 12.1	+0.2
	0.5nm,0.5s,baz=100,slow=4.0,SNR=6.7								
WRA	**Warramunga Arr**	**44.24**	**262**	P		P	**P**	**00 38 40.0**	**-0.7**
	1.8nm,0.4s,mb4.0,baz=97,slow=7.8,SNR=49								
FITZ	**Fitzroy Crossi**	**52.67**	**262**	P		P	**P**	**00 39 43.1**	**-0.1**
	5.5nm,1.1s,mb3.8,baz=165,slow=16,SNR=3.4								
QSPA	**South Pole Qui**	**70.05**	**180**	*eP*			**P**	**00 41 35.0**	**0.0**
	2.9nm,0.8s,mb3.8								
ILAR	**Eielson Array**	**87.94**	**13**	P		P	**P**	**00 43 08.9**	**0.0**
	0.9nm,0.5s,mb3.8,baz=218,slow=5.4,SNR=10								
MKAR	**Makanchi Array**	**110.55**	**314**	PKiKP				00 48 47.6	
	0.3nm,0.6s,baz=67,slow=1.8,SNR=4.1								
FINES	**FINESS Array B**	**135.19**	**344**	PKhKP				00 49 31.1	
	1.0nm,1.0s,baz=45,slow=2.0,SNR=3.5								
BRTR	**Keskin Array B**	**146.20**	**313**	PKPbc		PKPbc		00 49 57.1	+2.3
	1.2nm,0.6s,baz=128,slow=5.7,SNR=7.8								
GERES	**GERESS Array B**	**149.62**	**344**	PKPbc		PKPdf		00 50 05.9	+7.7
	0.8nm,0.7s,baz=326,slow=3.5,SNR=3.5								

CASC 07 01:05:34.5±2.2,11.01N×86.95W,h23km±14km,MD4.1,
6C-4D,Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CRUN	**El Crucero**	**1.16**	**33**	*eP*			Pn	01 05 55.3	-0.2
COPN	**Copaltepe**	**1.22**	**17**↓	*eP*			Pn	01 05 56.2	-0.2
COPN				*eS*			Sb	01 06 14.3	+2.3
TICN	**Ticuantepe**	**1.24**	**35**	*eP*			Pn	01 05 56.2	-0.5
APON	**Apoyo**	**1.25**	**44**↓	*eP*			Pn	01 05 56.0	-0.8
APON				*eS*			Sb	01 06 13.6	+0.6
XAVN	**Gruta Xavier**	**1.29**	**28**↑	*eP*			Pn	01 05 56.7	-0.6
MGAN	**Managua**	**1.32**	**31**↑	*eP*			Pn	01 05 57.1	-0.8
MGAN				*eS*			Sn	01 06 17.7	+2.7
PYN	**Poneloya**	**1.37**	**357**	*eP*			Pn	01 05 58.5	0.0
WILN	**Americas 2**	**1.37**	**33**	*eP*			Pn	01 05 57.6	-0.9
WILN				*eS*			Sn	01 06 16.3	+0.2
LEON	**Leon**	**1.40**	**2**↑	*eP*			Pn	01 05 59.0	+0.1
COFN	**Cofrada**	**1.40**	**36**↓	*eP*			Pn	01 05 58.0	-1.0
CONN	**Concepcion**	**1.41**	**67**↑	*eP*			Pn	01 05 57.5	-1.6
MOMJ	**Momotombo**	**1.45**	**16**	*eP*			Pn	01 05 59.3	-0.4
CNGN	**Cerro Negro**	**1.50**	**9**↑	*eP*			Pn	01 05 60.0	-0.5
CNGN				*eS*			Sn	01 06 20.9	+1.4
CRIN	**San Cristobal**	**1.68**	**357**	*eP*			Pn	01 06 03.6	+0.5
PYTN	**Playitas**	**1.75**	**30**	*eP*			Pn	01 06 03.0	-1.1
JCR	**Jicaral**	**2.15**	**122**↑	*eP*			Pn	01 06 06.9	-2.7
JCR				*eS*			Sn	01 06 42.5	+6.7
FORC	**Fortuna**	**2.31**	**103**

RPZ **Rata Peaks 21.74 178** P **P** **01 31 34.2 -0.1**
71nm,0.9s,mb5.1,baz=27,slow=6.1,SNR=8.1
RPZ S **S** **01 35 38.4 +9.3**
12nm,0.8s,baz=183,slow=19,SNR=1.6
RPZ LR LR 01 39 15.1
comp=Z,64μm,19.2s,MS6.0,baz=350,slow=34
CTA Charters Tower 22.42 270 *e*P **P** **01 31 42.2 +1.0**
163nm,1.2s,mb5.3
CTA *e*S **S** **01 35 45.8 +4.1**
CTA Charters Tower 22.42 270 P **P** **01 31 42.2 +1.0**
59nm,0.9s,mb5.0,baz=86,slow=12,SNR=25
CTA S **S** **01 35 50.3 +8.6**
34nm,1.2s,baz=53,slow=10,SNR=3.6
CTAO Charters Tower 22.42 270⇓*e*P **P** **01 31 42.3 +1.0**
474nm,1.4s,mb5.7
CTAO *e* 01 31 49.4
CTAO LR LR
comp=Z,86μm,19.0s,MS6.2
BWZ Berwen 22.55 181 P **P** **01 31 45.6 +3.2**
CNB Canberra Magne 22.57 229 *e*P **P** **01 31 43.1 +0.4**
comp=Z,578nm,1.1s,mb5.9
CNB *e*S **S** **01 35 52.3 +7.8**
TUZ Tuapeka 23.97 181 P **P** **01 32 02.5 +6.3**
PMG Port Moresby 25.38 296 P **P** **01 32 10.5 +0.4**
comp=Z,86nm,0.8s,mb5.3,baz=117,slow=8.4,SNR=10
PMG S **S** **01 36 36.5 +3.3**
comp=Z,3.7nm,0.5s,baz=274,slow=14,SNR=1.8
PMG LR LR 01 39 54.0
comp=Z,35μm,20.3s,MS5.9,baz=116,slow=31
PMG Port Moresby 25.38 296 *e*P **P** **01 32 10.0 -0.1**
PMG pmax pmax
comp=Z,170nm,0.9s
PMG Port Moresby 25.38 296 *e*P **P** **01 32 11.7 +1.6**
TOO Toolangi 26.40 228 *e*P **P** **01 32 19.1 -0.2**
comp=Z,70nm,1.1s,mb5.1
TOO *e*S **S** **01 36 55.0 +5.1**
WAU Wau 26.88 299 *e*P **P** **01 32 25.6 +1.6**
STKA Stephens Creek 27.29 243 *e*P **P** **01 32 26.4 -1.1**
comp=Z,102nm,1.1s,mb5.3
STKA *e*S **S** **01 37 00.6 -3.8**
STKA Stephens Creek 27.29 243 P **P** **01 32 26.5 -1.0**
comp=Z,592nm,1.4s,mb5.9,baz=79,slow=9.5,SNR=114
STKA PcP PcP 01 35 47.0 -0.5
comp=Z,14nm,0.7s,baz=2.7,slow=15,SNR=3.7
STKA S **S** **01 37 07.0 +2.6**
comp=Z,9.7nm,1.0s,baz=342,slow=16,SNR=1.5
STKA LR LR 01 42 48.9
comp=Z,72μm,19.4s,MS6.2,baz=87,slow=35
RAR Rarotonga 27.92 94 P **P** **01 32 33.6 +0.2**
comp=Z,27nm,1.1s,mb4.8,baz=233,slow=10,SNR=2.9
RAR Rarotonga 27.92 94 *e*P **P** **01 32 33.7 +0.3**
RAR LR LR
comp=Z,21μm,19.0s,MS5.7
TAU Tasmania Unive 28.31 217 *e*P **P** **01 32 34.9 -1.8**
comp=Z,130nm,1.1s,mb5.5
TAU LR LR
comp=Z,33μm,19.0s,MS6.0
AS12 Alice Springs 33.44 260 *e*P **P** **01 33 21.2 -1.0**
comp=Z,62nm,1.2s,mb5.4
AS12 *e* 01 33 29.3
AS12 *e* 01 33 38.1
ASAR Alice Springs 33.44 260 P **P** **01 33 20.2 -1.9**
comp=Z,16nm,0.8s,mb5.0,baz=91,slow=10,SNR=44
ASAR PcP PcP 01 36 02.8 -0.7
comp=Z,13nm,0.8s,baz=124,slow=3.3,SNR=4.2
ASAR LR LR 01 47 04.3
comp=Z,35μm,19.0s,MS6.1,baz=94,slow=36
WB2 Warramunga Arr 33.49 267 *e*P **P** **01 33 20.1 -2.5**
WB2 *e*S **S** **01 38 31.6 -11**
WRAB Tennant Creek 33.49 267 *e*P **P** **01 33 20.7 -1.9**
comp=Z,508nm,1.1s,mb6.4
WRA Warramunga Arr 33.50 267 P **P** **01 33 20.8 -1.9**
comp=Z,23nm,0.6s,mb5.3,baz=99,slow=8.2,SNR=87
WRA S **S** **01 38 39.8 -2.8**
comp=Z,5.1nm,1.1s,baz=125,slow=29,SNR=7.1
WRA LR LR 01 47 31.3
comp=Z,104μm,18.2s,MS6.6,baz=100,slow=37
PPT Papeete 38.04 91 *e*S **S** **01 39 34.1 -18**
PPT *e*L 01 42 24.6
PPT *e*R 01 44 23.5
comp=Z,21μm,23.5s,baz=249
FORT Forrest 38.58 248 *e*P **P** **01 34 04.5 -1.3**
comp=Z,680nm,1.0s,mb6.3
FORT *e*PP PP 01 35 34.4 -3.4
FORT *e*S S 01 39 25.5 -35
FITZ Fitzroy Crossi 41.93 267 *e*P **P** **01 34 33.2 -0.3**
comp=Z,241nm,1.0s,mb5.8
FITZ *e*S **S** **01 40 34.3 -17**
GUMO Guam 43.16 323 P **P** **01 34 43.7 0.0**
GUMO LR LR
comp=Z,9μm,19.0s,MS5.7
KLBR Kellerberrin 47.42 247 *e*P **P** **01 35 14.8 -2.7**
comp=Z,404nm,1.3s,mb6.2
KLBR *e*PP PP 01 37 13.6 +5.3
NWAO Narrogin (SRO) 47.83 245 *e*P **P** **01 35 20.0 -0.7**
comp=Z,170nm,1.0s,mb6.0
NWAO LR LR
comp=Z,54μm,20.0s,MS6.5
MUN Mundaring 48.72 246 *e*P **P** **01 35 27.2 -0.4**
comp=Z,64nm,1.0s,mb5.6
MUN *e*S **S** **01 42 22.1 -6.3**
MIDW Midway 51.28 14 Pu 01 35 47.9
MIDW S **S** **01 43 08.8 +5.0**
MIDW LR LR
comp=Z,128μm,19.0s,MS7.0
KIP Kipapa 53.09 38 PFAKE 01 36 10.0 +9.1
KIP LR LR
comp=Z,13μm,20.0s,MS6.0
POHA Pohakuloa 53.28 41 PFAKE 01 36 10.0 +7.7
POHA LR LR
comp=Z,14μm,20.0s,MS6.0
BUTP Butuan 53.42 300⇑*e*P **P** **01 36 00.2 -3.2**
RATI Rata 54.06 275⇓*e*P **P** **01 36 08.9 +0.8**
INGI Ingas 54.39 275⇓*e*P **P** **01 36 11.1 +0.6**
BESP Borongan 55.12 303⇑*e*P **P** **01 36 17.0 +1.2**
KELI Kelakatan 55.20 275⇑*e*P **P** **01 36 18.9 +2.4**
CBIJ Chichi jima 55.76 330 P **P** **01 36 19.3 -1.1**
comp=Z,164nm,1.0s,mb6.0,baz=300,slow=3.6,SNR=9.0
SBA Scott Base 56.00 181 P **P** **01 36 21.0 -0.4**
SBA pmax pmax
comp=Z,220nm,1.4s,mb6.0
SBA Scott Base 56.00 181 *e*P **P** **01 36 20.6 -0.8**
comp=Z,218nm,1.4s,mb6.0
SBA LR LR
comp=Z,17μm,19.0s,MS6.1
CNP Catarman 56.27 303⇑*e*P **P** **01 36 25.2 +1.1**
RCP Roxas 57.22 301⇑*e*P **P** **01 36 32.9 +2.0**
PVCP Virac 57.31 304⇑*e*P **P** **01 36 33.3 +1.7**
KALP Kalibo 57.61 301⇓*e*P **P** **01 36 33.4 -0.3**
comp=Z,5μm,1.0s
KKM Kota Kinabalu 59.72 291⇓*e*P **P** **01 36 47.9 -0.5**
BATP Bataraza 59.76 295⇑*e*P **P** **01 36 51.0 +2.4**
TGY Tagaytay City 60.12 302 P **P** **01 36 50.2 -0.9**
comp=Z,190nm,0.3s,mb6.6,baz=166,slow=16,SNR=6.8
TGY LR LR 01 58 08.4
comp=Z,6μm,20.7s,MS5.7,baz=156,slow=31
MIR Mirnyy 64.99 206*be*P **P** **01 37 21.5 -1.3**
MIR *e* 01 39 43.0
MIR *e* 01 45 58.0
MIR *e*SS SS 01 50 10.0 -6.3
MIR pmax pmax
comp=Z,240nm,1.7s,mb6.0
MIR pmax pmax
comp=Z,4μm,11.0s
MIR pmax pmax
comp=N,4μm,12.0s
MIR pmax pmax
comp=E,4μm,12.0s
MIR MLR MLR
comp=N,6μm,15.0s,MS6.1
MIR MLR MLR
comp=E,6μm,15.0s,MS6.1
MIR MLR MLR
comp=Z,14μm,15.0s,MS6.3
MAJO Matsushiro 65.53 332⇑*e*P **P** **01 37 25.2 -1.6**
comp=Z,78nm,0.8s,mb5.8
MAJO LR LR
comp=Z,6μm,19.0s,MS5.8
MAT Matsushiro 65.53 332 P **P** **01 37 25.1 -1.7**
MAT S S 01 46 12.0 +2.5
JNU Nakatsue 66.36 325 P **P** **01 37 31.5 -0.6**
comp=Z,56nm,0.8s,mb5.7,baz=89,slow=8.3,SNR=22
JNU S S 01 46 21.1 +1.5
comp=Z,2.4nm,0.3s,baz=285,slow=19,SNR=3.6
JNU LR LR 02 04 09.6
comp=Z,5μm,21.0s,MS5.7,baz=133,slow=34

TATO Taipei 66.41 312 *e*P **P** **01 37 31.2 -1.3**
comp=Z,146nm,1.1s,mb5.9
TATO LR LR
comp=Z,7μm,20.0s,MS5.8
QSPA South Pole Qui 68.14 180⇑*i*P **P** **01 37 41.2 -1.4**
comp=Z,210nm,1.2s,mb6.0
QSPA *e* pP 01 37 47.5 -0.3
QZH Quanzhou 68.41 310 P **P** **01 37 45.0 -0.2**
QZH S S 01 46 44.0 -0.4
QZH AMB AMB
comp=Z,200nm,1.3s,mb6.0
QZH LR LR
comp=N,5μm,19.1s,MS6.0
QZH LR LR
comp=E,8μm,20.4s,MS6.0
QZH LR LR
comp=Z,7μm,26.0s
YUK Yuzh-Kuril'sk 69.33 341 *e*P **P** **01 37 48.0 -2.5**
YUK *e* 01 38 09.5
YUK *e*S S 01 46 51.0 -3.9
YUK pmax pmax
comp=N,3μm,8.0s
YUK pmax pmax
comp=E,2μm,8.0s
YUK pmax pmax
comp=Z,4μm,8.0s
YUK smax
comp=E,3μm,15.0s
YUK smax
comp=N,2μm,13.0s
YUK MLR MLR
comp=Z,14μm,18.0s,MS6.2
YUK MLR MLR
comp=N,7μm,19.0s,MS6.0
YUK MLR MLR
comp=E,5μm,17.0s,MS6.0
KGM Kluang 69.42 281⇑*e*P **P** **01 37 52.0 +0.4**
comp=E,167nm,1.1s,mb5.9
HKC Hong Kong 70.09 305⇑*i*P **P** **01 37 56.0 +0.5**
HKC *i* S S 01 47 10.0 +5.7
COCO West Island 70.25 264 PFAKE 01 38 10.0 +13
COCO LR LR
comp=Z,20μm,21.0s,MS6.3
ASAJ Asahikawa 70.42 339 P **P** **01 37 57.3 +0.2**
comp=Z,234nm,1.4s,mb5.9,baz=205,slow=14,SNR=8.0
SSE Sheshan 70.63 317 ⇑P **P** **01 37 57.6 -1.0**
SSE PP PP 01 40 35.7 -1.5
SSE S S 01 47 10.7 +0.3
SSE SS SS 01 51 45.7 +1.6
SSE AMB AMB
comp=Z,65nm,2.0s,mb5.2
SSE AMB AMB
comp=Z,2μm,9.8s
SSE LR LR
comp=N,2μm,15.0s,MS5.8
SSE LR LR
comp=E,3μm,15.0s,MS5.8
SSE LR LR
comp=Z,5μm,15.0s,MS5.8
GZH Guangzhou 71.17 305 P **P** **01 38 02.5 +0.5**
GZH S S 01 47 20.0 +3.2
GZH LR LR
comp=N,1μm,17.3s,MS5.7
GZH LR LR
comp=E,3μm,21.6s,MS5.7
GZH LR LR
comp=Z,5μm,21.0s,MS5.8
KS15 Wonju Array Si 71.23 326 *e*P **P** **01 38 01.3 -0.9**
QIZ Qiongzhong 71.68 300⇑*i*P **P** **01 38 05.8 +0.6**
QIZ AP pP 01 38 10.8 +0.4
QIZ S S 01 47 26.4 +3.6
QIZ LR LR
comp=E,3μm,20.6s
QIZ LR LR
comp=Z,4μm,20.3s,MS5.7
QIZ Qiongzhong 71.68 300 *e*P **P** **01 38 05.6 +0.4**
comp=Z,65nm,1.3s,mb5.4
INCN Inchon 71.92 325 *e*P **P** **01 38 06.6 +0.3**
comp=Z,147nm,1.1s,mb5.8
INCN LR LR
comp=Z,5μm,20.0s,MS5.8
RPN Rapa Nui 72.22 113 PFAKE 01 38 20.0 +12
RPN LR LR
comp=Z,35μm,20.0s,MS6.6
IPM Ipoh 72.56 282⇓*e*P **P** **01 38 11.0 +0.4**
comp=Z,34nm,0.7s,mb5.4
NJ2 Nanjing 72.75 316 ⇑P **P** **01 38 11.9 +0.5**
NJ2 AP pP 01 38 21.9 +5.3
NJ2 XP sP 01 38 25.3 +6.8
NJ2 PP PP 01 40 57.0 +1.6
NJ2 S S 01 47 36.0 +1.1
NJ2 AMB AMB
comp=Z,2μm,9.4s
NJ2 LR LR
comp=N,1μm,21.6s,MS5.5
NJ2 LR LR
comp=E,2μm,20.3s,MS5.5
YSS Yuzh-Sakhalins 72.90 341α*i*P **P** **01 38 12.0 +0.1**
YSS *e* 01 38 32.0
YSS *i* S S 01 47 40.0 +3.8
YSS *e*S S 01 48 22.0 +46
YSS *e*SS SS 01 52 15.0 -4.1
YSS pmax pmax
comp=Z,90nm,1.0s,mb5.7
YSS pmax pmax
comp=Z,3μm,9.0s
YSS smax
comp=N,3μm,14.0s
YSS smax
comp=E,4μm,12.0s
YSS MLR MLR
comp=N,8μm,18.0s,MS6.0
YSS MLR MLR
comp=E,2μm,18.0s,MS6.0
YSS MLR MLR
comp=Z,9μm,18.0s,MS6.1
YSS Yuzh-Sakhalins 72.90 341 *e*P **P** **01 38 11.7 -0.2**
comp=Z,88nm,1.0s,mb5.6
YSS LR LR
comp=Z,11μm,20.0s,MS6.1
SKR Severo-Kuril's 73.35 351 *e*P **P** **01 38 12.0 -2.5**
SKR *e* 01 38 34.0
SKR *e*PPP PPP 01 42 46.0 +2.3
SKR *e*S S 01 47 40.0 -1.2
SKR pmax pmax
comp=N,3μm,8.0s
SKR pmax pmax
comp=E,3μm,8.0s
SKR pmax pmax
comp=Z,5μm,8.0s
SKR pmax pmax
comp=Z,400nm,1.2s,mb6.2
SKR smax
comp=N,5μm,14.0s
SKR smax
comp=E,7μm,14.0s
SKR MLR MLR
comp=N,4μm,18.0s,MS6.0
SKR MLR MLR
comp=E,6μm,18.0s,MS6.0
SKR MLR MLR
comp=Z,4μm,18.0s,MS5.8
VLA Vladivostok 73.70 332⇓*i*P **P** **01 38 15.0 -1.6**
VLA *i* 01 38 36.0
VLA *i* PPP PPP 01 42 50.0 +2.7
VLA *i* PS PS 01 48 18.0 -2.9
VLA *i* SS SS 01 52 25.0 -6.3
VLA pmax pmax
comp=Z,5μm,9.0s
VLA pmax pmax
comp=N,9μm,12.0s
VLA pmax pmax
comp=E,700nm,9.0s
VLA pmax pmax
comp=Z,2μm,12.0s
VLA pmax pmax
comp=N,2μm,10.0s
SMY Shemya 74.42 2 PFAKE 01 38 30.0 +9.4
SMY LR LR
comp=Z,16μm,19.0s,MS6.3
FX1 Attu Island--F 74.53 2 P **P** **01 38 20.3 -1.0**
comp=Z,35nm,0.8s,mb5.3,baz=79,slow=5.2,SNR=3.5
WHN Wuhan 74.81 312 ⇑P **P** **01 38 23.7 +0.4**
WHN S S 01 47 58.0 +0.1
WHN AMB AMB
comp=Z,319nm,2.0s,mb5.9
WHN LR LR
comp=N,5μm,23.9s,MS6.0
WHN LR LR
comp=E,8μm,23.3s,MS6.0
WHN LR LR
comp=Z,9μm,21.5s,MS6.0
CHAT Chantaburi 74.97 290 P **P** **01 38 26.0 +1.5**
PET Petropavlovsk 75.31 353*c i*P **P** **01 38 25.8 +0.1**
PET *e* 01 38 45.7
PET *e*S S 01 48 04.0 +1.0
PET *e* 01 48 30.7
PET *e*PPS PPS 01 48 57.8 +0.9
PET pmax pmax
comp=N,1μm,8.1s
PET pmax pmax
comp=Z,3μm,8.1s
PET pmax pmax
comp=E,519nm,4.4s
PET pmax pmax
comp=N,1μm,12.9s
PET pmax pmax
comp=E,582nm,11.6s
PET pmax pmax
comp=Z,3μm,10.7s
PET pmax pmax
comp=Z,3μm,16.3s
PET smax
comp=N,2μm,12.3s
PET smax
comp=N,2μm,11.0s
PET smax
comp=E,4μm,18.5s
PET smax
comp=E,4μm,13.6s
PET Petropavlovsk 75.31 353 PFAKE 01 38 40.0 +14
PET LR LR
comp=Z,9μm,19.0s,MS6.1
DL2 Dalian 75.69 323⇑*i*P **P** **01 38 28.3 +0.1**
DL2 PP PP 01 41 21.2 +1.3
DL2 PPP PPP 01 43 08.8 +2.5
DL2 S S 01 48 08.4 +0.9
DL2 AMB AMB
comp=Z,100nm,1.0s,mb5.7
DL2 AMB AMB
comp=Z,2μm,8.3s
DL2 LR LR
comp=N,950nm,16.3s,MS5.5
DL2 LR LR
comp=E,2μm,19.8s,MS5.5
MDJ Mudanjiang 75.90 331 P **P** **01 38 28.9 -0.4**
MDJ PCP PcP 01 38 40.6 -1.5
MDJ PP PP 01 41 19.1 -2.4
MDJ S S 01 48 14.3 +4.6
MDJ SCS ScS 01 48 40.4 +0.8
MDJ AMB AMB
comp=Z,3μm,8.6s
MDJ LR LR
comp=N,2μm,34.6s,MS5.6
MDJ LR LR
comp=E,4μm,30.1s,MS5.6
MDJ LR LR
comp=Z,6μm,24.1s
MDJ Mudanjiang 75.90 331⇑*e*P **P** **01 38 29.4 +0.1**
comp=Z,105nm,1.0s,mb5.7
MAW Mawson 76.29 202 P **P** **01 38 31.0 0.0**
comp=Z,18nm,1.0s,mb4.9,baz=101,slow=7.3,SNR=17
MAW S S 01 48 13.6 +0.1
comp=Z,1.4nm,0.9s,baz=289,slow=18,SNR=2.0
MAW LR LR 02 08 35.3
comp=Z,7μm,18.8s,MS6.0,baz=329,slow=33
MAW Mawson 76.29 202 *e*P **P** **01 38 30.0 -1.0**
comp=Z,119nm,1.3s,mb5.7
MAW LR LR
comp=Z,11μm,20.0s,MS6.2
TIA Tai'an 76.53 318 *e*P **P** **01 38 32.2 -0.8**
TIA AMB AMB
comp=Z,60nm,1.2s,mb5.4
TIA LR LR
comp=N,5μm,16.0s
SNY Shenyang 76.70 326 ⇑P **P** **01 38 34.2 +0.4**
SNY S S 01 48 21.6 +3.1
SNY LR LR
comp=N,3μm,23.7s,MS5.7
SNY LR LR
comp=E,3μm,20.2s,MS5.7
SNY LR LR
comp=Z,4μm,24.6s,MS5.7
NIKO Nikolski 76.78 13 *e*P **P** **01 38 32.7 -1.3**
NNT Nongplab 77.12 289 P **P** **01 38 40.0 +3.3**
CN2 Changchun 77.21 328 *e*P **P** **01 38 36.1 -0.5**
CN2 XP sP 01 38 43.7 0.0
CN2 *e*S S 01 48 25.0 +1.1
CN2 AMB AMB
comp=Z,130nm,1.0s,mb5.8
CN2 AMB AMB
comp=Z,3μm,7.0s
CN2 LR LR
comp=N,3μm,18.0s,MS5.8
CN2 LR LR
comp=E,3μm,18.0s,MS5.8
CN2 LR LR
comp=Z,5μm,22.0s,MS5.8
ENH Enshi 78.06 310 *e*P **P** **01 38 41.1 -0.5**
comp=Z,398nm,1.6s,mb6.1
GYA Guiyang 78.08 305⇑*i*P **P** **01 38 43.2 +1.4**
GYA AP pP 01 38 47.4 +0.3
GYA PP PP 01 41 41.7 +1.4
GYA S S 01 48 37.0 +3.3
GYA SS SS 01 53 40.6 +2.2
GYA AMB AMB
comp=Z,60nm,1.8s,mb5.2
GYA LR LR
comp=N,1μm,18.3s,MS5.8
GYA LR LR
comp=E,4μm,19.5s,MS5.8
GYA LR LR
comp=Z,5μm,21.9s,MS5.8
UNV Unalaska Valle 78.10 14 *e*P **P** **01 38 40.0 -1.3**
UNV LR LR
comp=Z,25μm,20.0s,MS6.5
NST Nakhon Sawan 78.15 292 P **P** **01 38 44.0 +1.7**
comp=Z,58nm,1.0s,mb5.5
KLR Kul'dur 78.67 335⇓*e*P **P** **01 38 43.8 -0.7**
KLR *e*S S 01 48 43.5 +3.9
KLR pmax pmax
comp=N,83nm,2.4s
KLR pmax pmax
comp=E,68nm,2.4s
KLR pmax pmax
comp=Z,310nm,2.4s,mb5.8
KLR pmax pmax
comp=N,1μm,8.0s
KLR pmax pmax
comp=E,700nm,8.0s
KLR pmax pmax
comp=Z,4μm,8.0s
KLR smax
comp=N,2μm,14.5s
KLR smax
comp=E,2μm,14.5s
KLR MLR MLR
comp=Z,4μm,18.0s,MS5.8
BJT Baijiatuau 79.56 321 *e*P **P** **01 38 49.4 -0.2**
comp=Z,63nm,1.0s,mb5.5
BJI Beijing 79.58 321 P **P** **01 38 49.4 -0.3**
BJI PP PP 01 41 52.6 +0.6
BJI S S 01 48 51.0 +1.7
BJI SS SS 01 54 01.9 +1.4
BJI AMB AMB
comp=Z,83nm,2.0s,mb5.3
BJI LR LR
comp=N,4μm,18.3s,MS5.9
BJI LR LR
comp=E,3μm,17.5s,MS5.9
BJI LR LR
comp=Z,5μm,28.6s
BDT Bhumibol Dam 79.82 293 P **P** **01 38 56.0 +4.6**
comp=Z,13nm,1.1s,mb4.8
CHRT Chiangrai 80.35 296 ⇓P **P** **01 38 56.0 +1.8**
comp=Z,418nm,0.9s,mb6.4
TIY Taiyuan 80.40 317 ⇑P **P** **01 38 54.0 -0.1**
TIY S S 01 49 03.0 +5.0
TIY LR LR
comp=N,2μm,17.0s
TIY LR LR
comp=Z,3μm,17.0s,MS5.8

CM31 Chiang Mai Arr 80.42 294 *e*P P **01 38 56.4 +1.9**
comp=Z,66nm,0.9s,mb5.6
CM31 LR LR
comp=Z,6µm,19.0s,MS6.0
CMAR Chiang Mai Arr 80.42 294 P P **01 38 55.6 +1.1**
comp=Z,34nm,0.8s,mb5.3,baz=134,slow=3.9,SNR=45
CMAR PKKPbc 01 57 37.2
comp=Z,1.1nm,0.5s,baz=291,slow=3.5,SNR=7.1
CMAR PKPPKP 02 05 39.0
comp=Z,0.7nm,0.4s,baz=284,slow=4.0,SNR=5.9
KMI Kunming 80.44 302⇑ *e*P P **01 38 55.8 +1.2**
KMI XP sP 01 39 07.0 +5.3
KMI S S 01 49 02.1 +3.4
KMI AMB AMB
comp=Z,120nm,1.3s,mb5.7
KMI LR LR
comp=N,3µm,19.0s,MS6.0
KMI LR LR
comp=E,6µm,19.4s,MS6.0
KMI LR LR
comp=Z,5µm,20.9s,MS5.8
XAN Xi'an 80.57 312 P P **01 38 55.4 +0.3**
XAN S S 01 49 00.9 +1.0
XAN AMB AMB
comp=Z,77nm,2.2s,mb5.2
XAN LR LR
comp=N,1µm,20.3s,MS5.7
XAN LR LR
comp=E,3µm,18.1s,MS5.7
XAN LR LR
comp=Z,5µm,19.4s,MS5.8
CHTO Chiang Mai 80.58 295 P P **01 38 56.2 +0.8**
CHTO S S 01 49 04.9 +4.8
SDN Sand Point 80.92 16 *e*P P **01 38 54.7 -1.8**
CD2 Chengdu 82.57 307 *e*P P **01 39 07.0 +1.4**
CD2 SKS SKS 01 49 22.0 -6.0
CD2 S S 01 49 24.9 +4.4
SYO Syowa Base 82.61 196 ⇑P P **01 39 03.5 -1.5**
SYO Syowa Base 82.61 196 ⇓*p*P *p*P 01 39 09.0 -1.4
SYO Syowa Base 82.61 196⇑ *e*P P **01 39 03.5 -1.5**
SYO *e*pP pP 01 39 09.0 -1.4
MA2 Magadan 82.76 350 P P **01 39 05.1 -0.8**
MA2 S S 01 49 25.3 +3.6
MA2 Magadan 82.76 350*c i*P P **01 39 05.3 -0.6**
MA2 *e* 01 42 14.6
MA2 *e* 01 44 12.4
MA2 *e*S S 01 49 18.8 -2.9
MA2 *e*PS PS 01 50 18.4 +3.1
MA2 *e*SSS SSS 01 58 04.1 -8.2
MA2 pmax pmax
comp=N,7.0nm,1.2s
MA2 pmax pmax
comp=E,9.0nm,1.2s
MA2 pmax pmax
comp=Z,20nm,1.2s,mb5.0
MA2 MLR MLR
comp=Z,9µm,21.0s,MS6.1
MA2 Magadan 82.76 350⇑ *i*P P **01 39 05.3 -0.6**
MA2 LR LR
comp=Z,11µm,21.0s,MS6.2
HHC Hu-ho-hao-te 82.83 319 *e*P P **01 39 07.2 +0.5**
HHC AP pP 01 39 17.9 +5.8
HHC XP sP 01 39 21.2 +7.4
HHC PP PP 01 42 19.1 +0.1
HHC AMB AMB
comp=Z,67nm,2.1s,mb5.3
HHC LR LR
comp=N,2µm,19.0s,MS5.6
HHC LR LR
comp=E,2µm,17.6s,MS5.6
BTO Baotou 83.63 318 *e*P P **01 39 12.6 +1.7**
BTO S S 01 49 29.7 -1.3
BTO AMB AMB
comp=Z,128nm,1.6s,mb5.8
HIA Hailar 83.87 329 *e*P P **01 39 11.8 0.0**
comp=Z,30nm,1.1s,mb5.3
PMSA Palmer Station 84.09 160 P P **01 39 11.1 -1.5**
LZH Lanzhou 85.18 312 P P **01 39 19.9 +1.2**
LZH AP pP 01 39 26.0 +1.9
LZH XP sP 01 39 30.0 +4.2
LZH S S 01 49 44.0 -2.4
LZH SS SS 01 55 25.4 +1.7
LZH AMB AMB
comp=Z,240nm,1.4s,mb6.1
LZH LR LR
comp=N,7µm,19.4s
LZH LR LR
comp=Z,10µm,20.0s,MS6.2
KDAK Kodiak Island 85.26 19⇑ *i*P P **01 39 18.0 -0.6**
comp=Z,15nm,0.8s,mb5.2
KDAK LR LR
comp=Z,18µm,19.0s,MS6.5
SEY Seymchan 85.74 352 *i*P P **01 39 21.3 +0.4**
SEY 01 39 30.4
SEY *e* 01 49 50.5
SEY *e*SSS SSS 01 58 52.8 -7.4
SEY pmax pmax
comp=Z,130nm,1.2s,mb6.0
SEY pmax pmax
comp=N,40nm,1.1s
MAIT Maitri 86.32 187 *e*P P **01 39 23.1 -0.5**
SNAA Sanae 86.53 182 *e* P **01 39 25.2 +0.6**
SNAA Sanae 86.53 182 *e* P **01 39 27.1 +2.5**
SNAA Sanae 86.53 182⇑ *i*P P **01 39 23.3 -1.3**
SNAA *e* pP 01 39 27.1 -2.9
SAO San Andreas Ge 86.92 48 *e*P P **01 39 27.3 -0.1**
SAO LR LR
comp=Z,12µm,19.0s,MS6.3
HOPS Hopland 86.95 46 PFAKE 01 39 40.0 +13
HOPS LR LR
comp=Z,8µm,20.0s,MS6.1
VNA3 Neumayer Olymp 87.08 180 *e* P **01 39 29.4 +2.1**
VNA3 Neumayer Olymp 87.08 180 *e* P **01 39 30.6 +3.3**
VNA3 Neumayer Olymp 87.08 180 *e*S S 01 50 02.1 -1.8
VNA3 Neumayer Olymp 87.08 180⇑ *i*P P **01 39 27.2 -0.1**
VNA3 *e* pP 01 39 30.6 -2.1
VNA3 *e*S S 01 50 02.1 -1.8
CLNS Chul'man 87.20 337 *e*P P **01 39 29.7 +1.5**
CLNS *e* 01 42 54.4
CLNS *e*PPP PPP 01 44 50.2 -1.6
CLNS *e*S S 01 50 08.0 +2.7
CLNS pmax pmax
comp=N,30nm,1.1s
CLNS pmax pmax
comp=Z,70nm,1.1s,mb5.8
CLNS pmax pmax
comp=E,9.0nm,0.9s
CLNS pmax pmax
comp=N,10.0nm,1.0s
CLNS pmax pmax
comp=E,8.0nm,1.0s
CLNS pmax pmax
comp=Z,10.0nm,1.0s,mb5.0
CLNS smax
comp=N,2µm,11.6s
CLNS smax
comp=Z,1µm,13.0s
CLNS smax
comp=E,1µm,12.1s
SVW Sparrevohn 87.22 16 *e*P P **01 39 28.7 +0.5**
IMP Imphal 87.38 298 *e*P P **01 39 31.0 +1.2**
VNA2 Neumayer--Watz 87.39 181 *e* P **01 39 31.0 +2.2**
VNA2 Neumayer--Watz 87.39 181 *e* P **01 39 32.6 +3.8**
VNA2 Neumayer--Watz 87.39 181⇓ *i*P P **01 39 29.1 +0.3**
VNA2 *e* pP 01 39 32.6 -1.5
RSO Redoubt South 87.44 17 *e*P P **01 39 29.1 -0.1**
VNA1 Neumayer--Stat 87.67 181 *e* P **01 39 31.5 +1.4**
VNA1 Neumayer--Stat 87.67 181 *e* P **01 39 32.7 +2.6**
VNA1 Neumayer--Stat 87.67 181 *e*S S 01 50 04.9 -4.5
VNA1 Neumayer--Stat 87.67 181⇑ *i*P P **01 39 29.6 -0.5**
VNA1 *e* 01 39 32.7
VNA1 *e*S S 01 50 04.9 -4.5
MWC Mount Wilson 88.11 52 P P **01 39 32.4 -0.7**
MWC Mount Wilson 88.11 52 *e*P P **01 39 32.7 -0.4**
WDC Whiskeytown Da 88.13 45 P P **01 39 34.2 +1.2**
WDC pmax pmax
comp=Z,300nm,2.7s,mb6.0
WDC Whiskeytown Da 88.13 45 *e*P P **01 39 33.9 +0.9**
comp=Z,297nm,2.7s,mb6.0
WDC LR LR
comp=Z,8µm,20.0s,MS6.2
OHCM Honcut 88.19 46 *e*P P **01 39 33.5 +0.1**
SLKM Skilak Lake 88.20 18 P P **01 39 32.3 -0.6**
SLKM Skilak Lake 88.20 18 *e*P P **01 39 32.1 -0.8**

CMB Columbia Colle 88.29 48 *e*P P **01 39 33.6 -0.2**
comp=Z,31nm,1.4s,mb5.3
CMB LR LR
comp=Z,8µm,19.0s,MS6.2
YBH Yreka Blue Hor 88.61 44 P P **01 39 36.2 +0.9**
comp=Z,7.5nm,1.2s,mb4.9,baz=292,slow=1.8,SNR=9.1
YBH Yreka Blue Hor 88.61 44 P P **01 39 36.6 +1.3**
YBH pmax pmax
comp=Z,40nm,1.8s
YBH Yreka Blue Hor 88.61 44 *e*P P **01 39 33.2 -2.1**
comp=Z,40nm,1.8s,mb5.5
YBH LR LR
comp=Z,7µm,21.0s,MS6.0
USHA Ushuaia 88.67 150 LR LR 02 10 17.4
comp=Z,6µm,21.5s,MS6.0,baz=202,slow=30
FIB Fire Island 88.74 18 PFAKE 01 39 50.0 +15
FIB LR LR
comp=Z,28µm,19.0s,MS6.7
TNA Tin City 88.81 9 *e*P P **01 39 35.2 -0.5**
comp=Z,7.1nm,0.9s,mb5.0
TNA LR LR
comp=Z,6µm,21.0s,MS6.0
HUMO Hull Mountain 88.91 43 *e*P P **01 39 36.5 -0.3**
PMS Palmer South 88.98 18 *e*P P **01 39 41.4 +4.8**
PFO Pinyon Flat Ob 89.00 53 P P **01 39 37.8 +0.4**
PFO *e* pP 01 39 44.7 +1.9
PFO Pinyon Flat Ob 89.00 53 *e*P P **01 39 36.9 -0.5**
PFO LR LR
comp=Z,13µm,20.0s,MS6.3
BEKR Beckwourth 89.21 46 *e*P P **01 39 38.1 -0.1**
comp=Z,92nm,2.2s,mb5.7
MTUM Tungsten Hills 89.22 49 *e*P P **01 39 39.0 +0.7**
AGT Agartala 89.22 296 *i*P P **01 39 37.0 -1.7**
AGT ⇓*i* 01 40 09.0
WCN Washoe City 89.34 47 P P **01 39 40.5 +1.6**
WCN Washoe City 89.34 47 *e*P P **01 39 39.2 +0.3**
PMR Palmer 89.39 18 *e*P P **01 39 37.2 -1.3**
comp=Z,14nm,1.0s,mb5.2
PMR LR LR
comp=Z,11µm,20.0s,MS6.3
SHL Shillong 89.39 298 *e*P P **01 39 39.3 -0.1**
comp=Z,32nm,8.0s
SHL *e* 01 50 02.5
DAC Darwin (Calif) 89.40 50 PFAKE 01 39 50.0 +11
DAC LR LR
comp=Z,10µm,20.0s,MS6.2
ULN Ulaanbaatar 89.54 323 P P **01 39 39.6 0.0**
ULN SKSac 01 50 07.9
ULN sSKSac 01 50 31.0
ULN Ulaanbaatar 89.54 323⇑ *i*P P **01 39 39.7 +0.1**
ULN Ulaanbaatar 89.54 323 *e*P P **01 39 39.6 0.0**
ULN LR LR
comp=Z,5µm,20.0s,MS6.0
GTA Gaotai 89.61 313 *e*P P **01 39 40.9 +0.8**
GTA AP pP 01 39 45.1 -0.4
GTA XP sP 01 39 48.9 +1.7
GTA SKS SKS 01 50 09.0 -5.0
GTA S S 01 50 30.3 +2.1
GTA SS SS 01 56 27.7 -0.4
GTA AMB AMB
comp=Z,29nm,1.8s,mb5.3
GTA LR LR
comp=N,2µm,19.0s,MS5.5
GTA LR LR
comp=E,1µm,22.0s,MS5.5
YAK Yakutsk 89.69 342 *e*P P **01 39 39.8 -0.1**
YAK *e*S S 01 50 01.8 -27
YAK *e*PS S 01 50 29.9 +1.6
YAK *e*SS SS 01 56 20.4 -8.3
YAK pmax pmax
comp=Z,10.0nm,0.9s,mb5.2
YAK pmax pmax
comp=N,6.0nm,1.0s
YAK pmax pmax
comp=E,3.0nm,1.1s
YAK pmax pmax
comp=Z,4.0nm,0.7s,mb4.9
YAK pmax pmax
comp=N,6.0nm,1.2s
YAK pmax pmax
comp=E,3.0nm,1.0s
YAK smax
comp=E,7.0nm,1.2s
YAK smax
comp=Z,3.0nm,0.8s
YAK smax
comp=N,9.0nm,1.3s
YAK MLR MLR
comp=Z,4µm,17.0s,MS5.9
YAK MLR MLR
comp=N,2µm,18.0s,MS5.7
YAK MLR MLR
comp=E,2µm,18.0s,MS5.7
YAK Yakutsk 89.69 342 *e*P P **01 39 40.0 +0.1**
YAK LR LR
comp=Z,8µm,19.0s,MS6.1
COR Corvallis 89.73 41 PFAKE 01 39 50.0 +9.5
COR LR LR
comp=Z,9µm,20.0s,MS6.2
BILL Bilibino 89.75 359*c i*P P **01 39 40.2 +0.1**
BILL *e* 01 43 19.0
BILL *i* 01 50 07.4
BILL *e*SS SS 01 56 29.7 +0.3
BILL pmax pmax
comp=Z,71nm,1.2s,mb5.9
BILL MLR MLR
comp=Z,4µm,19.0s,MS5.8
BILL Bilibino 89.75 359 *e*P P **01 39 39.3 -0.8**
comp=Z,111nm,1.5s,mb6.0
PAHR Pah Rah Range 89.79 47 *e*P P **01 39 40.8 -0.2**
SML Sawmill 89.79 18 P P **01 39 32.8 -7.6**
SML Sawmill 89.79 18 *e*P P **01 39 39.8 -0.6**
SONM Songino Array 89.89 323 P P **01 39 41.1 -0.1**
comp=Z,24nm,0.9s,mb5.5,baz=139,slow=2.8,SNR=113
SONM S S 01 50 10.5 -20
comp=Z,0.2nm,0.3s,baz=30,slow=43,SNR=3.0
SONM PKKPbc 01 57 12.7
comp=Z,2.7nm,1.1s,baz=288,slow=3.9,SNR=7.6
SONM PKPPKP 02 05 21.1
comp=Z,0.8nm,1.0s,slow=1.2,SNR=5.0
NVAR Mina Array Bea 89.91 48 P P **01 39 41.9 +0.4**
comp=Z,5.3nm,0.8s,mb4.9,baz=215,slow=5.4,SNR=18
NVAR LR LR 02 14 39.9
comp=Z,9µm,18.7s,MS6.2,baz=295,slow=32
NVAR Mina Array Bea 89.91 48 P P **01 39 41.9 +0.3**
NVAR LR LR 02 14 39.9
DIV Divide 90.04 20 PFAKE 01 39 50.0 +8.4
DIV LR LR
comp=Z,52µm,21.0s,MS6.9
MOD Modoc 90.25 44 P P **01 39 42.0 -1.1**
comp=Z,42nm,1.6s,mb5.5
MOD LR LR
comp=Z,8µm,19.0s,MS6.2
SSOR Sweet Springs 90.38 41 P P **01 39 44.6 +1.0**
SSOR *e* 01 40 00.4
SSOR Sweet Springs 90.38 41 *e*P P **01 39 43.9 +0.3**
SSOR *e* 01 39 60.0
TPH Tonopah 90.50 49 P P **01 39 45.0 +0.7**
TPH pmax pmax
comp=Z,21nm,1.2s,mb5.3
TPH Tonopah 90.50 49 *e*P P **01 39 44.5 +0.2**
comp=Z,21nm,1.3s,mb5.3
TPH *e* 01 39 59.6
TPH LR LR
comp=Z,8µm,19.0s,MS6.2
LDFC Landfair 90.66 52 *e*P P **01 39 46.2 +1.2**
BMW Boistfort Moun 90.76 39 P P **01 39 46.0 +0.7**
OCWA Octopus Mounta 90.88 38 *e*P P **01 39 46.4 +0.6**
comp=Z,25nm,0.9s,mb5.5
OCWA *e* 01 40 03.0
OCWA LR LR
comp=Z,4µm,20.0s,MS5.9
SIT Sitka 90.93 26 PFAKE 01 40 00.0 +14
SIT LR LR
comp=Z,12µm,20.0s,MS6.3
NEN Nelson 91.10 52 *e*P P **01 39 46.6 -0.5**
NEN *e* 01 40 00.2
CAL Calcutta 91.14 294 *e*P P **01 39 50.0 +2.4**
CAL *e* 01 43 02.0
MCK McKinley 91.15 17 P P **01 39 46.7 +0.1**
MCK McKinley 91.15 17 *e*P P **01 39 46.3 -0.4**
MCK LR LR
comp=Z,6µm,19.0s,MS6.1
GNW Green Mountain 91.56 39 *e*P P **01 39 49.0 +0.1**
BMN Battle Mountai 91.59 47 P P **01 39 50.3 +1.1**

BMN pmax pmax
comp=Z,13nm,1.1s,mb5.2
BMN Battle Mountai 91.59 47 *e*P P **01 39 50.0 +0.8**
comp=Z,13nm,1.1s,mb5.2
BMN LR LR
comp=Z,7µm,21.0s,MS6.1
WVOR Wild Horse Val 91.59 45 P P **01 39 50.1 +0.9**
WVOR pmax pmax
comp=Z,9.0nm,1.0s,mb5.0
WVOR Wild Horse Val 91.59 45 *e*P P **01 39 49.6 +0.4**
comp=Z,9.2nm,1.0s,mb5.1
WVOR LR LR
comp=Z,10µm,19.0s,MS6.3
LSA Lhasa 91.69 301 P P **01 39 51.8 +1.9**
LSA XP sP 01 40 05.5 +8.5
LSA AMB AMB
comp=Z,20nm,0.9s,mb5.5
LSA AMB AMB
comp=Z,1µm,8.7s
LSA LR LR
comp=N,2µm,28.0s,MS5.6
LSA LR LR
comp=E,2µm,28.0s,MS5.6
LSA LR LR
comp=Z,4µm,26.0s,MS5.7
LSA Lhasa 91.69 301 *e*P P **01 39 52.0 +2.0**
comp=Z,44nm,1.3s,mb5.6
LON Longmire 91.74 40 P P **01 39 53.8 +4.0**
LON Longmire 91.74 40 *e*P P **01 39 50.2 +0.4**
PGC Sidney 91.77 37 *e*P P **01 39 50.4 +0.5**
IMA Indian Mountai 91.89 14 *e*P P **01 39 50.8 +0.8**
comp=Z,630nm,2.5s,mb6.5
RMW Rattlesnake Mo 92.11 39 P P **01 39 55.3 +3.9**
RMW Rattlesnake Mo 92.11 39 *e*P P **01 39 51.5 +0.1**
BOD Bodaibo 92.13 334 *e*P P **01 39 49.0 -2.3**
COLA College 92.34 17 *e*P P **01 39 51.5 -0.6**
COLA MLR MLR
comp=Z,8µm,18.0s,MS6.2
ILAR Eielson Array 92.52 17 P P **01 39 50.8 -2.1**
comp=Z,3.3nm,0.6s,mb4.9,baz=236,slow=5.2,SNR=24
ILAR PKKP PKKP 01 57 05.0 +7.2
comp=Z,5.0nm,1.2s,baz=335,slow=3.1,SNR=9.3
ILAR LR LR 02 19 53.6
comp=Z,13µm,18.7s,MS6.4,baz=235,slow=34
TUC Tucson 92.74 56 P P **01 39 55.8 +1.1**
TUC pmax pmax
comp=Z,5.0nm,1.0s,mb4.9
TUC Tucson 92.74 56 *e*P P **01 39 54.9 +0.2**
comp=Z,4.9nm,1.0s,mb4.9
TUC LR LR
comp=Z,11µm,19.0s,MS6.3
HAWA Hanford 92.93 41 *e*P P **01 39 55.6 +0.4**
HAWA LR LR
comp=Z,12µm,20.0s,MS6.3
ZAK Zakamensk 92.98 324 *e*P P **01 39 54.9 -0.5**
ZAK *e* 01 43 39.6
ZAK *e* 01 50 28.9
NLW Nelson Butte 93.27 39 *e*P P **01 39 56.5 -0.2**
TLY Talaya 93.47 325 *i*P P **01 39 56.9 -0.7**
TLY *e* 01 40 14.7
TLY *i* 01 43 40.4
TLY *i*S S 01 50 24.1 -38
TLY *e*PS PS 01 52 20.6 -2.2
TLY *e*SS SS 01 57 21.1 -2.0
TLY pmax pmax
comp=Z,276nm,1.1s,mb6.6
WUAZ Wupatki 93.61 53 *e*P P **01 39 59.3 +0.7**
comp=Z,7.4nm,1.0s,mb5.1
WUAZ LR LR
comp=Z,10µm,20.0s,MS6.3
DLBC Dease Lake 94.01 27 *e*P P **01 39 59.6 -0.3**
comp=Z,4.3nm,1.0s,mb4.8,baz=202,slow=7.3,SNR=5.9
DLBC Dease Lake 94.01 27 *e*P P **01 40 00.1 +0.2**
DAWY Dawson 94.20 20 *e*P P **01 39 59.3 -1.4**
MVU Marysvale 94.23 50 PFAKE 01 40 10.0 +8.6
MVU LR LR
comp=Z,13µm,19.0s,MS6.4
MSU Marysvale 94.26 50 P P **01 40 07.4 +5.9**
MSU Marysvale 94.26 50 P P **01 40 00.3 -1.2**
MDRS Chennai 94.73 282 *e*P P **01 40 05.0 +0.8**
MDRS *i* 01 41 49.0
MDRS *e* 01 50 40.0
HLID Hailey 94.86 45 *e*P P **01 40 04.0 -0.3**
comp=Z,3.5nm,0.9s,mb4.8
HLID LR LR
comp=Z,8µm,21.0s,MS6.2
MOY Mondy 94.88 324 *e*P P **01 40 04.8 +0.7**
GUN Gumba 95.25 298 *e*P P **01 40 07.6 +1.2**
comp=Z,140nm,1.4s,mb6.2
NEW Newport 95.26 40 PFAKE 01 40 20.0 +14
NEW LR LR
comp=Z,6µm,19.0s,MS6.0
EFI East Falkland 95.42 152 PFAKE 01 40 20.0 +13
EFI LR LR
comp=Z,5µm,20.0s,MS6.0
PKI Pulchoki 95.51 297 *e*P P **01 40 08.6 +1.0**
comp=Z,67nm,0.9s,mb6.1
KKN Kakani 95.69 298 *e*P P **01 40 09.3 +0.9**
comp=Z,37nm,0.6s,mb6.0
DMN Daman 95.77 297 *e*P P **01 40 09.2 +0.4**
comp=Z,131nm,1.0s,mb6.3
PLCA Paso Flores 95.94 138 P P **01 40 09.3 +0.1**
comp=Z,21nm,1.2s,mb5.4,baz=219,slow=6.3,SNR=10
PLCA LR LR 02 17 20.6
comp=Z,3µm,19.9s,MS5.7,baz=232,slow=32
PLCA Paso Flores 95.94 138 *e*P P **01 40 09.4 +0.1**
comp=Z,17nm,1.4s,mb5.3
PLCA LR LR
comp=Z,2µm,19.0s,MS5.6
HWUT Hardware Ranch 95.95 48 PFAKE 01 40 20.0 +11
HWUT LR LR
comp=Z,4µm,19.0s,MS6.0
KGD Kothagudem 95.98 286 *e*P P **01 40 06.8 -3.1**
KGD *e*PP PP 01 44 05.4 +0.6
KGD *e* 01 50 35.1
KGD *e* 01 52 54.2
KGD *e* 01 57 46.9
KGD *e* 02 05 23.7
GKN Gorkha 96.30 298 *e*P P **01 40 11.5 +0.3**
comp=Z,102nm,1.2s,mb6.1
MSO Missoula 96.56 42 PFAKE 01 40 20.0 +8.1
MSO LR LR
comp=Z,13µm,19.0s,MS6.4
MNTX Cornudas Mount 96.73 59 *e*P P **01 40 12.2 -0.9**
AHID Auburn Hatcher 96.74 47 PFAKE 01 40 20.0 +7.2
AHID LR LR
comp=Z,5µm,21.0s,MS6.0
KOLN Koldanda 97.07 297 *e*P P **01 40 15.0 +0.3**
comp=Z,39nm,0.9s,mb5.8
ANMO Albuquerque 97.09 55⇑ *i*P P **01 40 13.0 -1.6**
ANMO Albuquerque 97.09 55 P P **01 40 14.7 +0.1**
comp=Z,2.4nm,1.0s,mb4.6
ANMO LR LR
comp=Z,9µm,19.0s,MS6.3
DANN Dangsing 97.15 298 *e*P P **01 40 16.1 +1.1**
TXAR Lajitas Array 97.26 61 P P **01 40 15.7 +0.2**
comp=Z,1.0nm,1.0s,slow=6.3,SNR=5.5
TXAR PKKP PKKP 01 56 55.8 +5.2
comp=Z,0.6nm,0.6s,baz=92,slow=3.6,SNR=6.5
TXAR LR LR 02 17 52.0
comp=Z,20µm,18.1s,MS6.6,baz=260,slow=32
BOZ Bozeman (W) 97.54 44 P P **01 40 16.0 -0.3**
BOZ LR LR
comp=Z,12µm,20.0s,MS6.4
TIXI Tiksi 97.54 348 *e*P P **01 40 14.5 -1.2**
TIXI *e* 01 50 44.8
TIXI *e*S S 01 51 39.0 +2.8
TIXI pmax pmax
comp=Z,43nm,1.1s,mb5.9
TIXI MLR MLR
comp=Z,27µm,18.0s,MS6.8
TIXI Tiksi 97.54 348⇓ *e*P P **01 40 14.9 -0.8**
TIXI LR LR
comp=Z,7µm,22.0s,MS6.1
BW06 Boulder Array 97.78 47 PFAKE 01 40 30.0 +13
BW06 LR LR
comp=Z,5µm,19.0s,MS6.0
PDAR Pinedale Array 97.78 47 P P **01 40 16.8 -0.7**
comp=Z,1.6nm,1.2s,baz=180,slow=2.7,SNR=3.5
PDAR PP PP 01 44 15.7 -3.0
comp=Z,2.6nm,1.0s,baz=252,slow=4.7,SNR=6.5
PDAR PKKP PKKP 01 56 55.3 +6.0
comp=Z,1.2nm,0.9s,baz=90,slow=3.0,SNR=5.1
PDAR PKPPKP 02 05 08.0
comp=Z,0.6nm,0.8s,baz=90,slow=4.4,SNR=4.6

PDAR LR LR 02 20 26.2
comp=Z,4µm,18.3s,MS6.0,baz=236,slow=33
INK Inuvik 98.81 18 PKKPbc 01 56 50.3
comp=Z,1.7nm,0.7s,baz=46,slow=2.1,SNR=8.3
INK LR LR 02 19 56.8
comp=Z,11µm,21.0s,MS6.3,baz=228,slow=32
INK Inuvik 98.81 18 P **P 01 40 20.0 -1.5**
INK pmax pmax
comp=Z,18nm,1.4s
INK Inuvik 98.81 18 *e*P **P 01 40 20.2 -1.3**
comp=Z,18nm,1.5s,mb5.4
SDCO Great Sand Dun 98.82 53 PFAKE 01 40 30.0 +7.7
SDCO LR LR
comp=Z,7µm,20.0s,MS6.2
ISCO Idaho Springs 99.46 51 PFAKE 01 40 40.0 +15
ISCO LR LR
comp=Z,6µm,19.0s,MS6.1
WMQ Urumqi 99.69 313 P **P 01 40 27.1 +1.0**
WMQ AP pP 01 40 31.9 +0.4
WMQ XP sP 01 40 34.1 +0.9
WMQ PP PP 01 44 34.2 +1.3
WMQ SKS SKS 01 51 03.9 -5.0
WMQ S S 01 51 56.7 +1.8
WMQ SS SS 01 58 52.6 +2.0
WMQ LR LR
comp=N,7µm,17.2s,MS6.4
WMQ LR LR
comp=E,8µm,18.7s,MS6.4
WMQ LR LR
comp=Z,9µm,18.0s,MS6.3
JCT Junction City 100.81 62 PFAKE 01 40 40.0 +8.5
JCT LR LR
comp=Z,17µm,20.0s,MS6.5
RSSD Black Hills 102.02 47 PFAKE 01 40 50.0 +13
RSSD LR LR
comp=Z,1µm,19.0s,MS5.5
YKA Yellowknife Ar 102.64 27 P Pdif 01 40 37.6 -1.3
comp=Z,1.4nm,0.8s,baz=252,slow=4.5,SNR=12
YKA PKIKP 01 44 58.5
comp=Z,0.6nm,0.7s,baz=237,slow=1.6,SNR=9.6
YKA PKKPbc 01 56 36.9
comp=Z,0.4nm,0.7s,baz=55,slow=2.9,SNR=4.3
YKA PKPPKP 02 04 57.8
comp=Z,0.2nm,0.7s,baz=54,slow=2.2,SNR=3.9
WMOK Wichita Mounta 102.96 58 PFAKE 01 40 50.0 +8.9
WMOK LR LR
comp=Z,19µm,19.0s,MS6.6
CBKS Cedar Bluff 103.45 53 PFAKE 01 40 50.0 +6.9
CBKS LR LR
comp=Z,6µm,19.0s,MS6.2
HKT Hockley 103.90 63 PFAKE 01 41 00.0 +15
HKT LR LR
comp=Z,5µm,19.0s,MS6.0
MKAR Makanchi Array 104.26 315 Pdiff Pdif 01 40 45.0 -1.5
comp=Z,1.8nm,0.6s,baz=99,slow=6.4,SNR=20
MKAR PP PP 01 44 59.8 -7.6
comp=Z,1.9nm,0.9s,baz=112,slow=7.8,SNR=2.9
MKAR PKKPbc 01 56 32.1
comp=Z,1.4nm,0.4s,baz=268,slow=3.1,SNR=24
MKAR Makanchi Array 104.26 315 Pdif Pdif 01 40 45.0 -1.5
MKAR PP PP 01 44 59.8 -7.5
MKAR PKKPbc 01 56 32.1
NVS Novosibirsk 105.92 323 *i* P Pdif 01 40 51.9 -1.7
NVS *e* 01 51 33.9
NVS pmax pmax
comp=N,10.0nm,2.2s
NVS pmax pmax
comp=E,21nm,2.2s
NVS pmax pmax
comp=Z,44nm,2.2s
NVS pmax pmax
comp=N,29nm,2.0s
NVS pmax pmax
comp=E,53nm,2.0s
NVS pmax pmax
comp=Z,75nm,2.0s
NVS pmax pmax
comp=N,47nm,2.4s
NVS pmax pmax
comp=E,122nm,2.4s
FFC Flin Flon 106.38 37 PFAKE 01 45 20.0
FFC LR LR
comp=Z,6µm,20.0s,MS6.1
MIAR Mount Ida 107.03 59 PFAKE 01 45 20.0
MIAR LR LR
comp=Z,15µm,19.0s,MS6.6
LVC Limon Verde 107.38 124 PFAKE 01 45 20.0
LVC LR LR
comp=Z,3µm,20.0s,MS5.9
JTS JuntasAbangare 107.47 86 PFAKE 01 45 20.0
JTS LR LR
comp=Z,891nm,22.0s,MS5.3
ULM Lac du Bonnet 109.00 43 PKiKP 01 45 10.3
comp=Z,2.8nm,0.6s,baz=274,slow=3.7,SNR=4.6
ULM Lac du Bonnet 109.00 43 *e*PKP 01 45 09.8
ULM LR LR
comp=Z,8µm,20.0s,MS6.3
CCM Cathedral Cave 109.70 56 *e*PKP 01 45 12.4
CCM LR LR
comp=Z,2µm,19.0s,MS5.8
OXF Oxford 110.35 60 PFAKE 01 45 30.0 +13
OXF LR LR
comp=Z,17µm,20.0s,MS6.6
LPAZ La Paz 111.40 119 PKKPbc 01 56 12.1
comp=Z,0.8nm,0.7s,baz=90,slow=20,SNR=3.5
FCC Fort Churchill 111.42 34 PKIKP PKPdf 01 45 13.7 -4.7
FCC Fort Churchill 111.42 34 *e*PKP PKPdf 01 45 13.2 -5.2
JFWS Jewell Farm 111.42 51 PFAKE 01 45 30.0 +11
JFWS LR LR
comp=Z,9µm,19.0s,MS6.4
PLAL Pickwick Lake 111.53 60 *e*PKPdf PKPdf 01 45 14.9 -4.3
PLAL LR LR
comp=Z,20µm,20.0s,MS6.7
KKAR Karatay Array 111.54 309 *i* PKIKP PKPdf 01 45 21.5 +2.5
KKAR pmax pmax
comp=Z,5.0nm,0.8s
WVT Waverly 111.96 59 PFAKE 01 45 30.0 +10
WVT LR LR
comp=Z,10µm,20.0s,MS6.4
LRAL Lakeview Retre 111.99 62 PKPdf PKPdf 01 45 17.6 -2.5
LRAL LR LR
comp=Z,11µm,20.0s,MS6.5
BVAR Borovoye Array 113.04 320 PKiKP 01 45 18.7
comp=Z,1.6nm,0.5s,baz=162,slow=4.6,SNR=7.2
BVAR PKKPbc 01 56 04.3
comp=Z,3.6nm,1.0s,baz=270,slow=4.4,SNR=7.1
BRVK Borovoye 113.11 320 *e*PKP PKPdf 01 45 19.5 -2.4
CPUP Villa Florida 113.51 134 PFAKE 01 45 30.0 +6.6
CPUP LR LR
comp=Z,1µm,22.0s,MS5.4
WCI Wyandotte Cave 113.56 57 PFAKE 01 45 30.0 +6.8
WCI LR LR
comp=Z,12nm,19.0s,MS6.5
DWPF Disney 115.63 68 PFAKE 01 45 40.0 +13
DWPF LR LR
comp=Z,981nm,19.0s,MS5.4
AAM Ann Arbor 116.14 53 PFAKE 01 45 40.0 +12
AAM LR LR
comp=Z,12µm,19.0s,MS6.5
ACSO Alum Creek Sta 116.40 55 PFAKE 01 45 40.0 +11
ACSO LR LR
comp=Z,10µm,20.0s,MS6.4
JSC Jenkinsville 116.92 62 PKIKP PKPdf 01 45 27.0 -2.8
JSC Jenkinsville 116.92 62 *e*PKPdf PKPdf 01 45 25.7 -4.1
PWV Princeton 117.53 58 *e*PKPdf PKPdf 01 45 27.2 -3.7
FWV Forest Hill 117.75 58 *e*PKPdf PKPdf 01 45 27.6 -3.8
BLA Blacksburg 118.01 59 *e*PKPdf PKPdf 01 45 28.5 -3.4
BLA LR LR
comp=Z,12µm,20.0s,MS6.5
SUR Sutherland 118.57 209 *e*PKPdf PKPdf 01 45 32.1 -1.0
SUR LR LR
comp=Z,5µm,20.0s,MS6.2
SVE Sverdlovsk 118.75 324⇓ *i*PKIKP PKPdf 01 45 30.0 -2.8
SVE *e* 01 52 40.0
SVE *e* 01 56 29.0
SVE *e* 02 03 00.0
ERPA Erie 118.84 53 PFAKE 01 45 40.0 +6.6
ERPA LR LR
comp=Z,7µm,20.0s,MS6.3
SADO Sadowa 119.61 50 PKP PKPdf 01 45 30.0 -4.7
comp=Z,6.2nm,0.8s,baz=358,slow=1.7,SNR=3.7
SADO Sadowa 119.61 50 PKP PKPdf 01 45 30.0 -4.7
ARU Arti 119.92 323⇓ *i*PKIKP PKPdf 01 45 33.2 -1.8
ARU *i* 01 46 52.5
ARU *e* 01 52 27.8
ARU *i* PS PS 01 56 46.7 +1.4
ARU *i* SS SS 02 03 18.7 -2.8
ARU pmax pmax
comp=Z,12nm,0.9s
SDV Santo Domingo 120.28 92 PKP PKPdf 01 45 33.1 -3.7
comp=Z,11nm,0.8s,baz=315,slow=2.9,SNR=9.3
SSPA Standing Stone 120.31 55 *e*PKPdf PKPdf 01 45 31.6 -4.6
SSPA LR LR
comp=Z,8µm,20.0s,MS6.4
CBN Corbin 120.52 58 PFAKE 01 45 50.0 +13
CBN LR LR
comp=Z,13µm,20.0s,MS6.6
SDMD Soldier's Deli 121.03 56 *e*PKPdf PKPdf 01 45 33.7 -4.0
MVL Millersville 121.44 56 *e*PKPdf PKPdf 01 45 34.0 -4.4
BINY Binghamton 121.81 53 *e*PKPdf PKPdf 01 45 35.2 -4.0
BINY LR LR
comp=Z,12µm,20.0s,MS6.5
LBTB Lobatse 122.04 218 PKIKP PKPdf 01 45 38.9 -1.1
LBTB Lobatse 122.04 218 *e*PKPdf PKPdf 01 45 37.3 -2.7
LBTB LR LR
comp=Z,4µm,19.0s,MS6.1
KBS Kingsbay 122.07 355 *e* Pdif 01 42 05.7 +1.5
KBS *e*PP PP 01 47 11.7 -2.5
KBS *e*SS SS 02 03 50.7 +1.6
KBS AMS AMS 02 37 31.5
comp=Z,2µm,20.0s,MS5.7
KBS Kingsbay 122.07 355 PFAKE 01 45 50.0 +11
KBS LR LR
comp=Z,2µm,21.0s,MS5.8
SPB4 Spitsbergen Ar 122.35 354 *e*PKPdf PKPdf 01 45 37.4 -2.0
NCB Newcomb 123.12 51 *e*PKPdf PKPdf 01 45 37.0 -4.6
NCB LR LR
comp=Z,8µm,20.0s,MS6.4
FRB Frobisher Bay 123.15 27 PKP PKPdf 01 45 37.3 -3.8
comp=Z,22nm,1.0s,baz=308,slow=2.6,SNR=18
PAL Palisades 123.34 55 PKIKP PKPdf 01 45 39.3 -2.8
PAL Palisades 123.34 55 *e*PKPdf PKPdf 01 45 38.4 -3.7
ACCN Adirondack Com 123.53 52 *e*PKPdf PKPdf 01 45 37.5 -4.9
QUA2 Belchertown 124.51 53 *e*PKPdf PKPdf 01 45 41.0 -3.4
HNH Hanover 124.53 51 *e*PKPdf PKPdf 01 45 41.3 -3.1
DAG Danmarks Havn 124.93 2 *i* P PKPdf 01 45 40.0 -4.3
comp=Z,5µm,21.0s
DAG Danmarks Havn 124.93 2 *e*PKIKP PKPdf 01 45 40.0 -4.3
DAG MLR MLR
comp=N,4µm,21.0s
DAG MLR MLR
comp=Z,5µm,21.0s,MS6.2
HRV Harvard--Oak R 125.10 53 PKIKP PKPdf 01 45 42.4 -3.1
HRV Harvard--Oak R 125.10 53 *e*PKPdf PKPdf 01 45 42.0 -3.5
HRV LR LR
comp=Z,3µm,19.0s,MS5.9
BRYW Bryant College 125.12 53 *e*PKPdf PKPdf 01 45 41.5 -4.1
WES Weston 125.27 53 *e*PKPdf PKPdf 01 45 42.7 -3.1
WES LR LR
comp=Z,12µm,20.0s,MS6.6
CAM4 Nova Friburgo 125.62 142 *e*P PKPdf 01 45 43.3 -3.7
CAM4 *i* 01 45 45.6
CAM4 *i* 01 45 51.3
CAM4 *i* 01 46 00.8
CAM4 Nova Friburgo 125.62 142 *e*P PKPdf 01 45 43.3 -3.8
CAM4 *i* 01 45 45.6
CAM4 *i* 01 45 51.3
CAM4 *i* 01 46 00.8
WVL Waterville 126.37 50 PFAKE 01 46 00.0 +12
WVL LR LR
comp=Z,25µm,21.0s,MS6.9
LVZ Lovozero 126.47 341 *e*PKIKP PKPdf 01 45 43.5 -3.8
LVZ *e* 01 47 37.2
LVZ *e*SS SS 02 04 36.5 -7.9
LVZ pmax pmax
comp=Z,210nm,4.2s
LVZ pmax pmax
comp=N,70nm,3.7s
LVZ pmax pmax
comp=E,60nm,4.2s
LVZ MLR MLR
comp=Z,7µm,22.0s,MS6.3
LVZ MLR MLR
comp=N,2µm,20.0s,MS6.1
LVZ MLR MLR
comp=E,3µm,22.0s,MS6.1
SCHQ Schefferville 126.53 37 PKP PKPdf 01 45 44.0 -3.7
comp=E,15nm,1.0s,baz=338,slow=2.6,SNR=12
SCHQ Schefferville 126.53 37 *e*PKPdf PKPdf 01 45 44.0 -3.7
SCHQ LR LR
comp=Z,18µm,21.0s,MS6.7
APA Apatity 127.05 341⇓ *i*PKIKP PKPdf 01 45 46.0 -2.5
APA *e* 01 52 50.0
APA *e*PS PS 01 57 55.0 +6.9
APA pmax pmax
comp=Z,24nm,1.1s
APA pmax pmax
comp=Z,600nm,8.0s
BDFB Brasilia 127.12 132 PKP PKPdf 01 45 46.9 -3.0
comp=Z,5.4nm,0.7s,baz=122,slow=2.5,SNR=8.0
SJG San Juan 127.17 83 PKP PKPdf 01 45 46.1 -3.9
comp=Z,80nm,0.8s,baz=56,slow=3.1,SNR=20
SJG San Juan 127.17 83 PKIKP PKPdf 01 45 45.1 -4.9
SJG San Juan 127.17 83 *e*PKPdf PKPdf 01 45 45.5 -4.5
SJG LR LR
comp=Z,2µm,22.0s,MS5.8
PQI Presque Isle 127.31 47 *e*PKPdf PKPdf 01 45 45.4 -4.1
KEV Kevo 127.36 345 *e*p PKPdf 01 45 42.2 -6.9
comp=Z,0.4nm,0.3s
HUMP Col San Antoni 127.45 83 *e*PKPdf PKPdf 01 45 46.5 -4.1
MTP Monte Pirata 127.71 84 *e*PKPdf PKPdf 01 45 47.3 -3.9
PECR Pechory 127.82 325 *e*PKIKP PKPdf 01 45 46.6 -3.7
PECR *e* 01 48 00.0
ARCES ARCESS Array B 127.88 345 PKP PKPdf 01 45 45.2 -5.0
comp=Z,4.0nm,0.5s,baz=27,slow=1.3,SNR=24
ARE0 ARCESS Array S 127.88 345 *e*PKPdf PKPdf 01 45 45.7 -4.4
CAM3 Guarapari 128.07 143⇓ *i*P PKPdf 01 45 49.6 -2.2
CAM3 *i* 01 45 53.7
CAM3 *i* 01 46 05.6
CAM3 *i* 01 46 19.9
CAM3 Guarapari 128.07 143⇓ *i*P PKPdf 01 45 49.5 -2.2
CAM3 *i* 01 45 53.7
CAM3 *i* 01 46 05.6
CAM3 *i* 01 46 19.9
MAK Makhachkala 128.33 308 *e*PKIKP PKPdf 01 45 49.5 -2.2
MAK *e* 01 47 55.0
MAK *e*PPP PPP 01 50 41.0 -1.0
MAK pmax pmax
comp=Z,2µm,8.0s
MAK pmax pmax
comp=Z,2µm,8.0s
KMBO Kilima Mbogo 128.69 250 PKPdf PKPdf 01 45 52.0 -1.2
KMBO Kilima Mbogo 128.69 250 PKP PKPdf 01 45 49.8 -3.4
comp=Z,1nm,0.9s,baz=13,slow=2.9,SNR=15
KMBO Kilima Mbogo 128.69 250 *e*PKPdf PKPdf 01 45 52.2 -1.0
KMBO LR LR
comp=Z,4µm,21.0s,MS6.1
TRO Tromso 129.26 347 *e*P PKPdf 01 45 48.7 -4.0
TRO *e*PP PP 01 47 53.1 -9.2
TRO *e*SS SS 02 05 20.1 +0.9
TRO AMS AMS 02 41 00.6
comp=Z,3µm,21.7s,MS5.9
TRN Trinidad (W) 129.43 94 *e* PKPdf 01 45 52.0 -2.5
KAMS Al Khamasin 129.46 279 P PKPdf 01 45 52.5 -2.0
MZLS Mizel 129.57 284 P PKPdf 01 45 53.2 -1.4
TATS Tathlith 130.31 277 D 01 45 56.2
BBSR BB Station 130.53 66 PFAKE 01 46 00.0 +3.8
BBSR LR LR
comp=Z,16µm,22.0s,MS6.7
JOF Joensuu 130.56 337 *e*p PKPdf 01 45 51.7 -3.7
comp=Z,1.1nm,0.4s
JOF Joensuu 130.56 337 *e*PKIKP PKPdf 01 45 51.7 -3.7
JOF pmax pmax
comp=Z,1.0nm,0.4s
GNI Garni 130.63 305*c* *i*PKIKP PKPdf 01 45 54.8 -1.4
GNI Garni 130.63 305⇑ *i*PKP PKPdf 01 45 54.8 -1.4
GNI LR LR
comp=Z,3µm,21.0s,MS6.0
JMIC Jan Mayen 130.92 359 *e*P PKPdf 01 45 59.0 +3.1
JMIC *e*PP PP 01 48 06.6 -6.5
JMIC *e*SS SS 02 05 40.2 +1.1
ZEI Tsey 130.99 308⇑ *i*PKIKP PKPdf 01 45 55.0 -1.8
ZEI *i* 01 48 16.0
ZEI *e* 01 53 02.0
ZEI *i* PS PS 01 58 18.0 -4.3
ZEI pmax pmax
comp=Z,800nm,8.0s
ZEI pmax pmax
comp=Z,800nm,7.0s
ZEI MLR MLR
comp=Z,2µm,20.0s,MS5.9
GOF Gofitskoye 131.25 311 *e*PKIKP PKPdf 01 45 54.5 -2.7
GOF *e* 01 46 02.0
GOF *i* 01 48 13.0
GOF *e* 02 05 45.0
GOF pmax pmax
comp=Z,2µm,8.0s
GOF pmax pmax
comp=Z,2µm,8.0s
MOS Moscow 131.41 326 *e*PKIKP PKPdf 01 45 52.3 -4.9
MOS *e* 01 48 11.0
MOS *e* 01 51 02.2
MOS pmax pmax
comp=Z,90nm,1.4s
PYA Pyatigorsk 131.41 310 *e*PKIKP PKPdf 01 45 51.0 -6.5
PYA *i* PS PS 01 58 17.0 -8.6
PYA pmax pmax
comp=E,1µm,8.0s
PYA pmax pmax
comp=Z,2µm,8.0s
AFFS 'Afif 131.55 283 P PKPdf 01 45 57.0 -1.4
ARSS Ar Rass 131.61 286 P PKPdf 01 45 57.9 -0.5
KIV Kislovodsk 131.69 310*c* *i*PKIKP PKPdf 01 45 55.0 -3.1
KIV pmax pmax
comp=Z,33nm,2.7s
KIV MLR MLR
comp=Z,2µm,21.0s,MS5.9
KIV Kislovodsk 131.69 310 PKPdf PKPdf 01 45 55.6 -2.5
KIV LR LR
comp=Z,3µm,20.0s,MS6.0
FURI Furi 131.69 262 PKPdf PKPdf 01 45 58.7 -0.1
FURI PP PP 01 48 17.6 -1.7
FURI SKPab 01 49 25.0
TVAN Van 131.79 303 *i* P PKPdf 01 45 56.4 -2.0
VOR Voronezh 132.03 321 PKIKP PKPdf 01 45 56.0 -2.5
VOR pmax pmax
comp=Z,80nm,2.0s
BLJS Baljurashi 132.11 277 D 01 45 58.9
OBN Obninsk 132.22 326 *i* PKIKP PKPdf 01 45 56.0 -2.7
OBN *i* 01 48 19.0
OBN *e*PS PS 01 58 34.9 +2.9
OBN *i* SS SS 02 05 58.2 +2.2
OBN pmax pmax
comp=Z,52nm,2.2s
OBN pmax pmax
comp=Z,400nm,8.0s
OBN MLR MLR
comp=Z,5µm,22.0s,MS6.1
OBN Obninsk 132.22 326 *e*PKP PKPdf 01 45 56.1 -2.6
OBN LR LR
comp=Z,5µm,22.0s,MS6.1
PUL Pulkovo 132.81 334 *e*PKIKP PKPdf 01 45 56.2 -3.5
PUL *e* 01 48 21.0
PUL *e*SS SS 02 05 55.7 -7.2
PUL MLR MLR
comp=Z,4µm,19.0s,MS6.1
PUL MLR MLR
comp=N,4µm,22.0s,MS6.2
PUL MLR MLR
comp=E,2µm,19.0s,MS6.2
KAF Kangasniemi 132.87 338 *e*p PKPdf 01 45 56.5 -3.3
comp=E,1.9nm,0.4s
KAF Kangasniemi 132.87 338 *e*PKIKP PKPdf 01 45 56.5 -3.3
KAF pmax pmax
comp=Z,2.0nm,0.4s
HILS Ha'il 133.06 288 P PKPdf 01 45 59.9 -1.3
ERZM Erzurum 133.24 305 *i* P PKPdf 01 45 59.9 -1.1
FINES FINESS Array B 133.40 337 PKhKP 01 45 45.8
comp=Z,0.5nm,0.5s,baz=45,slow=2.7,SNR=4.4
FINES PKP PKPdf 01 45 57.8 -3.0
comp=Z,2.7nm,0.5s,baz=90,slow=1.4,SNR=15
FINES SKPbc 01 49 23.8
comp=Z,19nm,1.2s,baz=72,slow=6.0,SNR=7.1
FINES FINESS Array B 133.40 337 PKP PKPdf 01 45 57.8 -3.0
FINES SKPbc 01 49 23.8
SOC Sochi 133.87 310 *e*P Pdif 01 42 55.5 -1.3
SOC *i* 01 45 58.4
SOC *e*PPP PPP 01 51 20.3 -7.0
SOC *e*SS SS 02 06 07.3 -8.8
SOC pmax pmax
comp=Z,27nm,1.0s
SOC pmax pmax
comp=N,18nm,0.8s
SOC pmax pmax
comp=E,22nm,0.7s
SOC pmax pmax
comp=Z,25nm,1.0s
SOC pmax pmax
comp=N,39nm,1.4s
SOC pmax pmax
comp=E,15nm,0.5s
NSS Namsos 135.04 347 *e*P PKPdf 01 45 59.1 -4.7
NSS *e*PP PP 01 48 34.8 -4.3
NSS AMS AMS 02 45 05.7
comp=Z,4µm,21.5s,MS6.1
KBRS Khaybar 135.16 285 D 01 46 05.5
ANN Anapa 135.19 312 *e*PKIKP PKPdf 01 45 56.5 -8.1
ANN *e* 01 48 33.3
ANN pmax pmax
comp=Z,300nm,9.0s
ELZG Elazig 135.25 303 *i* P PKPdf 01 46 03.6 -1.3
GZT Gaziantep 136.50 302 *i* P PKPdf 01 46 02.6 -4.5
BORG Borgarnes 136.52 7 PFAKE 01 46 10.0 +3.6
BORG LR LR
comp=Z,6µm,20.0s,MS6.3
MNK Minsk 136.92 329⇓ *e*PKIKP PKPdf 01 46 08.0 +0.7
MNK *e* 01 48 44.0
MNK *e*PS PS 01 59 16.0 +4.6
MNK *e*SS SS 02 06 46.0 -6.2
MNK MLR MLR
comp=N,5µm,20.0s
MNK MLR MLR
comp=Z,7µm,20.0s,MS6.4
SIM Simferopol' 137.42 313*d* *i*PKHKP 01 45 58.0
SIM *i* 01 46 05.0
SIM *e* 01 48 51.0
SIM *e*SS SS 02 07 01.0 +2.6
SIM pmax pmax
comp=Z,9.0nm,1.3s
SIM pmax pmax
comp=Z,280nm,8.3s
COBT Iskenderun 137.64 301 *i* P PKPdf 01 46 05.4 -3.9
TRSB Teresina 138.20 126*ce* P PKPdf 01 46 07.7 -3.2
TRSB *i* 01 49 41.7
NB2 NORSAR Subarra138.26 345 PKP 01 45 56.6
comp=Z,45nm,2.0s,baz=42,slow=2.5
NB2 NORSAR Subarra138.26 345 PKPa 01 45 56.6
baz=42,slow=2.5
NOA NORSAR Array B138.26 345 PKhKP 01 45 58.9
comp=Z,1.1nm,0.6s,baz=257,slow=3.0,SNR=5.7
NOA PKP PKPdf 01 46 07.0 -2.7
comp=Z,12nm,1.3s,baz=78,slow=5.1,SNR=4.8
KSHT Keshet 138.33 295 P PKPdf 01 46 00.1 -11
HRI Mount Hermon 138.38 296 P PKPdf 01 46 00.2 -11
AVNT Avronos 138.40 304 *i* P PKPdf 01 46 07.3 -3.3
MKRJ Makawir 138.54 293 P PKPdf 01 46 00.2 -11
HMDT Nahal Hemdat 138.61 294 P PKPdf 01 46 00.5 -11
DRGI Dragot 138.75 293 P PKPdf 01 46 00.5 -11
MZDA Masada 138.79 293 P PKPdf 01 46 00.4 -11
HNTI Hanita 138.86 296 P PKPdf 01 46 00.5 -11
ZFRI Zfri 138.96 292 P PKPdf 01 46 00.8 -11
SLTI Sal'it 139.02 294 P PKPdf 01 46 01.1 -11
BDAS Al Bad' 139.03 289 P PKPdf 01 46 08.3 -3.8
JMOS Jabal al Moall 139.03 290 P PKPdf 01 46 08.6 -3.4
ALWS Ilw as Safayha 139.07 290 P PKPdf 01 46 09.5 -2.6
AQBJ Aqaba 139.08 290 P PKPdf 01 46 01.1 -11
ELDT Eldivan 139.12 307 *i* P PKPdf 01 46 09.4 -2.4
PRNI Paran 139.12 291 P PKPdf 01 46 01.2 -11
BRTR Keskin Array B 139.13 306 PKhKP 01 46 02.1
comp=Z,2.8nm,0.7s,baz=125,slow=1.3,SNR=5.7
BRTR PKP PKPdf 01 46 08.7 -3.2
comp=Z,3.4nm,0.8s,baz=136,slow=3.9,SNR=13
EIL Elat 139.17 290 P PKPdf 01 46 01.2 -11
HAQS Haql 139.19 289 P PKPdf 01 46 09.8 -2.5
MBH Mount Berech 139.20 291 P PKPdf 01 46 01.2 -11
MASH Mash'abbe Sade 139.29 292 P PKPdf 01 46 01.4 -11
KMTI Karmit 139.36 291 P PKPdf 01 46 01.4 -11
SUW Suwalki 139.41 330 *e*PKP PKPdf 01 46 04.3 -7.7
SUW *e*PKIKP PKPdf 01 46 09.9 -2.1
SUW *e*PP PP 01 49 02.4 -4.1
SUW MLR MLR 02 49 00.7
comp=Z,6µm,22.2s,MS6.3
SUW Suwalki 139.41 330 *i* PKIKP PKPdf 01 46 09.9 -2.1

SUW e 01 49 02.4
SUW MLR MLR
comp=Z,6µm,22.2s,MS6.3
SVTA Shivta 139.44 292 P PKPdf 01 46 01.7 -11
KZIT Kziot 139.63 292 P PKPdf 01 46 02.0 -11
KONO Kongsberg 139.87 345 eP PKPdf 01 45 58.8 -14
KONO ePP PP 01 49 06.6 -2.5
KONO eSS SS 02 07 26.4 0.0
KONO AMS AMS 02 50 22.1
comp=Z,4µm,20.0s,MS6.1
HENT Hendek 140.89 308 i P PKPdf 01 46 05.3 -10
LVV L'vov 141.48 325 ePKIKP PKPdf 01 46 12.0 -3.8
WAR Warsaw 141.54 330 ePKP PKPdf 01 46 10.2 -5.6
WAR ePKIKP PKPdf 01 46 14.4 -1.4
WAR ePP PP 01 49 12.1 -7.2
WAR MLR MLR 02 49 31.2
comp=Z,6µm,23.5s,MS6.3
WAR Warsaw 141.54 330 ePKIKP PKPdf 01 46 10.2 -5.6
WAR e 01 49 12.1
WAR MLR MLR
comp=Z,6µm,23.5s,MS6.3
BSD Bornholm Skovb 142.04 337 i P PKPdf 01 46 06.2 -10
comp=Z,38nm,1.0s
BSD i 01 49 18.6
BSD Bornholm Skovb 142.04 337 i PKHKP 01 46 06.2
BSD i 01 49 18.6
BSD pmax pmax
comp=Z,38nm,1.0s
KWP Kalwaria 142.30 325 ePKP PKPdf 01 46 10.1 -7.1
KWP ePKIKP PKPdf 01 46 15.8 -1.4
KWP ePP PP 01 49 22.1 -1.8
KWP MLR MLR 02 50 35.2
comp=Z,5µm,23.1s,MS6.2
KWP Kalwaria 142.30 325 ePKIKP PKPdf 01 46 10.1 -7.1
KWP i 01 46 15.8
KWP e 01 49 22.1
KWP MLR MLR
comp=Z,5µm,23.1s,MS6.2
COP Copenhagen 142.44 339 i P PKPdf 01 46 08.4 -8.8
comp=Z,14nm,0.6s
COP i 01 49 17.1
COP Copenhagen 142.44 339 i PKHKP 01 46 08.4
COP i 02 08 02.1
COP pmax pmax
comp=Z,14nm,0.6s
COP MLR MLR
comp=Z,2µm,21.0s,MS5.8
COP Copenhagen 142.44 339 i P PKPdf 01 46 08.4 -8.8
COP i 01 49 17.1
COP i 02 07 22.4
COP i 02 08 02.1
COP LR LR
comp=Z,2µm,21.0s,MS5.8
MUD Monsted U'grnd 142.78 343⇑ iP PKPdf 01 46 09.1 -8.7
comp=Z,9.7nm,0.7s
MUD Monsted U'grnd 142.78 343 i P PKPdf 01 46 15.1 -2.7
MUD i 01 49 25.3
MUD Monsted U'grnd 142.78 343⇑ iPKHKP 01 46 09.1
MUD pmax pmax
comp=Z,10.0nm,0.7s
MUD Monsted U'grnd 142.78 343 ePKIKP PKPdf 01 46 15.1 -2.7
MUD i 01 49 25.3
MUD MLR MLR
comp=Z,6µm,22.0s,MS6.3
MUD Monsted U'grnd 142.78 343 eP PKPdf 01 46 15.1 -2.7
MUD i 01 49 25.3
MUD e 02 08 09.7
CRVS Cervenica-Dubn 143.38 325 ePKP PKPdf 01 46 14.7 -4.3
CRVS e 01 46 21.0
OJC Ojcow 143.43 328 ePKP(df) 01 46 12.1
OJC ePP PP 01 49 20.8 -10
OJC eSKS(df) 01 53 19.4
OJC eSS SS 02 07 54.7 -14
OJC MLR MLR 02 50 28.2
comp=Z,4µm,20.8s,MS6.1
OJC Ojcow 143.43 328 ePKHKP 01 46 12.1
OJC e 01 53 19.4
OJC MLR MLR
comp=Z,4µm,20.8s,MS6.1
NIE Niedzica 143.67 326 ePKP PKPdf 01 46 14.4 -5.1
KECS Kecovo 144.15 325 ePKP PKPdf 01 46 17.8 -2.6
KECS e 01 46 22.0
KDAG Bornova 144.26 306 i P PKPbc 01 46 15.9 -0.8
RAC Raciborz 144.30 329 ePKP(df) 01 46 16.2
RAC eSS SS 02 08 17.5 -1.0
RAC MLR MLR 02 54 18.4
comp=Z,5µm,20.2s,MS6.3
ALN Alexandroupoli 144.35 310 eP PKPbc 01 46 16.8 -0.1
BDRM Kayabasi 144.49 304 i P PKPbc 01 46 16.3 -1.0
OKC Ostrava-Krasne 144.49 328 ePKP PKPdf 01 46 16.8 -4.2
OKC eSS SS 02 08 22.1 +1.6
OKC L 02 54 40.0
KPL Plockton 144.50 356⇑ eP PKPbc 01 46 15.5 -1.2
LIKS Likavka 144.52 327 ePKP PKPdf 01 46 24.8 +3.8
BSEG Bad Segeberg 144.58 339 ePKIKP PKPdf 01 46 17.9 -3.1
KSB Sheil Bridge 144.61 356⇑ eP PKPbc 01 46 15.3 -1.6
KSP Ksiaz 144.66 331 ePKP PKPdf 01 46 17.4 -3.8
KSP ePKIKP PKPdf 01 46 24.2 +3.0
KSP ePP PP 01 49 36.5 -1.6
KSP MLR MLR 02 54 43.1
comp=Z,10µm,21.3s,MS6.5
KSP Ksiaz 144.66 331 ePKIKP PKPdf 01 46 17.0 -4.2
KSP e 01 49 35.0
KSP e 02 02 00.0
KSP eSS SS 02 08 22.0 -0.4
KSP MLR MLR
comp=Z,11µm,22.6s,MS6.6
KSP Ksiaz 144.66 331 ePKP PKPdf 01 46 17.0 -4.2
KSP i 01 46 18.5
KSP ePP PP 01 49 35.0 -3.1
KSP ePPP tx 02 00 46.0
KSP eSKKS 02 02 00.0
KSP eSS SS 02 08 22.0 -0.4
KSP LR LR
comp=Z,11µm,22.6s,MS6.6
PRK Paraskevi 144.75 308 eP PKPbc 01 46 19.0 +1.0
PSZ Piszkesteto 144.81 325⇑ ePKP/p 01 46 19.1
KAR1 Arisaig 144.93 356 eP PKPbc 01 46 16.7 -1.2
DPC Dobruska-Polom 145.00 331 ePKP PKPdf 01 46 18.4 -3.4
DPC eSS SS 02 08 30.8 +4.7
DPC L 02 54 30.0
comp=Z,4.2nm,20.0s
DPC Dobruska-Polom 145.00 331 ePKIKP PKPdf 01 46 18.4 -3.4
DPC MLR MLR
comp=Z,4µm,20.0s,MS6.2
VYHS Vyhne 145.01 326 ePKP PKPdf 01 46 18.9 -3.0
UPC Upice 145.03 331 ePKP PKPdf 01 46 18.3 -3.6
KARP Karpathos 145.07 301 eP PKPbc 01 46 19.5 +0.5
KOLL Kolacno 145.18 327 ePKP PKPdf 01 46 19.9 -2.3
KOLL e 01 46 24.6
LOS Limnos 145.38 309 eP PKPbc 01 46 20.4 +0.8
EBH Black Hill 145.41 354⇑ eP PKPbc 01 46 18.5 -0.6
EBH AMB AMB 01 46 24.2
comp=Z,478nm,1.6s
BUD Budapest 145.54 325 ePKP/pc PKPbc 01 46 21.6 +1.9
EAB Aberfoyle 145.54 355⇑ iP PKPbc 01 46 18.9 -0.6
EAB AMB AMB 01 46 24.6
comp=Z,496nm,1.6s
ESY Stoneypath 145.64 353⇑ iP PKPbc 01 46 19.2 -0.5
ESY AMB AMB 01 46 25.5
comp=Z,426nm,1.5s
PVCC Panska Ves 145.65 332 ePKP PKPdf 01 46 20.4 -2.5
PVCC L 02 51 00.0
comp=Z,5.0nm,21.4s
BRG Berggiesshubel 145.66 333 i PKP2 PKPab 01 46 20.0 -1.9
BRG i 01 46 21.4
BRG i 01 49 43.5
BRG i SS SS 02 08 38.0 +4.6
BRG pmax pmax
comp=Z,313nm,1.1s
BRG MLR MLR
comp=N,4µm,20.3s,MS6.3
BRG MLR MLR
comp=E,3µm,20.3s,MS6.3
BRG MLR MLR
comp=Z,5µm,20.3s,MS6.3
BRG Berggiesshubel 145.66 333 i PKP PKPdf 01 46 20.0 -3.0
BRG i 01 46 21.4
BRG i 01 46 25.6
BRG i PP PP 01 49 43.5 -0.6
BRG e 01 56 31.1
BRG i SS SS 02 08 38.0 +4.6
BRG LR LR
comp=Z,5µm,20.3s,MS6.3
EDI Edinburgh 145.69 353⇑ iP PKPbc 01 46 19.4 -0.5
EDI AMB AMB 01 46 25.7
comp=Z,306nm,1.5s
SRO Srobarova 145.71 326 e PKPbc 01 46 22.4 +2.2
SRO e 01 46 26.3
CLL Collm 145.72 334⇑ i PKPbc 01 46 20.3 +0.2
CLL i PKP1 PKPbc 01 46 21.6 +1.5
CLL i *PPKP 01 46 25.0
CLL i 01 46 32.6
CLL e 01 49 42.0
CLL i 01 50 08.3
CLL e 01 52 05.0
CLL ePS PS 02 00 51.0 0.0
CLL eSS SS 02 08 37.0 +3.0
CLL e 02 09 29.0
CLL e 02 10 00.0
CLL eSSS SSS 02 13 41.0 -23
CLL e 02 21 24.0
CLL Collm 145.72 334 i PKP2 PKPab 01 46 20.3 -1.8
CLL pmax pmax
comp=Z,269nm,1.0s
CLL MLR MLR
comp=Z,4µm,18.9s,MS6.3
CLL Collm 145.72 334 i PKP PKPdf 01 46 20.3 -2.7
CLL i 01 46 25.0
CLL LR LR
comp=Z,4µm,18.9s,MS6.3
PCOU Corrie 145.72 354⇑ eP PKPbc 01 46 19.1 -0.8
EAU Auchinoon 145.80 354⇑ iP PKPbc 01 46 20.1 -0.1
EAU AMB AMB 01 46 25.6
comp=Z,818nm,1.6s
EBL Broad Law 145.83 353⇑ iP PKPbc 01 46 19.9 -0.3
BOLS Boljevac 145.85 317⇑ iPKP PKPdf 01 46 22.4 -1.2
POB1 Observatory 145.89 355⇑ eP PKPbc 01 46 19.9 -0.5
PMSU Muirshiel 145.92 355⇑ eP PKPbc 01 46 19.8 -0.6
SRS Serrai 145.99 312 eP PKPbc 01 46 21.5 +0.4
PCA1 Carrot 146.02 354⇑ eP PKPbc 01 46 20.2 -0.4
OUR Ouranopolis 146.02 310 eP PKPbc 01 46 21.4 +0.2
PRA Prague 146.04 332 PKP PKPdf 01 46 21.0 -2.6
PRU Pruhonice 146.06 332 ePKP PKPdf 01 46 21.5 -2.2
PRU eSS SS 02 08 31.9 -5.9
PRU L 02 49 00.0
comp=Z,6.4nm,20.0s
SVIS Svilajnac 146.07 318⇑ iPKP PKPdf 01 46 21.5 -2.4
ZST Bratislava 146.09 327 ePKP PKPdf 01 46 23.0 -0.8
ZST e 01 46 35.8
THR4 Thira Island, 146.23 303 eP PKPbc 01 46 22.3 +0.5
THR3 Thira Island, 146.24 303 eP PKPbc 01 46 22.5 +0.7
BEO Belgrade 146.26 320⇑ iPKP PKPdf 01 46 21.8 -2.4
THR6 Thira Island, 146.26 303 eP PKPbc 01 46 21.5 -0.4
SOH Sokhos 146.27 312 eP PKPbc 01 46 22.3 +0.5
EKA Eskdalemuir Ar 146.27 353 ePKPbc PKPbc 01 46 21.2 0.0
comp=Z,28nm,0.5s,baz=352,slow=2.5,SNR=174
THR5 Thira Island, 146.28 303 eP PKPbc 01 46 23.7 +1.8
ESK Eskdalemuir 146.29 353⇑ iP PKPbc 01 46 20.9 -0.5
ESK AMB AMB 01 46 26.9
comp=Z,275nm,1.8s
ESK Eskdalemuir 146.29 353 PKP2 PKPab 01 46 21.3 -2.9
ESK Eskdalemuir 146.29 353 ePKPbc PKPbc 01 46 21.7 +0.3
ESK LR LR
comp=Z,4µm,20.0s,MS6.2
NPS Neapolis 146.37 301 eP PKPbc 01 46 24.0 +1.9
PLG Polygyros 146.38 311 eP PKPbc 01 46 23.0 +1.0
XRY Khrisi 146.39 300 eP PKPbc 01 46 20.0 -2.2
VKA Vienna 146.43 328⇑ iPKP PKPdf 01 46 23.2 -1.2
KNT Kendrikon 146.44 312 eP PKPbc 01 46 22.7 +0.5
GMK Mull of Kintyr 146.48 356⇑ eP PKPbc 01 46 21.7 0.0
AOS Alonnisos 146.53 309 eP PKPbc 01 46 22.1 -0.2
GRUS Gruza 146.59 318⇑ iPKP PKPdf 01 46 23.8 -1.0
VAY Valandovo 146.60 313 i PKP PKPdf 01 46 24.3 -0.6
THE Thessaloniki 146.62 312 eP PKPbc 01 46 23.2 +0.7
XAL Allendale 146.62 352⇑ eP PKPbc 01 46 22.1 0.0
LCP Cassop 146.64 351⇑ eP PKPbc 01 46 22.6 +0.5
WIT Witteveen 146.67 342 ePKP PKPdf 01 46 22.6 -2.0
comp=Z,415nm,1.2s
SOP Sopron 146.70 327⇑ iPKP/p 01 46 24.8
GCL Cushendall 146.78 356⇑ eP PKPbc 01 46 23.5 +1.1
MOX Moxa 146.78 335 i P PKPbc 01 46 24.7 +2.1
comp=Z,logA/T=2.1
MOX SS SS 02 08 33.0 -14
MOX Moxa 146.78 335 cePKP2 PKPab 01 46 24.7 -1.6
MOX pmax pmax
comp=Z,172nm,1.3s
MOX MLR MLR
comp=Z,3µm,20.0s,MS6.1
MOX Moxa 146.78 335⇑ ePKP PKPdf 01 46 24.7 -0.2
MOX LR LR
comp=Z,3µm,20.0s,MS6.1
GRG Griva 146.87 312 eP PKPbc 01 46 26.2 +3.1
GAL1 Galloway 146.89 355 eP PKPbc 01 46 22.5 -0.1
LWH Whinny Nab 146.91 350⇑ eP PKPbc 01 46 23.2 +0.4
PTL Penteli 146.92 307 eP PKPbc 01 46 24.0 +0.7
DIVS Divcibare 146.93 319⇑ iPKP PKPdf 01 46 23.3 -2.0
NEO Neokhori 146.95 309 eP PKPbc 01 46 25.0 +1.6
XOR Xorichti 146.95 309 eP PKPbc 01 46 24.8 +1.4
ATH Athens Observa 147.06 307 eP PKPdf 01 46 23.0 -2.8
SKO Skopje 147.07 315⇑ iPKP PKPdf 01 46 25.9 +0.3
SKO i 01 46 31.0
comp=Z,0.2nm,0.8s
KHC Kasperske Hory 147.11 331 ePKP PKPdf 01 46 23.2 -2.3
KHC epPKP 01 46 26.0
KHC x x 01 46 37.5
KHC eSS SS 02 08 56.9 +6.5
KHC L 02 49 30.0
comp=Z,4.5nm,22.8s
KHC Kasperske Hory 147.11 331 ePKIKP PKPdf 01 46 23.2 -2.3
KHC e 01 46 26.0
KHC i 01 46 37.5
KHC MLR MLR
comp=Z,4µm,22.8s,MS6.2
KHC Kasperske Hory 147.11 331 ePKP PKPdf 01 46 23.2 -2.3
KHC e 01 46 26.0
KHC e 01 46 37.5
KHC e 02 08 56.9
KHC LR LR
comp=Z,4µm,22.8s,MS6.2
LIT Litokhoron 147.16 311 eP PKPdf 01 46 24.5 -1.3
GEC2 GERESS Array S 147.27 331 ePKP2 PKPab 01 46 26.4 -1.8
GERES GERESS Array B 147.27 331 i PKP PKPdf 01 46 22.6 -3.1
comp=Z,23nm,0.7s,baz=45,slow=2.8,SNR=23
GERES PKPbc PKPdf 01 46 24.9 -0.8
comp=Z,21nm,0.6s,baz=45,slow=1.9,SNR=62
WET Wettzell 147.41 332 ePKP2 PKPab 01 46 26.9 -1.8
NVSS Nova Varos 2 147.42 318⇑ iPKP PKPdf 01 46 27.5 +1.3
VAM Vamos 147.45 302 eP PKPdf 01 46 27.0 +0.5
ARSA Arzberg 147.51 327⇑ iPKP PKPdf 01 46 22.8 -3.4
LDU Leeds Universi 147.56 351⇑ eP PKPdf 01 46 26.3 +0.3
KZN Kozani 147.58 312 eP PKPdf 01 46 28.5 +2.0
WIM Isle of Man 147.60 354 eP PKPdf 01 46 25.2 -0.8
GMM Mts of Mourne 147.61 356⇑ eP PKPdf 01 46 25.3 -0.8
FNA Florina 147.65 313 eP PKPdf 01 46 27.1 +0.5
GRA1 Grafenberg Arr 147.69 334 ePKPbc PKPdf 01 46 27.8 +1.4
GRA1 ePP PP 01 50 01.8 +5.5
GRA1 eSS SS 02 09 17.9 +21
GRA1 LR LR
comp=Z,4µm,19.2s,MS6.3
GRF Grafenberg Arr 147.69 334 ePKP2 PKPab 01 46 27.8 -2.0
GRF e 01 50 01.8
LMK Market Rasen 147.70 349⇑ eP PKPdf 01 46 25.9 -0.3
AGG Agios Georgios 147.70 309 eP PKPdf 01 46 25.0 -1.7
MOA Molln 147.72 329⇑ iPKP PKPdf 01 46 22.6 -3.9
BCI Bajram Curri 147.77 316 i p PKPdf 01 46 27.5 +0.7
LHO Holmfirth 147.85 351 i P PKPdf 01 46 26.7 +0.2
LHO Holmfirth 147.85 351⇑ eP PKPdf 01 46 25.7 -0.8
OHR Ohrid 147.89 314 i PKP PKPdf 01 46 25.5 -1.5
DMUB Kingscourt 148.00 357 eP PKPdf 01 46 26.5 -0.2
KBI1 Birley Grange 148.09 351⇑ eP PKPdf 01 46 26.0 -0.9
KYTH Kithira 148.11 304 eP PKPdf 01 46 29.0 +1.5
EVR Evrytania 148.12 309 eP PKPdf 01 46 29.0 +1.6
KSY Syston 148.22 349⇑ eP PKPdf 01 46 26.3 -0.8
SISC Sisak 148.23 324 i PKP PKPdf 01 46 27.5 +0.1
QSH Qafa e Shtames 148.29 315 ep PKPdf 01 46 29.0 +1.4
WME Myndd Eilian 148.30 354 eP PKPdf 01 46 26.8 -0.4
WCB1 Church Bay 148.34 354⇑ eP PKPdf 01 46 26.9 -0.4
KWE Weaver Farm 148.37 351⇑ eP PKPdf 01 46 27.3 0.0
WPM1 Penmaenmawr 148.40 353⇑ eP PKPdf 01 46 27.2 -0.1
TIR Tirane 148.40 315 ep PKPdf 01 46 31.0 +3.2
WLF1 Llynfaes 148.42 354⇑ eP PKPdf 01 46 27.2 -0.2
WLF1 AMB AMB 01 46 32.9
comp=Z,240nm,1.7s
JAN Janina 148.50 311 eP PKPdf 01 46 30.1 +2.1
OBKA Obir 148.51 327⇑ iPKP PKPdf 01 46 24.8 -3.0
YLL Llanberis 148.54 353⇑ eP PKPdf 01 46 27.7 +0.1
YLL AMB AMB 01 46 33.0
comp=Z,221nm,1.5s
DCN Croghan 148.58 357 eP PKPdf 01 46 27.8 +0.1
DLF Lyons Farm 148.58 356 eP PKPdf 01 46 27.8 +0.1
SIND Sindeldorf 148.60 335 eP PKPdf 01 46 28.5 +0.7
ITM Ithomi 148.66 306 eP PKPdf 01 46 29.5 +1.1
HGN Heimansgroeve 148.69 341 ePKP PKPdf 01 46 28.9 +1.0
comp=Z,50nm,2.0s
HGN ex x 01 50 11.0
TOD Tromm 148.70 336 eP PKPdf 01 46 28.9 +0.9
TOD Tromm 148.70 336 PKP PKPdf 01 46 29.7 +1.7
KBA Koelnbreinsper 148.71 329⇑ iPKP PKPdf 01 46 24.1 -4.0
YRE Yr Eifl 148.72 354 eP PKPdf 01 46 28.3 +0.4
KTG1 Tilbrook Grang 148.80 349 eP PKPdf 01 46 27.1 -0.9
BOJS Bojanci 148.81 325 ePKPbc PKPdf 01 46 30.4 +2.1
VISS Visnje 148.83 326 i PKPbc PKPdf 01 46 30.4 +2.1
LJU Ljubljana 148.83 326 ePKPbc PKPdf 01 46 30.0 +1.6
LJU e 01 46 49.4
LJU ePP PP 01 50 01.4 -1.1
LJU Ljubljana 148.83 326 ePKPdf PKPdf 01 46 26.7 -1.6
LJU ePKPbc PKPdf 01 46 30.0 +1.6
LJU e 01 46 49.4
LJU ePP PP 01 50 01.4 -1.1
FUR Furstenfeldbru 148.85 332 ePKP2 PKPab 01 46 30.5 -4.0
IGT Igoumenitsa 148.91 311 eP PKPdf 01 46 29.9 +1.2
ABH Alteburg 148.92 338 eP PKPdf 01 46 29.7 +1.4
ABH Alteburg 148.92 338 PKP PKPdf 01 46 30.9 +2.6
HDH Heidenheim 148.97 334 eP PKPdf 01 46 29.2 +0.7
HLM1 Long Mynd 149.00 352⇑ eP PKPdf 01 46 29.9 +1.5
HLM1 AMB AMB 01 46 34.6
comp=Z,196nm,1.5s
SSP1 Stoney Pound 149.13 352⇑ eP PKPdf 01 46 29.2 +0.7
VOY Vojsko 149.17 327 ePKPbc PKPdf 01 46 29.8 +0.9
VOY e 01 46 34.1
PTCC Patocco-Chiusa 149.18 328 ePKP PKPdf 01 46 30.2 +1.3
KTD Kalmit 149.20 337 eP PKPdf 01 46 30.4 +1.6
KEK Kerkira 149.20 312 eP PKPdf 01 46 30.0 +0.9
RUP Ruppelstein 149.24 338 eP PKPdf 01 46 30.5 +1.6
RUP Ruppelstein 149.24 338 PKP PKPdf 01 46 31.6 +2.7
VLS Valsamata 149.28 309 eP PKPdf 01 46 34.0 +4.7
FVI Forni Avoltri 149.32 329 ePKP PKPdf 01 46 30.6 +1.5
GMNA Gemona 149.33 328 ePKP PKPdf 01 46 30.9 +1.7
WATA Walderalm 149.34 331⇑ iPKP PKPdf 01 46 28.2 -0.9
WTTA Wattenberg 149.37 331⇑ iPKP PKPdf 01 46 28.2 -1.0
HAE Alders End 149.42 351⇑ iP PKPdf 01 46 30.8 +1.7
HAE AMB AMB 01 46 40.5
comp=Z,358nm,1.2s
BUCH Bad Urach 149.43 335 eP PKPdf 01 46 30.4 +1.2
SKP1 Kophill 149.45 349⇑ eP PKPdf 01 46 29.6 +0.5
TRI Trieste 149.45 327 ePKP PKPdf 01 46 31.9 +2.5
LBG Lerchenberg 149.47 335 eP PKPdf 01 46 30.9 +1.6
HTR Trewern Hill 149.48 352⇑ iP PKPdf 01 46 31.0 +1.9
HTR AMB AMB 01 46 35.8
comp=Z,221nm,1.6s
MCH1 Michaelchurch 149.52 352⇑ eP PKPdf 01 46 30.0 +0.8
MOTA Moosalm 149.55 331⇓ iPKP PKPdf 01 46 27.0 -2.4
LANF Langenberg 149.58 337 ePKP PKPdf 01 46 32.3 +2.9
SQTA Sankt Quirin 149.59 331⇓ iPKP PKPdf 01 46 28.2 -1.3
GIVF Givet 149.61 341 ePKP1 PKPdf 01 46 31.9 +2.5
comp=Z,189nm,0.9s
NVLJ Novalja 149.62 324 i PKP PKPdf 01 46 31.8 +2.1
UBR Uberruh 149.72 333 eP PKPdf 01 46 31.3 +1.6
HPE Pembroke 149.79 354⇑ eP PKPdf 01 46 31.4 +1.7
SWN1 Swindon 149.82 350⇑ eP PKPdf 01 46 32.3 +2.6
GUT Gutenstein 149.82 334 eP PKPdf 01 46 30.9 +1.1
BAIF Baives 149.83 342 ePKP1 PKPdf 01 46 32.6 +2.8
comp=Z,234nm,1.2s
BFO Black Forest 149.92 336 ePKP2 PKPab 01 46 32.8 -6.2
STR Strasbourg 149.93 336 PKP PKPdf 01 46 33.7 +3.7
SPAK Spaichingen 149.93 335 eP PKPdf 01 46 32.1 +2.1
SPAK Spaichingen 149.93 335 PKP PKPdf 01 46 32.7 +2.7
DAVA Damuels 150.13 333⇑ iPKP PKPdf 01 46 28.3 -2.0
WLS Welschbruch 150.22 337 PKP PKPdf 01 46 33.7 +3.2
SWK Warminster 150.24 350 eP PKPdf 01 46 32.6 +2.2
CDF Champ du Feu 150.25 337 ePKP1 PKPdf 01 46 33.4 +2.9
comp=Z,183nm,1.1s
CTI Castel Tesino 150.26 329 ePKP PKPdf 01 46 33.4 +2.8
LIBD Limburg 150.35 336 eP PKPdf 01 46 32.8 +2.1
LIBD Limburg 150.35 336 PKP PKPdf 01 46 33.7 +3.0
KIZ Kirchzarten 150.39 336 eP PKPdf 01 46 32.4 +1.7
FELD Feldberg 150.42 335 eP PKPdf 01 46 33.3 +2.5
ECH Echery 150.46 337 PKP PKPdf 01 46 33.8 +3.0
DAVOX Davos 150.52 332 PKP PKPdf 01 46 28.3 -2.6
comp=Z,5.5nm,0.6s,baz=345,slow=7.9,SNR=5.2
DAVOX PKPbc PKPdf 01 46 33.7 +2.8
comp=Z,132nm,1.1s,baz=194,slow=2.0,SNR=34
BRMO Bormio 150.53 331 ePKP PKPdf 01 46 33.5 +2.5
FGMS Monte Sant'Ang 150.72 318 ePKP PKPdf 01 46 35.0 +3.6
MOF Molkenrain 150.77 336 PKP PKPdf 01 46 34.6 +3.3
THEF They Montfort 150.87 338 PKP PKPdf 01 46 35.1 +3.7
HINF Hinteralfeld 150.91 337 ePKP1 PKPdf 01 46 34.7 +3.2
comp=Z,74nm,0.9s
HAU Haudompre 150.93 337 ePKP1 PKPdf 01 46 34.9 +3.4
comp=Z,172nm,1.1s
HAU eR
comp=Z,5µm,18.8s
MEZF Maizieres J'vi 150.94 339 ePKP1 PKPdf 01 46 35.3 +3.8
comp=Z,242nm,0.9s
BBS Basel-Blauen 150.95 335 eP PKPdf 01 46 33.6 +2.0
BBS Basel-Blauen 150.95 335 PKP PKPdf 01 46 35.3 +3.7
RGNG Rignano Grg 150.97 319 ePKP PKPdf 01 46 35.2 +3.4
SAL Salo 151.12 330 ePKP PKPdf 01 46 35.3 +3.5
SBD Saint Breward 151.14 353⇑ eP PKPdf 01 46 28.3 -3.4
LOMF Lomont 151.30 336 PKP PKPdf 01 46 36.5 +4.4
FSSB Fossombrone 151.34 324 ePKP PKPdf 01 46 35.9 +3.6
RSM Repubblica di 151.35 325 ePKP PKPdf 01 46 31.6 -0.7
ARV Arcevia 151.38 324 ePKP PKPdf 01 46 27.9 -4.5
SNTG Esanatoglia 151.54 324 ePKP PKPdf 01 46 31.3 -1.3
TDS Terranova Siba 151.57 314 ePKP PKPdf 01 46 41.6 +8.9
SFI Santa Sofia 151.68 326 ePKP PKPdf 01 46 37.7 +4.9
VAI Varese 151.71 332 ePKP PKPdf 01 46 29.5 -3.2
CII Carovilli 151.71 320 ePKP PKPdf 01 46 44.8 +12
SGO Sicignano 151.76 317 ePKP PKPdf 01 46 37.2 +4.2
PGD Poggio Sodo 151.77 326 ePKP PKPdf 01 46 38.6 +5.7
CSSN Cassano Irpino 151.78 318 ePKP PKPdf 01 46 37.8 +4.8
VMG Vicchio 151.80 326 ePKP PKPdf 01 46 39.0 +6.1
ZCCA Zocca 151.81 327 ePKP PKPdf 01 46 31.6 -1.4
RNI2 Rionero Sannit 151.82 320 ePKP PKPdf 01 46 40.0 +7.0
SEI Scarperia 151.83 327 ePKP PKPdf 01 46 38.8 +5.8
AQU L'Aquila 151.86 322 ePKP PKPdf 01 46 38.2 +5.1
GRI Girifalco 151.94 313 ePKP PKPdf 01 46 39.0 +5.7
GSCL Gusciola 152.01 328 ePKP PKPdf 01 46 38.2 +4.9
SDI San Donato 152.02 320 ePKP PKPdf 01 46 37.7 +4.3
ERBM Eremo 152.04 328 ePKP PKPdf 01 46 38.8 +5.4
PTQR Pietraquaria 152.07 321 ePKP PKPdf 01 46 36.7 +3.3
GRAM 152.16 329 P PKPdf 01 46 39.4 +6.0
VALM 152.18 328 P PKPdf 01 46 40.1 +6.6
CABF La Chapelle 152.20 336 ePKP1 PKPdf 01 46 38.5 +5.0
comp=Z,30nm,0.5s
FLN La Foliniere 152.21 347 ePKP1 PKPdf 01 46 37.5 +4.1
comp=Z,186nm,1.1s
FLN eR
comp=Z,5µm,19.8s
BDI Bagni Di Lucca 152.21 327 ePKP PKPdf 01 46 37.1 +3.5
SARO Sassorosso 152.22 328 P PKPdf 01 46 40.0 +6.4
ORO Oropa 152.24 333 ePKP PKPdf 01 46 29.5 -4.1
MNS Montasola 152.25 323 ePKP PKPdf 01 46 36.7 +3.1
BOB Bobbio (Coli) 152.25 330 ePKP PKPdf 01 46 39.2 +5.6
CSNT Castellina Chi 152.28 326 ePKP PKPdf 01 46 37.8 +4.2
LDF La Druitiere 152.29 346 ePKP1 PKPdf 01 46 37.7 +4.2
comp=Z,84nm,1.1s
BACM 152.31 328 P PKPdf 01 46 39.6 +5.9
MAIM 152.37 327 P PKPdf 01 46 39.3 +5.5
VINC Vinca 152.38 328 P PKPdf 01 46 39.2 +5.4
LOR Lormes 152.41 340 ePKP1 PKPdf 01 46 38.3 +4.6
comp=Z,34nm,0.7s
LOR eR
comp=Z,7µm,19.5s
PII Pisa 152.49 327 ePKP PKPdf 01 46 38.7 +4.7
SOI Samo 152.55 312 ePKP PKPdf 01 46 39.9 +5.7
GRR Gorron 152.64 347 ePKP1 PKPdf 01 46 38.7 +4.7
comp=Z,52nm,0.7s
SSF Saint Saulge 152.71 340 ePKP1 PKPdf 01 46 39.2 +5.0
comp=Z,80nm,1.2s
LSD Ceresole Reale 152.73 333 P PKPdf 01 46 39.6 +5.3
HYF Humbligny 152.79 341 ePKP1 PKPdf 01 46 39.6 +5.3
PCP Pian Castagno 152.84 330 P PKPdf 01 46 39.8 +5.4
LPL La Plagne 152.85 334 ePKP1 PKPdf 01 46 38.6 +4.2
comp=Z,35nm,1.1s
LPG La Plagne 152.86 334 ePKP1 PKPdf 01 46 38.6 +4.2

comp=Z,65nm,1.5s
RSP Reno Superiore 152.93 333 P PKPdf 01 46 41.3 +6.8
SMF Signal de Mont 152.97 339 *e*PKP1 PKPdf 01 46 39.4 +4.9
comp=Z,60nm,1.2s
AVF Avril sur Loir 153.00 340 *e*PKP1 PKPdf 01 46 39.2 +4.6
comp=Z,37nm,1.2s
SGMF Saint Gilles 153.10 349 *e*PKP1 PKPdf 01 46 40.3 +5.6
FENE Fenestrelle 153.11 333 P PKPdf 01 46 41.0 +6.2
ROSF Rostrenen 153.13 350 *e*PKP1 PKPdf 01 46 39.5 +4.8
BHB Bricherasio 153.18 332 P PKPdf 01 46 40.9 +6.0
FIN Finale Ligure 153.25 330 P PKPdf 01 46 40.6 +5.6
RRL Cesana Torines 153.31 333 P PKPdf 01 46 41.0 +6.0
ROB Roburent 153.34 331 P PKPdf 01 46 41.8 +6.7
BGF Bois d'Agland 153.37 340 *e*PKP1 PKPdf 01 46 40.5 +5.4
comp=Z,23nm,0.7s
RORO 153.39 330 P PKPdf 01 46 41.5 +6.4
GRN Grenoble 153.47 335 PKP PKPdf 01 46 41.3 +6.0
MBDF Montbardon 153.48 333 *e*PKP1 PKPdf 01 46 40.6 +5.3
comp=Z,27nm,1.1s
PZZ Prazzo 153.51 332 P PKPdf 01 46 40.8 +5.4
QUIF Quistinic 153.53 350 *e*PKP1 PKPdf 01 46 41.1 +5.8
MONE Monesi 153.56 331 P PKPdf 01 46 41.8 +6.4
ENR Entracque 153.59 331 P PKPdf 01 46 41.8 +6.3
STV2 Anna di Valdie 153.62 332 P PKPdf 01 46 41.3 +5.8
STV Sta Anna Valdi 153.62 332 P PKPdf 01 46 41.8 +6.3
IMI Imperia 153.63 330 P PKPdf 01 46 41.3 +5.8
SURF Saint Ours 153.66 333 PKP PKPdf 01 46 41.8 +6.2
ORIF Oris-en-Rattie 153.69 334 *e*PKP1 PKPdf 01 46 41.6 +6.0
comp=Z,72nm,0.8s
ORIF *e*R
comp=Z,6µm,21.8s
SAOF Saorge 153.72 331 PKP PKPdf 01 46 40.9 +5.2
TCF Toulx Ste Croi 153.80 341 *e*PKP1 PKPdf 01 46 41.3 +5.6
PGF Pioggiola 154.11 327 *e*PKP1 PKPdf 01 46 42.1 +5.9
comp=Z,294nm,1.2s
MFF Saint Martin d 154.16 345 *e*PKP1 PKPdf 01 46 41.7 +5.5
comp=Z,67nm,1.2s
VIVF Saint-Julien-l 154.21 336 *e*PKP1 PKPdf 01 46 42.4 +6.1
FRF La Foret Royal 154.46 331 *e*PKP1 PKPdf 01 46 42.7 +6.0
LMR La Mourre 154.70 331 *e*PKP1 PKPdf 01 46 43.3 +6.3
RJF Les Rejaudoux 154.90 341 *e*PKP1 PKPdf 01 46 44.1 +6.9
RJF *e*R
comp=Z,6µm,22.5s
CAF Calviac 155.07 340 *e*PKP1 PKPdf 01 46 43.3 +5.9
LASF Ste Croix 155.18 336 *e*PKP1 PKPdf 01 46 44.7 +7.1
comp=Z,34nm,1.1s
LFF La Frestale 155.46 342 *e*PKP1 PKPdf 01 46 44.6 +6.7
EBR Ebro Roquetas 159.24 337 *e*Ts PKPab 01 47 25.5 +6.7
PVRL Vila Real 160.63 355 *e*PKPab PKPab 01 47 24.2 -0.5
PVIS Viseu 161.20 355 *e*PKPab PKPab 01 47 26.1 -1.1
MTE Manteigas 161.49 355 *e*PKPab PKPab 01 47 28.0 -0.5
ESDC Sonseca Array 161.62 346 PKPab PKPab 01 47 28.0 -1.1
comp=Z,4.6nm,0.8s,baz=1.2,slow=3.2,SNR=6.6
ESLA Sonseca Array 161.62 346 PFAKE 01 46 50.0 +4.6
ESLA LR LR
comp=Z,38µm,20.0s
PCBR Castelo Branco 162.03 354 *e*PKPab PKPab 01 47 29.5 -1.4
PTOM Tomar 162.33 356 *e*PKPab PKPab 01 47 31.4 -0.8
LIC Lamto 163.72 197 *e*PKIKP PKPdf 01 46 46.1 -2.2
comp=Z,77nm,1.2s
LIC *e*R
comp=Z,15µm,20.8s
KIC Kosan Boka 163.77 198 *e*PKP1 PKPdf 01 46 45.1 -3.2
comp=Z,237nm,1.3s
PBEJ Beja 163.87 354 *e*PKPab PKPab 01 47 39.0 +0.1
DBIC Dimbokro 164.09 198 PKP PKPdf 01 46 46.2 -2.5
comp=Z,111nm,1.1s,baz=204,slow=2.4,SNR=5.1
DBIC PKPab PKPab 01 47 38.8 -1.8
comp=Z,36nm,1.1s,baz=152,slow=4.3,SNR=6.8
DBIC Dimbokro 164.09 198 *e*PKPdf PKPdf 01 46 45.4 -3.3
DBIC *e*PKPab PKPab 01 47 37.2 -3.4
TIC Toumodi 164.12 198 *e*PKP1 PKPdf 01 46 45.7 -3.0
comp=Z,136nm,1.0s
PALC Alcoutim 164.38 353 *e*PKPab PKPab 01 47 40.8 -0.4

*LDG **07** 01:37:05.7±0.2,42.05N×1.45E,h4km,Ml2.0/5,Error ellipse: s-maj=3.2km s-min=1.9km az=151.0*
*MDD **07** 01:37:05.9±0.7,42.04N×1.46E,h9km±8km,mbLg1.6/8, Error ellipse: s-maj=3.0km s-min=1.8km az=63.0,PRXIMO*
*NEIC **07** 01:37:06.2,42.05N×1.45E,ML2.0(LDG),MN1.3(MDD), After MDD.*
ISC 07 01:37:04.5±0.6,42.09N±0.03×1.40E±0.04,h9km,n20, σ1§14/21,Pyrenees

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CORG	**Organya**	**0.16**	**336**	**Pg**	**Pg**	**01 37 09.9**	**+2.0**
CORG				Lg		01 37 13.3	
	12nm,0.0s						
EMIR	**Miracle**	**0.20**	**152**	**Pg**	**Pg**	**01 37 08.9**	**+0.2**
	62nm,0.0s,SNR=18						
EMIR				Lg		01 37 11.4	
	13nm,0.0s,SNR=7.9						
EMIR	**Miracle**	**0.20**	**152**	**Pg**	**Pg**	**01 37 08.9**	**+0.2**
EMIR				Lg		01 37 11.5	
CSOR	**Sort**	**0.35**	**325**	**Pg**	**Pg**	**01 37 13.5**	**+1.9**
CSOR				Lg		01 37 19.6	
	1.2nm,0.1s						
CAVN	**Les Avellanes**	**0.53**	**247**	**Pg**	**Pg**	**01 37 16.2**	**+1.1**
CAVN				Lg		01 37 23.6	
	4.8nm,0.1s						
CLLI	**Llivia**	**0.58**	**47**	**Pg**	**Pg**	**01 37 16.7**	**+0.6**
EPOB	**Poblet**	**0.77**	**198**	**Pg**	**Pg**	**01 37 19.8**	**-0.2**
	1.9nm,0.0s,SNR=7.9						
EPOB				Lg		01 37 29.7	
	2.5nm,0.0s,SNR=7.9						
EPOB	**Poblet**	**0.77**	**198**	**Pg**	**Pg**	**01 37 19.8**	**-0.1**
EPOB				Lg		01 37 29.8	
EJON	**La Jonquera**	**1.16**	**71**	**Pg**	**Pg**	**01 37 27.1**	**-0.6**
	0.8nm,0.1s,SNR=8.8						
EJON				Lg		01 37 42.4	
	1.5nm,0.1s,SNR=7.9						
EJON	**La Jonquera**	**1.16**	**71**	**Pg**	**Pg**	**01 37 27.2**	**-0.5**
EJON				Lg		01 37 42.5	
EPF	**Esparros**	**1.23**	**321**	*e*Pg	**Pg**	**01 37 29.3**	**+0.3**
EPF				*e*Sg	**Sg**	**01 37 46.3**	**+0.9**
	4.9nm,0.2s						
ERTA	**Horta de San J**	**1.39**	**216**	**Pg**	**Pg**	**01 37 31.5**	**-0.7**
	0.5nm,0.1s,SNR=7.0						
ERTA				Lg		01 37 49.0	
	2.3nm,0.2s,SNR=7.9						
ERTA	**Horta de San J**	**1.39**	**216**	**Pg**	**Pg**	**01 37 31.3**	**-0.9**
ERTA				Lg		01 37 49.8	
MTLF	**Montolieu**	**1.39**	**25**	*e*Pg	**Pg**	**01 37 32.4**	**+0.1**
MTLF				*e*Sg	**Sg**	**01 37 50.0**	**-0.8**
	2.7nm,0.2s						
ESAC	**San Caprasio**	**1.44**	**256**	**Pg**	**Pg**	**01 37 34.1**	**+0.8**
	2.7nm,0.2s,SNR=7.9						
ESAC				Lg		01 37 53.4	
	3.2nm,0.1s,SNR=7.9						
ETSF	**Etsaut**	**1.66**	**300**	*e*Sg	**Sg**	**01 37 59.0**	**-0.8**
	2.5nm,0.3s						
SJPF	**Ste Jean**	**2.19**	**299**	*e*Sg	**Sg**	**01 38 15.7**	**-1.9**
	1.3nm,0.3s						
EMOS	**Mosqueruela**	**2.23**	**220**	Lg		01 38 18.1	
	0.4nm,0.2s,SNR=7.9						
EMOS	**Mosqueruela**	**2.23**	**220**	**Pg**	**Pg**	**01 37 47.5**	**-1.5**
EMOS				Lg		01 38 17.6	
CAF	**Calviac**	**2.88**	**9**	*e*Sg	**Sg**	**01 38 37.2**	**-3.1**
	0.7nm,0.2s						

*IDC **07** 01:51:52.9±2.6,34.94N×3.99W,mb3.8/4,mb1 3.9/6, mb1mx3.6/24,ML3.6/2,Error ellipse: s-maj=48.6km s-min=31.6km az=21.0*
*NEIC **07** 01:51:56.9,34.99N×3.82W,MG3.8(MDD),After MDD.*
*MDD **07** 01:51:56.4±1.1,34.98N×3.86W,mb3.8/19,Error ellipse: s-maj=11.1km s-min=4.0km az=7.0,PRXIMO AftershockPLICA*
ISC 07 01:51:55.0±0.7,35.03N±0.04×3.93W±0.03,h10km,n75, σ1§36/133,mb3.7/4,3C,Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EMEL	**Melilla**	**0.84**	**71**	⇑P	**Pb**	**01 52 10.9**	**-0.4**
	268nm,0.2s,SNR=18						
EMEL				S	**Sb**	**01 52 21.8**	**-0.7**
	2µm,0.2s						
MELI	**Melilla**	**0.86**	**72**	⇑P	**Pb**	**01 52 11.1**	**-0.5**
MELI				S	**Sb**	**01 52 23.0**	**+0.1**
EJIF	**Jimena Fronter**	**1.89**	**319**	P	**Pn**	**01 52 29.4**	**+1.8**
	2.1nm,0.2s,SNR=17						
EJIF				S	**Sn**	**01 52 53.4**	**+1.7**
	31nm,0.3s						
EJIF	**Jimena Fronter**	**1.89**	**319**	P	**Pn**	**01 52 29.6**	**+1.9**
EJIF				S	**Sn**	**01 52 53.6**	**+1.8**
ERON	**Agron**	**1.99**	**3**	P	**Pn**	**01 52 29.6**	**+0.5**
	4.5nm,0.2s,SNR=6.0						
ERON	**Agron**	**1.99**	**3**	P	**Pn**	**01 52 31.1**	**+2.0**
ERON				S	**Sn**	**01 52 54.0**	**-0.3**
EBER	**Berja**	**2.05**	**24**	P	**Pn**	**01 52 30.2**	**+0.3**
	5.1nm,0.2s,SNR=7.9						
EBER				S	**Sn**	**01 52 55.6**	**-0.1**
	134nm,0.5s,SNR=7.9						
EBER	**Berja**	**2.05**	**24**	P	**Pn**	**01 52 30.1**	**+0.1**
EBER				S	**Sn**	**01 52 55.6**	**-0.1**
ELOJ	**Sierra Loja**	**2.12**	**355**	P	**Pn**	**01 52 32.0**	**+1.0**
	7.8nm,0.5s,SNR=9.1						
ELOJ				S	**Sn**	**01 52 58.4**	**+0.8**
	11nm,0.4s,SNR=7.9						
ELOJ	**Sierra Loja**	**2.12**	**355**	P	**Pn**	**01 52 33.7**	**+2.7**
ELOJ				S	**Sn**	**01 53 00.9**	**+3.2**
ELIJ	**Sierra de Lija**	**2.22**	**329**	⇑P	**Pn**	**01 52 35.5**	**+3.0**
	5.6nm,0.3s,SNR=18						
ELIJ				S	**Sn**	**01 53 03.1**	**+3.0**
	31nm,0.4s,SNR=4.0						
ELIJ	**Sierra de Lija**	**2.22**	**329**	P	**Pn**	**01 52 35.6**	**+3.1**
ELIJ				S	**Sn**	**01 53 05.4**	**+5.3**
ECOG	**Cogollos-Vega**	**2.26**	**7**	P	**Pn**	**01 52 34.2**	**+1.2**
	7.9nm,0.3s,SNR=12						
ECOG				S	**Sn**	**01 53 04.1**	**+2.9**
	12nm,0.3s,SNR=7.9						
ECOG	**Cogollos-Vega**	**2.26**	**7**	P	**Pn**	**01 52 35.0**	**+2.0**
ECOG				S	**Sn**	**01 53 03.7**	**+2.5**
ESPR	**Espera**	**2.41**	**320**	P	**Pn**	**01 52 37.2**	**+2.1**
	1.3nm,0.2s,SNR=18						
ESPR				S	**Sn**	**01 53 08.2**	**+3.3**
	34nm,0.3s						
ESPR	**Espera**	**2.41**	**320**	P	**Pn**	**01 52 37.6**	**+2.5**
ESPR				S	**Sn**	**01 53 06.4**	**+1.5**
ELUQ	**Luque**	**2.54**	**354**	P	**Pn**	**01 52 38.8**	**+1.9**
	15nm,0.5s,SNR=10						
ELUQ				S	**Sn**	**01 53 10.5**	**+2.2**
	13nm,0.3s						
ELUQ	**Luque**	**2.54**	**354**	P	**Pn**	**01 52 40.0**	**+3.0**
ELUQ				S	**Sn**	**01 53 11.6**	**+3.3**
EQES	**Quesada**	**2.85**	**14**	P	**Pn**	**01 52 42.9**	**+1.4**
	4.9nm,0.2s,SNR=28						
EQES				S	**Sn**	**01 53 16.8**	**+0.6**
	39nm,0.4s						
EQES	**Quesada**	**2.85**	**14**	P	**Pn**	**01 52 43.6**	**+2.1**
EQES				S	**Sn**	**01 53 16.6**	**+0.4**
EHUE	**Huescar**	**2.98**	**21**	P	**Pn**	**01 52 45.0**	**+1.7**
	1.4nm,0.3s,SNR=12						
EHUE				S	**Sn**	**01 53 19.6**	**+0.1**
	7.8nm,0.4s,SNR=7.9						
EHUE	**Huescar**	**2.98**	**21**	P	**Pn**	**01 52 45.6**	**+2.3**
EHUE				S	**Sn**	**01 53 19.8**	**+0.3**
EBAN	**Banos Encina**	**3.13**	**2**	P	**Pn**	**01 52 48.1**	**+2.7**
EADA	**Adamuz**	**3.17**	**351**	P	**Pn**	**01 52 47.0**	**+1.0**
	0.6nm,0.1s,SNR=15						
EADA				S	**Sn**	**01 53 25.3**	**+0.9**
	6.4nm,0.3s						
EADA	**Adamuz**	**3.17**	**351**	P	**Pn**	**01 52 47.7**	**+1.6**
EADA				S	**Sn**	**01 53 24.2**	**-0.1**
EMIN	**Mina Concepcio**	**3.51**	**322**	P	**Pn**	**01 52 51.2**	**+0.4**
	1.0nm,0.1s,SNR=24						
EMIN	**Mina Concepcio**	**3.51**	**322**	P	**Pn**	**01 52 51.2**	**+0.4**
EMIN				S	**Sn**	**01 53 30.8**	**-2.2**
EMUR	**La Murta**	**3.55**	**37**	P	**Pn**	**01 52 52.2**	**+0.9**
	0.8nm,0.2s,SNR=7.9						
EMUR	**La Murta**	**3.55**	**37**	P	**Pn**	**01 52 51.7**	**+0.4**
EMUR				S	**Sn**	**01 53 29.3**	**-4.5**
PALC	**Alcoutim**	**3.75**	**311**	*e*Pn	**Pn**	**01 52 55.2**	**+0.9**
PALC				*e*Sn	**Sn**	**01 53 37.5**	**-1.5**
	40nm,0.4s						
PALC	**Alcoutim**	**3.75**	**311**	Pn	**Pn**	**01 52 55.2**	**+0.9**
PALC				Sn	**Sn**	**01 53 37.5**	**-1.5**
	20nm,0.4s						
EVIA	**Vianos**	**3.78**	**17**	P	**Pn**	**01 52 59.8**	**+5.2**
EGRO	**El Granado**	**3.80**	**312**	P	**Pn**	**01 52 55.4**	**+0.4**
	1.3nm,0.1s,SNR=7.9						
EGRO				S	**Sn**	**01 53 38.5**	**-1.7**
	34nm,0.4s,SNR=7.9						
EGRO	**El Granado**	**3.80**	**312**	P	**Pn**	**01 52 55.4**	**+0.4**
EGRO				S	**Sn**	**01 53 38.1**	**-2.1**
ETOB	**Tobarra**	**4.08**	**27**	P	**Pn**	**01 52 60.0**	**+1.0**
	2.8nm,0.2s,SNR=16						
ETOB				S	**Sn**	**01 53 45.3**	**-2.1**
	8.5nm,0.5s						
ETOB	**Tobarra**	**4.08**	**27**	P	**Pn**	**01 52 60.0**	**+1.0**
ETOB				S	**Sn**	**01 53 42.9**	**-4.5**
PBEJ	**Beja**	**4.36**	**315**	*e*Pn	**Pn**	**01 53 03.7**	**+0.9**
PBEJ				*e*Sn	**Sn**	**01 53 52.2**	**-2.0**
	16nm,0.7s						
PBEJ	**Beja**	**4.36**	**315**	Pn	**Pn**	**01 53 03.7**	**+0.9**
PBEJ				Sn	**Sn**	**01 53 52.2**	**-2.0**
	8.0nm,0.7s						
PTEO	**Sao Teotonio**	**4.61**	**304**	*e*Pn	**Pn**	**01 53 07.5**	**+1.1**
PTEO				*e*Sn	**Sn**	**01 53 59.0**	**-1.7**
	23nm,0.6s						
PTEO	**Sao Teotonio**	**4.61**	**304**	Pn	**Pn**	**01 53 07.5**	**+1.1**
PTEO				Sn	**Sn**	**01 53 59.0**	**-1.7**
	12nm,0.6s						
ESDC	**Sonseca Array**	**4.64**	**360**	Pn			
	2.1nm,0.3s,baz=179,slow=12,SNR=18						
ESDC				Sn	**Sn**	**01 53 06.5**	**-0.3**
	1.0nm,0.3s,baz=183,slow=24,SNR=4.3						
ESDC				Lg		01 54 15.8	
	1.4nm,0.3s,baz=180,slow=26,SNR=4.4						
ESDC	**Sonseca Array**	**4.64**	**360**	P	**Pn**	**01 53 06.6**	**-0.2**
	0.4nm,0.1s,baz=175,slow=12,SNR=14						
ESDC				S	**Sn**	**01 53 58.8**	**-2.5**
	0.1nm,0.3s,baz=186,slow=22,SNR=5.6						
MOE	**Montemor**	**4.97**	**316**	*e*Pn	**Pn**	**01 53 12.6**	**+1.1**
MOE				*e*Sn	**Sn**	**01 54 07.3**	**-2.5**
PCBR	**Castelo Branco**	**5.57**	**331**	*e*Pn	**Pn**	**01 53 19.9**	**0.0**
PCBR				*e*Sn	**Sn**	**01 54 21.0**	**-3.8**
	7.8nm,0.2s						
PCBR	**Castelo Branco**	**5.57**	**331**	Pn	**Pn**	**01 53 19.9**	**0.0**
PCBR				Sn	**Sn**	**01 54 21.0**	**-3.8**
	3.9nm,0.2s						
GUD	**Guadarrama**	**5.61**	**358**	P	**Pn**	**01 53 20.4**	**-0.1**
	2.2nm,0.4s,SNR=4.0						
GUD				S	**Sn**	**01 54 23.8**	**-2.0**
	1.9nm,0.3s,SNR=4.0						
PLOU	**Loures**	**5.68**	**314**	*e*Pn	**Pn**	**01 53 22.5**	**+1.0**
PLOU				*e*Sn	**Sn**	**01 54 23.4**	**-4.2**
PTOM	**Tomar**	**5.80**	**323**	*e*Pn	**Pn**	**01 53 22.8**	**-0.5**
PTOM				*e*Sn	**Sn**	**01 54 25.4**	**-5.3**
	12nm,0.4s						
EIBI	**Ibiza**	**5.81**	**45**	P	**Pn**	**01 53 21.8**	**-1.6**
	1.9nm,0.2s,SNR=7.6						
EIBI	**Ibiza**	**5.81**	**45**	P	**Pn**	**01 53 21.4**	**-1.9**
EIBI				S	**Sn**	**01 54 23.2**	**-7.6**
ETOR	**Torete**	**5.97**	**14**	P	**Pn**	**01 53 26.0**	**+0.4**
	1.4nm,0.4s,SNR=7.9						
ETOR				S	**Sn**	**01 54 30.5**	**-4.3**
	1.1nm,0.5s,SNR=4.0						
ETOR	**Torete**	**5.97**	**14**	P	**Pn**	**01 53 25.8**	**+0.3**
ETOR				S	**Sn**	**01 54 30.1**	**-4.7**
EMOS	**Mosqueruela**	**5.99**	**26**	P	**Pn**	**01 53 27.0**	**+1.1**
	0.4nm,0.7s,SNR=7.9						
EMOS	**Mosqueruela**	**5.99**	**26**	P	**Pn**	**01 53 25.4**	**-0.5**
MTE	**Manteigas**	**6.08**	**333**	*e*Pn	**Pn**	**01 53 27.3**	**+0.2**
MTE				*e*Sn	**Sn**	**01 54 32.3**	**-5.2**
	12nm,0.6s						
MTE	**Manteigas**	**6.08**	**333**	Pn	**Pn**	**01 53 27.3**	**+0.2**
MTE				Sn	**Sn**	**01 54 32.3**	**-5.2**
	6.2nm,0.6s						
PVIS	**Viseu**	**6.48**	**332**	*e*Pn	**Pn**	**01 53 32.5**	**-0.4**
PVIS				*e*Sn	**Sn**	**01 54 43.2**	**-4.5**
	9.9nm,0.8s						
PVIS	**Viseu**	**6.48**	**332**	Pn	**Pn**	**01 53 32.5**	**-0.4**
PVIS				Sn	**Sn**	**01 54 43.2**	**-4.5**
	4.9nm,0.8s						
ERTA	**Horta de San J**	**6.81**	**28**	P	**Pn**	**01 53 37.0**	**-0.5**
	1.0nm,0.4s,SNR=7.9						
ERTA	**Horta de San J**	**6.81**	**28**	P	**Pn**	**01 53 36.8**	**-0.7**
PVRL	**Vila Real**	**6.91**	**336**	*e*P	**Pn**	**01 53 38.8**	**-0.1**
PVRL				*e*Sn	**Sn**	**01 54 53.0**	**-5.4**
	10nm,0.3s						
PVRL	**Vila Real**	**6.91**	**336**	P	**Pn**	**01 53 38.8**	**-0.1**
PVRL				Sn	**Sn**	**01 54 53.0**	**-5.4**
	5.1nm,0.3s						
PBRG	**Braganca**	**7.11**	**343**	*e*Pn	**Pn**	**01 53 41.3**	**-0.4**
PBRG				*e*Sn	**Sn**	**01 54 58.6**	**-4.9**
ECAL	**Calabor**	**7.24**	**343**	P	**Pn**	**01 53 43.2**	**-0.4**
	1.7nm,0.4s,SNR=9.3						
ECAL				S	**Sn**	**01 55 02.5**	**-4.2**
	3.6nm,0.4s,SNR=7.9						
ECAL	**Calabor**	**7.24**	**343**	P	**Pn**	**01 53 43.2**	**-0.4**
ECAL				S	**Sn**	**01 55 01.3**	**-5.4**
ELOB	**Lobios**	**7.55**	**336**	P	**Pn**	**01 53 47.6**	**-0.3**
	1.6nm,0.4s,SNR=7.9						
ELOB				S	**Sn**	**01 55 07.7**	**-6.8**
	0.1nm,0.8s,SNR=7.9						
EINC	**Incio**	**8.07**	**342**	P	**P**	**01 53 54.9**	**-0.2**
	0.7nm,0.4s,SNR=7.9						
EINC				S	**Sn**	**01 55 20.3**	**-7.1**
	1.4nm,0.4s,SNR=4.0						
EINC	**Incio**	**8.07**	**342**	P	**P**	**01 53 55.1**	**0.0**
EINC				S	**Sn**	**01 55 20.0**	**-7.4**
EALK	**Alkurruntz**	**8.39**	**12**	P	**P**	**01 53 59.6**	**0.0**
	2.9nm,0.4s,SNR=7.9						
EALK	**Alkurruntz**	**8.39**	**12**	P	**P**	**01 53 59.5**	**-0.1**
GERES	**GERESS Array B**	**18.98**	**38**	P	**P**	**01 56 17.9**	**-0.9**
	0.1nm,0.3s,baz=210,slow=7.9,SNR=2.2						
MLR	**Muntele Rosu**	**24.95**	**56**	P	**P**	**01 57 17.8**	**-1.9**
	2.4nm,1.0s,mb3.7,baz=228,slow=14,SNR=3.1						
BRTR	**Keskin Array B**	**30.07**	**70**	P	**P**	**01 58 04.6**	**-2.0**
	3.2nm,1.2s,mb3.9,baz=270,slow=5.8,SNR=4.9						
MKAR	**Makanchi Array**	**63.11**	**50**	P	**P**	**02 02 23.2**	**-1.6**
	1.0nm,0.9s,mb4.0,baz=288,slow=3.8,SNR=6.0						
YKA	**Yellowknife Ar**	**68.19**	**332**	P	**P**	**02 02 55.1**	**-2.1**
	0.2nm,0.6s,mb3.3,baz=60,slow=6.3,SNR=5.3						

IDC 07 02:01:19.3±7.7,20.68S×175.67W,mb4.1/5,mb1 4.2/5, mb1mx3.9/16,Error ellipse: s-maj=198.0km s-min=49.4km az=31.0,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**35.64**	**264**	P	P	02 08 20.2	-1.0
	4.1nm,0.5s,baz=95,slow=11,SNR=7.5						
STKA	**Stephens Creek**	**39.68**	**245**	P	P	02 08 53.0	-2.0
	0.8nm,0.5s,baz=86,slow=11,SNR=4.5						
ASAR	**Alice Springs**	**46.60**	**257**	P	P	02 09 49.3	-1.9
	1.2nm,0.5s,baz=96,slow=8.2,SNR=17						
WRA	**Warramunga Arr**	**46.73**	**262**	P	P	02 09 50.0	-2.3
	1.7nm,0.7s,baz=97,slow=7.9,SNR=45						
MAW	**Mawson**	**82.13**	**199**	P	P	02 13 41.6	-1.2
	1.1nm,0.9s,baz=97,slow=8.1,SNR=3.6						

*GUC **07** 02:05:07.0±0.8,27.86S×66.66W,h162km±55km,ML5.2*
*NEIC **07** 02:05:07.6±0.4,27.84S×66.60W,h152km±4km,mb4.4/13, Error ellipse: s-maj=6.4km s-min=4.4km az=86.0*
*SYO **07** 02:05:07.6,27.84S×66.60W,h152km,MB4.4*
*IDC **07** 02:05:09.6±0.8,27.74S×66.61W,h167km±6km,mb4.0/10, mb1 4.1/14,mb1mx4.0/19,MS4.9/1,Ms1 4.9/1, ms1mx4.0/24,Error ellipse: s-maj=17.6km s-min=10.7km az=62.0*
ISC 07 02:05:07.0±0.5,27.84S±0.03×66.64W±0.05,h161km±5km, n95,σ1§07/89,mb4.4/23,7C-2D,Catamarca Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CPCH	**Copiapo**	**3.33**	**277**	⇑*i*P	**P**	**02 05 59.5**	**-0.2**
CPCH				*i* S	**S**	**02 06 39.3**	**-0.8**
CPCH				AMP		02 06 43.8	
	comp=E,6µm,0.1s						
VACH	**Vallenar**	**3.71**	**258**	*i* P	**P**	**02 06 05.9**	**+1.4**
VACH				*i* S	**S**	**02 06 48.0**	**-0.7**
VACH				AMP		02 06 52.3	
	comp=E,731nm,0.1s						
TLL	**Tololo Astrono**	**4.32**	**237**	⇑*i*P	**P**	**02 06 13.9**	**+1.4**
TLL				*i* S	**S**	**02 07 03.8**	**+0.9**
TLL				AMP		02 07 09.6	
	comp=E,904nm,0.5s						
LSCH	**La Serena**	**4.53**	**242**	*e*P	**P**	**02 06 15.4**	**+0.2**
LSCH				*i* S	**S**	**02 07 06.7**	**-1.2**
CPN1	**Cerro Paranal**	**4.66**	**313**	*e*P	**P**	**02 06 19.1**	**+2.2**
OVCH	**Ovalle**	**4.84**	**234**	*e*P	**P**	**02 06 19.2**	**-0.1**
OVCH				*i* S	**S**	**02 07 14.2**	**-1.0**
CMCH	**Combarbala**	**5.04**	**228**	*e*P	**P**	**02 06 22.2**	**+0.2**
CMCH				*i* S	**S**	**02 07 19.8**	**-0.2**
MDZ	**Mendoza**	**5.37**	**200**	*e*P	**P**	**02 06 26.9**	**+0.6**
MDZ				*e*S	**S**	**02 07 29.5**	**+1.7**
LVC	**Limon Verde**	**5.60**	**338**	*e*P	**P**	**02 06 31.5**	**+2.2**
	comp=E,8.1nm,0.3s,baz=172,slow=8.3,SNR=35						
LVC				S	**S**	**02 07 33.4**	**+0.2**
	comp=E,28nm,0.3s,baz=283,slow=21,SNR=26						
LVC	**Limon Verde**	**5.60**	**338**	*e*Pn	**P**	**02 06 29.7**	**+0.4**
LVC				*e*Sn	**S**	**02 07 33.1**	**-0.1**
JACH	**Jahuel**	**5.91**	**214**	*e*P	**P**	**02 06 34.0**	**+0.6**
FCH	**Farellones**	**6.31**	**209**	*e*P	**P**	**02 06 40.0**	**+1.3**
FCH				*i* S	**S**	**02 07 50.6**	**+0.6**
PEL	**Peldehue**	**6.33**	**212**	*e*P	**P**	**02 06 39.0**	**0.0**
ROCH	**El Roble**	**6.35**	**215**	*i* P	**P**	**02 06 38.4**	**-1.0**
ROCH				*i* S	**S**	**02 07 49.0**	**-2.1**
CLCH	**Cerro Calan**	**6.47**	**210**	*e*P	**P**	**02 06 41.4**	**+0.5**
PCH	**Pirque**	**6.65**	**209**	*e*P	**P**	**02 06 43.7**	**+0.4**
RCDM	**Rinconada Maip**	**6.67**	**211**	⇑*i*P	**P**	**02 06 43.5**	**-0.1**
RCDM				*i* S	**S**	**02 07 57.0**	**-1.7**
LMEL	**Las Melosas**	**6.72**	**206**	⇑*i*P	**P**	**02 06 44.9**	**+0.6**
TACH	**Talagante**	**6.87**	**211**	*e*P	**P**	**02 06 45.2**	**-1.1**
LCCH	**Las Cruces**	**7.04**	**216**	*e*P	**P**	**02 06 46.5**	**-2.0**
SFDO	**San Fernando**	**7.72**	**208**	*i* P	**P**	**02

SYO				*e*pP		pP	02 16 32.2	-8.4
SBA	**Scott Base**	**69.99**	**190**	*e*P		**P**	**02 16 03.5**	**+1.2**
ANMO	**Albuquerque**	**72.92**	**327**	*e*P		**P**	**02 16 21.4**	**+1.0**
	comp=E,5.2nm,1.4s,mb4.1							
SADO	**Sadowa**	**73.16**	**351**	P		**P**	**02 16 21.1**	**-0.6**
	comp=E,3.8nm,0.8s,mb4.2,baz=157,slow=7.7,SNR=3.4							
SUR	**Sutherland**	**73.69**	**118**	P		**P**	**02 16 25.7**	**+0.7**
	comp=E,3.9nm,0.5s,mb4.4,baz=249,slow=7.3,SNR=9.9							
SUR	**Sutherland**	**73.69**	**118**	*e*P		**P**	**02 16 25.6**	**+0.6**
WUAZ	**Wupatki**	**75.85**	**324**	*e*P		**P**	**02 16 38.7**	**+1.6**
ISCO	**Idaho Springs**	**76.46**	**330**	*e*P		**P**	**02 16 41.9**	**+1.4**
MAW	**Mawson**	**77.69**	**162**	P		**P**	**02 16 47.5**	**+0.8**
	comp=E,8.8nm,0.8s,mb4.5,baz=210,slow=5.9,SNR=16							
MAW	**Mawson**	**77.69**	**162**	*e*P		**P**	**02 16 47.4**	**+0.7**
	comp=E,5.7nm,0.8s,mb4.2							
MSU	**Marysvale**	**78.55**	**325**	*e*P		**P**	**02 16 53.5**	**+1.5**
RSSD	**Black Hills**	**79.37**	**334**	*e*P		**P**	**02 16 56.7**	**+0.4**
DAU	**Daniels Canyon**	**79.55**	**327**	*e*P		**P**	**02 16 59.1**	**+1.7**
LBTB	**Lobatse**	**80.56**	**113**	*e*P		**P**	**02 17 02.9**	**-0.2**
	comp=E,4.5nm,0.9s,mb4.1							
BW06	**Boulder Array**	**80.60**	**329**	*e*P		**P**	**02 17 03.6**	**+0.7**
PDAR	**Pinedale Array**	**80.60**	**329**	P		**P**	**02 17 03.5**	**+0.6**
	comp=E,1.7nm,0.5s,mb3.9,baz=124,slow=7.4,SNR=17							
HWUT	**Hardware Ranch**	**80.63**	**328**	*e*P		**P**	**02 17 04.2**	**+1.1**
	comp=E,5.0nm,0.9s,mb4.1							
ULM	**Lac du Bonnet**	**81.96**	**342**	P		**P**	**02 17 09.4**	**-0.4**
	baz=201,slow=1.9							
ULM	**Lac du Bonnet**	**81.96**	**342**	*e*P		**P**	**02 17 09.7**	**-0.1**
	comp=E,19nm,0.8s,mb4.8							
HLID	**Hailey**	**83.48**	**327**	*e*P		**P**	**02 17 19.2**	**+1.5**
	comp=E,5.8nm,1.0s,mb4.3							
MCMT	**McKenzie Canyo**	**83.70**	**329**	*e*P		**P**	**02 17 20.4**	**+1.5**
BOZ	**Bozeman (W)**	**83.79**	**330**	*e*P		**P**	**02 17 19.7**	**+0.5**
CHMT	**Chamberlain Mo**	**85.48**	**330**	*e*P		**P**	**02 17 28.7**	**+1.1**
YBH	**Yreka Blue Hor**	**86.45**	**322**	P		**P**	**02 17 32.5**	**0.0**
	comp=E,1.7nm,0.6s,mb3.9,baz=119,slow=3.5,SNR=4.1							
YKA	**Yellowknife Ar**	**97.83**	**340**	P		**P**	**02 18 24.6**	**+0.1**
	comp=E,0.4nm,0.6s,mb4.0,baz=134,slow=4.4,SNR=19							
ASAR	**Alice Springs**	**125.09**	**203**	PKP		PKPdf	02 23 49.3	+0.6
	comp=E,2.3nm,0.5s,baz=134,slow=1.7,SNR=29							
ASAR				pPKP			02 24 35.3	
	comp=E,1.0nm,0.5s,baz=132,slow=1.9,SNR=5.7							
WRA	**Warramunga Arr**	**128.34**	**205**	PKP		PKPdf	02 23 56.3	+1.2
	comp=E,1.7nm,0.3s,baz=155,slow=2.0,SNR=58							
WRA				pPKP			02 24 41.9	
	comp=E,1.7nm,0.5s,baz=165,slow=1.6,SNR=7.8							
WRAB	**Tennant Creek**	**128.34**	**205**	*e*PKPdf		PKPdf	02 23 56.3	+1.2
BVAR	**Borovoye Array**	**139.61**	**39**	PKP		PKPdf	02 24 16.2	+1.1
	comp=E,1.1nm,0.6s,baz=238,slow=39,SNR=6.4							
EKS2	**Erkin-Say**	**144.80**	**55**	P		PKPdf	02 24 26.8	+2.3
	SNR=9.0							
AML	**Almayashu**	**144.84**	**56**	P		PKPdf	02 24 26.8	+2.2
	SNR=7.5							
USP	**Ospenovka**	**145.19**	**53**	P		PKPdf	02 24 27.5	+2.4
	SNR=12							
KURK	**Kurchatov**	**145.21**	**39**	*e*PKPbc		PKPbc	02 24 27.3	+1.9
UCH	**Uchtor**	**145.42**	**55**	P		PKPdf	02 24 29.3	+3.7
	SNR=29							
CHMS	**Chumysh**	**145.43**	**54**	P		PKPdf	02 24 28.5	+3.0
	SNR=12							
KBK	**Karagaybulak**	**145.64**	**54**	P		PKPdf	02 24 29.7	+3.8
	SNR=9.0							
KZA	**Kyzart**	**145.99**	**55**	P		PKPdf	02 24 30.9	+4.4
	SNR=8.6							
TKM2	**Tokmak 2**	**146.05**	**54**	P		PKPdf	02 24 29.9	+3.3
	SNR=14							
MKAR	**Makanchi Array**	**149.17**	**44**	PKP		PKPdf	02 24 33.7	+2.2
	comp=E,11nm,0.6s,baz=268,slow=2.7,SNR=43							
MKAR				PKPbc		PKPdf	02 24 37.9	+6.3
	comp=E,9.0nm,0.5s,baz=274,slow=2.1,SNR=91							
MKAR				PKPab		PKPab	02 24 42.7	-0.4
	comp=E,5.3nm,0.5s,baz=287,slow=4.0,SNR=19							
MKAR				pPKPbc			02 25 20.5	
	comp=E,2.8nm,0.8s,baz=333,slow=2.7,SNR=1.7							
MKAR	**Makanchi Array**	**149.17**	**44**	PKP		PKPdf	02 24 33.7	+2.2
MKAR				PKPbc		PKPdf	02 24 37.9	+6.3
MKAR				PKPab		PKPab	02 24 42.7	-0.4
MKAR				pPKPbc			02 25 20.5	
SONM	**Songino Array**	**159.32**	**13**	PKP		PKPdf	02 24 48.4	+3.0
	comp=E,2.5nm,1.2s,baz=180,slow=1.2,SNR=6.6							
SONM				PKPab		PKPab	02 25 25.5	-0.5
	comp=E,1.4nm,0.7s,baz=323,slow=4.2,SNR=8.3							

*NEIC **07** 02:07:31.3±2.2,8.28S×119.55E,h172km±29km,mb3.9/1, Error ellipse: s-maj=49.0km s-min=7.8km az=223.0*
*IDC **07** 02:07:35.5±2.7,8.20S×119.82E,h216km±30km,mb3.5/4, mb1 3.6/6,mb1mx3.5/14,Error ellipse: s-maj=72.2km s-min=9.7km az=53.0*
ISC 07 02:07:28.8±2.0,**8.1S**±0.2×**119.7E**±0.2,**h166**km±23km,**n14,** σ0§**99**/22,**mb3.8**/3,**1C-1D,Flores region**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
KEDI	**Kedomdong**	**3.53**	**264**	*e*Pn		**P**	**02 08 26.1**	**+1.9**
KEDI				*e*Sn		**S**	**02 09 04.1**	**-2.8**
RATI	**Rata**	**4.13**	**261**	⇓*e*Pn		**P**	**02 08 32.3**	**+0.4**
RATI				*e*Sn		**S**	**02 09 21.2**	**+0.6**
KELI	**Kelakatan**	**5.12**	**269**	⇑*e*Pn		**P**	**02 08 44.4**	**-0.5**
KELI				*e*Sn		**S**	**02 09 31.3**	**-12**
FITZ	**Fitzroy Crossi**	**11.50**	**150**	*e*P		**P**	**02 10 09.7**	**+0.8**
	3.9nm,0.9s							
FITZ				*e*S		**S**	**02 12 06.1**	**-8.6**
FITZ	**Fitzroy Crossi**	**11.50**	**150**	P		**P**	**02 10 09.9**	**+0.9**
	0.6nm,0.3s,baz=338,slow=9.8,SNR=35							
FITZ				S		**S**	**02 12 10.1**	**-4.6**
	1.0nm,0.3s,baz=192,slow=19,SNR=10							
WRA	**Warramunga Arr**	**18.44**	**131**	P		**P**	**02 11 33.3**	**-0.9**
	1.0nm,0.3s,baz=303,slow=12,SNR=38							
WRA				S		**S**	**02 14 51.2**	**+0.1**
	0.2nm,0.3s,baz=311,slow=24,SNR=6.5							
WRAB	**Tennant Creek**	**18.44**	**131**	*e*P		**P**	**02 11 33.5**	**-0.8**
WB2	**Warramunga Arr**	**18.45**	**131**	*e*P		**P**	**02 11 33.4**	**-0.9**
WB2				*e*S		**S**	**02 14 50.9**	**-0.3**
AS12	**Alice Springs**	**20.62**	**140**	*e*P		**P**	**02 11 57.1**	**+0.5**
	3.7nm,0.3s							
ASAR	**Alice Springs**	**20.62**	**140**	P		**P**	**02 11 57.0**	**+0.5**
	3.3nm,0.4s,baz=315,slow=8.7,SNR=32							
ASAR				S		**S**	**02 15 34.1**	**+1.7**
	0.7nm,0.9s,baz=323,slow=22,SNR=4.6							
STKA	**Stephens Creek**	**31.23**	**142**	*e*P		**P**	**02 13 35.0**	**+0.1**
	2.3nm,1.8s,mb3.6							
STKA	**Stephens Creek**	**31.23**	**142**	P		**P**	**02 13 34.7**	**-0.2**
	2.2nm,0.5s,mb4.1,baz=308,slow=9.0,SNR=11							
SONM	**Songino Array**	**56.93**	**349**	P		**P**	**02 16 59.7**	**+0.9**
	0.5nm,0.5s,mb3.6,baz=167,slow=7.4,SNR=6.7							
MKAR	**Makanchi Array**	**63.98**	**332**	P		**P**	**02 17 46.0**	**-0.6**
	1.6nm,0.6s,mb4.0,baz=154,slow=7.0,SNR=20							

*IDC **07** 02:12:44.1±2.9,32.33S×178.29W,mb4.1/4,mb1 4.2/5, mb1mx4.1/15,Error ellipse: s-maj=60.3km s-min=35.0km az=115.0*
*NEIC **07** 02:12:52.5±1.6,32.85S×178.21W,h75km,mb4.4/1,Error ellipse: s-maj=32.9km s-min=22.7km az=111.0*
ISC 07 02:12:48.1±1.8,**32.35S**±0.1×**178.4W**±0.3,**h33**km,**n11,** σ1§**10**/10,**mb4.1**/5,**South of Kermadec Islands**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
URZ	**Urewera**	**6.93**	**210**	Pn		**Pn**	**02 14 26.8**	**-3.2**
	baz=113,slow=13,SNR=2.8							
URZ				Sn		**Sn**	**02 15 48.8**	**+0.3**
	11nm,0.3s,baz=104,slow=18,SNR=22							
STKA	**Stephens Creek**	**33.73**	**260**	P		**P**	**02 19 29.8**	**+1.4**
	1.2nm,0.7s,mb3.9,baz=90,slow=11,SNR=3.9							
CTA	**Charters Tower**	**33.80**	**282**	P		**P**	**02 19 30.5**	**+1.3**
	4.2nm,0.7s,mb4.5,baz=95,slow=14,SNR=5.4							
CTAO	**Charters Tower**	**33.80**	**282**	P		**P**	**02 19 31.1**	**+1.9**
ASAR	**Alice Springs**	**42.67**	**269**	P		**P**	**02 20 43.3**	**-0.2**
	1.3nm,0.6s,mb3.8,baz=105,slow=7.5,SNR=12							
WB2	**Warramunga Ar**	**43.83**	**274**	*e*P		**P**	**02 20 52.3**	**-0.6**
WRAB	**Tennant Creek**	**43.84**	**274**	*e*P		**P**	**02 20 52.5**	**-0.4**
WRA	**Warramunga Arr**	**43.84**	**274**	P		**P**	**02 20 51.6**	**-1.4**
	4.0nm,0.8s,mb4.2,baz=113,slow=7.9,SNR=32							
QSPA	**South Pole Qui**	**57.76**	**180**	*e*P		**P**	**02 22 38.1**	**+0.4**
	2.1nm,0.7s,mb4.3							
KAF	**Kangasniemi**	**146.25**	**339**	*e*p		PKPdf	02 32 23.5	+0.3
	1.3nm,0.7s							
FINES	**FINESS Array B**	**146.84**	**339**	PKPbc		PKPbc	02 32 26.9	+1.2
	1.7nm,0.8s,baz=45,slow=2.7,SNR=8.1							

*CASC **07** 02:19:10.7±1.6,13.68N×90.29W,h82km±16km,MD3.5, ML3.8*

ISC 07 02:19:10.4±1.2,**13.7N**±0.2×**90.28W**±0.09,**h91**km±17km, **n13,** σ0§**68**/23,**1C-5D,Near coast of Guatemala**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
CUSS	**Cusmapa**	**0.38**	**58**	⇑*e*P		**P**	**02 19 23.6**	**-0.7**
CUSS				*e*S		**S**	**02 19 34.0**	**-0.9**
IXG	**Ixpaco**	**0.49**	**340**	*e*P		**P**	**02 19 24.1**	**-1.2**
IXG				*e*S		**S**	**02 19 36.6**	**+0.1**
IXG				AML		AML	02 19 39.5	
	comp=N,3μm,0.4s							
RTR	**El Retiro**	**0.64**	**73**	⇓*e*P		**P**	**02 19 26.5**	**-0.1**
RTR				*e*S		**S**	**02 19 39.6**	**+0.9**
SBLS	**San Blas**	**0.65**	**78**	⇓*e*P		**P**	**02 19 26.5**	**-0.2**
SBLS				*e*S		**S**	**02 19 38.5**	**-0.2**
SNJE	**San Jose**	**0.67**	**76**	⇓*e*P		**P**	**02 19 26.8**	**-0.1**
RBDL	**Robledal**	**0.70**	**55**	⇓*e*P		**P**	**02 19 27.0**	**-0.2**
RBDL				*e*S		**S**	**02 19 40.4**	**+0.8**
FUG	**Fuego 3**	**0.92**	**323**	*e*P		**P**	**02 19 28.9**	**-0.5**
FUG				*e*S		**S**	**02 19 43.5**	**-0.2**
BOQS	**Boqueron**	**0.97**	**88**	*e*P		**P**	**02 19 30.0**	**0.0**
LFU	**La Fuente**	**1.13**	**88**	*e*P		**P**	**02 19 31.9**	**-0.1**
LFRS	**El Faro**	**1.18**	**94**	⇓*e*P		**P**	**02 19 32.6**	**0.0**
LFRS				*e*S		**S**	**02 19 49.9**	**+0.7**
LCBS	**La Ceiba**	**1.26**	**92**	*e*P		**P**	**02 19 33.4**	**-0.3**
LCBS				*e*S		**S**	**02 19 52.0**	**+1.0**
SNVI	**San Vicente**	**1.40**	**94**	*e*P		**P**	**02 19 35.2**	**-0.2**
SNVI				*e*S		**S**	**02 19 53.6**	**-0.3**
JAT	**Jato**	**1.45**	**295**	*e*P		**P**	**02 19 36.3**	**+0.2**
JAT				*e*S		**S**	**02 19 57.4**	**+2.4**

IDC 07 02:22:34.4±6.1,**30.53S**×**178.73W,mb3.9**/2,**mb1 4.2**/2, **mb1mx3.9**/12,**Error ellipse: s-maj=236.0km s-min=58.9km az=155.0,Kermadec Islands**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
ASAR	**Alice Springs**	**42.47**	**267**	P		P	02 30 31.0	-2.0
	0.6nm,0.6s,baz=103,slow=7.6,SNR=8.7							
WRA	**Warramunga Arr**	**43.47**	**273**	P		P	02 30 39.9	-1.3
	1.3nm,0.4s,baz=113,slow=7.8,SNR=34							
FINES	**FINESS Array B**	**145.05**	**339**	PKPbc		PKPbc	02 42 11.4	-1.7
	0.5nm,0.6s,baz=45,slow=3.9,SNR=4.6							

IDC 07 02:42:04.3±4.6,**29.60S**×**177.79W,mb4.0**/3,**mb1 4.2**/3, **mb1mx3.9**/12,**Error ellipse: s-maj=184.0km s-min=69.9km az=158.0,Kermadec Islands**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
STKA	**Stephens Creek**	**34.84**	**256**	P		P	02 48 57.3	-1.8
	2.5nm,0.7s,baz=101,slow=12,SNR=9.1							
ASAR	**Alice Springs**	**43.34**	**266**	P		P	02 50 08.0	-2.0
	0.6nm,0.5s,baz=103,slow=7.3,SNR=8.9							
WRA	**Warramunga Arr**	**44.25**	**271**	P		P	02 50 15.7	-1.7
	1.1nm,0.3s,baz=110,slow=8.1,SNR=76							
FINES	**FINESS Array B**	**144.46**	**340**	PKP		PKPdf	03 01 41.4	-2.3
	0.5nm,0.5s,baz=63,slow=4.3,SNR=6.8							

*NEIC **07** 02:43:07.4±0.4,71.01N×6.92W,h10km,ML3.2(BER), Error ellipse: s-maj=8.7km s-min=4.5km az=179.0*
*NAO **07** 02:43:08.4±2.2,71.07N×7.08W*
*BER **07** 02:43:09.7±1.2,71.20N×7.29W,h15km±5km,MD2.6, ML3.2*
ISC 07 02:43:05.3±0.5,**71.08N**±0.08×**6.75W**±0.10,**h10**km,**n13,** σ0§**88**/16,**2C,Jan Mayen Island region**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
JNE	**Jan Mayen East**	**0.51**	**261**	⇑*i*P		**Pg**	**02 43 16.6**	**+0.9**
JNE				*e*S		**Sg**	**02 43 22.7**	**+0.1**
JNE				AML		AML	02 43 25.1	
	comp=Z,2μm,0.5s							
JNW	**Jan Mayen West**	**0.55**	**266**	⇑*i*P		**Pg**	**02 43 16.9**	**+0.6**
JNW				*e*S		**Sg**	**02 43 23.2**	**-0.6**
JNW				AML		AML	02 43 26.6	
	comp=Z,940nm,0.3s							
JMIC	**Jan Mayen**	**0.58**	**262**	Pg		**Pg**	**02 43 17.4**	**+0.3**
JMIC				Lg			02 43 24.1	
JMI	**Jan Mayen**	**0.67**	**258**	*e*P		**Pb**	**02 43 19.0**	**+0.5**
JMI				*e*S		**Sb**	**02 43 26.4**	**-1.1**
JMI				AML		AML	02 43 27.3	
	comp=Z,1μm,0.3s							
LOF	**Lofoten**	**7.66**	**103**	*e*P		**Pn**	**02 44 59.8**	**+0.1**
KBS	**Kingsbay**	**9.18**	**23**	Pn		**P**	**02 45 20.0**	**-0.7**
KBS	**Kingsbay**	**9.18**	**23**	*e*Pn		**P**	**02 45 20.3**	**-0.4**
SPB4	**Spitsbergen Ar**	**9.30**	**30**	*e*Pn		**P**	**02 45 22.4**	**-0.1**
SPA0	**Spitsbergen Ar**	**9.31**	**30**	Pn		**P**	**02 45 23.0**	**+0.5**
	baz=224,slow=16							
NSS	**Namsos**	**9.61**	**124**	*e*P		**P**	**02 45 24.4**	**-2.1**
ARA0	**ARCESS Array S**	**10.91**	**83**	Pn		**P**	**02 45 43.5**	**-0.8**
	baz=287,slow=14							
HFS	**Hagfors**	**13.74**	**133**	Pn		**P**	**02 46 22.4**	**+0.2**
	baz=358,slow=11							
FIA0	**FINESS Array S**	**16.11**	**110**	P		**P**	**02 46 55.0**	**+2.0**
	baz=303,slow=10							

*IDC **07** 02:47:00.1±77.0,20.17S×174.33E,mb3.6/3,mb1 3.8/3, mb1mx3.6/13,Error ellipse: s-maj=1338.0km s-min=135.0km az=78.0*
ISC 07 02:47:50.8±5.4,**21.6S**±0.3×**169.3E**±0.4,**h93**km±33km,**n5,** σ0§**95**/6,**mb3.5**/3,**1C,Southeast of Loyalty Islands**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
DZM	**Mont Dzumac**	**2.70**	**259**	*e*P		**P**	**02 48 32.8**	**-0.5**
DZM				*e*S		**S**	**02 49 05.2**	**+0.2**
BKM	**Butte a Klehm**	**4.04**	**346**	⇑*i*P		**P**	**02 48 51.9**	**+0.2**
STKA	**Stephens Creek**	**26.71**	**242**	P		**P**	**02 53 23.9**	**+0.6**
	1.2nm,0.5s,mb3.7,baz=86,slow=13,SNR=7.4							
ASAR	**Alice Springs**	**32.69**	**260**	P		**P**	**02 54 16.9**	**+0.4**
	0.5nm,0.9s,mb3.3,baz=83,slow=8.8,SNR=3.3							
WRA	**Warramunga Arr**	**32.69**	**266**	P		**P**	**02 54 15.6**	**-1.0**
	0.3nm,0.4s,mb3.5,baz=98,slow=8.0,SNR=9.5							

ISC 07 03:01:11.6±0.8,**46.41N**±0.04×**15.05E**±0.05,**n6,** σ0§**54**/9, **2C-1D,Northwestern Balkan Peninsula**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
PERS	**Pernice**	**0.24**	**12**	*i*Pg		**Pg**	**03 01 16.9**	**+0.6**
GROS	**Grobnik**	**0.32**	**80**	*e*Sg		**Sg**	**03 01 22.1**	**-0.1**
PDKS	**Podkum**	**0.33**	**186**	*i*Sg		**Sg**	**03 01 22.7**	**+0.3**
	comp=Z,49nm,0.9s							
OBKA	**Obir**	**0.36**	**287**	⇑*i*PG		**Pg**	**03 01 18.5**	**-0.2**
OBKA				*i* SG		**Sg**	**03 01 24.3**	**+0.8**
	comp=Z,23nm,0.6s							
ARSA	**Arzberg**	**0.91**	**21**	⇓*i*PG		**Pg**	**03 01 29.0**	**-0.7**
ARSA				*i* SG		**Sg**	**03 01 42.3**	**+0.5**
	comp=Z,5.7nm,0.5s							
KBA	**Koelnbreinsper**	**1.35**	**301**	⇑*i*PG		**Pg**	**03 01 37.7**	**-0.8**
KBA				*i* SG		**Sg**	**03 01 56.2**	**-0.3**
	comp=Z,6.3nm,0.6s							

*BER **07** 03:01:48.4±4.8,80.31N×24.04E,h15km±36km,ML3.1, ML2.9(NAO)*
*NEIC **07** 03:01:50.7,80.18N×24.25E,h15km,ML2.9(BER),After BER.*
*NAO **07** 03:01:52.6±4.6,80.13N×21.82E,h10km±18km,ML2.9*
ISC 07 03:01:47.5±2.4,**80.3N**±0.2×**23.2E**±0.7,**h15**km,**n6,** σ1§**19**/13,**Svalbard region**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
KBS	**Kingsbay**	**2.48**	**241**	*e*P		**Pn**	**03 02 27.6**	**-0.4**
KBS				*e*Pg		**Pg**	**03 02 31.6**	**-5.5**
KBS				*e*S		**Sn**	**03 02 57.5**	**-0.7**
KBS				AML		AML	03 03 02.0	
	comp=Z,171nm,0.6s							
KBS	**Kingsbay**	**2.48**	**241**	*e*P		**Pn**	**03 02 31.3**	**+3.2**
KBS				*e*S		**Sn**	**03 02 57.0**	**-1.2**
SPA0	**Spitsbergen Ar**	**2.52**	**214**	Pn		**Pn**	**03 02 28.1**	**-0.6**
	baz=23,slow=12							
SPA0				Pg		**Pg**	**03 02 32.3**	**-5.6**
	baz=33,slow=16							
SPA0				Sn		**Sn**	**03 02 58.7**	**-0.6**
	baz=53,slow=28							
SPB4	**Spitsbergen Ar**	**2.52**	**214**	*e*Pn		**Pn**	**03 02 30.9**	**+2.3**
SPB4				*e*Sn		**Sn**	**03 03 00.5**	**+1.1**
ARA0	**ARCESS Array S**	**10.88**	**176**	Pn		**P**	**03 04 24.2**	**-1.4**
	baz=353,slow=10							
ARA0				Sn		**S**	**03 06 13.3**	**-15**
	baz=3.2,slow=22							
HFS	**Hagfors**	**20.50**	**194**	P		**P**	**03 06 27.6**	**+0.4**

WEL 07 03:10:49.5±1.0,**35.71S**×**177.77E,h12**km,**ML4.5**/2,**Error ellipse: s-maj=12.1km s-min=6.9km az=90.0,Off east coast of North Island**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
PUZ	**Puketiti**	**2.39**	**171**	PN		Pn	03 11 27.5	-1.7
PUZ				SN		Sn	03 11 57.4	-1.3
URZ	**Urewera**	**2.60**	**191**	P*		Pb	03 11 30.8	-4.9
URZ				S*		Sb	03 11 60.0	-7.7
MWZ	**Matawai**	**2.63**	**184**	*e*P*		Pb	03 11 30.4	-5.7
MWZ				S*		Sb	03 12 00.6	-7.9

*NEIC **07** 03:20:14.4,40.55N×35.78E,h5km,MD3.9(ISK),After ISK.*
*ISK **07** 03:20:14.3,40.55N×35.78E,h5km,MD3.9,ML3.9*
*IDC **07** 03:20:15.9±1.6,40.67N×35.68E,mb3.6/3,mb1 3.9/5, mb1mx3.6/18,ML4.2/2,Error ellipse: s-maj=19.3km s-min=13.2km az=149.0*
ISC 07 03:20:15.3±0.3,**40.60N**±0.03×**35.81E**±0.03,**h5**km,**n42,** σ1§**05**/55,**mb3.5**/3,**1C,Turkey**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
TOKT	**Tokat**	**0.62**	**116**	PG		**Pg**	**03 20 27.4**	**-0.4**
TOKT				SG		**Sg**	**03 20 37.0**	**+0.8**
TOKT	**Tokat**	**0.62**	**116**	Pg		**Pg**	**03 20 27.4**	**-0.4**
TOKT				Sg		**Sg**	**03 20 37.4**	**+1.2**
CTKT	**Corum**	**0.78**	**272**	*i* P		**Pg**	**03 20 30.0**	**-0.9**
CTKT				*i* S		**Sg**	**03 20 43.2**	**+1.9**
YOZ	**Yozgat**	**1.03**	**202**	PG		**Pg**	**03 20 34.1**	**-1.8**
YOZ				SG		**Sg**	**03 20 48.0**	**-1.7**
YOZ	**Yozgat**	**1.03**	**202**	Pg		**Pg**	**03 20 34.1**	**-1.8**
YOZ				Sg		**Sg**	**03 20 48.1**	**-1.6**
BOYT	**Boyabat**	**1.07**	**320**	⇑*i*P		**Pb**	**03 20 36.0**	**+0.1**
BOYT				*i* S		**Sb**	**03 20 51.2**	**+1.2**
SVSK	**Karacayir**	**1.14**	**127**	*e*Pn		**Pn**	**03 20 35.9**	**-1.9**
BYBT	**Boyabat**	**1.17**	**318**	*i* PN		**Pn**	**03 20 37.6**	**-0.7**
SVST	**Sivas**	**1.20**	**133**	*i* P		**Pb**	**03 20 38.2**	**0.0**
SVST				*i* S		**Sb**	**03 20 56.3**	**+2.4**
TOS	**Tosya**	**1.43**	**288**	*i* PN		**Pn**	**03 20 41.6**	**-0.4**
CANT	**Cankiri**	**1.67**	**271**	*i* PN		**Pn**	**03 20 45.7**	**+0.3**
BNN	**Bunyan**	**1.75**	**179**	*e*PN		**Pn**	**03 20 47.0**	**+0.5**
ELDT	**Eldivan**	**1.82**	**267**	*i* P		**Pn**	**03 20 48.0**	**+0.4**
ELDT				*i* S		**Sn**	**03 21 12.2**	**+0.8**
BRTR	**Keskin Array B**	**1.88**	**243**	Pg		**Pg**	**03 20 48.6**	**-4.3**
	49nm,0.3s,baz=54,slow=14,SNR=620							
BRTR				Lg			03 21 14.4	
	52nm,0.3s,baz=82,slow=25,SNR=14							
BZK	**Bozkurt**	**1.92**	**315**	PN		**Pn**	**03 20 50.0**	**+0.9**
AVNT	**Avonos**	**1.96**	**202**	*i* P		**Pn**	**03 20 50.6**	**+0.9**
AVNT				*i* S		**Sn**	**03 21 17.5**	**+2.6**
KAMT	**Kaman**	**2.03**	**233**	*i* PN		**Pn**	**03 20 50.3**	**-0.3**
BALT	**Daday**	**2.06**	**298**	*i* P		**Pn**	**03 20 52.0**	**+1.0**
BALT				*i* S		**Sn**	**03 21 20.7**	**+3.4**
ANTO	**Ankara**	**2.42**	**253**	*e*PN		**Pn**	**03 20 56.6**	**+0.4**
LOD	**Lodumlu**	**2.44**	**254**	*e*PN		**Pn**	**03 20 56.0**	**-0.5**
SAFT	**Safranbolu**	**2.45**	**286**	*i* PN		**Pn**	**03 20 56.9**	**+0.2**
NIG	**Nigde**	**2.66**	**201**	*i* PN		**Pn**	**03 20 59.4**	**-0.2**
KELT	**Kelkit**	**2.67**	**99**	*e*P		**Pn**	**03 20 59.9**	**+0.1**
GUMT	**Gumushane**	**2.80**	**92**	*e*PN		**Pn**	**03 21 02.6**	**+1.0**
MYA	**Malataya**	**3.04**	**137**	PN		**Pn**	**03 21 04.7**	**-0.3**
EZC	**Erzincan**	**3.18**	**104**	PN		**Pn**	**03 21 03.0**	**-4.1**
ELZG	**Elazig**	**3.23**	**130**	*i* P		**Pn**	**03 21 09.0**	**+1.3**
ELZG				*i* S		**Sn**	**03 21 55.

3.3nm,0.2s
EADA Adamuz 3.91 54 Pn **Pn 03 39 21.8 -0.1**
0.8nm,0.1s,SNR=18
EADA Sn **Sn 03 40 06.6 -1.9**
9.8nm,0.2s
EADA Adamuz 3.91 54 P **Pn 03 39 21.8 -0.1**
EADA S **Sn 03 40 06.5 -1.9**
PCBR Castelo Branco 3.98 13 *e*Pn **Pn 03 39 22.8 -0.1**
PCBR *e*Sn **Sn 03 40 09.2 -1.0**
3.9nm,0.1s
PCBR Castelo Branco 3.98 13 Pn **Pn 03 39 22.8 -0.1**
PCBR Sn **Sn 03 40 09.2 -1.0**
1.9nm,0.1s
ECOG Cogollos-Vega 4.27 70 Sn **Sn 03 40 16.2 -1.3**
1.8nm,0.2s,SNR=7.9
EBAN Banos Encina 4.45 59 Sn **Sn 03 40 18.7 -3.3**
4.0nm,0.1s,SNR=7.9
MTE Manteigas 4.52 10 *e*Pn **Pn 03 39 30.3 -0.2**
MTE *e*Sn **Sn 03 40 21.8 -1.9**
2.7nm,0.3s
MTE Manteigas 4.52 10 Pn **Pn 03 39 30.3 -0.2**
MTE Sn **Sn 03 40 21.8 -1.9**
1.4nm,0.3s
PVIS Viseu 4.79 7 *e*Pn **Pn 03 39 33.9 -0.4**
PVIS *e*Sn **Sn 03 40 27.7 -2.9**
EQES Quesada 4.81 66 Pn **Pn 03 39 34.4 -0.3**
0.4nm,0.2s,SNR=7.9
EQES Sn **Sn 03 40 28.7 -2.5**
1.3nm,0.2s,SNR=7.9
EQES Quesada 4.81 66 P **Pn 03 39 34.3 -0.3**
EQES S **Sn 03 40 27.3 -3.9**
PVRL Vila Real 5.36 7 *e*Pn **Pn 03 39 41.4 -1.0**
PVRL *e*Sn **Sn 03 40 41.5 -3.4**
3.0nm,0.1s
PVRL Vila Real 5.36 7 Pn **Pn 03 39 41.4 -1.0**
PVRL Sn **Sn 03 40 41.5 -3.4**
1.5nm,0.1s
ELOB Lobios 5.92 4 Pn **Pn 03 39 49.3 -0.9**
0.6nm,0.1s,SNR=7.9
ELOB Sn **Sn 03 40 55.2 -3.8**
1.6nm,0.2s,SNR=7.9
ELOB Lobios 5.92 4 P **Pn 03 39 49.4 -0.9**
ELOB S **Sn 03 40 54.5 -4.5**
ECAL Calabor 6.16 13 Pn **Pn 03 39 53.3 -0.3**
0.8nm,0.1s,SNR=7.9
ETOB Tobarra 6.24 62 Sn **Sn 03 41 01.7 -5.3**
1.7nm,0.1s,SNR=7.9
EMAZ Mazaricos 6.99 358 Pn **Pn 03 40 03.2 -2.2**
1.3nm,0.2s,SNR=7.9
ETOR Torete 7.08 45 Pn **Pn 03 40 06.1 -0.5**
0.3nm,0.1s,SNR=7.9
ETOR Sn **Sn 03 41 22.4 -5.6**
0.8nm,0.2s,SNR=7.9

*NEIC **07** 04:01:56.9±2.3,60.00S×27.57W,h123km±22km,mb4.0/1, Error ellipse: s-maj=19.8km s-min=11.2km az=212.0*
*IDC **07** 04:01:59.9±16.0,59.97S×27.60W,h148km±135km, mb3.7/6,mb1 3.8/6,mb1mx3.7/13,Error ellipse: s-maj=73.2km s-min=37.9km az=162.0*
ISC 07 04:01:53.2±4.7,59.9S±0.2×27.7W±0.3,h96km±52km,n20, σ0§70/13,mb4.0/7,2C-2D,South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
VNA1	**Neumayer--Stat**	**13.38**	**151**	ǁ*i*	**P**	**04 05 00.6**	**+0.5**
VNA3	**Neumayer Olymp**	**13.49**	**155**	ǁ*i*	**P**	**04 05 01.5**	**+0.1**
VNA2	**Neumayer--Watz**	**13.78**	**151**	ǁ*i*	**P**	**04 05 00.7**	**-4.3**
SNAA	**Sanae**	**15.39**	**150**	ǁ*i*	**P**	**04 05 25.6**	**0.0**
PMSA	**Palmer Station**	**17.39**	**238**	P	**P**	**04 05 50.0**	**-0.7**
QSPA	**South Pole Qui**	**30.32**	**180**	*e*P	**P**	**04 07 57.0**	**0.0**
	1.8nm,0.6s,mb3.9						
PLCA	**Paso Flores**	**32.66**	**287**	P	**P**	**04 08 17.2**	**-0.6**
	1.1nm,0.7s,mb3.8,baz=154,slow=15,SNR=2.8						
CPUP	**Villa Florida**	**39.30**	**315**	P	**P**	**04 09 14.2**	**+0.2**
	1.7nm,0.5s,mb4.1,baz=169,slow=6.9,SNR=7.1						
CPUP	**Villa Florida**	**39.30**	**315**	*e*P	**P**	**04 09 14.5**	**+0.5**
BDFB	**Brasilia**	**46.65**	**333**	P	**P**	**04 10 18.1**	**+4.5**
	2.6nm,1.0s,mb3.9,baz=178,slow=24,SNR=3.4						
LVC	**Limon Verde**	**47.15**	**304**	P	**P**	**04 10 18.3**	**+0.8**
	1.1nm,0.4s,mb4.0,baz=145,slow=6.7,SNR=4.5						
LPAZ	**La Paz**	**52.50**	**308**	P	**P**	**04 10 59.1**	**+0.7**
	1.4nm,0.4s,mb4.3,baz=99,slow=8.8,SNR=16						
DBIC	**Dimbokro**	**68.80**	**24**	P	**P**	**04 12 47.6**	**-1.3**
	4.7nm,0.9s,mb4.3,baz=185,slow=4.8,SNR=4.6						
ARCES	**ARCESS Array B**	**134.62**	**23**	PKP	PKPdf	04 20 58.5	-0.5
	2.4nm,1.0s,baz=225,slow=1.7,SNR=6.9						
YKA	**Yellowknife Ar**	**138.81**	**315**	PKP	PKPdf	04 21 06.2	-0.6
	0.2nm,0.6s,baz=129,slow=2.4,SNR=6.6						
YKA	**Yellowknife Ar**	**138.82**	**315**	PKP	PKPdf	04 21 06.2	-0.6
INK	**Inuvik**	**148.56**	**317**	PKPbc	PKPdf	04 21 26.9	+3.8
	1.5nm,0.8s,baz=93,slow=2.1,SNR=23						
INK	**Inuvik**	**148.56**	**317**	PKPbc	PKPdf	04 21 26.9	+3.7
SONM	**Songino Array**	**150.96**	**94**	PKPbc	PKPdf	04 21 34.4	+6.9
	1.4nm,0.3s,baz=216,slow=3.4,SNR=7.9						
ILAR	**Eielson Array**	**152.37**	**306**	PKPbc	PKPdf	04 21 36.0	+6.9
	0.4nm,0.4s,baz=123,slow=1.0,SNR=9.7						

*IDC **07** 04:34:03.6±1.3,5.92S×131.75E,mb4.2/3,mb1 4.6/8, mb1mx4.3/15,ML4.5/5,Error ellipse: s-maj=38.2km s-min=20.3km az=65.0*
*NEIC **07** 04:34:04.8±0.8,6.03S×131.86E,h10km,Error ellipse: s-maj=16.1km s-min=11.0km az=71.0*
ISC 07 04:34:14.0±2.5,6.47S±0.07×131.9E±0.1,h130km±30km, n14,σ1§22/20,mb4.3/4,Tanimbar Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**13.06**	**207**	*e*P	**P**	**04 37 16.1**	**+0.5**
	46nm,0.5s						
FITZ				*e*S	**S**	**04 39 36.4**	**-1.9**
FITZ	**Fitzroy Crossi**	**13.06**	**207**	Pn	**P**	**04 37 15.8**	**+0.1**
	11nm,0.3s,baz=22,slow=9.6,SNR=136						
FITZ				Sn	**S**	**04 39 36.4**	**-1.9**
	3.2nm,0.3s,baz=172,slow=13,SNR=7.3						
WRAB	**Tennant Creek**	**13.60**	**170**	*e*Pn	**P**	**04 37 23.0**	**+0.4**
	37nm,0.7s						
WRAB				*e*Sn	**S**	**04 39 49.9**	**-1.0**
WRA	**Warramunga Arr**	**13.61**	**170**	Pn	**P**	**04 37 23.6**	**+0.8**
	5.6nm,0.3s,baz=356,slow=13,SNR=87						
WRA				Sn	**S**	**04 39 50.3**	**-0.8**
	3.7nm,0.3s,baz=356,slow=23,SNR=7.3						
WB2	**Warramunga Arr**	**13.61**	**170**	*e*P	**P**	**04 37 22.6**	**-0.1**
WB2				*e*S	**S**	**04 39 51.1**	**0.0**
PMG	**Port Moresby**	**15.42**	**102**	Pn	**P**	**04 37 44.7**	**-1.1**
	1.0nm,0.3s,baz=286,slow=14,SNR=2.3						
AS12	**Alice Springs**	**17.21**	**174**	*e*P	**P**	**04 38 10.8**	**+2.9**
	10nm,0.3s						
ASAR	**Alice Springs**	**17.21**	**174**	P	**P**	**04 38 11.4**	**+3.5**
	3.0nm,0.3s,baz=348,slow=8.9,SNR=86						
ASAR				S	**S**	**04 41 17.0**	**+3.7**
	1.0nm,0.3s,baz=357,slow=28,SNR=6.1						
CTA	**Charters Tower**	**19.45**	**135**	P	**P**	**04 38 39.1**	**+6.3**
	0.2nm,0.3s,baz=288,slow=13,SNR=2.5						
FORT	**Forrest**	**24.45**	**188**	*e*P	**P**	**04 39 29.3**	**+7.2**
	83nm,0.7s,mb5.4						
NWAO	**Narrogin (SRO)**	**29.64**	**205**	P	**P**	**04 40 15.3**	**+5.9**
	2.9nm,0.4s,mb4.4,baz=49,slow=10,SNR=6.1						
NWAO	**Narrogin (SRO)**	**29.64**	**205**	P	**P**	**04 40 15.3**	**+5.9**
CMAR	**Chiang Mai Arr**	**40.84**	**308**	P	**P**	**04 41 44.6**	**0.0**
	1.0nm,0.4s,mb3.8,baz=144,slow=7.8,SNR=4.5						
MKAR	**Makanchi Array**	**57.59**	**134**	P	**P**	**04 45 06.1**	**-0.1**
	0.5nm,0.4s,mb3.6,baz=114,slow=7.6,SNR=17						

*IDC **07** 04:41:17.3±5.0,21.60N×93.28E,h87km±50km,mb3.3/3, mb1 3.5/4,mb1mx3.2/17,ML4.1/1,Error ellipse: s-maj=77.1km s-min=23.4km az=50.0*
*NEIC **07** 04:41:21.6±1.0,22.33N×94.33E,h104km±17km,Error ellipse: s-maj=33.9km s-min=10.3km az=221.0*
ISC 07 04:41:19.6±2.7,22.2N±0.3×93.9E±0.2,h134km±30km,n17, σ0§84/23,mb3.5/3,1C,Myanmar-India border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
IMP	**Imphal**	**2.56**	**1**	*e*P	**P**	**04 42 01.0**	**-0.5**
SHL	**Shillong**	**3.81**	**332**	ǁP	**P**	**04 42 10.5**	**-7.5**
SHL				*e*S	S	04 42 29.5	-33
CMAR	**Chiang Mai Arr**	**6.03**	**127**	P	**P**	**04 42 45.8**	**-1.8**
	1.1nm,0.3s,baz=305,slow=14,SNR=8.8						
CMAR				Lg		04 44 15.2	
	0.8nm,0.3s,baz=322,slow=29,SNR=4.0						
LSA	**Lhasa**	**7.86**	**342**	*e*Pn	**P**	**04 43 12.7**	**+0.4**
	14nm,0.6s						
GUN	**Gumba**	**9.22**	**310**	*e*Pn	**P**	**04 43 34.8**	**+4.4**
GUN				*e*Sn	**S**	**04 45 12.8**	**+0.1**
	61nm,0.3s						
PKI	**Pulchoki**	**9.37**	**306**	*e*Pn	**P**	**04 43 38.4**	**+6.0**
PKI				*e*Sn	**S**	**04 45 15.8**	**-0.5**
	52nm,0.6s						
KKN	**Kakani**	**9.58**	**307**	*e*Sn	**S**	**04 45 21.7**	**+0.2**
	54nm,0.5s						
KKN	**Kakani**	**9.58**	**307**	*e*Pn	**P**	**04 43 41.5**	**+6.1**
KKN				*e*Sn	**S**	**04 45 21.7**	**+0.2**
DMN	**Daman**	**9.62**	**306**	*e*Sn	**S**	**04 45 22.6**	**+0.4**
	31nm,0.4s						
DMN	**Daman**	**9.62**	**306**	*e*Pn	**P**	**04 43 41.5**	**+5.7**
DMN				*e*Sn	**S**	**04 45 22.6**	**+0.4**
GKN	**Gorkha**	**10.18**	**306**	*e*Pn	**P**	**04 43 47.5**	**+4.3**
GKN				*e*Sn	**S**	**04 45 35.5**	**-0.1**
	67nm,0.3s						
KOLN	**Koldanda**	**10.85**	**303**	*e*Pn	**P**	**04 43 56.9**	**+4.8**
KOLN				*e*Sn	**S**	**04 45 50.8**	**-0.7**
	31nm,0.3s						
MKAR	**Makanchi Array**	**26.27**	**342**	P	**P**	**04 46 48.4**	**+4.3**
	1.1nm,0.7s,mb3.6,baz=145,slow=12,SNR=8.1						
MKAR				pP	pP	04 47 13.0	+0.8
	1.2nm,0.6s,baz=148,slow=9.6,SNR=5.8						
MKAR	**Makanchi Array**	**26.27**	**342**	P	**P**	**04 46 48.4**	**+4.3**
MKAR				pP	pP	04 47 13.0	+0.8
BRTR	**Keskin Array B**	**53.57**	**304**	P	**P**	**04 50 28.2**	**-0.7**
	0.4nm,0.5s,mb3.4,baz=100,slow=8.7,SNR=2.6						
WRA	**Warramunga Arr**	**57.59**	**134**	P	**P**	**04 50 58.4**	**+0.4**
	0.5nm,0.7s,mb3.5,baz=320,slow=7.4,SNR=5.3						
WRA	**Warramunga Arr**	**57.59**	**134**	P	**P**	**04 50 58.4**	**+0.4**

IDC 07 04:45:47.0±4.3,5.50S×102.66E,mb3.7/3,mb1 3.8/3, mb1mx3.6/13,Error ellipse: s-maj=184.0km s-min=63.0km az=55.0,Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CMAR	**Chiang Mai Arr**	**24.09**	**351**	P	P	04 51 04.5	-0.8
	0.5nm,0.4s,baz=178,slow=10,SNR=5.0						
ASAR	**Alice Springs**	**35.08**	**124**	pP	pP	04 52 49.5	+5.5
	0.5nm,1.0s,baz=282,slow=8.3,SNR=3.9						
MKAR	**Makanchi Array**	**55.11**	**343**	P	P	04 55 21.5	-1.9
	0.5nm,0.5s,baz=148,slow=8.3,SNR=12						
BVAR	**Borovoye Array**	**64.37**	**339**	P	P	04 56 24.1	-2.9
	0.7nm,0.5s,baz=153,slow=9.7,SNR=4.7						
TXAR	**Lajitas Array**	**145.63**	**43**	PKPbc	PKPbc	05 05 27.5	-1.2
	0.8nm,1.0s,baz=245,slow=0.6,SNR=5.6						
TXAR				pPKPbc		05 05 39.2	
	0.6nm,0.7s,baz=258,slow=0.6,SNR=7.1						

IDC 07 04:47:51.0±17.0,19.29S×173.91W,mb4.0/5,mb1 4.2/5, mb1mx3.8/17,Error ellipse: s-maj=318.0km s-min=155.3km az=80.0,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CTA	**Charters Tower**	**37.46**	**262**	P	P	04 55 07.4	-0.7
	1.8nm,0.4s,baz=83,slow=13,SNR=5.1						
STKA	**Stephens Creek**	**41.78**	**244**	P	P	04 55 42.1	-1.8
	1.2nm,0.6s,baz=84,slow=9.2,SNR=3.3						
ASAR	**Alice Springs**	**48.55**	**255**	P	P	04 56 35.7	-2.4
	0.7nm,0.7s,baz=97,slow=7.3,SNR=7.8						
WRA	**Warramunga Arr**	**48.59**	**260**	P	P	04 56 35.9	-2.6
	0.6nm,0.3s,baz=96,slow=7.6,SNR=39						
FITZ	**Fitzroy Crossi**	**57.01**	**261**	P	P	04 57 39.3	-2.0
	5.5nm,1.1s,baz=104,slow=8.3,SNR=4.8						

*NEIC **07** 04:49:18.9,35.87N×8.65W,MN2.7(MDD),After MDD. MDD **07** 04:49:18.2±1.6,35.85N×8.68W,mb4.0/4,Error ellipse: s-maj=14.5km s-min=9.3km az=30.0,PRXIMO*
*INMG **07** 04:49:19.3±0.9,35.75N×8.78W,h17km±24km,ML2.0, Error ellipse: s-maj=21.3km s-min=3.5km az=39.0*
ISC 07 04:49:18.1±1.1,35.89N±0.05×8.64W±0.06,h17km,n42, σ1§36/78,1D,West of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PTEO	**Sao Teotonio**	**1.65**	**358**	*e*Pn	**Pn**	**04 49 47.4**	**+0.7**
PTEO				*e*Sn	**Sn**	**04 50 09.2**	**+1.6**
	11nm,0.2s						
PTEO	**Sao Teotonio**	**1.65**	**358**	Pn	**Pn**	**04 49 47.4**	**+0.7**
PTEO				Sn	**Sn**	**04 50 09.2**	**+1.6**
	5.6nm,0.2s						
PALC	**Alcoutim**	**1.83**	**30**	*e*Pn	**Pn**	**04 49 50.8**	**+1.6**
PALC				*e*Sn	**Sn**	**04 50 14.9**	**+2.9**
	8.5nm,0.2s						
PALC	**Alcoutim**	**1.83**	**30**	Pn	**Pn**	**04 49 50.8**	**+1.6**
PALC				Sn	**Sn**	**04 50 14.9**	**+2.9**
	4.2nm,0.2s						
ERIP	**Rio Piedras**	**1.85**	**36**	ǁPn	**Pn**	**04 49 51.1**	**+1.6**
	5.1nm,0.1s,SNR=18						
ERIP				Sn	**Sn**	**04 50 14.8**	**+2.2**
	32nm,0.1s,SNR=7.9						
EGRO	**El Granado**	**1.88**	**29**	Pn	**Pn**	**04 49 51.6**	**+1.6**
	3.0nm,0.1s,SNR=20						
EGRO				Sn	**Sn**	**04 50 15.8**	**+2.3**
	8.2nm,0.1s,SNR=7.9						
EGRO	**El Granado**	**1.88**	**29**	P	**Pn**	**04 49 51.6**	**+1.7**
EGRO				S	**Sn**	**04 50 15.8**	**+2.3**
PBEJ	**Beja**	**2.22**	**16**	*e*Pn	**Pn**	**04 49 55.7**	**+0.9**
PBEJ				*e*Sn	**Sn**	**04 50 23.5**	**+1.5**
	4.8nm,0.2s						
PBEJ	**Beja**	**2.22**	**16**	Pn	**Pn**	**04 49 55.7**	**+0.9**
PBEJ				Sn	**Sn**	**04 50 23.5**	**+1.5**
	2.4nm,0.2s						
ESPR	**Espera**	**2.44**	**66**	Pn	**Pn**	**04 49 58.8**	**+0.8**
	2.6nm,0.1s,SNR=6.6						
ESPR				Sn	**Sn**	**04 50 29.0**	**+1.2**
	3.1nm,0.2s,SNR=7.9						
ESPR	**Espera**	**2.44**	**66**	P	**Pn**	**04 50 00.2**	**+2.2**
ESPR				S	**Sn**	**04 50 28.8**	**+1.0**
EMIN	**Mina Concepcio**	**2.45**	**39**	Pn	**Pn**	**04 49 58.9**	**+0.9**
	0.5nm,0.1s,SNR=13						
EMIN				Sn	**Sn**	**04 50 28.5**	**+0.7**
	1.3nm,0.1s,SNR=7.9						
EMIN	**Mina Concepcio**	**2.45**	**39**	P	**Pn**	**04 49 58.9**	**+0.9**
EMIN				S	**Sn**	**04 50 28.8**	**+1.0**
MOE	**Montemor**	**2.64**	**5**	*e*Pn	**Pn**	**04 50 01.4**	**+0.6**
MOE				*e*Sn	**Sn**	**04 50 33.1**	**+0.5**
ELIJ	**Sierra de Lija**	**2.82**	**68**	Pn	**Pn**	**04 50 04.2**	**+0.8**
	0.4nm,0.1s,SNR=5.0						
ELIJ				Sn	**Sn**	**04 50 36.5**	**-0.7**
	0.7nm,0.1s,SNR=7.9						
ELIJ	**Sierra de Lija**	**2.82**	**68**	P	**Pn**	**04 50 04.4**	**+1.1**
ELIJ				S	**Sn**	**04 50 36.7**	**-0.5**
PLOU	**Loures**	**3.02**	**352**	*e*Pn	**Pn**	**04 50 05.4**	**-0.8**
PTOM	**Tomar**	**3.73**	**3**	*e*Pn	**Pn**	**04 50 16.1**	**-0.1**
PTOM				*e*Sn	**Sn**	**04 50 59.0**	**-1.2**
	3.3nm,0.1s						
PTOM	**Tomar**	**3.73**	**3**	Pn	**Pn**	**04 50 16.1**	**-0.1**
PTOM				Sn	**Sn**	**04 50 59.0**	**-1.2**
	1.6nm,0.1s						
EADA	**Adamuz**	**3.96**	**54**	Pn	**Pn**	**04 50 19.7**	**+0.1**
	0.7nm,0.1s,SNR=14						
EADA				Sn	**Sn**	**04 51 04.7**	**-1.5**
	6.8nm,0.1s,SNR=7.9						
EADA	**Adamuz**	**3.96**	**54**	P	**Pn**	**04 50 19.9**	**+0.3**
EADA				S	**Sn**	**04 51 05.2**	**-0.9**
PCBR	**Castelo Branco**	**4.05**	**13**	*e*Pn	**Pn**	**04 50 20.8**	**0.0**
PCBR				*e*Sn	**Sn**	**04 51 07.2**	**-1.1**
	2.5nm,0.2s						
PCBR	**Castelo Branco**	**4.05**	**13**	Pn	**Pn**	**04 50 20.8**	**0.0**
PCBR				Sn	**Sn**	**04 51 07.2**	**-1.1**
	1.2nm,0.2s						
EBAN	**Banos Encina**	**4.50**	**58**	Pn	**Pn**	**04 50 26.6**	**-0.5**
	1.6nm,0.1s,SNR=4.0						
EBAN				Sn	**Sn**	**04 51 16.4**	**-3.3**
	1.6nm,0.1s,SNR=7.9						
EBAN	**Banos Encina**	**4.50**	**58**	P	**Pn**	**04 50 26.3**	**-0.8**
EBAN				S	**Sn**	**04 51 17.3**	**-2.4**
MTE	**Manteigas**	**4.58**	**10**	*e*Sn	**Sn**	**04 51 20.2**	**-1.7**
EQES	**Quesada**	**4.85**	**65**	Pn	**Pn**	**04 50 31.8**	**-0.5**
	0.3nm,0.1s,SNR=4.0						
EQES				Sn	**Sn**	**04 51 25.0**	**-3.7**
	0.6nm,0.1s,SNR=7.9						
EQES	**Quesada**	**4.85**	**65**	P	**Pn**	**04 50 31.9**	**-0.4**
EQES				S	**Sn**	**04 51 26.9**	**-1.8**
EHUE	**Huescar**	**5.21**	**67**	Pn	**Pn**	**04 50 37.7**	**+0.4**
	0.4nm,0.2s,SNR=5.0						
EHUE				Sn	**Sn**	**04 51 35.0**	**-2.7**
	0.4nm,0.1s,SNR=7.9						
EHUE	**Huescar**	**5.21**	**67**	P	**Pn**	**04 50 37.4**	**+0.1**
EHUE				S	**Sn**	**04 51 34.7**	**-3.0**
ELOB	**Lobios**	**5.99**	**4**	Pn	**Pn**	**04 50 46.8**	**-1.4**
	0.5nm,0.1s,SNR=7.9						
ELOB				Sn	**Sn**	**04 51 53.1**	**-4.0**
	1.0nm,0.2s,SNR=7.9						
ELOB	**Lobios**	**5.99**	**4**	P	**Pn**	**04 50 47.3**	**-0.9**
ELOB				S	**Sn**	**04 51 54.4**	**-2.6**
ECAL	**Calabor**	**6.22**	**13**	Pn	**Pn**	**04 50 51.0**	**-0.5**
	0.7nm,0.2s,SNR=7.9						
ECAL				Sn	**Sn**	**04 52 00.6**	**-2.4**
	0.4nm,0.1s,SNR=7.9						
ECAL	**Calabor**	**6.22**	**13**	P	**Pn**	**04 50 50.9**	**-0.6**
ECAL				S	**Sn**	**04 52 00.3**	**-2.6**
ETOB	**Tobarra**	**6.28**	**62**	Pn	**Pn**	**04 50 50.7**	**-1.7**
	0.3nm,0.2s,SNR=4.0						
ETOB				Sn	**Sn**	**04 51 59.0**	**-5.6**
	0.9nm,0.1s,SNR=7.9						
ETOB	**Tobarra**	**6.28**	**62**	P	**Pn**	**04 50 52.6**	**+0.2**
ETOB				S	**Sn**	**04 51 59.9**	**-4.7**
EINC	**Incio**	**6.83**	**8**	Pn	**Pn**	**04 50 59.1**	**-1.0**
	0.4nm,0.2s,SNR=5.0						
EINC	**Incio**	**6.83**	**8**	P	**Pn**	**04 50 59.0**	**-1.1**
EMAZ	**Mazaricos**	**7.05**	**358**	Pn	**Pn**	**04 51 00.9**	**-2.3**
	0.8nm,0.1s,SNR=7.9						
EMAZ	**Mazaricos**	**7.05**	**358**	P	**Pn**	**04 51 01.3**	**-1.9**
ETOR	**Torete**	**7.14**	**44**	Pn	**Pn**	**04 51 03.7**	**-0.7**
	0.3nm,0.1s,SNR=7.9						
ETOR				Sn	**Sn**	**04 52 21.3**	**-4.6**
	0.7nm,0.2s,SNR=7.9						
ETOR	**Torete**	**7.14**	**44**	P	**Pn**	**04 51 03.4**	**-1.0**
ETOR				S	**Sn**	**04 52 20.6**	**-5.3**

*NIED **07** 05:02:00,35.30N×140.70E,h32km,Mw4.0 Best double couple: M0 1.23×10^15 NP1:φs 190°,δ82°,λ-93°. NP2:φs 29°, δ9°,λ-71°.*
*IDC **07** 05:02:20.1±0.6,35.27N×140.49E,mb3.8/14,mb1 4.1/16, mb1mx4.0/23,ML4.2/2,Error ellipse: s-maj=22.7km s-min=13.6km az=97.0*
*JMA **07** 05:02:24.4±0.1,35.36N×140.66E,h47km±2km,M4.1 JMA Felt II J1.*
*NEIC **07** 05:02:26.6±1.8,35.23N×140.43E,h46km±16km,mb4.3/1, Error ellipse: s-maj=13.6km s-min=9.4km az=102.0*
NEIC Recorded [2 JMA] in Chiba Prefecture.
ISC 07 05:02:24.6±0.4,35.29N±0.03×140.60E±0.05,h47km±4km, n38,σ1§11/42,mb3.8/15,7C,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KTR	**Katsuura**	**0.27**	**239**	P	**P**	**05 02 33.6**	**+0.4**
JCN	**Nagara**	**0.35**	**291**	ǁP	**P**	**05 02 34.5**	**+0.6**
BSO4	**Boso 4**	**0.37**	**216**	ǁP	**P**	**05 02 35.2**	**+1.1**
CHOJ	**Chosi**	**0.46**	**27**	ǁP	**P**	**05 02 34.0**	**-1.2**
CHOJ				*e*S	**S**	**05 02 41.3**	**-1.4**
BSO3	**Boso 3**	**0.49**	**189**	ǁP	**P**	**05 02 36.4**	**+0.8**
BSO3				*e*S	**S**	**05 02 42.1**	**+1.7**
BSO1	**Boso 1**	**0.71**	**154**	ǁP	**P**	**05 02 37.9**	**-0.4**
JYT	**Yasato**	**0.99**	**341**	P	**P**	**05 02 41.5**	**-0.8**
JIM2	**Oshima 3**	**1.12**	**240**	ǁP	**P**	**05 02 44.1**	**+0.1**
JIM2				*e*S	**S**	**05 02 59.2**	**+0.7**
JOD2	**Odawara 2**	**1.24**	**269**	ǁP	**P**	**05 02 46.2**	**+0.4**
JOD2				*e*S	**S**	**05 03 02.0**	**+0.4**
JAG	**Ashikaga**	**1.47**	**321**	P	**P**	**05 02 49.3**	**+0.2**
JHJ	**Hachijo jima 2**	**2.27**	**198**	Pn	**P**	**05 02 60.0**	**-0.5**
	49nm,0.3s,baz=249,slow=22,SNR=14						
JHJ				Sn	**S**	**05 03 25.4**	**-1.9**
	195nm,0.3s,baz=244,slow=23,SNR=20						
MAJO	**Matsushiro**	**2.31**	**303**	*e*Pn	**P**	**05 03 01.3**	**+0.3**
MAT	**Matsushiro**	**2.31**	**303**	P	**P**	**05 03 01.6**	**+0.6**
MAT				S	**S**	**05 03 27.1**	**-1.2**
CBIJ	**Chichi jima**	**8.28**	**170**	Pn	**P**	**05 04 22.1**	**-2.7**
	18nm,0.3s,baz=288,slow=20,SNR=18						
ENH	**Enshi**	**26.57**	**268**	*e*P	**P**	**05 07 58.6**	**-1.6**
	6.4nm,0.7s,mb4.3						
SONM	**Songino Array**	**28.26**	**307**	P	**P**	**05 08 13.6**	**-1.7**
	0.6nm,0.5s,mb3.5,baz=108,slow=9.1,SNR=2.9						
MKAR	**Makanchi Array**	**44.51**	**303**	P	**P**	**05 10 33.0**	**0.0**
	0.9nm,0.7s,mb3.7,baz=90,slow=9.9,SNR=6.8						
ILAR	**Eielson Array**	**51.32**	**32**	P	**P**	**05 11 26.1**	**+0.3**
	0.8nm,0.8s,mb3.7,baz=271,slow=6.3,SNR=11						
WRAB	**Tennant Creek**	**55.24**	**187**	*e*P	**P**	**05 11 54.7**	**-0.7**
WRA	**Warramunga Arr**	**55.25**	**187**	P	**P**	**05 11 54.7**	**-0.8**
	3.1nm,1.0s,mb4.3,baz=1.7,slow=7.7,SNR=23						
INK	**Inuvik**	**56.24**	**26**	P	**P**	**05 12 02.0**	**+0.1**
	0.3nm,0.5s,mb3.6,baz=62,slow=2.9,SNR=6.4						
INK	**Inuvik**	**56.24**	**26**	*e*P	**P**	**05 12 02.1**	**+0.1**
ASAR	**Alice Springs**	**58.98**	**187**	P	**P**	**05 12 21.1**	**-0.8**
	0.6nm,0.6s,mb3.8,baz=19,slow=12,SNR=4.8						
ARCES	**ARCESS Array B**	**65.39**	**339**	P	**P**	**05 13 03.8**	**-0.1**
	3.1nm,1.5s,mb4.2,baz=27,slow=8.1,SNR=3.5						
YKA	**Yellowknife Ar**	**65.64**	**30**	P	**P**	**05 13 05.7**	**+0.1**
	0.3nm,0.9s,mb3.3,baz=305,slow=6.6,SNR=7.1						
YKA	**Yellowknife Ar**

*IDC **07** 05:33:07.2±2.2,23.07S×68.02W,h109km±18km,mb3.6/3, mb1 3.6/4,mb1mx3.4/13,Error ellipse: s-maj=52.8km s-min=35.0km az=4.0*

ISC 07 05:33:06.4±2.1,23.1S±0.3×68.0W±0.2,h116km±20km,n5, σ1§61/6,mb4.0/2,Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
LVC	**Limon Verde**	**1.00**	**299**	P		**P**		**05 33 29.8**	**+1.4**
	baz=114,slow=7.8								
LVC				S		**S**		**05 33 43.8**	**-1.1**
LPAZ	**La Paz**	**6.79**	**359**	P		**P**		**05 34 44.9**	**+0.1**
	0.6nm,0.3s,baz=176,slow=8.3,SNR=24								
BDFB	**Brasilia**	**20.22**	**72**	P		**P**		**05 37 34.6**	**+0.4**
	1.6nm,0.4s,baz=250,slow=4.7,SNR=3.7								
DBIC	**Dimbokro**	**68.37**	**72**	P		**P**		**05 43 56.5**	**-1.3**
	1.9nm,0.6s,mb4.1,baz=206,slow=6.7,SNR=3.6								
YKA	**Yellowknife Ar**	**92.99**	**340**	P		**P**		**05 46 07.9**	**+0.6**
	0.4nm,0.8s,mb3.8,baz=132,slow=4.8,SNR=8.7								

*IDC **07** 05:34:45.2±8.0,17.40S×178.86W,h653km±101km, mb3.2/5,mb1 3.5/5,mb1mx3.2/14,Error ellipse: s-maj=82.6km s-min=38.1km az=150.0*

ISC 07 05:34:43.6±1.6,17.4S±0.6×178.9W±0.4,h650km,n8, σ0§08/8,mb3.7/5,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**38.46**	**240**	*eP*		**P**		**05 41 14.2**	**-0.2**
	3.1nm,0.6s,mb3.9								
STKA	**Stephens Creek**	**38.46**	**240**	P		**P**		**05 41 14.4**	**0.0**
	6.7nm,0.9s,mb4.1,baz=89,slow=9.8,SNR=6.6								
WB2	**Warramunga Arr**	**44.26**	**259**	*eP*		**P**		**05 42 00.3**	**+0.1**
WRA	**Warramunga Arr**	**44.27**	**259**	P		**P**		**05 42 00.3**	**0.0**
	2.3nm,0.3s,mb4.0,baz=93,slow=7.5,SNR=110								
AS12	**Alice Springs**	**44.48**	**254**	*eP*		**P**		**05 42 01.9**	**0.0**
	5.4nm,0.3s,mb4.4								
ASAR	**Alice Springs**	**44.48**	**254**	P		**P**		**05 42 02.0**	**+0.2**
	15nm,0.8s,mb4.4,baz=87,slow=8.7,SNR=118								
ASAR				PcP		PcP		05 43 30.1	-0.7
	0.6nm,0.5s,baz=106,slow=4.0,SNR=4.6								
ILAR	**Eielson Array**	**85.52**	**13**	P		**P**		**05 46 15.7**	**-0.1**
	0.2nm,0.5s,mb3.0,baz=228,slow=4.7,SNR=4.2								
TXAR	**Lajitas Array**	**86.13**	**58**	P		**P**		**05 46 19.5**	**+0.1**
	0.4nm,0.7s,mb3.2,baz=223,slow=5.2,SNR=6.8								

*IDC **07** 06:01:46.1±1.7,13.83S×112.24W,mb3.8/6,mb1 4.1/6, mb1mx3.9/15,MS3.8/9,Ms1 3.8/9,ms1mx3.5/25,Error ellipse: s-maj=48.3km s-min=32.7km az=42.0*

*NEIC **07** 06:01:47.6±0.8,13.84S×112.39W,h10km,mb4.6/1,Error ellipse: s-maj=24.3km s-min=14.3km az=56.0*

ISC 07 06:01:49.0±1.1,13.4S±0.1×111.9W±0.2,h10km,n24, σ0§95/16,mb3.7/8,MS3.8/9,Central East Pacific Rise

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
LVC	**Limon Verde**	**41.77**	**109**	LR		LR		06 22 47.4	
	comp=Z,76nm,20.9s,MS3.5,baz=280,slow=30								
LPAZ	**La Paz**	**42.35**	**100**	P		**P**		**06 09 45.5**	**+0.1**
	1.1nm,0.8s,mb3.5,baz=262,slow=7.1,SNR=3.7								
LPAZ				LR		LR		06 23 16.0	
	comp=Z,98nm,20.0s,MS3.7,baz=109,slow=30								
LPAZ	**La Paz**	**42.35**	**100**	*eP*		**P**		**06 09 47.0**	**+1.7**
TXAR	**Lajitas Array**	**43.23**	**11**	P		**P**		**06 09 53.1**	**+0.7**
	1.1nm,1.1s,mb3.5,baz=180,slow=8.1,SNR=5.2								
TXAR				LR		LR		06 23 52.6	
	comp=Z,55nm,19.4s,MS3.5,baz=285,slow=30								
JCT	**Junction City**	**45.16**	**15**	P		**P**		**06 10 09.5**	**+1.5**
PLCA	**Paso Flores**	**45.18**	**135**	LR		LR		06 25 31.6	
	comp=Z,132nm,18.8s,MS3.9,baz=353,slow=32								
MNTX	**Cornudas Mount**	**45.29**	**8**	*eP*		**P**		**06 10 08.9**	**-0.1**
	0.2nm,0.9s,mb3.0								
NVAR	**Mina Array Bea**	**51.91**	**354**	P		**P**		**06 11 01.0**	**+0.8**
	1.0nm,0.9s,mb3.8,baz=175,slow=9.9,SNR=4.8								
LRAL	**Lakeview Retre**	**51.95**	**27**	*eP*		**P**		**06 11 01.4**	**+0.9**
CPUP	**Villa Florida**	**52.56**	**113**	LR		LR		06 28 04.6	
	comp=Z,99nm,20.6s,MS3.8,baz=228,slow=30								
CPUP	**Villa Florida**	**52.56**	**113**	P		**P**		**06 11 03.6**	**-1.7**
USHA	**Ushuaia**	**53.37**	**150**	LR		LR		06 28 01.3	
	comp=Z,382nm,21.0s,MS4.4,baz=206,slow=30								
HWUT	**Hardware Ranch**	**54.74**	**0**	P		**P**		**06 11 20.2**	**-0.8**
PDAR	**Pinedale Array**	**55.94**	**2**	P		**P**		**06 11 28.5**	**-1.2**
	0.5nm,0.7s,mb3.7,baz=150,slow=7.3,SNR=4.0								
HLID	**Hailey**	**56.74**	**358**	*eP*		**P**		**06 11 35.4**	**-0.1**
MCMT	**McKenzie Canyo**	**57.97**	**359**	*eP*		**P**		**06 11 44.0**	**-0.1**
BDFB	**Brasilia**	**61.68**	**101**	LR		LR		06 35 19.0	
	comp=Z,70nm,21.6s,MS3.8,baz=117,slow=32								
YKA	**Yellowknife Ar**	**75.69**	**359**	P		**P**		**06 13 35.3**	**-0.8**
	0.4nm,0.9s,mb3.4,baz=176,slow=4.6,SNR=9.7								
YKA				LR		LR		06 43 46.1	
	comp=Z,56nm,19.1s,MS3.9,baz=95,slow=33								
YKA	**Yellowknife Ar**	**75.69**	**359**	P		**P**		**06 13 35.3**	**-0.8**
YKA				LR		LR		06 43 46.1	
QSPA	**South Pole Qui**	**76.69**	**180**	*eP*		**P**		**06 13 42.5**	**+1.0**
	5.4nm,1.0s,mb4.4								
SCHQ	**Schefferville**	**77.90**	**25**	P		**P**		**06 13 47.7**	**-0.9**
	4.2nm,0.8s,mb4.4,baz=123,slow=18,SNR=6.0								
ILAR	**Eielson Array**	**82.33**	**346**	LR		LR		06 43 11.6	
	comp=Z,38nm,19.6s,MS3.8,baz=128,slow=30								
MKAR	**Makanchi Array**	**144.65**	**343**	PKP		PKPdf		06 21 24.4	-4.7
	0.3nm,0.6s,baz=27,slow=3.2,SNR=4.2								
CMAR	**Chiang Mai Arr**	**149.94**	**284**	PKPab		PKPab		06 21 43.6	-4.8
	1.2nm,0.5s,baz=45,slow=1.3,SNR=3.2								

TAP 07 06:09:25.6,22.81N×120.88E,h6km±1km,ML3.6,13D, Taiwan

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
TWG	**Pinlang**	**0.18**	**87**	*i*P		Pg		06 09 29.8	+0.6
TWG				S		Sg		06 09 31.9	+0.2
ECL	**Taimali**	**0.22**	**162**	*i*P		Pg		06 09 30.3	+0.1
ECL				S		Sg		06 09 33.1	0.0
SSD	**Sandimen**	**0.24**	**254**	*i*P		Pg		06 09 30.5	+0.1
SSD				S		Sg		06 09 33.3	-0.4
TTN	**Taitung**	**0.25**	**103**	*i*P		Pg		06 09 31.9	+1.2
TTN				S		Sg		06 09 36.2	+2.0
SGLT	**Jiouru**	**0.37**	**257**	*e*P		Pg		06 09 34.0	+1.0
SGLT				S		Sg		06 09 42.0	+4.1
STYT	**Tauyuan**	**0.37**	**342**	P		Pg		06 09 33.4	+0.4
STYT				S		Sg		06 09 38.7	+0.7
SGST	**Jiashian**	**0.39**	**315**	*e*P		Pg		06 09 34.2	+0.8
ELDTW	**Lidau**	**0.40**	**18**	*i*P		Pg		06 09 33.7	+0.2
ELDTW				S		Sg		06 09 39.0	+0.1
TWM1	**Shoushan**	**0.42**	**272**	*i*P		Pg		06 09 35.6	+1.6
TWM1				S		Sg		06 09 43.0	+3.2
EAST	**Anshuo**	**0.43**	**184**	*i*P		Pg		06 09 34.2	+0.1
TAW	**Tawu**	**0.45**	**178**	*i*P		Pg		06 09 34.5	-0.1
TAW				S		Sg		06 09 41.4	+0.8
CHN1	**Nanshi**	**0.49**	**319**	*e*P		Pg		06 09 37.1	+1.6
CHN1				S		Sg		06 09 46.0	+3.9
SCZT	**Fangliau**	**0.50**	**209**	*i*P		Pg		06 09 35.4	-0.2
SCZT				S		Sg		06 09 42.1	-0.1
WTP	**Ta-pu**	**0.50**	**331**	*i*P		Pg		06 09 36.6	+1.0
WTP				S		Sg		06 09 44.1	+1.9
CHKT	**Chengkung**	**0.53**	**57**	*i*P		Pg		06 09 36.8	+0.6
CHKT				S		Sg		06 09 45.1	+1.7
CHN3	**Shinhua**	**0.54**	**299**	*e*P		Pg		06 09 39.5	+3.0
KAU	**Kaohsiung**	**0.58**	**246**	*e*P		Pg		06 09 39.9	+2.7
TWK	**Hsinying**	**0.58**	**322**	*i*P		Pg		06 09 39.1	+1.9
TWK				S		Sg		06 09 47.4	+2.4
CHN4	**Tsaushan**	**0.60**	**334**	*e*P		Pg		06 09 39.1	+1.5
TWF1	**Yuli**	**0.66**	**35**	*i*P		Pg		06 09 38.3	-0.5
TWF1				S		Sg		06 09 46.0	-1.6
TWP	**Hsiaoliuchiu**	**0.67**	**226**	*e*P		Pg		06 09 41.3	+2.4
YUS	**Yu-Shan**	**0.68**	**6**	*i*P		Pg		06 09 39.1	-0.1
YUS				S		Sg		06 09 48.3	0.0
ALS	**Alishan**	**0.70**	**354**	*e*P		Pg		06 09 40.0	+0.4
SCLT	**Jiali**	**0.73**	**300**	*e*P		Pg		06 09 42.5	+2.3
SCLT				S		Sg		06 09 55.2	+5.3
CHY	**Chiayi**	**0.80**	**329**	*e*P		Pb		06 09 43.1	+1.5
CHY				S		Sg		06 09 55.6	+3.3
EHY	**Hungye**	**0.80**	**30**	*e*P		Pb		06 09 40.9	-0.6
EHY				S		Sg		06 09 51.1	-1.2
CHN5	**Tsauling**	**0.81**	**347**	*e*P		Pb		06 09 42.3	+0.7
CHN2	**Minshiung**	**0.81**	**333**	*e*P		Pb		06 09 44.0	+2.4
CHN2				S		Sg		06 09 56.8	+4.3
HEN	**Hengchun**	**0.81**	**189**	*e*P		Pb		06 09 42.4	+0.7
CHN8	**Yiju**	**0.81**	**311**	*e*P		Pb		06 09 43.7	+1.9
TWK1	**Hengchun**	**0.86**	**185**	*e*P		Pb		06 09 42.3	-0.3
WDT	**Danda**	**0.97**	**14**	*e*P		Pb		06 09 44.1	-0.3
LAY	**Lan-yu**	**0.99**	**141**	*e*P		Pb		06 09 42.7	-2.0
SMLT	**Sun Moon Lake**	**1.07**	**1**	*e*P		Pb		06 09 46.4	+0.3
TYC	**Yuchr**	**1.09**	**359**	*e*P		Pb		06 09 47.8	+1.3
TYC				S		Sb		06 10 04.3	+3.6
ESL	**Shilin**	**1.12**	**27**	*e*P		Pb		06 09 46.5	-0.5
WDGT	**Dungji**	**1.21**	**292**	*e*P		Pb		06 09 48.9	+0.4
TCU	**Taichung**	**1.34**	**352**	*e*P		Pb		06 09 52.2	+1.4
TWD	**Chiawan**	**1.43**	**27**	*e*P		Pn		06 09 52.4	+0.3
TWT	**Tachien**	**1.46**	**11**	*e*P		Pn		06 09 53.7	+1.1
TWQ1	**Liyutan**	**1.53**	**356**	*e*P		Pn		06 09 54.8	+1.2
NSY	**Sanyi**	**1.60**	**356**	*e*P		Pn		06 09 54.5	-0.1
NNS	**Nan Shan**	**1.68**	**15**	*e*P		Pn		06 09 57.3	+1.5
ENA	**Nanau**	**1.79**	**26**	*e*P		Pn		06 09 58.5	+1.1
NSTT	**Nanjuang**	**1.82**	**3**	*e*P		Pn		06 10 01.5	+3.8
NSTT				S		Sn		06 10 24.5	+3.2
NSK	**Sanguang**	**1.91**	**13**	*e*P		Pn		06 10 00.8	+1.9
NSK				S		Sn		06 10 25.2	+1.6
ENTT	**Nioudou**	**1.93**	**19**	*e*P		Pn		06 10 01.6	+2.3
ENTT				S		Sn		06 10 27.8	+3.7
TWC	**Suao**	**2.00**	**26**	*e*P		Pn		06 10 01.6	+1.3
TWE	**Neicheng**	**2.03**	**21**	*e*P		Pn		06 10 02.3	+1.5
TWA	**Mucha**	**2.25**	**16**	*e*P		Pn		06 10 07.6	+3.6
NWF	**Wu-fen Shan**	**2.40**	**20**	*e*P		Pn		06 10 07.8	+1.8

*NEIC **07** 06:16:15.0,29.84S×71.21W,h69km,MD3.6(GUC),After GUC.*

GUC 07 06:16:15.0±0.8,29.84S×71.21W,h69km±3km,MD3.6, ML3.3,3C-2D,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
LSCH	**La Serena**	**0.07**	**206**	*i*P		P		06 16 25.3	+0.3
LSCH				*i* S		S		06 16 32.6	+0.2
LSCH				AMP				06 16 33.0	
	comp=E,2μm,0.2s								
TLL	**Tololo Astrono**	**0.48**	**133**	*i*P		P		06 16 28.7	+1.2
TLL				*i* S		S		06 16 38.4	+1.6
TLL				AMP				06 16 39.2	
	comp=E,3μm,0.1s								
OVCH	**Ovalle**	**0.76**	**180**	*i*P		P		06 16 30.8	+0.1
OVCH				*i* S		S		06 16 42.4	0.0
OVCH				AMP				06 16 42.7	
	comp=N,2μm,0.3s								
VACH	**Vallenar**	**1.32**	**17**	*i*P		P		06 16 37.6	-0.5
VACH				*i* S		S		06 16 55.2	0.0
VACH				AMP				06 16 57.7	
	comp=N,2μm,0.1s								
CMCH	**Combarbala**	**1.34**	**172**	*i*P		P		06 16 38.5	+0.1
CMCH				*i* S		S		06 16 55.9	+0.3
ILCH	**Illapel**	**1.79**	**179**	*i* P		P		06 16 44.2	-0.2
ILCH				*i* S		S		06 17 06.2	+0.2
ILCH				AMP				06 17 11.6	
	comp=E,164nm,0.2s								
PTCH	**Petorca**	**2.43**	**174**	*i* P		P		06 16 53.2	0.0
PTCH				*i* S		S		06 17 21.5	-0.3
PTCH				AMP				06 17 28.6	
	comp=E,243nm,0.3s								
FCH	**Farellones**	**3.56**	**168**	*i* P		P		06 17 10.3	+1.1
FCH				*i* S		S		06 17 51.2	+0.9
RCDM	**Rinconada Maip**	**3.65**	**175**	*i* S		S		06 17 51.3	-1.3

*MOS **07** 06:52:13.0±1.0,36.40N×71.26E,h117km,mb5.1/30,Error ellipse: s-maj=8.8km s-min=5.5km az=111.3*

*NEIC **07** 06:52:13.8±0.2,36.19N×71.20E,mb4.9/77,Error ellipse: s-maj=7.3km s-min=4.0km az=30.0*

*HRVD **07** 06:52:13.8±0.4,36.28N×70.98E,h131km±3km,MW5.1/62, Centroid moment Tensor Solution. LP body waves: s20,c28;Mantle waves: s62,c106; Half duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}0.31±.19; $M_{\theta\theta}$-5.97±.20; $M_{\phi\phi}$5.66±.20; $M_{r\theta}$1.94±.15; $M_{r\phi}$-0.68±.19; $M_{\theta\phi}$0.23±.15; Best double couple: M_o6.13×10^{16} NP1: ϕ_s313°,δ78°,λ-170°. NP2:ϕ_s221°,δ80°,λ-12°. Principal axes: T 5.7, Plg1°, Azm267°; N .86, Plg74°, Azm2°; P -6.56, Plg16°, Azm177°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*BJI **07** 06:52:13.2,36.49N×71.12E,h118km,mB4.9,mb5.0*

*NNC **07** 06:52:18.2±4.6,36.77N×71.19E,h159km±41km,mpv5.7, Error ellipse: s-maj=39.3km s-min=31.2km az=23.0*

*IDC **07** 06:52:18.5±2.6,36.38N×71.25E,h161km±24km,mb4.3/20, mb1 4.5/23,mb1mx4.5/23,MS3.8/6,Ms1 3.8/6, ms1mx3.5/26,Error ellipse: s-maj=11.9km s-min=10.5km az=22.0*

ISC 07 06:52:11.6±0.3,36.31N±0.02×71.12E±0.02,h110km±3km, h118km±2.4km;pP-P,n330,σ1§31/359,mb4.9/119,31C-20D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
CEP	**Cherat**	**2.56**	**165**	*i*P		**P**		**06 52 55.6**	**+3.0**
CEP				S		**S**		**06 53 27.0**	**+3.5**
CHCP	**Chirah Chowk**	**3.17**	**146**	*i*P		**P**		**06 53 03.4**	**+2.5**
THW	**Thamme Wali**	**3.54**	**171**	*i*P		**P**		**06 53 07.7**	**+1.8**
SRNI	**Srinagar**	**3.77**	**125**	*e*P		**P**		**06 53 12.0**	**+3.0**
SRNI				*e*S		**S**		**06 53 51.5**	**-1.1**
SBDP	**Sheikh Budin**	**4.00**	**184**	P		**P**		**06 53 13.1**	**+0.9**
DRP	**Derazinda**	**4.61**	**190**	P		**P**		**06 53 21.5**	**+1.1**
KSH	**Kashi**	**5.00**	**49**	P		**P**		**06 53 29.1**	**+3.4**
KSH				S		**S**		**06 54 25.0**	**+2.2**
KSH				S		S			
	comp=N,5μm,0.8s								
KSH				S		S			
	comp=E,4μm,0.7s								
TAS	**Tashkent**	**5.21**	**345**	*e*PN		**P**		**06 53 25.3**	**-3.2**
TAS				pmax		pmax			
	comp=Z,1500μm,1.7s								
AML	**Almayashu**	**6.15**	**18**	P		**P**		**06 53 42.0**	**+0.6**
	SNR=1448								
UCH	**Uchtor**	**6.47**	**23**	P		**P**		**06 53 46.4**	**+0.6**
	SNR=697								
KZA	**Kyzart**	**6.60**	**28**	P		**P**		**06 53 47.8**	**+0.3**
	SNR=394								
EKS2	**Erkin-Say**	**6.67**	**17**	P		**P**		**06 53 48.7**	**+0.1**
	SNR=493								
KK31	**Karatay Array**	**6.81**	**356**	⇓P		**P**		**06 53 49.7**	**-0.7**
	comp=Z,218nm,0.3s,baz=173,slow=12,SNR=2796								
KK31				⇑S		**S**		**06 55 01.6**	**-5.3**
	comp=Z,829nm,0.7s,baz=181,slow=23,SNR=12								
KKAR	**Karatay Array**	**6.81**	**356**	PN		**P**		**06 53 49.6**	**-0.8**
KKAR				pmax		pmax			
	comp=Z,134nm,0.3s								
AAK	**Ala-Archa**	**6.84**	**21**	P		**P**		**06 53 51.3**	**+0.4**
	SNR=718								
KBK	**Karagaybulak**	**7.00**	**24**	P		**P**		**06 53 53.6**	**+0.6**
	SNR=78								
QUE	**Quetta**	**7.03**	**211**	*e*P		**P**		**06 53 52.0**	**-1.4**
QUE				*e*S		**S**		**06 55 08.5**	**-3.7**
FRU	**Bishkek**	**7.06**	**21**	*i*PN		**P**		**06 53 54.0**	**+0.2**
FRU				pmax		pmax			
	comp=Z,1μm,2.0s								
FRU				pmax		pmax			
	comp=Z,2μm,3.0s								
ULHL	**Ulahol**	**7.14**	**32**	P		**P**		**06 53 55.3**	**+0.4**
	SNR=15								
CHMS	**Chumysh**	**7.25**	**22**	P		**P**		**06 53 56.8**	**+0.4**
	SNR=156								
USP	**Ospenovka**	**7.42**	**19**	P		**P**		**06 53 58.8**	**0.0**
	SNR=224								
TKM2	**Tokmak 2**	**7.46**	**26**	P		**P**		**06 53 59.3**	**+0.1**
	SNR=187								
NDI	**New Delhi**	**9.18**	**144**	*e*P		**P**		**06 54 21.9**	**-0.5**
NDI				*e*				06 55 59.5	
NDI				*e*				06 56 03.3	
	comp=N,424nm,0.4s								
NDI				*e*				06 56 03.3	
	comp=E,553nm,0.6s								
PTH	**Pithoragarh**	**10.19**	**129**	*e*P		**P**		**06 54 35.0**	**-0.9**
PTH				*e*				06 56 27.7	
AJM	**Ajmer**	**10.25**	**162**	*e*P		**P**		**06 54 35.0**	**-1.7**
AJM				*e*				06 56 23.3	
AJM				*e*				06 56 27.3	
	comp=N,301nm,0.2s								
AJM				*e*				06 56 27.6	
	comp=E,617nm,0.2s								
VAN	**Vannovskaya**	**10.52**	**283**	P		**P**		**06 54 37.5**	**-2.8**
BHUJ	**Bhuj**	**13.07**	**186**	*e*P		**P**		**06 55 11.8**	**-2.3**
BHUJ				*e*				06 57 27.4	
BHUJ				*e*				06 57 37.2	
	comp=E,405nm,1.1s								
BHUJ				*e*				06 57 37.3	
	comp=N,147nm,0.7s								
DANN	**Dangsing**	**13.30**	**123**	*e*P		**P**		**06 55 15.1**	**-2.0**
DANN				*e*S		**S**		**06 57 34.9**	**-7.7**
MK31	**Makanchi Array**	**13.39**	**35**	P		**P**		**06 55 16.9**	**-1.3**
	comp=N,143nm,1.1s,baz=211,slow=9.5,SNR=324								
MKAR	**Makanchi Array**	**13.39**	**35**	P		**P**		**06 55 16.9**	**-1.2**
	comp=N,2.2nm,0.3s,baz=221,slow=11,SNR=50								
MKAR				S		**S**		**06 57 43.6**	**-1.1**
	baz=212,slow=16,SNR=2.5								
MKAR	**Makanchi Array**	**13.39**	**35**	P		**P**		**06 55 17.0**	**-1.2**
MKAR				S		**S**		**06 57 43.7**	**-1.0**
MKAR				pmax		pmax			
	comp=Z,2.0nm,0.3s								
KOLN	**Koldanda**	**13.57**	**125**	*e*P		**P**		**06 55 18.7**	**-1.9**
	comp=Z,124nm,0.3s								
BHPL	**Bhopal**	**14.12**	**156**	*e*P		**P**		**06 55 25.4**	**-2.2**
BHPL				*e*				06 55 27.1	
	comp=Z,113nm,1.1s								
BHPL				*e*				06 57 52.5	
GKN	**Gorkha**	**14.12**	**122**	*e*P		**P**		**06 55 25.5**	**-2.1**
	comp=Z,332nm,0.3s								
GKN				*e*S		**S**		**06 57 53.8**	**-8.0**
DMN	**Daman**	**14.69**	**122**	*e*P		**P**		**06 55 32.9**	**-2.0**
	comp=Z,232nm,0.3s								
DMN				*e*S		**S**		**06 58 06.5**	**-8.6**
KKN	**Kakani**	**14.70**	**121**	*e*P		**P**		**06 55 32.4**	**-2.6**
	comp=Z,266nm,0.4s								
WMQ	**Urumqi**	**14.73**	**54**	P		**P**		**06 55 35.2**	**-0.2**
WMQ				XP				06 56 06.3	
WMQ				S		**S**		**06 58 16.6**	**+0.6**
WMQ				PCP		PcP		07 00 40.0	-1.0
WMQ				SCP				07 04 02.4	
WMQ				PCS				07 04 13.9	
WMQ				SCS		ScS		07 07 39.0	-0.9
WMQ				LR		LR			
	comp=N,3μm,8.4s								
WMQ				LR		LR			
	comp=E,3μm,9.5s								
WMQ				LR		LR			
	comp=Z,5μm,8.4s								
PKI	**Pulchoki**	**14.92**	**122**	*e*P		**P**		**06 55 35.9**	**-2.0**
	comp=Z,306nm,0.5s								
GUN	**Gumba**	**15.04**	**120**	*e*P		**P**		**06 55 37.2**	**-2.2**
	comp=Z,199nm,0.4s								
JBP	**Jabalpur**	**15.18**	**147**	⇓*i*P		**P**		**06 55 40.6**	**-0.6**
JBP				*i*				06 58 15.2	
AB31	**Akbulak array**	**15.30**	**331**	⇓P		**P**		**06 55 39.4**	**-3.1**
	comp=Z,204nm,0.8s								
AB31				⇓S		**S**		**06 58 19.6**	**-9.4**
	comp=Z,280nm,0.8s								
AB31	**Akbulak array**	**15.30**	**331**	P		**P**		**06 55 40.4**	**-2.1**
AB31				pmax		pmax			
	comp=Z,5.0nm,0.2s								
KURK	**Kurchatov**	**15.39**	**18**	P		**P**		**06 55 40.1**	**-3.5**
	comp=Z,56nm,0.8s,baz=195,slow=8.9,SNR=37								
KURK	**Kurchatov**	**15.39**	**18**	*e*P		**P**		**06 55 40.2**	**-3.4**
AKL	**Akola**	**16.38**	**160**	⇑*i*P		**P**		**06 55 57.0**	**+0.8**
AKL				⇑*i*				06 58 48.7	
VOSK	**Vostochnaya**	**16.42**	**360**	⇓P		**P**		**06 55 53.9**	**-2.5**
	comp=Z,79nm,0.9s								
ZRNK	**Zerenda**	**16.71**	**356**	⇓P		**P**		**06 55 57.9**	**-2.2**
	comp=Z,116nm,1.1s								
BVA0	**Borovoye Array**	**16.73**	**358**	⇑P		**P**		**06 55 58.1**	**-2.2**
	comp=Z,22nm,1.0s,baz=169,slow=12,SNR=154								
BVA0	**Borovoye Array**	**16.73**	**358**	*i* P		**P**		**06 55 58.0**	**-2.3**
BVA0				pmax		pmax			
	comp=Z,3.0nm,0.8s								
BVAR	**Borovoye Array**	**16.73**	**358**	P		**P**		**06 55 58.2**	**-2.1**
	comp=Z,3.9nm,0.3s,baz=174,slow=11,SNR=64								
BVAR				S		**S**		**06 58 57.5**	**-3.9**
	comp=Z,0.6nm,0.3s,baz=162,slow=23,SNR=5.3								
BRVK	**Borovoye**	**16.76**	**358**	*e*P		**P**		**06 55 58.3**	**-2.5**
BLSP	**Bilaspur**	**17.07**	**143**	*e*P		**P**		**06 56 03.0**	**-1.7**
BLSP				*i*				06 58 59.0	
BOM	**Bombay**	**17.41**	**175**	*e*P		**P**		**06 56 09.3**	**+0.3**
BOM				*e*				06 59 31.0	
POO	**Poona**	**17.87**	**172**	*e*P		**P**		**06 56 14.3**	**-0.2**
POO				*i*				06 56 59.0	
POO				*e*				06 59 39.2	
LSA	**Lhasa**	**18.03**	**106**	P		**P**		**06 56 17.9**	**+1.5**
LSA				AP				06 56 27.7	
LSA				XS				06 59 57.0	
LSA				AMB		AMB			
	comp=Z,170nm,1.8s		

comp=Z,381nm,1.1s,mb5.6
ZEI Tsey 21.91 295 *e*P **P** **06 56 58.5 +1.9**
ZEI *e**PP 06 57 23.0
ZEI *e*S **S** **07 00 50.0 +3.5**
ZEI *i* 07 00 58.0
ZEI *i* 07 01 33.0
ZEI pmax pmax
comp=Z,50nm,1.0s,mb4.8
ZEI MLR MLR
comp=Z,200nm,8.0s
IMP Imphal 22.70 114 *e*P **P** **06 57 07.0 +2.5**
PYA Pyatigorsk 22.71 299 *i* P **P** **06 57 04.0 -0.4**
PYA *i* S **S** **07 01 08.0 +7.4**
PYA smax
comp=N,2µm,4.0s
CUD Cuddapah 22.79 161 *e*P **P** **06 57 07.6 +2.1**
CUD *e* 06 57 26.3
CUD *e* 06 57 32.5
CUD *e*S **S** **07 01 11.8 +10**
GTA Gaotai 22.83 74 ⇑P **P** **06 57 08.3 +2.7**
GTA AP 06 57 31.7
GTA XP 06 57 44.6
GTA AMB AMB
comp=Z,102nm,0.6s,mb5.3
GTA AMB AMB
comp=Z,475nm,4.9s
GTA LR LR
comp=N,170nm,11.0s
GTA LR LR
comp=E,157nm,13.3s
GTA LR LR
comp=Z,146nm,8.4s
GOF Gofitskoye 22.93 301 ⇑*i*P **P** **06 57 08.5 +2.0**
GOF *i* 06 57 33.5
GOF pmax pmax
comp=Z,1µm,3.0s
KIV Kislovodsk 22.96 298*c i*P **P** **06 57 08.0 +1.2**
KIV *e*S **S** **07 01 12.9 +7.9**
KIV pmax pmax
comp=Z,147nm,1.1s,mb5.2
KIV MLR MLR
comp=Z,200nm,15.0s
KIV Kislovodsk 22.96 298 *e*P **P** **06 57 09.2 +2.3**
comp=Z,31nm,0.8s,mb4.7
SOC Sochi 25.04 297 *e*P **P** **06 57 28.8 +2.0**
SOC *e* 06 58 09.7
SOC *e*S **S** **07 01 37.2 -3.1**
SOC *e*SS SS 07 02 49.7 +0.7
SOC pmax pmax
comp=Z,68nm,1.2s,mb5.0
SOC pmax pmax
comp=N,38nm,1.0s
SOC pmax pmax
comp=E,59nm,0.7s
MZLS Mizel 25.44 248 P **P** **06 57 30.8 0.0**
ARSS Ar Rass 25.95 254 P **P** **06 57 34.7 -0.8**
MOY Mondy 26.18 45 *e*P **P** **06 57 39.2 +1.9**
LZH Lanzhou 26.35 81 P **P** **06 57 41.7 +2.7**
LZH AP pP 06 58 05.1 +2.3
LZH XP sP 06 58 18.2 +2.4
LZH PP PP 06 58 27.3 +1.5
LZH AMB AMB
comp=Z,50nm,1.2s,mb4.8
HILS Ha'il 26.37 259 P **P** **06 57 39.0 -0.3**
ZAK Zakamensk 27.05 49 *e*P **P** **06 57 45.6 +0.3**
AFFS 'Afif 27.17 251 P **P** **06 57 45.8 -0.9**
CD2 Chengdu 27.63 92 *e*P **P** **06 57 52.7 +1.9**
CD2 *i* AP pP 06 58 16.7 +1.9
CD2 XP sP 06 58 31.6 +3.9
CD2 PP PP 06 58 43.3 +0.1
CD2 *i* S **S** **07 02 27.0 +4.2**
CD2 *i* XS 07 03 10.2
CD2 AMB AMB
comp=Z,30nm,1.1s,mb4.7
TLY Talaya 27.71 46 *e*P **P** **06 57 51.2 -0.1**
TLY *e*S **S** **07 02 27.9 +4.1**
TLY pmax pmax
comp=Z,229nm,1.8s,mb5.4
TLY MLR MLR
comp=Z,600nm,15.0s
KAMS Al Khamasin 28.15 243 P **P** **06 57 53.5 -2.1**
SONM Songino Array 28.37 55 P **P** **06 57 57.7 +0.4**
comp=Z,15nm,0.6s,mb4.7,baz=263,slow=8.3,SNR=22
ASF Jabal al Asfar 28.50 272 P **P** **06 58 00.3 +1.7**
comp=Z,3.9nm,0.8s,mb4.0,baz=300,slow=12,SNR=4.1
KBRS Khaybar 29.12 258 P **P** **06 58 04.6 +0.4**
KMI Kunming 29.26 103 *e*P **P** **06 58 05.0 -0.4**
KMI AP pP 06 58 31.4 +1.7
KMI PP PP 06 59 08.7 +4.3
KMI S **S** **07 02 50.9 +2.1**
KMI AMB AMB
comp=Z,17nm,0.6s,mb4.8
KMI LR LR
comp=N,183nm,10.0s
KMI LR LR
comp=E,86nm,6.7s
KMI LR LR
comp=Z,142nm,6.7s
TATS Tathlith 29.44 243 P **P** **06 58 05.4 -1.6**
BRTR Keskin Array B 29.58 288 P **P** **06 58 07.9 -0.2**
comp=Z,7.6nm,0.9s,mb4.3,baz=98,slow=8.7,SNR=17
MOS Moscow 29.87 321 *e*P **P** **06 58 08.3 -2.3**
MOS *e* 06 59 16.6
MOS *e*S **S** **07 02 50.2 -7.9**
MOS *e**SS 07 03 36.2
MOS pmax pmax
comp=Z,110nm,0.6s,mb5.7
CHRT Chiangrai 29.97 115 ⇓P **P** **06 58 12.5 +0.7**
CHG Chiang Mai 30.05 118 ⇓P **P** **06 58 03.7 -8.8**
comp=Z,12nm,0.7s,mb4.7
OBN Obninsk 30.15 320*c i*P **P** **06 58 12.8 -0.2**
OBN *e**PP pP 06 58 37.9 +0.5
OBN *e**SP sP 06 58 55.0 +4.9
OBN *e* 06 59 12.7
OBN *e* 07 05 22.0
OBN pmax pmax
comp=Z,99nm,1.8s,mb5.1
OBN MLR MLR
comp=Z,200nm,16.0s
OBN Obninsk 30.15 320 *e*P **P** **06 58 12.7 -0.4**
comp=Z,56nm,0.9s,mb5.2
TBKS Tabuk 30.20 264 P **P** **06 58 14.5 +0.7**
CMAR Chiang Mai Arr 30.28 119 P **P** **06 58 14.8 +0.3**
comp=Z,17nm,0.9s,mb4.7,baz=301,slow=8.2,SNR=57
CMAR ScP 07 04 40.1
comp=Z,2.5nm,0.9s,baz=297,slow=4.5,SNR=7.2
CMAR Chiang Mai Arr 30.28 119 P **P** **06 58 14.9 +0.4**
CMAR pmax pmax
comp=Z,17nm,0.9s
CMAR pmax pmax
comp=N,3.0nm,0.9s
JMQS Jabal Moqyreh 30.47 266 P **P** **06 58 16.1 0.0**
BLJS Baljurashi 30.59 246 P **P** **06 58 16.8 -0.5**
BTO Baotou 30.60 70 *e*P **P** **06 58 18.8 +1.7**
BTO AMB AMB
comp=Z,64nm,0.8s,mb5.4
XAN Xi'an 30.86 83 P **P** **06 58 19.9 +0.4**
XAN AMB AMB
comp=Z,18nm,1.5s,mb4.6
BDT Bhumibol Dam 31.13 120 P **P** **06 58 22.0 -0.1**
HAQS Haql 31.17 267 P **P** **06 58 22.6 +0.3**
BDAS Al Bad' 31.28 266 P **P** **06 58 22.6 -0.6**
GYA Guiyang 31.74 98 ⇑P **P** **06 58 28.4 +1.1**
GYA AP pP 06 58 50.3 -1.6
GYA S **S** **07 03 29.8 +2.0**
GYA XS 07 04 12.0
GYA AMB AMB
comp=Z,10.0nm,0.9s,mb4.5
GYA AMB AMB
comp=Z,120nm,5.1s
GYA LR LR
comp=N,440nm,8.7s
GYA LR LR
comp=E,220nm,6.8s
GYA LR LR
comp=Z,280nm,6.8s
HHC Hu-ho-hao-te 31.74 69 *e*P **P** **06 58 28.8 +1.6**
HHC AMB AMB
comp=Z,20nm,1.3s,mb4.7
HHC AMB AMB
comp=Z,128nm,5.4s
ENH Enshi 32.48 89 *e*P **P** **06 58 34.6 +0.9**
comp=Z,17nm,0.8s,mb4.8
NST Nakhon Sawan 33.00 121 P **P** **06 58 39.0 +0.8**
comp=Z,92nm,0.9s,mb5.6
CFR Carcaliu 33.41 299 ⇑*i*P **P** **06 58 43.1 +1.5**
CFR Carcaliu 33.41 299 ⇑*i*P **P** **06 58 43.1 +1.6**
VRI Vrincioaia 34.41 300 ⇑*i*P **P** **06 58 52.7 +2.7**
VRI Vrincioaia 34.41 300 ⇑*i*P **P** **06 58 52.7 +2.6**
KKTK Khon Kaen 34.45 117 P **P** **06 58 52.0 +1.3**
comp=Z,2µm,0.6s
ISR Istrita 34.54 299 ⇑*i*P **P** **06 58 55.0 +3.8**
ISR Istrita 34.54 299 ⇑*i*P **P** **06 58 55.0 +3.8**
MNK Minsk 34.73 315 *e*P **P** **06 58 52.0 -0.7**
NNT Nongplab 34.92 125 P **P** **06 58 56.8 +2.1**
MLR Muntele Rosu 34.96 299 ⇑*i*P **P** **06 58 56.6 +1.9**
BJT Baijiatuau 35.33 70 *e*P **P** **06 58 59.4 +1.4**
comp=Z,18nm,0.7s,mb5.0
BJI Beijing 35.33 70 P **P** **06 58 59.5 +1.5**
BJI PP PP 07 00 19.7 -1.1
BJI PCP PcP 07 01 28.1 +1.9
BJI S **S** **07 04 30.5 +7.2**
BJI SCP 07 04 59.4
BJI AMB AMB
comp=Z,24nm,0.9s,mb5.0
BJI LR LR
comp=N,260nm,16.6s
BJI LR LR
comp=E,98nm,17.2s
BJI LR LR
comp=Z,117nm,24.9s
BOD Bodaibo 35.44 39 *e*P **P** **06 58 57.8 -0.9**
JOF Joensuu 36.09 330 *e*p **P** **06 59 03.8 -0.3**
comp=Z,7.8nm,0.4s,mb5.0
JOF Joensuu 36.09 330 *e*P **P** **06 59 03.8 -0.3**
JOF pmax pmax
comp=Z,8.0nm,0.4s,mb5.0
WHN Wuhan 36.31 86 *e*P **P** **06 59 08.5 +2.2**
WHN AP pP 06 59 36.0 +4.5
TIA Tai'an 36.83 76 *e*P **P** **06 59 12.5 +1.9**
KWP Kalwaria 37.20 306 *e*P **P** **06 59 13.8 +0.2**
KWP *e* 06 59 15.5
SUW Suwalki 37.32 314 *e*P **P** **06 59 14.2 -0.3**
HIA Hailar 37.33 54 *e*P **P** **06 59 15.9 +1.3**
comp=Z,7.8nm,0.6s,mb4.8
LVZ Lovozero 37.67 338 *e*P **P** **06 59 17.5 +0.2**
LVZ *e*S **S** **07 05 01.2 +2.5**
LVZ pmax pmax
comp=Z,40nm,1.3s,mb5.1
LVZ pmax pmax
comp=N,10.0nm,0.9s
LVZ pmax pmax
comp=E,10.0nm,1.0s
LVZ pmax pmax
comp=Z,60nm,1.5s,mb5.2
LVZ pmax pmax
comp=N,30nm,1.7s
LVZ pmax pmax
comp=E,20nm,1.3s
LVZ smax
comp=E,80nm,2.3s
LVZ MLR MLR
comp=N,180nm,10.0s
LVZ MLR MLR
comp=Z,240nm,10.0s
LVZ MLR MLR
comp=E,110nm,9.0s
FINES FINESS Array B 37.70 326 P **P** **06 59 17.9 +0.3**
comp=E,16nm,0.7s,mb4.9,baz=112,slow=10,SNR=47
FINES LR LR 07 15 20.2
comp=E,91nm,18.5s,baz=355,slow=37
FINES FINESS Array B 37.70 326 P **P** **06 59 17.9 +0.3**
FINES pmax pmax
comp=Z,16nm,0.7s
FINES MLR MLR
comp=Z,91nm,18.5s
KAF Kangasniemi 37.84 327 *e*p **P** **06 59 18.6 -0.2**
comp=Z,1.2nm,0.2s,mb4.4,baz=111,slow=8.5
KAF Kangasniemi 37.84 327 *e*P **P** **06 59 18.6 -0.2**
KAF pmax pmax
comp=Z,1.0nm,0.2s,mb4.3
APA Apatity 37.85 338 ⇑*i*P **P** **06 59 19.5 +0.7**
APA *i* *PP pP 06 59 45.5 +1.4
APA *e*S **S** **07 04 58.5 -2.9**
APA pmax pmax
comp=Z,18nm,0.9s,mb4.9
CRVS Cervenica-Dubn 38.00 305 *e*P **P** **06 59 22.4 +2.2**
CRVS *e*PP PP 07 00 43.0 -8.4
CRVS *e*PCP PcP 07 01 33.8 -0.4
CRVS Cervenica-Dubn 38.00 305 *e*P **P** **06 59 22.4 +2.2**
CRVS *e* 07 01 33.8
QIZ Qiongzhong 38.07 106 *e*P **P** **06 59 21.9 +0.8**
QIZ S **S** **07 05 05.6 +0.4**
QIZ AMB AMB
comp=Z,26nm,1.7s,mb4.8
SKO Skopje 38.51 294 *e*P **P** **06 59 32.0 +7.5**
NIE Niedzica 38.76 306 *e*P **P** **06 59 29.2 +2.7**
PSZ Piszkesteto 39.06 304 *e*P **P** **06 59 31.1 +2.1**
PSZ *e*S Px 07 01 03.3
OJC Ojcow 39.10 307 *e*P **P** **06 59 30.9 +1.6**
NJ2 Nanjing 39.41 82 *e*P **P** **06 59 31.9 -0.2**
NJ2 PP PP 07 01 04.9 -3.0
NJ2 S **S** **07 05 30.0 +4.8**
NJ2 AMB AMB
comp=Z,50nm,0.8s,mb5.4
NJ2 LR LR
comp=N,300nm,16.2s
NJ2 LR LR
comp=E,300nm,12.4s
NJ2 LR LR
comp=Z,6µm,17.3s
VYHS Vyhne 39.75 305 *e*P **P** **06 59 36.9 +2.2**
VYHS *e*PP PP 07 01 04.8 -6.6
VYHS *e*PCP PcP 07 01 35.7 -4.0
VYHS *e*S **S** **07 05 44.7 +15**
VYHS *e*SS SS 07 08 36.6 +12
VYHS Vyhne 39.75 305 *e*P **P** **06 59 36.9 +2.2**
VYHS *e* 07 01 35.7
OKC Ostrava-Krasne 40.16 307 *e*PP PP 07 01 13.3 -2.5
CLNS Chul'man 40.99 43 *e*P **P** **06 59 45.2 +0.4**
CLNS pmax pmax
comp=N,7.0nm,0.9s
CLNS pmax pmax
comp=Z,20nm,0.9s,mb5.0
CLNS pmax pmax
comp=E,10.0nm,1.0s
KEV Kevo 41.02 338 *e*p **P** **06 59 44.8 -0.2**
comp=E,2.9nm,0.3s,mb4.6
KEV Kevo 41.02 338 *e*P **P** **06 59 44.8 -0.2**
KEV pmax pmax
comp=Z,3.0nm,0.3s,mb4.6
DPC Dobruska-Polom 41.33 308 *e*PP PP 07 01 22.3 -5.4
KSP Ksiaz 41.33 308 *e*P **P** **06 59 48.0 +0.3**
KSP *e* 06 59 51.4
KSP Ksiaz 41.33 308 *e*P **P** **06 59 46.7 -1.0**
KSP *e**PP PP 07 01 23.0 -4.8
KSP *e*SS SS 07 09 01.5 +5.3
ARCES ARCESS Array B 41.36 338 P **P** **06 59 48.4 +0.6**
comp=Z,12nm,0.6s,mb4.9,baz=113,slow=8.1,SNR=80
ARCES PP PP 07 01 29.3 +1.3
comp=Z,11nm,0.8s,baz=117,slow=8.1,SNR=4.0
ARCES LR LR 07 19 51.3
comp=Z,103nm,19.0s,baz=135,slow=40
ARCES ARCESS Array B 41.36 338 P **P** **06 59 48.4 +0.6**
ARCES 07 01 29.3
ARCES pmax pmax
comp=Z,12nm,0.6s
ARCES pmax pmax
comp=Z,11nm,0.8s
ARCES MLR MLR
comp=Z,103nm,19.0s
ARCES ARCESS Array B 41.36 338 P **P** **06 59 48.4 +0.6**
ARCES PP PP 07 01 29.3 +1.3
ARCES LR LR 07 19 51.3
ARE0 ARCESS Array S 41.36 338 *e*P **P** **06 59 47.4 -0.4**
CN2 Changchun 41.62 62 *e*P **P** **06 59 51.2 +1.1**
CN2 *e*AP pP 07 00 14.0 -1.5
CN2 *e*S **S** **07 05 58.0 +0.3**
CN2 AMB AMB
comp=Z,10.0nm,0.8s,mb4.6
CN2 LR LR
comp=Z,170nm,22.0s
KTK1 Kautokeino 41.83 336 *e*P **P** **06 59 51.9 +0.4**
KTK1 AMb AMB 07 00 00.0
comp=Z,51nm,2.0s,mb4.9
KTK1 *e*pP pP 07 00 19.2 +2.2
IPM Ipoh 41.86 132 ⇑*e*P **P** **06 59 54.0 +1.5**
ARSA Arzberg 42.06 303 ⇑*i*P **P** **06 59 55.8 +2.1**
comp=Z,10nm,1.3s,mb4.4
PERS Pernice 42.40 302 *e* **P** **06 59 57.4 +0.9**
PRU Pruhonice 42.48 307 P **P** **06 59 59.0 +1.9**
comp=Z,21nm,0.9s,mb4.9
PRU *e*PP PP 07 01 35.7 -4.3
PRU Pruhonice 42.48 307 P **P** **06 59 59.0 +1.9**
PRU *e* 07 01 35.7
PRU pmax pmax
comp=Z,21nm,0.9s,mb4.9
BRG Berggiesshubel 42.82 308 *i* P **P** **07 00 02.1 +2.3**
BRG *i* 07 00 40.4
BRG *e* 07 09 27.1
BRG pmax pmax
comp=Z,38nm,1.0s,mb5.1
BRG Berggiesshubel 42.82 308 *i* P **P** **07 00 02.1 +2.3**
comp=Z,38nm,1.0s,mb5.1
BRG *i* 07 00 40.4
BRG *e* 07 09 27.1
MOA Molln 42.84 304 ⇑*i*P **P** **07 00 00.7 +0.6**
comp=Z,27nm,1.1s,mb4.9
GEC2 GERESS Array S 43.12 305 *e*P **P** **07 00 04.1 +1.8**
GEC2 *e**PP pP 07 00 32.0 +4.2
GEC2 pmax pmax
comp=Z,10.0nm,1.2s,mb4.4
GEC2 GERESS Array S 43.12 305 *e*P **P** **07 00 04.1 +1.8**
comp=Z,10.0nm,1.2s,mb4.4
GEC2 *e*pP pP 07 00 32.0 +4.2
GERES GERESS Array B 43.12 305 P **P** **07 00 04.0 +1.7**
comp=Z,3.1nm,0.8s,mb4.1,baz=101,slow=6.8,SNR=10
GERES PP PP 07 01 42.2 -4.1
comp=Z,3.2nm,0.8s,baz=67,slow=10,SNR=3.9
GERES GERESS Array B 43.12 305 P **P** **07 00 04.0 +1.7**
GERES 07 01 42.2
GERES pmax pmax
comp=Z,3.0nm,0.8s
GERES pmax pmax
comp=Z,3.0nm,0.8s
KHC Kasperske Hory 43.17 306 *e*P **P** **07 00 04.5 +1.8**
KHC x x 07 00 19.0
KHC *e*PP PP 07 01 45.8 -1.1
KHC Kasperske Hory 43.17 306 *e*P **P** **07 00 04.5 +1.8**
KHC *e* 07 01 45.8
KHC Kasperske Hory 43.17 306 *e*P **P** **07 00 04.5 +1.8**
KHC *e* 07 00 19.0
KHC *e*PP PP 07 01 45.8 -1.1
CLL Collm 43.39 309 P **P** **07 00 05.5 +1.1**
comp=Z,logA/T=1.5,mb5.0
CLL *e**PP pP 07 00 33.0 +3.0
CLL *e**SP sP 07 00 47.0 +4.2
CLL *i* PP PP 07 01 47.0 -2.0
CLL *i* *PPP 07 02 05.8
CLL *i* 07 02 39.2
CLL Collm 43.39 309 *i* P **P** **07 00 05.5 +1.1**
CLL *i* 07 01 47.0
CLL pmax pmax
comp=Z,33nm,1.1s,mb5.0
CLL Collm 43.39 309 *i* P **P** **07 00 05.5 +1.1**
comp=Z,33nm,1.1s,mb5.0
CLL *e*pP pP 07 00 26.0 -4.0
CLL *i* PP PP 07 01 47.0 -2.0
CADS Cadrg 43.40 302 *e* **P** **07 00 06.2 +1.6**
DGAR Diego Garcia 43.50 178 P **P** **07 00 06.5 +0.6**
KBA Koelnbreinsper 43.55 303 ⇑*i*P **P** **07 00 06.4 +0.6**
comp=Z,21nm,1.0s,mb4.8
WET Wettzell 43.63 306 *e*P **P** **07 00 08.1 +1.7**
MOR8 Moi Rana 44.03 331 *e*P **P** **07 00 08.9 -0.5**
MOR8 AMb AMB 07 00 13.4
comp=Z,52nm,0.8s,mb5.3
MOR8 *e*pP pP 07 00 37.1 +2.0
MOR8 Moi Rana 44.03 331 *e*P **P** **07 00 08.9 -0.5**
comp=Z,52nm,0.8s,mb5.3
YAK Yakutsk 44.07 35 *e*P **P** **07 00 09.2 -0.6**
YAK *e* pP 07 00 37.8 +2.4
YAK *e* 07 00 53.5
YAK *e*S **S** **07 06 31.8 -1.5**
YAK *e**SS 07 07 16.1
YAK *e* 07 09 57.6
YAK pmax pmax
comp=Z,20nm,0.8s,mb4.9
YAK pmax pmax
comp=N,2.0nm,0.6s
YAK pmax pmax
comp=E,6.0nm,1.2s
YAK pmax pmax
comp=Z,10.0nm,1.0s,mb4.5
YAK pmax pmax
comp=N,5.0nm,0.9s
YAK pmax pmax
comp=E,10.0nm,1.2s
YAK smax
comp=N,10.0nm,1.3s
YAK smax
comp=E,10.0nm,1.1s
YAK MLR MLR
comp=Z,30nm,10.0s
MOX Moxa 44.31 308 *i* P **P** **07 00 14.0 +2.1**
comp=Z,logA/T=1.4,mb4.9
MOX PcP PcP 07 01 58.0 +3.3
MOX Moxa 44.31 308 *e*P **P** **07 00 14.0 +2.1**
MOX *e* 07 01 58.0
MOX pmax pmax
comp=Z,25nm,1.1s,mb4.9
MOX Moxa 44.31 308 *e*P **P** **07 00 14.0 +2.1**
comp=Z,25nm,1.1s,mb4.9
MOX *e* 07 01 58.0
MDJ Mudanjiang 44.42 60 P **P** **07 00 10.9 -1.9**
MDJ PCP PcP 07 01 53.7 -1.5
MDJ PP PP 07 01 56.4 -3.0
MDJ SCP 07 05 37.5
MDJ PCS 07 05 46.7
MDJ S **S** **07 06 36.6 -1.9**
MDJ SCS ScS 07 09 58.9 +2.0
MDJ AMB AMB
comp=Z,5.0nm,1.1s,mb4.2
MDJ AMB AMB
comp=Z,43nm,4.1s
MDJ LR LR
comp=N,96nm,13.8s
MDJ LR LR
comp=E,121nm,18.4s
MDJ LR LR
comp=Z,139nm,14.5s
NB2 NORSAR Subarra 44.59 323 P **P** **07 00 13.5 -0.5**
comp=Z,18nm,0.6s,mb5.0,baz=97,slow=7.9
NB2 NORSAR Subarra 44.59 323 P **P** **07 00 13.5 -0.5**
baz=97,slow=7.9
NOA NORSAR Array B 44.59 323 P **P** **07 00 13.4 -0.5**
comp=Z,22nm,0.7s,mb5.0,baz=97,slow=7.8,SNR=90
NOA PP PP 07 01 56.1 -4.8
comp=Z,6.1nm,1.0s,baz=96,slow=11,SNR=2.6
NOA LR LR 07 21 05.2
comp=Z,82nm,18.6s,baz=105,slow=39
NOA NORSAR Array B 44.59 323 P **P** **07 00 13.5 -0.5**
NOA 07 01 56.1
NOA pmax pmax
comp=Z,22nm,0.7s
NOA pmax pmax
comp=Z,6.0nm,1.0s
NOA MLR MLR
comp=Z,82nm,18.6s
GRA1 Grafenberg Arr 44.65 307 *e*P **P** **07 00 17.3 +2.7**
comp=Z,40nm,1.2s,mb5.0
GRA1 *e*pP pP 07 00 45.8 +5.5
GRA1 *e* 07 02 02.1
GRF Grafenberg Arr 44.65 307 *e*P **P** **07 00 17.3 +2.7**
GRF *e**PP pP 07 00 45.8 +5.5
GRF *e* 07 02 02.1
GRF pmax pmax
comp=Z,40nm,1.2s,mb5.0
WTTA Wettenberg 44.68 303 ⇑*i*P **P** **07 00 13.6 -1.3**
comp=Z,17nm,0.8s,mb4.8
WATA Walderalm 44.71 304 ⇑*i*P **P** **07 00 15.5 +0.4**
comp=Z,8.7nm,0.9s,mb4.5
NAO01 NORSAR Array S 44.73 323 *e*P **P** **07 00 14.7 -0.5**
comp=Z,17nm,0.8s,mb4.8
KS15 Wonju Array Si 44.83 71 *e*P **P** **07 00 17.1 +0.8**
LOF Lofoten 44.86 333 *e*P **P** **07 00 17.9 +1.9**
LOF Lofoten 44.86 333 *e*P **P** **07 00 18.3 +2.3**
BSEG Bad Segeberg 44.89 313 *e*P **P** **07 00 18.4 +1.9**
BSEG pmax pmax
comp=Z,50nm,0.9s,mb5.2
MOTA Moosalm 45.03 304 ⇑*i*P **P** **07 00 17.9 +0.2**
comp=Z,8.4nm,0.9s,mb4.5
KLR Kul'dur 45.18 54 *e*P **P** **07 00 18.8 -0.1**
DAVA Damuels 45.86 304 ⇑*i*P **P** **07 00 24.5 +0.3**

comp=Z,37nm,0.7s,mb5.2
TIXI Tiksi 45.92 22⇑ *iP* **P 07 00 24.1 -0.3**
TIXI *eS* **S 07 06 56.2 -3.5**
TIXI *e* 07 07 46.6
TIXI pmax pmax
comp=Z,265nm,0.9s,mb6.0
TIXI MLR MLR
comp=Z,700nm,14.0s
TIXI Tiksi 45.92 22 *eP* **P 07 00 24.1 -0.3**
comp=Z,58nm,0.9s,mb5.3
SPAK Spaichingen 46.46 305 *eP* **P 07 00 30.8 +1.9**
BFO Black Forest 46.72 305 *eP* **P 07 00 31.9 +0.9**
BFO pmax pmax
comp=Z,16nm,1.1s,mb4.7
BFO Black Forest 46.72 305 *eP* **P 07 00 31.9 +0.9**
comp=Z,16nm,1.1s,mb4.7
LANF Langenberg 46.96 306 *eP* **P 07 00 34.9 +2.0**
RUP Ruppelstein 47.33 307 *eP* **P 07 00 38.0 +2.2**
WLS Welschbruch 47.35 306 *eP* **P 07 00 38.9 +3.0**
CDF Champ du Feu 47.40 306 *eP* **P 07 00 35.7 -0.6**
comp=Z,18nm,1.0s,mb4.5
BBS Basel-Blauen 47.42 304 *eP* **P 07 00 30.1 -6.4**
ECH Echery 47.51 305 *eP* **P 07 00 39.4 +2.2**
MOF Molkenrain 47.59 305 *eP* **P 07 00 38.2 +0.3**
SPB4 Spitsbergen Ar 47.71 347 *eP* **P 07 00 37.6 -0.8**
HINF Hinteralfeld 47.79 305 *eP* **P 07 00 38.3 -1.1**
comp=Z,28nm,0.9s,mb4.8
LOMF Lomont 47.89 304 *eP* **P 07 00 36.1 -4.1**
HAU Haudompre 48.09 305 *eP* **P 07 00 40.7 -1.0**
comp=Z,21nm,0.8s,mb4.7
SBF Sospel 48.23 300 *eP* **P 07 00 42.1 -0.8**
comp=Z,50nm,0.8s,mb5.1
THEF They Montfort 48.28 306 *eP* **P 07 00 44.8 +1.6**
LPG La Plagne 48.33 302 *eP* **P 07 00 43.1 -0.5**
comp=Z,12nm,0.7s,mb4.6
LPL La Plagne 48.34 302 *eP* **P 07 00 43.2 -0.5**
comp=Z,22nm,0.8s,mb4.7
MBDF Montbardon 48.49 301 *eP* **P 07 00 43.7 -1.2**
comp=Z,16nm,0.7s,mb4.7
CABF La Chapelle 48.54 303 *eP* **P 07 00 44.8 -0.4**
comp=Z,43nm,0.9s,mb5.1
GIVF Givet 48.69 308 *eP* **P 07 00 46.1 -0.2**
KMBO Kilima Mbogo 48.77 228 P **P 07 00 47.9 +0.5**
comp=Z,2.1nm,0.7s,mb4.2,baz=32,slow=16,SNR=3.8
KMBO Kilima Mbogo 48.77 228 *eP* **P 07 00 46.9 -0.5**
KBS Kingsbay 48.82 347 *eP* **P 07 00 47.4 +0.4**
comp=Z,39nm,1.0s,mb5.3
MEZF Maizieres J'vi 48.84 306 *eP* **P 07 00 47.0 -0.5**
JOW Kunigami 49.00 84 P **P 07 00 47.8 -1.2**
comp=Z,9.0nm,0.4s,mb5.0,baz=292,slow=16,SNR=8.2
ORIF Oris-en-Rattie 49.06 301 *eP* **P 07 00 48.3 -0.9**
comp=Z,7.4nm,0.6s,mb4.5
BAIF Baives 49.09 308 *eP* **P 07 00 48.1 -1.3**
comp=Z,84nm,1.0s,mb5.3
LOR Lormes 49.88 305 *eP* **P 07 00 54.0 -1.5**
comp=Z,7.6nm,0.6s,mb4.5
VIVF Saint-Julien-l 49.91 302 *eP* **P 07 00 54.3 -1.4**
comp=Z,14nm,0.7s,mb4.7
SMF Signal de Mont 50.04 304 *eP* **P 07 00 55.5 -1.2**
comp=Z,55nm,1.0s,mb5.1
SSF Saint Saulge 50.17 305 *eP* **P 07 00 56.4 -1.3**
comp=Z,11nm,0.8s,mb4.5
AVF Avril sur Loir 50.33 304 *eP* **P 07 00 57.6 -1.3**
comp=Z,54nm,1.0s,mb5.1
LASF Ste Croix 50.68 301 *eP* **P 07 01 01.0 -0.6**
comp=Z,27nm,0.9s,mb5.0
BGF Bois d'Agland 50.73 304 *eP* **P 07 01 00.6 -1.3**
TCF Toulx Ste Croi 51.22 304 *eP* **P 07 01 04.8 -0.9**
comp=Z,37nm,1.0s,mb5.0
CAF Calviac 51.68 302 *eP* **P 07 01 08.3 -0.9**
MTLF Montolieu 52.02 300 *eP* **P 07 01 10.4 -1.4**
LDF La Druitiere 52.17 307 *eP* **P 07 01 11.2 -1.6**
comp=Z,11nm,0.5s,mb4.8
FLN La Foliniere 52.36 308 *eP* **P 07 01 12.5 -1.7**
comp=Z,19nm,0.7s,mb4.9
ESK Eskdalemuir 52.52 316 *eP* **P 07 01 15.1 -0.2**
GRR Gorron 52.70 307 *eP* **P 07 01 15.7 -1.0**
comp=Z,49nm,1.0s,mb5.2
MFF Saint Martin d 52.71 305 *eP* **P 07 01 15.2 -1.6**
comp=Z,63nm,1.2s,mb5.2
YSS Yuzh-Sakhalins 52.86 55⇓ *eP* **P 07 01 17.3 -0.6**
YSS pmax pmax
comp=E,40nm,1.0s
YSS pmax pmax
comp=Z,50nm,1.0s,mb5.5
MAJO Matsushiro 52.94 68 *eP* **P 07 01 17.5 -1.2**
comp=Z,19nm,0.8s,mb5.2
MAT Matsushiro 52.94 68 P **P 07 01 17.7 -1.0**
EPF Esparros 53.43 300 *eP* **P 07 01 20.9 -1.3**
comp=Z,20nm,1.0s,mb4.8
SGMF Saint Gilles 53.83 307 *eP* **P 07 01 24.6 -0.4**
comp=Z,38nm,0.8s,mb5.1
ETSF Etsaut 54.10 301 *eP* **P 07 01 24.8 -2.2**
comp=Z,20nm,0.7s,mb4.9
ROSF Rostrenen 54.26 308 *eP* **P 07 01 27.0 -1.2**
comp=Z,50nm,1.1s,mb5.2
SEY Seymchan 54.53 34 *eP* **P 07 01 29.5 -0.4**
DAG Danmarks Havn 54.94 344⇓ *iP* **P 07 01 32.7 -0.1**
comp=Z,8.0nm,0.6s,mb4.9
DAG Danmarks Havn 54.94 344⇓ *eP* **P 07 01 32.7 -0.1**
DAG pmax pmax
comp=Z,8.0nm,0.6s,mb4.9
DAG Danmarks Havn 54.94 344⇓ *eP* **P 07 01 32.7 -0.1**
comp=Z,8.0nm,0.6s,mb4.9
ESDC Sonseca Array 57.63 298 P **P 07 01 52.0 -0.4**
comp=Z,1.2nm,0.6s,mb4.1,baz=61,slow=7.1,SNR=5.0
BILL Bilibino 58.74 26 *eP* **P 07 01 59.4 -0.3**
BILL *e**PP pP 07 02 30.0 +3.4
BILL pmax pmax
comp=Z,21nm,1.0s,mb5.1
BILL Bilibino 58.74 26 *eP* **P 07 01 59.4 -0.4**
comp=Z,21nm,0.9s,mb5.2
EVO Evora 60.98 298 *eP* **P 07 02 14.9 -0.5**
comp=Z,32nm,1.4s,mb4.9
FX1 Attu Island--F 68.49 40 P **P 07 03 02.7 -0.9**
comp=Z,24nm,0.6s,mb5.2,baz=35,slow=16,SNR=4.8
FX1 Attu Island--F 68.49 40 P **P 07 03 02.7 -0.9**
FX1 pmax pmax
comp=Z,24nm,0.6s
TNA Tin City 68.71 23 *eP* **P 07 03 04.2 -0.6**
RES Resolute Bay 68.90 356 *eP* **P 07 03 04.7 -1.1**
comp=Z,4.5nm,0.9s,mb4.3
IMA Indian Mountai 69.28 18 *eP* **P 07 03 25.8 -0.5**
comp=Z,43nm,1.0s,mb5.2
MBWA Marble Bar 73.33 133 *eP* **P 07 03 34.0 +0.9**
INK Inuvik 74.08 9 LR LR 07 41 28.4
comp=Z,82nm,18.7s,baz=96,slow=40
INK Inuvik 74.08 9 *eP* **P 07 03 36.5 -0.2**
comp=Z,13nm,0.6s,mb4.8
LBTB Lobatse 74.60 222 *eP* **P 07 03 39.7 -0.8**
comp=Z,6.4nm,0.6s,mb4.5
COLA College 74.64 16 *eP* **P 07 03 39.6 -0.3**
comp=Z,28nm,0.9s,mb5.0
FITZ Fitzroy Crossi 74.70 127 *eP* **P 07 03 40.6 -0.6**
comp=Z,7.1nm,1.0s,mb4.3
DBIC Dimbokro 74.78 267 P **P 07 03 39.5 -2.2**
comp=Z,3.2nm,0.5s,mb4.3,baz=202,slow=5.9,SNR=11
DBIC Dimbokro 74.78 267 P **P 07 03 39.5 -2.2**
DBIC pmax pmax
comp=Z,3.0nm,0.5s
KIC Kosan Boka 74.87 267 *eP* **P 07 03 40.3 -1.9**
comp=Z,41nm,0.6s,mb5.3
TIC Toumodi 74.93 267 *eP* **P 07 03 40.6 -2.0**
comp=Z,40nm,0.6s,mb5.3
ILAR Eielson Array 74.94 16 P **P 07 03 41.0 -0.6**
comp=Z,11nm,0.9s,mb4.6,baz=318,slow=4.9,SNR=52
ILAR PP PP 07 06 31.5 -1.0
comp=Z,2.6nm,1.1s,baz=320,slow=7.0,SNR=4.9
ILAR Eielson Array 74.94 16 P **P 07 03 41.0 -0.6**
ILAR 07 06 31.5
ILAR pmax pmax
comp=Z,11nm,0.9s
ILAR pmax pmax
comp=Z,3.0nm,1.1s
LIC Lamto 75.18 267 *eP* **P 07 03 41.9 -2.1**
comp=Z,36nm,0.9s,mb4.8
LIC Lamto 75.18 267 *eP* **P 07 03 42.0 -2.0**
comp=Z,51nm,0.9s,mb5.2
MCK McKinley 75.36 17 *eP* **P 07 03 43.6 -0.4**
comp=Z,34nm,0.7s,mb4.2
PWA Palmer West 76.88 19 *eP* **P 07 03 51.6 -1.0**
RSO Redoubt South 77.09 21 *eP* **P 07 03 53.7 0.0**
DAWY Dawson 77.09 13 *eP* **P 07 03 53.1 -0.7**
PMR Palmer 77.12 18 *eP* **P 07 03 53.8 -0.2**
SML Sawmill 77.14 18 *eP* **P 07 03 53.5 -0.5**
PMS Palmer South 77.31 19 *eP* **P 07 03 54.5 -0.5**

TOA Tolsona 77.41 17 *eP* **P 07 03 57.5 +2.0**
EYAK Cordova Ski Ar 78.87 18 *eP* **P 07 04 03.7 +0.2**
KDAK Kodiak Island 79.34 22 *eP* **P 07 04 05.2 -1.0**
comp=Z,33nm,0.9s,mb5.2
YKW3 Yellowknife Ar 81.37 3 *eP* **P 07 04 16.8 -0.1**
YKA Yellowknife Ar 81.44 3 P **P 07 04 17.3 +0.1**
comp=Z,7.8nm,0.7s,mb4.7,baz=349,slow=5.5,SNR=124
YKA LR LR 07 40 29.9
comp=Z,61nm,20.7s,slow=36
YKA Yellowknife Ar 81.44 3 P **P 07 04 17.3 +0.1**
YKA pmax pmax
comp=Z,8.0nm,0.7s
YKA MLR MLR
comp=Z,61nm,20.7s
YKA Yellowknife Ar 81.44 3 P **P 07 04 17.3 +0.1**
YKA LR LR 07 40 29.9
WRA Warramunga Arr 81.81 122 P **P 07 04 18.9 -1.1**
comp=Z,9.7nm,0.8s,mb4.7,baz=323,slow=4.9,SNR=65
WRA Warramunga Arr 81.81 122 P **P 07 04 18.9 -1.1**
WRA pmax pmax
comp=Z,10.0nm,0.8s
WRAB Tennant Creek 81.81 122 *eP* **P 07 04 18.2 -1.8**
comp=Z,29nm,0.8s,mb5.2
WB2 Warramunga Arr 81.82 122⇓ *iP* **P 07 04 18.7 -1.3**
SCHQ Schefferville 82.31 337 P **P 07 04 22.8 +0.9**
comp=Z,4.8nm,0.8s,mb4.4,baz=57,slow=4.9,SNR=9.3
SCHQ Schefferville 82.31 337 *eP* **P 07 04 22.9 +1.0**
comp=Z,6.6nm,0.8s,mb4.5
DLBC Dease Lake 83.97 11 *eP* **P 07 04 29.7 -0.4**
AS12 Alice Springs 84.06 125⇑ *iP* **P 07 04 30.7 -0.7**
comp=Z,10nm,0.8s,mb4.7
ASAR Alice Springs 84.06 125 P **P 07 04 30.1 -1.2**
comp=Z,9.5nm,0.7s,mb4.7,baz=310,slow=5.0,SNR=80
FCC Fort Churchill 84.49 352 *eP* **P 07 04 33.1 +0.5**
comp=Z,13nm,1.1s,mb4.7
FORT Forrest 85.47 134⇑ *iP* **P 07 04 37.8 -0.4**
comp=Z,42nm,0.7s,mb5.5
CTA Charters Tower 90.37 115⇑ *iP* **P 07 05 01.2 -0.7**
comp=Z,6.8nm,0.9s,mb4.8
CTAO Charters Tower 90.37 115 *eP* **P 07 05 00.7 -1.2**
ULM Lac du Bonnet 93.06 352 P **P 07 05 12.8 -0.8**
comp=Z,2.0nm,0.6s,mb4.6,baz=306,slow=2.2,SNR=4.2
ULM LR LR 07 54 16.3
comp=Z,71nm,19.0s,baz=255,slow=40
ULM Lac du Bonnet 93.06 352 P **P 07 05 12.8 -0.8**
ULM LR LR 07 54 16.3
STKA Stephens Creek 94.60 126 P **P 07 05 19.4 -1.7**
comp=Z,1.6nm,0.6s,mb4.6,baz=351,slow=8.7,SNR=5.0
WALA Waterton Lakes 94.89 3 *eP* **P 07 05 21.8 -0.1**
comp=Z,3.3nm,0.6s,mb4.9
NEW Newport 95.49 6 *eP* **P 07 05 24.9 +0.2**
comp=Z,4.2nm,0.9s,mb4.9
QSPA South Pole Qui 126.10 180 *eP* PKPdf 07 10 58.5 -1.3
RAR Rarotonga 133.43 86 PKhKP 07 11 11.8
comp=Z,9.1nm,0.7s,baz=297,slow=6.8,SNR=3.2
RAR Rarotonga 133.43 86 PKIKP PKPdf 07 11 11.8 -3.5
RAR pmax pmax
comp=Z,9.0nm,0.7s
CPUP Villa Florida 135.30 268 PKP PKPdf 07 11 18.0 -0.7
comp=Z,2.5nm,1.0s,baz=343,slow=4.2,SNR=4.7
CPUP Villa Florida 135.30 268 PKIKP PKPdf 07 11 18.0 -0.7
CPUP pmax pmax
comp=Z,3.0nm,1.0s
CPUP Villa Florida 135.30 268 PKP PKPdf 07 11 18.0 -0.7
LPAZ La Paz 138.76 288 PKP PKPdf 07 11 24.6 -0.7
comp=Z,0.6nm,0.8s,baz=180,slow=15,SNR=2.7
LPAZ La Paz 138.76 288 PKIKP PKPdf 07 11 24.6 -0.6
LPAZ pmax pmax
comp=Z,1.0nm,0.8s
PLCA Paso Flores 149.85 250 PKPbc PKPdf 07 11 48.4 +5.0
comp=Z,12nm,1.3s,baz=293,slow=5.6,SNR=7.1
PLCA Paso Flores 149.85 250 PKPbc PKPdf 07 11 48.4 +5.0

MEX ***07*** *06:57:57.1±0.9, 13.46N×92.54W, h20km±999km, MD4.8*
CASC ***07*** *06:57:58.8±2.3, 14.15N×92.00W, h74km±30km, MD4.6, ML4.5, mb4.6(NEIC)*
NEIC ***07*** *06:57:59.7±0.8, 13.92N×91.84W, h41km±6km, mb4.6/38, MD4.7(MEX), Error ellipse: s-maj=8.5km s-min=6.7km az=200.0*
BJI ***07*** *06:57:59.8, 13.90N×91.80W, h40km, mB4.9, Ms4.8, Msz4.3*
IDC ***07*** *06:58:03.9±2.5, 14.00N×91.61W, h79km±20km, mb4.0/16, mb1 4.2/19, mb1mx4.2/22, MS3.8/10, Ms1 3.8/10, ms1mx3.6/22, Error ellipse: s-maj=23.0km s-min=12.1km az=58.0*
ISC 07 06:57:59.7±0.5, 14.03N±0.04×91.94W±0.03, h51km±4km, n192, σ1$22/197, mb4.5/48, MS3.9/9, 7C-5D, Guatemala

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JAT	**Jato**	**0.41**	**45⇓**	*eP*		**P**		**06 58 11.6**	**+1.6**
PCG	**Pacaya**	**1.34**	**74**	*eP*		**P**		**06 58 23.1**	**+0.5**
IXG	**Ixpaco**	**1.45**	**84⇑**	*eP*		**P**		**06 58 23.4**	**-0.7**
IXG				*eS*		**S**		**06 58 43.2**	**+1.1**
IXG				AML		AML		06 59 00.3	
	comp=N,41μm,0.6s								
GCG	**Guatemala City**	**1.47**	**68**	*eP*		**P**		**06 58 25.7**	**+1.3**
CUSS	**Cusmapa**	**1.94**	**93**	*eP*		**P**		**06 58 29.5**	**-1.4**
CUSS				*eS*		**S**		**06 58 52.6**	**-1.4**
RBDL	**Robledal**	**2.19**	**87⇑**	*eP*		**P**		**06 58 34.4**	**0.0**
RBDL				*eS*		**S**		**06 59 03.6**	**+3.3**
RTR	**El Retiro**	**2.23**	**93⇓**	*eP*		**P**		**06 58 35.0**	**-0.1**
RTR				*eS*		**S**		**06 59 03.1**	**+1.7**
CCIG	**Comitan**	**2.25**	**355**	*iP*		**P**		**06 58 38.4**	**+3.0**
CCIG				*iS*		**S**		**06 59 11.1**	**+9.2**
SBLS	**San Blas**	**2.26**	**94**	*eP*		**P**		**06 58 34.5**	**-0.9**
SBLS				*eS*		**S**		**06 59 01.2**	**-0.9**
SNJE	**San Jose**	**2.27**	**94**	*eP*		**P**		**06 58 35.3**	**-0.3**
SNJE				*eS*		**S**		**06 59 07.4**	**+4.9**
MTO2	**Montecristo 2**	**2.53**	**81**	*eP*		**P**		**06 58 39.7**	**+0.4**
BOQS	**Boqueron**	**2.60**	**96**	*eP*		**P**		**06 58 39.3**	**-1.0**
BOQS				*eS*		**S**		**06 59 09.9**	**-0.9**
SNET	**Serv Nac Est T**	**2.65**	**97**	*eP*		**P**		**06 58 40.6**	**-0.4**
SNET				*eS*		**S**		**06 59 14.9**	**+2.8**
SNET				*i*				06 59 26.9	
	comp=Z,2μm,1.0s								
LFU	**La Fuente**	**2.76**	**95⇑**	*eP*		**P**		**06 58 42.1**	**-0.4**
SCX	**San Cristobal**	**2.77**	**346**	*iP*		**P**		**06 58 45.8**	**+3.0**
SCX				*iS*		**S**		**06 59 23.5**	**+8.2**
LFRS	**El Faro**	**2.82**	**98**	*eP*		**P**		**06 58 42.7**	**-0.8**
LFRS				*eS*		**S**		**06 59 17.4**	**+0.9**
LBRS	**Las Brisas**	**2.83**	**95⇑**	*eP*		**P**		**06 58 43.0**	**-0.6**
LCBS	**La Ceiba**	**2.90**	**97⇑**	*eP*		**P**		**06 58 43.7**	**-0.9**
LCBS				*eS*		**S**		**06 59 19.5**	**+1.1**
SNVI	**San Vicente**	**3.04**	**97⇓**	*eP*		**P**		**06 58 46.2**	**-0.3**
SNVI				*eS*		**S**		**06 59 23.7**	**+1.7**
VSM	**San Miguel**	**3.61**	**99⇓**	*eP*		**P**		**06 58 54.0**	**-0.6**
CAHU	**Cacacuatique**	**3.63**	**94**	*eP*		**P**		**06 58 54.0**	**-0.8**
CNCH	**Conchagua**	**4.06**	**100**	*eP*		**P**		**06 58 59.9**	**-1.0**
CMIG	**Matias Romero**	**4.16**	**317**	*eP*		**P**		**06 58 59.4**	**-3.0**
CMIG				*iS*		**S**		**06 59 46.4**	**-4.0**
HUIG	**Huatulco**	**4.39**	**294**	*eP*		**P**		**06 58 56.1**	**-9.4**
HUIG				*iS*		**S**		**06 59 45.1**	**-11**
TUIG	**Tuzandepetl**	**4.64**	**329**	*eP*		**P**		**06 59 05.8**	**-3.4**
TUIG				*iS*		**S**		**07 00 00.3**	**-2.1**
PYN	**Poneloya**	**5.06**	**108**	*eP*		**P**		**06 59 14.7**	**-0.3**
LEON	**Leon**	**5.17**	**107⇓**	*eP*		**P**		**06 59 16.5**	**0.0**
CNGN	**Cerro Negro**	**5.32**	**106**	*eP*		**P**		**06 59 18.5**	**-0.1**
EVV	**El Vigia**	**5.49**	**324**	*eP*		**P**		**06 59 17.0**	**-3.9**
OXX	**Oaxaca**	**5.52**	**304**	*iP*		**P**		**06 59 21.2**	**-0.2**
VHO	**Vista Hermosa**	**5.52**	**304**	*eP*		**P**		**06 59 17.0**	**-4.4**
VHO				*iS*		**S**		**07 00 15.2**	**-9.3**
VHO	**Vista Hermosa**	**5.52**	**304**	*eP*		**P**		**06 59 20.6**	**-0.8**
VHO				*eS*		**S**		**07 00 17.9**	**-6.6**
COPN	**Copaltepe**	**5.52**	**109**	*eP*		**P**		**06 59 22.0**	**+0.6**
XAVN	**Gruta Xavier**	**5.78**	**108**	*eP*		**P**		**06 59 26.0**	**+1.0**
MGAN	**Managua**	**5.85**	**108**	*eP*		**P**		**06 59 26.2**	**+0.2**
MGAN				*i*				07 00 50.3	
	comp=E,367nm,0.6s								
TICN	**Ticuantepe**	**5.91**	**109**	*eP*		**P**		**06 59 29.2**	**+2.5**
TEIG	**Tepich**	**7.09**	**29**	P		**P**		**06 59 44.5**	**+1.2**
	comp=E,66nm,0.3s,baz=205,slow=5.9,SNR=46								
TEIG				S		**S**		**07 01 03.7**	**+0.3**
	baz=77,slow=20,SNR=2.3								
TEIG	**Tepich**	**7.09**	**29**	*eP*		**P**		**06 59 44.5**	**+1.2**
POHV	**Veracruz**	**7.17**	**315**	*iP*		**P**		**06 59 45.5**	**+1.1**
IISM	**Ciudad Serdan**	**7.18**	**314**	*iP*		**P**		**06 59 39.5**	**-5.1**
JTS	**JuntasAbangare**	**7.78**	**118**	P		**P**		**06 59 51.4**	**-1.4**
	comp=E,1.5nm,0.3s,baz=310,slow=16,SNR=18								
JTS				S		**S**		**07 01 01.8**	**-19**
	comp=E,2.5nm,0.3s,baz=212,slow=22,SNR=1.8								

JTS Lg 07 01 33.1
comp=E,1.3nm,0.3s,baz=145,slow=23,SNR=2.5
JTS JuntasAbangare 7.78 118 *eP* **P 06 59 52.2 -0.7**
comp=E,0.5nm,0.6s
JCR Jicaral 7.87 121 *eP* **P 06 59 52.0 -2.0**
PPM Popocatepetl 8.14 309 *eP* **P 06 59 53.3 -4.5**
PPM *iS* **S 07 01 24.9 -4.4**
PPM Popocatepetl 8.14 309 *eP* **P 07 00 00.5 +2.7**
PPM *iS* **S 07 01 24.9 -4.4**
ACX Acapulco 8.19 291 *iP* **P 06 59 54.5 -4.1**
YAIG Yautepec 8.36 306 *iP* **P 06 59 56.5 -4.3**
YAIG *eS* **S 07 01 28.5 -6.3**
YAIG Yautepec 8.36 306 *iP* **P 07 00 01.0 +0.1**
YAIG *eS* **S 07 01 28.5 -6.3**
PRS1 Puriscal 8.47 117 *eP* **P 07 00 03.3 +0.8**
CAIG El Cayaco 8.57 292 *eP* **P 06 59 55.6 -8.2**
CAIG *iS* **S 07 01 26.5 -14**
CAIG El Cayaco 8.57 292 *iP* **P 07 00 00.8 -3.0**
UNM Universidad Na 8.71 308 *eP* **P 07 00 11.0 +5.3**
SJS Escuela Geolog 8.72 117 *eP* **P 07 00 06.8 +0.9**
LCR2 La Lucha 2 8.86 118 *eP* **P 07 00 07.4 -0.4**
ICR Volcan Irazu 8.89 116 *eP* **P 07 00 09.4 +1.1**
URSC Urasca 9.01 117 *eP* **P 07 00 10.6 +0.7**
BUS Buena Vista 9.16 118 *eP* **P 07 00 12.0 +0.1**
ZIIG Zihuatanejo 9.83 292 *eP* **P 07 00 17.6 -3.7**
ZIIG Zihuatanejo 9.83 292 *iP* **P 07 00 18.8 -2.5**
ACR Cerro Adams 10.12 121 *eP* **P 07 00 24.9 -0.3**
MOIG Morelia 10.48 304 *iP* **P 07 00 25.3 -4.9**
MOIG *iS* **S 07 02 18.5 -8.7**
MOIG Morelia 10.48 304 *iP* **P 07 00 25.3 -4.9**
MOIG *iS* **S 07 02 28.3 +1.2**
SFJM Santa Fe 12.39 303 *eP* **P 07 00 56.0 +0.1**
DWPF Disney 17.09 33 *eP* **P 07 01 56.2 -0.4**
comp=E,28nm,0.9s
JCT Junction City 17.91 337 *eP* **P 07 02 08.7 +1.9**
comp=E,5.2nm,0.6s
TXAR Lajitas Array 18.71 326 P **P 07 02 17.8 +1.2**
comp=E,0.8nm,0.3s,baz=157,slow=12,SNR=116
TXAR ScP 07 10 10.9
comp=E,0.0nm,0.3s,baz=146,slow=4.5,SNR=3.5
TXAR LR LR 07 10 42.0
comp=E,125nm,19.2s,baz=150,slow=40
OTAV Otavalo 19.13 135 P **P 07 02 24.9 +3.4**
LRAL Lakeview Retre 19.45 13 *eP* **P 07 02 25.0 +0.1**
comp=E,12nm,0.6s
ROSC El Rosal 19.60 116 P **P 07 02 27.4 +0.7**
comp=E,0.9nm,0.3s,baz=131,slow=4.4,SNR=11
MIAR Mount Ida 20.48 356 *eP* **P 07 02 34.2 -1.6**
comp=E,14nm,0.6s
OXF Oxford 20.52 6 *eP* **P 07 02 34.8 -1.4**
comp=E,18nm,0.6s
UALR University of 20.66 359 *eP* **P 07 02 37.3 -0.4**
comp=E,17nm,0.6s
PLAL Pickwick Lake 21.15 9 *eP* **P 07 02 42.1 -0.6**
comp=E,5.5nm,0.6s,mb4.1
HBAR Harrisburg 21.47 3 *eP* **P 07 02 46.5 +0.7**
MNTX Cornudas Mount 21.47 327 *eP* **P 07 02 46.0 +0.1**
comp=E,2.1nm,0.8s,mb3.5
SDV Santo Domingo 21.49 101 P **P 07 02 42.9 -3.3**
comp=E,3.3nm,0.7s,mb3.8,baz=280,slow=7.1,SNR=6.6
WMOK Wichita Mounta 21.53 344 *eP* **P 07 02 46.1 -0.4**
comp=E,13nm,0.8s,mb4.4
WMOK *eS* **S 07 06 43.0 +6.0**
SWET Sewanee 21.78 13 *eP* **P 07 02 48.8 -0.2**
COW Cow Castle Cre 21.81 26 *eP* **P 07 02 51.0 +1.7**
GLAT Glass 22.28 6 *eP* **P 07 02 53.2 -0.7**
WVT Waverly 22.32 9 *eP* **P 07 02 53.8 -0.5**
comp=E,12nm,0.6s,mb4.5
CPCT Cooper Cave 22.35 16 *eP* **P 07 02 54.7 +0.1**
CPCT *e* 07 03 13.2
JSC Jenkinsville 22.36 24 *eP* **P 07 02 55.0 +0.3**
SIUC Southern Illin 23.71 5 *eP* **P 07 03 07.5 -0.4**
comp=E,94nm,0.8s,mb5.3
CCM Cathedral Cave 23.94 1 *eP* **P 07 03 09.6 -0.5**
comp=E,10.0nm,0.6s,mb4.4
USIN University of 24.14 8 *eP* **P 07 03 11.1 -1.0**
comp=E,43nm,0.6s,mb5.1
SLM Saint Louis 24.56 3 *eP* **P 07 03 15.4 -0.8**
comp=E,48nm,0.6s,mb5.2
ANMO Albuquerque 24.61 330 *eP* **P 07 03 18.4 +1.7**
comp=E,16nm,0.7s,mb4.7
WCI Wyandotte Cave 24.62 11 *eP* **P 07 03 15.7 -1.1**
comp=E,22nm,0.6s,mb4.9
TUC Tucson 25.05 320 *eP* **P 07 03 22.5 +1.5**
comp=E,3.0nm,0.7s,mb3.9
SJG San Juan 25.10 77 LR LR 07 12 35.3
comp=E,139nm,20.7s,MS3.5,baz=264,slow=35
PWV Princeton 25.16 21 *eP* **P 07 03 21.5 -0.4**
ELN Prospectdale 25.17 21 *eP* **P 07 03 21.5 -0.4**
KSU1 Kansas State U 25.31 351 *eP* **P 07 03 23.2 -0.2**
FWV Forest Hill 25.46 21 *eP* **P 07 03 23.8 -1.0**
BLO Bloomington 25.50 10 *eP* **P 07 03 24.1 -1.0**
comp=E,24nm,0.6s,mb4.9
ACSO Alum Creek Sta 27.26 15 *eP* **P 07 03 39.2 -2.1**
comp=E,13nm,0.6s,mb4.6
ACSO *e* 07 04 19.6
WUAZ Wupatki 27.63 324 *eP* **P 07 03 46.1 +1.3**
comp=E,8.6nm,0.9s,mb4.4
PV01 Paradox Valley 28.18 331 *eP* **P 07 03 51.3 +1.6**
ISCO Idaho Springs 28.35 337 *eP* **P 07 03 52.7 +1.5**
comp=E,2.6nm,0.6s,mb4.0
ISCO *e*PcP PcP 07 07 06.0 +3.0
PV10 Paradox Valley 28.59 331 *eP* **P 07 03 53.7 +0.3**
SSPA Standing Stone 29.22 22 *eP* **P 07 03 56.9 -2.0**
comp=E,3.3nm,0.6s,mb4.2
NEN Nelson 29.78 320 *eP* **P 07 04 05.1 +1.2**
SRU San Rafael 29.88 330 *eP* **P 07 04 05.0 +0.2**
MSU Marysvale 30.26 327 *eP* **P 07 04 09.6 +1.5**
MSU *e*PcP PcP 07 07 10.6 +2.7
MVU Marysvale 30.27 327 *eP* **P 07 04 09.6 +1.4**
comp=E,4.6nm,0.8s,mb4.3
MVU *e*PcP PcP 07 07 08.6 +0.7
MPU Maple Canyon 31.12 330 *eP* **P 07 04 16.9 +1.1**
DAU Daniels Canyon 31.25 331 *eP* **P 07 04 18.4 +1.4**
CTU Camp Tracy 31.71 331 *eP* **P 07 04 22.1 +1.3**
RSSD Black Hills 31.73 343 *eP* **P 07 04 20.2 -0.8**
comp=E,3.0nm,0.6s,mb4.3
RSSD *e*PcP PcP 07 07 12.4 +0.7
HWUT Hardware Ranch 32.34 332 *eP* **P 07 04 27.0 +0.6**
comp=E,11nm,0.9s,mb4.7
HWUT *e*PcP PcP 07 07 13.4 0.0
PDAR Pinedale Array 32.42 335 P **P 07 04 27.5 +0.4**
comp=E,1.5nm,0.6s,mb4.0,baz=139,slow=9.2,SNR=13
PDAR PcP PcP 07 07 14.5 +0.9
comp=E,1.4nm,0.5s,baz=154,slow=5.3,SNR=9.7
SADO Sadowa 32.52 17 P **P 07 04 26.0 -1.9**
comp=E,2.4nm,0.4s,mb4.5,baz=179,slow=7.2,SNR=3.5
HVU Hansel Valley 33.04 331 *eP* **P 07 04 33.7 +1.2**
REDW Red Top Meadow 33.44 335 *eP* **P 07 04 37.0 +1.0**
NCB Newcomb 33.47 23 *eP* **P 07 04 34.0 -2.2**
comp=E,4.9nm,0.7s,mb4.5
KSWY Kelly School 33.57 335 *eP* **P 07 04 38.1 +1.1**
NVAR Mina Array Bea 33.69 321 P **P 07 04 40.1 +2.0**
comp=E,12nm,0.8s,mb4.9,baz=126,slow=9.2,SNR=62
NVAR PcP PcP 07 07 17.6 +0.5
comp=E,1.9nm,0.7s,baz=108,slow=4.0,SNR=5.8
BMN Battle Mountai 34.36 325 *eP* **P 07 04 45.5 +1.6**
comp=E,7.5nm,0.7s,mb4.7
QLMT Earthquake Lak 34.89 335 *eP* **P 07 04 50.4 +2.1**
HLID Hailey 35.18 331 *eP* **P 07 04 51.7 +0.8**
comp=E,7.9nm,0.8s,mb4.7
HLID *e*PcP PcP 07 07 23.9 +2.5
MCMT McKenzie Canyo 35.47 334 *eP* **P 07 04 55.1 +1.8**
BOZ Bozeman (W) 35.64 336 *eP* **P 07 04 55.3 +0.6**
comp=E,7.6nm,1.0s,mb4.6
ULM Lac du Bonnet 36.27 356 P **P 07 04 58.0 -1.9**
comp=E,1.9nm,0.7s,mb4.2,baz=183,slow=11,SNR=5.2
ULM PcP PcP 07 07 23.2 -1.3
comp=E,2.6nm,0.5s,baz=176,slow=3.1,SNR=4.3
ULM LR LR 07 24 37.3
comp=E,121nm,18.7s,MS3.7,baz=244,slow=44
ULM Lac du Bonnet 36.27 356 P **P 07 04 58.0 -1.9**
ULM PcP PcP 07 07

DPW	**Davenport**	**40.17**	**332**	*e*P	**P**	**07 05 33.6**	**+1.0**
LON	**Longmire**	**41.10**	**329**	*e*P	**P**	**07 05 41.2**	**+1.0**
NLW	**Nelson Butte**	**41.30**	**331**	*e*P	**P**	**07 05 43.2**	**+1.3**
RPW	**Rockport**	**42.12**	**331**	*e*P	**P**	**07 05 48.8**	**+0.2**
GNW	**Green Mountain**	**42.16**	**329**	*e*P	**P**	**07 05 49.0**	**+0.1**
OCWA	**Octopus Mounta**	**42.97**	**328**	*e*P	**P**	**07 05 57.2**	**+1.7**
	comp=E,5.8nm,0.6s,mb4.5						
PGC	**Sidney**	**43.20**	**330**	*e*P	**P**	**07 05 58.1**	**+0.7**
	comp=E,16nm,0.6s,mb4.9						
SCHQ	**Schefferville**	**45.18**	**20**	P	**P**	**07 06 11.1**	**-2.1**
	comp=E,12nm,0.8s,mb4.8,baz=206,slow=4.6,SNR=8.4						
SCHQ				PcP	PcP	07 07 51.8	-1.5
	comp=E,3.8nm,0.6s,baz=123,slow=19,SNR=6.2						
SCHQ				LR	LR	07 26 03.7	
	comp=E,387nm,19.1s,MS4.3,baz=308,slow=37						
SCHQ	**Schefferville**	**45.18**	**20**	*e*P	**P**	**07 06 11.1**	**-2.1**
	comp=E,17nm,0.9s,mb4.9						
SCHQ				*e*PcP	PcP	07 07 51.8	-1.5
YKA	**Yellowknife Ar**	**51.01**	**347**	P	**P**	**07 06 57.5**	**-1.0**
	comp=E,8.5nm,0.6s,mb4.8,baz=149,slow=7.5,SNR=54						
YKA				PcP	PcP	07 08 13.3	-0.9
	comp=E,3.3nm,0.7s,baz=150,slow=3.7,SNR=13						
YKA	**Yellowknife Ar**	**51.01**	**347**	P	**P**	**07 06 57.5**	**-1.0**
YKA				PcP	PcP	07 08 13.3	-0.8
YKW3	**Yellowknife Ar**	**51.07**	**347**	*e*P	**P**	**07 06 57.9**	**-1.1**
YKW3				*e*PcP	PcP	07 08 13.9	-0.5
CPUP	**Villa Florida**	**52.37**	**140**	P	**P**	**07 07 05.0**	**-4.2**
	comp=E,1.6nm,0.8s,mb4.0,baz=3.3,slow=6.6,SNR=3.4						
CPUP				LR	LR	07 30 38.7	
	comp=E,138nm,19.6s,MS4.0,baz=130,slow=38						
BDFB	**Brasilia**	**52.49**	**123**	P	**P**	**07 07 07.5**	**-2.7**
	comp=E,1.9nm,0.7s,mb4.1,baz=314,slow=7.4,SNR=3.0						
DLBC	**Dease Lake**	**52.65**	**336**	*e*P	**P**	**07 07 12.0**	**+1.2**
PLCA	**Paso Flores**	**57.98**	**161**	LR	LR	07 26 40.3	
	comp=E,185nm,19.7s,MS4.2,baz=88,slow=30						
INK	**Inuvik**	**60.43**	**344**	*e*P	**P**	**07 08 05.5**	**-0.7**
	comp=E,9.6nm,0.6s,mb5.0						
EYAK	**Cordova Ski Ar**	**60.49**	**333**	*e*P	**P**	**07 08 07.0**	**+0.4**
RES	**Resolute Bay**	**60.67**	**359**	*e*P	**P**	**07 08 05.1**	**-2.7**
	comp=E,4.8nm,0.6s,mb4.8						
SML	**Sawmill**	**62.16**	**333**	*e*P	**P**	**07 08 17.2**	**-0.7**
SML				*e*	pP	07 08 31.9	-0.1
PMR	**Palmer**	**62.42**	**333**	*e*P	**P**	**07 08 19.8**	**+0.2**
PMS	**Palmer South**	**62.47**	**333**	*e*P	**P**	**07 08 19.6**	**-0.4**
KDAK	**Kodiak Island**	**62.73**	**328**	*e*P	**P**	**07 08 21.2**	**-0.5**
	comp=E,12nm,0.6s,mb5.2						
ILAR	**Eielson Array**	**62.84**	**337**	P	**P**	**07 08 21.9**	**-0.5**
	comp=E,17nm,1.1s,mb5.1,baz=109,slow=5.8,SNR=44						
ILAR				PcP	PcP	07 08 59.5	-0.6
	comp=E,1.1nm,0.6s,baz=127,slow=1.7,SNR=5.1						
MCK	**McKinley**	**63.20**	**335**	*e*P	**P**	**07 08 24.4**	**-0.4**
	comp=E,1.8nm,0.6s,mb4.4						
COLA	**College**	**63.25**	**337**	*e*P	**P**	**07 08 24.5**	**-0.7**
SPU	**Mount Spurr**	**63.58**	**332**	*e*P	**P**	**07 08 26.8**	**-0.4**
RSO	**Redoubt South**	**63.66**	**331**	*e*P	**P**	**07 08 27.8**	**0.0**
SVW	**Sparrevohn**	**65.20**	**331**	*e*P	**P**	**07 08 34.9**	**-2.9**
KBS	**Kingsbay**	**78.97**	**11**	*e*P	**P**	**07 09 59.3**	**0.0**
ESDC	**Sonseca Array**	**79.65**	**52**	P	**P**	**07 10 01.2**	**-2.5**
	comp=E,0.4nm,0.3s,mb3.8,baz=323,slow=6.4,SNR=4.7						
SPB4	**Spitsbergen Ar**	**80.05**	**11**	*e*P	**P**	**07 10 04.5**	**-0.5**
BILL	**Bilibino**	**81.46**	**338**	*e*P	**P**	**07 10 13.3**	**+0.6**
	comp=E,32nm,1.1s,mb5.2						
NB2	**NORSAR Subarra**	**84.09**	**28**	P	**P**	**07 10 26.1**	**-0.1**
	comp=E,1.7nm,0.7s,mb4.3,baz=267,slow=4.5						
NOA	**NORSAR Array B**	**84.09**	**28**	P	**P**	**07 10 25.6**	**-0.5**
	comp=E,1.9nm,0.8s,mb4.3,baz=289,slow=5.4,SNR=6.2						
NOA				LR	LR	07 44 41.2	
	comp=E,29nm,20.4s,MS3.6,baz=235,slow=33						
DBIC	**Dimbokro**	**85.59**	**84**	P	**P**	**07 10 33.0**	**-1.8**
	comp=E,4.9nm,1.2s,mb4.6,baz=154,slow=22,SNR=4.1						
DBIC	**Dimbokro**	**85.59**	**84**	*e*P	**P**	**07 10 37.7**	**+3.0**
ARCES	**ARCESS Array B**	**86.09**	**18**	P	**P**	**07 10 35.1**	**-0.7**
	comp=E,1.5nm,0.6s,mb4.4,baz=288,slow=3.8,SNR=18						
ARCES				LR	LR	07 48 10.9	
	comp=E,89nm,21.3s,MS4.1,baz=124,slow=35						
CLL	**Collm**	**88.26**	**37**	P	**P**	**07 10 47.0**	**+0.2**
TIXI	**Tiksi**	**90.24**	**348**	*e*P	**P**	**07 10 55.7**	**0.0**
	comp=E,17nm,0.1s						
FINES	**FINESS Array B**	**90.45**	**25**	P	**P**	**07 10 55.4**	**-1.4**
	comp=E,1.7nm,0.9s,mb4.4,baz=225,slow=5.4,SNR=3.0						
FINES				LR	LR	07 52 12.9	
	comp=E,41nm,18.7s,MS3.9,baz=14,slow=36						
CN2	**Changchun**	**113.09**	**331**	*e*PKP	PKPdf	07 16 31.3	-0.3
MKAR	**Makanchi Array**	**119.24**	**5**	PKP	PKPdf	07 16 43.2	-0.2
	comp=E,0.9nm,0.7s,baz=333,slow=2.7,SNR=7.8						
LBTB	**Lobatse**	**120.56**	**111**	*e*PKPdf	PKPdf	07 16 49.7	+3.1
WMQ	**Urumqi**	**122.43**	**0**	*e*PKP	PKPdf	07 16 50.9	+1.2
SSE	**Sheshan**	**124.99**	**325**	⇑PKP	PKPdf	07 16 51.8	-3.3
NJ2	**Nanjing**	**125.51**	**328**	*e*PKP	PKPdf	07 17 02.4	+6.4
STKA	**Stephens Creek**	**128.12**	**240**	PKP	PKPdf	07 17 00.8	-0.3
	comp=E,2.0nm,0.8s,baz=311,slow=3.4,SNR=5.9						
ENH	**Enshi**	**131.36**	**335**	*e*PKPdf	PKPdf	07 17 10.9	+3.6
WRAB	**Tennant Creek**	**135.45**	**256**	PKPdf	PKPdf	07 17 16.6	+1.4
WRA	**Warramunga Arr**	**135.46**	**256**	PKP	PKPdf	07 17 15.6	+0.4
	comp=E,0.4nm,0.5s,baz=86,slow=2.9,SNR=7.4						
ASAR	**Alice Springs**	**135.73**	**250**	PKP	PKPdf	07 17 16.0	+0.4
	comp=E,0.4nm,0.6s,baz=86,slow=2.4,SNR=4.7						
GKN	**Gorkha**	**138.09**	**5**	*e*P	PKPdf	07 17 22.7	+2.9
	comp=E,2.9nm,0.2s						
KOLN	**Koldanda**	**138.23**	**6**	*e*P	PKPdf	07 17 23.9	+3.8
	comp=E,3.3nm,0.5s						
GUN	**Gumba**	**138.26**	**3**	*e*P	PKPdf	07 17 22.9	+2.8
	comp=E,6.6nm,0.6s						
KKN	**Kakani**	**138.34**	**4**	*e*P	PKPdf	07 17 22.8	+2.5
DMN	**Daman**	**138.51**	**4**	*e*P	PKPdf	07 17 23.1	+2.5
	comp=E,6.9nm,0.6s						
PKI	**Pulchoki**	**138.57**	**4**	*e*P	PKPdf	07 17 23.1	+2.4
	comp=E,7.5nm,0.6s						
CHG	**Chiang Mai**	**145.65**	**342**	⇑P	PKPdf	07 17 34.4	+1.0
	comp=E,11nm,0.9s						
CM31	**Chiang Mai Arr**	**145.99**	**341**	*e*PKPbc	PKPbc	07 17 36.7	+1.8
CMAR	**Chiang Mai Arr**	**145.99**	**341**	PKPbc	PKPbc	07 17 36.3	+1.3
	comp=E,18nm,0.7s,baz=335,slow=3.5,SNR=62						
BDT	**Bhumibol Dam**	**147.10**	**340**	P	PKPdf	07 17 38.0	+2.1
	comp=E,13nm,0.8s						

IDC 07 06:58:05.0±15.0, 54.82S×135.15W, mb4.3/2, mb1 4.6/2, mb1mx3.9/13, MS3.6/3, Ms1 3.6/3, ms1mx3.4/16, Error ellipse: s-maj=746.0km s-min=221.2km az=141.0, Pacific-Antarctic Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**35.98**	**277**	LR		LR	LR	07 15 24.7	
	comp=Z,262nm,20.1s,baz=96,slow=25								
RAR	**Rarotonga**	**38.35**	**321**	LR		LR	LR	07 19 33.8	
	comp=Z,13nm,18.3s,baz=139,slow=34								
STKA	**Stephens Creek**	**60.90**	**255**	LR		LR	LR	07 30 31.8	
	comp=Z,115nm,18.9s,baz=26,slow=32								
ASAR	**Alice Springs**	**71.54**	**255**	P		P	P	07 09 27.8	-1.8
	2.0nm,0.7s,baz=139,slow=6.8,SNR=14								
WRA	**Warramunga Arr**	**74.24**	**258**	P		P	P	07 09 44.0	-1.5
	2.4nm,0.7s,baz=143,slow=5.3,SNR=14								
MKAR	**Makanchi Array**	**155.27**	**267**	PKPab		PKPab	PKPab	07 18 23.8	-2.5
	0.6nm,0.6s,baz=108,slow=4.6,SNR=4.7								

IDC 07 07:12:14.3±4.2, 22.21S×148.24E, mb1 3.5/4, mb1mx3.4/11, ML3.2/4, Error ellipse: s-maj=43.2km s-min=22.9km az=78.0, Queensland

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**2.81**	**318**	Pn		Pn	Pn	07 13 01.8	+0.5
	2.7nm,0.3s,baz=133,slow=17,SNR=29								
CTA				Pg		Pg	Pg	07 13 06.4	-3.9
	4.4nm,0.3s,baz=138,slow=17,SNR=40								
CTA				Lg				07 13 43.0	
	10.0nm,0.3s,baz=227,slow=20,SNR=4.1								
CTA				Rg				07 13 55.9	
	70nm,0.5s,baz=222,slow=22,SNR=7.9								
STKA	**Stephens Creek**	**11.30**	**210**	Pn		P	P	07 14 55.6	-4.6
	0.2nm,0.3s,baz=34,slow=13,SNR=5.7								
STKA				Lg				07 18 16.3	
	0.1nm,0.3s,baz=115,slow=20,SNR=1.8								
WRA	**Warramunga Arr**	**13.17**	**277**	Pn		P	P	07 15 21.0	-4.4
	0.1nm,0.3s,baz=97,slow=12,SNR=9.4								
WRA				Lg				07 19 10.8	
	0.2nm,0.3s,baz=101,slow=27,SNR=5.8								
ASAR	**Alice Springs**	**13.29**	**261**	Pn		P	P	07 15 25.3	-1.6
	0.1nm,0.3s,baz=86,slow=15,SNR=4.5								
ASAR				Lg				07 19 17.6	
	0.1nm,0.3s,baz=80,slow=25,SNR=3.7								

*NEIC **07** 07:25:17.0, 33.50S×71.10W, h68km, MD3.4(GUC), After GUC.*

GUC 07 07:25:17.0±0.7, 33.50S×71.10W, h68km±2km, MD3.4, ML3.7, 19C-5D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
TACH	**Talagante**	**0.20**	**137**	⇓	*i*	P	P	07 25 27.5	+0.2
RCDM	**Rinconada Maip**	**0.25**	**87**	*e*P		P	P	07 25 27.8	+0.1
RCDM					*i*	S	S	07 25 35.7	+0.1
RCDM					AMP			07 25 36.2	
	comp=N,21μm,0.1s								
PUEX	**Pudahuel**	**0.29**	**78**	*i*	P	P	P	07 25 28.0	0.0
PUEX				*e*	S	S	S	07 25 36.5	+0.5
PUEX					AMP			07 25 37.6	
	comp=E,8μm,0.4s								
SAN	**Santiago**	**0.37**	**82**	*i*	P	P	P	07 25 28.9	+0.3
SAN				*i*	S	S	S	07 25 37.7	+0.6
SAN					AMP			07 25 38.7	
	comp=E,7μm,0.4s								
LCCH	**Las Cruces**	**0.39**	**274**	⇑	*i*	P	P	07 25 28.8	+0.1
STL	**Santa Lucia**	**0.39**	**80**	⇑	*i*	P	P	07 25 29.0	+0.3
STL					*i*	S	S	07 25 38.0	+0.7
STL					AMP			07 25 38.7	
	comp=E,4μm,0.2s								
ANTU	**Antumapu**	**0.40**	**100**	⇑	*i*	P	P	07 25 29.3	+0.5
ANTU					*i*	S	S	07 25 38.4	+0.9
ANTU					AMP			07 25 38.8	
	comp=N,10μm,0.4s								
LLCH	**Llolleo**	**0.42**	**105**	*i*		P	P	07 25 27.8	-1.1
LLCH				*i*		S	S	07 25 36.8	-1.0
FSR	**Penalolen**	**0.48**	**87**	*i*	P	P	P	07 25 30.0	+0.5
FSR				*i*	S	S	S	07 25 39.9	+1.1
FSR					AMP			07 25 43.3	
	comp=E,4μm,0.1s								
CLCH	**Cerro Calan**	**0.48**	**77**	⇑	*i*	P	P	07 25 30.1	+0.6
CLCH				*i*		S	S	07 25 39.8	+1.0
CLCH					AMP			07 25 41.0	
	comp=N,3μm,0.5s								
CLCH					AMP			07 25 41.7	
	comp=N,3μm,0.4s								
PEL	**Peldehue**	**0.50**	**44**	⇑	*i*	P	P	07 25 30.4	+0.7
PEL					*i*	S	S	07 25 39.9	+0.8
PEL					AMP			07 25 40.5	
	comp=N,8μm,0.2s								
PCH	**Pirque**	**0.51**	**104**	⇓	*i*	P	P	07 25 30.1	+0.4
PCH					*i*	S	S	07 25 39.9	+0.7
ROCH	**El Roble**	**0.54**	**8**	⇑	*i*	P	P	07 25 30.6	+0.5
ROCH					*i*	S	S	07 25 41.4	+1.7
CHCH	**Chadas Angostu**	**0.57**	**139**	⇓	*i*	P	P	07 25 30.6	+0.1
IHA	**Instituto Hidr**	**0.66**	**316**	*e*P		P	P	07 25 31.5	+0.1
IHA					*i*	S	S	07 25 42.5	+0.5
FCH	**Farellones**	**0.70**	**76**	⇑	*i*	P	P	07 25 32.8	+0.9
FCH				⇑	*i*	P		07 25 32.8	
FCH					*i*	S	S	07 25 44.4	+1.4
FCH					AMP			07 25 45.0	
	comp=E,9μm,0.3s								
FCH	**Farellones**	**0.70**	**76**	⇑	*i*	P	P	07 25 32.8	+0.9
CACH	**El Canelo**	**0.74**	**146**	⇑	*i*	P	P	07 25 33.0	+0.6
CACH					*i*	S	S	07 25 45.4	+1.6
LMEL	**Las Melosas**	**0.82**	**115**	⇑	*i*	P	P	07 25 34.0	+0.7
LMEL					*i*	S	S	07 25 46.8	+1.2
LMEL					AMP			07 25 48.8	
	comp=N,3μm,0.2s								
JACH	**Jahuel**	**0.92**	**28**	⇑	*i*	P	P	07 25 35.1	+0.4
JACH					*i*	S	S	07 25 48.7	+1.0
CICH	**Cipreses**	**0.99**	**145**	⇑	*i*	P	P	07 25 36.0	+0.4
CICH					*i*	S	S	07 25 50.2	+0.9
PACH	**Papudo**	**1.00**	**344**	⇓	*i*	P	P	07 25 35.8	+0.1
SFDO	**San Fernando**	**1.11**	**176**	⇑	*i*	P	P	07 25 37.0	-0.1
PTCH	**Petorca**	**1.25**	**7**	⇑	*i*	P	P	07 25 39.4	+0.5
PTCH					*i*	S	S	07 25 55.7	+0.6
PTCH					AMP			07 25 56.1	
	comp=N,2μm,0.2s								
ILCH	**Illapel**	**1.86**	**358**	⇓	*i*	P	P	07 25 47.8	+0.4
ILCH					*i*	S	S	07 26 10.7	+1.0
ILCH					AMP			07 26 11.6	
	comp=E,970nm,0.2s								
TALC	**Talca**	**1.94**	**193**	⇑	*i*	P	P	07 25 48.2	-0.2
TALC					*i*	S	S	07 26 12.1	+0.5
SJC	**San Javier**	**2.19**	**193**	⇑	*i*	P	P	07 25 31.7	-20
SJC					*i*	S	S	07 25 42.8	-35
SJC					AMP			07 25 43.0	
	comp=N,6μm,0.2s								
CMCH	**Combarbala**	**2.32**	**2**	⇑	*i*	P	P	07 25 53.5	-0.3
CMCH					*i*	S	S	07 26 21.2	0.0
OVCH	**Ovalle**	**2.89**	**358**	*i*		P	P	07 26 01.5	-0.3
OVCH				*i*		S	S	07 26 34.4	-1.0
OVCH					AMP			07 26 42.5	
	comp=N,174nm,0.2s								
TLL	**Tololo Astrono**	**3.33**	**4**	⇑	*i*	P	P	07 26 07.9	-0.1
TLL					*i*	S	S	07 26 46.4	-0.3
TLL					AMP			07 26 48.7	
	comp=N,150nm,0.5s								

*CASC **07** 07:33:24.7±2.3, 12.34N×87.31W, h105km±11km, MD4.0, ML3.7*

ISC 07 07:33:24.4±0.5, 12.2N±0.1×87.37W±0.08, h101km±12km, n33, σ0°94/52, 6C-3D, Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
PYN	**Poneloya**	**0.37**	**67**	⇓	*e*	P	**P**	**07 33 40.6**	**+1.0**
LEON	**Leon**	**0.50**	**69**	⇓	*e*	P	**P**	**07 33 40.9**	**+0.4**
LEON					*e*	S	**S**	**07 33 52.2**	**-0.4**
CRIN	**San Cristobal**	**0.56**	**34**	*e*		P	**P**	**07 33 41.2**	**+0.3**
CRIN					*e*	S	**S**	**07 33 54.6**	**+1.3**
TEL3	**Telica 3**	**0.61**	**57**	*e*		P	**P**	**07 33 41.7**	**+0.4**
CNGN	**Cerro Negro**	**0.71**	**68**	⇓	*e*	P	**P**	**07 33 41.8**	**-0.4**
CNGN					*e*	S	**S**	**07 33 57.3**	**+1.8**
COPN	**Copaltepe**	**0.77**	**94**	*e*		P	**P**	**07 33 42.2**	**+0.5**
COPN					*e*	S	**S**	**07 33 56.0**	**-0.4**
MOMJ	**Momotombo**	**0.83**	**78**	⇓	*e*	P	**P**	**07 33 43.2**	**-0.3**
MOMJ					*e*	S	**S**	**07 33 56.0**	**-1.6**
XAVN	**Gruta Xavier**	**1.03**	**95**	⇑	*e*	P	**P**	**07 33 45.8**	**+0.3**
XAVN					*e*	S	**S**	**07 33 59.8**	**-1.5**
MGAN	**Managua**	**1.10**	**95**	*e*		P	**P**	**07 33 45.8**	**-0.6**
MGAN					*e*	S	**S**	**07 34 03.2**	**+0.4**
MGAN					*i*			07 34 03.4	
	comp=N,1μm,0.3s								
CNCH	**Conchagua**	**1.13**	**337**	*e*		P	**P**	**07 33 46.5**	**-0.2**
CNCH					*e*	S	**S**	**07 34 03.7**	**+0.3**
TICN	**Ticuantepe**	**1.13**	**100**	⇓	*e*	P	**P**	**07 33 46.8**	**+0.1**
TICN					*e*	S	**S**	**07 34 04.1**	**+0.6**
WILN	**Americas 2**	**1.16**	**94**	*e*		S	**S**	**07 34 04.6**	**+0.5**
MASN	**Masaya**	**1.22**	**102**	*e*		P	**P**	**07 33 48.1**	**+0.3**
COFN	**Cofrada**	**1.24**	**94**	⇓	*e*	P	**P**	**07 33 47.3**	**-0.7**
APON	**Apoyo**	**1.32**	**104**	⇓	*e*	P	**P**	**07 33 49.0**	**+0.1**
APON					*e*	S	**S**	**07 34 06.6**	**-0.7**
PYTN	**Playitas**	**1.32**	**77**	*e*		P	**P**	**07 33 47.9**	**-1.1**
BLLM	**Bellamira**	**1.47**	**325**	*e*		P	**P**	**07 33 50.8**	**+0.1**
BLLM					*e*	S	**S**	**07 34 14.4**	**+4.1**
CONN	**Concepcion**	**1.84**	**111**	*e*		P	**P**	**07 33 55.3**	**-0.1**
LCBS	**La Ceiba**	**2.11**	**312**	*e*		P	**P**	**07 33 58.8**	**-0.1**
LFRS	**El Faro**	**2.15**	**310**	*e*		P	**P**	**07 33 59.4**	**-0.1**
LFRS					*e*	S	**S**	**07 34 24.8**	**-0.9**
CRZC	**La Cruz**	**2.16**	**126**	*e*		S	**S**	**07 34 26.7**	**+0.8**
LFU	**La Fuente**	**2.27**	**312**	⇓	*e*	P	**P**	**07 34 02.1**	**+1.0**
LFU					*e*	S	**S**	**07 34 27.9**	**-0.6**
BOQS	**Boqueron**	**2.38**	**309**	*e*		P	**P**	**07 34 03.6**	**+0.9**
BOQS					*e*	S	**S**	**07 34 31.4**	**+0.1**
SBLS	**San Blas**	**2.71**	**306**	*e*		P	**P**	**07 34 07.4**	**+0.2**
SBLS					*e*	S	**S**	**07 34 37.3**	**-2.0**
RTR	**El Retiro**	**2.76**	**307**	*e*		P	**P**	**07 34 08.2**	**+0.3**
RTR					*e*	S	**S**	**07 34 39.9**	**-0.7**
CUSS	**Cusmapa**	**3.01**	**304**	*e*		P	**P**	**07 34 11.5**	**+0.2**
JCR	**Jicaral**	**3.25**	**137**	*e*		P	**P**	**07 34 15.6**	**+1.1**
CGA2	**Cerro Gallo 2**	**3.61**	**127**	*e*		P	**P**	**07 34 21.0**	**+1.6**
CGA2					*e*	S	**S**	**07 35 00.7**	**-0.5**
PRS1	**Puriscal**	**3.75**	**126**	*e*		P	**P**	**07 34 21.4**	**+0.1**
PRS1					*e*	S	**S**	**07 35 02.8**	**-1.9**
LAJ	**Bijagual**	**3.97**	**126**	*e*		P	**P**	**07 34 22.2**	**-2.2**
LCR2	**La Lucha 2**	**4.13**	**127**	*e*		P	**P**	**07 34 27.9**	**+1.2**
LCR2					*e*	S	**S**	**07 35 11.4**	**-2.8**
URSC	**Urasca**	**4.26**	**124**	*e*		P	**P**	**07 34 28.6**	**+0.2**
BUS	**Buena Vista**	**4.44**	**127**	*e*		P	**P**	**07 34 33.4**	**+2.6**

*IDC **07** 07:44:24.2±8.3, 7.16S×123.92E, h288km±97km, mb3.4/3, mb1 3.4/6, mb1mx3.3/15, MS2.9/1, Ms1 2.9/1, ms1mx2.7/10, Error ellipse: s-maj=136.0km s-min=27.0km az=51.0*
*NEIC **07** 07:44:34.5±0.8, 7.94S×123.38E, h425km, Error ellipse: s-maj=51.0km s-min=11.7km az=59.0*

ISC 07 07:44:23.5±0.9, 7.1S±0.2×124.0E±0.3, h300km, n9, σ0°32/10, mb3.7/3, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**11.02**	**172**	P		P	**P**	**07 46 55.0**	**-0.1**
	0.3nm,0.3s,baz=20,slow=20,SNR=3.5								
FITZ				LR		LR	LR	07 51 52.6	
	comp=Z,61nm,18.1s,baz=5.9,slow=41								
WRAB	**Tennant Creek**	**16.21**	**143**	*e*P		P	**P**	**07 47 56.5**	**0.0**
WRA	**Warramunga Arr**	**16.21**	**143**	P		P	**P**	**07 47 56.5**	**-0.1**
	0.2nm,0.3s,baz=315,slow=12,SNR=11								
WB2	**Warramunga Ar**	**16.22**	**143**	*e*P		P	**P**	**07 47 56.6**	**0.0**
WB2				*e*S		S	**S**	**07 50 56.3**	**+9.0**
AS12	**Alice Springs**	**19.00**	**151**	*e*P		P	**P**	**07 48 25.1**	**0.0**
	2.6nm,1.0s								
AS12				*i*				07 48 28.8	
ASAR	**Alice Springs**	**19.00**	**151**	P		P	**P**	**07 48 25.2**	**+0.1**
	0.5nm,0.3s,baz=328,slow=12,SNR=19								
STKA	**Stephens Creek**	**29.59**	**149**	P		P	**P**	**07 50 03.6**	**+0.1**
	0.7nm,0.4s,mb3.5,baz=323,slow=10,SNR=4.2								
MKAR	**Makanchi Array**	**65.20**	**330**	P		P	**P**	**07 54 35.5**	**+0.6**
	0.6nm,0.5s,mb3.5,baz=144,slow=8.2,SNR=10.0								
ZAL	**Zalesovo**	**69.19**	**336**	P		P	**P**	**07 54 58.9**	**-0.6**
	1.1nm,0.4s,mb4.0,baz=238,slow=6.3,SNR=3.3								

*NEIC **07** 07:53:27.5±0.4, 70.97N×6.87W, h10km, ML3.5(BER), Error ellipse: s-maj=7.9km s-min=4.0km az=186.0*
*NAO **07** 07:53:28.7±1.6, 71.10N×7.06W*
*BER **07** 07:53:29.5±0.7, 71.18N×7.15W, h5km±13km, MD3.0, ML3.5*

ISC 07 07:53:26.2±2.6, 71.02N±0.08×6.7W±0.5, h20km±47km, n15, σ0°71/16, 3C, Jan Mayen Island region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JNE	**Jan Mayen East**	**0.52**	**267**	⇑	*i*	P	**Pb**	**07 53 36.9**	**+0.4**
JNW	**Jan Mayen West**	**0.56**	**272**	⇑	*i*	P	**Pb**	**07 53 37.3**	**+0.1**
JNW						AML	AML	07 53 47.1	
	comp=Z,2μm,0.3s								
JMIC	**Jan Mayen**	**0.59**	**268**	Pg		Pg	**Pb**	**07 53 37.7**	**0.0**
JMIC				Lg				07 53 44.7	
JMI	**Jan Mayen**	**0.67**	**263**	⇑	*i*	P	**Pb**	**07 53 39.4**	**+0.3**
JMI				*e*	S		**Sb**	**07 53 47.1**	**-0.7**
JMI						AML	AML	07 53 50.2	
	comp=Z,5μm,0.3s								
LOF	**Lofoten**	**7.63**	**103**	*e*P		P	**Pn**	**07 55 20.0**	**+0.8**
STOK	**Stokkvaagen**	**8.56**	**114**	*e*P		P	**P**	**07 55 31.4**	**-0.7**
MOR8	**Moi Rana**	**9.10**	**112**	*e*P		P	**P**	**07 55 39.2**	**-0.3**
KBS	**Kingsbay**	**9.22**	**23**	Pn		P	**P**	**07 55 40.9**	**-0.4**
KBS	**Kingsbay**	**9.22**	**23**	*e*Pn		P	**P**	**07 55 40.8**	**-0.5**
SPB4	**Spitsbergen Ar**	**9.35**	**30**	*e*Pn		P	**P**	**07 55 43.6**	**+0.6**
SPA0	**Spitsbergen Ar**	**9.35**	**30**	Pn		P	**P**	**07 55 43.0**	**0.0**
	baz=227,slow=16								
NSS	**Namsos**	**9.57**	**124**	*e*P		P	**P**	**07 55 44.6**	**-1.3**
ARA0	**ARCESS Array S**	**10.90**	**82**	Pn		P	**P**	**07 56 03.1**	**-1.0**
	baz=287,slow=12								
HFS

MNTX	Cornudas Mount	36.83	298	*e*P	P	08 58 04.8	+0.2	
ANMO	Albuquerque	38.40	303	P	P	08 58 17.9	+0.1	
LVC	Limon Verde	41.47	183	*e*P	P	08 58 41.6	-1.8	
WUAZ	Wupatki	42.45	302	*e*P	P	08 58 52.9	+1.6	
	3.3nm,0.9s,mb4.0							
PDAR	Pinedale Array	42.99	313	P	P	08 58 56.1	+0.5	
	0.6nm,0.5s,mb3.6,baz=90,slow=7.4,SNR=5.2							
PDAR				PcP	PcP	09 00 46.5	+0.5	
	0.5nm,0.9s,baz=45,slow=3.8,SNR=2.6							
PDAR				LR	LR	09 16 56.5		
	comp=Z,81nm,19.4s,MS3.6,baz=272,slow=36							
QLMT	Earthquake Lak	44.97	315	*e*P	P	08 59 13.7	+2.2	
BOZ	Bozeman (W)	45.38	316	*e*P	P	08 59 15.3	+0.5	
CPUP	Villa Florida	46.06	168	*e*P	P	08 59 21.4	+0.9	
	1.9nm,0.7s,mb4.1,baz=344,slow=7.3,SNR=3.1							
CPUP	Villa Florida	46.06	168	*e*P	P	08 59 18.2	-2.3	
HLID	Hailey	46.61	312	*e*P	P	08 59 25.4	+0.8	
NVAR	Mina Array Bea	48.40	305	P	P	08 59 38.9	+0.3	
	0.6nm,0.6s,mb3.8,baz=104,slow=7.5,SNR=6.0							
NVAR	Mina Array Bea	48.40	305	P	P	08 59 38.9	+0.3	
NEW	Newport	49.80	318	*e*P	P	08 59 48.9	-0.4	
	3.2nm,0.6s,mb4.5							
YKA	Yellowknife Ar	54.35	335	P	P	09 00 22.4	-0.8	
	0.7nm,0.6s,mb3.8,baz=114,slow=7.7,SNR=17							
ESDC	Sonseca Array	57.37	55	P	P	09 00 45.4	+0.2	
	1.1nm,0.5s,mb4.1,baz=275,slow=7.2,SNR=5.7							
EKA	Eskdalemuir Ar	59.60	36	P	P	09 01 00.9	+0.4	
	0.8nm,0.5s,mb4.0,baz=283,slow=6.1,SNR=7.2							
DLBC	Dease Lake	59.96	327	*e*P	P	09 01 03.2	+0.3	
DBIC	Dimbokro	61.40	93	P	P	09 01 14.7	+1.3	
	3.1nm,1.0s,mb4.4,baz=293,slow=7.7,SNR=2.8							
INK	Inuvik	63.85	338	*e*P	P	09 01 28.2	-0.6	
NOA	NORSAR Array B	67.73	31	LR	LR	09 26 06.7		
	comp=Z,28nm,18.3s,MS3.5,baz=55,slow=31							
ILAR	Eielson Array	68.68	333	P	P	09 01 59.6	+0.1	
	1.1nm,0.7s,mb3.9,baz=94,slow=4.1,SNR=12							
IMA	Indian Mountai	71.47	335	P	P	09 02 15.9	-0.6	
ARCES	ARCESS Array B	73.12	22	P	P	09 02 27.4	+1.3	
	2.2nm,0.8s,mb4.1,baz=281,slow=4.6,SNR=6.7							
MLR	Muntele Rosu	78.56	46	P	P	09 03 00.7	+3.3	
	1.5nm,0.7s,mb4.1,baz=216,slow=8.7,SNR=3.1							
VNA3	Neumayer Olymp	98.13	164	⇑*i*	P	09 04 31.2	-0.5	
VNA1	Neumayer--Stat	98.15	163	⇓*i*	P	09 04 28.1	-3.7	
VNA2	Neumayer--Watz	98.55	163		P	09 04 31.4	-2.2	
SNAA	Sanae	100.19	163		P	09 04 29.8	-11	
WMQ	Urumqi	113.21	20	*e*PKP	PKPdf	09 09 31.2	-0.6	
CN2	Changchun	116.43	350	*e*PKP	PKPdf	09 09 37.0	-1.1	
NJ2	Nanjing	128.88	354	*e*PKP	PKPdf	09 10 02.7	+0.2	
STKA	Stephens Creek	151.43	238	PKPbc	PKPdf	09 10 50.4	+8.1	
	0.7nm,0.6s,baz=86,slow=1.8,SNR=5.6							
STKA				PKPab	PKPab	09 10 58.9	-0.1	
	1.7nm,0.9s,baz=58,slow=2.6,SNR=3.7							
ASAR	Alice Springs	160.14	253	PKPab	PKPab	09 11 35.9	-0.5	
	0.4nm,0.5s,baz=102,slow=4.8,SNR=8.9							

NIED ***07*** *09:09:00,39.20N×144.50E,h5km,Mw3.8 Best double couple: M0 6.68×10^14 NP1:φs191°,δ47°,λ-93°. NP2:φs15°, δ43°,λ-87°.*

IDC ***07*** *09:09:02.3±15.0,34.89N×142.84E,mb3.4/5,mb1 3.6/5, mb1mx3.5/24,Error ellipse: s-maj=409.0km s-min=31.3km az=172.0*

JMA ***07*** *09:09:38.3±0.2,39.17N×144.51E,h56km,M3.8*

ISC 07 09:09:37.1±1.3,39.21N±0.06×144.59E±0.09,h39km±17km, n14,σ1f11/23,mb3.4/3,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
MIYJ	Miyako 2	2.17	280	P		P	P	09 10 12.4	+0.8
MIYJ				*e*S		S		09 10 37.3	-0.2
JTH	Tanohata	2.23	290	P		P	P	09 10 13.4	+1.0
JTH				*e*S		S		09 10 39.6	+0.8
OFUJ	Ofunato	2.27	268	P		P	P	09 10 13.5	+0.5
OFUJ				*e*S		S		09 10 40.4	+0.4
JOM	Ohasama	2.57	277	P		P	P	09 10 18.1	+0.9
JOM				*e*S		S		09 10 47.6	+0.1
JMK	Ichinoseki	2.63	265	P		P	P	09 10 18.7	+0.5
JMK				*e*S		S		09 10 49.1	-0.1
JMM	Marumori	3.26	247	P		P	P	09 10 26.6	-0.5
JMM				*e*S		S		09 11 02.7	-2.5
JCH	Churui	3.52	345	P		P	P	09 10 31.0	+0.2
JCH				*e*S		S		09 11 11.1	-0.7
JTKR	Abashiri--Toko	4.78	354	P		P	P	09 10 48.5	-0.2
JTKR				*e*S		S		09 11 42.2	-1.4
JRY	Ryogami san	5.52	237	P		P	P	09 10 57.6	-1.5
JRY				*e*S		S		09 11 56.2	-6.0
MAT	Matsushiro	5.71	244	P		P	P	09 11 01.7	+0.1
MAT	Matsushiro	5.71	244	P		P	P	09 11 01.8	+0.2
ILAR	Eielson Array	46.31	33	P		P	P	09 18 02.6	+2.2
	0.4nm,0.7s,mb3.5,baz=258,slow=7.0,SNR=7.3								
INK	Inuvik	51.30	28	P		P	P	09 18 41.1	+2.1
	0.4nm,0.7s,mb3.5,baz=258,slow=9.3,SNR=6.0								
YKA	Yellowknife Ar	60.66	32	P		P	P	09 19 44.0	-2.3
	0.2nm,0.7s,mb3.3,baz=307,slow=6.2,SNR=2.5								

NIED ***07*** *09:28:00,39.10N×144.40E,h5km,Mw3.6 Best double couple: M0 2.48×10^14 NP1:φs205°,δ64°,λ-93°. NP2:φs31°, δ26°,λ-85°.*

JMA ***07*** *09:28:12.2±0.2,39.14N×144.42E,h44km,M3.6*

ISC 07 09:28:12.8±2.2,39.1N±0.1×144.4E±0.2,h44km,n7, σ0f45/11,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
MIYJ	Miyako 2	2.05	284	P		P	P	09 28 45.5	-0.1
MIYJ				*e*S		S		09 29 09.6	-0.5
OFUJ	Ofunato	2.13	270	P		P	P	09 28 46.6	0.0
JOM	Ohasama	2.44	279	P		P	P	09 28 51.4	+0.3
JOM				*e*S		S		09 29 20.3	+0.4
JMK	Ichinoseki	2.48	267	P		P	P	09 28 51.8	+0.1
JMM	Marumori	3.09	247	P		P	P	09 28 59.7	-0.7
JMM				*e*S		S		09 29 35.8	-0.7
JYK	Kaneyama	3.16	268	P		P	P	09 29 01.6	+0.3
MAT	Matsushiro	5.53	244	P		P	P	09 29 34.9	+0.1
MAT				*e*S		S	S	09 30 38.8	+0.8

MOS ***07*** *09:50:21.4±1.3,57.81S×26.21W,h10km,mb5.7/11, MS5.1/4,Error ellipse: s-maj=75.1km s-min=25.0km az=98.9*

IDC ***07*** *09:50:27.8±0.4,58.02S×25.84W,h38km±3km,mb5.0/18, mb1 5.0/18,mb1mx5.0/19,MS4.8/12,Ms1 4.8/12, ms1mx4.8/14,Error ellipse: s-maj=17.4km s-min=11.6km az=41.0*

NEIC ***07*** *09:50:31.6±1.2,57.91S×25.54W,h72km±9km,mb5.1/17, Error ellipse: s-maj=9.0km s-min=5.2km az=223.0*

SYO ***07*** *09:50:31.6,57.91S×25.54W,h72km,MB5.1*

BJI ***07*** *09:50:31.7,57.90S×25.50W,h71km,mB5.2,Ms5.3, Msz5.0*

HRVD ***07*** *09:50:31.6±0.2,58.04S×25.11W,h45km,MW5.4/70, Centroid moment Tensor Solution. LP body waves: s70,c140;Mantle waves: s65,c115; Half duration: 1s3 Moment tensor: Scale 10^17Nm; Mrr1.68±.03; Mθθ0.06±.03; Mφφ-1.74±.03; Mrθ0.04±.03; Mrφ0.35±.02; Mθφ0.20±.03; Best double couple: M0 1.75×10^17 NP1:φs167°,δ42°,λ86°. NP2:φs352°,δ48°,λ93°. Principal axes: T 1.69, Plg86°, Azm299°; N .12, Plg3°, Azm170°; P -1.82, Plg3°, Azm79°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 07 09:50:27.4±0.3,57.87S±0.05×25.6W±0.1,h46km, h46km±3.5km:pP-P,n272,σ0f93/81,mb5.4/30,MS4.9/32, 30C-11D,South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
VNA1	Neumayer--Stat	14.78	157	⇑*i*P		P		09 53 56.0	+1.3
VNA1	Neumayer--Stat	14.78	157	⇑*i*		P		09 54 00.0	+5.3
VNA1	Neumayer--Stat	14.78	157	⇑*i*		P		09 54 14.5	+20
VNA1	Neumayer--Stat	14.78	157	⇑*i*				09 54 17.3	
VNA3	Neumayer Olymp	14.98	160	⇑*i*		P		09 54 01.8	+4.5
VNA3	Neumayer Olymp	14.98	160	⇑*i*		P		09 54 16.4	+19
VNA3	Neumayer Olymp	14.98	160	⇑*i*				09 54 19.9	
VNA3	Neumayer Olymp	14.98	160	⇓*i*				09 54 25.4	
VNA3	Neumayer Olymp	14.98	160	S		S		09 56 56.3	+14
VNA3	Neumayer Olymp	14.98	160	⇑*i*P		P		09 53 57.7	+0.4
VNA3				S		S		09 56 56.3	+14
VNA2	Neumayer--Watz	15.18	157			P		09 54 05.5	+5.7
VNA2	Neumayer--Watz	15.18	157	⇑*i*		P		09 54 19.4	+20
VNA2	Neumayer--Watz	15.18	157	⇑*i*		P		09 54 22.7	
VNA2	Neumayer--Watz	15.18	157	S		S		09 57 01.6	+15
VNA2	Neumayer--Watz	15.18	157	P		P		09 54 00.9	+1.1
VNA2				S		S		09 57 01.6	+15
SNAA	Sanae	16.73	155	⇑*i*P		P		09 54 20.1	+0.6
SNAA	Sanae	16.73	155			P		09 54 21.1	+1.6
SNAA	Sanae	16.73	155	⇑*i*		P		09 54 32.3	+13
SNAA	Sanae	16.73	155	⇑*i*		P		09 54 35.3	+16
SNAA	Sanae	16.73	155	⇑*i*				09 54 41.0	
SNAA	Sanae	16.73	155	P		P		09 54 20.0	+0.5
PMSA	Palmer Station	19.42	233	*e*P		P		09 54 53.5	+1.4
EFI	East Falkland	19.57	274	*e*P		P		09 54 55.8	+1.8
	95nm,0.9s								
MAIT	Maitri	20.25	144	*e*P		P		09 55 00.5	-0.5
MAIT				*e*S		S		09 58 41.6	+1.0
USHA	Ushuaia	23.62	259	P		P		09 55 35.2	+0.7
	28nm,0.9s,mb4.7,baz=107,slow=8.1,SNR=5.2								
USHA				LR		LR		10 02 47.3	
	comp=Z,5μm,20.6s,MS5.0,baz=75,slow=32								
SYO	Syowa Base	29.64	139	⇓P		P		09 56 27.9	-2.1
SYO	Syowa Base	29.64	139	⇑sP		sP		09 56 43.6	-4.2
SYO	Syowa Base	29.64	139	⇓PnPn				09 57 21.1	
SYO	Syowa Base	29.64	139	⇓*e*P		P		09 56 27.9	-2.1
SYO				*e*sP		sP		09 56 43.6	-4.2
SYO				*e*PnPn				09 57 21.1	
TRQA	Tornquist	30.84	294	*e*P		P		09 56 40.3	-0.7
QSPA	South Pole Qui	32.38	180	⇑*i*P		P		09 56 53.3	-0.8
	280nm,1.2s,mb6.0								
QSPA				*e*				09 59 56.8	
QSPA				*e*				10 03 41.8	
PLCA	Paso Flores	33.18	281	P		P		09 57 00.7	-0.8
	48nm,1.1s,mb5.3,baz=147,slow=7.9,SNR=28								
PLCA				sPcP				09 59 59.5	
	9.6nm,1.3s,baz=133,slow=4.1,SNR=2.9								
PLCA				LR		LR		10 09 42.7	
	comp=Z,1μm,20.6s,MS4.6,baz=126,slow=35								
PLCA	Paso Flores	33.18	281	*e*P		P		09 57 00.8	-0.6
	26nm,1.1s,mb5.1								
PLCA				LR		LR			
	comp=Z,824nm,19.0s,MS4.5								
CAM4	Nova Friburgo	37.54	334	⇑*i*P		P		09 57 40.7	+2.0
CAM4				*i*		pP		09 57 51.3	+0.3
CAM4				*i*				09 58 00.1	
CAM4				*i*				09 58 03.3	
CAM4	Nova Friburgo	37.54	334	⇑*i*P		P		09 57 40.7	+2.0
CAM4				*i*		pP		09 57 51.3	+0.3
CAM4				*i*				09 58 00.1	
CAM4				*i*				09 58 03.3	
MAW	Mawson	38.18	142	⇑*i*P		P		09 57 43.4	-0.2
	comp=Z,55nm,1.0s,mb5.2								
MAW	Mawson	38.18	142	P		P		09 57 43.5	-0.1
	comp=Z,65nm,0.9s,mb5.3,baz=231,slow=8.5,SNR=47								
MAW				pP		pP		09 57 52.8	-3.1
	comp=Z,19nm,0.9s,baz=251,slow=8.2,SNR=3.4								
MAW				PcP		PcP		09 59 57.6	-0.5
	comp=Z,6.6nm,1.0s,baz=269,slow=5.0,SNR=4.1								
MAW				sPcP				10 00 13.7	
	comp=Z,22nm,0.9s,baz=268,slow=4.4,SNR=4.4								
MAW				LR		LR		10 11 21.2	
	comp=Z,1μm,19.9s,MS4.7,baz=249,slow=33								
CPUP	Villa Florida	38.66	311	P		P		09 57 47.5	-0.5
	comp=Z,13nm,0.6s,mb4.8,baz=179,slow=7.9,SNR=21								
CPUP				PcP		PcP		09 59 59.5	-0.4
	comp=Z,13nm,1.0s,baz=170,slow=3.0,SNR=3.1								
CPUP				sPcP				10 00 16.4	
	comp=Z,24nm,1.2s,baz=134,slow=2.8,SNR=3.0								
CPUP				LR		LR		10 12 35.2	
	comp=Z,917nm,20.3s,MS4.6,baz=177,slow=34								
CPUP	Villa Florida	38.66	311	*e*P		P		09 57 46.8	-1.1
	comp=Z,22nm,1.1s,mb4.8								
CPUP				*e*		pP		09 58 00.9	+0.6
CPUP				*e*PcP		PcP		09 59 59.2	-0.8
CPUP				LR		LR			
	comp=Z,608nm,20.0s,MS4.4								
CAM3	Guarapari	38.66	337	⇑*i*P		P		09 57 49.7	+1.6
CAM3				*i*				09 57 55.3	
CAM3				*i*		pP		09 58 01.8	+1.4
CAM3	Guarapari	38.66	337	⇑*i*P		P		09 57 49.7	+1.6
CAM3				*i*				09 57 55.3	
CAM3				*i*		pP		09 58 01.8	+1.4
SUR	Sutherland	40.35	71	P		P		09 58 03.3	+1.3
	comp=Z,19nm,0.9s,mb4.8,baz=223,slow=4.8,SNR=8.6								
SUR				PcP		PcP		10 00 05.4	+0.1
	comp=Z,16nm,1.0s,baz=255,slow=3.5,SNR=3.6								
SUR				sPcP				10 00 22.4	
	comp=Z,36nm,1.0s,baz=238,slow=0.9,SNR=6.9								
SUR				LR		LR		10 10 37.4	
	comp=Z,3μm,21.5s,MS5.1,baz=220,slow=30								
SUR	Sutherland	40.35	71	*e*P		P		09 58 02.7	+0.7
	comp=Z,24nm,1.1s,mb4.8								
SUR				LR		LR			
	comp=Z,4μm,21.0s,MS5.2								
SBA	Scott Base	44.32	184	*e*P		P		09 58 34.4	+0.7
	comp=Z,140nm,1.4s,mb5.5								
SBA				LR		LR			
	comp=Z,810nm,22.0s,MS4.6								
BDFB	Brasilia	45.37	329	P		P		09 58 44.2	+1.3
	comp=Z,24nm,0.7s,mb5.2,baz=157,slow=4.4,SNR=33								
BDFB				LR		LR		10 14 56.4	
	comp=Z,736nm,20.8s,MS4.6,baz=179,slow=32								
BDFB	Brasilia	45.37	329	P		P		09 58 44.2	+1.3
BDFB				LR		LR		10 14 56.4	
LVC	Limon Verde	46.95	300	P		P		09 58 54.7	-0.7
	comp=Z,7.7nm,0.5s,mb4.9,baz=121,slow=8.2,SNR=18								
LVC	Limon Verde	46.95	300	*e*P		P		09 58 54.1	-1.2
	comp=Z,19nm,1.0s,mb5.0								
LVC				LR		LR			
	comp=Z,1μm,19.0s,MS4.8								
LBTB	Lobatse	48.77	70	*e*P		P		09 59 09.1	-0.3
LBTB				LR		LR			
	comp=Z,2μm,21.0s,MS5.0								
ARE	Arequipa	53.48	301	*e*P		P		09 59 44.0	-1.2
LIC	Lamto	66.03	23	⇑*i*P		P		10 01 11.3	-0.1
	comp=Z,276nm,1.4s,mb6.1								
LIC				⇑*i*pP		pP		10 01 28.1	+3.5
KIC	Kosan Boka	66.22	23	⇑*i*P		P		10 01 12.5	-0.1
	comp=Z,302nm,1.0s,mb6.3								
KIC				⇑*i*pP		pP		10 01 29.3	+3.5
TIC	Toumodi	66.44	22	⇑*i*P		P		10 01 13.8	-0.2
	comp=Z,464nm,1.1s,mb6.4								
TIC				⇑*i*pP		pP		10 01 30.7	+3.5
DBIC	Dimbokro	66.50	23	P		P		10 01 14.3	-0.1
	comp=Z,23nm,0.5s,mb5.4,baz=168,slow=7.2,SNR=28								
DBIC				sP		sP		10 01 30.6	-2.0
	comp=Z,110nm,0.8s,baz=174,slow=7.1,SNR=25								
DBIC				LR		LR		10 23 04.2	
	comp=Z,567nm,21.7s,MS4.7,baz=160,slow=29								
DBIC	Dimbokro	66.50	23	P		P		10 01 14.3	-0.1
DBIC				sP		sP		10 01 30.6	-2.0
DBIC				LR		LR		10 23 04.2	
OTAV	Otavalo	71.37	303	*e*P		P		10 01 44.2	-0.2
	comp=Z,55nm,1.3s,mb5.3								
ROSC	El Rosal	73.72	309	P		P		10 01 58.0	-0.3
	comp=Z,9.7nm,0.4s,mb5.1,baz=147,slow=20,SNR=5.6								
ROSC				LR		LR		10 36 14.9	
	comp=Z,376nm,20.9s,MS4.7,baz=142,slow=37								
TRN	Trinidad (W)	74.27	323	*e*		P		10 02 02.2	+0.8
PCRV	Puerto La Cruz	74.90	320	P		P		10 02 05.5	+0.4
	comp=Z,177nm,1.1s,mb5.9,baz=166,slow=3.0,SNR=21								
KMBO	Kilima Mbogo	74.92	67	P		P		10 02 07.6	+2.3
	comp=Z,6.7nm,0.9s,mb4.6,baz=205,slow=5.5,SNR=12								
KMBO				LR		LR		10 32 50.9	
	comp=Z,1μm,18.3s,MS5.2,baz=273,slow=34								
KMBO	Kilima Mbogo	74.92	67	*e*P		P		10 02 07.6	+2.4
	comp=Z,6.8nm,1.1s,mb4.5								
KMBO				LR		LR			
	comp=Z,769nm,19.0s,MS5.0								
SDV	Santo Domingo	75.90	314	P		P		10 02 10.3	-0.5
	comp=Z,20nm,1.0s,mb5.0,baz=168,slow=4.6,SNR=16								
BBL	Barber's Block	78.89	325	*e*P		P		10 02 28.4	+1.0
TAU	Tasmania Unive	79.41	175	*e*P		P		10 02 29.3	-0.4
	comp=Z,164nm,1.1s,mb5.9								
SEG	Port Louis	79.72	325	*e*P		P		10 02 31.9	+0.1
MTP	Monte Pirata	82.60	322	*e*P		P		10 02 45.9	-1.0
HUMP	Col San Antoni	82.74	322	*e*P		P		10 02 46.8	-0.8
SJG	San Juan	82.81	321	P		P		10 02 47.1	-0.9
	comp=Z,12nm,0.3s,mb5.4,baz=160,slow=2.5,SNR=10.0								
SJG	San Juan	82.81	321	*e*P		P		10 02 47.1	-0.9
	comp=Z,16nm,0.6s,mb5.2								
SJG				LR		LR			
	comp=Z,332nm,22.0s,MS4.7								
MGP	Maguayo	83.03	321	*e*P		P		10 02 46.9	-2.2
JTS	JuntasAbangare	83.21	302	P		P		10 02 48.8	-1.2
	comp=Z,24nm,1.2s,mb5.1,baz=279,slow=3.1,SNR=5.5								
JTS	JuntasAbangare	83.21	302	*e*P		P		10 02 50.0	0.0
NWAO	Narrogin (SRO)	84.32	149	P		P		10 02 54.3	-1.0
	comp=Z,20nm,1.1s,mb5.2,baz=51,slow=6.5,SNR=2.8								
NWAO	Narrogin (SRO)	84.32	149	*e*P		P		10 02 55.5	+0.3
TOO	Toolangi	84.63	173	*e*P		P		10 02 56.4	-0.3
	comp=Z,13nm,1.0s,mb5.0								
TOO				*e*		pP		10 03 08.9	-1.3
TOO				*e*				10 06 09.8	
MUN	Mundaring	84.93	148	*e*P		P		10 02 57.9	-0.4
	comp=Z,17nm,1.0s,mb5.1								
KLBR	Kellerberrin	85.72	149	*e*P		P		10 03 01.7	-0.5
	comp=Z,80nm,1.3s,mb5.8								
CNB	Canberra Magne	87.08	176	*e*P		P		10 03 09.0	+0.2
	comp=Z,13nm,0.8s,mb5.2								
FORT	Forrest	88.96	158	*e*P		P		10 03 18.3	+0.4
	comp=Z,232nm,0.9s,mb6.5								
STKA	Stephens Creek	89.95	169	⇑*i*P		P		10 03 22.5	-0.1
	comp=Z,15nm,1.0s,mb5.3								
STKA				*e*		pP		10 03 35.1	-1.2
STKA				*e*				10 06 54.7	
STKA	Stephens Creek	89.95	169	P		P		10 03 22.8	+0.2
	comp=Z,18nm,1.0s,mb5.3,baz=160,slow=5.5,SNR=26								
STKA				pP		pP		10 03 34.5	-1.7
	comp=Z,38nm,1.1s,baz=152,slow=5.0,SNR=11								
STKA				PP		PP		10 06 53.5	-4.6
	comp=Z,9.0nm,1.2s,baz=161,slow=10,SNR=3.7								
STKA				LR		LR		10 40 51.4	
	comp=Z,786nm,21.9s,MS5.1,baz=202,slow=34								
ARMA	Armidale	92.02	178	*e*P		P		10 03 32.5	+0.3
AS12	Alice Springs	96.99	161	*e*P		P		10 03 54.1	-0.9
	comp=Z,24nm,1.1s,mb5.5								
AS12				*e*		pP		10 04 06.8	-1.9
ASAR	Alice Springs	96.99	161	P		P		10 03 54.2	-0.7
	comp=Z,21nm,1.1s,mb5.5,baz=194,slow=4.5,SNR=74								
ASAR				pP		pP		10 04 06.5	-2.2
	comp=Z,9.2nm,0.7s,baz=184,slow=4.1,SNR=14								
ASAR				sP		sP		10 04 10.8	-2.6
	comp=Z,56nm,1.3s,baz=182,slow=4.0,SNR=7.7								
ASAR				PP		PP		10 07 52.0	-1.6
	comp=Z,3.5nm,1.0s,baz=190,slow=8.1,SNR=3.9								
ASAR				PKiKP				10 08 31.9	
	comp=Z,0.9nm,0.7s,baz=183,slow=1.6,SNR=4.1								
ASAR				PKKPbc				10 20 34.8	
	comp=Z,1.3nm,1.0s,baz=351,slow=2.0,SNR=5.1								
ASAR				LR		LR		10 45 29.0	
	comp=Z,487nm,19.6s,MS5.0,baz=197,slow=34								
ESDC	Sonseca Array	98.87	17	P		P		10 04 03.3	+0.2
	comp=Z,0.4nm,0.3s,mb4.4,baz=112,slow=6.9,SNR=2.6								
ESDC				LR		LR		10 42 44.2	
	comp=Z,202nm,21.2s,MS4.6,baz=150,slow=32								
WRA	Warramunga Arr	100.70	161	P		P		10 04 10.7	-1.2
	comp=Z,3.3nm,0.9s,baz=198,slow=4.1,SNR=14								
WRA				pP				10 04 21.7	
	comp=Z,1.9nm,0.8s,baz=184,slow=4.3,SNR=6.4								
WRA				sP				10 04 27.3	
	comp=Z,2.1nm,0.7s,baz=190,slow=4.1,SNR=5.7								
WRA				PKiKP				10 08 36.8	
	comp=Z,1.1nm,0.8s,baz=185,slow=1.0,SNR=4.6								
WRA				PKKPbc				10 20 24.7	
	comp=Z,1.3nm,0.9s,baz=8.2,slow=2.8,SNR=6.7								
BRTR	Keskin Array B	109.11	45	PP		PP		10 09 15.6	-9.5
	comp=Z,1.2nm,0.8s,baz=180,slow=4.9,SNR=4.9								
GNI	Garni	113.91	52	*i* PKiKP		PKPdf		10 09 00.9	+0.3
GNI				pmax		pmax			
	comp=Z,5.0nm,0.8s								
GNI				MLR		MLR			
	comp=Z,400nm,19.0s								
ANMO	Albuquerque	114.33	297	*e*PKiKP		PKPdf		10 09 02.9	+1.3
KIV	Kislovodsk	116.23	48	*e*PKiKP		PKPdf		10 09 23.1	+18
KIV								10 10 11.0	
KIV				pmax		pmax			
	comp=Z,10.0nm,1.0s								
WUAZ	Wupatki	117.16	294	*e*PKPdf		PKPdf		10 09 08.1	+1.0
SCHQ	Schefferville	117.18	335	PKP		PKPdf		10 09 06.5	0.0
	comp=Z,2.7nm,0.6s,baz=150,slow=2.2,SNR=6.5								
ISCO

CHRT	**Chiangrai**	**125.24**	**110**	⇓P		PKPdf	10 09 23.5	+0.6	
	comp=Z,153nm,0.8s								
FINES	**FINESS Array B**	**125.60**	**28**	PKP		PKPdf	10 09 22.9	+0.3	
	comp=Z,5.5nm,0.6s,baz=140,slow=2.8,SNR=55								
FINES				sPKP			10 09 40.3		
	comp=Z,8.7nm,0.6s,baz=117,slow=4.3,SNR=7.8								
HRY	**Holter Researc**	**126.08**	**302**	*e*PKPdf		PKPdf	10 09 25.4	+1.6	
WVOR	**Wild Horse Val**	**126.08**	**294**	*e*PKPdf		PKPdf	10 09 25.9	+1.9	
KAF	**Kangasniemi**	**126.23**	**27**	ep		PKPdf	10 09 22.4	-1.3	
MOD	**Modoc**	**126.51**	**292**	*e*PKPdf		PKPdf	10 09 26.4	+1.6	
WDC	**Whiskeytown Da**	**126.63**	**290**	*e*PKPdf		PKPdf	10 09 26.1	+0.9	
CHMT	**Chamberlain Mo**	**126.88**	**301**	*e*PKPdf		PKPdf	10 09 26.3	+0.9	
MSO	**Missoula**	**127.14**	**301**	*e*PKPdf		PKPdf	10 09 27.0	+1.1	
AB31	**Akbulak array**	**127.70**	**56**	*i* PKIKP		PKPdf	10 09 27.2	+0.3	
AB31				pmax		pmax			
	comp=Z,46nm,1.0s								
FFC	**Flin Flon**	**127.98**	**314**	*e*PKPdf		PKPdf	10 09 27.5	+0.2	
FFC				*ep*PKPdf			10 09 45.1		
KKAR	**Karatay Array**	**128.12**	**68**	*i* PKIKP		PKPdf	10 09 28.1	+0.2	
KKAR				pmax		pmax			
	comp=Z,52nm,1.1s								
JOF	**Joensuu**	**128.18**	**29**	*e*pkp		PKPdf	10 09 26.3	-1.2	
FCC	**Fort Churchill**	**128.25**	**322**	*e*PKPdf		PKPdf	10 09 27.4	-0.3	
FCC				*ep*PKPdf			10 09 45.2		
HUMO	**Hull Mountain**	**128.35**	**291**	*e*PKPdf		PKPdf	10 09 29.9	+1.5	
WALA	**Waterton Lakes**	**128.76**	**303**	*e*PKPdf		PKPdf	10 09 29.4	+0.4	
LSA	**Lhasa**	**128.76**	**95**	PKP		PKPdf	10 09 31.6	+2.1	
LSA	**Lhasa**	**128.76**	**95**	*e*PKPdf		PKPdf	10 09 31.5	+2.0	
LSA				*ep*PKPdf			10 09 48.8		
AML	**Almayashu**	**129.00**	**71**	P		PKPdf	10 09 30.7	+1.1	
	SNR=12								
QIZ	**Qiongzhong**	**129.37**	**121**	*e*PKP		PKPdf	10 09 30.7	-0.2	
QIZ				*e*PP		PP	10 11 43.1	-1.9	
QIZ				SS		SS	10 28 58.7	-1.3	
QIZ				LR		LR			
	comp=N,300nm,20.5s,MS5.1								
QIZ				LR		LR			
	comp=E,201nm,17.4s,MS5.1								
QIZ				LR		LR			
	comp=Z,387nm,27.4s								
EKS2	**Erkin-Say**	**129.43**	**70**	P		PKPdf	10 09 31.7	+1.3	
	SNR=7.6								
HAWA	**Hanford**	**129.44**	**297**	*e*PKPdf		PKPdf	10 09 31.6	+1.3	
HAWA				*ep*PKPdf			10 09 49.5		
UCH	**Uchtor**	**129.48**	**71**	P		PKPdf	10 09 31.9	+1.4	
	SNR=9.4								
NEW	**Newport**	**129.65**	**300**	*e*PKPdf		PKPdf	10 09 30.7	0.0	
CRF	**Corfu**	**129.68**	**297**	P		PKPdf	10 09 32.8	+2.0	
KZA	**Kyzart**	**129.75**	**72**	P		PKPdf	10 09 32.8	+1.8	
	SNR=7.4								
AAK	**Ala-Archa**	**129.77**	**71**	P		PKPdf	10 09 32.0	+0.9	
	SNR=9.0								
FRU	**Bishkek**	**129.98**	**71**	*e*PKIKP		PKPdf	10 09 32.5	+1.0	
FRU				pmax		pmax			
	comp=Z,50nm,2.0s								
FRU				MLR		MLR			
	comp=Z,1μm,22.0s,MS5.5								
EPH	**Ephrata**	**130.16**	**297**	P		PKPdf	10 09 33.1	+1.4	
USP	**Ospenovka**	**130.23**	**70**	P		PKPdf	10 09 33.9	+1.9	
	SNR=5.5								
ETW	**Entiat**	**130.69**	**297**	P		PKPdf	10 09 34.2	+1.5	
LON	**Longmire**	**130.79**	**295**	*e*PKPdf		PKPdf	10 09 33.4	+0.5	
NLW	**Nelson Butte**	**131.03**	**298**	*e*PKPdf		PKPdf	10 09 34.0	+0.7	
KMI	**Kunming**	**131.11**	**109**	*e*PKP		PKPdf	10 09 35.4	+1.3	
KMI				PP		PP	10 11 57.8	+1.5	
KMI				LR		LR			
	comp=N,227nm,18.8s,MS5.1								
KMI				LR		LR			
	comp=E,259nm,18.8s,MS5.1								
KMI				LR		LR			
	comp=Z,296nm,20.8s,MS5.0								
BMW	**Boistfort Moun**	**131.28**	**294**	*e*PKPdf		PKPdf	10 09 35.5	+1.7	
RMW	**Rattlesnake Mo**	**131.29**	**296**	*e*PKPdf		PKPdf	10 09 35.1	+1.3	
PNT	**Penticton**	**131.56**	**299**	P		PKPdf	10 09 35.7	+1.4	
RPW	**Rockport**	**131.85**	**297**	*e*PKPdf		PKPdf	10 09 35.5	+0.6	
GNW	**Green Mountain**	**131.85**	**296**	P		PKPdf	10 09 36.2	+1.3	
JCW	**Jim Creek**	**131.87**	**297**	P		PKPdf	10 09 35.9	+1.0	
ARU	**Arti**	**132.28**	**48**	⇓*i* PKIKP		PKPdf	10 09 34.6	-0.8	
ARU				pmax		pmax			
	comp=Z,21nm,1.4s								
ARU				MLR		MLR			
	comp=N,200nm,21.0s,MS4.9								
ARU				MLR		MLR			
	comp=Z,400nm,21.0s,MS5.1								
ARU				MLR		MLR			
	comp=E,100nm,20.0s,MS4.9								
ARCES	**ARCESS Array B**	**132.32**	**22**	PKhKP			10 09 23.7		
	comp=E,4.9nm,1.2s,baz=217,slow=2.7,SNR=3.6								
ARCES				PKP		PKPdf	10 09 35.6	+0.4	
	comp=E,9.8nm,0.9s,baz=234,slow=1.2,SNR=32								
ARCES				sPKP			10 09 52.4		
	comp=E,18nm,0.9s,baz=207,slow=2.0,SNR=11								
ARCES				PP		PP	10 12 00.8	-1.5	
	comp=E,18nm,1.2s,baz=219,slow=7.8,SNR=5.0								
ARCES	**ARCESS Array B**	**132.32**	**22**	PKP		PKPdf	10 09 23.7	-11	
ARCES				PKP		PKPdf	10 09 35.6	+0.4	
ARCES				sPKP			10 09 52.4		
ARCES				PP		PP	10 12 00.8	-1.5	
ARE0	**ARCESS Array S**	**132.32**	**22**	*e*PKPdf		PKPdf	10 09 36.3	+1.1	
ARE0				*ep*PKPdf			10 09 52.5		
APA	**Apatity**	**132.45**	**26**	⇓*i* PKIKP		PKPdf	10 09 37.5	+2.0	
APA				MLR		MLR			
	comp=Z,500nm,20.0s,MS5.2								
OCWA	**Octopus Mounta**	**132.64**	**295**	*e*PKPdf		PKPdf	10 09 38.9	+2.5	
KEV	**Kevo**	**132.80**	**22**	*ep*kp		PKPdf	10 09 28.7	-7.4	
PGC	**Sidney**	**132.91**	**296**	*e*PKPdf		PKPdf	10 09 38.2	+1.3	
SVE	**Sverdlovsk**	**133.38**	**49**	⇓*e*PKHKP			10 09 25.0		
SVE	**Sverdlovsk**	**133.38**	**49**	*e*PKIKP		PKPdf	10 09 38.2	+0.7	
SVE				pmax		pmax			
	comp=Z,70nm,2.2s								
GYA	**Guiyang**	**134.18**	**112**	PKP		PKPdf	10 09 40.5	+0.6	
GYA				PP		PP	10 12 12.4	-3.2	
GYA				PKS		PKS	10 13 11.4	-3.7	
GYA				SS		SS	10 29 58.6	+0.4	
GYA				PP		PP			
	comp=Z,210nm,5.7s								
ZRNK	**Zerenda**	**134.35**	**58**	*i* P		PKPdf	10 09 39.8	+0.4	
BRVK	**Borovoye**	**135.00**	**58**	PKIKP		PKPdf	10 09 41.1	+0.5	
BRVK				pmax		pmax			
	comp=Z,7.0nm,1.0s								
BRVK	**Borovoye**	**135.00**	**58**	*e*PKPdf		PKPdf	10 09 41.3	+0.7	
VOSK	**Vostochnaya**	**135.10**	**59**	PKIKP		PKPdf	10 09 39.1	-1.7	
VOSK				pmax		pmax			
	comp=Z,25nm,1.4s								
CD2	**Chengdu**	**136.34**	**106**	*e*PKP		PKPdf	10 09 45.2	+1.5	
MKAR	**Makanchi Array**	**136.64**	**72**	PKhKP			10 09 35.1		
	comp=Z,1.1nm,0.7s,baz=248,slow=6.5,SNR=7.0								
MKAR				PKP		PKPdf	10 09 43.7	-0.1	
	comp=Z,6.2nm,1.0s,baz=240,slow=3.2,SNR=12								
MKAR				sPKP			10 10 01.4		
	comp=Z,9.2nm,0.8s,baz=251,slow=1.9,SNR=10.0								
MKAR	**Makanchi Array**	**136.64**	**72**	*i* PKIKP		PKPdf	10 09 43.3	-0.5	
MKAR				pmax		pmax			
	comp=Z,16nm,1.0s								
MKAR	**Makanchi Array**	**136.64**	**72**	PKP		PKPdf	10 09 35.0	-8.7	
MKAR				PKP		PKPdf	10 09 43.7	-0.1	
MKAR				sPKP			10 10 01.4		
KURK	**Kurchatov**	**137.40**	**66**	*i* PKIKP		PKPdf	10 09 42.9	-2.2	
KURK				pmax		pmax			
	comp=Z,9.0nm,0.9s								
KURK	**Kurchatov**	**137.40**	**66**	*e*PKPdf		PKPdf	10 09 45.6	+0.5	
KURK				*ep*PKPdf			10 10 02.1		
WMQ	**Urumqi**	**137.42**	**79**	PKP		PKPdf	10 09 46.6	+1.3	
WMQ				PP		PP	10 12 37.0	+2.1	
WMQ				PKS		PKS	10 13 21.4	+1.0	
WMQ				SKS		SKS	10 16 45.6	-3.7	
WMQ				SKKS			10 19 16.6		
WMQ				SS		SS	10 30 34.0	-2.3	
WMQ				PP		PP			
	comp=Z,153nm,12.0s								
WMQ				LR		LR			
	comp=N,254nm,30.0s								
WMQ				LR		LR			
	comp=E,125nm,23.2s								
WMQ				LR		LR			
	comp=Z,405nm,28.9s,MS5.0								
YKA	**Yellowknife Ar**	**138.09**	**316**	PKP		PKPdf	10 09 46.8	+0.8	
	comp=Z,53nm,1.1s,baz=126,slow=2.2,SNR=118								
YKA				pPKP			10 09 58.9		
	comp=Z,12nm,0.5s,baz=128,slow=2.4,SNR=9.9								
YKA				sPKP			10 10 03.5		
	comp=Z,30nm,0.8s,baz=126,slow=2.3,SNR=12								
YKA				PP		PP	10 12 35.0	-3.9	
	comp=Z,2.3nm,1.0s,baz=119,slow=6.4,SNR=3.9								
YKA				SKPbc			10 13 15.0		
	comp=Z,4.8nm,1.0s,baz=114,slow=2.7,SNR=5.4								
YKA				SKKPbc			10 22 01.1		
	comp=Z,0.4nm,0.8s,baz=302,slow=5.1,SNR=3.9								
YKA	**Yellowknife Ar**	**138.09**	**316**	PKP		PKPdf	10 09 46.8	+0.8	
YKA				pPKP			10 09 58.9		
YKA				sPKP			10 10 03.5		
YKA				PP		PP	10 12 35.0	-3.9	
YKA				SKPbc			10 13 15.0		
YKA				SKKPbc			10 22 01.1		
YKW3	**Yellowknife Ar**	**138.13**	**316**	*e*PKPdf		PKPdf	10 09 46.5	+0.4	
YKW3				*ep*PKPdf			10 10 04.2		
SPB4	**Spitsbergen Ar**	**138.17**	**12**	*e*PKPdf		PKPdf	10 09 46.8	+0.9	
SPB4				*ep*PKPdf			10 10 05.7		
KBS	**Kingsbay**	**138.36**	**10**	*e*PP		PP	10 12 38.2	-2.0	
KBS				AMS		AMS	11 05 08.0		
	comp=Z,177nm,20.0s,MS4.8								
KBS	**Kingsbay**	**138.36**	**10**	*e*PKPdf		PKPdf	10 09 48.5	+2.4	
ENH	**Enshi**	**138.72**	**112**	*e*PKPdf		PKPdf	10 09 48.9	+0.8	
ENH				*ep*PKPdf			10 10 07.1		
RES	**Resolute Bay**	**139.87**	**337**	*e*PKPpre			10 09 41.4		
RES				*e*PKPdf		PKPdf	10 09 50.4	+1.5	
RES				*ep*PKPdf			10 10 07.0		
GTA	**Gaotai**	**140.76**	**94**	*e*PKP		PKPdf	10 09 50.9	-0.5	
WHN	**Wuhan**	**141.30**	**117**	*e*PKP		PKPdf	10 09 56.0	+3.4	
DLBC	**Dease Lake**	**142.07**	**304**	PKhKP			10 09 49.2		
	comp=Z,6.8nm,1.1s,baz=96,slow=3.9,SNR=14								
DLBC	**Dease Lake**	**142.07**	**304**	*e*PKPpre			10 09 49.8		
DLBC				*e*PKPdf		PKPdf	10 09 54.3	+1.3	
NVS	**Novosibirsk**	**142.13**	**63**	*i* PKIKP		PKPdf	10 09 49.5	-3.7	
NVS				*i*			10 13 03.2		
NVS				pmax		pmax			
	comp=N,9.0nm,1.5s								
NVS				pmax		pmax			
	comp=E,3.0nm,1.5s								
NVS				pmax		pmax			
	comp=Z,17nm,1.5s								
ZAL	**Zalesovo**	**142.37**	**65**	PKhKP			10 09 50.4		
	comp=Z,1.9nm,0.4s,slow=3.0,SNR=6.4								
ZAL				PKP		PKPdf	10 09 54.6	+1.0	
	comp=Z,1.9nm,0.4s,baz=63,slow=2.3,SNR=7.7								
ZAL				pPKP			10 10 06.8		
	comp=Z,3.4nm,0.4s,baz=140,slow=1.7,SNR=4.3								
ZAL	**Zalesovo**	**142.37**	**65**	PKP		PKPdf	10 09 50.4	-3.3	
ZAL				PKP		PKPdf	10 09 54.6	+1.0	
ZAL				pPKP			10 10 06.8		
NJ2	**Nanjing**	**144.66**	**121**	⇑PKP		PKPdf	10 09 58.8	+0.5	
NJ2				PP		PP	10 13 17.0	-2.1	
NJ2				PKS		PKS	10 13 34.0	+1.1	
NJ2				SS		SS	10 31 58.0	-2.6	
NJ2				LR		LR			
	comp=N,340nm,17.7s,MS5.3								
NJ2				LR		LR			
	comp=E,340nm,17.0s,MS5.3								
SSE	**Sheshan**	**144.89**	**125**	PKP		PKPdf	10 09 59.0	+0.2	
SSE				APKP			10 10 15.4		
SSE				PP		PP	10 13 20.4	-0.1	
SSE				LR		LR			
	comp=N,257nm,20.0s,MS5.0								
SSE				LR		LR			
	comp=E,128nm,20.0s,MS5.0								
SSE				LR		LR			
	comp=Z,348nm,20.0s,MS5.1								
BTO	**Baotou**	**147.03**	**102**	*e*PKP		PKPdf	10 10 05.7	+3.6	
TIA	**Tai'an**	**147.26**	**115**	*e*PKP		PKPdf	10 10 03.4	+0.8	
INK	**Inuvik**	**147.75**	**318**	PKP		PKPdf	10 10 01.5	-0.9	
	comp=Z,56nm,0.9s,baz=104,slow=1.6,SNR=11								
INK				PKPbc		PKPdf	10 10 06.5	+4.1	
	baz=129,slow=2.7								
INK				sPKPbc			10 10 23.9		
	comp=Z,80nm,0.8s,baz=112,slow=4.3,SNR=9.6								
INK	**Inuvik**	**147.75**	**318**	PKP		PKPdf	10 10 01.5	-0.9	
INK				*e*PKPbc		PKPdf	10 10 06.5	+4.1	
INK				sPKPbc			10 10 23.9		
HHC	**Hu-ho-hao-te**	**148.01**	**103**	⇑PKP		PKPdf	10 10 08.5	+4.8	
HHC				PP		PP	10 13 43.7	+4.8	
HHC				SKS		SKS	10 17 03.8	-1.7	
HHC				LR		LR			
	comp=N,94nm,20.0s,MS4.7								
HHC				LR		LR			
	comp=E,96nm,22.6s,MS4.7								
HHC				LR		LR			
	comp=Z,101nm,21.2s,MS4.6								
DAWY	**Dawson**	**148.63**	**309**	*e*PKPdf		PKPdf	10 10 03.5	-0.4	
DAWY				*e*PKPbc		PKPdf	10 10 09.0	+5.1	
MOY	**Mondy**	**149.30**	**78**	*e*PKP2		PKPab	10 10 11.4	-5.2	
BJT	**Baijiatuan**	**149.75**	**109**	*e*PKPbc		PKPdf	10 10 12.7	+6.2	
BJI	**Beijing**	**149.77**	**109**	PKP		PKPdf	10 10 11.1	+4.6	
BJI				PP		PP			
	comp=Z,182nm,4.7s								
BJI				LR		LR			
	comp=N,168nm,23.3s,MS4.9								
BJI				LR		LR			
	comp=E,129nm,22.6s,MS4.9								
BJI				LR		LR			
	comp=Z,251nm,24.8s,MS4.9								
ZAK	**Zakamensk**	**149.79**	**82**	*e*PKIKP		PKPdf	10 10 06.8	+0.6	
ZAK				*e*			10 10 12.2		
SONM	**Songino Array**	**149.95**	**88**	PKP		PKPdf	10 10 06.7	+0.2	
	comp=Z,7.4nm,1.1s,baz=207,slow=2.8,SNR=3.7								
SONM				PKPbc		PKPdf	10 10 12.9	+6.3	
	comp=Z,64nm,1.1s,baz=225,slow=1.7,SNR=41								
SONM				*e*PKPbc			10 10 24.8		
	comp=Z,29nm,0.8s,baz=241,slow=3.1,SNR=9.8								
SONM				sPKPbc			10 10 29.8		
	comp=Z,85nm,0.9s,baz=231,slow=2.1,SNR=20								
EYAK	**Cordova Ski Ar**	**150.15**	**301**	*e*PKPdf		PKPdf	10 10 06.7	+0.2	
EYAK				*e*PKPbc		PKPdf	10 10 13.5	+7.0	
ULN	**Ulaanbaatar**	**150.32**	**89**	*c i* PKIKP		PKPdf	10 10 13.4	+6.3	
ULN	**Ulaanbaatar**	**150.32**	**89**	*e*PKPbc		PKPdf	10 10 13.3	+6.1	
TLY	**Talaya**	**150.69**	**80**	*e*PKIKP		PKPdf	10 10 07.6	0.0	
TLY				*e*			10 10 14.1		
TLY				pmax		pmax			
	comp=Z,110nm,1.4s								
DL2	**Dalian**	**151.57**	**118**	PKP		PKPdf	10 10 17.0	+7.7	
SML	**Sawmill**	**151.76**	**302**	*e*PKPbc		PKPdf	10 10 16.6	+7.8	
ILAR	**Eielson Array**	**151.95**	**309**	PKP		PKPdf	10 10 08.0	-1.1	
	comp=Z,2.2nm,1.0s,baz=316,slow=1.6,SNR=16								
ILAR				PKPbc		PKPdf	10 10 17.0	+7.9	
	comp=Z,214nm,1.1s,baz=117,slow=1.5,SNR=339								
ILAR				sPKPbc			10 10 33.6		
	comp=Z,69nm,1.1s,baz=149,slow=3.5,SNR=11								
PMR	**Palmer**	**152.05**	**302**	*e*P		PKPdf	10 10 07.3	-2.0	
PMR				LR		LR			
	comp=Z,200nm,19.0s,MS4.9								
SLKM	**Skilak Lake**	**152.21**	**299**	*e*PKPbc		PKPdf	10 10 17.9	+8.4	
GOU	**Gould Hall**	**152.23**	**301**	*e*PKPbc		PKPdf	10 10 18.7	+9.1	
KDAK	**Kodiak Island**	**152.35**	**293**	*e*PKPbc		PKPdf	10 10 18.1	+8.3	
COLA	**College**	**152.37**	**309**	*d i* PKIKP		PKPdf	10 10 17.3	+7.7	
COLA	**College**	**152.37**	**309**	*e*PKPpre			10 10 08.0		
COLA				*e*PKPbc		PKPdf	10 10 17.3	+7.7	
FIB	**Fire Island**	**152.40**	**300**	*e*PKPbc		PKPdf	10 10 19.4	+10	
MCK	**McKinley**	**152.56**	**306**	*e*PKPpre			10 10 08.1		
MCK				*e*PKPbc		PKPdf	10 10 18.9	+8.9	
INCN	**Inchon**	**152.68**	**126**	*e*PKPbc		PKPdf	10 10 19.0	+8.0	
INCN				*e*			10 10 35.9		
KS15	**Wonju Array Si**	**153.17**	**128**	*e*PKPbc		PKPdf	10 10 20.6	+8.9	
KS15				*e*			10 10 37.4		
SPU	**Mount Spurr**	**153.27**	**300**	*e*PKPpre			10 10 08.5		
SPU				*e*PKPbc		PKPdf	10 10 19.9	+8.9	
RSO	**Redoubt South**	**153.38**	**298**	*e*PKPbc		PKPdf	10 10 20.2	+9.1	
SNY	**Shenyang**	**154.78**	**116**	⇑PKP		PKPdf	10 10 12.2	-1.4	
SVW	**Sparrevohn**	**154.91**	**299**	*e*P		PKPdf	10 10 22.4	+9.2	
IMA	**Indian Mountai**	**154.97**	**311**	*e*PKPpre			10 10 12.0		
IMA				*e*PKPbc		PKPdf	10 10 24.4	+11	
MAJO	**Matsushiro**	**156.12**	**146**	*e*PKPdf		PKPdf	10 10 17.2	+1.7	
MAT	**Matsushiro**	**156.12**	**146**	PKP		PKPdf	10 10 16.4	+0.8	
CN2	**Changchun**	**157.17**	**116**	*e*PKP		PKPdf	10 10 16.2	-0.6	
CN2				PP		PP	10 14 30.3	+0.5	
CN2				*e*SS		SS	10 34 15.0	-2.7	
CN2				LR		LR			
	comp=N,300nm,26.0s,MS5.3								
CN2				LR		LR			
	comp=E,500nm,26.0s,MS5.3								
CN2				LR		LR			
	comp=Z,250nm,24.0s,MS5.0								
BOD	**Bodaibo**	**158.73**	**73**	*e*PKIKP		PKPdf	10 10 16.8	-1.5	
MDJ	**Mudanjiang**	**159.74**	**120**	PKP		PKPdf	10 10 19.8	0.0	
MDJ				APKP			10 10 41.7		
MDJ				LR		LR			
	comp=N,159nm,29.2s,MS4.8								
MDJ				LR		LR			
	comp=E,153nm,28.7s,MS4.8								
MDJ				LR		LR			
	comp=Z,197nm,27.8s,MS4.8								
TIXI	**Tiksi**	**162.65**	**27**	*e*PKIKP		PKPdf	10 10 19.2	-2.8	
TIXI				*e*			10 14 57.1		
TIXI				pmax		pmax			
	comp=Z,51nm,1.6s								
KLR	**Kul'dur**	**164.08**	**113**	*e*PKIKP		PKPdf	10 10 22.7	-1.3	
KLR				*e*			10 11 17.7		
CLNS	**Chul'man**	**164.11**	**81**	*e*PKIKP		PKPdf	10 10 23.2	-0.6	
CLNS				*e*			10 11 19.3		
CLNS				pmax		pmax			
	comp=Z,30nm,1.1s								
CLNS				pmax		pmax			
	comp=N,10.0nm,1.2s								
CLNS				pmax		pmax			
	comp=E,4.0nm,0.9s								
CLNS				pmax		pmax			
	comp=N,10.0nm,0.9s								
CLNS				pmax		pmax			
	comp=Z,20nm,1.1s								
CLNS				pmax		pmax			
	comp=E,10.0nm,0.9s								
YAK	**Yakutsk**	**166.98**	**61**	*e*PKP2		PKPab	10 11 43.4	+11	
YAK				pmax		pmax			
	comp=Z,10.0nm,0.8s								
YAK				pmax		pmax			
	comp=N,4.0nm,1.1s								
YAK				pmax		pmax			
	comp=E,5.0nm,1.0s								
YSS	**Yuzh-Sakhalins**	**166.99**	**142**	*e*PKP2		PKPab	10 11 32.3	-0.2	
BILL	**Bilibino**	**168.48**	**337**	*i* PKIKP		PKPdf	10 10 24.1	-2.8	
BILL				*e*			10 15 24.3		
BILL				pmax		pmax			
	comp=Z,12nm,1.5s								
MA2	**Magadan**	**177.46**	**46**	*e*PKIKP		PKPdf	10 10 30.3	-0.6	
MA2				*e*			10 12 15.3		

*IDC **07** 10:18:38.4±1.1,3.30S×142.84E,mb4.0/7,mb1 4.2/9, mb1mx4.1/15,ML3.7/2,Error ellipse: s-maj=39.9km s-min=19.2km az=95.0*
*NEIC **07** 10:18:44.5±0.7,3.34S×142.77E,h45km,mb4.5/5,Error ellipse: s-maj=20.0km s-min=7.9km az=83.0*

ISC 07 10:18:41.7±0.9,3.33S±0.07×142.7E±0.2,h33km,n22, σ0§75/21,mb4.4/11,Near north coast of New Guinea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CTA	**Charters Tower**	**17.01**	**169**	Pn	**P**	**10 22 38.6**	**-0.3**
	0.1nm,0.3s,slow=13,SNR=3.6						
WRAB	**Tennant Creek**	**18.41**	**206**	*e*P	**P**	**10 22 56.8**	**+0.4**
	12nm,0.8s						
WB2	**Warramunga Arr**	**18.42**	**206**	*e*P	**P**	**10 22 56.5**	**0.0**
WRA	**Warramunga Arr**	**18.42**	**206**	P	**P**	**10 22 54.9**	**-1.7**
	0.6nm,0.3s,baz=22,slow=12,SNR=27						
AS12	**Alice Springs**	**21.94**	**202**	*e*P	**P**	**10 23 38.7**	**+4.4**
	22nm,1.7s,mb4.3						
ASAR	**Alice Springs**	**21.94**	**202**	P	**P**	**10 23 33.5**	**-0.8**
	1.7nm,0.5s,mb3.7,baz=29,slow=12,SNR=14						
FITZ	**Fitzroy Crossi**	**22.26**	**228**	*e*P	**P**	**10 23 38.9**	**+1.5**
	4.6nm,0.4s,mb4.3						
FITZ	**Fitzroy Crossi**	**22.26**	**228**	P	**P**	**10 23 38.9**	**+1.5**
	6.2nm,0.5s,mb4.3,baz=21,slow=9.1,SNR=30						
STKA	**Stephens Creek**	**28.42**	**182**	P	**P**	**10 24 36.2**	**+0.6**
	1.7nm,0.4s,mb4.0,slow=5.1,SNR=4.4						
STKA	**Stephens Creek**	**28.42**	**182**	P	**P**	**10 24 36.2**	**+0.6**
FORT	**Forrest**	**30.61**	**205**	*e*P	**P**	**10 24 55.5**	**+0.3**
	47nm,0.7s,mb5.4						
CMAR	**Chiang Mai Arr**	**48.23**	**298**	P	**P**	**10 27 21.6**	**-0.2**
	0.7nm,0.7s,mb3.8,baz=118,slow=6.5,SNR=4.4						
GUN	**Gumba**	**62.84**	**304**	*e*P	**P**	**10 29 07.1**	**+0.1**
PKI	**Pulchoki**	**63.12**	**303**	*e*P	**P**	**10 29 07.7**	**-1.1**
KKN	**Kakani**	**63.30**	**303**	*e*P	**P**	**10 29 09.3**	**-0.7**
DMN	**Daman**	**63.38**	**303**	*e*P	**P**	**10 29 10.6**	**+0.1**
	14nm,0.9s,mb5.1						
GKN	**Gorkha**	**63.91**

0.3nm,0.1s,SNR=7.9
ECAB Sn **Sn** **10 32 46.3 -0.2**
2.5nm,0.1s,SNR=7.9
ECAB Lg 10 32 52.0
7.2nm,0.1s,SNR=7.9
ELUQ Luque 2.57 72 Lg 10 33 10.1
7.6nm,0.2s,SNR=4.0
ELOJ Sierra Loja 2.58 81 Lg 10 33 08.8
3.2nm,0.3s,SNR=7.9
EADA Adamuz 2.59 57 Pn **Pn** **10 32 31.5 +0.9**
0.4nm,0.1s,SNR=6.3
EADA Sn **Sn** **10 33 01.7 +0.1**
1.5nm,0.1s,SNR=11
EADA Lg 10 33 09.9
9.1nm,0.1s,SNR=5.3
EADA Adamuz 2.59 57 Pn **Pn** **10 32 30.8 +0.2**
EADA Sn **Sn** **10 33 01.0 -0.6**
EADA Lg 10 33 10.2
PCBR Castelo Branco 3.04 358 *e*Pn **Pn** **10 32 36.1 -0.9**
PCBR *e*Sn **Sn** **10 33 10.3 -2.9**
12nm,0.5s
PCBR Castelo Branco 3.04 358 Pn **Pn** **10 32 36.1 -0.9**
PCBR Sn **Sn** **10 33 10.3 -2.9**
5.9nm,0.5s
EBAN Banos Encina 3.14 63 Pn **Pn** **10 32 37.7 -0.7**
3.8nm,0.1s,SNR=7.9
EBAN Sn **Sn** **10 33 13.8 -1.8**
3.5nm,0.2s,SNR=4.0
EBAN Lg 10 33 27.3
4.4nm,0.1s,SNR=7.9
EBAN Banos Encina 3.14 63 Pn **Pn** **10 32 37.8 -0.6**
EBAN Sn **Sn** **10 33 14.2 -1.5**
EBAN Lg 10 33 26.9
EQES Quesada 3.55 72 Sn **Sn** **10 33 21.7 -4.3**
2.4nm,0.3s,SNR=4.0
EQES Lg 10 33 37.9
0.7nm,0.1s,SNR=7.9
EVIA Vianos 4.25 63 Sn **Sn** **10 33 40.3 -3.5**
0.8nm,0.2s,SNR=7.9
EVIA Lg 10 34 00.4
1.2nm,0.3s,SNR=5.0
ETOB Tobarra 4.95 66 Sn **Sn** **10 33 55.7 -5.7**
3.7nm,0.2s,SNR=6.0
ELOB Lobios 5.09 354 Sn **Sn** **10 33 59.6 -5.5**
0.6nm,0.1s,SNR=4.0
ECAL Calabor 5.16 5 Sn **Sn** **10 34 01.6 -5.0**
3.6nm,0.2s,SNR=7.9

NAO ***07*** *10:58:07.6±2.6, 70.77N×6.86W*
NEIC ***07*** *10:58:08.5±0.8, 70.97N×6.82W, h10km, ML3.3(BER), Error ellipse: s-maj=14.0km s-min=7.7km az=180.0*
BER ***07*** *10:58:10.9±1.0, 71.15N×7.05W, h10km, MD3.2, ML3.3*
ISC 07 10:58:06.4±0.6, 71.00N±0.08×6.61W±0.09, h10km, n13, σ1§10/17, 3C, Jan Mayen Island region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JNE	**Jan Mayen East**	**0.55**	**269**	*i*P	**Pg**	**10 58 18.6**	**+1.1**
JNE				*e*S	**Sg**	**10 58 24.1**	**-0.9**
JNE				AML	AML	10 58 27.2	
	comp=Z,1μm,0.3s						
JNW	**Jan Mayen West**	**0.59**	**273**	*i*P	**Pg**	**10 58 19.1**	**+0.7**
JNW				*e*S	**Sg**	**10 58 25.9**	**-0.4**
JNW				AML	AML	10 58 29.1	
	comp=Z,1μm,0.2s						
JMIC	**Jan Mayen**	**0.62**	**270**	Pg	**Pg**	**10 58 19.4**	**+0.4**
JMIC				Lg		10 58 26.9	
JMI	**Jan Mayen**	**0.70**	**265**	*e*P	**Pb**	**10 58 20.9**	**+0.7**
JMI				*e*S	**Sb**	**10 58 29.5**	**-0.1**
JMI				AML	AML	10 58 32.2	
	comp=Z,2μm,0.4s						
DAG	**Danmarks Havn**	**6.68**	**336**	*i*P	**Pn**	**10 59 44.8**	**-2.2**
	comp=Z,6.0nm,0.8s						
LOF	**Lofoten**	**7.60**	**103**	*e*P	**Pn**	**11 00 00.7**	**+0.7**
KBS	**Kingsbay**	**9.23**	**23**	Pn	**P**	**11 00 22.5**	**-0.1**
KBS				Sn	**Sn**	**11 01 59.0**	**-8.5**
KBS	**Kingsbay**	**9.23**	**23**	*e*Pn	**P**	**11 00 22.1**	**-0.5**
	comp=Z,100nm,1.2s						
SPB4	**Spitsbergen Ar**	**9.35**	**30**	*e*Pn	**P**	**11 00 25.3**	**+1.1**
SPA0	**Spitsbergen Ar**	**9.35**	**30**	Pn	**P**	**11 00 25.2**	**+1.0**
	baz=225,slow=14						
NSS	**Namsos**	**9.54**	**124**	*e*P	**P**	**11 00 25.0**	**-1.6**
ARA0	**ARCESS Array S**	**10.88**	**82**	Pn	**P**	**11 00 42.2**	**-2.7**
	baz=290,slow=12						
FIA0	**FINESS Array S**	**16.04**	**110**	P	**P**	**11 01 54.1**	**+0.8**
	baz=313,slow=11						

MAN 07 11:21:35.8, 14.13N×120.27E, h70km, mb4.4, ML3.2, MS3.0, 9C-2D, Luzon

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
LUBP	**Lubang**	**0.39**	**183**	*e*P	P	11 21 51.3	+3.5
LUBP				*e*S	S	11 22 02.8	+6.2
TGY	**Tagaytay City**	**0.65**	**92**	*i*P	P	11 21 52.5	+2.1
TGY				*i*S	S	11 22 03.3	+2.2
PGP	**Puerto Galera**	**0.91**	**133**	*i*P	P	11 21 54.0	+0.6
PGP				*i*S	S	11 21 59.0	-7.5
QVPH	**Quezon City--P**	**0.93**	**56**	*e*P	P	11 21 54.4	+0.8
QVPH				*e*S	S	11 22 08.4	+1.5
PCPH	**Palayan**	**1.64**	**29**	*e*P	P	11 22 02.6	-0.6
PCPH				*e*S	S	11 22 22.3	-1.0
BOAC	**Boac**	**1.67**	**113**	*e*P	P	11 22 04.4	+0.7
BOAC				*e*S	S	11 22 25.3	+1.2
POLP	**Polilio Island**	**1.73**	**70**	*e*P	P	11 22 04.6	+0.2
SJMP	**San Jose**	**1.85**	**153**	*e*P	P	11 22 06.9	+0.8
SJMP				*e*S	S	11 22 28.8	+0.4
BALP	**Baler**	**2.04**	**38**	*e*P	P	11 22 09.3	+0.6
BALP				*e*S	S	11 22 33.6	+0.7
BUSP	**Coron**	**2.11**	**182**	*e*P	P	11 22 10.2	+0.5
BUSP				*e*S	S	11 22 35.2	+0.5
ENPP	**El Nido**	**3.02**	**196**	*e*P	P	11 22 23.0	+0.5
ENPP				*e*S	S	11 22 57.1	-0.4
CUYO	**Cuyo Island**	**3.34**	**167**	*e*P	P	11 22 25.3	-1.7

IDC ***07*** *11:34:58.6±6.1, 31.08S×179.84W, h377km±63km, mb2.7/2, mb1 3.0/3, mb1mx2.9/11, Error ellipse: s-maj=67.4km s-min=34.0km az=11.0*
ISC 07 11:34:56.0±2.0, 31.2S±0.1×179.2W±0.4, h417km±24km, n17, σ0§80/14, mb3.0/2, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PUZ	**Puketiti**	**7.20**	**197**	P	**P**	**11 36 44.5**	**+1.3**
PUZ				S	**S**	**11 38 06.6**	**-1.2**
URZ	**Urewera**	**7.71**	**202**	P	**P**	**11 36 48.3**	**-0.6**
	1.3nm,0.3s,baz=147,slow=2.1,SNR=19						
URZ				S	**S**	**11 38 18.3**	**+0.4**
	6.7nm,0.3s,baz=89,slow=11,SNR=11						
URZ	**Urewera**	**7.71**	**202**	P	**P**	**11 36 48.0**	**-0.9**
KNZ	**Kokohu**	**8.24**	**197**	P	**P**	**11 36 56.1**	**+1.1**
MTW	**Mount Morrison**	**10.85**	**202**	P	**P**	**11 37 24.4**	**-0.5**
MTW				S	**S**	**11 39 22.3**	**-0.6**
SNZO	**South Karori**	**11.26**	**204**	P	**P**	**11 37 28.8**	**-0.6**
THZ	**Tophouse**	**12.34**	**209**	P	**P**	**11 37 40.8**	**-0.7**
THZ				S	**S**	**11 39 54.7**	**+1.1**
KHZ	**Kahutara**	**12.65**	**205**	P	**P**	**11 37 45.4**	**+0.5**
ASAR	**Alice Springs**	**42.08**	**268**	P	**P**	**11 42 11.2**	**+0.4**
	0.4nm,0.9s,mb2.8,baz=102,slow=8.3,SNR=4.1						
ASAR				PcP	PcP	11 44 00.0	+2.9
	0.2nm,0.4s,baz=110,slow=3.9,SNR=4.4						
WRA	**Warramunga Ar**	**43.14**	**274**	P	**P**	**11 42 18.8**	**-0.6**
	0.5nm,0.4s,mb3.2,baz=112,slow=7.8,SNR=12						
JOF	**Joensuu**	**142.76**	**337**	*e*pkp	PKPdf	11 53 38.0	-1.6
KAF	**Kangasniemi**	**144.94**	**339**	*e*pkp	PKPdf	11 53 47.3	+4.0
	baz=43,slow=3.3						
FINES	**FINESS Array B**	**145.52**	**339**	PKPbc	PKPbc	11 53 50.3	+4.8
	3.7nm,0.5s,baz=45,slow=3.9,SNR=37						
NB2	**NORSAR Subarra**	**149.36**	**350**	PKP		11 54 05.9	
	1.2nm,0.6s,baz=20,slow=4.1						
NOA	**NORSAR Array B**	**149.36**	**350**	PKPbc	PKPdf	11 54 03.5	+13
	1.9nm,1.0s,baz=21,slow=2.7,SNR=3.7						
AKASG	**Malin Array Be**	**151.30**	**321**	PKPbc	PKPdf	11 54 05.8	+12
	0.9nm,0.5s,baz=45,slow=2.6,SNR=5.4						
AKASG				PKPab	PKPab	11 54 15.2	+2.6
	0.6nm,0.3s,baz=225,slow=3.9,SNR=6.1						
BRTR	**Keskin Array B**	**152.08**	**297**	PKPbc	PKPdf	11 54 08.5	+13
	1.0nm,1.0s,baz=56,slow=5.2,SNR=3.7						

IDC 07 11:43:52.9±2.1, 6.65S×129.20E, mb3.7/1, mb1 3.8/4, mb1mx3.7/12, ML3.5/3, MS3.5/1, Ms1 3.5/1, ms1mx2.6/16, Error ellipse: s-maj=89.8km s-min=27.4km az=76.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**11.90**	**197**	*e*P	P	11 46 44.5	-2.5
	3.2nm,1.0s						
FITZ				*e*S	S	11 48 37.9	-24
FITZ	**Fitzroy Crossi**	**11.90**	**197**	Pn	P	11 46 43.4	-3.6
	0.3nm,0.3s,baz=20,slow=12,SNR=20						
FITZ				Sn	S	11 48 38.8	-23
	0.7nm,0.3s,slow=17,SNR=4.4						
WRA	**Warramunga Arr**	**14.13**	**160**	Pn	P	11 47 15.0	-1.6
	0.4nm,0.3s,baz=344,slow=13,SNR=18						
WRA				Sn	S	11 49 36.2	-19
	0.7nm,0.3s,baz=337,slow=22,SNR=9.2						
WB2	**Warramunga Arr**	**14.13**	**160**	*e*P	P	11 47 15.0	-1.7
WB2				*e*S	S	11 49 37.4	-18
ASAR	**Alice Springs**	**17.52**	**166**	P	P	11 47 58.9	-1.4
	0.1nm,0.3s,baz=333,slow=9.2,SNR=10						
ASAR				S	S	11 50 58.4	-16
	0.1nm,0.3s,baz=346,slow=25,SNR=6.6						
TGY	**Tagaytay City**	**22.19**	**338**	LR	LR	11 59 20.0	
	comp=Z,134nm,19.7s,baz=52,slow=42						
MKAR	**Makanchi Array**	**67.50**	**327**	P	P	11 54 50.9	-2.1
	0.9nm,1.1s,baz=124,slow=5.2,SNR=3.2						

IDC 07 12:21:00.4±3.0, 6.71S×105.63E, mb4.0/5, mb1 4.2/5, mb1mx3.9/15, Error ellipse: s-maj=159.0km s-min=20.8km az=52.0, Sunda Strait

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**30.81**	**118**	P	P	12 27 18.4	-2.0
	0.6nm,0.5s,baz=289,slow=11,SNR=9.4						
ASAR	**Alice Springs**	**31.97**	**125**	P	P	12 27 27.9	-2.6
	0.5nm,0.8s,baz=302,slow=8.2,SNR=12						
STKA	**Stephens Creek**	**41.85**	**132**	P	P	12 28 52.8	-1.3
	2.7nm,0.6s,baz=311,slow=7.8,SNR=7.9						
MKAR	**Makanchi Array**	**57.16**	**341**	P	P	12 30 49.3	-2.1
	0.4nm,0.3s,baz=153,slow=8.8,SNR=9.9						
ZAL	**Zalesovo**	**62.91**	**346**	P	P	12 31 27.9	-2.9
	2.5nm,0.3s,baz=198,slow=4.4,SNR=3.7						

MEX 07 12:34:21.2±0.4, 15.31N×96.80W, h10km, MD3.9, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
HUIG	**Huatulco**	**0.81**	**56**	*i*P	Pb	12 34 34.7	-2.1
HUIG				*i*S	Sb	12 34 45.4	-2.1
VHO	**Vista Hermosa**	**1.75**	**2**	*e*P	Pn	12 34 48.0	-3.9
VHO				*i*S	Sn	12 35 08.6	-5.8
OXX	**Oaxaca**	**1.76**	**2**	*i*P	Pn	12 34 49.0	-3.0
OXX				*i*S	Sn	12 35 09.3	-5.3
CMIG	**Matias Romero**	**2.55**	**46**	*i*P	Pn	12 34 58.9	-4.4
CMIG				*i*S	Sn	12 35 30.9	-3.9

NEIC ***07*** *12:36:19.8, 35.01N×4.00W, MG3.5(MDD), After MDD.*
MDD ***07*** *12:36:20.1±1.7, 35.02N×4.01W, mb3.6/7, Error ellipse: s-maj=17.1km s-min=6.9km az=9.0, AftershockPLICA PRXIMO*
ISC 07 12:36:19.6±1.2, 35.09N±0.07×4.05W±0.05, h10km, n24, σ1§23/41, Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
EMEL	**Melilla**	**0.92**	**77**	P	**Pb**	**12 36 36.8**	**-0.4**
	35nm,0.1s,SNR=8.9						
EMEL				S	**Sb**	**12 36 49.5**	**+0.2**
	260nm,0.2s,SNR=7.9						
ERON	**Agron**	**1.93**	**6**	P	**Pn**	**12 36 53.2**	**+0.3**
	1.0nm,0.1s,SNR=7.9						
ERON	**Agron**	**1.93**	**6**	P	**Pn**	**12 36 53.2**	**+0.3**
EBER	**Berja**	**2.03**	**27**	S	**Sn**	**12 37 19.5**	**-0.4**
	9.2nm,0.3s						
EBER	**Berja**	**2.03**	**27**	P	**Pn**	**12 36 53.0**	**-1.4**
EBER				S	**Sn**	**12 37 19.9**	**-0.1**
ELOJ	**Sierra Loja**	**2.05**	**358**	P	**Pn**	**12 36 55.0**	**+0.4**
ELOJ				S	**Sn**	**12 37 22.3**	**+1.8**
ELIJ	**Sierra de Lija**	**2.12**	**330**	P	**Pn**	**12 36 57.6**	**+2.0**
	8.0nm,0.4s,SNR=13						
ELIJ				S	**Sn**	**12 37 25.4**	**+3.2**
	2.2nm,0.3s,SNR=4.0						
ELIJ	**Sierra de Lija**	**2.12**	**330**	P	**Pn**	**12 36 57.6**	**+2.0**
ELIJ				S	**Sn**	**12 37 26.5**	**+4.3**
ELUQ	**Luque**	**2.47**	**356**	P	**Pn**	**12 37 02.9**	**+2.3**
	2.2nm,0.2s,SNR=7.9						
EQES	**Quesada**	**2.82**	**16**	P	**Pn**	**12 37 06.8**	**+1.3**
	0.1nm,0.0s,SNR=6.6						
EQES				S	**Sn**	**12 37 40.2**	**+0.2**
	7.4nm,0.3s						
EQES	**Quesada**	**2.82**	**16**	P	**Pn**	**12 37 06.7**	**+1.1**
EQES				S	**Sn**	**12 37 40.1**	**+0.2**
EHUE	**Huescar**	**2.96**	**23**	P	**Pn**	**12 37 08.4**	**+0.8**
	0.7nm,0.2s,SNR=7.9						
EHUE				S	**Sn**	**12 37 44.1**	**+0.6**
	1.7nm,0.2s,SNR=7.9						
EHUE	**Huescar**	**2.96**	**23**	P	**Pn**	**12 37 07.6**	**0.0**
EHUE				S	**Sn**	**12 37 44.0**	**+0.5**
EADA	**Adamuz**	**3.10**	**352**	P	**Pn**	**12 37 10.2**	**+0.6**
	1.3nm,0.1s,SNR=9.2						
EADA				S	**Sn**	**12 37 47.2**	**+0.1**
	2.7nm,0.2s						
EADA	**Adamuz**	**3.10**	**352**	P	**Pn**	**12 37 09.9**	**+0.4**
EADA				S	**Sn**	**12 37 47.2**	**+0.1**
ECAB	**El Cabril**	**3.17**	**340**	P	**Pn**	**12 37 10.9**	**+0.2**
	0.5nm,0.1s,SNR=7.9						
ECAB				S	**Sn**	**12 37 49.0**	**+0.1**
	1.6nm,0.2s,SNR=7.9						
EMIN	**Mina Concepcio**	**3.41**	**322**	P	**Pn**	**12 37 13.2**	**-0.7**
	1.2nm,0.1s,SNR=16						
EMIN	**Mina Concepcio**	**3.41**	**322**	P	**Pn**	**12 37 13.2**	**-0.8**
EMIN				S	**Sn**	**12 37 51.9**	**-2.9**
EMUR	**La Murta**	**3.56**	**39**	S	**Sn**	**12 37 56.0**	**-2.6**
	3.6nm,0.4s,SNR=5.0						
EGRO	**El Granado**	**3.69**	**312**	P	**Pn**	**12 37 17.4**	**-0.6**
	0.8nm,0.1s,SNR=7.9						
EGRO				S	**Sn**	**12 37 59.7**	**-2.3**
	2.6nm,0.2s,SNR=7.9						
EGRO	**El Granado**	**3.69**	**312**	P	**Pn**	**12 37 17.2**	**-0.7**
EGRO				S	**Sn**	**12 37 59.7**	**-2.4**
ETOB	**Tobarra**	**4.07**	**29**	P	**Pn**	**12 37 22.3**	**-1.1**
	1.0nm,0.2s,SNR=4.0						
ETOB				S	**Sn**	**12 38 10.1**	**-1.6**
	2.0nm,0.6s,SNR=7.9						
ETOB	**Tobarra**	**4.07**	**29**	P	**Pn**	**12 37 25.3**	**+1.9**
ETOB				S	**Sn**	**12 38 10.1**	**-1.6**
ESDC	**Sonseca Array**	**4.57**	**1**	P	**Pn**	**12 37 29.9**	**-0.6**
	1.1nm,0.2s,baz=178,slow=12,SNR=5.2						

JMA ***07*** *12:37:45.8±0.1, 43.87N×145.90E, h136km±1km, M3.2*
IDC ***07*** *12:37:49.2±2.9, 44.52N×145.59E, h144km±29km, mb3.0/5, mb1 3.2/6, mb1mx3.0/23, Error ellipse: s-maj=114.0km s-min=23.6km az=169.0*
ISC 07 12:37:44.1±0.7, 43.81N±0.10×145.90E±0.09, h146km±7km, n17, σ0§78/28, mb3.1/5, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
NEM2	**Nemuro 2**	**0.46**	**194**	P	**P**	**12 38 05.6**	**+0.3**
NEM2				*e*S	**S**	**12 38 20.2**	**-1.4**
JRA	**Rausu**	**0.58**	**283**	P	**P**	**12 38 05.7**	**-0.2**
JNK	**Nakash**	**0.89**	**255**	P	**P**	**12 38 08.4**	**+0.6**
JNK				*e*S	**S**	**12 38 26.1**	**+0.1**
JAK	**Akkeshi**	**1.20**	**227**	P	**P**	**12 38 11.5**	**+0.9**
JAK				*e*S	**S**	**12 38 30.7**	**-0.3**
JTKR	**Abashiri--Toko**	**1.45**	**277**	P	**P**	**12 38 13.5**	**+0.3**
JTKR				*e*S	**S**	**12 38 34.5**	**-1.1**
JAR	**Ashorobuto**	**1.63**	**252**	P	**P**	**12 38 16.4**	**+1.3**
JAR				*e*S	**S**	**12 38 39.1**	**+0.1**
JOB	**Onbets**	**1.76**	**240**	P	**P**	**12 38 17.8**	**+1.3**
JOB				*e*S	**S**	**12 38 41.3**	**-0.2**
JMP	**Maruseppu**	**1.85**	**277**	P	**P**	**12 38 18.0**	**+0.5**
JMP				*e*S	**S**	**12 38 42.4**	**-0.8**
JCH	**Churui**	**2.21**	**238**	P	**P**	**12 38 21.8**	**-0.1**
JCH				*e*S	**S**	**12 38 49.7**	**-1.2**
JKK2	**Kamakawa 2**	**2.28**	**273**	P	**P**	**12 38 23.4**	**+0.6**
JKK2				*e*S	**S**	**12 38 53.2**	**+0.7**
ASAJ	**Asahikawa**	**2.40**	**278**	P	**P**	**12 38 25.2**	**+0.9**
	11nm,0.3s,baz=87,slow=13,SNR=88						
ASAJ				S	**S**	**12 38 55.2**	**0.0**
	0.5nm,0.3s,baz=17,slow=19,SNR=4.0						
ASAJ	**Asahikawa**	**2.40**	**278**	P	**P**	**12 38 25.2**	**+0.8**
ASAJ				*e*S	**S**	**12 38 55.0**	**-0.2**
ILAR	**Eielson Array**	**41.97**	**36**	P	**P**	**12 45 22.4**	**+0.9**
	0.2nm,0.6s,mb2.9,baz=285,slow=8.4,SNR=8.1						
MKAR	**Makanchi Array**	**43.75**	**297**	P	**P**	**12 45 35.9**	**-0.2**
	0.2nm,0.5s,mb3.0,baz=69,slow=9.8,SNR=2.6						
INK	**Inuvik**	**46.81**	**30**	P	**P**	**12 45 59.8**	**-0.3**
	0.3nm,0.5s,mb3.2,baz=303,slow=2.8,SNR=8.3						
YKA	**Yellowknife Ar**	**56.25**	**33**	P	**P**	**12 47 10.1**	**-0.8**
	0.3nm,0.8s,mb3.2,baz=303,slow=6.8,SNR=6.5						
FINES	**FINESS Array B**	**64.40**	**332**	P	**P**	**12 48 04.3**	**-1.7**
	0.4nm,0.5s,mb3.5,baz=53,slow=6.9,SNR=5.0						

IDC 07 12:43:39.9±1.8, 47.83S×103.61E, mb3.6/3, mb1 3.9/3, mb1mx3.8/10, MS3.9/4, Ms1 4.0/4, ms1mx3.6/8, Error ellipse: s-maj=60.5km s-min=47.9km az=161.0, Southeast Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**32.85**	**75**	LR	LR	13 01 12.1	
	comp=Z,257nm,18.3s,baz=205,slow=32						
ASAR	**Alice Springs**	**34.07**	**56**	P	P	12 50 25.5	-2.4
	0.4nm,0.8s,baz=216,slow=7.8,SNR=3.7						
ASAR				PcP	PcP	12 53 03.9	-1.9
	0.5nm,0.8s,baz=223,slow=2.5,SNR=4.7						
ASAR				LR	LR	13 02 15.4	
	comp=Z,101nm,18.6s,baz=207,slow=33						
WRA	**Warramunga Arr**	**37.31**	**52**	P	P	12 50 53.7	-1.8
	0.8nm,0.8s,baz=213,slow=8.6,SNR=3.9						
CMAR	**Chiang Mai Arr**	**66.11**	**355**	P	P	12 54 28.6	-2.5
	1.0nm,0.9s,baz=207,slow=6.2,SNR=4.9						
CMAR				LR	LR	13 21 55.6	
	comp=Z,66nm,18.1s,baz=200,slow=35						
PLCA	**Paso Flores**	**91.67**	**184**	LR	LR	13 41 05.9	
	comp=Z,102nm,18.7s,baz=181,slow=38						
INK	**Inuvik**	**145.28**	**33**	PKPbc	PKPbc	13 03 15.0	-3.4
	6.8nm,1.3s,baz=314,slow=3.0,SNR=6.7						
NVAR	**Mina Array Bea**	**148.34**	**92**	PKPbc	PKPdf	13 03 26.8	+0.9
	0.9nm,0.9s,baz=233,slow=4.5,SNR=2.9						
YKA	**Yellowknife Ar**	**154.19**	**41**	PKPbc	PKPdf	13 03 41.1	+7.3
	0.2nm,0.9s,baz=281,slow=3.1,SNR=3.6						
YKA				PKPab	PKPab	13 03 55.9	-0.5
	0.4nm,0.7s,baz=289,slow=4.5,SNR=7.4						

IDC ***07*** *13:40:50.1±10.0, 24.22S×179.87W, h464km±110km, mb3.5/5, mb1 3.6/6, mb1mx3.4/13, Error ellipse: s-maj=83.5km s-min=33.1km az=38.0*
NEIC ***07*** *13:40:56.2±4.5, 24.525S×179.95E, h530km±45km, mb4.0/3, Error ellipse: s-maj=50.4km s-min=22.8km az=216.0*
ISC 07 13:40:49.5±5.3, 24.2S±0.2×179.8E±0.4, h445km±59km, n17, σ0§87/16, mb4.1/8, 2C-5D, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**14.23**	**189**	P	**P**	**13 43 54.4**	**+0.5**
	1.1nm,0.3s,baz=338,slow=2.5,SNR=6.5						
URZ				S	**S**	**13 46 23.1**	**+0.6**
	1.0nm,0.3s,baz=255,slow=21,SNR=14						
RPZ	**Rata Peaks**	**20.78**	**198**	P	**P**	**13 44 57.3**	**-1.6**
	7.4nm,0.7s,baz=37,slow=10,SNR=5.7						
CTA	**Charters Tower**	**31.32**	**271**	*i*P	**P**	**13 46 34.7**	**+1.6**
	7.7nm,0.4s,mb4.5						
CTAO	**Charters Tower**	**31.32**	**271**	*e*P	**P**	**13 46 34.5**	**+1.5**
TOO	**Toolangi**	**32.16**	**237**	*i*P	**P**	**13 46 40.7**	**+0.6**
	1.9nm,0.6s,mb3.7						
STKA	**Stephens Creek**	**34.47**	**248**	*i*P	**P**	**13 47 00.1**	**+0.5**
	3.0nm,0.6s,mb3.9						
STKA	**Stephens Creek**	**34.47**	**248**	P	**P**	**13 47 00.1**	**+0.5**
	2.8nm,0.5s,mb3.9,baz=97,slow=10.0,SNR=16						
AS12	**Alice Springs**	**41.83**	**261**	*i*P	**P**	**13 48 00.4**	**+0.2**
	6.4nm,1.2s,mb3.9						
ASAR	**Alice Springs**	**41.83**	**261**	P	**P**	**13 48 00.2**	**+0.1**
	1.7nm,0.5s,mb3.7,baz=93,slow=6.7,SNR=44						
WB2	**Warramunga Ar**	**42.22**	**267**	*i*P	**P**	**13 48 03.0**	**-0.3**
WRAB	**Tennant Creek**	**42.22**	**267**	*e*P	**P**	**13 48 02.9**	**-0.5**
WRA	**Warramunga Arr**	**42.23**	**267**	P	**P**	**13 48 03.1**	**-0.3**
	4.1nm,0.4s,mb4.2,baz=100,slow=8.2,SNR=99						
FORT	**Forrest**	**46.06**	**250**	*i*P	**P**	**13 48 31.8**	**-1.6**
	27nm,0.5s,mb4.9						
FITZ	**Fitzroy Crossi**	**50.65**	**266**	*i*P	**P**	**13 49 07.6**	**-0.6**
	5.4nm,0.8s,mb3.9						
CMAR	**Chiang Mai Arr**	**89.47**	**290**	P	**P**	**13 53 00.2**	**+0.9**
	0.3nm,0.3s,mb3.6,baz=142,slow=3.2,SNR=4.8						
BRTR	**Keskin Array B**	**147.62**	**307**	PKPbc	PKPdf	13 59 41.1	+2.0
	0.5nm,0.4s,baz=132,slow=5.2,SNR=3.6						
CLL	**Collm**	**151.07**	**343**	*e*PKP1	PKPdf	13 59 49.0	+4.9

TAP ***07*** *13:54:46.0,23.57N×121.79E, h21km, ML3.3*
JMA ***07*** *13:54:51.9±0.1, 23.54N×121.90E, h63km, M2.8*
ISC 07 13:54:51.6±2.2, 23.5N±0.2×122.0E±0.1, h21km, n6, σ0§38/11, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
YOJ	**Yonaguni jima**	**1.33**	**45**	P	**Pn**	**13 55 15.3**	**0.0**
YOJ				*e*S	**Sb**	**13 55 32.5**	**+0.1**
HATJ	**Hateruma jima**	**1.76**	**72**	P	**Pn**	**13 55 21.4**	**0.0**
HATJ				*e*S	**Sn**	**13 55 43.7**	**+0.4**
IRIF	**Iriomote-Funau**	**1.80**	**63**	P	**Pn**	**13 55 22.0**	**+0.1**
IRIF				*e*S	**Sn**	**13 55 44.7**	**+0.4**
JKRS	**Kuro-shima**	**1.99**	**69**	P	**Pn**	**13 55 24.9**	**+0.2**
JKRS				*e*S	**Sn**	**13 55 49.8**	**+0.5**
JIJ	**Ishigaki jima**	**2.15**	**67**	P	**Pn**	**13 55 26.7**	**-0.3**
JIJ				S	**Sn**	**13 55 52.8**	**-0.6**
JTJ	**Tarama**	**2.73**	**65**	*e*S	**Sn**	**13 56 07.2**	**

3µm,0.7s
ZLN Zelenaya 1.19 307 *i* P Pb 14 27 34.1 +0.8
ZLN *i* S Sb 14 27 50.3 +1.9
CIRR Tsirk 1.27 310 *eP* Pb 14 27 35.6 +0.8
CIRR *i* S Sb 14 27 53.6 +2.7
LGNR Loginova 1.28 308 *i* P Pb 14 27 36.0 +1.1
LGNR *eS* Sb 14 27 53.3 +2.3
TUMR Tumrok 1.33 270 *eP* Pb 14 27 36.5 +0.6
TUMR *eS* Sb 14 27 53.4 +0.6
KMNR Kamenistaya 1.35 290 *i* P Pn 14 27 36.5 +0.3
KMNR *i* S Sb 14 27 54.2 +1.0
KRSR Krestovskiy 1.41 311 *eP* Pn 14 27 37.7 +0.7
KRSR *eS* Sb 14 27 56.4 +1.4
KPT Kopyto 1.44 298 *eP* Pn 14 27 37.7 +0.3
KPT *eS* Sb 14 27 56.8 +1.0
KLY Klyuchi 1.44 315 P Pn 14 27 36.5 -0.9
KLY S Sb 14 27 54.4 -1.4
KLY Klyuchi 1.44 315 *i* P Pn 14 27 36.3 -1.1
KLY *i* S Sb 14 27 54.0 -1.8
SVLR Shiveluch 1.45 331 *eP* Pn 14 27 38.0 +0.4
SVLR *eS* Sb 14 27 56.8 +0.6
KOZ Kozyrevsk 1.66 298 P Pn 14 27 41.2 +0.7
KOZ S Sn 14 28 02.3 +0.6
KOZ Kozyrevsk 1.66 298 *eP* Pn 14 27 41.2 +0.7
KOZ *i* S Sn 14 28 03.1 +1.4
SRDR Sredinnyy 1.86 304 *eP* Pn 14 27 44.1 +0.7
SRDR *eS* Sn 14 28 08.5 +1.6
BKI Bering 2.00 92 *eP* Pn 14 27 44.1 -1.4
BKI *i* S Sn 14 28 08.4 -2.1
BKI Smax
240nm,0.9s
KII Karymskiy 2.17 235 P Pn 14 27 48.1 +0.2
KII S Sn 14 28 14.0 -0.9
KII Karymskiy 2.17 235 *eP* Pn 14 27 48.0 +0.1
KII *eS* Sn 14 28 14.4 -0.5
ESO Esso 2.23 288 *eP* Pn 14 27 48.1 -0.7
ESO *eS* Sn 14 28 17.2 +0.8
ESO Smax
120nm,0.8s
SPN Mys Shipunski 2.65 214 P Pn 14 27 54.1 -0.6
SPN S Sn 14 28 24.4 -2.5
SPN Mys Shipunski 2.65 214 *eP* Pn 14 27 54.0 -0.7
SPN *i* S Sn 14 28 24.3 -2.6
NLC Nalytchevo 2.82 222 P Pn 14 27 57.2 0.0
NLC S Sn 14 28 30.6 -0.8
NLC Nalytchevo 2.82 222 *eP* Pn 14 27 57.2 0.0
NLC *i* S Sn 14 28 30.1 -1.3
SDLR Sedlovina 2.93 227 *eP* Pn 14 27 59.1 +0.4
SDLR *i* S Sn 14 28 34.3 +0.2
SMAR Somma 2.98 228 *eP* Pn 14 27 59.7 +0.3
SMAR *i* S Sn 14 28 34.8 -0.5
AVH Avacha 3.00 228 *eP* Pn 14 28 00.5 +0.8
AVH *eS* Sn 14 28 37.8 +1.9
UGLR Uglovaya 3.00 227 *eP* Pn 14 28 00.2 +0.4
UGLR *eS* Sn 14 28 35.0 -1.0
KOK Koryaka 3.03 230 *eP* Pn 14 28 01.1 +1.0
KOK *eS* Sn 14 28 37.1 +0.6
GNL Ganaly 3.10 240 *eP* Pn 14 28 01.5 +0.3
GNL *eS* Sn 14 28 36.9 -1.5
PET Petropavlovsk 3.21 226 P Pn 14 28 02.6 -0.1
PET S Sn 14 28 39.5 -1.7
PET Petropavlovsk 3.21 226 *eP* Pn 14 28 02.5 -0.1
PET *eS* Sn 14 28 39.9 -1.3
KRMR Karymshinskiy 3.57 228 *eP* Pn 14 28 08.7 +0.9
KRMR *eS* Sn 14 28 51.1 +0.8
RUS Russkaya 3.72 221 P Pn 14 28 10.6 +0.7
RUS S Sn 14 28 53.4 -0.6
RUS Russkaya 3.72 221 *eP* Pn 14 28 10.6 +0.7
RUS *i* S Sn 14 28 53.8 -0.2
GRL Gorelyy 3.80 225 *eP* Pn 14 28 12.0 +1.0
GRL *eS* Sn 14 28 58.2 +2.2
APC Apacha 3.94 235 *eP* Pn 14 28 15.2 +2.1
APC *eS* Sn 14 29 00.5 +0.9
APC Smax
100nm,1.0s
OSSR Ossora 3.96 4 *eP* Pn 14 28 13.3 -0.1
OSSR *eS* Sn 14 28 56.8 -3.4
SKR Severo-Kuril's 6.02 222 *eS* Sn 14 29 53.0 +1.0

IDC ***07*** *14:34:43.3±11.0, 8.53S×123.63E, h136km±128km, mb3.8/1, mb1 3.4/4, mb1mx3.2/13, ML3.0/3, Error ellipse: s-maj=123.0km s-min=56.4km az=47.0*

ISC 07 14:34:44.3±5.5, 8.6S±0.2×123.6E±0.4, h169km±60km, n4, σ0≥94/5, mb3.9/1, Flores region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**9.65**	**168**	P		**P**	**14 36 60.0**	**-0.3**
	0.1nm,0.3s,baz=52,slow=17,SNR=3.8							
FITZ				S		**S**	**14 38 47.0**	**+0.3**
	0.3nm,0.3s,baz=358,slow=13,SNR=6.3							
WRA	**Warramunga Arr**	**15.32**	**139**	P		**P**	**14 38 13.5**	**+0.4**
	0.1nm,0.3s,baz=321,slow=11,SNR=5.9							
ASAR	**Alice Springs**	**17.93**	**148**	P		**P**	**14 38 43.5**	**-0.7**
	0.1nm,0.3s,baz=328,slow=12,SNR=6.3							
ZAL	**Zalesovo**	**70.38**	**337**	P		**P**	**14 45 41.9**	**+0.2**
	0.8nm,0.3s,mb3.9,baz=157,slow=5.4,SNR=3.3							

MEX 07 14:49:49.3±0.6, 16.47N×96.01W, h46km±18km, MD3.7, Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
HUIG	**Huatulco**	**0.70**	**188**	*i* P		P	14 50 01.1	-1.8
HUIG				*i* S		S	14 50 10.9	-2.0
VHO	**Vista Hermosa**	**0.92**	**311**	*i* P		P	14 50 04.4	-1.5
VHO				*i* S		S	14 50 15.9	-2.3
CMIG	**Matias Romero**	**1.24**	**60**	*i* P		P	14 50 08.7	-1.9
CMIG				*i* S		S	14 50 23.7	-2.7
PNIG	**Pinotepa**	**2.03**	**268**	*eP*		P	14 50 22.3	+0.6
PNIG				*i* S		S	14 50 42.4	-3.6

IDC ***07*** *14:58:19.8±0.7, 57.95S×25.59W, h58km±6km, mb4.1/10, mb1 4.1/10, mb1mx4.0/15, MS3.7/3, Ms1 3.7/3, ms1mx3.4/13, Error ellipse: s-maj=25.4km s-min=17.7km az=21.0*

NEIC ***07*** *14:58:21.4±1.4, 57.90S×25.54W, h74km±13km, mb4.0/1, Error ellipse: s-maj=11.4km s-min=7.7km az=216.0*

ISC 07 14:58:18.5±3.1, 57.8S±0.1×25.5W±0.2, h57km±31km, n47, σ0≤63/20, mb4.5/13, MS3.7/3, 2C-1D, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
VNA1	**Neumayer--Stat**	**14.80**	**157**	⇓*i*		**P**	**15 01 45.5**	**+0.1**
VNA3	**Neumayer Olymp**	**15.00**	**160**	⇓*i*		**P**	**15 01 47.6**	**-0.4**
VNA2	**Neumayer--Watz**	**15.19**	**157**	P		**P**	**15 01 50.5**	**0.0**
SNAA	**Sanae**	**16.74**	**155**	⇑*i*		**P**	**15 02 09.8**	**-0.2**
USHA	**Ushuaia**	**23.69**	**259**	P		**P**	**15 03 26.4**	**+1.3**
	14nm,0.9s,mb4.4,baz=54,slow=8.7,SNR=2.6							
QSPA	**South Pole Qui**	**32.42**	**180**	*eP*		**P**	**15 04 44.6**	**+0.2**
	1.9nm,0.7s,mb4.0							
PLCA	**Paso Flores**	**33.23**	**281**	P		**P**	**15 04 51.1**	**-0.7**
	2.3nm,0.9s,mb4.1,baz=62,slow=4.9,SNR=3.8							
PLCA				LR		LR	15 18 47.1	
	comp=Z,140nm,19.5s,MS3.7,baz=264,slow=37							
CPUP	**Villa Florida**	**38.67**	**311**	P		**P**	**15 05 37.5**	**-0.5**
	0.8nm,0.5s,mb3.7,baz=159,slow=8.5,SNR=3.2							
CPUP				LR		LR	15 21 00.3	
	comp=Z,83nm,19.9s,MS3.6,baz=157,slow=35							
SUR	**Sutherland**	**40.28**	**71**	P		**P**	**15 05 52.6**	**+1.4**
	2.6nm,0.8s,mb4.0,baz=256,slow=4.2,SNR=3.0							
BDFB	**Brasilia**	**45.36**	**329**	P		**P**	**15 06 33.4**	**+0.7**
	5.3nm,0.5s,mb4.6,baz=131,slow=4.3,SNR=8.0							
LVC	**Limon Verde**	**46.98**	**300**	P		**P**	**15 06 46.0**	**+0.6**
	1.5nm,0.4s,mb4.3,baz=153,slow=4.5,SNR=3.4							
LBTB	**Lobatse**	**48.70**	**70**	*eP*		**P**	**15 06 58.5**	**-0.3**
LPAZ	**La Paz**	**52.15**	**305**	P		**P**	**15 07 24.3**	**-0.8**
	1.7nm,0.4s,mb4.3,baz=131,slow=3.6,SNR=9.6							
LPAZ	**La Paz**	**52.15**	**305**	*eP*		**P**	**15 07 24.0**	**-1.1**
LIC	**Lamto**	**65.96**	**22**	*eP*		**P**	**15 09 00.6**	**-0.2**
	25nm,0.5s,mb5.5							
KIC	**Kosan Boka**	**66.15**	**23**	*eP*		**P**	**15 09 01.7**	**-0.3**
	82nm,1.2s							
TIC	**Toumodi**	**66.37**	**22**	*eP*		**P**	**15 09 03.2**	**-0.2**
	27nm,0.5s,mb5.5							
DBIC	**Dimbokro**	**66.43**	**22**	P		**P**	**15 09 03.5**	**-0.2**
	5.1nm,0.5s,mb4.8,baz=164,slow=7.3,SNR=17							
KMBO	**Kilima Mbogo**	**74.85**	**67**	LR		LR	15 42 25.6	
	comp=Z,45nm,19.2s,MS3.8,baz=89,slow=35							
STKA	**Stephens Creek**	**89.99**	**169**	P		**P**	**15 11 12.9**	**+0.5**
	0.7nm,0.6s,mb4.2,baz=164,slow=23,SNR=2.9							
ASAR	**Alice Springs**	**97.01**	**161**	P		**P**	**15 11 43.9**	**-0.9**
	1.0nm,0.7s,mb4.3,baz=182,slow=3.9,SNR=14							
ASAR				pP		pP	15 12 00.6	-0.8
	0.7nm,0.6s,baz=184,slow=4.2,SNR=5.4							
ELN	**Prospectdale**	**105.39**	**317**	*eP*		Pdif	15 12 26.1	+4.2
RSSD	**Black Hills**	**120.63**	**305**	*e*PKPdf		PKPdf	15 17 03.1	-0.1
BW06	**Boulder Array**	**122.05**	**300**	*e*PKPdf		PKPdf	15 17 05.6	-0.3
PDAR	**Pinedale Array**	**122.05**	**300**	PKP		PKPdf	15 17 06.0	+0.1
	0.4nm,0.4s,baz=162,slow=4.7,SNR=3.6							
PDAR	**Pinedale Array**	**122.05**	**300**	PKP		PKPdf	15 17 06.0	+0.1
HWUT	**Hardware Ranch**	**122.09**	**298**	*e*PKPdf		PKPdf	15 17 06.9	+0.9
NVAR	**Mina Array Bea**	**122.92**	**291**	PKP		PKPdf	15 17 08.8	+1.1
	0.6nm,0.6s,baz=112,slow=2.8,SNR=5.4							
CMAR	**Chiang Mai Arr**	**123.58**	**110**	PKP		PKPdf	15 17 10.4	+1.0
	1.3nm,0.7s,baz=227,slow=3.7,SNR=8.4							
CMAR				pPKP			15 17 27.6	
	1.8nm,1.0s,baz=231,slow=4.0,SNR=4.0							
FINES	**FINESS Array B**	**125.53**	**28**	PKP		PKPdf	15 17 12.4	+0.5
	1.5nm,0.5s,baz=132,slow=3.3,SNR=17							
FINES				pPKP			15 17 30.0	
	0.6nm,0.6s,baz=135,slow=2.7,SNR=2.6							
WVOR	**Wild Horse Val**	**126.12**	**294**	*e*PKPdf		PKPdf	15 17 15.2	+1.5
KAF	**Kangasniemi**	**126.16**	**27**	*ep*		PKPdf	15 17 12.8	-0.4
	0.4nm,0.3s							
CHMT	**Chamberlain Mo**	**126.91**	**301**	*e*PKPdf		PKPdf	15 17 16.5	+1.5
JOF	**Joensuu**	**128.11**	**29**	*ep*		PKPdf	15 17 15.6	-1.3
	1.7nm,0.6s							
FCC	**Fort Churchill**	**128.25**	**322**	*e*PKPdf		PKPdf	15 17 17.1	-0.3
ARCES	**ARCESS Array B**	**132.26**	**22**	PKP		PKPdf	15 17 25.8	+1.1
	2.3nm,0.9s,baz=270,slow=1.2,SNR=9.1							
BVAR	**Borovoye Array**	**134.95**	**58**	PKP		PKPdf	15 17 30.8	+0.7
	0.4nm,0.4s,baz=166,slow=6.1,SNR=4.2							
YKA	**Yellowknife Ar**	**138.10**	**316**	PKP		PKPdf	15 17 36.2	+0.6
	1.9nm,0.6s,baz=128,slow=2.1,SNR=31							
YKA				SKPbc			15 21 04.2	
	0.5nm,0.9s,baz=128,slow=3.2,SNR=6.5							
YKA	**Yellowknife Ar**	**138.10**	**316**	PKP		PKPdf	15 17 36.2	+0.6
YKA				SKPbc			15 21 04.2	
YKW3	**Yellowknife Ar**	**138.14**	**316**	*e*PKPdf		PKPdf	15 17 35.9	+0.2
INK	**Inuvik**	**147.75**	**318**	*e*PKPbc		PKPdf	15 17 55.7	+3.7
DAWY	**Dawson**	**148.65**	**309**	*e*PKPbc		PKPdf	15 17 58.2	+4.7
SONM	**Songino Array**	**149.89**	**88**	PKPbc		PKPdf	15 18 02.2	+6.1
	4.0nm,0.7s,baz=235,slow=3.4,SNR=13							
SONM				pPKPbc			15 18 19.1	
	2.5nm,0.6s,baz=243,slow=2.8,SNR=6.7							
SML	**Sawmill**	**151.79**	**302**	*e*PKPbc		PKPdf	15 18 06.3	+7.8
ILAR	**Eielson Array**	**151.97**	**309**	PKPbc		PKPdf	15 18 06.3	+7.6
	8.0nm,0.6s,baz=143,slow=2.5,SNR=118							
MCK	**McKinley**	**152.59**	**306**	*e*PKPbc		PKPdf	15 18 08.4	+8.9
IMA	**Indian Mountai**	**154.99**	**311**	*e*PKPbc		PKPdf	15 18 13.6	+11
IMA				*e*PKPab		PKPab	15 18 29.0	-0.7

IDC 07 15:46:42.0±3.1, 9.57S×71.89W, h654km±62km, mb2.7/3, mb1 3.0/4, mb1mx2.8/18, Error ellipse: s-maj=210.0km s-min=61.0km az=69.0, Peru-Brazil border region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
LPAZ	**La Paz**	**7.62**	**152**	P		P	15 48 40.3	+0.5
	0.5nm,0.3s,baz=335,slow=2.6,SNR=4.3							
PDAR	**Pinedale Array**	**62.41**	**329**	P		P	15 56 04.1	-1.3
	0.3nm,0.4s,baz=128,slow=10,SNR=2.8							
YKA	**Yellowknife Ar**	**79.03**	**341**	P		P	15 57 39.9	-1.6
	0.3nm,0.5s,baz=135,slow=5.7,SNR=14							
INK	**Inuvik**	**88.80**	**341**	P		P	15 58 28.6	-0.5
	0.4nm,1.0s,baz=104,slow=4.2,SNR=4.5							
ASAR	**Alice Springs**	**138.44**	**217**	PKP		PKPdf	16 04 55.1	-0.7
	0.2nm,0.9s,baz=138,slow=2.7,SNR=4.0							
WRA	**Warramunga Arr**	**140.93**	**221**	PKP		PKPdf	16 04 59.9	-0.5
	0.5nm,0.9s,baz=136,slow=2.8,SNR=9.4							

NEIC ***07*** *15:50:39.0, 28.14S×71.32W, h30km, ML3.7(GUC), After GUC.*

GUC 07 15:50:39.0±0.7, 28.14S×71.32W, h30km±9km, ML3.7, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
VACH	**Vallenar**	**0.66**	**132**	*eP*		Pb	15 50 51.6	-0.4
VACH				*i* S		Sb	15 51 01.1	+0.2
VACH				AMP			15 51 06.0	
	comp=N,5µm,0.0s							
CPCH	**Copiapo**	**1.16**	**48**	*i* P		Pn	15 50 59.8	+0.4
CPCH				*i* S		Sn	15 51 14.5	+0.3
CPCH				AMP			15 51 16.3	
	comp=E,5µm,0.1s							
TLL	**Tololo Astrono**	**2.07**	**168**	*eP*		Pn	15 51 13.5	+1.1
TLL				*eS*		Sn	15 51 40.4	+3.0
TLL				AMP			15 51 50.2	
	comp=N,614nm,0.6s							
CMCH	**Combarbala**	**3.04**	**175**	*eP*		Pn	15 51 26.2	0.0
CMCH				*eS*		Sn	15 52 02.3	+0.3

MAN 07 16:03:23.5, 15.67N×119.89E, h11km, mb3.5, ML2.2, MS1.6,7C, Luzon

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
SCZP	**Santa Cruz**	**0.11**	**10**	⇑*eP*		Pg	16 03 30.4	+4.0
SCZP				*eS*		Sg	16 03 35.7	+7.3
BOLP	**Bolinao**	**0.71**	**2**	⇑*eP*		Pb	16 03 37.0	-0.4
BOLP				*eS*		Sb	16 03 46.7	-0.2
BCPH	**Baguio City Da**	**0.97**	**43**	⇑*iP*		Pb	16 03 42.2	+0.3
BCPH				*i* S		Sb	16 03 56.0	+1.5
BALP	**Baler**	**1.62**	**87**	⇑*eP*		Pn	16 03 51.3	-1.0
BALP				*eS*		Sn	16 04 13.7	+0.3
LUBP	**Lubang**	**1.95**	**170**	⇑*eP*		Pn	16 03 56.9	-0.1
LUBP				*eS*		Sn	16 04 19.1	-2.5
ABRA	**Dolores**	**2.12**	**22**	⇑*eP*		Pn	16 03 59.2	-0.2
CAUP	**Cauayan**	**2.25**	**55**	⇑*eP*		Pn	16 04 01.5	+0.3

IDC 07 16:14:00.0±25.0, 18.97S×173.21W, mb4.1/4, mb1 4.3/4, mb1mx3.9/17, Error ellipse: s-maj=473.0km s-min=163.4km az=73.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CTA	**Charters Tower**	**38.15**	**261**	P		P	16 21 22.1	-0.9
	2.1nm,0.5s,baz=94,slow=15,SNR=3.6							
STKA	**Stephens Creek**	**42.51**	**243**	P		P	16 21 57.1	-1.9
	2.5nm,1.1s,baz=94,slow=13,SNR=2.9							
ASAR	**Alice Springs**	**49.27**	**255**	P		P	16 22 50.5	-2.3
	1.1nm,0.5s,baz=91,slow=7.8,SNR=41							
WRA	**Warramunga Arr**	**49.30**	**260**	P		P	16 22 50.9	-2.1
	0.8nm,0.3s,baz=97,slow=7.5,SNR=65							

IDC ***07*** *16:23:22.3±1.2, 1.96S×68.80E, mb3.9/11, mb1 4.0/11, mb1mx3.9/18, MS3.6/5, Ms1 3.6/5, ms1mx3.4/17, Error ellipse: s-maj=39.5km s-min=20.6km az=45.0*

NEIC ***07*** *16:23:24.0±0.7, 1.98S×68.82E, h10km, mb4.8/6, Error ellipse: s-maj=16.8km s-min=13.1km az=46.0*

ISC 07 16:23:21.6±1.1, 2.0S±0.2×68.8E±0.1, h10km, n27, σ0≤85/22, mb4.3/18, MS3.6/5, Carlsberg Ridge

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
KMBO	**Kilima Mbogo**	**31.51**	**271**	LR		LR	16 40 32.1	
	comp=Z,62nm,20.8s,MS3.3,baz=112,slow=33							
KOLN	**Koldanda**	**32.87**	**25**	*eP*		**P**	**16 29 58.3**	**+0.3**
	12nm,0.9s,mb4.8							
DMN	**Daman**	**33.38**	**27**	*eP*		**P**	**16 30 03.1**	**+0.6**
	25nm,0.9s,mb5.2							
GKN	**Gorkha**	**33.51**	**26**	*eP*		**P**	**16 30 04.0**	**+0.3**
	36nm,0.9s,mb5.3							
KKN	**Kakani**	**33.62**	**27**	*eP*		**P**	**16 30 05.0**	**+0.4**
	19nm,0.8s,mb5.0							
GUN	**Gumba**	**34.00**	**28**	*eP*		**P**	**16 30 08.7**	**+0.9**
	40nm,0.9s,mb5.4							
CMAR	**Chiang Mai Arr**	**35.99**	**54**	P		**P**	**16 30 25.6**	**+0.6**
	1.3nm,0.9s,mb3.9,baz=247,slow=11,SNR=11							
CMAR				LR		LR	16 43 01.9	
	comp=Z,45nm,18.6s,MS3.3,baz=215,slow=33							
GNI	**Garni**	**47.36**	**335**	P		**P**	**16 31 58.9**	**+1.0**
MKAR	**Makanchi Array**	**50.03**	**12**	P		**P**	**16 32 17.8**	**-0.7**
	0.8nm,0.7s,mb3.9,baz=198,slow=12,SNR=6.3							
BRTR	**Keskin Array B**	**52.53**	**326**	P		**P**	**16 32 39.1**	**+1.6**
	0.5nm,0.6s,mb3.6,baz=144,slow=11,SNR=5.3							
KURK	**Kurchatov**	**53.19**	**8**	*eP*		**P**	**16 32 41.5**	**-0.7**
BVAR	**Borovoye Array**	**54.85**	**1**	P		**P**	**16 32 54.2**	**-0.1**
	1.0nm,0.6s,mb4.0,baz=180,slow=8.9,SNR=8.4							
ZAL	**Zalesovo**	**57.32**	**11**	P		**P**	**16 33 10.4**	**-1.7**
	0.7nm,0.6s,mb3.9,baz=159,slow=7.8,SNR=6.9							
ARU	**Arti**	**58.83**	**353**	*eP*		**P**	**16 33 22.0**	**-0.7**
	15nm,1.5s,mb4.8							
SONM	**Songino Array**	**59.50**	**29**	P		**P**	**16 33 27.3**	**-0.1**
	2.9nm,0.8s,mb4.4,baz=217,slow=6.2,SNR=8.0							
ULN	**Ulaanbaatar**	**59.84**	**29**	P		**P**	**16 33 28.5**	**-1.2**
AKASG	**Malin Array Be**	**62.40**	**333**	P		**P**	**16 33 45.5**	**-1.6**
	1.5nm,0.6s,mb4.3,baz=139,slow=6.0,SNR=8.3							
MAW	**Mawson**	**65.60**	**182**	LR		LR	16 58 04.9	
	comp=Z,94nm,18.0s,MS4.0,baz=242,slow=32							
WRA	**Warramunga Arr**	**66.39**	**111**	P		**P**	**16 34 13.6**	**+0.1**
	0.5nm,0.8s,mb3.6,baz=286,slow=6.1,SNR=3.9							
ASAR	**Alice Springs**	**66.48**	**115**	P		**P**	**16 34 14.1**	**+0.1**
	0.9nm,0.7s,mb3.9,baz=282,slow=6.2,SNR=7.9							
FINES	**FINESS Array B**	**71.18**	**340**	P		**P**	**16 34 43.5**	**+1.0**
	1.1nm,0.9s,mb3.8,baz=129,slow=8.9,SNR=4.1							
STKA	**Stephens Creek**	**74.38**	**122**	LR		LR	17 08 16.7	
	comp=Z,74nm,18.3s,MS4.0,baz=205,slow=36							
ARCES	**ARCESS Array B**	**77.09**	**346**	P		**P**	**16 35 16.2**	**-0.3**
	1.7nm,0.8s,mb4.1,baz=141,slow=5.8,SNR=4.1							
ARCES				LR		LR	17 11 04.1	
	comp=Z,34nm,20.0s,MS3.7,baz=49,slow=37							
ARCES	**ARCESS Array B**	**77.09**	**346**	P		**P**	**16 35 16.2**	**-0.3**
ARCES				LR		LR	17 11 04.1	
QSPA	**South Pole Qui**	**87.99**	**180**	*eP*		**P**	**16 36 22.7**	**+10**
	1.3nm,0.8s,mb4.2							
YKA	**Yellowknife Ar**	**119.60**	**2**	PKP		PKPdf	16 42 13.5	-1.1
	0.1nm,0.4s,baz=346,slow=2.2,SNR=3.9							
TXAR	**Lajitas Array**	**151.88**	**346**	PKPbc		PKPdf	16 43 20.6	+6.6
	0.7nm,0.3s,baz=45,slow=1.8,SNR=4.6							

GUC ***07*** *16:42:18.9±0.7, 33.75S×70.71W, h82km±2km, MD3.8, ML4.0*

NEIC ***07*** *16:42:18.9, 33.75S×70.71W, h82km, MD3.8(GUC), After GUC.*

NEIC Felt [III] at Melipilla and Santiago; [II] at San Jose de Maipo and Talagante.

ISC 07 16:42:19.0±0.8, 33.75S±0.03×70.73W±0.07, h85km±5km, n24, σ0≥31/43, 11C-7D, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CHCH	**Chadas Angostu**	**0.19**	**161**	⇑*iP*		**P**	**16 42 31.1**	**-0.2**
ANTU	**Antumapu**	**0.20**	**23**	*i* P		**P**	**16 42 31.1**	**-0.2**
ANTU				*i* S		**S**	**16 42 40.3**	**-0.3**
ANTU				AMP			16 42 41.1	
	comp=N,28µm,0.2s							
TACH	**Talagante**	**0.20**	**299**	⇓*iP*		**P**	**16 42 31.4**	**0.0**
PCH	**Pirque**	**0.22**	**54**	⇑*iP*		**P**	**16 42 31.4**	**-0.1**
PCH				*i* S		**S**	**16 42 40.3**	**-0.5**
RCDM	**Rinconada Maip**	**0.27**	**346**	⇑*iP*		**P**	**16 42 31.7**	**-0.1**
RCDM				*i* S		**S**	**16 42 41.0**	**-0.2**
SAN	**Santiago**	**0.30**	**10**	⇑*iP*		**P**	**16 42 31.9**	**0.0**
SAN				*i* S		**S**	**16 42 41.2**	**-0.4**
PUEX	**Pudahuel**	**0.31**	**355**	⇑*iP*		**P**	**16 42 32.1**	**+0.1**
PUEX				*i* S		**S**	**16 42 41.7**	**0.0**
FSR	**Penalolen**	**0.32**	**31**	*i* P		**P**	**16 42 32.0**	**0.0**
FSR				*i* S		**S**	**16 42 41.8**	**0.0**
FSR				AMP			16 42 42.4	
	comp=N,12µm,0.2s							
CACH	**El Canelo**	**0.38**	**164**	⇓*iP*		**P**	**16 42 32.7**	**+0.4**
CACH				*i* S		**S**	**16 42 42.8**	**+0.4**
CLCH	**Cerro Calan**	**0.39**	**24**	⇑*iP*		**P**	**16 42 32.4**	**0.0**
CLCH				*i* S		**S**	**16 42 42.6**	**0.0**
CLCH				AMP			16 42 44.2	
	comp=N,7µm,0.5s							
LMEL	**Las Melosas**	**0.45**	**102**	*i* P		**P**	**16 42 32.8**	**-0.1**
LMEL				*i* S		**S**	**16 42 43.6**	**+0.3**
LMEL				AMP			16 42 46.5	
	comp=N,13µm,0.1s							
FCH	**Farellones**	**0.56**	**41**	AMP			16 42 46.5	
	comp=E,6µm,0.1s							
LNV	**Longovilo**	**0.60**	**250**	⇓*iP*		**P**	**16 42 34.0**	**-0.3**
PEL	**Peldehue**	**0.61**	**3**	⇓*iP*		**P**	**16 42 34.4**	**+0.1**
PEL				*i* S		**S**	**16 42 45.8**	**+0.1**
PEL				AMP			16 42 46.8	
	comp=N,10µm,0.3s							
CICH	**Cipreses**	**0.62**	**156**	⇑*iP*		**P**	**16 42 34.5**	**0.0**
CICH				*i* S		**S**	**16 42 46.3**	**+0.4**
LCCH	**Las Cruces**	**0.76**	**291**	⇓*iP*		**P**	**16 42 35.8**	**-0.1**
LCCH				*i* S		**S**	**16 42 48.1**	**-0.2**
ROCH	**El Roble**	**0.81**	**343**	⇓*iP*		**P**	**16 42 36.5**	**0.0**
ROCH				*i* S		**S**	**16 42 50.2**	**+0.7**
SFDO	**San Fernando**	**0.89**	**195**	⇑*iP*		**P**	**16 42 37.3**	**0.0**
SFDO				*i* S		**S**	**16 42 50.9**	**-0.2**
JACH	**Jahuel**	**1.07**	**6**	⇓*iP*		**P**	**16 42 39.4**	**0.0**
JACH				*i* S		**S**	**16 42 54.8**	**0.0**
PACH	**Papudo**	**1.35**	**334**	⇑*iP*		**P**	**16 42 42.8**	**-0.3**
PACH				*i* S		**S**	**16 43 01.6**	**+0.7**
PTCH	**Petorca**	**1.50**	**353**	⇑*iP*		**P**	**16 42 44.5**	**-0.4**
PTCH				*i* S		**S**	**16 43 04.9**	**+0.8**
TALC	**Talca**	**1.80**	**204**

MTLF	**Montolieu**	**2.09**	**82**	*e*Sg		**Sg**	**17 20 29.6**	**-2.8**
	1.4nm,0.3s								

IDC 07 17:23:15.8±3.5, 11.60S×167.31E, mb3.9/4, mb1 4.0/4, mb1mx3.8/14, Error ellipse: s-maj=114.0km s-min=42.9km az=132.0, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**32.74**	**251**	P	P	17 29 50.5	-2.2
	0.6nm,0.6s,baz=84,slow=8.8,SNR=7.6						
ASAR	**Alice Springs**	**33.93**	**245**	P	P	17 30 01.1	-1.9
	0.8nm,0.9s,baz=70,slow=9.6,SNR=7.6						
CMAR	**Chiang Mai Arr**	**73.74**	**293**	P	P	17 34 52.7	-1.5
	1.0nm,0.9s,baz=127,slow=4.2,SNR=7.7						
MKAR	**Makanchi Array**	**94.99**	**317**	P	P	17 36 39.6	-1.9
	0.6nm,0.5s,baz=92,slow=6.2,SNR=6.0						
AKASG	**Malin Array Be**	**128.16**	**327**	PKP	PKPdf	17 42 24.1	-2.1
	0.2nm,0.2s,baz=78,slow=4.3,SNR=4.3						

PRE 07 17:26:17.2±1.5, 28.12S×26.83E, h2km, ML3.6, South Africa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SEK	**Senekal**	**0.73**	**106**	*e*P	Pg	17 26 30.7	-1.0
SEK				*e*S	Sg	17 26 39.8	-1.7
SEK				*e*		17 26 43.9	
	comp=Z,607nm,0.2s						
BOSA	**Boshof**	**1.47**	**250**	*e*P	Pn	17 26 44.4	-0.4
BOSA				*e*S	Sb	17 27 01.1	-3.0
KSR	**Koster**	**2.25**	**1**	*e*P	Pn	17 26 55.3	-0.7
KSR				*e*S	Sn	17 27 22.5	-2.2
KSR				*e*		17 27 25.1	
	comp=Z,722nm,0.2s						
SLR	**Silverton**	**2.71**	**29**	*e*P	Pn	17 27 00.1	-2.5
SLR				*e*S	Sn	17 27 34.2	-2.1
SLR				*e*		17 27 46.7	
	comp=Z,304nm,0.4s						
NWL	**Newcastle**	**2.79**	**82**	*e*P	Pn	17 27 01.6	-2.1
NWL				*e*S	Sn	17 27 34.9	-3.5
NWL				*e*		17 27 49.6	
	comp=Z,448nm,0.5s						
UPI	**Upington**	**4.93**	**266**	*e*P	Pn	17 27 30.4	-3.7
UPI				*e*S	Sn	17 28 24.5	-8.0

*IDC **07** 17:44:20.4±1.5, 41.35N×141.14E, h89km±14km, mb3.3/9, mb1 3.6/12, mb1mx3.4/26, Error ellipse: s-maj=22.6km s-min=10.5km az=105.0*
*JMA **07** 17:44:21.4±0.1, 41.45N×141.31E, h91km±1km, M3.3*
JMA Felt I J1.
*NEIC **07** 17:44:23.8±0.8, 41.49N×141.15E, h118km±7km, Error ellipse: s-maj=10.1km s-min=7.4km az=113.0*
ISC 07 17:44:20.3±0.3, 41.43N±0.03×141.26E±0.05, h101km±3km, n34, σ0°88/48, mb3.6/9, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOT	**Ohata**	**0.17**	**254**	P	P	17 44 34.4	-0.2
JOT				*e*S	S	17 44 44.6	-0.8
JKB	**Kayabe**	**0.49**	**339**	P	P	17 44 36.2	-0.1
JKB				*e*S	S	17 44 47.7	-0.6
JSR	**Shiriuchi**	**0.64**	**279**	P	P	17 44 37.7	+0.2
JSR				*e*S	S	17 44 49.6	-0.8
JTM	**Tenmabayashi**	**0.66**	**193**	P	P	17 44 37.9	+0.3
JTM				S	S	17 44 50.3	-0.3
JYM2	**Yakumo 2**	**0.96**	**316**	P	P	17 44 41.2	+0.6
JYM2				*e*S	S	17 44 56.0	+0.1
JNB	**Noboribetsu**	**1.05**	**351**	P	P	17 44 41.7	0.0
JNB				*e*S	S	17 44 56.9	-0.8
JANG	**Nango**	**1.07**	**170**	P	P	17 44 41.9	0.0
JANG				S	S	17 44 57.6	-0.5
JIW	**Iwasaki**	**1.27**	**229**	P	P	17 44 44.9	+0.7
JIW				S	S	17 45 02.4	+0.2
JAH	**Hinai**	**1.33**	**201**	P	P	17 44 45.9	+0.9
JAH				S	S	17 45 04.8	+1.4
JNBK	**Urakawa-nobuka**	**1.40**	**52**	P	P	17 44 45.8	-0.1
JEW	**Eniwo**	**1.42**	**6**	P	P	17 44 46.5	+0.4
JEW				*e*S	S	17 45 05.0	-0.3
JOSM	**Okushiri--Mats**	**1.49**	**297**	P	P	17 44 46.9	0.0
JOSM				*e*S	S	17 45 06.2	-0.5
JEM	**Erimo**	**1.54**	**67**	P	P	17 44 47.4	-0.1
JEM				*e*S	S	17 45 07.2	-0.5
ASAJ	**Asahikawa**	**2.86**	**20**	P	P	17 45 05.3	+0.1
	4.8nm,0.3s,baz=234,slow=12,SNR=49						
ASAJ				S	S	17 45 41.1	+2.2
	4.3nm,0.3s,baz=159,slow=24,SNR=5.6						
MAJO	**Matsushiro**	**5.43**	**207**	*e*P	P	17 45 43.1	+2.9
	8.0nm,0.8s						
MAT	**Matsushiro**	**5.43**	**207**	P	P	17 45 42.5	+2.3
YSS	**Yuzh-Sakhalins**	**5.63**	**10**	*e*P	P	17 45 43.9	+1.0
JHJ	**Hachijo jima 2**	**8.38**	**189**	P	P	17 46 17.6	-2.9
	7.0nm,0.3s,baz=62,slow=23,SNR=6.3						
JHJ				S	S	17 47 47.0	-7.1
	0.8nm,0.3s,baz=90,slow=20,SNR=2.6						
MDJ	**Mudanjiang**	**9.12**	**294**	*e*P	P	17 46 31.4	+0.8
CBIJ	**Chichi jima**	**14.32**	**177**	P	P	17 47 37.5	-1.8
	1.0nm,0.3s,baz=264,slow=19,SNR=2.5						
ULN	**Ulaanbaatar**	**25.03**	**297**	*e*P	P	17 49 35.7	-0.5
ZAL	**Zalesovo**	**38.99**	**308**	P	P	17 51 37.6	-0.3
	1.0nm,0.5s,mb3.9,baz=288,slow=9.0,SNR=4.4						
MKAR	**Makanchi Array**	**41.82**	**298**	P	P	17 52 00.9	-0.4
	0.9nm,0.6s,mb3.7,baz=81,slow=8.9,SNR=13						
ILAR	**Eielson Array**	**45.90**	**35**	P	P	17 52 34.2	+0.4
	1.0nm,0.5s,mb3.8,baz=275,slow=5.7,SNR=15						
INK	**Inuvik**	**50.56**	**29**	P	P	17 53 10.3	+0.3
	2.0nm,0.8s,mb4.2,baz=305,slow=5.3,SNR=12						
INK	**Inuvik**	**50.56**	**29**	*e*P	P	17 53 10.2	+0.1
YKA	**Yellowknife Ar**	**60.09**	**31**	P	P	17 54 17.9	-0.8
	0.2nm,0.4s,mb3.5,baz=307,slow=6.4,SNR=6.0						
YKA	**Yellowknife Ar**	**60.09**	**31**	P	P	17 54 17.9	-0.8
WRA	**Warramunga Arr**	**61.39**	**187**	P	P	17 54 27.3	-0.8
	0.2nm,0.8s,mb3.2,baz=5.4,slow=7.1,SNR=5.5						
FINES	**FINESS Array B**	**64.89**	**331**	P	P	17 54 48.9	-1.6
	0.4nm,0.6s,mb3.4,baz=22,slow=10,SNR=5.9						
ASAR	**Alice Springs**	**65.12**	**187**	P	P	17 54 52.0	-0.6
	0.1nm,0.6s,mb2.8,baz=12,slow=8.7,SNR=4.9						
HLID	**Hailey**	**71.49**	**48**	*e*P	P	17 55 32.2	+0.6
BOZ	**Bozeman (W)**	**71.66**	**45**	*e*P	P	17 55 33.3	+0.7
PDAR	**Pinedale Array**	**74.69**	**46**	P	P	17 55 50.6	+0.3
	0.7nm,0.5s,mb3.7,baz=256,slow=0.6,SNR=6.2						

*IDC **07** 17:46:58.2±1.8, 14.38N×94.28W, mb3.8/9, mb1 4.1/11, mb1mx4.0/23, ML4.3/1, MS3.5/3, Ms1 3.5/3, ms1mx3.1/22, Error ellipse: s-maj=45.1km s-min=30.5km az=23.0*
*NEIC **07** 17:47:04.3±1.1, 14.60N×94.19W, h35km, Error ellipse: s-maj=20.7km s-min=16.1km az=202.0*
*MEX **07** 17:47:04.4±1.1, 14.61N×94.58W, h32km±84km, MD4.2*
ISC 07 17:47:03.8±0.9, 14.70N±0.09×94.46W±0.06, h33km, n28, σ1°34/29, mb3.8/9, MS3.6/3, Off coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HUIG	**Huatulco**	**1.92**	**304**	*i* P	S	17 47 32.1	-2.5
HUIG				*i* S	S	17 47 54.0	-3.8
CMIG	**Matias Romero**	**2.42**	**350**	*i* P	P	17 47 41.3	-0.4
CMIG				*i* S	S	17 48 09.5	-1.0
SCX	**San Cristobal**	**2.68**	**41**	*i* P	P	17 47 47.5	+1.9
CCIG	**Comitan**	**2.74**	**55**	*i* P	P	17 47 46.7	+0.3
CCIG				*i* S	S	17 48 18.9	+0.3
OXX	**Oaxaca**	**3.22**	**318**	*e*P	P	17 47 54.0	+0.8
EVV	**El Vigia**	**3.84**	**347**	*e*P	P	17 48 02.5	+0.5
POHV	**Veracruz**	**5.12**	**329**	*e*P	P	17 48 35.0	+15
PPM	**Popocatepetl**	**5.90**	**318**	*e*P	P	17 48 35.0	+3.9
TEIG	**Tepich**	**8.06**	**46**	Pn	P	17 48 57.6	-3.8
	4.1nm,0.3s,baz=183,slow=13,SNR=7.4						
TEIG				Sn	Sn	17 50 25.8	-6.8
	baz=120,slow=17,SNR=1.9						
TXAR	**Lajitas Array**	**16.87**	**331**	P	P	17 51 01.2	+2.2
	baz=156,slow=15,SNR=4.3						
WMOK	**Wichita Mounta**	**20.33**	**350**	*e*P	P	17 51 38.1	-1.8
	2.4nm,0.7s						
TUC	**Tucson**	**23.00**	**322**	P	P	17 52 09.5	+2.7
CCM	**Cathedral Cave**	**23.44**	**6**	*e*P	P	17 52 10.6	-0.4
WUAZ	**Wupatki**	**25.70**	**327**	P	P	17 52 34.2	+1.5
PDAR	**Pinedale Array**	**30.84**	**338**	P	P	17 53 19.8	+0.6
	0.2nm,0.4s,mb3.3,baz=119,slow=9.3,SNR=2.7						
PDAR	**Pinedale Array**	**30.84**	**338**	P	P	17 53 19.8	+0.6
NVAR	**Mina Array Bea**	**31.66**	**323**	P	P	17 53 27.4	+1.1
	0.9nm,0.7s,mb3.7,baz=148,slow=8.5,SNR=6.1						
SCHQ	**Schefferville**	**45.44**	**22**	LR	LR	18 14 43.5	
	comp=Z,124nm,18.2s,MS3.9,baz=41,slow=36						
YKA	**Yellowknife Ar**	**49.83**	**348**	P	**P**	**17 55 54.9**	**-0.5**
	2.5nm,1.2s,mb4.1,baz=153,slow=7.4,SNR=14						
YKA				PcP	PcP	17 57 14.3	-1.7
	0.2nm,0.8s,baz=143,slow=3.9,SNR=4.1						
YKA				LR	LR	18 22 33.8	
	comp=Z,41nm,18.0s,MS3.5,baz=180,slow=43						
FRB	**Frobisher Bay**	**52.20**	**14**	P	**P**	**17 56 11.4**	**-2.0**
	3.5nm,0.7s,mb4.4,baz=204,slow=10,SNR=5.4						
INK	**Inuvik**	**59.11**	**344**	P	**P**	**17 57 02.7**	**-0.5**
	0.9nm,0.7s,mb3.9,baz=117,slow=7.8,SNR=6.8						
INK	**Inuvik**	**59.11**	**344**	P	**P**	**17 57 02.7**	**-0.5**
ILAR	**Eielson Array**	**61.27**	**337**	P	**P**	**17 57 16.4**	**-1.6**
	0.8nm,0.9s,mb3.8,baz=135,slow=3.8,SNR=6.8						
ESDC	**Sonseca Array**	**81.15**	**51**	P	**P**	**17 59 16.2**	**-1.6**
	0.2nm,0.3s,mb3.5,baz=297,slow=6.6,SNR=4.7						
NOA	**NORSAR Array B**	**84.67**	**28**	P	**P**	**17 59 36.1**	**+0.9**
	0.5nm,0.8s,mb3.7,baz=309,slow=5.2,SNR=2.2						
NOA				LR	LR	18 34 10.3	
	comp=Z,17nm,22.0s,MS3.4,baz=215,slow=33						
GERES	**GERESS Array B**	**90.57**	**39**	P	**P**	**18 00 03.8**	**-0.1**
	0.6nm,0.8s,mb4.0,baz=278,slow=6.9,SNR=3.6						
WRA	**Warramunga Arr**	**133.25**	**256**	PKP	PKPdf	18 06 16.5	-0.9
	0.3nm,0.7s,baz=92,slow=3.3,SNR=4.9						
CMAR	**Chiang Mai Arr**	**144.51**	**338**	PKP	PKPdf	18 06 36.8	-1.0
	1.2nm,0.8s,baz=349,slow=3.6,SNR=12						

*IDC **07** 18:18:00.5±1.4, 20.90N×99.14E, mb3.5/3, mb1 3.8/4, mb1mx3.5/18, ML4.8/1, Error ellipse: s-maj=66.5km s-min=24.5km az=68.0*
*NEIC **07** 18:18:03.9±1.1, 20.68N×98.60E, h20km, Error ellipse: s-maj=32.5km s-min=8.9km az=57.0*
*BJI **07** 18:18:07.8, 20.76N×97.76E, h21km, ML4.0, Ms3.4*
ISC 07 18:18:01.8±0.5, 20.49N±0.03×98.31E±0.05, h10km, n17, σ1°39/27, mb3.5/3, Myanmar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHG	**Chiang Mai**	**1.77**	**160**	PN	**Pn**	**18 18 33.5**	**+0.7**
CHG				PG	**Pg**	**18 18 36.8**	**-0.4**
CHG				SG	**Sg**	**18 18 59.6**	**-1.3**
CM31	**Chiang Mai Arr**	**2.11**	**163**	*e*Pn	**Pn**	**18 18 37.8**	**+0.2**
CM31				*e*Pb	**Pb**	**18 18 42.8**	**+3.0**
CM31				*e*Sn	**Sn**	**18 19 11.2**	**+7.0**
CMAR	**Chiang Mai Arr**	**2.11**	**163**	Pn	**Pn**	**18 18 41.5**	**+3.9**
	56nm,0.3s,baz=336,slow=17,SNR=164						
CMAR				Lg		18 19 09.9	
	221nm,0.3s,baz=333,slow=32,SNR=31						
NANT	**Nan**	**2.81**	**126**	PN	**Pn**	**18 18 49.6**	**+1.9**
NANT				PG	**Pg**	**18 18 56.2**	**-1.7**
NANT				SG	**Sg**	**18 19 37.0**	**+1.6**
BDT	**Bhumibol Dam**	**3.30**	**168**	PN	**Pn**	**18 18 58.0**	**+3.4**
BDT				PG	**Pg**	**18 19 03.5**	**-4.1**
BDT				SG	**Sg**	**18 19 44.0**	**-7.6**
NST	**Nakhon Sawan**	**5.10**	**160**	PG	**Pg**	**18 19 43.0**	**-0.6**
NST				SG	**Sg**	**18 20 43.0**	**-8.5**
KMI	**Kunming**	**6.16**	**41**	*e*PG	**Pg**	**18 20 04.2**	**-0.5**
KMI				SG	**Sg**	**18 21 27.2**	**+0.4**
KMI				S	Sn		
	comp=N,25nm,1.1s						
KMI				S	Sn		
	comp=E,21nm,1.0s						
KMI				LR	LR		
	comp=N,166nm,5.9s						
KMI				LR	LR		
	comp=E,142nm,6.1s						
LSA	**Lhasa**	**11.23**	**326**	*e*P	**P**	**18 20 43.2**	**-2.2**
LSA	**Lhasa**	**11.23**	**326**	*e*Pn	**P**	**18 20 43.2**	**-2.3**
GUN	**Gumba**	**13.53**	**305**	*e*P	**P**	**18 21 18.7**	**+2.3**
PKI	**Pulchoki**	**13.73**	**303**	*e*P	**P**	**18 21 19.4**	**+0.4**
	comp=E,8.7nm,0.6s						
KKN	**Kakani**	**13.93**	**304**	*e*P	**P**	**18 21 21.6**	**-0.1**
GKN	**Gorkha**	**14.53**	**304**	*e*P	**P**	**18 21 30.3**	**+0.7**
	comp=E,13nm,0.7s						
KOLN	**Koldanda**	**15.25**	**301**	*e*P	**P**	**18 21 39.7**	**+0.7**
	comp=E,9.8nm,0.9s						
MKAR	**Makanchi Array**	**29.31**	**337**	P	**P**	**18 24 04.2**	**-2.4**
	comp=E,0.5nm,0.6s,mb3.4,baz=147,slow=9.5,SNR=4.5						
WRA	**Warramunga Arr**	**53.47**	**136**	P	**P**	**18 27 19.4**	**-5.3**
	comp=E,0.3nm,0.7s,mb3.4,baz=322,slow=7.8,SNR=3.0						
ASAR	**Alice Springs**	**55.94**	**140**	P	**P**	**18 27 41.1**	**-1.6**
	comp=E,0.7nm,0.8s,mb3.7,baz=321,slow=6.8,SNR=5.5						

*IDC **07** 18:29:43.5±1.6, 39.14N×71.97E, mb3.5/4, mb1 3.6/7, mb1mx3.4/22, ML3.3/3, MS3.1/1, Ms1 3.3/1, ms1mx2.4/23, Error ellipse: s-maj=28.9km s-min=26.0km az=62.0*
*MOS **07** 18:29:46.8±1.8, 39.24N×71.68E, h33km, mb4.1/1, Error ellipse: s-maj=34.4km s-min=15.7km az=93.1*
*NEIC **07** 18:29:50.0±0.9, 39.12N×72.15E, h50km, Error ellipse: s-maj=21.9km s-min=11.5km az=64.0*
ISC 07 18:29:44.9±0.9, 39.09N±0.06×71.6E±0.1, h33km, n24, σ1°20/24, mb3.5/4, MS3.0/1, 1C-1D, Tajikistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AML	**Almayashu**	**3.42**	**27**	P	**P**	**18 30 37.8**	**+0.6**
	SNR=39						
UCH	**Uchtor**	**3.82**	**34**	P	**P**	**18 30 42.6**	**-0.3**
	SNR=14						
EKS2	**Erkin-Say**	**3.92**	**24**	P	**P**	**18 30 44.5**	**+0.2**
	SNR=10						
KZA	**Kyzart**	**4.06**	**41**	P	**P**	**18 30 48.2**	**+1.9**
	SNR=6.5						
KK31	**Karatay Array**	**4.10**	**348**	⇑P	**P**	**18 30 47.7**	**+0.9**
	6.7nm,0.5s,baz=144,slow=11,SNR=307						
KK31				⇓S	**S**	**18 31 33.0**	**-1.4**
	4.3nm,0.3s,baz=139,slow=24,SNR=4.5						
KKAR	**Karatay Array**	**4.10**	**348**	*e*PN	**Pn**	**18 30 46.9**	**-0.1**
KKAR						18 31 32.9	
KKAR						18 31 45.9	
KKAR				pmax	pmax		
	comp=Z,3.0nm,0.3s						
KKAR				smax			
	comp=Z,3.0nm,0.3s						
KKAR				smax			
	comp=Z,5.0nm,0.3s						
AAK	**Ala-Archa**	**4.15**	**31**	P	**P**	**18 30 47.9**	**+0.4**
	SNR=12						
KBK	**Karagaybulak**	**4.36**	**34**	P	**P**	**18 30 50.9**	**+0.4**
	SNR=18						
CHMS	**Chumysh**	**4.56**	**30**	P	**P**	**18 30 53.6**	**+0.2**
	SNR=17						
USP	**Ospenovka**	**4.70**	**26**	P	**P**	**18 30 54.7**	**-0.6**
	SNR=21						
MKAR	**Makanchi Array**	**10.96**	**42**	Pn	**P**	**18 32 20.4**	**-2.0**
	comp=Z,0.1nm,0.3s,baz=233,slow=14,SNR=3.9						
AB31	**Akbulak array**	**13.17**	**324**	P	**P**	**18 32 49.6**	**-2.4**
AB31						18 35 10.3	
AB31				pmax	pmax		
	comp=Z,1.0nm,0.4s						
AB31				smax			
	comp=Z,1.0nm,0.5s						
BVAR	**Borovoye Array**	**13.97**	**357**	Pn	**P**	**18 32 58.6**	**-3.8**
	comp=Z,0.2nm,0.3s,baz=166,slow=12,SNR=6.9						
KOLN	**Koldanda**	**15.05**	**135**	*e*P	**P**	**18 33 16.9**	**+0.1**
GKN	**Gorkha**	**15.46**	**132**	*e*P	**P**	**18 33 21.5**	**-0.6**
	comp=Z,12nm,0.4s						
KKN	**Kakani**	**16.00**	**131**	*e*P	**P**	**18 33 27.0**	**-2.0**
	comp=Z,7.0nm,0.5s						
DMN	**Daman**	**16.03**	**132**	*e*P	**P**	**18 33 25.0**	**-4.4**
ZAL	**Zalesovo**	**17.35**	**27**	P	**P**	**18 33 45.8**	**-0.1**
	comp=Z,0.3nm,0.3s,baz=189,slow=11,SNR=4.3						
CMAR	**Chiang Mai Arr**	**31.35**	**123**	LR	LR	18 51 12.0	
	comp=Z,34nm,19.1s,MS3.0,baz=160,slow=41						
FINES	**FINESS Array B**	**35.66**	**324**	P	**P**	**18 36 45.2**	**+3.8**
	comp=Z,0.3nm,0.4s,mb3.5,baz=121,slow=11,SNR=5.2						
ARCES	**ARCESS Array B**	**38.97**	**336**	P	**P**	**18 37 11.4**	**+2.2**
	comp=Z,1.1nm,0.7s,mb3.7,baz=113,slow=6.9,SNR=6.8						
ARCES	**ARCESS Array B**	**38.97**	**336**	P	**P**	**18 37 11.4**	**+2.2**
ARCES				pmax	pmax		
	comp=Z,1.0nm,0.7s						
YKA	**Yellowknife Ar**	**78.64**	**3**	P	**P**	**18 41 44.8**	**+0.4**
	comp=Z,0.1nm,0.3s,mb3.2,baz=349,slow=5.3,SNR=4.0						
WRA	**Warramunga Arr**	**82.94**	**123**	P	**P**	**18 42 09.5**	**+1.5**
	comp=Z,0.4nm,0.8s,mb3.5,baz=305,slow=6.9,SNR=7.2						

PRE 07 18:32:34.9±2.3, 32.08S×30.36E, h5km, ML3.7, Off coast of South Africa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GRM	**Grahamstown**	**3.42**	**248**	*e*P	Pn	18 33 29.1	-0.9
GRM				*e*S	Sn	18 34 07.1	-4.3
GRM				*e*		18 34 32.7	
	comp=Z,92nm,0.4s						
NWL	**Newcastle**	**4.36**	**355**	*e*S	Sn	18 34 28.1	-7.3
SEK	**Senekal**	**4.43**	**327**	*e*P	Pn	18 33 42.4	-1.9
SEK				*e*S	Sn	18 34 28.1	-9.0
SEK				*e*		18 34 35.6	
	comp=Z,156nm,0.5s						
BOSA	**Boshof**	**5.60**	**307**	*e*P	Pn	18 34 05.4	+4.5
BOSA				*e*S	Sn	18 34 58.8	-7.7
UPI	**Upington**	**8.71**	**293**	*e*P	P	18 34 34.8	-10
UPI				*e*S	Sn	18 36 01.7	-22

IDC 07 18:38:58.2±2.4, 7.23S×153.15E, mb3.5/4, mb1 3.8/5, mb1mx3.6/14, ML2.5/1, Error ellipse: s-maj=124.0km s-min=29.6km az=133.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**6.31**	**250**	Pn	Pn	18 40 27.9	-6.9
	0.7nm,0.3s,baz=27,slow=6.8,SNR=2.9						
PMG				Sn	Sn	18 41 27.8	-21
	3.0nm,0.3s,baz=150,slow=21,SNR=7.2						
WRA	**Warramunga Arr**	**22.19**	**233**	P	P	18 43 54.5	-3.4
	0.2nm,0.9s,baz=59,slow=11,SNR=5.5						
ASAR	**Alice Springs**	**24.67**	**226**	P	P	18 44 20.9	-1.3
	1.0nm,0.9s,baz=56,slow=9.2,SNR=9.6						
FITZ	**Fitzroy Crossi**	**28.89**	**245**	P	P	18 45 00.7	-0.4
	3.0nm,0.8s,baz=72,slow=7.5,SNR=8.6						
ILAR	**Eielson Array**	**84.27**	**22**	P	P	18 51 31.4	-1.5
	0.3nm,0.6s,baz=248,slow=4.3,SNR=4.9						

*IDC **07** 18:46:24.2±0.9, 39.35N×72.15E, mb3.9/8, mb1 4.1/11, mb1mx3.9/22, ML3.7/3, MS3.2/4, Ms1 3.2/4, ms1mx2.8/32, Error ellipse: s-maj=19.5km s-min=15.7km az=78.0*
*MOS **07** 18:46:27.3±1.9, 39.39N×71.79E, h33km, mb4.1/5, Error ellipse: s-maj=20.4km s-min=8.6km az=90.2*
*NNC **07** 18:46:27.5±5.5, 39.52N×71.83E, h1km±22km, mpv4.5, Error ellipse: s-maj=75.5km s-min=35.4km az=57.0*
*NEIC **07** 18:46:29.9±0.5, 39.13N×72.31E, h50km, mb4.4/3, Error ellipse: s-maj=14.2km s-min=7.3km az=51.0*
*BJI **07** 18:46:31.7, 39.33N×72.21E, h65km, mb3.9, ML4.1*
ISC 07 18:46:30.8±0.6, 39.44N±0.04×72.06E±0.07, h60km±7km, n65, σ0°97/72, mb3.8/12, MS3.0/3, 5C-2D, Kyrgyzstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AML	**Almayashu**	**2.96**	**24**	P	**P**	**18 47 17.3**	**+0.7**
	SNR=195						
KSH	**Kashi**	**3.03**	**87**	*e*P	**P**	**18 47 17.4**	**-0.1**
KSH				S	S		
	comp=N,360nm,0.6s						
KSH				S	S		
	comp=E,310nm,0.6s						
UCH	**Uchtor**	**3.35**	**33**	P	**P**	**18 47 22.4**	**+0.4**
	SNR=48						
EKS2	**Erkin-Say**	**3.47**	**21**	P	**P**	**18 47 24.2**	**+0.5**
	SNR=42						
KZA	**Kyzart**	**3.58**	**42**	P	**P**	**18 47 26.5**	**+1.2**
	SNR=18						
AAK	**Ala-Archa**	**3.69**	**29**	P	**P**	**18 47 27.4**	**+0.7**
	SNR=59						
KK31	**Karatay Array**	**3.84**	**343**	Pn	**P**	**18 47 27.6**	**-1.4**
	comp=E,28nm,0.2s,baz=147,slow=11,SNR=542						
KK31				⇓Pg	**P**	**18 47 35.4**	**+6.5**
	comp=E,44nm,0.3s,baz=162,slow=16,SNR=7.1						
KK31				⇑Sn	**S**	**18 48 11.6**	**-1.6**
	comp=E,26nm,0.3s,baz=164,slow=17,SNR=3.8						
KK31				⇑Lg		18 48 24.5	
	comp=E,50nm,0.3s,baz=164,slow=33,SNR=6.7						
KKAR	**Karatay Array**	**3.84**	**343**	PN	**P**	**18 47 27.5**	**-1.4**
KKAR				*i*		18 48 13.1	
KKAR						18 48 26.3	
KKAR				pmax	pmax		
	comp=Z,7.0nm,0.3s						
KKAR				smax			
	comp=Z,8.0nm,0.3s						
KKAR				smax			
	comp=Z,17nm,0.4s						
KBK	**Karagaybulak**	**3.89**	**33**	P	**P**	**18 47 30.6**	**+1.0**
	SNR=63						
FRU	**Bishkek**	**3.90**	**29**	*e*PN	**P**	**18 47 31.5**	**+1.7**
FRU				*e*S	**S**	**18 48 20.0**	**+5.3**
FRU				*i*		18 48 31.0	
FRU				pmax	pmax		
	comp=Z,120nm,1.8s						
FRU				pmax	pmax		
	comp=E,880nm,1.8s						
CHMS	**Chumysh**	**4.10**	**29**	P	**P**	**18 47 32.1**	**-0.4**
	SNR=74						
ULHL	**Ulahol**	**4.23**	**47**	P	**P**	**18 47 34.0**	**-0.4**
	SNR=8.2						
USP	**Ospenovka**	**4.24**	**25**	P	**P**	**18 47 34.5**	**-0.1**
	SNR=78						
TKM2	**Tokmak 2**	**4.38**	**36**	P	**P**	**18 47 36.4**	**-0.1**
	SNR=14						
CEP	**Cherat**	**5.61**	**181**	P	**P**	**18 47 55.4**	**+1.9**
CEP				S	**S**	**18 49 06.0**	**+8.6**
CHCP	**Chirah Chowk**	**5.85**	**170**	P	**P**	**18 47 57.3**	**+0.4**
THW	**Thamme Wali**	**6.63**	**182**	P	**P**	**18 48 08.0**	**+0.1**
THW				S	**S**	**18 49 29.0**	**+6.1**
SBDP	**Sheikh Budin**	**7.20**	**188**	P	**P**	**18 48 13.5**	**-2.2**
SBDP				S	**S**	**18 49 41.0**	**+4.2**
DRP	**Derazinda**	**7.83**	**192**	P	**P**	**18 48 21.8**	**-2.6**
MK31	**Makan

LSA	**Lhasa**	**18.45**	**116**	P	**P**	**18 50 44.0**	**+0.2**
LSA	**Lhasa**	**18.45**	**116**	*e*P	**P**	**18 50 44.2**	**+0.4**
ARU	**Arti**	**19.19**	**337**	*e*P	**P**	**18 50 52.3**	**+0.2**
GNI	**Garni**	**20.98**	**281**	P	**P**	**18 51 12.4**	**+1.5**
	comp=Z,8.5nm,0.8s						
GTA	**Gaotai**	**21.41**	**81**	*e*P	**P**	**18 51 15.1**	**-0.3**
GTA				AMB	AMB		
	comp=Z,4.0nm,0.7s,mb3.9						
ZAK	**Zakamensk**	**24.49**	**53**	*e*P	**P**	**18 51 45.3**	**0.0**
ULN	**Ulaanbaatar**	**26.50**	**60**	*e*P	**P**	**18 52 03.9**	**-0.3**
	comp=Z,1.3nm,0.8s,mb3.5						
BRTR	**Keskin Array B**	**29.46**	**283**	P	**P**	**18 52 32.0**	**+1.0**
	comp=Z,0.8nm,0.6s,mb3.6,baz=68,slow=6.7,SNR=5.1						
CMAR	**Chiang Mai Arr**	**31.27**	**124**	LR	LR	19 07 03.2	
	comp=Z,36nm,20.2s,MS3.0,baz=97,slow=40						
JOF	**Joensuu**	**33.79**	**328**	*e*p	**P**	**18 53 08.7**	**0.0**
	comp=Z,0.3nm,0.4s,mb3.6						
FINES	**FINESS Array B**	**35.57**	**324**	P	**P**	**18 53 24.7**	**+0.8**
	comp=Z,0.8nm,0.4s,mb4.0,baz=116,slow=10,SNR=12						
FINES				LR	LR	19 08 58.4	
	comp=Z,30nm,18.3s,MS3.1,baz=3.2,slow=38						
FINES	**FINESS Array B**	**35.57**	**324**	P	**P**	**18 53 24.7**	**+0.8**
FINES				pmax	pmax		
	comp=Z,1.0nm,0.4s						
FINES				MLR	MLR		
	comp=Z,30nm,18.3s						
ARCES	**ARCESS Array B**	**38.78**	**336**	P	**P**	**18 53 50.9**	**+0.3**
	comp=Z,1.9nm,0.6s,mb4.0,baz=106,slow=8.5,SNR=22						
ARCES				LR	LR	19 11 16.6	
	comp=Z,27nm,21.7s,MS3.0,baz=315,slow=38						
ARCES	**ARCESS Array B**	**38.78**	**336**	P	**P**	**18 53 50.9**	**+0.2**
ARCES				pmax	pmax		
	comp=Z,2.0nm,0.6s						
ARCES				MLR	MLR		
	comp=Z,27nm,21.7s						
NOA	**NORSAR Array B**	**42.58**	**321**	P	**P**	**18 54 22.5**	**+0.5**
	comp=Z,0.3nm,0.6s,mb3.2,baz=100,slow=7.2,SNR=3.3						
TIXI	**Tiksi**	**42.74**	**23**	*e*P	**P**	**18 54 23.1**	**-0.1**
TIXI				pmax	pmax		
	comp=Z,19nm,0.8s,mb4.9						
TIXI	**Tiksi**	**42.74**	**23**	*e*P	**P**	**18 54 23.1**	**-0.1**
ILAR	**Eielson Array**	**71.73**	**16**	P	**P**	**18 57 46.7**	**-1.1**
	comp=Z,0.6nm,0.7s,mb3.6,baz=319,slow=4.7,SNR=9.5						
ILAR	**Eielson Array**	**71.73**	**16**	P	**P**	**18 57 46.7**	**-1.1**
ILAR				pmax	pmax		
	comp=Z,1.0nm,0.7s						
YKA	**Yellowknife Ar**	**78.27**	**3**	P	**P**	**18 58 25.9**	**+0.8**
	comp=Z,0.4nm,0.5s,mb3.6,baz=350,slow=5.6,SNR=13						
YKA	**Yellowknife Ar**	**78.27**	**3**	P	**P**	**18 58 25.9**	**+0.7**
WRA	**Warramunga Arr**	**82.86**	**123**	P	**P**	**18 58 49.7**	**-0.7**
	comp=Z,1.2nm,0.6s,mb4.1,baz=326,slow=5.1,SNR=14						
WRA	**Warramunga Arr**	**82.86**	**123**	P	**P**	**18 58 49.7**	**-0.6**
WRA				pmax	pmax		
	comp=Z,1.0nm,0.6s						
WRAB	**Tennant Creek**	**82.86**	**123**	*e*P	**P**	**18 58 49.8**	**-0.5**
ASAR	**Alice Springs**	**85.27**	**126**	P	**P**	**18 59 02.0**	**-0.3**
	comp=Z,0.8nm,0.7s,mb4.0,baz=309,slow=4.5,SNR=12						

IDC 07 18:52:54.6±2.3, 0.28N×125.43E, mb3.5/3, mb1 3.7/3, mb1mx3.5/15, Error ellipse: s-maj=290.0km s-min=24.3km az=64.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**21.91**	**157**	P	P	18 57 49.8	-1.7
	0.4nm,0.5s,baz=337,slow=9.6,SNR=8.6						
ASAR	**Alice Springs**	**25.19**	**161**	P	P	18 58 22.2	-1.3
	0.6nm,0.8s,baz=334,slow=7.2,SNR=6.4						
MKAR	**Makanchi Array**	**59.68**	**327**	P	P	19 03 00.8	-2.4
	1.4nm,0.7s,baz=121,slow=7.7,SNR=12						

*NEIC **07** 19:00:08.3±1.3, 1.63N×78.58W, h47km±13km, mb4.5/9, Error ellipse: s-maj=16.9km s-min=7.9km az=73.0*
NEIC Felt at Tumaco, Columbia.
*IGQ **07** 19:00:12.3, 1.09N×78.67W, h7km±3km, mb4.4, Error ellipse: s-maj=3.0km s-min=1.7km az=132.2*
*IDC **07** 19:00:12.3±3.7, 1.70N×78.49W, h86km±35km, mb3.8/14, mb1 4.0/15, mb1mx3.9/24, MS3.6/9, Ms1 3.6/9, ms1mx3.4/29, Error ellipse: s-maj=27.6km s-min=11.9km az=72.0*

ISC 07 19:00:06.4±0.3, 1.79N±0.03×78.74W±0.05, h33km, n65, σ1§19/65, mb4.2/19, MS3.6/8, 11C-2D, Colombia-Ecuador border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LORE	**San Lorenzo**	**0.51**	**193**	P	P	**19 00 17.4**	**+0.4**
COTA	**Cotacachi**	**1.50**	**165**	⇑P	P	**19 00 29.9**	**-1.4**
OTAV	**Otavalo**	**1.57**	**170**	⇑*e*Pn	Pn	**19 00 30.4**	**-2.1**
OTAV				*e*Sn	Sn	**19 00 48.8**	**-3.1**
JOR1	**San Jorge 1**	**1.79**	**177**	P	P	**19 00 37.0**	**+1.7**
CAYA	**Cayambe**	**1.87**	**156**	⇑P	P	**19 00 36.0**	**-0.5**
YANA	**Yana**	**1.91**	**175**	⇑P	P	**19 00 36.1**	**-1.0**
CAYR	**Refugio Cayamb**	**1.91**	**158**	⇑P	P	**19 00 36.8**	**-0.3**
PINO	**Pino**	**1.94**	**176**	⇑P	P	**19 00 36.8**	**-0.8**
ELAGU	**Cayambe Volc**	**1.95**	**158**	⇓P	P	**19 00 37.6**	**-0.2**
GGP	**Refugio Guagua**	**1.96**	**176**	P	P	**19 00 37.1**	**-0.8**
CGGP	**Crater GGP**	**1.96**	**176**	P	P	**19 00 36.8**	**-1.0**
JUA2	**San Juan 2**	**2.00**	**176**	P	P	**19 00 37.4**	**-1.0**
CONE	**Cono NE Rev Vo**	**2.15**	**149**	⇑P	P	**19 00 41.3**	**+0.8**
AZU1	**Azuela**	**2.19**	**148**	P	P	**19 00 41.8**	**+0.7**
AZU1				S	S	**19 01 06.8**	**-0.5**
EPALM	**Reventador vol**	**2.23**	**153**	P	P	**19 00 42.2**	**+0.5**
ANTI	**Antisana**	**2.30**	**166**	⇑P	P	**19 00 43.3**	**+0.5**
NAS1	**Nasa**	**2.42**	**174**	⇑P	P	**19 00 45.3**	**+0.8**
VC1	**Cotopaxi 1**	**2.44**	**172**	⇑P	P	**19 00 45.5**	**+0.7**
TAMB	**Tambo**	**2.50**	**172**	P	P	**19 00 46.6**	**+1.0**
JAMA	**Jama**	**2.52**	**216**	P	P	**19 00 45.4**	**-0.5**
JAMA				S	S	**19 01 16.3**	**+0.7**
QIL1	**Quilotoa**	**2.63**	**184**	P	P	**19 00 46.4**	**-1.0**
JUIV	**Juive**	**3.21**	**175**	P	P	**19 00 56.5**	**+0.8**
RUN2	**Runtun**	**3.21**	**174**	P	P	**19 00 58.3**	**+2.6**
CUSU	**Cusua**	**3.23**	**175**	P	P	**19 00 59.3**	**+3.4**
RETU	**Refugio**	**3.24**	**175**	P	P	**19 00 57.4**	**+1.3**
ULBA	**Ulba**	**3.24**	**174**	⇑P	P	**19 00 57.1**	**+1.0**
IGUA	**Igualata**	**3.26**	**178**	P	P	**19 00 57.5**	**+1.0**
PATA	**Patacocha**	**3.29**	**175**	P	P	**19 00 58.0**	**+1.2**
ARRY	**Arrayan**	**3.29**	**175**	P	P	**19 00 57.2**	**+0.4**
ARRY				S	S	**19 01 38.6**	**+3.3**
ROSC	**El Rosal**	**5.35**	**55**	P	P	**19 01 26.8**	**+0.9**
	4.0nm,0.3s,baz=303,slow=1.1,SNR=7.2						
ROSC				S	S	**19 02 28.7**	**+1.4**
	5.1nm,0.3s,baz=203,slow=22,SNR=6.0						
ROSC				LR	LR	19 03 49.6	
	comp=Z,434nm,20.6s,baz=232,slow=42						
LPAZ	**La Paz**	**20.80**	**150**	P	P	**19 04 44.7**	**-2.7**
	11nm,0.8s,baz=337,slow=10,SNR=62						
LPAZ				LR	LR	19 13 55.6	
	comp=Z,178nm,20.0s,MS3.4,baz=269,slow=40						
LPAZ	**La Paz**	**20.80**	**150**	⇓*i*P	P	**19 04 44.1**	**-3.3**
	7.3nm,0.8s						
LVC	**Limon Verde**	**26.08**	**159**	P	P	**19 05 37.8**	**-1.3**
	10nm,0.8s,mb4.4,baz=326,slow=7.9,SNR=14						
LVC	**Limon Verde**	**26.08**	**159**	*e*P	P	**19 05 37.7**	**-1.4**
	12nm,0.9s,mb4.4						
LRAL	**Lakeview Retre**	**32.03**	**347**	P	P	**19 06 31.7**	**-0.6**
CPUP	**Villa Florida**	**34.77**	**145**	P	P	**19 06 51.2**	**-4.9**
	2.7nm,0.9s,mb4.2,baz=7.0,slow=13,SNR=3.4						
CPUP				LR	LR	19 23 20.5	
	comp=Z,118nm,20.4s,MS3.6,baz=178,slow=40						
CPUP	**Villa Florida**	**34.77**	**145**	*e*P	P	**19 06 51.3**	**-4.8**
BDFB	**Brasilia**	**34.97**	**121**	LR	LR	19 21 44.6	
	comp=Z,193nm,18.8s,MS3.9,baz=249,slow=37						
WVT	**Waverly**	**35.19**	**347**	P	P	**19 06 57.9**	**-1.6**
TXAR	**Lajitas Array**	**36.24**	**321**	P	P	**19 07 09.7**	**+1.2**
	0.8nm,0.3s,mb4.2,baz=127,slow=6.3,SNR=3.9						
TXAR				LR	LR	19 23 01.9	
	comp=Z,62nm,19.2s,MS3.4,baz=160,slow=38						
CCM	**Cathedral Cave**	**37.87**	**344**	*e*P	P	**19 07 20.7**	**-1.4**
	5.4nm,0.7s,mb4.4						
ANMO	**Albuquerque**	**41.88**	**325**	*e*P	P	**19 07 57.1**	**+1.7**
	6.8nm,0.9s,mb4.3						
PLCA	**Paso Flores**	**42.98**	**171**	P	P	**19 08 02.2**	**-2.1**
	5.9nm,0.8s,mb4.4,baz=343,slow=9.8,SNR=13						
PLCA				LR	LR	19 24 34.4	
	comp=Z,88nm,18.1s,MS3.7,baz=82,slow=34						
PLCA	**Paso Flores**	**42.98**	**171**	*e*P	P	**19 08 02.1**	**-2.2**
	3.2nm,0.8s,mb4.1						
SDCO	**Great Sand Dun**	**43.41**	**329**	P	P	**19 08 09.9**	**+1.9**
WUAZ	**Wupatki**	**45.20**	**322**	*e*P	P	**19 08 24.1**	**+1.7**
	9.2nm,0.9s,mb4.6						
PV10	**Paradox Valley**	**45.77**	**326**	*e*P	P	**19 08 27.0**	**+0.1**

RSSD	**Black Hills**	**47.75**	**335**	*e*P	P	**19 08 43.0**	**+0.7**
	5.8nm,0.9s,mb4.6								
RSSD				*e*	pP	19 08 54.3	+2.2		
PDAR	**Pinedale Array**	**49.22**	**330**	P	P	**19 08 53.5**	**-0.3**		
	0.8nm,0.9s,mb3.7,baz=117,slow=6.6,SNR=3.8								
PDAR				LR	LR	19 30 26.7			
	comp=Z,96nm,21.6s,MS3.8,baz=312,slow=37								
HWUT	**Hardware Ranch**	**49.43**	**328**	*e*P	P	**19 08 55.0**	**-0.3**		
	1.5nm,0.5s,mb4.3								
ULM	**Lac du Bonnet**	**50.43**	**346**	P	P	**19 09 02.8**	**-0.1**		
	3.7nm,0.8s,mb4.5,baz=126,slow=4.0,SNR=3.2								
NVAR	**Mina Array Bea**	**51.36**	**320**	P	P	**19 09 11.3**	**+1.2**		
	2.2nm,0.8s,mb4.1,baz=130,slow=7.0,SNR=8.9								
HLID	**Hailey**	**52.30**	**328**	P	P	**19 09 17.3**	**+0.3**		
YBH	**Yreka Blue Hor**	**56.01**	**321**	P	P	**19 09 43.1**	**-1.2**		
	1.5nm,0.6s,mb4.2,baz=100,slow=12,SNR=3.0								
NEW	**Newport**	**56.86**	**330**	LR	LR	19 35 00.4			
	comp=Z,82nm,20.7s,MS3.8,baz=69,slow=37								
YKA	**Yellowknife Ar**	**66.20**	**343**	P	P	**19 10 50.7**	**-2.1**		
	0.5nm,0.6s,mb3.7,baz=137,slow=6.0,SNR=15								
YKA				LR	LR	19 43 10.3			
	comp=Z,31nm,19.8s,MS3.5,baz=105,slow=39								
DLBC	**Dease Lake**	**69.19**	**334**	P	P	**19 11 11.5**	**-0.1**		
	0.5nm,0.4s,mb3.8,baz=172,slow=14,SNR=3.6								
DLBC	**Dease Lake**	**69.19**	**334**	P	P	**19 11 11.5**	**-0.1**		
DBIC	**Dimbokro**	**73.78**	**84**	P	P	**19 11 36.7**	**-3.3**		
	5.5nm,1.0s,mb4.4,baz=259,slow=4.0,SNR=4.1								
INK	**Inuvik**	**75.93**	**342**	P	P	**19 11 50.4**	**-0.9**		
	1.3nm,1.0s,mb3.8,baz=117,slow=6.8,SNR=4.9								
ILAR	**Eielson Array**	**79.19**	**336**	P	P	**19 12 08.3**	**-1.1**		
	0.6nm,0.6s,mb3.7,baz=112,slow=5.1,SNR=11								
QSPA	**South Pole Qui**	**91.83**	**180**	*e*P	P	**19 13 11.3**	**-0.6**		
	3.0nm,0.9s,mb4.6								
ASAR	**Alice Springs**	**141.64**	**233**	PKhKP		19 19 28.7			
	0.5nm,0.8s,baz=123,slow=3.9,SNR=6.9								
WRA	**Warramunga Arr**	**142.99**	**239**	PKhKP		19 19 33.7			
	1.3nm,0.7s,baz=111,slow=3.0,SNR=19								
CMAR	**Chiang Mai Arr**	**159.75**	**6**	PKPab	PKPab	19 20 42.4	-1.5		
	0.4nm,0.9s,baz=329,slow=5.3,SNR=3.6								

*IDC **07** 19:32:05.1±8.9, 32.36S×179.84W, h246km±95km, mb3.3/2, mb1 3.5/3, mb1mx3.4/13, Error ellipse: s-maj=97.2km s-min=45.9km az=1.0*

ISC 07 19:32:04.7±2.2, 33.3S±0.2×178.5W±0.5, h363km±26km, n12, σ0§75/13, mb3.2/2, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**5.45**	**208**	P	P	**19 33 29.7**	**-0.8**
URZ	**Urewera**	**6.11**	**214**	P	P	**19 33 38.8**	**+1.0**
	1.9nm,0.3s,baz=291,slow=8.2,SNR=13						
URZ				S	S	**19 34 51.6**	**+0.6**
	3.3nm,0.3s,baz=274,slow=23,SNR=13						
URZ	**Urewera**	**6.11**	**214**	P	P	**19 33 37.9**	**+0.1**
MRZ	**Mangatainoka R**	**8.75**	**211**	P	P	**19 34 07.8**	**-0.9**
KIW	**Kapiti Island**	**9.21**	**213**	P	P	**19 34 13.7**	**-0.5**
QRZ	**Quartz Range**	**10.38**	**221**	P	P	**19 34 28.3**	**+0.1**
THZ	**Tophouse**	**10.86**	**216**	P	P	**19 34 33.8**	**-0.1**
THZ				S	S	**19 36 31.1**	**-0.9**
KHZ	**Kahutara**	**11.07**	**212**	P	P	**19 34 38.2**	**+1.9**
MQZ	**McQueen's Vall**	**12.49**	**211**	S	S	**19 37 07.1**	**+0.2**
ASAR	**Alice Springs**	**42.61**	**270**	P	P	**19 39 28.4**	**+0.4**
	0.8nm,0.5s,mb3.1,baz=109,slow=7.4,SNR=15						
WRA	**Warramunga Arr**	**43.86**	**275**	P	P	**19 39 37.6**	**-0.4**
	1.0nm,0.4s,mb3.3,baz=114,slow=8.0,SNR=39						
FINES	**FINESS Array B**	**147.68**	**338**	PKPbc	PKPdf	19 51 15.2	+13
	0.5nm,0.8s,baz=14,slow=5.7,SNR=4.4						

IDC 07 19:52:59.0±1.4, 23.22S×114.86W, mb3.6/4, mb1 3.9/4, mb1mx3.8/16, MS3.8/5, Ms1 3.8/5, ms1mx3.6/9, Error ellipse: s-maj=53.8km s-min=42.7km az=27.0, Easter Island region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLCA	**Paso Flores**	**40.97**	**126**	LR	LR	20 13 19.0	
	comp=Z,225nm,19.5s,baz=217,slow=30						
LPAZ	**La Paz**	**44.37**	**90**	P	P	20 01 12.0	-1.2
	0.6nm,0.7s,baz=292,slow=13,SNR=1.9						
ROSC	**El Rosal**	**48.41**	**60**	LR	LR	20 17 51.2	
	comp=Z,76nm,20.6s,baz=152,slow=31						
CPUP	**Villa Florida**	**51.97**	**106**	LR	LR	20 19 46.7	
	comp=Z,129nm,21.6s,baz=282,slow=31						
TXAR	**Lajitas Array**	**53.35**	**12**	LR	LR	20 18 38.7	
	comp=Z,45nm,19.6s,baz=210,slow=29						
NVAR	**Mina Array Bea**	**61.41**	**357**	P	P	20 03 17.3	-2.0
	0.3nm,0.4s,baz=196,slow=6.6,SNR=2.8						
BDFB	**Brasilia**	**63.03**	**96**	LR	LR	20 26 00.0	
	comp=Z,95nm,20.6s,baz=299,slow=31						
PDAR	**Pinedale Array**	**65.84**	**4**	P	P	20 03 46.6	-1.7
	0.3nm,0.5s,baz=157,slow=6.9,SNR=2.4						
YKA	**Yellowknife Ar**	**85.42**	**0**	P	P	20 05 37.2	-1.9
	0.3nm,0.8s,baz=173,slow=5.0,SNR=6.5						
AKASG	**Malin Array Be**	**140.93**	**36**	PKP	PKPdf	20 12 30.0	-2.8
	0.7nm,0.6s,baz=43,slow=38,SNR=6.3						
ZAL	**Zalesovo**	**145.93**	**339**	PKPbc	PKPbc	20 12 41.7	+1.4
	0.9nm,0.4s,baz=79,slow=5.7,SNR=5.2						
CMAR	**Chiang Mai Arr**	**148.10**	**268**	PKPbc	PKPdf	20 12 47.2	+1.3
	2.2nm,0.7s,baz=112,slow=1.2,SNR=7.6						
BRTR	**Keskin Array B**	**148.71**	**51**	PKPbc	PKPdf	20 12 49.0	+2.7
	0.9nm,0.9s,baz=315,slow=2.0,SNR=2.9						
BVAR	**Borovoye Array**	**149.97**	**354**	PKPbc	PKPdf	20 12 50.0	+2.2
	1.0nm,0.7s,baz=321,slow=1.5,SNR=3.9						
MKAR	**Makanchi Array**	**152.72**	**334**	PKPbc	PKPdf	20 12 55.6	+3.5
	1.0nm,0.6s,baz=90,slow=1.2,SNR=8.0						

*NIED **07** 20:17:00, 22.80N×120.50E, h23km, Mw4.8 Best double couple: M0 1.55×10^16 NP1: ϕ=201°, δ=78°, λ=145°. NP2: ϕ=299°, δ=55°, λ=14°.*
*TAP **07** 20:17:45.3, 22.94N×120.57E, h14km, ML4.9*
TAP Felt III J at Jiashian, IV J at Sandimen, III J at Shinhua, II J at Nanshi, II J at Tauyuan, II J at Dapu, I J at Dungshan, II J at Yungkang, II J at Jiali, II J at Kaohsiung, III J at Taimali, II J at Chiayi, II J at Taitung, I J at Alishan, I J at Tawa, II J at Chenggung, II J at Szhu, II J at Mingjian, I J at Hengchun, I J at Dacheng, I J at Penghu, I J at Lanyu, I J at Hualien.
*IDC **07** 20:17:48.0±4.2, 22.84N×120.75E, h14km±26km, mb4.2/20, mb1 4.3/23, mb1mx4.3/29, ML3.9/3, MS4.0/20, Ms1 4.0/20, ms1mx3.9/33, Error ellipse: s-maj=18.6km s-min=11.1km az=69.0*
*JMA **07** 20:17:49.4±0.3, 22.80N×120.52E, h94km, M5.1*
*NEIC **07** 20:17:51.2±0.8, 22.80N×120.64E, h38km±7km, mb4.6/19, MS4.2/2, Error ellipse: s-maj=6.1km s-min=5.3km az=66.0*
NEIC Felt at T'ai-nan. Recorded [4 TAP] in P'ing-tung; [3 TAP] in Kao-hsiung, T'ai-nan and T'ai-tung; [2 TAP] in Chia-i, Nan-t'ou and Yun-lin; [1 TAP] in Chang-hua Counties.
*BJI **07** 20:17:51.8, 22.92N×120.47E, h37km, mB4.6, mb4.4, ML4.5, Ms4.7, Msz4.5*
*MOS **07** 20:18:17.6±1.6, 26.65N×119.40E, h33km, mb4.8/11, Error ellipse: s-maj=27.5km s-min=13.4km az=111.5*

ISC 07 20:17:46.1±0.2, 22.91N±0.01×120.55E±0.02, h11km±1km, n213, σ1§29/258, mb4.5/47, MS4.2/30, 27C-19D, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWM1	**Shoushan**	**0.15**	**234**	⇑*i*P	Pg	**20 17 50.4**	**+0.7**
SGST	**Jiashian**	**0.17**	**10**	⇑*i*P	Pg	**20 17 50.0**	**-0.1**
SGST				S	Sg	**20 17 53.7**	**+1.0**
SSD	**Sandimen**	**0.18**	**155**	⇓*i*P	Pg	**20 17 50.2**	**0.0**
SSD				S	Sg	**20 17 54.0**	**+1.1**
SGLT	**Jiouru**	**0.19**	**197**	⇑*i*P	Pg	**20 17 51.5**	**+1.1**
CHN3	**Shinhua**	**0.24**	**314**	⇓*i*P	Pg	**20 17 52.3**	**+1.0**
CHN1	**Nanshi**	**0.28**	**356**	⇓*i*P	Pg	**20 17 51.8**	**-0.1**
STYT	**Tauyuan**	**0.32**	**37**	⇑*i*P	Pg	**20 17 52.3**	**-0.4**
TAI1	**Yung-k'ang**	**0.32**	**294**	⇑*i*P	Pg	**20 17 53.0**	**+0.1**
WTP	**Ta-pu**	**0.34**	**10**	⇑*i*P	Pg	**20 17 52.9**	**-0.3**
TWK	**Hsinying**	**0.36**	**351**	⇓*i*P	Pg	**20 17 53.3**	**-0.2**
TWK				S	Sg	**20 17 59.1**	**+0.6**
KAU	**Kaohsiung**	**0.41**	**213**	*e*P	Pg	**20 17 54.9**	**+0.4**
SCLT	**Jiali**	**0.42**	**309**	⇑P	Pg	**20 17 54.5**	**-0.2**
CHN4	**Tsaushan**	**0.44**	**5**	⇓*i*P	Pg	**20 17 54.5**	**-0.7**
ECL	**Taimali**	**0.48**	**130**	⇓*i*P	Pg	**20 17 55.2**	**-0.8**
TWG	**Pinlang**	**0.49**	**100**	⇑*i*P	Pg	**20 17 55.6**	**-0.5**
TWG				S	Sg	**20 18 03.2**	**+0.5**
ELDTW	**Lidau**	**0.51**	**57**	*i* P	Pg	**20 17 55.9**	**-0.6**
CHN8	**Yiju**	**0.54**	**324**	*e*P	Pg	**20 17 56.3**	**-0.6**
CHN8				S	Sg	**20 18 05.8**	**+1.6**
SCZT	**Fangliau**	**0.54**	**173**	⇓*i*P	Pg	**20 17 56.4**	**-0.6**

TTN	**Taitung**	**0.57**	**106**	*i* P	Pg	**20 17 57.8**	**+0.1**		
TWP	**Hsiaoliuchiu**	**0.59**	**197**	*e*P	Pg	**20 17 59.6**	**+1.7**		
TWP				S	Sg	**20 18 11.2**	**+5.3**		
EAST	**Anshuo**	**0.59**	**152**	⇓*i*P	Pg	**20 17 57.4**	**-0.7**		
CHY	**Chiayi**	**0.60**	**349**	P	Pb	**20 17 57.4**	**-0.7**		
CHY				S	Sg	**20 18 06.2**	**0.0**		
CHN2	**Minshiung**	**0.62**	**354**	*e*P	Pb	**20 17 58.1**	**-0.4**		
CHN2				S	Sg	**20 18 08.0**	**+0.9**		
TAW	**Tawu**	**0.64**	**150**	⇓*i*P	Pb	**20 17 58.1**	**-0.7**		
TAW				S	Sb	**20 18 07.4**	**0.0**		
ALS	**Alishan**	**0.64**	**21**	*e*P	Pb	**20 17 58.0**	**-0.9**		
YUS	**Yu-Shan**	**0.69**	**33**	⇓*i*P	Pb	**20 17 59.0**	**-0.6**		
CHN5	**Tsauling**	**0.69**	**10**	⇓*i*P	Pb	**20 17 58.7**	**-1.0**		
WGK	**Gukeng**	**0.77**	**1**	P	Pb	**20 18 00.7**	**-0.4**		
WGK				S	Sb	**20 18 12.6**	**+1.3**		
CHKT	**Chengkung**	**0.77**	**76**	⇓*i*P	Pb	**20 18 00.9**	**-0.3**		
CHKT				S	Sb	**20 18 12.8**	**+1.4**		
WSF	**Szhu**	**0.79**	**337**	*e*P	Pb	**20 18 00.5**	**-0.9**		
WSF				S	Sb	**20 18 12.3**	**+0.6**		
TWF1	**Yuli**	**0.82**	**57**	⇓*i*P	Pb	**20 18 01.0**	**-0.8**		
TWF1				S	Sb	**20 18 12.2**	**-0.4**		
WDGT	**Dungji**	**0.89**	**293**	⇑*i*P	Pb	**20 18 01.5**	**-1.7**		
WDGT				S	Sb	**20 18 13.8**	**-1.0**		
HEN	**Hengchun**	**0.92**	**169**	⇓*i*P	Pb	**20 18 03.6**	**+0.1**		
HEN				S	Sb	**20 18 17.5**	**+2.0**		
EHY	**Hungye**	**0.93**	**50**	⇓*i*P	Pb	**20 18 02.8**	**-0.9**		
EHY				S	Sb	**20 18 15.8**	**0.0**		
WNT	**Mingjian**	**0.97**	**7**	P	Pb	**20 18 03.6**	**-0.9**		
WNT				S	Sb	**20 18 17.6**	**+0.5**		
WTCT	**Ta-ch'eng**	**0.98**	**345**	*e*P	Pb	**20 18 03.1**	**-1.6**		
WTCT				S	Sb	**20 18 17.3**	**-0.1**		
TWK1	**Hengchun**	**0.99**	**166**	⇓*i*P	Pb	**20 18 04.7**	**-0.1**		
SMLT	**Sun Moon Lake**	**1.02**	**18**	⇑*i*P	Pb	**20 18 05.1**	**-0.3**		
SMLT				S	Sb	**20 18 19.9**	**+1.3**		
TYC	**Yuchr**	**1.03**	**16**	*e*P	Pb	**20 18 04.6**	**-0.9**		
PNG	**Penghu**	**1.13**	**306**	*e*P	Pb	**20 18 04.6**	**-2.5**		
ESL	**Shilin**	**1.21**	**42**	⇓*i*P	Pb	**20 18 07.8**	**-0.8**		
ESL				S	Sb	**20 18 25.1**	**+1.0**		
TCU	**Taichung**	**1.24**	**5**	*e*P	Pb	**20 18 07.8**	**-1.3**		
LAY	**Lan-yu**	**1.27**	**133**	⇓*i*P	Pb	**20 18 07.7**	**-1.9**		
WHF	**Hehuan Shan**	**1.39**	**28**	⇑*i*P	Pn	**20 18 11.1**	**-0.6**		
HWA	**Hwalien**	**1.44**	**42**	*e*P	Pn	**20 18 11.8**	**-0.5**		
TWQ1	**Liyutan**	**1.45**	**8**	*e*P	Pn	**20 18 10.6**	**-1.7**		
TWQ1				S	Sb	**20 18 30.3**	**-0.6**		
TWT	**Tachien**	**1.46**	**23**	*e*P	Pn	**20 18 11.1**	**-1.4**		
TWD	**Chiawan**	**1.51**	**39**	P	Pn	**20 18 12.2**	**-1.1**		
TWD				S	Sb	**20 18 33.9**	**+1.1**		
NSY	**Sanyi**	**1.51**	**7**	*e*P	Pn	**20 18 12.0**	**-1.3**		
NNS	**Nan Shan**	**1.70**	**26**	*e*P	Pn	**20 18 15.3**	**-0.7**		
NSTT	**Nanjuang**	**1.76**	**13**	*e*P	Pn	**20 18 14.9**	**-2.0**		
ENA	**Nanau**	**1.86**	**36**	*e*P	Pn	**20 18 17.0**	**-1.3**		
NSK	**Sanguang**	**1.91**	**23**	*e*P	Pn	**20 18 17.7**	**-1.2**		
ENTT	**Nioudou**	**1.96**	**28**	*e*P	Pn	**20 18 19.3**	**-0.4**		
TWC	**Suao**	**2.07**	**35**	*

QIZ	**Qiongzhong**	**10.72**	**251**	*e*P		**P**	**20 20 21.8**	**-1.0**
QIZ				S		**S**	**20 22 32.6**	**+8.7**
QIZ				LR	LR			
	comp=N,1μm,17.9s							
QIZ				LR	LR			
	comp=E,3μm,15.2s							
QIZ				LR	LR			
	comp=Z,4μm,14.8s							
QIZ	**Qiongzhong**	**10.72**	**251**	*e*P		**P**	**20 20 22.5**	**-0.3**
	comp=Z,50nm,1.2s							
ENH	**Enshi**	**12.31**	**309**	*e*P		**P**	**20 20 44.2**	**-0.1**
	comp=Z,15nm,1.1s							
GYA	**Guiyang**	**13.11**	**288**	P		**P**	**20 20 55.8**	**+0.8**
GYA				AP			20 21 06.6	
GYA				S		**S**	**20 23 15.6**	**-6.2**
GYA				LR	LR			
	comp=N,860nm,13.2s							
GYA				LR	LR			
	comp=E,2μm,12.9s							
GYA				LR	LR			
	comp=Z,3μm,14.1s							
JNU	**Nakatsue**	**13.65**	**40**	Pn		**P**	**20 21 04.3**	**+2.1**
	comp=Z,0.2nm,0.3s,baz=229,slow=7.1,SNR=3.6							
JNU				LR	LR		20 27 17.3	
	comp=Z,846nm,18.6s,baz=225,slow=42							
XAN	**Xi'an**	**15.07**	**320**	P		**P**	**20 21 21.8**	**+1.0**
XAN				LR	LR			
	comp=N,847nm,12.4s							
XAN				LR	LR			
	comp=E,1μm,15.0s							
XAN				LR	LR			
	comp=Z,2μm,15.0s							
KS15	**Wonju Array Si**	**15.80**	**22**	*e*P		**P**	**20 21 32.5**	**+2.3**
KMI	**Kunming**	**16.42**	**281**	*e*P		**P**	**20 21 43.6**	**+5.3**
KMI				AP			20 21 52.0	
KMI				PP	PP		20 21 57.1	+5.2
KMI				S		**S**	**20 24 44.0**	**+3.9**
KMI				AMB	AMB			
	comp=Z,7.0nm,0.5s							
KMI				LR	LR			
	comp=N,408nm,5.2s							
KMI				LR	LR			
	comp=E,2μm,13.4s							
KMI				LR	LR			
	comp=Z,2μm,13.6s							
CD2	**Chengdu**	**16.95**	**302**	*e*P		**P**	**20 21 46.9**	**+2.0**
CD2				AP			20 21 55.3	
CD2				XS			20 25 01.4	
CD2				LR	LR			
	comp=E,2μm,11.4s							
CD2				LR	LR			
	comp=Z,3μm,13.5s							
BJT	**Baijiatuan**	**17.46**	**349**	P		**P**	**20 21 54.4**	**+3.2**
	comp=Z,17nm,0.9s							
BJI	**Beijing**	**17.48**	**349**	P		**P**	**20 21 58.5**	**+7.1**
BJI				XP			20 22 09.0	
BJI				S		**S**	**20 25 11.1**	**+6.9**
BJI				AMB	AMB			
	comp=Z,8.0nm,0.9s							
BJI				AMB	AMB			
	comp=Z,162nm,4.7s							
BJI				LR	LR			
	comp=N,926nm,16.6s							
BJI				LR	LR			
	comp=E,400nm,17.0s							
BJI				LR	LR			
	comp=Z,589nm,17.2s							
NANT	**Nan**	**18.99**	**261**	⇑P		**P**	**20 22 13.0**	**+2.7**
HHC	**Hu-ho-hao-te**	**19.43**	**339**	⇑P		**P**	**20 22 22.8**	**+7.6**
HHC				AMB	AMB			
	comp=Z,15nm,1.5s							
HHC				AMB	AMB			
	comp=Z,116nm,8.2s							
HHC				LR	LR			
	comp=N,840nm,13.7s							
HHC				LR	LR			
	comp=E,432nm,13.1s							
HHC				LR	LR			
	comp=Z,706nm,14.5s							
LZH	**Lanzhou**	**19.55**	**316**	*e*P		**P**	**20 22 18.1**	**+1.4**
LZH				XP			20 22 33.1	
LZH				AMB	AMB			
	comp=Z,20nm,1.0s							
LZH				AMB	AMB			
	comp=Z,370nm,4.1s							
LZH				LR	LR			
	comp=E,2μm,10.6s							
LZH				LR	LR			
	comp=Z,3μm,13.7s							
BTO	**Baotou**	**19.76**	**336**	*e*P		**P**	**20 22 25.9**	**+6.9**
BTO				AMB	AMB			
	comp=Z,23nm,0.9s							
BTO				LR	LR			
	comp=N,3μm,12.5s							
BTO				LR	LR			
	comp=E,2μm,13.7s							
JHJ	**Hachijo jima 2**	**19.76**	**55**	P		**P**	**20 22 22.1**	**+3.0**
	comp=E,4.0nm,0.3s,baz=252,slow=18,SNR=3.2							
JHJ				LR	LR		20 30 03.5	
	comp=E,256nm,18.4s,baz=86,slow=37							
CBIJ	**Ishichi jima**	**20.04**	**74**	LR		LR	20 29 35.8	
	comp=E,196nm,18.6s,MS3.5,baz=336,slow=36							
MAJO	**Matsushiro**	**20.44**	**44**	*e*P		**P**	**20 22 24.7**	**-1.6**
	comp=E,18nm,0.8s							
CHG	**Chiang Mai**	**20.59**	**263**	⇑P		**P**	**20 22 32.4**	**+4.5**
	comp=E,14nm,1.0s							
CMAR	**Chiang Mai Arr**	**20.69**	**262**	P		**P**	**20 22 29.9**	**+1.0**
	comp=E,1.4nm,0.6s,baz=74,slow=8.8,SNR=12							
CMAR				PcP	PcP		20 26 40.0	+1.2
	comp=E,0.7nm,0.4s,baz=32,slow=1.1,SNR=7.0							
CMAR				LR	LR		20 31 54.6	
	comp=E,860nm,18.8s,MS4.2,baz=80,slow=41							
CN2	**Changchun**	**21.23**	**10**	*e*P		**P**	**20 22 37.6**	**+3.3**
CN2				*e*XP			20 22 51.3	
CN2				*e*S		**S**	**20 26 25.5**	**+0.3**
CN2				AMB	AMB			
	comp=Z,10.0nm,0.6s,mb4.3							
CN2				AMB	AMB			
	comp=Z,200nm,4.0s							
CN2				LR	LR			
	comp=N,900nm,12.0s,MS4.6							
CN2				LR	LR			
	comp=E,1μm,12.0s,MS4.6							
CN2				LR	LR			
	comp=Z,1μm,13.0s,MS4.5							
MDJ	**Mudanjiang**	**22.89**	**17**	P		**P**	**20 22 52.5**	**+1.6**
MDJ				AP			20 23 03.8	
MDJ				XP			20 23 10.4	
MDJ				PCP	PcP		20 26 41.2	-1.7
MDJ				S		**S**	**20 27 00.6**	**+4.8**
MDJ				PCS			20 30 20.1	
MDJ				AMB	AMB			
	comp=Z,5.0nm,1.1s,mb3.9							
MDJ				AMB	AMB			
	comp=Z,18nm,3.4s							
MDJ				LR	LR			
	comp=N,646nm,13.7s,MS4.4							
MDJ				LR	LR			
	comp=E,776nm,15.3s,MS4.4							
MDJ				LR	LR			
	comp=Z,777nm,16.3s,MS4.2							
GTA	**Gaotai**	**24.11**	**318**	*e*P		**P**	**20 23 04.6**	**+1.9**
GTA				AP			20 23 19.2	
GTA				AMB	AMB			
	comp=Z,4.0nm,1.4s,mb3.7							
GTA				AMB	AMB			
	comp=Z,85nm,4.6s							
GTA				LR	LR			
	comp=N,259nm,12.6s							
GTA				LR	LR			
	comp=E,365nm,17.9s							
GTA				LR	LR			
	comp=Z,515nm,16.4s,MS4.1							
HIA	**Hailar**	**26.31**	**359**	*e*P		**P**	**20 23 24.1**	**+0.6**
	comp=Z,16nm,1.2s,mb4.4							
ULN	**Ulaanbaatar**	**27.14**	**340**	*e*P		**P**	**20 23 31.8**	**+0.6**
ULN	**Ulaanbaatar**	**27.14**	**340**	*e*P		**P**	**20 23 31.6**	**+0.5**
	comp=Z,17nm,1.5s,mb4.3							
LSA	**Lhasa**	**27.16**	**291**	P		**P**	**20 23 35.6**	**+4.1**
LSA	**Lhasa**	**27.16**	**291**	*e*P		**P**	**20 23 33.8**	**+2.3**
	comp=Z,6.9nm,0.6s,mb4.4							
SONM	**Songino Array**	**27.33**	**339**	P		**P**	**20 23 34.6**	**+1.8**
	comp=Z,3.8nm,1.0s,mb3.9,baz=146,slow=8.9,SNR=3.5							
ASAJ	**Asahikawa**	**27.86**	**35**	P		**P**	**20 23 36.9**	**-0.9**
	comp=Z,5.6nm,0.8s,mb4.2,baz=229,slow=9.3,SNR=2.6							
ASAJ				LR	LR		20 35 17.4	
	comp=Z,800nm,19.1s,MS4.3,baz=250,slow=38							
YSS	**Yuzh-Sakhalins**	**29.91**	**31**	*e*P		**P**	**20 24 01.8**	**+5.6**
YSS				*e*			20 24 09.5	
YSS				pmax	pmax			
	comp=Z,20nm,1.0s,mb4.8							
YSS				MLR	MLR			
	comp=Z,300nm,15.0s,MS4.0							
YSS				MLR	MLR			
	comp=E,400nm,14.0s							
ZAK	**Zakamensk**	**30.57**	**338**	*e*P		**P**	**20 23 56.0**	**-5.9**
ZAK				*e*			20 24 07.9	
TLY	**Talaya**	**31.55**	**340**	*e*P		**P**	**20 24 14.3**	**+3.7**
TLY				pmax	pmax			
	comp=Z,25nm,0.9s,mb5.0							
TLY				MLR	MLR			
	comp=Z,5μm,17.0s,MS5.2							
GUN	**Gumba**	**31.64**	**286**	*e*P		**P**	**20 24 11.9**	**+0.3**
	comp=Z,7.8nm,0.6s,mb4.7							
KKN	**Kakani**	**32.17**	**286**	*e*P		**P**	**20 24 16.5**	**+0.2**
	comp=Z,16nm,1.1s,mb4.8							
DMN	**Daman**	**32.33**	**286**	*e*P		**P**	**20 24 18.1**	**+0.5**
	comp=Z,44nm,1.6s,mb5.0							
GKN	**Gorkha**	**32.74**	**286**	*e*P		**P**	**20 24 21.0**	**-0.2**
KOLN	**Koldanda**	**33.66**	**286**	*e*P		**P**	**20 24 28.8**	**-0.4**
	comp=Z,10nm,0.8s,mb4.8							
WMQ	**Urumqi**	**34.13**	**316**	*e*P		**P**	**20 24 38.0**	**+4.8**
WMQ				XP		sP	20 24 53.0	+15
WMQ				PP		PP	20 25 54.2	+6.6
WMQ				PCP		PcP	20 27 13.9	+3.4
WMQ				S		**S**	**20 29 59.3**	**+1.2**
WMQ				SCP			20 30 52.4	
WMQ				PCS			20 30 59.0	
WMQ				SCS		ScS	20 34 53.3	-1.7
WMQ				AMB	AMB			
	comp=Z,33nm,1.2s,mb5.1							
WMQ				AMB	AMB			
	comp=Z,163nm,4.3s							
WMQ				LR	LR			
	comp=N,873nm,18.2s,MS4.7							
WMQ				LR	LR			
	comp=E,954nm,17.3s,MS4.7							
WMQ				LR	LR			
	comp=Z,1μm,18.1s,MS4.7							
BOD	**Bodaibo**	**35.19**	**354**	*e*P		**P**	**20 24 38.2**	**-3.9**
MKAR	**Makanchi Array**	**38.86**	**317**	P		**P**	**20 25 14.0**	**+1.0**
	comp=Z,2.3nm,0.6s,mb4.1,baz=130,slow=9.5,SNR=14							
MKAR				PcP	PcP		20 27 24.1	-0.5
	comp=Z,2.8nm,1.1s,baz=90,slow=4.3,SNR=2.7							
MKAR				LR	LR		20 42 31.5	
	comp=Z,316nm,18.2s,MS4.2,baz=257,slow=38							
MKAR	**Makanchi Array**	**38.86**	**317**	*i* P		**P**	**20 25 14.0**	**+0.9**
MKAR				pmax	pmax			
	comp=Z,2.0nm,0.6s							
MKAR	**Makanchi Array**	**38.86**	**317**	P		**P**	**20 25 14.0**	**+0.9**
MKAR				PcP	PcP		20 27 24.1	-0.5
MKAR				LR	LR		20 42 31.5	
WAU	**Wau**	**39.49**	**137**	*e*P		**P**	**20 25 17.8**	**-0.9**
ZAL	**Zalesovo**	**41.01**	**328**	P		**P**	**20 25 30.6**	**-0.1**
	comp=Z,1.1nm,0.6s,mb3.7,baz=281,slow=9.6,SNR=4.7							
ZAL				LR	LR		20 44 18.6	
	comp=Z,226nm,20.0s,MS4.0,baz=252,slow=39							
ZAL	**Zalesovo**	**41.01**	**328**	*i* P		**P**	**20 25 30.6**	**-0.1**
ZAL				pmax	pmax			
	comp=Z,1.0nm,0.6s							
FITZ	**Fitzroy Crossi**	**41.06**	**173**	*e*P		**P**	**20 25 29.6**	**-1.9**
	comp=Z,7.7nm,1.0s,mb4.3							
FITZ	**Fitzroy Crossi**	**41.06**	**173**	P		**P**	**20 25 29.8**	**-1.7**
	comp=Z,12nm,1.1s,mb4.4,baz=345,slow=9.7,SNR=19							
PMG	**Port Moresby**	**41.36**	**138**	P		**P**	**20 25 32.0**	**-1.9**
	comp=Z,26nm,0.9s,mb4.9,baz=304,slow=3.6,SNR=5.0							
PMG				LR	LR		20 42 05.1	
	comp=Z,182nm,18.1s,MS4.0,baz=128,slow=35							
PET	**Petropavlovsk**	**41.69**	**34**	*e*P		**P**	**20 25 45.1**	**+8.8**
PET				pmax	pmax			
	comp=Z,29nm,0.9s,mb4.9							
PET				MLR	MLR			
	comp=Z,395nm,24.0s,MS4.2							
NVS	**Novosibirsk**	**42.28**	**329**	*e*P		**P**	**20 25 45.1**	**+4.0**
NVS				pmax	pmax			
	comp=Z,16nm,1.9s,mb4.3							
NVS				pmax	pmax			
	comp=N,12nm,1.3s							
NVS				pmax	pmax			
	comp=E,9.0nm,1.3s							
KURK	**Kurchatov**	**42.70**	**321**	*e*P		**P**	**20 25 46.0**	**+1.3**
WRAB	**Tennant Creek**	**44.66**	**161**	*e*P		**P**	**20 25 58.8**	**-2.2**
	comp=E,61nm,0.7s,mb5.5							
WRA	**Warramunga Arr**	**44.67**	**161**	P		**P**	**20 25 59.0**	**-2.0**
	comp=E,33nm,0.8s,mb5.2,baz=344,slow=8.7,SNR=200							
WRA				PcP	PcP		20 27 42.3	-1.8
	comp=E,2.4nm,0.7s,baz=340,slow=3.4,SNR=4.9							
WB2	**Warramunga Arr**	**44.67**	**161**	⇑*i*P		**P**	**20 25 59.0**	**-2.0**
AS12	**Alice Springs**	**48.08**	**163**	*e*P		**P**	**20 26 26.6**	**-1.3**
	comp=E,8.9nm,1.1s,mb5.0							
ASAR	**Alice Springs**	**48.08**	**163**	P		**P**	**20 26 26.9**	**-1.0**
	comp=E,9.5nm,0.5s,mb5.0,baz=355,slow=14,SNR=128							
ASAR				PcP	PcP		20 27 54.6	-1.4
	comp=E,3.5nm,0.8s,baz=360,slow=3.4,SNR=5.5							
ASAR				ScP			20 31 48.0	
	comp=E,0.6nm,0.8s,baz=323,slow=4.5,SNR=4.0							
ASAR				LR	LR		20 46 11.2	
	comp=E,75nm,19.3s,MS3.7,baz=344,slow=36							
BVAR	**Borovoye Array**	**48.30**	**322**	P		**P**	**20 26 30.0**	**+0.8**
	comp=E,1.1nm,0.6s,mb4.1,baz=108,slow=9.4,SNR=11							
BVAR				PcP	PcP		20 27 56.4	-0.1
	comp=E,1.0nm,0.8s,baz=104,slow=5.9,SNR=2.0							
BVAR				LR	LR		20 49 18.6	
	comp=E,128nm,19.1s,MS3.9,baz=100,slow=39							
BRVK	**Borovoye**	**48.37**	**322**	*e*P		**P**	**20 26 29.8**	**0.0**
TIXI	**Tiksi**	**49.00**	**3**	*e*P		**P**	**20 26 32.7**	**-1.7**
TIXI				pmax	pmax			
	comp=Z,67nm,1.0s,mb5.6							
TIXI				MLR	MLR			
	comp=Z,3μm,13.0s,MS5.5							
TIXI	**Tiksi**	**49.00**	**3**	*e*P		**P**	**20 26 32.8**	**-1.5**
CTA	**Charters Tower**	**49.55**	**148**	*e*P		**P**	**20 26 38.3**	**-1.0**
	comp=Z,8.8nm,0.9s,mb4.8							
CTA	**Charters Tower**	**49.55**	**148**	LR	LR		20 46 07.8	
	comp=Z,325nm,19.3s,MS4.3,baz=332,slow=34							
CTAO	**Charters Tower**	**49.55**	**148**	*e*P		**P**	**20 26 37.8**	**-1.5**
CTAO				LR	LR			
	comp=Z,218nm,20.0s,MS4.2							
BILL	**Bilibino**	**53.08**	**20**	*e*P		**P**	**20 27 02.5**	**-2.9**
BILL				pmax	pmax			
	comp=Z,3.0nm,0.9s,mb4.2							
BILL				MLR	MLR			
	comp=Z,300nm,16.0s,MS4.4							
NWAO	**Narrogin (SRO)**	**55.61**	**183**	P		**P**	**20 27 22.8**	**-1.7**
	comp=Z,14nm,0.9s,mb5.0,baz=59,slow=5.9,SNR=3.2							
ARU	**Arti**	**55.78**	**324**	⇓*i*P		**P**	**20 27 25.2**	**-0.1**
ARU				*i*			20 29 29.4	
ARU				*e*S		**S**	**20 35 07.3**	**-2.9**
ARU				pmax	pmax			
	comp=Z,11nm,1.0s,mb4.8							
ARU				MLR	MLR			
	comp=N,100nm,17.0s,MS4.1							
ARU				MLR	MLR			
	comp=E,100nm,17.0s,MS4.1							
ARU				MLR	MLR			
	comp=Z,100nm,17.0s,MS4.0							
ARU	**Arti**	**55.78**	**324**	*e*P		**P**	**20 27 25.3**	**0.0**
	comp=Z,20nm,1.3s,mb5.0							
STKA	**Stephens Creek**	**58.08**	**159**	*e*P		**P**	**20 27 39.5**	**-2.5**
	comp=Z,3.0nm,0.5s,mb4.6							
STKA	**Stephens Creek**	**58.08**	**159**	P		**P**	**20 27 40.0**	**-1.9**
	comp=Z,5.7nm,0.9s,mb4.6,baz=336,slow=6.5,SNR=17							
ARMA	**Armidale**	**60.84**	**149**	*e*P		**P**	**20 28 00.2**	**-0.9**
TOO	**Toolangi**	**64.58**	**158**	*e*P		**P**	**20 28 25.1**	**-0.7**
	comp=Z,8.9nm,0.9s,mb4.8							
ZEI	**Tsey**	**65.25**	**308**	⇑*e*P		**P**	**20 28 37.9**	**+7.8**
KIV	**Kislovodsk**	**65.94**	**309**	*e*P		**P**	**20 28 40.3**	**+5.9**
KIV				pmax	pmax			
	comp=Z,9.0nm,0.9s,mb4.8							
KIV				MLR	MLR			
	comp=Z,100nm,18.0s,MS4.1							
KIV	**Kislovodsk**	**65.94**	**309**	*e*P		**P**	**20 28 35.2**	**+0.8**
	comp=Z,7.9nm,0.9s,mb4.7							
IMA	**Indian Mountai**	**67.60**	**26**	*e*P		**P**	**20 28 45.3**	**+0.7**
OBN	**Obninsk**	**68.14**	**322**	*e*P		**P**	**20 28 53.0**	**+4.8**
OBN				pmax	pmax			
	comp=Z,15nm,1.4s,mb4.8							
OBN				MLR	MLR			
	comp=Z,100nm,16.0s,MS4.1							
JOF	**Joensuu**	**69.53**	**331**	*e*p		**P**	**20 28 56.9**	**+0.3**
	comp=Z,0.5nm,0.4s,mb3.8							
JOF	**Joensuu**	**69.53**	**331**	*e*P		**P**	**20 28 56.9**	**+0.3**
JOF				pmax	pmax			
	comp=Z,1.0nm,0.4s,mb4.1							
PWA	**Palmer West**	**69.92**	**31**	*e*P		**P**	**20 28 57.5**	**-1.5**
KEV	**Kevo**	**69.94**	**338**	*e*p		**P**	**20 29 00.3**	**+1.3**
	comp=Z,1.6nm,0.3s,mb4.4							
KEV	**Kevo**	**69.94**	**338**	*e*P		**P**	**20 29 00.3**	**+1.3**
KEV				pmax	pmax			
	comp=Z,2.0nm,0.3s,mb4.5							
MCK	**McKinley**	**69.94**	**28**	*e*P		**P**	**20 28 57.9**	**-1.2**
PMS	**Palmer South**	**70.14**	**31**	*e*P		**P**	**20 28 59.5**	**-0.9**
PMR	**Palmer**	**70.28**	**31**	*e*P		**P**	**20 28 59.8**	**-1.4**
PMR				LR	LR			
	comp=Z,200nm,21.0s,MS4.3							
ARCES	**ARCESS Array B**	**70.50**	**338**	P		**P**	**20 29 05.2**	**+2.8**
	comp=Z,4.2nm,0.8s,mb4.4,baz=65,slow=8.2,SNR=13							
ARCES				LR	LR		21 03 44.0	
	comp=Z,65nm,18.7s,MS3.9,baz=199,slow=39							
ARCES	**ARCESS Array B**	**70.50**	**338**	P		**P**	**20 29 05.2**	**+2.8**
ARCES				LR	LR		21 03 44.0	
ILAR	**Eielson Array**	**70.61**	**27**	P		**P**	**20 29 02.4**	**-0.7**
	comp=Z,1.4nm,0.7s,mb4.0,baz=293,slow=8.1,SNR=20							
KAF	**Kangasniemi**	**71.97**	**330**	*e*p		**P**	**20 29 09.3**	**-2.1**
	comp=Z,1.3nm,0.6s,mb4.0							
KAF	**Kangasniemi**	**71.97**	**330**	*e*P		**P**	**20 29 09.3**	**-2.1**
KAF				pmax	pmax			
	comp=Z,1.0nm,0.6s,mb3.9							
FINES	**FINESS Array B**	**72.25**	**330**	P		**P**	**20 29 13.7**	**+0.7**
	comp=Z,0.7nm,0.8s,mb3.7,baz=22,slow=7.5,SNR=6.9							
FINES				LR	LR		21 05 12.6	
	comp=Z,108nm,18.4s,MS4.2,baz=58,slow=39							
FINES	**FINESS Array B**	**72.25**	**330**	*i* P		**P**	**20 29 22.8**	**+10**
FINES				pmax	pmax			
	comp=Z,1.0nm,0.9s							
AKASG	**Malin Array Be**	**73.43**	**318**	P		**P**	**20 29 20.0**	**-0.1**
	comp=Z,1.5nm,0.7s,mb4.0,baz=62,slow=5.8,SNR=5.1							
BRTR	**Keskin Array B**	**73.46**	**307**	P		**P**	**20 29 20.9**	**+0.3**
	comp=Z,0.6nm,0.8s,mb3.6,baz=112,slow=7.8,SNR=3.3							
BRTR				LR	LR		21 06 59.9	
	comp=Z,42nm,18.8s,MS3.8,baz=30,slow=40							
DAWY	**Dawson**	**73.93**	**27**	*e*P		**P**	**20 29 22.5**	**-0.3**
INK	**Inuvik**	**74.62**	**22**	*e*P		**P**	**20 29 25.8**	**-0.9**
	comp=Z,4.0nm,0.6s,mb4.5							
MLR	**Muntele Rosu**	**77.11**	**314**	P		**P**	**20 29 42.9**	**+1.6**
	comp=Z,2.2nm,0.6s,mb4.3,baz=163,slow=6.1,SNR=5.0							
NB2	**NORSAR Subarra**	**79.08**	**332**	P		**P**	**20 29 51.8**	**+0.1**
	comp=Z,1.8nm,0.7s,mb4.1,baz=61,slow=5.3							
NOA	**NORSAR Array B**	**79.08**	**332**	P		**P**	**20 29 52.2**	**+0.4**
	comp=Z,4.4nm,1.1s,mb4.3,baz=62,slow=5.4,SNR=5.3							
NOA				LR	LR		21 08 08.6	
	comp=Z,157nm,19.9s,MS4.3,baz=45,slow=38							
NOA	**NORSAR Array B**	**79.08**	**332**	P		**P**	**20 29 52.2**	**+0.4**
NOA				LR	LR		21 08 08.6	
OJC	**Ojcow**	**79.27**	**320**	*e*P		**P**	**20 30 02.0**	**+9.0**
DLBC	**Dease Lake**	**80.33**	**30**	LR	LR		21 05 29.6	
	comp=Z,100nm,19.2s,MS4.2,baz=308,slow=36							
KSP	**Ksiaz**	**81.06**	**322**	*e*P		**P**	**20 30 14.5**	**+12**
GERES	**GERESS Array B**	**83.45**	**320**	P		**P**	**20 30 16.5**	**+1.5**
	comp=Z,0.4nm,0.7s,mb3.6,baz=180,slow=8.0,SNR=5.4							
SUMG	**Summit**	**83.70**	**354**	*e*P		**P**	**20 30 16.7**	**+1.0**
KMBO	**Kilima Mbogo**	**84.26**	**266**	LR	LR		21 07 09.4	
	comp=Z,62nm,20.4s,MS4.0,baz=91,slow=35							
YKW3	**Yellowknife Ar**	**84.32**	**22**	*e*P		**P**	**20 30 18.6**	**-0.4**
YKA	**Yellowknife Ar**	**84.36**	**23**	P		**P**	**20 30 19.2**	**-0.1**
	comp=Z,1.9nm,0.6s,mb4.4,baz=315,slow=4.8,SNR=47							
YKA				LR	LR		21 13 16.8	
	comp=Z,64nm,19.9s,MS4.0,baz=265,slow=40							
YKA	**Yellowknife Ar**	**84.36**	**23**	P		**P**	**20 30 19.2**	**-0.1**
YKA				LR	LR		21 13 16.8	
OCWA	**Octopus Mounta**	**88.86**	**38**	P		**P**	**20 30 41.2**	**-0.4**
FRB	**Frobisher Bay**	**93.34**	**4**	LR	LR		21 10 41.5	
	comp=Z,85nm,20.8s,MS4.2,baz=336,slow=34							
HLID	**Hailey**	**96.83**	**37**	P		**P**	**20 31 19.5**	**+1.0**
VNA2	**Neumayer--Watz**	**123.50**	**198**			Pdif	20 33 15.5	-0.3
VNA1	**Neumayer--Stat**	**123.89**	**198**	⇑*i*		Pdif	20 33 18.2	+0.7
OTAV	**Otavalo**	**150.48**	**41**	PKP		PKPdf	20 37 36.0	-0.5

*IDC **07** 20:36:00.3±5.1,5.79S×146.92E,h50km±55km,mb3.6/4, mb1 3.9/7,mb1mx3.7/15,ML3.5/3,Error ellipse: s-maj=57.6km s-min=35.9km az=99.0*
*NEIC **07** 20:36:01.5±2.9,5.84S×147.09E,h72km±21km,mb4.3/1, Error ellipse: s-maj=31.6km s-min=28.9km az=80.0*
ISC 07 20:36:00.6±2.0,5.9S±0.1×147.1E±0.2,h76km±17km,n14, σ1§00/18,mb3.7/5,Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
WAU	**Wau**	**1.52**	**192**	*e*P		**P**		**20 36 27.3**	**+0.8**
PMG	**Port Moresby**	**3.53**	**178**	P		**P**		**20 36 53.2**	**-1.2**
	8.2nm,0.3s,baz=345,slow=4.8,SNR=18								
PMG				S		**S**		**20 37 35.6**	**+0.5**
	10nm,0.3s,baz=185,slow=22,SNR=8.1								
PMG	**Port Moresby**	**3.53**	**178**	*e*P		**P**		**20 36 53.4**	**-1.0**
PMG				*e*S		**S**		**20 37 34.2**	**-1.0**
CTA	**Charters Tower**	**14.17**	**183**	P		**P**		**20 39 20.7**	**+1.7**
	0.2nm,0.3s,baz=353,slow=17,SNR=2.6								
WRAB	**Tennant Creek**	**18.66**	**220**	*e*P		**P**		**20 40 15.6**	**+0.5**
WB2	**Warramunga Arr**	**18.66**	**220**	*e*P		**P**		**20 40 13.9**	**-1.2**
WRA	**Warramunga Arr**	**18.67**	**220**	P		**P**		**20 40 13.6**	**-1.6**
	0.3nm,0.3s,baz=41,slow=12,SNR=13								
WRA				S		**S**		**20 43 37.7**	**+0.3**
	0.1nm,0.3s,baz=50,slow=21,SNR=3.0								
ASAR	**Alice Springs**	**21.76**	**214**	P		**P**		**20 40 46.8**	**-0.7**
	0.7nm,0.4s,mb3.3,baz=51,slow=9.0,SNR=13								
ASAR				S		**S**		**20 44 54.1**	**+16**
	1.0nm,1.1s,baz=39,slow=23,SNR=4.5								
FITZ	**

HEN				S	**S**	**20 36 42.6**	**-0.2**
WTP	**Ta-pu**	**0.92**	**42**	P	**P**	**20 36 30.4**	**-0.3**
WTP				S	**S**	**20 36 43.1**	**+0.3**
ECL	**Taimali**	**0.93**	**88**	⇑*i*P	**S**	**20 36 30.7**	**-0.2**
ECL				S	**S**	**20 36 42.2**	**-1.0**
STYT	**Tauyuan**	**0.96**	**51**	*e*P	**S**	**20 36 30.9**	**-0.4**
STYT				S	**S**	**20 36 43.9**	**0.0**
CHN4	**Tsaushan**	**0.99**	**37**	⇓P	**S**	**20 36 31.5**	**-0.1**
CHN4				S	**S**	**20 36 44.7**	**+0.1**
TWK1	**Hengchun**	**1.00**	**127**	⇓*i*P	**S**	**20 36 31.5**	**-0.4**
TWK1				S	**S**	**20 36 44.4**	**-0.6**
CHY	**Chiayi**	**1.03**	**25**	*e*P	**S**	**20 36 32.2**	**-0.1**
CHY				S	**S**	**20 36 45.8**	**0.0**
PNG	**Penghu**	**1.07**	**340**	P	**S**	**20 36 32.1**	**-0.6**
PNG				S	**S**	**20 36 46.5**	**-0.1**
TWG	**Pinlang**	**1.07**	**76**	*i* P	**S**	**20 36 32.9**	**0.0**
TWG				S	**S**	**20 36 46.4**	**-0.3**
CHN2	**Minshiung**	**1.08**	**27**	*e*P	**S**	**20 36 33.3**	**+0.3**
CHN2				S	**S**	**20 36 47.4**	**+0.3**
WSF	**Szhu**	**1.10**	**13**	*e*P	**S**	**20 36 33.8**	**+0.5**
WSF				S	**S**	**20 36 47.6**	**+0.1**
TTN	**Taitung**	**1.12**	**80**	*e*P	**S**	**20 36 34.0**	**+0.4**
ELDTW	**Lidau**	**1.17**	**57**	⇑*i*P	**S**	**20 36 34.0**	**-0.2**
ELDTW				S	**S**	**20 36 49.5**	**+0.3**
CHN5	**Tsauling**	**1.23**	**33**	*e*P	**S**	**20 36 34.8**	**-0.3**
CHN5				S	**S**	**20 36 50.4**	**-0.5**
ALS	**Alishan**	**1.23**	**40**	*e*P	**S**	**20 36 35.1**	**0.0**
ALS				S	**S**	**20 36 51.1**	**+0.2**
WGK	**Gukeng**	**1.26**	**27**	*e*P	**S**	**20 36 35.3**	**-0.2**
WGK				S	**S**	**20 36 51.0**	**-0.4**
YUS	**Yu-Shan**	**1.31**	**45**	*e*P	**S**	**20 36 36.4**	**+0.1**
YUS				S	**S**	**20 36 52.7**	**-0.1**
WTCT	**Ta-ch'eng**	**1.33**	**13**	*e*P	**S**	**20 36 37.3**	**+0.6**
WTCT				S	**S**	**20 36 53.5**	**+0.1**
CHKT	**Chengkung**	**1.41**	**67**	*e*P	**S**	**20 36 38.0**	**+0.2**
CHKT				S	**S**	**20 36 54.8**	**-0.6**
TWF1	**Yuli**	**1.47**	**57**	P	**S**	**20 36 38.5**	**-0.2**
TWF1				S	**S**	**20 36 56.3**	**-0.6**
WNT	**Mingjian**	**1.48**	**27**	*e*P	**S**	**20 36 38.4**	**-0.3**
LAY	**Lan-yu**	**1.57**	**109**	*e*P	**S**	**20 36 38.6**	**-1.4**
LAY				S	**S**	**20 36 57.1**	**-2.3**
EHY	**Hungye**	**1.58**	**53**	*i* P	**S**	**20 36 40.2**	**+0.1**
EHY				S	**S**	**20 36 58.9**	**-0.6**
TYC	**Yuchr**	**1.58**	**32**	*e*P	**S**	**20 36 40.0**	**-0.1**
TYC				S	**S**	**20 36 59.6**	**+0.1**
SMLT	**Sun Moon Lake**	**1.58**	**33**	*e*P	**S**	**20 36 39.9**	**-0.2**
SMLT				S	**S**	**20 36 59.4**	**-0.2**
WDT	**Danda**	**1.61**	**42**	*e*P	**S**	**20 36 40.7**	**+0.1**
TCU	**Taichung**	**1.72**	**23**	*e*P	**S**	**20 36 42.5**	**+0.4**
TCU				S	**S**	**20 37 03.0**	**+0.1**
ESL	**Shilin**	**1.85**	**47**	*e*P	**S**	**20 36 43.9**	**-0.1**
ESL				S	**S**	**20 37 05.8**	**-0.5**
TWQ1	**Liyutan**	**1.94**	**23**	*e*P	**S**	**20 36 45.7**	**+0.5**
WHF	**Hehuan Shan**	**1.99**	**37**	*e*P	**S**	**20 36 45.7**	**-0.3**
WHF				S	**S**	**20 37 09.4**	**-0.4**
NSY	**Sanyi**	**1.99**	**22**	*e*P	**S**	**20 36 46.8**	**+0.8**
TWT	**Tachien**	**2.03**	**34**	*e*P	**S**	**20 36 46.6**	**+0.1**
TWT				S	**S**	**20 37 10.1**	**-0.7**
HWA	**Hwalien**	**2.08**	**47**	*e*P	**S**	**20 36 48.2**	**+1.0**
HWA				S	**S**	**20 37 12.5**	**+0.4**
TWD	**Chiawan**	**2.14**	**45**	*e*P	**S**	**20 36 48.2**	**0.0**
TWD				S	**S**	**20 37 12.6**	**-1.1**
NSTT	**Nanjuang**	**2.28**	**25**	*e*P	**S**	**20 36 49.3**	**-0.8**
NNS	**Nan Shan**	**2.28**	**35**	*e*P	**S**	**20 36 50.5**	**+0.4**
KNM	**Kinmen**	**2.31**	**323**	*e*P	**S**	**20 36 50.1**	**-0.5**
NSK	**Sanguang**	**2.47**	**31**	*e*P	**S**	**20 36 53.1**	**+0.2**
NSK				S	**S**	**20 37 15.0**	**-2.1**
ENA	**Nanau**	**2.48**	**41**	*e*P	**S**	**20 36 52.8**	**-0.2**
ENA				S	**S**	**20 37 21.7**	**-0.7**
ENTT	**Nioudou**	**2.55**	**35**	*e*P	**S**	**20 36 54.4**	**+0.5**
ENTT				S	**S**	**20 37 22.9**	**-1.1**
TWE	**Neicheng**	**2.67**	**36**	*e*P	**S**	**20 36 56.1**	**+0.5**
TWE				S	**S**	**20 37 24.9**	**-2.1**
TWC	**Suao**	**2.68**	**40**	*e*P	**S**	**20 36 56.0**	**0.0**
TWC				S	**S**	**20 37 26.7**	**-0.8**
TWA	**Mucha**	**2.84**	**32**	*e*P	**S**	**20 36 57.2**	**-0.9**
NWF	**Wu-fen Shan**	**3.01**	**34**	*e*P	**S**	**20 36 59.5**	**-1.0**
NWF				S	**S**	**20 37 33.3**	**-2.5**
TWB1	**Santiao Chiao**	**3.07**	**37**	*e*P	**S**	**20 37 01.5**	**0.0**
TWB1				S	**S**	**20 37 35.4**	**-2.0**
YOJ	**Yonaguni jima**	**3.39**	**55**	P	**S**	**20 37 10.7**	**+4.8**
YOJ				*e*S	**S**	**20 37 49.5**	**+4.1**
HATJ	**Hateruma jima**	**3.85**	**66**	P	**S**	**20 37 15.6**	**+3.2**
HATJ				S	**S**	**20 37 58.2**	**+1.2**
IRIF	**Iriomote-Funau**	**3.90**	**62**	P	**S**	**20 37 16.8**	**+3.2**
IRIF				*e*S	**S**	**20 38 01.5**	**+2.2**
JKRS	**Kuro-shima**	**4.09**	**65**	P	**S**	**20 37 19.2**	**+3.4**
JKRS				S	**S**	**20 38 04.3**	**+1.2**
JIJ	**Ishigaki jima**	**4.25**	**64**	P	**S**	**20 37 20.6**	**+2.5**
JIJ				S	**S**	**20 38 07.9**	**+0.7**
JTJ	**Tarama**	**4.83**	**64**	P	**S**	**20 37 29.2**	**+2.9**
JTJ				*e*S	**S**	**20 38 23.6**	**+1.9**
JOGS	**Gusukube**	**5.46**	**65**	P	**S**	**20 37 37.2**	**+2.0**
JOGS				*e*S	**S**	**20 38 38.5**	**+0.8**
JOW	**Kunigami**	**8.68**	**59**	LR	LR	20 41 39.0	
	comp=Z,82nm,19.2s,baz=222,slow=40						
JHJ	**Hachijo jima 2**	**20.42**	**55**	LR	LR	20 47 17.8	
	comp=Z,50nm,21.4s,MS2.8,baz=24,slow=34						
MKAR	**Makanchi Array**	**36.74**	**318**	P	**P**	**20 43 42.2**	**+6.0**
	0.6nm,0.6s,mb3.5,baz=119,slow=11,SNR=4.6						
ZAL	**Zalesovo**	**41.02**	**329**	P	**P**	**20 44 01.4**	**+6.4**
	0.5nm,0.6s,mb3.4,baz=84,slow=19,SNR=2.6						
WRA	**Warramunga Arr**	**44.52**	**161**	P	**P**	**20 44 38.9**	**+15**
	0.5nm,0.6s,mb3.5,baz=345,slow=9.3,SNR=5.6						
BVAR	**Borovoye Array**	**48.23**	**322**	P	**P**	**20 44 57.9**	**+5.1**
	0.4nm,0.6s,mb3.6,baz=100,slow=9.0,SNR=4.0						
BVAR				pP	pP	20 45 07.3	+3.3
	1.0nm,1.0s,baz=108,slow=4.7,SNR=4.3						
ILAR	**Eielson Array**	**71.17**	**27**	P	**P**	**20 47 33.9**	**+3.4**
	0.5nm,0.8s,mb3.5,baz=291,slow=6.3,SNR=5.3						
FINES	**FINESS Array B**	**72.27**	**330**	P	**P**	**20 47 41.5**	**+4.5**
	0.9nm,0.9s,mb3.7,baz=63,slow=9.3,SNR=3.7						
FINES				pP	pP	20 47 50.8	+2.1
	1.1nm,0.8s,baz=90,slow=5.7,SNR=4.1						
NOA	**NORSAR Array B**	**79.12**	**332**	pP	pP	20 48 30.8	+3.0
	0.3nm,0.6s,baz=62,slow=5.5,SNR=3.4						
YKA	**Yellowknife Ar**	**84.90**	**22**	P	**P**	**20 48 51.2**	**+5.4**
	0.2nm,0.5s,mb3.5,baz=314,slow=4.8,SNR=8.0						

MAN 07 20:38:40.7,13.89N×120.53E,h100km,mb3.6,ML2.3, MS1.7,5C-1D,Mindoro

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LUBP	**Lubang**	**0.32**	**242**	⇑*e*P	P	20 38 57.2	+1.8
LUBP				*e*S	S	20 39 08.9	+2.3
PGP	**Puerto Galera**	**0.56**	**133**	⇓*i*P	P	20 38 58.0	+0.9
SJMP	**San Jose**	**1.53**	**158**	⇑*e*P	P	20 39 08.7	+1.0
SJMP				*e*S	S	20 39 28.6	+0.8
BUSP	**Coron**	**1.90**	**190**	⇑*e*P	P	20 39 12.4	0.0
BUSP				*e*S	S	20 39 35.7	-0.3
ENPP	**El Nido**	**2.87**	**202**	⇑*e*P	P	20 39 25.8	+0.1
ENPP				*e*S	S	20 39 59.8	+0.2
CUYO	**Cuyo Island**	**3.05**	**171**	⇑*e*P	P	20 39 27.8	-0.4

*NEIC **07** 21:04:32.7,59.55N×152.68W,h65km,ML3.8(PMR), ML3.6(AEIC),After AEIC.*
*IDC **07** 21:04:34.1±6.2,59.72N×152.42W,h95km±48km,mb3.2/2, mb1 3.6/6,mb1mx3.3/24,Error ellipse: s-maj=52.1km s-min=27.7km az=51.0*
ISC 07 21:04:30.1±0.3,59.55N±0.03×152.60W±0.06,h90km±4km, n80,σ0°81/88,mb3.6/2,Southern Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
XLV	**Seldovia**	**0.46**	**102**	P	**P**	**21 04 44.8**	**0.0**
XLV				S	**S**	**21 04 55.0**	**-0.7**
AGU	**Augustine-Summ**	**0.47**	**246**	P	**P**	**21 04 44.5**	**-0.3**
AGU				S	**S**	**21 04 51.4**	**-4.5**
ILIM	**Iliamna**	**0.56**	**341**	P	**P**	**21 04 45.2**	**-0.4**
ILIM				S	**S**	**21 04 55.4**	**-1.8**
ILW	**Iliamna West**	**0.58**	**332**	P	**P**	**21 04 45.5**	**-0.3**
CNPM	**China Poot**	**0.69**	**91**	P	**P**	**21 04 47.3**	**+0.5**
BRLK	**Bradley Lake**	**0.90**	**75**	P	**P**	**21 04 49.5**	**+0.6**
RSO	**Redoubt South**	**0.92**	**355**	P	**P**	**21 04 49.8**	**+0.6**
RSO				S	**S**	**21 05 02.2**	**-1.2**
REF	**Redoubt East F**	**0.94**	**357**	P	**P**	**21 04 50.0**	**+0.5**
REF				S	**S**	**21 05 03.7**	**-0.2**
RDT	**Redoubt**	**1.03**	**5**	P	**P**	**21 04 50.7**	**+0.2**
RDT				S	**S**	**21 05 05.7**	**-0.1**
KAPH	**Katmai Pasha**	**1.32**	**224**	P	**P**	**21 04 54.0**	**-0.1**
KAHG	**Katmai Hook Gl**	**1.46**	**224**	P	**P**	**21 04 55.9**	**0.0**
KARR	**Katmai Rainbow**	**1.52**	**227**	P	**P**	**21 04 56.6**	**0.0**
SLKM	**Skilak Lake**	**1.53**	**50**	*e*P	**P**	**21 04 57.6**	**+0.8**
BKG	**Blockade Glaci**	**1.53**	**6**	P	**P**	**21 04 57.6**	**+0.8**
CKL	**Chakachamna La**	**1.66**	**4**	P	**P**	**21 04 59.4**	**+1.0**
KAIC	**Katmai Ikaglui**	**1.66**	**231**	P	**P**	**21 04 58.2**	**-0.2**
SPU	**Mount Spurr**	**1.66**	**9**	P	**P**	**21 04 59.4**	**+0.9**
SEW	**Seward**	**1.68**	**69**	P	**P**	**21 05 01.0**	**+2.3**
KDAK	**Kodiak Island**	**1.77**	**180**	P	**P**	**21 04 59.7**	**-0.2**
FIB	**Fire Island**	**2.02**	**36**	P	**P**	**21 05 04.8**	**+1.7**
ANCK	**Anglo Creek**	**2.02**	**229**	P	**P**	**21 05 03.5**	**+0.3**
CAHL	**Cahill**	**2.06**	**224**	P	**P**	**21 05 04.2**	**+0.5**
RC01	**Rabbit Creek A**	**2.10**	**41**	P	**P**	**21 05 05.3**	**+1.0**
SUA	**Susitna One**	**2.13**	**25**	P	**P**	**21 05 06.2**	**+1.5**
GOU	**Gould Hall**	**2.15**	**39**	*e*P	**P**	**21 05 07.1**	**+2.1**
KJL	**Kejulik**	**2.16**	**227**	P	**P**	**21 05 05.6**	**+0.6**
SVW	**Sparrevohn**	**2.17**	**317**	P	**P**	**21 05 05.3**	**+0.1**
PMS	**Palmer South**	**2.27**	**40**	P	**P**	**21 05 07.7**	**+1.0**
SKT	**Skwentna**	**2.49**	**12**	P	**P**	**21 05 10.1**	**+0.4**
PWA	**Palmer West**	**2.50**	**31**	P	**P**	**21 05 10.9**	**+1.1**
PMR	**Palmer**	**2.67**	**38**	P	**P**	**21 05 12.1**	**-0.1**
KNK	**Knik Glacier**	**2.77**	**46**	P	**P**	**21 05 13.6**	**0.0**
GHO	**Glory Hole Cre**	**2.87**	**37**	P	**P**	**21 05 14.9**	**0.0**
CUT	**Chulitna**	**3.08**	**21**	P	**P**	**21 05 18.2**	**+0.4**
SML	**Sawmill**	**3.09**	**41**	P	**P**	**21 05 17.9**	**-0.1**
HIN	**Hinchinbrook I**	**3.18**	**72**	P	**P**	**21 05 18.8**	**-0.5**
MID	**Middleton Isla**	**3.19**	**90**	P	**P**	**21 05 19.7**	**+0.3**
JPK	**Jack Peak**	**3.34**	**61**	P	**P**	**21 05 21.3**	**-0.2**
SCM	**Sheep Creek Mo**	**3.46**	**46**	P	**P**	**21 05 23.1**	**0.0**
VLZ	**Valdez**	**3.50**	**60**	P	**P**	**21 05 23.2**	**-0.4**
CVA	**Cordova**	**3.58**	**71**	P	**P**	**21 05 24.5**	**-0.2**
EYAK	**Cordova Ski Ar**	**3.58**	**71**	P	**P**	**21 05 24.4**	**-0.3**
HUR	**Hurricane**	**3.73**	**21**	P	**P**	**21 05 26.6**	**-0.1**
TT01	**Tatalina**	**3.75**	**335**	P	**P**	**21 05 26.4**	**-0.7**
KLU	**Klutina**	**3.83**	**57**	P	**P**	**21 05 27.5**	**-0.7**
TOA	**Tolsona**	**4.06**	**48**	P	**P**	**21 05 30.4**	**-0.9**
TRF	**Thorofare Moun**	**4.07**	**15**	P	**P**	**21 05 32.2**	**+0.7**
KTH	**Kantishna Hill**	**4.10**	**11**	P	**P**	**21 05 32.2**	**+0.4**
KAIM	**Kayak Island**	**4.16**	**81**	P	**P**	**21 05 33.2**	**+0.5**
BMRM	**Bremner River**	**4.23**	**67**	P	**P**	**21 05 33.6**	**-0.1**
DHY	**Denali Highway**	**4.34**	**33**	P	**P**	**21 05 35.3**	**+0.1**
MCK	**McKinley**	**4.54**	**21**	P	**P**	**21 05 38.4**	**+0.3**
GLB	**Gilahina Butte**	**4.74**	**63**	P	**P**	**21 05 41.0**	**+0.3**
PAX	**Paxson**	**4.86**	**42**	P	**P**	**21 05 42.0**	**-0.3**
BWN	**Browne**	**4.87**	**16**	P	**P**	**21 05 42.5**	**0.0**
TGL	**Tana Glacier**	**5.03**	**72**	P	**P**	**21 05 44.8**	**+0.2**
NEA	**Nenana**	**5.31**	**17**	P	**P**	**21 05 47.6**	**-0.8**
BALM	**Baldy**	**5.31**	**69**	P	**P**	**21 05 48.2**	**-0.3**
YAH	**Yahtse**	**5.51**	**77**	P	**P**	**21 05 51.5**	**+0.2**
HDA	**Harding Lake**	**5.55**	**26**	P	**P**	**21 05 51.0**	**-0.7**
CCB	**Clear Creek Bu**	**5.59**	**22**	P	**P**	**21 05 51.2**	**-1.0**
COLA	**College**	**5.78**	**21**	P	**P**	**21 05 54.8**	**-0.2**
MDM	**Murphy Dome**	**5.80**	**19**	P	**P**	**21 05 54.6**	**-0.5**
CHX	**Chaix Hills**	**5.82**	**80**	P	**P**	**21 05 55.0**	**-0.4**
ILAR	**Eielson Array**	**5.88**	**25**	P	**P**	**21 05 55.9**	**-0.4**
	4.1nm,0.3s,baz=207,slow=14,SNR=163						
ILAR				S	**S**	**21 06 59.9**	**-3.1**
	5.6nm,0.3s,baz=96,slow=18,SNR=14						
IL1	**Eielson Array**	**5.88**	**25**	P	**P**	**21 05 55.3**	**-1.0**
BCA3	**Beaver Creek A**	**6.29**	**51**	P	**P**	**21 06 01.6**	**-0.3**
IM3	**Indian Mountai**	**6.48**	**356**	P	**P**	**21 06 04.1**	**-0.5**
PN7A	**Pavlof North-7**	**6.53**	**235**	P	**P**	**21 06 04.1**	**-1.3**
IMA	**Indian Mountai**	**6.56**	**356**	*e*P	**P**	**21 06 06.2**	**+0.4**
PNL	**Peninsula**	**6.70**	**83**	P	**P**	**21 06 07.2**	**-0.5**
BM3	**Burnt Mountain**	**8.66**	**21**	P	**P**	**21 06 33.1**	**-1.3**
WHY	**Whitehorse**	**8.92**	**75**	P	**P**	**21 06 36.3**	**-1.6**
BESE	**Bessie Mountai**	**9.19**	**88**	P	**P**	**21 06 39.9**	**-1.7**
DLBC	**Dease Lake**	**11.68**	**86**	P	**P**	**21 07 16.9**	**+2.0**
	0.6nm,0.3s,baz=233,slow=9.0,SNR=9.6						
DLBC				S	**S**	**21 09 21.5**	**-2.3**
	0.2nm,0.3s,baz=128,slow=19,SNR=5.1						
INK	**Inuvik**	**12.08**	**35**	P	**P**	**21 07 21.1**	**+1.0**
	0.1nm,0.3s,baz=231,slow=12,SNR=6.4						
YKA	**Yellowknife Ar**	**18.46**	**65**	P	**P**	**21 08 41.4**	**+0.8**
	0.4nm,0.3s,baz=278,slow=9.7,SNR=46						
YKA	**Yellowknife Ar**	**18.46**	**65**	P	**P**	**21 08 41.4**	**+0.8**
FINES	**FINESS Array B**	**59.33**	**1**	P	**P**	**21 14 23.9**	**-0.2**
	0.4nm,0.7s,mb3.6,baz=354,slow=14,SNR=2.6						
BVAR	**Borovoye Array**	**62.56**	**332**	P	**P**	**21 14 46.5**	**+0.4**
	0.5nm,0.6s,mb3.6,baz=37,slow=7.2,SNR=3.7						

*LDG **07** 21:56:00.9±0.1,43.07N×0.06W,h10km,Md1.9/2,Ml1.6/2, Error ellipse: s-maj=1.7km s-min=0.7km az=173.0*
*NEIC **07** 21:56:01.2,43.04N×0.06W,h5km,ML2.2(STR), ML1.6(LDG),After STR.*
*STR **07** 21:56:01.2±0.4,43.04N×0.06W,h5km±1km,Ml2.2, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
ISC 07 21:55:59.7±1.0,43.14N±0.07×0.06W±0.04,h10km,n6, σ0°70/10,Pyrenees

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LABF	**Labassere**	**0.13**	**134**	Pg	**Pg**	**21 56 03.7**	**+0.8**
LABF				Sg	**Sg**	**21 56 05.9**	**+0.8**
VIEF	**Viey**	**0.26**	**167**	Pg	**Pg**	**21 56 05.2**	**-0.1**
VIEF				Sg	**Sg**	**21 56 07.9**	**-1.1**
EPF	**Esparros**	**0.31**	**110**	*e*Pg	**Pg**	**21 56 06.9**	**+0.7**
EPF				*e*Sg	**Sg**	**21 56 10.8**	**+0.3**
	7.6nm,0.2s						
ETSF	**Etsaut**	**0.44**	**237**	*e*Pg	**Pg**	**21 56 08.9**	**+0.2**
ETSF				*e*Sg	**Sg**	**21 56 14.4**	**-0.2**
	5.4nm,0.2s						
SJPF	**Ste Jean**	**0.85**	**269**	*e*Sg	**Sg**	**21 56 28.2**	**-0.1**
	1.8nm,0.2s						
MTLF	**Montolieu**	**1.68**	**82**	*e*Sg	**Sg**	**21 56 54.2**	**-1.4**
	0.6nm,0.2s						

*NEIC **07** 21:59:51.6±0.6,21.72S×169.78E,h10km,mb4.6/6, Error ellipse: s-maj=21.8km s-min=12.8km az=159.0*
*BJI **07** 21:59:51.5,21.70S×169.80E,h10km,mB5.1,mb4.6*
*LDG **07** 21:59:52.6±0.3,21.23S×169.60E,h10km,Mb4.7/3, Error ellipse: s-maj=27.6km s-min=5.9km az=153.0*
*IDC **07** 21:59:55.6±0.9,21.65S×169.67E,h28km±4km,mb4.2/8, mb1 4.3/9,mb1mx4.2/15,ML3.8/1,MS3.9/7,Ms1 3.9/7, ms1mx3.8/14,Error ellipse: s-maj=35.5km s-min=20.7km az=157.0*
ISC 07 21:59:53.3±3.5,21.68S±0.08×169.6E±0.1,h24km±24km, n73,σ1°16/25,mb4.4/16,MS3.9/7,1C,Southeast of Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NOUC	**Port Laguerre**	**3.09**	**262**	*e*P	**Pn**	**22 00 40.6**	**-1.1**
NOUC	**Port Laguerre**	**3.09**	**262**	*e*P	**Pn**	**22 00 40.6**	**-1.2**
BKM	**Butte a Klehm**	**4.19**	**342**	⇑*i*P	**Pn**	**22 00 57.6**	**+0.1**
URZ	**Urewera**	**17.75**	**160**	P	**P**	**22 04 01.9**	**+1.3**
	0.3nm,0.3s,baz=359,slow=11,SNR=3.8						
CTA	**Charters Tower**	**21.86**	**270**	P	**P**	**22 04 48.1**	**+1.8**
	5.0nm,0.8s,mb4.0,baz=107,slow=11,SNR=3.9						
CTA				LR	LR	22 12 16.2	
	comp=Z,291nm,21.0s,MS3.7,baz=229,slow=34						
CTAO	**Charters Tower**	**21.86**	**270**	*e*P	**P**	**22 04 48.0**	**+1.6**
PMG	**Port Moresby**	**24.78**	**296**	LR	LR	22 12 05.0	
	comp=Z,125nm,18.2s,MS3.5,baz=269,slow=29						
STKA	**Stephens Creek**	**26.91**	**242**	*e*P	**P**	**22 05 35.1**	**+0.4**
	7.0nm,1.9s,mb3.9						
STKA	**Stephens Creek**	**26.91**	**242**	P	**P**	**22 05 35.3**	**+0.6**
	2.0nm,0.6s,mb3.9,baz=73,slow=11,SNR=7.9						
STKA				LR	LR	22 15 40.2	
	comp=Z,363nm,19.3s,MS4.0,baz=52,slow=35						
AS12	**Alice Springs**	**32.94**	**260**	*e*P	**P**	**22 06 27.4**	**-1.0**
	9.0nm,1.4s,mb4.5						
ASAR	**Alice Springs**	**32.94**	**260**	P	**P**	**22 06 27.6**	**-0.8**
	2.5nm,0.6s,mb4.3,baz=77,slow=8.8,SNR=29						
ASAR				PcP	PcP	22 09 11.9	-0.6
	0.9nm,0.8s,baz=94,slow=2.8,SNR=4.7						
ASAR				LR	LR	22 20 45.4	
	comp=Z,108nm,18.6s,MS3.6,baz=192,slow=38						
WRA	**Warramunga Arr**	**32.96**	**267**	P	**P**	**22 06 27.2**	**-1.4**
	0.5nm,0.5s,mb3.7,baz=97,slow=6.0,SNR=13						
WRA				LR	LR	22 20 06.9	
	comp=Z,230nm,18.8s,MS3.9,baz=100,slow=37						
FITZ	**Fitzroy Crossi**	**41.39**	**267**	*e*P	**P**	**22 07 39.3**	**-0.3**
	3.4nm,0.6s,mb4.2						
MAJO	**Matsushiro**	**65.06**	**332**	P	**P**	**22 10 33.2**	**-1.0**
QSPA	**South Pole Qui**	**68.39**	**180**	*e*P	**P**	**22 10 54.0**	**-0.6**
	8.6nm,1.2s,mb4.7						

CN2	**Changchun**	**76.71**	**329**	*e*P	**P**	**22 11 46.9**	**+2.6**
CN2				AMB	AMB		
	comp=Z,10.0nm,1.0s,mb4.7						
ENH	**Enshi**	**77.48**	**310**	*e*P	**P**	**22 11 48.9**	**0.0**
	comp=Z,16nm,1.2s,mb4.8						
CMAR	**Chiang Mai Arr**	**79.81**	**295**	P	**P**	**22 12 03.4**	**+1.5**
	comp=Z,3.0nm,0.9s,mb4.2,baz=138,slow=4.2,SNR=21						
KMI	**Kunming**	**79.84**	**302**	*e*P	**P**	**22 12 03.0**	**+1.1**
KMI				AMB	AMB		
	comp=Z,8.0nm,1.3s,mb4.5						
HHC	**Hu-ho-hao-te**	**82.28**	**320**	*e*P	**P**	**22 12 16.1**	**+1.7**
HHC				AMB	AMB		
	comp=Z,5.0nm,1.0s,mb4.4						
SNAA	**Sanae**	**86.75**	**182**	*e*P	**P**	**22 12 35.1**	**-1.1**
ULN	**Ulaanbaatar**	**89.01**	**323**	*e*P	**P**	**22 12 47.5**	**-0.1**
	comp=Z,5.4nm,1.3s,mb4.7						
SONM	**Songino Array**	**89.36**	**323**	P	**P**	**22 12 49.5**	**+0.3**
	comp=Z,1.8nm,0.8s,mb4.4,baz=146,slow=4.5,SNR=13						
SONM				pP	pP	22 12 59.1	+2.3
	comp=Z,2.0nm,0.9s,baz=135,slow=3.5,SNR=8.7						
BILL	**Bilibino**	**89.49**	**359**	*e*P	**P**	**22 12 48.2**	**-1.2**
	comp=Z,2.9nm,0.6s,mb4.8						
NVAR	**Mina Array Bea**	**90.16**	**48**	P	**P**	**22 12 53.0**	**-0.2**
	comp=Z,7.4nm,1.2s,mb4.9,baz=218,slow=5.3,SNR=5.5						
NVAR				pP	pP	22 13 02.4	+1.5
	comp=Z,0.4nm,0.6s,baz=221,slow=5.4,SNR=3.1						
ILAR	**Eielson Array**	**92.45**	**17**	LR	LR	22 50 40.8	
	comp=Z,65nm,19.5s,MS4.1,baz=40,slow=33						
TXAR	**Lajitas Array**	**97.63**	**62**	LR	LR	22 49 52.9	
	comp=Z,103nm,18.5s,MS4.3,baz=350,slow=31						
INK	**Inuvik**	**98.75**	**18**	P	**P**	**22 13 29.6**	**-2.1**
	comp=Z,1.7nm,1.0s,mb4.5,baz=235,slow=7.9,SNR=4.1						
YKA	**Yellowknife Ar**	**102.67**	**27**	P	Pdif	22 13 50.6	+1.2
	comp=Z,0.2nm,0.7s,baz=257,slow=4.1,SNR=5.7						
KEV	**Kevo**	**126.98**	**345**	*ep*	PKPdf	22 18 49.4	-10
	comp=Z,0.2nm,0.3s						
ARCES	**ARCESS Array B**	**127.50**	**345**	PKP	PKPdf	22 18 55.7	-4.8
	comp=Z,1.7nm,0.7s,baz=63,slow=2.7,SNR=6.8						
ARCES				pPKP		22 19 04.6	
	comp=Z,3.3nm,0.7s,baz=69,slow=1.1,SNR=3.6						
JOF	**Joensuu**	**130.12**	**337**	*ep*	PKPdf	22 18 58.7	-7.0
	comp=Z,2.2nm,0.7s						
KAF	**Kangasniemi**	**132.44**	**338**	*ep*	PKPdf	22 19 05.4	-4.7
	comp=Z,0.6nm,0.4s						
FINES	**FINESS Array B**	**132.96**	**337**	PKP	PKPdf	22 19 07.8	-3.3
	comp=Z,1.8nm,0.9s,baz=117,slow=4.3,SNR=5.7						
FINES				pPKP		22 19 16.4	
	comp=Z,0.9nm,0.5s,baz=62,slow=2.9,SNR=3.7						
FINES				PP	PP	22 21 29.8	-6.3
	comp=Z,0.3nm,0.4s,baz=90,slow=3.8,SNR=4.7						
FINES	**FINESS Array B**	**132.96**	**337**	PKP	PKPdf	22 19 07.8	-3.3
FINES				pPKP		22 19 16.4	
FINES				PP	PP	22 21 29.8	-6.3
AKASG	**Malin Array Be**	**137.65**	**323**	pPKP		22 19 25.6	
	comp=Z,

TLL	Tololo Astrono	1.30 270	⇓	*i*	P	P	22 08 33.9	-0.2
TLL				*i*	S	S	22 08 50.4	-0.1
TLL				AMP			22 08 50.8	
	comp=E,3μm,0.3s							
OVCH	Ovalle	1.70 255	⇓	*i*	P	P	22 08 39.1	-0.6
OVCH				*i*	S	S	22 09 00.1	-0.3
OVCH				AMP			22 09 03.7	
	comp=E,4μm,0.3s							
LSCH	La Serena	1.71 278	⇓	*i*	P	P	22 08 40.3	+0.5
LSCH				*i*	S	S	22 09 01.8	+1.2
LSCH				AMP			22 09 05.4	
	comp=E,2μm,0.3s							
CMCH	Combarbala	1.78 235	⇑	*i*	P	P	22 08 40.1	-0.6
CMCH				*i*	S	S	22 09 01.4	-0.9
CMCH				AMP			22 09 03.8	
	comp=E,9μm,0.6s							
VACH	Vallenar	2.03 321		*e*	P	P	22 08 48.1	+3.7
VACH				*i*	S	S	22 09 16.1	+7.3
VACH				AMP			22 09 18.3	
	comp=E,5μm,0.4s							
ILCH	Illapel	2.17 227	⇓	*i*	P	P	22 08 46.2	-0.2
ILCH				*i*	S	S	22 09 11.9	-0.5
ILCH				AMP			22 09 14.8	
	comp=E,1μm,0.6s							
PTCH	Petorca	2.51 213		*i*	P	P	22 08 51.9	+0.6
PTCH				*i*	S	S	22 09 21.6	+0.6
PTCH				AMP			22 09 24.2	
	comp=E,2μm,0.3s							
MDZ	Mendoza	2.74 172		*e*	P	P	22 08 54.6	+0.1
MDZ					S	S	22 09 54.6	+28
JACH	Jahuel	2.74 203		*i*	P	P	22 08 54.8	+0.3
CPCH	Copiapo	2.95 341		*e*	P	P	22 09 02.1	+4.6
PACH	Papudo	2.99 217		*e*	P	P	22 08 58.4	+0.3
PEL	Peldehue	3.19 201		*e*	P	P	22 09 01.4	+0.5
PEL				*i*	S	S	22 09 39.0	+0.7
PEL				AMP			22 09 52.5	
	comp=N,621nm,0.6s							
FCH	Farellones	3.26 195		*e*	P	P	22 09 02.3	+0.3
FCH				*i*	S	S	22 09 42.1	+2.1
FCH				AMP			22 09 50.8	
	comp=E,278nm,0.4s							
CLCH	Cerro Calan	3.39 198		*e*	P	P	22 09 03.1	-0.7
CLCH				*i*	S	S	22 09 44.1	+0.9
CLCH				AMP			22 09 59.8	
	comp=E,555nm,0.5s							
RCDM	Rinconada Maip	3.55 201	⇓	*i*	P	P	22 09 05.0	-1.0
TACH	Talagante	3.75 201		*i*	P	P	22 09 07.0	-1.8
LMEL	Las Melosas	3.75 192		*e*	P	P	22 09 09.3	+0.5
LMEL				*i*	S	S	22 09 53.8	+1.4
CHCH	Chadas Angostu	3.93 197		*i*	P	P	22 09 09.9	-1.5
CICH	Cipreses	4.25 193	⇑	*i*	P	P	22 09 14.9	-1.0
SFDO	San Fernando	4.67 198		*e*	P	P	22 09 19.3	-2.6
LVC	Limon Verde	7.53 3		Pn		P	22 10 01.7	-0.3
	comp=E,1.3nm,0.3s,baz=200,slow=9.5,SNR=14							
LVC				Lg			22 11 56.8	
	comp=E,1.0nm,0.3s,baz=306,slow=14,SNR=3.8							
TRQA	Tornquist	9.93 144		*e*Pn		P	22 10 31.3	-3.9
PLCA	Paso Flores	10.59 185		Lg			22 13 48.9	
	comp=E,0.2nm,0.3s,baz=150,slow=16,SNR=3.2							
PLCA				LR		LR	22 15 05.6	
	comp=E,97nm,18.4s,baz=341,slow=41							
CPUP	Villa Florida	11.22 73		Pn		P	22 10 53.5	+0.6
	comp=E,0.2nm,0.3s,baz=246,slow=8.9,SNR=4.0							
CPUP				Lg			22 14 03.9	
	comp=E,0.3nm,0.3s,baz=341,slow=17,SNR=2.8							
LPAZ	La Paz	13.86 5		Pn		P	22 11 29.2	+1.1
	comp=E,0.1nm,0.3s,baz=203,slow=5.9,SNR=2.7							
LPAZ	La Paz	13.86 5		Pn		P	22 11 29.2	+1.1
TXAR	Lajitas Array	67.63 328		P		P	22 19 06.8	-0.4
	comp=E,0.3nm,0.4s,mb3.7,baz=148,slow=8.5,SNR=3.5							
PDAR	Pinedale Array	81.46 331		P		P	22 20 26.0	-0.6
	comp=E,0.3nm,0.4s,mb3.5,baz=150,slow=7.3,SNR=3.5							
WRA	Warramunga Arr	125.23 208		PKP		PKPdf	22 27 07.8	-1.4
	comp=E,0.3nm,0.5s,baz=153,slow=1.8,SNR=8.6							
ZAL	Zalesovo	149.75 31		PKPbc		PKPdf	22 27 57.4	+4.9
	comp=E,1.5nm,0.5s,baz=80,slow=2.1,SNR=5.6							
MKAR	Makanchi Array	152.46 45		PKPbc		PKPdf	22 28 04.1	+7.4
	comp=E,2.9nm,1.0s,baz=321,slow=1.8,SNR=6.1							
MKAR				PKPab		PKPab	22 28 15.2	-1.1
	comp=E,1.5nm,0.6s,baz=304,slow=4.4,SNR=11							

NEIC ***07*** *22:23:10.9,38.25S×176.22E,h169km, After WEL.*
WEL ***07*** *22:23:11.4±0.3,38.25S×176.22E,h163km±2km, ML4.1/5, Error ellipse: s-maj=1.3km s-min=1.3km az=0.0*

ISC 07 22:23:09.4±0.7,38.42S±0.04×176.24E±0.05,h177km±5km, n89,σ1§25/115,16C,North Island

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
PATZ	Paeroa	0.04	18	⇑PN		P	22 23 33.4	+0.5
PATZ				SN		S	22 23 50.1	-0.8
PATZ	Paeroa	0.04	18	P		P	22 23 33.5	+0.5
UTU	Utuhina	0.25	351	PN		P	22 23 33.3	-0.1
UTU				SN		S	22 23 49.4	-2.4
UTU	Utuhina	0.25	351	P		P	22 23 33.4	0.0
TAZ	Tarawera	0.28	48	PN		P	22 23 33.5	0.0
TAZ	Tarawera	0.28	48	P		P	22 23 33.5	0.0
LIRZ	Lichensteins R	0.43	15	PN		P	22 23 33.5	-0.4
LIRZ	Lichensteins R	0.43	15	P		P	22 23 33.6	-0.3
EDRZ	Edgecumbe	0.50	51	PN		P	22 23 33.7	-0.5
EDRZ	Edgecumbe	0.50	51	P		P	22 23 33.8	-0.4
MARZ	Manawahe	0.55	38	⇑PN		P	22 23 34.0	-0.4
MARZ	Manawahe	0.55	38	P		P	22 23 34.1	-0.3
RATZ	Rangitukua	0.58	219	⇑PN		P	22 23 35.3	+0.8
RATZ	Rangitukua	0.58	219	P		P	22 23 35.3	+0.8
TGRZ	Tauranga	0.69	1	⇑PN		P	22 23 34.2	-0.9
TGRZ				SN		S	22 23 52.2	-2.7
TGRZ	Tauranga	0.69	1	P		P	22 23 34.2	-0.9
KATZ	Kakaramea	0.70	218	PN		P	22 23 36.2	+1.1
KATZ	Kakaramea	0.70	218	P		P	22 23 36.2	+1.1
URZ	Urewera	0.70	77	⇑PN		P	22 23 34.9	-0.2
URZ				SN		S	22 23 52.6	-2.4
URZ	Urewera	0.70	77	⇑P		P	22 23 34.9	-0.2
BKZ	Black Stump Fm	0.77	165	⇑PN		P	22 23 37.0	+1.5
MGZ	Maungaku	0.80	223	⇑PN		P	22 23 36.9	+1.2
MGZ	Maungaku	0.80	223	P		P	22 23 36.9	+1.2
KAVZ	Karewarewa	0.82	214	PN		P	22 23 37.0	+1.2
KAVZ	Karewarewa	0.82	214	P		P	22 23 37.0	+1.2
WTVZ	West Tongariro	0.86	216	PN		P	22 23 37.3	+1.3
NGZ	Ngauruhoe	0.90	213	PN		P	22 23 37.4	+1.1
NGZ	Ngauruhoe	0.90	213	P		P	22 23 37.6	+1.3
CNZ	Chateau	0.95	215	PN		P	22 23 37.5	+1.0
CNZ	Chateau	0.95	215	P		P	22 23 37.8	+1.2
WPVZ	Whakapapa	0.95	215	PN		P	22 23 37.8	+1.2
TUVZ	Tukino	0.96	208	PN		P	22 23 38.4	+1.7
TUVZ	Tukino	0.96	208	P		P	22 23 38.4	+1.7
FWVZ	Far West T-bar	0.99	213	PN		P	22 23 38.3	+1.4
FWVZ				SN		S	22 23 59.5	+1.3
FWVZ	Far West T-bar	0.99	213	P		P	22 23 38.3	+1.4
DRZ	Dome Shelter	1.00	212	PN		P	22 23 38.9	+1.9
DRZ	Dome Shelter	1.00	212	P		P	22 23 39.1	+2.2
MWZ	Matawai	1.01	86	⇑PN		P	22 23 37.8	+0.7
MWZ				SN		S	22 23 57.0	-1.4
WNVZ	Wahianoa	1.03	209	⇑PN		P	22 23 38.9	+1.7
HIZ	Hauiti	1.09	265	PN		P	22 23 38.0	+0.2
HIZ				SN		S	22 23 58.9	-0.7
KNZ	Kokohu	1.27	119	⇑PN		P	22 23 41.0	+1.7
KNZ				SN		S	22 24 02.2	-0.2
KNZ				SN		S	22 24 02.6	+0.1
KNZ	Kokohu	1.27	119	*e*P		P	22 23 41.0	+1.7
VRZ	Vera Road	1.36	238	⇑PN		P	22 23 41.3	+1.2
VRZ				SN		S	22 24 03.6	-0.2
VRZ	Vera Road	1.36	238	*e*P		P	22 23 41.3	+1.2
PUZ	Puketiti	1.62	78	PN		P	22 23 43.1	+0.4
PUZ				SN		S	22 24 06.3	-2.0
PUZ	Puketiti	1.62	78	P		P	22 23 43.1	+0.4
PUZ				S		S	22 24 05.8	-2.6
TSZ	Takapari Road	1.65	187	⇑PN		P	22 23 44.7	+1.8
TSZ				SN		S	22 24 09.2	+0.4
WAZ	Wanganui	1.65	216	PN		P	22 23 44.2	+1.2
WAZ	Wanganui	1.65	216	P		P	22 23 44.4	+1.4
PWZ	Pawanui	1.68	163	PN		P	22 23 45.4	+2.3
RAEZ	Rainy Point	1.68	238	PN		P	22 23 44.7	+1.4
RAEZ	Rainy Point	1.68	238	P		P	22 23 45.1	+1.8
KUZ	Kuaotunu	1.72	346	PN		P	22 23 41.8	-1.8
KUZ	Kuaotunu	1.72	346	P		P	22 23 42.0	-1.7
MXZ	Matakaoa Point	1.84	63	PN		P	22 23 44.8	-0.1
MXZ				SN		S	22 24 09.7	-2.6
NEZ	North Egmont	1.88	242	PN		P	22 23 47.0	+1.7
NEZ	North Egmont	1.88	242	P		P	22 23 47.0	+1.7
DFE	Dawson Falls	1.90	241	PN		P	22 23 47.0	+1.5
DFE	Dawson Falls	1.90	241	P		P	22 23 47.0	+1.5
BFZ	Birch Farm	2.26	180	PN		P	22 23 51.1	+1.5
BFZ				SN		S	22 24 21.0	+0.5
BFZ	Birch Farm	2.26	180	*e*P		P	22 23 51.1	+1.6
MRZ	Mangatainoka R	2.29	193	⇑PN		P	22 23 51.1	+1.1
MRZ				SN		S	22 24 20.9	-0.4
MTW	Mount Morrison	2.79	192	⇑PN		P	22 23 56.4	+0.5
MTW				SN		S	22 24 30.5	-1.3
MTW	Mount Morrison	2.79	192	P		P	22 23 56.4	+0.5
CAW	Cannon Point	2.83	198	PN		P	22 23 56.8	+0.4
CAW	Cannon Point	2.83	198	P		P	22 23 56.9	+0.5
MRW	Makara Radio	3.04	202	PN		P	22 23 59.0	0.0
MRW	Makara Radio	3.04	202	P		P	22 23 59.2	+0.2
WEL	Wellington	3.08	201	PN		P	22 23 59.8	+0.4
MSWZ	Moikau Station	3.09	194	⇑PN		P	22 23 59.7	+0.2
MSWZ				SN		S	22 24 36.8	-1.4
SNZO	South Karori	3.12	202	PN		P	22 23 59.7	-0.2
SNZO				SN		S	22 24 36.8	-2.0
SNZO	South Karori	3.12	202	P		P	22 23 59.9	0.0
BHW	Baring Head	3.16	199	PN		P	22 24 00.5	0.0
BHW	Baring Head	3.16	199	P		P	22 24 00.5	0.0
TUWZ	Tuamarina	3.49	210	PN		P	22 24 04.1	-0.5
TUWZ				SN		S	22 24 45.0	-2.1
NNZ	Nelson	3.56	217	PN		P	22 24 04.7	-0.8
NNZ				SN		S	22 24 47.5	-1.2
NNZ	Nelson	3.56	217	*e*P		P	22 24 04.8	-0.7
QRZ	Quartz Range	3.74	229	PN		P	22 24 06.0	-1.8
QRZ				SN		S	22 24 50.6	-2.3
QRZ	Quartz Range	3.74	229	*e*P		P	22 24 06.1	-1.7
BSWZ	Blackbirch Sta	3.76	208	PN		P	22 24 07.6	-0.4
BSWZ				SN		S	22 24 53.1	-0.1
THZ	Tophouse	4.21	216	PN		P	22 24 12.8	-0.9
THZ				SN		S	22 25 02.5	-1.0
THZ	Tophouse	4.21	216	*e*P		P	22 24 12.9	-0.8
KHZ	Kahutara	4.49	206	PN		P	22 24 16.8	-0.7
KHZ				SN		S	22 25 09.0	-1.0
KHZ	Kahutara	4.49	206	*e*P		P	22 24 16.9	-0.5
LTZ	Lake Taylor	5.30	214	PN		P	22 24 26.8	-1.1
LTZ	Lake Taylor	5.30	214	*e*P		P	22 24 26.3	-1.6
MQZ	McQueen's Vall	5.94	206	PN		P	22 24 33.9	-2.3
MQZ				SN		S	22 25 37.9	-5.9
WVZ	Waitaha Valley	6.25	220	SN		S	22 25 45.0	-6.3
ODZ	Otahua Downs	7.83	211	PN		P	22 24 59.5	-1.8

NEIC ***07*** *22:28:19.2,36.47N×28.93E,h59km, MD3.9(ATH), After ATH.*
ISK ***07*** *22:28:19.6,36.52N×28.90E,h80km, MD3.5*
ATH ***07*** *22:28:19.5,36.48N×28.91E,h44km±3km, MD3.9/6*
IDC ***07*** *22:28:22.0±1.6,36.39N×28.98E,h68km±21km, mb3.4/3, mb1 3.9/9,mb1mx3.5/24, Error ellipse: s-maj=19.1km s-min=13.9km az=155.0*

ISC 07 22:28:19.1±0.2,36.33N±0.02×28.97E±0.02,h62km±7km, n103,σ1§06/119,mb3.5/3,4D,Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
KSL	Kastellorizon	0.53	110	*e*P		P	22 28 33.0	+1.4
ARG	Arkhangelos	0.69	261	*e*P		P	22 28 34.2	+0.8
ELL	Elmali	0.86	61	*i*PG		P	22 28 37.2	+1.6
YER	Yerkesik	0.97	326	*i*PG		P	22 28 36.6	-0.5
DNZL	Cakiroluk	1.36	3	*i*P		P	22 28 41.8	-0.6
DNZL				*i*S		S	22 29 00.4	+0.7
MLSB	Milas	1.36	315	*i*PN		P	22 28 42.5	0.0
MLSB				SN		S	22 28 58.5	-1.2
DENT	Denizli	1.42	2	*i*PN		P	22 28 42.5	-0.8
BDRM	Kayabasi	1.43	301	*i*P		P	22 28 43.2	-0.2
BDRM				*i*S		S	22 28 59.6	-1.8
ANTB	Antalya	1.47	67	*i*PN		P	22 28 45.8	+1.8
NISR	Nisiros	1.51	281	*e*P		P	22 28 43.6	-0.9
AYDN	Tasoluk	1.59	327	*i*P		P	22 29 49.9	+1.3
AYDN				*i*S		S	22 29 03.9	-1.2
KARP	Karpathos	1.66	242	*e*P		P	22 28 48.5	+1.9
ISP	Isparta	1.95	39	*i*PN		P	22 28 50.8	+0.3
KHL	Karahalli	2.04	12	*e*PN		P	22 28 50.7	-1.1
MANT	Manisa	2.18	351	*i*P		P	22 28 52.1	-1.8
MANT				*i*S		S	22 29 25.8	+6.2
SMG	Samos	2.19	309	*e*P		P	22 28 53.8	-0.2
IZM	Izmir	2.47	327	PN		P	22 28 55.9	-2.0
AKS	Akhisar	2.70	340	PN		P	22 28 59.0	-2.2
APE	Apeiranthos	2.86	286	*e*P		P	22 29 02.9	-0.6
ALT	Altintas	2.87	18	PN		P	22 29 02.2	-1.3
THR3	Thira Island,	2.88	273	*e*P		P	22 29 04.7	+0.9
THR6	Thira Island,	2.88	272	*e*P		P	22 29 04.8	+1.0
THR4	Thira Island,	2.88	274	*e*P		P	22 29 04.0	+0.2
HDMB	Hadim	2.90	76	*e*PN		P	22 29 05.9	+1.9
THR5	Thira Island,	2.92	273	*e*P		P	22 29 03.4	-1.0
MPS	Neapolis	2.93	250	*e*P		P	22 29 05.0	+0.5
XRY	Khrisi	3.04	242	*e*P		P	22 29 07.0	+1.0
PPCY	Paphos	3.11	117	⇓P		P	22 29 08.0	+1.1
PPCY	Paphos	3.11	117	⇓*e*P		P	22 29 08.0	+1.1
KONT	Konya--Tatoy	3.15	58	PN		P	22 29 09.0	+1.4
LEF	Lefka	3.41	110	*e*PN		P	22 29 13.5	+2.3
KIZT	Kizilcal	3.44	41	*i*PN		P	22 29 11.6	0.0
IDI	Anoyia	3.48	254	P		P	22 29 12.1	0.0
	24nm,0.3s,baz=75,slow=14,SNR=776							
IDI				S		S	22 29 50.5	-1.8
	42nm,0.3s,baz=344,slow=13,SNR=9.2							
ESKT	Eskisehir	3.51	24	PN		P	22 29 11.5	-1.1
SZAC	Souni-Zanaja	3.56	115	⇓P		P	22 29 14.0	+0.7
	16nm,0.3s							
SZAC				S		S	22 29 54.2	-0.2
SZAC	Souni-Zanaja	3.56	115	⇓*e*P		P	22 29 14.0	+0.7
SZAC				S		S	22 29 54.2	-0.2
PRK	Paraskevi	3.61	325	*e*P		P	22 29 12.7	-1.3
CSS	Prodhromos	3.81	110	*e*Pn		P	22 29 17.0	+0.3
IKL	Isikli	3.81	90	PN		P	22 29 17.9	+1.1
VAM	Vamos	3.98	258	*e*P		P	22 29 19.3	+0.1
PTL	Penteli	4.42	294	*e*P		P	22 29 25.5	+0.1
ANTO	Ankara	4.64	39	*e*PN		P	22 29 27.8	-0.7
LOS	Limnos	4.72	321	*e*P		P	22 29 30.0	+0.4
KYTH	Kithira	4.79	271	*e*P		P	22 29 30.0	-0.5
KAMT	Kaman	4.83	50	PN		P	22 29 30.7	-0.3
VLI	Veliai	4.87	276	*e*P		P	22 29 31.9	+0.2
BRTR	Keskin Array B	5.01	46	P		P	22 29 33.0	-0.5
	1.5nm,0.3s,baz=220,slow=15,SNR=35							
BRTR				S		S	22 30 30.8	+0.1
	1.2nm,0.3s,baz=228,slow=22,SNR=5.5							
ALN	Alexandroupoli	5.10	334	*e*P		P	22 29 33.9	-0.9
NEO	Neokhori	5.43	305	*e*P		P	22 29 39.5	+0.1
XOR	Xorichti	5.48	305	*e*P		P	22 29 38.5	-1.5
CEYT	Ceyhan	5.49	81	*e*PN		P	22 29 40.3	+0.1
OUR	Ouranopolis	5.60	317	*e*P		P	22 29 41.8	+0.1
ITM	Ithomi	5.72	281	*e*P		P	22 29 45.4	+2.1
AGG	Agios Georgios	5.91	299	*e*P		P	22 29 47.3	+1.3
BHL	Bhannes	5.99	112	*e*PN		P	22 29 42.6	-4.5
HNTI	Hanita	6.05	121	Pn		P	22 29 47.6	-0.4
HNTI				SN		S	22 30 51.1	-5.6
HWQ	Hawqa	6.06	108	*e*PN		P	22 29 49.0	+0.9
HAF	Haifa	6.12	124	Pn		P	22 29 48.4	-0.6
OFRI	'Ofer	6.20	125	Pn		P	22 29 50.3	+0.3
SOH	Sokhos	6.28	317	*e*P		P	22 29 52.9	-0.3
RZN	Rezhen	6.29	330	*i*P		P	22 29 52.0	+0.6
KSDI	Kefar Szold	6.33	118	Pn		P	22 29 51.7	-0.3
HRI	Mount Hermon	6.35	117	Pn		P	22 29 51.6	-0.6
SRS	Serrai	6.36	320	*e*P		P	22 29 52.6	+0.3
SLTI	Sal'it	6.47	127	Pn		P	22 29 52.8	-1.1
SLTI				Sn		S	22 31 01.7	-5.5
KSHT	Keshet	6.55	119	Pn		P	22 29 55.0	-0.1
MMB	Musomiste	6.65	324	*i*P		P	22 29 51.0	-5.4
KNT	Kendrikon	6.76	317	*e*P		P	22 29 60.0	+1.9
HMDT	Nahal Hemdat	6.78	125	Pn		P	22 29 57.8	-0.5
GRG	Griva	6.91	314	*e*P		P	22 30 00.3	+0.3
VLS	Valsamata	6.93	288	*e*P		P	22 30 01.5	+1.1
LKD	Levkas	7.02	292	*e*P		P	22 30 04.9	+3.2
KZIT	Kziot	7.05	139	Pn		P	22 30 01.7	-0.4
KZIT				SN		S	22 31 16.2	-5.4
RTMM	Retamin	7.10	136	Pn		P	22 30 02.2	-0.5
DRGI	Dragot	7.13	130	Pn		P	22 30 02.3	-0.8
SVTA	Shivta	7.16	137	Pn		P	22 30 03.0	-0.5
MASH	Mash'abbe Sade	7.20	136	Pn		P	22 30 03.5	-0.5
MZDA	Masada	7.31	131	Pn		P	22 30 05.0	-0.5
MZDA				SN		S	22 31 22.9	-4.9
MKRJ	Makawir	7.31	129	Pn		P	22 30 05.4	-0.2
FNA	Florina	7.42	309	*e*P		P	22 30 10.0	+2.9
IGT	Igoumenitsa	7.54	298	*e*P		P	22 30 12.0	+3.4
VTS	Vitosha	7.67	326	*i*P		P	22 30 11.0	+0.4
ZFRI	Zfri	7.75	136	Pn		P	22 30 10.5	-1.2
ASF	Jabal al Asfar	7.76	120	P		P	22 30 13.7	+1.9
	2.5nm,0.3s,baz=171,slow=4.8,SNR=12							
ASF				S		S	22 31 40.6	+1.5
	1.4nm,0.3s,baz=72,slow=17,SNR=5.0							
PRNI	Paran	7.81	138	Pn		P	22 30 11.4	-1.1
PRNI				Sn		S	22 31 34.3	-6.0
KMTI	Karmit	7.86	141	Pn		P	22 30 11.9	-1.3
KMTI				Sn		S	22 31 35.2	-6.3
MBH	Mount Berech	8.21	141	Pn		P	22 30 17.0	-1.0
EIL	Elat	8.33	141	Pn		P	22 30 18.5	-1.1
EIL	Elat	8.33	141	P		S	22 31 36.4	-17
	9.5nm,0.3s,baz=314,slow=6.6,SNR=106							
AQBJ	Aqaba	8.33	141	Pn		P	22 30 18.8	-0.8
QURS	Qurayyt al Mil	8.52	123	P		P	22 30 24.0	+1.8
ALWS	Ilw as Safayha	8.68	142	P		P	22 30 23.6	-0.8
JMOS	Jabal al Moall	8.82	142	P		P	22 30 25.4	-0.8
HAQS	Haql	8.82	144	P		P	22 30 25.5	-0.8
MLR	Muntele Rosu	9.43	347	P		P	22 30 35.9	+1.3
	0.3nm,0.3s,baz=267,slow=15,SNR=3.6							
JMQS	Jabal Moqyreh	9.44	140	P		P	22 30 34.3	-0.5
AYUS	'Aynunah	9.71	145	P		P	22 30 37.7	-0.8
TBKS	Tabuk	10.32	139	P		P	22 30 46.3	-0.5
VAE	Valguarnera	11.71	280	P		P	22 31 08.6	+3.0
	1.3nm,0.3s,baz=100,slow=6.1,SNR=4.5							
FINES	FINESS Array B	25.20	357	P		P	22 33 40.1	-0.1
	1.0nm,0.8s,mb3.4,baz=169,slow=9.7,SNR=4.7							
MKAR	Makanchi Array	40.54	58	P		P	22 35 53.9	+0.2
	0.5nm,0.6s,mb3.3,baz=270,slow=7.3,SNR=6.8							
DBIC	Dimbokro	42.74	235	P		P	22 36 13.3	+1.1
	1.0nm,0.4s,mb3.9,baz=18,slow=9.6,SNR=4.6							
DBIC	Dimbokro	42.74	235	P		P	22 36 13.3	+1.1

IDC 07 22:58:57.4±16.0,17.37S×178.79W,h573km±199km, mb3.4/4,mb1 3.6/4,mb1mx3.3/14,Error ellipse: s-maj=132.0km s-min=60.1km az=168.0,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
STKA	Stephens Creek	38.57	240	P		P	23 05 32.0	-1.3
	2.3nm,0.6s,baz=90,slow=10,SNR=7.0							
WRA	Warramunga Arr	44.37	259	P		P	23 06 17.8	-1.7
	2.4nm,0.8s,baz=94,slow=7.2,SNR=56							
ASAR	Alice Springs	44.59	254	P		P	23 06 19.8	-1.4
	1.1nm,0.5s,baz=88,slow=8.4,SNR=127							
PDAR	Pinedale Array	87.21	44	P		P	23 10 43.8	-0.8
	0.8nm,0.8s,baz=199,slow=2.9,SNR=5.1							
GERES	GERESS Array B	147.00	345	PKPbc		PKPdf	23 17 35.8	+2.9
	0.3nm,0.5s,slow=2.9,SNR=3.6							

MOS ***07*** *23:11:35.3±1.5,49.85N×88.02E,h15km, mb3.7/5, Error ellipse: s-maj=13.4km s-min=7.8km az=103.0*
NEIC ***07*** *23:11:36.3±0.6,50.12N×88.34E,h10km, mb4.1/2, Error ellipse: s-maj=13.6km s-min=8.3km az=70.0*
NNC ***07*** *23:11:37.5±2.7,50.09N×87.98E,mpv4.2, Error ellipse: s-maj=23.3km s-min=14.3km az=91.0*
IDC ***07*** *23:11:37.9±1.9,50.05N×88.36E,h22km±12km, mb3.5/9, mb1 3.7/13,mb1mx3.7/23,ML3.9/4, Error ellipse: s-maj=12.5km s-min=9.6km az=100.0*

ISC 07 23:11:35.4±0.5,49.82N±0.04×87.97E±0.07,h15km,n51,σ1§38/67,mb3.8/15,7C-4D,Kazakhstan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
ELDR	Elanda	1.84	320	*e*PN		Pn	23 12 08.0	+1.2
ELDR				*e*S		Sn	23 12 32.4	+2.5
ARTR	Artybash	2.03	348	*e*PN		Pn	23 12 09.4	-0.1
ARTR				*e*S		Sn	23 12 36.7	+2.1
UKR	Ust'-Kan	2.33	300	*e*PN		Pn	23 12 18.4	+4.6
UKR				*e*S		Sn	23 12 49.0	+6.7
TASR	Tashtagol	2.94	359	*e*PN		Pn	23

BVA0	**Borovoye Array**	**11.43 293**	*e*P		**P**	**23 14 19.2**	**-1.8**
BVA0			*e*			23 16 22.6	
BVAR	**Borovoye Array**	**11.43 293**	Pn		**P**	**23 14 19.5**	**-1.5**
	comp=Z,1.2nm,0.3s,baz=102,slow=14,SNR=19						
BVAR			Sn		**S**	**23 16 22.9**	**-6.5**
	comp=Z,0.8nm,0.3s,baz=98,slow=21,SNR=12						
BVAR			Lg			23 17 49.9	
	baz=104,slow=24,SNR=2.4						
BRVK	**Borovoye**	**11.50 293**	*e*Pn		**P**	**23 14 20.8**	**-1.1**
SONM	**Songino Array**	**12.31 92**	Pn		**P**	**23 14 32.8**	**-0.1**
	comp=Z,0.1nm,0.3s,baz=287,slow=13,SNR=5.1						
SONM			Lg			23 18 04.8	
	comp=Z,0.1nm,0.3s,baz=282,slow=28,SNR=5.5						
KK31	**Karatay Array**	**13.76 247**	⇑Pn		**P**	**23 14 52.8**	**+0.6**
	comp=Z,1.6nm,0.6s,baz=53,slow=13,SNR=20						
KKAR	**Karatay Array**	**13.76 247**	P		**P**	**23 14 52.2**	**+0.1**
KKAR			*e*			23 17 26.2	
AB31	**Akbulak array**	**18.16 279**	⇓P		**P**	**23 15 49.5**	**+1.1**
	comp=Z,0.7nm,0.6s,baz=82,slow=9.4,SNR=17						
ARU	**Arti**	**18.74 302**	*e*P		**P**	**23 15 55.7**	**+0.2**
GUN	**Gumba**	**21.94 185**	*e*P		**P**	**23 16 35.0**	**+5.0**
KKN	**Kakani**	**22.10 186**	*e*P		**P**	**23 16 36.5**	**+4.9**
	comp=Z,12nm,0.6s,mb4.5						
KOLN	**Koldanda**	**22.27 190**	*e*P		**P**	**23 16 38.0**	**+4.7**
	comp=Z,20nm,1.5s,mb4.3						
DMN	**Daman**	**22.29 187**	*e*P		**P**	**23 16 37.6**	**+4.1**
	comp=Z,7.7nm,0.6s,mb4.3						
PKI	**Pulchoki**	**22.30 186**	*e*P		**P**	**23 16 35.8**	**+2.1**
TIXI	**Tiksi**	**28.63 26**	*e*P		**P**	**23 17 32.9**	**+0.1**
TIXI			pmax	pmax			
	comp=Z,5.0nm,1.0s,mb4.2						
JOF	**Joensuu**	**32.82 315**	*e*p		**P**	**23 18 07.3**	**-2.6**
	comp=Z,0.5nm,0.5s,mb3.7						
JOF	**Joensuu**	**32.82 315**	*e*P		**P**	**23 18 07.3**	**-2.6**
JOF			pmax	pmax			
	comp=Z,1.0nm,0.5s,mb4.0						
KAF	**Kangasniemi**	**35.22 314**	*e*p		**P**	**23 18 24.6**	**-6.0**
	comp=Z,0.2nm,0.3s,mb3.5						
FINES	**FINESS Array B**	**35.43 313**	P		**P**	**23 18 31.6**	**-0.8**
	comp=Z,0.5nm,0.6s,mb3.6,baz=90,slow=7.6,SNR=7.4						
FINES	**FINESS Array B**	**35.43 313**	P		**P**	**23 18 31.7**	**-0.7**
FINES			pmax	pmax			
	comp=Z,1.0nm,0.6s						
AKASG	**Malin Array Be**	**36.70 295**	P		**P**	**23 18 42.9**	**-0.4**
	comp=Z,0.3nm,0.3s,mb3.6,baz=60,slow=9.1,SNR=4.2						
BRTR	**Keskin Array B**	**39.08 276**	P		**P**	**23 19 05.4**	**+2.1**
	comp=Z,0.8nm,0.5s,mb3.7,baz=90,slow=6.0,SNR=7.2						
NOA	**NORSAR Array B**	**42.45 315**	P		**P**	**23 19 31.4**	**+0.7**
	comp=Z,0.3nm,0.5s,mb3.2,baz=64,slow=7.7,SNR=3.6						
ILAR	**Eielson Array**	**58.09 24**	P		**P**	**23 21 28.4**	**-1.4**
	comp=Z,0.5nm,0.8s,mb3.6,baz=314,slow=4.7,SNR=5.2						
ILAR	**Eielson Array**	**58.09 24**	P		**P**	**23 21 28.4**	**-1.4**
ILAR			pmax	pmax			
	comp=Z,1.0nm,0.8s						
ESDC	**Sonseca Array**	**62.12 299**	P		**P**	**23 21 58.1**	**+0.3**
	comp=Z,1.0nm,0.7s,mb4.1,baz=44,slow=6.6,SNR=4.8						
YKA	**Yellowknife Ar**	**66.61 11**	P		**P**	**23 22 24.2**	**-2.3**
	comp=Z,0.2nm,0.7s,mb3.2,baz=340,slow=7.0,SNR=5.3						
YKA	**Yellowknife Ar**	**66.61 11**	P		**P**	**23 22 24.2**	**-2.3**
WRA	**Warramunga Arr**	**80.67 136**	P		**P**	**23 23 48.9**	**-0.2**
	comp=Z,0.4nm,0.8s,mb3.4,baz=344,slow=5.6,SNR=6.1						
ASAR	**Alice Springs**	**83.75 138**	P		**P**	**23 24 04.2**	**-0.9**
	comp=Z,0.2nm,0.4s,mb3.6,baz=334,slow=4.5,SNR=2.2						
CPUP	**Villa Florida**	**144.49 298**	PKP	PKPdf		23 31 11.3	-3.2
	comp=Z,0.9nm,0.6s,baz=89,slow=6.1,SNR=4.6						
CPUP	**Villa Florida**	**144.49 298**	PKIKP	PKPdf		23 31 11.3	-3.2
CPUP			pmax	pmax			
	comp=Z,1.0nm,0.6s						
CPUP	**Villa Florida**	**144.49 298**	PKP	PKPdf		23 31 11.3	-3.2

*IDC **07** 23:31:35.8±4.6,29.77N×51.43E,mb3.7/10,mb1 3.9/12, mb1mx3.7/24,ML3.4/2,Error ellipse: s-maj=92.4km s-min=25.7km az=172.0*
*NEIC **07** 23:31:38.2±1.9,29.37N×51.57E,h35km,mb4.4/12,Error ellipse: s-maj=36.0km s-min=17.9km az=168.0*
*THR **07** 23:31:43.5±1.5,29.96N×51.75E,MD3.6*
ISC 07 23:31:36.8±2.3,29.78N±0.07×51.38E±0.10,h15km±19km, n43,σ0s99/47,mb4.2/24,5C-1D,Southern Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NASN	**Na'in**	**3.25**	**22**	*e*PN	**Pn**	**23 32 30.2**	**+1.9**
	baz=200,slow=7.4						
NASN				SN	**Sn**	**23 33 05.2**	**-1.8**
HASS	**Wahat al Ahsa'**	**4.81**	**199**	P	**Pn**	**23 32 54.6**	**+4.1**
DAMV	**Damavand**	**5.85**	**5**	*e*PN	**Pn**	**23 33 06.2**	**+1.0**
DAMV				SN	**Sn**	**23 33 09.2**	**-3.6**
MZLS	**Mizel**	**7.95**	**225**	P	**Pn**	**23 33 34.9**	**+0.3**
ARSS	**Ar Rass**	**8.19**	**244**	P	**P**	**23 33 37.3**	**-0.6**
HILS	**Ha'il**	**8.76**	**256**	P	**P**	**23 33 45.4**	**-0.5**
AFFS	**'Afif**	**9.48**	**234**	P	**P**	**23 33 55.1**	**-0.8**
MAKU	**Maku**	**11.03**	**332**	*e*PN	**P**	**23 34 22.4**	**+5.4**
MAKU				SN	**S**	**23 36 18.1**	**-3.0**
KAMS	**Al Khamasin**	**11.26**	**215**	P	**P**	**23 34 19.6**	**-0.8**
TATS	**Tathlith**	**12.46**	**217**	P	**P**	**23 34 36.0**	**-0.6**
ASF	**Jabal al Asfar**	**12.65**	**285**	Pn	**P**	**23 34 38.0**	**-1.1**
	0.4nm,0.3s,baz=38,slow=17,SNR=4.5						
ASF				Sn	**S**	**23 36 54.6**	**-6.1**
	0.3nm,0.3s,baz=326,slow=16,SNR=3.6						
KIV	**Kislovodsk**	**15.75**	**336**	*e*P	**P**	**23 35 25.2**	**+5.5**
	29nm,1.1s						
BRTR	**Keskin Array B**	**17.60**	**309**	P	**P**	**23 35 44.5**	**+1.3**
	0.1nm,0.3s,baz=121,slow=14,SNR=4.8						
IDI	**Anoyia**	**22.96**	**291**	P	**P**	**23 36 42.4**	**+0.7**
	4.3nm,0.9s,mb3.9,baz=126,slow=8.7,SNR=2.2						
MLR	**Muntele Rosu**	**25.38**	**315**	P	**P**	**23 37 07.9**	**+3.1**
	4.1nm,0.7s,mb4.1,baz=104,slow=8.3,SNR=6.5						
AKASG	**Malin Array Be**	**26.70**	**328**	P	**P**	**23 37 17.6**	**+0.5**
	0.3nm,0.3s,mb3.3,baz=131,slow=9.1,SNR=7.5						
BVAR	**Borovoye Array**	**27.09**	**26**	P	**P**	**23 37 20.8**	**+0.2**
	1.0nm,0.7s,mb3.5,baz=220,slow=39,SNR=3.9						
KBA	**Koelnbreinsper**	**34.03**	**311**	⇑*i*P	**P**	**23 38 23.0**	**+0.8**
	4.2nm,0.6s,mb4.5						
ZAL	**Zalesovo**	**34.15**	**35**	P	**P**	**23 38 22.0**	**-1.1**
	1.0nm,0.6s,mb3.9,baz=120,slow=9.9,SNR=5.9						
ZAL	**Zalesovo**	**34.15**	**35**	P	**P**	**23 38 22.0**	**-1.1**
GERES	**GERESS Array B**	**34.36**	**314**	P	**P**	**23 38 24.8**	**-0.2**
	0.5nm,0.6s,mb3.7,baz=101,slow=6.8,SNR=6.8						
KHC	**Kasperske Hory**	**34.53**	**315**	*e*P	**P**	**23 38 26.5**	**0.0**
WTTA	**Wattenberg**	**35.20**	**311**	⇑*i*P	**P**	**23 38 32.6**	**+0.3**
	6.5nm,0.5s,mb4.8						
WATA	**Walderalm**	**35.26**	**311**	⇑*i*P	**P**	**23 38 32.7**	**-0.1**
	4.2nm,0.5s,mb4.6						
SQTA	**Sankt Quirin**	**35.47**	**311**	⇓*i*P	**P**	**23 38 34.7**	**+0.1**
	9.9nm,0.4s,mb5.1						
MOTA	**Moosalm**	**35.57**	**311**	⇑*i*P	**P**	**23 38 35.2**	**-0.2**
	4.8nm,0.6s,mb4.6						
FINES	**FINESS Array B**	**35.80**	**339**	P	**P**	**23 38 36.0**	**-1.2**
	0.4nm,0.7s,mb3.4,baz=162,slow=6.0,SNR=4.4						
FINES	**FINESS Array B**	**35.80**	**339**	P	**P**	**23 38 36.0**	**-1.2**
DAVA	**Damuels**	**36.37**	**310**	⇑*i*P	**P**	**23 38 42.3**	**+0.2**
	18nm,0.5s,mb5.3						
SBF	**Sospel**	**37.44**	**304**	*e*P	**P**	**23 38 53.6**	**+2.4**
	79nm,1.1s,mb5.2						
MBDF	**Montbardon**	**38.02**	**306**	*e*P	**P**	**23 38 57.0**	**+1.0**
	5.2nm,0.7s,mb4.1						
LPG	**La Plagne**	**38.14**	**307**	*e*P	**P**	**23 38 58.0**	**+0.9**
	13nm,1.0s,mb4.3						
LPL	**La Plagne**	**38.16**	**307**	*e*P	**P**	**23 38 58.1**	**+0.9**
CABF	**La Chapelle**	**38.77**	**309**	*e*P	**P**	**23 39 02.7**	**+0.3**
	15nm,0.9s,mb4.4						
SMF	**Signal de Mont**	**40.31**	**308**	*e*P	**P**	**23 39 14.9**	**-0.2**
	6.2nm,0.6s,mb4.2						
LOR	**Lormes**	**40.38**	**309**	*e*P	**P**	**23 39 15.2**	**-0.5**
	4.9nm,0.6s,mb4.1						
SSF	**Saint Saulge**	**40.59**	**309**	*e*P	**P**	**23 39 17.3**	**-0.1**
	14nm,1.1s,mb4.2						
NOA	**NORSAR Array B**	**40.97**	**331**	P	**P**	**23 39 19.5**	**-0.9**
	0.4nm,0.8s,mb3.1,baz=112,slow=8.4,SNR=2.5						
TCF	**Toulx Ste Croi**	**41.39**	**307**	*e*P	**P**	**23 39 23.6**	**-0.3**
ARCES	**ARCESS Array B**	**42.46**	**347**	P	**P**	**23 39 31.5**	**-0.9**
	0.9nm,0.7s,mb3.5,baz=135,slow=6.9,SNR=5.1						
ARCES	**ARCESS Array B**	**42.46**	**347**	P	**P**	**23 39 31.5**	**-0.9**
LIC	**Lamto**	**57.90**	**258**	*e*P	**P**	**23 41 20.6**	**-10**
	32nm,1.4s,mb4.9						
YKA	**Yellowknife Ar**	**87.36**	**354**	P	**P**	**23 44 24.5**	**+0.6**
	0.2nm,0.6s,mb3.5,baz=9.0,slow=5.3,SNR=6.2						

*GUC **07** 23:55:04.2±0.8,35.17S×66.99W,h5km,MD4.2,ML4.4*
*IDC **07** 23:55:07.8±1.5,35.55S×67.54W,mb4.2/3,mb1 4.2/7, mb1mx4.0/16,ML4.2/4,MS3.3/3,Ms1 3.2/3,ms1mx3.1/17, Error ellipse: s-maj=54.1km s-min=22.3km az=106.0*

*NEIC **07** 23:55:10.7±0.7,35.32S×67.44W,h10km,ML4.4(GUC), Error ellipse: s-maj=11.9km s-min=9.5km az=203.0*
ISC 07 23:55:07.3±0.5,35.41S±0.07×67.26W±0.05,h5km,n22, σ1s12/28,mb4.1/3,MS3.2/1,1D,Mendoza Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CICH	**Cipreses**	**2.82**	**292**	*i*P	**Pn**	**23 55 52.6**	**-1.2**
CICH				*i*S	**Sn**	**23 56 30.7**	**+2.2**
MDZ	**Mendoza**	**2.85**	**332**	*e*P	**Pn**	**23 55 54.9**	**+0.7**
MDZ				*e*		23 56 40.0	
LMEL	**Las Melosas**	**2.88**	**302**	*e*P	**Pn**	**23 55 53.7**	**-1.1**
LMEL				*i*S	**Sn**	**23 56 30.7**	**+0.4**
LMEL				AMP		23 56 36.8	
	comp=N,377nm,0.3s						
CACH	**El Canelo**	**3.04**	**294**	*e*P	**Pn**	**23 55 55.3**	**-1.6**
CACH				*i*S	**Sn**	**23 56 34.3**	**+0.2**
CHCH	**Chadas Angostu**	**3.16**	**297**	⇓*i*P	**Pn**	**23 55 57.4**	**-1.3**
FCH	**Farellones**	**3.26**	**309**	*e*P	**Pn**	**23 55 59.8**	**-0.2**
CLCH	**Cerro Calan**	**3.37**	**306**	*e*P	**Pn**	**23 56 01.6**	**-0.1**
CLCH				*i*S	**Sn**	**23 56 43.1**	**+0.5**
PEL	**Peldehue**	**3.63**	**308**	*e*P	**Pn**	**23 56 06.4**	**+1.1**
LNV	**Longovilo**	**3.71**	**292**	*i*P	**Pn**	**23 56 05.0**	**-1.5**
CCHI	**Chillan**	**4.08**	**252**	*e*P	**Pn**	**23 56 12.0**	**+0.2**
CCHI				*i*S	**Sn**	**23 57 04.0**	**+3.5**
CCHI				AMP		23 57 10.6	
	comp=E,480nm,0.7s						
TRQA	**Tornquist**	**5.00**	**123**	*e*Pn	**Pn**	**23 56 26.8**	**+2.1**
	comp=E,2.6nm,0.8s						
TRQA				*e*Pg	**Pg**	**23 56 47.0**	**-0.1**
TRQA				*e*Sg	**Sg**	**23 57 53.0**	**-0.6**
PLCA	**Paso Flores**	**5.91**	**205**	Pn	**Pn**	**23 56 33.4**	**-4.3**
	comp=E,1.9nm,0.3s,baz=13,slow=12,SNR=59						
PLCA				Pg	**Pg**	**23 56 50.6**	**-15**
	comp=E,3.0nm,0.3s,baz=12,slow=15,SNR=14						
PLCA				Lg		23 58 01.4	
	comp=E,3.6nm,0.3s,baz=31,slow=12,SNR=2.9						
CPUP	**Villa Florida**	**12.43**	**46**	Pn	**P**	**23 58 07.8**	**-0.1**
	comp=E,0.1nm,0.3s,baz=234,slow=19,SNR=5.0						
CPUP				Lg		00 01 57.6	
	comp=E,0.5nm,0.3s,baz=99,slow=7.9,SNR=3.2						
CPUP				LR	LR	00 03 38.2	
	comp=E,101nm,19.7s,baz=35,slow=40						
LVC	**Limon Verde**	**12.84**	**353**	Pn	**P**	**23 58 11.6**	**-1.7**
	comp=E,0.3nm,0.3s,baz=186,slow=9.2,SNR=1.9						
LVC				Lg		00 02 04.7	
	comp=E,0.2nm,0.3s,baz=312,slow=7.9,SNR=4.5						
LVC				LR	LR	00 03 34.6	
	comp=E,157nm,22.0s,baz=66,slow=39						
LVC	**Limon Verde**	**12.84**	**353**	Pn	**P**	**23 58 11.6**	**-1.7**
LVC				Lg		00 02 04.7	
LVC				LR	LR	00 03 34.6	
LPAZ	**La Paz**	**19.06**	**357**	P	**P**	**23 59 34.9**	**+1.9**
	comp=E,0.4nm,0.3s,baz=160,slow=6.4,SNR=7.7						
BDFB	**Brasilia**	**26.16**	**46**	LR	LR	00 12 36.2	
	comp=E,67nm,19.7s,MS3.2,baz=115,slow=40						
PMSA	**Palmer Station**	**29.46**	**177**	*e*P	**P**	**00 01 17.3**	**+3.5**
SDV	**Santo Domingo**	**44.17**	**355**	P	**P**	**00 03 19.4**	**+0.4**
	comp=E,7.1nm,0.3s,mb4.9,baz=272,slow=4.8,SNR=13						
TXAR	**Lajitas Array**	**72.97**	**327**	P	**P**	**00 06 39.5**	**-0.3**
	comp=E,0.2nm,0.4s,mb3.4,baz=151,slow=9.3,SNR=3.1						
PDAR	**Pinedale Array**	**86.87**	**330**	P	**P**	**00 07 54.1**	**+0.1**
	comp=E,0.4nm,0.4s,mb4.0,baz=164,slow=5.2,SNR=4.9						
BVAR	**Borovoye Array**	**145.53**	**46**	PKPbc	PKPbc	00 14 48.5	+1.9
	comp=E,0.7nm,0.7s,baz=252,slow=1.7,SNR=5.6						

*IDC **07** 23:55:27.7±1.3,6.20S×123.44E,mb3.9/3,mb1 4.2/5, mb1mx4.0/16,ML3.9/2,MS3.1/1,Ms1 3.1/1,ms1mx2.3/23, Error ellipse: s-maj=144.0km s-min=23.9km az=68.0*
*NEIC **07** 23:55:31.7±0.6,6.20S×124.01E,h35km,mb4.4/1,Error ellipse: s-maj=38.3km s-min=8.8km az=64.0*
ISC 07 23:55:28.8±4.9,6.2S±0.2×123.8E±0.3,h30km±38km,n10, σ0s75/11,mb4.0/2,Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**11.93**	**172**	*e*P	**P**	**23 58 19.6**	**-0.4**
	6.4nm,1.6s						
FITZ	**Fitzroy Crossi**	**11.93**	**172**	Pn	**P**	**23 58 19.5**	**-0.5**
	0.5nm,0.3s,baz=8.6,slow=5.0,SNR=13						
WRAB	**Tennant Creek**	**17.02**	**144**	*e*P	**P**	**23 59 26.6**	**+0.1**
	34nm,1.2s						
WRA	**Warramunga Arr**	**17.02**	**144**	P	**P**	**23 59 26.1**	**-0.5**
	0.5nm,0.3s,baz=318,slow=13,SNR=30						
WRA				S	**S**	**00 02 33.1**	**-0.3**
	0.3nm,0.3s,baz=318,slow=26,SNR=7.1						
WB2	**Warramunga Arr**	**17.03**	**144**	*e*P	**P**	**23 59 26.4**	**-0.2**
WB2				*e*S	**S**	**00 02 28.2**	**-5.3**
ASAR	**Alice Springs**	**19.86**	**152**	P	**P**	**00 00 03.2**	**+2.7**
	4.0nm,0.8s,baz=326,slow=11,SNR=27						
JNU	**Nakatsue**	**39.70**	**9**	LR	LR	00 20 56.6	
	comp=Z,22nm,18.5s,baz=67,slow=38						
SONM	**Songino Array**	**55.99**	**346**	P	**P**	**00 05 06.7**	**-0.2**
	1.0nm,1.1s,mb3.8,baz=162,slow=4.6,SNR=3.1						
MKAR	**Makanchi Array**	**64.35**	**330**	P	**P**	**00 06 04.2**	**0.0**
	1.6nm,0.6s,mb4.2,baz=130,slow=7.1,SNR=16						
KURK	**Kurchatov**	**68.78**	**331**	*e*P	**P**	**00 06 32.1**	**-0.1**

*NEIC **08** 00:01:21.2±1.9,7.60S×127.41E,h132km±19km,mb4.8/11, Error ellipse: s-maj=16.5km s-min=8.8km az=51.0*
*IDC **08** 00:01:23.8±3.2,7.59S×127.39E,h155km±31km,mb3.9/9, mb1 4.1/13,mb1mx4.0/18,Error ellipse: s-maj=23.9km s-min=12.1km az=60.0*
ISC 08 00:01:22.4±2.0,7.73S±0.09×127.4E±0.1,h162km±21km, n36,σ1s16/38,mb4.5/17,2C-2D,Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**10.45**	**189**	⇓*i*P	**P**	**00 03 49.4**	**+0.5**
	8.3nm,0.3s						
FITZ				*e*S	**S**	**00 05 40.1**	**-3.6**
FITZ	**Fitzroy Crossi**	**10.45**	**189**	P	**P**	**00 03 49.6**	**+0.7**
	4.4nm,0.3s,baz=18,slow=11,SNR=42						
FITZ				S	**S**	**00 05 40.3**	**-3.4**
	7.3nm,0.3s,baz=30,slow=13,SNR=10						
WRAB	**Tennant Creek**	**13.90**	**151**	*e*P	**P**	**00 04 32.6**	**-0.9**
WRA	**Warramunga Arr**	**13.91**	**152**	P	**P**	**00 04 32.8**	**-0.9**
	1.9nm,0.3s,baz=323,slow=13,SNR=40						
WRA				S	**S**	**00 06 58.1**	**-6.2**
	12nm,0.3s,baz=324,slow=24,SNR=14						
WB2	**Warramunga Arr**	**13.91**	**152**	*e*P	**P**	**00 04 31.8**	**-1.9**
WB2				*e*		00 04 38.8	
WB2				*e*S	**S**	**00 06 57.6**	**-6.8**
AS12	**Alice Springs**	**17.05**	**159**	⇑*i*P	**P**	**00 05 13.7**	**+1.1**
	19nm,0.4s						
AS12				*i*		00 05 16.3	
AS12				*e*S	**S**	**00 08 13.7**	**-1.6**
ASAR	**Alice Springs**	**17.05**	**159**	P	**P**	**00 05 13.8**	**+1.2**
	10nm,0.3s,baz=338,slow=11,SNR=143						
ASAR				S	**S**	**00 08 14.7**	**-0.6**
	0.9nm,0.3s,baz=341,slow=16,SNR=3.2						
PMG	**Port Moresby**	**19.66**	**96**	P	**P**	**00 05 42.1**	**+1.2**
	2.4nm,0.3s,baz=260,slow=4.8,SNR=8.1						
PMG	**Port Moresby**	**19.66**	**96**	*e*P	**P**	**00 05 41.8**	**+0.9**
	48nm,0.9s						
CTA	**Charters Tower**	**22.05**	**126**	P	**P**	**00 06 05.5**	**+0.9**
	6.0nm,0.7s,mb4.2,baz=307,slow=10,SNR=5.9						
CTAO	**Charters Tower**	**22.05**	**126**	*e*P	**P**	**00 06 06.1**	**+1.5**
TGY	**Tagaytay City**	**22.60**	**344**	P	**P**	**00 06 11.7**	**+1.6**
	210nm,0.4s,baz=156,slow=10,SNR=4.2						
FORT	**Forrest**	**22.95**	**178**	⇑*i*P	**P**	**00 06 16.1**	**+2.8**
	48nm,0.6s,mb5.1						
FORT				*e*S	S	00 10 35.8	+28
NWAO	**Narrogin (SRO)**	**26.77**	**199**	P	**P**	**00 06 51.5**	**+2.3**
	16nm,1.0s,mb4.6,baz=226,slow=5.7,SNR=3.0						
NWAO	**Narrogin (SRO)**	**26.77**	**199**	P	**P**	**00 06 51.5**	**+2.3**
STKA	**Stephens Creek**	**27.45**	**153**	⇓*i*P	**P**	**00 06 55.8**	**+0.5**
	3.1nm,0.4s,mb4.3						
STKA				*i*		00 07 00.5	
STKA				*e*S	S	00 12 17.5	+55
STKA	**Stephens Creek**	**27.45**	**153**	P	**P**	**00 06 55.8**	**+0.5**
	6.0nm,0.7s,mb4.3,baz=328,slow=9.1,SNR=14						
CMAR	**Chiang Mai Arr**	**38.24**	**319**	P	**P**	**00 08 29.6**	**+1.1**
	2.0nm,0.6s,mb3.9,baz=140,slow=6.9,SNR=9.7						
LSA	**Lhasa**	**50.95**	**319**	P	**P**	**00 10 08.3**	**-1.2**
	5.3nm,0.8s,mb4.2						
GUN	**Gumba**	**53.49**	**313**	*e*P	**P**	**00 10 28.6**	**+0.2**
	15nm,0.5s,mb5.0						
PKI	**Pulchoki**	**53.64**	**313**	*e*P	**P**	**00 10 30.4**	**+1.0**
	9.0nm,0.5s,mb4.8						
KKN	**Kakani**	**53.85**	**313**	*e*P	**P**	**00 10 31.1**	**+0.1**
	9.4nm,0.5s,mb4.8						
DMN	**Daman**	**53.88**	**312**	*e*P	**P**	**00 10 32.3**	**+1.1**
	23nm,0.3s,mb5.4						
URZ	**Urewera**	**54.10**	**132**	P	**P**	**00 10 33.1**	**+0.4**
	1.8nm,0.3s,mb4.2,baz=250,slow=4.5,SNR=3.2						
GKN	**Gorkha**	**54.44**	**313**	*e*P	**P**	**00 10 34.8**	**-0.5**
	14nm,0.5s,mb5.0						
KOLN	**Koldanda**	**55.08**	**312**	*e*P	**P**	**00 10 39.4**	**-0.5**
	12nm,0.7s,mb4.7						
SONM	**Songino Array**	**58.34**	**344**	P	**P**	**00 11 02.1**	**-0.6**
	1.3nm,0.8s,mb3.8,baz=164,slow=8.4,SNR=8.2						
MKAR	**Makanchi Array**	**67.42**	**328**	P	**P**	**00 12 01.6**	**-1.0**
	2.4nm,0.5s,mb4.3,baz=120,slow=7.7,SNR=28						
ZAL	**Zalesovo**	**71.10**	**335**	P	**P**	**00 12 23.1**	**-1.7**
	1.6nm,0.4s,mb4.1,baz=259,slow=6.5,SNR=5.4						
KURK	**Kurchatov**	**71.79**	**330**	*e*P	**P**	**00 12 27.9**	**-1.0**
BVAR	**Borovoye Array**	**77.29**	**329**	P	**P**	**00 12 59.6**	**-0.8**
	0.6nm,0.5s,mb3.5,baz=135,slow=6.3,SNR=7.1						
BRVK	**Borovoye**	**77.36**	**329**	*e*P	**P**	**00 12 59.9**	**-0.8**
YKA	**Yellowknife Ar**	**109.55**	**26**	PKiKP		00 19 33.8	
	0.2nm,0.6s,baz=298,slow=1.7,SNR=7.2						
GERES	**GERESS Array B**	**111.28**	**320**	PKiKP		00 19 38.2	
	0.4nm,0.6s,slow=1.3,SNR=4.6						
CPUP	**Villa Florida**	**145.84**	**173**	PKPbc	PKPbc	00 20 46.5	+3.1
	0.7nm,0.6s,baz=233,slow=5.1,SNR=3.6						
LPAZ	**La Paz**	**151.65**	**147**	PKPbc	PKPdf	00 21 02.6	+11
	0.3nm,0.3s,baz=96,slow=4.9,SNR=2.9						

*NIED **08** 00:10:00,36.70N×140.90E,h65km,Mw4.0 Best double couple: M0 1.12×10^15 NP1:φs218°,δ68°,λ120°. NP2: φs341°,δ37°,λ40°.*
*NEIC **08** 00:10:02.5±0.4,36.82N×140.98E,mb4.6/3,Error ellipse: s-maj=11.0km s-min=9.3km az=55.0*
NEIC Recorded [2 JMA] in Fukushima, Ibaraki and Tochigi; [1 JMA] in Gumma and Saitama Prefectures.
*JMA **08** 00:10:03.8±0.1,36.70N×140.86E,h62km±1km,M4.2 Broadband fault plane solution: P waves. NP1:φs337°, δ51°,λ34°. NP2:φs224°,δ64°,λ135°. Principal axes: T Plg49°, Azm184°; N Plg40°, Azm20°; P Plg8°, Azm283°;*
JMA Felt II J1.
*IDC **08** 00:10:04.4±0.8,36.66N×140.36E,h63km±6km,mb3.8/15, mb1 4.0/19,mb1mx3.8/29,MS3.1/2,Ms1 3.2/2, ms1mx2.5/31 Error ellipse: s-maj=18.9km s-min=8.8km az=87.0*
ISC 08 00:10:00.8±0.4,36.66N±0.03×141.06E±0.04,h60km, h60km±2.6km:pP-P,n45,σ1s28/59,mb4.2/18,MS3.1/2, 8C-6D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.40**	**263**	⇑P	**P**	**00 10 14.0**	**+2.2**
JHO				S	**S**	**00 10 21.0**	**+1.1**
ONAJ	**Iwakimizuishiy**	**0.49**	**335**	⇑P	**P**	**00 10 14.8**	**+2.1**
JFK	**Kawauchi**	**0.72**	**348**	⇑P	**P**	**00 10 17.5**	**+2.1**
JFK				S	**S**	**00 10 27.1**	**+0.9**
JYT	**Yasato**	**0.82**	**238**	⇓P	**P**	**00 10 18.3**	**+1.7**
JYT				S	**S**	**00 10 28.3**	**-0.1**
JFT	**Otama**	**1.03**	**326**	⇑P	**P**	**00 10 21.3**	**+1.8**
JFT				S	**S**	**00 10 33.7**	**+0.3**
JMM	**Marumori**	**1.22**	**350**	⇑P	**P**	**00 10 24.2**	**+2.1**
JMM				S	**S**	**00 10 38.9**	**+0.9**
JAG	**Ashikaga**	**1.31**	**260**	⇓P	**P**	**00 10 24.4**	**+0.9**
JAG				S	**S**	**00 10 39.2**	**-1.1**
JFY	**Yanaizu**	**1

	1.4nm,0.5s,baz=96,slow=8.0,SNR=18						
WRA	**Warramunga Arr**	**43.65**	**262**	P	P	00 23 55.6	-1.4
	0.6nm,0.3s,baz=96,slow=7.6,SNR=16						
FITZ	**Fitzroy Crossi**	**52.07**	**262**	P	P	00 25 00.5	-2.3
	3.7nm,1.1s,baz=127,slow=10,SNR=3.4						

*IDC **08** 00:24:09.3±1.3,6.19S×151.56E,mb3.9/7,mb1 4.1/8, mb1mx4.0/14,ML2.2/1,Error ellipse: s-maj=54.9km s-min=19.0km az=125.0*
*NEIC **08** 00:24:11.9±0.8,6.15S×151.40E,h10km,mb4.8/2,Error ellipse: s-maj=38.2km s-min=12.3km az=129.0*

ISC 08 00:24:09.4±0.9,6.2S±0.2×151.6E±0.2,h10km,n13, σ1$07/16,mb3.8/8,1D,New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**5.41**	**233**	Pn	**Pn**	**00 25 30.6**	**-1.5**
	0.5nm,0.3s,baz=23,slow=6.4,SNR=2.9						
PMG				Sn	**Sn**	**00 26 36.1**	**+0.9**
	11nm,0.3s,baz=183,slow=16,SNR=8.2						
PMG	**Port Moresby**	**5.41**	**233**	Pn	**Pn**	**00 25 30.6**	**-1.5**
PMG				Pn	**Pn**	**00 25 32.7**	**+0.6**
PMG				Sn	**Sn**	**00 26 36.1**	**+0.9**
WRAB	**Tennant Creek**	**21.59**	**229**	*e*P	**P**	**00 28 59.8**	**-1.8**
	8.3nm,1.0s,mb4.1						
WB2	**Warramunga Arr**	**21.60**	**229**	*e*P	**P**	**00 29 02.7**	**+1.1**
WRA	**Warramunga Arr**	**21.61**	**229**	P	**P**	**00 29 00.6**	**-1.1**
	1.1nm,0.8s,mb3.4,baz=55,slow=10,SNR=6.3						
AS12	**Alice Springs**	**24.30**	**223**	*e*P	**P**	**00 29 30.6**	**+2.3**
	4.7nm,1.0s,mb3.9						
ASAR	**Alice Springs**	**24.30**	**223**	P	**P**	**00 29 28.4**	**+0.1**
	2.4nm,0.7s,mb3.7,baz=56,slow=8.9,SNR=27						
STKA	**Stephens Creek**	**27.20**	**199**	P	**P**	**00 29 55.3**	**-0.1**
	1.2nm,0.7s,mb3.5,baz=327,slow=16,SNR=3.2						
FITZ	**Fitzroy Crossi**	**27.92**	**243**	⇓*i*P		**00 30 09.5**	**+7.5**
	3.0nm,0.4s,mb4.3						
FITZ	**Fitzroy Crossi**	**27.92**	**243**	P	**P**	**00 30 02.2**	**+0.1**
	2.0nm,0.8s,mb3.8,baz=54,slow=8.7,SNR=5.7						
SONM	**Songino Array**	**66.84**	**329**	P	**P**	**00 35 03.4**	**-0.3**
	0.6nm,0.8s,mb3.7,baz=151,slow=5.4,SNR=3.6						
ILAR	**Eielson Array**	**83.90**	**22**	P	**P**	**00 36 40.2**	**-0.3**
	1.8nm,0.8s,mb4.3,baz=248,slow=5.4,SNR=18						
YKA	**Yellowknife Ar**	**97.22**	**28**	P	**P**	**00 37 44.6**	**+1.3**
	0.3nm,0.9s,mb3.7,baz=271,slow=5.3,SNR=3.7						

*IDC **08** 00:58:28.2±3.3,5.40S×12.96W,mb3.8/6,mb1 3.9/7, mb1mx3.7/21,ML3.0/1,MS3.7/12,Ms1 3.7/12, ms1mx3.5/21,Error ellipse: s-maj=155.0km s-min=25.7km az=142.0*

ISC 08 00:58:28.1±2.9,5.3S±0.7×13.0W±0.6,h10km,n17,σ1$04/7, mb3.8/6,MS3.7/11,Ascension Island region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DBIC	**Dimbokro**	**14.37**	**34**	Pn	**P**	**01 01 52.8**	**-1.0**
	0.1nm,0.3s,baz=196,slow=12,SNR=4.6						
DBIC				LR	LR	01 06 29.2	
	comp=Z,133nm,19.6s,baz=118,slow=33						
BDFB	**Brasilia**	**35.91**	**251**	P	**P**	**01 05 30.2**	**-0.5**
	2.0nm,0.9s,mb4.0,baz=110,slow=3.8,SNR=2.7						
ESDC	**Sonseca Array**	**45.50**	**10**	LR	LR	01 26 58.5	
	comp=Z,40nm,18.9s,MS3.4,baz=140,slow=38						
CPUP	**Villa Florida**	**47.21**	**239**	LR	LR	01 22 56.3	
	comp=Z,98nm,21.7s,MS3.7,baz=309,slow=31						
KMBO	**Kilima Mbogo**	**50.29**	**87**	LR	LR	01 28 57.0	
	comp=Z,76nm,18.7s,MS3.7,baz=102,slow=36						
PCRV	**Puerto La Cruz**	**53.71**	**287**	LR	LR	01 26 48.5	
	comp=Z,50nm,21.2s,MS3.5,baz=290,slow=32						
GERES	**GERESS Array B**	**58.72**	**20**	P	**P**	**01 08 29.3**	**+0.9**
	1.4nm,0.9s,mb4.0,baz=207,slow=6.6,SNR=7.8						
BRTR	**Keskin Array B**	**62.01**	**39**	P	**P**	**01 08 52.0**	**+1.0**
	1.0nm,0.9s,mb4.0,baz=225,slow=8.2,SNR=8.0						
ROSC	**El Rosal**	**62.11**	**278**	LR	LR	01 35 10.6	
	comp=Z,91nm,20.5s,MS3.9,baz=134,slow=36						
PLCA	**Paso Flores**	**62.28**	**226**	LR	LR	01 34 03.3	
	comp=Z,115nm,19.1s,MS4.1,baz=289,slow=34						
AKASG	**Malin Array Be**	**66.51**	**28**	P	**P**	**01 09 18.6**	**-1.5**
	0.2nm,0.3s,mb3.7,baz=230,slow=7.0,SNR=4.4						
NOA	**NORSAR Array B**	**68.77**	**12**	P	**P**	**01 09 35.6**	**+1.4**
	0.3nm,0.7s,mb3.3,baz=260,slow=4.0,SNR=2.0						
NOA				LR	LR	01 43 55.2	
	comp=Z,20nm,18.2s,MS3.4,baz=15,slow=40						
FINES	**FINESS Array B**	**73.06**	**18**	P	**P**	**01 09 59.8**	**-0.3**
	0.9nm,0.7s,mb3.8,baz=225,slow=5.9,SNR=5.1						
ARCES	**ARCESS Array B**	**79.13**	**13**	LR	LR	01 44 22.6	
	comp=Z,31nm,21.4s,MS3.6,baz=120,slow=35						
TXAR	**Lajitas Array**	**93.17**	**299**	LR	LR	01 49 01.1	
	comp=Z,29nm,20.4s,MS3.7,baz=270,slow=32						
PDAR	**Pinedale Array**	**98.40**	**312**	LR	LR	01 49 04.4	
	comp=Z,62nm,18.7s,MS4.1,baz=336,slow=31						
ZAL	**Zalesovo**	**98.82**	**36**	LR	LR	01 59 24.6	
	comp=Z,37nm,18.3s,MS3.9,baz=188,slow=37						

*NIED **08** 01:05:00,36.80N×141.30E,h38km,Mw3.6 Best double couple: M0 3.24×10^19 NP1:φs192°,δ61°,λ-141°. NP2: φs80°,δ57°,λ-36°.*
*JMA **08** 01:05:43.3±0.1,36.77N×141.33E,h48km±2km,M3.7*

ISC 08 01:05:42.3±1.5,36.79N±0.05×141.44E±0.09,h28km±6km, n11,σ0$83/22,3C-3D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.60**	**302**	⇓P	**Pb**	**01 05 54.7**	**+0.4**
ONAJ				S	**Sb**	**01 06 02.6**	**+0.1**
JHO	**Hitachi**	**0.72**	**256**	⇓P	**Pb**	**01 05 55.9**	**-0.3**
JHO				S	**Sb**	**01 06 04.9**	**-0.9**
JFK	**Kawauchi**	**0.74**	**322**	⇑P	**Pb**	**01 05 56.7**	**+0.2**
JFK				S	**Sb**	**01 06 06.1**	**-0.1**
JFT	**Otama**	**1.15**	**310**	⇑P	**Pn**	**01 06 03.2**	**+0.5**
JFT				S	**Sn**	**01 06 17.5**	**-0.1**
JMM	**Marumori**	**1.20**	**335**	⇑P	**Pn**	**01 06 03.2**	**-0.2**
JMM				S	**Sn**	**01 06 18.1**	**-0.8**
JFY	**Yanaizu**	**1.52**	**295**	P	**Pn**	**01 06 09.5**	**+1.4**
JFY				S	**Sn**	**01 06 27.9**	**+0.8**
JAG	**Ashikaga**	**1.64**	**258**	⇓P	**Pn**	**01 06 09.3**	**-0.5**
JAG				S	**Sn**	**01 06 27.3**	**-2.8**
JIO	**Ouri**	**1.67**	**358**	P	**Pn**	**01 06 10.0**	**-0.2**
JIO				S	**Sn**	**01 06 29.4**	**-1.4**
JOU	**Okura**	**1.69**	**339**	P	**Pn**	**01 06 11.2**	**+0.6**
JOU				S	**Sn**	**01 06 31.9**	**+0.4**
JKT	**Katashina**	**1.76**	**270**	P	**Pn**	**01 06 11.6**	**+0.1**
JKT				S	**Sn**	**01 06 32.5**	**-0.7**
MAT	**Matsushiro**	**2.61**	**266**	P	**Pn**	**01 06 24.2**	**+0.5**
MAT				S	**Sn**	**01 06 56.3**	**+1.5**

*WAR **08** 01:05:50.3,51.45N×16.07E,h1km,Location given by Polkowice mine, origin time based upon KSP*
*PRU **08** 01:05:50.2,51.43N×16.07E*
*NEIC **08** 01:05:53.4±0.9,51.26N×15.83E,h5km,MG2.5(WAR), Error ellipse: s-maj=11.3km s-min=7.0km az=205.0*

ISC 08 01:05:48.1±0.8,51.44N±0.04×16.05E±0.04,n16,σ1$37/31, Poland

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KSP	**Ksiaz**	**0.62**	**165**	*e*Pg	**Pg**	**01 06 01.7**	**+1.3**
KSP				*e*Sg	**Sg**	**01 06 09.9**	**+1.3**
KSP	**Ksiaz**	**0.62**	**165**	*i* Pg	**Pg**	**01 06 01.8**	**+1.4**
KSP				*i* Sg	**Sg**	**01 06 10.4**	**+1.8**
UPC	**Upice**	**0.93**	**181**	*e*PG	**Pg**	**01 06 07.7**	**+1.0**
DPC	**Dobruska-Polom**	**1.10**	**171**	*e*PG	**Pg**	**01 06 10.6**	**+0.5**
DPC				*e*SG	**Sg**	**01 06 24.9**	**+0.1**
PVCC	**Panska Ves**	**1.30**	**226**	*e*PG	**Pg**	**01 06 14.9**	**+0.8**
BRG	**Berggiesshubel**	**1.44**	**248**	*e*Pg	**Pg**	**01 06 17.3**	**+0.4**
BRG				*i* Sg	**Sg**	**01 06 37.2**	**+1.1**
PRU	**Pruhonice**	**1.74**	**214**	PG	**Pg**	**01 06 21.7**	**-1.1**
PRU				*i* x	x	01 06 25.8	
PRU				*i* x	x	01 06 38.9	
PRU				SG	**Sg**	**01 06 46.2**	**+0.2**
	4.3nm,0.4s						
RUE	**Ruedersdorf**	**1.75**	**308**	*e*Pn	**Pn**	**01 06 23.4**	**+3.5**
RUE				*e*Sn	**Sn**	**01 06 44.4**	**+1.3**
CLL	**Collm**	**1.91**	**267**	*e*PG	**Pg**	**01 06 25.0**	**-1.3**
CLL				*i*		01 06 29.8	
CLL				*e*SG	**Sg**	**01 06 51.0**	**-0.8**
CLL	**Collm**	**1.91**	**267**	*e*Pg	**Pg**	**01 06 25.0**	**-1.3**
CLL				*e*Sg	**Sg**	**01 06 51.0**	**-0.8**
MORC	**Moravsky Berou**	**1.92**	**150**	*i* Pn	**Pn**	**01 06 25.4**	**+3.1**
MORC				*e*Sn	**Sn**	**01 06 49.3**	**+1.8**
OKC	**Ostrava-Krasne**	**2.09**	**139**	*e*PG	**Pg**	**01 06 27.8**	**-2.0**
OKC				*e*SG	**Sg**	**01 06 54.6**	**-3.0**
OJC	**Ojcow**	**2.67**	**116**	*e*Pg	**Pg**	**01 06 39.8**	**-1.7**
OJC				*e*Sg	**Sg**	**01 07 16.6**	**-0.5**
OJC	**Ojcow**	**2.67**	**116**	*e*PG	**Pg**	**01 06 40.0**	**-1.5**
OJC				*e*SG	**Sg**	**01 07 17.0**	**-0.1**
KHC	**Kasperske Hory**	**2.80**	**215**	*e*PN	**Pn**	**01 06 35.8**	**+0.8**
KHC				*e*PG	**Pg**	**01 06 41.5**	**-2.5**
KHC				*e*SG	**Sg**	**01 07 19.5**	**-1.8**
MOX	**Moxa**	**2.91**	**256**	*e*Pg	**Pg**	**01 06 45.1**	**-1.0**
MOX				*e*Sg	**Sn**	**01 07 05.2**	**-7.4**

*WAR **08** 01:21:36.9,51.56N×16.01E,ML2.7,Mining Induced*
*PRU **08** 01:21:36.6,51.53N×16.05E*

ISC 08 01:21:34.1±2.6,51.6N±0.1×16.1E±0.1,n7,σ0$84/9, Poland

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KSP	**Ksiaz**	**0.75**	**170**	*e*PG	**Pg**	**01 21 50.0**	**+0.9**
KSP				*i* SG	**Sg**	**01 22 00.4**	**+1.3**
UPC	**Upice**	**1.08**	**183**	*e*PG	**Pg**	**01 21 56.1**	**+0.5**
DPC	**Dobruska-Polom**	**1.24**	**173**	*e*PG	**Pg**	**01 21 59.0**	**+0.1**
DPC				*e*SG	**Sg**	**01 22 15.2**	**-0.2**
PVCC	**Panska Ves**	**1.43**	**223**	*e*PG	**Pg**	**01 22 02.1**	**-0.6**
PRU	**Pruhonice**	**1.88**	**212**	*e*SG	**Sg**	**01 22 35.9**	**-0.7**
	6.3nm,0.3s						
OKC	**Ostrava-Krasne**	**2.18**	**142**	*e*SG	**Sg**	**01 22 45.2**	**-1.4**
KHC	**Kasperske Hory**	**2.94**	**214**	*e*SG	**Sg**	**01 23 07.0**	**-4.9**

*IDC **08** 01:22:44.3±0.9,7.36S×125.86E,mb4.1/6,mb1 4.1/9, mb1mx4.0/16,ML3.8/3,MS2.6/1,Ms1 2.6/1,ms1mx2.1/20, Error ellipse: s-maj=41.0km s-min=16.5km az=64.0*

ISC 08 01:22:48.4±2.9,7.7S±0.1×126.0E±0.2,h67km±30km,n13, σ1$01/18,mb3.9/6,1D,Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**10.34**	**182**	*e*P	**P**	**01 25 17.2**	**+0.9**
	1.7nm,0.4s						
FITZ				*e*S	**S**	**01 27 09.3**	**-2.1**
FITZ	**Fitzroy Crossi**	**10.34**	**182**	Pn	**P**	**01 25 17.0**	**+0.7**
	0.8nm,0.3s,baz=9.1,slow=12,SNR=22						
FITZ				Sn	**S**	**01 27 10.5**	**-0.9**
	1.3nm,0.3s,baz=176,slow=20,SNR=6.6						
FITZ				LR	LR	01 30 08.0	
	comp=Z,30nm,21.1s,baz=157,slow=42						
WRA	**Warramunga Arr**	**14.61**	**147**	Pn	**P**	**01 26 12.8**	**0.0**
	0.6nm,0.3s,baz=330,slow=14,SNR=16						
WRA				Sn	**S**	**01 28 51.8**	**-1.7**
	0.3nm,0.3s,baz=330,slow=22,SNR=4.5						
WB2	**Warramunga Arr**	**14.61**	**147**	*e*P	**P**	**01 26 13.2**	**+0.2**
WB2				*e*S	**S**	**01 28 53.6**	**0.0**
AS12	**Alice Springs**	**17.59**	**155**	*e*P	**P**	**01 26 56.4**	**+5.8**
	4.2nm,0.6s						
ASAR	**Alice Springs**	**17.59**	**155**	P	**P**	**01 26 54.6**	**+4.0**
	0.3nm,0.3s,baz=333,slow=12,SNR=20						
ASAR				S	**S**	**01 30 03.5**	**+1.8**
	0.0nm,0.3s,baz=334,slow=29,SNR=3.4						
CTA	**Charters Tower**	**23.16**	**124**	P	**P**	**01 27 56.3**	**+6.5**
	2.1nm,0.7s,mb3.6,baz=94,slow=13,SNR=3.3						
NWAO	**Narrogin (SRO)**	**26.38**	**197**	P	**P**	**01 28 25.4**	**+4.9**
	17nm,1.0s,mb4.4,baz=288,slow=23,SNR=3.0						
STKA	**Stephens Creek**	**28.10**	**151**	⇓*i*P	**P**	**01 28 41.7**	**+5.6**
	2.6nm,0.4s,mb4.1						
STKA	**Stephens Creek**	**28.10**	**151**	P	**P**	**01 28 41.4**	**+5.3**
	2.5nm,0.4s,mb4.1,baz=330,slow=9.6,SNR=17						
CMAR	**Chiang Mai Arr**	**37.26**	**315**	P	**P**	**01 29 55.9**	**+0.3**
	0.7nm,0.3s,mb4.0,baz=141,slow=5.8,SNR=1.6						
SONM	**Songino Array**	**57.95**	**345**	P	**P**	**01 32 35.8**	**-0.4**
	0.3nm,0.5s,mb3.6,baz=158,slow=7.8,SNR=3.3						
MKAR	**Makanchi Array**	**66.71**	**329**	P	**P**	**01 33 34.1**	**-0.4**
	0.6nm,0.6s,mb3.6,baz=123,slow=8.0,SNR=5.5						

IDC 08 02:03:49.6±5.0,33.82S×55.52E,mb3.6/3,mb1 3.8/3, mb1mx3.6/18,Error ellipse: s-maj=265.0km s-min=33.8km az=40.0,Southwest Indian Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ASAR	**Alice Springs**	**67.99**	**104**	P	P	02 14 50.5	-2.3
	0.6nm,0.6s,baz=233,slow=5.5,SNR=6.1						
WRA	**Warramunga Arr**	**70.14**	**101**	P	P	02 15 04.7	-1.4
	0.3nm,0.6s,baz=230,slow=5.4,SNR=3.9						
BRTR	**Keskin Array B**	**75.93**	**343**	P	P	02 15 37.8	-2.0
	0.2nm,0.5s,baz=169,slow=7.3,SNR=3.1						
ILAR	**Eielson Array**	**146.14**	**17**	PKPbc	PKPbc	02 23 29.4	-1.5
	0.7nm,1.1s,baz=326,slow=3.3,SNR=4.1						
YKA	**Yellowknife Ar**	**150.63**	**351**	PKPbc	PKPdf	02 23 43.5	+4.6
	0.3nm,0.9s,baz=28,slow=2.2,SNR=5.1						

*IDC **08** 02:25:55.5±1.3,4.06S×133.57E,mb4.0/4,mb1 4.1/7, mb1mx3.9/13,ML3.6/3,Error ellipse: s-maj=69.1km s-min=21.1km az=71.0*
*NEIC **08** 02:25:57.2±0.8,3.99S×133.76E,h10km,mb4.1/3,Error ellipse: s-maj=17.0km s-min=12.2km az=83.0*

ISC 08 02:25:59.3±2.1,4.28S±0.06×133.7E±0.1,h43km±20km, n16,σ1$65/22,mb3.9/3,1C-1D,Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KAKA	**Kakadu**	**8.47**	**189**	⇓*i*P	**P**	**02 28 04.4**	**+2.2**
	11nm,0.6s						
KAKA				*i* S	**S**	**02 29 39.0**	**+1.5**
PMG	**Port Moresby**	**14.28**	**112**	*e*P	**P**	**02 29 18.8**	**-2.0**
	166nm,2.1s						
WRAB	**Tennant Creek**	**15.57**	**178**	*e*P	**P**	**02 29 41.2**	**+3.6**
	18nm,0.8s						
WB2	**Warramunga Arr**	**15.58**	**178**	*e*P	**P**	**02 29 36.1**	**-1.5**
WB2				*e*S	**S**	**02 32 27.6**	**-1.5**
WRA	**Warramunga Arr**	**15.58**	**178**	Pn	**P**	**02 29 35.7**	**-2.0**
	0.1nm,0.3s,baz=7.1,slow=13,SNR=12						
WRA				Sn	**S**	**02 32 26.7**	**-2.4**
	0.2nm,0.3s,baz=6.3,slow=22,SNR=5.7						
FITZ	**Fitzroy Crossi**	**15.85**	**209**	*e*P	**P**	**02 29 42.0**	**+0.9**
	3.0nm,0.6s						
FITZ				*e*S	**S**	**02 32 34.4**	**-1.0**
FITZ	**Fitzroy Crossi**	**15.85**	**209**	Pn	**P**	**02 29 40.3**	**-0.8**
	0.3nm,0.3s,baz=27,slow=12,SNR=8.8						
FITZ				Sn	**S**	**02 32 34.3**	**-1.0**
	0.7nm,0.3s,baz=179,slow=12,SNR=12						
AS12	**Alice Springs**	**19.28**	**179**	⇑*i*P	**P**	**02 30 26.6**	**+3.4**
	4.2nm,0.6s						
ASAR	**Alice Springs**	**19.28**	**179**	P	**P**	**02 30 25.9**	**+2.7**
	0.4nm,0.3s,baz=8.3,slow=11,SNR=36						
ASAR				S	**S**	**02 33 54.1**	**+1.0**
	0.1nm,0.3s,baz=358,slow=26,SNR=3.9						
CTA	**Charters Tower**	**19.90**	**143**	P	**P**	**02 30 32.1**	**+2.1**
	4.7nm,1.0s,baz=349,slow=10,SNR=3.6						
CTAO	**Charters Tower**	**19.90**	**143**	*e*P	**P**	**02 30 32.0**	**+2.0**
	13nm,1.2s						
STKA	**Stephens Creek**	**28.43**	**166**	P	**P**	**02 31 53.4**	**+1.2**
	1.2nm,0.7s,mb3.7,baz=342,slow=9.6,SNR=2.9						
STKA	**Stephens Creek**	**28.43**	**166**	P	**P**	**02 31 53.4**	**+1.2**
MKAR	**Makanchi Array**	**68.08**	**325**	P	**P**	**02 36 55.8**	**-0.8**
	1.5nm,0.9s,mb4.0,baz=127,slow=7.2,SNR=3.8						
ZAL	**Zalesovo**	**70.87**	**332**	P	**P**	**02 37 12.4**	**-1.2**
	0.9nm,0.4s,mb4.1,baz=280,slow=11,SNR=2.6						
SML	**Sawmill**	**88.07**	**28**	*e*P	**P**	**02 38 47.6**	**+1.6**
SML				*e*		02 39 08.6	

*SKO **08** 02:30:29.3,41.96N×21.52E,h8km,ML3.3*
*THE **08** 02:30:30.3,41.95N×21.50E,h3km,ML2.9*

ISC 08 02:30:29.4±0.6,41.97N±0.04×21.49E±0.05,h7km±6km, n14,σ0$97/24,4C-4D,Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SKO	**Skopje**	**0.04**	**281**	⇓*i*Pg	**Pg**	**02 30 31.3**	**+0.4**
SKO				Smax		02 30 32.0	
	comp=N,35nm,0.3s						
SKO				Smax		02 30 32.0	
	comp=E,15nm,0.3s						
SKO				⇑*i*Sg	**Sg**	**02 30 32.2**	**+0.3**
SKO				Smax		02 30 34.0	
	comp=N,25nm,0.3s						
KPJ	**Monastery St.**	**0.70**	**69**	*i* Pg	**Pg**	**02 30 42.6**	**-0.8**
KPJ				⇓*i*Sg	**Sg**	**02 30 54.3**	**+1.6**
KPJ				⇑*i*		02 30 55.3	
BIA	**Bitola**	**0.95**	**187**	⇓*i*Pg	**Pg**	**02 30 47.1**	**-1.4**
BIA				*i* Sg	**Sg**	**02 31 01.4**	**+0.2**
OHR	**Ohrid**	**1.00**	**211**	⇑*i*Pg	**Pg**	**02 30 48.7**	**-0.7**
OHR				⇑*i*Sg	**Sg**	**02 31 02.9**	**+0.2**
OHR				⇓*i*Sg	**Sg**	**02 31 03.0**	**+0.3**
BCI	**Bajram Curri**	**1.13**	**291**	*i* Pg	**Pg**	**02 30 51.4**	**-0.6**
FNA	**Florina**	**1.18**	**184**	*e*Pg	**Pg**	**02 30 52.1**	**-1.0**
FNA				*e*Sg	**Sg**	**02 31 08.5**	**-0.4**
PUK	**Puka**	**1.19**	**274**	*i* Pg	**Pg**	**02 30 51.6**	**-1.6**
GRG	**Griva**	**1.22**	**145**	*e*Pb	**Pb**	**02 30 52.5**	**+0.1**
GRG				*e*Sb	**Sb**	**02 31 09.8**	**+1.7**
QSH	**Qafa e Shtames**	**1.26**	**250**	*i* Pg	**Pg**	**02 30 56.0**	**+1.3**
QSH				*i* Sg	**Sg**	**02 31 14.0**	**+2.5**
KNT	**Kendrikon**	**1.33**	**127**	*e*Pb	**Pb**	**02 30 54.1**	**-0.2**
KNT				*e*Sb	**Sb**	**02 31 12.4**	**+1.0**
SRS	**Serrai**	**1.79**	**117**	*e*Pb	**Pb**	**02 31 01.2**	**-1.0**
SOH	**Sokhos**	**1.81**	**128**	*e*Pb	**Pb**	**02 31 01.7**	**-0.8**
SOH				*e*Sb	**Sb**	**02 31 24.8**	**-0.5**
OUR	**Ouranopolis**	**2.49**	**130**	*e*Pn	**Pn**	**02 31 11.2**	**+0.2**
AGG	**Agios Georgios**	**3.01**	**167**	*e*Pn	**Pn**	**02 31 18.5**	**0.0**

*BJI **08** 03:00:55.1,63.60N×149.90W,h139km*
*NEIC **08** 03:00:57.1,63.65N×149.86W,h139km,mb3.7/2,After AEIC.*
*IDC **08** 03:00:58.2±1.9,63.89N×149.88W,h142km±13km, mb3.6/13,mb1 3.7/17,mb1mx3.7/23,MS3.0/1,Ms1 3.1/1, ms1mx2.3/25,Error ellipse: s-maj=25.8km s-min=10.8km az=45.0*

ISC 08 03:00:55.9±0.2,63.66N±0.02×149.89W±0.06, h140km±2km,n102,σ0$93/117,mb3.8/15,1C,Central Alaska

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TRF	**Thorofare Moun**	**0.28**	**220**	P	**P**	**03 01 16.7**	**+1.0**
TRF				S	**S**	**03 01 30.9**	**+0.1**
MCK	**McKinley**	**0.43**	**80**	P	**P**	**03 01 17.1**	**+0.7**
MCK				S	**S**	**03 01 31.5**	**-0.5**
KTH	**Kantishna Hill**	**0.47**	**257**	P	**P**	**03 01 17.1**	**+0.5**
KTH				S	**S**	**03 01 31.9**	**-0.4**
RND	**Reindeer**	**0.53**	**119**	P	**P**	**03 01 17.3**	**+0.5**
BWN	**Browne**	**0.54**	**20**	P	**P**	**03 01 17.9**	**+1.0**
HUR	**Hurricane**	**0.70**	**170**	P	**P**	**03 01 18.3**	**+0.6**
HUR				S	**S**	**03 01 34.2**	**-0.3**
NEA	**Nenana**	**0.98**	**21**	P	**P**	**03 01 20.4**	**+0.7**
CUT	**Chulitna**	**1.28**	**188**	P	**P**	**03 01 23.2**	**+0.5**
DHY	**Denali Highway**	**1.28**	**116**	P	**P**	**03 01 23.7**	**+1.0**
CCB	**Clear Creek Bu**	**1.35**	**42**	P	**P**	**03 01 24.1**	**+0.7**
CCB				S	**S**	**03 01 43.8**	**-0.7**
MLY	**Manley**	**1.42**	**345**	P	**P**	**03 01 24.8**	**+0.6**
MDM	**Murphy Dome**	**1.49**	**28**	P	**P**	**03 01 25.8**	**+0.9**
MDM				S	**S**	**03 01 45.9**	**-1.3**
HDA	**Harding Lake**	**1.49**	**59**	P	**P**	**03 01 25.6**	**+0.6**
COLA	**College**	**1.51**	**35**	P	**P**	**03 01 26.0**	**+0.8**
COLA				S	**S**	**03 01 46.7**	**-0.9**
GLM	**Gilmore Dome**	**1.72**	**38**	P	**P**	**03 01 28.3**	**+0.8**
ILAR	**Eielson Array**	**1.72**	**48**	P	**P**	**03 01 27.9**	**+0.4**
	9.9nm,0.3s,baz=229,slow=12,SNR=260						
ILAR				S	**S**	**03 01 50.7**	**-1.1**
	19nm,0.3s,baz=235,slow=20,SNR=26						
IL1	**Eielson Array**	**1.72**	**48**	P	**P**	**03 01 27.9**	**+0.4**
SKT	**Skwentna**	**1.85**	**205**	P	**P**	**03 01 29.3**	**+0.3**
GHO	**Glory Hole Cre**	**1.95**	**166**	P	**P**	**03 01 30.8**	**+0.6**
SML	**Sawmill**	**2.00**	**158**	P	**P**	**03 01 30.9**	**+0.1**
PWA	**Palmer West**	**2.02**	**180**	P	**P**	**03 01 31.6**	**+0.5**
PMR	**Palmer**	**2.11**	**170**	P	**P**	**03 01 32.3**	**+0.1**
PAX	**Paxson**	**2.11**	**107**	P	**P**	**03 01 33.5**	**+1.3**
PAX				S	**S**	**03 02 00.4**	**+0.4**
SCM	**Sheep Creek Mo**	**2.18**	**146**	P	**P**	**03 01 33.1**	**0.0**
SUA	**Susitna One**	**2.24**	**191**	P	**P**	**03 01 34.5**	**+0.7**
TOA	**Tolsona**	**2.31**	**131**	P	**P**	**03 01 35.4**	**+0.7**
KNK	**Knik Glacier**	**2.36**	**163**	P	**P**	**03 01 35.3**	**0.0**
PMS	**Palmer South**	**2.43**	**176**	P	**P**	**03 01 36.5**	**+0.2**
GOU	**Gould Hall**	**2.48**	**179**	*e*P	**P**	**03 01 37.6**	**+0.6**
GOU				*e*S	**S**	**03 02 06.7**	**-1.6**
FIB	**Fire Island**	**2.51**	**183**	P	**P**	**03 01 38.0**	**+0.7**
RC01	**Rabbit Creek A**	**2.58**	**178**	P	**P**	**03 01 38.3**	**0.0**
RC01				S	**S**	**03 02 08.4**	**-2.1**
DOT	**Dot Lake**	**2

NB2	**NORSAR Subarra**	**54.80**	**11**	P		**P**		**03 10 10.1**	**-2.5**	
	0.5nm,0.6s,mb3.4,baz=350,slow=7.4									
NOA	**NORSAR Array B**	**54.80**	**11**	P		**P**		**03 10 09.8**	**-2.9**	
	2.7nm,1.1s,mb3.9,baz=352,slow=7.3,SNR=4.1									
NOA				LR		LR		03 31 26.3		
	comp=Z,13nm,19.6s,baz=315,slow=34									
FINES	**FINESS Array B**	**55.17**	**2**	P		**P**		**03 10 13.9**	**-1.4**	
	1.3nm,0.7s,mb3.8,baz=10,slow=7.3,SNR=10									
ZAL	**Zalesovo**	**55.30**	**324**	P		**P**		**03 10 14.2**	**-2.1**	
	1.6nm,0.9s,mb3.7,baz=212,slow=0.2,SNR=4.4									
BVAR	**Borovoye Array**	**59.49**	**333**	P		**P**		**03 10 43.8**	**-1.9**	
	1.8nm,0.4s,mb4.2,baz=37,slow=7.4,SNR=14									
SSE	**Sheshan**	**62.15**	**284**	⇑P		**P**		**03 11 04.6**	**+0.6**	
NJ2	**Nanjing**	**62.33**	**287**	*e*P		**P**		**03 11 07.0**	**+1.8**	
MKAR	**Makanchi Array**	**62.46**	**322**	P		**P**		**03 11 03.7**	**-2.1**	
	1.2nm,0.4s,mb4.1,baz=32,slow=7.5,SNR=20									
MKAR	**Makanchi Array**	**62.46**	**322**	P		**P**		**03 11 03.7**	**-2.2**	
WMQ	**Urumqi**	**63.61**	**317**	*e*P		**P**		**03 11 15.1**	**+1.8**	
AKASG	**Malin Array Be**	**65.98**	**1**	P		**P**		**03 11 27.9**	**-0.6**	
	1.2nm,0.9s,mb3.7,baz=359,slow=6.4,SNR=4.5									
GERES	**GERESS Array B**	**67.09**	**12**	P		**P**		**03 11 35.2**	**-0.4**	
	0.2nm,0.4s,mb3.3,slow=8.0,SNR=4.6									

*IDC **08** 03:12:45.5±1.2,33.89S×72.12W,mb4.0/2,mb1 4.1/6, mb1mx4.0/15,ML4.1/4,MS3.5/3,Ms1 3.4/3,ms1mx3.2/16, Error ellipse: s-maj=41.2km s-min=22.2km az=83.0*

*GUC **08** 03:12:48.1±0.8,33.89S×72.24W,h38km±1km,MD4.1, ML4.1*

*NEIC **08** 03:12:48.1,33.89S×72.24W,h38km,mb4.3/1, MD4.1(GUC),After GUC.*

ISC 08 03:12:48.2±0.7,33.87S±0.03×72.32W±0.05,h37km±10km, n43,σ0984/65,mb4.0/3,MS3.5/1,12C-9D,Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h m s		ISC
LCCH	**Las Cruces**	**0.74**	**58**	⇑*i*P	**P**	**03 13 01.0**		**-1.3**
LCCH				*i* S	**S**	**03 13 11.8**		**-0.7**
LNV	**Longovilo**	**0.76**	**96**	⇓*i*P	**P**	**03 13 01.5**		**-1.0**
LNV				*i* S	**S**	**03 13 11.5**		**-1.5**
IHA	**Instituto Hidr**	**1.02**	**34**	⇓*i*P	**P**	**03 13 06.3**		**+0.2**
IHA				*i* S	**S**	**03 13 19.2**		**-0.3**
TACH	**Talagante**	**1.18**	**80**	⇑*i*P	**P**	**03 13 07.4**		**-1.0**
TACH				*i* S	**S**	**03 13 23.1**		**-0.4**
SFDO	**San Fernando**	**1.31**	**125**	⇑*i*P	**P**	**03 13 10.2**		**-0.3**
SFDO				*i* S	**S**	**03 13 27.0**		**0.0**
RCDM	**Rinconada Maip**	**1.32**	**74**	⇑*i*P	**P**	**03 13 09.7**		**-0.8**
RCDM				*i* S	**S**	**03 13 26.4**		**-0.8**
RCDM				AMP		03 13 27.6		
	comp=N,3μm,0.5s							
PUEX	**Pudahuel**	**1.38**	**72**	*i* P	**P**	**03 13 11.2**		**-0.1**
PUEX				*i* S	**S**	**03 13 28.7**		**+0.2**
PUEX				AMP		03 13 38.0		
	comp=N,6μm,0.5s							
CHCH	**Chadas Angostu**	**1.39**	**93**	⇑*i*P	**P**	**03 13 11.2**		**-0.3**
CHCH				*i* S	**S**	**03 13 28.5**		**-0.4**
ROCH	**El Roble**	**1.42**	**51**	⇓*i*P	**P**	**03 13 12.2**		**+0.3**
ROCH				*i* S	**S**	**03 13 31.4**		**+1.8**
ANTU	**Antumapu**	**1.44**	**78**	⇑*i*P	**P**	**03 13 12.1**		**-0.1**
ANTU				*i* S	**S**	**03 13 30.3**		**+0.1**
ANTU				AMP		03 13 31.7		
	comp=N,4μm,0.4s							
SAN	**Santiago**	**1.45**	**74**	⇑*i*P	**P**	**03 13 12.4**		**0.0**
SAN				*i* S	**S**	**03 13 30.4**		**0.0**
SAN				AMP		03 13 32.0		
	comp=N,4μm,0.7s							
CACH	**El Canelo**	**1.45**	**100**	⇓*i*P	**P**	**03 13 12.8**		**+0.4**
CACH				*i* S	**S**	**03 13 31.5**		**+1.1**
PACH	**Papudo**	**1.53**	**29**	⇑*i*P	**P**	**03 13 13.4**		**0.0**
PACH				*i* S	**S**	**03 13 33.4**		**+1.1**
PCH	**Pirque**	**1.53**	**81**	⇑*i*P	**P**	**03 13 13.2**		**-0.3**
PCH				*i* S	**S**	**03 13 32.6**		**+0.2**
FSR	**Penalolen**	**1.55**	**76**	*i* P	**P**	**03 13 13.8**		**+0.1**
FSR				*i* S	**S**	**03 13 33.1**		**+0.3**
FSR				AMP		03 13 38.7		
	comp=E,3μm,0.6s							
PEL	**Peldehue**	**1.55**	**62**	⇑*i*P	**P**	**03 13 14.2**		**+0.4**
PEL				*i* S	**S**	**03 13 33.3**		**+0.4**
PEL				AMP		03 13 40.0		
	comp=N,8μm,0.4s							
CLCH	**Cerro Calan**	**1.56**	**73**	⇓*i*P	**P**	**03 13 14.0**		**0.0**
CLCH				*i* S	**S**	**03 13 33.6**		**+0.3**
CLCH				AMP		03 13 52.5		
	comp=N,3μm,0.7s							
CLCH				AMP		03 13 53.3		
	comp=N,3μm,0.7s							
TALC	**Talca**	**1.62**	**160**	*i* P	**P**	**03 13 17.3**		**+2.5**
TALC				*i* S	**S**	**03 13 38.2**		**+3.5**
TALC				AMP		03 13 41.7		
	comp=N,8μm,0.7s							
CICH	**Cipreses**	**1.64**	**106**	⇑*i*P	**P**	**03 13 15.3**		**+0.2**
CICH				*i* S	**S**	**03 13 34.9**		**-0.2**
LMEL	**Las Melosas**	**1.77**	**90**	⇓*i*P	**P**	**03 13 17.0**		**+0.2**
LMEL				*i* S	**S**	**03 13 39.0**		**+0.8**
LMEL				AMP		03 13 41.9		
	comp=N,2μm,0.3s							
FCH	**Farellones**	**1.78**	**73**	⇓*i*P	**P**	**03 13 17.5**		**+0.4**
FCH				*i* S	**S**	**03 13 39.7**		**+1.0**
FCH				AMP		03 13 46.7		
	comp=E,2μm,0.3s							
PTCH	**Petorca**	**1.99**	**36**	*i* P	**P**	**03 13 20.1**		**+0.2**
PTCH				*i* S	**S**	**03 13 44.9**		**+1.1**
PTCH				AMP		03 13 49.8		
	comp=E,3μm,0.4s							
COCH	**Cobquecura**	**2.29**	**189**	AMP		03 14 09.8		
	comp=E,592nm,0.6s							
CCHI	**Chillan**	**2.73**	**176**	AMP		03 14 20.7		
	comp=E,2μm,0.7s							
CMCH	**Combarbala**	**2.91**	**23**	⇓*i*P	**P**	**03 13 33.2**		**0.0**
CMCH				*i* S	**S**	**03 14 07.1**		**-0.4**
MDZ	**Mendoza**	**3.07**	**72**	*e*P	**P**	**03 13 39.9**		**+4.4**
MDZ				*e*		03 13 43.9		
MDZ				S	**S**	**03 13 59.8**		**-12**
OVCH	**Ovalle**	**3.39**	**17**	⇓*i*P	**P**	**03 13 40.0**		**0.0**
OVCH				*i* S	**S**	**03 14 18.9**		**-0.7**
OVCH				AMP		03 14 43.5		
	comp=E,802nm,0.7s							
TLL	**Tololo Astrono**	**3.91**	**20**	⇑*i*P	**P**	**03 13 47.2**		**-0.3**
TLL				*i* S	**S**	**03 14 32.4**		**-0.4**
PLCA	**Paso Flores**	**6.99**	**169**	Pn	**P**	**03 14 30.6**		**-0.1**
	comp=E,0.6nm,0.3s,baz=334,slow=9.9,SNR=9.6							
PLCA				Lg		03 16 25.5		
	comp=E,0.1nm,0.3s,baz=63,slow=5.4,SNR=4.1							
PLCA	**Paso Flores**	**6.99**	**169**	Pn	**P**	**03 14 30.6**		**-0.1**
PLCA				Lg		03 16 25.5		
TRQA	**Tornquist**	**9.37**	**119**	*e*P	**P**	**03 15 02.2**		**-1.5**
	comp=E,1.1nm,0.8s							
LVC	**Limon Verde**	**11.61**	**16**	Pn	**P**	**03 15 28.5**		**-5.9**
	comp=E,0.5nm,0.3s,baz=222,slow=4.9,SNR=5.9							
LVC				LR	LR	03 20 02.4		
	comp=E,149nm,21.8s,baz=230,slow=38							
LVC	**Limon Verde**	**11.61**	**16**	*e*P	**P**	**03 15 27.9**		**-6.6**
LVC				LR	LR	03 20 02.4		
CPUP	**Villa Florida**	**14.99**	**64**	Pn	**P**	**03 16 16.3**		**-2.8**
	comp=E,0.1nm,0.3s,baz=66,slow=9.8,SNR=2.8							
CPUP				LR	LR	03 22 32.5		
	comp=E,173nm,20.2s,baz=272,slow=40							
CPUP	**Villa Florida**	**14.99**	**64**	P	**P**	**03 16 16.3**		**-2.8**
	comp=E,1.9nm,0.9s							
CPUP				LR	LR	03 22 32.5		
LPAZ	**La Paz**	**17.91**	**13**	P	**P**	**03 16 57.0**		**+0.8**
	comp=E,0.4nm,0.3s,baz=189,slow=8.5,SNR=27							
LPAZ	**La Paz**	**17.91**	**13**	P	**P**	**03 16 57.0**		**+0.8**
BDFB	**Brasilia**	**28.46**	**56**	LR	LR	03 30 38.6		
	comp=E,142nm,20.9s,MS3.5,baz=296,slow=38							
TXAR	**Lajitas Array**	**69.51**	**331**	P	**P**	**03 23 56.9**		**+1.9**
	comp=E,0.4nm,0.6s,mb3.6,baz=152,slow=8.0,SNR=7.7							
TXAR	**Lajitas Array**	**69.51**	**331**	P	**P**	**03 23 56.9**		**+1.9**
DBIC	**Dimbokro**	**75.36**	**71**	P	**P**	**03 24 30.4**		**+0.3**
	comp=E,2.5nm,0.8s,mb4.2,baz=204,slow=7.5,SNR=5.8							
BW06	**Boulder Array**	**83.54**	**333**	P	**P**	**03 25 11.4**		**-2.1**
	comp=E,3.7nm,1.5s,mb4.3							
WRA	**Warramunga Arr**	**120.76**	**209**	PKP	PKPdf	03 31 39.3		+2.4
	comp=E,0.4nm,0.9s,baz=156,slow=1.7,SNR=12							

*NEIC **08** 03:18:14.8,53.42N×164.71W,h20km,mb4.5/8, ML3.8(AEIC),After AEIC.*

*IDC **08** 03:18:16.0±6.5,53.78N×164.96W,h23km±42km,mb4.0/17, mb1 4.1/20,mb1mx4.1/27,ML3.6/3,MS3.3/6,Ms1 3.3/6, ms1mx3.0/29,Error ellipse: s-maj=21.9km s-min=13.0km az=175.0*

ISC 08 03:18:16.6±0.7,53.61N±0.07×164.90W±0.06,h50km±5km, n64,σ1911/64,mb4.2/24,MS3.2/6,1D,Unimak Island region

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h m s		ISC
AKA	**Akutan**	**0.74**	**316**	P	**P**	**03 18 31.1**		**+0.2**
AKA				S	**S**	**03 18 42.9**		**+1.3**
AHB	**Akutan Harbor**	**0.75**	**314**	P	**P**	**03 18 31.1**		**+0.1**
WESS	**West Dahl Sout**	**0.88**	**7**	P	**P**	**03 18 32.6**		**-0.2**
WESS				S	**S**	**03 18 46.9**		**+2.0**
WESE	**West Dahl East**	**0.89**	**12**	P	**P**	**03 18 32.4**		**-0.5**
UNV	**Unalaska Valle**	**0.98**	**285**	P	**P**	**03 18 33.1**		**-1.2**
UNV				S	**S**	**03 18 47.1**		**-0.3**
MTBL	**Makushin Table**	**1.12**	**290**	P	**P**	**03 18 35.8**		**-0.4**
MCIR	**Makushin Cirqu**	**1.23**	**287**	P	**P**	**03 18 37.5**		**-0.3**
SSLW	**Shishaldin Wes**	**1.25**	**21**	P	**P**	**03 18 37.5**		**-0.6**
WTUG	**Tugumak**	**1.28**	**13**	P	**P**	**03 18 38.3**		**-0.2**
FALS	**False Pass**	**1.53**	**34**	P	**P**	**03 18 40.4**		**-1.6**
BALA	**Baldy Mountain**	**2.01**	**37**	P	**P**	**03 18 50.1**		**+1.3**
DRIA	**Deer Island**	**2.06**	**48**	P	**P**	**03 18 48.3**		**-1.2**
DTNA	**Dutton South F**	**2.19**	**44**	P	**P**	**03 18 50.6**		**-0.7**
NIKO	**Nikolski**	**2.46**	**257**	P	**P**	**03 18 55.3**		**+0.1**
PN7A	**Pavlof North-7**	**2.49**	**42**	P	**P**	**03 18 56.8**		**+1.2**
BLHA	**Black Hill**	**2.67**	**37**	P	**P**	**03 18 58.4**		**+0.2**
SDN	**Sand Point**	**3.10**	**54**	P	**P**	**03 19 03.5**		**-0.8**
SDPT	**Sand Point**	**3.11**	**54**	*e*P	**P**	**03 19 04.2**		**-0.3**
ATKA	**Atka Island**	**5.80**	**260**	P	**P**	**03 19 36.7**		**-5.5**
SVW	**Sparrevohn**	**9.03**	**30**	*e*P	**P**	**03 20 29.3**		**+2.3**
	6.8nm,0.6s							
PMS	**Palmer South**	**11.24**	**41**	*e*P	**P**	**03 20 58.4**		**+1.3**
	4.9nm,0.5s							
TNA	**Tin City**	**12.09**	**354**	P	**P**	**03 21 04.0**		**-4.4**
FX1	**Attu Island--F**	**13.15**	**276**	Pn	**P**	**03 21 23.9**		**+1.3**
	0.7nm,0.3s,baz=254,slow=15,SNR=6.6							
IMA	**Indian Mountai**	**13.68**	**20**	*e*P	**P**	**03 21 27.8**		**-1.5**
COLA	**College**	**14.21**	**31**	P	**P**	**03 21 32.8**		**-3.4**
ILAR	**Eielson Array**	**14.43**	**32**	Pn	**P**	**03 21 35.8**		**-3.4**
	0.1nm,0.3s,baz=227,slow=11,SNR=4.2							
DAWY	**Dawson**	**16.72**	**41**	*e*P	**P**	**03 22 09.5**		**+1.2**
DLBC	**Dease Lake**	**19.92**	**62**	P	**P**	**03 22 47.1**		**+0.6**
	0.2nm,0.3s,baz=282,slow=16,SNR=7.2							
INK	**Inuvik**	**20.83**	**33**	P	**P**	**03 22 52.9**		**-3.0**
	1.4nm,0.5s,baz=234,slow=9.5,SNR=14							
INK				LR	LR	03 31 47.0		
	comp=Z,96nm,19.4s,MS3.2,baz=42,slow=39							
INK	**Inuvik**	**20.83**	**33**	P	**P**	**03 22 52.9**		**-3.0**
INK				LR	LR	03 31 47.0		
BBB	**Bella Bella**	**22.08**	**79**	LR	LR	03 29 53.3		
	comp=Z,59nm,18.1s,MS3.0,baz=66,slow=32							
YKW3	**Yellowknife Ar**	**27.37**	**51**	*e*P	**P**	**03 23 58.8**		**+0.2**
YKA	**Yellowknife Ar**	**27.38**	**51**	P	**P**	**03 24 00.2**		**+1.5**
	0.7nm,0.4s,mb3.5,baz=273,slow=9.3,SNR=29							
YKA				LR	LR	03 35 47.6		
	comp=Z,63nm,18.8s,MS3.2,baz=280,slow=38							
YKA	**Yellowknife Ar**	**27.38**	**51**	P	**P**	**03 24 00.2**		**+1.5**
YKA				LR	LR	03 35 47.6		
YBH	**Yreka Blue Hor**	**30.34**	**96**	P	**P**	**03 24 26.6**		**+1.2**
	5.0nm,1.3s,mb4.1,baz=321,slow=7.5,SNR=3.0							
NVAR	**Mina Array Bea**	**35.05**	**96**	P	**P**	**03 25 06.7**		**+0.4**
	1.5nm,0.8s,mb4.0,baz=310,slow=8.0,SNR=5.7							
NVAR	**Mina Array Bea**	**35.05**	**96**	P	**P**	**03 25 06.7**		**+0.4**
WUAZ	**Wupatki**	**41.11**	**94**	*e*P	**P**	**03 25 57.5**		**+0.5**
	3.0nm,0.7s,mb4.0							
MAJO	**Matsushiro**	**42.42**	**270**	*e*P	**P**	**03 26 07.5**		**-0.2**
MNTX	**Cornudas Mount**	**47.34**	**93**	*e*P	**P**	**03 26 47.1**		**0.0**
	1.9nm,0.8s,mb4.1							
DAG	**Dannarks Havn**	**48.14**	**10**	⇓*i*P	**P**	**03 26 53.0**		**+0.3**
	2.8nm,0.5s,mb4.5							
WMOK	**Wichita Mounta**	**49.14**	**85**	*e*P	**P**	**03 27 00.7**		**-0.3**
	2.0nm,0.7s,mb4.3							
TXAR	**Lajitas Array**	**50.07**	**94**	P	**P**	**03 27 07.7**		**-0.6**
	2.1nm,0.7s,mb4.3,baz=303,slow=5.5,SNR=27							
TXAR				LR	LR	03 47 10.4		
	comp=Z,34nm,21.1s,MS3.3,baz=355,slow=35							
JCT	**Junction City**	**51.54**	**89**	*e*P	**P**	**03 27 18.6**		**-0.8**
	7.9nm,0.8s,mb4.7							
ULN	**Ulaanbaatar**	**52.60**	**302**	*e*P	**P**	**03 27 26.0**		**-1.0**
	5.6nm,0.9s,mb4.5							
SCHQ	**Schefferville**	**52.65**	**46**	P	**P**	**03 27 26.4**		**-0.9**
	5.7nm,1.2s,mb4.4,baz=65,slow=19,SNR=2.0							
SONM	**Songino Array**	**52.95**	**302**	P	**P**	**03 27 29.2**		**-0.5**
	2.0nm,0.8s,mb4.1,baz=53,slow=5.5,SNR=17							
KEV	**Kevo**	**56.64**	**355**	*e*p	**P**	**03 27 54.4**		**-1.8**
ARCES	**ARCESS Array B**	**56.94**	**356**	P	**P**	**03 27 56.6**		**-1.7**
	3.0nm,0.7s,mb4.4,baz=22,slow=6.5,SNR=17							
JOF	**Joensuu**	**63.12**	**352**	*e*p	**P**	**03 28 39.2**		**-1.5**
KAF	**Kangasniemi**	**64.29**	**354**	*e*p	**P**	**03 28 47.3**		**-0.8**
	11nm,0.5s,mb5.1,baz=3.7,slow=6.2							
MKAR	**Makanchi Array**	**64.87**	**316**	LR	LR	03 58 32.8		
	comp=Z,47nm,21.1s,MS3.7,baz=12,slow=37							
FINES	**FINESS Array B**	**64.97**	**354**	P	**P**	**03 28 51.9**		**-0.7**
	5.2nm,0.6s,mb4.8,baz=25,slow=7.5,SNR=81							
NB2	**NORSAR Subarra**	**65.66**	**2**	P	**P**	**03 28 56.5**		**-0.5**
	1.6nm,0.7s,mb4.2,baz=359,slow=6.5							
NOA	**NORSAR Array B**	**65.66**	**2**	P	**P**	**03 28 56.8**		**-0.3**
	3.7nm,1.1s,mb4.3,baz=358,slow=6.5,SNR=6.0							
NOA				LR	LR	03 58 25.3		
	comp=Z,10nm,19.0s,MS3.1,baz=305,slow=37							
AKASG	**Malin Array Be**	**75.39**	**351**	P	**P**	**03 29 56.0**		**+0.1**
	2.4nm,0.5s,mb4.4,baz=6.2,slow=5.3,SNR=6.0							
KWP	**Kalwaria**	**76.94**	**355**	*e*P	**P**	**03 30 06.0**		**+1.3**
	14nm,1.0s,mb4.9							
GERES	**GERESS Array B**	**77.92**	**1**	P	**P**	**03 30 11.5**		**+1.4**
	0.4nm,0.6s,mb3.5,slow=4.0,SNR=4.9							
CMAR	**Chiang Mai Arr**	**78.93**	**286**	P	**P**	**03 30 17.2**		**+0.9**
	1.1nm,0.7s,mb3.9,baz=37,slow=4.5,SNR=6.0							
ESDC	**Sonseca Array**	**85.64**	**15**	P	**P**	**03 30 51.4**		**+0.9**
	0.8nm,0.6s,mb4.1,baz=334,slow=5.1,SNR=5.0							
BRTR	**Keskin Array B**	**85.67**	**346**	P	**P**	**03 30 52.5**		**+1.9**
	1.0nm,0.6s,mb4.3,baz=354,slow=3.6,SNR=5.7							
WRA	**Warramunga Arr**	**89.91**	**235**	P	**P**	**03 31 14.6**		**+3.2**
	0.2nm,0.8s,mb3.5,baz=31,slow=6.0,SNR=2.7							
ASAR	**Alice Springs**	**93.28**	**234**	P	**P**	**03 31 30.9**		**+3.9**
	0.1nm,0.3s,mb3.7,baz=34,slow=4.5,SNR=2.8							
QSPA	**South Pole Qui**	**143.38**	**180**	*e*PKP	PKPdf	03 37 49.7		+6.2

*NNC **08** 03:24:03.4±1.2,39.81N×63.11E,mpv4.0,Error ellipse: s-maj=13.6km s-min=8.2km az=174.0*

*BJI **08** 03:24:12.9,40.30N×63.40E,h14km*

*NEIC **08** 03:24:12.9±0.5,40.30N×63.35E,mb4.4/9,Error ellipse: s-maj=10.4km s-min=7.9km az=208.0*

NEIC Felt [IV] at Gazli.

*IDC **08** 03:24:12.6±0.8,40.17N×63.10E,h13km±3km,mb4.0/18, mb1 4.2/20,mb1mx4.1/24,ML4.3/2,MS3.1/4,Ms1 3.1/4, ms1mx2.8/24,Error ellipse: s-maj=17.3km s-min=12.5km az=155.0*

*MOS **08** 03:24:14.9±1.2,40.56N×63.21E,h33km,mb4.3/12,Error ellipse: s-maj=11.9km s-min=8.9km az=80.6*

MOS Felt (III-IV) at Gazli.

ISC 08 03:24:10.6±2.1,40.52N±0.05×63.30E±0.05,h3km±13km, h15km±.5km:pP-P,n89,σ1§17/92,mb4.2/27,MS3.0/2, 13C-4D,Northwestern Uzbekistan

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h m s		ISC
TAS	**Tashkent**	**4.62**	**78**	*e*PN	**Pn**	**03 25 22.5**		**-0.4**
TAS				pmax	pmax			
	comp=Z,100μm,1.2s							
KK31	**Karatay Array**	**5.98**	**62**	⇓Pn	**Pn**	**03 25 42.9**		**+0.8**
	comp=Z,4.6nm,0.3s,baz=241,slow=15,SNR=32							
KK31				⇑Lg		03 27 26.4		
	comp=Z,44nm,0.5s,baz=244,slow=29,SNR=5.4							
KKAR	**Karatay Array**	**5.98**	**62**	PN	**Pn**	**03 25 42.8**		**+0.7**
KKAR				pmax	pmax			
	comp=Z,2.0nm,0.2s							
AML	**Almayashu**	**7.99**	**75**	P	**Pn**	**03 26 10.3**		**0.0**
	SNR=16							
EKS2	**Erkin-Say**	**8.14**	**71**	P	**P**	**03 26 12.5**		**0.0**
	SNR=6.3							
UCH	**Uchtor**	**8.61**	**75**	P	**P**	**03 26 18.9**		**-0.1**
	SNR=7.8							
AAK	**Ala-Archa**	**8.66**	**72**	P	**P**	**03 26 20.1**		**+0.4**
	SNR=13							
USP	**Ospenovka**	**8.80**	**68**	P	**P**	**03 26 21.0**		**-0.6**
	SNR=11							
KBK	**Karagaybulak**	**8.99**	**72**	P	**P**	**03 26 24.5**		**+0.2**
	SNR=10							
AB31	**Akbulak array**	**9.05**	**346**	⇑Pn	**P**	**03 26 24.7**		**-0.5**
	comp=Z,1.2nm,0.3s							
AB31				⇑Lg		03 29 11.8		
	comp=Z,35nm,0.7s							
AB31	**Akbulak array**	**9.05**	**346**	P	**P**	**03 26 23.8**		**-1.3**
AB31				pmax	pmax			
	comp=Z,1.0nm,0.2s							
KZA	**Kyzart**	**9.13**	**76**	P	**P**	**03 26 27.1**		**+0.8**
	SNR=8.5							
ZRNK	**Zerenda**	**13.03**	**15**	⇑Pn	**P**	**03 27 18.5**		**-0.7**
	comp=Z,0.1nm,0.4s							
VOSK	**Vostochnaya**	**13.29**	**21**	⇑Pn	**P**	**03 27 21.4**		**-1.2**
	comp=Z,6.5nm,0.7s							
VOSK				⇑Lg		03 31 24.7		
	comp=Z,17nm,0.8s							
BVA0	**Borovoye Array**	**13.41**	**19**	⇑Pn	**P**	**03 27 25.9**		**+1.7**
	comp=Z,1.7nm,0.5s,baz=203,slow=14,SNR=55							
BVA0				⇑Lg		03 31 30.1		
	comp=Z,4.4nm,1.1s							
BVA0	**Borovoye Array**	**13.41**	**19**	*i* P	**P**	**03 27 24.3**		**+0.1**
BVAR	**Borovoye Array**	**13.41**	**19**	Pn	**P**	**03 27 24.0**		**-0.2**
	comp=Z,1.9nm,0.3s,baz=219,slow=9.5,SNR=30							
BVAR				Sn	**S**	**03 29 49.0**		**-6.0**
	comp=Z,2.2nm,0.3s,baz=210,slow=21,SNR=7.1							
BVAR				Lg		03 31 24.1		
	baz=232,slow=24,SNR=1.9							
BVAR				LR	LR	03 33 05.1		
	comp=Z,68nm,19.9s,baz=125,slow=39							
BRVK	**Borovoye**	**13.41**	**18**	⇓Pn	**P**	**03 27 25.9**		**+1.6**
	comp=Z,3.4nm,0.5s							
BRVK				⇓Lg		03 31 29.5		
	comp=Z,12nm,0.9s							
BRVK	**Borovoye**	**13.41**	**18**	*e*P	**P**	**03 27 23.5**		**-0.8**
KURK	**Kurchatov**	**14.77**	**41**	⇑Pn	**P**	**03 27 38.5**		**-3.5**
	comp=Z,2.0nm,0.7s,baz=238,slow=9.4,SNR=6.8							
KURK				⇑Lg		03 32 13.4		
	comp=Z,32nm,1.5s,baz=107,slow=6.8,SNR=5.7							
KURK	**Kurchatov**	**14.77**	**41**	*e*P	**P**	**03 27 40.3**		**-1.7**
KURK				*e*S	**S**	**03 30 14.5**		**-13**
MK31	**Makanchi Array**	**15.10**	**59**	⇓Pn	**P**	**03 27 45.7**		**-0.6**
	comp=Z,7.1nm,0.5s,baz=210,slow=40,SNR=56							
MKAR	**Makanchi Array**	**15.10**	**59**	Pn	**P**	**03 27 45.4**		**-0.9**
	comp=Z,0.7nm,0.3s,baz=249,slow=14,SNR=40							
MKAR				sP		03 27 53.5		
	comp=Z,2.8nm,0.3s,baz=244,slow=12,SNR=23							
MKAR				Lg		03 32 22.4		
	comp=Z,0.2nm,0.3s,baz=242,slow=29,SNR=3.1							
KIV	**Kislovodsk**	**15.64**	**289**	*e*P	**P**	**03 27 49.2**		**-4.3**
KIV				*i* S	**S**	**03 30 35.9**		**-12**
KIV				pmax	pmax			
	comp=Z,8.0nm,0.8s							
KIV				MLR	MLR			
	comp=Z,100nm,14.0s							
ARU	**Arti**	**16.22**	**351**	⇑*i*P	**P**	**03 27 59.2**		**-1.6**
ARU				*e*S	**S**	**03 30 59.6**		**-1.6**
ARU				pmax	pmax			
	comp=Z,8.0nm,0.7s							
ARU	**Arti**	**16.22**	**351**	*e*P	**P**	**03 28 05.1**		**+4.3**
	comp=Z,9.2nm,0.5s							
SVE	**Sverdlovsk**	**16.41**	**355**	⇑*e*P	**P**	**03 27 53.0**		**-10**
SOC	**Sochi**	**17.76**	**288**	*e*P	**P**	**03 28 18.4**		**-1.9**
SOC				*e*S	**S**	**03 31 30.2**		**-6.5**
SOC				pmax	pmax			
	comp=Z,22nm,1.4s							
SOC				pmax	pmax			
	comp=N,14nm,0.9s							
SOC				pmax	pmax			
	comp=E,23nm,0.9s							
SOC				smax				
	comp=N,20nm,1.0s							
SOC				smax				
	comp=E,6.0nm,0.4s							
SOC				MLR	MLR			
	comp=Z,212nm,19.0s							
SOC				MLR	MLR			
	comp=N,40nm,14.0s							
SOC				MLR	MLR			

comp=Z,0.9nm,0.7s,mb3.7,baz=106,slow=8.1,SNR=4.4
NOA pP pP 03 31 30.9 +2.9
comp=Z,1.1nm,0.5s,baz=100,slow=8.5,SNR=7.7
NOA LR LR 03 48 54.4
comp=Z,14nm,18.7s,MS2.8,baz=195,slow=39
NOA NORSAR Array B 37.50 321 P **P** **03 31 26.8 -0.1**
NOA pmax pmax
comp=Z,1.0nm,0.7s
NOA pmax pmax
comp=N,1.0nm,0.5s
NOA MLR MLR
comp=Z,15nm,18.7s
NOA NORSAR Array B 37.50 321 P **P** **03 31 26.8 -0.2**
NOA pP pP 03 31 30.9 +2.9
NOA LR LR 03 48 54.4
TIXI Tiksi 44.46 24 *e*P **P** **03 32 25.5 +1.4**
TIXI pmax pmax
comp=Z,30nm,0.8s,mb5.1
TIXI Tiksi 44.46 24 P **P** **03 32 24.9 +0.9**
NJ2 Nanjing 44.94 83 *e*P **P** **03 32 28.5 +0.1**
SSE Sheshan 47.14 82 ⇑P **P** **03 32 45.9 0.0**
DBIC Dimbokro 69.12 261 P **P** **03 35 17.1 -3.2**
comp=Z,1.9nm,0.8s,mb4.1,baz=354,slow=7.7,SNR=3.9
DBIC pP pP 03 35 21.8 +0.4
comp=Z,1.9nm,0.8s,baz=262,slow=18,SNR=1.9
DBIC Dimbokro 69.12 261 P **P** **03 35 17.1 -3.2**
DBIC pmax pmax
comp=Z,2.0nm,0.8s
DBIC pmax pmax
comp=N,2.0nm,0.8s
INK Inuvik 70.76 7 P **P** **03 35 30.0 +0.6**
comp=N,0.6nm,0.5s,mb3.8,baz=24,slow=6.6,SNR=8.6
INK Inuvik 70.76 7 P **P** **03 35 30.0 +0.5**
INK pmax pmax
comp=Z,1.0nm,0.5s
INK Inuvik 70.76 7 P **P** **03 35 30.0 +0.6**
ILAR Eielson Array 72.41 13 P **P** **03 35 39.9 +0.5**
comp=Z,0.6nm,0.8s,mb3.6,baz=329,slow=4.1,SNR=5.7
ILAR pP pP 03 35 44.0 +3.6
comp=Z,0.3nm,0.6s,baz=329,slow=5.3,SNR=3.0
SCHQ Schefferville 75.90 333 P **P** **03 35 59.7 0.0**
comp=Z,4.0nm,0.9s,mb4.3,baz=33,slow=5.7,SNR=3.1
SCHQ pP pP 03 36 04.0 +3.2
comp=Z,1.6nm,0.6s,baz=252,slow=15,SNR=2.8
SCHQ Schefferville 75.90 333 P **P** **03 35 59.7 0.0**
SCHQ pP pP 03 36 04.0 +3.2
DIV Divide 75.97 14 *e*P **P** **03 36 00.9 +1.0**
comp=Z,3μm,0.8s
YKA Yellowknife Ar 77.32 359 P **P** **03 36 07.8 +0.4**
comp=Z,1.4nm,0.6s,mb4.0,baz=355,slow=6.4,SNR=52
YKA pP pP 03 36 12.9 +4.4
comp=Z,0.8nm,0.6s,baz=356,slow=6.3,SNR=13
YKA Yellowknife Ar 77.32 359 P **P** **03 36 07.8 +0.4**
YKA *PP pP 03 36 12.9 +4.4
YKA pmax pmax
comp=Z,1.0nm,0.6s
YKA pmax pmax
comp=N,1.0nm,0.6s
YKA Yellowknife Ar 77.32 359 P **P** **03 36 07.8 +0.4**
YKA pP pP 03 36 12.9 +4.4
ULM Lac du Bonnet 87.78 347 P **P** **03 37 02.6 +0.9**
comp=N,1.5nm,0.8s,mb4.3,baz=16,slow=5.8,SNR=3.0
WRA Warramunga Arr 89.22 117 P **P** **03 37 08.1 -1.2**
comp=N,1.0nm,0.8s,mb4.2,baz=322,slow=4.7,SNR=14
WRA Warramunga Arr 89.22 117 P **P** **03 37 08.1 -1.2**
WRA pmax pmax
comp=Z,1.0nm,0.8s
ASAR Alice Springs 91.50 120 P **P** **03 37 18.4 -1.4**
comp=Z,0.7nm,0.8s,mb4.0,baz=329,slow=5.5,SNR=5.5
CPUP Villa Florida 129.35 267 PKP PKPdf 03 43 20.6 -2.5
comp=Z,1.3nm,0.7s,baz=59,slow=4.9,SNR=2.7
CPUP Villa Florida 129.35 267 PKIKP PKPdf 03 43 20.7 -2.4
CPUP pmax pmax
comp=Z,1.0nm,0.7s
PLCA Paso Flores 145.28 254 PKPbc PKPbc 03 43 49.4 -0.3
comp=Z,1.1nm,0.7s,baz=57,slow=22,SNR=3.0
PLCA Paso Flores 145.28 254 PKIKP PKPdf 03 43 49.4 -2.2
PLCA pmax pmax
comp=Z,1.0nm,0.7s

MAN 08 03:45:07.0, 6.45N×125.03E, h19km, mb4.0, ML2.8, MS2.4, Mindanao

MEX 08 04:03:10.5±1.2, 16.41N×94.33W, h98km±21km, MD3.7, Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CMIG	**Matias Romero**	**0.86**	**322**	*i* P	P	04 03 28.1	-1.4
CMIG				*i* S	S	04 03 41.7	-2.0
HUIG	**Huatulco**	**1.82**	**250**	*i* P	P	04 03 38.7	-2.5
HUIG				*i* S	S	04 04 02.6	-1.2
VHO	**Vista Hermosa**	**2.39**	**286**	*i* P	P	04 03 48.1	-0.8
VHO				*i* S	S	04 04 15.3	-2.1

*BJI **08** 04:04:31.1, 19.00S×175.50W, h229km, mB4.8, mb4.9*
*NEIC **08** 04:04:33.2±0.2, 19.01S×175.53W, mb4.8/20, Error ellipse: s-maj=9.8km s-min=6.1km az=142.0*
*IDC **08** 04:04:33.7±0.7, 19.02S×175.62W, h231km±6km, mb4.2/16, mb1 4.3/17, mb1mx4.3/20, Error ellipse: s-maj=15.2km s-min=8.6km az=134.0*
ISC 08 04:04:32.2±1.7, 19.02S±0.08×175.57W±0.07, h232km±16km, h228km±3.7km:pP-P, n121, σ1s09/58, mb4.6/33, 13C-6D, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAR	**Rarotonga**	**15.00**	**101**	P	**P**	**04 07 52.8**	**-1.5**
	1.7nm,0.3s,baz=226,slow=9.4,SNR=4.4						
RAR				S	**S**	**04 10 43.0**	**+8.6**
	1.2nm,0.3s,baz=126,slow=23,SNR=3.1						
DZM	**Mont Dzumac**	**17.12**	**257**	*e*P	**P**	**04 08 21.4**	**+2.4**
NOUC	**Port Laguerre**	**17.25**	**257**	*e*P	**P**	**04 08 22.1**	**+1.7**
URZ	**Urewera**	**20.20**	**197**	P	**P**	**04 08 50.9**	**+0.4**
	22nm,0.4s,baz=356,slow=5.2,SNR=30						
URZ				S	**S**	**04 12 24.5**	**+5.4**
	3.1nm,0.5s,baz=128,slow=19,SNR=6.3						
SNZO	**South Karori**	**23.72**	**198**	*e*P	**P**	**04 09 23.7**	**-0.8**
	48nm,0.9s,mb5.1						
RPZ	**Rata Peaks**	**27.07**	**202**	P	**P**	**04 09 55.1**	**-0.2**
	5.8nm,0.4s,mb4.6,baz=315,slow=1.4,SNR=4.1						
ARMA	**Armidale**	**31.77**	**243**	*e*P	**P**	**04 10 36.7**	**-0.2**
CNB	**Canberra Magne**	**34.95**	**235**	*e*P	**P**	**04 11 04.1**	**+0.2**
	33nm,0.9s,mb4.9						
CTA	**Charters Tower**	**35.94**	**262**	*e*P	**P**	**04 11 12.5**	**+0.1**
	54nm,0.6s,mb5.3						
CTA	**Charters Tower**	**35.94**	**262**	P	**P**	**04 11 12.5**	**0.0**
	61nm,0.6s,mb5.3,baz=94,slow=10,SNR=77						
CTAO	**Charters Tower**	**35.94**	**262**	⇑*e*P	**P**	**04 11 12.7**	**+0.3**
	75nm,0.8s,mb5.3						
PMG	**Port Moresby**	**37.30**	**280**	P	**P**	**04 11 24.0**	**+0.1**
	63nm,0.9s,mb5.1,baz=87,slow=4.0,SNR=13						
TOO	**Toolangi**	**38.61**	**233**	*e*P	**P**	**04 11 34.8**	**+0.3**
	9.3nm,0.7s,mb4.4						
STKA	**Stephens Creek**	**40.49**	**243**	*e*P	**P**	**04 11 50.3**	**+0.2**
	7.8nm,0.6s,mb4.3						
STKA	**Stephens Creek**	**40.49**	**243**	P	**P**	**04 11 49.9**	**-0.2**
	16nm,0.9s,mb4.4,baz=91,slow=11,SNR=31						
WB2	**Warramunga Arr**	**47.08**	**260**	*e*P	**P**	**04 12 41.6**	**-1.1**
WB2				*e*S	**S**	**04 19 14.4**	**-1.6**
WRAB	**Tennant Creek**	**47.08**	**260**	*e*P	**P**	**04 12 41.7**	**-1.0**
	66nm,0.6s,mb5.1						
WRA	**Warramunga Arr**	**47.09**	**260**	P	**P**	**04 12 41.9**	**-1.0**
	21nm,0.5s,mb4.7,baz=97,slow=8.7,SNR=305						
WRA				PcP	PcP	04 14 11.2	0.0
	5.6nm,0.7s,baz=89,slow=3.8,SNR=6.9						
WRA				S	**S**	**04 19 15.1**	**-1.0**
	1.4nm,0.9s,baz=94,slow=13,SNR=5.4						
AS12	**Alice Springs**	**47.10**	**255**	||*i*P	**P**	**04 12 42.5**	**-0.3**
	53nm,0.7s,mb5.0						
AS12				*e*PCP	PcP	04 14 10.9	-0.3
ASAR	**Alice Springs**	**47.10**	**255**	P	**P**	**04 12 42.6**	**-0.2**
	66nm,0.6s,mb5.1,baz=88,slow=8.4,SNR=366						
ASAR				PcP	PcP	04 14 11.1	-0.1
	9.5nm,0.7s,baz=104,slow=3.7,SNR=13						
ASAR				S	**S**	**04 19 16.0**	**-0.2**
	0.8nm,0.8s,baz=94,slow=14,SNR=4.1						
KAKA	**Kakadu**	**50.30**	**269**	*e*P	**P**	**04 13 05.8**	**-1.6**
	36nm,0.6s,mb4.9						
FORT	**Forrest**	**51.98**	**245**	⇑*i*P	**P**	**04 13 18.9**	**-0.8**
	173nm,0.7s,mb5.6						
FITZ	**Fitzroy Crossi**	**55.51**	**261**	*e*P	**P**	**04 13 44.9**	**-0.6**
	9.3nm,0.9s,mb4.3						
KLBR	**Kellerberrin**	**60.76**	**244**	||*i*P	**P**	**04 14 20.8**	**-0.9**
	31nm,0.8s,mb5.0						
MUN	**Mundaring**	**62.03**	**243**	*e*P	**P**	**04 14 29.1**	**-1.1**
	17nm,0.7s,mb4.8						
MAT	**Matsushiro**	**70.42**	**322**	P	**P**	**04 15 22.2**	**-0.9**
MAT	**Matsushiro**	**70.42**	**322**	*e*P	**P**	**04 15 22.0**	**-1.1**
	12nm,0.8s,mb4.6						
QSPA	**South Pole Qui**	**71.04**	**180**	*e*P	**P**	**04 15 28.2**	**+2.1**
	5.6nm,0.9s,mb4.2						
YSS	**Yuzh-Sakhalins**	**75.64**	**332**	*e*P	**P**	**04 15 53.4**	**+0.1**
	19nm,0.8s,mb4.8						
KS15	**Wonju Array Si**	**77.35**	**317**	*e*P	**P**	**04 16 04.2**	**+1.2**
KS15				*e*PcP	PcP	04 16 12.1	-0.9
KS15				*e*pP	pP	04 16 54.3	-3.9
YBH	**Yreka Blue Hor**	**77.72**	**38**	P	**P**	**04 16 04.0**	**-0.9**
	1.1nm,0.7s,mb3.6,baz=185,slow=7.4,SNR=3.3						
YBH				pP	pP	04 17 00.8	+0.5
	2.4nm,0.9s,baz=193,slow=7.4,SNR=4.4						
NVAR	**Mina Array Bea**	**78.39**	**42**	P	**P**	**04 16 08.6**	**-0.1**
	1.1nm,0.8s,mb3.5,baz=219,slow=5.7,SNR=7.3						
NVAR				tx	tx	04 16 35.9	
	0.7nm,0.7s,baz=225,slow=8.9,SNR=2.9						
NVAR				pP	pP	04 17 01.6	-2.5
	3.1nm,1.2s,baz=213,slow=7.2,SNR=3.8						
NVAR	**Mina Array Bea**	**78.39**	**42**	P	**P**	**04 16 08.6**	**-0.1**
NVAR				pP	pP	04 17 01.6	-2.5
MDJ	**Mudanjiang**	**80.66**	**324**	P	**P**	**04 16 20.9**	**+0.4**
MDJ				AMB	AMB		
	comp=Z,11nm,1.0s,mb4.4						
MDJ				AMB	AMB		
	comp=Z,45nm,3.9s						
SPU	**Mount Spurr**	**82.13**	**11**	*e*P	**P**	**04 16 25.8**	**-2.0**
WHN	**Wuhan**	**83.44**	**305**	*e*P	**P**	**04 16 36.5**	**+1.3**
MAW	**Mawson**	**83.72**	**199**	P	**P**	**04 16 37.0**	**+1.3**
	comp=Z,6.2nm,0.7s,mb4.5,baz=166,slow=7.3,SNR=9.2						
MAW	**Mawson**	**83.72**	**199**	*e*P	**P**	**04 16 36.1**	**+0.4**
	comp=Z,15nm,1.1s,mb4.6						
TXAR	**Lajitas Array**	**84.33**	**57**	P	**P**	**04 16 41.6**	**+1.9**
	comp=Z,0.6nm,0.8s,baz=202,slow=6.7,SNR=7.8						
TXAR				tx	tx	04 17 08.7	
	comp=Z,1.0nm,0.6s,baz=219,slow=6.5,SNR=11						
MCK	**McKinley**	**85.06**	**12**	*e*P	**P**	**04 16 41.5**	**-0.9**
	comp=Z,14nm,0.9s,mb4.7						
MCK				*e*pP	pP	04 17 36.1	-2.6
MCK				*e*PP	PP	04 20 00.5	-3.4
COLA	**College**	**86.29**	**11**	*e*P	**P**	**04 16 47.6**	**-0.9**
	comp=Z,13nm,0.8s,mb4.7						
PDAR	**Pinedale Array**	**86.33**	**42**	P	**P**	**04 16 51.5**	**+2.3**
	comp=Z,0.6nm,0.9s,baz=180,slow=5.4,SNR=2.5						
PDAR				pP	pP	04 17 45.1	-0.5
	comp=Z,1.0nm,0.8s,baz=225,slow=4.2,SNR=4.7						
ILAR	**Eielson Array**	**86.39**	**12**	P	**P**	**04 16 48.0**	**-0.9**
	comp=Z,9.6nm,1.1s,mb4.4,baz=225,slow=5.5,SNR=33						
ILAR				pP	pP	04 17 44.5	-0.9
	comp=Z,1.6nm,0.8s,baz=227,slow=6.1,SNR=4.3						
BJT	**Baijiatuau**	**86.47**	**314**	*e*P	**P**	**04 16 49.8**	**-0.2**
	comp=Z,10nm,0.6s,mb4.7						
BOZ	**Bozeman (W)**	**86.52**	**39**	*e*P	**P**	**04 16 50.5**	**+0.5**
	comp=Z,9.2nm,1.7s,mb4.2						
ENH	**Enshi**	**87.13**	**303**	*e*P	**P**	**04 16 54.2**	**+0.9**
	comp=Z,35nm,1.0s,mb5.0						
ENH				*e*		04 17 36.9	
ENH				*e*		04 17 43.7	
XAN	**Xi'an**	**89.08**	**306**	P	**P**	**04 17 04.1**	**+1.7**
XAN				AMB	AMB		
	comp=Z,25nm,1.2s,mb4.9						
SNAA	**Sanae**	**89.40**	**178**	*e*P	**P**	**04 17 03.4**	**+0.3**
SNAA				*e*		04 18 14.9	
CMAR	**Chiang Mai Arr**	**91.80**	**289**	P	**P**	**04 17 17.1**	**+1.8**
	comp=Z,2.4nm,0.5s,mb4.4,baz=109,slow=3.0,SNR=23						
INK	**Inuvik**	**92.27**	**14**	*e*P	**P**	**04 17 15.5**	**-0.9**
	comp=Z,7.1nm,0.9s,mb4.6						
INK				*e*pP	pP	04 18 13.2	-0.1
INK				*e*sP	sP	04 18 37.6	+0.3
YKA	**Yellowknife Ar**	**94.23**	**24**	P	**P**	**04 17 25.0**	**-0.4**
	comp=Z,1.0nm,0.8s,mb3.9,baz=239,slow=4.3,SNR=26						
YKA				tx	tx	04 17 45.5	
	comp=Z,0.2nm,0.6s,baz=237,slow=4.6,SNR=6.4						
YKA				pP	pP	04 18 22.6	+0.3
	comp=Z,0.3nm,0.8s,baz=235,slow=4.2,SNR=2.9						
YKA				PKKPbc		04 34 25.1	
	comp=Z,0.1nm,0.5s,baz=46,slow=2.2,SNR=8.6						
YKA	**Yellowknife Ar**	**94.23**	**24**	P	**P**	**04 17 25.1**	**-0.4**
YKA				pP	pP	04 18 22.6	+0.3
YKA				PKKPbc		04 34 25.1	
SONM	**Songino Array**	**96.16**	**318**	P	**P**	**04 17 36.2**	**+1.6**
	comp=Z,0.6nm,0.8s,mb3.9,baz=146,slow=4.5,SNR=5.2						
ZAL	**Zalesovo**	**110.79**	**321**	PKiKP		04 22 37.4	
	comp=Z,1.4nm,0.5s,baz=7.2,slow=4.1,SNR=4.2						
MKAR	**Makanchi Array**	**111.85**	**314**	PKiKP		04 22 40.0	
	comp=Z,0.5nm,0.6s,baz=135,slow=1.7,SNR=4.5						
MKAR	**Makanchi Array**	**111.85**	**314**	PKPdf	PKPdf	04 22 40.0	+0.8
BVAR	**Borovoye Array**	**119.41**	**321**	PKP	PKPdf	04 22 54.7	+0.9
	comp=Z,2.3nm,0.6s,baz=90,slow=1.5,SNR=20						
SPITS	**Spitsbergen Ar**	**120.52**	**357**	PKP	PKPdf	04 22 56.2	+0.7
	comp=Z,10nm,1.3s,baz=84,slow=8.2,SNR=2.8						
ARCES	**ARCESS Array B**	**127.86**	**351**	PKP	PKPdf	04 23 10.5	+0.8
	comp=Z,5.2nm,0.9s,baz=24,slow=2.2,SNR=19						
FINES	**FINESS Array B**	**134.96**	**345**	PKiKP		04 23 19.9	
	comp=Z,0.8nm,0.7s,baz=90,slow=3.8,SNR=5.6						
FINES				PKP	PKPdf	04 23 25.3	+2.1
	comp=Z,1.3nm,0.6s,baz=45,slow=2.7,SNR=8.2						
NB2	**NORSAR Subarra**	**137.75**	**355**	PKP		04 23 29.5	
	comp=Z,0.6nm,0.6s,baz=13,slow=2.6						
NOA	**NORSAR Array B**	**137.75**	**355**	PKP	PKPdf	04 23 29.4	+1.1
	comp=Z,0.7nm,0.7s,baz=15,slow=4.2,SNR=3.3						
HFS	**Hagfors**	**138.40**	**353**	PKhKP		04 23 21.4	
	comp=Z,1.0nm,0.7s,baz=180,slow=1.4,SNR=5.7						
HFS				PKP	PKPdf	04 23 32.5	+3.0
HFS	**Hagfors**	**138.40**	**353**	PKP	PKPdf	04 23 21.4	-8.1
HFS				PKP	PKPdf	04 23 32.5	+3.0
AKASG	**Malin Array Be**	**142.77**	**334**	PKhKP		04 23 34.8	
	comp=Z,2.0nm,0.5s,baz=41,slow=3.8,SNR=12						
EKA	**Eskdalemuir Ar**	**143.29**	**7**	PKhKP		04 23 36.0	
	comp=Z,1.0nm,0.5s,baz=342,slow=2.6,SNR=4.0						
MALT	**Malatya**	**144.79**	**310**	*e*P		04 23 27.6	
BSEG	**Bad Segeberg**	**144.86**	**354**	*e*PKPbc	PKPbc	04 23 42.2	+0.8
KSP	**Ksiaz**	**146.88**	**346**	*e*P	PKPdf	04 23 48.0	+3.4
CLL	**Collm**	**147.08**	**350**	||*i*PKP1	PKPdf	04 23 49.0	+4.1
CLL				*e*PKPK		04 24 47.0	
CRVS	**Cervenica-Dubn**	**147.18**	**339**	*e*PKP	PKPdf	04 23 47.6	+2.5
CRVS				*e*		04 23 52.0	
UPC	**Upice**	**147.26**	**346**	⇑*e*PKPB		04 23 49.8	
BRG	**Berggiesshubel**	**147.33**	**349**	*i* P	PKPdf	04 23 49.8	+4.5
DPC	**Dobruska-Polom**	**147.34**	**346**	⇑*e*PKPB	PKPdf	04 23 50.3	+5.0
OKC	**Ostrava-Krasne**	**147.35**	**343**	⇑*e*PKPB	PKPdf	04 23 49.8	+4.4
BRTR	**Keskin Array B**	**147.47**	**316**	PKP	PKPdf	04 23 47.8	+1.9
	comp=Z,3.6nm,0.8s,baz=6.3,slow=11,SNR=44						
BRTR				PKPbc	PKPdf	04 23 50.5	+4.7
	comp=Z,9.0nm,0.8s,baz=139,slow=4.5,SNR=43						
BRTR	**Keskin Array B**	**147.47**	**316**	PKP	PKPdf	04 23 47.8	+1.9
BRTR				PKPbc	PKPdf	04 23 50.5	+4.7
PVCC	**Panska Ves**	**147.54**	**348**	⇑*e*PKPB		04 23 50.7	
MORC	**Moravsky Berou**	**147.57**	**344**	*e*PKPdf	PKPdf	04 23 47.9	+2.2
MORC				*e*PKPbc	PKPdf	04 23 50.9	+5.2
MOX	**Moxa**	**147.93**	**351**	*e*PKP	PKPdf	04 23 51.5	+5.2
PRU	**Pruhonice**	**148.06**	**348**	⇑*e*PKPB		04 23 51.7	
	comp=Z,15nm,0.9s						
MLR	**Muntele Rosu**	**148.15**	**331**	PKPbc	PKPdf	04 23 52.5	+5.8
	comp=Z,7.3nm,1.0s,baz=107,slow=3.4,SNR=6.7						
VRAC	**Vranov**	**148.24**	**345**	PKPbc	PKPdf	04 23 53.0	+6.2
	comp=Z,4.0nm,0.3s,baz=58,slow=8.2,SNR=6.1						
VYHS	**Vyhne**	**148.37**	**342**	*e*PKP	PKPdf	04 23 52.8	+5.8
PSZ	**Piszkesteto**	**148.55**	**340**	||*e*PKP/F		04 23 53.1	
PSZ	**Piszkesteto**	**148.55**	**340**	*e*PKPbc	PKPdf	04 23 53.4	+6.1
GRA1	**Grafenberg Arr**	**148.92**	**351**	*e*PKPbc	PKPdf	04 23 54.4	+6.5
GRA1				*e*PKPab	PKPab	04 23 58.7	-0.5
GIVF	**Givet**	**148.99**	**360**	*e*PKP1	PKPdf	04 23 54.0	+6.0
	comp=Z,33nm,0.9s						
BAIF	**Baives**	**149.03**	**0**	*e*PKP1	PKPdf	04 23 54.3	+6.3
	comp=Z,11nm,0.7s						
KHC	**Kasperske Hory**	**149.07**	**348**	⇑*e*PKPB		04 23 54.5	
ZST	**Bratislava**	**149.13**	**343**	*e*PKP	PKPdf	04 23 54.8	+6.6
WET	**Wettzell**	**149.19**	**349**	*e*PKPbc	PKPdf	04 23 54.7	+6.4
WET				*e*PKPab	PKPab	04 23 59.7	-0.6
GEC2	**GERESS Array S**	**149.32**	**348**	*e*PKPbc	PKPdf	04 23 55.1	+6.6
GERES	**GERESS Array B**	**149.32**	**348**	PKP	PKPdf	04 23 50.3	+1.7
	comp=Z,0.3nm,0.7s,baz=90,slow=1.3,SNR=4.6						
GERES				PKPbc	PKPdf	04 23 55.0	+6.5
	comp=Z,4.9nm,0.7s,baz=24,slow=2.3,SNR=38						
FLN	**La Foliniere**	**150.07**	**7**	*e*PKP1	PKPdf	04 23 56.4	+6.7
	comp=Z,9.0nm,0.5s						
MOA	**Molln**	**150.15**	**347**	||*i*PKP	PKPdf	04 23 56.8	+7.0
LDF	**La Druitiere**	**150.27**	**6**	*e*PKP1	PKPdf	04 23 56.7	+6.7
	comp=Z,12nm,0.8s						
GRR	**Gorron**	**150.39**	**7**	*e*PKP1	PKPdf	04 23 57.2	+7.0
	comp=Z,25nm,0.7s						
FUR	**Furstenfeldbru**	**150.40**	**351**	*e*PKPbc	PKPdf	04 23 58.0	+7.8
FUR				*e*PKPab	PKPab	04 24 04.7	-0.7
MEZF	**Maizieres J'vi**	**150.59**	**359**	*e*PKP1	PKPdf	04 23 58.1	+7.6
CDF	**Champ du Feu**	**150.59**	**356**	*e*PKP1	PKPdf	04 23 58.0	+7.5
	comp=Z,31nm,1.0s						
BFO	**Black Forest**	**150.59**	**355**	*e*PKPbc	PKPdf	04 23 57.2	+6.7
HAU	**Haudorpre**	**151.05**	**357**	*e*PKP1	PKPdf	04 23 59.0	+7.8
	comp=Z,17nm,0.7s						
KBA	**Koelnbreinsper**	**151.08**	**347**	⇑*i*PKP	PKPdf	04 23 58.9	+7.6
WATA	**Walderalm**	**151.16**	**350**	⇑*i*PKP	PKPdf	04 23 59.0	+7.6
HINF	**Hinteralfeld**	**151.21**	**357**	*e*PKP1	PKPdf	04 23 59.2	+7.8
	comp=Z,7.6nm,0.6s						
WTTA	**Wattenberg**	**151.22**	**350**	||*i*PKP	PKPdf	04 23 59.6	+8.1
MOTA	**Moosalm**	**151.23**	**351**	||*i*PKP	PKPdf	04 23 59.2	+7.7
MOTA				*i*		04 24 07.4	
SQTA	**Sankt Quirin**	**151.33**	**350**	⇑*i*PKP	PKPdf	04 23 59.7	+8.1
DAVA	**Damuels**	**151.46**	**352**	⇑*i*PKP	PKPdf	04 23 59.7	+7.9
LOR	**Lormes**	**151.82**	**1**	*e*PKP1	PKPdf	04 24 00.8	+8.4
	comp=Z,14nm,0.8s						
DAVOX	**Davos**	**151.96**	**352**	PKPbc	PKPdf	04 24 01.4	+8.9
	comp=Z,10nm,0.5s,baz=289,slow=2.4,SNR=19						
SSF	**Saint Saulge**	**152.02**	**1**	*e*PKP1	PKPdf	04 24 01.2	+8.5
	comp=Z,25nm,1.0s						
AVF	**Avril sur Loir**	**152.29**	**2**	*e*PKP1	PKPdf	04 24 01.9	+8.8
CABF	**La Chapelle**	**152.45**	**358**	*e*PKP1	PKPdf	04 24 02.7	+9.4
	comp=Z,23nm,1.0s						
BGF	**Bois d'Agland**	**152.51**	**2**	*e*PKP1	PKPdf	04 24 02.3	+8.9
	comp=Z,14nm,0.8s						
TCF	**Toul-Ste Croi**	**152.75**	**3**	*e*PKP1	PKPdf	04 24 02.4	+8.7
	comp=Z,24nm,1.0s						
LPL	**La Plagne**	**153.51**	**356**	*e*PKP1	PKPdf	04 24 05.3	+11
LPG	**La Plagne**	**153.53**	**356**	*e*PKP1	PKPdf	04 24 05.4	+11
ORIF	**Oris-en-Rattie**	**154.15**	**358**	*e*PKP1	PKPdf	04 24 06.4	+11
MBDF	**Montbardon**	**154.29**	**356**	*e*PKP1	PKPdf	04 24 07.7	+12
	comp=Z,11nm,0.7s						

*NEIC **08** 04:23:44.7±2.6, 18.07S×178.35W, h542km±33km, mb4.3/6, Error ellipse: s-maj=25.9km s-min=10.6km az=175.0*
*IDC **08** 04:23:47.2±5.8, 18.12S×178.40W, h566km±73km, mb3.3/9, mb1 3.5/9, mb1mx3.3/17, Error ellipse: s-maj=33.7km s-min=21.3km az=8.0*
ISC 08 04:23:42.7±4.2, 18.0S±0.3×178.4W±0.1, h523km±58km, n23, σ0s84/19, mb4.0/13, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAR	**Rarotonga**	**17.85**	**103**	*e*P	**P**	**04 27 20.1**	**-0.4**
	1μm,2.6s						
URZ	**Urewera**	**20.54**	**190**	P	**P**	**04 27 45.6**	**-0.2**
	2.2nm,0.5s,baz=115,slow=11,SNR=4.0						
SNZO	**South Karori**	**23.95**	**193**	*e*P	**P**	**04 28 10.2**	**-6.6**
	60nm,1.0s,mb5.2						
CTA	**Charters Tower**	**33.42**	**261**	*e*P	**P**	**04 29 39.7**	**+0.6**
	4.1nm,0.8s,mb3.9						
CTAO	**Charters Tower**	**33.42**	**261**	*e*P	**P**	**04 29 39.7**	**+0.6**
	4.9nm,0.8s,mb4.1						
PMG	**Port Moresby**	**34.47**	**280**	P	**P**	**04 29 49.2**	**+1.3**
	14nm,0.9s,mb4.5,baz=240,slow=18,SNR=3.4						
STKA	**Stephens Creek**	**38.57**	**241**	*e*P	**P**	**04 30 23.3**	**+1.9**
	2.6nm,0.6s,mb3.9						
STKA	**Stephens Creek**	**38.57**	**241**	P	**P**	**04 30 23.2**	**+1.8**
	2.1nm,0.7s,mb3.8,baz=97,slow=9.7,SNR=9.1						
WB2	**Warramunga Arr**	**44.59**	**260**	*e*P	**P**	**04 31 08.9**	**-0.7**
WRAB	**Tennant Creek**	**44.59**	**260**	*e*P	**P**	**04 31 08.7**	**-1.0**
	10.0nm,0.7s,mb4.5						
WRA	**Warramunga Arr**	**44.60**	**260**	P	**P**	**04 31 09.1**	**-0.7**
	2.2nm,0.4s,mb4.1,baz=94,slow=7.1,SNR=129						
AS12	**Alice Springs**	**44.75**	**254**	*e*P	**P**	**04 31 10.7**	**-0.2**
	10nm,0.5s,mb4.6						
ASAR	**Alice Springs**	**44.75**	**254**	P	**P**	**04 31 11.0**	**+0.1**
	18nm,0.5s,mb4.8,baz=88,slow=8.5,SNR=286						
KAKA	**Kakadu**	**47.61**	**269**	*e*P	**P**	**04 31 31.9**	**-1.0**
	7.9nm,0.6s,mb4.4						
YBH	**Y

0.4nm,0.5s,baz=90,slow=6.9,SNR=3.8
HFS Hagfors 143.60 351 PKP PKPdf 04 51 22.5 -0.8
4.4nm,0.7s,baz=90,slow=4.4,SNR=7.2
AKASG Malin Array Be 147.00 329 PKPbc PKPdf 04 51 32.9 +3.4
2.1nm,0.4s,baz=42,slow=3.9,SNR=18
BRTR Keskin Array B 150.26 308 PKPbc PKPdf 04 51 42.4 +7.4
1.5nm,0.8s,baz=146,slow=4.5,SNR=6.7
BRTR PKPab PKPab 04 51 49.7 +0.6
1.2nm,0.6s,baz=45,slow=3.5,SNR=5.2
MLR Muntele Rosu 152.13 325 PKPbc PKPdf 04 51 44.4 +6.8
1.0nm,0.8s,baz=279,slow=24,SNR=1.9
MLR PKPab PKPab 04 51 54.6 -2.1
0.9nm,0.4s,baz=2.8,slow=11,SNR=3.1
CLL Collm 152.16 347 *i* PKP1 PKPdf 04 51 46.3 +8.8
CLL *i* PKP2 PKPab 04 51 56.1 -0.5
BRG Berggiesshubel 152.36 345 *eP* PKPdf 04 51 46.9 +9.1

NEIC ***08*** *04:33:04.5±0.3,7.67S×156.99E,mb4.6/9, Error ellipse: s-maj=13.7km s-min=6.7km az=134.0*
IDC ***08*** *04:33:05.1±0.9,7.69S×156.87E,h384km±9km, mb3.7/12, mb1 3.9/14,mb1mx3.8/18, Error ellipse: s-maj=18.7km s-min=12.4km az=128.0*
ISC 08 04:33:03.3±0.4,7.69S±0.10×156.9E±0.1,h380km,n32, σ0§91/31,mb4.2/19,Bougainville - Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**9.82**	**259**	P		**P**	**04 35 22.1**	**+1.8**
	9.8nm,0.3s,baz=56,slow=6.4,SNR=22							
WAU	**Wau**	**10.14**	**271**	*eP*		**P**	**04 35 26.7**	**+2.6**
CTA	**Charters Tower**	**16.10**	**219**	P		**P**	**04 36 31.3**	**+0.9**
	0.6nm,0.3s,baz=39,slow=11,SNR=11							
CTAO	**Charters Tower**	**16.10**	**219**	*eP*		**P**	**04 36 31.3**	**+0.8**
	6.3nm,0.8s							
WRAB	**Tennant Creek**	**25.04**	**239**	*eP*		**P**	**04 37 55.8**	**-0.7**
	18nm,0.8s,mb4.4							
WB2	**Warramunga Arr**	**25.05**	**239**	*eP*		**P**	**04 37 55.8**	**-0.8**
WRA	**Warramunga Arr**	**25.06**	**239**	P		**P**	**04 37 56.0**	**-0.6**
	4.1nm,0.4s,mb4.1,baz=60,slow=9.1,SNR=95							
WRA				pP			04 38 59.4	
	0.3nm,0.4s,baz=65,slow=8.2,SNR=1.0							
ASAR	**Alice Springs**	**27.21**	**232**	P		**P**	**04 38 15.1**	**-0.9**
	1.0nm,0.5s,mb3.3,baz=57,slow=10,SNR=13							
ASAR				pP			04 39 23.2	
	1.3nm,0.9s,baz=67,slow=9.1,SNR=3.8							
FITZ	**Fitzroy Crossi**	**32.16**	**248**	P		**P**	**04 38 57.3**	**-1.7**
	1.5nm,0.3s,mb3.7,baz=10,slow=5.9,SNR=8.8							
FORT	**Forrest**	**35.45**	**226**	*eP*		**P**	**04 39 26.6**	**-0.2**
	32nm,0.7s,mb4.7							
RPZ	**Rata Peaks**	**37.96**	**163**	P		**P**	**04 39 47.6**	**+0.2**
	5.7nm,0.8s,mb3.9,baz=88,slow=22,SNR=3.0							
SONM	**Songino Array**	**70.96**	**327**	P		**P**	**04 43 42.6**	**+0.4**
	1.4nm,0.8s,mb3.8,baz=149,slow=7.2,SNR=12							
SONM				pP		pP	04 45 07.3	+0.4
	0.8nm,1.1s,baz=117,slow=5.5,SNR=2.9							
BILL	**Bilibino**	**75.83**	**4**	*eP*		**P**	**04 44 09.6**	**-0.3**
	40nm,1.4s,mb5.0							
SVW	**Sparrevohn**	**77.91**	**21**	*eP*		**P**	**04 44 22.2**	**+0.9**
PMS	**Palmer South**	**80.28**	**23**	*eP*		**P**	**04 44 34.1**	**+0.2**
PWA	**Palmer West**	**80.40**	**23**	*eP*		**P**	**04 44 34.3**	**-0.2**
PMR	**Palmer**	**80.66**	**23**	*eP*		**P**	**04 44 34.9**	**-1.0**
	10nm,0.9s,mb4.6							
PMR				*eP*			04 44 35.6	
SML	**Sawmill**	**81.09**	**23**	*eP*		**P**	**04 44 38.4**	**+0.4**
IMA	**Indian Mountai**	**81.84**	**18**	*eP*		**P**	**04 44 42.1**	**+0.2**
MCK	**McKinley**	**81.98**	**21**	*eP*		**P**	**04 44 41.5**	**-1.2**
	6.9nm,0.9s,mb4.5							
QSPA	**South Pole Qui**	**82.29**	**180**	*eP*		**P**	**04 44 44.7**	**+0.8**
	18nm,0.7s,mb5.0							
COLA	**College**	**83.03**	**21**	*eP*		**P**	**04 44 46.7**	**-1.2**
ILAR	**Eielson Array**	**83.32**	**21**	P		**P**	**04 44 48.2**	**-1.2**
	3.7nm,0.9s,mb4.2,baz=271,slow=4.8,SNR=23							
MKAR	**Makanchi Array**	**85.20**	**318**	P		**P**	**04 44 59.1**	**+0.1**
	1.2nm,0.5s,mb4.0,baz=93,slow=4.9,SNR=13							
ZAL	**Zalesovo**	**85.84**	**326**	P		**P**	**04 45 01.6**	**-0.4**
	1.6nm,0.3s,mb4.3,baz=281,slow=4.6,SNR=3.5							
YBH	**Yreka Blue Hor**	**87.92**	**48**	P		**P**	**04 45 13.4**	**+1.2**
	1.0nm,0.6s,mb3.8,baz=137,slow=8.9,SNR=3.4							
INK	**Inuvik**	**89.69**	**20**	*eP*		**P**	**04 45 19.3**	**-0.5**
	5.3nm,1.3s,mb4.3							
NVAR	**Mina Array Bea**	**90.64**	**51**	P		**P**	**04 45 26.1**	**+1.2**
	0.8nm,0.8s,mb3.7,baz=220,slow=7.0,SNR=4.8							
YKA	**Yellowknife Ar**	**96.04**	**28**	P		**P**	**04 45 49.5**	**+0.4**
	1.8nm,0.7s,mb4.3,baz=264,slow=4.8,SNR=40							
YKA				pP		pP	04 47 18.4	+0.3
	0.4nm,0.8s,baz=263,slow=4.4,SNR=7.1							
YKA	**Yellowknife Ar**	**96.04**	**28**	P		**P**	**04 45 49.5**	**+0.4**
YKA				pP		pP	04 47 18.4	+0.3
PDAR	**Pinedale Array**	**97.73**	**48**	P		**P**	**04 45 58.1**	**+0.9**
	0.4nm,0.7s,mb3.7,baz=270,slow=1.8,SNR=2.7							
BDFB	**Brasilia**	**146.12**	**133**	PKPbc		PKPbc	04 52 01.4	+1.3
	2.5nm,0.6s,baz=159,slow=4.2,SNR=5.8							

DHMR ***08*** *04:39:18.4±3.0,29.82N×51.66E,h60km,mb5.0*
THR ***08*** *04:39:19.0±0.3,29.64N×51.25E,h20km±2km, MD4.6, ML4.6*
BJI ***08*** *04:39:19.2,29.83N×50.97E,h66km,mB5.0,mb5.1,Ms4.7, Msz4.5*
MOS ***08*** *04:39:20.2±1.0,29.91N×51.51E,h33km,mb5.1/19, Error ellipse: s-maj=10.2km s-min=5.0km az=115.8*
IDC ***08*** *04:39:20.8±2.1,29.84N×51.55E,h27km±13km,mb4.5/31, mb1 4.5/34,mb1mx4.5/35,ML4.0/3,MS3.9/12,Ms1 3.9/12, ms1mx3.7/22,Error ellipse: s-maj=13.9km s-min=10.6km az=16.0,putative timing error at EIL*
NEIC ***08*** *04:39:25.1±1.1,29.88N×51.47E,h67km±10km,mb5.0/90, Error ellipse: s-maj=6.3km s-min=3.5km az=189.0*
NEIC At least 4 buildings destroyed and 6 damaged in the Kazerun-Qa'emiyeh area.
ZUR_RM ***08*** *04:39:25,29.88N×51.47E,h21km,Mw4.6/10,Moment Tensor Solution. s10 Moment tensor: Scale 10¹⁵Nm; Mrr4.14; Mθθ-0.21; Mφφ-3.93; Mrθ4.41; Mθφ5.48; Mφr-1.19; Best double couple: M08.08×10¹⁵ NP1:φs113°,δ70°,λ52°. NP2:φa360°,δ43°,λ149°. Principal axes: T 7.296, Plg50°, Azm341°; N 1.571, Plg36°, Azm129°; P -8.867, Plg16°, Azm231°;*
ISC 08 04:39:16.2±1.0,29.70N±0.03×51.45E±0.02,h15km±7km, h43km±3.1km:pP-P,n356,σ1§02/375,mb4.9/152,MS4.1/26, 34C-8D,Southern Iran

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
NASN	**Na'in**	**3.30**	**20**	*ePN*		**Pn**	**04 40 10.1**	**+1.6**
NASN				SN		**Sn**	**04 40 47.7**	**0.0**
NASN				LG			04 41 04.7	
NASN				AMP			04 41 14.6	
	comp=N,3μm,0.7s							
HASS	**Wahat al Ahsa'**	**4.76**	**200**	P		**Pn**	**04 40 34.0**	**+4.7**
HASS				S		**Sn**	**04 41 30.6**	**+5.8**
DAMV	**Damavand**	**5.93**	**4**	*ePN*		**Pn**	**04 40 45.6**	**-0.1**
	baz=186,slow=6.2							
DAMV				SN		**Sn**	**04 41 49.9**	**-4.2**
DAMV				LG			04 42 24.5	
MZLS	**Mizel**	**7.94**	**226**	P		**Pn**	**04 41 15.2**	**+1.2**
MZLS				S		**Sn**	**04 42 42.1**	**-2.2**
ARSS	**Ar Rass**	**8.21**	**244**	P		**P**	**04 41 17.5**	**-0.2**
ARSS				S		**Sn**	**04 42 47.2**	**-3.9**
HILS	**Ha'il**	**8.80**	**257**	P		**P**	**04 41 25.7**	**-0.3**
AFFS	**'Afif**	**9.49**	**235**	P		**P**	**04 41 35.4**	**0.0**
TVAN	**Van**	**11.04**	**325**	*i* P		**P**	**04 41 55.0**	**-1.7**
MAKU	**Maku**	**11.12**	**332**	*ePN*		**P**	**04 41 56.1**	**-1.7**
MAKU				SN		**S**	**04 43 52.3**	**-11**
KAMS	**Al Khamasin**	**11.23**	**215**	P		**P**	**04 41 59.8**	**+0.4**
KBRS	**Khaybar**	**11.47**	**253**	P		**P**	**04 42 02.4**	**-0.3**
BEST	**Besiri**	**11.76**	**317**	*i* P		**P**	**04 42 03.8**	**-2.7**
TATS	**Tathlith**	**12.44**	**217**	P		**P**	**04 42 16.2**	**+0.5**
ASF	**Jabal al Asfar**	**12.73**	**285**	Pn		**P**	**04 42 20.1**	**+0.5**
	comp=N,2.0nm,0.3s,baz=342,slow=8.2,SNR=12							
ASF				Sn		**S**	**04 44 36.9**	**-5.2**
	comp=N,2.3nm,0.3s,baz=203,slow=18,SNR=7.1							
ASF				Lg			04 46 18.0	
	baz=139,slow=19,SNR=1.8							
ASF				LR		LR	04 48 26.2	
	comp=N,222nm,18.1s,baz=144,slow=43							
QUE	**Quetta**	**13.45**	**84**	*eP*		**P**	**04 42 33.5**	**+4.4**
ELZG	**Elazig**	**13.54**	**314**	*i* P		**P**	**04 42 28.1**	**-2.2**
MKRJ	**Makawir**	**13.74**	**282**	P		**P**	**04 42 32.5**	**-0.4**
KSHT	**Keshet**	**13.76**	**288**	P		**P**	**04 42 31.5**	**-1.7**
GZT	**Gaziantep**	**13.86**	**307**	*i* P		**P**	**04 42 33.3**	**-1.2**
HRI	**Mount Hermon**	**13.87**	**289**	P		**P**	**04 42 33.4**	**-1.3**
HMDT	**Nahal Hemdat**	**13.90**	**285**	P		**P**	**04 42 35.0**	**0.0**
KSDI	**Kefar Szold**	**13.92**	**288**	P		**P**	**04 42 33.8**	**-1.5**
KSDI				S		**S**	**04 45 11.7**	**+1.2**
DRGI	**Dragot**	**13.95**	**282**	P		**P**	**04 42 35.9**	**+0.2**
MZDA	**Masada**	**13.96**	**281**	P		**P**	**04 42 35.3**	**-0.6**
MMLI	**Mount Malkishu**	**14.01**	**285**	P		**P**	**04 42 35.6**	**-0.8**
ZFRI	**Zfri**	**14.11**	**278**	P		**P**	**04 42 38.5**	**+0.7**
HRFI	**Mount Harif**	**14.25**	**275**	P		**P**	**04 42 38.1**	**-1.5**
HNTI	**Hanita**	**14.30**	**288**	P		**P**	**04 42 39.4**	**-0.9**
SLTI	**Sal'it**	**14.30**	**284**	P		**P**	**04 42 39.9**	**-0.4**
EIL	**Elat**	**14.34**	**274**	P		**P**	**04 42 42.1**	**+1.2**
MBH	**Mount Berech**	**14.37**	**274**	P		**P**	**04 42 41.3**	**+0.1**
OFRI	**'Ofer**	**14.39**	**286**	P		**P**	**04 42 42.0**	**+0.5**
KMTI	**Karmit**	**14.51**	**276**	P		**P**	**04 42 43.4**	**+0.3**
SVTA	**Shivta**	**14.59**	**279**	P		**P**	**04 42 43.6**	**-0.5**
KZIT	**Kziot**	**14.78**	**279**	P		**P**	**04 42 47.8**	**+1.2**
KZIT				S		**S**	**04 45 34.6**	**+3.7**
HAJJ	**Hajjah**	**15.70**	**209**	*ieP*		**P**	**04 42 58.3**	**-0.3**
KIV	**Kislovodsk**	**15.85**	**336**	*ceP*		**P**	**04 43 02.4**	**+2.1**
KIV				*eS*		**S**	**04 45 55.3**	**-0.5**
KIV				pmax	pmax			
	comp=Z,276nm,1.0s							
KIV				MLR	MLR			
	comp=Z,500nm,19.0s							
KIV	**Kislovodsk**	**15.85**	**336**	*eP*		**P**	**04 43 02.2**	**+1.8**
	comp=Z,261nm,1.0s							
CSS	**Prodhromos**	**16.18**	**294**	*eP*		**P**	**04 43 05.5**	**+0.8**
DRP	**Derazinda**	**16.26**	**78**	P		**P**	**04 43 10.2**	**+4.5**
AVNT	**Avonos**	**16.42**	**308**	*i* P		**P**	**04 43 09.4**	**+1.7**
BDHA	**Al Bayda'**	**16.57**	**200**	*eP*		**P**	**04 43 09.1**	**-0.7**
GOF	**Gofitskoye**	**16.71**	**339**	*i/*P		**P**	**04 43 12.0**	**+0.7**
GOF				pmax	pmax			
	comp=Z,80nm,1.4s							
SOC	**Sochi**	**16.72**	**329**	*i* P		**P**	**04 43 11.8**	**+0.3**
SOC				*eS*		**S**	**04 46 13.8**	**-2.3**
SOC				pmax	pmax			
	comp=Z,89nm,0.8s							
SOC				pmax	pmax			
	comp=N,79nm,0.9s							
SOC				pmax	pmax			
	comp=E,57nm,0.8s							
SOC				pmax	pmax			
	comp=Z,234nm,2.2s							
SOC				pmax	pmax			
	comp=N,137nm,1.5s							
SOC				pmax	pmax			
	comp=E,199nm,1.6s							
SOC				MLR	MLR			
	comp=Z,229nm,13.0s							
SOC				MLR	MLR			
	comp=N,582nm,14.0s							
SOC				MLR	MLR			
	comp=E,467nm,12.0s							
LBOS		**16.77**	**201**	*i*P		**P**	**04 43 11.6**	**-0.7**
LBOS				AMb	AMB	AMB	04 43 11.8	
	comp=Z,152nm,1.9s							
SBDP	**Sheikh Budin**	**16.80**	**76**	P		**P**	**04 43 15.6**	**+3.0**
CTKT	**Corum**	**17.41**	**313**	*i* P		**P**	**04 43 23.6**	**+3.4**
THW	**Thamme Wali**	**17.62**	**75**	*i*P		**P**	**04 43 23.2**	**+0.3**
BRTR	**Keskin Array B**	**17.70**	**309**	P		**P**	**04 43 25.2**	**+1.4**
	comp=Z,0.3nm,0.3s,baz=130,slow=13,SNR=26							
BRTR				ScP			04 51 35.4	
	comp=Z,0.2nm,0.3s,baz=158,slow=6.7,SNR=4.6							
BOYT	**Boyabat**	**17.79**	**316**	*i* P		**P**	**04 43 25.8**	**+0.9**
CEP	**Cherat**	**17.87**	**71**	P		**P**	**04 43 27.6**	**+1.6**
ELDT	**Eldivan**	**18.22**	**311**	*i* P		**P**	**04 43 31.4**	**+1.1**
ANN	**Anapa**	**18.71**	**327**	*eP*		**P**	**04 43 43.4**	**+7.2**
ANN				*eS*		**S**	**04 47 08.8**	**+7.6**
ANN				pmax	pmax			
	comp=Z,20nm,0.8s							
BALT	**Daday**	**18.80**	**314**	*i* P		**P**	**04 43 37.4**	**+0.1**
CHCP	**Chirah Chowk**	**18.97**	**72**	P		**P**	**04 43 39.5**	**0.0**
ISP	**Isparta**	**19.18**	**301**	*eP*		**P**	**04 43 44.8**	**+2.9**
HENT	**Hendek**	**20.07**	**309**	*i* P		**P**	**04 43 53.0**	**+1.2**
KKAR	**Karatay Array**	**20.29**	**44**	*i* P		**P**	**04 43 53.2**	**-1.0**
KKAR				pmax	pmax			
	comp=Z,10.0nm,0.6s							
SIM	**Simferopol'**	**20.47**	**323**	*ceP*		**P**	**04 43 55.6**	**-0.4**
SIM				*eS*		**S**	**04 47 40.0**	**+0.6**
SIM				pmax	pmax			
	comp=Z,27nm,0.9s							
AB31	**Akbulak array**	**20.57**	**16**	*i* P		**P**	**04 43 55.6**	**-1.4**
AB31				pmax	pmax			
	comp=Z,6.0nm,0.6s							
ULDT	**Uludag**	**21.00**	**306**	*i* P		**P**	**04 44 02.3**	**+0.8**
KDAG	**Bornova**	**21.79**	**300**	*i* P		**P**	**04 44 10.6**	**+1.1**
AML	**Almayashu**	**21.80**	**49**	P		**P**	**04 44 10.2**	**+0.7**
	SNR=31							
EKS2	**Erkin-Say**	**22.10**	**48**	P		**P**	**04 44 14.5**	**+1.9**
	SNR=7.0							
KSH	**Kashi**	**22.37**	**58**	*eP*		**P**	**04 44 16.1**	**+0.8**
KSH				*eAP*			04 44 30.1	
KSH				*eXP*			04 44 37.5	
KSH				*ePP*	PP		04 44 45.2	+2.5
KSH				*ePCP*	PcP		04 48 11.1	-0.3
KSH				*eS*	**S**		**04 48 12.4**	**-3.2**
KSH				*eXS*			04 48 36.2	
KSH				*eSS*	SS		04 48 56.1	-0.4
KSH				*eSCP*			04 51 42.2	
KSH				*ePCS*			04 51 48.7	
KSH				*eSCS*	ScS		04 55 25.6	-5.2
KSH				AMB	AMB			
	comp=Z,100nm,1.1s,mb5.2							
KSH				LR	LR			
	comp=N,290nm,6.0s							
KSH				LR	LR			
	comp=E,560nm,11.5s							
UCH	**Uchtor**	**22.39**	**50**	P		**P**	**04 44 17.8**	**+2.4**
	SNR=7.8							
NDI	**New Delhi**	**22.51**	**86**	*e*		**P**	**04 44 16.0**	**-0.7**
AAK	**Ala-Archa**	**22.56**	**49**	P		**P**	**04 44 19.6**	**+2.5**
	SNR=9.4							
KZA	**Kyzart**	**22.81**	**51**	P		**P**	**04 44 21.7**	**+2.1**
	SNR=8.1							
USP	**Ospenovka**	**22.86**	**47**	P		**P**	**04 44 22.8**	**+2.7**
	SNR=16							
KBK	**Karagaybulak**	**22.86**	**49**	P		**P**	**04 44 22.7**	**+2.6**
	SNR=14							
CHMS	**Chumysh**	**22.89**	**48**	P		**P**	**04 44 21.3**	**+0.9**
	SNR=10							
IDI	**Anoyia**	**23.05**	**291**	P		**P**	**04 44 24.9**	**+3.0**
	comp=E,11nm,0.7s,mb4.4,baz=96,slow=11,SNR=12							
TKM2	**Tokmak 2**	**23.41**	**49**	P		**P**	**04 44 27.3**	**+1.9**
	SNR=7.7							
PRD	**Provadia**	**23.47**	**312**	*i* P		**P**	**04 44 29.0**	**+3.0**
VOR	**Voronezh**	**23.82**	**341**	*eP*		**P**	**04 44 30.0**	**+0.7**
VOR				*e*PP			04 44 36.0	
VOR				*eS*		**S**	**04 48 44.0**	**+3.0**
VOR				pmax	pmax			
	comp=Z,120nm,0.9s,mb5.3							
VOR				pmax	pmax			
	comp=N,140nm,1.2s							
VOR				pmax	pmax			
	comp=E,60nm,1.0s							
VOR				smax				
	comp=N,230nm,1.6s							
VOR				smax				
	comp=Z,70nm,1.8s							
VOR				smax				
	comp=E,130nm,1.6s							
HARR	**Harsova**	**23.86**	**315**	*i*P		**P**	**04 44 32.2**	**+2.5**
HARR	**Harsova**	**23.86**	**315**	*ieP*		**P**	**04 44 32.1**	**+2.4**
CFR	**Carcaliu**	**23.99**	**316**	*i*P		**P**	**04 44 31.9**	**+0.9**
CFR	**Carcaliu**	**23.99**	**316**	*i*P		**P**	**04 44 32.0**	**+1.0**
KDZ	**Kurdzhali**	**24.18**	**307**	*i* P		**P**	**04 44 35.0**	**+2.1**
RZN	**Rozhen**	**24.68**	**306**	*i* P		**P**	**04 44 40.0**	**+2.2**
ISR	**Istrita**	**24.93**	**315**	*i*P		**P**	**04 44 43.3**	**+3.2**
ISR	**Istrita**	**24.93**	**315**	*ieP*		**P**	**04 44 37.4**	**-2.6**
VRI	**Vrincioaia**	**25.19**	**317**	*i*P		**P**	**04 44 44.1**	**+1.5**
VRI	**Vrincioaia**	**25.19**	**317**	*ieP*		**P**	**04 44 45.2**	**+2.6**
MMB	**Musomiste**	**25.35**	**305**	*i* P		**P**	**04 44 46.0**	**+1.9**
PGB	**Panagyurishte**	**25.37**	**308**	*i* P		**P**	**04 44 47.0**	**+2.7**
MLR	**Muntele Rosu**	**25.48**	**315**	P		**P**	**04 44 48.1**	**+2.8**
	comp=E,50nm,0.8s,mb5.1,baz=225,slow=1.0,SNR=56							
MLR	**Muntele Rosu**	**25.48**	**315**	*i*P		**P**	**04 44 48.0**	**+2.7**
MLR	**Muntele Rosu**	**25.48**	**315**	*ieP*		**P**	**04 44 47.9**	**+2.7**
KKB	**Krupnik**	**25.89**	**306**	*i* P		**P**	**04 44 50.0**	**+0.8**
VTS	**Vitosha**	**26.05**	**307**	*i* P		**P**	**04 44 52.0**	**+1.4**
AKASG	**Malin Array Be**	**26.79**	**328**	P		**P**	**04 44 56.6**	**-0.8**
	comp=E,8.6nm,0.7s,mb4.4,baz=137,slow=8.9,SNR=27							
AKASG				PcP		PcP	04 48 20.0	-0.8
	comp=E,1.3nm,0.5s,baz=91,slow=2.1,SNR=6.7							
SKO	**Skopje**	**27.09**	**305**	*i* P		**P**	**04 45 01.0**	**+0.8**
BRVK	**Borovoye**	**27.12**	**25**	*eP*		**P**	**04 45 00.6**	**+0.3**
BVA0	**Borovoye Array**	**27.13**	**25**	*i* P		**P**	**04 45 00.6**	**+0.2**
BVA0				pmax	pmax			
	comp=Z,1.0nm,0.9s							
BVAR	**Borovoye Array**	**27.13**	**25**	P		**P**	**04 45 01.1**	**+0.7**
	comp=Z,10nm,0.6s,mb4.6,baz=217,slow=7.4,SNR=61							
BVAR				PcP	PcP		04 48 21.5	0.0
	comp=Z,3.1nm,0.6s,baz=198,slow=1.4,SNR=5.6							
BVAR				LR	LR		04 56 37.6	
	comp=Z,121nm,21.2s,MS3.4,baz=145,slow=38							
ARU	**Arti**	**27.18**	**9**	*i*P		**P**	**04 45 01.3**	**+0.4**
ARU				*e*			04 45 45.4	
ARU				*e*PPP	PPP		04 45 53.6	-6.1
ARU				*e*			04 48 21.8	
ARU				*eS*		**S**	**04 49 38.4**	**+1.2**
ARU				*eSS*	SS		04 50 43.2	-10
ARU				*eSSS*	SSS		04 50 59.8	-11
ARU				*e*			04 55 44.8	
ARU				pmax	pmax			
	comp=Z,12nm,0.8s,mb4.5							
ARU				MLR	MLR			
	comp=Z,200nm,18.0s,MS3.7							
ARU				MLR	MLR			
	comp=N,100nm,17.0s							
ARU	**Arti**	**27.18**	**9**	P		**P**	**04 45 01.4**	**+0.5**
	comp=N,12nm,0.8s,mb4.5							
BOLS	**Boljevac**	**27.34**	**309**	*i*P		**P**	**04 45 03.6**	**+1.2**
OBN	**Obninsk**	**27.55**	**341**	*eP*		**P**	**04 45 03.9**	**-0.3**
OBN				*e*			04 45 52.2	
OBN				*eS*		**S**	**04 49 43.1**	**0.0**
OBN				pmax	pmax			
	comp=Z,26nm,0.8s,mb4.9							
OBN				MLR	MLR			
	comp=Z,300nm,18.0s,MS3.9							
OBN	**Obninsk**	**27.55**	**341**	*eP*		**P**	**04 45 02.7**	**-1.6**
	comp=Z,13nm,0.6s,mb4.8							
MOS	**Moscow**	**27.82**	**343**	*eP*		**P**	**04 45 04.2**	**-2.5**
MOS				*e*			04 45 55.6	
MOS				pmax	pmax			
	comp=Z,40nm,0.6s,mb5.2							
SVE	**Sverdlovsk**	**27.87**	**11**	*ieP*		**P**	**04 44 57.5**	**-10**
SVE				*e*			04 45 12.4	
SVE				*e*			04 45 50.0	
SVE				MLR	MLR			
	comp=N,400nm,13.0s,MS4.2							
SVE				MLR	MLR			
	comp=E,200nm,13.0s,MS4.2							
SVE				MLR	MLR			
	comp=Z,600nm,13.0s,MS4.4							
KOLN	**Koldanda**	**28.21**	**86**	*eP*		**P**	**04 45 10.6**	**+0.1**
	comp=Z,23nm,0.7s,mb4.9							
DANN	**Dangsing**	**28.24**	**85**	*eP*		**P**	**04 45 11.6**	**+0.8**
GKN	**Gorkha**	**29.07**	**85**	*eP*		**P**	**04 45 18.2**	**0.0**
	comp=Z,41nm,0.7s,mb5.3							
KURK	**Kurchatov**	**29.24**	**36**	*eP*		**P**	**04 45 20.1**	**+0.6**
MKAR	**Makanchi Array**	**29.37**	**46**	P		**P**	**04 45 20.5**	**-0.3**
	comp=Z,8.6nm,0.7s,mb4.6,baz=228,slow=6.7,SNR=35							
MKAR				PcP	PcP		04 48 26.4	-0.7
	comp=Z,1.1nm,0.6s,baz=228,slow=2.6,SNR=4.5							
MKAR				LR	LR		04 58 43.0	
	comp=Z,404nm,18.6s,MS4.1,baz=253,slow=40							
MKAR	**Makanchi Array**	**29.37**	**46**	P		**P**	**04 45 20.7**	**-0.1**
MKAR				pmax	pmax			
	comp=Z,7.0nm,0.7s							
MKAR	**Makanchi Array**	**29.37**	**46**	P		**P**	**04 45 20.5**	**-0.3**
MKAR				PcP	PcP		04 48 26.4	-0.7
MKAR				LR	LR		04 58 43.0	
KWP	**Kalwaria**	**29.48**	**321**	*eP*		**P**	**04 45 22.1**	**+0.4**
KWP	**Kalwaria**	**29.48**	**321**	P		**P**	**04 45 21.7**	**0.0**
	comp=Z,8.2nm,0.4s,mb4.8							
DMN	**Daman**	**29.55**	**86**	*eP*		**P**	**04 45 22.3**	**-0.3**
	comp=Z,34nm,0.6s,mb5.2							
KKN	**Kakani**	**29.66**	**85**	*eP*		**P**	**04 45 23.6**	**0.0**
	comp=Z,62nm,0.8s,mb5.4							
CRVS	**Cervenica-Dubn**	**29.81**	**318**	*i* P		**P**	**04 45 25.5**	**+0.8**
CRVS				*e*			04 45 27.9	
CRVS				*e*			04 45 34.6	
CRVS	**Cervenica-Dubn**	**29.81**	**318**	*i* P		**P**	**04 45 25.5**	**+0.8**
CRVS				*e*			04 45 34.6	
PKI	**Pulchoki**	**29.82**	**86**	*eP*		**P**	**04 45 25.0**	**0.0**
	comp=Z,89nm,1.2s,mb5.4							
GUN	**Gumba**	**30.16**	**85**	*eP*		**P**	**04 45 28.3**	**+0.3**
	comp=Z,56nm,0.8s,mb5.3							
PSZ	**Piszkesteto**	**30.29**	**316**	*eP*		**P**	**04 45 29.0**	**0.0**
NIE	**Niedzica**	**30.72**	**319**	*eP*		**P**	**04 45 34.0**	**+1.3**
SLCN	**Sala Consilina**	**31.01**	**300**	*eP*		**P**	**04 45 37.9**	**+2.5**
VYHS	**Vyhne**	**31.17**	**316**	*i* P		**P**	**04 45 37.1**	**+0.4**
VYHS				*e*			04 45 50.9	
SRO

LSA Lhasa 34.37 80 *e*P P **04 46 05.7 +1.0**
comp=N,6.1nm,0.5s,mb4.8
SFI Santa Sofia 34.39 305 *e*P P **04 46 07.5 +2.7**
GEC2 GERESS Array S 34.45 314 *e*P P **04 46 05.4 +0.1**
GEC2 pmax pmax
comp=Z,18nm,1.5s,mb4.8
GEC2 GERESS Array S 34.45 314 *e*P P **04 46 05.4 +0.1**
comp=Z,18nm,1.5s,mb4.8
GERES GERESS Array B 34.45 314 P P **04 46 05.2 -0.1**
comp=Z,4.7nm,0.7s,mb4.5,baz=108,slow=8.2,SNR=35
GERES PcP PcP 04 48 41.0 +0.2
comp=Z,1.3nm,0.6s,baz=117,slow=3.0,SNR=5.6
GERES ScP 04 52 24.0
comp=Z,1.0nm,0.8s,baz=135,slow=3.8,SNR=6.0
PVCC Panska Ves 34.54 318 *e*P P **04 46 05.8 -0.2**
VMG Vicchio 34.62 305 *e*P P **04 46 09.6 +2.9**
KHC Kasperske Hory 34.63 315 *e*P P **04 46 06.7 -0.1**
KHC pP pP 04 46 16.0 +4.8
KHC Kasperske Hory 34.63 315 *e*P P **04 46 06.7 -0.1**
KHC *i* 04 46 16.0
KHC Kasperske Hory 34.63 315 *e*P P **04 46 06.7 -0.1**
KHC *e* 04 46 16.0
BRG Berggiesshubel 35.04 318 *e*P P **04 46 10.2 -0.1**
BRG *e* 04 46 23.1
BRG pmax pmax
comp=Z,14nm,0.9s,mb4.9
BRG MLR MLR
comp=N,100nm,20.1s,MS3.7
BRG MLR MLR
comp=E,100nm,20.1s,MS3.7
BRG MLR MLR
comp=Z,110nm,20.1s,MS3.6
BRG Berggiesshubel 35.04 318 *e*P P **04 46 10.2 -0.1**
comp=Z,14nm,0.9s,mb4.9
BRG *e* 04 46 23.1
BRG LR LR
comp=Z,110nm,20.1s,MS3.6
WET Wettzell 35.07 315 *e*P P **04 46 10.2 -0.3**
WET pmax pmax
comp=Z,23nm,1.2s,mb5.0
WET Wettzell 35.07 315 *e*P P **04 46 10.2 -0.3**
comp=Z,23nm,1.2s,mb5.0
WTTA Wattenberg 35.30 311⇑ *i*P P **04 46 12.8 +0.3**
comp=Z,54nm,1.0s,mb5.4
WATA Walderalm 35.36 311⇑ *i*P P **04 46 13.0 0.0**
comp=Z,40nm,1.0s,mb5.3
SQTA Sankt Quirin 35.57 311⇓ *i*P P **04 46 15.0 +0.2**
comp=Z,32nm,0.7s,mb5.4
MOTA Moosalm 35.67 311⇑ *i*P P **04 46 15.5 -0.2**
comp=Z,27nm,0.8s,mb5.2
JOF Joensuu 35.69 344 *e*p P **04 46 14.4 -1.3**
CLL Collm 35.76 318⇑⇑P P **04 46 16.4 0.0**
comp=Z,logA/T=1.4,mb5.1
CLL *e**PP pP 04 46 27.0 +6.2
CLL Collm 35.76 318⇑ *i*P P **04 46 16.4 0.0**
CLL *e* 04 46 27.0
CLL pmax pmax
comp=Z,28nm,1.0s,mb5.2
CLL Collm 35.76 318⇑ *i*P P **04 46 16.4 0.0**
comp=Z,28nm,1.0s,mb5.2
CLL *e* 04 46 27.0
FUR Furstenfeldbru 35.78 312 *e*P P **04 46 16.9 +0.3**
FUR pmax pmax
comp=Z,93nm,0.9s,mb5.7
FUR Furstenfeldbru 35.78 312 *e*P P **04 46 16.9 +0.3**
comp=Z,93nm,0.9s,mb5.7
FINES FINESS Array B 35.90 339 P P **04 46 16.4 -1.0**
comp=Z,3.4nm,0.7s,mb4.4,baz=141,slow=12,SNR=18
FINES PcP PcP 04 48 44.2 -0.7
comp=Z,1.9nm,0.6s,baz=135,slow=7.9,SNR=3.3
FINES LR LR 05 02 36.6
comp=Z,163nm,19.8s,MS3.8,baz=354,slow=39
SHL Shillong 35.93 87⇑P P **04 46 17.2 -0.9**
BRMO Bormio 35.95 309 *e*P P **04 46 19.1 +1.1**
BOB Bobbio (Coli) 36.24 306 *e*P P **04 46 22.4 +1.8**
GRA1 Grafenberg Arr 36.27 315 *e*P P **04 46 21.2 +0.5**
comp=Z,54nm,0.9s,mb5.5
GRF Grafenberg Arr 36.27 315 *e*P P **04 46 21.2 +0.5**
GRF pmax pmax
comp=Z,54nm,0.9s,mb5.5
MOX Moxa 36.34 317 *i* P P **04 46 21.3 0.0**
comp=Z,logA/T=1.1,mb4.8
MOX Moxa 36.34 317 *e*P P **04 46 21.3 0.0**
MOX pmax pmax
comp=Z,18nm,1.3s,mb4.8
MOX Moxa 36.34 317 *e*P P **04 46 21.3 0.0**
comp=Z,18nm,1.3s,mb4.8
DAVOX Davos 36.34 310 P P **04 46 22.3 +0.9**
comp=Z,24nm,0.6s,mb5.3,baz=120,slow=8.0,SNR=37
DAVOX Davos 36.34 310 P P **04 46 22.3 +0.9**
KAF Kangasniemi 36.35 340 *e*p P **04 46 19.9 -1.3**
comp=Z,1.2nm,0.4s,mb4.2,baz=139,slow=8.8
KAF Kangasniemi 36.35 340 *e*P P **04 46 19.9 -1.3**
KAF pmax pmax
comp=Z,1.0nm,0.4s,mb4.1
BSD Bornholm Skovb 36.38 325⇑ *i*P P **04 46 19.9 -1.6**
comp=Z,30nm,0.7s,mb5.3
BSD Bornholm Skovb 36.38 325⇑ *i*P P **04 46 19.9 -1.6**
BSD pmax pmax
comp=Z,30nm,0.7s,mb5.3
DAVA Damuels 36.46 311⇑ *i*P P **04 46 22.6 +0.2**
comp=Z,58nm,0.7s,mb5.6
SPAK Spaichingen 37.37 312 *e*P P **04 46 30.9 +0.9**
MCGN Macugnaga 37.46 308 *e*P P **04 46 31.0 +0.3**
SBF Sospel 37.53 304 *e*P P **04 46 32.0 +0.6**
comp=Z,96nm,0.9s,mb5.2
BFO Black Forest 37.73 312 *e*P P **04 46 34.0 +1.1**
BFO pmax pmax
comp=Z,6.0nm,0.8s,mb4.4
BFO Black Forest 37.73 312 *e*P P **04 46 34.0 +1.1**
comp=Z,6.0nm,0.8s,mb4.4
FELD Feldberg 37.83 311 *e*P P **04 46 34.6 +0.7**
FRF La Foret Royal 38.07 304 *e*P P **04 46 36.1 +0.2**
comp=Z,36nm,1.0s,mb4.8
MBDF Montbardon 38.12 306 *e*P P **04 46 36.4 +0.1**
comp=Z,38nm,0.6s,mb5.0
LMR La Mourre 38.14 303 *e*P P **04 46 36.7 +0.2**
BNI Bardonecchia 38.23 306 *e*P P **04 46 37.0 -0.2**
LPG La Plagne 38.24 307 *e*P P **04 46 37.6 +0.3**
comp=Z,50nm,0.8s,mb5.0
LPL La Plagne 38.26 307 *e*P P **04 46 37.6 +0.1**
comp=Z,53nm,1.0s,mb4.9
BSEG Bad Segeberg 38.27 321 *e*P P **04 46 37.9 +0.4**
BSEG pmax pmax
comp=Z,19nm,1.4s,mb4.6
MOF Molkenrain 38.40 311 *e*P P **04 46 38.6 0.0**
OG01 Vacheresse 38.42 308 *e*P P **04 46 37.9 -0.9**
CDF Champ du Feu 38.43 312 *e*P P **04 46 37.8 -1.1**
comp=Z,11nm,0.7s,mb4.4
ECH Echery 38.46 311 *e*P P **04 46 39.1 0.0**
LOMF Lomont 38.51 310 *e*P P **04 46 39.5 0.0**
HINF Hinteralfeld 38.58 311 *e*P P **04 46 39.5 -0.6**
comp=Z,18nm,0.7s,mb4.6
CABF La Chapelle 38.87 309 *e*P P **04 46 42.9 +0.3**
comp=Z,98nm,0.8s,mb5.3
SMRF Simiane la Rot 38.88 304 *e*P P **04 46 42.9 +0.2**
HAU Haudompre 38.95 311 *e*P P **04 46 42.5 -0.7**
comp=Z,32nm,0.8s,mb4.8
APA Apatity 39.40 349⇓ *i*P P **04 46 46.0 -0.8**
APA *i* 04 47 00.6
APA *i* 04 48 15.5
APA pmax pmax
comp=Z,22nm,0.7s,mb5.0
WLF Walferdange 39.43 313 *e*P P **04 46 46.7 -0.5**
comp=Z,28nm,0.9s,mb5.0
HFS Hagfors 39.55 331 P P **04 46 47.4 -0.6**
comp=Z,4.3nm,0.4s,mb4.5,baz=129,slow=9.5,SNR=36
HFS PP PP 04 48 15.6 -7.3
comp=Z,4.4nm,0.6s,baz=135,slow=8.2,SNR=3.3
VIVF Saint-Julien-l 39.62 306 *e*P P **04 46 48.4 -0.4**
comp=Z,36nm,1.1s,mb4.7
MUD Monsted U'grnd 39.88 324⇑ *i*P P **04 46 51.5 +0.7**
comp=Z,17nm,0.9s,mb4.8
MUD Monsted U'grnd 39.88 324⇑ *i*P P **04 46 51.5 +0.7**
MUD pmax pmax
comp=Z,17nm,0.9s,mb4.8
MEZF Maizieres J'vi 39.90 311 *e*P P **04 46 51.0 -0.1**
comp=Z,61nm,1.0s,mb5.0
LASF Ste Croix 40.12 304 *e*P P **04 46 53.1 +0.1**
comp=Z,38nm,1.1s,mb4.7
GIVF Givet 40.37 314 *e*P P **04 46 55.4 +0.5**
comp=Z,30nm,0.8s,mb4.8
SMF Signal de Mont 40.41 308 *e*P P **04 46 55.1 -0.2**
comp=Z,93nm,0.8s,mb5.3
LOR Lormes 40.48 309 *e*P P **04 46 55.5 -0.4**
comp=Z,22nm,0.8s,mb4.7

GTA Gaotai 40.58 63⇑P P **04 46 58.6 +1.8**
GTA AMB AMB
comp=Z,22nm,0.7s,mb4.9
SSF Saint Saulge 40.69 309 *e*P P **04 46 57.5 -0.1**
comp=Z,42nm,0.9s,mb4.8
BAIF Baives 40.74 314 *e*P P **04 46 58.6 +0.6**
comp=Z,30nm,0.8s,mb4.7
AVF Avril sur Loir 40.76 308 *e*P P **04 46 57.8 -0.4**
comp=Z,71nm,1.3s,mb4.8
NB2 NORSAR Subarra 41.07 331 P P **04 46 59.1 -1.5**
comp=Z,3.3nm,0.7s,mb4.1,baz=121,slow=8.6
NOA NORSAR Array B 41.07 331 P P **04 46 59.4 -1.1**
comp=Z,2.2nm,0.6s,mb4.0,baz=122,slow=8.3,SNR=11
NOA PP PP 04 48 31.1 -7.4
comp=Z,3.5nm,0.9s,baz=131,slow=11,SNR=7.0
NOA LR LR 05 05 21.0
comp=Z,184nm,20.2s,MS3.9,baz=120,slow=38
NOA NORSAR Array B 41.07 331 P P **04 46 59.4 -1.2**
NOA PP PP 04 48 31.1 -7.4
NOA LR LR 05 05 21.0
BGF Bois d'Agland 41.08 308 *e*P P **04 47 00.8 0.0**
comp=Z,14nm,0.8s,mb4.4
MTLF Montolieu 41.27 303 *e*P P **04 47 03.3 +0.9**
CAF Calviac 41.47 305 *e*P P **04 47 04.6 +0.6**
comp=Z,53nm,1.3s,mb4.7
TCF Toulx Ste Croi 41.49 308 *e*P P **04 47 04.4 +0.2**
comp=Z,19nm,0.8s,mb4.5
RJF Les Rejaudoux 41.88 306 *e*P P **04 47 08.0 +0.6**
comp=Z,33nm,1.0s,mb4.6
LFF La Frestale 42.41 305 *e*P P **04 47 12.3 +0.6**
comp=Z,33nm,0.8s,mb4.7
KEV Kevo 42.45 348 *e*p P **04 47 11.3 -0.4**
MOY Mondy 42.50 45 *e*P P **04 47 14.3 +1.9**
ARCES ARCESS Array B 42.55 347 P P **04 47 12.5 -0.1**
comp=Z,7.0nm,0.7s,mb4.5,baz=149,slow=8.2,SNR=36
ARCES ScP 04 52 53.1
comp=Z,2.2nm,0.8s,baz=141,slow=5.8,SNR=4.7
ARCES LR LR 05 08 24.3
comp=Z,106nm,18.6s,MS3.8,baz=291,slow=41
ARCES ARCESS Array B 42.55 347 P P **04 47 12.5 -0.1**
ARCES ScP 04 52 53.1
ARCES LR LR 05 08 24.3
ARE0 ARCESS Array S 42.55 347 *e*P P **04 47 12.2 -0.4**
MFF Saint Martin d 43.14 308 *e*P P **04 47 17.4 -0.2**
comp=Z,26nm,0.8s,mb4.7
EBEN Beniarda 43.18 296 P P **04 47 19.8 +1.7**
comp=Z,47nm,1.5s,mb5.0
EMOS Mosqueruela 43.28 299 P P **04 47 21.2 +2.4**
comp=Z,36nm,1.0s,mb5.1
ETSF Etsaut 43.29 302 *e*P P **04 47 20.0 +1.1**
comp=Z,45nm,1.0s,mb4.8
LDF La Druitiere 43.31 311 *e*P P **04 47 18.4 -0.6**
comp=Z,23nm,0.6s,mb4.8
FLN La Foliniere 43.56 311 *e*P P **04 47 20.6 -0.5**
comp=Z,25nm,0.5s,mb4.9
ZAK Zakamensk 43.70 47 *e*P P **04 47 22.3 +0.1**
ZAK *e* 04 49 04.5
GRR Gorron 43.77 310 *e*P P **04 47 22.4 -0.4**
comp=Z,50nm,0.8s,mb5.0
SJPF Ste Jean 43.78 303 *e*P P **04 47 24.0 +1.1**
comp=Z,40nm,0.8s,mb4.9
LZH Lanzhou 44.02 67 *e*P P **04 47 25.7 +0.8**
LZH AP pP 04 47 40.3 +11
LZH XP sP 04 47 48.8 +17
LZH AMB AMB
comp=Z,30nm,1.2s,mb4.9
LZH LR LR
comp=E,470nm,16.1s
LZH LR LR
comp=Z,560nm,18.4s,MS4.5
ETOB Tobarra 44.22 296 P P **04 47 27.4 +0.8**
comp=Z,44nm,1.7s,mb4.9
CHG Chiang Mai 44.37 93 P P **04 47 34.5 +6.5**
ETOR Torete 44.46 299 P P **04 47 29.5 +1.1**
comp=Z,5.8nm,0.8s,mb4.4
CMAR Chiang Mai Arr 44.51 93 P P **04 47 29.1 0.0**
comp=Z,1.9nm,0.4s,mb4.2,baz=286,slow=8.4,SNR=8.8
CMAR LR LR 05 08 32.0
comp=Z,66nm,18.2s,MS3.6,baz=290,slow=39
EVIA Vianos 44.97 296 P P **04 47 33.4 +0.8**
comp=Z,9.4nm,0.7s,mb4.7
EHUE Huescar 45.12 295 P P **04 47 33.8 0.0**
comp=Z,5.7nm,1.0s,mb4.4
QUIF Quistinic 45.28 309 *e*P P **04 47 34.5 -0.4**
comp=Z,70nm,0.6s,mb5.3
ROSF Rostrenen 45.37 310 *e*P P **04 47 35.4 -0.3**
comp=Z,54nm,0.8s,mb5.1
KMI Kunming 45.46 83 *e*P P **04 47 37.1 +0.4**
KMI AP pP 04 47 50.3 +9.1
KMI PP PP 04 49 25.1 +1.3
KMI SS SS 04 57 30.6 -1.6
KMI AMB AMB
comp=Z,20nm,0.8s,mb5.0
SONM Songino Array 45.49 51 P P **04 47 37.3 +0.7**
comp=Z,6.1nm,0.9s,mb4.5,baz=263,slow=9.3,SNR=47
SONM PcP PcP 04 49 15.6 -0.4
comp=Z,1.4nm,0.8s,baz=253,slow=3.4,SNR=3.9
EQES Quesada 45.50 295 P P **04 47 37.2 +0.4**
comp=Z,21nm,1.3s,mb4.8
NANT Nan 45.90 92 P P **04 47 36.9 -3.3**
ULN Ulaanbaatar 45.94 51*c* *i*P P **04 47 40.8 +0.7**
ULN Ulaanbaatar 45.94 51 *e*P P **04 47 40.6 +0.5**
comp=Z,1.7nm,0.6s,mb4.2
ESDC Sonseca Array 46.00 298 P P **04 47 41.4 +0.6**
comp=Z,0.6nm,0.4s,mb3.8,baz=82,slow=7.8,SNR=6.7
ESDC Sonseca Array 46.00 298 P P **04 47 41.3 +0.6**
comp=Z,2.7nm,0.7s,mb4.3
EBAN Banos Encina 46.02 296 P P **04 47 41.3 +0.4**
comp=Z,14nm,0.9s,mb4.9
GUD Guadarrama 46.06 299 P P **04 47 41.8 +0.6**
comp=Z,12nm,1.2s,mb4.7
EADA Vdamuz 46.64 296 P P **04 47 46.2 +0.5**
comp=Z,20nm,1.3s,mb4.9
EARI Arriondas 46.69 303 P P **04 47 46.7 +0.6**
comp=Z,98nm,1.9s,mb5.4
ELIJ Sierra de Lija 47.44 294 P P **04 47 51.3 -0.9**
comp=Z,5.4nm,0.7s,mb4.6
ECAL Calabor 47.90 301 P P **04 47 56.5 +0.8**
comp=Z,19nm,1.1s,mb5.0
EPON Pontenova 48.10 303 P P **04 47 57.8 +0.6**
comp=Z,50nm,1.5s,mb5.3
ERUA La Rua 48.16 302 P P **04 47 57.9 +0.2**
comp=Z,13nm,0.8s,mb5.0
EINC Incio 48.29 302 P P **04 47 58.1 -0.6**
comp=Z,26nm,1.0s,mb5.2
EMIN Mina Concepcio 48.33 296 P P **04 47 57.8 -1.3**
comp=Z,8.5nm,0.8s,mb4.8
GYA Guiyang 48.44 80 P P **04 47 58.5 -1.6**
GYA AP pP 04 48 15.6 +11
GYA XP sP 04 48 21.8 +15
GYA S S **04 54 51.6 -7.6**
GYA AMB AMB
comp=Z,10.0nm,0.6s,mb5.0
EBAD Badajoz 48.46 297 P P **04 47 59.3 -0.7**
comp=Z,15nm,1.1s,mb4.9
PCBR Castelo Branco 48.67 299 *e*P P **04 48 03.5 +1.8**
comp=Z,25nm,1.4s,mb5.1
PVRL Vila Real 48.69 301 *e*P P **04 48 03.4 +1.6**
comp=Z,31nm,0.9s,mb5.3
PVIS Viseu 48.89 300 *e*P P **04 48 05.1 +1.8**
comp=Z,44nm,1.5s,mb5.3
EGRO El Granado 49.00 296 P P **04 48 04.1 -0.2**
comp=Z,23nm,1.2s,mb5.1
PALC Alcoutim 49.01 295 *e*P P **04 48 04.2 -0.1**
STS Santiago 49.16 303 P P **04 48 05.7 +0.4**
comp=Z,16nm,0.9s,mb5.0
PBEJ Beja 49.23 296 *e*P P **04 48 06.6 +0.6**
comp=Z,15nm,1.4s,mb4.8
EVO Evora 49.27 297 *e*P P **04 48 07.7 +1.4**
comp=Z,11nm,0.7s,mb4.7
PTOM Tomar 49.42 298 *e*P P **04 48 08.9 +1.5**
comp=Z,59nm,0.9s,mb5.6
EMAZ Mazaricos 49.46 303 P P **04 48 05.7 -2.0**
comp=Z,66nm,1.7s,mb5.4
ENH Enshi 49.78 74 P P **04 48 09.9 -0.4**
BOD Bodaibo 50.87 38 *e*P P **04 48 17.9 -0.4**
SPITS Spitsbergen Ar 51.01 351 P P **04 48 19.4 +0.3**
comp=Z,12nm,0.7s,mb5.0,baz=153,slow=4.5,SNR=24
SPB4 Spitsbergen Ar 51.01 351 *e*P P **04 48 17.6 -1.5**
BJI Beijing 53.05 60 P P **04 48 34.8 -0.2**
BJI AMB AMB
comp=Z,13nm,0.8s,mb4.9
BJI AMB AMB
comp=Z,61nm,5.8s
BJI LR LR
comp=N,158nm,19.2s,MS4.2
BJI LR LR
comp=E,148nm,19.2s,MS4.2
BJI LR LR
comp=Z,133nm,21.6s,MS4.0
HIA Hailar 54.32 49 *e*P P **04 48 43.8 -0.3**
comp=Z,8.4nm,0.8s,mb4.7
DAG Danmarks Havn 56.77 345⇓ *i*P P **04 49 00.8 -0.8**
comp=Z,3.5nm,0.5s,mb4.7
DAG Danmarks Havn 56.77 345⇓ *i*P P **04 49 00.8 -0.8**
DAG pmax pmax
comp=Z,4.0nm,0.5s,mb4.7
NJ2 Nanjing 57.03 69 *e*P P **04 49 03.4 -0.6**
NJ2 PP PP 04 51 14.0 +1.6
NJ2 PCS 04 53 58.0
NJ2 S S **04 56 53.0 -3.0**
NJ2 AMB AMB
comp=Z,40nm,1.2s,mb5.3
NJ2 LR LR
comp=N,320nm,21.9s,MS4.5
NJ2 LR LR
comp=E,240nm,17.5s,MS4.5
NJ2 LR LR
comp=Z,130nm,10.6s
DBIC Dimbokro 57.57 258 P P **04 49 09.1 +1.1**
comp=Z,13nm,1.0s,mb4.9,baz=46,slow=7.2,SNR=10.0
KIC Kosan Boka 57.63 258 *e*P P **04 49 09.1 +0.7**
comp=Z,64nm,1.1s,mb5.6
TIC Toumodi 57.72 258 *e*P P **04 49 07.5 -1.6**
comp=Z,42nm,0.8s,mb5.5
LIC Lamto 57.94 258 *e*P P **04 49 11.2 +0.6**
comp=Z,38nm,0.7s,mb5.5
LIC Lamto 57.94 258 *e*P P **04 49 11.1 +0.5**
comp=Z,11nm,0.7s,mb5.0
TIXI Tiksi 58.15 21 *e*P P **04 49 10.8 -0.5**
TIXI *e*S S **04 57 04.3 -6.0**
TIXI pmax pmax
comp=Z,60nm,1.1s,mb5.5
TIXI MLR MLR
comp=Z,2μm,16.0s,MS5.2
TIXI Tiksi 58.15 21 *e*P P **04 49 10.6 -0.8**
YAK Yakutsk 58.77 33 *e*P P **04 49 14.9 -0.9**
CN2 Changchun 59.09 54 *e*P P **04 49 17.7 -0.5**
CN2 XP sP 04 49 41.8 +17
CN2 PPP PPP 04 52 55.0 -0.1
CN2 *e*S S **04 57 16.7 -6.2**
CN2 AMB AMB
comp=Z,10.0nm,0.9s,mb4.8
CN2 LR LR
comp=Z,370nm,19.0s,MS4.5
SSE Sheshan 59.21 70⇑P P **04 49 19.0 -0.3**
SSE AP pP 04 49 32.7 +8.8
SSE S S **04 57 21.2 -3.5**
SSE AMB AMB
comp=Z,30nm,0.7s,mb5.4
SSE LR LR
comp=N,85nm,20.0s,MS3.9
SSE LR LR
comp=E,27nm,20.0s,MS3.9
SSE LR LR
comp=Z,48nm,15.9s,MS3.7
LBTB Lobatse 59.80 207 *e*P P **04 49 24.8 +1.5**
comp=Z,12nm,0.8s,mb5.0
MDJ Mudanjiang 61.79 52 P P **04 49 35.0 -1.6**
MDJ AP pP 04 49 48.5 +7.2
MDJ PP PP 04 51 50.4 -4.6
MDJ S S **04 57 52.8 -4.6**
MDJ SS SS 05 01 56.0 -5.2
MDJ AMB AMB
comp=Z,6.0nm,0.9s,mb4.7
MDJ AMB AMB
comp=Z,28nm,3.3s
MDJ LR LR
comp=N,105nm,21.1s
MDJ LR LR
comp=Z,55nm,22.2s,MS3.7
SUMG Summit 61.93 340 *e*P P **04 49 37.0 -0.3**
KS15 Wonju Array Si 62.56 61 *e*P P **04 49 40.8 -1.1**
JNU Nakatsue 66.29 64 P P **04 50 06.7 +0.5**
comp=Z,3.2nm,0.3s,mb4.8,baz=344,slow=10.0,SNR=3.0
JOW Kunigami 66.52 72 P P **04 50 07.3 -0.5**
comp=Z,11nm,0.7s,mb5.0,baz=174,slow=27,SNR=2.7
SUR Sutherland 68.24 208 P P **04 50 20.4 +1.9**
comp=Z,6.6nm,0.8s,mb4.7,baz=49,slow=11,SNR=3.6
SEY Seymchan 68.72 29 *e*P P **04 50 22.0 +1.0**
SEY *e* 04 50 46.7
SEY pmax pmax
comp=E,20nm,1.1s
SEY pmax pmax
comp=Z,60nm,1.1s,mb5.4
MA2 Magadan 69.35 32 *e*P P **04 50 25.1 +0.2**
MA2 pmax pmax
comp=Z,10.0nm,1.0s,mb4.7
YSS Yuzh-Sakhalins 69.78 47 *e*P P **04 50 26.4 -1.4**
YSS pmax pmax
comp=Z,30nm,1.0s,mb5.2
YSS MLR MLR
comp=E,300nm,18.0s
YSS MLR MLR
comp=Z,400nm,18.0s,MS4.7
YSS Yuzh-Sakhalins 69.78 47 *e*P P **04 50 26.4 -1.4**
comp=Z,9.1nm,0.8s,mb4.8
BILL Bilibino 71.37 21 *i* P P **04 50 38.0 +0.9**
BILL *e* 04 50 59.7
BILL pmax pmax
comp=Z,15nm,1.1s,mb4.8
BILL MLR MLR
comp=Z,100nm,16.0s,MS4.2
SCHQ Schefferville 80.58 329 P P **04 51 30.0 +0.7**
comp=Z,7.4nm,0.7s,mb4.8,baz=64,slow=5.2,SNR=12
SCHQ LR LR 05 28 46.3
comp=Z,133nm,18.2s,MS4.3,baz=280,slow=37
SCHQ Schefferville 80.58 329 *e*P P **04 51 29.1 -0.1**
INK Inuvik 82.22 2 P P **04 51 38.1 +0.6**
comp=Z,3.0nm,0.7s,mb4.3,baz=18,slow=8.1,SNR=14
INK Inuvik 82.22 2 *e*P P **04 51 37.4 -0.1**
comp=Z,3.9nm,1.0s,mb4.3
IMA Indian Mountai 82.60 10 *e*P P **04 51 40.2 +0.6**
comp=Z,40nm,0.7s,mb5.5
COLA College 84.54 8 P P **04 51 50.3 +0.9**
comp=Z,4.0nm,0.5s,mb4.8
ILAR Eielson Array 84.75 8 P P **04 51 51.0 +0.5**
comp=Z,2.1nm,0.6s,mb4.4,baz=324,slow=4.1,SNR=23
ILAR PP PP 04 55 06.5 -2.0
comp=Z,1.1nm,1.1s,baz=344,slow=5.7,SNR=4.4
ILAR PKKPbc 05 10 04.4
comp=Z,0.3nm,0.9s,baz=180,slow=2.1,SNR=4.5
ILAR LR LR 05 35 43.2
comp=Z,52nm,18.4s,MS4.0,baz=212,slow=40
MCK McKinley 85.49 9 *e*P P **04 51 54.6 +0.5**
comp=Z,9.3nm,1.2s,mb4.8
FITZ Fitzroy Crossi 85.80 113 *e*P P **04 51 57.2 +0.4**
comp=Z,4.4nm,0.6s,mb4.9
FITZ Fitzroy Crossi 85.80 113 P P **04 51 57.3 +0.6**
comp=Z,5.9nm,0.8s,mb4.9,baz=339,slow=3.0,SNR=9.4
DAWY Dawson 86.16 5 *e*P P **04 51 58.6 +1.1**
YKW3 Yellowknife Ar 87.38 354 *e*P P **04 52 04.2 +0.7**
YKA Yellowknife Ar 87.45 354 P P **04 52 04.8 +1.0**
comp=Z,3.8nm,0.7s,mb4.7,baz=10,slow=5.2,SNR=108
YKA PP PP 04 55 23.4 -7.6
comp=Z,0.6nm,0.8s,baz=4.9,slow=8.2,SNR=5.5
YKA LR LR 05 37 42.8
comp=Z,43nm,18.6s,MS3.9,baz=70,slow=40
NWAO Narrogin (SRO) 88.08 130 P P **04 52 08.2 +0.6**
comp=Z,12nm,0.8s,mb5.2,baz=280,slow=17,SNR=7.5
KAKA Kakadu 88.52 105 *e*P P **04 52 10.2 +0.2**
comp=Z,15nm,0.9s,mb5.3
BINY Binghamton 93.61 324 P P **04 52 36.0 +2.9**
WRA Warramunga Arr 93.78 111 P P **04 52 33.9 -0.3**
comp=Z,0.5nm,0.5s,mb4.2,baz=312,slow=4.1,SNR=6.1
WRA PKKPbc 05 09 39.6
comp=Z,0.7nm,0.5s,baz=114,slow=2.6,SNR=17
WRAB Tennant Creek 93.78 111 P P **04 52 35.6 +1.3**
ASAR Alice Springs 95.28 114 P P **04 52 40.9 -0.3**
comp=Z,0.9nm,0.7s,mb4.3,baz=305,slow=4.4,SNR=4.4
ULM Lac du Bonnet 95.29 340 P P **04 52 41.0 +0.5**
comp=Z,2.4nm,0.8s,mb4.7,baz=47,slow=3.4,SNR=3.5
ULM PP PP 04 56 25.1 -7.9
comp=Z,2.6nm,0.9s,baz=16,slow=2.8,SNR=3.0
ULM LR LR 05 39 26.6
comp=Z,66nm,18.2s,MS4.2,baz=37,slow=38
TXAR Lajitas Array 116.67 336 PKP PKPdf 04 58 02.4 -1.5
comp=Z,0.3nm,0.6s,baz=6.0,slow=0.2,SNR=5.2
CPUP Villa Florida 117.96 254 PKP PKPdf 04 58 04.5 -1.9
comp=Z,1.4nm,0.8s,baz=207,slow=10,SNR=3.0
QSPA South Pole Qui 119.54 180 *e*PKP PKPdf 04 58 06.2 -2.0
LPAZ La Paz 123.36 269 PKP PKPdf 04 58 15.9 -1.1
comp=Z,0.7nm,0.8s,baz=209,slow=18,SNR=2.9

PLCA	**Paso Flores**	**132.13**	**240**	PKP	PKPdf	04 58 32.9	-0.4
	comp=Z,0.4nm,0.6s,baz=266,slow=19,SNR=2.7						
PLCA				SKPbc		05 01 57.1	
	comp=Z,2.8nm,0.9s,baz=93,slow=2.6,SNR=6.0						
PLCA	**Paso Flores**	**132.13**	**240**	PKP	PKPdf	04 58 32.9	-0.4
PLCA				SKPbc		05 01 57.1	

*IDC **08** 04:41:56.7±2.0,5.84S×148.23E,h88km±16km,mb3.9/7, mb1 4.1/10,mb1mx4.0/16,Error ellipse: s-maj=23.5km s-min=11.4km az=120.0*
*NEIC **08** 04:41:58.9±1.1,5.77S×148.14E,h104km±10km,mb4.2/3, Error ellipse: s-maj=16.3km s-min=10.0km az=134.0*
ISC 08 04:41:57.4±1.2,5.80S±0.09×148.17E±0.09,h105km±11km, n22,σ1°17/26,mb4.0/7,New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WAU	**Wau**	**2.10**	**223**	*e*P	**P**	**04 42 33.5**	**+1.4**
PMG	**Port Moresby**	**3.72**	**196**	P	**P**	**04 42 53.2**	**-0.9**
	13nm,0.3s,baz=14,slow=7.2,SNR=35						
PMG				S	**S**	**04 43 34.0**	**-3.1**
	71nm,0.3s,baz=180,slow=18,SNR=16						
PMG	**Port Moresby**	**3.72**	**196**	*e*P	**P**	**04 42 53.6**	**-0.5**
PMG				*e*S	**S**	**04 43 34.0**	**-3.1**
RAB	**Rabaul**	**4.29**	**68**	*e*P	**P**	**04 43 02.5**	**+0.7**
CTA	**Charters Tower**	**14.32**	**187**	P	**P**	**04 45 19.9**	**+3.5**
	0.1nm,0.3s,baz=360,slow=16,SNR=3.5						
CTAO	**Charters Tower**	**14.32**	**187**	P	**P**	**04 45 15.2**	**-1.2**
	4.9nm,0.8s						
WRAB	**Tennant Creek**	**19.44**	**222**	*e*P	**P**	**04 46 17.4**	**-0.8**
	55nm,0.8s						
WB2	**Warramunga Arr**	**19.44**	**222**	*e*P	**P**	**04 46 17.4**	**-0.8**
WB2				*e*S	**S**	**04 49 50.7**	**+3.7**
WRA	**Warramunga Arr**	**19.45**	**222**	P	**P**	**04 46 17.7**	**-0.6**
	1.4nm,0.3s,baz=49,slow=11,SNR=95						
WRA				S	**S**	**04 49 52.2**	**+5.0**
	0.0nm,0.3s,baz=42,slow=22,SNR=6.1						
AS12	**Alice Springs**	**22.45**	**216**	*e*P	**P**	**04 46 49.7**	**+1.3**
	16nm,0.5s,mb4.6						
ASAR	**Alice Springs**	**22.45**	**216**	P	**P**	**04 46 49.6**	**+1.2**
	18nm,0.5s,mb4.7,baz=53,slow=9.0,SNR=250						
ASAR				S	**S**	**04 50 50.5**	**+7.6**
	2.5nm,0.9s,baz=34,slow=25,SNR=13						
ARMA	**Armidale**	**24.70**	**173**	*e*P	**P**	**04 47 10.8**	**+0.6**
FITZ	**Fitzroy Crossi**	**25.16**	**239**	*e*P	**P**	**04 47 14.7**	**0.0**
	9.5nm,0.9s,mb4.2						
FITZ	**Fitzroy Crossi**	**25.16**	**239**	P	**P**	**04 47 14.6**	**-0.1**
	13nm,0.7s,mb4.5,baz=62,slow=3.5,SNR=15						
STKA	**Stephens Creek**	**26.66**	**193**	*e*P	**P**	**04 47 30.0**	**+1.6**
	5.5nm,0.9s,mb4.1						
STKA	**Stephens Creek**	**26.66**	**193**	P	**P**	**04 47 26.9**	**-1.5**
	9.0nm,1.0s,mb4.2,baz=357,slow=8.2,SNR=14						
URZ	**Urewera**	**41.64**	**145**	P	**P**	**04 49 36.2**	**-0.7**
	2.3nm,0.4s,mb4.3,baz=344,slow=19,SNR=2.5						
RAR	**Rarotonga**	**52.63**	**112**	P	**P**	**04 51 04.3**	**+1.1**
	39nm,0.4s						
SONM	**Songino Array**	**64.81**	**330**	P	**P**	**04 52 27.2**	**0.0**
	0.3nm,0.5s,mb3.4,baz=146,slow=5.2,SNR=3.9						
MKAR	**Makanchi Array**	**78.09**	**320**	P	**P**	**04 53 46.0**	**-0.3**
	0.9nm,0.9s,mb3.5,baz=121,slow=8.4,SNR=2.7						
ILAR	**Eielson Array**	**84.85**	**23**	P	**P**	**04 54 20.0**	**-1.2**
	0.4nm,0.8s,mb3.4,baz=272,slow=4.8,SNR=3.9						
BDFB	**Brasilia**	**153.34**	**143**	PKPbc	PKPdf	05 01 45.4	+9.1
	0.9nm,0.4s,baz=204,slow=1.1,SNR=3.7						
BDFB				PKPab	PKPab	05 01 58.2	-0.6
	1.6nm,0.6s,baz=219,slow=6.5,SNR=3.5						

*NNC **08** 05:00:24.5±0.9,43.05N×77.55E,mpv3.0,Error ellipse: s-maj=15.1km s-min=4.3km az=161.0*
*KNET **08** 05:00:27.4±0.6,42.90N×77.38E,h12km±3km,ml3.1,Error ellipse: s-maj=4.2km s-min=3.0km az=129.0*
ISC 08 05:00:25.8±1.1,42.86N±0.09×77.71E±0.08,h10km,n13, σ0°94/19,16C-5D,Lake Issyk-Kul region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ULHL	**Ulahol**	**1.25**	**241**	↑P	**Pb**	**05 00 47.5**	**-1.5**
	73nm,0.1s,SNR=290						
ULHL				↑S	**Sb**	**05 01 03.5**	**-1.4**
	350nm,0.2s						
TKM2	**Tokmak 2**	**1.55**	**273**	P	**Pn**	**05 00 52.1**	**-1.7**
	35nm,0.1s,SNR=21						
TKM2				↓S	**Sb**	**05 01 12.0**	**-1.9**
	220nm,0.1s						
KZA	**Kyzart**	**1.98**	**248**	↑P	**Pn**	**05 00 60.0**	**+0.2**
	24nm,0.2s,SNR=26						
KZA				↓S	**Sn**	**05 01 26.1**	**+1.2**
	53nm,0.2s						
KBK	**Karagaybulak**	**2.04**	**265**	↑P	**Pn**	**05 01 00.9**	**+0.1**
	75nm,0.2s,SNR=72						
KBK				↑S	**Sn**	**05 01 27.1**	**+0.6**
	251nm,0.3s						
CHMS	**Chumysh**	**2.18**	**275**	↑P	**Pn**	**05 01 02.4**	**-0.2**
	45nm,0.2s,SNR=46						
CHMS				↑S	**Sn**	**05 01 29.7**	**-0.2**
	89nm,0.2s						
AAK	**Ala-Archa**	**2.38**	**266**	↑P	**Pn**	**05 01 06.0**	**+0.4**
	20nm,0.2s,SNR=41						
AAK				↑S	**Sn**	**05 01 36.0**	**+1.0**
	58nm,0.2s						
USP	**Ospenovka**	**2.39**	**281**	↓P	**Pn**	**05 01 05.3**	**-0.3**
	44nm,0.3s,SNR=82						
USP				↓S	**Sn**	**05 01 35.6**	**+0.3**
	422nm,0.4s						
UCH	**Uchtor**	**2.44**	**256**	↑P	**Pn**	**05 01 07.6**	**+1.1**
	32nm,0.3s,SNR=58						
EKS2	**Erkin-Say**	**2.90**	**267**	↓P	**Pn**	**05 01 13.4**	**+0.4**
	8.6nm,0.1s,SNR=17						
AML	**Almayashu**	**3.06**	**258**	↑P	**Pn**	**05 01 16.4**	**+1.2**
	11nm,0.2s,SNR=10						
MK31	**Makanchi Array**	**5.11**	**38**	↑Pn	**Pn**	**05 01 43.9**	**-0.5**
	0.6nm,0.5s,baz=220,slow=18,SNR=12						
MK31				↑Lg		05 03 03.3	
	9.2nm,0.7s,baz=219,slow=27,SNR=11						
KK31	**Karatay Array**	**5.29**	**275**	↑Pg	**Pb**	**05 01 58.9**	**+0.8**
	1.7nm,0.6s,baz=92,slow=16,SNR=23						
KK31				↑Lg		05 03 06.2	
	8.5nm,0.5s,baz=92,slow=28,SNR=24						
KURK	**Kurchatov**	**7.88**	**4**	↑Lg		05 04 27.9	
	5.5nm,0.9s,baz=103,slow=13,SNR=8.1						

*NEIC **08** 05:33:48.1,32.34S×71.54W,h32km,ML2.8(GUC),After GUC.*
GUC 08 05:33:48.1±1.2,32.34S×71.54W,h32km±4km,MD3.5, ML2.8,4C-3D,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PACH	**Papudo**	**0.21**	**156**	↓*i*P	Pb	05 33 54.4	-0.3
PACH				*i* S	Sn	05 33 59.7	+0.5
PTCH	**Petorca**	**0.52**	**82**	↑*i*P	Pb	05 33 58.6	-0.4
PTCH				*i* S	Sb	05 34 06.8	+0.3
PTCH				AMP		05 34 07.3	
	comp=E,2µm,0.2s						
ROCH	**El Roble**	**0.77**	**145**	↓*i*P	Pn	05 34 02.7	-0.1
ROCH				*i* S	Sb	05 34 14.7	+1.5
JACH	**Jahuel**	**0.87**	**113**	↑*i*P	Pn	05 34 03.8	-0.4
JACH				*i* S	Sn	05 34 16.2	+0.4
PEL	**Peldehue**	**1.08**	**138**	*i* P	Pn	05 34 07.8	+0.7
PEL				*i* S	Sn	05 34 22.6	+1.5
PEL				AMP		05 34 25.4	
	comp=E,428nm,0.3s						
CMCH	**Combarbala**	**1.25**	**22**	↑*i*P	Pn	05 34 08.8	-0.9
CMCH				*i* S	Sn	05 34 25.1	-0.4
CMCH				AMP		05 34 27.0	
	comp=E,578nm,0.5s						
RCDM	**Rinconada Maip**	**1.30**	**152**	AMP		05 34 32.1	
	comp=E,252nm,0.1s						
CLCH	**Cerro Calan**	**1.35**	**141**	↓*i*P	Pn	05 34 11.6	+0.5
CLCH				*i* S	Sn	05 34 29.6	+1.6
CLCH				AMP		05 34 30.4	
	comp=N,211nm,0.3s						
FCH	**Farellones**	**1.44**	**133**	AMP		05 34 33.6	
	comp=E,229nm,0.1s						
OVCH	**Ovalle**	**1.75**	**10**	*i* P	Pn	05 34 18.2	+1.3
OVCH				*i* S	Sn	05 34 40.5	+2.2
OVCH				AMP		05 34 42.9	
	comp=N,121nm,0.3s						
LMEL	**Las Melosas**	**1.88**	**144**	↑*i*P	Pn	05 34 19.3	+0.7
LMEL				*i* S	Sn	05 34 43.3	+2.0
LMEL				AMP		05 34 45.3	
	comp=N,191nm,0.2s						

OTT 08 05:46:45.4±0.0,47.94N×70.67W,h22km,MN3.3/24, 1C-2D,46km south from La Baie, Quebec Eastern Background Seismic Zone.,Southern Quebec

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DAQ	**Lac Daran**	**0.39**	**275**	PG	Pb	05 46 52.9	-0.7
DAQ				SG	Sb	05 46 58.7	-0.4
DAQ				Trac		05 46 59.5	
	comp=Z,800nm,0.0s						
LMQ	**La Malbaie**	**0.45**	**149**	PG	Pb	05 46 53.9	-0.7
LMQ				SG	Sb	05 47 00.4	-0.5
LMQ				Trac		05 47 00.9	
	comp=Z,514nm,0.1s						
A61	**Sainte Mathild**	**0.46**	**122**	↓PG	Pb	05 46 54.0	-0.8
A61				SG	Sb	05 47 00.4	-0.6
A61				Trac		05 47 00.8	
	comp=Z,183nm,0.0s						
A54	**Misere**	**0.51**	**160**	↑PG	Pb	05 46 54.8	-0.8
A54				SG	Sb	05 47 02.3	-0.3
A54				Trac		05 47 02.6	
	comp=Z,125nm,0.0s						
A64	**Saint Simeon**	**0.53**	**101**	↓PG	Pb	05 46 55.2	-0.8
A64				SG	Sb	05 47 02.6	-0.6
A64				Trac		05 47 02.7	
	comp=Z,267nm,0.1s						
A16	**Riviere Ouelle**	**0.64**	**136**	PG	Pb	05 46 57.3	-0.5
A16				SG	Sb	05 47 06.2	-0.2
A11	**Saint Roch-des**	**0.76**	**155**	PG	Pb	05 46 59.2	-0.6
A11				SG	Sb	05 47 09.7	-0.1
A11				Trac		05 47 10.0	
	comp=Z,46nm,0.1s						
QCQ	**Quebec**	**1.23**	**200**	PG	Pn	05 47 07.1	-0.4
QCQ				SG	Sb	05 47 23.7	+0.5
QCQ				Trac		05 47 26.0	
	comp=Z,105nm,0.1s						
DPQ	**Saint Jean**	**1.91**	**230**	PN	Pn	05 47 16.9	-0.2
DPQ				PG	Pn	05 47 18.1	+0.9
DPQ				SN	Sn	05 47 38.8	-2.0
DPQ				SG	Sn	05 47 43.0	+2.3
DPQ				Trac		05 47 45.3	
	comp=Z,59nm,0.1s						
CNQ	**Baie Comeau**	**2.20**	**51**	PN	Pn	05 47 20.4	-0.9
CNQ				SN	Sn	05 47 46.2	-1.9
CNQ				Trac		05 47 56.5	
	comp=Z,76nm,0.2s						
GSQ	**Grosses Roches**	**2.56**	**66**	PN	Pn	05 47 25.2	-1.4
GSQ				SN	Sn	05 47 54.2	-3.1
GSQ				Trac		05 48 13.0	
	comp=Z,18nm,0.1s						
ICQ	**Pointe Anglais**	**2.75**	**53**	PN	Pn	05 47 27.6	-1.6
ICQ				SN	Sn	05 47 59.1	-3.1
ICQ				Trac		05 48 11.9	
	comp=Z,50nm,0.3s						
MOQ	**Mont Orford**	**2.84**	**203**	PN	Pn	05 47 30.1	-0.5
MOQ				SN	Sn	05 48 02.8	-1.6
MOQ				Trac		05 48 17.8	
	comp=Z,27nm,0.3s						
MNQ	**Manicouagan**	**2.88**	**25**	PN	Pn	05 47 29.7	-1.4
MNQ				SN	Sn	05 48 01.8	-3.7
MNQ				Trac		05 48 18.8	
	comp=Z,26nm,0.1s						
TRQ	**Mont Tremblant**	**3.16**	**239**	PN	Pn	05 47 33.5	-1.6
TRQ				SN	Sn	05 48 08.6	-4.0
TRQ				Trac		05 48 25.9	
	comp=Z,18nm,0.1s						
MNT	**Montreal**	**3.17**	**221**	PN	Pn	05 47 38.0	+2.8
MNT				SN	Sn	05 48 08.5	-4.3
MNT				Trac		05 48 23.6	
	comp=Z,18nm,0.1s						
SMQ	**Clarke City**	**3.47**	**47**	PN	Pn	05 47 37.4	-2.0
SMQ				SN	Sn	05 48 16.6	-3.7
SMQ				Trac		05 48 20.6	
	comp=Z,16nm,0.1s						
ALFO	**Alfred**	**3.70**	**233**	PN	Pn	05 47 41.9	-0.8
ALFO				SN	Sn	05 48 21.6	-4.7
ALFO				Trac		05 48 49.5	
	comp=Z,57nm,0.2s						
GRQ	**Grand Remous**	**3.78**	**251**	PN	Pn	05 47 41.8	-2.1
GRQ				SN	Sn	05 48 23.8	-4.4
GRQ				Trac		05 48 44.5	
	comp=Z,19nm,0.1s						
GGN	**Saint George**	**3.86**	**135**	PN	Pn	05 47 43.0	-2.0
GGN				SN	Sn	05 48 26.4	-3.9
GAC	**Glen Almond**	**3.99**	**238**	PN	Pn	05 47 44.9	-1.9
GAC				SN	Sn	05 48 28.9	-4.5
GAC				Trac		05 48 48.7	
	comp=Z,45nm,0.3s						
OTT	**Ottawa**	**4.31**	**236**	PN	Pn	05 47 47.7	-3.6
OTT				Trac		05 49 01.0	
	comp=Z,19nm,0.2s						
WBO	**Williamsburg**	**4.33**	**229**	PN	Pn	05 47 50.8	-0.9
WBO				SN	Sn	05 48 36.2	-5.9
WBO				Trac		05 49 06.2	
	comp=Z,15nm,0.2s						
LMN	**Caledonia Moun**	**4.53**	**115**	PN	Pn	05 47 51.5	-2.9
LMN				SN	Sn	05 48 40.8	-6.3
VLDQ	**Val d'Or**	**4.56**	**275**	PN	Pn	05 47 55.5	+0.6
VLDQ				SN	Sn	05 48 46.6	-1.3
VLDQ				Trac		05 49 22.4	
	comp=Z,4.4nm,0.1s						
CRLO	**Chalk River**	**4.97**	**250**	PN	Pn	05 47 56.8	-3.9
CRLO				SN	Sn	05 48 51.8	-6.5
CRLO				Trac		05 49 24.2	
	comp=Z,13nm,0.2s						
MPPO	**Murphy's Point**	**5.00**	**233**	PN	Pn	05 47 59.3	-1.9
MPPO				SN	Sn	05 48 52.4	-6.7
MPPO				Trac		05 49 21.8	
	comp=Z,24nm,0.3s						
PEMO	**Pembroke**	**5.05**	**246**	PN	Pn	05 47 58.7	-3.2
KGNO	**Kingston**	**5.49**	**230**	PN	Pn	05 48 05.1	-3.0
KGNO				Trac		05 49 42.8	
	comp=Z,3.1nm,0.1s						
BANO	**Bancroft**	**5.80**	**243**	PN	Pn	05 48 09.1	-3.4
BANO				SN	Sn	05 49 10.8	-8.3
EEO	**Eldee**	**5.87**	**260**	PN	Pn	05 48 09.4	-3.9
EEO				SN	Sn	05 49 13.2	-7.6
EEO				LG		05 49 46.0	
EEO				Trac		05 49 49.5	
	comp=Z,11nm,0.2s						
DELO	**Deloro Mine**	**5.91**	**237**	PN	Pn	05 48 10.6	-3.4
DELO				SN	Sn	05 49 14.3	-7.6
KILO	**Kirkland Lake**	**6.08**	**279**	PN	Pn	05 48 10.3	-6.1
KILO				SN	Sn	05 49 17.9	-8.1
KILO				Trac		05 49 23.8	
	comp=Z,3.2nm,0.1s						
LG4Q	**La Grande 4**	**6.10**	**340**	PN	Pn	05 48 12.7	-3.9
LG4Q				SN	Sn	05 49 18.4	-8.2
LG4Q				LG		05 49 55.0	
MALO	**McAlpine Lake**	**6.34**	**293**	PN	Pn	05 48 15.4	-4.7
MALO				SN	Sn	05 49 24.7	-8.0
BUKO	**Buck Lake**	**6.50**	**251**	SN	Sn	05 49 28.6	-8.1
SADO	**Sadowa**	**6.67**	**245**	PN	Pn	05 48 20.5	-4.1
SADO				SN	Sn	05 49 31.5	-9.2
SADO				LG		05 50 12.6	
SADO				Trac		05 50 19.2	
	comp=Z,5.5nm,0.2s						
LINO	**Lindsay**	**6.68**	**241**	PN	Pn	05 48 20.4	-4.4
WLVO	**Wesleyville**	**6.72**	**236**	PN	Pn	05 48 21.5	-3.9
WLVO				SN	Sn	05 49 33.0	-9.0
BINY	**Binghamton**	**6.86**	**215**	PN	Pn	05 48 22.2	-5.1
BINY				SN	Sn	05 49 40.1	-5.4
SCHQ	**Schefferville**	**7.31**	**18**	PN	Pn	05 48 29.4	-4.3
SCHQ				Trac		05 50 00.6	
	comp=Z,1.0nm,0.1s						
SUNO	**Sudbury Onapin**	**7.38**	**264**	PN	Pn	05 48 30.2	-4.4
SUNO				SN	Sn	05 49 47.6	-11
SUNO				Trac		05 50 24.3	
	comp=Z,3.0nm,0.1s						
TOBO	**Tobermory, Bru**	**7.96**	**254**	PN	Pn	05 48 38.2	-4.5
TOBO				SN	Sn	05 50 02.0	-11
DRLN	**Deer Lake**	**8.83**	**77**	PN	P	05 48 49.6	-5.2
VIMO	**Victor Mine**	**9.68**	**305**	PN	P	05 48 58.8	-7.6
VIMO				SN	Sn	05 50 42.7	-13
VIMO				Trac		05 50 48.9	
	comp=Z,0.8nm,0.1s						
GTO	**Geraldton**	**10.89**	**286**	PN	P	05 49 18.2	-4.9
GTO				SN	S	05 51 12.2	-13
SILO	**Sutton Inlier**	**11.07**	**312**	PN	P	05 49 17.6	-7.9
SILO				SN	S	05 51 16.2	-13
SILO				Trac		05 51 20.2	
	comp=Z,0.4nm,0.1s						

*NEIC **08** 05:54:58.7±0.8,23.66S×66.63W,h198km±9km,mb3.6/2, Error ellipse: s-maj=15.2km s-min=11.1km az=224.0*
*IDC **08** 05:54:58.8±1.2,23.67S×66.67W,h196km±11km,mb3.0/2, mb1 3.2/7,mb1mx3.2/16,Error ellipse: s-maj=21.4km s-min=17.1km az=33.0*
ISC 08 05:54:57.7±0.9,23.73S±0.08×66.7W±0.1,h203km±10km, n13,σ0°58/15,mb3.4/3,Jujuy Province

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LVC	**Limon Verde**	**2.35**	**298**	P	**P**	**05 55 41.1**	**+0.5**
	26nm,0.3s,baz=133,slow=6.4,SNR=274						
LVC				S	**S**	**05 56 13.6**	**-0.2**
	28nm,0.3s,baz=269,slow=22,SNR=35						
LVC	**Limon Verde**	**2.35**	**298**	*e*P	**P**	**05 55 40.8**	**+0.1**
LVC				*e*S	**S**	**05 56 12.8**	**-0.9**
LPAZ	**La Paz**	**7.53**	**349**	P	**P**	**05 56 47.2**	**+1.5**
	0.2nm,0.3s,baz=170,slow=15,SNR=5.8						
LPAZ				S	**S**	**05 58 10.1**	**+0.1**
	0.1nm,0.3s,baz=230,slow=14,SNR=2.3						
LPAZ	**La Paz**	**7.53**	**349**	*e*P	**P**	**05 56 45.9**	**+0.2**
	0.4nm,0.4s						
LPAZ				S	**S**	**05 58 10.1**	**+0.1**
CPUP	**Villa Florida**	**8.85**	**109**	P	**P**	**05 57 02.2**	**-0.7**
	0.1nm,0.3s,baz=322,slow=12,SNR=4.1						
CPUP	**Villa Florida**	**8.85**	**109**	P	**P**	**05 57 02.2**	**-0.7**
PLCA	**Paso Flores**	**17.27**	**190**	P	**P**	**05 58 48.6**	**+0.7**
	0.2nm,0.3s,baz=3.2,slow=12,SNR=6.5						
BDFB	**Brasilia**	**19.30**	**69**	P	**P**	**05 59 09.4**	**+0.2**
	0.3nm,0.3s,baz=243,slow=10,SNR=4.4						
OTAV	**Otavalo**	**26.43**	**333**	P	**P**	**06 00 17.7**	**-0.2**
	6.1nm,1.4s,mb4.0						
TXAR	**Lajitas Array**	**63.64**	**324**	P	**P**	**06 05 08.7**	**-0.8**
	0.1nm,0.4s,mb2.8,baz=148,slow=6.0,SNR=4.7						
YKA	**Yellowknife Ar**	**93.98**	**340**	P	**P**	**06 07 53.1**	**+0.1**
	0.2nm,0.6s,mb3.3,baz=137,slow=4.5,SNR=14						
WRA	**Warramunga Arr**	**132.01**	**207**	PKP	PKPdf	06 13 48.2	+0.4
	0.2nm,0.8s,baz=166,slow=0.1,SNR=8.4						
MKAR	**Makanchi Array**	**146.12**	**39**	PKPbc	PKPbc	06 14 15.4	+1.8
	0.6nm,0.5s,baz=335,slow=3.6,SNR=6.9						

*JMA **08** 06:04:01.9±0.2,39.19N×144.49E,h55km,M3.6*
ISC 08 06:03:59.6±1.2,39.25N±0.06×144.65E±0.09,h55km,n12, σ1°09/19,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyako 2**	**2.22**	**279**	P	**P**	**06 04 35.7**	**+0.9**
MIYJ				*e*S	**S**	**06 05 00.6**	**-0.4**
JTH	**Tanohata**	**2.26**	**289**	P	**P**	**06 04 36.1**	**+0.7**
JTH				*e*S	**S**	**06 05 02.6**	**+0.5**
OFUJ	**Ofunato**	**2.33**	**267**	P	**P**	**06 04 36.9**	**+0.6**
JOM	**Ohasama**	**2.62**	**276**	P	**P**	**06 04 41.4**	**+1.0**
JOM				*e*S	**S**	**06 05 10.4**	**-0.7**
JMK	**Ichinoseki**	**2.69**	**265**	P	**P**	**06 04 42.1**	**+0.6**
JMM	**Marumori**	**3.33**	**247**	P	**P**	**06 04 49.7**	**-0.8**
JMM				*e*S	**S**	**06 05 27.0**	**-2.1**
JYK	**Kaneyama**	**3.36**	**266**	*e*S	**S**	**06 05 30.0**	**+0.1**
JCH	**Churui**	**3.50**	**344**	P	**P**	**06 04 55.0**	**+2.1**
JCH				*e*S	**S**	**06 05 33.8**	**+0.3**
NEM2	**Nemuro 2**	**4.19**	**11**	P	**P**	**06 05 01.8**	**-0.9**
NEM2				*e*S	**S**	**06 05 47.7**	**-3.2**
JTKR	**Abashiri--Toko**	**4.75**	**353**	P	**P**	**06 05 11.4**	**+0.9**
JTKR				*e*S	**S**	**06 06 02.8**	**-2.1**
JRY	**Ryogami san**	**5.59**	**237**	P	**P**	**06 05 21.1**	**-1.0**
MAT	**Matsushiro**	**5.77**	**244**	P	**P**	**06 05 25.2**	**+0.6**

*INMG **08** 06:10:31.9±1.2,42.79N×7.18W,h12km±7km,ML1.8,Error ellipse: s-maj=3.5km s-min=1.8km az=96.0*
*NEIC **08** 06:10:32.0,42.79N×7.19W,MN2.1(MDD),After MDD.*
*MDD **08** 06:10:31.2±0.6,42.79N×7.23W,h8km±5km,mbLg2.0/15, Error ellipse: s-maj=5.0km s-min=3.9km az=78.0,PRXIMO*
ISC 08 06:10:30.2±0.6,42.76N±0.03×7.25W±0.07,h14km±6km, n30,σ1°22/33,4D,Spain

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
EINC	**Incio**	**0.12**	**216**	↓Pg	**Pg**	**06 10 35.3**	**+1.6**
	18nm,0.1s,SNR=18						
EINC				Lg		06 10 37.9	
	61nm,0.0s,SNR=5.0						
EINC	**Incio**	**0.12**	**216**	↓Pg	**Pg**	**06 10 35.3**	**+1.6**
EINC				Lg		06 10 37.9	
ERUA	**La Rua**	**0.37**	**168**	Pg	**Pg**	**06 10 39.2**	**+1.1**
	5.3nm,0.1s,SNR=7.9						
ERUA				Lg		06 10 44.1	
	16nm,0.1s,SNR=6.4						
ERUA	**La Rua**	**0.37**	**168**	Pg	**Pg**	**06 10 39.2**	**+1.1**
ERUA				Lg		06 10 44.1	
EPON	**Pontenova**	**0.57**	**7**	Pg	**Pg**	**06 10 41.5**	**-0.4**
	2.0nm,0.1s,SNR=17						
EPON				Lg		06 10 48.9	
	8.9nm,0.1s,SNR=21						
EPON	**Pontenova**	**0.57**	**7**	Pg	**Pg**	**06 10 42.1**	**+0.2**
EPON				Lg		06 10 48.7	
ECAL	**Calabor**	**0.90**	**155**	Pg	**Pg**	**06 10 48.8**	**+0.4**
	1.1nm,0.1s,SNR=22						
ECAL				Lg		06 11 00.3	
	20nm,0.2s,SNR=5.0						
ECAL	**Calabor**	**0.90**	**155**	Pg	**Pg**	**06 10 48.8**	**+0.4**
ECAL				Lg		06 11 00.9	
STS	**Santiago**	**0.96**	**278**	Pg	**Pg**	**06 10 49.9**	**+0.3**
	11nm,0.1s,SNR=6.8						
STS				Lg		06 11 02.5	
	14nm,0.2s,SNR=13						
STS	**Santiago**	**0.96**	**278**	Pg	**Pg**	**06 10 49.9**	**+0.3**
STS				Lg		06 11 02.6	
PBRG	**Braganca**	**1.03**	**158**	*e*P	**Pb**	**06 10 50.9**	**+1.7**
PBRG				*e*S	**Sb**	**06 11 04.6**	**+2.3**
	9.9nm,0.3s						
PBRG	**Braganca**	**1.03**	**158**	P	**Pb**	**06 10 50.9**	**+1.7**
PBRG				S	**Sb**	**06 11 04.6**	**+2.3**
	4.9nm,0.3s						
ELOB	**Lobios**	**1.07**	**214**	Pg	**Pg**	**06 10 52.7**	**+1.0**
	9.0

PCBR	**Castelo Branco**	**2.92**	**183**	*e*Sn		**Sn**	**06 11 51.3**	**-1.0**
	1.3nm,0.3s							
GUD	**Guadarrama**	**3.14**	**131**	Lg			06 12 10.2	
	2.9nm,0.4s,SNR=7.9							

IDC ***08*** *06:13:11.2±6.0,34.91S×179.02E,h172km±51km,mb3.6/3, mb1 3.7/4,mb1mx3.6/13,Error ellipse: s-maj=62.1km s-min=29.7km az=24.0*

WEL ***08*** *06:13:14.6±0.6,35.23S×178.71E,h216km±13km,ML4.4/1, Error ellipse: s-maj=18.2km s-min=9.3km az=90.0*

NEIC ***08*** *06:13:18.9±1.8,35.92S×178.97E,h255km±17km,mb4.3/2, Error ellipse: s-maj=30.2km s-min=24.7km az=175.0*

ISC 08 06:13:15.1±1.4,35.8S±0.1×179.4E±0.3,h260km±11km, n35,σ1ᵎ15/35,mb3.7/5,Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
MXZ	**Matakaoa Point**	**1.98**	**206**		PN	**P**	**06 13 58.0**	**-0.4**
MXZ					SN	**S**	**06 14 30.9**	**-1.1**
PUZ	**Puketiti**	**2.46**	**201**		PN	**P**	**06 14 03.4**	**+0.4**
PUZ					SN	**S**	**06 14 41.0**	**+0.8**
MWZ	**Matawai**	**2.95**	**210**		PN	**P**	**06 14 08.5**	**+0.5**
MWZ					SN	**S**	**06 14 49.1**	**-0.1**
URZ	**Urewera**	**3.07**	**216**	P		**P**	**06 14 08.5**	**-0.8**
	4.4nm,0.3s,baz=211,slow=1.2,SNR=24							
URZ				S		**S**	**06 14 52.3**	**+0.8**
	11nm,0.3s,baz=111,slow=22,SNR=15							
KNZ	**Kokohu**	**3.51**	**202**	*e*PN		**P**	**06 14 14.9**	**+0.7**
KNZ	**Kokohu**	**3.51**	**202**	*e*P		**P**	**06 14 14.7**	**+0.5**
BKZ	**Black Stump Fm**	**4.09**	**213**	PN		**P**	**06 14 21.1**	**+0.2**
PWZ	**Pawanui**	**4.69**	**204**	PN		**P**	**06 14 29.2**	**+1.3**
PWZ					SN	**S**	**06 15 27.1**	**+2.3**
PWZ	**Pawanui**	**4.69**	**204**	P		**P**	**06 14 29.1**	**+1.2**
TSZ	**Takapari Road**	**5.06**	**211**	PN		**P**	**06 14 32.4**	**+0.1**
TSZ					SN	**S**	**06 15 34.1**	**+1.3**
TSZ	**Takapari Road**	**5.06**	**211**	*e*P		**P**	**06 14 32.4**	**0.0**
BFZ	**Birch Farm**	**5.48**	**206**	PN		**P**	**06 14 40.2**	**+2.6**
BFZ	**Birch Farm**	**5.48**	**206**	*e*P		**P**	**06 14 38.6**	**+1.0**
MRZ	**Mangatainoka R**	**5.72**	**210**	PN		**P**	**06 14 40.1**	**-0.4**
MRZ					SN	**S**	**06 15 45.5**	**-1.8**
MTW	**Mount Morrison**	**6.17**	**208**	*e*PN		**P**	**06 14 45.7**	**-0.5**
MTW	**Mount Morrison**	**6.17**	**208**	P		**P**	**06 14 45.7**	**-0.4**
CAW	**Cannon Point**	**6.30**	**211**	PN		**P**	**06 14 47.1**	**-0.7**
CAW	**Cannon Point**	**6.30**	**211**	P		**P**	**06 14 47.1**	**-0.7**
MSWZ	**Moikau Station**	**6.49**	**209**	*e*PN		**P**	**06 14 50.5**	**+0.4**
SNZO	**South Karori**	**6.63**	**212**	*e*P		**P**	**06 14 50.0**	**-1.8**
TUWZ	**Tuamarina**	**7.07**	**215**	*e*PN		**P**	**06 15 06.2**	**-1.5**
THZ	**Tophouse**	**7.83**	**218**	*e*PN		**P**	**06 15 06.2**	**-0.8**
KHZ	**Kahutara**	**8.03**	**213**	*e*PN		**P**	**06 15 07.5**	**-2.0**
CTAO	**Charters Tower**	**32.99**	**289**	*e*P		**P**	**06 19 28.3**	**+0.5**
	20nm,1.4s,mb4.5							
ASAR	**Alice Springs**	**40.97**	**274**	P		**P**	**06 20 33.5**	**-0.8**
	1.2nm,0.5s,mb3.4,baz=115,slow=7.7,SNR=23							
WRAB	**Tennant Creek**	**42.45**	**280**	P		**P**	**06 20 48.4**	**+2.1**
	2.6nm,0.4s,mb3.8							
WRA	**Warramunga Arr**	**42.45**	**279**	P		**P**	**06 20 44.9**	**-1.4**
	1.4nm,0.6s,mb3.4,baz=120,slow=7.5,SNR=41							
FITZ	**Fitzroy Crossi**	**50.42**	**276**	P		**P**	**06 21 50.1**	**+1.8**
	3.1nm,1.1s,mb3.6,baz=150,slow=13,SNR=2.9							
SPITS	**Spitsbergen Ar**	**136.88**	**355**	PKP		PKPdf	06 32 10.9	+5.2
	5.1nm,1.0s,baz=135,slow=14,SNR=3.1							
ARCES	**ARCESS Array B**	**143.29**	**345**	PKhKP			06 32 17.4	
	1.2nm,0.8s,baz=90,slow=0.9,SNR=3.3							
JOF	**Joensuu**	**146.45**	**334**	*e*pkp		PKPdf	06 32 26.9	+4.1
KAF	**Kangasniemi**	**148.72**	**336**	*e*pkp		PKPdf	06 32 33.2	+6.8
	baz=47,slow=2.7							
FINES	**FINESS Array B**	**149.27**	**335**	PKPbc		PKPdf	06 32 35.2	+7.9
	1.9nm,0.6s,baz=39,slow=4.4,SNR=14							
FINES	**FINESS Array B**	**149.27**	**335**	PKPbc		PKPdf	06 32 35.2	+7.9
DBIC	**Dimbokro**	**150.77**	**171**	PKPbc		PKPdf	06 32 45.4	+14
	1.4nm,0.7s,baz=164,slow=3.1,SNR=3.6							

IDC ***08*** *06:13:59.0±1.6,54.26S×7.36E,mb4.0/3,mb1 4.2/3, mb1mx3.8/13,Error ellipse: s-maj=129.0km s-min=38.1km az=28.0*

NEIC ***08*** *06:13:59.6±0.7,53.95S×7.21E,h10km,mb4.4/5,Error ellipse: s-maj=19.4km s-min=17.6km az=96.0*

ISC 08 06:13:58.0±0.8,54.0S±0.1×7.2E±0.2,h10km,n12, σ0ᵎ97/10,mb4.3/8,Bouvet Island region

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
SNAA	**Sanae**	**18.32**	**190**	*e*P		**P**	**06 18 13.8**	**+0.3**
MAW	**Mawson**	**29.23**	**140**	P		**P**	**06 20 01.7**	**+0.1**
	25nm,1.6s,mb4.7							
LBTB	**Lobatse**	**32.01**	**33**	*e*P		**P**	**06 20 26.4**	**-0.2**
	3.4nm,1.2s,mb4.0							
PMSA	**Palmer Station**	**35.87**	**224**	P		**P**	**06 20 58.1**	**-1.3**
QSPA	**South Pole Qui**	**36.29**	**180**	*e*P		**P**	**06 21 03.0**	**+0.1**
	5.9nm,1.0s,mb4.5							
TRQA	**Tornquist**	**48.60**	**260**	*e*P		**P**	**06 22 44.6**	**+1.3**
	7.1nm,2.0s,mb4.3							
CPUP	**Villa Florida**	**54.25**	**274**	P		**P**	**06 23 27.4**	**+1.3**
	1.4nm,0.9s,mb3.9,baz=149,slow=5.9,SNR=3.4							
LVC	**Limon Verde**	**63.91**	**267**	*e*P		**P**	**06 24 30.8**	**-2.3**
	3.3nm,1.0s,mb4.3							
STKA	**Stephens Creek**	**85.88**	**142**	P		**P**	**06 26 39.1**	**+0.2**
	1.5nm,0.6s,mb4.4,baz=226,slow=4.3,SNR=5.0							
ASAR	**Alice Springs**	**90.13**	**133**	P		**P**	**06 26 59.3**	**-0.1**
	0.3nm,0.5s,mb3.9,baz=202,slow=4.9,SNR=3.9							
SPB4	**Spitsbergen Ar**	**131.99**	**3**	P		PKPdf	06 33 09.6	-3.9
YKA	**Yellowknife Ar**	**149.19**	**310**	PKPbc		PKPdf	06 33 48.1	+4.2
	1.0nm,0.7s,baz=101,slow=2.7,SNR=28							

JMA 08 06:14:55.0±0.2,39.23N×144.51E,h57km,M3.5,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
MIYJ	**Miyako 2**	**2.11**	**280**		P	P	06 15 29.0	+0.3
MIYJ					*e*S	S	06 15 53.7	0.0
JTH	**Tanohata**	**2.16**	**290**		P	P	06 15 29.4	0.0
JTH					*e*S	S	06 15 55.9	+0.9
OFUJ	**Ofunato**	**2.21**	**267**		P	P	06 15 30.2	+0.1
JOM	**Ohasama**	**2.51**	**277**		P	P	06 15 34.8	+0.5
JOM					*e*S	S	06 16 04.2	+0.5
JMK	**Ichinoseki**	**2.58**	**265**		P	P	06 15 35.5	+0.2
JMK					*e*S	S	06 16 05.3	-0.2
JMM	**Marumori**	**3.22**	**246**		P	P	06 15 43.0	-1.3
JMM					*e*S	S	06 16 20.7	-1.0
JYK	**Kaneyama**	**3.25**	**266**		P	P	06 15 45.1	+0.3
JCH	**Churui**	**3.49**	**346**		P	P	06 15 47.0	-1.2
JCH					*e*S	S	06 16 27.1	-1.5
JKB	**Kayabe**	**3.75**	**316**		*e*S	S	06 16 33.6	-1.5
NEM2	**Nemuro 2**	**4.23**	**12**		P	P	06 15 55.0	-3.6
NEM2					*e*S	S	06 16 41.0	-6.3
JTKR	**Abashiri--Toko**	**4.76**	**355**		P	P	06 16 04.8	-1.2
JTKR					*e*S	S	06 16 56.1	-4.4
JRY	**Ryogami san**	**5.49**	**236**		P	P	06 16 14.3	-1.8
MAT	**Matsushiro**	**5.66**	**244**		P	P	06 16 18.8	+0.3
MAT	**Matsushiro**	**5.66**	**244**		P	P	06 16 18.7	+0.2

LDG ***08*** *06:52:21.1±0.1,44.85N×7.59E,h18km,Md2.4/3,Ml2.5/10, Error ellipse: s-maj=1.9km s-min=1.1km az=86.0*

ROM ***08*** *06:52:21.4±0.1,44.80N×7.62E,h10km,MD2.4/2,ML1.8/2, Error ellipse: s-maj=0.9km s-min=0.8km az=90.0*

NEIC ***08*** *06:52:21.8,44.84N×7.61E,h10km,ML2.8(GEN), ML2.5(LDG),ML2.5(STR),After GEN.*

STR ***08*** *06:52:22.5±0.6,44.79N×7.53E,h10km±1km,Ml2.5,Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*

ISC 08 06:52:21.1±0.4,44.81N±0.02×7.54E±0.03,h12km±3km, n44,σ0ᵎ92/82,3C-5D,Northern Italy

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
BHB	**Bricherasio**	**0.20**	**278**	⇓P		**Pg**	**06 52 27.1**	**+1.4**
BHB					S	**Sg**	**06 52 30.5**	**+1.8**
DOI	**San Damiano**	**0.38**	**214**	*e*PG		**Pg**	**06 52 29.9**	**+1.0**
DOI					SG	**Sg**	**06 52 35.8**	**+1.7**
DOI	**San Damiano**	**0.38**	**214**	*e*Pg		**Pg**	**06 52 29.9**	**+1.0**
DOI					*e*Sg	**Sg**	**06 52 35.8**	**+1.8**
RSP	**Reno Superiore**	**0.40**	**329**	⇓P		**Pg**	**06 52 29.4**	**+0.2**
RSP					S	**Sg**	**06 52 35.1**	**+0.4**
FENE	**Fenestrelle**	**0.40**	**303**	P		**Pg**	**06 52 30.0**	**+0.6**
FENE					S	**Sg**	**06 52 36.2**	**+1.2**
PZZ	**Prazzo**	**0.44**	**226**	⇑P		**Pg**	**06 52 30.7**	**+0.5**
PZZ					S	**Sg**	**06 52 37.2**	**+1.0**
RRL	**Cesana Torines**	**0.55**	**281**	⇑P		**Pg**	**06 52 33.2**	**+0.9**
RRL					S	**Sg**	**06 52 41.1**	**+1.4**
MBDF	**Montbardon**	**0.56**	**261**	*e*Pg		**Pg**	**06 52 33.1**	**+0.7**
MBDF				*e*Sg		**Sg**	**06 52 41.1**	**+1.2**
	60nm,0.2s							
ROB	**Roburent**	**0.57**	**156**	P		**Pg**	**06 52 32.8**	**+0.2**
ROB					S	**Sg**	**06 52 40.0**	**-0.3**
STV2	**Anna di Valdie**	**0.59**	**195**	P		**Pb**	**06 52 33.1**	**+0.3**
STV2					S	**Sg**	**06 52 41.4**	**+0.4**
STV	**Sta Anna Valdi**	**0.59**	**195**	P		**Pb**	**06 52 33.3**	**+0.4**
STV					S	**Sg**	**06 52 41.6**	**+0.5**
ENR	**Entracque**	**0.59**	**189**	⇑P		**Pb**	**06 52 33.5**	**+0.6**
ENR					S	**Sg**	**06 52 41.8**	**+0.6**
SURF	**Saint Ours**	**0.62**	**238**	Pg		**Pg**	**06 52 34.0**	**+0.4**
BNI	**Bardonecchia**	**0.66**	**292**	*e*P		**Pb**	**06 52 34.6**	**+0.6**
BNI					*e*S	**Sb**	**06 52 43.6**	**+0.8**
LSD	**Ceresole Reale**	**0.70**	**337**	⇓P		**Pb**	**06 52 34.9**	**+0.1**
LSD					S	**Sb**	**06 52 44.0**	**-0.1**
MONE	**Monesi**	**0.75**	**168**	P		**Pb**	**06 52 36.1**	**+0.5**
MONE					S	**Sb**	**06 52 45.7**	**+0.3**
PCP	**Pian Castagno**	**0.77**	**110**	⇓P		**Pb**	**06 52 35.6**	**-0.2**
PCP					S	**Sb**	**06 52 45.1**	**-0.8**
FIN	**Finale Ligure**	**0.77**	**142**	*e*PG		**Pg**	**06 52 36.0**	**-0.6**
FIN					SG	**Sg**	**06 52 46.3**	**-0.6**
	26nm,0.3s							
FIN	**Finale Ligure**	**0.77**	**142**	⇓P		**Pb**	**06 52 36.1**	**+0.2**
FIN					S	**Sb**	**06 52 46.1**	**+0.1**
RORO		**0.80**	**152**	P		**Pb**	**06 52 36.5**	**+0.1**
RORO					S	**Sb**	**06 52 46.5**	**-0.3**
AUTN	**L'Aution**	**0.82**	**186**	Pg		**Pg**	**06 52 38.5**	**+0.9**
AUTN					Sg	**Sg**	**06 52 48.9**	**+0.2**
SAOF	**Saorge**	**0.83**	**179**	Pg		**Pg**	**06 52 37.4**	**-0.3**
SAOF					Sg	**Sg**	**06 52 48.7**	**-0.1**
TOUF	**Mont Tournerai**	**0.83**	**195**	Pg		**Pg**	**06 52 37.3**	**-0.4**
TOUF					Sg	**Sg**	**06 52 48.7**	**-0.1**
LPG	**La Plagne**	**0.88**	**321**	*e*Pg		**Pg**	**06 52 38.3**	**-0.6**
LPG				*e*Sg		**Sg**	**06 52 50.1**	**-0.6**
	18nm,0.2s							
LPL	**La Plagne**	**0.91**	**321**	*e*Pg		**Pg**	**06 52 38.7**	**-0.6**
LPL				*e*Sg		**Sg**	**06 52 50.8**	**-0.7**
	17nm,0.3s							
IMI	**Imperia**	**0.94**	**165**	*e*PG		**Pg**	**06 52 39.8**	**-0.1**
IMI					SG	**Sg**	**06 52 52.1**	**-0.4**
	22nm,0.3s							
IMI	**Imperia**	**0.94**	**165**	P		**Pb**	**06 52 39.9**	**+1.1**
IMI					S	**Sb**	**06 52 51.3**	**+0.4**
AURF	**Auriere**	**0.94**	**190**	Pg		**Pg**	**06 52 39.7**	**-0.2**
AURF					Sg	**Sg**	**06 52 53.4**	**+0.9**
SBF	**Sospel**	**0.95**	**185**	*e*Pg		**Pg**	**06 52 39.6**	**-0.6**
SBF				*e*Sg		**Sg**	**06 52 52.8**	**-0.2**
	132nm,0.2s							
MVIF	**Mont Vial**	**0.96**	**197**	Pg		**Pg**	**06 52 39.5**	**-0.8**
NEGI	**Negi**	**0.97**	**173**	P		**Pb**	**06 52 40.3**	**+1.0**
NEGI					S	**Sb**	**06 52 52.1**	**+0.2**
REVF	**Revere**	**1.08**	**187**	Pg		**Pg**	**06 52 42.8**	**0.0**
REVF					Sg	**Sg**	**06 52 57.9**	**+0.7**
MCGN	**Macugnaga**	**1.19**	**15**	*e*PN		**Pn**	**06 52 43.7**	**+0.2**
ORIF	**Oris-en-Rattie**	**1.19**	**276**	*e*Pg		**Pg**	**06 52 44.5**	**-0.4**
ORIF				*e*Sg		**Sg**	**06 52 59.5**	**-1.3**
	17nm,0.2s							
FRF	**La Foret Royal**	**1.41**	**208**	*e*Pg		**Pg**	**06 52 48.2**	**-1.1**
FRF				*e*Sg		**Sg**	**06 53 06.9**	**-1.2**
	12nm,0.2s							
TAVF	**Tavernes**	**1.60**	**222**	Pg		**Pg**	**06 52 52.0**	**-1.2**
TAVF					Sg	**Sg**	**06 53 13.9**	**-0.7**
VILF	**Villemus**	**1.63**	**234**	Pg		**Pg**	**06 52 53.7**	**+0.1**
SMRF	**Simiane la Rot**	**1.64**	**240**	*e*Pg		**Pg**	**06 52 52.4**	**-1.5**
SMRF				*e*Sg		**Sg**	**06 53 14.5**	**-1.3**
	5.6nm,0.3s							
LMR	**La Mourre**	**1.66**	**207**	*e*Pn		**Pn**	**06 52 48.6**	**-1.6**
LMR				*e*Pg		**Pg**	**06 52 52.0**	**-2.2**
LMR				*e*Sg		**Sg**	**06 53 14.5**	**-1.8**
	9.2nm,0.3s							
GRAM		**1.83**	**99**	P		**Pn**	**06 52 53.4**	**+0.7**
BACM		**1.89**	**106**	P		**Pn**	**06 52 54.9**	**+1.5**
VIVF	**Saint-Julien-l**	**2.04**	**272**	*e*Pg		**Pg**	**06 52 59.6**	**-2.3**
VIVF				*e*Sg		**Sg**	**06 53 26.9**	**-2.3**
	1.4nm,0.2s							
CABF	**La Chapelle**	**2.07**	**331**	*e*Pg		**Pg**	**06 52 59.6**	**-2.8**
CABF				*e*Sg		**Sg**	**06 53 25.9**	**-4.1**
	2.0nm,0.3s							
LASF	**Ste Croix**	**2.74**	**256**	*e*Sg		**Sg**	**06 53 48.4**	**-4.0**
	0.6nm,0.2s							

TRN 08 06:56:07.9,17.59N×59.42W,h29km,MD3.9,M3.6(FDF), MD3.7(FDF),1C-1D,Leeward Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
DEG	**La Desirade**	**2.02**	**231**	*e*P		Pn	06 56 41.2	+0.5
DEG					*e*S	Sn	06 57 04.8	-0.4
SEG	**Port Louis**	**2.32**	**240**	*e*P		Pn	06 56 46.5	+1.5
PAG	**Le Parnasse**	**2.66**	**235**	*e*P		Pn	06 56 51.7	+1.8
BBL	**Barber's Block**	**2.84**	**224**	*e*P		Pn	06 56 53.1	+0.7
BBL					*e*S	Sn	06 57 26.6	+0.6
DLVT	**Layou Valley**	**2.86**	**222**	*e*P		Pn	06 56 53.5	+0.8
DLVT					*e*S	Sn	06 57 27.5	+1.0
MDN	**Morne-Daniel**	**2.95**	**220**	*e*P		Pn	06 56 54.9	+1.0
MDN					*e*S	Sn	06 57 28.3	-0.4
DSTT	**Stowe**	**2.95**	**218**	*e*P		Pn	06 56 53.5	-0.4
DSTT					*e*S	Sn	06 57 30.7	+1.9
DBCT	**Belle View Cho**	**2.95**	**219**	*e*P		Pn	06 56 54.8	+0.8
DBCT					*e*S	Sn	06 57 28.7	-0.2
CRM	**Caravelle**	**3.16**	**207**	*e*P		Pn	06 56 57.2	+0.4
FDF	**Fort de France**	**3.29**	**211**	⇑*e*P		Pn	06 56 59.2	+0.5
FDF					*e*S	Sn	06 57 36.5	-0.9
MVM	**Montagne Vaucl**	**3.33**	**205**	*e*P		Pn	06 56 60.0	+0.6
MVM					*e*S	Sn	06 57 37.7	-0.8
BIM	**Bigot**	**3.44**	**208**	⇓*i*P		Pn	06 57 01.7	+0.8
BIM					*e*S	Sn	06 57 41.6	+0.4

NIED ***08*** *07:06:00,42.30N×143.00E,h47km,Mw3.9 Best double couple: M0 8.14×10¹⁴ NP1:φs328°,δ80°,λ39°. NP2:φs230°, δ52°,λ167°.*

NEIC ***08*** *07:06:47.5±1.1,42.32N×142.82E,h62km±11km,mb4.6/3, Error ellipse: s-maj=14.7km s-min=8.8km az=127.0*

NEIC Recorded [2 JMA] in the Urakawa area and [1 JMA] in the Obihiro and Shizunai areas.

JMA ***08*** *07:06:48.1±0.1,42.32N×143.00E,h52km±1km,M3.8 Broadband fault plane solution: P waves. NP1:φs228°, δ54°,λ167°. NP2:φs326°,δ79°,λ36°. Principal axes: T Plg33°, Azm193°; N Plg52°, Azm340°; P Plg16°, Azm92°; JMA Felt II J1.*

IDC ***08*** *07:06:48.0±2.1,42.19N×142.87E,h68km±18km,mb3.4/8, mb1 3.7/9,mb1mx3.4/23,MS3.0/1,Ms1 3.0/1,ms1mx2.4/20 Error ellipse: s-maj=21.6km s-min=15.0km az=100.0*

ISC 08 07:06:45.9±0.4,42.20N±0.04×142.95E±0.06,h67km±3km, n34,σ1ᵎ24/41,mb3.8/11,6C-2D,Hokkaido region

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
JNBK	**Urakawa-nobuka**	**0.17**	**298**	⇑P		**P**	**07 06 56.4**	**+0.5**
JNBK					*e*S	**S**	**07 07 03.2**	**-0.1**
JEM	**Erimo**	**0.24**	**140**	⇑P		**P**	**07 06 57.9**	**+1.5**
JCH	**Churui**	**0.51**	**36**	⇑P		**P**	**07 06 58.4**	**-0.2**
JCH					*e*S	**S**	**07 07 06.5**	**-1.5**
JBT2	**Biratori 2**	**0.72**	**323**	⇓P		**P**	**07 07 01.3**	**+0.4**
JBT2					*e*S	**S**	**07 07 11.8**	**-0.3**
JOB	**Onbets**	**0.96**	**43**	⇑P		**P**	**07 07 04.6**	**+0.7**
JOB					*e*S	**S**	**07 07 17.5**	**+0.2**
JFR	**Furan**	**1.00**	**345**	⇑P		**P**	**07 07 03.5**	**-0.9**
JAR	**Ashorobuto**	**1.25**	**29**	⇑P		**P**	**07 07 07.4**	**-0.4**
JAR					*e*S	**S**	**07 07 22.0**	**-2.1**
JEW	**Eniwo**	**1.28**	**300**	⇓P		**P**	**07 07 09.3**	**+1.1**
JEW					*e*S	**S**	**07 07 25.8**	**+1.0**
JAB	**Ashibetsu**	**1.41**	**338**	P		**P**	**07 07 10.8**	**+0.8**
ASAJ	**Asahikawa**	**1.93**	**352**	P		**P**	**07 07 17.6**	**+0.4**
	36nm,0.3s,baz=356,slow=9.1,SNR=29							
ASAJ				S		**S**	**07 07 42.8**	**+2.6**
	28nm,0.3s,baz=200,slow=32,SNR=14							
YSS	**Yuzh-Sakhalins**	**4.75**	**358**	P		**P**	**07 07 54.6**	**-2.1**
MAJO	**Matsushiro**	**6.74**	**215**	*e*P		**P**	**07 08 24.4**	**+0.1**
	11nm,0.4s							
MAT	**Matsushiro**	**6.74**	**215**	P		**P**	**07 08 25.8**	**+1.5**
MAT	**Matsushiro**	**6.74**	**215**	P		**P**	**07 08 26.0**	**+1.7**
	10nm,0.8s							
JHJ	**Hachijo jima 2**	**9.41**	**196**	P		**P**	**07 08 58.6**	**-2.3**
	18nm,0.3s,baz=78,slow=22,SNR=6.1							
JHJ						LR	07 12 37.4	
	comp=Z,82nm,18.3s,baz=305,slow=37							

KS15	**Wonju Array Si**	**12.52**	**253**	*e*P		**P**	**07 09 41.1**	**-1.7**
PET	**Petropavlovsk**	**15.11**	**39**	P		**P**	**07 10 15.6**	**-0.9**
FX1	**Attu Island--F**	**22.86**	**52**	P		**P**	**07 11 45.7**	**+1.9**
	11nm,0.7s,mb4.3,baz=280,slow=17,SNR=2.4							
SONM	**Songino Array**	**26.27**	**295**	P		**P**	**07 12 17.0**	**+0.5**
	1.1nm,0.7s,mb3.4,baz=84,slow=10,SNR=6.2							
ENH	**Enshi**	**29.32**	**257**	P		**P**	**07 12 43.5**	**-0.7**
	2.6nm,0.5s,mb4.1							
MKAR	**Makanchi Array**	**42.57**	**298**	P		**P**	**07 14 36.1**	**-0.3**
	1.0nm,0.6s,mb3.7,baz=63,slow=11,SNR=8.5							
KURK	**Kurchatov**	**43.84**	**304**	*e*P		**P**	**07 14 46.4**	**-0.3**
ILAR	**Eielson Array**	**44.54**	**35**	P		**P**	**07 14 53.0**	**+0.8**
	0.3nm,0.6s,mb3.2,baz=264,slow=7.5,SNR=5.4							
BRVK	**Borovoye**	**48.15**	**309**	*e*P		**P**	**07 15 18.2**	**-2.5**
INK	**Inuvik**	**49.28**	**29**	*e*P		**P**	**07 15 28.9**	**-0.4**
YKA	**Yellowknife Ar**	**58.77**	**32**	P		**P**	**07 16 38.2**	**-0.7**
	0.2nm,0.9s,mb3.2,baz=303,slow=5.2,SNR=4.0							
YKA	**Yellowknife Ar**	**58.77**	**32**	P		**P**	**07 16 38.2**	**-0.7**
WRAB	**Tennant Creek**	**62.33**	**189**	*e*P		**P**	**07 17 01.3**	**-2.4**
	9.1nm,1.1s,mb4.7							
WRA	**Warramunga Arr**	**62.34**	**189**	P		**P**	**07 17 04.1**	**+0.4**
	0.5nm,0.6s,mb3.8,baz=6.2,slow=7.1,SNR=12							
FINES	**FINESS Array B**	**64.81**	**332**	P		**P**	**07 17 18.3**	**-0.9**
	0.5nm,0.5s,mb3.6,baz=57,slow=5.8,SNR=10							
PAHR	**Pah Rah Range**	**69.55**	**55**	P		**P**	**07 17 51.6**	**+2.3**
	5.4nm,0.5s,mb4.6							
LRV	**Little Rabbit**	**70.57**	**58**	*e*P		**P**	**07 17 55.4**	**-0.2**
BGU	**Big Grassy Mou**	**72.52**	**50**	*e*P		**P**	**07 18 09.0**	**+1.9**
TXAR	**Lajitas Array**	**86.06**	**53**	P		**P**	**07 19 22.4**	**+2.0**
	0.2nm,0.7s,mb3.2,baz=315,slow=1.8,SNR=3.4							

IDC 08 07:27:47.2±13.0,27.58N×44.53W,mb3.7/4,mb1 4.0/4, mb1mx3.5/23,MS3.5/1,Ms1 3.5/1,ms1mx2.7/27,Error ellipse: s-maj=325.0km s-min=51.2km az=167.0, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
SADO	**Sadowa**	**32.48**	**311**		LR	LR	07 44 40.1	
	comp=Z,79nm,20.7s,baz=209,slow=31							
PDAR	**Pinedale Array**	**54.02**	**304**		P	P	07 37 13.4	-2.0
	0.3nm,0.5s,baz=79,slow=9.2,SNR=3.7							
YKA	**Yellowknife Ar**	**56.75**	**329**		P	P	07 37 32.4	-2.5
	0.3nm,0.9s,baz=94,slow=7.4,SNR=5.5							
ARCES	**ARCESS Array B**	**57.47**	**23**		P	P	07 37 37.5	-2.5
	2.4nm,0.8s,baz=259,slow=4.6,SNR=4.6							
ILAR	**Eielson Array**	**70.45**	**334**		P	P	07 39 03.4	-1.6
	0.6nm,0.8s,baz=69,slow=3.9,SNR=5.7							

BJI ***08*** *07:49:52.1,50.97N×87.69E,h12km,ML4.3*

IDC ***08*** *07:50:03.4±1.1,50.20N×87.63E,mb3.5/4,mb1 3.7/8, mb1mx3.5/23,ML3.6/4,Error ellipse: s-maj=14.8km s-min=9.9km az=106.0*

MOS ***08*** *07:50:04.0±1.5,50.01N×87.53E,h15km,mb4.1/4,Error ellipse: s-maj=17.6km s-min=7.9km az=91.7*

NEIC ***08*** *07:50:04.9±0.9,50.20N×87.58E,h10km,Error ellipse: s-maj=19.1km s-min=13.1km az=183.0*

NNC ***08*** *07:50:10.7±2.7,50.14N×87.05E,h33km,mpv4.0,Error ellipse: s-maj=25.1km s-min=11.1km az=99.0*

ISC 08 07:50:03.1±0.9,50.00N±0.03×87.33E±0.05,h8km±6km, n37,σ1ᵎ26/52,mb3.6/5,10C-6D,Kazakhstan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
AKAR	**Aktash**	**0.37**	**30**	*e*PG		**Pg**	**07 50 09.2**	**-1.5**
ARTR	**Artybash**	**1.80**	**359**	*e*PN		**Pn**	**07 50 35.3**	**+0.6**
ARTR				*e*S

KK31				⇓Sn	S	07 55 46.5	-1.0		
	comp=E,2.1nm,0.7s								
KKAR	**Karatay Array**	**13.46**	**246**	*i* P	**P**	**07 53 17.0**	**+0.3**		
AB31	**Akbulak array**	**17.73**	**278**	⇑P	**P**	**07 54 12.6**	**+1.0**		
	comp=E,1.5nm,0.8s,baz=79,slow=11,SNR=13								
KIV	**Kislovodsk**	**30.69**	**276**	*e*P	**P**	**07 56 28.5**	**+8.4**		
KIV				pmax	pmax				
	comp=Z,5.0nm,0.9s,mb4.3								
FINES	**FINESS Array B**	**35.01**	**313**	P	**P**	**07 57 00.6**	**+3.0**		
	comp=Z,0.8nm,0.9s,mb3.6,baz=68,slow=10,SNR=3.7								
FINES	**FINESS Array B**	**35.01**	**313**	P	**P**	**07 57 00.6**	**+3.0**		
FINES				pmax	pmax				
	comp=E,1.0nm,0.9s								
BRTR	**Keskin Array B**	**38.65**	**276**	P	**P**	**07 57 29.8**	**+1.3**		
	comp=Z,1.3nm,0.7s,mb3.8,baz=63,slow=6.4,SNR=2.8								
NOA	**NORSAR Array B**	**42.04**	**315**	P	**P**	**07 57 57.7**	**+1.6**		
	comp=Z,0.5nm,0.9s,mb3.1,baz=72,slow=7.0,SNR=3.2								
NOA	**NORSAR Array B**	**42.04**	**315**	P	**P**	**07 57 57.7**	**+1.6**		
NOA				pmax	pmax				
	comp=Z,1.0nm,0.9s								
YKA	**Yellowknife Ar**	**66.51**	**11**	P	**P**	**08 00 51.9**	**-2.7**		
	comp=Z,0.1nm,0.6s,mb3.0,baz=341,slow=6.5,SNR=5.3								
YKA	**Yellowknife Ar**	**66.51**	**11**	P	**P**	**08 00 51.9**	**-2.7**		
CPUP	**Villa Florida**	**144.04**	**298**	PKP	PKPdf	08 09 38.3	-3.5		
	comp=Z,2.8nm,1.1s,baz=50,slow=7.9,SNR=3.4								
CPUP	**Villa Florida**	**144.04**	**298**	PKIKP	PKPdf	08 09 38.3	-3.5		
CPUP				pmax	pmax				
	comp=Z,3.0nm,1.1s								

NIED ***08*** *08:02:00,22.00N×121.80E,h11km,Mw5.7 Best double couple: M0 3.58×10^17 NP1:φs290°,δ69°,λ-84°. NP2:φs93°, δ22°,λ-106°.*

TAP ***08*** *08:02:47.0,21.93N×121.64E,h7km,ML5.6*

TAP Felt I J at Hengchun, II J at Hengchun, I J at Taimali, I J at Taitung, I J at Pinlang, I J at Chenggung, I J at Jiouru, I J at Kaohsiung, I J at Shoushan, I J at Tauyuan, I J at Dapu, I J at Dungshan, I J at Tsaushan, I J at Alishan, I J at Jiali, I J at Tsauling, I J at Chiayi, I J at Gukeng, I J at Ryuetan.

JMA ***08*** *08:02:51.1±0.4,21.99N×121.81E,h10km,M5.7*

DUSS ***08*** *08:02:51.9±0.3,21.86N×122.03E,h15km*

BJI ***08*** *08:02:51.7,22.18N×121.47E,h7km,mB5.8,mb5.5,ML5.0, Ms5.7,Msz5.5*

ORF ***08*** *08:02:52.7,21.27N×121.97E,h30km,mb6.0*

IDC ***08*** *08:02:52.1±1.9,22.01N×121.73E,h14km±11km,mb5.3/33, mb1 5.4/38,mb1mx5.4/39,ML4.5/5,MS5.2/26,Ms1 5.2/26, ms1mx5.1/31,Error ellipse: s-maj=14.1km s-min=9.0km az=66.0,Putative timing error at EIL*

NEIC ***08*** *08:02:54.2±1.5,21.95N×121.60E,h26km±10km, mb5.7/105,MS5.4/101,MW5.6,ML5.7(TAP),Error ellipse: s-maj=4.2km s-min=3.9km az=48.0,Moment Tensor Solution. s14 Moment tensor: Scale 10^17Nm; Mrr-1.68; Mθθ1.63; Mφφ0.06; Mrθ1.81; Mrφ0.33; Mθφ0.51; Best double couple: M0 2.5×10^17 NP1:φs82°,δ21°,λ-84°. NP2: φs255°,δ69°,λ-92°. Principal axes: T 2.53, Plg24°, Azm347°; N -.01, Plg2°, Azm256°; P -2.53, Plg66°, Azm161°;*

NEIC Recorded [5 TAP] in T'ai-tung; [2 TAP] in P'ing-tung; [1 TAP] in Chia-i, Kao-hsiung, Nan-t'ou and Yun-lin Counties.

HRVD ***08*** *08:02:54.2±0.1,21.93N×121.48E,h12km,MW5.5/73, Centroid moment Tensor Solution. LP body waves: s54,c108;Mantle waves: s73,c166; Half duration: 1s4 Moment tensor: Scale 10^17Nm; Mrr-2.31±.03; Mθθ2.42±.03; Mφφ-0.12±.04; Mrθ0.38±.08; Mrφ-0.67±.03; Mθφ0.26±.10; Best double couple: M0 2.5×10^17 NP1:φs113°, δ42°,λ-76°. NP2:φs275°,δ49°,λ-102°. Principal axes: T 2.61, Plg4°, Azm14°; N -.23, Plg9°, Azm283°; P -2.39, Plg80°, Azm124°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

MOS ***08*** *08:02:56.2±0.9,22.48N×121.55E,h33km,mb6.0/50, MS5.6/36 Error ellipse: s-maj=9.2km s-min=5.3km az=111.0*

ISC 08 08:02:51.3±0.1**,22.17N**±0.02×**121.59E**±0.02**,h10**km**, (h12**km**±1.5**km**:pP-P),n769,**σ**1**9**16**/755**,mb5.6**/155**, MS5.4**/151**,90C-54D,Taiwan region**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time h m s	Res	ISC
LAY	**Lan-yu**	**0.14**	**194**	⇓*i* P		**Pg**	**08 02 50.7**	**-3.9**	
TAW	**Tawu**	**0.67**	**286**	*e*P		**Pb**	**08 03 02.0**	**-2.5**	
TTN	**Taitung**	**0.71**	**325**	P		**Pb**	**08 03 05.2**	**0.0**	
TTN				S		**Sb**	**08 03 18.8**	**+4.0**	
EAST	**Anshuo**	**0.72**	**287**	*e*P		**Pb**	**08 03 02.2**	**-3.1**	
ECL	**Taimali**	**0.72**	**306**	*e*P		**Pb**	**08 03 03.0**	**-2.4**	
TWK1	**Hengchun**	**0.76**	**253**	⇑*i*P		**Pb**	**08 03 01.9**	**-4.2**	
TWK1				S		**Sb**	**08 03 12.2**	**-4.1**	
TWG	**Pinlang**	**0.80**	**324**	*e*P		**Pb**	**08 03 05.2**	**-1.6**	
TWG				S		**Sb**	**08 03 18.4**	**+1.0**	
HEN	**Hengchun**	**0.81**	**258**	*i* P		**Pb**	**08 03 03.0**	**-3.8**	
SCZT	**Fangliau**	**0.92**	**283**	*e*P		**Pb**	**08 03 05.8**	**-3.0**	
CHKT	**Chengkung**	**0.94**	**347**	⇓*i*P		**Pb**	**08 03 07.8**	**-1.4**	
CHKT				S		**Sb**	**08 03 22.3**	**+0.8**	
SSD	**Sandimen**	**1.05**	**303**	*e*P		**Pb**	**08 03 09.2**	**-1.9**	
SSD				S		**Sb**	**08 03 26.9**	**+2.1**	
ELDTW	**Lidau**	**1.14**	**333**	*e*P		**Pb**	**08 03 10.8**	**-1.8**	
TWP	**Hsiaoliuchiu**	**1.15**	**279**	⇑*i*P		**Pb**	**08 03 12.1**	**-0.7**	
SGLT	**Jiouru**	**1.15**	**299**	*e*P		**Pb**	**08 03 12.1**	**-0.8**	
TWF1	**Yuli**	**1.20**	**347**	⇓*i*P		**Pb**	**08 03 11.9**	**-1.8**	
KAU	**Kaohsiung**	**1.25**	**289**	*e*P		**Pb**	**08 03 13.2**	**-1.2**	
STYT	**Tauyuan**	**1.25**	**322**	⇓*i*P		**Pb**	**08 03 12.8**	**-1.7**	
TWM1	**Shoushan**	**1.26**	**301**	*i* P		**Pb**	**08 03 14.0**	**-0.6**	
SGST	**Jiashian**	**1.30**	**314**	⇓*i*P		**Pb**	**08 03 14.5**	**-0.7**	
SGST				S		**Sb**	**08 03 36.4**	**+4.6**	
EHY	**Hungye**	**1.35**	**350**	⇓*i*P		**Pn**	**08 03 14.0**	**-2.2**	
WTP	**Ta-pu**	**1.40**	**320**	⇓*i*P		**Pn**	**08 03 15.9**	**-1.0**	
CHN1	**Nanshi**	**1.40**	**316**	⇓*i*P		**Pn**	**08 03 16.5**	**-0.5**	
YUS	**Yu-Shan**	**1.43**	**336**	*e*P		**Pn**	**08 03 16.0**	**-1.5**	
CHN3	**Shinhua**	**1.44**	**309**	*e*P		**Pn**	**08 03 17.4**	**-0.2**	
CHN3				S		**Sb**	**08 03 40.1**	**+4.0**	
CHN4	**Tsaushan**	**1.49**	**322**	⇓*i*P		**Pn**	**08 03 17.7**	**-0.5**	
CHN4				S		**Sb**	**08 03 42.7**	**+5.3**	
TWK	**Hsinying**	**1.49**	**317**	⇓*i*P		**Pn**	**08 03 17.4**	**-0.8**	
ALS	**Alishan**	**1.51**	**332**	⇑P		**Pn**	**08 03 18.1**	**-0.5**	
ALS				S		**Sb**	**08 03 43.7**	**+5.6**	
TAI1	**Yung-k'ang**	**1.52**	**305**	⇓*i*P		**Pn**	**08 03 17.5**	**-1.2**	
SCLT	**Jiali**	**1.63**	**308**	*e*P		**Pn**	**08 03 18.8**	**-1.4**	
ESL	**Shilin**	**1.64**	**355**	⇓*i*P		**Pn**	**08 03 18.1**	**-2.2**	
ESL				S		**Sn**	**08 03 45.3**	**+3.7**	
CHN5	**Tsauling**	**1.65**	**330**	*i* P		**Pn**	**08 03 19.9**	**-0.6**	
CHN2	**Minshiung**	**1.70**	**323**	*e*P		**Pn**	**08 03 21.0**	**-0.2**	
CHN2				S		**Sn**	**08 03 46.1**	**+2.9**	
CHY	**Chiayi**	**1.70**	**321**	*i* P		**Pn**	**08 03 19.7**	**-1.5**	
CHN8	**Yiju**	**1.73**	**313**	*e*P		**Pn**	**08 03 19.9**	**-1.7**	
WGK	**Gukeng**	**1.78**	**328**	*e*P		**Pn**	**08 03 22.4**	**+0.1**	
HWA	**Hwalien**	**1.79**	**0**	*e*P		**Pn**	**08 03 20.0**	**-2.6**	
SMLT	**Sun Moon Lake**	**1.81**	**340**	*e*P		**Pn**	**08 03 22.6**	**-0.3**	
SMLT				S		**Sn**	**08 03 51.3**	**+5.2**	
TYC	**Yuchr**	**1.85**	**339**	⇓*i*P		**Pn**	**08 03 23.5**	**+0.1**	
WNT	**Mingjian**	**1.89**	**334**	⇓*i*P		**Pn**	**08 03 24.4**	**+0.5**	
WNT				S		**Sn**	**08 03 51.8**	**+3.8**	
TWD	**Chiawan**	**1.90**	**0**	⇓*i*P		**Pn**	**08 03 21.6**	**-2.5**	
WSF	**Szhu**	**1.93**	**319**	*e*P		**Pn**	**08 03 22.7**	**-1.8**	
WHF	**Hehuan Shan**	**1.98**	**351**	⇓*i*P		**Pn**	**08 03 23.9**	**-1.4**	
WTCT	**Ta-ch'eng**	**2.07**	**325**	*e*P		**Pn**	**08 03 24.9**	**-1.7**	
WDGT	**Dungji**	**2.08**	**302**	*e*P		**Pn**	**08 03 23.7**	**-3.0**	
TWT	**Tachien**	**2.10**	**350**	⇓*i*P		**Pn**	**08 03 26.4**	**-0.7**	
TWT				S		**Sn**	**08 03 55.3**	**+1.9**	
TCU	**Taichung**	**2.14**	**337**	*e*P		**Pn**	**08 03 27.7**	**+0.2**	
TCU				S		**Sn**	**08 03 55.8**	**+1.5**	
ENA	**Nanau**	**2.25**	**4**	*e*P		**Pn**	**08 03 26.8**	**-2.3**	
NNS	**Nan Shan**	**2.26**	**355**	⇓*i*P		**Pn**	**08 03 27.9**	**-1.4**	
TWQ1	**Liyutan**	**2.29**	**341**	P		**Pn**	**08 03 30.4**	**+0.7**	
TWQ1				S		**Sn**	**08 04 03.0**	**+4.8**	
PNG	**Penghu**	**2.33**	**307**	*e*P		**Pn**	**08 03 27.3**	**-3.0**	
PNG				S		**Sn**	**08 03 54.4**	**-4.9**	
NSY	**Sanyi**	**2.36**	**341**	*e*P		**Pn**	**08 03 31.7**	**+1.1**	
TWC	**Suao**	**2.44**	**6**	⇓*i*P		**Pn**	**08 03 30.1**	**-1.6**	
TWC				S		**Sn**	**08 04 02.1**	**+0.2**	
ENTT	**Nioudou**	**2.45**	**360**	*e*P		**Pn**	**08 03 30.4**	**-1.7**	
NSK	**Sanguang**	**2.50**	**355**	⇓*i*P		**Pn**	**08 03 31.8**	**-0.9**	
NSK				S		**Sn**	**08 04 08.0**	**+4.5**	
NSTT	**Nanjuang**	**2.50**	**348**	*e*P		**Pn**	**08 03 32.7**	**-0.1**	
TWE	**Neicheng**	**2.54**	**2**	P		**Pn**	**08 03 31.8**	**-1.4**	
ILA	**Ilan**	**2.58**	**3**	*e*P		**Pn**	**08 03 33.1**	**-0.8**	
YOJ	**Yonaguni jima**	**2.63**	**30**	P		**Pn**	**08 03 35.6**	**+1.1**	
YOJ				S		**Sn**	**08 04 09.1**	**+2.4**	
HSN	**Hsinchu**	**2.68**	**348**	*e*P		**Pn**	**08 03 35.5**	**+0.3**	
HATJ	**Hateruma jima**	**2.77**	**47**	P		**Pn**	**08 03 36.5**	**-0.1**	
HATJ				*e*S		**Sn**	**08 04 09.9**	**-0.5**	
TATO	**Taipei**	**2.79**	**358**	⇑*e*P		**Pn**	**08 03 39.3**	**+2.5**	
TWA	**Mucha**	**2.79**	**360**	*e*P		**Pn**	**08 03 36.2**	**-0.7**	
TWA				S		**Sn**	**08 04 14.4**	**+3.4**	
TAP1	**Taipei**	**2.85**	**359**	*e*P		**Pn**	**08 03 35.9**	**-1.8**	
TAP	**Taipei**	**2.85**	**359**	*e*P		**Pn**	**08 03 37.8**	**0.0**	
NWF	**Wu-fen Shan**	**2.89**	**3**	⇓*i*P		**Pn**	**08 03 37.6**	**-0.7**	
NWF				S		**Sn**	**08 04 15.5**	**+2.1**	
IRIF	**Iriomote-Funau**	**2.92**	**42**	P		**Pn**	**08 03 39.6**	**+1.0**	
IRIF				*e*S		**Sn**	**08 04 14.5**	**+0.4**	
TWS1	**Kuangyinshan**	**2.92**	**357**	*e*P		**Pn**	**08 03 37.8**	**-0.8**	
JKRS	**Kuro-shima**	**3.03**	**47**	P		**Pn**	**08 03 40.8**	**+0.6**	
JKRS				S		**Sn**	**08 04 17.0**	**0.0**	
TWY	**Chenhua**	**3.09**	**0**	*e*P		**Pn**	**08 03 40.6**	**-0.5**	
JIJ	**Ishigaki jima**	**3.20**	**47**	P		**Pn**	**08 03 42.1**	**-0.6**	
JIJ				S		**Sn**	**08 04 20.1**	**-1.3**	
PCYT	**Pengchaiyu**	**3.47**	**7**	*e*P		**Pn**	**08 03 44.4**	**-2.0**	
KNM	**Kinmen**	**3.66**	**308**	*e*P		**Pn**	**08 03 47.0**	**-2.2**	
KNM				S		**Sn**	**08 04 30.2**	**-2.7**	
JTJ	**Tarama**	**3.77**	**49**	P		**Pn**	**08 03 50.4**	**-0.3**	
JTJ				S		**Sn**	**08 04 34.6**	**-1.1**	
QZH	**Quanzhou**	**3.89**	**316**	⇑*i*P		**Pn**	**08 03 52.6**	**+0.1**	
QZH				S		**Sn**	**08 04 37.5**	**-1.3**	
QZH				S		Sn			
	comp=N,3μm,0.9s								
QZH				S		Sn			
	comp=E,4μm,1.0s								
QZH				LR		LR			
	comp=N,49μm,6.6s								
QZH				LR		LR			
	comp=E,33μm,8.2s								
QZH				LR		LR			
	comp=E,65μm,10.4s								
JMJ	**Miyako jima 2**	**4.30**	**52**	P		**Pn**	**08 03 57.6**	**-0.7**	
JMJ				*e*S		**Sn**	**08 04 47.6**	**-1.5**	
JOGS	**Gusukube**	**4.35**	**53**	P		**Pn**	**08 03 59.2**	**+0.2**	
JOGS				*e*S		**Sn**	**08 04 49.6**	**-0.8**	
JKE	**Kume jima 2**	**6.29**	**48**	P		**Pn**	**08 04 23.8**	**-2.6**	
JKE				*e*S		**Sn**	**08 05 33.8**	**-5.3**	
JAGN	**Aguni-jima**	**6.77**	**48**	P		**Pn**	**08 04 32.0**	**-1.2**	
JAGN				*e*S		**Sn**	**08 05 47.7**	**-3.5**	
NAH1	**Naha**	**6.86**	**53**	*e*S		**Sn**	**08 05 52.0**	**-1.5**	
HKC	**Hong Kong**	**6.87**	**272**	⇑*e*P		**Pn**	**08 04 35.0**	**+0.4**	
JIH	**Iheya**	**7.56**	**49**	P		**Pn**	**08 04 43.1**	**-1.1**	
JIH				*e*S		**Sn**	**08 06 05.3**	**-5.5**	
JOW	**Kunigami**	**7.65**	**51**	Pn		**Pn**	**08 04 41.4**	**-4.2**	
	comp=Z,13nm,0.3s,baz=244,slow=8.8,SNR=20								
JOW				Sn		**Sn**	**08 06 08.6**	**-4.7**	
	comp=Z,11nm,0.3s,baz=321,slow=30,SNR=3.5								
JOW	**Kunigami**	**7.65**	**51**	P		**Pn**	**08 04 43.2**	**-2.4**	
JOW				*e*S		**Sn**	**08 06 08.6**	**-4.6**	
GZH	**Guangzhou**	**7.67**	**278**	P		**Pn**	**08 04 43.6**	**-2.2**	
GZH				S		**Sn**	**08 06 06.6**	**-7.0**	
GZH				LR		LR			
	comp=N,23μm,13.5s								
GZH				LR		LR			
	comp=E,23μm,12.2s								
GZH				LR		LR			
	comp=Z,43μm,12.5s								
TGY	**Tagaytay City**	**8.05**	**185**	Pn		**P**	**08 04 47.1**	**-4.0**	
	comp=Z,40nm,0.3s,baz=69,slow=22,SNR=3.7								
TGY				LR		LR	08 08 05.5		
	comp=Z,28μm,20.9s,baz=306,slow=40								
JTK	**Tokunoshima**	**8.71**	**49**	P		**P**	**08 04 56.4**	**-3.8**	
JTK				*e*S		**Sn**	**08 06 31.8**	**-7.7**	
SSE	**Sheshan**	**8.89**	**358**	⇑P		**P**	**08 05 02.7**	**-0.1**	
SSE				S		**Sn**	**08 06 40.8**	**-3.3**	
SSE				LR		LR			
	comp=N,19μm,15.0s								
SSE				LR		LR			
	comp=E,9μm,15.0s								
SSE				LR		LR			
	comp=Z,27μm,15.0s								
JMZ	**Minamidaito 2**	**9.52**	**66**	P		**P**	**08 05 08.3**	**-3.3**	
JMZ				*e*S		**Sn**	**08 06 46.8**	**-13**	
JAM	**Amami Oshima**	**9.55**	**48**	P		**P**	**08 05 06.6**	**-5.3**	
JAM				*e*S		**Sn**	**08 06 52.0**	**-8.3**	
NJ2	**Nanjing**	**10.13**	**347**	*e*P		**P**	**08 05 19.0**	**-1.0**	
NJ2				AP			08 05 22.4		
NJ2				XP			08 05 26.0		
NJ2				PP		PP	08 05 31.3	+3.3	
NJ2				S		**S**	**08 07 12.5**	**-2.3**	
NJ2				AMB		AMB			
	comp=Z,100nm,0.9s								
NJ2				AMB		AMB			
	comp=Z,1μm,6.3s								
NJ2				LR		LR			
	comp=N,56μm,21.6s								
NJ2				LR		LR			
	comp=E,39μm,14.6s								
NJ2				LR		LR			
	comp=Z,71μm,15.9s								
WHN	**Wuhan**	**10.56**	**324**	P		**P**	**08 05 24.5**	**-1.3**	
WHN				S		**S**	**08 07 18.5**	**-6.7**	
WHN				LR		LR			
	comp=N,37μm,19.8s								
WHN				LR		LR			
	comp=E,37μm,13.2s								
WHN				LR		LR			
	comp=Z,58μm,13.7s								
QIZ	**Qiongzhong**	**11.44**	**256**	P		**P**	**08 05 33.7**	**-4.1**	
QIZ				PP		PP	08 05 42.4	-4.3	
QIZ				S		**S**	**08 07 40.7**	**-6.0**	
QIZ				AMB		AMB			
	comp=Z,624nm,8.0s								
QIZ				LR		LR			
	comp=N,19μm,14.4s								
QIZ				LR		LR			
	comp=E,17μm,15.2s								
QIZ				LR		LR			
	comp=Z,26μm,16.3s								
QIZ	**Qiongzhong**	**11.44**	**256**	*e*P		**P**	**08 05 33.5**	**-4.3**	
	comp=Z,153nm,0.9s								
JFU	**Fukue jima 2**	**12.22**	**30**	P		**P**	**08 05 49.2**	**+0.8**	
JHD	**Hondo**	**12.75**	**35**	P		**P**	**08 05 54.9**	**-0.6**	
JZO	**Okuchi**	**12.75**	**37**	P		**P**	**08 05 54.1**	**-1.4**	
ENH	**Enshi**	**13.52**	**309**	*e*P		**P**	**08 06 06.0**	**+0.3**	
	comp=Z,122nm,1.0s								
JNU	**Nakatsue**	**13.65**	**35**	Pn		**P**	**08 06 04.8**	**-2.7**	
	comp=Z,0.9nm,0.3s,baz=190,slow=8.0,SNR=22								
JNU				LR		LR	08 11 31.0		
	comp=Z,10μm,20.3s,baz=203,slow=38								
GYA	**Guiyang**	**14.26**	**290**	⇑P		**P**	**08 06 14.9**	**-0.5**	
GYA				AP			08 06 21.6		
GYA				XP			08 06 24.7		
GYA				S		**S**	**08 08 53.3**	**-1.3**	
GYA				LR		LR			
	comp=N,10μm,12.0s								
GYA				LR		LR			
	comp=E,13μm,15.6s								
GYA				LR		LR			
	comp=Z,19μm,15.6s								
TIA	**Tai'an**	**14.52**	**345**	⇑P		**P**	**08 06 22.1**	**+3.3**	
TIA				AMB		AMB			
	comp=Z,411nm,2.0s								
TIA				LR		LR			
	comp=N,9μm,12.2s								
TIA				LR		LR			
	comp=E,10μm,9.0s								
JTY	**Toyota**	**14.64**	**33**	P		**P**	**08 06 20.1**	**-0.4**	
DAV	**Davao City (W)**	**15.50**	**165**	*e*P		**P**	**08 06 34.0**	**+2.2**	
INCN	**Inchon**	**15.87**	**15**	⇑*i*P		**P**	**08 06 38.4**	**+2.0**	
	comp=E,1μm,1.4s								
KS15	**Wonju Array Si**	**16.16**	**18**	⇑*i*P		**P**	**08 06 41.9**	**+1.8**	
XAN	**Xi'an**	**16.25**	**319**	P		**P**	**08 06 42.2**	**+1.0**	
XAN				S		**S**	**08 09 50.0**	**+8.6**	
XAN				LR		LR			
	comp=N,10μm,17.4s								
XAN				LR		LR			
	comp=E,13μm,13.1s								
XAN				LR		LR			
	comp=Z,20μm,14.6s								
DL2	**Dalian**	**16.68**	**0**	P		**P**	**08 06 49.8**	**+3.1**	
DL2				S		**S**	**08 10 01.6**	**+10**	
DL2				AMB		AMB			
	comp=Z,2μm,11.7s								
DL2				LR		LR			
	comp=N,3μm,12.0s								
DL2				LR		LR			
	comp=E,8μm,17.1s								
DL2				LR		LR			
	comp=Z,9μm,17.2s								
KKM	**Kota Kinabalu**	**16.86**	**199**	⇓*e*P		**P**	**08 06 47.0**	**-2.1**	
	comp=Z,265nm,1.5s								
UBT	**Ubonrachathani**	**17.13**	**249**	P		**P**	**08 06 54.0**	**+1.4**	
	comp=Z,694nm,1.5s								
TIY	**Taiyuan**	**17.38**	**335**	⇑P		**P**	**08 06 58.0**	**+2.5**	
TIY				LR		LR			
	comp=N,12μm,14.0s								
KMI	**Kunming**	**17.52**	**283**	⇑*i*P		**P**	**08 06 57.1**	**-0.2**	
KMI				AP			08 07 01.5		
KMI				XP			08 07 03.7		
KMI				PP		PP	08 07 10.2	-1.7	
KMI				S		**S**	**08 10 05.8**	**-4.7**	
KMI				SS		SS	08 10 30.5	-2.1	
KMI				PcP		PcP	08 11 39.6	+1.1	
KMI				LR		LR			
	comp=N,7μm,11.0s								
KMI				LR		LR			
	comp=E,14μm,11.7s								
KMI				LR		LR			
	comp=Z,14μm,12.5s								
CD2	**Chengdu**	**18.15**	**302**	*e*P		**P**	**08 07 04.5**	**-0.7**	
CD2				AP			08 07 09.2		
CD2				XP			08 07 12.2		
CD2				S		**S**	**08 10 24.9**	**-0.1**	
CD2				XS			08 10 30.9		
CD2				SS		SS	08 10 48.8	+0.4	
CD2				AMB		AMB			
	comp=Z,230nm,1.1s								
CD2				AMB		AMB			
	comp=Z,1μm,5.7s								
CD2				LR		LR			
	comp=N,22μm,10.2s								
CD2				LR		LR			
	comp=E,15μm,15.6s								
BJT	**Baijiatuau**	**18.38**	**347**	*e*P		**P**	**08 07 10.0**	**+2.1**	
	comp=Z,330nm,1.3s								
BJI	**Beijing**	**18.40**	**347**	P		**P**	**08 07 10.0**	**+1.8**	
BJI				XP			08 07 14.6		
BJI				S		**S**	**08 10 38.9**	**+8.5**	
BJI				AMB		AMB			
	comp=Z,92nm,0.8s								
BJI				AMB		AMB			
	comp=Z,4μm,3.7s								
BJI				LR		LR			
	comp=N,16μm,13.7s								
BJI				LR		LR			
	comp=E,12μm,14.2s								
BJI				LR		LR			
	comp=Z,13μm,21.2s								
KKTK	**Khon Kaen**	**18.64**	**255**	P		**P**	**08 07 11.0**	**-0.3**	
	comp=Z,926nm,0.8s								
CBIJ	**Chichi jima**	**19.34**	**71**	P		**P**	**08 07 18.3**	**-1.3**	
	comp=Z,4.9nm,0.3s,baz=193,slow=2.4,SNR=20								
CBIJ				LR		LR	08 13 14.0		
	comp=Z,4μm,20.3s,baz=260,slow=32								
JHJ	**Hachijo jima 2**	**19.43**	**52**	P		**P**	**08 07 22.9**	**+2.3**	
	comp=Z,15nm,0.3s,baz=249,slow=21,SNR=8.9								
JHJ				LR		LR	08 14 39.3		
	comp=Z,7μm,19.0s,baz=91,slow=36								
JGN	**Niukaw**	**19.57**	**41**	P		**P**	**08 07 23.6**	**+1.5**	
JIZS	**Izushimoda**	**19.64**	**47**	P		**P**	**08 07 25.3**	**+2.3**	
SNY	**Shenyang**	**19.67**	**4**	⇓P		**P**	**08 07 24.6**	**+1.4**	
NJJJ	**Nii jima 2**	**19.74**	**48**	P		**P**	**08 07 26.7**	**+2.6**	
JTT	**Ttatey**	**19.83**	**40**	P		**P**	**08 07 27.4**	**+2.3**	
NANT	**Nan**	**19.85**	**264**	⇓P		**P**	**08 07 24.5**	**-0.9**	
	comp=Z,138nm,1.1s								
JNT	**Takato**	**19.85**	**43**	P		**P**	**08 07 27.0**	**+1.7**	
MAJO	**Matsushiro**	**20.32**	**42**	⇑*e*P		**P**	**08 07 30.9**	**+0.7**	
	comp=Z,624nm,1.4s								
MAJO				LR		LR			
	comp=Z,7μm,19.0s,MS5.0								
MAT	**Matsushiro**	**20.32**	**42**	P		**P**	**08 07 31.0**	**+0.7**	
MAT				S		**S**	**08 11 12.0**	**-0.8**	
MAT	**Matsushiro**	**20.32**	**42**	*e*P		**P**	**08 07 31.0**	**+0.7**	
	comp=Z,2μm,1.9s								
MAT				*e*S		**S**	**08 11 13.0**	**+0.2**	
MAT				LR		LR			
	comp=Z,7μm,20.0s,MS5.0								
HHC	**Hu-ho-hao-te**	**20.46**	**338**	⇑P		**P**	**08 07 32.6**	**+0.9**	
HHC				AP			08 07 36.8		
HHC				XP			08 07 40.0		
HHC				PP		PP	08 07 57.5	+5.0	
HHC				S		**S**	**08 11 23.3**	**+7.8**	
HHC				AMB		AMB			
	comp=Z,120nm,1.2s								
HHC				AMB		AMB			
	comp=Z,2μm,3.8s								
HHC				LR		LR			
	comp=N,11μm,16.6s,MS5.4								
HHC				LR		LR			
	comp=E,8μm,16.0s,MS5.4								
HHC				LR		LR			
	comp=Z,13μm,17.2s,MS5

MDJ AMB AMB
comp=Z,2μm,4.3s
MDJ LR LR
comp=N,13μm,14.9s,MS5.6
MDJ LR LR
comp=E,7μm,14.3s,MS5.6
MDJ LR LR
comp=Z,16μm,15.2s,MS5.6
MDJ Mudanjiang 23.34 15 *e*P **P 08 08 02.0 +1.5**
comp=Z,206nm,1.2s,mb5.4
GUMO Guam 23.72 107 P **P 08 08 05.2 +0.7**
GUMO pmax pmax
comp=Z,1μm,1.3s,mb6.2
GUMO Guam 23.72 107 *e*P **P 08 08 05.1 +0.6**
comp=Z,467nm,0.9s,mb5.9
GUMO LR LR
comp=Z,2μm,20.0s,MS4.7
GTA Gaotai 25.29 318⇑ *i*P **P 08 08 20.5 +1.1**
GTA AP pP 08 08 26.7 +4.4
GTA XP sP 08 08 29.6 +5.9
GTA PP PP 08 09 02.2 +4.3
GTA PCP PcP 08 11 53.2 -0.2
GTA S **S** **08 12 47.2 +4.7**
GTA SCP 08 15 28.7
GTA PCS 08 15 34.1
GTA SCS ScS 08 19 17.6 -1.1
GTA AMB AMB
comp=Z,1μm,4.6s
GTA LR LR
comp=N,3μm,13.3s,MS5.3
GTA LR LR
comp=E,6μm,15.2s,MS5.3
GTA LR LR
comp=Z,6μm,14.1s,MS5.2
IMP Imphal 25.48 281 *e*P **P 08 08 23.0 +1.6**
IPM Ipoh 26.50 232⇑ *e*P **P 08 08 29.0 -2.0**
comp=Z,348nm,1.2s,mb5.8
KGM Kluang 26.78 224⇑ *e*P **P 08 08 33.2 -0.2**
comp=Z,748nm,1.0s,mb6.2
HIA Hailar 27.08 357 *e*P **P 08 08 34.9 -0.9**
comp=Z,52nm,1.0s,mb5.0
SHL Shillong 27.35 283⇑ *i* **P 08 08 48.0 +9.5**
SHL *e*S **S** **08 13 16.0 -0.5**
ASAJ Asahikawa 27.93 33 P **P 08 08 43.8 +0.2**
comp=Z,238nm,0.8s,mb5.9,baz=241,slow=14,SNR=77
ASAJ LR LR 08 21 02.4
comp=Z,7μm,20.0s,MS5.2,baz=258,slow=39
ULN Ulaanbaatar 28.16 339⇑ *i*P **P 08 08 45.3 -0.4**
KLR Kul'dur 28.18 14 *e*P **P 08 08 45.0 -0.8**
KLR *e*S **S** **08 13 31.5 +1.8**
KLR pmax pmax
comp=Z,2μm,7.5s
KLR MLR MLR
comp=Z,22μm,14.0s,MS5.9
LSA Lhasa 28.32 292 P **P 08 08 50.0 +2.7**
LSA XP sP 08 08 59.7 +8.1
LSA PP PP 08 09 40.8 +2.4
LSA S **S** **08 13 40.0 +7.8**
LSA LR LR
comp=N,3μm,25.0s
LSA LR LR
comp=E,4μm,19.4s
LSA LR LR
comp=Z,5μm,21.7s,MS5.0
LSA Lhasa 28.32 292 *e*P **P 08 08 49.1 +1.8**
comp=Z,30nm,0.8s,mb5.0
SONM Songino Array 28.36 338 P **P 08 08 46.6 -0.9**
comp=Z,47nm,0.9s,mb5.1,baz=152,slow=8.3,SNR=126
SONM PcP PcP 08 11 59.0 -1.4
comp=Z,13nm,1.2s,baz=152,slow=1.1,SNR=8.5
SONM ScP 08 15 38.5
comp=Z,6.6nm,0.9s,baz=162,slow=3.9,SNR=7.7
YUK Yuzh-Kuril'sk 29.61 37 *e*P **P 08 08 58.9 +0.1**
YUK *e* 08 09 57.1
YUK pmax pmax
comp=Z,3μm,1.5s
YUK pmax pmax
comp=Z,6μm,2.0s
YUK pmax pmax
comp=N,5μm,3.0s
YUK pmax pmax
comp=E,4μm,2.0s
YUK MLR MLR
comp=Z,7μm,20.0s,MS5.3
YUK MLR MLR
comp=N,7μm,23.0s,MS5.3
YUK MLR MLR
comp=E,3μm,21.0s,MS5.3
YSS Yuzh-Sakhalins 30.06 30α *i*P **P 08 09 02.8 0.0**
YSS *e* 08 09 14.0
YSS *e* 08 10 02.8
YSS *e*S **S** **08 14 02.0 +2.2**
YSS *e* 08 14 20.0
YSS pmax pmax
comp=N,120nm,1.0s
YSS pmax pmax
comp=E,100nm,1.0s
YSS pmax pmax
comp=Z,310nm,1.0s,mb6.0
YSS pmax pmax
comp=Z,590nm,1.4s,mb6.1
YSS pmax pmax
comp=N,210nm,1.1s
YSS pmax pmax
comp=N,1μm,4.0s
YSS pmax pmax
comp=Z,2μm,4.0s
YSS pmax pmax
comp=Z,1μm,9.0s
YSS pmax pmax
comp=N,700nm,12.0s
YSS MLR MLR
comp=N,5μm,16.0s,MS5.4
YSS MLR MLR
comp=E,4μm,16.0s,MS5.4
YSS MLR MLR
comp=Z,6μm,16.0s,MS5.3
YSS Yuzh-Sakhalins 30.06 30⇑ *i*P **P 08 09 03.5 +0.7**
ZAK Zakamensk 31.61 337 *e*P **P 08 09 15.0 -1.4**
ZAK *e* 08 10 28.2
ZAK *e* 08 12 07.8
GUN Gumba 32.77 287 *e*P **P 08 09 27.0 +0.2**
comp=Z,518nm,1.1s,mb6.4
PKI Pulchoki 33.18 287 *e*P **P 08 09 29.8 -0.5**
comp=Z,658nm,1.5s,mb6.3
KKN Kakani 33.30 287 *e*P **P 08 09 31.4 0.0**
comp=Z,501nm,1.3s,mb6.3
DMN Daman 33.45 287 *e*P **P 08 09 32.8 +0.1**
comp=Z,610nm,1.4s,mb6.3
MOY Mondy 33.49 337 *e*P **P 08 09 32.5 -0.3**
GKN Gorkha 33.88 288 *e*P **P 08 09 36.5 +0.1**
comp=Z,494nm,1.4s,mb6.2
CLNS Chul'man 34.71 3 *e*P **P 08 09 43.3 +0.1**
CLNS *e* 08 11 16.4
CLNS pmax pmax
comp=Z,8.0nm,0.8s,mb4.7
CLNS pmax pmax
comp=N,8.0nm,1.0s
CLNS pmax pmax
comp=E,9.0nm,1.0s
CLNS pmax pmax
comp=Z,10.0nm,1.0s,mb4.7
CLNS pmax pmax
comp=N,20nm,1.1s
CLNS pmax pmax
comp=E,9.0nm,1.0s
KOLN Koldanda 34.79 287 *e*P **P 08 09 44.2 0.0**
comp=E,396nm,1.2s,mb6.2
WMQ Urumqi 35.33 316 P **P 08 09 50.0 +1.3**
WMQ AP pP 08 09 54.4 +2.8
WMQ XP sP 08 09 57.0 +4.1
WMQ PP PP 08 11 09.7 +1.7
WMQ PCP PcP 08 12 20.0 +0.8
WMQ S **S** **08 15 23.4 +1.4**
WMQ XS 08 15 30.7
WMQ SCP 08 16 04.1
WMQ PCS 08 16 05.9
WMQ SS SS 08 17 41.2 +2.2
WMQ SCS ScS 08 20 07.1 +0.4
WMQ AMB AMB
comp=Z,112nm,0.8s,mb5.8
WMQ AMB AMB
comp=Z,980nm,5.4s
WMQ LR LR
comp=N,6μm,16.2s,MS5.6
WMQ LR LR
comp=E,6μm,17.3s,MS5.6
WMQ LR LR
comp=Z,10μm,18.2s,MS5.6
BOD Bodaibo 36.03 353 *e*P **P 08 09 53.2 -1.2**
BOD *e* 08 12 19.0
KAKA Kakadu 36.24 162⇑ *i*P **P 08 09 51.2 -5.5**
comp=Z,74nm,0.9s,mb5.6
KAKA *e*S PcP 08 12 19.2 -3.0
PTH Pithoragarh 37.79 290 *e*P **P 08 10 13.0 +3.4**
PTH *e* 08 16 05.0
WAU Wau 38.30 137 *e*P **P 08 10 12.9 -1.1**
KGD Kothagudem 38.68 271 *e*P **P 08 10 15.1 -2.0**
KGD *e*S **S** **08 16 13.6 +0.1**
SKR Severo-Kuril's 39.17 35 *e*P **P 08 10 18.0 -2.9**
SKR *e* 08 10 29.1
SKR *e*PPP PPP 08 12 36.0 +18
SKR *e*S **S** **08 16 24.0 +3.5**
SKR *e*SS SS 08 19 02.0 -3.0
SKR pmax pmax
comp=Z,560nm,1.3s,mb6.1
SKR pmax pmax
comp=Z,3μm,12.0s
SKR smax
comp=N,3μm,14.0s
SKR smax
comp=E,3μm,14.0s
SKR MLR MLR
comp=N,3μm,18.0s,MS5.3
SKR MLR MLR
comp=Z,6μm,18.0s,MS5.4
SKR MLR MLR
comp=E,3μm,20.0s,MS5.3
MKAR Makanchi Array 40.05 317 P **P 08 10 29.3 +1.1**
comp=E,69nm,0.7s,mb5.5,baz=110,slow=8.8,SNR=170
MKAR PcP PcP 08 12 33.0 -0.7
comp=E,13nm,0.6s,baz=98,slow=3.9,SNR=9.0
MKAR ScP 08 16 21.3
comp=E,11nm,0.8s,baz=106,slow=4.4,SNR=10
MKAR LR LR 08 28 42.5
comp=E,5μm,18.0s,MS5.4,baz=108,slow=38
MKAR Makanchi Array 40.05 317 *i*P **P 08 10 29.2 +1.0**
MKAR pmax pmax
comp=Z,68nm,0.8s
MKAR Makanchi Array 40.05 317 P **P 08 10 29.3 +1.1**
MKAR PcP PcP 08 12 33.0 -0.7
MKAR ScP 08 16 21.3
MKAR LR LR 08 28 42.5
PMG Port Moresby 40.17 139 P **P 08 10 26.4 -3.1**
comp=Z,24nm,0.9s,mb4.9,baz=341,slow=8.4,SNR=4.2
PMG PcP PcP 08 12 32.8 -1.6
comp=Z,18nm,0.8s,baz=325,slow=3.1,SNR=3.1
PMG LR LR 08 24 37.2
comp=Z,1μm,20.2s,MS4.7,baz=71,slow=33
PMG Port Moresby 40.17 139 *e*P **P 08 10 28.1 -1.5**
comp=Z,29nm,0.9s,mb5.0
PMG LR LR
comp=Z,1μm,21.0s,MS4.8
YAK Yakutsk 40.22 6 *e*P **P 08 10 28.1 -1.3**
YAK *e**PP pP 08 10 35.7 +3.3
YAK *e*PPP PPP 08 12 09.7 -22
YAK *e* 08 12 32.1
YAK *e*SSS SSS 08 19 29.6 -35
YAK *e* 08 20 30.6
YAK pmax pmax
comp=Z,20nm,0.8s,mb4.9
YAK pmax pmax
comp=N,10.0nm,1.2s
YAK pmax pmax
comp=N,3.0nm,0.9s
YAK pmax pmax
comp=E,5.0nm,2.0s
YAK pmax pmax
comp=Z,20nm,0.9s,mb4.8
YAK MLR MLR
comp=N,4μm,15.0s,MS5.4
YAK MLR MLR
comp=E,1μm,15.0s,MS5.4
YAK MLR MLR
comp=Z,5μm,15.0s,MS5.5
YAK Yakutsk 40.22 6⇑ *i*P **P 08 10 28.1 -1.3**
FITZ Fitzroy Crossi 40.22 174⇓ *i*P **P 08 10 25.3 -4.6**
comp=Z,79nm,0.9s,mb5.5
FITZ *e*S **S** **08 16 25.5 -11**
NDI New Delhi 40.42 289⇑ *i*P **P 08 10 30.0 -1.4**
NDI *e* 08 12 33.0
NDI *e*S **S** **08 16 40.0 +0.5**
SMLA Simla 40.47 292 *e* **P 08 10 38.5 +6.7**
SMLA *e* 08 16 48.9
BHPL Bhopal 40.64 280 *e*P **P 08 10 33.9 +0.7**
BHPL *e* pP 08 10 36.1 -0.2
comp=Z,87nm,1.2s
HYB Hyderabad 40.67 271 *i*P **P 08 10 34.0 +0.4**
HYB *e*PP x 08 14 00.0
HYB *e*S **S** **08 16 48.0 +4.7**
HYB *e*ScS ScS 08 20 36.0 -1.3
HYB *e* 12 14 36.0
HYB Hyderabad 40.67 271 *e*P **P 08 10 34.0 +0.4**
HYB *e*S **S** **08 16 52.0 +8.7**
CUD Cuddapah 41.26 267 *e*P **P 08 10 40.0 +1.6**
CUD *e*pP pP 08 10 44.1 +2.7
CUD *e*sP sP 08 10 48.7 +6.0
CUD *e*PcP PcP 08 12 37.7 -0.2
CUD *e*S **S** **08 16 57.4 +5.4**
CUD *e*SS SS 08 20 15.1 +25
PET Petropavlovsk 41.77 33α *i*P **P 08 10 42.5 +0.3**
PET *e* 08 12 21.6
PET *e*S **S** **08 16 54.0 -5.3**
PET pmax pmax
comp=Z,930nm,12.4s
PET pmax pmax
comp=Z,479nm,12.1s
PET pmax pmax
comp=Z,223nm,1.3s,mb5.6
PET pmax pmax
comp=Z,351nm,18.6s
PET smax
comp=E,572nm,13.6s
PET smax
comp=E,553nm,15.0s
PET MLR MLR
comp=E,4μm,21.0s,MS5.4
PET MLR MLR
comp=E,3μm,19.0s
PET MLR MLR
comp=N,3μm,21.0s,MS5.4
PET MLR MLR
comp=Z,6μm,21.0s,MS5.4
PET MLR MLR
comp=N,2μm,20.0s
PET MLR MLR
comp=Z,4μm,21.0s
PET Petropavlovsk 41.77 33⇑ *i*P **P 08 10 42.4 +0.2**
comp=Z,291nm,1.3s,mb5.8
PET LR LR
comp=Z,6μm,22.0s,MS5.4
COCO West Island 41.90 218 PFAKE 08 10 50.0 +6.2
COCO LR LR
comp=Z,2μm,20.0s,MS5.0
ZAL Zalesovo 42.14 328 P **P 08 10 44.8 -0.5**
comp=Z,38nm,0.8s,mb5.1,baz=297,slow=6.6,SNR=11
ZAL ScP 08 16 28.7
comp=Z,6.4nm,1.0s,baz=266,slow=5.4,SNR=6.6
ZAL LR LR 08 30 41.8
comp=Z,8μm,19.5s,MS5.6,baz=255,slow=39
ZAL Zalesovo 42.14 328 *i*P **P 08 10 45.3 +0.1**
ZAL pmax pmax
comp=Z,38nm,0.8s
KSH Kashi 42.32 305 *e*P **P 08 10 49.2 +2.2**
KSH *e*AP pP 08 10 53.5 +3.5
KSH *e*XP sP 08 10 56.1 +4.9
KSH *e*PP PP 08 12 30.6 +2.5
KSH *e*PCP PcP 08 12 41.2 0.0
KSH *e*SCP 08 16 30.0
KSH *e*PCS 08 16 32.5
KSH *e*S **S** **08 17 11.2 +3.5**
KSH *e*XS 08 17 18.4
KSH *e*SS SS 08 20 15.0 +4.6
KSH *e*SCS ScS 08 20 47.4 +0.3
KSH AMB AMB
comp=Z,120nm,1.2s,mb5.4
KSH AMB AMB
comp=Z,620nm,4.2s
KSH LR LR
comp=N,3μm,12.8s,MS5.6
KSH LR LR
comp=E,3μm,12.2s,MS5.6
AAA Alma-Ata 42.44 310 *e*P **P 08 10 48.0 +0.1**
AAA *e*S **S** **08 17 04.0 -5.3**
AAA pmax pmax
comp=E,800nm,4.0s
AAA smax
comp=N,1μm,6.0s
AAA smax
comp=E,900nm,6.0s
AAA MLR MLR
comp=N,4μm,13.0s,MS5.6
AAA MLR MLR
comp=E,4μm,13.0s,MS5.6
AAA MLR MLR
comp=Z,3μm,13.0s,MS5.4
ULHL Ulahol 42.69 309 P **P 08 10 51.6 +1.6**
SNR=20
MA2 Magadan 42.70 21 P **P 08 10 49.5 -0.3**
MA2 PP PP 08 12 29.6 -2.0
MA2 Magadan 42.70 21*c i*P **P 08 10 49.4 -0.4**
MA2 *i* 08 11 01.8
MA2 *e* 08 12 33.2
MA2 *e*PPP PPP 08 13 06.3 +1.3
MA2 *e*S **S** **08 17 12.1 -0.8**
MA2 *e*SS SS 08 20 41.4 +24
MA2 pmax pmax
comp=Z,40nm,1.3s,mb5.0
MA2 pmax pmax
comp=E,20nm,1.5s
MA2 pmax pmax
comp=N,20nm,1.3s
MA2 MLR MLR
comp=Z,8μm,18.0s,MS5.7
MA2 Magadan 42.70 21⇑ *i*P **P 08 10 49.4 -0.4**
AJM Ajmer 42.81 285 *e*P **P 08 10 51.7 +0.5**
TKM2 Tokmak 2 43.31 310 P **P 08 10 57.0 +2.0**
SNR=69
KZA Kyzart 43.37 308 P **P 08 10 58.1 +2.7**
SNR=70
NVS Novosibirsk 43.40 329 *i*P **P 08 10 54.9 -0.6**
NVS *e*S **S** **08 17 22.9 -0.2**
NVS *e* 08 20 51.0
NVS pmax pmax
comp=Z,265nm,2.2s,mb5.6
NVS pmax pmax
comp=N,155nm,1.8s
NVS pmax pmax
comp=E,125nm,1.9s
NVS smax
comp=E,141nm,2.0s
WRAB Tennant Creek 43.67 162⇓ *e*P **P 08 10 53.1 -5.0**
comp=E,577nm,1.4s,mb6.1
WRAB LR LR
comp=Z,896nm,19.6s,MS4.7
WRA Warramunga Arr 43.67 163 P **P 08 10 53.0 -5.2**
comp=Z,36nm,0.7s,mb5.2,baz=344,slow=9.0,SNR=155
WRA PcP PcP 08 12 44.6 -1.4
comp=Z,9.7nm,0.7s,baz=345,slow=3.6,SNR=7.5
WRA ScP 08 16 33.9
comp=Z,11nm,1.1s,baz=344,slow=3.9,SNR=6.0
WB2 Warramunga Arr 43.68 162⇑ *i*P **P 08 10 53.8 -4.4**
WB2 *i* S **S** **08 17 15.7 -12**
KBK Karagaybulak 43.71 309 P **P 08 11 00.4 +2.1**
SNR=44
KURK Kurchatov 43.88 321 P **P 08 11 00.0 +0.6**
KURK Kurchatov 43.88 321 *e*P **P 08 10 59.9 +0.5**
CHMS Chumysh 43.93 310 P **P 08 11 01.5 +1.5**
SNR=34
UCH Uchtor 43.94 308 P **P 08 11 02.8 +2.8**
SNR=90
AAK Ala-Archa 44.03 309 P **P 08 11 02.7 +1.8**
SNR=26
USP Ospenovka 44.17 310 P **P 08 11 03.2 +1.3**
SNR=47
AML Almayashu 44.51 308 P **P 08 11 07.2 +2.4**
SNR=71
EKS2 Erkin-Say 44.56 309 P **P 08 11 06.9 +1.8**
SNR=24
KAD Karad 44.74 273 *e*P **P 08 11 07.6 +0.7**
KAD *e* pP 08 11 08.9 -1.1
comp=Z,53nm,1.1s
POO Poona 44.77 274 *e*P **P 08 11 07.8 +0.7**
POO *e* pP 08 11 09.9 -0.2
comp=Z,107nm,1.4s
SEY Seymchan 45.74 19 *e*P **P 08 11 14.7 +0.5**
SEY *SP sP 08 11 27.5 +9.1
SEY 08 12 50.8
SEY 08 13 03.3
SEY *e*S **S** **08 17 59.1 +2.3**
SEY 08 21 07.1
SEY pmax pmax
comp=N,30nm,1.1s
SEY pmax pmax
comp=Z,90nm,1.1s,mb5.6
SEY pmax pmax
comp=E,30nm,1.4s
SEY MLR MLR
comp=E,2μm,19.0s,MS5.5
SEY MLR MLR
comp=Z,10μm,19.0s,MS5.8
SEY MLR MLR
comp=N,5μm,17.0s,MS5.5
KKAR Karatay Array 47.00 309 *i*P **P 08 11 25.2 +0.8**
KKAR pmax pmax
comp=Z,135nm,1.3s,mb5.7
AS12 Alice Springs 47.11 165⇑ *i*P **P 08 11 21.8 -3.8**
comp=Z,50nm,1.0s,mb5.4
AS12 *e*S 08 16 46.2
ASAR Alice Springs 47.11 165 P **P 08 11 20.5 -5.1**
comp=Z,37nm,0.9s,mb5.3,baz=344,slow=6.5,SNR=133
ASAR PcP PcP 08 12 55.4 -2.5
comp=Z,23nm,1.0s,baz=347,slow=2.7,SNR=7.1
ASAR ScP 08 16 47.8
comp=Z,7.2nm,1.0s,baz=350,slow=3.4,SNR=8.9
ASAR LR LR 08 33 51.1
comp=Z,993nm,19.1s,MS4.8,baz=335,slow=40
ASAR P4KPbc 08 49 07.2
comp=Z,0.4nm,0.9s,baz=337,slow=3.5,SNR=4.8
CTA Charters Tower 48.42 148 *e*P **P 08 11 33.3 -2.6**
comp=Z,23nm,0.9s,mb5.2
CTA Charters Tower 48.42 148 P **P 08 11 33.0 -2.9**
comp=Z,29nm,1.2s,mb5.2,baz=320,slow=9.1,SNR=21
CTA PcP PcP 08 12 59.8 -2.8
comp=Z,8.9nm,0.8s,baz=342,slow=3.2,SNR=2.4
CTAO Charters Tower 48.42 148⇓ *e*P **P 08 11 33.0 -2.9**
comp=Z,94nm,1.5s,mb5.6
CTAO LR LR
comp=Z,3μm,21.0s,MS5.3
VOSK Vostochnaya 49.03 321 P **P 08 11 39.8 -0.3**
VOSK pmax pmax
comp=Z,279nm,2.4s,mb5.9
VOSK Vostochnaya 49.03 321 *i*P **P 08 11 39.8 -0.3**
QUE Quetta 49.29 291 *e*P **P 08 11 42.0 -0.5**
QUE *e*S **S** **08 19 00.0 +12**
BVA0 Borovoye Array 49.47 322 P **P 08 11 43.6 +0.1**
BRVK Borovoye 49.54 322 P **P 08 11 44.3 +0.3**
BRVK Borovoye 49.54 322⇑ *i*P **P 08 11 44.1 +0.1**
FX1 Attu Island--F 49.64 39 *e*P **P 08 11 45.3 +0.5**
TIXI Tiksi 49.67 3 *e*P **P 08 11 41.9 -3.0**
TIXI *e*S **S** **08 18 48.5 -3.8**
TIXI pmax pmax
comp=Z,358nm,1.3s,mb6.2
TIXI MLR MLR
comp=Z,88μm,16.0s
TIXI Tiksi 49.67 3 *e*P **P 08 11 42.1 -2.8**
comp=Z,109nm,1.6s,mb5.6
TIXI LR LR
comp=Z,10μm,19.0s,MS5.8
SMY Shemya 50.14 39 PFAKE 08 12 00.0 +11
SMY LR LR
comp=Z,5μm,21.0s,MS5.5
FORT Forrest 53.01 173⇓ *i*P **P 08 12 06.5 -4.2**
comp=Z,498nm,0.9s,mb6.4
FORT *e*S **S** **08 19 33.4 -5.3**
BILL Bilibino 53.45 19 *i*P **P 08 12 11.4 -2.0**
BILL *e* 08 13 21.3
BILL *e* 08 14 14.9
BILL *e*S **S** **08 19 34.0 -10**
BILL pmax pmax
comp=Z,160nm,1.5s,mb5.7
BILL MLR MLR
comp=Z,6μm,19.0s,MS5.7
BILL Bilibino 53.45 19 *i*P **P 08 12 11.5 -1.9**
KLBR Kellerberrin 53.59 184⇓ *i*P **P 08 12 10.6 -4.3**
comp=Z,142nm,0.6s,mb6.1
MUN Mundaring 54.09 186⇓ *i*P **P 08 12 14.5 -4.1**

comp=Z,41nm,0.9s,mb5.4
NWAO Narrogin (SRO) 54.95 184 P **P** **08 12 20.9 -4.0**
comp=Z,118nm,0.8s,mb6.0,baz=3.2,slow=8.2,SNR=59
NWAO LR LR 08 37 08.6
comp=Z,7.3nm,19.8s,baz=36,slow=38
NWAO Narrogin (SRO) 54.95 184⇓*e*P **P** **08 12 21.0 -3.9**
comp=Z,124nm,0.9s,mb5.9
NWAO LR LR
comp=Z,794nm,20.0s,MS4.8
AB31 Akbulak array 55.12 315 P **P** **08 12 25.7 -0.2**
AB31 pmax pmax
comp=Z,70nm,1.0s,mb5.7
SVE Sverdlovsk 55.88 325⇑*i*P **P** **08 12 30.5 -0.8**
SVE *e*S **S** **08 20 13.0 -4.0**
SVE *e* 08 22 18.0
SVE pmax pmax
comp=Z,380nm,2.3s,mb6.0
SVE MLR MLR
comp=Z,4μm,11.0s,MS5.8
SVE MLR MLR
comp=N,800nm,12.0s,MS5.6
SVE MLR MLR
comp=E,3μm,12.0s,MS5.6
RKGY Rocky Gully 56.64 185 *e*P **P** **08 12 33.9 -3.1**
comp=E,1.6nm,0.6s
ARU Arti 56.94 324⇑*i*P **P** **08 12 38.0 -0.9**
ARU *i* 08 13 30.9
ARU *i* 08 14 44.8
ARU *i* S **S** **08 20 33.0 +2.1**
ARU *e* 08 22 17.3
ARU pmax pmax
comp=Z,94nm,0.8s,mb5.9
ARU MLR MLR
comp=Z,4μm,18.0s,MS5.5
ARU MLR MLR
comp=N,1μm,16.0s,MS5.5
ARU MLR MLR
comp=E,3μm,18.0s,MS5.5
ARU Arti 56.94 324⇑*e*P **P** **08 12 37.9 -1.0**
comp=E,76nm,0.8s,mb5.8
ARU LR LR
comp=Z,3μm,19.0s,MS5.5
STKA Stephens Creek 57.06 160⇓*i*P **P** **08 12 35.9 -4.2**
comp=Z,26nm,0.8s,mb5.3
STKA *i* S **S** **08 20 28.6 -4.3**
STKA Stephens Creek 57.06 160 P **P** **08 12 34.8 -5.3**
comp=Z,26nm,0.7s,mb5.4,baz=336,slow=7.6,SNR=44
STKA LR LR 08 40 07.9
comp=Z,1μm,19.2s,MS5.0,baz=335,slow=39
UNV Unalaska Valle 61.78 40 PFAKE 08 13 20.0 +7.6
UNV LR LR
comp=Z,4μm,22.0s,MS5.5
TNA Tin City 61.96 26 *e*P **P** **08 13 13.9 +0.4**
comp=Z,159nm,1.7s,mb5.9
TNA LR LR
comp=Z,937nm,20.0s,MS5.0
ANM Nome 62.92 28 *e*P **P** **08 13 21.9 +2.1**
TOO Toolangi 63.54 159⇓*i*P **P** **08 13 21.2 -3.1**
comp=Z,32nm,1.0s,mb5.3
MAK Makhachkala 63.81 308 *e*P **P** **08 13 27.0 +1.1**
MAK *e*PPP PPP 08 17 24.0 +4.1
MAK *i* S **S** **08 22 04.0 +4.7**
MAK *i* PS PS 08 22 23.0 +3.4
MAK *i* 08 23 18.0
MAK pmax pmax
comp=Z,1μm,3.0s
MAK smax
comp=N,2μm,6.0s
MAK smax
comp=E,1μm,6.0s
MAK MLR MLR
comp=N,2μm,12.0s
MAK MLR MLR
comp=Z,3μm,12.0s,MS5.7
PECR Pechory 64.95 323 *e*P **P** **08 13 33.0 -0.2**
PECR *i* S **S** **08 22 14.0 +0.8**
PECR *e* 08 23 22.0
PECR smax
comp=E,1μm,6.0s
PECR smax
comp=N,1μm,12.0s
PECR MLR MLR
comp=N,4μm,14.0s,MS6.0
PECR MLR MLR
comp=E,5μm,16.0s,MS6.0
HASS Wahat al Ahsa' 65.18 288 P **P** **08 13 34.8 -0.3**
ZEI Tsey 66.46 308⇓*e*P **P** **08 13 43.0 -0.1**
GOF Gofitskoye 66.73 311⇓*i*P **P** **08 13 45.0 +0.3**
GOF *i* 08 14 16.0
GOF *i* S S 08 22 40.0 +4.9
GOF pmax pmax
comp=Z,300nm,1.7s,mb6.0
GOF pmax pmax
comp=Z,350nm,1.5s,mb6.2
GOF pmax pmax
comp=Z,2μm,3.0s
GOF smax
comp=N,2μm,8.0s
PYA Pyatigorsk 66.87 310 *i* P **P** **08 13 45.0 -0.6**
PYA *i* 08 14 14.0
PYA *i* S S 08 22 40.0 +3.2
PYA *i* 08 23 42.0
PYA MLR MLR
comp=N,2μm,15.0s
KIV Kislovodsk 67.14 310*c i*P **P** **08 13 47.7 +0.3**
KIV *e* 08 14 11.4
KIV *e* 08 16 15.8
KIV *e*S S 08 22 46.2 +6.0
KIV pmax pmax
comp=Z,612nm,2.1s,mb6.3
KIV MLR MLR
comp=Z,2μm,21.0s,MS5.2
KIV Kislovodsk 67.14 310⇑*i*P **P** **08 13 47.9 +0.5**
comp=Z,334nm,1.3s,mb6.2
KIV LR LR
comp=Z,2μm,21.0s,MS5.2
SVW Sparrevohn 67.39 31 *e*P **P** **08 13 49.7 +1.1**
TVAN Van 67.56 304 *i*P **P** **08 13 50.0 -0.2**
IMA Indian Mountai 67.83 26 P **P** **08 13 51.5 +0.1**
IMA pmax pmax
comp=Z,200nm,1.2s,mb6.0
IMA Indian Mountai 67.83 26 *e*P **P** **08 13 52.4 +1.0**
VOR Voronezh 68.27 318 *e*P **P** **08 13 54.0 -0.3**
VOR *e**SP sP 08 14 04.5 +5.9
VOR *e* 08 16 20.0
VOR pmax pmax
comp=N,40nm,1.7s
VOR pmax pmax
comp=Z,270nm,1.7s,mb6.0
VOR pmax pmax
comp=E,220nm,1.6s
LVZ Lovozero 68.53 336 *e*P **P** **08 13 54.1 -1.6**
LVZ *e* 08 14 08.2
LVZ *e*S S 08 22 55.0 -1.3
LVZ pmax pmax
comp=Z,40nm,1.1s,mb5.3
LVZ pmax pmax
comp=N,9.0nm,0.8s
LVZ pmax pmax
comp=E,10.0nm,0.8s
LVZ pmax pmax
comp=Z,250nm,2.2s,mb5.8
LVZ pmax pmax
comp=E,200nm,2.5s
LVZ smax
comp=E,290nm,4.4s
LVZ MLR MLR
comp=Z,3μm,15.0s,MS5.7
LVZ MLR MLR
comp=N,790nm,18.0s,MS5.5
LVZ MLR MLR
comp=E,2μm,15.0s,MS5.5
LVZ Lovozero 68.53 336⇑*e*P **P** **08 13 54.1 -1.6**
MOS Moscow 68.62 323 *e*P **P** **08 13 54.9 -1.5**
MOS *e* 08 14 18.4
MOS *e* 08 16 22.6
MOS *e*S S 08 22 54.8 -2.7
MOS *e*PS PS 08 23 18.3 -5.6
MOS *e* 08 23 52.3
MOS pmax pmax
comp=Z,820nm,1.6s,mb6.4
MOS pmax pmax
comp=N,90nm,1.0s
MOS pmax pmax
comp=E,270nm,1.4s
MOS pmax pmax
comp=Z,2μm,1.8s
MOS MLR MLR
comp=Z,4μm,16.0s,MS5.7
MOS MLR MLR
comp=E,3μm,15.0s
ERZM Erzurum 68.85 306 *i*P **P** **08 13 59.8 +1.7**
RSO Redoubt South 68.86 32 *e*P **P** **08 14 00.2 +2.4**
TAU Tasmania Unive 68.97 160 P **P** **08 13 57.0 -1.8**
TAU pmax pmax
comp=Z,160nm,1.3s,mb5.8
TAU Tasmania Unive 68.97 160 *e*P **P** **08 13 56.8 -2.0**
comp=Z,136nm,1.3s,mb5.7
TAU LR LR
comp=Z,1μm,22.0s,MS5.0
APA Apatity 69.03 336⇓*i*P **P** **08 13 57.5 -1.3**
APA *i* 08 14 29.8
APA *e* 08 16 34.0
APA *i* S S 08 23 03.0 +0.7
APA *i* 08 23 38.0
APA pmax pmax
comp=Z,57nm,1.0s,mb5.5
APA MLR MLR
comp=Z,6μm,15.0s,MS6.0
SPU Mount Spurr 69.10 31 *e*P **P** **08 13 58.2 -1.1**
OBN Obninsk 69.31 322*c i*P **P** **08 13 59.5 -1.2**
OBN *e* 08 14 22.0
OBN *e* 08 16 30.6
OBN *e*S S 08 23 06.9 +1.2
OBN pmax pmax
comp=Z,265nm,1.5s,mb6.0
OBN MLR MLR
comp=Z,2μm,18.0s,MS5.4
OBN Obninsk 69.31 322⇑*i*P **P** **08 13 59.5 -1.2**
SOC Sochi 69.33 310 *e*P **P** **08 14 00.6 -0.4**
SOC *e* 08 14 20.0
SOC *e*S S 08 23 08.8 +2.6
SOC *e* 08 23 55.1
SOC *e*SS SS 08 27 36.3 +1.5
SOC pmax pmax
comp=Z,135nm,0.9s,mb5.9
SOC pmax pmax
comp=N,54nm,1.4s
SOC pmax pmax
comp=E,198nm,1.3s
SOC pmax pmax
comp=Z,531nm,2.0s,mb6.1
SOC pmax pmax
comp=N,144nm,1.5s
SOC pmax pmax
comp=E,258nm,1.3s
SOC smax
comp=N,942nm,7.3s
SOC smax
comp=E,2μm,5.1s
SOC MLR MLR
comp=Z,2μm,18.0s,MS5.4
SOC MLR MLR
comp=N,591nm,17.0s,MS5.7
SOC MLR MLR
comp=E,4μm,18.0s,MS5.7
KDAK Kodiak Island 69.33 35 *e*P **P** **08 14 00.8 +0.1**
comp=E,134nm,1.2s,mb5.8
KDAK LR LR
comp=Z,2μm,22.0s,MS5.2
BEST Besiri 69.34 304 *i*P **P** **08 14 01.8 +0.6**
MZLS Mizel 69.42 288 P **P** **08 14 02.1 +0.2**
PWA Palmer West 70.06 31 *e*P **P** **08 14 05.1 0.0**
MCK McKinley 70.13 28 P **P** **08 14 05.0 -0.6**
MCK pmax pmax
comp=Z,43nm,1.2s,mb5.2
MCK McKinley 70.13 28 *e*P **P** **08 14 04.8 -0.8**
comp=Z,25nm,1.0s,mb5.1
MCK LR LR
comp=Z,1μm,19.0s,MS5.1
PMS Palmer South 70.28 31 *e*P **P** **08 14 06.3 -0.2**
KELT Kelkit 70.38 306 *i*P **P** **08 14 11.7 +4.2**
COLA College 70.40 27⇑*i*P **P** **08 14 06.0 -1.2**
COLA College 70.40 27 P **P** **08 14 08.0 +0.9**
comp=Z,92nm,1.5s,mb5.5
COLA LR LR
comp=Z,1μm,19.0s,MS5.1
PMR Palmer 70.42 30 P **P** **08 14 05.6 -1.7**
PMR pmax pmax
comp=Z,21nm,0.8s,mb5.1
PMR Palmer 70.42 30 *e*P **P** **08 14 05.4 -2.0**
comp=Z,35nm,0.8s,mb5.3
PMR LR LR
comp=Z,2μm,22.0s,MS5.4
JOF Joensuu 70.64 331 *ep* **P** **08 14 06.9 -1.7**
ARSS Ar Rass 70.64 291 P **P** **08 14 09.2 -0.1**
ANN Anapa 70.69 311*c i*P **P** **08 14 09.9 +0.6**
ANN *e*S S 08 23 24.2 +2.1
ANN pmax pmax
comp=Z,180nm,1.1s,mb5.9
ANN pmax pmax
comp=N,80nm,1.7s
ANN pmax pmax
comp=E,70nm,1.8s
ANN smax
comp=N,640nm,4.4s
SML Sawmill 70.75 30 P **P** **08 14 08.7 -0.7**
SML Sawmill 70.75 30 *e*P **P** **08 14 08.0 -1.3**
ILAR Eielson Array 70.83 27 P **P** **08 14 08.4 -1.4**
comp=N,4.2nm,0.6s,baz=270,slow=5.1,SNR=39
ILAR PKP2bc 08 41 58.9
comp=N,3.2nm,1.0s,baz=123,slow=0.7,SNR=11
ILAR LR LR 08 48 21.9
comp=N,1μm,19.0s,baz=306,slow=38
ILAR Eielson Array 70.83 27 P **P** **08 14 08.4 -1.4**
ILAR ⇑*e* 08 41 58.9
ILAR LR LR 08 48 21.9
ELZG Elazig 70.96 305 *i*P **P** **08 14 11.8 +0.8**
KEV Kevo 70.97 338 *ep* **P** **08 14 08.7 -1.9**
KAMS Al Khamasin 71.03 285 P **P** **08 14 10.8 -1.0**
AFFS 'Afif 71.39 289 P **P** **08 14 14.2 +0.3**
HILS Ha'il 71.48 293 P **P** **08 14 15.0 +0.7**
SPB4 Spitsbergen Ar 71.52 348 *e*P **P** **08 14 11.7 -2.1**
ARCES ARCESS Array B 71.53 338 P **P** **08 14 13.1 -0.9**
comp=N,15nm,1.0s,mb4.9,baz=72,slow=7.7,SNR=20
ARCES LR LR 08 49 10.8
comp=N,2μm,18.1s,MS5.4,baz=68,slow=39
ARE0 ARCESS Array S 71.53 338 *e*P **P** **08 14 12.5 -1.5**
TOA Tolsona 71.69 30 *e*P **P** **08 14 18.5 +3.5**
PUL Pulkovo 71.75 328 *e*P **P** **08 14 15.3 -0.1**
PUL *e* 08 14 27.7
PUL pmax pmax
comp=Z,30nm,0.6s,mb5.4
PUL MLR MLR
comp=Z,8μm,17.0s,MS6.0
PUL MLR MLR
comp=N,1μm,15.0s,MS6.0
PUL MLR MLR
comp=E,7μm,20.0s,MS6.0
KBS Kingsbay 72.07 349 *e*P **P** **08 14 11.7 -5.4**
KBS *e*PP PP 08 16 58.2 -0.6
KBS *e*S S 08 23 36.6 -1.0
KBS AMS AMS 08 50 28.3
comp=Z,8μm,17.1s,MS6.0
KBS Kingsbay 72.07 349 *e*P **P** **08 14 11.7 -5.4**
KBS *e* 08 23 27.3
SVST Sivas 72.19 306 *i*P **P** **08 14 19.3 +0.9**
EYAK Cordova Ski Ar 72.25 31 *e*P **P** **08 14 17.7 -0.7**
TATS Tathlith 72.25 284 P **P** **08 14 19.2 +0.1**
GZT Gaziantep 72.33 304 *i*P **P** **08 14 19.9 +0.6**
LBOS 72.42 278⇑*e*P **P** **08 14 20.6 +0.4**
DJNS Zahran al Janu 72.75 282 P **P** **08 14 22.8 +0.7**
SIM Simferopol' 72.95 312*ce*P **P** **08 14 22.8 0.0**
SIM *e*S S 08 23 51.0 +2.9
SIM pmax pmax
comp=Z,193nm,1.1s,mb5.9
SIM MLR MLR
comp=Z,2μm,22.0s,MS5.3
SIM Simferopol' 72.95 312⇑*i*P **P** **08 14 22.4 -0.4**
KAF Kangasniemi 73.08 331 *ep* **P** **08 14 21.7 -1.5**
comp=Z,19nm,0.6s,mb5.2,baz=73,slow=5.7
KAF Kangasniemi 73.08 331 *e*P **P** **08 14 21.7 -1.5**
KAF pmax pmax
comp=Z,19nm,0.6s,mb5.2
BOYT Boyabat 73.28 308 *i*P **P** **08 14 25.4 +0.6**
FINES FINESS Array B 73.36 330 P **P** **08 14 23.9 -0.9**
comp=Z,32nm,0.8s,mb5.3,baz=90,slow=7.6,SNR=55
FINES LR LR 08 49 49.2
comp=Z,3μm,20.2s,MS5.6,baz=190,slow=38
COBT Iskenderun 73.56 303 *i*P **P** **08 14 27.0 +0.5**
CTKT Corum 73.57 308 *i*P **P** **08 14 27.3 +0.8**
TRO Tromso 73.72 339 *e*P **P** **08 14 25.5 -1.2**
BLJS Baljurashi 73.83 285 P **P** **08 14 29.2 +0.8**
KBRS Khaybar 74.10 292 P **P** **08 14 31.2 +1.4**
DAWY Dawson 74.15 27 *e*P **P** **08 14 28.5 -0.9**
DAWY PKKP PKKP 08 33 52.6 +13
ASF Jabal al Asfar 74.24 299 P **P** **08 14 33.2 +2.7**
baz=315,slow=4.9
BALT Daday 74.35 309 *i*P **P** **08 14 32.1 +1.1**
DUSS Damascus Unive 74.36 300 *i*P **P** **08 14 32.2 +1.1**
DUSS *i*P 08 14 32.5
DUSS *i*P 08 14 33.0
DUSS *e* pP 08 14 34.1 -0.3
baz=73,slow=2.9
DUSS *e*S S 08 24 09.7 +5.6
FRSS Farasan al Kab 74.36 282 P **P** **08 14 32.3 +0.8**
MNK Minsk 74.37 323⇓*i*P **P** **08 14 30.0 -0.8**
MNK *e*S S 08 24 00.0 -3.8
MNK pmax pmax
comp=Z,450nm,1.5s,mb6.2
MNK pmax pmax
comp=E,550nm,1.5s
ELDT Eldivan 74.61 308 *i*P **P** **08 14 32.3 -0.2**
AKASG Malin Array Be 74.62 319 P **P** **08 14 31.1 -1.2**
comp=E,239nm,1.3s,mb6.0,baz=61,slow=5.3,SNR=85
AKASG PKKPbc 08 33 56.9
comp=E,0.3nm,0.3s,baz=248,slow=2.5,SNR=4.7
AKASG LR LR 08 49 49.1
comp=E,1μm,20.0s,MS5.2,baz=50,slow=38
BRTR Keskin Array B 74.67 307 P **P** **08 14 32.6 -0.2**
comp=E,81nm,1.1s,mb5.5,baz=104,slow=5.1,SNR=158
HRI Mount Hermon 74.87 300 P **P** **08 14 34.8 +0.6**
HRI Mount Hermon 74.87 300 P **P** **08 14 34.6 +0.4**
KSHT Keshet 74.89 300 P **P** **08 14 35.0 +0.7**
KSHT Keshet 74.89 300 P **P** **08 14 34.8 +0.5**
INK Inuvik 74.94 22 LR LR 08 50 44.9
comp=E,2μm,20.7s,MS5.3,baz=293,slow=38
INK Inuvik 74.94 22 P **P** **08 14 32.9 -1.0**
INK pmax pmax
comp=Z,45nm,1.1s
INK Inuvik 74.94 22 *e*P **P** **08 14 31.7 -2.1**
comp=Z,57nm,1.0s,mb5.5
HMDT Nahal Hemdat 75.33 299 P **P** **08 14 37.5 +0.7**
HMDT Nahal Hemdat 75.33 299 P **P** **08 14 37.3 +0.5**
HNTI Hanita 75.37 300 P **P** **08 14 37.5 +0.4**
HNTI Hanita 75.37 300 P **P** **08 14 37.4 +0.3**
OUZ Omahuta 75.42 138 P **P** **08 14 37.8 +0.5**
MKJ Makawir 75.44 298 P **P** **08 14 38.0 +0.5**
HAF Haifa 75.58 300 P **P** **08 14 38.6 +0.3**
HAF Haifa 75.58 300 P **P** **08 14 38.4 +0.1**
DRGI Dragot 75.64 298 P **P** **08 14 39.0 +0.4**
DRGI Dragot 75.64 298 P **P** **08 14 38.8 +0.2**
OFRI 'Ofer 75.66 300 P **P** **08 14 39.1 +0.4**
OFRI 'Ofer 75.66 300 P **P** **08 14 38.9 +0.2**
TBKS Tabuk 75.68 295 P **P** **08 14 40.1 +1.2**
SLTI Sal'it 75.73 299 P **P** **08 14 39.7 +0.6**
SLTI Sal'it 75.73 299 P **P** **08 14 39.5 +0.4**
JMQS Jabal Moqyreh 76.05 296 P **P** **08 14 41.7 +0.7**
ZFRI Zfri 76.12 298 P **P** **08 14 41.7 +0.3**
ZFRI Zfri 76.12 298 P **P** **08 14 41.5 +0.1**
CSS Prodhromos 76.28 302⇑P **P** **08 14 42.0 -0.1**
comp=Z,3.3nm,1.1s
CSS Prodhromos 76.28 302*e*P **P** **08 14 42.0 -0.1**
MASH Mash'abbe Sade 76.31 298 P **P** **08 14 42.6 +0.2**
MASH Mash'abbe Sade 76.31 298 P **P** **08 14 42.4 0.0**
PRNI Paran 76.33 297 P **P** **08 14 43.0 +0.5**
PRNI Paran 76.33 297 P **P** **08 14 42.8 +0.3**
HENT Hendek 76.36 309 *i*P **P** **08 14 41.8 -0.6**
SVTA Shivta 76.47 298 P **P** **08 14 43.4 +0.1**
SVTA Shivta 76.47 298 P **P** **08 14 43.2 -0.1**
AQBJ Aqaba 76.48 297 P **P** **08 14 43.5 +0.1**
MBH Mount Berech 76.57 297 P **P** **08 14 44.2 +0.3**
MBH Mount Berech 76.57 297 P **P** **08 14 44.0 +0.1**
EIL Elat 76.58 297 P **P** **08 14 44.2 +0.3**
EIL Elat 76.58 297 P **P** **08 14 44.0 +0.1**
ALWS Ilw as Safayha 76.59 296 P **P** **08 14 44.8 +0.7**
JMOS Jabal al Moall 76.60 296 P **P** **08 14 44.7 +0.7**
KMTI Karmit 76.63 297 P **P** **08 14 44.3 +0.1**
KMTI Karmit 76.63 297 P **P** **08 14 44.1 -0.1**
KZIT Kziot 76.65 298 P **P** **08 14 44.4 +0.1**
KZIT Kziot 76.65 298 P **P** **08 14 44.2 -0.1**
SZAC Nuni-Zanaja 76.69 302 P **P** **08 14 44.5 0.0**
HAQS Haql 76.78 296 P **P** **08 14 45.9 +0.8**
ALFC Alevga 76.79 303⇑P **P** **08 14 44.5 -0.5**
comp=Z,2.1nm,1.1s
ALFC Alevga 76.79 303⇑*e*P **P** **08 14 44.5 -0.5**
BDAS Al Bad' 76.83 295 P **P** **08 14 45.9 +0.5**
CFR Carcaliu 76.95 314⇑*i*P **P** **08 14 45.4 -0.3**
CFR Carcaliu 76.95 314⇑P **P** **08 14 45.5 -0.2**
SUW Suwalki 77.12 323 *e*P **P** **08 14 45.6 -0.8**
HARR Harsova 77.24 313⇓*i*P **P** **08 14 47.8 +0.5**
HARR Harsova 77.24 313⇓P **P** **08 14 48.0 +0.7**
PSN Preselentsi 77.39 312 *i*P **P** **08 14 49.0 +0.9**
ISP Isparta 77.56 306⇑*i*P **P** **08 14 48.8 -0.4**
VRI Vrincioaia 77.67 315⇓*i*P **P** **08 14 50.9 +1.3**
VRI Vrincioaia 77.67 315⇑*i*P **P** **08 14 51.4 +1.8**
ULDT Uludag 77.84 308 *i*P **P** **08 14 50.9 +0.1**
ISR Istrita 78.04 314⇑*i*P **P** **08 14 53.8 +2.1**
ISR Istrita 78.04 314⇑*i*P **P** **08 14 53.8 +2.2**
PRD Provadia 78.09 312 *i*P **P** **08 14 52.0 0.0**
NSS Namsos 78.24 335 *e*P **P** **08 14 50.3 -2.1**
NSS AMS AMS 08 53 54.0
comp=Z,3μm,18.8s,MS5.6
MLR Muntele Rosu 78.31 314 P **P** **08 14 53.4 +0.2**
comp=Z,40nm,0.9s,mb5.3,baz=38,slow=2.6,SNR=37
MLR Muntele Rosu 78.31 314⇑*i*P **P** **08 14 53.6 +0.4**
MLR Muntele Rosu 78.31 314⇑P **P** **08 14 53.6 +0.5**
DAG Danmarks Havn 78.40 351⇑*i*P **P** **08 14 52.2 -0.9**
comp=Z,12nm,0.8s,mb4.9
comp=Z,2μm,19.0s
DAG Danmarks Havn 78.40 351⇑*i*P **P** **08 14 52.2 -0.9**
DAG pmax pmax
comp=Z,12nm,0.8s,mb4.9
DAG MLR MLR
comp=Z,2μm,19.0s,MS5.5
DAG MLR MLR
comp=N,2μm,20.0s,MS5.5
DAG MLR MLR
comp=E,2μm,19.0s,MS5.5
SIT Sitka 78.49 33 P **P** **08 14 56.1 +2.2**
SIT pmax pmax
comp=Z,73nm,1.2s,mb5.5
SIT Sitka 78.49 33 *e*P **P** **08 14 54.3 +0.4**
SIT LR LR
comp=Z,1μm,20.0s,MS5.2
BUC1 Bucharest 78.64 313⇑*i*P **P** **08 14 56.0 +1.0**
BUC1 Bucharest 78.64 313⇑P **P** **08 14 55.9 +0.9**
JMB Yambol 78.90 311 *i*P **P** **08 14 57.0 +0.6**
KWP Kalwaria 78.93 319 *e*P **P** **08 14 56.6 +0.2**
comp=Z,580nm,1.4s,mb6.3
FWVZ Far West T-bar 79.23 140 *e*P **P** **08 14 56.7 -1.6**
HFS Hagfors 79.50 331 P **P** **08 14 58.2 -1.1**
comp=Z,17nm,0.6s,mb5.2,baz=90,slow=5.9,SNR=32
PVL Pavlikeni 79.50 312 *i*P **P** **08 15 01.0 +1.3**
URZ Urewera 79.53 139 P **P** **08 14 57.4 -2.6**
comp=Z,6.8nm,0.6s,mb4.7,baz=60,slow=0.8,SNR=5.5
AYDN Tasoluk 79.59 306 *i*P **P** **08 14 48.1 -12**
BWZ Berwen 79.70 147 P **P** **08 14 59.0 -1.8**
RPZ Rata Peaks 79.72 146 P **P** **08 14 58.7 -2.2**
comp=Z,109nm,1.3s,mb5.6,baz=221,slow=1.1,SNR=12
ALN Alexandroupoli 79.81 310 *e*P **P** **08 15 01.4 0.0**
ARG Arkhangelos 79.89 305⇓*i*P **P** **08 15 02.4 +0.4**
CRVS Cervenica-Dubn 79.96 319 *e*P **P** **08 15 02.4 +0.4**
CRVS *e* 08 15 18.7
CRVS *e* 08 15 27.9
KDZ Kurdzhali 79.99 311 *i*P **P** **08 15 03.0 +0.6**
RDO Rodhopi 80.09 310⇑*i*P **P** **08 15 02.6 -0.3**
NB2 NORSAR Subarra 80.17 332 P **P** **08 15 01.4 -1.5**
comp=Z,8.8nm,0.6s,mb4.9,baz=62,slow=5.0
NB2 NORSAR Subarra 80.17 332 P **P** **08 15 01.4 -1.5**
baz=62,slow=5.1
NOA NORSAR Array B 80.17 332 P **P** **08 15 01.7 -1.2**
comp=Z,12nm,0.8s,mb4.9,baz=62,slow=5.5,SNR=36
NOA LR LR 08 53 58.5
comp=Z,5μm,20.8s,MS5.8,baz=60,slow=38
NOA NORSAR Array B 80.17 332 P **P** **08 15 01.7 -1.2**
NOA LR LR 08 53 58.5
PRK Paraskevi 80.23 308⇓*i*P **P** **08 15 04.0 +0.3**
PLD Plovdiv 80.33 311 *i*P **P** **08 15 04.0 -0.2**
SMG Samos 80.35 307⇑*i*P **P** **08 15 04.3 0.0**
NAO01 NORSAR Array S 80.40 332 *e*P **P** **08 15 02.7 -1.4**
comp=Z,87nm,1.3s,mb5.5
NAO01 LR LR
comp=Z,4μm,20.0s,MS5.8

OJC Ojcow 80.45 320 *e*P **P** **08 15 04.6 0.0**
OJC *e*PP PP 08 18 09.7 0.0
OJC *e*S S 08 25 10.0 +0.5
OJC *e*SS SS 08 30 22.3 -2.2
OJC MLR MLR 08 53 49.6
comp=Z,2µm,19.7s,MS5.5
NIE Niedzica 80.45 320 *e*P **P** **08 15 05.5 +0.8**
RZN Rozhen 80.47 311 *i* P **P** **08 15 05.0 +0.1**
DLBC Dease Lake 80.48 30 LR LR 08 51 03.3
comp=Z,1µm,20.9s,MS5.2,baz=295,slow=36
DLBC Dease Lake 80.48 30 *e*P **P** **08 15 05.0 +0.3**
PGB Panagyurishte 80.54 312 *i* P **P** **08 15 06.0 +0.7**
RES Resolute Bay 80.58 9 P **P** **08 15 04.1 -0.8**
RES pmax pmax
comp=Z,380nm,2.1s,mb6.0
RES Resolute Bay 80.58 9 *e*P **P** **08 15 03.4 -1.5**
comp=Z,101nm,1.5s,mb5.5
KECS Kecovo 80.71 319 *e*P **P** **08 15 05.2 -0.9**
KAP Karpathos 80.85 305⇑ *i*P **P** **08 15 06.9 -0.1**
JMIC Jan Mayen 80.86 345 LR LR 08 53 54.3
comp=Z,2µm,21.7s,MS5.4,baz=48,slow=38
BSD Bornholm Skovb 81.12 326 *i* P **P** **08 15 03.7 -4.4**
comp=Z,305nm,1.9s,mb5.9
BSD Bornholm Skovb 81.12 326 *i* P **P** **08 15 05.4 -2.7**
comp=Z,71nm,1.4s,mb5.4
comp=Z,5µm,20.0s
BSD Bornholm Skovb 81.12 326 *i* P **P** **08 15 05.4 -2.7**
BSD pmax pmax
comp=Z,71nm,1.4s,mb5.4
BSD MLR MLR
comp=Z,5µm,20.0s,MS5.8
BSD Bornholm Skovb 81.12 326 *i* P **P** **08 15 05.4 -2.7**
comp=Z,71nm,1.4s,mb5.4
VTS Vitosha 81.18 312 *i* P **P** **08 15 09.0 +0.3**
NVR Nevrokopi 81.19 311⇑ *i*P **P** **08 15 08.4 -0.3**
MMB Musomiste 81.20 311 *i* P **P** **08 15 08.0 -0.8**
PSZ Piszkesteto 81.30 318 P **P** **08 15 09.8 +0.7**
PSZ pmax pmax
comp=Z,94nm,1.3s,mb5.6
PSZ Piszkesteto 81.30 318 *e*P **P** **08 15 09.3 +0.2**
comp=Z,62nm,1.2s,mb5.4
RAC Raciborz 81.45 321 *e*P **P** **08 15 10.5 +0.6**
RAC *e*PcP PcP 08 15 15.8 -0.7
RAC *e*S S 08 25 19.8 -0.1
RAC MLR MLR 08 54 27.6
comp=Z,2µm,20.5s,MS5.4
SRS Serrai 81.47 311 *e*P **P** **08 15 09.4 -0.8**
SRS Serrai 81.47 311 P **P** **08 15 13.3 +3.1**
OUR Ouranopolis 81.48 310 *e*P **P** **08 15 10.2 -0.1**
KKB Krupnik 81.54 312 *i* P **P** **08 15 10.0 -0.5**
KONO Kongsberg 81.55 332 *e*P **P** **08 15 06.6 -3.6**
KONO *e*PP PP 08 18 15.2 -3.6
KONO *e*S S 08 25 20.7 0.0
KONO *e*SS SS 08 30 39.3 -1.5
KONO AMS AMS 08 55 25.7
comp=Z,12µm,19.9s,MS6.2
KONO Kongsberg 81.55 332⇓ *e*P **P** **08 15 11.4 +1.2**
BOLS Boljevac 81.56 314⇑ *i*P **P** **08 15 10.6 0.0**
OKC Ostrava-Krasne 81.58 320⇑ *i*P **P** **08 15 10.7 +0.1**
OKC *e*S S 08 25 20.7 -0.5
OKC L 08 56 50.0
VYHS Vyhne 81.72 319 *i* P **P** **08 15 12.0 +0.7**
VYHS *e*S S 08 25 22.1 -0.5
SOH Sokhos 81.74 311 *e*P **P** **08 15 11.4 -0.2**
PAIG Paliouri 81.85 310 *e*P **P** **08 15 11.9 -0.3**
SANT Santorini 81.86 306 *e*P **P** **08 15 10.7 -1.6**
SVIS Svilajnac 81.87 314 *e*P **P** **08 15 11.4 -0.8**
KNT Kendrikon 81.94 311 *e*P **P** **08 15 12.4 -0.2**
KOLL Kolacno 81.94 319 *i* P **P** **08 15 13.5 +1.0**
KOLL *e* pP 08 15 16.0 +0.3
MORC Moravsky Berou 81.96 321 *e*P **P** **08 15 12.6 +0.1**
comp=Z,84nm,1.5s,mb5.5
AOS Alonnisos 81.99 309 *e*P **P** **08 15 12.4 -0.5**
THE Thessaloniki 82.09 311 *e*P **P** **08 15 12.9 -0.5**
VAY Valandovo 82.10 311⇑ *i*P **P** **08 15 13.1 -0.4**
COP Copenhagen 82.12 327 *i* P **P** **08 15 12.8 -0.5**
comp=Z,45nm,1.6s,mb5.2
COP *i* pP 08 15 17.5 +1.0
COP *i* S S 08 24 45.2 -41
comp=Z,3µm,18.0s
COP Copenhagen 82.12 327 *i* P **P** **08 15 12.8 -0.5**
COP pmax pmax
comp=Z,45nm,1.6s,mb5.2
COP MLR MLR
comp=Z,3µm,18.0s,MS5.6
NPS Neapolis 82.14 305⇓ *i*P **P** **08 15 14.6 +0.8**
KSP Ksiaz 82.23 322⇑ *e*P **P** **08 15 14.2 +0.3**
KSP *e*S S 08 25 28.5 +0.6
KSP MLR MLR
comp=Z,8µm,18.8s,MS6.1
KSP Ksiaz 82.23 322⇑ *e*P **P** **08 15 14.2 +0.3**
KSP *e*pP pP 08 15 18.1 +1.0
KSP *e*S S 08 25 28.5 +0.6
KSP LR LR
comp=Z,8µm,18.8s,MS6.1
SRO Srobarova 82.31 319 *e*P **P** **08 15 15.9 +1.5**
GRG Griva 82.36 311 *e*P **P** **08 15 14.4 -0.5**
GRUS Gruza 82.37 314 *e*P **P** **08 15 15.2 +0.5**
NEO Neokhori 82.41 309⇓ *i*P **P** **08 15 14.7 -0.4**
XOR Xorichti 82.41 309 *e*P **P** **08 15 14.4 -0.7**
DPC Dobruska-Polom 82.43 321⇑ *i*P **P** **08 15 14.6 -0.4**
DPC *e*S S 08 25 30.5 +0.6
DPC L 08 56 50.0
comp=Z,4.4nm,16.9s
UPC Upice 82.54 322⇑ *i*P **P** **08 15 15.9 +0.4**
LIT Litokhoron 82.63 310 *e*P **P** **08 15 15.3 -0.9**
SKO Skopje 82.63 312 *i* P **P** **08 15 16.7 +0.5**
comp=Z,0.1nm,1.0s
IDI Anoyia 82.68 305 P **P** **08 15 17.8 +1.2**
comp=Z,19nm,0.7s,mb5.2,baz=68,slow=5.8,SNR=9.6
VRAC Vranov 82.72 320 P **P** **08 15 17.0 +0.5**
comp=Z,57nm,1.1s,mb5.5,baz=72,slow=5.5,SNR=45
LKR Lokris 82.82 309⇓ *i*P **P** **08 15 16.2 -1.1**
ZST Bratislava 82.89 319 *e*P **P** **08 15 18.4 +1.0**
ZST *e*S S 08 25 42.3 +7.6
RUE Ruedersdorf 82.91 324 *e*P **P** **08 15 17.5 +0.1**
KZN Kozani 83.06 311⇑ *i*P **P** **08 15 17.5 -1.0**
FNA Florina 83.14 311 *e*P **P** **08 15 18.3 -0.6**
AGG Agios Georgios 83.16 309 *e*P **P** **08 15 14.8 -4.1**
VKA Vienna 83.33 320⇑ *i*P **P** **08 15 20.3 +0.6**
comp=Z,1µm,3.0s
MUD Monsted U'grnd 83.35 329⇑ *i*P **P** **08 15 19.4 -0.2**
comp=Z,38nm,0.8s,mb5.5
MUD *i* 08 18 29.9
MUD *i* S S 08 25 41.5 +2.4
comp=Z,7µm,18.0s
MUD Monsted U'grnd 83.35 329⇑ *i*P **P** **08 15 19.4 -0.2**
MUD *i* 08 18 29.9
MUD *i* S S 08 25 41.5 +2.4
MUD pmax pmax
comp=Z,38nm,0.8s,mb5.5
MUD MLR MLR
comp=Z,7µm,18.0s,MS6.1
PVCC Panska Ves 83.36 322⇑ *i*P **P** **08 15 20.2 +0.5**
PVCC *e*S S 08 25 41.9 +2.6
PVCC L 08 57 30.0
comp=Z,3.7nm,15.5s
SOP Sopron 83.44 319⇑ *e*P **P** **08 15 20.6 +0.3**
BRG Berggiesshubel 83.55 323 *i* P **P** **08 15 20.8 +0.1**
BRG *i* 08 18 33.8
BRG *i* S S 08 25 44.0 +2.8
BRG pmax pmax
comp=Z,335nm,2.2s,mb6.1
BRG MLR MLR
comp=N,3µm,13.9s,MS5.9
BRG MLR MLR
comp=E,2µm,13.9s,MS5.9
BRG MLR MLR
comp=Z,5µm,13.9s,MS6.0
BRG Berggiesshubel 83.55 323 *i* P **P** **08 15 20.8 +0.1**
comp=Z,335nm,2.1s,mb6.1
BRG *i* PcP PcP 08 15 25.4 -0.1
BRG *i* PP PP 08 18 33.8 -1.3
BRG *i* S S 08 25 44.0 +2.8
BRG *e*SS SS 08 31 44.0 +34
BRG LR LR
comp=Z,5µm,13.9s,MS6.0
EVR Evrytania 83.57 309⇓ *i*P **P** **08 15 20.5 -0.7**
VLI Velia 83.61 307⇓ *i*P **P** **08 15 19.8 -1.5**
PRU Pruhonice 83.61 322⇑ *i*P **P** **08 15 21.3 +0.2**
comp=Z,257nm,1.7s,mb6.1
PRU *e*S S 08 25 41.3 -0.6
PRU L 08 57 30.0
comp=Z,3.6nm,15.0s
PRU Pruhonice 83.61 322⇑ *i*P **P** **08 15 21.3 +0.2**
PRU *e* 08 25 41.3
PRU pmax pmax
comp=Z,257nm,1.7s,mb6.1
PRU MLR MLR
comp=Z,4µm,15.0s,MS5.9
PRA Prague 83.64 322⇑ *i*P **P** **08 15 24.0 +2.8**
CLL Collm 83.88 323⇑ *i*P **P** **08 15 22.2 -0.2**
comp=Z,logA/T=1.7,mb5.6
CLL *i* pP 08 15 26.3 +0.7
CLL *i* *SP sP 08 15 31.6 +5.0
CLL *i* 08 15 48.0
CLL *e* 08 18 23.0
CLL *e*PP PP 08 18 31.0 -6.6
CLL *e* 08 18 51.0
CLL *e*S S 08 25 40.0 -4.5
CLL *e*PS PS 08 26 33.0 -6.4
CLL *e*SS SS 08 31 12.0 -3.0
CLL *e* 08 37 18.0
CLL Collm 83.88 323⇑ *i*P **P** **08 15 22.2 -0.2**
CLL *e*S S 08 25 40.0 -4.5
CLL pmax pmax
comp=Z,280nm,2.0s,mb6.0
CLL MLR MLR
comp=Z,7µm,17.4s,MS6.1
CLL Collm 83.88 323⇑ *i*P **P** **08 15 22.2 -0.2**
comp=Z,280nm,2.0s,mb6.0
CLL *i* pP 08 15 26.3 +0.7
CLL *e*S S 08 25 40.0 -4.5
CLL LR LR
comp=Z,7µm,17.4s,MS6.1
RLS Riolos of Patr 84.16 309⇓ *i*P **P** **08 15 24.1 0.0**
ITM Ithomi 84.17 308⇓ *i*P **P** **08 15 23.3 -0.9**
ARSA Arzberg 84.26 319⇑ *i*P **P** **08 15 24.5 +0.1**
comp=Z,430nm,2.4s,mb6.2
IGT Igoumenitsa 84.38 310 *e*P **P** **08 15 24.9 -0.3**
BBB Bella Bella 84.39 35 LR LR 08 49 32.8
comp=Z,381nm,20.8s,MS4.8,baz=316,slow=33
LKD Levkas 84.49 309 *e*P **P** **08 15 25.4 -0.4**
SISC Sisak 84.52 317 *i* P **P** **08 15 26.6 +0.9**
SUMG Summit 84.53 354 *e*P **P** **08 15 25.1 -0.1**
KHC Kasperske Hory 84.57 321⇑ *i*P **P** **08 15 26.0 +0.1**
KHC pP pP 08 15 31.0 +1.9
KHC *e*S S 08 25 46.4 -4.9
KHC L 08 58 00.0
comp=Z,4.1nm,17.0s
KHC Kasperske Hory 84.57 321⇑ *i*P **P** **08 15 26.0 +0.1**
KHC *i* pP 08 15 31.0 +1.9
KHC *e* 08 25 46.4
KHC MLR MLR
comp=Z,4µm,17.0s,MS5.9
KHC Kasperske Hory 84.57 321⇑ *i*P **P** **08 15 26.0 +0.1**
KHC *e* pP 08 15 31.0 +1.9
KHC *e*SKS SKS 08 25 46.4 -4.7
KHC LR LR
comp=Z,4µm,17.0s,MS5.9
YKW3 Yellowknife Ar 84.62 23 *e*P **P** **08 15 24.6 -1.2**
YKW3 *e*PKKPbc 08 33 32.5
GERES GERESS Array B 84.63 321 P **P** **08 15 25.9 -0.3**
comp=Z,21nm,0.9s,mb5.3,baz=56,slow=4.8,SNR=68
GERES PKKPbc 08 33 36.8
comp=Z,0.7nm,0.6s,baz=225,slow=3.8,SNR=5.8
GERES GERESS Array B 84.63 321 P **P** **08 15 25.9 -0.3**
GERES PKKPbc 08 33 36.8
YKA Yellowknife Ar 84.67 23 P **P** **08 15 25.1 -1.0**
comp=Z,12nm,0.8s,mb5.1,baz=312,slow=4.6,SNR=63
YKA PKiKP 08 20 38.2
comp=Z,0.2nm,0.6s,baz=322,slow=1.6,SNR=5.0
YKA PKKP PKKP 08 33 21.5 -1.2
comp=Z,0.5nm,0.8s,baz=111,slow=1.9,SNR=7.4
YKA PKKPbc 08 33 32.3
comp=Z,1.3nm,0.6s,baz=134,slow=2.5,SNR=21
YKA LR LR 08 57 19.8
comp=Z,917nm,20.5s,MS5.2,baz=290,slow=39
KEK Kerkira 84.68 311⇑ *i*P **P** **08 15 25.7 -1.0**
MOA Molln 84.75 320⇑ *i*P **P** **08 15 27.3 +0.5**
comp=Z,469nm,2.2s,mb6.2
PERS Pernice 84.79 318 *e*P **P** **08 15 27.1 0.0**
MOX Moxa 84.96 323 *i* P **P** **08 15 27.8 0.0**
comp=Z,logA/T=2.0,mb5.9
MOX PP PP 08 18 48.0 +1.7
MOX S S 08 25 55.0 -0.2
MOX L 08 58 31.0
MOX Moxa 84.96 323 *e*P **P** **08 15 27.8 0.0**
MOX pmax pmax
comp=Z,227nm,2.2s,mb5.9
MOX MLR MLR
comp=Z,6µm,19.0s,MS6.0
MOX Moxa 84.96 323 *e*P **P** **08 15 27.8 0.0**
comp=Z,227nm,2.2s,mb5.9
MOX LR LR
comp=Z,6µm,19.0s,MS6.0
KMBO Kilima Mbogo 85.17 267 P **P** **08 15 30.7 +0.9**
comp=Z,60nm,0.9s,mb5.7,baz=44,slow=7.5,SNR=100
KMBO LR LR 08 52 55.4
comp=Z,1µm,21.4s,MS5.2,baz=212,slow=35
KMBO Kilima Mbogo 85.17 267 *e*P **P** **08 15 30.8 +1.1**
comp=Z,57nm,1.0s,mb5.7
KMBO *e*PP PP 08 18 48.6 -0.3
KMBO LR LR
comp=Z,722nm,21.0s,MS5.0
OBKA Obir 85.19 318⇑ *i*P **P** **08 15 29.3 +0.2**
comp=Z,514nm,2.4s,mb6.2
BOJS Bojanci 85.22 317 *e*P **P** **08 15 29.7 +0.5**
LJU Ljubljana 85.42 318 *e*P **P** **08 15 30.3 +0.1**
LJU *e*PP PP 08 18 50.6 +0.5
LCI Lecce 85.59 312 *e*P **P** **08 15 31.5 +0.3**
CEY Cerknica 85.62 318 *e*P **P** **08 15 31.3 +0.1**
GRA1 Grafenberg Arr 85.65 322 *e*P **P** **08 15 31.9 +0.6**
comp=Z,395nm,1.9s,mb6.3
GRA1 *e*PP PP 08 19 00.2 +8.3
GRA1 *e*SS SS 08 31 56.7 +15
GRA1 LR LR
comp=Z,4µm,18.7s,MS5.9
GRF Grafenberg Arr 85.65 322 *e*P **P** **08 15 31.9 +0.6**
GRF pmax pmax
comp=Z,395nm,1.9s,mb6.3
KBA Koelnbreinsper 85.66 319⇑ *i*P **P** **08 15 31.2 -0.2**
comp=Z,373nm,2.9s,mb6.1
VOY Vojsko 85.82 318 *e*P **P** **08 15 32.0 -0.2**
VOY *e* 08 15 43.7
VOY Vojsko 85.82 318 *e*P **P** **08 15 27.7 -4.5**
VOY *e* pP 08 15 32.0 -3.4
VOY *e* 08 15 43.7
WATA Walderalm 86.60 320⇓ *i*P **P** **08 15 37.1 +1.1**
comp=Z,120nm,2.3s,mb5.7
WTTA Wattenberg 86.60 320⇑ *i*P **P** **08 15 35.8 -0.2**
comp=Z,324nm,2.5s,mb6.1
SQTA Sankt Quirin 86.87 320⇓ *i*P **P** **08 15 37.3 -0.1**
comp=Z,290nm,2.5s,mb6.1
MOTA Moosalm 86.88 320⇑ *i*P **P** **08 15 37.2 -0.2**
comp=Z,209nm,2.6s,mb5.9
TOD Tromm 87.05 323 *e*P **P** **08 15 37.7 -0.5**
TDS Terranova Siba 87.12 312 *e*P **P** **08 15 40.0 +1.3**
SLCN Sala Consilina 87.27 313 *e*P **P** **08 15 40.1 +0.6**
SGO Sicignano 87.42 313 *e*P **P** **08 15 41.2 +1.0**
CII Carovilli 87.56 314 P **P** **08 15 42.3 +1.5**
ARV Arcevia 87.61 316 *e*P **P** **08 15 42.1 +1.1**
FSSB Fossombrone 87.62 317 *e*P **P** **08 15 42.1 +1.0**
DAVA Damuels 87.62 321⇑ *i*P **P** **08 15 40.7 -0.3**
comp=Z,250nm,2.8s,mb6.0
RNI2 Rionero Sannit 87.67 314 *e*P **P** **08 15 44.0 +2.7**
RSM Repubblica di 87.72 317 *e*P **P** **08 15 43.0 +1.5**
SNTG Esanatoglia 87.73 316 *e*P **P** **08 15 42.9 +1.3**
BRMO Bormio 87.74 320 *e*P **P** **08 15 42.0 +0.4**
AQU L'Aquila 87.86 315 *e*P **P** **08 15 44.0 +1.7**
DAVOX Davos 87.88 320 P **P** **08 15 42.2 0.0**
comp=Z,10nm,0.7s,mb5.2,baz=124,slow=6.9,SNR=11
SDI San Donato 87.89 314 *e*P **P** **08 15 42.6 +0.2**
LANF Langenberg 87.94 323 *e*P **P** **08 15 42.4 0.0**
RUP Ruppelstein 87.96 324 *e*P **P** **08 15 42.6 +0.1**
HGN Heimansgroeve 88.00 325 *e*P **P** **08 15 41.2 -1.5**
comp=Z,19nm,1.7s,mb5.0
PTQR Pietraquaria 88.01 315 *e*P **P** **08 15 43.7 +0.7**
SOI Samo 88.02 310 *e*P **P** **08 15 43.6 +0.5**
SFI Santa Sofia 88.11 317 *e*P **P** **08 15 44.9 +1.5**
VMG Vicchio 88.27 317 *e*P **P** **08 15 46.3 +2.1**
MTTG Motta San Giov 88.31 311 *e*P **P** **08 15 44.1 -0.4**
SEI Scarperia 88.34 317 *e*P **P** **08 15 47.1 +2.5**
WLF Walferdange 88.48 324 P **P** **08 15 45.6 +0.6**
WLF pmax pmax
comp=Z,150nm,1.7s,mb6.0
WLF Walferdange 88.48 324 *e*P **P** **08 15 45.3 +0.2**
comp=Z,95nm,1.5s,mb5.8
WLS Welschbruch 88.49 323 *e*P **P** **08 15 44.5 -0.6**
CDF Champ du Feu 88.53 323 *e*P **P** **08 15 45.0 -0.3**
CSNT Castellina Chi 88.67 317 *e*P **P** **08 15 47.9 +1.8**
GSCL Gusciola 88.68 318 *e*P **P** **08 15 49.8 +3.6**
ECH Echery 88.71 322 *e*P **P** **08 15 45.2 -1.0**
ERBM Eremo 88.75 318 *e*P **P** **08 15 48.3 +1.8**
BORG Borgarnes 88.75 345 LR LR 08 58 43.2
comp=Z,4µm,19.4s,MS5.8,baz=24,slow=38
BORG Borgarnes 88.75 345 PFAKE 08 16 00.0 +14
BORG LR LR
comp=Z,5µm,19.0s,MS6.0
PGC Sidney 88.77 37 *e*P **P** **08 15 48.1 +1.7**
comp=Z,54nm,1.0s,mb5.8
OCWA Octopus Mounta 88.85 38 *e*P **P** **08 15 47.7 +0.9**
comp=Z,80nm,1.3s,mb5.9
OCWA LR LR
comp=Z,1µm,19.0s,MS5.4
BBS Basel-Blauen 88.91 322 *e*P **P** **08 15 46.1 -1.0**
MOF Molkenrain 88.92 322 *e*P **P** **08 15 46.4 -0.8**
GIVF Givet 88.95 325 *e*P **P** **08 15 46.7 -0.6**
GRFL Gerfalco 89.03 317 *e*P **P** **08 15 50.0 +2.1**
HINF Hinteralfeld 89.09 322 *e*P **P** **08 15 47.2 -0.8**
HAU Haudompre 89.28 323 *e*P **P** **08 15 48.1 -0.8**
comp=Z,28nm,0.8s,mb5.3
HAU *e*R
comp=Z,4µm,20.2s
BAIF Baives 89.30 325 *e*P **P** **08 15 48.5 -0.5**
VDB Vedder Mountai 89.31 36 P **P** **08 15 49.3 +0.3**
SQM Sequim 89.31 37 P **P** **08 15 50.8 +1.7**
LOMF Lomont 89.36 322 *e*P **P** **08 15 47.8 -1.5**
MCGN Macugnaga 89.43 320 *e*P **P** **08 15 50.1 +0.4**
VAE Valguarnera 89.45 311 P **P** **08 15 51.4 +1.4**
comp=Z,13nm,1.0s,mb5.2,baz=104,slow=14,SNR=2.2
EKA Eskdalemuir Ar 89.65 332 P **P** **08 15 50.8 +0.3**
comp=Z,6.2nm,0.8s,mb5.0,baz=63,slow=3.7,SNR=12
EKA PKKPbc 08 33 24.4
comp=Z,1.0nm,0.6s,baz=297,slow=1.9,SNR=4.0
ESK Eskdalemuir 89.68 332 *e*P **P** **08 15 49.4 -1.2**
ESK AMB AMB 08 15 55.6
comp=Z,74nm,1.6s,mb5.8
ESK Eskdalemuir 89.68 332 PFAKE 08 16 00.0 +9.4
ESK LR LR
comp=Z,8µm,19.0s,MS6.2
GNW Green Mountain 89.71 38 *e*P **P** **08 15 51.9 +0.9**
MEZF Maizieres J'vi 89.73 323 *e*P **P** **08 15 50.8 -0.2**
HPK Haverah Park 89.85 330 *e*P **P** **08 15 51.1 -0.3**
JCW Jim Creek 89.87 37 P **P** **08 15 53.9 +2.2**
RPW Rockport 89.95 36 *e*P **P** **08 15 53.2 +1.2**
BMW Boistfort Moun 90.08 39 *e*P **P** **08 15 54.1 +1.4**
CABF La Chapelle 90.19 322 *e*P **P** **08 15 52.8 -0.4**
LHO Holmfirth 90.22 330 *e*P **P** **08 15 52.1 -1.0**
RMW Rattlesnake Mo 90.35 37 P **P** **08 15 56.7 +2.8**
RMW Rattlesnake Mo 90.35 37 *e*P **P** **08 15 55.3 +1.4**
LPG La Plagne 90.41 320 *e*P **P** **08 15 54.5 +0.3**
comp=Z,79nm,1.0s,mb5.7
LPL La Plagne 90.41 320 *e*P **P** **08 15 54.3 +0.1**
comp=Z,97nm,1.2s,mb5.7
PNT Penticton 90.48 35 P **P** **08 15 55.4 +0.9**
PGF Pioggiola 90.59 317 *e*P **P** **08 15 55.4 +0.3**
comp=Z,238nm,1.2s,mb6.1
BNI Bardonecchia 90.69 320 *e*P **P** **08 15 55.0 -0.6**
BNI *e*PP PP 08 19 33.8 +0.5
SAOF Saorge 90.73 319 *e*P **P** **08 15 56.6 +0.9**
LON Longmire 90.74 38 P **P** **08 15 58.0 +2.3**
LON Longmire 90.74 38 *e*P **P** **08 15 56.5 +0.8**
AUTN L'Aution 90.81 319 *e*P **P** **08 15 56.3 +0.2**
MBDF Montbardon 90.81 320 *e*P **P** **08 15 55.2 -0.9**
comp=Z,96nm,1.4s,mb5.7
NLW Nelson Butte 90.81 36 *e*P **P** **08 15 57.1 +1.1**
SBF Sospel 90.87 319 *e*P **P** **08 15 56.9 +0.5**
comp=Z,149nm,1.2s,mb5.9
AURF Auriere 90.93 319 *e*P **P** **08 15 55.3 -1.3**
MVIF Mont Vial 91.03 319 *e*P **P** **08 15 54.4 -2.7**
COR Corvallis 91.06 40 P **P** **08 16 00.3 +3.1**
COR pmax pmax
comp=Z,120nm,1.5s,mb6.0
COR Corvallis 91.06 40 *e*P **P** **08 15 58.9 +1.7**
comp=Z,78nm,1.3s,mb5.9
COR LR LR
comp=Z,571nm,20.0s,MS5.0
LOR Lormes 91.09 323 *e*P **P** **08 15 56.6 -0.7**
comp=Z,58nm,1.1s,mb5.5
LOR *e*R
comp=Z,4µm,19.8s
ORIF Oris-en-Rattie 91.24 320 *e*P **P** **08 15 58.1 +0.1**
ORIF *e*R
comp=Z,3µm,22.8s
CALN Calern 91.27 319 *e*P **P** **08 15 54.9 -3.3**
SSF Saint Saulge 91.40 323 *e*P **P** **08 15 58.2 -0.5**
comp=Z,82nm,1.4s,mb5.6
SMF Signal de Mont 91.45 322 *e*P **P** **08 15 58.5 -0.5**
comp=Z,167nm,1.3s,mb5.9
FRF La Foret Royal 91.52 319 *e*P **P** **08 15 59.0 -0.4**
comp=Z,102nm,1.4s,mb5.7
AVF Avril sur Loir 91.64 323 *e*P **P** **08 15 59.3 -0.6**
comp=Z,114nm,1.3s,mb5.7
LMR La Mourre 91.72 319 *e*P **P** **08 16 00.2 -0.1**
comp=Z,248nm,1.8s,mb5.9
HYF Humbligny 91.76 323 *e*P **P** **08 16 00.4 0.0**
HSO Harness Mounta 91.77 41 P **P** **08 16 02.7 +2.2**
PLDF La Plantade 91.96 322 *e*P **P** **08 16 01.1 -0.2**
VIVF Saint-Julien-l 91.99 321 *e*P **P** **08 16 01.2 -0.3**
comp=Z,29nm,1.0s,mb5.2
BGF Bois d'Agland 92.06 323 *e*P **P** **08 16 01.4 -0.4**
DPW Davenport 92.10 36 P **P** **08 16 04.4 +2.5**
DPW Davenport 92.10 36 *e*P **P** **08 16 02.9 +1.0**
AGO Saint Agoulin 92.19 322 *e*P **P** **08 16 02.7 +0.3**
HAWA Hanford 92.24 37 PFAKE 08 16 10.0 +7.4
HAWA LR LR
comp=Z,817nm,21.0s,MS5.2
HUMO Hull Mountain 92.35 42 *e*P **P** **08 16 02.4 -0.8**
NEW Newport 92.44 35 LR LR 08 59 20.6
comp=Z,678nm,18.8s,MS5.1,baz=327,slow=37
NEW Newport 92.44 35 *e*P **P** **08 16 04.1 +0.6**
comp=Z,16nm,1.0s,mb5.3
NEW LR LR
comp=Z,792nm,19.0s,MS5.2
PYM Petit Puy Mans 92.44 322 *e*P **P** **08 16 02.5 -1.0**
LDF La Druitiere 92.46 326 *e*P **P** **08 16 02.5 -1.0**
comp=Z,220nm,1.7s,mb5.9
FLN La Foliniere 92.54 326 *e*P **P** **08 16 03.4 -0.5**
comp=Z,56nm,1.2s,mb5.6
FLN *e*R
comp=Z,4µm,21.0s
TCF Toulx Ste Croi 92.58 323 *e*P **P** **08 16 04.0 -0.2**
comp=Z,49nm,1.1s,mb5.5
LBL Lubilhac 92.60 321 *e*P **P** **08 16 03.2 -1.1**
LASF Ste Croix 92.91 320 *e*P **P** **08 16 05.5 -0.2**
comp=Z,118nm,1.6s,mb5.8
YBH Yreka Blue Hor 92.98 42 P **P** **08 16 04.7 -1.4**
comp=Z,6.2nm,1.0s,mb5.0,baz=96,slow=4.3,SNR=8.6
YBH Yreka Blue Hor 92.98 42 P **P** **08 16 08.5 +2.4**
YBH pmax pmax
comp=Z,25nm,1.3s
YBH Yreka Blue Hor 92.98 42 *e*P **P** **08 16 07.2 +1.0**
comp=Z,19nm,1.2s,mb5.4
YBH LR LR
comp=Z,768nm,22.0s,MS5.1
CAF Calviac 93.46 322 *e*P **P** **08 16 08.5 +0.2**
comp=Z,53nm,1.2s,mb5.5
RJF Les Rejaudoux 93.55 322 *e*P **P** **08 16 08.9 +0.2**
comp=Z,132nm,1.2s,mb5.9
RJF *e*R
comp=Z,3µm,21.5s
WALA Waterton Lakes 93.60 33 *e*P **P** **08 16 10.0 +1.2**
comp=Z,26nm,1.2s,mb5.5
MFF Saint Martin d 93.69 324 *e*P **P** **08 16 09.0 -0.3**
WDC Whiskeytown Da 93.72 43 P **P** **08 16 10.7 +1.1**
WDC pmax pmax
comp=Z,20nm,1.3s,mb5.4
WDC Whiskeytown Da 93.72 43 *e*P **P** **08 16 09.8 +0.3**
comp=Z,15nm,1.2s,mb5.3
WDC LR LR
comp=Z,686nm,20.0s,MS5.1
FCC Fort Churchill 94.14 18 P **P** **08 16 10.7 -0.3**
FCC pmax pmax
comp=Z,96nm,2.0s,mb5.9
FCC Fort Churchill 94.14 18 *e*P **P** **08 16 09.6 -1.4**
comp=Z,19nm,1.3s,mb5.4
HOPS Hopland 94.24 45 PFAKE 08 16 20.0 +8.0
HOPS LR LR
comp=Z,916nm,19.0s,MS5.3
ROSF Rostrenen 94.25 327 *e*P **P** **08 16 10.4 -1.4**
MTLF Montolieu 94.30 320 *e*P **P** **08 16 12.0 -0.2**
comp=Z,59nm,1.4s,mb5.5

MOD	**Modoc**	**94.38**	**41**	*e*P		**P**	**08 16 13.5**	**+0.9**	
	comp=Z,24nm,1.1s,mb5.5								
MOD				LR		LR			
	comp=Z,680nm,22.0s,MS5.1								
FFC	**Flin Flon**	**94.82**	**24**	*e*P		**P**	**08 16 13.7**	**-0.6**	
	comp=Z,8.2nm,0.8s,mb5.2								
FFC				LR		LR			
	comp=Z,1µm,20.0s,MS5.4								
MSO	**Missoula**	**95.02**	**35**	*e*P		**P**	**08 16 15.5**	**+0.1**	
	comp=Z,28nm,1.5s,mb5.5								
MSO				LR		LR			
	comp=Z,1µm,22.0s,MS5.4								
WVOR	**Wild Horse Val**	**95.08**	**40**	P		**P**	**08 16 17.6**	**+1.8**	
WVOR				pmax		pmax			
	comp=Z,31nm,1.4s,mb5.5								
WVOR	**Wild Horse Val**	**95.08**	**40**	*e*P		**P**	**08 16 17.4**	**+1.7**	
	comp=Z,23nm,1.3s,mb5.5								
WVOR				LR		LR			
	comp=Z,837nm,20.0s,MS5.2								
OHCM	**Honcut**	**95.09**	**44**	P		**P**	**08 16 18.1**	**+2.2**	
CHMT	**Chamberlain Mo**	**95.32**	**34**	*e*P		**P**	**08 16 17.7**	**+1.0**	
PPT	**Papeete**	**95.43**	**107**	*e*S		S	08 27 21.4	-9.5	
PPT				*e*L			08 42 55.1		
PPT				*e*R			08 46 43.4		
	comp=Z,598nm,21.2s,baz=295								
BEKR	**Beckwourth**	**95.50**	**43**	*e*P		**P**	**08 16 18.4**	**+0.6**	
	comp=Z,23nm,1.2s,mb5.5								
HRY	**Holter Researc**	**96.19**	**34**	*e*P		**P**	**08 16 21.4**	**+0.6**	
PAHR	**Pah Rah Range**	**96.21**	**43**	*e*P		**P**	**08 16 22.5**	**+1.5**	
	comp=Z,20nm,1.1s,mb5.5								
CMB	**Columbia Colle**	**96.53**	**45**	P		**P**	**08 16 21.8**	**-0.7**	
CMB				pmax		pmax			
	comp=Z,27nm,1.1s,mb5.6								
CMB	**Columbia Colle**	**96.53**	**45**	*e*P		**P**	**08 16 21.6**	**-1.0**	
	comp=Z,22nm,1.0s,mb5.5								
CMB				LR		LR			
	comp=Z,678nm,22.0s,MS5.1								
SAO	**San Andreas Ge**	**96.54**	**46**	PFAKE			08 16 30.0	+7.4	
SAO				LR		LR			
	comp=Z,609nm,20.0s,MS5.1								
HLID	**Hailey**	**96.84**	**37**	*e*P		**P**	**08 16 24.9**	**+1.1**	
	comp=Z,10nm,1.2s,mb5.1								
HLID				LR		LR			
	comp=Z,1µm,20.0s,MS5.4								
MCMT	**McKenzie Canyo**	**96.89**	**36**	*e*P		**P**	**08 16 25.6**	**+1.6**	
BOZ	**Bozeman (W)**	**97.00**	**34**	PFAKE			08 16 40.0	+16	
BOZ				LR		LR			
	comp=Z,997nm,20.0s,MS5.3								
BMN	**Battle Mountai**	**97.12**	**41**	*e*P		**P**	**08 16 26.6**	**+1.5**	
	comp=Z,11nm,1.1s,mb5.2								
BMN				LR		LR			
	comp=Z,581nm,20.0s,MS5.1								
TBI	**Tubuai**	**97.60**	**112**	*e*S		S	08 27 40.7	-8.5	
TBI				*e*R			08 47 45.3		
	comp=Z,7.6nm,24.0s								
NVAR	**Mina Array Bea**	**97.64**	**43**	P		**P**	**08 16 27.8**	**+0.3**	
	comp=Z,38nm,1.5s,mb5.7,baz=282,slow=2.2,SNR=16								
NVAR				PP		PP	08 20 28.4	+0.3	
	comp=Z,1.6nm,1.0s,baz=301,slow=5.8,SNR=4.3								
NVAR				PKKPbc			08 33 03.2		
	comp=Z,0.4nm,0.6s,baz=99,slow=3.9,SNR=3.8								
NVAR				LR		LR	08 58 24.1		
	comp=Z,594nm,21.5s,MS5.0,baz=355,slow=34								
TPH	**Tonopah**	**98.53**	**43**	P		**P**	**08 16 33.4**	**+1.9**	
TPH				pmax		pmax			
	comp=Z,18nm,1.3s,mb5.4								
TPH	**Tonopah**	**98.53**	**43**	*e*P		**P**	**08 16 32.5**	**+1.0**	
	comp=Z,18nm,1.3s,mb5.4								
TPH				LR		LR			
	comp=Z,606nm,20.0s,MS5.1								
AHID	**Auburn Hatcher**	**99.20**	**36**	PFAKE			08 16 50.0	+16	
AHID				LR		LR			
	comp=Z,1µm,22.0s,MS5.3								
MAW	**Mawson**	**99.33**	**199**	P		**P**	**08 16 33.2**	**-1.2**	
	comp=Z,8.7nm,1.0s,mb5.2,baz=8.2,slow=4.2,SNR=5.2								
MAW				PP		PP	08 20 40.0	+0.1	
	comp=Z,6.4nm,0.9s,baz=26,slow=9.9,SNR=4.2								
MAW				LR		LR	09 01 56.7		
	comp=Z,420nm,18.1s,MS5.0,baz=50,slow=36								
HWUT	**Hardware Ranch**	**99.71**	**38**	*e*Pdif		**P**	**08 16 38.4**	**+1.6**	
HWUT				*e*PKKPbc			08 32 55.6		
HWUT				LR		LR			
	comp=Z,2µm,21.0s,MS5.5								
BW06	**Boulder Array**	**100.04**	**36**	PFAKE			08 16 50.0	+12	
BW06				LR		LR			
	comp=Z,1µm,21.0s,MS5.4								
PDAR	**Pinedale Array**	**100.04**	**36**	P		P	08 16 40.5	+2.3	
	comp=Z,0.3nm,0.5s,baz=304,slow=5.3,SNR=3.1								
PDAR				PP		PP	08 20 46.3	+0.1	
	comp=Z,1.8nm,1.0s,baz=297,slow=3.3,SNR=4.8								
PDAR				PKKPbc			08 32 55.4		
	comp=Z,3.3nm,1.0s,baz=117,slow=3.3,SNR=12								
PDAR				PKKPab			08 33 20.2		
	comp=Z,5.9nm,1.0s,baz=124,slow=5.3,SNR=14								
ESDC	**Sonseca Array**	**100.22**	**320**	PP		PP	08 20 45.7	-2.0	
	comp=Z,2.4nm,0.8s,baz=46,slow=8.0,SNR=5.9								
ESLA	**Sonseca Array**	**100.22**	**320**	PFAKE			08 16 50.0	+11	
ESLA				LR		LR			
	comp=Z,7µm,19.0s,MS6.2								
ULM	**Lac du Bonnet**	**100.64**	**23**	PKKPab			08 33 15.3		
	comp=Z,8.8nm,0.8s,baz=134,slow=4.3,SNR=13								
ULM	**Lac du Bonnet**	**100.64**	**23**	PFAKE			08 16 50.0	+9.2	
ULM				LR		LR			
	comp=Z,2µm,20.0s,MS5.6								
DAU	**Daniels Canyon**	**100.67**	**38**	Pdif		P	08 16 40.7	-0.5	
DAU				*e*PKKPbc			08 32 54.7		
MVU	**Marysvale**	**101.35**	**40**	PFAKE			08 17 00.0	+16	
MVU				LR		LR			
	comp=Z,664nm,19.0s,MS5.2								
MSU	**Marysvale**	**101.37**	**40**	P		P	08 16 46.1	+1.7	
MSU	**Marysvale**	**101.37**	**40**	*e*Pdif		P	08 16 44.3	-0.1	
PFO	**Pinyon Flat Ob**	**101.69**	**46**	PFAKE			08 17 00.0	+14	
PFO				LR		LR			
	comp=Z,1µm,19.0s,MS5.3								
RSSD	**Black Hills**	**101.92**	**32**	PFAKE			08 17 00.0	+13	
RSSD				LR		LR			
	comp=Z,431nm,21.0s,MS5.0								
SCHQ	**Schefferville**	**102.97**	**5**	PFAKE			08 17 00.0	+8.9	
SCHQ				LR		LR			
	comp=Z,2µm,20.0s,MS5.7								
SBA	**Scott Base**	**103.20**	**171**	PFAKE			08 17 00.0	+8.3	
SBA				LR		LR			
	comp=Z,1µm,19.0s,MS5.4								
PV10	**Paradox Valley**	**103.31**	**39**	*e*Pdif		Pdif	08 16 53.7	+0.7	
WUAZ	**Wupatki**	**103.80**	**42**	Pdif		Pdif	08 16 59.1	+3.9	
	comp=Z,4.8nm,1.2s								
WUAZ				*e*PKKPab			08 33 04.8		
WUAZ				LR		LR			
	comp=Z,563nm,20.0s,MS5.1								
LBTB	**Lobatse**	**104.22**	**249**	PFAKE			08 17 10.0	+13	
LBTB				LR		LR			
	comp=Z,1µm,20.0s,MS5.3								
ISCO	**Idaho Springs**	**104.24**	**36**	Pdif		Pdif	08 17 00.8	+3.7	
ISCO				*e*PKKPbc			08 32 43.1		
ISCO				*e*PKKPab			08 33 02.1		
ISCO				LR		LR			
	comp=Z,1µm,21.0s,MS5.3								
SDCO	**Great Sand Dun**	**105.76**	**37**	PFAKE			08 21 30.0		
SDCO				LR		LR			
	comp=Z,887nm,20.0s,MS5.3								
TUC	**Tucson**	**106.24**	**44**	*e*PKP			08 21 28.0		
TUC				LR		LR			
	comp=Z,563nm,20.0s,MS5.1								
ANMO	**Albuquerque**	**107.16**	**40**	PFAKE			08 21 30.0		
ANMO				LR		LR			
	comp=Z,858nm,20.0s,MS5.3								
CBKS	**Cedar Bluff**	**108.03**	**33**	PFAKE			08 21 30.0		
CBKS				LR		LR			
	comp=Z,1µm,20.0s,MS5.5								
JFWS	**Jewell Farm**	**108.90**	**24**	PFAKE			08 21 30.0		
JFWS				LR		LR			
	comp=Z,2µm,21.0s,MS5.5								
MNTX	**Cornudas Mount**	**110.06**	**42**	PFAKE			08 21 40.0	+14	
MNTX				LR		LR			
	comp=Z,1µm,22.0s,MS5.4								
SUR	**Sutherland**	**110.28**	**242**	PFAKE			08 21 40.0	+13	
SUR				LR		LR			
	comp=Z,2µm,19.0s,MS5.7								
PQI	**Presque Isle**	**110.93**	**7**	PFAKE			08 21 40.0	+12	
PQI				LR		LR			
	comp=Z,9µm,20.0s,MS6.3								
WMOK	**Wichita Mounta**	**111.64**	**35**	PKIKP		PKPdf	08 21 27.4	-1.8	
WMOK	**Wichita Mounta**	**111.64**	**35**	*e*PKP		PKPdf	08 21 25.3	-3.9	
WMOK				LR		LR			
	comp=Z,1µm,19.0s,MS5.5								
AAM	**Ann Arbor**	**111.74**	**20**	PFAKE			08 21 40.0	+11	
AAM				LR		LR			
	comp=Z,1µm,19.0s,MS5.5								
QSPA	**South Pole Qui**	**111.97**	**180**	*e*PKP		PKPdf	08 21 25.9	-2.9	
QSPA				LR		LR			
	comp=Z,6µm,22.0s,MS6.1								
NCB	**Newcomb**	**112.60**	**12**	PFAKE			08 21 40.0	+9.1	
NCB				LR		LR			
	comp=Z,1µm,21.0s,MS5.5								
TXAR	**Lajitas Array**	**112.76**	**42**	Pdiff		Pdif	08 17 35.8	+1.0	
	comp=Z,0.1nm,0.4s,baz=120,slow=10,SNR=2.6								
TXAR				PKiKP			08 21 28.7		
	comp=Z,1.6nm,0.6s,baz=208,slow=0.7,SNR=41								
TXAR				PKKPbc			08 32 16.8		
	comp=Z,1.2nm,0.9s,baz=146,slow=4.5,SNR=9.4								
TXAR	**Lajitas Array**	**112.76**	**42**	Pdif		Pdif	08 17 35.8	+1.0	
TXAR				PKPdf		PKPdf	08 21 28.7	-2.9	
TXAR				PKKPbc			08 32 16.8		
LBNH	**Lisbon**	**112.76**	**10**	PFAKE			08 21 40.0	+8.8	
LBNH				LR		LR			
	comp=Z,2µm,20.0s,MS5.7								
WVL	**Waterville**	**112.80**	**9**	PFAKE			08 21 40.0	+8.7	
WVL				LR		LR			
	comp=Z,5µm,20.0s,MS6.1								
EMMW	**East Machias**	**112.93**	**7**	PFAKE			08 21 40.0	+8.4	
EMMW				LR		LR			
	comp=Z,8µm,22.0s,MS6.3								
ERPA	**Erie**	**112.99**	**17**	PFAKE			08 21 40.0	+8.2	
ERPA				LR		LR			
	comp=Z,1µm,20.0s,MS5.6								
ACSO	**Alum Creek Sta**	**113.83**	**20**	PFAKE			08 21 40.0	+6.5	
ACSO				LR		LR			
	comp=Z,1µm,22.0s,MS5.5								
BINY	**Binghamton**	**113.92**	**14**	PFAKE			08 21 40.0	+6.4	
BINY				LR		LR			
	comp=Z,2µm,20.0s,MS5.6								
JCT	**Junction City**	**114.27**	**39**	PKIKP		PKPdf	08 21 31.8	-2.7	
JCT	**Junction City**	**114.27**	**39**	*e*PKP		PKPdf	08 21 31.7	-2.8	
JCT				LR		LR			
	comp=Z,896nm,20.0s,MS5.4								
WCI	**Wyandotte Cave**	**114.46**	**24**	PKIKP		PKPdf	08 21 31.4	-3.3	
WCI	**Wyandotte Cave**	**114.46**	**24**	*e*PKP		PKPdf	08 21 30.4	-4.3	
WCI				LR		LR			
	comp=Z,2µm,22.0s,MS5.5								
HRV	**Harvard--Oak R**	**114.51**	**11**	PFAKE			08 21 40.0	+5.3	
HRV				LR		LR			
	comp=Z,429nm,21.0s,MS5.0								
SSPA	**Standing Stone**	**114.94**	**16**	PFAKE			08 21 40.0	+4.5	
SSPA				LR		LR			
	comp=Z,1µm,20.0s,MS5.5								
MCWV	**Mont Chateau**	**115.31**	**18**	PFAKE			08 21 50.0	+14	
MCWV				LR		LR			
	comp=Z,2µm,22.0s,MS5.6								
WVT	**Waverly**	**115.68**	**26**	PKIKP		PKPdf	08 21 33.4	-3.8	
WVT	**Waverly**	**115.68**	**26**	*e*PKPdf		PKPdf	08 21 33.2	-4.0	
WVT				LR		LR			
	comp=Z,1µm,20.0s,MS5.5								
OXF	**Oxford**	**116.39**	**28**	*e*PKPdf		PKPdf	08 21 35.0	-3.6	
OXF				LR		LR			
	comp=Z,779nm,21.0s,MS5.3								
PLAL	**Pickwick Lake**	**116.57**	**27**	*e*PKPdf		PKPdf	08 21 34.6	-4.3	
PLAL				LR		LR			
	comp=Z,782nm,20.0s,MS5.3								
HKT	**Hockley**	**116.91**	**36**	PFAKE			08 21 50.0	+10	
HKT				LR		LR			
	comp=Z,295nm,21.0s,MS4.9								
MAIT	**Maitri**	**117.28**	**201**	*e*P		PKPdf	08 21 35.2	-4.2	
CBN	**Corbin**	**117.36**	**17**	PFAKE			08 21 50.0	+10	
CBN				LR		LR			
	comp=Z,3µm,20.0s,MS5.9								
BLA	**Blacksburg**	**117.40**	**20**	PFAKE			08 21 50.0	+10	
BLA				LR		LR			
	comp=Z,1µm,19.0s,MS5.5								
CPCT	**Cooper Cave**	**117.58**	**24**	*e*PKP		PKPdf	08 21 35.5	-5.3	
LRAL	**Lakeview Retre**	**118.69**	**27**	*e*PKPdf		PKPdf	08 21 38.7	-4.4	
LRAL				LR		LR			
	comp=Z,730nm,20.0s,MS5.3								
JSC	**Jenkinsville**	**119.80**	**22**	PKIKP		PKPdf	08 21 43.1	-2.0	
JSC	**Jenkinsville**	**119.80**	**22**	*e*PKPdf		PKPdf	08 21 42.6	-2.5	
DBIC	**Dimbokro**	**120.24**	**292**	PKP		PKPdf	08 21 43.9	-2.6	
	comp=Z,11nm,0.7s,baz=48,slow=3.4,SNR=21								
DBIC	**Dimbokro**	**120.24**	**292**	*e*PKPdf		PKPdf	08 21 43.4	-3.1	
DBIC				*e*PP		PP	08 23 10.0	-3.2	
DBIC				LR		LR			
	comp=Z,420nm,22.0s,MS5.0								
KIC	**Kosan Boka**	**120.30**	**292**	*e*PKIKP		PKPdf	08 21 42.6	-4.0	
	comp=Z,69nm,0.7s								
TIC	**Toumodi**	**120.39**	**292**	*e*PKIKP		PKPdf	08 21 43.0	-3.8	
	comp=Z,45nm,0.7s								
LIC	**Lamto**	**120.61**	**292**	*e*PKIKP		PKPdf	08 21 43.5	-3.8	
	comp=Z,37nm,0.7s								
LIC				*e*R					
	comp=Z,933nm,20.5s								
LIC	**Lamto**	**120.61**	**292**	*e*PKIKP		PKPdf	08 21 42.8	-4.5	
	comp=Z,59nm,0.7s								
LIC	**Lamto**	**120.61**	**292**	*e*PKPdf		PKPdf	08 21 43.5	-3.8	
LIC				LR		LR			
	comp=Z,470nm,20.5s,MS5.1								
SNAA	**Sanae**	**121.45**	**198**	*e*PKPdf		PKPdf	08 21 42.5	-5.0	
DWPF	**Disney**	**125.29**	**25**	PFAKE			08 22 10.0	+14	
DWPF				LR		LR			
	comp=Z,277nm,21.0s,MS4.9								
BBSR	**BB Station**	**125.43**	**7**	PFAKE			08 22 10.0	+14	
BBSR				LR		LR			
	comp=Z,3µm,21.0s,MS6.0								
SJG	**San Juan**	**139.25**	**11**	PFAKE			08 22 30.0	+7.5	
SJG				LR		LR			
	comp=Z,918nm,22.0s,MS5.5								
ROSC	**El Rosal**	**148.94**	**32**	PKP		PKPdf	08 22 37.9	-1.4	
	comp=Z,11nm,0.8s,baz=324,slow=8.3,SNR=12								
ROSC				PKPbc		PKPdf	08 22 41.1	+1.8	
	comp=Z,54nm,0.7s,baz=144,slow=2.9,SNR=19								
ROSC				PKPab		PKPab	08 22 45.3	-1.2	
	comp=Z,56nm,0.7s,baz=140,slow=3.4,SNR=22								
OTAV	**Otavalo**	**150.37**	**44**	*e*PKPdf		PKPdf	08 22 40.1	-1.4	
EFI	**East Falkland**	**150.55**	**180**	*e*PKPdf		PKPdf	08 22 37.8	-2.9	
PLCA	**Paso Flores**	**158.84**	**154**	PKP		PKPdf	08 22 49.2	-3.0	
	comp=Z,8.5nm,1.2s,baz=232,slow=1.6,SNR=6.7								
PLCA				PKPab		PKPab	08 23 25.4	-2.2	
	comp=Z,8.4nm,1.1s,baz=208,slow=5.5,SNR=3.6								
PLCA	**Paso Flores**	**158.84**	**154**	PKP		PKPdf	08 22 49.2	-3.0	
PLCA				PKPab		PKPab	08 23 25.4	-2.2	
BDFB	**Brasilia**	**168.21**	**302**	PKP		PKPdf	08 22 58.8	-2.8	
	comp=Z,16nm,1.0s,baz=33,slow=1.3,SNR=15								
BDFB				PKPab		PKPab	08 24 08.7	-0.3	
	comp=Z,12nm,1.1s,baz=4.9,slow=6.5,SNR=5.7								
LPAZ	**La Paz**	**169.12**	**59**	PKP		PKPdf	08 23 00.5	-1.6	
	comp=Z,8.5nm,1.1s,baz=31,slow=4.2,SNR=17								
LPAZ				PKPab		PKPab	08 24 12.4	-0.5	
	comp=Z,14nm,1.2s,baz=321,slow=2.7,SNR=6.2								
LPAZ	**La Paz**	**169.12**	**59**	PKIKP		PKPdf	08 23 01.2	-0.9	
LPAZ	**La Paz**	**169.12**	**59**	*e*PKPdf		PKPdf	08 23 00.7	-1.4	
LPAZ				*e*PKPab		PKPab	08 24 11.7	-1.2	
LVC	**Limon Verde**	**170.28**	**95**	*e*PKP		PKPdf	08 23 01.0	-1.6	
LVC				*e*PKPab		PKPab	08 24 18.6	+0.6	
LVC				*e*PP		PP	08 28 11.3	+2.5	
CPUP	**Villa Florida**	**175.75**	**193**	PKP		PKPdf	08 23 01.7	-3.2	
	comp=Z,14nm,1.1s,baz=57,slow=2.4,SNR=13								
CPUP				PKPab		PKPab	08 24 39.5	-2.5	
	comp=Z,14nm,0.9s,baz=178,slow=3.5,SNR=12								
CPUP	**Villa Florida**	**175.75**	**193**	PKIKP		PKPdf	08 23 02.3	-2.6	
CPUP	**Villa Florida**	**175.75**	**193**	*e*PKPdf		PKPdf	08 23 01.6	-3.3	
CPUP				*e*PKPab		PKPab	08 24 39.5	-2.5	

TAP 08 08:06:59.4,22.01N×121.62E,h10km,ML4.1,Taiwan region

JMA ***08*** *08:17:02.9±0.2,39.22N×144.48E,h44km,M3.8*
ISC 08 08:17:00.9±1.2,39.20N±0.06×144.62E±0.09,h44km,n13, σ1§05/22,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyako 2**	**2.20**	**281**	P	**P**	**08 17 36.6**	**+0.9**
MIYJ				*e*S	**S**	**08 18 01.1**	**-0.7**
JTH	**Tanohata**	**2.25**	**290**	P	**P**	**08 17 37.0**	**+0.5**
OFUJ	**Ofunato**	**2.30**	**268**	P	**P**	**08 17 37.8**	**+0.7**
OFUJ				*e*S	**S**	**08 18 04.3**	**0.0**
JOM	**Ohasama**	**2.59**	**277**	P	**P**	**08 17 42.4**	**+1.0**
JOM				*e*S	**S**	**08 18 11.6**	**-0.3**
JMK	**Ichinoseki**	**2.66**	**266**	P	**P**	**08 17 43.0**	**+0.7**
JMM	**Marumori**	**3.28**	**247**	P	**P**	**08 17 50.3**	**-0.9**
JMM				*e*S	**S**	**08 18 26.9**	**-2.5**
JYK	**Kaneyama**	**3.33**	**266**	P	**P**	**08 17 53.3**	**+1.5**
JNBK	**Urakawa-nobuka**	**3.38**	**336**	P	**P**	**08 17 53.6**	**+1.0**
JNBK				*e*S	**S**	**08 18 32.6**	**+0.6**
JCH	**Churui**	**3.54**	**345**	P	**P**	**08 17 55.4**	**+0.6**
JCH				*e*S	**S**	**08 18 35.2**	**-0.7**
NEM2	**Nemuro 2**	**4.25**	**11**	P	**P**	**08 18 03.4**	**-1.4**
NEM2				*e*S	**S**	**08 18 49.4**	**-4.3**
JTKR	**Abashiri--Toko**	**4.79**	**354**	P	**P**	**08 18 12.7**	**+0.2**
JTKR				*e*S	**S**	**08 19 04.4**	**-3.1**
JRY	**Ryogami san**	**5.54**	**237**	P	**P**	**08 18 21.6**	**-1.3**
JRY				*e*S	**S**	**08 19 20.7**	**-5.5**
MAT	**Matsushiro**	**5.72**	**244**	P	**P**	**08 18 26.0**	**+0.5**

MDD ***08*** *08:24:06.9±0.5,38.70N×7.87W,mbLg2.0/13,Error ellipse: s-maj=3.5km s-min=3.2km az=68.0,PRXIMO*
INMG ***08*** *08:24:07.8±0.8,38.70N×7.91W,h16km±4km,ML1.9,Error ellipse: s-maj=2.0km s-min=1.3km az=98.0*
NEIC ***08*** *08:24:07.8,38.67N×7.87W,MN2.2(MDD),After MDD.*
ISC 08 08:24:06.3±0.6,38.67N±0.04×7.86W±0.04,h15km±8km, n26,σ0§86/31,Portugal

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MOE	**Montemor**	**0.41**	**250**	*e*Pg	**Pg**	**08 24 15.4**	**+0.4**
MOE				*e*Sg	**Sg**	**08 24 20.9**	**+0.1**
PBEJ	**Beja**	**0.64**	**181**	*e*Pg	**Pg**	**08 24 20.3**	**+1.0**
PBEJ				*e*Sg	**Sg**	**08 24 29.4**	**+1.4**
	13nm,0.1s						
PBEJ	**Beja**	**0.64**	**181**	Pg	**Pg**	**08 24 20.3**	**+1.0**
PBEJ				Lg		08 24 29.4	
	6.4nm,0.1s						
EBAD	**Badajoz**	**0.66**	**82**	Pg	**Pg**	**08 24 20.4**	**+0.6**
	13nm,0.1s,SNR=7.9						
EBAD				Lg		08 24 30.0	
	40nm,0.1s,SNR=7.9						
EBAD	**Badajoz**	**0.66**	**82**	Pg	**Pg**	**08 24 20.5**	**+0.7**
EBAD				Lg		08 24 30.0	
PLOU	**Loures**	**1.04**	**283**	*e*P	**Pb**	**08 24 24.9**	**-0.5**
PLOU				*e*S	**Sb**	**08 24 38.6**	**0.0**
	14nm,0.2s						
PLOU	**Loures**	**1.04**	**283**	P	**Pb**	**08 24 24.9**	**-0.5**
PLOU				S	**Sb**	**08 24 38.6**	**0.0**
	7.2nm,0.2s						
PTOM	**Tomar**	**1.04**	**336**	*e*P	**Pb**	**08 24 25.6**	**0.0**
PTOM				*e*S	**Sb**	**08 24 38.9**	**+0.1**
	61nm,0.2s						
PTOM	**Tomar**	**1.04**	**336**	P	**Pb**	**08 24 25.6**	**0.0**
PTOM				S	**Sb**	**08 24 38.9**	**+0.1**
	30nm,0.2s						
EGRO	**El Granado**	**1.17**	**165**	Pg	**Pg**	**08 24 28.9**	**-0.9**
	0.5nm,0.1s,SNR=7.9						
EGRO				Lg		08 24 46.3	
	5.7nm,0.1s,SNR=9.2						
EGRO	**El Granado**	**1.17**	**165**	Pn	**Pn**	**08 24 28.8**	**+0.7**
EGRO				Pg	**Pg**	**08 24 30.4**	**+0.7**
EGRO				Lg		08 24 45.8	
PCBR	**Castelo Branco**	**1.21**	**14**	*e*P	**Pb**	**08 24 28.8**	**+0.4**
PCBR				*e*S	**Sb**	**08 24 43.7**	**+0.1**
	15nm,0.4s						
PCBR	**Castelo Branco**	**1.21**	**14**	P	**Pb**	**08 24 28.8**	**+0.4**
PCBR				S	**Sb**	**08 24 43.7**	**+0.1**
	7.7nm,0.4s						
PALC	**Alcoutim**	**1.24**	**166**	*e*Sg	**Sg**	**08 24 47.6**	**-0.1**
	10nm,0.1s						
PALC	**Alcoutim**	**1.24**	**166**	Lg		08 24 47.6	
	5.2nm,0.1s						
EMIN	**Mina Concepcio**	**1.29**	**134**	Pg	**Pg**	**08 24 32.1**	**-0.1**
	0.4nm,0.1s,SNR=12						
EMIN				Lg		08 24 49.2	
	6.5nm,0.1s,SNR=28						
EMIN	**Mina Concepcio**	**1.29**	**134**	Pg	**Pg**	**08 24 31.9**	**-0.4**
EMIN				Lg		08 24 49.2	
PTEO	**Sao Teotonio**	**1.31**	**212**	*e*Pg	**Pg**	**08 24 32.5**	**-0.1**
PTEO				*e*Sg	**Sg**	**08 24 48.6**	**-1.6**
	14nm,0.2s						
PTEO	**Sao Teotonio**	**1.31**	**212**	Pg	**Pg**	**08 24 32.5**	**-0.1**
PTEO				Lg		08 24 48.6	
	7.0nm,0.2s						
ECAB	**El Cabril**	**2.00**	**106**	Pg	**Pg**	**08 24 43.9**	**-2.5**
	0.6nm,0.2s,SNR=7.9						
ECAB				Lg		08 25 11.1	
	1.8nm,0.1s,SNR=7.9						
ESPR	**Espera**	**2.39**	**138**	Lg		08 25 23.7	
	4.3nm,0.3s,SNR=4.0						
EADA	**Adamuz**	**2.62**	**100**	Pg	**Pg**	**08 24 55.0**	**-3.7**
	0.2nm,0.2s,SNR=7.9						
EADA				Lg		08 25 31.0	
	0.7nm,

18nm,0.3s,baz=206,slow=20,SNR=11
FRB Frobisher Bay 9.72 84 PN **P** **08 37 00.8 -0.4**
FRB SN **Sn** **08 38 42.9 -8.1**
FRB LG 08 39 41.1
FRB Trac 08 39 49.2
comp=Z,310nm,0.8s
SILO Sutton Inlier 10.36 161 PN **P** **08 37 10.5 +0.4**
SILO SN **S** **08 39 00.9 -5.9**
SILO LG 08 40 07.9
SILO Trac 08 40 19.2
comp=Z,122nm,0.5s
RES Resolute Bay 10.45 354 PN **P** **08 37 10.3 -1.0**
RES SN **S** **08 39 01.0 -8.0**
RES Trac 08 40 02.8
comp=Z,349nm,1.1s
RES Resolute Bay 10.45 354 *e*Pn **P** **08 37 09.5 -1.8**
RES *e*Sn **S** **08 38 55.3 -14**
ILKN Indian Lake 10.58 280 PN **P** **08 37 12.2 -0.8**
ILKN SN **S** **08 38 59.6 -13**
ILKN LG 08 40 10.6
YKW3 Yellowknife Ar 10.82 271 PN **P** **08 37 14.7 -1.7**
YKW3 SN **S** **08 39 08.7 -9.3**
YKW3 LG 08 40 18.6
YKW3 Trac 08 40 30.5
comp=Z,112nm,0.5s
YKW3 Yellowknife Ar 10.82 271 *e*Pn **P** **08 37 14.4 -2.0**
YKA Yellowknife Ar 10.84 271 Pn **P** **08 37 14.8 -1.8**
1.9nm,0.3s,baz=72,slow=12,SNR=84
YKA Sn **S** **08 39 06.7 -12**
5.8nm,0.3s,baz=62,slow=22,SNR=15
YKA Lg 08 40 15.6
11nm,0.3s,baz=289,slow=23,SNR=6.1
FFC Flin Flon 11.22 216 *e*Pn **P** **08 37 20.5 -1.4**
MUMO Musselwhite Mi 11.81 179 PN **P** **08 37 30.1 +0.3**
MUMO SN **S** **08 39 32.5 -10**
MUMO Trac 08 41 00.2
comp=Z,77nm,0.5s
VIMO Victor Mine 12.15 160 PN **P** **08 37 33.9 -0.5**
VIMO SN **S** **08 39 42.3 -8.1**
VIMO Trac 08 41 18.6
comp=Z,85nm,0.5s
LG4Q La Grande 4 13.71 134 PN **P** **08 37 54.8 -0.2**
LG4Q SN **S** **08 40 19.7 -8.1**
LG4Q LG 08 41 47.3
LG4Q Trac 08 41 53.4
comp=Z,98nm,0.4s
TULEG Thule 14.07 21 PN **P** **08 37 59.5 0.0**
TULEG SN **S** **08 40 27.7 -8.3**
SOLO Sioux Lookout 14.42 184 PN **P** **08 38 03.7 -0.6**
SOLO SN **S** **08 40 34.9 -10**
SOLO Trac 08 42 16.4
comp=Z,70nm,0.7s
ULM Lac du Bonnet 14.44 193 Pn **P** **08 38 03.8 -0.8**
2.4nm,0.3s,baz=8.8,slow=12,SNR=24
ULM Sn **S** **08 40 34.2 -11**
3.2nm,0.3s,baz=31,slow=17,SNR=4.1
ULM Lg 08 42 08.9
4.4nm,0.3s,baz=284,slow=21,SNR=3.6
ULM Lac du Bonnet 14.44 193 PN **P** **08 38 03.6 -0.9**
ULM SN **S** **08 40 31.6 -13**
ULM SN **S** **08 40 36.5 -8.6**
ULM Trac 08 42 14.4
comp=Z,208nm,1.2s
ULM Lac du Bonnet 14.44 193 *e*Pn **P** **08 38 03.4 -1.2**
3.2nm,0.9s
GTO Geraldton 14.82 170 PN **P** **08 38 07.9 -1.7**
GTO SN **S** **08 40 44.4 -10**
GTO LG 08 42 25.4
GTO Trac 08 42 28.0
comp=Z,77nm,0.8s
SCHQ Schefferville 15.31 117 Pn **P** **08 38 13.5 -2.5**
1.0nm,0.3s,baz=322,slow=10,SNR=13
SCHQ Sn **S** **08 40 53.3 -12**
2.1nm,0.3s,baz=73,slow=16,SNR=3.5
SCHQ Lg 08 42 33.3
7.8nm,0.3s,baz=258,slow=18,SNR=6.6
SCHQ Schefferville 15.31 117 PN **P** **08 38 14.1 -1.9**
SCHQ SN **S** **08 40 54.7 -11**
SCHQ Trac 08 42 44.9
comp=Z,187nm,0.9s
SCHQ Schefferville 15.31 117 *e*Pn **P** **08 38 14.0 -2.0**
16nm,0.5s
MALO McAlpine Lake 15.53 153 PN **P** **08 38 18.4 -0.5**
MALO SN **S** **08 41 00.5 -10**
KAPO Kapuskasing 15.61 160 Trac 08 43 01.8
comp=Z,28nm,0.3s
TBO Thunder Bay 15.79 177 PN **P** **08 38 22.9 +0.6**
TBO SN **S** **08 41 06.9 -10**
TBO Trac 08 43 00.1
comp=Z,30nm,0.6s
EUNU Eureka 15.80 3 PN **P** **08 38 21.6 -0.6**
EUNU SN **S** **08 41 08.4 -8.5**
EDM Edmonton 16.09 237 PN **P** **08 38 26.4 +0.4**
EDM SN **S** **08 41 11.7 -12**
EDM Trac 08 43 23.4
comp=Z,68nm,0.7s
FNBB Fort Nelson 16.17 265 PN **P** **08 38 27.1 +0.2**
FNBB SN **S** **08 41 14.0 -12**
FNBB Trac 08 43 27.8
comp=Z,129nm,1.1s
INK Inuvik 17.33 302 Pn **P** **08 38 39.9 -1.7**
1.3nm,0.3s,baz=81,slow=13,SNR=96
INK Sn **S** **08 41 37.8 -15**
0.7nm,0.3s,baz=81,slow=22,SNR=3.7
INK Lg 08 43 35.4
1.4nm,0.3s,baz=354,slow=32,SNR=4.0
INK Inuvik 17.33 302 PN **P** **08 38 40.2 -1.3**
INK SN **S** **08 41 40.1 -12**
INK Inuvik 17.33 302 *e*Pn **P** **08 38 39.4 -2.1**
0.7nm,0.6s
VLDQ Val d'Or 17.83 150 PN **P** **08 38 45.9 -2.0**
VLDQ SN **S** **08 41 50.3 -13**
VLDQ Trac 08 44 04.3
comp=Z,24nm,0.3s
MNQ Manicouagan 18.07 130 LG 08 44 01.2
MNQ Trac 08 44 06.6
comp=Z,63nm,0.6s
DLBC Dease Lake 19.47 271 P **P** **08 39 10.6 +2.9**
0.6nm,0.3s,baz=50,slow=12,SNR=13
DLBC Sn **S** **08 42 39.1 -1.6**
0.5nm,0.3s,baz=271,slow=21,SNR=3.4
DLBC Lg 08 44 44.3
0.3nm,0.3s,baz=184,slow=16,SNR=3.3
DLBC Dease Lake 19.47 271 *e*Pn **P** **08 39 08.8 +1.2**
WALA Waterton Lakes 19.76 230 *e*Pn **P** **08 39 11.4 +0.5**
4.8nm,0.5s
SUMG Summit 20.13 44 *e*P **P** **08 39 18.3 +3.5**
SADO Sadowa 20.70 156 P **P** **08 39 24.3 +3.4**
1.9nm,0.4s,baz=347,slow=9.7,SNR=3.8
SADO S **S** **08 43 10.6 +4.0**
2.0nm,0.5s,baz=302,slow=20,SNR=2.5
SADO Lg 08 45 24.6
9.3nm,1.0s,baz=263,slow=22,SNR=3.1
DAWY Dawson 20.76 291 *e*P **P** **08 39 23.6 +2.2**
HRY Holter Researc 21.17 223 *e*P **P** **08 39 26.6 +0.9**
CHMT Chamberlain Mo 21.43 226 *e*P **P** **08 39 31.3 +3.1**
NEW Newport 21.54 234 P **P** **08 39 34.5 +5.1**
1.1nm,0.4s,mb3.7,baz=36,slow=12,SNR=4.3
NEW S **S** **08 43 23.5 +1.1**
1.4nm,0.4s,baz=270,slow=20,SNR=3.2
NEW Lg 08 45 50.8
8.1nm,1.0s,baz=98,slow=19,SNR=3.0
NEW Newport 21.54 234 *e*P **P** **08 39 32.5 +3.1**
2.4nm,0.8s,mb3.7
RSSD Black Hills 21.66 207 *e*P **P** **08 39 32.9 +2.2**
5.9nm,2.0s,mb3.7
MSO Missoula 21.72 227 *e*P **P** **08 39 33.2 +2.0**
4.8nm,0.8s,mb4.0
BOZ Bozeman (W) 22.08 222 *e*P **P** **08 39 37.6 +2.8**
3.0nm,0.7s,mb3.8
DPW Davenport 22.26 235 P **P** **08 39 41.7 +5.2**
NCB Newcomb 22.48 148 *e*P **P** **08 39 41.6 +2.8**
BBB Bella Bella 22.74 255 P **P** **08 39 50.1 +9.0**
2.2nm,0.7s,mb3.7,baz=92,slow=1.3,SNR=2.5
QLMT Earthquake Lak 22.77 221 P **P** **08 39 44.7 +3.2**
MCMT McKenzie Canyo 23.18 223 *e*P **P** **08 39 47.5 +2.0**
ILAR Eielson Array 23.45 297 P **P** **08 39 54.4 +6.4**
4.0nm,0.7s,mb4.0,baz=70,slow=9.8,SNR=25
ILAR S **S** **08 44 11.5 +15**
0.5nm,0.7s,baz=66,slow=14,SNR=3.4
ILAR Lg 08 46 56.6
1.2nm,0.8s,baz=67,slow=28,SNR=2.7
COLA College 23.78 297 *e*P **P** **08 39 51.1 0.0**
5.7nm,0.8s,mb4.0
BW06 Boulder Array 24.18 215 *e*P **P** **08 39 58.5 +3.1**
1.5nm,0.4s,mb3.8
PDAR Pinedale Array 24.18 215 P **P** **08 40 01.9 +6.5**
1.4nm,0.4s,mb3.7,baz=39,slow=8.9,SNR=12
PDAR Lg 08 47 13.3
2.1nm,0.9s,baz=30,slow=36,SNR=3.8
HLID Hailey 24.80 224 *e*P **P** **08 40 05.3 +4.0**
SSPA Standing Stone 24.94 156 *e*P **P** **08 40 06.3 +3.7**
5.7nm,0.8s,mb4.2
EYAK Cordova Ski Ar 25.04 287 *e*P **P** **08 40 06.9 +3.5**
NVAR Mina Array Bea 30.68 225 PcP PcP 08 43 57.2 +4.3
0.8nm,0.7s,baz=47,slow=2.4,SNR=4.5
TXAR Lajitas Array 36.02 199 P **P** **08 41 46.0 +4.8**
0.1nm,0.6s,mb2.9,baz=40,slow=7.0,SNR=2.1
TXAR PcP PcP 08 44 12.4 +4.6
0.5nm,0.4s,baz=35,slow=3.1,SNR=7.3
ARCES ARCESS Array B 39.15 30 P **P** **08 42 11.2 +4.1**
1.9nm,0.9s,mb3.8,baz=315,slow=6.9,SNR=6.0
EKA Eskdalemuir Ar 41.44 60 P **P** **08 42 29.9 +3.8**
1.5nm,0.7s,mb3.8,baz=311,slow=7.8,SNR=5.8
FINES FINESS Array B 45.92 37 P **P** **08 43 08.1 +6.1**
0.4nm,0.6s,mb3.5,baz=342,slow=6.0,SNR=5.6
FINES PcP PcP 08 44 43.0 +3.6
0.9nm,0.3s,baz=355,slow=2.0,SNR=16
AKASG Malin Array Be 56.15 42 P **P** **08 44 23.2 +3.6**
0.4nm,0.4s,mb3.8,baz=334,slow=6.4,SNR=3.6
ZAL Zalesovo 61.96 3 P **P** **08 45 03.9 +4.0**
1.7nm,0.3s,mb4.6,baz=22,slow=10.0,SNR=3.4
ZAL Zalesovo 61.96 3 P **P** **08 45 03.9 +4.0**
BRVK Borovoye 61.97 13 *e*P **P** **08 45 01.5 +1.6**
BVAR Borovoye Array 62.01 13 P **P** **08 45 04.3 +4.0**
2.2nm,0.6s,mb4.5,baz=346,slow=6.1,SNR=12
ULN Ulaanbaatar 67.23 347 *e*P **P** **08 45 33.5 -0.5**
SONM Songino Array 67.32 348 P **P** **08 45 40.3 +5.7**
0.2nm,0.5s,mb3.5,baz=359,slow=6.7,SNR=2.7
BRTR Keskin Array B 67.41 44 P **P** **08 45 40.0 +4.6**
0.4nm,0.5s,mb3.7,baz=18,slow=3.9,SNR=4.4
MKAR Makanchi Array 69.03 5 P **P** **08 45 49.4 +4.2**
2.8nm,0.5s,mb4.4,baz=12,slow=4.7,SNR=34
MKAR Makanchi Array 69.03 5 P **P** **08 45 49.4 +4.1**
WRA Warramunga Arr 126.46 304 PKP PKPdf 08 53 45.9 +0.9
0.1nm,0.4s,baz=1.2,slow=1.8,SNR=6.4
STKA Stephens Creek 134.38 290 PKP PKPdf 08 54 01.8 +2.0
0.4nm,0.4s,baz=270,slow=4.0,SNR=3.2

LDG ***08*** *08:53:07.6,54.86N×95.05E,h10km*
MOS ***08*** *08:53:08.4±1.0,54.71N×95.17E,h15km,mb4.8/20,Error ellipse: s-maj=7.6km s-min=7.6km az=133.4*
IDC ***08*** *08:53:08.3±0.5,54.76N×95.12E,mb4.4/24,mb1 4.6/28, mb1mx4.5/29,ML4.0/4,MS4.0/4,Ms1 4.0/4,ms1mx3.4/37, Error ellipse: s-maj=12.5km s-min=9.9km az=159.0*
BJI ***08*** *08:53:08.9,54.90N×94.93E,h20km,mB4.8,mb4.6,ML5.3, Ms4.7,Msz4.4*
NNC ***08*** *08:53:10.7±1.1,54.87N×94.61E,Error ellipse: s-maj=20.5km s-min=8.5km az=151.0*
NEIC ***08*** *08:53:11.5±2.2,54.80N×95.07E,h19km±13km,mb4.8/42, Error ellipse: s-maj=4.9km s-min=4.0km az=193.0*
NEIC Felt at Krasnoyarsk.
ISC 08 08:53:09.3±0.1,54.79N±0.02×95.01E±0.04,h15km,n227, σ0s99/228,mb4.7/81,MS4.2/12,12C-10D,Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
SHRR	**Shira**	**2.83**	**266**	*e*Pn		**Pn**	**08 53 55.8**	**+1.0**
SHRR				*e*			08 54 38.7	
SHRR				pmax	pmax			
	comp=Z,6μm,0.7s							
SHRR				smax				
	comp=E,54μm,0.7s							
CERR	**Cheremushki**	**2.88**	**229**	*e*Pn		**Pn**	**08 53 56.3**	**+0.8**
CERR				*e*S		**Sn**	**08 54 36.8**	**+6.6**
ORL	**Orlik**	**3.63**	**126**	*e*Pn		**Pn**	**08 54 11.5**	**+5.2**
ORL				*e*			08 54 59.3	
ORL				pmax	pmax			
	comp=Z,650nm,0.8s							
ORL				smax				
	comp=N,6μm,1.2s							
TASR	**Tashtagol**	**4.69**	**247**	*e*Pn		**Pn**	**08 54 22.1**	**+0.8**
TASR				*e*			08 54 32.0	
TASR				*e*S		**Sn**	**08 55 35.5**	**+19**
MOY	**Mondy**	**4.76**	**129**	*e*Pn		**Pn**	**08 54 19.7**	**-2.6**
MOY				*e*			08 54 32.4	
MOY				*e*			08 55 33.7	
MOY				pmax	pmax			
	comp=Z,723nm,0.9s							
MOY				smax				
	comp=N,5μm,1.2s							
ARS	**Arshan**	**5.29**	**120**	*e*Pn		**Pn**	**08 54 41.7**	**+12**
ARS				*e*			08 55 48.9	
ARS				pmax	pmax			
	comp=Z,2μm,0.7s							
ARS				smax				
	comp=E,9μm,0.8s							
ELT	**Yel'tsovka**	**5.39**	**257**	*e*Pn		**Pg**	**08 54 49.0**	**-7.9**
ELT				*e*S		Sn	08 55 56.9	+23
ARTR	**Artybash**	**5.52**	**240**	*e*Pn		**Pn**	**08 54 32.9**	**0.0**
ARTR				*e*			08 54 47.4	
ZAL	**Zalesovo**	**6.03**	**266**	Pn		**Pn**	**08 54 39.3**	**-0.9**
	comp=E,5.9nm,0.3s,baz=303,slow=13,SNR=25							
ZAL				Pg		**Pg**	**08 54 54.5**	**-15**
	comp=E,23nm,0.3s,baz=305,slow=16,SNR=14							
ZAL				Lg			08 56 15.2	
	comp=E,52nm,0.3s,baz=215,slow=12,SNR=11							
TLY	**Talaya**	**6.04**	**117**	*e*Pn		**Pn**	**08 54 35.0**	**-5.4**
TLY				*e*			08 54 53.8	
TLY				*e*			08 56 12.3	
TLY				pmax	pmax			
	comp=Z,219nm,0.8s							
TLY				smax				
	comp=E,2μm,1.0s							
AKAR	**Aktash**	**6.35**	**228**	*e*Pn		**Pn**	**08 54 45.1**	**+0.4**
AKAR				*e*			08 55 05.4	
ZAK	**Zakamensk**	**6.69**	**128**	*e*Pn		**Pn**	**08 54 52.3**	**+2.8**
ZAK				*e*			08 55 06.6	
ZAK				pmax	pmax			
	comp=Z,292nm,1.0s							
NVS	**Novosibirsk**	**6.81**	**275**	*e*Pn		**Pn**	**08 54 51.3**	**+0.2**
NVS				*e*			08 55 10.4	
NVS				*e*S		Sn	08 56 37.7	+29
TRG	**Tyrgan**	**7.02**	**102**	*e*Pn		**Pn**	**08 54 51.8**	**-2.3**
TRG				*e*			08 55 13.1	
TRG				*e*			08 56 41.1	
TRG				pmax	pmax			
	comp=Z,139nm,0.7s							
TRG				smax				
	comp=N,3μm,1.1s							
UKR	**Ust'-Kan**	**7.30**	**242**	*e*P		**Pn**	**08 54 58.3**	**+0.3**
OGRR	**Ongureny**	**7.47**	**94**	*e*P		**Pn**	**08 54 57.8**	**-2.6**
OGRR				pmax	pmax			
	comp=Z,103nm,0.7s							
NIZ	**Nizh Angarsk**	**8.36**	**77**	*e*P		**P**	**08 55 09.1**	**-3.7**
NIZ				pmax	pmax			
	comp=Z,85nm,0.6s							
YLYR	**Ulyunkhan**	**9.32**	**83**	*e*P		**P**	**08 55 22.4**	**-3.8**
YLYR				*e*S		**Sn**	**08 57 02.8**	**-9.0**
SONM	**Songino Array**	**9.95**	**130**	Pn		**P**	**08 55 35.2**	**+0.5**
	comp=Z,0.1nm,0.3s,baz=315,slow=12,SNR=40							
SONM				Pg		P	08 56 06.8	+32
	comp=Z,1.9nm,0.3s,baz=311,slow=17,SNR=7.4							
SONM				Lg			08 58 16.2	
	comp=Z,5.7nm,0.3s,baz=313,slow=27,SNR=10.0							
ULN	**Ulaanbaatar**	**10.23**	**128**	*d* *i*P		**P**	**08 55 39.0**	**+0.5**
ULN	**Ulaanbaatar**	**10.23**	**128**	*e*P		**P**	**08 55 38.4**	**-0.1**
	comp=Z,14nm,0.9s							
KURK	**Kurchatov**	**10.73**	**254**	Pn		**P**	**08 55 43.0**	**-2.4**
	comp=Z,17nm,0.8s,baz=62,slow=9.2,SNR=53							
KURK				⇓Lg			08 58 44.8	
	comp=Z,215nm,1.5s,baz=135,slow=15,SNR=5.4							
KURK	**Kurchatov**	**10.73**	**254**	*e*P		**P**	**08 55 42.7**	**-2.7**
MK31	**Makanchi Array**	**11.34**	**230**	Pn		**P**	**08 55 52.6**	**-1.0**
	comp=Z,11nm,0.6s,baz=48,slow=10,SNR=54							
MK31				Lg			08 59 04.1	
	comp=Z,87nm,0.8s,baz=52,slow=28,SNR=4.1							
MKAR	**Makanchi Array**	**11.34**	**230**	Pn		**P**	**08 55 53.0**	**-0.6**
	comp=Z,1.8nm,0.3s,baz=38,slow=7.5,SNR=37							
MKAR				Lg			08 59 08.9	
	comp=Z,2.5nm,0.3s,baz=48,slow=29,SNR=6.7							
MKAR	**Makanchi Array**	**11.34**	**230**	*i*P		**P**	**08 55 52.6**	**-1.0**
MKAR				pmax	pmax			
	comp=Z,4.0nm,0.5s							
WMQ	**Urumqi**	**11.96**	**206**	P		**P**	**08 56 02.2**	**+0.1**
WMQ				AP			08 56 05.4	
WMQ				XP			08 56 08.2	
WMQ				PP	PP		08 56 11.8	+0.1
WMQ				S	**S**		**08 58 14.9**	**-1.3**
WMQ				SS	SS		08 58 28.9	-1.9
WMQ				PCP	PcP		09 01 49.7	+1.9
WMQ				SCP			09 05 20.7	
WMQ				PCS			09 05 22.5	
WMQ				SCS	ScS		09 08 55.2	+1.8
WMQ				AMB	AMB			
	comp=Z,11nm,0.7s							
WMQ				AMB	AMB			
	comp=Z,70nm,4.1s							
WMQ				LR	LR			
	comp=N,2μm,10.2s							
WMQ				LR	LR			
	comp=E,2μm,11.4s							
WMQ				LR	LR			
	comp=Z,3μm,11.7s							
VOSK	**Vostochnaya**	**14.35**	**272**	⇓Pn		**P**	**08 56 31.7**	**-1.9**
	comp=Z,12nm,0.7s							
BVA0	**Borovoye Array**	**14.60**	**273**	⇑Pn		**P**	**08 56 36.2**	**-0.7**
	comp=Z,3.3nm,0.9s							
BVA0	**Borovoye Array**	**14.60**	**273**	P		**P**	**08 56 36.1**	**-0.8**
BVAR	**Borovoye Array**	**14.60**	**273**	Pn		**P**	**08 56 36.4**	**-0.5**
	comp=Z,2.5nm,0.3s,baz=70,slow=14,SNR=46							
BVAR				Lg			09 00 57.7	
	baz=94,slow=22,SNR=1.8							
BVAR				LR	LR		09 02 12.2	
	comp=Z,393nm,18.3s,baz=100,slow=37							
BRVK	**Borovoye**	**14.65**	**273**	⇑Pn		**P**	**08 56 35.6**	**-2.0**
	comp=Z,7.5nm,0.7s							
BRVK	**Borovoye**	**14.65**	**273**	*e*P		**P**	**08 56 35.5**	**-2.0**
ZRNK	**Zerenda**	**15.42**	**274**	⇓Pn		**P**	**08 56 46.7**	**-1.0**
	comp=Z,0.3nm,0.8s							
GTA	**Gaotai**	**15.72**	**166**	*e*P		**P**	**08 56 51.8**	**+0.2**
GTA				AP			08 56 57.6	
GTA				AMB	AMB			
	comp=Z,9.0nm,1.2s							
GTA				AMB	AMB			
	comp=Z,122nm,3.4s							
GTA				LR	LR			
	comp=N,836nm,9.9s							
GTA				LR	LR			
	comp=E,467nm,8.0s							
GTA				LR	LR			
	comp=Z,1μm,8.7s							
CLNS	**Chul'man**	**16.86**	**71**	*e*P		**P**	**08 57 05.8**	**-0.1**
CLNS				pmax	pmax			
	comp=Z,40nm,0.9s							
CLNS				pmax	pmax			
	comp=N,9.0nm,0.8s							
CLNS				pmax	pmax			
	comp=E,30nm,1.0s							
CLNS				MLR	MLR			
	comp=N,200nm,14.0s							
CLNS				MLR	MLR			
	comp=E,100nm,11.0s							
CLNS				MLR	MLR			
	comp=Z,300nm,11.0s							
BTO	**Baotou**	**17.36**	**139**	*e*P		**P**	**08 57 13.1**	**+0.7**
BTO				AMB	AMB			
	comp=Z,28nm,0.5s							
BTO				LR	LR			
	comp=N,3μm,10.0s							
BTO				LR	LR			
	comp=E,2μm,6.3s							
TKM2	**Tokmak 2**	**17.37**	**235**	P		**P**	**08 57 14.3**	**+1.9**
	SNR=9.8							
ULHL	**Ulahol**	**17.59**	**232**	P		**P**	**08 57 15.6**	**+0.4**
	SNR=9.0							
USP	**Ospenovka**	**17.64**	**238**	P		**P**	**08 57 15.2**	**-0.6**
	SNR=46							
CHMS	**Chumysh**	**17.71**	**237**	P		**P**	**08 57 18.9**	**+2.2**
	SNR=23							
HHC	**Hu-ho-hao-te**	**17.77**	**135**	*e*P		**P**	**08 57 19.8**	**+2.4**
HHC				XP			08 57 27.7	
HHC				PP	PP		08 57 32.8	+0.6
HHC				AMB	AMB			
	comp=Z,14nm,1.2s							
HHC				LR	LR			
	comp=N,577nm,10.6s							
HHC				LR	LR			
	comp=E,457nm,7.0s							
HHC				LR	LR			
	comp=Z,661nm,9.3s							
AAK	**Ala-Archa**	**18.11**	**236**	P		**P**	**08 57 21.5**	**-0.3**
	SNR=18							
KZA	**Kyzart**	**18.18**	**234**	P		**P**	**08 57 23.2**	**+0.6**
	SNR=14							
UCH	**Uchtor**	**18.41**	**235**	P		**P**	**08 57 26.9**	**+1.4**
	SNR=30							
EKS2	**Erkin-Say**	**18.44**	**238**	P		**P**	**08 57 25.4**	**-0.4**
	SNR=35							
AML	**Almayashu**	**18.88**	**237**	P		**P**	**08 57 31.9**	**+0.7**
	SNR=25							
SVE	**Sverdlovsk**	**19.31**	**290**	⇑*i*P		**P**	**08 57 35.3**	**-0.8**
SVE				pmax	pmax			
	comp=Z,120nm,1.8s							
YAK	**Yakutsk**	**19.36**	**54**	*e*P		**P**	**08 57 33.7**	**-2.9**
YAK				pmax	pmax			
	comp=Z,10.0nm,0.8s							
YAK				pmax	pmax			
	comp=N,2.0nm,1.0s							
YAK				pmax	pmax			
	comp=E,5.0nm,1.0s							
YAK				pmax	pmax			
	comp=E,6.0nm,0.8s							
YAK				pmax	pmax			
	comp=Z,10.0nm,0.8s							
YAK				pmax	pmax			
	comp=N,3.0nm,0.9s							
YAK				MLR	MLR			
	comp=Z,140nm,12.0s							
YAK				MLR	MLR			
	comp=N,100nm,15.0s							
YAK				MLR	MLR			
	comp=E,140nm,11.0s							
YAK	**Yakutsk**	**19.36**	**54**	*e*P		**P**	**08 57 33.9**	**-2.7**
	comp=E,30nm,0.4s							
LZH	**Lanzhou**	**19.67**	**158**	P		**P**	**08 57 41.3**	**+0.9**
LZH				AP			08 57 46.5	
LZH				XP			08 57 51.2	
LZH				AMB	AMB			
	comp=Z,100nm,1.2s							
LZH				LR	LR			
	comp=N,2μm,9.0s							
LZH				LR	LR			
	comp=Z,2μm,12.0s							
KK31	**Karatay Array**	**19.77**	**244**	⇑P		**P**	**08 57 39.9**	**-1.5**
	comp=Z,23nm,0.9s,baz=154,slow=5.2,SNR=3.7							
KKAR	**Karatay Array**	**19.77**	**244**	*i*P		**P**	**08 57 39.9**	**-1.5**
KKAR				pmax	pmax			
	comp=Z,54nm,1.1s							
KSH	**Kashi**	**19.92**	**228**	*e*P		**P**	**08 57 42.1**	**-1.0**
KSH				*e*AP			08 57 47.1	
KSH				*e*XP			08 57 50.6	
KSH				*e*PP	PP		08 58 00.5	-1.7
KSH				*e*S	**S**		**09 01 18.0**	**-3.1**
KSH				*e*SS	SS		09 01 46.1	-3.3
KSH				*e*PCP	PcP		09 01 59.0	-0.5
KSH				*e*SCP			09 05 33.2	
KSH				*e*PCS			09 05 35.5	
KSH				*e*SCS	ScS		09 09 14.4	-0.5
KSH				AMB	AMB			
	comp=Z,20nm,0.5s							
KSH				AMB	AMB			
	comp=Z,250nm,6.7s							
KSH				LR	LR			
	comp=N,230nm,4.2s							
KSH				LR	LR			
	comp=E,920nm,5.2s							
BJI	**Beijing**	**20.44**	**127**	P		**P**	**08 57 47.1**	**-1.4**
BJI				AMB	AMB			
	comp=Z,29nm,0.9s							
BJI				LR	LR			
	comp=N,619nm,14.3s,MS4.2							
BJI				LR	LR			
	comp=E,595nm,14.3s,MS4.2							
BJI				LR	LR			
	comp=Z,724nm,21.5s							
ARU	**Arti**	**20.50**	**290**	⇑*i*P		**P**	**08 57 47.6**	**-1.5**
ARU				*i*			08 58 05.5	
ARU				*e*S		**S**	**09 01 37.3**	**+4.4**
ARU				*e*SS		SS	09 01 58.8	-4.6
ARU				pmax	pmax			
	comp=Z,22nm,0.8s							

AB31 Akbulak array 22.11 270 ⇓P **P** 08 58 04.8 -0.6
comp=Z,26nm,1.2s,mb4.5,baz=66,slow=12,SNR=97
AB31 Akbulak array 22.11 270 *i* P **P** 08 58 04.8 -0.7
TIXI Tiksi 22.25 28 *e*P **P** 08 58 05.5 -1.2
TIXI *e*S **S** 09 02 06.2 +0.3
TIXI pmax pmax
comp=Z,366nm,0.7s,mb5.9
TIXI MLR MLR
comp=Z,2μm,10.0s,MS4.9
TIXI Tiksi 22.25 28 *e*P **P** 08 58 05.6 -1.1
comp=Z,19nm,0.1s,mb5.5
CN2 Changchun 22.50 107 *e*P **P** 08 58 10.7 +1.4
CN2 *e*AP 08 58 16.2
CN2 *e*S **S** 09 02 11.4 +0.7
CN2 AMB AMB
comp=Z,10.0nm,1.0s,mb4.2
CN2 LR LR
comp=N,430nm,20.0s,MS4.0
CN2 LR LR
comp=E,420nm,20.0s,MS4.0
CN2 LR LR
comp=Z,450nm,14.0s
KLR Kul'dur 23.09 89 *e*P **P** 08 58 14.2 -0.8
MDJ Mudanjiang 24.33 100 P **P** 08 58 28.3 +1.2
MDJ AMB AMB
comp=Z,8.0nm,0.6s,mb4.3
MDJ AMB AMB
comp=Z,160nm,6.1s
CD2 Chengdu 24.67 162 ⇓P **P** 08 58 32.1 +1.6
CD2 AMB AMB
comp=Z,22nm,1.0s,mb4.6
LSA Lhasa 25.22 188 P **P** 08 58 38.6 +2.8
GUN Gumba 27.66 198 *e*P **P** 08 58 59.1 +0.8
comp=Z,58nm,0.9s,mb5.2
GKN Gorkha 27.81 200 *e*P **P** 08 59 00.2 +0.6
comp=Z,211nm,1.5s,mb5.5
KALG Kalgarh 27.85 211 *e*P **P** 08 58 55.1 -4.9
KKN Kakani 27.89 199 *e*P **P** 08 59 01.1 +0.7
comp=Z,29nm,0.5s,mb5.1
WHN Wuhan 27.91 142 *e*P **P** 08 59 01.0 +0.5
PKI Pulchoki 28.08 198 *e*P **P** 08 59 03.0 +0.9
comp=Z,44nm,1.0s,mb5.0
DMN Daman 28.10 199 *e*P **P** 08 59 03.0 +0.7
comp=Z,69nm,1.4s,mb5.1
KOLN Koldanda 28.25 202 *e*P **P** 08 59 04.2 +0.6
comp=Z,115nm,1.3s,mb5.3
NJ2 Nanjing 28.31 134 *e*P **P** 08 59 02.5 -1.6
NJ2 AP pP 08 59 11.9 +3.4
NJ2 XP sP 08 59 15.9 +5.4
NJ2 PP PP 08 59 53.4 -1.9
NJ2 S **S** 09 03 45.0 -3.4
NJ2 XS 09 04 00.0
NJ2 AMB AMB
comp=Z,20nm,0.6s,mb4.9
NJ2 AMB AMB
comp=Z,780nm,9.1s
NJ2 LR LR
comp=N,1μm,24.9s
NJ2 LR LR
comp=E,800nm,12.3s
NJ2 LR LR
comp=Z,1μm,20.1s,MS4.5
NDI New Delhi 29.09 214 *e*P **P** 08 59 09.5 -1.7
SHL Shillong 29.28 186 *i* P **P** 08 59 12.5 -0.4
AYAN Aya Nagar 29.31 214 *e*P **P** 08 59 12.3 -0.9
AYAN AMb AMB 08 59 15.7
comp=Z,20nm,1.0s,mb4.8
SONA Sohna 29.54 213 *e*P **P** 08 59 14.9 -0.3
SONA AMb AMB 08 59 16.1
comp=Z,15nm,0.3s,mb5.2
MA2 Magadan 29.82 58 *e*P **P** 08 59 17.2 -0.2
MA2 pmax pmax
comp=Z,10.0nm,0.7s,mb4.7
MA2 Magadan 29.82 58 *e*P **P** 08 59 16.7 -0.8
KUDL Kundal 29.83 214 *e*P **P** 08 59 17.8 0.0
KUDL AMb AMB 08 59 20.6
comp=Z,7.6nm,0.8s,mb4.5
SSE Sheshan 30.13 131 ⇑P **P** 08 59 21.3 +0.8
SSE S **S** 09 04 18.4 +1.0
SSE AMB AMB
comp=Z,52nm,0.6s,mb5.4
SSE AMB AMB
comp=Z,437nm,11.8s
SSE LR LR
comp=N,352nm,15.0s,MS4.3
SSE LR LR
comp=E,460nm,15.0s,MS4.3
SSE LR LR
comp=Z,634nm,15.0s,MS4.4
KMI Kunming 30.18 166 *e*P **P** 08 59 19.9 -1.0
KMI AMB AMB
comp=Z,11nm,0.6s,mb4.8
KMI LR LR
comp=N,375nm,10.2s,MS4.4
KMI LR LR
comp=E,245nm,11.1s,MS4.4
KMI LR LR
comp=Z,312nm,14.0s,MS4.1
APA Apatity 30.86 319 ⇓ *i*P **P** 08 59 27.1 +0.6
APA pmax pmax
comp=Z,30nm,1.3s,mb5.0
MOS Moscow 31.91 296 *e*P **P** 08 59 28.3 -7.6
MOS *e* 08 59 36.1
MOS pmax pmax
comp=Z,100nm,2.1s,mb5.3
JOF Joensuu 32.62 310 *ep* **P** 08 59 41.8 -0.2
OBN Obninsk 32.72 295 ⇓*e*P **P** 08 59 42.7 -0.2
OBN *e* 09 00 48.2
OBN *e* 09 02 27.4
OBN *e*S **S** 09 04 58.7 +1.1
OBN pmax pmax
comp=Z,22nm,1.1s,mb5.0
OBN MLR MLR
comp=Z,300nm,18.0s,MS4.0
OBN Obninsk 32.72 295 *e*P **P** 08 59 42.6 -0.2
KEV Kevo 32.89 324 *ep* **P** 08 59 44.6 +0.3
JASL Jaisalmer 32.95 222 *e*P **P** 08 59 44.9 -0.3
JNU Nakatsue 33.15 116 P **P** 08 59 45.6 -1.3
comp=Z,5.4nm,0.8s,mb4.5,baz=320,slow=22,SNR=3.0
JNU LR LR 09 14 09.2
comp=Z,176nm,18.3s,MS3.8,baz=172,slow=38
ARCES ARCESS Array B 33.45 323 P **P** 08 59 49.6 +0.5
comp=Z,2.7nm,0.6s,mb4.4,baz=76,slow=9.5,SNR=21
ARCES PcP PcP 09 02 29.2 -1.2
comp=Z,5.3nm,1.0s,baz=76,slow=2.1,SNR=10
ARCES ARCESS Array B 33.45 323 P **P** 08 59 49.6 +0.5
ARCES 09 02 29.2
ARCES pmax pmax
comp=Z,3.0nm,0.6s
GOF Gofitskoye 34.11 275 ⇑ *i*P **P** 08 59 56.0 +0.9
GOF pmax pmax
comp=Z,30nm,1.2s,mb5.1
BHPL Bhopal 34.13 210 *e*P **P** 08 59 55.5 -0.1
BHPL *e* 08 59 56.2
comp=Z,48nm,0.5s
BILL Bilibino 34.38 39 *de*P **P** 08 59 57.8 +0.6
BILL pmax pmax
comp=Z,8.0nm,1.2s,mb4.5
BILL MLR MLR
comp=Z,200nm,16.0s,MS4.0
BILL Bilibino 34.38 39 *e*P **P** 08 59 57.2 0.0
KIV Kislovodsk 34.97 274 ⇑*e*P **P** 09 00 03.2 +0.7
KIV *e* 09 01 17.4
KIV pmax pmax
comp=Z,15nm,0.9s,mb4.9
KIV MLR MLR
comp=Z,200nm,18.0s,MS3.9
KIV Kislovodsk 34.97 274 *e*P **P** 09 00 02.3 -0.2
KAF Kangasniemi 35.08 310 *ep* **P** 09 00 03.4 +0.1
comp=Z,4.1nm,0.5s,mb4.6,baz=66,slow=8.8
KAF Kangasniemi 35.08 310 *e*P **P** 09 00 03.4 +0.1
KAF pmax pmax
comp=Z,4.0nm,0.5s,mb4.6
FINES FINESS Array B 35.42 309 P **P** 09 00 06.4 +0.3
comp=Z,5.4nm,0.5s,mb4.8,baz=79,slow=9.7,SNR=41
FINES FINESS Array B 35.42 309 P **P** 09 00 06.4 +0.3
FINES pmax pmax
comp=Z,5.0nm,0.5s
CMAR Chiang Mai Arr 36.39 174 P **P** 09 00 14.5 -0.2
comp=Z,1.3nm,0.4s,mb4.2,baz=355,slow=9.6,SNR=7.5
CMAR LR LR 09 15 59.0
comp=Z,205nm,20.1s,MS3.9,baz=330,slow=38
CMAR Chiang Mai Arr 36.39 174 P **P** 09 00 14.5 -0.2
CMAR pmax pmax
comp=Z,1.0nm,0.4s
CMAR MLR MLR
comp=Z,205nm,20.1s
AKASG Malin Array Be 38.72 292 P **P** 09 00 33.8 -0.3
comp=Z,3.4nm,0.4s,mb4.4,baz=51,slow=8.7,SNR=30
AKASG PP PP 09 01 59.8 -6.8
comp=Z,0.9nm,0.5s,baz=55,slow=9.7,SNR=4.9
NB2 NORSAR Subarra 42.05 314 P **P** 09 01 00.9 -0.3
comp=Z,5.7nm,0.7s,mb4.3,baz=77,slow=7.4
NOA NORSAR Array B 42.05 314 P **P** 09 01 01.8 +0.6
comp=Z,6.9nm,0.6s,mb4.5,baz=59,slow=8.2,SNR=25
NOA NORSAR Array B 42.05 314 P **P** 09 01 01.8 +0.6
NOA pmax pmax
comp=Z,7.0nm,0.6s
NAO01 NORSAR Array S 42.29 314 *e*P **P** 09 01 03.1 0.0
comp=Z,7.9nm,0.6s,mb4.5
BRTR Keskin Array B 42.87 276 P **P** 09 01 09.6 +1.4
comp=Z,4.1nm,0.8s,mb4.2,baz=66,slow=6.5,SNR=25
BRTR PcP PcP 09 02 59.7 -0.1
comp=Z,1.0nm,0.7s,baz=72,slow=3.9,SNR=3.9
CRVS Cervenica-Dubn 43.88 294 *e*P **P** 09 01 13.7 -2.6
TGY Tagaytay City 45.35 143 LR LR 09 21 41.9
comp=Z,226nm,19.4s,MS4.1,baz=14,slow=38
MORC Moravsky Berou 45.40 297 *e*P **P** 09 01 28.8 +0.3
comp=Z,4.5nm,0.8s,mb4.3
VYHS Vyhne 45.52 295 *e*P **P** 09 01 30.6 +1.2
DPC Dobruska-Polom 45.68 299 *e*P **P** 09 01 31.7 +1.0
UPC Upice 45.74 299 *e*P **P** 09 01 31.9 +0.7
PVCC Panska Ves 46.46 300 *e*P **P** 09 01 38.1 +1.3
BRG Berggiesshubel 46.56 300 *e*P **P** 09 01 38.5 +0.9
BRG *e* 09 03 10.6
BRG *e* 09 03 28.0
BRG pmax pmax
comp=Z,6.0nm,1.2s,mb4.4
BRG Berggiesshubel 46.56 300 *e*P **P** 09 01 38.5 +0.9
comp=Z,5.9nm,1.2s,mb4.4
BRG *e*PcP PcP 09 03 10.6 -1.7
BRG *e*PP PP 09 03 28.0 +1.0
CLL Collm 46.76 301 ⇑P **P** 09 01 39.6 +0.4
comp=Z,logA/T=1.2,mb4.9
CLL *e*PPP PPP 09 04 11.0 -3.7
CLL Collm 46.76 301 ⇑ *i*P **P** 09 01 39.6 +0.4
CLL pmax pmax
comp=Z,10.0nm,0.7s,mb4.8
CLL Collm 46.76 301 ⇑ *i*P **P** 09 01 39.6 +0.4
comp=Z,10.0nm,0.7s,mb4.8
PRU Pruhonice 46.80 299 *e*P **P** 09 01 41.7 +2.1
comp=Z,3.9nm,0.4s,mb4.7
MZLS Mizel 47.79 251 P **P** 09 01 48.2 +0.5
KHC Kasperske Hory 47.83 299 *e*P **P** 09 01 47.7 0.0
MOX Moxa 47.85 301 *i* P **P** 09 01 48.1 +0.2
MOX PP PP 09 03 40.0 +0.8
MOX Moxa 47.85 301 *e*P **P** 09 01 48.1 +0.2
GERES GERESS Array B 47.95 298 P **P** 09 01 49.1 +0.4
comp=Z,1.8nm,0.7s,mb4.2,baz=53,slow=6.7,SNR=10
GERES GERESS Array B 47.95 298 P **P** 09 01 49.1 +0.5
GERES pmax pmax
comp=Z,2.0nm,0.7s
GRA1 Grafenberg Arr 48.66 301 *e*P **P** 09 01 55.2 +1.1
comp=Z,14nm,1.0s,mb5.0
GRF Grafenberg Arr 48.66 301 *e*P **P** 09 01 55.2 +1.1
GRF pmax pmax
comp=Z,14nm,1.0s,mb5.0
IMA Indian Mountai 48.82 30 *e*P **P** 09 01 54.2 -0.9
comp=Z,34nm,0.9s,mb5.4
SUMG Summit 48.91 343 *e*P **P** 09 01 55.7 0.0
AFFS 'Afif 49.08 253 P **P** 09 01 58.2 +0.5
JMOS Jabal al Moall 49.51 264 P **P** 09 02 01.5 +0.6
HAQS Haql 49.70 264 P **P** 09 02 02.9 +0.5
BDAS Al Bad' 50.07 264 P **P** 09 02 06.0 +0.7
COLA College 51.37 29 ⇓*e*P **P** 09 02 14.5 -0.1
COLA College 51.37 29 *e*P **P** 09 02 14.6 0.0
comp=Z,3.1nm,0.8s,mb4.3
CDF Champ du Feu 51.45 302 *e*P **P** 09 02 15.5 0.0
comp=Z,3.5nm,0.5s,mb4.2
GIVF Givet 51.51 305 *e*P **P** 09 02 15.8 0.0
ILAR Eielson Array 51.72 29 P **P** 09 02 16.6 -0.6
comp=Z,5.7nm,0.7s,mb4.6,baz=318,slow=4.7,SNR=63
ILAR Eielson Array 51.72 29 P **P** 09 02 16.7 -0.5
ILAR pmax pmax
comp=Z,6.0nm,0.7s
HINF Hinteralfeld 52.07 301 *e*P **P** 09 02 19.8 -0.3
comp=Z,5.0nm,0.8s,mb4.2
INK Inuvik 52.11 21 P **P** 09 02 19.8 -0.4
comp=Z,15nm,0.9s,mb4.9,baz=342,slow=10,SNR=56
INK Inuvik 52.11 21 P **P** 09 02 19.8 -0.4
INK pmax pmax
comp=Z,15nm,1.0s
INK Inuvik 52.11 21 *e*P **P** 09 02 19.2 -1.0
comp=Z,11nm,0.8s,mb4.8
TATS Tathlith 52.35 249 P **P** 09 02 22.7 +0.1
BLJS Baljurashi 53.09 251 P **P** 09 02 27.8 -0.4
LPL La Plagne 53.71 299 *e*P **P** 09 02 32.6 +0.3
comp=Z,4.7nm,0.5s,mb4.4
LPG La Plagne 53.71 299 *e*P **P** 09 02 32.7 +0.3
comp=Z,13nm,0.7s,mb4.7
DJNS Zahran al Janu 53.82 247 P **P** 09 02 34.1 +0.6
LOR Lormes 53.92 303 *e*P **P** 09 02 33.5 -0.3
BNI Bardonecchia 54.06 299 *e*P **P** 09 02 34.9 0.0
SSF Saint Saulge 54.23 303 *e*P **P** 09 02 35.4 -0.7
comp=Z,9.2nm,0.8s,mb4.4
MBDF Montbardon 54.24 299 *e*P **P** 09 02 35.6 -0.6
comp=Z,13nm,0.6s,mb4.7
DAWY Dawson 54.28 26 *e*P **P** 09 02 34.5 -1.7
AVF Avril sur Loir 54.50 302 *e*P **P** 09 02 38.1 0.0
comp=Z,8.7nm,0.9s,mb4.4
ORIF Oris-en-Rattie 54.56 299 *e*P **P** 09 02 38.4 -0.2
comp=Z,24nm,0.8s,mb5.0
LDF La Drutiere 54.89 306 *e*P **P** 09 02 41.3 +0.3
FLN La Foliniere 54.94 306 *e*P **P** 09 02 40.8 -0.5
comp=Z,29nm,0.9s,mb5.0
FRF La Foret Royal 55.13 298 *e*P **P** 09 02 41.8 -1.0
comp=Z,8.9nm,0.6s,mb4.7
VIVF Saint-Julien-l 55.21 300 *e*P **P** 09 02 42.8 -0.6
comp=Z,12nm,0.8s,mb4.7
GRR Gorron 55.38 306 *e*P **P** 09 02 43.2 -1.3
TCF Toulx Ste Croi 55.41 303 *e*P **P** 09 02 44.4 -0.4
comp=Z,5.1nm,0.6s,mb4.4
YKA Yellowknife Ar 60.78 15 P **P** 09 03 20.8 -1.4
comp=Z,3.2nm,0.8s,mb4.5,baz=339,slow=7.0,SNR=46
YKA PKP2bc 09 32 46.1
comp=Z,0.2nm,0.7s,baz=180,slow=1.2,SNR=4.5
YKA Yellowknife Ar 60.78 15 P **P** 09 03 20.8 -1.4
YKA ⇑*e* 09 32 46.1
DLBC Dease Lake 61.45 25 P **P** 09 03 26.1 -0.7
comp=Z,1.6nm,0.9s,mb4.2,baz=298,slow=7.5,SNR=4.6
ESDC Sonseca Array 63.35 301 P **P** 09 03 39.5 -0.2
comp=Z,1.3nm,0.5s,mb4.3,baz=37,slow=7.6,SNR=7.9
SCHQ Schefferville 69.73 349 P **P** 09 04 18.7 -1.2
comp=Z,2.3nm,0.5s,mb4.3,baz=280,slow=19,SNR=6.1
SCHQ Schefferville 69.73 349 P **P** 09 04 18.7 -1.2
KMBO Kilima Mbogo 72.96 242 *e*P **P** 09 04 39.0 -1.0
RMW Rattlesnake Mo 73.50 25 *e*P **P** 09 04 43.1 +0.7
NEW Newport 73.82 22 P **P** 09 04 43.8 -0.4
comp=Z,1.6nm,0.8s,mb4.0,baz=318,slow=11,SNR=3.7
NEW Newport 73.82 22 P **P** 09 04 43.8 -0.4
NEW pmax pmax
comp=Z,2.0nm,0.8s
NEW Newport 73.82 22 *e*P **P** 09 04 43.8 -0.4
ULM Lac du Bonnet 74.94 7 P **P** 09 04 49.7 -1.0
comp=Z,3.2nm,1.0s,mb4.2,baz=0.4,slow=8.5,SNR=4.5
ULM Lac du Bonnet 74.94 7 P **P** 09 04 49.7 -1.0
MSO Missoula 75.84 20 *e*P **P** 09 04 55.8 -0.2
comp=Z,31nm,1.4s,mb5.0
CHMT Chamberlain Mo 75.89 20 *e*P **P** 09 04 55.5 -0.7
HRY Holter Researc 76.36 19 *e*P **P** 09 04 58.8 -0.1
FITZ Fitzroy Crossi 77.15 150 P **P** 09 05 02.6 -1.2
comp=Z,5.2nm,1.0s,mb4.4,baz=7.3,slow=2.2,SNR=4.0
MCMT McKenzie Canyo 77.98 20 *e*P **P** 09 05 08.0 +0.2
QLMT Earthquake Lak 78.25 19 *e*P **P** 09 05 09.7 +0.3
HLID Hailey 78.87 21 *e*P **P** 09 05 12.8 0.0
comp=Z,2.1nm,0.9s,mb4.1
WVOR Wild Horse Val 78.99 25 *e*P **P** 09 05 14.3 +0.9
comp=Z,12nm,1.0s,mb4.8
MOD Modoc 79.07 26 *e*P **P** 09 05 14.9 +1.0
comp=Z,13nm,1.0s,mb4.8
RSSD Black Hills 80.14 14 *e*P **P** 09 05 19.1 -0.5
comp=Z,1.6nm,0.6s,mb4.1
BW06 Boulder Array 80.59 18 *e*P **P** 09 05 21.3 -0.7
PDAR Pinedale Array 80.59 18 P **P** 09 05 21.9 -0.2
comp=Z,0.7nm,0.4s,mb3.9,baz=39,slow=2.8,SNR=7.7
BEKR Beckwourth 80.97 27 *e*P **P** 09 05 23.3 -0.8
comp=Z,11nm,1.2s,mb4.7
HWUT Hardware Ranch 81.33 20 *e*P **P** 09 05 25.1 -0.9
comp=Z,11nm,1.0s,mb4.7
WRAB Tennant Creek 81.65 143 P **P** 09 05 26.2 -1.9
WRA Warramunga Arr 81.66 143 P **P** 09 05 27.4 -0.6
comp=Z,3.5nm,1.0s,mb4.2,baz=345,slow=6.1,SNR=15
WRA Warramunga Ar 81.66 143 P **P** 09 05 27.4 -0.7
WRA pmax pmax
comp=Z,4.0nm,1.0s
CMB Columbia Colle 82.69 27 *e*P **P** 09 05 33.8 +0.8
comp=Z,2.9nm,1.0s,mb4.3
NVAR Mina Array Bea 82.85 26 P **P** 09 05 35.6 +1.7
comp=Z,1.9nm,0.8s,mb4.2,baz=357,slow=3.7,SNR=17
BINY Binghamton 83.08 353 P **P** 09 05 36.0 +1.0
TPH Tonopah 83.46 25 *e*P **P** 09 05 37.8 +0.8
comp=Z,6.1nm,1.0s,mb4.6
MTUM Tungsten Hills 83.81 26 *e*P **P** 09 05 40.3 +1.6
MSU Marysvale 84.19 21 *e*P **P** 09 05 42.1 +1.4
PV10 Paradox Valley 84.94 19 *e*P **P** 09 05 45.8 +1.4
ASAR Alice Springs 84.95 145 P **P** 09 05 44.5 -0.3
comp=Z,4.6nm,1.1s,mb4.5,baz=335,slow=4.2,SNR=13
PV01 Paradox Valley 85.26 18 *e*P **P** 09 05 47.4 +1.4
SDCO Great Sand Dun 86.17 16 *e*P **P** 09 05 51.3 +0.8
NEN Nelson 86.34 24 *e*P **P** 09 05 52.1 +0.7
WUAZ Wupatki 87.24 21 *e*P **P** 09 05 56.8 +1.0
comp=Z,11nm,1.2s,mb5.0
ANMO Albuquerque 88.73 18 *e*P **P** 09 06 04.4 +1.4
WVT Waverly 89.42 2 *e*P **P** 09 06 06.2 -0.1
comp=Z,11nm,1.1s,mb5.1
WMOK Wichita Mounta 90.05 11 *e*P **P** 09 06 09.8 +0.6
comp=Z,11nm,1.1s,mb5.1
DBIC Dimbokro 90.26 282 P **P** 09 06 10.7 +0.1
comp=Z,2.6nm,0.9s,mb4.6,baz=65,slow=4.6,SNR=2.9
DBIC Dimbokro 90.26 282 P **P** 09 06 10.7 0.0
DBIC pmax pmax
comp=Z,3.0nm,0.9s
MNTX Cornudas Mount 92.09 17 *e*P **P** 09 06 18.7 0.0
TXAR Lajitas Array 94.69 16 P **P** 09 06 32.1 +1.5
comp=Z,1.3nm,1.0s,mb4.3,baz=34,slow=3.8,SNR=9.0
STKA Stephens Creek 95.15 142 P **P** 09 06 32.9 +0.2
comp=Z,0.5nm,0.5s,mb4.2,baz=344,slow=13,SNR=3.2
STKA Stephens Creek 95.15 142 P **P** 09 06 32.9 +0.2
LPAZ La Paz 139.43 335 PKP PKPdf 09 12 37.9 -1.8
comp=Z,3.9nm,1.3s,baz=350,slow=6.4,SNR=3.7
LPAZ La Paz 139.43 335 PKIKP PKPdf 09 12 37.9 -1.8
LPAZ pmax pmax
comp=Z,4.0nm,1.3s
QSPA South Pole Qui 144.56 180 *e*PKP PKPdf 09 12 42.1 -4.7
CPUP Villa Florida 145.09 313 PKPbc PKPbc 09 12 45.7 -0.3
comp=Z,8.6nm,0.9s,baz=89,slow=1.4,SNR=16
CPUP Villa Florida 145.09 313 PKIKP PKPdf 09 12 45.7 -3.6
CPUP pmax pmax
comp=Z,9.0nm,0.9s
CPUP Villa Florida 145.09 313 PKPbc PKPbc 09 12 45.7 -0.3
LVC Limon Verde 145.68 333 PKPbc PKPbc 09 12 49.6 +2.0
comp=Z,20nm,1.2s,baz=337,slow=2.7,SNR=11
LVC Limon Verde 145.68 333 PKPbc PKPbc 09 12 49.6 +2.0
PLCA Paso Flores 162.97 320 PKPab PKPab 09 14 01.2 -0.3
comp=Z,1.6nm,1.0s,baz=12,slow=5.8,SNR=3.2
PLCA Paso Flores 162.97 320 PKP2 PKPab 09 14 01.3 -0.3
PLCA pmax pmax
comp=Z,2.0nm,1.0s

IDC ***08*** *09:01:33.6±3.0,30.43S×177.32W,mb3.8/4,mb1 4.0/5, mb1mx3.9/15,ML2.8/1,Error ellipse: s-maj=67.1km s-min=35.5km az=116.0*
NEIC ***08*** *09:01:34.8±0.7,30.44S×177.29W,h10km,Error ellipse: s-maj=22.1km s-min=11.4km az=149.0*
ISC 08 09:01:32.9±1.0,30.5S±0.1×177.3W±0.2,h10km,n8,
σ0§41/8,mb4.0/5,Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
URZ	**Urewera**	**9.02**	**209**		**P**	**P**	**09 03 45.6**	**-0.6**
URZ	0.1nm,0.3s,baz=180,slow=18,SNR=2.0							
					Sn	**Sn**	**09 05 29.2**	**+0.3**
	0.4nm,0.3s,baz=274,slow=23,SNR=5.6							
RAR	**Rarotonga**	**18.25**	**64**	*e*P	**P**	**P**	**09 05 48.2**	**+0.1**
STKA	**Stephens Creek**	**35.06**	**257**	P	**P**	**P**	**09 08 28.8**	**+0.7**
	2.3nm,1.1s,mb4.0,baz=104,slow=12,SNR=4.9							
ASAR	**Alice Springs**	**43.73**	**267**	P	**P**	**P**	**09 09 40.0**	**-0.2**
	0.5nm,0.6s,mb3.4,baz=105,slow=7.3,SNR=7.8							
WRAB	**Tennant Creek**	**44.72**	**272**	*e*P	**P**	**P**	**09 09 47.9**	**-0.4**
	14nm,1.2s,mb4.7							
WRA	**Warramunga Arr**	**44.73**	**272**	P	**P**	**P**	**09 09 48.1**	**-0.2**
	0.5nm,0.3s,mb3.9,baz=110,slow=8.1,SNR=43							
FITZ	**Fitzroy Crossi**	**52.98**	**270**	P	**P**	**P**	**09 10 52.5**	**+0.3**
	1.4nm,0.7s,mb4.0,baz=117,slow=4.5,SNR=2.3							
FINES	**FINESS Array B**	**145.46**	**340**	PKPbc	PKPbc	PKPbc	09 21 11.8	+0.7
	0.9nm,0.5s,baz=18,slow=4.4,SNR=9.5							

NIED ***08*** *09:03:00,39.20N×144.50E,h5km,Mw3.9 Best double couple: M0 7.37×10^14 NP1:φs191°,δ64°,λ-90°. NP2:φs10°, δ26°,λ-90°.*
IDC ***08*** *09:03:32.0±1.2,39.01N×144.72E,mb3.6/7,mb1 3.9/10, mb1mx3.7/26,ML3.6/3,Error ellipse: s-maj=32.8km s-min=22.8km az=107.0*
NEIC ***08*** *09:03:33.9±0.8,39.12N×144.74E,h10km,Error ellipse: s-maj=19.2km s-min=10.2km az=131.0*
JMA ***08*** *09:03:36.9±0.2,39.23N×144.48E,h54km,M4.0*
ISC 08 09:03:36.7±0.7,39.26N±0.04×144.50E±0.05,h54km,n29,
σ1§19/43,mb3.7/8,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
MIYJ	**Miyako 2**	**2.10**	**279**	P	**P**	**P**	**09 04 10.6**	**+0.5**
MIYJ				*e*S	**S**	**S**	**09 04 35.4**	**+0.4**
JTH	**Tanohata**	**2.14**	**289**	P	**P**	**P**	**09 04 11.1**	**+0.3**
JTH				*e*S	**S**	**S**	**09 04 37.0**	**+0.8**
OFUJ	**Ofunato**	**2.21**	**266**	P	**P**	**P**	**09 04 11.7**	**0.0**
OFUJ				*e*S	**S**	**S**	**09 04 38.0**	**+0.2**
JOM	**Ohasama**	**2.49**	**276**	P	**P**	**P**	**09 04 16.4**	**+0.6**
JOM				*e*S	**S**	**S**	**09 04 45.4**	**+0.3**
JANG	**Nango**	**2.55**	**297**	P	**P**	**P**	**09 04 16.5**	**-0.1**
JMK	**Ichinoseki**	**2.57**	**264**	P	**P**	**P**	**09 04 16.9**	**0.0**
JMK				*e*S	**S**	**S**	**09 04 47.4**	**+0.4**
JOT	**Ohata**	**3.38**	**310**	*e*S	**S**	**S**	**09 05 08.4**	**+0.9**
JCH	**Churui**	**3.46**	**346**	P	**P**	**P**	**09 04 29.6**	**+0.2**
JCH				*e*S	**S**	**S**	**09 05 08.7**	**-0.8**
JKB	**Kayabe**	**3.72**	**316**	*e*S	**S**	**S**	**09 05 15.5**	**-0.6**
NEM2	**Nemuro 2**	**4.20**	**12**	P	**P**	**P**	**09 04 37.6**	**-2.3**
NEM2				*e*S	**S**	**S**	**09 05 23.4**	**-4.9**
JTKR	**Abashiri--Toko**	**4.72**	**355**	P	**P**	**P**	**09 04 46.7**	**-0.6**
JTKR				*e*S	**S**	**S**	**09 05 38.4**	**-3.0**
ASAJ	**Asahikawa**	**5.05**	**344**	Pn	**P**	**P**	**09 04 52.1**	**+0.3**
ASAJ	1.0nm,0.3s,baz=46,slow=34,SNR=3.0							
	1.0nm,0.3s,baz=40,slow=31,SNR=5.6				Sn	**S**	**09 05 48.9**	**-0.8**
JRY	**Ryogami san**	**5.50**	**236**	P	**P**	**P**	**09 04 55.6**	**-2.4**
JRY				*e*S	**S**	**S**	**09 05 55.7**	**-5.0**
MAJO	**Matsushiro**	**5.67**	**243**	*e*P	**P**	**P**	**09 05 00.0**	**-0.3**
MAT	**Matsushiro**	**5.67**	**243**	P	**P**	**P**	**09 05 00.0**	**-0.3**
MAT				*e*S	**S**	**S**	**09 06 02.9**	**-2.0**
MAT	**Matsushiro**	**5.67**	**243**	P	**P**	**P**	**09 05 00.1**	**-0.2**
MAT	**Matsushiro**	**5.67**	**243**	*e*P	**P**	**P**	**09 05 00.0**	**-0.3**
	15nm,0.6s							
MAT					S	**S**	**09 06 03.0**	**-1.9**
JHJ	**Hachijo jima 2**	**7.22**	**213**	Pn	**P**	**P**	**09 05 16.9**	**-5.1**
	3.9nm,0.3s,baz=48,slow=19,SNR=1.8							
JHJ					Sn	**S**	**09 06 30.8**	**-13**
	8.0nm,0.3s,baz=81,slow=23,SNR=4.6							
YSS	**Yuzh-Sakhalins**	**7.79**	**351**	*e*P	**P**	**P**	**09 05 28.9**	**-1.0**
	4.4nm,0.5s							
CBIJ	**Chichi jima**	**12.29**	**190**	Pn	**P**	**P**	**09 06 22.1**	**-9.2**
	2.8nm,0.3s,baz=194,slow=18,SNR=2.5							
CBIJ					Sn	**S**	**09 08 32.5**	**-15**
	3.3nm,0.3s,baz=110,slow=20,SNR=3.2							
MKAR	**Makanchi Array**	**45.03**	**301**	P	**P**	**P**	**09 11 51.9**	**+3.4**
	1.1nm,0.7s,mb3.6,baz=86,slow=9.5,SNR=7.6							
ILAR	**Eielson Array**	**46.31**	**34**	P	**P**	**P**	**09 12 00.1**	**+1.8**
	0.9nm,1.0s,mb3.7,baz=256,slow=6.6,SNR=7.6							
BVAR	**Borovoye Array**	**50.90**	**312**	P	**P**	**P**	**09 12 37.0**	**+2.9**
	1.4nm,1.0s,mb3.9,baz=83,slow=12,SNR=3.9							
BRVK	**Borovoye**	**50.95**	**312**	P	**P**	**P**	**09 12 35.2**	**+0.7**
INK	**Inuvik**	**51.29**	**28**	*e*P	**P**	**P**	**09 12 38.0**	**+1.1**
	2.6nm,1.2s,mb4.0							
WRA	**Warramunga Arr**	**59.66**	**191**	P	**P**	**P**	**09 13 36.4**	**-1.4**
	0.3nm,0.7s,mb3.4,baz=11,slow=6.9,SNR=4.8							
YKA	**Yellowknife Ar**	**60.65**	**32**	P	**P**	**P**	**09 13 45.3**	**+1.3**
	0.2nm,0.7s,mb3.4,baz=302,slow=6.3,SNR=4.1							
FINES	**FINESS Array B**	**67.96**	**333**	P	**P**	**P**	**09 14 34.3**	**+2.9**
	1.3nm,0.5s,mb4.2,baz=72,slow=6.0,SNR=9.7							
AKASG	**Malin Array Be**	**74.00**	**323**	P	**P**	**P**	**09 15 10.6**	**+2.7**
	0.2nm,0.3s,mb3.5,baz=45,slow=5.9,SNR=4.9							

NEIC ***08*** *09:06:32.9±0.8,33.29S×178.76W,h10km,mb4.7/5,Error ellipse: s-maj=19.3km s-min=13.7km az=108.0*

IDC ***08*** *09:06:39.1±1.0,33.49S×178.82W,h54km±6km,mb4.1/4, mb1 4.2/6,mb1mx4.0/15,MS3.8/1,Ms1 3.7/1,ms1mx3.1/21, Error ellipse: s-maj=33.4km s-min=17.7km az=121.0*

ISC 08 09:06:35.0±2.7,33.5S±0.1×178.6W±0.2,h55km±20km,n28, σ0°68/23,mb4.4/8,MS3.8/1,South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PUZ	**Puketiti**	**5.30**	**208**	P	**P**	**09 07 53.8**	**+0.3**
PUZ				S	**S**	**09 08 55.1**	**+1.1**
URZ	**Urewera**	**5.96**	**215**	P	**P**	**09 08 02.8**	**+0.1**
	5.6nm,0.3s,baz=74,slow=14,SNR=51						
URZ				S	**S**	**09 09 09.6**	**-0.9**
	4.7nm,0.3s,baz=297,slow=20,SNR=3.4						
URZ	**Urewera**	**5.96**	**215**	P	**P**	**09 08 02.3**	**-0.4**
KNZ	**Kokohu**	**6.35**	**208**	*e*P	**P**	**09 08 07.7**	**-0.4**
OUZ	**Omahuta**	**6.74**	**253**	P	**P**	**09 08 14.3**	**+0.7**
FWVZ	**Far West T-bar**	**7.50**	**218**	P	**P**	**09 08 24.5**	**+0.3**
PWZ	**Pawanui**	**7.53**	**208**	P	**P**	**09 08 24.8**	**+0.1**
SNZO	**South Karori**	**9.51**	**212**	P	**P**	**09 08 50.5**	**-1.3**
	137nm,1.5s						
RPZ	**Rata Peaks**	**13.08**	**215**	P	**P**	**09 09 34.6**	**-5.3**
	0.3nm,0.3s,baz=110,slow=12,SNR=3.1						
RPZ				S	**S**	**09 11 51.0**	**-13**
	0.4nm,0.3s,baz=105,slow=15,SNR=2.4						
STKA	**Stephens Creek**	**33.45**	**262**	LR	LR	09 26 24.3	
	comp=Z,153nm,18.3s,MS3.8,baz=23,slow=36						
CTA	**Charters Tower**	**33.96**	**284**	P	**P**	**09 13 16.5**	**+1.2**
	3.0nm,0.6s,mb4.4,baz=113,slow=9.2,SNR=4.0						
CTAO	**Charters Tower**	**33.96**	**284**	*e*P	**P**	**09 13 15.5**	**+0.3**
	33nm,1.7s,mb5.0						
AS12	**Alice Springs**	**42.58**	**270**	*e*P	**P**	**09 14 27.9**	**+0.6**
	3.1nm,1.1s,mb4.0						
ASAR	**Alice Springs**	**42.58**	**270**	P	**P**	**09 14 27.6**	**+0.4**
	1.6nm,0.6s,mb4.0,baz=108,slow=7.3,SNR=23						
WB2	**Warramunga Arr**	**43.83**	**276**	*e*P	**P**	**09 14 37.4**	**-0.1**
WRAB	**Tennant Creek**	**43.84**	**276**	*e*P	**P**	**09 14 37.2**	**-0.3**
	7.9nm,0.5s,mb4.7						
WRA	**Warramunga Arr**	**43.84**	**276**	P	**P**	**09 14 37.8**	**+0.2**
	3.2nm,0.4s,mb4.4,baz=117,slow=7.8,SNR=94						
KAKA	**Kakadu**	**49.12**	**283**	*e*P	**P**	**09 15 17.9**	**-1.3**
	6.9nm,0.6s,mb4.9						
FITZ	**Fitzroy Crossi**	**51.96**	**273**	*e*P	**P**	**09 15 40.6**	**-0.2**
	2.8nm,1.1s,mb4.1						
QSPA	**South Pole Qui**	**56.67**	**180**	*e*P	**P**	**09 16 22.3**	**+7.8**
	2.4nm,0.8s,mb4.3						
MAW	**Mawson**	**69.31**	**201**	P	**P**	**09 17 38.7**	**+0.7**
	1.4nm,0.3s,mb4.3,baz=349,slow=6.1,SNR=6.0						
ARCES	**ARCESS Array B**	**141.45**	**347**	PKhKP		09 25 56.9	
	0.7nm,0.5s,baz=28,slow=4.2,SNR=3.0						
ARCES				PKP	PKPdf	09 26 01.4	+2.5
	1.0nm,0.8s,baz=27,slow=2.7,SNR=3.9						
JOF	**Joensuu**	**145.05**	**337**	*e*pkp	PKPdf	09 26 08.1	+2.9
KAF	**Kangasniemi**	**147.23**	**339**	*e*pkp	PKPdf	09 26 14.4	+5.4
	baz=43,slow=2.8						
FINES	**FINESS Array B**	**147.81**	**338**	PKPbc	PKPdf	09 26 16.9	+7.0
	2.4nm,0.5s,baz=47,slow=4.0,SNR=21						
FINES				pPKPbc		09 26 31.8	
	2.9nm,0.8s,baz=76,slow=7.9,SNR=4.9						
NB2	**NORSAR Subarra**	**151.67**	**350**	PKP		09 26 27.2	
	0.6nm,0.5s,baz=20,slow=2.6						
NOA	**NORSAR Array B**	**151.67**	**350**	PKPbc	PKPdf	09 26 27.2	+11
	0.9nm,0.6s,baz=17,slow=4.2,SNR=4.5						
NOA				pPKPbc		09 26 43.0	
	1.0nm,0.7s,baz=13,slow=4.0,SNR=4.1						
HFS	**Hagfors**	**152.11**	**347**	PKPbc	PKPdf	09 26 27.9	+11
	2.3nm,0.7s,baz=27,slow=2.3,SNR=8.7						
HFS				pPKPbc		09 26 43.7	
	2.4nm,0.8s,baz=90,slow=1.5,SNR=3.1						

NEIC ***08*** *09:16:41.9±0.7, 12.99N×87.32W,h10km,mb4.1/13,Error ellipse: s-maj=29.0km s-min=12.3km az=57.0*

CASC ***08*** *09:16:42.5±2.2, 12.22N×88.15W,h25km±15km,MD4.1, mb4.1(NEIC)*

IDC ***08*** *09:16:45.8±2.9, 12.81N×87.47W,h42km±32km,mb3.7/8, mb1 4.0/9,mb1mx3.7/21,ML2.9/1,Error ellipse: s-maj=50.5km s-min=18.3km az=52.0*

ISC 08 09:16:41.1±0.6,12.01N±0.05×88.24W±0.04,h49km±5km, n70,σ1°12/88,mb4.0/21,1C,Off coast of central America

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PYN	**Poneloya**	**1.25**	**73**	*e*P	**P**	**09 17 02.2**	**-0.2**
CNCH	**Conchagua**	**1.32**	**17**	*e*P	**P**	**09 17 03.2**	**-0.4**
CNCH				*e*S	**S**	**09 17 22.2**	**+1.9**
CRIN	**San Cristobal**	**1.35**	**59**	*e*P	**P**	**09 17 02.7**	**-1.4**
LEON	**Leon**	**1.38**	**73**	*e*P	**P**	**09 17 03.6**	**-0.8**
VSM	**San Miguel**	**1.41**	**359**	*e*P	**P**	**09 17 04.6**	**-0.3**
BLLM	**Bellamira**	**1.42**	**0**	*e*P	**P**	**09 17 04.4**	**-0.6**
BLLM				*e*S	**S**	**09 17 24.1**	**+1.3**
CNGN	**Cerro Negro**	**1.58**	**72**	*e*P	**P**	**09 17 07.0**	**-0.3**
CNGN				*e*S	**S**	**09 17 26.4**	**-0.3**
COPN	**Copaltepe**	**1.62**	**84**	*e*P	**P**	**09 17 07.7**	**-0.1**
SNVI	**San Vicente**	**1.70**	**340**	*e*P	**P**	**09 17 09.2**	**+0.4**
SNVI				*e*S	**S**	**09 17 30.1**	**+0.6**
CAHU	**Cacacuatique**	**1.75**	**1**	*e*P	**P**	**09 17 09.4**	**-0.2**
CAHU				*e*S	**S**	**09 17 33.1**	**+2.4**
LCBS	**La Ceiba**	**1.79**	**336**	*e*P	**P**	**09 17 09.2**	**-0.8**
LFRS	**El Faro**	**1.79**	**334**	*e*P	**P**	**09 17 09.2**	**-1.0**
LFRS				*e*S	**S**	**09 17 32.4**	**+0.6**
XAVN	**Gruta Xavier**	**1.88**	**86**	*e*P	**P**	**09 17 10.2**	**-1.2**
LBRS	**Las Brisas**	**1.89**	**336**	*e*P	**P**	**09 17 11.1**	**-0.5**
LBRS				*e*S	**S**	**09 17 33.4**	**-0.7**
LFU	**La Fuente**	**1.93**	**334**	*e*P	**P**	**09 17 11.5**	**-0.5**
MGAN	**Managua**	**1.96**	**86**	*e*P	**P**	**09 17 12.1**	**-0.4**
MGAN				*e*S	**S**	**09 17 35.9**	**+0.1**
TICN	**Ticuantepe**	**1.97**	**89**	*e*P	**P**	**09 17 12.7**	**+0.1**
TICN				*e*S	**S**	**09 17 37.6**	**+1.5**
BOQS	**Boqueron**	**1.99**	**330**	*e*P	**P**	**09 17 12.5**	**-0.4**
BOQS				*e*S	**S**	**09 17 37.1**	**+0.4**
COFN	**Cofrada**	**2.09**	**86**	*e*P	**P**	**09 17 13.3**	**-1.0**
COFN				*e*S	**S**	**09 17 39.2**	**0.0**
APON	**Apoyo**	**2.13**	**92**	*e*P	**P**	**09 17 14.2**	**-0.8**
PYTN	**Playitas**	**2.20**	**76**	*e*P	**P**	**09 17 16.9**	**+1.0**
PYTN				*e*S	**S**	**09 17 40.8**	**-1.2**
SBLS	**San Blas**	**2.26**	**324**	*e*P	**P**	**09 17 16.2**	**-0.6**
SBLS				*e*S	**S**	**09 17 43.7**	**+0.1**
SNJE	**San Jose**	**2.28**	**324**	*e*P	**P**	**09 17 16.7**	**-0.3**
SNJE				*e*S	**S**	**09 17 44.0**	**+0.1**
RTR	**El Retiro**	**2.32**	**324**	*e*P	**P**	**09 17 17.6**	**-0.1**
RTR				*e*S	**S**	**09 17 44.8**	**-0.3**
RBDL	**Robledal**	**2.52**	**326**	*e*P	**P**	**09 17 20.4**	**-0.1**
RBDL				*e*S	**S**	**09 17 50.2**	**0.0**
CONN	**Concepcion**	**2.60**	**100**	*e*P	**P**	**09 17 21.5**	**-0.1**
MTO2	**Montecristo 2**	**2.61**	**335**	*e*P	**P**	**09 17 21.9**	**0.0**
MTO2				*e*S	**S**	**09 17 52.7**	**+0.1**
CRZC	**La Cruz**	**2.80**	**112**	*e*P	**P**	**09 17 33.1**	**+8.6**
JTS	**JuntasAbangare**	**3.65**	**118**	P	**P**	**09 17 37.2**	**+0.6**
	1.1nm,0.3s,baz=312,slow=17,SNR=8.5						
JTS				S	**S**	**09 18 19.0**	**+0.2**
	2.2nm,0.3s,baz=299,slow=18,SNR=3.0						
JTS	**JuntasAbangare**	**3.65**	**118**	P	**P**	**09 17 37.2**	**+0.6**
JTS				*e*Pn	**P**	**09 17 37.5**	**+1.0**
JTS				S	**S**	**09 18 19.0**	**+0.2**
JCR	**Jicaral**	**3.75**	**125**	*e*P	**P**	**09 17 37.7**	**-0.2**
CGA2	**Cerro Gallo 2**	**4.20**	**118**	*e*P	**P**	**09 17 47.3**	**+3.0**
VPS2	**Volcan Poas 2**	**4.33**	**114**	*e*P	**P**	**09 17 40.3**	**-5.8**
PRS	**Puriscal**	**4.35**	**117**	*e*P	**P**	**09 17 50.6**	**+4.1**
LAJ	**Bijagual**	**4.57**	**117**	*e*P	**P**	**09 17 47.5**	**-2.0**
SJS	**Escuela Geolog**	**4.60**	**116**	*e*P	**P**	**09 17 54.7**	**+4.8**
LCR2	**La Lucha 2**	**4.73**	**118**	*e*P	**P**	**09 17 54.5**	**+2.7**
URSC	**Urasca**	**4.89**	**116⇑**	*e*P	**P**	**09 17 57.5**	**+3.5**
URSC				*e*S	**S**	**09 18 56.1**	**+6.2**
BUS	**Buena Vista**	**5.04**	**119**	*e*P	**P**	**09 17 59.3**	**+3.3**
HKT	**Hockley**	**19.19**	**340**	*e*P	**P**	**09 20 55.1**	**-8.4**
	6.4nm,1.3s						
JCT	**Junction City**	**21.27**	**332**	*e*P	**P**	**09 21 25.1**	**-0.3**
	8.4nm,0.7s,mb4.2						
TXAR	**Lajitas Array**	**22.44**	**323**	P	**P**	**09 21 38.9**	**+1.9**
	2.0nm,0.8s,mb3.6,baz=143,slow=11,SNR=28						
PLAL	**Pickwick Lake**	**22.87**	**0**	P	**P**	**09 21 33.0**	**-8.2**
	22nm,2.2s,mb4.2						
MIAR	**Mount Ida**	**22.95**	**349**	*e*P	**P**	**09 21 36.0**	**-6.0**
	0.4nm,0.6s,mb3.0						
WMOK	**Wichita Mounta**	**24.57**	**339**	*e*P	**P**	**09 21 57.9**	**+0.1**
	14nm,1.3s,mb4.3						
ANMO	**Albuquerque**	**28.20**	**327**	P	**P**	**09 22 34.0**	**+2.7**
	7.8nm,2.0s,mb4.0						
TUC	**Tucson**	**28.93**	**318**	*e*P	**P**	**09 22 40.5**	**+2.6**
	1.2nm,1.0s,mb3.6						
WUAZ	**Wupatki**	**31.40**	**322**	*e*P	**P**	**09 22 53.7**	**-6.0**
	4.5nm,1.4s,mb4.1						
ISCO	**Idaho Springs**	**31.66**	**334**	P	**P**	**09 23 02.0**	**0.0**
	1.1nm,0.8s,mb3.7						
PV01	**Paradox Valley**	**31.72**	**329**	*e*P	**P**	**09 23 01.4**	**-1.1**
PV10	**Paradox Valley**	**32.14**	**328**	*e*P	**P**	**09 23 07.3**	**+1.0**
RSSD	**Black Hills**	**34.77**	**340**	*e*P	**P**	**09 23 28.8**	**0.0**
	1.8nm,0.7s,mb4.1						
PDAR	**Pinedale Array**	**35.80**	**333**	P	**P**	**09 23 38.9**	**+1.2**
	1.2nm,1.0s,mb3.8,baz=135,slow=10,SNR=4.6						
HWUT	**Hardware Ranch**	**35.85**	**330**	*e*P	**P**	**09 23 36.7**	**-1.3**
	4.0nm,1.2s,mb4.2						
NVAR	**Mina Array Bea**	**37.53**	**320**	P	**P**	**09 23 56.9**	**+4.7**
	0.9nm,0.9s,mb3.5,baz=123,slow=9.1,SNR=4.7						
NVAR				PcP	PcP	09 26 13.2	+3.2
	0.8nm,1.1s,baz=133,slow=4.9,SNR=3.8						
ULM	**Lac du Bonnet**	**38.64**	**352**	P	**P**	**09 23 59.5**	**-1.8**
	5.2nm,0.6s,mb4.5,baz=158,slow=9.2,SNR=11						
HLID	**Hailey**	**38.71**	**329**	*e*P	**P**	**09 24 03.5**	**+1.5**
	4.6nm,1.8s,mb3.9						
MCMT	**McKenzie Canyo**	**38.90**	**332**	*e*P	**P**	**09 24 05.3**	**+1.8**
BOZ	**Bozeman (W)**	**38.99**	**334**	*e*P	**P**	**09 24 04.6**	**+0.4**
	2.5nm,0.9s,mb3.9						
SCHQ	**Schefferville**	**45.92**	**17**	P	**P**	**09 24 57.2**	**-3.4**
	3.5nm,0.7s,mb4.4,baz=222,slow=16,SNR=4.1						
SCHQ	**Schefferville**	**45.92**	**17**	P	**P**	**09 24 57.2**	**-3.4**
FCC	**Fort Churchill**	**46.87**	**356**	*e*P	**P**	**09 25 06.1**	**-1.9**
	3.1nm,0.7s,mb4.3						
YKA	**Yellowknife Ar**	**53.83**	**345**	P	**P**	**09 25 59.7**	**-1.3**
	3.3nm,1.1s,mb4.2,baz=137,slow=7.9,SNR=43						
YKA				PcP	PcP	09 27 06.4	+0.2
	0.3nm,0.5s,baz=146,slow=4.0,SNR=8.4						
YKA	**Yellowknife Ar**	**53.83**	**345**	P	**P**	**09 25 59.7**	**-1.3**
YKA				PcP	PcP	09 27 06.4	+0.2
INK	**Inuvik**	**63.39**	**343**	P	**P**	**09 27 06.3**	**-1.2**
	0.9nm,0.9s,mb3.9,baz=173,slow=11,SNR=4.8						
INK	**Inuvik**	**63.39**	**343**	P	**P**	**09 27 06.3**	**-1.2**
ILAR	**Eielson Array**	**66.11**	**336**	P	**P**	**09 27 23.9**	**-1.1**
	0.6nm,0.9s,mb3.6,baz=119,slow=2.9,SNR=5.0						
ASAR	**Alice Springs**	**138.39**	**248**	PKP	PKPdf	09 36 10.1	+8.1
	0.4nm,0.7s,baz=90,slow=0.9,SNR=5.1						
WRA	**Warramunga Arr**	**138.40**	**254**	PKP	PKPdf	09 36 10.6	+8.5
	0.3nm,0.7s,baz=93,slow=1.7,SNR=4.8						
CMAR	**Chiang Mai Arr**	**148.91**	**347**	PKPbc	PKPdf	09 36 27.8	+7.5
	1.6nm,0.7s,baz=18,slow=2.9,SNR=3.0						

IDC ***08*** *09:26:36.6±3.4,2.50S×102.13E,h159km±26km,mb3.3/6, mb1 3.5/6,mb1mx3.3/15,Error ellipse: s-maj=82.8km s-min=13.9km az=54.0*

ISC 08 09:26:34.9±5.0,2.5S±0.4×102.1E±0.6,h159km±47km,n7, σ1°27/7,mb3.5/6,Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**35.95**	**121**	P	**P**	**09 33 21.3**	**-0.8**
	0.3nm,0.4s,mb3.3,baz=306,slow=9.3,SNR=12						
ASAR	**Alice Springs**	**37.28**	**127**	P	**P**	**09 33 33.3**	**0.0**
	0.3nm,0.4s,mb3.3,baz=302,slow=7.6,SNR=11						
ASAR				S	**S**	**09 39 08.0**	**-0.3**
	0.2nm,0.7s,baz=300,slow=14,SNR=2.6						
ASAR				ScP		09 39 23.3	
	0.5nm,0.8s,baz=304,slow=2.5,SNR=4.1						
STKA	**Stephens Creek**	**47.27**	**133**	P	**P**	**09 34 54.9**	**+0.8**
	1.6nm,0.7s,mb3.8,baz=308,slow=8.8,SNR=5.8						
SONM	**Songino Array**	**50.27**	**4**	P	**P**	**09 35 17.9**	**+1.0**
	0.8nm,0.5s,mb3.6,baz=188,slow=10,SNR=7.8						
MKAR	**Makanchi Array**	**52.09**	**343**	P	**P**	**09 35 29.0**	**-1.7**
	0.7nm,0.5s,mb3.6,baz=154,slow=8.2,SNR=8.3						
ARCES	**ARCESS Array B**	**87.65**	**340**	P	**P**	**09 39 06.7**	**+0.7**
	0.8nm,0.7s,mb3.7,baz=79,slow=4.6,SNR=3.0						
TXAR	**Lajitas Array**	**143.79**	**40**	PKP	PKPdf	09 45 52.5	+0.8
	1.0nm,0.8s,baz=225,slow=0.5,SNR=17						

NIED ***08*** *09:42:00,38.50N×143.50E,h26km,Mw4.6 Best double couple: M0 7.66×10^15 NP1:φs 18°,δ57°,λ85°. NP2:φs 208°, δ33°,λ98°.*

JMA ***08*** *09:42:13.6±0.1,38.54N×143.49E,h11km±3km,M5.0*

JMA Felt I J1.

BJI ***08*** *09:42:18.0,38.71N×143.22E,h33km,mB4.7,mb4.7, Ms4.3,Msz4.1*

NEIC ***08*** *09:42:20.5±0.2,38.60N×143.11E,mb4.9/18,Error ellipse: s-maj=6.7km s-min=4.9km az=128.0*

NEIC Recorded [1 JMA] in Iwate and Miyagi Prefectures.

IDC ***08*** *09:42:20.2±0.4,38.53N×143.13E,h29km±2km,mb4.0/24, mb1 4.2/29,mb1mx4.2/33,ML4.0/4,MS3.5/8,Ms1 3.6/8, ms1mx3.3/34,Error ellipse: s-maj=12.3km s-min=9.7km az=103.0*

MOS ***08*** *09:42:22.8±0.9,39.05N×142.99E,h41km,mb5.0/10,Error ellipse: s-maj=17.1km s-min=7.8km az=104.8*

ISC 08 09:42:18.2±0.3,38.60N±0.04×143.23E±0.04,h30km, h30km±.5km:pP-P,n139,σ1°02/152,mb4.6/57,MS4.0/16, 12C-7D,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**1.31**	**292**	⇓P	**Pn**	**09 42 41.1**	**+0.2**
OFUJ				*e*S	**Sn**	**09 43 00.4**	**+2.9**
MIYJ	**Miyako 2**	**1.46**	**312**	P	**Pn**	**09 42 42.9**	**-0.2**
JIO	**Ouri**	**1.49**	**265**	P	**Pn**	**09 42 43.3**	**-0.1**
JIO				*e*S	**Sn**	**09 43 04.5**	**+2.6**
JMK	**Ichinoseki**	**1.61**	**283**	⇑P	**Pn**	**09 42 45.5**	**+0.3**
JOM	**Ohasama**	**1.74**	**300**	⇑P	**Pn**	**09 42 47.4**	**+0.4**
JOU	**Okura**	**2.03**	**264**	⇑P	**Pn**	**09 42 51.5**	**+0.3**
JOU				*e*S	**Sn**	**09 43 19.3**	**+3.5**
JMM	**Marumori**	**2.06**	**250**	⇑P	**Pn**	**09 42 51.2**	**-0.4**
JANG	**Nango**	**2.21**	**324**	⇑P	**Pn**	**09 42 53.2**	**-0.6**
JFK	**Kawauchi**	**2.24**	**237**	⇑P	**Pn**	**09 42 53.4**	**-0.7**
JYK	**Kaneyama**	**2.27**	**279**	⇑P	**Pn**	**09 42 55.1**	**+0.5**
JFT	**Otama**	**2.53**	**246**	⇑P	**Pn**	**09 42 58.7**	**+0.4**
MAJO	**Matsushiro**	**4.49**	**244**	*e*P	**Pn**	**09 43 26.9**	**+0.7**
MAT	**Matsushiro**	**4.49**	**244**	P	**Pn**	**09 43 26.7**	**+0.5**
MAT				*e*S	**Sn**	**09 44 24.6**	**+6.5**
MAT	**Matsushiro**	**4.49**	**244**	*e*P	**Pn**	**09 43 27.0**	**+0.8**
MAT				S	**Sn**	**09 44 25.0**	**+6.9**
ASAJ	**Asahikawa**	**5.53**	**355**	Pn	**Pn**	**09 43 39.2**	**-1.6**
	6.0nm,0.3s,baz=208,slow=6.7,SNR=18						
ASAJ				Sn	**Sn**	**09 44 43.3**	**-0.8**
	5.3nm,0.3s,baz=233,slow=20,SNR=3.9						
ASAJ				LR	LR	09 46 36.6	
	comp=Z,964nm,19.1s,baz=6.4,slow=46						
YUK	**Yuzh-Kuril'sk**	**5.78**	**19**	*e*P	**Pn**	**09 43 40.4**	**-3.9**
YUK				*i* S	**Sn**	**09 44 41.5**	**-8.8**
YUK				pmax	pmax		
	comp=Z,2μm,0.7s						
YUK				pmax	pmax		
	comp=Z,210nm,0.5s						
YUK				pmax	pmax		
	comp=N,190nm,0.5s						
YUK				pmax	pmax		
	comp=E,190nm,0.5s						
YUK				smax			
	comp=E,1μm,0.7s						
YUK				smax			
	comp=N,810nm,0.5s						
YUK				smax			
	comp=N,3μm,2.0s						
YUK				smax			
	comp=E,2μm,1.0s						
JHJ	**Hachijo jima 2**	**6.15**	**208**	Pn	**Pn**	**09 43 45.8**	**-3.8**
	comp=E,21nm,0.3s,baz=62,slow=11,SNR=15						
JHJ				Sn	**Sn**	**09 44 53.0**	**-6.6**
	comp=E,46nm,0.3s,baz=71,slow=23,SNR=6.5						
JHJ				LR	LR	09 45 52.6	
	comp=E,123nm,19.6s,baz=319,slow=35						
KUR	**Kuril'sk**	**7.47**	**26**	*e*P	**Pn**	**09 44 08.3**	**+0.2**
KUR				*i* S	**Sn**	**09 45 24.2**	**-8.5**
KUR				pmax	pmax		
	comp=N,60nm,0.5s						
KUR				pmax	pmax		
	comp=Z,90nm,0.5s						
KUR				smax			
	comp=N,290nm,0.8s						
KUR				smax			
	comp=E,300nm,0.8s						
YSS	**Yuzh-Sakhalins**	**8.35**	**358**	*e*P	**P**	**09 44 17.9**	**-2.5**
YSS				*e*S	**Sn**	**09 45 46.9**	**-7.8**
YSS				smax			
	comp=N,40nm,1.0s						
YSS				smax			
	comp=E,30nm,1.0s						
YSS	**Yuzh-Sakhalins**	**8.35**	**358**	*e*P	**P**	**09 44 18.5**	**-1.9**
	comp=E,13nm,0.5s						
JNU	**Nakatsue**	**11.42**	**245**	Pn	**P**	**09 44 58.6**	**-3.9**
	comp=E,0.2nm,0.3s,baz=53,slow=23,SNR=5.5						
JNU				LR	LR	09 49 54.8	
	comp=E,539nm,18.2s,baz=60,slow=40						
CBIJ	**Chichi jima**	**11.51**	**185**	Pn	**P**	**09 44 58.5**	**-5.4**
	comp=E,5.0nm,0.3s,baz=9.7,slow=16,SNR=3.3						
CBIJ				Sn	**S**	**09 46 56.9**	**-16**
	comp=E,4.1nm,0.3s,baz=17,slow=19,SNR=4.5						
MDJ	**Mudanjiang**	**11.84**	**305**	P	**P**	**09 45 07.9**	**-0.3**
MDJ				AMB	AMB		
	comp=Z,19nm,0.9s						
MDJ				AMB	AMB		
	comp=Z,98nm,3.8s						
MDJ				LR	LR		
	comp=E,728nm,15.1s						
MDJ				LR	LR		
	comp=Z,1μm,15.7s						
KS15	**Wonju Array Si**	**12.16**	**269**	P	**P**	**09 45 08.5**	**-4.1**
KLR	**Kul'dur**	**13.45**	**326**	*e*P	**P**	**09 45 27.0**	**-2.5**
CN2	**Changchun**	**14.35**	**297**	*e*P	**P**	**09 45 42.4**	**+1.0**
CN2				XP		09 45 52.9	
CN2				*e*S	**S**	**09 48 14.5**	**-5.9**
CN2				AMB	AMB		
	comp=Z,10.0nm,1.1s						
CN2				LR	LR		
	comp=Z,530nm,17.0s						
JOW	**Kunigami**	**17.18**	**231**	P	**P**	**09 46 14.2**	**-3.7**
	baz=103,slow=20,SNR=2.0						
PET	**Petropavlovsk**	**17.93**	**31**	P	**P**	**09 46 22.4**	**-4.5**
	comp=Z,8.0nm,0.7s						
SSE	**Sheshan**	**19.56**	**254**	⇓P	**P**	**09 46 47.6**	**+1.0**
SSE				S	**S**	**09 50 16.3**	**-3.6**
SSE				AMB	AMB		
	comp=Z,31nm,0.7s						
SSE				LR	LR		
	comp=N,421nm,15.0s						
SSE				LR	LR		
	comp=E,215nm,15.0s						
SSE				LR	LR		
	comp=Z,445nm,15.0s						
NJ2	**Nanjing**	**20.91**	**259**	*e*P	**P**	**09 47 02.0**	**+1.3**
NJ2				PP	PP	09 47 25.5	+2.2
NJ2				S	**S**	**09 50 44.0**	**-3.4**
NJ2				AMB	AMB		
	comp=Z,40nm,0.6s						
NJ2				AMB	AMB		
	comp=Z,270nm,8.4s						
NJ2				LR	LR		
	comp=N,570nm,13.6s,MS4.2						
NJ2				LR	LR		
	comp=E,520nm,15.0s,MS4.2						
NJ2				LR	LR		
	comp=Z,680nm,18.8s,MS4.0						
BJI	**Beijing**	**20.96**	**282**	P	**P**	**09 46 58.2**	**-3.0**
BJI				AMB	AMB		
	comp=Z,11nm,0.5s						
BJI				AMB	AMB		
	comp=Z,103nm,4.5s						
BJI				LR	LR		
	comp=E,662nm,13.8s						
BJI				LR	LR		
	comp=Z,362nm,15.2s,MS3.9						
MA2	**Magadan**	**21.53**	**10**	*e*P	**P**	**09 47 06.6**	**-0.3**
MA2				*e*		09 47 23.1	
MA2				*e*		09 51 09.6	
MA2				pmax	pmax		
	comp=Z,10.0nm,0.9s,mb4.2						
MA2	**Magadan**	**21.53**	**10**	*e*P	**P**	**09 47 03.5**	**-3.3**
	comp=Z,8.1nm,0.7s,mb4.3						
CLNS	**Chul'man**	**21.90**	**332**	*e*P	**P**	**09 47 09.8**	**-0.7**
CLNS				*e*		09 47 23.5	
CLNS				*e*S	**S**	**09 50 50.1**	**-16**
CLNS				*e*		09 51 11.6	
CLNS				pmax	pmax		
	comp=Z,20nm,0.9s,mb4.5						
CLNS				pmax	pmax		
	comp=N,10.0nm,1.0s						
CLNS				pmax	pmax		
	comp=E,10.0nm,0.9s						
CLNS				pmax	pmax		
	comp=Z,20nm,1.0s,mb4.5						
CLNS				pmax	pmax		
	comp=N,9.0nm,1.2s						
CLNS				pmax	pmax		
	comp=E,7.0nm,0.8s						
CLNS				smax			
	comp=N,100nm,12.6s						
CLNS				smax			
	comp=Z,100nm,13.5s						
CLNS				smax			
	comp=E,100nm,12.5s						
CLNS				MLR	MLR		
	comp=N,300nm,13.0s,MS3.9						
CLNS				MLR	MLR		
	comp=Z,300nm,13.0s,MS3.9						
CLNS				MLR	MLR		
	comp=E,100nm,14.0s,MS3.9						
HHC	**Hu-ho-hao-te**	**24.39**	**285**	*e*P	**P**	**09 47 33.8**	**-1.3**
HHC

BILL	**Bilibino**	**32.12**	**16**	*eP*		**P**	**09 48 44.6**	**-0.2**	
	comp=Z,6.9nm,0.8s,mb4.5								
KALP	**Kalibo**	**32.65**	**220**	AMb		AMB	09 51 28.6		
	comp=Z,25nm,0.9s,mb5.1								
KALP				*eP*			09 51 30.2		
GYA	**Guiyang**	**32.92**	**259**	⇑P		**P**	**09 48 50.8**	**-1.3**	
GYA				AMB		AMB			
	comp=Z,10.0nm,0.9s,mb4.8								
CD2	**Chengdu**	**33.13**	**269**	⇓P		**P**	**09 48 53.0**	**-1.0**	
CD2				AMB		AMB			
	comp=Z,9.0nm,0.9s,mb4.7								
GTA	**Gaotai**	**33.51**	**285**	*eP*		**P**	**09 48 57.5**	**+0.3**	
GTA				AP		pP	09 49 06.3	+0.4	
GTA				XP		sP	09 49 10.3	+0.6	
GTA				AMB		AMB			
	comp=Z,18nm,1.0s,mb5.0								
TIXI	**Tiksi**	**33.92**	**352**	*eP*		**P**	**09 48 59.5**	**-0.9**	
TIXI				pmax		pmax			
	comp=Z,14nm,0.7s,mb5.0								
TIXI				MLR		MLR			
	comp=Z,2µm,17.0s,MS4.8								
KMI	**Kunming**	**36.63**	**261**	*eP*		**P**	**09 49 22.9**	**-1.0**	
KMI				XP		sP	09 49 34.0	-2.5	
KMI				AMB		AMB			
	comp=Z,12nm,1.2s,mb4.6								
ZAL	**Zalesovo**	**41.96**	**311**	P		**P**	**09 50 07.2**	**-0.5**	
	comp=Z,3.8nm,0.5s,mb4.3,baz=282,slow=9.1,SNR=8.2								
ZAL				LR		LR	10 06 40.3		
	comp=Z,51nm,19.9s,MS3.4,baz=200,slow=35								
NVS	**Novosibirsk**	**42.82**	**313**	*eP*		**P**	**09 50 17.7**	**+2.8**	
CMAR	**Chiang Mai Arr**	**43.29**	**255**	P		**P**	**09 50 18.8**	**-0.4**	
	comp=Z,0.8nm,0.4s,mb3.8,baz=45,slow=6.7,SNR=6.6								
CMAR				LR		LR	10 09 45.0		
	comp=Z,46nm,18.2s,MS3.4,baz=65,slow=38								
MKAR	**Makanchi Array**	**44.53**	**301**	P		**P**	**09 50 28.9**	**0.0**	
	comp=Z,4.2nm,0.6s,mb4.5,baz=85,slow=9.3,SNR=21								
MKAR				pP		pP	09 50 37.9	+0.2	
	comp=Z,5.0nm,0.6s,baz=87,slow=9.9,SNR=12								
MKAR				LR		LR	10 09 52.3		
	comp=Z,153nm,19.2s,MS3.9,baz=53,slow=37								
MKAR	**Makanchi Array**	**44.53**	**301**	*i* P		**P**	**09 50 28.7**	**-0.1**	
MKAR				pmax		pmax			
	comp=Z,3.0nm,0.6s								
IMA	**Indian Mountai**	**44.60**	**31**	P		**P**	**09 50 29.5**	**+0.3**	
	comp=Z,29nm,1.4s,mb4.9								
KURK	**Kurchatov**	**46.12**	**307**	*eP*		**P**	**09 50 41.1**	**-0.3**	
COLA	**College**	**46.98**	**33**	*eP*		**P**	**09 50 57.7**	**+10**	
COLA	**College**	**46.98**	**33**	*eP*		**P**	**09 50 50.9**	**+2.9**	
	comp=Z,3.0nm,0.8s,mb4.3								
COLA				LR		LR			
	comp=Z,70nm,19.0s,MS3.6								
ILAR	**Eielson Array**	**47.40**	**33**	P		**P**	**09 50 51.7**	**+0.4**	
	comp=Z,1.2nm,0.8s,mb3.9,baz=264,slow=6.4,SNR=13								
ILAR				pP		pP	09 51 01.1	+0.9	
	comp=Z,2.6nm,0.6s,baz=261,slow=6.2,SNR=16								
GUN	**Gumba**	**48.44**	**275**	*eP*		**P**	**09 51 00.2**	**+0.3**	
	comp=Z,60nm,0.8s,mb5.7								
KKN	**Kakani**	**48.97**	**275**	*eP*		**P**	**09 51 04.0**	**0.0**	
	comp=Z,45nm,0.7s,mb5.6								
PKI	**Pulchoki**	**48.97**	**275**	*eP*		**P**	**09 51 03.7**	**-0.3**	
	comp=Z,19nm,0.8s,mb5.2								
DMN	**Daman**	**49.19**	**275**	*eP*		**P**	**09 51 05.6**	**-0.1**	
GKN	**Gorkha**	**49.37**	**276**	*eP*		**P**	**09 51 06.8**	**-0.3**	
	comp=Z,99nm,1.2s,mb5.7								
DANN	**Dangsing**	**49.89**	**277**	*eP*		**P**	**09 51 11.5**	**+0.4**	
TKM2	**Tokmak 2**	**50.16**	**298**	P		**P**	**09 51 13.7**	**+0.7**	
	SNR=16								
KOLN	**Koldanda**	**50.29**	**276**	*eP*		**P**	**09 51 13.9**	**-0.2**	
	comp=Z,56nm,1.2s,mb5.5								
BVA0	**Borovoye Array**	**50.60**	**312**	*i* P		**P**	**09 51 15.8**	**-0.3**	
BVAR	**Borovoye Array**	**50.60**	**312**	P		**P**	**09 51 15.9**	**-0.2**	
	comp=Z,2.4nm,0.5s,mb4.4,baz=79,slow=7.6,SNR=19								
BVAR				pP		pP	09 51 24.9	-0.3	
	comp=Z,5.8nm,0.8s,baz=74,slow=8.5,SNR=13								
BVAR				PcP		PcP	09 52 34.0	+0.3	
	comp=Z,2.7nm,0.7s,baz=63,slow=3.3,SNR=5.1								
BRVK	**Borovoye**	**50.65**	**312**	*eP*		**P**	**09 51 16.3**	**-0.2**	
KBK	**Karagaybulak**	**50.70**	**298**	P		**P**	**09 51 17.6**	**+0.6**	
	SNR=14								
USP	**Ospenovka**	**50.81**	**299**	P		**P**	**09 51 17.9**	**+0.1**	
	SNR=7.4								
EKS2	**Erkin-Say**	**51.51**	**298**	P		**P**	**09 51 23.6**	**+0.4**	
	SNR=5.5								
AML	**Almayashu**	**51.76**	**297**	P		**P**	**09 51 25.9**	**+0.9**	
	SNR=9.4								
KAKA	**Kakadu**	**52.03**	**193**	*eP*		**P**	**09 51 27.0**	**-0.5**	
	comp=Z,19nm,0.7s,mb5.1								
INK	**Inuvik**	**52.33**	**28**	P		**P**	**09 51 29.7**	**+0.7**	
	comp=Z,0.9nm,0.7s,mb3.8,baz=316,slow=4.6,SNR=6.7								
INK				pP		pP	09 51 38.7	+0.6	
	comp=Z,1.1nm,0.5s,baz=317,slow=8.5,SNR=5.0								
INK	**Inuvik**	**52.33**	**28**	*eP*		**P**	**09 51 29.5**	**+0.4**	
	comp=Z,1.4nm,0.6s,mb4.1								
INK				pP		pP	09 51 38.7	+0.6	
KALG	**Kalgarh**	**53.22**	**281**	AMb		AMB	09 51 31.3		
	comp=Z,16nm,0.1s								
KALG				*eP*			09 51 34.2		
KKAR	**Karatay Array**	**53.59**	**300**	*i* P		**P**	**09 51 38.1**	**-0.6**	
KKAR				pmax		pmax			
	comp=Z,1.0nm,0.5s,mb4.0								
SVE	**Sverdlovsk**	**54.93**	**318**	⇓P		**P**	**09 51 48.8**	**+0.4**	
SVE				MLR		MLR			
	comp=N,300nm,15.0s,MS4.8								
SVE				MLR		MLR			
	comp=E,500nm,15.0s,MS4.8								
SVE				MLR		MLR			
	comp=Z,1µm,15.0s,MS5.0								
AGRA	**Agra**	**54.94**	**279**	*eP*		**P**	**09 51 48.1**	**-0.8**	
AGRA				*e*			09 54 43.5		
AYAN	**Aya Nagar**	**54.96**	**281**	*eP*		**P**	**09 51 48.0**	**-1.0**	
AYAN				AMb		AMB	09 51 49.9		
	comp=Z,7.6nm,0.6s,mb4.9								
BHGR	**Bahadurgarh**	**55.01**	**281**	*eP*		**P**	**09 51 43.8**	**-5.5**	
BHGR				AMb		AMB	09 51 45.1		
	comp=Z,99nm,0.2s								
SONA	**Sohna**	**55.11**	**280**	*eP*		**P**	**09 51 49.3**	**-0.8**	
SONA				AMb		AMB	09 51 50.7		
	comp=Z,7.8nm,0.2s,mb5.3								
SONA				*e*			09 57 09.7		
KUDL	**Kundal**	**55.62**	**281**	*e*		**P**	**09 51 37.8**	**-16**	
KUDL				AMb		AMB	09 51 45.9		
	comp=Z,3.8nm,0.4s,mb4.8								
KHET	**Khetri**	**56.17**	**281**	*eP*		**P**	**09 51 57.4**	**-0.3**	
KHET				AMb		AMB	09 51 58.9		
	comp=Z,7.6nm,0.9s,mb4.8								
DLBC	**Dease Lake**	**56.50**	**39**	P		**P**	**09 52 06.5**	**+6.8**	
	comp=Z,1.4nm,0.9s,mb4.0,baz=294,slow=8.8,SNR=3.1								
DLBC	**Dease Lake**	**56.50**	**39**	P		**P**	**09 52 06.5**	**+6.8**	
AB31	**Akbulak array**	**58.04**	**310**	P		**P**	**09 52 09.7**	**-0.9**	
AB31				pmax		pmax			
	comp=Z,1.0nm,0.4s,mb4.2								
CTA	**Charters Tower**	**58.45**	**177**	P		**P**	**09 52 15.3**	**+1.4**	
	comp=Z,4.5nm,0.9s,mb4.5,baz=348,slow=22,SNR=2.8								
FITZ	**Fitzroy Crossi**	**58.77**	**200**	P		**P**	**09 52 15.7**	**-0.5**	
	comp=Z,1.6nm,0.7s,mb4.2,baz=7.8,slow=8.1,SNR=3.2								
FITZ				pP		pP	09 52 23.5	-1.8	
	comp=Z,2.3nm,0.6s,baz=15,slow=9.6,SNR=2.6								
WRAB	**Tennant Creek**	**58.82**	**190**	*eP*		**P**	**09 52 14.9**	**-1.6**	
	comp=Z,28nm,0.8s,mb5.3								
WB2	**Warramunga Arr**	**58.83**	**190**	*eP*		**P**	**09 52 15.0**	**-1.5**	
WRA	**Warramunga Arr**	**58.83**	**190**	P		**P**	**09 52 14.9**	**-1.7**	
	comp=Z,4.1nm,0.7s,mb4.6,baz=7.6,slow=7.0,SNR=33								
WRA				pP		pP	09 52 24.4	-1.3	
	comp=Z,10nm,0.8s,baz=6.8,slow=6.9,SNR=19								
SPITS	**Spitsbergen Ar**	**59.26**	**349**	LR		LR	10 19 07.2		
	comp=Z,7.0nm,21.0s,baz=3.5,slow=37								
JASL	**Jaisalmer**	**60.52**	**282**	*eP*		**P**	**09 52 27.8**	**-0.3**	
JASL				*e*			09 54 20.6		
YKA	**Yellowknife Ar**	**61.73**	**31**	P		**P**	**09 52 35.4**	**-0.3**	
	comp=Z,0.2nm,0.6s,baz=301,slow=6.6,SNR=5.6								
YKA	**Yellowknife Ar**	**61.73**	**31**	P		**P**	**09 52 35.4**	**-0.3**	
AS12	**Alice Springs**	**62.56**	**190**	*eP*		**P**	**09 52 42.4**	**+0.5**	
	comp=Z,5.3nm,1.0s,mb4.6								
ASAR	**Alice Springs**	**62.56**	**190**	P		**P**	**09 52 40.5**	**-1.4**	
	comp=Z,0.7nm,0.6s,mb4.0,baz=14,slow=6.6,SNR=19								
ASAR				pP		pP	09 52 49.6	-1.5	
	comp=Z,3.8nm,0.9s,baz=8.5,slow=6.8,SNR=15								
ARCES	**ARCESS Array B**	**63.03**	**340**	P		**P**	**09 52 44.2**	**-0.2**	
	comp=Z,2.8nm,0.6s,mb4.5,baz=54,slow=7.8,SNR=11								
ARCES				pP		pP	09 52 53.2	-0.3	
	comp=Z,1.7nm,0.8s,baz=31,slow=7.1,SNR=1.6								
ARCES	**ARCESS Array B**	**63.03**	**340**	P		**P**	**09 52 44.2**	**-0.2**	
ARCES				pP		pP	09 52 53.2	-0.3	
JOF	**Joensuu**	**65.25**	**332**	*ep*		**P**	**09 52 57.7**	**-1.1**	
KAF	**Kangasniemi**	**67.57**	**333**	*ep*		**P**	**09 53 12.9**	**-0.7**	
	baz=48,slow=6.1								

OBN	**Obninsk**	**67.70**	**323**	⇑*eP*		**P**	**09 53 14.3**	**-0.2**	
OBN				*i*		pP	09 53 24.1	+0.4	
OBN				*e**PP		pP	09 53 29.9	+6.2	
OBN				*e*			09 53 41.0		
OBN				*eS*		S	10 02 04.1	-4.3	
OBN				*eSS*		SS	10 06 22.6	-8.5	
OBN				pmax		pmax			
	comp=Z,37nm,1.7s,mb5.1								
OBN				MLR		MLR			
	comp=Z,200nm,15.0s,MS4.5								
NEW	**Newport**	**68.00**	**45**	P		**P**	**09 53 17.4**	**+0.8**	
	comp=Z,1.1nm,0.7s,mb4.0,baz=315,slow=7.1,SNR=2.9								
NEW				pP		pP	09 53 26.8	+1.0	
	comp=Z,3.0nm,0.8s,baz=312,slow=4.6,SNR=4.7								
FINES	**FINESS Array B**	**68.09**	**333**	P		**P**	**09 53 16.6**	**-0.3**	
	comp=Z,4.5nm,0.8s,mb4.6,baz=45,slow=8.1,SNR=17								
FINES				pP		pP	09 53 25.4	-0.7	
	comp=Z,2.4nm,0.7s,baz=45,slow=8.1,SNR=5.9								
FINES				PcP		PcP	09 53 42.5	-0.3	
	comp=Z,2.5nm,0.8s,baz=45,slow=5.9,SNR=3.8								
FINES				LR		LR	10 25 32.6		
	comp=Z,127nm,18.7s,MS4.2,baz=178,slow=38								
SUMG	**Summit**	**69.11**	**1**	*eP*		**P**	**09 53 23.6**	**+0.5**	
STKA	**Stephens Creek**	**70.14**	**181**	P		**P**	**09 53 30.0**	**+0.1**	
	comp=Z,21nm,1.5s,mb4.8,baz=6.8,slow=11,SNR=3.0								
STKA	**Stephens Creek**	**70.14**	**181**	P		**P**	**09 53 30.0**	**+0.1**	
ZEI	**Tsey**	**70.92**	**310**	⇓*eP*		**P**	**09 53 33.7**	**-0.9**	
KIV	**Kislovodsk**	**70.96**	**311**	*i* P		**P**	**09 53 34.9**	**+0.1**	
KIV				*i* *PP		pP	09 53 51.3	+7.3	
KIV				*e*			09 53 57.0		
KIV				*eS*		S	10 02 44.7	-2.5	
KIV				*eSS*		SS	10 07 15.5	-6.8	
KIV				pmax		pmax			
	comp=Z,23nm,1.1s,mb5.0								
KIV				MLR		MLR			
	comp=Z,100nm,16.0s,MS4.2								
KIV	**Kislovodsk**	**70.96**	**311**	*eP*		**P**	**09 53 34.6**	**-0.2**	
	comp=Z,29nm,1.1s,mb5.1								
NVAR	**Mina Array Bea**	**72.90**	**54**	P		**P**	**09 53 48.1**	**+1.8**	
	comp=Z,0.7nm,0.8s,mb3.6,baz=280,slow=3.7,SNR=3.8								
NVAR				pP		pP	09 53 57.5	+1.9	
	comp=Z,1.1nm,0.7s,baz=278,slow=7.8,SNR=6.5								
SOC	**Sochi**	**72.92**	**312**	*eP*		**P**	**09 53 46.0**	**-0.3**	
SOC				*e**PP		pP	09 54 03.3	+7.7	
SOC				*eS*		S	10 03 05.7	-3.8	
SOC				*e*			10 03 37.6		
SOC				*eSSS*		SSS	10 11 03.1	+0.7	
SOC				pmax		pmax			
	comp=Z,36nm,1.6s,mb5.0								
SOC				pmax		pmax			
	comp=N,16nm,0.7s								
SOC				pmax		pmax			
	comp=E,44nm,1.0s								
SOC				MLR		MLR			
	comp=Z,332nm,25.0s,MS4.5								
SOC				MLR		MLR			
	comp=N,169nm,31.0s								
SOC				MLR		MLR			
	comp=E,271nm,25.0s								
NB2	**NORSAR Subarra**	**73.29**	**338**	P		**P**	**09 53 48.4**	**+0.3**	
	comp=E,7.5nm,0.9s,mb4.6,baz=39,slow=5.8								
NOA	**NORSAR Array B**	**73.29**	**338**	P		**P**	**09 53 48.5**	**+0.3**	
	comp=E,5.3nm,0.9s,mb4.5,baz=38,slow=5.9,SNR=17								
NOA				pP		pP	09 53 57.7	+0.3	
	comp=E,2.1nm,0.7s,baz=38,slow=5.9,SNR=5.9								
NOA	**NORSAR Array B**	**73.29**	**338**	P		**P**	**09 53 48.5**	**+0.3**	
NOA				pP		pP	09 53 57.7	+0.3	
AKASG	**Malin Array Be**	**73.93**	**323**	P		**P**	**09 53 52.2**	**+0.2**	
	comp=E,2.4nm,0.5s,mb4.4,baz=42,slow=5.4,SNR=25								
AKASG				pP		pP	09 54 01.6	+0.2	
	comp=E,2.5nm,0.6s,baz=42,slow=5.6,SNR=5.7								
PDAR	**Pinedale Array**	**75.54**	**47**	P		**P**	**09 54 02.1**	**+0.6**	
	comp=E,0.5nm,0.5s,mb3.7,baz=270,slow=3.6,SNR=5.0								
PDAR				pP		pP	09 54 12.1	+1.2	
	comp=E,2.0nm,1.0s,baz=308,slow=3.2,SNR=6.2								
OJC	**Ojcow**	**78.53**	**327**	*eP*		**P**	**09 54 19.0**	**+1.0**	
PV10	**Paradox Valley**	**78.66**	**50**	*eP*		**P**	**09 54 21.0**	**+2.0**	
BRTR	**Keskin Array B**	**78.88**	**312**	P		**P**	**09 54 21.2**	**+1.1**	
	comp=E,1.0nm,0.7s,mb3.9,baz=77,slow=3.4,SNR=9.7								
BRTR				pP		pP	09 54 30.4	+0.9	
	comp=E,0.7nm,0.5s,baz=100,slow=2.8,SNR=3.5								
NIE	**Niedzica**	**78.90**	**326**	*eP*		**P**	**09 54 22.3**	**+2.3**	
KSP	**Ksiaz**	**79.52**	**329**	*eP*		**P**	**09 54 24.7**	**+1.4**	
BRG	**Berggiesshubel**	**80.42**	**330**	*eP*		**P**	**09 54 29.5**	**+1.3**	
BRG				pmax		pmax			
	comp=Z,6.0nm,1.2s,mb4.4								
BRG	**Berggiesshubel**	**80.42**	**330**	*eP*		**P**	**09 54 29.5**	**+1.3**	
	comp=Z,6.0nm,1.2s,mb4.4								
CLL	**Collm**	**80.44**	**331**	P		**P**	**09 54 29.0**	**+0.7**	
	comp=Z,logA/T=1.1,mb4.8								
CLL				*i* *SP		sP	09 54 43.0	+2.2	
CLL	**Collm**	**80.44**	**331**	*i* P		**P**	**09 54 29.0**	**+0.7**	
CLL				*i*			09 54 43.0		
CLL				pmax		pmax			
	comp=Z,13nm,1.0s,mb4.8								
CLL	**Collm**	**80.44**	**331**	*i* P		**P**	**09 54 29.0**	**+0.7**	
	comp=Z,13nm,1.0s,mb4.8								
CLL				*i*			09 54 43.0		
GERES	**GERESS Array B**	**82.12**	**329**	P		**P**	**09 54 37.9**	**+0.8**	
	comp=Z,0.7nm,0.6s,mb3.8,baz=18,slow=3.1,SNR=5.1								
GERES				pP		pP	09 54 47.5	+1.0	
	comp=Z,0.8nm,0.7s,baz=68,slow=7.2,SNR=2.1								
ANMO	**Albuquerque**	**82.47**	**51**	*eP*		**P**	**09 54 42.9**	**+3.7**	
TXAR	**Lajitas Array**	**88.03**	**53**	P		**P**	**09 55 08.3**	**+1.3**	
	comp=Z,0.5nm,0.8s,mb3.8,baz=311,slow=4.3,SNR=7.9								
TXAR				pP		pP	09 55 17.5	+1.0	
	comp=Z,0.8nm,0.7s,baz=308,slow=3.5,SNR=10.0								
TXAR	**Lajitas Array**	**88.03**	**53**	P		**P**	**09 55 08.3**	**+1.3**	
TXAR				pP		pP	09 55 17.5	+1.0	

PRU ***08*** *09:54:58.7,51.56N×16.10E*
WAR ***08*** *09:54:59.4,51.56N×16.10E,ML2.6,Mining Induced*
ISC 08 09:54:57.5±1.6,51.53N±0.07×16.04E±0.07,n9,σ0°96/13,
Poland

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h m s		ISC
KSP	**Ksiaz**	**0.71**	**167**	*e*PG	**Pg**	**09 55 13.0**	**+1.4**	
KSP				*e*SG	**Sg**	**09 55 22.0**	**+1.0**	
UPC	**Upice**	**1.02**	**181**	*e*PG	**Pg**	**09 55 18.6**	**+0.7**	
DPC	**Dobruska-Polom**	**1.20**	**171**	*e*PG	**Pg**	**09 55 21.2**	**-0.1**	
DPC				*e*SG	**Sg**	**09 55 37.2**	**-0.1**	
PVCC	**Panska Ves**	**1.37**	**223**	*e*PG	**Pg**	**09 55 25.5**	**+0.8**	
BRG	**Berggiesshubel**	**1.47**	**244**	*e*Pg	**Pg**	**09 55 27.1**	**+0.2**	
BRG				*e*Sg	**Sg**	**09 55 47.7**	**+1.2**	
PRU	**Pruhonice**	**1.81**	**212**	*e*SG	**Sg**	**09 55 57.2**	**-0.6**	
	3.9nm,0.4s							
CLL	**Collm**	**1.91**	**264**	*e*PG	**Pg**	**09 55 34.0**	**-1.6**	
CLL				*e*SG	**Sg**	**09 56 01.0**	**-0.1**	
OKC	**Ostrava-Krasne**	**2.16**	**141**	*e*SG	**Sg**	**09 56 08.0**	**-1.5**	
KHC	**Kasperske Hory**	**2.87**	**214**	*e*SG	**Sg**	**09 56 31.9**	**-1.2**	

JMA ***08*** *10:03:52.1±0.2,39.18N×144.45E,h44km,M3.8*
ISC 08 10:03:50.5±1.2,39.15N±0.08×144.58E±0.08,h44km,n12,
σ0°77/21,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h m s		ISC
MIYJ	**Miyako 2**	**2.18**	**282**	P	**P**	**10 04 25.8**	**+0.7**	
MIYJ				*e*S	**S**	**10 04 50.3**	**-0.7**	
JTH	**Tanohata**	**2.24**	**292**	P	**P**	**10 04 26.3**	**+0.3**	
JTH				*e*S	**S**	**10 04 52.7**	**+0.1**	
OFUJ	**Ofunato**	**2.26**	**269**	P	**P**	**10 04 26.8**	**+0.5**	
OFUJ				*e*S	**S**	**10 04 52.5**	**-0.6**	
JOM	**Ohasama**	**2.57**	**278**	P	**P**	**10 04 31.5**	**+0.8**	
JOM				*e*S	**S**	**10 05 00.6**	**-0.3**	
JMK	**Ichinoseki**	**2.62**	**267**	P	**P**	**10 04 32.1**	**+0.7**	
JMK				*e*S	**S**	**10 05 01.9**	**-0.3**	
JCH	**Churui**	**3.59**	**346**	P	**P**	**10 04 45.1**	**0.0**	
JKB	**Kayabe**	**3.85**	**317**	P	**P**	**10 04 49.8**	**+1.0**	
NEM2	**Nemuro 2**	**4.31**	**11**	P	**P**	**10 04 54.1**	**-1.2**	
NEM2				*e*S	**S**	**10 05 38.8**	**-6.1**	
JTKR	**Abashiri--Toko**	**4.85**	**354**	P	**P**	**10 05 01.8**	**-1.1**	
JTKR				*e*S	**S**	**10 05 53.8**	**-4.7**	
JOSM	**Okushiri--Mats**	**4.87**	**309**	P	**P**	**10 05 04.5**	**+1.3**	
JRY	**Ryogami san**	**5.48**	**237**	P	**P**	**10 05 10.8**	**-1.0**	
JRY				*e*S	**S**	**10 06 09.6**	**-4.8**	
MAT	**Matsushiro**	**5.67**	**245**	P	**P**	**10 05 15.2**	**+0.8**	
MAT				S	**S**	**10 06 18.4**	**-0.8**	

GUC ***08*** *10:11:58.4±0.8,34.58S×71.88W,h26km±4km,MD4.4,*
ML4.3
NEIC ***08*** *10:11:58.4,34.58S×71.87W,h27km,mb4.6/2,*
ML4.3(GUC),After GUC.
NEIC Felt [III] at Curico and Vichuquen; [II] at Talca.
IDC ***08*** *10:11:58.6±0.8,34.80S×72.02W,h37km±5km,mb3.7/5,*
mb1 3.9/9,mb1mx3.9/15,ML4.2/4,MS3.5/1,Ms1 3.4/1,
ms1mx2.9/21,Error ellipse: s-maj=36.9km s-min=21.2km
az=70.0
ISC 08 10:11:58.0±0.4,34.60S±0.03×71.99W±0.05,h36km,
h36km±1.4km:pP-P,n47,σ0°87/62,mb4.1/7,MS3.4/1,7C-5D,
Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h m s		ISC
SFDO	**San Fernando**	**0.80**	**91**	⇑*i*P	**P**	**10 12 12.3**	**-0.6**	
LNV	**Longovilo**	**0.81**	**37**	⇓*i*P	**P**	**10 12 12.2**	**-0.7**	
TALC	**Talca**	**0.84**	**160**	⇑*i*P	**P**	**10 12 13.9**	**+0.5**	
TALC				*i* S	**S**	**10 12 25.1**	**+0.3**	
TALC				AMP		10 12 29.9		
	comp=N,34µm,0.3s							
LCCH	**Las Cruces**	**1.18**	**17**	*e*P	**P**	**10 12 17.8**	**-0.4**	
CACH	**El Canelo**	**1.25**	**67**	⇓*i*P	**P**	**10 12 19.2**	**0.0**	
CACH				*i* S	**S**	**10 12 34.6**	**-0.5**	
TACH	**Talagante**	**1.29**	**43**	⇑*i*P	**P**	**10 12 19.5**	**-0.3**	
CHCH	**Chadas Angostu**	**1.29**	**59**	⇑*i*P	**P**	**10 12 19.7**	**-0.2**	
CICH	**Cipreses**	**1.33**	**78**	⇑*i*P	**P**	**10 12 19.9**	**-0.6**	
RCDM	**Rinconada Maip**	**1.48**	**42**	*e*P	**P**	**10 12 22.4**	**-0.3**	
RCDM				*i* S	**S**	**10 12 40.6**	**-0.4**	
RCDM				AMP		10 12 42.9		
	comp=E,4µm,0.4s							
ANTU	**Antumapu**	**1.53**	**48**	*e*P	**P**	**10 12 23.1**	**-0.1**	
ANTU				*i* S	**S**	**10 12 42.3**	**+0.1**	
ANTU				AMP		10 12 51.6		
	comp=E,9µm,0.2s							
PUEX	**Pudahuel**	**1.55**	**42**	*e*P	**P**	**10 12 23.5**	**-0.1**	
PUEX				*i* S	**S**	**10 12 43.0**	**+0.3**	
PUEX				AMP		10 12 45.4		
	comp=N,9µm,0.5s							
PCH	**Pirque**	**1.57**	**52**	⇓*i*P	**P**	**10 12 23.8**	**-0.1**	
PCH				*i* S	**S**	**10 12 42.9**	**-0.3**	
SAN	**Santiago**	**1.59**	**44**	⇓*i*P	**P**	**10 12 24.2**	**0.0**	
SAN				*i* S	**S**	**10 12 43.6**	**-0.2**	
SAN				AMP		10 12 45.3		
	comp=N,7µm,0.7s							
IHA	**Instituto Hidr**	**1.60**	**11**	*e*P	**P**	**10 12 24.3**	**0.0**	
IHA				*i* S	**S**	**10 12 44.3**	**+0.3**	
FSR	**Penalolen**	**1.65**	**48**	*e*P	**P**	**10 12 25.0**	**0.0**	
FSR				*i* S	**S**	**10 12 45.4**	**+0.1**	
FSR				AMP		10 12 52.9		
	comp=E,4µm,0.3s							
COCH	**Cobquecura**	**1.66**	**203**	*e*P	**P**	**10 12 26.9**	**+1.7**	
COCH				*i* S	**S**	**10 12 49.4**	**+3.9**	
LMEL	**Las Melosas**	**1.66**	**63**	⇓*i*P	**P**	**10 12 25.0**	**-0.2**	
LMEL				*i* S	**S**	**10 12 45.7**	**+0.2**	
LMEL				AMP		10 12 47.6		
	comp=N,7µm,0.2s							
SJCH	**San Jose de Ma**	**1.66**	**55**	*e*P	**P**	**10 12 25.2**	**0.0**	
SJCH				*i* S	**S**	**10 12 46.0**	**+0.5**	
SJCH				AMP		10 12 48.3		
	comp=N,9µm,0.6s							
CLCH	**Cerro Calan**	**1.71**	**45**	⇑*i*P	**P**	**10 12 25.7**	**-0.1**	
CLCH				*i* S	**S**	**10 12 47.1**	**+0.5**	
CLCH				AMP		10 12 50.6

TXAR	**Lajitas Array**	**35.85**	**311**	P	**P**	**10 45 16.2**	**+0.4**	
	0.1nm,0.5s,mb2.7,baz=132,slow=11,SNR=3.7							
YKA	**Yellowknife Ar**	**62.47**	**340**	P	**P**	**10 48 37.1**	**-0.9**	
	0.2nm,0.4s,mb3.3,baz=132,slow=6.6,SNR=9.5							
YKA				pP	pP	10 49 07.8	-6.8	
	0.1nm,0.6s,baz=130,slow=7.2,SNR=2.3							
ASAR	**Alice Springs**	**149.50**	**235**	PKPbc	PKPdf	10 58 03.1	+7.1	
	0.3nm,0.6s,baz=122,slow=3.6,SNR=3.4							
ASAR				PKPab	PKPab	10 58 06.4	-2.0	
	0.2nm,0.4s,baz=116,slow=3.8,SNR=4.8							
WRA	**Warramunga Arr**	**150.63**	**243**	PKPbc	PKPdf	10 58 05.9	+8.0	
	0.5nm,0.3s,baz=107,slow=2.7,SNR=25							
WRA				PKPab	PKPab	10 58 12.3	-1.0	
	0.2nm,0.4s,baz=106,slow=3.6,SNR=4.2							

NEIC ***08*** *10:50:39.6±1.6,51.46N×16.09E,h5km,MG2.6(WAR), Error ellipse: s-maj=18.4km s-min=9.2km az=198.0*
WAR ***08*** *10:50:39.8,51.52N×16.11E,h1km,Location given by Rudna mine, origin time based upon KSP*
PRU ***08*** *10:50:40.0,51.48N×16.09E*
ISC 08 10:50:37.1±1.0,51.51N±0.05×16.10E±0.05,n12,σ1§19/22, Poland

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
KSP	**Ksiaz**	**0.68**	**169**	*e*Pg		**Pg**	**10 50 52.4**	**+1.7**
KSP				*e*Sg		**Sg**	**10 51 02.1**	**+2.3**
UPC	**Upice**	**1.01**	**183**	*e*PG		**Pg**	**10 50 58.4**	**+1.2**
DPC	**Dobruska-Polom**	**1.17**	**173**	*e*Pg		**Pg**	**10 51 01.1**	**+0.6**
DPC				*e*Sg		**Sg**	**10 51 17.0**	**+0.9**
PVCC	**Panska Ves**	**1.38**	**225**	*e*PG		**Pg**	**10 51 05.2**	**+0.6**
BRG	**Berggiesshubel**	**1.50**	**246**	*e*Pg		**Pg**	**10 51 07.7**	**+0.7**
BRG				*i* Sg		**Sg**	**10 51 27.9**	**+0.9**
PRU	**Pruhonice**	**1.82**	**213**	*e*PG		**Pg**	**10 51 12.7**	**-0.7**
PRU				*i* x		x	10 51 28.4	
PRU				SG		**Sg**	**10 51 36.6**	**-1.0**
	8.5nm,0.4s							
CLL	**Collm**	**1.95**	**265**	*e*PN		**Pn**	**10 51 13.0**	**+1.3**
CLL				*e*PG		**Pg**	**10 51 16.0**	**0.0**
CLL				*i* SG		**Sg**	**10 51 42.4**	**+0.5**
OKC	**Ostrava-Krasne**	**2.13**	**141**	*e*SG		**Sg**	**10 51 46.6**	**-1.2**
OJC	**Ojcow**	**2.68**	**117**	*e*Pg		**Pg**	**10 51 29.8**	**-0.7**
OJC				*e*Sg		**Sg**	**10 52 05.5**	**-0.8**
OJC	**Ojcow**	**2.68**	**117**	*e*PG		**Pg**	**10 51 30.0**	**-0.5**
OJC				*e*SG		**Sg**	**10 52 05.0**	**-1.3**
KHC	**Kasperske Hory**	**2.88**	**215**	*e*PG		**Pg**	**10 51 31.9**	**-2.7**
KHC				*e*SG		**Sg**	**10 52 11.1**	**-1.8**
MOX	**Moxa**	**2.96**	**255**	*e*Pg		**Pg**	**10 51 35.0**	**-1.1**
MOX				*e*Sg		**Sg**	**10 52 14.4**	**-1.1**

IDC ***08*** *10:50:58.7±1.3,36.35N×137.24E,mb3.3/3,mb1 3.5/4, mb1mx3.2/24,ML3.2/1,Error ellipse: s-maj=40.0km s-min=23.8km az=65.0*
JMA ***08*** *10:51:09.9±0.3,32.19N×138.14E,h404km,M3.5*
ISC 08 10:51:10.3±0.5,31.99N±0.05×137.83E±0.08,h350km,n18, σ1§21/23,mb3.6/6,Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
JHJ	**Hachijo jima 2**	**2.00**	**55**	Pn		**P**	**10 52 00.3**	**-1.6**
	4.4nm,0.3s,baz=135,slow=19,SNR=2.7							
JHJ				Sn		**S**	**10 52 47.4**	**+5.0**
	16nm,0.3s,baz=79,slow=18,SNR=7.3							
JHJ2	**Mitsune**	**2.02**	**56**	P		**P**	**10 52 05.3**	**+3.2**
JOD2	**Odawara 2**	**3.43**	**17**	P		**P**	**10 52 15.6**	**+1.5**
JOD2				*e*S		**S**	**10 53 07.5**	**+3.3**
BSO1	**Boso 1**	**3.74**	**44**	*e*S		**S**	**10 53 07.5**	**-2.1**
JHU	**Hanno**	**4.04**	**17**	P		**P**	**10 52 20.5**	**+0.4**
JHU				*e*S		**S**	**10 53 14.1**	**-0.9**
JRY	**Ryogami san**	**4.12**	**12**	P		**P**	**10 52 22.3**	**+1.3**
JRY				*e*S		**S**	**10 53 17.6**	**+1.2**
MAT	**Matsushiro**	**4.55**	**4**	P		**P**	**10 52 26.2**	**+0.6**
MAT				S		**S**	**10 53 24.4**	**-0.3**
MAT	**Matsushiro**	**4.55**	**4**	P		**P**	**10 52 26.4**	**+0.8**
JAG	**Ashikaga**	**4.63**	**16**	P		**P**	**10 52 25.6**	**-0.8**
CBIJ	**Chichi jima**	**6.18**	**141**	P		**P**	**10 52 44.8**	**+1.0**
CBIJ				*e*S		**S**	**10 53 57.2**	**0.0**
MKAR	**Makanchi Array**	**44.49**	**306**	P		**P**	**10 58 48.7**	**-0.8**
	0.6nm,0.5s,mb3.0,baz=94,slow=9.1,SNR=8.6							
GUN	**Gumba**	**44.85**	**279**	*e*P		**P**	**10 58 53.5**	**+0.9**
	11nm,0.7s,mb4.1							
PKI	**Pulchoki**	**45.35**	**279**	*e*P		**P**	**10 58 55.4**	**-1.1**
	4.7nm,0.5s,mb3.8							
KKN	**Kakani**	**45.39**	**279**	*e*P		**P**	**10 58 56.8**	**0.0**
	2.6nm,0.2s,mb4.0							
DMN	**Daman**	**45.59**	**279**	*e*P		**P**	**10 58 58.0**	**-0.4**
	2.7nm,0.3s,mb3.9							
GKN	**Gorkha**	**45.86**	**279**	*e*P		**P**	**10 59 00.6**	**+0.1**
WRA	**Warramunga Arr**	**51.74**	**184**	P		Px	11 00 39.0	
	0.1nm,0.8s,baz=13,slow=8.1,SNR=2.8							
ILAR	**Eielson Array**	**55.33**	**30**	P		**P**	**11 00 08.2**	**-2.1**
	0.3nm,0.8s,mb2.7,baz=280,slow=6.4,SNR=5.4							

IDC 08 11:10:09.9±3.0,4.07N×76.01W,h183km±32km,mb2.7/3, mb1 3.1/3,mb1mx2.9/20,Error ellipse: s-maj=55.8km s-min=32.0km az=74.0,Colombia

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
ROSC	**El Rosal**	**1.85**	**65**	P		P	11 10 44.3	-1.5
	27nm,0.3s,baz=310,slow=0.5,SNR=16							
ROSC				S		S	11 11 14.4	+0.8
	16nm,0.3s,baz=222,slow=23,SNR=26							
TXAR	**Lajitas Array**	**36.30**	**317**	P		P	11 16 56.8	-0.9
	0.2nm,0.8s,baz=127,slow=9.0,SNR=2.4							
YKA	**Yellowknife Ar**	**64.88**	**341**	P		P	11 20 28.5	-2.9
	0.3nm,0.8s,baz=135,slow=6.1,SNR=9.7							
INK	**Inuvik**	**74.65**	**341**	P		P	11 21 29.1	-1.4
	0.2nm,0.6s,baz=103,slow=14,SNR=3.0							
ASAR	**Alice Springs**	**145.18**	**233**	PKPbc		PKPbc	11 29 25.9	-1.0
	0.3nm,0.6s,baz=116,slow=3.9,SNR=9.0							
WRA	**Warramunga Arr**	**146.49**	**239**	PKPbc		PKPbc	11 29 29.8	-0.3
	0.2nm,0.8s,baz=102,slow=4.0,SNR=5.1							

NIED ***08*** *11:14:00,39.20N×144.40E,h5km,Mw3.7 Best double couple: M₀3.38×10¹⁴ NP1:φ=211°,δ67°,λ-89°. NP2:φ=29°, δ23°,λ-92°.*
JMA ***08*** *11:14:29.4±0.2,39.19N×144.43E,h55km,M3.7*
ISC 08 11:14:26.8±1.3,39.23N±0.06×144.63E±0.10,h55km,n13, σ1§03/18,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
MIYJ	**Miyako 2**	**2.21**	**280**	P		**P**	**11 15 02.6**	**+0.8**
MIYJ				S		**S**	**11 15 27.1**	**-0.8**
JTH	**Tanohata**	**2.25**	**289**	P		**P**	**11 15 03.2**	**+0.7**
OFUJ	**Ofunato**	**2.31**	**267**	P		**P**	**11 15 03.8**	**+0.5**
JOM	**Ohasama**	**2.60**	**276**	P		**P**	**11 15 08.4**	**+0.9**
JOM				S		**S**	**11 15 37.5**	**-0.5**
JANG	**Nango**	**2.66**	**296**	P		**P**	**11 15 08.5**	**+0.2**
JMK	**Ichinoseki**	**2.67**	**265**	P		**P**	**11 15 09.0**	**+0.5**
JOT	**Ohata**	**3.48**	**309**	*e*S		**S**	**11 16 00.8**	**+0.6**
JKB	**Kayabe**	**3.82**	**315**	P		**P**	**11 15 26.4**	**+1.8**
NEM2	**Nemuro 2**	**4.21**	**11**	P		**P**	**11 15 29.5**	**-0.7**
NEM2				*e*S		**S**	**11 16 14.6**	**-4.1**
JTKR	**Abashiri--Toko**	**4.77**	**354**	P		**P**	**11 15 38.6**	**+0.6**
JTKR				*e*S		**S**	**11 16 30.5**	**-2.1**
JRY	**Ryogami san**	**5.57**	**237**	P		**P**	**11 15 47.6**	**-1.4**
MAT	**Matsushiro**	**5.75**	**244**	P		**P**	**11 15 52.0**	**+0.4**
MAT				S		**S**	**11 16 55.4**	**-1.6**
MAT	**Matsushiro**	**5.75**	**244**	P		**P**	**11 15 52.1**	**+0.5**

NEIC ***08*** *11:30:16.0±0.5,6.53S×132.90E,h10km,mb4.4/1,Error ellipse: s-maj=16.0km s-min=7.9km az=66.0*
IDC ***08*** *11:30:15.2±0.9,6.48S×132.98E,mb3.8/6,mb1 4.1/11, mb1mx4.0/15,ML3.7/5,MS3.3/1,Ms1 3.3/1,ms1mx2.8/11, Error ellipse: s-maj=38.1km s-min=17.5km az=66.0*
ISC 08 11:30:16.6±2.3,6.62S±0.06×132.89E±0.10,h33km±24km, n28,σ1§29/33,mb3.8/7,1C,Tanimbar Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
KAKA	**Kakadu**	**6.06**	**185**	⇑*i*P		**P**	**11 31 50.6**	**+4.5**
	14nm,0.3s							
KAKA				*e*S		**S**	**11 33 00.6**	**+5.4**
WRAB	**Tennant Creek**	**13.31**	**174**	*e*P		**P**	**11 33 26.0**	**+0.3**
	11nm,0.6s							
WRA	**Warramunga Arr**	**13.31**	**174**	Pn		**P**	**11 33 25.4**	**-0.4**
	0.3nm,0.3s,baz=358,slow=13,SNR=65							
WRA				Sn		**S**	**11 35 52.2**	**-1.4**
	1.0nm,0.3s,baz=1.8,slow=23,SNR=6.3							
WB2	**Warramunga Arr**	**13.31**	**174**	*e*P		**P**	**11 33 25.7**	**-0.1**
WB2				*e*S		**S**	**11 35 50.8**	**-2.9**
FITZ	**Fitzroy Crossi**	**13.42**	**211**	*e*P		**P**	**11 33 28.3**	**+1.1**
	3.2nm,0.4s							
FITZ				*e*S		**S**	**11 35 50.1**	**-6.1**
FITZ	**Fitzroy Crossi**	**13.42**	**211**	Pn		**P**	**11 33 28.1**	**+0.9**
	0.8nm,0.3s,baz=28,slow=11,SNR=26							
FITZ				Sn		**S**	**11 35 54.7**	**-1.5**
	1.4nm,0.3s,baz=178,slow=12,SNR=7.1							
PMG	**Port Moresby**	**14.40**	**102**	Pn		**P**	**11 33 39.3**	**-0.9**
	0.7nm,0.3s,baz=258,slow=18,SNR=3.0							
PMG				Sn		**S**	**11 36 09.3**	**-10**
	1.1nm,0.3s,baz=3.6,slow=22,SNR=4.0							
AS12	**Alice Springs**	**16.97**	**177**	*e*P		**P**	**11 34 15.6**	**+2.5**
	44nm,1.8s							
ASAR	**Alice Springs**	**16.97**	**177**	P		**P**	**11 34 14.1**	**+1.0**
	0.4nm,0.3s,baz=17,slow=13,SNR=34							
ASAR				S		**S**	**11 37 20.8**	**+1.3**
	0.4nm,0.3s,slow=27,SNR=4.7							
CTA	**Charters Tower**	**18.64**	**137**	*e*P		**P**	**11 34 34.4**	**+0.4**
	4.0nm,0.7s							
CTA	**Charters Tower**	**18.64**	**137**	P		**P**	**11 34 34.7**	**+0.7**
	0.3nm,0.3s,baz=324,slow=9.1,SNR=5.8							
CTA				LR		LR	11 42 38.5	
	comp=Z,88nm,19.5s,baz=259,slow=40							
CTA	**Charters Tower**	**18.64**	**137**	P		**P**	**11 34 34.7**	**+0.7**
CTA				LR		LR	11 42 38.5	
STKA	**Stephens Creek**	**26.41**	**163**	*e*P		**P**	**11 35 54.8**	**+2.6**
	2.6nm,0.9s,mb3.8							
STKA	**Stephens Creek**	**26.41**	**163**	P		**P**	**11 35 54.2**	**+2.0**
	1.8nm,0.5s,mb3.9,baz=337,slow=9.1,SNR=6.0							
CMAR	**Chiang Mai Arr**	**41.74**	**307**	P		**P**	**11 38 06.0**	**+1.4**
	0.6nm,0.7s,mb3.3,baz=139,slow=6.6,SNR=4.3							
GUN	**Gumba**	**56.90**	**309**	*e*P		**P**	**11 39 59.0**	**-2.0**
PKI	**Pulchoki**	**57.09**	**309**	*e*P		**P**	**11 40 01.6**	**-0.8**
KKN	**Kakani**	**57.30**	**309**	*e*P		**P**	**11 40 02.6**	**-1.3**
DMN	**Daman**	**57.35**	**309**	*e*P		**P**	**11 40 03.8**	**-0.4**
GKN	**Gorkha**	**57.90**	**309**	*e*P		**P**	**11 40 08.4**	**+0.3**
KOLN	**Koldanda**	**58.60**	**308**	*e*P		**P**	**11 40 14.4**	**+1.5**
	4.2nm,0.6s,mb4.6							
SONM	**Songino Array**	**59.05**	**339**	P		**P**	**11 40 15.6**	**-0.2**
	0.2nm,0.3s,mb3.6,baz=153,slow=3.2,SNR=2.8							
MKAR	**Makanchi Array**	**69.51**	**325**	P		**P**	**11 41 24.3**	**+0.3**
	0.7nm,0.5s,mb3.8,baz=108,slow=7.7,SNR=6.5							
MKAR	**Makanchi Array**	**69.51**	**325**	P		**P**	**11 41 24.3**	**+0.3**
MAW	**Mawson**	**76.35**	**202**	P		**P**	**11 42 08.2**	**+4.4**
	1.1nm,0.5s,mb4.1,baz=58,slow=9.5,SNR=3.5							
BVAR	**Borovoye Array**	**79.29**	**327**	P		**P**	**11 42 23.3**	**+2.9**
	0.2nm,0.4s,mb3.4,baz=135,slow=4.1,SNR=2.9							
CPUP	**Villa Florida**	**145.78**	**164**	PKPbc		PKPbc	11 49 57.0	+3.6
	1.2nm,0.7s,baz=201,slow=3.1,SNR=3.7							
LPAZ	**La Paz**	**149.16**	**138**	PKPbc		PKPdf	11 50 07.9	+10
	1.1nm,0.8s,baz=208,slow=3.1,SNR=3.9							

LDG ***08*** *12:05:20.7±0.1,47.59N×0.75E,h2km,Md2.5/1,Ml2.6/19, Error ellipse: s-maj=1.6km s-min=1.0km az=35.0*
NEIC ***08*** *12:05:20.7,47.59N×0.75E,h2km,ML2.6(LDG), ML2.5(STR),After LDG.*
STR ***08*** *12:05:24.4±1.8,47.42N×0.98E,h2km±1km,Ml2.5,Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
ISC 08 12:05:18.0±0.4,47.54N±0.02×0.73E±0.03,h5km±3km,n21, σ1§16/56,France

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
MFF	**Saint Martin d**	**1.11**	**213**	*e*Pg		**Pg**	**12 05 43.0**	**+2.8**
	SNR=1.0							
MFF				*e*Sn		**Sn**	**12 05 55.4**	**-0.6**
	SNR=1.0							
MFF				*e*Sg		**Sg**	**12 05 57.4**	**+2.3**
	13nm,0.2s,SNR=1.0							
LDF	**La Druitiere**	**1.20**	**332**	*e*Pg		**Pg**	**12 05 43.4**	**+1.5**
	SNR=1.0							
LDF				*e*Sg		**Sg**	**12 05 56.9**	**-1.0**
	8.1nm,0.2s,SNR=1.0							
HYF	**Humbligny**	**1.33**	**101**	*e*Pg		**Pg**	**12 05 46.4**	**+1.9**
HYF				*e*Sg		**Sg**	**12 06 02.3**	**+0.2**
GRR	**Gorron**	**1.36**	**309**	*e*Pn		**Pn**	**12 05 45.0**	**+1.3**
GRR				*e*Pg		**Pg**	**12 05 46.5**	**+1.3**
	SNR=1.0							
GRR				*e*Sg		**Sg**	**12 06 02.9**	**-0.5**
	8.9nm,0.2s,SNR=1.0							
FLN	**La Foliniere**	**1.47**	**327**	*e*Pn		**Pn**	**12 05 46.1**	**+0.9**
	SNR=1.0							
FLN				*e*Pg		**Pg**	**12 05 47.4**	**+0.1**
FLN				*e*Sg		**Sg**	**12 06 05.5**	**-1.3**
	14nm,0.2s,SNR=1.0							
TCF	**Toulx Ste Croi**	**1.61**	**140**	*e*Pg		**Pg**	**12 05 51.1**	**+0.9**
	SNR=1.0							
TCF				*e*Sn		**Sn**	**12 06 09.4**	**+0.7**
TCF				*e*Sg		**Sg**	**12 06 12.5**	**+0.8**
	4.6nm,0.2s,SNR=1.0							
BGF	**Bois d'Agland**	**1.75**	**123**	*e*Pn		**Pn**	**12 05 50.6**	**+1.4**
BGF				*e*Pg		**Pg**	**12 05 53.2**	**+0.3**
	SNR=1.0							
BGF				*e*Sn		**Sn**	**12 06 12.1**	**-0.1**
BGF				*e*Sg		**Sg**	**12 06 16.6**	**+0.3**
	11nm,0.3s,SNR=1.0							
AVF	**Avril sur Loir**	**1.94**	**112**	*e*Pn		**Pn**	**12 05 53.7**	**+1.7**
	SNR=1.0							
AVF				*e*Pg		**Pg**	**12 05 56.5**	**-0.2**
AVF				*e*Sn		**Sn**	**12 06 16.6**	**-0.4**
AVF				*e*Sg		**Sg**	**12 06 21.8**	**-0.8**
	3.1nm,0.2s,SNR=1.0							
SSF	**Saint Saulge**	**1.95**	**103**	*e*Pn		**Pn**	**12 05 53.7**	**+1.6**
	SNR=1.0							
SSF				*e*Pg		**Pg**	**12 05 56.8**	**-0.1**
	SNR=1.0							
SSF				*e*Sn		**Sn**	**12 06 16.7**	**-0.5**
SSF				*e*Sg		**Sg**	**12 06 22.0**	**-0.9**
	5.5nm,0.2s,SNR=1.0							
LOR	**Lormes**	**2.14**	**96**	*e*Pn		**Pn**	**12 05 56.4**	**+1.5**
	SNR=1.0							
LOR				*e*Pg		**Pg**	**12 06 00.6**	**-0.2**
	SNR=1.0							
LOR				*e*Sg		**Sg**	**12 06 27.4**	**-1.9**
	6.3nm,0.2s,SNR=1.0							
AGO	**Saint Agoulin**	**2.22**	**131**	Pg		**Pg**	**12 06 01.9**	**-0.5**
AGO				Sg		**Sg**	**12 06 30.8**	**-1.2**
RJF	**Les Rejaudoux**	**2.30**	**166**	*e*Pn		**Pn**	**12 05 58.6**	**+1.4**
RJF				*e*Pg		**Pg**	**12 06 04.5**	**+0.5**
	SNR=1.0							
RJF				*e*Sn		**Sn**	**12 06 26.1**	**-0.1**
RJF				*e*Sg		**Sg**	**12 06 33.6**	**-1.1**
	7.7nm,0.2s,SNR=1.0							
SMF	**Signal de Mont**	**2.31**	**112**	*e*Pn		**Pn**	**12 05 58.1**	**+0.9**
SMF				*e*Pg		**Pg**	**12 06 03.6**	**-0.4**
SMF				*e*Sn		**Sn**	**12 06 25.0**	**-1.3**
SMF				*e*Sg		**Sg**	**12 06 33.6**	**-1.2**
	4.0nm,0.2s,SNR=1.0							
PYM	**Petit Puy Mans**	**2.38**	**138**	Pg		**Pg**	**12 06 06.2**	**+0.7**
LFF	**La Frestale**	**2.60**	**180**	*e*Pg		**Pg**	**12 06 09.7**	**-0.2**
LFF				*e*Sn		**Sn**	**12 06 33.5**	**-0.3**
	SNR=1.0							
LFF				*e*Sg		**Sg**	**12 06 44.4**	**-0.2**
	7.2nm,0.3s,SNR=1.0							
QUIF	**Quistinic**	**2.66**	**280**	*e*Pn		**Pn**	**12 06 02.4**	**+0.2**
QUIF				*e*Sn		**Sn**	**12 06 33.2**	**-2.0**
QUIF				*e*Sg		**Sg**	**12 06 44.1**	**-2.3**
	3.7nm,0.2s,SNR=1.0							
CAF	**Calviac**	**2.77**	**160**	*e*Pn		**Pn**	**12 06 04.8**	**+0.9**
CAF				*e*Pg		**Pg**	**12 06 12.7**	**-0.7**
CAF				*e*Sn		**Sn**	**12 06 35.6**	**-2.6**
	SNR=1.0							
CAF				*e*Sg		**Sg**	**12 06 49.2**	**-1.2**
	4.1nm,0.3s,SNR=1.0							
ROSF	**Rostrenen**	**2.81**	**288**	*e*Sg		**Sg**	**12 06 48.6**	**-2.8**
	1.1nm,0.2s							
MEZF	**Maizieres J'vi**	**3.06**	**70**	*e*Sg		**Sg**	**12 06 55.5**	**-4.2**
	4.8nm,0.4s,SNR=1.0							
HINF	**Hinteralfeld**	**4.15**	**84**	*e*Sn		**Sn**	**12 07 07.8**	**-5.1**
	2.0nm,0.3s,SNR=1.0							
EPF	**Esparros**	**4.52**	**184**	*e*Sn		**Sn**	**12 07 18.9**	**-3.5**
	2.6nm,0.6s,SNR=1.0							

TAP ***08*** *12:09:44.2,21.97N×121.55E,h14km,ML3.4*
TAP Felt IV J at Lanyu.
JMA ***08*** *12:09:46.9±0.3,21.83N×121.80E,h28km,M4.2*
ISC 08 12:09:42.9±0.8,21.87N±0.06×121.60E±0.03,h11km±6km, n43,σ1§04/62,1C,Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
LAY	**Lan-yu**	**0.17**	**345**	⇑*i*P		**Pg**	**12 09 47.3**	**+0.4**
TWK1	**Hengchun**	**0.74**	**276**	*i* P		**Pb**	**12 09 57.4**	**0.0**
TWK1				S		**Sb**	**12 10 07.3**	**+0.1**
HEN	**Hengchun**	**0.81**	**280**	*i* P		**Pb**	**12 09 58.6**	**0.0**
HEN				S		**Sb**	**12 10 09.0**	**-0.3**
EAST	**Anshuo**	**0.86**	**306**	P		**Pb**	**12 09 58.5**	**-1.0**
ECL	**Taimali**	**0.94**	**321**	P		**Pb**	**12 09 59.0**	**-1.8**
SCZT	**Fangliau**	**1.04**	**299**	*e*P		**Pb**	**12 10 01.6**	**-0.8**
TWG	**Pinlang**	**1.06**	**333**	*e*P		**Pb**	**12 10 01.1**	**-1.8**
TWP	**Hsiaoliuchiu**	**1.24**	**293**	*e*P		**Pb**	**12 10 06.7**	**+0.8**
CHKT	**Chengkung**	**1.24**	**350**	*e*P		**Pb**	**12 10 02.3**	**-3.7**
SSD	**Sandimen**	**1.25**	**314**	*e*P		**Pb**	**12 10 06.0**	**0.0**
SGLT	**Jiouru**	**1.33**	**310**	*e*P		**Pb**	**12 10 08.7**	**+1.2**
ELDTW	**Lidau**	**1.42**	**338**	*e*P		**Pn**	**12 10 07.3**	**-1.5**
TWM1	**Shoushan**	**1.45**	**311**	*e*P		**Pn**	**12 10 10.3**	**+1.1**
TWM1				S		**Sb**	**12 10 29.8**	**+2.1**
TWF1	**Yuli**	**1.50**	**349**	*e*P		**Pn**	**12 10 07.8**	**-2.2**
STYT	**Tauyuan**	**1.50**	**329**	*e*P		**Pn**	**12 10 09.2**	**-0.8**
SGST	**Jiashian**	**1.53**	**322**	*e*P		**Pn**	**12 10 10.4**	**0.0**
CHN1	**Nanshi**	**1.64**	**323**	*e*P		**Pn**	**12 10 12.6**	**+0.6**
CHN1				S		**Sn**	**12 10 33.5**	**+0.3**
WTP	**Ta-pu**	**1.65**	**327**	P		**Pn**	**12 10 11.9**	**-0.1**
WTP				S		**Sn**	**12 10 32.7**	**-0.6**
EHY	**Hungye**	**1.65**	**351**	*e*P		**Pn**	**12 10 10.0**	**-2.1**
YUS	**Yu-Shan**	**1.72**	**340**	*e*P		**Pn**	**12 10 12.4**	**-0.6**
TWK	**Hsinying**	**1.73**	**324**	*e*P		**Pn**	**12 10 13.2**	**0.0**
CHN4	**Tsaushan**	**1.74**	**328**	*e*P		**Pn**	**12 10 13.8**	**+0.3**
CHN4				S		**Sn**	**12 10 35.5**	**-0.3**
ALS	**Alishan**	**1.79**	**336**	*e*P		**Pn**	**12 10 14.3**	**+0.2**
ALS				S		**Sn**	**12 10 38.2**	**+1.2**
CHN5	**Tsauling**	**1.92**	**334**	*e*P		**Pn**	**12 10 15.7**	**-0.2**
CHN5				S		**Sn**	**12 10 40.9**	**+0.6**
ESL	**Shilin**	**1.94**	**355**	*e*P		**Pn**	**12 10 14.5**	**-1.8**
SMLT	**Sun Moon Lake**	**2.10**	**342**	*e*P		**Pn**	**12 10 18.8**	**+0.1**
SMLT				S		**Sn**	**12 10 45.6**	**+0.6**
TYC	**Yuchr**	**2.14**	**341**	*e*P		**Pn**	**12 10 19.4**	**+0.3**
TYC				S		**Sn**	**12 10 46.5**	**+0.7**
WNT	**Mingjian**	**2.17**	**337**	*e*P		**Pn**	**12 10 20.5**	**+1.0**
WNT				S		**Sn**	**12 10 46.6**	**-0.1**
WDGT	**Dungji**	**2.26**	**308**	*e*P		**Pn**	**12 10 19.6**	**-1.3**
WHF	**Hehuan Shan**	**2.29**	**352**	*e*P		**Pn**	**12 10 21.0**	**-0.2**
TWT	**Tachien**	**2.40**	**351**	*e*P		**Pn**	**12 10 23.1**	**+0.2**
NNS	**Nan Shan**	**2.57**	**355**	*e*P		**Pn**	**12 10 25.6**	**+0.4**
NNS				S		**Sn**	**12 10 57.2**	**+0.4**
TWQ1	**Liyutan**	**2.58**	**343**	*e*P		**Pn**	**12 10 25.9**	**+0.5**
TWQ1				S		**Sn**	**12 10 57.2**	**+0.1**
ENTT	**Nioudou**	**2.76**	**359**	*e*P		**Pn**	**12 10 26.6**	**-1.3**
NSK	**Sanguang**	**2.80**	**356**	*e*P		**Pn**	**12 10 27.8**	**-0.8**
NSTT	**Nanjuang**	**2.80**	**349**	*e*P		**Pn**	**12 10 29.9**	**+1.2**
TWE	**Neicheng**	**2.84**	**1**	*e*P		**Pn**	**12 10 28.2**	**-0.9**
YOJ	**Yonaguni jima**	**2.89**	**26**	P		**Pn**	**12 10 32.0**	**+2.2**
YOJ				*e*S		**Sn**	**12 11 05.7**	**+0.8**
HATJ	**Hateruma jima**	**2.98**	**43**	P		**Pn**	**12 10 32.5**	**+1.4**
HATJ				*e*S		**Sn**	**12 11 06.9**	**-0.3**
IRIF	**Iriomote-Funau**	**3.14**	**38**	P		**Pn**	**12 10 35.2**	**+1.8**
IRIF				*e*S		**Sn**	**12 11 11.3**	**0.0**
JKRS	**Kuro-shima**	**3.24**	**43**	P		**Pn**	**12 10 36.5**	**+1.7**
JKRS				*e*S		**Sn**	**12 11 13.1**	**-0.6**
JIJ	**Ishigaki jima**	**3.41**	**43**	P		**Pn**	**12 10 38.4**	**+1.2**
JIJ				*e*S		**Sn**

STV2				S		**Sg**	**12 38 56.4**	**-0.4**
RRL	**Cesana Torines**	**0.41**	**312**	P		**Pg**	**12 38 51.8**	**+0.6**
RRL				S		**Sg**	**12 38 57.6**	**+0.7**
STV	**Sta Anna Valdi**	**0.41**	**169**	P		**Pg**	**12 38 51.5**	**+0.3**
STV				S		**Sg**	**12 38 56.7**	**-0.1**
ENR	**Entracque**	**0.45**	**161**	P		**Pg**	**12 38 52.0**	**+0.2**
ENR				S		**Sg**	**12 38 57.3**	**-0.6**
RSP	**Reno Superiore**	**0.51**	**3**	P		**Pb**	**12 38 53.3**	**+0.4**
RSP				S		**Sb**	**12 39 00.2**	**+0.3**
ROB	**Roburent**	**0.59**	**127**	P		**Pb**	**12 38 54.8**	**+0.5**
ROB				S		**Sb**	**12 39 02.7**	**+0.5**
TOUF	**Mont Tournerai**	**0.63**	**178**	Pg		**Pg**	**12 38 55.5**	**0.0**
TOUF				Sg		**Sg**	**12 39 03.7**	**-0.4**
AUTN	**L'Aution**	**0.67**	**167**	Pg		**Pg**	**12 38 55.8**	**-0.4**
AUTN				Sg		**Sg**	**12 39 05.1**	**-0.1**
MONE	**Monesi**	**0.69**	**145**	P		**Pb**	**12 38 56.1**	**+0.1**
SAOF	**Saorge**	**0.70**	**160**	Pg		**Pg**	**12 38 56.8**	**-0.1**
SAOF				Sg		**Sg**	**12 39 06.3**	**-0.1**
MVIF	**Mont Vial**	**0.75**	**183**	Pg		**Pg**	**12 38 57.7**	**-0.1**
MVIF				Sg		**Sg**	**12 39 08.2**	**+0.2**
AURF	**Auriere**	**0.76**	**174**	Pg		**Pg**	**12 38 57.7**	**-0.4**
AURF				Sg		**Sg**	**12 39 08.7**	**+0.3**
SBF	**Sospel**	**0.80**	**168**	*e*Pg		**Pg**	**12 38 58.1**	**-0.7**
SBF				*e*Sg		**Sg**	**12 39 08.8**	**-0.7**
	446nm,0.3s,SNR=1.0							
LSD	**Ceresole Reale**	**0.81**	**357**	P		**Pb**	**12 38 58.7**	**+0.6**
LSD				S		**Sb**	**12 39 09.6**	**+0.8**
RORO		**0.81**	**131**	P		**Pb**	**12 38 58.4**	**+0.2**
RORO				S		**Sb**	**12 39 09.6**	**+0.8**
FIN	**Finale Ligure**	**0.84**	**121**	*e*PG		**Pg**	**12 38 59.1**	**-0.4**
FIN				SG		**Sg**	**12 39 10.5**	**-0.2**
	68nm,0.2s							
FIN	**Finale Ligure**	**0.84**	**121**	P		**Pb**	**12 38 59.1**	**+0.6**
OG25	**Le Caire**	**0.86**	**252**	Pg		**Pg**	**12 39 00.6**	**+0.6**
NEGI	**Negi**	**0.87**	**156**	P		**Pb**	**12 38 59.4**	**+0.2**
NEGI				S		**Sb**	**12 39 11.4**	**+0.9**
IMI	**Imperia**	**0.88**	**146**	*e*PG		**Pg**	**12 38 59.7**	**-0.7**
IMI				SG		**Sg**	**12 39 12.2**	**-0.1**
	131nm,0.3s							
IMI	**Imperia**	**0.88**	**146**	P		**Pb**	**12 38 59.8**	**+0.5**
IMI				S		**Sb**	**12 39 12.1**	**+1.3**
LPG	**La Plagne**	**0.91**	**339**	*e*Pg		**Pg**	**12 39 01.0**	**0.0**
LPG				*e*Sg		**Sg**	**12 39 13.6**	**+0.4**
	113nm,0.3s							
REVF	**Revere**	**0.91**	**173**	Pg		**Pg**	**12 39 01.2**	**+0.2**
REVF				Sg		**Sg**	**12 39 13.7**	**+0.4**
CALN	**Calern**	**0.93**	**195**	Pg		**Pg**	**12 39 01.2**	**0.0**
CALN				Sg		**Sg**	**12 39 14.2**	**+0.5**
LPL	**La Plagne**	**0.93**	**339**	*e*Pg		**Pg**	**12 39 01.4**	**0.0**
LPL				*e*Sg		**Sg**	**12 39 14.5**	**+0.5**
	127nm,0.2s							
PCP	**Pian Castagno**	**0.96**	**96**	P		**Pb**	**12 39 01.2**	**+0.6**
PCP				S		**Sb**	**12 39 12.9**	**0.0**
ORIF	**Oris-en-Rattie**	**0.99**	**286**	*e*Pg		**Pg**	**12 39 02.4**	**-0.1**
	SNR=1.0							
ORIF				*e*Sg		**Sg**	**12 39 15.3**	**-0.5**
	46nm,0.2s							
ORO	**Oropa**	**1.12**	**29**	*e*PN		**Pn**	**12 39 02.8**	**-1.2**
	35nm,0.2s							
ORO	**Oropa**	**1.12**	**29**	*e*Pg		**Pg**	**12 39 02.8**	**-2.4**
FRF	**La Foret Royal**	**1.16**	**201**	*e*Pg		**Pg**	**12 39 04.9**	**-1.0**
	SNR=1.0							
FRF				*e*Sg		**Sg**	**12 39 20.3**	**-1.2**
	140nm,0.2s,SNR=1.0							
TAVF	**Tavernes**	**1.32**	**219**	Pg		**Pg**	**12 39 09.6**	**+0.4**
TAVF				Sg		**Sg**	**12 39 28.2**	**+1.3**
VILF	**Villemus**	**1.34**	**234**	Pg		**Pg**	**12 39 10.2**	**+0.7**
SMRF	**Simiane la Rot**	**1.35**	**241**	*e*Pg		**Pg**	**12 39 09.9**	**+0.1**
	SNR=1.0							
SMRF				*e*Sg		**Sg**	**12 39 28.5**	**+0.6**
	45nm,0.3s							
LMR	**La Mourre**	**1.41**	**201**	*e*Pn		**Pn**	**12 39 07.9**	**-0.2**
	SNR=1.0							
LMR				*e*Pg		**Pg**	**12 39 08.4**	**-2.4**
	SNR=1.0							
LMR				*e*Sg		**Sg**	**12 39 28.0**	**-1.7**
	163nm,0.2s,SNR=1.0							
MCGN	**Macugnaga**	**1.42**	**22**	*e*PN		**Pn**	**12 39 07.3**	**-1.0**
	14nm,0.5s							
MCGN	**Macugnaga**	**1.42**	**22**	*e*Pg		**Pg**	**12 39 07.3**	**-3.7**
PUYF	**Puyloubier**	**1.56**	**225**	Pg		**Pg**	**12 39 13.2**	**-0.7**
PUYF				Sg		**Sg**	**12 39 34.5**	**-0.2**
TREF	**Trevaresse**	**1.67**	**233**	Pg		**Pg**	**12 39 16.5**	**+0.5**
TREF				Sg		**Sg**	**12 39 40.5**	**+2.2**
OG01	**Vacheresse**	**1.72**	**348**	Pg		**Pg**	**12 39 16.5**	**-0.6**
GELF	**Grande-Etoile**	**1.81**	**226**	Pg		**Pg**	**12 39 17.3**	**-1.4**
GELF				Sg		**Sg**	**12 39 41.8**	**-1.0**
VIVF	**Saint-Julien-l**	**1.82**	**277**	*e*Pn		**Pn**	**12 39 15.4**	**+1.3**
	SNR=1.0							
VIVF				*e*Pg		**Pg**	**12 39 18.6**	**-0.5**
VIVF				*e*Sg		**Sg**	**12 39 43.3**	**-0.1**
	11nm,0.3s							
OG05	**Jujurieux**	**1.86**	**319**	Pg		**Pg**	**12 39 18.2**	**-1.7**
OG05				Sg		**Sg**	**12 39 43.2**	**-1.6**
CABF	**La Chapelle**	**2.12**	**338**	*e*Pn		**Pn**	**12 39 20.5**	**+2.2**
	SNR=1.0							
CABF				*e*Sg		**Sg**	**12 39 52.0**	**-1.2**
	30nm,0.5s,SNR=1.0							
PGF	**Pioggiola**	**2.47**	**148**	*e*Pn		**Pn**	**12 39 22.5**	**-0.8**
	SNR=1.0							
PGF				*e*Sn		**Sn**	**12 39 51.6**	**-1.9**
	7.7nm,0.2s,SNR=1.0							
LASF	**Ste Croix**	**2.48**	**258**	*e*Pn		**Pn**	**12 39 24.5**	**+1.1**
	SNR=1.0							
LASF				*e*Pg		**Pg**	**12 39 34.5**	**+2.4**
	SNR=1.0							
LASF				*e*Sn		**Sn**	**12 39 54.0**	**+0.3**
	5.0nm,0.4s,SNR=1.0							
SMF	**Signal de Mont**	**3.10**	**311**	*e*Pn		**Pn**	**12 39 34.0**	**+1.7**
	SNR=1.0							
SMF				*e*Sg		**Sg**	**12 40 22.7**	**-3.1**
	8.4nm,0.3s							
HINF	**Hinteralfeld**	**3.18**	**356**	*e*Pn		**Pn**	**12 39 34.5**	**+1.0**
	SNR=1.0							
HINF				*e*Sn		**Sn**	**12 40 09.0**	**-2.6**
	SNR=1.0							
HINF				*e*Sg		**Sg**	**12 40 24.2**	**-4.4**
	6.3nm,0.4s							
HAU	**Haudompre**	**3.41**	**350**	*e*Pn		**Pn**	**12 39 36.6**	**-0.2**
	SNR=1.0							
HAU				*e*Sg		**Sg**	**12 40 32.3**	**-4.0**
	4.7nm,0.3s,SNR=1.0							
AVF	**Avril sur Loir**	**3.45**	**310**	*e*Pn		**Pn**	**12 39 39.2**	**+1.9**
	SNR=1.0							
LOR	**Lormes**	**3.51**	**319**	*e*Pn		**Pn**	**12 39 39.7**	**+1.5**
	SNR=1.0							
LOR				*e*Sn		**Sn**	**12 40 18.3**	**-1.8**
	4.3nm,0.3s,SNR=1.0							
SSF	**Saint Saulge**	**3.54**	**314**	*e*Pn		**Pn**	**12 39 40.2**	**+1.6**
	SNR=1.0							
SSF				*e*Sn		**Sn**	**12 40 18.8**	**-2.0**
	5.2nm,0.5s,SNR=1.0							
BGF	**Bois d'Agland**	**3.61**	**303**	*e*Pn		**Pn**	**12 39 40.1**	**+0.5**
	SNR=1.0							
CAF	**Calviac**	**3.68**	**276**	*e*Pn		**Pn**	**12 39 41.1**	**+0.6**
	SNR=1.0							
CDF	**Champ du Feu**	**3.77**	**1**	*e*Pn		**Pn**	**12 39 41.6**	**-0.2**
	SNR=1.0							
CDF				*e*Sn		**Sn**	**12 40 23.3**	**-3.2**
	2.3nm,0.4s,SNR=1.0							
MTLF	**Montolieu**	**3.83**	**252**	*e*Pn		**Pn**	**12 39 41.1**	**-1.6**
	SNR=1.0							
MTLF				*e*Sn		**Sn**	**12 40 26.5**	**-1.7**
	1.7nm,0.3s							
TCF	**Toulx Ste Croi**	**3.88**	**297**	*e*P		**Pn**	**12 39 46.6**	**+3.1**
	SNR=1.0							
TCF				*e*Pg		**Pg**	**12 39 57.0**	**-3.2**
	SNR=1.0							

*IDC **08** 12:53:43.2±2.1,23.88S×67.12W,h177km±29km, mb1 3.2/4,mb1mx3.1/15,Error ellipse: s-maj=38.6km s-min=22.8km az=118.0*
*NEIC **08** 12:53:44.0±1.3,23.81S×67.12W,h184km±20km,mb4.1/1, Error ellipse: s-maj=29.5km s-min=16.4km az=117.0*
ISC 08 12:53:42.3±1.7,23.9S±0.1×67.1W±0.4,h187km±44km,n7, σ0§59/9,Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h m s		ISC
LVC	**Limon Verde**	**2.09**	**308**	P	**P**	**12 54 21.8**		**+0.5**
	3.2nm,0.3s,baz=130,slow=7.4,SNR=86							
LVC				S	**S**	**12 54 50.8**		**-0.5**
	12nm,0.3s,baz=265,slow=22,SNR=74							
LPAZ	**La Paz**		**7.66**	**353**	P	**P**	**12 55 32.6**	**+0.6**
	0.5nm,0.3s,baz=164,slow=11,SNR=12							
LPAZ					S	**S**	**12 56 57.5**	**-0.1**
	0.1nm,0.3s,baz=233,slow=14,SNR=3.4							
LPAZ	**La Paz**		**7.66**	**353**	*e*P	**P**	**12 55 32.2**	**+0.3**
LPAZ					S	**S**	**12 56 57.5**	**-0.1**
PLCA	**Paso Flores**		**17.00**	**189**	P	**P**	**12 57 29.2**	**-1.2**
	0.1nm,0.3s,baz=164,slow=23,SNR=2.7							
PLCA	**Paso Flores**		**17.00**	**189**	P	**P**	**12 57 31.5**	**+1.1**
	19nm,2.2s							
BDFB	**Brasilia**		**19.77**	**69**	P	**P**	**12 57 59.6**	**-0.3**
	0.5nm,0.3s,baz=234,slow=9.3,SNR=5.4							
WRA	**Warramunga Arr**		**131.63**	**207**	PKP	PKPdf	13 12 35.7	+2.1
	0.5nm,1.1s,baz=153,slow=1.8,SNR=6.2							

*IDC **08** 12:54:33.2±3.2,23.69S×179.93E,h504km±32km, mb3.3/4, mb1 3.5/5,mb1mx3.2/14,Error ellipse: s-maj=41.6km s-min=27.4km az=178.0*
ISC 08 12:54:31.3±5.3,23.6S±0.2×179.9E±0.2,h490km±64km,n5, σ0§92/6,mb3.7/4,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h m s		ISC
URZ	**Urewera**	**14.85**	**189**	P	**P**	**12 57 40.3**		**-0.2**
	0.8nm,0.3s,baz=51,slow=5.5,SNR=5.4							
URZ				S	**S**	**13 00 13.5**		**+0.2**
	0.5nm,0.3s,baz=317,slow=22,SNR=4.0							
CTA	**Charters Tower**	**31.38**	**270**	P	**P**	**13 00 13.5**		**+1.0**
	4.4nm,0.3s,mb4.3,baz=98,slow=9.9,SNR=21							
ASAR	**Alice Springs**	**41.99**	**260**	P	**P**	**13 01 39.9**		**-0.2**
	0.9nm,0.6s,mb3.4,baz=102,slow=7.0,SNR=15							
ASAR				ScP		13 06 25.6		
	0.4nm,0.7s,baz=105,slow=4.8,SNR=5.6							
WRA	**Warramunga Arr**	**42.33**	**266**	P	**P**	**13 01 42.0**		**-0.8**
	1.1nm,0.3s,mb3.7,baz=94,slow=8.5,SNR=52							
TXAR	**Lajitas Array**	**90.33**	**58**	P	**P**	**13 06 40.7**		**+0.1**
	0.5nm,0.7s,mb3.5,baz=223,slow=7.4,SNR=5.0							

*NEIC **08** 12:59:55.7,62.30N×141.48W,h13km,ML3.7(PMR), ML3.5(AEIC),After AEIC.*
*OTT **08** 12:59:56.2,62.28N×141.44W,h10km,ML4.0/2(PGC), Mw4.1/6(PGC),Wrangell Mountains, Alaska.*
*IDC **08** 12:59:57.7±1.0,62.47N×141.65W,mb3.5/6,mb1 3.7/8, mb1mx3.5/21,ML3.4/2,Error ellipse: s-maj=27.2km s-min=10.0km az=37.0*
ISC 08 12:59:54.3±0.3,62.34N±0.02×141.43W±0.05,h13km,n71, σ1§19/86,mb3.4/6,Central Alaska

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h m s		ISC
BCA3	**Beaver Creek A**	**0.75**	**348**	P	**Pb**	**13 00 10.4**		**+1.8**
BCA3				S	**Sb**	**13 00 23.5**		**+5.0**
WANC	**Wrangell North**	**1.28**	**256**	P	**Pb**	**13 00 17.2**		**-0.6**
BALM	**Baldy**	**1.38**	**199**	P	**Pn**	**13 00 17.6**		**-1.7**
CTGM	**Chitina Glacie**	**1.38**	**178**	P	**Pn**	**13 00 17.7**		**-1.6**
WACK	**Wrangell Chich**	**1.41**	**257**	P	**Pn**	**13 00 19.8**		**+0.1**
WACK				S	**Sb**	**13 00 37.8**		**+0.2**
GLB	**Gilahina Butte**	**1.44**	**232**	P	**Pn**	**13 00 18.6**		**-1.6**
GLB				S	**Sb**	**13 00 36.2**		**-2.0**
TGL	**Tana Glacier**	**1.72**	**203**	P	**Pn**	**13 00 23.6**		**-0.6**
DOT	**Dot Lake**	**1.78**	**319**	P	**Pn**	**13 00 26.2**		**+1.1**
DOT				S	**Sn**	**13 00 51.1**		**+3.4**
TZL	**Tazlina**	**1.90**	**263**	P	**Pn**	**13 00 27.4**		**+0.7**
DAWY	**Dawson**	**1.97**	**27**	Pn	**Pn**	**13 00 29.6**		**+1.9**
DAWY				Pg	**Pg**	**13 00 33.1**		**-0.5**
DAWY				Sg	**Sg**	**13 00 59.5**		**-0.4**
DAWY				Trac		13 01 01.7		
	comp=Z,804nm,0.3s							
DAWY	**Dawson**	**1.97**	**27**	P	**Pn**	**13 00 29.7**		**+1.9**
PAX	**Paxson**	**1.97**	**291**	P	**Pn**	**13 00 27.8**		**0.0**
YAH	**Yahtse**	**1.99**	**184**	P	**Pn**	**13 00 28.3**		**+0.2**
BMRM	**Bremner River**	**2.04**	**229**	P	**Pn**	**13 00 28.2**		**-0.7**
BMRM				S	**Sn**	**13 00 52.6**		**-1.8**
TOA	**Tolsona**	**2.23**	**266**	P	**Pn**	**13 00 32.5**		**+0.9**
SNH	**Sunshine Point**	**2.27**	**198**	P	**Pn**	**13 00 33.3**		**+1.2**
KLU	**Kluna**	**2.29**	**250**	P	**Pn**	**13 00 32.2**		**-0.1**
CHX	**Chaix Hills**	**2.29**	**176**	P	**Pn**	**13 00 33.8**		**+1.5**
CYK	**Cape Yakataga**	**2.32**	**193**	P	**Pn**	**13 00 34.2**		**+1.4**
PCA	**Pinnacle**	**2.32**	**165**	P	**Pn**	**13 00 33.9**		**+1.1**
WRG	**White River Gl**	**2.33**	**187**	P	**Pn**	**13 00 33.9**		**+1.0**
VLZ	**Valdez**	**2.63**	**245**	P	**Pn**	**13 00 37.8**		**+0.6**
VLZ				S	**Sn**	**13 01 12.7**		**+3.5**
EYAK	**Cordova Ski Ar**	**2.74**	**231**	P	**Pn**	**13 00 39.6**		**+0.8**
JPK	**Jack Peak**	**2.78**	**245**	P	**Pn**	**13 00 39.8**		**+0.5**
SCM	**Sheep Creek Mo**	**2.82**	**262**	P	**Pn**	**13 00 40.1**		**+0.2**
DHY	**Denali Highway**	**2.84**	**288**	P	**Pn**	**13 00 41.8**		**+1.6**
PNL	**Peninsula**	**2.85**	**159**	P	**Pn**	**13 00 41.0**		**+0.6**
HIN	**Hinchinbrook I**	**3.12**	**234**	P	**Pn**	**13 00 44.3**		**0.0**
HDA	**Harding Lake**	**3.24**	**312**	P	**Pn**	**13 00 45.3**		**-0.6**
SML	**Sawmill**	**3.29**	**264**	P	**Pn**	**13 00 47.7**		**+1.1**
IL1	**Eielson Array**	**3.45**	**317**	P	**Pn**	**13 00 48.0**		**-0.9**
ILAR	**Eielson Array**	**3.45**	**317**	Pn	**Pn**	**13 00 48.0**		**-1.0**
	6.7nm,0.3s,baz=148,slow=13,SNR=385							
ILAR				Pg	**Pg**	**13 00 59.3**		**-3.9**
	12nm,0.3s,baz=133,slow=16,SNR=62							
ILAR				Sn	**Sn**	**13 01 28.6**		**-1.5**
	13nm,0.3s,baz=126,slow=14,SNR=6.0							
ILAR				Lg		13 01 44.0		
	48nm,0.3s,baz=132,slow=28,SNR=23							
KNK	**Knik Glacier**	**3.45**	**258**	P	**Pn**	**13 00 49.6**		**+0.6**
WHY	**Whitehorse**	**3.56**	**115**	Pn	**Pn**	**13 00 51.0**		**+0.6**
WHY				Pg	**Pg**	**13 01 00.8**		**-4.6**
WHY				Sg	**Sg**	**13 01 47.0**		**-6.0**
WHY				Trac		13 01 53.6		
	comp=Z,110nm,0.2s							
WHY	**Whitehorse**	**3.56**	**115**	P	**Pn**	**13 00 51.1**		**+0.6**
GHO	**Glory Hole Cre**	**3.57**	**264**	P	**Pn**	**13 00 51.6**		**+1.0**
CCB	**Clear Creek Bu**	**3.68**	**312**	P	**Pn**	**13 00 50.7**		**-1.4**
MCK	**McKinley**	**3.69**	**296**	P	**Pn**	**13 00 54.0**		**+1.6**
PMR	**Palmer**	**3.71**	**262**	P	**Pn**	**13 00 53.3**		**+0.7**
MID	**Middleton Isla**	**3.78**	**222**	P	**Pn**	**13 00 54.1**		**+0.5**
COLA	**College**	**3.83**	**314**	P	**Pn**	**13 00 53.0**		**-1.4**
PMS	**Palmer South**	**4.01**	**258**	P	**Pn**	**13 00 57.5**		**+0.6**
MDM	**Murphy Dome**	**4.01**	**314**	P	**Pn**	**13 00 55.4**		**-1.5**
PWA	**Palmer West**	**4.04**	**264**	P	**Pn**	**13 00 58.1**		**+0.8**
CUT	**Chulitna**	**4.12**	**275**	P	**Pn**	**13 01 00.3**		**+2.0**
RC01	**Rabbit Creek A**	**4.15**	**256**	P	**Pn**	**13 00 59.6**		**+0.8**
MPA	**Moose Pass**	**4.24**	**248**	P	**Pn**	**13 00 59.7**		**-0.4**
SEW	**Seward**	**4.48**	**244**	P	**Pn**	**13 01 02.3**		**-1.2**
KTH	**Kantishna Hill**	**4.50**	**290**	P	**Pn**	**13 01 05.8**		**+2.0**
BESE	**Bessie Mountai**	**4.98**	**136**	P	**Pn**	**13 01 10.1**		**-0.5**
BRLK	**Bradley Lake**	**5.27**	**245**	P	**Pn**	**13 01 13.5**		**-1.2**
BM3	**Burnt Mountain**	**5.28**	**347**	P	**Pn**	**13 01 15.5**		**+0.7**
CKL	**Chakachamna La**	**5.30**	**262**	P	**Pn**	**13 01 15.0**		**-0.2**
BKG	**Blockade Glaci**	**5.31**	**261**	P	**Pn**	**13 01 14.4**		**-0.9**
CNPM	**China Poot**	**5.55**	**244**	P	**Pn**	**13 01 17.0**		**-1.6**
IM3	**Indian Mountai**	**6.50**	**310**	P	**Pn**	**13 01 30.6**		**-1.5**
TT01	**Tatalina**	**6.75**	**281**	P	**Pn**	**13 01 35.2**		**-0.4**
INK	**Inuvik**	**6.84**	**25**	Pn	**Pn**	**13 01 35.4**		**-1.4**
INK				Sg	**Sg**	**13 03 30.2**		**-12**
INK				Trac		13 03 45.8		
	comp=Z,45nm,1.1s							
SVW	**Sparrevohn**	**6.86**	**266**	*e*P	**Pn**	**13 01 34.8**		**-2.2**
DLBC	**Dease Lake**	**6.87**	**120**	Pn	**Pn**	**13 01 36.8**		**-0.5**
DLBC				Pg	**Pg**	**13 01 57.7**		**-14**
DLBC				Sg	**Sg**	**13 03 28.6**		**-14**
DLBC				Trac		13 03 45.0		
	comp=Z,36nm,0.7s							
DLBC	**Dease Lake**	**6.87**	**120**	P	**Pn**	**13 01 36.5**		**-0.8**
YKW3	**Yellowknife Ar**	**12.38**	**77**	P	**P**	**13 02 50.7**		**-2.2**
YKA	**Yellowknife Ar**	**12.40**	**77**	Pn	**P**	**13 02 53.0**		**-0.1**
	0.1nm,0.3s,baz=274,slow=12,SNR=8.5							
YKA				Lg		13 06 28.5		
	0.1nm,0.3s,baz=273,slow=27,SNR=3.6							
YKA	**Yellowknife Ar**	**12.40**	**77**	Pn	**P**	**13 02 53.0**		**-0.1**
YKA				Lg		13 06 28.5		
YBH	**Yreka Blue Hor**	**23.46**	**143**	P	**P**	**13 05 08.6**		**+4.7**
	1.0nm,0.7s,mb3.3,baz=296,slow=16,SNR=2.0							
NVAR	**Mina Array Bea**	**27.81**	**139**	P	**P**	**13 05 50.3**		**+5.6**
	0.3nm,0.7s,mb3.1,baz=331,slow=9.3,SNR=3.6							
TXAR	**Lajitas Array**	**41.13**	**126**	P	**P**	**13 07 45.7**		**+6.3**
	0.1nm,0.3s,mb2.9,baz=324,slow=7.8,SNR=3.9							
TXAR	**Lajitas Array**	**41.13**	**126**	P	**P**	**13 07 45.7**		**+6.3**
FINES	**FINESS Array B**	**56.18**	**7**	P	**P**	**13 09 39.4**		**+4.0**
	0.4nm,0.7s,mb3.6,baz=330,slow=11,SNR=1.4							
SONM	**Songino Array**	**57.67**	**312**	P	**P**	**13 09 49.7**		**+3.6**
	0.5nm,0.6s,mb3.7,baz=34,slow=5.2,SNR=3.0							
AKASG	**Malin Array Be**	**67.06**	**6**	P	**P**	**13 10 52.0**		**+3.3**
	1.0nm,0.6s,mb4.0,baz=354,slow=5.5,SNR=4.8							

*IDC **08** 13:05:05.2±5.3,5.15S×78.51W,h100km±51km,mb3.6/9, mb1 3.8/12,mb1mx3.7/20,Error ellipse: s-maj=30.3km s-min=17.3km az=74.0*
*NEIC **08** 13:05:06.4±2.5,5.14S×78.45W,h111km±25km,mb4.3/2, Error ellipse: s-maj=17.9km s-min=9.2km az=87.0*
NEIC Felt [II] at Bagua.
ISC 08 13:05:06.4±3.4,5.13S±0.08×78.4W±0.2,h128km±35km, n21,σ0§86/19,mb4.1/10,Northern Peru

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h m s		ISC
LPAZ	**La Paz**		**15.01**	**138**	P	**P**	**13 08 33.4**	**+0.3**
	0.3nm,0.3s,baz=312,slow=13,SNR=7.1							
SDV	**Santo Domingo**		**15.95**	**29**	P	**P**	**13 08 45.3**	**+0.5**
	1.9nm,0.3s,baz=252,slow=2.9,SNR=4.0							
LVC	**Limon Verde**		**19.67**	**153**	P	**P**	**13 09 25.7**	**-2.0**
	0.1nm,0.3s,baz=287,slow=11,SNR=2.8							
PCRV	**Puerto La Cruz**		**20.50**	**42**	P	**P**	**13 09 35.6**	**-0.5**
	13nm,0.9s,baz=196,slow=7.4,SNR=3.6							
SJG	**San Juan**		**26.08**	**27**	P	**P**	**13 10 30.7**	**+0.7**
	14nm,0.3s,mb4.9,baz=338,slow=20,SNR=7.7							
CPUP	**Villa Florida**		**29.18**	**138**	P	**P**	**13 10 51.5**	**-6.5**
	16nm,1.8s,mb4.3							
PLCA	**Paso Flores**		**36.15**	**170**	P	**P**	**13 11 58.5**	**+0.5**
	1.3nm,0.6s,mb4.0,baz=9.2,slow=1.9,SNR=3.3							
RPN	**Rapa Nui**		**36.67**	**230**	P	**P**	**13 12 03.5**	**+0.9**
	4μm,2.2s							
TXAR	**Lajitas Array**		**41.97**	**326**	P	**P**	**13 12 46.9**	**+0.5**
	0.2nm,0.5s,baz=148,slow=7.2,SNR=4.9							
TXAR	**Lajitas Array**		**41.97**	**326**	P	**P**	**13 12 46.9**	**+0.5**
PDAR	**Pinedale Array**		**55.40**	**332**	P	**P**	**13 14 28.9**	**-0.7**
	0.4nm,0.5s,mb3.7,baz=143,slow=7.4,SNR=3.4							
HWUT	**Hardware Ranch**		**55.47**	**330**	*e*P	**P**	**13 14 29.7**	**-0.5**
	2.1nm,0.6s,mb4.3							
NVAR	**Mina Array Bea**		**56.94**	**323**	P	**P**	**13 14 40.2**	**-0.5**
	0.7nm,0.7s,mb3.8,baz=134,slow=7.7,SNR=5.2							
NVAR	**Mina Array Bea**		**56.94**	**323**	P	**P**	**13 14 40.2**	**-0.5**
ULM	**Lac du Bonnet**		**57.18**	**347**	P	**P**	**13 14 40.8**	**-1.4**
	3.8nm,0.6s,mb4.6,baz=153,slow=6.8,SNR=6.7							
YKA	**Yellowknife Ar**		**72.86**	**343**	P	**P**	**13 16 22.7**	**-0.1**
	0.7nm,0.7s,mb3.6,baz=135,slow=5.9,SNR=22							
YKA	**Yellowknife Ar**		**72.86**	**343**	P	**P**	**13 16 22.7**	**-0.1**
DBIC	**Dimbokro**		**74.37**	**82**	P	**P**	**13 16 33.4**	**+0.8**
	2.6nm,0.7s,mb4.1,baz=252,slow=9.6,SNR=4.9							
ILAR	**Eielson Array**		**85.61**	**336**	P	**P**	**13 17 32.5**	**+1.3**
	0.7nm,0.9s,mb3.6,baz=147,slow=3.9,SNR=4.9							
ASAR	**Alice Springs**		**137.40**	**226**	PKP	PKPdf	13 24 16.1	+0.4
	0.4nm,1.0s,baz=132,slow=1.8,SNR=4.5							
WRA	**Warramunga Arr**		**139.26**	**231**	PKP	PKPdf	13 24 23.0	+3.8
	0.4nm,0.4s,baz=131,slow=1.5,SNR=7.0							

*BJI **08** 13:25:21.4,4.41N×94.73E,h78km,mB4.8,mb4.7*
*MOS **08** 13:25:23.2±1.0,5.08N×95.28E,h33km,mb4.9/5,Error ellipse: s-maj=32.8km s-min=13.4km az=103.1*
*NEIC **08** 13:25:31.3±0.5,5.23N×94.98E,mb4.3/9,Error ellipse: s-maj=16.8km s-min=8.3km az=54.0*
*IDC **08** 13:25:32.5±0.6,5.47N×95.45E,h80km±3km,mb4.0/13, mb1 4.2/14,mb1mx4.1/18,MS2.8/1,Ms1 3.0/1, ms1mx2.7/19,Error ellipse: s-maj=39.3km s-min=8.6km az=47.0*
**IS

MDJ				AMB	AMB			
	comp=Z,4.0nm,0.6s,mb4.5							
MDJ				AMB	AMB			
	comp=Z,41nm,4.2s							
NVS	**Novosibirsk**	**50.29**	**351**	*i* P	**P**	**13 34 19.4**	**-1.3**	
NVS				pmax	pmax			
	comp=N,7.0nm,0.8s							
NVS				pmax	pmax			
	comp=E,3.0nm,0.8s							
NVS				pmax	pmax			
	comp=Z,8.0nm,0.8s,mb4.7							
BVA0	**Borovoye Array**	**51.71**	**341**	*i* P	**P**	**13 34 30.5**	**-1.0**	
BVA0				pmax	pmax			
	comp=Z,1.0nm,0.8s,mb3.9							
BRVK	**Borovoye**	**51.78**	**341**	*e*P	**P**	**13 34 31.0**	**-1.0**	
AB31	**Akbulak array**	**52.95**	**332**	P	**P**	**13 34 40.7**	**-0.1**	
AB31				pmax	pmax			
	comp=Z,10.0nm,0.7s,mb5.0							
KLR	**Kul'dur**	**53.54**	**29**	*e*P	**P**	**13 34 44.3**	**-0.9**	
BOD	**Bodaibo**	**54.37**	**12**	*e*P	**P**	**13 34 49.7**	**-1.4**	
STKA	**Stephens Creek**	**57.60**	**133**	P	**P**	**13 35 14.9**	**+0.2**	
	comp=Z,1.1nm,0.6s,mb4.1,baz=308,slow=6.0,SNR=4.8							
STKA				pP	pP	13 35 34.0	-0.3	
	comp=Z,1.8nm,0.9s,baz=309,slow=9.1,SNR=2.0							
SVE	**Sverdlovsk**	**58.13**	**338**	*e*P	**P**	**13 35 18.6**	**+0.6**	
YSS	**Yuzh-Sakhalins**	**58.14**	**37**	*e*P	**P**	**13 35 17.2**	**-1.0**	
YSS				pmax	pmax			
	comp=Z,14nm,0.9s,mb5.0							
KIV	**Kislovodsk**	**59.90**	**319**	*e*P	**P**	**13 35 30.7**	**+0.3**	
KIV				pmax	pmax			
	comp=Z,5.0nm,0.7s,mb4.7							
BRTR	**Keskin Array B**	**64.89**	**311**	P	**P**	**13 36 04.5**	**+0.9**	
	comp=Z,0.9nm,0.6s,mb3.8,baz=123,slow=8.0,SNR=5.6							
BRTR				pP	pP	13 36 23.6	-0.2	
	comp=Z,0.5nm,0.5s,baz=109,slow=11,SNR=2.2							
OBN	**Obninsk**	**68.08**	**328**	*e*P	**P**	**13 36 22.8**	**-0.7**	
OBN				*e*		13 36 49.3		
OBN				*e*		13 38 53.9		
OBN				pmax	pmax			
	comp=Z,11nm,0.6s,mb4.9							
TIXI	**Tiksi**	**69.50**	**11**	*e*P	**P**	**13 36 30.0**	**-2.0**	
TIXI				*e*	pP	13 36 48.9	-3.5	
TIXI				pmax	pmax			
	comp=Z,30nm,0.9s,mb5.1							
AKASG	**Malin Array Be**	**70.79**	**322**	P	**P**	**13 36 39.2**	**-0.9**	
	comp=Z,2.5nm,0.7s,mb4.2,baz=92,slow=4.6,SNR=8.6							
JOF	**Joensuu**	**73.58**	**335**	*e*p	**P**	**13 36 55.8**	**-0.6**	
FINES	**FINESS Array B**	**75.43**	**332**	P	**P**	**13 37 06.8**	**-0.3**	
	comp=Z,6.4nm,0.5s,mb4.7,baz=99,slow=6.0,SNR=65							
FINES				pP	pP	13 37 28.7	+0.9	
	comp=Z,0.9nm,0.4s,baz=76,slow=7.9,SNR=1.9							
FINES				sP	sP	13 37 35.9	-0.2	
	comp=Z,1.1nm,0.5s,baz=104,slow=7.9,SNR=2.2							
KAF	**Kangasniemi**	**75.52**	**333**	*e*p	**P**	**13 37 06.9**	**-0.7**	
	baz=102,slow=5.4							
OJC	**Ojcow**	**76.59**	**320**	*e*P	**P**	**13 37 14.5**	**+0.6**	
ARCES	**ARCESS Array B**	**77.99**	**340**	P	**P**	**13 37 21.5**	**+0.2**	
	comp=Z,5.6nm,0.9s,mb4.3,baz=87,slow=5.8,SNR=15							
ARCES				PcP	PcP	13 37 31.9	+0.8	
	comp=Z,3.8nm,1.1s,baz=79,slow=4.6,SNR=3.8							
ARCES	**ARCESS Array B**	**77.99**	**340**	P	**P**	**13 37 21.5**	**+0.2**	
ARCES				PcP	PcP	13 37 31.9	+0.8	
GERES	**GERESS Array B**	**80.41**	**318**	P	**P**	**13 37 36.1**	**+1.2**	
	comp=Z,0.9nm,0.6s,mb3.8,baz=90,slow=5.3,SNR=9.9							
GERES				pP	pP	13 37 57.7	+2.1	
	comp=Z,1.0nm,0.9s,baz=104,slow=5.5,SNR=2.3							
NB2	**NORSAR Subarra**	**82.45**	**331**	P	**P**	**13 37 44.8**	**-0.4**	
	comp=Z,3.4nm,0.8s,mb4.2,baz=95,slow=5.0							
NOA	**NORSAR Array B**	**82.45**	**331**	P	**P**	**13 37 45.1**	**-0.1**	
	comp=Z,2.5nm,0.7s,mb4.1,baz=95,slow=4.9,SNR=10							
SPB4	**Spitsbergen Ar**	**82.52**	**348**	*e*P	**P**	**13 37 45.1**	**-0.2**	
ILAR	**Eielson Array**	**96.67**	**22**	P	**P**	**13 38 51.9**	**-0.6**	
	comp=Z,0.2nm,0.5s,mb3.8,baz=286,slow=4.4,SNR=5.9							
SML	**Sawmill**	**97.43**	**25**	P	**P**	**13 38 56.7**	**+0.6**	
ULM	**Lac du Bonnet**	**123.81**	**9**	PKP	PKPdf	13 44 22.0	+2.7	
	comp=Z,1.9nm,0.8s,baz=286,slow=1.3,SNR=2.5							
NVAR	**Mina Array Bea**	**126.50**	**33**	PKP	PKPdf	13 44 27.9	+3.1	
	comp=Z,2.7nm,1.2s,baz=217,slow=0.9,SNR=4.8							
NVAR	**Mina Array Bea**	**126.50**	**33**	PKP	PKPdf	13 44 27.9	+3.1	
PDAR	**Pinedale Array**	**127.10**	**23**	PKP	PKPdf	13 44 28.0	+2.1	
	comp=Z,0.3nm,0.4s,baz=117,slow=3.3,SNR=4.3							
TXAR	**Lajitas Array**	**141.04**	**27**	PKP	PKPdf	13 44 51.2	-1.1	
	comp=Z,0.2nm,0.4s,baz=135,slow=1.3,SNR=4.4							
LPAZ	**La Paz**	**160.37**	**235**	P	PKPdf	13 45 22.8	+1.4	

*IDC **08** 13:31:40.6±1.8, 0.54S×125.95E, mb3.3/3, mb1 3.6/4, mb1mx3.5/15, ML3.5/1, Error ellipse: s-maj=124.0km s-min=24.1km az=68.0*

ISC 08 13:31:43.2±1.8, 0.5S±0.3×126.0E±0.6, h33km, n4, σ1$90/4, mb3.4/2, Southern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
FITZ	**Fitzroy Crossi**	**17.49**	**181**	P		**P**	**13 35 46.1**	**-0.2**
	0.1nm,0.3s,baz=328,slow=9.5,SNR=3.3							
WRA	**Warramunga Arr**	**20.96**	**158**	P		**P**	**13 36 24.7**	**-1.2**
	1.6nm,1.1s,baz=335,slow=12,SNR=5.4							
ASAR	**Alice Springs**	**24.25**	**162**	P		**P**	**13 37 00.1**	**+1.5**
	0.5nm,0.7s,mb3.1,baz=347,slow=12,SNR=5.6							
MKAR	**Makanchi Array**	**60.66**	**327**	P		**P**	**13 41 53.5**	**-0.1**
	0.2nm,0.3s,mb3.7,baz=123,slow=7.8,SNR=8.5							

*ISK **08** 13:33:05.7, 39.85N×26.16E, h8km, MD3.3*
*NEIC **08** 13:33:07.2, 39.85N×26.11E, h14km±12km, MD3.3/3*
*ATH **08** 13:33:07.2, 39.85N×26.11E, h14km±12km, MD3.3/3*

ISC 08 13:33:06.4±0.5, 39.85N±0.03×26.16E±0.04, h8km±4km, n28, σ0$91/33, 1C, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
BOZC	**Bozcaada**	**0.09**	**267**	*i* P		**Pg**	**13 33 09.8**	**+1.1**
BOZC				*i* S		**Sg**	**13 33 11.9**	**+1.7**
EZN	**Ezine**	**0.13**	**99**	*i* PG		**Pg**	**13 33 09.1**	**-0.3**
PRK	**Paraskevi**	**0.60**	**172**	*e*PB		**Pb**	**13 33 18.2**	**-0.6**
LPK	**Lapseki**	**0.70**	**41**	*e*PG		**Pg**	**13 33 20.5**	**+0.1**
LIA	**Limnos Island**	**0.76**	**274**	*e*PB		**Pb**	**13 33 22.0**	**+0.6**
KGT	**Karabiga**	**1.06**	**55**	PG		**Pg**	**13 33 26.3**	**-1.4**
MRMT	**Marmara Adasi**	**1.33**	**55**	PN		**Pn**	**13 33 30.3**	**-1.0**
MRMT				SN		**Sn**	**13 33 49.8**	**+0.5**
RDO	**Rodhopi**	**1.38**	**340**	*e*PB		**Pb**	**13 33 33.0**	**+0.9**
EDC	**Edincik**	**1.40**	**68**	PN		**Pn**	**13 33 32.2**	**-0.1**
EDC				SN		**Sn**	**13 33 51.4**	**+0.4**
BNT	**Bandirma**	**1.44**	**69**	PN		**Pn**	**13 33 32.5**	**-0.4**
AKS	**Akhisar**	**1.60**	**127**	*e*PN		**Pn**	**13 33 34.4**	**-0.8**
KDAG	**Bornova**	**1.68**	**149**	*i* P		**Pn**	**13 33 37.1**	**+0.8**
KDAG				*i* S		**Sn**	**13 33 59.1**	**+1.0**
IZM	**Izmir**	**1.68**	**149**	PN		**Pn**	**13 33 36.4**	**+0.1**
KCT	**Karacabey**	**1.73**	**75**	*e*PN		**Pn**	**13 33 36.4**	**-0.7**
KDZ	**Kurdzhali**	**1.89**	**343**	*i* P		**Pn**	**13 33 40.0**	**+0.7**
DST	**Dursunbey**	**1.92**	**96**	*e*PN		**Pn**	**13 33 39.8**	**+0.1**
ORLT	**Orhaneli**	**2.11**	**84**	*e*PN		**Pn**	**13 33 42.5**	**0.0**
RZN	**Rozhen**	**2.14**	**330**	*i* P		**Pn**	**13 33 43.5**	**+0.5**
PLG	**Polygyros**	**2.15**	**285**	*e*PB		**Pb**	**13 33 43.4**	**-1.8**
CTT	**Catalca**	**2.16**	**52**	*e*PN		**Pn**	**13 33 43.3**	**+0.1**
ARMT	**Armutlu**	**2.19**	**70**	*e*PN		**Pn**	**13 33 43.9**	**+0.3**
SMG	**Samos**	**2.20**	**166**	*e*PG		**Pg**	**13 33 48.8**	**-1.6**
ULDT	**Uludag**	**2.30**	**82**	⇑*i* P		**Pn**	**13 33 46.0**	**+0.7**
ULDT				*i* S		**Sn**	**13 34 17.1**	**+3.1**
NVR	**Nevrokopi**	**2.31**	**311**	*e*PB		**Pb**	**13 33 45.7**	**-2.2**
BADT	**Buyukada**	**2.47**	**65**	*e*PN		**Pn**	**13 33 47.6**	**0.0**
MMB	**Musomiste**	**2.54**	**314**	*i* P		**Pn**	**13 33 48.0**	**-0.7**
YLV	**Yalova**	**2.56**	**73**	*e*PN		**Pn**	**13 33 49.1**	**+0.2**
APE	**Apeiranthos**	**2.82**	**190**	*e*PN		**Pn**	**13 33 52.6**	**0.0**

JMA 08 13:54:26.2±0.1, 43.62N×146.52E, h69km±1km, M3.5, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
NEM2	**Nemuro 2**	**0.62**	**246**	P		P	13 54 40.4	+0.1
NEM2				*e*S		S	13 54 50.8	+0.1
JRA	**Rausu**	**1.06**	**288**	P		P	13 54 45.5	-0.2
JRA				*e*S		S	13 55 00.3	+0.2
JNK	**Nakash**	**1.31**	**269**	P		P	13 54 48.6	-0.5
JNK				*e*S		S	13 55 04.5	-1.6
JAK	**Akkeshi**	**1.47**	**246**	P		P	13 54 50.8	-0.5
JAK				*e*S		S	13 55 09.4	-0.4
JTKR	**Abashiri--Toko**	**1.92**	**281**	P		P	13 54 57.2	-0.2
JTKR				*e*S		S	13 55 19.9	-0.5
JAR	**Ashorobuto**	**2.03**	**262**	P		P	13 54 59.2	+0.4
JAR				*e*S		S	13 55 23.3	+0.3
JOB	**Onbets**	**2.09**	**251**	P		P	13 54 59.8	+0.1
JOB				*e*S		S	13 55 24.7	+0.2
JMP	**Maruseppu**	**2.32**	**281**	P		P	13 55 02.8	-0.2
JCH	**Churui**	**2.52**	**248**	P		P	13 55 05.6	-0.2
JCH				*e*S		S	13 55 35.0	-0.4

*IDC **08** 14:01:27.3±1.4, 49.00S×124.97E, mb4.0/4, mb1 4.3/5, mb1mx4.1/10, ML2.0/1, MS3.7/4, Ms1 3.6/4, ms1mx3.5/8, Error ellipse: s-maj=44.1km s-min=36.4km az=111.0*
*NEIC **08** 14:01:29.2±0.7, 48.97S×125.05E, h10km, mb4.6/2, Error ellipse: s-maj=21.9km s-min=17.1km az=84.0*

ISC 08 14:01:29.0±2.8, 48.8S±0.3×125.2E±0.3, h10km, n18, σ0$88/8, mb4.1/5, MS3.5/4, 2D, Western Indian-Antarctic Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
NWAO	**Narrogin (SRO)**	**16.92**	**336**	P		**P**	**14 05 28.1**	**+0.7**
	0.2nm,0.3s,baz=159,slow=8.6,SNR=2.9							
STKA	**Stephens Creek**	**20.94**	**42**	P		**P**	**14 06 15.5**	**+1.3**
	8.1nm,0.8s,baz=206,slow=11,SNR=19							
STKA				LR	LR		14 12 58.4	
	comp=Z,139nm,19.6s,MS3.3,baz=204,slow=33							
STKA	**Stephens Creek**	**20.94**	**42**	P		**P**	**14 06 15.5**	**+1.3**
STKA				LR	LR		14 12 58.4	
ASAR	**Alice Springs**	**26.00**	**18**	P		**P**	**14 07 03.6**	**0.0**
	3.7nm,0.9s,mb3.9,baz=191,slow=9.3,SNR=27							
ASAR				PcP	PcP		14 10 29.6	-2.9
	0.6nm,0.8s,baz=190,slow=1.8,SNR=5.7							
ASAR				LR	LR		14 16 11.3	
	comp=Z,172nm,19.6s,MS3.6,baz=204,slow=34							
WRA	**Warramunga Arr**	**29.70**	**18**	P		**P**	**14 07 36.4**	**-0.9**
	0.8nm,0.9s,mb3.5,baz=192,slow=12,SNR=4.9							
WRA				PcP	PcP		14 10 38.3	-3.2
	0.5nm,0.6s,baz=204,slow=2.4,SNR=6.9							
WRA				LR	LR		14 19 51.0	
	comp=Z,161nm,18.0s,MS3.7,baz=170,slow=37							
WRAB	**Tennant Creek**	**29.71**	**18**	*e*P		**P**	**14 07 36.4**	**-1.0**
	16nm,1.3s,mb4.6							
MAW	**Mawson**	**35.85**	**215**	LR	LR		14 18 44.7	
	comp=Z,105nm,21.0s,MS3.6,baz=238,slow=29							
CMAR	**Chiang Mai Arr**	**70.90**	**334**	P		**P**	**14 12 47.5**	**-0.8**
	1.9nm,0.8s,mb4.1,baz=186,slow=5.5,SNR=15							
LSA	**Lhasa**	**83.84**	**331**	P		**P**	**14 14 00.7**	**+0.9**
	4.0nm,1.2s,mb4.4							
ILAR	**Eielson Array**	**131.86**	**35**	PKP	PKPdf		14 20 40.5	-4.2
	0.4nm,0.7s,baz=267,slow=3.7,SNR=4.9							
NVAR	**Mina Array Bea**	**134.12**	**78**	PKP	PKPdf		14 20 48.1	-1.4
	0.5nm,0.9s,baz=172,slow=1.5,SNR=3.7							
FINES	**FINESS Array B**	**135.07**	**318**	PKP	PKPdf		14 20 47.3	-3.4
	1.2nm,0.8s,baz=72,slow=6.0,SNR=4.1							
TXAR	**Lajitas Array**	**138.21**	**99**	PKP	PKPdf		14 20 54.2	-3.2
	0.1nm,0.5s,baz=169,slow=4.6,SNR=3.1							
YKA	**Yellowknife Ar**	**144.96**	**44**	PKPbc	PKPbc		14 21 04.9	-0.4
	4.3nm,0.7s,baz=270,slow=3.4,SNR=104							
YKA	**Yellowknife Ar**	**144.96**	**44**	PKPbc	PKPbc		14 21 04.9	-0.4
RSSD	**Black Hills**	**146.25**	**79**	*e*PKP	PKPdf		14 21 08.7	-2.2
DAG	**Danmarks Havn**	**148.52**	**345**	⇓*i* P	PKPdf		14 21 14.1	+0.4
	2.1nm,0.7s							
DAG	**Danmarks Havn**	**148.52**	**345**	⇓*e*P	PKPdf		14 21 14.1	+0.4

*NEIC **08** 14:03:35.8±3.1, 15.32S×74.41W, h99km±30km, mb3.6/2, Error ellipse: s-maj=40.5km s-min=20.8km az=82.0*
*IDC **08** 14:03:37.4±4.5, 15.27S×74.27W, h112km±46km, mb3.6/3, mb1 3.8/6, mb1mx3.6/15, Error ellipse: s-maj=37.6km s-min=22.2km az=86.0*

ISC 08 14:03:35.0±2.4, 15.4S±0.1×74.4W±0.2, h109km±24km, n11, σ1$35/14, mb3.9/3, 1D, Near coast of Peru

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
ARE	**Arequipa**	**2.96**	**111**	⇓*i* P		**P**	**14 04 21.1**	**-0.3**
ARE				*e*S		**S**	**14 04 55.0**	**-1.4**
LPAZ	**La Paz**	**6.07**	**99**	P		**P**	**14 05 06.0**	**+2.5**
	2.5nm,0.3s,baz=288,slow=9.6,SNR=62							
LPAZ				S		**S**	**14 06 13.1**	**+0.9**
	1.2nm,0.3s,baz=313,slow=11,SNR=3.7							
LVC	**Limon Verde**	**8.82**	**145**	P		**P**	**14 05 41.8**	**+0.8**
	3.1nm,0.3s,baz=314,slow=12,SNR=30							
LVC				S		**S**	**14 07 17.7**	**-1.6**
	3.4nm,0.3s,baz=115,slow=22,SNR=7.0							
LVC	**Limon Verde**	**8.82**	**145**	P		**P**	**14 05 41.8**	**+0.8**
LVC				S		**S**	**14 07 17.7**	**-1.6**
CPUP	**Villa Florida**	**19.25**	**127**	P		**P**	**14 07 53.9**	**+0.6**
	0.1nm,0.3s,baz=325,slow=11,SNR=6.0							
CPUP	**Villa Florida**	**19.25**	**127**	*e*P		**P**	**14 07 53.3**	**0.0**
	2.5nm,0.9s							
PLCA	**Paso Flores**	**25.44**	**173**	P		**P**	**14 08 57.5**	**+3.3**
	1.7nm,0.8s,mb3.5,baz=358,slow=8.1,SNR=4.6							
PLCA	**Paso Flores**	**25.44**	**173**	P		**P**	**14 08 56.0**	**+1.8**
	4.8nm,1.5s,mb3.7							
TXAR	**Lajitas Array**	**52.73**	**328**	P		**P**	**14 12 40.6**	**-0.2**
	0.5nm,0.5s,mb3.8,baz=148,slow=9.2,SNR=10							
SCHQ	**Schefferville**	**70.27**	**5**	P		**P**	**14 14 36.4**	**-1.8**
	2.5nm,0.7s,mb4.2,baz=266,slow=15,SNR=3.3							
YKA	**Yellowknife Ar**	**83.81**	**342**	pP		pP	14 16 17.9	-3.7
	0.1nm,0.7s,baz=132,slow=6.3,SNR=1.8							

TAP 08 14:05:32.4, 22.90N×120.60E, h8km, ML3.7, 6C-5D, Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
SSD	**Sandimen**	**0.16**	**169**	⇑*i* P		Pg	14 05 36.4	+0.6
SSD				S		Sg	14 05 39.8	+1.7
TWM1	**Shoushan**	**0.18**	**245**	⇓*i* P		Pg	14 05 37.3	+0.7
TWM1				S		Sg	14 05 41.2	+2.3
SGST	**Jiashian**	**0.18**	**355**	⇓*i* P		Pg	14 05 37.0	+0.8
SGST				S		Sg	14 05 41.0	+2.1
SGLT	**Jiouru**	**0.20**	**210**	*e*P		Pg	14 05 37.7	+1.1
SGLT				S		Sg	14 05 42.7	+3.2
CHN3	**Shinhua**	**0.28**	**309**	⇑*i* P		Pg	14 05 39.4	+1.3
CHN3				S		Sg	14 05 44.7	+2.8
CHN1	**Nanshi**	**0.29**	**347**	⇓*i* P		Pg	14 05 39.0	+0.7
CHN1				S		Sg	14 05 44.5	+2.1
STYT	**Tauyuan**	**0.30**	**29**	⇑*i* P		Pg	14 05 39.2	+0.7
STYT				S		Sg	14 05 44.7	+2.1
WTP	**Ta-pu**	**0.34**	**2**	⇓*i* P		Pg	14 05 40.0	+0.6
WTP				S		Sg	14 05 46.1	+2.0
TAI1	**Yung-k'ang**	**0.37**	**292**	*e*P		Pg	14 05 40.4	+0.5
TWK	**Hsinying**	**0.38**	**344**	⇑*i* P		Pg	14 05 40.6	+0.5
TWK				S		Sg	14 05 47.7	+2.5
KAU	**Kaohsiung**	**0.43**	**219**	*e*P		Pg	14 05 42.2	+1.2
TWU	**Pinlang**	**0.44**	**100**	⇑*i* P		Pg	14 05 41.9	+0.6
TWG				S		Sg	14 05 49.4	+2.1
ECL	**Taimali**	**0.45**	**133**	P		Pg	14 05 41.4	+0.1
ECL				S		Sg	14 05 47.8	+0.5
CHN4	**Tsaushan**	**0.45**	**359**	P		Pg	14 05 41.5	+0.1
CHN4				S		Sg	14 05 49.3	+1.8
SCLT	**Jiali**	**0.46**	**306**	*e*P		Pg	14 05 42.1	+0.4
SCLT				S		Sg	14 05 50.9	+2.9
ELDTW	**Lidau**	**0.48**	**53**	⇑P		Pg	14 05 42.7	+0.6
ELDTW				S		Sg	14 05 50.7	+2.1
TTN	**Taitung**	**0.53**	**106**	P		Pg	14 05 44.0	+1.1
TTN				S		Sg	14 05 53.1	+3.1
SCZT	**Fangliau**	**0.53**	**178**	⇓P		Pg	14 05 42.7	-0.3
SCZT				S		Sg	14 05 52.6	+2.5
EAST	**Anshuo**	**0.56**	**156**	P		Pg	14 05 43.7	0.0
EAST				S		Sg	14 05 52.4	+1.1
CHN8	**Yiju**	**0.57**	**321**	P		Pg	14 05 43.7	-0.2
CHN8				S		Sg	14 05 54.0	+2.5
TWP	**Hsiaoliuchiu**	**0.59**	**202**	*e*P		Pg	14 05 45.8	+1.5
TWP				S		Sg	14 05 56.6	+4.4
TAW	**Tawu**	**0.60**	**153**	*e*P		Pg	14 05 44.5	0.0
TAW				S		Sg	14 05 53.6	+0.9
CHY	**Chiayi**	**0.62**	**345**	P		Pg	14 05 44.6	-0.2
CHY				S		Sg	14 05 54.6	+1.6
ALS	**Alishan**	**0.64**	**17**	P		Pg	14 05 45.2	+0.1
ALS				S		Sg	14 05 55.6	+1.9
CHN2	**Minshiung**	**0.64**	**350**	*e*P		Pg	14 05 45.4	+0.2
CHN2				S		Sg	14 05 55.7	+1.9
YUS	**Yu-Shan**	**0.67**	**29**	*e*P		Pg	14 05 46.3	+0.5
YUS				S		Sg	14 05 56.7	+1.9
CHN5	**Tsauling**	**0.70**	**6**	*e*P		Pb	14 05 46.0	-0.3
CHN5				S		Sg	14 05 57.6	+1.9
CHKT	**Chengkung**	**0.73**	**74**	P		Pb	14 05 47.7	+0.8
CHKT				S		Sb	14 05 59.1	+2.3
WGK	**Gukeng**	**0.78**	**357**	*e*P		Pb	14 05 47.9	+0.1
WGK				S		Sb	14 06 00.3	+2.0
TWF1	**Yuli**	**0.78**	**55**	*i* P		Pb	14 05 48.0	+0.2
TWF1				S		Sb	14 05 59.1	+0.8
WSF	**Szhu**	**0.81**	**335**	*e*P		Pb	14 05 47.7	-0.6
WSF				S		Sb	14 06 00.3	+1.1
EHY	**Hungye**	**0.90**	**48**	*e*P		Pb	14 05 49.8	+0.1
EHY				S		Sb	14 06 03.5	+1.9
HEN	**Hengchun**	**0.90**	**172**	*e*P		Pb	14 05 50.3	+0.5
HEN				S		Sb	14 06 04.3	+2.6
WDGT	**Dungji**	**0.94**	**293**	*e*P		Pb	14 05 48.5	-1.9
WDGT				S		Sb	14 06 01.7	-1.1
TWK1	**Hengchun**	**0.97**	**169**	*e*P		Pb	14 05 51.2	+0.2
TWK1				S		Sb	14 06 06.3	+2.6
WNT	**Mingjian**	**0.98**	**5**	*e*P		Pb	14 05 51.1	0.0
WNT				S		Sb	14 06 05.8	+1.9
WTCT	**Ta-ch'eng**	**1.00**	**343**	*e*P		Pb	14 05 50.7	-0.9
WTCT				S		Sb	14 06 05.1	+0.4
SMLT	**Sun Moon Lake**	**1.02**	**16**	*e*P		Pb	14 05 52.0	+0.2
SMLT				S		Sb	14 06 07.2	+2.1
TYC	**Yuchr**	**1.03**	**13**	*e*P		Pb	14 05 51.9	-0.1
TYC				S		Sb	14 06 07.3	+1.9
PNG	**Penghu**	**1.17**	**305**	*e*P		Pb	14 05 52.1	-2.3
ESL	**Shilin**	**1.19**	**40**	*e*P		Pb	14 05 55.5	+0.8
ESL				S		Sb	14 06 12.2	+2.1
TCU	**Taichung**	**1.24**	**3**	*e*P		Pb	14 05 55.4	-0.3
TCU				S		Sb	14 06 12.6	+0.9
WHF	**Hehuan Shan**	**1.38**	**26**	*e*P		Pn	14 05 58.5	+0.5
WHF				S		Sb	14 06 17.9	+2.2
TWT	**Tachien**	**1.45**	**21**	*e*P		Pn	14 05 59.1	+0.2
TWT				S		Sb	14 06 19.0	+1.4
TWQ1	**Liyutan**	**1.45**	**6**	*e*P		Pn	14 05 58.3	-0.6
TWQ1				S		Sb	14 06 18.3	+0.6
TWD	**Chiawan**	**1.49**	**38**	*e*P		Pn	14 05 59.8	+0.3
TWD				S		Sb	14 06 20.0	+1.2
NSY	**Sanyi**	**1.52**	**6**	*e*P		Pn	14 05 59.9	0.0
NSY				S		Sb	14 06 20.4	+0.8
NNS	**Nan Shan**	**1.69**	**25**	*e*P		Pn	14 06 02.8	+0.4
NNS				S		Sn	14 06 25.1	+0.8
NSTT	**Nanjuang**	**1.76**	**12**	*e*P		Pn	14 06 04.0	+0.6
NSTT				S		Sn	14 06 27.7	+1.4
NSK	**Sanguang**	**1.90**	**21**	*e*P		Pn	14 06 06.5	+1.1
NSK				S		Sn	14 06 31.2	+1.5
ENTT	**Nioudou**	**1.94**	**27**	*e*P		Pn	14 06 06.7	+0.7
ENTT				S		Sn	14 06 32.4	+1.5
TWC	**Suao**	**2.05**	**34**	*e*P		Pn	14 06 08.1	+0.5
TWC				S		Sn	14 06 34.5	+0.9
TWE	**Neicheng**	**2.06**	**28**	*e*P		Pn	14 06 08.0	+0.3
TWE				S		Sn	14 06 35.0	+1.2
TWA	**Mucha**	**2.26**	**23**	*e*P		Pn	14 06 11.5	+1.0
TWA				S		Sn	14 06 40.9	+2.0
NWF	**Wu-fen Shan**	**2.42**	**26**	*e*P		Pn	14 06 14.1	+1.3
NWF				S		Sn	14 06 44.6	+1.7

*IDC **08** 14:05:46.8±1.1, 12.57N×144.26E, mb3.4/6, mb1 3.7/6, mb1mx3.6/18, MS2.6/1, Ms1 2.6/1, ms1mx2.4/14, Error ellipse: s-maj=38.9km s-min=24.6km az=105.0*
*NEIC **08** 14:05:48.1±0.8, 12.50N×144.25E, h10km, mb4.5/2, Error ellipse: s-maj=27.4km s-min=15.8km az=92.0*

ISC 08 14:05:49.8±0.9, 12.5N±0.1×144.2E±0.2, h33km, n10, σ0$99/9, mb3.7/8, South of Mariana Islands

| Code | Station Name | Δ° | AZ° | Phase | ID | ISC | Time | Res |
|---|---|---|---|---|---|---

BDFB	**Brasilia**	**22.26**	**99**	P	**P**		**14 22 42.0**	**+1.8**
	1.1nm,0.4s,mb3.5,baz=251,slow=17,SNR=2.3							
PCRV	**Puerto La Cruz**	**24.01**	**15**	LR	LR		14 31 27.3	
	comp=Z,55nm,19.2s,baz=260,slow=34							
PLCA	**Paso Flores**	**27.45**	**179**	P	**P**		**14 23 28.1**	**-1.3**
	0.7nm,0.5s,mb3.5,baz=168,slow=20,SNR=4.0							
PLCA	**Paso Flores**	**27.45**	**179**	*eP*	**P**		**14 23 25.6**	**-3.8**
	16nm,2.0s,mb4.2							
PLCA				P			14 23 28.1	
RPN	**Rapa Nui**	**38.52**	**243**	P	**P**		**14 25 05.1**	**-0.3**
TXAR	**Lajitas Array**	**52.81**	**324**	P	**P**		**14 26 59.2**	**+0.5**
	0.7nm,1.1s,mb3.6,baz=162,slow=8.6,SNR=2.2							
TXAR	**Lajitas Array**	**52.81**	**324**	P	**P**		**14 26 59.2**	**+0.5**
PDAR	**Pinedale Array**	**66.01**	**330**	P	**P**		**14 28 29.1**	**-0.3**
	0.5nm,0.9s,mb3.3,baz=122,slow=12,SNR=2.9							
QSPA	**South Pole Qui**	**76.97**	**180**	*eP*	**P**		**14 29 35.0**	**+0.8**
	1.8nm,0.7s,mb3.9							
YKA	**Yellowknife Ar**	**82.76**	**341**	P	**P**		**14 30 05.1**	**-0.4**
	0.3nm,0.6s,mb3.3,baz=137,slow=5.2,SNR=7.5							
YKA	**Yellowknife Ar**	**82.76**	**341**	P	**P**		**14 30 05.1**	**-0.4**
WRA	**Warramunga Arr**	**138.79**	**217**	PKP	PKPdf		14 37 09.8	+2.6
	0.3nm,0.9s,baz=135,slow=1.9,SNR=3.9							
SONM	**Songino Array**	**145.38**	**3**	PKPbc	PKPbc		14 37 21.0	+2.5
	1.0nm,0.9s,baz=342,slow=3.9,SNR=6.2							

IDC 08 14:52:30.6±9.2, 58.63S×151.14E, mb3.4/2, mb1 3.7/2, mb1mx3.6/9, Error ellipse: s-maj=438.0km s-min=64.7km az=84.0, West of Macquarie Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**37.03**	**333**	P	P	14 59 42.1	-1.6
	0.4nm,0.7s,baz=174,slow=9.6,SNR=4.8						
WRA	**Warramunga Arr**	**40.53**	**335**	P	P	15 00 11.0	-2.0
	0.3nm,0.5s,baz=165,slow=7.5,SNR=8.5						
AKASG	**Malin Array Be**	**146.47**	**282**	PKPbc	PKPbc	15 12 11.6	-0.6
	0.2nm,0.3s,baz=117,slow=2.1,SNR=4.9						

*NEIC **08** 14:53:43.2±1.1,24.06S×66.76W,h134km±13km,mb3.9/3, Error ellipse: s-maj=19.6km s-min=10.3km az=79.0*
*IDC **08** 14:53:43.7±2.4,23.94S×66.75W,h127km±25km,mb4.5/1, mb1 3.9/5,mb1mx3.5/15, Error ellipse: s-maj=27.6km s-min=24.1km az=88.0*

ISC 08 14:53:42.1±1.2, 24.01S±0.07×66.7W±0.1, h130km±19km, n11,σ0§69/14, mb4.3/3, Salta Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LVC	**Limon Verde**	**2.48**	**304**	P	**P**	**14 54 23.2**	**+0.5**
	12nm,0.3s,baz=124,slow=7.4,SNR=24						
LVC				S	**S**	**14 54 52.7**	**-0.8**
	18nm,0.3s,baz=183,slow=6.2,SNR=11						
LVC	**Limon Verde**	**2.48**	**304**	P	**P**	**14 54 23.2**	**+0.5**
LVC				S	**S**	**14 54 52.7**	**-0.8**
LPAZ	**La Paz**	**7.80**	**350**	P	**P**	**14 55 34.6**	**+0.6**
	1.0nm,0.3s,baz=173,slow=10.0,SNR=9.8						
LPAZ				S	**S**	**14 57 01.4**	**+0.2**
	0.5nm,0.3s,baz=335,slow=17,SNR=6.3						
TRQA	**Tornquist**	**14.57**	**165**	*eP*	**P**	**14 57 02.9**	**0.0**
PLCA	**Paso Flores**	**16.99**	**190**	P	**P**	**14 57 35.3**	**+2.2**
	0.2nm,0.3s,baz=14,slow=10,SNR=7.4						
PLCA	**Paso Flores**	**16.99**	**190**	*eP*	**P**	**14 57 31.4**	**-1.7**
	2.1nm,0.8s						
BDFB	**Brasilia**	**19.41**	**68**	P	**P**	**14 58 00.5**	**0.0**
	1.6nm,0.3s,baz=248,slow=11,SNR=24						
BDFB				S	**S**	**15 01 27.4**	**-0.5**
	0.5nm,0.3s,baz=72,slow=23,SNR=3.2						
OTAV	**Otavalo**	**26.67**	**333**	*eP*	**P**	**14 59 10.7**	**-0.2**
	2.5nm,0.8s,mb3.9						
ROSC	**El Rosal**	**29.64**	**344**	P	**P**	**14 59 37.9**	**+0.2**
	4.5nm,0.3s,mb4.7,baz=111,slow=21,SNR=2.2						
QSPA	**South Pole Qui**	**66.20**	**180**	*eP*	**P**	**15 04 12.1**	**-5.3**
	3.0nm,0.5s,mb4.4						
MKAR	**Makanchi Array**	**146.34**	**40**	PKPbc	PKPbc	15 13 07.3	+0.1
	1.1nm,1.1s,baz=326,slow=5.2,SNR=3.1						

IDC 08 15:05:33.1±11.0, 2.79S×126.63E, h398km±146km, mb2.9/4, mb1 3.1/5, mb1mx2.9/15, Error ellipse: s-maj=122.0km s-min=32.3km az=70.0, Ceram Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**18.64**	**157**	P	P	15 09 25.5	+0.7
	0.8nm,0.3s,baz=333,slow=10,SNR=12						
ASAR	**Alice Springs**	**21.91**	**162**	P	P	15 09 54.6	-1.8
	0.4nm,0.5s,baz=343,slow=12,SNR=3.3						
STKA	**Stephens Creek**	**32.18**	**156**	P	P	15 11 25.7	-1.7
	0.6nm,0.5s,baz=322,slow=17,SNR=2.1						
SONM	**Songino Array**	**53.44**	**343**	P	P	15 14 12.9	-3.0
	0.4nm,0.6s,baz=155,slow=6.4,SNR=4.4						
MKAR	**Makanchi Array**	**62.89**	**327**	P	P	15 15 19.1	-1.2
	1.5nm,0.4s,baz=116,slow=7.7,SNR=36						

IDC 08 15:09:27.0±8.6, 5.35S×147.43E, h79km±57km, mb3.4/2, mb1 3.6/4, mb1mx3.3/13, ML3.3/1, Error ellipse: s-maj=82.1km s-min=57.0km az=75.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**4.04**	**184**	P	P	15 10 26.6	-1.3
	16nm,0.3s,baz=354,slow=5.0,SNR=66						
PMG				S	S	15 11 13.3	-1.0
	15nm,0.3s,baz=152,slow=22,SNR=18						
WRA	**Warramunga Arr**	**19.30**	**220**	P	P	15 13 44.9	-3.4
	baz=42,slow=11,SNR=6.3						
ASAR	**Alice Springs**	**22.39**	**214**	P	P	15 14 20.0	+0.3
	2.4nm,0.9s,baz=38,slow=11,SNR=9.0						
STKA	**Stephens Creek**	**26.95**	**191**	P	P	15 15 00.8	-2.3
	0.8nm,0.7s,baz=153,slow=24,SNR=2.9						

*NEIC **08** 15:57:09.3, 37.12N×21.06E, h5km, MD3.5(ATH), After ATH.*
*ATH **08** 15:57:09.3, 37.12N×21.06E, h5km, MD3.5/4*

ISC 08 15:57:10.2±3.5, 37.2N±0.2×21.1E±0.3, h5km, n5, σ1§50/5, Southern Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ITM	**Ithomi**	**0.65**	**88**	*e*PB	**Pb**	**15 57 22.7**	**-0.9**
RLS	**Riolos of Patr**	**0.94**	**17**	*e*PB	**Pb**	**15 57 28.3**	**-0.2**
VLS	**Valsamata**	**1.09**	**338**	*e*PB	**Pb**	**15 57 30.7**	**-0.5**
VLI	**Veliai**	**1.53**	**106**	*e*PB	**Pb**	**15 57 39.2**	**+0.6**
EVR	**Evrytania**	**1.83**	**17**	*e*PN	**Pn**	**15 57 45.8**	**+3.1**

*TAP **08** 16:13:15.2,22.85N×121.37E,h22km,ML4.5*
TAP Felt I J at Taitung, III J at Chenggung, II J at Pinlang, I J at Taimali, I J at Lidau, I J at Tauyuan, I J at Sandimen, I J at Dapu, I J at Lanyu, I J at Tsauling, I J at Chiayi.
*BJI **08** 16:13:17.7,22.90N×121.50E,h45km,mB4.2,mb4.1, ML3.8,Ms3.7,Msz3.8*
*JMA **08** 16:13:18.7±0.3,22.71N×121.52E,h69km,M3.9*
*NEIC **08** 16:13:20.7±1.6,22.91N×121.54E,h45km±17km,mb4.2/1, Error ellipse: s-maj=17.8km s-min=10.0km az=54.0*
NEIC Recorded [3 TAP] in T'ai-tung and [1 TAP] in Chia-i and Kao-hsiung Counties.
*IDC **08** 16:13:21.8±4.2,22.94N×121.61E,h57km±42km,mb3.5/10, mb1 3.7/11,mb1mx3.5/24,ML4.3/1,MS3.3/2,Ms1 3.4/2, ms1mx2.7/29, Error ellipse: s-maj=26.6km s-min=13.9km az=59.0*

ISC 08 16:13:15.3±0.3, 22.83N±0.02×121.38E±0.02, h20km±3km, n84,σ1§15/123, mb3.7/10, MS3.3/1, 11C-5D, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TTN	**Taitung**	**0.23**	**251**	*i*P	**Pb**	**16 13 21.3**	**+0.5**
CHKT	**Chengkung**	**0.27**	**358**	*i*P	**Pb**	**16 13 21.1**	**-0.4**
CHKT				S	**Sb**	**16 13 25.4**	**-0.4**
TWG	**Pinlang**	**0.28**	**269**	*i*P	**Pb**	**16 13 21.4**	**-0.3**
TWG				S	**Sb**	**16 13 25.9**	**-0.2**
ECL	**Taimali**	**0.45**	**240**	*i*P	**Pb**	**16 13 24.1**	**-0.5**
ECL				S	**Sb**	**16 13 30.4**	**-0.4**
ELDTW	**Lidau**	**0.49**	**317**	*i*P	**Pb**	**16 13 23.8**	**-1.3**
ELDTW				S	**Sb**	**16 13 29.7**	**-2.2**
TWF1	**Yuli**	**0.53**	**352**	*i*P	**Pb**	**16 13 24.6**	**-1.2**
TWF1				S	**Sb**	**16 13 32.2**	**-0.8**
TAW	**Tawu**	**0.65**	**224**	*e*P	**Pb**	**16 13 27.4**	**-0.4**
TAW				S	**Sb**	**16 13 34.8**	**-1.5**
EAST	**Anshuo**	**0.66**	**228**	*i*P	**Pb**	**16 13 27.6**	**-0.4**
STYT	**Tauyuan**	**0.66**	**300**	*i*P	**Pb**	**16 13 27.0**	**-1.0**
STYT				S	**Sb**	**16 13 35.6**	**-1.3**
SSD	**Sandimen**	**0.69**	**264**	*i*P	**Pb**	**16 13 27.7**	**-0.9**
SSD				S	**Sb**	**16 13 35.4**	**-2.3**
YUS	**Yu-Shan**	**0.77**	**329**	*i*P	**Pb**	**16 13 29.0**	**-0.8**
YUS				S	**Sb**	**16 13 37.9**	**-1.9**
SGST	**Jiashian**	**0.78**	**289**	*i*P	**Pb**	**16 13 29.8**	**-0.2**
SGST				S	**Sb**	**16 13 41.6**	**+1.5**
LAY	**Lan-yu**	**0.80**	**168**	*e*P	**Pb**	**16 13 30.4**	**0.0**
WTP	**Ta-pu**	**0.82**	**301**	*i*P	**Pb**	**16 13 30.3**	**-0.4**
WTP				S	**Sb**	**16 13 41.8**	**+0.5**
SGLT	**Jiouru**	**0.82**	**263**	*e*P	**Pb**	**16 13 31.2**	**+0.4**
SCZT	**Fangliau**	**0.83**	**237**	*e*P	**Pb**	**16 13 30.7**	**-0.3**
SCZT				S	**Sb**	**16 13 42.9**	**+1.2**
CHN1	**Nanshi**	**0.86**	**295**	*i*P	**Pb**	**16 13 31.4**	**-0.1**
CHN1				S	**Sb**	**16 13 43.6**	**+1.1**
ALS	**Alishan**	**0.86**	**322**	*i*P	**Pb**	**16 13 31.0**	**-0.4**
ALS				S	**Sb**	**16 13 41.7**	**-0.8**
TWM1	**Shoushan**	**0.88**	**270**	*e*P	**Pb**	**16 13 32.6**	**+0.9**
CHN4	**Tsaushan**	**0.89**	**306**	*i*P	**Pb**	**16 13 31.7**	**-0.3**
CHN4				S	**Sb**	**16 13 44.5**	**+1.0**
TWK	**Hsinying**	**0.93**	**298**	*i*P	**Pb**	**16 13 32.4**	**-0.3**
TWK				S	**Sb**	**16 13 47.0**	**+2.5**
CHN3	**Shinhua**	**0.97**	**285**	*e*P	**Pb**	**16 13 34.6**	**+1.4**
ESL	**Shilin**	**0.98**	**3**	*e*P	**Pb**	**16 13 31.3**	**-2.2**
CHN5	**Tsauling**	**1.00**	**320**	*i*P	**Pb**	**16 13 33.6**	**-0.3**
HEN	**Hengchun**	**1.01**	**216**	*e*P	**Pb**	**16 13 34.7**	**+0.7**
KAU	**Kaohsiung**	**1.02**	**256**	*e*P	**Pb**	**16 13 36.4**	**+2.3**
TWK1	**Hengchun**	**1.03**	**211**	*e*P	**Pb**	**16 13 33.7**	**-0.6**
TWP	**Hsiaoliuchiu**	**1.05**	**243**	*e*P	**Pb**	**16 13 36.7**	**+1.9**
TAI1	**Yung-k'ang**	**1.08**	**282**	*e*P	**Pb**	**16 13 36.2**	**+1.0**
CHN2	**Minshiung**	**1.09**	**310**	*e*P	**Pb**	**16 13 35.7**	**+0.4**
CHN2				S	**Sb**	**16 13 50.9**	**+1.8**
CHY	**Chiayi**	**1.10**	**307**	*e*P	**Pb**	**16 13 35.6**	**0.0**
CHY				S	**Sb**	**16 13 50.8**	**+1.3**
WGK	**Gukeng**	**1.14**	**319**	*e*P	**Pb**	**16 13 36.3**	**+0.1**
WGK				S	**Sb**	**16 13 52.2**	**+1.7**
SMLT	**Sun Moon Lake**	**1.14**	**337**	*e*P	**Pb**	**16 13 35.6**	**-0.6**
SMLT				S	**Sb**	**16 13 52.1**	**+1.5**
SCLT	**Jiali**	**1.15**	**288**	*e*P	**Pb**	**16 13 36.6**	**+0.3**
SCLT				S	**Sb**	**16 13 53.4**	**+2.6**
TYC	**Yuchr**	**1.18**	**336**	*e*P	**Pb**	**16 13 36.3**	**-0.5**
TYC				S	**Sb**	**16 13 52.3**	**+0.7**
CHN8	**Yiju**	**1.19**	**296**	*e*P	**Pb**	**16 13 37.0**	**-0.1**
CHN8				S	**Sb**	**16 13 54.0**	**+1.9**
WNT	**Mingjian**	**1.23**	**329**	*e*P	**Pn**	**16 13 38.0**	**+0.4**
WNT				S	**Sb**	**16 13 54.3**	**+1.3**
TWD	**Chiawan**	**1.26**	**9**	*e*P	**Pn**	**16 13 35.9**	**-2.3**
WHF	**Hehuan Shan**	**1.32**	**355**	P	**Pn**	**16 13 37.3**	**-1.6**
WHF				S	**Sb**	**16 13 53.6**	**-2.1**
WSF	**Szhu**	**1.34**	**307**	*e*P	**Pn**	**16 13 38.8**	**-0.4**
WSF				S	**Sb**	**16 13 56.9**	**+0.7**
TWT	**Tachien**	**1.43**	**353**	*e*P	**Pn**	**16 13 39.7**	**-0.8**
WTCT	**Ta-ch'eng**	**1.44**	**316**	*e*P	**Pn**	**16 13 39.6**	**-1.1**
WTCT				S	**Sn**	**16 13 59.5**	**+0.3**
TCU	**Taichung**	**1.47**	**334**	*e*P	**Pn**	**16 13 41.7**	**+0.7**
TCU				S	**Sn**	**16 14 00.6**	**+0.9**
NNS	**Nan Shan**	**1.61**	**360**	*e*P	**Pn**	**16 13 41.7**	**-1.3**
TWQ1	**Liyutan**	**1.61**	**340**	*e*P	**Pn**	**16 13 43.6**	**+0.5**
TWQ1				S	**Sn**	**16 14 05.1**	**+1.6**
ENA	**Nanau**	**1.63**	**12**	*e*P	**Pn**	**16 13 41.3**	**-2.0**
WDGT	**Dungji**	**1.64**	**286**	*e*P	**Pn**	**16 13 42.3**	**-1.1**
WDGT				S	**Sn**	**16 14 02.6**	**-1.6**
NSY	**Sanyi**	**1.68**	**340**	*e*P	**Pn**	**16 13 45.2**	**+1.1**
ENTT	**Nioudou**	**1.81**	**5**	*e*P	**Pn**	**16 13 44.4**	**-1.6**
TWC	**Suao**	**1.83**	**14**	*e*P	**Pn**	**16 13 45.1**	**-1.1**
NSTT	**Nanjuang**	**1.83**	**349**	*e*P	**Pn**	**16 13 46.1**	**0.0**
PNG	**Penghu**	**1.83**	**294**	*e*P	**Pn**	**16 13 45.0**	**-1.2**
PNG				S	**Sn**	**16 14 07.0**	**-2.0**
NSK	**Sanguang**	**1.84**	**359**	*e*P	**Pn**	**16 13 45.6**	**-0.7**
TWE	**Neicheng**	**1.91**	**8**	*e*P	**Pn**	**16 13 46.2**	**-1.1**
TATO	**Taipei**	**2.14**	**3**	*e*P	**Pn**	**16 13 52.0**	**+1.4**
TWA	**Mucha**	**2.15**	**5**	*e*P	**Pn**	**16 13 51.2**	**+0.4**
YOJ	**Yonaguni jima**	**2.21**	**42**	P	**Pn**	**16 13 53.8**	**+2.1**
YOJ				S	**Sn**	**16 14 20.9**	**+2.2**
NWF	**Wu-fen Shan**	**2.27**	**9**	*e*P	**Pn**	**16 13 52.0**	**-0.4**
TWS1	**Kuangyinshan**	**2.27**	**1**	*e*P	**Pn**	**16 13 53.2**	**+0.8**
HATJ	**Hateruma jima**	**2.54**	**61**	P	**Pn**	**16 13 57.8**	**+1.4**
HATJ				S	**Sn**	**16 14 26.5**	**-0.6**
IRIF	**Iriomote-Funau**	**2.63**	**55**	P	**Pn**	**16 13 59.4**	**+1.8**
IRIF				S	**Sn**	**16 14 30.2**	**+0.9**
JKRS	**Kuro-shima**	**2.79**	**59**	P	**Pn**	**16 13 59.3**	**+1.3**
JKRS				S	**Sn**	**16 14 34.1**	**+0.6**
JIJ	**Ishigaki jima**	**2.96**	**58**	P	**Sn**	**16 14 03.6**	**+1.2**
JIJ				S	**Sn**	**16 14 37.0**	**-0.7**
KNM	**Kinmen**	**3.13**	**301**	*e*P	**Pn**	**16 14 04.3**	**-0.4**
QZH	**Quanzhou**	**3.31**	**310**	P	**Pn**	**16 14 07.9**	**+0.6**
QZH				S	**Sn**	**16 14 44.7**	**-1.8**
QZH				S	Sn		
	comp=N,320nm,0.9s						
QZH				S	Sn		
	comp=E,280nm,0.7s						
JTJ	**Tarama**	**3.54**	**59**	P	**Pn**	**16 14 11.6**	**+1.0**
JTJ				S	**Sn**	**16 14 52.1**	**-0.3**
JOW	**Kunigami**	**7.43**	**56**	P	**Pn**	**16 15 04.7**	**-0.7**
TGY	**Tagaytay City**	**8.69**	**183**	LR	LR	16 19 04.7	
	comp=E,107nm,19.9s,baz=19,slow=39						
WHN	**Wuhan**	**9.93**	**322**	*e*P	**P**	**16 15 39.5**	**-0.6**
WHN				*e*S	**Sn**	**16 17 24.7**	**-7.3**
WHN				LR	LR		
	comp=N,211nm,12.0s						
WHN				LR	LR		
	comp=E,650nm,10.3s						
QIZ	**Qiongzhong**	**11.42**	**253**	*e*P	**P**	**16 16 05.8**	**+5.2**
QIZ				S	**S**	**16 18 06.5**	**-2.2**
QIZ				LR	LR		
	comp=N,149nm,14.0s						
QIZ				LR	LR		
	comp=E,201nm,14.5s						
QIZ				LR	LR		
	comp=Z,280nm,14.8s						
QIZ	**Qiongzhong**	**11.42**	**253**	P	**P**	**16 15 58.3**	**-2.3**
	comp=Z,55nm,1.9s						
GYA	**Guiyang**	**13.86**	**288**	P	**P**	**16 16 34.0**	**+0.8**
GYA				LR	LR		
	comp=N,110nm,8.1s						
GYA				LR	LR		
	comp=E,340nm,12.0s						
GYA				LR	LR		
	comp=Z,430nm,12.9s						
JHJ	**Hachijo jima 2**	**19.19**	**54**	P	**P**	**16 17 37.2**	**-3.5**
	comp=Z,4.1nm,0.3s,baz=242,slow=15,SNR=2.9						
CMAR	**Chiang Mai Arr**	**21.43**	**262**	P	**P**	**16 18 07.5**	**+3.0**
	comp=Z,1.4nm,0.8s,mb3.3,baz=69,slow=9.2,SNR=9.7						
CMAR				LR	LR	16 27 37.9	
	comp=Z,107nm,18.4s,MS3.3,baz=80,slow=40						
SONM	**Songino Array**	**27.69**	**338**	P	**P**	**16 19 04.2**	**+0.1**
	comp=Z,0.8nm,0.8s,mb3.4,baz=159,slow=10,SNR=3.8						
MKAR	**Makanchi Array**	**39.44**	**317**	P	**P**	**16 20 47.4**	**+1.5**
	comp=Z,1.1nm,0.7s,mb3.7,baz=112,slow=9.5,SNR=13						
PMG	**Port Moresby**	**40.79**	**139**	P	**P**	**16 20 58.9**	**+1.7**
	comp=Z,7.8nm,0.7s,mb4.4,baz=313,slow=4.2,SNR=2.4						
ZAL	**Zalesovo**	**41.48**	**328**	P	**P**	**16 21 02.8**	**+0.2**
	comp=Z,1.2nm,0.6s,mb3.7,baz=264,slow=4.2,SNR=6.3						
WRA	**Warramunga Arr**	**44.35**	**162**	P	**P**	**16 21 26.6**	**+0.3**
	comp=Z,0.3nm,0.5s,mb3.3,baz=343,slow=8.8,SNR=9.8						
ASAR	**Alice Springs**	**47.79**	**164**	P	**P**	**16 21 53.3**	**-0.3**
	comp=Z,0.4nm,0.8s,mb3.5,baz=337,slow=6.8,SNR=6.5						
STKA	**Stephens Creek**	**57.73**	**160**	P	**P**	**16 23 06.3**	**-1.1**
	comp=Z,0.5nm,0.4s,mb3.9,baz=324,slow=14,SNR=1.9						
STKA	**Stephens Creek**	**57.73**	**160**	P	**P**	**16 23 06.3**	**-1.1**
FINES	**FINESS Array B**	**72.70**	**330**	P	**P**	**16 24 43.6**	**+0.1**
	comp=Z,0.8nm,0.9s,mb3.6,baz=45,slow=7.9,SNR=3.7						
HFS	**Hagfors**	**78.83**	**331**	P	**P**	**16 25 18.4**	**+0.1**
	comp=Z,0.4nm,0.4s,mb3.7,baz=101,slow=7.6,SNR=4.5						

IDC 08 16:14:03.0±66.0, 13.76S×172.42W, mb3.7/3, mb1 3.9/3, mb1mx3.6/16, Error ellipse: s-maj=1289.0km s-min=207.6km az=77.0, Samoa Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**45.68**	**239**	P	P	16 22 25.7	-1.8
	0.4nm,0.4s,baz=104,slow=8.3,SNR=3.6						
WRA	**Warramunga Arr**	**51.16**	**255**	P	P	16 23 07.9	-2.3
	0.1nm,0.3s,baz=89,slow=6.3,SNR=10.0						
ASAR	**Alice Springs**	**51.53**	**251**	P	P	16 23 11.3	-1.7
	1.3nm,0.4s,baz=86,slow=8.2,SNR=52						

*JMA **08** 16:17:17.3,37.39N×139.56E,h5km±1km,M2.1*

ISC 08 16:17:16.9±0.7, 37.39N±0.06×139.57E±0.06, h8km±10km, n7,σ0§14/12, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFY	**Yanaizu**	**0.11**	**82**	P	**Pg**	**16 17 19.7**	**+0.2**
JFY				*e*S	**Sg**	**16 17 21.2**	**-0.1**
JHK	**Hiroka**	**0.46**	**252**	P	**Pg**	**16 17 26.2**	**0.0**
JHK				*e*S	**Sg**	**16 17 32.4**	**0.0**
JNS	**Sasagawa**	**0.47**	**335**	P	**Pg**	**16 17 26.4**	**0.0**
JNS				*e*S	**Sg**	**16 17 32.7**	**0.0**
JFT	**Otama**	**0.63**	**78**	P	**Pg**	**16 17 29.4**	**-0.1**
MAJO	**Matsushiro**	**1.38**	**232**	*e*P	**Pb**	**16 17 42.5**	**-0.1**
	7.8nm,0.6s						
MAT	**Matsushiro**	**1.38**	**232**	P	**Pb**	**16 17 42.8**	**+0.2**
MAT				S	**Sb**	**16 18 00.3**	**0.0**
MAT	**Matsushiro**	**1.38**	**232**	P	**Pb**	**16 17 43.0**	**+0.4**
MAT				*e*S	**Sb**	**16 18 00.0**	**-0.3**

*HEL **08** 16:25:35.0±0.2,67.07N×20.89E,ML1.7,ML1.9(UPP), Explosion*
*IDC **08** 16:25:35.3±0.8,67.08N×21.51E,mb1 3.0/5, mb1mx3.0/22,ML2.5/5, Error ellipse: s-maj=14.8km s-min=6.7km az=109.0*

ISC 08 16:25:33.0±0.5, 67.01N±0.03×20.8E±0.1, n13,σ1§25/20, Sweden

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KIF	**Kilpisjarvi**	**2.01**	**0**	*e*P	**Pn**	**16 26 09.5**	**+1.0**
KIF				*e*S	**Sn**	**16 26 35.7**	**+1.1**
SGF	**Sodankyl**	**2.28**	**76**	*e*P	**Pn**	**16 26 12.8**	**+0.4**
OUL	**Oulu**	**2.84**	**130**	*e*P	**Pn**	**16 26 21.8**	**+1.3**
OUL				MSG		16 27 05.6	
	comp=Z,2.1nm,0.2s						
ARCES	**ARCESS Array B**	**3.09**	**33**	Pn	**Pn**	**16 26 22.8**	**-1.2**
	comp=Z,0.6nm,0.3s,baz=209,slow=14,SNR=56						
ARCES				Sn	**Sn**	**16 27 00.5**	**-1.7**
	comp=Z,0.4nm,0.3s,baz=212,slow=24,SNR=3.5						
ARCES				Lg		16 27 05.3	
	comp=Z,0.6nm,0.3s,baz=208,slow=27,SNR=7.1						
MSF	**Maaselka**	**3.50**	**105**	*e*P	**Pn**	**16 26 30.8**	**+1.1**
KEV	**Kevo**	**3.60**	**37**	*e*P	**Pn**	**16 26 30.0**	**-1.2**
KEV				MSG		16 27 21.2	
	comp=Z,1.5nm,0.2s						
VAF	**Ylistaro**	**4.06**	**168**	*e*P	**Pn**	**16 26 39.4**	**+1.6**
VAF				*e*S	**Sn**	**16 27 25.7**	**-1.1**
KJN	**Kajaani**	**4.11**	**132**	*e*P	**Pn**	**16 26 39.2**	**+0.7**
SUF	**Sumiainen**	**4.88**	**149**	*e*P	**Pn**	**16 26 50.4**	**+1.0**
SUF				*e*S	**Sn**	**16 27 46.7**	**-0.7**
FINES	**FINESS Array B**	**6.04**	**155**	Pn	**Pn**	**16 27 05.9**	**+0.1**
	comp=Z,1.0nm,0.3s,baz=346,slow=12,SNR=8.9						
FINES				Sn	**Sn**	**16 28 13.3**	**-3.3**
	comp=Z,0.1nm,0.3s,baz=330,slow=19,SNR=4.0						
FINES				Lg		16 28 45.9	
	comp=Z,0.1nm,0.3s,baz=333,slow=28,SNR=3.0						
NOA	**NORSAR Array B**	**7.31**	**219**	Pn	**Pn**	**16 27 24.9**	**+1.3**
	comp=Z,0.1nm,0.3s,baz=54,slow=12,SNR=2.4						
NOA				Sn	**Sn**	**16 28 48.8**	**+0.5**
	comp=Z,0.1nm,0.3s,baz=247,slow=20,SNR=2.5						
HFS	**Hagfors**	**7.58**	**208**	Pn	**Pn**	**16 27 26.6**	**-0.8**
	comp=Z,0.0nm,0.3s,baz=17,slow=13,SNR=6.0						
HFS				Sn	**Sn**	**16 28 53.0**	**-2.1**
	comp=Z,0.0nm,0.3s,baz=17,slow=25,SNR=3.6						
SPITS	**Spitsbergen Ar**	**11.30**	**355**	Pn	**P**	**16 28 15.4**	**-3.2**
	comp=Z,0.1nm,0.3s,baz=158,slow=19,SNR=4.6						

*NIED **08** 16:30:00,38.20N×141.10E,h77km,Mw3.9 Best double couple: Mo7.36×10^14 NP1:φs334°,δ67°,λ-47°. NP2:φs86°, δ47°,λ-148°.*
*BJI **08** 16:30:21.0,37.91N×141.55E,h83km,mB4.6,mb4.6, Ms4.9,Msz4.6*
*NEIC **08** 16:30:28.4±1.1,38.32N×141.02E,h83km±10km,mb4.6/8, Error ellipse: s-maj=15.9km s-min=9.7km az=127.0*
NEIC Recorded [2 JMA] in Miyagi and [1 JMA] in Fukushima and Iwate Prefectures.
*IDC **08** 16:30:28.2±1.6,38.20N×140.97E,h81km±17km,mb3.7/11, mb1 3.8/14,mb1mx3.6/26,Error ellipse: s-maj=25.2km s-min=10.1km az=93.0*
*JMA **08** 16:30:29.2,38.20N×141.07E,h80km±1km,M4.1 Broadband fault plane solution: P waves. NP1:φs87°,δ51°, λ-137°. NP2:φs326°,δ58°,λ-48°. Principal axes: T Plg4°, Azm28°; N Plg35°, Azm121°; P Plg55°, Azm292°;*

comp=Z,6.5nm,0.5s,mb4.6
GKN Gorkha 47.77 275 *e*P **P 16 38 57.0 +0.3**
comp=Z,14nm,0.7s,mb4.9
ILAR Eielson Array 48.63 33 P **P 16 39 04.7 +1.8**
comp=Z,0.4nm,0.7s,mb3.4,baz=269,slow=7.4,SNR=7.2
KOLN Koldanda 48.70 276 *e*P **P 16 39 04.1 +0.3**
comp=Z,4.1nm,0.3s,mb4.9
BVAR Borovoye Array 49.64 312 P **P 16 39 10.7 -0.1**
comp=Z,1.9nm,0.6s,mb4.2,baz=75,slow=8.9,SNR=15
BRVK Borovoye 49.69 312 *e*P **P 16 39 08.0 -3.1**
WRA Warramunga Arr 58.18 188 P **P 16 40 13.5 -0.3**
comp=Z,0.3nm,0.4s,mb3.7,baz=5.0,slow=7.1,SNR=15
ASAR Alice Springs 61.91 188 P **P 16 40 39.4 +0.3**
comp=Z,0.2nm,0.4s,mb3.5,baz=359,slow=4.0,SNR=6.3
ARCES ARCESS Array B 62.84 339 P **P 16 40 44.5 -0.2**
comp=Z,6.3nm,1.1s,mb4.5,baz=51,slow=7.8,SNR=4.7
ARCES ARCESS Array B 62.84 339 P **P 16 40 44.5 -0.2**
FINES FINESS Array B 67.69 332 P **P 16 41 15.6 -0.2**
comp=Z,0.8nm,0.5s,mb3.8,baz=37,slow=8.0,SNR=13
NB2 NORSAR Subarra 73.03 337 P **P 16 41 48.5 +0.6**
comp=Z,0.1nm,0.5s,baz=47,slow=6.2
NOA NORSAR Array B 73.03 337 P **P 16 41 48.5 +0.6**
comp=Z,0.6nm,0.5s,mb3.7,baz=40,slow=5.8,SNR=4.1
AKASG Malin Array Be 73.25 322 P **P 16 41 49.2 -0.2**
comp=Z,0.7nm,0.3s,mb3.9,baz=45,slow=6.6,SNR=5.7

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*SKHL **08** 16:39:34.7±0.2, 49.00N×141.69E, h10km, mb4.6/6, Ms4.5/5, msh4.9/2*
SKHL Felt (VII) at Porechie, (V) at Shaktersk, Uglegorsk.
*MOS **08** 16:39:36.4±0.9, 48.92N×141.86E, h10km, mb4.7/17, Error ellipse: s-maj=13.3km s-min=6.8km az=98.1*
MOS Felt (III) at Uglegorsk.
*IDC **08** 16:39:36.6±0.6, 48.95N×141.87E, mb4.3/19, mb1 4.5/20, mb1mx4.4/25, ML3.9/1, MS3.6/6, Ms1 3.6/6, ms1mx3.2/29, Error ellipse: s-maj=15.7km s-min=14.3km az=111.0*
*NEIC **08** 16:39:37.9±0.3, 48.92N×141.91E, h10km, mb4.5/20, Error ellipse: s-maj=7.0km s-min=4.9km az=154.0*
NEIC Felt [III] at Uglegorsk.
*BJI **08** 16:39:37.8, 48.90N×141.90E, h10km, mB4.5, mb4.2, Ms4.5, Msz3.9*
ISC 08 16:39:36.3±0.2, **48.96N**±0.02×**141.84E**±0.03, **h10**km, **n124**, σ1**16**/160, **mb4.4**/45, **MS4.0**/13, **7C-6D, Sakhalin Island**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
UGL	**Uglegorsk**	**0.19**	**53**	*i* Pg		**Pg**		**16 39 40.6**	**+0.1**
UGL					*e*Sg	**Sg**		**16 39 43.5**	**+0.2**
UGL	**Uglegorsk**	**0.19**	**53**	k *i*PN		**Pg**		**16 39 40.6**	**+0.1**
TYV	**Tymovskoe**	**1.98**	**15**	⇑ *i*Pb		**Pn**		**16 40 10.2**	**0.0**
TYV					*e*Pg	**Pg**		**16 40 13.6**	**-2.2**
TYV					AMB	AMB		16 40 15.0	
	160nm,0.6s								
TYV					AMB	AMB		16 40 15.0	
	60nm,0.4s								
TYV					AMB	AMB		16 40 15.0	
	40nm,0.4s								
TYV					pP			16 40 17.8	
TYV					*e*rx	rx		16 40 25.6	
TYV					*e*Sb	**Sb**		**16 40 32.8**	**-3.8**
TYV					*e*Sg	**Sg**		**16 40 41.0**	**-1.1**
TYV					A			16 40 45.2	
	2μm,1.0s								
TYV					A			16 40 45.2	
	3μm,1.0s								
TYV	**Tymovskoe**	**1.98**	**15**	⇑ *i*PN		**Pn**		**16 40 10.2**	**0.0**
TYV					*e*S	**Sn**		**16 40 39.0**	**+3.8**
TYV					pmax	pmax			
	comp=Z,53nm,0.9s								
TYV					smax				
	comp=N,2μm,1.0s								
TYV					smax				
	comp=E,3μm,1.0s								
YSS	**Yuzh-Sakhalins**	**2.10**	**163**	*e*Pn		**Pn**		**16 40 11.5**	**-0.6**
YSS					*e*Pb	**Pb**		**16 40 14.0**	**-0.1**
YSS					*e*Pg	**Pg**		**16 40 18.0**	**-0.3**
YSS					AMB	AMB		16 40 22.1	
	comp=E,1μm,0.9s								
YSS					AMB	AMB		16 40 22.1	
	comp=E,1μm,0.9s								
YSS					AMB	AMB		16 40 22.1	
	comp=E,510nm,0.5s								
YSS					*e*Sn	**Sn**		**16 40 35.8**	**-2.7**
YSS					*e*Sb	**Sb**		**16 40 39.2**	**-1.1**
YSS					*e*Sg	**Sg**		**16 40 48.0**	**+1.6**
YSS					A			16 40 51.0	
	comp=E,2μm,0.9s								
YSS					A			16 40 51.0	
	comp=E,1μm,0.9s								
YSS					A			16 40 56.0	
	comp=E,3μm,2.0s								
YSS					AMS	AMS		16 41 28.0	
	comp=E,2μm,10.0s								
YSS					AMS	AMS		16 41 28.0	
	comp=E,1μm,6.0s								
YSS					AMS	AMS		16 41 28.0	
	comp=E,1μm,8.0s								
YSS	**Yuzh-Sakhalins**	**2.10**	**163**	*e*PN		**Pn**		**16 40 11.5**	**-0.6**
YSS					*e*			16 40 41.0	
YSS					pmax	pmax			
	comp=Z,380nm,0.5s								
YSS					pmax	pmax			
	comp=N,300nm,0.4s								
YSS					pmax	pmax			
	comp=N,1μm,0.9s								
YSS					pmax	pmax			
	comp=Z,1μm,0.9s								
YSS					pmax	pmax			
	comp=E,510nm,0.5s								
YSS					smax				
	comp=N,1μm,0.8s								
YSS					smax				
	comp=E,460nm,0.9s								
YSS					MLR	MLR			
	comp=Z,1μm,8.0s								
YSS	**Yuzh-Sakhalins**	**2.10**	**163**	*e*P		**Pn**		**16 40 12.5**	**+0.4**
YSS					*e*S	**Sn**		**16 40 39.5**	**+1.0**
GRNR	**Gornyy**	**3.94**	**299**	*e*Pn		**Pn**		**16 40 37.6**	**-0.6**
GRNR					*e*Pg	**Pg**		**16 40 51.0**	**-4.0**
GRNR					AMB	AMB		16 40 52.0	
	comp=Z,230nm,0.6s								
GRNR					AMB	AMB		16 40 52.0	
	comp=Z,310nm,0.6s								
GRNR					AMB	AMB		16 40 52.0	
	comp=Z,180nm,0.6s								
GRNR					*e*Sg	**Sg**		**16 41 44.0**	**-3.5**
GRNR					A			16 41 44.6	
	comp=Z,5μm,0.6s								
GRNR					A			16 41 44.6	
	comp=Z,710nm,0.6s								
GRNR					A			16 41 44.6	
	comp=Z,430nm,0.6s								
NKL	**Nikolayevsk**	**4.26**	**351**	*i* Pn		**Pn**		**16 40 39.6**	**-3.1**
NKL					*e*Pb	**Pb**		**16 40 48.2**	**-2.8**
NKL					*i* Pg	**Pg**		**16 40 58.0**	**-3.3**
NKL					AMB	AMB		16 40 59.4	
	comp=Z,200nm,0.6s								
NKL					AMB	AMB		16 40 59.4	
	comp=Z,60nm,0.6s								
NKL					AMB	AMB		16 40 59.4	
	comp=Z,170nm,0.6s								
NKL					*e*rx	rx		16 41 18.0	
NKL					*e*Sn	**Sn**		**16 41 29.0**	**-4.1**
NKL					*e*Sb	**Sb**		**16 41 37.0**	**-5.8**
NKL					*e*Sg	**Sg**		**16 41 56.4**	**-1.6**
NKL					A			16 42 07.0	
	comp=Z,2μm,1.0s								
NKL					A			16 42 07.0	
	comp=Z,910nm,1.0s								
NKL					AMS	AMS		16 43 46.0	
	comp=Z,1μm,8.0s								
NKL					AMS	AMS		16 43 46.0	
	comp=Z,1μm,10.0s								
OKH	**Okha**	**4.64**	**8**	*e*Pb		**Pb**		**16 40 58.1**	**+0.5**
OKH					*e*Pg	**Pg**		**16 41 08.4**	**-0.7**
OKH					AMB	AMB		16 41 12.6	
	comp=Z,200nm,0.6s								
OKH					*e*Sg	**Sg**		**16 42 12.0**	**+1.0**
OKH					A			16 42 14.0	
	comp=Z,270nm,0.6s								
OKH					A			16 42 32.2	
	comp=Z,2μm,6.0s								
OKH					AMS	AMS		16 42 58.2	
	comp=Z,3μm,9.0s								
OKH					AMS	AMS		16 42 58.2	
	comp=Z,2μm,9.0s								
OKH					AMS	AMS		16 42 58.2	
	comp=Z,2μm,9.0s								
OKH	**Okha**	**4.64**	**8**	*e*PN		**Pb**		**16 40 58.1**	**+0.5**
OKH					MLR	MLR			
	comp=N,2μm,10.0s								
ASAJ	**Asahikawa**	**4.88**	**174**	Pn		**Pn**		**16 40 50.5**	**-1.0**
	comp=N,4.1nm,0.3s,baz=29,slow=6.6,SNR=25								
ASAJ					Sn	**Sn**		**16 41 47.5**	**-1.2**
	baz=43,slow=19,SNR=2.2								
ASAJ					LR	LR		16 43 08.7	
	comp=N,622nm,18.9s,baz=170,slow=44								
ASAJ	**Asahikawa**	**4.88**	**174**	PN		**Pn**		**16 40 50.5**	**-1.0**
ASAJ					pmax	pmax			
	comp=Z,4.0nm,0.3s								
ASAJ					MLR	MLR			
	comp=Z,622nm,18.9s								
TEY	**Ternei**	**5.31**	**224**	*e*Pn		**Pn**		**16 40 59.0**	**+1.3**
TEY					*e*Pg	**Pg**		**16 41 19.0**	**-3.4**
TEY					AMB	AMB		16 41 21.4	
	comp=Z,30nm,0.6s								
TEY					*e*Sn	**Sn**		**16 41 57.0**	**-2.7**
TEY					*e*Sg	**Sg**		**16 42 32.0**	**-1.2**
TEY					A			16 42 44.0	
	comp=Z,180nm,0.8s								
TEY					A			16 42 44.0	
	comp=Z,160nm,0.8s								
TEY					AMS	AMS		16 43 15.0	
	comp=Z,1μm,13.0s								
KUR	**Kuril'sk**	**5.56**	**130**	*e*Pn		**Pn**		**16 41 00.5**	**-0.6**
KUR					sP			16 41 07.8	
KUR					*e*Sn	**Sn**		**16 42 05.0**	**-0.8**
KUR	**Kuril'sk**	**5.56**	**130**	*e*PN		**Pn**		**16 41 07.8**	**+6.7**
KUR					*e*S	**Sn**		**16 42 09.3**	**+3.5**
KUR					pmax	pmax			
	comp=N,60nm,0.8s								
KUR					pmax	pmax			
	comp=E,60nm,0.8s								
KUR					pmax	pmax			
	comp=Z,110nm,0.8s								
KUR					smax				
	comp=N,150nm,0.8s								
KUR					smax				
	comp=E,110nm,0.8s								
YUK	**Yuzh-Kuril'sk**	**5.66**	**149**	*e*Pn		**Pn**		**16 41 02.4**	**-0.1**
YUK					*e*Sn	**Sn**		**16 42 06.0**	**-2.4**
YUK	**Yuzh-Kuril'sk**	**5.66**	**149**	*e*PN		**Pn**		**16 41 02.4**	**-0.1**
YUK					pmax	pmax			
	comp=Z,120nm,0.5s								
KLR	**Kul'dur**	**6.63**	**276**	*e*rx		rx		16 41 21.2	
KLR					*e*rx	rx		16 43 07.6	
KLR					*e*rx	rx		16 43 09.5	
KLR					AMS	AMS		16 45 08.0	
	comp=Z,1μm,8.0s								
KLR					AMS	AMS		16 45 08.0	
	comp=Z,2μm,8.0s								
KLR	**Kul'dur**	**6.63**	**276**	*e*PN		**Pn**		**16 41 21.2**	**+5.0**
KLR					MLR	MLR			
	comp=E,1μm,7.5s								
KLR					MLR	MLR			
	comp=Z,2μm,7.5s								
EKMR	**Ekimchan**	**6.95**	**310**	*e*Pn		**Pn**		**16 41 20.4**	**-0.4**
EKMR					sP			16 41 26.7	
EKMR					*e*Pb	**Pb**		**16 41 37.9**	**+0.8**
EKMR					*e*Pg	**Pg**		**16 41 52.1**	**-3.0**
EKMR					*e*Sn	**Sn**		**16 42 33.0**	**-7.7**
EKMR					*e*Sb	**Sb**		**16 42 50.0**	**-11**
EKMR					*i* Sg	**Sg**		**16 43 25.5**	**-2.2**
EKMR					A			16 43 30.9	
	comp=Z,420nm,1.0s								
EKMR					A			16 43 30.9	
	comp=Z,240nm,1.0s								
VLA	**Vladivostok**	**9.05**	**233**	*i* rx		rx		16 44 17.0	
VLA					*e*rx	rx		16 44 54.0	
VLA					AMS	AMS		16 45 22.0	
	comp=Z,2μm,13.0s								
VLA					AMS	AMS		16 45 22.0	
	comp=Z,2μm,15.0s								
YASR	**Yasnyy**	**9.72**	**302**	*e*P		**P**		**16 41 57.6**	**-1.6**
YASR					*e*rx	rx		16 42 12.1	
YASR					*e*S	**Sn**		**16 43 50.3**	**+0.7**
BMKR	**Bomnak**	**9.88**	**311**	*e*P		**P**		**16 42 00.5**	**-0.9**
BMKR					sP			16 42 09.0	
BMKR					*e*S	**Sn**		**16 43 53.5**	**0.0**
ZEA	**Zeya**	**10.29**	**303**	*e*P		**P**		**16 42 06.5**	**-0.6**
ZEA					*e*rx	rx		16 43 07.7	
ZEA					*e*S	**S**		**16 44 04.0**	**+0.4**
ZEA					AMS	AMS		16 46 21.0	
	comp=Z,1μm,10.0s								
ZEA					AMS	AMS		16 46 21.0	
	comp=Z,900nm,10.0s								
ZEA					AMS	AMS		16 46 21.0	
	comp=Z,1μm,10.0s								
KROS	**Kirovskiy**	**10.72**	**306**	*e*P		**P**		**16 42 11.3**	**-1.6**
KROS					*e*rx	rx		16 42 55.6	
KROS					*e*S	**S**		**16 44 18.0**	**+4.0**
KROS					*e*rx	rx		16 45 18.3	
PET	**Petropavlovsk**	**11.35**	**63**	*e*P		**P**		**16 42 22.7**	**+1.3**
PET					*e*S	**S**		**16 44 29.9**	**+0.6**
PET					AMS	AMS		16 47 06.1	
	comp=Z,430nm,16.0s								
PET	**Petropavlovsk**	**11.35**	**63**	*e*PN		**P**		**16 42 22.7**	**+1.3**
PET					pmax	pmax			
	comp=Z,4.0nm,0.5s								
PET					MLR	MLR			
	comp=Z,431nm,16.0s								
PET	**Petropavlovsk**	**11.35**	**63**	P		**P**		**16 42 18.8**	**-2.6**
MA2	**Magadan**	**11.83**	**23**	P		**P**		**16 42 26.5**	**-1.5**
	comp=Z,46nm,1.8s								
MAJO	**Matsushiro**	**12.69**	**193**	*e*P		**P**		**16 42 42.2**	**+2.6**
	comp=Z,4.7nm,0.8s								
HIA	**Hailar**	**14.47**	**280**	*e*P		**P**		**16 43 04.0**	**+1.1**
	comp=Z,13nm,1.1s								
YAK	**Yakutsk**	**14.76**	**337**	*e*P		**P**		**16 43 13.5**	**+6.9**
YAK					*e*S	**S**		**16 45 54.7**	**+3.6**
YAK					pmax	pmax			
	comp=Z,5.0nm,0.9s								
YAK					pmax	pmax			
	comp=N,6.0nm,1.5s								
YAK					pmax	pmax			
	comp=E,4.0nm,1.1s								
YAK					smax				
	comp=N,2.0nm,1.0s								
YAK					smax				
	comp=E,2.0nm,1.0s								
YAK					MLR	MLR			
	comp=Z,270nm,13.0s								
YAK	**Yakutsk**	**14.76**	**337**	*e*Pn		**P**		**16 43 05.6**	**-1.0**
	comp=Z,9.7nm,0.7s								
SEY	**Seymchan**	**15.16**	**19**	*e*P		**P**		**16 43 19.4**	**+7.5**
SEY					pmax	pmax			
	comp=Z,10.0nm,0.8s								
SEY					MLR	MLR			
	comp=Z,1μm,13.0s								
SEY					MLR	MLR			
	comp=E,2μm,14.0s								
JNU	**Nakatsue**	**17.82**	**211**	LR		LR		16 50 29.4	
	comp=E,264nm,18.4s,baz=43,slow=37								
BOD	**Bodaibo**	**18.70**	**309**	⇓ *i*P		**P**		**16 43 57.4**	**+0.8**
FX1	**Attu Island--F**	**20.05**	**67**	P		**P**		**16 44 11.4**	**-0.8**
BJI	**Beijing**	**20.28**	**254**	P		**P**		**16 44 15.4**	**+0.7**
BJI					AMB	AMB			
	comp=Z,10.0nm,1.0s								
BJI					AMB	AMB			
	comp=Z,135nm,5.6s								
BJI					LR	LR			
	comp=N,601nm,11.2s,MS4.4								
BJI					LR	LR			
	comp=E,753nm,11.2s,MS4.4								
BJI					LR	LR			
	comp=Z,324nm,16.9s								
BILL	**Bilibino**	**22.70**	**24**	*e*P		**P**		**16 44 41.4**	**+2.6**
BILL					pmax	pmax			
	comp=Z,9.0nm,1.3s,mb4.0								
BILL					MLR	MLR			
	comp=Z,100nm,15.0s,MS3.4								
BILL	**Bilibino**	**22.70**	**24**	*e*P		**P**		**16 44 41.0**	**+2.3**
	comp=Z,3.4nm,0.7s,mb3.9								
HHC	**Hu-ho-hao-te**	**22.81**	**261**	*e*P		**P**		**16 44 41.5**	**+1.4**
HHC					AP			16 44 50.1	
HHC					XP			16 44 55.0	
HHC					AMB	AMB			
	comp=Z,11nm,1.4s,mb4.1								
HHC					AMB	AMB			
	comp=Z,42nm,3.2s								
HHC					LR	LR			
	comp=N,483nm,11.8s,MS4.3								
HHC					LR	LR			
	comp=E,347nm,11.6s,MS4.3								
HHC					LR	LR			
	comp=Z,236nm,12.7s,MS3.8								
ULN	**Ulaanbaatar**	**23.00**	**281**	*e* P		**P**		**16 44 43.4**	**+1.5**
ULN	**Ulaanbaatar**	**23.00**	**281**	⇑ *e*P		**P**		**16 44 43.5**	**+1.6**
	comp=Z,17nm,1.3s,mb4.3								
SONM	**Songino Array**	**23.43**	**281**	P		**P**		**16 44 47.7**	**+1.6**
	comp=Z,2.2nm,0.7s,mb3.7,baz=67,slow=9.4,SNR=13								
TIXI	**Tiksi**	**23.54**	**350**	*e*P		**P**		**16 44 47.5**	**+0.6**
TIXI					*e*			16 44 55.2	
TIXI					*e*S	**S**		**16 49 03.1**	**+6.0**
TIXI					pmax	pmax			
	comp=Z,44nm,0.8s,mb4.9								
TIXI					MLR	MLR			
	comp=Z,3μm,13.0s,MS4.9								
TIXI	**Tiksi**	**23.54**	**350**	*e*P		**P**		**16 44 47.9**	**+1.0**
	comp=Z,7.0nm,0.7s,mb4.2								
SSE	**Sheshan**	**23.71**	**229**	⇑P		**P**		**16 44 49.2**	**+0.1**
SSE					XP			16 45 02.8	
SSE					AMB	AMB			
	comp=Z,24nm,1.8s,mb4.3								
SSE					LR	LR			
	comp=N,72nm,11.7s,MS3.7								
SSE					LR	LR			
	comp=E,149nm,11.7s,MS3.7								
SSE					LR	LR			
	comp=Z,214nm,11.8s,MS3.8								
NJ2	**Nanjing**	**24.16**	**234**	*e*P		**P**		**16 44 53.0**	**-0.4**
NJ2					AP			16 45 02.3	
NJ2					XP			16 45 06.3	
NJ2					AMB	AMB			
	comp=Z,40nm,1.0s,mb4.8								
NJ2					AMB	AMB			
	comp=Z,390nm,4.4s								
NJ2					LR	LR			
	comp=N,700nm,11.8s								
NJ2					LR	LR			
	comp=E,360nm,20.6s								
NJ2					LR	LR			
	comp=Z,350nm,19.2s								
ZAK	**Zakamensk**	**24.81**	**288**	*e*P		**P**		**16 45 00.7**	**+1.2**
ENH	**Enshi**	**30.81**	**245**	P		**P**		**16 45 51.6**	**-2.7**
	comp=Z,15nm,1.3s,mb4.7								
ZAL	**Zalesovo**	**35.06**	**300**	P		**P**		**16 46 31.1**	**0.0**
	comp=Z,1.2nm,0.7s,mb4.0,baz=335,slow=9.5,SNR=7.6								
NVS	**Novosibirsk**	**35.70**	**302**	*e*P		**P**		**16 46 36.2**	**-0.2**
NVS					pmax	pmax			
	comp=Z,15nm,1.4s,mb4.7								
NVS					pmax	pmax			
	comp=N,10.0nm,1.3s								
IMA	**Indian Mountai**	**36.63**	**38**	*e*P		**P**		**16 46 44.8**	**+0.5**
	comp=N,19nm,0.6s,mb5.1								
RSO	**Redoubt South**	**37.89**	**47**	*e*P		**P**		**16 46 52.2**	**-2.6**
MCK	**McKinley**	**38.97**	**41**	*e*P		**P**		**16 47 04.7**	**+0.9**
	comp=N,3.4nm,1.1s,mb4.0								
MKAR	**Makanchi Array**	**39.11**	**290**	P		**P**		**16 47 06.0**	**+0.8**
	comp=N,4.6nm,0.7s,mb4.3,baz=74,slow=6.5,SNR=15								
MKAR					PcP	PcP		16 49 15.0	-0.4
	comp=N,0.8nm,0.6s,baz=45,slow=3.4,SNR=3.7								
MKAR	**Makanchi Array**	**39.11**	**290**	P		**P**		**16 47 06.0**	**+0.8**
MKAR								16 49 15.0	
MKAR					pmax	pmax			
	comp=Z,5.0nm,0.7s								
MKAR	**Makanchi Array**	**39.11**	**290**	P		**P**		**16 47 06.0**	**+0.8**
MKAR					PcP	PcP		16 49 15.0	-0.4
COLA	**College**	**39.21**	**39**	‖ *e*P		**P**		**16 47 07.0**	**+1.2**
ILAR	**Eielson Array**	**39.63**	**40**	P		**P**		**16 47 09.7**	**+0.3**
	comp=Z,4.9nm,0.6s,mb4.4,baz=288,slow=8.3,SNR=46								
ILAR					LR	LR		17 03 00.9	
	comp=Z,43nm,21.2s,MS3.3,baz=103,slow=35								
ILAR	**Eielson Array**	**39.63**	**40**	P		**P**		**16 47 09.7**	**+0.3**
ILAR					pmax	pmax			
	comp=Z,5.0nm,0.6s								
ILAR					MLR	MLR			
	comp=Z,43nm,21.2s								
KURK	**Kurchatov**	**39.70**	**297**	*e*P		**P**		**16 47 10.5**	**+0.4**
LSA	**Lhasa**	**42.77**	**262**	P		**P**		**16 47 37.0**	**+1.5**
	comp=Z,6.9nm,1.2s,mb4.3								
DAWY	**Dawson**	**42.95**	**39**	*e*P		**P**		**16 47 36.5**	**+0.1**
BVAR	**Borovoye Array**	**43.44**	**304**	P		**P**		**16 47 40.9**	**+0.3**
	comp=Z,2.7nm,0.6s,mb4.1,baz=65,slow=9.3,SNR=27								
BVAR					PcP	PcP		16 49 29.5	+0.1
	comp=Z,1.3nm,0.5s,baz=70,slow=3.9,SNR=7.0								
BRVK	**Borovoye**	**43.49**	**304**	*e*P		**P**		**16 47 41.8**	**+0.9**
INK	**Inuvik**	**43.86**	**32**	P		**P**		**16 47 44.1**	**+0.4**
	comp=Z,2.8nm,0.7s,mb4.1,baz=303,slow=5.9,SNR=18								
INK	**Inuvik**	**43.86**	**32**	P		**P**		**16 47 44.1**	**+0.3**
INK					pmax	pmax			
	comp=Z,3.0nm,0.7s								
INK	**Inuvik**	**43.86**	**32**	*e*P		**P**		**16 47 43.1**	**-0.7**
	comp=Z,2.7nm,0.7s,mb4.1								
CMAR	**Chiang Mai Arr**	**45.97**	**244**	P		**P**		**16 48 01.6**	**+0.2**
	comp=Z,1.4nm,1.0s,mb3.8,baz=31,slow=6.2,SNR=6.0								
CMAR					LR	LR		17 07 18.6	
	comp=Z,72nm,20.1s,MS3.6,baz=65,slow=36								
CMAR	**Chiang Mai Arr**	**45.97**	**244**	P		**P**		**16 48 01.6**	**+0.3**
CMAR					pmax	pmax			
	comp=Z,1.0nm,1.0s								
CMAR					MLR	MLR			
	comp=Z,72nm,20.1s								
SVE	**Sverdlovsk**	**46.87**	**312**	‖ *e*P		**P**		**16 48 09.2**	**+1.3**
SVE					MLR	MLR			
	comp=N,100nm,15.0s,MS4.5								
SVE					MLR	MLR			
	comp=E,400nm,15.0s,MS4.5								
SVE					MLR	MLR			
	comp=Z,500nm,15.0s,MS4.6								
GUN	**Gumba**	**47.41**	**265**	*e*P		**P**		**16 48 12.2**	**-0.4**
	comp=Z,14nm,1.0s,mb4.8								
KKN	**Kakani**	**47.89**	**265**	*e*P		**P**		**16 48 16.1**	**-0.3**
	comp=Z,9.3nm,0.9s,mb4.8								
ARU	**Arti**	**48.07**	**312**	⇑ *i*P		**P**		**16 48 17.4**	**0.0**
ARU					*e*			16 49 42.5	
ARU					*e*			16 50 11.3	
ARU					*e*S	**S**		**16 55 15.4**	**+0.7**
ARU					*e*SS	SS		16 58 41.7	+3.2
ARU					pmax	pmax			
	comp=Z,6.0nm,0.8s,mb4.7								
ARU					MLR	MLR			
	comp=Z,200nm,16.0s,MS4.2								
ARU					MLR	MLR			
	comp=N,100nm,17.0s,MS4.2								
ARU					MLR	MLR			
	comp=E,200nm,17.0s,MS4.2								
DMN	**Daman**	**48.12**	**265**	*e*P		**P**		**16 48 18.7**	**+0.5**
	comp=E,16nm,1.1s,mb5.0								
GKN	**Gorkha**	**48.17**	**266**	*e*P		**P**		**16 48 18.8**	**+0.3**
	comp=E,12nm,0.7s,mb5.0								
KOLN	**Koldanda**	**49.00**	**267**	*e*P		**P**		**16 48 25.4**	**+0.4**
	comp=E,16nm,1.2s,mb4.9								
RES	**Resolute Bay**	**51.03**	**17**	*e*P		**P**		**16 48 37.9**	**-1.9**
	comp=E,3.0nm,0.8s,mb4.3								
ARCES	**ARCESS Array B**	**53.04**	**337**	P		**P**		**16 48 54.7**	**-0.4**
	comp=E,3.0nm,0.9s,mb4.2,baz=39,slow=7.8,SNR=3.8								
ARCES	**ARCESS Array B**	**53.04**	**337**	P		**P**		**16

OBN					*e*S		**S**	**16 57 40.5**	**-1.5**
OBN					pmax	pmax			
	comp=Z,9.0nm,0.8s,mb4.8								
OBN					MLR	MLR			
	comp=Z,100nm,15.0s,MS4.1								
GOF	**Gofitskoye**	**62.67**	**308**	*e*P		**P**		**16 50 03.0**	**-0.1**
NB2	**NORSAR Subarra**	**63.37**	**336**	P		**P**		**16 50 07.1**	**-0.4**
	comp=Z,5.6nm,0.8s,mb4.8,baz=33,slow=6.5								
NOA	**NORSAR Array B**	**63.37**	**336**	P		**P**		**16 50 06.9**	**-0.6**
	comp=Z,4.3nm,0.7s,mb4.7,baz=34,slow=6.5,SNR=17								
NOA	**NORSAR Array B**	**63.37**	**336**	P		**P**		**16 50 06.9**	**-0.6**
NOA					pmax	pmax			
	comp=Z,4.0nm,0.7s								
KIV	**Kislovodsk**	**63.61**	**307**	*d* iP		**P**		**16 50 10.5**	**+1.3**
KIV					pmax	pmax			
	comp=Z,10.0nm,0.9s,mb4.8								
KIV					MLR	MLR			
	comp=Z,100nm,20.0s,MS4.0								
FFC	**Flin Flon**	**63.65**	**36**	*e*P		**P**		**16 50 09.1**	**-0.1**
	comp=Z,3.6nm,0.8s,mb4.5								
AKASG	**Malin Array Be**	**65.21**	**320**	P		**P**		**16 50 19.2**	**-0.3**
	comp=Z,4.3nm,0.7s,mb4.6,baz=38,slow=6.9,SNR=23								
WB2	**Warramunga Arr**	**68.92**	**188**	*e*P		**P**		**16 50 42.1**	**-1.3**
WRA	**Warramunga Arr**	**68.92**	**188**	P		**P**		**16 50 42.7**	**-0.7**
	comp=Z,2.5nm,0.7s,mb4.3,baz=2.2,slow=6.9,SNR=30								
WRA	**Warramunga Arr**	**68.92**	**188**	P		**P**		**16 50 42.7**	**-0.8**
WRA					pmax	pmax			
	comp=Z,3.0nm,0.7s								
PDAR	**Pinedale Array**	**69.27**	**48**	P		**P**		**16 50 45.6**	**+0.4**
	comp=Z,1.5nm,0.7s,mb4.1,baz=334,slow=2.6,SNR=11								
OJC	**Ojcow**	**69.40**	**324**	*e*P		**P**		**16 50 46.7**	**+0.8**
NIE	**Niedzica**	**69.85**	**324**	*e*P		**P**		**16 50 50.7**	**+2.1**
OKC	**Ostrava-Krasne**	**70.34**	**325**	*e*P		**P**		**16 50 54.3**	**+2.7**
DPC	**Dobruska-Polom**	**70.60**	**326**	*e*P		**P**		**16 50 54.2**	**+1.0**
DPC					*es*P		PcP	16 51 09.1	-5.4
MORC	**Moravsky Berou**	**70.62**	**325**	*e*P		**P**		**16 50 53.9**	**+0.6**
	comp=Z,6.8nm,0.8s,mb4.6								
MORC				*e*				16 51 07.5	
RSSD	**Black Hills**	**70.87**	**44**	P		**P**		**16 50 54.2**	**-0.8**
	comp=Z,3.6nm,0.8s,mb4.3								
CLL	**Collm**	**70.97**	**329**	P		**P**		**16 50 55.6**	**+0.1**
	comp=Z,logA/T=0.8,mb4.5								
CLL				*i*	*S		PcP	16 51 10.2	-5.8
CLL	**Collm**	**70.97**	**329**	*i* P			**P**	**16 50 55.6**	**+0.1**
CLL				*i*			PcP	16 51 10.2	-5.8
CLL					pmax	pmax			
	comp=Z,5.0nm,0.8s,mb4.5								
CLL	**Collm**	**70.97**	**329**	*i* P			**P**	**16 50 55.6**	**+0.1**
	comp=Z,5.0nm,0.8s,mb4.5								
CLL				*i*				16 51 10.2	
BRG	**Berggiesshubel**	**71.01**	**328**	*i* P			**P**	**16 50 55.9**	**+0.2**
BRG					pmax	pmax			
	comp=Z,3.0nm,1.0s,mb4.2								
BRG	**Berggiesshubel**	**71.01**	**328**	*i* P			**P**	**16 50 55.9**	**+0.2**
	comp=Z,2.6nm,1.0s,mb4.1								
BRTR	**Keskin Array B**	**71.34**	**309**	P		**P**		**16 50 58.6**	**+0.8**
	comp=Z,1.5nm,0.7s,mb4.0,baz=62,slow=4.2,SNR=12								
PRU	**Pruhonice**	**71.54**	**327**	*e*P		**P**		**16 50 59.7**	**+0.8**
KHC	**Kasperske Hory**	**72.60**	**327**	*e*pP		**P**		**16 51 06.2**	**+1.1**
ASAR	**Alice Springs**	**72.64**	**188**	P		**P**		**16 51 06.2**	**+0.2**
	comp=Z,2.8nm,0.8s,mb4.3,baz=2.6,slow=5.1,SNR=30								
GERES	**GERESS Array B**	**72.80**	**327**	P		**P**		**16 51 07.0**	**+0.7**
	comp=Z,1.3nm,0.7s,mb4.0,baz=37,slow=6.7,SNR=9.9								
GERES	**GERESS Array B**	**72.80**	**327**	P		**P**		**16 51 07.0**	**+0.7**
GERES					pmax	pmax			
	comp=Z,1.0nm,0.7s								
GRA1	**Grafenberg Arr**	**72.95**	**329**	*e*P		**P**		**16 51 08.1**	**+1.0**
	comp=Z,10.0nm,0.8s,mb4.8								
GRF	**Grafenberg Arr**	**72.95**	**329**	*e*P		**P**		**16 51 08.1**	**+1.0**
GRF					pmax	pmax			
	comp=Z,10.0nm,0.8s,mb4.8								
TXAR	**Lajitas Array**	**82.65**	**53**	P		**P**		**16 52 02.5**	**+1.5**
	comp=Z,1.5nm,0.8s,mb4.0,baz=270,slow=2.5,SNR=9.6								
ESDC	**Sonseca Array**	**86.70**	**334**	P		**P**		**16 52 21.8**	**+0.7**
	comp=Z,1.5nm,0.6s,mb4.4,baz=16,slow=4.6,SNR=8.4								
BDFB	**Brasilia**	**145.80**	**17**	PKPbc		PKPbc		16 59 17.5	+1.4
	comp=Z,3.3nm,0.6s,baz=9.5,slow=2.3,SNR=4.9								
BDFB	**Brasilia**	**145.80**	**17**	PKP2		PKPab		16 59 17.5	-0.7
BDFB					pmax	pmax			
	comp=Z,3.0nm,0.6s								

*MEX **08** 16:59:15.9±0.7, 15.80N×95.04W, h15km±11km, MD4.2*
*NEIC **08** 16:59:16.7, 15.88N×94.99W, h10km, MD4.2(MEX), After MEX.*

ISC 08 16:59:13.1±0.9, 15.83N±0.07×95.03W±0.04, h15km, n11, σ1§31/19, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
HUIG	**Huatulco**	**1.04**	**267**	*i* P		**Pb**	**16 59 31.9**	**-0.4**
HUIG				*i* S		**Sb**	**16 59 44.2**	**-1.3**
CMIG	**Matias Romero**	**1.27**	**6**	*i* P		**Pb**	**16 59 35.9**	**-0.2**
CMIG				*i* S		**Sb**	**16 59 50.9**	**-1.1**
OXX	**Oaxaca**	**2.05**	**308**	*e*P		**Pn**	**16 59 50.0**	**+2.5**
VHO	**Vista Hermosa**	**2.05**	**307**	*i* P		**Pn**	**16 59 46.5**	**-1.0**
VHO				*i* S		**Sn**	**17 00 12.9**	**-0.1**
SCX	**San Cristobal**	**2.47**	**68**	*e*P		**Pn**	**16 59 57.0**	**+3.5**
SCX				*e*S		**Sn**	**17 00 22.5**	**-1.1**
SCX	**San Cristobal**	**2.47**	**68**	*e*P		**Pn**	**16 59 57.0**	**+3.5**
SCX				*e*S		**Sn**	**17 00 26.0**	**+2.4**
CCIG	**Comitan**	**2.82**	**80**	*e*P		**Pn**	**16 59 58.0**	**-0.4**
CCIG				*i* S		**Sn**	**17 00 31.2**	**-1.2**
IISM	**Ciudad Serdan**	**3.86**	**325**	*e*P		**Pn**	**17 00 14.0**	**+0.7**
POHV	**Veracruz**	**3.88**	**327**	*e*P		**Pn**	**17 00 16.0**	**+2.5**
PPM	**Popocatepetl**	**4.71**	**314**	*i* P		**Pn**	**17 00 26.2**	**+0.8**
PPM				*e*P			17 00 39.0	
PPM				*i* S		**Sn**	**17 01 18.9**	**-1.4**
PPM	**Popocatepetl**	**4.71**	**314**	*i* P		**Pn**	**17 00 26.2**	**+0.8**
PPM				*e*P			17 00 39.0	
PPM				*i* S		**Sn**	**17 01 33.8**	**+13**

*IDC **08** 17:02:52.9±1.1, 41.53S×91.12W, mb4.1/8, mb1 4.3/9, mb1mx4.2/16, ML3.4/1, MS4.3/14, Ms1 4.3/14, ms1mx4.2/20, Error ellipse: s-maj=40.7km s-min=23.6km az=158.0*
*NEIC **08** 17:02:53.5±0.7, 41.62S×91.16W, h10km, mb4.4/4, Error ellipse: s-maj=18.5km s-min=11.9km az=198.0*

ISC 08 17:02:51.7±0.7, 41.7S±0.1×91.2W±0.1, h10km, n24, σ1§13/17, mb4.1/12, MS4.3/12, Southeast of Easter Island

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
PLCA	**Paso Flores**	**15.58**	**94**	Pn		**P**	**17 06 33.3**	**+0.2**
	0.0nm,0.3s,baz=132,slow=17,SNR=2.1							
PLCA				LR		LR	17 10 59.6	
	comp=Z,897nm,19.5s,baz=85,slow=31							
USHA	**Ushuaia**	**19.98**	**139**	LR		LR	17 13 39.6	
	comp=Z,1μm,20.4s,baz=270,slow=32							
RPN	**Rapa Nui**	**20.76**	**309**	P		**P**	**17 07 33.4**	**-1.8**
	2μm,1.8s							
TRQA	**Tornquist**	**22.68**	**91**	*e*P		**P**	**17 07 54.7**	**+0.3**
	1.3nm,1.2s,mb3.2							
LVC	**Limon Verde**	**26.64**	**51**	P		**P**	**17 08 33.4**	**+1.0**
	3.0nm,0.8s,mb3.9,baz=238,slow=8.1,SNR=4.5							
LVC				LR		LR	17 16 17.8	
	comp=Z,394nm,20.4s,MS4.0,baz=214,slow=30							
LVC	**Limon Verde**	**26.64**	**51**	*e*P		**P**	**17 08 31.1**	**-1.3**
	27nm,2.1s,mb4.4							
LVC				P		pP	17 08 33.4	-1.9
LVC				LR		LR	17 16 17.8	
CPUP	**Villa Florida**	**31.74**	**72**	P		**P**	**17 09 18.1**	**0.0**
	0.5nm,0.5s,mb3.6,baz=190,slow=5.1,SNR=3.2							
CPUP				LR		LR	17 20 39.6	
	comp=Z,536nm,18.5s,MS4.3,baz=261,slow=34							
LPAZ	**La Paz**	**32.15**	**45**	P		**P**	**17 09 20.9**	**-0.8**
	3.1nm,1.2s,mb4.0,baz=182,slow=4.6,SNR=3.9							
LPAZ				LR		LR	17 19 12.8	
	comp=Z,460nm,19.4s,MS4.2,baz=269,slow=31							
OTAV	**Otavalo**	**43.26**	**19**	P		**P**	**17 10 56.0**	**+0.7**
	14nm,1.3s,mb4.5							
OTAV				*e*			17 11 18.4	
OTAV					PP	PP	17 12 34.7	-3.4
OTAV					*e*PcP	PcP	17 12 45.4	+0.5
BDFB	**Brasilia**	**45.27**	**68**	LR		LR	17 28 46.3	
	comp=Z,660nm,19.6s,MS4.6,baz=279,slow=34							
ROSC	**El Rosal**	**48.78**	**23**	LR		LR	17 28 55.5	
	comp=Z,438nm,18.7s,MS4.5,baz=182,slow=32							
SNAA	**Sanae**	**50.60**	**156**	*e*P		**P**	**17 11 50.1**	**-2.0**
PCRV	**Puerto La Cruz**	**57.07**	**32**	LR		LR	17 34 27.0	
	comp=Z,307nm,20.1s,MS4.4,baz=25,slow=33							
SJG	**San Juan**	**63.82**	**27**	LR		LR	17 39 42.3	
	comp=Z,258nm,18.7s,MS4.4,baz=73,slow=35							
URZ	**Urewera**	**66.98**	**239**	P		**P**	**17 13 48.4**	**+1.7**
	4.2nm,0.8s,mb4.5,baz=252,slow=10,SNR=3.1							
URZ				LR		LR	17 35 47.9	
	comp=Z,439nm,20.9s,MS4.7,baz=178,slow=29							
MAW	**Mawson**	**69.32**	**170**	LR		LR	17 42 33.3	
	comp=Z,270nm,20.9s,MS4.5,baz=216,slow=34							
TXAR	**Lajitas Array**	**71.56**	**349**	P		**P**	**17 14 15.7**	**+0.7**
	1.8nm,1.1s,mb3.9,baz=168,slow=8.3,SNR=7.1							
TXAR				LR		LR	17 38 37.2	
	comp=Z,78nm,21.1s,MS4.0,baz=155,slow=30							
HBF	**Harts Bluff**	**74.88**	**9**	P		**P**	**17 14 32.9**	**-1.5**
TUC	**Tucson**	**75.77**	**343**	P		**P**	**17 14 38.5**	**-0.9**
	3.7nm,1.2s,mb4.2							
ANMO	**Albuquerque**	**77.50**	**347**	P		**P**	**17 14 50.0**	**+1.0**
	4.1nm,1.3s,mb4.2							
NVAR	**Mina Array Bea**	**83.44**	**339**	P		**P**	**17 15 20.4**	**-0.2**
	1.2nm,1.1s,mb3.8,baz=172,slow=6.4,SNR=3.5							
PDAR	**Pinedale Array**	**85.64**	**347**	P		**P**	**17 15 33.5**	**+2.0**
	1.1nm,1.0s,mb4.0,baz=180,slow=5.4,SNR=3.0							
DBIC	**Dimbokro**	**91.67**	**83**	P		**P**	**17 16 01.1**	**+0.4**
	4.2nm,1.0s,mb4.7,baz=247,slow=7.7,SNR=3.1							
DBIC				LR		LR	17 56 52.0	
	comp=Z,88nm,18.5s,MS4.2,baz=112,slow=35							
STKA	**Stephens Creek**	**92.15**	**223**	LR		LR	17 51 41.6	
	comp=Z,147nm,19.6s,MS4.4,baz=206,slow=32							

*NEIC **08** 17:10:16.1±1.3, 7.96S×113.41E, h169km±9km, mb4.4/2, Error ellipse: s-maj=34.9km s-min=13.1km az=50.0*
*IDC **08** 17:10:17.8±11.0, 8.11S×113.33E, h182km±108km, mb3.1/4, mb1 3.2/5, mb1mx3.1/15, Error ellipse: s-maj=117.0km s-min=24.3km az=56.0*

ISC 08 17:10:15.1±1.3, 7.9S±0.2×113.4E±0.2, h177km±8km, n12, σ0§84/16, mb3.7/6, 1C-3D, Jawa

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
KELI	**Kelakatan**	**1.09**	**107**	⇓*i* Pn		**P**	**17 10 43.5**	**+0.1**
KELI				*e*P			17 10 44.1	
KELI				*i* Sn		**S**	**17 11 06.3**	**+1.0**
INGI	**Ingas**	**1.92**	**119**	⇓*i* Pn		**P**	**17 10 50.6**	**-0.8**
INGI				*e*Sn		**S**	**17 11 18.6**	**-0.9**
RATI	**Rata**	**2.23**	**112**	⇑*e* Pn		**P**	**17 10 55.1**	**+0.2**
RATI				*e*Sn		**S**	**17 11 24.7**	**-0.9**
KEDI	**Kedomdong**	**2.71**	**103**	⇓*i* Pn		**P**	**17 11 01.1**	**+0.4**
KEDI				*i* Sn		**S**	**17 11 36.5**	**+0.8**
FITZ	**Fitzroy Crossi**	**15.62**	**132**	P		**P**	**17 13 47.4**	**+0.3**
	0.1nm,0.3s,baz=184,slow=17,SNR=7.3							
FITZ				S		**S**	**17 16 30.0**	**-4.9**
	0.1nm,0.3s,baz=338,slow=19,SNR=3.4							
WRA	**Warramunga Arr**	**23.52**	**123**	P		**P**	**17 15 11.7**	**+1.3**
	0.2nm,0.3s,mb3.1,baz=299,slow=12,SNR=9.2							
ASAR	**Alice Springs**	**25.12**	**131**	P		**P**	**17 15 25.5**	**+0.2**
	0.4nm,0.3s,mb3.4,baz=304,slow=8.9,SNR=21							
CM31	**Chiang Mai Arr**	**29.83**	**331**	P		**P**	**17 16 07.0**	**-1.0**
	1.8nm,0.6s,mb4.0							
PMG	**Port Moresby**	**33.36**	**95**	*e*P		**P**	**17 16 37.1**	**-1.6**
	27nm,1.4s,mb4.8							
STKA	**Stephens Creek**	**35.43**	**136**	P		**P**	**17 16 56.0**	**-0.1**
	1.3nm,0.5s,mb3.8,baz=322,slow=8.0,SNR=5.9							
MKAR	**Makanchi Array**	**61.09**	**336**	P		**P**	**17 20 13.6**	**+1.1**
	0.2nm,0.4s,mb3.3,baz=145,slow=6.2,SNR=8.2							
CPUP	**Villa Florida**	**144.82**	**194**	PKP		PKPdf	17 29 32.5	+1.0
	2.5nm,1.0s,baz=194,slow=4.2,SNR=2.8							

JMA 08 17:26:07.6±0.1, 28.67N×128.12E, h143km, M3.6, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
JTK	**Tokunoshima**	**1.15**	**140**	P		P	17 26 33.3	0.0
JTK				S		S	17 26 52.7	-0.4
JAM	**Amami Oshima**	**1.33**	**101**	P		P	17 26 34.7	-0.5
JAM				S		S	17 26 55.1	-1.3
JIH	**Iheya**	**1.64**	**185**	P		P	17 26 38.5	0.0
JIH				S		S	17 27 01.8	-0.4
JZK	**Kikaishima**	**1.67**	**102**	P		P	17 26 39.3	+0.5
JZK				S		S	17 27 03.0	+0.2
JOW	**Kunigami**	**1.84**	**176**	P		P	17 26 40.3	-0.4
JOW				S		S	17 27 04.5	-1.7
JAGN	**Aguni-jima**	**2.21**	**201**	P		P	17 26 45.2	-0.2
JAGN				S		S	17 27 13.8	-0.4
NAH1	**Naha**	**2.49**	**189**	P		P	17 26 48.4	-0.4
NAH1				S		S	17 27 18.7	-1.6
JKC	**Kuchinoerabu**	**2.54**	**45**	*e*S		S	17 27 21.3	-0.2
JJT2	**Tamagusuku 2**	**2.54**	**188**	P		P	17 26 49.4	-0.1
JJT2				*e*S		S	17 27 20.7	-0.9
JKE	**Kume jima 2**	**2.62**	**207**	P		P	17 26 50.1	-0.4
JKE				*e*S		S	17 27 22.9	-0.4
JTN	**Tanegashima 3**	**3.18**	**51**	P		P	17 26 56.6	-1.2
JTN				*e*S		S	17 27 35.3	-0.8
JTZ	**Takazaki**	**4.12**	**38**	P		P	17 27 09.3	-0.8
JTZ				*e*S		S	17 27 55.0	-3.2
JIU2	**Izumi 2**	**4.51**	**30**	P		P	17 27 15.5	+0.2

JMA 08 17:32:54.5±0.2, 44.01N×148.11E, M4.2, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op		ISC	h m s	ISC
NEM2	**Nemuro 2**	**1.83**	**250**	P		Pn	17 33 27.6	+0.1
NEM2				*e*S		Sn	17 33 51.8	0.0
JRA	**Rausu**	**2.16**	**269**	P		Pn	17 33 32.4	+0.2
JRA				*e*S		Sn	17 34 00.4	+0.4
JNK	**Nakash**	**2.49**	**261**	P		Pn	17 33 37.2	+0.3
JNK				*e*S		Sn	17 34 08.5	0.0
JAK	**Akkeshi**	**2.68**	**249**	P		Pn	17 33 39.8	+0.1
JAK				*e*S		Sn	17 34 12.5	-0.8
JAR	**Ashorobuto**	**3.23**	**259**	P		Pn	17 33 48.3	+0.8
JAR				*e*S		Sn	17 34 28.0	+0.8
JCH	**Churui**	**3.73**	**250**	P		Pn	17 33 55.0	+0.4
JCH				*e*S		Sn	17 34 39.4	-0.6
JKK2	**Kamakawa 2**	**3.88**	**270**	P		Pn	17 33 58.2	+1.6
JSE	**Soyaes**	**4.07**	**285**	P		Pn	17 33 56.6	-2.8
JFR	**Furan**	**4.10**	**260**	P		Pn	17 34 02.0	+2.2
JNBK	**Urakawa-nobuka**	**4.28**	**248**	P		Pn	17 34 02.9	+0.5
JNBK				*e*S		Sn	17 34 53.4	-0.5
JKB	**Kayabe**	**5.61**	**250**	P		Pn	17 34 20.9	-0.3
JKB				*e*S		Sn	17 35 24.3	-3.0
JOT	**Ohata**	**5.83**	**246**	P		Pn	17 34 23.5	-0.8
JOT				*e*S		Sn	17 35 29.4	-3.4
JANG	**Nango**	**6.10**	**236**	*e*S		Sn	17 35 34.6	-5.0

*BJI **08** 18:22:01.0, 0.32S×124.11E, h224km, mB4.4, mb4.6*
*IDC **08** 18:22:07.6±1.3, 0.30N×123.69E, h219km±12km, mb4.3/18, mb1 4.3/20, mb1mx4.3/22, Error ellipse: s-maj=15.9km s-min=6.7km az=70.0*
*NEIC **08** 18:22:08.2±0.2, 0.33N×123.73E, mb4.7/29, Error ellipse: s-maj=9.9km s-min=4.5km az=67.0*
*MOS **08** 18:22:09.7±0.8, 0.81N×123.42E, h230km, mb4.6/7, Error ellipse: s-maj=29.1km s-min=11.4km az=104.9*

ISC 08 18:22:06.0±0.2, 0.35N±0.04×123.76E±0.06, h218km, h218km±5.0km; pP-P, n130, σ0§99/124, mb4.6/60, 10C-7D, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
KKM	**Kota Kinabalu**	**9.42**	**307**	*e*P		**P**	**18 24 21.8**	**+3.4**
TGY	**Tagaytay City**	**13.95**	**349**	P		**P**	**18 25 17.2**	**+1.3**
	48nm,0.3s,baz=185,slow=6.3,SNR=11							
KAKA	**Kakadu**	**15.54**	**147**	*e*P		**P**	**18 25 34.7**	**-0.7**
	167nm,0.6s							
FITZ	**Fitzroy Crossi**	**18.42**	**174**	*e*P		**P**	**18 26 06.4**	**-1.1**
	34nm,0.6s							
FITZ				*e*S		**S**	**18 29 20.6**	**-1.2**
FITZ	**Fitzroy Crossi**	**18.42**	**174**	P		**P**	**18 26 06.5**	**-0.9**
	5.0nm,0.3s,baz=7.4,slow=8.0,SNR=218							
FITZ				S		**S**	**18 29 22.3**	**+0.5**
	0.1nm,0.3s,baz=184,slow=18,SNR=4.3							
FITZ				ScP			18 33 43.8	
	0.2nm,0.3s,baz=354,slow=5.4,SNR=5.1							
PIAM	**Paiam**	**20.20**	**107**	*e*P		**P**	**18 26 06.9**	**-19**
WRAB	**Tennant Creek**	**22.67**	**153**	*e*P		**P**	**18 26 50.2**	**+0.4**
	246nm,0.5s							
WRAB				*e*			18 27 25.9	
WRAB				*es*P			18 27 57.8	
WRA	**Warramunga Arr**	**22.67**	**153**	P		**P**	**18 26 50.2**	**+0.3**
	97nm,0.5s,mb5.6,baz=336,slow=9.9,SNR=701							
WRA				S		**S**	**18 30 38.6**	**+0.2**
	2.1nm,0.7s,baz=334,slow=16,SNR=3.6							
WRA				ScP			18 33 52.1	
	1.4nm,0.7s,baz=326,slow=2.5,SNR=8.6							
WB2	**Warramunga Arr**	**22.68**	**153**	⇓*i* P		**P**	**18 26 50.2**	**+0.3**
QIZ	**Qiongzhong**	**23.05**	**324**	P		**P**	**18 26 55.0**	**+1.5**
IPM	**Ipoh**	**23.10**	**281**	⇓*e* P		**P**	**18 26 55.2**	**+1.2**
PMG	**Port Moresby**	**25.23**	**113**	P		**P**	**18 27 14.6**	**+0.7**
	19nm,0.7s,mb4.9,baz=298,slow=8.6,SNR=9.2							
PMG	**Port Moresby**	**25.23**	**113**	*e*P		**P**	**18 27 14.3**	**+0.4**
	24nm,0.8s,mb4.9							
AS12	**Alice Springs**	**25.82**	**158**	*e*P		**P**	**18 27 17.8**	**-1.5**
	23nm,0.7s,mb4.9							
ASAR	**Alice Springs**	**25.82**	**158**	P		**P**	**18 27 19.3**	**0.0**
	11nm,0.7s,mb4.6,baz=340,slow=8.2,SNR=156							
ASAR				ScP			18 34 02.5	
	2.9nm,0.8s,baz=340,slow=2.6,SNR=14							
KKTK	**Khon Kaen**	**26.05**	**309**	P		**P**	**18 27 22.2**	**+0.7**
	802nm,0.6s							
NANT	**Nan**	**29.13**	**310**	⇓P		**P**	**18 27 49.8**	**+0.7**
	162nm,0.9s,mb5.7							
BDT	**Bhumibol Dam**	**29.60**	**306**	P		**P**	**18 27 54.0**	**+0.8**
CTA	**Charters Tower**	**29.96**	**134**	*e*P		**P**	**18 27 55.6**	**-0.8**
	7.8nm,0.8s,mb4.4							
CTA	**Charters Tower**	**29.96**	**134**	P		**P**	**18 27 56.0**	**-0.4**
	11nm,0.8s,mb4.5,baz=312,slow=9.6,SNR=7.8							
CM31	**Chiang Mai Arr**	**30.30**	**308**	*e*P		**P**	**18 28 00.1**	**+0.7**
	7.2nm,0.8s,mb4.3							
CM31				*e*			18 28 33.6	
CM31				*e*PcP		PcP	18 30 52.5	-1.6
CMAR	**Chiang Mai Arr**	**30.30**	**308**	P		**P**	**18 28 00.0**	**+0.6**
	5.6nm,0.7s,mb4.3,baz=131,slow=6.9,SNR=57							
CMAR				PcP		PcP	18 30 55.2	+1.1
	1.2nm,0.7s,baz=161,slow=2.0,SNR=7.0							
CMAR				ScP			18 34 17.1	
	0.9nm,0.8s,baz=150,slow=2.6,SNR=5.3							
CHG	**Chiang Mai**	**30.50**	**308**	⇑P		**P**	**18 28 01.2**	**+0.1**
	22nm,0.8s,mb4.8							
SSE	**Sheshan**	**30.68**	**356**	⇑P		**P**	**18 28 02.1**	**-0.5**
SSE				AMB		AMB		
	comp=Z,37nm,0.8s,mb5.1							
GYA	**Guiyang**	**30.74**	**329**	P		**P**	**18 28 04.3**	**+1.1**
GYA				AMB		AMB		
	comp=Z,10.0nm,1.0s,mb4.4							
FORT	**Forrest**	**31.22**	**173**	⇑*i* P		**P**	**18 28 06.9**	**-0.4**
	comp=Z,224nm,0.6s							
WHN	**Wuhan**	**31.34**	**344**	⇑P		**P**	**18 28 10.6**	**+2.3**
NJ2	**Nanjing**	**31.88**	**352**	*e*P		**P**	**18 28 15.3**	**+2.3**
NJ2				PP		PP	18 29 33.3	+6.3
NJ2				S		**S**	**18 33 05.0**	**-1.5**
NJ2				XS			18 34 33.0	
NJ2				AMB		AMB		
	comp=Z,120nm,1.0s,mb5.4							
NJ2				AMB		AMB		
	comp=Z,160nm,5.0s							
NJ2				LR		LR		
	comp=N,110nm,15.0s							
NJ2				LR		LR		
	comp=E,200nm,18.9s							
NJ2				LR		LR		
	comp=Z,110nm,17.7s							
CBIJ	**Chichi jima**	**31.95**	**32**	P		**P**	**18 28 13.3**	**-0.3**
	comp=Z,4.5nm,0.4s,mb5.4,baz=240,slow=20,SNR=12							
KLBR	**Kellerberrin**	**32.27**	**190**	*e*P		**P**	**18 28 13.9**	**-2.5**
	comp=Z,11nm,0.5s,mb4.6							
ENH	**Enshi**	**32.71**	**337**	*e*P		**P**	**18 28 20.3**	**+0.1**
	comp=Z,29nm,0.8s,mb4.9							
NWAO	**Narrogin (SRO)**	**33.66**	**190**	P		**P**	**18 28 28.1**	**-0.2**
	comp=Z,12nm,0.9s,mb4.4,baz=30,slow=10,SNR=10							
CD2	**Chengdu**	**35.84**	**330**	*e*P		**P**	**18 28 47.1**	**+0.4**
STKA	**Stephens Creek**	**36.22**	**154**	*e*P		**P**	**18 28 50.2**	**+0.3**
	comp=Z,14nm,0.7s,mb4.6							
STKA				*e*			18 34 36.9	
STKA	**Stephens Creek**	**36.22**	**154**	P		**P**	**18 28 50.3**	**+0.4**
	comp=Z,18nm,0.7s,mb4.7,baz=326,slow=8.7,SNR=50							
STKA				ScP			18 34 37.0	
	comp=Z,6.1nm,1

SNR=20
YAK Yakutsk 61.69 3 *e*P **P** **18 32 02.5 -0.4**
YAK pmax pmax
comp=Z,40nm,0.8s,mb5.1
YAK pmax pmax
comp=N,8.0nm,0.9s
YAK Yakutsk 61.69 3 *e*P **P** **18 32 02.4 -0.5**
comp=N,111nm,0.7s,mb5.6
YAK *e*PcP PcP 18 32 37.2 -4.8
URZ Urewera 62.21 134 P **P** **18 32 06.8 +0.1**
comp=N,4.5nm,0.4s,mb4.5,baz=243,slow=3.3,SNR=10.0
ZAL Zalesovo 62.32 335 P **P** **18 32 05.0 -2.2**
comp=N,5.3nm,0.5s,mb4.4,baz=263,slow=5.2,SNR=21
ZAL Zalesovo 62.32 335 *i* P **P** **18 32 05.0 -2.2**
ZAL pmax pmax
comp=Z,5.0nm,0.5s
MA2 Magadan 62.70 15 *ce*P **P** **18 32 10.3 +0.6**
MA2 pmax pmax
comp=Z,20nm,0.8s,mb4.8
MA2 Magadan 62.70 15 *e*P **P** **18 32 10.5 +0.8**
comp=Z,28nm,0.8s,mb4.9
MA2 *e*PcP PcP 18 32 46.2 0.0
MA2 *ep*P pP 18 33 02.4 +2.4
MA2 *e*PP PP 18 34 31.1 -0.7
KURK Kurchatov 63.06 330 *i* P **P** **18 32 10.7 -1.5**
KURK pmax pmax
comp=Z,27nm,0.7s,mb5.0
KURK Kurchatov 63.06 330 *e*P **P** **18 32 10.8 -1.4**
KURK *ep*P pP 18 33 00.9 -1.6
KURK *es*P sP 18 33 25.0 -0.8
KKAR Karatay Array 63.75 319 P **P** **18 32 15.3 -1.5**
KKAR pmax pmax
comp=Z,1.0nm,0.5s,mb3.7
VOSK Vostochnaya 68.12 329 P **P** **18 32 42.6 -1.7**
VOSK pmax pmax
comp=Z,9.0nm,0.7s,mb4.5
BVA0 Borovoye Array 68.58 329 *i* P **P** **18 32 45.9 -1.2**
BRVK Borovoye 68.66 329 *e*P **P** **18 32 46.3 -1.3**
BRVK *ep*P pP 18 33 39.2 +0.4
BRVK *e*PP PP 18 35 14.4 -9.2
TIXI Tiksi 71.27 2 *e*P **P** **18 33 02.0 -1.0**
TIXI *e**PP pP 18 33 51.7 -2.8
TIXI pmax pmax
comp=Z,177nm,0.8s,mb5.7
TIXI Tiksi 71.27 2 *e*P **P** **18 33 02.0 -1.0**
comp=Z,22nm,0.5s,mb5.0
TIXI *ep*P pP 18 33 51.5 -3.0
AB31 Akbulak array 72.93 322 P **P** **18 33 11.9 -1.4**
AB31 pmax pmax
comp=Z,4.0nm,0.6s,mb4.2
BILL Bilibino 73.57 15 *d* *i*P **P** **18 33 17.0 +0.3**
BILL pmax pmax
comp=Z,8.0nm,1.4s,mb4.2
BILL Bilibino 73.57 15 *e*P **P** **18 33 16.5 -0.2**
comp=Z,2.2nm,0.7s,mb3.9
BILL *e*PP PP 18 36 01.8 -3.1
ARU Arti 76.23 329 *i*P **P** **18 33 30.4 -1.6**
ARU *e* 18 33 41.9
ARU *i* 18 36 24.1
ARU *e*S S 18 42 52.3 -4.3
ARU pmax pmax
comp=Z,18nm,0.8s,mb4.8
ARU Arti 76.23 329 *e*P **P** **18 33 30.4 -1.5**
comp=Z,25nm,0.9s,mb4.8
ARU *ep*P pP 18 34 25.5 +1.5
ARU *es*P sP 18 34 45.9 -1.0
MAW Mawson 79.58 200 P **P** **18 33 51.0 +1.0**
comp=Z,3.4nm,1.0s,mb3.9,baz=63,slow=9.0,SNR=3.0
ARSS Ar Rass 81.32 296 P **P** **18 33 59.7 -0.3**
ZEI Tsey 82.32 313 *e*P **P** **18 34 05.0 +0.3**
BLJS Baljurashi 82.51 290 P **P** **18 34 07.2 +1.0**
HILS Ha'il 82.71 297 P **P** **18 34 07.3 +0.2**
KIV Kislovodsk 83.33 314 *e*P **P** **18 34 11.3 +1.4**
KIV *e**PP pP 18 35 10.3 +7.4
KIV *i* 18 37 23.5
KIV pmax pmax
comp=Z,2.0nm,0.9s,mb3.9
IMA Indian Mountai 86.66 24 *e*P **P** **18 34 27.6 +1.8**
comp=Z,18nm,0.8s,mb4.8
OBN Obninsk 88.11 325 *c* *i*P **P** **18 34 32.2 -0.7**
OBN *e* 18 38 02.5
OBN *e*S S 18 44 34.6 -21
OBN pmax pmax
comp=Z,19nm,1.4s,mb4.7
MCK McKinley 88.49 26 *e*P **P** **18 34 35.2 +0.7**
comp=Z,2.8nm,0.9s,mb4.1
SML Sawmill 88.70 28 *e*P **P** **18 34 35.8 +0.2**
ILAR Eielson Array 89.41 25 P **P** **18 34 38.6 -0.2**
comp=Z,0.6nm,0.5s,mb3.7,baz=245,slow=4.9,SNR=9.5
BRTR Keskin Array B 89.88 310 P **P** **18 34 40.6 -1.0**
comp=Z,1.5nm,0.9s,mb3.8,baz=117,slow=5.5,SNR=10
QSPA South Pole Qui 90.28 180 *e*P **P** **18 34 44.4 +1.8**
comp=Z,1.2nm,0.6s,mb3.9
JOF Joensuu 90.82 333 *ep* **P** **18 34 44.2 -1.2**
ARCES ARCESS Array B 92.57 340 P **P** **18 34 52.1 -1.3**
comp=Z,1.5nm,0.5s,mb4.3,baz=97,slow=4.0,SNR=10
AKASG Malin Array Be 92.62 321 P **P** **18 34 52.6 -1.5**
comp=Z,0.7nm,0.5s,mb4.0,baz=72,slow=4.3,SNR=6.5
DAWY Dawson 92.70 26 *e*P **P** **18 34 55.2 +1.1**
KAF Kangasniemi 93.20 332 *ep* **P** **18 34 55.1 -1.3**
baz=98,slow=4.5
SPB4 Spitsbergen Ar 93.20 349 *e*P **P** **18 34 55.5 -0.7**
FINES FINESS Array B 93.38 332 P **P** **18 34 56.1 -1.2**
comp=Z,1.0nm,0.5s,mb4.1,baz=87,slow=4.6,SNR=11
INK Inuvik 94.38 21 *e*P **P** **18 35 01.6 0.0**
comp=Z,1.7nm,0.6s,mb4.2
NOA NORSAR Array B 100.45 333 P P 18 35 28.0 -1.5
comp=Z,0.5nm,0.6s,baz=70,slow=4.5,SNR=2.9
GERES GERESS Array B 102.83 320 PP PP 18 39 58.1 -1.0
comp=Z,0.2nm,0.5s,baz=53,slow=4.9,SNR=3.8
YKA Yellowknife Ar 103.78 24 Pdiff Pdif 18 35 45.7 +1.7
comp=Z,0.2nm,0.8s,baz=297,slow=4.5,SNR=4.6
YKA PKiKP 18 40 01.2
comp=Z,0.1nm,0.3s,baz=308,slow=2.0,SNR=4.1
YKA Yellowknife Ar 103.78 24 Pdif Pdif 18 35 45.7 +1.7
YMR Madison River 114.07 40 PKPdf PKPdf 18 40 20.9 +1.6
TCUT Toone Canyon 115.31 43 *e*Pdif Pdif 18 36 31.8 -3.6
TXAR Lajitas Array 126.00 53 PKP PKPdf 18 40 45.5 +2.7
comp=Z,0.4nm,0.8s,baz=180,slow=1.3,SNR=4.1
PWV Princeton 136.04 29 *e*PKPdf PKPdf 18 41 02.7 +1.0
LPAZ La Paz 160.29 144 PKPab PKPab 18 42 26.2 +2.2
comp=Z,0.8nm,0.8s,baz=75,slow=3.8,SNR=3.6

*KRSC **08** 18:50:27.9±1.5,52.16N×152.73E,h593km±10km,ML4.4*
*MOS **08** 18:50:33.0±0.8,52.64N×152.55E,h526km,mb4.0/11,*
Error ellipse: s-maj=19.4km s-min=9.9km az=93.8
*SKHL **08** 18:50:33.0±8.4,52.48N×152.88E,h545km±25km,mb4.6/2,*
msh5.3/1
*NEIC **08** 18:50:34.2±0.3,52.72N×152.64E,h521km±4km,mb4.0/23,*
Error ellipse: s-maj=5.6km s-min=3.9km az=151.0
*IDC **08** 18:50:35.4±1.3,52.69N×152.51E,h535km±15km,*
mb3.3/21,mb1 3.5/23,mb1mx3.5/26,Error ellipse:
s-maj=10.9km s-min=8.2km az=147.0
ISC 08 18:50:33.3±0.2,52.66N±0.05×152.69E±0.07,h524km±3km,
n142,σ0993/166,mb3.9/41,3C-2D,Northwest of Kuril
Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
MIPR	**Malaya Ipel'ka**	**2.52**	**97**	*i* P		**P**	**18 51 44.1**	**+0.2**
MIPR				*e*S		**S**	**18 52 39.6**	**-0.1**
ALID	**Alaid**	**2.52**	**134**	*i* P		**P**	**18 51 44.6**	**+0.7**
APC	**Apacha**	**2.73**	**83**	*e*P		**P**	**18 51 44.8**	**-0.3**
APC				*e*S		**S**	**18 52 41.3**	**-0.6**
APC				Smax				
	160nm,1.1s							
PAU	**Pauzhetka**	**2.81**	**113**	*e*P		**P**	**18 51 45.6**	**0.0**
PAU				*e*S		**S**	**18 52 43.6**	**+0.8**
PAU				Smax				
	100nm,0.9s							
SKR	**Severo-Kuril's**	**2.91**	**131**	*e*P		**P**	**18 51 45.0**	**-1.2**
SKR				AMB	AMB		18 51 46.0	
	60nm,0.5s							
SKR				AMB	AMB		18 51 46.0	
	110nm,0.5s							
SKR				*e*S		**S**	**18 52 39.0**	**-4.9**
SKR				A			18 52 55.7	
	100nm,0.2s							
SKR				A			18 52 55.7	
	60nm,0.5s							
SKR	**Severo-Kuril's**	**2.91**	**131**	*e*P		**P**	**18 51 45.0**	**-1.2**
SKR				*e*S		**S**	**18 52 39.0**	**-4.9**
SKR				pmax	pmax			
	comp=N,60nm,0.5s							
SKR				pmax	pmax			
	comp=E,60nm,0.5s							
SKR				pmax	pmax			
	comp=Z,110nm,0.5s							
GRL	**Goreİyy**	**3.29**	**90**	*i* P		**P**	**18 51 49.2**	**+0.5**
GRL				*i* S		**S**	**18 52 49.4**	**+1.0**
KRMR	**Karymshinskiy**	**3.31**	**85**	*e*P		**P**	**18 51 48.0**	**-0.9**
KRMR				*e*S		**S**	**18 52 46.2**	**-2.6**
GNL	**Ganaly**	**3.33**	**70**	*i* P		**P**	**18 51 49.7**	**+0.7**
GNL				*i* S		**S**	**18 52 50.7**	**+1.8**
RUS	**Russkaya**	**3.56**	**91**	P		**P**	**18 51 49.9**	**-0.7**
RUS				S		**S**	**18 52 49.0**	**-3.0**
RUS	**Russkaya**	**3.56**	**91**	*i* P		**P**	**18 51 49.9**	**-0.7**
RUS				*i* S		**S**	**18 52 48.9**	**-3.1**
PET	**Petropavlovsk**	**3.64**	**82**	P		**P**	**18 51 51.1**	**-0.1**
PET				S		**S**	**18 52 50.4**	**-2.5**
PET	**Petropavlovsk**	**3.64**	**82**	*i* P		**P**	**18 51 51.1**	**-0.1**
PET				*i* S		**S**	**18 52 50.9**	**-2.0**
PET	**Petropavlovsk**	**3.64**	**82**	*e*P		**P**	**18 51 51.1**	**-0.1**
PET				*e*S		**S**	**18 52 51.3**	**-1.6**
PET				pmax	pmax			
	comp=Z,56nm,0.3s							
PET				pmax	pmax			
	comp=Z,56nm,0.4s							
PET				smax				
	comp=N,252nm,2.7s							
PET				smax				
	comp=E,133nm,0.7s							
PET				smax				
	comp=N,108nm,0.6s							
PET				smax				
	comp=E,329nm,2.2s							
PET				smax				
	comp=N,70nm,13.9s							
PET	**Petropavlovsk**	**3.64**	**82**	*e*P		**P**	**18 51 50.9**	**-0.2**
KOK	**Koryaka**	**3.65**	**78**	*e*P		**P**	**18 51 51.9**	**+0.6**
KOK				*e*S		**S**	**18 52 53.6**	**+0.5**
AVH	**Avacha**	**3.71**	**78**	*e*P		**P**	**18 51 52.3**	**+0.6**
AVH				*i* S		**S**	**18 52 54.3**	**+0.4**
SMAR	**Somma**	**3.75**	**78**	*e*P		**P**	**18 51 52.6**	**+0.6**
SMAR				*i* S		**S**	**18 52 55.1**	**+0.7**
UGLR	**Uglovaya**	**3.75**	**79**	*e*P		**P**	**18 51 52.6**	**+0.6**
UGLR				*i* S		**S**	**18 52 53.3**	**-1.2**
SDLR	**Sedlovina**	**3.80**	**78**	*i* P		**P**	**18 51 53.2**	**+0.8**
SDLR				*i* S		**S**	**18 52 55.9**	**+0.8**
NLC	**Nalytchevo**	**4.06**	**80**	P		**P**	**18 51 53.8**	**-0.6**
NLC				S		**S**	**18 52 54.6**	**-4.2**
NLC	**Nalytchevo**	**4.06**	**80**	*i* P		**P**	**18 51 53.8**	**-0.6**
SPN	**Mys Shipunski**	**4.47**	**81**	P		**P**	**18 51 56.0**	**-1.7**
SPN				S		**S**	**18 52 59.5**	**-5.2**
SPN	**Mys Shipunski**	**4.47**	**81**	*i* P		**P**	**18 51 56.2**	**-1.5**
SPN				*i* S		**S**	**18 53 00.4**	**-4.3**
ESO	**Esso**	**4.81**	**45**	*i* P		**P**	**18 52 01.4**	**+0.8**
ESO				*e*S		**S**	**18 53 10.1**	**+0.3**
ESO				Smax				
	comp=N,30nm,1.1s							
TUMR	**Tumrok**	**5.13**	**56**	*e*P		**P**	**18 52 04.6**	**+1.1**
TUMR				*e*S		**S**	**18 53 15.3**	**+0.4**
KOZ	**Kozyrevsk**	**5.41**	**48**	P		**P**	**18 52 06.8**	**+0.8**
KOZ	**Kozyrevsk**	**5.41**	**48**	*i* P		**P**	**18 52 06.7**	**+0.7**
KMNR	**Kamenistaya**	**5.41**	**52**	*e*P		**P**	**18 52 07.0**	**+1.0**
SRDR	**Sredinnyy**	**5.50**	**45**	*i* P		**P**	**18 52 07.9**	**+1.1**
KPT	**Kopyto**	**5.52**	**50**	*i* P		**P**	**18 52 07.3**	**+0.3**
MKZ	**Mys Kozlova**	**5.71**	**67**	*i* P		**P**	**18 52 08.3**	**-0.5**
MKZ				*i* S		**S**	**18 53 20.0**	**-4.5**
LGNR	**Loginova**	**5.80**	**51**	*i* P		**P**	**18 52 10.3**	**+0.7**
LGNR				*e*S		**S**	**18 53 25.2**	**-0.8**
KRSR	**Krestovskiy**	**5.82**	**49**	*e*P		**P**	**18 52 09.3**	**-0.5**
KRSR				*e*S		**S**	**18 53 23.8**	**-2.5**
ZLN	**Zelenaya**	**5.82**	**51**	*i* P		**P**	**18 52 09.9**	**+0.1**
ZLN				*e*S		**S**	**18 53 24.2**	**-2.1**
CIRR	**Tsirk**	**5.84**	**50**	*e*P		**P**	**18 52 10.1**	**+0.1**
KLY	**Klyuchi**	**5.91**	**49**	P		**P**	**18 52 11.3**	**+0.6**
KLY	**Klyuchi**	**5.91**	**49**	*i* P		**P**	**18 52 12.1**	**+1.4**
KLY				*e*S		**S**	**18 53 29.3**	**+1.4**
SVLR	**Shiveluch**	**6.32**	**48**	*e*P		**P**	**18 52 15.2**	**+0.6**
TYV	**Tymovskoe**	**6.48**	**258**	*e*P		**P**	**18 52 16.9**	**+0.8**
KBG	**Krutoberegovo**	**6.86**	**54**	*e*P		**P**	**18 52 16.9**	**-2.9**
KBTR	**Krutoberegovo**	**6.90**	**55**	P		**P**	**18 52 17.5**	**-2.7**
KBTR	**Krutoberegovo**	**6.90**	**55**	*e*P		**P**	**18 52 19.3**	**-2.9**
KBTR				*i* S		**S**	**18 53 42.5**	**-2.6**
MA2	**Magadan**	**7.02**	**352**	*e*P		**P**	**18 52 21.4**	**+0.1**
MA2				pmax	pmax			
	comp=Z,10.0nm,0.7s							
MA2	**Magadan**	**7.02**	**352**	*e*P		**P**	**18 52 20.6**	**-0.8**
	comp=Z,26nm,0.8s							
YSS	**Yuzh-Sakhalins**	**8.59**	**232**	*e*P		**P**	**18 52 36.3**	**-1.0**
YSS				AMB	AMB		18 52 37.2	
	comp=Z,20nm,0.7s							
YSS	**Yuzh-Sakhalins**	**8.59**	**232**	*e*P		**P**	**18 52 37.8**	**+0.5**
	comp=Z,17nm,0.6s							
SEY	**Seymchan**	**10.30**	**359**	*e*P		**P**	**18 52 56.2**	**+1.3**
SEY				*e**SP			18 54 53.2	
SEY				pmax	pmax			
	comp=Z,80nm,0.7s							
SEY				pmax	pmax			
	comp=N,30nm,0.5s							
ASAJ	**Asahikawa**	**10.86**	**222**	P		**P**	**18 53 00.5**	**-0.2**
	comp=N,1.3nm,0.3s,baz=71,slow=4.3,SNR=13							
ASAJ	**Asahikawa**	**10.86**	**222**	P		**P**	**18 53 00.5**	**-0.1**
ASAJ				pmax	pmax			
	comp=Z,1.0nm,0.3s							
KAMR	**Kamenskoye**	**12.18**	**31**	*i* P		**P**	**18 53 15.4**	**+1.3**
FX1	**Attu Island--F**	**12.40**	**81**	P		**P**	**18 53 17.0**	**+0.6**
	comp=Z,3.0nm,0.3s,baz=129,slow=8.9,SNR=13							
FX1	**Attu Island--F**	**12.40**	**81**	P		**P**	**18 53 17.0**	**+0.6**
FX1				pmax	pmax			
	comp=Z,3.0nm,0.3s							
FX1	**Attu Island--F**	**12.40**	**81**	P		**P**	**18 53 17.1**	**+0.7**
ZEA	**Zeya**	**15.26**	**284**	*e*P		**P**	**18 53 45.4**	**+0.1**
ZEA				AMB	AMB		18 53 46.0	
	comp=Z,12nm,1.0s							
YAK	**Yakutsk**	**15.48**	**316**	*e*P		**P**	**18 53 46.9**	**-0.4**
YAK				*e*S		**S**	**18 56 27.6**	**+3.2**
YAK				pmax	pmax			
	comp=Z,8.0nm,0.8s							
YAK				pmax	pmax			
	comp=N,2.0nm,1.0s							
YAK				pmax	pmax			
	comp=E,4.0nm,0.9s							
YAK				smax				
	comp=N,7.0nm,1.1s							
YAK				smax				
	comp=E,7.0nm,1.0s							
YAK	**Yakutsk**	**15.48**	**316**	*e*P		**P**	**18 53 47.4**	**+0.1**
	comp=E,36nm,0.6s							
BILL	**Bilibino**	**16.76**	**18**	*ce*P		**P**	**18 54 00.6**	**+0.7**
BILL				pmax	pmax			
	comp=Z,4.0nm,0.6s							
BILL	**Bilibino**	**16.76**	**18**	*e*P		**P**	**18 54 00.6**	**+0.7**
	comp=Z,5.0nm,0.5s							
MAJO	**Matsushiro**	**19.07**	**218**	*e*P		**P**	**18 54 22.9**	**+0.5**
	comp=Z,54nm,0.6s							
MAT	**Matsushiro**	**19.07**	**218**	P		**P**	**18 54 22.8**	**+0.4**
MAT	**Matsushiro**	**19.07**	**218**	*e*P		**P**	**18 54 23.0**	**+0.6**
	comp=Z,40nm,0.7s							
HIA	**Hailar**	**20.92**	**274**	*e*P		**P**	**18 54 39.6**	**0.0**
	comp=Z,4.1nm,0.7s							
JHJ	**Hachijo jima 2**	**21.63**	**211**	P		**P**	**18 54 45.4**	**-1.0**
	comp=Z,134nm,0.9s,baz=106,slow=10,SNR=2.3							
TIXI	**Tiksi**	**21.76**	**340**	*e*P		**P**	**18 54 47.3**	**0.0**
TIXI				pmax	pmax			
	comp=Z,43nm,1.2s,mb5.0							
BOD	**Bodaibo**	**22.42**	**299**	*e*P		**P**	**18 54 52.4**	**-0.9**
JNU	**Nakatsue**	**25.05**	**227**	P		**P**	**18 55 16.9**	**-0.1**
	comp=Z,3.0nm,0.6s,mb4.1,baz=18,slow=6.4,SNR=3.9							
CBIJ	**Chichi jima**	**26.72**	**201**	P		**P**	**18 55 31.6**	**-0.2**
	comp=Z,82nm,0.8s,baz=262,slow=18,SNR=3.6							
SONM	**Songino Array**	**29.59**	**279**	P		**P**	**18 55 57.1**	**+0.5**
	comp=Z,0.2nm,0.3s,mb3.2,baz=82,slow=7.3,SNR=6.0							
SONM				PcP	PcP		18 58 43.6	-1.8
	comp=Z,0.5nm,0.7s,baz=71,slow=2.5,SNR=5.0							
SML	**Sawmill**	**32.11**	**50**	*e*P		**P**	**18 56 13.9**	**-4.0**
ILAR	**Eielson Array**	**32.29**	**44**	P		**P**	**18 56 19.6**	**+0.2**
	comp=Z,0.6nm,0.4s,mb3.5,baz=266,slow=7.5,SNR=9.9							
ILAR	**Eielson Array**	**32.29**	**44**	P		**P**	**18 56 19.6**	**+0.2**
ILAR				pmax	pmax			
	comp=Z,1.0nm,0.4s							
INK	**Inuvik**	**36.92**	**36**	P		**P**	**18 56 58.8**	**+0.8**
	comp=Z,2.1nm,0.3s,mb4.1,baz=300,slow=7.3,SNR=31							
INK				PcP	PcP		18 59 04.6	-1.5
	comp=Z,0.5nm,0.4s,baz=275,slow=3.4,SNR=5.0							
INK	**Inuvik**	**36.92**	**36**	P		**P**	**18 56 58.8**	**+0.8**
INK							18 59 04.6	
INK				pmax	pmax			
	comp=Z,2.0nm,0.3s							
INK				pmax	pmax			
	comp=Z,1.0nm,0.4s							
INK	**Inuvik**	**36.92**	**36**	*e*P		**P**	**18 56 58.3**	**+0.3**
	comp=Z,2.4nm,0.5s,mb4.0							
INK				PcP	PcP		18 59 04.6	-1.4
ZAL	**Zalesovo**	**39.18**	**300**	P		**P**	**18 57 15.6**	**-0.8**
	comp=Z,1.8nm,0.3s,mb4.0,baz=330,slow=8.9,SNR=6.1							
ZAL				PcP	PcP		18 59 10.7	-2.7
	comp=Z,0.7nm,0.6s,baz=81,slow=14,SNR=3.4							
ZAL	**Zalesovo**	**39.18**	**300**	P		**P**	**18 57 15.6**	**-0.8**
ZAL							18 59 10.7	
ZAL				pmax	pmax			
	comp=Z,2.0nm,0.3s							
ZAL				pmax	pmax			
	comp=Z,1.0nm,0.6s							
DLBC	**Dease Lake**	**41.84**	**50**	P		**P**	**18 57 40.4**	**+2.7**
	comp=Z,0.8nm,0.6s,mb3.4,baz=257,slow=11,SNR=3.0							
KURK	**Kurchatov**	**44.07**	**298**	*e*P		**P**	**18 57 55.3**	**0.0**
MKAR	**Makanchi Array**	**44.22**	**292**	P		**P**	**18 57 56.6**	**0.0**
	comp=Z,2.7nm,0.4s,mb4.1,baz=62,slow=6.9,SNR=73							
MKAR	**Makanchi Array**	**44.22**	**292**	P		**P**	**18 57 56.6**	**+0.1**
MKAR				pmax	pmax			
	comp=Z,3.0nm,0.4s							
RES	**Resolute Bay**	**45.35**	**20**	*e*P		**P**	**18 58 04.6**	**-0.4**
	comp=Z,1.5nm,0.4s,mb3.9							
YKA	**Yellowknife Ar**	**46.45**	**40**	P		**P**	**18 58 13.6**	**+0.1**
	comp=Z,1.2nm,0.4s,mb3.8,baz=304,slow=7.2,SNR=40							
YKA				PcP	PcP		18 59 36.7	-1.2
	comp=Z,0.4nm,0.4s,baz=314,slow=3.7,SNR=13							
YKA				ScP			19 02 39.6	
	comp=Z,0.3nm,0.8s,baz=307,slow=4.0,SNR=5.5							
YKA	**Yellowknife Ar**	**46.45**	**40**	P		**P**	**18 58 13.7**	**+0.2**
YKA				PcP	PcP		18 59 36.7	-1.2
YKA				ScP			19 02 39.6	
BVAR	**Borovoye Array**	**47.05**	**305**	P		**P**	**18 58 18.0**	**-0.3**
	comp=Z,9.9nm,0.5s,mb4.6,baz=57,slow=7.2,SNR=104							
BVAR				PcP	PcP		18 59 38.6	-1.6
	comp=Z,0.7nm,0.4s,baz=60,slow=1.5,SNR=4.1							
BVAR				ScP			19 02 39.4	
	comp=Z,1.3nm,1.0s,baz=27,slow=3.3,SNR=3.7							
BRVK	**Borovoye**	**47.09**	**305**	*e*P		**P**	**18 58 18.2**	**-0.3**
SVE	**Sverdlovsk**	**49.42**	**314**	‖*e*P		**P**	**18 58 35.3**	**-0.7**
ARU	**Arti**	**50.57**	**314**	‖*i*P		**P**	**18 58 43.6**	**-0.9**
ARU				*e*			18 59 50.8	
ARU				*e*			19 00 46.0	
ARU				*e*S		**S**	**19 05 19.7**	**+0.3**
ARU				*e*SS		SS	19 09 03.1	-0.7
ARU				pmax	pmax			
	comp=Z,9.0nm,0.8s,mb4.2							
ARU	**Arti**	**50.57**	**314**	*e*P		**P**	**18 58 43.6**	**-0.9**
	comp=Z,9.3nm,0.6s,mb4.3							
ARU				PcP	PcP		18 59 51.0	-2.1
ARU				*ep*P	pP		19 00 24.4	-0.3
ARU				*e*PP	PP		19 00 53.2	+6.4
ARCES	**ARCESS Array B**	**52.20**	**339**	P		**P**	**18 58 55.1**	**-1.1**
	comp=Z,7.6nm,1.1s,mb4.0,baz=34,slow=4.4,SNR=9.6							
ARCES	**ARCESS Array B**	**52.20**	**339**	P		**P**	**18 58 55.1**	**-1.1**
ARCES				pmax	pmax			
	comp=Z,8.0nm,1.1s							
CMAR	**Chiang Mai Arr**	**53.74**	**252**	PcP	PcP		19 00 04.8	-0.8
	comp=Z,0.5nm,0.7s,baz=13,slow=3.6,SNR=4.4							
GUN	**Gumba**	**54.44**	**271**	*e*P		**P**	**18 59 12.4**	**-0.3**
	comp=Z,7.2nm,0.4s,mb4.3							
KKN	**Kakani**	**54.89**	**271**	*e*P		**P**	**18 59 16.1**	**+0.3**
	comp=Z,13nm,0.5s,mb4.4							
PKI	**Pulchoki**	**54.97**	**271**	*e*P		**P**	**18 59 16.2**	**-0.2**
	comp=Z,8.5nm,0.6s,mb4.1							
DMN	**Daman**	**55.13**	**271**	*e*P		**P**	**18 59 17.7**	**+0.2**
	comp=Z,11nm,0.5s,mb4.3							
GKN	**Gorkha**	**55.13**	**272**	*e*P		**P**	**18 59 17.3**	**-0.2**
	comp=Z,10nm,0.7s,mb4.2							
KOLN	**Koldanda**	**55.93**	**272**	*e*P		**P**	**18 59 22.4**	**-0.6**
	comp=Z,20nm,1.2s,mb4.2							
JOF	**Joensuu**	**55.95**	**332**	*ep*		**P**	**18 59 21.2**	**-1.5**
KAF	**Kangasniemi**	**57.99**	**333**	*ep*		**P**	**18 59 35.1**	**-1.6**
	baz=36,slow=6.4							
FINES	**FINESS Array B**	**58.60**	**333**	P		**P**	**18 59 39.8**	**-1.1**
	comp=Z,2.0nm,0.4s,mb3.7,baz=37,slow=7.6,SNR=53							
FINES	**FINESS Array B**	**58.60**	**333**	*e*P		**P**	**18 59 39.6**	**-1.2**
NVAR	**Mina Array Bea**	**60.06**	**65**	P		**P**	**18 59 52.1**	**+1.4**
	comp=Z,1.6nm,0.9s,mb3.4,baz=322,slow=5.2,SNR=6.9							
HWUT	**Hardware Ranch**	**61.39**	**58**	*e*P		**P**	**18 59 58.0**	**-1.4**
	comp=Z,2.0nm,0.7s,mb3.6							
PDAR	**Pinedale Array**	**61.58**	**56**	P		**P**	**19 00 01.2**	**+0.5**
	comp=Z,1.1nm,0.5s,mb3.6,baz=348,slow=2.5,SNR=11							
ULM	**Lac du Bonnet**	**62.28**	**42**	P		**P**	**19 00 03.8**	**-1.4**
	comp=Z,1.1nm,0.3s,mb3.8,baz=303,slow=8.6,SNR=3.5							
NB2	**NORSAR Subarra**	**62.56**	**340**	P		**P**	**19 00 05.5**	**-1.3**
	comp=Z,3.0nm,0.7s,mb3.8,baz=24,slow=6.5							
NOA	**NORSAR Array B**	**62.56**	**340**	P		**P**	**19 00 06.0**	**-0.8**
	comp=Z,1.8nm,0.5s,mb3.8,baz=25,slow=6.5,SNR=13							
NOA	**NORSAR Array B**	**62.56**	**340**	P		**P**	**19 00 06.0**	**-0.8**
NOA				pmax	pmax			
	comp=Z,2.0nm,0.5s							
AKASG	**Malin Array Be**	**66.52**	**325**	P		**P**	**19 00 30.6**	**-1.2**
	comp=Z,1.2nm,0.4s,mb3.8,baz=31,slow=6.1,SNR=12							
SCHQ	**Schefferville**	**67.98**	**23**	P		**P**	**19 00 39.7**	**-1.0**
	comp=Z,2.2nm,0.4s,mb4.1,baz=264,slow=17,SNR=6.1							
SCHQ	**Schefferville**	**67.98**	**23**	P		**P**	**19 00 39.7**	**-1.0**
CLL	**Collm**	**70.98**	**335**	P		**P**	**19 00 58.4**	**-0.2**
GRA1	**Grafenberg Arr**	**72.93**	**335**	*e*P		**P**	**19 01 04.9**	**-4.8**
	comp=Z,6.0nm,1.0s,mb4.0							
GRF	**Grafenberg Arr**	**72.93**	**335**	*e*P		**P**	**19 01 04.9**	**-4.8**
GRF				pmax	pmax			
	comp=Z,6.0nm,1.0s,mb4.0							
GERES	**GERESS Array B**	**73.04**	**333**	P		**P**	**19 01 10.3**	**-0.1**
	comp=Z

ellipse: s-maj=22.1km s-min=17.2km az=86.0
ISC 08 18:52:53.0±2.7,7.08S±0.09×129.6E±0.2,h109km±33km, n7,σ1§15/10,mb3.4/1,Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**11.63**	**199**	Pn	**P**	**18 55 35.7**	**-0.9**
	0.3nm,0.3s,baz=14,slow=12,SNR=17						
FITZ				Sn	**S**	**18 57 36.4**	**-8.2**
	0.4nm,0.3s,baz=168,slow=20,SNR=5.0						
WRAB	**Tennant Creek**	**13.57**	**161**	P	**P**	**18 56 02.1**	**0.0**
	3.8nm,0.5s						
WRA	**Warramunga Arr**	**13.57**	**161**	Pn	**P**	**18 56 03.5**	**+1.3**
	0.4nm,0.3s,baz=339,slow=13,SNR=29						
WRA				Sn	**S**	**18 58 28.9**	**-1.8**
	0.6nm,0.3s,baz=335,slow=23,SNR=8.0						
ASAR	**Alice Springs**	**16.99**	**167**	P	**P**	**18 56 48.4**	**+3.1**
	0.2nm,0.3s,baz=341,slow=11,SNR=16						
ASAR				S	**S**	**18 59 50.1**	**+1.0**
	0.1nm,0.3s,baz=347,slow=25,SNR=4.3						
PMG	**Port Moresby**	**17.49**	**99**	*e*P	**P**	**18 56 51.3**	**-0.4**
	12nm,1.0s						
MKAR	**Makanchi Array**	**68.10**	**327**	P	**P**	**19 03 42.9**	**-0.2**
	0.2nm,0.3s,mb3.4,baz=122,slow=8.2,SNR=6.3						
MKAR	**Makanchi Array**	**68.10**	**327**	P	**P**	**19 03 42.9**	**-0.2**

*BJI **08** 19:08:10.8,49.77N×88.29E,h6km,mb4.0,ML4.4*
*IDC **08** 19:08:10.6±0.8,49.93N×88.47E,mb3.6/8,mb1 3.9/12, mb1mx3.8/23,ML4.0/4,MS3.1/2,Ms1 3.1/2,ms1mx2.6/25, Error ellipse: s-maj=12.6km s-min=10.2km az=70.0*
*MOS **08** 19:08:11.3±2.1,49.77N×88.24E,h15km,mb3.9/6,Error ellipse: s-maj=12.8km s-min=7.2km az=101.5*
*NEIC **08** 19:08:11.9±0.4,49.92N×88.45E,h10km,mb4.0/7,Error ellipse: s-maj=9.7km s-min=6.8km az=220.0*
*NNC **08** 19:08:15.1±2.7,49.85N×87.83E,h12km±9km,mpv4.5, Error ellipse: s-maj=21.1km s-min=10.4km az=108.0*
ISC 08 19:08:12.5±0.4,49.83N±0.03×88.09E±0.06,h15km,n60, σ1§44/79,mb3.9/15,MS3.1/1,17C-3D, Tuva-Buryatia-Mongolia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKAR	**Aktash**	**0.58**	**328**	*e*PG	**Pg**	**19 08 22.7**	**-1.7**
AKAR				*e*S	**Sb**	**19 08 31.6**	**+0.1**
ARTR	**Artybash**	**2.04**	**346**	*i* PN	**Pn**	**19 08 48.8**	**+2.0**
ARTR				*i* S	**Sn**	**19 09 13.8**	**+1.8**
UKR	**Ust'-Kan**	**2.40**	**299**	*e*PN	**Pn**	**19 08 57.2**	**+5.3**
UKR				*i* S	**Sn**	**19 09 30.2**	**+9.0**
TASR	**Tashtagol**	**2.94**	**357**	*e*PN	**Pn**	**19 09 01.8**	**+2.2**
TASR				*e*S	**Sn**	**19 09 43.4**	**+8.5**
ELT	**Yel'tsovka**	**3.63**	**342**	*e*PN	**Pn**	**19 09 11.5**	**+2.1**
ELT				*e*		19 09 20.3	
ELT				*e*S	**Sn**	**19 10 03.9**	**+12**
CERR	**Cheremushki**	**3.67**	**33**	*i* PN	**Pn**	**19 09 10.0**	**-0.1**
CERR				*i*		19 09 17.1	
CERR				*i* S	**Sn**	**19 10 07.6**	**+14**
ZAL	**Zalesovo**	**4.59**	**335**	Pn	**Pn**	**19 09 22.9**	**-0.3**
	16nm,0.3s,baz=236,slow=9.0,SNR=40						
ZAL				Sn	**Sn**	**19 10 17.2**	**+0.5**
	12nm,0.3s,baz=189,slow=12,SNR=4.4						
ZAL				Lg		19 10 35.3	
	25nm,0.3s,baz=154,slow=23,SNR=14						
ZAL	**Zalesovo**	**4.59**	**335**	PN	**Pn**	**19 09 22.9**	**-0.2**
ZAL						19 10 17.3	
ZAL				pmax	pmax		
	comp=Z,16nm,0.3s						
ZAL				smax			
	comp=N,12nm,0.3s						
SHRR	**Shira**	**4.85**	**14**	*e*PN	**Pn**	**19 09 26.7**	**0.0**
SHRR				*e*		19 10 37.5	
SHRR				pmax	pmax		
	comp=Z,26nm,0.6s						
SHRR				pmax	pmax		
	comp=Z,247nm,0.5s						
SHRR				smax			
	comp=E,2μm,0.9s						
MK31	**Makanchi Array**	**4.92**	**234**	⇓Pn	**Pn**	**19 09 29.9**	**+2.1**
	comp=E,56nm,0.6s,baz=52,slow=13,SNR=1049						
MK31				⇑Pg	**Pg**	**19 09 43.5**	**-7.3**
	comp=E,33nm,0.3s,baz=53,slow=17,SNR=5.7						
MK31				⇑Sn	**Sn**	**19 10 29.8**	**+4.7**
	comp=E,52nm,0.7s,baz=54,slow=31,SNR=6.7						
MK31				⇑Lg		19 10 47.7	
	comp=E,108nm,0.6s,baz=61,slow=30,SNR=4.1						
MKAR	**Makanchi Array**	**4.92**	**234**	Pn	**Pn**	**19 09 30.2**	**+2.4**
	comp=E,13nm,0.3s,baz=56,slow=14,SNR=324						
MKAR				Sn	**Sn**	**19 10 30.5**	**+5.4**
	comp=E,18nm,0.3s,baz=71,slow=26,SNR=6.0						
MKAR				Lg		19 10 50.0	
	comp=E,24nm,0.3s,baz=43,slow=30,SNR=8.7						
MKAR	**Makanchi Array**	**4.92**	**234**	PN	**Pn**	**19 09 30.0**	**+2.2**
MKAR						19 10 29.7	
MKAR						19 10 49.3	
MKAR				pmax	pmax		
	comp=Z,3.0nm,0.2s						
MKAR				smax			
	comp=Z,5.0nm,0.3s						
MKAR				smax			
	comp=Z,53nm,0.5s						
MKAR	**Makanchi Array**	**4.92**	**234**	Pn	**Pn**	**19 09 30.2**	**+2.4**
MKAR				Sn	**Sn**	**19 10 30.5**	**+5.4**
MKAR				Lg		19 10 50.0	
NVS	**Novosibirsk**	**5.83**	**331**	*i* PN	**Pn**	**19 09 39.6**	**-1.1**
NVS				*i*		19 09 57.6	
NVS				*i* S	Sn	19 11 13.4	+25
WMQ	**Urumqi**	**6.02**	**183**	*e*P	**Pn**	**19 09 44.2**	**+0.9**
WMQ				S	**Sn**	**19 10 52.8**	**+0.2**
WMQ				SG	**Sg**	**19 11 18.6**	**-14**
WMQ				S	Sn		
	comp=N,182nm,1.0s						
WMQ				S	Sn		
	comp=E,188nm,1.0s						
KURK	**Kurchatov**	**6.14**	**282**	⇑Pn	**Pn**	**19 09 45.3**	**+0.4**
	comp=E,12nm,0.5s,baz=98,slow=8.6,SNR=201						
KURK				⇑Sn	**Sn**	**19 10 56.6**	**+1.0**
	comp=E,46nm,1.0s,baz=260,slow=16,SNR=7.5						
KURK				⇑Lg		19 11 25.1	
	comp=E,108nm,0.7s,baz=354,slow=15,SNR=11						
KURK	**Kurchatov**	**6.14**	**282**	*e*Pn	**Pn**	**19 09 45.2**	**+0.2**
KURK				*e*S	**Sn**	**19 10 57.7**	**+2.1**
MOY	**Mondy**	**8.39**	**72**	*e*P	**P**	**19 10 10.7**	**-5.8**
MOY				pmax	pmax		
	comp=Z,15nm,1.1s						
VOSK	**Vostochnaya**	**11.10**	**292**	⇑Pn	**P**	**19 10 50.9**	**-2.8**
	comp=Z,2.4nm,0.5s						
VOSK				⇑Sn	**S**	**19 12 53.2**	**-5.3**
	comp=Z,5.9nm,0.6s						
VOSK				⇑Lg		19 14 01.4	
	comp=Z,33nm,1.1s						
BVA0	**Borovoye Array**	**11.50**	**293**	⇑Pn	**P**	**19 10 56.9**	**-2.3**
	comp=Z,1.1nm,0.8s,baz=109,slow=14,SNR=69						
BVA0				⇑Sn	**S**	**19 13 06.4**	**-1.9**
	comp=Z,2.1nm,0.8s,baz=99,slow=25,SNR=5.8						
BVA0	**Borovoye Array**	**11.50**	**293**	P	**P**	**19 10 56.8**	**-2.4**
BVA0				*e*		19 13 06.4	
BVAR	**Borovoye Array**	**11.50**	**293**	Pn	**P**	**19 10 56.8**	**-2.4**
	comp=Z,1.6nm,0.3s,baz=105,slow=15,SNR=48						
BVAR				Sn	**S**	**19 13 03.3**	**-5.1**
	comp=Z,1.5nm,0.3s,baz=98,slow=21,SNR=5.2						
BVAR				Lg		19 14 16.2	
	baz=90,slow=26,SNR=2.0						
BVAR				LR	LR	19 15 35.2	
	comp=Z,66nm,19.3s,baz=15,slow=38						
BRVK	**Borovoye**	**11.57**	**293**	⇓Pn	**P**	**19 10 57.8**	**-2.3**
	comp=Z,2.9nm,0.7s						
BRVK				⇑Sn	**S**	**19 13 01.8**	**-8.2**
	comp=Z,5.0nm,0.6s						
BRVK	**Borovoye**	**11.57**	**293**	*e*Pn	**P**	**19 10 57.7**	**-2.4**
BRVK				*e*S	**S**	**19 13 03.0**	**-7.0**
SONM	**Songino Array**	**12.23**	**92**	Pn	**P**	**19 11 04.0**	**-5.0**
	comp=Z,0.1nm,0.3s,baz=289,slow=14,SNR=2.4						
SONM				Lg		19 14 25.9	
	comp=Z,0.2nm,0.3s,baz=273,slow=26,SNR=4.5						
ZRNK	**Zerenda**	**12.32**	**292**	⇑Pn	**P**	**19 11 07.5**	**-2.7**
	comp=Z,0.1nm,0.7s						
ULN	**Ulaanbaatar**	**12.64**	**92**	*e*P	**P**	**19 11 07.0**	**-7.5**
	comp=Z,7.5nm,2.0s						
KK31	**Karatay Array**	**13.84**	**248**	⇑Pn	**P**	**19 11 30.5**	**+0.1**
	comp=Z,0.8nm,0.3s,baz=47,slow=13,SNR=28						
KK31				⇑Sn	**S**	**19 14 00.1**	**-4.5**
	comp=Z,6.6nm,0.8s,baz=50,slow=22,SNR=12						
KK31				⇑Lg		19 15 31.0	
	comp=Z,9.3nm,0.7s,baz=347,slow=41,SNR=5.3						
KKAR	**Karatay Array**	**13.84**	**248**	*i* P	**P**	**19 11 30.4**	**+0.1**
KKAR				pmax	pmax		
	comp=Z,1.0nm,0.3s						
AB31	**Akbulak array**	**18.24**	**279**	⇑P	**P**	**19 12 27.2**	**+0.6**
	comp=Z,0.6nm,0.4s						
AB31	**Akbulak array**	**18.24**	**279**	P	**P**	**19 12 27.1**	**+0.5**
ARU	**Arti**	**18.81**	**302**	*i* P	**P**	**19 12 33.8**	**+0.3**
ARU				*e*S	**S**	**19 16 07.6**	**+8.1**
ARU				pmax	pmax		
	comp=Z,4.0nm,0.8s						
ARU	**Arti**	**18.81**	**302**	*e*P	**P**	**19 12 32.7**	**-0.8**
	comp=Z,3.6nm,0.5s						
ARU				*e*S	**S**	**19 15 59.6**	**+0.1**
GUN	**Gumba**	**21.95**	**185**	*e*P	**P**	**19 13 07.1**	**-0.2**
	comp=Z,6.8nm,0.5s,mb4.3						
KKN	**Kakani**	**22.11**	**187**	*e*P	**P**	**19 13 08.8**	**-0.1**
	comp=Z,7.9nm,0.6s,mb4.3						
KOLN	**Koldanda**	**22.30**	**191**	*e*P	**P**	**19 13 10.5**	**-0.2**
	comp=Z,5.1nm,0.8s,mb4.0						
DMN	**Daman**	**22.31**	**187**	*e*P	**P**	**19 13 10.6**	**-0.2**
	comp=Z,7.9nm,0.8s,mb4.2						
PKI	**Pulchoki**	**22.32**	**186**	*e*P	**P**	**19 13 11.2**	**+0.2**
	comp=Z,9.3nm,0.7s,mb4.3						
YAK	**Yakutsk**	**25.80**	**46**	*e*P	**P**	**19 13 41.9**	**-2.2**
YAK				pmax	pmax		
	comp=Z,5.0nm,0.7s,mb4.2						
TIXI	**Tiksi**	**28.59**	**26**	P	**P**	**19 14 12.1**	**+2.6**
NJ2	**Nanjing**	**28.96**	**116**	*e*P	**P**	**19 14 14.3**	**+1.0**
OBN	**Obninsk**	**31.22**	**300**	P	**P**	**19 14 32.9**	**-0.3**
	comp=Z,10nm,1.2s,mb4.5						
CMAR	**Chiang Mai Arr**	**32.49**	**161**	P	**P**	**19 14 44.7**	**+0.2**
	comp=Z,0.5nm,0.7s,mb3.5,baz=333,slow=9.8,SNR=5.2						
CMAR	**Chiang Mai Arr**	**32.49**	**161**	P	**P**	**19 14 44.7**	**+0.1**
CMAR				pmax	pmax		
	comp=Z,1.0nm,0.7s						
ARCES	**ARCESS Array B**	**35.10**	**327**	LR	LR	19 32 18.3	
	comp=Z,34nm,18.0s,MS3.1,baz=92,slow=41						
FINES	**FINESS Array B**	**35.48**	**313**	P	**P**	**19 15 09.4**	**-0.6**
	comp=Z,0.8nm,0.8s,mb3.7,baz=56,slow=6.9,SNR=7.0						
FINES	**FINESS Array B**	**35.48**	**313**	P	**P**	**19 15 09.4**	**-0.6**
FINES				pmax	pmax		
	comp=Z,1.0nm,0.8s						
AKASG	**Malin Array Be**	**36.78**	**295**	P	**P**	**19 15 21.3**	**+0.3**
	comp=Z,0.5nm,0.3s,mb3.8,baz=63,slow=9.2,SNR=6.2						
BRTR	**Keskin Array B**	**39.16**	**276**	P	**P**	**19 15 42.8**	**+1.7**
	comp=Z,0.5nm,0.5s,mb3.5,baz=82,slow=8.7,SNR=5.0						
NB2	**NORSAR Subarra**	**42.51**	**315**	P	**P**	**19 16 08.9**	**+0.6**
	comp=Z,0.8nm,0.6s,mb3.6,baz=66,slow=7.9						
NOA	**NORSAR Array B**	**42.51**	**315**	P	**P**	**19 16 09.2**	**+0.9**
	comp=Z,0.7nm,0.6s,mb3.6,baz=65,slow=7.7,SNR=7.1						
NOA	**NORSAR Array B**	**42.51**	**315**	P	**P**	**19 16 09.2**	**+0.9**
NOA				pmax	pmax		
	comp=Z,1.0nm,0.6s						
CLL	**Collm**	**45.75**	**302**	P	**P**	**19 16 38.0**	**+3.4**
YKA	**Yellowknife Ar**	**66.58**	**11**	P	**P**	**19 19 01.0**	**-2.5**
	comp=Z,0.3nm,0.9s,mb3.3,baz=347,slow=6.2,SNR=4.2						
WRA	**Warramunga Arr**	**80.62**	**136**	P	**P**	**19 20 23.0**	**-3.0**
	comp=Z,0.5nm,0.9s,mb3.4,baz=341,slow=5.8,SNR=4.8						
WRA	**Warramunga Arr**	**80.62**	**136**	P	**P**	**19 20 23.0**	**-3.0**
WRA				pmax	pmax		
	comp=Z,1.0nm,0.9s						
ASAR	**Alice Springs**	**83.70**	**139**	P	**P**	**19 20 39.5**	**-2.4**
	comp=Z,0.6nm,0.9s,mb3.7,baz=336,slow=5.1,SNR=6.4						
CPUP	**Villa Florida**	**144.55**	**299**	PKP	PKPdf	19 27 49.2	-2.6
	comp=Z,2.3nm,0.9s,baz=49,slow=5.2,SNR=3.3						
CPUP	**Villa Florida**	**144.55**	**299**	PKIKP	PKPdf	19 27 49.2	-2.6
CPUP				pmax	pmax		
	comp=Z,2.0nm,0.9s						
CPUP	**Villa Florida**	**144.55**	**299**	PKP	PKPdf	19 27 49.2	-2.6

*NEIC **08** 19:31:55.9,41.08S×175.05E,h29km,ML4.1(WEL),After WEL.*
*IDC **08** 19:31:55.6±4.8,41.16S×174.88E,h31km±36km,mb3.7/3, mb1 3.8/5,mb1mx3.7/13,ML2.9/2,MS3.5/2,Ms1 3.4/2, ms1mx2.8/18, Error ellipse: s-maj=57.0km s-min=22.4km az=132.0*
*WEL **08** 19:31:55.8±0.0,41.08S×175.06E,h30km,ML4.1/14,Error ellipse: s-maj=0.4km s-min=0.4km az=0.0*
ISC 08 19:31:55.8±0.3,41.11S±0.02×175.06E±0.03,h30km,n71, σ1§09/88,mb3.8/3,MS3.8/1,6C-12D,North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAW	**Cannon Point**	**0.01**	**115**	⇓P*	**Pb**	**19 32 00.7**	**0.0**
CAW				S*	**Sb**	**19 32 04.4**	**+0.3**
CAW	**Cannon Point**	**0.01**	**115**	⇓P	**Pn**	**19 32 00.7**	**+0.9**
CAW				S	**Sn**	**19 32 04.4**	**+2.4**
KIW	**Kapiti Island**	**0.27**	**335**	⇑P*	**Pb**	**19 32 02.7**	**-0.1**
WEL	**Wellington**	**0.28**	**230**	⇓P*	**Pb**	**19 32 03.2**	**+0.2**
WEL				S*	**Sb**	**19 32 08.8**	**+0.9**
WEL	**Wellington**	**0.28**	**230**	⇓P	**Pb**	**19 32 03.2**	**+0.2**
WEL				S	**Sb**	**19 32 08.8**	**+0.9**
MRW	**Makara Radio**	**0.30**	**245**	⇓P*	**Pb**	**19 32 03.4**	**+0.2**
MRW				S*	**Sb**	**19 32 08.7**	**+0.5**
MRW	**Makara Radio**	**0.30**	**245**	⇓P	**Pb**	**19 32 03.4**	**+0.2**
MRW				S	**Sb**	**19 32 08.7**	**+0.5**
BHW	**Baring Head**	**0.34**	**205**	⇓P*	**Pb**	**19 32 03.9**	**+0.2**
BHW				S*	**Sb**	**19 32 09.6**	**+0.5**
BHW	**Baring Head**	**0.34**	**205**	⇓P	**Pb**	**19 32 03.9**	**+0.2**
BHW				S	**Sb**	**19 32 09.6**	**+0.5**
SNZO	**South Karori**	**0.34**	**232**	⇑P*	**Pb**	**19 32 03.9**	**+0.1**
SNZO				S*	**Sb**	**19 32 09.8**	**+0.7**
SNZO	**South Karori**	**0.34**	**232**	⇑P	**Pb**	**19 32 03.9**	**+0.2**
SNZO				S	**Sb**	**19 32 09.8**	**+0.7**
MTW	**Mount Morrison**	**0.34**	**99**	⇑P*	**Pb**	**19 32 03.8**	**0.0**
MTW				S*	**Sb**	**19 32 09.9**	**+0.6**
MTW	**Mount Morrison**	**0.34**	**99**	⇑P	**Pb**	**19 32 03.8**	**0.0**
MTW				S	**Sb**	**19 32 09.9**	**+0.7**
MSWZ	**Moikau Station**	**0.34**	**155**	⇑P*	**Pb**	**19 32 04.2**	**+0.4**
MSWZ				S*	**Sb**	**19 32 10.5**	**+1.2**
MRZ	**Mangatainoka R**	**0.59**	**42**	⇓P*	**Pb**	**19 32 07.0**	**-0.7**
MRZ				S*	**Sb**	**19 32 16.6**	**+0.8**
TUWZ	**Tuamarina**	**0.90**	**248**	⇓P*	**Pb**	**19 32 12.2**	**-0.6**
CMWZ	**Cape Campbell**	**0.90**	**224**	P*	**Pb**	**19 32 13.1**	**+0.3**
BFZ	**Birch Farm**	**0.99**	**65**	P*	**Pb**	**19 32 12.6**	**-1.7**
BFZ	**Birch Farm**	**0.99**	**65**	P	**Pn**	**19 32 12.8**	**-1.1**
BFZ				S	**Sn**	**19 32 26.1**	**-0.9**
BSWZ	**Blackbirch Sta**	**1.08**	**235**	⇓P*	**Pb**	**19 32 15.0**	**-0.8**
NNZ	**Nelson**	**1.27**	**264**	PN	**Pn**	**19 32 17.8**	**-0.1**
NNZ	**Nelson**	**1.27**	**264**	*e*P	**Pn**	**19 32 17.9**	**0.0**
WAZ	**Wanganui**	**1.35**	**358**	PN	**Pn**	**19 32 20.0**	**+1.0**
WAZ	**Wanganui**	**1.35**	**358**	P	**Pn**	**19 32 20.1**	**+1.1**
KHZ	**Kahutara**	**1.73**	**220**	PN	**Pn**	**19 32 23.2**	**-1.3**
KHZ	**Kahutara**	**1.73**	**220**	*e*P	**Pn**	**19 32 23.2**	**-1.3**
PWZ	**Pawanui**	**1.75**	**53**	PN	**Pn**	**19 32 22.5**	**-2.2**
PWZ	**Pawanui**	**1.75**	**53**	*e*P	**Pn**	**19 32 22.6**	**-2.0**
THZ	**Tophouse**	**1.75**	**247**	⇓PN	**Pn**	**19 32 23.8**	**-0.9**
THZ	**Tophouse**	**1.75**	**247**	*e*P	**Pn**	**19 32 23.8**	**-0.9**
WNVZ	**Wahianoa**	**1.82**	**13**	PN	**Pn**	**19 32 25.8**	**0.0**
FWVZ	**Far West T-bar**	**1.89**	**12**	*e*P	**Pn**	**19 32 26.8**	**+0.2**
RAEZ	**Rainy Point**	**1.89**	**344**	PN	**Pn**	**19 32 28.0**	**+1.4**
RAEZ	**Rainy Point**	**1.89**	**344**	P	**Pn**	**19 32 28.3**	**+1.7**
TUVZ	**Tukino**	**1.89**	**14**	PN	**Pn**	**19 32 26.8**	**0.0**
DFE	**Dawson Falls**	**1.92**	**337**	P	**Pn**	**19 32 28.6**	**+1.5**
WPVZ	**Whakapapa**	**1.93**	**11**	PN	**Pn**	**19 32 27.6**	**+0.2**
QRZ	**Quartz Range**	**1.94**	**277**	PN	**Pn**	**19 32 27.1**	**-0.3**
QRZ	**Quartz Range**	**1.94**	**277**	*e*P	**Pn**	**19 32 27.5**	**+0.1**
CNZ	**Chateau**	**1.94**	**11**	P	**Pn**	**19 32 27.6**	**+0.2**
NRZ	**Ngariki Road**	**1.96**	**334**	P	**Pn**	**19 32 29.3**	**+1.5**
NGZ	**Ngauruhoe**	**1.97**	**12**	PN	**Pn**	**19 32 28.0**	**+0.2**
NGZ	**Ngauruhoe**	**1.97**	**12**	P	**Pn**	**19 32 28.0**	**+0.1**
NEZ	**North Egmont**	**1.97**	**338**	P	**Pn**	**19 32 29.3**	**+1.4**
WTVZ	**West Tongariro**	**2.03**	**12**	PN	**Pn**	**19 32 28.7**	**0.0**
WTVZ				PN	**Pn**	**19 32 29.1**	**+0.4**
NWEZ	**Newall Road**	**2.04**	**333**	PN	**Pn**	**19 32 30.1**	**+1.2**
KAVZ	**Karewarewa**	**2.05**	**13**	PN	**Pn**	**19 32 29.3**	**+0.2**
KAVZ	**Karewarewa**	**2.05**	**13**	P	**Pn**	**19 32 29.3**	**+0.2**
PKE	**Pukeiti**	**2.08**	**336**	P	**Pn**	**19 32 30.6**	**+1.2**
MGZ	**Maungaku**	**2.13**	**10**	PN	**Pn**	**19 32 30.1**	**-0.1**
MGZ	**Maungaku**	**2.13**	**10**	P	**Pn**	**19 32 30.2**	**0.0**
KATZ	**Kakaramea**	**2.18**	**13**	P	**Pn**	**19 32 31.2**	**+0.3**
BKZ	**Black Stump Fm**	**2.23**	**30**	PN	**Pn**	**19 32 29.4**	**-2.2**
DSZ	**Denniston Nort**	**2.53**	**254**	PN	**Pn**	**19 32 34.4**	**-1.4**
DSZ	**Denniston Nort**	**2.53**	**254**	P	**Pn**	**19 32 34.7**	**-1.2**
HIZ	**Hauiti**	**2.59**	**356**	PN	**Pn**	**19 32 36.5**	**-0.3**
LTZ	**Lake Taylor**	**2.67**	**230**	PN	**Pn**	**19 32 35.6**	**-2.3**
LTZ	**Lake Taylor**	**2.67**	**230**	P	**Pn**	**19 32 35.7**	**-2.2**
KNZ	**Kokohu**	**2.89**	**45**	PN	**Pn**	**19 32 37.8**	**-3.2**
MQZ	**McQueen's Vall**	**3.15**	**214**	PN	**Pn**	**19 32 40.7**	**-4.0**
URZ	**Urewera**	**3.25**	**30**	Pn	**Pn**	**19 32 46.1**	**0.0**
	1.1nm,0.3s,baz=226,slow=4.0,SNR=3.1						
URZ				Sn	**Sn**	**19 33 20.1**	**-4.2**
	5.0nm,0.3s,baz=298,slow=14,SNR=5.6						
URZ				LR	LR	19 33 29.7	
	comp=Z,311nm,19.2s,baz=325,slow=28						
URZ				Lg		19 33 43.0	
	3.8nm,0.3s,baz=113,slow=21,SNR=4.3						
MWZ	**Matawai**	**3.36**	**35**	PN	**Pn**	**19 32 43.0**	**-4.6**
RPZ	**Rata Peaks**	**3.95**	**227**	Pn	**Pn**	**19 32 52.5**	**-3.5**
	1.2nm,0.3s,baz=30,slow=10,SNR=9.5						
RPZ				Sn	**Sn**	**19 33 35.2**	**-6.7**
	7.8nm,0.3s,baz=309,slow=3.5,SNR=17						
RPZ	**Rata Peaks**	**3.95**	**227**	Pn	**Pn**	**19 32 52.5**	**-3.6**
RPZ				Sn	**Sn**	**19 33 35.2**	**-6.7**
TUZ	**Tuapeka**	**6.25**	**217**	*e*PN	**Pn**	**19 33 23.8**	**-4.8**
ASAR	**Alice Springs**	**38.45**	**284**	P	**P**	**19 39 13.5**	**-3.3**
	1.5nm,0.7s,mb3.8,baz=124,slow=7.1,SNR=26						
WB2	**Warramunga Arr**	**40.45**	**289**	*e*P	**P**	**19 39 29.9**	**-3.5**
WRA	**Warramunga Arr**	**40.46**	**289**	P	**P**	**19 39 30.2**	**-3.3**
	0.6nm,0.6s,mb3.5,baz=127,slow=8.3,SNR=9.0						
FITZ	**Fitzroy Crossi**	**47.95**	**283**	P	**P**	**19 40 30.3**	**-3.5**
	1.5nm,0.7s,mb4.2,baz=174,slow=9.2,SNR=3.3						
MAW	**Mawson**	**60.29**	**204**	LR	LR	20 08 10.0	
	comp=Z,75nm,19.6s,MS3.8,baz=64,slow=36						
BRTR	**Keskin Array B**	**150.75**	**280**	PKPbc	PKPdf	19 51 43.5	-0.8
	0.6nm,0.7s,baz=148,slow=5.5,SNR=5.0						
BRTR				PKPab	PKPab	19 51 51.1	-3.0
	1.1nm,0.9s,baz=124,slow=4.5,SNR=5.8						

*MOS **08** 19:41:01.5±1.2,53.22N×168.08E,h33km,mb4.3/13,Error ellipse: s-maj=11.4km s-min=8.8km az=124.9*
*BJI **08** 19:41:02.1,52.86N×168.49E,h57km,mB4.5,mb4.5*
*KRSC **08** 19:41:02.8±1.0,53.23N×167.99E,h41km±22km,ML5.0*
*NEIC **08** 19:41:04.8±0.4,53.26N×168.18E,mb4.5/15,Error ellipse: s-maj=10.8km s-min=5.8km az=177.0*
*IDC **08** 19:41:05.0±0.4,53.27N×168.34E,h40km±3km,mb3.8/21, mb1 4.0/22,mb1mx3.9/28,ML3.7/1,MS3.6/2,Ms1 3.6/2, ms1mx2.8/32,Error ellipse: s-maj=13.1km s-min=7.3km az=180.0*
ISC 08 19:41:04.0±0.7,53.35N±0.03×167.81E±0.05,h49km±6km, h44km±1.0km:pP-P,n125,σ1§21/169,mb4.2/36,MS3.8/3, 2C-5D,Komandorsky Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKI	**Bering**	**2.15**	**331**	*i* P	**P**	**19 41 37.7**	**-0.5**
BKI				*i* S	**S**	**19 42 03.5**	**-0.2**
BKI				Smax			
	710nm,1.1s						
FX1	**Attu Island--F**	**3.26**	**96**	P	**P**	**19 41 47.5**	**-6.4**
	34nm,0.3s,baz=322,slow=4.2,SNR=167						
FX1				S	**S**	**19 42 21.3**	**-11**
	118nm,0.3s,baz=110,slow=21,SNR=16						
FX1	**Attu Island--F**	**3.26**	**96**	*e*P	**P**	**19 41 47.3**	**-6.6**
FX1				*e*S	**S**	**19 42 21.6**	**-10**
MKZ	**Mys Kozlova**	**3.79**	**291**	P	**P**	**19 42 01.6**	**+0.1**
MKZ				S	**S**	**19 42 44.1**	**-1.2**
MKZ	**Mys Kozlova**	**3.79**	**291**	*i* P	**P**	**19 42 01.5**	**0.0**
MKZ				*i* S	**S**	**19 42 44.9**	**-0.4**
SMY	**Shemya**	**3.84**	**97**	*e*P	**P**	**19 41 55.9**	**-6.3**
KBTR	**Krutoberegovo**	**4.07**	**317**	P	**P**	**19 42 04.5**	**-0.9**
KBTR				S	**S**	**19 42 49.0**	**-3.4**
KBTR	**Krutoberegovo**	**4.07**	**317**	*e*P	**P**	**19 42 04.7**	**-0.7**
KBTR				*i* S	**S**	**19 42 51.4**	**-1.0**
KBG	**Krutoberegovo**	**4.15**	**317**	*e*P	**P**	**19 42 07.2**	**+0.7**
KBG				*e*S	**S**	**19 42 56.0**	**+1.7**
KBG				Smax			
	560nm,0.9s						
SPN	**Mys Shipunski**	**4.69**	**270**	P	**P**	**19 42 14.2**	**+0.1**
SPN				S	**S**	**19 43 05.7**	**-2.2**
SPN	**Mys Shipunski**	**4

comp=E,50µm,0.5s
ALID Alaid 7.95 257 *e*P **P** **19 42 59.3 -0.3**
ALID *e*S **S** **19 44 23.3 -5.7**
MA2 Magadan 11.29 310 *e*P **P** **19 43 45.1 -0.1**
BILL Bilibino 14.76 358*c i*P **P** **19 44 33.4 +2.5**
BILL pmax pmax
comp=Z,18nm,0.9s
BILL MLR MLR
comp=Z,200nm,16.0s
BILL Bilibino 14.76 358 *e*P **P** **19 44 33.6 +2.7**
comp=Z,14nm,0.8s
YAK Yakutsk 21.85 309⇓*e*P **P** **19 45 54.4 +0.7**
YAK pmax pmax
comp=Z,15nm,0.7s,mb4.5
YAK Yakutsk 21.85 309 *e*P **P** **19 45 53.0 -0.7**
comp=Z,16nm,0.8s,mb4.5
IMA Indian Mountai 22.77 41 *e*P **P** **19 46 03.0 +0.5**
comp=Z,15nm,0.7s,mb4.5
KLR Kul'dur 22.77 274 *e*P **P** **19 46 05.8 +3.1**
SML Sawmill 24.54 52 *e*P **P** **19 46 18.3 -1.5**
TIXI Tiksi 24.93 332 *e*P **P** **19 46 23.7 +0.2**
TIXI *e* 19 46 38.2
TIXI pmax pmax
comp=Z,49nm,1.2s,mb4.9
TIXI MLR MLR
comp=Z,600nm,16.0s,MS4.2
TIXI Tiksi 24.93 332 *e*P **P** **19 46 25.1 +1.6**
comp=Z,7.2nm,0.3s,mb4.7
TIXI *e* 19 46 37.8
COLA College 24.93 45*d i*P **P** **19 46 22.2 -1.3**
COLA College 24.93 45 *e*P **P** **19 46 21.7 -1.9**
comp=Z,6.9nm,0.7s,mb4.3
ILAR Eielson Array 25.33 45 P **P** **19 46 25.2 -2.1**
comp=Z,2.8nm,0.6s,mb3.9,baz=251,slow=7.6,SNR=27
ILAR pP pP 19 46 37.7 -2.0
comp=Z,3.3nm,0.6s,baz=252,slow=6.8,SNR=8.9
ILAR LR LR 19 55 48.7
comp=Z,31nm,20.1s,MS2.8,baz=149,slow=35
ILAR Eielson Array 25.33 45 P **P** **19 46 25.2 -2.1**
ILAR *PP pP 19 46 37.7 -2.0
ILAR pmax pmax
comp=Z,3.0nm,0.6s
ILAR pmax pmax
comp=N,3.0nm,0.6s
ILAR MLR MLR
comp=Z,31nm,20.1s
EYAK Cordova Ski Ar 25.85 55 *e*P **P** **19 46 30.3 -1.9**
DAWY Dawson 28.57 47 *e*P **P** **19 46 55.4 -1.6**
CN2 Changchun 29.22 268 *e*P **P** **19 47 03.5 +0.6**
BOD Bodaibo 30.06 300 *e*P **P** **19 47 10.8 +0.6**
INK Inuvik 30.81 38 P **P** **19 47 15.4 -1.4**
comp=Z,0.9nm,0.4s,mb3.9,baz=256,slow=4.8,SNR=4.2
INK pP pP 19 47 27.1 -2.5
comp=Z,1.3nm,0.7s,baz=271,slow=6.2,SNR=3.3
INK sP sP 19 47 31.0 -4.7
comp=Z,2.0nm,0.9s,baz=270,slow=16,SNR=3.2
INK Inuvik 30.81 38 P **P** **19 47 15.4 -1.4**
INK *PP pP 19 47 27.1 -2.5
INK *SP sP 19 47 31.0 -4.7
INK pmax pmax
comp=Z,1.0nm,0.4s
INK pmax pmax
comp=N,1.0nm,0.7s
INK pmax pmax
comp=N,2.0nm,0.9s
INK Inuvik 30.81 38 *e*P **P** **19 47 14.6 -2.2**
comp=N,5.4nm,1.2s,mb4.2
INK pP pP 19 47 27.1 -2.5
INK sP sP 19 47 31.0 -4.7
DLBC Dease Lake 34.11 56 *e*P **P** **19 47 44.9 -0.7**
ULN Ulaanbaatar 37.92 287 P **P** **19 48 20.0 +2.0**
comp=N,5.2nm,1.9s,mb3.9
SONM Songino Array 38.31 287 P **P** **19 48 24.1 +2.9**
comp=N,0.9nm,0.8s,mb3.5,baz=59,slow=8.8,SNR=4.0
SONM pP pP 19 48 36.0 +1.8
comp=N,1.0nm,0.8s,baz=45,slow=8.7,SNR=3.9
SONM PcP PcP 19 50 35.5 +0.5
comp=N,0.6nm,0.9s,baz=45,slow=1.7,SNR=3.7
YKW3 Yellowknife Ar 39.73 45 *e*P **P** **19 48 31.5 -1.4**
YKW3 *epP* pP 19 48 43.8 -2.1
YKA Yellowknife Ar 39.76 45 P **P** **19 48 32.3 -0.8**
comp=N,1.3nm,0.6s,mb3.8,baz=294,slow=7.7,SNR=21
YKA pP pP 19 48 44.3 -1.9
comp=N,1.3nm,0.8s,baz=293,slow=7.8,SNR=8.8
YKA PcP PcP 19 50 38.9 -0.5
comp=N,0.3nm,0.6s,baz=297,slow=3.4,SNR=3.7
YKA Yellowknife Ar 39.76 45 P **P** **19 48 32.3 -0.8**
YKA *PP pP 19 48 44.3 -1.9
YKA 19 50 38.9
YKA pmax pmax
comp=Z,1.0nm,0.6s
YKA pmax pmax
comp=N,1.0nm,0.8s
YKA Yellowknife Ar 39.76 45 P **P** **19 48 32.3 -0.8**
YKA pP pP 19 48 44.3 -1.9
YKA PcP PcP 19 50 38.9 -0.5
RES Resolute Bay 41.29 24 *e*P **P** **19 48 43.7 -1.9**
comp=N,2.3nm,0.9s,mb3.8
NEW Newport 45.68 64 P **P** **19 49 20.8 -0.5**
comp=N,1.5nm,0.6s,mb4.1,baz=292,slow=9.0,SNR=3.4
NEW Newport 45.68 64 P **P** **19 49 20.8 -0.5**
NEW pmax pmax
comp=Z,2.0nm,0.6s
NEW Newport 45.68 64 P **P** **19 49 20.8 -0.5**
YBH Yreka Blue Hor 46.52 75 P **P** **19 49 27.5 -0.5**
comp=Z,0.8nm,0.5s,mb3.9,baz=289,slow=3.0,SNR=4.0
YBH Yreka Blue Hor 46.52 75 P **P** **19 49 27.5 -0.5**
YBH pmax pmax
comp=Z,1.0nm,0.5s
GTA Gaotai 47.15 282 *e*P **P** **19 49 35.2 +2.2**
GTA AP pP 19 49 47.7 +1.4
GTA AMB AMB
comp=Z,4.0nm,0.7s,mb4.5
SPB4 Spitsbergen Ar 47.58 352 *e*P **P** **19 49 36.0 +0.1**
DAG Danmarks Havn 50.09 2⇓*i*P **P** **19 49 56.0 +0.7**
comp=Z,2.7nm,0.7s,mb4.4
DAG Danmarks Havn 50.09 2⇓*i*P **P** **19 49 56.0 +0.7**
DAG pmax pmax
comp=Z,3.0nm,0.7s,mb4.4
FCC Fort Churchill 50.28 42 *e*P **P** **19 49 56.0 -1.0**
comp=Z,6.9nm,0.8s,mb4.7
FCC *epP* pP 19 50 09.1 -1.2
NVAR Mina Array Bea 51.24 75 P **P** **19 50 03.3 -1.2**
comp=Z,0.3nm,0.5s,mb3.5,baz=275,slow=10.0,SNR=5.0
NVAR sP sP 19 50 17.5 -6.1
comp=Z,0.8nm,0.6s,baz=316,slow=6.6,SNR=4.3
KURK Kurchatov 51.45 306 *e*P **P** **19 50 06.2 +0.2**
KURK *epP* pP 19 50 19.6 +0.3
MKAR Makanchi Array 52.15 300 P **P** **19 50 11.5 +0.3**
comp=Z,2.2nm,1.1s,mb4.0,baz=52,slow=7.1,SNR=11
MKAR pP pP 19 50 23.8 -0.8
comp=Z,0.5nm,0.7s,baz=51,slow=7.8,SNR=3.4
MKAR Makanchi Array 52.15 300 P **P** **19 50 11.5 +0.3**
MKAR *PP pP 19 50 23.8 -0.8
MKAR pmax pmax
comp=Z,2.0nm,1.1s
MKAR pmax pmax
comp=N,1.0nm,0.7s
PDAR Pinedale Array 53.27 66 P **P** **19 50 18.1 -1.5**
comp=N,1.2nm,0.9s,mb3.8,baz=315,slow=4.2,SNR=6.7
PDAR pP pP 19 50 31.0 -2.1
comp=N,0.9nm,0.8s,baz=315,slow=6.3,SNR=4.1
BVAR Borovoye Array 53.77 312 P **P** **19 50 23.6 +0.4**
comp=N,1.1nm,0.5s,mb4.0,baz=53,slow=7.4,SNR=9.8
BVAR pP pP 19 50 36.6 -0.1
comp=N,1.6nm,0.8s,baz=53,slow=7.4,SNR=5.4
BVAR Borovoye Array 53.77 312 P **P** **19 50 23.6 +0.4**
BVAR pP pP 19 50 36.6 -0.1
BRVK Borovoye 53.80 312 *e*P **P** **19 50 23.6 +0.2**
BRVK *epP* pP 19 50 36.5 -0.4
ARCES ARCESS Array B 54.38 345 P **P** **19 50 27.5 0.0**
comp=N,6.4nm,1.1s,mb4.5,baz=36,slow=10,SNR=4.6
ARCES pP pP 19 50 40.2 -0.8
comp=N,2.7nm,0.7s,baz=18,slow=7.7,SNR=2.4
ARCES ARCESS Array B 54.38 345 P **P** **19 50 27.5 0.0**
ARCES *PP pP 19 50 40.2 -0.8
ARCES pmax pmax
comp=Z,6.0nm,1.1s
ARCES pmax pmax
comp=N,3.0nm,0.7s
ARCES ARCESS Array B 54.38 345 P **P** **19 50 27.5 0.0**
ARCES pP pP 19 50 40.2 -0.8
ULM Lac du Bonnet 55.16 51 P **P** **19 50 32.2 -1.1**
comp=N,2.0nm,0.6s,mb4.3,baz=310,slow=5.1,SNR=4.9
ARU Arti 56.24 321⇓*i*P **P** **19 50 41.3 +0.2**
ARU *e* 19 52 46.9
ARU *e*PPP PPP 19 54 01.2 -4.1
ARU *e*S **S** **19 58 31.8 +6.4**
ARU *e*SS SS 20 02 16.8 +4.0
ARU pmax pmax
comp=Z,5.0nm,0.8s,mb4.6
ARU Arti 56.24 321 *e*P **P** **19 50 41.2 +0.1**
comp=Z,5.6nm,0.9s,mb4.6
ARU *epP* pP 19 50 53.2 -1.5
FINES FINESS Array B 61.60 340 P **P** **19 51 17.8 -0.3**
comp=Z,1.1nm,0.7s,mb4.1,baz=18,slow=6.0,SNR=6.8
FINES pP pP 19 51 30.8 -1.0
comp=Z,1.0nm,0.8s,baz=45,slow=11,SNR=2.3
FINES FINESS Array B 61.60 340 P **P** **19 51 17.8 -0.3**
FINES *PP pP 19 51 30.8 -1.0
FINES pmax pmax
comp=Z,1.0nm,0.7s
FINES pmax pmax
comp=N,1.0nm,0.8s
CMAR Chiang Mai Ar 62.81 265 P **P** **19 51 29.1 +2.3**
comp=N,0.4nm,0.4s,mb3.9,baz=305,slow=33,SNR=6.6
CMAR pP pP 19 51 40.9 +0.3
comp=N,0.4nm,0.5s,baz=306,slow=34,SNR=6.4
GUN Gumba 63.44 282 *e*P **P** **19 51 31.9 +1.0**
comp=N,19nm,1.1s,mb5.2
KKN Kakani 63.88 282 *e*P **P** **19 51 34.4 +0.7**
comp=N,5.5nm,0.7s,mb4.7
PKI Pulchoki 63.97 282 *e*P **P** **19 51 35.3 +1.0**
comp=N,7.4nm,0.7s,mb4.8
GKN Gorkha 64.10 283 *e*P **P** **19 51 35.4 +0.3**
comp=N,14nm,1.1s,mb4.9
DMN Daman 64.12 282 *e*P **P** **19 51 35.0 -0.2**
comp=N,46nm,1.8s,mb5.2
NB2 NORSAR Subarra 64.45 348 P **P** **19 51 36.8 0.0**
comp=N,4.0nm,0.8s,mb4.5,baz=16,slow=6.5
NOA NORSAR Array B 64.45 348 P **P** **19 51 37.0 +0.2**
comp=N,2.8nm,0.6s,mb4.4,baz=16,slow=6.6,SNR=14
NOA pP pP 19 51 49.0 -1.7
comp=N,1.5nm,0.9s,baz=17,slow=6.5,SNR=3.0
NOA NORSAR Array B 64.45 348 P **P** **19 51 37.0 +0.2**
NOA *PP pP 19 51 49.0 -1.6
NOA pmax pmax
comp=Z,3.0nm,0.6s
NOA pmax pmax
comp=N,2.0nm,0.9s
NOA NORSAR Array B 64.45 348 P **P** **19 51 37.0 +0.2**
NOA pP pP 19 51 49.0 -1.7
TXAR Lajitas Array 66.20 73 P **P** **19 51 48.1 -0.5**
comp=N,0.4nm,0.5s,mb3.7,baz=299,slow=5.2,SNR=9.3
TXAR pP pP 19 52 00.3 -2.2
comp=N,0.8nm,0.6s,baz=305,slow=5.2,SNR=5.9
AKASG Malin Array Be 70.63 334 pP pP 19 52 29.7 0.0
comp=N,0.6nm,0.5s,baz=22,slow=6.2,SNR=2.6
GERES GERESS Array B 75.85 343 P **P** **19 52 47.8 +1.7**
comp=N,0.6nm,0.6s,mb3.7,baz=34,slow=4.8,SNR=9.9
GERES pP pP 19 52 58.7 -1.6
comp=N,0.8nm,0.7s,baz=27,slow=6.0,SNR=5.0
GERES GERESS Array B 75.85 343 P **P** **19 52 47.8 +1.7**
GERES *PP pP 19 52 58.7 -1.5
GERES pmax pmax
comp=Z,1.0nm,0.6s
GERES pmax pmax
comp=N,1.0nm,0.7s
WRA Warramunga Arr 78.51 212 P **P** **19 53 01.6 +0.1**
comp=N,1.0nm,0.9s,mb3.8,baz=30,slow=5.8,SNR=7.4
WRA pP pP 19 53 14.8 -0.9
comp=N,1.3nm,1.0s,baz=32,slow=5.7,SNR=4.6
WRA Warramunga Arr 78.51 212 P **P** **19 53 01.6 +0.1**
WRA *PP pP 19 53 14.8 -0.9
WRA pmax pmax
comp=Z,1.0nm,0.9s
WRA pmax pmax
comp=N,1.0nm,1.0s
BRTR Keskin Array B 79.21 326 P **P** **19 53 07.0 +2.1**
comp=N,0.7nm,0.5s,mb3.9,baz=37,slow=5.2,SNR=6.1
FITZ Fitzroy Crossi 79.89 220 P **P** **19 53 10.1 +1.0**
comp=N,1.9nm,0.8s,mb4.1,baz=22,slow=5.4,SNR=4.0
FITZ pP pP 19 53 22.4 -0.9
comp=N,1.3nm,0.6s,baz=38,slow=11,SNR=1.9
ASAR Alice Springs 82.14 211 P **P** **19 53 22.1 +1.4**
comp=N,1.7nm,0.7s,mb4.1,baz=19,slow=5.3,SNR=27
ASAR pP pP 19 53 34.2 -0.8
comp=N,1.3nm,0.7s,baz=20,slow=5.1,SNR=7.9
URZ Urewera 91.59 173 LR LR 20 32 18.7
comp=N,155nm,19.3s,MS4.5,baz=30,slow=34
QSPA South Pole Qui 143.09 180 *e*P PKPbc 20 00 28.2 -0.4

NIED ***08*** *19:49:00,35.50N×136.30E,h8km,Mw3.5 Best double couple: M₀2.26×10¹⁴ NP1:φs197°,δ78°,λ99°. NP2:φs340°, δ15°,λ54°.*
JMA ***08*** *19:49:13.1,35.52N×136.28E,h11km±1km,M3.4 Broadband fault plane solution: P waves. NP1:φs320°, δ33°,λ45°. NP2:φs190°,δ67°,λ114°. Principal axes: T Plg60°, Azm136°; N Plg22°, Azm0°; P Plg19°, Azm262°;*
JMA Felt II J1.
ISC 08 19:49:13.0±0.6,35.51N±0.03×136.26E±0.04,h9km±5km, n9,σ0§59/18,2C-5D,Western Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFM	**Mihama**	**0.23**	**275**	⇓P	**Pg**	**19 49 18.2**	**+0.4**
JFM				*e*S	**Sg**	**19 49 21.6**	**+0.6**
JEG	**Eigenji**	**0.39**	**164**	⇑P	**Pg**	**19 49 20.9**	**+0.1**
JEG				*e*S	**Sg**	**19 49 26.2**	**+0.1**
JGM	**Miyama**	**0.42**	**63**	⇓P	**Pg**	**19 49 21.1**	**-0.4**
JGM				*e*S	**Sg**	**19 49 26.7**	**-0.4**
JWT	**Wachi**	**0.74**	**252**	⇓P	**Pb**	**19 49 27.3**	**-0.2**
JWT				*e*S	**Sb**	**19 49 36.6**	**-0.9**
JKG	**Kaga**	**0.77**	**4**	P	**Pb**	**19 49 27.6**	**-0.5**
JKG				*e*S	**Sb**	**19 49 37.8**	**-0.6**
TSUJ	**Tsu 2**	**0.81**	**171**	⇑P	**Pb**	**19 49 28.5**	**-0.2**
TSUJ				*e*S	**Sb**	**19 49 39.2**	**-0.3**
JKY	**Yasaka**	**0.95**	**278**	⇓P	**Pb**	**19 49 31.2**	**0.0**
JKY				*e*S	**Sb**	**19 49 44.0**	**+0.3**
JHE	**Heguri**	**0.97**	**209**	⇓P	**Pb**	**19 49 31.8**	**+0.2**
JHE				*e*S	**Sb**	**19 49 44.6**	**+0.2**
MAT	**Matsushiro**	**1.89**	**56**	P	**Pn**	**19 49 45.6**	**-0.1**
MAT				S	**Sn**	**19 50 11.9**	**+2.1**

NEIC ***08*** *19:55:27.8±0.9,6.35N×73.55W,h138km±11km,mb3.9/3, Error ellipse: s-maj=19.2km s-min=11.8km az=127.0*
IDC ***08*** *19:55:27.7±0.7,6.25N×73.41W,h140km±10km,mb3.0/3, mb1 3.6/5,mb1mx3.3/22,Error ellipse: s-maj=28.4km s-min=8.2km az=134.0*
ISC 08 19:55:27.0±0.7,6.44N±0.09×73.59W±0.08,h136km±10km, n12,σ0§81/13,mb3.5/6,Northern Colombia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ROSC	**El Rosal**	**1.74**	**205**	P	**P**	**19 55 58.2**	**-0.4**
	71nm,0.3s,baz=79,slow=11,SNR=52						
ROSC				S	**S**	**19 56 22.8**	**0.0**
	62nm,0.3s,baz=115,slow=15,SNR=7.0						
SDV	**Santo Domingo**	**3.81**	**50**	P	**P**	**19 56 25.6**	**+0.3**
	39nm,0.3s,baz=219,slow=5.1,SNR=84						
SDV				S	**S**	**19 57 10.0**	**+0.1**
	13nm,0.3s,baz=66,slow=18,SNR=12						
OTAV	**Otavalo**	**7.84**	**218**	*e*P	**P**	**19 57 19.9**	**+0.4**
PCRV	**Puerto La Cruz**	**9.60**	**67**	P	**P**	**19 57 42.8**	**-0.3**
	1.0nm,0.3s,baz=222,slow=12,SNR=6.0						
PCRV				S	**S**	**19 59 29.4**	**0.0**
	0.7nm,0.3s,baz=153,slow=3.7,SNR=3.6						
LPAZ	**La Paz**	**23.22**	**167**	P	**P**	**20 00 23.2**	**+0.2**
	2.4nm,1.3s,mb3.5						
PLAL	**Pickwick Lake**	**31.38**	**337**	P	**P**	**20 01 37.0**	**-0.4**
	2.5nm,0.8s,mb4.0						
PLAL				*e*pP	pP	20 02 06.4	-0.3
PLAL				*e*sP	sP	20 02 22.9	+0.5
PLAL				*e*PP	PP	20 02 50.3	+4.7
PLAL				*e*PcP	PcP	20 04 25.5	-2.2
TXAR	**Lajitas Array**	**36.37**	**312**	P	**P**	**20 02 20.8**	**+0.9**
	0.2nm,0.7s,mb2.9,baz=112,slow=4.9,SNR=2.4						
TUC	**Tucson**	**43.14**	**312**	P	**P**	**20 03 12.9**	**-3.0**
	6.5nm,2.0s,mb3.9						
PDAR	**Pinedale Array**	**48.11**	**324**	P	**P**	**20 03 56.5**	**+1.5**
	0.2nm,0.4s,mb3.1,baz=129,slow=5.8,SNR=3.1						
YKA	**Yellowknife Ar**	**63.46**	**340**	P	**P**	**20 05 43.5**	**-1.0**
	0.7nm,0.5s,mb3.8,baz=135,slow=6.4,SNR=25						
ASAR	**Alice Springs**	**148.51**	**234**	PKPbc	PKPdf	20 14 58.5	+3.7
	0.3nm,0.5s,baz=125,slow=3.5,SNR=6.5						
WRA	**Warramunga Arr**	**149.75**	**241**	PKPbc	PKPdf	20 15 01.7	+4.9
	0.4nm,0.4s,baz=107,slow=2.8,SNR=25						
WRA				pPKPbc		20 15 35.8	
	0.2nm,0.5s,baz=109,slow=2.7,SNR=2.2						

NEIC ***08*** *20:10:21.7,41.08S×175.05E,h28km,ML4.1(WEL),After WEL.*
IDC ***08*** *20:10:21.2±2.0,41.24S×175.01E,h41km±15km,mb3.9/3, mb1 4.0/5,mb1mx3.8/13,ML3.2/2,MS3.2/1,Ms1 3.2/1, ms1mx2.6/18,Error ellipse: s-maj=41.6km s-min=9.4km az=131.0*
WEL ***08*** *20:10:21.5±0.1,41.07S×175.05E,h29km,ML4.1/14, Error ellipse: s-maj=0.6km s-min=0.5km az=0.0*
ISC 08 20:10:21.5±0.3,41.12S±0.03×175.04E±0.03,h29km,n80, σ1§16/93,mb4.1/3,MS3.1/1,7C-9D,North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CAW	**Cannon Point**	**0.03**	**70**	⇓P*	**Pb**	**20 10 26.4**	**0.0**
CAW				S*	**Sb**	**20 10 30.3**	**+0.5**
CAW	**Cannon Point**	**0.03**	**70**	⇓P	**Pn**	**20 10 26.4**	**+0.6**
CAW				S	**Sn**	**20 10 30.3**	**+2.2**
WEL	**Wellington**	**0.26**	**230**	P*	**Pb**	**20 10 28.8**	**+0.4**
WEL				S*	**Sb**	**20 10 34.5**	**+1.4**
WEL	**Wellington**	**0.26**	**230**	⇓P	**Pb**	**20 10 28.8**	**+0.4**
MRW	**Makara Radio**	**0.28**	**246**	⇑P*	**Pb**	**20 10 29.0**	**+0.4**
MRW				S*	**Sb**	**20 10 34.4**	**+1.0**
MRW	**Makara Radio**	**0.28**	**246**	⇑P	**Pb**	**20 10 29.0**	**+0.4**
MRW				S	**Sb**	**20 10 34.4**	**+1.0**
SNZO	**South Karori**	**0.32**	**232**	⇑P*	**Pb**	**20 10 29.6**	**+0.5**
SNZO				S*	**Sb**	**20 10 35.4**	**+1.1**
SNZO	**South Karori**	**0.32**	**232**	⇑P	**Pb**	**20 10 29.6**	**+0.5**
SNZO				S	**Sb**	**20 10 35.4**	**+1.1**
BHW	**Baring Head**	**0.32**	**203**	⇓P*	**Pb**	**20 10 29.5**	**+0.4**
BHW				S*	**Sb**	**20 10 35.2**	**+0.9**
BHW	**Baring Head**	**0.32**	**203**	⇓P	**Pb**	**20 10 29.5**	**+0.4**
BHW				S	**Sb**	**20 10 35.2**	**+0.9**
MSWZ	**Moikau Station**	**0.34**	**152**	⇑P*	**Pb**	**20 10 29.9**	**+0.5**
MSWZ				S*	**Sb**	**20 10 36.3**	**+1.5**
MTW	**Mount Morrison**	**0.35**	**97**	⇑P*	**Pb**	**20 10 29.5**	**-0.2**
MTW				S*	**Sb**	**20 10 35.9**	**+0.7**
MTW	**Mount Morrison**	**0.35**	**97**	⇑P	**Pb**	**20 10 29.5**	**-0.1**
MTW				S	**Sb**	**20 10 35.9**	**+0.7**
MRZ	**Mangatainoka R**	**0.61**	**42**	⇓P*	**Pb**	**20 10 32.8**	**-0.9**
MRZ				S*	**Sb**	**20 10 41.6**	**-0.4**
TUWZ	**Tuamarina**	**0.88**	**249**	P*	**Pb**	**20 10 37.9**	**-0.2**
TUWZ				S*	**Sb**	**20 10 50.5**	**+0.8**
CMWZ	**Cape Campbell**	**0.88**	**224**	P*	**Pb**	**20 10 38.9**	**+0.7**
BFZ	**Birch Farm**	**1.01**	**65**	P*	**Pb**	**20 10 38.4**	**-1.9**
BFZ	**Birch Farm**	**1.01**	**65**	*e*P	**Pn**	**20 10 38.5**	**-1.4**
BFZ				S	**Sn**	**20 10 54.9**	**+1.6**
BSWZ	**Blackbirch Sta**	**1.06**	**235**	⇓P*	**Pb**	**20 10 40.8**	**-0.3**
NNZ	**Nelson**	**1.26**	**265**	PN	**Pn**	**20 10 43.5**	**+0.1**
TSZ	**Takapari Road**	**1.27**	**34**	⇓P*	**Pb**	**20 10 42.2**	**-2.1**
TSZ	**Takapari Road**	**1.27**	**34**	P	**Pn**	**20 10 42.6**	**-1.0**
WAZ	**Wanganui**	**1.36**	**358**	PN	**Pn**	**20 10 45.8**	**+1.0**
WAZ	**Wanganui**	**1.36**	**358**	P	**Pn**	**20 10 45.9**	**+1.0**
KHZ	**Kahutara**	**1.71**	**220**	PN	**Pn**	**20 10 48.9**	**-1.1**
KHZ				SN	**Sn**	**20 11 09.9**	**-1.2**
KHZ	**Kahutara**	**1.71**	**220**	P	**Pn**	**20 10 48.9**	**-1.0**
THZ	**Tophouse**	**1.73**	**247**	PN	**Pn**	**20 10 49.1**	**-1.1**
THZ	**Tophouse**	**1.73**	**247**	P	**Pn**	**20 10 49.6**	**-0.5**
PWZ	**Pawanui**	**1.76**	**53**	PN	**Pn**	**20 10 48.3**	**-2.3**
WNVZ	**Wahianoa**	**1.84**	**14**	PN	**Pn**	**20 10 51.3**	**-0.4**
DRZ	**Dome Shelter**	**1.88**	**13**	*e*PN	**Pn**	**20 10 52.4**	**+0.1**
DRZ	**Dome Shelter**	**1.88**	**13**	P	**Pn**	**20 10 52.6**	**+0.3**
RAEZ	**Rainy Point**	**1.89**	**345**	PN	**Pn**	**20 10 54.0**	**+1.6**
RAEZ	**Rainy Point**	**1.89**	**345**	P	**Pn**	**20 10 54.2**	**+1.7**
FWVZ	**Far West T-bar**	**1.90**	**12**	PN	**Pn**	**20 10 52.5**	**-0.1**
FWVZ	**Far West T-bar**	**1.90**	**12**	P	**Pn**	**20 10 52.6**	**0.0**
TUVZ	**Tukino**	**1.91**	**15**	PN	**Pn**	**20 10 52.5**	**-0.2**
QRZ	**Quartz Range**	**1.92**	**278**	PN	**Pn**	**20 10 53.2**	**+0.3**
QRZ	**Quartz Range**	**1.92**	**278**	P	**Pn**	**20 10 53.0**	**+0.1**
DFE	**Dawson Falls**	**1.93**	**338**	PN	**Pn**	**20 10 54.4**	**+1.4**
DFE	**Dawson Falls**	**1.93**	**338**	P	**Pn**	**20 10 54.4**	**+1.5**
WPVZ	**Whakapapa**	**1.95**	**12**	PN	**Pn**	**20 10 53.3**	**0.0**
CNZ	**Chateau**	**1.96**	**12**	PN	**Pn**	**20 10 53.3**	**-0.1**
CNZ	**Chateau**	**1.96**	**12**	P	**Pn**	**20 10 53.4**	**0.0**
NEZ	**North Egmont**	**1.98**	**338**	P	**Pn**	**20 10 55.2**	**+1.5**
NGZ	**Ngauruhoe**	**1.99**	**13**	PN	**Pn**	**20 10 53.6**	**-0.2**
NGZ	**Ngauruhoe**	**1.99**	**13**	P	**Pn**	**20 10 53.7**	**-0.1**
VRZ	**Vera Road**	**2.00**	**354**	PN	**Pn**	**20 10 54.6**	**+0.6**
VRZ	**Vera Road**	**2.00**	**354**	P	**Pn**	**20 10 54.8**	**+0.8**
WTVZ	**West Tongariro**	**2.04**	**12**	PN	**Pn**	**20 10 54.5**	**-0.2**
NWEZ	**Newall Road**	**2.05**	**334**	PN	**Pn**	**20 10 56.2**	**+1.5**
NWEZ	**Newall Road**	**2.05**	**334**	P	**Pn**	**20 10 56.3**	**+1.6**
KAVZ	**Karewarewa**	**2.07**	**13**	P	**Pn**	**20 10 55.0**	**0.0**
PKE	**Pukeiti**	**2.08**	**337**	P	**Pn**	**20 10 56.5**	**+1.3**
MGZ	**Maungaku**	**2.15**	**10**	PN	**Pn**	**20 10 55.8**	**-0.8**
MGZ	**Maungaku**	**2.15**	**10**	P	**Pn**	**20 10 55.8**	**-0.3**
DSZ	**Dunniston Nort**	**2.51**	**254**	PN	**Pn**	**20 11 00.4**	**-0.9**
LTZ	**Lake Taylor**	**2.65**	**230**	⇓PN	**Pn**	**20 11 01.4**	**-1.9**
LTZ	**Lake Taylor**	**2.65**	**230**	P	**Pn**	**20 11 01.6**	**-1.7**
KNZ	**Kokohu**	**2.91**	**45**	PN	**Pn**	**20 11 07.4**	**+0.4**
MQZ	**McQueen's Vall**	**3.13**	**214**	PN	**Pn**	**20 11 06.3**	**-3.8**
MQZ				SN	**Sn**	**20 11 40.6**	**-6.5**
MQZ	**McQueen's Vall**	**3.13**	**214**	*e*P	**Pn**	**20 11 06.6**	**-3.6**
URZ	**Urewera**	**3.27**	**30**	P	**Pn**	**20 11 11.3**	**-0.8**
	1.6nm,0.3s,baz=242,slow=4.8,SNR=8.2						
URZ				S	**Sn**	**20 11 50.9**	**+0.4**
	7.6nm,0.3s,baz=79,slow=22,SNR=4.4						
MWZ	**Matawai**	**3.38**	**35**	PN	**Pn**	**20 11 09.0**	**-4.7**
WVZ	**Waitaha Valley**	**3.75**	**237**	PN	**Pn**	**20 11 16.4**	**-2.6**
RPZ	**Rata Peaks**	**3.93**	**227**	P	**Pn**	**20 11 18.6**	**-2.9**
	2.2nm,0.3s,baz=42,slow=3.2,SNR=13						
RPZ				S	**Sn**	**20 12 01.6**	**-5.6**
	5.2nm,0.3s,baz=336,slow=4.7,SNR=5.6						
RPZ	**Rata Peaks**	**3.93**	**227**	*e*PN	**Pn**	**20 11 17.6**	**-3.9**
BWZ	**Berwen**	**5.10**	**226**	PN	**Pn**	**20 11 34.4**	**-3.6**
TUZ	**Tuapeka**	**6.23**	**217**	*e*PN	**Pn**	**20 11 49.8**	**-4.2**
AS12	**Alice Springs**	**38.44**	**284**	*e*P	**P**	**20 17 39.1**	**-3.4**
	16nm,1.6s,mb4.5						
ASAR	**Alice Springs**	**38.44**	**284**	P	**P**	**20 17 39.4**	**-3.1**
	1.2nm,0.4s,mb4.0,baz=121,slow=6.8,SNR=46						
ASAR				LR	LR	20 31 28.3	
	comp=Z,32nm,20.8s,MS3.1,baz=81,slow=33						
WB2	**Warramunga Arr**	**40.44**	**289**	*e*P	**P**	**20 17 55.8**	**-3.2**
WRA	**Warramunga Arr**	**40.45**	**289**	P	**P**	**20 17 55.8**	**-3.3**
	1.1nm,0.5s,mb3.8,baz=127,slow=8.3,SNR=30						
FITZ	**Fitzroy Crossi**	**47.93**	**283**	P	**P**	**20 18 55.6**	**-3.8**
	4.1nm,1.1s,mb4.4,baz=180,slow=11,SNR=6.0						
YKA	**Yellowknife Ar**	**117.53**	**30**	PKP	PKPdf	20 29 01.8	-7.0
	0.2nm,0.7s,baz=258,slow=1.4,SNR=5.6						
YKA	**Yellowknife Ar**	**117.53**	**30**	PKP	PKPdf	20 29 01.8	-7.0
ARCES	**ARCESS Array B**	**147.38**	**341**	PKPbc	PKPdf	20 29 58.2	-5.5
	24nm,1.5s,baz=45,slow=1.3,SNR=3.9						
BRTR	**Keskin Array B**	**150.74**	**280**	PKPbc	PKPdf	20 30 08.3	-1.6
	1.2nm,0.9s,baz=141,slow=7.9,SNR=7.0						
BRTR				PKPab	PKPab	20 30 15.8	-3.9
	0.7nm,0.8s,baz=149,slow=7.2,SNR=4.4						
FINES	**FINESS Array B**	**152.32**	**328**	PKPbc	PKPdf	20

CEP Cherat 5.48 47 P **Pn** **20 13 09.1 +2.6**
CEP S **Sn** **20 14 16.0 +5.2**
CHCP Chirah Chowk 6.29 54 P **Pn** **20 13 19.2 +1.3**
CHCP S **Sn** **20 14 36.0 +4.9**
AJM Ajmer 7.56 117 ⇓*i*P **Pn** **20 13 36.0 +0.3**
AJM *i* 20 15 00.0
KHET Khetri 7.87 103 *e*P **Pn** **20 13 39.8 -0.2**
KHET *e*S **Sn** **20 15 02.9 -7.5**
KHET *e* 20 15 09.7
comp=E,83nm,0.6s
KHET *e* 20 15 09.7
comp=N,78nm,0.4s
RTK Rohtak 8.16 95 *e*P **P** **20 13 41.7 -2.5**
KUDL Kundal 8.43 101 *e*P **P** **20 13 48.0 +0.2**
KUDL *e* 20 15 20.9
BHGR Bahadurgarh 8.68 97 *e*P **P** **20 13 50.2 -1.2**
BHGR *e* 20 15 27.5
SMLA Simla 8.71 81 ⇑*i* **P** **20 13 58.5 +6.7**
SMLA *e* 20 15 37.5
AYAN Aya Nagar 8.89 98 *e*P **P** **20 13 53.8 -0.4**
AYAN *e* 20 15 31.5
SONA Sohna 8.90 100 *e*P **P** **20 13 54.1 -0.3**
SONA *e* 20 15 31.5
SONA *e* 20 15 38.5
comp=E,152nm,0.5s
SONA *e* 20 15 38.9
comp=N,76nm,0.5s
NDI New Delhi 8.92 97 *e*P **P** **20 13 52.5 -2.2**
NDI *e* 20 15 32.0
AGRA Agra 9.93 104 *e*P **P** **20 14 07.7 -0.9**
AGRA *e* 20 15 55.9
AGRA *e* 20 16 10.9
comp=E,236nm,0.7s
AGRA *e* 20 16 11.0
comp=N,131nm,0.7s
KALG Kalgarh 10.12 91 *e*P **P** **20 14 05.2 -6.1**
KALG *e* 20 15 56.3
KALG *e* 20 16 01.3
comp=E,221nm,0.6s
PTH Pithoragarh 11.38 90 *e*P **P** **20 14 27.0 -1.5**
PTH *e* 20 16 38.0
KSH Kashi 11.85 35 P **P** **20 14 37.0 +2.2**
KSH AP 20 14 42.4
KSH XP 20 14 46.4
KSH S **S** **20 16 47.8 -0.7**
KSH XS 20 16 55.7
KSH SS SS 20 17 02.3 -0.2
KSH PCP PcP 20 20 25.4 +3.1
KSH LR LR
comp=N,1µm,6.6s
KSH LR LR
comp=E,1µm,6.0s
AML Almayashu 13.09 22 P **P** **20 14 51.0 -0.5**
SNR=519
KKAR Karatay Array 13.23 11 P **P** **20 14 52.3 -0.9**
KKAR pmax pmax
comp=Z,2.0nm,0.4s
JBP Jabalpur 13.42 118 ⇓*e*P **P** **20 14 56.0 +0.1**
JBP *e* 20 17 20.5
UCH Uchtor 13.46 24 P **P** **20 14 56.4 +0.1**
SNR=118
EKS2 Erkin-Say 13.60 21 P **P** **20 14 58.4 +0.2**
SNR=21
KZA Kyzart 13.60 27 P **P** **20 14 57.0 -1.2**
SNR=20
AAK Ala-Archa 13.81 23 P **P** **20 15 01.1 +0.2**
SNR=96
KBK Karagaybulak 13.99 25 P **P** **20 15 03.4 +0.2**
SNR=86
ULHL Ulahol 14.14 29 P **P** **20 15 04.3 -1.0**
SNR=14
CHMS Chumysh 14.22 23 P **P** **20 15 06.3 0.0**
SNR=5.4
USP Ospenovka 14.37 22 P **P** **20 15 07.8 -0.6**
SNR=17
TKM2 Tokmak 2 14.46 26 P **P** **20 15 08.4 -1.0**
SNR=179
KOLN Koldanda 14.62 95 *e*P **P** **20 15 10.3 -1.3**
comp=Z,190nm,1.0s
DANN Dangsing 14.63 93 *e*P **P** **20 15 10.4 -1.4**
GKN Gorkha 15.46 94 *e*P **P** **20 15 20.3 -2.4**
comp=Z,105nm,0.8s
DMN Daman 15.95 95 *e*P **P** **20 15 26.6 -2.4**
comp=Z,104nm,0.9s
KKN Kakani 16.06 94 *e*P **P** **20 15 28.0 -2.4**
comp=Z,92nm,0.9s
PKI Pulchoki 16.22 95 *e*P **P** **20 15 30.0 -2.5**
HYB Hyderabad 16.40 138 *i*P **P** **20 15 36.0 +1.2**
HYB Hyderabad 16.40 138 *e*P **P** **20 15 36.0 +1.2**
GUN Gumba 16.56 93 *e*P **P** **20 15 34.9 -1.8**
comp=Z,454nm,0.9s
AB31 Akbulak array 19.87 346 *i*P **P** **20 16 16.6 -0.3**
AB31 pmax pmax
comp=Z,6.0nm,0.6s
MKAR Makanchi Array 20.38 31 P **P** **20 16 21.5 -0.9**
comp=Z,24nm,0.5s,baz=207,slow=10,SNR=318
MKAR LR LR 20 25 31.6
comp=Z,221nm,21.3s,MS3.5,baz=226,slow=40
MKAR Makanchi Array 20.38 31 *e*P **P** **20 16 21.2 -1.2**
MKAR pmax pmax
comp=Z,10.0nm,0.5s
MZLS Mizel 20.43 258 P **P** **20 16 20.5 -2.5**
LSA Lhasa 20.83 85 P **P** **20 16 30.0 +2.9**
LSA Lhasa 20.83 85 *e*P **P** **20 16 29.6 +2.5**
comp=Z,41nm,1.1s
WMQ Urumqi 21.30 44 P **P** **20 16 33.2 +1.4**
WMQ AP 20 16 40.0
WMQ XP 20 16 43.6
WMQ PP PP 20 16 56.5 +1.1
WMQ S **S** **20 20 21.4 -2.5**
WMQ AMB AMB
comp=Z,9.0nm,0.8s,mb4.2
WMQ AMB AMB
comp=Z,56nm,4.7s
WMQ LR LR
comp=N,235nm,15.0s,MS4.0
WMQ LR LR
comp=E,358nm,15.4s,MS4.0
WMQ LR LR
comp=Z,450nm,17.3s,MS3.9
ARSS Ar Rass 21.50 264 P **P** **20 16 33.2 -0.8**
KURK Kurchatov 22.30 20 *e*P **P** **20 16 40.8 -1.0**
SHL Shillong 22.34 96 *e*P **P** **20 16 44.0 +1.6**
SHL *e* 20 20 44.0
HILS Ha'il 22.36 269 P **P** **20 16 43.6 +1.0**
ZEI Tsey 22.46 311 ⇓*e*P **P** **20 16 46.6 +3.2**
KAMS Al Khamasin 22.58 250 P **P** **20 16 45.3 +0.5**
BVA0 Borovoye Array 23.00 5 *i*P **P** **20 16 49.2 +0.5**
BVAR Borovoye Array 23.00 5 P **P** **20 16 49.6 +0.9**
comp=Z,4.5nm,0.5s,mb4.2,baz=172,slow=10,SNR=34
BVAR LR LR 20 27 23.7
comp=Z,148nm,20.9s,MS3.4,baz=140,slow=41
BRVK Borovoye 23.03 5 *e*P **P** **20 16 49.6 +0.7**
KIV Kislovodsk 23.78 312 *e*P **P** **20 17 00.8 +4.4**
KIV *i* 20 17 17.6
KIV *e* 20 17 30.3
KIV pmax pmax
comp=Z,12µm,1.5s
KIV MLR MLR
comp=Z,100nm,19.0s,MS3.3
KIV Kislovodsk 23.78 312 *e*P **P** **20 17 00.7 +4.4**
comp=Z,14nm,1.3s,mb4.2
TATS Tathlith 23.86 249 P **P** **20 16 59.0 +1.6**
GOF Gofitskoye 24.09 315 *e*P **P** **20 17 10.0 +11**
BLJS Baljurashi 25.23 252 P **P** **20 17 14.2 +3.6**
SOC Sochi 25.58 309 *e*P **P** **20 17 17.5 +3.9**
SOC *e* 20 17 58.0
SOC *e*S **S** **20 21 43.7 +4.3**
SOC *e*SS SS 20 22 58.2 +16
SOC pmax pmax
comp=Z,13nm,0.9s,mb4.5
SOC pmax pmax
comp=N,14nm,0.8s
SOC pmax pmax
comp=E,27nm,0.9s
SOC MLR MLR
comp=Z,165nm,16.0s,MS3.6
SOC MLR MLR
comp=E,180nm,15.0s
ASF Jabal al Asfar 25.91 282 P **P** **20 17 16.1 -0.8**
comp=E,7.8nm,1.1s,mb4.1,baz=77,slow=4.6,SNR=5.8
ARU Arti 26.97 349 ⇓*i*P **P** **20 17 27.4 +1.0**
ARU *i* 20 18 09.8
ARU *i* 20 20 46.8
ARU *e*S **S** **20 22 03.5 +1.2**
ARU *e*SS SS 20 23 12.0 -3.4
ARU *i* 20 28 14.2
ARU pmax pmax
comp=Z,7.0nm,1.4s,mb4.0
ARU MLR MLR
comp=N,100nm,15.0s,MS3.6
ARU MLR MLR
comp=E,100nm,15.0s,MS3.6
ARU MLR MLR
comp=Z,100nm,15.0s,MS3.5
ARU Arti 26.97 349 *e*P **P** **20 17 26.9 +0.5**
comp=Z,8.6nm,1.2s,mb4.2
ZAL Zalesovo 27.02 23 P **P** **20 17 26.4 -0.4**
comp=Z,14nm,0.6s,mb4.7,baz=160,slow=8.5,SNR=34
ZAL LR LR 20 29 50.0
comp=Z,241nm,20.2s,MS3.8,baz=158,slow=40
SVE Sverdlovsk 27.07 352 ⇓*e*P **P** **20 17 32.0 +4.7**
SVE MLR MLR
comp=N,100nm,9.0s
SVE MLR MLR
comp=E,300nm,9.0s
SVE MLR MLR
comp=Z,400nm,9.0s
NVS Novosibirsk 27.27 21 *e*P **P** **20 17 31.6 +2.5**
NVS *i* 20 17 49.0
NVS pmax pmax
comp=Z,11nm,1.4s,mb4.2
NVS pmax pmax
comp=N,10.0nm,1.3s
NVS pmax pmax
comp=E,3.0nm,0.9s
GTA Gaotai 28.28 62 *e*P **P** **20 17 40.7 +2.3**
GTA XP sP 20 17 53.1 +12
GTA AMB AMB
comp=Z,7.0nm,1.0s,mb4.2
BRTR Keskin Array B 28.93 298 P **P** **20 17 42.6 -1.7**
comp=Z,9.0nm,0.7s,mb3.6,baz=114,slow=9.2,SNR=7.2
CHG Chiang Mai 30.98 104 ⇑P **P** **20 18 03.1 +0.4**
comp=Z,20nm,0.9s,mb4.9
CM31 Chiang Mai Arr 31.14 105 *e*P **P** **20 18 03.8 -0.3**
comp=Z,4.7nm,0.8s,mb4.4
CMAR Chiang Mai Arr 31.14 105 P **P** **20 18 04.8 +0.6**
comp=Z,4.0nm,0.8s,mb4.3,baz=300,slow=8.5,SNR=34
CMAR PcP PcP 20 21 00.1 +0.7
comp=Z,0.8nm,0.6s,baz=285,slow=4.3,SNR=5.5
KMI Kunming 31.86 90 *e*P **P** **20 18 10.6 +0.2**
KMI AP pP 20 18 17.9 +5.9
KMI XP sP 20 18 21.6 +9.0
KMI S **S** **20 23 15.7 -4.7**
KMI XS 20 23 33.6
KMI SS SS 20 25 13.7 +2.6
KMI AMB AMB
comp=Z,17nm,1.1s,mb4.8
KMI AMB AMB
comp=Z,48nm,4.6s
KMI LR LR
comp=N,258nm,19.2s,MS4.0
KMI LR LR
comp=E,162nm,15.1s,MS4.0
KMI LR LR
comp=Z,152nm,13.0s,MS3.9
NANT Nan 32.46 103 ⇑P **P** **20 18 16.4 +0.7**
OBN Obninsk 33.13 328 *e*P **P** **20 18 23.4 +2.2**
OBN *e* 20 19 39.2
OBN pmax pmax
comp=Z,4.0nm,0.5s,mb4.6
OBN MLR MLR
comp=Z,100nm,16.0s,MS3.6
OBN Obninsk 33.13 328 *e*P **P** **20 18 22.9 +1.7**
ZAK Zakamensk 33.75 43 *e*P **P** **20 18 27.3 +0.7**
ZAK *e* 20 21 06.4
SONM Songino Array 34.82 48 P **P** **20 18 37.2 +1.4**
comp=Z,1.5nm,0.7s,mb4.1,baz=256,slow=10,SNR=3.7
GYA Guiyang 34.89 86 ⇑*i*P **P** **20 18 37.7 +1.0**
GYA AMB AMB
comp=Z,10.0nm,0.8s,mb4.8
AKASG Malin Array Be 34.90 317 P **P** **20 18 35.4 -1.1**
comp=Z,1.8nm,0.6s,mb4.2,baz=105,slow=7.1,SNR=12
ULN Ulaanbaatar 35.26 48 *e*P **P** **20 18 40.4 +0.8**
ULN Ulaanbaatar 35.26 48 *e*P **P** **20 18 40.1 +0.5**
comp=Z,2.8nm,1.0s,mb4.2
XAN Xi'an 35.45 73 P **P** **20 18 42.1 +0.7**
XAN AMB AMB
comp=Z,8.0nm,1.3s,mb4.5
BTO Baotou 36.20 61 *e*P **P** **20 18 48.6 +1.0**
BTO AMB AMB
comp=Z,26nm,0.8s,mb5.2
ENH Enshi 36.46 79 *e*P **P** **20 18 50.7 +0.8**
comp=Z,9.2nm,0.6s,mb4.9
JOF Joensuu 40.04 335 *e*p **P** **20 19 19.0 -0.5**
PSZ Piszkesteto 40.07 310 P **P** **20 19 21.8 +1.8**
FINES FINESS Array B 41.24 331 P **P** **20 19 28.6 -0.8**
comp=Z,1.3nm,0.8s,mb3.6,baz=118,slow=9.4,SNR=6.6
FINES LR LR 20 39 43.2
comp=Z,119nm,19.7s,MS3.8,baz=117,slow=41
FINES FINESS Array B 41.24 331 *i*P **P** **20 19 30.3 +0.9**
FINES pmax pmax
comp=Z,1.0nm,0.8s
KAF Kangasniemi 41.49 332 *e*p **P** **20 19 30.7 -0.8**
baz=113,slow=7.8
KMBO Kilima Mbogo 42.15 228 LR LR 20 37 53.6
comp=Z,71nm,18.5s,MS3.6,baz=77,slow=37
BOD Bodaibo 42.37 35 *e*P **P** **20 19 39.1 +0.4**
HIA Hailar 43.79 49 *e*P **P** **20 19 51.9 +1.6**
comp=Z,2.8nm,0.6s,mb4.2
NJ2 Nanjing 43.99 74 *e*P **P** **20 19 52.1 -0.1**
NJ2 AP pP 20 20 02.0 +8.2
NJ2 XP sP 20 20 05.9 +11
NJ2 PP PP 20 21 35.6 -0.8
NJ2 S **S** **20 26 20.0 -4.2**
NJ2 AMB AMB
comp=Z,20nm,0.5s,mb5.1
NJ2 LR LR
comp=N,420nm,12.1s,MS4.7
NJ2 LR LR
comp=E,540nm,15.6s,MS4.7
NJ2 LR LR
comp=Z,480nm,15.2s,MS4.5
GERES GERESS Array B 44.27 311 P **P** **20 19 52.3 -2.0**
comp=Z,0.4nm,0.5s,mb3.4,baz=112,slow=7.2,SNR=6.1
BRG Berggiesshubel 44.33 313 *e*P **P** **20 19 55.6 +0.9**
BRG pmax pmax
comp=Z,5.0nm,1.3s,mb4.1
BRG Berggiesshubel 44.33 313 *e*P **P** **20 19 55.6 +0.9**
comp=Z,5.1nm,1.3s,mb4.1
ARCES ARCESS Array B 45.95 341 P **P** **20 20 07.2 -0.1**
comp=Z,3.3nm,0.6s,mb4.5,baz=128,slow=8.2,SNR=21
ARCES LR LR 20 40 06.4
comp=Z,68nm,20.7s,MS3.6,baz=162,slow=37
SSE Sheshan 46.14 74 ⇓P **P** **20 20 07.9 -1.5**
SSE S **S** **20 26 50.7 -4.5**
SSE LR LR
comp=N,145nm,15.0s,MS4.1
SSE LR LR
comp=E,61nm,15.0s,MS4.1
SSE LR LR
comp=Z,182nm,15.0s,MS4.2
CN2 Changchun 47.63 57 *e*P **P** **20 20 22.4 +1.4**
CN2 XP sP 20 20 33.0 +10
CN2 *e*S **S** **20 27 14.0 -2.1**
CN2 SS SS 20 30 35.5 -2.7
CN2 AMB AMB
comp=Z,10.0nm,0.9s,mb4.8
CN2 AMB AMB
comp=Z,200nm,4.0s
CN2 LR LR
comp=N,200nm,16.0s,MS4.3
CN2 LR LR
comp=E,200nm,16.0s,MS4.3
CN2 LR LR
comp=Z,300nm,15.0s,MS4.4
NB2 NORSAR Subarra 47.73 327 P **P** **20 20 19.8 -1.7**
comp=Z,1.3nm,0.7s,mb4.1,baz=108,slow=7.4
NOA NORSAR Array B 47.73 327 P **P** **20 20 20.1 -1.4**
comp=Z,1.4nm,0.7s,mb4.1,baz=108,slow=7.6,SNR=8.0
NOA LR LR 20 43 08.0
comp=Z,53nm,18.7s,MS3.5,baz=160,slow=40
LPL La Plagne 49.00 306 *e*P **P** **20 20 29.8 -1.8**
MDJ Mudanjiang 50.54 55 P **P** **20 20 42.8 -0.6**
MDJ AP pP 20 20 51.4 +6.4
MDJ XP sP 20 20 54.2 +8.6
MDJ S **S** **20 27 54.1 -2.6**
MDJ XS 20 28 06.9
MDJ SS SS 20 31 23.5 -4.5
MDJ AMB AMB
comp=Z,8.0nm,1.2s,mb4.5
MDJ LR LR
comp=N,188nm,15.3s,MS4.2
MDJ LR LR
comp=E,75nm,16.9s,MS4.2
MDJ LR LR
comp=Z,160nm,13.2s,MS4.2
SMF Signal de Mont 50.92 308 *e*P **P** **20 20 44.6 -1.7**
comp=Z,14nm,0.8s,mb4.6
YAK Yakutsk 51.05 33c *i*P **P** **20 20 46.5 -0.5**
YAK pmax pmax
comp=Z,7.0nm,0.7s,mb4.7
YAK MLR MLR
comp=Z,100nm,17.0s,MS3.9
SSF Saint Saulge 51.12 308 *e*P **P** **20 20 45.5 -2.3**
comp=Z,4.0nm,0.7s,mb4.2
AVF Avril sur Loir 51.25 308 *e*P **P** **20 20 47.4 -1.3**
KLR Kul'dur 51.65 49 *e*P **P** **20 20 51.0 -0.7**
CAF Calviac 52.34 306 *e*P **P** **20 20 55.3 -1.7**
TIXI Tiksi 52.87 20 *e*P **P** **20 21 00.3 -0.4**
TIXI *e*S **S** **20 28 27.5 -0.9**
TIXI pmax pmax
comp=Z,51nm,0.8s,mb5.5
TIXI MLR MLR
comp=Z,400nm,12.0s,MS4.7
TIXI Tiksi 52.87 20 *e*P **P** **20 21 00.3 -0.4**
comp=Z,18nm,0.1s
JOW Kunigami 53.29 77 P **P** **20 21 04.0 -0.4**
comp=Z,18nm,0.6s,mb5.2,baz=154,slow=28,SNR=3.5
JNU Nakatsue 53.62 69 P **P** **20 21 07.9 +1.2**
comp=Z,4.4nm,0.6s,mb4.6,baz=287,slow=11,SNR=2.8
ESDC Sonseca Array 57.70 300 P **P** **20 21 33.5 -2.6**
comp=Z,0.7nm,0.6s,mb3.9,baz=64,slow=6.7,SNR=5.1
YSS Yuzh-Sakhalins 59.26 51 *e*P **P** **20 21 47.3 +0.4**
YSS pmax pmax
comp=Z,12nm,1.1s,mb4.8
YSS MLR MLR
comp=Z,200nm,17.0s,MS4.3
ASAJ Asahikawa 59.80 54 P **P** **20 21 50.0 -0.6**
comp=Z,3.4nm,0.9s,mb4.4,baz=22,slow=29,SNR=3.0
BILL Bilibino 65.73 24 *e*P **P** **20 22 29.4 -0.2**
BILL pmax pmax
comp=Z,3.0nm,0.8s,mb4.4
BILL MLR MLR
comp=Z,100nm,18.0s,MS4.1
LBTB Lobatse 67.76 221 P **P** **20 22 45.0 +1.8**
DBIC Dimbokro 71.11 267 P **P** **20 23 02.0 -1.8**
comp=Z,3.0nm,0.7s,mb4.4,baz=8.4,slow=13,SNR=6.0
FITZ Fitzroy Crossi 73.97 122 P **P** **20 23 20.3 -0.5**
comp=Z,2.5nm,0.9s,mb4.1,baz=355,slow=5.9,SNR=3.6
FX1 Attu Island--F 75.39 37 P **P** **20 23 30.2 +2.0**
comp=Z,10nm,0.7s,mb4.9,baz=83,slow=20,SNR=2.6
KAKA Kakadu 75.85 114 *e*P **P** **20 23 32.1 +0.5**
comp=Z,4.5nm,0.6s,mb4.6
IMA Indian Mountai 79.14 16 *e*P **P** **20 23 49.6 +0.8**
INK Inuvik 80.66 8 P **P** **20 23 57.1 +0.2**
comp=Z,3.0nm,0.8s,mb4.3,baz=0.4,slow=5.0,SNR=9.5
INK Inuvik 80.66 8 *e*P **P** **20 23 56.9 0.0**
comp=Z,3.7nm,0.8s,mb4.4
COLA College 81.46 14 P **P** **20 24 01.1 -0.1**
WRA Warramunga Arr 81.59 119 P **P** **20 24 02.8 0.0**
comp=Z,1.9nm,0.7s,mb4.2,baz=320,slow=4.8,SNR=26
WRAB Tennant Creek 81.59 119 *e*P **P** **20 24 03.1 +0.3**
WB2 Warramunga Arr 81.60 119 *e*P **P** **20 24 03.2 +0.4**
ILAR Eielson Array 81.75 14 P **P** **20 24 02.6 -0.1**
comp=Z,0.5nm,0.6s,mb3.6,baz=328,slow=4.2,SNR=7.3
ILAR LR LR 21 04 56.6
comp=Z,61nm,19.8s,MS4.0,baz=148,slow=39
MCK McKinley 82.20 15 P **P** **20 24 05.4 +0.3**
ASAR Alice Springs 83.46 122 P **P** **20 24 12.8 +0.4**
comp=Z,2.6nm,0.8s,mb4.3,baz=308,slow=5.2,SNR=43
DAWY Dawson 83.82 11 *e*P **P** **20 24 13.8 +0.5**
PMR Palmer 84.00 17 P **P** **20 24 15.3 +1.0**
YKW3 Yellowknife Ar 87.62 1 *e*P **P** **20 24 32.4 +0.2**
YKA Yellowknife Ar 87.69 1 P **P** **20 24 33.0 +0.6**
comp=Z,2.4nm,0.6s,mb4.6,baz=349,slow=4.9,SNR=65
YKA LR LR 21 08 23.2
comp=Z,34nm,22.0s,MS3.7,baz=255,slow=39
YKA Yellowknife Ar 87.69 1 P **P** **20 24 33.0 +0.6**
YKA LR LR 21 08 23.2
DLBC Dease Lake 90.61 9 P **P** **20 24 48.8 +2.4**
comp=Z,0.7nm,0.6s,mb4.2,baz=51,slow=9.3,SNR=2.9
CTA Charters Tower 90.97 113 P **P** **20 24 51.0 +2.0**
comp=Z,2.5nm,0.7s,mb4.7,baz=172,slow=10,SNR=3.0
CTA Charters Tower 90.97 113 P **P** **20 24 51.0 +2.0**

NIED ***08*** *20:18:00,22.10N×121.90E,h5km,Mw4.1 Best double couple: M0 1.5×10^15 NP1:φs 265°, δ49°, λ-86°. NP2:φs 78°, δ42°, λ-95°.*
TAP ***08*** *20:18:40.4,21.97N×121.42E,h7km,ML4.1*
TAP Felt IV J at Lanyu, I J at Sandimen.
IDC ***08*** *20:18:40.3±0.6,21.86N×121.66E,mb4.0/17,mb1 4.1/18, mb1mx4.1/23,ML3.6/1,MS3.4/3,Ms1 3.5/3,ms1mx3.1/24, Error ellipse: s-maj=28.6km s-min=12.8km az=69.0*
BJI ***08*** *20:18:42.8,21.80N×121.70E,h32km,mB4.4,mb4.1, ML3.9,Ms3.5,Msz3.4*
NEIC ***08*** *20:18:44.9±3.8,21.84N×121.72E,h32km±28km,mb4.3/5, Error ellipse: s-maj=13.4km s-min=7.5km az=67.0*
JMA ***08*** *20:18:44.0±0.3,22.06N×121.90E,M4.1*
ISC 08 20:18:39.3±0.8,21.95N±0.03×121.54E±0.02,h9km±5km, n102,σ1°32/125,mb4.0/19,MS3.7/2,5C,Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LAY	**Lan-yu**	**0.09**	**8**	⇑*i*P	**Pg**	**20 18 44.2**	**+2.5**
TWK1	**Hengchun**	**0.68**	**270**	⇑*i*P	**Pb**	**20 18 52.1**	**-0.7**
TWK1				S	**Sb**	**20 19 00.1**	**-1.9**
TAW	**Tawu**	**0.72**	**304**	⇑*i*P	**Pb**	**20 18 52.5**	**-1.0**
TAW				S	**Sb**	**20 19 01.9**	**-1.4**
HEN	**Hengchun**	**0.74**	**274**	⇑*i*P	**Pb**	**20 18 53.1**	**-0.8**
HEN				S	**Sb**	**20 19 02.1**	**-1.8**
EAST	**Anshuo**	**0.77**	**304**	⇑*i*P	**Pb**	**20 18 53.5**	**-0.9**
ECL	**Taimali**	**0.84**	**320**	*e*P	**Pb**	**20 18 54.5**	**-1.1**
ECL				S	**Sb**	**20 19 05.1**	**-1.7**
TTN	**Taitung**	**0.88**	**336**	*e*P	**Pb**	**20 18 56.1**	**-0.1**
SCZT	**Fangliau**	**0.95**	**296**	*e*P	**Pb**	**20 18 56.5**	**-1.0**
TWG	**Pinlang**	**0.97**	**334**	*e*P	**Pb**	**20 18 56.3**	**-1.5**
SSD	**Sandimen**	**1.15**	**314**	*e*P	**Pb**	**20 18 59.5**	**-1.4**
CHKT	**Chengkung**	**1.16**	**352**	*e*P	**Pb**	**20 18 59.3**	**-1.7**
CHKT				S	**Sb**	**20 19 13.6**	**-2.2**
TWP	**Hsiaoliuchiu**	**1.16**	**290**	*e*P	**Pb**	**20 19 01.9**	**+0.9**
TWP				S	**Sb**	**20 19 19.8**	**+3.9**
SGLT	**Jiouru**	**1.24**	**309**	*e*P	**Pb**	**20 19 03.7**	**+1.4**
KAU	**Kaohsiung**	**1.29**	**299**	*e*P	**Pb**	**20 19 04.1**	**+0.7**
ELDTW	**Lidau**	**1.32**	**339**	*e*P	**Pb**	**20 19 01.9**	**-1.9**
TWM1	**Shoushan**	**1.35**	**310**	*e*P	**Pb**	**20 19 05.5**	**+1.2**
STYT	**Tauyuan**	**1.41**	**329**	*e*P	**Pn**	**20 19 04.5**	**-0.7**
TWF1	**Yuli**	**1.41**	**351**	*e*P	**Pn**	**20 19 03.6**	**-1.6**
SGST	**Jiashian**	**1.43**	**322**	*e*P	**Pn**	**20 19 05.8**	**+0.3**
CHN1	**Nanshi**	**1.54**	**323**	*e*P	**Pn**	**20 19 07.6**	**+0.5**
CHN1				S	**Sb**	**20 19 28.5**	**+1.4**
WTP	**Ta-pu**	**1.55**	**327**	*e*P	**Pn**	**20 19 07.2**	**+0.1**
WTP				S	**Sb**	**20 19 28.5**	**+1.3**
CHN3	**Shinhua**	**1.56**	**316**	*e*P	**Pn**	**20 19 08.3**	**+1.0**
CHN3				S	**Sb**	**20 19 28.9**	**+1.3**
YUS	**Yu-Shan**	**1.62**	**341**	*e*P	**Pn**	**20 19 08.1**	**-0.2**
TWK	**Hsinying**	**1.63**	**324**	*e*P	**Pn**	**20 19 08.8**	**+0.4**
CHN4	**Tsaushan**	**1.65**	**328**	*e*P	**Pn**	**20 19 08.9**	**+0.4**
ALS	**Alishan**	**1.69**	**337**	*e*P	**Pn**	**20 19 09.0**	**-0.2**
SCLT	**Jiali**	**1.74**	**315**	*e*P	**Pn**	**20 19 09.2**	**-0.8**
SCLT				S	**Sn**	**20 19 32.4**	**0.0**
CHN5	**Tsauling**	**1.82**	**334**	*e*P	**Pn**	**20 19 12.0**	**+0.9**
CHN5				S	**Sn**	**20 19 36.4**	**+1.9**
CHY	**Chiayi**	**1.85**	**326**	*e*P	**Pn**	**20 19 11.9**	**+0.3**
CHN8	**Yiju**	**1.85**	**319**	*e*P	**Pn**	**20 19 11.2**	**-0.3**
CHN2	**Minshiung**	**1.85**	**328**	*e*P	**Pn**	**20 19 12.4**	**+0.8**
ESL	**Shilin**	**1.86**	**357**	*e*P	**Pn**	**20 19 10.1**	**-1.5**
WGK	**Gukeng**	**1.95**	**333**	*e*P	**Pn**	**20 19 13.7**	**+0.8**
SMLT	**Sun Moon Lake**	**2.01**	**343**	*e*P	**Pn**	**20 19 14.4**	**+0.6**
TYC	**Yuchr**	**2.04**	**342**	*e*P	**Pn**	**20 19 14.8**	**+0.5**
WSF	**Szhu**	**2.07**	**324**	*e*P	**Pn**	**20 19 12.8**	**-1.9**
WNT	**Mingjian**	**2.07**	**338**	*e*P	**Pn**	**20 19 15.1**	**+0.4**
WNT				S	**Sn**	**20 19 42.1**	**+1.2**
TWD	**Chiawan**	**2.12**	**1**	*e*P	**Pn**	**20 19 13.0**	**-2.4**
WDGT	**Dungji**	**2.17**	**307**	*e*P	**Pn**	**20 19 14.0**	**-2.1**
WDGT				S	**Sn**	**20 19 39.1**	**-4.2**
WHF	**Hehuan Shan**	**2.20**	**354**	*e*P	**Pn**	**20 19 15.0**	**-1.5**
TWT	**Tachien**	**2.32**	**352**	*e*P	**Pn**	**20 19 17.6**	**-0.5**
TCU	**Taichung**	**2.33**	**340**	*e*P	**Pn**	**20 19 18.8**	**+0.4**
PNG	**Penghu**	**2.44**	**312**	*e*P	**Pn**	**20 19 18.0**	**-1.9**
PNG				S	**Sn**	**20 19 45.4**	**-4.7**

ENA	**Nanau**	**2.47**	**4**	*eP*		**Pn**	**20 19 18.3**	**-2.1**
NNS	**Nan Shan**	**2.48**	**357**	*eP*		**Pn**	**20 19 20.7**	**+0.2**
TWQ1	**Liyutan**	**2.49**	**344**	*eP*		**Pn**	**20 19 21.5**	**+0.8**
TWQ1				S		**Sn**	**20 19 52.1**	**+0.7**
NSY	**Sanyi**	**2.56**	**344**	*eP*		**Pn**	**20 19 23.0**	**+1.3**
TWC	**Suao**	**2.66**	**6**	*eP*		**Pn**	**20 19 21.6**	**-1.5**
ENTT	**Nioudou**	**2.68**	**1**	*eP*		**Pn**	**20 19 21.8**	**-1.6**
NSTT	**Nanjuang**	**2.71**	**350**	*eP*		**Pn**	**20 19 25.3**	**+1.4**
NSTT				S		**Sn**	**20 19 59.8**	**+2.7**
NSK	**Sanguang**	**2.72**	**357**	*eP*		**Pn**	**20 19 22.9**	**-1.0**
TWE	**Neicheng**	**2.76**	**2**	*eP*		**Pn**	**20 19 21.7**	**-2.9**
YOJ	**Yonaguni jima**	**2.84**	**28**	P		**Pn**	**20 19 28.6**	**+2.9**
YOJ				*eS*		**Sn**	**20 20 00.7**	**+0.3**
HATJ	**Hateruma jima**	**2.96**	**44**	P		**Pn**	**20 19 29.2**	**+1.8**
HATJ				*eS*		**Sn**	**20 20 02.1**	**-1.3**
TATO	**Taipei**	**3.01**	**359**	*eP*		**Pn**	**20 19 32.0**	**+3.9**
TWA	**Mucha**	**3.02**	**1**	*eP*		**Pn**	**20 19 27.8**	**-0.4**
NWF	**Wu-fen Shan**	**3.12**	**4**	*eP*		**Pn**	**20 19 29.1**	**-0.5**
IRIF	**Iriomote-Funau**	**3.12**	**40**	P		**Pn**	**20 19 31.5**	**+1.9**
IRIF				*eS*		**Sn**	**20 20 06.6**	**-0.7**
JKRS	**Kuro-shima**	**3.22**	**45**	P		**Pn**	**20 19 32.9**	**+1.8**
JKRS				S		**Sn**	**20 20 09.7**	**-0.2**
JIJ	**Ishigaki jima**	**3.39**	**44**	P		**Pn**	**20 19 34.8**	**+1.3**
JIJ				S		**Sn**	**20 20 12.6**	**-1.8**
KNM	**Kinmen**	**3.77**	**311**	*eP*		**Pn**	**20 19 37.3**	**-1.5**
JTJ	**Tarama**	**3.95**	**47**	P		**Pn**	**20 19 43.2**	**+1.7**
JTJ				S		**Sn**	**20 20 27.1**	**-1.4**
QZH	**Quanzhou**	**4.02**	**318**	P		**Pn**	**20 19 43.8**	**+1.3**
QZH				S		Sn		
	comp=N,150nm,0.9s							
QZH				S		Sn		
	comp=E,120nm,0.8s							
JMJ	**Miyako jima 2**	**4.48**	**50**	P		**Pn**	**20 19 51.0**	**+2.1**
JMJ				*eS*		**Sn**	**20 20 40.5**	**-1.3**
JOGS	**Gusukube**	**4.52**	**51**	*eS*		**Sn**	**20 20 42.4**	**-0.6**
JKE	**Kume jima 2**	**6.48**	**47**	P		**Pn**	**20 20 16.3**	**-0.9**
JKE				*eS*		**Sn**	**20 21 26.7**	**-5.3**
JIH	**Iheya**	**7.74**	**48**	P		**Pn**	**20 20 35.2**	**+0.3**
JOW	**Kunigami**	**7.83**	**50**	Pn		**Pn**	**20 20 36.9**	**+0.7**
	comp=E,2.0nm,0.3s,baz=185,slow=20,SNR=4.1							
QIZ	**Qiongzhong**	**11.34**	**257**	*eP*		**P**	**20 21 25.1**	**+0.5**
QIZ				LR		LR		
	comp=E,177nm,13.3s							
QIZ				LR		LR		
	comp=Z,170nm,11.8s							
JNU	**Nakatsue**	**13.87**	**35**	LR		LR	20 27 28.0	
	comp=Z,67nm,20.9s,baz=232,slow=38							
GYA	**Guiyang**	**14.29**	**291**	P		**P**	**20 22 09.4**	**+5.4**
GYA				AMB		AMB		
	comp=Z,10.0nm,0.6s							
BJI	**Beijing**	**18.60**	**347**	P		**P**	**20 23 06.3**	**+7.5**
BJI				AMB		AMB		
	comp=Z,5.0nm,0.9s							
BJI				LR		LR		
	comp=N,138nm,14.2s							
BJI				LR		LR		
	comp=E,109nm,14.2s							
MAJO	**Matsushiro**	**20.52**	**41**	P		**P**	**20 23 18.9**	**-1.6**
	comp=E,5.5nm,0.8s							
MAT	**Matsushiro**	**20.52**	**41**	P		**P**	**20 23 24.0**	**+3.5**
MAT	**Matsushiro**	**20.52**	**41**	*eP*		**P**	**20 23 24.0**	**+3.5**
	comp=E,8.4nm,0.9s							
CMAR	**Chiang Mai Arr**	**21.48**	**265**	P		**P**	**20 23 31.6**	**+1.2**
	comp=E,1.10nm,0.7s,mb3.3,baz=71,slow=9.0,SNR=7.1							
SONM	**Songino Array**	**28.55**	**338**	P		**P**	**20 24 39.5**	**+2.2**
	comp=E,0.7nm,0.4s,mb3.8,baz=146,slow=5.2,SNR=3.1							
FITZ	**Fitzroy Crossi**	**40.01**	**174**	*eP*		**P**	**20 26 15.6**	**-0.7**
	comp=E,1.8nm,1.0s,mb3.8							
FITZ	**Fitzroy Crossi**	**40.01**	**174**	P		**P**	**20 26 15.5**	**-0.8**
	comp=E,2.0nm,0.7s,mb4.0,baz=306,slow=3.1,SNR=8.9							
PMG	**Port Moresby**	**40.04**	**138**	P		**P**	**20 26 13.4**	**-3.2**
	comp=E,5.2nm,0.7s,mb4.4							
MKAR	**Makanchi Array**	**40.18**	**318**	P		**P**	**20 26 19.7**	**+2.2**
	comp=E,8.7nm,1.2s,mb4.4,baz=104,slow=10.0,SNR=12							
MKAR				PcP		PcP	20 28 23.4	+1.2
	comp=E,0.6nm,0.7s,baz=90,slow=5.8,SNR=4.6							
MKAR	**Makanchi Array**	**40.18**	**318**	P		**P**	**20 26 19.7**	**+2.2**
MKAR				PcP		PcP	20 28 23.4	+1.1
ZAL	**Zalesovo**	**42.30**	**328**	P		**P**	**20 26 36.8**	**+2.0**
	comp=E,0.9nm,0.3s,mb3.8,baz=264,slow=10,SNR=5.1							
WRAB	**Tennant Creek**	**43.47**	**162**	*eP*		**P**	**20 26 43.9**	**-0.8**
	comp=E,2.7nm,0.4s,mb4.3							
WRA	**Warramunga Arr**	**43.48**	**162**	P		**P**	**20 26 43.9**	**-0.9**
	comp=E,1.6nm,0.6s,mb3.9,baz=344,slow=8.9,SNR=22							
WB2	**Warramunga Arr**	**43.48**	**162**	*eP*		**P**	**20 26 43.6**	**-1.2**
KURK	**Kurchatov**	**44.02**	**321**	*eP*		**P**	**20 26 50.3**	**+1.5**
KURK				*e*			20 27 14.2	
ASAR	**Alice Springs**	**46.91**	**164**	P		**P**	**20 27 11.7**	**-0.5**
	comp=E,0.5nm,0.4s,mb3.8,baz=339,slow=6.9,SNR=11							
BVAR	**Borovoye Array**	**49.61**	**322**	P		**P**	**20 27 33.9**	**+1.1**
	comp=E,0.5nm,0.4s,mb3.9,baz=105,slow=8.8,SNR=4.6							
NWAO	**Narrogin (SRO)**	**54.72**	**184**	P		**P**	**20 28 12.4**	**+1.0**
	comp=E,7.1nm,1.0s,mb3.8,baz=60,slow=18,SNR=2.3							
STKA	**Stephens Creek**	**56.86**	**160**	*eP*		**P**	**20 28 26.2**	**-0.7**
	comp=E,2.5nm,0.6s,mb4.4							
STKA	**Stephens Creek**	**56.86**	**160**	P		**P**	**20 28 26.1**	**-0.8**
	comp=E,3.1nm,0.7s,mb4.5,baz=327,slow=3.3,SNR=12							
ARCES	**ARCESS Array B**	**71.72**	**338**	P		**P**	**20 30 04.0**	**+0.8**
	comp=E,3.6nm,0.9s,mb4.3,baz=56,slow=4.4,SNR=3.5							
ARCES	**ARCESS Array B**	**71.72**	**338**	P		**P**	**20 30 04.0**	**+0.8**
FINES	**FINESS Array B**	**73.53**	**330**	P		**P**	**20 30 16.0**	**+2.0**
	comp=E,1.7nm,0.8s,mb4.0,baz=53,slow=6.9,SNR=5.1							
FINES				LR		LR	21 06 40.2	
	comp=E,24nm,18.1s,MS3.5,baz=286,slow=39							
FINES	**FINESS Array B**	**73.53**	**330**	P		**P**	**20 30 16.0**	**+2.0**
AKASG	**Malin Array Be**	**74.75**	**319**	P		**P**	**20 30 21.8**	**+0.5**
	comp=E,1.0nm,0.7s,mb3.9,baz=59,slow=5.6,SNR=4.2							
BRTR	**Keskin Array B**	**74.76**	**307**	P		**P**	**20 30 24.2**	**+2.6**
	comp=E,0.6nm,0.7s,mb3.6,baz=97,slow=7.6,SNR=5.0							
NB2	**NORSAR Subarra**	**80.34**	**332**	P		**P**	**20 30 51.1**	**-0.9**
	comp=E,0.8nm,0.6s,mb3.8,baz=60,slow=5.3							
NOA	**NORSAR Array B**	**80.34**	**332**	P		**P**	**20 30 52.5**	**+0.5**
	comp=E,0.5nm,0.6s,mb3.6,baz=62,slow=5.1,SNR=2.3							
NOA				LR		LR	21 09 55.6	
	comp=E,51nm,19.4s,MS3.9,baz=160,slow=38							
GERES	**GERESS Array B**	**84.77**	**321**	P		**P**	**20 31 17.6**	**+2.5**
	comp=E,0.4nm,0.5s,mb3.8,baz=53,slow=6.7,SNR=7.1							
YKA	**Yellowknife Ar**	**84.89**	**23**	P		**P**	**20 31 16.5**	**+1.2**
	comp=E,0.3nm,0.6s,mb3.6,baz=315,slow=4.8,SNR=8.9							

*IDC **08** 20:27:46.6±10.0, 23.42S×178.90W, h408km±101km, mb3.2/6, mb1 3.3/7, mb1mx3.2/16, Error ellipse: s-maj=134.0km s-min=39.1km az=62.0*

ISC 08 20:27:44.3±4.2, 23.5S±0.2×178.9W±0.6, h400km, n7, σ0$74/8, mb3.5/6, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**15.16**	**192**	P	**P**	**20 30 59.9**	**-0.8**
	2.9nm,0.3s,baz=2.9,slow=1.7,SNR=16						
URZ				S	**S**	**20 33 38.4**	**-0.2**
	0.4nm,0.3s,baz=165,slow=16,SNR=2.6						
RPZ	**Rata Peaks**	**21.86**	**200**	P	**P**	**20 32 08.1**	**+1.3**
	2.5nm,0.5s,mb3.9,baz=14,slow=8.3,SNR=3.8						
CTA	**Charters Tower**	**32.52**	**269**	P	**P**	**20 33 42.3**	**+0.9**
	3.9nm,0.3s,mb4.2,baz=100,slow=11,SNR=16						
STKA	**Stephens Creek**	**35.86**	**248**	P	**P**	**20 34 09.9**	**+0.4**
	1.3nm,0.8s,mb3.3,baz=111,slow=16,SNR=2.3						
ASAR	**Alice Springs**	**43.14**	**260**	P	**P**	**20 35 08.4**	**-0.5**
	0.3nm,0.4s,mb3.0,baz=93,slow=7.5,SNR=8.7						
WRA	**Warramunga Arr**	**43.48**	**265**	P	**P**	**20 35 10.9**	**-0.8**
	0.4nm,0.3s,mb3.2,baz=96,slow=8.4,SNR=25						
FITZ	**Fitzroy Crossi**	**51.91**	**265**	P	**P**	**20 36 15.8**	**-0.3**
	2.0nm,1.0s,mb3.3,baz=176,slow=17,SNR=2.4						

*IDC **08** 20:35:47.2±0.8, 18.06S×169.37E, mb4.3/10, mb1 4.5/10, mb1mx4.4/15, Error ellipse: s-maj=25.4km s-min=19.5km az=167.0*

*NEIC **08** 20:36:11.3±2.0, 18.50S×169.35E, h220km±18km, mb4.2/3, Error ellipse: s-maj=19.2km s-min=12.6km az=182.0*

ISC 08 20:36:12.8±0.8, 18.64S±0.1°×169.3E±0.1, h246km±7km, n21, σ1$12/19, mb4.0/11, 1C-1D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BKM	**Butte a Klehm**	**1.38**	**314**	⇑*iP*	**P**	**20 36 50.6**	**+0.6**
BKM				S	**S**	**20 37 19.3**	**+0.2**
NOUC	**Port Laguerre**	**4.43**	**219**	*eP*	**P**	**20 37 20.8**	**-1.3**
NOUC	**Port Laguerre**	**4.43**	**219**	*eP*	**P**	**20 37 20.8**	**-1.3**
ARMA	**Armidale**	**19.85**	**230**	*eP*	**P**	**20 40 28.8**	**+2.2**
URZ	**Urewera**	**20.71**	**162**	P	**P**	**20 40 35.7**	**+0.6**
	2.1nm,0.5s,baz=315,slow=16,SNR=3.2						
RPZ	**Rata Peaks**	**25.04**	**177**	P	**P**	**20 41 16.9**	**+0.7**
	4.1nm,0.8s,mb4.1,baz=67,slow=7.6,SNR=3.1						
STKA	**Stephens Creek**	**28.20**	**237**	*eP*	**P**	**20 41 45.3**	**+0.3**
	3.6nm,0.6s,mb4.2						
STKA	**Stephens Creek**	**28.20**	**237**	P	**P**	**20 41 45.3**	**+0.3**
	6.5nm,0.8s,mb4.3,baz=66,slow=8.8,SNR=18						
RAR	**Rarotonga**	**29.19**	**100**	P	**P**	**20 41 51.4**	**-2.4**
	33nm,0.9s,mb4.9,baz=110,slow=12,SNR=2.3						
WRAB	**Tennant Creek**	**32.96**	**262**	*eP*	**P**	**20 42 25.1**	**-1.5**
	9.0nm,1.0s,mb4.2						
WRA	**Warramunga Arr**	**32.97**	**262**	P	**P**	**20 42 25.4**	**-1.3**
	0.4nm,0.3s,mb3.4,baz=99,slow=6.8,SNR=19						
AS12	**Alice Springs**	**33.31**	**255**	⇓*iP*	**P**	**20 42 29.1**	**-0.5**
	5.9nm,0.3s,mb4.6						
ASAR	**Alice Springs**	**33.31**	**255**	P	**P**	**20 42 29.2**	**-0.4**
	7.7nm,0.5s,mb4.5,baz=83,slow=8.8,SNR=208						
QSPA	**South Pole Qui**	**71.41**	**180**	*eP*	**P**	**20 47 07.6**	**+0.2**
	1.9nm,0.6s,mb3.9						
CMAR	**Chiang Mai Arr**	**78.29**	**294**	P	**P**	**20 47 49.0**	**+1.4**
	2.2nm,1.1s,mb3.7,baz=131,slow=4.2,SNR=8.0						
NVAR	**Mina Array Bea**	**88.38**	**49**	P	**P**	**20 48 39.5**	**+1.4**
	0.5nm,0.7s,mb3.5,baz=249,slow=7.7,SNR=3.9						
ILAR	**Eielson Array**	**89.65**	**17**	P	**P**	**20 48 42.5**	**-0.9**
	0.5nm,0.4s,mb3.7,baz=239,slow=4.9,SNR=9.7						
WVOR	**Wild Horse Val**	**89.87**	**45**	P	**P**	**20 48 45.0**	**0.0**
	1.9nm,0.5s,mb4.2						
YKA	**Yellowknife Ar**	**100.12**	**27**	P	P	20 49 32.6	+1.2
	0.4nm,0.7s,baz=253,slow=4.8,SNR=8.8						
MKAR	**Makanchi Array**	**101.34**	**316**	P	P	20 49 39.3	+2.0
	0.2nm,0.7s,baz=101,slow=7.3,SNR=2.2						
MKAR				PP	PP	20 53 46.0	-5.6
	1.7nm,1.3s,baz=112,slow=7.8,SNR=3.8						
GERES	**GERESS Array B**	**143.98**	**332**	PKhKP		20 55 18.8	
	0.3nm,0.4s,baz=34,slow=3.5,SNR=5.1						

*THE **08** 21:00:09.2, 39.03N×26.70E, h10km, ML2.8*
*ATH **08** 21:00:16.3, 38.46N×26.09E, h15km*

ISC 08 21:00:07.7±1.8, 39.08N±0.07×26.8E±0.2, h10km, n12, σ0$30/12, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
LIA	**Limnos Island**	**1.49**	**304**	*ePN*	**Pn**	**21 00 46.1**	**+11**
ALN	**Alexandroupoli**	**1.91**	**343**	*ePb*	**Pb**	**21 00 42.1**	**0.0**
AOS	**Alonnisos**	**2.27**	**273**	*ePn*	**Pn**	**21 00 46.3**	**+0.6**
PTL	**Penteli**	**2.51**	**247**	*ePB*	**Pb**	**21 00 47.0**	**-5.5**
MPAR	**Parnis Oros**	**2.56**	**250**	*ePN*	**Pn**	**21 00 50.0**	**0.0**
THR4	**Thira Island,**	**2.84**	**203**	*ePn*	**Pn**	**21 00 53.9**	**0.0**
NSAL	**Nisos Salamina**	**2.86**	**247**	*ePN*	**Pn**	**21 00 54.0**	**-0.2**
THR3	**Thira Island,**	**2.88**	**203**	*ePn*	**Pn**	**21 00 54.5**	**0.0**
THR5	**Thira Island,**	**2.89**	**204**	*ePn*	**Pn**	**21 00 54.3**	**-0.4**
NAIG	**Nisos Aigina**	**2.91**	**244**	*ePN*	**Pn**	**21 00 55.0**	**+0.1**
THR6	**Thira Island,**	**2.93**	**203**	*ePn*	**Pn**	**21 00 55.6**	**+0.4**
AGG	**Agios Georgios**	**3.47**	**271**	*ePn*	**Pn**	**21 01 02.5**	**-0.4**

*NEIC **08** 21:08:58.0, 18.11N×69.16W, h111km, MD3.5(RSPR), After RSPR.*

RSPR 08 21:08:58.0, 18.11N×69.16W, h111km±14km, M3.5, 7C-3D, Dominican Republic region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
IDE	**Isla Desecheo**	**1.62**	**80**	*eP*	P	21 09 24.8	-2.0
IDE				S	S	21 09 44.0	-4.5
LSP	**Las Mesas**	**1.97**	**88**	⇓*eP*	P	21 09 30.9	-0.3
LSP				S	S	21 09 55.1	-0.9
MGP	**Maguayo**	**1.97**	**93**	*eP*	P	21 09 28.7	-2.5
LRS	**Lares**	**2.21**	**85**	⇓*eP*	P	21 09 33.7	-0.6
LRS				S	S	21 09 58.5	-3.1
AOPR	**Arecibo Observ**	**2.30**	**84**	⇓*eP*	P	21 09 34.1	-1.5
AOPR				S	S	21 09 58.9	-4.9
OBIP	**Obispado Ponce**	**2.43**	**91**	⇑*eP*	P	21 09 36.5	-0.9
OBIP	**Obispado Ponce**	**2.43**	**91**	S	S	21 10 04.5	-2.4
CELP	**Cerrillos**	**2.46**	**90**	⇑*eP*	P	21 09 35.8	-1.8
CSB	**Colonia Sabana**	**2.86**	**86**	⇑*eP*	P	21 09 41.1	-2.0
CBYP	**Canovanas**	**3.15**	**87**	⇑*eP*	P	21 09 45.1	-1.8
CBYP				S	S	21 10 20.8	-3.3
HUMP	**Col San Antoni**	**3.15**	**89**	S	S	21 10 19.5	-4.6
MTP	**Monte Pirata**	**3.43**	**90**	⇑*eP*	P	21 09 50.6	-0.2
MTP				S	S	21 10 28.8	-2.1

*NEIC **08** 21:17:38.8±0.5, 11.33S×166.38E, mb4.4/8, Error ellipse: s-maj=16.9km s-min=12.1km az=126.0*
*IDC **08** 21:17:39.1±1.3, 11.38S×166.41E, h93km±6km, mb3.8/9, mb1 4.0/9, mb1mx3.8/15, MS3.0/1, Ms1 3.0/1, ms1mx2.8/14, Error ellipse: s-maj=51.6km s-min=15.7km az=141.0*

ISC 08 21:17:38.4±4.7, 11.4S±0.2×166.3E±0.1, h98km±44km, h93km±1.6km: pP-P, n24, σ0°92/20, mb4.2/17, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
NOUC	**Port Laguerre**	**10.68**	**180**	*eP*	**P**	**21 20 10.3**	**+0.7**
PMG	**Port Moresby**	**18.91**	**274**	LR	LR	21 27 24.4	
	comp=Z,53nm,21.9s,baz=282,slow=31						
CTAO	**Charters Tower**	**21.12**	**243**	P	**P**	**21 22 16.3**	**-0.7**
	48nm,2.0s,mb4.5						
WRAB	**Tennant Creek**	**31.86**	**251**	*eP*	**P**	**21 23 55.5**	**-1.0**
	32nm,1.6s,mb4.8						
WRAB				*e*	pP	21 24 16.8	-1.9
WRA	**Warramunga Arr**	**31.87**	**251**	P	**P**	**21 23 55.8**	**-0.7**
	0.9nm,0.7s,mb3.6,baz=84,slow=8.8,SNR=8.9						
WRA				pP	pP	21 24 17.9	-0.9
	0.7nm,0.7s,baz=83,slow=8.6,SNR=3.3						
WRA				PcP	PcP	21 26 45.1	0.0
	0.7nm,0.7s,baz=87,slow=2.9,SNR=5.5						
ASAR	**Alice Springs**	**33.12**	**244**	P	**P**	**21 24 06.2**	**-1.2**
	0.6nm,0.6s,mb3.6,baz=68,slow=9.8,SNR=8.4						
ASAR				pP	pP	21 24 28.6	-1.2
	1.4nm,0.7s,baz=72,slow=9.7,SNR=8.4						
ASAR				PcP	PcP	21 26 48.5	0.0
	0.9nm,0.6s,baz=78,slow=2.3,SNR=12						
FITZ	**Fitzroy Crossi**	**39.80**	**255**	P	**P**	**21 25 05.0**	**+1.4**
	1.6nm,0.9s,mb3.9,baz=173,slow=9.7,SNR=2.9						
FITZ				pP	pP	21 25 27.7	+1.1
	2.0nm,0.7s,baz=127,slow=4.7,SNR=2.7						
FX1	**Attu Island--F**	**64.26**	**5**	P	**P**	**21 28 04.2**	**-1.1**
	16nm,0.8s,mb4.9,baz=216,slow=11,SNR=2.9						
CMAR	**Chiang Mai Arr**	**72.72**	**293**	P	**P**	**21 28 59.5**	**+1.3**
	1.2nm,0.9s,mb3.7,baz=112,slow=4.2,SNR=4.9						
QSPA	**South Pole Qui**	**78.64**	**180**	*eP*	**P**	**21 29 30.4**	**-0.2**
	2.0nm,0.7s,mb4.1						
ULN	**Ulanbaatar**	**78.87**	**324**	*eP*	**P**	**21 29 33.0**	**+0.6**
	2.3nm,0.8s,mb4.1						
ILAR	**Eielson Array**	**83.65**	**18**	P	**P**	**21 29 56.8**	**-0.2**
	0.7nm,0.5s,mb3.7,baz=262,slow=5.0,SNR=16						
ILAR				pP	pP	21 30 20.8	-2.0
	0.3nm,0.6s,baz=261,slow=4.8,SNR=2.6						
NVAR	**Mina Array Bea**	**85.83**	**50**	P	**P**	**21 30 09.8**	**+1.3**
	0.2nm,0.3s,mb3.5,baz=252,slow=5.7,SNR=3.2						
PKI	**Pulchoki**	**97.25**	**299**	*eP*	**P**	**21 30 16.1**	**+0.5**
KKN	**Kakani**	**87.41**	**299**	*eP*	**P**	**21 30 17.0**	**+0.6**
DMN	**Daman**	**87.52**	**299**	*eP*	**P**	**21 30 17.3**	**+0.4**
	10nm,0.9s,mb4.9						
GKN	**Gorkha**	**88.02**	**299**	*eP*	**P**	**21 30 19.3**	**0.0**
	7.1nm,0.7s,mb4.8						
KOLN	**Koldanda**	**88.85**	**298**	*eP*	**P**	**21 30 23.3**	**0.0**
	5.3nm,0.8s,mb4.6						
HWUT	**Hardware Ranch**	**91.67**	**48**	*eP*	**P**	**21 30 32.6**	**-3.5**
	1.1nm,0.7s,mb4.2						
MKAR	**Makanchi Array**	**94.11**	**317**	P	**P**	**21 30 47.6**	**+0.6**
	2.3nm,0.5s,mb4.8,baz=87,slow=5.8,SNR=35						
MKAR				pP	pP	21 31 11.7	-1.7
	0.7nm,0.7s,baz=56,slow=4.4,SNR=3.4						
YKA	**Yellowknife Ar**	**95.02**	**27**	P	**P**	**21 30 49.3**	**-1.5**
	0.2nm,0.5s,mb3.8,baz=256,slow=4.4,SNR=5.6						
ARCES	**ARCESS Array B**	**116.77**	**346**	PKP	PKPdf	21 36 11.8	+0.8
	2.4nm,0.8s,baz=71,slow=2.3,SNR=13						
KAF	**Kangasniemi**	**121.73**	**339**	*ep*	PKPdf	21 36 20.8	+0.1
FINES	**FINESS Array B**	**122.26**	**339**	PKP	PKPdf	21 36 22.2	+0.5
	0.7nm,0.8s,baz=50,slow=4.0,SNR=9.7						

*LDG **08** 21:32:25.6±0.1, 43.07N×0.04E, h5km, Md2.5/2, Ml2.1/5, Error ellipse: s-maj=1.0km s-min=0.8km az=17.0*
*NEIC **08** 21:32:25.6, 43.07N×0.04E, h5km, ML2.2(STR), ML2.1(LDG), After LDG.*
*STR **08** 21:32:25.6±0.1, 43.05N×0.04E, h5km±1km, Ml2.2, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
*MDD **08** 21:32:26.0±0.4, 43.08N×0.05E, mbLg1.5/9, Error ellipse: s-maj=4.8km s-min=2.4km az=174.0, PRXIMO*

ISC 08 21:32:24.1±0.4, 43.15N±0.02×0.07E±0.03, h5km, n17, σ0$71/30, 1C, France

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
LABF	**Labassere**	**0.10**	**178**	Pg	**Pg**	**21 32 27.2**	**+0.9**
LABF				Sg	**Sg**	**21 32 28.3**	**+0.6**
EPF	**Esparros**	**0.23**	**120**	*ePg*	**Pg**	**21 32 29.8**	**+1.0**
EPF				*eSg*	**Sg**	**21 32 32.8**	**+0.9**
	36nm,0.2s						
VIEF	**Viey**	**0.27**	**187**	Pg	**Pg**	**21 32 29.4**	**0.0**
VIEF				Sg	**Sg**	**21 32 32.1**	**-0.9**
REYF	**Montagne du Re**	**0.35**	**257**	Pg	**Pg**	**21 32 31.8**	**+0.8**
REYF				Sg	**Sg**	**21 32 36.8**	**+1.1**
RESF	**Ens**	**0.39**	**150**	Pg	**Pg**	**21 32 32.1**	**+0.1**
RESF				Sg	**Sg**	**21 32 37.1**	**-0.1**
ETSF	**Etsaut**	**0.52**	**242**	*ePg*	**Pg**	**21 32 34.7**	**+0.1**
ETSF				*eSg*	**Sg**	**21 32 40.9**	**-0.6**
	66nm,0.3s						
MELF	**Melles**	**0.58**	**118**	Pg	**Pg**	**21 32 35.5**	**-0.1**
MELF				Sg	**Sg**	**21 32 43.7**	**+0.4**
SALF	**Salau**	**0.91**	**115**	Pg	**Pg**	**21 32 42.4**	**+0.1**
SALF				Sg	**Sg**	**21 32 54.3**	**-0.1**
SJPF	**Ste Jean**	**0.95**	**268**	*ePg*	**Pg**	**21 32 43.2**	**+0.2**
SJPF				*eSg*	**Sg**	**21 32 54.9**	**-0.8**
	2.5nm,0.2s						
EALK	**Alkurruntz**	**1.16**	**274**	Pg	**Pg**	**21 32 47.2**	**+0.1**
	0.1nm,0.1s,SNR=7.9						
EALK				Lg		21 33 04.2	
	1.3nm,0.2s,SNR=7.9						
ESAC	**San Caprasio**	**1.48**	**196**	⇑Pg	**Pg**	**21 32 52.9**	**-0.8**
	21nm,0.3s,SNR=18						
ESAC				Lg		21 33 12.6	
	4.7nm,0.2s,SNR=7.9						
MTLF	**Montolieu**	**1.58**	**82**	*ePg*	**Pg**	**21 32 55.8**	**+0.1**
MTLF				*eSg*	**Sg**	**21 33 16.2**	**-0.6**
	3.4nm,0.2s						
LFF	**La Frestale**	**1.86**	**15**	*ePg*	**Pg**	**21 33 01.7**	**+0.6**
LFF				*eSg*	**Sg**	**21 33 26.8**	**+0.9**
	7.4nm,0.3s						
EPOB	**Poblet**	**1.94**	**157**	Pg	**Pg**	**21 33 00.4**	**-2.5**
	0.8nm,0.1s,SNR=7.9						
EPOB				Lg		21 33 25.1	
	3.5nm,0.2s,SNR=7.9						
CAF	**Calviac**	**2.29**	**38**	*ePg*	**Pg**	**21 33 09.3**	**-0.5**
CAF				*eSg*	**Sg**	**21 33 39.9**	**-0.4**
	1.2nm,0.2s						
RJF	**Les Rejaudoux**	**2.40**	**25**	*ePg*	**Pg**	**21 33 11.3**	**-0.6**
RJF				*eSg*	**Sg**	**21 33 43.1**	**-0.7**
	2.9nm,0.2s						
EMOS	**Mosqueruela**	**2.81**	**188**	Pg	**Pg**	**21 33 15.4**	**-4.8**
	0.4nm,0.2s,SNR=4.0						

CASC 08 21:48:06.7±1.6, 12.82N×88.39W, h47km±70km, MD3.5, 4C-8D, Off coast of central America

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
VSM	**San Miguel**	**0.61**	**10**	⇑*eP*	P	21 48 19.9	+0.8
VSM				*eS*	S	21 48 29.6	+1.3
BLLM	**Bellamira**	**0.63**	**13**	⇓*eP*	P	21 48 19.5

IDC ***08*** *22:17:05.7±10.0, 22.04S×179.46W, h451km±124km, mb3.1/7, mb1 3.4/8, mb1mx3.3/16, Error ellipse: s-maj=61.8km s-min=21.4km az=6.0*

ISC 08 22:17:16.8±4.1, 22.6S±0.2×179.6W±0.2, h608km±56km, n8, σ0°42/9, mb3.5/7, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**15.83**	**190**	P	**P**	**22 20 32.4**	**-0.2**
	4.6nm,0.3s,baz=13,slow=5.9,SNR=26						
URZ				S	**S**	**22 23 09.8**	**-0.2**
	1.1nm,0.3s,baz=74,slow=18,SNR=6.6						
RPZ	**Rata Peaks**	**22.40**	**198**	P	**P**	**22 21 33.7**	**+0.6**
	3.5nm,0.4s,mb4.3,baz=258,slow=19,SNR=4.0						
ASAR	**Alice Springs**	**42.61**	**259**	P	**P**	**22 24 23.4**	**+0.6**
	0.4nm,0.6s,mb3.1,baz=89,slow=6.7,SNR=6.3						
WRA	**Warramunga Arr**	**42.86**	**265**	P	**P**	**22 24 24.2**	**-0.7**
	0.4nm,0.3s,mb3.4,baz=96,slow=8.4,SNR=16						
FITZ	**Fitzroy Crossi**	**51.29**	**264**	P	**P**	**22 25 28.4**	**0.0**
	1.0nm,0.6s,mb3.5,baz=108,slow=6.4,SNR=5.9						
NVAR	**Mina Array Bea**	**83.60**	**44**	P	**P**	**22 28 43.5**	**-0.1**
	0.7nm,0.8s,mb3.2,baz=217,slow=5.6,SNR=4.5						
TXAR	**Lajitas Array**	**89.46**	**58**	P	**P**	**22 29 12.1**	**+0.4**
	0.6nm,0.7s,mb3.6,baz=209,slow=4.6,SNR=8.8						
PDAR	**Pinedale Array**	**91.53**	**44**	P	**P**	**22 29 20.4**	**-0.4**
	0.2nm,0.5s,mb3.4,baz=207,slow=2.0,SNR=2.7						

NEIC ***08*** *22:30:46.4±0.6, 7.54N×74.98W, mb3.5/1, Error ellipse: s-maj=13.3km s-min=12.2km az=51.0*

IDC ***08*** *22:30:46.5±0.6, 7.72N×74.93W, h50km±6km, mb3.6/11, mb1 3.9/14, mb1mx3.8/22, Error ellipse: s-maj=12.7km s-min=9.9km az=82.0*

ISC 08 22:30:45.8±0.5, 7.77N±0.06×74.89W±0.06, h52km, h52km±.3km: pP-P, n23, σ1§06/23, mb3.9/11, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ROSC	**El Rosal**	**2.94**	**169**	P	**P**	**22 31 30.9**	**-0.4**
	26nm,0.3s,baz=13,slow=2.9,SNR=23						
ROSC				S	**S**	**22 32 06.4**	**+0.8**
	66nm,0.3s,baz=61,slow=23,SNR=7.1						
SDV	**Santo Domingo**	**4.35**	**75**	P	**P**	**22 31 52.3**	**+1.2**
	36nm,0.3s,baz=232,slow=4.1,SNR=118						
SDV				S	**S**	**22 32 41.1**	**-0.1**
	82nm,0.3s,baz=73,slow=23,SNR=14						
PCRV	**Puerto La Cruz**	**10.40**	**76**	P	**P**	**22 33 14.1**	**-1.0**
	2.1nm,0.3s,baz=253,slow=3.4,SNR=11						
PCRV				S	**S**	**22 35 05.0**	**-6.2**
	4.6nm,0.3s,baz=222,slow=23,SNR=7.2						
SJG	**San Juan**	**13.34**	**39**	P	**P**	**22 33 58.3**	**+3.8**
LPAZ	**La Paz**	**24.82**	**164**	P	**P**	**22 36 01.6**	**-3.1**
	2.3nm,0.7s,mb3.8,baz=15,slow=4.9,SNR=8.7						
LPAZ	**La Paz**	**24.82**	**164**	*e*P	**P**	**22 36 01.4**	**-3.3**
	1.0nm,0.6s,mb3.5						
TXAR	**Lajitas Array**	**34.53**	**312**	P	**P**	**22 37 30.3**	**-1.1**
	0.2nm,0.6s,mb3.2,baz=134,slow=8.7,SNR=4.2						
RW3	**Ridgway**	**42.39**	**321**	*e*P	**P**	**22 38 39.2**	**+2.3**
ULM	**Lac du Bonnet**	**45.82**	**341**	P	**P**	**22 39 03.8**	**-0.6**
	0.8nm,0.4s,mb4.0,baz=153,slow=12,SNR=2.6						
PDAR	**Pinedale Array**	**46.29**	**325**	P	**P**	**22 39 08.8**	**+0.7**
	1.0nm,0.8s,mb3.8,baz=112,slow=8.0,SNR=6.1						
SCHQ	**Schefferville**	**47.38**	**6**	P	**P**	**22 39 17.1**	**+0.6**
	2.6nm,1.0s,mb4.1,baz=204,slow=13,SNR=7.2						
NVAR	**Mina Array Bea**	**49.58**	**315**	P	**P**	**22 39 34.7**	**+0.9**
	0.5nm,0.7s,mb3.7,baz=126,slow=7.8,SNR=5.9						
YKA	**Yellowknife Ar**	**61.78**	**340**	P	**P**	**22 40 59.6**	**-1.7**
	0.6nm,0.4s,mb4.1,baz=133,slow=6.9,SNR=31						
YKA				pP	pP	22 41 14.0	-1.8
	0.3nm,0.4s,baz=132,slow=6.8,SNR=3.6						
YKA	**Yellowknife Ar**	**61.78**	**340**	P	**P**	**22 40 59.6**	**-1.7**
YKA				pP	pP	22 41 14.0	-1.8
ILAR	**Eielson Array**	**75.37**	**335**	P	**P**	**22 42 24.6**	**-0.6**
	0.5nm,0.6s,mb3.6,baz=107,slow=5.2,SNR=5.8						
NB2	**NORSAR Subarra**	**81.37**	**29**	P	**P**	**22 42 58.4**	**+0.2**
	0.7nm,0.6s,mb3.8,baz=269,slow=5.3						
NOA	**NORSAR Array B**	**81.37**	**29**	P	**P**	**22 42 58.8**	**+0.5**
	1.1nm,0.8s,mb3.9,baz=272,slow=5.3,SNR=4.5						
ARCES	**ARCESS Array B**	**86.40**	**20**	P	**P**	**22 43 23.3**	**0.0**
	3.2nm,0.9s,mb4.5,baz=271,slow=3.3,SNR=8.6						
ARCES				pP	pP	22 43 38.5	0.0
	3.7nm,0.8s,baz=304,slow=4.4,SNR=2.2						
FINES	**FINESS Array B**	**88.44**	**28**	P	**P**	**22 43 32.9**	**-0.4**
	0.7nm,0.7s,mb4.0,baz=342,slow=6.0,SNR=4.1						
FINES				pP	pP	22 43 48.3	-0.3
	0.6nm,0.7s,baz=252,slow=6.0,SNR=2.0						
FINES	**FINESS Array B**	**88.44**	**28**	P	**P**	**22 43 32.9**	**-0.4**
FINES				pP	pP	22 43 48.3	-0.3
ASAR	**Alice Springs**	**148.20**	**237**	PKPbc	PKPdf	22 50 25.4	+2.1
	1.5nm,0.7s,baz=120,slow=3.3,SNR=17						
ASAR				pPKPbc		22 50 41.2	
	0.5nm,0.6s,baz=119,slow=3.7,SNR=3.1						
WB2	**Warramunga Arr**	**149.21**	**244**	*e*P	PKPdf	22 50 28.2	+3.1
WRA	**Warramunga Arr**	**149.22**	**244**	PKPbc	PKPdf	22 50 28.5	+3.4
	2.4nm,0.7s,baz=107,slow=2.7,SNR=18						
WRA				pPKPbc		22 50 44.3	
	1.3nm,0.9s,baz=107,slow=2.6,SNR=5.1						

NNC ***08*** *22:49:53.0±4.4, 38.77N×75.65E, h30km±15km, mpv3.2, Error ellipse: s-maj=38.5km s-min=9.2km az=18.0*

ISC 08 22:49:47.3±0.9, 38.3N±0.1×75.7E±0.2, h33km, n7, σ0°51/7, 4C-1D, Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KK31	**Karatay Array**	**6.19**	**322**	⇓Pn	**Pn**	**22 51 19.8**	**+0.8**
	1.3nm,0.5s,baz=132,slow=12,SNR=34						
KK31				⇑Sn	**Sn**	**22 52 28.8**	**-0.6**
	4.3nm,0.6s,baz=137,slow=23,SNR=6.5						
KK31				⇑Lg		22 52 58.4	
	7.3nm,0.7s,baz=142,slow=30						
MK31	**Makanchi Array**	**9.79**	**28**	⇑Pn	**P**	**22 52 08.8**	**0.0**
	0.5nm,0.5s,baz=202,slow=12,SNR=9.9						
KOLN	**Koldanda**	**12.43**	**145**	*e*P	**P**	**22 52 45.2**	**+0.5**
	5.8nm,0.7s						
KURK	**Kurchatov**	**12.59**	**9**	⇑Lg		22 56 15.5	
	2.6nm,1.0s,baz=170,slow=16,SNR=3.3						
GKN	**Gorkha**	**12.72**	**141**	*e*P	**P**	**22 52 47.9**	**-0.7**
	6.8nm,0.4s						
KKN	**Kakani**	**13.21**	**140**	*e*P	**P**	**22 52 54.9**	**-0.2**
GUN	**Gumba**	**13.43**	**138**	*e*P	**P**	**22 52 58.1**	**+0.1**

NEIC ***08*** *23:03:38.2±0.2, 20.27S×173.79W, mb4.9/32, MS4.5/5, Error ellipse: s-maj=9.4km s-min=4.6km az=143.0*

SYO ***08*** *23:03:38.2, 20.27S×173.79W, h36km, MB4.9, MS4.5*

HRVD ***08*** *23:03:38.2±0.5, 20.52S×173.03W, h24km±1km, MW4.9/43, Centroid moment Tensor Solution. LP body waves: s13,c13;Mantle waves: s43,c56; Half duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}3.07±.33; $M_{\theta\theta}$-0.43±.19; $M_{\phi\phi}$-2.63±.21; $M_{r\theta}$0.58±.30; $M_{r\phi}$0.15±.15; $M_{\theta\phi}$0.97±.22; Best double couple: $M_0$3.06×10^{16} NP1:φs168°, δ37°, λ75°. NP2:φs7°, δ55°, λ101°. Principal axes: T 3.33, Plg77°, Azm314°; N -.53, Plg9°, Azm180°; P -2.79, Plg9°, Azm89°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

IDC ***08*** *23:03:38.3±0.7, 20.10S×173.92W, h33km±5km, mb4.4/21, mb1 4.6/23, mb1mx4.6/24, ML5.0/2, MS4.2/11, Ms1 4.2/11, ms1mx4.0/25 Error ellipse: s-maj=18.5km s-min=10.1km az=141.0*

BJI ***08*** *23:03:38.2, 20.30S×173.80W, h35km, mB5.3, mb4.9, Ms4.9, Msz4.4*

ISC 08 23:03:36.8±0.2, 20.31S±0.07×173.81W±0.06, h36km, h36km±.6km: pP-P, n146, σ0§95/100, mb4.8/54, MS4.3/18, 7C-7D, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAR	**Rarotonga**	**13.16**	**96**	Pn	**P**	**23 06 30.1**	**-14**
	10.0nm,0.3s,baz=254,slow=6.5,SNR=17						
RAR				Sn	S	23 08 40.4	-30
	baz=161,slow=7.9,SNR=2.2						
RAR				LR	LR	23 10 55.4	
	comp=Z,1μm,18.4s,baz=304,slow=33						
RAR	**Rarotonga**	**13.16**	**96**	*e*P	**P**	**23 06 29.5**	**-14**
NOUC	**Port Laguerre**	**18.63**	**261**	*e*P	**P**	**23 07 54.9**	**+1.1**
URZ	**Urewera**	**19.54**	**202**	P	**P**	**23 08 03.2**	**-0.9**
	3.3nm,0.3s,baz=17,slow=4.1,SNR=23						
URZ				S	**S**	**23 11 26.8**	**-10**
	1.0nm,0.3s,baz=134,slow=23,SNR=7.5						
RPZ	**Rata Peaks**	**26.54**	**205**	P	**P**	**23 09 13.2**	**+0.1**
	14nm,0.8s,mb4.6,baz=91,slow=2.3,SNR=9.4						
RPZ				S	**S**	**23 13 50.3**	**+7.2**
	9.6nm,1.3s,baz=322,slow=15,SNR=1.7						
RPZ	**Rata Peaks**	**26.54**	**205**	P	**P**	**23 09 13.2**	**+0.1**
RPZ				S	**S**	**23 13 50.3**	**+7.2**
CTA	**Charters Tower**	**37.42**	**263**	⇓*i*P	**P**	**23 10 48.1**	**-0.3**
	9.6nm,0.7s,mb4.7						
CTA	**Charters Tower**	**37.42**	**263**	P	**P**	**23 10 48.4**	**-0.1**
	14nm,0.8s,mb4.9,baz=108,slow=10,SNR=13						
PMG	**Port Moresby**	**39.15**	**280**	P	**P**	**23 11 02.5**	**-0.4**
	44nm,0.8s,mb5.2,baz=93,slow=5.6,SNR=14						
PMG	**Port Moresby**	**39.15**	**280**	*e*P	**P**	**23 11 02.2**	**-0.7**
	60nm,0.9s,mb5.3						
TOO	**Toolangi**	**39.20**	**235**	⇑*i*P	**P**	**23 11 03.2**	**+0.1**
	7.6nm,0.7s,mb4.5						
STKA	**Stephens Creek**	**41.41**	**245**	⇑*i*P	**P**	**23 11 21.0**	**-0.5**
	9.2nm,1.1s,mb4.3						
STKA	**Stephens Creek**	**41.41**	**245**	P	**P**	**23 11 21.1**	**-0.4**
	10.0nm,0.9s,mb4.4,baz=88,slow=9.7,SNR=15						
STKA				S	**S**	**23 17 37.1**	**+3.3**
	0.9nm,0.6s,baz=212,slow=14,SNR=2.5						
STKA				LR	LR	23 27 19.5	
	comp=Z,438nm,18.4s,MS4.4,baz=289,slow=34						
AS12	**Alice Springs**	**48.38**	**256**	⇑*i*P	**P**	**23 12 16.2**	**-1.2**
	11nm,0.6s,mb5.0						
AS12				*i* PCP	PcP	23 13 44.5	+0.6
ASAR	**Alice Springs**	**48.38**	**256**	P	**P**	**23 12 16.1**	**-1.3**
	9.5nm,0.6s,mb5.0,baz=100,slow=7.6,SNR=104						
ASAR				PcP	PcP	23 13 44.6	+0.7
	6.6nm,0.9s,baz=100,slow=4.7,SNR=8.6						
ASAR				S	**S**	**23 19 13.7**	**-0.6**
	0.6nm,0.8s,baz=94,slow=12,SNR=4.7						
ASAR				LR	LR	23 32 03.9	
	comp=Z,254nm,19.7s,MS4.2,baz=93,slow=35						
WB2	**Warramunga Arr**	**48.50**	**261**	⇑*i*P	**P**	**23 12 16.7**	**-1.7**
WB2				*i* PCP	PcP	23 13 45.7	+1.3
WRAB	**Tennant Creek**	**48.51**	**261**	*e*P	**P**	**23 12 16.2**	**-2.2**
	160nm,1.6s,mb5.8						
WRA	**Warramunga Arr**	**48.51**	**261**	P	**P**	**23 12 16.9**	**-1.6**
	7.9nm,0.9s,mb4.8,baz=97,slow=7.6,SNR=45						
WRA				PcP	PcP	23 13 45.1	+0.7
	6.3nm,1.0s,baz=93,slow=3.7,SNR=6.0						
WRA				S	**S**	**23 19 16.0**	**-0.1**
	0.2nm,0.4s,baz=182,slow=23,SNR=3.9						
WRA				LR	LR	23 31 42.8	
	comp=Z,156nm,18.8s,MS4.0,baz=110,slow=35						
KAKA	**Kakadu**	**51.94**	**270**	⇑*i*P	**P**	**23 12 43.3**	**-1.3**
	31nm,1.2s,mb5.1						
FORT	**Forrest**	**52.97**	**246**	⇓*i*P	**P**	**23 12 51.1**	**-1.1**
	61nm,0.7s,mb5.6						
FITZ	**Fitzroy Crossi**	**56.94**	**261**	⇓*i*P	**P**	**23 13 20.5**	**-0.7**
	4.7nm,0.6s,mb4.7						
FITZ	**Fitzroy Crossi**	**56.94**	**261**	P	**P**	**23 13 20.6**	**-0.7**
	6.6nm,0.7s,mb4.8,baz=140,slow=5.4,SNR=12						
SBA	**Scott Base**	**58.35**	**185**	*e*P	**P**	**23 13 31.1**	**+0.7**
	15nm,1.1s,mb4.9						
VNDA	**Vanda**	**58.48**	**186**	P	**P**	**23 13 32.2**	**+1.0**
	3.7nm,0.9s,mb4.4,baz=8.8,slow=6.4,SNR=18						
VNDA	**Vanda**	**58.48**	**186**	*e*P	**P**	**23 13 31.4**	**+0.2**
	2.9nm,1.0s,mb4.3						
KLBR	**Kellerberrin**	**61.69**	**244**	⇑*i*P	**P**	**23 13 53.2**	**-0.6**
	14nm,0.6s,mb5.2						
MUN	**Mundaring**	**62.94**	**244**	⇑*i*P	**P**	**23 14 02.1**	**-0.1**
	18nm,0.8s,mb5.2						
QSPA	**South Pole Qui**	**69.76**	**180**	*e*P	**P**	**23 14 45.5**	**+0.8**
	11nm,1.0s,mb4.7						
MAJO	**Matsushiro**	**72.46**	**321**	*e*P	**P**	**23 15 01.2**	**-0.4**
	16nm,1.0s,mb4.9						
MAT	**Matsushiro**	**72.46**	**321**	P	**P**	**23 15 02.0**	**+0.4**
MAT	**Matsushiro**	**72.46**	**321**	*e*P	**P**	**23 15 02.0**	**+0.4**
	8.2nm,0.8s,mb4.7						
ASAJ	**Asahikawa**	**75.51**	**329**	P	**P**	**23 15 18.6**	**-0.6**
	2.6nm,0.4s,mb4.5,baz=56,slow=30,SNR=2.4						
ASAJ				LR	LR	23 47 58.6	
	comp=Z,90nm,18.8s,MS4.1,baz=164,slow=35						
CMB	**Columbia Colle**	**76.71**	**41**	*e*P	**P**	**23 15 24.7**	**-1.4**
	12nm,1.4s,mb4.6						
CMB				*e*pP	pP	23 15 36.5	-0.7
CMB				LR	LR		
	comp=Z,206nm,19.0s,MS4.5						
MTUM	**Tungsten Hills**	**77.42**	**42**	*e*P	**P**	**23 15 29.9**	**-0.2**
MTUM				*e*pP	pP	23 15 40.5	-0.8
YSS	**Yuzh-Sakhalins**	**77.56**	**331**	*e*P	**P**	**23 15 31.7**	**+1.0**
	comp=Z,11nm,0.8s,mb4.8						
YBH	**Yreka Blue Hor**	**77.74**	**37**	P	**P**	**23 15 31.9**	**0.0**
	comp=Z,3.0nm,0.8s,mb4.2,baz=131,slow=1.6,SNR=9.1						
YBH	**Yreka Blue Hor**	**77.74**	**37**	*e*P	**P**	**23 15 31.1**	**-0.7**
	comp=Z,10nm,1.4s,mb4.6						
YBH				*e*	pP	23 15 42.4	-0.5
BEKR	**Beckwourth**	**77.89**	**39**	*e*P	**P**	**23 15 32.7**	**0.0**
	comp=Z,9.0nm,1.1s,mb4.6						
WCN	**Washoe City**	**77.89**	**40**	*e*P	**P**	**23 15 31.4**	**-1.3**
	comp=Z,18nm,1.4s,mb4.8						
NVAR	**Mina Array Bea**	**78.24**	**41**	P	**P**	**23 15 34.5**	**-0.2**
	comp=Z,7.6nm,0.8s,mb4.7,baz=217,slow=5.8,SNR=29						
NVAR				pP	pP	23 15 45.5	-0.2
	comp=Z,12nm,0.9s,baz=214,slow=7.0,SNR=16						
LDFC	**Landfair**	**78.32**	**46**	*e*P	**P**	**23 15 34.5**	**-0.6**
TPH	**Tonopah**	**78.70**	**42**	*e*P	**P**	**23 15 36.3**	**-0.8**
	comp=Z,14nm,1.0s,mb4.8						
TPH				*e*pP	pP	23 15 48.1	-0.1
NEN	**Nelson**	**78.82**	**45**	*e*P	**P**	**23 15 37.4**	**-0.5**
TUC	**Tucson**	**79.81**	**50**	*e*P	**P**	**23 15 43.1**	**-0.2**
	comp=Z,16nm,1.5s,mb4.7						
BMN	**Battle Mountai**	**80.12**	**40**	*e*P	**P**	**23 15 45.4**	**+0.6**
	comp=Z,11nm,1.1s,mb4.7						
WVOR	**Wild Horse Val**	**80.51**	**38**	*e*P	**P**	**23 15 46.3**	**-0.6**
	comp=Z,8.3nm,1.1s,mb4.6						
WUAZ	**Wupatki**	**81.10**	**47**	*e*P	**P**	**23 15 50.2**	**+0.1**
	comp=Z,9.2nm,1.1s,mb4.6						
RMW	**Rattlesnake Mo**	**82.03**	**33**	*e*P	**P**	**23 15 54.8**	**+0.1**
MVU	**Marysvale**	**82.17**	**44**	*e*P	**P**	**23 15 55.8**	**+0.3**
	comp=Z,10nm,1.1s,mb4.7						
MSU	**Marysvale**	**82.19**	**44**	*e*P	**P**	**23 15 56.5**	**+0.8**
HAWA	**Hanford**	**82.52**	**35**	*e*P	**P**	**23 15 57.0**	**-0.2**
	comp=Z,23nm,1.4s,mb5.0						
MDJ	**Mudanjiang**	**82.68**	**323**	P	**P**	**23 16 00.3**	**+2.3**
MDJ				AP	pP	23 16 12.1	+2.9
MDJ				XP	sP	23 16 18.6	+5.5
MDJ				S	S	23 26 18.9	+7.3
MDJ				AMB	AMB		
	comp=Z,12nm,1.1s,mb4.8						
MDJ				AMB	AMB		
	comp=Z,35nm,3.4s						
MDJ				LR	LR		
	comp=N,69nm,18.6s,MS4.2						
MDJ				LR	LR		
	comp=E,59nm,17.3s,MS4.2						
MDJ				LR	LR		
	comp=Z,121nm,17.3s,MS4.3						
MAW	**Mawson**	**83.04**	**199**	P	**P**	**23 16 01.2**	**+1.8**
	comp=Z,3.5nm,0.9s,mb4.4,baz=298,slow=16,SNR=2.6						
MAW	**Mawson**	**83.04**	**199**	P	**P**	**23 16 01.0**	**+1.6**
MNTX	**Cornudas Mount**	**83.47**	**53**	*e*P	**P**	**23 16 01.3**	**-1.1**
SPUT	**South Promonto**	**83.57**	**42**	*e*P	**P**	**23 16 02.8**	**+0.1**
SRU	**San Rafael**	**83.60**	**44**	*e*P	**P**	**23 16 03.0**	**+0.1**
HVU	**Hansel Valley**	**83.63**	**41**	*e*P	**P**	**23 16 03.3**	**+0.3**
HLID	**Hailey**	**83.66**	**39**	*e*P	**P**	**23 16 03.1**	**0.0**
	comp=Z,9.8nm,1.0s,mb4.9						
HLID				*e*pP	pP	23 16 14.1	-0.2
HLID				LR	LR		
	comp=Z,228nm,19.0s,MS4.6						
CTU	**Camp Tracy**	**83.67**	**43**	*e*P	**P**	**23 16 04.0**	**+0.8**
TXAR	**Lajitas Array**	**83.67**	**56**	P	**P**	**23 16 02.7**	**-0.8**
	comp=Z,2.3nm,0.8s,mb4.3,baz=225,slow=11,SNR=4.4						
TXAR				pP	pP	23 16 14.2	-0.5
	comp=Z,3.5nm,0.8s,baz=225,slow=7.1,SNR=5.5						
TXAR				LR	LR	23 48 30.6	
	comp=Z,62nm,19.9s,MS4.0,baz=185,slow=32						
PMR	**Palmer**	**83.98**	**12**	PFAKE		23 16 20.0	+16
PMR				LR	LR		
	comp=Z,168nm,19.0s,MS4.4						
TCUT	**Toone Canyon**	**84.12**	**42**	*e*P	**P**	**23 16 05.8**	**+0.4**
PV10	**Paradox Valley**	**84.20**	**46**	*e*P	**P**	**23 16 05.9**	**0.0**
ANMO	**Albuquerque**	**84.25**	**50**	*e*P	**P**	**23 16 06.6**	**+0.3**
	comp=Z,10nm,1.1s,mb4.9						
ANMO				*e*pP	pP	23 16 17.3	-0.2
ANMO				LR	LR		
	comp=Z,209nm,19.0s,MS4.5						
HWUT	**Hardware Ranch**	**84.29**	**42**	*e*P	**P**	**23 16 05.8**	**-0.6**
	comp=Z,5.8nm,0.9s,mb4.7						
PV01	**Paradox Valley**	**84.39**	**46**	*e*P	**P**	**23 16 06.9**	**-0.1**
PV01				*e*pP	pP	23 16 18.1	0.0
CN2	**Changchun**	**84.60**	**321**	*e*P	**P**	**23 16 10.2**	**+2.4**
CN2				XP	sP	23 16 25.6	+2.7
CN2				*e*S	S	23 26 34.5	+3.7
CN2				AMB	AMB		
	comp=Z,10.0nm,1.0s,mb4.9						
CN2				LR	LR		
	comp=N,230nm,20.0s,MS4.7						
CN2				LR	LR		
	comp=E,180nm,20.0s,MS4.7						
CN2				LR	LR		
	comp=Z,150nm,18.0s,MS4.4						
NEW	**Newport**	**84.97**	**34**	P	**P**	**23 16 08.8**	**-0.8**
	comp=Z,1.5nm,0.7s,mb4.2,baz=136,slow=6.2,SNR=3.4						
RW3	**Ridgway**	**85.05**	**46**	*e*P	**P**	**23 16 11.3**	**+1.1**
AHID	**Auburn Hatcher**	**85.21**	**41**	*e*P	**P**	**23 16 11.2**	**+0.3**
	comp=Z,15nm,1.1s,mb5.0						
MCMT	**McKenzie Canyo**	**85.31**	**39**	*e*P	**P**	**23 16 11.5**	**+0.2**
MCK	**McKinley**	**86.00**	**11**	*e*P	**P**	**23 16 13.8**	**-0.4**
	comp=Z,6.1nm,1.0s,mb4.8						
PDAR	**Pinedale Array**	**86.17**	**42**	P	**P**	**23 16 15.4**	**-0.2**
	comp=Z,2.1nm,0.9s,mb4.4,baz=207,slow=3.3,SNR=10						
PDAR				pP	pP	23 16 26.2	-0.6
	comp=Z,3.2nm,0.9s,baz=225,slow=4.2,SNR=9.2						
PDAR				LR	LR	23 51 08.2	
	comp=Z,101nm,19.4s,MS4.2,baz=54,slow=33						
CHMT	**Chamberlain Mo**	**86.27**	**37**	*e*P	**P**	**23 16 16.1**	**+0.1**
DLBC	**Dease Lake**	**86.39**	**21**	P	**P**	**23 16 15.8**	**-0.4**
	comp=Z,0.7nm,0.7s,mb4.0,baz=276,slow=13,SNR=2.7						
DLBC	**Dease Lake**	**86.39**	**21**	P	**P**	**23 16 15.8**	**-0.4**
BOZ	**Bozeman (W)**	**86.48**	**38**	*e*P	**P**	**23 16 16.4**	**-0.6**
	comp=Z,9.9nm,1.3s,mb4.9						
COLA	**College**	**87.23**	**11**	PFAKE		23 16 30.0	+10
COLA				LR	LR		
	comp=Z,264nm,22.0s,MS4.6						
ILAR	**Eielson Array**	**87.31**	**11**	P	**P**	**23 16 20.5**	**-0.1**
	comp=Z,2.0nm,0.8s,mb4.4,baz=217,slow=5.3,SNR=17						
ILAR				LR	LR	23 53 13.8	
	comp=Z,94nm,18.8s,MS4.2,baz=218,slow=34						
SYO	**Syowa Base**	**87.73**	**191**	⇓P	**P**	**23 16 23.6**	**+1.1**
SYO	**Syowa Base**	**87.73**	**191**	⇓pP	pP	23 16 34.1	+0.3
SYO	**Syowa Base**	**87.73**	**191**	⇓*e*P	**P**	**23 16 23.6**	**+1.1**
SYO				⇓*e*pP	pP	23 16 34.1	+0.3
SNAA	**Sanae**	**88.05**	**177**	*e*P	**P**	**23 16 23.9**	**-0.1**
DAWY	**Dawson**	**88.25**	**14**	*e*P	**P**	**23 16 25.5**	**+0.4**
BJT	**Baijiatuao**	**88.55**	**314**	*e*P	**P**	**23 16 29.2**	**+2.0**
BJI	**Beijing**	**88.56**	**314**	P	**P**	**23 16 28.9**	**+1.7**
BJI				AMB	AMB		
	comp=Z,13nm,1.4s,mb5.1						
BJI				AMB	AMB		
	comp=Z,83nm,4.2s						
BJI				LR	LR		
	comp=Z,45nm,20.5s,MS3.9						
ENH	**Enshi**	**89.22**	**303**	*e*P	**P**	**23 16 32.5**	**+1.9**
	comp=Z,30nm,1.1s,mb5.5						
ENH				*e*pP	pP	23 16 43.0	+1.1
RSSD	**Black Hills**	**90.33**	**43**	*e*P	**P**	**23 16 33.9**	**-1.5**
	comp=Z,6.3nm,1.1s,mb4.9						
RSSD				*e*pP	pP	23 16 45.9	-0.9
XAN	**Xi'an**	**91.17**	**306**	P	**P**	**23 16 41.6**	**+1.9**
XAN				AMB	AMB		
	comp=Z,16nm,1.4s,mb5.2						
INK	**Inuvik**	**93.11**	**14**	P	**P**	**23 16 48.3**	**+0.6**
	comp=Z,2.8nm,0.9s,mb4.7,baz=80,slow=11,SNR=3.8						
CMAR	**Chiang Mai Arr**	**93.77**	**288**	P	**P**	**23 16 54.8**	**+3.0**
	comp=Z,123nm,0.5s,baz=104,slow=3.0,SNR=4.7						
YKA	**Yellowknife Ar**	**94.73**	**24**	P	**P**	**23 16 55.3**	**+0.1**
	comp=Z,0.7nm,0.8s,mb4.1,baz=236,slow=4.4,SNR=13						
YKA				LR	LR	23 54 22.9	
	comp=Z,96nm,19.3s,MS4.3,baz=235,slow=32						
YKA	**Yellowknife Ar**	**94.73**	**24**	P	**P**	**23 16 55.3**	**+0.1**
YKA				LR	LR	23 54 22.9	
ULM	**Lac du Bonnet**	**97.97**	**39**	P	**P**	**23 17 08.8**	**-1.4**
	comp=Z,2.0nm,0.8s,mb4.7,baz=153,slow=1.3,SNR=3.5					

0.7nm,0.7s,mb3.8,baz=282,slow=5.9,SNR=5.4
ASAR Alice Springs 67.16 115 P **P** 23 45 15.4 -0.4
0.7nm,1.0s,mb3.6,baz=288,slow=6.1,SNR=6.7

*NEIC **08** 23:36:42.9±0.8,31.81N×142.53E,h10km,mb4.6/1,Error ellipse: s-maj=30.8km s-min=9.9km az=78.0*
*IDC **08** 23:36:42.8±1.4,31.75N×141.93E,mb3.8/6,mb1 3.9/8, mb1mx3.7/22,ML3.6/2,MS3.1/1,Ms1 3.1/1,ms1mx2.5/24, Error ellipse: s-maj=56.2km s-min=17.3km az=70.0*
*JMA **08** 23:36:46.0±0.4,31.74N×141.92E,h80km,M3.4*
ISC 08 23:36:44.4±2.0,31.74N±0.05×142.0E±0.1,h28km±16km, n24,σ0§95/30,mb3.9/7,Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JHJ2	**Mitsune**	**2.31**	**307**	P		**Pn**	**23 37 21.1**	**-0.5**
JHJ2				*e*S		**Sn**	**23 37 49.6**	**+0.2**
JHJ	**Hachijo jima 2**	**2.34**	**307**	Pn		**Pn**	**23 37 21.7**	**-0.3**
	16nm,0.3s,baz=219,slow=24,SNR=5.6							
JHJ				Sn		**Sn**	**23 37 49.0**	**-1.1**
	18nm,0.3s,baz=276,slow=23,SNR=4.4							
BSO1	**Boso 1**	**3.04**	**344**	P		**Pn**	**23 37 32.6**	**+0.7**
JOD2	**Odawara 2**	**4.29**	**326**	P		**Pn**	**23 37 49.6**	**0.0**
CBIJ	**Chichi jima**	**4.63**	**178**	Pn		**Pn**	**23 37 55.0**	**+0.6**
	7.0nm,0.3s,baz=271,slow=23,SNR=10							
CBIJ				Sn		**Sn**	**23 38 45.1**	**-2.9**
	5.9nm,0.3s,baz=272,slow=21,SNR=2.3							
CBIJ				LR		LR	23 39 04.5	
	comp=Z,205nm,19.1s,baz=117,slow=31							
CBIJ	**Chichi jima**	**4.63**	**178**	P		**Pn**	**23 37 55.5**	**+1.0**
JRY	**Ryogami san**	**5.00**	**330**	P		**Pn**	**23 38 00.8**	**+1.2**
JHO	**Hitachi**	**5.01**	**346**	P		**Pn**	**23 37 58.8**	**-1.0**
JHO				*e*S		**Sn**	**23 38 56.0**	**-1.5**
JAG	**Ashikaga**	**5.14**	**336**	P		**Pn**	**23 38 01.3**	**-0.3**
MAJO	**Matsushiro**	**5.74**	**328**	P		**Pn**	**23 38 11.4**	**+1.2**
MAT	**Matsushiro**	**5.74**	**328**	P		**Pn**	**23 38 11.2**	**+1.0**
MAT				*e*S		**Sn**	**23 39 16.4**	**+0.5**
MAT	**Matsushiro**	**5.74**	**328**	P		**Pn**	**23 38 11.0**	**+0.8**
MAT				S		**Sn**	**23 39 16.0**	**+0.1**
JMK	**Ichinoseki**	**7.23**	**355**	P		**Pn**	**23 38 30.3**	**-0.8**
YSS	**Yuzh-Sakhalins**	**15.21**	**2**	*e*P		**P**	**23 40 15.8**	**-3.1**
MKAR	**Makanchi Array**	**47.51**	**306**	P		**P**	**23 45 19.7**	**+0.7**
	0.4nm,0.4s,mb3.8,baz=87,slow=9.3,SNR=12							
MKAR	**Makanchi Array**	**47.51**	**306**	P		**P**	**23 45 19.7**	**+0.7**
KURK	**Kurchatov**	**49.72**	**312**	*e*P		**P**	**23 45 35.8**	**-0.1**
WRAB	**Tennant Creek**	**51.90**	**189**	*e*P		**P**	**23 45 52.5**	**-0.5**
	4.5nm,0.6s,mb4.6							
WRA	**Warramunga Arr**	**51.91**	**189**	P		**P**	**23 45 52.7**	**-0.4**
	0.9nm,0.5s,mb4.0,baz=6.8,slow=7.7,SNR=19							
ASAR	**Alice Springs**	**55.63**	**189**	S		**P**	**23 46 20.6**	**+0.2**
	0.6nm,0.6s,mb3.8,baz=18,slow=13,SNR=13							
FINES	**FINESS Array B**	**73.74**	**333**	P		**P**	**23 48 18.0**	**+0.6**
	0.5nm,0.8s,mb3.5,baz=135,slow=5.4,SNR=4.4							
AKASG	**Malin Array Be**	**78.81**	**323**	P		**P**	**23 48 46.9**	**+0.8**
	0.4nm,0.4s,mb3.7,baz=51,slow=4.7,SNR=3.1							
NB2	**NORSAR Subarra**	**79.27**	**338**	P		**P**	**23 48 49.7**	**+1.3**
	0.6nm,0.6s,mb3.7,baz=40,slow=5.6							
NOA	**NORSAR Array B**	**79.27**	**338**	P		**P**	**23 48 49.9**	**+1.5**
	0.8nm,0.7s,mb3.8,baz=30,slow=7.1,SNR=4.1							

*NEIC **08** 23:41:17.7±0.5,6.74N×73.00W,mb4.3/6,Error ellipse: s-maj=11.5km s-min=8.5km az=114.0*
*IDC **08** 23:41:18.4±1.1,6.80N×72.97W,h167km±12km,mb3.7/7, mb1 4.0/11,mb1mx3.7/23,MS3.9/2,Ms1 3.9/2, ms1mx3.0/19,Error ellipse: s-maj=20.6km s-min=12.4km az=114.0*
*FUNV **08** 23:41:18.3,6.84N×73.07W,h179km,MW3.6*
ISC 08 23:41:16.9±0.4,6.80N±0.06×72.96W±0.06,h172km±6km, n39,σ0§96/40,mb4.0/12,13C,Northern Colombia

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
VIGV	**El Vigia**	**2.12**	**34⇑**	*e*P		**P**	**23 42 01.5**	**+6.3**
VIGV				*e*S		**S**	**23 42 33.0**	**+8.4**
ROSC	**El Rosal**	**2.36**	**215**	P		**P**	**23 41 58.8**	**+0.9**
	173nm,0.3s,baz=116,slow=20,SNR=309							
ROSC				S		**S**	**23 42 28.9**	**-0.7**
	262nm,0.3s,baz=130,slow=18,SNR=11							
SOCV	**Socops**	**2.55**	**54⇑**	*e*P		**P**	**23 42 01.7**	**+1.4**
SOCV				*e*S		**S**	**23 42 32.9**	**-0.7**
SDV	**Santo Domingo**	**3.10**	**48**	P		**P**	**23 42 08.4**	**+1.4**
	132nm,0.3s,baz=243,slow=7.0,SNR=388							
SDV				S		**S**	**23 42 46.7**	**+1.2**
	63nm,0.3s,baz=56,slow=20,SNR=13							
ELOV	**Elorza**	**3.45**	**86⇑**	*e*P		**P**	**23 42 12.6**	**+1.0**
VIRV	**Villa del Rosa**	**3.72**	**8⇑**	*e*P		**P**	**23 42 13.7**	**-1.2**
VIRV				*e*S		**S**	**23 42 55.5**	**-4.1**
CURV	**Curarigua**	**4.36**	**43⇑**	*e*P		**P**	**23 42 23.5**	**+0.4**
DABV	**Dabajuro**	**4.70**	**29**	*e*P		**P**	**23 42 27.1**	**-0.4**
SIQV	**Siquisique**	**4.93**	**29⇑**	*e*P		**P**	**23 42 30.7**	**+0.1**
BAUV	**El Baul**	**5.32**	**66⇑**	*e*P		**P**	**23 42 35.0**	**-0.6**
MONV	**Montecano**	**5.91**	**30**	*e*P		**P**	**23 42 42.6**	**-0.8**
TURV	**Turiamo**	**6.23**	**54⇑**	*e*P		**P**	**23 42 47.4**	**-0.2**
CAOV	**Caicara del Or**	**6.61**	**85⇑**	*e*P		**P**	**23 42 52.1**	**-0.6**
MERV	**Las Mercedes**	**7.03**	**69**	*e*P		**P**	**23 42 58.0**	**-0.3**
BIRV	**Birongo**	**7.55**	**61⇑**	*e*P		**P**	**23 43 04.5**	**-0.7**
CUPV	**Cœpira**	**7.80**	**65⇑**	*e*P		**P**	**23 43 07.9**	**-0.5**
PARV	**Pariaguan**	**8.37**	**75⇑**	*e*P		**P**	**23 43 15.3**	**-0.6**
OTAV	**Otavalo**	**8.51**	**220**	*e*P		**P**	**23 43 16.8**	**-1.1**
	5.0nm,0.6s							
OTAV				*e*S		**S**	**23 44 56.3**	**+3.9**
PCRV	**Puerto La Cruz**	**8.89**	**67**	P		**P**	**23 43 25.2**	**+2.4**
	2.1nm,0.3s,baz=242,slow=6.6,SNR=11							
GUNV	**Guanoco**	**10.45**	**71**	*e*P		**P**	**23 43 42.4**	**-1.0**
SJG	**San Juan**	**13.06**	**30**	P		**P**	**23 44 16.4**	**-0.6**
	2.2nm,0.3s,baz=30,slow=22,SNR=3.5							
LPAZ	**La Paz**	**23.43**	**168**	P		**P**	**23 46 13.7**	**+1.9**
	1.5nm,0.3s,mb3.9,baz=342,slow=2.7,SNR=2.1							
LPAZ				pP			23 46 45.9	
	2.1nm,0.5s,baz=344,slow=12,SNR=6.0							
PLAL	**Pickwick Lake**	**31.32**	**336**	*e*P		**P**	**23 47 23.6**	**+0.3**
	6.0nm,0.8s,mb4.4							
BDFB	**Brasilia**	**33.28**	**132**	LR		LR	00 03 19.9	
	comp=Z,162nm,18.5s,baz=246,slow=40							
CCM	**Cathedral Cave**	**35.26**	**335⇑**	*i*P		**P**	**23 47 57.4**	**+0.5**
	11nm,0.7s,mb4.6							
CPUP	**Villa Florida**	**36.25**	**156**	P		**P**	**23 48 02.9**	**-2.5**
	27nm,2.2s,mb4.5							
TXAR	**Lajitas Array**	**36.60**	**312**	P		**P**	**23 48 08.8**	**+0.6**
	1.6nm,0.8s,mb3.7,baz=120,slow=10,SNR=4.0							
TUC	**Tucson**	**43.39**	**311**	P		**P**	**23 49 04.6**	**+0.4**
	2.2nm,1.4s,mb3.6							
ULM	**Lac du Bonnet**	**47.37**	**340**	P		**P**	**23 49 34.8**	**-0.5**
	4.1nm,0.4s,mb4.4,baz=150,slow=6.8,SNR=14							
SCHQ	**Schefferville**	**48.15**	**5**	P		**P**	**23 49 41.8**	**+0.4**
	4.5nm,0.9s,mb4.1,baz=233,slow=17,SNR=4.1							
PDAR	**Pinedale Array**	**48.19**	**324**	P		**P**	**23 49 42.3**	**+0.4**
	1.0nm,0.6s,mb3.6,baz=125,slow=8.2,SNR=7.4							
HWUT	**Hardware Ranch**	**48.72**	**321**	P		**P**	**23 49 44.8**	**-1.1**
	2.1nm,0.8s,mb3.8							
NVAR	**Mina Array Bea**	**51.62**	**315**	P		**P**	**23 50 08.9**	**+1.0**
	0.2nm,0.3s,mb3.3,baz=128,slow=5.6,SNR=3.7							
YKA	**Yellowknife Ar**	**63.34**	**340**	P		**P**	**23 51 29.2**	**-0.5**
	2.6nm,0.6s,mb4.3,baz=133,slow=6.6,SNR=134							
YKA				pP		pP	23 52 08.2	-2.0
	0.5nm,0.7s,baz=130,slow=7.0,SNR=3.9							
YKA	**Yellowknife Ar**	**63.34**	**340**	P		**P**	**23 51 29.2**	**-0.5**
YKA				pP		pP	23 52 08.2	-2.0
BRTR	**Keskin Array B**	**98.28**	**48**	LR		LR	00 35 24.3	
	comp=Z,61nm,18.1s,baz=65,slow=33							
ASAR	**Alice Springs**	**149.23**	**234**	PKPbc		PKPdf	00 00 47.4	+6.1
	1.9nm,0.9s,baz=114,slow=3.5,SNR=15							
WB2	**Warramunga Arr**	**150.46**	**241**	*e*P		PKPdf	00 00 50.4	+7.1
WRA	**Warramunga Arr**	**150.47**	**241**	PKPbc		PKPdf	00 00 50.6	+7.3
	1.1nm,0.7s,baz=109,slow=2.6,SNR=11							

*KRSC **08** 23:53:36.3±1.1,48.79N×156.57E,h19km±20km,ML4.7*
*IDC **08** 23:53:43.3±1.1,50.15N×154.99E,mb3.7/10,mb1 4.0/12, mb1mx3.9/25,ML3.8/2,MS3.3/2,Ms1 3.3/2,ms1mx2.7/28, Error ellipse: s-maj=32.1km s-min=21.1km az=133.0*
*MOS **08** 23:53:45.9±2.3,49.89N×154.93E,h33km,mb3.9/5,Error ellipse: s-maj=27.2km s-min=12.2km az=60.7*
*NEIC **08** 23:53:47.0±4.8,49.98N×155.03E,h28km±36km,mb4.1/2, Error ellipse: s-maj=23.6km s-min=11.9km az=135.0*
ISC 08 23:53:38.8±0.8,48.88N±0.05×156.56E±0.09,h49km±9km, n59,σ1§40/85,mb3.8/12,MS3.5/1,1C,East of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
SKR	**Severo-Kuril's**	**1.83**	**351**	*i* S		**S**	**23 54 32.1**	**+1.6**
SKR	**Severo-Kuril's**	**1.83**	**351**	*e*PN		**P**	**23 54 06.5**	**-2.0**
SKR				*i*			23 54 20.5	
SKR				pmax		pmax		
	comp=Z,620nm,0.4s							
SKR				pmax		pmax		
	comp=N,200μm,0.4s							
SKR				pmax		pmax		
	comp=E,80nm,0.4s							
SKR				smax				
	comp=E,2μm,0.3s							
SKR				smax				
	comp=N,830nm,0.5s							
SKR				smax				
	comp=N,2μm,2.0s							
SKR				smax				
	comp=E,2μm,2.0s							
ALID	**Alaid**	**2.10**	**342**	*e*P		**P**	**23 54 11.6**	**-0.7**
ALID				*i* S		**S**	**23 54 36.5**	**-0.7**
PAU	**Pauzhetka**	**2.60**	**3**	*e*P		**P**	**23 54 19.3**	**-0.1**
PAU				*e*S		**S**	**23 54 51.7**	**+1.8**
PAU				Smax				
	comp=E,1μm,0.3s							
MIPR	**Malaya Ipel'ka**	**3.41**	**2**	*e*P		**P**	**23 54 30.0**	**-0.8**
MIPR				*e*S		**S**	**23 55 08.8**	**-1.6**
RUS	**Russkaya**	**3.77**	**18**	P		**P**	**23 54 34.1**	**-1.9**
RUS				S		**S**	**23 55 16.8**	**-2.8**
RUS	**Russkaya**	**3.77**	**18**	*e*P		**P**	**23 54 34.4**	**-1.6**
RUS				*e*S		**S**	**23 55 18.8**	**-0.8**
GRL	**Gorelyy**	**3.80**	**14**	*e*P		**P**	**23 54 35.8**	**-0.6**
GRL				*e*S		**S**	**23 55 20.2**	**-0.2**
APC	**Apacha**	**4.07**	**5**	*e*P		**P**	**23 54 42.6**	**+2.4**
KRMR	**Karymshinskiy**	**4.08**	**13**	*e*P		**P**	**23 54 42.3**	**+1.9**
KRMR				*e*S		**S**	**23 55 30.4**	**+3.0**
PET	**Petropavlovsk**	**4.36**	**17**	*e*P		**P**	**23 54 44.9**	**+0.6**
PET				*i* S		**S**	**23 55 34.5**	**+0.1**
PET	**Petropavlovsk**	**4.36**	**17⇑**	*i*PN		**P**	**23 54 46.7**	**+2.4**
PET				*e*S		**S**	**23 55 37.6**	**+3.2**
PET				pmax		pmax		
	comp=Z,53nm,0.5s							
PET				smax				
	comp=E,295nm,0.6s							
PET				smax				
	comp=N,315nm,0.6s							
PET				MLR		MLR		
	comp=Z,188nm,15.0s							
PET	**Petropavlovsk**	**4.36**	**17**	*e*P		**P**	**23 54 44.9**	**+0.7**
PET				*e*S		**S**	**23 55 34.8**	**+0.4**
UGLR	**Uglovaya**	**4.57**	**17**	*e*P		**P**	**23 54 47.2**	**0.0**
UGLR				*e*S		**S**	**23 55 39.2**	**-0.4**
AVH	**Avacha**	**4.60**	**16**	*e*P		**P**	**23 54 47.9**	**+0.2**
AVH				*e*S		**S**	**23 55 41.2**	**+0.7**
KOK	**Koryaka**	**4.61**	**16**	*e*P		**P**	**23 54 48.0**	**+0.2**
KOK				*e*S		**S**	**23 55 41.6**	**+0.9**
SMAR	**Somma**	**4.61**	**17**	*e*P		**P**	**23 54 48.9**	**+1.0**
SMAR				*e*S		**S**	**23 55 42.4**	**+1.6**
NLC	**Nalytchevo**	**4.64**	**21**	P		**P**	**23 54 47.2**	**-1.1**
NLC				S		**S**	**23 55 39.0**	**-2.6**
NLC	**Nalytchevo**	**4.64**	**21**	*e*P		**P**	**23 54 46.8**	**-1.5**
NLC				*e*S		**S**	**23 55 38.6**	**-3.0**
SDLR	**Sedlovina**	**4.64**	**17**	*e*P		**P**	**23 54 47.8**	**-0.5**
SDLR				*e*S		**S**	**23 55 40.1**	**-1.5**
SPN	**Mys Shipunski**	**4.76**	**26**	P		**P**	**23 54 49.2**	**-0.7**
SPN				S		**S**	**23 55 43.4**	**-1.0**
SPN	**Mys Shipunski**	**4.76**	**26**	*e*P		**P**	**23 54 49.4**	**-0.5**
SPN				*e*S		**S**	**23 55 43.0**	**-1.4**
GNL	**Ganaly**	**4.90**	**10**	*e*P		**P**	**23 54 52.5**	**+0.6**
GNL				*e*S		**S**	**23 55 48.8**	**+0.7**
MKZ	**Mys Kozlova**	**6.53**	**27**	P		**P**	**23 55 12.4**	**-2.3**
MKZ				S		**S**	**23 56 24.5**	**-4.2**
MKZ	**Mys Kozlova**	**6.53**	**27**	*e*P		**P**	**23 55 13.2**	**-1.5**
MKZ				*e*S		**S**	**23 56 25.7**	**-3.0**
TUMR	**Tumrok**	**6.79**	**18**	*e*P		**P**	**23 55 19.4**	**+1.1**
TUMR				*e*S		**S**	**23 56 35.7**	**+0.7**
KUR	**Kuril'sk**	**6.97**	**242**	*e*PN		**P**	**23 55 21.0**	**+0.2**
KUR				pmax		pmax		
	comp=Z,100nm,0.7s							
KMNR	**Kamenistaya**	**7.25**	**17**	*e*P		**P**	**23 55 27.0**	**+2.3**
KMNR				*e*S		**S**	**23 56 45.9**	**-0.6**
KPT	**Kopyto**	**7.45**	**16**	*e*P		**P**	**23 55 28.4**	**+1.0**
KOZ	**Kozyrevsk**	**7.47**	**14**	*e*P		**P**	**23 55 29.2**	**+1.4**
ZLN	**Zelenaya**	**7.61**	**18**	*e*P		**P**	**23 55 28.5**	**-1.1**
KBTR	**Krutoberegovo**	**8.27**	**25**	*e*P		**P**	**23 55 37.7**	**-1.1**
KBTR				*e*S		**S**	**23 57 06.4**	**-5.5**
YSS	**Yuzh-Sakhalins**	**9.47**	**263**	*e*PN		**P**	**23 55 55.9**	**+0.5**
ASAJ	**Asahikawa**	**10.74**	**249**	Pn		**P**	**23 56 11.9**	**-0.6**
	comp=Z,3.4nm,0.3s,baz=88,slow=16,SNR=8.6							
ASAJ				LR		LR	23 59 56.3	
	comp=Z,96nm,19.6s,baz=331,slow=36							
ASAJ	**Asahikawa**	**10.74**	**249**	PN		**P**	**23 56 12.0**	**-0.6**
ASAJ				pmax		pmax		
	comp=Z,3.0nm,0.3s							
ASAJ				MLR		MLR		
	comp=Z,97nm,19.6s							
FX1	**Attu Island--F**	**11.22**	**63**	Pn		**P**	**23 56 19.5**	**+0.4**
	comp=Z,0.7nm,0.3s,baz=61,slow=22,SNR=2.7							
FX1				Sn		**S**	**23 58 14.8**	**-9.3**
	comp=Z,0.6nm,0.3s,baz=271,slow=22,SNR=1.8							
MAJO	**Matsushiro**	**18.21**	**234**	P		**P**	**23 57 55.0**	**+5.4**
	comp=Z,43nm,2.3s							
TIXI	**Tiksi**	**26.16**	**340**	*e*P		**P**	**23 59 06.2**	**-3.6**
TIXI				*e*		pP	23 59 17.5	-4.7
TIXI				pmax		pmax		
	comp=Z,20nm,0.9s,mb4.7							
TIXI	**Tiksi**	**26.16**	**340**	P		**P**	**23 59 06.9**	**-2.9**
ILAR	**Eielson Array**	**33.43**	**40**	P		**P**	**00 00 20.2**	**+5.7**
	comp=Z,0.6nm,0.8s,mb3.6,baz=253,slow=7.2,SNR=6.6							
ILAR	**Eielson Array**	**33.43**	**40**	P		**P**	**00 00 20.3**	**+5.8**
ILAR				pmax		pmax		
	comp=Z,1.0nm,0.8s							
INK	**Inuvik**	**38.60**	**34**	*e*P		**P**	**00 01 02.0**	**+3.8**
	comp=Z,2.4nm,1.0s,mb3.9							
YKA	**Yellowknife Ar**	**47.82**	**39**	P		**P**	**00 02 19.6**	**+6.8**
	comp=Z,0.3nm,0.7s,mb3.5,baz=296,slow=7.4,SNR=3.9							
YKA	**Yellowknife Ar**	**47.82**	**39**	P		**P**	**00 02 19.6**	**+6.8**
MKAR	**Makanchi Array**	**48.03**	**297**	P		**P**	**00 02 12.6**	**-2.1**
	comp=Z,0.8nm,0.8s,mb3.8,baz=59,slow=7.1,SNR=9.3							
MKAR				LR		LR	00 21 50.1	
	comp=Z,53nm,18.9s,MS3.5,baz=138,slow=36							
MKAR	**Makanchi Array**	**48.03**	**297**	P		**P**	**00 02 12.6**	**-2.1**
MKAR				pmax		pmax		
	comp=Z,1.0nm,0.8s							
MKAR				MLR		MLR		
	comp=Z,53nm,18.9s							
MKAR	**Makanchi Array**	**48.03**	**297**	P		**P**	**00 02 12.6**	**-2.1**
MKAR				LR		LR	00 21 50.1	
KURK	**Kurchatov**	**48.13**	**303**	*e*P		**P**	**00 02 12.9**	**-2.5**
BVAR	**Borovoye Array**	**51.30**	**309**	P		**P**	**00 02 37.4**	**-2.3**
	comp=Z,0.6nm,0.5s,mb3.8,baz=49,slow=9.9,SNR=4.9							
BRVK	**Borovoye**	**51.34**	**310**	*e*P		**P**	**00 02 36.9**	**-3.0**
CMAR	**Chiang Mai Arr**	**55.11**	**258**	P		**P**	**00 03 11.6**	**+3.2**
	comp=Z,0.7nm,0.7s,mb3.8,baz=34,slow=6.5,SNR=3.5							
CMAR	**Chiang Mai Arr**	**55.11**	**258**	P		**P**	**00 03 11.6**	**+3.3**
CMAR				pmax		pmax		
	comp=Z,1.0nm,0.7s							
FINES	**FINESS Array B**	**63.08**	**336**	P		**P**	**00 04 00.9**	**-2.0**
	comp=Z,0.3nm,0.5s,mb3.7,baz=33,slow=6.9,SNR=5.9							
WRA	**Warramunga Arr**	**71.32**	**202**	P		**P**	**00 05 09.9**	**+15**
	comp=Z,0.5nm,0.9s,mb3.5,baz=17,slow=6.4,SNR=2.7							
WRA	**Warramunga Arr**	**71.32**	**202**	P		**P**	**00 05 09.9**	**+15**
WRA				pmax		pmax		
	comp=Z,1.0nm,0.9s							
GERES	**GERESS Array B**	**77.52**	**336**	P		**P**	**00 05 31.1**	**+0.7**
	comp=Z,0.9nm,0.8s,mb3.8,baz=34,slow=4.8,SNR=9.3							
GERES	**GERESS Array B**	**77.52**	**336**	P		**P**	**00 05 31.1**	**+0.7**
GERES				pmax		pmax		
	comp=Z,1.0nm,0.8s							
BRTR	**Keskin Array B**	**78.38**	**319**	P		**P**	**00 05 36.1**	**+0.8**
	comp=Z,1.3nm,0.9s,mb3.8,baz=63,slow=2.8,SNR=5.9							
IDI	**Anoyia**	**85.82**	**322**	P		**P**	**00 06 17.7**	**+3.8**
	comp=Z,1.5nm,0.8s,mb4.3,baz=333,slow=22,SNR=3.0							

*WAR **08** 23:58:38.7,50.26N×18.96E,ML2.3,Mining Induced PRU **08** 23:58:41.3,50.28N×18.81E*
*NEIC **08** 23:58:42.5±1.7,50.23N×18.56E,h5km,Error ellipse: s-maj=21.0km s-min=11.9km az=187.0*
ISC 08 23:58:37.6±0.9,50.33N±0.06×18.92E±0.04,n9,σ1§00/17, Poland

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
RAC	**Raciborz**	**0.53**	**242**	*e*PG		**Pg**	**23 58 49.0**	**+0.8**
RAC				*e*SG		**Sg**	**23 58 56.0**	**+0.8**
OJC	**Ojcow**	**0.58**	**101**	*e*PG		**Pg**	**23 58 50.0**	**+0.9**
OJC				*e*SG		**Sg**	**23 58 58.0**	**+1.2**
OKC	**Ostrava-Krasne**	**0.70**	**225**	*e*PG		**Pg**	**23 58 52.1**	**+0.4**
OKC				*e*SG		**Sg**	**23 59 02.5**	**+1.5**
MORC	**Moravsky Berou**	**1.05**	**238**	*e*P		**Pb**	**23 58 58.0**	**-0.4**
MORC				*e*S		**Sb**	**23 59 11.8**	**-0.6**
NIE	**Niedzica**	**1.29**	**135**	*e*PG		**Pg**	**23 59 02.0**	**-1.3**
NIE				*e*SG		**Sg**	**23 59 19.0**	**-1.4**
DPC	**Dobruska-Polom**	**1.66**	**272**	*e*PG		**Pg**	**23 59 09.0**	**-1.8**
DPC				*e*SG		**Sg**	**23 59 32.5**	**-0.5**
VYHS	**Vyhne**	**1.84**	**182**	*e*PN		**Pn**	**23 59 12.1**	**+1.3**
VYHS				*e*SN		**Sn**	**23 59 34.1**	**-1.0**
UPC	**Upice**	**1.87**	**276**	*e*SG		**Sg**	**23 59 39.8**	**0.0**
CRVS	**Cervenica-Dubn**	**2.19**	**130**	*e*PN		**Pn**	**23 59 21.9**	**+6.2**
CRVS				*e*SN		**Sn**	**23 59 44.0**	**+0.1**

IDC 09 00:46:33.8±1.8,0.73S×125.62E,mb3.5/3,mb1 3.8/3, mb1mx3.6/15,Error ellipse: s-maj=165.0km s-min=25.2km az=64.0,Southern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
WRA	**Warramunga Arr**	**20.92**	**156**	P		P	00 51 17.5	-3.1
	1.4nm,0.6s,baz=334,slow=11,SNR=9.3							
WB2	**Warramunga Arr**	**20.92**	**156**	*e*P		P	00 51 17.5	-3.1
ASAR	**Alice Springs**	**24.18**	**161**	P		P	00 51 52.5	-0.4
	1.2nm,0.7s,baz=350,slow=13,SNR=22							
MKAR	**Makanchi Array**	**60.62**	**327**	P		P	00 56 46.5	-2.4
	0.3nm,0.4s,baz=126,slow=7.6,SNR=7.2							

*IDC **09** 00:55:53.2±1.0,24.38S×176.07W,mb4.0/6,mb1 4.3/8, mb1mx4.1/16,ML4.1/2,Error ellipse: s-maj=43.6km s-min=26.0km az=147.0*
*NEIC **09** 00:56:00.6±5.4,24.54S×176.05W,h57km±48km,mb4.2/3, Error ellipse: s-maj=33.0km s-min=23.6km az=170.0*
ISC 09 00:55:56.6±0.8,24.4S±0.2×176.2W±0.2,h33km,n14, σ0§92/12,mb4.0/9,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
URZ	**Urewera**	**14.99**	**201**	Pn		**P**	**00 59 28.2**	**+0.4**
	0.8nm,0.3s,baz=330,slow=9.5,SNR=3.8							
RAR	**Rarotonga**	**15.44**	**82**	Pn		**P**	**00 59 20.6**	**-13**
	1.0nm,0.3s,baz=333,slow=14,SNR=5.7							
RAR	**Rarotonga**	**15.44**	**82**	P		**P**	**00 59 20.0**	**-14**
ASAR	**Alice Springs**	**45.41**	**260**	P		**P**	**01 04 14.2**	**0.0**
	0.5nm,0.4s,mb3.7,baz=92,slow=6.7,SNR=19							
WRAB	**Tennant Creek**	**45.85**	**265**	*e*P		**P**	**01 04 17.3**	**-0.5**
	1.5nm,0.4s,mb4.3							
WRA	**Warramunga Arr**	**45.86**	**265**	P		**P**	**01 04 17.2**	**-0.7**
	0.6nm,0.3s,mb4.0,baz=99,slow=6.7,SNR=7.9							
SBA	**Scott Base**	**54.16**	**184**	P		**P**	**01 05 16.4**	**-4.1**
	2.3nm,0.9s,mb4.1							
MAW	**Mawson**	**78.52**	**200**	P		**P**	**01 07 55.8**	**+0.1**
	1.7nm,0.6s,mb4.2,slow=5.1,SNR=4.1							
NVAR	**Mina Array Bea**	**82.70**	**42**	P		**P**	**01 08 18.6**	**+0.1**
	0.3nm,0.3s,mb3.8,baz=236,slow=11,SNR=5.2							
TXAR	**Lajitas Array**	**87.73**	**56**	P		**P**	**01 08 43.4**	**-0.3**
	0.3nm,0.9s,mb3.5,baz=207,slow=2.8,SNR=3.5							
HLID	**Hailey**	**88.16**	**40**	P		**P**	**01 08 45.2**	**-0.2**
	0.6nm,0.7s,mb3.9							
CMAR	**Chiang Mai Arr**	**92.98**	**289**	P		**P**	**01 09 11.2**	**+2.7**
	0.7nm,0.5s,mb4.3,baz=146,slow=4.8,SNR=5.5							
AKASG	**Malin Array Be**	**147.19**	**330**	PKPbc

SNR=12
KBK Karagaybulak 8.20 27 P P 01 29 52.4 +1.4
SNR=14
CHMS Chumysh 8.43 25 P P 01 29 54.1 -0.1
SNR=9.3
JASL Jaisalmer 8.50 174 eP P 01 29 51.2 -3.9
USP Ospenovka 8.59 23 P P 01 29 56.4 +0.1
SNR=8.5
TKM2 Tokmak 2 8.67 28 P P 01 29 58.0 +0.5
SNR=14
NDI New Delhi 9.09 136 eP P 01 30 02.0 -1.3
NDI eS S 01 31 43.0 -2.2
KUDL Kundal 9.12 141 eP P 01 30 02.0 -1.6
KUDL AMb AMB 01 30 03.4
comp=Z,8.1nm,0.7s
KUDL i S S 01 31 42.9 -3.0
AYAN Aya Nagar 9.19 137 eP P 01 30 04.2 -0.5
AYAN AMb AMB 01 30 09.7
comp=Z,7.5nm,0.6s
AYAN eS S 01 31 46.4 -1.4
SONA Sohna 9.35 138 eP P 01 30 06.1 -0.7
SONA AMb AMB 01 30 07.2
comp=Z,10nm,0.4s
SONA eS S 01 31 48.7 -2.8
KOLN Koldanda 13.88 120 eP P 01 31 05.6 -1.9
comp=Z,6.2nm,0.3s
GKN Gorkha 14.49 117 eP P 01 31 14.1 -1.4
comp=Z,15nm,0.3s
MK31 Makanchi Array 14.65 35 P P 01 31 23.7 +6.2
comp=Z,7.5nm,0.8s,baz=218,slow=15,SNR=6.9
MKAR Makanchi Array 14.65 35 P P 01 31 17.3 -0.2
comp=Z,0.1nm,0.3s,baz=221,slow=15,SNR=6.5
KKN Kakani 15.08 116 eP P 01 31 22.6 -0.6
comp=Z,37nm,0.6s
PKI Pulchoki 15.29 116 eP P 01 31 24.3 -1.7
comp=Z,26nm,0.6s
GUN Gumba 15.45 115 eP P 01 31 27.3 -0.7
comp=Z,14nm,0.4s
AB31 Akbulak array 15.68 335 ⇑P P 01 31 23.4 -7.3
comp=Z,1.5nm,0.6s,slow=0.1,SNR=53
AB31 ⇓S S 01 34 06.2 -16
comp=Z,1.2nm,0.7s,baz=159,slow=23,SNR=2.5
AB31 Akbulak array 15.68 335 P P 01 31 23.7 -7.0
KURK Kurchatov 16.52 20 eP P 01 31 43.1 +1.7
VOSK Vostochnaya 17.32 2 ⇓P P 01 31 51.3 -0.1
comp=Z,4.2nm,1.5s
BVA0 Borovoye Array 17.61 1 ⇓P P 01 31 53.5 -1.4
comp=Z,0.5nm,0.9s,baz=185,slow=10,SNR=11
BVA0 Borovoye Array 17.61 1 iP P 01 31 56.4 +1.4
BVAR Borovoye Array 17.61 1 P P 01 31 53.8 -1.2
comp=Z,0.5nm,0.3s,baz=180,slow=10,SNR=8.1
BRVK Borovoye 17.64 1 eP P 01 31 53.2 -2.2
ZAL Zalesovo 21.23 25 P P 01 32 36.4 +1.2
comp=Z,7.0nm,0.4s,mb4.3,baz=163,slow=11,SNR=18
ZAL LR LR 01 42 01.0
comp=Z,28nm,19.1s,MS2.7,baz=184,slow=40
ZAL Zalesovo 21.23 25 P P 01 32 36.4 +1.3
ZAL pmax pmax
comp=Z,7.0nm,0.4s
ZAL MLR MLR
comp=Z,28nm,19.1s
SHL Shillong 21.23 112 eP P 01 32 39.0 +3.6
ZEI Tsey 21.48 298⇑eP P 01 32 41.9 +4.2
NVS Novosibirsk 21.49 21 iP P 01 32 40.2 +2.5
NVS pmax pmax
comp=Z,7.0nm,1.1s,mb3.9
NVS pmax pmax
comp=N,9.0nm,1.0s
SVE Sverdlovsk 22.34 346⇓eP P 01 32 38.3 -7.8
ARU Arti 22.41 343 eP P 01 32 43.4 -3.4
KIV Kislovodsk 22.59 300 eP P 01 32 48.1 -0.6
comp=N,2.4nm,0.4s,mb4.0
BRTR Keskin Array B 29.00 289 P P 01 33 49.5 +0.9
comp=N,0.3nm,0.5s,mb3.3,baz=80,slow=8.8,SNR=4.2
CMAR Chiang Mai Arr 30.69 116 P P 01 34 06.0 +2.2
comp=N,0.5nm,0.4s,mb3.7,baz=295,slow=8.8,SNR=5.5
CMAR Chiang Mai Arr 30.69 116 P P 01 34 06.1 +2.2
CMAR pmax pmax
comp=Z,1.0nm,0.4s
MLR Muntele Rosu 34.61 301 P P 01 34 37.0 -0.6
comp=Z,0.5nm,0.4s,mb3.8,baz=130,slow=8.1,SNR=3.5
MLR Muntele Rosu 34.61 301 P P 01 34 37.0 -0.6
MLR pmax pmax
comp=Z,1.0nm,0.4s
FINES FINESS Array B 37.94 327 P P 01 35 04.6 -0.9
comp=Z,0.6nm,0.8s,mb3.4,baz=113,slow=11,SNR=4.2
FINES FINESS Array B 37.94 327 P P 01 35 04.6 -0.9
FINES pmax pmax
comp=Z,1.0nm,0.8s
HFS Hagfors 43.42 323 P P 01 35 50.1 -0.5
comp=Z,1.9nm,0.7s,mb3.9,baz=113,slow=11,SNR=7.5
HFS Hagfors 43.42 323 P P 01 35 50.1 -0.5
HFS pmax pmax
comp=Z,2.0nm,0.7s
NB2 NORSAR Subarra 44.76 324 P P 01 35 59.7 -1.7
comp=Z,0.8nm,0.5s,mb3.8,baz=101,slow=7.9
NOA NORSAR Array B 44.76 324 P P 01 35 59.7 -1.7
comp=Z,0.7nm,0.4s,mb3.8,baz=101,slow=8.0,SNR=5.8
NOA NORSAR Array B 44.76 324 P P 01 35 59.7 -1.7
NOA pmax pmax
comp=Z,1.0nm,0.4s
INK Inuvik 75.11 9 P P 01 39 30.1 +0.9
comp=Z,0.4nm,0.5s,mb3.6,baz=25,slow=5.3,SNR=4.3
INK Inuvik 75.11 9 eP P 01 39 28.5 -0.7
WRA Warramunga Arr 82.13 121 P P 01 40 09.7 +1.2
comp=Z,0.3nm,0.7s,mb3.4,baz=322,slow=4.5,SNR=5.0
YKA Yellowknife Ar 82.36 2 P P 01 40 09.6 +0.9
comp=Z,0.2nm,0.9s,mb3.1,baz=352,slow=5.6,SNR=6.7
ASAR Alice Springs 84.32 124 P P 01 40 21.6 +2.0
comp=Z,0.3nm,0.6s,mb3.6,baz=307,slow=5.0,SNR=6.5

*TAP **09** 01:37:07.9,21.99N×121.57E,h8km,ML3.7*
*IDC **09** 01:37:10.8±1.4,22.31N×121.65E,mb3.5/5,mb1 3.7/5, mb1mx3.5/20,MS3.3/5,Ms1 3.4/5,ms1mx2.9/24,Error ellipse: s-maj=56.5km s-min=22.9km az=58.0*
*NEIC **09** 01:37:18.9±2.1,22.23N×121.52E,h61km±23km,Error ellipse: s-maj=26.4km s-min=16.7km az=60.0*
ISC 09 01:37:11.4±0.9,22.1N±0.1×121.4E±0.2,h8km,n9,σ1§76/6, mb3.5/5,MS3.3/4,Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
TATO	Taipei	2.92	2	eP		Pn		01 38 00.5	+1.4
JNU	Nakatsue	13.87	35	LR		LR		01 45 47.7	
	comp=Z,110nm,18.9s,baz=242,slow=38								
CMAR	Chiang Mai Arr	21.35	264	P		P		01 42 02.9	+1.4
	0.5nm,0.3s,mb3.3,baz=82,slow=6.9,SNR=4.6								
CMAR				LR		LR		01 51 47.9	
	comp=Z,30nm,20.0s,MS2.7,baz=180,slow=41								
ASAJ	Asahikawa	28.14	34	LR		LR		01 54 46.2	
	comp=Z,36nm,20.8s,MS3.0,baz=71,slow=38								
MKAR	Makanchi Array	40.02	318	P		P		01 44 46.5	-2.0
	1.0nm,0.9s,mb3.5,baz=106,slow=8.8,SNR=6.2								
WRA	Warramunga Arr	43.61	162	P		P		01 45 18.2	0.0
	0.6nm,0.7s,mb3.4,baz=344,slow=8.9,SNR=3.5								
ASAR	Alice Springs	47.04	164	P		P		01 45 45.7	+0.2
	0.2nm,0.5s,mb3.3,baz=343,slow=7.3,SNR=4.6								
FINES	FINESS Array B	73.38	330	P		P		01 48 44.1	-1.3
	0.8nm,0.8s,mb3.7,baz=56,slow=5.0,SNR=4.7								
FINES				LR		LR		02 24 07.4	
	comp=Z,29nm,18.9s,MS3.6,baz=179,slow=38								
NOA	NORSAR Array B	80.20	332	LR		LR		02 28 33.8	
	comp=Z,43nm,18.3s,MS3.8,baz=335,slow=38								

*NIED **09** 01:38:00,35.70N×142.10E,h8km,Mw3.9 Best double couple: M0 7.24×10^14 NP1:φs354°,δ66°,λ69°. NP2:φs217°,δ32°,λ129°.*
*JMA **09** 01:38:43.5±0.3,35.70N×142.14E,h28km,M3.6*
*NEIC **09** 01:38:47.4±1.3,35.55N×142.01E,h35km,Error ellipse: s-maj=37.6km s-min=14.9km az=49.0*
*IDC **09** 01:38:49.1±8.3,35.49N×141.89E,h46km±66km,mb3.5/5, mb1 3.6/6,mb1mx3.3/24,ML3.6/1,MS3.0/1,Ms1 3.0/1, ms1mx2.3/23,Error ellipse: s-maj=75.0km s-min=22.6km az=73.0*
ISC 09 01:38:43.2±2.0,35.66N±0.04×142.17E±0.09,h23km±12km, n23,σ0§97/30,mb3.7/5,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	1.07	273	P		Pn		01 39 02.1	-0.8
CHOJ				eS		Sb		01 39 16.4	0.0
BSO1	Boso 1	1.40	225	P		Pn		01 39 07.9	+0.3
BSO1				S		Sn		01 39 24.7	-0.8
BSO2	Boso 2	1.47	232	eS		Sn		01 39 28.6	+1.3
JHO	Hitachi	1.61	307	P		Pn		01 39 10.4	-0.2
BSO3	Boso 3	1.61	238	P		Pn		01 39 10.8	+0.2
BSO3				S		Sn		01 39 32.2	+1.5
JAG	Ashikaga	2.33	290	P		Pn		01 39 20.5	-0.4
JFT	Otama	2.37	322	P		Pn		01 39 22.3	+0.8
JFT				eS		Sn		01 39 48.2	-1.9
JIM2	Oshima 3	2.43	248	P		Pn		01 39 21.3	-1.1
JMM	Marumori	2.46	334	P		Pn		01 39 23.1	+0.3
JMM				eS		Sn		01 39 52.4	-0.1
JOD2	Odawara 2	2.55	262	eS		Sn		01 39 51.4	-3.2
JKT	Katashina	2.61	296	P		Pn		01 39 24.7	-0.2
JFY	Yanaizu	2.64	312	P		Pn		01 39 26.3	+0.9
JRY	Ryogami san	2.68	279	P		Pn		01 39 25.9	0.0
JHJ	Hachijo jima 2	3.21	219	P		Pn		01 39 33.1	-0.4
	22nm,0.3s,baz=254,slow=22,SNR=6.0								
JHJ				S		Sn		01 40 07.2	-4.3
	52nm,0.3s,baz=73,slow=21,SNR=9.7								
MAJO	Matsushiro	3.33	286	eP		Pn		01 39 35.2	+0.1
MAT	Matsushiro	3.33	286	P		Pn		01 39 35.5	+0.4
MAT				S		Sn		01 40 16.7	+2.3
MAT	Matsushiro	3.33	286	eP		Pn		01 39 36.0	+0.9
MAT				eS		Sn		01 40 24.0	+10
ASAJ	Asahikawa	8.45	2	LR		LR		01 45 10.6	
	comp=Z,98nm,18.6s,baz=328,slow=44								
MKAR	Makanchi Array	45.37	303	P		P		01 47 03.1	+1.7
	2.2nm,1.0s,mb3.9,baz=94,slow=9.4,SNR=8.6								
BVAR	Borovoye Array	51.95	313	P		P		01 47 52.0	-0.2
	0.6nm,0.9s,mb3.5,baz=59,slow=8.4,SNR=2.3								
WRA	Warramunga Arr	55.79	189	P		P		01 48 19.5	-1.5
	0.7nm,0.9s,mb3.7,baz=6.0,slow=7.5,SNR=3.0								
ASAR	Alice Springs	59.52	189	P		P		01 48 47.0	-0.2
	0.8nm,0.9s,mb3.7,baz=10.0,slow=6.8,SNR=4.5								
BRTR	Keskin Array B	80.22	312	P		P		01 50 54.1	+0.8
	1.2nm,1.1s,mb3.7,baz=45,slow=1.7,SNR=3.7								

CASC 09 01:39:06.2±2.0,11.52N×81.94W,MD4.1,ML3.6,1C-2D, North of Panama

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
TRTC	Tortuguero	1.98	242	⇓iP		Pn		01 39 39.7	-1.5
ICR	Volcan Irazu	2.40	231	eP		Pn		01 39 47.0	-0.4
ICR				eS		Sn		01 40 18.6	+0.7
VPS2	Volcan Poas 2	2.61	240⇑	eP		Pn		01 39 49.8	-0.5
VPS2				eS		Sn		01 40 22.7	-0.5
BUS	Buena Vista	2.64	223	eP		Pn		01 39 50.8	0.0
BUS				eS		Sn		01 40 25.6	+1.6
LCR2	La Lucha 2	2.69	229	eP		Pn		01 39 51.3	-0.1
LAJ	Bijagual	2.70	233	eP		Pn		01 39 58.4	+6.7
LAJ				eS		Sn		01 40 40.0	+14
PRS1	Puriscal	2.78	237	⇓eP		Pn		01 39 54.5	+1.7
PRS1				eS		Sn		01 40 31.1	+3.5
CGA2	Cerro Gallo 2	2.89	239	eP		Pn		01 39 53.3	-1.0
JCR	Jicaral	3.53	242	eP		Pn		01 40 02.0	-1.4
JCR				eS		Sn		01 40 46.8	+0.3
PYTN	Playitas	4.15	285	eP		Pn		01 40 11.3	-1.0
PYTN				eS		Sn		01 41 01.5	-0.7
MGAN	Managua	4.26	279	i		Pn		01 41 12.2	+58
	comp=N,184nm,0.5s								
QUIN	Quiabu	4.66	291	eP		Pn		01 40 17.3	-2.1
QUIN				eS		Sn		01 41 16.0	+1.0

*TAP **09** 01:59:33.8,21.77N×121.62E,h6km,ML4.0*
*IDC **09** 01:59:36.7±1.0,21.89N×121.72E,mb3.5/8,mb1 3.7/8, mb1mx3.6/20,MS3.0/1,Ms1 3.0/1,ms1mx2.5/24,Error ellipse: s-maj=43.4km s-min=21.4km az=63.0*
*JMA **09** 01:59:38.8±0.4,21.88N×121.87E,h34km*
*NEIC **09** 01:59:49.1±1.4,21.73N×121.46E,h101km±14km,Error ellipse: s-maj=18.9km s-min=12.4km az=71.0*
ISC 09 01:59:38.9±3.0,21.93N±0.08×121.83E±0.10,h28km±22km, n16,σ0§69/19,mb3.5/8,Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
YOJ	Yonaguni jima	2.75	23	P		Pn		02 00 22.6	+0.4
YOJ				eS		Sn		02 00 55.2	+0.4
IRIF	Iriomote-Funau	2.97	36	P		Pn		02 00 25.4	0.0
TATO	Taipei	3.05	354	P		Pn		02 00 38.0	+11
JKRS	Kuro-shima	3.05	41	P		Pn		02 00 27.0	+0.4
JKRS				eS		Sn		02 01 01.9	-0.7
JIJ	Ishigaki jima	3.23	41	P		Pn		02 00 28.9	-0.1
JIJ				S		Sn		02 01 06.0	-1.0
JTJ	Tarama	3.78	44	P		Pn		02 00 37.0	+0.1
JTJ				S		Sn		02 01 21.0	+0.1
JNU	Nakatsue	13.73	34	LR		LR		02 08 05.2	
	comp=Z,58nm,19.9s,baz=226,slow=37								
CMAR	Chiang Mai Arr	21.75	265	P		P		02 04 28.4	-1.9
	0.4nm,0.4s,mb3.2,baz=78,slow=8.3,SNR=2.7								
MKAR	Makanchi Array	40.38	318	P		P		02 07 16.5	+0.4
	1.4nm,0.8s,mb3.7,baz=106,slow=8.7,SNR=11								
WRA	Warramunga Arr	43.37	163	P		P		02 07 41.3	+0.4
	0.7nm,0.7s,mb3.5,baz=344,slow=8.4,SNR=4.5								
ASAR	Alice Springs	46.82	165	P		P		02 08 08.1	-0.4
	0.2nm,0.7s,mb3.2,baz=354,slow=8.2,SNR=4.5								
BVAR	Borovoye Array	49.80	322	P		P		02 08 31.6	+0.4
	0.6nm,0.6s,mb3.8,baz=101,slow=7.6,SNR=4.4								
FINES	FINESS Array B	73.69	330	P		P		02 11 11.6	-0.1
	0.8nm,1.0s,mb3.6,baz=76,slow=5.7,SNR=4.1								
NOA	NORSAR Array B	80.49	332	P		P		02 11 49.5	-0.1
	1.2nm,1.1s,mb3.7,baz=58,slow=3.9,SNR=2.8								
YKA	Yellowknife Ar	84.81	23	P		P		02 12 13.2	+1.5
	0.2nm,0.9s,mb3.3,baz=308,slow=4.7,SNR=4.1								
YKA	Yellowknife Ar	84.81	23	P		P		02 12 13.2	+1.5

WEL 09 02:07:28.6±0.3,36.55S×177.82E,h183km±4km,ML3.6/1, Error ellipse: s-maj=5.4km s-min=4.3km az=90.0,Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
MXZ	Matakaoa Point	1.09	159	PN		P		02 07 57.2	-0.3
MXZ				SN		S		02 08 19.0	-0.8
PUZ	Puketiti	1.56	167	PN		P		02 08 01.6	-0.2
PUZ				SN		S		02 08 26.0	-1.3
MWZ	Matawai	1.80	187	PN		P		02 08 04.1	-0.1
MWZ				SN		S		02 08 31.7	+0.2
URZ	Urewera	1.80	198	PN		P		02 08 04.0	-0.2
URZ				SN		S		02 08 30.8	-0.7
KNZ	Kokohu	2.47	183	PN		P		02 08 10.9	-0.8
BKZ	Black Stump Fm	2.82	201	PN		P		02 08 14.6	-1.2
MRZ	Mangatainoka R	4.47	202	PN		P		02 08 33.0	-3.5
MRZ				SN		S		02 09 24.0	-5.0
MTW	Mount Morrison	4.95	201	PN		P		02 08 38.9	-3.8
NNZ	Nelson	5.81	215	PN		P		02 08 49.8	-4.2
THZ	Tophouse	6.46	215	ePN		P		02 08 57.6	-4.8
KHZ	Kahutara	6.73	208	ePN		P		02 09 01.6	-4.4
MQZ	McQueen's Vall	8.17	207	SN		S		02 10 46.3	-10

*NIED **09** 02:08:00,41.50N×144.00E,h29km,Mw3.9 Best double couple: M0 7.25×10^14 NP1:φs3°,δ67°,λ68°. NP2:φs228°, δ31°,λ131°.*
*JMA **09** 02:08:54.7±0.2,41.51N×143.96E,h53km±2km,M3.6*
*NEIC **09** 02:08:58.3±3.6,41.58N×143.63E,h47km±47km,mb3.8/1, Error ellipse: s-maj=43.1km s-min=22.0km az=182.0*
*IDC **09** 02:09:02.7±7.8,41.59N×143.59E,h86km±50km,mb3.3/5, mb1 3.4/6,mb1mx3.2/23,ML3.0/1,MS2.8/2,Ms1 2.8/2, ms1mx2.3/23,Error ellipse: s-maj=63.0km s-min=31.2km az=170.0*
ISC 09 02:08:54.0±0.9,41.48N±0.05×144.02E±0.07,h44km±7km, n28,σ0§77/38,mb3.6/5,4C-1D,Hokkaido region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JEM	Erimo	0.84	310	⇓P		P		02 09 09.3	-0.2
JCH	Churui	1.24	337	⇑P		P		02 09 15.1	-0.1
JCH				eS		S		02 09 32.0	+1.0
JNBK	Urakawa-nobuka	1.24	311	⇑P		P		02 09 16.0	+0.8
JOB	Onbets	1.43	354	P		P		02 09 18.2	+0.2
JOB				eS		S		02 09 36.2	+0.4
JAK	Akkeshi	1.60	18	P		P		02 09 20.7	+0.4
JAK				eS		S		02 09 39.7	-0.2
JBT2	Biratori 2	1.79	317	P		P		02 09 23.7	+0.6
JAR	Ashorobuto	1.83	354	⇑P		P		02 09 23.3	-0.3
JAR				eS		S		02 09 44.3	-1.3
JFR	Furan	1.99	328	P		P		02 09 25.9	0.0
JNK	Nakash	2.17	13	P		P		02 09 28.8	+0.4
JNK				eS		S		02 09 53.1	-1.1
JANG	Nango	2.20	241	P		P		02 09 28.7	-0.1
JANG				eS		S		02 09 54.1	-0.8
JOT	Ohata	2.24	269	P		P		02 09 29.8	+0.4
JOT				eS		S		02 09 55.2	-0.8
NEM2	Nemuro 2	2.28	33	P		P		02 09 29.9	0.0
NEM2				eS		S		02 09 55.7	-1.2
JKB	Kayabe	2.28	281	P		P		02 09 30.2	+0.2
JKB				eS		S		02 09 57.0	0.0
JTM	Tenmabayashi	2.34	254	⇑P		P		02 09 31.4	+0.6
JTM				eS		S		02 09 57.6	-0.8
JEW	Eniwo	2.35	306	P		P		02 09 31.8	+0.8
ASAJ	Asahikawa	2.84	339	P		P		02 09 43.1	+5.2
	1.8nm,0.3s,baz=152,slow=6.3,SNR=4.7								
ASAJ				S		S		02 10 14.9	+3.7
	4.7nm,0.3s,baz=256,slow=8.6,SNR=4.3								
ASAJ				LR		LR		02 11 19.0	
	comp=Z,195nm,18.6s,baz=325,slow=52								
MAJO	Matsushiro	6.69	224	eP		P		02 10 32.2	0.0
JHJ	Hachijo jima 2	9.00	203	LR		LR		02 15 21.3	
	comp=Z,40nm,19.3s,baz=285,slow=42								
HIA	Hailar	18.70	303	P		P		02 13 09.3	-1.6
	3.5nm,0.5s								
ZAL	Zalesovo	40.59	309	P		P		02 16 29.7	-1.0
	1.1nm,0.7s,mb3.6,baz=225,slow=4.3,SNR=2.8								
MKAR	Makanchi Array	43.62	299	P		P		02 16 56.0	+0.5
	0.7nm,0.6s,mb3.6,baz=85,slow=9.2,SNR=9.0								
ILAR	Eielson Array	44.68	35	P		P		02 17 07.0	+3.2
	0.3nm,0.7s,mb3.3,baz=280,slow=11,SNR=4.5								
KURK	Kurchatov	44.92	305	eP		P		02 17 06.4	+0.5
KEV	Kevo	60.02	339	ep		P		02 18 58.7	+0.6
JOF	Joensuu	63.01	332	ep		P		02 19 17.4	-0.9
KAF	Kangasniemi	65.29	333	ep		P		02 19 33.0	0.0
	baz=47,slow=6.2								
FINES	FINESS Array B	65.83	332	P		P		02 19 36.9	+0.4
	1.2nm,0.5s,mb4.2,baz=50,slow=7.2,SNR=38								
AKASG	Malin Array Be	72.02	323	P		P		02 20 15.5	+0.8
	0.1nm,0.3s,mb3.2,baz=36,slow=5.2,SNR=4.4								

*NNC **09** 02:30:33.1±10.0,42.87N×77.54E,h6km±13km,mpv2.4, Error ellipse: s-maj=137.7km s-min=29.8km az=153.0*
*KNET **09** 02:30:37.7±0.5,42.86N×77.23E,h7km±2km,ml2.2, Error ellipse: s-maj=3.2km s-min=2.8km az=98.0*
ISC 09 02:30:35.8±1.0,42.81N±0.09×77.55E±0.08,h7km,n8, σ1§05/15,10C-7D,Lake Issyk-Kul region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ULHL	Ulahol	1.12	240	⇓P		Pb		02 30 56.2	-0.9
	5.6nm,0.1s,SNR=29								
ULHL				⇓S		Sb		02 31 10.3	-1.4
	20nm,0.1s								
TKM2	Tokmak 2	1.44	275	⇓P		Pn		02 31 00.6	-1.8
	3.6nm,0.1s,SNR=31								
TKM2				⇑S		Sb		02 31 19.2	-1.9
	28nm,0.1s								
KZA	Kyzart	1.85	248	⇓P		Pn		02 31 09.3	+1.0
	5.1nm,0.2s,SNR=5.0								
KZA				⇑S		Sn		02 31 33.3	+1.1
	8.0nm,0.2s								
CHMS	Chumysh	2.07	276	⇑P		Pn		02 31 11.7	+0.3
	5.4nm,0.2s,SNR=7.8								
CHMS				⇑S		Sn		02 31 37.7	+0.1
	15nm,0.2s								
AAK	Ala-Archa	2.26	267	⇓P		Pn		02 31 15.2	+1.1
	6.5nm,0.3s,SNR=9.4								
AAK				⇓S		Sn		02 31 44.2	+1.7
	13nm,0.3s								
USP	Ospenovka	2.29	283	⇑P		Pn		02 31 14.8	+0.3
	7.0nm,0.2s,SNR=20								
USP				⇑S		Sn		02 31 43.6	+0.4
	16nm,0.2s								
KK31	Karatay Array	5.18	276	⇓Pg		Pg		02 32 07.4	-12
	0.2nm,0.3s,baz=91,slow=16,SNR=5.7								
KK31				⇑Lg				02 33 13.6	
	1.7nm,0.7s,baz=91,slow=29,SNR=7.9								
MK31	Makanchi Array	5.22	39	⇑Pn		Pn		02 31 56.1	0.0
	0.3nm,0.7s,baz=218,slow=16								
MK31				⇑Sn		Sn		02 32 57.1	-0.2
	0.4nm,0.5s,baz=214,slow=24,SNR=4.8								
MK31				⇑Lg				02 33 17.0	
	0.8nm,0.6s,baz=214,slow=28,SNR=6.9								

*NEIC **09** 02:45:49.7±9.5,51.48N×16.30E,h5km,Error ellipse: s-maj=110.0km s-min=15.2km az=54.0*
*PRU **09** 02:45:49.9,51.48N×16.09E*
*WAR **09** 02:45:51.3,51.50N×16.09E,ML2.5,Mining Induced*
ISC 09 02:45:49.7±1.6,51.43N±0.07×15.92E±0.08,n9,σ0§85/15, Poland

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
KSP	Ksiaz	0.63	158	ePG		Pg		02 46 03.0	+0.7
KSP				eSG		Sg		02 46 11.0	+0.3
UPC	Upice	0.92	176	ePG		Pg		02 46 08.6	+0.4
DPC	Dobruska-Polom	1.11	167	ePG		Pg		02 46 11.3	-0.6
DPC				eSG		Sg		02 46 26.2	-0.4
	2.5nm,0.2s								
PVCC	Panska Ves	1.24	224	ePG		Pg		02 46 15.7	+1.2
PRU	Pruhonice	1.69	212	ePG		Pg		02 46 23.8	+0.4
PRU				eSG		Sg		02 46 46.9	+1.0
	2.0nm,0.3s								
CLL	Collm	1.83	267	ePG		Pg		02 46 25.0	-1.3
CLL				i				02 46 31.6	
CLL				i SG		Sg		02 46 51.5	+0.7
CLL	Collm	1.83	267	ePg		Pg		02 46 25.0	-1.3
CLL				i Sg		Sg		02 46 51.5	+0.7
OKC	Ostrava-Krasne	2.13	137	eSG		Sg		02 46 56.1	-4.6
KHC	Kasperske Hory	2.75	214	ePG		Pg		02 46 43.7	-0.9
KHC				eSG		Sg		02 47 19.8	-1.4

*IDC **09** 02:47:05.2±0.9,0.14S×124.42E,mb3.9/4,mb1 4.0/5, mb1mx3.7/17,ML3.1/1,Error ellipse: s-maj=96.4km s-min=20.9km az=67.0*
*NEIC **09** 02:47:06.0±0.8,0.47N×125.66E,h10km,mb4.3/1,Error ellipse: s-maj=36.4km s-min=12.0km az=63.0*
ISC 09 02:47:07.6±0.8,0.4N±0.1×125.6E±0.2,h33km,n11, σ0§85/10,mb3.9/5,Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
FITZ	Fitzroy Crossi	18.43	180	P		P		02 51 16.6	-5.8
	0.1nm,0.3s,baz=17,slow=11,SNR=2.4								
WRAB	Tennant Creek	21.99	158	eP		P		02 52 00.4	-0.2
	9.6nm,0.8s,mb4.3								
WRA	Warramunga Arr	21.99	158	P		P		02 51 59.0	-1.7
	1.1nm,0.6s,mb3.4,baz=332,slow=10,SNR=16								
WRA				PcP		PcP		02 55 59.5	+0.3
	1.8nm,1.3s,baz=348,slow=1.9,SNR=3.7								
WB2

*IDC **09** 03:34:37.8±2.1,14.60N×53.78E,mb3.7/6,mb1 3.9/6, mb1mx3.6/20,Error ellipse: s-maj=70.6km s-min=28.8km az=63.0*

ISC 09 03:34:37.6±1.9,14.7N±0.3×53.7E±0.4,h10km,n6,σ0§63/6, mb3.7/6,Owen Fracture Zone region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MKAR	**Makanchi Array**	**39.97**	**31**	P	**P**	**03 42 13.8**	**-0.2**
	0.6nm,0.6s,mb3.5,baz=211,slow=8.4,SNR=6.0						
BVAR	**Borovoye Array**	**40.52**	**16**	P	**P**	**03 42 18.6**	**+0.2**
	0.6nm,0.6s,mb3.4,baz=194,slow=6.1,SNR=4.7						
FINES	**FINESS Array B**	**50.76**	**343**	P	**P**	**03 43 39.1**	**-0.6**
	0.9nm,0.8s,mb3.8,baz=157,slow=11,SNR=2.1						
ARCES	**ARCESS Array B**	**57.63**	**349**	P	**P**	**03 44 30.6**	**+0.6**
	2.0nm,0.8s,mb4.2,baz=135,slow=5.1,SNR=5.5						
WRA	**Warramunga Arr**	**86.43**	**112**	P	**P**	**03 47 21.8**	**-0.5**
	0.3nm,0.8s,mb3.6,baz=293,slow=4.5,SNR=3.5						
ASAR	**Alice Springs**	**87.13**	**115**	P	**P**	**03 47 26.1**	**+0.5**
	0.4nm,0.6s,mb3.9,baz=296,slow=5.4,SNR=5.4						

*ISK **09** 03:55:44.4,36.82N×34.76E,h9km,MD3.8*
*NIC **09** 03:55:48.2±0.4,36.56N×34.63E,h76km,mb4.1,ML3.7, MW3.2*
*NSSC **09** 03:55:52.2,36.73N×35.35E,h15km±5km*

ISC 09 03:55:44.2±0.9,36.75N±0.02×34.77E±0.03,h5km±6km, n34,σ1§27/52,5C-4D,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CEYT	**Ceyhan**	**0.83**	**71**	*i* PG	**Pg**	**03 56 01.0**	**+0.3**
IKL	**Isikli**	**1.01**	**240**	*i* PG	**Pg**	**03 56 04.7**	**+0.4**
COBT	**Iskenderun**	**1.22**	**100**	⇑P	**Pb**	**03 56 07.7**	**+0.4**
COBT				*i* S	**Sb**	**03 56 25.3**	**+2.1**
HTY	**Hatay**	**1.27**	**119**	*i* PN	**Pn**	**03 56 09.3**	**+0.8**
HTY				*i* SN	**Sn**	**03 56 28.0**	**+1.9**
ARNB	**Al Arnab**	**1.31**	**132**	⇓P	**Pb**	**03 56 10.7**	**+1.7**
ARNB				⇑S	**Sb**	**03 56 26.2**	**+0.2**
NIG	**Nigde**	**1.37**	**355**	*i* PN	**Pn**	**03 56 09.2**	**-0.8**
DRWC	**Darouich**	**1.53**	**94**	⇑P	**Pn**	**03 56 12.1**	**-0.2**
DRWC				⇑S	**Sb**	**03 56 26.9**	**-5.4**
BTCH	**Batrach**	**1.54**	**117**	⇑P	**Pn**	**03 56 13.4**	**+1.1**
BTCH				⇑S	**Sb**	**03 56 28.9**	**-3.6**
SLNF	**Slenfeh**	**1.64**	**134**	⇑P	**Pn**	**03 56 15.5**	**+1.6**
SLNF				⇑S	**Sb**	**03 56 34.3**	**-1.2**
WRDH	**Warideh**	**1.82**	**132**	⇓P	**Pn**	**03 56 18.1**	**+1.7**
WRDH				⇓S	**Sn**	**03 56 39.0**	**-1.0**
PHNC	**Paralimni**	**1.84**	**199**	P	**Pn**	**03 56 15.8**	**-0.9**
PHNC				S	**Sn**	**03 56 42.3**	**+1.8**
HDMB	**Hadim**	**1.84**	**277**	PN	**Pn**	**03 56 17.1**	**+0.4**
HDMB				SN	**Sn**	**03 56 40.9**	**+0.2**
GAZ	**Gaziantep**	**2.00**	**77**	PN	**Pn**	**03 56 18.4**	**-0.6**
MAMC	**Mammari**	**2.01**	**219**	P	**Pn**	**03 56 18.0**	**-1.2**
AVNT	**Avonos**	**2.03**	**2**	⇑*i*P	**Pn**	**03 56 17.9**	**-1.6**
AVNT				*i* S	**Sn**	**03 56 45.2**	**-0.3**
CSS	**Prodhromos**	**2.13**	**214**	⇓P	**Pn**	**03 56 18.6**	**-2.2**
CSS				S	**Sn**	**03 56 42.9**	**-5.0**
LEF	**Lefka**	**2.23**	**224**	PN	**Pn**	**03 56 22.5**	**+0.3**
BNN	**Bunyan**	**2.27**	**22**	PN	**Pn**	**03 56 21.9**	**-1.0**
GZT	**Gaziantep**	**2.32**	**74**	*i* P	**Pn**	**03 56 22.2**	**-1.4**
GZT				*i* S	**Sn**	**03 57 02.0**	**+9.2**
ALFC	**Alevga**	**2.37**	**229**	⇑P	**Pn**	**03 56 22.8**	**-1.4**
	9.9nm,0.2s						
ALFC				S	**Sn**	**03 56 49.7**	**-4.3**
SZAC	**Souni-Zanaja**	**2.51**	**218**	P	**Pn**	**03 56 26.7**	**+0.4**
	3.9nm,0.2s						
SZAC				S	**Sn**	**03 57 00.1**	**+2.5**
HWQ	**Hawqa**	**2.64**	**158**	*i* PG	**Pn**	**03 56 28.3**	**+0.1**
	baz=57,slow=2.4						
HWQ				*i* SG	**Sn**	**03 56 59.0**	**-2.0**
PPCY	**Paphos**	**2.71**	**227**	P	**Pn**	**03 56 30.7**	**+1.6**
KAMT	**Kaman**	**2.75**	**343**	PN	**Pn**	**03 56 28.8**	**-0.9**
YOZ	**Yozgat**	**2.92**	**8**	*e*PN	**Pn**	**03 56 32.2**	**0.0**
BHL	**Bhannes**	**2.93**	**165**	*i* PG	**Pn**	**03 56 31.6**	**-0.6**
BHL				*i* SG	**Sn**	**03 57 05.6**	**-2.6**
KIZT	**Kizilcal**	**3.12**	**314**	*e*PN	**Pn**	**03 56 34.2**	**-0.9**
MYA	**Malataya**	**3.31**	**60**	*e*PN	**Pn**	**03 56 36.5**	**-1.2**
SVSK	**Karacayir**	**3.62**	**28**	*e*PN	**Pn**	**03 56 40.8**	**-1.3**
CTKT	**Corum**	**3.87**	**0**	P	**Pn**	**03 56 46.6**	**+1.0**
ELDT	**Eldivan**	**3.88**	**345**	⇑*i*P	**Pn**	**03 56 49.9**	**+4.0**
ELDT				*i* S	**Sn**	**03 57 35.1**	**+2.7**
ELL	**Elmali**	**3.90**	**271**	*e*PN	**Pn**	**03 56 45.8**	**-0.3**
BOYT	**Boyabat**	**4.67**	**1**	*i* P	**Pn**	**03 56 57.5**	**+0.4**
BALT	**Daday**	**4.90**	**348**	⇑*i*P	**Pb**	**03 57 12.5**	**+2.2**
BALT				*i* S	**Pg**	**03 57 17.8**	**-4.2**

*NIED **09** 03:59:00,42.50N×145.10E,h29km,Mw4.1 Best double couple: M0 1.6×10^15 NP1:φs19°,δ73°,λ67°. NP2:φs254°, δ28°,λ141°.*
*MOS **09** 03:59:02.4±1.2,42.42N×144.99E,h33km,mb4.8/2,Error ellipse: s-maj=34.9km s-min=15.2km az=91.2*
*JMA **09** 03:59:04.6,42.51N×145.06E,h43km±1km,M4.2*
*NEIC **09** 03:59:05.6±1.3,42.50N×144.95E,h41km±13km,mb4.5/9, Error ellipse: s-maj=10.6km s-min=7.8km az=160.0*
*IDC **09** 03:59:07.2±3.4,42.49N×144.91E,h58km±29km,mb3.8/17, mb1 4.0/18,mb1mx3.9/26,ML4.5/1,MS3.4/3,Ms1 3.4/3, ms1mx2.8/31,Error ellipse: s-maj=19.0km s-min=16.8km az=148.0*

ISC 09 03:59:04.2±0.7,42.50N±0.05×145.06E±0.06,h48km±5km, n53,σ0§85/62,mb4.2/26,MS3.7/3,3C,Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAK	**Akkeshi**	**0.57**	**332**	P	**P**	**03 59 16.0**	**-0.2**
JAK				*e*S	**S**	**03 59 25.0**	**0.0**
JOB	**Onbets**	**0.99**	**295**	P	**P**	**03 59 22.3**	**+0.3**
NEM2	**Nemuro 2**	**1.00**	**30**	P	**P**	**03 59 22.3**	**+0.2**
NEM2				*e*S	**S**	**03 59 35.3**	**-0.1**
JNK	**Nakash**	**1.12**	**347**	P	**P**	**03 59 23.6**	**-0.1**
JNK				*e*S	**S**	**03 59 37.3**	**-1.0**
JAR	**Ashorobuto**	**1.24**	**311**	P	**P**	**03 59 25.4**	**-0.1**
JCH	**Churui**	**1.26**	**276**	P	**P**	**03 59 26.5**	**+0.7**
JCH				*e*S	**S**	**03 59 43.4**	**+1.5**
JRA	**Rausu**	**1.44**	**2**	P	**P**	**03 59 28.5**	**+0.1**
JRA				*e*S	**S**	**03 59 46.1**	**-0.3**
JEM	**Erimo**	**1.49**	**252**	P	**P**	**03 59 30.9**	**+1.7**
YUK	**Yuzh-Kuril'sk**	**1.64**	**20**	⇑*i*PN	**P**	**03 59 30.6**	**-0.7**
YUK				*i* S	**S**	**03 59 50.9**	**-0.4**
YUK				pmax	pmax		
	comp=Z,840nm,0.3s						
YUK				smax			
	comp=N,4μm,0.9s						
YUK				smax			
	comp=E,8μm,0.7s						
YUK				smax			
	comp=N,3μm,0.5s						
YUK				smax			
	comp=E,4μm,0.5s						
ASAJ	**Asahikawa**	**2.42**	**313**	P	**P**	**03 59 43.4**	**+1.1**
	comp=E,74nm,0.3s,baz=159,slow=12,SNR=156						
ASAJ				S	**S**	**04 00 15.5**	**+4.7**
	comp=E,45nm,0.3s,baz=36,slow=23,SNR=12						
ASAJ				LR	LR	04 00 47.0	
	comp=E,447nm,20.4s,baz=330,slow=42						
KUR	**Kuril'sk**	**3.41**	**36**	*e*PN	**P**	**03 59 56.3**	**+0.1**
KUR				*e*S	**S**	**04 00 36.0**	**+0.3**
KUR				pmax	pmax		
	comp=Z,90nm,0.5s						
KUR				smax			
	comp=N,240nm,0.6s						
KUR				smax			
	comp=E,190nm,0.6s						
YSS	**Yuzh-Sakhalins**	**4.75**	**341**	*e*PN	**P**	**04 00 14.8**	**-0.4**
YSS				MLR	MLR		
	comp=Z,400nm,15.0s						
YSS				MLR	MLR		
	comp=E,300nm,14.0s						
MAJO	**Matsushiro**	**7.96**	**224**	*e*P	**P**	**04 00 57.7**	**-2.3**
	comp=E,16nm,0.4s						
MAT	**Matsushiro**	**7.96**	**224**	P	**P**	**04 00 58.0**	**-2.0**
MAT				S	**S**	**04 02 30.1**	**+0.5**
MAT	**Matsushiro**	**7.96**	**224**	*e*P	**P**	**04 00 58.0**	**-2.0**
	comp=E,13nm,0.5s						
MAT				*e*S	**S**	**04 02 40.0**	**+10**
ULN	**Ulaanbaatar**	**27.13**	**295**	*e*P	**P**	**04 04 44.0**	**-0.6**
	comp=E,3.2nm,0.6s,mb4.0						
SONM	**Songino Array**	**27.57**	**295**	P	**P**	**04 04 48.7**	**+0.1**
	comp=E,17nm,1.1s,mb4.6,baz=81,slow=8.3,SNR=11						
ZAK	**Zakamensk**	**29.53**	**300**	*e*P	**P**	**04 05 06.0**	**0.0**
ZAL	**Zalesovo**	**40.56**	**308**	P	**P**	**04 06 39.5**	**-0.7**
	comp=E,2.8nm,0.4s,mb4.3,baz=306,slow=6.0,SNR=7.3						
IMA	**Indian Mountai**	**40.57**	**33**	*e*P	**P**	**04 06 41.6**	**+1.5**
	comp=E,15nm,0.6s,mb4.8						
ILAR	**Eielson Array**	**43.40**	**35**	P	**P**	**04 07 03.1**	**-0.1**
	comp=E,2.4nm,0.6s,mb4.1,baz=264,slow=6.4,SNR=30						
MKAR	**Makanchi Array**	**43.82**	**298**	P	**P**	**04 07 06.5**	**-0.4**
	comp=E,2.2nm,0.8s,mb4.0,baz=80,slow=7.4,SNR=15						
KURK	**Kurchatov**	**44.97**	**304**	⇑*i*P	**P**	**04 07 16.0**	**0.0**
CMAR	**Chiang Mai Arr**	**45.70**	**253**	LR	LR	04 26 26.0	
	comp=E,45nm,18.7s,MS3.4,baz=55,slow=36						
INK	**Inuvik**	**48.25**	**30**	P	**P**	**04 07 41.9**	**+0.2**
	comp=E,1.5nm,0.5s,mb4.3,baz=312,slow=5.4,SNR=24						
INK	**Inuvik**	**48.25**	**30**	*e*P	**P**	**04 07 42.3**	**+0.6**
	comp=E,2.0nm,0.7s,mb4.3						
BRVK	**Borovoye**	**49.17**	**310**	*e*P	**P**	**04 07 49.1**	**+0.1**
GUN	**Gumba**	**49.56**	**273**	*e*P	**P**	**04 07 52.0**	**-0.3**
	comp=E,12nm,0.5s,mb5.2						
KKN	**Kakani**	**50.07**	**273**	*e*P	**P**	**04 07 55.2**	**-1.0**
PKI	**Pulchoki**	**50.09**	**273**	*e*P	**P**	**04 07 57.6**	**+1.2**
DMN	**Daman**	**50.29**	**273**	*e*P	**P**	**04 07 58.3**	**+0.4**
	comp=E,4.2nm,0.4s,mb4.8						
KOLN	**Koldanda**	**51.32**	**274**	*e*P	**P**	**04 08 05.8**	**+0.1**
	comp=E,7.0nm,0.6s,mb4.8						
ARU	**Arti**	**54.22**	**317**	*e*P	**P**	**04 08 26.1**	**-0.7**
	comp=E,5.6nm,0.9s,mb4.5						
YKA	**Yellowknife Ar**	**57.69**	**33**	P	**P**	**04 08 53.6**	**+2.0**
	comp=E,0.6nm,0.7s,mb3.8,baz=303,slow=7.0,SNR=18						
KEV	**Kevo**	**59.34**	**339**	*e*p	**P**	**04 09 01.3**	**-1.8**
ARCES	**ARCESS Array B**	**59.88**	**339**	P	**P**	**04 09 06.1**	**-0.8**
	comp=E,2.9nm,0.9s,mb4.3,baz=37,slow=6.1,SNR=6.5						
ARCES	**ARCESS Array B**	**59.88**	**339**	P	**P**	**04 09 06.1**	**-0.8**
JOF	**Joensuu**	**62.48**	**332**	*e*p	**P**	**04 09 23.5**	**-0.9**
WRA	**Warramunga Arr**	**62.91**	**191**	P	**P**	**04 09 26.5**	**-1.4**
	comp=E,0.2nm,0.5s,mb3.5,baz=11,slow=6.8,SNR=5.5						
KAF	**Kangasniemi**	**64.74**	**333**	*e*p	**P**	**04 09 38.4**	**-0.7**
	comp=E,1.5nm,0.4s,mb4.4						
KAF	**Kangasniemi**	**64.74**	**333**	*e*P	**P**	**04 09 38.4**	**-0.7**
KAF				pmax	pmax		
	comp=Z,2.0nm,0.4s,mb4.5						
FINES	**FINESS Array B**	**65.29**	**332**	P	**P**	**04 09 42.0**	**-0.6**
	comp=Z,3.9nm,0.6s,mb4.6,baz=49,slow=7.6,SNR=46						
ASAR	**Alice Springs**	**66.63**	**191**	P	**P**	**04 09 52.0**	**+0.1**
	comp=Z,0.3nm,0.6s,mb3.5,baz=9.1,slow=5.6,SNR=6.9						
BOZ	**Bozeman (W)**	**68.88**	**47**	*e*P	**P**	**04 10 07.0**	**+1.4**
	comp=Z,0.9nm,0.6s,mb3.9						
KIV	**Kislovodsk**	**69.45**	**311**	⇑*i*P	**P**	**04 10 10.2**	**+1.1**
KIV				*e*		04 10 32.9	
KIV				*e*		04 12 43.3	
KIV				pmax	pmax		
	comp=Z,8.0nm,1.0s,mb4.6						
KIV				MLR	MLR		
	comp=Z,100nm,20.0s,MS4.1						
NVAR	**Mina Array Bea**	**69.54**	**56**	P	**P**	**04 10 10.5**	**+0.8**
	comp=Z,0.5nm,0.7s,mb3.6,baz=297,slow=4.0,SNR=2.3						
NB2	**NORSAR Subarra**	**70.21**	**338**	P	**P**	**04 10 13.3**	**-0.1**
	comp=Z,2.5nm,0.7s,mb4.2,baz=34,slow=6.2						
NOA	**NORSAR Array B**	**70.21**	**338**	P	**P**	**04 10 13.2**	**-0.2**
	comp=Z,2.3nm,0.7s,mb4.2,baz=36,slow=6.1,SNR=10						
HFS	**Hagfors**	**70.24**	**336**	P	**P**	**04 10 13.5**	**-0.1**
	comp=Z,3.7nm,0.7s,mb4.5,baz=53,slow=7.4,SNR=16						
AKASG	**Malin Array Be**	**71.67**	**323**	P	**P**	**04 10 22.1**	**-0.2**
	comp=Z,0.9nm,0.4s,mb4.1,baz=42,slow=6.0,SNR=6.9						
PDAR	**Pinedale Array**	**71.89**	**48**	P	**P**	**04 10 24.9**	**+1.1**
	comp=Z,0.5nm,0.6s,mb3.6,baz=297,slow=3.3,SNR=3.7						
BRTR	**Keskin Array B**	**77.28**	**313**	P	**P**	**04 10 55.5**	**+0.6**
	comp=Z,0.3nm,0.5s,mb3.5,baz=90,slow=4.9,SNR=3.5						
BRTR				LR	LR	04 51 50.4	
	comp=Z,29nm,20.2s,MS3.6,baz=120,slow=41						
EKA	**Eskdalemuir Ar**	**78.86**	**342**	P	**P**	**04 11 03.8**	**+0.5**
	comp=Z,1.0nm,0.5s,mb4.0,baz=20,slow=4.9,SNR=7.8						

*PRU **09** 04:09:58.8,51.50N×16.09E*
*WAR **09** 04:09:59.3,51.51N×16.08E,h1km,Location given by Rudna mine, origin time based upon KSP*
*NEIC **09** 04:10:02.3±1.4,51.29N×15.74E,h5km,ML2.6(VIE), ML2.1(BRG),Error ellipse: s-maj=17.6km s-min=7.7km az=196.0*

ISC 09 04:09:56.6±0.8,51.49N±0.04×16.07E±0.04,n15,σ1§07/33, 1C,Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.66**	**168**	*e*Pg	**Pg**	**04 10 11.7**	**+1.9**
KSP				*e*Sg	**Sg**	**04 10 20.6**	**+2.0**
KSP	**Ksiaz**	**0.66**	**168**	*i* PG	**Pg**	**04 10 11.7**	**+1.9**
KSP				*e*SG	**Sg**	**04 10 20.7**	**+2.1**
KSP	**Ksiaz**	**0.66**	**168**	*i* Pg	**Pg**	**04 10 11.7**	**+1.9**
KSP				*e*Sg	**Sg**	**04 10 20.5**	**+1.9**
UPC	**Upice**	**0.98**	**182**	*e*PG	**Pg**	**04 10 17.8**	**+1.6**
DPC	**Dobruska-Polom**	**1.15**	**172**	*e*Pg	**Pg**	**04 10 20.5**	**+0.9**
DPC				*e*SG	**Sg**	**04 10 35.4**	**+0.5**
	13nm,0.2s						
PVCC	**Panska Ves**	**1.35**	**225**	*e*PG	**Pg**	**04 10 24.4**	**+0.8**
BRG	**Berggiesshubel**	**1.48**	**246**	*e*Pn	**Pn**	**04 10 25.6**	**+1.1**
BRG				*i* Pg	**Pg**	**04 10 26.6**	**+0.5**
BRG				*i* Sg	**Sg**	**04 10 46.9**	**+1.2**
PRU	**Pruhonice**	**1.79**	**214**	*e*PN	**Pn**	**04 10 29.2**	**+0.2**
PRU				PG	**Pg**	**04 10 31.8**	**-0.5**
PRU				*i* x	x	04 10 49.0	
PRU				SN	**Sn**	**04 10 52.5**	**-0.3**
PRU				SG	**Sg**	**04 10 55.9**	**-0.3**
	11nm,0.2s						
CLL	**Collm**	**1.93**	**266**	*e*PN	**Pn**	**04 10 31.0**	**0.0**
CLL				*i* PG	**Pg**	**04 10 34.7**	**-0.5**
CLL				*i* SG	**Sg**	**04 11 00.3**	**-0.6**
OKC	**Ostrava-Krasne**	**2.12**	**141**	*e*PG	**Pg**	**04 10 38.6**	**-0.2**
OKC				*e*SG	**Sg**	**04 11 05.7**	**-1.3**
OJC	**Ojcow**	**2.68**	**117**	*e*Pg	**Pg**	**04 10 49.6**	**-0.5**
OJC				*e*Sg	**Sg**	**04 11 24.5**	**-1.4**
OJC	**Ojcow**	**2.68**	**117**	*e*PG	**Pg**	**04 10 50.0**	**-0.1**
OJC				*e*SG	**Sg**	**04 11 24.0**	**-1.9**
KHC	**Kasperske Hory**	**2.85**	**215**	*e*PN	**Pn**	**04 10 44.7**	**+0.5**
KHC				*e*PG	**Pg**	**04 10 51.1**	**-2.4**
KHC				*e*SG	**Sg**	**04 11 30.0**	**-1.5**
MOX	**Moxa**	**2.94**	**255**	*e*Pg	**Pg**	**04 10 54.1**	**-1.1**
MOX				*e*Sg	**Sg**	**04 11 34.0**	**-0.4**
MOA	**Molln**	**3.83**	**199**	⇑*i*PN	**Pn**	**04 10 59.1**	**+1.0**
MOA				*i* SG	**Sg**	**04 12 02.6**	**-1.4**
	1.5nm,0.3s						

*SKHL **09** 04:11:30.7±0.3,48.74N×141.41E,h10km,mb4.2/4*
*MOS **09** 04:11:33.1±1.4,48.63N×142.19E,h10km,mb3.9/2,Error ellipse: s-maj=73.8km s-min=13.8km az=92.1*
*IDC **09** 04:11:33.1±1.2,48.65N×142.35E,mb3.4/4,mb1 3.6/5, mb1mx3.4/23,ML3.3/1,Error ellipse: s-maj=48.0km s-min=24.0km az=101.0*
*NEIC **09** 04:11:34.5±0.8,48.63N×142.34E,h10km,Error ellipse: s-maj=33.7km s-min=13.2km az=93.0*

ISC 09 04:11:33.4±0.7,48.66N±0.06×142.5E±0.2,h10km,n13, σ1§18/16,mb3.3/4,1D,Sakhalin Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
UGL	**Uglegorsk**	**0.52**	**324**	*e*PN	**Pn**	**04 11 43.0**	**-3.4**
UGL				S	**Sg**	**04 11 51.6**	**+0.8**
UGL				pmax	pmax		
	comp=Z,46nm,0.3s						
UGL				smax			
	comp=N,3μm,0.4s						
UGL				smax			
	comp=E,3μm,0.4s						
YSS	**Yuzh-Sakhalins**	**1.72**	**175**	⇓*i*PN	**Pn**	**04 12 04.2**	**+0.6**
YSS				*e*S	**Sn**	**04 12 26.7**	**+1.0**
YSS				pmax	pmax		
	comp=Z,120nm,0.3s						
YSS	**Yuzh-Sakhalins**	**1.72**	**175**	*e*Pn	**Pn**	**04 12 04.2**	**+0.6**
TYV	**Tymovskoe**	**2.21**	**2**	*e*PN	**Pn**	**04 12 14.0**	**+3.4**
TYV				*e*S	**Sn**	**04 12 46.4**	**+8.2**
TYV				pmax	pmax		
	comp=Z,15nm,0.6s						
TYV				smax			
	comp=N,136nm,1.0s						
TYV				smax			
	comp=E,88nm,1.0s						
ASAJ	**Asahikawa**	**4.55**	**179**	Pn	**Pn**	**04 12 43.6**	**-0.3**
	comp=E,1.3nm,0.3s,baz=229,slow=29,SNR=2.7						
ASAJ	**Asahikawa**	**4.55**	**179**	PN	**Pn**	**04 12 43.7**	**-0.2**
ASAJ				pmax	pmax		
	comp=Z,1.0nm,0.3s						
ILAR	**Eielson Array**	**39.57**	**39**	P	**P**	**04 19 06.0**	**+0.1**
	comp=Z,0.5nm,0.7s,mb3.4,baz=278,slow=9.2,SNR=7.2						
ILAR	**Eielson Array**	**39.57**	**39**	P	**P**	**04 19 06.1**	**+0.1**
ILAR				pmax	pmax		
	comp=Z,1.0nm,0.7s						
YKA	**Yellowknife Ar**	**53.53**	**34**	P	**P**	**04 20 55.6**	**-0.2**
	comp=Z,0.1nm,0.7s,mb2.9,baz=306,slow=7.2,SNR=5.1						
FINES	**FINESS Array B**	**59.03**	**330**	P	**P**	**04 21 33.7**	**-1.5**
	comp=Z,1.4nm,1.1s,mb3.9,baz=45,slow=7.9,SNR=7.4						
FINES	**FINESS Array B**	**59.03**	**330**	P	**P**	**04 21 33.7**	**-1.5**
FINES				pmax	pmax		
	comp=Z,1.0nm,1.1s						
FINES	**FINESS Array B**	**59.03**	**330**	P	**P**	**04 21 33.7**	**-1.5**
ASAR	**Alice Springs**	**72.41**	**188**	P	**P**	**04 23 00.5**	**-1.1**
	comp=Z,0.2nm,0.7s,mb3.1,baz=359,slow=5.5,SNR=5.3						

*NNC **09** 04:22:15.6±2.8,38.08N×70.41E,mpv3.8,Error ellipse: s-maj=29.0km s-min=19.5km az=17.0*

ISC 09 04:22:15.6±4.0,38.1N±0.3×72.2E±0.4,h229km±47km,n7, σ0§62/9,1C,Tajikistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AML	**Almayashu**	**4.17**	**16**	P	**P**	**04 23 20.8**	**-0.3**
	SNR=55						
UCH	**Uchtor**	**4.48**	**23**	P	**P**	**04 23 24.9**	**0.0**
	SNR=12						
KZA	**Kyzart**	**4.61**	**30**	P	**P**	**04 23 25.9**	**-0.6**
	SNR=5.2						
EKS2	**Erkin-Say**	**4.70**	**15**	P	**P**	**04 23 27.9**	**+0.4**
	SNR=16						
AAK	**Ala-Archa**	**4.84**	**21**	P	**P**	**04 23 30.1**	**+0.7**
	SNR=11						
KK31	**Karatay Array**	**5.12**	**346**	P	**P**	**04 23 31.9**	**-1.0**
	4.7nm,0.3s,baz=167,slow=11,SNR=174						
KK31				S	**S**	**04 24 33.6**	**+0.5**
	11nm,0.5s,baz=186,slow=26,SNR=20						
AB31	**Akbulak array**	**14.18**	**326**	P	**P**	**04 25 28.5**	**+0.9**
	0.2nm,0.3s,baz=132,slow=15,SNR=16						
AB31				⇑S	**S**	**04 27 59.0**	**-0.5**
	0.6nm,0.5s,baz=153,slow=24,SNR=6.6						

*LDG **09** 04:51:14.7±0.1,42.72N×0.61E,h10km,Md1.9/2,Ml1.6/4, Error ellipse: s-maj=3.0km s-min=1.2km az=5.0*
*NEIC **09** 04:51:14.7,42.72N×0.61E,h10km,ML2.1(STR), ML1.6(LDG),After LDG.*
*STR **09** 04:51:14.5±0.1,42.70N×0.61E,h5km±1km,Ml2.1,Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
*MDD **09** 04:51:15.5±0.7,42.75N×0.62E,mbLg1.3/3,Error ellipse: s-maj=5.4km s-min=4.7km az=61.0,PRIXIMO*

ISC 09 04:51:14.0±0.7,42.72N±0.05×0.61E±0.03,h10km,n11, σ0§94/15,Pyrenees

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MELF	**Melles**	**0.19**	**35**	Pg	**Pg**	**04 51 19.0**	**+0.8**
MELF				Sg	**Sg**	**04 51 22.1**	**+1.1**
RESF	**Ens**	**0.22**	**294**	Pg	**Pg**	**04 51 19.4**	**+0.7**
RESF				Sg	**Sg**	**04 51 22.6**	**+0.7**
EPF	**Esparros**	**0.37**	**328**	*e*Pg	**Pg**	**04 51 22.1**	**+0.5**
EPF				*e*Sg	**Sg**	**04 51 26.7**	**0.0**
	7.2nm,0.2s						
SALF	**Salau**	**0.43**	**84**	Pg	**Pg**	**04 51 22.9**	**+0.2**
SALF				Sg	**Sg**	**04 51 28.8**	**+0.2**
ETSF	**Etsaut**	**0.88**	**282**	*e*Pg	**Pg**	**04 51 32.2**	**+0.6**
ETSF				*e*Sg	**Sg**	**04 51 42.1**	**-1.3**
	3.1nm,0.2s						
ESAC	**San Caprasio**	**1.28**	**219**	Pg	**Pg**	**04 51 39.8**	**+0.3**
	1.4nm,0.2s,SNR=7.9						
ESAC				Lg		04 51 57.4	
	7.9nm,0.2s,SNR=10						
MTLF	**Montolieu**	**1.33**	**62**	*e*Pg	**Pg**	**04 51 39.8**	**-0.8**
MTLF				*e*Sg	**Sg**	**04 51 56.2**	**-2.3**
	1.1nm,0.2s						
SJPF	**Ste Jean**	**1.41**	**287**	*e*Sg	**Sg**	**04 51 59.6**	**-1.2**
	1.1nm,0.2s						
EPOB	**Poblet**	**1.41**	**165**	Lg		04 51 59.9	
	1.0nm,0.3s,SNR=7.9						
EALK	**Alkurruntz**	**1.63**	**289**	Lg		04 52 08.4	
	0.8nm,0.2s,SNR=7.9						
RJF	**Les Rejaudoux**	**2.67**	**14**	*e*Sg	**Sg**	**04 52 38.5**	**-4.3**
	0.5nm,0.2s						

*NEIC **09** 05:17:54.3,15.90N×96.21W,h12km,MD3.4(MEX),After MEX.*
*MEX **09** 05:17:54.4±0.7,15.90N×96.22W,h48km±7km,MD4.3*

ISC 09 05:17:53.1±0.8,15.95N±0.06×96.27W±0.04,h45km±13km, n21,σ1§23/31,Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HUIG	**Huatulco**	**0.24**	**138**	*i* P	**P**	**05 18 01.1**	**-0.1**
HUIG				*i* S	**S**	**05 18 06.3**	**-0.5**
VHO	**Vista Hermosa**	**1.20**	**339**	*e*P	**P**	**05 18 14.4**	**+0.6**
VHO		

TWK	**Hsinying**	**0.18**	**223**	⇓	*i*	P	**Pg**	**06 02 26.2**	**-0.4**
TWK						S	**Sg**	**06 02 30.1**	**+0.6**
CHN2	**Minshiung**	**0.19**	**313**	⇑	*i*	P	**Pg**	**06 02 26.7**	**0.0**
ALS	**Alishan**	**0.20**	**57**	⇑	*i*	P	**Pg**	**06 02 26.3**	**-0.6**
ALS						S	**Sg**	**06 02 29.9**	**-0.1**
CHN5	**Tsauling**	**0.20**	**14**	⇓	*i*	P	**Pg**	**06 02 26.1**	**-0.8**
CHY	**Chiayi**	**0.21**	**297**	⇑	*i*	P	**Pg**	**06 02 26.7**	**-0.3**
CHN1	**Nanshi**	**0.23**	**202**	⇓	*i*	P	**Pg**	**06 02 27.0**	**-0.5**
WGK	**Gukeng**	**0.29**	**348**		*i*	P	**Pg**	**06 02 28.4**	**-0.1**
WGK						S	**Sg**	**06 02 34.0**	**+1.3**
YUS	**Yu-Shan**	**0.31**	**74**	⇑	*i*	P	**Pg**	**06 02 28.4**	**-0.5**
YUS						S	**Sg**	**06 02 33.5**	**+0.1**
SGST	**Jiashian**	**0.32**	**187**	⇓	*i*	P	**Pg**	**06 02 28.7**	**-0.3**
SGST						S	**Sg**	**06 02 34.7**	**+1.1**
CHN8	**Yiju**	**0.38**	**262**	⇑	*i*	P	**Pg**	**06 02 30.0**	**-0.3**
CHN8						S	**Sg**	**06 02 37.4**	**+1.8**
CHN3	**Shinhua**	**0.40**	**216**	⇓		P	**Pb**	**06 02 31.1**	**+0.4**
CHN3						S	**Sg**	**06 02 39.6**	**+3.3**
ELDTW	**Lidau**	**0.42**	**120**	⇑	*i*	P	**Pb**	**06 02 30.2**	**-0.8**
WSF	**Szhu**	**0.44**	**303**	⇑	*i*	P	**Pb**	**06 02 30.9**	**-0.4**
WSF						S	**Sb**	**06 02 38.5**	**+1.0**
SCLT	**Jiali**	**0.46**	**240**	⇑	*i*	P	**Pb**	**06 02 31.8**	**+0.2**
SCLT						S	**Sb**	**06 02 40.2**	**+2.3**
WNT	**Mingjian**	**0.48**	**7**	⇓	*i*	P	**Pb**	**06 02 31.8**	**-0.2**
WNT						S	**Sb**	**06 02 39.3**	**+0.7**
TAI1	**Yung-k'ang**	**0.51**	**226**	⇑		P	**Pb**	**06 02 33.3**	**+0.7**
TAI1						S	**Sb**	**06 02 42.7**	**+3.0**
SMLT	**Sun Moon Lake**	**0.54**	**28**	⇓	*i*	P	**Pb**	**06 02 32.6**	**-0.4**
SMLT						S	**Sb**	**06 02 41.7**	**+1.2**
TYC	**Yuchr**	**0.54**	**23**	⇓	*i*	P	**Pb**	**06 02 32.7**	**-0.4**
TYC						S	**Sb**	**06 02 41.5**	**+1.0**
WTCT	**Ta-ch'eng**	**0.56**	**326**	⇑	*i*	P	**Pb**	**06 02 32.9**	**-0.5**
WTCT						S	**Sb**	**06 02 41.7**	**+0.8**
TWM1	**Shoushan**	**0.60**	**198**		*e*	P	**Pb**	**06 02 35.5**	**+1.4**
TWF1	**Yuli**	**0.62**	**94**	⇑	*i*	P	**Pb**	**06 02 33.7**	**-0.7**
TWF1						S	**Sb**	**06 02 42.3**	**-0.5**
SSD	**Sandimen**	**0.65**	**179**	⇑	*i*	P	**Pb**	**06 02 34.9**	**-0.1**
SSD						S	**Sb**	**06 02 45.1**	**+1.4**
SGLT	**Jiouru**	**0.68**	**190**		*e*	P	**Pb**	**06 02 36.4**	**+0.9**
TWG	**Pinlang**	**0.71**	**144**	⇑	*i*	P	**Pb**	**06 02 35.7**	**-0.3**
TWG						S	**Sb**	**06 02 46.4**	**+1.1**
TCU	**Taichung**	**0.74**	**4**	⇓		P	**Pb**	**06 02 36.4**	**-0.2**
TCU						S	**Sb**	**06 02 47.4**	**+1.0**
CHKT	**Chengkung**	**0.74**	**114**		*e*	P	**Pb**	**06 02 36.8**	**+0.3**
CHKT						S	**Sb**	**06 02 48.3**	**+2.0**
TTN	**Taitung**	**0.80**	**143**		*e*	P	**Pb**	**06 02 37.2**	**-0.4**
TTN						S	**Sb**	**06 02 51.2**	**+3.1**
ESL	**Shilin**	**0.85**	**61**			P	**Pb**	**06 02 38.0**	**-0.3**
ESL						S	**Sb**	**06 02 49.6**	**+0.3**
ECL	**Taimali**	**0.86**	**159**	⇑		P	**Pb**	**06 02 38.3**	**-0.1**
ECL						S	**Sb**	**06 02 50.4**	**+0.8**
KAU	**Kaohsiung**	**0.88**	**199**		*e*	P	**Pb**	**06 02 40.3**	**+1.5**
WDGT	**Dungji**	**0.90**	**261**		*e*	P	**Pb**	**06 02 38.5**	**-0.7**
WDGT						S	**Sb**	**06 02 51.1**	**+0.3**
WHF	**Hehuan Shan**	**0.94**	**38**		*i*	P	**Pb**	**06 02 39.9**	**-0.1**
WHF						S	**Sb**	**06 02 53.1**	**+1.0**
TWQ1	**Liyutan**	**0.95**	**8**	⇓		P	**Pb**	**06 02 40.1**	**0.0**
TWQ1						S	**Sb**	**06 02 53.7**	**+1.4**
TWT	**Tachien**	**0.99**	**31**	⇓		P	**Pb**	**06 02 39.9**	**-0.8**
TWT						S	**Sb**	**06 02 54.5**	**+1.1**
PNG	**Penghu**	**1.00**	**280**		*e*	P	**Pb**	**06 02 39.9**	**-1.0**
PNG						S	**Sb**	**06 02 53.6**	**0.0**
NSY	**Sanyi**	**1.02**	**7**		*e*	P	**Pb**	**06 02 41.4**	**+0.2**
NSY						S	**Sb**	**06 02 56.2**	**+2.0**
SCZT	**Fangliau**	**1.02**	**180**		*e*	P	**Pb**	**06 02 41.8**	**+0.4**
SCZT						S	**Sb**	**06 02 58.3**	**+3.8**
EAST	**Anshuo**	**1.03**	**168**		*e*	P	**Pb**	**06 02 41.8**	**+0.3**
EAST						S	**Sb**	**06 02 58.0**	**+3.2**
HWA	**Hwalien**	**1.07**	**57**		*e*	P	**Pb**	**06 02 42.4**	**+0.3**
HWA						S	**Sb**	**06 02 57.3**	**+1.6**
TWP	**Hsiaoliuchiu**	**1.08**	**193**		*e*	P	**Pb**	**06 02 43.4**	**+1.1**
TWD	**Chiawan**	**1.12**	**53**		*e*	P	**Pb**	**06 02 42.6**	**-0.3**
TWD						S	**Sb**	**06 02 58.1**	**+1.0**
NNS	**Nan Shan**	**1.24**	**33**		*e*	P	**Pb**	**06 02 44.3**	**-0.7**
NNS						S	**Sb**	**06 03 02.9**	**+2.1**
NSTT	**Nanjuang**	**1.27**	**16**		*e*	P	**Pb**	**06 02 45.0**	**-0.6**
NSTT						S	**Sb**	**06 03 02.8**	**+1.1**
HEN	**Hengchun**	**1.39**	**176**		*e*	P	**Pn**	**06 02 47.5**	**0.0**
HSN	**Hsinchu**	**1.43**	**13**		*e*	P	**Pn**	**06 02 47.8**	**-0.2**
HSN						S	**Sb**	**06 03 07.6**	**+1.4**
NSK	**Sanguang**	**1.44**	**28**		*e*	P	**Pn**	**06 02 47.8**	**-0.3**
NSK						S	**Sb**	**06 03 07.5**	**+1.1**
ENA	**Nanau**	**1.45**	**45**		*e*	P	**Pn**	**06 02 47.6**	**-0.6**
ENA						S	**Sb**	**06 03 08.7**	**+2.0**
TWK1	**Hengchun**	**1.46**	**173**		*e*	P	**Pn**	**06 02 48.2**	**-0.2**
ENTT	**Nioudou**	**1.50**	**35**		*e*	P	**Pn**	**06 02 48.9**	**-0.2**
ENTT						S	**Sb**	**06 03 11.7**	**+3.4**
TWE	**Neicheng**	**1.62**	**36**		*e*	P	**Pn**	**06 02 51.2**	**+0.5**
TWE						S	**Sn**	**06 03 14.6**	**+2.9**
TWC	**Suao**	**1.64**	**43**		*e*	P	**Pn**	**06 02 51.8**	**+0.7**
TWC						S	**Sn**	**06 03 14.4**	**+2.3**
ILA	**Ilan**	**1.70**	**37**		*e*	P	**Pn**	**06 02 53.4**	**+1.4**
TATO	**Taipei**	**1.75**	**27**		*e*	Pn	**Pn**	**06 02 51.4**	**-1.3**
TATO						*e*Sn	**Sn**	**06 03 13.1**	**-1.8**
TWA	**Mucha**	**1.80**	**29**		*e*	P	**Pn**	**06 02 53.0**	**-0.3**
TWA						S	**Sn**	**06 03 17.4**	**+1.3**
TAP	**Taipei**	**1.82**	**26**		*e*	P	**Pn**	**06 02 53.0**	**-0.6**
TAP1	**Taipei**	**1.82**	**27**		*e*	P	**Pn**	**06 02 52.9**	**-0.7**
TWS1	**Kuangyinshan**	**1.84**	**23**		*e*	P	**Pn**	**06 02 53.4**	**-0.5**
TWS1						S	**Sn**	**06 03 17.6**	**+0.5**
NWF	**Wu-fen Shan**	**1.97**	**32**		*e*	P	**Pn**	**06 02 55.4**	**-0.4**
TWY	**Chenhua**	**2.07**	**25**		*e*	P	**Pn**	**06 02 56.6**	**-0.6**
KNM	**Kinmen**	**2.25**	**297**		*e*	P	**Pn**	**06 02 59.3**	**-0.7**
QZH	**Quanzhou**	**2.41**	**310**	⇓	*i*	P	**Pn**	**06 02 59.3**	**-2.7**
QZH						S	**Sn**	**06 03 27.4**	**-4.2**
QZH						S	Sn		
	comp=N,2μm,0.4s								
QZH						S	Sn		
	comp=E,3μm,0.8s								
YOJ	**Yonaguni jima**	**2.42**	**64**			P	**Pn**	**06 03 01.8**	**-0.5**
YOJ						S	**Sn**	**06 03 32.1**	**+0.1**
PCYT	**Pengchaiyu**	**2.58**	**30**		*e*	P	**Pn**	**06 03 03.0**	**-1.5**
HATJ	**Hateruma jima**	**2.99**	**77**			P	**Pn**	**06 03 09.9**	**-0.4**
HATJ						S	**Sn**	**06 03 45.1**	**-1.2**
IRIF	**Iriomote-Funau**	**2.99**	**71**			P	**Pn**	**06 03 09.9**	**-0.4**
IRIF						S	**Sn**	**06 03 46.3**	**-0.2**
JKRS	**Kuro-shima**	**3.21**	**74**			P	**Pn**	**06 03 13.4**	**0.0**
JKRS						S	**Sn**	**06 03 51.9**	**0.0**
JIJ	**Ishigaki jima**	**3.36**	**73**			P	**Pn**	**06 03 14.3**	**-1.3**
JIJ						S	**Sn**	**06 03 53.9**	**-1.8**
JTJ	**Tarama**	**3.93**	**71**			P	**Pn**	**06 03 22.6**	**-1.0**
JTJ						S	**Sn**	**06 04 09.1**	**-0.9**
JMJ	**Miyako jima 2**	**4.49**	**71**			S	**Sn**	**06 04 23.2**	**-1.2**
JKE	**Kume jima 2**	**6.31**	**61**			P	**Pn**	**06 03 55.2**	**-2.1**
JOW	**Kunigami**	**7.73**	**62**			P	**Pn**	**06 04 12.9**	**-4.3**
	comp=E,5.1nm,0.3s,baz=242,slow=17,SNR=6.7								
JOW	**Kunigami**	**7.73**	**62**			P	**Pn**	**06 04 13.3**	**-3.9**
QIZ	**Qiongzhong**	**10.96**	**249**		*e*	P	**P**	**06 05 01.2**	**-0.7**
QIZ	**Qiongzhong**	**10.96**	**249**		*e*	P	**P**	**06 04 59.0**	**-2.8**
GYA	**Guiyang**	**13.03**	**286**			P	**P**	**06 05 27.0**	**-2.8**
GYA						LR	LR		
	comp=N,2μm,9.9s								
GYA						LR	LR		
	comp=E,1μm,9.6s								
GYA						LR	LR		
	comp=Z,960nm,9.9s								
BJI	**Beijing**	**17.01**	**348**		*e*	P	**P**	**06 06 26.2**	**+4.7**
BJI						AMB	AMB		
	comp=Z,10.0nm,0.8s								
BJI						LR	LR		
	comp=Z,126nm,15.2s								
CBIJ	**Chichi jima**	**19.84**	**75**			LR	LR	06 12 59.9	
	comp=Z,47nm,18.0s,baz=115,slow=32								
CMAR	**Chiang Mai Arr**	**20.83**	**260**			P	**P**	**06 07 06.3**	**+0.1**
	comp=Z,2.8nm,1.0s,baz=65,slow=8.0,SNR=6.4								
CMAR						LR	LR	06 16 29.4	
	comp=Z,95nm,19.3s,MS3.2,baz=90,slow=40								
SONM	**Songino Array**	**26.90**	**339**			P	**P**	**06 08 01.9**	**-2.8**
	comp=Z,0.7nm,0.3s,mb3.6,baz=170,slow=7.5,SNR=3.6								
MKAR	**Makanchi Array**	**38.55**	**317**			P	**P**	**06 09 44.6**	**-1.7**
	comp=Z,2.9nm,1.0s,mb4.0,baz=110,slow=10,SNR=17								
ZAL	**Zalesovo**	**40.63**	**328**			P	**P**	**06 10 00.1**	**-3.3**
	comp=Z,1.8nm,0.4s,mb4.1,baz=209,slow=6.6,SNR=4.7								
PMG	**Port Moresby**	**41.68**	**138**			LR	LR	06 26 51.7	
	comp=Z,190nm,18.3s,MS4.0,baz=96,slow=35								
WRAB	**Tennant Creek**	**45.10**	**162**			P	**P**	**06 10 37.7**	**-2.6**
WRA	**Warramunga Arr**	**45.11**	**162**			P	**P**	**06 10 35.4**	**-5.0**
	comp=Z,0.6nm,0.6s,mb3.6,baz=345,slow=8.8,SNR=13								
ASAR	**Alice Springs**	**48.53**	**164**			P	**P**	**06 11 02.9**	**-4.3**
	comp=Z,0.3nm,0.5s,mb3.6,baz=331,slow=6.1,SNR=7.8								
ASAR						PcP	PcP	06 12 29.2	-4.3
	comp=Z,0.3nm,0.4s,baz=348,slow=3.9,SNR=4.2								
STKA	**Stephens Creek**	**58.51**	**159**			P	**P**	**06 12 16.5**	**-4.3**
	comp=Z,1.0nm,0.7s,mb4.0,baz=318,slow=14,SNR=3.1								
FINES	**FINESS Array B**	**71.86**	**330**			P	**P**	**06 13 44.0**	**-2.5**
	comp=Z,1.0nm,0.8s,mb3.8,slow=1.9,SNR=3.6								
BRTR	**Keskin Array B**	**73.22**	**306**			P	**P**	**06 13 53.0**	**-2.0**
	comp=Z,0.6nm,0.8s,mb3.6,baz=101,slow=6.3,SNR=3.9								
NOA	**NORSAR Array B**	**78.67**	**332**			P	**P**	**06 14 22.9**	**-2.4**
	comp=Z,0.6nm,0.7s,mb3.6,baz=58,slow=5.7,SNR=3.7								
YKA	**Yellowknife Ar**	**83.89**	**23**			P	**P**	**06 14 49.7**	**-2.9**
	comp=Z,1.2nm,0.9s,mb4.0,baz=316,slow=4.7,SNR=16								
YKA	**Yellowknife Ar**	**83.89**	**23**			P	**P**	**06 14 49.7**	**-2.9**

*TAP **09** 06:03:37.7, 23.41N×120.63E, h11km, ML4.0*
TAP Felt II J at Tsaushan, II J at Dapu, II J at Alishan, I J at Dungshan, II J at Tsauling, II J at Chiayi, I J at Nanshi, II J at Gukeng, I J at Szhu, I J at Jiali, II J at Mingjian.

ISC 09 06:03:38.7±0.2, 23.41N±0.01×120.63E±0.02, h12km±2km, n47, σ0°79/78, 4C-2D, Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CHN4	**Tsaushan**	**0.07**	**212**	⇓	*i*	P	**Pg**	**06 03 40.6**	**-0.7**
CHN4						S	**Sg**	**06 03 42.5**	**-0.5**
WTP	**Ta-pu**	**0.17**	**186**	⇓	*i*	P	**Pg**	**06 03 42.0**	**-0.7**
ALS	**Alishan**	**0.19**	**58**	⇑	*i*	P	**Pg**	**06 03 42.6**	**-0.4**
ALS						S	**Sg**	**06 03 46.2**	**+0.3**
CHN2	**Minshiung**	**0.19**	**310**	⇑	*i*	P	**Pg**	**06 03 42.8**	**-0.3**
CHN2						S	**Sg**	**06 03 46.8**	**+0.8**
CHN5	**Tsauling**	**0.19**	**13**	⇑	*i*	P	**Pg**	**06 03 42.4**	**-0.7**
TWK	**Hsinying**	**0.20**	**223**		*i*	P	**Pg**	**06 03 42.5**	**-0.7**
TWK						S	**Sg**	**06 03 46.3**	**+0.1**
CHY	**Chiayi**	**0.21**	**294**		*i*	P	**Pg**	**06 03 42.9**	**-0.6**
CHY						S	**Sg**	**06 03 46.9**	**+0.3**
CHN1	**Nanshi**	**0.24**	**203**		*i*	P	**Pg**	**06 03 43.5**	**-0.6**
CHN1						S	**Sg**	**06 03 47.8**	**+0.2**
WGK	**Gukeng**	**0.28**	**347**		*i*	P	**Pg**	**06 03 44.5**	**-0.3**
WGK						S	**Sg**	**06 03 49.8**	**+1.1**
YUS	**Yu-Shan**	**0.30**	**75**		*i*	P	**Pg**	**06 03 44.8**	**-0.3**
YUS						S	**Sg**	**06 03 49.8**	**+0.4**
SGST	**Jiashian**	**0.33**	**188**		*i*	P	**Pg**	**06 03 45.2**	**-0.5**
SGST						S	**Sg**	**06 03 50.9**	**+0.6**
CHN8	**Yiju**	**0.39**	**261**			P	**Pg**	**06 03 46.1**	**-0.8**
CHN8						S	**Sg**	**06 03 53.4**	**+1.1**
CHN3	**Shinhua**	**0.41**	**217**		*i*	P	**Pg**	**06 03 47.4**	**+0.2**
CHN3						S	**Sg**	**06 03 55.4**	**+2.5**
ELDTW	**Lidau**	**0.42**	**122**	⇑	*i*	P	**Pg**	**06 03 46.6**	**-0.7**
ELDTW						S	**Sg**	**06 03 53.0**	**-0.1**
WSF	**Szhu**	**0.44**	**301**			P	**Pg**	**06 03 46.8**	**-1.0**
WSF						S	**Sg**	**06 03 54.2**	**+0.5**
SCLT	**Jiali**	**0.47**	**240**			P	**Pg**	**06 03 48.0**	**-0.3**
SCLT						S	**Sg**	**06 03 55.8**	**+1.2**
WNT	**Mingjian**	**0.47**	**6**		*e*	P	**Pg**	**06 03 47.6**	**-0.7**
WNT						S	**Sg**	**06 03 55.6**	**+0.9**
TAI1	**Yung-k'ang**	**0.52**	**225**		*e*	P	**Pb**	**06 03 49.5**	**+0.2**
TAI1						S	**Sg**	**06 03 58.1**	**+1.6**
SMLT	**Sun Moon Lake**	**0.53**	**27**		*i*	P	**Pb**	**06 03 49.2**	**-0.2**
SMLT						S	**Sg**	**06 03 57.4**	**+0.6**
TYC	**Yuchr**	**0.53**	**23**			P	**Pb**	**06 03 48.9**	**-0.6**
TYC						S	**Sg**	**06 03 57.1**	**+0.3**
WTCT	**Ta-ch'eng**	**0.56**	**325**			P	**Pb**	**06 03 48.8**	**-1.0**
WTCT						S	**Sb**	**06 03 57.3**	**-0.1**
TWF1	**Yuli**	**0.61**	**95**		*i*	P	**Pb**	**06 03 50.0**	**-0.8**
TWF1						S	**Sb**	**06 03 58.5**	**-0.6**
TWM1	**Shoushan**	**0.62**	**198**		*e*	P	**Pb**	**06 03 52.2**	**+1.3**
SSD	**Sandimen**	**0.66**	**180**		*e*	P	**Pb**	**06 03 51.3**	**-0.4**
SSD						S	**Sb**	**06 04 01.2**	**+0.7**
SGLT	**Jiouru**	**0.69**	**191**		*e*	P	**Pb**	**06 03 53.3**	**+1.1**
TWG	**Pinlang**	**0.71**	**145**		*e*	P	**Pb**	**06 03 52.2**	**-0.3**
TCU	**Taichung**	**0.73**	**3**		*i*	P	**Pb**	**06 03 52.4**	**-0.5**
TCU						S	**Sb**	**06 04 02.9**	**+0.2**
CHKT	**Chengkung**	**0.74**	**115**		*i*	P	**Pb**	**06 03 53.2**	**+0.2**
CHKT						S	**Sb**	**06 04 04.4**	**+1.6**
ESL	**Shilin**	**0.84**	**61**		*e*	P	**Pb**	**06 03 54.1**	**-0.5**
ESL						S	**Sb**	**06 04 05.5**	**-0.1**
ECL	**Taimali**	**0.86**	**160**		*e*	P	**Pb**	**06 03 54.6**	**-0.5**
WDGT	**Dungji**	**0.91**	**261**		*e*	P	**Pb**	**06 03 54.3**	**-1.6**
WHF	**Hehuan Shan**	**0.93**	**38**			P	**Pb**	**06 03 56.2**	**-0.1**
WHF						S	**Sb**	**06 04 08.4**	**+0.1**
TWQ1	**Liyutan**	**0.94**	**8**			P	**Pb**	**06 03 56.1**	**-0.3**
TWQ1						S	**Sb**	**06 04 09.4**	**+0.7**
TWT	**Tachien**	**0.97**	**31**		*e*	P	**Pb**	**06 03 56.0**	**-1.0**
PNG	**Penghu**	**1.00**	**279**		*e*	P	**Pb**	**06 03 55.9**	**-1.6**
PNG						S	**Sb**	**06 04 09.4**	**-1.0**
NSY	**Sanyi**	**1.01**	**7**			P	**Pb**	**06 03 57.4**	**-0.2**
NSY						S	**Sb**	**06 04 11.9**	**+1.3**
SCZT	**Fangliau**	**1.03**	**181**		*e*	P	**Pb**	**06 03 57.2**	**-0.9**
EAST	**Anshuo**	**1.04**	**169**		*e*	P	**Pb**	**06 03 58.3**	**+0.1**
HWA	**Hwalien**	**1.05**	**57**		*e*	P	**Pb**	**06 03 58.8**	**+0.6**
TWD	**Chiawan**	**1.11**	**53**		*e*	P	**Pb**	**06 03 58.7**	**-0.6**
NNS	**Nan Shan**	**1.23**	**33**		*e*	P	**Pb**	**06 04 00.7**	**-0.6**
NSTT	**Nanjuang**	**1.26**	**15**		*e*	P	**Pb**	**06 04 00.7**	**-1.2**
NSTT						S	**Sb**	**06 04 18.3**	**+0.4**
NSK	**Sanguang**	**1.42**	**28**		*e*	P	**Pn**	**06 04 04.0**	**-0.5**
ENA	**Nanau**	**1.43**	**45**		*e*	P	**Pn**	**06 04 05.1**	**+0.5**
ENTT	**Nioudou**	**1.49**	**35**		*e*	P	**Pn**	**06 04 05.4**	**-0.1**
ENTT						S	**Sb**	**06 04 25.9**	**+1.2**
TWE	**Neicheng**	**1.61**	**36**		*e*	P	**Pn**	**06 04 07.9**	**+0.7**
TWC	**Suao**	**1.63**	**43**		*e*	P	**Pn**	**06 04 08.2**	**+0.7**
TWC						S	**Sn**	**06 04 31.4**	**+2.9**

*NEIC **09** 06:15:35.1±0.6, 11.90S×165.76E, h10km, mb4.1/4, Error ellipse: s-maj=18.8km s-min=14.8km az=125.0*
*IDC **09** 06:15:46.1±14.0, 12.19S×165.68E, h99km±124km, mb3.8/7, mb1 3.9/7, mb1mx3.7/17, MS3.5/5, Ms1 3.5/5, ms1mx3.2/22, Error ellipse: s-maj=51.8km s-min=31.0km az=32.0*

ISC 09 06:15:44.4±3.3, 12.1S±0.2×165.6E±0.1, h94km±30km, n16, σ0°93/13, mb3.9/10, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**6.12**	**155**		*i*	P	**P**	**06 17 14.2**	**+0.4**
BKM						S	**S**	**06 18 32.0**	**+8.9**
CTA	**Charters Tower**	**20.16**	**244**			P	**P**	**06 20 13.8**	**+0.2**
	3.1nm,0.7s,baz=62,slow=15,SNR=3.2								
CTA						LR	LR	06 25 48.1	
	comp=Z,97nm,21.7s,baz=40,slow=30								
STKA	**Stephens Creek**	**29.56**	**224**			LR	LR	06 33 55.7	
	comp=Z,151nm,18.1s,baz=26,slow=37								
WRAB	**Tennant Creek**	**30.95**	**251**		*e*	P	**P**	**06 21 54.1**	**-0.7**
	1.4nm,0.6s,mb3.9								
WRA	**Warramunga Arr**	**30.96**	**251**			P	**P**	**06 21 54.6**	**-0.4**
	0.9nm,0.9s,mb3.5,baz=84,slow=8.6,SNR=11								
WRA						LR	LR	06 32 53.6	
	comp=Z,56nm,19.0s,baz=85,slow=33								
RPZ	**Rata Peaks**	**31.87**	**172**			P	**P**	**06 22 01.3**	**-1.3**
	7.9nm,0.8s,mb4.5,baz=359,slow=13,SNR=6.0								
ASAR	**Alice Springs**	**32.16**	**245**			P	**P**	**06 22 04.7**	**-0.7**
	2.2nm,0.7s,mb4.0,baz=71,slow=9.1,SNR=26								
ASAR						LR	LR	06 34 28.0	
	comp=Z,68nm,18.5s,baz=150,slow=35								
VNDA	**Vanda**	**65.45**	**181**		*e*	P	**P**	**06 26 20.3**	**+1.3**
	0.4nm,0.7s,mb3.4								
SBA	**Scott Base**	**65.76**	**180**		*e*	P	**P**	**06 26 21.3**	**+0.3**
	2.1nm,0.8s,mb4.0								
CMAR	**Chiang Mai Arr**	**72.36**	**294**			P	**P**	**06 27 03.5**	**+1.2**
	0.8nm,0.3s,mb4.0,baz=134,slow=5.5,SNR=5.4								
COLA	**College**	**84.33**	**18**			P	**P**	**06 28 05.3**	**-1.5**
	0.7nm,0.5s,mb3.8								
ILAR	**Eielson Array**	**84.56**	**19**			P	**P**	**06 28 07.7**	**-0.2**
	0.3nm,0.7s,mb3.3,baz=231,slow=5.8,SNR=2.7								
NVAR	**Mina Array Bea**	**86.84**	**50**			LR	LR	07 05 34.5	
	comp=Z,38nm,18.4s,baz=30,slow=34								
MKAR	**Makanchi Array**	**94.15**	**317**			P	**P**	**06 28 55.0**	**+1.4**
	1.5nm,0.7s,mb4.5,baz=88,slow=6.3,SNR=15								
MKAR						pP	pP	06 29 06.8	-12
	3.6nm,0.7s,baz=95,slow=6.5,SNR=24								
ARCES	**ARCESS Array B**	**117.29**	**345**			PKP	PKPdf	06 34 18.9	+0.6
	1.1nm,0.5s,baz=90,slow=2.4,SNR=4.7								
FINES	**FINESS Array B**	**122.67**	**338**			PKP	PKPdf	06 34 29.6	+0.7
	1.2nm,0.9s,baz=72,slow=6.0,SNR=5.6								

*IDC **09** 06:32:02.5±4.8, 13.87N×88.55W, mb3.3/3, mb1 3.8/3, mb1mx3.5/18, MS3.4/1, Ms1 3.3/1, ms1mx2.5/14, Error ellipse: s-maj=114.0km s-min=82.4km az=40.0*
*CASC **09** 06:32:10.0±1.5, 13.29N×89.83W, h35km±450km, MD3.8, ML3.8*

ISC 09 06:32:09.4±0.9, 13.25N±0.08×89.85W±0.04, h47km±12km, n25, σ0°62/41, mb3.5/2, MS3.3/1, 16C, El Salvador

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
SBLS	**San Blas**	**0.63**	**20**	⇑	*i*	P	**P**	**06 32 22.3**	**+0.2**
SBLS						*e*S	**S**	**06 32 31.8**	**+0.4**
SNJE	**San Jose**	**0.66**	**211**	⇑	*e*	P	**S**	**06 32 22.7**	**+0.2**
SNJE						*e*S	**S**	**06 32 30.7**	**-1.5**
CUSS	**Cusmapa**	**0.66**	**352**	⇑	*e*	P	**S**	**06 32 22.6**	**0.0**
CUSS						*e*S	**S**	**06 32 32.0**	**-0.2**
RTR	**El Retiro**	**0.68**	**17**	⇑	*e*	P	**S**	**06 32 23.1**	**+0.3**
RTR						*e*S	**S**	**06 32 33.1**	**+0.5**
BOQS	**Boqueron**	**0.73**	**49**	⇑	*e*	P	**S**	**06 32 23.5**	**-0.1**
BOQS						*e*S	**S**	**06 32 34.1**	**+0.2**
SNET	**Serv Nac Est T**	**0.74**	**54**	⇑	*e*	P	**S**	**06 32 23.4**	**-0.3**
SNET						*e*S	**S**	**06 32 34.1**	**0.0**
SNET						*i*		06 32 39.3	
	comp=Z,2μm,0.3s								
LFRS	**El Faro**	**0.85**	**64**	⇑	*i*	P	**P**	**06 32 24.8**	**-0.3**
LFU	**La Fuente**	**0.87**	**55**	⇑	*e*	P	**S**	**06 32 25.4**	**-0.1**
LFU						*e*S	**S**	**06 32 37.4**	**+0.2**
RBDL	**Robledal**	**0.87**	**10**	⇑	*i*	P	**S**	**06 32 26.0**	**+0.5**
RBDL						*e*S	**S**	**06 32 38.3**	**+0.9**
LBRS	**Las Brisas**	**0.92**	**58**	⇑	*e*	P	**S**	**06 32 26.2**	**0.0**
LBRS						*e*S	**S**	**06 32 38.5**	**-0.1**
LCBS	**La Ceiba**	**0.94**	**64**	⇑	*i*	P	**S**	**06 32 26.1**	**-0.3**
LCBS						*e*S	**S**	**06 32 37.4**	**-1.6**
SNVI	**San Vicente**	**1.05**	**70**	⇑	*e*	P	**S**	**06 32 27.6**	**-0.3**
SNVI						*e*P		06 32 28.2	
SNV

FINES Sn **S** **06 55 10.8 -14**
0.2nm,0.3s,baz=218,slow=23,SNR=4.1

WEL 09 07:12:55.9±0.1,34.98S×178.07E,h33km,ML3.5/1,Error ellipse: s-maj=3.1km s-min=0.9km az=90.0,South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time h m s	Res ISC
PUZ	**Puketiti**	**3.09**	**177**		PN	Pn	07 13 41.6	-2.0
PUZ					SN	Sn	07 14 16.0	-3.8
PUZ					SN	Sn	07 14 16.2	-3.6
URZ	**Urewera**	**3.36**	**193**	*e*P	Pn	Pn	07 13 45.8	-1.6
MWZ	**Matawai**	**3.37**	**187**	*e*P	Pn	Pn	07 13 46.0	-1.7

NIED ***09*** *07:12:00,35.60N×141.80E,h20km,Mw4.1 Best double couple: M0 1.84×10^15 NP1:φs 355°,δ72°,λ65°. NP2:φs 232°,δ31°,λ143°.*
IDC ***09*** *07:12:55.0±0.8,35.46N×141.74E,mb3.7/10,mb1 3.9/11,mb1mx3.8/23,ML3.6/1,MS3.3/1,Ms1 3.3/1,ms1mx2.6/27,Error ellipse: s-maj=24.2km s-min=16.9km az=103.0*
JMA ***09*** *07:12:57.9±0.4,35.56N×141.78E,h43km±4km,M3.5*
NEIC ***09*** *07:12:58.9±7.8,35.56N×141.78E,h20km±55km,mb4.2/2,Error ellipse: s-maj=24.5km s-min=16.6km az=86.0*
ISC 09 07:12:58.1±1.5,35.50N±0.05×141.75E±0.08,h32km±10km,n33,σ1s11/37,mb3.7/12,1C,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time h m s	Res ISC
CHOJ	**Chosi**	**0.75**	**286**	P		Pb	**07 13 12.4**	**-0.3**
BSO1	**Boso 1**	**1.05**	**217**	P		Pn	**07 13 16.9**	**+0.1**
BSO1				*e*S		Sb	**07 13 33.0**	**+1.9**
BSO3	**Boso 3**	**1.23**	**236**	P		Pn	**07 13 19.8**	**+0.5**
BSO4	**Boso 4**	**1.26**	**247**	P		Pn	**07 13 20.8**	**+1.0**
JYT	**Yasato**	**1.46**	**301**	P		Pn	**07 13 22.0**	**-0.6**
JHO	**Hitachi**	**1.47**	**320**	P		Pn	**07 13 21.6**	**-1.2**
JFK	**Kawauchi**	**2.00**	**340**	P		Pn	**07 13 29.5**	**-0.8**
JIM2	**Oshima 3**	**2.05**	**248**	P		Pn	**07 13 31.0**	**-0.1**
JAG	**Ashikaga**	**2.08**	**297**	P		Pn	**07 13 30.9**	**-0.6**
JOD2	**Odawara 2**	**2.19**	**265**	P		Pn	**07 13 33.0**	**-0.1**
JOD2				S		Sn	**07 13 59.1**	**-0.2**
JHJ	**Hachijo jima 2**	**2.87**	**215**	Pn		Pn	**07 13 41.1**	**-1.8**
	24nm,0.3s,baz=257,slow=23,SNR=7.5							
JHJ				Sn		Sn	**07 14 15.2**	**-1.5**
	59nm,0.3s,baz=248,slow=21,SNR=9.9							
MAJO	**Matsushiro**	**3.05**	**291**	⇑*e*Pn		Pn	**07 13 45.6**	**+0.2**
MAT	**Matsushiro**	**3.05**	**291**	P		Pn	**07 13 46.2**	**+0.8**
MAT				S		Sn	**07 14 23.6**	**+2.3**
MAT	**Matsushiro**	**3.05**	**291**	*e*P		Pn	**07 13 46.0**	**+0.6**
MAT				*e*S		Sn	**07 14 33.0**	**+12**
ASAJ	**Asahikawa**	**8.64**	**4**	LR		LR	07 19 27.0	
	comp=Z,190nm,18.2s,baz=162,slow=45							
HIA	**Hailar**	**21.20**	**317**	P		P	**07 17 43.0**	**-0.2**
	6.6nm,1.1s,mb3.9							
ULN	**Ulaanbaatar**	**28.46**	**306**	P		P	**07 18 54.5**	**+2.3**
	2.5nm,0.3s,mb4.3							
SONM	**Songino Array**	**28.89**	**306**	P		P	**07 18 56.3**	**+0.3**
	0.7nm,0.5s,mb3.7,baz=90,slow=5.8,SNR=3.0							
ZAL	**Zalesovo**	**43.17**	**314**	P		P	**07 20 59.0**	**+1.7**
	1.5nm,0.4s,mb4.1,baz=289,slow=7.3,SNR=5.1							
MKAR	**Makanchi Array**	**45.18**	**303**	P		P	**07 21 13.3**	**-0.3**
	0.8nm,0.6s,mb3.7,baz=87,slow=11,SNR=7.0							
MKAR	**Makanchi Array**	**45.18**	**303**	P		P	**07 21 13.3**	**-0.3**
KURK	**Kurchatov**	**47.10**	**309**	*e*P		P	**07 21 27.0**	**-1.8**
ILAR	**Eielson Array**	**50.65**	**32**	P		P	**07 21 55.8**	**-0.2**
	0.5nm,0.8s,mb3.5,baz=262,slow=7.2,SNR=5.8							
WB2	**Warramunga Arr**	**55.58**	**188**	*e*P		P	**07 22 35.9**	**+2.8**
WRA	**Warramunga Arr**	**55.58**	**188**	P		P	**07 22 31.5**	**-1.6**
	0.9nm,0.5s,mb4.0,baz=2.2,slow=7.6,SNR=17							
ASAR	**Alice Springs**	**59.30**	**188**	P		P	**07 22 59.5**	**+0.1**
	0.8nm,0.8s,mb3.8,baz=9.4,slow=9.0,SNR=4.6							
YKA	**Yellowknife Ar**	**65.00**	**30**	P		P	**07 23 36.3**	**-0.5**
	0.2nm,0.8s,mb3.2,baz=299,slow=6.5,SNR=5.2							
YKA	**Yellowknife Ar**	**65.00**	**30**	P		P	**07 23 36.3**	**-0.5**
AKASG	**Malin Array Be**	**75.68**	**323**	P		P	**07 24 41.0**	**-0.7**
	0.5nm,0.4s,mb3.8,baz=45,slow=5.2,SNR=8.0							
NVAR	**Mina Array Bea**	**75.70**	**53**	P		P	**07 24 43.3**	**+1.2**
	0.2nm,0.7s,mb3.1,baz=276,slow=8.2,SNR=2.6							
NOA	**NORSAR Array B**	**75.71**	**338**	P		P	**07 24 41.4**	**-0.3**
	0.6nm,0.6s,mb3.7,baz=42,slow=5.4,SNR=3.6							
NOA	**NORSAR Array B**	**75.71**	**338**	P		P	**07 24 41.4**	**-0.3**
PV10	**Paradox Valley**	**81.59**	**49**	P		P	**07 25 15.4**	**+1.2**

BJI ***09*** *07:47:15.9,9.87N×126.22E,h48km,mB5.0,mb4.9,Ms4.5,Msz4.4*
MOS ***09*** *07:47:18.0±0.8,10.31N×125.84E,h33km,mb5.0/15,Error ellipse: s-maj=24.4km s-min=9.3km az=110.4*
IDC ***09*** *07:47:20.2±0.7,10.39N×125.96E,h29km±4km,mb4.5/26,mb1 4.6/27,mb1mx4.6/28,ML4.9/1,MS4.3/17,Ms1 4.3/17,ms1mx4.2/27,Error ellipse: s-maj=17.4km s-min=10.2km az=80.0*
MAN ***09*** *07:47:21.5,10.39N×126.07E,h11km,mb5.6,ML4.6,MS4.9*
MAN F SURIGAO CITY PALO LEYTE INTENSITY II.
NEIC ***09*** *07:47:22.1±1.4,10.40N×126.12E,h48km±13km,mb4.8/33,MS4.3/4,Error ellipse: s-maj=9.0km s-min=5.4km az=75.0*
NEIC Felt [II PIVS] at Palo, Leyte and at Surigao, Mindanao.
ISC 09 07:47:18.9±0.2,10.40N±0.02×126.31E±0.03,h36km,h36km±2.8km:pP-P,n223,σ1s39/249,mb4.8/81,MS4.3/42,39C-14D,Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time h m s	Res ISC
SCPH	**Surigao**	**1.01**	**233**	*i*P		P	**07 47 37.1**	**+0.3**
SCPH				*i*S		S	**07 47 45.8**	**-4.3**
MSLP	**Maasin**	**1.45**	**260**	⇑*e*P		P	**07 47 43.5**	**+0.4**
BUTP	**Butuan**	**1.58**	**205**	⇑*e*P		P	**07 47 47.0**	**+2.2**
OCLP	**Ormoc**	**1.79**	**291**	⇑*e*P		P	**07 47 49.6**	**+1.7**
LLP	**Lapu-Lapu**	**2.31**	**268**	⇑*i*P		P	**07 47 56.3**	**+1.0**
LLP				*i*S		S	**07 48 22.4**	**-0.3**
TBP	**Tagbilaran**	**2.51**	**254**	*i*P		P	**07 47 59.5**	**+1.4**
TBP				*i*S		S	**07 48 27.2**	**-0.7**
CNP	**Catarman**	**2.64**	**323**	⇑*e*P		P	**07 48 01.1**	**+0.9**
SNPH	**Sibulan**	**3.20**	**251**	⇑*i*P		P	**07 48 09.5**	**+1.4**
SNPH				*i*S		S	**07 48 49.0**	**+3.5**
MMPH	**Masbate**	**3.27**	**307**	⇑*i*P		P	**07 48 11.9**	**+2.8**
MMPH				*i*S		S	**07 48 52.6**	**+5.4**
DAV	**Davao City (W)**	**3.39**	**192**	*e*P		P	**07 48 14.5**	**+3.8**
DCPH	**Dipolog City**	**3.43**	**238**	⇑*e*P		P	**07 48 12.5**	**+1.2**
DCPH				*e*S		S	**07 48 42.0**	**-9.3**
KCP	**Kidapawan**	**3.58**	**200**	⇓*e*P		P	**07 48 16.7**	**+3.3**
KCP				*i*S		S	**07 49 01.1**	**+6.0**
RCP	**Roxas**	**3.68**	**289**	⇑*e*P		P	**07 48 15.9**	**+1.1**
CTBH	**Cotabato--PC H**	**3.76**	**213**	⇑*i*P		P	**07 48 19.1**	**+3.1**
PVCP	**Virac**	**3.81**	**327**	⇑*e*P		P	**07 48 19.1**	**+2.4**
PAGZ	**Pagadian**	**3.84**	**229**	⇑*e*P		P	**07 48 19.1**	**+1.9**
AAP	**Aniniy**	**4.29**	**271**	*e*P		P	**07 48 24.0**	**+0.5**
GSPH	**General Santos**	**4.49**	**198**	*i*P		P	**07 48 33.3**	**+6.9**
AUQP	**San Andres**	**4.59**	**310**	⇑*e*P		P	**07 48 40.8**	**+13**
OTRP	**Odiongan**	**4.63**	**295**	⇑*e*P		P	**07 48 29.1**	**+0.8**
GQP	**Guinayangan**	**5.13**	**313**	*e*P		P	**07 48 37.0**	**+1.6**
CUYO	**Cuyo Island**	**5.22**	**275**	⇑*e*P		P	**07 48 36.8**	**+0.2**
BOAC	**Boac**	**5.32**	**305**	⇑*e*P		P	**07 48 39.8**	**+1.8**
SJMP	**San Jose**	**5.48**	**292**	⇑*e*P		P	**07 48 41.9**	**+1.6**
POLP	**Polilio Island**	**6.05**	**316**	⇑*e*P		P	**07 48 49.1**	**+0.8**
BUSP	**Coron**	**6.20**	**285**	⇑*e*P		P	**07 48 50.6**	**+0.3**
TGY	**Tagaytay City**	**6.41**	**306**	*e*P		P	**07 48 55.3**	**+2.0**
TGY	**Tagaytay City**	**6.41**	**306**	Pn		P	**07 48 54.9**	**+1.6**
	30nm,0.3s,baz=274,slow=3.1,SNR=13							
TGY				LR		LR	07 51 40.2	
	comp=Z,7μm,19.1s,baz=39,slow=42							
QVPH	**Quezon City--P**	**6.64**	**310**	*e*P		P	**07 48 58.0**	**+1.5**
LUBP	**Lubang**	**6.79**	**300**	⇑*e*P		P	**07 49 00.0**	**+1.3**
ENPP	**El Nido**	**6.81**	**277**	⇑*e*P		P	**07 48 58.9**	**-0.1**
BALP	**Baler**	**7.03**	**320**	⇑*e*P		P	**07 49 02.4**	**+0.3**
PCPH	**Palayan**	**7.22**	**316**	⇓*i*P		P	**07 49 06.6**	**+1.9**
PALP	**Palanan**	**7.62**	**331**	⇑*e*P		P	**07 49 15.0**	**+4.8**
CAUP	**Cauayan**	**7.83**	**327**	⇑*e*P		P	**07 49 12.8**	**-0.3**
SCZP	**Santa Cruz**	**8.21**	**311**	⇑*e*P		P	**07 49 20.6**	**+2.2**
BOLP	**Bolinao**	**8.60**	**314**	⇑*e*P		P	**07 49 25.8**	**+1.9**
SGCP	**Mt. Cagua**	**8.82**	**333**	⇑*e*P		P	**07 49 31.4**	**+4.5**
APYP	**Conner**	**8.89**	**327**	⇑*e*P		P	**07 49 27.9**	**0.0**
ABRA	**Dolores**	**9.02**	**324**	⇑*e*P		P	**07 49 30.6**	**+0.9**
KKM	**Kota Kinabalu**	**10.88**	**247**	⇑*e*P		P	**07 49 56.7**	**+1.3**
	141nm,0.9s							
TATO	**Taipei**	**15.20**	**343**	P		P	**07 50 52.3**	**-0.4**
QZH	**Quanzhou**	**16.21**	**334**	*e*P		P	**07 51 09.0**	**+3.3**
QZH				S		S	**07 54 08.0**	**+4.0**
QZH				LR		LR		
	comp=N,2μm,15.3s							
QZH				LR		LR		
	comp=E,1μm,16.0s							
QZH				LR		LR		
	comp=Z,3μm,20.5s							
GZH	**Guangzhou**	**17.68**	**317**	P		P	**07 51 26.3**	**+2.2**
GZH				AMB		AMB		
	comp=Z,360nm,6.3s							
GZH				LR		LR		
	comp=N,2μm,21.4s							
GZH				LR		LR		
	comp=E,943nm,19.4s							
GZH				LR		LR		
	comp=Z,3μm,20.1s							
QIZ	**Qiongzhong**	**18.07**	**300**	P		P	**07 51 29.1**	**0.0**
QIZ				PP		PP	07 51 44.2	+0.2
QIZ				S		S	**07 54 47.6**	**+1.1**
QIZ				SS		SS	07 55 11.0	+1.0
QIZ				AMB		AMB		
	comp=Z,13nm,1.4s							
QIZ				AMB		AMB		
	comp=Z,395nm,8.4s							
QIZ				LR		LR		
	comp=N,868nm,19.2s							
QIZ				LR		LR		
	comp=E,1μm,20.0s							
QIZ				LR		LR		
	comp=Z,2μm,19.0s							
QIZ	**Qiongzhong**	**18.07**	**300**	*e*P		P	**07 51 27.3**	**-1.8**
	comp=Z,11nm,0.8s							
SSE	**Sheshan**	**21.13**	**348**	P		P	**07 52 05.5**	**+2.5**
SSE				S		S	**07 55 50.6**	**-0.5**
SSE				AMB		AMB		
	comp=Z,44nm,0.7s,mb4.9							
SSE				LR		LR		
	comp=N,262nm,19.3s,MS3.7							
SSE				LR		LR		
	comp=E,113nm,19.3s,MS3.7							
SSE				LR		LR		
	comp=Z,326nm,20.0s,MS3.7							
CBIJ	**Chichi jima**	**22.35**	**40**	P		P	**07 52 18.1**	**+2.9**
	comp=Z,139nm,0.5s,mb5.6,baz=278,slow=5.7,SNR=16							
CBIJ				LR		LR	07 59 15.6	
	comp=Z,714nm,21.5s,MS4.1,baz=216,slow=32							
NJ2	**Nanjing**	**22.62**	**343**	*e*P		P	**07 52 19.5**	**+1.6**
NJ2				S		S	**07 56 19.0**	**+0.4**
NJ2				AMB		AMB		
	comp=Z,180nm,1.0s,mb5.5							
NJ2				AMB		AMB		
	comp=Z,410nm,6.0s							
NJ2				LR		LR		
	comp=N,450nm,21.9s,MS4.1							
NJ2				LR		LR		
	comp=E,590nm,18.0s,MS4.1							
NJ2				LR		LR		
	comp=Z,450nm,21.0s,MS3.9							
WHN	**Wuhan**	**22.92**	**333**	⇑P		P	**07 52 20.0**	**-0.9**
WHN				S		S	**07 56 30.0**	**+5.9**
WHN				LR		LR		
	comp=N,911nm,15.0s							
WHN				LR		LR		
	comp=Z,2μm,18.6s,MS4.5							
JNU	**Nakatsue**	**23.00**	**10**	P		P	**07 52 23.6**	**+1.9**
	comp=Z,40nm,1.1s,mb4.8,baz=142,slow=3.0,SNR=9.1							
JNU				LR		LR	08 00 13.2	
	comp=Z,307nm,20.2s,MS3.7,baz=309,slow=34							
KKTK	**Khon Kaen**	**23.59**	**287**	P		P	**07 52 25.5**	**-1.9**
KAKA	**Kakadu**	**23.74**	**165**	⇑*i*P		P	**07 52 30.2**	**+1.3**
	comp=Z,94nm,0.8s,mb5.3							
KAKA				*i*S		S	**07 56 38.8**	**+0.3**
KGM	**Kluang**	**24.30**	**251**	⇓*e*P		P	**07 52 35.0**	**+0.5**
GYA	**Guiyang**	**24.48**	**313**	⇑P		P	**07 52 35.2**	**-0.9**
GYA				AMB		AMB		
	comp=Z,20nm,1.0s,mb4.5							
GYA				AMB		AMB		
	comp=Z,130nm,4.6s							
GYA				LR		LR		
	comp=N,1μm,21.3s,MS4.6							
GYA				LR		LR		
	comp=E,2μm,23.6s,MS4.6							
GYA				LR		LR		
	comp=Z,2μm,21.9s,MS4.5							
ENH	**Enshi**	**25.22**	**324**	*e*P		P	**07 52 42.5**	**-0.7**
	comp=Z,16nm,1.1s,mb4.5							
IPM	**Ipoh**	**25.71**	**259**	⇓*e*P		P	**07 52 48.0**	**+0.1**
	comp=Z,37nm,0.8s,mb5.0							
JHJ	**Hachijo jima 2**	**25.79**	**27**	LR		LR	08 02 43.0	
	comp=Z,439nm,19.5s,MS4.0,baz=251,slow=36							
NST	**Nakhon Sawan**	**26.02**	**284**	P		P	**07 52 50.0**	**-0.8**
	comp=Z,58nm,1.0s,mb5.1							
NNT	**Nongplab**	**26.13**	**277**	P		P	**07 52 50.0**	**-1.8**
KMI	**Kunming**	**26.73**	**306**	*e*P		P	**07 53 00.0**	**+2.8**
KMI				AP		pP	07 53 10.7	+3.5
KMI				S		S	**07 57 24.8**	**-3.7**
KMI				AMB		AMB		
	comp=Z,14nm,1.1s,mb4.4							
KMI				AMB		AMB		
	comp=Z,83nm,4.4s							
KMI				LR		LR		
	comp=N,433nm,18.9s,MS4.3							
KMI				LR		LR		
	comp=E,750nm,23.9s,MS4.3							
KMI				LR		LR		
	comp=Z,976nm,25.2s,MS4.3							
KS15	**Wonju Array Si**	**26.96**	**3**	*e*P		P	**07 53 00.2**	**+1.0**
TIA	**Tai'an**	**27.01**	**343**	*e*P		P	**07 52 59.7**	**0.0**
CHRT	**Chiangrai**	**27.24**	**293**	⇑P		P	**07 53 00.0**	**-2.0**
BDT	**Bhumibol Dam**	**27.35**	**287**	P		P	**07 53 00.0**	**-3.0**
CM31	**Chiang Mai Arr**	**27.66**	**290**	*e*P		P	**07 53 02.7**	**-3.1**
	comp=Z,13nm,0.6s,mb4.7							
CMAR	**Chiang Mai Arr**	**27.66**	**290**	P		P	**07 53 04.2**	**-1.5**
	comp=Z,12nm,0.8s,mb4.6,baz=104,slow=7.3,SNR=66							
CMAR				LR		LR	08 05 41.7	
	comp=Z,357nm,18.1s,MS4.0,baz=105,slow=40							
CHG	**Chiang Mai**	**27.74**	**291**	⇓P		P	**07 53 04.7**	**-1.8**
	comp=Z,13nm,0.9s,mb4.6							
MAJO	**Matsushiro**	**28.17**	**21**	P		P	**07 53 09.6**	**-0.6**
MAT	**Matsushiro**	**28.17**	**21**	P		P	**07 53 09.4**	**-0.8**
MAT				S		S	**07 57 58.0**	**+6.5**
MAT	**Matsushiro**	**28.17**	**21**	*e*P		P	**07 53 09.0**	**-1.2**
MAT				*e*S		S	**07 57 59.0**	**+7.5**
MAT				LR		LR		
	comp=Z,350nm,20.0s,MS4.0							
FITZ	**Fitzroy Crossi**	**28.33**	**181**	⇓*i*P		P	**07 53 11.6**	**-0.2**
	comp=Z,8.0nm,0.6s,mb4.5							
FITZ	**Fitzroy Crossi**	**28.33**	**181**	P		P	**07 53 11.1**	**-0.7**
	comp=Z,4.6nm,0.5s,mb4.4,baz=8.5,slow=8.5,SNR=18							
XAN	**Xi'an**	**28.41**	**329**	P		P	**07 53 10.6**	**-1.8**
XAN				PP		PP	07 54 07.0	+2.7
XAN				S		S	**07 57 48.3**	**-7.2**
XAN				AMB		AMB		
	comp=Z,10.0nm,0.5s,mb4.7							
XAN				LR		LR		
	comp=N,201nm,18.6s,MS4.1							
XAN				LR		LR		
	comp=E,444nm,19.2s,MS4.1							
XAN				LR		LR		
	comp=Z,665nm,17.4s,MS4.3							
PMG	**Port Moresby**	**28.60**	**133**	P		P	**07 53 16.0**	**+1.8**
	comp=Z,28nm,0.8s,mb5.1,baz=316,slow=6.8,SNR=8.1							
PMG	**Port Moresby**	**28.60**	**133**	*e*P		P	**07 53 15.7**	**+1.5**
PMG	**Port Moresby**	**28.60**	**133**	*e*P		P	**07 53 13.2**	**-1.0**
	comp=Z,36nm,0.9s,mb5.1							
DL2	**Dalian**	**28.69**	**352**	*e*P		P	**07 53 16.3**	**+1.5**
DL2				AMB		AMB		
	comp=Z,20nm,0.8s,mb4.9							
DL2				LR		LR		
	comp=E,170nm,18.4s							
DL2				LR		LR		
	comp=Z,170nm,20.8s,MS3.6							
CD2	**Chengdu**	**29.24**	**318**	*e*P		P	**07 53 17.8**	**-2.0**
CD2				S		S	**07 58 05.3**	**-3.4**
CD2				AMB		AMB		
	comp=Z,230nm,6.9s							
CD2				LR		LR		
	comp=N,1μm,24.3s							
CD2				LR		LR		
	comp=Z,1μm,16.5s							
BJI	**Beijing**	**30.86**	**345**	*e*P		P	**07 53 34.6**	**+0.5**
BJI				S		S	**07 58 33.1**	**-1.1**
BJI				AMB		AMB		
	comp=Z,10.0nm,1.3s,mb4.5							
BJI				LR		LR		
	comp=N,341nm,17.3s,MS4.2							
BJI				LR		LR		
	comp=E,248nm,18.0s,MS4.2							
BJI				LR		LR		
	comp=Z,383nm,20.4s,MS4.0							
WRAB	**Tennant Creek**	**31.17**	**165**	*e*P		P	**07 53 35.1**	**-1.9**
	comp=Z,15nm,0.8s,mb4.9							
WRA	**Warramunga Arr**	**31.17**	**165**	P		P	**07 53 36.0**	**-1.0**
	comp=Z,2.5nm,0.6s,mb4.2,baz=346,slow=9.4,SNR=30							
WRA				S		S	**07 58 34.3**	**-5.1**
	comp=Z,4.9nm,0.8s,baz=344,slow=16,SNR=7.9							
WRA	**Warramunga Arr**	**31.17**	**165**	*i*P		P	**07 53 36.0**	**-1.1**
WB2	**Warramunga Arr**	**31.18**	**165**	⇓*i*P		P	**07 53 36.0**	**-1.1**
WB2				*e*S		S	**07 58 33.2**	**-6.2**
LZH	**Lanzhou**	**32.69**	**325**	*e*P		P	**07 53 46.2**	**-4.0**
LZH				AMB		AMB		
	comp=Z,30nm,1.0s,mb5.2							
LZH				LR		LR		
	comp=N,1μm,17.2s							
LZH				LR		LR		
	comp=Z,2μm,20.0s,MS4.8							
HHC	**Hu-ho-hao-te**	**33.01**	**339**	*e*P		P	**07 53 54.3**	**+1.4**
HHC				PP		PP	07 55 06.6	+2.7
HHC				PCP		PcP	07 56 35.2	-1.1
HHC				S		S	**07 59 13.2**	**+5.4**
HHC				PCS			08 00 20.4	
HHC				SS		SS	08 01 13.8	+4.9
HHC				AMB		AMB		
	comp=Z,13nm,1.1s,mb4.8							
HHC				AMB		AMB		
	comp=Z,105nm,5.7s							
HHC				LR		LR		
	comp=N,360nm,17.8s,MS4.2							
HHC				LR		LR		
	comp=E,273nm,17.8s,MS4.2							
HHC				LR		LR		
	comp=Z,360nm,16.9s,MS4.2							
BTO	**Baotou**	**33.36**	**337**	*e*P		P	**07 54 01.0**	**+5.1**
BTO				AMB		AMB		
	comp=Z,9.0nm,0.3s,mb5.2							
BTO				LR		LR		
	comp=N,756nm,19.8s							
BTO				LR		LR		
	comp=E,731nm,12.9s							
MDJ	**Mudanjiang**	**34.21**	**4**	P		P	**07 54 04.3**	**+1.1**
MDJ				PP		PP	07 55 18.6	+0.1
MDJ				S		S	**07 59 21.9**	**-4.5**
MDJ				SS		SS	08 01 44.9	+8.4
MDJ				AMB		AMB		
	comp=Z,16nm,1.2s,mb4.8							
MDJ				AMB		AMB		
	comp=Z,55nm,4.1s							
MDJ				LR		LR		
	comp=N,302nm,18.8s,MS4.1							
MDJ				LR		LR		
	comp=E,137nm,18.8s,MS4.1							
MDJ				LR		LR		
	comp=Z,369nm,17.2s,MS4.2							
MDJ	**Mudanjiang**	**34.21**	**4**	*e*P		P	**07 54 04.0**	**+0.8**
	comp=Z,5.8nm,0.6s,mb4.7							
MDJ				*e*		pP	07 54 14.5	+1.0
AS12	**Alice Springs**	**34.66**	**168**	⇓*i*P		P	**07 54 07.0**	**-0.3**
	comp=Z,10nm,0.7s,mb4.9							
AS12				*i*S		S	**07 59 31.2**	**-2.5**
ASAR	**Alice Springs**	**34.66**	**168**	P		P	**07 54 07.0**	**-0.3**
	comp=Z,2.3nm,0.4s,mb4.5,baz=351,slow=7.0,SNR=74							
ASAR				S		S	**07 59 30.3**	**-3.3**
	comp=Z,6.1nm,0.8s,baz=352,slow=20,SNR=9.8							
SHL	**Shillong**	**35.91**	**299**	*e*P		P	**07 54 15.2**	**-2.7**
SHL				*e*S		S	**07 59 48.7**	**-4.2**
CTA	**Charters Tower**	**36.10**	**147**	*e*P		P	**07 54 22.2**	**+2.6**
	comp=Z,10nm,0.9s,mb4.8							
CTAO	**Charters Tower**	**36.10**	**147**	*e*P		P	**07 54 18.8**	**-0.8**
	comp=Z,16nm,0.9s,mb4.9							
CTAO				LR		LR		
	comp=Z,532nm,22.0s,MS4.3							
ASAJ	**Asahikawa**	**36.43**	**20**	P		P	**07 54 23.6**	**+1.5**
	comp=Z,7.2nm,0.6s,mb4.8,baz=212,slow=13,SNR=3.5							
GTA	**Gaotai**	**37.29**	**325**	*e*P		P	**07 54 28.3**	**-1.1**
GTA				S		S	**08 00 11.0**	**-3.0**
GTA				AMB		AMB		
	comp=Z,13nm,0.9s,mb4.8							
GTA				AMB		AMB		
	comp=Z,145nm,5.7s							
GTA				LR		LR		
	comp=N,283nm,20.5s,MS4.2							
GTA				LR		LR		
	comp=E,277nm,18.6s,MS4.2							
GTA				LR		LR		
	comp=Z,490nm,20.5s,MS4.3							
LSA	**Lhasa**	**37.98**	**305**	*e*P		P	**07 54 35.6**	**+0.3**
	comp=Z,4.9nm,0.6s,mb4.4							
KLR	**Kul'dur**	**38.97**	**6**	*e*P		P	**07 54 43.8**	**+0.5**
ULN	**Ulaanbaatar**	**40.71**	**340**	*c i*P		P	**07 54 58.3**	**+0.5**
ULN	**Ulaanbaatar**	**40.71**	**340**	*e*P		P	**07 54 57.2**	**-0.5**
SONM	**Songino Array**	**40.91**	**339**	P		P	**07 55 00.3**	**+0.9**
	comp=Z,1.7nm,0.4s,mb4.0,baz=155,slow=10,SNR=6.5							
SONM				PcP		PcP	07 56 59.8	-0.3
	comp=Z,2.2nm,0.5s,baz=149,slow=3.9,SNR=4.2							
SONM				ScP			08 00 46.0	
	comp=Z,1.6nm,0.6s,baz=135,slow=2.0,SNR=4.5							
FORT	**Forrest**	**40.98**	**178**	⇑*i*P		P	**07 55 01.0**	**+0.9**
	comp=Z,114nm,0.6s,mb5.7							
GUN	**Gumba**	**41.73**	**300**	*e*P		P	**07 55 04.3**	**-2.1**
	comp=Z,64nm,0.8s,mb5.3							
PKI	**Pulchoki**	**42.04**	**300**	*e*P		P	**07 55 06.4**	**-2.6**
	comp=Z,18nm,0.5s,mb5.0							
KKN	**Kakani**	**42.21**	**300**	*e*P		P	**07 55 07.7**	**-2.7**
**D

PET					*e*S	**S**	**08 03 36.5**	**+20**	
PET					MLR	MLR			
	comp=Z,165nm,15.0s,MS4.2								
TOO	**Toolangi**	**51.00**	**160**	*e*P	**P**		**07 56 22.8**	**+3.3**	
	comp=Z,7.0nm,0.9s,mb4.6								
POO	**Poona**	**51.29**	**285**	*e*P	**P**		**07 56 20.5**	**-1.4**	
YAK	**Yakutsk**	**51.59**	**2**	*e*P	**P**		**07 56 22.5**	**-1.1**	
YAK				pmax	pmax				
	comp=Z,10.0nm,1.0s,mb4.7								
YAK				pmax	pmax				
	comp=N,7.0nm,1.2s								
YAK				pmax	pmax				
	comp=Z,10.0nm,0.9s,mb4.8								
YAK				pmax	pmax				
	comp=N,6.0nm,1.2s								
YAK	**Yakutsk**	**51.59**	**2**	*e*P	**P**		**07 56 22.4**	**-1.2**	
	comp=N,17nm,0.8s,mb5.0								
MKAR	**Makanchi Array**	**51.94**	**323**	P	**P**		**07 56 25.1**	**-1.3**	
	comp=N,7.3nm,0.5s,mb4.9,baz=124,slow=7.7,SNR=94								
MKAR				pP	pP		07 56 35.3	-1.8	
	comp=N,42nm,0.8s,baz=122,slow=8.2,SNR=34								
MKAR				ScP			08 01 33.0		
	comp=N,3.1nm,1.2s,baz=108,slow=4.6,SNR=4.1								
MKAR				LR	LR		08 20 39.4		
	comp=N,340nm,19.7s,MS4.4,baz=129,slow=39								
MKAR	**Makanchi Array**	**51.94**	**323**	*i* P	**P**		**07 56 25.1**	**-1.4**	
MKAR				pmax	pmax				
	comp=Z,28nm,0.8s								
MA2	**Magadan**	**52.40**	**15**	*e*P	**P**		**07 56 30.7**	**+1.0**	
MA2				*e*S	**S**		**08 03 46.1**	**-5.5**	
MA2				pmax	pmax				
	comp=Z,30nm,0.9s,mb5.2								
MA2				MLR	MLR				
	comp=Z,310nm,22.0s,MS4.3								
KSH	**Kashi**	**53.17**	**312**	*e*P	**P**		**07 56 32.8**	**-3.0**	
KSH				*e*PCP	PcP		07 57 42.7	-0.8	
KSH				*e*PP	PP		07 58 33.0	-4.4	
KSH				*e*S	**S**		**08 03 58.3**	**-4.0**	
KSH				LR	LR				
	comp=N,350nm,14.8s,MS4.8								
KSH				LR	LR				
	comp=E,450nm,12.4s,MS4.8								
ZAL	**Zalesovo**	**54.53**	**331**	P	**P**		**07 56 43.9**	**-1.7**	
	comp=E,2.2nm,0.3s,mb4.6,baz=269,slow=7.0,SNR=5.6								
ZAL				LR	LR		08 22 56.1		
	comp=E,297nm,19.1s,MS4.4,baz=3.8,slow=39								
ZAL	**Zalesovo**	**54.53**	**331**	*i* P	**P**		**07 56 43.9**	**-1.7**	
ZAL				pmax	pmax				
	comp=Z,2.0nm,0.3s								
KZA	**Kyzart**	**54.54**	**315**	P	**P**		**07 56 45.2**	**-0.6**	
	SNR=6.5								
KBK	**Karagaybulak**	**54.95**	**315**	P	**P**		**07 56 47.3**	**-1.4**	
	SNR=7.5								
UCH	**Uchtor**	**55.11**	**315**	P	**P**		**07 56 49.2**	**-0.7**	
	SNR=9.0								
AML	**Almayashu**	**55.65**	**314**	P	**P**		**07 56 52.8**	**-1.0**	
	SNR=8.8								
EKS2	**Erkin-Say**	**55.77**	**315**	P	**P**		**07 56 52.7**	**-2.0**	
	SNR=6.4								
NVS	**Novosibirsk**	**55.80**	**331**	*e*P	**P**		**07 56 53.0**	**-1.8**	
NVS				*e*S	**S**		**08 04 34.7**	**-2.9**	
NVS				pmax	pmax				
	comp=N,39nm,1.7s								
NVS				pmax	pmax				
	comp=Z,32nm,1.7s,mb5.1								
NVS				pmax	pmax				
	comp=E,19nm,1.6s								
NVS				smax					
	comp=N,23nm,2.0s								
NVS				smax					
	comp=E,12nm,1.5s								
KURK	**Kurchatov**	**55.98**	**325**	*e*P	**P**		**07 56 54.0**	**-2.1**	
FX1	**Attu Island--F**	**56.61**	**32**	P	**P**		**07 57 02.5**	**+2.0**	
	comp=E,18nm,0.6s,mb5.3,baz=305,slow=12,SNR=5.7								
FX1				LR	LR		08 20 12.0		
	comp=E,5.1nm,18.8s,baz=257,slow=35								
FX1	**Attu Island--F**	**56.61**	**32**	*e*P	**P**		**07 57 01.8**	**+1.2**	
KKAR	**Karatay Array**	**58.19**	**315**	*e*P	**P**		**07 57 09.3**	**-2.5**	
KKAR				pmax	pmax				
	comp=Z,2.0nm,0.5s,mb4.4								
VOSK	**Vostochnaya**	**61.13**	**325**	P	**P**		**07 57 29.3**	**-2.7**	
VOSK				pmax	pmax				
	comp=Z,3.0nm,0.7s,mb4.5								
TIXI	**Tiksi**	**61.22**	**1**	*e*P	**P**		**07 57 31.5**	**-0.8**	
TIXI				*e*S	**S**		**08 05 38.9**	**-9.0**	
TIXI				pmax	pmax				
	comp=Z,129nm,1.1s								
TIXI				MLR	MLR				
	comp=Z,1μm,16.0s,MS5.1								
TIXI	**Tiksi**	**61.22**	**1**	*e*P	**P**		**07 57 32.1**	**-0.3**	
	comp=Z,8.8nm,0.2s,mb5.5								
BRVK	**Borovoye**	**61.65**	**325**	*i* P	**P**		**07 57 33.8**	**-1.6**	
BRVK	**Borovoye**	**61.65**	**325**	*e*P	**P**		**07 57 33.2**	**-2.3**	
BILL	**Bilibino**	**63.27**	**16***c*	*i*P	**P**		**07 57 47.1**	**+1.1**	
BILL				pmax	pmax				
	comp=Z,14nm,1.5s,mb4.9								
BILL				MLR	MLR				
	comp=Z,100nm,19.0s,MS4.0								
BILL	**Bilibino**	**63.27**	**16**	*e*P	**P**		**07 57 44.5**	**-1.5**	
	comp=Z,6.4nm,0.8s,mb4.8								
AB31	**Akbulak array**	**66.80**	**319**	*i* P	**P**		**07 58 06.8**	**-2.2**	
AB31				pmax	pmax				
	comp=Z,2.0nm,0.6s,mb4.3								
SVE	**Sverdlovsk**	**68.12**	**327**	*e*P	**P**		**07 58 10.6**	**-6.5**	
SVE				MLR	MLR				
	comp=N,200nm,15.0s,MS4.7								
SVE				MLR	MLR				
	comp=E,300nm,15.0s,MS4.7								
SVE				MLR	MLR				
	comp=Z,300nm,15.0s,MS4.6								
ARU	**Arti**	**69.14**	**327**	*i*P	**P**		**07 58 20.6**	**-2.8**	
ARU				*e*			07 58 43.6		
ARU				*e*S	S		08 07 17.7	-7.4	
ARU				pmax	pmax				
	comp=Z,17nm,0.8s,mb5.0								
IMA	**Indian Mountai**	**76.50**	**24**	*e*P	**P**		**07 59 09.1**	**+2.5**	
	comp=Z,29nm,0.6s,mb5.4								
ZEI	**Tsey**	**77.46**	**312**	*e*P	**P**		**07 59 10.7**	**-1.9**	
MZLS	**Mizel**	**77.77**	**292**	P	**P**		**07 59 13.2**	**-1.5**	
KIV	**Kislovodsk**	**78.29**	**313**	*e*P	**P**		**07 59 14.4**	**-2.6**	
KIV				pmax	pmax				
	comp=Z,7.0nm,0.7s,mb4.7								
KIV				MLR	MLR				
	comp=Z,300nm,18.0s,MS4.7								
PMR	**Palmer**	**78.34**	**29**	*e*P	**P**		**07 59 17.6**	**+0.7**	
	comp=Z,16nm,1.3s,mb4.8								
PMR				LR	LR				
	comp=Z,203nm,20.0s,MS4.5								
MCK	**McKinley**	**78.42**	**27**	*e*P	**P**		**07 59 18.3**	**+0.9**	
	comp=Z,6.3nm,0.5s,mb4.8								
KAMS	**Al Khamasin**	**78.77**	**289**	P	**P**		**07 59 18.0**	**-2.2**	
COLA	**College**	**78.89**	**26**	*e*P	**P**		**07 59 20.9**	**+1.0**	
COLA	**College**	**78.89**	**26**	*e*P	**P**		**07 59 19.9**	**0.0**	
	comp=Z,4.6nm,0.7s,mb4.5								
COLA				LR	LR				
	comp=Z,145nm,20.0s,MS4.3								
ILAR	**Eielson Array**	**79.31**	**26**	P	**P**		**07 59 22.4**	**+0.2**	
	comp=Z,4.1nm,0.7s,mb4.5,baz=237,slow=5.0,SNR=58								
ILAR				LR	LR		08 32 29.9		
	comp=Z,127nm,19.1s,MS4.3,baz=281,slow=34								
ARSS	**Ar Rass**	**79.35**	**295**	P	**P**		**07 59 22.3**	**-1.0**	
AFFS	**'Afif**	**79.79**	**293**	P	**P**		**07 59 24.2**	**-1.4**	
TATS	**Tathlith**	**79.89**	**288**	P	**P**		**07 59 25.3**	**-1.0**	
DJNS	**Zahran al Janu**	**80.08**	**286**	P	**P**		**07 59 26.9**	**-0.3**	
HILS	**Ha'il**	**80.46**	**296**	P	**P**		**07 59 29.1**	**-0.1**	
MIR	**Mirnyy**	**80.52**	**193**	*e*P	**P**		**07 59 27.7**	**-1.0**	
MIR				pmax	pmax				
	comp=Z,50nm,1.3s,mb5.3								
OBN	**Obninsk**	**81.41**	**324**	*e*P	**P**		**07 59 31.6**	**-1.9**	
OBN				pmax	pmax				
	comp=Z,4.0nm,0.5s,mb4.6								
OBN				MLR	MLR				
	comp=Z,200nm,18.0s,MS4.5								
FRSS	**Farasan al Kab**	**81.56**	**285**	P	**P**		**07 59 34.4**	**-0.7**	
APA	**Apatity**	**81.57**	**337**	*e*P	**P**		**07 59 37.7**	**+3.5**	
APA				pmax	pmax				
	comp=Z,23nm,1.0s,mb5.1								
BLJS	**Baljurashi**	**81.60**	**289**	P	**P**		**07 59 35.1**	**-0.2**	
ANN	**Anapa**	**81.97**	**314**	*e*P	**P**		**07 59 35.3**	**-1.4**	
ANN				pmax	pmax				
	comp=Z,7.0nm,0.9s,mb4.6								
DAWY	**Dawson**	**82.61**	**26**	*e*P	**P**		**07 59 40.8**	**+1.3**	
KBRS	**Khaybar**	**82.92**	**295**	P	**P**		**07 59 41.9**	**0.0**	
JOF	**Joensuu**	**83.09**	**333**	*e*p	**P**		**07 59 40.9**	**-1.1**	
	comp=Z,2.8nm,0.4s,mb4.7								
JOF	**Joensuu**	**83.09**	**333**	*e*P	**P**		**07 59 40.9**	**-1.1**	
JOF				pmax	pmax				
	comp=Z,3.0nm,0.4s,mb4.7								
KEV	**Kevo**	**83.52**	**340**	*e*p	**P**		**07 59 46.9**	**+2.9**	
ARCES	**ARCESS Array B**	**84.08**	**340**	P	**P**		**07 59 47.0**	**+0.1**	
	comp=Z,4.3nm,0.6s,mb4.8,baz=76,slow=6.7,SNR=22								
ARCES				LR	LR		08 44 35.6		
	comp=Z,168nm,19.3s,MS4.4,baz=307,slow=41								
ARE0	**ARCESS Array S**	**84.08**	**340**	*e*P	**P**		**07 59 47.8**	**+0.8**	
INK	**Inuvik**	**84.15**	**22**	P	**P**		**07 59 49.2**	**+2.0**	
	comp=Z,4.2nm,0.5s,mb4.8,baz=293,slow=4.9,SNR=76								
INK				LR	LR		08 42 53.7		
	comp=Z,94nm,18.3s,MS4.2,baz=87,slow=40								
INK	**Inuvik**	**84.15**	**22**	*e*P	**P**		**07 59 48.6**	**+1.3**	
	comp=Z,3.9nm,0.6s,mb4.7								
YNBS	**Yanbu' al Bahr**	**84.27**	**294**	P	**P**		**07 59 48.7**	**-0.2**	
KBS	**Kingsbay**	**84.40**	**350**	P	**P**		**07 59 47.7**	**-0.6**	
JMQS	**Jabal Moqyreh**	**85.43**	**298**	P	**P**		**07 59 54.3**	**-0.2**	
BRTR	**Keskin Array B**	**85.48**	**309**	P	**P**		**07 59 52.9**	**-1.6**	
	comp=Z,2.8nm,1.0s,mb4.4,baz=92,slow=4.6,SNR=9.5								
BRTR				LR	LR		08 45 21.9		
	comp=Z,138nm,20.0s,MS4.3,baz=225,slow=41								
KAF	**Kangasniemi**	**85.53**	**332**	*e*p	**P**		**07 59 53.9**	**-0.3**	
	comp=Z,2.4nm,0.4s,mb4.8								
KAF	**Kangasniemi**	**85.53**	**332**	*e*P	**P**		**07 59 53.9**	**-0.3**	
KAF				pmax	pmax				
	comp=Z,2.0nm,0.4s,mb4.7								
DBAS	**Duba**	**85.61**	**297**	P	**P**		**07 59 55.1**	**-0.4**	
FINES	**FINESS Array B**	**85.79**	**332**	P	**P**		**07 59 54.9**	**-0.7**	
	comp=Z,2.4nm,0.4s,mb4.7,baz=85,slow=5.3,SNR=57								
FINES				pP	pP		08 00 04.8	-2.0	
	comp=Z,2.7nm,0.4s,baz=76,slow=4.0,SNR=6.1								
FINES				LR	LR		08 42 46.2		
	comp=Z,148nm,18.3s,MS4.4,baz=180,slow=39								
FINES	**FINESS Array B**	**85.79**	**332**	P	**P**		**07 59 54.9**	**-0.7**	
FINES				pP	pP		08 00 04.8	-2.0	
FINES				LR	LR		08 42 46.1		
JMOS	**Jabal al Moall**	**86.04**	**299**	P	**P**		**07 59 57.3**	**-0.2**	
ALWS	**Ilw as Safayha**	**86.06**	**299**	P	**P**		**07 59 58.2**	**+0.6**	
BDAS	**Al Bad'**	**86.17**	**298**	P	**P**		**07 59 58.7**	**+0.5**	
HAQS	**Haql**	**86.22**	**299**	P	**P**		**07 59 59.0**	**+0.6**	
AKASG	**Malin Array Be**	**86.48**	**321**	P	**P**		**07 59 57.7**	**-1.5**	
	comp=Z,2.0nm,0.4s,mb4.7,baz=64,slow=4.7,SNR=23								
AKASG				pP	pP		08 00 07.9	-2.6	
	comp=Z,2.9nm,0.5s,baz=67,slow=4.3,SNR=6.9								
AKASG				LR	LR		08 43 30.2		
	comp=Z,150nm,20.4s,MS4.4,baz=60,slow=39								
DLBC	**Dease Lake**	**88.26**	**31**	P	**P**		**08 00 10.5**	**+2.9**	
	comp=Z,1.1nm,0.8s,mb4.1,baz=212,slow=9.5,SNR=2.9								
DLBC	**Dease Lake**	**88.26**	**31**	P	**P**		**08 00 10.5**	**+2.9**	
KMBO	**Kilima Mbogo**	**89.27**	**269**	P	**P**		**08 00 14.1**	**+0.6**	
	comp=Z,2.9nm,0.8s,mb4.7,baz=221,slow=23,SNR=6.0								
KMBO				LR	LR		08 40 41.2		
	comp=Z,293nm,18.1s,MS4.8,baz=277,slow=36								
MAW	**Mawson**	**89.83**	**200**	P	**P**		**08 00 15.3**	**+0.4**	
	comp=Z,2.4nm,0.5s,mb4.8,baz=50,slow=3.0,SNR=6.6								
VNDA	**Vanda**	**90.06**	**173**	P	**P**		**08 00 17.1**	**+1.4**	
	comp=Z,3.4nm,0.9s,mb4.7,baz=311,slow=6.1,SNR=12								
VNDA	**Vanda**	**90.06**	**173**	*e*P	**P**		**08 00 16.4**	**+0.7**	
	comp=Z,2.2nm,0.8s,mb4.5								
DAG	**Danmarks Havn**	**90.63**	**352**	||*i*P	**P**		**08 00 19.2**	**+0.8**	
	comp=Z,1.5nm,0.8s,mb4.4								
DAG	**Danmarks Havn**	**90.63**	**352**	||*e*P	**P**		**08 00 19.2**	**+0.8**	
DAG				pmax	pmax				
	comp=Z,2.0nm,0.8s,mb4.5								
DAG	**Danmarks Havn**	**90.63**	**352**	||*e*P	**P**		**08 00 19.2**	**+0.8**	
	comp=Z,1.5nm,0.8s,mb4.4								
SBA	**Scott Base**	**90.96**	**172**	P	**P**		**08 00 21.8**	**+1.9**	
CRVS	**Cervenica-Dubn**	**91.81**	**320**	*e*P	**P**		**08 00 24.9**	**+0.4**	
CRVS				*e*			08 00 40.6		
NB2	**NORSAR Subarra**	**92.66**	**334**	P	**P**		**08 00 27.1**	**-1.0**	
	comp=Z,0.8nm,0.6s,mb4.3,baz=68,slow=5.3								
NOA	**NORSAR Array B**	**92.66**	**334**	P	**P**		**08 00 27.8**	**-0.3**	
	comp=Z,0.9nm,0.6s,mb4.4,baz=64,slow=4.6,SNR=6.3								
NOA				LR	LR		08 46 15.7		
	comp=Z,220nm,20.8s,MS4.6,baz=65,slow=38								
YKW3	**Yellowknife Ar**	**93.58**	**24**	*e*P	**P**		**08 00 33.4**	**+1.2**	
YKA	**Yellowknife Ar**	**93.62**	**24**	P	**P**		**08 00 34.4**	**+2.0**	
	comp=Z,2.5nm,0.7s,mb4.8,baz=300,slow=4.6,SNR=65								
YKA				PKKP	PKKP		08 17 37.0	+8.8	
	comp=Z,0.4nm,0.9s,baz=119,slow=2.8,SNR=7.1								
YKA				LR	LR		08 40 39.4		
	comp=Z,121nm,20.2s,MS4.3,baz=275,slow=34								
YKA	**Yellowknife Ar**	**93.62**	**24**	*i* P	**P**		**08 00 34.4**	**+2.0**	
YKA	**Yellowknife Ar**	**93.62**	**24**	P	**P**		**08 00 34.4**	**+2.0**	
YKA				PKKP	PKKP		08 17 37.0	+8.8	
YKA				LR	LR		08 40 39.4		
GERES	**GERESS Array B**	**96.61**	**322**	P	**P**		**08 00 46.8**	**+0.4**	
	comp=Z,0.4nm,0.6s,mb4.1,baz=53,slow=4.9,SNR=3.3								
QSPA	**South Pole Qui**	**100.27**	**180**	Pdif	P		08 01 04.5	+2.2	
NVAR	**Mina Array Bea**	**102.72**	**47**	P	Pdif		08 01 18.1	+3.9	
	comp=Z,0.7nm,0.8s,baz=296,slow=3.4,SNR=4.0								
PDAR	**Pinedale Array**	**106.57**	**39**	PKKPab			08 17 15.1		
	comp=Z,0.7nm,0.8s,baz=90,slow=4.4,SNR=3.7								
TXAR	**Lajitas Array**	**117.71**	**49**	PKP	PKPdf		08 06 05.6	+3.6	
	comp=Z,0.3nm,0.6s,baz=3.9,slow=3.7,SNR=7.9								
JCT	**Junction City**	**119.89**	**46**	*e*PKP	PKPdf		08 06 09.1	+2.8	
WVT	**Waverly**	**123.64**	**33**	*e*PKP	PKPdf		08 06 15.1	+1.8	
SDV	**Santo Domingo**	**154.48**	**42**	PKPbc	PKPdf		08 07 18.8	+11	
	comp=Z,3.2nm,0.6s,baz=333,slow=2.3,SNR=3.5								
LPAZ	**La Paz**	**164.79**	**114**	PKP	PKPdf		08 07 25.2	+5.5	
	comp=Z,0.9nm,0.8s,baz=298,slow=4.5,SNR=3.4								
LPAZ				PKPab	PKPab		08 08 22.2	+4.4	
	comp=Z,1.6nm,0.7s,baz=234,slow=3.1,SNR=5.5								

NIED ***09*** *08:24:00,20.70N×121.80E,h5km,Mw4.2 Best double couple: M₀2.47×10¹⁵ NP1:φ₅69°,δ63°,λ-143°. NP2: φ₅320°,δ58°,λ-33°.*

NEIC ***09*** *08:24:07.9±3.7,20.72N×121.21E,h7km±24km,mb4.4/7, Error ellipse: s-maj=9.9km s-min=6.9km az=86.0*

JMA ***09*** *08:24:09.7±0.4,20.70N×121.77E,M4.7*

BJI ***09*** *08:24:11.0,20.90N×120.78E,h5km,mB4.4,mb4.3,ML4.1, Ms3.9,Msz3.8*

IDC ***09*** *08:24:12.4±2.1,20.73N×121.37E,h40km±18km,mb3.9/14, mb1 4.1/16,mb1mx4.0/24,ML3.8/2,MS3.6/7,Ms1 3.6/7, ms1mx3.4/28,Error ellipse: s-maj=23.3km s-min=10.2km az=71.0*

ISC 09 08:24:10.6±0.5,20.81N±0.02×121.23E±0.04,h42km±6km, n56,σ1§25/71,mb4.2/19,MS3.7/6,8C-1D,Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
BBP	**Basco**	**0.78**	**118**	||*e*P	**P**	**08 24 25.3**	**+0.1**
BBP					*e*S	**S**	**08 24 37.6**	**+1.7**
SGCP	**Mt. Cagua**	**2.67**	**163**	||*e*P	**P**	**08 24 52.5**	**+0.3**
APYP	**Conner**	**2.93**	**180**	||*e*P	**P**	**08 25 03.2**	**+7.3**
CVP	**Callao Caves**	**3.14**	**170**	*e*P		**P**	**08 24 58.9**	**0.0**
CVP				*i* S		**S**	**08 25 37.6**	**+2.0**
PALP	**Palanan**	**3.90**	**163**	||*e*P	**P**	**08 25 16.0**	**+6.4**
YOJ	**Yonaguni jima**	**3.99**	**24**	P		**P**	**08 25 12.8**	**+1.9**
HATJ	**Hateruma jima**	**4.01**	**36**	P		**P**	**08 25 11.5**	**+0.3**
HATJ				*e*S		**S**	**08 25 57.5**	**-0.1**
IRIF	**Iriomote-Funau**	**4.20**	**33**	P		**P**	**08 25 14.7**	**+0.8**
IRIF				*e*S		**S**	**08 26 03.4**	**+1.1**
JKRS	**Kuro-shima**	**4.27**	**36**	P		**P**	**08 25 15.0**	**+0.2**
JKRS				*e*S		**S**	**08 26 04.1**	**+0.1**
JIJ	**Ishigaki jima**	**4.44**	**37**	P		**P**	**08 25 17.2**	**-0.1**
JIJ				*e*S		**S**	**08 26 07.3**	**-1.1**
BOLP	**Bolinao**	**4.58**	**196**	||*e*P	**P**	**08 25 20.9**	**+1.7**
QZH	**Quanzhou**	**4.78**	**330**	P		**P**	**08 25 20.0**	**-2.0**
QZH				S		**S**	**08 26 10.9**	**-6.0**
QZH				S		S		
	comp=N,130nm,0.8s							
QZH				S		S		
	comp=E,120nm,0.7s							
JTJ	**Tarama**	**4.98**	**39**	P		**P**	**08 25 25.5**	**+0.6**
JTJ				*e*S		**S**	**08 26 20.5**	**-1.4**
BALP	**Baler**	**5.05**	**176**	||*e*P	**P**	**08 25 26.0**	**+0.1**
JMJ	**Miyako jima 2**	**5.47**	**42**	*e*S		**S**	**08 26 32.5**	**-1.7**
JOGS	**Gusukube**	**5.50**	**44**	*e*S		**S**	**08 26 34.0**	**-1.1**
TGY	**Tagaytay City**	**6.68**	**182**	P		**P**	**08 25 46.8**	**-1.9**
	comp=E,45nm,0.3s,baz=133,slow=19,SNR=1.7							
GZH	**Guangzhou**	**7.66**	**289**	P		**P**	**08 25 57.2**	**-5.2**
GZH				S		**S**	**08 27 14.7**	**-14**
GZH				AMB		AMB		
	comp=Z,35nm,0.5s							
GZH				S		S		
	comp=N,95nm,1.0s							
GZH				S		S		
	comp=E,63nm,0.8s							
GZH				LR		LR		
	comp=N,478nm,13.7s							
GZH				LR		LR		
	comp=E,419nm,15.7s							
JOW	**Kunigami**	**8.80**	**46**	P		**P**	**08 26 16.4**	**-1.7**
	comp=E,2.3nm,0.3s,baz=144,slow=19,SNR=4.3							
JOW				LR		LR	08 29 56.4	
	comp=E,246nm,20.6s,baz=294,slow=39							
QIZ	**Qiongzhong**	**10.86**	**263**	P		**P**	**08 26 42.8**	**-3.7**
QIZ				S		**S**	**08 28 36.1**	**-12**
QIZ				LR		LR		
	comp=N,344nm,13.4s							
QIZ				LR		LR		
	comp=Z,379nm,12.7s							
QIZ	**Qiongzhong**	**10.86**	**263**	*e*P		**P**	**08 26 42.5**	**-3.9**
ENH	**Enshi**	**14.17**	**314**	P		**P**	**08 27 28.4**	**-2.2**
	comp=Z,16nm,1.4s							
GYA	**Guiyang**	**14.48**	**296**	P		**P**	**08 27 32.7**	**-2.0**
GYA				S		**S**	**08 30 10.3**	**-4.4**
GYA				LR		LR		
	comp=N,100nm,8.7s							
GYA				LR		LR		
	comp=E,200nm,9.2s							
GYA				LR		LR		
	comp=Z,210nm,8.6s							
JNU	**Nakatsue**	**14.96**	**33**	P		**P**	**08 27 40.9**	**-0.1**
	comp=Z,0.3nm,0.3s,baz=279,slow=13,SNR=2.5							
JNU				LR		LR	08 33 33.2	
	comp=Z,144nm,18.7s,baz=235,slow=38							
XAN	**Xi'an**	**17.10**	**323**	P		**P**	**08 28 08.2**	**+0.2**
XAN				XP			08 28 20.2	
XAN				S		**S**	**08 31 17.4**	**+2.1**
XAN				AMB		AMB		
	comp=Z,5.0nm,1.4s							
XAN				LR		LR		
	comp=N,323nm,14.2s							
XAN				LR		LR		
	comp=E,219nm,16.9s							
XAN				LR		LR		
	comp=Z,407nm,15.6s							
KS15	**Wonju Array Si**	**17.55**	**18**	*e*P		**P**	**08 28 14.9**	**+1.1**
CD2	**Chengdu**	**18.64**	**306**	*e*P		**P**	**08 28 27.2**	**-0.1**
BJT	**Baijiatuan**	**19.63**	**348**	*e*P		**P**	**08 28 38.1**	**-0.3**
	comp=Z,26nm,0.8s							
BJI	**Beijing**	**19.65**	**348**	P		**P**	**08 28 39.0**	**+0.4**
BJI				S		**S**	**08 32 13.2**	**+0.6**
BJI				AMB		AMB		
	comp=Z,20nm,0.9s							
BJI				LR		LR		
	comp=N,258nm,15.5s							
BJI				LR		LR		
	comp=E,370nm,16.1s							
BJI				LR		LR		
	comp=Z,206nm,18.7s							
CMAR	**Chiang Mai Arr**	**21.12**	**267**	P		**P**	**08 28 54.2**	**+0.1**
	comp=Z,5.5nm,0.9s,mb3.9,baz=73,slow=9.3,SNR=18							
CMAR				LR		LR	08 37 44.7	
	comp=Z,114nm,18.2s,MS3.3,baz=268,slow=38							
LZH	**Lanzhou**	**21.52**	**319**	*e*P		**P**	**08 29 02.7**	**+4.8**
LZH				XP			08 29 10.7	
LZH				AMB		AMB		
	comp=Z,20nm,1.0s,mb4.5							
LZH				LR		LR		
	comp=N,630nm,13.0s							
LZH				LR		LR		
	comp=Z,510nm,13.2s,MS4.1							
MAJO	**Matsushiro**	**21.57**	**40**	P		**P**	**08 28 59.5**	**+1.1**
HHC	**Hu-ho-hao-te**	**21.60**	**340**	*e*P		**P**	**08 29 02.5**	**+3.8**
HHC				AMB		AMB		
	comp=Z,12nm,1.2s,mb4.2							
ASAJ	**Asahikawa**	**29.24**	**32**	LR		LR	08 44 12.1	
	comp=Z,104nm,18.3s,MS3.5,baz=255,slow=41							
ULN	**Ulaanbaatar**	**29.32**	**340**	*e*P		**P**	**08 30 09.9**	**-1.4**
	comp=Z,3.1nm,0.5s,mb4.3							
SONM	**Songino Array**	**29.50**	**339**	P		**P**	**08 30 13.9**	**+0.9**
	comp=Z,4.3nm,1.0s,mb4.2,baz=160,slow=8.8,SNR=7.5							
FITZ	**Fitzroy Crossi**	**38.91**	**173**	||*i*P	**P**	**08 31 33.0**	**-1.1**
	comp=Z,5.3nm,0.9s,mb4.3							
FITZ	**Fitzroy Crossi**	**38.91**	**173**	P		**P**	**08 31 32.9**	**-1.2**
	comp=Z,1.1nm,1.1s,mb4.5,baz=18,slow=5.9,SNR=8.8							
MKAR	**Makanchi Array**	**40.84**	**319**	P		**P**	**08 31 51.4**	**+1.6**
	comp=Z,1.7nm,0.6s,mb3.9,baz=111,slow=9.9,SNR=22

KHZ				S	S	08 38 45.7	-3.5		
DSZ	**Denniston Nort**	**10.66**	**221**	S	S	08 38 57.0	-1.2		
LTZ	**Lake Taylor**	**11.16**	**216**	*eP*	P	08 37 05.3	-1.7		
LTZ				S	S	08 39 06.2	-4.1		
MQZ	**McQueen's Vall**	**11.70**	**212**	S	S	08 39 19.2	-3.9		
WVZ	**Waitaha Valley**	**12.15**	**219**	S	S	08 39 29.8	-4.0		
RPZ	**Rata Peaks**	**12.45**	**216**	P	P	08 37 20.7	-3.4		
	1.3nm,0.3s,baz=333,slow=22,SNR=9.8								
RPZ				S	S	08 39 37.6	-3.3		
	2.1nm,0.3s,baz=343,slow=7.0,SNR=5.7								
ODZ	**Otahua Downs**	**13.64**	**213**	S	S	08 40 05.7	-3.3		
STKA	**Stephens Creek**	**33.12**	**263**	P	P	08 40 57.0	-0.9		
	0.4nm,0.3s,mb3.7,baz=104,slow=8.3,SNR=2.0								
STKA				LR	LR	08 52 37.6			
	comp=Z,194nm,18.3s,baz=153,slow=33								
STKA	**Stephens Creek**	**33.12**	**263**	P	P	08 40 57.0	-0.9		
STKA				LR	LR	08 52 37.6			
CTA	**Charters Tower**	**33.86**	**285**	P	P	08 41 03.7	-0.7		
	5.0nm,0.4s,mb4.7,baz=106,slow=11,SNR=12								
CTA	**Charters Tower**	**33.86**	**285**	P	P	08 41 03.7	-0.7		
CTAO	**Charters Tower**	**33.86**	**285**	*eP*	P	08 41 04.3	-0.1		
	5.5nm,0.6s,mb4.6								
AS12	**Alice Springs**	**42.33**	**271**	*eP*	P	08 42 15.6	+0.6		
	3.7nm,0.6s,mb4.3								
ASAR	**Alice Springs**	**42.33**	**271**	P	P	08 42 15.4	+0.4		
	3.9nm,0.7s,mb4.2,baz=108,slow=7.4,SNR=47								
ASAR				pP	pP	08 42 29.6	-8.9		
	5.1nm,0.8s,baz=110,slow=7.6,SNR=8.6								
ASAR				S	S	08 48 29.5	+1.4		
	0.7nm,0.7s,baz=117,slow=14,SNR=5.9								
ASAR				LR	LR	08 57 50.0			
	comp=Z,73nm,18.8s,baz=116,slow=33								
WB2	**Warramunga Arr**	**43.64**	**276**	*jiP*	P	08 42 25.4	-0.3		
WRAB	**Tennant Creek**	**43.64**	**276**	*eP*	P	08 42 25.3	-0.4		
	16nm,0.6s,mb4.9								
WRA	**Warramunga Arr**	**43.65**	**276**	P	P	08 42 25.5	-0.2		
	6.1nm,0.4s,mb4.6,baz=116,slow=7.9,SNR=84								
WRA				S	S	08 48 47.8	+0.5		
	0.4nm,0.9s,baz=116,slow=15,SNR=2.9								
KAKA	**Kakadu**	**49.00**	**284**	*jiP*	P	08 43 06.1	-1.9		
	11nm,0.6s,mb5.0								
FITZ	**Fitzroy Crossi**	**51.73**	**273**	*jiP*	P	08 43 28.6	-0.1		
	3.6nm,0.6s,mb4.6								
QSPA	**South Pole Qui**	**56.08**	**180**	*eP*	P	08 44 08.9	+9.0		
	8.8nm,0.9s,mb4.8								
QSPA				*e*		08 45 56.9			
YKA	**Yellowknife Ar**	**109.02**	**26**	PKiKP		08 52 48.4			
	0.3nm,1.1s,baz=230,slow=1.6,SNR=3.0								
MKAR	**Makanchi Array**	**119.51**	**309**	PKP	PKPdf	08 53 08.8	+1.8		
	0.3nm,0.5s,baz=94,slow=2.4,SNR=5.1								
JOF	**Joensuu**	**145.48**	**336**	*ep*	PKPdf	08 53 57.3	+2.6		
KAF	**Kangasniemi**	**147.68**	**338**	*ep*	PKPdf	08 54 02.4	+4.0		
FINES	**FINESS Array B**	**148.26**	**337**	PKPbc	PKPdf	08 54 04.2	+4.9		
	6.6nm,0.7s,baz=56,slow=3.5,SNR=39								
FINES				pPKPbc		08 54 18.7			
	5.6nm,0.7s,baz=90,slow=3.8,SNR=7.2								
LIC	**Lamto**	**151.74**	**167**	*e*PKP1	PKPab	08 54 24.1	-0.1		
	31nm,0.9s								
KIC	**Kosan Boka**	**151.93**	**167**	*e*PKP1	PKPab	08 54 24.1	-0.9		
	28nm,0.7s								
TIC	**Toumodi**	**152.15**	**167**	*e*PKP1	PKPab	08 54 25.3	-0.7		
	7.5nm,0.2s								
NB2	**NORSAR Subarra**	**152.21**	**349**	PKP		08 54 14.4			
	1.5nm,0.7s,baz=17,slow=2.6								
NOA	**NORSAR Array B**	**152.21**	**349**	PKPbc	PKPdf	08 54 13.5	+8.0		
	2.0nm,0.8s,baz=12,slow=4.1,SNR=7.6								
NOA				pPKPbc		08 54 27.4			
	2.1nm,0.7s,baz=14,slow=4.2,SNR=6.4								
NOA	**NORSAR Array B**	**152.21**	**349**	PKPbc	PKPdf	08 54 13.5	+8.0		
NOA				pPKPbc		08 54 27.4			
BRTR	**Keskin Array B**	**153.49**	**292**	PKPbc	PKPdf	08 54 16.9	+9.0		
	1.0nm,0.5s,baz=144,slow=3.4,SNR=5.6								

IDC 09 08:35:34.6±48.0, 28.76S×177.13W, mb4.0/3, mb1 4.2/3, mb1mx3.9/12, Error ellipse: s-maj=889.0km s-min=175.6km az=95.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**10.06**	**201**	*eP*	P	08 38 09.2	+5.8
PUZ				S	S	08 39 44.2	-14
KNZ	**Kokohu**	**11.11**	**201**	*eP*	P	08 38 25.9	+8.1
KNZ				S	S	08 40 08.4	-16
PWZ	**Pawanui**	**12.29**	**202**	*eP*	P	08 38 43.6	+10
PWZ				S	S	08 40 32.6	-20
BFZ	**Birch Farm**	**13.08**	**203**	S	S	08 40 52.1	-20
MRZ	**Mangatainoka R**	**13.30**	**205**	*eS*	S	08 40 53.3	-24
MTW	**Mount Morrison**	**13.76**	**204**	*eS*	S	08 41 07.8	-20
CAW	**Cannon Point**	**13.88**	**205**	*eS*	S	08 41 09.1	-22
QRZ	**Quartz Range**	**14.72**	**212**	S	S	08 41 30.9	-20
THZ	**Tophouse**	**15.30**	**209**	S	S	08 41 41.0	-24
KHZ	**Kahutara**	**15.59**	**207**	S	S	08 41 46.4	-25
DSZ	**Denniston Nort**	**15.78**	**212**	S	S	08 41 51.7	-24
LTZ	**Lake Taylor**	**16.41**	**209**	S	S	08 42 03.4	-27
MQZ	**McQueen's Vall**	**17.02**	**206**	S	S	08 42 16.9	-28
STKA	**Stephens Creek**	**35.62**	**255**	P	P	08 42 34.8	-1.3
	0.7nm,0.4s,baz=90,slow=13,SNR=4.1						
ASAR	**Alice Springs**	**43.99**	**265**	P	P	08 43 43.2	-2.2
	1.3nm,1.0s,baz=107,slow=7.7,SNR=4.7						
WRA	**Warramunga Arr**	**44.83**	**270**	P	P	08 43 50.5	-1.9
	1.9nm,0.3s,baz=111,slow=7.7,SNR=14						

*IDC **09** 08:57:16.4±1.3, 34.45N×119.89W, mb3.7/6, mb1 4.0/11, mb1mx3.8/24, ML3.8/5, MS3.5/5, Ms1 3.5/5, ms1mx3.2/28, Error ellipse: s-maj=19.8km s-min=14.7km az=71.0*
*NEIC **09** 08:57:17.3, 34.40N×120.02W, h4km, ML4.4(PAS), After PAS.*
NEIC Felt [IV] at Buellton, Goleta, Santa Barbara and Solvang; [III] at Carpinteria, Lompoc, Newbury Park, Oxnard, Santa Ynez and Ventura; [II] at Camarillo, Thousand Oaks and Woodland Hills.

ISC 09 08:57:12.7±0.9, 34.26N±0.07×120.13W±0.06, h4km, n59, σ1§13/62, mb3.6/6, MS3.5/3, 1C, Southern California

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MWC	**Mount Wilson**	**1.72**	**91**	*i*P	**Pn**	**08 57 44.1**	**+0.5**
MWC				*e*S	**Sn**	**08 58 06.1**	**-0.1**
LRV	**Little Rabbit**	**2.28**	**342**	*e*P	**Pn**	**08 57 51.2**	**-0.5**
SAO	**San Andreas Ge**	**2.72**	**337**	*e*P	**Pn**	**08 57 56.6**	**-1.3**
DAC	**Darwin (Calif)**	**2.89**	**45**	*e*Pn	**Pn**	**08 58 00.2**	**-0.2**
DAC				*e*Pb	**Pb**	**08 58 05.8**	**+1.3**
DAC				*e*Pg	**Pg**	**08 58 09.3**	**-1.1**
PFO	**Pinyon Flat Ob**	**3.12**	**101**	*e*Pn	**Pn**	**08 58 03.5**	**-0.2**
BAR	**Barrett**	**3.29**	**118**	*e*Pn	**Pn**	**08 58 05.9**	**-0.2**
MTUM	**Tungsten Hills**	**3.34**	**22**	*e*Pn	**Pn**	**08 58 07.5**	**+0.7**
CMB	**Columbia Colle**	**3.77**	**357**	*e*Pn	**Pn**	**08 58 12.4**	**-0.5**
SAC	**San Andreas**	**3.80**	**331**	*e*Pn	**Pn**	**08 58 12.1**	**-1.1**
LKC	**Lake Chabot**	**3.81**	**336**	*e*Pn	**Pn**	**08 58 12.2**	**-1.2**
LDFC	**Landfair**	**4.22**	**77**	*e*Pn	**Pn**	**08 58 17.6**	**-1.6**
NVAR	**Mina Array Bea**	**4.41**	**19**	Pn	**Pn**	**08 58 22.3**	**+0.3**
	3.2nm,0.3s,baz=203,slow=19,SNR=27						
NVAR				Sn	**Sn**	**08 59 08.8**	**-5.8**
	9.4nm,0.3s,baz=138,slow=16,SNR=4.1						
NVAR				Lg		08 59 28.5	
	12nm,0.3s,baz=43,slow=17,SNR=4.2						
NVAR	**Mina Array Bea**	**4.41**	**19**	Pn	**Pn**	**08 58 22.3**	**+0.3**
NVAR				Sn	**Sn**	**08 59 08.8**	**-5.8**
NVAR				Lg		08 59 28.5	
TPH	**Tonopah**	**4.47**	**31**	*e*Pn	**Pn**	**08 58 22.5**	**-0.4**
NEN	**Nelson**	**4.56**	**71**	*e*Pn	**Pn**	**08 58 22.4**	**-1.6**
NSHM	**Saint Helena R**	**4.70**	**336**	*e*Pn	**Pn**	**08 58 23.8**	**-2.3**
WCN	**Washoe City**	**5.04**	**0**	*e*Pn	**Pn**	**08 58 31.1**	**+0.2**
CHCM	**Honcut**	**5.18**	**348**	*e*Pn	**Pn**	**08 58 32.2**	**-0.7**
PAHR	**Pah Rah Range**	**5.47**	**6**	*e*Pg	**Pg**	**08 58 54.5**	**-7.5**
BEKR	**Beckwourth**	**5.60**	**358**	*e*Pn	**Pn**	**08 58 37.5**	**-1.3**
BMN	**Battle Mountai**	**6.58**	**20**	Pn	**Pn**	**08 58 52.5**	**-0.1**
WDC	**Whiskeytown Da**	**6.59**	**344**	Pn	**Pn**	**08 58 51.1**	**-1.7**
WUAZ	**Wupatki**	**7.30**	**78**	*e*Pn	**Pn**	**08 59 02.2**	**-0.6**
MOD	**Modoc**	**7.63**	**359**	Pn	**Pn**	**08 59 06.5**	**-0.9**
MVU	**Marysvale**	**7.66**	**54**	*e*Pn	**Pn**	**08 59 08.2**	**+0.4**
MSU	**Marysvale**	**7.69**	**54**	*e*Pn	**Pn**	**08 59 09.2**	**+1.0**
YBH	**Yreka Blue Hor**	**7.73**	**346**	Pn	**Pn**	**08 59 09.5**	**+0.7**
	0.1nm,0.3s,baz=171,slow=13,SNR=1.9						
TUC	**Tucson**	**8.06**	**101**	*e*Pn	**P**	**08 59 11.2**	**-2.2**
	637nm,2.5s						
WVOR	**Wild Horse Val**	**8.24**	**8**	Pn	**P**	**08 59 13.7**	**-2.3**
HUMO	**Hull Mountain**	**8.62**	**346**	*e*Pn	**P**	**08 59 22.8**	**+1.6**
BGU	**Big Grassy Mou**	**8.72**	**38**	*e*Pn	**P**	**08 59 22.3**	**-0.2**
SRU	**San Rafael**	**9.11**	**55**	*e*Pn	**P**	**08 59 28.9**	**+1.0**
JLU	**Jordanelle**	**9.36**	**45**	Pn	**P**	**08 59 31.5**	**+0.1**
HVU	**Hansel Valley**	**9.48**	**36**	Pn	**P**	**08 59 32.5**	**-0.6**
PV10	**Paradox Valley**	**9.85**	**62**	*e*Pn	**P**	**08 59 38.5**	**+0.4**
HWUT	**Hardware Ranch**	**9.97**	**40**	*e*Pn	**P**	**08 59 40.4**	**+0.6**
PV01	**Paradox Valley**	**10.11**	**64**	*e*Pn	**P**	**08 59 42.1**	**+0.4**
HLID	**Hailey**	**10.30**	**24**	*e*Pn	**P**	**08 59 45.5**	**+1.3**
AHID	**Auburn Hatcher**	**11.05**	**37**	Pn	**P**	**08 59 53.5**	**-1.0**
ANMO	**Albuquerque**	**11.29**	**83**	*e*Pn	**P**	**08 59 57.0**	**-0.8**
LNOR	**Lincton Mounta**	**11.68**	**6**	Pn	**P**	**09 00 04.1**	**+0.9**
PDAR	**Pinedale Array**	**11.85**	**41**	Pn	**P**	**09 00 06.9**	**+1.4**
	0.1nm,0.3s,baz=230,slow=12,SNR=6.3						
LON	**Longmire**	**12.54**	**355**	Pn	**P**	**09 00 15.5**	**+0.7**
MNTX	**Cornudas Mount**	**12.65**	**98**	Pn	**P**	**09 00 14.9**	**-1.3**
RMW	**Rattlesnake Mo**	**13.25**	**355**	Pn	**P**	**09 00 24.1**	**0.0**
CHMT	**Chamberlain Mo**	**13.67**	**20**	*e*Pn	**P**	**09 00 29.9**	**+0.3**
NEW	**Newport**	**14.17**	**8**	Pn	**P**	**09 00 38.6**	**+2.4**
	0.1nm,0.3s,baz=182,slow=15,SNR=3.1						
NEW				LR	LR	09 06 04.7	
	comp=Z,126nm,18.5s,baz=205,slow=38						
NEW	**Newport**	**14.17**	**8**	P	**P**	**09 00 38.5**	**+2.3**
	4.1nm,0.9s						
TXAR	**Lajitas Array**	**14.83**	**105**	Pn	**P**	**09 00 47.3**	**+2.2**
	0.2nm,0.3s,baz=285,slow=12,SNR=33						
BBB	**Bella Bella**	**18.82**	**345**	LR	LR	09 09 17.0	
	comp=Z,65nm,18.5s,baz=58,slow=39						
ULM	**Lac du Bonnet**	**23.88**	**41**	P	**P**	**09 02 27.6**	**-0.3**
	3.3nm,0.7s,mb3.9,baz=219,slow=7.3,SNR=5.3						
DLBC	**Dease Lake**	**25.07**	**348**	P	**P**	**09 02 42.6**	**+3.2**
	2.2nm,1.1s,mb3.6,baz=175,slow=12,SNR=3.6						
DLBC				LR	LR	09 13 50.6	
	comp=Z,128nm,18.4s,MS3.5,baz=73,slow=40						
YKA	**Yellowknife Ar**	**28.47**	**5**	P	**P**	**09 03 11.1**	**+0.6**
	0.1nm,0.5s,mb2.7,baz=248,slow=24,SNR=4.8						
YKA				PcP	PcP	09 06 22.9	+0.1
	0.4nm,1.0s,baz=175,slow=2.2,SNR=6.8						
YKA				LR	LR	09 13 55.2	
	comp=Z,68nm,21.4s,MS3.2,baz=180,slow=35						
YKA	**Yellowknife Ar**	**28.47**	**5**	P	**P**	**09 03 11.2**	**+0.6**
YKA				PcP	PcP	09 06 22.9	+0.1
YKA				LR	LR	09 13 55.2	
DAWY	**Dawson**	**32.10**	**344**	*eP*	**P**	**09 03 45.4**	**+2.6**
ILAR	**Eielson Array**	**34.59**	**340**	P	**P**	**09 04 06.0**	**+1.6**
	0.8nm,0.6s,mb3.8,baz=154,slow=8.1,SNR=10						
SCHQ	**Schefferville**	**41.97**	**44**	P	**P**	**09 05 06.9**	**+0.8**
	3.1nm,0.9s,mb3.9,baz=276,slow=17,SNR=2.1						
ARCES	**ARCESS Array B**	**73.50**	**12**	LR	LR	09 43 39.0	
	comp=Z,61nm,19.6s,MS3.9,baz=15,slow=38						
FINES	**FINESS Array B**	**80.75**	**16**	P	**P**	**09 09 29.8**	**+1.6**
	0.8nm,0.6s,mb3.8,baz=346,slow=5.7,SNR=3.2						

*JMA **09** 09:06:12.2±0.7, 22.88N×121.54E, h94km, M2.8*
TAP 09 09:06:09.7, 22.74N×121.34E, h40km, ML3.6, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**2.30**	**41**	P	P	09 06 46.0	0.0
YOJ				S	S	09 07 11.6	-1.7
HATJ	**Hateruma jima**	**2.62**	**59**	S	S	09 07 18.4	-2.9
IRIF	**Iriomote-Funau**	**2.71**	**54**	S	S	09 07 22.2	-1.5
JKRS	**Kuro-shima**	**2.87**	**58**	S	S	09 07 25.9	-1.8
JIJ	**Ishigaki jima**	**3.04**	**57**	P	P	09 06 55.8	-0.7
JIJ				S	S	09 07 29.5	-2.5
JTJ	**Tarama**	**3.62**	**58**	P	P	09 07 03.1	-1.6
JTJ				S	S	09 07 43.2	-3.5

IDC 09 09:08:13.6±71.0, 22.59S×179.61W, mb3.6/3, mb1 3.8/3, mb1mx3.6/13, MS4.1/1, Ms1 4.1/1, ms1mx3.0/17, Error ellipse: s-maj=1281.0km s-min=167.2km az=85.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**34.43**	**287**	LR	LR	09 25 13.3	
	comp=Z,332nm,20.3s,baz=215,slow=30						
STKA	**Stephens Creek**	**35.55**	**246**	P	P	09 15 11.5	-3.1
	1.4nm,0.8s,baz=107,slow=11,SNR=3.3						
ASAR	**Alice Springs**	**42.61**	**259**	P	P	09 16 12.1	-1.4
	0.4nm,0.8s,baz=95,slow=7.9,SNR=6.1						
WRA	**Warramunga Arr**	**42.87**	**265**	P	P	09 16 14.4	-1.2
	0.6nm,0.5s,baz=96,slow=8.3,SNR=18						

*IDC **09** 09:56:58.1±0.8, 16.26S×177.61E, mb4.0/10, mb1 4.2/10, mb1mx4.1/16, MS3.9/10, Ms1 3.9/10, ms1mx3.8/17, Error ellipse: s-maj=29.6km s-min=18.7km az=140.0*
*NEIC **09** 09:57:00.3±0.8, 16.11S×177.62E, h10km, mb4.6/4, Error ellipse: s-maj=23.5km s-min=17.4km az=147.0*
ISC 09 09:56:58.8±0.7, 16.3S±0.1×177.7E±0.1, h10km, n23, σ1§36/17, mb4.0/13, MS3.9/10, Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**21.89**	**181**	P	**P**	**10 01 53.0**	**-0.9**
	6.7nm,0.7s,mb4.2,baz=221,slow=1.2,SNR=6.0						
RAR	**Rarotonga**	**21.92**	**106**	LR	LR	10 08 14.0	
	comp=Z,532nm,18.5s,MS4.0,baz=262,slow=31						
ARMA	**Armidale**	**27.64**	**235**	*eP*	**P**	**10 02 51.0**	**+2.2**
RPZ	**Rata Peaks**	**27.91**	**190**	P	**P**	**10 02 49.2**	**-1.9**
	1.7nm,0.6s,mb3.9,baz=51,slow=13,SNR=3.1						
CTA	**Charters Tower**	**30.04**	**258**	P	**P**	**10 03 07.8**	**-2.7**
	1.3nm,0.5s,mb3.9,baz=84,slow=9.2,SNR=1.9						
CTA				LR	LR	10 12 32.7	
	comp=Z,159nm,18.4s,MS3.7,baz=259,slow=31						
PMG	**Port Moresby**	**30.48**	**279**	LR	LR	10 12 58.9	
	comp=Z,78nm,21.2s,MS3.3,baz=303,slow=32						
STKA	**Stephens Creek**	**36.20**	**238**	*eP*	**P**	**10 04 05.1**	**+1.4**
	6.5nm,0.8s,mb4.6						
STKA	**Stephens Creek**	**36.20**	**238**	P	**P**	**10 04 03.8**	**+0.1**
	7.5nm,0.8s,mb4.7,baz=74,slow=8.5,SNR=16						
STKA				LR	LR	10 17 01.9	
	comp=Z,208nm,18.8s,MS3.9,baz=35,slow=33						
WB2	**Warramunga Arr**	**41.23**	**258**	*eP*	**P**	**10 04 45.7**	**-0.1**
WRA	**Warramunga Arr**	**41.25**	**258**	P	**P**	**10 04 45.5**	**-0.4**
	1.2nm,0.9s,mb3.5,baz=93,slow=8.9,SNR=15						
AS12	**Alice Springs**	**41.64**	**253**	*eP*	**P**	**10 04 49.2**	**0.0**
	5.5nm,0.9s,mb4.2						
ASAR	**Alice Springs**	**41.64**	**253**	P	**P**	**10 04 49.0**	**-0.2**
	4.1nm,0.9s,mb4.1,baz=84,slow=7.8,SNR=20						
ASAR				LR	LR	10 19 36.5	
	comp=Z,125nm,18.5s,MS3.8,baz=86,slow=33						
FITZ	**Fitzroy Crossi**	**49.59**	**260**	*eP*	**P**	**10 05 54.2**	**+1.7**
	4.9nm,0.9s,mb4.5						
SBA	**Scott Base**	**61.83**	**183**	*eP*	**P**	**10 07 20.6**	**+0.6**
	7.5nm,1.3s,mb4.7						
QSPA	**South Pole Qui**	**73.76**	**180**	*eP*	**P**	**10 08 37.2**	**+2.7**
	4.6nm,0.7s,mb4.5						
NVAR	**Mina Array Bea**	**80.93**	**46**	P	**P**	**10 09 15.1**	**0.0**
	0.2nm,0.6s,mb3.3,baz=225,slow=7.7,SNR=2.6						
CMAR	**Chiang Mai Arr**	**84.79**	**291**	P	**P**	**10 09 32.9**	**-2.5**
	0.9nm,0.9s,mb3.9,baz=229,slow=28,SNR=2.6						
CMAR				LR	LR	10 45 27.1	
	comp=Z,62nm,18.6s,MS4.0,baz=200,slow=34						
ILAR	**Eielson Array**	**85.21**	**14**	P	**P**	**10 09 36.8**	**+0.3**
	1.8nm,1.2s,mb4.1,baz=239,slow=5.9,SNR=5.6						
ILAR				LR	LR	10 46 37.9	
	comp=Z,30nm,19.3s,MS3.7,baz=138,slow=35						
TXAR	**Lajitas Array**	**88.35**	**59**	P	**P**	**10 09 52.7**	**+0.1**
	0.1nm,0.4s,mb3.4,baz=355,slow=11,SNR=3.1						
TXAR				LR	LR	10 42 51.0	
	comp=Z,59nm,19.4s,MS4.0,baz=175,slow=31						
PDAR	**Pinedale Array**	**88.81**	**45**	LR	LR	10 42 42.7	
	comp=Z,97nm,18.9s,MS4.2,baz=258,slow=31						
YKA	**Yellowknife Ar**	**94.47**	**26**	LR	LR	10 50 46.2	
	comp=Z,64nm,18.0s,MS4.1,baz=180,slow=34						
GRA1	**Grafenberg Arr**	**144.91**	**345**	*e*PKP	PKPdf	10 16 41.2	+2.0
GRA1				*e*		10 16 48.8	
GERES	**GERESS Array B**	**144.98**	**341**	PKP	PKPdf	10 16 36.6	-2.7
	0.2nm,0.5s,baz=31,slow=5.7,SNR=1.8						

*NEIC **09** 10:08:03.1±0.5, 18.50S×177.92W, h650km, mb4.2/9, Error ellipse: s-maj=20.1km s-min=9.6km az=147.0*
*IDC **09** 10:08:04.0±5.4, 18.44S×178.02W, h657km±62km, mb3.3/7, mb1 3.5/7, mb1mx3.3/15, Error ellipse: s-maj=62.2km s-min=32.9km az=150.0*
ISC 09 10:08:01.9±0.9, 18.5S±0.2×178.0W±0.2, h650km, n24, σ0§40/19, mb4.0/12, 2D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ARMA	**Armidale**	**29.98**	**241**	*eP*	**P**	**10 13 23.0**	**+0.4**
CNB	**Canberra Magne**	**33.37**	**233**	*eP*	**P**	**10 13 51.0**	**+0.1**
	7.3nm,0.4s,mb4.6						
CTA	**Charters Tower**	**33.75**	**261**	*jiP*	**P**	**10 13 55.1**	**+0.9**
	6.5nm,0.7s,mb4.3						
CTA	**Charters Tower**	**33.75**	**261**	P	**P**	**10 13 54.8**	**+0.6**
	7.8nm,0.6s,mb4.4,baz=93,slow=10,SNR=11						
CTAO	**Charters Tower**	**33.75**	**261**	*eP*	**P**	**10 13 54.8**	**+0.6**
	7.8nm,0.7s,mb4.3						
TOO	**Toolangi**	**37.09**	**232**	*eP*	**P**	**10 14 21.3**	**-0.2**
	3.4nm,0.7s,mb4.0						
STKA	**Stephens Creek**	**38.69**	**242**	*eP*	**P**	**10 14 34.8**	**+0.3**
	4.2nm,0.9s,mb3.9						
STKA	**Stephens Creek**	**38.69**	**242**	P	**P**	**10 14 34.5**	**0.0**
	2.5nm,0.4s,mb4.0,baz=80,slow=6.9,SNR=7.5						
WB2	**Warramunga Arr**	**44.91**	**260**	*eP*	**P**	**10 15 23.1**	**-0.4**
WRAB	**Tennant Creek**	**44.91**	**260**	*eP*	**P**	**10 15 23.4**	**-0.1**
	10nm,0.4s,mb4.5						
WRA	**Warramunga Arr**	**44.92**	**260**	P	**P**	**10 15 23.3**	**-0.3**
	4.2nm,0.4s,mb4.1,baz=98,slow=5.8,SNR=227						
AS12	**Alice Springs**	**45.01**	**255**	*jiP*	**P**	**10 15 24.2**	**0.0**
	5.8nm,1.0s,mb3.9						
ASAR	**Alice Springs**	**45.01**	**255**	P	**P**	**10 15 24.3**	**+0.1**
	7.5nm,0.7s,mb4.2,baz=88,slow=8.2,SNR=176						
ASAR				PcP	PcP	10 16 50.5	-0.4
	1.2nm,0.7s,baz=103,slow=3.8,SNR=7.3						
KAKA	**Kakadu**	**48.02**	**269**	*eP*	**P**	**10 15 46.7**	**-0.2**
	2.7nm,0.3s,mb4.0						
FITZ	**Fitzroy Crossi**	**53.33**	**261**	*eP*	**P**	**10 16 25.2**	**0.0**
	1.2nm,0.3s,mb3.6						
SBA	**Scott Base**	**59.82**	**184**	*eP*	**P**	**10 17 08.1**	**-0.4**
	1.0nm,0.6s,mb3.1						
TXAR	**Lajitas Array**	**85.99**	**57**	P	**P**	**10 19 37.9**	**+0.9**
	1.2nm,1.1s,mb3.5,baz=215,slow=6.3,SNR=7.9						
ILAR	**Eielson Array**	**86.41**	**13**	P	**P**	**10 19 37.4**	**-0.7**
	0.1nm,0.4s,baz=228,slow=5.5,SNR=4.8						
SONM	**Songino Array**	**94.29**	**319**	P	**P**	**10 20 14.9**	**0.0**
	0.7nm,0.6s,mb3.8,baz=90,slow=2.9,SNR=2.4						
ARCES	**ARCESS Array B**	**127.00**	**350**	PKP	PKPdf	10 25 54.5	+1.0
	6.4nm,1.1s,baz=72,slow=3.8,SNR=5.7						
FINES	**FINESS Array B**	**133.90**	**344**	PKP	PKPdf	10 26 08.2	+1.6
	0.7nm,0.8s,baz=112,slow=10,SNR=3.3						
EKA	**Eskdalemuir Ar**	**143.06**	**5**	PKP	PKPdf	10 26 22.1	-1.0
	0.8nm,0.6s,baz=315,slow=2.4,SNR=5.6						
GERES	**GERESS Array B**	**148.32**	**345**	PKPbc	PKPdf	10 26 37.6	+5.5
	0.6nm,0.6s,baz=63,slow=3.0,SNR=3.8						
DAVOX	**Davos**	**151.10**	**349**	PKPbc	PKPdf	10 26 45.1	+8.7
	4.0nm,0.5s,baz=158,slow=20,SNR=10						

*TAP **09** 10:33:27.0, 22.67N×121.24E, h28km, ML2.9*
*JMA **09** 10:33:30.2±0.2, 22.61N×121.60E, h67km*
ISC 09 10:33:30.4±3.6, 22.6N±0.2×121.7E±0.2, h28km, n6, σ0§29/8, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**2.22**	**33**	*e*S	**Sn**	**10 34 32.7**	**-0.1**
HATJ	**Hateruma jima**	**2.43**	**53**	P	**Pn**	**10 34 09.2**	**0.0**
HATJ				*e*S	**Sn**	**10 34 38.6**	**+0.3**
IRIF	**Iriomote-Funau**	**2.55**	**47**	*e*S	**Sn**	**10 34 41.9**	**+0.5**
JKRS	**Kuro-shima**	**2.69**	**52**	*e*S	**Sn**

EIBI				S	Sn	10 44 37.2	-6.6
PVRL	Vila Real	6.80	336	*e*Pn	Pn	10 43 48.3	-1.1
PVRL				*e*Sn	Sn	10 45 02.3	-5.4
PBRG	Braganca	7.02	343	*e*Pn	Pn	10 43 51.5	-0.9
ECAL	Calabor	7.15	344	P	Pn	10 43 53.9	-0.3
	1.0nm,0.4s,SNR=7.9						
ECAL	Calabor	7.15	344	P	Pn	10 43 53.0	-1.3
ECAL				S	Sn	10 45 10.0	-6.3

IDC 09 10:44:38.6±14.0, 15.02S×177.32W, h462km±167km, mb2.8/5, mb1 3.1/5, mb1mx2.9/14, Error ellipse: s-maj=94.9km s-min=46.1km az=151.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**40.98**	**238**	P	P	10 51 38.6	-2.5
	1.6nm,0.8s,baz=208,slow=10,SNR=2.9						
WRA	**Warramunga Arr**	**46.25**	**257**	P	P	10 52 22.0	-0.9
	0.2nm,0.3s,baz=80,slow=5.9,SNR=20						
ASAR	**Alice Springs**	**46.64**	**252**	P	P	10 52 24.2	-1.6
	1.2nm,0.3s,baz=87,slow=8.3,SNR=47						
ILAR	**Eielson Array**	**82.85**	**13**	P	P	10 56 12.4	-1.7
	0.2nm,0.5s,baz=207,slow=4.9,SNR=4.5						
TXAR	**Lajitas Array**	**83.57**	**57**	P	P	10 56 18.6	+0.1
	0.1nm,0.6s,baz=219,slow=8.0,SNR=3.9						
BRTR	**Keskin Array B**	**143.42**	**318**	PKP	PKPdf	11 03 19.4	0.0
	0.7nm,0.8s,baz=63,slow=2.8,SNR=4.0						

*IDC **09** 10:53:24.3±2.0,26.99S×84.42E,mb3.9/7,mb1 4.0/7, mb1mx3.9/16, Error ellipse: s-maj=68.6km s-min=24.1km az=33.0*

*NEIC **09** 10:53:28.9±0.7,26.49S×84.80E,h10km,mb4.3/3, Error ellipse: s-maj=22.6km s-min=18.2km az=129.0*

ISC 09 10:53:27.6±0.6, 26.60S±0.10×84.9E±0.1, h10km, n17, σ1$48/15, mb4.2/13, South Indian Ocean

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**38.53**	**86**	P	**P**	**11 00 53.9**	**+1.7**
	4.0nm,1.0s,mb4.1,baz=210,slow=5.4,SNR=4.0						
MAW	**Mawson**	**43.15**	**192**	*e*P	**P**	**11 01 31.1**	**+1.4**
	2.9nm,0.6s,mb4.2						
ASAR	**Alice Springs**	**44.30**	**97**	P	**P**	**11 01 38.1**	**-1.5**
	1.2nm,0.9s,mb3.6,baz=264,slow=7.0,SNR=4.5						
WRA	**Warramunga Arr**	**45.72**	**93**	P	**P**	**11 01 49.4**	**-1.6**
	1.3nm,0.9s,mb3.9,baz=256,slow=8.4,SNR=6.2						
WRA				PcP	PcP	11 03 26.9	-2.5
	0.4nm,0.7s,baz=258,slow=2.6,SNR=4.4						
CMAR	**Chiang Mai Arr**	**46.83**	**18**	P	**P**	**11 01 59.0**	**-0.8**
	0.6nm,0.6s,mb3.7,baz=212,slow=9.7,SNR=5.1						
LBTB	**Lobatse**	**52.94**	**258**	*e*P	**P**	**11 02 43.9**	**-2.7**
	1.7nm,0.6s,mb4.2						
DMN	**Daman**	**53.90**	**0**	*e*P	**P**	**11 02 58.7**	**+5.2**
KOLN	**Koldanda**	**54.07**	**359**	*e*P	**P**	**11 02 56.1**	**+1.3**
	19nm,1.1s,mb4.9						
GUN	**Gumba**	**54.21**	**1**	*e*P	**P**	**11 02 57.6**	**+1.8**
	28nm,1.2s,mb5.1						
GKN	**Gorkha**	**54.29**	**360**	*e*P	**P**	**11 02 57.8**	**+1.4**
	8.1nm,0.6s,mb4.8						
QSPA	**South Pole Qui**	**63.52**	**180**	*e*P	**P**	**11 03 59.9**	**+0.1**
	58nm,0.8s,mb5.7						
SNAA	**Sanae**	**64.28**	**201**	*e*P	**P**	**11 04 05.7**	**+0.8**
MKAR	**Makanchi Array**	**73.08**	**358**	P	**P**	**11 04 58.1**	**-1.7**
	0.9nm,0.8s,mb3.8,baz=180,slow=8.5,SNR=7.9						
BVAR	**Borovoye Array**	**80.28**	**351**	P	**P**	**11 05 39.9**	**-0.1**
	1.3nm,0.9s,mb3.8,baz=162,slow=4.7,SNR=5.6						
BRTR	**Keskin Array B**	**81.42**	**323**	P	**P**	**11 05 43.2**	**-3.1**
	0.3nm,0.5s,mb3.5,baz=146,slow=10,SNR=2.6						
YKA	**Yellowknife Ar**	**141.85**	**14**	PKP	PKPdf	11 12 57.2	-4.9
	0.1nm,1.0s,baz=321,slow=3.8,SNR=3.9						
YKA	**Yellowknife Ar**	**141.85**	**14**	PKP	PKPdf	11 12 57.2	-4.9

*NEIC **09** 11:17:40.4±1.8,5.63S×151.77E,h70km±21km, Error ellipse: s-maj=57.2km s-min=16.5km az=125.0*

*IDC **09** 11:17:45.4±9.4,5.91S×151.51E,h88km±60km,mb3.4/4, mb1 3.6/5,mb1mx3.3/15,ML2.4/1,MS3.5/1,Ms1 3.7/1, ms1mx2.9/9, Error ellipse: s-maj=71.4km s-min=58.5km az=17.0*

ISC 09 11:17:39.1±2.1, 5.7S±0.3×151.6E±0.3, h59km±25km, n8, σ1$23/9, mb3.6/4, MS3.5/1, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAB	**Rabaul**	**1.58**	**20**	*e*P	**P**	**11 18 05.1**	**-0.3**
PMG	**Port Moresby**	**5.75**	**230**	P	**P**	**11 19 05.2**	**+1.4**
	0.8nm,0.3s,baz=37,slow=12,SNR=3.7						
PMG				S	**S**	**11 20 08.2**	**-1.2**
	3.2nm,0.3s,baz=330,slow=23,SNR=6.5						
PMG	**Port Moresby**	**5.75**	**230**	*e*Pn	**P**	**11 19 05.2**	**+1.4**
PMG				S	**S**	**11 20 08.2**	**-1.2**
WRA	**Warramunga Arr**	**21.97**	**228**	P	**P**	**11 22 31.4**	**+1.8**
	0.9nm,0.5s,mb3.4,baz=53,slow=9.8,SNR=9.9						
ASAR	**Alice Springs**	**24.70**	**222**	P	**P**	**11 22 57.1**	**+0.9**
	0.9nm,0.7s,mb3.4,baz=57,slow=8.4,SNR=8.1						
STKA	**Stephens Creek**	**27.69**	**199**	P	**P**	**11 23 22.6**	**-1.3**
	0.8nm,0.7s,mb3.5,baz=315,slow=3.9,SNR=2.7						
FITZ	**Fitzroy Crossi**	**28.20**	**242**	P	**P**	**11 23 27.4**	**-1.1**
	1.5nm,0.4s,mb4.0,baz=58,slow=6.5,SNR=12						
CMAR	**Chiang Mai Arr**	**57.19**	**296**	LR	LR	11 54 14.0	
	comp=Z,38nm,18.3s,MS3.5,baz=125,slow=38						

*IDC **09** 11:42:23.6±4.7,22.09S×70.45W,h55km±36km,mb3.4/2, mb1 3.8/4,mb1mx3.5/15,ML4.0/2, Error ellipse: s-maj=58.0km s-min=34.2km az=62.0*

ISC 09 11:42:22.1±2.3, 22.1S±0.2×70.5W±0.3, h55km, n6, σ0$28/5, mb3.5/2, Near coast of northern Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
LVC	**Limon Verde**	**1.58**	**110**	P	**P**	**11 42 48.4**	**+0.2**
	106nm,0.3s,baz=289,slow=11,SNR=997						
LPAZ	**La Paz**	**6.18**	**22**	P	**P**	**11 43 53.0**	**+0.1**
	1.7nm,0.3s,baz=216,slow=5.5,SNR=51						
CPUP	**Villa Florida**	**12.75**	**112**	P	**P**	**11 45 17.1**	**-5.8**
	0.3nm,0.3s,baz=305,slow=12,SNR=5.6						
BDFB	**Brasilia**	**22.22**	**77**	P	**P**	**11 47 15.0**	**-0.3**
	2.8nm,0.9s,mb3.7,baz=270,slow=7.1,SNR=2.8						
YKA	**Yellowknife Ar**	**91.24**	**341**	P	**P**	**11 55 22.2**	**0.0**
	0.1nm,0.5s,mb3.4,baz=140,slow=4.6,SNR=7.0						
MKAR	**Makanchi Array**	**146.96**	**35**	PKPbc	PKPbc	12 01 59.8	+1.7
	0.3nm,0.6s,baz=297,slow=2.7,SNR=3.6						

*GUC **09** 11:42:29.3±0.9,24.63S×70.70W,h44km±3km, MD4.1, ML4.3*

*NEIC **09** 11:42:30.9±0.3,24.71S×70.17W,mb4.1/2,MD4.1(GUC), Error ellipse: s-maj=13.8km s-min=6.1km az=91.0*

*IDC **09** 11:42:31.0±0.7,24.67S×70.26W,h51km±4km,mb3.9/7, mb1 4.1/8,mb1mx3.9/14,MS3.1/4,Ms1 3.2/4,ms1mx3.1/18, Error ellipse: s-maj=22.4km s-min=22.0km az=76.0*

ISC 09 11:42:29.7±0.5, 24.70S±0.03×70.2W±0.1, h54km±5km, h50km±1.5km: pP-P, n31, σ0$98/32, mb4.4/10, MS3.3/1, 2C-1D, Near coast of northern Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CPN1	**Cerro Paranal**	**0.20**	**290**	*e*P	**P**	**11 42 38.7**	**+0.3**
CPN1				*i* S	**S**	**11 42 45.3**	**+0.5**
CPN1				AMP		11 42 45.6	
	comp=E,28μm,0.5s						
ANCH	**Antofagasta**	**1.03**	**349**	⇑*i* P	**P**	**11 42 47.9**	**-0.3**
ANCH				*i* S	**S**	**11 43 00.3**	**-1.5**
ANCH				AMP		11 43 02.6	
	comp=E,12μm,0.2s						
LVC	**Limon Verde**	**2.38**	**30**	*i* P	**P**	**11 43 09.8**	**+2.6**
LVC				*i* S	**S**	**11 43 41.2**	**+5.9**
LVC				AMP		11 43 43.5	
	comp=E,3μm,0.3s						
LVC	**Limon Verde**	**2.38**	**30**	P	**P**	**11 43 08.9**	**+1.6**
	comp=E,339nm,0.3s,baz=170,slow=20,SNR=38						
LVC				LR	LR	11 44 11.1	
	comp=E,497nm,21.1s,baz=240,slow=42						
LVC	**Limon Verde**	**2.38**	**30**	*e*Pn	**P**	**11 43 08.6**	**+1.4**
LVC				*e*Sn	**S**	**11 43 39.4**	**+4.0**
LVC				LR	LR	11 44 11.1	
CPCH	**Copiapo**	**2.65**	**183**	⇓*i* P	**P**	**11 43 11.4**	**+0.4**
CPCH				*i* S	**S**	**11 43 43.5**	**+1.4**
VACH	**Vallenar**	**3.90**	**187**	⇑*i* P	**P**	**11 43 28.1**	**-0.4**
VACH				*i* S	**S**	**11 44 12.3**	**-1.2**
TLL	**Tololo Astrono**	**5.48**	**186**	*e*P	**P**	**11 43 50.0**	**-0.6**
LPAZ	**La Paz**	**8.59**	**13**	P	**P**	**11 44 33.7**	**-0.2**
	comp=E,0.5nm,0.3s,baz=190,slow=13,SNR=4.0						
LPAZ				LR	LR	11 47 40.1	
	comp=E,46nm,20.5s,baz=283,slow=36						
CPUP	**Villa Florida**	**11.73**	**101**	LR	LR	11 50 27.3	
	comp=E,128nm,21.1s,baz=313,slow=40						
TRQA	**Tornquist**	**15.04**	**154**	*e*P	**P**	**11 45 58.3**	**-2.0**
	comp=E,2.2nm,0.8s						
BDFB	**Brasilia**	**22.66**	**71**	P	**P**	**11 47 27.9**	**+0.6**
	comp=E,8.4nm,0.7s,mb4.3,baz=236,slow=9.9,SNR=9.6						
BDFB				LR	LR	11 57 17.1	
	comp=E,125nm,20.3s,MS3.3,baz=294,slow=39						
TXAR	**Lajitas Array**	**62.61**	**327**	P	**P**	**11 52 50.5**	**-0.3**
	comp=E,0.6nm,0.8s,mb3.8,baz=148,slow=8.3,SNR=7.3						
QSPA	**South Pole Qui**	**65.51**	**180**	*e*P	**P**	**11 53 10.1**	**+1.2**
	comp=E,6.3nm,0.8s,mb4.7						
LIC	**Lamto**	**70.43**	**73**	*e*P	**P**	**11 53 40.0**	**-0.6**
	comp=E,66nm,1.6s,mb5.3						
TIC	**Toumodi**	**70.64**	**73**	*e*P	**P**	**11 53 41.3**	**-0.5**
	comp=E,35nm,0.8s,mb5.3						
KIC	**Kosan Boka**	**70.74**	**73**	*e*P	**P**	**11 53 42.1**	**-0.4**
	comp=E,235nm,1.8s						
DBIC	**Dimbokro**	**70.79**	**73**	P	**P**	**11 53 42.3**	**-0.4**
	comp=E,2.3nm,0.6s,mb4.3,baz=200,slow=10,SNR=4.9						
DBIC				pP	pP	11 53 57.2	-0.8
	comp=E,6.1nm,0.8s,baz=204,slow=5.4,SNR=3.4						
DBIC				sP	sP	11 54 02.2	-1.6
	comp=E,4.8nm,0.6s,baz=202,slow=6.3,SNR=2.8						
MSU	**Marysvale**	**74.17**	**327**	P	**P**	**11 54 03.8**	**+1.4**
PDAR	**Pinedale Array**	**76.30**	**331**	P	**P**	**11 54 12.7**	**-1.7**
	comp=E,0.3nm,0.4s,mb3.6,baz=135,slow=5.1,SNR=2.8						
ULM	**Lac du Bonnet**	**78.01**	**343**	P	**P**	**11 54 23.2**	**-0.6**
	comp=E,1.2nm,0.4s,mb4.2,baz=156,slow=7.1,SNR=5.3						
ULM	**Lac du Bonnet**	**78.01**	**343**	P	**P**	**11 54 23.2**	**-0.6**
HLID	**Hailey**	**79.13**	**329**	*e*P	**P**	**11 54 30.9**	**+0.8**
MCMT	**McKenzie Canyo**	**79.39**	**331**	*e*P	**P**	**11 54 32.6**	**+1.1**
MCMT				*e*	pP	11 54 46.3	-0.6
MAW	**Mawson**	**81.62**	**164**	P	**P**	**11 54 43.8**	**+1.0**
	comp=E,3.5nm,1.0s,mb4.2,baz=255,slow=4.1,SNR=3.9						
YKA	**Yellowknife Ar**	**93.80**	**341**	P	**P**	**11 55 41.7**	**+0.2**
	comp=E,1.0nm,0.6s,mb4.4,baz=138,slow=4.4,SNR=31						
YKA				pP	pP	11 55 56.3	-1.1
	comp=E,2.4nm,1.0s,baz=138,slow=4.2,SNR=12						
YKA				sP	sP	11 56 02.4	-0.6
	comp=E,0.4nm,0.6s,baz=140,slow=4.4,SNR=3.5						
YKA	**Yellowknife Ar**	**93.80**	**341**	P	**P**	**11 55 41.7**	**+0.1**
YKA				pP	pP	11 55 56.3	-1.2
YKA				sP	sP	11 56 02.4	-0.6
ASAR	**Alice Springs**	**126.55**	**208**	PKP	PKPdf	12 01 28.8	+1.3
	comp=E,0.5nm,0.5s,baz=132,slow=1.6,SNR=20						
ASAR				pPKP		12 01 43.2	
	comp=E,1.2nm,0.9s,baz=135,slow=1.6,SNR=5.7						
WRA	**Warramunga Arr**	**129.61**	**210**	PKP	PKPdf	12 01 35.0	+1.5
	comp=E,0.8nm,0.9s,baz=128,slow=1.2,SNR=11						
WRA				pPKP		12 01 50.2	
	comp=E,1.2nm,0.9s,baz=164,slow=1.5,SNR=6.4						
ZAL	**Zalesovo**	**145.34**	**26**	PKPbc	PKPbc	12 02 02.5	+1.0
	comp=E,8.0nm,0.7s,baz=73,slow=3.6,SNR=27						
ZAL				pPKPbc		12 02 17.9	
	comp=E,11nm,1.0s,baz=66,slow=3.4,SNR=10.0						
MKAR	**Makanchi Array**	**148.89**	**38**	PKPbc	PKPdf	12 02 13.2	+6.1
	comp=E,3.5nm,0.7s,baz=320,slow=2.6,SNR=35						
MKAR				pPKPbc		12 02 28.1	
	comp=E,15nm,1.0s,baz=322,slow=2.6,SNR=23						
MKAR				sPKPbc		12 02 34.8	
	comp=E,2.4nm,0.6s,baz=357,slow=3.0,SNR=5.2						

IDC 09 11:55:32.9±2.9, 4.52S×103.61E, h38km±8km, mb3.3/4, mb1 3.5/4, mb1mx3.3/15, Error ellipse: s-maj=170.0km s-min=19.6km az=53.0, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CMAR	**Chiang Mai Arr**	**23.29**	**349**	pP		12 00 50.1	
	1.1nm,0.7s,baz=190,slow=8.7,SNR=3.1						
WRA	**Warramunga Arr**	**33.62**	**120**	P	P	12 02 11.2	-1.0
	0.3nm,0.9s,baz=301,slow=9.7,SNR=5.6						
ASAR	**Alice Springs**	**34.86**	**126**	P	P	12 02 20.9	-1.9
	0.2nm,0.4s,baz=299,slow=8.3,SNR=6.5						
ASAR				pP	pP	12 02 31.4	-2.1
	0.4nm,0.3s,baz=302,slow=8.1,SNR=3.9						
STKA	**Stephens Creek**	**44.79**	**132**	P	P	12 03 42.0	-3.1
	1.5nm,0.5s,baz=330,slow=9.7,SNR=6.8						
MKAR	**Makanchi Array**	**54.46**	**342**	P	P	12 04 56.6	-2.4
	0.3nm,0.4s,baz=156,slow=7.8,SNR=4.1						
MKAR				pP	pP	12 05 07.9	-2.3
	1.0nm,0.6s,baz=155,slow=8.3,SNR=6.6						
TXAR	**Lajitas Array**	**144.28**	**43**	PKP	PKPdf	12 15 04.8	-0.8
	0.4nm,0.4s,baz=254,slow=1.0,SNR=12						
TXAR				pPKP		12 15 17.2	
	0.3nm,0.5s,baz=268,slow=1.1,SNR=3.8						

*NEIC **09** 12:11:24.9±4.1,7.36S×150.61E,h61km±29km, Error ellipse: s-maj=94.7km s-min=21.4km az=127.0*

*IDC **09** 12:11:25.8±6.3,7.36S×150.60E,h68km±52km,mb3.3/4, mb1 3.6/5,mb1mx3.3/15,ML2.3/1, Error ellipse: s-maj=83.5km s-min=34.7km az=132.0*

ISC 09 12:11:23.0±4.8, 7.6S±0.4×150.8E±0.4, h62km±38km, n8, σ0$83/10, mb3.5/3, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**4.03**	**243**	P	**P**	**12 12 23.7**	**0.0**
	1.7nm,0.3s,baz=51,slow=6.5,SNR=7.4						
PMG				S	**S**	**12 13 10.5**	**+0.4**
	3.4nm,0.3s,baz=359,slow=23,SNR=6.1						
PMG	**Port Moresby**	**4.03**	**243**	*e*Pn	**P**	**12 12 23.5**	**-0.3**
PMG				*e*Sn	**S**	**12 13 10.5**	**+0.4**
WRAB	**Tennant Creek**	**20.12**	**231**	*e*P	**P**	**12 15 53.9**	**-0.6**
WB2	**Warramunga Arr**	**20.13**	**231**	*e*P	**P**	**12 15 53.8**	**-0.7**
WRA	**Warramunga Arr**	**20.14**	**231**	P	**P**	**12 15 53.9**	**-0.7**
	2.0nm,0.7s,baz=56,slow=11,SNR=30						
ASAR	**Alice Springs**	**22.77**	**224**	P	**P**	**12 16 23.2**	**+2.2**
	0.9nm,0.7s,mb3.3,baz=50,slow=9.7,SNR=12						
FITZ	**Fitzroy Crossi**	**26.63**	**244**	P	**P**	**12 16 57.7**	**-0.2**
	1.1nm,0.6s,mb3.6,baz=154,slow=16,SNR=5.2						
ILAR	**Eielson Array**	**85.47**	**22**	P	**P**	**12 23 55.1**	**+0.3**
	0.4nm,0.8s,mb3.6,baz=252,slow=5.7,SNR=4.4						

*NNC **09** 12:25:38.4±4.3,43.06N×83.21E,mpv3.2, Error ellipse: s-maj=37.6km s-min=27.9km az=44.0*

*BJI **09** 12:25:40.1,43.56N×85.06E,h18km, mb4.4, ML3.9*

*IDC **09** 12:25:45.3±1.6,44.28N×84.90E,mb3.4/1,mb1 3.6/5, mb1mx3.4/23,ML3.5/4, Error ellipse: s-maj=40.1km s-min=17.2km az=48.0*

ISC 09 12:25:46.5±1.3, 44.2N±0.1×85.1E±0.1, h18km, n9, σ1$16/15, mb3.3/1, 4C-4D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WMQ	**Urumqi**	**1.94**	**100**	⇑*i* P	**Pn**	**12 26 15.0**	**-4.1**
WMQ				SG	**Sn**	**12 26 42.6**	**-0.6**
WMQ				S	Sn		
	comp=N,2μm,1.0s						
WMQ				S	Sn		
	comp=E,733nm,1.5s						
MK31	**Makanchi Array**	**3.24**	**324**	⇑Pn	**Pn**	**12 26 38.7**	**+1.1**
	comp=E,0.9nm,0.3s,baz=149,slow=14,SNR=408						
MK31				⇓Pg	**Pn**	**12 26 48.2**	**+11**
	comp=E,4.5nm,0.3s,baz=152,slow=15,SNR=96						
MK31				⇑Lg		12 27 36.6	
	comp=E,26nm,0.3s,baz=145,slow=29,SNR=13						
MKAR	**Makanchi Array**	**3.24**	**324**	Pn	**Pn**	**12 26 38.5**	**+0.8**
	comp=E,1.4nm,0.3s,baz=149,slow=14,SNR=54						
MKAR				Pg	**Pn**	**12 26 48.5**	**+11**
	comp=E,7.3nm,0.3s,baz=151,slow=16,SNR=36						
MKAR				Lg		12 27 37.1	
	comp=E,62nm,0.3s,baz=145,slow=29,SNR=24						
KURK	**Kurchatov**	**7.84**	**329**	⇓Pn	**Pn**	**12 27 41.2**	**-1.3**
	comp=E,1.6nm,1.3s,baz=76,slow=2.9,SNR=3.9						
KURK				⇓Sn	**Sn**	**12 29 11.6**	**-0.1**
	comp=E,2.7nm,0.6s,baz=121,slow=16,SNR=4.1						
KURK				⇑Lg		12 30 01.9	
	comp=E,13nm,0.6s,baz=258,slow=17,SNR=10						
ZAL	**Zalesovo**	**9.75**	**359**	Pn	**P**	**12 28 06.7**	**-2.2**
	comp=E,1.6nm,0.3s,baz=227,slow=9.8,SNR=7.8						
ZAL				Sn	**Sn**	**12 30 00.0**	**+1.1**
	comp=E,1.5nm,0.3s,baz=27,slow=20,SNR=8.5						
ZAL				Lg		12 31 08.5	
	comp=E,0.7nm,0.3s,baz=286,slow=21,SNR=4.6						
VOSK	**Vostochnaya**	**12.63**	**317**	⇓Sn	**S**	**12 31 02.3**	**-6.9**
	comp=E,1.9nm,0.7s						
BVAR	**Borovoye Array**	**13.10**	**318**	Pn	**P**	**12 28 48.6**	**-5.6**
	comp=E,0.2nm,0.3s,baz=122,slow=14,SNR=3.0						
BVAR				Sn	**S**	**12 31 12.0**	**-8.5**
	comp=E,0.2nm,0.3s,baz=157,slow=11,SNR=3.8						
BVAR				Lg		12 32 51.5	
	comp=E,0.2nm,0.3s,baz=126,slow=26,SNR=3.5						
SONM	**Songino Array**	**15.26**	**69**	Pn	**P**	**12 29 23.4**	**+0.9**
	comp=E,0.1nm,0.3s,baz=268,slow=11,SNR=5.7						
WRA	**Warramunga Arr**	**78.12**	**133**	P	**P**	**12 37 47.2**	**+1.0**
	comp=E,0.4nm,1.1s,mb3.3,baz=330,slow=4.7,SNR=6.6						

*NNC **09** 12:27:41.2±39.0, 37.85N×70.49E, mpv3.9, Error ellipse: s-maj=515.8km s-min=163.2km az=161.0*

ISC 09 12:27:32.0±1.4, 37.04N±0.09×71.8E±0.2, h150km, n12, σ0$47/13, 2C-1D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
AML	**Almayashu**	**5.29**	**16**	P	**P**	**12 28 50.0**	**-0.1**
	SNR=21						
UCH	**Uchtor**	**5.59**	**21**	P	**P**	**12 28 54.0**	**-0.1**
	SNR=6.7						
KZA	**Kyzart**	**5.70**	**27**	P	**P**	**12 28 55.3**	**-0.3**
	SNR=8.7						
EKS2	**Erkin-Say**	**5.82**	**15**	P	**P**	**12 28 57.8**	**+0.7**
	SNR=9.8						
AAK	**Ala-Archa**	**5.96**	**20**	P	**P**	**12 28 59.4**	**+0.3**
	SNR=9.5						
KK31	**Karatay Array**	**6.13**	**351**	⇑P	**P**	**12 29 00.6**	**-0.7**
	3.1nm,0.2s,baz=169,slow=12,SNR=43						
KK31				⇓S	**S**	**12 30 02.8**	**-8.0**
	9.3nm,0.2s,baz=171,slow=18,SNR=22						
KOLN	**Koldanda**	**13.60**	**129**	*e*P	**P**	**12 30 40.1**	**+0.4**
	4.7nm,0.3s						
GKN	**Gorkha**	**14.09**	**126**	*e*P	**P**	**12 30 46.6**	**+0.7**
	7.2nm,0.3s						
KKN	**Kakani**	**14.65**	**125**	*e*P	**P**	**12 30 52.8**	**-0.3**
	9.9nm,0.5s						
DMN	**Daman**	**14.66**	**126**	*e*P	**P**	**12 30 52.3**	**-0.9**
	5.8nm,0.3s						
AB31	**Akbulak array**	**14.93**	**329**	⇑P	**P**	**12 30 56.6**	**+0.3**
	0.2nm,0.3s						
GUN	**Gumba**	**14.97**	**123**	*e*P	**P**	**12 30 57.0**	**0.0**
	8.0nm,0.3s						

*NEIC **09** 13:02:01.2±1.2, 18.42N×145.93E, h157km±11km, mb4.0/1, Error ellipse: s-maj=23.5km s-min=14.1km az=92.0*

*IDC **09** 13:02:12.2±7.2, 18.44N×145.60E, h264km±71km, mb3.2/10, mb1 3.5/11, mb1mx3.3/22, MS2.7/1, Ms1 2.7/1, ms1mx2.3/29, Error ellipse: s-maj=29.1km s-min=12.6km az=86.0*

ISC 09 13:01:59.3±1.2, 18.50N±0.08×146.0E±0.2, h162km±11km, n22, σ1$11/21, mb3.7/11, 1C, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SARN	**Sarigan**	**1.80**	**187**	⇑*e*P	**P**	**13 02 33.1**	**-0.2**
SAPN	**Saipan**	**3.27**	**184**	P	**P**	**13 02 50.3**	**-1.0**
SAPN				*e*S	**S**	**13 03 27.7**	**-3.6**
GUMO	**Guam**	**5.00**	**193**	P	**P**	**13 03 15.2**	**+1.4**
GUMO				S	**S**	**13 04 12.9**	**+1.6**
CBIJ	**Chichi jima**	**9.25**	**338**	LR	LR	13 07 57.3	
	comp=Z,46nm,18.7s,baz=16,slow=38						
JOW	**Kunigami**	**18.33**	**300**	P	**P**	**13 06 05.3**	**+1.4**
	1.6nm,0.3s,baz=101,slow=18,SNR=3.6						
WRAB	**Tennant Creek**	**39.87**	**197**	*e*P	**P**	**13 09 18.8**	**-0.1**
	4.7nm,0.4s,mb4.5						
WB2	**Warramunga Arr**	**39.88**	**197**	*e*P	**P**	**13 09 18.6**	**-0.3**
WRA	**Warramunga Arr**	**39.88**	**197**	P	**P**	**13 09 18.9**	**0.0**
	1.7nm,0.4s,mb4.0,baz=18,slow=8.1,SNR=57						
FITZ	**Fitzroy Crossi**	**41.52**	**210**	*e*P	**P**	**13 09 32.6**	**+0.1**
	1.2nm,0.3s,mb4.0						
FITZ	**Fitzroy Crossi**	**41.52**	**210**	P	**P**	**13 09 32.7**	**+0.2**
	1.4nm,0.3s,mb4.1,baz=19,slow=6.5,SNR=23						
ASAR	**Alice Springs**	**43.54**	**196**	P	**P**	**13 09 48.9**	**0.0**
	0.7nm,0.4s,mb3.7,baz=13,slow=6.4,SNR=25						
STKA	**Stephens Creek**	**50.27**	**185**	P	**P**	**13 10 40.8**	**-0.4**
	3.8nm,1.1s,mb4.0,baz=356,slow=8.6,SNR=4.0						
MKAR	**Makanchi Array**	**58.81**	**314**	P	**P**	**13 11 41.7**	**-1.2**
	0.1nm,0.5s,mb2.9,baz=91,slow=8.2,SNR=2.8						
ILAR	**Eielson Array**	**63.70**	**26**	P	**P**	**13 12 15.9**	**+0.6**
	0.3nm,0.5s,mb3.4,baz=255,slow=6.0,SNR=7.2						
BVAR	**Borovoye Array**	**66.81**	**320**	P	**P**	**13 12 34.1**	**-1.5**
	0.4nm,0.6s,mb3.5,baz=76,slow=5.9,SNR=3

VNDA	**Vanda**	**13.71**	**193**	*e*P	P	13 53 02.3	-1.7
	9.4nm,1.6s						
RPZ	**Rata Peaks**	**21.18**	**349**	LR	LR	13 59 53.7	
	comp=Z,166nm,19.4s,baz=111,slow=29						
URZ	**Urewera**	**26.41**	**1**	LR	LR	14 02 46.3	
	comp=Z,205nm,20.7s,baz=48,slow=30						
ASAR	**Alice Springs**	**49.38**	**305**	P	P	13 58 37.5	-1.7
	0.5nm,0.6s,baz=151,slow=6.5,SNR=5.6						
WRA	**Warramunga Arr**	**52.67**	**307**	P	P	13 59 01.4	-2.7
	0.5nm,0.7s,baz=158,slow=6.4,SNR=7.8						
BRTR	**Keskin Array B**	**147.07**	**239**	PKPbc	PKPdf	14 09 29.9	-0.7
	3.2nm,0.9s,baz=153,slow=5.5,SNR=13						
KIV	**Kislovodsk**	**147.10**	**254**	*e*PKPbc	PKPdf	14 09 30.1	-0.4

*IDC **09** 13:51:00.4±3.1, 18.97N×121.16E, mb3.5/5, mb1 3.8/5, mb1mx3.5/18, MS3.1/3, Ms1 3.1/3, ms1mx2.8/25, Error ellipse: s-maj=77.1km s-min=35.8km az=171.0*
*MAN **09** 13:51:03.9, 19.08N×121.06E, h11km, mb4.5, ML3.3, MS3.2*
*NEIC **09** 13:51:07.7±1.5, 19.10N×121.00E, h45km, mb3.8/2, Error ellipse: s-maj=29.9km s-min=18.8km az=173.0*

ISC 09 13:51:02.0±0.5, 19.11N±0.04×120.95E±0.06, h11km, n19, σ0§96/21, mb3.6/5, 7C, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
APYP	**Conner**	**1.27**	**167**⇑	*e*P	Pb	**13 51 24.9**	**-0.5**
SGCP	**Mt. Cagua**	**1.35**	**130**⇑	*e*P	Pb	**13 51 25.9**	**-0.9**
SGCP				*e*S	Sb	**13 51 43.6**	**-0.3**
ABRA	**Dolores**	**1.47**	**189**⇑	*e*P	Pn	**13 51 26.8**	**-1.8**
SZP	**Santa**	**1.62**	**197**⇑	*e*P	Pn	**13 51 31.1**	**+0.4**
SZP				*e*S	Sn	**13 52 00.0**	**+8.3**
CVP	**Callao Caves**	**1.62**	**149**	*e*P	Pn	**13 51 30.9**	**+0.2**
CVP				*i* S	Sn	**13 51 52.6**	**+0.8**
BBP	**Basco**	**1.63**	**35**⇑	*e*P	Pn	**13 51 31.6**	**+0.7**
BBP				*e*S	Sn	**13 51 52.5**	**+0.5**
PALP	**Palanan**	**2.47**	**145**⇑	*e*P	Pn	**13 51 46.2**	**+3.3**
PALP				*e*S	Sn	**13 52 19.7**	**+6.5**
BOLP	**Bolinao**	**2.89**	**200**⇑	*e*P	Pn	**13 51 51.8**	**+3.0**
TGY	**Tagaytay City**	**4.98**	**180**	LR	LR	13 54 32.5	
	comp=Z,344nm,19.3s,baz=28,slow=44						
JOW	**Kunigami**	**10.22**	**40**	LR	LR	13 57 51.7	
	comp=Z,72nm,18.7s,baz=51,slow=40						
ENH	**Enshi**	**15.22**	**319**	*e*P	P	**13 54 39.5**	**+0.8**
	2.7nm,0.7s						
JNU	**Nakatsue**	**16.54**	**31**	LR	LR	14 01 16.4	
	comp=Z,43nm,21.8s,baz=149,slow=37						
CMAR	**Chiang Mai Arr**	**20.85**	**272**	P	P	**13 55 46.2**	**-0.2**
	0.3nm,0.5s,baz=73,slow=12,SNR=4.4						
ULN	**Ulaanbaatar**	**30.84**	**342**	*e*P	P	**13 57 19.6**	**-0.6**
	3.5nm,1.3s,mb4.0						
SONM	**Songino Array**	**31.01**	**341**	P	P	**13 57 21.2**	**-0.5**
	0.8nm,0.7s,mb3.6,baz=149,slow=7.2,SNR=5.4						
MKAR	**Makanchi Array**	**41.95**	**320**	P	P	**13 58 54.9**	**+0.5**
	0.9nm,0.8s,mb3.5,baz=114,slow=12,SNR=8.2						
BRVK	**Borovoye**	**51.60**	**323**	*e*P	P	**14 00 10.2**	**-0.1**
ILAR	**Eielson Array**	**73.82**	**26**	P	P	**14 02 37.4**	**-0.7**
	0.4nm,0.9s,mb3.3,baz=294,slow=6.2,SNR=4.1						
YKA	**Yellowknife Ar**	**87.72**	**23**	P	P	**14 03 50.6**	**-1.0**
	0.4nm,0.7s,mb3.8,baz=309,slow=4.5,SNR=15						

IDC 09 14:12:08.7±1.9, 3.11N×127.94E, mb3.7/4, mb1 3.9/4, mb1mx3.6/17, Error ellipse: s-maj=136.0km s-min=24.7km az=66.0, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**23.75**	**165**	P	P	14 17 22.7	-1.0
	2.1nm,0.4s,baz=344,slow=10,SNR=15						
WB2	**Warramunga Arr**	**23.75**	**165**	*e*P	P	14 17 20.6	-3.1
ASAR	**Alice Springs**	**27.24**	**168**	P	P	14 17 55.6	-0.9
	0.2nm,0.8s,baz=353,slow=7.6,SNR=4.1						
STKA	**Stephens Creek**	**37.13**	**161**	P	P	14 19 19.8	-3.2
	1.8nm,0.8s,baz=342,slow=13,SNR=3.0						
MKAR	**Makanchi Array**	**58.76**	**325**	P	P	14 22 08.8	-2.0
	0.5nm,0.6s,baz=122,slow=7.6,SNR=5.6						

*BJI **09** 14:12:59.8, 22.10N×144.68E, h68km, mB4.6, mb4.5*
*NEIC **09** 14:13:02.5±0.3, 22.21N×144.20E, h50km, mb4.4/11, Error ellipse: s-maj=9.2km s-min=6.3km az=76.0*
*IDC **09** 14:13:02.3±2.5, 22.27N×144.03E, h48km±23km, mb4.0/20, mb1 4.1/23, mb1mx4.1/28, ML4.3/3, MS3.2/5, Ms1 3.2/5, ms1mx3.0/29, Error ellipse: s-maj=20.4km s-min=11.0km az=93.0*

ISC 09 14:13:00.9±1.9, 22.22N±0.05×144.06E±0.09, h50km±16km, n53, σ1§03/54, mb4.3/29, MS3.2/3, Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**5.14**	**341**	P	P	**14 14 17.1**	**-0.1**
	35nm,0.3s,baz=135,slow=19,SNR=50						
CBIJ				S	S	**14 15 13.3**	**-2.7**
	115nm,0.3s,baz=108,slow=24,SNR=16						
JOW	**Kunigami**	**15.08**	**291**	P	P	**14 16 36.2**	**+3.9**
	2.3nm,0.3s,baz=138,slow=8.3,SNR=6.1						
JOW				LR	LR	14 22 23.9	
	comp=Z,67nm,18.3s,baz=99,slow=37						
MAJO	**Matsushiro**	**15.15**	**342**	*e*P	P	**14 16 32.3**	**-0.8**
	9.5nm,0.6s						
MAT	**Matsushiro**	**15.15**	**342**	P	P	**14 16 35.0**	**+1.9**
MAT				S	S	**14 19 12.9**	**-7.0**
MAT	**Matsushiro**	**15.15**	**342**	*e*P	P	**14 16 35.0**	**+1.9**
	12nm,1.0s						
MAT				*e*S	S	**14 19 13.0**	**-6.9**
JNU	**Nakatsue**	**15.93**	**316**	P	P	**14 16 47.1**	**+4.0**
	0.9nm,0.3s,baz=149,slow=13,SNR=5.3						
JNU				LR	LR	14 21 57.7	
	comp=Z,45nm,21.2s,baz=254,slow=34						
KS15	**Wonju Array Si**	**20.61**	**321**	*e*P	P	**14 17 40.2**	**+1.9**
ASAJ	**Asahikawa**	**21.87**	**357**	P	P	**14 17 54.4**	**+3.4**
	4.2nm,0.9s,mb3.9,baz=125,slow=30,SNR=2.5						
ASAJ				LR	LR	14 25 25.3	
	comp=Z,43nm,21.7s,MS2.8,baz=167,slow=34						
DL2	**Dalian**	**25.38**	**316**	*e*P	P	**14 18 26.7**	**+1.6**
DL2				AMB	AMB		
	comp=Z,10.0nm,0.7s,mb4.5						
PMG	**Port Moresby**	**31.58**	**174**	P	P	**14 19 21.1**	**-0.1**
	comp=Z,5.3nm,0.7s,mb4.5,baz=141,slow=3.2,SNR=3.6						
HIA	**Hailar**	**33.15**	**330**	*e*P	P	**14 19 34.3**	**-0.2**
	comp=Z,3.5nm,0.8s,mb4.3						
ULN	**Ulaanbaatar**	**39.08**	**320**	*e*P	P	**14 20 25.2**	**+0.6**
	comp=Z,2.5nm,0.7s,mb4.0						
SONM	**Songino Array**	**39.46**	**320**	P	P	**14 20 28.4**	**+0.6**
	comp=Z,1.7nm,0.7s,mb3.9,baz=130,slow=6.8,SNR=15						
CTAO	**Charters Tower**	**42.11**	**177**	*e*P	P	**14 20 50.3**	**+0.3**
	comp=Z,19nm,1.3s,mb4.6						
CMAR	**Chiang Mai Arr**	**42.35**	**273**	P	P	**14 20 52.1**	**+0.1**
	comp=Z,0.4nm,0.5s,mb3.3,baz=57,slow=7.2,SNR=5.0						
WRAB	**Tennant Creek**	**42.96**	**193**	*e*P	P	**14 20 56.9**	**-0.1**
	comp=Z,22nm,0.8s,mb4.9						
WB2	**Warramunga Arr**	**42.97**	**193**	*e*P	P	**14 20 56.9**	**-0.2**
WRA	**Warramunga Arr**	**42.97**	**193**	P	P	**14 20 57.0**	**-0.1**
	comp=Z,3.1nm,0.3s,mb4.5,baz=14,slow=8.7,SNR=123						
FITZ	**Fitzroy Crossi**	**43.94**	**206**	*e*P	P	**14 21 06.4**	**+1.4**
	comp=Z,3.7nm,0.8s,mb4.2						
FITZ	**Fitzroy Crossi**	**43.94**	**206**	P	P	**14 21 05.3**	**+0.3**
	comp=Z,3.4nm,0.6s,mb4.2,baz=15,slow=6.1,SNR=13						
FITZ				LR	LR	14 39 07.1	
	comp=Z,37nm,18.5s,MS3.3,baz=246,slow=36						
AS12	**Alice Springs**	**46.67**	**193**	*e*P	P	**14 21 25.7**	**-0.9**
	comp=Z,13nm,1.6s,mb4.6						
ASAR	**Alice Springs**	**46.67**	**193**	P	P	**14 21 26.1**	**-0.5**
	comp=Z,0.8nm,0.3s,mb4.1,baz=13,slow=6.7,SNR=17						
ASAR				LR	LR	14 41 18.3	
	comp=Z,56nm,18.6s,MS3.5,baz=212,slow=36						
GUN	**Gumba**	**52.59**	**289**	*e*P	P	**14 22 12.4**	**+0.4**
KKN	**Kakani**	**53.13**	**289**	*e*P	P	**14 22 16.8**	**+0.7**
DMN	**Daman**	**53.31**	**289**	*e*P	P	**14 22 16.8**	**-0.6**
GKN	**Gorkha**	**53.67**	**289**	*e*P	P	**14 22 21.0**	**+1.0**
	comp=Z,5.1nm,0.3s,mb4.9						
STKA	**Stephens Creek**	**53.84**	**183**	P	P	**14 22 20.5**	**-0.7**
	comp=Z,3.8nm,0.5s,mb4.6,baz=344,slow=8.1,SNR=9.6						
KOLN	**Koldanda**	**54.61**	**289**	*e*P	P	**14 22 28.3**	**+1.4**
	comp=Z,3.0nm,0.3s,mb4.9						
MKAR	**Makanchi Array**	**54.94**	**312**	P	P	**14 22 29.0**	**-0.1**
	comp=Z,1.9nm,0.7s,mb4.2,baz=93,slow=9.3,SNR=13						
KURK	**Kurchatov**	**57.65**	**317**	*e*P	P	**14 22 47.4**	**-1.0**
SML	**Sawmill**	**60.10**	**30**	*e*P	P	**14 23 04.3**	**-0.8**
NWAO	**Narrogin (SRO)**	**60.53**	**206**	P	P	**14 23 06.8**	**-1.7**
	comp=Z,30nm,1.1s,mb5.3,baz=226,slow=5.8,SNR=3.7						
ILAR	**Eielson Array**	**61.20**	**27**	P	P	**14 23 11.1**	**-1.6**
	comp=Z,1.2nm,0.7s,mb4.1,baz=260,slow=5.7,SNR=18						
BVAR	**Borovoye Array**	**62.80**	**319**	P	P	**14 23 22.4**	**-1.1**
	comp=Z,1.9nm,0.4s,mb4.6,baz=91,slow=7.2,SNR=18						
BRVK	**Borovoye**	**62.87**	**319**	*e*P	P	**14 23 23.1**	**-0.8**
YKA	**Yellowknife Ar**	**75.61**	**28**	P	P	**14 24 41.7**	**-0.2**
	comp=Z,0.9nm,0.6s,mb3.9,baz=291,slow=5.6,SNR=32						
YKA	**Yellowknife Ar**	**75.61**	**28**	P	P	**14 24 41.7**	**-0.2**
ARCES	**ARCESS Array B**	**78.68**	**342**	P	P	**14 24 59.3**	**+0.4**
	comp=Z,1.5nm,0.7s,mb4.0,baz=56,slow=8.7,SNR=4.7						
JOF	**Joensuu**	**80.19**	**335**	*e*P	P	**14 25 06.0**	**-1.2**
NVAR	**Mina Array Bea**	**82.18**	**52**	P	P	**14 25 19.4**	**+1.3**
	comp=Z,2.9nm,0.8s,mb4.2,baz=282,slow=3.7,SNR=16						
NVAR	**Mina Array Bea**	**82.18**	**52**	P	P	**14 25 19.4**	**+1.3**
KAF	**Kangasniemi**	**82.59**	**335**	*e*P	P	**14 25 17.6**	**-2.1**
FINES	**FINESS Array B**	**83.06**	**335**	P	P	**14 25 21.4**	**-0.6**
	comp=Z,1.4nm,0.4s,mb4.3,baz=77,slow=5.5,SNR=35						
BOZ	**Bozeman (W)**	**83.84**	**43**	P	P	**14 25 26.8**	**+0.4**
	comp=Z,0.7nm,0.5s,mb4.0						
HWUT	**Hardware Ranch**	**85.63**	**47**	*e*P	P	**14 25 36.5**	**+1.1**
	comp=Z,12nm,1.4s,mb4.9						
PDAR	**Pinedale Array**	**86.45**	**45**	P	P	**14 25 40.1**	**+0.7**
	comp=Z,0.7nm,0.8s,mb3.9,baz=270,slow=1.5,SNR=4.9						
MSU	**Marysvale**	**86.55**	**50**	*e*P	P	**14 25 41.0**	**+1.0**
AKASG	**Malin Array Be**	**87.55**	**325**	P	P	**14 25 43.1**	**-1.4**
	comp=Z,0.6nm,0.4s,mb4.2,baz=50,slow=5.3,SNR=8.5						
RW3	**Ridgway**	**89.81**	**48**	*e*P	P	**14 25 55.9**	**+0.3**
BRTR	**Keskin Array B**	**90.57**	**314**	P	P	**14 25 58.6**	**-0.4**
	comp=Z,0.2nm,0.3s,mb3.9,baz=53,slow=6.2,SNR=3.7						
TXAR	**Lajitas Array**	**97.09**	**55**	P	P	**14 26 29.8**	**+0.6**
	comp=Z,0.2nm,0.5s,mb3.8,baz=278,slow=2.8,SNR=5.6						
LPAZ	**La Paz**	**149.08**	**85**	PKPbc	PKPdf	14 32 47.3	+7.2
	comp=Z,3.6nm,0.4s,baz=1.9,slow=6.2,SNR=18						
LPAZ	**La Paz**	**149.08**	**85**	*e*PKPbc	PKPdf	14 32 46.9	+6.8
LPAZ				*e*PKPab	PKPab	14 32 52.0	+1.1

*NEIC **09** 14:21:20.4, 16.85N×99.72W, h2km, MD3.6(MEX), After MEX.*

MEX 09 14:21:20.5±0.5, 16.80N×99.74W, h6km±3km, MD3.8, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ACX	**Acapulco**	**0.19**	**292**	*i* P	Pg	14 21 24.0	-0.4
ACX				*i* S	Sg	14 21 26.5	-0.4
CAIG	**El Cayaco**	**0.57**	**296**	*i* P	Pg	14 21 30.6	-1.2
CAIG				*i* S	Sg	14 21 39.0	-0.4
ZIIG	**Zihuatanejo**	**1.84**	**296**	*i* P	Pn	14 21 50.1	-2.8
ZIIG				*i* S	Sn	14 22 12.0	-4.7
YAIG	**Yautepec**	**2.15**	**17**	*i* P	Pn	14 21 53.4	-4.0
YAIG				*i* S	Sn	14 22 18.2	-6.5
PPM	**Popocatepetl**	**2.49**	**25**	*i* P	Pn	14 21 59.2	-3.0
PPM				*i* S	Sn	14 22 30.5	-2.9

*NEIC **09** 14:44:54.4, 32.11S×71.41W, h40km, MD3.6(GUC), After GUC.*

GUC 09 14:44:54.4±0.9, 32.11S×71.41W, h40km±2km, MD3.6, ML2.9, 8C-4D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PACH	**Papudo**	**0.42**	**183**⇓	*i*P	P	14 45 04.3	+0.2
PACH				*i* S	S	14 45 11.8	+0.8
PTCH	**Petorca**	**0.43**	**111**⇓	*i*P	P	14 45 04.8	+0.5
PTCH				*i* S	S	14 45 11.9	+0.7
PTCH				AMP		14 45 13.0	
	comp=N,4μm,0.2s						
ILCH	**Illapel**	**0.52**	**24**⇑	*i*P	P	14 45 05.8	+0.4
ILCH				*i* S	S	14 45 14.0	+0.9
ILCH				AMP		14 45 14.8	
	comp=E,2μm,0.1s						
JACH	**Jahuel**	**0.90**	**130**⇓	*i*P	P	14 45 11.3	+0.6
JACH				*i* S	S	14 45 24.1	+1.5
ROCH	**El Roble**	**0.92**	**159**⇑	*i*P	P	14 45 11.7	+0.7
CMCH	**Combarbala**	**1.00**	**21**⇑	*i*P	P	14 45 12.5	+0.4
CMCH				*i* S	S	14 45 26.1	+0.9
CMCH				AMP		14 45 28.3	
	comp=N,2μm,0.4s						
PEL	**Peldehue**	**1.20**	**149**	*i* S	S	14 45 31.9	+1.6
PEL				AMP		14 45 33.0	
	comp=E,316nm,0.3s						
LCCH	**Las Cruces**	**1.37**	**186**⇑	*i*P	P	14 45 18.2	+0.8
RCDM	**Rinconada Maip**	**1.47**	**160**⇑	*i*P	P	14 45 19.1	+0.3
RCDM				*i* S	S	14 45 37.2	+0.2
RCDM				AMP		14 45 42.7	
	comp=E,234nm,0.1s						
CLCH	**Cerro Calan**	**1.48**	**150**⇑	*i*P	P	14 45 19.8	+0.8
CLCH				*i* S	S	14 45 38.6	+1.3
CLCH				AMP		14 45 41.0	
	comp=N,172nm,0.4s						
OVCH	**Ovalle**	**1.51**	**7**⇓	*i*P	P	14 45 20.1	+0.7
OVCH				*i* S	S	14 45 39.3	+1.2
OVCH				AMP		14 45 44.0	
	comp=E,342nm,0.5s						
FCH	**Farellones**	**1.54**	**142**	*i* P	P	14 45 20.6	+0.8
FCH				*i* S	S	14 45 40.7	+1.9
FCH				AMP		14 45 41.1	
	comp=E,123nm,0.3s						
TACH	**Talagante**	**1.59**	**166**⇑	*i*P	P	14 45 21.1	+0.6
LNV	**Longovilo**	**1.84**	**180**	*i* P	P	14 45 24.6	+0.5
TLL	**Tololo Astrono**	**2.01**	**15**⇑	*i*P	P	14 45 28.1	+1.6
TLL				*i* S	S	14 45 53.0	+2.5
TLL				AMP		14 45 57.6	
	comp=E,119nm,0.4s						
LMEL	**Las Melosas**	**2.01**	**150**	*i* P	P	14 45 27.4	+0.9
LMEL				AMP		14 45 56.6	
	comp=N,123nm,0.1s						

*JMA **09** 14:49:41.0±0.4, 21.97N×121.77E, h62km, M3.2*

TAP 09 14:49:39.7, 22.03N×121.63E, h9km, ML3.4, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**2.73**	**27**	P	Pn	14 50 23.5	-1.0
YOJ				*e*S	Sn	14 50 55.9	-2.1
HATJ	**Hateruma jima**	**2.84**	**44**	P	Pn	14 50 24.6	-1.5
HATJ				*e*S	Sn	14 50 56.4	-4.4
IRIF	**Iriomote-Funau**	**3.00**	**40**	P	Pn	14 50 27.0	-1.3
IRIF				*e*S	Sn	14 51 01.8	-3.0
JKRS	**Kuro-shima**	**3.10**	**44**	P	Pn	14 50 28.4	-1.4
JKRS				*e*S	Sn	14 51 04.5	-2.9
JIJ	**Ishigaki jima**	**3.28**	**44**	P	Pn	14 50 30.2	-2.1
JIJ				*e*S	Sn	14 51 06.8	-5.0
JTJ	**Tarama**	**3.84**	**47**	P	Pn	14 50 38.2	-2.0
JTJ				*e*S	Sn	14 51 22.4	-3.6

*IDC **09** 14:58:23.5±1.2, 32.44S×178.06W, mb4.3/3, mb1 4.4/5, mb1mx4.0/16, ML3.8/2, Error ellipse: s-maj=44.5km s-min=25.9km az=137.0*
*NEIC **09** 14:58:25.0±0.8, 32.41S×178.09W, h10km, mb4.7/3, Error ellipse: s-maj=23.0km s-min=16.4km az=113.0*

ISC 09 14:58:28.0±1.7, 32.38S±0.09×178.3W±0.3, h33km, n20, σ0§83/10, mb4.4/5, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**6.96**	**211**	Pn	**Pn**	**15 00 09.0**	**-1.4**
	2.1nm,0.3s,baz=35,slow=1.8,SNR=16						
URZ				Sn	**Sn**	**15 01 29.9**	**+0.7**
	2.6nm,0.3s,baz=186,slow=18,SNR=6.8						
RPZ	**Rata Peaks**	**14.06**	**213**	Pn	P	**15 01 43.0**	**-4.0**
	0.4nm,0.3s,baz=302,slow=3.8,SNR=3.8						
CTA	**Charters Tower**	**33.91**	**282**	P	P	**15 05 11.4**	**+1.2**
	4.5nm,0.8s,mb4.5,baz=114,slow=7.8,SNR=4.6						
CTAO	**Charters Tower**	**33.91**	**282**	*e*P	P	**15 05 11.4**	**+1.2**
	2.0nm,0.5s,mb4.3						
ASAR	**Alice Springs**	**42.78**	**269**	P	P	**15 06 24.1**	**-0.2**
	2.5nm,0.9s,mb4.0,baz=110,slow=7.9,SNR=22						
WB2	**Warramunga Arr**	**43.94**	**274**	*e*P	P	**15 06 33.2**	**-0.6**
WRAB	**Tennant Creek**	**43.94**	**274**	*e*P	P	**15 06 33.7**	**-0.1**
	18nm,0.9s,mb4.8						
WRAB				*e*	pP	15 06 43.1	-0.6
WRA	**Warramunga Arr**	**43.95**	**274**	P	P	**15 06 33.6**	**-0.2**
	4.7nm,1.0s,mb4.2,baz=113,slow=8.0,SNR=55						
QSPA	**South Pole Qui**	**57.73**	**180**	*e*P	P	**15 08 18.1**	**+0.6**
	7.1nm,0.7s,mb4.8						
MKAR	**Makanchi Array**	**118.83**	**309**	PKP	PKPdf	15 17 13.6	+0.7
	1.1nm,1.0s,baz=90,slow=3.6,SNR=4.0						
MKAR	**Makanchi Array**	**118.83**	**309**	PKP	PKPdf	15 17 13.6	+0.7
BVAR	**Borovoye Array**	**127.62**	**315**	PKP	PKPdf	15 17 30.7	+1.1
	2.1nm,1.0s,baz=90,slow=1.5,SNR=7.2						
JOF	**Joensuu**	**144.15**	**337**	*e*p	PKPbc	15 17 58.0	-0.9
KAF	**Kangasniemi**	**146.31**	**339**	*e*p	PKPdf	15 18 04.6	+1.3
FINES	**FINESS Array B**	**146.90**	**339**	PKPbc	PKPbc	15 18 07.2	+1.4
	4.0nm,0.5s,baz=56,slow=4.6,SNR=40						
NB2	**NORSAR Subarra**	**150.66**	**351**	PKPdf	PKPdf	15 18 15.9	+5.6
	0.8nm,0.7s,baz=39,slow=1.9						
NOA	**NORSAR Array B**	**150.66**	**351**	PKPbc	PKPdf	15 18 16.6	+6.3
	1.2nm,1.0s,baz=245,slow=21,SNR=3.1						
HFS	**Hagfors**	**151.12**	**348**	PKPbc	PKPdf	15 18 17.8	+6.7
	1.3nm,0.6s,baz=104,slow=6.1,SNR=6.0						
AKASG	**Malin Array Be**	**152.68**	**320**	PKPbc	PKPdf	15 18 21.9	+8.3
	1.7nm,0.8s,baz=45,slow=2.3,SNR=7.8						
BRTR	**Keskin Array B**	**153.25**	**295**	PKPbc	PKPdf	15 18 22.9	+8.2
	1.1nm,0.7s,baz=124,slow=4.5,SNR=6.2						

*STR **09** 14:58:46.9±0.1, 42.81N×2.55E, h5km±1km, Ml2.1, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
*LDG **09** 14:58:47.4±0.1, 42.82N×2.53E, h3km, Md2.1/1, Ml1.7/3, Error ellipse: s-maj=1.8km s-min=1.0km az=102.0*
*NEIC **09** 14:58:47.4, 42.82N×2.53E, h3km, ML2.1(STR), ML1.7(LDG), After LDG.*
*MDD **09** 14:58:47.5±0.5, 42.82N×2.51E, mbLg1.2/2, Error ellipse: s-maj=9.8km s-min=2.5km az=57.0, PRXIMO SIN SOLUCIN*

ISC 09 14:58:46.9±0.7, 42.82N±0.03×2.47E±0.05, h9km±6km, n9, σ0§77/16, Pyrenees

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LRDF	**Laroque-de-Fa**	**0.13**	**24**	Pg	**Pg**	**14 58 50.0**	**-0.1**
LRDF				Sg	**Sg**	**14 58 52.4**	**+0.2**
FILF	**Fillols**	**0.27**	**165**	Pg	**Pg**	**14 58 52.5**	**0.0**
FILF				Sg	**Sg**	**14 58 56.2**	**0.0**
CARF	**Carcanieres**	**0.28**	**249**	Pg	**Pg**	**14 58 53.6**	**+0.7**
CARF				Sg	**Sg**	**14 58 58.6**	**+1.8**
EJON	**La Jonquera**	**0.48**	**140**	Pg	**Pg**	**14 58 55.7**	**-1.0**
	0.4nm,0.1s,SNR=7.9						
EJON				Lg		14 59 02.4	
	1.4nm,0.1s,SNR=12						
MTLF	**Montolieu**	**0.56**	**341**	*e*Pg	**Pg**	**14 58 58.3**	**+0.1**
MTLF				*e*Pn	**Pn**	**14 59 00.9**	**+0.3**
MTLF				*e*Sg	**Sg**	**14 59 05.4**	**-0.2**
MTLF				*e*Sn	**Sn**	**14 59 10.4**	**+0.5**
	1.7nm,0.2s						
MTLF	**Montolieu**	**0.56**	**341**	Pg	**Pg**	**14 58 58.3**	**+0.1**
MTLF				Lg		14 59 05.4	
EPF	**Esparros**	**1.58**	**279**	*e*Pn	**Pn**	**14 59 15.3**	**+0.1**
EPF				*e*Sg	**Sg**	**14 59 38.9**	**-0.6**
	2.6nm,0.2s						
ETSF	**Etsaut**	**2.23**	**273**	*e*Sg	**Sg**	**14 59 59.3**	**-1.8**
	0.3nm,0.2s						
VIVF	**Saint-Julien-l**	**2.59**	**37**	*e*Sg	**Sg**	**15 00 08.0**	**-5.2**
	0.4nm,0.2s						

*NNC **09** 15:36:16.3±2.7, 39.85N×77.49E, mpv2.9, Error ellipse: s-maj=24.9km s-min=12.9km az=154.0*

BJI 09 15:36:21.6, 40.10N×77.38E, h14km, ML3.8, 3C-2D, Kyrgyzstan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSH	**Kashi**	**1.23**	**242**⇑	*i*PG	Pg	15 36 43.3	-3.0
KSH				SG	Sg	15 37 01.5	-1.3
KSH				S	Sb		
	comp=N,560nm,0.7s						
KSH				S	Sb		
	comp=E,580nm,0.7s						
KK31	**Karatay Array**	**5.96**	**302**	⇓Pg	Pg	15 38 09.0	-12
	comp=E,2.5nm,0.8s,baz=116,slow=16,SNR=8.8						
KK31				⇓Lg		15 39 30.4	
	comp=E,3.3nm,0.8s,baz=123,slow=27,SNR=4.0						
MK31	**Makanchi Array**	**7.58**	**26**	Pn	Pn	15 38 13.2	-1.3
	comp=E,0.1nm,0.3s,baz=192,slow=12,SNR=9.8						
MK31				⇑Lg		15 40 21.0	
	comp=E,2.8nm,0.7s						
KURK	**Kurchatov**	**10.65**	**4**	⇑Lg		15 42 00.0	
	comp=E,5.7nm,1.7s,baz=121,slow=16,SNR=4.0						

*IDC **09** 15:54:01.7±2.6, 8.17N×93.65E, mb3.2/2, mb1 3.5/3, mb1mx3.3/18, ML3.8/1, Error ellipse: s-maj=84.0km s-min=31.8km az=66.0*

ISC 09 15:54:03.2±1.5, 8.3N±0.2×93.4E±0.2, h33km, n8, σ1§46/8, mb3.5/3, Nicobar Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**11.46**	**27**	Pn	P	**15 56 47.4**	**-0.2**
	0.2nm,0.3s,baz=212,slow=15,SNR=6.4						
PKI	**Pulchoki**	**20.64**	**339**	*e*P	P	**15 58 45.3**	**+2.7**
	6.9nm,0.6s						
DMN	**Daman**	**20.78**	**339**	*e*P	P	**15 58 44.9**	**+0.8**
	5.8nm,0.5s						
GUN	**Gumba**	**20.80**	**341**	*e*P	P	**15 58 43.3**	**-0.9**
	225nm,0.3s						
KKN	**Kakani**	**20.89**	**339**	*e*P

BVAR	**Borovoye Array**	**50.03**	**311**	P		**P**	**17 27 11.9**	**-0.8**
	0.4nm,0.4s,mb3.8,baz=68,slow=7.1,SNR=5.4							
WRA	**Warramunga Arr**	**58.87**	**189**	P		**P**	**17 28 17.4**	**-0.3**
	0.3nm,0.6s,mb3.5,baz=6.3,slow=7.3,SNR=7.6							
ASAR	**Alice Springs**	**62.60**	**189**	P		**P**	**17 28 42.9**	**-0.1**
	0.2nm,0.6s,mb3.4,slow=6.3,SNR=5.1							

*IDC **09** 17:26:06.1±0.6,42.62S×41.95E,mb4.3/9,mb1 4.4/9, mb1mx4.2/16,MS3.8/5,Ms1 3.8/5,ms1mx3.4/23,Error ellipse: s-maj=29.2km s-min=19.2km az=50.0*
*NEIC **09** 17:26:07.4±0.3,42.70S×41.88E,h10km,mb4.6/11,Error ellipse: s-maj=12.4km s-min=8.8km az=75.0*
ISC 09 17:26:05.7±0.6,42.74S±0.09×41.8E±0.2,h10km,n31, σ0s71/20,mb4.5/18,MS3.9/4,Prince Edward Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
SUR	**Sutherland**	**19.52**	**295**	LR		LR	LR	17 36 18.0	
	comp=Z,210nm,18.5s,baz=112,slow=31								
LBTB	**Lobatse**	**22.13**	**318**	*e*P			**P**	**17 31 03.5**	**+0.5**
	8.5nm,1.3s,mb4.0								
MAW	**Mawson**	**27.38**	**163**	P			**P**	**17 31 54.5**	**+1.9**
	3.7nm,0.7s,mb4.0,baz=310,slow=14,SNR=4.9								
MAW				LR		LR	LR	17 39 35.1	
	comp=Z,259nm,20.7s,MS3.8,baz=57,slow=30								
MAW	**Mawson**	**27.38**	**163**	P			**P**	**17 31 52.4**	**-0.3**
	6.6nm,1.0s,mb4.1								
MAW				LR		LR	LR	17 39 35.1	
KMBO	**Kilima Mbogo**	**41.63**	**353**	LR		LR	LR	17 48 19.5	
	comp=Z,214nm,21.0s,MS4.0,baz=98,slow=32								
QSPA	**South Pole Qui**	**47.47**	**180**	*e*P			**P**	**17 34 40.5**	**-1.3**
	5.6nm,0.9s,mb4.5								
VNDA	**Vanda**	**54.57**	**167**	P			**P**	**17 35 35.0**	**-0.6**
	1.0nm,0.6s,mb4.0,baz=255,slow=6.8,SNR=7.6								
VNDA	**Vanda**	**54.57**	**167**	*e*P			**P**	**17 35 35.4**	**-0.2**
	0.5nm,0.7s,mb3.6								
SBA	**Scott Base**	**55.15**	**168**	*e*P			**P**	**17 35 40.8**	**+0.9**
	70nm,2.2s,mb5.3								
DBIC	**Dimbokro**	**64.88**	**307**	P			**P**	**17 36 47.1**	**-0.3**
	3.7nm,0.6s,mb4.6,baz=139,slow=9.2,SNR=5.5								
STKA	**Stephens Creek**	**75.62**	**120**	P			**P**	**17 37 52.9**	**+0.4**
	3.6nm,0.7s,mb4.4,baz=267,slow=4.2,SNR=8.3								
ASAR	**Alice Springs**	**75.84**	**109**	P			**P**	**17 37 54.0**	**+0.1**
	2.3nm,0.9s,mb4.1,baz=227,slow=5.3,SNR=15								
WRA	**Warramunga Arr**	**78.57**	**106**	P			**P**	**17 38 09.2**	**+0.1**
	2.6nm,0.7s,mb4.3,baz=218,slow=4.7,SNR=42								
BDFB	**Brasilia**	**79.40**	**259**	LR		LR	LR	18 05 37.7	
	comp=Z,75nm,19.3s,MS4.0,baz=115,slow=30								
KOLN	**Koldanda**	**80.04**	**37**	*e*P			**P**	**17 38 16.9**	**0.0**
	28nm,1.3s,mb5.0								
CMAR	**Chiang Mai Arr**	**80.44**	**54**	P			**P**	**17 38 18.9**	**-0.3**
	1.7nm,1.1s,mb3.9,baz=226,slow=6.5,SNR=7.5								
DMN	**Daman**	**80.58**	**38**	*e*P			**P**	**17 38 18.4**	**-1.4**
	18nm,1.0s,mb5.0								
PKI	**Pulchoki**	**80.69**	**38**	*e*P			**P**	**17 38 20.2**	**-0.2**
	15nm,1.0s,mb4.8								
GKN	**Gorkha**	**80.71**	**38**	*e*P			**P**	**17 38 20.3**	**-0.2**
	13nm,1.0s,mb4.8								
KKN	**Kakani**	**80.81**	**38**	*e*P			**P**	**17 38 21.1**	**+0.1**
	10nm,0.9s,mb4.7								
BRTR	**Keskin Array B**	**82.42**	**354**	P			**P**	**17 38 29.6**	**+0.5**
	1.4nm,1.0s,mb3.9,baz=170,slow=7.5,SNR=7.6								
BRTR				LR		LR	LR	18 16 55.6	
	comp=Z,28nm,18.2s,MS3.7,baz=65,slow=37								
LSA	**Lhasa**	**85.19**	**42**	*e*P			**P**	**17 38 44.8**	**+1.4**
	4.8nm,0.8s,mb4.7								
MKAR	**Makanchi Array**	**96.12**	**27**	P			**P**	**17 39 34.0**	**-0.4**
	0.6nm,0.6s,mb4.2,baz=211,slow=5.6,SNR=5.8								
TXAR	**Lajitas Array**	**149.23**	**256**	PKPbc		PKPdf		17 45 57.0	+3.9
	1.1nm,0.7s,baz=138,slow=4.9,SNR=13								
ULM	**Lac du Bonnet**	**150.22**	**299**	PKPbc		PKPdf		17 45 57.7	+3.7
	5.6nm,0.7s,baz=58,slow=3.1,SNR=7.5								
ULM	**Lac du Bonnet**	**150.22**	**299**	*e*PKPbc		PKPdf		17 45 58.0	+4.0
MNTX	**Cornudas Mount**	**151.77**	**258**	*e*PKPbc		PKPdf		17 46 02.5	+5.6
YKA	**Yellowknife Ar**	**155.82**	**333**	PKPbc		PKPdf		17 46 10.0	+8.6
	0.4nm,1.0s,baz=11,slow=1.7,SNR=4.8								
YKA				PKPab		PKPab		17 46 27.4	-0.3
	0.4nm,0.7s,baz=43,slow=4.5,SNR=7.8								
ILAR	**Eielson Array**	**157.39**	**10**	PKPab		PKPab		17 46 33.4	-1.0
	0.5nm,0.6s,baz=323,slow=3.7,SNR=7.4								
NVAR	**Mina Array Bea**	**164.26**	**261**	PKPab		PKPab		17 47 06.2	+1.3
	0.5nm,0.9s,baz=127,slow=4.5,SNR=3.5								
NVAR	**Mina Array Bea**	**164.26**	**261**	PKPab		PKPab		17 47 06.2	+1.3

*NEIC **09** 17:26:32.5±0.7,21.43S×67.29W,h188km±7km,mb4.3/2, Error ellipse: s-maj=12.4km s-min=10.1km az=76.0*
*SYO **09** 17:26:32.4,21.43S×67.29W,h188km,MB4.3*
*IDC **09** 17:26:32.3±0.9,21.38S×67.24W,h184km±9km,mb3.7/5, mb1 3.8/8,mb1mx3.6/15,Error ellipse: s-maj=16.5km s-min=12.5km az=101.0*
*GUC **09** 17:26:33.9±0.7,22.15S×67.09W,h194km±11km,ML4.7*
ISC 09 17:26:31.7±0.6,21.45S±0.05×67.35W±0.09,h200km±8km, n25,σ1s19/26,mb3.8/5,5C-3D,Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
LVC	**Limon Verde**	**1.85**	**231**	*i*P		P	**P**	**17 27 10.7**	**+1.6**
LVC				*i* S			**S**	**17 27 39.1**	**+1.2**
LVC				AMP				17 27 40.2	
	comp=E,1μm,0.5s								
LVC	**Limon Verde**	**1.85**	**231**	P			**P**	**17 27 10.6**	**+1.6**
	baz=63,slow=10								
LVC				S			**S**	**17 27 38.8**	**+0.9**
	comp=E,101nm,0.3s,baz=283,slow=23,SNR=81								
ANCH	**Antofagasta**	**3.60**	**231**	*i*P			**P**	**17 27 30.0**	**+0.9**
ANCH				*i* S			**S**	**17 28 12.4**	**-1.0**
ANCH				AMP				17 28 14.8	
	comp=N,1μm,0.5s								
CPN1	**Cerro Paranal**	**4.23**	**221**	*e*P			**P**	**17 27 37.6**	**+0.6**
CPN1				*i* S			**S**	**17 28 25.8**	**-1.8**
CPN1				AMP				17 28 28.8	
	comp=E,823nm,0.3s								
LPAZ	**La Paz**	**5.18**	**352**	P			**P**	**17 27 50.4**	**+1.3**
	comp=E,12nm,0.3s,baz=171,slow=8.7,SNR=199								
LPAZ				S			**S**	**17 28 48.3**	**-0.9**
	comp=E,2.2nm,0.3s,baz=42,slow=24,SNR=3.6								
LPAZ	**La Paz**	**5.18**	**352**	*i*P			**P**	**17 27 50.3**	**+1.2**
	comp=E,17nm,0.4s								
LPAZ				*e*S			**S**	**17 28 47.8**	**-1.4**
ARE	**Arequipa**	**6.32**	**321**	*e*P			**P**	**17 28 03.0**	**-0.8**
ARE				*i*				17 28 03.7	
ARE				*i* S			**S**	**17 29 09.7**	**-5.8**
CPCH	**Copiapo**	**6.49**	**204**	*i*P			**P**	**17 28 04.3**	**-1.7**
CPCH				*i* S			**S**	**17 29 12.9**	**-6.6**
CPUP	**Villa Florida**	**10.38**	**120**	P			**P**	**17 28 57.1**	**+0.5**
	comp=E,1.5nm,0.3s,baz=322,slow=12,SNR=22								
CPUP	**Villa Florida**	**10.38**	**120**	*e*P			**P**	**17 28 56.9**	**+0.3**
	comp=E,2.7nm,0.5s								
BDFB	**Brasilia**	**19.21**	**76**	P			**P**	**17 30 41.1**	**-1.4**
	comp=E,1.4nm,0.3s,baz=256,slow=7.5,SNR=13								
TXAR	**Lajitas Array**	**61.43**	**324**	P			**P**	**17 36 29.4**	**+0.3**
	comp=E,0.2nm,0.6s,mb2.9,baz=135,slow=6.4,SNR=3.4								
DBIC	**Dimbokro**	**67.33**	**73**	P			**P**	**17 37 06.2**	**-1.4**
	comp=E,6.6nm,0.8s,mb4.3,baz=223,slow=7.3,SNR=7.0								
ULM	**Lac du Bonnet**	**75.71**	**342**	P			**P**	**17 37 56.5**	**-0.1**
	comp=E,1.9nm,0.5s,mb4.0,baz=123,slow=5.4,SNR=5.4								
SYO	**Syowa Base**	**76.04**	**159**	‖P			**P**	**17 37 52.9**	**-5.2**
SYO	**Syowa Base**	**76.04**	**159**	‖PcP			PcP	17 38 00.0	-10
SYO	**Syowa Base**	**76.04**	**159**	‖pP			pP	17 38 45.1	-1.0
MAW	**Mawson**	**83.96**	**163**	P			**P**	**17 38 41.6**	**+1.6**
	comp=E,3.6nm,0.7s,mb4.2,baz=190,slow=6.1,SNR=3.8								
YKA	**Yellowknife Ar**	**91.62**	**340**	P			**P**	**17 39 18.2**	**+1.5**
	comp=E,0.2nm,0.4s,mb3.4,baz=134,slow=4.9,SNR=14								
YKA				pP			pP	17 40 07.5	+1.3
	comp=E,0.3nm,0.8s,baz=134,slow=3.7,SNR=6.3								
YKA	**Yellowknife Ar**	**91.62**	**340**	P			**P**	**17 39 18.2**	**+1.5**
YKA				pP			pP	17 40 07.5	+1.3
ASAR	**Alice Springs**	**130.61**	**206**	PKP			PKPdf	17 45 22.1	+2.6
	comp=E,0.7nm,0.4s,baz=131,slow=1.7,SNR=12								
WRA	**Warramunga Arr**	**133.72**	**209**	PKP			PKPdf	17 45 28.4	+3.1
	comp=E,0.7nm,0.4s,baz=157,slow=1.7,SNR=10								
MKAR	**Makanchi Array**	**144.73**	**37**	PKP			PKPdf	17 45 46.4	+2.1
	comp=E,6.0nm,0.9s,baz=316,slow=3.0,SNR=33								
MKAR	**Makanchi Array**	**144.73**	**37**	PKP			PKPdf	17 45 46.4	+2.1
SONM	**Songino Array**	**153.19**	**9**	PKPbc			PKPdf	17 46 08.1	+11
	comp=E,0.3nm,0.3s,baz=301,slow=1.4,SNR=9.2								

*IDC **09** 17:36:01.1±2.1,5.66S×130.89E,mb3.7/2,mb1 3.8/5, mb1mx3.6/13,ML3.5/3,Error ellipse: s-maj=113.0km s-min=25.1km az=80.0*
ISC 09 17:36:23.5±4.2,6.7S±0.2×130.2E±0.2,h224km±46km,n6, σ1s23/10,mb3.3/2,Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**12.13**	**201**	*e*P			**P**	**17 39 10.9**	**+0.6**
	3.7nm,1.7s								
FITZ				*e*S			**S**	**17 41 20.9**	**-0.8**
FITZ	**Fitzroy Crossi**	**12.13**	**201**	Pn			**P**	**17 39 11.9**	**+1.6**
	0.3nm,0.3s,baz=5.0,slow=5.4,SNR=16								
FITZ				Sn			**S**	**17 41 21.2**	**-0.5**
	0.4nm,0.3s,baz=135,slow=2.9,SNR=4.4								
WRA	**Warramunga Arr**	**13.75**	**163**	Pn			**P**	**17 39 29.2**	**-1.4**
	0.3nm,0.3s,baz=340,slow=14,SNR=26								
WRA				Sn			**S**	**17 41 58.3**	**-0.1**
	0.4nm,0.3s,baz=346,slow=25,SNR=6.3								
ASAR	**Alice Springs**	**17.22**	**168**	P			**P**	**17 40 14.8**	**+2.8**
	0.2nm,0.3s,baz=346,slow=9.5,SNR=16								
ASAR				S			**S**	**17 43 24.7**	**+10**
	0.1nm,0.3s,slow=29,SNR=4.5								
SONM	**Songino Array**	**58.23**	**341**	P			**P**	**17 45 51.3**	**-5.2**
	0.5nm,0.8s,mb3.2,baz=156,slow=6.7,SNR=4.3								
MKAR	**Makanchi Array**	**68.08**	**327**	P			**P**	**17 47 00.3**	**-0.5**
	0.5nm,0.4s,mb3.5,baz=115,slow=7.5,SNR=9.6								

*IDC **09** 17:51:32.5±0.5,14.29N×145.43E,mb4.5/16,mb1 4.7/16, mb1mx4.6/21,MS3.8/11,Ms1 3.8/11,ms1mx3.7/20,Error ellipse: s-maj=20.0km s-min=14.3km az=88.0*
*MOS **09** 17:51:34.7±0.8,14.22N×145.59E,h33km,mb4.7/4,Error ellipse: s-maj=22.2km s-min=13.1km az=116.6*
*BJI **09** 17:51:34.0,14.01N×145.45E,h30km,mB5.2,mb4.9, Ms4.3,Msz4.0*
*NEIC **09** 17:51:35.4±1.2,14.19N×145.23E,h15km±7km,mb4.9/23, MS4.4/2,Error ellipse: s-maj=6.9km s-min=5.3km az=103.0*
NEIC Felt on Rota.
*HRVD **09** 17:51:35.4±0.6,14.14N×145.15E,h18km±2km,MW4.8/43, Centroid moment Tensor Solution. LP body waves: s7,c8; Mantle waves: s43,c68; Half duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-1.35±.22; $M_{\theta\theta}$1.47±.14; $M_{\phi\phi}$-0.12±.14; $M_{r\theta}$1.02±.26; $M_{\theta\phi}$0.29±.10; $M_{\phi r}$-0.50±.31; Best double couple: $M_0$1.84×10^{16} NP1:ϕ_s60°,δ32°,λ-126°. NP2: ϕ_s281°,δ65°,λ-70°. Principal axes: T 1.81, Plg17°, Azm356°; N .06, Plg18°, Azm92°; P -1.87, Plg64°, Azm226°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
ISC 09 17:51:33.8±1.7,14.17N±0.04×145.23E±0.05,h13km±10km, h20km±.9k:pP-P,n107,σ1s08/104,mb4.7/52,MS3.9/21, 5C-3D,Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**0.67**	**211**	⇑*i*P			**Pb**	**17 51 48.4**	**+1.5**
GUMO				*e*S			**Sb**	**17 51 56.6**	**+0.9**
SAPN	**Saipan**	**1.16**	**26**	⇑*i*P			**Pb**	**17 51 56.9**	**+1.7**
SARN	**Sarigan**	**2.58**	**12**	⇑*e*P			**Pn**	**17 52 16.9**	**+1.0**
JOW	**Kunigami**	**20.24**	**311**	LR		LR	LR	18 02 12.2	
	comp=Z,241nm,21.2s,MS3.5,baz=125,slow=32								
JNU	**Nakatsue**	**22.95**	**328**	P			**P**	**17 56 38.4**	**-0.6**
	29nm,1.0s,mb4.7,baz=85,slow=6.9,SNR=6.8								
JNU				LR		LR	LR	18 04 34.7	
	comp=Z,89nm,21.9s,MS3.2,baz=233,slow=34								
MAJO	**Matsushiro**	**23.15**	**346**	*e*P			**P**	**17 56 41.6**	**+0.6**
	8.4nm,0.7s,mb4.3								
MAT	**Matsushiro**	**23.15**	**346**	P			**P**	**17 56 42.2**	**+1.2**
MAT				S			**S**	**18 00 50.0**	**+2.2**
MAT	**Matsushiro**	**23.15**	**346**	*e*P			**P**	**17 56 42.0**	**+1.0**
	20nm,1.2s,mb4.4								
MAT				*e*S			**S**	**18 00 51.0**	**+3.2**
MAT				LR		LR	LR		
	comp=Z,710nm,20.0s,MS4.1								
PMG	**Port Moresby**	**23.50**	**175**	LR		LR	LR	18 05 58.3	
	comp=Z,177nm,18.6s,MS3.5,baz=173,slow=37								
TGY	**Tagaytay City**	**23.55**	**273**	P			**P**	**17 56 46.9**	**+1.9**
	comp=Z,58nm,0.7s,mb5.1,baz=104,slow=2.7,SNR=4.1								
SSE	**Sheshan**	**27.76**	**311**	P			**P**	**17 57 25.1**	**+0.7**
SSE				S			**S**	**18 02 07.4**	**+2.3**
SSE				AMB		AMB	AMB		
	comp=Z,49nm,0.7s,mb5.2								
SSE				LR		LR	LR		
	comp=N,67nm,27.9s,MS3.3								
SSE				LR		LR	LR		
	comp=E,90nm,27.9s,MS3.3								
SSE				LR		LR	LR		
	comp=Z,120nm,22.1s								
KS15	**Wonju Array Si**	**27.85**	**329**	*e*P			**P**	**17 57 25.2**	**+0.1**
NJ2	**Nanjing**	**29.96**	**311**	*e*P			**P**	**17 57 46.9**	**+2.7**
NJ2				AMB		AMB	AMB		
	comp=Z,20nm,1.1s,mb4.8								
MDJ	**Mudanjiang**	**33.14**	**339**	P			**P**	**17 58 11.9**	**-0.1**
MDJ				AMB		AMB	AMB		
	comp=Z,14nm,1.0s,mb4.8								
MDJ				AMB		AMB	AMB		
	comp=Z,46nm,4.5s								
MDJ				LR		LR	LR		
	comp=N,93nm,28.1s								
MDJ				LR		LR	LR		
	comp=E,58nm,35.7s								
MDJ				LR		LR	LR		
	comp=Z,134nm,30.6s,MS3.5								
MDJ	**Mudanjiang**	**33.14**	**339**	*e*P			**P**	**17 58 11.7**	**-0.3**
	comp=Z,13nm,1.0s,mb4.8								
CN2	**Changchun**	**34.04**	**334**	*e*P			**P**	**17 58 21.0**	**+1.2**
CN2				LR		LR	LR		
	comp=N,170nm,20.0s,MS4.0								
CN2				LR		LR	LR		
	comp=E,210nm,20.0s,MS4.0								
CN2				LR		LR	LR		
	comp=Z,200nm,20.0s,MS3.8								
WRAB	**Tennant Creek**	**35.53**	**198**	*e*P			**P**	**17 58 31.4**	**-1.4**
	comp=Z,24nm,0.9s,mb5.1								
WB2	**Warramunga Arr**	**35.54**	**198**	*e*P			**P**	**17 58 32.2**	**-0.7**
WRA	**Warramunga Arr**	**35.55**	**198**	P			**P**	**17 58 32.1**	**-0.8**
	comp=Z,7.5nm,1.0s,mb4.6,baz=19,slow=9.2,SNR=19								
WRA				PcP			PcP	18 01 01.6	-0.6
	comp=Z,0.9nm,0.6s,baz=14,slow=3.2,SNR=5.9								
BJT	**Baijiatuan**	**36.21**	**321**	*e*P			**P**	**17 58 37.8**	**-0.5**
	comp=Z,7.3nm,0.6s,mb4.8								
BJI	**Beijing**	**36.22**	**321**	*e*P			**P**	**17 58 38.0**	**-0.4**
BJI				S			**S**	**18 04 23.7**	**+6.2**
BJI				AMB		AMB	AMB		
	comp=Z,13nm,0.8s,mb4.9								
BJI				LR		LR	LR		
	comp=N,139nm,17.5s,MS3.9								
BJI				LR		LR	LR		
	comp=E,89nm,13.1s,MS3.9								
BJI				LR		LR	LR		
	comp=Z,122nm,21.8s								
ENH	**Enshi**	**36.58**	**302**	*e*P			**P**	**17 58 40.8**	**-0.7**
	comp=Z,32nm,1.3s,mb5.0								
FITZ	**Fitzroy Crossi**	**37.43**	**212**	*e*P			**P**	**17 58 44.3**	**-4.5**
	comp=Z,4.9nm,0.8s,mb4.4								
FITZ	**Fitzroy Crossi**	**37.43**	**212**	LR		LR	LR	18 15 53.7	
	comp=Z,58nm,18.2s,MS3.4,baz=314,slow=39								
GYA	**Guiyang**	**38.03**	**295**	P			**P**	**17 58 54.6**	**+0.8**
GYA				AP		pP		17 59 01.2	+3.7
GYA				XP		sP		17 59 04.8	+5.7
GYA				S			**S**	**18 04 50.6**	**+5.2**
GYA				AMB		AMB	AMB		
	comp=Z,20nm,1.0s,mb4.8								
AS12	**Alice Springs**	**39.20**	**197**	*e*P			**P**	**17 59 03.8**	**+0.3**
	comp=Z,4.8nm,0.9s,mb4.2								
ASAR	**Alice Springs**	**39.20**	**197**	P			**P**	**17 59 03.2**	**-0.3**
	comp=Z,2.9nm,1.1s,mb3.9,baz=18,slow=13,SNR=15								
ASAR				PP			PP	18 00 35.4	-2.1
	comp=Z,1.2nm,0.8s,baz=16,slow=13,SNR=3.0								
ASAR				PcP			PcP	18 01 13.2	-0.1
	comp=Z,1.1nm,0.7s,baz=14,slow=2.3,SNR=5.8								
ASAR				LR		LR	LR	18 15 43.2	
	comp=Z,124nm,18.3s,MS3.8,baz=9.3,slow=37								
PET	**Petropavlovsk**	**40.21**	**13**	*e*P			**P**	**17 58 57.1**	**-14**
HIA	**Hailar**	**40.77**	**334**	*e*P			**P**	**17 59 16.4**	**+0.1**
	comp=Z,31nm,1.3s,mb4.8								
KMI	**Kunming**	**41.32**	**292**	*e*P			**P**	**17 59 17.8**	**-3.2**
KMI				AMB		AMB	AMB		
	comp=Z,10.0nm,1.2s,mb4.3								
KMI				LR		LR	LR		
	comp=Z,65nm,19.7s,MS3.5								
LZH	**Lanzhou**	**42.94**	**308**	*e*P			**P**	**17 59 34.5**	**+0.3**
LZH				AP		pP		17 59 40.0	+2.0
LZH				XP		sP		17 59 45.0	+5.4
LZH				AMB		AMB	AMB		
	comp=Z,40nm,1.0s,mb5.1								
CM31	**Chiang Mai Arr**	**44.54**	**282**	*e*P			**P**	**17 59 47.3**	**-0.1**
CMAR	**Chiang Mai Arr**	**44.54**	**282**	P			**P**	**17 59 47.6**	**+0.2**
	comp=Z,5.1nm,0.8s,mb4.4,baz=84,slow=6.0,SNR=28								
STKA	**Stephens Creek**	**45.91**	**184**	*e*P			**P**	**17 59 57.9**	**-0.3**
	comp=Z,4.4nm,1.1s,mb4.3								
STKA	**Stephens Creek**	**45.91**	**184**	P			**P**	**17 59 58.2**	**0.0**
	comp=Z,4.4nm,0.8s,mb4.5,baz=349,slow=3.8,SNR=7.2								
STKA				LR		LR		18 20 40.9	
	comp=Z,172nm,18.9s,MS4.0,baz=24,slow=38								
ULN	**Ulaanbaatar**	**46.11**	**325**	*e*P			**P**	**17 59 59.4**	**-0.1**
	comp=Z,20nm,1.3s,mb4.9								
SONM	**Songino Array**	**46.47**	**324**	P			**P**	**18 00 02.7**	**+0.3**
	comp=Z,7.7nm,1.0s,mb4.6,baz=146,slow=7.1,SNR=42								
GTA	**Gaotai**	**47.06**	**311**	*e*P			**P**	**18 00 07.7**	**+0.6**
GTA				AMB		AMB	AMB		
	comp=Z,6.0nm,0.8s,mb4.6								
YAK	**Yakutsk**	**49.08**	**350**	*e*P			**P**	**18 00 20.8**	**-1.7**
YAK				pmax		pmax			
	comp=Z,18nm,2.8s,mb4.6								
BOD	**Bodaibo**	**49.51**	**339**	*e*P			**P**	**18 00 23.8**	**-2.1**
ZAK	**Zakamensk**	**49.56**	**326**	‖*e*P			**P**	**18 00 26.2**	**-0.2**
TLY	**Talaya**	**50.06**	**327**	*e*P			**P**	**18 00 29.0**	**-1.2**
TLY				*e*S			**S**	**18 07 41.9**	**+2.2**
TLY				pmax		pmax			
	comp=Z,202nm,1.4s								
TLY				MLR		MLR			
	comp=Z,600nm,15.0s,MS4.7								
MOY	**Mondy**	**51.46**	**326**	*e*P			**P**	**18 00 41.5**	**+0.6**
TOO	**Toolangi**	**51.46**	**180**	*e*P			**P**	**18 00 42.8**	**+1.7**
	comp=Z,5.9nm,0.8s,mb4.6								
LSA	**Lhasa**	**52.05**	**297**	P			**P**	**18 00 47.0**	**+1.4**
LSA	**Lhasa**	**52.05**	**297**	*e*P			**P**	**18 00 46.2**	**+0.6**
	comp=Z,9.8nm,0.7s,mb4.8								
BILL	**Bilibino**	**55.54**	**9**	‖*e*P			**P**	**18 01 07.4**	**-3.5**
BILL				pmax		pmax			
	comp=Z,7.0nm,2.1s,mb4.3								
PKI	**Pulchoki**	**56.98**	**294**	*e*P			**P**	**18 01 20.7**	**-1.1**
	comp=Z,64nm,1.2s,mb5.5								
WMQ	**Urumqi**	**57.00**	**313**	⇑P			**P**	**18 01 22.5**	**+0.9**
WMQ				AP		pP		18 01 28.6	+3.1
WMQ				XP		sP		18 01 31.4	+4.4
WMQ				PCP		PcP		18 02 17.3	+0.7
WMQ				PP		PP		18 03 25.3	-4.6
WMQ				SCP				18 06 14.4	
WMQ				S			**S**	**18 09 14.1**	**+0.3**
WMQ				SCS		ScS		18 11 07.1	-0.1
WMQ				SS		SS		18 13 03.9	+0.1
WMQ				AMB		AMB			
	comp=Z,25nm,1.2s,mb5.1								
WMQ				AMB		AMB			
	comp=Z,119nm,5.0s								
WMQ				LR		LR			
	comp=N,489nm,18.1s,MS4.7								
WMQ				LR		LR			
	comp=E,326nm,18.0s,MS4.7								
WMQ				LR		LR			
	comp=Z,646nm,18.6s,MS4.8								
KKN	**Kakani**	**57.10**	**294**	*e*P			**P**	**18 01 21.4**	**-1.2**
	comp=Z,60nm,1.2s,mb5.5								
DMN	**Daman**	**57.26**	**294**	*e*P			**P**	**18 01 22.9**	**-0.8**
	comp=Z,70nm,1.2s,mb5.6								
GKN	**Gorkha**	**57.67**	**294**	*e*P			**P**	**18 01 25.6**	**-1.0**
	comp=Z,182nm,1.4s								
TIXI	**Tiksi**	**58.30**	**354**	*e*P			**P**	**18 01 26.9**	**-3.5**
TIXI				pmax		pmax			
	comp=Z,1.0nm,1.1s,mb3.8								
TIXI				MLR		MLR			
	comp=Z,100nm,16.0s,MS4.0								
KOLN	**Koldanda**	**58.59**	**294**	*e*P			**P**	**18 01 32.1**	**-0.9**
	comp=Z,70nm,1.1s,mb5.6								
MKAR	**Makanchi Array**	**61.32**	**316**	P			**P**	**18 01 51.3**	**-0.2**
	comp=Z,24nm,0.8s,mb5.3,baz=90,slow=8.4,SNR=156								
**MKA

VNA2	**Neumayer--Watz**	**120.85**	**190**	P		Pdif	18 06 50.5	-1.2
VNA3	**Neumayer Olymp**	**120.95**	**189**	⇑*i*P		Pdif	18 06 49.6	-2.5
VNA1	**Neumayer--Stat**	**121.24**	**190**	⇓*i*P		Pdif	18 06 51.0	-2.4
LPAZ	**La Paz**	**147.76**	**98**	PKPbc	PKPdf		18 11 19.2	-0.6
	comp=Z,3.4nm,0.8s,baz=291,slow=5.0,SNR=13							
LPAZ	**La Paz**	**147.76**	**98**	*e*PKPdf	PKPdf		18 11 18.8	-1.0
LPAZ				*e*PKPbc	PKPdf		18 11 22.3	+2.5

*IDC **09** 18:11:46.0±2.7,35.01N×4.01W,mb3.3/2,mb1 3.5/3, mb1mx3.2/22,ML3.8/1,Error ellipse: s-maj=54.0km s-min=43.0km az=36.0*

*NEIC **09** 18:11:48.7,35.06N×3.90W,MG4.0(MDD),After MDD.*

*MDD **09** 18:11:48.7±1.0,35.05N×3.92W,mb4.0/25,Error ellipse: s-maj=10.9km s-min=4.0km az=9.0,AftershockPLICA PRXIMO*

*INMG **09** 18:11:49.2±1.2,35.04N×3.88W,h13km±14km,ML2.6, Error ellipse: s-maj=13.1km s-min=3.1km az=162.0*

*LDG **09** 18:11:50.3±0.4,35.01N×4.02W,h2km,Md3.6/1,Ml3.0/4, Error ellipse: s-maj=7.7km s-min=4.0km az=172.0*

ISC 09 18:11:47.8±0.6,**35.13N**±0.04×**3.99W**±0.03,**h10**km,**n86,** σ1§**14**/143,**mb3.4**/2,**Strait of Gibraltar**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EMEL	**Melilla**	**0.86**	**78**	P	**Pb**	**18 12 03.3**	**-1.0**
	246nm,0.1s,SNR=31						
EMEL				S	**Sb**	**18 12 15.5**	**-0.1**
	1μm,0.2s						
MELI	**Melilla**	**0.88**	**79**	P	**Pb**	**18 12 03.7**	**-0.9**
MELI				S	**Sb**	**18 12 17.0**	**+0.9**
EJIF	**Jimena Fronter**	**1.79**	**318**	P	**Pn**	**18 12 20.0**	**+1.0**
	7.4nm,0.2s,SNR=7.1						
EJIF	**Jimena Fronter**	**1.79**	**318**	P	**Pn**	**18 12 20.0**	**+1.0**
EJIF				S	**Sn**	**18 12 44.6**	**+2.6**
ERON	**Agron**	**1.89**	**4**	P	**Pn**	**18 12 21.3**	**+0.8**
	6.1nm,0.3s,SNR=8.8						
ERON				S	**Sn**	**18 12 45.7**	**+1.1**
	25nm,0.4s						
ERON	**Agron**	**1.89**	**4**	P	**Pn**	**18 12 21.3**	**+0.8**
ERON				S	**Sn**	**18 12 45.6**	**+1.0**
EBER	**Berja**	**1.98**	**26**	P	**Pn**	**18 12 21.3**	**-0.4**
	7.3nm,0.3s,SNR=14						
EBER				S	**Sn**	**18 12 46.9**	**+0.2**
	56nm,0.4s						
EBER	**Berja**	**1.98**	**26**	P	**Pn**	**18 12 21.4**	**-0.4**
EBER				S	**Sn**	**18 12 46.6**	**-0.1**
ELOJ	**Sierra Loja**	**2.02**	**356**	P	**Pn**	**18 12 23.0**	**+0.7**
	9.5nm,0.3s,SNR=13						
ELOJ				S	**Sn**	**18 12 52.0**	**+4.2**
	13nm,0.4s						
ELOJ	**Sierra Loja**	**2.02**	**356**	P	**Pn**	**18 12 23.0**	**+0.7**
ELOJ				S	**Sn**	**18 12 51.2**	**+3.3**
ELIJ	**Sierra de Lija**	**2.11**	**328**	P	**Pn**	**18 12 26.5**	**+2.8**
	17nm,0.3s,SNR=40						
ELIJ	**Sierra de Lija**	**2.11**	**328**	P	**Pn**	**18 12 26.5**	**+2.8**
ELIJ				S	**Sn**	**18 12 54.3**	**+4.1**
LIJA	**Lijar**	**2.11**	**327**	P	**Pn**	**18 12 27.0**	**+3.3**
ECOG	**Cogollos-Vega**	**2.17**	**9**	P	**Pn**	**18 12 27.3**	**+2.7**
	6.3nm,0.2s,SNR=7.9						
ECOG				S	**Sn**	**18 12 52.2**	**+0.5**
	12nm,0.3s,SNR=4.0						
ECOG	**Cogollos-Vega**	**2.17**	**9**	P	**Pn**	**18 12 27.0**	**+2.5**
ECOG				S	**Sn**	**18 12 52.0**	**+0.3**
ESPR	**Espera**	**2.31**	**319**	P	**Pn**	**18 12 28.7**	**+2.3**
	6.7nm,0.3s,SNR=16						
ESPR	**Espera**	**2.31**	**319**	P	**Pn**	**18 12 28.7**	**+2.3**
ESPR				S	**Sn**	**18 12 55.2**	**+0.1**
ELUQ	**Luque**	**2.44**	**355**	P	**Pn**	**18 12 30.2**	**+1.8**
	2.7nm,0.2s,SNR=7.8						
ELUQ	**Luque**	**2.44**	**355**	P	**Pn**	**18 12 29.3**	**+1.0**
ELUQ				S	**Sn**	**18 13 01.9**	**+3.4**
EQES	**Quesada**	**2.77**	**15**	P	**Pn**	**18 12 34.6**	**+1.6**
	4.8nm,0.2s,SNR=28						
EQES				S	**Sn**	**18 13 08.7**	**+1.8**
	22nm,0.3s						
EQES	**Quesada**	**2.77**	**15**	P	**Pn**	**18 12 34.6**	**+1.6**
EQES				S	**Sn**	**18 13 08.5**	**+1.6**
EHUE	**Huescar**	**2.91**	**22**	P	**Pn**	**18 12 35.5**	**+0.5**
	1.9nm,0.3s,SNR=9.4						
EHUE	**Huescar**	**2.91**	**22**	P	**Pn**	**18 12 36.7**	**+1.7**
EHUE				S	**Sn**	**18 13 12.9**	**+2.5**
EADA	**Adamuz**	**3.07**	**351**	P	**Pn**	**18 12 38.8**	**+1.5**
	1.6nm,0.2s,SNR=13						
EADA				S	**Sn**	**18 13 15.8**	**+1.3**
	6.7nm,0.2s,SNR=5.1						
EADA	**Adamuz**	**3.07**	**351**	P	**Pn**	**18 12 38.5**	**+1.2**
EADA				S	**Sn**	**18 13 15.1**	**+0.6**
ECAB	**El Cabril**	**3.16**	**339**	P	**Pn**	**18 12 39.5**	**+0.9**
	2.0nm,0.2s,SNR=7.9						
ECAB				S	**Sn**	**18 13 16.9**	**+0.2**
	18nm,0.4s,SNR=7.9						
EMIN	**Mina Concepcio**	**3.41**	**321**	P	**Pn**	**18 12 42.4**	**+0.2**
	5.5nm,0.2s,SNR=48						
EMIN				S	**Sn**	**18 13 23.0**	**-0.1**
	4.4nm,0.2s,SNR=17						
EMIN	**Mina Concepcio**	**3.41**	**321**	P	**Pn**	**18 12 42.4**	**+0.2**
EMIN				S	**Sn**	**18 13 22.8**	**-0.3**
EMUR	**La Murta**	**3.50**	**38**	P	**Pn**	**18 12 44.4**	**+1.0**
	1.2nm,0.3s,SNR=5.0						
EMUR				S	**Sn**	**18 13 22.7**	**-2.6**
	5.4nm,0.3s,SNR=4.4						
EMUR	**La Murta**	**3.50**	**38**	P	**Pn**	**18 12 43.7**	**+0.3**
EMUR				S	**Sn**	**18 13 22.3**	**-3.0**
PALC	**Alcoutim**	**3.66**	**311**	*e*Pn	**Pn**	**18 12 46.2**	**+0.5**
PALC				*e*Sn	**Sn**	**18 13 28.6**	**-0.8**
	10nm,0.4s						
PALC	**Alcoutim**	**3.66**	**311**	Pn	**Pn**	**18 12 46.2**	**+0.5**
PALC				Sn	**Sn**	**18 13 28.6**	**-0.8**
	5.1nm,0.4s						
EVIA	**Vianos**	**3.70**	**18**	P	**Pn**	**18 12 49.6**	**+3.4**
EVIA				S	**Sn**	**18 13 30.7**	**+0.2**
EGRO	**El Granado**	**3.71**	**311**	P	**Pn**	**18 12 47.0**	**+0.7**
	14nm,0.4s,SNR=26						
EGRO				S	**Sn**	**18 13 29.7**	**-0.9**
	14nm,0.3s						
EGRO	**El Granado**	**3.71**	**311**	P	**Pn**	**18 12 46.7**	**+0.3**
EGRO				S	**Sn**	**18 13 29.5**	**-1.1**
ETOB	**Tobarra**	**4.02**	**28**	P	**Pn**	**18 12 51.3**	**+0.5**
	6.2nm,0.3s,SNR=20						
ETOB				S	**Sn**	**18 13 37.5**	**-1.0**
	2.8nm,0.4s						
ETOB	**Tobarra**	**4.02**	**28**	P	**Pn**	**18 12 52.0**	**+1.2**
ETOB				S	**Sn**	**18 13 36.3**	**-2.1**
PBEJ	**Beja**	**4.26**	**314**	*e*Pn	**Pn**	**18 12 54.9**	**+0.7**
	7.1nm,0.4s						
EBAD	**Badajoz**	**4.36**	**327**	P	**Pn**	**18 12 55.2**	**-0.5**
	6.4nm,0.3s,SNR=7.9						
EBAD				S	**Sn**	**18 13 45.9**	**-1.2**
	14nm,0.2s,SNR=7.9						
EBAD	**Badajoz**	**4.36**	**327**	P	**Pn**	**18 12 55.7**	**+0.1**
EBAD				S	**Sn**	**18 13 45.0**	**-2.1**
PTEO	**Sao Teotonio**	**4.52**	**304**	*e*Pn	**Pn**	**18 12 58.8**	**+0.8**
PTEO				*e*Sn	**Sn**	**18 13 50.0**	**-1.3**
	12nm,0.5s						
PTEO	**Sao Teotonio**	**4.52**	**304**	Pn	**Pn**	**18 12 58.8**	**+0.8**
PTEO				Sn	**Sn**	**18 13 50.0**	**-1.3**
	5.9nm,0.5s						
ESDC	**Sonseca Array**	**4.54**	**0**	Pn	**Pn**	**18 12 58.7**	**+0.5**
	1.9nm,0.3s,baz=180,slow=13,SNR=28						
ESDC				Sn	**Sn**	**18 13 51.6**	**-0.1**
	0.8nm,0.3s,baz=183,slow=22,SNR=3.2						
ESDC	**Sonseca Array**	**4.54**	**0**	P	**Pn**	**18 12 58.4**	**+0.3**
	5.4nm,0.3s,baz=179,slow=12,SNR=28						
ESDC				S	**Sn**	**18 13 49.3**	**-2.4**
	1.2nm,0.3s,baz=182,slow=22,SNR=4.6						
ESDC	**Sonseca Array**	**4.54**	**0**	P	**Pn**	**18 12 58.4**	**+0.2**
ESDC				S	**Sn**	**18 13 50.2**	**-1.5**
EBEN	**Beniarda**	**4.67**	**39**	P	**Pn**	**18 12 59.9**	**-0.1**
EBEN				S	**Sn**	**18 13 49.5**	**-5.5**
EVO	**Evora**	**4.69**	**318**	*e*Pn	**Pn**	**18 13 01.4**	**+1.1**
EVO				*e*Sn	**Sn**	**18 13 54.7**	**-0.7**
	10nm,0.3s						
MOE	**Montemor**	**4.87**	**315**	*e*Sn	**Sn**	**18 13 58.8**	**-1.3**
PCBR	**Castelo Branco**	**5.46**	**330**	*e*Pn	**Pn**	**18 13 11.5**	**+0.3**
	5.0nm,0.3s						
GUD	**Guadarrama**	**5.51**	**359**	P	**Pn**	**18 13 12.5**	**+0.6**
	0.6nm,0.1s,SNR=5.8						
GUD	**Guadarrama**	**5.51**	**359**	P	**Pn**	**18 13 12.0**	**+0.1**
PLOU	**Loures**	**5.58**	**314**	*e*Pn	**Pn**	**18 13 12.8**	**-0.1**
	15nm,0.4s						
PTOM	**Tomar**	**5.70**	**323**	*e*Pn	**Pn**	**18 13 15.1**	**+0.5**
PTOM				*e*Sn	**Sn**	**18 14 16.9**	**-4.0**

EIBI	**Ibiza**	**5.77**	**46**	P	**Pn**	**18 13 14.6**	**-0.9**
	1.0nm,0.1s,SNR=7.9							
EIBI				S	**Sn**	**18 14 16.6**	**-6.1**
	3.2nm,0.4s,SNR=7.9							
EIBI	**Ibiza**	**5.77**	**46**	P	**Pn**	**18 13 14.3**	**-1.2**
EIBI				S	**Sn**	**18 14 16.2**	**-6.4**
ETOR	**Torete**	**5.88**	**14**	P	**Pn**	**18 13 17.7**	**+0.5**
	0.8nm,0.2s,SNR=7.9							
ETOR				S	**Sn**	**18 14 22.3**	**-3.2**
	0.8nm,0.4s,SNR=7.9							
ETOR	**Torete**	**5.88**	**14**	P	**Pn**	**18 13 17.2**	**+0.1**
ETOR				S	**Sn**	**18 14 21.3**	**-4.2**
MTE	**Manteigas**	**5.97**	**333**	*e*Pn	**Pn**	**18 13 18.4**	**0.0**
MTE				*e*Sn	**Sn**	**18 14 25.6**	**-2.0**
	7.6nm,0.6s							
MTE	**Manteigas**	**5.97**	**333**	Pn	**Pn**	**18 13 18.4**	**0.0**
MTE				Sn	**Sn**	**18 14 25.6**	**-2.0**
	3.8nm,0.6s							
PVIS	**Viseu**	**6.38**	**332**	*e*Pn	**Pn**	**18 13 24.1**	**0.0**
PVIS				*e*Sn	**Sn**	**18 14 34.2**	**-3.6**
PVRL	**Vila Real**	**6.80**	**336**	*e*Pn	**Pn**	**18 13 29.8**	**-0.4**
PVRL				*e*Sn	**Sn**	**18 14 45.0**	**-3.5**
	7.3nm,0.3s							
PVRL	**Vila Real**	**6.80**	**336**	Pn	**Pn**	**18 13 29.8**	**-0.4**
PVRL				Sn	**Sn**	**18 14 45.0**	**-3.5**
	3.7nm,0.3s							
PBRG	**Braganca**	**7.01**	**343**	*e*Pn	**Pn**	**18 13 32.5**	**-0.5**
	4.0nm,0.6s							
ECAL	**Calabor**	**7.14**	**343**	P	**Pn**	**18 13 34.7**	**-0.1**
	3.2nm,0.3s,SNR=10							
ECAL				S	**Sn**	**18 14 50.6**	**-6.2**
	2.6nm,0.4s,SNR=7.9							
ECAL	**Calabor**	**7.14**	**343**	P	**Pn**	**18 13 34.8**	**-0.1**
ECAL				S	**Sn**	**18 14 51.7**	**-5.1**
ELOB	**Lobios**	**7.45**	**336**	P	**Pn**	**18 13 37.5**	**-1.7**
	1.8nm,0.2s,SNR=7.9							
ELOB	**Lobios**	**7.45**	**336**	P	**Pn**	**18 13 38.4**	**-0.8**
ELOB				S	**Sn**	**18 14 59.0**	**-5.6**
EZAM	**Zamans**	**7.92**	**334**	P	**Pn**	**18 13 45.4**	**-0.3**
	3.3nm,0.4s,SNR=4.0							
EINC	**Incio**	**7.96**	**342**	P	**Pn**	**18 13 45.7**	**-0.7**
	1.3nm,0.4s,SNR=4.7							
EINC				S	**Sn**	**18 15 13.3**	**-4.2**
	0.5nm,0.2s,SNR=4.0							
EINC	**Incio**	**7.96**	**342**	P	**Pn**	**18 13 45.6**	**-0.8**
ETSF	**Etsaut**	**8.20**	**18**	*e*Pn	**P**	**18 13 49.9**	**+0.1**
ETSF				*e*Sn	**Sn**	**18 15 18.8**	**-4.7**
	0.9nm,0.4s							
EARI	**Arriondas**	**8.22**	**354**	P	**P**	**18 13 49.2**	**-0.7**
	0.5nm,0.2s,SNR=7.9							
SJPF	**Ste Jean**	**8.26**	**14**	*e*Pn	**P**	**18 13 49.7**	**-0.8**
SJPF				*e*Sn	**Sn**	**18 15 19.7**	**-5.1**
	1.1nm,0.3s							
EALK	**Alkurruntz**	**8.31**	**13**	P	**P**	**18 13 52.0**	**+0.8**
	5.7nm,0.5s,SNR=5.6							
EALK	**Alkurruntz**	**8.31**	**13**	P	**P**	**18 13 50.1**	**-1.1**
EPON	**Pontenova**	**8.55**	**344**	P	**P**	**18 13 54.2**	**-0.3**
	0.5nm,0.2s,SNR=4.0							
EPON	**Pontenova**	**8.55**	**344**	P	**P**	**18 13 54.0**	**-0.5**
EPF	**Esparros**	**8.58**	**22**	*e*Pn	**P**	**18 13 54.3**	**-0.6**
EPF				*e*Sn	**Sn**	**18 15 27.8**	**-5.0**
	0.9nm,0.3s							
LASF	**Ste Croix**	**10.79**	**32**	*e*Pn	**P**	**18 14 24.7**	**-0.6**
SMRF	**Simiane la Rot**	**11.50**	**37**	*e*Pn	**P**	**18 14 34.4**	**-0.7**
PGF	**Pioggiola**	**12.54**	**50**	*e*Pn	**P**	**18 14 48.3**	**-0.7**
QUIF	**Quistinic**	**12.79**	**2**	*e*Pn	**P**	**18 14 52.3**	**-0.1**
ROSF	**Rostrenen**	**13.21**	**2**	*e*Pn	**P**	**18 14 57.8**	**-0.2**
FLN	**La Foliniere**	**13.87**	**10**	*e*Pn	**P**	**18 15 06.6**	**0.0**
MKAR	**Makanchi Array**	**63.08**	**50**	P	**P**	**18 22 15.4**	**-2.0**
	0.3nm,0.7s,mb3.5,baz=285,slow=6.3,SNR=3.5							
YKA	**Yellowknife Ar**	**68.08**	**332**	P	**P**	**18 22 47.9**	**-1.4**
	0.2nm,0.7s,mb3.2,baz=60,slow=6.9,SNR=4.9							

MAN 09 18:18:56.0,15.42N×120.48E,h9km,mb4.0,ML2.7,MS2.3, 13C-1D,Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCPH	**Palayan**	**0.61**	**77**	⇓*e*P	Pg	18 19 08.3	-0.1
PCPH				*e*S	Sg	18 19 18.1	+1.5
SCZP	**Santa Cruz**	**0.65**	**303**	⇑*e*P	Pb	18 19 08.9	-0.2
SCZP				*e*S	Sg	18 19 20.7	+2.9
BCPH	**Baguio City Da**	**0.96**	**6**	⇑*i*P	Pb	18 19 14.3	-0.1
BCPH				*i* S	Sb	18 19 28.3	+1.3
BOLP	**Bolinao**	**1.10**	**330**	⇑*e*P	Pb	18 19 17.2	+0.5
BALP	**Baler**	**1.11**	**73**	⇑*e*P	Pb	18 19 16.3	-0.6
BALP				*e*S	Sb	18 19 33.0	+1.8
POLP	**Polilio Island**	**1.57**	**116**	⇑*e*P	Pn	18 19 23.6	-0.7
POLP				*e*S	Sb	18 19 45.8	+1.0
LUBP	**Lubang**	**1.69**	**188**	⇑*e*P	Pn	18 19 24.3	-1.8
CAUP	**Cauayan**	**1.99**	**40**	⇑*e*P	Pn	18 19 32.2	+1.9
CAUP				*e*S	Sn	18 20 01.6	+6.0
ABRA	**Dolores**	**2.23**	**6**	⇑*e*P	Pn	18 19 42.4	+8.7
ABRA				*e*S	Sn	18 20 09.8	+8.2
BOAC	**Boac**	**2.36**	**146**	⇑*e*P	Pn	18 19 26.9	-8.6
BOAC				*e*S	Sn	18 20 07.5	+2.6
PALP	**Palanan**	**2.48**	**49**	⇑*e*P	Pn	18 18 53.1	-44
APYP	**Conner**	**2.54**	**17**	⇑*e*P	Pn	18 19 43.9	+5.8
SJMP	**San Jose**	**3.01**	**168**	⇑*e*P	Pn	18 19 45.7	+0.9
BBP	**Basco**	**5.19**	**16**	⇑*e*P	Pn	18 20 03.7	-12

MAN 09 18:47:03.6,15.63N×121.80E,h6km,mb4.1,ML2.9,MS2.5, 5C-1D,Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BALP	**Baler**	**0.24**	**297**	⇑*e*P	Pg	18 47 08.9	+0.4
BALP				*e*S	Sg	18 47 13.6	+1.8
PCPH	**Palayan**	**0.68**	**264**	⇓*e*P	Pg	18 47 16.9	-0.3
PCPH				*e*S	Sg	18 47 27.2	+0.9
POLP	**Polilio Island**	**0.91**	**171**	⇑*e*P	Pb	18 47 20.9	-0.5
POLP				*e*S	Sb	18 47 36.4	+2.9
CAUP	**Cauayan**	**1.31**	**1**	⇑*e*P	Pb	18 47 25.9	-2.3
CAUP				*e*S	Sb	18 47 45.6	+0.5
BOLP	**Bolinao**	**1.96**	**293**	⇑*e*P	Pn	18 47 37.6	-0.2
APYP	**Conner**	**2.28**	**347**	⇑*e*P	Pn	18 47 42.9	+0.5

*IDC **09** 18:52:13.4±0.5,17.69S×168.86E,mb4.4/19,mb1 4.6/19, mb1mx4.6/20,MS4.7/18,Ms1 4.7/18,ms1mx4.6/23,Error ellipse: s-maj=17.9km s-min=14.9km az=144.0*

*NEIC **09** 18:52:15.1±0.2,17.71S×168.90E,h10km,mb5.0/23, MS4.9/18,Error ellipse: s-maj=7.4km s-min=5.1km az=128.0*

*SYO **09** 18:52:15.0,17.71S×168.90E,h10km,MB5.0,MS4.9*

*HRVD **09** 18:52:15.1±0.2,17.62S×168.95E,h12km,MW5.2/65, Centroid moment Tensor Solution. LP body waves: s43,c72;Mantle waves: s65,c115; Half duration: 1§0 Moment tensor: Scale 10^17^Nm; Mrr=0.10±.02; Mθθ0.90±.02; Mϕϕ-0.80±.02; Mrθ0.09±.04; Mϕϕ-0.11±.02; Mϕr-0.07±.04; Best double couple: M0.86×10^17^ NP1:ϕs49°, δ83°,λ180°. NP2:ϕs139°,δ90°,λ7°. Principal axes: T ,91, Plg5°, Azm4°; N -,1, Plg83°, Azm141°; P -,81, Plg5°, Azm273°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*LDG **09** 18:52:16.2±0.1,17.38S×168.60E,h10km,Mb5.1/2, Ms4.8/7 Error ellipse: s-maj=15.8km s-min=5.4km az=110.0*

*BJI **09** 18:52:16.5,17.04S×168.56E,h4km,mB5.2,mb4.8,Ms5.0, Msz4.7*

*MOS **09** 18:52:19.0±1.9,17.50S×168.54E,h33km,mb5.4/8, MS4.9/5,Error ellipse: s-maj=22.8km s-min=17.1km az=23.1*

ISC 09 18:52:16.8±1.4,**17.76S**±0.05×**168.81E**±0.06,**h32**km,9km, **n201,**σ0§**91**/103,**mb4.8**/40,**MS4.8**/44,**10C-11D,Vanuatu Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**0.55**	**280**	⇓*i*P	**Pb**	**18 52 28.4**	**+0.4**
DZM	**Mont Dzumac**	**4.83**	**207**	*e*P	**Pn**	**18 53 28.9**	**-0.4**
DZM				*e*S	**Sn**	**18 54 20.4**	**-4.5**
DZM	**Mont Dzumac**	**4.83**	**207**	*e*P	**Pn**	**18 53 28.9**	**-0.4**
DZM				*e*S	**Sn**	**18 54 20.4**	**-4.5**
NOUC	**Port Laguerre**	**4.92**	**208**	*e*P	**Pn**	**18 53 30.9**	**+0.3**
NOUC				*e*S	**Sn**	**18 54 22.5**	**-4.5**
NOUC	**Port Laguerre**	**4.92**	**208**	*e*P	**Pn**	**18 53 30.9**	**+0.3**
NOUC				*e*S	**Sn**	**18 54 22.5**	**-4.5**

ARMA	**Armidale**	**20.09**	**228**	*e*P	**P**	**18 56 49.4**	**-1.2**
CTA	**Charters Tower**	**21.46**	**260**	*e*P	**P**	**18 57 05.6**	**+0.8**
	36nm,1.9s,mb4.4						
CTA				*e*S	**S**	**19 01 08.0**	**+12**
CTA	**Charters Tower**	**21.46**	**260**	P	**P**	**18 57 04.0**	**-0.8**
	4.6nm,0.9s,mb3.8,baz=32,slow=15,SNR=2.3						
CTA				LR	LR	19 04 31.0	
	comp=Z,4μm,19.5s,MS4.8,baz=83,slow=34						
CTAO	**Charters Tower**	**21.46**	**260**	*e*P	**P**	**18 57 07.4**	**+2.7**
	54nm,1.3s,mb4.7						
URZ	**Urewera**	**21.67**	**162**	P	**P**	**18 57 06.7**	**-0.1**
	25nm,1.0s,mb4.6,baz=351,slow=5.7,SNR=20						
URZ				LR	LR	19 03 45.7	
	comp=Z,4μm,20.4s,MS4.8,baz=200,slow=32						
PMG	**Port Moresby**	**22.61**	**289**	P	**P**	**18 57 16.4**	**0.0**
	24nm,1.0s,mb4.6,baz=255,slow=3.1,SNR=5.9						
PMG				LR	LR	19 05 13.1	
	comp=Z,4μm,18.9s,MS4.8,baz=331,slow=34						
PMG	**Port Moresby**	**22.61**	**289**	*e*P	**P**	**18 57 15.8**	**-0.5**
	108nm,1.5s,mb5.1						
MRZ	**Mangatainoka R**	**23.55**	**167**	P	**P**	**18 57 24.9**	**-0.4**
WAU	**Wau**	**23.89**	**293**	*e*P	**P**	**18 57 24.9**	**-3.9**
THZ	**Tophouse**	**24.18**	**173**	P	**P**	**18 57 31.4**	**+0.1**
CNB	**Canberra Magne**	**24.59**	**221**	*e*P	**P**	**18 57 37.1**	**+1.7**
	33nm,0.9s,mb4.9						
LTZ	**Lake Taylor**	**25.11**	**174**	P	**P**	**18 57 40.3**	**0.0**
RPZ	**Rata Peaks**	**25.94**	**176**	P	**P**	**18 57 47.1**	**-1.0**
	18nm,0.8s,mb4.7,baz=24,slow=5.9,SNR=11						
RPZ				LR	LR	19 06 59.9	
	comp=Z,6μm,20.0s,MS5.1,baz=341,slow=34						
STKA	**Stephens Creek**	**28.32**	**235**	*e*P	**P**	**18 58 10.3**	**+0.5**
	20nm,1.1s,mb4.7						
STKA	**Stephens Creek**	**28.32**	**235**	P	**P**	**18 58 10.1**	**+0.2**
	10nm,0.7s,mb4.6,baz=63,slow=7.9,SNR=16						
STKA				LR	LR	19 09 11.7	
	comp=Z,730nm,19.2s,MS4.3,baz=61,slow=36						
RAR	**Rarotonga**	**29.79**	**102**	LR	LR	19 07 50.2	
	comp=Z,665nm,18.4s,MS4.3,baz=282,slow=32						
WB2	**Warramunga Arr**	**32.65**	**261**	*e*P	**P**	**18 58 47.2**	**-1.1**
WB2				*i*		18 58 53.1	
WRAB	**Tennant Creek**	**32.65**	**261**	*e*P	**P**	**18 58 47.1**	**-1.2**
	211nm,1.4s						
WRA	**Warramunga Arr**	**32.66**	**261**	P	**P**	**18 58 47.1**	**-1.3**
	4.7nm,1.0s,mb4.4,baz=100,slow=6.0,SNR=64						
WRA				LR	LR	19 11 07.7	
	comp=Z,2μm,21.5s,MS4.7,baz=90,slow=35						
AS12	**Alice Springs**	**33.12**	**254**	*e*P	**P**	**18 58 51.7**	**-0.6**
	9.1nm,0.5s,mb5.0						
AS12				*e*		18 58 57.7	
ASAR	**Alice Springs**	**33.12**	**254**	P	**P**	**18 58 51.9**	**-0.5**
	10.0nm,0.7s,mb4.8,baz=82,slow=8.8,SNR=141						
ASAR				LR	LR	19 11 51.1	
	comp=Z,2μm,19.3s,MS4.8,baz=86,slow=36						
PPT	**Papeete**	**39.59**	**96**	*e*S	**S**	**19 05 38.7**	**-8.9**
PPT				*e*L		19 09 03.9	
PPT				*e*R		19 10 35.7	
	3μm,26.5s,baz=260						
FITZ	**Fitzroy Crossi**	**41.01**	**263**	⇓*i*P	**P**	**18 59 59.5**	**+0.7**
	15nm,0.7s,mb4.7						
FITZ				*e*		19 00 05.1	
FITZ	**Fitzroy Crossi**	**41.01**	**263**	P	**P**	**18 59 59.7**	**+0.8**
	26nm,0.9s,mb4.8,baz=130,slow=4.4,SNR=33						
FITZ				LR	LR	19 16 44.5	
	comp=Z,1μm,19.2s,MS4.8,baz=95,slow=36						
NWAO	**Narrogin (SRO)**	**48.54**	**242**	P	**P**	**19 00 59.4**	**+0.3**
	19nm,0.9s,mb5.1,baz=73,slow=11,SNR=5.8						
TGY	**Tagaytay City**	**56.86**	**301**	LR	LR	19 25 59.4	
	comp=Z,323nm,20.5s,MS4.4,baz=146,slow=36						
KKM	**Kota Kinabalu**	**57.05**	**290**	*e*P	**P**	**19 02 07.4**	**+4.8**
VNDA	**Vanda**	**59.88**	**182**	P	**P**	**19 02 20.9**	**-0.6**
	1.7nm,0.7s,mb4.2,baz=356,slow=3.6,SNR=8.8						
VNDA				LR	LR	19 23 47.5	
	comp=Z,821nm,20.8s,MS4.8,baz=360,slow=32						
VNDA	**Vanda**	**59.88**	**182**	*e*P	**P**	**19 02 21.1**	**-0.4**
	7.5nm,1.5s,mb4.5						
SBA	**Scott Base**	**60.13**	**181**	*e*P	**P**	**19 02 22.2**	**-1.0**
	27nm,1.4s,mb5.1						
MAJO	**Matsushiro**	**61.27**	**332**	*e*P	**P**	**19 02 31.2**	**-0.3**
MAT	**Matsushiro**	**61.27**	**332**	P	**P**	**19 02 31.1**	**-0.4**
MAT				S	**S**	**19 10 47.0**	**-0.6**
MAT	**Matsushiro**	**61.27**	**332**	*e*P	**P**	**19 02 31.0**	**-0.5**

BJT					LR	LR				
	comp=Z,681nm,22.0s,MS4.9									
CM31	**Chiang Mai Arr**	**77.53**	**294**	*eP*	**P**	**P**	**19 04 14.0**	**+2.3**		
	comp=Z,5.8nm,0.9s,mb4.5									
CMAR	**Chiang Mai Arr**	**77.53**	**294**	P	**P**	**P**	**19 04 11.6**	**-0.1**		
	comp=Z,0.7nm,0.9s,baz=79,slow=4.6,SNR=4.4									
HIA	**Hailar**	**79.64**	**330**	*eP*	**P**	**P**	**19 04 22.2**	**-0.3**		
	comp=Z,24nm,1.4s,mb4.9									
MAW	**Mawson**	**79.64**	**202**	P	P	**P**	**19 04 23.7**	**+1.5**		
	comp=Z,5.6nm,0.9s,mb4.5,baz=144,slow=5.2,SNR=5.6									
MAW	**Mawson**	**79.64**	**202**	*eP*	**P**	**P**	**19 04 21.5**	**-0.8**		
	comp=Z,20nm,1.1s,mb5.0									
SEY	**Seymchan**	**81.46**	**352**	*eP*	**P**	**P**	**19 04 30.5**	**-1.4**		
SEY				*e*			19 14 40.9			
SEY					pmax	pmax				
	comp=Z,30nm,1.6s,mb5.0									
RSO	**Redoubt South**	**83.89**	**18**	*eP*	**P**	**P**	**19 04 43.3**	**-1.2**		
SLKM	**Skilak Lake**	**84.69**	**19**	P	**P**	**P**	**19 04 49.0**	**+0.5**		
YAK	**Yakutsk**	**85.35**	**343**	⇓*eP*	**P**	**P**	**19 04 51.9**	**+0.2**		
YAK					pmax	pmax				
	comp=Z,26nm,1.0s,mb5.3									
YAK					MLR	MLR				
	comp=Z,500nm,19.0s,MS4.9									
YAK	**Yakutsk**	**85.35**	**343**	*eP*	**P**	**P**	**19 04 51.6**	**-0.1**		
	comp=Z,8.6nm,0.6s,mb5.1									
ULN	**Ulaanbaatar**	**85.44**	**323**	*de*P	**P**	**P**	**19 04 53.6**	**+1.1**		
ULN	**Ulaanbaatar**	**85.44**	**323**	*eP*	**P**	**P**	**19 04 52.6**	**0.0**		
	comp=Z,17nm,1.1s,mb5.1									
BILL	**Bilibino**	**85.58**	**359**	*eP*	**P**	**P**	**19 04 52.3**	**-0.4**		
BILL					pmax	pmax				
	comp=Z,12nm,1.3s,mb5.0									
BILL	**Bilibino**	**85.58**	**359**	*eP*	**P**	**P**	**19 04 51.2**	**-1.5**		
	comp=Z,12nm,1.3s,mb5.0									
SONM	**Songino Array**	**85.80**	**323**	P	P	**P**	**19 04 55.2**	**+0.8**		
	comp=Z,5.0nm,0.9s,mb4.7,baz=135,slow=3.5,SNR=24									
PMR	**Palmer**	**85.87**	**19**	PFAKE			19 05 10.0	+16		
PMR					LR	LR				
	comp=Z,802nm,21.0s,MS5.1									
SYO	**Syowa Base**	**86.23**	**196**	⇓P	**P**	**P**	**19 04 56.6**	**+0.6**		
SYO	**Syowa Base**	**86.23**	**196**	⇑PcP	PcP	PcP	19 05 02.1	+3.2		
SYO	**Syowa Base**	**86.23**	**196**	⇓*e*P	**P**	**P**	**19 04 56.6**	**+0.6**		
SYO				⇑*e*PcP	PcP	PcP	19 05 02.1	+3.2		
CMB	**Columbia Colle**	**86.48**	**48**	PFAKE			19 05 10.0	+12		
CMB					LR	LR				
	comp=Z,375nm,21.0s,MS4.8									
YBH	**Yreka Blue Hor**	**86.53**	**44**	P	P	**P**	**19 04 58.7**	**+0.6**		
	comp=Z,2.3nm,0.9s,mb4.4,baz=199,slow=5.3,SNR=4.5									
HUMO	**Hull Mountain**	**86.77**	**43**	*eP*	**P**	**P**	**19 04 59.0**	**-0.2**		
BEKR	**Beckwourth**	**87.29**	**47**	*eP*	**P**	**P**	**19 05 02.0**	**+0.2**		
	comp=Z,16nm,1.4s,mb5.1									
MTUM	**Tungsten Hills**	**87.50**	**50**	*eP*	**P**	**P**	**19 05 03.4**	**+0.5**		
MCK	**McKinley**	**87.58**	**17**	*eP*	**P**	**P**	**19 05 01.8**	**-0.8**		
BOD	**Bodaibo**	**87.84**	**334**	*eP*	**P**	**P**	**19 05 03.2**	**-0.8**		
NVAR	**Mina Array Bea**	**88.13**	**49**	P	**P**	**P**	**19 05 06.4**	**+0.5**		
	comp=Z,3.1nm,1.1s,mb4.4,baz=212,slow=6.2,SNR=12									
LSA	**Lhasa**	**88.41**	**302**	P	**P**	**P**	**19 05 07.9**	**+0.5**		
BBB	**Bella Bella**	**88.47**	**33**	LR	LR		19 38 44.3			
	comp=Z,316nm,18.5s,MS4.8,baz=66,slow=32									
ZAK	**Zakamensk**	**88.87**	**324**	*eP*	**P**	**P**	**19 05 08.7**	**-0.4**		
ILAR	**Eielson Array**	**88.95**	**17**	P	**P**	**P**	**19 05 08.0**	**-1.2**		
	comp=Z,1.4nm,0.8s,mb4.4,baz=220,slow=4.2,SNR=8.7									
ILAR					LR	LR	19 39 31.8			
	comp=Z,422nm,20.4s,MS4.8,baz=250,slow=32									
WVOR	**Wild Horse Val**	**89.56**	**45**	*eP*	**P**	**P**	**19 05 12.4**	**-0.2**		
	comp=Z,9.4nm,1.1s,mb5.0									
WVOR					LR	LR				
	comp=Z,528nm,19.0s,MS5.0									
NEN	**Nelson**	**89.58**	**52**	*eP*	**P**	**P**	**19 05 12.5**	**-0.4**		
BMN	**Battle Mountai**	**89.71**	**47**	*eP*	**P**	**P**	**19 05 14.0**	**+0.6**		
	comp=Z,16nm,1.3s,mb5.2									
BMN					LR	LR				
	comp=Z,398nm,22.0s,MS4.8									
RMW	**Rattlesnake Mo**	**89.72**	**39**	*eP*	**P**	**P**	**19 05 12.5**	**-0.7**		
SNAA	**Sanae**	**90.61**	**183**	P	**P**	**P**	**19 05 16.4**	**-0.4**		
DAWY	**Dawson**	**90.75**	**20**	*eP*	**P**	**P**	**19 05 17.3**	**-0.3**		
DLBC	**Dease Lake**	**90.92**	**27**	LR	LR		19 43 24.7			
	comp=Z,574nm,18.4s,MS5.0,baz=232,slow=34									
VNA3	**Neumayer Olymp**	**91.22**	**180**	⇑*iP*		**P**	**19 05 28.4**	**+8.8**		
VNA2	**Neumayer--Watz**	**91.50**	**181**	P		**P**	**19 05 23.3**	**+2.4**		
VNA1	**Neumayer--Stat**	**91.80**	**181**	⇓*iP*		**P**	**19 05 31.1**	**+8.9**		
HLID	**Hailey**	**92.85**	**45**	*eP*		**P**	**19 05 27.3**	**-0.4**		
HLID					LR	LR				
	comp=Z,664nm,21.0s,MS5.1									
NEW	**Newport**	**92.91**	**40**	P		**P**	**19 05 29.2**	**+1.3**		
NEW					LR	LR				
	comp=Z,339nm,20.0s,MS4.8									
TIXI	**Tiksi**	**93.22**	**348**	*eP*		**P**	**19 05 34.7**	**+5.9**		
TIXI				*eS*		S	19 16 27.9	-2.7		
TIXI					pmax	pmax				
	comp=Z,21nm,1.1s,mb5.5									
TIXI					MLR	MLR				
	comp=Z,3μm,17.0s,MS5.8									
AHID	**Auburn Hatcher**	**94.84**	**47**	PFAKE			19 05 50.0	+13		
AHID					LR	LR				
	comp=Z,464nm,20.0s,MS5.0									
INK	**Inuvik**	**95.28**	**18**	LR	LR		19 45 41.2			
	comp=Z,357nm,18.1s,MS4.9,baz=37,slow=34									
BOZ	**Bozeman (W)**	**95.45**	**44**	PFAKE			19 05 50.0	+10		
BOZ					LR	LR				
	comp=Z,498nm,20.0s,MS5.0									
ANMO	**Albuquerque**	**95.80**	**55**	PFAKE			19 05 50.0	+8.5		
ANMO					LR	LR				
	comp=Z,192nm,19.0s,MS4.6									
WMQ	**Urumqi**	**95.89**	**314**	*eP*		**P**	**19 05 42.8**	**+1.1**		
WMQ					XP	sP	19 05 56.3	+1.1		
WMQ					PP	PP	19 09 37.3	+1.1		
WMQ					SKS	SKS	19 16 13.9	-9.1		
WMQ					S	S	19 16 54.2	+0.1		
WMQ					SS	SS	19 23 28.2	-0.5		
WMQ					AMB	AMB				
	comp=Z,13nm,2.4s,mb4.9									
WMQ					AMB	AMB				
	comp=Z,77nm,8.2s									
WMQ					LR	LR				
	comp=N,168nm,21.6s,MS4.7									
WMQ					LR	LR				
	comp=E,187nm,21.7s,MS4.7									
WMQ					LR	LR				
	comp=Z,284nm,23.2s,MS4.7									
BW06	**Boulder Array**	**95.91**	**47**	P	P	**P**	**19 05 42.6**	**+0.8**		
PDAR	**Pinedale Array**	**95.91**	**47**	P	P	**P**	**19 05 42.4**	**+0.5**		
	comp=Z,0.1nm,0.3s,mb3.7,baz=301,slow=5.3,SNR=2.0									
PDAR					LR	LR	19 39 53.6			
	comp=Z,166nm,19.4s,MS4.5,baz=273,slow=30									
TXAR	**Lajitas Array**	**96.42**	**61**	P	P	**P**	**19 05 45.5**	**+1.1**		
	comp=Z,0.1nm,0.6s,SNR=3.0									
TXAR					LR	LR	19 41 21.9			
	comp=Z,129nm,19.2s,MS4.4,baz=230,slow=31									
TXAR	**Lajitas Array**	**96.42**	**61**	P	P	**P**	**19 05 45.5**	**+1.1**		
TXAR					LR	LR	19 41 21.9			
YKA	**Yellowknife Ar**	**99.55**	**27**	P	P	**P**	**19 05 56.7**	**-1.1**		
	comp=Z,0.3nm,0.9s,mb3.7,baz=256,slow=4.9,SNR=6.1									
YKA					LR	LR	19 44 54.3			
	comp=Z,424nm,19.4s,MS5.0,baz=260,slow=32									
YKA	**Yellowknife Ar**	**99.55**	**27**	P	P	**P**	**19 05 56.7**	**-1.1**		
YKA					LR	LR	19 44 54.3			
MKAR	**Makanchi Array**	**100.41**	**316**	P	P	P	19 06 03.1	+1.1		
	comp=Z,0.7nm,0.7s,baz=90,slow=4.9,SNR=5.4									
MKAR	**Makanchi Array**	**100.41**	**316**	*iP*		P	19 06 06.6	+4.6		
MKAR					pmax	pmax				
	comp=Z,1.0nm,0.7s									
AAM	**Ann Arbor**	**114.60**	**51**	PFAKE			19 11 10.0	+11		
AAM					LR	LR				
	comp=Z,236nm,19.0s,MS4.8									
ACSO	**Alum Creek Sta**	**115.02**	**53**	PFAKE			19 11 10.0	+10		
ACSO					LR	LR				
	comp=Z,993nm,21.0s,MS5.4									
ARU	**Arti**	**115.81**	**325**	PFAKE			19 11 10.0	+8.7		
ARU					LR	LR				
	comp=Z,284nm,21.0s,MS4.9									
BLA	**Blacksburg**	**116.89**	**57**	PFAKE			19 11 10.0	+6.2		
BLA					LR	LR				
	comp=Z,244nm,19.0s,MS4.8									
CPUP	**Villa Florida**	**117.31**	**133**	PKP	PKPdf		19 11 01.0	-3.9		
	comp=Z,1.6nm,1.0s,baz=117,slow=6.8,SNR=1.9									
ARCES	**ARCESS Array B**	**123.55**	**345**	PKP	PKPdf		19 11 11.2	-4.8		
	comp=Z,5.0nm,1.0s,baz=45,slow=1.7,SNR=8.9									
MOS	**Moscow**	**127.23**	**328**	*e*PKIKP	PKPdf		19 11 18.5	-4.8		
ZEI	**Tsey**	**127.36**	**311**	⇓*e*PKIKP	PKPdf		19 11 22.4	-1.6		
GOF	**Gofitskoye**	**127.50**	**314**	*e*PKIKP	PKPdf		19 11 22.0	-2.2		
VOR	**Voronezh**	**127.97**	**323**	PKIKP	PKPdf		19 11 22.0	-2.9		
VOR					pmax	pmax				
	comp=Z,40nm,1.8s									
KIV	**Kislovodsk**	**127.99**	**312**	⇑*i*PKIKP	PKPdf		19 11 21.4	-3.8		
KIV				*e*			19 13 24.9			
KIV				*i*			19 18 32.0			
KIV				*e*PS	PS		19 23 33.6	+4.6		
KIV				*i* SS	SS		19 30 38.0	+3.0		
KIV					pmax	pmax				
	comp=Z,9.0nm,1.2s									
KIV					MLR	MLR				
	comp=Z,300nm,20.0s,MS5.0									
OBN	**Obninsk**	**128.04**	**327**	*de*PKIKP	PKPdf		19 11 26.2	+1.3		
OBN				*e*			19 13 33.2			
OBN				*e*SS	SS		19 30 39.2	+3.8		
OBN					pmax	pmax				
	comp=Z,18nm,1.4s									
OBN					MLR	MLR				
	comp=Z,300nm,18.0s,MS5.0									
FINES	**FINESS Array B**	**129.07**	**338**	PKP	PKPdf		19 11 22.5	-4.3		
	comp=Z,4.2nm,1.2s,baz=153,slow=4.3,SNR=5.5									
SOC	**Sochi**	**130.16**	**312**	*i* PKHKP			19 11 02.6			
NOA	**NORSAR Array B**	**133.92**	**345**	PKP	PKPdf		19 11 31.0	-4.8		
	comp=Z,1.4nm,1.1s,baz=46,slow=2.6,SNR=2.7									
NOA	**NORSAR Array B**	**133.92**	**345**	PKP	PKPdf		19 11 31.0	-4.8		
AKASG	**Malin Array Be**	**134.06**	**325**	PKP	PKPdf		19 11 31.9	-4.5		
	comp=Z,0.2nm,0.4s,baz=33,slow=1.8,SNR=5.7									
BRTR	**Keskin Array B**	**135.58**	**309**	PKP	PKPdf		19 11 36.0	-3.6		
	comp=Z,0.4nm,0.5s,baz=315,slow=2.0,SNR=4.5									
OKC	**Ostrava-Krasne**	**140.26**	**330**	L			20 11 40.0			
	comp=Z,0.3nm,22.7s									
DPC	**Dobruska-Polom**	**140.74**	**332**	*e*PKPpre			19 11 41.6			
DPC				*e*PKPdf	PKPdf		19 11 45.7	-2.9		
DPC				L			20 08 50.0			
	comp=Z,0.6nm,27.6s									
DPC	**Dobruska-Polom**	**140.74**	**332**	*e*PKIKP	PKPdf		19 11 41.6	-7.0		
DPC				MLR	MLR					
	comp=Z,600nm,27.6s,MS5.2									
VYHS	**Vyhne**	**140.83**	**328**	*e*PKP	PKPdf		19 11 46.5	-2.4		
VYHS				*es*P			19 40 14.8			
BRG	**Berggiesshubel**	**141.37**	**334**	*e*PKIKP	PKPdf		19 11 49.7	0.0		
BRG					pmax	pmax				
	comp=Z,5.0nm,1.2s									
PVCC	**Panska Ves**	**141.37**	**334**	L			20 18 10.0			
	comp=Z,0.3nm,19.0s									
CLL	**Collm**	**141.41**	**336**	P	PKPdf		19 11 47.0	-2.8		
CLL				*es*S	SS		19 32 54.0	-22		
CLL				*e*			19 35 18.0			
CLL	**Collm**	**141.41**	**336**	*e*PKP	PKPdf		19 11 47.0	-2.8		
PRU	**Pruhonice**	**141.79**	**333**	*e*PKPdf	PKPdf		19 11 48.3	-2.1		
PRU				*ex*	x		19 11 56.0			
PRU				L			20 11 00.0			
MOX	**Moxa**	**142.48**	**336**	*e*P	PKPdf		19 12 00.0	+8.4		
KHC	**Kasperske Hory**	**142.84**	**333**	*e*PKPpre			19 11 46.3			
KHC				*e*PKPdf	PKPdf		19 11 52.4	+0.1		
KHC				L			20 16 40.0			
	comp=Z,0.3nm,21.8s									
KHC	**Kasperske Hory**	**142.84**	**333**	*e*PKP	PKPdf		19 11 46.3	-6.0		
KHC				*e*			19 11 52.4			
KHC				LR	LR					
	comp=Z,300nm,21.8s,MS5.0									
GERES	**GERESS Array B**	**143.00**	**332**	PKhKP			19 11 45.5			
	comp=Z,0.8nm,0.9s,baz=90,slow=2.9,SNR=5.9									
GERES				PKP	PKPdf		19 11 49.1	-3.4		
	comp=Z,1.4nm,0.9s,baz=45,slow=1.9,SNR=5.7									
SKO	**Skopje**	**143.18**	**318**	*e*PKP	PKPdf		19 11 51.0	-2.1		
GRA1	**Grafenberg Arr**	**143.39**	**335**	*e*PKP	PKPdf		19 11 46.6	-6.6		
GRF	**Grafenberg Arr**	**143.39**	**335**	*e*PKIKP	PKPdf		19 11 46.6	-6.6		
MOA	**Molln**	**143.48**	**331**	⇑*i*PKP	PKPdf		19 11 51.2	-2.2		
KBA	**Koelnbreinsper**	**144.47**	**331**	⇑*i*PKP	PKPdf		19 11 48.9	-6.3		
STU	**Stuttgart**	**144.92**	**336**	*e*PKP	PKPdf		19 11 51.9	-4.0		
VOY	**Vojsko**	**144.97**	**329**	*e*PKPdf	PKPdf		19 11 51.0	-5.1		
VOY				*e*			19 11 56.3			
WATA	**Walderalm**	**145.08**	**333**	⇓*i*PKP	PKPdf		19 11 52.8	-3.4		
WTTA	**Wattenberg**	**145.11**	**332**	⇑*i*PKP	PKPdf		19 11 51.6	-4.7		
WLF	**Walferdange**	**145.24**	**340**	*e*PKP	PKPdf		19 11 52.3	-4.1		
GIVF	**Givet**	**145.27**	**342**	*e*PKP1	PKPbc		19 11 51.9	+0.3		
MOTA	**Moosalm**	**145.28**	**333**	⇓*i*PKP	PKPdf		19 11 52.8	-3.8		
MOTA				*i*			19 12 07.7			
SQTA	**Sankt Quirin**	**145.33**	**333**	⇑*i*PKP	PKPdf		19 11 53.2	-3.5		
BAIF	**Baives**	**145.49**	**342**	*e*PKP1	PKPbc		19 11 52.9	+0.8		
DAVA	**Damuels**	**145.84**	**334**	⇓*i*PKP	PKPdf		19 11 54.9	-2.6		
DAVA				*i*			19 12 10.2			
CDF	**Champ du Feu**	**145.93**	**338**	*e*PKP1	PKPbc		19 11 54.6	+1.3		
	comp=Z,61nm,1.0s									
CTI	**Castel Tesino**	**146.02**	**331**	*e*PKP	PKPdf		19 11 55.0	-2.9		
BRMO	**Bormio**	**146.27**	**333**	⇑*i*PKP	PKPdf		19 11 57.1	-1.2		
HINF	**Hinteralfeld**	**146.58**	**338**	*e*PKP1	PKPbc		19 11 56.1	+1.3		
	comp=Z,8.7nm,0.6s									
HAU	**Haudompre**	**146.60**	**338**	*e*PKP1	PKPbc		19 11 56.4	+1.5		
	comp=Z,26nm,0.8s									
HAU				*e*R						
	comp=Z,230nm,20.8s									
MEZF	**Maizieres J'vi**	**146.61**	**340**	*e*PKP1	PKPbc		19 11 56.9	+2.0		
	comp=Z,42nm,0.8s									
ARV	**Arcevia**	**147.23**	**327**	*e*PKP	PKPdf		19 11 59.7	-0.3		
SNTG	**Esanatoglia**	**147.40**	**326**	*e*PKP	PKPdf		19 12 00.6	+0.3		
VAI	**Varese**	**147.44**	**334**	*e*PKP	PKPdf		19 11 58.3	-1.9		
SFI	**Santa Sofia**	**147.50**	**328**	*e*PKP	PKPdf		19 12 00.6	+0.2		
SEI	**Scarperia**	**147.64**	**329**	*e*PKP	PKPdf		19 12 02.2	+1.6		
MCGN	**Macugnaga**	**147.69**	**335**	*e*PKP	PKPdf		19 12 00.2	-0.5		
SGO	**Sicignano**	**147.80**	**324**	*e*PKP	PKPdf		19 12 00.2	-0.8		
FLN	**La Foliniere**	**147.88**	**347**	*e*PKP1	PKPdf		19 11 59.6	-1.3		
	comp=Z,52nm,1.0s									
FLN				*e*R						
	comp=Z,376nm,21.5s									
CABF	**La Chapelle**	**147.88**	**337**	*e*PKP1	PKPdf		19 12 00.7	-0.2		
	comp=Z,32nm,0.9s									
LDF	**La Druitiere**	**147.96**	**346**	*e*PKP1	PKPdf		19 11 59.8	-1.2		
	comp=Z,26nm,1.0s									
SDI	**San Donato**	**147.96**	**323**	*e*PKP	PKPdf		19 12 01.2	0.0		
LOR	**Lormes**	**148.08**	**340**	*e*PKP1	PKPdf		19 12 00.6	-0.6		
	comp=Z,25nm,0.8s									
LOR				*e*R						
	comp=Z,406nm,23.0s									
MNS	**Montasola**	**148.13**	**325**	*e*PKP	PKPdf		19 12 01.0	-0.5		
GRR	**Gorron**	**148.31**	**347**	*e*PKP1	PKPdf		19 12 01.1	-0.5		
	comp=Z,43nm,1.0s									
SSF	**Saint Saulge**	**148.37**	**341**	*e*PKP1	PKPdf		19 12 01.5	-0.2		
	comp=Z,65nm,1.0s									
LPL	**La Plagne**	**148.55**	**336**	*e*PKP1	PKPdf		19 12 02.6	+0.6		
	comp=Z,34nm,1.1s									
LPG	**La Plagne**	**148.56**	**335**	*e*PKP1	PKPdf		19 12 02.6	+0.5		
	comp=Z,89nm,1.4s									
SMF	**Signal de Mont**	**148.63**	**340**	*e*PKP1	PKPdf		19 12 02.0	-0.1		
AVF	**Avril sur Loir**	**148.66**	**341**	*e*PKP1	PKPdf		19 12 01.8	-0.4		
	comp=Z,30nm,1.2s									
ROSF	**Rostrenen**	**148.83**	**350**	*e*PKP1	PKPdf		19 12 02.0	-0.4		
	comp=Z,46nm,1.1s									
BNI	**Bardonecchia**	**148.96**	**335**	*e*PKP	PKPdf		19 11 59.1	-3.6		
BGF	**Bois d'Agland**	**149.03**	**341**	*e*PKP1	PKPdf		19 12 03.0	+0.2		
	comp=Z,41nm,0.9s									
MBDF	**Montbardon**	**149.19**	**335**	*e*PKP1	PKPdf		19 12 03.3	+0.2		
QUIF	**Quistinic**	**149.22**	**349**	*e*PKP1	PKPdf		19 12 03.0	0.0		
	comp=Z,24nm,1.0s									
ORIF	**Oris-en-Rattie**	**149.38**	**336**	*e*PKP1	PKPdf		19 12 04.3	+0.9		
	comp=Z,30nm,0.8s									
ORIF				*e*R						
	comp=Z,367nm,20.2s									
TCF	**Toulx Ste Croi**	**149.46**	**342**	*e*PKP1	PKPdf		19 12 04.1	+0.6		
	comp=Z,35nm,1.0s									
MFF	**Saint Martin d**	**149.82**	**345**	*e*PKP1	PKPdf		19 12 05.0	+0.9		
	comp=Z,46nm,1.1s									
VIVF	**Saint-Julien-l**	**149.90**	**337**	*e*PKP1	PKPdf		19 12 05.6	+1.4		
	comp=Z,32nm,1.0s									
PGF	**Pioggiola**	**149.91**	**329**	*e*PKP1	PKPdf		19 12 05.2	+0.9		
	comp=Z,76nm,1.0s									
FRF	**La Foret Royal**	**150.19**	**333**	*e*PKP1	PKPdf		19 12 05.8	+1.1		
	comp=Z,198nm,1.7s									
SMRF	**Simiane la Rot**	**150.29**	**335**	*e*PKP1	PKPdf		19 12 06.8	+1.9		
LMR	**La Mourre**	**150.43**	**333**	*e*PKP1	PKPdf		19 12 06.6	+1.5		
	comp=Z,186nm,1.7s									
RJF	**Les Rejaudoux**	**150.56**	**342**	*e*PKP1	PKPdf		19 12 07.0	+1.8		
	comp=Z,26nm,1.0s									
RJF				*e*R						
	comp=Z,429nm,19.2s									
CAF	**Calviac**	**150.73**	**341**	*e*PKP1	PKPdf		19 12 07.6	+2.1		
	comp=Z,82nm,1.5s									
LASF	**Ste Croix**	**150.87**	**337**	*e*PKP1	PKPdf		19 12 07.9	+2.2		
	comp=Z,42nm,0.9s									
LFF	**La Frestale**	**151.12**	**342**	*e*PKP1	PKPdf		19 12 08.2	+2.1		
	comp=Z,31nm,0.8s									
MTLF	**Montolieu**	**152.09**	**339**	*e*PKP1	PKPdf		19 12 10.5	+2.9		
	comp=Z,19nm,0.9s									
EPF	**Esparros**	**152.98**	**341**	*e*PKP1	PKPdf		19 12 12.5	+3.7		
	comp=Z,13nm,1.0s									
ETSF	**Etsaut**	**153.37**	**342**	*e*PKP1	PKPdf		19 12 13.8	+4.4		
	comp=Z,18nm,1.0s									
ESDC	**Sonseca Array**	**157.28**	**345**	PKPab	PKPab		19 12 41.5	-1.5		
	comp=Z,1.2nm,0.7s,baz=18,slow=4.7,SNR=4.6									

*IDC **09** 18:58:44.7±2.0,6.27S×129.45E,mb4.4/1,mb1 4.5/4, mb1mx3.9/13,ML4.0/3,Error ellipse: s-maj=92.0km s-min=26.4km az=76.0*

ISC 09 18:59:06.5±3.5,**7.3S**±0.1×**129.0E**±0.2,**h231**km±40km,**n6, σ1§10/10,mb4.0/1,Banda Sea**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
				Op				
FITZ	**Fitzroy Crossi**	**11.25**	**197**	Pn		**P**	**19 01 41.6**	**-0.6**
	0.3nm,0.3s,baz=21,slow=8.6,SNR=13							
FITZ				Sn		**S**	**19 03 44.8**	**+0.2**
	1.0nm,0.3s,baz=160,slow=7.4,SNR=8.0							
WRA	**Warramunga Arr**	**13.62**	**158**	Pn		**P**	**19 02 10.7**	**-1.1**
	1.4nm,0.3s,baz=344,slow=12,SNR=46							
WRA				Sn		**S**	**19 04 36.8**	**-1.2**
	0.4nm,0.3s,baz=332,slow=23,SNR=4.8							
WB2	**Warramunga Arr**	**13.62**	**158**	*e*P		**P**	**19 02 13.2**	**+1.4**
WB2				*e*S		**S**	**19 04 38.2**	**+0.1**
AS12	**Alice Springs**	**16.96**	**164**	*e*P		**P**	**19 02 54.0**	**+2.2**
	4.1nm,0.5s							
ASAR	**Alice Springs**	**16.96**	**164**	P		**P**	**19 02 54.1**	**+2.3**
	0.9nm,0.3s,baz=340,slow=9.9,SNR=34							
ASAR				S		**S**	**19 06 00.4**	**+8.7**
	0.2nm,0.3s,baz=350,slow=26,SNR=4.4							
MKAR	**Makanchi Array**	**67.92**	**327**	P		**P**	**19 09 41.6**	**-0.6**
	1.5nm,0.4s,mb4.0,baz=122,slow=8.3,SNR=47							

*IDC **09** 19:04:56.6±0.9,7.47S×125.63E,mb4.1/5,mb1 4.2/8, mb1mx4.1/15,ML3.9/3,Error ellipse: s-maj=44.5km s-min=17.8km az=58.0*

*NEIC **09** 19:04:59.9±8.6,7.52S×125.66E,h24km±66km,mb4.1/4, Error ellipse: s-maj=26.9km s-min=14.9km az=214.0*

ISC 09 19:05:04.5±2.9,**7.88S**±0.10×**125.8E**±0.1,**h103**km±30km, **n21,σ1§19/26,mb4.2/12,1D,Banda Sea**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
				Op				
FITZ	**Fitzroy Crossi**	**10.16**	**181**	*e*P		**P**	**19 07 29.8**	**+1.1**
	2.7nm,0.4s							
FITZ				*e*S		**S**	**19 09 22.0**	**+0.7**

2.1nm,0.9s,mb4.2

KMI	**Kunming**	**57.41**	**36**	*e*P		**P**	**19 37 33.4**	**+5.5**
KMI				S		**S**	**19 45 18.7**	**-4.2**
KMI				AMB	AMB			
	comp=Z,8.0nm,1.1s,mb4.7							
KMI				AMB	AMB			
	comp=Z,106nm,6.3s							
KMI				LR	LR			
	comp=N,182nm,21.0s,MS4.3							
KMI				LR	LR			
	comp=E,213nm,21.0s,MS4.3							
KMI				LR	LR			
	comp=Z,257nm,31.6s							
ASAR	**Alice Springs**	**58.58**	**105**	P		**P**	**19 37 35.2**	**-0.9**
	comp=Z,0.9nm,0.7s,mb3.9,baz=257,slow=6.8,SNR=6.5							
WRA	**Warramunga Arr**	**59.88**	**101**	P		**P**	**19 37 44.3**	**-0.8**
	comp=Z,1.5nm,0.7s,mb4.1,baz=255,slow=6.7,SNR=15							
WRA				LR	LR		20 02 19.7	
	comp=Z,588nm,19.1s,MS4.7,baz=265,slow=35							
WB2	**Warramunga Arr**	**59.89**	**101**	*e*P		**P**	**19 37 44.9**	**-0.3**
WRAB	**Tennant Creek**	**59.89**	**101**	*e*P		**P**	**19 37 45.8**	**+0.5**
	comp=Z,14nm,1.0s,mb4.9							
ENH	**Enshi**	**65.15**	**38**	*e*P		**P**	**19 38 21.1**	**+1.0**
	comp=Z,13nm,1.3s,mb4.8							
QSPA	**South Pole Qui**	**67.35**	**180**	*e*P		**P**	**19 38 35.4**	**+2.0**
	comp=Z,12nm,1.1s,mb4.8							
GTA	**Gaotai**	**67.98**	**25**	*e*P		**P**	**19 38 43.3**	**+5.3**
GTA				AMB	AMB			
	comp=Z,4.0nm,1.2s,mb4.3							
WMQ	**Urumqi**	**68.30**	**14**	*e*P		**P**	**19 38 44.2**	**+4.3**
VNDA	**Vanda**	**68.42**	**166**	P		**P**	**19 38 40.1**	**0.0**
	comp=Z,1.7nm,1.2s,mb4.0,baz=274,slow=8.2,SNR=2.4							
MKAR	**Makanchi Array**	**70.17**	**9**	P		**P**	**19 38 50.1**	**-1.2**
	comp=Z,1.9nm,0.7s,mb4.1,baz=180,slow=4.9,SNR=6.4							
MKAR				LR	LR		20 08 28.0	
	comp=Z,256nm,20.7s,MS4.5,baz=165,slow=35							
BRTR	**Keskin Array B**	**70.68**	**331**	P		**P**	**19 38 53.0**	**-1.5**
	comp=Z,0.4nm,0.7s,mb3.5,baz=153,slow=5.1,SNR=3.6							
BRTR				LR	LR		20 07 09.5	
	comp=Z,184nm,20.8s,MS4.3,baz=25,slow=34							
BRTR	**Keskin Array B**	**70.68**	**331**	P		**P**	**19 38 53.0**	**-1.5**
BRTR				LR	LR		20 07 09.5	
KURK	**Kurchatov**	**73.58**	**6**	*e*P		**P**	**19 39 16.3**	**+4.8**
PMG	**Port Moresby**	**74.95**	**94**	LR		LR	20 07 19.3	
	comp=Z,421nm,21.5s,MS4.7,baz=216,slow=32							
ZRNK	**Zerenda**	**75.40**	**360**	*e*P		**P**	**19 39 21.9**	**-0.1**
BVAR	**Borovoye Array**	**75.47**	**0**	P		**P**	**19 39 22.5**	**0.0**
	comp=Z,0.2nm,0.4s,mb3.4,baz=194,slow=5.9,SNR=2.9							
BRVK	**Borovoye**	**75.50**	**0**	*e*P		**P**	**19 39 21.5**	**-1.1**
SONM	**Songino Array**	**77.64**	**24**	P		**P**	**19 39 34.0**	**-0.6**
	comp=Z,0.6nm,0.8s,mb3.6,baz=221,slow=4.7,SNR=6.0							
ULN	**Ulaanbaatar**	**77.92**	**25**	*e*P		**P**	**19 39 35.4**	**-0.8**
	comp=Z,3.9nm,1.0s,mb4.3							
AKASG	**Malin Array Be**	**81.38**	**335**	P		**P**	**19 39 55.4**	**+0.6**
	comp=Z,0.3nm,0.4s,mb3.6,baz=137,slow=4.0,SNR=6.1							
CRVS	**Cervenica-Dubn**	**83.29**	**330**	*es*P		**P**	**19 40 11.5**	**+6.8**
CRVS				*e*			19 40 39.0	
GERES	**GERESS Array B**	**86.99**	**327**	P		**P**	**19 40 23.9**	**+0.7**
	comp=Z,0.1nm,0.3s,mb3.6,baz=162,slow=3.1,SNR=3.2							
BRG	**Bergqiesshubel**	**88.18**	**328**	*e*P		**P**	**19 40 33.9**	**+5.1**
	comp=Z,1.9nm,0.1s,mb5.3							
BRG				LR	LR			
	comp=Z,250nm,22.5s,MS4.6							
GRA1	**Grafenberg Arr**	**88.78**	**326**	*e*P		**P**	**19 40 36.9**	**+5.2**
	comp=Z,43nm,2.0s,mb5.4							
GRA1				LR	LR			
	comp=Z,200nm,21.5s,MS4.5							
CLL	**Collm**	**88.91**	**328**	P		**P**	**19 40 37.0**	**+4.7**
MOX	**Moxa**	**89.18**	**327**	*i* P		**P**	**19 40 39.1**	**+5.5**
	comp=Z,logA/T=0.8,mb4.9							
MOX				L			20 18 20.0	
MOX	**Moxa**	**89.18**	**327**	*e*P		**P**	**19 40 39.1**	**+5.5**
	comp=Z,8.0nm,1.4s,mb4.9							
MOX				LR	LR			
	comp=Z,100nm,22.0s,MS4.2							
INK	**Inuvik**	**132.27**	**11**	PKP		PKPdf	19 46 53.3	-0.3
	comp=Z,0.3nm,0.5s,baz=166,slow=4.2,SNR=2.3							
YKA	**Yellowknife Ar**	**140.19**	**3**	PKP		PKPdf	19 47 04.1	-4.1
	comp=Z,0.3nm,0.9s,baz=348,slow=3.7,SNR=6.0							
YKA	**Yellowknife Ar**	**140.19**	**3**	PKP		PKPdf	19 47 04.1	-4.1
NVAR	**Mina Array Bea**	**162.96**	**22**	PKP		PKPdf	19 47 39.0	-2.9
	comp=Z,0.1nm,0.3s,baz=63,slow=2.0,SNR=2.0							
NVAR				PKPab		PKPab	19 48 31.4	+0.6
	comp=Z,0.2nm,0.5s,baz=225,slow=2.6,SNR=2.1							
TXAR	**Lajitas Array**	**171.13**	**319**	PKPab		PKPab	19 49 05.6	-1.2
	comp=Z,0.5nm,1.0s,baz=22,slow=4.9,SNR=2.6							

*CASC **09** 20:00:20.0±2.0, 13.84N×91.55W, h1km±6km, MD4.0, ML4.2, mb3.5(NEIC)*

*NEIC **09** 20:00:27.7±2.2, 14.46N×91.36W, h117km±24km, mb3.5/1, Error ellipse: s-maj=38.5km s-min=14.2km az=62.0*

*IDC **09** 20:00:28.5±4.0, 14.58N×91.35W, h116km±38km, mb3.3/3, mb1 3.7/6, mb1mx3.4/20, Error ellipse: s-maj=63.2km s-min=21.7km az=53.0*

ISC 09 20:00:18.8±0.9, 13.97N±0.08×91.84W±0.06, h63km±7km, n29, σ0§85/45, mb3.7/4, 3C-2D, Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAT	**Jato**	**0.39**	**29⇑**	*e*P	**P**	**20 00 29.4**	**-0.7**
JAT				*e*S	**S**	**20 00 38.8**	**+0.3**
JAT				AML	AML	20 00 39.2	
	comp=N,52μm,0.3s						
TP2	**Tecpan 2**	**1.13**	**44**	*e*P	**P**	**20 00 38.5**	**-0.3**
TP2				*e*S	**S**	**20 00 54.0**	**+0.2**
TP2				AML	AML	20 00 55.5	
	comp=E,898nm,0.4s						
IXG	**Ixpaco**	**1.35**	**81**	*e*P	**P**	**20 00 41.2**	**-0.9**
IXG				*e*S	**S**	**20 00 58.9**	**-0.5**
IXG				AML	AML	20 01 01.4	
	comp=E,10μm,0.3s						
NBG	**Las Nubes**	**1.57**	**67⇑**	*e*P	**P**	**20 00 45.6**	**+0.6**
NBG				*e*S	**S**	**20 01 07.1**	**+2.8**
CUSS	**Cusmapa**	**1.83**	**92**	*e*P	**P**	**20 00 47.9**	**-0.7**
CUSS				*e*S	**S**	**20 01 10.1**	**-0.6**
RBDL	**Robledal**	**2.09**	**86**	*e*P	**P**	**20 00 52.5**	**+0.4**
RBDL				*e*S	**S**	**20 01 17.9**	**+0.9**
RTR	**El Retiro**	**2.13**	**92**	*e*P	**P**	**20 00 52.5**	**-0.3**
SBLS	**San Blas**	**2.15**	**93⇓**	*e*P	**P**	**20 00 53.0**	**0.0**
SBLS				*e*S	**S**	**20 01 18.7**	**+0.1**
SNJE	**San Jose**	**2.17**	**93**	*e*P	**P**	**20 00 53.4**	**+0.1**
SNJE				*e*S	**S**	**20 01 19.3**	**+0.4**
MTO2	**Montecristo 2**	**2.44**	**80⇑**	*e*P	**P**	**20 00 56.6**	**-0.5**
BOQS	**Boqueron**	**2.49**	**95**	*e*P	**P**	**20 00 58.2**	**+0.3**
BOQS				*e*S	**S**	**20 01 27.1**	**-0.1**
LFU	**La Fuente**	**2.65**	**95**	*e*P	**P**	**20 01 00.0**	**-0.2**
LFU				*e*S	**S**	**20 01 29.3**	**-1.9**
LFRS	**El Faro**	**2.72**	**97**	*e*P	**P**	**20 01 01.2**	**+0.1**
LFRS				*e*S	**S**	**20 01 32.3**	**-0.6**
LBRS	**Las Brisas**	**2.72**	**95**	*e*P	**P**	**20 01 02.0**	**+0.9**
LBRS				*e*S	**S**	**20 01 33.3**	**+0.3**
LCBS	**La Ceiba**	**2.79**	**96**	*e*P	**P**	**20 01 02.6**	**+0.5**
LCBS				*e*S	**S**	**20 01 35.1**	**+0.3**
SNVI	**San Vicente**	**2.93**	**97**	*e*P	**P**	**20 01 04.8**	**+0.6**
SNVI				*e*P		20 01 06.2	
SNVI				*e*S	**S**	**20 01 38.8**	**+0.5**
CAHU	**Cacacuatique**	**3.52**	**93**	*e*P	**P**	**20 01 12.8**	**+0.3**
BLLM	**Bellamira**	**3.54**	**98**	*e*P	**P**	**20 01 11.3**	**-1.3**
BLLM				*e*S	**S**	**20 01 53.3**	**-0.2**
CNCH	**Conchagua**	**3.95**	**100⇓**	*e*P	**P**	**20 01 19.2**	**+0.8**
CNCH				*e*S	**S**	**20 02 04.2**	**+0.3**
TEIG	**Tepich**	**7.09**	**28**	P	**P**	**20 02 00.3**	**-1.8**
	comp=E,6.2nm,0.3s,baz=171,slow=13,SNR=5.6						
TEIG	**Tepich**	**7.09**	**28**	*e*P	**P**	**20 02 00.3**	**-1.8**
JTS	**JuntasAbangare**	**7.66**	**118**	P	**P**	**20 02 14.5**	**+4.5**
	comp=E,1.3nm,0.3s,baz=311,slow=20,SNR=4.7						
JTS				S	**S**	**20 03 42.2**	**+6.1**
	comp=E,0.6nm,0.3s,baz=333,slow=23,SNR=2.5						
TXAR	**Lajitas Array**	**18.81**	**326**	P	**P**	**20 04 36.4**	**+0.6**
	comp=E,0.1nm,0.3s,baz=156,slow=13,SNR=14						
ANMO	**Albuquerque**	**24.71**	**330**	*e*P	**P**	**20 05 36.3**	**+0.9**
	comp=E,0.9nm,0.5s,mb3.6						
NVAR	**Mina Array Bea**	**33.79**	**321**	P	**P**	**20 06 58.8**	**+2.0**
	comp=E,2.1nm,1.0s,mb4.0,baz=125,slow=9.3,SNR=11						
YKA	**Yellowknife Ar**	**51.09**	**347**	P	**P**	**20 09 14.3**	**-2.4**
	comp=E,0.3nm,0.6s,mb3.4,baz=150,slow=7.5,SNR=16						
YKA				pP	pP	20 09 39.2	+6.1
	comp=E,0.1nm,0.6s,baz=147,slow=7.6,SNR=3.2						
YKA	**Yellowknife Ar**	**51.09**	**347**	P	**P**	**20 09 14.3**	**-2.4**
YKA				pP	pP	20 09 39.2	+6.1
ILAR	**Eielson Array**	**62.93**	**337**	P	**P**	**20 10 39.9**	**-0.8**
	comp=E,0.7nm,0.7s,mb3.9,baz=128,slow=3.9,SNR=7.6						
CMAR	**Chiang Mai Arr**	**146.07**	**341**	PKPbc	PKPbc	20 19 54.2	+1.6

comp=E,1.1nm,0.7s,baz=338,slow=4.9,SNR=6.0

*NIED **09** 20:06:00, 24.60N×121.80E, h80km, Mw5.0 Best double couple: M0 3.43×10^16 NP1:φs 329°, δ69°, λ-31°. NP2:φs 71°, δ62°, λ-156°.*

*BJI **09** 20:06:46.6, 24.63N×121.76E, h62km, mB4.9, mb4.8, ML5.1, Ms4.5, Msz4.0*

*NEIC **09** 20:06:47.7±0.5, 24.56N×121.82E, h71km±4km, mb4.9/44, Error ellipse: s-maj=4.2km s-min=3.8km az=161.0*

NEIC Recorded [4 TAP] in I-lan; [3 TAP] in Hua-lien, Nan-t'ou, T'ai-chung and T'ao-yuan; [2 TAP] in Chang-hua, Chia-i, Hsin-chu, Miao-li, T'ai-pei, T'ai-tung and Yun-lin; [1 TAP] in T'ai-nan Counties.

*JMA **09** 20:06:47.0±0.3, 24.64N×121.79E, h72km, M4.8*

*TAP **09** 20:06:47.6, 24.57N×121.77E, h69km, ML5.5*

TAP Felt II J at Suao, IV J at Nanau, III J at Neicheng, III J at Nioudou, III J at Ilan, III J at Nanshan, III J at Sanguang, I J at Mucha, II J, II J at Chiawan, II J at Taipai, II J at Hualien, II J at Kuangyinshan, III J at Hehuanshan, III J at Tachien, II J at Nanjuang, II J at Hsinchu, III J at Shilin, I J at Sanyi, I J at Liyutan, II J at Ryuetan, II J at Mingjian, II J at Alishan, II J at Tsauling, II J at Gukeng, II J at Chenggung, II J at Dacheng, I J at Lidau, II J at Chiayi, I J at Dapu, II J at Szhu, I J at Anpu, III J at Jungli (National Central University).

*HRVD **09** 20:06:47.7±0.3, 24.68N×121.66E, h75km±3km, MW5.0/53, Centroid moment Tensor Solution. LP body waves: s18,c27;Mantle waves: s53,c90; Half duration: 0 Moment tensor: Scale 10^16 Nm; Mr 1.80±.16; Mθθ 1.11±.14; Mφφ -2.91±.15; Mrθ 0.80±.08; Mθφ -1.82±.12; Mφr -1.63±.10; Best double couple: M0 3.57×10^16 NP1:φs 57°, δ48°, λ 151°. NP2:φs 168°, δ69°, λ46°. Principal axes: T 3.25, Plg47°, Azm32°; N .64, Plg40°, Azm187°; P -3.89, Plg13°, Azm288°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*IDC **09** 20:06:48.2±1.8, 24.60N×121.86E, h75km±15km, mb4.2/21, mb1 4.4/26, mb1mx4.4/30, MS3.7/9, Ms1 3.8/9, ms1mx3.6/32 Error ellipse: s-maj=13.0km s-min=10.5km az=66.0*

*MOS **09** 20:06:49.3±0.7, 24.75N×121.85E, h96km, mb4.8/14, Error ellipse: s-maj=15.1km s-min=7.3km az=108.8*

ISC 09 20:06:47.0±0.1, 24.60N±0.01×121.82E±0.01, h75km±1km, h78km±3.1km: pP-P, n298, σ1§10/375, mb4.8/74, 28C-26D, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWC	**Suao**	**0.03**	**71⇓**	*i*P	**P**	**20 06 58.0**	**+0.1**
ILA	**Ilan**	**0.18**	**337⇓**	*i*P	**P**	**20 06 58.7**	**+0.6**
ILA				S	**S**	**20 07 07.3**	**+1.0**
TWE	**Neicheng**	**0.18**	**310⇓**	*i*P	**P**	**20 06 58.4**	**+0.3**
ENA	**Nanau**	**0.19**	**203⇓**	*i*P	**P**	**20 06 58.0**	**-0.1**
ENA				S	**S**	**20 07 05.9**	**-0.6**
ENTT	**Nioudou**	**0.24**	**280⇓**	*i*P	**P**	**20 06 58.5**	**0.0**
NSK	**Sanguang**	**0.43**	**280⇓**	*i*P	**P**	**20 06 59.5**	**-0.2**
TWA	**Mucha**	**0.44**	**330⇓**	*i*P	**P**	**20 07 00.2**	**+0.4**
TWA				S	**S**	**20 07 09.1**	**-0.3**
NNS	**Nan Shan**	**0.44**	**249⇓**	*i*P	**P**	**20 06 59.9**	**0.0**
NNS				S	**S**	**20 07 08.6**	**-0.8**
NWF	**Wu-fen Shan**	**0.47**	**355⇓**	*i*P	**P**	**20 07 00.8**	**+0.8**
NWF				S	**S**	**20 07 10.6**	**+0.7**
TATO	**Taipei**	**0.48**	**321**	*e*P	**P**	**20 06 59.7**	**-0.5**
TATO				*e*S	**S**	**20 07 08.3**	**-1.8**
TAP1	**Taipei**	**0.51**	**328⇑**	*i*P	**P**	**20 07 00.8**	**+0.2**
TAP1				S	**S**	**20 07 09.9**	**-0.6**
TAP	**Taipei**	**0.52**	**327⇑**	*i*P	**P**	**20 07 00.8**	**+0.2**
TAP				S	**S**	**20 07 10.4**	**-0.3**
TWD	**Chiawan**	**0.56**	**202⇓**	*i*P	**P**	**20 06 59.9**	**-1.1**
TWD				S	**S**	**20 07 09.1**	**-2.2**
TWS1	**Kuangyinshan**	**0.62**	**324⇑**	*i*P	**P**	**20 07 02.0**	**+0.4**
TWS1				S	**S**	**20 07 12.6**	**+0.3**
HWA	**Hwalien**	**0.65**	**198⇓**	*i*P	**P**	**20 07 01.1**	**-0.8**
WHF	**Hehuan Shan**	**0.68**	**228⇓**	*i*P	**P**	**20 07 02.2**	**0.0**
TWT	**Tachien**	**0.68**	**240⇓**	*i*P	**P**	**20 07 02.8**	**+0.5**
TWY	**Chenhua**	**0.70**	**343⇑**	*i*P	**P**	**20 07 03.2**	**+0.8**
TWY				S	**S**	**20 07 13.4**	**+1.3**
NSTT	**Nanjuang**	**0.75**	**272⇑**	*i*P	**P**	**20 07 02.8**	**-0.2**
NSTT				S	**S**	**20 07 13.9**	**-1.0**
HSN	**Hsinchu**	**0.80**	**285⇑**	*i*P	**P**	**20 07 03.3**	**-0.3**
HSN				S	**S**	**20 07 14.8**	**-1.2**
ESL	**Shilin**	**0.86**	**205⇓**	*i*P	**P**	**20 07 02.6**	**-1.7**
NSY	**Sanyi**	**0.98**	**259⇑**	*i*P	**P**	**20 07 06.1**	**+0.3**
NSY				S	**S**	**20 07 19.7**	**-0.2**
TWQ1	**Liyutan**	**0.99**	**255⇑**	*i*P	**P**	**20 07 05.9**	**+0.1**
TWQ1				S	**S**	**20 07 20.2**	**+0.2**
PCYT	**Pengchaiyu**	**1.05**	**12**	*i* P	**S**	**20 07 07.6**	**+1.0**
PCYT				S	**S**	**20 07 23.0**	**+1.7**
YOJ	**Yonaguni jima**	**1.09**	**97**	P	**S**	**20 07 07.4**	**+0.3**
YOJ				S	**S**	**20 07 22.3**	**+0.1**
SMLT	**Sun Moon Lake**	**1.10**	**230**	⇓P	**S**	**20 07 07.8**	**+0.4**
SMLT				S	**S**	**20 07 24.0**	**+1.5**
TYC	**Yuchr**	**1.12**	**232**	P	**S**	**20 07 07.9**	**+0.4**
TCU	**Taichung**	**1.14**	**247**	*e*P	**P**	**20 07 07.9**	**+0.1**
TCU				S	**S**	**20 07 24.4**	**-1.9**
WNT	**Mingjian**	**1.26**	**236**	*e*P	**P**	**20 07 09.8**	**+0.3**
WNT				S	**S**	**20 07 26.6**	**+0.4**
TWF1	**Yuli**	**1.33**	**201**	*e*P	**P**	**20 07 08.1**	**-2.3**
YUS	**Yu-Shan**	**1.36**	**216**	*e*P	**P**	**20 07 11.2**	**+0.3**
YUS				S	**S**	**20 07 29.7**	**+1.2**
ALS	**Alishan**	**1.43**	**221**	⇓P	**S**	**20 07 12.8**	**+1.0**
ALS				S	**S**	**20 07 31.6**	**+1.6**
CHN5	**Tsauling**	**1.45**	**227**	*e*P	**P**	**20 07 12.3**	**+0.3**
WGK	**Gukeng**	**1.47**	**232**	*e*P	**P**	**20 07 12.5**	**+0.3**
WGK				S	**S**	**20 07 31.7**	**+0.8**
CHKT	**Chengkung**	**1.55**	**196**	*e*P	**P**	**20 07 12.1**	**-1.2**
CHKT				S	**S**	**20 07 31.6**	**-1.2**
ELDTW	**Lidau**	**1.59**	**208**	*e*P	**P**	**20 07 12.5**	**-1.3**
WTCT	**Ta-ch'eng**	**1.59**	**243**	*e*P	**P**	**20 07 13.3**	**-0.5**
WTCT				S	**S**	**20 07 33.1**	**-0.5**
CHN2	**Minshiung**	**1.63**	**229**	*e*P	**P**	**20 07 14.9**	**+0.5**
CHN2				S	**S**	**20 07 35.1**	**+0.6**
CHN4	**Tsaushan**	**1.68**	**222**	*e*P	**P**	**20 07 15.6**	**+0.6**
CHN4				S	**S**	**20 07 38.3**	**+2.7**
CHY	**Chiayi**	**1.69**	**230**	*e*P	**P**	**20 07 15.3**	**+0.2**
CHY				S	**S**	**20 07 35.9**	**+0.1**
WTP	**Ta-pu**	**1.74**	**220**	*e*P	**P**	**20 07 16.2**	**+0.3**
WSF	**Szhu**	**1.75**	**237**	*e*P	**P**	**20 07 15.7**	**-0.3**
WSF				S	**S**	**20 07 37.1**	**-0.2**
IRIF	**Iriomote-Funau**	**1.76**	**98**	P	**P**	**20 07 16.0**	**-0.1**
IRIF				S	**S**	**20 07 38.2**	**+0.7**
TWK	**Hsinying**	**1.80**	**223**	*e*P	**P**	**20 07 16.9**	**+0.2**
TWK				S	**S**	**20 07 41.4**	**+2.8**
CHN1	**Nanshi**	**1.84**	**220**	*e*P	**P**	**20 07 17.6**	**+0.4**
CHN1				S	**S**	**20 07 40.2**	**+0.8**
HATJ	**Hateruma jima**	**1.89**	**106**	P	**S**	**20 07 18.3**	**+0.5**
HATJ				*e*S	**S**	**20 07 42.7**	**+2.1**
SGST	**Jiashian**	**1.89**	**217**	*e*P	**P**	**20 07 18.5**	**+0.6**
TWG	**Pinlang**	**1.90**	**201**	*e*P	**P**	**20 07 15.8**	**-2.2**
TWG				S	**S**	**20 07 38.6**	**-2.3**
CHN8	**Yiju**	**1.93**	**230**	*e*P	**P**	**20 07 18.4**	**0.0**
CHN8				S	**S**	**20 07 42.2**	**+0.6**
TTN	**Taitung**	**1.94**	**199**	*e*P	**P**	**20 07 17.4**	**-1.2**
CHN3	**Shinhua**	**2.02**	**222**	*e*P	**P**	**20 07 20.7**	**+1.0**
JKRS	**Kuro-shima**	**2.03**	**100**	P	**P**	**20 07 20.1**	**+0.4**
JKRS				S	**S**	**20 07 45.2**	**+1.3**
SCLT	**Jiali**	**2.06**	**227**	*e*P	**P**	**20 07 20.4**	**+0.2**
SCLT				S	**S**	**20 07 45.2**	**+0.5**
JIJ	**Ishigaki jima**	**2.13**	**96**	P	**P**	**20 07 20.9**	**-0.3**
JIJ				S	**S**	**20 07 46.3**	**-0.1**
TAI1	**Yung-k'ang**	**2.13**	**224**	*e*P	**P**	**20 07 22.0**	**+0.8**
TAI1				S	**S**	**20 07 46.3**	**-0.3**
SSD	**Sandimen**	**2.15**	**211**	*e*P	**P**	**20 07 22.2**	**+0.8**
SSD				S	**S**	**20 07 49.5**	**+2.7**
ECL	**Taimali**	**2.15**	**202**	*e*P	**P**	**20 07 19.0**	**-2.4**
TWM1	**Shoushan**	**2.19**	**216**	*e*P	**P**	**20 07 23.7**	**+1.7**
SGLT	**Jiouru**	**2.23**	**213**	*e*P	**P**	**20 07 24.5**	**+1.8**
PNG	**Penghu**	**2.31**	**244**	*e*P	**P**	**20 07 22.2**	**-1.5**
PNG				S	**S**	**20 07 47.8**	**-3.3**
EAST	**Anshuo**	**2.38**	**202**	*e*P	**P**	**20 07 23.2**	**-1.6**
WDGT	**Dungji**	**2.39**	**236**	*e*P	**P**	**20 07 23.6**	**-1.3**
WDGT				S	**S**	**20 07 50.3**	**-2.6**
TAW	**Tawu**	**2.39**	**201**	*e*P	**P**	**20 07 23.3**	**-1.6**
SCZT	**Fangliau**	**2.48**	**207**	*e*P	**P**	**20 07 26.6**	**+0.5**
SCZT				S	**S**	**20 07 57.5**	**+2.2**

LAY	**Lan-yu**	**2.56**	**186**	*e*P		**P**	**20 07 26.0**	**-1.3**
TWP	**Hsiaoliuchiu**	**2.61**	**211**	*e*P		**P**	**20 07 29.6**	**+1.6**
JTJ	**Tarama**	**2.62**	**89**	P		**P**	**20 07 28.4**	**+0.3**
JTJ				*e*S		**S**	**20 08 00.2**	**+1.4**
HEN	**Hengchun**	**2.77**	**201**	*e*P		**P**	**20 07 31.3**	**+1.1**
TWK1	**Hengchun**	**2.81**	**200**	*e*P		**P**	**20 07 30.6**	**-0.1**
QZH	**Quanzhou**	**2.96**	**277⇓**	*i*P		**P**	**20 07 31.4**	**-1.4**
QZH				S		**S**	**20 08 01.5**	**-5.7**
QZH				S	S			
	comp=N,5μm,0.8s							
QZH				S	S			
	comp=E,6μm,1.2s							
KNM	**Kinmen**	**3.09**	**267**	*e*P		**P**	**20 07 34.9**	**+0.2**
KNM				S		**S**	**20 08 09.2**	**-1.5**
JMJ	**Miyako jima 2**	**3.16**	**85**	P		**P**	**20 07 36.3**	**+0.6**
JMJ				*e*S		**S**	**20 08 13.1**	**+0.7**
JOGS	**Gusukube**	**3.26**	**86**	P		**P**	**20 07 38.4**	**+1.3**
JOGS				*e*S		**S**	**20 08 15.1**	**+0.2**
BBP	**Basco**	**4.14**	**178⇑**	*e*P		**P**	**20 07 47.3**	**-2.0**
BBP				*e*S		**S**	**20 08 31.9**	**-5.0**
JKE	**Kume jima 2**	**4.80**	**68**	P		**P**	**20 07 59.7**	**+1.2**
JAGN	**Aguni-jima**	**5.28**	**67**	P		**P**	**20 08 05.5**	**+0.5**
JAGN				*e*S		**S**	**20 09 05.7**	**+0.5**
NAH1	**Naha**	**5.54**	**72**	*e*S		**S**	**20 09 12.2**	**+0.5**
JJT2	**Tamagusuku 2**	**5.58**	**73**	P		**P**	**20 08 09.7**	**+0.6**
JIH	**Iheya**	**6.04**	**65**	P		**P**	**20 08 15.9**	**+0.3**
JIH				*e*S		**S**	**20 09 23.3**	**-0.8**
JOW	**Kunigami**	**6.23**	**68**	P		**P**	**20 08 17.4**	**-0.8**
	comp=E,24nm,0.3s,baz=189,slow=11,SNR=93							
JOW				S		**S**	**20 09 27.1**	**-1.6**
	comp=E,25nm,0.3s,baz=110,slow=25,SNR=7.1							
JOW	**Kunigami**	**6.23**	**68**	P		**P**	**20 08 17.3**	**-0.9**
JOW				*e*S		**S**	**20 09 27.1**	**-1.6**
SGCP	**Mt. Cagua**	**6.33**	**178⇑**	*e*P		**P**	**20 08 18.0**	**-1.6**
SGCP				*e*S		**S**	**20 09 25.7**	**-5.5**
SSE	**Sheshan**	**6.49**	**355**	P		**P**	**20 08 21.4**	**-0.5**
SSE				S		**S**	**20 09 33.1**	**-2.1**
SSE				S	S			
	comp=N,136nm,1.1s							
SSE				S	S			
	comp=E,159nm,1.1s							
SSE				LR	LR			
	comp=N,432nm,18.0s							
SSE				LR	LR			
	comp=E,1μm,18.0s							
SSE				LR	LR			
	comp=Z,522nm,8.5s							
APYP	**Conner**	**6.73**	**185⇑**	*e*P		**P**	**20 08 24.8**	**-0.4**
APYP				*e*S		**S**	**20 09 38.1**	**-2.9**
CVP	**Callao Caves**	**6.86**	**180**	*e*P		**P**	**20 08 26.1**	**-1.0**
CVP				*i* S		**S**	**20 09 40.7**	**-3.6**
ABRA	**Dolores**	**6.99**	**189⇑**	*e*P		**P**	**20 08 28.1**	**-0.7**
ABRA				*e*S		**S**	**20 09 48.0**	**+0.4**
JTK	**Tokunoshima**	**7.14**	**62**	P		**P**	**20 08 29.8**	**-1.1**
JTK				*e*S		**S**	**20 09 49.2**	**-2.1**
PALP	**Palanan**	**7.52**	**176⇑**	*e*P		**P**	**20 08 37.5**	**+1.4**
PALP				*e*S		**S**	**20 09 57.9**	**-2.7**
CAUP	**Cauayan**	**7.62**	**180⇑**	*e*P		**P**	**20 08 39.1**	**+1.6**
CAUP				*e*S		**S**	**20 10 04.8**	**+1.8**
NJ2	**Nanjing**	**7.87**	**341**	*e*P		**P**	**20 08 39.1**	**-1.8**
NJ2				XP			20 08 56.5	
NJ2				S		**S**	**20 10 05.1**	**-4.1**
NJ2				AMB	AMB			
	comp=Z,100nm,1.0s							
NJ2				AMB	AMB			
	comp=Z,180nm,6.7s							
NJ2				S	S			
	comp=N,890nm,1.0s							
NJ2				S	S			
	comp=E,640nm,1.2s							
NJ2				LR	LR			
	comp=N,2μm,10.0s							
NJ2				LR	LR			
	comp=E,3μm,7.6s							
NJ2				LR	LR			

comp=Z,900nm,5.1s
KMI Kunming 17.33 276 *e*P **P** **20 10 46.0 +0.6**
KMI AP 20 10 56.3
KMI PP PP 20 11 01.2 +0.4
KMI PPP PPP 20 11 10.6 +0.3
KMI S **S** **20 13 55.4 +1.7**
KMI XS 20 14 10.6
KMI AMB AMB
comp=Z,34nm,1.5s
KMI AMB AMB
comp=Z,256nm,3.4s
KMI LR LR
comp=N,622nm,6.8s
KMI LR LR
comp=E,1μm,8.9s
KMI LR LR
comp=Z,1μm,9.6s
JHJ Hachijo jima 2 17.86 58 P **P** **20 10 52.2 +0.3**
comp=Z,14nm,0.3s,baz=180,slow=9.1,SNR=4.7
JHJ LR LR 20 18 46.1
comp=Z,211nm,18.6s,baz=36,slow=40
HHC Hu-ho-hao-te 18.33 335 ⇑P **P** **20 11 00.3 +2.7**
HHC AP 20 11 13.5
HHC S **S** **20 14 24.1 +7.9**
HHC XS 20 14 38.7
HHC PCS 20 19 01.7
HHC SCS ScS 20 22 31.6 -1.8
HHC AMB AMB
comp=Z,47nm,1.5s
HHC AMB AMB
comp=Z,203nm,5.1s
MAJO Matsushiro 18.43 46 P **P** **20 10 56.5 -2.1**
MAT Matsushiro 18.43 46 P **P** **20 10 57.5 -1.2**
MAT S **S** **20 14 29.0 +11**
MAT Matsushiro 18.43 46 *e*P **P** **20 10 58.0 -0.7**
comp=Z,5.5nm,0.7s
MAT *e*S **S** **20 14 30.0 +12**
CBIJ Chichi jima 18.49 78 P **P** **20 11 00.1 +0.5**
comp=Z,4.8nm,0.3s,baz=271,slow=18,SNR=4.9
CBIJ LR LR 20 17 26.2
comp=Z,144nm,18.8s,baz=263,slow=35
BTO Baotou 18.77 331 *e*P **P** **20 11 03.9 +1.2**
BTO S **S** **20 14 31.8 +5.9**
BTO AMB AMB
comp=Z,44nm,1.5s
BTO LR LR
comp=N,567nm,10.2s
BTO LR LR
comp=E,881nm,9.4s
KKM Kota Kinabalu 19.22 197 *e*P **P** **20 11 09.1 +1.3**
LZH Lanzhou 19.25 311 ⇓P **P** **20 11 09.2 +1.3**
LZH AP 20 11 22.2
LZH XP 20 11 33.0
LZH S **S** **20 14 43.0 +6.8**
LZH AMB AMB
comp=Z,180nm,1.4s
LZH AMB AMB
comp=Z,350nm,4.9s
LZH LR LR
comp=E,780nm,9.8s
LZH LR LR
comp=Z,810nm,10.3s
CN2 Changchun 19.38 8 *e*P **P** **20 11 09.4 +0.1**
CN2 *e*AP 20 11 24.6
CN2 *e*XP 20 11 34.5
CN2 *e*S **S** **20 14 40.2 +1.2**
CN2 AMB AMB
comp=Z,20nm,0.9s
CN2 AMB AMB
comp=Z,200nm,3.0s
CN2 LR LR
comp=N,200nm,12.0s
CN2 LR LR
comp=E,500nm,12.0s
CN2 LR LR
comp=Z,320nm,20.0s
KKTK Khon Kaen 19.59 249 P **P** **20 11 13.0 +1.2**
CHRT Chiangrai 20.93 261 ⇓P **P** **20 11 27.0 +1.4**
comp=Z,121nm,1.2s
MDJ Mudanjiang 20.95 16 P **P** **20 11 25.7 +0.1**
MDJ AP 20 11 39.3
MDJ XP 20 11 48.6
MDJ S **S** **20 15 15.8 +6.1**
MDJ PCP PcP 20 15 29.4 -1.7
MDJ SCP 20 18 58.5
MDJ PCS 20 19 06.8
MDJ SCS ScS 20 22 43.0 +1.1
MDJ AMB AMB
comp=Z,25nm,1.0s
MDJ AMB AMB
comp=Z,140nm,7.4s
MDJ LR LR
comp=N,249nm,12.7s
MDJ LR LR
comp=E,412nm,11.5s
MDJ LR LR
comp=Z,321nm,17.2s
MDJ Mudanjiang 20.95 16 *e*P **P** **20 11 25.3 -0.3**
comp=Z,27nm,1.0s
CHG Chiang Mai 22.01 259 P **P** **20 11 37.7 +1.3**
comp=Z,32nm,1.0s,mb4.6
CHG S **S** **20 15 39.5 +10**
CM31 Chiang Mai Arr 22.13 258 *e*P **P** **20 11 37.8 +0.3**
comp=Z,30nm,1.0s,mb4.6
CMAR Chiang Mai Arr 22.13 258 P **P** **20 11 39.0 +1.5**
comp=Z,15nm,0.9s,mb4.3,baz=62,slow=8.2,SNR=54
CMAR LR LR 20 20 14.8
comp=Z,175nm,19.5s,baz=70,slow=36
NST Nakhon Sawan 22.19 250 P **P** **20 11 40.0 +1.8**
BDT Bhumibol Dam 22.52 255 P **P** **20 11 43.5 +2.1**
HIA Hailar 24.68 357 *e*P **P** **20 12 02.0 -0.1**
comp=Z,36nm,0.9s,mb4.8
KLR Kul'dur 25.79 15 *e*P **P** **20 12 11.8 -0.7**
KLR *e* pP 20 12 32.0 +2.2
KLR pmax pmax
comp=E,21nm,1.2s
KLR pmax pmax
comp=Z,30nm,1.2s,mb4.6
ASAJ Asahikawa 25.82 36 P **P** **20 12 12.5 -0.3**
comp=Z,5.3nm,0.6s,mb4.2,baz=227,slow=4.9,SNR=5.1
ASAJ LR LR 20 22 42.6
comp=Z,239nm,19.6s,baz=343,slow=37
ULN Ulaanbaatar 26.00 337*c i*P **P** **20 12 15.0 +0.5**
ULN Ulaanbaatar 26.00 337 *e*P **P** **20 12 14.7 +0.2**
comp=Z,22nm,0.7s,mb4.7
SONM Songino Array 26.22 336 P **P** **20 12 16.8 +0.3**
comp=Z,18nm,0.8s,mb4.6,baz=150,slow=8.6,SNR=88
SONM ScP 20 19 13.0
comp=Z,0.8nm,0.9s,baz=158,slow=6.7,SNR=4.1
SHL Shillong 27.11 278 *i* P **P** **20 12 25.5 +0.6**
SHL *e*S **S** **20 17 11.5 +16**
LSA Lhasa 27.71 287 P **P** **20 12 32.0 +1.6**
LSA Lhasa 27.71 287 *e*P **P** **20 12 30.9 +0.5**
comp=Z,8.8nm,0.8s,mb4.3
YSS Yuzh-Sakhalins 27.87 32⇑ *e*P **P** **20 12 32.0 +0.4**
YSS pmax pmax
comp=Z,50nm,1.2s,mb4.9
YSS Yuzh-Sakhalins 27.87 32 *e*P **P** **20 12 32.4 +0.8**
comp=Z,43nm,1.3s,mb4.8
ZAK Zakamensk 29.48 336 *e*P **P** **20 12 44.9 -1.0**
TLY Talaya 30.41 337 *e*P **P** **20 12 52.7 -1.5**
TLY pmax pmax
comp=Z,900nm,0.7s,mb5.5
TLY MLR MLR
comp=Z,600nm,14.6s
MOY Mondy 31.38 335 *e*P **P** **20 13 02.4 -0.3**
GUN Gumba 32.33 284 *e*P **P** **20 13 11.4 +0.1**
comp=Z,56nm,1.0s,mb5.2
PKI Pulchoki 32.77 283 *e*P **P** **20 13 14.6 -0.4**
comp=Z,25nm,0.9s,mb5.0
KKN Kakani 32.87 284 *e*P **P** **20 13 15.6 -0.3**
comp=Z,45nm,1.0s,mb5.3
DMN Daman 33.03 283 *e*P **P** **20 13 16.0 -1.4**
comp=Z,41nm,1.0s,mb5.2
GKN Gorkha 33.43 284 *e*P **P** **20 13 20.3 -0.5**
comp=Z,65nm,1.1s,mb5.4
BOD Bodaibo 33.66 352⇓ *i*P **P** **20 13 20.8 -1.7**
WMQ Urumqi 33.79 313 *e*P **P** **20 13 23.4 -0.3**
WMQ AP pP 20 13 41.4 -0.4
WMQ XP sP 20 13 50.5 -0.5
WMQ PP PP 20 14 38.6 -0.3
WMQ PCP PcP 20 16 01.2 -0.4
WMQ S **S** **20 18 40.8 -0.2**
WMQ XS 20 19 11.7
WMQ SCP 20 19 38.0
WMQ PCS 20 19 46.1
WMQ SS SS 20 20 51.0 -0.3
WMQ SCS ScS 20 23 38.2 -0.4
WMQ AMB AMB
comp=Z,33nm,1.2s,mb5.0
WMQ AMB AMB
comp=Z,163nm,4.3s
WMQ LR LR
comp=N,2μm,18.2s
WMQ LR LR
comp=E,1μm,17.3s
WMQ LR LR
comp=Z,3μm,18.1s
KOLN Koldanda 34.35 284 *e*P **P** **20 13 28.8 +0.1**
comp=Z,43nm,1.0s,mb5.2
PTH Pithoragarh 37.23 287 *e*P **P** **20 13 53.0 0.0**
YAK Yakutsk 37.79 6⇓ *e*P **P** **20 13 56.0 -1.4**
YAK pmax pmax
comp=Z,23nm,1.1s,mb4.9
YAK Yakutsk 37.79 6 *e*P **P** **20 13 55.3 -2.0**
comp=Z,23nm,1.0s,mb5.0
MKAR Makanchi Array 38.45 315 P **P** **20 14 03.3 +0.3**
comp=Z,6.4nm,0.6s,mb4.6,baz=105,slow=10.0,SNR=77
MKAR ScP 20 19 56.7
comp=Z,1.0nm,0.7s,baz=104,slow=6.3,SNR=5.8
MKAR LR LR 20 29 47.3
comp=Z,110nm,20.7s,baz=212,slow=36
MKAR Makanchi Array 38.45 315 *i* P **P** **20 14 03.3 +0.3**
MKAR pmax pmax
comp=Z,6.0nm,0.6s
MKAR Makanchi Array 38.45 315 P **P** **20 14 03.3 +0.3**
MKAR ScP 20 19 56.7
MKAR LR LR 20 29 47.3
PET Petropavlovsk 39.64 35 *e*P **P** **20 14 07.1 -5.7**
PET MLR MLR
comp=Z,234nm,20.0s
MA2 Magadan 40.38 22 *e*P **P** **20 14 18.5 -0.3**
MA2 pmax pmax
comp=Z,8.0nm,1.0s,mb4.5
MA2 Magadan 40.38 22 *e*P **P** **20 14 18.9 0.0**
NVS Novosibirsk 41.47 327 *e*P **P** **20 14 27.7 -0.2**
NVS pmax pmax
comp=Z,24nm,2.1s,mb4.7
NVS pmax pmax
comp=N,15nm,2.0s
PMG Port Moresby 41.88 141 P **P** **20 14 31.9 +0.3**
comp=N,20nm,1.0s,mb4.8,baz=328,slow=5.5,SNR=5.9
TKM2 Tokmak 2 41.97 308 P **P** **20 14 34.6 +2.5**
SNR=8.9
KURK Kurchatov 42.15 320 *e*P **P** **20 14 32.8 -0.7**
KBK Karagaybulak 42.39 307 P **P** **20 14 37.7 +2.1**
SNR=8.0
FITZ Fitzroy Crossi 42.61 175 P **P** **20 14 35.5 -2.1**
comp=N,2.0nm,0.8s,mb3.9,baz=0.2,slow=9.4,SNR=4.4
UCH Uchtor 42.64 306 P **P** **20 14 39.9 +2.3**
SNR=8.9
AML Almayashu 43.23 306 P **P** **20 14 44.6 +2.2**
SNR=7.9
EKS2 Erkin-Say 43.25 307 P **P** **20 14 44.3 +1.8**
SNR=6.9
WRAB Tennant Creek 45.91 163 *e*P **P** **20 15 02.0 -2.2**
comp=N,14nm,0.8s,mb4.8
WRA Warramunga Arr 45.92 164 P **P** **20 15 02.4 -1.9**
comp=N,5.6nm,0.7s,mb4.4,baz=345,slow=8.7,SNR=57
WRA Warramunga Arr 45.92 164 *i* P **P** **20 15 02.4 -1.8**
WB2 Warramunga Arr 45.92 163 *e*P **P** **20 15 02.0 -2.3**
TIXI Tiksi 47.25 3 *e*P **P** **20 15 12.2 -1.8**
TIXI *e**PP pP 20 15 31.1 -1.6
TIXI pmax pmax
comp=Z,359nm,1.0s,mb6.1
TIXI MLR MLR
comp=Z,1μm,18.0s
TIXI Tiksi 47.25 3 *e*P **P** **20 15 12.1 -1.9**
comp=Z,16nm,0.5s,mb5.0
BRVK Borovoye 47.79 320 *e*P **P** **20 15 17.6 -0.9**
ZRNK Zerenda 48.51 320 *e*P **P** **20 15 23.2 -0.8**
AS12 Alice Springs 49.39 165 *e*P **P** **20 15 29.7 -1.6**
comp=Z,9.8nm,1.3s,mb4.6
ASAR Alice Springs 49.39 165 P **P** **20 15 30.0 -1.3**
comp=Z,1.3nm,0.6s,mb4.1,baz=22,slow=12,SNR=28
ASAR ScP 20 20 40.9
comp=Z,0.3nm,0.7s,baz=347,slow=5.1,SNR=4.0
CTA Charters Tower 50.38 150 *e*P **P** **20 15 38.9 0.0**
comp=Z,14nm,1.5s,mb4.7
CTA Charters Tower 50.38 150 P **P** **20 15 39.0 +0.1**
comp=Z,9.4nm,0.8s,mb4.8,baz=322,slow=8.5,SNR=6.8
CTAO Charters Tower 50.38 150 *e*P **P** **20 15 37.6 -1.3**
BILL Bilibino 51.10 20*de*P **P** **20 15 42.4 -1.3**
BILL pmax pmax
comp=Z,11nm,1.1s,mb4.8
BILL Bilibino 51.10 20 *e*P **P** **20 15 41.5 -2.2**
comp=Z,9.4nm,1.0s,mb4.8
SVE Sverdlovsk 54.05 323⇑ *e*P **P** **20 16 04.9 -0.9**
SVE *e* 20 17 11.9
SVE pmax pmax
comp=Z,30nm,1.7s,mb5.0
ARU Arti 55.13 323 *e*P **P** **20 16 12.1 -1.5**
ARU pmax pmax
comp=Z,24nm,1.6s,mb5.0
STKA Stephens Creek 59.25 160 *e*P **P** **20 16 41.7 -1.4**
comp=Z,2.7nm,0.7s,mb4.4
STKA Stephens Creek 59.25 160 P **P** **20 16 41.6 -1.5**
comp=Z,3.3nm,0.8s,mb4.4,baz=312,slow=9.5,SNR=4.4
HASS Wahat al Ahsa' 64.64 287 P **P** **20 17 18.7 -0.6**
ZEI Tsey 65.14 307⇑ *e*P **P** **20 17 22.4 +0.2**
SVW Sparrevohn 65.22 32 *e*P **P** **20 17 21.5 -0.9**
GOF Gofitskoye 65.33 310 *e*P **P** **20 17 23.0 -0.3**
IMA Indian Mountai 65.57 26 *e*P **P** **20 17 23.7 -0.9**
KIV Kislovodsk 65.78 309*ce*P **P** **20 17 26.3 0.0**
KIV pmax pmax
comp=Z,21nm,1.0s,mb4.9
KIV MLR MLR
comp=Z,100nm,19.0s
KIV Kislovodsk 65.78 309 *e*P **P** **20 17 26.1 -0.2**
comp=Z,16nm,0.9s,mb4.9
MOS Moscow 66.83 322 *e*P **P** **20 17 31.8 -0.9**
MOS pmax pmax
comp=Z,60nm,0.6s,mb5.6
APA Apatity 66.93 335⇑ *e*P **P** **20 17 32.2 -0.9**
APA pmax pmax
comp=Z,43nm,1.2s,mb5.2
OBN Obninsk 67.54 322*c i*P **P** **20 17 35.5 -1.6**
OBN *i* pP 20 17 55.0 -1.9
OBN pmax pmax
comp=Z,31nm,1.8s,mb4.8
OBN Obninsk 67.54 322 *e*P **P** **20 17 35.0 -2.1**
MCK McKinley 67.91 29 *e*P **P** **20 17 38.4 -0.9**
comp=Z,10nm,1.2s,mb4.5
PMR Palmer 68.23 31 *e*P **P** **20 17 40.4 -0.9**
SML Sawmill 68.56 31 *e*P **P** **20 17 42.0 -1.4**
ILAR Eielson Array 68.58 27 P **P** **20 17 41.9 -1.6**
comp=Z,1.5nm,0.7s,mb3.9,baz=295,slow=5.9,SNR=16
JOF Joensuu 68.63 331 *ep* **P** **20 17 42.4 -1.4**
comp=Z,9.9nm,0.7s,mb4.8
JOF Joensuu 68.63 331 *e*P **P** **20 17 42.4 -1.4**
JOF pmax pmax
comp=Z,10.0nm,0.7s,mb4.8
KEV Kevo 68.81 338 *ep* **P** **20 17 43.4 -1.4**
MZLS Mizel 68.88 288 P **P** **20 17 46.5 +0.5**
ANN Anapa 69.26 311 *e*P **P** **20 17 46.4 -1.6**
ANN *e* pP 20 18 06.6 -1.3
ANN *e**PP pP 20 18 24.2 +16
ANN *e* 20 20 17.2
ANN *e*S S 20 26 41.4 -5.6
ANN pmax pmax
comp=Z,9.0nm,1.0s,mb4.5
ARCES ARCESS Array B 69.37 338 P **P** **20 17 47.9 -0.4**
comp=Z,12nm,1.0s,mb4.7,baz=53,slow=6.1,SNR=7.8
HILS Ha'il 70.76 292 P **P** **20 17 58.1 +0.7**
AFFS 'Afif 70.83 288 P **P** **20 17 58.3 +0.5**
KAF Kangasniemi 71.08 330 *ep* **P** **20 17 57.0 -1.7**
GZT Gaziantep 71.17 303 *i* P **P** **20 18 00.1 +0.4**
FINES FINESS Array B 71.38 330 P **P** **20 17 59.8 -0.8**
comp=Z,5.5nm,0.9s,mb4.4,baz=66,slow=5.5,SNR=27
FINES LR LR 20 52 21.5
comp=Z,96nm,20.9s,baz=70,slow=38
SIM Simferopol' 71.50 312*d i*P **P** **20 18 01.3 -0.2**
SIM *e* pP 20 18 21.0 -0.6
SIM pmax pmax
comp=Z,10.0nm,0.8s,mb4.7
TATS Tathlith 71.88 284 P **P** **20 18 05.0 +0.8**
DAWY Dawson 71.90 27 *e*P **P** **20 18 02.4 -1.2**
BOYT Boyabat 71.96 308 *i* P **P** **20 18 04.6 +0.2**
CTKT Corum 72.28 307 *i* P **P** **20 18 06.2 0.0**
INK Inuvik 72.62 22 P **P** **20 18 06.8 -0.9**
comp=Z,5.0nm,0.6s,mb4.5,baz=303,slow=5.8,SNR=28
INK Inuvik 72.62 22 *e*P **P** **20 18 06.2 -1.4**
comp=Z,17nm,1.1s,mb4.8
AKASG Malin Array Be 72.95 318 P **P** **20 18 08.6 -1.3**
comp=Z,6.2nm,0.8s,mb4.5,baz=60,slow=5.9,SNR=29
BALT Daday 73.02 308 *i* P **P** **20 18 09.8 -0.8**
ELDT Eldivan 73.31 307 *i* P **P** **20 18 13.3 +1.1**
BRTR Keskin Array B 73.39 306 P **P** **20 18 13.1 +0.3**
comp=Z,4.8nm,0.8s,mb4.4,baz=101,slow=6.3,SNR=31
BLJS Baljurashi 73.42 285 P **P** **20 18 14.7 +1.5**
KBRS Khaybar 73.42 291 P **P** **20 18 14.9 +1.7**
SUW Suwalki 75.32 323 *e*P **P** **20 18 23.1 -0.5**
AYUS 'Aynunah 75.95 295 P **P** **20 18 28.2 +0.5**
ULDT Uludag 76.52 308 *i* P **P** **20 18 30.6 -0.1**
KWP Kalwaria 77.25 319 *e*P **P** **20 18 34.3 -0.2**
NB2 NORSAR Subarra 78.13 332 P **P** **20 18 38.3 -0.9**
comp=Z,3.6nm,0.7s,mb4.2,baz=62,slow=5.3
NOA NORSAR Array B 78.13 332 P **P** **20 18 39.4 +0.3**
comp=Z,3.4nm,0.7s,mb4.2,baz=58,slow=5.7,SNR=11
NOA LR LR 20 56 03.1
comp=Z,56nm,21.6s,baz=195,slow=38
NOA NORSAR Array B 78.13 332 P **P** **20 18 39.4 +0.3**
NOA LR LR 20 56 03.1
OJC Ojcow 78.73 320 *e*P **P** **20 18 42.4 -0.3**
VYHS Vyhne 80.04 319 *i* P **P** **20 18 49.9 +0.1**
DPC Dobruska-Polom 80.68 321 *e*P **P** **20 18 53.0 -0.2**
SKO Skopje 81.17 312 *e*P **P** **20 18 45.0 -11**
PVCC Panska Ves 81.58 322 *e*PCP PcP 20 19 04.5 +0.6
BRG Berggiesshubel 81.77 322 *i* P **P** **20 19 00.2 +1.3**
BRG pmax pmax
comp=Z,4.0nm,1.0s,mb4.2
BRG Berggiesshubel 81.77 322 *i* P **P** **20 19 00.2 +1.3**
comp=Z,3.8nm,1.0s,mb4.2
PRU Pruhonice 81.86 321 *e*P **P** **20 18 59.3 0.0**
CLL Collm 82.07 323 ⇓P **P** **20 19 00.1 -0.3**
comp=Z,logA/T=0.7,mb4.3
CLL *e**PP pP 20 19 23.0 +2.2
CLL Collm 82.07 323⇓ *i*P **P** **20 19 00.1 -0.3**
CLL *e* pP 20 19 23.0 +2.2
CLL pmax pmax
comp=Z,5.0nm,1.1s,mb4.3
CLL Collm 82.07 323⇓ *i*P **P** **20 19 00.1 -0.3**
comp=Z,5.0nm,1.1s,mb4.3
CLL *e* pP 20 19 23.0 +2.2
YKW3 Yellowknife Ar 82.31 23 *e*P **P** **20 19 00.3 -1.2**
YKA Yellowknife Ar 82.36 23 P **P** **20 19 00.9 -0.7**
comp=Z,4.1nm,0.8s,mb4.3,baz=314,slow=4.9,SNR=86
YKA Yellowknife Ar 82.36 23 P **P** **20 19 00.9 -0.7**
KHC Kasperske Hory 82.82 321 *e*P **P** **20 19 04.3 0.0**
GERES GERESS Array B 82.89 321 P **P** **20 19 04.3 -0.4**
comp=Z,2.5nm,0.8s,mb4.1,baz=45,slow=3.8,SNR=21
GRA1 Grafenberg Arr 83.87 322 *e*P **P** **20 19 09.7 +0.2**
comp=Z,7.0nm,1.2s,mb4.4
GRF Grafenberg Arr 83.87 322 *e*P **P** **20 19 09.7 +0.2**
GRF pmax pmax
comp=Z,7.0nm,1.2s,mb4.4
KMBO Kilima Mbogo 85.53 267 P **P** **20 19 19.0 +0.3**
comp=Z,2.6nm,1.0s,mb4.1,baz=59,slow=9.9,SNR=4.8
CDF Champ du Feu 86.75 323 *e*P **P** **20 19 23.8 0.0**
GNW Green Mountain 87.67 38 *e*P **P** **20 19 29.3 +1.0**
JCW Jim Creek 87.81 37 P **P** **20 19 30.1 +1.2**
RPW Rockport 87.89 37 *e*P **P** **20 19 29.7 +0.4**
BMW Boistfort Moun 88.06 39 *e*P **P** **20 19 31.3 +1.1**
RMW Rattlesnake Mo 88.30 37 P **P** **20 19 32.7 +1.4**
FMW Mount Fremont 88.68 38 P **P** **20 19 34.3 +1.2**
LPG La Plagne 88.68 320 *e*P **P** **20 19 33.4 +0.3**
comp=Z,13nm,0.9s,mb4.7
LPL La Plagne 88.68 320 *e*P **P** **20 19 33.4 +0.3**
comp=Z,8.6nm,0.8s,mb4.5
LON Longmire 88.71 38 *e*P **P** **20 19 33.5 +0.2**
PGF Pioggiola 88.97 317 *e*P **P** **20 19 34.5 -0.1**
comp=Z,50nm,1.0s,mb5.2
COR Corvallis 89.08 40 *e*P **P** **20 19 36.1 +1.1**
comp=Z,59nm,1.3s,mb5.5
MBDF Montbardon 89.11 320 *e*P **P** **20 19 35.9 +0.7**
comp=Z,12nm,1.1s,mb4.5
LOR Lormes 89.29 323 *e*P **P** **20 19 36.0 +0.1**
SSOR Sweet Springs 89.42 40 *e*P **P** **20 19 37.1 +0.5**
ORIF Oris-en-Rattie 89.52 320 *e*P **P** **20 19 36.9 -0.2**
comp=Z,9.0nm,0.9s,mb4.6
SSF Saint Saulge 89.60 323 *e*P **P** **20 19 37.7 +0.3**
SMF Signal de Mont 89.67 323 *e*P **P** **20 19 37.2 -0.5**
comp=Z,21nm,1.1s,mb4.9
AVF Avril sur Loir 89.85 323 *e*P **P** **20 19 38.0 -0.6**
comp=Z,6.8nm,0.9s,mb4.5
DPW Davenport 90.01 36 *e*P **P** **20 19 40.1 +0.8**
VGB Gordon Butte 90.01 39 *e*P **P** **20 19 40.2 +0.8**
HAWA Hanford 90.19 37 *e*P **P** **20 19 41.1 +0.9**
VIVF Saint-Julien-l 90.25 321 *e*P **P** **20 19 40.1 -0.4**
comp=Z,11nm,1.0s,mb4.6
NEW Newport 90.33 35 *e*P **P** **20 19 41.4 +0.6**
comp=Z,32nm,1.2s,mb5.3
HUMO Hull Mountain 90.41 42 *e*P **P** **20 19 41.9 +0.6**
YBH Yreka Blue Hor 91.06 43 *e*P **P** **20 19 45.1 +0.8**
comp=Z,18nm,1.3s,mb5.0
LNOR Lincton Mounta 91.19 37 *e*P **P** **20 19 45.4 +0.5**
WALA Waterton Lakes 91.45 33 *e*P **P** **20 19 46.7 +0.6**
comp=Z,29nm,1.1s,mb5.3
CAF Calviac 91.70 322 *e*P **P** **20 19 47.6 +0.3**
comp=Z,18nm,1.1s,mb4.9
RJF Les Rejaudoux 91.77 322 *e*P **P** **20 19 47.8 +0.2**
comp=Z,21nm,1.0s,mb5.0
BSMT Bassoo Peak 91.80 34 P **P** **20 19 49.0 +1.4**
WDC Whiskeytown Da 91.82 43 *e*P **P** **20 19 48.1 +0.2**
comp=Z,8.4nm,1.1s,mb4.9
MOD Modoc 92.42 41 *e*P **P** **20 19 51.5 +0.8**
comp=Z,33nm,1.3s,mb5.4
MSO Missoula 92.91 35 *e*P **P** **20 19 52.7 -0.1**
comp=Z,20nm,1.1s,mb5.4
CHMT Chamberlain Mo 93.20 34 *e*P **P** **20 19 54.1 0.0**
CMB Columbia Colle 94.65 44 *e*P **P** **20 19 59.9 -1.0**
comp=Z,5.2nm,0.8s,mb5.0
CMB LR LR
comp=Z,406nm,19.0s
HLID Hailey 94.79 37 *e*P **P** **20 20 02.7 +1.3**
comp=Z,8.9nm,1.0s,mb5.2
HLID LR LR
comp=Z,316nm,21.0s
NVAR Mina Array Bea 95.73 43 P **P** **20 20 07.2 +1.4**
comp=Z,3.0nm,0.9s,mb4.7,baz=285,slow=3.1,SNR=18
TXAR Lajitas Array 110.82 42 PKiKP 20 25 13.2
comp=Z,0.6nm,0.8s,baz=270,slow=0.9,SNR=6.8
ROSC El Rosal 146.77 30 PKPbc PKPbc 20 26 22.0 +1.1
comp=Z,18nm,0.9s,baz=123,slow=19,SNR=10
OTAV Otavalo 148.45 41 *e*PKP PKPdf 20 26 24.0 +1.8
LPAZ La Paz 167.54 50 PKP PKPdf 20 26 48.2 +3.4
comp=Z,5.3nm,1.1s,baz=12,slow=5.3,SNR=14
LPAZ PKPab PKPab 20 27 52.1 -0.9
comp=Z,2.0nm,1.0s,baz=357,slow=7.7,SNR=3.6
LPAZ La Paz 167.54 50 PKP PKPdf 20 26 48.2 +3.4
LPAZ PKPab PKPab 20 27 52.1 -0.9

*IDC **09** 20:13:19.0±16.0, 23.77S×68.37E, mb3.5/4, mb1 3.7/4, mb1mx3.5/17, Error ellipse: s-maj=532.0km s-min=37.4km az=54.0*
*NEIC **09** 20:13:25.2±1.1, 23.24S×69.23E, h10km, mb4.5/2, Error ellipse: s-maj=32.1km s-min=20.6km az=88.0*
ISC 09 20:13:23.2±1.4, **23.2S**±0.2×**69.3E**±0.3, **h10**km, **n6**, σ0⁰⁸**67**/6, **mb3.8**/6, **Mid-Indian Ridge**

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
MAW	**Mawson**	**44.56**	**183**	*e*P	**P**		**20 21 36.8**	**0.0**
	4.4nm,0.5s,mb4.5							
ASAR	**Alice Springs**	**58.82**	**104**	P	**P**		**20 23 24.1**	**-0.3**
	0.7nm,0.8s,mb3.8,baz=258,slow=6.5,SNR=5.9							
WRA	**Warramunga Arr**	**60.16**	**100**	P	**P**		**20 23 33.8**	**0.0**
	0.3nm,0.7s,mb3.4,baz=255,slow=6.8,SNR=9.9							
WRAB	**Tennant Creek**	**60.17**	**100**	*e*P	**P**		**20 23 33.9**	**+0.1**
	1.6nm,0.6s,mb4.2							
MKAR	**Makanchi Array**	**70.67**	**9**	P	**P**		**20 24 40.4**	**-0.7**
	0.5nm,0.7s,mb3.5,baz=180,slow=4.9,SNR=4.7							
SONM	**Songino Array**	**78.20**	**25**	P	**P**		**20 25 25.3**	**+0.9**
	0.4nm,0.8s,mb3.4,baz=233,slow=6.2,SNR=3.7							

*LDG **09** 20:19:15.6±0.0, 42.81N×2.54E, h4km, Md2.5/1, Ml2.4/15, Error ellipse: s-maj=0.7km s-min=0.6km az=116.0*
*NEIC **09** 20:19:15.6, 42.81N×2.54E, h4km, ML2.4(LDG), ML2.3(STR), MN1.6(MDD), After LDG.*
*STR **09** 20:19:15.2±0.1, 42.81N×2.53E, h5km±1km, Ml2.3, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
*MDD **09** 20:19:15.5±0.3, 42.82N×2.55E, h10km±3km, mbLg1.8/20,*

Error ellipse: s-maj=2.2km s-min=2.0km az=67.0,PRXIMO
ISC 09 20:19:13.8±0.3,42.88N±0.02×2.58E±0.02,h10km,n58,σ1ŝ28/111,Pyrenees

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LRDF	**Laroque-de-Fa**	**0.07**	**336**	Pg	**Pg**	**20 19 18.2**	**+2.2**
LRDF				Sg	**Sg**	**20 19 20.4**	**+2.9**
LRDF	**Laroque-de-Fa**	**0.07**	**336**	P	**Pg**	**20 19 18.1**	**+2.1**
LRDF				S	**Sg**	**20 19 20.4**	**+2.9**
FILF	**Fillols**	**0.32**	**182**	Pg	**Pg**	**20 19 20.6**	**+0.3**
FILF				Sg	**Sg**	**20 19 24.4**	**-0.3**
FILF	**Fillols**	**0.32**	**182**	P	**Pg**	**20 19 20.8**	**+0.4**
FILF				S	**Sg**	**20 19 24.5**	**-0.2**
CARF	**Carcanieres**	**0.38**	**246**	Pg	**Pg**	**20 19 21.7**	**+0.1**
CARF				Sg	**Sg**	**20 19 26.7**	**-0.1**
CARF	**Carcanieres**	**0.38**	**246**	P	**Pg**	**20 19 21.8**	**+0.2**
CARF				S	**Sg**	**20 19 26.7**	**-0.1**
SJAF	**Saint Jean de**	**0.45**	**150**	Pg	**Pg**	**20 19 23.6**	**+0.7**
SJAF				Sg	**Sg**	**20 19 29.4**	**+0.3**
SJAF	**Saint Jean de**	**0.45**	**150**	P	**Pg**	**20 19 23.6**	**+0.6**
SJAF				S	**Sg**	**20 19 29.5**	**+0.4**
EJON	**La Jonquera**	**0.48**	**152**	Pg	**Pg**	**20 19 23.9**	**+0.3**
	1.8nm,0.1s,SNR=7.9						
EJON				Lg		20 19 30.6	
	17nm,0.2s,SNR=7.9						
EJON	**La Jonquera**	**0.48**	**152**	Pg	**Pg**	**20 19 24.3**	**+0.7**
EJON				Lg		20 19 30.6	
LPEF	**Le Peyrat**	**0.50**	**279**	Pg	**Pg**	**20 19 24.7**	**+0.8**
LPEF				Sg	**Sg**	**20 19 30.8**	**+0.2**
LPEF	**Le Peyrat**	**0.50**	**279**	P	**Pg**	**20 19 24.1**	**+0.3**
LPEF				S	**Sg**	**20 19 31.6**	**+1.0**
MTLF	**Montolieu**	**0.54**	**331**	*e*Pg	**Pg**	**20 19 26.4**	**+1.8**
MTLF				*e*Pn	**Pn**	**20 19 29.3**	**+2.2**
MTLF				*e*Sg	**Sg**	**20 19 33.5**	**+1.7**
	10nm,0.2s						
MTLF				*e*Sn	**Sn**	**20 19 38.6**	**+2.5**
CLLI	**Llivia**	**0.59**	**229**	Pg	**Pg**	**20 19 25.6**	**-0.2**
CLLI				Lg		20 19 33.0	
	2.9nm,0.1s						
VALF	**Valcebollere**	**0.63**	**221**	Pg	**Pg**	**20 19 26.2**	**-0.2**
VALF				Sg	**Sg**	**20 19 33.8**	**-1.1**
VALF	**Valcebollere**	**0.63**	**221**	P	**Pb**	**20 19 26.3**	**0.0**
VALF				S	**Sg**	**20 19 33.9**	**-1.0**
CBRU	**Bruguera**	**0.66**	**207**	Pg	**Pg**	**20 19 26.8**	**-0.2**
CBRU				Lg		20 19 34.7	
	5.6nm,0.1s						
GRBF	**Gourbit**	**0.77**	**268**	Pg	**Pg**	**20 19 30.3**	**+1.1**
GRBF				Lg		20 19 39.7	
PAND	**Andorre**	**0.84**	**245**	P	**Pb**	**20 19 30.7**	**+0.7**
PAND				S	**Sb**	**20 19 40.6**	**-0.4**
SALF	**Salau**	**1.03**	**264**	Pg	**Pg**	**20 19 33.9**	**-0.5**
SALF				Sg	**Sg**	**20 19 47.8**	**-0.3**
SALF	**Salau**	**1.03**	**264**	P	**Pb**	**20 19 34.0**	**+0.8**
SALF				S	**Sb**	**20 19 47.3**	**+0.8**
MLS	**Moulis**	**1.09**	**275**	S	**Sb**	**20 19 49.4**	**+0.9**
CFON	**Fontmartina**	**1.12**	**185**	Pg	**Pg**	**20 19 35.7**	**-0.4**
CFON				Lg		20 19 49.7	
	26nm,0.2s						
CORG	**Organya**	**1.13**	**236**	Pg	**Pg**	**20 19 36.1**	**-0.3**
CORG				Lg		20 19 50.3	
	2.7nm,0.2s						
CSOR	**Sort**	**1.18**	**245**	Pg	**Pg**	**20 19 36.6**	**-0.7**
CSOR				Lg		20 19 51.4	
	4.8nm,0.2s						
EMIR	**Miracle**	**1.24**	**219**	Pg	**Pg**	**20 19 38.1**	**-0.4**
	1.4nm,0.1s,SNR=7.9						
EMIR				Lg		20 19 54.4	
	2.3nm,0.1s,SNR=7.9						
EMIR	**Miracle**	**1.24**	**219**	Pg	**Pg**	**20 19 38.0**	**-0.5**
EMIR				Lg		20 19 54.4	
MELF	**Melles**	**1.34**	**271**	S	**Sb**	**20 19 57.3**	**+1.8**
LASF	**Ste Croix**	**1.52**	**37**	*e*Pn	**Pn**	**20 19 42.9**	**+1.7**
LASF				*e*Pg	**Pg**	**20 19 45.2**	**+1.0**
LASF				*e*Sn	**Sn**	**20 20 02.6**	**+1.5**
LASF				*e*Sg	**Sg**	**20 20 05.8**	**+1.4**
	4.7nm,0.3s						
LASF	**Ste Croix**	**1.52**	**37**	Pn	**Pn**	**20 19 42.9**	**+1.7**
LASF				Pg	**Pg**	**20 19 45.2**	**+1.0**
LASF				Lg		20 20 05.8	
	2.3nm,0.3s						
RESF	**Ens**	**1.65**	**268**	S	**Sn**	**20 20 06.8**	**+2.4**
EPF	**Esparros**	**1.65**	**276**	*e*Pn	**Pn**	**20 19 43.5**	**+0.5**
EPF				*e*Pg	**Pg**	**20 19 46.1**	**-0.6**
EPF				*e*Sn	**Sn**	**20 20 03.0**	**-1.4**
EPF				*e*Sg	**Sg**	**20 20 06.9**	**-1.9**
	16nm,0.2s						
EPF	**Esparros**	**1.65**	**276**	Pn	**Pn**	**20 19 43.5**	**+0.5**
EPF				Pg	**Pg**	**20 19 46.1**	**-0.6**
EPF				Lg		20 20 06.9	
	8.1nm,0.2s						
CAVN	**Les Avellanes**	**1.68**	**234**	Pg	**Pg**	**20 19 45.8**	**-1.5**
CAVN				Lg		20 20 07.2	
	7.1nm,0.2s						
EPOB	**Poblet**	**1.89**	**217**	Pg	**Pg**	**20 19 49.1**	**-2.4**
	0.8nm,0.1s,SNR=7.9						
EPOB				Lg		20 20 12.2	
	2.0nm,0.2s,SNR=7.9						
EPOB	**Poblet**	**1.89**	**217**	Pg	**Pg**	**20 19 48.9**	**-2.6**
EPOB				Lg		20 20 12.0	
CGAR	**Garraf**	**1.91**	**215**	Pg	**Pg**	**20 19 45.3**	**-6.6**
CGAR				Lg		20 20 06.2	
	2.1nm,0.2s						
CAF	**Calviac**	**2.08**	**350**	*e*Pn	**Pn**	**20 19 50.5**	**+1.3**
CAF				*e*Pg	**Pg**	**20 19 55.7**	**+0.3**
CAF				*e*Sn	**Sn**	**20 20 15.5**	**+0.1**
CAF				*e*Sg	**Sg**	**20 20 22.2**	**-1.0**
	8.0nm,0.3s						
CAF	**Calviac**	**2.08**	**350**	Pn	**Pn**	**20 19 50.5**	**+1.3**
CAF				Pg	**Pg**	**20 19 55.7**	**+0.3**
CAF				Lg		20 20 22.2	
	4.0nm,0.3s						
CAF	**Calviac**	**2.08**	**350**	*e*Pn	**Pn**	**20 19 50.5**	**+1.3**
CAF				*e*Pg	**Pg**	**20 19 55.7**	**+0.3**
CAF				*e*Sn	**Sn**	**20 20 15.5**	**+0.1**
CAF				*e*Sg	**Sg**	**20 20 22.2**	**-1.0**
ETSF	**Etsaut**	**2.31**	**272**	*e*Pg	**Pg**	**20 19 58.0**	**-1.8**
ETSF				*e*Sn	**Sn**	**20 20 18.8**	**-2.3**
	4.8nm,0.4s						
ETSF				*e*Sg	**Sg**	**20 20 27.4**	**-3.2**
ETSF	**Etsaut**	**2.31**	**272**	Pg	**Pg**	**20 19 58.0**	**-1.8**
ETSF				Lg		20 20 27.4	
SMRF	**Simiane la Rot**	**2.44**	**62**	*e*Pn	**Pn**	**20 19 55.2**	**+0.8**
SMRF				*e*Sg	**Sg**	**20 20 34.8**	**-0.4**
	1.7nm,0.2s						
LFF	**La Frestale**	**2.45**	**328**	*e*Pn	**Pn**	**20 19 55.1**	**+0.6**
LFF				*e*Pg	**Pg**	**20 20 02.3**	**-0.5**
LFF				*e*Sg	**Sg**	**20 20 34.0**	**-1.5**
	10nm,0.3s						
VIVF	**Saint-Julien-l**	**2.49**	**37**	*e*Pn	**Pn**	**20 19 56.2**	**+1.1**
VIVF				*e*Pg	**Pg**	**20 20 03.2**	**-0.4**
VIVF				*e*Sn	**Sn**	**20 20 25.9**	**0.0**
VIVF				*e*Sg	**Sg**	**20 20 36.1**	**-0.7**
	2.4nm,0.2s						
VIVF	**Saint-Julien-l**	**2.49**	**37**	Pn	**Pn**	**20 19 56.2**	**+1.1**
VIVF				Pg	**Pg**	**20 20 03.2**	**-0.4**
VIVF				Lg		20 20 36.1	
	1.2nm,0.2s						
ESAC	**San Caprasio**	**2.54**	**244**	Sn	**Sn**	**20 20 28.9**	**+1.9**
	7.3nm,0.2s,SNR=7.9						
ESAC				Lg		20 20 34.8	
	6.9nm,0.2s,SNR=7.9						
ESAC	**San Caprasio**	**2.54**	**244**	Pg	**Pg**	**20 20 06.5**	**+2.1**
ESAC				Sn	**Sn**	**20 20 31.7**	**+4.8**
RJF	**Les Rejaudoux**	**2.55**	**343**	*e*Pn	**Pn**	**20 19 56.5**	**+0.6**
RJF				*e*Pg	**Pg**	**20 20 03.9**	**-0.7**
RJF				*e*Sg	**Sg**	**20 20 36.6**	**-2.0**
	4.4nm,0.2s						
RJF	**Les Rejaudoux**	**2.55**	**343**	*e*Pn	**Pn**	**20 19 56.5**	**+0.6**
RJF				*e*Pg	**Pg**	**20 20 03.9**	**-0.7**
RJF				*e*Sg	**Sg**	**20 20 36.6**	**-2.0**
SJPF	**Ste Jean**	**2.80**	**276**	*e*Pn	**Pn**	**20 19 59.2**	**-0.3**
SJPF				*e*Sg	**Sg**	**20 20 42.8**	**-4.2**
	1.7nm,0.3s						
LMR	**La Mourre**	**2.92**	**80**	*e*Pn	**Pn**	**20 20 01.1**	**0.0**
LMR				*e*Sn	**Sn**	**20 20 35.3**	**-1.3**
LMR				*e*Sg	**Sg**	**20 20 48.7**	**-2.2**
	1.9nm,0.3s						
LMR	**La Mourre**	**2.92**	**80**	Pn	**Pn**	**20 20 01.1**	**0.0**
LMR				Lg		20 20 48.7	
	0.9nm,0.3s						
FRF	**La Foret Royal**	**3.05**	**76**	*e*Pn	**Pn**	**20 20 04.1**	**+1.0**
FRF				*e*Sg	**Sg**	**20 20 52.5**	**-2.9**
	1.0nm,0.2s						
EMOS	**Mosqueruela**	**3.39**	**223**	Lg		20 21 00.5	
	0.6nm,0.3s,SNR=4.0						
TCF	**Toulx Ste Croi**	**3.42**	**356**	*e*Pg	**Pg**	**20 20 20.0**	**-2.1**
TCF				*e*Sg	**Sg**	**20 21 05.1**	**-2.6**
	1.6nm,0.3s						
BGF	**Bois d'Agland**	**3.69**	**3**	*e*Pg	**Pg**	**20 20 25.3**	**-2.1**
BGF				*e*Sg	**Sg**	**20 21 13.0**	**-3.6**
	4.2nm,0.3s						
MFF	**Saint Martin d**	**4.20**	**333**	*e*Pg	**Pg**	**20 20 34.1**	**-3.5**
MFF				*e*Sg	**Sg**	**20 21 28.7**	**-5.0**
	1.1nm,0.2s						

TRN 09 20:28:56.1,16.70N×62.28W,h150km,MD3.6,M3.6(FDF),MD3.7(FDF),8C-1D,Leeward Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BPA	**Boggy Peak**	**0.53**	**49**	⇓*i*P	P	20 29 19.3	+1.1
BPA				*e*S	S	20 29 34.2	-0.8
SEG	**Port Louis**	**0.80**	**111**	*e*P	P	20 29 20.1	+0.5
PAG	**Le Parnasse**	**0.88**	**139**	*e*P	P	20 29 21.0	+0.8
CPB	**Codrington**	**1.03**	**25**	*e*P	P	20 29 23.1	+1.7
CPB				*e*S	S	20 29 42.3	+1.5
DEG	**La Desirade**	**1.23**	**108**	⇓*e*P	P	20 29 23.1	-0.2
DEG				*e*S	S	20 29 41.5	-2.7
BBL	**Barber's Block**	**1.40**	**146**	*e*P	P	20 29 25.3	+0.2
BBL	**Barber's Block**	**1.40**	**146**	⇓*e*P	P	20 29 26.6	+1.6
BBL				*e*S	S	20 29 48.2	+1.0
DWS	**Wesley**	**1.46**	**140**	*e*P	P	20 29 26.2	+0.6
DWS				*e*S	S	20 29 47.9	-0.4
STMA	**St. Maarten, A**	**1.56**	**329**	*e*P	P	20 29 37.4	+11
STMA				*e*S	S	20 29 49.9	-0.2
MDN	**Morne-Daniel**	**1.61**	**148**	⇑*i*P	P	20 29 29.0	+1.7
DSTT	**Stowe**	**1.72**	**147**	⇑*e*P	P	20 29 30.4	+2.0
DSTT				*e*S	S	20 29 55.6	+2.3
FDF	**Fort de France**	**2.23**	**151**	⇑*e*P	P	20 29 34.6	+0.1
FDF				*e*S	S	20 30 04.5	+0.6
CRM	**Caravelle**	**2.34**	**146**	⇑*e*P	P	20 29 35.6	-0.2
BIM	**Bigot**	**2.46**	**152**	⇑*i*P	P	20 29 37.7	+0.4
BIM				*e*S	S	20 30 10.9	+2.0
MVM	**Montagne Vaucl**	**2.51**	**148**	⇑*i*P	P	20 29 38.1	+0.1

*IDC **09** 20:31:15.6±1.4,38.46S×178.43E,mb4.7/4,mb1 4.7/5, mb1mx4.3/13,ML3.8/1,MS3.7/1,Ms1 3.7/1,ms1mx3.2/13, Error ellipse: s-maj=49.6km s-min=23.3km az=180.0*
*WEL **09** 20:31:19.7±0.3,38.22S×178.41E,h21km±1km,ML4.5/13, Error ellipse: s-maj=3.4km s-min=1.4km az=90.0*
*NEIC **09** 20:31:20.4,38.26S×178.36E,h17km,mb4.4/2, ML4.5(WEL),After WEL.*
ISC 09 20:31:18.1±1.5,38.27S±0.08×178.5E±0.1,h27km±6km,n89,σ0ŝ89/44,mb4.5/5,MS3.7/1,3C-3D,Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**0.28**	**314**	⇓P*	**Pb**	**20 31 24.6**	**-0.4**
PUZ				⇓P*	**Pb**	**20 31 24.7**	**-0.4**
PUZ				S*	**Sb**	**20 31 28.0**	**-1.9**
PUZ				S*	**Sb**	**20 31 28.1**	**-1.7**
PUZ	**Puketiti**	**0.28**	**314**	P	**Pb**	**20 31 24.6**	**-0.5**
PUZ				S	**Sb**	**20 31 28.3**	**-1.5**
PUZ				S	**Sb**	**20 31 28.5**	**-1.3**
MXZ	**Matakaoa Point**	**0.72**	**347**	⇑P*	**Pb**	**20 31 34.3**	**+2.3**
MXZ				S*	**Sb**	**20 31 42.0**	**+0.3**
MXZ	**Matakaoa Point**	**0.72**	**347**	P	**Pb**	**20 31 34.3**	**+2.2**
MXZ				S	**Sb**	**20 31 46.7**	**+5.0**
MWZ	**Matawai**	**0.78**	**265**	P*	**Pb**	**20 31 32.6**	**-0.4**
MWZ				S*	**Sb**	**20 31 43.0**	**-0.1**
MWZ	**Matawai**	**0.78**	**265**	P	**Pb**	**20 31 32.6**	**-0.4**
MWZ				S	**Sb**	**20 31 43.1**	**-0.1**
KNZ	**Kokohu**	**1.00**	**221**	⇑PN	**Pn**	**20 31 37.2**	**+0.7**
KNZ	**Kokohu**	**1.00**	**221**	P	**Pn**	**20 31 37.2**	**+0.8**
URZ	**Urewera**	**1.10**	**270**	Pn	**Pn**	**20 31 38.4**	**+0.4**
	480nm,0.3s,baz=100,slow=7.7,SNR=2891						
URZ				Sn	**Sn**	**20 31 52.5**	**+0.1**
	293nm,0.3s,baz=350,slow=24,SNR=22						
URZ	**Urewera**	**1.10**	**270**	⇓PN	**Pn**	**20 31 38.4**	**+0.4**
URZ				SN	**Sn**	**20 31 51.9**	**-0.5**
URZ	**Urewera**	**1.10**	**270**	P	**Pn**	**20 31 38.4**	**+0.4**
WIZ	**White Island**	**1.28**	**305**	⇑PN	**Pn**	**20 31 41.1**	**+0.6**
WIZ	**White Island**	**1.28**	**305**	P	**Pn**	**20 31 41.2**	**+0.7**
EDRZ	**Edgecumbe**	**1.41**	**276**	PN	**Pn**	**20 31 43.0**	**+0.7**
EDRZ	**Edgecumbe**	**1.41**	**276**	P	**Pn**	**20 31 43.2**	**+0.9**
TAZ	**Tarawera**	**1.58**	**271**	PN	**Pn**	**20 31 45.4**	**+0.6**
TAZ	**Tarawera**	**1.58**	**271**	P	**Pn**	**20 31 45.5**	**+0.7**
MKRZ	**Makatiti**	**1.62**	**274**	PN	**Pn**	**20 31 46.8**	**+1.5**
LIRZ	**Lichensteins R**	**1.70**	**278**	PN	**Pn**	**20 31 46.7**	**+0.2**
LIRZ	**Lichensteins R**	**1.70**	**278**	P	**Pn**	**20 31 46.9**	**+0.4**
PATZ	**Paeroa**	**1.78**	**266**	*e*PN	**Pn**	**20 31 47.8**	**+0.2**
PATZ	**Paeroa**	**1.78**	**266**	P	**Pn**	**20 31 48.1**	**+0.5**
BKZ	**Black Stump Fm**	**1.82**	**240**	PN	**Pn**	**20 31 48.3**	**+0.2**
BKZ	**Black Stump Fm**	**1.82**	**240**	P	**Pn**	**20 31 48.3**	**+0.1**
UTU	**Utuhina**	**1.83**	**272**	*e*PN	**Pn**	**20 31 48.5**	**+0.2**
PWZ	**Pawanui**	**2.18**	**216**	*e*PN	Px	20 32 06.0	
RATZ	**Rangitukua**	**2.23**	**254**	*e*PN	Px	20 31 54.3	
KATZ	**Kakaramea**	**2.32**	**251**	PN	Px	20 31 55.3	
KATZ	**Kakaramea**	**2.32**	**251**	P	Px	20 31 55.4	
KAVZ	**Karewarewa**	**2.39**	**249**	P	Px	20 31 56.5	
WTVZ	**West Tongariro**	**2.44**	**249**	*e*PN	Px	20 31 57.1	
MGZ	**Maungaku**	**2.44**	**252**	PN	Px	20 31 57.1	
TUVZ	**Tukino**	**2.45**	**245**	*e*PN	Px	20 31 57.2	
NGZ	**Ngauruhoe**	**2.45**	**247**	*e*PN	Px	20 31 57.1	
NGZ	**Ngauruhoe**	**2.45**	**247**	P	Px	20 31 57.3	
CNZ	**Chateau**	**2.50**	**247**	*e*PN	Px	20 31 58.5	
WNVZ	**Wahianoa**	**2.51**	**244**	PN	Px	20 31 58.0	
DRZ	**Dome Shelter**	**2.51**	**246**	*e*PN	Px	20 31 58.7	
FWVZ	**Far West T-bar**	**2.52**	**246**	*e*PN	Px	20 31 57.9	
FWVZ	**Far West T-bar**	**2.52**	**246**	P	Px	20 31 58.5	
TSZ	**Takapari Road**	**2.67**	**227**	PN	Px	20 31 59.0	
TSZ	**Takapari Road**	**2.67**	**227**	P	Px	20 31 59.0	
KUZ	**Kuaotunu**	**2.69**	**304**	PN	Px	20 31 59.9	
KUZ	**Kuaotunu**	**2.69**	**304**	P	Px	20 31 59.9	
HIZ	**Hauiti**	**2.88**	**264**	PN	Px	20 32 03.8	
BFZ	**Birch Farm**	**2.98**	**215**	*e*PN	Px	20 32 02.1	
BFZ	**Birch Farm**	**2.98**	**215**	P	Px	20 32 02.2	
WAZ	**Wanganui**	**3.12**	**241**	*e*PN	Px	20 32 06.4	
WAZ	**Wanganui**	**3.12**	**241**	*e*P	Px	20 32 07.0	
MRZ	**Mangatainoka R**	**3.29**	**223**	*e*PN	Px	20 32 06.4	
RAEZ	**Rainy Point**	**3.38**	**251**	PN	Px	20 32 11.3	
RAEZ	**Rainy Point**	**3.38**	**251**	P	Px	20 32 11.3	
NEZ	**North Egmont**	**3.59**	**252**	PN	Px	20 32 14.5	
NEZ	**North Egmont**	**3.59**	**252**	P	Px	20 32 14.7	
DFE	**Dawson Falls**	**3.60**	**252**	PN	Px	20 32 14.3	
DFE	**Dawson Falls**	**3.60**	**252**	P	Px	20 32 14.4	
MTW	**Mount Morrison**	**3.70**	**218**	*e*PN	Px	20 32 11.3	
MTW				SN	Sx	20 32 53.5	
MTW	**Mount Morrison**	**3.70**	**218**	P	Px	20 32 11.8	
NRZ	**Ngariki Road**	**3.73**	**252**	PN	Px	20 32 16.2	
NRZ	**Ngariki Road**	**3.73**	**252**	P	Px	20 32 16.4	
NWEZ	**Newall Road**	**3.77**	**253**	*e*PN	Px	20 32 17.2	
NWEZ	**Newall Road**	**3.77**	**253**	P	Px	20 32 15.1	
MRW	**Makara Radio**	**4.17**	**224**	SN	Sx	20 33 05.0	
SNZO	**South Karori**	**4.22**	**223**	*e*Pn	Px	20 32 19.5	
SNZO				*e*	Sx	20 32 25.0	
SNZO				*e*		20 32 36.2	
SNZO				*e*Sn	Sx	20 33 05.2	
NNZ	**Nelson**	**4.93**	**232**	*e*PN	Px	20 32 28.0	
NNZ				*e*SN	Sx	20 33 25.4	
NNZ	**Nelson**	**4.93**	**232**	*e*P	Px	20 32 29.0	
QRZ	**Quartz Range**	**5.28**	**239**	PN	Px	20 32 32.8	
QRZ	**Quartz Range**	**5.28**	**239**	*e*P	Px	20 32 32.9	
THZ	**Tophouse**	**5.54**	**229**	PN	Px	20 32 36.6	
THZ	**Tophouse**	**5.54**	**229**	*e*P	Px	20 32 36.8	
KHZ	**Kahutara**	**5.62**	**221**	*e*PN	Px	20 32 37.3	
KHZ				SN	Sx	20 33 37.1	
LTZ	**Lake Taylor**	**6.55**	**225**	SN	Sx	20 33 58.8	
MQZ	**McQueen's Vall**	**7.01**	**217**	*e*PN	Px	20 32 55.7	
MQZ				SN	Sx	20 34 08.1	
WVZ	**Waitaha Valley**	**7.61**	**228**	SN	Sx	20 34 26.2	
RPZ	**Rata Peaks**	**7.83**	**224**	Pn	Px	20 33 08.5	
	1.4nm,0.3s,baz=345,slow=5.5,SNR=7.8						
RPZ				Sn	Sx	20 34 28.9	
	4.7nm,0.3s,baz=142,slow=22,SNR=19						
RPZ	**Rata Peaks**	**7.83**	**224**	SN	Sx	20 34 28.8	
ODZ	**Otahua Downs**	**8.97**	**219**	*e*PN	Px	20 33 21.2	
STKA	**Stephens Creek**	**30.73**	**271**	*e*P	**P**	**20 37 32.2**	**-1.0**
	5.8nm,0.8s,mb4.5						
STKA	**Stephens Creek**	**30.73**	**271**	P	**P**	**20 37 32.7**	**-0.5**
	8.4nm,0.8s,mb4.6,baz=107,slow=11,SNR=14						
CTA	**Charters Tower**	**33.26**	**294**	P	**P**	**20 37 55.5**	**+0.2**
	4.5nm,0.6s,mb4.6,baz=134,slow=13,SNR=7.5						
PMG	**Port Moresby**	**40.23**	**307**	LR	LR	20 51 39.4	
	comp=Z,118nm,21.5s,MS3.7,baz=3.2,slow=30						
AS12	**Alice Springs**	**40.54**	**278**	*e*P	**P**	**20 38 55.1**	**-1.6**
	8.8nm,0.6s,mb4.6						
ASAR	**Alice Springs**	**40.54**	**278**	P	**P**	**20 38 55.9**	**-0.9**
	8.5nm,0.6s,mb4.5,baz=124,slow=8.5,SNR=112						
WB2	**Warramunga Arr**	**42.24**	**283**	*e*P	**P**	**20 39 09.7**	**-1.0**
WRA	**Warramunga Arr**	**42.25**	**283**	P	**P**	**20 39 09.8**	**-1.0**
	6.8nm,0.8s,mb4.3,baz=126,slow=7.1,SNR=67						
FITZ	**Fitzroy Crossi**	**50.03**	**278**	*e*P	**P**	**20 40 11.2**	**-1.3**
	2.4nm,0.6s,mb4.4						
ARCES	**ARCESS Array B**	**145.49**	**344**	PKPbc	PKPbc	20 50 54.6	+1.5
	2.3nm,0.6s,baz=45,slow=1.7,SNR=13						
FINES	**FINESS Array B**	**151.19**	**333**	PKPbc	PKPdf	20 51 09.8	+3.1
	0.9nm,0.6s,baz=63,slow=4.3,SNR=9.1						
BRTR	**Keskin Array B**	**152.76**	**284**	PKPbc	PKPdf	20 51 13.9	+4.2
	0.5nm,0.8s,baz=158,slow=4.8,SNR=3.3						

*IDC **09** 20:39:10.8±0.9,32.42N×95.98E,mb3.8/6,mb1 3.9/9, mb1mx3.7/19,ML3.8/3,MS3.1/1,Ms1 3.3/1,ms1mx2.8/22, Error ellipse: s-maj=55.5km s-min=18.4km az=58.0*
*NEIC **09** 20:39:15.9±1.1,32.45N×96.05E,h37km±16km,Error ellipse: s-maj=12.8km s-min=10.7km az=187.0*
*BJI **09** 20:39:16.2,32.54N×96.08E,h37km,mb3.8,ML3.4*
ISC 09 20:39:16.8±1.3,32.40N±0.06×95.82E±0.09,h65km±15km,n22,σ0ŝ80/23,mb3.8/6,Xizang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LSA	**Lhasa**	**4.83**	**237**	P	**P**	**20 40 33.0**	**+4.3**
LSA				AMB	AMB		
	comp=Z,10.0nm,0.9s						
LSA	**Lhasa**	**4.83**	**237**	*e*P	**P**	**20 40 32.6**	**+3.9**
	comp=Z,8.0nm,0.8s						
SHL	**Shillong**	**7.63**	**208**	*e*P	**P**	**20 41 08.5**	**+0.8**
SHL				*e*S	**S**	**20 42 35.0**	**+1.5**
GTA	**Gaotai**	**7.71**	**24**	*e*P	**P**	**20 41 09.6**	**+1.0**
GTA				AP		20 41 14.7	
GTA				AMB	AMB		
	comp=Z,4.0nm,1.2s						
GUN	**Gumba**	**9.70**	**245**	*e*P	**P**	**20 41 36.5**	**+0.6**
	comp=Z,15nm,0.4s						
KKN	**Kakani**	**10.22**	**246**	*e*P	**P**	**20 41 42.3**	**-0.7**
	comp=Z,4.2nm,0.3s						
PKI	**Pulchoki**	**10.23**	**245**	*e*P	**P**	**20 41 42.9**	**-0.3**
	comp=Z,13nm,0.6s						
DMN	**Daman**	**10.44**	**246**	*e*P	**P**	**20 41 45.5**	**-0.6**
	comp=Z,7.4nm,0.5s						
GKN	**Gorkha**	**10.62**	**249**	*e*P	**P**	**20 41 47.3**	**-1.2**
	comp=Z,5.9nm,0.4s						
KOLN	**Koldanda**	**11.54**	**250**	*e*P	**P**	**20 42 00.0**	**-0.9**
	comp=Z,10nm,0.9s						
ENH	**Enshi**	**11.88**	**97**	*e*P	**P**	**20 41 58.4**	**-7.0**
CMAR	**Chiang Mai Arr**	**14.17**	**168**	Pn	**P**	**20 42 34.7**	**-0.9**
	comp=Z,0.1nm,0.3s,baz=345,slow=10,SNR=4.0						
CMAR				LR	LR	20 48 23.6	
	comp=Z,77nm,18.4s,baz=345,slow=39						
SONM	**Songino Array**	**17.38**	**24**	P	**P**	**20 43 15.5**	**-0.7**
	comp=Z,0.2nm,0.3s,baz=214,slow=14,SNR=11						
MKAR	**Makanchi Array**	**17.71**	**328**	P	**P**	**20 43 20.8**	**+0.4**
	comp=Z,0.2nm,0.3s,baz=139,slow=13,SNR=11						
KURK	**Kurchatov**	**22.27**	**330**	*e*P	**P**	**20 44 09.1**	**-0.2**
CN2	**Changchun**	**25.81**	**55**	*e*P	**P**	**20 44 43.5**	**+0.1**
AKASG	**Malin Array Be**	**51.30**	**312**	P	**P**	**20 48 18.0**	**+1.8**
	comp=Z,0.2nm,0.3s,mb3.6,baz=70,slow=6.9,SNR=3.5						
FINES	**FINESS Array B**	**52.52**	**325**	P	**P**	**20 48 25.4**	**+0.3**
	comp=Z,2.6nm,1.1s,mb4.2,baz=72,slow=6.0,SNR=5.7						
ARCES	**ARCESS Array B**	**53.17**	**336**	P	**P**	**20 48 29.8**	**-0.1**
	comp=Z,2.4nm,0.9s,

*STR **09** 21:29:16.5±0.1, 42.81N×2.54E, h5km±1km, Ml2.4, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
*MDD **09** 21:29:16.9±0.3, 42.82N×2.55E, h7km±3km, mbLg1.9/25, Error ellipse: s-maj=2.1km s-min=2.0km az=73.0, PRXIMO*
ISC 09 21:29:14.9±0.2, 42.89N±0.02×2.58E±0.02, h7km, n61, σ1§25/111, Pyrenees

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
LRDF	**Laroque-de-Fa**	**0.06**	**328**	Pg	**Pg**	**21 29 19.4**	**+2.7**
LRDF				Sg	**Sg**	**21 29 21.6**	**+3.7**
LRDF	**Laroque-de-Fa**	**0.06**	**328**	P	**Pg**	**21 29 19.4**	**+2.7**
LRDF				S	**Sg**	**21 29 21.7**	**+3.9**
FILF	**Fillols**	**0.33**	**183**	Pg	**Pg**	**21 29 22.0**	**+0.4**
FILF				Sg	**Sg**	**21 29 25.6**	**-0.4**
FILF	**Fillols**	**0.33**	**183**	P	**Pg**	**21 29 22.1**	**+0.5**
FILF				S	**Sg**	**21 29 25.8**	**-0.2**
CARF	**Carcanieres**	**0.39**	**244**	Pg	**Pg**	**21 29 23.2**	**+0.4**
CARF				Sg	**Sg**	**21 29 28.1**	**0.0**
CARF	**Carcanieres**	**0.39**	**244**	P	**Pg**	**21 29 23.2**	**+0.4**
CARF				S	**Sg**	**21 29 27.9**	**-0.2**
SJAF	**Saint Jean de**	**0.46**	**151**	Pg	**Pg**	**21 29 24.7**	**+0.5**
SJAF				Sg	**Sg**	**21 29 30.7**	**+0.3**
SJAF	**Saint Jean de**	**0.46**	**151**	P	**Pg**	**21 29 24.9**	**+0.7**
SJAF				S	**Sg**	**21 29 30.7**	**+0.4**
EJON	**La Jonquera**	**0.49**	**153**	Pg	**Pg**	**21 29 25.7**	**+0.8**
	0.9nm,0.1s,SNR=15						
EJON				Lg		21 29 31.9	
	18nm,0.3s,SNR=5.0						
EJON	**La Jonquera**	**0.49**	**153**	Pg	**Pg**	**21 29 25.6**	**+0.8**
EJON				Lg		21 29 31.7	
LPEF	**Le Peyrat**	**0.50**	**277**	Pg	**Pg**	**21 29 25.9**	**+0.9**
LPEF				Sg	**Sg**	**21 29 32.7**	**+1.0**
LPEF	**Le Peyrat**	**0.50**	**277**	P	**Pg**	**21 29 26.0**	**+1.1**
LPEF				S	**Sg**	**21 29 32.5**	**+0.8**
MTLF	**Montolieu**	**0.53**	**330**	*e*Pg	**Pg**	**21 29 27.8**	**+2.3**
	SNR=1.0						
MTLF				*e*Pn	**Pn**	**21 29 30.5**	**+2.0**
MTLF				*e*Sg	**Sg**	**21 29 34.7**	**+2.1**
	11nm,0.2s,SNR=1.0						
MTLF				*e*Sn	**Sn**	**21 29 39.7**	**+2.1**
CLLI	**Llivia**	**0.61**	**228**	Pg	**Pg**	**21 29 26.9**	**-0.2**
CLLI				Lg		21 29 33.9	
	6.7nm,0.1s						
VALF	**Valcebollere**	**0.64**	**221**	Pg	**Pg**	**21 29 27.6**	**-0.2**
VALF				Sg	**Sg**	**21 29 35.3**	**-1.0**
VALF	**Valcebollere**	**0.64**	**221**	P	**Pg**	**21 29 27.6**	**-0.1**
VALF				S	**Sg**	**21 29 35.2**	**-1.2**
CBRU	**Bruguera**	**0.67**	**206**	Pg	**Pg**	**21 29 28.0**	**-0.4**
CBRU				Lg		21 29 36.2	
	11nm,0.1s						
GRBF	**Gourbit**	**0.77**	**267**	S	**Sb**	**21 29 40.9**	**+0.2**
PAND	**Andorre**	**0.84**	**245**	S	**Sb**	**21 29 41.9**	**-1.0**
SALF	**Salau**	**1.03**	**263**	P	**Pb**	**21 29 35.6**	**+0.9**
SALF				S	**Sb**	**21 29 48.8**	**+0.5**
MLS	**Moulis**	**1.09**	**274**	Pg	**Pg**	**21 29 37.6**	**+0.8**
MLS	**Moulis**	**1.09**	**274**	P	**Pb**	**21 29 36.7**	**+0.9**
MLS				S	**Sb**	**21 29 50.7**	**+0.6**
CFON	**Fontmartina**	**1.13**	**186**	Pg	**Pg**	**21 29 37.1**	**-0.4**
CFON				Lg		21 29 50.9	
	40nm,0.2s						
CORG	**Organya**	**1.14**	**235**	Pg	**Pg**	**21 29 37.6**	**-0.2**
CORG				Lg		21 29 51.7	
	6.3nm,0.2s						
CSOR	**Sort**	**1.18**	**245**	Pg	**Pg**	**21 29 38.3**	**-0.3**
CSOR				Lg		21 29 53.1	
	7.4nm,0.2s						
EMIR	**Miracle**	**1.25**	**219**	Pg	**Pg**	**21 29 39.2**	**-0.7**
	2.2nm,0.1s,SNR=14						
EMIR				Lg		21 29 55.7	
	4.1nm,0.1s,SNR=5.0						
EMIR	**Miracle**	**1.25**	**219**	Pg	**Pg**	**21 29 39.3**	**-0.6**
EMIR				Lg		21 29 55.5	
MELF	**Melles**	**1.34**	**270**	S	**Sb**	**21 29 57.0**	**-0.2**
LASF	**Ste Croix**	**1.51**	**38**	*e*Pn	**Pn**	**21 29 44.1**	**+1.6**
	SNR=1.0						
LASF				*e*Pg	**Pg**	**21 29 46.4**	**+1.3**
	SNR=1.0						
LASF				*e*Sn	**Sn**	**21 30 03.8**	**+1.2**
	SNR=1.0						
LASF				*e*Sg	**Sg**	**21 30 07.0**	**+1.8**
	9.4nm,0.3s,SNR=1.0						
LASF	**Ste Croix**	**1.51**	**38**	Pn	**Pn**	**21 29 44.1**	**+1.6**
LASF				Pg	**Pg**	**21 29 46.4**	**+1.3**
LASF				Lg		21 30 07.0	
	4.7nm,0.3s						
EPF	**Esparros**	**1.65**	**276**	*e*Pn	**Pn**	**21 29 44.7**	**+0.1**
EPF				*e*Pg	**Pg**	**21 29 47.4**	**-0.5**
	SNR=1.0						
EPF				*e*Sn	**Sn**	**21 30 04.6**	**-1.6**
EPF				*e*Sg	**Sg**	**21 30 08.3**	**-1.7**
	23nm,0.2s,SNR=1.0						
EPF	**Esparros**	**1.65**	**276**	Pn	**Pn**	**21 29 44.7**	**+0.1**
EPF				Pg	**Pg**	**21 29 47.4**	**-0.5**
EPF				Lg		21 30 08.3	
	11nm,0.2s						
RESF	**Ens**	**1.65**	**268**	S	**Sn**	**21 30 08.2**	**+2.0**
CAVN	**Les Avellanes**	**1.69**	**234**	Pg	**Pg**	**21 29 47.4**	**-1.2**
CAVN				Lg		21 30 08.9	
	12nm,0.2s						
VIEF	**Viey**	**1.88**	**271**	S	**Sn**	**21 30 14.5**	**+2.5**
EPOB	**Poblet**	**1.90**	**217**	Pn	**Pn**	**21 29 50.2**	**+2.1**
	1.4nm,0.1s,SNR=16						
EPOB				Lg		21 30 14.2	
	8.3nm,0.2s,SNR=6.9						
EPOB	**Poblet**	**1.90**	**217**	Pn	**Pn**	**21 29 50.4**	**+2.3**
EPOB				Lg		21 30 14.2	
CGAR	**Garraf**	**1.92**	**215**	Pg	**Pg**	**21 29 46.6**	**-6.7**
CGAR				Lg		21 30 07.4	
CAF	**Calviac**	**2.07**	**350**	*e*Pn	**Pn**	**21 29 51.7**	**+1.1**
	SNR=1.0						
CAF				*e*Pg	**Pg**	**21 29 56.9**	**+0.6**
	SNR=1.0						
CAF				*e*Sn	**Sn**	**21 30 16.8**	**-0.1**
CAF				*e*Sg	**Sg**	**21 30 23.6**	**-0.4**
	9.7nm,0.3s,SNR=1.0						
CAF	**Calviac**	**2.07**	**350**	Pn	**Pn**	**21 29 51.7**	**+1.1**
CAF				Pg	**Pg**	**21 29 56.9**	**+0.6**
CAF				Lg		21 30 23.6	
	4.8nm,0.3s						
ETSF	**Etsaut**	**2.31**	**271**	*e*Pn	**Pn**	**21 29 53.4**	**-0.6**
ETSF				*e*Pg	**Pg**	**21 29 59.3**	**-1.7**
	SNR=1.0						
ETSF				*e*Sn	**Sn**	**21 30 20.3**	**-2.6**
	SNR=1.0						
ETSF				*e*Sg	**Sg**	**21 30 28.7**	**-3.1**
	9.1nm,0.4s,SNR=1.0						
ETSF	**Etsaut**	**2.31**	**271**	Pn	**Pn**	**21 29 53.4**	**-0.6**
ETSF				Pg	**Pg**	**21 29 59.3**	**-1.7**
ETSF				Lg		21 30 28.7	
	4.6nm,0.4s						
SMRF	**Simiane la Rot**	**2.44**	**62**	*e*Pn	**Pn**	**21 29 56.5**	**+0.7**
SMRF				*e*Sn	**Sn**	**21 30 25.4**	**-0.8**
SMRF				*e*Sg	**Sg**	**21 30 36.0**	**-0.1**
	4.8nm,0.3s,SNR=1.0						
SMRF	**Simiane la Rot**	**2.44**	**62**	Pn	**Pn**	**21 29 56.5**	**+0.7**
SMRF				Lg		21 30 36.0	
	4.8nm,0.3s						
LFF	**La Frestale**	**2.45**	**328**	*e*Pn	**Pn**	**21 29 56.3**	**+0.4**
LFF				*e*Pg	**Pg**	**21 30 03.4**	**-0.4**
LFF				*e*Sg	**Sg**	**21 30 35.1**	**-1.3**
	15nm,0.3s,SNR=1.0						
VIVF	**Saint-Julien-l**	**2.48**	**37**	*e*Pn	**Pn**	**21 29 57.5**	**+1.0**
	SNR=1.0						
VIVF				*e*Pg	**Pg**	**21 30 04.3**	**-0.2**
	SNR=1.0						
VIVF				*e*Sn	**Sn**	**21 30 27.2**	**-0.1**
VIVF				*e*Sg	**Sg**	**21 30 37.4**	**-0.2**
	4.8nm,0.4s,SNR=1.0						
VIVF	**Saint-Julien-l**	**2.48**	**37**	Pn	**Pn**	**21 29 57.5**	**+1.0**
VIVF				Pg	**Pg**	**21 30 04.3**	**-0.2**
VIVF				Lg		21 30 37.4	
	2.4nm,0.4s						
RJF	**Les Rejaudoux**	**2.54**	**343**	*e*Pn	**Pn**	**21 29 57.8**	**+0.6**
RJF				*e*Pg	**Pg**	**21 30 05.4**	**-0.2**
	SNR=1.0						
RJF				*e*Sg	**Sg**	**21 30 38.2**	**-1.2**
	6.3nm,0.2s,SNR=1.0						
ESAC	**San Caprasio**	**2.54**	**244**	Pn	**Pn**	**21 29 59.3**	**+1.9**
	2.4nm,0.3s,SNR=7.9						
ESAC				Sn	**Sn**	**21 30 27.9**	**-1.0**
	5.3nm,0.3s,SNR=7.9						
ESAC				Lg		21 30 35.5	
	19nm,0.3s,SNR=6.7						
ESAC	**San Caprasio**	**2.54**	**244**	Pn	**Pn**	**21 29 59.1**	**+1.8**
ESAC				Sn	**Sn**	**21 30 30.0**	**+1.1**
ESAC				Lg		21 30 36.1	
SJPF	**Ste Jean**	**2.80**	**276**	*e*Pn	**Pn**	**21 30 00.2**	**-0.8**
SJPF				*e*Pg	**Pg**	**21 30 08.4**	**-2.5**
SJPF				*e*Sg	**Sg**	**21 30 44.0**	**-4.2**
	3.3nm,0.3s						
LMR	**La Mourre**	**2.91**	**80**	*e*Pn	**Pn**	**21 30 02.5**	**-0.1**
LMR				*e*Sn	**Sn**	**21 30 36.5**	**-1.7**
	2.9nm,0.3s,SNR=1.0						
LMR				*e*Sg	**Sg**	**21 30 49.8**	**-2.1**
	2.8nm,0.3s						
LMR	**La Mourre**	**2.91**	**80**	Pn	**Pn**	**21 30 02.5**	**-0.1**
LMR				Lg		21 30 49.8	
	1.4nm,0.3s						
EALK	**Alkurruntz**	**3.02**	**278**	Lg		21 30 53.0	
	1.2nm,0.2s,SNR=4.0						
FRF	**La Foret Royal**	**3.05**	**76**	*e*Pn	**Pn**	**21 30 05.1**	**+0.6**
FRF				*e*Sg	**Sg**	**21 30 53.9**	**-2.5**
	5.5nm,0.3s,SNR=1.0						
EMOS	**Mosqueruela**	**3.41**	**223**	Lg		21 31 04.0	
	0.6nm,0.2s,SNR=7.9						
TCF	**Toulx Ste Croi**	**3.41**	**356**	*e*Pg	**Pg**	**21 30 21.3**	**-1.8**
TCF				*e*Sg	**Sg**	**21 31 06.4**	**-2.1**
	5.3nm,0.5s,SNR=1.0						
BGF	**Bois d'Agland**	**3.67**	**3**	*e*Pg	**Pg**	**21 30 26.7**	**-1.6**
BGF				*e*Sg	**Sg**	**21 31 14.3**	**-3.0**
	6.5nm,0.3s,SNR=1.0						
ETOR	**Torete**	**4.03**	**241**	Lg		21 31 23.3	
	0.5nm,0.2s,SNR=7.9						
MFF	**Saint Martin d**	**4.19**	**333**	*e*Pg	**Pg**	**21 30 35.2**	**-3.4**
MFF				*e*Sg	**Sg**	**21 31 30.1**	**-4.4**
	1.9nm,0.3s						
SSF	**Saint Saulge**	**4.23**	**9**	*e*Sg	**Sg**	**21 31 31.9**	**-3.7**
	1.9nm,0.5s,SNR=1.0						

*NEIC **09** 21:29:54.8±0.9, 49.23S×125.17E, h10km, mb4.3/2, Error ellipse: s-maj=25.8km s-min=17.3km az=104.0*
*IDC **09** 21:29:54.3±2.0, 49.06S×125.14E, mb3.9/4, mb1 4.1/5, mb1mx4.0/10, ML2.3/1, MS4.0/6, Ms1 4.0/6, ms1mx3.5/17, Error ellipse: s-maj=48.6km s-min=41.9km az=142.0*
ISC 09 21:29:52.9±0.9, 49.3S±0.1×125.3E±0.3, h10km, n18, σ0§87/14, mb4.3/5, MS3.9/6, Western Indian-Antarctic Ridge

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
NWAO	**Narrogin (SRO)**	**17.39**	**337**	Pn	**P**	**21 33 56.3**	**-0.8**
	0.6nm,0.3s,baz=228,slow=12,SNR=5.0						
NWAO	**Narrogin (SRO)**	**17.39**	**337**	*e*P	**P**	**21 33 56.5**	**-0.5**
STKA	**Stephens Creek**	**21.24**	**41**	*e*P	**P**	**21 34 42.0**	**+0.8**
	5.6nm,0.9s,mb3.9						
STKA	**Stephens Creek**	**21.24**	**41**	P	**P**	**21 34 42.4**	**+1.2**
	6.4nm,0.9s,mb4.0,baz=211,slow=11,SNR=10						
STKA				LR	LR	21 41 17.9	
	comp=Z,504nm,20.6s,MS3.9,baz=210,slow=32						
ASAR	**Alice Springs**	**26.42**	**18**	P	**P**	**21 35 30.9**	**-0.5**
	2.2nm,0.8s,mb3.7,baz=190,slow=9.6,SNR=14						
ASAR				PcP	PcP	21 38 56.7	-0.7
	0.5nm,0.7s,baz=182,slow=2.3,SNR=3.9						
ASAR				LR	LR	21 45 01.0	
	comp=Z,383nm,19.3s,MS4.0,baz=221,slow=34						
WRA	**Warramunga Arr**	**30.13**	**17**	P	**P**	**21 36 03.4**	**-1.6**
	0.3nm,0.6s,baz=194,slow=8.1,SNR=3.6						
WRA				PcP	PcP	21 39 05.8	-0.7
	0.4nm,0.7s,baz=205,slow=2.5,SNR=5.7						
WRA				LR	LR	21 47 14.6	
	comp=Z,613nm,18.8s,MS4.3,baz=190,slow=35						
RPZ	**Rata Peaks**	**31.60**	**98**	LR	LR	21 45 39.1	
	comp=Z,181nm,21.3s,MS3.7,baz=170,slow=30						
MAW	**Mawson**	**35.52**	**216**	LR	LR	21 49 13.9	
	comp=Z,96nm,18.1s,MS3.6,baz=50,slow=33						
SNAA	**Sanae**	**53.94**	**198**	P	**P**	**21 39 17.3**	**-0.9**
CMAR	**Chiang Mai Arr**	**71.36**	**334**	P	**P**	**21 41 15.0**	**+0.1**
	1.7nm,0.7s,mb4.1,baz=180,slow=5.2,SNR=12						
JOW	**Kunigami**	**75.78**	**3**	LR	LR	22 11 17.1	
	comp=Z,109nm,21.6s,MS4.1,baz=299,slow=33						
LSA	**Lhasa**	**84.30**	**331**	*e*P	**P**	**21 42 27.7**	**+1.7**
	8.9nm,1.8s,mb4.6						
GUN	**Gumba**	**84.48**	**326**	*e*P	**P**	**21 42 27.7**	**+0.7**
	25nm,1.1s,mb5.2						
DMN	**Daman**	**84.50**	**325**	*e*P	**P**	**21 42 27.2**	**+0.2**
	48nm,1.9s						
KKN	**Kakani**	**84.59**	**325**	*e*P	**P**	**21 42 27.4**	**-0.1**
	37nm,1.7s						
GKN	**Gorkha**	**85.03**	**325**	*e*P	**P**	**21 42 30.3**	**+0.6**
	1.9nm,0.2s						
KOLN	**Koldanda**	**85.22**	**324**	*e*P	**P**	**21 42 30.1**	**-0.5**
	8.1nm,1.0s						
YKA	**Yellowknife Ar**	**145.24**	**45**	PKPbc	PKPbc	21 49 32.0	+2.1
	3.1nm,0.7s,baz=268,slow=3.5,SNR=103						

*LDG **09** 21:34:59.7±0.0, 42.81N×2.53E, h4km, Md2.4/1, Ml1.7/8, Error ellipse: s-maj=0.9km s-min=0.7km az=122.0*
*NEIC **09** 21:34:59.7, 42.81N×2.53E, h4km, ML2.0(STR), ML1.7(LDG), After LDG.*
*STR **09** 21:34:59.4±0.1, 42.81N×2.53E, h5km±1km, Ml2.0, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
*MDD **09** 21:35:00.0±0.4, 42.82N×2.53E, h10km±1km, mbLg1.3/3, Error ellipse: s-maj=5.2km s-min=3.0km az=56.0, PRXIMO*
ISC 09 21:34:58.3±0.4, 42.87N±0.02×2.53E±0.03, h12km±3km, n17, σ1§13/38, Pyrenees

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
LRDF	**Laroque-de-Fa**	**0.07**	**3**	Pg	**Pg**	**21 35 02.4**	**+1.5**
LRDF				Sg	**Sg**	**21 35 04.6**	**+2.0**
FILF	**Fillols**	**0.31**	**176**	Pg	**Pg**	**21 35 04.9**	**+0.1**
FILF				Sg	**Sg**	**21 35 08.6**	**-0.5**
CARF	**Carcanieres**	**0.35**	**245**	Pg	**Pg**	**21 35 06.0**	**+0.4**
CARF				Sg	**Sg**	**21 35 11.0**	**+0.5**
SJAF	**Saint Jean de**	**0.46**	**146**	Pg	**Pg**	**21 35 07.8**	**0.0**
SJAF				Sg	**Sg**	**21 35 13.6**	**-0.5**
EJON	**La Jonquera**	**0.49**	**148**	Pg	**Pg**	**21 35 08.6**	**+0.2**
	0.1nm,0.0s,SNR=7.9						
EJON				Lg		21 35 14.8	
	1.4nm,0.1s,SNR=7.9						
MTLF	**Montolieu**	**0.53**	**334**	*e*Pg	**Pg**	**21 35 10.7**	**+1.6**
MTLF				*e*Pn	**Pn**	**21 35 13.5**	**+2.1**
MTLF				*e*Sg	**Sg**	**21 35 17.9**	**+1.7**
	1.4nm,0.2s						
MTLF				*e*Sn	**Sn**	**21 35 22.6**	**+2.4**
MTLF	**Montolieu**	**0.53**	**334**	Pg	**Pg**	**21 35 10.7**	**+1.6**
MTLF				Lg		21 35 17.9	
	0.7nm,0.2s						
LASF	**Ste Croix**	**1.55**	**38**	*e*Pn	**Pn**	**21 35 27.0**	**+1.1**
LASF				*e*Pg	**Pg**	**21 35 29.6**	**+0.3**
LASF				*e*Sn	**Sn**	**21 35 46.6**	**+0.5**
LASF				*e*Sg	**Sg**	**21 35 50.0**	**+0.1**
	0.5nm,0.2s						
EPF	**Esparros**	**1.62**	**277**	*e*Pn	**Pn**	**21 35 27.6**	**+0.6**
EPF				*e*Pg	**Pg**	**21 35 30.2**	**-0.5**
EPF				*e*Sg	**Sg**	**21 35 51.3**	**-1.1**
	2.8nm,0.2s						
CAF	**Calviac**	**2.09**	**351**	*e*Pn	**Pn**	**21 35 34.6**	**+0.9**
CAF				*e*Pg	**Pg**	**21 35 39.9**	**-0.1**
CAF				*e*Sn	**Sn**	**21 35 59.7**	**-0.1**
CAF				*e*Sg	**Sg**	**21 36 06.5**	**-1.4**
	0.8nm,0.2s						
ETSF	**Etsaut**	**2.27**	**272**	*e*Pn	**Pn**	**21 35 36.3**	**-0.1**
ETSF				*e*Sg	**Sg**	**21 36 11.5**	**-2.6**
	1.1nm,0.3s						
LFF	**La Frestale**	**2.44**	**329**	*e*Sg	**Sg**	**21 36 18.1**	**-1.7**
	2.0nm,0.3s						
SMRF	**Simiane la Rot**	**2.48**	**62**	*e*Pn	**Pn**	**21 35 39.5**	**+0.2**
SMRF				*e*Sn	**Sn**	**21 36 08.0**	**-1.7**
	0.5nm,0.3s						
VIVF	**Saint-Julien-l**	**2.52**	**37**	*e*Pn	**Pn**	**21 35 40.5**	**+0.6**
VIVF				*e*Pg	**Pg**	**21 35 47.3**	**-1.4**
VIVF				*e*Sg	**Sg**	**21 36 20.4**	**-1.9**
	0.3nm,0.2s						
RJF	**Les Rejaudoux**	**2.54**	**344**	*e*Pn	**Pn**	**21 35 40.6**	**+0.4**
RJF				*e*Pg	**Pg**	**21 35 48.4**	**-0.8**
RJF				*e*Sg	**Sg**	**21 36 21.2**	**-1.9**
	1.1nm,0.3s						
SJPF	**Ste Jean**	**2.77**	**276**	*e*Pn	**Pn**	**21 35 42.9**	**-0.5**
LMR	**La Mourre**	**2.95**	**80**	*e*Pn	**Pn**	**21 35 45.4**	**-0.6**

*NEIC **09** 21:36:26.6, 42.81N×2.54E, h5km, ML2.1(STR), ML1.5(LDG), After STR.*

*STR **09** 21:36:26.6±0.1, 42.81N×2.54E, h5km±1km, Ml2.1, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
*LDG **09** 21:36:27.2±0.1, 42.82N×2.54E, h3km, Md2.3/1, Ml1.5/7, Error ellipse: s-maj=1.0km s-min=0.7km az=120.0*
*MDD **09** 21:36:27.4±0.5, 42.83N×2.53E, h10km±1km, mbLg0.6/2, Error ellipse: s-maj=5.6km s-min=3.0km az=59.0, PRXIMO*
ISC 09 21:36:25.6±0.5, 42.86N±0.03×2.55E±0.04, h14km±3km, n15, σ1§23/30, Pyrenees

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
LRDF	**Laroque-de-Fa**	**0.07**	**354**	Pg	**Pg**	**21 36 29.7**	**+1.2**
LRDF				Sg	**Sg**	**21 36 32.0**	**+1.5**
FILF	**Fillols**	**0.30**	**179**	Pg	**Pg**	**21 36 32.2**	**+0.1**
FILF				Sg	**Sg**	**21 36 36.0**	**-0.5**
CARF	**Carcanieres**	**0.36**	**246**	Pg	**Pg**	**21 36 33.3**	**+0.1**
CARF				Sg	**Sg**	**21 36 38.3**	**0.0**
EJON	**La Jonquera**	**0.48**	**149**	Pg	**Pg**	**21 36 36.1**	**+0.6**
	0.2nm,0.1s,SNR=7.9						
EJON				Lg		21 36 42.2	
	1.4nm,0.1s,SNR=7.9						
MTLF	**Montolieu**	**0.54**	**333**	*e*Pg	**Pg**	**21 36 38.1**	**+1.5**
MTLF				*e*Pn	**Pn**	**21 36 40.9**	**+2.4**
MTLF				*e*Sg	**Sg**	**21 36 45.0**	**+1.1**
	1.4nm,0.2s						
MTLF				*e*Sn	**Sn**	**21 36 50.0**	**+2.8**
MTLF	**Montolieu**	**0.54**	**333**	Pg	**Pg**	**21 36 38.1**	**+1.5**
MTLF				Lg		21 36 45.0	
	0.7nm,0.2s						
LASF	**Ste Croix**	**1.54**	**38**	*e*Pg	**Pg**	**21 36 56.7**	**+0.2**
LASF				*e*Sg	**Sg**	**21 37 17.3**	**+0.2**
	0.7nm,0.2s						
EPF	**Esparros**	**1.63**	**277**	*e*Pn	**Pn**	**21 36 55.0**	**+0.9**
EPF				*e*Pg	**Pg**	**21 36 57.5**	**-0.8**
EPF				*e*Sg	**Sg**	**21 37 18.6**	**-1.5**
	1.3nm,0.2s						
CAF	**Calviac**	**2.09**	**351**	*e*Pn	**Pn**	**21 37 01.9**	**+1.2**
CAF				*e*Pg	**Pg**	**21 37 07.1**	**-0.3**
CAF				*e*Sn	**Sn**	**21 37 27.0**	**+0.3**
CAF				*e*Sg	**Sg**	**21 37 33.9**	**-1.5**
	0.7nm,0.2s						
ETSF	**Etsaut**	**2.29**	**272**	*e*Sg	**Sg**	**21 37 38.9**	**-2.9**
	0.7nm,0.2s						
SMRF	**Simiane la Rot**	**2.47**	**62**	*e*Sn	**Sn**	**21 37 35.6**	**-0.7**
VIVF	**Saint-Julien-l**	**2.52**	**37**	*e*Pn	**Pn**	**21 37 07.8**	**+1.0**
VIVF				*e*Pg	**Pg**	**21 37 14.6**	**-1.3**
VIVF				*e*Sn	**Sn**	**21 37 37.5**	**0.0**
VIVF				*e*Sg	**Sg**	**21 37 47.7**	**-1.7**
	0.3nm,0.2s						
RJF	**Les Rejaudoux**	**2.55**	**343**	*e*Sg	**Sg**	**21 37 48.4**	**-2.3**
	0.9nm,0.3s						
SJPF	**Ste Jean**	**2.78**	**276**	*e*Sg	**Sg**	**21 37 54.3**	**-4.0**
	0.1nm,0.2s						
LMR	**La Mourre**	**2.94**	**79**	*e*Sn	**Sn**	**21 37 46.9**	**-1.3**

*LDG **09** 21:42:37.4±0.0, 42.81N×2.54E, h4km, Md2.2/1, Ml1.6/7, Error ellipse: s-maj=0.8km s-min=0.6km az=134.0*
*NEIC **09** 21:42:37.4, 42.81N×2.54E, h4km, ML1.9(STR), ML1.6(LDG), After LDG.*
*STR **09** 21:42:37.0±0.1, 42.81N×2.53E, h5km±1km, Ml1.9, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
*MDD **09** 21:42:37.7±0.4, 42.82N×2.53E, h10km±1km, mbLg1.0/2, Error ellipse: s-maj=4.8km s-min=3.0km az=58.0, PRXIMO*
ISC 09 21:42:35.9±0.4, 42.86N±0.02×2.51E±0.03, h11km±3km, n15, σ1§16/37, Pyrenees

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
LRDF	**Laroque-de-Fa**	**0.08**	**15**	Pg	**Pg**	**21 42 40.0**	**+1.6**
LRDF				Sg	**Sg**	**21 42 42.2**	**+2.1**
FILF	**Fillols**	**0.30**	**173**	Pg	**Pg**	**21 42 42.3**	**0.0**
FILF				Sg	**Sg**	**21 42 46.2**	**-0.3**
CARF	**Carcanieres**	**0.33**	**244**	Pg	**Pg**	**21 42 43.8**	**+1.0**
CARF				Sg	**Sg**	**21 42 48.5**	**+1.1**
SJAF	**Saint Jean de**	**0.47**	**144**	Pg	**Pg**	**21 42 45.3**	**-0.1**
SJAF				Sg	**Sg**	**21 42 51.2**	**-0.6**
EJON	**La Jonquera**	**0.50**	**146**	Pg	**Pg**	**21 42 46.2**	**+0.1**
	0.3nm,0.1s,SNR=7.9						
EJON				Lg		21 42 52.4	
	0.9nm,0.1s,SNR=7.9						
MTLF	**Montolieu**	**0.53**	**336**	*e*Pg	**Pg**	**21 42 48.6**	**+2.0**
MTLF				*e*Pn	**Pn**	**21 42 50.9**	**+1.8**
MTLF				*e*Sg	**Sg**	**21 42 55.5**	**+1.8**
	1.0nm,0.2s						
MTLF				*e*Sn	**Sn**	**21 43 00.1**	**+2.2**
MTLF	**Montolieu**	**0.53**	**336**	Pg	**Pg**	**21 42 48.6**	**+2.0**
MTLF				Lg		21 42 55.5	
	0.5nm,0.2s						
LASF	**Ste Croix**	**1.56**	**38**	*e*Pn	**Pn**	**21 43 04.5**	**+0.6**
LASF				*e*Pg	**Pg**	**21 43 07.2**	**+0.1**
LASF				*e*Sn	**Sn**	**21 43 24.4**	**+0.2**
LASF				*e*Sg	**Sg**	**21 43 27.6**	**-0.4**
	0.2nm,0.2s						
EPF	**Esparros**	**1.60**	**277**	*e*Pn	**Pn**	**21 43 05.2**	**+0.7**
EPF				*e*Pg	**Pg**	**21 43 07.7**	**-0.3**
EPF				*e*Sn	**Sn**	**21 43 25.0**	**-0.3**
EPF				*e*Sg	**Sg**	**21 43 29.0

STKA **Stephens Creek** 45.97 184 P **P** 22 07 09.8 +2.4
2.1nm,0.5s,mb4.3,baz=355,slow=8.9,SNR=4.3
SONM **Songino Array** 46.31 324 P **P** 22 07 10.6 +0.6
4.1nm,1.0s,mb4.3,baz=139,slow=6.3,SNR=23
GTA **Gaotai** 46.89 311 *eP* **P** 22 07 15.4 +0.8
GTA AP pP 22 07 22.7 +1.2
GTA AMB AMB
comp=Z,3.0nm,1.0s,mb4.2
LSA **Lhasa** 51.87 297 *eP* **P** 22 07 54.7 +1.5
comp=Z,5.1nm,0.7s,mb4.6
GUN **Gumba** 56.40 294 *eP* **P** 22 08 26.4 +0.1
comp=Z,36nm,1.0s,mb5.3
WMQ **Urumqi** 56.83 313 ⇑P **P** 22 08 30.5 +1.3
KKN **Kakani** 56.92 294 *eP* **P** 22 08 29.6 -0.5
comp=Z,18nm,1.1s,mb5.0
DMN **Daman** 57.08 294 *eP* **P** 22 08 30.8 -0.4
comp=Z,22nm,1.1s,mb5.1
GKN **Gorkha** 57.50 294 *eP* **P** 22 08 33.5 -0.7
comp=Z,45nm,1.2s,mb5.4
DANN **Dangsing** 58.27 295 *eP* **P** 22 08 39.7 +0.1
KOLN **Koldanda** 58.41 294 *eP* **P** 22 08 40.0 -0.6
comp=Z,23nm,0.9s,mb5.2
MKAR **Makanchi Array** 61.16 316 P **P** 22 08 59.0 -0.1
comp=Z,7.3nm,0.6s,mb5.0,baz=93,slow=8.9,SNR=77
KURK **Kurchatov** 64.21 320 *eP* **P** 22 09 18.3 -1.1
ILAR **Eielson Array** 67.91 25 P **P** 22 09 38.6 -4.1
comp=Z,1.1nm,0.8s,mb3.9,baz=244,slow=4.8,SNR=8.0
BRVK **Borovoye** 69.60 322 *eP* **P** 22 09 53.0 -0.4
ZRNK **Zerenda** 70.37 321 *eP* **P** 22 09 56.8 -1.3
YKA **Yellowknife Ar** 82.20 27 P **P** 22 11 02.1 -2.3
comp=Z,0.3nm,0.6s,mb3.4,baz=286,slow=5.2,SNR=11
BEKR **Beckwourth** 84.47 50 *eP* **P** 22 11 16.1 -0.4
comp=Z,3.9nm,0.9s,mb4.5
NVAR **Mina Array Bea** 86.38 51 P **P** 22 11 25.9 -0.2
comp=Z,2.1nm,0.6s,mb4.5,baz=268,slow=4.6,SNR=19
FINES **FINESS Array B** 90.66 335 P **P** 22 11 43.0 -2.8
comp=Z,0.6nm,0.7s,mb4.0,baz=27,slow=4.3,SNR=8.7
LPAZ **La Paz** 147.93 98 PKPbc PKPdf 22 18 30.1 +0.3
comp=Z,1.3nm,0.6s,baz=299,slow=3.9,SNR=7.3
LPAZ **La Paz** 147.93 98 *e*PKPdf PKPdf 22 18 26.4 -3.4
LPAZ PKPbc PKPdf 22 18 30.1 +0.3

MOS ***09*** *22:25:25.9±0.8, 6.55S×106.22E, h33km, mb5.9/20, Error ellipse: s-maj=15.5km s-min=7.6km az=111.3*
IDC ***09*** *22:25:28.4±1.3, 7.05S×106.22E, h52km±10km, mb5.0/29, mb1 5.0/29, mb1mx5.0/29, MS4.2/15, Ms1 4.2/15, ms1mx4.1/19, Error ellipse: s-maj=14.2km s-min=7.8km az=45.0*
DJA ***09*** *22:25:29.4±0.8, 7.24S×106.17E, h60km±4km, MD5.0/3, Error ellipse: s-maj=24.8km s-min=7.9km az=43.0*
NEIC ***09*** *22:25:31.1±0.7, 6.94S×106.18E, h78km±5km, mb5.3/42, Error ellipse: s-maj=6.8km s-min=3.5km az=222.0*
NEIC Felt [III] at Bogor.
SYO ***09*** *22:25:31.1, 6.94S×106.18E, h78km, MB5.3*
BJI ***09*** *22:25:31.1, 6.90S×106.20E, h78km, mB5.1, mb5.3, Ms4.8, Msz4.5*
HRVD ***09*** *22:25:31.1±0.3, 7.54S×105.97E, h55km±1km, MW5.1/49, Centroid moment Tensor Solution. LP body waves: s44,c69;Mantle waves: s49,c93; Half duration: 0 Moment tensor: Scale 10^16Nm; Mrr4.59±.22; Mθθ-4.72±.16; Mφφ0.13±.24; Mrθ2.51±.14; Mθφ3.20±.12; Mφr0.99±.19; Best double couple: M=6.22×10^16 NP1:φ321°, δ42°, λ129°. NP2:φ93°, δ59°, λ61°. Principal axes: T 5.83, Pl63°, Azm313°; N .78, Pl25°, Azm110°; P -6.62, Plg10°, Azm204°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
ISC 09 22:25:27.9±0.6, 6.96S±0.04×106.13E±0.03, h62km±5km, h75km±2.8km:pP-P, n468, σ1§04/365, mb5.3/90, 63C-14D, Jawa

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
KALI	**Kaliastana**	**0.54**	**105**	*e*Pn		**P**	**22 25 40.8**	**+0.2**
PULI	**Pulasari**	**0.63**	**346**	*e*Pn		**P**	**22 25 45.8**	**+4.2**
SINI	**Singah**	**1.36**	**92**	*e*Pn		**P**	**22 25 52.0**	**+0.7**
TPI	**Tanjungpandan**	**4.45**	**20**	*e*Pn		**P**	**22 26 38.5**	**+4.0**
KELI	**Kelakatan**	**8.38**	**99**	⇑*i*P		**P**	**22 27 31.5**	**+2.4**
KELI	**Kelakatan**	**8.38**	**99**	⇑*e*Pn		**P**	**22 27 31.5**	**+2.4**
KELI				*i* Sn		**S**	**22 29 04.3**	**+1.1**
INGI	**Ingas**	**9.12**	**102**	⇓*e*P		**P**	**22 27 39.5**	**+0.3**
INGI				*e*S		**S**	**22 29 19.2**	**-2.1**
INGI	**Ingas**	**9.12**	**102**	⇑*i*Pn		**P**	**22 27 39.4**	**+0.2**
INGI				*e*Sn		**S**	**22 29 19.2**	**-2.1**
KGM	**Kluang**	**9.35**	**342**	⇓*e*P		**P**	**22 27 45.5**	**+3.1**
RATI	**Rata**	**9.48**	**101**	⇑*e*P		**P**	**22 27 44.0**	**-0.1**
RATI				*e*S		**S**	**22 29 24.7**	**-5.4**
RATI	**Rata**	**9.48**	**101**	⇑*e*Pn		**S**	**22 27 44.0**	**-0.1**
RATI				*i* Sn		**S**	**22 29 24.8**	**-5.3**
KEDI	**Kedomdong**	**10.01**	**99**	⇑*i*P		**P**	**22 27 50.4**	**-1.1**
KEDI				*e*S		**S**	**22 29 42.5**	**-0.7**
KEDI	**Kedomdong**	**10.01**	**99**	⇓*e*P		**P**	**22 27 50.4**	**-1.1**
KEDI				*i* Sn		**S**	**22 29 44.9**	**+1.7**
COCO	**West Island**	**10.53**	**240**	*e*P		**P**	**22 27 50.4**	**-8.2**
	272nm,0.6s							
IPM	**Ipoh**	**12.55**	**336**	⇓*e*P		**P**	**22 28 26.4**	**+0.7**
KKM	**Kota Kinabalu**	**16.38**	**38**	⇑*e*P		**P**	**22 29 19.2**	**+3.9**
	75nm,0.8s							
NNT	**Nongplab**	**20.44**	**342**	P		**P**	**22 30 05.0**	**+2.2**
FITZ	**Fitzroy Crossi**	**22.00**	**122**	⇓*i*P		**P**	**22 30 18.1**	**-0.3**
	27nm,0.7s,mb4.8							
FITZ				*e*			22 30 36.3	
FITZ				*e*S		**S**	**22 34 14.8**	**+2.6**
FITZ	**Fitzroy Crossi**	**22.00**	**122**	P		**P**	**22 30 18.2**	**-0.2**
	32nm,0.7s,mb4.9,baz=306,slow=3.8,SNR=58							
FITZ				S		**S**	**22 34 13.6**	**+1.3**
	8.0nm,0.8s,baz=10,slow=11,SNR=4.3							
FITZ					LR	LR	22 38 48.3	
	comp=Z,249nm,20.2s,baz=292,slow=37							
ENPP	**El Nido**	**22.38**	**36**	⇑*e*P		**P**	**22 30 25.0**	**+2.8**
CUYO	**Cuyo Island**	**23.08**	**40**	⇑*e*P		**P**	**22 30 33.4**	**+4.2**
NST	**Nakhon Sawan**	**23.26**	**345**	P		**P**	**22 30 32.0**	**+1.1**
	42nm,1.0s,mb4.8							
KKTK	**Khon Kaen**	**23.38**	**352**	P		**P**	**22 30 33.0**	**+1.0**
BUSP	**Coron**	**23.47**	**37**	⇑*e*P		**P**	**22 30 36.6**	**+3.7**
SNPH	**Sibulan**	**23.52**	**47**	*e*P		**P**	**22 30 38.0**	**+4.7**
TBP	**Tagbilaran**	**24.20**	**47**	*e*P		**P**	**22 30 42.7**	**+2.7**
KALP	**Kalibo**	**24.55**	**41**	*e*P		**P**	**22 30 46.6**	**+3.1**
OTRP	**Odiongan**	**24.86**	**40**	⇑*e*P		**P**	**22 30 50.0**	**+3.6**
LUBP	**Lubang**	**24.89**	**34**	⇑*e*P		**P**	**22 30 49.5**	**+2.8**
BUTP	**Butuan**	**25.06**	**51**	⇑*e*P		**P**	**22 30 50.5**	**+2.2**
BDT	**Bhumibol Dam**	**25.06**	**344**	P		**P**	**22 30 47.0**	**-1.3**
MSLP	**Maasin**	**25.23**	**48**	⇑*e*P		**P**	**22 30 52.5**	**+2.6**
TGY	**Tagaytay City**	**25.57**	**35**	P		**P**	**22 30 56.3**	**+3.2**
	82nm,0.4s,mb5.7,baz=218,slow=5.0,SNR=9.0							
QIZ	**Qiongzhong**	**26.09**	**8**	*e*P		**P**	**22 30 58.2**	**+0.4**
QIZ				S		**S**	**22 35 30.6**	**+8.2**
QIZ					LR	LR		
	comp=N,978nm,22.6s							
QIZ					LR	LR		
	comp=E,666nm,19.8s							
QIZ					LR	LR		
	comp=Z,2μm,21.7s							
CM31	**Chiang Mai Arr**	**26.24**	**344**	*e*P		**P**	**22 30 57.8**	**-1.5**
	comp=Z,20nm,0.6s,mb4.8							
CM31					LR	LR		
	comp=Z,1μm,19.0s							
CMAR	**Chiang Mai Arr**	**26.24**	**344**	P		**P**	**22 30 57.9**	**-1.4**
	comp=Z,19nm,0.6s,mb4.8,baz=180,slow=9.2,SNR=64							
CMAR				PcP		PcP	22 34 25.6	+0.5
	comp=Z,8.2nm,0.8s,baz=203,slow=2.9,SNR=12							
CMAR				ScP			22 38 00.8	
	comp=Z,1.6nm,0.8s,baz=182,slow=2.4,SNR=5.2							
CMAR					LR	LR	22 42 57.7	
	comp=Z,818nm,18.1s,baz=170,slow=40							
CHG	**Chiang Mai**	**26.58**	**345**	⇑P		**P**	**22 31 02.1**	**-0.3**
	comp=Z,29nm,0.8s,mb4.9							
CHG	**Chiang Mai**	**26.58**	**345**	P		**P**	**22 31 07.0**	**+4.6**
BESP	**Borongan**	**26.63**	**46**	⇑*e*P		**P**	**22 31 05.7**	**+2.8**
CNP	**Catarman**	**26.71**	**44**	⇑*e*P		**P**	**22 31 00.5**	**-3.2**
NWAO	**Narrogin (SRO)**	**27.82**	**160**	P		**P**	**22 31 10.7**	**-2.9**
	comp=Z,12nm,0.9s,mb4.5,baz=357,slow=12,SNR=4.9							
NWAO	**Narrogin (SRO)**	**27.82**	**160**	P		**P**	**22 31 10.7**	**-2.9**
NWAO					LR	LR		
	comp=Z,1μm,19.0s							
WRA	**Warramunga Arr**	**30.25**	**118**	P		**P**	**22 31 33.9**	**-1.5**
	comp=Z,12nm,0.4s,mb5.0,baz=304,slow=9.2,SNR=70							
WRA				PcP		PcP	22 34 34.6	-0.2
	comp=Z,11nm,0.6s,baz=308,slow=2.0,SNR=11							
WRA				S		**S**	**22 36 28.0**	**-1.3**
	comp=Z,1.9nm,0.8s,baz=270,slow=18,SNR=4.1							
WRA					LR	LR	22 44 46.3	
	comp=Z,355nm,20.3s,baz=295,slow=38							
WRAB	**Tennant Creek**	**30.26**	**118**	*e*P		**P**	**22 31 33.9**	**-1.6**
	comp=Z,37nm,0.6s,mb5.3							
WRAB					LR	LR		
	comp=Z,452nm,22.0s							
WB2	**Warramunga Arr**	**30.26**	**118**	⇑*i*P		**P**	**22 31 34.0**	**-1.5**
WB2				*i*			22 34 34.5	
AS12	**Alice Springs**	**31.41**	**125**	*e*P		**P**	**22 31 43.9**	**-1.7**
	comp=Z,16nm,1.0s,mb4.8							
ASAR	**Alice Springs**	**31.41**	**125**	P		**P**	**22 31 44.0**	**-1.5**
	comp=Z,6.6nm,0.5s,mb4.7,baz=299,slow=8.1,SNR=39							
ASAR				PcP		PcP	22 34 37.5	-0.4
	comp=Z,6.0nm,0.4s,baz=306,slow=2.3,SNR=12							
ASAR				S		**S**	**22 36 43.4**	**-4.2**
	comp=Z,1.2nm,0.8s,baz=305,slow=14,SNR=2.0							
ASAR					LR	LR	22 43 41.1	
	comp=Z,370nm,21.9s,baz=295,slow=35							
ASAR	**Alice Springs**	**31.41**	**125**	P		**P**	**22 31 44.0**	**-1.5**
ASAR				PcP		PcP	22 34 37.5	-0.4
ASAR				S		**S**	**22 36 43.4**	**-4.2**
ASAR					LR	LR	22 43 41.1	
KMI	**Kunming**	**32.06**	**354**	*e*P		**P**	**22 31 52.3**	**+1.1**
KMI				PP		PP	22 33 02.9	+3.7
KMI				S		**S**	**22 37 02.0**	**+4.3**
KMI				AMB		AMB		
	comp=Z,63nm,4.3s							
KMI					LR	LR		
	comp=N,1μm,15.8s							
KMI					LR	LR		
	comp=E,722nm,15.8s							
KMI					LR	LR		
	comp=Z,2μm,18.4s							
GYA	**Guiyang**	**33.23**	**1**	⇑*i*P		**P**	**22 32 01.2**	**-0.1**
GYA				S		**S**	**22 37 16.0**	**+0.3**
GYA				AMB		AMB		
	comp=Z,20nm,1.0s,mb5.0							
GYA				AMB		AMB		
	comp=Z,460nm,5.8s							
GYA					LR	LR		
	comp=N,330nm,17.7s							
GYA					LR	LR		
	comp=E,770nm,18.3s							
GYA					LR	LR		
	comp=Z,560nm,17.7s							
CUD	**Cuddapah**	**34.50**	**308**	⇑*e*P		**P**	**22 32 12.4**	**0.0**
CUD				*e*		pP	22 32 23.4	-4.6
CUD				*e*pP		pP	22 32 31.6	+3.6
CUD				*e*S		**S**	**22 37 43.0**	**+7.4**
KGD	**Kothagudem**	**35.04**	**314**	⇑*e*P		**P**	**22 32 16.9**	**-0.1**
KGD				*e*			22 34 20.7	
KGD				*e*			22 42 52.5	
TATO	**Taipei**	**35.09**	**25**	PFAKE			22 32 30.0	+13
TATO					LR	LR		
	comp=Z,370nm,22.0s							
SHL	**Shillong**	**35.18**	**337**	⇑*i*P		**P**	**22 32 16.5**	**-1.6**
HYB	**Hyderabad**	**36.46**	**312**	⇑*i*P		**P**	**22 32 29.0**	**0.0**
	comp=Z,115nm,1.0s,mb5.8							
HYB				*e*pP		pP	22 32 49.5	+4.8
HYB				*e*S		**S**	**22 38 08.0**	**+2.3**
ENH	**Enshi**	**37.16**	**5**	*e*P		**P**	**22 32 34.1**	**-0.7**
	comp=Z,22nm,0.7s,mb5.1							
CD2	**Chengdu**	**37.73**	**357**	P		**P**	**22 32 39.6**	**+0.1**
WHN	**Wuhan**	**38.12**	**12**	*e*P		**P**	**22 32 44.0**	**+1.3**
LATR	**Latur**	**38.56**	**311**	*e*P		**P**	**22 32 45.0**	**-1.5**
LSA	**Lhasa**	**39.20**	**339**	P		**P**	**22 32 52.0**	**+0.3**
LSA				S		**S**	**22 38 47.3**	**+0.2**
LSA	**Lhasa**	**39.20**	**339**	*e*P		**P**	**22 32 51.1**	**-0.6**
	comp=Z,15nm,0.6s,mb4.9							
KAD	**Karad**	**39.73**	**308**	*e*P		**P**	**22 32 56.5**	**+0.3**
KAD				*e*			22 32 58.4	
	comp=Z,93nm,1.3s							
PKI	**Pulchoki**	**39.76**	**331**	*e*P		**P**	**22 32 55.1**	**-1.3**
	comp=Z,42nm,0.7s,mb5.3							
GUN	**Gumba**	**39.81**	**331**	*e*P		**P**	**22 32 56.1**	**-0.7**
	comp=Z,109nm,0.6s,mb5.8							
JOW	**Kunigami**	**39.87**	**32**	P		**P**	**22 32 59.0**	**+1.8**
	baz=258,slow=7.9							
JOW					LR	LR	22 49 49.9	
	comp=Z,186nm,21.6s,baz=120,slow=37							
DMN	**Daman**	**39.94**	**330**	*e*P		**P**	**22 32 56.9**	**-0.9**
	comp=Z,98nm,0.8s,mb5.6							
KKN	**Kakani**	**40.00**	**331**	*e*P		**P**	**22 32 57.4**	**-1.0**
	comp=Z,70nm,0.6s,mb5.6							
GKN	**Gorkha**	**40.49**	**330**	*e*P		**P**	**22 33 01.5**	**-0.9**
	comp=Z,135nm,0.4s,mb6.0							
NJ2	**Nanjing**	**40.65**	**17**	*e*P		**P**	**22 33 06.6**	**+2.9**
NJ2				S		**S**	**22 39 15.0**	**+6.1**
NJ2				AMB		AMB		
	comp=Z,240nm,6.0s							
NJ2					LR	LR		
	comp=N,930nm,26.0s							
NJ2					LR	LR		
	comp=E,540nm,18.2s							
NJ2					LR	LR		
	comp=Z,830nm,20.4s							
PMG	**Port Moresby**	**40.67**	**96**	P		**P**	**22 33 04.2**	**+0.2**
PMG	**Port Moresby**	**40.67**	**96**	P		**P**	**22 33 04.2**	**+0.2**
	comp=Z,153nm,1.0s,mb5.6,baz=271,slow=6.3,SNR=28							
PMG	**Port Moresby**	**40.67**	**96**	*e*P		**P**	**22 33 03.8**	**-0.2**
PMG				pmax		pmax		
	comp=Z,120nm,0.9s							
PMG	**Port Moresby**	**40.67**	**96**	*e*P		**P**	**22 33 04.7**	**+0.7**
POO	**Poona**	**40.69**	**309**	*e*P		**P**	**22 33 04.7**	**+0.5**
POO				*e*			22 33 06.2	
	comp=Z,74nm,1.0s							
KOLN	**Koldanda**	**40.83**	**329**	*e*P		**P**	**22 33 04.5**	**-0.7**
	comp=Z,101nm,0.5s,mb5.7							
XAN	**Xi'an**	**40.86**	**4**	P		**P**	**22 33 05.3**	**-0.1**
XAN				AMB		AMB		
	comp=Z,24nm,1.0s,mb4.8							
XAN					LR	LR		
	comp=N,525nm,23.8s							
XAN					LR	LR		
	comp=E,664nm,19.3s							
XAN					LR	LR		
	comp=Z,1μm,21.7s							
CTA	**Charters Tower**	**41.01**	**113**	*e*P		**P**	**22 33 07.1**	**+0.3**
	comp=Z,30nm,0.8s,mb5.0							
CTA	**Charters Tower**	**41.01**	**113**	P		**P**	**22 33 07.0**	**+0.2**
	comp=Z,38nm,0.8s,mb5.1,baz=281,slow=11,SNR=26							
CTA				PcP		PcP	22 35 06.5	0.0
	comp=Z,6.6nm,0.6s,baz=263,slow=6.7,SNR=3.0							
CTAO	**Charters Tower**	**41.01**	**113**	*e*P		**P**	**22 33 06.9**	**+0.1**
CTAO				pmax		pmax		
	comp=Z,51nm,1.0s,mb5.1							
CTAO				MLR		MLR		
	comp=Z,510nm,20.0s							
CTAO	**Charters Tower**	**41.01**	**113**	*e*P		**P**	**22 33 06.9**	**+0.1**
	comp=Z,51nm,0.9s,mb5.2							
CTAO					LR	LR		
	comp=Z,515nm,20.0s							
BHPL	**Bhopal**	**41.09**	**318**	*e*P		**P**	**22 33 07.2**	**-0.3**
BHPL				*e*			22 33 08.2	
	comp=Z,148nm,0.7s							
DANN	**Dangsing**	**41.22**	**329**	*e*P		**P**	**22 33 07.7**	**-0.7**
STKA	**Stephens Creek**	**41.31**	**132**	⇑*i*P		**P**	**22 33 08.6**	**-0.5**
	comp=Z,36nm,0.5s,mb5.3							
STKA				*e*			22 35 06.4	
STKA	**Stephens Creek**	**41.31**	**132**	P		**P**	**22 33 08.7**	**-0.4**
	comp=Z,50nm,0.6s,mb5.4,baz=306,slow=7.6,SNR=180							
STKA				PcP		PcP	22 35 06.8	-0.6
	comp=Z,24nm,0.7s,baz=329,slow=3.8,SNR=2.8							
STKA					LR	LR	22 49 57.7	
	comp=Z,448nm,21.2s,baz=289,slow=36							
LZH	**Lanzhou**	**42.88**	**357**	⇑P		**P**	**22 33 22.4**	**+0.4**
LZH				PCP		PcP	22 35 13.0	+0.4
LZH				*e*S		**S**	**22 39 41.0**	**-0.6**
LZH				AMB		AMB		
	comp=Z,60nm,1.0s,mb5.3							
LZH				AMB		AMB		
	comp=Z,210nm,4.8s							
LZH					LR	LR		
	comp=E,990nm,17.4s							
LZH					LR	LR		
	comp=Z,820nm,18.6s							
PTH	**Pithoragarh**	**44.03**	**327**	*e*P		**P**	**22 33 30.0**	**-1.5**
PTH				*e*PCP		PcP	22 35 16.0	-0.6
TIA	**Tai'an**	**44.17**	**13**	*e*P		**P**	**22 33 31.9**	**-0.6**
SONA	**Sohna**	**44.85**	**323**	*e*P		**P**	**22 33 37.4**	**-0.7**
SONA				*e*S		**S**	**22 40 10.0**	**-0.4**
AYAN	**Aya Nagar**	**45.00**	**323**	*e*P		**P**	**22 33 38.2**	**-1.0**
NDI	**New Delhi**	**45.09**	**323**	*e*P		**P**	**22 33 36.5**	**-3.4**
NDI				*e*			22 35 56.0	
NDI				*e*S		**S**	**22 40 12.0**	**-1.8**
KUDL	**Kundal**	**45.14**	**322**	*e*P		**P**	**22 33 39.8**	**-0.6**
AJM	**Ajmer**	**45.14**	**319**	*e*P		**P**	**22 33 40.0**	**-0.4**
KHET	**Khetri**	**45.51**	**321**	*e*P		**P**	**22 33 42.6**	**-0.7**
KHET				*e*S		**S**	**22 40 19.0**	**-0.8**
RTK	**Rohtak**	**45.82**	**323**	*e*P		**P**	**22 33 45.1**	**-0.7**
JNU	**Nakatsue**	**46.29**	**29**	P		**P**	**22 33 49.6**	**+0.3**
	comp=Z,18nm,0.7s,mb5.1,baz=197,slow=9.5,SNR=5.4							
GTA	**Gaotai**	**46.51**	**353**	⇑*i*P		**P**	**22 33 51.6**	**+0.6**
GTA				PCP		PcP	22 35 25.0	0.0
GTA				PP		PP	22 35 42.3	+1.5
GTA				AMB		AMB		
	comp=Z,71nm,0.7s,mb5.7							
GTA				AMB		AMB		
	comp=Z,122nm,4.6s							
GTA				LR		LR		
	comp=N,287nm,20.5s							
GTA				LR		LR		
	comp=E,172nm,16.7s							
GTA				LR		LR		
	comp=Z,392nm,21.3s							
TOO	**Toolangi**	**46.92**	**136**	*e*P		**P**	**22 33 54.8**	**+0.5**
	comp=Z,6.0nm,1.0s,mb4.5							
TOO				*e*			22 35 26.4	
BTO	**Baotou**	**47.47**	**4**	*e*P		**P**	**22 33 58.6**	**0.0**
BTO				AMB		AMB		
	comp=Z,24nm,0.5s,mb5.4							
BJT	**Baijiatuan**	**47.66**	**10**	*e*P		**P**	**22 33 59.6**	**-0.4**
	comp=Z,16nm,0.7s,mb5.2							
BJI	**Beijing**	**47.68**	**10**	*e*P		**P**	**22 34 00.2**	**0.0**
BJI				S		**S**	**22 40 53.8**	**+3.3**
BJI				AMB		AMB		
	comp=Z,29nm,0.7s,mb5.4							
BJI				AMB		AMB		
	comp=Z,199nm,4.3s							
BJI				LR		LR		
	comp=N,293nm,20.5s							
BJI				LR		LR		
	comp=E,431nm,21.8s							
BJI				LR		LR		
	comp=Z,422nm,28.2s							
HHC	**Hu-ho-hao-te**	**47.84**	**6**	⇑P		**P**	**22 34 01.8**	**+0.3**
HHC				PCP		PcP	22 35 29.6	-0.1
HHC				PP		PP	22 35 57.7	+4.6
HHC				S		**S**	**22 40 57.0**	**+4.3**
HHC				AMB		AMB		
	comp=Z,24nm,1.2s,mb5.1							
HHC				AMB		AMB		
	comp=Z,117nm,5.2s							
HHC				LR		LR		
	comp=N,151nm,18.4s							
HHC				LR		LR		
	comp=E,139nm,17.8s							
HHC				LR		LR		
	comp=Z,190nm,20.6s							
DL2	**Dalian**	**47.85**	**16**	P		**P**	**22 34 01.0**	**-0.6**
DL2				*e*S		**S**	**22 40 56.2**	**+3.3**
DL2				AMB		AMB		
	comp=Z,10.0nm,0.7s,mb5.0							
DL2					LR	LR		
	comp=E,170nm,18.6s							
DL2					LR	LR		
	comp=Z,280nm,20.8s							
INCN	**Inchon**	**48.19**	**22**	PFAKE			22 34 20.0	+16
INCN					LR	LR		
	comp=Z,226nm,21.0s							
ARMA	**Armidale**	**48.57**	**125**	*e*P		**P**	**22 34 08.0**	**+0.8**
CBIJ	**Chichi jima**	**48.63**	**44**	P		**P**	**22 34 06.5**	**-1.3**
	comp=Z,37nm,0.5s,mb5.7,baz=121,slow=22,SNR=4.7							
CBIJ					LR	LR	22 53 40.9	
	comp=Z,125nm,20.6s,baz=236,slow=35							
KS15	**Wonju Array Si**	**48.63**	**23**	*e*P		**P**	**22 34 08.1**	**+0.5**
MAJO	**Matsushiro**	**52.70**	**33**	*e*P		**P**	**22 34 36.0**	**-2.5**
MAJO					LR	LR		
	comp=Z,192nm,20.0s							
MAT	**Matsushiro**	**52.70**	**33**	P		**P**	**22 34 36.1**	**-2.4**
MAT				S		S	22 42 28.0	+28
MAT	**Matsushiro**	**52.70**	**33**	*e*P		**P**	**22 34 36.0**	**-2.5**
	comp=Z,27nm,1.3s,mb5.0							
MAT				*e*S		S	22 42 28.0	+28
WMQ	**Urumqi**	**53.23**	**343**	*e*P		**P**	**22 34 42.7**	**+0.3**
WMQ				PP		PP	22 36 44.3	-0.1
WMQ				S		**S**	**22 42 09.7**	**+2.6**
WMQ				SS		SS	22 45 48.7	+2.0
WMQ				AMB		AMB		
	comp=Z,28nm,0.8s,mb5.2							
WMQ				AMB		AMB		
	comp=Z,221nm,5.0s							
WMQ				LR		LR		
	comp=N,985nm,17.5s							
WMQ				LR		LR		
	comp=E,1μm,17.6s							
WMQ				LR		LR		
	comp=Z,2μm,18.5s							
CN2	**Changchun**	**53.47**	**17**	*e*P		**P**	**22 34 43.0**	**-1.2**
CN2				PCP		PcP	22 35 50.4	0.0
CN2				*e*S		**S**	**22 42 11.6**	**+1.3**
CN2				AMB		AMB		
	comp=Z,30nm,1.1s,mb5.1							
CN2				AMB		AMB		
	comp=Z,50nm,3.0s							
CN2				LR		LR		
	comp=N,510nm,20.0s							
CN2				LR		LR		
	comp=E,340nm,20.0s							
CN2				LR		LR		
	comp=Z,410nm,24.0s							
SONM	**Songino Array**	**54.56**	**0**	P		**P**	**22 34 52.0**	**-0.1**
	comp=Z,14nm,0.6s,mb5.2,baz=173,slow=7.8,SNR=119							
SONM				PcP		PcP	22 35 54.2	-0.2
	comp=Z,11nm,0.5s,baz=182,slow=3.8,SNR=16							
SONM				ScP			22 39 47.7	
	comp=Z,1.4nm,0.7s,baz=159,slow=3.2,SNR=4.2							
ULN	**Ulaanbaatar**	**54.60**	**1**	*e*P		**P**	**22 34 51.5**	**-0.8**
	comp=Z,20nm,0.6s,mb5.3							
ULN					LR	LR		
	comp=Z,1μm,22.0s							
MDJ	**Mudanjiang**	**55.52**	**20**	P		**P**	**22 34 58.2**	**-0.9**
MDJ				PCP		PcP	22 35 56.3

TLY e 22 36 08.6
TLY pmax pmax
comp=Z,149nm,1.4s,mb5.8
TLY MLR MLR
comp=Z,5µm,19.0s
MOY Mondy 58.56 356 *e*P **P 22 35 20.2 -0.3**
MOY e 22 36 10.4
KKAR Karatay Array 59.40 330 *i*P **P 22 35 24.6 -1.8**
KKAR pmax pmax
comp=Z,3.0nm,0.5s,mb4.6
KLR Kul'dur 60.27 19 *e*P **P 22 35 30.0 -2.3**
KLR e 22 36 15.2
KLR pmax pmax
comp=E,16nm,0.9s
KLR pmax pmax
comp=Z,24nm,0.9s,mb5.2
ASAJ Asahikawa 60.56 29 P **P 22 35 33.4 -1.0**
comp=Z,23nm,0.9s,mb5.3,baz=237,slow=11,SNR=12
KURK Kurchatov 62.17 341 *e*P **P 22 35 43.3 -1.8**
YSS Yuzh-Sakhalins 62.74 27⇑*i*P **P 22 35 47.0 -2.0**
YSS pmax pmax
comp=Z,90nm,1.2s,mb5.8
YSS Yuzh-Sakhalins 62.74 27 *e*P **P 22 35 47.6 -1.3**
comp=Z,117nm,1.3s,mb5.8
YSS LR LR
comp=Z,225nm,22.0s
HASS Wahat al Ahsa' 63.49 302 P **P 22 35 52.5 -1.8**
NVS Novosibirsk 64.48 346 *e*P **P 22 35 57.3 -2.9**
NVS e 22 36 27.4
NVS e 22 44 35.6
NVS pmax pmax
comp=Z,7.0nm,0.8s,mb4.7
NVS pmax pmax
comp=N,4.0nm,0.7s
BOD Bodaibo 64.88 5 *e*P **P 22 36 01.3 -1.4**
MSZ Milford Sound 65.22 136 P **P 22 36 05.4 +0.2**
KAMS Al Khamasin 66.28 296 P **P 22 36 11.1 -1.2**
VOSK Vostochnaya 66.54 338 P **P 22 36 11.9 -1.5**
VOSK pmax pmax
comp=Z,22nm,0.7s,mb5.3
VOSK Vostochnaya 66.54 338 *i*P **P 22 36 11.0 -2.4**
MZLS Mizel 66.90 300 P **P 22 36 15.5 -0.7**
BVA0 Borovoye Array 67.00 337 *i*P **P 22 36 15.2 -1.1**
BVA0 pmax pmax
comp=Z,5.0nm,0.5s,mb4.8
BVAR Borovoye Array 67.00 337 P **P 22 36 15.1 -1.2**
comp=Z,94nm,0.6s,mb6.0,baz=144,slow=9.0,SNR=717
TATS Tathlith 67.04 295 P **P 22 36 17.1 -0.1**
BRVK Borovoye 67.07 337 *e*P **P 22 36 15.3 -1.4**
MAW Mawson 67.15 197⇓*i*P **P 22 36 14.9 -2.1**
comp=Z,8.4nm,0.6s,mb5.0
MAW Mawson 67.15 197 P **P 22 36 15.1 -1.9**
comp=Z,12nm,0.7s,mb5.0,baz=54,slow=5.1,SNR=30
MAW LR LR 22 59 20.6
comp=Z,217nm,21.1s,baz=64,slow=30
MAW Mawson 67.15 197 *e*P **P 22 36 14.9 -2.1**
MAW pmax pmax
comp=Z,12nm,0.7s
ZRNK Zerenda 67.48 337 P **P 22 36 18.2 -1.1**
ZRNK pmax pmax
comp=Z,39nm,0.7s,mb5.5
ZRNK Zerenda 67.48 337 *e*P **P 22 36 18.1 -1.2**
FRSS Farasan al Kab 67.53 291 P **P 22 36 20.6 +0.4**
AFFS 'Afif 68.78 299 P **P 22 36 28.0 +0.1**
BLJS Baljurashi 68.84 294 P **P 22 36 29.0 +0.7**
KMBO Kilima Mbogo 68.90 271 P **P 22 36 28.4 -0.4**
KMBO Kilima Mbogo 68.90 271 P **P 22 36 28.4 -0.4**
comp=Z,6.7nm,1.0s,mb4.5,baz=48,slow=6.7,SNR=13
KMBO LR LR 23 01 02.5
comp=Z,330nm,21.3s,baz=88,slow=31
KMBO Kilima Mbogo 68.90 271 *e*P **P 22 36 27.9 -0.9**
KMBO LR LR
comp=Z,261nm,20.0s
ARSS Ar Rass 69.19 301 P **P 22 36 30.2 -0.3**
MGZ Maungaku 69.66 129 P **P 22 36 33.7 +0.6**
CNZ Chateau 69.70 129 P **P 22 36 33.4 +0.1**
FWVZ Far West T-bar 69.71 129 P **P 22 36 33.5 +0.2**
NGZ Ngauruhoe 69.73 129 P **P 22 36 33.6 +0.1**
URZ Urewera 70.79 128 LR LR 23 06 03.4
comp=Z,292nm,20.6s,baz=309,slow=34
HILS Ha'il 70.90 302 P **P 22 36 41.4 +0.6**
YAK Yakutsk 71.17 11 *e*P **P 22 36 40.5 -1.3**
YAK e pP 22 37 01.3 +2.5
YAK pmax pmax
comp=Z,5.0nm,0.8s,mb4.5
YAK pmax pmax
comp=N,6.0nm,1.1s
YAK pmax pmax
comp=E,5.0nm,1.1s
YAK pmax pmax
comp=N,7.0nm,0.9s
YAK pmax pmax
comp=Z,20nm,0.9s,mb5.0
YAK pmax pmax
comp=E,4.0nm,0.8s
YAK Yakutsk 71.17 11 *e*P **P 22 36 40.3 -1.5**
comp=E,70nm,0.5s,mb5.8
YAK LR LR
comp=Z,233nm,20.0s
KBRS Khaybar 72.57 300 P **P 22 36 51.4 +0.6**
YNBS Yanbu' al Bahr 73.27 298 P **P 22 36 55.3 +0.4**
SVE Sverdlovsk 73.62 336⇑*i*P **P 22 36 56.5 +0.2**
SVE e pP 22 37 15.0 +1.5
SVE pmax pmax
comp=Z,300nm,1.7s,mb6.0
SVE MLR MLR
comp=Z,400nm,23.0s
SVE MLR MLR
comp=N,100nm,21.0s
SVE MLR MLR
comp=E,100nm,21.0s
ARU Arti 74.22 335⇑*i*P **P 22 36 59.9 +0.1**
ARU *i* 22 37 09.1
ARU *i* 22 39 45.6
ARU *e*S S 22 46 33.6 +6.5
ARU *e*SS SS 22 51 14.1 -1.8
ARU *e*SSS SSS 22 54 31.4 +2.6
ARU pmax pmax
comp=Z,157nm,1.0s,mb5.9
ARU MLR MLR
comp=N,600nm,23.0s
ARU MLR MLR
comp=E,500nm,23.0s
ARU MLR MLR
comp=Z,300nm,23.0s
ARU Arti 74.22 335 *e*P **P 22 36 59.3 -0.5**
comp=Z,131nm,0.9s,mb5.9
ARU LR LR
comp=Z,286nm,22.0s
PET Petropavlovsk 74.40 30⇑*i*P **P 22 37 00.5 -0.5**
PET e 22 37 11.9
PET e 22 39 50.1
PET *e*S S 22 46 59.3 +30
PET pmax pmax
comp=Z,79nm,0.6s,mb5.8
PET smax
comp=E,103nm,39.4s
PET Petropavlovsk 74.40 30 *e*P **P 22 37 00.1 -0.8**
comp=E,40nm,0.6s,mb5.5
PET LR LR
comp=Z,215nm,21.0s
BEST Besiri 74.93 312 *i*P **P 22 37 04.1 -0.2**
ZEI Tsey 74.98 318⇓*e*P **P 22 37 05.5 +1.0**
MA2 Magadan 75.18 22*c i*P **P 22 37 05.1 -0.1**
MA2 pmax pmax
comp=Z,74nm,1.5s,mb5.4
MA2 Magadan 75.18 22 *e*P **P 22 37 03.1 -2.2**
comp=Z,68nm,1.2s,mb5.5
MA2 LR LR
comp=Z,117nm,20.0s
SYO Syowa Base 75.24 200⇑P **P 22 37 09.1 +3.7**
SYO Syowa Base 75.24 200⇓PcP PcP 22 37 16.2 -2.7
SYO Syowa Base 75.24 200⇓pP pP 22 37 28.9 +6.3
SYO Syowa Base 75.24 200⇑*e*P **P 22 37 09.1 +3.7**
SYO ⇓*e*PcP PcP 22 37 16.2 -2.7
SYO ⇓epP pP 22 37 28.9 +6.3
TBKS Tabuk 75.58 301 P **P 22 37 08.8 +0.6**
ERZM Erzurum 75.61 314 *i*P **P 22 37 08.8 +0.7**
QURS Qurayyt al Mil 75.85 305 P **P 22 37 10.4 +0.8**
VNDA Vanda 76.16 169 P **P 22 37 10.2 -0.3**
comp=Z,6.2nm,0.8s,mb4.6,baz=305,slow=6.9,SNR=37
VNDA Vanda 76.16 169 *e*P **P 22 37 09.2 -1.3**
comp=Z,4.0nm,0.9s,mb4.3
VNDA LR LR
comp=Z,163nm,21.0s

KIV Kislovodsk 76.28 318 *e*P **P 22 37 11.5 -0.4**
KIV pmax pmax
comp=Z,40nm,0.8s,mb5.4
KIV Kislovodsk 76.28 318 *e*P **P 22 37 11.5 -0.3**
comp=Z,40nm,0.8s,mb5.4
KIV LR LR
comp=Z,138nm,19.0s
JMQS Jabal Moqyreh 76.33 302 P **P 22 37 13.1 +0.6**
ASF Jabal al Asfar 76.43 305 P **P 22 37 15.5 +2.6**
comp=Z,67nm,0.8s,mb5.6,baz=342,slow=4.0,SNR=119
GOF Gofitskoye 76.50 319⇓*i*P **P 22 37 13.0 -0.1**
GOF pmax pmax
comp=Z,80nm,1.4s,mb5.5
AYUS 'Aynunah 76.66 301 P **P 22 37 14.6 +0.3**
ELZG Elazig 76.83 312 *i*P **P 22 37 15.2 +0.1**
BDAS Al Bad' 76.87 301 P **P 22 37 15.6 +0.1**
JMOS Jabal al Moall 77.06 302 P **P 22 37 16.7 +0.2**
TAYS Tayyib Ism 77.09 301 P **P 22 37 16.8 0.0**
HAQS Haql 77.18 302 P **P 22 37 17.5 +0.3**
MKRJ Makawir 77.27 304 P **P 22 37 18.4 +0.7**
EIL Elat 77.33 302 P **P 22 37 18.4 +0.4**
EIL Elat 77.33 302⇑P **P 22 37 18.4 +0.4**
ZFRI Zfri 77.38 303 P **P 22 37 18.9 +0.6**
ZFRI Zfri 77.38 303⇑P **P 22 37 18.9 +0.6**
MBH Mount Berech 77.39 303 P **P 22 37 19.0 +0.6**
MBH Mount Berech 77.39 303⇑P **P 22 37 19.0 +0.6**
MZDA Masada 77.43 304 P **P 22 37 19.1 +0.5**
PRNI Paran 77.47 303 P **P 22 37 19.5 +0.7**
PRNI Paran 77.47 303⇑P **P 22 37 19.5 +0.7**
DRGI Dragot 77.49 304 P **P 22 37 19.5 +0.6**
DRGI Dragot 77.49 304⇑P **P 22 37 19.5 +0.6**
GZT Gaziantep 77.51 311 *i*P **P 22 37 19.0 +0.1**
KSHT Keshet 77.54 306 P **P 22 37 20.3 +1.1**
KSHT Keshet 77.54 306⇑P **P 22 37 20.3 +1.1**
HMDT Nahal Hemdat 77.56 305 P **P 22 37 20.0 +0.7**
HMDT Nahal Hemdat 77.56 305⇑P **P 22 37 20.0 +0.7**
KMTI Karmit 77.63 303 P **P 22 37 20.0 +0.3**
HRI Mount Hermon 77.68 306 P **P 22 37 21.0 +1.1**
SVTA Shivta 77.94 304 P **P 22 37 21.9 +0.5**
SLTI Sal'it 77.95 305 P **P 22 37 22.2 +0.8**
SEY Seymchan 78.06 20 *e*P **P 22 37 21.9 +0.6**
SEY 22 37 31.9
SEY 22 40 13.3
SEY *e*S S 22 47 13.7 +4.8
SEY 22 47 35.4
SEY PS PS 22 48 09.8 +11
SEY SS SS 22 52 17.4 +3.2
SEY pmax pmax
comp=N,30nm,1.5s
SEY pmax pmax
comp=E,40nm,1.5s
SEY pmax pmax
comp=Z,140nm,1.5s,mb5.7
SEY MLR MLR
comp=Z,910nm,21.0s
SEY MLR MLR
comp=N,340nm,22.0s
SEY MLR MLR
comp=E,530nm,22.0s
HNTI Hanita 78.08 306 P **P 22 37 23.2 +1.1**
SOC Sochi 78.12 317 *i*P **P 22 37 21.1 -1.0**
SOC *e*PPP PPP 22 42 07.1 -3.4
SOC *e*S S 22 47 09.4 -0.6
SOC *e* 22 47 35.3
SOC pmax pmax
comp=Z,46nm,0.6s,mb5.6
SOC pmax pmax
comp=N,21nm,0.7s
SOC pmax pmax
comp=E,32nm,0.6s
HAF Haifa 78.12 305 P **P 22 37 23.0 +0.7**
KZIT Kziot 78.12 303 P **P 22 37 22.8 +0.4**
KZIT Kziot 78.12 303⇑P **P 22 37 22.8 +0.4**
COBT Iskenderun 78.24 309 *i*P **P 22 37 23.1 +0.2**
LBTB Lobatse 78.53 246 *e*P **P 22 37 23.3 -1.4**
comp=E,9.7nm,1.0s,mb4.7
LBTB LR LR
comp=Z,200nm,21.0s
TIXI Tiksi 79.88 7 *e*P **P 22 37 29.9 -1.2**
TIXI *e*S S 22 47 23.2 -4.9
TIXI pmax pmax
comp=Z,303nm,0.8s,mb6.3
TIXI MLR MLR
comp=Z,2µm,18.0s
TIXI Tiksi 79.88 7⇑*e*P **P 22 37 29.9 -1.2**
comp=Z,56nm,0.8s,mb5.5
TIXI LR LR
comp=Z,217nm,19.0s
AVNT Avonos 79.98 311 *i*P **P 22 37 32.2 -0.1**
CSS Prodhromos 80.07 307 *e*P **P 22 37 32.5 -0.4**
ANN Anapa 80.08 318 *e*P **P 22 37 32.3 -0.5**
ANN *e* 22 37 37.3
ANN *e**PP pP 22 37 43.4 -6.7
ANN *e* 22 40 36.3
ANN *e*PPP PPP 22 42 21.2 -6.9
ANN *e*S S 22 47 32.3 +1.5
ANN pmax pmax
comp=Z,10.0nm,1.4s,mb4.5
CTKT Corum 80.58 313 *i*P **P 22 37 35.8 +0.3**
BOYT Boyabat 80.74 314 *i*P **P 22 37 36.4 +0.1**
BRTR Keskin Array B 81.16 312 P **P 22 37 38.4 -0.2**
comp=Z,39nm,0.8s,mb5.4,baz=135,slow=7.0,SNR=291
BRTR PP PP 22 40 48.5 +2.1
comp=Z,2.3nm,0.8s,baz=102,slow=9.4,SNR=4.6
BRTR PKKPbc 22 56 14.8
comp=Z,0.5nm,0.8s,baz=108,slow=3.9,SNR=3.8
BRTR LR LR 23 15 05.2
comp=Z,152nm,21.1s,baz=175,slow=37
VOR Voronezh 81.51 325 *e*P **P 22 37 40.0 -0.1**
VOR *e**SP sP 22 37 52.0 -12
VOR pmax pmax
comp=Z,250nm,0.7s,mb6.2
VOR pmax pmax
comp=N,40nm,0.9s
VOR pmax pmax
comp=E,80nm,1.1s
ELDT Eldivan 81.53 313 *i*P **P 22 37 40.4 -0.1**
BALT Daday 81.86 314 *i*P **P 22 37 42.5 +0.3**
FX1 Attu Island--F 82.01 34 P **P 22 37 41.7 -1.0**
SIM Simferopol' 82.36 317*c i*P **P 22 37 45.1 +0.4**
SIM *e* 22 37 55.0
SIM *e* 22 40 53.0
SIM pmax pmax
comp=Z,30nm,1.1s,mb5.1
SIM MLR MLR
comp=Z,140nm,23.1s
SUR Sutherland 82.37 238 PFAKE 22 38 00.0 +15
SUR LR LR
comp=Z,839nm,20.0s
ISP Isparta 83.02 309⇑*i*P **P 22 37 47.8 -0.4**
QSPA South Pole Qui 83.03 180 *e*P **P 22 37 46.7 -0.7**
comp=Z,17nm,1.0s,mb5.0
HENT Hendek 83.48 312 *i*P **P 22 37 49.8 -0.6**
MOS Moscow 83.89 328 *i*P **P 22 37 52.6 +0.4**
MOS *e* 22 41 04.2
MOS *e*S S 22 48 11.4 +2.1
MOS pmax pmax
comp=Z,150nm,0.7s,mb6.2
OBN Obninsk 84.23 327*c i*P **P 22 37 54.5 +0.6**
OBN *e*SS SS 22 53 43.9 -1.9
OBN pmax pmax
comp=Z,81nm,0.7s,mb6.0
OBN Obninsk 84.23 327 *e*P **P 22 37 53.5 -0.3**
comp=Z,77nm,0.7s,mb5.9
OBN LR LR
comp=Z,255nm,22.0s
ARG Arkhangelos 84.49 307 *e*P **P 22 37 56.5 +0.8**
ULDT Uludag 84.61 311 *i*P **P 22 37 55.7 -0.5**
MANT Manisa 84.66 310 *i*P **P 22 37 57.3 +0.8**
KAP Karpathos 85.10 307 *e*P **P 22 38 00.0 +1.3**
BILL Bilibino 85.74 19 *e*P **P 22 38 00.4 -0.7**
BILL pmax pmax
comp=Z,18nm,1.0s,mb5.3
BILL Bilibino 85.74 19 *e*P **P 22 38 00.4 -0.7**
comp=Z,18nm,1.0s,mb5.2
SMG Samos 85.82 309 *e*P **P 22 38 03.3 +1.1**
NPS Neapolis 86.30 306 *e*P **P 22 38 05.9 +1.3**
KIS Kishinev 86.48 318*α i*P **P 22 38 05.0 -0.2**
KIS pmax pmax
comp=Z,200nm,1.2s,mb6.2
KIS pmax pmax
comp=Z,200nm,1.0s,mb6.3
CFR Carcaliu 86.51 316⇑P **P 22 38 06.4 +1.0**
CFR Carcaliu 86.51 316⇑P **P 22 38 06.4 +1.0**

HARR Harsova 86.54 316⇑*i*P **P 22 38 06.6 +1.1**
HARR Harsova 86.54 316⇑*i*P **P 22 38 06.6 +1.0**
PRK Paraskevi 86.57 310 *e*P **P 22 38 06.6 +0.8**
IDI Anoyia 86.88 306 P **P 22 38 08.5 +1.1**
comp=Z,35nm,0.6s,mb5.8,baz=79,slow=6.9,SNR=41
ALN Alexandroupoli 87.08 312 *e*P **P 22 38 08.7 +0.4**
AKASG Malin Array Be 87.13 322 P **P 22 38 08.1 -0.2**
comp=Z,17nm,0.7s,mb5.4,baz=90,slow=4.7,SNR=101
AKASG PP PP 22 41 31.4 -3.4
comp=Z,3.3nm,0.6s,baz=92,slow=6.6,SNR=5.0
VAM Vamos 87.46 306 *e*P **P 22 38 11.5 +1.2**
RDO Rodhopi 87.50 312 *e*P **P 22 38 10.7 +0.4**
ISR Istrita 87.59 316⇑*i*P **P 22 38 12.6 +1.9**
ISR Istrita 87.59 316⇑*i*P **P 22 38 12.6 +2.0**
VRI Vrincioaia 87.63 317⇑*i*P **P 22 38 12.3 +1.5**
VRI Vrincioaia 87.63 317⇑*i*P **P 22 38 12.3 +1.5**
BUC1 Bucharest 87.79 315 ⇑P **P 22 38 13.3 +1.7**
BUC1 Bucharest 87.79 315 ⇑P **P 22 38 13.3 +1.7**
MLR Muntele Rosu 88.08 316 P **P 22 38 14.1 +1.1**
baz=45,slow=4.3
MLR Muntele Rosu 88.08 316⇑*i*P **P 22 38 14.4 +1.4**
MLR Muntele Rosu 88.08 316 ⇑P **P 22 38 14.4 +1.4**
OUR Ouranopolis 88.51 311 *e*P **P 22 38 15.7 +0.5**
PAIG Paliouri 88.67 310 *e*P **P 22 38 16.2 +0.3**
MNK Minsk 88.88 325 *e*P **P 22 38 16.0 +0.5**
PLG Polygyros 88.92 311 *e*P **P 22 38 17.3 +0.2**
XOR Xorichti 88.94 310 *e*P **P 22 38 17.1 -0.1**
SRS Serrai 88.94 311 *e*P **P 22 38 17.3 +0.1**
LKR Lokris 88.97 309 *e*P **P 22 38 16.8 -0.5**
SOH Sokhos 89.07 311 *e*P **P 22 38 18.0 +0.3**
SNAA Sanae 89.30 197⇓*i*P **P 22 38 20.3 +2.1**
JOF Joensuu 89.32 334 *e*p **P 22 38 18.2 -0.2**
comp=Z,44nm,0.7s,mb5.9
JOF Joensuu 89.32 334 *e*P **P 22 38 18.2 -0.2**
JOF pmax pmax
comp=Z,45nm,0.7s,mb5.9
THE Thessaloniki 89.33 311 *e*P **P 22 38 18.6 -0.4**
KNT Kendrikon 89.46 311 *e*P **P 22 38 19.4 -0.2**
AGG Agios Georgios 89.54 309 *e*P **P 22 38 19.8 -0.3**
LIT Litohoron 89.59 310 *e*P **P 22 38 20.4 +0.2**
VAY Valandovo 89.73 312⇑*i*P **P 22 38 21.0 +0.1**
GRG Griva 89.80 311 *e*P **P 22 38 21.1 -0.1**
APA Apatity 89.89 339⇓*i*P **P 22 38 16.5 -4.5**
APA pmax pmax
comp=Z,140nm,1.7s,mb6.0
APA MLR MLR
comp=Z,500nm,18.0s
EVR Evrytania 89.93 309 *e*P **P 22 38 22.8 +0.9**
RLS Riolos of Patr 90.06 308 *e*P **P 22 38 23.9 +1.4**
MEV Metsovon 90.50 310 *e*P **P 22 38 25.2 +0.6**
FNA Florina 90.54 311 *e*P **P 22 38 24.1 -0.6**
BOLS Boljevac 90.58 314⇑*i*P **P 22 38 25.2 +0.4**
SKG Skopje 90.67 312 *i*P **P 22 38 24.5 -0.8**
LKD Levkas 90.79 309 *e*P **P 22 38 26.6 +0.7**
VNA2 Neumayer--Watz 90.95 198 P **P 22 38 16.8 -9.1**
IGT Igoumenitsa 91.15 310 *e*P **P 22 38 28.1 +0.5**
FINES FINESS Array B 91.33 332 P **P 22 38 28.1 +0.3**
comp=Z,14nm,0.7s,mb5.4,baz=114,slow=3.9,SNR=46
FINES PKKPbc 22 55 53.5
comp=Z,1.8nm,0.9s,baz=225,slow=2.7,SNR=3.4
FINES LR LR 23 23 48.3
comp=Z,144nm,21.0s,baz=336,slow=38
FINES FINESS Array B 91.33 332 *i*P **P 22 38 28.2 +0.3**
FINES pmax pmax
comp=Z,14nm,0.7s
KAF Kangasniemi 91.37 332 *e*p **P 22 38 28.0 0.0**
comp=Z,22nm,0.8s,mb5.5,baz=93,slow=4.3
KAF Kangasniemi 91.37 332 *e*P **P 22 38 28.0 0.0**
KAF pmax pmax
comp=Z,22nm,0.8s,mb5.5
SUW Suwalki 91.45 324 *e*P **P 22 38 28.6 0.0**
CRVS Cervenica-Dubn 91.70 319 *i*P **P 22 38 30.5 +0.6**
NIE Niedzica 92.52 319 *e*P **P 22 38 34.3 +0.7**
NIE *e* 22 42 15.0
KEV Kevo 92.73 340 *e*p **P 22 38 33.6 -0.5**
OJC Ojcow 92.95 320 *e*P **P 22 38 35.8 +0.2**
ARCES ARCESS Array B 93.20 340 P **P 22 38 36.2 -0.1**
comp=Z,10nm,0.8s,mb5.3,baz=100,slow=6.6,SNR=34
ARCES LR LR 23 26 56.3
comp=Z,215nm,21.5s,baz=104,slow=40
ARCES ARCESS Array B 93.20 340 P **P 22 38 36.2 -0.1**
ARCES LR LR 23 26 56.3
ARE0 ARCESS Array S 93.20 340 *e*P **P 22 38 35.5 -0.8**
VYHS Vyhne 93.37 318 *e*P **P 22 38 37.6 +0.1**
VYHS *e*pP pP 22 38 57.6 +2.3
VYHS *e* 22 42 21.8
SRO Srobarova 93.64 318 *e*P **P 22 38 39.9 +1.1**
OKC Ostrava-Krasne 93.97 320 *e*P **P 22 38 41.1 +0.9**
OKC *e*PP PP 22 42 26.3 -3.2
MORC Moravsky Berou 94.35 319 *e*P **P 22 38 41.5 -0.4**
comp=Z,4.6nm,0.8s,mb5.0
ZST Bratislava 94.49 318 *e*P **P 22 38 42.8 +0.2**
SISC Sisak 94.74 315 *i*P **P 22 38 45.7 +1.9**
DPC Dobruska-Polom 95.18 320 *e*P **P 22 38 44.9 -0.8**
DPC *e*PP PP 22 42 35.6 -2.7
KSP Ksiaz 95.24 320 *e*P **P 22 38 46.7 +0.7**
GOLS Golise 95.31 316 *e*P **P 22 38 47.2 +0.8**
UPC Upice 95.39 320 *e*PP PP 22 42 37.3 -2.7
GROS Grobnik 95.43 316 *e*P **P 22 38 47.5 +0.6**
LJU Ljubljana 96.07 316 *e*P **P 22 38 50.7 +0.9**
PRU Pruhonice 96.30 320 *e*P **P 22 38 51.1 +0.3**
PRU *e*PP PP 22 42 44.7 -2.5
BRG Berggiesshubel 96.73 320 *e*P **P 22 38 53.6 +0.9**
BRG *e* 22 42 45.3
BRG pmax pmax
comp=Z,15nm,1.4s,mb5.2
BRG Berggiesshubel 96.73 320 *e*P **P 22 38 53.6 +0.9**
comp=Z,15nm,1.4s,mb5.2
BRG *e*PP PP 22 42 45.3 -5.3
GERES GERESS Array B 96.79 318 P **P 22 38 53.1 0.0**
comp=Z,1.1nm,0.6s,mb4.5,baz=90,slow=4.0,SNR=11
KHC Kasperske Hory 96.88 319 *e*P **P 22 38 59.5 +6.0**
KHC PP PP 22 42 44.6 -7.3
HFS Hagfors 97.20 330 P **P 22 38 54.8 +0.1**
comp=Z,6.2nm,0.7s,mb5.2,baz=135,slow=4.2,SNR=13
HFS PP PP 22 42 47.8 -6.4
comp=Z,3.8nm,0.6s,baz=68,slow=8.0,SNR=3.7
HFS Hagfors 97.20 330 P **P 22 38 54.8 +0.1**
HFS PP PP 22 42 47.8 -6.4
CLL Collm 97.34 321 P **P 22 38 56.0 +0.5**
CLL *e*PP PP 22 42 51.0 -4.5
CLL Collm 97.34 321 *e*P **P 22 38 56.0 +0.5**
KBS Kingsbay 97.60 349 PFAKE 22 39 10.0 +14
KBS LR LR
comp=Z,367nm,19.0s
NB2 NORSAR Subarra 98.43 331 P **P 22 39 00.0 -0.2**
comp=Z,4.3nm,0.8s,mb5.0,baz=86,slow=4.5
NB2 NORSAR Subarra 98.43 331 P **P 22 39 00.0 -0.2**
baz=86,slow=4.6
NOA NORSAR Array B 98.43 331 P **P 22 39 02.1 +1.9**
comp=Z,5.2nm,1.0s,mb5.0,baz=85,slow=4.4,SNR=5.8
NOA LR LR 23 28 05.3
comp=Z,112nm,21.3s,baz=135,slow=38
GRA1 Grafenberg Arr 98.44 319 *e*Pdif **P 22 39 01.1 +0.6**
GRA1 *e*PP PP 22 43 01.4 -2.5
GRA1 LR LR
comp=Z,100nm,21.2s
GRF Grafenberg Arr 98.44 319 *e*P **P 22 39 01.1 +0.6**
GRF *e* 22 43 01.4
GRF MLR MLR
comp=Z,100nm,21.2s
KONO Kongsberg 99.27 329 PFAKE 22 39 20.0 +16
KONO LR LR
comp=Z,155nm,19.0s
DAVOX Davos 99.31 316 P **P 22 39 05.4 +0.9**
comp=Z,3.4nm,0.9s,mb4.9,baz=353,slow=22,SNR=3.7
SVW Sparrevohn 100.05 29 *e*P P 22 39 08.6 +1.0
IMA Indian Mountai 100.46 24 *e*P P 22 39 10.1 +0.8
IMA pmax pmax
comp=Z,37nm,1.1s
IMA Indian Mountai 100.46 24 *e*P P 22 39 10.5 +1.2
SBF Sospel 101.05 313 *e*P P 22 39 11.9 -0.6
comp=Z,23nm,0.8s
LPG La Plagne 101.50 315 *e*P P 22 39 14.1 -0.4
comp=Z,11nm,0.9s
LPL La Plagne 101.52 315 *e*P P 22 39 14.4 -0.1
KDAK Kodiak Island 101.88 32 PFAKE 22 39 30.0 +14
KDAK LR LR
comp=Z,244nm,20.0s
PWA Palmer West 102.73 28 *e*P Pdif 22 39 19.8 +0.3
PMS Palmer South 102.95 29 *e*P Pdif 22 39 20.6 +0.1
BAIF Baives 102.96 320 *e*P Pdif 22 39 20.5 -0.3
comp=Z,20nm,1.4s

PMR	**Palmer**	**103.09**	**28**	PFAKE			22 39 30.0	+8.9
PMR				LR	LR			
	comp=Z,232nm,19.0s							
LOR	**Lormes**	**103.41**	**317**	*e*P		Pdif	22 39 22.7	-0.2
	comp=Z,8.0nm,1.0s							
SMF	**Signal de Mont**	**103.47**	**316**	*e*P		Pdif	22 39 22.9	-0.2
ILAR	**Eielson Array**	**103.48**	**25**	PP		PP	22 43 37.8	-4.0
	comp=Z,0.5nm,0.7s,baz=302,slow=8.5,SNR=4.5							
ILAR				PKKPbc			22 55 16.1	
	comp=Z,1.5nm,1.0s,baz=120,slow=1.5,SNR=10							
SSF	**Saint Saulge**	**103.66**	**317**	*e*P		Pdif	22 39 24.0	0.0
AVF	**Avril sur Loir**	**103.79**	**316**	*e*P		Pdif	22 39 24.6	0.0
	comp=Z,11nm,1.2s							
BGF	**Bois d'Agland**	**104.16**	**316**	*e*P		Pdif	22 39 27.4	+1.2
TCF	**Toulx Ste Croi**	**104.62**	**316**	*e*P		Pdif	22 39 28.0	-0.2
	comp=Z,16nm,1.4s							
EPF	**Esparros**	**106.26**	**313**	*e*P		Pdif	22 39 35.1	-0.4
ESK	**Eskdalemuir**	**106.66**	**326**	PFAKE			22 44 00.0	
ESK				LR	LR			
	comp=Z,214nm,19.0s							
ESDC	**Sonseca Array**	**109.86**	**310**	PKKPbc			22 54 58.6	
	comp=Z,0.4nm,0.5s,baz=281,slow=3.9,SNR=4.1							
ESDC				PKKPab			22 55 08.9	
	comp=Z,0.7nm,0.8s,baz=255,slow=2.5,SNR=4.4							
DBIC	**Dimbokro**	**111.53**	**274**	PFAKE			22 44 10.0	+14
DBIC				LR	LR			
	comp=Z,222nm,19.0s							
YKA	**Yellowknife Ar**	**117.12**	**20**	PKP		PKPdf	22 44 06.4	+0.7
	comp=Z,1.3nm,0.6s,baz=353,slow=2.1,SNR=52							
YKA				PKKPbc			22 54 27.9	
	comp=Z,0.3nm,0.6s,baz=126,slow=3.9,SNR=11							
YKA				PKKPab			22 54 47.1	
	comp=Z,0.8nm,0.7s,baz=122,slow=3.9,SNR=7.1							
YKA	**Yellowknife Ar**	**117.12**	**20**	PKP		PKPdf	22 44 06.5	+0.7
YKA				PKKPbc			22 54 27.9	
YKA				PKKPab			22 54 47.1	
GNW	**Green Mountain**	**122.01**	**37**	*e*P		PKPdf	22 44 17.6	+2.0
HUMO	**Hull Mountain**	**124.14**	**42**	*e*P		PKPdf	22 44 21.8	+1.9
YBH	**Yreka Blue Hor**	**124.67**	**43**	PFAKE			22 44 30.0	+9.0
YBH				LR	LR			
	comp=Z,101nm,19.0s							
WDC	**Whiskeytown Da**	**125.27**	**44**	PFAKE			22 44 30.0	+7.9
WDC				LR	LR			
	comp=Z,216nm,19.0s							
LNOR	**Lincton Mounta**	**125.56**	**37**	PKIKP		PKPdf	22 44 25.0	+2.5
LNOR	**Lincton Mounta**	**125.56**	**37**	*e*PKP		PKPdf	22 44 23.7	+1.2
FCC	**Fort Churchill**	**126.04**	**13**	*e*PKIKP		PKPdf	22 44 23.5	+0.4
MOD	**Modoc**	**126.22**	**42**	*e*PKP		PKPdf	22 44 25.3	+1.4
WVOR	**Wild Horse Val**	**127.07**	**41**	PKIKP		PKPdf	22 44 28.3	+2.8
WVOR	**Wild Horse Val**	**127.07**	**41**	*e*PKP		PKPdf	22 44 27.5	+1.9
SAO	**San Andreas Ge**	**127.56**	**48**	PFAKE			22 44 40.0	+13
SAO				LR	LR			
	comp=Z,419nm,20.0s							
CHMT	**Chamberlain Mo**	**127.86**	**33**	*e*PKP		PKPdf	22 44 28.2	+1.3
BMN	**Battle Mountai**	**128.96**	**42**	PFAKE			22 44 40.0	+11
BMN				LR	LR			
	comp=Z,233nm,20.0s							
HLID	**Hailey**	**129.13**	**38**	PFAKE			22 44 40.0	+11
HLID				LR	LR			
	comp=Z,316nm,19.0s							
NVAR	**Mina Array Bea**	**129.15**	**45**	PKP		PKPdf	22 44 32.9	+3.2
	comp=Z,5.3nm,1.0s,baz=289,slow=1.3,SNR=12							
NVAR				SKPbc			22 47 49.6	
	comp=Z,1.3nm,0.8s,baz=255,slow=5.3,SNR=5.0							
MCMT	**McKenzie Canyo**	**129.33**	**35**	*e*PKP		PKPdf	22 44 32.4	+2.6
BOZ	**Bozeman (W)**	**129.52**	**34**	*e*PKIKP		PKPdf	22 44 33.0	+2.8
BOZ	**Bozeman (W)**	**129.52**	**34**	*e*PKP		PKPdf	22 44 31.8	+1.6
BOZ				LR	LR			
	comp=Z,343nm,21.0s							
TPH	**Tonopah**	**130.07**	**45**	PFAKE			22 44 40.0	+8.6
TPH				LR	LR			
	comp=Z,187nm,19.0s							
DAC	**Darwin (Calif)**	**130.59**	**47**	PFAKE			22 44 50.0	+18
DAC				LR	LR			
	comp=Z,196nm,20.0s							
HVU	**Hansel Valley**	**131.13**	**39**	PKIKP		PKPdf	22 44 37.1	+3.8
HVU	**Hansel Valley**	**131.13**	**39**	*e*PKP		PKPdf	22 44 34.4	+1.1
BGU	**Big Grassy Mou**	**131.44**	**40**	*e*PKP		PKPdf	22 44 35.2	+1.2
SCHQ	**Scheffer ville**	**131.93**	**355**	PKP		PKPdf	22 44 36.5	+2.0
	comp=Z,6.0nm,0.6s,baz=14,slow=4.6,SNR=13							
SCHQ				SKPbc			22 47 58.1	
	comp=Z,5.8nm,0.7s,baz=347,slow=3.0,SNR=5.7							
HWUT	**Hardware Ranch**	**131.97**	**38**	*e*PKP		PKPdf	22 44 35.3	+0.4
HWUT				LR	LR			
	comp=Z,282nm,20.0s							
PDAR	**Pinedale Array**	**132.47**	**36**	PKP		PKPdf	22 44 38.5	+2.6
	comp=Z,1.8nm,0.5s,baz=5.5,slow=0.3,SNR=14							
PDAR				SKPbc			22 48 00.1	
	comp=Z,1.8nm,0.9s,baz=270,slow=1.5,SNR=6.1							
PDAR				SKP			22 48 07.8	
	comp=Z,2.9nm,0.9s,baz=315,slow=2.1,SNR=7.2							
NEN	**Nelson**	**132.87**	**47**	*e*PKP		PKPdf	22 44 39.4	+2.6
ULM	**Lac du Bonnet**	**133.10**	**19**	PKP		PKPdf	22 44 38.4	+1.5
	comp=Z,6.7nm,0.7s,baz=334,slow=3.8,SNR=7.4							
ULM				SKPbc			22 48 01.2	
	comp=Z,8.7nm,0.9s,baz=346,slow=8.3,SNR=6.4							
ULM	**Lac du Bonnet**	**133.10**	**19**	PKP		PKPdf	22 44 38.4	+1.5
ULM				SKPbc			22 48 01.2	
MVU	**Marysvale**	**133.28**	**42**	PFAKE			22 44 50.0	+12
MVU				LR	LR			
	comp=Z,262nm,19.0s							
MSU	**Marysvale**	**133.30**	**42**	PKIKP		PKPdf	22 44 39.4	+1.9
MSU	**Marysvale**	**133.30**	**42**	*e*PKP		PKPdf	22 44 38.8	+1.3
RSSD	**Black Hills**	**134.56**	**31**	*e*PKP		PKPdf	22 44 40.7	+1.0
WUAZ	**Wupatki**	**135.41**	**45**	*e*PKP		PKPdf	22 44 43.2	+1.7
PV10	**Paradox Valley**	**135.42**	**40**	*e*PKP		PKPdf	22 44 43.8	+2.4
SDCO	**Great Sand Dun**	**138.03**	**38**	PFAKE			22 45 00.0	+14
SDCO				LR	LR			
	comp=Z,476nm,20.0s							
ANMO	**Albuquerque**	**139.09**	**43**	PFAKE			22 45 00.0	+12
ANMO				LR	LR			
	comp=Z,139nm,22.0s							
CBKS	**Cedar Bluff**	**140.63**	**33**	PFAKE			22 45 00.0	+9.0
CBKS				LR	LR			
	comp=Z,214nm,20.0s							
MNTX	**Cornudas Mount**	**141.66**	**46**	*e*PKP		PKPdf	22 44 50.0	-3.0
NCB	**Newcomb**	**143.14**	**0**	*e*PKP		PKPdf	22 44 52.9	-2.2
CPUP	**Villa Florida**	**143.22**	**205**	PKhKP			22 44 53.9	
	comp=Z,6.8nm,0.7s,baz=127,slow=1.7,SNR=37							
CPUP	**Villa Florida**	**143.22**	**205**	*e*PKP		PKPdf	22 44 53.7	-2.1
ACCN	**Adirondack Com**	**143.73**	**360**	*e*PKP		PKPdf	22 44 54.5	-1.6
WMOK	**Wichita Mounta**	**144.08**	**36**	PKIKP		PKPdf	22 44 56.7	-0.3
WMOK	**Wichita Mounta**	**144.08**	**36**	*e*PKP		PKPdf	22 44 56.4	-0.6
TXAR	**Lajitas Array**	**144.19**	**48**	PKP		PKPdf	22 44 58.3	+0.9
	comp=Z,15nm,0.5s,baz=272,slow=1.4,SNR=149							
HRV	**Harvard--Oak R**	**144.54**	**357**	PKIKP		PKPdf	22 44 57.9	+0.3
HRV	**Harvard--Oak R**	**144.54**	**357**	*e*PKP		PKPdf	22 44 57.3	-0.3
ERPA	**Erie**	**144.57**	**8**	*e*PKP		PKPdf	22 44 57.2	-0.5
BINY	**Binghamton**	**144.86**	**3**	*e*PKP		PKPdf	22 44 58.4	+0.3
ALLY	**Alegheny Colle**	**145.01**	**8**	*e*PKP		PKPdf	22 44 58.6	+0.1
SLM	**Saint Louis**	**145.17**	**23**	PKIKP		PKPdf	22 44 59.7	+0.9
SLM	**Saint Louis**	**145.17**	**23**	*e*PKP		PKPdf	22 44 59.3	+0.5
CCM	**Cathedral Cave**	**145.27**	**24**	PKPdf		PKPdf	22 45 00.1	+1.1
CCM	**Cathedral Cave**	**145.27**	**24**	PKIKP		PKPdf	22 45 00.2	+1.2
CCM	**Cathedral Cave**	**145.27**	**24**	*e*PKP		PKPdf	22 45 00.1	+1.1
FVM	**French Village**	**145.66**	**24**	PKIKP		PKPdf	22 45 01.2	+1.5
FVM	**French Village**	**145.66**	**24**	*e*PKP		PKPdf	22 45 00.8	+1.2
ACSO	**Alum Creek Sta**	**145.88**	**12**	*e*PKP		PKPdf	22 45 01.5	+1.5
BDFB	**Brasilia**	**145.94**	**229**	PKPbc		PKPbc	22 45 03.2	+1.5
	comp=Z,15nm,0.5s,baz=140,slow=2.4,SNR=54							
BLO	**Bloomington**	**145.97**	**18**	*e*PKPdf		PKPdf	22 45 01.6	+1.4
PAL	**Palisades**	**146.10**	**0**	PKP2		PKPab	22 45 02.8	-1.4
PAL	**Palisades**	**146.10**	**0**	*e*PKP		PKPdf	22 45 02.0	+1.7
JCT	**Junction City**	**146.25**	**43**	PKP2		PKPab	22 45 03.3	-1.8
JCT	**Junction City**	**146.25**	**43**	*e*PKPdf		PKPdf	22 45 02.9	+2.0
JCT				LR	LR			
	comp=Z,108nm,20.0s							
SSPA	**Standing Stone**	**146.28**	**6**	*e*PKPdf		PKPdf	22 45 00.8	+0.1
SSPA				*e*PKPbc		PKPbc	22 45 03.3	+1.4
CPNY	**Central Park**	**146.32**	**0**	PKP		PKPdf	22 45 01.8	+1.1
SIUC	**Southern Illin**	**146.36**	**22**	*e*PKPdf		PKPdf	22 45 03.0	+2.1
USIN	**University of**	**146.70**	**20**	*e*PKPdf		PKPdf	22 45 01.5	0.0
TRSB	**Teresina**	**146.75**	**250**	*e*P		PKPdf	22 45 03.4	+1.1
WCI	**Wyandotte Cave**	**146.90**	**18**	PKIKP		PKPdf	22 45 02.6	+0.8
WCI	**Wyandotte Cave**	**146.90**	**18**	*e*PKPdf		PKPdf	22 45 02.4	+0.6
WCI				*e*PKPbc		PKPbc	22 45 05.0	+1.6
MVL	**Millersville**	**147.03**	**4**	*e*PKPdf		PKPdf	22 45 03.7	+1.7
MIAR	**Mount Ida**	**147.08**	**31**	PKIKP		PKPdf	22 45 04.4	+2.2
MIAR	**Mount Ida**	**147.08**	**31**	*e*PKPdf		PKPdf	22 45 03.8	+1.5
MIAR				*e*PKPbc		PKPdf	22 45 06.0	+3.7
UALR	**University of**	**147.51**	**29**	*e*PKP		PKPdf	22 45 04.7	+1.8
GNAR	**Gosnell**	**147.56**	**25**	*e*PKPbc		PKPdf	22 45 07.4	+4.5
GLAT	**Glass**	**147.60**	**24**	*e*PKPbc		PKPdf	22 45 07.5	+4.6
UTMT	**University of**	**147.70**	**23**	*e*PKPbc		PKPdf	22 45 07.7	+4.6
WVT	**Waverly**	**148.28**	**22**	PFAKE			22 45 20.0	+16
WVT				LR	LR			
	comp=Z,257nm,20.0s							
CBN	**Corbin**	**148.74**	**5**	PKP		PKPdf	22 45 08.7	+4.0
CBN				LR	LR			
	comp=Z,362nm,21.0s							
FWV	**Forest Hill**	**148.88**	**11**	*e*PKPbc		PKPdf	22 45 09.7	+4.8
OXF	**Oxford**	**149.06**	**25**	*e*PKPbc		PKPdf	22 45 10.8	+5.4
OXF				LR	LR			
	comp=Z,321nm,19.0s							
PWV	**Princeton**	**149.07**	**11**	*e*PKPbc		PKPdf	22 45 10.6	+5.3
HKT	**Hockley**	**149.19**	**39**	*e*PKPdf		PKPdf	22 45 07.5	+1.8
HKT				*e*PKPbc		PKPdf	22 45 12.4	+6.7
PLAL	**Pickwick Lake**	**149.20**	**23**	*e*PKPbc		PKPdf	22 45 10.5	+4.9
PLAL				*e*PKPab		PKPab	22 45 15.5	-1.2
PLAL				LR	LR			
	comp=Z,328nm,22.0s							
ELN	**Prospectdale**	**149.23**	**11**	*e*PKPbc		PKPdf	22 45 10.5	+5.0
SWET	**Sewanee**	**149.77**	**20**	*e*PKPbc		PKPdf	22 45 12.2	+5.7
CPCT	**Cooper Cave**	**150.01**	**18**	*e*PKPdf		PKPdf	22 45 08.5	+1.7
CPCT				*e*PKPbc		PKPdf	22 45 13.3	+6.4
LVC	**Limon Verde**	**150.21**	**189**	PKPdf		PKPdf	22 45 10.5	+2.9
LVC				PKPbc		PKPdf	22 45 15.6	+8.0
LVC	**Limon Verde**	**150.21**	**189**	PKP		PKPdf	22 45 11.3	+3.7
	comp=Z,13nm,0.9s,baz=299,slow=4.9,SNR=5.9							
LVC				PKPbc		PKPdf	22 45 15.6	+8.1
	comp=Z,29nm,0.9s,baz=260,slow=2.7,SNR=26							
LVC	**Limon Verde**	**150.21**	**189**	*e*PKPdf		PKPdf	22 45 10.3	+2.8
LVC				*e*PKPbc		PKPdf	22 45 15.0	+7.4
LRAL	**Lakeview Retre**	**151.34**	**23**	*e*PKPdf		PKPdf	22 45 10.8	+1.9
LRAL				*e*PKPbc		PKPdf	22 45 16.1	+7.2
LRAL				*e*PKPab		PKPab	22 45 24.4	-1.2
LRAL				LR	LR			
	comp=Z,533nm,22.0s							
JSC	**Jenkinsville**	**151.97**	**13**	*e*PKIKP		PKPdf	22 45 11.0	+1.2
JSC				*e*			22 45 17.8	
COW	**Cow Castle Cre**	**152.96**	**13**	*e*PKPdf		PKPdf	22 45 13.4	+2.1
COW				*e*PKPbc		PKPdf	22 45 20.4	+9.1
COW				*e*PKPab		PKPab	22 45 30.5	-2.0
RGRS	**Roger Stewart**	**153.53**	**12**	*e*PKPbc		PKPdf	22 45 21.3	+9.3
RGRS				*e*PKPab		PKPab	22 45 33.1	-1.7
LPAZ	**La Paz**	**156.21**	**194**	PKP		PKPdf	22 45 18.5	+2.5
	comp=Z,4.2nm,1.1s,baz=61,slow=2.5,SNR=9.4							
LPAZ	**La Paz**	**156.21**	**194**	*e*PKP		PKPdf	22 45 18.0	+2.0
LPAZ				LR	LR			
	comp=Z,79nm,21.0s							
SJG	**San Juan**	**166.61**	**327**	PFAKE			22 45 40.0	+13
SJG				LR	LR			
	comp=Z,185nm,21.0s							

*ISK **09** 22:28:11.9,40.32N×41.48E,h4km,MD3.6*
ISC 09 22:28:12.4±0.7,**40.33N**±0.03×**41.41E**±0.08,**h4km,n14,**
σ0§95/21,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ERZM	**Erzurum**	**0.42**	**185**	*i* P	**Pg**	**22 28 20.3**	**-0.6**
ERZM				*i* S	**Sg**	**22 28 25.2**	**-1.3**
EZM	**Erzurum**	**0.45**	**198**	*i* PG	**Pg**	**22 28 20.5**	**-0.9**
EZM				*i* SG	**Sg**	**22 28 27.3**	**-0.1**
BCA	**Borcka**	**1.13**	**8**	*i* PN	**Pn**	**22 28 34.3**	**-0.6**
BCA				*i* SN	**Sn**	**22 28 50.3**	**-0.8**
EZC	**Erzincan**	**1.35**	**245**	PN	**Pn**	**22 28 44.2**	**+6.0**
GUMT	**Gumushane**	**1.48**	**276**	*i* PN	**Pn**	**22 28 40.6**	**+0.6**
BINT	**Bingol**	**1.61**	**206**	PN	**Pn**	**22 28 42.0**	**+0.1**
KELT	**Kelkit**	**1.66**	**265**	*i* P	**Pn**	**22 28 43.8**	**+1.3**
KELT				*i* S	**Sb**	**22 29 03.4**	**-1.1**
BTMT	**Batman**	**2.13**	**178**	PN	**Pn**	**22 28 50.5**	**+1.2**
BEST	**Besiri**	**2.43**	**183**	*i* P	**Pn**	**22 28 56.6**	**+3.0**
BEST				*i* S	**Sn**	**22 29 29.3**	**+5.1**
DIY	**Diyarbakir**	**2.60**	**201**	*e*PN	**Pn**	**22 28 55.9**	**0.0**
ELZG	**Elazig**	**2.62**	**227**	*i* P	**Pn**	**22 28 56.2**	**-0.1**
ELZG				*i* S	**Sn**	**22 29 43.7**	**+15**
MYA	**Malataya**	**3.06**	**230**	*e*PN	**Pn**	**22 29 03.3**	**+0.8**
SVST	**Sivas**	**3.47**	**262**	*i* P	**Pn**	**22 29 17.9**	**+10**
GZT	**Gaziantep**	**4.22**	**227**	*e*P	**Pn**	**22 29 23.9**	**+4.8**
GZT				*e*S	**Sn**	**22 29 53.3**	**-16**

*LDG **09** 22:33:28.5±0.1,42.82N×2.54E,h4km,Md2.0/1,Ml1.5/7,*
Error ellipse: s-maj=2.3km s-min=1.1km az=145.0
*NEIC **09** 22:33:28.0,42.80N×2.55E,h5km,ML1.7(STR),*
ML1.5(LDG),After STR.
*STR **09** 22:33:28.0±0.3,42.80N×2.55E,h5km±1km,Ml1.7,Error*
ellipse: s-maj=0.0km s-min=0.0km az=1.0
*MDD **09** 22:33:28.7±0.5,42.83N×2.53E,h10km±1km,mbLg1.1/2,*
Error ellipse: s-maj=7.0km s-min=3.0km az=59.0,PRXIMO
ISC 09 22:33:27.4±0.7,**42.89N**±0.03×**2.51E**±0.04,**h14**km±4km,
n12,σ1§34/22,Pyrenees

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LRDF	**Laroque-de-Fa**	**0.05**	**25**	Pg	**Pg**	**22 33 31.1**	**+1.0**
LRDF				Sg	**Sg**	**22 33 33.6**	**+1.8**
CARF	**Carcanieres**	**0.34**	**240**	Pg	**Pg**	**22 33 34.9**	**+0.2**
CARF				Sg	**Sg**	**22 33 39.7**	**+0.1**
MTLF	**Montolieu**	**0.50**	**335**	*e*Pg	**Pg**	**22 33 39.5**	**+1.9**
MTLF				*e*Pn	**Pn**	**22 33 42.0**	**+2.2**
MTLF				*e*Sg	**Sg**	**22 33 46.4**	**+1.9**
MTLF				*e*Sn	**Sn**	**22 33 51.2**	**+3.1**
	0.8nm,0.2s						
MTLF	**Montolieu**	**0.50**	**335**	Pg	**Pg**	**22 33 39.5**	**+1.9**
MTLF				Lg		22 33 46.4	
EJON	**La Jonquera**	**0.52**	**147**	Pg	**Pg**	**22 33 37.3**	**-0.8**
	0.2nm,0.1s,SNR=7.9						
EJON				Lg		22 33 43.5	
	1.0nm,0.1s,SNR=7.9						
LASF	**Ste Croix**	**1.54**	**39**	*e*Pg	**Pg**	**22 33 58.1**	**-0.1**
LASF				*e*Sg	**Sg**	**22 34 18.6**	**-0.2**
	0.2nm,0.2s						
EPF	**Esparros**	**1.60**	**276**	*e*Pg	**Pg**	**22 33 58.9**	**-0.5**
EPF				*e*Sg	**Sg**	**22 34 20.0**	**-0.8**
	1.0nm,0.2s						
CAF	**Calviac**	**2.06**	**351**	*e*Pn	**Pn**	**22 34 03.3**	**+1.2**
CAF				*e*Sn	**Sn**	**22 34 28.2**	**+0.4**
CAF				*e*Sg	**Sg**	**22 34 35.1**	**-1.0**
	0.7nm,0.2s						
ETSF	**Etsaut**	**2.25**	**271**	*e*Sg	**Sg**	**22 34 40.7**	**-1.9**
	0.4nm,0.2s						
LFF	**La Frestale**	**2.41**	**329**	*e*Sg	**Sg**	**22 34 46.7**	**-1.2**
	1.2nm,0.3s						
VIVF	**Saint-Julien-l**	**2.51**	**38**	*e*Pg	**Pg**	**22 34 15.7**	**-1.9**
VIVF				*e*Sg	**Sg**	**22 34 49.2**	**-1.9**
	0.2nm,0.2s						
RJF	**Les Rejaudoux**	**2.52**	**344**	*e*Sg	**Sg**	**22 34 49.9**	**-1.4**
	0.6nm,0.2s						

*LDG **09** 22:40:27.8±0.1,43.03N×0.60W,h3km,Md2.6/2,Ml2.4/5*
*NEIC **09** 22:40:27.6,43.06N×0.60W,h5km,ML2.4(LDG),*
ML2.4(STR),MN1.9(MDD),After STR.
*STR **09** 22:40:27.6±0.1,43.06N×0.60W,h5km±1km,Ml2.4,Error*
ellipse: s-maj=0.0km s-min=0.0km az=1.0
*MDD **09** 22:40:28.1±0.2,43.06N×0.61W,h3km±5km,mbLg1.8/11,*
Error ellipse: s-maj=2.9km s-min=1.5km az=19.0,PRXIMO
ISC 09 22:40:26.5±0.3,**43.14N**±0.02×**0.57W**±0.02,**h9**km±3km,**n38,**
σ1§03/66,1C,Pyrenees

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ATE	**Arette**	**0.10**	**242**	P	**Pg**	**22 40 29.4**	**+0.2**
ATE				S	**Sg**	**22 40 30.6**	**-0.3**
REYF	**Montagne du Re**	**0.15**	**116**	Pg	**Pg**	**22 40 30.9**	**+1.0**
REYF				Sg	**Sg**	**22 40 33.4**	**+1.3**
REYF	**Montagne du Re**	**0.15**	**116**	P	**Pg**	**22 40 31.0**	**+1.1**
REYF				S	**Sg**	**22 40 33.5**	**+1.4**
ETSF	**Etsaut**	**0.24**	**177**	*e*Pg	**Pg**	**22 40 30.9**	**-0.6**
ETSF				*e*Sg	**Sg**	**22 40 32.8**	**-2.0**
	50nm,0.3s						
ORDF	**Ordiarp**	**0.28**	**286**	Pg	**Pg**	**22 40 33.5**	**+1.3**
ORDF				Sg	**Sg**	**22 40 38.5**	**+2.4**
ORDF	**Ordiarp**	**0.28**	**286**	P	**Pg**	**22 40 33.4**	**+1.2**
ORDF				S	**Sg**	**22 40 38.3**	**+2.2**
LARF	**Larrau**	**0.32**	**252**	Pg	**Pg**	**22 40 33.4**	**+0.3**
LARF				Sg	**Sg**	**22 40 37.8**	**+0.4**
LARF	**Larrau**	**0.32**	**252**	P	**Pg**	**22 40 33.4**	**+0.3**
LARF				S	**Sg**	**22 40 37.2**	**-0.2**
SJPF	**Ste Jean**	**0.48**	**268**	*e*Pg	**Pg**	**22 40 36.4**	**+0.2**
SJPF				*e*Sg	**Sg**	**22 40 42.9**	**+0.3**
	24nm,0.2s						
VIEF	**Viey**	**0.51**	**120**	P	**Pg**	**22 40 37.1**	**+0.3**
VIEF				S	**Sg**	**22 40 43.7**	**+0.2**
OSSF	**Osses**	**0.52**	**284**	Pg	**Pg**	**22 40 37.2**	**+0.2**
OSSF	**Osses**	**0.52**	**284**	P	**Pg**	**22 40 37.3**	**+0.3**
OSSF				S	**Sg**	**22 40 44.6**	**+0.7**
EPF	**Esparros**	**0.68**	**99**	*e*Pg	**Pg**	**22 40 40.8**	**+0.7**
EPF				*e*Sg	**Sg**	**22 40 50.3**	**+1.1**
	13nm,0.2s						
EALK	**Alkurruntz**	**0.69**	**277**	Pg	**Pg**	**22 40 40.3**	**0.0**
	1.0nm,0.1s,SNR=14						
EALK				Lg		22 40 49.6	
	34nm,0.4s,SNR=5.0						
EALK	**Alkurruntz**	**0.69**	**277**	Pg	**Pg**	**22 40 40.4**	**0.0**
EALK				Lg		22 40 49.6	
RESF	**Ens**	**0.75**	**116**	Pg	**Pg**	**22 40 41.6**	**+0.1**
RESF				Sg	**Sg**	**22 40 51.8**	**+0.3**
RESF	**Ens**	**0.75**	**116**	P	**Pb**	**22 40 41.6**	**+0.3**
RESF				S	**Sb**	**22 40 51.6**	**+0.3**
MELF	**Melles**	**1.01**	**105**	S	**Sb**	**22 41 00.6**	**+1.6**
SALF	**Salau**	**1.35**	**106**	Pg	**Pg**	**22 40 53.7**	**+0.2**
SALF				Sg	**Sg**	**22 41 11.8**	**+0.3**
SALF	**Salau**	**1.35**	**106**	P	**Pb**	**22 40 53.4**	**+1.9**
SALF				S	**Sb**	**22 41 10.2**	**+1.4**
ESAC	**San Caprasio**	**1.42**	**177**	⇑Pg	**Pg**	**22 40 54.1**	**-0.7**
	8.1nm,0.2s,SNR=18						
ESAC				Lg		22 41 12.3	
	30nm,0.2s,SNR=5.0						
ESAC	**San Caprasio**	**1.42**	**177**	Pg	**Pg**	**22 40 54.1**	**-0.7**
ESAC				Lg		22 41 12.8	
EMIR	**Miracle**	**1.97**	**127**	Pg	**Pg**	**22 41 04.7**	**-1.3**
	0.7nm,0.1s,SNR=6.3						
EMIR				Lg		22 41 30.6	
	2.5nm,0.1s,SNR=5.0						
EMIR	**Miracle**	**1.97**	**127**	Pg	**Pg**	**22 41 03.9**	**-2.1**
EMIR				Lg		22 41 31.0	
LFF	**La Frestale**	**2.04**	**27**	*e*Pg	**Pg**	**22 41 07.7**	**+0.5**
LFF				*e*Sg	**Sg**	**22 41 35.4**	**+1.0**
	9.7nm,0.3s						
MTLF	**Montolieu**	**2.05**	**83**	*e*Pn	**Pn**	**22 41 01.8**	**+0.2**
MTLF				*e*Pg	**Pg**	**22 41 06.1**	**-1.4**
MTLF				*e*Sn	**Sn**	**22 41 27.0**	**-0.6**
MTLF				*e*Sg	**Sg**	**22 41 33.4**	**-1.4**
	1.4nm,0.2s						
ELAN	**Lanestosa**	**2.09**	**274**	Pg	**Pg**	**22 41 06.7**	**-1.6**
	0.3nm,0.2s,SNR=7.9						
ELAN				Lg		22 41 32.8	
	0.9nm,0.2s,SNR=7.9						
ELAN	**Lanestosa**	**2.09**	**274**	Pg	**Pg**	**22 41 06.1**	**-2.2**
ELAN				Lg		22 41 32.8	
EPOB	**Poblet**	**2.16**	**145**	Pg	**Pg**	**22 41 06.9**	**-2.8**
	0.4nm,0.1s,SNR=7.9						
EPOB				Sn	**Sn**	**22 41 30.6**	**+0.1**
	0.4nm,0.1s,SNR=7.9						
EPOB				Lg		22 41 35.5	
	2.7nm,0.2s,SNR=7.9						
EPOB	**Poblet**	**2.16**	**145**	Pg	**Pg**	**22 41 06.9**	**-2.9**
EPOB				Sn	**Sn**	**22 41 30.6**	**+0.1**
EPOB				Lg		22 41 34.7	
ETOR	**

σ0$64/12, **mb3.1**/9, **Sea of Okhotsk**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ILAR	**Eielson Array**	**38.47**	**39**	P	**P**	**00 33 47.1**	**+0.4**
	0.5nm,0.8s,mb3.0,baz=273,slow=7.9,SNR=5.4						
MKAR	**Makanchi Array**	**41.92**	**293**	P	**P**	**00 34 14.5**	**-0.2**
	0.6nm,1.0s,mb3.0,baz=72,slow=9.1,SNR=3.2						
INK	**Inuvik**	**43.02**	**33**	P	**P**	**00 34 23.4**	**+0.2**
	0.4nm,0.3s,mb3.3,baz=305,slow=7.5,SNR=14						
INK	**Inuvik**	**43.02**	**33**	*e*P	**P**	**00 34 23.0**	**-0.1**
	0.5nm,0.4s,mb3.3						
YKA	**Yellowknife Ar**	**52.59**	**35**	P	**P**	**00 35 35.1**	**-0.4**
	0.2nm,0.5s,mb2.7,baz=304,slow=7.0,SNR=9.8						
ARCES	**ARCESS Array B**	**54.77**	**338**	P	**P**	**00 35 51.0**	**0.0**
	1.2nm,0.8s,mb3.3,baz=41,slow=6.3,SNR=7.5						
FINES	**FINESS Array B**	**60.53**	**331**	P	**P**	**00 36 30.1**	**0.0**
	0.8nm,0.5s,mb3.4,baz=45,slow=7.0,SNR=15						
BOZ	**Bozeman (W)**	**64.60**	**49**	*e*P	**P**	**00 36 55.1**	**-1.4**
	0.8nm,0.6s,mb3.5						
NOA	**NORSAR Array B**	**65.14**	**338**	P	**P**	**00 36 59.9**	**+0.3**
	0.3nm,0.7s,mb3.1,baz=39,slow=15,SNR=2.2						
NOA	**NORSAR Array B**	**65.14**	**338**	P	**P**	**00 36 59.9**	**+0.3**
TXAR	**Lajitas Array**	**80.85**	**56**	P	**P**	**00 38 30.9**	**+1.1**
	0.1nm,0.4s,mb2.7,baz=309,slow=1.8,SNR=3.7						
TXAR	**Lajitas Array**	**80.85**	**56**	P	**P**	**00 38 30.9**	**+1.1**

*IDC **10** 00:29:39.8±1.5,9.10S×121.07E,mb3.9/3,mb1 4.1/6, mb1mx3.9/14,ML3.9/3,Error ellipse: s-maj=134.0km s-min=19.8km az=59.0*

*NEIC **10** 00:29:44.1±5.5,9.10S×121.14E,h27km±45km,mb4.3/1, MD4.6(DJA),Error ellipse: s-maj=35.1km s-min=6.4km az=212.0*

*DJA **10** 00:29:46.6±0.9,8.41S×120.77E,h208km±34km,MD4.7/4, ML5.0/4,Error ellipse: s-maj=120.7km s-min=28.7km az=0.0*

ISC 10 00:29:48.5±1.6, **9.7S**±0.2×**120.7E**±0.1, **h10**km±21km, **n17,** σ1$**22**/30, **mb3.7**/3, **8C-3D, Sumba region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEDI	**Kedomdong**	**4.67**	**284**	⇑*e*Pn	**P**	**00 30 58.5**	**+0.5**
	195nm,0.2s						
KEDI				⇓*e*Sn	**S**	**00 31 50.3**	**-1.1**
KEDI	**Kedomdong**	**4.67**	**284**	⇑*e*Pn	**P**	**00 30 58.9**	**+0.9**
KEDI				*e*Sn	**S**	**00 31 55.3**	**+3.9**
RATI	**Rata**	**5.17**	**280**	⇓*e*Pn	**P**	**00 31 05.7**	**+0.8**
	144nm,0.2s						
RATI				⇑*e*Sn	**S**	**00 32 03.9**	**0.0**
RATI	**Rata**	**5.17**	**280**	⇓*e*Pn	**P**	**00 31 05.7**	**+0.8**
RATI				*e*Sn	**S**	**00 32 06.6**	**+2.7**
INGI	**Ingas**	**5.54**	**278**	⇑*e*Pn	**P**	**00 31 11.0**	**+1.3**
	505nm,0.3s						
INGI				*e*Sn	**S**	**00 32 11.3**	**-1.4**
INGI	**Ingas**	**5.54**	**278**	⇑*e*Pn	**P**	**00 31 11.0**	**+1.3**
INGI				*e*Sn	**S**	**00 32 13.2**	**+0.5**
KELI	**Kelakatan**	**6.29**	**283**	⇑*e*Pn	**P**	**00 31 18.8**	**-1.3**
	62nm,0.3s						
KELI				⇑*i*Sn	**S**	**00 32 28.1**	**-3.0**
KELI	**Kelakatan**	**6.29**	**283**	⇑*e*Pn	**P**	**00 31 18.9**	**-1.2**
KELI				*i* Sn	**S**	**00 32 28.2**	**-2.9**
FITZ	**Fitzroy Crossi**	**9.66**	**151**	Pn	**P**	**00 32 05.1**	**-0.6**
	0.5nm,0.3s,baz=342,slow=13,SNR=19						
FITZ				Sn	**S**	**00 33 47.2**	**-5.7**
	6.1nm,0.3s,baz=188,slow=19,SNR=16						
FITZ	**Fitzroy Crossi**	**9.66**	**151**	*e*P	**P**	**00 32 01.1**	**-4.7**
	1.3nm,0.3s						
FITZ				*e*S	**S**	**00 33 45.1**	**-7.9**
FITZ				Sn	**S**	**00 33 47.2**	**-5.7**
WRA	**Warramunga Arr**	**16.67**	**129**	Pn	**P**	**00 33 36.3**	**-0.5**
	1.0nm,0.3s,baz=306,slow=14,SNR=28						
WRA				Sn	**S**	**00 36 29.4**	**-8.0**
	0.3nm,0.3s,baz=305,slow=23,SNR=4.2						
WRAB	**Tennant Creek**	**16.68**	**129**	*e*P	**P**	**00 33 36.9**	**0.0**
	16nm,0.6s						
WRAB				*e*		00 33 47.6	
WB2	**Warramunga Arr**	**16.68**	**129**	*e*P	**P**	**00 33 36.0**	**-0.9**
ASAR	**Alice Springs**	**18.79**	**139**	P	**P**	**00 34 03.6**	**+1.8**
	0.4nm,0.3s,baz=322,slow=13,SNR=25						
ASAR				S	**S**	**00 37 23.5**	**-0.6**
	0.1nm,0.3s,baz=318,slow=26,SNR=4.3						
STKA	**Stephens Creek**	**29.39**	**142**	P	**P**	**00 35 46.4**	**+2.8**
	0.8nm,0.5s,mb3.6,baz=328,slow=9.5,SNR=3.0						
SONM	**Songino Array**	**58.65**	**349**	P	**P**	**00 39 35.6**	**-0.8**
	0.4nm,0.5s,mb3.7,baz=166,slow=8.8,SNR=3.6						
MKAR	**Makanchi Array**	**65.82**	**332**	P	**P**	**00 40 24.8**	**+0.5**
	0.7nm,0.4s,mb3.6,baz=145,slow=7.3,SNR=18						

*NEIC **10** 00:40:30.7,42.81N×2.53E,h5km,ML2.4(LDG), ML2.2(STR),MN1.8(MDD),After STR.*

*STR **10** 00:40:30.7±0.1,42.81N×2.53E,h5km±1km,Ml2.2,Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*

*LDG **10** 00:40:31.1±0.0,42.81N×2.54E,h5km,Md2.8/1,Ml2.4/15, Error ellipse: s-maj=0.8km s-min=0.6km az=119.0*

*MDD **10** 00:40:31.2±0.2,42.82N×2.54E,h10km,mbLg1.8/19,Error ellipse: s-maj=2.0km s-min=1.7km az=82.0,PRXIMO*

ISC 10 00:40:29.2±0.3, **42.88N**±0.02×**2.57E**±0.02, **h10**km, **n48,** σ1$**20**/89, **Pyrenees**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LRDF	**Laroque-de-Fa**	**0.07**	**338**	Pg	**Pg**	**00 40 33.6**	**+2.2**
LRDF				Sg	**Sg**	**00 40 35.8**	**+2.9**
LRDF	**Laroque-de-Fa**	**0.07**	**338**	P	**Pg**	**00 40 33.7**	**+2.2**
LRDF				S	**Sg**	**00 40 36.0**	**+3.1**
FILF	**Fillols**	**0.32**	**182**	Pg	**Pg**	**00 40 36.1**	**+0.3**
FILF				Sg	**Sg**	**00 40 39.8**	**-0.3**
FILF	**Fillols**	**0.32**	**182**	P	**Pg**	**00 40 36.2**	**+0.5**
FILF				S	**Sg**	**00 40 40.0**	**-0.2**
CARF	**Carcanieres**	**0.38**	**245**	Pg	**Pg**	**00 40 37.4**	**+0.4**
CARF				Sg	**Sg**	**00 40 42.0**	**-0.2**
CARF	**Carcanieres**	**0.38**	**245**	P	**Pg**	**00 40 37.3**	**+0.4**
CARF				S	**Sg**	**00 40 42.3**	**+0.2**
SJAF	**Saint Jean de**	**0.45**	**150**	Pg	**Pg**	**00 40 39.2**	**+0.8**
SJAF				Sg	**Sg**	**00 40 44.8**	**+0.2**
SJAF	**Saint Jean de**	**0.45**	**150**	P	**Pg**	**00 40 39.2**	**+0.8**
SJAF				S	**Sg**	**00 40 45.0**	**+0.4**
EJON	**La Jonquera**	**0.49**	**151**	Pg	**Pg**	**00 40 39.8**	**+0.7**
	2.3nm,0.1s,SNR=7.9						
EJON				Lg		00 40 46.0	
	9.2nm,0.1s,SNR=7.9						
EJON	**La Jonquera**	**0.49**	**151**	Pg	**Pg**	**00 40 39.8**	**+0.7**
EJON				Lg		00 40 46.1	
LPEF	**Le Peyrat**	**0.49**	**279**	Pg	**Pg**	**00 40 40.1**	**+0.9**
LPEF				Sg	**Sg**	**00 40 46.9**	**+1.0**
LPEF	**Le Peyrat**	**0.49**	**279**	P	**Pg**	**00 40 40.3**	**+1.1**
LPEF				S	**Sg**	**00 40 47.1**	**+1.2**
MTLF	**Montolieu**	**0.53**	**331**	*e*Pg	**Pg**	**00 40 41.8**	**+1.8**
	SNR=1.0						
MTLF				*e*Pn	**Pn**	**00 40 44.7**	**+2.2**
MTLF				*e*Sg	**Sg**	**00 40 49.1**	**+2.0**
	6.0nm,0.2s,SNR=1.0						
MTLF				*e*Sn	**Sn**	**00 40 53.9**	**+2.4**
MTLF	**Montolieu**	**0.53**	**331**	Pg	**Pg**	**00 40 41.8**	**+1.8**
MTLF				Lg		00 40 49.1	
	0.0nm,0.2s						
CLLI	**Llivia**	**0.59**	**228**	Pg	**Pg**	**00 40 41.0**	**-0.2**
CLLI				Lg		00 40 48.1	
	2.4nm,0.1s						
VALF	**Valcebollere**	**0.63**	**221**	Pg	**Pg**	**00 40 41.8**	**0.0**
VALF				Sg	**Sg**	**00 40 49.3**	**-1.0**
VALF	**Valcebollere**	**0.63**	**221**	P	**Pb**	**00 40 41.8**	**+0.1**
VALF				S	**Sg**	**00 40 49.3**	**-0.9**
CBRU	**Bruguera**	**0.66**	**206**	Pg	**Pg**	**00 40 42.2**	**-0.3**
CBRU				Lg		00 40 50.0	
	5.7nm,0.1s						
GRBF	**Gourbit**	**0.76**	**268**	Pg	**Pg**	**00 40 45.6**	**+1.1**
GRBF				Lg		00 40 55.5	
PAND	**Andorre**	**0.83**	**245**	P	**Pb**	**00 40 45.9**	**+0.6**
PAND				S	**Sb**	**00 40 56.3**	**-0.1**
SALF	**Salau**	**1.02**	**264**	P	**Pb**	**00 40 49.6**	**+1.0**
SALF				S	**Sb**	**00 41 02.8**	**+1.0**
MLS	**Moulis**	**1.09**	**275**	S	**Sb**	**00 41 05.0**	**+1.2**
CFON	**Fontmartina**	**1.12**	**185**	Pg	**Pg**	**00 40 51.2**	**-0.4**
CFON				Lg		00 41 05.1	
	15nm,0.1s						
CORG	**Organya**	**1.13**	**236**	Pg	**Pg**	**00 40 51.6**	**-0.2**
CORG				Lg		00 41 05.9	
	1.9nm,0.2s						
CSOR	**Sort**	**1.17**	**245**	Pg	**Pg**	**00 40 52.3**	**-0.4**
CSOR				Lg		00 41 06.8	
	3.4nm,0.2s						
EMIR	**Miracle**	**1.23**	**219**	Pg	**Pg**	**00 40 53.3**	**-0.7**
	1.9nm,0.1s,SNR=7.9						
EMIR	**Miracle**	**1.23**	**219**	Pg	**Pg**	**00 40 53.3**	**-0.7**
EMIR				Lg		00 41 11.3	
MELF	**Melles**	**1.33**	**270**	S	**Sb**	**00 41 12.0**	**+1.2**
LASF	**Ste Croix**	**1.52**	**38**	*e*Pn	**Pn**	**00 40 58.2**	**+1.6**
	SNR=1.0						
LASF				*e*Pg	**Pg**	**00 41 00.7**	**+1.1**
	SNR=1.0						
LASF				*e*Sn	**Sn**	**00 41 17.9**	**+1.3**
LASF				*e*Sg	**Sg**	**00 41 21.2**	**+1.3**
	5.1nm,0.3s,SNR=1.0						
EPF	**Esparros**	**1.65**	**276**	*e*Pn	**Pn**	**00 40 58.7**	**+0.3**
EPF				*e*Pg	**Pg**	**00 41 01.5**	**-0.6**
	SNR=1.0						
EPF				*e*Sn	**Sn**	**00 41 18.5**	**-1.3**
	SNR=1.0						
EPF				*e*Sg	**Sg**	**00 41 22.6**	**-1.5**
	12nm,0.3s						
CAVN	**Les Avellanes**	**1.68**	**234**	Pg	**Pg**	**00 41 01.5**	**-1.2**
CAVN				Lg		00 41 22.9	
	6.4nm,0.2s						
EPOB	**Poblet**	**1.89**	**217**	Pg	**Pg**	**00 41 04.4**	**-2.4**
	0.9nm,0.1s,SNR=7.9						
EPOB	**Poblet**	**1.89**	**217**	Pg	**Pg**	**00 41 04.4**	**-2.4**
EPOB				Lg		00 41 28.4	
CAF	**Calviac**	**2.08**	**350**	*e*Pn	**Pn**	**00 41 05.9**	**+1.3**
CAF				*e*Pg	**Pg**	**00 41 11.1**	**+0.3**
CAF				*e*Sn	**Sn**	**00 41 30.9**	**+0.1**
	SNR=1.0						
CAF				*e*Sg	**Sg**	**00 41 37.8**	**-0.7**
	5.4nm,0.3s,SNR=1.0						
ETSF	**Etsaut**	**2.30**	**272**	*e*Pn	**Pn**	**00 41 07.4**	**-0.4**
ETSF				*e*Sn	**Sn**	**00 41 34.6**	**-1.8**
ETSF				*e*Sg	**Sg**	**00 41 42.9**	**-3.0**
	4.8nm,0.4s,SNR=1.0						
SMRF	**Simiane la Rot**	**2.45**	**62**	*e*Pn	**Pn**	**00 41 10.6**	**+0.7**
SMRF				*e*Sn	**Sn**	**00 41 39.5**	**-0.6**
SMRF				*e*Sg	**Sg**	**00 41 50.0**	**-0.8**
	4.3nm,0.4s						
LFF	**La Frestale**	**2.45**	**328**	*e*Pg	**Pg**	**00 41 17.6**	**-0.5**
	SNR=1.0						
LFF				*e*Sg	**Sg**	**00 41 49.4**	**-1.4**
	8.8nm,0.4s,SNR=1.0						
VIVF	**Saint-Julien-l**	**2.50**	**37**	*e*Pn	**Pn**	**00 41 11.5**	**+0.9**
VIVF				*e*Pg	**Pg**	**00 41 18.3**	**-0.7**
	SNR=1.0						
VIVF				*e*Sn	**Sn**	**00 41 41.1**	**-0.2**
VIVF				*e*Sg	**Sg**	**00 41 51.6**	**-0.7**
	2.7nm,0.3s,SNR=1.0						
ESAC	**San Caprasio**	**2.53**	**244**	Lg		00 41 50.0	
	9.3nm,0.3s,SNR=7.9						
ESAC	**San Caprasio**	**2.53**	**244**	Pn	**Pn**	**00 41 19.0**	**+7.9**
ESAC				Sn	**Sn**	**00 41 49.4**	**+7.1**
RJF	**Les Rejaudoux**	**2.54**	**343**	*e*Pn	**Pn**	**00 41 19.0**	**+0.7**
RJF				*e*Pg	**Pg**	**00 41 19.5**	**-0.5**
	SNR=1.0						
RJF				*e*Sn	**Sn**	**00 41 40.6**	**-2.0**
	SNR=1.0						
RJF				*e*Sg	**Sg**	**00 41 52.7**	**-1.2**
	3.6nm,0.2s,SNR=1.0						
SJPF	**Ste Jean**	**2.80**	**276**	*e*Pn	**Pn**	**00 41 14.1**	**-0.7**
SJPF				*e*Sg	**Sg**	**00 41 58.0**	**-4.3**
	1.3nm,0.2s						
LMR	**La Mourre**	**2.92**	**80**	*e*Pn	**Pn**	**00 41 16.4**	**-0.2**
LMR				*e*Sg	**Sg**	**00 42 03.8**	**-2.6**
	1.4nm,0.3s						
FRF	**La Foret Royal**	**3.06**	**76**	*e*Pn	**Pn**	**00 41 19.4**	**+0.8**
FRF				*e*Sg	**Sg**	**00 42 07.9**	**-3.1**
	3.7nm,0.3s						
EMOS	**Mosqueruela**	**3.39**	**223**	Lg		00 42 18.2	
	0.6nm,0.3s,SNR=4.0						
TCF	**Toul-Ste Croi**	**3.42**	**356**	*e*Sg	**Sg**	**00 42 20.3**	**-2.8**
	2.6nm,0.5s,SNR=1.0						
BGF	**Bois d'Agland**	**3.69**	**3**	*e*Pg	**Pg**	**00 41 40.9**	**-1.9**
BGF				*e*Sg	**Sg**	**00 42 28.7**	**-3.2**
	3.7nm,0.3s						
MFF	**Saint Martin d**	**4.20**	**333**	*e*Pg	**Pg**	**00 41 49.1**	**-3.9**
	SNR=1.0						
MFF				*e*Sg	**Sg**	**00 42 44.4**	**-4.6**
	0.6nm,0.3s						

*NEIC **10** 00:47:31.4±0.5,53.36N×160.94W,mb4.0/1,ML3.6(AEIC), Error ellipse: s-maj=7.9km s-min=5.8km az=191.0*

*IDC **10** 00:47:31.2±1.2,53.32N×160.89W,h34km±8km,mb3.6/9, mb1 3.8/11,mb1mx3.7/24,ML3.9/2,Error ellipse: s-maj=24.7km s-min=20.5km az=17.0*

ISC 10 00:47:28.8±0.7, **53.23N**±0.05×**160.87W**±0.09, **h33**km, **h33**km±2.8km**:pP-P, n28,** σ0$**63**/34, **mb3.8**/9, **South of Alaska**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DRIA	**Deer Island**	**1.92**	**335**	P	**Pn**	**00 47 59.8**	**-0.1**
DRIA				S	**Sn**	**00 48 23.2**	**+0.1**
DOL	**Dolgoi Island**	**2.01**	**343**	P	**Pn**	**00 48 00.8**	**-0.3**
DOL				S	**Sn**	**00 48 25.9**	**+0.5**
DTNA	**Dutton South F**	**2.09**	**338**	P	**Pn**	**00 48 02.2**	**0.0**
DTNA				S	**Sn**	**00 48 28.0**	**+0.6**
SDN	**Sand Point**	**2.12**	**6**	P	**Pn**	**00 48 02.3**	**-0.5**
SDN				S	**Sn**	**00 48 28.3**	**-0.1**
HAG	**Hague Volcano**	**2.18**	**344**	P	**Pn**	**00 48 03.9**	**+0.3**
PVV	**Pavlof Volcano**	**2.21**	**346**	P	**Pn**	**00 48 04.0**	**-0.1**
FALS	**False Pass**	**2.22**	**318**	P	**Pn**	**00 48 03.4**	**-0.7**
FALS				S	**Sn**	**00 48 31.3**	**+0.6**
BALA	**Baldy Mountain**	**2.27**	**331**	P	**Pn**	**00 48 05.1**	**+0.2**
PN6	**Pavlof North-6**	**2.31**	**345**	P	**Pn**	**00 48 04.5**	**-1.0**
BLHA	**Black Hill**	**2.57**	**345**	P	**Pn**	**00 48 09.6**	**+0.4**
WESN	**West Dahl Nort**	**2.58**	**303**	P	**Pn**	**00 48 09.7**	**+0.5**
UNV	**Unalaska Valle**	**3.42**	**283**	P	**Pn**	**00 48 20.6**	**-0.6**
MSW	**Makushin Switc**	**3.59**	**283**	P	**Pn**	**00 48 23.5**	**-0.2**
MCIR	**Makushin Cirqu**	**3.66**	**284**	P	**Pn**	**00 48 24.7**	**0.0**
ILAR	**Eielson Array**	**13.58**	**26**	Pn	**P**	**00 50 36.1**	**-5.2**
	0.1nm,0.3s,baz=214,slow=14,SNR=4.6						
ILAR				Sn	**S**	**00 52 59.4**	**-13**
	0.1nm,0.3s,baz=259,slow=8.2,SNR=4.5						
INK	**Inuvik**	**19.89**	**30**	P	**P**	**00 51 58.8**	**-1.2**
	0.7nm,0.3s,baz=248,slow=13,SNR=46						
INK	**Inuvik**	**19.89**	**30**	*e*P	**P**	**00 51 58.3**	**-1.8**
	5.5nm,0.6s						
YKA	**Yellowknife Ar**	**25.74**	**51**	P	**P**	**00 52 57.3**	**-0.2**
	0.6nm,0.7s,mb3.2,baz=268,slow=8.1,SNR=14						
YKA				pP	pP	00 53 08.1	+1.0
	0.4nm,0.9s,baz=272,slow=8.9,SNR=3.3						
YKA				PcP	PcP	00 56 25.8	-1.8
	0.1nm,0.5s,baz=270,slow=2.0,SNR=5.6						
YKA				pPcP		00 56 36.2	
	0.2nm,0.8s,baz=279,slow=2.4,SNR=4.8						
YKA	**Yellowknife Ar**	**25.74**	**51**	P	**P**	**00 52 57.4**	**-0.2**
YKA				pP	pP	00 53 08.1	+1.0
YKA				PcP	PcP	00 56 25.8	-1.8
YKA				pPcP		00 56 36.2	
NVAR	**Mina Array Bea**	**32.60**	**100**	P	**P**	**00 54 01.6**	**+2.3**
	0.3nm,0.7s,mb3.3,baz=297,slow=10,SNR=2.9						
NVAR				pP	pP	00 54 09.7	+0.8
	2.0nm,1.0s,baz=293,slow=10,SNR=7.3						
TXAR	**Lajitas Array**	**47.63**	**97**	P	**P**	**00 56 03.6**	**0.0**
	0.5nm,0.7s,mb3.7,baz=301,slow=5.9,SNR=6.7						
TXAR				pP	pP	00 56 13.7	+0.2
	1.2nm,0.6s,baz=302,slow=5.6,SNR=13						
SONM	**Songino Array**	**55.17**	**305**	P	**P**	**00 57 00.0**	**-0.1**
	0.8nm,0.8s,mb3.8,baz=27,slow=5.5,SNR=5.2						
BVAR	**Borovoye Array**	**65.82**	**329**	P	**P**	**00 58 12.6**	**+0.1**
	3.4nm,1.0s,mb4.3,baz=37,slow=7.2,SNR=9.0						
MKAR	**Makanchi Array**	**66.79**	**318**	P	**P**	**00 58 18.2**	**-0.6**
	1.0nm,1.0s,mb3.6,baz=51,slow=6.9,SNR=5.8						
MKAR	**Makanchi Array**	**66.79**	**318**	P	**P**	**00 58 18.2**	**-0.6**
AKASG	**Malin Array Be**	**76.09**	**353**	P	**P**	**00 59 13.9**	**-0.3**
	0.8nm,0.4s,mb4.0,baz=7.1,slow=5.4,SNR=7.4						
GERES	**GERESS Array B**	**78.19**	**4**	P	**P**	**00 59 26.4**	**+0.5**
	0.4nm,0.7s,mb3.5,slow=4.0,SNR=4.8						
BRTR	**Keskin Array B**	**86.57**	**349**	P	**P**	**01 00 10.3**	**+0.9**
	1.4nm,1.0s,mb4.2,baz=45,slow=2.0,SNR=6.5						

*NEIC **10** 00:48:16.7±1.8,4.73S×153.15E,h46km±15km,mb4.6/5, Error ellipse: s-maj=16.8km s-min=11.7km az=72.0*

*IDC **10** 00:48:16.9±6.0,4.96S×153.40E,h59km±50km,mb4.0/11, mb1 4.1/12,mb1mx4.0/16,ML3.8/1,MS3.7/3,Ms1 3.7/3, ms1mx3.4/15,Error ellipse: s-maj=36.7km s-min=20.1km az=86.0*

ISC 10 00:48:15.6±1.7, **4.74S**±0.07×**153.12E**±0.10, **h52**km±14km, **n29,** σ1$**12**/27, **mb4.3**/15, **MS4.0**/2, **2D, New Ireland region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAB	**Rabaul**	**1.10**	**300**	⇓*i*P	**P**	**00 48 35.0**	**+0.1**
PMG	**Port Moresby**	**7.51**	**232**	P	**P**	**00 50 05.5**	**+0.4**
	7.7nm,0.3s,baz=63,slow=4.9,SNR=15						
PMG				S	**S**	**00 51 28.8**	**-0.9**
	33nm,0.3s,baz=133,slow=16,SNR=9.6						
PMG	**Port Moresby**	**7.51**	**232**	*e*Pn	**P**	**00 50 05.4**	**+0.3**
PMG				Sn	S	00 51 03.4	-26
CTA	**Charters Tower**	**16.66**	**203**	LR	LR	00 57 14.9	
	comp=Z,114nm,19.9s,baz=231,slow=32						
NOUC	**Port Laguerre**	**21.47**	**145**	*e*P	**P**	**00 53 00.9**	**-0.8**
NOUC	**Port Laguerre**	**21.47**	**145**	*e*P	**P**	**00 53 00.9**	**-0.8**
DZM	**Mont Dzumac**	**21.53**	**144**	*e*P	**P**	**00 53 02.4**	**+0.1**
WRAB	**Tennant Creek**	**23.71**	**229**	*e*P	**P**	**00 53 23.8**	**0.0**
	31nm,0.6s,mb4.9						
WB2	**Warramunga Arr**	**23.71**	**229**	⇓*i*P	**P**	**00 53 24.2**	**+0.4**
WRA	**Warramunga Arr**	**23.72**	**229**	P	**P**	**00 53 25.0**	**+1.1**
	8.3nm,0.5s,mb4.5,baz=52,slow=9.8,SNR=67						
AS12	**Alice Springs**	**26.41**	**223**	*e*P	**P**	**00 53 53.4**	**+4.0**
	7.1nm,1.0s,mb4.2						
ASAR	**Alice Springs**	**26.41**	**223**	P	**P**	**00 53 49.8**	**+0.4**
	2.8nm,0.7s,mb3.9,baz=57,slow=8.9,SNR=14						
STKA	**Stephens Creek**	**29.08**	**200**	P	**P**	**00 54 17.0**	**+3.5**
	1.6nm,0.6s,mb3.9,baz=24,slow=12,SNR=2.8						
FITZ	**Fitzroy Crossi**	**29.97**	**241**	*e*P	**P**	**00 54 20.1**	**-1.4**
	9.7nm,0.6s,mb4.7						
JOW	**Kunigami**	**39.53**	**324**	P	**P**	**00 55 46.1**	**+2.9**
	12nm,0.8s,mb4.7,baz=141,slow=6.5,SNR=4.2						
RPZ	**Rata Peaks**	**41.92**	**160**	LR	LR	01 10 59.8	
	comp=Z,184nm,18.8s,MS4.0,baz=5.5,slow=33						
CMAR	**Chiang Mai Arr**	**58.14**	**295**	P	**P**	**00 58 07.0**	**+0.2**
	1.9nm,0.8s,mb4.2,baz=123,slow=5.7,SNR=6.4						
HIA	**Hailar**	**61.11**	**336**	P	**P**	**00 58 25.7**	**-1.1**
	5.1nm,1.1s,mb4.6						
SONM	**Songino Array**	**66.44**	**328**	P	**P**	**00 59 02.4**	**+0.7**
	1.1nm,0.6s,mb4.0,baz=145,slow=5.7,SNR=8.9						
VNDA	**Vanda**	**72.88**	**178**	P	**P**	**00 59 37.1**	**-3.3**
	1.6nm,0.6s,mb4.2,baz=302,slow=2.1,SNR=18						
VNDA	**Vanda**	**72.88**	**178**	*e*P	**P**	**00 59 36.9**	**-3.6**
	0.8nm,0.6s,mb3.8						
VNDA				*e*		00 59 43.0	
MKAR	**Makanchi Array**	**80.49**	**319**	P	**P**	**01 00 23.9**	**+0.2**
	1.9nm,0.8s,mb4.1,baz=98,slow=7.4,SNR=13						
ILAR	**Eielson Array**	**81.98**	**22**	P	**P**	**01 00 29.8**	**-1.4**
	0.6nm,0.7s,mb3.6,baz=255,slow=5.7,SNR=6.5						
QSPA	**South Pole Qui**	**85.22**	**180**	*e*P	**P**	**01 00 50.0**	**+2.8**
	2.5nm,0.8s,mb4.4						
BVAR	**Borovoye Array**	**89.38**	**323**	P	**P**	**01 01 07.2**	**-0.6**
	5.7nm,0.6s,mb5.0,baz=102,slow=5.8,SNR=33						
BRVK	**Borovoye**	**89.45**	**323**	*e*P	**P**	**01 01 07.0**	**-1.2**
YKA	**Yellowknife Ar**	**95.22**	**28**	P	**P**	**01 01 35.2**	**+0.7**
	0.2nm,0.9s,mb3.5,baz=279,slow=4.2,SNR=4.5						
YKA				LR	LR	01 42 28.9	
	comp=Z,46nm,19.2s,MS4.0,baz=105,slow=34						
YKA	**Yellowknife Ar**	**95.22**	**28**	P	**P**	**01 01 35.2**	**+0.7**
YKA				LR	LR	01 42 28.9	
GERES	**GERESS Array B**	**124.17**	**329**	PKP	PKPdf	01 07 11.4	+2.7
	0.3nm,0.5s,baz=135,slow=1.9,SNR=4.3						

WEL 10 01:02:12.1±0.2, **47.72S**×**165.36E, h33**km, **ML3.8**/2, **Error ellipse: s-maj=2.1km s-min=1.6km az=90.0, Off west coast of South Island**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WHZ	**Wether Hill Ro**	**2.55**	**45**	PN	Pn	01 02 50.1	-1.9
WHZ				SN	Sn	01 03 19.0	-3.2
MLZ	**Mavora Lakes**	**3.06**	**40**	PN	Pn	01 02 57.5	-1.9
MLZ				SN	Sn	01 03 31.8	-3.5
TUZ	**Tuapeka**	**3.42**	**61**	PN	Pn	01 03 02.9	-2.1
TUZ				SN	Sn	01 03 40.4	-4.0
AXZ	**Alexandra**	**3.68**	**50**	PN	Pn	01 03 05.8	-2.4
AXZ				SN	Sn	01 03 46.1	-4.7

*NEIC **10** 01:31:11.9±0.7,21.98S×169.79E,h10km,mb4.6/1,Error ellipse: s-maj=28.5km s-min=13.0km az=168

	0.4nm,0.2s							
EPF	**Esparros**	**1.61**	**277**	*e*Pn		**Pn**	**02 09 41.8**	**+0.4**
EPF				*e*Pg		**Pg**	**02 09 44.7**	**-0.4**
EPF				*e*Sg		**Sg**	**02 10 05.6**	**-1.0**
	1.5nm,0.2s							
CAF	**Calviac**	**2.08**	**351**	*e*Pn		**Pn**	**02 09 48.9**	**+0.7**
CAF				*e*Pg		**Pg**	**02 09 54.0**	**-0.5**
CAF				*e*Sn		**Sn**	**02 10 14.1**	**-0.2**
CAF				*e*Sg		**Sg**	**02 10 20.9**	**-1.4**
	0.9nm,0.3s							
ETSF	**Etsaut**	**2.27**	**272**	*e*Sg		**Sg**	**02 10 25.6**	**-2.8**
	0.5nm,0.2s							
LFF	**La Frestale**	**2.44**	**329**	*e*Sg		**Sg**	**02 10 32.6**	**-1.5**
	1.3nm,0.3s							
VIVF	**Saint-Julien-l**	**2.52**	**37**	*e*Pn		**Pn**	**02 09 54.5**	**+0.1**
VIVF				*e*Sn		**Sn**	**02 10 24.4**	**-1.0**
VIVF				*e*Sg		**Sg**	**02 10 34.6**	**-2.3**
	0.3nm,0.2s							
RJF	**Les Rejaudoux**	**2.54**	**344**	*e*Sg		**Sg**	**02 10 35.4**	**-2.1**
	0.3nm,0.2s							

*LDG **10** 02:21:21.7±0.1,42.80N×2.54E,h4km,Md2.7/1,MI1.8/8, Error ellipse: s-maj=1.0km s-min=0.8km az=135.0*
*NEIC **10** 02:21:21.4,42.81N×2.53E,h5km,ML2.0(STR), ML1.8(LDG),After STR.*
*STR **10** 02:21:21.4±0.1,42.81N×2.53E,h5km±1km,Ml2.0,Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
*MDD **10** 02:21:22.0±0.4,42.83N×2.54E,h9km±5km,mbLg1.2/4, Error ellipse: s-maj=4.4km s-min=2.7km az=58.0,PRXIMO*
ISC 10 02:21:20.1±0.3,42.86N±0.02×2.53E±0.03,h12km±3km, n20,σ1$14/45,Pyrenees

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
LRDF	**Laroque-de-Fa**	**0.08**	**3**	Pg		**Pg**	**02 21 24.4**	**+1.6**
LRDF				Sg		**Sg**	**02 21 26.8**	**+2.2**
FILF	**Fillols**	**0.30**	**176**	Pg		**Pg**	**02 21 26.8**	**+0.4**
FILF				Sg		**Sg**	**02 21 30.4**	**-0.2**
CARF	**Carcanieres**	**0.34**	**246**	Pg		**Pg**	**02 21 28.0**	**+0.7**
CARF				Sg		**Sg**	**02 21 32.8**	**+0.7**
SJAF	**Saint Jean de**	**0.45**	**145**	Pg		**Pg**	**02 21 29.6**	**+0.2**
SJAF				Sg		**Sg**	**02 21 35.4**	**-0.2**
EJON	**La Jonquera**	**0.48**	**147**	Pg		**Pg**	**02 21 30.3**	**+0.3**
	0.2nm,0.1s,SNR=7.9							
EJON				Lg			02 21 36.7	
	2.1nm,0.1s,SNR=7.9							
MTLF	**Montolieu**	**0.54**	**335**	*e*Pg		**Pg**	**02 21 32.6**	**+1.6**
MTLF				*e*Pn		**Pn**	**02 21 35.4**	**+2.2**
MTLF				*e*Sg		**Sg**	**02 21 39.6**	**+1.3**
MTLF				*e*Sn		**Sn**	**02 21 44.7**	**+2.6**
MTLF	**Montolieu**	**0.54**	**335**	Pg		**Pg**	**02 21 32.6**	**+1.6**
MTLF				Lg			02 21 39.6	
VALF	**Valcebollere**	**0.59**	**220**	Pg		**Pg**	**02 21 32.4**	**+0.3**
VALF				Sg		**Sg**	**02 21 39.8**	**-0.3**
EMIR	**Miracle**	**1.20**	**219**	Pg		**Pg**	**02 21 44.0**	**-0.2**
	0.8nm,0.1s,SNR=7.9							
LASF	**Ste Croix**	**1.56**	**38**	*e*Pn		**Pn**	**02 21 49.0**	**+1.2**
LASF				*e*Pg		**Pg**	**02 21 51.6**	**+0.4**
LASF				*e*Sn		**Sn**	**02 22 08.8**	**+0.9**
LASF				*e*Sg		**Sg**	**02 22 12.0**	**0.0**
	1.2nm,0.3s							
EPF	**Esparros**	**1.62**	**277**	*e*Pn		**Pn**	**02 21 49.6**	**+0.9**
EPF				*e*Pg		**Pg**	**02 21 52.4**	**-0.1**
EPF				*e*Sn		**Sn**	**02 22 09.3**	**-0.3**
EPF				*e*Sg		**Sg**	**02 22 13.2**	**-0.9**
	3.8nm,0.3s							
EPOB	**Poblet**	**1.85**	**216**	Pg		**Pg**	**02 21 55.6**	**-1.5**
	0.3nm,0.1s,SNR=4.0							
CAF	**Calviac**	**2.10**	**351**	*e*Pn		**Pn**	**02 21 56.8**	**+1.3**
CAF				*e*Pg		**Pg**	**02 22 02.1**	**+0.1**
CAF				*e*Sn		**Sn**	**02 22 21.9**	**+0.2**
CAF				*e*Sg		**Sg**	**02 22 28.6**	**-1.4**
	1.2nm,0.2s							
ETSF	**Etsaut**	**2.27**	**272**	*e*Pn		**Pn**	**02 21 58.4**	**+0.4**
ETSF				*e*Pg		**Pg**	**02 22 04.3**	**-1.2**
ETSF				*e*Sg		**Sg**	**02 22 33.4**	**-2.4**
	1.9nm,0.5s							
LFF	**La Frestale**	**2.45**	**329**	*e*Pg		**Pg**	**02 22 08.5**	**-0.6**
LFF				*e*Sg		**Sg**	**02 22 40.2**	**-1.6**
	3.6nm,0.3s							
SMRF	**Simiane la Rot**	**2.48**	**62**	*e*Pn		**Pn**	**02 22 01.4**	**+0.4**
SMRF				*e*Sn		**Sn**	**02 22 30.5**	**-1.0**
VIVF	**Saint-Julien-l**	**2.53**	**37**	*e*Pn		**Pn**	**02 22 02.4**	**+0.7**
VIVF				*e*Pg		**Pg**	**02 22 09.1**	**-1.5**
VIVF				*e*Sg		**Sg**	**02 22 42.3**	**-2.0**
	0.7nm,0.3s							
RJF	**Les Rejaudoux**	**2.56**	**344**	*e*Pg		**Pg**	**02 22 10.4**	**-0.7**
RJF				*e*Sg		**Sg**	**02 22 43.4**	**-1.8**
	0.7nm,0.2s							
LMR	**La Mourre**	**2.95**	**79**	*e*Pn		**Pn**	**02 22 07.4**	**-0.3**
LMR				*e*Sn		**Sn**	**02 22 41.4**	**-2.0**
FRF	**La Foret Royal**	**3.09**	**75**	*e*Sg		**Sg**	**02 22 58.9**	**-4.1**
	0.2nm,0.2s							

*NEIC **10** 03:09:55.9±2.0,36.20N×71.15E,h48km±20km,mb4.0/1, Error ellipse: s-maj=25.2km s-min=8.7km az=64.0*
*IDC **10** 03:09:58.8±6.3,36.38N×71.28E,h70km±51km,mb3.5/6, mb1 3.7/8,mb1mx3.4/21,ML3.7/2,MS2.7/1,Ms1 2.7/1, ms1mx2.2/22,Error ellipse: s-maj=43.2km s-min=29.3km az=24.0*
*MOS **10** 03:10:00.2±2.2,36.54N×71.25E,h87km,mb4.0/4,Error ellipse: s-maj=34.0km s-min=15.5km az=99.8*
*NNC **10** 03:10:07.0±2.8,36.92N×71.01E,h161km±31km,mpv4.8, Error ellipse: s-maj=26.9km s-min=21.9km az=26.0*
ISC 10 03:09:60.0±0.6,36.36N±0.03×71.38E±0.10,h102km±8km, n44,σ1$23/49,mb3.6/6,8C-3D,Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CEP	**Cherat**	**2.56**	**170**	⇓P		**P**	**03 10 41.3**	**+0.5**
CEP				S		**S**	**03 11 13.0**	**+1.6**
CHCP	**Chirah Chowk**	**3.10**	**150**	P		**P**	**03 10 50.3**	**+2.1**
THW	**Thamme Wali**	**3.57**	**175**	⇑P		**P**	**03 10 54.0**	**-0.5**
SARP	**Sargodha**	**4.55**	**166**	⇑P		**P**	**03 11 06.4**	**-1.6**
AML	**Almayashu**	**6.04**	**17**	P		**P**	**03 11 28.6**	**+0.4**
	SNR=58							
UCH	**Uchtor**	**6.34**	**22**	P		**P**	**03 11 33.3**	**+0.8**
	SNR=38							
KZA	**Kyzart**	**6.45**	**27**	P		**P**	**03 11 34.8**	**+0.8**
	SNR=19							
EKS2	**Erkin-Say**	**6.56**	**16**	P		**P**	**03 11 35.8**	**+0.3**
	SNR=41							
AAK	**Ala-Archa**	**6.71**	**20**	P		**P**	**03 11 38.1**	**+0.5**
	SNR=82							
KK31	**Karatay Array**	**6.77**	**355**	⇓P		**P**	**03 11 36.3**	**-2.1**
	34nm,0.4s,baz=175,slow=12,SNR=755							
KK31				⇑S		**S**	**03 12 46.8**	**-7.7**
	14nm,0.5s,baz=192,slow=26,SNR=8.2							
KKAR	**Karatay Array**	**6.77**	**355**	*e*PN		**P**	**03 11 36.1**	**-2.3**
KKAR				pmax		pmax		
	comp=Z,17nm,0.3s							
KBK	**Karagaybulak**	**6.87**	**23**	P		**P**	**03 11 40.6**	**+0.9**
	SNR=32							
ULHL	**Ulahol**	**6.98**	**31**	P		**P**	**03 11 42.1**	**+0.9**
	SNR=14							
CHMS	**Chumysh**	**7.12**	**20**	P		**P**	**03 11 43.1**	**-0.1**
	SNR=65							
USP	**Ospenovka**	**7.31**	**18**	P		**P**	**03 11 45.3**	**-0.4**
	SNR=98							
TKM2	**Tokmak 2**	**7.32**	**25**	P		**P**	**03 11 46.5**	**+0.6**
	SNR=31							
NDI	**New Delhi**	**9.10**	**146**	*e*P		**P**	**03 12 21.0**	**+11**
NDI				*e*S		**S**	**03 13 44.0**	**-7.3**
MK31	**Makanchi Array**	**13.23**	**35**	⇑P		**P**	**03 13 05.0**	**+0.2**
	comp=Z,1.3nm,0.7s,baz=221,slow=15,SNR=12							
MKAR	**Makanchi Array**	**13.23**	**35**	P		**P**	**03 13 04.4**	**-0.3**
	comp=Z,0.2nm,0.3s,baz=221,slow=15,SNR=12							
MKAR	**Makanchi Array**	**13.23**	**35**	*i* P		**P**	**03 13 04.7**	**-0.1**
MKAR				pmax		pmax		
	comp=Z,1.0nm,0.5s							
KOLN	**Koldanda**	**13.43**	**126**	*e*P		**P**	**03 13 03.0**	**-4.4**
	comp=Z,3.0nm,0.5s							
KOLN				*e*S		**S**	**03 15 28.0**	**-6.6**
GKN	**Gorkha**	**13.97**	**123**	*e*P		**P**	**03 13 12.2**	**-2.2**
	comp=Z,6.3nm,0.2s							
KKN	**Kakani**	**14.54**	**122**	*e*P		**P**	**03 13 20.7**	**-1.1**
PKI	**Pulchoki**	**14.77**	**122**	*e*P		**P**	**03 13 23.5**	**-1.2**
	comp=Z,16nm,0.6s							
GUN	**Gumba**	**14.88**	**120**	*e*P		**P**	**03 13 25.4**	**-0.7**
KURK	**Kurchatov**	**15.27**	**18**	⇓P		**P**	**03 13 33.0**	**+2.1**
	comp=Z,1.7nm,1.0s,baz=196,slow=11,SNR=4.1							
KURK	**Kurchatov**	**15.27**	**18**	*e*P		**P**	**03 13 33.0**	**+2.1**
AB31	**Akbulak array**	**15.36**	**331**	⇑P		**P**	**03 13 27.0**	**-5.0**
	comp=Z,1.7nm,0.3s							
AB31				⇑S		**S**	**03 16 02.6**	**-17**
	comp=Z,1.8nm,0.3s							
VOSK	**Vostochnaya**	**16.37**	**359**	⇑P		**P**	**03 13 40.9**	**-3.7**
	comp=Z,0.8nm,0.4s							
BVAR	**Borovoye Array**	**16.68**	**358**	P		**P**	**03 13 46.9**	**-1.7**
	comp=Z,0.6nm,0.3s,baz=159,slow=13,SNR=8.0							
BVAR				LR		LR	03 20 46.8	
	comp=Z,31nm,21.4s,baz=150,slow=39							
BRVK	**Borovoye**	**16.72**	**358**	P		**P**	**03 13 47.4**	**-1.6**
ZEI	**Tsey**	**22.08**	**295**	⇓*e*P		**P**	**03 14 50.6**	**+3.2**
BRTR	**Keskin Array B**	**29.77**	**288**	P		**P**	**03 15 58.4**	**-0.6**
	comp=Z,0.1nm,0.4s,mb2.8,baz=97,slow=12,SNR=3.0							
FINES	**FINESS Array B**	**37.77**	**326**	P		**P**	**03 17 06.9**	**-0.5**
	comp=Z,0.5nm,0.5s,mb3.6,baz=117,slow=9.3,SNR=5.7							
FINES	**FINESS Array B**	**37.77**	**326**	P		**P**	**03 17 06.9**	**-0.5**
FINES				pmax		pmax		
	comp=Z,1.0nm,0.5s							
ARCES	**ARCESS Array B**	**41.39**	**338**	P		**P**	**03 17 37.3**	**0.0**
	comp=Z,1.4nm,0.6s,mb4.0,baz=101,slow=6.2,SNR=7.9							
ARCES	**ARCESS Array B**	**41.39**	**338**	P		**P**	**03 17 37.3**	**0.0**
ARCES				pmax		pmax		
	comp=Z,1.0nm,0.6s							
CLL	**Collm**	**43.52**	**309**	P		**P**	**03 17 58.0**	**+3.3**
INK	**Inuvik**	**74.00**	**9**	P		**P**	**03 21 26.6**	**+1.1**
	comp=Z,1.0nm,0.5s,mb3.8,baz=358,slow=7.4,SNR=20							
INK	**Inuvik**	**74.00**	**9**	P		**P**	**03 21 26.6**	**+1.1**
INK				pmax		pmax		
	comp=Z,1.0nm,0.5s							
INK	**Inuvik**	**74.00**	**9**	*e*P		**P**	**03 21 26.7**	**+1.2**
	comp=Z,1.0nm,0.5s,mb3.8							
YKA	**Yellowknife Ar**	**81.37**	**3**	P		**P**	**03 22 07.2**	**+1.0**
	comp=Z,0.8nm,0.5s,mb3.8,baz=349,slow=5.4,SNR=32							
YKA	**Yellowknife Ar**	**81.37**	**3**	P		**P**	**03 22 07.2**	**+1.0**
YKA				pmax		pmax		
	comp=Z,1.0nm,0.5s							
WRA	**Warramunga Arr**	**81.65**	**122**	P		**P**	**03 22 09.8**	**+1.3**
	comp=Z,0.4nm,0.7s,mb3.4,baz=326,slow=4.6,SNR=3.9							

*THE **10** 03:17:42.9,41.97N×24.09E,h10km,ML3.4*
*ATH **10** 03:17:47.9,41.61N×24.27E,h10km*
ISC 10 03:17:41.1±1.1,42.02N±0.04×24.16E±0.05,h0km±8km, n21,σ0$80/29,1C-2D,Bulgaria

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
NVR	**Nevrokopi**	**0.70**	**198**	*e*PB		**Pb**	**03 17 55.8**	**0.0**
SRS	**Serrai**	**0.99**	**205**	*e*Pg		**Pg**	**03 18 01.0**	**+0.1**
SRS				*e*Sg		**Sg**	**03 18 13.1**	**-1.0**
KNT	**Kendrikon**	**1.27**	**228**	*e*Pb		**Pb**	**03 18 05.6**	**0.0**
KNT				*e*Sb		**Sb**	**03 18 22.4**	**0.0**
SOH	**Sokhos**	**1.34**	**207**	*e*Pb		**Pb**	**03 18 07.2**	**+0.5**
SOH				*e*Sb		**Sb**	**03 18 25.2**	**+1.0**
RDO	**Rodhopi**	**1.35**	**129**	*e*PB		**Pb**	**03 18 07.9**	**+0.9**
VAY	**Valandovo**	**1.38**	**240**	*i* Pn		**Pn**	**03 18 07.6**	**+0.1**
VAY				*i*			03 18 09.5	
VAY				*i* Sg		**Sg**	**03 18 27.7**	**+0.8**
THE	**Thessaloniki**	**1.65**	**213**	*e*Pb		**Pb**	**03 18 12.2**	**+0.1**
THE				*e*Sb		**Sb**	**03 18 33.2**	**-0.1**
OUR	**Ouranopolis**	**1.69**	**185**	*e*Pb		**Pb**	**03 18 12.2**	**-0.5**
GRG	**Griva**	**1.69**	**232**	*e*Pb		**Pb**	**03 18 12.1**	**-0.7**
GRG				*e*Sb		**Sb**	**03 18 33.8**	**-0.7**
PLG	**Polygyros**	**1.73**	**198**	*e*PB		**Pb**	**03 18 13.5**	**+0.1**
ALN	**Alexandroupoli**	**1.81**	**128**	*e*Pb		**Pb**	**03 18 14.4**	**-0.4**
ALN				*e*Sb		**Sb**	**03 18 39.1**	**+1.2**
SKO	**Skopje**	**2.02**	**270**	*e*Pn		**Pn**	**03 18 19.0**	**+2.2**
PAIG	**Paliouri**	**2.12**	**190**	*e*Pn		**Pn**	**03 18 17.9**	**-0.2**
PAIG				*e*Sn		**Sn**	**03 18 45.1**	**-0.5**
LOS	**Limnos**	**2.19**	**161**	*e*Pn		**Pn**	**03 18 19.2**	**-0.1**
FNA	**Florina**	**2.43**	**240**	*e*Pn		**Pn**	**03 18 22.6**	**+0.1**
XOR	**Xorichti**	**2.75**	**196**	*e*Pn		**Pn**	**03 18 26.9**	**-0.3**
AOS	**Alonnisos**	**2.85**	**184**	*e*Pn		**Pn**	**03 18 28.0**	**-0.6**
AGG	**Agios Georgios**	**3.30**	**206**	*e*Pn		**Pn**	**03 18 34.6**	**-0.4**
ISR	**Istrita**	**3.55**	**28**	⇑*i*P		**Pn**	**03 18 40.3**	**+1.7**
MLR	**Muntele Rosu**	**3.71**	**20**	⇓*i*P		**Pn**	**03 18 39.6**	**-1.2**
CFR	**Carcaliu**	**4.28**	**41**	⇓*i*P		**Pn**	**03 18 47.1**	**-1.9**

*NEIC **10** 03:26:40.2±3.5,4.69S×153.56E,h45km±24km,mb4.2/3, Error ellipse: s-maj=38.3km s-min=14.6km az=92.0*
*IDC **10** 03:26:45.0±7.5,4.78S×153.41E,h84km±58km,mb3.6/6, mb1 3.8/7,mb1mx3.6/16,ML3.3/1,Error ellipse: s-maj=51.9km s-min=31.7km az=78.0*
ISC 10 03:26:39.3±3.2,4.7S±0.1×153.5E±0.2,h47km±23km,n15, σ0$81/18,mb3.9/8,New Ireland region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
RAB	**Rabaul**	**1.46**	**291**	*e*P		**P**	**03 27 03.2**	**-0.5**
RAB				*e*S		**S**	**03 27 30.6**	**+8.7**
PMG	**Port Moresby**	**7.84**	**233**	P		**P**	**03 28 35.0**	**+1.6**
	2.4nm,0.3s,baz=39,slow=6.7,SNR=9.4							
PMG				S		**S**	**03 30 01.4**	**-0.4**
	2.1nm,0.3s,baz=324,slow=19,SNR=3.6							
PMG	**Port Moresby**	**7.84**	**233**	*e*Pn		**P**	**03 28 34.2**	**+0.8**
PMG				*e*Sn		**S**	**03 30 01.3**	**-0.5**
WRAB	**Tennant Creek**	**24.02**	**229**	*e*P		**P**	**03 31 52.3**	**+1.4**
	3.0nm,0.4s,mb4.1							
WB2	**Warramunga Arr**	**24.03**	**229**	*e*P		**P**	**03 31 51.4**	**+0.4**
WRA	**Warramunga Arr**	**24.04**	**229**	P		**P**	**03 31 51.5**	**+0.4**
	1.1nm,0.5s,mb3.5,baz=52,slow=9.9,SNR=9.4							
WRA				PcP		PcP	03 35 32.1	-1.3
	0.4nm,0.8s,baz=49,slow=2.3,SNR=6.2							
ASAR	**Alice Springs**	**26.69**	**223**	P		**P**	**03 32 15.6**	**-0.6**
	0.4nm,0.7s,mb3.1,baz=55,slow=9.2,SNR=3.3							
ASAR				PcP		PcP	03 35 37.5	-1.8
	0.4nm,0.5s,baz=57,slow=1.6,SNR=5.5							
FITZ	**Fitzroy Crossi**	**30.33**	**242**	P		**P**	**03 32 47.2**	**-1.7**
	0.6nm,0.5s,mb3.6,baz=90,slow=15,SNR=3.2							
VNDA	**Vanda**	**72.87**	**178**	P		**P**	**03 38 03.9**	**-0.8**
	1.5nm,0.7s,mb4.0,baz=330,slow=8.4,SNR=11							
VNDA	**Vanda**	**72.87**	**178**	*e*P		**P**	**03 38 03.7**	**-1.0**
	0.9nm,0.8s,mb3.8							
MKAR	**Makanchi Array**	**80.75**	**319**	P		**P**	**03 38 50.1**	**+0.8**
	0.5nm,0.4s,mb3.8,baz=98,slow=7.3,SNR=2.9							
KURK	**Kurchatov**	**84.16**	**322**	*e*P		**P**	**03 39 07.3**	**+0.5**
QSPA	**South Pole Qui**	**85.23**	**180**	*e*P		**P**	**03 39 11.5**	**0.0**
	3.5nm,0.6s,mb4.7							
BVAR	**Borovoye Array**	**89.62**	**323**	P		**P**	**03 39 32.8**	**-0.5**
	2.4nm,1.1s,mb4.4,baz=117,slow=6.4,SNR=4.9							
BRVK	**Borovoye**	**89.69**	**323**	*e*P		**P**	**03 39 33.5**	**0.0**

*NEIC **10** 03:44:04.1±0.8,20.76S×67.91W,h172km±11km,mb4.0/1, Error ellipse: s-maj=19.5km s-min=12.5km az=58.0*
*IDC **10** 03:44:04.1±0.8,20.71S×67.90W,h169km±12km,mb3.7/2, mb1 3.4/6,mb1mx3.3/17,Error ellipse: s-maj=25.4km s-min=10.5km az=97.0*
ISC 10 03:44:03.3±0.7,20.76S±0.06×67.9W±0.1,h178km±11km, n12,σ0$92/16,mb3.9/2,Southern Bolivia

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
LVC	**Limon Verde**	**2.07**	**207**	P		**P**	**03 44 42.6**	**+1.2**
	6.4nm,0.3s,baz=20,slow=8.4,SNR=95							
LVC				S		**S**	**03 45 11.5**	**+0.8**
	26nm,0.3s,baz=90,slow=20,SNR=50							
LVC	**Limon Verde**	**2.07**	**207**	*e*Pn		**P**	**03 44 42.3**	**+0.9**
LVC				*e*Sn		**S**	**03 45 08.8**	**-1.9**
LPAZ	**La Paz**	**4.45**	**357**	P		**P**	**03 45 11.8**	**+1.0**
	1.1nm,0.3s,baz=179,slow=7.6,SNR=37							
LPAZ				S		**S**	**03 46 02.5**	**-0.4**
	0.1nm,0.3s,baz=190,slow=25,SNR=6.4							
LPAZ	**La Paz**	**4.45**	**357**	*e*Pn		**P**	**03 45 12.2**	**+1.4**
LPAZ				S		**S**	**03 46 02.5**	**-0.4**
ARE	**Arequipa**	**5.46**	**321**	*e*P		**P**	**03 45 23.0**	**-1.0**
ARE				*i* S		**S**	**03 46 21.0**	**-5.6**
CPUP	**Villa Florida**	**11.17**	**122**	P		**P**	**03 46 38.6**	**-0.2**
	0.2nm,0.3s,baz=317,slow=11,SNR=5.6							
CPUP	**Villa Florida**	**11.17**	**122**	*e*P		**P**	**03 46 37.9**	**-1.0**
	9.6nm,1.8s							
BDFB	**Brasilia**	**19.56**	**78**	P		**P**	**03 48 20.0**	**+0.6**
	0.5nm,0.3s,baz=272,slow=9.5,SNR=8.1							
DBIC	**Dimbokro**	**67.62**	**73**	P		**P**	**03 54 42.5**	**-0.9**
	14nm,1.2s,mb4.6,baz=234,slow=8.6,SNR=4.7							
YKA	**Yellowknife Ar**	**90.80**	**340**	P		**P**	**03 56 47.5**	**+0.6**
	0.2nm,0.8s,mb3.2,baz=133,slow=4.8,SNR=7.6							
YKA	**Yellowknife Ar**	**90.80**	**340**	P		**P**	**03 56 47.5**	**+0.6**
MKAR	**Makanchi Array**	**144.48**	**36**	PKP		PKPdf	04 03 20.1	+2.0
	0.5nm,0.5s,baz=305,slow=2.8,SNR=7.8							

*LDG **10** 03:50:07.6±0.1,42.81N×2.54E,h4km,Md2.1/1,MI1.7/7, Error ellipse: s-maj=1.2km s-min=0.9km az=140.0*
*NEIC **10** 03:50:07.6,42.81N×2.54E,h4km,ML2.1(STR), ML1.7(LDG),After LDG.*
*STR **10** 03:50:07.2±0.1,42.80N×2.55E,h5km±1km,Ml2.1,Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
*MDD **10** 03:50:08.0±0.5,42.83N×2.54E,h10km±1km,mbLg1.1/3, Error ellipse: s-maj=5.4km s-min=3.2km az=54.0,PRXIMO*
ISC 10 03:50:06.2±0.5,42.86N±0.03×2.55E±0.03,h13km±3km, n16,σ1$21/35,Pyrenees

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
LRDF	**Laroque-de-Fa**	**0.08**	**354**	Pg		**Pg**	**03 50 10.3**	**+1.3**
LRDF				Sg		**Sg**	**03 50 12.7**	**+1.8**
FILF	**Fillols**	**0.30**	**178**	Pg		**Pg**	**03 50 12.7**	**0.0**
FILF				Sg		**Sg**	**03 50 16.6**	**-0.4**
CARF	**Carcanieres**	**0.36**	**246**	Pg		**Pg**	**03 50 14.2**	**+0.5**
CARF				Sg		**Sg**	**03 50 18.8**	**+0.1**
EJON	**La Jonquera**	**0.48**	**149**	Lg			03 50 22.8	
	1.3nm,0.1s,SNR=7.9							
MTLF	**Montolieu**	**0.54**	**333**	*e*Pg		**Pg**	**03 50 18.6**	**+1.4**
MTLF				*e*Pn		**Pn**	**03 50 21.3**	**+2.1**
MTLF				*e*Sg		**Sg**	**03 50 25.6**	**+1.1**
MTLF				*e*Sn		**Sn**	**03 50 30.5**	**+2.5**
	1.9nm,0.2s							
MTLF	**Montolieu**	**0.54**	**333**	Pg		**Pg**	**03 50 18.6**	**+1.4**
MTLF				Lg			03 50 25.6	
LASF	**Ste Croix**	**1.54**	**38**	*e*Pg		**Pg**	**03 50 47.4**	**+0.3**
LASF				*e*Sn		**Sn**	**03 50 54.8**	**+1.2**
LASF				*e*Sg		**Sg**	**03 50 58.1**	**+0.4**
	0.6nm,0.2s							
LASF	**Ste Croix**	**1.54**	**38**	Sn		**Sn**	**03 50 54.8**	**+1.2**
LASF				Lg			03 50 58.1	
	0.3nm,0.2s							
EPF	**Esparros**	**1.63**	**277**	*e*Pn		**Pn**	**03 50 35.5**	**+0.6**
EPF				*e*Pg		**Pg**	**03 50 38.3**	**-0.6**
EPF				*e*Sn		**Sn**	**03 50 55.4**	**-0.4**
EPF				*e*Sg		**Sg**	**03 50 59.2**	**-1.4**
	1.7nm,0.3s							
CAF	**Calviac**	**2.09**	**351**	*e*Pn		**Pn**	**03 50 42.7**	**+1.2**
CAF				*e*Pg		**Pg**	**03 50 47.8**	**-0.3**
CAF				*e*Sn		**Sn**	**03 51 07.8**	**+0.2**
CAF				*e*Sg		**Sg**	**03 51 14.7**	**-1.3**
	0.8nm,0.3s							
ETSF	**Etsaut**	**2.29**	**272**	*e*Pn		**Pn**	**03 50 44.3**	**+0.1**
ETSF				*e*Sg		**Sg**	**03 51 19.3**	**-3.1**
	0.3nm,0.2s							
LFF	**La Frestale**	**2.45**	**328**	*e*Pn		**Pn**	**03 50 47.1**	**+0.4**
LFF				*e*Sg		**Sg**	**03 51 26.0**	**-2.0**
	2.4nm,0.3s							
SMRF	**Simiane la Rot**	**2.47**	**62**	*e*Pn		**Pn**	**03 50 47.8**	**+0.9**
SMRF				*e*Sn		**Sn**	**03 51 16.1**	**-1.0**
VIVF	**Saint-Julien-l**	**2.52**	**37**	*e*Pg		**Pg**	**03 50 55.2**	**-1.3**
VIVF				*e*Sg		**Sg**	**03 51 28.2**	**-1.9**
	0.7nm,0.3s							
RJF	**Les Rejaudoux**	**2.55**	**343**	*e*Pn		**Pn**	**03 50 48.3**	**+0.2**
RJF				*e*Sg		**Sg**	**03 51 28.9**	**-2.4**
	1.0nm,0.3s							
LMR	**La Mourre**	**2.94**	**79**	*e*Pn		**Pn**	**03 50 53.2**	**-0.4**
LMR				*e*Sn		**Sn**	**03 51 27.1**	**-1.9**

*STR **10** 03:55:16.9±0.0,42.99N×2.37E,h5km±1km,MI1.7,Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
*LDG **10** 03:55:17.4±0.1,42.81N×2.53E,h3km,Md1.9/1,MI1.6/3, Error ellipse: s-maj=2.7km s-min=1.2km az=144.0*
*NEIC **10** 03:55:17.4,42.81N×2.53E,h3km,ML1.7(STR), ML1.6(LDG),After LDG.*
*MDD **10** 03:55:17.7±0.6,42.83N×2.54E,h8km±6km,mbLg0.8/4, Error ellipse: s-maj=6.7km s-min=3.2km az=58.0,PRXIMO*
**ISC 10 03:55:16.6±1.

CNCH	**Conchagua**	**4.61**	**109**	*e*P	**P**	**04 17 01.0**	**+0.8**
CNCH				*e*S	**S**	**04 17 51.5**	**-1.5**
OXX	**Oaxaca**	**4.80**	**298**	*e*P	**P**	**04 17 05.0**	**+2.1**
VHO	**Vista Hermosa**	**4.80**	**298**	*i* P	**P**	**04 17 04.6**	**+1.7**
VHO				*i* S	**S**	**04 17 56.3**	**-1.5**
TEIG	**Tepich**	**6.59**	**35**	P	**P**	**04 17 27.3**	**-0.2**
	comp=E,9.2nm,0.3s,baz=228,slow=4.3,SNR=16						
TEIG				S	**S**	**04 18 40.1**	**-1.7**
	baz=343,slow=22,SNR=2.4						
TEIG	**Tepich**	**6.59**	**35**	*e*Pn	**P**	**04 17 27.1**	**-0.5**
TEIG				S	**S**	**04 18 40.1**	**-1.7**
PPM	**Popocatepetl**	**7.37**	**306**	*i* S	**S**	**04 19 00.1**	**-0.9**
JTS	**JuntasAbangare**	**8.48**	**121**	P	**P**	**04 17 53.9**	**+0.4**
	comp=E,1.7nm,0.3s,baz=308,slow=16,SNR=8.3						
JTS				S	**S**	**04 19 30.9**	**+2.5**
	comp=E,0.8nm,0.3s,baz=299,slow=19,SNR=3.6						
TXAR	**Lajitas Array**	**17.84**	**326**	P	**P**	**04 19 59.2**	**+3.6**
	comp=E,0.0nm,0.3s,baz=126,slow=12,SNR=3.7						
MIAR	**Mount Ida**	**19.65**	**357**	*e*Pn	**P**	**04 20 18.0**	**+2.0**
	comp=E,5.3nm,0.9s						
MIAR				*e*P		04 20 20.9	
MNTX	**Cornudas Mount**	**20.60**	**327**	*e*P	**P**	**04 20 27.4**	**+1.4**
	comp=E,0.7nm,0.7s						
FWV	**Forest Hill**	**24.84**	**22**	*e*P	**P**	**04 21 06.9**	**-0.6**
SJG	**San Juan**	**25.28**	**79**	LR	LR	04 31 01.1	
	comp=E,38nm,18.7s,baz=90,slow=36						
NVAR	**Mina Array Bea**	**32.84**	**321**	P	**P**	**04 22 22.2**	**+3.0**
	comp=E,1.3nm,0.8s,mb3.8,baz=124,slow=9.0,SNR=9.0						
YKA	**Yellowknife Ar**	**50.14**	**347**	P	**P**	**04 24 39.2**	**-0.9**
	comp=E,0.4nm,0.6s,mb3.6,baz=148,slow=7.6,SNR=12						
YKA				pP	pP	04 25 08.7	+7.8
	comp=E,0.9nm,1.1s,baz=150,slow=7.5,SNR=4.5						
YKA				PcP	PcP	04 25 57.8	-0.7
	comp=E,0.3nm,0.9s,baz=150,slow=3.9,SNR=5.8						
YKA	**Yellowknife Ar**	**50.14**	**347**	P	**P**	**04 24 39.2**	**-0.9**
YKA				pP	pP	04 25 08.7	+7.8
YKA				PcP	PcP	04 25 57.9	-0.7
INK	**Inuvik**	**59.55**	**343**	LR	LR	04 55 06.2	
	comp=E,46nm,18.1s,baz=190,slow=40						
INK	**Inuvik**	**59.55**	**343**	*e*P	**P**	**04 25 47.7**	**-0.5**
	comp=E,0.7nm,0.6s,mb3.9						
ILAR	**Eielson Array**	**61.95**	**337**	P	**P**	**04 26 04.5**	**-0.1**
	comp=E,0.8nm,0.7s,mb3.9,baz=124,slow=5.1,SNR=9.1						
CMAR	**Chiang Mai Arr**	**145.10**	**341**	PKPbc	PKPbc	04 35 22.0	+1.6
	comp=E,3.3nm,1.0s,baz=334,slow=3.6,SNR=7.6						

IDC 10 04:17:14.6±2.6, 17.17S×178.43W, mb3.6/3, mb1 3.9/3, mb1mx3.7/14, Error ellipse: s-maj=307.0km s-min=32.9km az=159.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WB2	**Warramunga Arr**	**44.74**	**259**	*e*P	P	04 25 38.8	+6.9
WRA	**Warramunga Arr**	**44.75**	**259**	P	P	04 25 29.7	-2.3
	0.1nm,0.3s,baz=94,slow=7.8,SNR=3.2						
ASAR	**Alice Springs**	**44.98**	**254**	P	P	04 25 32.4	-1.4
	0.7nm,0.4s,baz=88,slow=8.3,SNR=11						
TXAR	**Lajitas Array**	**85.62**	**58**	P	P	04 29 55.6	-1.2
	0.5nm,0.9s,baz=214,slow=6.5,SNR=5.0						

*IDC **10** 04:38:44.7±12.0, 24.77S×179.80E, h402km±142km, mb3.3/4, mb1 3.5/5, mb1mx3.3/13, Error ellipse: s-maj=71.0km s-min=31.0km az=10.0*
*NEIC **10** 04:38:53.6±5.8, 25.34S×179.73E, h515km±71km, mb4.6/3, Error ellipse: s-maj=68.1km s-min=17.7km az=193.0*
ISC 10 04:38:47.7±1.2, 25.0S±0.1×179.7E±0.2, h450km, n9, σ0§80/10, mb3.9/6, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**13.44**	**189**	P	**P**	**04 41 42.8**	**-0.9**
	0.6nm,0.3s,baz=304,slow=3.6,SNR=3.8						
URZ				S	**S**	**04 44 05.6**	**+0.4**
	0.8nm,0.3s,baz=63,slow=23,SNR=8.8						
SNZO	**South Karori**	**16.83**	**193**	*e*P	**P**	**04 42 18.7**	**+0.3**
	18nm,0.6s						
CTAO	**Charters Tower**	**31.26**	**272**	*e*P	**P**	**04 44 32.0**	**+1.6**
	9.5nm,0.5s,mb4.5						
STKA	**Stephens Creek**	**34.12**	**250**	P	**P**	**04 44 55.0**	**+0.5**
	0.8nm,0.3s,mb3.6,baz=91,slow=12,SNR=5.8						
ASAR	**Alice Springs**	**41.64**	**262**	P	**P**	**04 45 56.5**	**0.0**
	3.6nm,1.0s,mb3.8,baz=99,slow=8.5,SNR=15						
WB2	**Warramunga Arr**	**42.10**	**267**	*e*P	**P**	**04 45 58.6**	**-1.6**
WRAB	**Tennant Creek**	**42.10**	**267**	*e*P	**P**	**04 46 00.0**	**-0.2**
	2.9nm,0.4s,mb4.1						
WRA	**Warramunga Arr**	**42.11**	**267**	P	**P**	**04 46 00.1**	**-0.2**
	1.5nm,0.3s,mb3.8,baz=99,slow=7.0,SNR=44						
TXAR	**Lajitas Array**	**91.19**	**58**	P	**P**	**04 51 05.0**	**+0.3**
	0.3nm,0.7s,mb3.4,baz=233,slow=6.3,SNR=4.8						

*NEIC **10** 04:42:12.1, 36.74N×26.67E, h24km, MD3.1(ATH), After ATH.*
*ISK **10** 04:42:12.7, 36.79N×26.64E, h5km, MD3.2, ML2.9*
*ATH **10** 04:42:12.1, 36.74N×26.67E, h24km±2km, MD3.1/6*
ISC 10 04:42:12.1±0.4, 36.73N±0.03×26.66E±0.03, h5km, n21, σ0§99/34, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
NISR	**Nisiros**	**0.39**	**107**	*e*PB	**Pb**	**04 42 20.8**	**-0.3**
NISR				*e*SB	**Sb**	**04 42 26.5**	**-0.6**
BDRM	**Kayabasi**	**0.71**	**61**	*e*P	**Pg**	**04 42 26.7**	**+0.3**
BDRM				*i* S	**Sg**	**04 42 36.9**	**+1.0**
APE	**Apeiranthos**	**0.97**	**291**	*i* PG	**Pg**	**04 42 31.3**	**-0.2**
APE				*i* SG	**Sg**	**04 42 44.3**	**-0.2**
APE	**Apeiranthos**	**0.97**	**291**	*e*PN	**Pn**	**04 42 30.5**	**-1.7**
APE				*e*SN	**Sn**	**04 42 45.0**	**-1.5**
SMG	**Samos**	**0.99**	**8**	*e*PN	**Pn**	**04 42 31.0**	**-1.5**
SANT	**Santorini**	**1.03**	**250**	*e*Pn	**Pn**	**04 42 31.5**	**-1.6**
SANT				*e*S	**Sb**	**04 42 47.1**	**+1.4**
THR1	**Thera Island**	**1.03**	**250**	*e*P	**Pb**	**04 42 31.8**	**-0.3**
THR1				*e*S	**Sb**	**04 42 46.3**	**+0.6**
THR4	**Thira Island,**	**1.05**	**256**	*e*P	**Pb**	**04 42 32.1**	**-0.3**
THR4				*e*S	**Sb**	**04 42 48.8**	**+2.4**
MLSB	**Milas**	**1.06**	**57**	PG	**Pg**	**04 42 32.7**	**-0.5**
MLSB				SG	**Sg**	**04 42 47.8**	**+0.5**
THR3	**Thira Island,**	**1.06**	**253**	*e*P	**Pb**	**04 42 33.5**	**+0.8**
THR3				*e*S	**Sb**	**04 42 47.8**	**+1.1**
THR6	**Thira Island,**	**1.08**	**251**	*e*P	**Pb**	**04 42 33.7**	**+0.8**
THR5	**Thira Island,**	**1.10**	**254**	*e*P	**Pb**	**04 42 32.9**	**-0.5**
KARP	**Karpathos**	**1.24**	**161**	*e*PN	**Pn**	**04 42 35.2**	**-0.9**
KARP				*e*SN	**Sn**	**04 42 53.8**	**+0.4**
AYDN	**Tasoluk**	**1.35**	**46**	*e*P	**Pb**	**04 42 37.3**	**-0.2**
AYDN				*i* S	**Sb**	**04 42 55.3**	**+0.4**
YER	**Yerkesik**	**1.36**	**72**	PN	**Pn**	**04 42 38.9**	**+1.1**
NPS	**Neapolis**	**1.69**	**211**	*e*PB	**Pb**	**04 42 41.0**	**-2.3**
IZM	**Izmir**	**1.74**	**16**	PN	**Pn**	**04 42 43.8**	**+0.6**
KDAG	**Bornova**	**1.74**	**16**	*i* P	**Pn**	**04 42 44.0**	**+0.8**
KDAG				*i* S	**Sn**	**04 43 11.5**	**+5.4**
XRY	**Khrisi**	**2.01**	**203**	*e*PN	**Pn**	**04 42 47.5**	**+0.4**
DNZL	**Cakiroluk**	**2.13**	**62**	*i* P	**Pn**	**04 42 56.9**	**+8.0**
MANT	**Manisa**	**2.32**	**40**	*e*P	**Pn**	**04 42 58.1**	**+6.6**
MANT				*i* S	**Sn**	**04 43 33.6**	**+13**

DJA 10 04:49:31.3±0.8, 8.28S×117.35E, h320km, MD4.5/4, ML4.9/4, 4C-1D, Error ellipse: s-maj=77.0km s-min=28.3km az=164.0, Sumbawa region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KEDI	**Kedomdong**	**1.24**	**260⇑**	*i*Pn	P	04 50 15.5	+0.3
	514nm,0.3s						
RATI	**Rata**	**1.85**	**256⇑**	*e*Pn	P	04 50 19.4	+0.4
	606nm,0.3s						
RATI	**Rata**	**1.85**	**256⇑**	*i* P	P	04 50 20.4	+1.4
RATI				*e*Sn	S	04 50 53.4	-3.0
INGI	**Ingas**	**2.24**	**256⇓**	*e*Pn	P	04 50 22.8	+0.7
	914nm,0.2s						
INGI				*e*Sn	S	04 50 58.2	-3.6
KELI	**Kelakatan**	**2.83**	**271⇑**	*e*Pn	P	04 50 28.2	+1.0
	872nm,0.3s						

*NAO **10** 04:54:45.2±6.8, 66.82N×13.20E, h6km±44km, ML2.2*
*BER **10** 04:54:47.4±4.0, 66.83N×13.08E, MD2.4, ML1.9, ML2.2(NAO)*
ISC 10 04:54:45.0±1.1, 66.83N±0.04×13.2E±0.2, h9km±9km, n11, σ1§33/9, Northern Norway

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STOK	**Stokkvaagen**	**0.50**	**186**	*e*P	**Pg**	**04 54 54.3**	**-0.9**
STOK				*e*S	**Sg**	**04 55 01.1**	**-0.8**
MOR8	**Moi Rana**	**0.84**	**141**	*e*P	**Pb**	**04 55 01.4**	**+0.1**
MOR8				*e*S	**Sg**	**04 55 14.5**	**+1.4**
MOR8				AML	AML	04 55 15.7	
	comp=Z,53nm,0.2s						
LOF	**Lofoten**	**1.31**	**6**	*e*Sg	**Sg**	**04 55 30.3**	**+1.5**
NSS	**Namsos**	**2.36**	**192**	*e*P	**Pn**	**04 55 24.1**	**-0.5**
NSS				*e*S	**Sn**	**04 55 55.7**	**+1.7**
ARA0	**ARCESS Array S**	**5.34**	**54**	Pn	**Pn**	**04 56 05.2**	**-1.8**
	baz=238,slow=14						
ARA0				Sn	**Sn**	**04 57 05.7**	**-3.8**
	baz=238,slow=22						
ARA0				Lg		04 57 32.7	
	baz=235,slow=28						
NB2	**NORSAR Subarra**	**5.88**	**189**	Lg		04 57 50.0	
NB2	**NORSAR Subarra**	**5.88**	**189**	Lg		04 57 50.0	
HFS	**Hagfors**	**6.73**	**178**	Lg		04 58 14.7	
	baz=2.7,slow=28						
HFS	**Hagfors**	**6.73**	**178**	Lg		04 58 14.7	
	baz=2.7,slow=28						
FIA0	**FINESS Array S**	**7.81**	**128**	Lg		04 58 50.8	
	baz=322,slow=28						
FIA0	**FINESS Array S**	**7.81**	**128**	Lg		04 58 50.8	
	baz=322,slow=28						

IDC 10 04:56:25.9±1.7, 22.08S×173.86W, mb3.9/4, mb1 4.3/5, mb1mx4.0/16, ML4.4/1, Error ellipse: s-maj=96.4km s-min=25.0km az=160.0, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAR	**Rarotonga**	**13.13**	**89**	Pn	P	04 59 31.7	-4.7
	2.1nm,0.3s,baz=295,slow=12,SNR=6.7						
RAR				Sn	S	05 01 46.3	-18
	0.9nm,0.3s,baz=122,slow=13,SNR=2.6						
ASAR	**Alice Springs**	**47.94**	**258**	P	P	05 05 07.2	-1.2
	1.4nm,0.7s,baz=101,slow=7.7,SNR=13						
WRA	**Warramunga Arr**	**48.22**	**263**	P	P	05 05 07.7	-2.9
	0.9nm,0.6s,baz=96,slow=8.0,SNR=9.5						
NVAR	**Mina Array Bea**	**79.58**	**41**	P	P	05 08 36.2	-0.3
	0.7nm,0.6s,baz=212,slow=7.4,SNR=5.4						
YKA	**Yellowknife Ar**	**96.36**	**24**	P	P	05 09 55.5	-1.9
	0.1nm,0.7s,baz=243,slow=5.3,SNR=4.0						
AKASG	**Malin Array Be**	**146.20**	**333**	PKPbc	PKPbc	05 16 07.0	-1.1
	0.3nm,0.4s,baz=21,slow=2.9,SNR=5.3						

*NEIC **10** 05:03:38.9, 38.36N×9.06W, MN1.8(MDD), After MDD.*
*INMG **10** 05:03:39.2±1.0, 38.21N×9.29W, h18km±4km, ML1.5, Error ellipse: s-maj=6.1km s-min=2.3km az=78.0*
*MDD **10** 05:03:39.5±1.1, 38.22N×9.32W, h34km±2km, mbLg1.5/4, Error ellipse: s-maj=11.6km s-min=5.5km az=73.0, PRXIMO*
ISC 10 05:03:38.8±0.9, 38.28N±0.04×9.21W±0.07, h34km, n22, σ1§20/40, Portugal

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PLOU	**Loures**	**0.61**	**4**	*e*P	**P**	**05 03 51.6**	**+0.7**
PLOU				*e*S	**S**	**05 04 01.1**	**+1.4**
	14nm,0.1s						
PLOU	**Loures**	**0.61**	**4**	P	**P**	**05 03 51.6**	**+0.7**
PLOU				S	**S**	**05 04 01.1**	**+1.4**
	7.2nm,0.1s						
MOE	**Montemor**	**0.72**	**70**	*e*P	**P**	**05 03 54.0**	**+1.5**
MOE				*e*S	**S**	**05 04 04.8**	**+2.3**
PTEO	**Sao Teotonio**	**0.82**	**152**	*e*P	**P**	**05 03 54.0**	**0.0**
PTEO				*e*S	**S**	**05 04 04.1**	**-1.0**
	9.9nm,0.2s						
PTEO	**Sao Teotonio**	**0.82**	**152**	P	**P**	**05 03 54.0**	**0.0**
PTEO				S	**S**	**05 04 04.1**	**-1.0**
	4.9nm,0.2s						
PBEJ	**Beja**	**1.09**	**103**	*e*S	**S**	**05 04 12.2**	**+0.4**
	3.3nm,0.1s						
PBEJ	**Beja**	**1.09**	**103**	S	**S**	**05 04 12.2**	**+0.4**
	1.6nm,0.1s						
EGRO	**El Granado**	**1.55**	**118**	Pg	**P**	**05 04 05.0**	**+0.5**
	0.2nm,0.1s,SNR=7.9						
EGRO				Lg		05 04 24.1	
	0.8nm,0.2s,SNR=4.5						
EGRO	**El Granado**	**1.55**	**118**	P	**P**	**05 04 04.9**	**+0.4**
EGRO				S	**S**	**05 04 23.7**	**+0.1**
PALC	**Alcoutim**	**1.59**	**120**	*e*P	**P**	**05 04 05.5**	**+0.5**
PALC				*e*S	**S**	**05 04 23.9**	**-0.7**
	3.4nm,0.3s						
PALC	**Alcoutim**	**1.59**	**120**	P	**P**	**05 04 05.5**	**+0.5**
PALC				S	**S**	**05 04 23.9**	**-0.7**
	1.7nm,0.3s						
EBAD	**Badajoz**	**1.79**	**74**	Pn	**P**	**05 04 08.2**	**+0.4**
	0.6nm,0.1s,SNR=5.0						
EBAD				Sn	**S**	**05 04 29.9**	**+0.4**
	1.3nm,0.1s,SNR=7.9						
EBAD	**Badajoz**	**1.79**	**74**	P	**P**	**05 04 08.9**	**+1.1**
EBAD				S	**S**	**05 04 29.2**	**-0.4**
EMIN	**Mina Concepcio**	**2.07**	**103**	Pn	**P**	**05 04 13.3**	**+1.5**
	0.0nm,0.0s,SNR=7.9						
EMIN				Sn	**S**	**05 04 35.4**	**-1.2**
	0.5nm,0.1s,SNR=8.0						
EMIN				Lg		05 04 37.5	
	SNR=7.9						
EMIN	**Mina Concepcio**	**2.07**	**103**	P	**P**	**05 04 13.5**	**+1.7**
EMIN				S	**S**	**05 04 35.5**	**-1.1**
EADA	**Adamuz**	**3.65**	**90**	Pn	**P**	**05 04 35.1**	**+0.8**
	0.6nm,0.2s,SNR=7.9						
EADA				Sn	**S**	**05 05 14.7**	**-2.2**
	0.6nm,0.1s,SNR=7.9						
EADA	**Adamuz**	**3.65**	**90**	P	**P**	**05 04 34.2**	**-0.2**
EADA				S	**S**	**05 05 14.3**	**-2.6**
ELOB	**Lobios**	**3.69**	**13**	Sn	**S**	**05 05 15.2**	**-2.8**
	0.7nm,0.2s,SNR=7.9						
ELOB	**Lobios**	**3.69**	**13**	P	**P**	**05 04 34.6**	**-0.3**
ELOB				S	**S**	**05 05 14.7**	**-3.3**
ECAL	**Calabor**	**4.12**	**27**	Pn	**P**	**05 04 41.2**	**+0.1**
	0.2nm,0.1s,SNR=7.9						
ECAL				Sn	**S**	**05 05 26.7**	**-2.2**
	0.3nm,0.1s,SNR=7.9						
ECAL	**Calabor**	**4.12**	**27**	P	**P**	**05 04 40.6**	**-0.5**
ECAL				S	**S**	**05 05 24.9**	**-3.9**
EMAZ	**Mazaricos**	**4.67**	**2**	Pn	**P**	**05 04 47.3**	**-1.6**
	0.6nm,0.1s,SNR=7.9						
EMAZ				Sn	**S**	**05 05 38.2**	**-4.4**
	0.7nm,0.1s,SNR=7.9						

*IDC **10** 05:14:14.6±0.5, 11.20S×165.87E, mb4.5/17, mb1 4.6/18, mb1mx4.6/19, MS4.2/15, Ms1 4.2/15, ms1mx4.1/22, Error ellipse: s-maj=19.9km s-min=15.0km az=128.0*
*NEIC **10** 05:14:20.6±0.2, 11.26S×165.81E, mb4.6/16, MS4.5/3, Error ellipse: s-maj=9.4km s-min=6.7km az=137.0*
*BJI **10** 05:14:20.5, 11.30S×165.80E, h39km, mB4.9, mb4.8, Ms4.8, Msz4.5*
ISC 10 05:14:18.7±0.3, 11.28S±0.06×165.74E±0.07, h37km, h37km±1.6km: pP-P, n77, σ0§85/43, mb4.5/28, MS4.2/18, 2C, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BKM	**Butte a Klehm**	**6.80**	**159**	*i* P	**P**	**05 15 59.5**	**+0.9**
PMG	**Port Moresby**	**18.37**	**274**	P	**P**	**05 18 36.4**	**+3.9**
	baz=103,slow=13,SNR=3.4						
PMG	**Port Moresby**	**18.37**	**274**	P	**P**	**05 18 33.4**	**+0.8**
	22nm,0.9s						
CTA	**Charters Tower**	**20.69**	**243**	*e*P	**P**	**05 18 58.8**	**+0.6**
	23nm,0.9s						
CTA	**Charters Tower**	**20.69**	**243**	P	**P**	**05 18 59.0**	**+0.8**
	18nm,0.9s,baz=77,slow=12,SNR=15						
CTA				LR	LR	05 26 23.4	
	comp=Z,1µm,18.4s,MS4.3,baz=54,slow=35						
CTAO	**Charters Tower**	**20.69**	**243**	*e*P	**P**	**05 18 58.5**	**+0.3**
	28nm,1.1s						
CTAO				*e*pP		05 19 08.5	
URZ	**Urewera**	**28.73**	**161**	P	**P**	**05 20 14.5**	**-0.3**
	5.8nm,0.8s,mb4.4,baz=290,slow=1.5,SNR=4.7						
STKA	**Stephens Creek**	**30.27**	**224**	*e*P	**P**	**05 20 28.7**	**+0.1**
	5.7nm,0.8s,mb4.3						
STKA				*e*	pP	05 20 39.2	+0.1
STKA	**Stephens Creek**	**30.27**	**224**	P	**P**	**05 20 28.6**	**0.0**
	6.9nm,0.7s,mb4.5,baz=34,slow=9.0,SNR=14						
STKA				LR	LR	05 32 07.9	
	comp=Z,507nm,18.8s,MS4.2,baz=127,slow=35						

WRAB	**Tennant Creek**	**31.39**	**250**	*e*P	**P**	**05 20 37.1**	**-1.5**
	17nm,0.8s,mb4.9						
WRAB				*e*pP	pP	05 20 47.9	-1.2
WB2	**Warramunga Arr**	**31.39**	**250**	*e*P	**P**	**05 20 37.8**	**-0.8**
WB2				*e*	pP	05 20 48.4	-0.7
WRA	**Warramunga Arr**	**31.40**	**250**	P	**P**	**05 20 37.9**	**-0.8**
	8.8nm,0.8s,mb4.6,baz=80,slow=9.0,SNR=55						
WRA				LR	LR	05 31 50.5	
	comp=Z,356nm,21.7s,MS4.0,baz=75,slow=34						
RPZ	**Rata Peaks**	**32.65**	**173**	P	**P**	**05 20 49.0**	**-0.3**
	17nm,0.8s,mb5.0,baz=22,slow=8.4,SNR=7.7						
ASAR	**Alice Springs**	**32.69**	**244**	P	**P**	**05 20 48.9**	**-1.1**
	2.9nm,0.8s,mb4.3,baz=75,slow=9.8,SNR=17						
ASAR				PcP	PcP	05 23 37.8	+2.6
	0.7nm,0.7s,baz=62,slow=2.1,SNR=4.6						
ASAR				LR	LR	05 34 27.6	
	comp=Z,686nm,18.2s,MS4.4,baz=6.2,slow=37						
RAR	**Rarotonga**	**34.48**	**111**	LR	LR	05 31 17.1	
	comp=Z,224nm,18.6s,MS3.9,baz=150,slow=30						
FITZ	**Fitzroy Crossi**	**39.32**	**255**	*e*P	**P**	**05 21 46.3**	**+0.2**
	7.0nm,0.8s,mb4.4						
FITZ	**Fitzroy Crossi**	**39.32**	**255**	P	**P**	**05 21 46.3**	**+0.2**
	9.0nm,0.8s,mb4.5,baz=104,slow=2.3,SNR=16						
FITZ				LR	LR	05 37 33.0	
	comp=Z,333nm,19.7s,MS4.2,baz=76,slow=35						
PPT	**Papeete**	**43.65**	**104**	*e*S	**S**	**05 28 38.6**	**-10**
PPT				*e*L		05 32 42.3	
PPT				*e*R		05 34 30.4	
	380nm,22.2s,baz=287						
CBIJ	**Chichi jima**	**44.47**	**329**	LR	LR	05 38 04.3	
	comp=Z,276nm,21.6s,MS4.1,baz=122,slow=32						
JNU	**Nakatsue**	**55.26**	**324**	LR	LR	05 43 40.1	
	comp=Z,159nm,19.8s,MS4.1,baz=125,slow=32						
RKT	**Rikitea**	**57.51**	**110**	*e*L		05 38 33.8	
RKT				*e*R		05 41 02.0	
	624nm,27.5s						
VNDA	**Vanda**	**66.26**	**181**	P	**P**	**05 25 04.5**	**-0.3**
	1.3nm,0.8s,mb4.0,baz=7.7,slow=4.8,SNR=4.9						
VNDA	**Vanda**	**66.26**	**181**	P	**P**	**05 25 04.5**	**-0.4**
SBA	**Scott Base**	**66.57**	**180**	*e*P	**P**	**05 25 06.7**	**0.0**
	3.7nm,0.9s,mb4.4						
SBA				*e*pP	pP	05 25 19.6	+1.5
ENH	**Enshi**	**68.04**	**309**	*e*P	**P**	**05 25 16.1**	**-0.7**
	13nm,1.0s,mb4.9						
ENH				*e*pP	pP	05 25 27.3	-0.8
BJT	**Baijiatuau**	**68.65**	**321**	P	**P**	**05 25 19.8**	**-0.5**
	3.6nm,0.4s,mb4.7						
CMAR	**Chiang Mai Arr**	**72.20**	**294**	P	**P**	**05 25 43.5**	**+1.3**
	1.9nm,0.5s,mb4.3,baz=108,slow=4.2,SNR=12						
CMAR				LR	LR	05 53 28.8	
	comp=Z,79nm,20.5s,MS4.0,baz=195,slow=33						
ULN	**Ulaanbaatar**	**78.48**	**324**	*e*P	**P**	**05 26 18.8**	**+1.2**
	4.1nm,0.8s,mb4.4						
ULN				LR	LR		
	comp=Z,108nm,20.0s,MS4.2						
QSPA	**South Pole Qui**	**78.73**	**180**	*e*P	**P**	**05 26 18.6**	**+0.2**
	comp=Z,56nm,0.9s,mb5.5						
SONM	**Songino Array**	**78.85**	**324**	P	**P**	**05 26 20.3**	**+0.6**
	comp=Z,2.6nm,1.0s,mb4.1,baz=135,slow=7.0,SNR=7.8						
BILL	**Bilibino**	**79.11**	**0**	*e*P	**P**	**05 26 20.2**	**-0.4**
	comp=Z,14nm,0.9s,mb4.9						
GTA	**Gaotai**	**79.21**	**314**	*e*P	**P**	**05 26 23.7**	**+1.9**
GTA				AP	pP	05 26 33.3	+0.1
GTA				XP	sP	05 26 38.5	+1.2
GTA				AMB	AMB		
	comp=Z,9.0nm,1.0s,mb4.7						
MCK	**McKinley**	**82.36**	**19**	*e*P	**P**	**05 26 39.1**	**+1.2**
	comp=Z,4.3nm,1.0s,mb4.3						
COLA	**College**	**83.50**	**18**	*e*P	**P**	**05 26 42.6**	**-1.1**
	comp=Z,15nm,0.9s,mb5.1						
ILAR	**Eielson Array**	**83.73**	**18**	P	**P**	**05 26 43.8**	**-1.0**
	comp=Z,3.3nm,0.7s,mb4.5,baz=245,slow=4.8,SNR=26						
ILAR				LR	LR	06 06 05.4	
	comp=Z,77nm,18.5s,MS4.1,baz=109,slow=37						
MAW	**Mawson**	**84.51**	**202**	P	**P**	**05 26 49.9**	**+1.2**
	comp=Z,18nm,1.4s,mb5.0,baz=103,slow=6.9,SNR=5.6						
MAW				LR	LR	06 00 20.3	
	comp=Z,110nm,21.3s,MS4.2,baz=240,slow=33						
DAWY	**Dawson**	**85.77**	**21**	*e*P	**P**	**05 26 54.9**	**-0.1**
NVAR	**Mina Array Bea**	**86.17**	**50**	P	**P**	**05 26 57.7**	**+0.1**
	comp=Z,1.6nm,0.8s,mb4.3,baz=221,slow=5.8,SNR=9.4						
NVAR	**Mina Array Bea**	**86.17**	**50**	P	**P**	**05 26 57.7**	**+0.1**
NEW	**Newport**	**89.92**	**41**	PFAKE		05 27 30.0	+15
NEW				LR	LR		
	comp=Z,191nm,20.0s,MS4.5						
INK	**Inuvik**	**90.12**	**19**	P	**P**	**05 27 15.2**	**-0.6**
	comp=Z,2.1nm,1.1s,mb4.4						
HLID	**Hailey**	**90.44**	**46**	*e*P	**P**	**05 27 18.4**	**+0.5**
	comp=Z,2.2nm,0.9s,mb4.5						
HLID				LR	LR		
	comp=Z,233nm,19.0s,MS4.6						
MSU	**Marysvale**	**90.83**	**51**	*e*P	**P**	**05 27 20.5**	**+0.7**
MSU				*e*pP	pP	05 27 32.1	+0.7
MKAR	**Makanchi Array**	**93.69**	**317**	P	**P**	**05 27 33.6**	**+0.9**
	comp=Z,4.9nm,0.8s,mb5.0,baz=102,

ISC 10 05:21:06.7±1.7, 34.15N±0.09× 89.30E±0.08, h47km±23km, n19, σ0°79/20, mb3.9/4, Xizang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LSA	**Lhasa**	**4.71**	**160**	P	**P**	**05 22 22.6**	**+5.5**
LSA				S	**S**	**05 23 25.7**	**+15**
LSA				LR	LR		
	comp=N,2μm,3.9s						
LSA				LR	LR		
	comp=E,4μm,4.2s						
LSA				LR	LR		
	comp=Z,5μm,3.2s						
LSA	**Lhasa**	**4.71**	**160**	*e*Pn	**P**	**05 22 18.4**	**+1.3**
KKN	**Kakani**	**7.22**	**210**	*e*P	**P**	**05 22 52.9**	**+0.7**
	comp=Z,11nm,0.7s						
GKN	**Gorkha**	**7.32**	**214**	*e*P	**P**	**05 22 54.7**	**+1.1**
PKI	**Pulchoki**	**7.36**	**208**	*e*P	**P**	**05 22 53.2**	**-1.0**
	comp=Z,13nm,0.6s						
DMN	**Daman**	**7.45**	**210**	*e*P	**P**	**05 22 55.2**	**-0.2**
	comp=Z,20nm,0.7s						
KOLN	**Koldanda**	**8.02**	**219**	*e*P	**P**	**05 23 02.0**	**-1.3**
MKAR	**Makanchi Array**	**13.70**	**339**	P	**P**	**05 24 19.5**	**-0.5**
	comp=Z,0.1nm,0.3s,baz=158,slow=7.8,SNR=3.1						
GYA	**Guiyang**	**16.83**	**112**	P	**P**	**05 25 01.2**	**+0.8**
GYA				AMB	AMB		
	comp=Z,10.0nm,0.6s						
ENH	**Enshi**	**17.52**	**97**	*e*P	**P**	**05 25 09.2**	**+0.1**
CMAR	**Chiang Mai Arr**	**17.84**	**149**	P	**P**	**05 25 12.7**	**-0.6**
	comp=Z,0.5nm,0.3s,baz=332,slow=12,SNR=8.7						
CMAR				LR	LR	05 32 45.1	
	comp=Z,41nm,21.9s,baz=205,slow=39						
SONM	**Songino Array**	**18.74**	**38**	P	**P**	**05 25 24.5**	**+0.6**
	comp=Z,0.2nm,0.3s,baz=229,slow=11,SNR=7.0						
ULN	**Ulaanbaatar**	**19.10**	**39**	*e*P	**P**	**05 25 26.7**	**-1.4**
	comp=Z,4.2nm,1.3s						
BVAR	**Borovoye Array**	**23.18**	**330**	P	**P**	**05 26 10.7**	**+0.9**
	comp=Z,0.9nm,0.7s,mb3.3,baz=135,slow=10,SNR=8.7						
BRVK	**Borovoye**	**23.25**	**330**	P	**P**	**05 26 11.1**	**+0.7**
ZRNK	**Zerenda**	**23.72**	**329**	*e*P	**P**	**05 26 15.3**	**+0.4**
BRTR	**Keskin Array B**	**44.23**	**294**	P	**P**	**05 29 13.1**	**0.0**
	comp=Z,2.1nm,1.1s,mb3.8,baz=90,slow=6.2,SNR=5.8						
COLA	**College**	**71.75**	**22**	*e*P	**P**	**05 32 25.1**	**-0.2**
	comp=Z,5.1nm,1.0s,mb4.4						
ILAR	**Eielson Array**	**72.12**	**22**	P	**P**	**05 32 26.8**	**-0.7**
	comp=Z,1.4nm,0.9s,mb3.9,baz=282,slow=4.4,SNR=8.3						

IDC 10 05:57:37.6±3.7, 11.29S×165.83E, mb4.0/4, mb1 4.2/4, mb1mx3.8/14, Error ellipse: s-maj=131.0km s-min=37.6km az=141.0, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**31.48**	**250**	P	P	06 04 00.8	-2.6
	2.0nm,0.8s,baz=80,slow=9.0,SNR=11						
CMAR	**Chiang Mai Arr**	**72.29**	**294**	P	P	06 09 06.5	-0.8
	0.6nm,0.3s,baz=90,slow=5.4,SNR=4.1						
ILAR	**Eielson Array**	**83.71**	**18**	P	P	06 10 07.9	-1.4
	0.3nm,0.6s,baz=244,slow=4.8,SNR=5.5						
MKAR	**Makanchi Array**	**93.76**	**317**	P	P	06 10 56.1	-1.6
	0.7nm,0.8s,baz=104,slow=5.0,SNR=6.6						

*NEIC **10** 06:07:21.1±1.2, 6.23S×151.54E, h10km, mb3.9/1, Error ellipse: s-maj=54.8km s-min=13.1km az=129.0*
*IDC **10** 06:07:27.3±6.0, 6.29S×151.56E, h62km±51km, mb3.5/6, mb1 3.8/7, mb1mx3.6/14, ML2.9/1, Error ellipse: s-maj=60.9km s-min=28.6km az=124.0*

ISC 10 06:07:28.3±5.2, 6.2S±0.3×151.3E±0.4, h76km±43km, n9, σ0°94/11, mb3.6/7, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**5.18**	**231**	P	**P**	**06 08 45.5**	**+0.6**
	2.5nm,0.3s,baz=35,slow=6.5,SNR=6.0						
PMG				S	**S**	**06 09 45.2**	**+1.2**
	9.6nm,0.3s,baz=195,slow=19,SNR=7.7						
PMG	**Port Moresby**	**5.18**	**231**	*e*Pn	**P**	**06 08 40.4**	**-4.5**
PMG				*e*Sn	**S**	**06 09 42.3**	**-1.8**
WRAB	**Tennant Creek**	**21.38**	**229**	*e*P	**P**	**06 12 11.3**	**-0.1**
	3.0nm,0.6s,mb3.8						
WRA	**Warramunga Arr**	**21.40**	**229**	P	**P**	**06 12 10.8**	**-0.7**
	1.2nm,0.7s,mb3.3,baz=56,slow=10,SNR=9.7						
ASAR	**Alice Springs**	**24.11**	**222**	P	**P**	**06 12 38.8**	**+0.6**
	3.1nm,0.8s,mb3.7,baz=55,slow=9.0,SNR=22						
FITZ	**Fitzroy Crossi**	**27.67**	**242**	P	**P**	**06 13 11.8**	**+0.4**
	0.9nm,0.5s,mb3.5,baz=37,slow=5.1,SNR=4.0						
SONM	**Songino Array**	**66.67**	**329**	P	**P**	**06 18 13.4**	**+0.2**
	0.5nm,0.6s,mb3.5,baz=151,slow=6.6,SNR=4.7						
ILAR	**Eielson Array**	**83.99**	**22**	P	**P**	**06 19 49.6**	**-1.6**
	1.7nm,0.7s,mb4.0,baz=250,slow=5.4,SNR=20						
YKA	**Yellowknife Ar**	**97.34**	**28**	P	**P**	**06 20 55.2**	**+1.2**
	0.1nm,0.7s,mb3.4,baz=272,slow=4.2,SNR=3.7						

IDC 10 06:29:02.2±4.8, 11.03S×165.60E, mb3.6/3, mb1 3.9/3, mb1mx3.6/14, MS3.3/1, Ms1 3.3/1, ms1mx2.7/21, Error ellipse: s-maj=247.0km s-min=34.1km az=139.0, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**18.22**	**273**	LR	LR	06 38 05.2	
	comp=Z,102nm,20.8s,baz=107,slow=30						
WRA	**Warramunga Arr**	**31.36**	**250**	P	P	06 35 24.2	-2.8
	1.4nm,0.8s,baz=81,slow=9.3,SNR=7.8						
ASAR	**Alice Springs**	**32.68**	**243**	P	P	06 35 37.1	-1.4
	0.9nm,1.1s,baz=74,slow=9.7,SNR=3.9						
ILAR	**Eielson Array**	**83.54**	**19**	P	P	06 41 31.8	-1.3
	0.3nm,0.8s,baz=231,slow=5.8,SNR=4.4						

*IDC **10** 06:32:01.6±0.8, 8.65N×126.32E, mb3.7/7, mb1 3.9/7, mb1mx3.7/20, MS3.5/2, Ms1 3.5/2, ms1mx2.7/25, Error ellipse: s-maj=52.9km s-min=18.9km az=77.0*
*NEIC **10** 06:32:03.1±0.6, 8.66N×126.34E, h10km, Error ellipse: s-maj=36.0km s-min=12.0km az=76.0*
*MAN **10** 06:32:09.0, 8.68N×126.47E, h23km, mb4.5, ML3.3, MS3.1*

ISC 10 06:32:08.0±0.8, 8.55N±0.05×126.50E±0.09, h63km±7km, n23, σ1°36/33, mb3.6/7, 9C-2D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BIPH	**Bislig**	**0.39**	**201**	↓*i*P	**P**	**06 32 19.2**	**-0.1**
BIPH				*i* S	**S**	**06 32 25.7**	**-1.9**
BUTP	**Butuan**	**0.96**	**295**	↑*e*P	**P**	**06 32 25.7**	**-0.2**
BUTP				*e*S	**S**	**06 32 40.2**	**+1.0**
SCPH	**Surigao**	**1.58**	**321**	*e*P	**P**	**06 32 34.1**	**-0.3**
SCPH				*e*S	**S**	**06 32 51.0**	**-2.9**
KCP	**Kidapawan**	**2.08**	**222**	↓*e*P	**P**	**06 32 43.3**	**+2.0**
MSLP	**Maasin**	**2.26**	**314**	↑*e*P	**P**	**06 32 46.2**	**+2.4**
MSLP				*e*S	**S**	**06 33 12.6**	**+2.1**
MSLP	**Maasin**	**2.26**	**314**	↑*e*P	**P**	**06 32 46.5**	**+2.7**
MSLP				*e*S	**S**	**06 33 13.2**	**+2.8**
TBP	**Tagbilaran**	**2.84**	**294**	*e*P	**P**	**06 32 52.0**	**-0.1**
TBP				*e*S	**S**	**06 33 23.4**	**-1.8**
PLP	**Palo**	**3.00**	**330**	*e*P	**P**	**06 32 54.1**	**-0.2**
PLP				*e*S	**S**	**06 33 28.7**	**-0.5**
LLP	**Lapu-Lapu**	**3.05**	**305**	↑*e*P	**P**	**06 32 56.0**	**+0.8**
LLP				*e*S	**S**	**06 33 30.5**	**-0.1**
BESP	**Borongan**	**3.20**	**341**	↑*e*P	**P**	**06 33 01.6**	**+4.3**
BESP				*e*S	**S**	**06 33 42.2**	**+7.8**
BESP	**Borongan**	**3.20**	**341**	↑*e*P	**P**	**06 33 01.6**	**+4.3**
BESP				*e*S	**S**	**06 33 42.2**	**+7.8**
CNP	**Catarman**	**4.33**	**335**	↑*e*P	**P**	**06 33 16.0**	**+3.0**
CNP	**Catarman**	**4.33**	**335**	↑*e*P	**P**	**06 33 14.2**	**+1.2**
CNP				*e*S	**S**	**06 34 01.7**	**-0.9**
PVCP	**Virac**	**5.51**	**336**	↑*e*P	**P**	**06 33 38.0**	**+8.5**
CBIJ	**Chichi jima**	**23.67**	**37**	LR	LR	06 44 24.9	
	comp=Z,83nm,19.8s,baz=118,slow=31						
FITZ	**Fitzroy Crossi**	**26.50**	**182**	P	P	**06 37 42.7**	**+1.0**
	1.3nm,0.5s,mb3.7,baz=15,slow=12,SNR=7.2						
WRA	**Warramunga Arr**	**29.35**	**165**	P	**P**	**06 38 06.9**	**-0.5**
	0.4nm,0.8s,mb3.2,baz=342,slow=9.3,SNR=4.2						
ASAR	**Alice Springs**	**32.83**	**167**	P	**P**	**06 38 38.1**	**+0.1**
	0.2nm,0.4s,mb3.4,baz=349,slow=7.1,SNR=3.3						
ASAR				PcP	PcP	06 41 22.2	+0.5
	0.6nm,0.6s,baz=348,slow=1.9,SNR=5.8						
MKAR	**Makanchi Array**	**53.53**	**323**	P	**P**	**06 41 22.9**	**-1.7**
	0.5nm,0.6s,mb3.6,baz=123,slow=7.9,SNR=5.2						
MKAR				PcP	PcP	06 42 29.7	-0.8
	0.4nm,0.6s,baz=107,slow=6.7,SNR=2.6						
BVAR	**Borovoye Array**	**63.20**	**326**	P	**P**	**06 42 30.2**	**-1.8**
	1.1nm,0.7s,mb4.1,baz=135,slow=6.3,SNR=5.1						
BVAR				LR	LR	07 09 42.9	
	comp=Z,50nm,20.6s,baz=135,slow=36						
ZRNK	**Zerenda**	**63.95**	**325**	*e*P	**P**	**06 42 34.4**	**-2.4**
ILAR	**Eielson Array**	**80.88**	**26**	P	**P**	**06 44 17.2**	**+0.7**
	0.3nm,0.6s,mb3.4,baz=247,slow=5.2,SNR=5.8						
YKA	**Yellowknife Ar**	**95.22**	**24**	P	**P**	**06 45 27.0**	**+1.4**
	0.3nm,0.6s,mb3.9,baz=299,slow=4.6,SNR=9.1						

*NIED **10** 06:38:00, 37.30N×141.50E, h56km, Mw4.2 Best double couple: M0 2.05×10^15 NP1:φ=248°, δ=73°, λ=80°. NP2:φ=98°, δ=19°, λ=119°.*
*MOS **10** 06:38:02.3±0.8, 37.32N×141.17E, h38km, mb4.7/4, Error ellipse: s-maj=24.4km s-min=9.7km az=90.0*
*NEIC **10** 06:38:06.6±0.3, 37.35N×141.40E, mb4.6/9, Error ellipse: s-maj=8.2km s-min=6.3km az=133.0*
NEIC Recorded [2 JMA] in Fukushima and Miyagi; [1 JMA] in Ibaraki and Tochigi Prefectures.
*BJI **10** 06:38:06.6, 37.30N×141.40E, h54km, mB4.6, mb4.5*
*IDC **10** 06:38:06.8±0.5, 37.31N×141.22E, h56km±4km, mb3.8/16, mb1 4.0/19, mb1mx3.9/25, MS3.0/3, Ms1 3.1/3, ms1mx2.7/28, Error ellipse: s-maj=17.0km s-min=9.6km az=102.0*
*JMA **10** 06:38:06.5±0.1, 37.34N×141.44E, h52km±1km, M4.4 Broadband fault plane solution: P waves. NP1:φ=84°, δ12°, λ99°. NP2:φ=255°, δ78°, λ88°. Principal axes: T Plg57°, Azm163°; N Plg2°, Azm256°; P Plg33°, Azm347°;*
JMA Felt II J1.

ISC 10 06:38:04.8±0.6, 37.30N±0.03×141.52E±0.06, h61km±4km, h54km±1.1km: pP-P, n71, σ1°16/82, mb4.2/26, 7C-7D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.51**	**277**	↑P	**P**	**06 38 17.2**	**+0.2**
JFK				*e*S	**S**	**06 38 25.0**	**-1.0**
ONAJ	**Iwakimizuishiy**	**0.61**	**251**	↑P	**P**	**06 38 18.6**	**+0.5**
ONAJ				*e*S	**S**	**06 38 27.3**	**-0.6**
JMM	**Marumori**	**0.80**	**315**	↑P	**P**	**06 38 20.8**	**+0.3**
JMM				*e*S	**S**	**06 38 30.3**	**-1.8**
JFT	**Otama**	**0.96**	**283**	↑P	**P**	**06 38 23.6**	**+1.0**
JFT				*e*S	**S**	**06 38 35.8**	**0.0**
JHO	**Hitachi**	**1.03**	**228**	↓P	**P**	**06 38 23.8**	**+0.3**
JHO				*e*S	**S**	**06 38 36.8**	**-0.5**
JIO	**Ouri**	**1.16**	**354**	↑P	**P**	**06 38 25.9**	**+0.7**
JIO				S	**S**	**06 38 39.9**	**-0.5**
JOU	**Okura**	**1.26**	**328**	↓P	**P**	**06 38 27.0**	**+0.4**
JOU				S	**S**	**06 38 43.1**	**+0.3**
JFY	**Yanaizu**	**1.45**	**275**	↑P	**P**	**06 38 30.0**	**+0.7**
JFY				*e*S	**S**	**06 38 47.7**	**+0.3**
JYS	**Shirataka**	**1.47**	**309**	↓P	**P**	**06 38 30.4**	**+0.8**
JYS				S	**S**	**06 38 48.8**	**+0.8**
JMK	**Ichinoseki**	**1.66**	**352**	↓P	**P**	**06 38 32.8**	**+0.6**
JMK				S	**S**	**06 38 52.8**	**+0.3**
MAJO	**Matsushiro**	**2.76**	**255**	*e*Pn	**P**	**06 38 49.0**	**+1.4**
MAT	**Matsushiro**	**2.76**	**255**	P	**P**	**06 38 49.1**	**+1.4**
MAT				*e*S	**S**	**06 39 23.4**	**+3.5**
MAT	**Matsushiro**	**2.76**	**255**	P	**P**	**06 38 49.0**	**+1.3**
MAT				S	**S**	**06 39 23.0**	**+3.1**
JHJ	**Hachijo jima 2**	**4.41**	**199**	P	**P**	**06 39 11.4**	**+0.6**
	64nm,0.3s,baz=77,slow=23,SNR=14						
JHJ				S	**S**	**06 39 58.9**	**-2.6**
	128nm,0.3s,baz=101,slow=23,SNR=10						
ASAJ	**Asahikawa**	**6.86**	**7**	P	**P**	**06 39 42.0**	**-2.9**
	9.4nm,0.3s,baz=223,slow=6.5,SNR=12						
ASAJ				S	**S**	**06 40 59.8**	**-2.5**
	1.7nm,0.3s,baz=121,slow=19,SNR=2.6						
ASAJ				LR	LR	06 42 43.0	
	comp=Z,91nm,20.7s,baz=118,slow=40						
YUK	**Yuzh-Kuril'sk**	**7.49**	**25**	P	**P**	**06 39 54.3**	**+0.6**
YUK				*e*S	**S**	**06 41 09.5**	**-8.5**
YUK				pmax	pmax		
	comp=Z,110nm,0.3s						
YUK				smax			
	comp=N,270nm,0.5s						
YUK				smax			
	comp=E,150nm,0.5s						
YUK				smax			
	comp=N,1μm,0.9s						
JNU	**Nakatsue**	**9.65**	**248**	LR	LR	06 44 23.5	
	comp=N,51nm,18.5s,baz=147,slow=40						
YSS	**Yuzh-Sakhalins**	**9.69**	**5**	↓*e*P	**P**	**06 40 22.0**	**-1.8**
YSS				pmax	pmax		
	comp=Z,20nm,0.9s						
YSS	**Yuzh-Sakhalins**	**9.69**	**5**	*e*P	**P**	**06 40 22.8**	**-1.1**
	comp=Z,15nm,0.5s						
CBIJ	**Chichi jima**	**10.20**	**177**	P	**P**	**06 40 28.3**	**-2.5**
	comp=Z,7.8nm,0.3s,baz=271,slow=23,SNR=10						
CBIJ				S	**S**	**06 42 13.5**	**-11**
	comp=Z,15nm,0.3s,baz=294,slow=19,SNR=6.3						
MDJ	**Mudanjiang**	**11.59**	**313**	P	**P**	**06 40 53.3**	**+3.6**
MDJ				AMB	AMB		
	comp=Z,11nm,1.1s						
MDJ				AMB	AMB		
	comp=Z,28nm,3.8s						
BJI	**Beijing**	**19.95**	**286**	P	**P**	**06 42 36.5**	**+2.1**
BJI				AMB	AMB		
	comp=Z,8.0nm,0.9s						
MA2	**Magadan**	**23.07**	**12**	*de*P	**P**	**06 43 06.8**	**+1.4**
MA2				*e**PP		06 43 23.1	
MA2				pmax	pmax		
	comp=Z,8.0nm,0.7s,mb4.3						
MA2	**Magadan**	**23.07**	**12**	*e*P	**P**	**06 43 06.9**	**+1.5**
	comp=Z,6.9nm,0.7s,mb4.2						
YAK	**Yakutsk**	**25.82**	**347**	*d i*P	**P**	**06 43 29.7**	**-2.0**
YAK				pmax	pmax		
	comp=Z,12nm,0.5s,mb4.7						
YAK	**Yakutsk**	**25.82**	**347**	*e*P	**P**	**06 43 31.6**	**-0.2**
	comp=Z,19nm,0.6s,mb4.8						
ULN	**Ulaanbaatar**	**27.27**	**304**	*e*P	**P**	**06 43 45.0**	**-0.2**
	comp=Z,4.8nm,0.9s,mb4.0						
BOD	**Bodaibo**	**27.35**	**327**	*e*P	**P**	**06 43 44.4**	**-1.4**
ENH	**Enshi**	**27.44**	**265**	*e*P	**P**	**06 43 45.6**	**-1.3**
	comp=Z,8.3nm,0.9s,mb4.3						
SONM	**Songino Array**	**27.70**	**304**	P	**P**	**06 43 48.4**	**-0.8**
	comp=Z,2.1nm,0.6s,mb4.0,baz=98,slow=8.4,SNR=15						
ZAK	**Zakamensk**	**30.17**	**308**	*e*P	**P**	**06 44 10.1**	**-1.0**
TIXI	**Tiksi**	**35.03**	**353**	↑*e*P	**P**	**06 44 52.3**	**-0.8**
TIXI				pmax	pmax		
	comp=Z,2.0nm,1.0s,mb4.0						
NVS	**Novosibirsk**	**42.71**	**313**	*e*P	**P**	**06 45 54.4**	**-2.7**
MKAR	**Makanchi Array**	**44.05**	**302**	P	**P**	**06 46 07.8**	**-0.3**
	comp=Z,2.9nm,0.7s,mb4.1,baz=88,slow=9.9,SNR=29						
MKAR	**Makanchi Array**	**44.05**	**302**	*i* P	**P**	**06 46 08.2**	**+0.2**
MKAR				pmax	pmax		
	comp=Z,3.0nm,0.7s						
KURK	**Kurchatov**	**45.83**	**308**	*e*P	**P**	**06 46 21.8**	**-0.4**
KURK				*e*pP	pP	06 46 36.0	-1.9
GUN	**Gumba**	**47.21**	**275**	*e*P	**P**	**06 46 34.9**	**+1.5**
	comp=Z,13nm,0.4s,mb5.2						
KKN	**Kakani**	**47.74**	**276**	*e*P	**P**	**06 46 38.4**	**+0.8**
GKN	**Gorkha**	**48.16**	**276**	*e*P	**P**	**06 46 40.0**	**-0.8**
	comp=Z,16nm,0.7s,mb5.2						
KOLN	**Koldanda**	**49.08**	**276**	*e*P	**P**	**06 46 47.3**	**-0.6**
	comp=Z,4.4nm,0.5s,mb4.7						
ILAR	**Eielson Array**	**49.22**	**32**	P	**P**	**06 46 49.6**	**+1.1**
	comp=Z,1.3nm,0.7s,mb4.1,baz=269,slow=6.3,SNR=19						
ILAR				pP	pP	06 47 04.2	-0.1
	comp=Z,3.6nm,0.9s,baz=272,slow=6.3,SNR=13						
BVAR	**Borovoye Array**	**50.45**	**312**	P	**P**	**06 46 57.4**	**-0.7**
	comp=Z,1.9nm,0.5s,mb4.4,baz=74,slow=8.1,SNR=18						
BVAR				pPcP		06 48 32.0	
	comp=Z,2.5nm,0.9s,baz=85,slow=1.8,SNR=5.8						
BRVK	**Borovoye**	**50.51**	**312**	*i* P	**P**	**06 46 57.7**	**-0.8**
BRVK	**Borovoye**	**50.51**	**312**	*e*P	**P**	**06 46 58.3**	**-0.2**
ZRNK	**Zerenda**	**51.28**	**312**	*e*P	**P**	**06 47 03.6**	**-0.8**
ZRNK				*e*pP	pP	06 47 17.0	-3.3
INK	**Inuvik**	**54.11**	**27**	P	**P**	**06 47 26.4**	**+1.2**
	comp=Z,1.1nm,0.8s,mb3.9,baz=326,slow=5.5,SNR=7.8						
INK				pP	pP	06 47 41.5	+0.2
	comp=Z,3.4nm,0.7s,baz=295,slow=5.8,SNR=11						
INK	**Inuvik**	**54.11**	**27**	*e*P	**P**	**06 47 26.1**	**+0.9**
	comp=Z,4.8nm,1.0s,mb4.4						
INK				*e*pP	pP	06 47 41.1	-0.2
INK				pP	pP	06 47 41.5	+0.2
WRAB	**Tennant Creek**	**57.33**	**188**	*e*P	**P**	**06 47 48.4**	**-0.7**
	comp=Z,5.9nm,0.6s,mb4.8						
WRAB				*e*pP	pP	06 48 02.0	-3.2
WB2	**Warramunga Arr**	**57.34**	**188**	*e*P	**P**	**06 47 48.4**	**-0.7**
WRA	**Warramunga Arr**	**57.34**	**188**	P	**P**	**06 47 48.6**	**-0.5**
	comp=Z,3.8nm,0.8s,mb4.5,baz=6.3,slow=7.4,SNR=38						
ASAR	**Alice Springs**	**61.06**	**188**	P	**P**	**06 48 14.7**	**0.0**
	comp=Z,6.0nm,1.2s,mb4.6,baz=14,slow=6.1,SNR=14						
YKA	**Yellowknife Ar**	**63.54**	**30**	P	**P**	**06 48 31.1**	**+0.6**
	comp=Z,0.3nm,0.6s,mb3.5,baz=303,slow=6.7,SNR=8.3						
YKA				pP	pP	06 48 46.6	-0.4
	comp=Z,1.6nm,0.7s,baz=303,slow=6.7,SNR=21						
ARCES	**ARCESS Array B**	**63.77**	**339**	P	**P**	**06 48 31.2**	**-0.9**
	comp=Z,2.6nm,0.8s,mb4.3,baz=56,slow=8.5,SNR=8.8						
ARCES				LR	LR	07 24 25.1	
	comp=Z,27nm,18.1s,baz=69,slow=44						
ARCES	**ARCESS Array B**	**63.77**	**339**	P	**P**	**06 48 31.2**	**-0.9**
ARCES				LR	LR	07 24 25.1	
FINES	**FINESS Array B**	**68.61**	**332**	P	**P**	**06 49 02.6**	**-0.3**
	comp=Z,1.5nm,0.8s,mb4.0,slow=11,SNR=4.2						
FINES	**FINESS Array B**	**68.61**	**332**	*i* P	**P**	**06 49 07.0**	**+4.1**
STKA	**Stephens Creek**	**68.82**	**180**	P	**P**	**06 49 05.6**	**+0.9**
	comp=Z,1.8nm,0.5s,mb4.3,baz=321,slow=8.6,SNR=5.3						
STKA	**Stephens Creek**	**68.82**	**180**	P	**P**	**06 49 05.6**	**+0.9**
KIV	**Kislovodsk**	**70.79**	**311**	*e*P	**P**	**06 49 19.6**	**+3.1**
KIV				pmax	pmax		
	comp=Z,9.0nm,0.9s,mb4.7						
KIV				pmax	pmax		
	comp=N,7.0nm,0.8s						
NB2	**NORSAR Subarra**	**73.97**	**337**	P	**P**	**06 49 34.8**	**0.0**
	comp=N,0.9nm,0.5s,mb4.0,baz=40,slow=5.3						
NOA	**NORSAR Array B**	**73.97**	**337**	P	**P**	**06 49 35.0**	**+0.2**
	comp=N,1.1nm,0.7s,mb3.9,baz=38,slow=6.0,SNR=3.9						
AKASG	**Malin Array Be**	**74.14**	**322**	P	**P**	**06 49 35.8**	**-0.2**
	comp=N,1.1nm,0.4s,mb4.2,baz=45,slow=5.7,SNR=9.1						
AKASG				pP	pP	06 49 51.0	-1.9
	comp=N,3.1nm,0.9s,baz=46,slow=6.1,SNR=3.6						
BOZ	**Bozeman (W)**	**74.46**	**44**	*e*pP	pP	06 49 55.9	+1.0
NVAR	**Mina Array Bea**	**74.76**	**53**	P	**P**	**06 49 42.9**	**+3.0**
	comp=N,0.4nm,0.8s,mb3.4,baz=288,slow=5.7,SNR=2.8						
NVAR				pP	pP	06 49 57.7	+0.9
	comp=N,0.6nm,0.6s,baz=296,slow=6.2,SNR=5.6						
NVAR	**Mina Array Bea**	**74.76**	**53**	P	**P**	**06 49 42.9**	**+3.0**
NVAR				pP	pP	06 49 57.7	+0.9
PDAR	**Pinedale Array**	**77.42**	**46**	P	**P**	**06 49 57.0**	**+2.1**
	comp=N,0.2nm,0.5s,mb3.3,baz=319,slow=8.3,SNR=2.8						
PDAR				pP	pP	06 50 12.6	+0.8
	comp=N,1.1nm,0.8s,baz=315,slow=4.2,SNR=7.0						
GERES	**GERESS Array B**	**82.53**	**328**	pP	pP	06 50 38.2	-0.9
	comp=N,0.5nm,0.2s,baz=37,slow=6.7,SNR=3.9						
TXAR	**Lajitas Array**	**89.89**	**52**	P	**P**	**06 51 00.6**	**+2.2**
	comp=N,0.3nm,0.6s,mb3.8,baz=297,slow=2.8,SNR=5.2						
TXAR				pP	pP	06 51 17.2	+1.4
	comp=N,1.1nm,0.6s,baz=300,slow=2.8,SNR=14						
TXAR	**Lajitas Array**	**89.89**	**52**	P	**P**	**06 51 00.6**	**+2.2**
TXAR				pP	pP	06 51 17.2	+1.4
LPAZ	**La Paz**	**146.49**	**59**	PKPbc	PKPbc	06 57 43.2	+3.9
	comp=N,1.1nm,0.7s,baz=273,slow=17,SNR=9.9						
LPAZ				pPKPbc		06 58 00.1	
	comp=N,1.8nm,0.6s,baz=273,slow=4.8,SNR=6.1						
LPAZ	**La Paz**	**146.49**	**59**	PKPbc	PKPbc	06 57 43.2	+3.9
LPAZ				pPKPbc		06 58 00.1	

*NEIC **10** 06:46:29.0, 56.78N×157.02W, h65km, ML3.2(AEIC), After AEIC.*
*IDC **10** 06:46:30.9±9.4, 57.02N×156.45W, h68km±98km, mb2.9/3, mb1 3.5/5, mb1mx3.2/22, ML3.6/2, Error ellipse: s-maj=115.0km s-min=59.6km az=102.0*

ISC 10 06:46:26.6±0.4, 56.93N±0.08×157.2W±0.1, h98km±8km, n40, σ1°09/42, mb3.1/3, Alaska Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KJL	**Kejulik**	**1.43**	**37**	P	**P**	**06 46 53.0**	**+0.8**
KJL				S	**S**	**06 47 11.7**	**+0.4**
CNTC	**Contact Creek**	**1.52**	**27**	P	**P**	**06 46 54.5**	**+1.2**
CAHL	**Cahill**	**1.52**	**41**	P	**P**	**06 46 54.2**	**+0.7**
ACHA	**Angle Creek He**	**1.63**	**37**	P	**P**	**06 46 56.0**	**+1.2**
KAIC	**Katmai Ikaglui**	**1.94**	**35**	P	**P**	**06 47 00.2**	**+1.4**
KARR	**Katmai Rainbow**	**2.06**	**39**	P	**P**	**06 47 01.6**	**+1.1**
SDPT	**Sand Point**	**2.43**	**231**	P	**P**	**06 47 05.1**	**-0.4**
SDN	**Sand Point**	**2.44**	**231**	P	**P**	**06 47 05.5**	**-0.1**
KDAK	**Kodiak Island**	**2.64**	**69**	P	**P**	**06 47 07.2**	**-1.1**
BLHA	**Black Hill**	**2.98**	**248**	P	**P**	**06 47 13.4**	**+0.3**
PVV	**Pavlof Volcano**	**3.01**	**241**	P	**P**	**06 47 12.9**	**-0

*IDC **10** 06:53:25.7±4.5,23.22N×121.71E,h60km±48km,mb3.3/4, mb1 3.5/5,mb1mx3.3/21,ML3.2/1,MS2.9/1,Ms1 3.1/1, ms1mx2.6/19,Error ellipse: s-maj=65.9km s-min=29.3km az=157.0*

ISC 10 06:53:16.8±3.1,22.6N±0.2×121.41E±0.09,h26km±24km, n12,σ0§94/16,mb3.5/4,MS2.7/1,Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**2.40**	**37**	P	**Pn**	**06 53 54.8**	**-0.4**
YOJ				S	**Sn**	**06 54 23.4**	**-0.6**
TATO	**Taipei**	**2.41**	**2**	*e*Pn	**Pn**	**06 53 55.9**	**+0.5**
HATJ	**Hateruma jima**	**2.66**	**55**	P	**Pn**	**06 53 59.1**	**+0.2**
HATJ				S	**Sn**	**06 54 32.1**	**+1.4**
IRIF	**Iriomote-Funau**	**2.77**	**50**	S	**Sn**	**06 54 34.5**	**+1.1**
JIJ	**Ishigaki jima**	**3.09**	**54**	P	**Pn**	**06 54 05.3**	**+0.3**
JIJ				S	**Sn**	**06 54 40.7**	**-0.8**
JTJ	**Tarama**	**3.66**	**55**	P	**Pn**	**06 54 13.5**	**+0.3**
JTJ				S	**Sn**	**06 54 52.8**	**-3.3**
JOW	**Kunigami**	**7.55**	**54**	P	**Pn**	**06 55 05.0**	**-3.1**
	1.0nm,0.3s,baz=240,slow=14,SNR=2.4						
CMAR	**Chiang Mai Arr**	**21.43**	**263**	P	**P**	**06 58 13.0**	**+7.9**
	1.3nm,0.7s,mb3.4,baz=69,slow=8.8,SNR=6.8						
CMAR				LR	LR	07 06 05.0	
	comp=Z,32nm,21.9s,MS2.7,baz=280,slow=35						
CMAR	**Chiang Mai Arr**	**21.43**	**263**	P	**P**	**06 58 13.0**	**+7.9**
CMAR				LR	LR	07 06 05.0	
SONM	**Songino Array**	**27.94**	**338**	P	**P**	**06 59 06.4**	**-0.6**
	1.3nm,0.9s,mb3.6,baz=159,slow=9.8,SNR=4.9						
MKAR	**Makanchi Array**	**39.66**	**317**	P	**P**	**07 00 48.7**	**+0.5**
	1.6nm,0.8s,mb3.8,baz=112,slow=10,SNR=13						
YKA	**Yellowknife Ar**	**84.38**	**23**	P	**P**	**07 05 47.6**	**0.0**
	0.2nm,0.9s,mb3.2,baz=309,slow=5.0,SNR=3.4						

*MAN **10** 07:35:14.3, 12.01N×121.95E,h8km,mb4.3,ML3.1,MS2.8*

ISC 10 07:35:13.1±2.0,11.94N±0.07×122.1E±0.1,h9km±13km,n4, σ0§41/7,4C,Panay

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OTRP	**Odiongan**	**0.42**	**356**	*e*P	**Pg**	**07 35 21.3**	**-0.3**
OTRP				*e*S	**Sg**	**07 35 27.6**	**+0.3**
SJMP	**San Jose**	**1.04**	**300**	*e*P	**Pb**	**07 35 32.6**	**-0.4**
SJMP				*e*S	**Sb**	**07 35 46.7**	**+0.2**
CUYO	**Cuyo Island**	**1.48**	**223**	*e*P	**Pn**	**07 35 40.3**	**+0.1**
BOAC	**Boac**	**1.52**	**353**	*e*P	**Pn**	**07 35 41.1**	**+0.4**
BOAC				*e*S	**Sb**	**07 36 00.1**	**-0.3**

*NAO **10** 07:41:28.6±3.3,67.90N×20.46E,ML1.9*
*BER **10** 07:41:29.0±2.8,67.80N×20.23E,ML1.7,ML1.9(NAO), Suspected explosion*

ISC 10 07:41:24.2±1.3,67.74N±0.10×20.3E±0.1,n5,σ0§88/8, Sweden

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KTK1	**Kautokeino**	**1.69**	**39**	*e*P	**Pn**	**07 41 56.6**	**+1.5**
KTK1				*e*Sg	**Sg**	**07 42 19.6**	**-0.8**
KTK1				AML	AML	07 42 23.0	
	comp=Z,11nm,0.5s						
LOF	**Lofoten**	**2.57**	**282**	*e*Sg	**Sg**	**07 42 49.3**	**-0.6**
LOF				AML	AML	07 42 52.5	
	comp=Z,5.5nm,0.3s						
ARA0	**ARCESS Array S**	**2.63**	**44**	Pn	**Pn**	**07 42 09.2**	**+0.6**
	baz=233,slow=14						
ARA0				Sn	**Sn**	**07 42 42.1**	**+0.3**
	baz=230,slow=22						
MOR8	**Moi Rana**	**2.78**	**238**	*e*Sg	**Sg**	**07 42 50.5**	**-6.3**
MOR8				AML	AML	07 42 53.9	
	comp=Z,10nm,0.3s						
APA0	**Apatity Array**	**4.85**	**86**	Pn	**Pn**	**07 42 40.6**	**+0.4**
	baz=271,slow=7.9						
APA0				Sn	**Sn**	**07 43 36.8**	**-1.3**
	baz=289,slow=28						

*NEIC **10** 08:05:23.6±0.4, 17.56S×178.76W,h600km, Error ellipse: s-maj=18.2km s-min=8.4km az=151.0*
*IDC **10** 08:05:24.9±11.0, 17.58S×178.77W,h617km±153km, mb3.1/10,mb1 3.3/10,mb1mx3.2/17,Error ellipse: s-maj=79.1km s-min=42.2km az=161.0*

ISC 10 08:05:22.3±0.6,17.6S±0.2×178.8W±0.1,h600km,n17, σ0§53/17,mb3.5/13,1D,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**33.15**	**260**	P	**P**	**08 11 13.0**	**+0.9**
	2.0nm,0.5s,mb4.0,baz=93,slow=11,SNR=5.2						
CTAO	**Charters Tower**	**33.15**	**260**	*e*P	**P**	**08 11 12.7**	**+0.5**
	2.0nm,0.5s,mb4.0						
STKA	**Stephens Creek**	**38.46**	**241**	P	**P**	**08 11 55.9**	**+0.2**
	3.7nm,0.9s,mb3.9,baz=34,slow=8.4,SNR=6.4						
WB2	**Warramunga Arr**	**44.33**	**259**	*e*P	**P**	**08 12 41.8**	**-0.5**
WRA	**Warramunga Arr**	**44.34**	**259**	P	**P**	**08 12 42.3**	**-0.2**
	2.0nm,0.6s,mb3.9,baz=96,slow=7.2,SNR=77						
AS12	**Alice Springs**	**44.53**	**254**	*i*P	**P**	**08 12 43.6**	**-0.3**
	5.6nm,0.5s,mb4.3						
ASAR	**Alice Springs**	**44.53**	**254**	P	**P**	**08 12 43.8**	**-0.1**
	9.7nm,0.6s,mb4.5,baz=88,slow=8.5,SNR=115						
FITZ	**Fitzroy Crossi**	**52.73**	**260**	P	**P**	**08 13 44.7**	**+0.1**
	1.8nm,0.9s,mb3.4,baz=79,slow=5.2,SNR=4.4						
SBA	**Scott Base**	**60.67**	**183**	*e*P	**P**	**08 14 36.8**	**-1.2**
	0.6nm,0.3s,mb3.3						
VNDA	**Vanda**	**60.68**	**185**	P	**P**	**08 14 39.0**	**+0.9**
	0.3nm,0.7s,mb2.6						
YBH	**Yreka Blue Hor**	**78.54**	**39**	P	**P**	**08 16 23.9**	**0.0**
	0.8nm,0.5s,mb3.3,baz=309,slow=18,SNR=3.5						
NVAR	**Mina Array Bea**	**79.47**	**44**	P	**P**	**08 16 29.0**	**+0.1**
	0.5nm,0.6s,mb3.0,baz=214,slow=7.5,SNR=5.1						
HLID	**Hailey**	**84.66**	**41**	*e*P	**P**	**08 16 55.3**	**+0.4**
	0.5nm,0.7s,mb3.2						
ILAR	**Eielson Array**	**85.70**	**13**	P	**P**	**08 16 58.9**	**-0.6**
	0.2nm,0.4s,mb3.1,baz=226,slow=4.7,SNR=9.4						
TXAR	**Lajitas Array**	**86.14**	**58**	P	**P**	**08 17 02.7**	**+0.3**
	0.7nm,0.8s,mb3.4,baz=220,slow=6.1,SNR=9.9						
TXAR	**Lajitas Array**	**86.14**	**58**	P	**P**	**08 17 02.7**	**+0.3**
PDAR	**Pinedale Array**	**87.40**	**44**	P	**P**	**08 17 07.7**	**-0.3**
	0.3nm,0.4s,mb3.3,baz=225,slow=2.6,SNR=3.5						

*IDC **10** 08:10:46.7±3.6,5.80S×147.80E,h28km±21km,mb3.9/5, mb1 4.2/8,mb1mx4.0/14,ML3.8/3,MS3.6/5,Ms1 3.6/5, ms1mx3.3/19,Error ellipse: s-maj=40.4km s-min=19.3km az=103.0*
*NEIC **10** 08:10:48.3±1.1,5.84S×147.71E,h41km±11km,mb4.5/5, Error ellipse: s-maj=16.4km s-min=7.1km az=132.0*

ISC 10 08:10:46.2±1.4,5.80S±0.08×147.7E±0.1,h37km±14km, n25,σ1§11/27,mb4.2/8,MS3.7/2,1C,Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WAU	**Wau**	**1.82**	**212**	*e*P	**P**	**08 11 16.4**	**+0.8**
KMBE	**Kimbe**	**2.46**	**85**	P	**P**	**08 11 24.4**	**-0.4**
PMG	**Port Moresby**	**3.62**	**188**	Pn	**P**	**08 11 41.5**	**+0.2**
	9.7nm,0.3s,baz=5.8,slow=6.6,SNR=26						
PMG				Sn	**S**	**08 12 20.5**	**-3.0**
	91nm,0.3s,baz=234,slow=19,SNR=11						
PMG				LR	LR	08 13 05.9	
	comp=Z,476nm,21.7s,baz=195,slow=38						
PMG	**Port Moresby**	**3.62**	**188**	*e*Pn	**P**	**08 11 41.0**	**-0.4**
PMG				*e*Sn	**S**	**08 12 23.2**	**-0.3**
RAB	**Rabaul**	**4.73**	**70**	*e*P	**P**	**08 11 58.1**	**+1.1**
CTA	**Charters Tower**	**14.27**	**186**	Pn	**P**	**08 14 10.9**	**+2.9**
	0.3nm,0.3s,baz=4.2,slow=19,SNR=3.5						
CTA				LR	LR	08 18 58.7	
	comp=Z,124nm,21.5s,baz=174,slow=34						
CTAO	**Charters Tower**	**14.27**	**186**	P	**P**	**08 14 09.7**	**+1.7**
WRAB	**Tennant Creek**	**19.12**	**222**	*e*P	**P**	**08 15 06.3**	**-2.7**
	18nm,0.6s						
WB2	**Warramunga Arr**	**19.13**	**221**	*e*P	**P**	**08 15 07.4**	**-1.7**
WRA	**Warramunga Arr**	**19.14**	**222**	P	**P**	**08 15 07.6**	**-1.6**
	1.1nm,0.3s,baz=44,slow=12,SNR=33						
WRA				S	**S**	**08 18 39.6**	**+1.9**
	0.1nm,0.3s,baz=41,slow=22,SNR=3.9						
WRA				ScP		08 23 04.9	
	0.0nm,0.3s,baz=22,slow=2.2,SNR=6.8						
WRA				LR	LR	08 23 20.9	
	comp=Z,214nm,18.6s,baz=25,slow=39						
AS12	**Alice Springs**	**22.18**	**215**	*i*P	**P**	**08 15 40.8**	**0.0**
	11nm,0.4s,mb4.7						
ASAR	**Alice Springs**	**22.18**	**215**	P	**P**	**08 15 40.7**	**-0.1**
	7.5nm,0.4s,mb4.4,baz=54,slow=8.1,SNR=70						
ASAR				S	**S**	**08 19 41.2**	**+3.5**
	1.3nm,0.6s,baz=31,slow=21,SNR=4.0						
ASAR				ScP		08 23 12.8	
	0.5nm,0.6s,baz=42,slow=1.5,SNR=4.0						
ASAR				LR	LR	08 24 36.1	
	comp=Z,123nm,18.1s,MS3.4,baz=39,slow=37						
FITZ	**Fitzroy Crossi**	**24.76**	**239**	*e*P	**P**	**08 16 07.2**	**+1.1**
	29nm,0.6s,mb5.0						
FITZ	**Fitzroy Crossi**	**24.76**	**239**	P	**P**	**08 16 07.5**	**+1.4**
	33nm,0.6s,mb5.1,baz=41,slow=6.3,SNR=58						
ARMA	**Armidale**	**24.77**	**172**	*e*P	**P**	**08 16 06.1**	**0.0**
STKA	**Stephens Creek**	**26.56**	**192**	*e*P	**P**	**08 16 21.9**	**-1.0**
	5.8nm,0.9s,mb4.1						
STKA	**Stephens Creek**	**26.56**	**192**	P	**P**	**08 16 22.8**	**-0.1**
	2.1nm,0.4s,mb4.1,baz=352,slow=8.5,SNR=11						
NWAO	**Narrogin (SRO)**	**39.14**	**222**	*e*P	**P**	**08 18 12.3**	**+0.1**
	2.1nm,0.5s,mb4.1						
RPZ	**Rata Peaks**	**42.99**	**155**	LR	LR	08 34 10.0	
	comp=Z,224nm,18.7s,MS4.1,baz=30,slow=33						
SONM	**Songino Array**	**64.57**	**331**	P	**P**	**08 21 21.8**	**-0.3**
	1.1nm,0.8s,mb4.0,baz=117,slow=6.4,SNR=4.6						
MKAR	**Makanchi Array**	**77.78**	**320**	P	**P**	**08 22 42.1**	**+0.6**
	0.4nm,0.5s,mb3.6,baz=100,slow=7.4,SNR=6.5						
KURK	**Kurchatov**	**81.47**	**323**	*e*P	**P**	**08 23 00.8**	**-0.4**
QSPA	**South Pole Qui**	**84.17**	**180**	*e*P	**P**	**08 23 14.4**	**0.0**
	7.3nm,0.7s,mb4.9						
ILAR	**Eielson Array**	**85.03**	**23**	P	**P**	**08 23 18.9**	**-0.1**
	0.3nm,0.6s,mb3.6,baz=252,slow=5.6,SNR=7.4						
BDFB	**Brasilia**	**153.62**	**144**	PKPbc	PKPdf	08 30 44.0	+10
	5.5nm,1.0s,baz=217,slow=2.0,SNR=4.9						

*IDC **10** 08:32:32.1±4.0,48.92N×151.07E,mb3.6/4,mb1 3.8/4, mb1mx3.4/22,Error ellipse: s-maj=125.0km s-min=40.9km az=8.0*

ISC 10 08:32:36.2±3.9,49.1N±0.9×151.0E±0.4,h33km,n4, σ0§38/4,mb3.6/4,Northwest of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MKAR	**Makanchi Array**	**44.64**	**294**	P	**P**	**08 40 46.9**	**0.0**
	0.4nm,0.8s,mb3.3,baz=59,slow=7.1,SNR=4.1						
FINES	**FINESS Array B**	**61.31**	**333**	P	**P**	**08 42 50.4**	**+0.3**
	0.6nm,0.5s,mb4.0,baz=45,slow=7.9,SNR=4.3						
HFS	**Hagfors**	**65.76**	**338**	P	**P**	**08 43 18.9**	**-0.3**
	0.6nm,0.4s,mb4.0,baz=53,slow=7.2,SNR=4.3						
TXAR	**Lajitas Array**	**77.56**	**60**	P	**P**	**08 44 30.3**	**0.0**
	0.2nm,0.5s,mb3.3,baz=297,slow=4.0,SNR=3.7						

IDC 10 08:33:03.5±2.0,2.07S×151.25E,mb3.4/3,mb1 3.7/3, mb1mx3.5/13,Error ellipse: s-maj=183.0km s-min=29.4km az=123.0,New Ireland region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**24.27**	**222**	P	P	08 38 22.3	-1.3
	0.3nm,0.3s,baz=47,slow=9.3,SNR=11						
ASAR	**Alice Springs**	**27.26**	**217**	P	P	08 38 50.5	-1.2
	0.2nm,0.5s,baz=48,slow=8.3,SNR=4.8						
ILAR	**Eielson Array**	**80.23**	**23**	P	P	08 45 15.7	-1.6
	0.2nm,0.5s,baz=246,slow=5.9,SNR=4.8						

*BJI **10** 08:33:32.4, 11.10N×122.21E,h30km,mB5.0,mb4.7, Ms4.3,Msz4.0*
*MAN **10** 08:33:39.1, 11.96N×121.97E,h13km,mb5.5,ML4.5, MS4.7*
MAN F CATIKLAN AKLAN IV BORACAY ISLAND IV ROMBLON ODIONGAN TABLAS ISLAND III.
*MOS **10** 08:33:39.5±0.9, 11.96N×122.05E,h33km,mb4.9/5,Error ellipse: s-maj=23.3km s-min=9.7km az=108.4*
*NEIC **10** 08:33:41.1±2.6, 11.95N×122.00E,h31km±18km,mb4.8/18, Error ellipse: s-maj=9.0km s-min=4.7km az=65.0*
NEIC Felt [IV PIVS] at Caticlan and on Boracay Island. Felt [III PIVS] at Odiongan, Tablas Island.
*IDC **10** 08:33:41.9±4.1, 12.01N×122.05E,h36km±34km,mb4.3/18, mb1 4.5/19,mb1mx4.3/27,ML4.4/1,MS3.8/16,Ms1 3.8/16, ms1mx3.6/35,Error ellipse: s-maj=26.3km s-min=10.8km az=70.0*

ISC 10 08:33:37.8±0.2,11.98N±0.02×121.94E±0.03,h13km, (h31km±1.5km:pP-P),n117,σ1§28/135,mb4.7/46,MS4.0/30, 21C-6D,Panay

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OTRP	**Odiongan**	**0.39**	**12**	*e*P	**Pg**	**08 33 46.8**	**+0.9**
OTRP				*e*S	**Sg**	**08 33 52.9**	**+1.6**
RCP	**Roxas**	**0.89**	**118**	*e*P	**Pb**	**08 33 55.6**	**+0.9**
RCP				*e*S	**Sb**	**08 34 08.2**	**+2.0**
SJMP	**San Jose**	**0.93**	**301**	*e*P	**Pb**	**08 33 57.8**	**+2.4**
SJMP				*e*S	**Sb**	**08 34 11.7**	**+4.4**
CUYO	**Cuyo Island**	**1.44**	**219**	*e*P	**Pn**	**08 34 04.0**	**+0.3**
CUYO				*e*S	**Sb**	**08 34 25.6**	**+3.6**
BOAC	**Boac**	**1.48**	**356**	*e*P	**Pn**	**08 34 05.1**	**+0.9**
MMPH	**Masbate**	**1.69**	**77**	*i*P	**Pn**	**08 34 07.0**	**-0.3**
MMPH				*i* S	**Sn**	**08 34 27.7**	**-1.3**
BUSP	**Coron**	**1.70**	**271**	*e*P	**Pn**	**08 34 08.2**	**+0.8**
BUSP				*e*S	**Sn**	**08 34 35.1**	**+5.9**
PGP	**Puerto Galera**	**1.79**	**328**	*e*P	**Pn**	**08 34 11.0**	**+2.2**
PGP				*e*S	**Sn**	**08 34 34.0**	**+2.5**
GQP	**Guinayangan**	**1.98**	**14**	*i*P	**Pn**	**08 34 12.0**	**+0.6**
TGY	**Tagaytay City**	**2.33**	**335**	*e*P	**Pn**	**08 34 18.4**	**+2.1**
TGY				*i* S	**Sn**	**08 34 50.2**	**+5.2**
TGY	**Tagaytay City**	**2.33**	**335**	Pn	**Pn**	**08 34 17.9**	**+1.5**
	101nm,0.3s,baz=228,slow=2.8,SNR=19						
TGY				Sn	**Sn**	**08 34 49.7**	**+4.6**
	429nm,0.3s,baz=234,slow=17,SNR=10						
TGY				LR	LR	08 34 54.9	
	comp=Z,523nm,21.2s,baz=4.5,slow=31						
LUBP	**Lubang**	**2.40**	**317**	*e*P	**Pn**	**08 34 19.5**	**+2.1**
LUBP				*e*S	Sn	08 34 25.7	-21
ENPP	**El Nido**	**2.58**	**253**	*e*P	**Pn**	**08 34 20.4**	**+0.4**
LLP	**Lapu-Lapu**	**2.59**	**129**	*e*P	**Pn**	**08 34 21.0**	**+0.9**
LLP				*e*S	**Sn**	**08 34 42.5**	**-9.1**
CNP	**Catarman**	**2.72**	**78**	*e*P	**Pn**	**08 34 23.6**	**+1.6**
CNP				*e*S	**Sn**	**08 34 50.6**	**-4.4**
OCLP	**Ormoc**	**2.77**	**109**	*e*P	**Pn**	**08 34 25.1**	**+2.3**
OCLP				*e*S	**Sn**	**08 35 00.0**	**+3.5**
SNPH	**Sibulan**	**2.91**	**154**	*e*P	**Pn**	**08 34 25.5**	**+0.7**
SNPH				*i* S	**Sn**	**08 35 01.0**	**+1.1**
TBP	**Tagbilaran**	**2.96**	**140**	*e*P	**Pn**	**08 34 26.8**	**+1.4**
TBP				*e*S	**Sn**	**08 35 13.8**	**+13**
PLP	**Palo**	**3.09**	**105**	*e*P	**Pn**	**08 34 27.8**	**+0.5**
BESP	**Borongan**	**3.45**	**96**	*e*P	**Pn**	**08 34 33.0**	**+0.6**
BESP				*e*S	**Sn**	**08 35 14.4**	**+0.9**
DCPH	**Dipolog City**	**3.65**	**157**	*e*P	**Pn**	**08 34 35.3**	**+0.1**
PCPH	**Palayan**	**3.66**	**347**	*e*P	**Pn**	**08 34 36.3**	**+1.0**
PAGZ	**Pagadian**	**4.34**	**161**	*e*P	**Pn**	**08 34 46.1**	**+1.0**
PAGZ				*e*S	**Sn**	**08 35 40.8**	**+4.6**
BCPH	**Baguio City Da**	**4.57**	**343**	*i*P	**Pn**	**08 34 51.0**	**+2.7**
DAV	**Davao City (W)**	**6.06**	**143**	*e*P	**Pn**	**08 35 18.5**	**+9.2**
QIZ	**Qiongzhong**	**13.60**	**303**	P	**P**	**08 36 53.0**	**0.0**
QIZ				S	**S**	**08 39 24.5**	**-0.4**
QIZ				AMB	AMB		
	comp=Z,21nm,1.4s						
QIZ				LR	LR		
	comp=N,347nm,16.8s						
QIZ				LR	LR		
	comp=E,274nm,18.7s						
QIZ				LR	LR		
	comp=Z,580nm,18.7s						
QIZ	**Qiongzhong**	**13.60**	**303**	*e*P	**P**	**08 36 52.1**	**-0.8**
KKTK	**Khon Kaen**	**19.03**	**285**	P	**P**	**08 38 06.0**	**+3.8**
	comp=Z,309nm,0.6s						
SSE	**Sheshan**	**19.04**	**358**	P	**P**	**08 38 07.2**	**+5.0**
SSE				S	**S**	**08 41 35.6**	**+4.7**
SSE				XS		08 41 56.6	
SSE				AMB	AMB		
	comp=Z,25nm,0.7s						
SSE				LR	LR		
	comp=N,179nm,20.0s						
SSE				LR	LR		
	comp=E,217nm,20.0s						
SSE				LR	LR		
	comp=Z,208nm,18.2s						
WHN	**Wuhan**	**19.77**	**340**	*e*P	**P**	**08 38 10.2**	**-0.4**
NJ2	**Nanjing**	**20.18**	**352**	*e*P	**P**	**08 38 15.3**	**+0.3**
NJ2				AP		08 38 26.3	
NJ2				XP		08 38 31.0	
NJ2				PP	PP	08 38 38.7	+3.8
NJ2				S	**S**	**08 42 04.0**	**+8.3**
NJ2				AMB	AMB		
	comp=Z,70nm,1.0s						
NJ2				AMB	AMB		
	comp=Z,520nm,6.9s						
NJ2				LR	LR		
	comp=N,580nm,21.7s,MS4.2						
NJ2				LR	LR		
	comp=E,910nm,21.9s,MS4.2						
NJ2				LR	LR		
	comp=Z,860nm,24.6s,MS4.0						
GYA	**Guiyang**	**20.35**	**317**	P	**P**	**08 38 17.6**	**+0.8**
GYA				AP		08 38 26.9	
GYA				XP		08 38 30.8	
GYA				PP	PP	08 38 39.2	+1.9
GYA				S	**S**	**08 41 58.6**	**-0.7**
GYA				AMB	AMB		
	comp=Z,20nm,1.0s						
GYA				AMB	AMB		
	comp=Z,510nm,6.2s						
GYA				LR	LR		
	comp=N,400nm,16.8s,MS4.0						
GYA				LR	LR		
	comp=E,380nm,16.8s,MS4.0						
GYA				LR	LR		
	comp=Z,430nm,17.7s,MS3.9						
SNG	**Songkhla**	**21.55**	**259**	P	**P**	**08 38 49.5**	**+20**
	comp=Z,2μm,1.0s						
ENH	**Enshi**	**21.56**	**329**	*e*P	**P**	**08 38 30.4**	**+1.2**
	comp=Z,6.5nm,0.8s,mb4.1						
KMI	**Kunming**	**22.37**	**308**	*e*P	**P**	**08 38 39.0**	**+1.7**
KMI				XP		08 38 52.8	
KMI				PP	PP	08 39 07.1	+2.5
KMI				S	**S**	**08 42 35.4**	**-2.3**
KMI				AMB	AMB		
	comp=Z,16nm,1.4s,mb4.3						
KMI				AMB	AMB		
	comp=Z,125nm,3.2s						
KMI				LR	LR		
	comp=N,307nm,15.0s,MS4.0						
KMI				LR	LR		
	comp=E,258nm,16.0s,MS4.0						
KMI				LR	LR		
	comp=Z,337nm,15.0s,MS3.9						
JNU	**Nakatsue**	**22.58**	**20**	P	**P**	**08 38 39.2**	**-0.1**
	comp=Z,16nm,1.0s,mb4.4,baz=148,slow=8.4,SNR=5.8						
JNU				LR	LR	08 46 14.0	
	comp=Z,130nm,21.0s,MS3.3,baz=33,slow=33						
CM31	**Chiang Mai Arr**	**23.09**	**289**	*e*P	**P**	**08 38 45.6**	**+1.1**
	comp=Z,20nm,0.7s,mb4.7						
CMAR	**Chiang Mai Arr**	**23.09**	**289**	P	**P**	**08 38 46.3**	**+1.8**
	comp=Z,14nm,0.8s,mb4.5,baz=100,slow=7.8,SNR=62						
CMAR				LR	LR	08 48 48.5	
	comp=Z,108nm,20.0s,MS3.3,baz=100,slow=39						
CMAR	**Chiang Mai Arr**	**23.09**	**289**	P	**P**	**08 38 46.3**	**+1.8**
CMAR				LR	LR	08 48 48.5	
CBIJ	**Chichi jima**	**24.23**	**49**	LR	LR	08 46 40.1	
	comp=Z,136nm,20.8s,MS3.4,baz=356,slow=32						
TIA	**Tai'an**	**24.52**	**351**	*e*P	**P**	**08 38 59.1**	**+0.9**
CD2	**Chengdu**	**25.25**	**321**	*e*P	**P**	**08 39 04.6**	**-0.7**
CD2				AP	pP	08 39 13.8	+4.7
CD2				XP	sP	08 39 17.9	+7.1
CD2				S	**S**	**08 43 23.7**	**-4.1**
CD2				AMB	AMB		
	comp=Z,10.0nm,0.9s,mb4.3						
CD2				AMB	AMB		
	comp=Z,160nm,6.9s						
CD2				LR	LR		
	comp=N,330nm,15.0s						
CD2				LR	LR		
	comp=Z,330nm,16.2s,MS3.9						
BJT	**Baijiatuan**	**28.39**	**351**	*e*P	**P**	**08 39 33.3**	**-0.7**
	comp=Z,12nm,0.9s,mb4.5						
BJI	**Beijing**	**28.41**	**351**	P	**P**	**08 39 33.6**	**-0.6**
BJI				AP	pP	08 39 43.0	+5.0
BJI				XP	sP	08 39 46.8	+7.1
BJI				S	**S**	**08 44 18.2**	**-1.1**
BJI				AMB	AMB		
	comp=Z,9.0nm,0.6s,mb4.6						
BJI				AMB	AMB		
	comp=Z,217nm,6.7s						
BJI				LR	LR		
	comp=N,275nm,15.2s,MS4.1						
BJI				LR	LR		
	comp=E,309nm,16.1s,MS4.1						
BJI				LR	LR		
	comp=Z,204nm,24.4s						
LZH	**Lanzhou**	**29.04**	**329**	*e*P	**P**	**08 39 42.7**	**+2.9**
LZH				AP	pP	08 39 51.3	+7.7
LZH				XP	sP	08 39 56.5	+11
LZH				AMB	AMB		
	comp=Z,40nm,1.0s,mb5.1						
LZH				LR	LR		
	comp=N,2μm,12.0s						
LZH				LR	LR		
	comp=Z,640nm,14.6s,MS4.4						
FITZ	**Fitzroy Crossi**	**30.11**	**173**	*i*P	**P**	**08 39 47.9**	**-1.7**
	comp=Z,7.6nm,0.9s,mb4.4						
FITZ	**Fitzroy Crossi**	**30.11**	**173**	P	**P**	**08 39 48.0**	**-1.6**
	comp=Z,12nm,1.0s,mb4.6,baz=215,slow=1.9,SNR=11						
HHC	**Hu-ho-hao-te**	**30.17**	**344**	*e*P	**P**	**08 39 49.6**	**-0.3**
HHC				AP	pP	08 39 59.9	+6.1
HHC				XP	sP	08 40 02.4	+6.9
HHC				PP	PP	08 40 57.8	+9.2
HHC				PCP	PcP	08 42 46.6	-4.6
HHC				S	**S**	**08 44 47.6**	**+0.2**
HHC				SCP		08 46 26.8	
HHC				PCS		08 46 30.0	
HHC				SS	SS	08 46 32.3	+6.8
HHC				SCS	ScS	08 50 19.7	-6.4
HHC				AMB	AMB		
	comp=Z,8.0nm,1.3s,mb4.3						
HHC				AMB	AMB		
	comp=Z,101nm,5.6s						
HHC				LR	LR		
	comp=N,223nm,15.6s,MS4.0						
HHC				LR	LR		
	comp=E,194nm,16.3s,MS4.0						
HHC				LR	LR		
	comp=Z,256nm,15.6s,MS4.0						
SHL	**Shillong**	**31.41**	**300**	*e*P	**P**	**08 40 01.0**	**0.0**
CN2	**Changchun**	**31.85**	**5**	*e*P	**P**	**08 40 07.4**	**+2.7**
CN2				LR	LR		
	comp=Z,130nm,20.0

comp=Z,32nm,0.8s,mb5.1
DMN Daman 37.81 300 *e*P **P** 08 40 54.8 -1.0
comp=Z,31nm,0.9s,mb5.0
KLR Kul'dur 38.02 10 *e*P **P** 08 40 57.4 0.0
SONM Songino Array 38.04 343 P **P** 08 40 57.2 -0.4
comp=Z,4.6nm,0.8s,mb4.3,baz=160,slow=8.9,SNR=21
GKN Gorkha 38.32 300 *e*P **P** 08 40 59.7 -0.4
comp=Z,22nm,0.8s,mb4.9
YSS Yuzh-Sakhalins 39.03 23⇑ *e*P **P** 08 41 05.3 -0.6
YSS pmax pmax
comp=Z,21nm,1.4s,mb4.7
YSS MLR MLR
comp=Z,200nm,21.0s,MS3.9
KOLN Koldanda 39.13 299 *e*P **P** 08 41 06.6 -0.4
comp=Z,23nm,0.8s,mb5.0
CTA Charters Tower 39.85 143 P **P** 08 41 11.7 -1.2
comp=Z,4.7nm,0.9s,mb4.2,baz=350,slow=8.8,SNR=3.4
CTAO Charters Tower 39.85 143 P **P** 08 41 10.9 -2.1
ZAK Zakamensk 41.24 342 *e*P **P** 08 41 23.4 -0.7
TLY Talaya 42.29 343 *e*P **P** 08 41 31.4 -1.2
TLY pmax pmax
comp=Z,71nm,1.1s,mb5.2
TLY MLR MLR
comp=Z,2μm,16.0s,MS5.1
FORT Forrest 42.91 172 *e*P **P** 08 41 40.9 +2.8
comp=Z,179nm,0.6s
MOY Mondy 43.07 341 *e*P **P** 08 41 39.3 +0.2
WMQ Urumqi 43.30 324 *e*P **P** 08 41 42.1 +1.1
WMQ AP pP 08 41 52.0 +7.1
WMQ XP sP 08 41 55.9 +9.4
WMQ PP PP 08 43 24.6 +0.7
WMQ S **S** **08 48 07.5 -0.1**
WMQ AMB AMB
comp=Z,6.0nm,1.1s,mb4.2
WMQ AMB AMB
comp=Z,63nm,8.6s
WMQ LR LR
comp=N,245nm,19.6s,MS4.3
WMQ LR LR
comp=E,311nm,17.8s,MS4.3
WMQ LR LR
comp=Z,453nm,20.2s,MS4.4
NWAO Narrogin (SRO) 44.88 186 P **P** **08 41 54.2 +0.3**
comp=Z,21nm,1.0s,mb4.9,baz=1.8,slow=8.2,SNR=7.0
NWAO Narrogin (SRO) 44.88 186 P **P** **08 41 54.2 +0.3**
BOD Bodaibo 46.15 354 *e*P **P** **08 42 01.8 -1.8**
STKA Stephens Creek 47.50 157 *e*P **P** **08 42 13.4 -1.3**
comp=Z,7.5nm,0.6s,mb4.8
STKA Stephens Creek 47.50 157 P **P** **08 42 13.7 -1.0**
comp=Z,8.4nm,0.6s,mb4.8,baz=328,slow=7.5,SNR=14
STKA LR LR 09 00 46.8
comp=Z,107nm,21.1s,MS3.8,baz=207,slow=34
MKAR Makanchi Array 48.13 324 P **P** **08 42 18.3 -1.1**
comp=Z,4.1nm,0.9s,mb4.5,baz=129,slow=7.8,SNR=32
MKAR LR LR 09 04 09.8
comp=Z,150nm,18.7s,MS4.0,baz=113,slow=38
MKAR Makanchi Array 48.13 324 *i* P **P** **08 42 18.8 -0.6**
MKAR pmax pmax
comp=Z,4.0nm,0.9s
YAK Yakutsk 50.28 5*de*P **P** **08 42 34.0 -1.8**
YAK pmax pmax
comp=Z,16nm,0.7s,mb5.2
MA2 Magadan 52.14 18*c i*P **P** **08 42 49.5 -0.4**
MA2 pmax pmax
comp=Z,15nm,1.3s,mb4.8
KURK Kurchatov 52.28 327 *e*P **P** **08 42 49.5 -1.6**
NVS Novosibirsk 52.42 333 *i* P **P** **08 42 50.2 -1.8**
BVAR Borovoye Array 57.87 326 P **P** **08 43 29.4 -2.2**
comp=Z,0.9nm,0.7s,mb3.9,baz=131,slow=15,SNR=3.9
BVAR LR LR 09 08 39.8
comp=Z,81nm,21.9s,MS3.8,baz=105,slow=36
BRVK Borovoye 57.94 326 *e*P **P** **08 43 40.5 +8.4**
ZRNK Zerenda 58.60 326 *e*P **P** **08 43 34.1 -2.6**
TIXI Tiksi 59.78 3 *e*P **P** **08 43 42.7 -2.0**
TIXI *e*S **S** **08 51 53.4 -0.4**
TIXI pmax pmax
comp=Z,50nm,0.9s,mb5.5
TIXI MLR MLR
comp=Z,1μm,18.0s,MS5.1
TIXI Tiksi 59.78 3 *e*P **P** **08 43 42.8 -1.9**
BILL Bilibino 62.98 17 *e*P **P** **08 44 05.0 -1.2**
BILL pmax pmax
comp=Z,8.0nm,1.4s,mb4.7
BILL MLR MLR
comp=Z,100nm,19.0s,MS4.0
SVE Sverdlovsk 64.50 328⇓ *e*P **P** **08 44 15.1 -1.2**
IMA Indian Mountai 76.86 25 *e*P **P** **08 45 31.3 +0.4**
comp=Z,40nm,1.3s,mb5.2
APA Apatity 78.46 337⇓ *e*P **P** **08 45 38.4 -1.3**
APA MLR MLR
comp=Z,700nm,16.0s,MS5.1
PMR Palmer 79.06 29 *e*P **P** **08 45 41.1 -2.0**
comp=Z,3.4nm,0.7s,mb4.4
ILAR Eielson Array 79.77 26 P **P** **08 45 45.1 -1.7**
comp=Z,1.2nm,0.7s,mb4.0,baz=246,slow=4.3,SNR=13
ARCES ARCESS Array B 81.11 339 P **P** **08 45 53.4 -0.5**
comp=Z,8.9nm,1.1s,mb4.6,baz=76,slow=5.0,SNR=5.6
ARCES LR LR 09 21 13.2
comp=Z,96nm,21.3s,MS4.1,baz=257,slow=35
BRTR Keskin Array B 81.16 309 LR LR 09 22 54.7
comp=Z,26nm,21.2s,MS3.6,baz=90,slow=36
SPITS Spitsbergen Ar 81.51 348 P **P** **08 45 55.3 -0.6**
comp=Z,31nm,1.4s,mb5.0,baz=103,slow=12,SNR=3.9
FINES FINESS Array B 82.37 331 LR LR 09 26 26.8
comp=Z,63nm,19.9s,MS4.0,baz=54,slow=38
AKASG Malin Array Be 82.55 320 LR LR 09 23 50.0
comp=Z,48nm,21.4s,MS3.8,baz=250,slow=36
DAWY Dawson 83.09 26 *e*P **P** **08 46 03.6 -0.6**
INK Inuvik 84.26 21 *e*P **P** **08 46 09.4 -0.6**
comp=Z,9.8nm,1.4s,mb4.8
KMBO Kilima Mbogo 85.03 268 LR LR 09 23 43.0
comp=Z,52nm,19.2s,MS3.9,baz=93,slow=35
MLR Muntele Rosu 85.72 315 P **P** **08 46 17.6 -0.3**
comp=Z,1.1nm,0.4s,mb4.4,baz=163,slow=2.0,SNR=4.0
MLR LR LR 09 29 12.8
comp=Z,91nm,19.4s,MS4.2,baz=61,slow=39
NOA NORSAR Array B 89.33 333 P **P** **08 46 33.9 -1.1**
comp=Z,1.2nm,0.8s,mb4.3,baz=68,slow=4.6,SNR=3.4
NOA LR LR 09 31 24.6
comp=Z,175nm,18.1s,MS4.5,baz=275,slow=39
JMIC Jan Mayen 90.76 346 LR LR 09 31 44.2
comp=Z,73nm,19.9s,MS4.1,baz=69,slow=38
VNDA Vanda 92.18 172 *e*P **P** **08 46 48.0 +0.1**
comp=Z,2.5nm,0.9s,mb4.5
SBA Scott Base 93.12 171 P **P** **08 46 53.0 +0.9**
YKA Yellowknife Ar 93.89 23 P **P** **08 46 55.7 -0.2**
comp=Z,0.6nm,0.7s,mb4.2,baz=305,slow=4.3,SNR=22
YKA LR LR 09 27 32.2
comp=Z,42nm,22.0s,MS3.9,baz=235,slow=34
YKA Yellowknife Ar 93.89 23 P **P** **08 46 55.7 -0.2**
YKA LR LR 09 27 32.2
VNA2 Neumayer--Watz 113.49 196 Pdif 08 48 21.7 -1.6
VNA3 Neumayer Olymp 113.91 195⇓ *i* Pdif 08 48 22.3 -2.8
TXAR Lajitas Array 119.82 46 PKP PKPdf 08 52 30.3 -1.5
comp=Z,0.3nm,0.8s,baz=297,slow=2.8,SNR=4.0

*NEIC **10** 08:41:30.5±0.9, 50.01N×19.28E, h5km, MG2.2(WAR), Error ellipse: s-maj=17.0km s-min=8.7km az=161.0*
*PRU **10** 08:41:30.1, 50.15N×19.14E*
WAR 10 08:41:30.1, 50.10N×19.23E, h1km, Location given by Central Institute of Mining, origin time based upon OJC, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OJC	**Ojcow**	**0.39**	**72**	*i* Pg	Pg	08 41 37.8	+0.1
OJC				*i* Sg	Sg	08 41 43.5	+0.6
OKC	**Ostrava-Krasne**	**0.75**	**250**	*e*PG	Pg	08 41 44.6	-0.3
OKC				*e*SG	Sg	08 41 54.9	0.0
NIE	**Niedzica**	**0.98**	**134**	*e*Pg	Pg	08 41 49.0	-0.7
NIE				*e*Sg	Sg	08 42 03.4	+0.6
LIKS	**Likavka**	**1.06**	**184**	*e*PN	Pn	08 41 51.3	-0.6
LIKS				*e*SN	Sn	08 42 04.8	-2.6
MORC	**Moravsky Berou**	**1.14**	**254**	*e*P	Pb	08 41 51.5	-0.7
MORC				*e*S	Sb	08 42 06.2	-1.1
KOLL	**Kolacno**	**1.62**	**200**	*e*PG	Pg	08 42 01.2	-1.2
KOLL				*e*SN	Sn	08 42 21.1	-0.6
VYHS	**Vyhne**	**1.63**	**189**	*i* PN	Pn	08 41 59.1	-1.0
VYHS				*i* SN	Sn	08 42 20.7	-1.3
DPC	**Dobruska-Polom**	**1.88**	**279**	*e*PG	Pg	08 42 03.8	-3.8
DPC				*e*SG	Sg	08 42 27.1	-5.6
	33nm,0.4s						
KSP	**Ksiaz**	**2.02**	**293**	*e*Pg	Pg	08 42 09.9	-0.4
KSP				*e*Sg	Sg	08 42 33.3	-3.9
KSP	**Ksiaz**	**2.02**	**293**	*e*PG	Pg	08 42 10.0	-0.3
KSP				*e*SN	Sn	08 42 33.0	+1.2
UPC	**Upice**	**2.10**	**282**	*e*PG	Pg	08 42 08.5	-3.5
UPC				*e*SG	Sg	08 42 34.8	-5.2

*IDC **10** 08:48:49.9±5.3, 6.01S×148.08E, mb4.1/3, mb1 4.1/5, mb1mx3.7/14, ML3.4/2, Error ellipse: s-maj=81.7km s-min=47.1km az=64.0*
ISC 10 08:48:50.0±5.7, 6.0S±0.2×147.8E±0.4, h3km±46km, n8, σ0$90/9, mb3.9/3, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.44**	**190**	Pn	**Pn**	**08 49 46.5**	**+0.9**
	5.7nm,0.3s,baz=17,slow=19,SNR=15						
PMG				Sn	**Sn**	**08 50 27.7**	**+0.1**
	3.2nm,0.3s,baz=195,slow=9.3,SNR=4.3						
WB2	**Warramunga Arr**	**19.04**	**222**	*e*P	**P**	**08 53 15.0**	**-0.8**
WRA	**Warramunga Arr**	**19.05**	**222**	P	**P**	**08 53 15.0**	**-0.9**
	0.3nm,0.3s,baz=47,slow=11,SNR=27						
AS12	**Alice Springs**	**22.07**	**216**	*e*P	**P**	**08 53 48.0**	**0.0**
	2.4nm,0.5s,mb3.9						
ASAR	**Alice Springs**	**22.07**	**216**	P	**P**	**08 53 48.0**	**0.0**
	3.6nm,0.6s,mb4.0,baz=52,slow=9.0,SNR=65						
FITZ	**Fitzroy Crossi**	**24.73**	**239**	*e*P	**P**	**08 54 15.8**	**+1.6**
	3.4nm,0.6s,mb4.0						
FITZ	**Fitzroy Crossi**	**24.73**	**239**	P	**P**	**08 54 15.9**	**+1.7**
	2.8nm,0.4s,mb4.2,baz=35,slow=7.6,SNR=18						
STKA	**Stephens Creek**	**26.39**	**192**	P	**P**	**08 54 28.8**	**-0.8**
	1.8nm,0.7s,mb3.7,baz=3.5,slow=11,SNR=4.9						

IDC 10 08:49:55.9±45.0, 15.81S×162.08E, mb3.6/3, mb1 3.8/3, mb1mx3.5/12, MS3.2/1, Ms1 3.2/1, ms1mx2.8/19, Error ellipse: s-maj=752.0km s-min=101.8km az=63.0, Vanuatu Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**15.64**	**252**	LR	LR	08 58 12.5	
	comp=Z,93nm,19.6s,baz=215,slow=32						
STKA	**Stephens Creek**	**24.56**	**226**	P	P	08 55 17.6	-1.1
	1.3nm,0.8s,baz=56,slow=11,SNR=4.0						
WRA	**Warramunga Arr**	**26.70**	**257**	P	P	08 55 37.0	-1.9
	0.2nm,0.4s,baz=88,slow=9.8,SNR=4.3						
ASAR	**Alice Springs**	**27.61**	**249**	P	P	08 55 45.4	-1.8
	0.6nm,0.5s,baz=75,slow=9.1,SNR=9.8						

*BER **10** 09:04:24.4±4.2, 75.03N×13.90E, h15km±43km, ML2.4(NAO)*
NAO 10 09:04:19.8±4.3, 74.73N×12.37E, h11km±26km, ML2.4, Norwegian Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SPA0	**Spitsbergen Ar**	**3.59**	**13**	Pn	Pn	09 05 15.2	-1.4
	baz=175,slow=16						
SPA0				Pg	Pg	09 05 24.3	-7.2
	baz=186,slow=14						
SPA0				Sn	Sn	09 05 59.7	+0.2
	baz=196,slow=22						
KBS	**Kingsbay**	**4.22**	**359**	Pn	Pn	09 05 21.7	-3.9
KBS				Sn	Sn	09 06 04.3	-11
ARA0	**ARCESS Array S**	**6.58**	**136**	Pn	Pn	09 05 56.5	-2.5
	baz=332,slow=14						
ARA0				Sn	Sn	09 07 08.8	-6.1
	baz=333,slow=22						

*NEIC **10** 09:11:55.2, 37.91S×176.28E, h181km, After WEL.*
WEL 10 09:11:56.2±0.4, 37.93S×176.31E, h170km±4km, ML3.9/6, 2D, Error ellipse: s-maj=2.7km s-min=2.2km az=0.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LIRZ	**Lichensteins R**	**0.10**	**144**	PN	P	09 12 19.0	-0.1
LIRZ	**Lichensteins R**	**0.10**	**144**	P	P	09 12 19.0	-0.1
UTU	**Utuhina**	**0.27**	**201**	PN	P	09 12 19.3	-0.2
UTU	**Utuhina**	**0.27**	**201**	P	P	09 12 19.5	0.0
MARZ	**Manawahe**	**0.29**	**102**	PN	P	09 12 19.4	-0.2
MARZ	**Manawahe**	**0.29**	**102**	P	P	09 12 19.4	-0.2
PATZ	**Paeroa**	**0.46**	**185**	PN	P	09 12 20.1	0.0
MWZ	**Matawai**	**1.04**	**113**	PN	P	09 12 23.2	-0.2
MWZ				SN	S	09 12 44.8	+0.3
MWZ	**Matawai**	**1.04**	**113**	P	P	09 12 23.4	-0.1
MWZ				S	S	09 12 44.8	+0.3
MGZ	**Maungaku**	**1.23**	**209**	PN	P	09 12 25.3	+0.1
MGZ	**Maungaku**	**1.23**	**209**	P	P	09 12 25.4	+0.2
BKZ	**Black Stump Fm**	**1.25**	**174**	PN	P	09 12 25.1	-0.3
BKZ				SN	S	09 12 46.5	-1.3
BKZ	**Black Stump Fm**	**1.25**	**174**	P	P	09 12 25.0	-0.3
HIZ	**Hauiti**	**1.29**	**242**	PN	P	09 12 25.0	-0.7
NGZ	**Ngauruhoe**	**1.37**	**204**	PN	P	09 12 27.1	+0.6
NGZ	**Ngauruhoe**	**1.37**	**204**	P	P	09 12 27.0	+0.5
TUVZ	**Tukino**	**1.44**	**201**	PN	P	09 12 27.2	+0.1
FWVZ	**Far West T-bar**	**1.46**	**204**	PN	P	09 12 27.7	+0.3
FWVZ				SN	S	09 12 51.2	-0.2
WNVZ	**Wahianoa**	**1.51**	**202**	PN	P	09 12 27.5	-0.4
KNZ	**Kokohu**	**1.53**	**136**	PN	P	09 12 28.2	+0.1
KNZ				SN	S	09 12 50.7	-1.9
KNZ	**Kokohu**	**1.53**	**136**	*e*P	P	09 12 28.2	+0.2
PUZ	**Puketiti**	**1.54**	**96**	PN	P	09 12 27.5	-0.7
PUZ	**Puketiti**	**1.54**	**96**	P	P	09 12 27.8	-0.4
MXZ	**Matakaoa Point**	**1.62**	**78**	PN	P	09 12 28.9	-0.1
MXZ	**Matakaoa Point**	**1.62**	**78**	P	P	09 12 28.9	-0.1
VRZ	**Vera Road**	**1.71**	**225**	PN	P	09 12 29.6	-0.3
VRZ	**Vera Road**	**1.71**	**225**	P	P	09 12 29.7	-0.2
WAZ	**Wanganui**	**2.10**	**209**	PN	P	09 12 33.1	-1.0
WAZ				SN	S	09 13 02.9	-0.5
WAZ	**Wanganui**	**2.10**	**209**	*e*P	P	09 12 33.2	-1.0
PWZ	**Pawanui**	**2.14**	**169**	PN	P	09 12 33.9	-0.7
PWZ				SN	S	09 13 02.2	-2.0
PWZ	**Pawanui**	**2.14**	**169**	P	P	09 12 34.0	-0.7
PWZ				S	S	09 13 02.7	-1.6
TSZ	**Takapari Road**	**2.15**	**187**	PN	P	09 12 33.4	-1.3
BFZ	**Birch Farm**	**2.75**	**181**	PN	P	09 12 39.8	-2.2
BFZ	**Birch Farm**	**2.75**	**181**	P	P	09 12 39.9	-2.1
MRZ	**Mangatainoka R**	**2.79**	**192**	⇓PN	P	09 12 39.9	-2.6
MRZ				SN	S	09 13 13.7	-4.3
KIW	**Kapiti Island**	**3.13**	**200**	PN	P	09 12 43.3	-3.4
KIW	**Kapiti Island**	**3.13**	**200**	P	P	09 12 43.5	-3.2
MTW	**Mount Morrison**	**3.29**	**191**	PN	P	09 12 45.2	-3.6
MTW				SN	S	09 13 23.5	-5.6
MTW	**Mount Morrison**	**3.29**	**191**	P	P	09 12 45.2	-3.5
CAW	**Cannon Point**	**3.32**	**196**	PN	P	09 12 45.5	-3.6
CAW	**Cannon Point**	**3.32**	**196**	P	P	09 12 45.7	-3.4
OUZ	**Omahuta**	**3.47**	**320**	⇓PN	P	09 12 48.9	-2.1
MRW	**Makara Radio**	**3.53**	**200**	PN	P	09 12 47.9	-3.9
MRW				SN	S	09 13 28.5	-5.9
MRW	**Makara Radio**	**3.53**	**200**	P	P	09 12 47.9	-3.8
MSWZ	**Moikau Station**	**3.58**	**193**	PN	P	09 12 48.4	-4.0
MSWZ				SN	S	09 13 29.2	-6.4
SNZO	**South Karori**	**3.60**	**200**	PN	P	09 12 48.5	-4.1
SNZO				SN	S	09 13 29.9	-6.2
SNZO	**South Karori**	**3.60**	**200**	P	P	09 12 48.6	-4.1
BHW	**Baring Head**	**3.65**	**197**	PN	P	09 12 49.1	-4.2
BHW	**Baring Head**	**3.65**	**197**	P	P	09 12 49.2	-4.1
TUWZ	**Tuamarina**	**3.95**	**207**	PN	P	09 12 52.7	-4.4
NNZ	**Nelson**	**3.99**	**214**	PN	P	09 12 53.1	-4.6
NNZ	**Nelson**	**3.99**	**214**	*e*P	P	09 12 53.2	-4.5
QRZ	**Quartz Range**	**4.12**	**224**	PN	P	09 12 54.7	-4.7
QRZ	**Quartz Range**	**4.12**	**224**	*e*P	P	09 12 54.8	-4.6
BSWZ	**Blackbirch Sta**	**4.22**	**206**	PN	P	09 12 56.7	-4.0
BSWZ				SN	S	09 13 45.7	-4.7
THZ	**Tophouse**	**4.64**	**213**	PN	P	09 13 01.5	-4.6
THZ	**Tophouse**	**4.64**	**213**	*e*P	P	09 13 01.5	-4.7
KHZ	**Kahutara**	**4.96**	**204**	PN	P	09 13 05.2	-5.2
KHZ	**Kahutara**	**4.96**	**204**	*e*P	P	09 13 05.5	-4.8
DSZ	**Denniston Nort**	**5.16**	**221**	PN	P	09 13 09.8	-3.0
LTZ	**Lake Taylor**	**5.75**	**211**	PN	P	09 13 15.2	-5.5
LTZ	**Lake Taylor**	**5.75**	**211**	*e*P	P	09 13 15.5	-5.1
MQZ	**McQueen's Vall**	**6.41**	**205**	PN	P	09 13 22.4	-6.9
RPZ	**Rata Peaks**	**7.02**	**213**	PN	P	09 13 31.5	-6.1
RPZ	**Rata Peaks**	**7.02**	**213**	*e*P	P	09 13 31.7	-5.8

*IDC **10** 09:21:47.8±4.0, 24.01N×95.89E, mb3.7/3, mb1 3.8/3, mb1mx3.5/17, Error ellipse: s-maj=398.0km s-min=25.1km az=59.0*

*NEIC **10** 09:21:53.0±2.0, 23.04N×94.16E, h60km±22km, Error ellipse: s-maj=29.1km s-min=15.4km az=66.0*
ISC 10 09:21:51.6±0.9, 23.01N±0.08×93.84E±0.07, h60km, n14, σ1$65/22, mb3.7/3, Myanmar-India border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IMP	**Imphal**	**1.77**	**3**	*e*P	**P**	**09 22 21.0**	**+0.5**
IMP				*e*S	**S**	**09 22 41.0**	**-0.9**
SHL	**Shillong**	**3.11**	**325**	*e*P	**P**	**09 22 43.5**	**+4.0**
SHL				*e*S	**S**	**09 23 15.5**	**-0.1**
LSA	**Lhasa**	**7.08**	**341**	*e*Pn	**P**	**09 23 35.7**	**+0.7**
	12nm,0.4s						
GUN	**Gumba**	**8.69**	**306**	*e*Pn	**P**	**09 24 00.0**	**+2.9**
GUN				*e*Sn	**S**	**09 25 34.3**	**-0.3**
	73nm,0.5s						
PKI	**Pulchoki**	**8.88**	**302**	*e*Pn	**P**	**09 24 02.2**	**+2.6**
PKI				*e*Sn	**S**	**09 25 38.1**	**-1.1**
	18nm,0.3s						
KKN	**Kakani**	**9.08**	**303**	*e*Pn	**P**	**09 24 05.8**	**+3.3**
KKN				*e*Sn	**S**	**09 25 42.4**	**-1.9**
	22nm,0.2s						
DMN	**Daman**	**9.13**	**302**	*e*Pn	**P**	**09 24 06.1**	**+3.0**
DMN				*e*Sn	**S**	**09 25 43.7**	**-1.7**
GKN	**Gorkha**	**9.68**	**303**	*e*Pn	**P**	**09 24 12.3**	**+1.5**
GKN				*e*Sn	**S**	**09 25 55.9**	**-3.1**
	54nm,0.3s						
KOLN	**Koldanda**	**10.40**	**299**	*e*Pn	**P**	**09 24 21.8**	**+1.3**
KOLN				*e*Sn	**S**	**09 26 13.2**	**-3.2**
	22nm,0.4s						
MKAR	**Makanchi Array**	**25.49**	**341**	P	**P**	**09 27 15.2**	**-0.6**
	1.8nm,0.6s,mb3.8,baz=147,slow=9.7,SNR=22						
KURK	**Kurchatov**	**30.09**	**341**	P	**P**	**09 27 56.9**	**-0.6**
ZRNK	**Zerenda**	**35.37**	**334**	P	**P**	**09 28 44.9**	**+1.6**
WRA	**Warramunga Arr**	**58.17**	**134**	P	**P**	**09 31 39.5**	**-2.5**
	0.2nm,0.4s,mb3.5,baz=324,slow=7.4,SNR=12						
ASAR	**Alice Springs**	**60.57**	**137**	P	**P**	**09 31 56.6**	**-1.8**
	0.3nm,0.4s,mb3.8,baz=319,slow=6.7,SNR=8.6						

IDC 10 09:24:50.1±4.8, 12.97S×167.53E, mb3.6/3, mb1 3.9/3, mb1mx3.7/14, Error ellipse: s-maj=240.0km s-min=32.2km az=141.0, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**32.54**	**253**	P	P	09 31 22.7	-2.5
	0.4nm,1.1s,baz=85,slow=9.1,SNR=5.0						
ASAR	**Alice Springs**	**33.57**	**247**	P	P	09 31 32.5	-1.6
	0.5nm,0.5s,baz=75,slow=8.7,SNR=11						
ILAR	**Eielson Array**	**84.78**	**18**	P	P	09 37 26.0	-1.3
	0.6nm,0.7s,baz=239,slow=5.1,SNR=9.6						

MAN 10 09:52:34.9, 12.05N×124.99E, h20km, mb3.5, ML2.2, MS1.7, 3C, Samar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CNP	**Catarman**	**0.56**	**326**⇑ *e*P		Pb	09 52 45.8	-0.1
CNP				*e*S	Sb	09 52 55.5	+2.0
BESP	**Borongan**	**0.62**	**135**⇑ *e*P		Pb	09 52 47.4	+0.4
BESP				*e*S	Sb	09 52 59.1	+3.8
PLP	**Palo**	**0.88**	**180**	*e*P	Pb	09 52 51.7	+0.4
PLP				*e*S	Sb	09 53 04.6	+2.1
PVCP	**Virac**	**1.74**	**332**⇑ *e*P		Pn	09 53 04.7	+0.1

*NEIC **10** 10:44:32.6, 30.65S×71.76W, h6km, ML3.7(GUC), After GUC.*
GUC 10 10:44:32.6±0.9, 30.65S×71.76W, h6km±5km, MD4.0, ML3.7, 1D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LSCH	**La Serena**	**0.86**	**31**	*e*P	Pb	10 44 49.9	+0.5
LSCH				*i* S	Sb	10 45 02.0	+1.0
LSCH				AMP		10 45 03.7	
	comp=N,2μm,0.4s						
TLL	**Tololo Astrono**	**0.95**	**60**⇓ *i* P		Pb	10 44 51.5	+0.4
TLL				*i* S	Sb	10 45 04.7	+1.0
TLL				AMP		10 45 07.9	
	comp=N,4μm,0.4s						
PACH	**Papudo**	**1.91**	**172**	*e*P	Pn	10 45 04.5	-1.5
PACH				*i* S	Sn	10 45 30.0	-0.4
VACH	**Vallenar**	**2.24**	**23**	*e*P	Pn	10 45 10.8	+0.1
VACH				*i* S	Sn	10 45 40.1	+1.2
VACH				AMP		10 45 46.8	
	comp=N,1μm,0.5s						
JACH	**Jahuel**	**2.26**	**154**	*i* P	Pn	10 45 11.4	+0.4
JACH				*i* S	Sn	10 45 41.0	+1.6
ROCH	**El Roble**	**2.40**	**165**	*i* P	Pn	10 45 14.2	+1.1
PEL	**Peldehue**	**2.65**	**160**	*e*P	Pn	10 45 17.1	+0.5
PEL				*i* S	Sn	10 45 50.7	+1.3
PEL				AMP		10 45 58.5	
	comp=E,707nm,0.5s						
CLCH	**Cerro Calan**	**2.93**	**160**	*e*P	Pn	10 45 20.7	+0.1
CLCH				*i* S	Sn	10 45 57.8	+1.3
RCDM	**Rinconada Maip**	**2.95**	**164**	*e*P	Pn	10 45 21.5	+0.7
FCH	**Farellones**	**2.95**	**155**	*e*P	Pn	10 45 20.7	-0.2
TACH	**Talagante**	**3.08**	**167**	*e*P	Pn	10 45 22.4	-0.3
LMEL	**Las Melosas**	**3.45**	**158**	*e*P	Pn	10 45 27.8	-0.2

DJA 10 10:48:32.9±0.9, 8.47S×114.64E, h114km±6km, ML3.7/2, 2C-2D, Error ellipse: s-maj=28.7km s-min=11.4km az=23.0, Bali region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KELI	**Kelakatan**	**0.29**	**331**⇓ *e*Pg		P	10 48 49.1	-0.1
KELI				*e*Sg	S	10 49 00.7	-0.8
INGI	**Ingas**	**0.61**	**124**⇑ *e*Pg		P	10 48 50.8	-0.3
INGI				*e*Sg	S	10 49 03.5	-1.4
RATI	**Rata**	**0.92**	**106**⇑ *i* Pg		P	10 48 53.5	-0.5
	207nm,0.2s						
RATI				*e*Sg	S	10 49 09.4	-0.3
KEDI	**Kedomdong**	**1.46**	**91**⇓ *i* Pn		P	10 48 59.2	-0.8
	46nm,0.2s						
KEDI				*e*Sn	S	10 49 18.0	-2.4

*IDC **10** 10:49:17.1±1.1, 19.71S×173.91W, mb3.9/7, mb1 4.1/8, mb1mx4.0/18, ML4.5/1, Error ellipse: s-maj=46.7km s-min=22.3km az=142.0*
*NEIC **10** 10:49:24.4±0.7, 19.83S×173.91W, h55km, Error ellipse: s-maj=27.4km s-min=14.5km az=134.0*
ISC 10 10:49:20.4±0.9, 19.9S±0.2×173.9W±0.2, h33km, n8, σ0$52/8, mb3.8/6, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**13.31**	**98**	Pn	**P**	**10 52 15.4**	**-14**
	2.3nm,0.3s,baz=235,slow=21,SNR=6.8						
URZ	**Urewera**	**19.93**	**201**	P	**P**	**10 53 51.3**	**-0.9**
	3.2nm,0.5s,baz=98,slow=3.2,SNR=4.5						
RPZ	**Rata Peaks**	**26.92**	**205**	P	**P**	**10 55 01.5**	**+1.0**
	6.7nm,0.8s,mb4.2,baz=83,slow=10,SNR=2.8						
STKA	**Stephens Creek**	**41.53**	**244**	P	**P**	**10 57 06.7**	**+0.2**
	1.6nm,0.7s,mb3.8,baz=53,slow=8.0,SNR=4.6						
ASAR	**Alice Springs

IDC 10 11:14:45.3±16.0, 16.76S×174.92W, mb4.5/5, mb1 4.7/5, mb1mx4.0/16, 1D, Error ellipse: s-maj=312.0km s-min=131.2km az=79.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**36.93**	**259**	*e*P	P	11 21 57.0	-1.0
	2.8nm,0.4s						
CTA	**Charters Tower**	**36.93**	**259**	P	P	11 21 56.0	-2.1
	3.3nm,0.4s,baz=80,slow=11,SNR=6.9						
STKA	**Stephens Creek**	**42.10**	**241**	*e*P	P	11 22 40.3	-0.6
	5.1nm,0.9s						
STKA	**Stephens Creek**	**42.10**	**241**	P	P	11 22 40.1	-0.8
	2.9nm,0.4s,baz=92,slow=11,SNR=18						
WB2	**Warramunga Arr**	**48.11**	**258**	*e*P	P	11 23 26.5	-2.7
WRA	**Warramunga Arr**	**48.12**	**258**	P	P	11 23 26.6	-2.7
	1.7nm,0.3s,baz=98,slow=7.1,SNR=103						
AS12	**Alice Springs**	**48.31**	**253**	⇓*i*P	P	11 23 28.6	-2.1
	20nm,0.6s						
ASAR	**Alice Springs**	**48.31**	**253**	P	P	11 23 28.8	-1.9
	37nm,0.7s,baz=89,slow=8.2,SNR=680						
FITZ	**Fitzroy Crossi**	**56.51**	**259**	P	P	11 24 29.9	-2.1
	0.8nm,0.5s,baz=81,slow=13,SNR=3.7						

OTT 10 11:14:58.3±0.5, 73.33N×95.60W, h18km, MN2.4/3, 155km northeast from Fort Ross, Nu Boothia Ungava Seismic Zone., Northwest Territories

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RES	**Resolute Bay**	**1.38**	**8**	PN	Pn	11 15 22.9	0.0
RES				SN	Sn	11 15 41.8	+1.0
RES				Trac		11 15 44.2	
	comp=Z,22nm,0.2s						
RES				SG	Sb	11 15 45.3	+4.8
PINU	**Pond Inlet**	**5.20**	**88**	PN	Pn	11 16 14.3	-3.0
PINU				SN	Sn	11 17 10.9	-6.6
PINU				LG		11 17 37.9	
IGL	**Igloolik**	**5.93**	**125**	PN	Pn	11 16 25.1	-2.4
IGL				SN	Sn	11 17 29.5	-6.2
IGL				LG		11 17 57.8	
IGL				Trac		11 18 11.7	
	comp=Z,0.9nm,0.1s						
LUPN	**Lupin Mine**	**9.34**	**223**	SN	Sn	11 18 49.2	-12
LUPN				LG		11 19 40.6	
COWN	**Contwyoto Lake**	**9.75**	**222**	PN	P	11 17 18.8	-1.7
COWN				SN	Sn	11 18 58.9	-12
COWN				LG		11 19 51.0	
YNEN	**Yamba Lake Nor**	**9.88**	**221**	SN	Sn	11 19 01.1	-13
YNEN				LG		11 19 54.8	
GLWN	**Glow Worm Lake**	**9.90**	**216**	SN	Sn	11 18 57.7	-17
GLWN				LG		11 19 56.9	
ACKN	**Achilles Lake**	**9.94**	**220**	PN	P	11 17 14.7	-8.4
ACKN				SN	Sn	11 18 49.6	-26
ACKN				LG		11 19 57.1	
YMBN	**Yamba Lake**	**10.17**	**222**	SN	S	11 19 09.2	-12
YMBN				LG		11 20 06.5	
MCKN	**MacKay Lake No**	**10.54**	**217**	SN	S	11 19 16.2	-14
MCKN				LG		11 20 16.4	
MLON	**Marlo Lake**	**10.70**	**216**	PN	P	11 17 30.3	-3.2
MLON				SN	S	11 19 20.2	-14
MLON				LG		11 20 21.8	
BOXN	**Box Lake**	**10.78**	**215**	PN	P	11 17 24.5	-10
BOXN				SN	S	11 19 14.3	-22
BOXN				LG		11 20 20.9	
BOXN				Trac		11 20 30.4	
	comp=Z,0.6nm,0.3s						
NODN	**Nodinka Narrow**	**10.89**	**218**	SN	S	11 19 24.4	-14
NODN				LG		11 20 26.5	
CAMN	**Camsell Lake**	**11.09**	**218**	PN	P	11 17 35.8	-3.1
CAMN				SN	S	11 19 29.6	-14
CAMN				SN	S	11 19 30.1	-13
CAMN				LG		11 20 33.1	
CAMN				LG		11 20 33.4	
KNDN	**Kennady Lake**	**11.10**	**213**	PN	P	11 17 35.2	-3.8
KNDN				SN	S	11 19 28.6	-15
KNDN				LG		11 20 33.9	
ILKN	**Indian Lake**	**11.47**	**227**	SN	S	11 19 38.9	-14
IHLN	**Indian Hill La**	**11.48**	**217**	SN	S	11 19 39.2	-14
IHLN				LG		11 20 48.8	
DSMN	**Discovery Mine**	**12.15**	**223**	SN	S	11 19 56.9	-12
YKW3	**Yellowknife Ar**	**12.86**	**223**	PN	P	11 17 55.8	-6.9
YKW3				SN	S	11 20 10.8	-15
YKW3				LG		11 21 28.9	
YKW3				Trac		11 21 46.4	
	comp=Z,0.2nm,0.3s						

*NEIC **10** 11:19:22.7, 46.52S×169.26E, h13km, ML3.7(WEL), After WEL.*
NEIC Felt at Mokoreta.
WEL 10 11:19:24.3±0.4, 46.41S×169.23E, h18km, 3km, ML3.6/9, 1C, Error ellipse: s-maj=2.7km s-min=2.4km az=0.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TUZ	**Tuapeka**	**0.53**	**32**	⇑P*	Pb	11 19 34.5	-0.3
TUZ				S*	Sb	11 19 42.3	+0.3
TUZ	**Tuapeka**	**0.53**	**32**	P	Pb	11 19 34.6	-0.2
TUZ				S	Sb	11 19 42.3	+0.3
WHZ	**Wether Hill Ro**	**1.03**	**299**	P*	Pb	11 19 42.9	-0.4
WHZ				S*	Sb	11 19 57.3	+0.9
WHZ	**Wether Hill Ro**	**1.03**	**299**	P	Pb	11 19 42.8	-0.5
WHZ				S	Sb	11 19 57.7	+1.4
AXZ	**Alexandra**	**1.14**	**4**	PN	Pn	11 19 45.0	-0.5
AXZ				SN	Sn	11 19 59.6	-1.0
MLZ	**Mavora Lakes**	**1.29**	**325**	PN	Pn	11 19 47.1	-0.4
MLZ				SN	Sn	11 20 05.5	+1.0
MLZ	**Mavora Lakes**	**1.29**	**325**	P	Pn	11 19 47.2	-0.4
MLZ				S	Sb	11 20 05.5	+1.6
ODZ	**Otahua Downs**	**1.68**	**37**	PN	Pn	11 19 52.1	-1.1
ODZ				SN	Sn	11 20 12.4	-2.0
ODZ				SN	Sn	11 20 12.7	-1.7
ODZ	**Otahua Downs**	**1.68**	**37**	*e*P	Pn	11 19 52.1	-1.1
BWZ	**Berwen**	**1.93**	**14**	PN	Pn	11 19 55.9	-0.9
MSZ	**Milford Sound**	**1.96**	**332**	*e*PN	Pn	11 19 56.2	-0.9
RPZ	**Rata Peaks**	**2.98**	**26**	PN	Pn	11 20 09.8	-2.0
RPZ	**Rata Peaks**	**2.98**	**26**	*e*P	Pn	11 20 09.9	-1.9
WVZ	**Waitaha Valley**	**3.50**	**18**	PN	Pn	11 20 17.8	-1.3
WVZ				SN	Sn	11 20 58.2	-2.2
WVZ	**Waitaha Valley**	**3.50**	**18**	*e*P	Pn	11 20 17.8	-1.3
MQZ	**McQueen's Vall**	**3.63**	**43**	PN	Pn	11 20 19.0	-2.0
MQZ	**McQueen's Vall**	**3.63**	**43**	*e*P	Pn	11 20 19.0	-1.9
LTZ	**Lake Taylor**	**4.22**	**32**	PN	Pn	11 20 27.1	-2.3
DSZ	**Denniston Nort**	**5.01**	**23**	PN	Pn	11 20 38.3	-2.3
DSZ	**Denniston Nort**	**5.01**	**23**	*e*P	Pn	11 20 38.4	-2.2
KHZ	**Kahutara**	**5.04**	**39**	PN	Pn	11 20 38.7	-2.3
QRZ	**Quartz Range**	**6.07**	**24**	PN	Pn	11 20 53.9	-1.6

*IDC **10** 11:25:18.7±1.5, 1.17N×121.90E, mb3.4/3, mb1 3.7/4, mb1mx3.5/17, ML3.8/1, Error ellipse: s-maj=140.0km s-min=23.5km az=64.0*
ISC 10 11:25:21.5±1.6, 1.0N±0.4×121.6E±0.9, h33km, n4, σ0§11/4, mb3.3/3, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**19.43**	**168**	P	**P**	**11 29 48.1**	**0.0**
	0.2nm,0.3s,baz=17,slow=9.2,SNR=8.1						
WRA	**Warramunga Arr**	**24.31**	**150**	P	**P**	**11 30 37.4**	**-0.1**
	0.7nm,0.5s,mb3.4,baz=325,slow=11,SNR=21						
ASAR	**Alice Springs**	**27.32**	**155**	P	**P**	**11 31 05.7**	**+0.1**
	0.3nm,0.5s,mb3.1,baz=345,slow=15,SNR=5.0						
MKAR	**Makanchi Array**	**57.00**	**329**	P	**P**	**11 35 06.4**	**0.0**
	0.2nm,0.4s,mb3.5,baz=131,slow=9.1,SNR=2.9						

*IDC **10** 11:25:45.7±0.8, 20.55S×174.19W, mb4.1/12, mb1 4.4/13, mb1mx4.3/18, ML4.5/1, Error ellipse: s-maj=40.8km s-min=16.8km az=148.0*
*NEIC **10** 11:25:55.4±0.3, 20.59S×174.28W, h75km, mb4.4/4, Error ellipse: s-maj=14.0km s-min=8.5km az=150.0*
ISC 10 11:25:48.9±0.6, 20.6S±0.1×174.3W±0.1, h33km, n35, σ0§45/22, mb4.1/14, 1C, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**13.55**	**95**	Pn	**P**	**11 28 47.0**	**-14**
	2.2nm,0.3s,baz=141,slow=12,SNR=5.4						
RAR				Sn	S	11 31 02.1	-30
	0.8nm,0.3s,baz=23,slow=17,SNR=3.2						
CTA	**Charters Tower**	**36.97**	**264**	P	**P**	**11 32 57.9**	**+0.8**
	2.5nm,0.6s,mb4.3,baz=104,slow=14,SNR=6.0						
CTAO	**Charters Tower**	**36.97**	**264**	*e*P	**P**	**11 32 57.6**	**+0.5**
	3.4nm,0.6s,mb4.3						
STKA	**Stephens Creek**	**40.90**	**245**	P	**P**	**11 33 29.7**	**-0.1**
	2.1nm,0.6s,mb4.0,baz=72,slow=5.7,SNR=7.6						
AS12	**Alice Springs**	**47.90**	**256**	*e*P	**P**	**11 34 21.4**	**-4.8**
	15nm,1.4s,mb4.8						
ASAR	**Alice Springs**	**47.90**	**256**	P	**P**	**11 34 26.4**	**+0.2**
	5.3nm,0.8s,mb4.6,baz=94,slow=7.8,SNR=35						
ASAR				PcP	PcP	11 35 55.0	+0.3
	1.3nm,0.8s,baz=98,slow=3.5,SNR=4.4						
WB2	**Warramunga Arr**	**48.04**	**261**	*e*P	**P**	**11 34 26.8**	**-0.5**
WRAB	**Tennant Creek**	**48.05**	**261**	*e*P	**P**	**11 34 27.0**	**-0.3**
WRA	**Warramunga Arr**	**48.05**	**261**	P	**P**	**11 34 27.1**	**-0.3**
	2.4nm,0.9s,mb4.2,baz=96,slow=5.6,SNR=20						
WRA				PcP	PcP	11 35 56.3	+1.0
	1.6nm,0.8s,baz=101,slow=3.6,SNR=5.0						
FITZ	**Fitzroy Crossi**	**56.48**	**261**	*e*P	**P**	**11 35 30.7**	**+0.3**
	3.0nm,1.4s,mb4.1						
FITZ	**Fitzroy Crossi**	**56.48**	**261**	P	**P**	**11 35 30.8**	**+0.4**
	3.3nm,0.9s,mb4.4,baz=178,slow=6.2,SNR=7.5						
SBA	**Scott Base**	**58.01**	**185**	*e*P	**P**	**11 35 40.2**	**-0.2**
	2.7nm,0.9s,mb4.3						
VNDA	**Vanda**	**58.12**	**186**	P	**P**	**11 35 41.2**	**0.0**
	1.3nm,1.0s,mb3.9,baz=1.6,slow=6.4,SNR=5.3						
VNDA	**Vanda**	**58.12**	**186**	*e*P	**P**	**11 35 40.8**	**-0.5**
	0.6nm,0.7s,mb3.7						
QSPA	**South Pole Qui**	**69.45**	**180**	*e*P	**P**	**11 36 55.9**	**+0.6**
	4.6nm,0.9s,mb4.4						
NVAR	**Mina Array Bea**	**78.75**	**42**	P	**P**	**11 37 50.5**	**+0.6**
	2.1nm,0.8s,mb4.1,baz=229,slow=11,SNR=13						
TXAR	**Lajitas Array**	**84.19**	**56**	P	**P**	**11 38 18.1**	**-0.5**
	0.1nm,0.3s,mb3.4,baz=146,slow=41,SNR=3.3						
PDAR	**Pinedale Array**	**86.68**	**42**	P	**P**	**11 38 30.6**	**+0.1**
	0.7nm,0.7s,mb4.0,baz=207,slow=3.3,SNR=6.1						
ILAR	**Eielson Array**	**87.70**	**11**	P	**P**	**11 38 34.9**	**-0.1**
	1.0nm,0.8s,mb4.1,baz=210,slow=5.6,SNR=7.5						
CMAR	**Chiang Mai Arr**	**93.47**	**288**	P	**P**	**11 39 07.0**	**+4.0**
	1.4nm,0.7s,mb4.5,baz=135,slow=2.5,SNR=7.1						
YKA	**Yellowknife Ar**	**95.19**	**24**	P	**P**	**11 39 09.7**	**-0.1**
	0.4nm,0.8s,mb3.9,baz=237,slow=4.4,SNR=13						
YKA	**Yellowknife Ar**	**95.19**	**24**	P	**P**	**11 39 09.7**	**-0.1**
MKAR	**Makanchi Array**	**113.84**	**313**	PKiKP		11 44 26.2	
	0.7nm,0.6s,baz=74,slow=1.5,SNR=7.6						
ZRNK	**Zerenda**	**122.26**	**320**	*e*PKP	PKPdf	11 44 41.9	+1.4
AKASG	**Malin Array Be**	**144.74**	**334**	PKP	PKPdf	11 45 23.3	+1.1
	2.7nm,0.6s,baz=41,slow=4.2,SNR=21						
CLL	**Collm**	**148.85**	**351**	⇑*i*PKP1	PKPdf	11 45 35.9	+6.9
UPC	**Upice**	**149.09**	**347**	*e*PKP	PKPdf	11 45 37.0	+7.6
BRG	**Berggiesshubel**	**149.13**	**350**	*e*P	PKPdf	11 45 34.7	+5.3
BRG				*e*		11 45 37.1	
DPC	**Dobruska-Polom**	**149.18**	**347**	*e*PKP	PKPdf	11 45 37.3	+7.8
OKC	**Ostrava-Krasne**	**149.23**	**344**	*e*PKP	PKPdf	11 45 35.8	+6.2
PVCC	**Panska Ves**	**149.35**	**349**	*e*PKP	PKPdf	11 45 37.4	+7.6
BRTR	**Keskin Array B**	**149.47**	**315**	PKPbc	PKPdf	11 45 37.9	+7.5
	2.4nm,0.8s,baz=124,slow=4.5,SNR=11						
PRU	**Pruhonice**	**149.88**	**349**	*e*PKP	PKPdf	11 45 38.6	+7.9
KHC	**Kasperske Hory**	**150.87**	**349**	*e*PKP	PKPdf	11 45 41.1	+8.9
GERES	**GERESS Array B**	**151.13**	**349**	PKPbc	PKPdf	11 45 40.5	+7.9
	3.3nm,1.1s,baz=180,slow=1.3,SNR=8.4						

*IDC **10** 11:55:42.8±1.2, 71.03N×6.84W, mb3.2/2, mb1 3.7/6, mb1mx3.4/24, ML3.3/4, MS3.2/2, Ms1 3.2/2, ms1mx2.6/19, Error ellipse: s-maj=27.5km s-min=8.7km az=178.0*
*NEIC **10** 11:55:43.6±0.5, 71.04N×6.92W, h10km, ML3.4(BER), Error ellipse: s-maj=9.6km s-min=6.0km az=189.0*
*BER **10** 11:55:45.0±1.0, 71.38N×7.60W, h16km±7km, MD3.2, ML3.4*
ISC 10 11:55:41.9±1.0, 71.07N±0.07×6.8W±0.1, h15km, 9km, n20, σ1§18/20, mb3.1/2, MS3.1/2, 4C, Jan Mayen Island region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JNE	**Jan Mayen East**	**0.51**	**262**	⇑*i*P	**Pg**	**11 55 52.8**	**+0.3**
JNE				*e*S	**Sg**	**11 55 59.5**	**0.0**
JNE				AML	AML	11 56 01.9	
	comp=Z,2μm,0.4s						
JNW	**Jan Mayen West**	**0.55**	**267**	⇑*i*P	**Pg**	**11 55 53.2**	**0.0**
JMIC	**Jan Mayen**	**0.58**	**263**	Pg	**Pg**	**11 55 53.6**	**-0.2**
	comp=Z,52nm,0.3s,baz=81,slow=5.4,SNR=88						
JMIC				Lg		11 56 00.5	
	comp=Z,187nm,0.3s,baz=200,slow=22,SNR=156						
JMI	**Jan Mayen**	**0.66**	**259**	*e*P	**Pb**	**11 55 55.3**	**+0.6**
JMI				*e*S	**Sb**	**11 56 02.4**	**-0.9**
JMI				AML	AML	11 56 06.3	
	comp=Z,2μm,0.5s						
DAG	**Danmarks Havn**	**6.60**	**336**	⇑*i*P	**Pn**	**11 57 18.5**	**-2.4**
	comp=Z,2.5nm,0.4s						
DAG	**Danmarks Havn**	**6.60**	**336**	⇑*e*P	**Pn**	**11 57 18.5**	**-2.4**
	comp=Z,2.5nm,0.4s						
LOF	**Lofoten**	**7.66**	**103**	*e*P	**Pn**	**11 57 37.3**	**+1.6**
STOK	**Stokkvaagen**	**8.59**	**114**	*e*P	**P**	**11 57 48.3**	**-0.4**
MOR8	**Moi Rana**	**9.13**	**112**	*e*P	**P**	**11 57 55.3**	**-0.8**
KBS	**Kingsbay**	**9.19**	**23**	*e*Pn	**P**	**11 57 55.5**	**-1.5**
SPB4	**Spitsbergen Ar**	**9.31**	**30**	*e*Pn	**P**	**11 57 59.8**	**+1.1**
SPITS	**Spitsbergen Ar**	**9.32**	**30**	Pn	**P**	**11 57 59.6**	**+0.9**
	comp=Z,1.5nm,0.3s,baz=219,slow=16,SNR=57						
NSS	**Namsos**	**9.61**	**124**	*e*P	**P**	**11 58 00.7**	**-1.9**
ARCES	**ARCESS Array B**	**10.91**	**83**	Pn	**P**	**11 58 19.4**	**-1.0**
	comp=Z,0.1nm,0.3s,baz=34,slow=4.4,SNR=6.7						
HFS	**Hagfors**	**13.74**	**133**	Pn	**P**	**11 58 57.8**	**-0.3**
	comp=Z,0.0nm,0.3s,baz=326,slow=10,SNR=4.2						
FINES	**FINESS Array B**	**16.11**	**110**	Pn	**P**	**11 59 30.1**	**+1.1**
	comp=Z,0.2nm,0.3s,baz=310,slow=11,SNR=4.5						
GERES	**GERESS Array B**	**24.27**	**146**	P	**P**	**12 01 02.3**	**+3.4**
	comp=Z,0.3nm,0.3s,mb3.2,baz=348,slow=9.0,SNR=3.4						
MLR	**Muntele Rosu**	**30.11**	**131**	LR	LR	12 14 56.8	
	comp=Z,22nm,18.8s,MS2.8,baz=199,slow=38						
INK	**Inuvik**	**36.41**	**330**	LR	LR	12 20 24.5	
	comp=Z,73nm,19.6s,MS3.5,baz=169,slow=41						
YKA	**Yellowknife Ar**	**37.75**	**314**	P	**P**	**12 02 59.6**	**+1.4**
	comp=Z,0.2nm,0.8s,mb2.9,baz=30,slow=8.6,SNR=5.2						

IDC 10 12:11:50.3±7.2, 21.63N×142.92E, h306km±91km, mb2.7/3, mb1 3.0/4, mb1mx2.7/23, Error ellipse: s-maj=251.0km s-min=21.2km az=105.0, Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**5.48**	**353**	P	P	12 13 13.2	-1.0
	3.5nm,0.3s,baz=285,slow=17,SNR=10						
CBIJ				S	S	12 14 21.6	+1.7
	4.4nm,0.3s,baz=273,slow=23,SNR=3.0						
WRA	**Warramunga Arr**	**42.16**	**192**	P	P	12 19 13.7	-1.4
	0.6nm,0.5s,baz=12,slow=8.6,SNR=14						
ASAR	**Alice Springs**	**45.87**	**192**	P	P	12 19 42.5	-2.0
	0.2nm,0.5s,baz=10,slow=7.5,SNR=4.9						
YKA	**Yellowknife Ar**	**76.63**	**28**	P	P	12 23 07.4	-1.4
	0.1nm,0.4s,baz=291,slow=5.8,SNR=3.8						

*INMG **10** 12:19:06.7±1.0, 39.68N×6.36W, ML1.6, Error ellipse: s-maj=2.1km s-min=1.7km az=110.0*
*NEIC **10** 12:19:06.6, 39.69N×6.36W, MN1.8(MDD), After MDD.*
*MDD **10** 12:19:06.9±0.4, 39.67N×6.37W, mbLg1.7/8, Error ellipse: s-maj=4.1km s-min=3.6km az=69.0, PRXIMO*
ISC 10 12:19:04.3±0.4, 39.68N±0.03×6.36W±0.04, n26, σ0§99/41, Spain

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCBR	**Castelo Branco**	**0.87**	**281**	*e*P	**Pg**	**12 19 22.4**	**+0.6**
	8.9nm,0.1s						
EBAD	**Badajoz**	**1.05**	**209**	Pg	**Pg**	**12 19 26.2**	**+0.9**
	7.9nm,0.1s,SNR=39						
EBAD				Lg		12 19 40.2	
	3.7nm,0.1s,SNR=15						
EBAD	**Badajoz**	**1.05**	**209**	Pg	**Pg**	**12 19 26.2**	**+0.9**
EBAD				Lg		12 19 40.0	
MTE	**Manteigas**	**1.16**	**309**	*e*P	**Pb**	**12 19 27.8**	**+0.9**
MTE				*e*S	**Sb**	**12 19 43.8**	**+1.4**
	5.8nm,0.2s						
MTE	**Manteigas**	**1.16**	**309**	P	**Pb**	**12 19 27.8**	**+0.9**
MTE				S	**Sb**	**12 19 43.8**	**+1.4**
	2.9nm,0.2s						
PVIS	**Viseu**	**1.57**	**312**	*e*P	**Pn**	**12 19 34.8**	**+1.3**
	6.7nm,0.2s						
PTOM	**Tomar**	**1.58**	**269**	*e*Pg	**Pg**	**12 19 35.5**	**-0.4**
	7.3nm,0.2s						

ECAB	**El Cabril**	**1.76**	**155**	Pn	**Pn**	**12 19 37.4**	**+1.1**
	0.4nm,0.1s,SNR=6.5						
ECAB				Pg	**Pg**	**12 19 39.2**	**-0.3**
	1.7nm,0.1s,SNR=16						
ECAB				Lg		12 20 02.8	
	2.1nm,0.2s,SNR=6.6						
ESDC	**Sonseca Array**	**1.85**	**89**	Pg	**Pg**	**12 19 40.6**	**-0.8**
	0.7nm,0.1s,baz=276,slow=16,SNR=7.9						
ESDC				Sn	**Sn**	**12 20 01.6**	**-0.5**
	1.2nm,0.1s,baz=271,slow=24,SNR=7.9						
ESDC				Lg		12 20 04.6	
	1.1nm,0.4s,baz=272,slow=29,SNR=9.3						
ESDC	**Sonseca Array**	**1.85**	**89**	Pg	**Pg**	**12 19 40.8**	**-0.6**
ESDC				Sn	**Sn**	**12 20 01.6**	**-0.5**
ESDC				Lg		12 20 04.6	
EMIN	**Mina Concepcio**	**1.92**	**187**	Pn	**Pn**	**12 19 39.8**	**+1.2**
	0.2nm,0.1s,SNR=7.9						
EMIN				Pg	**Pg**	**12 19 42.1**	**-0.6**
	0.7nm,0.1s,SNR=16						
EMIN				Lg		12 20 06.9	
	1.9nm,0.1s,SNR=9.2						
EMIN	**Mina Concepcio**	**1.92**	**187**	Pn	**Pn**	**12 19 39.5**	**+0.9**
EMIN				Pg	**Pg**	**12 19 42.0**	**-0.7**
EMIN				Lg		12 20 06.7	
MOE	**Montemor**	**1.93**	**234**	*e*Pg	**Pg**	**12 19 41.7**	**-1.1**
MOE				*e*Sg	**Sg**	**12 20 06.7**	**-1.9**
GUD	**Guadarrama**	**1.95**	**60**	Pg	**Pg**	**12 19 42.7**	**-0.6**
	1.1nm,0.2s,SNR=9.8						
GUD				Lg		12 20 08.3	
	3.0nm,0.2s						
GUD	**Guadarrama**	**1.95**	**60**	Pg	**Pg**	**12 19 42.0**	**-1.2**
GUD				Lg		12 20 08.3	
EADA	**Adamuz**	**2.05**	**137**	Pn	**Pn**	**12 19 41.8**	**+1.3**
	0.1nm,0.1s,SNR=7.9						
EADA				Pg	**Pg**	**12 19 44.5**	**-0.8**
	0.8nm,0.1s,SNR=13						
EADA				Lg		12 20 12.2	
	1.8nm,0.1s						
EADA	**Adamuz**	**2.05**	**137**	Pn	**Pn**	**12 19 41.5**	**+1.0**
EADA				Pg	**Pg**	**12 19 44.2**	**-1.2**
EADA				Lg		12 20 12.2	
ECAL	**Calabor**	**2.28**	**353**	Pn	**Pn**	**12 19 45.1**	**+1.3**
	0.8nm,0.2s,SNR=7.9						
ECAL				Pg	**Pg**	**12 19 49.7**	**-0.2**
	0.6nm,0.1s,SNR=4.0						
ECAL				Lg		12 20 18.5	
	1.5nm,0.2s,SNR=5.0						
ECAL	**Calabor**	**2.28**	**353**	Pn	**Pn**	**12 19 44.2**	**+0.4**
ECAL				Pg	**Pg**	**12 19 48.9**	**-1.0**
ECAL				Lg		12 20 18.1	
EGRO	**El Granado**	**2.31**	**203**	Pn	**Pn**	**12 19 44.6**	**+0.4**
	0.3nm,0.1s,SNR=5.5						
EGRO				Lg		12 20 19.8	
	2.0nm,0.2s						
EGRO	**El Granado**	**2.31**	**203**	Pn	**Pn**	**12 19 44.5**	**+0.3**
EGRO				Lg		12 20 20.3	
PALC	**Alcoutim**	**2.38**	**202**	*e*Pn	**Pn**	**12 19 45.4**	**+0.3**
ELOB	**Lobios**	**2.54**	**330**	Pg	**Pg**	**12 19 54.2**	**-0.8**
	1.9nm,0.2s,SNR=4.0						
ELOB				Sn	**Sn**	**12 20 17.8**	**-1.7**
	0.9nm,0.1s,SNR=7.9						
ELOB				Lg		12 20 27.7	
	0.9nm,0.2s,SNR=4.0						
ELOB	**Lobios**	**2.54**	**330**	Pn	**Pn**	**12 19 47.6**	**+0.1**
ELOB				Pg	**Pg**	**12 19 53.1**	**-2.0**
ELOB				Sn	**Sn**	**12 20 17.6**	**-2.0**
ELOB				Lg		12 20 26.0	
ETOR	**Torete**	**3.49**	**70**	Pn	**Pn**	**12 20 02.0**	**+1.0**
	0.3nm,0.2s,SNR=7.9						
ETOR				Lg		12 20 58.4	
	0.7nm,0.2s,SNR=7.9						
ETOR	**Torete**	**3.49**	**70**	Pn	**Pn**	**12 20 01.7**	**+0.7**
ETOR				Lg		12 20 57.8	

*MDD **10** 12:46:41.5±2.6, 37.25N×13.28W, mb3.7/9, Error ellipse: s-maj=23.9km s-min=17.9km az=58.0, PRXIMO*
ISC 10 12:46:44.2±1.4, 37.54N±0.06×12.92W±0.09, h10km, n16, σ1§00/29, Azores-Cape St. Vincent Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLOU	**Loures**	**3.25**	**64**	*e*Pn	**Pn**	**12 47 37.8**	**+1.4**
PTEO	**Sao Teotonio**	**3.33**	**89**	*e*Pn	**Pn**	**12 47 38.0**	**+0.5**
PTEO				*e*Sn	**Sn**	**12 48 18.1**	**+0.5**
MOE	**Montemor**	**3.73**	**73**	*e*Pn	**Pn**	**12 47 44.7**	**+1.4**
MOE				*e*Sn	**Sn**	**12 48 30.2**	**+2.4**
EGRO	**El Granado**	**4.32**	**88**	Pn	**Pn**	**12 47 51.1**	**-0.4**
	0.6nm,0.1s,SNR=7.9						
EGRO				Sn	**Sn**	**12 48 42.6**	**0.0**
	1.4nm,0.1s,SNR=7.9						
PALC	**Alcoutim**	**4.33**	**89**	*e*Pn	**Pn**	**12 47 50.8**	**-0.9**
PALC				*e*Sn	**Sn**	**12 48 42.2**	**-0.6**
	4.2nm,0.3s						
PALC	**Alcoutim**	**4.33**	**89**	Pn	**Pn**	**12 47 50.8**	**-0.9**
PALC				Sn	**Sn**	**12 48 42.2**	**-0.6**
	2.1nm,0.3s						
EBAD	**

LPAZ	**La Paz**	**51.94**	**303**	P	**P**	**13**	**24**	**37.5 +1.0**
	7.5nm,0.6s,mb4.8,baz=177,slow=7.7,SNR=42							
ABA	**Alger-Bouzarea**	**96.42**	**22**	P	**P**	**13**	**28**	**55.0 0.0**
ASAR	**Alice Springs**	**97.67**	**161**	P	**P**	**13**	**29**	**01.1 +0.1**
	0.2nm,0.6s,mb3.8,baz=187,slow=4.0,SNR=4.5							
YKA	**Yellowknife Ar**	**137.72**	**316**	PKP	PKPdf	13	34	49.8 +1.5
	0.2nm,0.5s,baz=125,slow=2.1,SNR=8.8							
YKA	**Yellowknife Ar**	**137.72**	**316**	PKP	PKPdf	13	34	49.8 +1.5
INK	**Inuvik**	**147.34**	**319**	PKPbc	PKPdf	13	35	09.1 +4.4
	0.8nm,0.5s,baz=69,slow=3.5,SNR=8.8							
SONM	**Songino Array**	**149.57**	**86**	PKPbc	PKPdf	13	35	15.5 +6.6
	1.5nm,0.8s,baz=236,slow=4.4,SNR=5.4							
ILAR	**Eielson Array**	**151.68**	**310**	PKPbc	PKPdf	13	35	19.9 +8.4
	0.6nm,0.7s,baz=130,slow=1.6,SNR=13							

*IDC **10** 13:20:13.5±2.5, 13.90N×120.57E, h87km±20km, mb3.0/4, mb1 3.3/4, mb1mx3.0/19, Error ellipse: s-maj=80.2km s-min=21.8km az=75.0*
*NEIC **10** 13:20:14.3±1.2, 13.93N×120.70E, h95km±10km, Error ellipse: s-maj=57.3km s-min=13.6km az=68.0*
ISC 10 13:20:12.0±0.5, 13.85N±0.03×120.39E±0.07, h91km±4km, n18, σ0§73/28, mb3.3/4, 8C-2D, Mindoro

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
LUBP	**Lubang**	**0.18**	**229**	↑*e*P		**P**	**13 20 25.8**	**+0.8**
LUBP				*e*S		**S**	**13 20 35.0**	**+0.1**
TGY	**Tagaytay City**	**0.59**	**65**	↓*i*P		**P**	**13 20 28.3**	**+0.5**
TGY				*i* S		**S**	**13 20 39.4**	**0.0**
TGY	**Tagaytay City**	**0.59**	**65**	P		**P**	**13 20 28.3**	**+0.6**
	309nm,0.3s,baz=257,slow=2.4,SNR=38							
TGY				S		**S**	**13 20 39.4**	**-0.1**
	2µm,0.3s,baz=129,slow=23,SNR=109							
PGP	**Puerto Galera**	**0.65**	**122**	↑*i*P		**P**	**13 20 28.0**	**-0.4**
PGP				*i* S		**S**	**13 20 31.0**	**-10**
SJMP	**San Jose**	**1.56**	**153**	↑*e*P		**P**	**13 20 39.8**	**+0.8**
SJMP				*e*S		**S**	**13 20 59.0**	**+0.2**
PCPH	**Palayan**	**1.83**	**22**	↑*e*P		**P**	**13 20 41.5**	**-1.1**
PCPH				*i* S		**S**	**13 21 04.0**	**-1.1**
BUSP	**Coron**	**1.85**	**186**	↑*e*P		**P**	**13 20 43.1**	**+0.4**
BUSP				*e*S		**S**	**13 21 05.4**	**0.0**
OTRP	**Odiongan**	**2.17**	**133**	↑*e*P		**P**	**13 20 48.7**	**+1.5**
OTRP				*e*S		**S**	**13 21 12.9**	**-0.3**
ENPP	**El Nido**	**2.79**	**200**	↑*e*P		**S**	**13 20 56.3**	**+0.5**
ENPP				*e*S		**S**	**13 21 27.5**	**-1.0**
KALP	**Kalibo**	**2.88**	**138**	↓*e*P		**P**	**13 20 57.8**	**+0.8**
CUYO	**Cuyo Island**	**3.05**	**168**	↑*e*P		**P**	**13 20 58.6**	**-0.7**
CUYO				*e*S		**S**	**13 21 33.2**	**-1.7**
SONM	**Songino Array**	**35.83**	**344**	P		**P**	**13 27 04.8**	**+0.2**
	0.5nm,0.6s,mb3.6,baz=159,slow=9.9,SNR=4.1							
WRA	**Warramunga Arr**	**36.28**	**157**	P		**P**	**13 27 07.9**	**-0.8**
	0.2nm,0.8s,mb3.1,baz=329,slow=10,SNR=4.3							
WRA	**Warramunga Arr**	**36.28**	**157**	P		**P**	**13 27 07.9**	**-0.8**
ASAR	**Alice Springs**	**39.56**	**160**	P		**P**	**13 27 36.8**	**+0.8**
	0.2nm,0.9s,mb2.9,baz=340,slow=7.7,SNR=3.6							
ASAR				pP		pP	13 27 57.0	-0.5
	0.3nm,0.6s,baz=340,slow=7.9,SNR=2.9							
BRVK	**Borovoye**	**55.55**	**326**	*e*P		**P**	**13 29 40.6**	**+0.4**
ZRNK	**Zerenda**	**56.20**	**325**	*e*P		**P**	**13 29 44.9**	**0.0**
YKA	**Yellowknife Ar**	**92.75**	**22**	P		**P**	**13 33 14.8**	**-0.2**
	0.2nm,0.8s,mb3.5,baz=306,slow=5.1,SNR=4.2							

*NEIC **10** 13:33:25.1±1.2,51.54N×16.13E, h5km, ML3.0(SZGRF), ML3.0(VIE), ML2.5(BRG), ML2.4(CLL), Error ellipse: s-maj=12.8km s-min=5.9km az=195.0*
*BGR **10** 13:33:26.4±0.8,51.44N×16.15E, h1km, ML3.0/6, Error ellipse: s-maj=7.8km s-min=6.7km az=165.0*
*WAR **10** 13:33:26.5,51.51N×16.09E, h1km, Location given by Rudna mine, origin time based upon KSP*
*PRU **10** 13:33:26.6,51.47N×16.06E*
*IDC **10** 13:33:27.4±1.2,51.43N×15.96E, mb1 3.4/4, mb1mx3.2/20, ML3.0/4, Error ellipse: s-maj=16.6km s-min=9.8km az=127.0*
ISC 10 13:33:23.6±0.6, 51.48N±0.03×16.09E±0.03, n33, σ1§32/65, 2C, Poland

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
KSP	**Ksiaz**	**0.65**	**169**	*e*Pg		**Pg**	**13 33 38.8**	**+2.3**
KSP				*e*Sg		**Sg**	**13 33 47.9**	**+2.8**
KSP	**Ksiaz**	**0.65**	**169**	*i* PG		**Pg**	**13 33 38.8**	**+2.3**
KSP				*i* SG		**Sg**	**13 33 47.9**	**+2.8**
UPC	**Upice**	**0.97**	**183**	*e*PG		**Pg**	**13 33 44.9**	**+1.9**
DPC	**Dobruska-Polom**	**1.14**	**173**	*e*PG		**Pg**	**13 33 47.4**	**+1.1**
DPC				*e*SG		**Sg**	**13 34 02.4**	**+1.0**
	34nm,0.3s							
PVCC	**Panska Ves**	**1.35**	**226**	*e*PG		**Pg**	**13 33 51.4**	**+0.8**
BRG	**Berggiesshubel**	**1.48**	**247**	*e*Pg		**Pg**	**13 33 53.3**	**+0.2**
BRG				*e*Sg		**Sg**	**13 34 14.2**	**+1.3**
BRG	**Berggiesshubel**	**1.48**	**247**	*e*Pn		**Pn**	**13 33 52.9**	**+1.3**
BRG				*i* Pg		**Pg**	**13 33 53.7**	**+0.5**
BRG				*i* Sg		**Sg**	**13 34 13.9**	**+1.0**
PRU	**Pruhonice**	**1.79**	**214**	*e*PN		**Pn**	**13 33 57.0**	**+1.1**
PRU				PG		**Pg**	**13 33 58.9**	**-0.3**
PRU				*i* x		x	13 34 15.9	
PRU				SN		**Sn**	**13 34 19.8**	**+0.2**
PRU				SG		**Sg**	**13 34 23.0**	**0.0**
	41nm,0.6s							
CLL	**Collm**	**1.94**	**266**	*e*Pg		**Pg**	**13 34 02.1**	**-0.3**
CLL				*e*Sg		**Sg**	**13 34 28.2**	**0.0**
CLL	**Collm**	**1.94**	**266**	*i* PN		**Pn**	**13 33 58.7**	**+0.5**
CLL				*e*PG		**Pg**	**13 34 02.0**	**-0.4**
CLL				*i*			13 34 04.8	
CLL				*i* SG		**Sg**	**13 34 27.9**	**-0.4**
CLL	**Collm**	**1.94**	**266**	*i* Pn		**Pn**	**13 33 58.7**	**+0.5**
CLL				*e*Pg		**Pg**	**13 34 02.0**	**-0.4**
CLL				*i* Sg		**Sg**	**13 34 27.9**	**-0.4**
OKC	**Ostrava-Krasne**	**2.10**	**141**	*e*PG		**Pg**	**13 34 05.2**	**-0.3**
OKC				*e*SG		**Sg**	**13 34 33.0**	**-0.4**
VRAC	**Vranov**	**2.19**	**171**	Pn		**Pn**	**13 34 04.1**	**+2.4**
	2.1nm,0.3s,baz=339,slow=14,SNR=10							
VRAC				Lg			13 34 36.5	
	5.0nm,0.3s,baz=79,slow=18,SNR=9.1							
TANN	**Tannenbergstha**	**2.53**	**247**	*e*Pn		**Pn**	**13 34 08.7**	**+2.1**
TANN				*e*Sg		**Sg**	**13 34 47.0**	**-0.8**
GUNZ	**Gunzen**	**2.63**	**246**	*e*Sg		**Sg**	**13 34 50.8**	**-0.2**
OJC	**Ojcow**	**2.67**	**117**	*e*Pg		**Pg**	**13 34 16.1**	**-0.7**
OJC				*e*Sg		**Sg**	**13 34 51.8**	**-0.5**
OJC	**Ojcow**	**2.67**	**117**	*e*PG		**Pg**	**13 34 16.0**	**-0.8**
OJC				*e*SG		**Sg**	**13 34 52.0**	**-0.3**
KHC	**Kasperske Hory**	**2.85**	**215**	*e*PN		**Pn**	**13 34 12.5**	**+1.4**
KHC				*e*PG		**Pg**	**13 34 18.2**	**-2.2**
KHC				*e*SN		**Sn**	**13 34 47.2**	**+0.6**
KHC				*e*SG		**Sg**	**13 34 56.6**	**-1.8**
MOX	**Moxa**	**2.94**	**255**	*e*Pg		**Pg**	**13 34 20.8**	**-1.6**
MOX				*e*Sg		**Sg**	**13 35 01.3**	**-0.3**
GEC2	**GERESS Array S**	**3.05**	**211**	*e*Pn		**Pn**	**13 34 16.0**	**+2.0**
GEC2				*e*Sg		**Sg**	**13 35 02.5**	**-2.6**
GEC2	**GERESS Array S**	**3.05**	**211**	*e*Pn		**Pn**	**13 34 16.0**	**+2.0**
GEC2				*e*Sg		**Sg**	**13 35 02.5**	**-2.6**
GERES	**GERESS Array B**	**3.05**	**211**	Pn		**Pn**	**13 34 15.5**	**+1.5**
	1.4nm,0.3s,baz=33,slow=12,SNR=23							
GERES				Pg		**Pg**	**13 34 21.5**	**-3.0**
	3.0nm,0.3s,baz=26,slow=18,SNR=20							
GERES				Lg			13 35 02.6	
	4.2nm,0.3s,baz=30,slow=26,SNR=8.1							
WET	**Wettzell**	**3.11**	**223**	*e*Sg		**Sg**	**13 35 05.3**	**-1.9**
ZST	**Bratislava**	**3.35**	**168**	*e*SG		**Sg**	**13 35 15.6**	**+0.6**
NIE	**Niedzica**	**3.39**	**126**	*e*P		**Pg**	**13 34 30.1**	**-1.2**
NIE				*e*S		**Sg**	**13 35 16.0**	**-0.6**
VYHS	**Vyhne**	**3.47**	**148**	*e*PN		**Pn**	**13 34 20.8**	**+0.8**
VYHS				*e*PG		**Pg**	**13 34 31.1**	**-1.8**
VYHS				*e*SG		**Sg**	**13 35 19.8**	**+0.7**
GRF	**Grafenberg Arr**	**3.58**	**242**	*e*Sg		**Sg**	**13 35 21.1**	**-1.7**
MOA	**Molln**	**3.82**	**199**	↑*i*PN		**Pn**	**13 34 26.3**	**+1.4**
MOA				*i* SG		**Sg**	**13 35 29.7**	**-1.0**
	5.9nm,0.4s							
ARSA	**Arzberg**	**4.25**	**185**	↑*i*PN		**Pn**	**13 34 32.1**	**+1.1**
ARSA				*i* SG		**Sg**	**13 35 39.4**	**-5.5**
	14nm,0.8s							
CRVS	**Cervenica-Dubn**	**4.31**	**125**	*e*PG		**Pg**	**13 34 48.3**	**-1.2**
CRVS				*e*SG		**Sg**	**13 35 44.8**	**-2.1**
KWP	**Kalwaria**	**4.61**	**111**	*e*Pg		**Pg**	**13 34 50.4**	**-5.1**
KWP				*e*Sg		**Sg**	**13 36 01.4**	**+4.5**
AKASG	**Malin Array Be**	**8.31**	**90**	Pn		**P**	**13 35 27.2**	**-1.0**
	0.9nm,0.3s,baz=278,slow=12,SNR=5.1							
FINES	**FINESS Array B**	**11.40**	**25**	Pn		**P**	**13 36 07.0**	**-3.6**
	0.1nm,0.3s,baz=203,slow=11,SNR=4.1							

*GUC **10** 13:45:28.2±1.1,28.22S×70.25W, h138km±9km, ML4.3*
*NEIC **10** 13:45:28.2,28.22S×70.25W, h138km, mb4.3/1, After GUC.*
*SYO **10** 13:45:28.2,28.22S×70.25W, h138km, MB4.3*
ISC 10 13:45:27.2±0.9, 28.29S±0.05×69.9W±0.4, h130km±22km, n8, σ0§41/11, 2C-1D, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
VACH	**Vallenar**	**0.79**	**249**	↑*i*P		**P**	**13 45 49.0**	**+0.7**
VACH				*i* S		**S**	**13 46 04.2**	**-0.3**
VACH				AMP			13 46 05.0	
	comp=N,10µm,0.1s							
CPCH	**Copiapo**	**1.01**	**338**	*e*P		**P**	**13 45 51.1**	**+0.7**
CPCH				*i* S		**S**	**13 46 07.7**	**-0.3**
CPCH				AMP			13 46 08.8	
	comp=E,14µm,0.1s							
LSCH	**La Serena**	**1.98**	**215**	*i* P		**P**	**13 46 01.0**	**-0.3**
LSCH				*i* S		**S**	**13 46 27.2**	**-0.1**
LSCH				AMP			13 46 28.1	
	comp=N,989nm,0.6s							
OVCH	**Ovalle**	**2.56**	**206**	AMP			13 46 45.6	
	comp=N,437nm,0.5s							
CMCH	**Combarbala**	**3.02**	**198**	AMP			13 47 15.0	
	comp=N,837nm,0.7s							
CPN1	**Cerro Paranal**	**3.68**	**353**	↑*i*P		**P**	**13 46 24.2**	**+0.5**
CPN1				*i* S		**S**	**13 47 06.5**	**-0.4**
CPN1				AMP			13 47 20.8	
	comp=E,325nm,0.4s							
FCH	**Farellones**	**5.03**	**184**	↓*i*P		**P**	**13 46 41.7**	**0.0**
FCH				*i* S		**S**	**13 47 39.0**	**-0.1**
LVC	**Limon Verde**	**5.73**	**9**	*e*P		**P**	**13 46 50.5**	**-0.5**
	comp=E,5.2nm,0.3s							

*NAO **10** 13:46:16.2±2.0, 70.87N×6.94W*
*NEIC **10** 13:46:16.8±0.4, 71.05N×6.93W, h10km, ML3.8(BER), Error ellipse: s-maj=7.8km s-min=4.9km az=8.0*
*IDC **10** 13:46:16.6±0.9, 71.02N×6.94W, mb3.6/4, mb1 3.9/9, mb1mx3.7/25, ML3.6/5, MS3.3/8, Ms1 3.3/8, ms1mx3.0/29, Error ellipse: s-maj=24.4km s-min=7.7km az=2.0*
*BER **10** 13:46:19.2±1.4, 71.23N×7.33W, h15km±6km, MD3.5, ML3.7*
ISC 10 13:46:14.8±0.4, 71.11N±0.06×6.74W±0.09, h10km, n33, σ1§17/31, mb3.6/5, MS3.4/5, 4C, Jan Mayen Island region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
JNE	**Jan Mayen East**	**0.52**	**258**	↑*i*P		**Pg**	**13 46 25.9**	**+0.5**
JNE				*e*S		**Sg**	**13 46 32.6**	**+0.1**
JNE				AML	AML		13 46 35.1	
	comp=Z,6µm,0.4s							
JNW	**Jan Mayen West**	**0.56**	**263**	↑*i*P		**Pg**	**13 46 26.3**	**+0.2**
JNW				AML	AML		13 46 37.5	
	comp=Z,4µm,0.5s							
JMIC	**Jan Mayen**	**0.59**	**259**	Pg		**Pg**	**13 46 26.7**	**-0.1**
JMIC				Lg			13 46 33.7	
JMIC	**Jan Mayen**	**0.59**	**259**	Pg		**Pg**	**13 46 26.7**	**-0.1**
	comp=Z,176nm,0.3s,baz=54,slow=3.1,SNR=228							
JMIC				Lg			13 46 33.4	
	comp=Z,1µm,0.3s,baz=191,slow=23,SNR=286							
JMI	**Jan Mayen**	**0.68**	**256**	↑*i*P		**Pb**	**13 46 28.3**	**+0.1**
JMI				*e*S		**Sb**	**13 46 36.1**	**-1.2**
JMI				AML	AML		13 46 37.0	
	comp=Z,6µm,0.3s							
DAG	**Danmarks Havn**	**6.56**	**335**	↑*i*P		**Pn**	**13 47 52.0**	**-1.9**
	comp=Z,18nm,0.7s							
DAG				*i*			13 49 02.0	
LOF	**Lofoten**	**7.66**	**103**	*e*P		**Pn**	**13 48 09.8**	**+0.5**
STOK	**Stokkvaagen**	**8.60**	**114**	*e*P		**P**	**13 48 20.9**	**-1.4**
MOR8	**Moi Rana**	**9.14**	**112**	*e*P		**P**	**13 48 28.9**	**-0.8**
KBS	**Kingsbay**	**9.15**	**23**	Pn		**P**	**13 48 30.0**	**+0.1**
KBS	**Kingsbay**	**9.15**	**23**	*e*Pn		**P**	**13 48 28.8**	**-1.1**
	comp=Z,20nm,0.6s							
SPB4	**Spitsbergen Ar**	**9.28**	**30**	*e*Pn		**P**	**13 48 32.5**	**+0.8**
SPA0	**Spitsbergen Ar**	**9.28**	**30**	Pn		**P**	**13 48 32.6**	**+0.9**
	baz=226,slow=12							
SPITS	**Spitsbergen Ar**	**9.28**	**30**	Pn		**P**	**13 48 33.1**	**+1.4**
	comp=Z,5.2nm,0.3s,baz=219,slow=12,SNR=151							
NSS	**Namsos**	**9.63**	**124**	*e*P		**P**	**13 48 33.9**	**-2.4**
ARA0	**ARCESS Array S**	**10.90**	**83**	Pn		**P**	**13 48 52.5**	**-1.3**
	baz=289,slow=12							
ARCES	**ARCESS Array B**	**10.90**	**83**	Pn		**P**	**13 48 52.6**	**-1.2**
	comp=Z,0.2nm,0.3s,baz=296,slow=9.3,SNR=7.8							
ARCES				LR		LR	13 52 19.0	
	comp=Z,93nm,20.9s,baz=71,slow=33							
NOA	**NORSAR Array B**	**12.38**	**136**	Pn		**P**	**13 49 14.7**	**+0.9**
	comp=Z,0.3nm,0.3s,baz=347,slow=13,SNR=2.5							
NOA				LR		LR	13 53 30.0	
	comp=Z,74nm,19.9s,baz=325,slow=35							
HFS	**Hagfors**	**13.76**	**133**	Pn		**P**	**13 49 27.1**	**-4.8**
	baz=328,slow=14							
HFS	**Hagfors**	**13.76**	**133**	Pn		**P**	**13 49 32.2**	**+0.2**
	comp=Z,0.1nm,0.3s,baz=324,slow=13,SNR=8.4							
FIA0	**FINESS Array S**	**16.12**	**110**	P		**P**	**13 50 02.4**	**-0.2**
	baz=322,slow=10							
FINES	**FINESS Array B**	**16.12**	**110**	Pn		**P**	**13 50 02.5**	**-0.1**
	comp=Z,0.3nm,0.3s,baz=319,slow=9.4,SNR=7.6							
FINES				LR		LR	13 55 44.7	
	comp=Z,67nm,18.6s,baz=174,slow=35							
FINES	**FINESS Array B**	**16.12**	**110**	Pn		**P**	**13 50 02.5**	**-0.2**
FINES				LR		LR	13 55 44.7	
FRB	**Frobisher Bay**	**23.76**	**283**	LR		LR	14 00 19.1	
	comp=Z,66nm,20.1s,MS3.1,baz=125,slow=36							
GERES	**GERESS Array B**	**24.30**	**146**	P		**P**	**13 51 35.3**	**+2.5**
	comp=Z,0.2nm,0.3s,mb3.1,baz=326,slow=9.6,SNR=5.1							
AKASG	**Malin Array Be**	**26.19**	**122**	P		**P**	**13 51 52.5**	**+1.7**
	comp=Z,2.1nm,0.9s,mb3.7,baz=334,slow=9.9,SNR=4.7							
SCHQ	**Schefferville**	**30.11**	**269**	LR		LR	14 03 16.3	
	comp=Z,64nm,18.2s,MS3.3,baz=210,slow=34							
INK	**Inuvik**	**36.38**	**330**	*e*P		**P**	**13 53 20.2**	**-0.2**
	comp=Z,2.4nm,1.1s,mb4.0							
YKA	**Yellowknife Ar**	**37.73**	**314**	P		**P**	**13 53 32.8**	**+1.1**
	comp=Z,0.5nm,0.8s,mb3.3,baz=29,slow=8.6,SNR=7.7							
YKA				LR		LR	14 07 58.4	
	comp=Z,40nm,18.3s,MS3.3,baz=30,slow=34							
YKA	**Yellowknife Ar**	**37.73**	**314**	P		**P**	**13 53 32.8**	**+1.0**
YKA				LR		LR	14 07 58.4	
ILAR	**Eielson Array**	**41.67**	**336**	LR		LR	14 10 54.5	
	comp=Z,43nm,18.5s,MS3.4,baz=346,slow=35							
MKAR	**Makanchi Array**	**46.31**	**72**	P		**P**	**13 54 44.3**	**+2.4**
	comp=Z,1.3nm,1.0s,mb3.8,baz=348,slow=6.6,SNR=8.8							
PDAR	**Pinedale Array**	**54.10**	**298**	LR		LR	14 18 30.3	
	comp=Z,66nm,19.4s,MS3.7,baz=255,slow=36							

*TAP **10** 13:49:42.5, 22.05N×121.57E, h14km, ML3.1*
*JMA **10** 13:49:43.5±0.3, 22.00N×121.67E, h75km, M3.1*
ISC 10 13:49:43.0±2.4, 22.0N±0.3×121.8E±0.3, h14km, n6, σ0§40/10, Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
YOJ	**Yonaguni jima**	**2.67**	**24**	P		**Pn**	**13 50 26.1**	**-0.2**
HATJ	**Hateruma jima**	**2.74**	**42**	P		**Pn**	**13 50 27.3**	**0.0**
IRIF	**Iriomote-Funau**	**2.90**	**37**	P		**Pn**	**13 50 29.7**	**0.0**
IRIF				*e*S		**Sn**	**13 51 04.8**	**+0.2**
JKRS	**Kuro-shima**	**3.00**	**42**	P		**Pn**	**13 50 31.2**	**+0.2**
JKRS				S		**Sn**	**13 51 07.8**	**+0.8**
JIJ	**Ishigaki jima**	**3.17**	**42**	P		**Pn**	**13 50 33.7**	**+0.2**
JIJ				S		**Sn**	**13 51 10.6**	**-0.8**
JTJ	**Tarama**	**3.73**	**45**	P		**Pn**	**13 50 41.1**	**-0.2**
JTJ				S		**Sn**	**13 51 25.2**	**-0.2**

*CASC **10** 14:02:54.8±2.3, 10.71N×86.35W, h6km±10km, MD4.0, ML3.4*
ISC 10 14:02:53.4±0.8, 10.67N±0.04×86.44W±0.05, h6km, n26, σ0§85/34, 3C-1D, Off coast of Costa Rica

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
CRZC	**La Cruz**	**0.87**	**71**	↑*e*P		**Pb**	**14 03 09.7**	**-0.9**
CRZC				*e*S		**Sb**	**14 03 21.0**	**-1.3**
CONN	**Concepcion**	**1.20**	**42**	↓*e*P		**Pb**	**14 03 15.0**	**-1.1**
CONN				*e*S		**Sb**	**14 03 32.1**	**+0.5**
APON	**Apoyo**	**1.29**	**16**	*e*P		**Pb**	**14 03 17.8**	**0.0**
APON				*e*S		**Sb**	**14 03 41.2**	**+6.7**
CRUN	**El Crucero**	**1.31**	**6**	*e*P		**Pb**	**14 03 18.5**	**+0.3**
TICN	**Ticuantepe**	**1.37**	**8**	*e*P		**Pb**	**14 03 18.9**	**-0.2**
XAVN	**Gruta Xavier**	**1.48**	**4**	*e*P		**Pn**	**14 03 20.6**	**0.0**
MGAN	**Managua**	**1.48**	**7**	*e*P		**Pn**	**14 03 19.5**	**-1.3**
MGAN				*e*S		**Sb**	**14 03 40.7**	**+0.7**
MGAN				*i*			14 03 46.7	
	comp=N,594nm,0.7s							
WILN	**Americas 2**	**1.50**	**9**	*e*P		**Pn**	**14 03 20.7**	**-0.4**
COFN	**Cofrada**	**1.51**	**12**	*e*P		**Pn**	**14 03 20.7**	**-0.4**
COPN	**Copaltepe**	**1.51**	**354**	↑*e*P		**Pn**	**14 03 21.0**	**-0.2**
COPN				*e*S		**Sb**	**14 03 41.2**	**+0.3**
JCR	**Jicaral**	**1.54**	**122**	*e*P		**Pn**	**14 03 19.9**	**-1.6**
JCR				*e*S		**Sb**	**14 03 42.9**	**+1.3**
MOMJ	**Momotombo**	**1.73**	**357**	*e*P		**Pn**	**14 03 24.0**	**-0.4**
FORC	**Fortuna**	**1.75**	**96**	*e*P		**Pn**	**14 03 25.5**	**+0.9**
LEON	**Leon**	**1.79**	**346**	*e*P		**Pn**	**14 03 25.1**	**-0.1**
PYN	**Poneloya**	**1.80**	**341**	*e*P		**Pn**	**14 03 25.6**	**+0.3**
CNGN	**Cerro Negro**	**1.84**	**352**	*e*P		**Pn**	**14 03 26.2**	**+0.3**
PYTN	**Playitas**	**1.90**	**11**	*e*P		**Pn**	**14 03 26.4**	**-0.3**
PYTN				*e*S		**Sn**	**14 03 53.8**	**+2.7**
TEL3	**Telica 3**	**1.94**	**348**	↑*e*P		**Pn**	**14 03 27.9**	**+0.6**
TEL3				*e*S		**Sn**	**14 03 51.6**	**-0.5**
CGA2	**Cerro Gallo 2**	**2.04**	**108**	*e*P		**Pn**	**14 03 27.7**	**-1.1**
PRS1	**Puriscal**	**2.20**	**108**	*e*P		**Pn**	**14 03 31.0**	**0.0**
VPS2	**Volcan Poas 2**	**2.22**	**102**	*e*P		**Pn**	**14 03 32.5**	**+1.3**
LAJ	**Bijagual**	**2.41**	**109**	*e*P		**Pn**	**14 03 29.4**	**-4.7**
LCR2	**La Lucha 2**	**2.57**	**111**	*e*P		**Pn**	**14 03 36.6**	**+0.3**
ICR	**Volcan Irazu**	**2.65**	**105**	*e*P		**Pn**	**14 03 39.2**	**+1.7**
TRTC	**Tortuguero**	**2.68**	**92**	*e*P		**Pn**	**14 03 37.4**	**-0.5**
URSC	**Urasca**	**2.74**	**107**	*e*P		**Pn**	**14 03 38.8**	**0.0**

DJA 10 14:18:47.0±1.0, 8.52S×116.38E, h30km±3km, MD4.5/1, ML4.2/2, 4D, Error ellipse: s-maj=21.8km s-min=17.9km az=12.0, Sumbawa region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
KEDI	**Kedomdong**	**0.26**	**276**	↓*i*Pg		**Pb**	**14 18 52.7**	**-1.2**
	2µm,0.2s							
KEDI				*e*Sg		Sb	14 18 56.8	-1.9
RATI	**Rata**	**0.86**	**256**	↓*e*Pg		Pn	14 19 02.3	-0.8
	473nm,0.2s							
RATI				*e*Sg		Sb	14 19 13.5	-1.0
INGI	**Ingas**	**1.25**	**256**	↓*i*Pn		Pn	14 19 08.8	0.0
	227nm,0.2s							
INGI	**Ingas**	**1.25**	**256**	*e*P		Pn	14 19 09.4	+0.6
KELI	**Kelakatan**	**1.89**	**279**	↓*i*Pn		Pn	14 19 17.1	-0.7
KELI				*e*Sn		Sn	14 19 38.5	-2.4

*SOF **10** 14:33:32.5, 40.28N×25.79E, h17km, MD2.9*
*NEIC **10** 14:33:33.5, 40.18N×25.45E, h26km, MD3.1(ATH), After ATH.*
*ATH **10** 14:33:33.5, 40.18N×25.45E, h26km±2km, MD3.1/3*
*THE **10** 14:33:34.2, 40.20N×25.48E, h1km, ML3.2*
*ISK **10** 14:33:36.4, 40.13N×25.72E, h15km, MD2.9, ML3.2*
ISC 10 14:33:33.2±0.5, 40.21N±0.03×25.48E±0.03, h5km±4km, n30, σ0§72/41, 1C, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
LIA	**Limnos Island**	**0.39**	**216**	*e*PB		**Pb**	**14 33 41.5**	**-0.6**
LOS	**Limnos**	**0.41**	**228**	*e*Pg		**Pg**	**14 33 42.0**	**+0.5**
LOS				*e*Sg		**Sg**	**14 33 47.9**	**+0.9**
BOZC	**Bozcaada**	**0.57**	**130**	*i* P		**Pg**	**14 33 45.0**	**+0.3**
BOZC				*i* S		**Sg**	**14 33 52.7**	**+0.3**
EZN	**Ezine**	**0.76**	**120**	*e*PG		**Pg**	**14 33 47.9**	**-0.4**
ALN	**Alexandroupoli**	**0.81**	**32**	*e*Pg		**Pg**	**14 33 49.6**	**+0.3**
ALN				*e*Sg		**Sg**	**14 34 00.8**	**+0.6**
RDO	**Rodhopi**	**0.94**	**3**	*e*PB		**Pb**	**14 33 51.5**	**0.0**
RDO				*e*SN		**Sn

TCU	**Taichung**	**1.25**	**257**	*e*P		**Pb**	**14 51 32.7**	**-0.4**
TCU				S		**Sb**	**14 51 48.6**	**-0.6**
TWF1	**Yuli**	**1.25**	**211**	*e*P		**Pb**	**14 51 32.5**	**-0.8**
TWF1				S		**Sb**	**14 51 49.3**	**0.0**
YUS	**Yu-Shan**	**1.34**	**226**	*e*P		**Pb**	**14 51 34.6**	**-0.2**
YUS				S		**Sb**	**14 51 53.0**	**+1.0**
ALS	**Alishan**	**1.43**	**230**	*e*P		**Pn**	**14 51 36.5**	**+0.4**
CHN5	**Tsauling**	**1.47**	**236**	*e*P		**Pn**	**14 51 37.5**	**+0.8**
IRIF	**Iriomote-Funau**	**1.58**	**93**	P		**Pn**	**14 51 37.5**	**-0.7**
IRIF				S		**Sb**	**14 51 57.3**	**-1.4**
HATJ	**Hateruma jima**	**1.69**	**102**	*e*S		**Sn**	**14 52 04.3**	**+2.6**
WTP	**Ta-pu**	**1.73**	**228**	*e*P		**Pn**	**14 51 41.9**	**+1.4**
WTP				S		**Sn**	**14 52 05.0**	**+2.1**
TWK	**Hsinying**	**1.81**	**230**	*e*P		**Pn**	**14 51 42.5**	**+1.0**
CHN1	**Nanshi**	**1.83**	**228**	*e*P		**Pn**	**14 51 42.6**	**+0.7**
CHN1				S		**Sn**	**14 52 05.1**	**-0.4**
JKRS	**Kuro-shima**	**1.84**	**96**	P		**Pn**	**14 51 41.7**	**-0.3**
JKRS				S		**Sn**	**14 52 04.4**	**-1.2**
JIJ	**Ishigaki jima**	**1.95**	**91**	P		**Pn**	**14 51 42.9**	**-0.7**
JIJ				S		**Sn**	**14 52 06.1**	**-2.3**
SSD	**Sandimen**	**2.10**	**217**	*e*P		**Pn**	**14 51 45.8**	**+0.1**
JTJ	**Tarama**	**2.46**	**85**	P		**Pn**	**14 51 50.7**	**-0.3**
JTJ				S		**Sn**	**14 52 19.5**	**-2.0**

NEIC ***10*** *15:44:23.1,47.50N×9.10E,h13km,ML2.1(LEDBW), ML2.0(ZUR),ML2.0(STR),After ZUR.*
BGR ***10*** *15:44:23.4±0.3,47.48N×9.06E,h10km,ML1.3/1,Error ellipse: s-maj=4.4km s-min=2.2km az=35.0*
LEDBW ***10*** *15:44:23.2±0.4,47.47N×9.07E,h12km±3km,ML2.1,Error ellipse: s-maj=8.0km s-min=4.0km az=19.0*
ZUR ***10*** *15:44:23.1,47.46N×9.08E,h13km,ML2.0/8*
STR ***10*** *15:44:24.6±0.6,47.51N×8.93E,h10km±1km,Ml2.0,Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*

ISC 10 15:44:22.8±0.3,**47.46N**±0.02×**9.01E**±0.02,**h13**km,**n45,** σ0§**92**/**77**,**5C-9D**,**Germany**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
WEIN	**Weingarten**	**0.07**	**349**	⇓*i*Pg		**Pg**	**15 44 25.9**	**+0.4**
	34nm,0.2s							
WEIN				*i* Sg		**Sg**	**15 44 28.3**	**+1.0**
	34nm,0.2s							
WILA	**Wila**	**0.08**	**235**	⇑*i*Pg		**Pg**	**15 44 26.5**	**+0.9**
	14nm,0.2s							
WILA				*i* Sg		**Sg**	**15 44 29.1**	**+1.6**
	14nm,0.2s							
WILA	**Wila**	**0.08**	**235**	*e*Pg		**Pg**	**15 44 26.5**	**+0.9**
	SNR=54							
WILA				*e*Sg		**Sg**	**15 44 28.7**	**+1.2**
	SNR=15							
SISB	**Singen-Sch Ber**	**0.23**	**353**	⇓*i*P		**Pg**	**15 44 28.2**	**+0.3**
SISB				S		**Sg**	**15 44 32.1**	**+0.8**
STEIN	**Stein am Rhein**	**0.23**	**336**	⇓*i*Pg		**Pg**	**15 44 28.5**	**+0.6**
	1.7nm,0.2s							
STEIN				*i* Sg		**Sg**	**15 44 32.6**	**+1.3**
	1.7nm,0.2s							
TRULL	**Truellikon**	**0.29**	**311**	⇓*i*Pg		**Pg**	**15 44 29.8**	**+0.8**
	4.0nm,0.3s							
TRULL				*e*Sg		**Sg**	**15 44 34.5**	**+1.4**
	4.0nm,0.3s							
ZUR	**Zurich**	**0.30**	**252**	⇑*i*Pg		**Pg**	**15 44 30.3**	**+1.1**
	1.1nm,0.1s							
ZUR				*i* Sg		**Sg**	**15 44 35.3**	**+1.7**
	1.1nm,0.1s							
ZUR	**Zurich**	**0.30**	**252**	*e*Pg		**Pg**	**15 44 30.3**	**+1.1**
	SNR=10							
FLACH	**Flaach**	**0.32**	**291**	⇑*i*Pg		**Pg**	**15 44 30.6**	**+1.1**
	6.2nm,0.2s							
FLACH				*i* Sg		**Sg**	**15 44 35.7**	**+1.7**
	6.2nm,0.2s							
KAMOR	**Kamor**	**0.37**	**117**	⇓*i*Pg		**Pg**	**15 44 29.9**	**-0.6**
	6.8nm,0.7s							
KAMOR				*e*Sg		**Sg**	**15 44 35.2**	**-0.5**
	6.8nm,0.7s							
KAMOR	**Kamor**	**0.37**	**117**	*e*Pg		**Pg**	**15 44 29.9**	**-0.6**
	SNR=5.6							
KAMOR				*e*Sg		**Sg**	**15 44 35.0**	**-0.6**
	SNR=17							
SLE	**Schleitheim**	**0.46**	**312**	⇓*i*Pg		**Pg**	**15 44 32.7**	**+0.4**
	2.1nm,0.4s							
SLE	**Schleitheim**	**0.46**	**312**	*e*Pg		**Pg**	**15 44 32.7**	**+0.4**
	SNR=7.8							
SLE				*e*Sg		**Sg**	**15 44 39.3**	**+0.7**
	SNR=5.9							
PLONS	**Plons**	**0.48**	**148**	*e*Pg		**Pg**	**15 44 32.2**	**-0.5**
	1.1nm,0.6s							
MUO	**Muotathal**	**0.55**	**207**	⇑*i*Pg		**Pg**	**15 44 34.3**	**+0.2**
	5.3nm,1.5s							
GUT	**Gutenstein**	**0.61**	**7**	P		**Pb**	**15 44 34.8**	**0.0**
GUT				*i* S		**Sb**	**15 44 42.8**	**-0.3**
GUT	**Gutenstein**	**0.61**	**7**	⇓*i*P		**Pb**	**15 44 34.6**	**-0.3**
GUT				P			15 44 34.8	
GUT				*i* S		**Sb**	**15 44 42.8**	**-0.3**
GUT	**Gutenstein**	**0.61**	**7**	⇓*i*P		**Pb**	**15 44 34.6**	**-0.2**
GUT				*i* S		**Sb**	**15 44 42.8**	**-0.3**
SPAK	**Spaichingen**	**0.66**	**347**	P		**Pb**	**15 44 36.0**	**+0.4**
SPAK	**Spaichingen**	**0.66**	**347**	Pg		**Pg**	**15 44 35.3**	**-0.8**
SPAK				Sg		**Sg**	**15 44 45.2**	**+0.2**
BNALP	**Bannalp**	**0.71**	**214**	*e*Pg		**Pg**	**15 44 37.3**	**+0.2**
	1.1nm,0.4s							
APL	**Alpnach**	**0.73**	**226**	*e*Pg		**Pg**	**15 44 37.8**	**+0.3**
	11nm,0.1s							
UBR	**Uberruh**	**0.78**	**73**	⇑*i*P		**Pb**	**15 44 37.3**	**-0.4**
UBR				S		**Sb**	**15 44 47.6**	**-0.3**
UBR				*i* S		**Sb**	**15 44 49.9**	**+2.0**
FELD	**Feldberg**	**0.79**	**302**	*e*Pg		**Pg**	**15 44 38.6**	**-0.2**
	SNR=3.6							
FELD				*e*Sg		**Sg**	**15 44 49.9**	**+0.5**
	SNR=12							
FELD	**Feldberg**	**0.79**	**302**	⇓P		**Pb**	**15 44 38.9**	**+1.0**
FELD	**Feldberg**	**0.79**	**302**	Pg		**Pg**	**15 44 38.8**	**0.0**
FELD				Sg		**Sg**	**15 44 49.6**	**+0.1**
KIZ	**Kirchzarten**	**0.89**	**304**	PN		**Pn**	**15 44 40.4**	**-0.4**
KIZ				SG		**Sg**	**15 44 52.6**	**+0.1**
BALST	**Balsthal**	**0.90**	**262**	*e*Pg		**Pg**	**15 44 41.0**	**+0.1**
	0.9nm,0.3s							
DAVOX	**Davos**	**0.91**	**138**	*e*Pg		**Pg**	**15 44 39.8**	**-1.2**
	1.1nm,0.4s							
DAVOX	**Davos**	**0.91**	**138**	*e*P		**Pb**	**15 44 39.7**	**-0.1**
BFO	**Black Forest**	**0.98**	**333**	*e*Pg		**Pg**	**15 44 42.1**	**-0.4**
	SNR=8.6							
BFO				*e*Sg		**Sg**	**15 44 55.2**	**-0.4**
	SNR=4.5							
BBS	**Basel-Blauen**	**1.01**	**271**	Pg		**Pg**	**15 44 43.0**	**-0.2**
BBS				Sg		**Sg**	**15 44 57.3**	**+0.5**
BUCH	**Bad Urach**	**1.02**	**13**	S		**Sb**	**15 44 55.3**	**+0.6**
TUBL	**Tuebingen Lnz**	**1.06**	**3**	S		**Sb**	**15 44 56.9**	**+0.7**
BOURR	**Bourrignon**	**1.21**	**267**	*e*Pg		**Pg**	**15 44 46.9**	**-0.1**
	SNR=1.7							
BOURR				*e*Sg		**Sg**	**15 45 03.1**	**0.0**
	SNR=5.5							
LBG	**Lerchenberg**	**1.21**	**353**	PN		**Pn**	**15 44 45.5**	**0.0**
LBG				PG		**Pg**	**15 44 46.0**	**-1.1**
LBG				*i* SG		**Sg**	**15 45 01.6**	**-1.8**
MOF	**Molkenrain**	**1.32**	**288**	*e*Sg		**Sg**	**15 45 05.8**	**-1.3**
	SNR=5.9							
MOF	**Molkenrain**	**1.32**	**288**	Pg		**Pg**	**15 44 49.2**	**-0.1**
MOF				Sg		**Sg**	**15 45 06.4**	**-0.6**
HDH	**Heidenheim**	**1.38**	**35**	S		**Sb**	**15 45 05.9**	**+0.5**
ECH	**Echery**	**1.46**	**302**	*e*Pg		**Pg**	**15 44 51.2**	**-0.7**
	SNR=2.0							
ECH				*e*Sg		**Sg**	**15 45 09.8**	**-1.5**
	SNR=4.6							
ECH	**Echery**	**1.46**	**302**	Pg		**Pg**	**15 44 50.2**	**-1.7**
ECH				Sg		**Sg**	**15 45 09.5**	**-1.9**
WLS	**Welschbruch**	**1.46**	**311**	*e*Pg		**Pg**	**15 44 50.7**	**-1.4**
	SNR=3.8							
WLS				*e*Sg		**Sg**	**15 45 10.4**	**-1.2**
	SNR=3.6							
WLS	**Welschbruch**	**1.46**	**311**	Pg		**Pg**	**15 44 50.7**	**-1.4**
WLS				Sg		**Sg**	**15 45 09.5**	**-2.1**
LOMF	**Lomont**	**1.48**	**267**	Pg		**Pg**	**15 44 51.1**	**-1.4**
LOMF				Sg		**Sg**	**15 45 10.9**	**-1.4**
THEF	**They Montfort**	**2.17**	**292**	Pg		**Pg**	**15 45 04.8**	**-1.4**
THEF				Sg		**Sg**	**15 45 32.8**	**-2.4**

TAP ***10*** *16:20:28.5,22.12N×121.63E,h8km,ML3.0*
JMA ***10*** *16:20:29.6±0.3,21.91N×121.83E,h94km*

ISC 10 16:20:28.8±2.1,**22.0N**±0.2×**122.0E**±0.2,**h8**km,**n6,** σ0§**43**/**12**,**Taiwan region**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
YOJ	**Yonaguni jima**	**2.67**	**20**	P		**Pn**	**16 21 12.7**	**-0.3**
YOJ				*e*S		**Sn**	**16 21 46.2**	**+0.3**
HATJ	**Hateruma jima**	**2.69**	**38**	P		**Pn**	**16 21 13.4**	**+0.2**
HATJ				*e*S		**Sn**	**16 21 46.6**	**+0.3**
IRIF	**Iriomote-Funau**	**2.87**	**34**	P		**Pn**	**16 21 15.7**	**-0.1**
IRIF				*e*S		**Sn**	**16 21 50.6**	**-0.3**
JKRS	**Kuro-shima**	**2.94**	**39**	P		**Pn**	**16 21 17.2**	**+0.3**
JKRS				S		**Sn**	**16 21 53.4**	**+0.6**
JIJ	**Ishigaki jima**	**3.12**	**39**	P		**Pn**	**16 21 19.0**	**-0.3**
JIJ				S		**Sn**	**16 21 56.1**	**-1.1**
JTJ	**Tarama**	**3.66**	**42**	P		**Pn**	**16 21 27.2**	**+0.1**
JTJ				S		**Sn**	**16 22 11.1**	**+0.1**

IDC 10 16:24:17.9±47.0,**16.71S**×**174.98W**,**mb4.3**/3,**mb1 4.5**/3, **mb1mx3.9**/14,**Error ellipse: s-maj=898.0km s-min=163.9km az=79.0,Tonga Islands**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
STKA	**Stephens Creek**	**42.07**	**241**	P		P	16 32 12.2	-1.1
	1.7nm,0.4s,baz=98,slow=11,SNR=8.5							
WRA	**Warramunga Arr**	**48.08**	**258**	P		P	16 32 59.2	-2.2
	0.9nm,0.7s,baz=97,slow=7.4,SNR=36							
AS12	**Alice Springs**	**48.27**	**253**	*e*P		P	16 33 00.7	-2.2
	5.6nm,0.6s							
ASAR	**Alice Springs**	**48.27**	**253**	P		P	16 33 00.8	-2.2
	6.9nm,0.5s,baz=89,slow=8.2,SNR=212							

IDC ***10*** *16:36:52.5±2.2,6.82S×128.68E,mb3.3/1,mb1 4.1/4, mb1mx3.8/13,ML3.6/3,Error ellipse: s-maj=104.0km s-min=27.9km az=74.0*

ISC 10 16:37:11.8±3.4,**7.8S**±0.1×**128.4E**±0.1,**h214**km±40km,**n7,** σ0§**76**/**12**,**mb2.9**/1,**Banda Sea**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**10.58**	**194**	*e*P		**P**	**16 39 39.4**	**+0.3**
	1.2nm,0.3s							
FITZ				*e*S		**S**	**16 41 35.1**	**+0.4**
FITZ	**Fitzroy Crossi**	**10.58**	**194**	Pn		**P**	**16 39 39.6**	**+0.4**
	0.5nm,0.3s,baz=16,slow=8.9,SNR=16							
FITZ				Sn		**S**	**16 41 33.7**	**-1.0**
	1.2nm,0.3s,baz=164,slow=22,SNR=8.8							
WRA	**Warramunga Arr**	**13.39**	**155**	Pn		**P**	**16 40 14.2**	**-0.4**
	0.2nm,0.3s,baz=335,slow=14,SNR=16							
WRA				Sn		**S**	**16 42 39.3**	**+0.3**
	0.7nm,0.3s,baz=332,slow=22,SNR=12							
WB2	**Warramunga Arr**	**13.40**	**155**	*e*P		**P**	**16 40 14.4**	**-0.3**
WB2				*e*S		**S**	**16 42 38.8**	**-0.3**
AS12	**Alice Springs**	**16.65**	**162**	*e*P		**P**	**16 40 57.8**	**+3.2**
	2.9nm,0.4s							
ASAR	**Alice Springs**	**16.65**	**162**	P		**P**	**16 40 57.8**	**+3.2**
	0.6nm,0.3s,baz=340,slow=11,SNR=49							
ASAR				S		**S**	**16 43 59.0**	**+7.2**
	0.2nm,0.3s,baz=315,slow=16,SNR=5.0							
MKAR	**Makanchi Array**	**68.01**	**328**	P		**P**	**16 47 49.6**	**-0.2**
	0.1nm,0.3s,mb2.9,baz=127,slow=8.6,SNR=5.5							

TAP ***10*** *17:13:19.8,23.75N×121.73E,h43km±1km,ML2.6*
JMA ***10*** *17:13:20.9±0.3,23.98N×121.77E,h88km,M2.1*

ISC 10 17:13:20.1±2.4,**24.1N**±0.4×**121.7E**±0.1,**h93**km±30km,**n6,** σ0§**39**/**11**,**Taiwan**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
YOJ	**Yonaguni jima**	**1.24**	**74**	P		**P**	**17 13 43.5**	**+0.3**
YOJ				S		**S**	**17 14 00.1**	**-0.3**
IRIF	**Iriomote-Funau**	**1.86**	**83**	P		**P**	**17 13 51.1**	**0.0**
IRIF				S		**S**	**17 14 14.6**	**+0.7**
HATJ	**Hateruma jima**	**1.93**	**92**	*e*S		**S**	**17 14 15.3**	**0.0**
JKRS	**Kuro-shima**	**2.11**	**87**	P		**P**	**17 13 54.3**	**-0.1**
JKRS				S		**S**	**17 14 20.1**	**+0.3**
JIJ	**Ishigaki jima**	**2.24**	**84**	P		**P**	**17 13 55.8**	**-0.4**
JIJ				S		**S**	**17 14 22.2**	**-0.8**
JTJ	**Tarama**	**2.78**	**79**	P		**P**	**17 14 03.8**	**+0.1**
JTJ				S		**S**	**17 14 36.7**	**+0.3**

GUC ***10*** *17:45:39.4±0.6,35.60S×70.79W,h2km±24km,MD3.9, ML3.1*
NEIC ***10*** *17:45:39.4,35.60S×70.79W,h2km,ML3.1(GUC),After GUC.*

ISC 10 17:45:38.7±1.8,**35.64S**±0.09×**70.74W**±0.08,**h2**km,**n9,** σ0§**85**/**13**,**Chile-Argentina border region**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
TALC	**Talca**	**0.77**	**288**	*i* P		**Pg**	**17 45 54.0**	**-0.1**
TALC				*i* S		**Sg**	**17 46 04.9**	**+0.6**
TALC				AMP			17 46 05.4	
	comp=N,2µm,0.5s							
SFDO	**San Fernando**	**1.05**	**347**	*e*P		**Pb**	**17 45 58.3**	**-0.9**
SFDO				*i* S		**Sb**	**17 46 12.8**	**-0.3**
CICH	**Cipreses**	**1.34**	**11**	*e*P		**Pb**	**17 46 03.7**	**-0.5**
CACH	**El Canelo**	**1.52**	**4**	*e*P		**Pn**	**17 46 06.8**	**-0.2**
CHCH	**Chadas Angostu**	**1.71**	**2**	*e*P		**Pn**	**17 46 08.9**	**-0.6**
LNV	**Longovilo**	**1.77**	**342**	*e*P		**Pn**	**17 46 09.9**	**-0.6**
LNV				*i* S		**Sn**	**17 46 32.9**	**-1.0**
TACH	**Talagante**	**1.99**	**355**	*e*P		**Pn**	**17 46 13.7**	**+0.1**
TACH				*i* S		**Sn**	**17 46 39.8**	**+0.4**
CLCH	**Cerro Calan**	**2.25**	**4**	*i* S		**Sn**	**17 46 47.3**	**+1.4**
CLCH				AMP			17 46 54.7	
	comp=N,172nm,0.7s							
FCH	**Farellones**	**2.34**	**9**	*e*P		**Pn**	**17 46 21.0**	**+2.4**
FCH				AMP			17 46 59.4	
	comp=N,118nm,0.4s							

INMG ***10*** *17:56:40.8±1.4,39.44N×8.98W,h11km±9km,ML1.5,Error ellipse: s-maj=8.0km s-min=5.6km az=114.0*
MDD ***10*** *17:56:41.0±0.8,39.39N×8.93W,h8km±5km,mbLg1.5/9, Error ellipse: s-maj=8.0km s-min=2.9km az=126.0, PRXIMO*
NEIC ***10*** *17:56:41.1,39.37N×8.85W,h4km,MN1.9(MDD),After MDD.*

ISC 10 17:56:40.1±0.9,**39.34N**±0.03×**8.86W**±0.07,**h13**km±5km, **n22,**σ1§**20**/**34**,**Portugal**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
PTOM	**Tomar**	**0.44**	**52**	*e*Pg		**Pg**	**17 56 49.2**	**0.0**
PTOM				*e*Sg		**Sg**	**17 56 56.6**	**+1.3**
	20nm,0.5s							
PTOM	**Tomar**	**0.44**	**52**	Pg		**Pg**	**17 56 49.2**	**0.0**
PTOM				Lg			17 56 56.6	
	9.8nm,0.5s							
PLOU	**Loures**	**0.51**	**206**	*e*Pg		**Pg**	**17 56 50.0**	**-0.5**
PLOU				*e*Sg		**Sg**	**17 56 59.3**	**+1.8**
	21nm,0.5s							
PLOU	**Loures**	**0.51**	**206**	Pg		**Pg**	**17 56 50.0**	**-0.5**
PLOU				Lg			17 56 59.3	
	11nm,0.5s							
MOE	**Montemor**	**0.91**	**154**	*e*P		**Pb**	**17 56 59.0**	**+1.8**
MOE				*e*S		**Sb**	**17 57 13.2**	**+4.2**
PCBR	**Castelo Branco**	**1.18**	**65**	*e*S		**Sb**	**17 57 19.4**	**+2.6**
	4.8nm,0.3s							
PCBR	**Castelo Branco**	**1.18**	**65**	S		**Sb**	**17 57 19.4**	**+2.6**
	2.4nm,0.3s							
EBAD	**Badajoz**	**1.55**	**112**	Pn		**Pn**	**17 57 07.8**	**+0.2**
	0.4nm,0.1s,SNR=7.9							
EBAD				Pg		**Pg**	**17 57 09.8**	**-1.4**
	0.7nm,0.1s,SNR=8.9							
EBAD				Lg			17 57 31.5	
	6.9nm,0.2s,SNR=12							
EBAD	**Badajoz**	**1.55**	**112**	Pn		**Pn**	**17 57 07.7**	**+0.1**
EBAD				Pg		**Pg**	**17 57 09.9**	**-1.3**
EBAD				Lg			17 57 30.5	
PTEO	**Sao Teotonio**	**1.80**	**177**	*e*Pg		**Pg**	**17 57 14.0**	**-2.0**
PTEO				*e*Sg		**Sg**	**17 57 39.5**	**-0.5**
EGRO	**El Granado**	**2.11**	**149**	Pn		**Pn**	**17 57 15.9**	**+0.4**
	0.7nm,0.3s,SNR=7.9							
EGRO				Lg			17 57 49.7	
	1.0nm,0.2s,SNR=6.1							
EGRO	**El Granado**	**2.11**	**149**	Pn		**Pn**	**17 57 16.1**	**+0.5**
EGRO				Lg			17 57 48.4	
PALC	**Alcoutim**	**2.17**	**149**	*e*Pn		**Pn**	**17 57 17.0**	**+0.6**
PALC				*e*Sg		**Sg**	**17 57 51.3**	**-1.1**
	5.0nm,0.4s							
PALC	**Alcoutim**	**2.17**	**149**	Pn		**Pn**	**17 57 17.0**	**+0.6**
PALC				Lg			17 57 51.3	
	2.5nm,0.4s							
EMIN	**Mina Concepcio**	**2.33**	**132**	Pn		**Pn**	**17 57 19.5**	**+0.8**
	0.4nm,0.1s,SNR=4.0							
EMIN	**Mina Concepcio**	**2.33**	**132**	Pn		**Pn**	**17 57 19.6**	**+0.9**
EMIN				Lg			17 57 54.3	
ELOB	**Lobios**	**2.59**	**13**	Lg			17 58 02.9	
	1.4nm,0.2s,SNR=4.0							
ECAB	**Ei Cabril**	**2.98**	**114**	Pn		**Pn**	**17 57 28.6**	**+0.7**
	0.4nm,0.2s,SNR=4.0							
ECAB				Pg		**Pg**	**17 57 34.7**	**-4.8**
	0.3nm,0.2s,SNR=4.0							
ECAB				Sn		**Sn**	**17 58 04.4**	**+0.6**
	0.7nm,0.3s,SNR=7.9							
ECAB				Lg			17 58 16.7	
	1.8nm,0.3s,SNR=6.7							
ECAL	**Calabor**	**3.06**	**31**	Pn		**Pn**	**17 57 28.1**	**-1.0**
	0.9nm,0.2s,SNR=7.9							
ECAL				Sn		**Sn**	**17 58 04.0**	**-1.9**
	0.9nm,0.3s,SNR=7.9							
ECAL	**Calabor**	**3.06**	**31**	Pn		**Pn**	**17 57 28.0**	**-1.1**
ECAL				Sn		**Sn**	**17 58 04.5**	**-1.3**
ECAL				Lg			17 58 18.5	
EADA	**Adamuz**	**3.55**	**108**	Pn		**Pn**	**17 57 35.7**	**-0.4**
	0.4nm,0.2s,SNR=7.9							
EADA				Sn		**Sn**	**17 58 17.0**	**-1.3**
	1.3nm,0.4s,SNR=4.0							
EADA				Lg			17 58 36.1	
	1.2nm,0.3s,SNR=4.0							
EADA	**Adamuz**	**3.55**	**108**	Pn		**Pn**	**17 57 35.1**	**-1.0**
EADA				Sn		**Sn**	**17 58 17.0**	**-1.4**
EADA				Lg			17 58 34.7	

NEIC ***10*** *18:01:34.0,38.25S×178.40E,h7km,ML3.9(WEL),After WEL.*

WEL 10 18:01:34.7±0.4,**38.23S**×**178.33E,h10**km±1km,**ML3.6**/10, **2D,Error ellipse: s-maj=3.0km s-min=1.8km az=90.0, Off east coast of North Island**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
PUZ	**Puketiti**	**0.16**	**341**	⇓PG		Pg	18 01 38.3	-0.1
PUZ				SG		Sg	18 01 40.4	-0.4
PUZ	**Puketiti**	**0.16**	**341**	P		Pg	18 01 38.3	-0.1
PUZ				S		Sg	18 01 41.2	+0.4
MWZ	**Matawai**	**0.64**	**260**	⇓P*		Pb	18 01 47.6	+0.1
MWZ				S*		Sb	18 01 56.1	-0.1
MWZ	**Matawai**	**0.64**	**260**	P		Pb	18 01 47.6	+0.1
MWZ				S		Sg	18 01 57.4	+1.3
MXZ	**Matakaoa Point**	**0.66**	**359**	P*		Pb	18 01 47.4	-0.5
MXZ				*e*S*		Sb	18 01 57.4	+0.6
MXZ	**Matakaoa Point**	**0.66**	**359**	P		Pb	18 01 48.0	+0.1
KNZ	**Kokohu**	**0.94**	**213**	P*		Pb	18 01 52.1	-0.6
KNZ	**Kokohu**	**0.94**	**213**	*e*P		Pb	18 01 52.1	-0.6
URZ	**Urewera**	**0.96**	**268**	P*		Pb	18 01 53.1	+0.2
URZ				*e*S*		Sb	18 02 04.9	-0.5
WIZ	**White Island**	**1.14**	**307**	P*		Pb	18 01 55.2	-0.9
WIZ	**White Island**	**1.14**	**307**	P		Pb	18 01 55.6	-0.4
EDRZ	**Edgecumbe**	**1.26**	**275**	P*		Pb	18 01 57.8	-0.2
EDRZ	**Edgecumbe**	**1.26**	**275**	P		Pb	18 01 58.1	0.0
MARZ	**Manawahe**	**1.32**	**280**	PN		Pn	18 01 58.2	-1.1
MARZ	**Manawahe**	**1.32**	**280**	P		Pb	18 01 58.3	-0.9
TAZ	**Tarawera**	**1.43**	**269**	PN		Pn	18 02 00.1	-0.7
TAZ	**Tarawera**	**1.43**	**269**	P		Pn	18 02 00.9	0.0
LIRZ	**Lichensteins R**	**1.55**	**278**	PN		Pn	18 02 01.4	-1.1
BKZ	**Black Stump Fm**	**1.71**	**236**	PN		Pn	18 02 03.3	-1.6
BKZ	**Black Stump Fm**	**1.71**	**236**	*e*P		Pn	18 02 03.5	-1.4
PWZ	**Pawanui**	**2.13**	**212**	*e*PN		Pn	18 02 06.4	-4.5
PWZ	**Pawanui**	**2.13**	**212**	*e*P		Pn	18 02 06.2	-4.7
CNZ	**Chateau**	**2.38**	**245**	PN		Pn	18 02 12.9	-1.6
CNZ	**Chateau**	**2.38**	**245**	P		Pn	18 02 13.1	-1.3
WPVZ	**Whakapapa**	**2.38**	**245**	PN		Pn	18 02 13.3	-1.2
WNVZ	**Wahianoa**	**2.40**	**242**	PN		Pn	18 02 12.8	-1.9
TSZ	**Takapari Road**	**2.59**	**224**	PN		Pn	18 02 13.8	-3.7
TSZ				*e*SN		Sn	18 02 46.9	-2.6
TSZ	**Takapari Road**	**2.59**	**224**	*e*P		Pn	18 02 13.9	-3.6
BFZ	**Birch Farm**	**2.93**	**213**	PN		Pn	18 02 17.4	-4.9
BFZ	**Birch Farm**	**2.93**	**213**	*e*P		Pn	18 02 17.5	-4.8
WAZ	**Wanganui**	**3.02**	**239**	PN		Pn	18 02 21.6	-2.0
WAZ	**Wanganui**	**3.02**	**239**	P		Pn	18 02 21.9	-1.6
MRZ	**Mangatainoka R**	**3.23**	**220**	PN		Pn	18 02 21.6	-4.9
MRZ				SN		Sn	18 02 59.7	-5.9
MTW	**Mount Morrison**	**3.65**	**216**	PN		Pn	18 02 26.6	-5.9
MTW	**Mount Morrison**	**3.65**	**216**	P		Pn	18 02 26.7	-5.8
CAW	**Cannon Point**	**3.82**	**220**	PN		Pn	18

3.8nm,0.2s,SNR=9.6
GUD Guadarrama 1.92 60 Pg **Pg** **18 12 53.8 -0.9**
GUD Lg 18 13 19.1
EMIN Mina Concepcio 1.95 188 Pn **Pn** **18 12 51.5 +0.5**
0.1nm,0.1s,SNR=4.0
EMIN Pg **Pg** **18 12 54.3 -0.9**
0.4nm,0.1s,SNR=7.3
EMIN Lg 18 13 21.0
2.2nm,0.2s,SNR=5.0
EMIN Mina Concepcio 1.95 188 Pn **Pn** **18 12 51.3 +0.4**
EMIN Pg **Pg** **18 12 54.1 -1.1**
EMIN Lg 18 13 20.9
MOE Montemor 1.96 234 *e*Sg **Sg** **18 13 20.2 -1.2**
EADA Adamuz 2.06 137 Pn **Pn** **18 12 54.1 +1.5**
0.3nm,0.1s,SNR=4.0
EADA Pg **Pg** **18 12 56.9 -0.6**
1.0nm,0.1s,SNR=12
EADA Lg 18 13 24.3
1.9nm,0.1s,SNR=5.0
EADA Adamuz 2.06 137 Pn **Pn** **18 12 53.1 +0.5**
EADA Pg **Pg** **18 12 56.8 -0.7**
EADA Lg 18 13 24.0
ECAL Calabor 2.26 353 Pg **Pg** **18 12 57.8 -3.5**
0.8nm,0.1s,SNR=4.0
ECAL Lg 18 13 28.1
1.9nm,0.2s,SNR=7.9
ECAL Calabor 2.26 353 Pn **Pn** **18 12 55.3 -0.1**
ECAL Pg **Pg** **18 12 58.6 -2.7**
ECAL Lg 18 13 27.9
EGRO El Granado 2.34 203 Pg **Pg** **18 13 02.7 -0.3**
1.4nm,0.3s,SNR=7.9
EGRO Lg 18 13 33.4
1.5nm,0.3s,SNR=7.9
EGRO El Granado 2.34 203 Pn **Pn** **18 12 57.3 +0.7**
EGRO Pg **Pg** **18 13 02.1 -0.9**
EGRO Lg 18 13 33.2
PALC Alcoutim 2.40 202 *e*Sg **Sg** **18 13 34.7 -1.6**
2.0nm,0.2s
PALC Alcoutim 2.40 202 Lg 18 13 34.7
1.0nm,0.2s
ELOB Lobios 2.52 329 Lg 18 13 38.1
1.9nm,0.3s,SNR=4.0
ETOR Torete 3.47 70 Lg 18 14 10.0
0.3nm,0.2s,SNR=4.0
ETOR Torete 3.47 70 Pn **Pn** **18 13 13.0 +0.4**
ETOR Lg 18 14 09.1

*LDG **10** 18:37:09.9±0.1,42.81N×2.53E,h3km,Md2.1/1,Ml2.1/4, Error ellipse: s-maj=1.4km s-min=1.1km az=105.0*
*NEIC **10** 18:37:09.6,42.81N×2.53E,h5km,ML2.1(STR), ML2.1(LDG),After STR.*
*STR **10** 18:37:09.6±0.1,42.81N×2.53E,h5km±1km,Ml2.1, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
*MDD **10** 18:37:09.6±0.4,42.81N×2.54E,h6km±6km,mbLg1.4/3, Error ellipse: s-maj=5.8km s-min=2.9km az=60.0,PRXIMO*
ISC 10 18:37:08.6±0.4,42.84N±0.02×2.52E±0.04,h12km±3km, n14,σ1ᵍ08/29,Pyrenees

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LRDF	**Laroque-de-Fa**	**0.10**	**9**	Pg	**Pg**	**18 37 12.5**	**+1.0**
LRDF				Sg	**Sg**	**18 37 14.9**	**+1.5**
FILF	**Fillols**	**0.28**	**174**	Pg	**Pg**	**18 37 15.0**	**+0.4**
FILF				Sg	**Sg**	**18 37 18.8**	**+0.1**
SJAF	**Saint Jean de**	**0.45**	**143**	Pg	**Pg**	**18 37 18.0**	**+0.2**
SJAF				Sg	**Sg**	**18 37 23.6**	**-0.3**
EJON	**La Jonquera**	**0.48**	**145**	Pg	**Pg**	**18 37 16.1**	**-2.3**
0.7nm,0.3s,SNR=8.1							
EJON				Lg		18 37 24.9	
3.9nm,0.1s,SNR=7.9							
MTLF	**Montolieu**	**0.55**	**336**	*e*Pg	**Pg**	**18 37 20.8**	**+1.1**
MTLF				*e*Pn	**Pn**	**18 37 23.5**	**+1.7**
MTLF				*e*Sg	**Sg**	**18 37 27.7**	**+0.6**
MTLF				*e*Sn	**Sn**	**18 37 32.8**	**+2.0**
2.4nm,0.2s							
MTLF	**Montolieu**	**0.55**	**336**	Pg	**Pg**	**18 37 20.8**	**+1.1**
MTLF				Lg		18 37 27.7	
VALF	**Valcebollere**	**0.57**	**220**	Pg	**Pg**	**18 37 20.5**	**+0.2**
VALF				Sg	**Sg**	**18 37 28.2**	**+0.1**
SALF	**Salau**	**0.98**	**266**	Pg	**Pg**	**18 37 28.3**	**0.0**
SALF				Sg	**Sg**	**18 37 42.2**	**+0.7**
LASF	**Ste Croix**	**1.57**	**38**	*e*Pn	**Pn**	**18 37 37.2**	**+0.7**
LASF				*e*Pg	**Pg**	**18 37 39.6**	**-0.4**
LASF				*e*Sn	**Sn**	**18 37 56.4**	**-0.5**
LASF				*e*Sg	**Sg**	**18 38 00.2**	**-0.8**
1.4nm,0.3s							
EPF	**Esparros**	**1.61**	**277**	*e*Pn	**Pn**	**18 37 37.8**	**+0.7**
EPF				*e*Pg	**Pg**	**18 37 40.2**	**-0.6**
EPF				*e*Sg	**Sg**	**18 38 00.9**	**-1.4**
2.7nm,0.2s							
EPOB	**Poblet**	**1.83**	**216**	Lg		18 38 07.8	
0.6nm,0.1s,SNR=7.9							
CAF	**Calviac**	**2.11**	**351**	*e*Sg	**Sg**	**18 38 16.4**	**-2.5**
1.7nm,0.3s							
ETSF	**Etsaut**	**2.26**	**272**	*e*Pn	**Pn**	**18 37 46.5**	**+0.1**
ETSF				*e*Sn	**Sn**	**18 38 13.6**	**-0.9**
LFF	**La Frestale**	**2.46**	**329**	*e*Pn	**Pn**	**18 37 49.2**	**0.0**
LFF				*e*Pg	**Pg**	**18 37 56.5**	**-1.2**
LFF				*e*Sg	**Sg**	**18 38 27.7**	**-2.8**
6.9nm,0.5s							

*NEIC **10** 18:39:34.0,24.52S×113.00E,h20km,ML3.4(AUST),After AUST.*
AUST 10 18:39:34.7,24.52S×113.00E,h20km,ML3.4,2D, Western Australia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GIRL	**Giralia**	**3.01**	**51**	*e*P	Pn	18 40 08.7	-14
MEEK	**Meekatharra**	**5.49**	**114**	⇓*i*P	Pn	18 40 53.4	-4.1
MEEK				*e*S	Sn	18 41 51.5	-9.3
54nm,0.4s							
MEEK	**Meekatharra**	**5.49**	**114**	⇓*i*P	Pn	18 40 53.4	-4.1
54nm,0.4s							
MEEK				*e*S	Sn	18 41 51.5	-9.3
BLDU	**Ballidu**	**6.91**	**152**	*e*P	Pn	18 41 12.7	-4.7
BLDU				*e*S	Sn	18 42 25.5	-11
14nm,0.5s							
BLDU	**Ballidu**	**6.91**	**152**	*e*P	Pn	18 41 12.7	-4.7
14nm,0.5s							
BLDU				*e*S	Sn	18 42 25.5	-11
MBWA	**Marble Bar**	**7.05**	**63**	*e*P	Pn	18 41 14.9	-4.5
MBWA				*e*S	Sn	18 42 26.7	-13
MUN	**Mundaring**	**7.95**	**160**	*e*P	Pn	18 41 26.5	-5.6
MUN				*e*S	Sn	18 42 48.6	-14
22nm,0.4s							
MUN	**Mundaring**	**7.95**	**160**	*e*P	Pn	18 41 26.5	-5.6
22nm,0.4s							
MUN				*e*S	Sn	18 42 48.6	-14
NWAO	**Narrogin (SRO)**	**9.16**	**157**	*e*P	P	18 41 41.5	-7.4
NWAO				*e*S	Sn	18 43 16.0	-17
66nm,0.3s							
FITZ	**Fitzroy Crossi**	**13.39**	**64**	*e*P	P	18 42 40.0	-6.2
FITZ				*e*S	S	18 44 54.5	-21
2.3nm,0.3s							
FITZ	**Fitzroy Crossi**	**13.39**	**64**	*e*P	P	18 42 40.0	-6.2
2.3nm,0.3s							
FITZ				*e*S	S	18 44 54.5	-21
AS12	**Alice Springs**	**19.10**	**92**	*e*P	P	18 43 53.1	-5.8
WB2	**Warramunga Arr**	**20.27**	**81**	*e*P	P	18 44 08.0	-3.9
WB2				*e*S	S	18 47 36.4	-17
WRAB	**Tennant Creek**	**20.27**	**81**	*e*P	P	18 44 08.1	-3.8
5.2nm,0.7s							

*TAP **10** 18:52:46.9,23.95N×122.53E,h24km±1km,ML2.5*
*JMA **10** 18:52:46.6±0.3,24.02N×122.58E,h21km,M1.7*
ISC 10 18:52:45.6±2.9,24.0N±0.1×122.5E±0.1,h22km±11km,n6, σ0ᵍ41/10,Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**0.63**	**45**	P	**Pb**	**18 52 58.1**	**+0.2**
YOJ				*e*S	**Sb**	**18 53 06.0**	**-0.2**
IRIF	**Iriomote-Funau**	**1.15**	**73**	P	**Pn**	**18 53 06.0**	**-0.5**
IRIF				*e*S	**Sb**	**18 53 21.3**	**+0.2**
HATJ	**Hateruma jima**	**1.17**	**88**	*e*S	**Sb**	**18 53 21.6**	**-0.2**
JKRS	**Kuro-shima**	**1.37**	**80**	P	**Pn**	**18 53 10.2**	**+0.4**
JKRS				S	**Sn**	**18 53 27.7**	**+0.3**
JIJ	**Ishigaki jima**	**1.52**	**76**	P	**Pn**	**18 53 11.7**	**-0.1**
JIJ				*e*S	**Sn**	**18 53 30.3**	**-0.8**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTJ	**Tarama**	**2.08**	**72**	*e*S	**Sn**	**18 53 46.0**	**+0.6**

*IDC **10** 18:57:13.4±2.2,21.74N×143.13E,h296km±20km,mb3.1/6, mb1 3.2/7,mb1mx3.0/23,Error ellipse: s-maj=83.2km s-min=15.7km az=86.0*
ISC 10 18:57:13.2±2.0,21.7N±0.1×142.9E±0.7,h303km±20km,n7, σ0ᵍ43/8,mb3.2/6,Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**5.42**	**353**	P	**P**	**18 58 36.6**	**+0.5**
6.4nm,0.3s,baz=211,slow=15,SNR=10.0							
CBIJ				S	**S**	**18 59 40.9**	**-0.4**
5.1nm,0.3s,baz=279,slow=22,SNR=6.9							
WRA	**Warramunga Arr**	**42.22**	**192**	P	**P**	**19 04 38.9**	**0.0**
0.4nm,0.4s,mb3.0,baz=15,slow=9.0,SNR=11							
FITZ	**Fitzroy Crossi**	**43.01**	**204**	P	**P**	**19 04 45.4**	**+0.2**
2.2nm,1.1s,mb3.3,baz=34,slow=11,SNR=4.7							
ASAR	**Alice Springs**	**45.93**	**192**	P	**P**	**19 05 07.8**	**-0.4**
0.2nm,0.7s,mB2.6,baz=9.7,slow=7.5,SNR=2.7							
MKAR	**Makanchi Array**	**54.51**	**313**	P	**P**	**19 06 12.1**	**+0.1**
0.3nm,0.5s,mb3.0,baz=91,slow=9.1,SNR=4.7							
ARCES	**ARCESS Array B**	**78.84**	**341**	P	**P**	**19 08 44.2**	**+0.3**
2.3nm,0.8s,mb3.9,baz=67,slow=6.9,SNR=4.0							
FINES	**FINESS Array B**	**83.07**	**334**	P	**P**	**19 09 05.7**	**-0.3**
0.9nm,0.8s,mb3.6,baz=45,slow=3.9,SNR=5.8							

*JMA **10** 18:59:24.3±0.1,38.86N×141.78E,h56km±1km,M3.6*
JMA Felt I J1.
ISC 10 18:59:23.9±1.3,38.85N±0.05×141.8E±0.1,h55km±9km, n10,σ0ᵍ62/19,2C-5D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.25**	**339**	⇓P	**P**	**18 59 33.8**	**+0.6**
OFUJ				S	**S**	**18 59 40.1**	**+0.1**
JMK	**Ichinoseki**	**0.46**	**284**	⇓P	**P**	**18 59 35.5**	**+0.4**
JMK				S	**S**	**18 59 43.4**	**+0.1**
JIO	**Ouri**	**0.52**	**221**	⇓P	**P**	**18 59 36.2**	**+0.4**
JIO				S	**S**	**18 59 44.2**	**-0.3**
JOM	**Ohasama**	**0.73**	**329**	⇓P	**P**	**18 59 38.7**	**+0.3**
JOM				S	**S**	**18 59 49.1**	**-0.1**
JOU	**Okura**	**1.00**	**242**	⇑P	**S**	**18 59 42.1**	**0.0**
JOU				*e*S	**S**	**18 59 55.1**	**-0.4**
JYK	**Kaneyama**	**1.12**	**274**	⇓P	**P**	**18 59 43.8**	**+0.1**
JYK				*e*S	**S**	**18 59 58.2**	**-0.1**
JMM	**Marumori**	**1.25**	**219**	P	**P**	**18 59 44.9**	**-0.7**
JMM				*e*S	**S**	**19 00 00.5**	**-1.1**
JYS	**Shirataka**	**1.49**	**246**	⇑P	**P**	**18 59 49.1**	**+0.2**
JANG	**Nango**	**1.54**	**352**	P	**P**	**18 59 49.0**	**-0.6**
JANG				*e*S	**S**	**19 00 08.0**	**-0.6**
MAT	**Matsushiro**	**3.65**	**232**	P	**P**	**19 00 20.5**	**+1.1**
MAT				*e*S	**S**	**19 01 05.0**	**+3.3**

*NEIC **10** 19:10:08.2±3.9, 18.13S×177.80W,h594km±43km, mb4.3/7, Error ellipse: s-maj=23.7km s-min=15.7km az=61.0*
*IDC **10** 19:10:09.6±3.1,18.11S×177.83W,h609km±32km,mb3.4/9, mb1 3.6/9,mb1mx3.4/16,Error ellipse: s-maj=55.2km s-min=19.1km az=151.0*
ISC 10 19:10:10.2±2.6,18.2S±0.1×177.9W±0.1,h634km±33km, n28,σ0ᵍ86/22,mb4.0/14,1D,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**33.86**	**261**	P	**P**	**19 16 04.7**	**+0.5**
3.6nm,0.8s,mb4.0,baz=82,slow=14,SNR=4.0							
CTAO	**Charters Tower**	**33.86**	**261**	P	**P**	**19 16 03.7**	**-0.5**
2.3nm,0.6s,mb4.0							
PMG	**Port Moresby**	**34.97**	**280**	P	**P**	**19 16 14.6**	**+1.3**
14nm,0.8s,mb4.6,baz=118,slow=4.3,SNR=4.0							
PMG	**Port Moresby**	**34.97**	**280**	*e*P	**P**	**19 16 14.4**	**+1.1**
PMG				P		19 16 14.6	
STKA	**Stephens Creek**	**38.90**	**242**	P	**P**	**19 16 45.8**	**+0.5**
4.8nm,1.2s,mb3.9,baz=85,slow=13,SNR=4.1							
WB2	**Warramunga Arr**	**45.03**	**260**	*e*P	**P**	**19 17 32.8**	**-0.7**
WRAB	**Tennant Creek**	**45.03**	**260**	*e*P	**P**	**19 17 33.0**	**-0.5**
11nm,0.6s,mb4.6							
WRA	**Warramunga Arr**	**45.04**	**260**	P	**P**	**19 17 32.9**	**-0.7**
3.2nm,0.4s,mb4.2,baz=96,slow=7.1,SNR=152							
WRA				S	**S**	**19 23 28.6**	**+0.1**
0.5nm,0.9s,baz=90,slow=14,SNR=4.1							
AS12	**Alice Springs**	**45.16**	**254**	*e*P	**P**	**19 17 34.3**	**-0.2**
6.1nm,1.0s,mb4.1							
ASAR	**Alice Springs**	**45.16**	**254**	P	**P**	**19 17 34.4**	**-0.2**
4.5nm,0.4s,mb4.3,baz=92,slow=7.7,SNR=125							
ASAR				PcP	PcP	19 19 00.7	-0.4
0.8nm,0.5s,baz=108,slow=3.6,SNR=4.6							
ASAR				ScP		19 21 57.0	
1.2nm,1.2s,baz=98,slow=5.0,SNR=4.1							
ASAR				S	**S**	**19 23 29.6**	**-0.5**
1.2nm,0.7s,baz=93,slow=15,SNR=11							
SBA	**Scott Base**	**60.15**	**184**	*e*P	**P**	**19 19 21.2**	**+1.2**
5.3nm,1.2s,mb3.6							
VNDA	**Vanda**	**60.19**	**185**	*e*P	**P**	**19 19 18.9**	**-1.3**
0.2nm,0.6s							
MAJO	**Matsushiro**	**68.43**	**323**	*e*P	**P**	**19 20 11.6**	**-0.8**
7.3nm,0.5s,mb4.4							
QSPA	**South Pole Qui**	**71.85**	**180**	*e*P	**P**	**19 20 32.4**	**+0.8**
3.5nm,0.7s,mb4.0							
PMSA	**Palmer Station**	**83.35**	**157**	P	**P**	**19 21 32.2**	**-0.8**
ENH	**Enshi**	**84.83**	**304**	*e*P	**P**	**19 21 42.0**	**+0.9**
7.1nm,0.7s,mb4.4							
TXAR	**Lajitas Array**	**85.76**	**57**	P	**P**	**19 21 46.6**	**+1.1**
2.4nm,0.6s,mb4.0,baz=217,slow=6.3,SNR=12							
ILAR	**Eielson Array**	**86.07**	**13**	P	**P**	**19 21 44.9**	**-1.2**
0.8nm,0.5s,mb3.6,baz=222,slow=4.9,SNR=9.8							
PDAR	**Pinedale Array**	**87.25**	**43**	P	**P**	**19 21 51.9**	**-0.3**
0.4nm,0.6s,mb3.3,baz=225,slow=2.1,SNR=3.7							
CMAR	**Chiang Mai Arr**	**89.43**	**290**	P	**P**	**19 22 04.0**	**+1.2**
1.3nm,0.9s,mb3.8,baz=125,slow=2.5,SNR=7.6							
KWP	**Kalwaria**	**144.53**	**337**	*e*PKPdf	PKPdf	19 28 37.3	+1.7
BRTR	**Keskin Array B**	**145.33**	**315**	PKPbc	PKPbc	19 28 40.1	+1.7
1.6nm,0.5s,baz=140,slow=3.7,SNR=8.7							
CRVS	**Cervenica-Dubn**	**145.59**	**337**	*e*PKP	PKPdf	19 28 40.8	+3.4
CLL	**Collm**	**145.86**	**348**	⇓*i*PKP1	PKPbc	19 28 40.9	+1.5
BRG	**Berggiesshubel**	**146.07**	**347**	*e*P	PKPdf	19 28 42.1	+4.0
VYHS	**Vyhne**	**146.86**	**339**	*e*PKP	PKPdf	19 28 44.2	+4.7
GERES	**GERESS Array B**	**148.02**	**345**	PKPbc	PKPdf	19 28 46.9	+5.6
0.9nm,0.5s,baz=18,slow=4.2,SNR=11							
DAVOX	**Davos**	**150.79**	**349**	PKPbc	PKPdf	19 28 53.4	+7.7
1.5nm,0.6s,baz=350,slow=6.1,SNR=3.6							

IDC 10 19:33:48.7±5.9,35.54S×53.67E,mb3.7/2,mb1 4.0/2, mb1mx3.5/17,Error ellipse: s-maj=394.0km s-min=46.0km az=33.0,Southwest Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**69.03**	**105**	P	P	19 44 56.6	-1.8
0.5nm,0.7s,baz=232,slow=5.8,SNR=11							
WRA	**Warramunga Arr**	**71.30**	**101**	P	P	19 45 10.4	-1.9
0.8nm,0.7s,baz=233,slow=5.1,SNR=5.6							
ILAR	**Eielson Array**	**148.23**	**17**	PKPbc	PKPdf	19 53 34.8	+0.6
0.5nm,0.7s,baz=309,slow=3.5,SNR=5.0							
YKA	**Yellowknife Ar**	**152.05**	**348**	PKPbc	PKPdf	19 53 45.1	+5.0
0.2nm,0.7s,baz=5.3,slow=2.2,SNR=5.2							

*IDC **10** 19:57:10.1±1.7,3.00N×128.48E,mb3.7/6,mb1 3.9/6, mb1mx3.7/16,Error ellipse: s-maj=222.0km s-min=21.0km az=70.0*
NEIC 10 19:57:13.5±1.1,2.92N×128.39E,h20km,mb4.4/1,Error ellipse: s-maj=137.0km s-min=11.4km az=70.0, Halmahera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRAB	**Tennant Creek**	**23.45**	**166**	*e*P	P	20 02 21.5	-1.2
8.1nm,0.7s							
WRA	**Warramunga Arr**	**23.46**	**166**	P	P	20 02 22.0	-0.8
1.9nm,0.5s,baz=346,slow=10,SNR=26							
ASAR	**Alice Springs**	**26.96**	**169**	P	P	20 02 54.1	-1.8
0.9nm,1.0s,baz=353,slow=7.2,SNR=3.8							
ASAR				PcP	PcP	20 06 15.1	-3.0
0.3nm,0.4s,baz=0.8,slow=1.9,SNR=6.8							
STKA	**Stephens Creek**	**36.81**	**161**	P	P	20 04 20.6	-1.6
0.9nm,0.4s,baz=342,slow=9.6,SNR=6.4							
SONM	**Songino Array**	**48.60**	**340**	P	P	20 05 55.3	-2.5
0.2nm,0.7s,baz=153,slow=6.4,SNR=3.6							
MKAR	**Makanchi Array**	**59.16**	**325**	P	P	20 07 12.9	-2.5
0.4nm,0.5s,baz=112,slow=7.8,SNR=3.1							
VNDA	**Vanda**	**82.42**	**173**	P	P	20 09 33.9	-1.4
0.3nm,0.4s,baz=354,slow=4.4,SNR=3.0							

WEL 10 20:18:53.6±0.5,36.22S×178.47E,h240km±6km,ML4.0/1, Error ellipse: s-maj=7.0km s-min=6.6km az=90.0,Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MWZ	**Matawai**	**2.25**	**199**	PN	P	20 19 37.7	-0.3
MWZ				SN	S	20 20 13.7	+1.4
URZ	**Urewera**	**2.31**	**208**	PN	P	20 19 37.6	-1.0
URZ				SN	S	20 20 12.9	-0.7
KNZ	**Kokohu**	**2.87**	**193**	PN	P	20 19 44.2	-0.3
BKZ	**Black Stump Fm**	**3.34**	**207**	PN	P	20 19 48.5	-1.2
MGZ	**Maungaku**	**3.63**	**219**	PN	P	20 19 53.0	0.0
NGZ	**Ngauruhoe**	**3.73**	**217**	PN	P	20 19 54.3	0.0
CNZ	**Chateau**	**3.77**	**217**	PN	P	20 19 54.9	+0.1
TUVZ	**Tukino**	**3.78**	**215**	PN	P	20 19 54.3	-0.6
FWVZ	**Far West T-bar**	**3.82**	**216**	PN	P	20 19 55.0	-0.3
WNVZ	**Wahianoa**	**3.85**	**215**	PN	P	20 19 54.9	-0.8
PWZ	**Pawanui**	**4.01**	**198**	PN	P	20 19 56.6	-1.0
PWZ				SN	S	20 20 46.3	-1.0
TSZ	**Takapari Road**	**4.32**	**207**	PN	P	20 20 00.4	-0.9
BFZ	**Birch Farm**	**4.79**	**201**	PN	P	20 20 06.1	-0.9
MRZ	**Mangatainoka R**	**4.99**	**206**	PN	P	20 20 07.9	-1.5
MTW	**Mount Morrison**	**5.46**	**204**	PN	P	20 20 13.5	-1.7
CAW	**Cannon Point**	**5.56**	**208**	PN	P	20 20 14.9	-1.7
MSWZ	**Moikau Station**	**5.77**	**205**	PN	P	20 20 17.5	-1.7
MRW	**Makara Radio**	**5.81**	**209**	PN	P	20 20 17.6	-2.1
THZ	**Tophouse**	**7.03**	**216**	PN	P	20 20 32.8	-2.5
THZ				SN	S	20 21 53.9	-0.9
KHZ	**Kahutara**	**7.28**	**210**	PN	P	20 20 36.2	-2.1
LTZ	**Lake Taylor**	**8.12**	**214**	PN	P	20 20 47.0	-2.1

*NEIC **10** 20:22:20.6±3.6,2.67N×124.42E,h287km±40km,mb4.6/3, Error ellipse: s-maj=23.7km s-min=8.2km az=68.0*
*IDC **10** 20:22:24.9±2.9,2.58N×124.40E,h331km±28km,mb3.5/8, mb1 3.7/8,mb1mx3.3/18,Error ellipse: s-maj=53.9km s-min=10.6km az=69.0*
ISC 10 20:22:21.2±3.4,2.7N±0.1×124.5E±0.2,h312km±38km,n18, σ0ᵍ61/19,mb3.8/10,1D,Celebes Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**20.70**	**177**	*e*P	**P**	**20 26 39.6**	**+0.9**
8.4nm,0.3s							
FITZ	**Fitzroy Crossi**	**20.70**	**177**	P	**P**	**20 26 39.0**	**+0.3**
10nm,0.4s,baz=7.1,slow=8.6,SNR=106							
WRAB	**Tennant Creek**	**24.49**	**157**	*e*P	**P**	**20 27 13.9**	**-0.5**
14nm,0.4s,mb4.7							
WRA	**Warramunga Arr**	**24.49**	**157**	P	**P**	**20 27 14.0**	**-0.5**
4.2nm,0.3s,mb4.2,baz=334,slow=11,SNR=89							
WRA				PcP	PcP	20 30 43.8	-0.7
0.7nm,1.1s,baz=328,slow=2.3,SNR=6.6							
WRA				S	**S**	**20 31 09.7**	**-0.6**
0.6nm,0.8s,baz=336,slow=17,SNR=60							
WB2	**Warramunga Arr**	**24.50**	**157**	⇓*i*P	**P**	**20 27 13.9**	**-0.6**
PMG	**Port Moresby**	**25.59**	**118**	P	**P**	**20 27 24.8**	**+0.3**
5.9nm,0.6s,mb4.2							
ASAR	**Alice Springs**	**27.76**	**161**	P	**P**	**20 27 43.6**	**-0.5**
1.1nm,0.5s,mb3.6,baz=343,slow=7.1,SNR=32							
ASAR				PcP	PcP	20 30 51.3	-0.7
0.5nm,0.7s,baz=358,slow=1.7,SNR=4.2							
ENH	**Enshi**	**30.89**	**334**	P	**P**	**20 28 10.6**	**-0.8**
NWAO	**Narrogin (SRO)**	**36.09**	**190**	P	**P**	**20 28 55.6**	**+0.1**
7.5nm,1.0s,mb4.2,baz=34,slow=3.6,SNR=4.1							
STKA	**Stephens Creek**	**38.03**	**156**	P	**P**	**20 29 12.9**	**+1.2**
2.3nm,0.4s,mb4.0,baz=323,slow=7.7,SNR=13							
STKA				PcP	PcP	20 31 20.7	+0.1
1.6nm,0.6s,baz=346,slow=4.2,SNR=3.2							
STKA	**Stephens Creek**	**38.03**	**156**	P	**P**	**20 29 12.9**	**+1.2**
STKA				PcP	PcP	20 31 20.7	+0.1
ULN	**Ulaanbaatar**	**47.45**	**344**	*e*P	**P**	**20 30 27.6**	**+0.7**
1.0nm,0.5s,mb3.4							
SONM	**Songino Array**	**47.60**	**344**	P	**P**	**20 30 28.2**	**+0.2**
0.5nm,0.6s,mb3.0,baz=153,slow=8.3,SNR=4.9							
MKAR	**Makanchi Array**	**57.15**	**327**	P	**P**	**20 31 38.2**	**+0.4**
1.0nm,0.5s,mb3.5,baz=122,slow=8.3,SNR=23							
MKAR	**Makanchi Array**	**57.15**	**327**	P	**P**	**20 31 38.2**	**+0.4**
KURK	**Kurchatov**	**61.43**	**329**	*e*P	**P**	**20 32 06.0**	**-0.7**
ZRNK	**Zerenda**	**67.68**	**327**	*e*P	**P**	**20 32 46.5**	**-0.2**
VNDA	**Vanda**	**82.70**	**172**	P	**P**	**20 34 11.7**	**+0.7**
0.3nm,0.3s,mb3.5,baz=284,slow=4.2,SNR=6.9							

*MAN **10** 20:27:00.2, 17.26N×119.87E, h38km, mb4.3, ML3.1, MS2.9*
MAN F STO DOMINGO ILOCOS SUR INTENSITY I.
*NEIC **10** 20:27:08.8±0.7, 16.99N×120.40E, h104km±8km, mb3.9/3, Error ellipse: s-maj=10.8km s-min=6.2km az=77.0*
NEIC Felt [I PIVS] at Santo Domingo.
*BJI **10** 20:27:09.0, 16.91N×119.93E, h103km, mb4.2*
*IDC **10** 20:27:09.2±2.4, 16.96N×120.41E, h107km±23km, mb3.5/11, mb1 3.7/13, mb1mx3.6/21, MS3.1/3, Ms1 3.2/3, ms1mx3.0/17, Error ellipse: s-maj=32.0km s-min=12.5km az=67.0*
ISC 10 20:27:01.4±0.6,17.20N±0.03×120.03E±0.03,h25km±5km, n39,σ1ᵍ20/50,mb3.9/12,MS3.0/1,11C-1D,Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SZP	**Santa**	**0.54**	**49**	⇑*e*P	**Pb**	**20 27 10.1**	**-2.0**
SZP				*e*S	**Sb**	**20 27 18.9**	**-0.5**
ABRA	**Dolores**	**0.79**	**56**	⇑*e*P	**Pb**	**20 27 16.6**	**+0.2**
ABRA				*e*S	**Sb**	**20 27 28.7**	**+2.0**
BOLP	**Bolinao**	**0.82**	**188**	⇑*e*P	**Pb**	**20 27 17.4**	**+0.5**
BOLP				*e*S	**Sb**	**20 27 29.0**	**+1.3**
BCPH	**Baguio City Da**	**0.97**	**147**	⇑*i*P	**Pb**

WRA	**Warramunga Arr**	**39.50**	**159**	P	**P**	**20 34 26.0**	**-5.9**
	comp=Z,0.5nm,0.5s,mb3.5,baz=341,slow=9.1,SNR=9.9						
ASAR	**Alice Springs**	**42.82**	**161**	P	**P**	**20 34 53.9**	**-5.4**
	comp=Z,0.7nm,0.6s,mb3.6,baz=337,slow=6.9,SNR=9.7						
MKAR	**Makanchi Array**	**42.87**	**322**	P	**P**	**20 35 00.3**	**+1.0**
	comp=Z,1.8nm,0.8s,mb3.8,baz=113,slow=9.2,SNR=13						
MKAR				PcP	PcP	20 36 48.5	-2.0
	comp=Z,1.4nm,0.6s,baz=108,slow=3.8,SNR=8.8						
MKAR	**Makanchi Array**	**42.87**	**322**	P	**P**	**20 35 00.3**	**+1.0**
MKAR				PcP	PcP	20 36 48.5	-2.0
KURK	**Kurchatov**	**46.95**	**325**	*e*P	**P**	**20 35 31.9**	**0.0**
KURK				*e*		20 35 42.6	
STKA	**Stephens Creek**	**53.00**	**157**	P	**P**	**20 36 12.8**	**-5.7**
	comp=Z,1.9nm,0.7s,mb4.1,slow=10,SNR=5.3						
STKA	**Stephens Creek**	**53.00**	**157**	P	**P**	**20 36 12.8**	**-5.7**
ZRNK	**Zerenda**	**53.29**	**324**	*e*P	**P**	**20 36 19.1**	**-1.2**
ZRNK				*e*	pP	20 36 27.8	-0.3
FINES	**FINESS Array B**	**76.93**	**331**	P	**P**	**20 38 51.7**	**-1.4**
	comp=Z,1.0nm,0.7s,mb3.9,baz=37,slow=6.9,SNR=7.9						
FINES	**FINESS Array B**	**76.93**	**331**	P	**P**	**20 38 51.7**	**-1.4**
AKASG	**Malin Array Be**	**77.39**	**319**	P	**P**	**20 38 54.5**	**-1.4**
	comp=Z,0.6nm,0.6s,mb3.7,baz=71,slow=3.7,SNR=4.8						
NOA	**NORSAR Array B**	**83.87**	**332**	P	**P**	**20 39 29.2**	**-0.8**
	comp=Z,0.4nm,0.7s,mb3.7,baz=61,slow=7.5,SNR=2.9						
GERES	**GERESS Array B**	**87.53**	**321**	P	**P**	**20 39 47.3**	**-1.0**
	comp=Z,0.4nm,0.8s,mb3.7,baz=18,slow=4.2,SNR=3.8						

*JMA **10** 20:37:35.7±0.5,22.48N×121.44E,h61km*
*TAP **10** 20:37:36.2,22.99N×121.19E,h6km,ML3.3*
ISC 10 20:37:34.5±2.2,22.6N±0.2×121.5E±0.2,h6km,n6, σ0§82/12,Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
YOJ	**Yonaguni jima**	**2.31**	**38**	P	**Pn**	**20 38 14.2**	**+0.7**
YOJ				*e*S	**Sn**	**20 38 41.9**	**-0.6**
HATJ	**Hateruma jima**	**2.58**	**56**	P	**Pn**	**20 38 17.3**	**-0.1**
HATJ				*e*S	**Sn**	**20 38 49.5**	**+0.1**
IRIF	**Iriomote-Funau**	**2.68**	**51**	P	**Pn**	**20 38 19.3**	**+0.4**
IRIF				*e*S	**Sn**	**20 38 52.9**	**+0.8**
JKRS	**Kuro-shima**	**2.83**	**55**	P	**Pn**	**20 38 21.0**	**-0.1**
JKRS				*e*S	**Sn**	**20 38 58.0**	**+2.1**
JIJ	**Ishigaki jima**	**3.00**	**55**	P	**Pn**	**20 38 23.4**	**-0.1**
JIJ				*e*S	**Sn**	**20 38 59.1**	**-1.1**
JTJ	**Tarama**	**3.58**	**56**	P	**Pn**	**20 39 31.0**	**-0.7**
JTJ				*e*S	**Sn**	**20 39 13.9**	**-0.9**

*LDG **10** 20:48:25.4±0.1,42.81N×2.53E,h3km,Md2.2/1,Ml2.0/8, Error ellipse: s-maj=1.3km s-min=0.9km az=103.0*
*NEIC **10** 20:48:25.0,42.81N×2.54E,h5km,ML2.2(STR), ML2.0(LDG),MN1.7(MDD),After STR.*
*STR **10** 20:48:25.0±0.1,42.81N×2.54E,h5km±1km,Ml2.2,Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
*MDD **10** 20:48:25.7±0.3,42.82N×2.53E,h6km±7km,mbLg1.5/9, Error ellipse: s-maj=2.3km s-min=1.8km az=84.0,PRXIMO*
ISC 10 20:48:23.8±0.3,42.86N±0.02×2.56E±0.03,h10km,n34, σ1§21/53,Pyrenees

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LRDF	**Laroque-de-Fa**	**0.08**	**351**	Pg	**Pg**	**20 48 28.0**	**+1.8**
LRDF				Sg	**Sg**	**20 48 30.5**	**+2.8**
LRDF	**Laroque-de-Fa**	**0.08**	**351**	P	**Pg**	**20 48 28.0**	**+1.8**
LRDF				S	**Sg**	**20 48 30.4**	**+2.6**
FILF	**Fillols**	**0.30**	**179**	Pg	**Pg**	**20 48 30.5**	**+0.4**
FILF				Sg	**Sg**	**20 48 34.2**	**-0.1**
FILF	**Fillols**	**0.30**	**179**	P	**Pg**	**20 48 30.5**	**+0.4**
FILF				S	**Sg**	**20 48 34.2**	**-0.1**
CARF	**Carcanieres**	**0.36**	**246**	P	**Pg**	**20 48 31.8**	**+0.5**
CARF				S	**Sg**	**20 48 36.6**	**+0.4**
SJAF	**Saint Jean de**	**0.45**	**147**	Pg	**Pg**	**20 48 33.2**	**+0.3**
SJAF				Sg	**Sg**	**20 48 39.0**	**0.0**
SJAF	**Saint Jean de**	**0.45**	**147**	P	**Pg**	**20 48 33.4**	**+0.5**
SJAF				S	**Sg**	**20 48 39.1**	**+0.1**
EJON	**La Jonquera**	**0.48**	**149**	Pg	**Pg**	**20 48 34.2**	**+0.6**
	0.6nm,0.1s,SNR=13						
EJON				Lg		20 48 40.3	
	5.3nm,0.2s,SNR=7.9						
EJON	**La Jonquera**	**0.48**	**149**	Pg	**Pg**	**20 48 34.3**	**+0.7**
EJON				Lg		20 48 40.3	
MTLF	**Montolieu**	**0.54**	**333**	*e*Pg	**Pg**	**20 48 36.3**	**+1.6**
MTLF				*e*Pn	**Pn**	**20 48 39.2**	**+2.0**
MTLF				*e*Sg	**Sg**	**20 48 43.4**	**+1.4**
MTLF				*e*Sn	**Sn**	**20 48 48.2**	**+1.9**
	4.9nm,0.2s						
MTLF	**Montolieu**	**0.54**	**333**	Pg	**Pg**	**20 48 36.3**	**+1.6**
MTLF				Lg		20 48 43.4	
CLLI	**Llivia**	**0.57**	**228**	Pg	**Pg**	**20 48 35.3**	**-0.1**
CLLI				Lg		20 48 42.3	
	1.3nm,0.1s						
VALF	**Valcebollere**	**0.61**	**221**	Pg	**Pg**	**20 48 35.9**	**-0.2**
VALF				Sg	**Sg**	**20 48 43.6**	**-0.7**
VALF	**Valcebollere**	**0.61**	**221**	P	**Pb**	**20 48 36.1**	**+0.1**
VALF				S	**Sg**	**20 48 43.7**	**-0.5**
CBRU	**Bruguera**	**0.64**	**206**	Pg	**Pg**	**20 48 36.5**	**-0.2**
CBRU				Lg		20 48 44.6	
	2.9nm,0.2s						
GRBF	**Gourbit**	**0.75**	**269**	S	**Sb**	**20 48 49.9**	**+1.4**
SALF	**Salau**	**1.01**	**265**	Pg	**Pg**	**20 48 43.8**	**-0.3**
SALF				Sg	**Sg**	**20 48 57.7**	**+0.1**
SALF	**Salau**	**1.01**	**265**	P	**Pb**	**20 48 43.9**	**+1.0**
SALF				S	**Sb**	**20 48 57.5**	**+1.5**
CFON	**Fontmartina**	**1.10**	**185**	Pg	**Pg**	**20 48 45.5**	**-0.4**
CFON				Lg		20 48 59.4	
	9.1nm,0.2s						
CSOR	**Sort**	**1.16**	**246**	Pg	**Pg**	**20 48 46.4**	**-0.6**
EMIR	**Miracle**	**1.22**	**219**	Pg	**Pg**	**20 48 47.8**	**-0.3**
	1.1nm,0.1s,SNR=7.9						
EMIR				Lg		20 49 04.3	
	0.9nm,0.1s,SNR=7.9						
EMIR	**Miracle**	**1.22**	**219**	Pg	**Pg**	**20 48 47.8**	**-0.4**
EMIR				Lg		20 49 04.1	
LASF	**Ste Croix**	**1.54**	**38**	*e*Pg	**Pg**	**20 48 55.1**	**+0.5**
LASF				*e*Sn	**Sn**	**20 49 12.4**	**+0.7**
LASF				*e*Sg	**Sg**	**20 49 15.5**	**+0.4**
	2.5nm,0.4s						
EPF	**Esparros**	**1.64**	**277**	*e*Pg	**Pg**	**20 48 56.2**	**-0.3**
EPF				*e*Sg	**Sg**	**20 49 15.8**	**-2.5**
	3.6nm,0.2s						
EPOB	**Poblet**	**1.87**	**217**	Pg	**Pg**	**20 48 59.3**	**-1.9**
	0.7nm,0.2s,SNR=5.0						
EPOB				Lg		20 49 23.0	
	1.3nm,0.1s,SNR=7.9						
EPOB	**Poblet**	**1.87**	**217**	Pg	**Pg**	**20 48 58.9**	**-2.2**
EPOB				Lg		20 49 22.9	
CAF	**Calviac**	**2.09**	**350**	*e*Pg	**Pg**	**20 49 05.4**	**-0.2**
CAF				*e*Sg	**Sg**	**20 49 32.2**	**-1.4**
	1.1nm,0.2s						
ETSF	**Etsaut**	**2.29**	**272**	*e*Sg	**Sg**	**20 49 37.1**	**-3.0**
	1.2nm,0.3s						
LFF	**La Frestale**	**2.46**	**328**	*e*Pg	**Pg**	**20 49 11.8**	**-1.1**
LFF				*e*Sg	**Sg**	**20 49 43.2**	**-2.4**
	3.9nm,0.3s						
VIVF	**Saint-Julien-l**	**2.51**	**37**	*e*Sg	**Sg**	**20 49 46.1**	**-1.4**
	1.3nm,0.2s						
ESAC	**San Caprasio**	**2.52**	**244**	Lg		20 49 45.0	
	5.4nm,0.3s,SNR=7.9						
RJF	**Les Rejaudoux**	**2.55**	**343**	*e*Pg	**Pg**	**20 49 14.2**	**-0.6**
RJF				*e*Sg	**Sg**	**20 49 46.6**	**-2.3**
	1.7nm,0.2s						
FRF	**La Foret Royal**	**3.07**	**75**	*e*Sg	**Sg**	**20 50 03.3**	**-2.8**
EALB	**Alboran**	**8.15**	**214**	Pg	**P**	**20 50 39.7**	**+15**
EALB				Lg		20 50 46.6	

*LDG **10** 20:50:29.8±0.1,42.81N×2.54E,h5km,Md2.2/1,Ml2.2/13, Error ellipse: s-maj=1.1km s-min=0.8km az=110.0*
*NEIC **10** 20:50:29.5,42.81N×2.53E,h5km,ML2.2(STR), ML2.2(LDG),MN1.6(MDD),After STR.*
*STR **10** 20:50:29.5±0.1,42.81N×2.53E,h5km±1km,Ml2.2,Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
*MDD **10** 20:50:30.0±0.3,42.82N×2.54E,h7km±4km,mbLg1.6/15, Error ellipse: s-maj=2.3km s-min=1.7km az=89.0,PRXIMO*
ISC 10 20:50:27.8±0.3,42.87N±0.02×2.58E±0.02,h10km,n41, σ1§30/67,Pyrenees

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LRDF	**Laroque-de-Fa**	**0.07**	**333**	P	**Pg**	**20 50 32.3**	**+2.2**
LRDF				Sg	**Sg**	**20 50 34.5**	**+2.8**
LRDF	**Laroque-de-Fa**	**0.07**	**333**	P	**Pg**	**20 50 32.4**	**+2.3**
LRDF				S	**Sg**	**20 50 34.6**	**+3.0**
FILF	**Fillols**	**0.31**	**183**	Pg	**Pg**	**20 50 34.8**	**+0.5**
FILF				Sg	**Sg**	**20 50 38.7**	**0.0**
FILF	**Fillols**	**0.31**	**183**	P	**Pg**	**20 50 34.9**	**+0.6**
FILF				S	**Sg**	**20 50 38.7**	**0.0**
CARF	**Carcanieres**	**0.39**	**246**	P	**Pg**	**20 50 36.1**	**+0.4**
CARF				S	**Sg**	**20 50 41.0**	**0.0**
SJAF	**Saint Jean de**	**0.45**	**150**	Pg	**Pg**	**20 50 37.8**	**+0.9**
SJAF				Sg	**Sg**	**20 50 43.6**	**+0.6**
SJAF	**Saint Jean de**	**0.45**	**150**	P	**Pg**	**20 50 37.8**	**+0.9**
SJAF				S	**Sg**	**20 50 43.6**	**+0.7**
EJON	**La Jonquera**	**0.48**	**152**	Pg	**Pg**	**20 50 38.3**	**+0.7**
	0.3nm,0.1s,SNR=4.7						
EJON				Lg		20 50 44.8	
	6.0nm,0.1s,SNR=5.0						
EJON	**La Jonquera**	**0.48**	**152**	Pg	**Pg**	**20 50 38.3**	**+0.8**
EJON				Lg		20 50 44.8	
LPEF	**Le Peyrat**	**0.50**	**279**	Pg	**Pg**	**20 50 38.7**	**+0.7**
LPEF				Sg	**Sg**	**20 50 45.9**	**+1.1**
LPEF	**Le Peyrat**	**0.50**	**279**	P	**Pg**	**20 50 38.9**	**+0.9**
LPEF				S	**Sg**	**20 50 45.5**	**+0.6**
MTLF	**Montolieu**	**0.54**	**330**	*e*Pg	**Pg**	**20 50 40.7**	**+2.0**
MTLF				*e*Pn	**Pn**	**20 50 43.6**	**+2.4**
MTLF				*e*Sg	**Sg**	**20 50 47.8**	**+1.8**
MTLF				*e*Sn	**Sn**	**20 50 52.2**	**+1.9**
	7.6nm,0.2s						
MTLF	**Montolieu**	**0.54**	**330**	Pg	**Pg**	**20 50 40.7**	**+2.0**
MTLF				Lg		20 50 47.8	
CLLI	**Llivia**	**0.60**	**229**	Pg	**Pg**	**20 50 39.7**	**-0.2**
CLLI				Lg		20 50 46.7	
	2.3nm,0.1s						
VALF	**Valcebollere**	**0.63**	**222**	Pg	**Pg**	**20 50 40.4**	**-0.1**
VALF				Sg	**Sg**	**20 50 48.2**	**-0.8**
VALF	**Valcebollere**	**0.63**	**222**	P	**Pb**	**20 50 40.5**	**+0.1**
VALF				S	**Sg**	**20 50 48.0**	**-0.9**
CBRU	**Bruguera**	**0.66**	**207**	Pg	**Pg**	**20 50 40.9**	**-0.2**
CBRU				Lg		20 50 49.3	
	5.8nm,0.2s						
SALF	**Salau**	**1.03**	**264**	Pg	**Pg**	**20 50 48.3**	**-0.2**
SALF				Sg	**Sg**	**20 51 01.4**	**-0.9**
SALF	**Salau**	**1.03**	**264**	P	**Pb**	**20 50 48.5**	**+1.2**
SALF				S	**Sb**	**20 51 02.0**	**+1.3**
MLS	**Moulis**	**1.10**	**275**	S	**Sb**	**20 51 04.1**	**+1.5**
CFON	**Fontmartina**	**1.12**	**186**	Pg	**Pg**	**20 50 49.8**	**-0.4**
CFON				Lg		20 51 03.9	
	13nm,0.2s						
CORG	**Organya**	**1.14**	**236**	Pg	**Pg**	**20 50 50.6**	**+0.1**
CORG				Lg		20 51 04.7	
	0.7nm,0.1s						
CSOR	**Sort**	**1.18**	**246**	Pg	**Pg**	**20 50 51.3**	**-0.1**
CSOR				Lg		20 51 05.5	
EMIR	**Miracle**	**1.24**	**220**	Pg	**Pg**	**20 50 52.0**	**-0.6**
	0.9nm,0.1s,SNR=7.9						
EMIR				Sn	**Sn**	**20 51 08.8**	**+0.8**
	1.1nm,0.1s,SNR=7.9						
EMIR	**Miracle**	**1.24**	**220**	Pg	**Pg**	**20 50 52.3**	**-0.3**
EMIR				Lg		20 51 08.6	
LASF	**Ste Croix**	**1.52**	**37**	*e*Pn	**Pn**	**20 50 56.6**	**+1.4**
LASF				*e*Pg	**Pg**	**20 50 59.4**	**+1.2**
LASF				*e*Sn	**Sn**	**20 51 16.3**	**+1.2**
LASF				*e*Sg	**Sg**	**20 51 20.2**	**+1.8**
	4.1nm,0.3s						
EPF	**Esparros**	**1.66**	**276**	*e*Pg	**Pg**	**20 51 00.3**	**-0.6**
EPF				*e*Sg	**Sg**	**20 51 20.4**	**-2.6**
	6.2nm,0.2s						
CAVN	**Les Avellanes**	**1.68**	**235**	Pg	**Pg**	**20 51 00.3**	**-1.1**
CAVN				Lg		20 51 21.6	
	4.0nm,0.1s						
EPOB	**Poblet**	**1.89**	**217**	Pg	**Pg**	**20 51 03.2**	**-2.3**
	0.5nm,0.1s,SNR=7.9						
EPOB				Lg		20 51 27.1	
	2.0nm,0.2s,SNR=7.9						
EPOB	**Poblet**	**1.89**	**217**	Pg	**Pg**	**20 51 03.4**	**-2.2**
EPOB				Lg		20 51 26.4	
CAF	**Calviac**	**2.09**	**350**	*e*Sg	**Sg**	**20 51 37.2**	**-0.1**
	3.0nm,0.3s						
ETSF	**Etsaut**	**2.31**	**272**	*e*Pg	**Pg**	**20 51 11.8**	**-2.2**
ETSF				*e*Sg	**Sg**	**20 51 41.5**	**-3.3**
	2.1nm,0.3s						
SMRF	**Simiane la Rot**	**2.44**	**62**	*e*Sg	**Sg**	**20 51 49.0**	**-0.2**
	2.8nm,0.4s						
LFF	**La Frestale**	**2.46**	**328**	*e*Sg	**Sg**	**20 51 48.1**	**-1.6**
	4.5nm,0.3s						
VIVF	**Saint-Julien-l**	**2.49**	**37**	*e*Pg	**Pg**	**20 51 16.7**	**-0.9**
VIVF				*e*Sn	**Sn**	**20 51 39.9**	**0.0**
VIVF				*e*Sg	**Sg**	**20 51 50.4**	**-0.4**
	2.2nm,0.3s						
ESAC	**San Caprasio**	**2.54**	**244**	Lg		20 51 48.8	
	5.7nm,0.2s,SNR=4.0						
RJF	**Les Rejaudoux**	**2.55**	**343**	*e*Pg	**Pg**	**20 51 18.4**	**-0.3**
RJF				*e*Sg	**Sg**	**20 51 51.8**	**-0.9**
	2.7nm,0.2s						
LMR	**La Mourre**	**2.91**	**80**	*e*Sg	**Sg**	**20 52 02.8**	**-2.0**
	0.9nm,0.2s						
FRF	**La Foret Royal**	**3.05**	**76**	*e*Sg	**Sg**	**20 52 06.4**	**-2.9**
	2.3nm,0.5s						
TCF	**Toulx Ste Croi**	**3.42**	**356**	*e*Pg	**Pg**	**20 51 34.0**	**-2.2**
TCF				*e*Sg	**Sg**	**20 52 19.3**	**-2.6**
	0.5nm,0.2s						
BGF	**Bois d'Agland**	**3.69**	**3**	*e*Pg	**Pg**	**20 51 39.6**	**-1.9**
BGF				*e*Sg	**Sg**	**20 52 27.1**	**-3.6**
	3.6nm,0.4s						

*HEL **10** 20:55:20.5±1.1,76.95N×16.86E,ML4.0,Explosion*
ISC 10 20:55:13.6±1.4,77.1N±0.2×1 8E± ,n10,σ1§42/15, Svalbard region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KBS	**Kingsbay**	**2.28**	**328**	*e*P	**Pn**	**20 55 52.3**	**-0.8**
KBS				*e*S	**Sn**	**20 56 22.5**	**+0.3**
KBS				AML	AML	20 56 27.6	
	comp=Z,383nm,0.3s						
BJO	**Bjornoya**	**2.60**	**175**	*e*P	**Pn**	**20 56 10.1**	**+12**
BJO				*e*S	**Sn**	**20 56 44.9**	**+14**
BJO				AML	AML	20 56 49.7	
	comp=Z,56nm,0.7s						
BJO1	**Bjornoya**	**2.60**	**176**	*e*	**Pn**	**20 56 10.1**	**+12**
BJO1				*e*		20 56 44.9	
BJO1				AML	AML	20 56 49.7	
	comp=Z,56nm,0.7s						
KEV	**Kevo**	**7.76**	**157**	*e*P	**Pn**	**20 57 12.8**	**+2.2**
KEV				*e*S	**Sn**	**20 58 39.1**	**-1.2**
KIF	**Kilpisjarvi**	**8.15**	**174**	*e*P	**P**	**20 57 17.6**	**+1.5**
KIF				*e*S	**Sn**	**20 58 44.6**	**-5.4**
SGF	**Sodankyl**	**9.99**	**161**	*e*P	**P**	**20 57 42.9**	**+1.6**
SGF				MPN		20 57 44.0	
	comp=Z,4.3nm,0.9s						
MSF	**Maaselka**	**11.70**	**158**	*e*P	**P**	**20 58 06.1**	**+1.5**
MSF				MPN		20 58 09.7	
	comp=Z,2.3nm,0.7s						
MSF				*e*S	**S**	**21 00 12.6**	**-4.6**
JOF	**Joensuu**	**14.84**	**156**	*e*P	**P**	**20 58 44.9**	**-1.2**
JOF				MPN		20 58 48.1	
	comp=Z,3.9nm,1.4s						
KEF	**Keuruu**	**15.14**	**168**	*e*P	**P**	**20 58 48.5**	**-1.5**
KEF				MPN		20 58 50.0	
	comp=Z,5.6nm,1.4s						
FIA0	**FINESS Array S**	**15.93**	**166**	*e*P	**P**	**20 58 58.5**	**-1.7**

*WEL **10** 21:20:16.6±0.2,39.19S×176.44E,h77km±2km,ML3.5/2, Error ellipse: s-maj=1.3km s-min=1.0km az=90.0*
ISC 10 21:20:14.8±0.6,39.27S±0.05×176.42E±0.06,h89km±7km, n35,σ1§16/42,4C-4D,North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BKZ	**Black Stump Fm**	**0.12**	**28**	⇑PN	**P**	**21 20 27.6**	**0.0**
BKZ				SN	**S**	**21 20 35.5**	**-1.6**
RITZ	**Rihia Road**	**0.53**	**304**	⇑PN	**P**	**21 20 29.3**	**-0.6**
KAVZ	**Karewarewa**	**0.63**	**286**	⇑PN	**P**	**21 20 31.1**	**+0.3**
KATZ	**Kakaramea**	**0.64**	**298**	PN	**P**	**21 20 31.0**	**+0.1**
WNVZ	**Wahianoa**	**0.64**	**265**	⇓PN	**P**	**21 20 31.6**	**+0.7**
NGZ	**Ngauruhoe**	**0.64**	**278**	⇓PN	**P**	**21 20 31.5**	**+0.5**
NGZ				SN	**S**	**21 20 41.7**	**-1.2**
RATZ	**Rangitukua**	**0.65**	**309**	PN	**P**	**21 20 30.7**	**-0.3**
WTVZ	**West Tongariro**	**0.66**	**283**	PN	**P**	**21 20 31.4**	**+0.3**
FWVZ	**Far West T-bar**	**0.67**	**271**	⇑PN	**P**	**21 20 31.8**	**+0.6**
FWVZ				SN	**S**	**21 20 42.3**	**-1.2**
WPVZ	**Whakapapa**	**0.68**	**275**	PN	**P**	**21 20 31.9**	**+0.6**
WPVZ				SN	**S**	**21 20 42.4**	**-1.2**
PWZ	**Pawanui**	**0.83**	**156**	PN	**P**	**21 20 34.7**	**+1.8**
TSZ	**Takapari Road**	**0.86**	**204**	⇑PN	**P**	**21 20 34.7**	**+1.5**
PATZ	**Paeroa**	**0.90**	**352**	PN	**P**	**21 20 32.9**	**-0.7**
KNZ	**Kokohu**	**1.01**	**76**	PN	**P**	**21 20 35.5**	**+0.7**
WAZ	**Wanganui**	**1.21**	**246**	⇓PN	**P**	**21 20 39.3**	**+2.0**
WAZ				SN	**S**	**21 20 56.1**	**+1.9**
MWZ	**Matawai**	**1.28**	**43**	PN	**P**	**21 20 38.0**	**-0.2**
VRZ	**Vera Road**	**1.30**	**276**	PN	**P**	**21 20 38.9**	**+0.5**
MARZ	**Manawahe**	**1.30**	**9**	PN	**P**	**21 20 37.6**	**-0.8**
BFZ	**Birch Farm**	**1.41**	**185**	PN	**P**	**21 20 41.0**	**+1.2**
HIZ	**Hauiti**	**1.44**	**301**	⇓PN	**P**	**21 20 40.4**	**+0.2**
MRZ	**Mangatainoka R**	**1.53**	**205**	PN	**P**	**21 20 42.3**	**+1.0**
RAEZ	**Rainy Point**	**1.57**	**269**	PN	**P**	**21 20 43.5**	**+1.6**
DFE	**Dawson Falls**	**1.80**	**268**	PN	**P**	**21 20 47.2**	**+2.3**
NEZ	**North Egmont**	**1.80**	**269**	PN	**P**	**21 20 47.0**	**+2.1**
PUZ	**Puketiti**	**1.87**	**51**	PN	**P**	**21 20 45.6**	**-0.2**
MTW	**Mount Morrison**	**2.01**	**200**	PN	**P**	**21 20 48.1**	**+0.5**
MXZ	**Matakaoa Point**	**2.26**	**42**	PN	**P**	**21 20 51.0**	**-0.2**
MRW	**Makara Radio**	**2.35**	**213**	PN	**P**	**21 20 52.1**	**-0.3**
MRW				SN	**S**	**21 21 20.5**	**0.0**
SNZO	**South Karori**	**2.42**	**212**	PN	**P**	**21 20 52.8**	**-0.6**
TUWZ	**Tuamarina**	**2.87**	**220**	PN	**P**	**21 20 58.7**	**-0.9**
TUWZ				SN	**S**	**21 21 32.2**	**-0.9**
THZ	**Tophouse**	**3.66**	**226**	PN	**P**	**21 21 09.2**	**-1.2**
KHZ	**Kahutara**	**3.83**	**214**	PN	**P**	**21 21 11.0**	**-1.7**
DSZ	**Denniston Nort**	**4.30**	**233**	PN	**P**	**21 21 17.1**	**-2.2**
LTZ	**Lake Taylor**	**4.71**	**221**	PN	**P**	**21 21 22.3**	**-2.5**
MQZ	**McQueen's Vall**	**5.25**	**211**	PN	**P**	**21 21 29.6**	**-2.8**

*WAR **10** 21:25:36.1,50.25N×18.90E,ML2.3,Mining Induced*
*PRU **10** 21:25:39.7,50.19N×18.64E*
*NEIC **10** 21:25:40.5±1.3,50.28N×18.38E,h5km,ML2.4(VIE),Error ellipse: s-maj=17.8km s-min=10.6km az=172.0*
ISC 10 21:25:35.1±0.7,50.31N±0.06×18.81E±0.04,n12,σ1§26/20, 1C,Poland

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OKC	**Ostrava-Krasne**	**0.64**	**223**	*e*PG	**Pg**	**21 25 49.1**	**+1.4**
OJC	**Ojcow**	**0.64**	**97**	*e*PG	**Pg**	**21 25 48.0**	**+0.2**
OJC				*e*SG	**Sg**	**21 25 56.0**	**-0.3**
MORC	**Moravsky Berou**	**0.97**	**238**	*e*Pg	**Pg**	**21 25 55.0**	**+0.5**
MORC				*e*Sg	**Sg**	**21 26 08.2**	**+0.7**
NIE	**Niedzica**	**1.32**	**132**	*e*PG	**Pg**	**21 26 01.0**	**-0.3**
NIE				*e*SG	**Sg**	**21 26 18.0**	**-0.9**
DPC	**Dobruska-Polom**	**1.60**	**273**	*e*PG	**Pg**	**21 26 06.0**	**-0.9**
DPC				*e*SG	**Sg**	**21 26 28.0**	**-0.2**
	7.3nm,0.2s						
KSP	**Ksiaz**	**1.69**	**289**	*e*PG	**Pg**	**21 26 10.0**	**+1.1**
KSP				*e*SN	**Sn**	**21 26 30.0**	**+1.2**
KSP				*e*SG	**Sg**	**21 26 33.0**	**+1.6**
UPC	**Upice**	**1.80**	**277**	*e*SG	**Sg**	**21 26 34.2**	**-0.9**
KWP	**Kalwaria**	**2.60**	**104**	*e*Pn	**Pn**	**21 26 26.6**	**+7.5**
PRU	**Pruhonice**	**2.77**	**265**	*e*SG	**Sg**	**21 27 04.2**	**-2.9**
	2.1nm,0.4s						
KHC	**Kasperske Hory**	**3.59**	**253**	*e*PG	**Pg**	**21 26 42.9**	**-3.9**
KHC				*e*SG	**Sg**	**21 27 31.0**	**-3.7**
CLL	**Collm**	**3.82**	**287**	*e*SG	**Sg**	**21 27 40.0**	**-2.2**
MOA	**Molln**	**3.87**	**232**	⇑*i*PN	**Pn**	**21 26 38.6**	**+1.5**
MOA				*i* SG	**Sg**	**21 27 35.6**	**-8.3**
	2.1nm,0.5s						

*INMG **10** 21:32:34.7±1.3,39.59N×6.89W,ML1.1,Error ellipse: s-maj=5.9km s-min=2.7km az=72.0*
*MDD **10** 21:32:34.1±0.7,39.58N×6.86W,mbLg1.4/7,Error ellipse: s-maj=7.1km s-min=3.3km az=60.0,PRXIMO*
*NEIC **10** 21:32:36.5,39.46N×6.76W,MN1.4(MDD),After MDD.*
ISC 10 21:32:32.5±0.6,39.57N±0.04×6.83W±0.05,n18,σ0§84/25, Spain

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PCBR	**Castelo Branco**	**0.57**	**299**	*e*Pg	**Pg**	**21 32 44.1**	**+0.3**
PCBR				*e*Sg	**Sg**	**21 32 51.0**	**-0.3**
	2.6nm,0.1s						
PCBR	**Castelo Branco**	**0.57**	**299**	Pg	**Pg**	**21 32 44.1**	**+0.3**
PCBR				Lg		21 32 51.0	
	1.3nm,0.1s						
EBAD	**Badajoz**	**0.82**	**190**	Pg	**Pg**	**21 32 49.4**	**+0.5**
	1.1nm,0.1s,SNR=7.9						
EBAD				Lg		21 33 00.1	
	3.6nm,0.1s,SNR=7.9						
MTE	**Manteigas**	**0.99**	**327**

LDG ***10*** *21:39:43.6±0.1, 42.81N×2.53E, h2km, Md2.2/1, Ml2.0/11, Error ellipse: s-maj=1.0km s-min=0.8km az=113.0*
NEIC ***10*** *21:39:43.3, 42.81N×2.53E, h5km, ML2.1(STR), ML2.0(LDG), After STR.*
STR ***10*** *21:39:43.3±0.1, 42.81N×2.53E, h5km±1km, Ml2.1, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
MDD ***10*** *21:39:43.9±0.5, 42.83N×2.54E, h11km, mbLg1.3/8, Error ellipse: s-maj=4.7km s-min=2.9km az=66.0, PRXIMO*

ISC 10 21:39:41.7±0.4, 42.87N±0.02×2.53E±0.03, h13km±5km, n21, σ1§39/34, Pyrenees

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
LRDF	**Laroque-de-Fa**	**0.07**	**6**	Pg		**Pg**	**21 39 46.2**	**+1.9**
LRDF				Sg		**Sg**	**21 39 48.5**	**+2.4**
FILF	**Fillols**	**0.31**	**176**	Pg		**Pg**	**21 39 48.7**	**+0.4**
FILF				Sg		**Sg**	**21 39 52.4**	**-0.3**
SJAF	**Saint Jean de**	**0.47**	**146**	Pg		**Pg**	**21 39 51.7**	**+0.5**
SJAF				Sg		**Sg**	**21 39 57.4**	**-0.2**
EJON	**La Jonquera**	**0.50**	**148**	Pg		**Pg**	**21 39 52.4**	**+0.5**
	0.5nm,0.1s,SNR=12							
EJON				Lg			21 39 58.6	
	2.5nm,0.1s,SNR=4.8							
MTLF	**Montolieu**	**0.52**	**334**	*e*Pg		**Pg**	**21 39 54.4**	**+2.0**
MTLF				*e*Pn		**Pn**	**21 39 57.3**	**+2.8**
MTLF				*e*Sg		**Sg**	**21 40 01.5**	**+2.0**
MTLF				*e*Sn		**Sn**	**21 40 06.6**	**+3.5**
	3.3nm,0.2s							
MTLF	**Montolieu**	**0.52**	**334**	Pg		**Pg**	**21 39 54.4**	**+2.0**
MTLF				Lg			21 40 01.5	
VALF	**Valcebollere**	**0.60**	**219**	Pg		**Pg**	**21 39 54.1**	**+0.2**
VALF				Sg		**Sg**	**21 40 01.8**	**-0.3**
SALF	**Salau**	**0.99**	**264**	Pg		**Pg**	**21 40 02.0**	**+0.4**
SALF				Sg		**Sg**	**21 40 15.7**	**+0.8**
EMIR	**Miracle**	**1.21**	**218**	Pg		**Pg**	**21 40 06.0**	**0.0**
	0.6nm,0.1s,SNR=7.9							
EMIR				Lg			21 40 22.6	
	0.9nm,0.1s,SNR=5.7							
LASF	**Ste Croix**	**1.54**	**38**	*e*Pg		**Pg**	**21 40 13.3**	**+0.7**
LASF				*e*Sn		**Sn**	**21 40 30.9**	**+1.8**
LASF				*e*Sg		**Sg**	**21 40 33.6**	**+0.3**
	1.8nm,0.3s							
EPF	**Esparros**	**1.61**	**276**	*e*Pg		**Pg**	**21 40 14.1**	**+0.1**
EPF				*e*Sg		**Sg**	**21 40 34.0**	**-1.6**
	4.2nm,0.2s							
EPOB	**Poblet**	**1.86**	**216**	Pg		**Pg**	**21 40 16.8**	**-2.1**
	0.2nm,0.1s,SNR=7.9							
EPOB				Lg			21 40 41.2	
	0.8nm,0.1s,SNR=7.9							
CAF	**Calviac**	**2.08**	**351**	*e*Pg		**Pg**	**21 40 23.8**	**+0.5**
CAF				*e*Sg		**Sg**	**21 40 50.2**	**-0.9**
	1.2nm,0.2s							
ETSF	**Etsaut**	**2.27**	**272**	*e*Sg		**Sg**	**21 40 55.2**	**-2.1**
	1.2nm,0.3s							
LFF	**La Frestale**	**2.44**	**329**	*e*Sg		**Sg**	**21 41 01.8**	**-1.2**
	2.9nm,0.3s							
SMRF	**Simiane la Rot**	**2.48**	**62**	*e*Sg		**Sg**	**21 41 02.7**	**-1.6**
	1.5nm,0.4s							
VIVF	**Saint-Julien-l**	**2.52**	**37**	*e*Sg		**Sg**	**21 41 04.0**	**-1.6**
	1.2nm,0.3s							
RJF	**Les Rejaudoux**	**2.54**	**344**	*e*Pg		**Pg**	**21 40 31.9**	**-0.5**
RJF				*e*Sg		**Sg**	**21 41 04.9**	**-1.4**
	1.3nm,0.2s							
LMR	**La Mourre**	**2.95**	**80**	*e*Sg		**Sg**	**21 41 16.6**	**-3.4**
	0.7nm,0.2s							
FRF	**La Foret Royal**	**3.09**	**76**	*e*Sg		**Sg**	**21 41 20.4**	**-4.2**
	1.2nm,0.3s							
TCF	**Toulx Ste Croi**	**3.42**	**356**	*e*Sg		**Sg**	**21 41 33.0**	**-2.7**
	0.5nm,0.3s							

NEIC ***10*** *22:03:35.7, 42.81N×2.51E, h5km, ML2.1(STR), ML1.8(LDG), After STR.*
STR ***10*** *22:03:35.7±0.1, 42.81N×2.51E, h5km±1km, Ml2.1, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
LDG ***10*** *22:03:36.2±0.1, 42.81N×2.54E, h2km, Md2.0/1, Ml1.8/4, Error ellipse: s-maj=1.6km s-min=1.3km az=87.0*
MDD ***10*** *22:03:36.4±0.5, 42.83N×2.53E, mbLg1.0/3, Error ellipse: s-maj=6.4km s-min=2.8km az=59.0, PRXIMO*

ISC 10 22:03:35.0±0.5, 42.82N±0.03×2.47E±0.04, h10km, n11, σ1§07/19, Pyrenees

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
LRDF	**Laroque-de-Fa**	**0.12**	**22**	Pg		**Pg**	**22 03 38.8**	**+0.8**
LRDF				Sg		**Sg**	**22 03 41.1**	**+1.0**
FILF	**Fillols**	**0.27**	**166**	Pg		**Pg**	**22 03 41.1**	**+0.5**
FILF				Sg		**Sg**	**22 03 44.9**	**+0.5**
SJAF	**Saint Jean de**	**0.45**	**138**	Pg		**Pg**	**22 03 44.2**	**0.0**
SJAF				Sg		**Sg**	**22 03 49.8**	**-0.5**
EJON	**La Jonquera**	**0.48**	**141**	Pg		**Pg**	**22 03 44.8**	**+0.1**
	0.1nm,0.1s,SNR=8.6							
EJON				Lg			22 03 51.1	
	0.8nm,0.1s,SNR=7.9							
MTLF	**Montolieu**	**0.55**	**340**	*e*Pg		**Pg**	**22 03 46.9**	**+0.8**
MTLF				*e*Pn		**Pn**	**22 03 50.0**	**+1.5**
MTLF				*e*Sg		**Sg**	**22 03 54.0**	**+0.5**
MTLF				*e*Sn		**Sn**	**22 03 59.2**	**+1.5**
	2.3nm,0.2s							
MTLF	**Montolieu**	**0.55**	**340**	Pg		**Pg**	**22 03 46.9**	**+0.8**
MTLF				Lg			22 03 54.0	
EPF	**Esparros**	**1.58**	**278**	*e*Pg		**Pg**	**22 04 06.9**	**+0.3**
EPF				*e*Sg		**Sg**	**22 04 27.6**	**-0.1**
	1.6nm,0.2s							
LASF	**Ste Croix**	**1.61**	**38**	*e*Pg		**Pg**	**22 04 05.8**	**-1.3**
LASF				*e*Sg		**Sg**	**22 04 26.4**	**-2.2**
	1.0nm,0.3s							
EPOB	**Poblet**	**1.80**	**216**	Lg			22 04 33.4	
	0.5nm,0.1s,SNR=7.9							
CAF	**Calviac**	**2.12**	**352**	*e*Sg		**Sg**	**22 04 42.8**	**-2.9**
	0.8nm,0.2s							
ETSF	**Etsaut**	**2.23**	**273**	*e*Pg		**Pg**	**22 04 18.7**	**-0.8**
ETSF				*e*Sg		**Sg**	**22 04 47.7**	**-1.6**
	1.5nm,0.4s							

LDG ***10*** *22:39:53.6±0.1, 42.82N×2.53E, h2km, Md2.0/1, Ml1.8/5, Error ellipse: s-maj=1.2km s-min=0.9km az=98.0*
NEIC ***10*** *22:39:53.3, 42.81N×2.53E, h5km, ML2.1(STR), ML1.8(LDG), After STR.*
STR ***10*** *22:39:53.3±0.1, 42.81N×2.53E, h5km±1km, Ml2.1, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
MDD ***10*** *22:39:53.6±0.5, 42.82N×2.50E, mbLg1.1/4, Error ellipse: s-maj=7.1km s-min=2.8km az=60.0, PRXIMO*

ISC 10 22:39:52.6±0.5, 42.84N±0.02×2.50E±0.04, h9km±6km, n14, σ1§11/23, Pyrenees

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
LRDF	**Laroque-de-Fa**	**0.10**	**16**	Pg		**Pg**	**22 39 56.2**	**+1.1**
LRDF				Sg		**Sg**	**22 39 58.6**	**+1.7**
FILF	**Fillols**	**0.28**	**171**	Pg		**Pg**	**22 39 58.7**	**+0.2**
FILF				Sg		**Sg**	**22 40 02.5**	**+0.1**
SJAF	**Saint Jean de**	**0.46**	**142**	Pg		**Pg**	**22 40 01.7**	**-0.1**
SJAF				Sg		**Sg**	**22 40 07.3**	**-0.6**
EJON	**La Jonquera**	**0.49**	**144**	Pg		**Pg**	**22 40 02.1**	**-0.3**
	0.2nm,0.1s,SNR=10							
EJON				Lg			22 40 08.5	
	2.0nm,0.1s,SNR=7.9							
MTLF	**Montolieu**	**0.54**	**338**	*e*Pg		**Pg**	**22 40 04.5**	**+1.0**
MTLF				*e*Pn		**Pn**	**22 40 07.4**	**+1.3**
MTLF				*e*Sg		**Sg**	**22 40 11.5**	**+0.7**
MTLF				*e*Sn		**Sn**	**22 40 16.5**	**+1.3**
	2.9nm,0.2s							
MTLF	**Montolieu**	**0.54**	**338**	Pg		**Pg**	**22 40 04.5**	**+1.0**
MTLF				Lg			22 40 11.5	
VALF	**Valcebollere**	**0.57**	**219**	Pg		**Pg**	**22 40 04.3**	**+0.3**
VALF				Sg		**Sg**	**22 40 11.7**	**+0.1**
SALF	**Salau**	**0.97**	**266**	Pg		**Pg**	**22 40 12.2**	**+0.2**
SALF				Sg		**Sg**	**22 40 25.8**	**+0.9**
LASF	**Ste Croix**	**1.58**	**38**	*e*Pg		**Pg**	**22 40 23.1**	**-1.1**
LASF				*e*Sg		**Sg**	**22 40 44.0**	**-1.2**
	1.6nm,0.3s							
EPF	**Esparros**	**1.60**	**278**	*e*Sg		**Sg**	**22 40 45.2**	**-0.6**
	1.8nm,0.2s							
EPOB	**Poblet**	**1.83**	**216**	Lg			22 40 50.9	
	0.6nm,0.1s,SNR=7.9							
CAF	**Calviac**	**2.11**	**352**	*e*Sg		**Sg**	**22 41 00.2**	**-2.6**
	1.1nm,0.2s							
ETSF	**Etsaut**	**2.25**	**272**	*e*Pn		**Pn**	**22 40 30.5**	**0.0**
ETSF				*e*Sg		**Sg**	**22 41 05.2**	**-2.3**
	0.6nm,0.3s							
LFF	**La Frestale**	**2.45**	**329**	*e*Sg		**Sg**	**22 41 11.5**	**-2.8**
	1.8nm,0.3s							

PGC 10 22:40:01.9, 47.37N×128.98W, h10km, MLSn3.5/1, Northern Juan de Fuca ridge., Off coast of Washington

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op		ISC	h m s	ISC
ETB	**Estevan Point**	**2.58**	**38**	Pn		Pn	22 40 44.7	+0.2
EDB	**Eliza Dome**	**2.79**	**26**	Pn		Pn	22 40 45.0	-2.5
OZB	**Mount Ozzard**	**2.82**	**54**	Pn		Pn	22 40 45.5	-2.5
OZB				Sn		Sn	22 41 17.4	-5.0
OZB				Trac			22 41 25.5	
	comp=Z,10.0nm,0.4s							
BPBC	**Brooks Peninsu**	**2.90**	**16**	Pn		Pn	22 40 46.2	-2.8
GDR	**Gold River**	**3.10**	**38**	Pn		Pn	22 40 49.6	-2.3
GDR				Sn		Sn	22 41 24.3	-5.1
	comp=Z,21nm,0.5s							
GDR				Trac			22 41 28.1	
	comp=Z,21nm,0.5s							
BTB	**Buttle Lake**	**3.11**	**46**	Pn		Pn	22 40 49.7	-2.3
BTB				Sn		Sn	22 41 25.0	-4.7
	comp=Z,43nm,0.4s							
BTB				Trac			22 41 26.2	
	comp=Z,43nm,0.4s							
WOSB	**Woss**	**3.21**	**29**	Pn		Pn	22 40 51.3	-2.1
MAYB	**Maynard**	**3.26**	**21**	Pn		Pn	22 40 51.5	-2.6
PFB	**Port Renfrew**	**3.28**	**67**	Pn		Pn	22 40 52.1	-2.3
PFB				Sn		Sn	22 41 29.2	-4.6
PFB				Trac			22 41 35.3	
	comp=Z,6.0nm,0.5s							
MGB	**Mount Grey**	**3.30**	**59**	Pn		Pn	22 40 51.9	-2.8
HOLB	**Holberg**	**3.32**	**9**	Pn		Pn	22 40 52.6	-2.3
CBB	**Campbell River**	**3.58**	**41**	Pn		Pn	22 40 56.9	-1.8
CBB				Sn		Sn	22 41 35.9	-5.6
CBB				Trac			22 41 38.5	
	comp=Z,45nm,0.4s							
NCRB	**Newcastle Ridg**	**3.59**	**31**	Pn		Pn	22 40 57.2	-1.7
NCRB				Sn		Sn	22 41 37.0	-4.8
	comp=Z,29nm,0.5s							
NCRB				Trac			22 41 39.2	
	comp=Z,29nm,0.5s							
LZB	**Mount Lazard**	**3.68**	**68**	Pn		Pn	22 40 57.6	-2.5
LZB				Sn		Sn	22 41 39.1	-4.9
LZB				Trac			22 41 45.1	
	comp=Z,1.0nm,0.3s							
TXB	**Texada**	**3.81**	**51**	Pn		Pn	22 40 59.9	-2.1
TXB				Sn		Sn	22 41 43.3	-4.0
	comp=Z,10.0nm,0.3s							
TXB				Trac			22 41 45.2	
	comp=Z,10.0nm,0.3s							
NLLB	**Nanaimo Lost L**	**3.81**	**59**	Pn		Pn	22 41 00.3	-1.7
PGC	**Sidney**	**3.92**	**69**	Pn		Pn	22 41 01.7	-1.9
VGZ	**Gonzales**	**3.94**	**73**	Pn		Pn	22 40 52.4	-12
GOBB	**Galiano Island**	**3.98**	**65**	Pn		Pn	22 41 02.3	-2.2
SHB	**Sechelt**	**4.06**	**55**	Pn		Pn	22 41 03.9	-1.7
SHB				Sn		Sn	22 41 49.1	-4.5
SHB				Trac			22 41 58.6	
	comp=Z,6.0nm,0.5s							
SNB	**Saturna Island**	**4.14**	**68**	Pn		Pn	22 41 04.9	-1.7
SNB				Sn		Sn	22 41 49.8	-5.9
SNB				Trac			22 41 60.0	
	comp=Z,4.0nm,0.4s							
BIB	**Bowen Island**	**4.29**	**60**	Pn		Pn	22 41 06.9	-1.9
WPB	**Watts Point**	**4.46**	**57**	Pn		Pn	22 41 09.6	-1.7
HNB	**Haney**	**4.67**	**64**	Pn		Pn	22 41 12.2	-2.0
BBB	**Bella Bella**	**4.85**	**6**	Pn		Pn	22 41 14.7	-2.0
BBB				Sn		Sn	22 42 06.7	-6.9
BBB				Trac			22 42 14.7	
	comp=Z,14nm,0.8s							
WSLR	**Whistler**	**4.86**	**53**	Pn		Pn	22 41 16.0	-0.9
VDB	**Vedder Mountai**	**4.89**	**68**	Pn		Pn	22 41 15.3	-1.9
LLLB	**Lillooet**	**5.68**	**53**	Pn		Pn	22 41 24.4	-4.1

WEL 10 22:52:40.8±0.4, 37.04S×177.60E, h148km±3km, ML3.7/1, Error ellipse: s-maj=5.4km s-min=4.1km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op		ISC	h m s	ISC
MXZ	**Matakaoa Point**	**0.77**	**133**	PN		P	22 53 03.5	-0.4
MXZ				SN		S	22 53 20.5	-1.0
PUZ	**Puketiti**	**1.15**	**153**	PN		P	22 53 06.8	-0.2
PUZ				SN		S	22 53 25.7	-1.4
URZ	**Urewera**	**1.28**	**198**	PN		P	22 53 07.8	-0.4
URZ				SN		S	22 53 29.2	-0.1
MWZ	**Matawai**	**1.29**	**182**	PN		P	22 53 07.9	-0.4
MWZ				SN		S	22 53 29.3	-0.3
KNZ	**Kokohu**	**1.98**	**178**	PN		P	22 53 15.5	-0.3
KNZ				SN		S	22 53 39.6	-3.1
BKZ	**Black Stump Fm**	**2.29**	**202**	PN		P	22 53 18.9	-0.8
NGZ	**Ngauruhoe**	**2.65**	**216**	PN		P	22 53 24.1	-0.1
TUVZ	**Tukino**	**2.70**	**214**	PN		P	22 53 24.7	-0.2
FWVZ	**Far West T-bar**	**2.74**	**216**	PN		P	22 53 25.0	-0.4
TSZ	**Takapari Road**	**3.27**	**203**	PN		P	22 53 30.0	-2.4
BFZ	**Birch Farm**	**3.78**	**196**	PN		P	22 53 36.0	-3.0
BFZ				SN		S	22 54 20.6	-3.1
MRZ	**Mangatainoka R**	**3.94**	**203**	PN		P	22 53 37.6	-3.5
MTW	**Mount Morrison**	**4.42**	**201**	PN		P	22 53 43.4	-4.0
CAW	**Cannon Point**	**4.51**	**205**	PN		P	22 53 44.6	-4.0
QRZ	**Quartz Range**	**5.47**	**225**	PN		P	22 53 57.2	-4.0
THZ	**Tophouse**	**5.95**	**216**	PN		P	22 54 03.6	-4.1
KHZ	**Kahutara**	**6.21**	**209**	PN		P	22 54 06.3	-4.9
LTZ	**Lake Taylor**	**7.04**	**214**	PN		P	22 54 17.2	-5.3

IDC ***10*** *22:53:29.6±0.6, 12.48N×86.49W, h144km±4km, mb3.8/16, mb1 4.0/19, mb1mx4.0/25, MS3.5/5, Ms1 3.5/5, ms1mx3.1/28, Error ellipse: s-maj=21.4km s-min=8.1km az=63.0*
NEIC ***10*** *22:53:30.1±0.5, 12.25N×86.85W, mb4.6/20, Error ellipse: s-maj=12.1km s-min=7.0km az=56.0*
CASC ***10*** *22:53:31.2±2.0, 11.97N×87.11W, h71km±41km, MD4.4, ML4.8, mb4.6(NEIC)*

ISC 10 22:53:28.8±0.2, 12.31N±0.06×86.88W±0.05, h148km±4km, h148km±2.6km: pP-P, n98, σ1§20/108, mb4.3/34, 9C-6D, Nicaragua

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op		ISC	h m s	ISC
CNCH	**Conchagua**	**1.34**	**316**	*e*P		**P**	**22 53 56.4**	**-0.4**
CNCH				*e*S		**S**	**22 54 16.4**	**-2.0**
BLLM	**Bellamira**	**1.74**	**311**	*e*P		**P**	**22 54 01.9**	**+0.8**
BLLM				*e*S		**S**	**22 54 23.2**	**-2.8**
CRZC	**La Cruz**	**1.84**	**137**	ǁ*i*P		**P**	**22 54 02.2**	**0.0**
CRZC				*e*S		**S**	**22 54 21.9**	**-6.0**
CAHU	**Cacacuatique**	**1.95**	**318**	ǁ*e*P		**P**	**22 54 04.0**	**+0.6**
CAHU				*e*S		**S**	**22 54 30.8**	**+0.6**
SNVI	**San Vicente**	**2.31**	**304**	*e*P		**P**	**22 54 08.6**	**+0.7**
SNVI				*e*S		**S**	**22 54 37.1**	**-0.9**
LCBS	**La Ceiba**	**2.45**	**303**	ǁ*e*P		**P**	**22 54 10.0**	**+0.3**
LFRS	**El Faro**	**2.50**	**302**	ǁ*e*P		**P**	**22 54 10.4**	**+0.1**
LBRS	**Las Brisas**	**2.55**	**304**	*e*P		**P**	**22 54 11.4**	**+0.5**
LBRS				*e*S		**S**	**22 54 42.3**	**-0.9**
SNET	**Serv Nac Est T**	**2.67**	**301**	*e*P		**P**	**22 54 13.5**	**+0.9**
SNET				*e*S		**S**	**22 54 44.9**	**-1.2**
BOQS	**Boqueron**	**2.74**	**302**	ǁ*e*P		**P**	**22 54 14.7**	**+1.3**
BOQS				*e*S		**S**	**22 54 46.9**	**-0.7**
JTS	**JuntasAbangare**	**2.75**	**136**	P		**P**	**22 54 12.0**	**-1.6**
	217nm,0.3s,baz=325,slow=6.2,SNR=87							
JTS				S		**S**	**22 54 45.4**	**-2.4**
	504nm,0.3s,baz=323,slow=17,SNR=9.0							
JTS				LR		LR	22 55 03.6	
	comp=Z,445nm,19.1s,baz=349,slow=36							
JTS	**JuntasAbangare**	**2.75**	**136**	*e*P		**P**	**22 54 12.4**	**-1.2**
JTS				*e*			22 54 15.2	
JCR	**Jicaral**	**2.99**	**144**	ǁ*e*P		**P**	**22 54 17.4**	**+0.7**
SNJE	**San Jose**	**3.08**	**301**	ǁ*e*P		**P**	**22 54 18.5**	**+0.8**
SNJE				*e*S		**S**	**22 54 54.1**	**-1.1**
SBLS	**San Blas**	**3.08**	**300**	*e*P		**P**	**22 54 18.6**	**+0.8**
SBLS				*e*S		**S**	**22 54 55.0**	**-0.3**
RTR	**El Retiro**	**3.13**	**301**	*e*P		**P**	**22 54 19.4**	**+1.0**
RTR				*e*S		**S**	**22 54 55.9**	**-0.5**
CGA2	**Cerro Gallo 2**	**3.28**	**134**	ǁ*e*P		**P**	**22 54 20.7**	**+0.3**
CGA2				*e*S		**S**	**22 54 59.3**	**-0.7**
VPS2	**Volcan Poas 2**	**3.34**	**129**	*e*P		**P**	**22 54 23.7**	**+2.6**
VPS2				*e*S		**S**	**22 55 03.6**	**+2.4**
PRS1	**Puriscal**	**3.42**	**132**	ǁ*e*P		**P**	**22 54 23.3**	**+1.1**
TRTC	**Tortuguero**	**3.55**	**119**	ǁ*i*P		**P**	**22 54 23.6**	**-0.2**
LAJ	**Bijagual**	**3.63**	**132**	ǁ*i*P		**P**	**22 54 23.6**	**-1.4**
SJS	**Escuela Geolog**	**3.63**	**130**	*e*S		**S**	**22 55 07.9**	**-0.3**
ICR	**Volcan Irazu**	**3.78**	**127**	*e*P		**P**	**22 54 27.4**	**+0.5**
LCR2	**La Lucha 2**	**3.80**	**132**	ǁ*e*P		**P**	**22 54 27.6**	**+0.4**
LCR2				*e*S		**S**	**22 55 11.7**	**-0.4**
URSC	**Urasca**	**3.91**	**129**	ǁ*e*P		**P**	**22 54 29.5**	**+0.9**
IXG	**Ixpaco**	**3.95**	**298**	*e*P		**P**	**22 54 29.5**	**+0.4**
IXG				*e*S		**S**	**22 55 12.4**	**-3.1**
IXG				AML		AML	22 55 20.6	
	comp=E,28μm,0.4s							
NBG	**Las Nubes**	**4.07**	**304**	*e*P		**P**	**22 54 32.1**	**+1.4**
NBG				*e*S		**S**	**22 55 19.1**	**+0.8**
NBG				AML		AML	22 55 31.8	
	comp=N,4μm,0.6s							
BUS	**Buena Vista**	**4.11**	**131**	ǁ*e*P		**P**	**22 54 32.0**	**+0.8**
BUS				*e*S		**S**	**22 55 18.1**	**-1.1**
TP2	**Tecpan 2**	**4.72**	**302**	*e*P		**P**	**22 54 41.3**	**+2.0**
TP2				*e*S		**S**	**22 55 33.8**	**0.0**
TP2				AML		AML	22 55 41.9	
	comp=N,2μm,0.5s							
JAT	**Jato**	**5.05**	**294**	*e*S		**S**	**22 55 37.6**	**-3.9**
JAT				*e*S		**S**	**22 55 37.7**	**-3.8**
JAT				AML		AML	22 55 46.7	
	comp=N,2μm,0.3s							
ACR	**Cerro Adams**	**5.14**	**135**	*e*P		**P**	**22 54 46.0**	**+1.0**
ACR				*e*S		**S**	**22 55 41.6**	**-2.3**
ROSC	**El Rosal**	**14.44**	**120**	P		**P**	**22 56 50.5**	**+3.1**
	comp=N,0.9nm,0.3s,baz=84,slow=23,SNR=3.5							
SDV	**Santo Domingo**	**16.32**	**100**	P		**P**	**22 57 10.3**	**-0.7**
	comp=N,1.0nm,0.3s,baz=294,slow=5.6,SNR=16							
HKT	**Hockley**	**19.43**	**336**	*e*P		**P**	**22 57 46.5**	**+0.6**
	comp=N,19nm,1.2s							
LRAL	**Lakeview Retre**	**20.63**	**360**	*e*P		**P**	**22 57 59.2**	**+1.1**
	comp=N,45nm,1.0s							
JCT	**Junction City**	**21.69**	**328**	*e*P		**P**	**22 58 09.7**	**+1.1**
	comp=N,17nm,0.9s,mb4.5							
COW	**Cow Castle Cre**	**21.73**	**14**	*e*P		**P**	**22 58 11.8**	**+2.8**
PCRV	**Puerto La Cruz**	**21.92**	**93**	P		**P**	**22 58 12.2**	**+1.3**
	comp=N,12nm,0.4s,mb4.7,baz=242,slow=3.7,SNR=13							
OXF	**Oxford**	**22.23**	**354**	*e*P		**P**	**22 58 15.2**	**+1.4**
	comp=N,51nm,1.0s,mb4.9							
JSC	**Jenkinsville**	**22.47**	**12**	*e*P		**P**	**22 58 17.7**	**+1.5**
PLAL	**Pickwick Lake**	**22.60**	**357**	*e*P		**P**	**22 58 18.2**	**+0.7**
	comp=N,20nm,0.8s,mb4.6							
SWET	**Sewanee**	**22.82**	**2**	*e*P		**P**	**22 58 21.5**	**+1.8**
MIAR	**Mount Ida**	**22.96**	**346**	*e*P		**P**	**22 58 21.5**	**+0.5**
	comp=N,23nm,1.0s,mb4.6							
MIAR				*e*pP			22 58 52.1	
TXAR	**Lajitas Array**	**23.04**	**320**	P		**P**	**22 58 23.6**	**+1.7**
	comp=N,18nm,0.8s,mb4.6,baz=139,slow=10.0,SNR=84							
CPCT	**Cooper Cave**	**23.14**	**5**	*e*P		**P**	**22 58 24.2**	**+1.5**
WVT	**Waverly**	**23.74**	**358**	*e*P		**P**	**22 58 29.3**	**+0.9**
	comp=N,8.4nm,0.7s,mb4.4							
WMOK	**Wichita Mounta**	**24.81**	**336**	*e*P		**P**	**22 58 37.9**	**-0.7**
	comp=N,60nm,1.1s,mb5.0							
ELN	**Prospedale**	**25.42**	**11**	*e*P		**P**	**22 58 45.2**	**+0.9**
PWV	**Princeton**	**25.47**	**11**	*e*P		**P**	**22 58 45.5**	**+0.8**
MNTX	**Cornudas Mount**	**25.75**	**321**	*e*P		**P**	**22 58 47.3**	**-0.1**
	comp=N,4.1nm,0.8s,mb4.1							
FWV	**Forest Hill**	**25.75**	**11**	*e*P		**P**	**22 58 47.7**	**+0.3**
WCI	**Wyandotte Cave**	**25.82**	**1**	*e*P		**P**	**22 58 47.8**	**-0.2**
	comp=N,12nm,0.7s,mb4.6							
WCI				*e*			22 58 57.4	
CCM	**Cathedral Cave**	**25.94**	**352**	*e*P		**P**	**22 58 48.1**	**-1.1**
	comp=N,15nm,1.1s,mb4.5							
CCM				*e*pP		pP	22 59 19.7	+0.1
CBN	**Corbin**	**27.15**	**17**	*e*P		**P**	**22 59 01.0**	**+0.8**
	comp=N,61nm,0.7s,mb5.3							
MCWV	**Mont Chateau**	**27.95**	**12**	*e*P		**P**	**22 59 07.3**	**-0.1**
	comp=N,21nm,0.7s,mb5.0							
ACSO	**Alum Creek Sta**	**28.03**	**6**	*e*P		**P**	**22 59 07.1**	**-1.0**
	comp=N,16nm,0.6s,mb4.9							
KSU1	**Kansas State U**	**28.05**	**344**	*e*P		**P**	**22 59 07.1**	**-1.2**
SDMD	**Soldier's Deli**	**28.42**	**16**	*e*P		**P**	**22 59 18.8**	**+7.1**
MVL	**Millersville**	**29.11**	**17**	*e*P		**P**	**22 59 18.0**	**+0.2**
SSPA	**Standing Stone**	**29.31**	**14**	*e*P		**P**	**22 59 19.3**	**-0.3**
	comp=N,12nm,0.6s,mb4.8							
ERPA	**Erie**	**30.30**	**10**	*e*P		**P**	**22 59 27.8**	**-0.6**
	comp=N,48nm,0.8s,mb5.3							
ACCN	**Adirondack Com**	**33.01**	**18**	*e*P		**P**	**22 59 51.6**	**-0.2**

WB2	**Warramunga Arr**	**139.76**	**254**	*e*P		PKPdf	23 12 34.0	-6.0
WB2				*i*			23 12 42.3	
WRA	**Warramunga Arr**	**139.77**	**254**	PKP		PKPdf	23 12 42.5	+2.5
	comp=N,7.5nm,0.8s,baz=90,slow=1.7,SNR=8.0							
WRA				pPKP			23 13 19.1	
	comp=N,1.5nm,0.8s,baz=90,slow=1.5,SNR=3.2							
WRA				SKPbc			23 16 04.3	
	comp=N,0.8nm,0.9s,baz=91,slow=2.1,SNR=6.0							
FITZ	**Fitzroy Crossi**	**148.13**	**256**	*e*P		PKPdf	23 13 00.5	+6.0
	comp=N,7.0nm,0.8s							
FITZ				*e*			23 13 37.5	
CMAR	**Chiang Mai Arr**	**148.90**	**349**	PKPbc		PKPdf	23 12 59.9	+4.2
	comp=N,0.6nm,0.4s,baz=349,slow=5.5,SNR=5.0							
CMAR				pPKPbc			23 13 38.5	
	comp=N,0.9nm,0.4s,baz=194,slow=20,SNR=2.2							

*LDG **10** 22:53:47.5±0.1,42.81N×2.53E,h3km,Md2.0/1,Ml1.9/7, Error ellipse: s-maj=1.4km s-min=1.1km az=110.0*
*NEIC **10** 22:53:47.5,42.81N×2.53E,h3km,ML2.1(STR), ML1.9(LDG),After LDG.*
*STR **10** 22:53:47.1±0.1,42.81N×2.53E,h5km±1km,Ml2.1,Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
*MDD **10** 22:53:47.8±0.4,42.83N×2.55E,h10km±1km,mbLg1.2/5, Error ellipse: s-maj=5.1km s-min=2.7km az=61.0,PRXIMO*
ISC 10 22:53:45.8±0.4,**42.87N**±0.02×**2.54E**±0.03,**h14**km±4km, **n20,**σ1§**16**/33,**Pyrenees**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LRDF	**Laroque-de-Fa**	**0.07**	**357**	Pg	**Pg**	**22 53 50.0**	**+1.3**
LRDF				Sg	**Sg**	**22 53 52.4**	**+1.8**
FILF	**Fillols**	**0.31**	**178**	Pg	**Pg**	**22 53 52.4**	**0.0**
FILF				Sg	**Sg**	**22 53 56.3**	**-0.5**
SJAF	**Saint Jean de**	**0.46**	**147**	Pg	**Pg**	**22 53 55.6**	**+0.4**
SJAF				Sg	**Sg**	**22 54 01.1**	**-0.4**
EJON	**La Jonquera**	**0.49**	**148**	Pg	**Pg**	**22 53 56.4**	**+0.6**
	0.4nm,0.1s,SNR=12						
EJON				Lg		22 54 02.4	
	2.3nm,0.1s,SNR=7.9						
MTLF	**Montolieu**	**0.53**	**333**	*e*Pg	**Pg**	**22 53 58.2**	**+1.5**
MTLF				*e*Pn	**Pn**	**22 54 01.2**	**+2.6**
MTLF				*e*Sg	**Sg**	**22 54 05.2**	**+1.3**
MTLF				*e*Sn	**Sn**	**22 54 10.3**	**+3.0**
	2.3nm,0.2s						
MTLF	**Montolieu**	**0.53**	**333**	Pg	**Pg**	**22 53 58.2**	**+1.5**
MTLF				Lg		22 54 05.2	
VALF	**Valcebollere**	**0.60**	**220**	Pg	**Pg**	**22 53 58.0**	**-0.1**
VALF				Sg	**Sg**	**22 54 05.7**	**-0.6**
SALF	**Salau**	**1.00**	**264**	Pg	**Pg**	**22 54 05.9**	**0.0**
SALF				Sg	**Sg**	**22 54 19.6**	**+0.2**
EMIR	**Miracle**	**1.21**	**219**	Pg	**Pg**	**22 54 10.0**	**-0.1**
	0.7nm,0.1s,SNR=7.9						
EMIR				Lg		22 54 25.9	
	0.5nm,0.2s,SNR=7.9						
LASF	**Ste Croix**	**1.54**	**38**	*e*Pg	**Pg**	**22 54 17.6**	**+0.9**
LASF				*e*Sg	**Sg**	**22 54 37.7**	**+0.4**
	2.3nm,0.4s						
EPF	**Esparros**	**1.63**	**277**	*e*Pg	**Pg**	**22 54 17.9**	**-0.4**
EPF				*e*Sg	**Sg**	**22 54 38.9**	**-1.2**
	2.5nm,0.2s						
EPOB	**Poblet**	**1.86**	**216**	Lg		22 54 45.0	
	0.9nm,0.2s,SNR=7.9						
CAF	**Calviac**	**2.09**	**351**	*e*Pn	**Pn**	**22 54 22.2**	**+1.3**
CAF				*e*Pg	**Pg**	**22 54 27.4**	**-0.1**
CAF				*e*Sn	**Sn**	**22 54 47.1**	**+0.3**
CAF				*e*Sg	**Sg**	**22 54 54.2**	**-1.2**
	1.1nm,0.2s						
ETSF	**Etsaut**	**2.28**	**272**	*e*Sn	**Sn**	**22 54 51.1**	**-0.6**
LFF	**La Frestale**	**2.45**	**328**	*e*Pg	**Pg**	**22 54 34.0**	**-0.7**
LFF				*e*Sg	**Sg**	**22 55 05.4**	**-2.0**
	4.1nm,0.4s						
SMRF	**Simiane la Rot**	**2.47**	**62**	*e*Sg	**Sg**	**22 55 06.8**	**-1.4**
VIVF	**Saint-Julien-l**	**2.52**	**37**	*e*Sg	**Sg**	**22 55 07.7**	**-1.9**
	0.9nm,0.3s						
RJF	**Les Rejaudoux**	**2.55**	**343**	*e*Sg	**Sg**	**22 55 08.7**	**-2.0**
	1.2nm,0.3s						
LMR	**La Mourre**	**2.94**	**80**	*e*Sg	**Sg**	**22 55 19.9**	**-3.9**
	0.4nm,0.2s						
FRF	**La Foret Royal**	**3.08**	**76**	*e*Sg	**Sg**	**22 55 24.0**	**-4.4**

NIED 10 22:55:00,44.40N×148.80E,h53km,Mw3.8 Best double couple: M0 4.96×10^14 **NP1:**φ=321°,δ=68°,λ=-34°. **NP2:** φ=65°,δ=59°,λ=-154°.**,Kuril Islands**

*CASC **10** 22:58:20.4,14.21N×91.43W,h80km,MD3.8,ML4.7, mb3.8(NEIC)*
*NEIC **10** 22:58:25.6±2.3,14.36N×91.23W,h103km±19km,mb3.8/2, Error ellipse: s-maj=35.5km s-min=15.7km az=61.0*
*IDC **10** 22:58:27.7±3.8,14.39N×91.00W,h122km±34km,mb3.5/4, mb1 3.8/6,mb1mx3.5/20,Error ellipse: s-maj=45.8km s-min=24.3km az=78.0*
ISC 10 22:58:21.4±0.6,**14.28N**±0.06×**91.41W**±0.05,**h84**km±4km, **n28,**σ0§**87**/42,**mb3.9**/5,**1C-1D,Guatemala**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAT	**Jato**	**0.23**	**280**	*e*P	**P**	**22 58 32.9**	**-0.9**
JAT				*e*S	**S**	**22 58 42.6**	**-0.5**
JAT				AML	AML	22 58 43.7	
	comp=N,26μm,0.3s						
FUG	**Fuego 3**	**0.57**	**73**	*e*P	**P**	**22 58 36.0**	**-0.3**
TP2	**Tecpan 2**	**0.63**	**37**	*e*P	**P**	**22 58 38.2**	**+1.3**
TP2				*e*S	**S**	**22 58 50.8**	**+2.4**
TP2				AML	AML	22 58 53.8	
	comp=N,12μm,0.4s						
PCG	**Pacaya**	**0.78**	**82**	*e*P	**P**	**22 58 38.6**	**0.0**
PCG				*e*S	**S**	**22 58 51.0**	**-0.2**
GCG	**Guatemala City**	**0.90**	**70**	*e*P	**P**	**22 58 40.6**	**+0.8**
GCG				*e*S	**S**	**22 58 53.2**	**-0.4**
GCG				AML	AML	22 58 59.6	
	comp=E,6μm,0.4s						
IXG	**Ixpaco**	**0.93**	**96**	*e*P	**P**	**22 58 39.7**	**-0.4**
IXG				*e*S	**S**	**22 58 52.1**	**-2.1**
IXG				AML	AML	22 59 01.0	
	comp=E,62μm,0.5s						
RTR	**El Retiro**	**1.75**	**102**	*e*P	**P**	**22 58 50.8**	**+0.2**
RTR				*e*S	**S**	**22 59 13.3**	**+1.1**
SBLS	**San Blas**	**1.79**	**104**	*e*P	**P**	**22 58 51.2**	**+0.1**
SBLS				*e*S	**S**	**22 59 13.4**	**+0.4**
SNJE	**San Jose**	**1.80**	**103**	*e*P	**P**	**22 58 51.3**	**+0.1**
SNJE				*e*S	**S**	**22 59 11.9**	**-1.3**
BOQS	**Boqueron**	**2.13**	**104**	*e*P	**P**	**22 58 56.2**	**+0.3**
BOQS				*e*S	**S**	**22 59 21.4**	**+0.1**
LBRS	**Las Brisas**	**2.36**	**103**	*e*P	**P**	**22 58 58.9**	**-0.1**
LFRS	**El Faro**	**2.37**	**106**	*e*P	**P**	**22 58 59.1**	**0.0**
LFRS				*e*S	**S**	**22 59 27.2**	**0.0**
LCBS	**La Ceiba**	**2.44**	**104**	*e*P	**P**	**22 59 00.3**	**+0.2**
LCBS				*e*S	**S**	**22 59 28.8**	**-0.1**
SNVI	**San Vicente**	**2.58**	**105**	*e*P	**P**	**22 59 01.9**	**-0.2**
SNVI				*e*P		22 59 02.6	
SNVI				*e*S	**S**	**22 59 33.1**	**+0.7**
CNCH	**Conchagua**	**3.61**	**106**	*e*P	**P**	**22 59 15.7**	**-0.7**
TEIG	**Tepich**	**6.63**	**26**	P	**P**	**22 59 59.0**	**+1.0**
	comp=E,34nm,0.3s,baz=209,slow=10,SNR=26						
TEIG				S	**S**	**23 01 11.2**	**-1.5**
	baz=156,slow=20,SNR=2.0						
TEIG	**Tepich**	**6.63**	**26**	*e*Pn	**P**	**22 59 58.9**	**+0.9**
TEIG				P		22 59 59.0	
TEIG				*e*		23 00 06.4	
TEIG				S	**S**	**23 01 11.2**	**-1.5**
JTS	**JuntasAbangare**	**7.45**	**121**	P	**P**	**23 00 10.0**	**+0.6**
	comp=E,2.1nm,0.3s,baz=302,slow=19,SNR=6.8						
JTS				S	**S**	**23 01 38.1**	**+5.2**
	comp=E,1.0nm,0.3s,baz=301,slow=19,SNR=2.8						
WMOK	**Wichita Mounta**	**21.43**	**343**	*e*P	**P**	**23 03 04.1**	**-0.1**
	comp=E,5.5nm,1.2s,mb3.8						
SIUC	**Southern Illin**	**23.42**	**4**	P	**P**	**23 03 18.4**	**-5.2**
NVAR	**Mina Array Bea**	**33.82**	**320**	P	**P**	**23 05 00.2**	**+2.6**
	comp=E,3.1nm,0.8s,mb4.2,baz=126,slow=10,SNR=4.9						
NVAR	**Mina Array Bea**	**33.82**	**320**	P	**P**	**23 05 00.2**	**+2.6**
SCHQ	**Schefferville**	**44.76**	**20**	P	**P**	**23 06 26.9**	**-1.2**
	comp=E,1.3nm,0.5s,mb3.9,baz=210,slow=8.9,SNR=5.6						
YKA	**Yellowknife Ar**	**50.89**	**346**	P	**P**	**23 07 15.1**	**-0.6**
	comp=E,0.3nm,0.4s,mb3.7,baz=147,slow=7.8,SNR=7.9						
YKA				PcP	PcP	23 08 30.3	-0.9
	comp=E,1.0nm,1.0s,baz=153,slow=3.7,SNR=7.2						
INK	**Inuvik**	**60.34**	**343**	P	**P**	**23 08 22.9**	**-0.6**
	comp=E,0.5nm,0.6s,mb3.7,baz=144,slow=5.2,SNR=4.7						
INK	**Inuvik**	**60.34**	**343**	*e*P	**P**	**23 08 22.6**	**-0.9**
	comp=E,0.5nm,0.6s,mb3.7						
SFS	**San Fernando**	**77.86**	**55**	P	**P**	**23 10 12.3**	**+0.7**
CMAR	**Chiang Mai Arr**	**145.91**	**342**	PKPbc	PKPbc	23 17 53.5	+1.3
	comp=E,3.0nm,0.6s,baz=335,slow=3.5,SNR=9.3						

*NEIC **10** 23:04:52.9,42.81N×2.52E,h5km,ML2.9(STR), ML2.9(LDG),MN2.2(MDD),After STR.*
*STR **10** 23:04:52.9±0.1,42.81N×2.52E,h5km±1km,Ml2.9,Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
*LDG **10** 23:04:53.4±0.1,42.81N×2.52E,h4km,Md2.9/1,Ml2.9/20, Error ellipse: s-maj=1.2km s-min=0.9km az=135.0*
*MDD **10** 23:04:53.4±0.2,42.81N×2.53E,h6km±3km,mbLg2.2/19, Error ellipse: s-maj=1.7km s-min=1.7km az=70.0,PRXIMO*
ISC 10 23:04:51.1±0.2,**42.89N**±0.01×**2.56E**±0.02,**h10**km,**n71,** σ1§**36**/136,**Pyrenees**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LRDF	**Laroque-de-Fa**	**0.05**	**339**	Pg	**Pg**	**23 04 55.6**	**+2.4**
LRDF				Sg	**Sg**	**23 04 58.0**	**+3.5**
LRDF	**Laroque-de-Fa**	**0.05**	**339**	P	**Pg**	**23 04 55.7**	**+2.5**
LRDF				S	**Sg**	**23 04 58.0**	**+3.5**
FILF	**Fillols**	**0.33**	**180**	Pg	**Pg**	**23 04 58.2**	**+0.3**
FILF				Sg	**Sg**	**23 05 01.9**	**-0.6**
FILF	**Fillols**	**0.33**	**180**	P	**Pg**	**23 04 58.3**	**+0.4**
FILF				S	**Sg**	**23 05 02.0**	**-0.5**
CARF	**Carcanieres**	**0.38**	**243**	P	**Pg**	**23 04 59.3**	**+0.4**
CARF				S	**Sg**	**23 05 04.3**	**+0.2**
SJAF	**Saint Jean de**	**0.47**	**150**	Pg	**Pg**	**23 05 01.1**	**+0.5**
SJAF				Sg	**Sg**	**23 05 06.9**	**-0.1**
SJAF	**Saint Jean de**	**0.47**	**150**	P	**Pg**	**23 05 01.1**	**+0.5**
SJAF				S	**Sg**	**23 05 07.0**	**0.0**
LPEF	**Le Peyrat**	**0.48**	**277**	Pg	**Pg**	**23 05 02.0**	**+1.0**
LPEF				Sg	**Sg**	**23 05 08.9**	**+1.4**
LPEF	**Le Peyrat**	**0.48**	**277**	P	**Pg**	**23 05 02.1**	**+1.2**
LPEF				S	**Sg**	**23 05 08.8**	**+1.2**
EJON	**La Jonquera**	**0.50**	**151**	Pg	**Pg**	**23 05 01.8**	**+0.5**
	2.8nm,0.1s,SNR=35						
EJON				Lg		23 05 07.0	
	42nm,0.2s,SNR=7.9						
EJON	**La Jonquera**	**0.50**	**151**	Pg	**Pg**	**23 05 01.9**	**+0.6**
EJON				Lg		23 05 07.8	
MTLF	**Montolieu**	**0.52**	**331**	*e*Pg	**Pg**	**23 05 03.8**	**+2.2**
	SNR=1.0						
MTLF				*e*Pn	**Pn**	**23 05 06.6**	**+2.4**
MTLF				*e*Sg	**Sg**	**23 05 10.8**	**+2.2**
	SNR=1.0						
MTLF				*e*Sn	**Sn**	**23 05 16.0**	**+3.0**
	28nm,0.2s						
MTLF	**Montolieu**	**0.52**	**331**	Pg	**Pg**	**23 05 03.8**	**+2.2**
MTLF				Lg		23 05 10.8	
CLLI	**Llivia**	**0.60**	**227**	Pg	**Pg**	**23 05 03.1**	**-0.1**
CLLI				Lg		23 05 10.1	
	21nm,0.2s						
CLLI	**Llivia**	**0.60**	**227**	Pg	**Pg**	**23 05 03.1**	**-0.1**
CLLI				Sg	**Sg**	**23 05 10.2**	**-1.1**
VALF	**Valcebollere**	**0.63**	**220**	Pg	**Pg**	**23 05 03.7**	**-0.8**
VALF				Sg	**Sg**	**23 05 11.6**	**-0.8**
VALF	**Valcebollere**	**0.63**	**220**	P	**Pb**	**23 05 03.9**	**+0.1**
VALF				S	**Sg**	**23 05 11.2**	**-1.2**
CBRU	**Bruguera**	**0.67**	**205**	Pg	**Pg**	**23 05 04.3**	**-0.3**
CBRU				Lg		23 05 12.3	
	20nm,0.2s						
CBRU	**Bruguera**	**0.67**	**205**	Pg	**Pg**	**23 05 04.3**	**-0.2**
CBRU				Sg	**Sg**	**23 05 12.4**	**-1.2**
GRBF	**Gourbit**	**0.76**	**267**	Pg	**Pg**	**23 05 07.9**	**+1.6**
GRBF				Lg		23 05 17.8	
GRBF	**Gourbit**	**0.76**	**267**	Pg	**Pg**	**23 05 08.0**	**+1.7**
GRBF				Sg	**Sg**	**23 05 17.9**	**+1.4**
PAND	**Andorre**	**0.83**	**244**	P	**Pb**	**23 05 08.2**	**+1.0**
PAND				S	**Sb**	**23 05 18.5**	**+0.2**
SALF	**Salau**	**1.02**	**263**	Pg	**Pg**	**23 05 11.4**	**-0.1**
SALF				Sg	**Sg**	**23 05 25.5**	**+0.3**
SALF	**Salau**	**1.02**	**263**	P	**Pb**	**23 05 11.4**	**+1.0**
SALF				S	**Sb**	**23 05 24.8**	**+1.2**
MLS	**Moulis**	**1.08**	**274**	Pg	**Pg**	**23 05 13.2**	**+0.4**
MLS				Sg	**Sg**	**23 05 28.0**	**+0.8**
MLS	**Moulis**	**1.08**	**274**	P	**Pb**	**23 05 12.7**	**+1.2**
MLS				S	**Sb**	**23 05 26.9**	**+1.5**
CFON	**Fontmartina**	**1.13**	**185**	Pg	**Pg**	**23 05 13.0**	**-0.8**
CFON				Lg		23 05 27.2	
	82nm,0.2s						
CFON	**Fontmartina**	**1.13**	**185**	Pg	**Pg**	**23 05 13.0**	**-0.8**
CFON				Sg	**Sg**	**23 05 27.2**	**-1.7**
CORG	**Organya**	**1.13**	**235**	Pg	**Pg**	**23 05 13.6**	**-0.2**
CORG				Lg		23 05 27.9	
	9.4nm,0.2s						
CORG	**Organya**	**1.13**	**235**	Pg	**Pg**	**23 05 13.6**	**-0.2**
CORG				Sg	**Sg**	**23 05 27.9**	**-1.0**
CSOR	**Sort**	**1.17**	**244**	Pg	**Pg**	**23 05 14.1**	**-0.5**
CSOR				Lg		23 05 28.5	
	13nm,0.2s						
CSOR	**Sort**	**1.17**	**244**	Pg	**Pg**	**23 05 14.2**	**-0.4**
CSOR				Sg	**Sg**	**23 05 28.5**	**-1.8**
EMIR	**Miracle**	**1.24**	**219**	Pg	**Pg**	**23 05 15.3**	**-0.7**
	3.2nm,0.1s,SNR=42						
EMIR				Lg		23 05 32.1	
	18nm,0.2s,SNR=8.7						
EMIR	**Miracle**	**1.24**	**219**	Pg	**Pg**	**23 05 15.4**	**-0.6**
EMIR				Lg		23 05 32.2	
MELF	**Melles**	**1.33**	**270**	Pg	**Pg**	**23 05 16.7**	**-0.9**
MELF				Sg	**Sg**	**23 05 34.9**	**-0.5**
MELF	**Melles**	**1.33**	**270**	P	**Pb**	**23 05 17.0**	**+1.3**
MELF				S	**Sb**	**23 05 34.8**	**+2.2**
LASF	**Ste Croix**	**1.51**	**38**	*e*Pn	**Pn**	**23 05 20.1**	**+1.7**
	SNR=1.0						
LASF				*e*Pg	**Pg**	**23 05 22.6**	**+1.2**
LASF				*e*Sn	**Sn**	**23 05 39.8**	**+1.5**
	14nm,0.3s,SNR=1.0						
LASF				*e*Sg	**Sg**	**23 05 43.1**	**+1.5**
	18nm,0.3s						
EPF	**Esparros**	**1.64**	**276**	*e*Pn	**Pn**	**23 05 21.3**	**+1.1**
	SNR=1.0						
EPF				*e*Pg	**Pg**	**23 05 22.8**	**-1.1**
	SNR=1.0						
EPF				*e*Sn	**Sn**	**23 05 40.9**	**-0.6**
	41nm,0.2s,SNR=1.0						
EPF				*e*Sg	**Sg**	**23 05 44.4**	**-1.3**
	42nm,0.2s						
RESF	**Ens**	**1.64**	**268**	S	**Sn**	**23 05 43.7**	**+2.2**
CAVN	**Les Avellanes**	**1.68**	**234**	Pg	**Pg**	**23 05 23.5**	**-1.2**
CAVN				Lg		23 05 44.9	
	24nm,0.2s						
CAVN	**Les Avellanes**	**1.68**	**234**	Pg	**Pg**	**23 05 23.5**	**-1.1**
CAVN				Sg	**Sg**	**23 05 45.0**	**-2.1**
EPOB	**Poblet**	**1.89**	**216**	Pg	**Pg**	**23 05 26.2**	**-2.7**
	2.7nm,0.1s,SNR=24						
EPOB				Lg		23 05 51.0	
	12nm,0.2s,SNR=7.9						
EPOB	**Poblet**	**1.89**	**216**	Pn	**Pn**	**23 05 26.0**	**+2.2**
EPOB				Lg		23 05 50.2	
CGAR	**Garraf**	**1.92**	**214**	Pg	**Pg**	**23 05 22.7**	**-6.7**
CGAR	**Garraf**	**1.92**	**214**	Pg	**Pg**	**23 05 22.7**	**-6.7**
CAF	**Calviac**	**2.07**	**350**	*e*Pn	**Pn**	**23 05 28.8**	**+2.5**
CAF				*e*Pg	**Pg**	**23 05 33.2**	**+0.8**
CAF				*e*Sn	**Sn**	**23 05 54.0**	**+1.6**
	SNR=1.0						
CAF				*e*Sg	**Sg**	**23 05 58.0**	**-2.0**
	16nm,0.2s,SNR=1.0						
PRAF	**Pradon**	**2.11**	**63**	Pg	**Pg**	**23 05 35.3**	**+2.1**
TREF	**Trevaresse**	**2.19**	**69**	Pg	**Pg**	**23 05 35.7**	**+0.9**
ETSF	**Etsaut**	**2.29**	**271**	*e*Pg	**Pg**	**23 05 35.5**	**-1.4**
	SNR=1.0						
ETSF				*e*Sn	**Sn**	**23 05 56.1**	**-2.1**
ETSF				*e*Sg	**Sg**	**23 06 04.7**	**-2.9**
	13nm,0.4s						
LBL	**Lubilhac**	**2.39**	**12**	Pn	**Pn**	**23 05 31.2**	**+0.2**
LBL				Pg	**Pg**	**23 05 39.6**	**+0.7**
LFF	**La Frestale**	**2.44**	**328**	*e*Pn	**Pn**	**23 05 33.8**	**+2.2**
LFF				*e*Pg	**Pg**	**23 05 39.6**	**-0.2**
LFF				*e*Sg	**Sg**	**23 06 10.1**	**-2.1**
	27nm,0.3s,SNR=1.0						
SMRF	**Simiane la Rot**	**2.45**	**63**	*e*Pn	**Pn**	**23 05 34.8**	**+3.0**
SMRF				*e*Pg	**Pg**	**23 05 40.4**	**+0.4**
	SNR=1.0						
SMRF				*e*Sg	**Sg**	**23 06 13.6**	**+1.0**
	6.7nm,0.3s,SNR=1.0						
VIVF	**Saint-Julien-l**	**2.49**	**37**	*e*Pg	**Pg**	**23 05 40.6**	**-0.2**
	SNR=1.0						
VIVF				*e*Sn	**Sn**	**23 06 03.2**	**+0.2**
VIVF				*e*Sg	**Sg**	**23 06 13.9**	**-0.1**
	6.6nm,0.3s,SNR=1.0						
RJF	**Les Rejaudoux**	**2.53**	**343**	*e*Pg	**Pg**	**23 05 41.4**	**-0.2**
RJF				*e*Sn	**Sn**	**23 06 03.7**	**-0.4**
	SNR=1.0						
RJF				*e*Sg	**Sg**	**23 06 14.3**	**-1.0**
	14nm,0.2s,SNR=1.0						
ESAC	**San Caprasio**	**2.54**	**244**	Pg	**Pg**	**23 05 40.0**	**-1.7**
	3.2nm,0.1s,SNR=7.9						
ESAC				Lg		23 06 11.7	
	48nm,0.3s,SNR=7.9						
ESAC	**San Caprasio**	**2.54**	**244**	Pn	**Pn**	**23 05 34.9**	**+1.9**
ESAC				Pg	**Pg**	**23 05 40.7**	**-1.0**
ESAC				Sn	**Sn**	**23 06 04.9**	**+0.7**
ESAC				Lg		23 06 11.5	
TAVF	**Tavernes**	**2.65**	**73**	Pg	**Pg**	**23 05 43.8**	**-0.3**
PYM	**Petit Puy Mans**	**2.88**	**6**	Pn	**Pn**	**23 05 38.9**	**+1.0**
PYM				Pg	**Pg**	**23 05 49.4**	**+0.8**
PYM				Sg	**Sg**	**23 06 26.0**	**-0.9**
LMR	**La Mourre**	**2.92**	**80**	*e*Pn	**Pn**	**23 05 39.9**	**+1.3**
	SNR=1.0						
LMR				*e*Pg	**Pg**	**23 05 49.0**	**-0.5**
	SNR=1.0						
LMR				*e*Sn	**Sn**	**23 06 14.1**	**0.0**
	SNR=1.0						
LMR				*e*Sg	**Sg**	**23 06 28.1**	**-0.3**
	3.3nm,0.2s,SNR=1.0						
FRF	**La Foret Royal**	**3.06**	**76**	*e*Pn	**Pn**	**23 05 41.4**	**+0.9**
	SNR=1.0						
FRF				*e*Pg	**Pg**	**23 05 50.5**	**-1.7**
	SNR=1.0						
FRF				*e*Sn	**Sn**	**23 06 16.6**	**-0.9**
	SNR=1.0						
FRF				*e*Sg	**Sg**	**23 06 30.0**	**-3.0**
	8.5nm,0.3s,SNR=1.0						
EMOS	**Mosqueruela**	**3.40**	**223**	Pg	**Pg**	**23 05 55.6**	**-3.4**
	0.6nm,0.2s,SNR=7.9						
EMOS				Lg		23 06 40.2	
	0.5nm,0.2s,SNR=7.9						
TCF	**Toulx Ste Croi**	**3.41**	**356**	*e*Pg	**Pg**	**23 05 58.6**	**-0.5**
	SNR=1.0						
TCF				*e*Sn	**Sn**	**23 06 25.9**	**-0.4**
	SNR=1.0						
TCF				*e*Sg	**Sg**	**23 06 42.3**	**-2.2**
	5.4nm,0.3s,SNR=1.0						
BGF	**Bois d'Agland**	**3.67**	**3**	*e*Pg	**Pg**	**23 06 03.0**	**-1.4**
	SNR=1.0						
BGF				*e*Sg	**Sg**	**23 06 50.7**	**-2.7**
	12nm,0.3s,SNR=1.0						
SBF	**Sospel**	**3.68**	**73**	*e*Pn	**Pn**	**23 05 50.2**	**+0.9**
	SNR=1.0						
SBF				*e*Sn	**Sn**	**23 06 32.7**	**-0.6**
	SNR=1.0						
SBF				*e*Sg	**Sg**	**23 06 50.7**	**-3.0**
	9.9nm,0.6s,SNR=1.0						
SMF	**Signal de Mont**	**3.86**	**13**	*e*Pg	**Pg**	**23 06 07.5**	**-0.7**
	SNR=1.0						
SMF				*e*Sg	**Sg**	**23 06 57.5**	**-2.2**
AVF	**Avril sur Loir**	**3.94**	**8**	*e*Pg	**Pg**	**23 06 09.0**	**-0.8**
AVF				*e*Sg	**Sg**	**23 07 00.0**	**-2.3**
	4.2nm,0.5s,SNR=1.0						
AVF	**Avril sur Loir**	**3.94**	**8**	Lg		23 07 00.0	
	2.1nm,0.5s						
ETOR	**Torete**	**4.02**	**241**	Lg		23 07 01.3	
	4.2nm,0.4s,SNR=7.9						
MFF	**Saint Martin d**	**4.18**	**333**	*e*Pg	**Pg**	**23 06 12.1**	**-2.5**
MFF				*e*Sn	**Sn**	**23 06 43.7**	**-2.3**
	SNR=1.0						
MFF				*e*Sg	**Sg**	**23 07 06.3**	**-4.1**
	4.8nm,0.4s,SNR=1.0						
SSF	**Saint Saulge**	**4.22**	**9**	*e*Sg	**Sg**	**23 07 08.8**	**-3.0**
	2.3nm,0.4s,SNR=1.0						
LOR	**Lormes**	**4.47**	**11**	*e*Sg	**Sg**	**23 07 16.8**	**-3.2**
	2.5nm,0.3s,SNR=1.0						

*NEIC **10** 23:13:30.7±0.7,24.60S×115.98W,h10km,mb4.7/8, Error ellipse: s-maj=22.9km s-min=15.6km az=215.0*
*IDC **10** 23:13:30.3±3.0,24.49S×115.75W,mb4.2/7,mb1 4.4/7, mb1mx4.1/19,MS3.9/5,Ms1 3.9/5,ms1mx3.6/21,Error ellipse: s-maj=105.0km s-min=26.1km az=40.0*
ISC 10 23:13:28.8±0.8,**24.6S**±0.1×**116.0W**±0.1,**h10**km,**n21,** σ1§**10**/17,**mb4.5**/14,**MS3.9**/5,**Southern East Pacific Rise**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**40.33**	**266**	LR	LR	23 33 13.5	
	comp=Z,134nm,19.6s,MS3.8,baz=113,slow=29						
LVC	**Limon Verde**	**43.04**	**97**	P	**P**	**23 21 31.3**	**+0.8**
	3.8nm,1.0s,mb4.1,baz=250,slow=9.2,SNR=4.3						
LVC	**Limon Verde**	**43.04**	**97**	*e*P	**P**	**23 21 31.0**	**+0.4**
	5.4nm,1.0s,mb4.2						
OTAV	**Otavalo**	**43.97**	**61**	*e*P	**P**	**23 21 37.2**	**-1.0**
	18nm,1.5s,mb4.6						
LPAZ	**La Paz**	**45.44**	**89**	P	**P**	**23 21 50.1**	**+0.2**
	6.7nm,0.7s,mb4.6,baz=265,slow=5.6,SNR=37						
LPAZ				LR	LR	23 35 38.4	
	comp=Z,71nm,20.6s,MS3.6,baz=265,slow

mb1 5.2/31,mb1mx5.2/31,ML5.1/3,MS5.0/21,Ms1 5.0/21, ms1mx5.0/24 Error ellipse: s-maj=15.2km s-min=9.5km az=45.0,Putative timing error at EIL

MOS ***10*** *23:27:27.3±0.9,37.53N×96.66E,h33km,mb5.6/52, MS5.3/41,Error ellipse: s-maj=7.1km s-min=4.3km az=116.8*

ISC 10 23:27:23.7±0.1,**37.51N**±0.02×**96.62E**±0.02,**h10**km, **(h12**km±1.0km**:pP-P),n800,**cı1**01/832,mb5.4**/214, **MS5.3**/139,**182C-37D,Qinghai**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time h m s	Res
GTA	**Gaotai**	**3.15**	**52**		PG	**Pg**	**23 28 18.4**	**-8.2**
GTA					S	**Sn**	**23 28 57.9**	**+5.4**
GTA					SG	**Sg**	**23 29 03.6**	**-5.0**
LZH	**Lanzhou**	**5.97**	**102**	⇑P	P	**Pn**	**23 28 55.5**	**+1.1**
CD2	**Chengdu**	**8.85**	**136**		P	**P**	**23 29 37.2**	**+2.6**
CD2					AP		23 29 41.8	
CD2					XP		23 29 44.7	
CD2					S	**Sn**	**23 31 17.3**	**+1.9**
CD2					XS		23 31 23.2	
CD2					AMB	AMB		
	comp=Z,1μm,6.0s							
LSA	**Lhasa**	**9.02**	**212**		P	**P**	**23 29 41.0**	**+3.9**
LSA					AP		23 29 47.3	
LSA					LR	LR		
	comp=N,30μm,11.2s							
LSA					LR	LR		
	comp=E,40μm,10.4s							
LSA	**Lhasa**	**9.02**	**212**	*e*P		**P**	**23 29 38.0**	**+1.0**
LSA				*e*S		**Sn**	**23 31 22.1**	**+2.4**
WMQ	**Urumqi**	**9.25**	**316**		P	**P**	**23 29 40.0**	**-0.3**
WMQ					AP		23 29 43.2	
WMQ					XP		23 29 46.0	
WMQ					S	**Sn**	**23 31 24.6**	**-0.9**
WMQ					XS		23 31 29.6	
WMQ					PCP	PcP	23 36 00.5	+0.1
WMQ					SCP		23 39 30.7	
WMQ					PCS		23 39 32.5	
WMQ					SCS	ScS	23 43 03.7	-0.6
WMQ					AMB	AMB		
	comp=Z,561nm,1.1s							
XAN	**Xi'an**	**10.58**	**105**		P	**P**	**23 29 55.0**	**-3.5**
BTO	**Baotou**	**10.87**	**69**	*e*P		**P**	**23 30 02.3**	**-0.2**
BTO					S	**S**	**23 32 05.9**	**+0.6**
HHC	**Hu-ho-hao-te**	**12.07**	**69**	⇑*i*P		**P**	**23 30 17.6**	**-1.2**
HHC					AP		23 30 21.2	
HHC					XP		23 30 24.5	
HHC					PP	PP	23 30 27.4	-1.1
HHC					S	**S**	**23 32 32.5**	**-2.0**
HHC					XS		23 32 36.9	
HHC					SS	SS	23 32 47.4	-1.5
HHC					AMB	AMB		
	comp=Z,306nm,1.5s							
HHC					AMB	AMB		
	comp=Z,2μm,3.0s							
HHC					LR	LR		
	comp=N,20μm,11.8s							
HHC					LR	LR		
	comp=E,17μm,11.3s							
HHC					LR	LR		
	comp=Z,15μm,11.5s							
TIY	**Taiyuan**	**12.55**	**84**	⇓P		**P**	**23 30 22.6**	**-2.6**
TIY					S	**S**	**23 32 48.0**	**+1.9**
SHL	**Shillong**	**12.57**	**200**	*e*P		**P**	**23 30 23.0**	**-2.5**
SHL				*e*			23 34 55.0	
SONM	**Songino Array**	**12.57**	**32**	Pn		**P**	**23 30 24.6**	**-0.8**
	comp=Z,16nm,0.3s,baz=217,slow=14,SNR=558							
SONM	Lg						23 34 03.5	
	comp=Z,2.1nm,0.3s,baz=226,slow=32,SNR=5.0							
ULN	**Ulaanbaatar**	**12.87**	**33**	*e*P		**P**	**23 30 29.2**	**-0.3**
ULN				*e*S		**S**	**23 32 58.7**	**+4.8**
IMP	**Imphal**	**12.89**	**191**	*e*P		**P**	**23 30 26.0**	**-3.8**
ENH	**Enshi**	**12.89**	**120**	⇑*i*P		**P**	**23 30 27.9**	**-1.9**
KMI	**Kunming**	**13.40**	**155**	*e*P		**P**	**23 30 35.8**	**-0.8**
KMI					AP		23 30 44.0	
KMI					XP		23 30 48.8	
KMI					PPP	PPP	23 30 55.7	+1.5
KMI					S	**S**	**23 33 03.3**	**-3.4**
KMI					XS		23 33 11.4	
KMI					SS	SS	23 33 19.6	-2.7
KMI					AMB	AMB		
	comp=Z,50nm,1.8s							
KMI					AMB	AMB		
	comp=Z,404nm,4.3s							
KMI					LR	LR		
	comp=N,21μm,10.5s							
KMI					LR	LR		
	comp=E,28μm,17.2s							
KMI					LR	LR		
	comp=Z,22μm,10.5s							
KKN	**Kakani**	**13.59**	**228**	*e*P		**P**	**23 30 35.7**	**-3.4**
	comp=Z,116nm,0.8s							
PKI	**Pulchoki**	**13.68**	**227**	*e*P		**P**	**23 30 37.1**	**-3.2**
	comp=Z,875nm,1.8s							
ZAK	**Zakamensk**	**13.73**	**18**	*e*P		**P**	**23 30 42.3**	**+1.6**
GKN	**Gorkha**	**13.82**	**230**	*e*P		**P**	**23 30 39.7**	**-2.4**
	comp=Z,572nm,1.4s							
DMN	**Daman**	**13.83**	**228**	*e*P		**P**	**23 30 39.0**	**-3.2**
	comp=Z,772nm,1.5s							
GYA	**Guiyang**	**13.92**	**139**	⇑*i*P		**P**	**23 30 41.4**	**-2.0**
GYA					AP		23 30 47.8	
GYA					XP		23 30 51.6	
GYA					PP	PP	23 30 53.4	-1.0
GYA					PPP	PPP	23 31 01.2	-0.2
GYA					S	**S**	**23 33 14.2**	**-4.8**
GYA					XS		23 33 24.0	
GYA					SS	SS	23 33 31.6	-3.5
GYA					AMB	AMB		
	comp=Z,150nm,1.2s							
GYA					AMB	AMB		
	comp=Z,760nm,4.5s							
MK31	**Makanchi Array**	**14.09**	**316**	⇑Pn		**P**	**23 30 42.2**	**-3.3**
	comp=Z,117nm,1.1s,baz=121,slow=14,SNR=510							
MK31				⇓Sn		**S**	**23 33 14.1**	**-8.8**
	comp=Z,228nm,1.2s,baz=122,slow=24,SNR=4.1							
MK31				⇓Lg			23 34 52.9	
	comp=Z,556nm,1.4s							
MKAR	**Makanchi Array**	**14.09**	**316**	Pn		**P**	**23 30 42.1**	**-3.3**
	comp=Z,8.1nm,0.3s,baz=130,slow=15,SNR=144							
MKAR					Sn	**S**	**23 33 15.8**	**-7.1**
	comp=Z,2.1nm,0.3s,baz=140,slow=16,SNR=3.6							
MKAR					LR	LR	23 36 55.3	
	comp=Z,10μm,19.7s,baz=125,slow=40							
DANN	**Dangsing**	**14.13**	**233**	*e*P		**P**	**23 30 45.2**	**-0.9**
AGT	**Agartala**	**14.34**	**200**	⇑*i*P		**P**	**23 30 45.0**	**-3.9**
AGT				*i*			23 31 39.0	
MOY	**Mondy**	**14.49**	**11**	*e*P		**P**	**23 30 53.6**	**+2.9**
KOLN	**Koldanda**	**14.63**	**232**	*e*P		**P**	**23 30 49.4**	**-3.3**
	comp=Z,266nm,1.3s							
TLY	**Talaya**	**15.02**	**17**	*i* P		**P**	**23 30 58.5**	**+0.9**
TLY				*i* S		**S**	**23 33 52.9**	**+8.1**
TLY					pmax	pmax		
	comp=Z,2.0nm,3.3s							
TLY					MLR	MLR		
	comp=Z,19μm,17.0s							
BJT	**Baijiatuau**	**15.46**	**75**	*e*P		**P**	**23 31 02.7**	**-0.7**
BJT				*e*S		**S**	**23 33 54.0**	**-1.3**
BJT					pmax	pmax		
	comp=Z,270nm,1.0s							
BJT	**Baijiatuau**	**15.46**	**75**	*e*P		**P**	**23 31 02.7**	**-0.7**
	comp=Z,269nm,1.0s							
BJT				*e*S		**S**	**23 33 54.0**	**-1.3**
BJI	**Beijing**	**15.46**	**75**	P		**P**	**23 31 04.8**	**+1.3**
BJI					AP		23 31 12.3	
BJI					XP		23 31 15.1	
BJI					AMB	AMB		
	comp=Z,3μm,5.0s							
BJI					LR	LR		
	comp=Z,15μm,20.5s							
PTH	**Pithoragarh**	**15.80**	**245**	*e*		**P**	**23 31 04.0**	**-3.9**
PTH				*e*			23 34 31.0	
AAA	**Alma-Ata**	**16.04**	**297**	*c i*P		**P**	**23 31 08.0**	**-2.9**
AAA					pmax	pmax		
	comp=Z,2μm,4.0s							
AAA					MLR	MLR		
	comp=Z,10μm,12.0s							
WHN	**Wuhan**	**16.25**	**110**	⇑P		**P**	**23 31 09.4**	**-4.3**
WHN					S	**S**	**23 34 20.0**	**+6.2**
KSH	**Kashi**	**16.28**	**283**	*e*P		**P**	**23 31 12.5**	**-1.5**
KSH				*e*AP			23 31 16.6	
KSH				*e*XP			23 31 20.0	
KSH				*e*PP		PP	23 31 26.0	-1.4
KSH				*e*S		**S**	**23 34 11.4**	**-3.1**
KSH				*e*PCP		PcP	23 36 09.5	+0.6
KSH				*e*SCP			23 39 42.3	
KSH				*e*PCS			23 39 44.8	
KSH					AMB	AMB		
	comp=Z,150nm,1.0s							
KSH					AMB	AMB		
	comp=Z,950nm,3.5s							
ULHL	**Ulahol**	**16.33**	**293**		P	**P**	**23 31 13.3**	**-1.3**
	SNR=34							
TIA	**Tai'an**	**16.47**	**88**	⇑P		**P**	**23 31 14.4**	**-2.0**
TIA					LR	LR		
	comp=N,6μm,7.3s							
TIA					LR	LR		
	comp=E,13μm,8.5s							
CAL	**Calcutta**	**16.54**	**208**	*e*P		**P**	**23 31 15.3**	**-2.2**
CAL				*e*			23 35 09.2	
CAL				*e*			23 36 21.0	
TKM2	**Tokmak 2**	**16.93**	**295**	P		**P**	**23 31 21.5**	**-0.7**
	SNR=322							
KZA	**Kyzart**	**17.03**	**292**	P		**P**	**23 31 22.9**	**-0.7**
	SNR=183							
KBK	**Karagaybulak**	**17.35**	**294**	P		**P**	**23 31 27.3**	**-0.1**
	SNR=309							
CHMS	**Chumysh**	**17.55**	**295**	P		**P**	**23 31 30.0**	**0.0**
	SNR=63							
UCH	**Uchtor**	**17.60**	**292**	P		**P**	**23 31 30.6**	**0.0**
	SNR=87							
FRU	**Bishkek**	**17.62**	**294**	*e*P		**P**	**23 31 31.0**	**+0.2**
FRU					pmax	pmax		
	comp=Z,240nm,1.3s							
AAK	**Ala-Archa**	**17.67**	**294**	P		**P**	**23 31 31.6**	**+0.1**
	SNR=163							
BHK	**Bhakra**	**17.72**	**256**	*e*		**P**	**23 31 37.0**	**+4.8**
BHK				*e*S		**S**	**23 34 50.0**	**+2.6**
USP	**Ospenovka**	**17.78**	**296**	P		**P**	**23 31 32.1**	**-0.8**
	SNR=108							
AML	**Almayashu**	**18.19**	**292**	P		**P**	**23 31 38.5**	**+0.6**
	SNR=63							
EKS2	**Erkin-Say**	**18.20**	**294**	P		**P**	**23 31 38.8**	**+0.7**
	SNR=83							
KURK	**Kurchatov**	**18.41**	**322**	P		**P**	**23 31 39.0**	**-1.6**
	comp=Z,120nm,1.3s,baz=117,slow=9.9,SNR=264							
KURK					⇓S	**S**	**23 35 12.0**	**+9.0**
	comp=Z,116nm,2.5s,baz=149,slow=16,SNR=3.5							
KURK	**Kurchatov**	**18.41**	**322**	⇑*i*P		**P**	**23 31 38.5**	**-2.1**
NDI	**New Delhi**	**18.46**	**247**	*e*		**P**	**23 31 36.0**	**-5.4**
NDI				*e*S		**S**	**23 35 08.0**	**+3.7**
CHG	**Chiang Mai**	**18.74**	**173**	⇑P		**P**	**23 31 47.9**	**+3.1**
	comp=Z,21nm,0.8s							
NANT	**Nan**	**18.98**	**168**	⇑P		**P**	**23 31 48.0**	**+0.3**
NJ2	**Nanjing**	**19.05**	**100**	*e*P		**P**	**23 31 47.2**	**-1.3**
NJ2					AP		23 31 52.3	
NJ2					XP		23 31 55.4	
NJ2					PP	PP	23 32 05.2	0.0
NJ2					S	**S**	**23 35 15.0**	**-2.5**
NJ2					XS		23 35 23.0	
NJ2					SS	SS	23 35 42.0	-1.1
NJ2					AMB	AMB		
	comp=Z,80nm,1.0s							
CM31	**Chiang Mai Arr**	**19.09**	**173**	P		**P**	**23 31 50.5**	**+1.5**
	comp=Z,29nm,0.7s							
CMAR	**Chiang Mai Arr**	**19.09**	**173**	P		**P**	**23 31 49.6**	**+0.6**
	comp=Z,0.8nm,0.3s,baz=348,slow=10,SNR=24							
CMAR					LR	LR	23 39 40.0	
	comp=Z,6μm,19.7s,baz=350,slow=38							
CMAR					ScP		23 39 48.6	
	baz=326,slow=3.3,SNR=6.1							
CHCP	**Chirah Chowk**	**19.36**	**266**	P		**P**	**23 31 51.6**	**-0.6**
NVS	**Novosibirsk**	**19.60**	**336**	*i* P		**P**	**23 31 53.4**	**-1.3**
NVS				*i* S		**S**	**23 35 34.8**	**+5.1**
NVS					pmax	pmax		
	comp=N,526nm,1.8s							
NVS					pmax	pmax		
	comp=E,325nm,1.8s							
NVS					pmax	pmax		
	comp=Z,556nm,1.8s							
NVS					smax			
	comp=N,504nm,2.3s							
NVS					smax			
	comp=E,374nm,2.3s							
DL2	**Dalian**	**19.69**	**78**	⇑*i*P		**P**	**23 31 56.3**	**+0.4**
DL2					S	**S**	**23 35 38.0**	**+6.1**
DL2					AMB	AMB		
	comp=Z,90nm,1.3s							
DL2					AMB	AMB		
	comp=Z,2μm,8.4s							
DL2					LR	LR		
	comp=N,9μm,15.7s							
DL2					LR	LR		
	comp=E,3μm,14.7s							
DL2					LR	LR		
	comp=Z,8μm,16.8s							
BLSP	**Bilaspur**	**19.78**	**223**	*e*P		**P**	**23 31 55.7**	**-1.3**
BLSP				*e*			23 35 33.5	
JBP	**Jabalpur**	**20.21**	**230**	⇓*i*P		**S**	**23 32 02.0**	**+0.4**
JBP				*i* S		**S**	**23 35 49.3**	**+6.3**
BDT	**Bhumibol Dam**	**20.30**	**173**	P		**P**	**23 32 04.0**	**+1.5**
	comp=Z,22nm,0.8s							
GZH	**Guangzhou**	**20.33**	**130**	P		**P**	**23 31 58.9**	**-3.9**
GZH					S	**S**	**23 35 44.7**	**-0.7**
GZH					AMB	AMB		
	comp=Z,3μm,5.9s							
CEP	**Cherat**	**20.39**	**267**	P		**P**	**23 32 01.5**	**-1.9**
HIA	**Hailar**	**20.42**	**48**	P		**P**	**23 32 03.7**	**+0.1**
HIA	**Hailar**	**20.42**	**48**	⇑*i*P		**P**	**23 32 03.8**	**+0.2**
HIA					pmax	pmax		
	comp=Z,2μm,2.4s							
HIA					MLR	MLR		
	comp=Z,2μm,21.0s							
HIA	**Hailar**	**20.42**	**48**	⇑*i*P		**P**	**23 32 03.8**	**+0.2**
	comp=Z,2μm,2.4s							
HIA					LR	LR		
	comp=Z,2μm,21.0s,MS4.5							
KK31	**Karatay Array**	**20.64**	**294**	⇑P		**P**	**23 32 04.8**	**-1.1**
	comp=Z,70nm,0.8s,baz=98,slow=10,SNR=446							
KK31				⇓S		**S**	**23 35 55.3**	**+3.8**
	comp=Z,20nm,1.1s							
KK31				⇑Lg			23 38 25.6	
	comp=Z,71nm,1.4s							
KKAR	**Karatay Array**	**20.64**	**294**	*i* P		**P**	**23 32 04.3**	**-1.6**
KKAR				*i* S		**S**	**23 35 55.2**	**+3.7**
KKAR					pmax	pmax		
	comp=Z,1μm,1.8s							
THW	**Thamme Wali**	**20.85**	**264**	P		**P**	**23 32 05.4**	**-2.8**
SNY	**Shenyang**	**21.16**	**70**	⇑*i*P		**P**	**23 32 11.4**	**+0.1**
SNY					AP		23 32 16.6	
SNY					XP		23 32 19.6	
SNY					PP	PP	23 32 38.7	+4.1
SNY					AMB	AMB		
	comp=Z,340nm,1.1s,mb5.6							
SNY					AMB	AMB		
	comp=Z,3μm,9.8s							
SNY					LR	LR		
	comp=Z,26μm,16.9s,MS5.7							
SSE	**Sheshan**	**21.25**	**100**	P		**P**	**23 32 12.7**	**+0.4**
SSE				S		**S**	**23 36 00.2**	**-3.3**
SSE				XS			23 36 13.7	
SSE					AMB	AMB		
	comp=Z,161nm,1.4s,mb5.2							
SSE					LR	LR		
	comp=N,2μm,14.4s,MS4.8							
SSE					LR	LR		
	comp=E,2μm,14.3s,MS4.8							
SSE					LR	LR		
	comp=Z,3μm,13.2s,MS4.9							
HKC	**Hong Kong**	**21.42**	**130**	⇑*i*P		**P**	**23 32 15.0**	**+1.0**
AJM	**Ajmer**	**21.59**	**246**	⇓*i*P		**P**	**23 32 14.0**	**-1.7**
QIZ	**Qiongzhong**	**21.74**	**144**	⇑*i*P		**P**	**23 32 17.5**	**+0.2**
QIZ					XP		23 32 23.6	
QIZ					PP	PP	23 32 42.7	+0.4
QIZ					PPP	PPP	23 32 52.6	+0.6
QIZ					S	**S**	**23 36 11.9**	**-0.9**
QIZ					XS		23 36 18.8	
QIZ					SS	SS	23 36 50.0	+0.4
QIZ					PCS		23 39 56.5	
QIZ					SCS	ScS	23 43 35.5	-1.9
QIZ					AMB	AMB		
	comp=Z,923nm,8.1s							
QIZ					LR	LR		
	comp=N,11μm,10.3s,MS5.6							
QIZ					LR	LR		
	comp=E,7μm,12.8s,MS5.6							
QIZ					LR	LR		
	comp=Z,15μm,11.5s,MS5.6							
QIZ	**Qiongzhong**	**21.74**	**144**	⇑*e*P		**P**	**23 32 17.3**	**0.0**
	comp=Z,78nm,0.9s,mb5.1							
SBDP	**Sheikh Budin**	**21.76**	**264**	P		**P**	**23 32 16.2**	**-1.2**
BHPL	**Bhopal**	**21.77**	**235**	*e*P		**P**	**23 32 16.7**	**-0.8**
BHPL				*e*			23 32 23.1	
	comp=Z,187nm,0.5s							
BHPL				*e*			23 36 07.3	
KKTK	**Khon Kaen**	**21.79**	**164**	P		**P**	**23 32 18.8**	**+1.0**
	comp=Z,926nm,0.5s							
NST	**Nakhon Sawan**	**21.97**	**171**	P		**P**	**23 32 20.0**	**+0.4**
	comp=Z,75nm,0.9s,mb5.1							
DRP	**Derazinda**	**22.45**	**263**	P		**P**	**23 32 24.1**	**-0.1**
QZH	**Quanzhou**	**22.52**	**118**	⇑*i*P		**P**	**23 32 25.2**	**+0.2**
QZH					S	**S**	**23 36 33.6**	**+6.5**
QZH					AMB	AMB		
	comp=Z,110nm,1.0s,mb5.2							
CN2	**Changchun**	**22.69**	**65**	*e*P		**P**	**23 32 26.8**	**+0.3**
CN2				*e*AP			23 32 31.7	
CN2				*e*S		**S**	**23 36 27.5**	**-2.5**
CN2					AMB	AMB		
	comp=Z,210nm,1.3s,mb5.4							
VIS	**Vishakhapatnam**	**22.91**	**214**	*e*P		**P**	**23 32 31.6**	**+2.7**
VIS				*e*			23 32 35.6	
	comp=Z,144nm,1.4s							
VIS				*e*			23 36 30.8	
BOD	**Bodaibo**	**23.32**	**24**	⇑*i*P		**P**	**23 32 33.1**	**+0.6**
VOSK	**Vostochnaya**	**23.46**	**319**	⇑P		**P**	**23 32 34.7**	**+0.8**
	comp=Z,248nm,1.1s,mb5.6							
VOSK				⇓S		**S**	**23 36 48.7**	**+5.2**
	comp=Z,80nm,1.4s							
VOSK				⇑Lg			23 39 22.6	
	comp=Z,233nm,2.7s							
VOSK	**Vostochnaya**	**23.46**	**319**	P		**P**	**23 32 34.6**	**+0.7**
VOSK				S		**S**	**23 36 48.6**	**+5.1**
VOSK					pmax	pmax		
	comp=Z,261nm,1.1s,mb5.6							
INCN	**Inchon**	**23.77**	**81**	⇑*i*P		**P**	**23 32 37.9**	**+0.8**
	comp=Z,180nm,0.9s,mb5.5							
INCN					LR	LR		
	comp=Z,9μm,19.0s,MS5.2							
AKL	**Akola**	**23.87**	**231**	*i*		**P**	**23 32 30.2**	**-8.0**
	comp=Z,318nm,1.7s,mb5.5							
AKL				*i*			23 36 34.7	
BVA0	**Borovoye Array**	**23.92**	**319**	P		**P**	**23 32 39.6**	**+1.2**
	comp=Z,47nm,1.1s,mb4.8,baz=120,slow=5.7,SNR=1414							
BVA0				⇓S		**S**	**23 37 00.7**	**+9.2**
	comp=Z,14nm,1.4s,baz=113,slow=17,SNR=12							
BVA0				⇓Lg			23 39 32.3	
	comp=Z,27nm,2.0s,baz=124,slow=24,SNR=4.9							
BVA0	**Borovoye Array**	**23.92**	**319**	*i* P		**P**	**23 32 39.5**	**+1.1**
BVA0				*i* S		**S**	**23 36 53.2**	**+1.7**
BVAR	**Borovoye Array**	**23.92**	**319**	P		**P**	**23 32 39.6**	**+1.2**
	comp=Z,165nm,1.0s,mb5.4,baz=117,slow=9.4,SNR=209							
BVAR					S	**S**	**23 37 01.7**	**+10**
	comp=Z,30nm,1.1s,baz=114,slow=18,SNR=8.0							
BVAR					LR	LR	23 42 05.9	
	comp=Z,8μm,18.2s,MS5.2,baz=95,slow=37							
BRVK	**Borovoye**	**24.00**	**319**	⇑P		**P**	**23 32 40.5**	**+1.4**
	comp=Z,189nm,1.1s,mb5.4							
BRVK				⇑S		**S**	**23 37 03.4**	**+11**
	comp=Z,61nm,2.2s							
BRVK	**Borovoye**	**24.00**	**319**	⇑*i*P		**P**	**23 32 40.1**	**+1.0**
BRVK				*e*S		**S**	**23 36 58.2**	**+5.4**
KGD	**Kothagudem**	**24.31**	**220**	*e*P		**P**	**23 32 44.4**	**+1.8**
KGD				*e*			23 32 49.9	
KGD				*e*			23 33 33.1	
KGD				*e*S		**S**	**23 36 58.5**	**-0.1**
KGD				*e*			23 40 18.1	
TATO	**Taipei**	**24.58**	**113**	⇑*e*P		**P**	**23 32 46.2**	**+1.1**
	comp=Z,123nm,1.0s,mb5.4							
ZRNK	**Zerenda**	**24.62**	**318**	⇑P		**P**	**23 32 45.5**	**+0.3**
	comp=Z,126nm,1.1s,mb5.4							
ZRNK				⇓S		**S**	**23 37 05.6**	**+2.2**
	comp=Z,65nm,1.9s							
ZRNK				⇑Lg			23 39 38.7	
	comp=Z,265nm,2.5s							
ZRNK	**Zerenda**	**24.62**	**318**	P		**P**	**23 32 45.4**	**+0.2**
ZRNK				S		**S**	**23 37 05.5**	**+2.1**
ZRNK					pmax	pmax		
	comp=Z,138nm,1.1s,mb5.4							
ZRNK	**Zerenda**	**24.62**	**318**	⇑*e*P		**P**	**23 32 45.4**	**+0.2**
KS15	**Wonju Array Si**	**24.76**	**81**	*e*P		**P**	**23 32 47.3**	**+0.6**
HYB	**Hyderabad**	**25.55**	**223**	*i* P		**P**	**23 32 53.5**	**-0.9**
	comp=Z,60nm,1.0s,mb5.1							
HYB				*e*S		**S**	**23 37 20.0**	**+0.6**
HYB				LR	LR		23 43 32.0	
	comp=Z,24nm,12.0s							
HYB	**Hyderabad**	**25.55**	**223**	*e*P		**P**	**23 32 53.5**	**-0.9**
	comp=Z,60nm,1.0s,mb5.1							
HYB				*e*S		**S**	**23 37 20.0**	**+0.6**
QUE	**Quetta**	**25.62**	**262**	⇓*i*P		**P**	**23 32 56.0**	**+1.0**
QUE				*e*S		**S**	**23 37 38.0**	**+17**
MDJ	**Mudanjiang**	**25.73**	**64**	P		**P**	**23 32 56.3**	**+0.5**
MDJ					AP	pP	23 33 00.8	+2.0
MDJ					XP	sP	23 33 04.9	+4.8
MDJ					PCP	PcP	23 36 26.5	-0.1
MDJ					S	**S**	**23 37 27.7**	**+5.5**
MDJ					SCP		23 40 05.0	
MDJ					AMB	AMB		
	comp=Z,2μm,7.8s							
MDJ	**Mudanjiang**	**25.73**	**64**	*e*P		**P**	**23 32 56.7**	**+0.9**
	comp=Z,130nm,1.6s,mb5.2							
MDJ					LR	LR		
	comp=Z,2μm,22.0s,MS4.6							
LATR	**Latur**	**25.89**	**228**	*e*		**P**	**23 33 01.3**	**+3.7**
	comp=Z,101nm,1.9s,mb5.0							
CLNS	**Chul'man**	**26.95**	**35**	*e*P		**P**	**23 33 06.9**	**0.0**
CLNS				*e*PP		pP	23 33 13.7	+3.9
CLNS				*e*PPP		PPP	23 33 52.9	-12
CLNS				*e*			23 36 28.5	
CLNS				*e*SS		SS	23 39 17.3	+22
CLNS					pmax	pmax		
	comp=Z,30nm,1.6s,mb4.6							
CLNS					pmax	pmax		
	comp=N,8.0nm,0.9s							
CLNS					pmax	pmax		
	comp=E,10.0nm,0.6s							
CLNS					MLR	MLR		
	comp=Z,19μm,10.0s,MS6.0							
CLNS					MLR	MLR		
	comp=N,7μm,11.0s,MS5.8							
CLNS					MLR	MLR		
	comp=E,13μm,12.0s,MS5.8							
BHUJ	**Bhuj**	**27.14**	**246**	*e*P		**P**	**23 33 12.1**	**+3.1**
VLA	**Vladivostok**	**27.34**	**67**	⇓*i*P		**P**	**23 33 09.0**	**-1.7**
VLA				*i*			23 34 00.0	
VLA				*i* PPP		PPP	23 34 12.0	+2.1
VLA				*i* S		**S**	**23 37 50.0**	**+1.4**
VLA				*i*			23 38 08.0	
VLA				*i* SS		SS	23 39 08.0	+3.0
VLA				*i* SSS		SSS	23 39 26.0	+2.9
VLA					pmax	pmax		
	comp=E,1μm,9.0s							
VLA					pmax	pmax		
	comp=Z,1μm,9.0s							
VLA					pmax	pmax		
	comp=N,500nm,5.0s							
VLA					pmax	pmax		
	comp=E,600nm,5.0s							
VLA					pmax	pmax		
	comp=Z,1μm,5.0s							
VLA					smax			
	comp=N,1μm,9.0s							

CUD e 23 33 44.1
CUD ePnPn 23 34 05.7
CUD eS **S** **23 37 47.1 -11**
CUD e 23 38 31.4
CUD eSnSn 23 39 11.8
KAD **Karad** **28.18 231** eP **P** **23 33 20.2 +1.7**
KAD e 23 33 26.4
comp=Z,83nm,1.2s
KAD e 23 37 55.8
JNU **Nakatsue** **28.20 89** P **P** **23 33 18.1 -0.5**
comp=Z,10nm,0.5s,mb4.7,baz=245,slow=7.6,SNR=5.7
JNU LR LR 23 44 44.4
comp=Z,3μm,18.8s,MS5.0,baz=295,slow=37
JOW **Kunigami** **28.71 103** P **P** **23 33 22.1 -1.1**
baz=280,slow=8.6
JOW LR LR 23 45 17.2
comp=Z,951nm,18.0s,MS4.4,baz=164,slow=37
AB31 **Akbulak array** **28.84 306** ⇑P **P** **23 33 24.1 0.0**
comp=Z,23nm,1.1s,mb4.8,baz=94,slow=8.8,SNR=98
AB31 **Akbulak array** **28.84 306** *i* P **P** **23 33 24.1 -0.1**
AB31 S **S** **23 38 02.4 -10**
AB31 pmax pmax
comp=Z,24nm,1.1s,mb4.8
GOA **Goa** **29.80 229**⇓ eP **P** **23 33 34.6 +1.6**
GOA e 23 38 25.2
SVE **Sverdlovsk** **30.66 321**α *i* P **P** **23 33 40.2 -0.1**
SVE ePPP PPP 23 34 56.0 +0.5
SVE eS **S** **23 38 40.0 -1.4**
SVE pmax pmax
comp=Z,280nm,1.3s,mb5.9
SVE MLR MLR
comp=N,4μm,15.0s,MS5.5
SVE MLR MLR
comp=E,6μm,15.0s,MS5.5
SVE MLR MLR
comp=Z,10μm,15.0s,MS5.6
ARU **Arti** **31.57 319**⇑ *i* P **P** **23 33 48.3 0.0**
ARU *i* 23 34 52.9
ARU *i* 23 36 39.7
ARU *i* S **S** **23 38 55.4 -0.3**
ARU *i* SS SS 23 40 49.7 +5.4
ARU *i* 23 44 20.2
ARU pmax pmax
comp=Z,201nm,1.0s,mb5.9
ARU MLR MLR
comp=N,4μm,20.0s,MS5.2
ARU MLR MLR
comp=E,2μm,18.0s,MS5.2
ARU MLR MLR
comp=Z,4μm,18.0s,MS5.1
ARU **Arti** **31.57 319** eP **P** **23 33 48.0 -0.3**
comp=Z,266nm,1.2s,mb6.0
ARU LR LR
comp=Z,543nm,22.0s
TGY **Tagaytay City** **31.80 131** LR LR 23 47 44.0
comp=Z,3μm,18.5s,MS5.0,baz=340,slow=38
YAK **Yakutsk** **31.91 29** eP **P** **23 33 50.6 -0.6**
YAK e 23 34 53.8
YAK ePPP PPP 23 35 05.6 -6.5
YAK pmax pmax
comp=Z,10.0nm,1.1s,mb4.6
YAK pmax pmax
comp=N,8.0nm,1.0s
YAK pmax pmax
comp=E,10.0nm,1.2s
YAK pmax pmax
comp=Z,9.0nm,0.8s,mb4.7
YAK pmax pmax
comp=E,5.0nm,1.1s
YAK MLR MLR
comp=N,3μm,11.0s,MS5.5
YAK MLR MLR
comp=Z,6μm,11.0s,MS5.5
YAK MLR MLR
comp=E,4μm,12.0s,MS5.5
YAK **Yakutsk** **31.91 29**⇑ *i* P **P** **23 33 50.6 -0.6**
comp=E,29nm,0.6s,mb5.3
YAK LR LR
comp=Z,819nm,20.0s,MS4.4
IPM **Ipoh** **33.02 172**⇓ eP **P** **23 34 01.0 -0.4**
MAJO **Matsushiro** **33.03 79** P **P** **23 33 59.6 -1.6**
MAJO pmax pmax
comp=Z,13nm,0.7s,mb5.0
MAJO MLR MLR
comp=Z,2μm,22.0s,MS4.8
MAJO **Matsushiro** **33.03 79** eP **P** **23 33 59.5 -1.8**
comp=Z,25nm,0.9s,mb5.2
MAJO LR LR
comp=Z,2μm,22.0s,MS4.8
MAT **Matsushiro** **33.03 79** P **P** **23 33 58.4 -2.8**
MAT S **S** **23 39 17.0 -1.7**
MAT **Matsushiro** **33.03 79** eP **P** **23 33 58.0 -3.2**
comp=Z,16nm,0.8s,mb5.0
MAT eS **S** **23 39 00.0 -19**
MAT LR LR
comp=Z,4μm,18.0s,MS5.1
TRD **Trivandrum** **33.91 217**⇓ *i* **P** **23 34 18.6 +9.4**
TRD *i* 23 39 41.6
YSS **Yuzh-Sakhalins** **35.00 59**α *i* P **P** **23 34 17.2 -1.0**
YSS e 23 35 39.0
YSS e 23 36 48.0
YSS eS **S** **23 39 46.0 -3.1**
YSS eSSS SSS 23 42 22.0 -8.8
YSS pmax pmax
comp=E,190nm,2.0s
YSS pmax pmax
comp=Z,170nm,2.0s,mb5.6
YSS pmax pmax
comp=E,500nm,6.0s
YSS pmax pmax
comp=Z,900nm,6.0s
YSS pmax pmax
comp=Z,190nm,2.0s,mb5.7
YSS pmax pmax
comp=Z,2μm,9.0s
YSS pmax pmax
comp=E,2μm,8.0s
YSS smax
comp=N,900nm,7.0s
YSS MLR MLR
comp=N,18μm,15.0s,MS6.1
YSS MLR MLR
comp=N,6μm,13.0s
YSS MLR MLR
comp=E,14μm,13.0s,MS6.1
YSS MLR MLR
comp=Z,12μm,13.0s,MS5.8
YSS **Yuzh-Sakhalins** **35.00 59**⇑ *i* P **P** **23 34 17.5 -0.6**
comp=Z,63nm,1.4s,mb5.3
YSS LR LR
comp=Z,3μm,19.0s,MS5.0
ASAJ **Asahikawa** **35.05 64** P **P** **23 34 18.2 -0.5**
comp=Z,15nm,0.7s,mb5.0,baz=272,slow=8.8,SNR=10.0
ASAJ **Asahikawa** **35.05 64** P **P** **23 34 18.2 -0.5**
ASAJ pmax pmax
comp=Z,15nm,0.7s
KGM **Kluang** **35.85 169**⇑ eP **P** **23 34 27.0 +1.2**
KKM **Kota Kinabalu** **36.05 145**⇓ eP **P** **23 34 28.5 +1.1**
MAK **Makhachkala** **37.45 294***c* *i* P **P** **23 34 42.0 +3.1**
MAK e 23 34 50.0
MAK e 23 36 01.0
MAK eS **S** **23 40 28.0 +1.1**
MAK e 23 40 46.0
MAK *i* 23 44 46.0
MAK pmax pmax
comp=N,400nm,4.0s
MAK pmax pmax
comp=E,400nm,4.0s
MAK pmax pmax
comp=Z,2μm,4.0s
MAK pmax pmax
comp=Z,700nm,6.0s
MAK smax
comp=N,1μm,6.0s
MAK smax
comp=E,1μm,6.0s
TIXI **Tiksi** **37.99 16** eP **P** **23 34 42.4 -0.8**
TIXI *i* 23 36 10.3
TIXI pmax pmax
comp=Z,427nm,1.7s,mb5.9
TIXI MLR MLR
comp=Z,57μm,10.0s
TIXI **Tiksi** **37.99 16** eP **P** **23 34 43.1 0.0**
comp=Z,20nm,0.6s,mb5.0
TIXI LR LR
comp=Z,6μm,19.0s,MS5.4

PECR **Pechory** **39.38 316** eP **P** **23 34 56.4 +1.5**
PECR *i* 23 36 25.6
PECR eS **S** **23 40 54.0 -1.9**
PECR eSS SS 23 43 45.0 +3.0
PECR e 23 44 59.0
PECR pmax pmax
comp=E,800nm,5.0s
PECR pmax pmax
comp=E,900nm,12.0s
PECR smax
comp=E,700nm,11.0s
PECR smax
comp=N,2μm,12.0s
PECR MLR MLR
comp=N,3μm,13.0s,MS6.0
PECR MLR MLR
comp=E,16μm,16.0s,MS6.0
ZEI **Tsey** **40.10 295**⇑ eP **P** **23 35 02.0 +1.0**
DAV **Davao City (W)** **40.12 132**⇓ eP **P** **23 35 06.0 +4.5**
GOF **Gofitskoye** **40.33 298**⇓ *i* P **P** **23 35 04.0 +1.1**
GOF eS **S** **23 41 14.0 +3.6**
GOF pmax pmax
comp=Z,140nm,1.2s,mb5.6
GOF pmax pmax
comp=Z,2μm,5.0s
GOF smax
comp=N,3μm,10.0s
GOF MLR MLR
comp=N,7μm,13.0s,MS6.0
GOF MLR MLR
comp=E,12μm,13.0s,MS6.0
GOF MLR MLR
comp=Z,6μm,13.0s,MS5.6
PYA **Pyatigorsk** **40.48 297***c* *i* P **P** **23 35 04.0 -0.1**
PYA *i* 23 41 14.0
PYA eSS SS 23 44 13.0 +6.8
PYA *i* SSS SSS 23 45 12.0 +29
PYA MLR MLR
comp=E,5μm,17.0s
MA2 **Magadan** **40.63 39***c* *i* P **P** **23 35 05.0 -0.2**
MA2 pmax pmax
comp=Z,23nm,0.9s,mb4.8
MA2 MLR MLR
comp=Z,4μm,15.0s,MS5.4
MA2 **Magadan** **40.63 39** eP **P** **23 35 05.1 -0.1**
comp=Z,15nm,0.7s,mb4.7
MA2 LR LR
comp=Z,3μm,19.0s,MS5.1
KIV **Kislovodsk** **40.76 297***c* *i* P **P** **23 35 07.1 +0.7**
KIV pmax pmax
comp=Z,65nm,1.2s,mb5.1
KIV MLR MLR
comp=Z,2μm,15.0s,MS5.1
KIV **Kislovodsk** **40.76 297** eP **P** **23 35 08.2 +1.8**
comp=Z,70nm,1.2s,mb5.2
KIV LR LR
comp=Z,2μm,21.0s,MS5.0
VOR **Voronezh** **42.17 309** eP **P** **23 35 18.0 +0.1**
VOR e*SP sP 23 35 34.5 +12
VOR e 23 36 54.0
VOR e 23 41 38.0
VOR pmax pmax
comp=E,280nm,1.3s
VOR pmax pmax
comp=Z,350nm,1.3s,mb5.8
MOS **Moscow** **42.97 315** *i* P **P** **23 35 24.9 +0.6**
MOS e 23 37 03.2
MOS eS **S** **23 41 49.9 +0.7**
MOS eSS SS 23 44 53.2 -1.5
MOS e 23 45 17.4
MOS pmax pmax
comp=Z,1μm,1.0s
MOS MLR MLR
comp=Z,4μm,14.0s,MS5.5
OBN **Obninsk** **43.59 314***c* *i* P **P** **23 35 29.4 +0.1**
OBN *i* *PP pP 23 35 45.2 +13
OBN e 23 37 10.7
OBN e 23 37 14.7
OBN *i* S **S** **23 41 58.8 +0.7**
OBN eSS SS 23 45 11.5 +5.8
OBN pmax pmax
comp=Z,297nm,1.2s,mb5.9
OBN MLR MLR
comp=Z,4μm,19.0s,MS5.3
OBN **Obninsk** **43.59 314** eP **P** **23 35 29.6 +0.3**
comp=Z,509nm,1.4s,mb6.1
OBN LR LR
comp=Z,5μm,19.0s,MS5.5
ANN **Anapa** **44.29 299***c* *i* P **P** **23 35 35.3 +0.1**
ANN e*PP pP 23 35 53.5 +15
ANN e 23 37 18.4
ANN eS **S** **23 42 10.0 +1.5**
ANN eSS SS 23 45 32.3 +14
PET **Petropavlovsk** **44.89 49** eP **P** **23 35 38.1 -1.9**
PET e 23 37 20.1
PET eS **S** **23 42 32.6 +15**
PET pmax pmax
comp=Z,12nm,0.6s,mb4.9
PET pmax pmax
comp=Z,593nm,8.7s
PET MLR MLR
comp=Z,3μm,17.0s,MS5.3
PET **Petropavlovsk** **44.89 49**⇑ eP **P** **23 35 38.5 -1.5**
PET LR LR
comp=Z,2μm,21.0s,MS5.0
LVZ **Lovozero** **45.36 332** eP **P** **23 35 43.2 -0.3**
LVZ e 23 37 27.3
LVZ eS **S** **23 42 24.5 +0.9**
LVZ e 23 45 40.9
LVZ pmax pmax
comp=N,30nm,1.0s
LVZ pmax pmax
comp=Z,110nm,1.0s,mb5.6
LVZ pmax pmax
comp=E,50nm,1.2s
LVZ pmax pmax
comp=Z,170nm,1.3s,mb5.7
LVZ pmax pmax
comp=N,20nm,1.0s
LVZ pmax pmax
comp=E,150nm,1.6s
LVZ smax
comp=Z,230nm,3.0s
LVZ smax
comp=N,1μm,11.3s
LVZ smax
comp=E,470nm,3.7s
LVZ smax
comp=N,460nm,10.4s
LVZ MLR MLR
comp=Z,4μm,15.0s,MS5.5
LVZ MLR MLR
comp=N,2μm,13.0s,MS5.4
LVZ MLR MLR
comp=E,3μm,13.0s,MS5.4
LVZ **Lovozero** **45.36 332**⇑ *i* P **P** **23 35 43.4 -0.1**
MZLS **Mizel** **45.65 268** P **P** **23 35 46.9 +0.5**
APA **Apatity** **45.78 331**⇓ *i* P **P** **23 35 46.6 -0.2**
APA *i* 23 35 59.6
APA e 23 37 32.0
APA *i* S **S** **23 42 32.0 +2.4**
APA *i* 23 42 51.0
APA *i* SS SS 23 45 50.0 +4.1
APA pmax pmax
comp=Z,1μm,6.0s
APA pmax pmax
comp=Z,130nm,1.3s,mb5.7
SVST **Sivas** **45.90 292** *i* P **P** **23 35 50.4 +2.3**
GZT **Gaziantep** **46.20 289** *i* P **P** **23 35 51.6 +1.1**
JOF **Joensuu** **46.28 325** ep **P** **23 35 51.2 +0.4**
comp=Z,141nm,0.9s,mb5.9
JOF **Joensuu** **46.28 325** eP **P** **23 35 51.2 +0.4**
JOF pmax pmax
comp=Z,141nm,0.9s,mb5.9
SIM **Simferopol'** **46.56 300***c* *i* P **P** **23 35 53.0 -0.2**
SIM e 23 37 43.0
SIM eS **S** **23 42 40.5 -0.5**
SIM eSS SS 23 45 47.0 -13
SIM pmax pmax
comp=Z,78nm,0.9s,mb5.6
HILS **Ha'il** **46.78 274** P **P** **23 35 56.1 +0.8**
PUL **Pulkovo** **46.79 321***de* P **P** **23 35 56.1 +1.3**
PUL e 23 37 43.5
PUL eS **S** **23 42 44.8 +0.6**
PUL e 23 45 47.6

PUL pmax pmax
comp=Z,270nm,0.9s,mb6.2
PUL pmax pmax
comp=N,350nm,0.8s
PUL pmax pmax
comp=E,240nm,0.8s
PUL smax
comp=Z,70nm,8.2s
PUL smax
comp=N,440nm,10.1s
PUL smax
comp=E,320nm,10.9s
PUL MLR MLR
comp=Z,3μm,12.0s,MS5.5
PUL MLR MLR
comp=E,3μm,13.0s
PUL **Pulkovo** **46.79 321**⇓ eP **P** **23 35 55.8 +1.0**
BOYT **Boyabat** **46.92 295** *i* P **P** **23 35 57.1 +0.9**
CTKT **Corum** **47.23 294** *i* P **P** **23 35 59.3 +0.7**
AFFS **'Afif** **47.45 269** P **P** **23 36 00.9 +0.3**
COBT **Iskenderun** **47.46 288** *i* P **P** **23 36 01.0 +0.4**
AVNT **Avonos** **47.76 292** *i* P **P** **23 36 02.8 0.0**
BALT **Daday** **47.98 296** *i* P **P** **23 36 05.1 +0.6**
BILL **Bilibino** **48.26 28** eP **P** **23 36 06.7 +0.4**
BILL pmax pmax
comp=Z,17nm,0.5s,mb5.3
BILL **Bilibino** **48.26 28**⇑ *i* P **P** **23 36 06.4 +0.1**
comp=Z,17nm,0.5s,mb5.3
BILL ePP PP 23 38 01.4 +3.1
ELDT **Eldivan** **48.26 294** *i* P **P** **23 36 07.3 +0.6**
KEV **Kevo** **48.33 334** ep **P** **23 36 06.7 -0.1**
comp=Z,1.5nm,0.3s,mb4.5
BRTR **Keskin Array B** **48.35 293** P **P** **23 36 07.6 +0.2**
comp=Z,28nm,0.8s,mb5.4,baz=95,slow=6.2,SNR=93
BRTR LR LR 23 59 29.0
comp=Z,1μm,19.1s,MS4.8,baz=20,slow=40
AKASG **Malin Array Be** **48.52 308** P **P** **23 36 08.1 -0.5**
comp=Z,28nm,0.6s,mb5.5,baz=68,slow=6.9,SNR=157
AKASG PcP PcP 23 37 35.4 +0.6
comp=Z,2.7nm,0.7s,baz=65,slow=3.3,SNR=4.0
AKASG LR LR 23 56 55.4
comp=Z,1μm,21.3s,MS4.9,baz=65,slow=36
QURS **Qurayyt al Mil** **48.58 281** P **P** **23 36 10.7 +1.4**
ASF **Jabal al Asfar** **48.60 282** P **P** **23 36 12.4 +3.0**
comp=Z,37nm,1.0s,mb5.4,baz=322,slow=2.4,SNR=22
ASF LR LR 00 00 41.5
comp=Z,1μm,18.5s,MS4.9,baz=108,slow=41
KAF **Kangasniemi** **48.62 324** ep **P** **23 36 08.9 -0.2**
comp=Z,154nm,1.5s,mb5.8,baz=87,slow=7.3
KAF **Kangasniemi** **48.62 324** eP **P** **23 36 08.9 -0.2**
KAF pmax pmax
comp=Z,155nm,1.5s,mb5.8
MNK **Minsk** **48.67 314**⇑ eP **P** **23 36 10.0 +0.3**
MNK e 23 38 05.0
MNK eS **S** **23 43 13.0 +2.2**
MNK pmax pmax
comp=E,410nm,1.0s
MNK pmax pmax
comp=Z,430nm,1.0s,mb6.4
MNK MLR MLR
comp=Z,5μm,16.0s,MS5.6
FINES **FINESS Array B** **48.77 323** P **P** **23 36 10.2 -0.1**
comp=Z,59nm,0.8s,mb5.7,baz=90,slow=5.7,SNR=108
FINES PcP PcP 23 37 35.1 -0.5
comp=Z,8.5nm,0.7s,baz=90,slow=4.2,SNR=3.3
FINES LR LR 23 57 00.5
comp=Z,1μm,18.4s,MS5.0,baz=88,slow=36
FINES **FINESS Array B** **48.77 323** P **P** **23 36 10.2 -0.1**
FINES 23 37 35.1
FINES pmax pmax
comp=Z,59nm,0.8s
FINES MLR MLR
comp=Z,1μm,18.4s
FINES **FINESS Array B** **48.77 323** P **P** **23 36 10.2 -0.1**
FINES PcP PcP 23 37 35.1 -0.5
FINES LR LR 23 57 00.5
ARCES **ARCESS Array B** **48.84 334** P **P** **23 36 11.2 +0.5**
comp=Z,35nm,0.8s,mb5.4,baz=90,slow=7.3,SNR=46
ARCES PcP PcP 23 37 34.9 -0.9
comp=Z,6.8nm,0.5s,baz=93,slow=3.1,SNR=9.6
ARCES LR LR 23 56 37.7
comp=Z,2μm,18.6s,MS5.1,baz=98,slow=36
ARCES **ARCESS Array B** **48.84 334** P **P** **23 36 11.3 +0.5**
ARCES 23 37 34.9
ARCES pmax pmax
comp=Z,35nm,0.9s
ARCES MLR MLR
comp=Z,2μm,18.7s
ARCES **ARCESS Array B** **48.84 334** P **P** **23 36 11.2 +0.5**
ARCES PcP PcP 23 37 34.9 -0.9
ARCES LR LR 23 56 37.7
ARE0 **ARCESS Array S** **48.84 334** eP **P** **23 36 11.6 +0.8**
GUMO **Guam** **48.97 106** PFAKE 23 36 20.0 +7.5
GUMO LR LR
comp=Z,773nm,21.0s,MS4.7
HRI **Mount Hermon** **49.06 284** P **P** **23 36 14.6 +1.6**
KSHT **Keshet** **49.12 284** P **P** **23 36 14.9 +1.5**
TATS **Tathlith** **49.34 264** P **P** **23 36 15.6 +0.3**
COCO **West Island** **49.43 180** PFAKE 23 36 30.0 +14
COCO LR LR
comp=Z,2μm,19.0s,MS5.1
KBRS **Khaybar** **49.53 274** P **P** **23 36 18.2 +1.6**
HNTI **Hanīta** **49.57 284** P **P** **23 36 18.0 +1.1**
HMDT **Nahal Hemdat** **49.63 283** P **P** **23 36 18.5 +1.2**
KIS **Kishinev** **49.63 304** eP **P** **23 36 17.0 -0.2**
KIS *i* 23 36 27.0
KIS e 23 38 11.0
KIS eS **S** **23 43 22.0 -2.3**
KIS ePS PS 23 43 34.0 +0.5
KIS eSS SS 23 46 48.0 -4.9
KIS eSSS SSS 23 48 18.0 -0.9
KIS pmax pmax
comp=Z,330nm,1.3s,mb6.2
KIS pmax pmax
comp=N,120nm,1.6s
KIS pmax pmax
comp=E,200nm,1.5s
KIS pmax pmax
comp=N,300nm,4.0s
KIS pmax pmax
comp=E,500nm,4.0s
KIS MLR MLR
comp=E,1μm,12.0s
KIS MLR MLR
comp=Z,2μm,14.0s,MS5.1
MMLI **Mount Malkishu** **49.63 283** P **P** **23 36 18.8 +1.4**
KTK1 **Kautokeino** **49.65 333**⇑ *i* P **P** **23 36 16.7 -0.3**
KTK1 AMb AMB 23 36 19.8
comp=Z,137nm,1.5s,mb5.8
HENT **Hendek** **49.98 295** *i* P **P** **23 36 19.2 -0.8**
DRGI **Dragot** **50.00 282** P **P** **23 36 21.4 +1.2**
SLTI **Sal'it** **50.01 283** P **P** **23 36 21.5 +1.2**
ESKT **Eskisehir** **50.45 294** *i* P **P** **23 36 23.3 -0.2**
TBKS **Tabuk** **50.55 278** P **P** **23 36 25.7 +1.3**
CFR **Carcaliu** **50.59 302**⇓ *i* P **P** **23 36 24.4 -0.1**
CFR **Carcaliu** **50.59 302**⇓ eP **P** **23 36 24.4 -0.1**
ZFRI **Zfri** **50.60 281** P **P** **23 36 26.0 +1.2**
BLJS **Baljurashi** **50.65 266** P **P** **23 36 26.1 +0.8**
MASH **Mash'abbe Sade** **50.72 282** P **P** **23 36 26.6 +0.9**
JMQS **Jabal Moqyreh** **50.78 279** P **P** **23 36 27.1 +0.9**
PRNI **Paran** **50.83 281** P **P** **23 36 27.6 +1.1**
PRNI **Paran** **50.83 281** ⇑P **P** **23 36 27.6 +1.1**
HARR **Harsova** **50.87 301**⇑ *i* P **P** **23 36 27.1 +0.5**
HARR **Harsova** **50.87 301** ⇓P **P** **23 36 27.4 +0.8**
SVTA **Shivta** **50.88 282** P **P** **23 36 27.7 +0.8**
PSN **Preselentsi** **51.00 300** P **P** **23 36 29.0 +1.4**
KZIT **Kziot** **51.06 282** P **P** **23 36 29.0 +0.7**
MBH **Mount Berech** **51.14 281** P **P** **23 36 29.8 +0.9**
TRO **Tromso** **51.15 334** eP **P** **23 36 28.2 -0.2**
KMTI **Karmit** **51.15 281** P **P** **23 36 29.8 +0.8**
EIL **Elat** **51.16 280** P **P** **23 36 29.8 +0.7**
EIL **Elat** **51.16 280** ⇑P **P** **23 36 29.8 +0.7**
ALWS **Ilw as Safayha** **51.23 280** P **P** **23 36 30.8 +1.2**
JMOS **Jabal al Moall** **51.26 280** P **P** **23 36 30.1 +0.3**
ISP **Isparta** **51.29 292**⇑ *i* P **P** **23 36 29.6 -0.3**
VRI **Vrincioaia** **51.33 303**⇓ *i* P **P** **23 36 31.5 +1.4**
VRI **Vrincioaia** **51.33 303**⇓ eP **P** **23 36 31.4 +1.2**
SUW **Suwalki** **51.45 314**⇑ eP **P** **23 36 30.5 -0.4**
comp=Z,300nm,1.2s,mb6.1
SUW ePP pP 23 36 33.0 -0.9
SUW ePcP PcP 23 37 44.5 -1.0
SUW ePP PP 23 38 29.9 +1.0
SUW eS **S** **23 43 48.7 -0.6**
SUW eSS 23 43 58.5

SUW	**Suwalki**	**51.45 314**	⇑	*eP*		**P**	**23 36 30.5**	**-0.4**
SUW				*e*			23 37 44.5	
SUW				*e*			23 38 29.9	
SUW				*eS*		**S**	**23 43 48.7**	**-0.6**
SUW				*e*			23 43 58.5	
HAQS	**Haql**	**51.45 280**		P		**P**	**23 36 31.7**	**+0.4**
AYUS	**'Aynunah**	**51.57 279**		P		**P**	**23 36 32.1**	**-0.1**
BDAS	**Al Bad'**	**51.60 279**		P		**P**	**23 36 32.2**	**-0.2**
SPB4	**Spitsbergen Ar**	**51.61 345**		*eP*		**P**	**23 36 32.6**	**+0.7**
ISR	**Istrita**	**51.68 302**	⇓	*iP*		**P**	**23 36 34.8**	**+2.0**
ISR	**Istrita**	**51.68 302**	⇓	P		**P**	**23 36 34.9**	**+2.2**
PRD	**Provadia**	**51.69 299**		*eP*		**P**	**23 36 34.0**	**+1.1**
TAYS	**Tayyib Ism**	**51.72 279**		P		**P**	**23 36 33.3**	**0.0**
MLR	**Muntele Rosu**	**51.97 303**	⇑	*iP*		**P**	**23 36 35.7**	**+0.7**
MLR	**Muntele Rosu**	**51.97 303**	⇑	*eP*		**P**	**23 36 35.5**	**+0.5**
LVV	**L'vov**	**51.97 308**		*eP*		**P**	**23 36 35.3**	**+0.4**
LVV				*eS*		**S**	**23 43 53.2**	**-3.4**
BUC1	**Bucharest**	**52.27 301**	⇑	*iP*		**P**	**23 36 38.7**	**+1.5**
BUC1	**Bucharest**	**52.27 301**	⇑	P		**P**	**23 36 38.7**	**+1.4**
DNZL	**Cakiroluk**	**52.42 292**		*i P*		**P**	**23 36 37.2**	**-1.3**
KBS	**Kingsbay**	**52.47 346**	⇑	*iP*		**P**	**23 36 37.9**	**-0.5**
KBS					AMb	AMB	23 36 40.4	
	comp=Z,51nm,1.2s,mb5.3							
KBS				*eP*		PP	23 38 37.6	-0.8
KBS				*eS*		**S**	**23 44 05.9**	**+2.8**
KBS				*eSS*		SS	23 47 41.7	+1.9
KBS					AMS	AMS	00 02 54.8	
	comp=Z,2µm,17.2s,MS5.1							
KBS	**Kingsbay**	**52.47 346**		P		**P**	**23 36 36.4**	**-2.0**
KBS					pmax	pmax		
	comp=Z,26nm,1.0s,mb5.1							
KBS					MLR	MLR		
	comp=Z,2µm,19.0s,MS5.2							
KBS	**Kingsbay**	**52.47 346**		*eP*		**P**	**23 36 36.3**	**-2.1**
	comp=Z,33nm,1.1s,mb5.2							
KBS					LR	LR		
	comp=Z,2µm,19.0s,MS5.2							
JMB	**Yambol**	**52.50 299**		P		**P**	**23 36 40.0**	**+1.0**
KWP	**Kalwaria**	**52.85 308**	⇑	*eP*		**P**	**23 36 41.7**	**+0.2**
	comp=Z,400nm,1.1s,mb6.3							
KWP				*epP*		pP	23 36 45.6	+1.0
KWP				*eS*		**S**	**23 44 12.3**	**+3.8**
KWP				*esS*			23 44 19.5	
KWP	**Kalwaria**	**52.85 308**	⇑	*eP*		**P**	**23 36 41.7**	**+0.2**
KWP				*eS*		**S**	**23 44 12.3**	**+3.8**
KWP				*e*			23 44 19.5	
PVL	**Pavlikeni**	**53.11 300**		*eP*		**P**	**23 36 36.0**	**-7.6**
WAR	**Warsaw**	**53.15 312**	⇑	*eP*		**P**	**23 36 43.8**	**+0.1**
	comp=Z,500nm,1.6s,mb6.2							
WAR				*epP*		pP	23 36 47.3	+0.6
WAR				*ePP*		PP	23 38 44.5	-0.8
WAR				*eS*		**S**	**23 44 17.1**	**+4.6**
WAR				*esS*			23 44 23.7	
WAR	**Warsaw**	**53.15 312**	⇑	*eP*		**P**	**23 36 43.8**	**+0.1**
WAR				*e*			23 38 44.5	
WAR				*eS*		**S**	**23 44 17.1**	**+4.6**
WAR				*e*			23 44 23.7	
LOF	**Lofoten**	**53.27 332**		*eP*		**P**	**23 36 45.7**	**+1.3**
LOF					AMb	AMB	23 36 47.9	
	comp=Z,201nm,1.3s,mb5.9							
MOR8	**Moi Rana**	**53.27 330**		*eP*		**P**	**23 36 43.1**	**-1.4**
MOR8					AMb	AMB	23 36 44.7	
	comp=Z,140nm,1.1s,mb5.8							
ALN	**Alexandroupoli**	**53.42 297**		*eP*		**P**	**23 36 45.2**	**-0.6**
KDAG	**Bornova**	**53.46 294**		*i P*		**P**	**23 36 45.6**	**-0.6**
FXI	**Attu Island--F**	**53.53 47**		*eP*		**P**	**23 36 46.4**	**-1.1**
KDZ	**Kurdzhali**	**53.59 298**		P		**P**	**23 36 48.0**	**+0.9**
BDRM	**Kayabasi**	**53.84 292**		*i P*		**P**	**23 36 48.8**	**-0.2**
CRVS	**Cervenica-Dubn**	**53.84 308**		*eP*		**P**	**23 36 48.8**	**0.0**
CRVS				*e*			23 37 05.4	
CRVS				*e*			23 37 12.6	
RZN	**Rozhen**	**54.07 298**		P		**P**	**23 36 51.0**	**+0.4**
SMY	**Shemya**	**54.12 47**		PFAKE			23 37 00.0	+9.2
SMY					LR	LR		
	comp=Z,4µm,20.0s,MS5.5							
PGB	**Panagyurishte**	**54.15 300**		*eP*		**P**	**23 36 52.5**	**+1.4**
NIE	**Niedzica**	**54.40 309**	⇑	*eP*		**P**	**23 36 53.4**	**+0.5**
NIE				*ePcP*		pP	23 36 56.9	+1.0
LOS	**Limnos**	**54.46 296**		*eP*		**P**	**23 36 52.5**	**-1.0**
OJC	**Ojcow**	**54.47 310**		*eP*		**P**	**23 36 53.1**	**-0.3**
OJC				*epP*		pP	23 36 56.8	+0.4
OJC				*ePcP*		PcP	23 37 56.8	-0.1
OJC				*ePP*		PP	23 38 55.2	-2.0
OJC				*eS*		**S**	**23 44 28.3**	**-2.2**
OJC				*eSS*		SS	23 48 10.1	-2.5
OJC					MLR	MLR	00 00 28.5	
	comp=Z,4µm,18.9s,MS5.5							
OJC	**Ojcow**	**54.47 310**		*eP*		**P**	**23 36 53.1**	**-0.3**
OJC				*e*			23 37 56.8	
OJC				*e*			23 38 55.2	
OJC				*eS*		**S**	**23 44 28.3**	**-2.2**
OJC				*eSS*		SS	23 48 10.1	-2.5
OJC					MLR	MLR		
	comp=Z,4µm,18.9s,MS5.5							
KECS	**Kecovo**	**54.59 308**		*eP*		**P**	**23 36 55.3**	**+1.0**
NSS	**Namsos**	**54.64 328**		*eP*		**P**	**23 36 52.6**	**-1.9**
NSS				*eS*		**S**	**23 44 34.7**	**+2.2**
NSS					AMS	AMS	00 02 49.8	
	comp=Z,1µm,14.6s,MS5.2							
VTS	**Vitosha**	**54.79 300**		P		**P**	**23 36 56.0**	**+0.1**
MMB	**Musomiste**	**54.80 299**		P		**P**	**23 36 56.0**	**0.0**
SRS	**Serrai**	**55.07 298**		*eP*		**P**	**23 36 57.4**	**-0.6**
OUR	**Ouranopolis**	**55.09 297**		*eP*		**P**	**23 36 57.4**	**-0.7**
KKB	**Krupnik**	**55.15 299**		P		**P**	**23 36 58.0**	**-0.5**
PSZ	**Piszkesteto**	**55.15 307**		*ePc*			23 36 58.8	
PSZ	**Piszkesteto**	**55.15 307**		P		**P**	**23 36 58.6**	**+0.2**
PSZ					pmax	pmax		
	comp=Z,52nm,1.2s,mb5.4							
PSZ	**Piszkesteto**	**55.15 307**		*eP*		**P**	**23 36 58.5**	**+0.1**
	comp=Z,43nm,1.1s,mb5.4							
BOLS	**Boljevac**	**55.20 302**	⇑	*iP*		**P**	**23 36 57.9**	**-1.0**
SOH	**Sokhos**	**55.35 298**		*eP*		**P**	**23 36 58.8**	**-1.2**
PAIG	**Paliouri**	**55.46 297**		*eP*		**P**	**23 36 60.0**	**-0.8**
RAC	**Raciborz**	**55.49 310**		*eP*		**P**	**23 37 01.3**	**+0.4**
RAC				*ePP*		PP	23 39 05.5	-0.9
RAC				*eS*		**S**	**23 44 42.0**	**-2.1**
RAC					LMN		23 57 40.8	
	comp=Z,10µm,21.5s							
RAC					LME		23 57 42.5	
	comp=Z,4µm,23.1s							
RAC					MLR	MLR	00 01 18.9	
	comp=Z,5µm,17.4s,MS5.7							
KNT	**Kendrikon**	**55.54 298**		*eP*		**P**	**23 37 00.3**	**-1.0**
TRON	**Trondheim**	**55.57 327**		*eP*		**P**	**23 37 01.7**	**+0.5**
OKC	**Ostrava-Krasne**	**55.60 310**	⇑	*iP*		**P**	**23 37 01.3**	**-0.4**
OKC				*eS*		**S**	**23 44 48.2**	**+2.6**
VYHS	**Vyhne**	**55.62 308**		*i P*		**P**	**23 37 02.4**	**+0.6**
VYHS				*e*			23 37 12.5	
VYHS				*e*			23 38 03.2	
VYHS				*e*			23 39 04.3	
VYHS				*eS*		**S**	**23 44 46.7**	**+0.8**
VYHS	**Vyhne**	**55.62 308**		*i P*		**P**	**23 37 02.4**	**+0.6**
VYHS				*e*		pP	23 37 05.7	+0.8
VYHS				*e*			23 37 12.5	
VYHS				*e*			23 37 24.1	
VYHS				*ePcP*		PcP	23 38 03.2	+1.9
VYHS				*ePP*		PP	23 39 04.3	-3.3
VYHS				*eS*		**S**	**23 44 46.7**	**+0.8**
VYHS				*e*			23 45 25.1	
VYHS				*eScS*		ScS	23 46 53.8	+6.1
VYHS				*eSS*		SS	23 48 37.0	+6.0
VYHS				*e*			23 55 24.5	
VAY	**Valandovo**	**55.71 299**	⇑	*iP*		**P**	**23 37 01.9**	**-0.6**
BSD	**Bornholm Skovb**	**55.79 317**	⇑	*iP*		**P**	**23 37 01.8**	**-1.2**
	comp=Z,48nm,0.9s,mb5.5							
BSD				*i* S		**S**	**23 44 49.5**	**+1.4**
BSD				*i*			23 49 15.4	
	comp=Z,3µm,18.0s							
BSD	**Bornholm Skovb**	**55.79 317**	⇑	*iP*		**P**	**23 37 01.8**	**-1.2**
BSD				*i* S		**S**	**23 44 49.5**	**+1.4**
BSD					pmax	pmax		
	comp=Z,48nm,0.9s,mb5.5							
BSD					MLR	MLR		
	comp=Z,3µm,18.0s,MS5.5							
KOLL	**Kolacno**	**55.86 308**		*eP*		**P**	**23 37 04.0**	**+0.4**
KOLL				*epP*		pP	23 37 07.8	+1.2
NB2	**NORSAR Subarra**	**55.90 324**		P		**P**	**23 37 02.7**	**-0.9**
	comp=Z,73nm,1.0s,mb5.7,baz=71,slow=7.0							
NB2	**NORSAR Subarra**	**55.90 324**		P		**P**	**23 37 02.7**	**-0.9**
	baz=71,slow=7.4							
NOA	**NORSAR Array B**	**55.90 324**		P		**P**	**23 37 02.6**	**-1.0**
	comp=Z,45nm,0.9s,mb5.5,baz=74,slow=7.2,SNR=79							
NOA					LR	LR	00 02 20.1	
	comp=Z,1µm,19.3s,MS5.1,baz=65,slow=38							
NOA	**NORSAR Array B**	**55.90 324**		P		**P**	**23 37 02.6**	**-1.0**
NOA					pmax	pmax		
	comp=Z,45nm,0.9s							
NOA					MLR	MLR		
	comp=Z,1µm,19.3s							
GRG	**Griva**	**55.96 298**		*eP*		**P**	**23 37 02.8**	**-1.6**
MORC	**Moravsky Berou**	**55.99 310**		*eP*		**P**	**23 37 04.4**	**-0.1**
	comp=Z,54nm,0.9s,mb5.6							
GRUS	**Gruza**	**56.02 302**	⇓	*iP*		**P**	**23 37 04.5**	**-0.2**
XOR	**Xorichti**	**56.02 296**		*eP*		**P**	**23 37 04.1**	**-0.8**
NAO01	**NORSAR Array S**	**56.11 324**		*eP*		**P**	**23 37 04.4**	**-0.7**
	comp=Z,60nm,1.0s,mb5.6							
SRO	**Srobarova**	**56.18 307**		*eP*		**P**	**23 37 07.5**	**+1.6**
LIT	**Litokhoron**	**56.23 297**		*eP*		**P**	**23 37 04.9**	**-1.4**
SKO	**Skopje**	**56.24 300**	⇑	*iP*		**P**	**23 37 06.4**	**0.0**
KSP	**Ksiaz**	**56.38 311**	⇑	*eP*		**P**	**23 37 07.3**	**0.0**
	comp=Z,900nm,4.0s							
KSP				*epP*		pP	23 37 11.0	+0.6
KSP				*ePcP*		PcP	23 38 03.4	-0.9
KSP				*ePP*		PP	23 39 14.4	0.0
KSP				*eS*		**S**	**23 45 02.2**	**+6.2**
KSP				*esS*			23 45 06.2	
KSP	**Ksiaz**	**56.38 311**	⇑	*eP*		**P**	**23 37 07.1**	**-0.2**
KSP				*e*			23 38 03.7	
KSP				*eS*		**S**	**23 44 56.5**	**+0.5**
KSP				*e*			23 46 55.0	
KSP				*eSS*		SS	23 48 41.0	-2.6
KSP					MLR	MLR		
	comp=N,14µm,24.3s							
KSP					MLR	MLR		
	comp=Z,8µm,18.4s							
KSP	**Ksiaz**	**56.38 311**	⇑	*eP*		**P**	**23 37 07.1**	**-0.2**
KSP				*epP*		pP	23 37 11.5	+1.1
KSP				*ePcP*		PcP	23 38 03.7	-0.6
KSP				*eS*		**S**	**23 44 56.5**	**+0.5**
KSP				*eScS*		ScS	23 46 55.0	+1.9
KSP				*eSS*		SS	23 48 41.0	-2.6
KSP					LR	LR		
	comp=Z,8µm,18.4s,MS5.8							
DIVS	**Divcibare**	**56.43 303**	⇓	*iP*		**P**	**23 37 07.0**	**-0.7**
IDI	**Anoyia**	**56.45 291**		P		**P**	**23 37 06.9**	**-1.1**
	comp=Z,27nm,0.6s,mb5.5,baz=32,slow=7.1,SNR=21							
OSL	**Oslo**	**56.46 323**		*eP*		**P**	**23 37 07.0**	**-0.7**
DPC	**Dobruska-Polom**	**56.53 311**	⇑	*iP*		**P**	**23 37 08.7**	**+0.3**
DPC				*eS*		**S**	**23 45 04.4**	**+6.4**
DPC				*L*			00 01 50.0	
	comp=Z,4.7nm,16.5s							
DOMB	**Dombas**	**56.58 326**		*eP*		**P**	**23 37 07.9**	**-0.7**
DOMB					AMb	AMB	23 37 09.6	
	comp=Z,89nm,1.2s,mb5.7							
UPC	**Upice**	**56.67 311**	⇑	*iP*		**P**	**23 37 09.4**	**+0.1**
FNA	**Florina**	**56.75 299**		*eP*		**P**	**23 37 08.2**	**-1.8**
AGG	**Agios Georgios**	**56.77 296**		*eP*		**P**	**23 37 08.6**	**-1.7**
ZST	**Bratislava**	**56.81 308**		*i P*		**P**	**23 37 11.6**	**+1.2**
ZST				*e*			23 37 21.5	
ZST				*eS*		**S**	**23 45 04.4**	**+2.7**
ZST				*eSS*		SS	23 48 46.6	-4.3
ZST	**Bratislava**	**56.81 308**		*i P*		**P**	**23 37 11.6**	**+1.2**
ZST				*e*		pP	23 37 14.0	+0.5
ZST				*e*			23 37 21.5	
ZST				*eS*		**S**	**23 45 04.4**	**+2.7**
ZST				*eSS*		SS	23 48 46.6	-4.3
ZST				*e*			23 56 57.0	
COP	**Copenhagen**	**56.95 318**	⇑	*iP*		**P**	**23 37 11.3**	**0.0**
	comp=Z,39nm,0.9s,mb5.4							
COP				*i*			23 40 01.6	
COP				*i* S		**S**	**23 45 06.2**	**+2.8**
	comp=Z,1µm,17.0s							
COP	**Copenhagen**	**56.95 318**	⇑	*iP*		**P**	**23 37 11.3**	**0.0**
COP				*i* S		**S**	**23 45 06.2**	**+2.8**
COP					pmax	pmax		
	comp=Z,39nm,0.9s,mb5.4							
COP					MLR	MLR		
	comp=Z,1µm,17.0s,MS5.1							
IVA	**Berane**	**56.95 301**	⇑	*iP*		**P**	**23 37 11.6**	**+0.1**
PVY	**Plav**	**57.01 301**	⇑	*iP*		**P**	**23 37 12.1**	**+0.2**
MOL	**Molde**	**57.09 327**	⇑	*iP*		**P**	**23 37 13.0**	**+0.8**
MOL					AMb	AMB	23 37 15.3	
	comp=Z,192nm,1.6s,mb5.9							
KONO	**Kongsberg**	**57.09 323**		*eP*		**P**	**23 37 10.5**	**-1.7**
KONO					AMb	AMB	23 37 14.1	
	comp=Z,94nm,1.0s,mb5.8							
KONO				*eS*		**S**	**23 45 08.6**	**+3.4**
KONO					AMS	AMS	00 03 21.7	
	comp=Z,1µm,17.5s,MS5.1							
KONO	**Kongsberg**	**57.09 323**		*eP*		**P**	**23 37 11.3**	**-0.9**
KONO	**Kongsberg**	**57.09 323**		*eP*		**P**	**23 37 10.2**	**-2.0**
	comp=Z,70nm,1.0s,mb5.7							
KONO					LR	LR		
	comp=Z,1µm,20.0s,MS5.0							
PLE	**Pljevlja**	**57.12 302**	⇑	*iP*		**P**	**23 37 13.1**	**+0.4**
VKA	**Vienna**	**57.27 308**	⇑	*iP*		**P**	**23 37 13.7**	**0.0**
	comp=Z,746nm,4.0s							
RUE	**Ruedersdorf**	**57.29 314**	⇑	*eP*		**P**	**23 37 13.5**	**-0.3**
QSH	**Qafa e Shtames**	**57.48 300**		*i P*		**P**	**23 37 14.0**	**-1.2**
UPM	**Unac-Piva**	**57.49 302**	⇑	*iP*		**P**	**23 37 15.8**	**-0.5**
PVCC	**Panska Ves**	**57.52 311**	⇑	*iP*		**P**	**23 37 15.3**	**-0.1**
PVCC				*eS*		**S**	**23 45 14.9**	**+3.9**
PVCC					pmax	pmax		
	comp=Z,58nm,1.0s,mb5.6							
PVCC					MLR	MLR		
	comp=Z,4µm,14.2s,MS5.7							
PVCC	**Panska Ves**	**57.52 311**	⇑	*iP*		**P**	**23 37 15.3**	**-0.1**
	comp=Z,58nm,1.0s,mb5.6							
PVCC				*eS*		**S**	**23 45 14.9**	**+3.9**
PVCC					LR	LR		
	comp=Z,4µm,14.2s,MS5.7							
TTG	**Podgorica**	**57.56 301**	⇑	*iP*		**P**	**23 37 14.8**	**-1.0**
NKY	**Niksic**	**57.59 302**	⇑	*iP*		**P**	**23 37 14.5**	**-1.5**
PRU	**Pruhonice**	**57.73 311**	⇑	*iP*		**P**	**23 37 16.6**	**-0.3**
PRU				*eS*		**S**	**23 45 21.0**	**+7.2**
PRU					MLR	MLR		
	comp=Z,4µm,13.0s,MS5.7							
ULC	**Ulcinj**	**57.75 301**	⇑	*iP*		**P**	**23 37 16.2**	**-0.9**
BRG	**Berggiesshubel**	**57.77 312**		*i P*		**P**	**23 37 17.4**	**+0.3**
BRG				*i* S		**S**	**23 45 16.0**	**+1.7**
BRG				*i* SS		SS	23 49 11.0	+4.6
BRG					pmax	pmax		
	comp=Z,75nm,1.2s,mb5.6							
BRG					MLR	MLR		
	comp=N,7µm,24.7s,MS5.7							
BRG					MLR	MLR		
	comp=E,2µm,24.7s,MS5.7							
BRG					MLR	MLR		
	comp=Z,4µm,16.3s							
BRG	**Berggiesshubel**	**57.77 312**		*i P*		**P**	**23 37 17.4**	**+0.3**
	comp=Z,75nm,1.1s,mb5.6							
BRG				*i* S		**S**	**23 45 16.0**	**+1.7**
BRG				*i* SS		SS	23 49 11.0	+4.6
BRG					LR	LR		
	comp=Z,4µm,16.3s,MS5.6							
PRA	**Prague**	**57.77 311**	⇑	P		**P**	**23 37 16.0**	**-1.1**
PRA				*L*			00 03 00.0	
BUM	**Brajici-Budva**	**57.86 301**	⇑	*iP*		**P**	**23 37 17.8**	**0.0**
BRY	**Bratogost**	**57.86 302**	⇑	*iP*		**P**	**23 37 18.0**	**+0.2**
IGT	**Igoumenitsa**	**57.98 298**		*eP*		**P**	**23 37 16.6**	**-2.2**
HCY	**Herceg Novi**	**58.07 301**	⇑	*iP*		**P**	**23 37 19.4**	**+0.1**
ARSA	**Arzberg**	**58.15 308**	⇑	*iP*		**P**	**23 37 19.3**	**-0.5**
	comp=Z,256nm,3.6s							
CLL	**Collm**	**58.16 313**	⇑	P		**P**	**23 37 19.5**	**-0.3**
	comp=Z,logA/T=1.8,mb5.6							
CLL				*i* *PP		pP	23 37 23.1	+0.2
CLL				*i*			23 37 26.7	
CLL				*ePCP		PcP	23 38 17.0	+5.8
CLL				*ePPP		PPP	23 40 45.0	-8.0
CLL				*eS*		**S**	**23 45 23.0**	**+3.5**
CLL				*ePS*		PS	23 45 38.0	+4.1
CLL				*eSCS*		ScS	23 47 08.0	+2.0
CLL	**Collm**	**58.16 313**	⇑	*iP*		**P**	**23 37 19.5**	**-0.3**
CLL				*eS*		**S**	**23 45 23.0**	**+3.5**
CLL					pmax	pmax		
	comp=Z,75nm,1.1s,mb5.6							
CLL	**Collm**	**58.16 313**	⇑	*iP*		**P**	**23 37 19.5**	**-0.3**
	comp=Z,75nm,1.1s,mb5.6							
CLL				*i*		pP	23 37 23.1	+0.2
CLL				*eS*		**S**	**23 45 23.0**	**+3.5**
SiSC	**Sisak**	**58.29 305**		*i P*		**P**	**23 37 21.1**	**+0.3**
MUD	**Monsted U'grnd**	**58.40 319**	⇑	*iP*		**P**	**23 37 21.6**	**+0.2**
	comp=Z,71nm,1.0s,mb5.7							
MUD				*i*			23 40 43.0	
MUD				*i* S		**S**	**23 45 27.4**	**+4.9**
	comp=Z,2µm,18.0s							
MUD	**Monsted U'grnd**	**58.40 319**	⇑	*iP*		**P**	**23 37 21.6**	**+0.2**
MUD				*i* S		**S**	**23 45 27.4**	**+4.9**
MUD					pmax	pmax		
	comp=Z,71nm,1.0s,mb5.7							
MUD					MLR	MLR		
	comp=Z,2µm,18.0s,MS5.2							
GROS	**Grobnik**	**58.47 307**		*i P*		**P**	**23 37 21.6**	**-0.4**
KHC	**Kasperske Hory**	**58.64 310**	⇑	*iP*		**P**	**23 37 23.1**	**-0.1**
KHC				*eS*		**S**	**23 45 29.6**	**+3.9**
KHC				*L*			00 03 10.0	
	comp=Z,4.0nm,15.6s							
PERS	**Pernice**	**58.64 307**		*eP*		**P**	**23 37 22.7**	**-0.5**
PERS				*ePcP*		PcP	23 38 12.7	-0.4
PERS				*ePP*		PP	23 39 32.7	-2.1
GEC2	**GERESS Array S**	**58.67 310**		*eP*		**P**	**23 37 23.5**	**+0.1**
GEC2					pmax	pmax		
	comp=Z,47nm,1.2s,mb5.4							
GEC2	**GERESS Array S**	**58.67 310**		*eP*		**P**	**23 37 23.5**	**+0.1**
	comp=Z,47nm,1.2s,mb5.4							
GERES	**GERESS Array B**	**58.67 310**		P		**P**	**23 37 23.6**	**+0.1**
	comp=Z,15nm,0.8s,mb5.1,baz=68,slow=7.2,SNR=112							
GERES	**GERESS Array B**	**58.67 310**		P		**P**	**23 37 23.6**	**+0.2**
GERES					pmax	pmax		
	comp=Z,15nm,0.8s							
BLS5	**Blasjo**	**58.67 323**		*eP*		**P**	**23 37 24.0**	**+0.7**
BLS5					AMb	AMB	23 37 26.2	
	comp=Z,34nm,1.1s,mb5.3							
TNA	**Tin City**	**58.68 29**		*eP*		**P**	**23 37 23.2**	**0.0**
	comp=Z,197nm,2.1s,mb5.8							
MOA	**Molln**	**58.71 309**	⇑	*iP*		**P**	**23 37 23.8**	**+0.1**
	comp=Z,262nm,2.4s,mb5.8							
BSEG	**Bad Segeberg**	**58.72 316**		*eP*		**P**	**23 37 24.2**	**+0.5**
BSEG					pmax	pmax		
	comp=Z,97nm,1.1s,mb5.8							
BOJS	**Bojanci**	**59.00 306**		*i P*		**P**	**23 37 25.5**	**-0.3**
BOJS				*ePP*		PP	23 39 36.4	-1.6
OBKA	**Obir**	**59.05 307**	⇑	*iP*		**P**	**23 37 25.9**	**-0.2**
	comp=Z,233nm,2.4s,mb5.8							
WET	**Wettzell**	**59.05 310**		*eP*		**P**	**23 37 26.1**	**0.0**
WET					pmax	pmax		
	comp=Z,52nm,1.2s,mb5.4							
WET	**Wettzell**	**59.05 310**		*eP*		**P**	**23 37 26.1**	**0.0**
	comp=Z,52nm,1.2s,mb5.4							
DAG	**Danmarks Havn**	**59.22 346**	⇓	*iP*		**P**	**23 37 25.0**	**-1.9**
	comp=Z,10.0nm,0.9s,mb4.8							
	comp=Z,1µm,21.0s							
DAG	**Danmarks Havn**	**59.22 346**	⇓	*eP*		**P**	**23 37 25.0**	**-1.9**
DAG					pmax	pmax		
	comp=Z,10.0nm,0.9s,mb4.8							
DAG					MLR	MLR		
	comp=Z,1µm,21.0s,MS5.0							
DAG					MLR	MLR		
	comp=E,2µm,17.0s							
DAG	**Danmarks Havn**	**59.22 346**	⇓	*eP*		**P**	**23 37 25.0**	**-1.9**
	comp=E,10nm,0.9s,mb4.8							
DAG					LR	LR		
	comp=Z,1µm,21.0s,MS5.0							
MOX	**Moxa**	**59.23 312**	⇑	*iP*		**P**	**23 37 27.1**	**-0.2**
	comp=Z,logA/T=1.8,mb5.6							
MOX				*S*		**S**	**23 45 39.0**	**+5.6**
MOX				*L*			00 04 07.0	
MOX	**Moxa**	**59.23 312**		*eP*		**P**	**23 37 27.1**	**-0.2**
MOX					pmax	pmax		
	comp=Z,99nm,1.5s,mb5.6							
MOX					MLR	MLR		
	comp=Z,2µm,18.0s,MS5.3							
MOX	**Moxa**	**59.23 312**		*eP*		**P**	**23 37 27.1**	**-0.2**
	comp=Z,99nm,1.5s,mb5.6							
MOX					LR	LR		
	comp=Z,2µm,18.0s,MS5.3							
LJU	**Ljubljana**	**59.25 307**		*eP*		**P**	**23 37 26.7**	**-0.8**
LJU				*ePcP*		PcP	23 38 11.4	-4.1
LJU				*ePPP*		PP	23 39 37.1	-3.2
LJU				*eS*		**S**	**23 45 35.3**	**+1.5**
LJU				*eScS*		ScS	23 47 15.9	+1.9
CEY	**Cerknica**	**59.44 306**		*eP*		**P**	**23 37 28.1**	**-0.7**
CEY				*ePcP*		PcP	23 38 14.8	-1.5
CEY				*ePP*		PP	23 39 40.1	-1.9
CEY				*eS*		**S**	**23 45 37.8**	**+1.6**
KBA	**Koelnbreinsper**	**59.58 308**	⇑	*iP*		**P**	**23 37 29.8**	**0.0**
	comp=Z,214nm,2.2s,mb5.8							
BRT	**Bari-Castellan**	**59.60 300**		*eP*		**P**	**23 37 30.7**	**+0.7**
NVLJ	**Novalja**	**59.63 305**	⇑	*iP*		**P**	**23 37 28.7**	**-1.4**
VOY	**Vojsko**	**59

MTTG Motta San Giov 61.91 298 *eP* **P 23 37 45.1 -0.6**
ABH Alteburg 61.92 313⇑*eP* **P 23 37 45.6 -0.1**
ABH Alteburg 61.92 313 *eP* **P 23 37 45.9 +0.2**
SPAK Spaichingen 61.96 311 *eP* **P 23 37 45.5 -0.5**
SPAK Spaichingen 61.96 311 *eP* **P 23 37 45.6 -0.4**
PGD Poggio Sodo 61.97 305 *eP* **P 23 37 47.2 +1.1**
SAN1 Sandwick 61.99 326 *eP* **P 23 37 45.9 -0.1**
MNS Montasola 62.00 303 *eP* **P 23 37 45.6 -0.7**
WAL1 Walls 62.05 326⇑*eP* **P 23 37 46.6 +0.2**
VMG Vicchio 62.05 305 *eP* **P 23 37 47.9 +1.2**
SEI Scarperia 62.13 306 *eP* **P 23 37 48.8 +1.6**
BFO Black Forest 62.13 311 *eP* **P 23 37 46.7 -0.4**
BFO pmax pmax
comp=Z,58nm,1.1s,mb5.6
BFO Black Forest 62.13 311 *eP* **P 23 37 46.7 -0.4**
comp=Z,58nm,1.1s,mb5.6
LANF Langenberg 62.16 312 *eP* **P 23 37 46.9 -0.4**
ZCCA Zocca 62.24 306⇑*iP* **P 23 37 49.3 +1.4**
RUP Ruppelstein 62.28 313⇑*eP* **P 23 37 47.9 -0.2**
RUP Ruppelstein 62.28 313 *eP* **P 23 37 48.2 +0.1**
CSNT Castellina Chi 62.43 305 *eP* **P 23 37 48.3 -0.9**
HGN Heimansgroeve 62.47 314⇑*eP* **P 23 37 49.1 -0.2**
comp=Z,26nm,1.2s,mb5.2
GSCL Gusciola 62.49 306 *eP* **P 23 37 49.8 +0.3**
FELD Feldberg 62.53 311 *eP* **P 23 37 49.4 -0.3**
KIZ Kirchzarten 62.55 311 *eP* **P 23 37 49.2 -0.7**
ERBM Eremo 62.57 306 *eP* **P 23 37 51.2 +1.1**
BDI Bagni Di Lucca 62.62 306 *eP* **P 23 37 50.1 -0.2**
LIBD Limburg 62.65 311 *eP* **P 23 37 50.4 -0.1**
WLS Welschbruch 62.68 311 *eP* **P 23 37 50.4 -0.3**
SARO Sassorosso 62.69 306 P **P 23 37 49.8 -1.1**
VLC Villacollemand 62.71 306⇑*eP* **P 23 37 50.7 -0.3**
VALM 62.71 306 P **P 23 37 49.3 -1.7**
CDF Champ du Feu 62.73 311⇑*iP* **P 23 37 50.7 -0.3**
comp=Z,84nm,1.1s,mb5.5
MAIM 62.75 306 P **P 23 37 49.8 -1.5**
GRAM 62.76 307 P **P 23 37 48.3 -3.1**
GRFL Gerfalco 62.78 305 *eP* **P 23 37 50.9 -0.6**
PII Pisa 62.81 306 *eP* **P 23 37 51.0 -0.7**
WLF Walferdange 62.83 313 P **P 23 37 52.1 +0.4**
WLF pmax pmax
comp=Z,84nm,1.0s,mb5.8
WLF Walferdange 62.83 313 *eP* **P 23 37 52.2 +0.5**
comp=Z,147nm,1.3s,mb6.0
BACM 62.85 306 P **P 23 37 52.3 +0.3**
VINC Vinca 62.87 306 P **P 23 37 51.6 -0.4**
ECH Echery 62.89 311 *eP* **P 23 37 51.1 -1.0**
WAKE Wake Island 62.91 86 PFAKE 23 38 00.0 +7.4
WAKE LR LR
comp=Z,1μm,21.0s,MS5.1
VAI Varese 62.96 308 *eP* **P 23 37 51.2 -1.4**
BBS Basel-Blauen 63.01 310 *eP* **P 23 37 52.4 -0.5**
BOB Bobbio (Coli) 63.03 307 *eP* **P 23 37 53.4 +0.3**
MOF Molkenrain 63.06 311 *eP* **P 23 37 52.7 -0.6**
HINF Hinteralfeld 63.25 311⇑*iP* **P 23 37 54.0 -0.5**
comp=Z,38nm,0.8s,mb5.3
GIVF Givet 63.40 314⇑*iP* **P 23 37 55.4 0.0**
comp=Z,135nm,1.2s,mb5.7
MCGN Macugnaga 63.41 309 *eP* **P 23 37 55.6 0.0**
HAU Haudompre 63.47 311⇑*iP* **P 23 37 55.4 -0.5**
comp=Z,75nm,1.2s,mb5.4
HAU *eR*
comp=Z,3μm,20.5s
LOMF Lomont 63.48 311 *eP* **P 23 37 55.6 -0.4**
GENL Genova Univers 63.50 307 P **P 23 37 49.5 -6.6**
THEF They Montfort 63.58 312 *eP* **P 23 37 56.0 -0.6**
IMA Indian Mountai 63.63 25 P **P 23 37 56.8 +0.2**
IMA pmax pmax
comp=Z,87nm,0.7s,mb5.9
IMA Indian Mountai 63.63 25 *eP* **P 23 37 56.4 -0.2**
SCO Scoresbysund 63.69 341 *iP* **P 23 37 58.3 +1.3**
comp=Z,16nm,0.8s,mb5.1
SCO *i* 23 39 55.3
SCO Scoresbysund 63.69 341 *iP* **P 23 37 58.3 +1.3**
SCO pmax pmax
comp=Z,16nm,0.8s,mb5.1
PCP Pian Castagno 63.71 307 P **P 23 37 57.0 -0.5**
BAIF Baives 63.77 314⇑*iP* **P 23 37 58.0 +0.2**
comp=Z,72nm,0.9s,mb5.4
MEZF Maizieres J'vi 64.00 312⇑*iP* **P 23 37 59.4 0.0**
comp=Z,77nm,1.0s,mb5.4
OG01 Vacheresse 64.04 310 *eP* **P 23 37 59.3 -0.3**
FIN Finale Ligure 64.08 307 P **P 23 37 58.8 -1.1**
LSD Ceresole Reale 64.15 309 P **P 23 38 01.1 +0.7**
RORO 64.21 307 P **P 23 37 59.8 -1.0**
RSP Reno Superiore 64.23 308 P **P 23 37 59.5 -1.5**
ROB Roburent 64.25 307 P **P 23 37 58.8 -2.3**
CABF La Chapelle 64.27 310 *eP* **P 23 38 00.8 -0.4**
comp=Z,22nm,0.9s,mb4.9
PGF Pioggiola 64.35 305 *eP* **P 23 38 01.8 +0.1**
comp=Z,213nm,1.3s,mb5.7
RSL Roselend 64.37 309 *eP* **P 23 38 01.7 -0.2**
BHB Bricherasio 64.38 308 P **P 23 38 00.4 -1.5**
LPG La Plagne 64.39 309⇑*iP* **P 23 38 02.5 +0.6**
comp=Z,103nm,0.9s,mb5.6
LPL La Plagne 64.39 309⇑*iP* **P 23 38 02.4 +0.4**
comp=Z,91nm,0.9s,mb5.5
UNV Unalaska Valle 64.41 41 PFAKE 23 38 10.0 +8.1
UNV LR LR
comp=Z,5μm,20.0s,MS5.7
FENE Fenestrelle 64.41 308 P **P 23 38 00.5 -1.6**
IMI Imperia 64.42 307 *eP* **P 23 38 02.4 +0.2**
MONE Monesi 64.42 307 P **P 23 38 01.2 -1.0**
NEGI Negi 64.57 307 P **P 23 38 02.4 -0.8**
ENR Entracque 64.57 307 P **P 23 38 02.1 -1.0**
OG22 Abries 64.58 308 *eP* **P 23 38 02.6 -0.6**
SAOF Saorge 64.60 307 *eP* **P 23 38 03.4 +0.1**
STV2 Anna di Valdie 64.62 307 P **P 23 38 00.9 -2.6**
STV Sta Anna Valdi 64.62 307 P **P 23 38 02.6 -0.9**
PZZ Prazzo 64.64 308 P **P 23 38 01.7 -1.9**
RRL Cesana Torines 64.64 308 P **P 23 38 03.9 +0.3**
BNI Bardonecchia 64.64 308 P **P 23 38 03.4 -0.2**
BNI Bardonecchia 64.64 308 *eP* **P 23 38 03.5 -0.1**
SBF Sospel 64.73 307 *eP* **P 23 38 03.8 -0.4**
comp=Z,163nm,0.9s,mb5.8
MBDF Montbardon 64.74 308 *eP* **P 23 38 03.0 -1.2**
comp=Z,31nm,0.8s,mb5.1
TOUF Mont Tournerai 64.78 307 *eP* **P 23 38 04.6 +0.1**
AURF Auriere 64.79 307 *eP* **P 23 38 04.4 -0.2**
SURF Saint Ours 64.83 308 *eP* **P 23 38 04.5 -0.3**
MVIF Mont Vial 64.89 307 *eP* **P 23 38 05.0 -0.3**
CALN Calern 65.13 307 *eP* **P 23 38 06.4 -0.4**
GRN Grenoble 65.13 309 *eP* **P 23 38 07.1 +0.3**
ESK Eskdalemuir 65.17 322 P **P 23 38 06.1 -0.7**
ESK pmax pmax
comp=Z,61nm,1.2s,mb5.5
ESK MLR MLR
comp=Z,2μm,21.0s,MS5.2
ESK Eskdalemuir 65.17 322 *eP* **P 23 38 05.8 -1.1**
comp=Z,60nm,1.2s,mb5.5
ESK LR LR
comp=Z,1μm,21.0s,MS5.2
ORIF Oris-en-Rattie 65.20 309⇑*iP* **P 23 38 07.1 -0.1**
comp=Z,82nm,1.0s,mb5.4
ORIF *eR*
comp=Z,3μm,19.8s
KSB Sheil Bridge 65.27 324 *eP* **P 23 38 06.8 -0.6**
LOR Lormes 65.30 312⇑*iP* **P 23 38 06.9 -0.9**
comp=Z,61nm,1.1s,mb5.2
LOR *eR*
comp=Z,2μm,18.0s
KPL Plockton 65.31 324 *eP* **P 23 38 08.7 +1.0**
FRF La Foret Royal 65.38 307⇑*iP* **P 23 38 07.9 -0.5**
comp=Z,57nm,1.2s,mb5.2
LMR La Mourre 65.58 307⇑*iP* **P 23 38 09.2 -0.4**
comp=Z,99nm,1.2s,mb5.4
KAR1 Arisaig 65.61 324⇑*eP* **P 23 38 09.7 +0.1**
SSF Saint Saulge 65.61 311⇑*iP* **P 23 38 09.2 -0.6**
comp=Z,61nm,1.2s,mb5.2
SMF Signal de Mont 65.61 311⇑*iP* **P 23 38 09.3 -0.5**
comp=Z,116nm,0.9s,mb5.6
SVW Sparrevohn 65.66 31 *eP* **P 23 38 10.3 +0.4**
KSK Scoval 65.72 325⇑*eP* **P 23 38 10.2 -0.2**
TAVF Tavernes 65.72 307 *eP* **P 23 38 10.4 -0.2**
OCF Saint Nazaire 65.73 308 *eP* **P 23 38 10.8 +0.2**
OG26 St.-Nazaire-De 65.73 308 *eP* **P 23 38 10.8 +0.2**
AVF Avril sur Loir 65.83 311⇑*iP* **P 23 38 10.7 -0.5**
comp=Z,144nm,1.2s,mb5.6
SMRF Simiane la Rot 65.85 308⇑*iP* **P 23 38 11.4 0.0**
comp=Z,54nm,1.3s,mb5.1
SUMG Summit 65.89 347 *eP* **P 23 38 10.7 -0.5**
VIVF Saint-Julien-l 65.98 309⇑*iP* **P 23 38 11.9 -0.3**
comp=Z,108nm,1.2s,mb5.4

PUYF Puyloubier 65.99 307 *eP* **P 23 38 12.3 0.0**
HYF Humbligny 66.02 312 *eP* **P 23 38 12.3 -0.1**
BERF Bertagne 66.11 307 *eP* **P 23 38 13.0 0.0**
TREF Trevaresse 66.15 307 *eP* **P 23 38 13.7 +0.4**
PRAF Pradon 66.19 308 *eP* **P 23 38 13.7 +0.1**
GELF Grande-Etoile 66.24 307 *eP* **P 23 38 13.7 -0.2**
BGF Bois d'Agland 66.25 311⇑*iP* **P 23 38 13.4 -0.5**
comp=Z,53nm,0.9s,mb5.3
COLF Collangettes 66.26 310 *eP* **P 23 38 13.6 -0.4**
AGO Saint Agoulin 66.33 311 *eP* **P 23 38 14.2 -0.2**
PMG Port Moresby 66.41 124 P **P 23 38 15.1 -0.3**
comp=Z,23nm,0.9s,mb5.2,baz=357,slow=8.1,SNR=7.1
PMG Port Moresby 66.41 124 P **P 23 38 15.1 -0.3**
PMG pmax pmax
comp=Z,23nm,1.0s
PMG Port Moresby 66.41 124 *eP* **P 23 38 15.0 -0.4**
comp=Z,66nm,1.3s,mb5.5
PMG LR LR
comp=Z,378nm,19.0s,MS4.6
HLM1 Long Mynd 66.44 319⇑*eP* **P 23 38 14.8 -0.2**
HLM1 AMB AMB 23 38 17.1
comp=Z,137nm,1.1s,mb5.9
HAE Alders End 66.51 318⇑*iP* **P 23 38 15.3 -0.1**
HAE AMB AMB 23 38 17.5
comp=Z,135nm,1.0s,mb5.9
PYM Petit Puy Mans 66.56 310 *eP* **P 23 38 16.1 +0.2**
SSP1 Stoney Pound 66.61 319⇑*eP* **P 23 38 15.8 -0.3**
MCK McKinley 66.64 26 P **P 23 38 16.5 +0.4**
MCK pmax pmax
comp=Z,9.0nm,0.6s,mb5.0
MCK MLR MLR
comp=Z,2μm,20.0s,MS5.2
MCK McKinley 66.64 26 *eP* **P 23 38 16.3 +0.2**
comp=Z,12nm,0.7s,mb5.0
MCK LR LR
comp=Z,2μm,20.0s,MS5.2
LBL Lubilhac 66.67 310 *eP* **P 23 38 16.3 -0.3**
ILAR Eielson Array 66.69 25 P **P 23 38 15.3 -1.1**
comp=Z,21nm,0.6s,mb5.3,baz=297,slow=5.3,SNR=180
ILAR PKP2bc 00 06 42.8
comp=Z,0.7nm,0.9s,baz=154,slow=2.2,SNR=5.4
ILAR LR LR 00 09 29.8
comp=Z,945nm,18.9s,MS5.0,baz=316,slow=38
ILAR Eielson Array 66.69 25 P **P 23 38 15.3 -1.1**
ILAR ⇑*e* 00 06 42.8
ILAR LR LR 00 09 29.8
TCF Toulx Ste Croi 66.77 311⇑*iP* **P 23 38 17.1 -0.1**
comp=Z,218nm,1.3s,mb5.7
MCH1 Michaelchurch 66.77 318⇑*iP* **P 23 38 16.9 -0.2**
KMBO Kilima Mbogo 66.84 249 P **P 23 38 19.0 +0.8**
comp=Z,13nm,0.9s,mb5.0,baz=44,slow=9.1,SNR=22
KMBO LR LR 00 08 35.8
comp=Z,531nm,20.0s,MS4.8,baz=46,slow=37
KMBO Kilima Mbogo 66.84 249⇑*eP* **P 23 38 18.4 +0.2**
comp=Z,13nm,1.0s,mb4.9
KMBO LR LR
comp=Z,431nm,21.0s,MS4.6
HTR Trewern Hill 66.87 319⇑*iP* **P 23 38 17.6 -0.1**
HTR AMB AMB 23 38 19.8
comp=Z,134nm,1.1s,mb5.9
VERF Verneugheol 66.88 311 *eP* **P 23 38 17.9 0.0**
LASF Ste Croix 66.88 308⇑*iP* **P 23 38 18.0 0.0**
comp=Z,126nm,1.2s,mb5.5
LDF La Druitiere 66.95 314⇑*iP* **P 23 38 17.9 -0.5**
comp=Z,86nm,0.9s,mb5.5
FLN La Foliniere 67.07 315⇑*iP* **P 23 38 18.7 -0.4**
comp=Z,109nm,1.2s,mb5.4
FLN *eR*
comp=Z,3μm,19.0s
RSO Redoubt South 67.18 30 *eP* **P 23 38 20.0 +0.4**
WRAB Tennant Creek 67.28 141⇑*eP* **P 23 38 20.0 -0.9**
comp=Z,66nm,0.9s,mb5.7
WRAB LR LR
comp=Z,810nm,22.0s,MS4.9
WRA Warramunga Arr 67.28 141 P **P 23 38 20.1 -0.9**
comp=Z,14nm,0.8s,mb5.1,baz=340,slow=6.5,SNR=55
WRA PKP2bc 00 06 48.9
comp=Z,2.9nm,1.0s,baz=140,slow=2.9,SNR=10
WRA Warramunga Arr 67.28 141 P **P 23 38 20.1 -0.8**
WRA pmax pmax
comp=Z,14nm,0.8s
WRA pmax pmax
comp=Z,3.0nm,1.0s
WRA Warramunga Arr 67.28 141 P **P 23 38 20.1 -0.9**
WRA ⇑*e* 00 06 48.9
WB2 Warramunga Arr 67.29 141⇑*iP* **P 23 38 20.0 -1.0**
GRR Gorron 67.48 314 *eP* **P 23 38 21.3 -0.4**
comp=Z,115nm,0.8s,mb5.7
CAF Calviac 67.55 310⇑*iP* **P 23 38 22.5 +0.3**
comp=Z,86nm,1.2s,mb5.4
RJF Les Rejaudoux 67.69 311 *eP* **P 23 38 23.4 +0.3**
comp=Z,170nm,1.3s,mb5.6
RJF *eR*
comp=Z,2μm,23.0s
DMUB Kingscourt 67.75 322 *eP* **P 23 38 22.9 -0.4**
FIB Fire Island 67.77 29 PFAKE 23 38 40.0 +17
FIB LR LR
comp=Z,6μm,19.0s,MS5.8
RES Resolute Bay 67.83 3 P **P 23 38 23.9 +0.4**
RES pmax pmax
comp=Z,26nm,1.2s,mb5.1
RES Resolute Bay 67.83 3 *eP* **P 23 38 23.1 -0.3**
comp=Z,33nm,1.3s,mb5.2
DLF Lyons Farm 67.89 321⇑*iP* **P 23 38 23.7 -0.5**
PMR Palmer 67.90 28 P **P 23 38 24.1 0.0**
PMR pmax pmax
comp=Z,33nm,1.0s,mb5.3
PMR MLR MLR
comp=Z,2μm,19.0s,MS5.4
PMR Palmer 67.90 28 *eP* **P 23 38 24.0 -0.1**
comp=Z,18nm,0.7s,mb5.2
PMR LR LR
comp=Z,2μm,19.0s,MS5.4
PMS Palmer South 67.95 29 *eP* **P 23 38 23.7 -0.7**
MFF Saint Martin d 68.00 312⇑*iP* **P 23 38 24.8 -0.2**
comp=Z,79nm,0.9s,mb5.4
SML Sawmill 68.06 28 *eP* **P 23 38 22.4 -2.7**
SML Sawmill 68.06 28 *eP* **P 23 38 24.9 -0.2**
INK Inuvik 68.08 18 P **P 23 38 25.0 -0.1**
INK pmax pmax
comp=Z,57nm,0.7s
INK Inuvik 68.08 18 *eP* **P 23 38 25.0 -0.1**
comp=Z,52nm,0.6s,mb5.7
DCN Croghan 68.24 321⇑*iP* **P 23 38 26.1 -0.3**
MTLF Montolieu 68.28 308⇑*iP* **P 23 38 26.8 0.0**
comp=Z,42nm,1.1s,mb5.1
LRDF Laroque-de-Fa 68.28 308 *eP* **P 23 38 26.5 -0.3**
LCHF La Chataignera 68.32 313 *eP* **P 23 38 25.3 -1.7**
EJON La Jonquera 68.32 307 P **P 23 38 25.2 -1.9**
comp=Z,6.9nm,0.9s,mb4.7
LFF La Frestale 68.35 311⇑*iP* **P 23 38 27.4 +0.2**
comp=Z,77nm,0.8s,mb5.5
SBD Saint Breward 68.43 318⇑*eP* **P 23 38 14.8 -13**
SBD AMB AMB 23 38 17.8
comp=Z,110nm,1.2s,mb5.8
FILF Fillols 68.47 308 *eP* **P 23 38 28.1 +0.1**
TOA Tolsona 68.65 27 *eP* **P 23 38 29.8 +1.0**
LPEF Le Peyrat 68.67 308 *eP* **P 23 38 29.3 +0.1**
LRYF La Roche-sur-Y 68.83 313 *eP* **P 23 38 30.3 +0.1**
KDAK Kodiak Island 68.86 32 *eP* **P 23 38 29.4 -0.7**
comp=Z,33nm,0.8s,mb5.3
KDAK LR LR
comp=Z,3μm,19.0s,MS5.6
ROSF Rostrenen 68.87 315⇑*iP* **P 23 38 30.5 +0.1**
comp=Z,202nm,1.3s,mb5.6
VALF Valcebollere 68.89 308 *eP* **P 23 38 30.8 +0.2**
QUIF Quistinic 69.04 315⇑*iP* **P 23 38 31.4 0.0**
comp=Z,83nm,0.9s,mb5.4
MLS Moulis 69.18 309 *eP* **P 23 38 32.1 -0.2**
EMIR Miracle 69.46 307 P **P 23 38 32.3 -1.8**
comp=Z,35nm,1.1s,mb5.2
DAWY Dawson 69.57 23 *eP* **P 23 38 34.1 -0.3**
EPF Esparros 69.61 309⇑*iP* **P 23 38 34.4 -0.6**
comp=Z,43nm,1.1s,mb5.0
RESF Ens 69.73 309 *eP* **P 23 38 36.3 +0.6**
EYAK Cordova Ski Ar 69.83 28 *eP* **P 23 38 36.5 +0.4**
VIEF Viey 69.88 309 *eP* **P 23 38 37.1 +0.5**
EPOB Poblet 70.05 307 P **P 23 38 37.3 -0.4**
comp=Z,19nm,0.9s,mb5.0
ETSF Etsaut 70.23 309 *eP* **P 23 38 39.4 +0.6**
comp=Z,81nm,1.1s,mb5.3
AS12 Alice Springs 70.24 144 *eP* **P 23 38 38.4 -0.7**
comp=Z,29nm,1.0s,mb5.2
ASAR Alice Springs 70.24 144 P **P 23 38 38.5 -0.6**
comp=Z,12nm,0.8s,mb4.9,baz=331,slow=6.2,SNR=63
ASAR PKP2bc 00 06 41.1
comp=Z,0.8nm,0.8s,baz=141,slow=3.6,SNR=5.4
ASAR Alice Springs 70.24 144 P **P 23 38 38.5 -0.6**
ASAR ⇑*e* 00 06 41.1
VAL Valentia 70.53 321 *eP* **P 23 38 40.2 -0.2**
EALK Alkurruntz 70.64 310 P **P 23 38 39.4 -1.9**
comp=Z,17nm,1.2s,mb4.9
EBR Ebro Roquetas 70.70 307 *eP* **P 23 38 42.5 +0.8**
ESAC San Caprasio 70.82 308 P **P 23 38 40.7 -1.6**
comp=Z,41nm,0.9s,mb5.4
EIBI Ibiza 71.14 305 P **P 23 38 42.3 -2.1**
comp=Z,34nm,1.1s,mb5.2
MUN Mundaring 71.51 163 *eP* **P 23 38 46.4 -0.3**
comp=Z,29nm,1.0s,mb5.2
KLBR Kellerberrin 71.52 161 *eP* **P 23 38 46.8 0.0**
comp=Z,29nm,0.8s,mb5.3
EMOS Mosqueruela 71.57 307 P **P 23 38 45.3 -1.6**
comp=Z,33nm,0.8s,mb5.3
ELAN Lanestosa 71.80 311 P **P 23 38 46.9 -1.3**
comp=Z,30nm,1.0s,mb5.2
ETOR Torete 72.31 308 P **P 23 38 51.1 -0.2**
comp=Z,10nm,0.9s,mb4.8
NWAO Narrogin (SRO) 72.66 162 P **P 23 38 54.6 +1.1**
comp=Z,22nm,0.8s,mb5.1,baz=3.1,slow=12,SNR=7.1
NWAO Narrogin (SRO) 72.66 162 P **P 23 38 54.6 +1.1**
NWAO LR LR
comp=Z,1μm,21.0s,MS5.2
EARI Arriondas 72.82 312 P **P 23 38 54.4 +0.2**
comp=Z,14nm,0.9s,mb4.9
ETOB Tobarra 73.22 306 P **P 23 38 56.3 -0.4**
comp=Z,18nm,1.0s,mb5.0
EMUR La Murta 73.48 305 P **P 23 38 57.7 -0.6**
comp=Z,27nm,0.8s,mb5.2
GUD Guadarrama 73.72 309 P **P 23 38 59.6 0.0**
comp=Z,11nm,0.8s,mb4.8
EVIA Vianos 73.84 306 P **P 23 39 01.8 +1.5**
comp=Z,22nm,1.0s,mb5.0
CTA Charters Tower 73.92 132 *eP* **P 23 38 57.7 -3.4**
comp=Z,14nm,0.9s,mb4.9
CTA Charters Tower 73.92 132 P **P 23 39 01.5 +0.4**
comp=Z,17nm,0.8s,mb5.0,baz=326,slow=8.6,SNR=7.7
CTA Charters Tower 73.92 132 P **P 23 39 01.5 +0.4**
CTA pmax pmax
comp=Z,17nm,0.8s
CTAO Charters Tower 73.92 132 *eP* **P 23 38 57.8 -3.3**
CTAO pmax pmax
comp=Z,110nm,1.6s,mb5.5
CTAO Charters Tower 73.92 132 *eP* **P 23 38 58.9 -2.1**
comp=Z,129nm,1.7s,mb5.6
CTAO LR LR
comp=Z,686nm,19.0s,MS5.0
EPON Pontenova 73.95 312 P **P 23 39 01.1 +0.3**
comp=Z,25nm,1.0s,mb5.1
FORT Forrest 74.03 152 *eP* **P 23 39 01.0 -0.5**
comp=Z,92nm,1.7s,mb5.4
ESDC Sonseca Array 74.17 308 P **P 23 39 02.7 +0.5**
comp=Z,13nm,0.7s,mb5.0,baz=49,slow=5.8,SNR=46
ESDC PP PP 23 41 46.2 -3.4
comp=Z,4.0nm,1.0s,baz=50,slow=8.7,SNR=5.5
ESDC LR LR 00 13 28.0
comp=Z,691nm,18.2s,MS5.0,baz=30,slow=37
ESDC Sonseca Array 74.17 308 P **P 23 39 01.7 -0.4**
comp=Z,18nm,0.8s,mb5.1
ESLA Sonseca Array 74.17 308 *eP* **P 23 39 02.7 +0.5**
comp=Z,5.6nm,0.9s,mb4.5
ESLA LR LR
comp=Z,5μm,19.0s,MS5.8
EHUE Huescar 74.37 306 P **P 23 39 03.5 +0.2**
comp=Z,8.7nm,1.0s,mb4.6
EINC Incio 74.47 312 P **P 23 39 04.7 +0.8**
comp=Z,27nm,0.9s,mb5.2
ERUA La Rua 74.50 312 P **P 23 39 05.3 +1.3**
comp=Z,10nm,0.9s,mb4.8
ECAL Calabor 74.53 311 P **P 23 39 04.5 +0.2**
comp=Z,23nm,0.8s,mb5.2
PBRG Braganca 74.62 311 *eP* **P 23 39 06.0 +1.3**
comp=Z,51nm,1.4s,mb5.3
EQES Quesada 74.69 306 P **P 23 39 06.0 +0.8**
comp=Z,27nm,0.8s,mb5.2
EBAN Banos Encina 74.94 307 P **P 23 39 07.1 +0.4**
comp=Z,8.7nm,0.6s,mb4.9
EBER Berja 75.10 305 P **P 23 39 08.5 +0.9**
comp=Z,28nm,0.9s,mb5.2
EMAZ Mazaricos 75.25 313 P **P 23 39 08.4 +0.1**
ECOG Cogollos-Vega 75.31 306 P **P 23 39 09.0 +0.2**
comp=Z,6.7nm,0.8s,mb4.6
ELOB Lobios 75.37 312 P **P 23 39 09.1 +0.1**
comp=Z,27nm,0.8s,mb5.2
EADA Adamuz 75.44 307 P **P 23 39 09.8 +0.2**
comp=Z,8.4nm,0.8s,mb4.7
ELUQ Luque 75.60 306 P **P 23 39 11.1 +0.7**
comp=Z,29nm,0.8s,mb5.2
ERON Agron 75.62 306 P **P 23 39 10.0 -0.6**
comp=Z,7.2nm,0.6s,mb4.8
ELOJ Sierra Loja 75.77 306 P **P 23 39 11.6 +0.1**
comp=Z,3.5nm,0.8s,mb4.3
MTE Manteigas 75.95 310 *eP* **P 23 39 13.4 +1.0**
comp=Z,75nm,1.2s,mb5.5
MTE *eS* S 23 48 57.6 +3.8
MTE *eSS* SS 23 53 50.4 +1.1
PVIS Viseu 75.97 311 *eP* **P 23 39 13.4 +0.9**
SIT Sitka 76.12 26 PFAKE 23 39 20.0 +7.0
SIT LR LR
comp=Z,3μm,19.0s,MS5.6
EBAD Badajoz 76.62 309 P **P 23 39 15.8 -0.4**
comp=Z,18nm,1.0s,mb5.0
ELIJ Sierra de Lija 76.69 306 P **P 23 39 16.1 -0.5**
comp=Z,10nm,0.8s,mb4.8
DLBC Dease Lake 76.79 23 *eP* **P 23 39 18.1 +1.4**
EMIN Mina Concepcio 77.00 308 P **P 23 39 17.9 -0.4**
comp=Z,30nm,0.9s,mb5.2
ESPR Espera 77.03 307 P **P 23 39 17.9 -0.6**
comp=Z,16nm,0.9s,mb5.0
YKW3 Yellowknife Ar 77.16 14 *eP* **P 23 39 18.6 -0.1**
YKA Yellowknife Ar 77.22 14 P **P 23 39 18.8 -0.2**
comp=Z,9.4nm,0.6s,mb4.9,baz=327,slow=5.1,SNR=163
YKA PKKPbc 23 58 23.8
comp=Z,0.2nm,0.8s,baz=165,slow=2.0,SNR=4.2
YKA PKPPKP 00 06 32.4
comp=Z,0.1nm,0.4s,baz=148,slow=2.7,SNR=3.9
YKA LR LR 00 20 15.3
comp=Z,1μm,18.2s,MS5.2,baz=290,slow=41
YKA Yellowknife Ar 77.22 14 P **P 23 39 18.8 -0.2**
YKA PKKPbc 23 58 23.8
YKA P'P' 00 06 32.4
YKA LR LR 00 20 15.3
EVO Evora 77.37 309⇑*iP* **P 23 39 21.7 +1.3**
comp=Z,149nm,1.3s,mb5.5
EVO *eR*
comp=Z,1μm,20.2s
PBEJ Beja 77.59 308 *eP* **P 23 39 22.6 +1.0**
comp=Z,65nm,1.4s,mb5.4
EGRO El Granado 77.66 308 P **P 23 39 22.8 +0.9**
comp=Z,17nm,0.8s,mb5.0
PALC Alcoutim 77.69 308 *eP* **P 23 39 23.0 +0.9**
comp=Z,60nm,1.3s,mb5.4
STKA Stephens Creek 80.80 142⇑*iP* **P 23 39 38.8 -0.3**
comp=Z,18nm,0.8s,mb5.0
STKA Stephens Creek 80.80 142 P **P 23 39 38.9 -0.2**
comp=Z,21nm,0.8s,mb5.2,baz=324,slow=6.3,SNR=19
FCC Fort Churchill 83.67 6 *eP* **P 23 39 52.5 -0.8**
comp=Z,56nm,1.4s,mb5.5
ARMA Armidale 84.92 135⇑*iP* **P 23 40 01.4 +1.1**
FFC Flin Flon 86.75 11 P **P 23 40 08.6 -0.2**
FFC pmax pmax
comp=Z,23nm,0.9s,mb5.4
FFC Flin Flon 86.75 11 *eP* **P 23 40 08.7 -0.1**
comp=Z,21nm,0.8s,mb5.4
FFC LR LR
comp=Z,976nm,19.0s,MS5.2
SCHQ Schefferville 86.94 350 P **P 23 40 09.7 +0.1**
comp=Z,30nm,0.7s,mb5.6,baz=31,slow=5.1,SNR=43
SCHQ LR LR 00 18 54.7
comp=Z,703nm,20.6s,MS5.0,baz=18,slow=36
SCHQ Schefferville 86.94 350 *eP* **P 23 40 10.1 +0.4**
comp=Z,41nm,0.8s,mb5.7
SCHQ LR LR
comp=Z,1μm,22.0s,MS5.3
PGC Sidney 87.12 25 *eP* **P 23 40 12.6 +1.9**
comp=Z,86nm,0.8s,mb6.0
TOO Toolangi 87.28 143 *eP* **P 23 40 12.1 +0.4**
comp=Z,12nm,1.0s,mb5.1
OCWA Octopus Mounta 87.64 26 PFAKE 23 40 30.0 +17
OCWA LR LR
comp=Z,1μm,19.0s,MS5.3
RPW Rockport 87.94 24 P **P 23 40 16.0 +1.3**
JCW Jim Creek 88.03 25 P **P 23 40 16.6 +1.6**
GNW Green Mountain 88.27 25 *eP* **P 23 40 17.6 +1.4**

RMW	**Rattlesnake Mo**	**88.71**	**25**	P	**P**		**23**	**40**	**20.5 +2.2**
FMW	**Mount Fremont**	**89.21**	**25**	P	**P**		**23**	**40**	**22.5 +1.8**
LON	**Longmire**	**89.32**	**25**	P	**P**		**23**	**40**	**22.8 +1.5**
LON	**Longmire**	**89.32**	**25**	*e*P	**P**		**23**	**40**	**22.5 +1.2**
NEW	**Newport**	**89.48**	**22**	*e*P	**P**		**23**	**40**	**23.4 +1.4**
	comp=Z,29nm,0.7s,mb5.7								
NEW				LR	LR				
	comp=Z,838nm,19.0s,MS5.2								
ERK	**Elk Rock**	**89.53**	**26**	P	**P**		**23**	**40**	**24.6 +2.4**
WALA	**Waterton Lakes**	**89.65**	**20**	*e*P	**P**		**23**	**40**	**23.6 +0.8**
	comp=Z,51nm,1.4s,mb5.7								
WAH2	**Wahluke Slope**	**90.06**	**24**	P	**P**		**23**	**40**	**26.6 +1.9**
GBL	**Gable Mountain**	**90.24**	**24**	P	**P**		**23**	**40**	**27.6 +2.0**
HAWA	**Hanford**	**90.39**	**24**	*e*P	**P**		**23**	**40**	**27.9 +1.6**
	comp=Z,17nm,0.7s,mb5.5								
HAWA				LR	LR				
	comp=Z,1μm,19.0s,MS5.3								
COR	**Corvallis**	**90.67**	**27**	PFAKE			23	40	40.0 +12
COR				LR	LR				
	comp=Z,3μm,19.0s,MS5.8								
LBTB	**Lobatse**	**91.16**	**239**	P	**P**		**23**	**40**	**30.9 +0.6**
LBTB				pmax	pmax				
	comp=Z,6.0nm,1.1s,mb4.8								
LBTB	**Lobatse**	**91.16**	**239**	*e*P	**P**		**23**	**40**	**31.1 +0.8**
	comp=Z,3.5nm,0.9s,mb4.7								
LBTB				LR	LR				
	comp=Z,447nm,21.0s,MS4.9								
MSO	**Missoula**	**91.69**	**20**	*e*P	**P**		**23**	**40**	**32.9 +0.7**
	comp=Z,16nm,0.8s,mb5.4								
MSO				LR	LR				
	comp=Z,1μm,21.0s,MS5.4								
CHMT	**Chamberlain Mo**	**91.80**	**20**	*e*P	**P**		**23**	**40**	**33.7 +1.0**
ULM	**Lac du Bonnet**	**91.93**	**8**	P	**P**		**23**	**40**	**33.0 -0.2**
	comp=Z,9.7nm,0.8s,mb5.2,baz=347,slow=5.1,SNR=14								
ULM				LR	LR		00	24	12.6
	comp=Z,682nm,18.9s,MS5.1,baz=148,slow=37								
ULM	**Lac du Bonnet**	**91.93**	**8**	*e*P	**P**		**23**	**40**	**31.7 -1.5**
	comp=Z,15nm,0.8s,mb5.4								
ULM				LR	LR				
	comp=Z,1μm,20.0s,MS5.3								
HRY	**Holter Researc**	**92.36**	**19**	*e*P	**P**		**23**	**40**	**37.0 +1.6**
HUMO	**Hull Mountain**	**92.50**	**28**	*e*P	**P**		**23**	**40**	**38.9 +2.8**
LCCM	**Lewis and Clar**	**93.16**	**20**	P	**P**		**23**	**40**	**40.1 +1.1**
YBH	**Yreka Blue Hor**	**93.35**	**28**	PFAKE			23	40	50.0 +10
YBH				LR	LR				
	comp=Z,934nm,20.0s,MS5.2								
BOZ	**Bozeman (W)**	**93.40**	**19**	P	**P**		**23**	**40**	**41.3 +1.2**
BOZ				pmax	pmax				
	comp=Z,6.0nm,0.8s,mb5.1								
BOZ	**Bozeman (W)**	**93.40**	**19**	*e*P	**P**		**23**	**40**	**41.1 +1.0**
	comp=Z,5.5nm,0.7s,mb5.1								
BOZ				LR	LR				
	comp=Z,1μm,20.0s,MS5.4								
MCMT	**McKenzie Canyo**	**93.83**	**21**	*e*P	**P**		**23**	**40**	**43.8 +1.7**
MOD	**Modoc**	**94.08**	**27**	PFAKE			23	41	00.0 +17
MOD				LR	LR				
	comp=Z,902nm,20.0s,MS5.2								
WVOR	**Wild Horse Val**	**94.20**	**25**	*e*P	**P**		**23**	**40**	**46.0 +2.1**
WVOR				pmax	pmax				
	comp=Z,7.0nm,0.8s,mb5.1								
WVOR	**Wild Horse Val**	**94.20**	**25**	P	**P**		**23**	**40**	**44.8 +0.9**
	comp=Z,6.8nm,0.8s,mb5.1								
WVOR				LR	LR				
	comp=Z,1μm,19.0s,MS5.4								
QLMT	**Earthquake Lak**	**94.21**	**20**	*e*P	**P**		**23**	**40**	**45.7 +1.8**
WDC	**Whiskeytown Da**	**94.41**	**29**	PFAKE			23	41	00.0 +15
WDC				LR	LR				
	comp=Z,787nm,20.0s,MS5.2								
HLID	**Hailey**	**94.53**	**22**	*e*P	**P**		**23**	**40**	**46.9 +1.6**
	comp=Z,7.8nm,0.7s,mb5.2								
HLID				LR	LR				
	comp=Z,1μm,20.0s,MS5.4								
DBIC	**Dimbokro**	**95.00**	**282**	P	**P**		**23**	**40**	**48.6 +0.4**
	comp=Z,8.4nm,0.9s,mb5.2,baz=65,slow=2.3,SNR=6.8								
DBIC				LR	LR		00	30	41.1
	comp=Z,1μm,18.4s,MS5.3,baz=37,slow=40								
PQI	**Presque Isle**	**95.07**	**349**	PFAKE			23	41	00.0 +12
PQI				LR	LR				
	comp=Z,3μm,20.0s,MS5.8								
HOPS	**Hopland**	**95.56**	**30**	PFAKE			23	41	00.0 +10
HOPS				LR	LR				
	comp=Z,1μm,21.0s,MS5.4								
AHID	**Auburn Hatcher**	**96.22**	**20**	*e*P	**P**		**23**	**40**	**54.9 +1.8**
	comp=Z,4.6nm,0.6s,mb5.1								
AHID				LR	LR				
	comp=Z,1μm,20.0s,MS5.4								
BMN	**Battle Mountai**	**96.46**	**25**	PFAKE			23	41	10.0 +16
BMN				LR	LR				
	comp=Z,989nm,22.0s,MS5.2								
RSSD	**Black Hills**	**96.62**	**15**	P	**P**		**23**	**40**	**56.5 +1.6**
RSSD				pmax	pmax				
	comp=Z,17nm,0.7s,mb5.6								
RSSD	**Black Hills**	**96.62**	**15**	*e*P	**P**		**23**	**40**	**56.4 +1.5**
	comp=Z,17nm,0.7s,mb5.6								
RSSD				LR	LR				
	comp=Z,2μm,20.0s,MS5.5								
BW06	**Boulder Array**	**96.63**	**19**	PFAKE			23	41	10.0 +15
BW06				LR	LR				
	comp=Z,1μm,19.0s,MS5.4								
PDAR	**Pinedale Array**	**96.63**	**19**	P	**P**		**23**	**40**	**55.0 +0.1**
	comp=Z,2.0nm,0.8s,mb4.6,baz=23,slow=4.1,SNR=12								
PDAR				PP	PP		23	44	43.5 -8.5
	comp=Z,0.5nm,0.6s,baz=307,slow=7.4,SNR=3.8								
PDAR				PKiKP			23	45	33.8
	comp=Z,0.7nm,0.7s,slow=1.5,SNR=3.8								
PDAR				LR	LR		00	29	38.5
	comp=Z,1μm,18.4s,MS5.4,baz=232,slow=39								
EMMW	**East Machias**	**96.90**	**349**	PFAKE			23	41	10.0 +14
EMMW				LR	LR				
	comp=Z,3μm,19.0s,MS5.8								
HWUT	**Hardware Ranch**	**97.16**	**21**	*e*P	**P**		**23**	**41**	**00.2 +2.9**
	comp=Z,8.3nm,0.7s,mb5.3								
HWUT				LR	LR				
	comp=Z,971nm,19.0s,MS5.3								
WVL	**Waterville**	**97.37**	**350**	PFAKE			23	41	10.0 +12
WVL				LR	LR				
	comp=Z,3μm,20.0s,MS5.7								
CMB	**Columbia Colle**	**97.44**	**29**	PFAKE			23	41	10.0 +11
CMB				LR	LR				
	comp=Z,1μm,21.0s,MS5.4								
NVAR	**Mina Array Bea**	**97.87**	**27**	P	**P**		**23**	**41**	**02.5 +1.8**
	comp=Z,3.2nm,0.7s,mb5.0,baz=337,slow=2.6,SNR=8.0								
NVAR				LR	LR		00	31	26.3
	comp=Z,798nm,18.2s,MS5.2,baz=230,slow=39								
SAO	**San Andreas Ge**	**98.14**	**30**	PFAKE			23	41	10.0 +8.1
SAO				LR	LR				
	comp=Z,1μm,21.0s,MS5.4								
NCB	**Newcomb**	**98.48**	**353**	PFAKE			23	41	20.0 +17
NCB				LR	LR				
	comp=Z,469nm,20.0s,MS5.0								
TPH	**Tonopah**	**98.57**	**26**	PFAKE			23	41	20.0 +16
TPH				LR	LR				
	comp=Z,929nm,21.0s,MS5.3								
SUR	**Sutherland**	**99.10**	**236**	PFAKE			23	41	20.0 +14
SUR				LR	LR				
	comp=Z,2μm,19.0s,MS5.5								
HRV	**Harvard--Oak R**	**99.64**	**351**	PFAKE			23	41	20.0 +11
HRV				LR	LR				
	comp=Z,219nm,20.0s,MS4.7								
JFWS	**Jewell Farm**	**99.71**	**5**	PFAKE			23	41	20.0 +11
JFWS				LR	LR				
	comp=Z,1μm,22.0s,MS5.4								
WES	**Weston**	**99.73**	**351**	PFAKE			23	41	20.0 +11
WES				LR	LR				
	comp=Z,1μm,19.0s,MS5.3								
MVU	**Marysvale**	**99.83**	**23**	PFAKE			23	41	20.0 +10
MVU				LR	LR				
	comp=Z,795nm,20.0s,MS5.2								
DAC	**Darwin (Calif)**	**100.04**	**27**	PFAKE			23	41	20.0 +9.4
DAC				LR	LR				
	comp=Z,1μm,20.0s,MS5.3								
BINY	**Binghamton**	**100.39**	**354**	PFAKE			23	41	20.0 +8.0
BINY				LR	LR				
	comp=Z,452nm,21.0s,MS5.0								
ISCO	**Idaho Springs**	**100.40**	**17**	PFAKE			23	41	20.0 +7.8
ISCO				LR	LR				
	comp=Z,866nm,20.0s,MS5.3								
AAM	**Ann Arbor**	**100.57**	**0**	PFAKE			23	41	20.0 +7.2
AAM				LR	LR				
	comp=Z,922nm,20.0s,MS5.3								
ERPA	**Erie**	**100.69**	**357**	PFAKE			23	41	30.0 +17
ERPA				LR	LR				
	comp=Z,1μm,20.0s,MS5.5								
SSPA	**Standing Stone**	**102.07**	**356**	PFAKE			23	41	30.0 +10
SSPA				LR	LR				
	comp=Z,3μm,19.0s,MS5.9								
SDCO	**Great Sand Dun**	**102.38**	**18**	PFAKE			23	41	30.0 +8.9
SDCO				LR	LR				
	comp=Z,802nm,22.0s,MS5.2								
CBKS	**Cedar Bluff**	**102.57**	**13**	PFAKE			23	41	30.0 +8.1
CBKS				LR	LR				
	comp=Z,995nm,20.0s,MS5.3								
ACSO	**Alum Creek Sta**	**102.64**	**360**	PFAKE			23	41	30.0 +7.8
ACSO				LR	LR				
	comp=Z,1μm,21.0s,MS5.4								
PFO	**Pinyon Flat Ob**	**102.83**	**28**	PFAKE			23	41	40.0 +17
PFO				LR	LR				
	comp=Z,1μm,20.0s,MS5.5								
WUAZ	**Wupatki**	**102.84**	**23**	PFAKE			23	41	40.0 +17
WUAZ				LR	LR				
	comp=Z,1μm,19.0s,MS5.4								
CBN	**Corbin**	**104.46**	**355**	PFAKE			23	41	40.0 +10
CBN				LR	LR				
	comp=Z,1μm,20.0s,MS5.4								
CCM	**Cathedral Cave**	**104.46**	**6**	PFAKE			23	41	40.0 +10
CCM				LR	LR				
	comp=Z,877nm,19.0s,MS5.3								
WCI	**Wyandotte Cave**	**104.59**	**2**	PFAKE			23	41	40.0 +9.2
WCI				LR	LR				
	comp=Z,4μm,19.0s,MS6.0								
ANMO	**Albuquerque**	**104.79**	**19**	PFAKE			23	41	40.0 +8.2
ANMO				LR	LR				
	comp=Z,858nm,20.0s,MS5.3								
BLA	**Blacksburg**	**105.60**	**358**	PFAKE			23	46	00.0
BLA				LR	LR				
	comp=Z,2μm,21.0s,MS5.6								
TUC	**Tucson**	**105.98**	**24**	PFAKE			23	46	00.0
TUC				LR	LR				
	comp=Z,635nm,19.0s,MS5.2								
WVT	**Waverly**	**106.62**	**4**	PFAKE			23	46	00.0
WVT				LR	LR				
	comp=Z,963nm,19.0s,MS5.4								
WMOK	**Wichita Mounta**	**106.71**	**13**	PFAKE			23	46	00.0
WMOK				LR	LR				
	comp=Z,1μm,19.0s,MS5.4								
MIAR	**Mount Ida**	**107.69**	**9**	PFAKE			23	46	00.0
MIAR				LR	LR				
	comp=Z,1μm,20.0s,MS5.5								
PLAL	**Pickwick Lake**	**107.75**	**4**	PFAKE			23	46	00.0
PLAL				LR	LR				
	comp=Z,1μm,19.0s,MS5.4								
MAW	**Mawson**	**107.85**	**193**	PFAKE			23	46	00.0
MAW				LR	LR				
	comp=Z,454nm,19.0s,MS5.0								
MNTX	**Cornudas Mount**	**108.15**	**20**	PFAKE			23	46	10.0
MNTX				LR	LR				
	comp=Z,934nm,19.0s,MS5.4								
BBSR	**BB Station**	**108.33**	**343**	PFAKE			23	46	10.0
BBSR				LR	LR				
	comp=Z,2μm,19.0s,MS5.7								
LRAL	**Lakeview Retre**	**109.74**	**3**	PFAKE			23	46	10.0
LRAL				LR	LR				
	comp=Z,972nm,19.0s,MS5.4								
JCT	**Junction City**	**110.64**	**15**	PKIKP	PKPdf		23	45	59.1 -0.5
JCT	**Junction City**	**110.64**	**15**	PKP	PKPdf		23	45	59.9 +0.2
JCT				LR	LR				
	comp=Z,1μm,19.0s,MS5.4								
TXAR	**Lajitas Array**	**110.85**	**19**	PKiKP			23	45	59.5
	comp=Z,0.5nm,0.7s,baz=348,slow=1.3,SNR=4.8								
TXAR				PKiKPab			23	57	09.4
	comp=Z,1.0nm,1.1s,baz=124,slow=4.5,SNR=4.1								
HKT	**Hockley**	**111.89**	**12**	PFAKE			23	46	10.0 +8.1
HKT				LR	LR				
	comp=Z,2μm,19.0s,MS5.6								
SYO	**Syowa Base**	**114.18**	**199**	⇓pPdiff			23	42	19.5
DWPF	**Disney**	**114.70**	**358**	PFAKE			23	46	20.0 +12
DWPF				LR	LR				
	comp=Z,2μm,20.0s,MS5.6								
PPT	**Papeete**	**119.22**	**90**	*e*PP	PP		23	47	24.8 -14
PPT				*e*PS	PS		23	57	23.1 +0.6
PPT				*e*SS	SS		00	04	02.2 +5.7
PPT				*e*R			00	22	15.5
	comp=Z,407nm,22.2s								
VNDA	**Vanda**	**121.28**	**167**	PKP	PKPdf		23	46	16.1 -3.2
	comp=Z,1.3nm,1.0s,baz=330,slow=4.6,SNR=4.3								
VNDA	**Vanda**	**121.28**	**167**	PKP	PKPdf		23	46	16.1 -3.2
VNDA				LR	LR				
	comp=Z,246nm,20.0s,MS4.8								
TBI	**Tubuai**	**122.37**	**96**	*e*L			00	18	17.2
TBI				*e*R			00	24	34.7
	comp=Z,10.0nm,22.5s								
QSPA	**South Pole Qui**	**127.27**	**180**	*e*P	PKPdf		23	46	29.5 -1.1
VNA2	**Neumayer--Watz**	**129.48**	**204**		PKPdf		23	46	37.2 +2.1
VNA1	**Neumayer--Stat**	**129.77**	**205**	⇑*i*	PKPdf		23	46	37.0 +1.4
VNA3	**Neumayer Olymp**	**130.23**	**204**	⇑*i*	PKPdf		23	46	38.6 +2.1
SDV	**Santo Domingo**	**132.33**	**343**	PKP	PKPdf		23	46	39.5 -2.5
	comp=Z,16nm,0.9s,baz=325,slow=3.1,SNR=9.5								
SDV				SKPbc			23	50	05.7
	comp=Z,4.5nm,0.7s,baz=124,slow=21,SNR=12								
ROSC	**El Rosal**	**137.02**	**347**	PKP	PKPdf		23	46	50.0 -0.5
	comp=Z,22nm,0.8s,baz=25,slow=5.1,SNR=7.5								
BDFB	**Brasilia**	**141.92**	**295**	PKhKP			23	46	53.2
	comp=Z,3.9nm,0.9s,baz=101,slow=2.4,SNR=7.4								
OTAV	**Otavalo**	**142.17**	**352**	*e*PKPpre			23	46	53.0
OTAV				*e*PKPdf	PKPdf		23	46	59.9 0.0
LPAZ	**La Paz**	**154.93**	**323**	PKP	PKPdf		23	47	19.0 -0.9
	comp=Z,2.4nm,0.9s,baz=46,slow=4.4,SNR=9.3								
LPAZ				PKPbc	PKPdf		23	47	28.5 +8.6
	comp=Z,1.6nm,0.6s,baz=22,slow=2.4,SNR=6.8								
LPAZ				PKPab	PKPab		23	47	41.7 -1.8
	comp=Z,4.9nm,0.8s,baz=29,slow=4.3,SNR=8.8								
LPAZ	**La Paz**	**154.93**	**323**	*e*PKPdf	PKPdf		23	47	19.2 -0.7
LPAZ				LR	LR				
	comp=Z,291nm,22.0s,MS5.1								
CPUP	**Villa Florida**	**155.31**	**289**	PKP	PKPdf		23	47	18.0 -2.1
	comp=Z,2.8nm,0.8s,baz=109,slow=1.5,SNR=12								
CPUP	**Villa Florida**	**155.31**	**289**	*e*PKPdf	PKPdf		23	47	18.1 -2.0
CPUP				LR	LR				
	comp=Z,342nm,20.0s,MS5.2								
ARE	**Arequipa**	**156.55**	**330**	*e*P	PKPdf		23	47	25.0 +3.0
LVC	**Limon Verde**	**160.61**	**316**	PKP	PKPdf		23	47	27.1 +0.4
	comp=Z,8.8nm,1.1s,baz=18,slow=2.5,SNR=9.0								
LVC				PKPab	PKPab		23	48	08.7 +1.0
	comp=Z,13nm,0.8s,baz=28,slow=5.2,SNR=18								
LVC	**Limon Verde**	**160.61**	**316**	*e*PKPdf	PKPdf		23	47	27.7 +1.0
LVC				LR	LR				
	comp=Z,782nm,19.0s								

IDC 10 23:37:06.1±55.0, 17.59S×173.80W, mb4.0/3, mb1 4.2/3, mb1mx3.8/15, Error ellipse: s-maj=1042.0km s-min=193.8km az=81.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**42.65**	**242**	P	P	23 45 04.8	-1.3
	2.6nm,0.9s,baz=90,slow=9.1,SNR=3.3						
WRA	**Warramunga Arr**	**49.01**	**259**	P	P	23 45 54.8	-2.1
	0.6nm,0.3s,baz=97,slow=8.0,SNR=8.5						
ASAR	**Alice Springs**	**49.10**	**254**	P	P	23 45 55.5	-2.0
	1.0nm,0.4s,baz=87,slow=8.1,SNR=13						

*IDC **10** 23:49:09.4±5.0, 36.83N×96.73E, mb3.6/4, mb1 3.7/6, mb1mx3.5/21, ML3.7/2, Error ellipse: s-maj=107.0km s-min=45.2km az=179.0*

ISC 10 23:49:17.5±3.6, 37.6N±0.4×96.5E±0.2, h33km, n6, σ1§26/6, mb3.5/4, Qinghai

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SONM	**Songino Array**	**12.57**	**32**	Pn	**P**	**23 52 16.9**	**+0.2**
	0.3nm,0.3s,baz=222,slow=15,SNR=4.5						
MKAR	**Makanchi Array**	**13.98**	**316**	Pn	**P**	**23 52 34.2**	**-1.1**
	0.1nm,0.3s,baz=124,slow=16,SNR=4.7						
BVAR	**Borovoye Array**	**23.82**	**319**	P	**P**	**23 54 29.9**	**+1.8**
	0.8nm,0.8s,mb3.2,baz=106,slow=11,SNR=5.4						
FINES	**FINESS Array B**	**48.67**	**323**	P	**P**	**23 57 59.9**	**-0.1**
	0.9nm,0.9s,mb3.8,baz=90,slow=8.3,SNR=3.8						
NOA	**NORSAR Array B**	**55.80**	**324**	P	**P**	**23 58 53.3**	**0.0**
	1.2nm,1.0s,mb3.9,baz=47,slow=4.9,SNR=3.3						
YKA	**Yellowknife Ar**	**77.19**	**14**	P	**P**	**00 01 08.4**	**-0.7**
	0.1nm,0.4s,mb3.1,baz=336,slow=5.4,SNR=5.4						

*NAO **11** 00:50:46.4±8.1, 59.90N×5.49E, h6km±41km, ML2.3*
*NEIC **11** 00:50:47.4, 60.01N×5.24E, ML1.8(BER), After BER.*
NEIC Felt at Rostoy.
*BER **11** 00:50:47.7±2.7, 60.01N×5.30E, h7km, MD1.7, ML1.8, MW2.0, ML2.3(NAO)*

ISC 11 00:50:46.8±0.6, 60.03N±0.02×5.28E±0.09, h15km±4km, n19, σ0§75/36, 5C-2D, Southern Norway

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
EGD	**Espegrend**	**0.25**	**353**	⇑*i*P	**Pg**	**00 50 52.5**	**+0.1**
EGD				*e*S	**Sg**	**00 50 56.2**	**0.0**
BER	**Bergen**	**0.36**	**4**	⇑*i*P	**Pg**	**00 50 54.4**	**-0.1**
BER				*e*S	**Sg**	**00 50 59.7**	**+0.1**
BER				AML	AML	00 50 59.9	
	comp=Z,186nm,0.1s						
RUND	**Rundenannen**	**0.39**	**6**	⇑*i*P	**Pg**	**00 50 55.0**	**0.0**
RUND				AML	AML	00 51 03.6	
	comp=Z,87nm,0.3s						
ASK	**Askoy**	**0.46**	**355**	⇑*i*P	**Pb**	**00 50 55.8**	**-0.3**
ASK				*e*S	**Sb**	**00 51 02.1**	**-0.4**
ASK				AML	AML	00 51 02.4	
	comp=Z,36nm,0.2s						
ASK	**Askoy**	**0.46**	**355**	*e*P	**Pb**	**00 50 55.8**	**-0.3**
ASK				*e*S	**Sb**	**00 51 02.1**	**-0.4**
ODD1	**Odda**	**0.69**	**99**	⇓*i*P	**Pb**	**00 50 59.4**	**-0.5**
ODD1				*e*S	**Sb**	**00 51 09.0**	**0.0**
ODD1				AML	AML	00 51 12.1	
	comp=Z,52nm,0.3s						
ODD1	**Odda**	**0.69**	**99**	*e*P	**Pb**	**00 50 59.4**	**-0.5**
ODD1				*e*S	**Sb**	**00 51 09.0**	**0.0**
KMY	**Karmoy**	**0.82**	**181**	*e*P	**Pb**	**00 51 02.0**	**-0.1**
KMY				*e*S	**Sb**	**00 51 12.7**	**0.0**
KMY				AML	AML	00 51 14.7	
	comp=Z,29nm,0.1s						
BLS5	**Blasjo**	**0.85**	**135**	⇓*i*P	**Pb**	**00 51 03.5**	**+0.8**
BLS5				*e*S	**Sb**	**00 51 14.8**	**+1.2**
BLS5				AML	AML	00 51 17.1	
	comp=Z,45nm,0.3s						
BLS5	**Blasjo**	**0.85**	**135**	*e*P	**Pb**	**00 51 03.5**	**+0.8**
BLS5				*e*S	**Sb**	**00 51 14.8**	**+1.2**
SUE	**Sulen**	**1.07**	**346**	*e*P	**Pb**	**00 51 06.1**	**-0.4**
SUE				*e*S	**Sb**	**00 51 20.1**	**0.0**
SUE				AML	AML	00 51 21.3	
	comp=Z,38nm,0.1s						
STAV	**Stavanger**	**1.11**	**169**	⇑*i*P	**Pb**	**00 51 06.7**	**-0.5**
STAV				*e*S	**Sb**	**00 51 21.4**	**0.0**
STAV				AML	AML	00 51 22.7	
	comp=Z,30nm,0.2s						
HYA	**Hoyanger**	**1.23**	**21**	*e*P	**Pb**	**00 51 09.7**	**+0.4**
HYA				*e*S	**Sb**	**00 51 27.0**	**+2.2**
HYA				AML	AML	00 51 31.8	
	comp=Z,22nm,0.3s						
FOO	**Floro**	**1.58**	**356**	*e*P	**Pn**	**00 51 14.4**	**-0.2**
FOO				*e*S	**Sn**	**00 51 34.9**	**0.0**
FOO				AML	AML	00 51 36.4	
	comp=Z,18nm,0.1s						
SNART	**Snartemo**	**1.96**	**149**	*e*P	**Pn**	**00 51 21.4**	**+1.5**
SNART				*e*Sg	**Sg**	**00 51 47.2**	**-5.0**
SNART				AML	AML	00 51 47.8	
	comp=Z,54nm,0.4s						
KONO	**Kongsberg**	**2.21**	**98**	*e*P	**Pn**	**00 51 23.4**	**-0.2**
KONO				*e*S	**Sn**	**00 51 50.1**	**-0.7**
MOL	**Molde**	**2.78**	**22**	*e*P	**Pn**	**00 51 31.9**	**+0.2**
NB2	**NORSAR Subarra**	**3.10**	**68**	Pn	**Pn**	**00 51 35.4**	**-0.9**
NB2				Pg	**Pg**	**00 51 40.3**	**-8.5**
NB2				Lg		00 52 20.9	
HFS	**Hagfors**	**4.21**	**85**	Pn	**Pn**	**00 51 49.9**	**-2.2**
	baz=266,slow=14						
HFS				Sn	**Sn**	**00 52 37.1**	**-4.5**
	baz=268,slow=28						
HFS				Lg		00 52 58.2	
	baz=275,slow=37						

*NEIC **11** 00:53:09.2±1.6, 50.33N×18.82E, h5km, MG2.1(WAR), Error ellipse: s-maj=25.2km s-min=10.0km az=174.0*
*WAR **11** 00:53:09.2, 50.26N×18.91E, h1km, Location given by Central Institute of Mining, origin time based upon OJC*
*PRU **11** 00:53:09.7, 50.25N×18.81E*

ISC 11 00:53:07.7±0.6, 50.31N±0.04×18.82E±0.03, n16, σ1§20/31, Poland

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OJC	**Ojcow**	**0.63**	**98**	*e*Pg	**Pg**	**00 53 20.3**	**-0.1**
OJC				*e*Sg	**Sg**	**00 53 28.6**	**-0.2**
OJC	**Ojcow**	**0.63**	**98**	*e*PG	**Pg**	**00 53 20.0**	**-0.4**
OJC				*e*SG	**Sg**	**00 53 29.0**	**+0.2**
OKC	**Ostrava-Krasne**	**0.64**	**223**	*e*PG	**Pg**	**00 53 21.7**	**+1.2**
OKC				*e*SG	**Sg**	**00 53 30.3**	**+1.3**
MORC	**Moravsky Berou**	**0.98**	**238**	*e*Pg	**Pg**	**00 53 28.2**	**+1.0**
MORC				*e*Sg	**Sg**	**00 53 40.0**	**-0.3**
NIE	**Niedzica**	**1.31**	**132**	*e*Pg	**Pg**	**00 53 32.3**	**-1.6**
NIE				*e*Sg	**Sg**	**00 53 50.3**	**-1.1**
DPC	**Dobruska-Polom**	**1.60**	**272**	*e*PG	**Pg**	**00 53 38.2**	**-1.5**
DPC				*e*SG	**S

LSCH			*i* S		**Sb**	**01 21 10.8**	**-0.1**
LSCH			AMP			01 21 11.7	
	comp=E,483nm,0.2s						
TLL	**Tololo Astrono**	**0.94**	**138**⇓	*i* P	**Pb**	**01 21 11.9**	**+0.3**
TLL				*i* S	**Sb**	**01 21 23.7**	**0.0**
TLL				AMP		01 21 29.1	
	comp=E,596nm,0.5s						
VACH	**Vallenar**	**1.12**	**38**⇑	*i* P	**Pb**	**01 21 14.8**	**+0.2**
VACH				*i* S	**Sb**	**01 21 28.7**	**-0.2**
OVCH	**Ovalle**	**1.17**	**166**⇑	*i* P	**Pb**	**01 21 15.3**	**-0.2**
OVCH				*i* S	**Sb**	**01 21 30.0**	**-0.3**
OVCH				AMP		01 21 33.6	
	comp=E,530nm,0.3s						
CMCH	**Combarbala**	**1.76**	**165**	*i* P	**Pn**	**01 21 24.3**	**-0.1**
CMCH				*i* S	**Sn**	**01 21 46.9**	**+0.3**
CMCH				AMP		01 21 50.1	
	comp=E,881nm,0.8s						

DJA ***11*** *01:31:05.2±1.0, 7.57S×113.14E, h254km±14km, MD4.6/4, ML4.4/4, Error ellipse: s-maj=77.1km s-min=26.5km az=15.0*

ISC 11 01:31:08.0±3.2**, 7.4S**±0.7×**113.3E**±0.3**, h234**km±65km**, n4, σ0§29/7, 4D, Jawa**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KELI	**Kelakatan**	**1.38**	**124**⇓	*i* Pn	**P**	**01 31 44.2**	**0.0**
	324nm,0.2s						
INGI	**Ingas**	**2.26**	**127**⇓	*i* Pn	**P**	**01 31 51.8**	**-0.2**
	327nm,0.2s						
INGI				*e*Sn	**S**	**01 32 26.4**	**+0.3**
RATI	**Rata**	**2.52**	**120**⇓	*i* Pn	**P**	**01 31 54.7**	**-0.1**
	377nm,0.2s						
RATI				*e*Sn	**S**	**01 32 30.8**	**-0.2**
KEDI	**Kedomdong**	**2.95**	**111**⇓	*e*Pn	**P**	**01 31 59.6**	**+0.3**
	49nm,0.2s						
KEDI				*e*Sn	**S**	**01 32 39.1**	**0.0**

NEIC ***11*** *01:37:08.4±0.6, 47.78N×39.29E, h10km, Error ellipse: s-maj=11.0km s-min=9.0km az=195.0*
MOS ***11*** *01:37:09.6±1.3, 48.13N×39.51E, h10km, mb4.0/1, Error ellipse: s-maj=12.4km s-min=6.4km az=85.5*
IDC ***11*** *01:37:10.9±1.2, 48.14N×39.43E, mb3.6/5, mb1 3.9/12, mb1mx3.8/24, ML3.7/7, Error ellipse: s-maj=17.5km s-min=11.7km az=176.0*

ISC 11 01:37:09.1±1.7**, 48.17N**±0.03×**39.29E**±0.06**, h10**km±12km**, n48, σ1§45/67, mb3.5**/3**, 4C-2D, Ukraine - Moldova - Southwestern Russia region**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
VRSR	**Storozhevoye**	**3.05**	**359**	P	**Pn**	**01 38 01.2**	**+2.9**
VRSR				S	**Sn**	**01 38 41.0**	**+5.8**
KGUR	**Krasnodar**	**3.16**	**183**	*e*P	**Pn**	**01 37 58.3**	**-1.6**
KGUR				S	**Sn**	**01 38 44.4**	**+6.4**
VOR	**Voronezh**	**3.56**	**359**	*e*P	**Pn**	**01 38 16.5**	**+11**
VOR				pmax	pmax		
	comp=E,30nm,0.9s						
VOR				pmax	pmax		
	comp=Z,100nm,0.9s						
ANN	**Anapa**	**3.61**	**202**	*e*P	**Pn**	**01 38 07.2**	**+0.9**
ANN				*e*S	**Sn**	**01 38 50.3**	**+0.8**
ANN				pmax	pmax		
	comp=Z,6.0nm,0.4s						
ANN				smax			
	comp=Z,30nm,0.9s						
ANN				smax			
	comp=N,140nm,1.1s						
ANN				smax			
	comp=E,180nm,1.2s						
GOF	**Gofitskoye**	**4.04**	**139**⇑	*i* P	**Pn**	**01 38 13.0**	**+0.5**
GOF				pmax	pmax		
	comp=Z,50nm,0.8s						
SOC	**Sochi**	**4.60**	**176**	P	**Pn**	**01 38 21.2**	**+0.8**
SOC				S	**Sn**	**01 39 10.0**	**-4.5**
SIM	**Simferopol'**	**4.81**	**230**	*e*P	**Pn**	**01 38 26.5**	**+3.1**
SIM				*e*S	**Sn**	**01 39 20.7**	**+0.9**
SIM				pmax	pmax		
	comp=Z,17nm,0.9s						
KIV	**Kislovodsk**	**4.83**	**150**	*e*P	**Pn**	**01 38 15.7**	**-8.0**
KIV	**Kislovodsk**	**4.83**	**150**	*e*Pn	**Pn**	**01 38 15.7**	**-8.0**
KIV				*e*Pb	**Pb**	**01 38 28.4**	**-5.2**
KIV				*e*Pg	**Pg**	**01 38 37.4**	**-8.3**
KIV				*e*Sn	**Sn**	**01 39 33.7**	**+13**
KIV0	**Kislovodsk Arr**	**4.84**	**149**	P	**Pn**	**01 38 22.3**	**-1.5**
ALU	**Alushta**	**4.86**	**226**	*e*P	**Pn**	**01 38 27.8**	**+3.7**
ALU				*i* S	**Sn**	**01 39 23.2**	**+2.1**
PYA	**Pyatigorsk**	**4.90**	**146**	P	**Pn**	**01 38 23.9**	**-0.7**
YAL	**Yalta**	**5.12**	**226**	*e*P	**Pn**	**01 38 30.9**	**+3.1**
YAL				*e*S	**Sn**	**01 39 27.2**	**-0.5**
SEV	**Sevastopol'**	**5.32**	**229**⇓	*e*P	**Pn**	**01 38 32.4**	**+1.8**
SEV				*e*S	**Sn**	**01 39 32.2**	**-0.5**
ZEI	**Tsey**	**6.30**	**147**⇑	*e*P	**Pn**	**01 38 49.5**	**+5.1**
AKASG	**Malin Array Be**	**7.04**	**295**	Pn	**Pn**	**01 38 55.0**	**+0.3**
	comp=Z,2.2nm,0.3s,baz=107,slow=13,SNR=12						
AKASG				Sn	**Sn**	**01 40 13.8**	**-1.8**
	comp=Z,5.2nm,0.3s,baz=108,slow=24,SNR=7.4						
AKASG				Lg		01 41 00.9	
	comp=Z,0.8nm,0.3s,baz=109,slow=28,SNR=3.4						
OBN	**Obninsk**	**7.15**	**347**⇓	*e*P	**Pn**	**01 38 58.2**	**+1.8**
OBN				*e*S	**Sn**	**01 40 29.1**	**+11**
OBN				pmax	pmax		
	comp=Z,6.0nm,0.6s						
OBN				smax			
	comp=E,52nm,0.6s						
OBN	**Obninsk**	**7.15**	**347**	Pn	**Pn**	**01 38 54.1**	**-2.3**
	comp=E,82nm,0.9s						
OBN				*e*Pg	**Pg**	**01 39 23.6**	**-8.4**
OBN				*e*Sn	**Sn**	**01 40 19.0**	**+0.4**
BOYT	**Boyabat**	**7.44**	**206**	*i* P	**Pn**	**01 38 59.8**	**-0.6**
MOS	**Moscow**	**7.65**	**353**	*e*P	**Pn**	**01 39 05.8**	**+2.5**
MOS				*e*S	**Sn**	**01 40 27.5**	**-3.4**
MOS				pmax	pmax		
	comp=Z,40nm,0.5s						
BALT	**Daday**	**7.85**	**214**	*i* P	**Pn**	**01 39 05.0**	**-1.1**
KELT	**Kelkit**	**8.02**	**180**	*i* P	**P**	**01 39 07.9**	**-0.6**
CTKT	**Corum**	**8.21**	**205**	*i* P	**P**	**01 39 10.6**	**-0.5**
CFR	**Carcaliu**	**8.24**	**253**⇑	*i* P	**Sn**	**01 40 42.3**	**-3.3**
KMPD	**K-Podol'skiy**	**8.56**	**277**	*e*P	**P**	**01 39 24.0**	**+8.0**
ELDT	**Eldivan**	**8.75**	**211**	*i* P	**P**	**01 39 25.5**	**+6.8**
BRTR	**Keskin Array B**	**9.37**	**208**	Pn	**P**	**01 39 26.6**	**-0.7**
	comp=Z,0.1nm,0.3s,baz=160,slow=28,SNR=4.4						
BRTR				Sn	**Sn**	**01 41 07.8**	**-6.0**
	comp=Z,0.1nm,0.3s,baz=28,slow=21,SNR=3.9						
MLR	**Muntele Rosu**	**9.54**	**259**	Pn	**P**	**01 39 30.1**	**+0.7**
	comp=Z,0.3nm,0.3s,baz=186,slow=9.0,SNR=3.4						
MLR				Sn	**Sn**	**01 41 14.1**	**-3.6**
	comp=Z,0.4nm,0.3s,baz=75,slow=19,SNR=3.9						
MLR				Lg		01 42 09.4	
	comp=Z,0.1nm,0.3s,baz=164,slow=13,SNR=3.4						
PSZ	**Piszkesteto**	**12.98**	**276**	*e*P	**P**	**01 40 13.6**	**-2.7**
PSZ				pmax	pmax		
	comp=Z,6.0nm,0.9s						
PSZ	**Piszkesteto**	**12.98**	**276**	*e*P	**P**	**01 40 13.6**	**-2.7**
	comp=Z,5.8nm,0.9s						
CSS	**Prodhromos**	**13.93**	**201**	P	**P**	**01 40 21.7**	**-7.0**
ARU	**Arti**	**14.36**	**48**	*e*P	**P**	**01 40 28.9**	**-5.3**
ARU				pmax	pmax		
	comp=Z,4.0nm,0.6s						
ARU	**Arti**	**14.36**	**48**	*e*P	**P**	**01 40 28.9**	**-5.4**
	comp=Z,4.2nm,0.6s						
MORC	**Moravsky Berou**	**14.37**	**285**	*e*P	**P**	**01 40 32.5**	**-2.0**
	comp=Z,1.5nm,0.9s						
FINES	**FINESS Array B**	**15.28**	**335**	Pn	**P**	**01 40 41.6**	**-4.6**
	comp=Z,0.5nm,0.3s,baz=141,slow=14,SNR=13						
FINES				Sn	**S**	**01 43 26.9**	**-9.2**
	comp=Z,0.6nm,0.3s,baz=147,slow=23,SNR=7.1						
FINES				Lg		01 45 11.8	
	baz=151,slow=29,SNR=2.6						
SOKR	**Solikamsk**	**15.33**	**35**	P	**P**	**01 40 50.3**	**+3.4**
SVE	**Sverdlovsk**	**15.56**	**48**⇑	*e*P	**P**	**01 40 45.0**	**-5.0**
SVE				pmax	pmax		
	comp=Z,20nm,1.0s						
GERES	**GERESS Array B**	**16.95**	**282**	P	**P**	**01 41 12.4**	**+4.7**
	comp=Z,0.2nm,0.3s,baz=83,slow=11,SNR=10						
HFS	**Hagfors**	**19.04**	**318**	Pn	**P**	**01 41 29.5**	**-3.9**
	comp=Z,0.1nm,0.3s,baz=108,slow=14,SNR=6.3						
HFS				P		01 41 34.0	
	comp=Z,0.1nm,0.3s,baz=114,slow=15,SNR=16						
HFS	**Hagfors**	**19.04**	**318**	P	**P**	**01 41 34.0**	**+0.6**
ZRNK	**Zerenda**	**19.39**	**65**	*e*P	**P**	**01 41 35.1**	**-2.6**
BRVK	**Borovoye**	**20.17**	**64**	*e*P	**P**	**01 41 45.1**	**-1.1**
BVAR	**Borovoye Array**	**20.23**	**64**	P	**P**	**01 41 46.8**	**-0.1**
	comp=Z,0.6nm,0.4s,baz=270,slow=10,SNR=7.3						
NB2	**NORSAR Subarra**	**20.54**	**319**	P	**P**	**01 41 49.2**	**-0.8**
	comp=Z,10nm,1.0s,baz=111,slow=10						
NOA	**NORSAR Array B**	**20.54**	**319**	P	**P**	**01 41 50.4**	**+0.3**
	comp=Z,6.3nm,0.9s,baz=111,slow=11,SNR=12						
ARCES	**ARCESS Array B**	**22.47**	**347**	P	**P**	**01 42 10.3**	**+0.9**
	comp=Z,3.3nm,0.8s,mb3.8,baz=157,slow=6.9,SNR=17						
MKAR	**Makanchi Array**	**28.82**	**76**	P	**P**	**01 43 11.2**	**+2.0**
	comp=Z,0.3nm,0.7s,mb3.1,baz=284,slow=12,SNR=2.5						
YKA	**Yellowknife Ar**	**67.74**	**347**	P	**P**	**01 48 09.1**	**+0.9**
	comp=Z,0.2nm,0.5s,mb3.4,baz=18,slow=6.4,SNR=9.1						

JMA 11 01:37:24.5±0.5**, 26.59N**×**125.42E, h219**km**, M3.5, Northeast of Taiwan**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JKE	**Kume jima 2**	**1.25**	**102**	P	P	01 37 58.2	-0.1
JKE				*e*S	S	01 38 23.7	-0.7
JOGS	**Gusukube**	**1.82**	**180**	*e*S	S	01 38 33.0	+0.1
JTJ	**Tarama**	**2.05**	**199**	P	S	01 38 05.4	+0.1
JTJ				S	S	01 38 34.8	-1.9
JIH	**Iheya**	**2.32**	**78**	P	P	01 38 07.6	-0.5
JIJ	**Ishigaki jima**	**2.50**	**208**	P	P	01 38 09.2	-0.8
JIJ				*e*S	S	01 38 41.9	-3.4
JOW	**Kunigami**	**2.56**	**84**	P	P	01 38 10.4	-0.3
JOW				*e*S	S	01 38 42.9	-3.6
HATJ	**Hateruma jima**	**2.92**	**210**	P	P	01 38 14.3	-0.3
JTK	**Tokunoshima**	**3.36**	**68**	P	P	01 38 18.2	-1.7
JMZ	**Minamidaito 2**	**5.27**	**97**	P	P	01 38 43.8	+0.4

IDC ***11*** *01:43:28.9±4.9, 36.55N×96.67E, mb3.5/4, mb1 3.6/6, mb1mx3.4/22, ML3.7/2, Error ellipse: s-maj=107.0km s-min=41.2km az=3.0*
BJI ***11*** *01:43:40.4, 37.53N×96.80E, h26km, ML3.5, Ms3.4, Msz3.4*

ISC 11 01:43:31.1±1.9**, 36.9N**±0.3×**96.7E**±0.1**, h10**km**, n7**, σ0§64/8, **mb3.5/4, Qinghai**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
LZH	**Lanzhou**	**5.80**	**96**	*e*PG	**Pg**	**01 45 28.0**	**+1.1**
LZH				SG	**Sg**	**01 46 43.5**	**-0.7**
LZH				S	Sn		
	comp=N,51nm,1.2s						
LZH				S	Sn		
	comp=E,48nm,1.2s						
LZH				LR	LR		
	comp=E,218nm,5.5s						
LZH				LR	LR		
	comp=Z,253nm,7.6s						
SONM	**Songino Array**	**13.05**	**30**	Pn	**P**	**01 46 39.6**	**+0.3**
	comp=Z,0.3nm,0.3s,baz=212,slow=15,SNR=2.7						
MKAR	**Makanchi Array**	**14.59**	**317**	Pn	**P**	**01 46 55.2**	**-4.2**
	comp=Z,0.1nm,0.3s,baz=127,slow=15,SNR=5.9						
BVAR	**Borovoye Array**	**24.44**	**320**	P	**P**	**01 48 51.1**	**+0.3**
	comp=Z,0.7nm,0.6s,mb3.3,baz=121,slow=8.6,SNR=5.0						
FINES	**FINESS Array B**	**49.31**	**323**	P	**P**	**01 52 21.5**	**-0.4**
	comp=Z,0.8nm,0.8s,mb3.8,baz=117,slow=12,SNR=1.0						
INK	**Inuvik**	**68.63**	**18**	P	**P**	**01 54 36.1**	**+0.1**
	comp=Z,0.6nm,0.6s,mb3.7,baz=328,slow=8.2,SNR=9.7						
YKA	**Yellowknife Ar**	**77.79**	**14**	P	**P**	**01 55 28.9**	**-0.6**
	comp=Z,0.1nm,0.4s,mb3.1,baz=335,slow=5.1,SNR=4.5						

NEIC ***11*** *01:48:23.1±6.9, 31.35S×179.89E, h422km±74km, mb4.1/1, Error ellipse: s-maj=102.8km s-min=27.7km az=198.0*
IDC ***11*** *01:48:25.1±5.4, 31.69S×179.84E, h441km±59km, mb3.0/4, mb1 3.1/4, mb1mx3.0/13, Error ellipse: s-maj=65.2km s-min=27.5km az=20.0*

ISC 11 01:48:26.9±1.7**, 32.0S**±0.2×**179.7E**±0.4**, h482**km±31km**, n23, σ0§99/21, mb3.5/5, 1C, Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PUZ	**Puketiti**	**6.21**	**191**	P	**P**	**01 50 05.4**	**-0.1**
PUZ				S	**S**	**01 51 21.5**	**-2.0**
URZ	**Urewera**	**6.63**	**198**	P	**P**	**01 50 09.8**	**+0.1**
	25nm,0.3s,baz=288,slow=2.9,SNR=23						
URZ				S	**S**	**01 51 32.0**	**+0.7**
	18nm,0.3s,baz=70,slow=23,SNR=20						
URZ	**Urewera**	**6.63**	**198**	P	**P**	**01 50 09.7**	**-0.1**
KNZ	**Kokohu**	**7.23**	**193**	P	**P**	**01 50 16.8**	**+0.8**
NGZ	**Ngauruhoe**	**7.94**	**204**	*e*P	**P**	**01 50 24.1**	**+0.7**
TUVZ	**Tükino**	**8.00**	**203**	*e*P	**P**	**01 50 24.3**	**+0.2**
BFZ	**Birch Farm**	**9.14**	**197**	P	**P**	**01 50 37.0**	**+0.7**
BFZ				*e*S	**S**	**01 52 22.2**	**+3.2**
MRZ	**Mangatainoka R**	**9.30**	**200**	*e*P	**P**	**01 50 37.1**	**-0.9**
MRZ				*e*S	**S**	**01 52 21.7**	**-0.5**
THZ	**Tophouse**	**11.20**	**207**	*e*P	**P**	**01 50 57.5**	**-0.7**
THZ				S	**S**	**01 52 59.1**	**-0.2**
KHZ	**Kahutara**	**11.53**	**204**	P	**P**	**01 51 10.7**	**-0.1**
CTA	**Charters Tower**	**32.21**	**283**	P	**P**	**01 54 15.7**	**+0.2**
	1.9nm,0.7s,mb3.6,baz=101,slow=15,SNR=2.5						
STKA	**Stephens Creek**	**32.27**	**260**	P	**P**	**01 54 18.4**	**+2.5**
	0.8nm,0.6s,mb3.3,baz=126,slow=19,SNR=2.1						
ASAR	**Alice Springs**	**41.13**	**270**	P	**P**	**01 55 29.5**	**+0.4**
	0.6nm,0.9s,mb3.0,baz=111,slow=7.3,SNR=4.3						
WB2	**Warramunga Arr**	**42.26**	**275**⇑	*i* P	**P**	**01 55 38.0**	**-0.2**
WRAB	**Tennant Creek**	**42.26**	**275**	*e*P	**P**	**01 55 36.2**	**-2.0**
	8.0nm,0.9s,mb4.2						
WRA	**Warramunga Arr**	**42.27**	**275**	P	**P**	**01 55 37.8**	**-0.5**
	1.1nm,0.4s,mb3.6,baz=112,slow=7.9,SNR=20						
BVAR	**Borovoye Array**	**126.16**	**315**	PKP	PKPdf	02 06 35.4	+2.2
	0.2nm,0.3s,baz=124,slow=5.2,SNR=3.5						
JOF	**Joensuu**	**143.12**	**336**	*e*p	PKPbc	02 06 58.9	-3.7
KAF	**Kangasniemi**	**145.34**	**338**	*e*p	PKPdf	02 07 08.5	+0.6
FINES	**FINESS Array B**	**145.91**	**338**	PKPbc	PKPbc	02 07 12.6	+2.2
	1.6nm,0.4s,baz=44,slow=4.4,SNR=22						
FINES	**FINESS Array B**	**145.91**	**338**	PKPbc	PKPbc	02 07 12.6	+2.2
AKASG	**Malin Array Be**	**151.30**	**319**	PKPbc	PKPdf	02 07 25.8	+8.1
	2.0nm,0.9s,baz=63,slow=2.1,SNR=5.5						
AKASG				PKPab	PKPab	02 07 34.5	-2.3
	0.9nm,0.8s,baz=135,slow=6.5,SNR=3.8						
BRTR	**Keskin Array B**	**151.58**	**295**	PKPbc	PKPdf	02 07 29.2	+11
	0.6nm,0.6s,baz=108,slow=4.6,SNR=3.0						
BRTR				PKPab	PKPab	02 07 38.4	+0.1
	1.4nm,1.1s,baz=90,slow=8.6,SNR=3.1						

LDG ***11*** *02:15:56.6±0.1, 42.82N×2.53E, h4km, Md2.4/1, Ml2.2/12, Error ellipse: s-maj=1.0km s-min=1.0km az=21.0*
NEIC ***11*** *02:15:56.2, 42.81N×2.53E, h5km, ML2.2(STR), ML2.2(LDG), MN1.7(MDD), After STR.*
STR ***11*** *02:15:56.2±0.1, 42.81N×2.53E, h5km±1km, Ml2.2, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
MDD ***11*** *02:15:56.7±0.3, 42.82N×2.53E, h8km±2km, mbLg1.6/14, Error ellipse: s-maj=2.0km s-min=1.7km az=85.0, PRXIMO*

ISC 11 02:15:54.3±0.3**, 42.88N**±0.02×**2.60E**±0.02**, h10**km**, n42, σ1§23/72, Pyrenees**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
LRDF	**Laroque-de-Fa**	**0.07**	**325**	Pg	**Pg**	**02 15 59.1**	**+2.4**
LRDF				Sg	**Sg**	**02 16 01.4**	**+3.2**
LRDF	**Laroque-de-Fa**	**0.07**	**325**	P	**Pg**	**02 15 59.0**	**+2.4**
LRDF				S	**Sg**	**02 16 01.4**	**+3.2**
FILF	**Fillols**	**0.32**	**185**	Pg	**Pg**	**02 16 01.4**	**+0.5**
FILF				Sg	**Sg**	**02 16 05.2**	**-0.1**
FILF	**Fillols**	**0.32**	**185**	P	**Pg**	**02 16 01.6**	**+0.7**
FILF				S	**Sg**	**02 16 05.1**	**-0.2**
CARF	**Carcanieres**	**0.40**	**246**	P	**Pg**	**02 16 02.7**	**+0.3**
CARF				S	**Sg**	**02 16 07.7**	**-0.2**
SJAF	**Saint Jean de**	**0.45**	**152**	Pg	**Pg**	**02 16 04.7**	**+1.3**
SJAF				Sg	**Sg**	**02 16 10.3**	**+0.9**
SJAF	**Saint Jean de**	**0.45**	**152**	P	**Pg**	**02 16 04.6**	**+1.2**
SJAF				S	**Sg**	**02 16 10.3**	**+0.9**
EJON	**La Jonquera**	**0.48**	**153**	Pg	**Pg**	**02 16 05.4**	**+1.3**
	1.4nm,0.1s,SNR=7.9						
EJON				Lg		02 16 11.4	
	5.8nm,0.1s,SNR=7.9						
EJON	**La Jonquera**	**0.48**	**153**	Pg	**Pg**	**02 16 05.4**	**+1.3**
EJON				Lg		02 16 11.4	
LPEF	**Le Peyrat**	**0.51**	**278**	S	**Sg**	**02 16 12.5**	**+0.9**
MTLF	**Montolieu**	**0.54**	**329**	*e*Pg	**Pg**	**02 16 07.3**	**+2.0**
MTLF				*e*Pn	**Pn**	**02 16 10.1**	**+2.4**
MTLF				*e*Sg	**Sg**	**02 16 14.5**	**+1.9**
MTLF				*e*Sn	**Sn**	**02 16 19.3**	**+2.5**
	5.5nm,0.2s						
MTLF	**Montolieu**	**0.54**	**329**	Pg	**Pg**	**02 16 07.3**	**+2.0**
MTLF				Lg		02 16 14.5	
CLLI	**Llivia**	**0.61**	**229**	Pg	**Pg**	**02 16 06.5**	**-0.1**
CLLI				Lg		02 16 13.9	
	1.9nm,0.1s						
VALF	**Valcebollere**	**0.64**	**222**	Pg	**Pg**	**02 16 07.2**	**0.0**
VALF				Sg	**Sg**	**02 16 14.7**	**-1.1**
VALF	**Valcebollere**	**0.64**	**222**	P	**Pb**	**02 16 07.2**	**+0.1**
VALF				S	**Sb**	**02 16 14.6**	**-1.2**
CBRU	**Bruguera**	**0.67**	**208**	Pg	**Pg**	**02 16 07.7**	**0.0**
CBRU				Lg		02 16 15.6	
	4.1nm,0.1s						
GRBF	**Gourbit**	**0.78**	**268**	S	**Sb**	**02 16 20.9**	**+1.0**
PAND	**Andorre**	**0.85**	**246**	S	**Sb**	**02 16 21.4**	**-0.5**
SALF	**Salau**	**1.04**	**264**	P	**Pb**	**02 16 15.1**	**+1.1**
SALF				S	**Sb**	**02 16 28.4**	**+0.9**
MLS	**Moulis**	**1.11**	**275**	S	**Sb**	**02 16 30.3**	**+0.9**
CFON	**Fontmartina**	**1.12**	**186**	Pg	**Pg**	**02 16 16.6**	**-0.2**
CFON				Lg		02 16 30.6	
	11nm,0.1s						
CORG	**Organya**	**1.15**	**236**	Pg	**Pg**	**02 16 16.7**	**-0.6**
CORG				Lg		02 16 31.3	
	1.4nm,0.2s						
CSOR	**Sort**	**1.19**	**246**	Pg	**Pg**	**02 16 17.7**	**-0.5**
CSOR				Lg		02 16 32.5	
	2.5nm,0.2s						
EMIR	**Miracle**	**1.25**	**220**	Pg	**Pg**	**02 16 18.8**	**-0.5**
	1.0nm,0.1s,SNR=7.9						
EMIR				Lg		02 16 35.7	
	2.8nm,0.1s,SNR=7.9						
MELF	**Melles**	**1.35**	**270**	S	**Sb**	**02 16 36.9**	**+0.4**
LASF	**Ste Croix**	**1.51**	**37**	*e*Pg	**Pg**	**02 16 26.1**	**+1.6**
LASF				*e*Sg	**Sg**	**02 16 46.6**	**+1.9**
	2.7nm,0.3s						
EPF	**Esparros**	**1.66**	**276**	*e*Pn	**Pn**	**02 16 24.3**	**+0.5**
EPF				*e*Pg	**Pg**	**02 16 27.0**	**-0.6**
EPF				*e*Sg	**Sg**	**02 16 48.0**	**-1.8**
	6.3nm,0.2s						
CAVN	**Les Avellanes**	**1.69**	**235**	Pg	**Pg**	**02 16 26.9**	**-1.2**
CAVN				Lg		02 16 48.3	
	4.4nm,0.2s						
EPOB	**Poblet**	**1.90**	**217**	Pg	**Pg**	**02 16 29.9**	**-2.3**
	0.6nm,0.1s,SNR=7.9						
EPOB				Lg		02 16 54.0	
	1.2nm,0.1s,SNR=7.9						
EPOB	**Poblet**	**1.90**	**217**	Pg	**Pg**	**02 16 29.9**	**-2.3**
EPOB				Lg		02 16 54.0	
CAF	**Calviac**	**2.08**	**350**	*e*Pg	**Pg**	**02 16 36.7**	**+0.7**
CAF				*e*Sn	**Sn**	**02 16 56.5**	**+0.5**
CAF				*e*Sg	**Sg**	**02 17 03.1**	**-0.7**
	2.3nm,0.2s						
ETSF	**Etsaut**	**2.32**	**272**	*e*Sg	**Sg**	**02 17 08.1**	**-3.5**
	3.6nm,0.4s						
SMRF	**Simiane la Rot**	**2.43**	**62**	*e*Pn	**Pn**	**02 16 36.2**	**+1.4**
SMRF				*e*Sn	**Sn**	**02 17 05.1**	**+0.2**
SMRF				*e*Sg	**Sg**	**02 17 15.7**	**+0.4**
	1.8nm,0.3s						
LFF	**La Frestale**	**2.46**	**328**	*e*Pg	**Pg**	**02 16 42.8**	**-0.7**
LFF				*e*Sg	**Sg**	**02 17 14.0**	**-2.3**
	5.0nm,0.3s						
VIVF	**Saint-Julien-l**	**2.48**	**36**	*e*Pg	**Pg**	**02 16 43.7**	**-0.2**
VIVF				*e*Sg	**Sg**	**02 17 17.0**	**-0.1**
	1.0nm,0.2s						
RJF	**Les Rejaudoux**	**2.55**	**343**	*e*Pg	**Pg**	**02 16 44.8**	**-0.4**
RJF				*e*Sn	**Sn**	**02 17 07.1**	**-0.7**
RJF				*e*Sg	**Sg**	**02 17 17.4**	**-1.8**
	2.5nm,0.2s						
ESAC	**San Caprasio**	**2.55**	**244**	Lg		02 17 15.4	
	6.7nm,0.3s,SNR=7.9						
LMR	**La Mourre**	**2.90**	**80**	*e*Pn	**Pn**	**02 16 42.7**	**+1.2**
LMR				*e*Pg	**Pg**	**02 16 51.7**	**-0.6**
LMR				*e*Sn	**Sn**	**02 17 16.2**	**-0.6**
LMR				*e*Sg	**Sg**	**02 17 29.5**	**-1.5**
	1.1nm,0.2s						
FRF	**La Foret Royal**	**3.04**	**76**	*e*Pn	**Pn**	**02 16 44.9**	**+1.5**
FRF				*e*Pg	**Pg**	**02 16 53.3**	**-1.7**
FRF				*e*Sn	**Sn**	**02 17 19.4**	**-0.8**
FRF				*e*Sg	**Sg**	**02 17 33.3**	**-2.2**
	1.7nm,0.3s						
TCF	**Toulx Ste Croi**	**3.42**	**355**	*e*Pg	**Pg**	**02 17 00.9**	**-1.8**
TCF				*e*Sg	**Sg**	**02 17 45.7**	**-2.6**
	0.8nm,0.3s						
BGF	**Bois d'Agland**	**3.69**	**3**	*e*Pg	**Pg**	**02 17 06.6**	**-1.3**
MFF	**Saint Martin d**	**4.21**	**333**	*e*Sg	**Sg**	**02 18 10.2**	**-4.2**

INMG ***11*** *02:33:33.3±0.8, 37.33N×8.33W, h20km±4km, ML1.1, Error ellipse: s-maj=4.4km s-min=2.4km az=14.0*
MDD ***11*** *02:33:33.6±0.9, 37.33N×8.30W, mbLg1.2/4, Error ellipse: s-maj=10.0km s-min=2.8km az=9.0, PRXIMO*

ISC 11 02:33:32.4±1.3**, 37.34N**±0.07×**8.29W**±0.05**, h10**km**, n9, σ0§64/12, 1C, Portugal**

| Code | Station Name | Δ° | AZ° | Phase ID | |

MTLF				Lg			02 40 13.7	
CLLI	**Llivia**	**0.58**	**228**	Pg		**Pg**	**02 40 05.8**	**-0.1**
CLLI				Lg			02 40 13.3	
	0.9nm,0.0s							
VALF	**Valcebollere**	**0.61**	**221**	P		**Pb**	**02 40 06.6**	**+0.1**
VALF				S		**Sg**	**02 40 14.2**	**-0.6**
CBRU	**Bruguera**	**0.65**	**206**	Pg		**Pg**	**02 40 07.0**	**-0.2**
CBRU				Lg			02 40 15.1	
	2.9nm,0.2s							
GRBF	**Gourbit**	**0.75**	**268**	S		**Sb**	**02 40 19.8**	**+0.9**
SALF	**Salau**	**1.01**	**264**	Pg		**Pg**	**02 40 14.6**	**+0.2**
SALF				Sg		**Sg**	**02 40 28.1**	**+0.1**
SALF	**Salau**	**1.01**	**264**	S		**Sb**	**02 40 27.8**	**+1.3**
MLS	**Moulis**	**1.08**	**275**	S		**Sb**	**02 40 30.3**	**+2.0**
CFON	**Fontmartina**	**1.11**	**185**	Pg		**Pg**	**02 40 15.9**	**-0.5**
CFON				Lg			02 40 29.5	
	6.2nm,0.1s							
CORG	**Organya**	**1.12**	**236**	Pg		**Pg**	**02 40 16.6**	**+0.1**
CORG				Lg			02 40 30.6	
	1.9nm,0.1s							
CSOR	**Sort**	**1.16**	**245**	Pg		**Pg**	**02 40 17.3**	**-0.1**
CSOR				Lg			02 40 31.8	
	1.9nm,0.2s							
EMIR	**Miracle**	**1.22**	**219**	Pg		**Pg**	**02 40 18.4**	**-0.2**
	1.2nm,0.1s,SNR=7.9							
EMIR				Lg			02 40 34.6	
	2.3nm,0.2s,SNR=7.9							
LASF	**Ste Croix**	**1.53**	**38**	*e*Pn		**Pn**	**02 40 23.0**	**+1.2**
LASF				*e*Pg		**Pg**	**02 40 25.4**	**+0.6**
LASF				*e*Sn		**Sn**	**02 40 42.8**	**+0.9**
LASF				*e*Sg		**Sg**	**02 40 46.6**	**+1.3**
	2.0nm,0.3s							
EPF	**Esparros**	**1.64**	**276**	*e*Pg		**Pg**	**02 40 25.7**	**-1.2**
EPF				*e*Sg		**Sg**	**02 40 46.1**	**-2.6**
	4.2nm,0.2s							
CAVN	**Les Avellanes**	**1.66**	**234**	Pg		**Pg**	**02 40 26.4**	**-1.0**
CAVN				Lg			02 40 47.7	
	2.5nm,0.2s							
EPOB	**Poblet**	**1.87**	**216**	Pg		**Pg**	**02 40 29.0**	**-2.5**
	0.4nm,0.0s,SNR=7.9							
EPOB				Lg			02 40 53.3	
	1.1nm,0.1s,SNR=7.9							
EPOB	**Poblet**	**1.87**	**216**	Pg		**Pg**	**02 40 29.1**	**-2.5**
EPOB				Lg			02 40 53.3	
CAF	**Calviac**	**2.09**	**350**	*e*Pg		**Pg**	**02 40 36.0**	**+0.1**
CAF				*e*Sn		**Sn**	**02 40 56.5**	**+0.6**
CAF				*e*Sg		**Sg**	**02 41 02.7**	**-1.0**
	1.7nm,0.3s							
ETSF	**Etsaut**	**2.29**	**272**	*e*Sg		**Sg**	**02 41 07.7**	**-2.8**
	1.3nm,0.3s							
LFF	**La Frestale**	**2.45**	**328**	*e*Pg		**Pg**	**02 40 42.5**	**-0.6**
LFF				*e*Sg		**Sg**	**02 41 12.9**	**-2.9**
	3.7nm,0.4s							
SMRF	**Simiane la Rot**	**2.46**	**62**	*e*Sg		**Sg**	**02 41 15.7**	**-0.4**
	1.3nm,0.4s							
VIVF	**Saint-Julien-l**	**2.51**	**37**	*e*Sg		**Sg**	**02 41 16.5**	**-1.2**
	1.0nm,0.2s							
ESAC	**San Caprasio**	**2.52**	**244**	Lg			02 41 14.7	
	3.6nm,0.2s,SNR=7.9							
RJF	**Les Rejaudoux**	**2.55**	**343**	*e*Pg		**Pg**	**02 40 43.7**	**-1.3**
RJF				*e*Sn		**Sn**	**02 41 06.1**	**-1.5**
RJF				*e*Sg		**Sg**	**02 41 16.4**	**-2.6**
	1.7nm,0.2s							
LMR	**La Mourre**	**2.93**	**80**	*e*Sg		**Sg**	**02 41 29.9**	**-1.9**
FRF	**La Foret Royal**	**3.07**	**76**	*e*Sg		**Sg**	**02 41 32.5**	**-3.8**
TCF	**Toulx Ste Croi**	**3.43**	**356**	*e*Sg		**Sg**	**02 41 45.1**	**-3.2**
	1.9nm,0.4s							

IDC ***11*** *02:40:52.0±7.8,15.14S×75.54W,h128km±86km,mb3.1/2, mb1 3.6/4,mb1mx3.3/16,Error ellipse: s-maj=94.9km s-min=46.2km az=74.0*

ISC 11 02:40:52.8±6.1,15.2S±0.2×75.5W±0.5,h154km±65km,n4, σ1⇕55/5,mb3.2/2,Near coast of Peru

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LPAZ	**La Paz**	**7.15**	**100**	P	**P**	**02 42 35.8**	**-0.1**
	1.9nm,0.3s,baz=291,slow=8.9,SNR=60						
LVC	**Limon Verde**	**9.66**	**141**	P	**P**	**02 43 09.8**	**+0.6**
	0.4nm,0.3s,baz=327,slow=8.8,SNR=7.5						
LVC				S	**S**	**02 44 55.6**	**-0.4**
	0.5nm,0.3s,baz=61,slow=19,SNR=4.9						
TXAR	**Lajitas Array**	**51.94**	**328**	P	**P**	**02 49 47.2**	**-1.0**
	0.4nm,0.5s,mb3.3,baz=146,slow=8.6,SNR=6.0						
YKA	**Yellowknife Ar**	**83.25**	**343**	P	**P**	**02 53 03.9**	**+0.9**
	0.2nm,0.5s,mb3.1,baz=137,slow=5.8,SNR=8.3						

LDG ***11*** *02:48:22.7±0.1,42.81N×2.53E,h4km,Md2.1/1,Ml2.0/8, Error ellipse: s-maj=0.9km s-min=0.8km az=122.0*
NEIC ***11*** *02:48:22.4,42.81N×2.53E,h5km,ML2.2(STR), ML2.0(LDG),MN1.6(MDD),After STR.*
STR ***11*** *02:48:22.9±0.3,42.82N×2.53E,h10km,mbLg1.5/10,Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
MDD ***11*** *02:48:22.9±0.3,42.82N×2.53E,h10km,mbLg1.5/10,Error ellipse: s-maj=2.4km s-min=1.9km az=99.0,PRXIMO*

ISC 11 02:48:21.0±0.3,42.88N±0.02×2.56E±0.03,h10km,n36, σ1⇕24/58,Pyrenees

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LRDF	**Laroque-de-Fa**	**0.06**	**346**	Pg	**Pg**	**02 48 25.3**	**+2.1**
LRDF				Sg	**Sg**	**02 48 27.7**	**+3.1**
LRDF	**Laroque-de-Fa**	**0.06**	**346**	P	**Pg**	**02 48 25.4**	**+2.2**
LRDF				S	**Sg**	**02 48 27.7**	**+3.1**
FILF	**Fillols**	**0.32**	**180**	Pg	**Pg**	**02 48 27.8**	**+0.3**
FILF				Sg	**Sg**	**02 48 31.6**	**-0.3**
FILF	**Fillols**	**0.32**	**180**	P	**Pg**	**02 48 27.9**	**+0.3**
FILF				S	**Sg**	**02 48 31.6**	**-0.4**
CARF	**Carcanieres**	**0.37**	**244**	P	**Pg**	**02 48 29.1**	**+0.6**
CARF				S	**Sg**	**02 48 34.0**	**+0.3**
SJAF	**Saint Jean de**	**0.46**	**149**	Pg	**Pg**	**02 48 30.8**	**+0.5**
SJAF				Sg	**Sg**	**02 48 36.6**	**+0.1**
SJAF	**Saint Jean de**	**0.46**	**149**	P	**Pg**	**02 48 30.8**	**+0.5**
SJAF				S	**Sg**	**02 48 36.5**	**0.0**
EJON	**La Jonquera**	**0.49**	**150**	Pg	**Pg**	**02 48 31.6**	**+0.6**
	0.3nm,0.1s,SNR=7.9						
EJON				Lg		02 48 37.7	
	3.7nm,0.1s,SNR=7.9						
EJON	**La Jonquera**	**0.49**	**150**	Pg	**Pg**	**02 48 31.6**	**+0.6**
EJON				Lg		02 48 37.7	
MTLF	**Montolieu**	**0.53**	**332**	*e*Pg	**Pg**	**02 48 33.5**	**+1.9**
MTLF				*e*Pn	**Pn**	**02 48 36.7**	**+2.5**
MTLF				*e*Sg	**Sg**	**02 48 40.8**	**+2.0**
MTLF				*e*Sn	**Sn**	**02 48 45.6**	**+2.5**
	5.2nm,0.2s						
MTLF	**Montolieu**	**0.53**	**332**	Pg	**Pg**	**02 48 33.5**	**+1.9**
MTLF				Lg		02 48 40.8	
CLLI	**Llivia**	**0.59**	**228**	Pg	**Pg**	**02 48 32.7**	**-0.1**
CLLI				Lg		02 48 39.7	
	0.9nm,0.1s						
VALF	**Valcebollere**	**0.62**	**220**	Pg	**Pg**	**02 48 33.4**	**-0.1**
VALF				Sg	**Sg**	**02 48 41.0**	**-0.9**
VALF	**Valcebollere**	**0.62**	**220**	P	**Pb**	**02 48 33.5**	**+0.1**
VALF				S	**Sg**	**02 48 41.1**	**-0.8**
CBRU	**Bruguera**	**0.65**	**205**	Pg	**Pg**	**02 48 33.9**	**-0.3**
CBRU				Lg		02 48 41.6	
	4.6nm,0.2s						
GRBF	**Gourbit**	**0.75**	**268**	S	**Sb**	**02 48 46.7**	**+0.9**
SALF	**Salau**	**1.01**	**264**	Pg	**Pg**	**02 48 41.3**	**0.0**
SALF				Sg	**Sg**	**02 48 54.9**	**0.0**
SALF	**Salau**	**1.01**	**264**	P	**Pb**	**02 48 41.8**	**+1.6**
SALF				S	**Sb**	**02 48 54.7**	**+1.4**
CFON	**Fontmartina**	**1.12**	**185**	Lg		02 48 56.8	
	4.3nm,0.1s						
CORG	**Organya**	**1.12**	**235**	Lg		02 48 57.2	
	0.6nm,0.1s						
CSOR	**Sort**	**1.17**	**245**	Pg	**Pg**	**02 48 43.8**	**-0.5**
CSOR				Lg		02 48 58.7	
	1.1nm,0.1s						
EMIR	**Miracle**	**1.23**	**219**	Pg	**Pg**	**02 48 45.3**	**-0.3**
	0.6nm,0.1s,SNR=7.9						
EMIR				Lg		02 49 01.1	
	0.8nm,0.1s,SNR=7.9						
LASF	**Ste Croix**	**1.53**	**38**	*e*Pn	**Pn**	**02 48 49.9**	**+1.4**
LASF				*e*Pg	**Pg**	**02 48 52.2**	**+0.7**
LASF				*e*Sg	**Sg**	**02 49 12.9**	**+1.0**
	2.1nm,0.3s						
EPF	**Esparros**	**1.64**	**276**	*e*Pn	**Pn**	**02 48 50.6**	**+0.6**
EPF				*e*Pg	**Pg**	**02 48 53.3**	**-0.4**
EPF				*e*Sn	**Sn**	**02 49 10.4**	**-0.9**
EPF				*e*Sg	**Sg**	**02 49 14.2**	**-1.3**
	3.7nm,0.2s						
CAVN	**Les Avellanes**	**1.67**	**234**	Pg	**Pg**	**02 48 52.9**	**-1.4**
CAVN				Lg		02 49 14.1	
	2.0nm,0.2s						
EPOB	**Poblet**	**1.88**	**216**	Pg	**Pg**	**02 48 55.0**	**-3.5**
	0.4nm,0.1s,SNR=4.0						
EPOB				Lg		02 49 19.9	
	1.3nm,0.1s,SNR=7.9						
CAF	**Calviac**	**2.08**	**350**	*e*Pg	**Pg**	**02 49 02.6**	**+0.1**
CAF				*e*Sn	**Sn**	**02 49 22.7**	**+0.1**
CAF				*e*Sg	**Sg**	**02 49 29.4**	**-0.9**
	1.8nm,0.3s						
ETSF	**Etsaut**	**2.29**	**272**	*e*Sg	**Sg**	**02 49 34.5**	**-2.8**
	2.0nm,0.3s						
LFF	**La Frestale**	**2.44**	**328**	*e*Sg	**Sg**	**02 49 39.8**	**-2.6**
	5.4nm,0.6s						
SMRF	**Simiane la Rot**	**2.46**	**62**	*e*Pn	**Pn**	**02 49 02.1**	**+0.3**
VIVF	**Saint-Julien-l**	**2.50**	**37**	*e*Pg	**Pg**	**02 49 09.7**	**-1.2**
VIVF				*e*Sg	**Sg**	**02 49 44.1**	**-0.2**
	0.7nm,0.2s						
ESAC	**San Caprasio**	**2.53**	**244**	Lg		02 49 41.9	
	5.2nm,0.2s,SNR=7.9						
RJF	**Les Rejaudoux**	**2.54**	**343**	*e*Pg	**Pg**	**02 49 10.8**	**-0.9**
RJF				*e*Sn	**Sn**	**02 49 33.4**	**-0.9**
RJF				*e*Sg	**Sg**	**02 49 43.7**	**-1.9**
	1.4nm,0.2s						
LMR	**La Mourre**	**2.93**	**80**	*e*Pn	**Pn**	**02 49 08.4**	**-0.1**
LMR				*e*Sg	**Sg**	**02 49 55.7**	**-2.8**
FRF	**La Foret Royal**	**3.06**	**76**	*e*Sg	**Sg**	**02 50 00.1**	**-3.0**
	0.9nm,0.3s						
TCF	**Toulx Ste Croi**	**3.42**	**356**	*e*Sg	**Sg**	**02 50 12.0**	**-2.9**

LDG ***11*** *03:25:35.8±0.1,42.82N×2.53E,h6km,Md2.2/1,Ml2.1/11, Error ellipse: s-maj=1.5km s-min=1.0km az=171.0*
NEIC ***11*** *03:25:35.8,42.82N×2.53E,h6km,ML2.1(LDG), MN1.5(MDD),After LDG.*
MDD ***11*** *03:25:35.8±0.2,42.82N×2.52E,h10km±2km,mbLg1.5/13, Error ellipse: s-maj=2.6km s-min=1.8km az=107.0, PRXIMO*

ISC 11 03:25:33.7±0.3,42.88N±0.02×2.56E±0.02,h10km,n34, σ1⇕25/58,Pyrenees

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LRDF	**Laroque-de-Fa**	**0.06**	**343**	P	**Pg**	**03 25 38.3**	**+2.5**
LRDF				S	**Sg**	**03 25 40.7**	**+3.4**
FILF	**Fillols**	**0.32**	**180**	P	**Pg**	**03 25 40.9**	**+0.6**
FILF				S	**Sg**	**03 25 44.6**	**0.0**
CARF	**Carcanieres**	**0.37**	**245**	P	**Pg**	**03 25 42.0**	**+0.7**
CARF				S	**Sg**	**03 25 46.9**	**+0.5**
EJON	**La Jonquera**	**0.49**	**151**	Pg	**Pg**	**03 25 44.5**	**+0.9**
	0.3nm,0.0s,SNR=7.9						
EJON				Lg		03 25 50.6	
	2.5nm,0.1s,SNR=7.9						
EJON	**La Jonquera**	**0.49**	**151**	Pg	**Pg**	**03 25 44.6**	**+0.9**
EJON				Lg		03 25 50.6	
MTLF	**Montolieu**	**0.53**	**331**	*e*Pg	**Pg**	**03 25 46.5**	**+2.1**
MTLF				*e*Pn	**Pn**	**03 25 49.2**	**+2.3**
MTLF				*e*Sg	**Sg**	**03 25 53.6**	**+2.1**
MTLF				*e*Sn	**Sn**	**03 25 58.5**	**+2.7**
	5.7nm,0.2s						
MTLF	**Montolieu**	**0.53**	**331**	Pg	**Pg**	**03 25 46.5**	**+2.1**
MTLF				Lg		03 25 53.6	
CLLI	**Llivia**	**0.59**	**228**	Pg	**Pg**	**03 25 45.7**	**+0.1**
CLLI				Lg		03 25 52.7	
	2.0nm,0.1s						
VALF	**Valcebollere**	**0.62**	**220**	Pg	**Pg**	**03 25 46.4**	**+0.2**
VALF				Sg	**Sg**	**03 25 54.0**	**-0.6**
VALF	**Valcebollere**	**0.62**	**220**	P	**Pb**	**03 25 46.4**	**+0.3**
VALF				S	**Sg**	**03 25 53.9**	**-0.8**
CBRU	**Bruguera**	**0.66**	**206**	Pg	**Pg**	**03 25 46.9**	**0.0**
CBRU				Lg		03 25 54.8	
	3.0nm,0.1s						
SALF	**Salau**	**1.02**	**264**	S	**Sb**	**03 26 07.7**	**+1.5**
MLS	**Moulis**	**1.08**	**275**	S	**Sb**	**03 26 09.5**	**+1.5**
CFON	**Fontmartina**	**1.12**	**185**	Pg	**Pg**	**03 25 55.6**	**-0.3**
CFON				Lg		03 26 10.5	
	5.7nm,0.1s						
CORG	**Organya**	**1.12**	**235**	Lg		03 26 10.0	
	0.5nm,0.1s						
CSOR	**Sort**	**1.17**	**245**	Pg	**Pg**	**03 25 56.2**	**-0.9**
CSOR				Lg		03 26 11.6	
	1.9nm,0.2s						
EMIR	**Miracle**	**1.23**	**219**	Pg	**Pg**	**03 25 58.0**	**-0.3**
	0.6nm,0.1s,SNR=7.9						
EMIR				Lg		03 26 15.3	
	2.7nm,0.1s,SNR=7.9						
EMIR	**Miracle**	**1.23**	**219**	Pg	**Pg**	**03 25 58.0**	**-0.3**
EMIR				Lg		03 26 15.3	
LASF	**Ste Croix**	**1.52**	**38**	*e*Pn	**Pn**	**03 26 02.8**	**+1.7**
LASF				*e*Pg	**Pg**	**03 26 05.3**	**+1.2**
LASF				*e*Sn	**Sn**	**03 26 22.2**	**+1.1**
LASF				*e*Sg	**Sg**	**03 26 25.6**	**+1.1**
	4.1nm,0.4s						
EPF	**Esparros**	**1.64**	**276**	*e*Pn	**Pn**	**03 26 03.4**	**+0.6**
EPF				*e*Pg	**Pg**	**03 26 06.1**	**-0.3**
EPF				*e*Sn	**Sn**	**03 26 23.1**	**-1.0**
EPF				*e*Sg	**Sg**	**03 26 27.1**	**-1.2**
	4.9nm,0.2s						
CAVN	**Les Avellanes**	**1.67**	**234**	Pg	**Pg**	**03 26 06.1**	**-1.0**
CAVN				Lg		03 26 27.4	
	2.8nm,0.1s						
EPOB	**Poblet**	**1.88**	**216**	Pg	**Pg**	**03 26 09.1**	**-2.2**
	0.7nm,0.0s,SNR=5.0						
EPOB				Lg		03 26 33.2	
	1.0nm,0.1s,SNR=7.9						
EPOB	**Poblet**	**1.88**	**216**	Pg	**Pg**	**03 26 09.1**	**-2.2**
EPOB				Lg		03 26 33.1	
CAF	**Calviac**	**2.08**	**350**	*e*Pg	**Pg**	**03 26 15.5**	**+0.3**
CAF				*e*Sn	**Sn**	**03 26 35.5**	**+0.3**
CAF				*e*Sg	**Sg**	**03 26 42.3**	**-0.6**
	1.8nm,0.3s						
ETSF	**Etsaut**	**2.29**	**272**	*e*Pn	**Pn**	**03 26 11.9**	**-0.3**
ETSF				*e*Sg	**Sg**	**03 26 47.5**	**-2.6**
	1.8nm,0.3s						
LFF	**La Frestale**	**2.45**	**328**	*e*Pg	**Pg**	**03 26 22.2**	**-0.3**
LFF				*e*Sg	**Sg**	**03 26 53.8**	**-1.4**
	4.7nm,0.3s						
SMRF	**Simiane la Rot**	**2.45**	**62**	*e*Pn	**Pn**	**03 26 15.1**	**+0.7**
SMRF				*e*Pg	**Pg**	**03 26 22.8**	**+0.1**
SMRF				*e*Sg	**Sg**	**03 26 55.1**	**-0.3**
	1.7nm,0.4s						
VIVF	**Saint-Julien-l**	**2.50**	**37**	*e*Sn	**Sn**	**03 26 45.7**	**-0.2**
VIVF				*e*Sg	**Sg**	**03 26 56.2**	**-0.7**
	1.5nm,0.3s						
ESAC	**San Caprasio**	**2.53**	**244**	Lg		03 26 55.6	
	4.5nm,0.2s,SNR=4.0						
RJF	**Les Rejaudoux**	**2.54**	**343**	*e*Pg	**Pg**	**03 26 24.3**	**-0.1**
RJF				*e*Sg	**Sg**	**03 26 57.0**	**-1.3**
	1.6nm,0.2s						
LMR	**La Mourre**	**2.92**	**80**	*e*Pn	**Pn**	**03 26 21.2**	**0.0**
LMR				*e*Sg	**Sg**	**03 27 08.6**	**-2.5**
	1.0nm,0.3s						
FRF	**La Foret Royal**	**3.06**	**76**	*e*Pn	**Pn**	**03 26 23.9**	**+0.8**
FRF				*e*Pg	**Pg**	**03 26 33.2**	**-1.6**
FRF				*e*Sg	**Sg**	**03 27 12.5**	**-3.1**
TCF	**Toulx Ste Croi**	**3.42**	**356**	*e*Pg	**Pg**	**03 26 40.0**	**-1.9**
TCF				*e*Sg	**Sg**	**03 27 24.9**	**-2.6**
	1.1nm,0.4s						
BGF	**Bois d'Agland**	**3.69**	**3**	*e*Sg	**Sg**	**03 27 33.3**	**-3.1**
	1.9nm,0.4s						

CASC 11 03:40:10.7±1.6,13.65N×90.14W,h72km±25km,MD3.6, ML3.9,5C,Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SBLS	**San Blas**	**0.54**	**69⇑**	*e*P	P	03 40 24.6	+0.3
SBLS				*e*S	S	03 40 35.2	+1.0
RTR	**El Retiro**	**0.54**	**63⇑**	*i*P	P	03 40 25.0	+0.7
RTR				*e*S	S	03 40 36.0	+1.8
SNJE	**San Jose**	**0.57**	**67⇑**	*e*P	P	03 40 25.1	+0.5
SNJE				*e*S	S	03 40 35.5	+0.8
IXG	**Ixpaco**	**0.60**	**330**	*e*P	P	03 40 25.0	0.0
IXG				*e*S	S	03 40 35.4	0.0
IXG				AML	AML	03 40 41.4	
	comp=E,8μm,0.3s						
BOQS	**Boqueron**	**0.84**	**84⇑**	*e*P	P	03 40 27.6	0.0
BOQS				*e*S	S	03 40 41.0	+0.8
SNET	**Serv Nac Est T**	**0.89**	**87**	*e*P	P	03 40 27.8	-0.3
SNET				*e*S	S	03 40 42.4	+1.3
LFRS	**El Faro**	**1.05**	**91**	*e*P	P	03 40 29.6	-0.6
LFRS				*e*S	S	03 40 45.1	+0.3
LBRS	**Las Brisas**	**1.07**	**85⇑**	*e*P	P	03 40 30.8	+0.3
LBRS				*e*S	S	03 40 46.0	+0.8
LCBS	**La Ceiba**	**1.13**	**89**	*e*P	P	03 40 31.2	-0.1
LCBS				*e*S	S	03 40 44.9	-1.7
SNVI	**San Vicente**	**1.27**	**91**	*e*P	P	03 40 33.5	+0.5
SNVI				*e*S	S	03 40 51.0	+1.3
JAT	**Jato**	**1.60**	**295**	*e*P	P	03 40 36.3	-1.2
JAT				*e*S	S	03 40 58.5	+1.2
JAT				AML	AML	03 41 01.3	
	comp=N,875nm,0.3s						
BLLM	**Bellamira**	**1.86**	**96**	*e*P	P	03 40 41.4	+0.2
BLLM				*e*P		03 40 42.2	
BLLM				*e*S	S	03 41 04.0	+0.4
BLLM				*e*S	S	03 41 04.5	+0.9
CAHU	**Cacacuatique**	**1.88**	**86**	*e*P	P	03 40 41.7	+0.3
CNCH	**Conchagua**	**2.28**	**99**	*e*P	P	03 40 46.4	-0.6
CNCH				*e*S	S	03 41 13.7	-0.2

IDC ***11*** *03:40:29.8±2.1,6.64S×130.11E,mb4.2/1,mb1 4.0/4, mb1mx3.8/13,ML3.7/3,Error ellipse: s-maj=86.2km s-min=27.0km az=78.0*

ISC 11 03:40:47.3±3.4,7.5S±0.1×129.8E±0.1,h192km±39km,n6, σ0⇕68/11,mb3.8/1,1C,Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**11.33**	**201⇑**	*i*P	**P**	**03 43 24.7**	**0.0**
	1.1nm,0.3s						
FITZ				*e*S	**S**	**03 45 28.2**	**-0.1**
FITZ	**Fitzroy Crossi**	**11.33**	**201**	Pn	**P**	**03 43 24.2**	**-0.5**
	0.5nm,0.3s,baz=16,slow=9.5,SNR=34						
FITZ				Sn	**S**	**03 45 28.5**	**+0.2**
	0.7nm,0.3s,baz=351,slow=23,SNR=5.8						
WRA	**Warramunga Arr**	**13.14**	**161**	Pn	**P**	**03 43 47.6**	**-0.1**
	0.5nm,0.3s,baz=347,slow=14,SNR=24						
WRA				Sn	**S**	**03 46 10.1**	**+0.1**
	0.7nm,0.3s,baz=335,slow=22,SNR=9.1						
WB2	**Warramunga Arr**	**13.15**	**161**	*e*P	**P**	**03 43 47.7**	**-0.1**
WB2				*e*S	**S**	**03 46 09.7**	**-0.4**
ASAR	**Alice Springs**	**16.57**	**167**	P	**P**	**03 44 33.5**	**+3.3**
	0.3nm,0.3s,baz=344,slow=9.2,SNR=7.9						
ASAR				S	**S**	**03 47 33.4**	**+6.1**
	0.2nm,0.3s,baz=354,slow=29,SNR=4.5						
MKAR	**Makanchi Array**	**68.53**	**327**	P	**P**	**03 51 30.9**	**-0.2**
	1.0nm,0.4s,mb3.6,baz=119,slow=8.1,SNR=17						

NEIC ***11*** *03:42:40.6,38.91N×21.22E,h4km,MD3.1(ATH),After ATH.*
ATH ***11*** *03:42:40.6,38.91N×21.22E,h4km,MD3.1/4*
THE ***11*** *03:42:42.0,38.90N×21.15E,h10km,ML2.8*

ISC 11 03:42:40.8±0.5,38.89N±0.03×21.17E±0.04,h3km,n13, σ1⇕02/20,Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LKD	**Levkas**	**0.45**	**245**	*e*Pg	**Pg**	**03 42 49.5**	**-0.1**
LKD				*e*Sg	**Sg**	**03 42 57.4**	**+1.8**
EVR	**Evrytania**	**0.50**	**87**	*e*PG	**Pg**	**03 42 49.5**	**-1.3**
JAN	**Janina**	**0.80**	**342**	*e*PG	**Pg**	**03 42 55.5**	**-1.3**
VLS	**Valsamata**	**0.85**	**213**	*e*PG	**Pg**	**03 42 56.0**	**-1.7**
VLS				*e*SG	**Sg**	**03 43 10.0**	**+1.0**
RLS	**Riolos of Patr**	**0.87**	**164**	*e*PG	**Pg**	**03 42 57.5**	**-0.6**
MEV	**Metsovon**	**0.89**	**3**	*e*Pg	**Pg**	**03 42 57.5**	**-1.1**
MEV				*e*Sg	**Sg**	**03 43 11.3**	**+0.8**
IGT	**Igoumenitsa**	**0.91**	**315**	*e*Pg	**Pg**	**03 42 58.0**	**-1.0**
IGT				*e*Sg	**Sg**	**03 43 12.1**	**+1.1**
AGG	**Agios Georgios**	**0.92**	**82**	*e*Pg	**Pg**	**03 42 58.5**	**-0.5**
AGG				*e*Sg	**Sg**	**03 43 13.3**	**+2.0**
KEK	**Kerkira**	**1.34**	**308**	*e*PN	**Pn**	**03 43 06.5**	**0.0**
LIT	**Litokhoron**	**1.58**	**40**	*e*Pb	**Pb**	**03 43 10.8**	**+0.4**
LIT				*e*Sb	**Sb**	**03 43 32.0**	**+1.3**
XOR	**Xorichti**	**1.64**	**73**	*e*Pb	**Pb**	**03 43 11.9**	**+0.4**
FNA	**Florina**	**1.90**	**5**	*e*Pb	**Pb**	**03 43 15.6**	**-0.2**
FNA				*e*Sb	**Sb**	**03 43 39.1**	**-0.7**
KNT	**Kendrikon**	**2.63**	**30**	*e*Pn	**Pn**	**03 43 24.9**	**0.0**

CASC ***11*** *03:51:19.2±2.1,12.35N×88.36W,h4km±8km,MD3.6*

ISC 11 03:51:18.1±0.7,12.29N±0.04×88.40W±0.04,h4km,n18, σ1⇕02/28,3C,Off coast of central America

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CNCH	**Conchagua**	**1.13**	**29**	*e*P	**Pb**	**03 51 38.4**	**-1.5**
CNCH				*e*S	**Sb**	**03 51 54.2**	**-0.6**
BLLM	**Bellamira**	**1.16**	**8**	*e*P	**Pb**	**03 51 39.5**	**-0.9**
BLLM				*e*S	**Sb**	**03 51 55.7**	**0.0**
PYN	**Poneloya**	**1.35**	**86⇑**	*e*P	**Pb**	**03 51 45.0**	**+1.3**
PYN				*e*S	**Sb**	**03 52 03.1**	**+1.9**
CRIN	**San Cristobal**	**1.39**	**73**	*e*P	**Pb**	**03 51 43.9**	**-0.3**
LCBS	**La Ceiba**	**1.47**	**338⇑**	*e*P	**Pn**	**03 51 44.8**	**-0.7**
LFRS	**El Faro**	**1.48**	**334**	*e*P	**Pn**	**03 51 45.2**	**-0.4**
LFRS				*e*S	**Sb**	**03 52 07.9**	**+3.1**
LEON	**Leon**	**1.48**	**85**	*e*P	**Pn**	**03 51 45.7**	**+0.1**

LKD				*e*Sg		**Sg**	**04 23 14.4**	**+2.8**
EVR	**Evrytania**	**0.53**	**82**	*i*PB		**Pb**	**04 23 09.0**	**-0.4**
EVR				*e*SB		**Sb**	**04 23 16.0**	**-1.0**
VLS	**Valsamata**	**0.79**	**213**	*i*PB		**Pb**	**04 23 14.3**	**+0.5**
VLS				*e*SN		**Sn**	**04 23 28.0**	**+0.4**
JAN	**Janina**	**0.84**	**345**	*e*PN		**Pn**	**04 23 13.9**	**-2.3**
JAN				*e*SB		**Sb**	**04 23 25.7**	**-0.3**
IGT	**Igoumenitsa**	**0.93**	**318**	*e*Pg		**Pg**	**04 23 15.8**	**-0.9**
IGT				*e*Sg		**Sg**	**04 23 30.1**	**+1.0**
MEV	**Metsovon**	**0.94**	**4**	*e*Pg		**Pg**	**04 23 15.5**	**-1.5**
MEV				*e*Sg		**Sg**	**04 23 29.2**	**-0.4**
AGG	**Agios Georgios**	**0.95**	**79**	*e*Pg		**Pg**	**04 23 16.5**	**-0.6**
AGG				*e*Sg		**Sg**	**04 23 31.0**	**+1.2**
KEK	**Kerkira**	**1.35**	**310**	*e*PN		**Pn**	**04 23 24.3**	**+0.8**
SRN	**Sarande**	**1.36**	**320**	*i* Pn		**Pn**	**04 23 23.6**	**0.0**
SRN				*i* Sn		**Sn**	**04 23 42.1**	**0.0**
LSK	**Leskovik**	**1.37**	**343**	*i* Pn		**Pn**	**04 23 25.2**	**+1.4**
LSK				*i* Sn		**Sn**	**04 23 44.6**	**+2.3**
KZN	**Kozani**	**1.54**	**18**	*e*PN		**Pn**	**04 23 25.8**	**-0.4**
LIT	**Litokhoron**	**1.64**	**39**	*e*Pb		**Pb**	**04 23 27.8**	**-0.5**
LIT				*e*Sb		**Sb**	**04 23 48.6**	**-0.4**
XOR	**Xorichti**	**1.68**	**71**	*e*Pb		**Pb**	**04 23 30.0**	**+0.9**
XOR				*e*Sb		**Sb**	**04 23 52.1**	**+1.7**
NEO	**Neokhori**	**1.69**	**73**	*e*PN		**Pn**	**04 23 28.2**	**-0.1**
ITM	**Ithomi**	**1.77**	**159**	*e*Pn		**Pn**	**04 23 33.2**	**+3.7**
FNA	**Florina**	**1.95**	**5**	*e*Pb		**Pb**	**04 23 33.1**	**-0.5**
FNA				*e*Sb		**Sb**	**04 23 58.1**	**0.0**
AOS	**Alonnisos**	**2.16**	**80**	*e*Pn		**Pn**	**04 23 35.2**	**+0.1**
AOS				*e*Sn		**Sn**	**04 24 02.8**	**+0.3**
BIA	**Bitola**	**2.18**	**4**	*i* Pn		**Pn**	**04 23 37.1**	**+1.8**
BIA				*i* Sn		**Sn**	**04 24 03.0**	**+0.1**
BIA				*i*			04 24 05.8	
PAIG	**Paliouri**	**2.25**	**60**	*e*Pn		**Pn**	**04 23 36.6**	**+0.2**
GRG	**Griva**	**2.33**	**24**	*e*Pn		**Pn**	**04 23 37.7**	**+0.3**
PLG	**Polygyros**	**2.35**	**49**	*e*PB		**Pb**	**04 23 37.5**	**-3.0**
VLI	**Velia**	**2.56**	**145**	*e*PB		**Pb**	**04 23 43.6**	**-0.4**
SOH	**Sokhos**	**2.61**	**40**	*e*Pn		**Pn**	**04 23 42.3**	**+0.7**
OUR	**Ouranopolis**	**2.66**	**55**	*e*Pn		**Pn**	**04 23 42.1**	**0.0**
KNT	**Kendrikon**	**2.68**	**30**	*e*Pn		**Pn**	**04 23 42.7**	**+0.1**
KNT				*e*Sn		**Sn**	**04 24 16.3**	**+0.6**
QSH	**Qafa e Shtames**	**2.84**	**341**	*i* Pn		**Pn**	**04 23 52.0**	**+7.3**
SRS	**Serrai**	**2.95**	**39**	*e*Pn		**Pn**	**04 23 46.5**	**+0.1**
SKO	**Skopje**	**3.13**	**4**	*e*Pn		**Pn**	**04 23 50.0**	**+1.0**
SKO				*i*			04 23 56.0	
SOI	**Samo**	**4.06**	**261**	*e*Pn		**Pn**	**04 24 01.4**	**-0.8**
SANT	**Santorini**	**4.23**	**124**	*e*P		**Pn**	**04 24 03.2**	**-1.3**
PTRP	**Pietrapertosa**	**4.26**	**295**	*e*Pn		**Pn**	**04 24 04.8**	**-0.1**
MGR	**Morigerati**	**4.51**	**288**	*e*Pn		**Pn**	**04 24 07.5**	**-1.0**
SLCN	**Sala Consilina**	**4.52**	**292**	*e*Pn		**Pn**	**04 24 08.7**	**0.0**
MRLC	**Muro Lucano**	**4.75**	**296**	*e*Pn		**Pn**	**04 24 10.7**	**-1.2**
SGO	**Sicignano**	**4.81**	**293**	*e*Pn		**Pn**	**04 24 12.3**	**-0.5**
PZI	**Palazzolo**	**5.21**	**252**	*e*Pn		**Pn**	**04 24 14.8**	**-3.5**
CII	**Carovilli**	**5.96**	**301**	*e*Pn		**Pn**	**04 24 28.2**	**-0.8**
SDI	**San Donato**	**6.29**	**299**	*e*Pn		**Pn**	**04 24 32.6**	**-1.1**
PSZ	**Piszkesteto**	**9.12**	**355**	*e*P		**P**	**04 25 08.3**	**-4.9**

***ATH* 11 04:26:42.6, 36.08N×29.21E, *h*41km, MD3.5/3, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSL	**Kastellorizon**	**0.31**	**77**	*e*P	P	04 26 51.0	-0.1
KSL				*e*S	S	04 26 58.2	+1.2
ARG	**Arkhangelos**	**0.89**	**279**	*e*P	P	04 27 00.0	+1.3
KARP	**Karpathos**	**1.75**	**253**	*e*P	P	04 27 12.0	+1.0

***MDD* 11 04:39:15.1±1.6, 35.90N×0.16W, *mb*3.6/1, Error ellipse: s-maj=13.2km s-min=8.0km az=118.0, PRXIMO, Northern Algeria**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EBER	**Berja**	**2.42**	**295**	P	Pn	04 39 53.8	-2.7
	0.9nm,0.1s,SNR=5.0						
EBER				S	Sn	04 40 26.0	-1.3
	3.5nm,0.4s,SNR=7.9						
EHUE	**Huescar**	**2.73**	**315**	P	Pn	04 40 01.7	+0.7
	0.2nm,0.1s,SNR=4.0						
ETOB	**Tobarra**	**2.96**	**338**	P	Pn	04 40 03.7	-0.5
	0.4nm,0.1s,SNR=7.9						
ETOB				S	Sn	04 40 39.4	-1.5
	0.7nm,0.2s,SNR=7.9						
EQES	**Quesada**	**3.01**	**310**	P	Pn	04 40 04.2	-0.7
	0.6nm,0.1s,SNR=7.9						
EQES				S	Sn	04 40 42.9	+0.6
	1.3nm,0.2s,SNR=7.9						
EIBI	**Ibiza**	**3.34**	**20**	P	Pn	04 40 08.1	-1.5
	1.4nm,0.1s,SNR=7.9						
EIBI				S	Sn	04 40 49.9	-0.8
	1.0nm,0.3s,SNR=7.9						

IDC **11** *05:11:27.8±0.8, 37.56N×96.77E, mb3.9/13, mb1 4.0/15, mb1mx4.0/24, ML3.9/2, Error ellipse: s-maj=27.8km s-min=17.0km az=41.0*
NEIC **11** *05:11:29.8±0.4, 37.67N×96.68E, h10km, Error ellipse: s-maj=13.3km s-min=7.9km az=51.0*
MOS **11** *05:11:30.8±1.1, 37.61N×96.70E, h33km, mb4.0/1, Error ellipse: s-maj=29.5km s-min=15.1km az=106.2*
BJI **11** *05:11:31.2, 37.61N×96.47E, h10km, mb4.4, ML3.9, Ms3.5, Msz3.5*
ISC 11 05:11:27.8±0.5, 37.60N±0.07×96.68E±0.07, h10km, n27, σ1°02/31, mb3.9/13, Qinghai

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GTA	**Gaotai**	**3.05**	**53**	P	**Pn**	**05 12 23.4**	**+6.3**
GTA				PG	**Pg**	**05 12 27.8**	**-1.0**
GTA				SG	**Sg**	**05 13 02.4**	**-7.1**
GTA				S	Sn		
	comp=N,81nm,1.3s						
GTA				S	Sn		
	comp=E,79nm,0.9s						
GTA				LR	LR		
	comp=N,288nm,5.8s						
GTA				LR	LR		
	comp=E,365nm,6.4s						
GTA				LR	LR		
	comp=Z,383nm,6.1s						
LZH	**Lanzhou**	**5.94**	**103**	PG	**Pg**	**05 13 22.0**	**-4.4**
LZH				SG	**Sg**	**05 14 37.5**	**-8.1**
LZH				S	Sn		
	comp=N,98nm,1.2s						
LZH				S	Sn		
	comp=E,95nm,1.2s						
LZH				LR	LR		
	comp=E,338nm,5.7s						
LZH				LR	LR		
	comp=Z,375nm,7.5s						
LSA	**Lhasa**	**9.13**	**212**	*e*P	**P**	**05 13 43.3**	**+0.7**
LSA				pmax	pmax		
	comp=Z,3.0nm,0.5s						
LSA	**Lhasa**	**9.13**	**212**	*e*P	**P**	**05 13 43.3**	**+0.7**
	comp=Z,3.1nm,0.5s						
WMQ	**Urumqi**	**9.22**	**315**	*e*P	**P**	**05 13 44.3**	**+0.3**
BTO	**Baotou**	**10.79**	**70**	*e*P	**P**	**05 14 12.9**	**+7.4**
HHC	**Hu-ho-hao-te**	**11.99**	**70**	*e*P	**P**	**05 14 23.9**	**+2.1**
HHC				AMB	AMB		
	comp=Z,9.0nm,1.1s						
SONM	**Songino Array**	**12.46**	**32**	Pn	**P**	**05 14 30.8**	**+2.7**
	comp=Z,0.5nm,0.3s,baz=217,slow=14,SNR=2.5						
ENH	**Enshi**	**12.89**	**121**	*e*P	**P**	**05 14 34.2**	**+0.3**
MKAR	**Makanchi Array**	**14.06**	**315**	Pn	**P**	**05 14 46.7**	**-2.5**
	comp=Z,0.2nm,0.3s,baz=129,slow=15,SNR=11						
MKAR				Sn	**S**	**05 17 14.9**	**-11**
	comp=Z,0.0nm,0.3s,baz=136,slow=23,SNR=2.6						
KURK	**Kurchatov**	**18.37**	**321**	*e*P	**P**	**05 15 42.8**	**-1.5**
BVAR	**Borovoye Array**	**23.89**	**319**	P	**P**	**05 16 42.7**	**+0.6**
	comp=Z,2.2nm,0.7s,mb3.7,baz=117,slow=9.9,SNR=15						
BRVK	**Borovoye**	**23.96**	**319**	*e*P	**P**	**05 16 44.4**	**+1.5**
ZRNK	**Zerenda**	**24.59**	**318**	*e*P	**P**	**05 16 49.6**	**+0.6**
BRTR	**Keskin Array B**	**48.36**	**293**	P	**P**	**05 20 11.1**	**-0.5**
	comp=Z,0.7nm,0.5s,mb4.0,baz=104,slow=5.1,SNR=4.1						
AKASG	**Malin Array Be**	**48.51**	**308**	P	**P**	**05 20 13.2**	**+0.7**
	comp=Z,0.2nm,0.2s,mb3.7,baz=70,slow=6.8,SNR=4.3						
FINES	**FINESS Array B**	**48.73**	**323**	P	**P**	**05 20 14.1**	**0.0**
	comp=Z,1.0nm,0.6s,mb4.0,baz=184,slow=31,SNR=2.1						
SPITS	**Spitsbergen Ar**	**51.53**	**345**	P	**P**	**05 20 36.0**	**+0.6**
	comp=Z,4.9nm,1.1s,mb4.4,baz=106,slow=6.6,SNR=3.4						
FX1	**Attu Island--F**	**53.43**	**47**	P	**P**	**05 20 49.5**	**-0.3**
	comp=Z,5.4nm,0.7s,mb4.6,baz=267,slow=17,SNR=2.5						
NOA	**NORSAR Array B**	**55.85**	**324**	P	**P**	**05 21 06.8**	**-0.6**
	comp=Z,0.7nm,0.7s,mb3.8,baz=114,slow=3.6,SNR=3.0						
NOA	**NORSAR Array B**	**55.85**	**324**	P	**P**	**05 21 06.8**	**-0.6**
GERES	**GERESS Array B**	**58.65**	**310**	P	**P**	**05 21 28.1**	**+0.7**
	comp=Z,0.2nm,0.2s,mb3.7,baz=67,slow=7.5,SNR=3.1						
ILAR	**Eielson Array**	**66.58**	**25**	P	**P**	**05 22 19.1**	**-0.7**
	comp=Z,0.9nm,0.8s,mb3.8,baz=290,slow=5.0,SNR=11						
WRA	**Warramunga Arr**	**67.32**	**141**	P	**P**	**05 22 24.4**	**-0.9**
	comp=Z,1.1nm,1.2s,mb3.8,baz=6.0,slow=6.1,SNR=6.7						
INK	**Inuvik**	**67.98**	**18**	P	**P**	**05 22 28.4**	**-0.2**
	comp=Z,2.2nm,0.7s,mb4.3,baz=347,slow=7.0,SNR=23						
ASAR	**Alice Springs**	**70.28**	**144**	P	**P**	**05 22 42.5**	**-1.0**
	comp=Z,1.3nm,1.0s,mb3.8,baz=327,slow=5.8,SNR=6.5						
YKA	**Yellowknife Ar**	**77.12**	**14**	P	**P**	**05 23 22.0**	**-0.5**
	comp=Z,0.3nm,0.5s,mb3.5,baz=335,slow=5.9,SNR=8.4						

IDC **11** *05:18:48.9±5.0, 37.06N×96.66E, mb3.7/5, mb1 3.8/7, mb1mx3.6/22, ML4.0/2, Error ellipse: s-maj=107.0km s-min=39.0km az=4.0*
BJI **11** *05:18:56.3, 37.47N×96.65E, h15km, ML3.4*
ISC 11 05:18:52.7±2.4, 37.6N±0.3×96.6E±0.2, h15km, n8, σ1°10/9, mb3.7/5, Qinghai

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GTA	**Gaotai**	**3.08**	**53**	PG	**Pg**	**05 19 52.3**	**-1.9**
GTA				SG	**Sg**	**05 20 35.7**	**+0.5**
GTA				S	Sn		
	comp=N,37nm,0.8s						
GTA				S	Sn		
	comp=E,32nm,1.0s						
SONM	**Songino Array**	**12.48**	**32**	Pn	**P**	**05 21 53.4**	**+0.9**
	comp=E,0.8nm,0.3s,baz=358,slow=33,SNR=3.8						
MKAR	**Makanchi Array**	**14.03**	**315**	Pn	**P**	**05 22 10.7**	**-2.3**
	comp=E,0.2nm,0.3s,baz=128,slow=14,SNR=8.1						
BVAR	**Borovoye Array**	**23.86**	**319**	P	**P**	**05 24 06.6**	**+0.5**
	comp=E,1.3nm,0.6s,mb3.5,baz=108,slow=9.4,SNR=9.7						
FINES	**FINESS Array B**	**48.71**	**323**	P	**P**	**05 27 38.5**	**+0.5**
	comp=E,1.1nm,0.8s,mb4.0,baz=107,slow=20,SNR=3.0						
SPITS	**Spitsbergen Ar**	**51.52**	**345**	P	**P**	**05 28 00.5**	**+1.2**
	comp=E,8.1nm,1.1s,mb4.6,baz=105,slow=10,SNR=2.6						
ILAR	**Eielson Array**	**66.59**	**25**	P	**P**	**05 29 43.3**	**-0.6**
	comp=E,0.2nm,0.6s,mb3.3,baz=288,slow=4.7,SNR=4.2						
YKA	**Yellowknife Ar**	**77.12**	**14**	P	**P**	**05 30 46.9**	**+0.4**
	comp=E,0.1nm,0.5s,mb3.0,baz=339,slow=5.6,SNR=4.2						

IDC **11** *05:21:01.6±1.1, 7.16N×76.35W, mb3.5/3, mb1 3.9/6, mb1mx3.6/22, ML3.2/3, MS2.7/1, Ms1 2.7/1, ms1mx2.4/25, Error ellipse: s-maj=23.3km s-min=16.9km az=44.0*
NEIC **11** *05:21:05.1±2.8, 7.06N×76.38W, h24km±23km, mb3.7/4, Error ellipse: s-maj=10.7km s-min=9.8km az=215.0*
ISC 11 05:21:04.4±0.6, 7.16N±0.06×76.39W±0.06, h33km, n15, σ1°18/16, mb3.6/6, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ROSC	**El Rosal**	**3.08**	**138**	Pn	**Pn**	**05 21 52.1**	**+0.2**
	10nm,0.3s,baz=307,slow=7.5,SNR=34						
ROSC				Pg	**P**	**05 21 55.9**	**+4.2**
	28nm,0.3s,baz=342,slow=16,SNR=52						
ROSC				Sn	**Sn**	**05 22 28.9**	**+0.9**
	12nm,0.3s,baz=159,slow=20,SNR=6.0						
ROSC				Lg		05 22 33.9	
	32nm,0.3s,baz=207,slow=23,SNR=7.4						
SDV	**Santo Domingo**	**5.95**	**73**	Pn	**Pn**	**05 22 32.7**	**+0.1**
	1.5nm,0.3s,baz=297,slow=13,SNR=17						
SDV				Sn	**Sn**	**05 23 40.0**	**-0.5**
	3.4nm,0.3s,baz=80,slow=22,SNR=2.7						
SDV				Lg		05 24 08.9	
	2.9nm,0.3s,baz=356,slow=14,SNR=5.1						
SDV				LR	LR	05 25 06.0	
	comp=Z,74nm,20.7s,baz=43,slow=41						
OTAV	**Otavalo**	**7.18**	**197**	*e*P	**P**	**05 22 48.0**	**-1.6**
JTS	**JuntasAbangare**	**9.01**	**291**	*e*P	**P**	**05 23 13.9**	**-1.2**
	0.7nm,1.1s						
PCRV	**Puerto La Cruz**	**12.00**	**75**	Pn	**P**	**05 23 54.3**	**-1.8**
	0.8nm,0.3s,baz=198,slow=6.4,SNR=3.7						
LPAZ	**La Paz**	**24.69**	**161**	P	**P**	**05 26 25.8**	**+1.8**
	0.7nm,0.7s,mb3.3,baz=315,slow=5.7,SNR=2.2						
LPAZ	**La Paz**	**24.69**	**161**	P	**P**	**05 26 23.3**	**-0.7**
	0.6nm,0.8s,mb3.2						
PLAL	**Pickwick Lake**	**29.70**	**340**	*e*P	**P**	**05 27 10.9**	**+1.3**
	1.0nm,0.5s,mb3.8						
MIAR	**Mount Ida**	**31.52**	**332**	P	**P**	**05 27 25.5**	**-0.2**
	4.3nm,1.5s,mb4.1						
ANMO	**Albuquerque**	**39.10**	**319**	P	**P**	**05 28 33.1**	**+2.8**
	1.5nm,1.2s,mb3.6						
YKA	**Yellowknife Ar**	**61.85**	**341**	P	**P**	**05 31 22.0**	**-0.4**
	0.3nm,0.5s,mb3.6,baz=132,slow=6.8,SNR=15						
INK	**Inuvik**	**71.62**	**341**	P	**P**	**05 32 25.0**	**+0.9**
	0.7nm,1.1s,mb3.5,baz=146,slow=9.4,SNR=4.1						
INK	**Inuvik**	**71.62**	**341**	P	**P**	**05 32 25.0**	**+0.9**
WRA	**Warramunga Arr**	**147.61**	**244**	PKPbc	PKPdf	05 40 48.3	+4.8
	0.1nm,0.5s,baz=107,slow=2.4,SNR=5.0						
WRA	**Warramunga Arr**	**147.61**	**244**	PKPbc	PKPdf	05 40 48.3	+4.8

HRVD **11** *05:24:14.7±1.0, 15.01S×173.66W, h128km±12km, MW4.8/34, Centroid moment Tensor Solution. LP body waves: s4,c4;Mantle waves: s34,c39; Half duration: 0 Moment tensor: Scale 10^16Nm; Mrr-0.63±.22; Mθθ-1.00±.25; Mφφ1.63±.21; Mrθ-0.53±.16; Mrφ0.61±.29; Mθφ0.80±.16; Best double couple: M0 1.8×10^16 NP1:φs53°, δ52°, λ-18°. NP2:φs154°, δ76°, λ-141°. Principal axes: T 1.95, Plg15°, Azm279°; N -.29, Plg49°, Azm171°; P -1.66, Plg37°, Azm21°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
IDC **11** *05:24:14.9±5.8, 15.35S×173.77W, h50km±51km, mb4.3/12, mb1 4.4/13, mb1mx4.4/16, ML4.3/1, MS3.7/2, Ms1 3.7/2, ms1mx3.1/29 Error ellipse: s-maj=23.1km s-min=16.7km az=144.0*
NEIC **11** *05:24:15.2±1.7, 15.38S×173.79W, h54km±15km, mb4.8/8, Error ellipse: s-maj=9.7km s-min=6.0km az=147.0*
ISC 11 05:24:11.5±3.9, 15.4S±0.1×173.85W±0.09, h35km±36km, n54, σ0°63/29, mb4.6/18, MS3.7/2, 1C-5D, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**14.58**	**116**	P	**P**	**05 27 37.1**	**-0.2**
	1.2nm,0.3s,baz=142,slow=4.6,SNR=2.0						
RAR				S	**S**	**05 30 05.2**	**-13**
	1.0nm,0.3s,baz=14,slow=15,SNR=2.3						
NOUC	**Port Laguerre**	**19.95**	**247**	*e*P	**P**	**05 28 50.3**	**+6.8**
URZ	**Urewera**	**24.18**	**198**	P	**P**	**05 29 26.8**	**+1.1**
	25nm,0.7s,mb4.8,baz=14,slow=2.8,SNR=15						
SNZO	**South Karori**	**27.71**	**199**	P	**P**	**05 29 58.7**	**0.0**
JOHN	**Johnston Islan**	**32.16**	**8**	P	**P**	**05 30 38.8**	**+0.4**
CTA	**Charters Tower**	**38.23**	**257**	LR	LR	05 44 12.3	
	comp=Z,133nm,21.4s,MS3.7,baz=50,slow=31						
PMG	**Port Moresby**	**38.50**	**274**	P	**P**	**05 31 34.6**	**+2.2**
	10nm,0.7s,mb4.7,baz=151,slow=3.3,SNR=3.1						
TOO	**Toolangi**	**42.16**	**230**	*e*P	**P**	**05 32 02.7**	**+0.2**
	9.8nm,1.0s,mb4.4						
STKA	**Stephens Creek**	**43.69**	**240**	*e*P	**P**	**05 32 15.5**	**+0.4**
	14nm,0.3s,mb4.7						
STKA	**Stephens Creek**	**43.69**	**240**	P	**P**	**05 32 15.1**	**0.0**
	25nm,1.1s,mb4.9,baz=82,slow=8.1,SNR=22						
WB2	**Warramunga Arr**	**49.42**	**257**	*i*P	**P**	**05 33 00.0**	**-0.4**
WRAB	**Tennant Creek**	**49.43**	**257**	*e*P	**P**	**05 32 59.4**	**-1.0**
	6.5nm,0.5s,mb4.9						
WRA	**Warramunga Arr**	**49.44**	**257**	P	**P**	**05 32 59.8**	**-0.7**
	9.7nm,0.5s,mb5.1,baz=91,slow=6.8,SNR=260						
WRA				PcP	PcP	05 34 21.4	-1.2
	2.8nm,0.8s,baz=84,slow=3.7,SNR=7.5						
AS12	**Alice Springs**	**49.72**	**252**	*i*P	**P**	**05 33 02.5**	**-0.1**
	27nm,0.9s,mb5.3						
AS12				*e*pP	pP	05 33 33.6	+21
ASAR	**Alice Springs**	**49.72**	**252**	P	**P**	**05 33 02.4**	**-0.2**
	64nm,1.1s,mb5.5,baz=86,slow=8.7,SNR=115						
KAKA	**Kakadu**	**52.11**	**266**	*i*P	**P**	**05 33 20.9**	**+0.1**
	10nm,0.5s,mb5.0						
FORT	**Forrest**	**55.05**	**243**	*e*P	**P**	**05 33 41.3**	**-1.1**
	102nm,0.6s						
FITZ	**Fitzroy Crossi**	**57.80**	**258**	*i*P	**P**	**05 34 01.6**	**-0.5**
	2.1nm,0.9s,mb4.2						
VNDA	**Vanda**	**63.38**	**186**	P	**P**	**05 34 39.5**	**+0.1**
	4.8nm,0.9s,mb4.6,baz=11,slow=6.2,SNR=17						
KLBR	**Kellerberrin**	**63.88**	**242**	*i*P	**P**	**05 34 42.8**	**-0.5**
	17nm,0.7s,mb5.2						
JNU	**Nakatsue**	**71.45**	**313**	P	**P**	**05 35 31.0**	**+0.4**
	8.9nm,0.7s,mb4.8,baz=320,slow=44,SNR=2.5						
NVAR	**Mina Array Bea**	**74.58**	**42**	P	**P**	**05 35 48.5**	**-0.3**
	0.6nm,0.5s,mb3.8,baz=218,slow=9.6,SNR=4.2						
QSPA	**South Pole Qui**	**74.69**	**180**	*e*P	**P**	**05 35 49.0**	**+0.2**
	13nm,1.0s,mb4.8						
TXAR	**Lajitas Array**	**80.94**	**56**	P	**P**	**05 36 24.2**	**-0.1**
	0.2nm,0.8s,baz=236,slow=9.0,SNR=3.9						
DLBC	**Dease Lake**	**81.81**	**22**	LR	LR	06 08 11.0	
	comp=Z,36nm,19.8s,MS3.7,baz=18,slow=32						
ILAR	**Eielson Array**	**82.48**	**11**	P	**P**	**05 36 31.9**	**+0.4**
	0.6nm,0.8s,mb3.8,baz=229,slow=6.2,SNR=6.8						
PDAR	**Pinedale Array**	**82.52**	**42**	P	**P**	**05 36 31.7**	**-0.5**
	0.6nm,0.7s,mb3.7,baz=270,slow=3.0,SNR=4.4						
MAW	**Mawson**	**87.70**	**199**	*i*P	**P**	**05 36 57.8**	**+0.4**
	4.4nm,0.9s,mb4.7						
MAW	**Mawson**	**87.70**	**199**	P	**P**	**05 36 57.7**	**+0.4**
	5.1nm,0.8s,mb4.8,baz=133,slow=6.9,SNR=7.9						
YKA	**Yellowknife Ar**	**90.22**	**24**	P	**P**	**05 37 09.4**	**0.0**
	0.5nm,1.1s,mb3.8,baz=237,slow=4.4,SNR=5.3						
BVAR	**Borovoye Array**	**117.58**	**322**	PKP	PKPdf	05 42 53.8	0.0
	0.5nm,0.6s,baz=45,slow=2.1,SNR=5.1						
ARCES	**ARCESS Array B**	**124.50**	**352**	PKP	PKPdf	05 43 07.0	+0.2
	4.1nm,1.1s,baz=90,slow=4.9,SNR=4.2						
PRU	**Pruhonice**	**144.78**	**351**	*e*PKP	PKPdf	05 43 45.2	+0.5
KMBO	**Kilima Mbogo**	**145.17**	**245**	PKPbc	PKPbc	05 43 47.9	+1.1
	12nm,1.1s,baz=49,slow=2.8,SNR=11						
VYHS	**Vyhne**	**145.34**	**345**	*e*PKP	PKPdf	05 43 47.1	+1.4
GRA1	**Grafenberg Arr**	**145.50**	**354**	*e*PKP	PKPdf	05 43 47.7	+1.8
KHC	**Kasperske Hory**	**145.77**	**351**	*e*PKP	PKPdf	05 43 47.5	+1.1
BRTR	**Keskin Array B**	**145.85**	**321**	PKPbc	PKPbc	05 43 49.2	+1.5
	4.3nm,0.7s,baz=90,slow=2.5,SNR=19						
GERES	**GERESS Array B**	**146.03**	**351**	PKPbc	PKPbc	05 43 49.4	+1.5
	4.3nm,1.1s,baz=27,slow=3.0,SNR=13						
CDF	**Champ du Feu**	**147.02**	**359**	*e*PKP1	PKPdf	05 43 51.8	+3.3
	18nm,1.0s						
HAU	**Haudompre**	**147.44**	**360**	*e*PKP1	PKPdf	05 43 52.9	+3.7
	10nm,0.7s						
SSF	**Saint Saulge**	**148.31**	**3**	*e*PKP1	PKPdf	05 43 55.4	+4.8
	20nm,1.2s						
AVF	**Avril sur Loir**	**148.57**	**4**	*e*PKP1	PKPdf	05 43 55.7	+4.6
	12nm,1.1s						
SMF	**Signal de Mont**	**148.74**	**3**	*e*PKP1	PKPdf	05 43 56.2	+4.9
BGF	**Bois d'Agland**	**148.76**	**4**	*e*PKP1	PKPdf	05 43 56.4	+5.0
CABF	**La Chapelle**	**148.83**	**0**	*e*PKP1	PKPdf	05 43 57.3	+5.8
	28nm,1.1s						
LPL	**La Plagne**	**149.92**	**359**	*e*PKP1	PKPdf	05 44 00.5	+7.2
	9.4nm,0.9s						
LPG	**La Plagne**	**149.94**	**359**	*e*PKP1	PKPdf	05 44 00.7	+7.4
	16nm,1.1s						
BNI	**Bardonecchia**	**150.39**	**359**	*e*PKPbc	PKPdf	05 44 01.2	+7.2
ORIF	**Oris-en-Rattie**	**150.52**	**0**	*e*PKP1	PKPdf	05 44 01.3	+7.1
VIVF	**Saint-Julien-l**	**150.56**	**2**	*e*PKP1	PKPdf	05 44 01.4	+7.1
	12nm,1.1s						
MBDF	**Montbardon**	**150.71**	**359**	*e*PKP1	PKPdf	05 44 01.1	+6.6
	8.2nm,0.9s						
LASF	**Ste Croix**	**151.30**	**3**	*e*PKP1	PKPdf	05 44 03.2	+7.8
SMRF	**Simiane la Rot**	**151.46**	**1**	*e*PKP1	PKPdf	05 44 03.9	+8.2
	11nm,1.1s						

NEIC **11** *05:29:17.0, 37.00N×22.61E, h2km, MD3.1(ATH), After ATH.*
ATH **11** *05:29:17.2, 37.03N×22.62E, h5km, MD3.1/5*
ISC 11 05:29:16.3±0.8, 37.05N±0.07×22.63E±0.07, h5km, n6, σ0°48/8, 1C-1D, Southern Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VLI	**Veliai**	**0.41**	**143**	*i*Pg	**Pg**	**05 29 24.9**	**+0.3**
VLI				*e*Sg	**Sg**	**05 29 29.4**	**-0.7**
ITM	**Ithomi**	**0.58**	**283**	*i*Pg	**Pg**	**05 29 28.0**	**+0.1**
ITM				*e*Sg	**Sg**	**05 29 35.3**	**-0.3**
KYTH	**K

IMA	**Indian Mountai**	**148.29**	**328**	*e*PKPdf	PKPdf	05	56	19.5 -1.8

IDC **11** *05:39:15.0±1.6, 11.51S×166.51E, h114km±8km, mb4.3/7, mb1 4.4/8, mb1mx4.0/18, MS3.5/1, Ms1 3.5/1, ms1mx3.0/19, Error ellipse: s-maj=27.5km s-min=26.1km az=117.0*
NEIC **11** *05:39:26.7±5.7, 11.66S×166.22E, h214km±48km, mb4.3/8, Error ellipse: s-maj=33.8km s-min=16.7km az=53.0*
ISC 11 05:39:13.9±1.5,**11.6S**±0.2×**166.5E**±0.2,**h113**km, **h113**km±1.9km;**pP-P,n21,**σ**0§94/20,mb4.4**/10,**5D,Santa Cruz Islands**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**19.10**	**275**	P		**P**	**05 43 30.7**	**+0.4**
	0.5nm,0.3s,baz=77,slow=9.3,SNR=4.1							
PMG	**Port Moresby**	**19.10**	**275**	*e*P		**P**	**05 43 30.8**	**+0.4**
	31nm,1.1s							
PMG				*e*			05 43 43.3	
WAU	**Wau**	**19.92**	**281**	*e*P		**P**	**05 43 41.6**	**+2.6**
CTA	**Charters Tower**	**21.16**	**244**	*e*P		**P**	**05 43 53.1**	**+1.6**
	12nm,0.8s,mb4.3							
CTA	**Charters Tower**	**21.16**	**244**	P		**P**	**05 43 52.8**	**+1.3**
	16nm,0.8s,mb4.4,baz=80,slow=11,SNR=14							
CTAO	**Charters Tower**	**21.16**	**244**	*e*P		**P**	**05 43 52.5**	**+1.0**
	17nm,0.8s,mb4.4							
STKA	**Stephens Creek**	**30.52**	**225**	⇓*i*P		**P**	**05 45 19.5**	**+0.8**
	4.4nm,0.6s,mb4.4							
STKA	**Stephens Creek**	**30.52**	**225**	P		**P**	**05 45 19.2**	**+0.5**
	4.7nm,0.6s,mb4.4,baz=60,slow=7.2,SNR=8.9							
WRAB	**Tennant Creek**	**31.93**	**251**	*e*P		**P**	**05 45 30.4**	**-0.8**
WB2	**Warramunga Arr**	**31.93**	**251**	⇓*i*P		**P**	**05 45 30.6**	**-0.6**
WRA	**Warramunga Arr**	**31.95**	**251**	P		**P**	**05 45 29.8**	**-1.4**
	8.7nm,0.7s,mb4.6,baz=85,slow=9.1,SNR=64							
RPZ	**Rata Peaks**	**32.23**	**174**	P		**P**	**05 45 33.7**	**+0.2**
	11nm,0.6s,mb4.8,baz=326,slow=6.2,SNR=8.5							
AS12	**Alice Springs**	**33.16**	**244**	⇓*i*P		**P**	**05 45 41.0**	**-0.8**
	8.7nm,0.7s,mb4.7							
ASAR	**Alice Springs**	**33.16**	**244**	P		**P**	**05 45 41.0**	**-0.8**
	9.2nm,0.7s,mb4.7,baz=74,slow=9.5,SNR=86							
ASAR				pP		pP	05 46 05.8	-1.4
	1.0nm,0.7s,baz=72,slow=9.1,SNR=1.4							
ASAR				ScP			05 51 56.8	
	0.4nm,0.6s,baz=88,slow=4.0,SNR=4.0							
ASAR				LR		LR	05 58 21.0	
	comp=Z,81nm,18.3s,baz=226,slow=34							
KAKA	**Kakadu**	**33.30**	**265**	⇓*i*P		**P**	**05 45 41.9**	**-1.1**
	5.5nm,0.6s,mb4.6							
FITZ	**Fitzroy Crossi**	**39.91**	**256**	⇓*i*P		**P**	**05 46 39.0**	**+0.5**
	7.0nm,1.1s,mb4.4							
FITZ	**Fitzroy Crossi**	**39.91**	**256**	P		**P**	**05 46 38.8**	**+0.3**
	7.8nm,0.9s,mb4.5,baz=87,slow=3.5,SNR=11							
FITZ				pP		pP	05 47 05.8	+1.2
	4.6nm,1.0s,baz=121,slow=4.3,SNR=3.0							
VNDA	**Vanda**	**65.94**	**181**	P		**P**	**05 49 49.3**	**-0.3**
	0.4nm,0.6s,mb3.4							
SBA	**Scott Base**	**66.23**	**180**	*e*P		**P**	**05 49 52.1**	**+0.7**
	2.8nm,0.9s,mb4.1							
MKAR	**Makanchi Array**	**94.41**	**317**	P		**P**	**05 52 21.9**	**-0.2**
	1.2nm,0.5s,mb4.5,baz=90,slow=7.2,SNR=14							
MKAR				pP		pP	05 52 51.5	-0.5
	1.6nm,1.1s,baz=90,slow=7.3,SNR=3.1							
ARCES	**ARCESS Array B**	**117.06**	**346**	PKP		PKPdf	05 57 44.9	-0.1
	2.2nm,0.9s,baz=56,slow=3.3,SNR=3.0							

IDC **11** *05:49:07.6±0.9, 32.99N×96.53E, mb3.9/10, mb1 4.1/11, mb1mx3.9/20, ML4.2/1, Error ellipse: s-maj=55.3km s-min=16.8km az=56.0*
MOS **11** *05:49:11.3±2.0, 33.12N×96.56E, h35km, mb4.0/1, Error ellipse: s-maj=17.6km s-min=14.4km az=85.8*
BJI **11** *05:49:13.2, 33.31N×96.61E, h53km, mB4.3, mb4.4, ML4.1, Ms3.7, Msz3.6*
NEIC **11** *05:49:14.8±0.6, 33.10N×96.46E, h50km, Error ellipse: s-maj=12.8km s-min=9.5km az=144.0*
ISC 11 05:49:11.4±1.6,**33.10N**±0.07×**96.49E**±0.08,**h38**km±18km, **n31,**σ**1§27/32,mb3.9/11,Qinghai**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
LSA	**Lhasa**	**5.69**	**235**	P		**P**	**05 50 41.8**	**+6.2**
LSA	**Lhasa**	**5.69**	**235**	*e*P		**P**	**05 50 39.5**	**+3.9**
LSA				pmax		pmax		
	comp=Z,18nm,0.6s							
LSA	**Lhasa**	**5.69**	**235**	*e*Pn		**P**	**05 50 39.5**	**+3.9**
	comp=Z,18nm,0.6s							
SHL	**Shillong**	**8.52**	**209**	*e*P		**P**	**05 51 17.5**	**+2.4**
SHL				*e*S		**S**	**05 52 47.4**	**-3.6**
KKN	**Kakani**	**11.03**	**244**	*e*P		**P**	**05 51 50.1**	**+0.4**
	comp=Z,7.9nm,0.3s							
KKN	**Kakani**	**11.03**	**244**	*e*P		**P**	**05 51 50.1**	**+0.4**
KKN				pmax		pmax		
	comp=Z,4.0nm,0.3s							
PKI	**Pulchoki**	**11.04**	**243**	*e*P		**P**	**05 51 48.7**	**-1.2**
	comp=Z,23nm,0.4s							
PKI	**Pulchoki**	**11.04**	**243**	*e*P		**P**	**05 51 48.7**	**-1.2**
PKI				pmax		pmax		
	comp=Z,12nm,0.4s							
DMN	**Daman**	**11.25**	**244**	*e*P		**P**	**05 51 52.1**	**-0.6**
	comp=Z,12nm,0.5s							
GKN	**Gorkha**	**11.41**	**247**	*e*P		**P**	**05 51 55.6**	**+0.7**
ENH	**Enshi**	**11.42**	**101**	*e*P		**P**	**05 51 55.8**	**+0.8**
	comp=Z,3.0nm,0.5s							
DANN	**Dangsing**	**11.93**	**250**	*e*P		**P**	**05 52 03.1**	**+1.2**
KOLN	**Koldanda**	**12.32**	**248**	*e*P		**P**	**05 52 05.4**	**-1.8**
	comp=Z,7.8nm,0.7s							
WMQ	**Urumqi**	**12.72**	**330**	*e*P		**P**	**05 52 10.8**	**-1.6**
MKAR	**Makanchi Array**	**17.44**	**326**	P		**P**	**05 53 12.3**	**-1.0**
	comp=Z,0.7nm,0.3s,baz=130,slow=14,SNR=32							
MKAR	**Makanchi Array**	**17.44**	**326**	*e*P		**P**	**05 53 13.6**	**+0.3**
MKAR				pmax		pmax		
	comp=Z,2.0nm,0.7s							
ZAK	**Zakamensk**	**17.98**	**14**	*e*P		**P**	**05 53 12.2**	**-7.8**
KURK	**Kurchatov**	**21.96**	**329**	*e*P		**P**	**05 54 03.2**	**-0.2**
ZAL	**Zalesovo**	**22.43**	**342**	P		**P**	**05 54 09.1**	**+1.1**
	comp=Z,1.2nm,0.3s,mb3.7,baz=71,slow=6.6,SNR=3.0							
CN2	**Changchun**	**24.95**	**56**	*e*P		**P**	**05 54 31.0**	**-1.6**
CN2				AMB		AMB		
	comp=Z,10.0nm,0.7s,mb4.5							
BVAR	**Borovoye Array**	**27.32**	**325**	P		**P**	**05 54 54.1**	**-0.3**
	comp=Z,0.4nm,0.4s,mb3.3,baz=117,slow=6.4,SNR=3.6							
AKASG	**Malin Array Be**	**51.26**	**311**	P		**P**	**05 58 13.1**	**-0.2**
	comp=Z,0.9nm,0.6s,mb3.9,baz=79,slow=6.1,SNR=4.2							
FINES	**FINESS Array B**	**52.27**	**325**	P		**P**	**05 58 23.0**	**+2.2**
	comp=Z,0.8nm,0.6s,mb3.8,baz=180,slow=21,SNR=3.5							
ARCES	**ARCESS Array B**	**52.77**	**335**	P		**P**	**05 58 26.2**	**+1.8**
	comp=Z,3.7nm,0.9s,mb4.3,baz=76,slow=5.0,SNR=3.6							
NB2	**NORSAR Subarra**	**59.44**	**326**	P		**P**	**05 59 10.9**	**-1.5**
	comp=Z,0.8nm,0.5s,mb4.0,baz=77,slow=6.5							
NOA	**NORSAR Array B**	**59.44**	**326**	P		**P**	**05 59 11.3**	**-1.1**
	comp=Z,1.0nm,0.6s,mb4.1,baz=76,slow=6.7,SNR=4.8							
NOA	**NORSAR Array B**	**59.44**	**326**	P		**P**	**05 59 11.3**	**-1.1**
WRA	**Warramunga Arr**	**63.94**	**140**	P		**P**	**05 59 41.7**	**-1.5**
	comp=Z,1.4nm,0.7s,mb4.1,baz=333,slow=7.2,SNR=9.1							
ASAR	**Alice Springs**	**66.78**	**143**	P		**P**	**06 00 00.7**	**-0.6**
	comp=Z,1.0nm,0.4s,mb4.2,baz=326,slow=6.7,SNR=13							
INK	**Inuvik**	**72.30**	**17**	P		**P**	**06 00 34.4**	**0.0**
	comp=Z,1.0nm,0.8s,mb3.8,baz=344,slow=4.6,SNR=4.6							
YKA	**Yellowknife Ar**	**81.51**	**14**	P		**P**	**06 01 27.5**	**+1.7**
	comp=Z,0.2nm,0.5s,mb3.3,baz=336,slow=5.0,SNR=7.5							

NEIC **11** *06:14:12.4±0.8, 18.30N×61.79W, h10km, mb3.9/3, Error ellipse: s-maj=19.2km s-min=11.9km az=94.0*
TRN **11** *06:14:14.6, 18.19N×61.78W, h23km, MD4.0, M4.1(FDF)*
IDC **11** *06:14:22.1±4.6, 18.04N×61.97W, h100km±46km, mb3.6/8, mb1 3.8/11, mb1mx3.6/23, MS3.5/1, Ms1 3.4/1, ms1mx2.8/28, Error ellipse: s-maj=30.1km s-min=15.9km az=60.0*
ISC 11 06:14:13.9±0.6,**18.38N**±0.04×**61.72W**±0.04,**h33**km,**n38,** σ**1§20/49,mb4.0/11,MS3.5/1,2C,Leeward Islands**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
CPB	**Codrington**	**0.74**	**188**	*e*P		**P**	**06 14 27.2**	**-0.7**
CPB				*e*S		**S**	**06 14 37.3**	**-0.8**
BPA	**Boggy Peak**	**1.33**	**186**	*e*P		**P**	**06 14 35.8**	**-0.6**
BPA				*e*S		**S**	**06 14 52.4**	**-0.7**
STMA	**St. Maarten, A**	**1.37**	**256**	*e*P		**P**	**06 14 37.6**	**+0.7**
STMA				*e*S		**S**	**06 14 53.5**	**-0.5**
SKI	**Saint Kitts**	**1.43**	**223**	*e*P		**P**	**06 14 39.8**	**+2.1**
SKI				*e*S		**S**	**06 14 54.6**	**-0.9**
SKDB	**Saint Kitts 2**	**1.43**	**227**	*e*P		**P**	**06 14 40.0**	**+2.3**
SKDB				*e*S		**S**	**06 14 55.3**	**-0.2**
NVRH	**Round Hill, Ne**	**1.46**	**215**	⇑*i*P		**P**	**06 14 40.2**	**+2.1**
NVRH				*e*S		**S**	**06 14 55.8**	**-0.5**
STAT	**Sint Eustatius**	**1.49**	**234**	⇑*i*P		**P**	**06 14 39.2**	**+0.5**
STAT				*e*S		**S**	**06 14 57.8**	**+0.7**
SABT	**Saba**	**1.64**	**243**	*e*P		**P**	**06 14 41.8**	**+1.1**
SABT				*e*S		**S**	**06 15 02.9**	**+2.0**
MJHT	**Jackboy Hill**	**1.66**	**195**	*i* P		**P**	**06 14 40.5**	**-0.6**
MLYT		**1.71**	**195**	*i* P		**P**	**06 14 41.2**	**-0.6**
MGH	**Saint George's**	**1.72**	**196**	*i* P		**P**	**06 14 41.2**	**-0.6**
SEG	**Port Louis**	**1.98**	**174**	*e*P		**P**	**06 14 45.3**	**-0.2**
DEG	**La Desirade**	**2.15**	**163**	*e*P		**P**	**06 14 48.0**	**-0.1**
DEG				*e*S		**S**	**06 15 14.1**	**+0.3**
PAG	**Le Parnasse**	**2.34**	**179**	*e*P		**P**	**06 14 50.7**	**-0.1**
PAG				*e*S		**S**	**06 15 18.7**	**+0.1**
BBL	**Barber's Block**	**2.85**	**175**	*e*P		**P**	**06 14 58.7**	**+0.7**
BBL	**Barber's Block**	**2.85**	**175**	*e*P		**P**	**06 14 59.3**	**+1.3**
MDN	**Morne-Daniel**	**3.06**	**174**	*e*P		**P**	**06 15 04.7**	**+3.6**
DBCT	**Belle View Cho**	**3.11**	**173**	*e*P		**P**	**06 15 04.7**	**+3.0**
DSTT	**Stowe**	**3.14**	**173**	*e*P		**P**	**06 15 04.4**	**+2.2**
FDF	**Fort de France**	**3.67**	**171**	*e*P		**P**	**06 15 11.6**	**+1.9**
SJG	**San Juan**	**4.22**	**267**	S		**S**	**06 16 06.2**	**-0.3**
	10nm,0.3s,baz=302,slow=18,SNR=2.8							
PCRV	**Puerto La Cruz**	**8.63**	**200**	P		**P**	**06 16 17.3**	**-2.1**
	1.0nm,0.3s,baz=356,slow=7.3,SNR=4.9							
SDV	**Santo Domingo**	**12.81**	**224**	P		**P**	**06 17 15.9**	**-0.6**
	0.1nm,0.3s,baz=79,slow=12,SNR=7.2							
SDV				S		**S**	**06 19 35.3**	**-3.5**
	0.2nm,0.3s,baz=316,slow=19,SNR=2.9							
ROSC	**El Rosal**	**18.24**	**224**	P		**P**	**06 18 23.9**	**-2.5**
	0.3nm,0.3s,baz=88,slow=22,SNR=2.5							
ROSC	**El Rosal**	**18.24**	**224**	P		**P**	**06 18 23.9**	**-2.5**
OTAV	**Otavalo**	**24.40**	**224**	*e*P		**P**	**06 19 29.2**	**-1.5**
	2.6nm,0.8s,mb3.7							
MIAR	**Mount Ida**	**32.58**	**306**	*e*P		**P**	**06 20 43.2**	**-1.3**
	1.7nm,0.4s,mb4.3							
LPAZ	**La Paz**	**35.02**	**191**	P		**P**	**06 21 04.7**	**-1.0**
	1.6nm,1.2s,mb3.8							
BDFB	**Brasilia**	**36.40**	**157**	P		**P**	**06 21 16.1**	**-1.3**
	2.2nm,1.0s,mb4.0,baz=163,slow=20,SNR=2.4							
BDFB				LR		LR	06 35 54.2	
	comp=Z,75nm,19.2s,MS3.5,baz=113,slow=36							
SCHQ	**Schefferville**	**36.60**	**355**	P		**P**	**06 21 21.8**	**+3.1**
	2.0nm,0.8s,mb4.0,baz=306,slow=19,SNR=3.2							
SCHQ	**Schefferville**	**36.60**	**355**	P		**P**	**06 21 21.8**	**+3.1**
TXAR	**Lajitas Array**	**39.70**	**294**	P		**P**	**06 21 44.3**	**-0.5**
	0.7nm,0.7s,mb3.5,baz=104,slow=10,SNR=6.2							
ULM	**Lac du Bonnet**	**41.86**	**327**	P		**P**	**06 22 02.5**	**+0.1**
	1.4nm,0.6s,mb3.8,baz=137,slow=8.8,SNR=4.2							
CPUP	**Villa Florida**	**44.65**	**174**	P		**P**	**06 22 21.1**	**-4.2**
	0.9nm,0.6s,mb3.8,baz=48,slow=2.8,SNR=4.3							
PDAR	**Pinedale Array**	**47.05**	**312**	P		**P**	**06 22 44.0**	**-0.2**
	2.3nm,1.2s,mb4.0,baz=90,slow=8.9,SNR=4.3							
DBIC	**Dimbokro**	**56.51**	**94**	P		**P**	**06 23 55.8**	**+0.2**
	5.5nm,0.9s,mb4.6,baz=233,slow=15,SNR=2.7							
YKA	**Yellowknife Ar**	**57.07**	**334**	P		**P**	**06 23 58.5**	**-0.5**
	1.0nm,0.6s,mb4.0,baz=108,slow=7.4,SNR=23							
YKA	**Yellowknife Ar**	**57.07**	**334**	P		**P**	**06 23 58.5**	**-0.5**

KNET **11** *06:16:42.3±0.4, 42.75N×76.44E, h13km±3km, ml2.1, Error ellipse: s-maj=3.4km s-min=2.1km az=89.0*
NNC **11** *06:16:45.2±3.5, 43.42N×76.19E, mpv2.3, Error ellipse: s-maj=52.2km s-min=23.2km az=157.0*
ISC 11 06:16:41.7±1.1,**42.76N**±0.05×**76.62E**±0.07,**h13**km,**n10,** σ**1§03/17,9C-9D,Lake Issyk-Kul region**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
ULHL	**Ulahol**	**0.59**	**209**	⇓P		**Pb**	**06 16 52.7**	**-0.6**
	43nm,0.3s,SNR=26							
ULHL				⇓S		**Sb**	**06 17 00.4**	**-0.8**
	64nm,0.2s							
TKM2	**Tokmak 2**	**0.77**	**282**	⇑P		**Pb**	**06 16 55.3**	**-1.2**
	5.5nm,0.1s,SNR=19							
TKM2				⇑S		**Sb**	**06 17 05.2**	**-1.3**
	60nm,0.1s							
KZA	**Kyzart**	**1.22**	**237**	⇓P		**Pb**	**06 17 04.0**	**-0.2**
	2.5nm,0.1s,SNR=16							
KZA				⇓S		**Sb**	**06 17 20.8**	**+1.1**
	9.7nm,0.2s							
KBK	**Karagaybulak**	**1.24**	**266**	⇑P		**Pb**	**06 17 03.9**	**-0.6**
	4.2nm,0.1s,SNR=15							
KBK				⇑S		**Sb**	**06 17 20.0**	**-0.2**
	17nm,0.1s							
AAK	**Ala-Archa**	**1.57**	**266**	⇓P		**Pn**	**06 17 09.7**	**+0.1**
	7.4nm,0.2s,SNR=12							
AAK				⇓S		**Sn**	**06 17 29.6**	**-0.2**
	19nm,0.3s							
USP	**Ospenovka**	**1.64**	**289**	⇑P		**Pn**	**06 17 10.3**	**-0.1**
	9.0nm,0.2s,SNR=6.6							
USP				⇑S		**Sn**	**06 17 31.6**	**+0.2**
	31nm,0.2s							
EKS2	**Erkin-Say**	**2.10**	**268**	⇓P		**Pn**	**06 17 19.0**	**+2.0**
	2.9nm,0.2s,SNR=9.7							
EKS2				⇑S		**Sn**	**06 17 46.1**	**+2.9**
	13nm,0.2s							
AML	**Almayashu**	**2.26**	**255**	P		**Pn**	**06 17 22.7**	**+3.4**
	SNR=17							
KK31	**Karatay Array**	**4.50**	**276**	⇓Pg		**Pg**	**06 18 00.7**	**-11**
	0.3nm,0.3s,baz=88,slow=14,SNR=6.0							
KK31				⇑Lg			06 18 57.9	
	1.7nm,0.5s,baz=82,slow=28,SNR=9.6							
MK31	**Makanchi Array**	**5.70**	**43**	⇓Pn		**Pn**	**06 18 08.3**	**+0.1**
	0.1nm,0.3s,baz=221,slow=15,SNR=5.6							
MK31				⇑Lg			06 19 38.3	
	0.2nm,0.3s,baz=226,slow=28,SNR=4.6							

IDC **11** *06:31:24.5±1.6, 9.49N×92.61E, mb3.8/5, mb1 3.9/6, mb1mx3.6/21, ML3.6/1, Error ellipse: s-maj=59.6km s-min=27.2km az=53.0*
ISC 11 06:31:28.0±1.4,**9.6N**±0.2×**92.8E**±0.2,**h33**km,**n6,** σ**0§43/6, mb3.7/5,Nicobar Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**10.64**	**33**	Pn		**P**	**06 34 01.5**	**+0.1**
	0.1nm,0.3s,baz=227,slow=15,SNR=5.1							
MKAR	**Makanchi Array**	**38.14**	**348**	P		**P**	**06 38 45.3**	**-0.6**
	0.5nm,0.7s,mb3.4,baz=172,slow=8.6,SNR=6.2							
BVAR	**Borovoye Array**	**46.95**	**342**	P		**P**	**06 39 57.3**	**-0.1**
	0.5nm,0.6s,mb3.6,baz=207,slow=6.4,SNR=4.2							
WRA	**Warramunga Arr**	**50.34**	**126**	P		**P**	**06 40 24.0**	**-0.1**
	0.2nm,0.8s,mb3.2,baz=309,slow=8.1,SNR=6.5							
ARCES	**ARCESS Array B**	**73.21**	**340**	P		**P**	**06 42 57.4**	**+0.3**
	3.1nm,0.9s,mb4.2,baz=90,slow=6.3,SNR=3.1							
HFS	**Hagfors**	**76.31**	**330**	P		**P**	**06 43 15.4**	**+0.3**
	2.7nm,1.0s,mb4.1,baz=158,slow=35,SNR=3.0							

ISC 11 06:33:46.0±0.7,**45.05N**±0.03×**14.76E**±0.06,**h10**km,**n9,** σ**0§50/15,Northwestern Balkan Peninsula**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
NVLJ	**Novalja**	**0.49**	**170**	*i* Pg		**Pg**	**06 33 55.6**	**-0.4**
NVLJ				*i* Sg		**Sg**	**06 34 03.3**	**+0.7**
KNDS	**Knezji Dol**	**0.55**	**331**	*i* Sg		**Sg**	**06 34 04.8**	**+0.4**
BOJS	**Bojanci**	**0.57**	**37**	*i* Pg		**Pg**	**06 33 57.1**	**-0.5**
BOJS				*i* Sg		**Sg**	**06 34 06.0**	**+0.6**
	comp=Z,11nm,0.1s							
CEY	**Cerknica**	**0.73**	**342**	*i* Pg		**Pg**	**06 33 59.9**	**-0.7**
CEY				*i* Sg		**Sg**	**06 34 10.7**	**+0.3**
	comp=Z,6.0nm,0.1s							
VISS	**Visnje**	**0.76**	**4**	*i* Pg		**Pg**	**06 34 00.1**	**-1.1**
VISS				*i* Sg		**Sg**	**06 34 11.4**	**+0.1**
	comp=Z,4.0nm,0.1s							
CRES	**Cresnjevec ost**	**0.92**	**32**	*i* Sg		**Sg**	**06 34 16.9**	**+0.2**
	comp=Z,1.0nm,0.1s							
LEGS	**Legarje**	**0.98**	**24**	*i* Sg		**Sg**	**06 34 19.1**	**+0.2**
	comp=Z,2.0nm,0.1s							
PDKS	**Podkum**	**1.04**	**9**	*e*Pg		**Pg**	**06 34 07.2**	**+0.3**
PDKS				*i* Sg		**Sg**	**06 34 20.4**	**-0.5**
	comp=Z,3.0nm,0.1s							
VOY	**Vojsko**	**1.15**	**329**	*e*Pg		**Pg**	**06 34 09.1**	**0.0**
VOY				*e*Sg		**Sg**	**06 34 24.9**	**+0.4**

IDC **11** *06:36:37.1±0.6, 44.31S×16.14W, mb4.4/12, mb1 4.4/12, mb1mx4.4/13, MS4.7/14, Ms1 4.6/14, ms1mx4.5/18, Error ellipse: s-maj=24.5km s-min=19.8km az=27.0*
NEIC **11** *06:36:38.3±0.4, 44.30S×16.02W, h10km, mb4.6/3, Error ellipse: s-maj=16.6km s-min=11.3km az=184.0*

ISC 11 06:36:36.5±0.5,**44.3S**±0.1×**16.0W**±0.1,**h10**km,**n47,** σ**0§98/21,mb4.6/18,MS4.7/14,Southern Mid-Atlantic Ridge**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
SUR	**Sutherland**	**30.99**	**80**	LR		LR	06 52 18.5	
	comp=Z,1μm,21.1s,MS4.6,baz=61,slow=30							
TRQA	**Tornquist**	**34.79**	**264**	*e*P		**P**	**06 43 27.6**	**-1.6**
USHA	**Ushuaia**	**34.79**	**233**	LR		LR	06 56 00.4	
	comp=Z,992nm,18.3s,MS4.6,baz=64,slow=34							
CPUP	**Villa Florida**	**37.73**	**284**	P		**P**	**06 43 53.0**	**-1.1**
	6.5nm,0.7s,mb4.5,baz=135,slow=7.7,SNR=30							
CPUP				LR		LR	06 58 44.2	
	comp=Z,803nm,18.0s,MS4.6,baz=161,slow=35							
CPUP	**Villa Florida**	**37.73**	**284**	*e*P		**P**	**06 43 53.3**	**-0.9**
CPUP				LR		LR	06 58 44.2	
LBTB	**Lobatse**	**38.77**	**74**	*e*P		**P**	**06 44 01.8**	**-1.1**
	5.3nm,0.9s,mb4.3							
BDFB	**Brasilia**	**39.39**	**306**	P		**P**	**06 44 07.6**	**-0.5**
	4.5nm,0.9s,mb4.2,baz=154,slow=9.0,SNR=7.6							
BDFB				PcP		PcP	06 46 17.7	+0.8
	2.1nm,0.7s,baz=188,slow=3.4,SNR=5.1							
BDFB				LR		LR	06 57 17.5	
	comp=Z,1μm,20.6s,MS4.7,baz=139,slow=32							
MAW	**Mawson**	**45.87**	**148**	P		**P**	**06 44 59.8**	**-0.4**
	1.3nm,0.7s,mb4.0,baz=26,slow=6.8,SNR=2.3							
MAW				LR		LR	07 00 17.0	
	comp=Z,433nm,21.0s,MS4.4,baz=262,slow=31							
QSPA	**South Pole Qui**	**45.92**	**180**	*e*P		**P**	**06 45 05.6**	**+5.1**
	15nm,1.2s,mb4.8							
LVC	**Limon Verde**	**48.23**	**279**	LR		LR	07 03 22.1	
	comp=Z,578nm,21.4s,MS4.5,baz=149,slow=33							
LIC	**Lamto**	**51.29**	**14**	*e*P		**P**	**06 45 42.8**	**-0.1**
	109nm,1.4s,mb5.6							
KIC	**Kosan Boka**	**51.48**	**14**	*e*P		**P**	**06 45 44.0**	**-0.3**
	237nm,1.4s,mb5.9							
TIC	**Toumodi**	**51.70**	**14**	*e*P		**P**	**06 45 45.8**	**-0.3**
	148nm,1.3s,mb5.8							
DBIC	**Dimbokro**	**51.76**	**14**	P		**P**	**06 45 45.3**	**-1.2**
	6.1nm,0.9s,mb4.5,baz=186,slow=10,SNR=2.9							
DBIC				LR		LR	07 02 09.1	
	comp=Z,377nm,21.6s,MS4.4,baz=174,slow=30							
LPAZ	**La Paz**	**51.88**	**286**	P		**P**	**06 45 47.0**	**-0.4**
	0.9nm,0.6s,mb3.9,baz=82,slow=5.0,SNR=9.4							
LPAZ				LR		LR	07 07 40.7	
	comp=Z,1μm,18.8s,MS5.0,baz=292,slow=36							
ARE	**Arequipa**	**54.10**	**283**	*e*P		**P**	**06 46 06.0**	**+2.2**
VNDA	**Vanda**	**58.41**	**179**	P		**P**	**06 46 34.0**	**0.0**
	7.3nm,1.2s,mb4.6,baz=201,slow=7.0,SNR=11							
KMBO	**Kilima Mbogo**	**63.72**	**63**	P		**P**	**06 47 12.1**	**+1.3**
	0.4nm,0.3s,mb3.9,baz=25,slow=23,SNR=3.3							
KMBO				LR		LR	07 11 47.5	
	comp=Z,1μm,21.2s,MS5.0,baz=276,slow=33							
PCRV	**Puerto La Cruz**	**69.84**	**308**	LR		LR	07 15 50.8	
	comp=Z,558nm,20.9s,MS4.8,baz=133,slow=34							
OTAV	**Otavalo**	**70.78**	**290**	*e*P		**P**	**06 47 57.4**	**+2.0**
	4.8nm,0.9s,mb4.4							
ROSC	**El Rosal**	**71.52**	**297**	P		**P**	**06 48 00.1**	**+0.4**
	4.1nm,0.9s,mb4.4,baz=209,slow=19,SNR=4.3							
ROSC				LR		LR	07 18 14.2	
	comp=Z,981nm,18.4s,MS5.1,baz=35,slow=35							
SDV	**Santo Domingo**	**72.32**	**302**	P		**P**	**06 48 04.4**	**-0.1**
	3.3nm,0.8s,mb4.3,baz=78,slow=3.0,SNR=4.1							
SDV				LR		LR	07 20 42.3	
	comp=Z,261nm,19.4s,MS4.5,baz=196,slow=37

σ1⁹26/17, **mb4.3**/4, **MS3.7**/2, **1D**, **Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**10.70**	**212**	Pn	**P**	**07 36 11.9**	**+1.3**
	0.6nm,0.3s,baz=21,slow=9.7,SNR=15						
URZ				Sn	**S**	**07 38 11.9**	**+1.6**
	2.0nm,0.3s,baz=98,slow=20,SNR=8.0						
URZ	**Urewera**	**10.70**	**212**	P	**P**	**07 36 11.8**	**+1.2**
BFZ	**Birch Farm**	**13.07**	**208**	*e*S	**S**	**07 39 07.0**	**-0.7**
MRZ	**Mangatainoka R**	**13.34**	**210**	P	**P**	**07 36 44.4**	**-1.6**
MRZ				*e*S	**S**	**07 39 13.0**	**-1.1**
THZ	**Tophouse**	**15.45**	**214**	*e*P	**P**	**07 37 17.5**	**+3.9**
RAR	**Rarotonga**	**16.47**	**64**	Pn	**P**	**07 37 26.9**	**+0.2**
	1.1nm,0.3s,baz=104,slow=21,SNR=1.8						
RAR				Sn	**S**	**07 40 27.8**	**-0.1**
	0.9nm,0.3s,baz=198,slow=10,SNR=1.7						
MQZ	**McQueen's Vall**	**17.08**	**210**	*e*S	**S**	**07 40 37.1**	**-4.6**
RPZ	**Rata Peaks**	**17.82**	**213**	P	**P**	**07 37 47.1**	**+3.6**
	0.6nm,0.3s,baz=325,slow=22,SNR=4.7						
RPZ				S	**S**	**07 40 52.8**	**-5.6**
	0.4nm,0.3s,baz=82,slow=13,SNR=2.4						
CTA	**Charters Tower**	**35.72**	**276**	LR	LR	07 52 34.9	
	comp=Z,118nm,19.2s,MS3.7,baz=295,slow=32						
STKA	**Stephens Creek**	**36.73**	**255**	P	**P**	**07 40 44.7**	**+2.1**
	2.6nm,0.6s,mb4.2,baz=87,slow=11,SNR=5.4						
ASAR	**Alice Springs**	**45.24**	**265**	P	**P**	**07 41 52.9**	**+0.1**
	4.0nm,1.0s,mb4.2,baz=98,slow=7.3,SNR=22						
WB2	**Warramunga Arr**	**46.14**	**270**	⇓*i*P	**P**	**07 41 58.9**	**-1.0**
WRA	**Warramunga Ar**	**46.15**	**270**	P	**P**	**07 41 58.8**	**-1.2**
	3.2nm,0.7s,mb4.4,baz=110,slow=7.7,SNR=28						
WRA				LR	LR	08 01 18.2	
	comp=Z,91nm,18.9s,MS3.8,baz=300,slow=36						
NVAR	**Mina Array Bea**	**86.11**	**41**	P	**P**	**07 46 23.9**	**+8.5**
	1.7nm,1.1s,mb4.2,baz=225,slow=7.7,SNR=4.5						
AKASG	**Malin Array Be**	**151.70**	**326**	PKPbc	PKPdf	07 53 32.5	+12
	1.3nm,0.5s,baz=40,slow=2.6,SNR=5.3						

*IDC **11** 07:39:21.2±11.0,29.04S×175.62W,mb4.1/4,mb1 4.2/6, mb1mx4.0/16,ML3.8/2,Error ellipse: s-maj=202.0km s-min=38.3km az=89.0*

*NEIC **11** 07:39:36.0±0.7,29.28S×177.50W,h10km,mb4.7/2,Error ellipse: s-maj=19.0km s-min=12.3km az=136.0*

ISC 11 07:39:37.8±0.8,**29.35S**±0.08×**177.5W**±0.1,**h33**km,**n15**, σ1⁹**00**/16, **mb4.1**/5, **Kermadec Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**9.95**	**205**	Pn	**P**	**07 41 59.9**	**-1.6**
	0.8nm,0.3s,baz=297,slow=14,SNR=9.9						
URZ				Sn	**Sn**	**07 44 02.5**	**+9.4**
	0.9nm,0.3s,baz=28,slow=23,SNR=6.3						
MRZ	**Mangatainoka R**	**12.62**	**205**	*e*S	**S**	**07 44 58.4**	**+0.4**
SNZO	**South Karori**	**13.51**	**206**	P	**P**	**07 42 50.0**	**+0.6**
THZ	**Tophouse**	**14.62**	**210**	*e*P	**P**	**07 43 05.0**	**+1.0**
KHZ	**Kahutara**	**14.91**	**207**	*e*P	**P**	**07 43 08.2**	**+0.5**
RPZ	**Rata Peaks**	**17.00**	**209**	P	**P**	**07 43 33.7**	**-0.7**
	0.3nm,0.3s,baz=122,slow=22,SNR=3.5						
RAR	**Rarotonga**	**17.97**	**67**	P	**P**	**07 43 47.6**	**+0.9**
	100nm,1.5s						
CTA	**Charters Tower**	**34.05**	**277**	P	**P**	**07 46 21.2**	**+0.1**
	2.1nm,0.5s,mb4.3,baz=130,slow=17,SNR=3.3						
CTAO	**Charters Tower**	**34.05**	**277**	P	**P**	**07 46 22.0**	**+0.8**
STKA	**Stephens Creek**	**35.13**	**255**	P	**P**	**07 46 32.2**	**+2.0**
	2.3nm,0.8s,mb4.1,baz=100,slow=11,SNR=3.0						
ASAR	**Alice Springs**	**43.59**	**266**	P	**P**	**07 47 40.9**	**+0.2**
	1.2nm,0.7s,mb3.7,baz=98,slow=6.9,SNR=16						
WRAB	**Tennant Creek**	**44.48**	**271**	P	**P**	**07 47 47.8**	**0.0**
	8.6nm,0.9s,mb4.5						
WRA	**Warramunga Arr**	**44.48**	**271**	P	**P**	**07 47 47.0**	**-0.8**
	2.0nm,0.7s,mb4.0,baz=110,slow=7.8,SNR=20						
QSPA	**South Pole Qui**	**60.76**	**180**	*e*P	**P**	**07 49 46.8**	**-1.3**
ENH	**Enshi**	**91.35**	**304**	P	**P**	**07 52 40.3**	**-1.5**

*NEIC **11** 07:41:00.4±0.7,20.70S×178.48W,h570km,mb4.2/2, Error ellipse: s-maj=20.0km s-min=13.0km az=188.0*

*IDC **11** 07:41:07.8±1.9,20.98S×178.84W,h646km±24km, mb3.4/13,mb1 3.6/14,mb1mx3.5/18,Error ellipse: s-maj=25.0km s-min=11.0km az=162.0*

ISC 11 07:40:56.8±3.5,**20.6S**±0.2×**178.67W**±0.10,**h516**km±47km, **n28**, σ0⁹**87**/22, **mb4.1**/15, **4D**, **Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**17.66**	**95**	*e*P	**P**	**07 44 32.0**	**-1.1**
URZ	**Urewera**	**17.95**	**191**	P	**P**	**07 44 36.1**	**+0.4**
	2.2nm,0.3s,baz=356,slow=12,SNR=5.6						
RPZ	**Rata Peaks**	**24.57**	**198**	P	**P**	**07 45 37.1**	**+0.3**
	10nm,1.0s,mb4.4,baz=256,slow=14,SNR=3.9						
CTA	**Charters Tower**	**32.85**	**265**	P	**P**	**07 46 49.9**	**+1.0**
	5.4nm,0.4s,mb4.4,baz=94,slow=10,SNR=11						
PMG	**Port Moresby**	**34.76**	**284**	P	**P**	**07 47 06.7**	**+1.8**
	14nm,0.9s,mb4.5,baz=50,slow=7.7,SNR=3.1						
STKA	**Stephens Creek**	**37.17**	**244**	P	**P**	**07 47 25.2**	**+0.6**
	1.3nm,0.4s,mb3.8,baz=347,slow=9.1,SNR=3.0						
AS12	**Alice Springs**	**43.88**	**257**	⇓*i*P	**P**	**07 48 18.7**	**+0.1**
	11nm,1.1s,mb4.3						
ASAR	**Alice Springs**	**43.88**	**257**	P	**P**	**07 48 18.8**	**+0.1**
	8.6nm,0.5s,mb4.5,baz=96,slow=7.4,SNR=64						
ASAR				PcP	PcP	07 49 51.0	-3.1
	1.4nm,0.6s,baz=100,slow=4.2,SNR=6.7						
ASAR				S	**S**	**07 54 04.0**	**-8.4**
	2.1nm,0.7s,baz=92,slow=16,SNR=24						
WB2	**Warramunga Arr**	**43.95**	**262**	⇓*i*P	**P**	**07 48 18.8**	**-0.4**
WRAB	**Tennant Creek**	**43.95**	**262**	*e*P	**P**	**07 48 18.1**	**-1.1**
	11nm,0.8s,mb4.4						
WRA	**Warramunga Arr**	**43.96**	**262**	P	**P**	**07 48 18.6**	**-0.7**
	7.1nm,0.6s,mb4.4,baz=97,slow=7.8,SNR=106						
WRA				S	**S**	**07 54 04.3**	**-9.4**
	0.3nm,0.5s,baz=102,slow=3.8,SNR=6.6						
KAKA	**Kakadu**	**47.39**	**272**	⇓*i*P	**P**	**07 48 44.8**	**-1.0**
	3.8nm,0.3s,mb4.4						
FITZ	**Fitzroy Crossi**	**52.39**	**263**	⇓*i*P	**P**	**07 49 21.9**	**-0.9**
	2.6nm,0.4s,mb3.9						
YBH	**Yreka Blue Hor**	**80.78**	**39**	P	**P**	**07 52 18.6**	**+1.3**
	2.1nm,0.7s,mb3.7,baz=248,slow=2.7,SNR=4.0						
NVAR	**Mina Array Bea**	**81.55**	**44**	P	**P**	**07 52 22.2**	**+1.0**
	1.4nm,0.8s,mb3.5,baz=231,slow=9.3,SNR=7.9						
TXAR	**Lajitas Array**	**87.65**	**58**	P	**P**	**07 52 51.8**	**+0.6**
	1.2nm,0.8s,mb3.6,baz=214,slow=4.5,SNR=9.8						
ILAR	**Eielson Array**	**88.58**	**13**	P	**P**	**07 52 53.5**	**-1.2**
	0.6nm,0.6s,mb3.6,baz=231,slow=5.2,SNR=6.8						
PDAR	**Pinedale Array**	**89.48**	**43**	P	**P**	**07 52 59.5**	**0.0**
	0.8nm,0.6s,mb3.7,baz=250,slow=3.0,SNR=7.3						
CMAR	**Chiang Mai Arr**	**89.57**	**290**	P	**P**	**07 53 00.3**	**0.0**
	4.4nm,1.1s,mb4.2,baz=134,slow=3.1,SNR=7.0						
YKA	**Yellowknife Ar**	**96.89**	**25**	P	**P**	**07 53 32.3**	**-0.6**
	0.0nm,0.3s,baz=250,slow=4.4,SNR=3.7						
MKAR	**Makanchi Array**	**110.83**	**313**	PKiKP		07 58 28.7	
	0.5nm,0.7s,SNR=4.3						
BVAR	**Borovoye Array**	**118.77**	**320**	PKP	PKPdf	07 58 44.0	-1.8
	1.0nm,0.4s,baz=148,slow=1.0,SNR=8.3						
ARCES	**ARCESS Array B**	**128.93**	**349**	PKP	PKPdf	07 59 04.0	-0.9
	2.3nm,0.8s,baz=27,slow=2.7,SNR=5.8						
AKASG	**Malin Array Be**	**142.82**	**331**	PKP	PKPdf	07 59 27.0	-3.6
	4.0nm,0.5s,baz=45,slow=4.2,SNR=14						
BRTR	**Keskin Array B**	**146.46**	**312**	PKPbc	PKPbc	07 59 38.5	-0.6
	1.7nm,0.6s,baz=127,slow=5.0,SNR=7.0						
MLR	**Muntele Rosu**	**147.99**	**326**	PKPbc	PKPdf	07 59 42.7	+3.2
	4.4nm,0.9s,baz=149,slow=16,SNR=3.6						
GERES	**GERESS Array B**	**150.15**	**343**	PKPbc	PKPdf	07 59 48.0	+5.2
	1.3nm,0.7s,baz=45,slow=1.9,SNR=9.0						
DAVOX	**Davos**	**153.00**	**347**	PKPbc	PKPdf	07 59 55.4	+8.4
	2.9nm,0.6s,baz=353,slow=20,SNR=2.6						

*NEIC **11** 07:40:57.3,38.50N×20.53E,h5km,MD3.6(ATH),After ATH.*

*ATH **11** 07:40:57.3,38.50N×20.53E,h5km,MD3.6/5*

*THE **11** 07:40:58.2,38.51N×20.45E,h10km,ML3.5*

ISC 11 07:40:56.8±0.9,**38.48N**±0.03×**20.44E**±0.08,**h0**km±7km, **n14**, σ0⁹**98**/21, **1D**, **Greece**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LKD	**Levkas**	**0.28**	**36**	*e*Pg	**Pg**	**07 41 01.5**	**-1.0**
LKD				*e*Sg	**Sg**	**07 41 07.0**	**+0.7**
VLS	**Valsamata**	**0.32**	**158**	⇓*i*PG	**Pg**	**07 41 03.6**	**+0.3**
VLS				*e*SB	**Sb**	**07 41 09.7**	**-0.9**
IGT	**Igoumenitsa**	**1.06**	**356**	*e*Pg	**Pg**	**07 41 18.8**	**+0.8**
IGT				*e*Sg	**Sg**	**07 41 32.1**	**+0.1**
EVR	**Evrytania**	**1.16**	**67**	*e*PG	**Pg**	**07 41 17.0**	**-3.0**
JAN	**Janina**	**1.22**	**15**	*e*PB	**Pb**	**07 41 21.0**	**+0.5**
KEK	**Kerkira**	**1.33**	**338**	*e*PB	**Pb**	**07 41 22.5**	**+0.1**
MEV	**Metsovon**	**1.45**	**25**	*e*Pb	**Pb**	**07 41 23.4**	**-0.9**
MEV				*e*Sb	**Sb**	**07 41 44.0**	**+0.9**
AGG	**Agios Georgios**	**1.58**	**69**	*e*Pb	**Pb**	**07 41 24.8**	**-1.9**
AGG				*e*Sb	**Sb**	**07 41 48.1**	**+1.1**
ITM	**Ithomi**	**1.75**	**137**	*e*PN	**Pn**	**07 41 30.5**	**+1.8**
LIT	**Litokhoron**	**2.27**	**44**	*e*Pn	**Pn**	**07 41 36.6**	**+0.5**
LIT				*e*Sn	**Sn**	**07 42 04.9**	**-0.4**
XOR	**Xorichti**	**2.33**	**67**	*e*Pn	**Pn**	**07 41 38.2**	**+1.3**
FNA	**Florina**	**2.42**	**17**	*e*Pn	**Pn**	**07 41 38.1**	**-0.1**
FNA				*e*Sn	**Sn**	**07 42 07.6**	**-1.3**
SOH	**Sokhos**	**3.25**	**43**	*e*Pn	**Pn**	**07 41 49.9**	**-0.1**
SKO	**Skopje**	**3.58**	**12**	*e*Pn	**Pg**	**07 42 08.0**	**-0.2**

*NEIC **11** 07:52:46.3±1.2,18.91N×145.65E,h232km±12km,Error ellipse: s-maj=22.7km s-min=13.5km az=81.0*

*IDC **11** 07:52:46.1±3.7,18.95N×145.59E,h230km±36km,mb3.3/6, mb1 3.5/8,mb1mx3.4/21,Error ellipse: s-maj=29.5km s-min=13.8km az=93.0*

ISC 11 07:52:44.3±1.0,**18.98N**±0.06×**145.5E**±0.2,**h226**km±10km, **n11**, σ0⁹**85**/13, **mb3.6**/7, **1C**, **Mariana Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SAPN	**Saipan**	**3.75**	**176**	⇑*e*P	**P**	**07 53 45.7**	**+1.0**
GUMO	**Guam**	**5.40**	**187**	*e*P	**P**	**07 54 05.4**	**+0.4**
	16nm,0.3s						
GUMO				*e*S	**S**	**07 55 06.5**	**-1.3**
CBIJ	**Chichi jima**	**8.63**	**340**	P	**P**	**07 54 46.8**	**+0.3**
	7.4nm,0.3s,baz=298,slow=20,SNR=6.5						
CBIJ				S	**S**	**07 56 21.0**	**-1.1**
	3.5nm,0.3s,baz=282,slow=22,SNR=3.4						
JOW	**Kunigami**	**17.68**	**299**	P	**P**	**07 56 39.4**	**+2.0**
	4.2nm,0.3s,baz=134,slow=12,SNR=20						
WRAB	**Tennant Creek**	**40.19**	**196**	*e*P	**P**	**08 00 00.7**	**+0.3**
	14nm,0.5s,mb4.6						
WRAB				*e*pP	pP	08 00 48.5	+0.4
WRA	**Warramunga Arr**	**40.20**	**196**	P	**P**	**08 00 00.3**	**-0.1**
	4.6nm,0.6s,mb4.1,baz=16,slow=8.9,SNR=91						
ASAR	**Alice Springs**	**43.87**	**195**	P	**P**	**08 00 29.7**	**-0.5**
	1.1nm,0.5s,mb3.5,baz=16,slow=7.3,SNR=25						
MKAR	**Makanchi Array**	**58.13**	**314**	P	**P**	**08 02 16.1**	**-0.3**
	0.3nm,0.5s,mb3.2,baz=84,slow=9.1,SNR=4.9						
ILAR	**Eielson Array**	**63.48**	**26**	P	**P**	**08 02 51.4**	**-0.5**
	0.2nm,0.5s,mb3.0,baz=251,slow=5.8,SNR=4.8						
BVAR	**Borovoye Array**	**66.14**	**320**	P	**P**	**08 03 08.5**	**-0.7**
	0.9nm,0.4s,mb3.7,baz=104,slow=7.7,SNR=7.5						
YKA	**Yellowknife Ar**	**77.83**	**28**	P	**P**	**08 04 18.5**	**+0.7**
	0.2nm,0.6s,mb2.9,baz=289,slow=5.5,SNR=6.6						

*NSSC **11** 08:19:25.4,33.63N×35.91E,h6km±6km*

*GRAL **11** 08:19:25.0±8.1,33.57N×36.19E,h4km±999km,MD2.6*

ISC 11 08:19:26.0±2.0,**33.56N**±0.08×**35.89E**±0.09,**h20**km±20km, **n5**, σ0⁹**82**/10, **1D**, **Jordan - Syria region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BRBR	**Barbar**	**0.16**	**162**	⇑P	**Pb**	**08 19 30.4**	**-0.2**
BRBR				⇑S	**Sb**	**08 19 34.1**	**+0.3**
QASN	**Qassioun**	**0.32**	**95**	⇑P	**Pb**	**08 19 31.7**	**-1.3**
QASN				⇓S	**Sb**	**08 19 37.0**	**-0.8**
BHL	**Bhannes**	**0.40**	**330**	*i* PG	**Pb**	**08 19 33.3**	**-1.0**
	baz=94,slow=9.3						
BHL				*i* SG	**Sb**	**08 19 40.6**	**+0.7**
TOTH	**TOTAH**	**0.49**	**114**	⇑P	**Pb**	**08 19 36.0**	**+0.1**
TOTH				⇑S	**Sb**	**08 19 44.2**	**+1.6**
HWQ	**Hawqa**	**0.72**	**4**	*i* PG	**Pb**	**08 19 39.8**	**+0.1**
HWQ				*i* SG	**Sb**	**08 19 49.6**	**+0.5**

*DJA **11** 08:28:41.3±0.6,0.30N×96.85E,h44km±6km,mb5.0/2, MD5.6/3,Error ellipse: s-maj=14.8km s-min=8.3km az=39.0*

*BJI **11** 08:28:46.7,0.26N×97.85E,h28km,mB6.1,mb5.9,Ms6.5, Msz6.4*

*NEIC **11** 08:28:48.3±0.1,0.42N×97.83E,h21km,mb5.6/98,ME5.8, MS6.2/113,MW6.1,Error ellipse: s-maj=4.2km s-min=3.1km az=217.0 Broadband fault plane solution: P waves. NP1:φs120°,δ80°,λ90°. NP2:φs300°,δ10°,λ90°. Principal axes: T Plg55°, Azm30°; N Plg0°, Azm0°; P Plg35°, Azm210°; Moment Tensor Solution. s25 Moment tensor: Scale 10¹⁸ Nm; Mrr0.76; Mθθ-0.78; Mφφ0.02; Mrθ1.14; Mrφ0.23; Mθφ-0.82; Best double couple: M₀1.6×10¹⁸ NP1:φs268°,δ17°,λ56°. NP2:φs123°,δ76°, λ100°. Principal axes: T 1.62, Plg58°, Azm46°; N 0, Plg10°, Azm300°; P -1.62, Plg30°, Azm205°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism.*

NEIC Felt [III] at Gunungsitoli. Also felt at Kuala Lumpur, Malaysia and in Singapore.

*SYO **11** 08:28:48.2,0.42N×97.83E,h21km,MB5.6,MS6.2*

*HRVD **11** 08:28:48.3±0.2,0.18N×97.58E,h24km,MW6.1/77, Centroid moment Tensor Solution. LP body waves: s77,c186;Mantle waves: s70,c102; Half duration: 2s6 Moment tensor: Scale 10¹⁸Nm; Mrr0.73±.01; Mθθ-0.35±.01; Mφφ-0.38±.01; Mrθ1.06±.03; Mrφ0.35±.01; Mθφ-0.85±.03; Best double couple: M₀1.54×10¹⁸ NP1: φs322°,δ14°,λ102°. NP2:φs130°,δ76°,λ87°. Principal axes: T 1.55, Plg59°, Azm35°; N -.02, Plg3°, Azm130°; P -1.53, Plg31°, Azm222°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to mantle waves, cutoff=125s.*

*MOS **11** 08:28:49.5±1.1,0.56N×97.81E,h36km,mb6.0/54, MS6.0/28 Error ellipse: s-maj=8.2km s-min=4.4km az=112.5*

*IDC **11** 08:28:51.9±1.1,0.40N×97.86E,h50km±8km,mb5.2/39, mb1 5.2/40,mb1mx5.2/40,MS5.9/24,Ms1 5.9/24, ms1mx5.7/31,Error ellipse: s-maj=9.4km s-min=6.0km az=49.0,Putative timing error at EIL*

ISC 11 08:28:47.2±0.5,**0.42N**±0.02×**97.83E**±0.02,**h23**km±3km, **h29**km±1.5km**:pP-P, n773,** σ0⁹**96**/657, **mb5.7**/171, **MS6.2**/167, **159C-26D, Northern Sumatera**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GSI	**Gunungsitoli**	**0.92**	**344**	*e*P	**Pb**	**08 29 05.0**	**+0.7**
AEKI	**Aeknabara**	**1.78**	**20**	*e*Pn	**Pb**	**08 29 26.4**	**+7.4**
PCBI	**Pancar Batu**	**1.82**	**37**	*e*Pn	**Pb**	**08 29 20.8**	**+1.1**
MRPI	**Mariponipon**	**1.90**	**51**	⇑*e*Pn	**Pb**	**08 29 22.6**	**+1.6**
SEMI	**Semponon**	**2.10**	**15**	⇓*e*Pn	**Pb**	**08 29 24.6**	**+0.1**
HUTI	**Huta Ginjang**	**2.20**	**31**	*e*Pn	**Pb**	**08 29 26.3**	**+0.1**
PSI	**Prapat**	**2.51**	**26**	⇑*i*P	**Pb**	**08 29 31.0**	**-0.4**
PPI	**Padang Panjang**	**2.71**	**109**	*e*P	**Pn**	**08 29 31.0**	**+0.7**
TSI	**Tuntungan**	**3.15**	**13**	*e*P	**Pn**	**08 29 36.4**	**-0.2**
KLM	**Kuala Lumpur**	**4.65**	**55**	*e*P	**Pn**	**08 30 01.0**	**+3.1**
IPM	**Ipoh**	**5.22**	**38**	⇑*e*P	**Pn**	**08 30 07.5**	**+1.5**
BSI	**Banda Aceh**	**5.64**	**333**	*e*P	**Pn**	**08 30 01.0**	**-11**
KGM	**Kluang**	**5.71**	**74**	⇑*i*P	**Pn**	**08 30 14.5**	**+1.6**
KGM				*i* S	**Sn**	**08 31 31.0**	**+13**
LEM	**Lembang**	**12.13**	**127**	*e*P	**P**	**08 31 39.0**	**-2.8**
COCO	**West Island**	**12.56**	**184**	P	**P**	**08 31 47.3**	**-0.4**
	300nm,0.4s						
NST	**Nakhon Sawan**	**15.33**	**8**	P	**P**	**08 32 21.5**	**-2.5**
	600nm,0.8s						
BDT	**Bhumibol Dam**	**16.76**	**4**	P	**P**	**08 32 41.0**	**-1.3**
	160nm,0.8s						
CM31	**Chiang Mai Arr**	**17.96**	**3**	*e*P	**P**	**08 32 56.7**	**-0.6**
	252nm,0.8s						
CMAR	**Chiang Mai Arr**	**17.96**	**3**	P	**P**	**08 32 56.6**	**-0.7**
	13nm,0.3s,baz=193,slow=11,SNR=202						
CHG	**Chiang Mai**	**18.31**	**3**	⇑P	**P**	**08 33 01.0**	**-0.8**
	15nm,0.9s						
CHG				S	**S**	**08 36 22.7**	**+0.5**
KELI	**Kelakatan**	**18.69**	**118**	⇑*e*P	**P**	**08 33 06.5**	**+0.1**
KELI				⇓*e*S	**S**	**08 36 39.2**	**+8.5**
KKM	**Kota Kinabalu**	**19.18**	**73**	*e*PDF		08 33 13.5	
	316nm,0.6s						
CHRT	**Chiangrai**	**19.43**	**6**	⇑P	**P**	**08 33 14.5**	**-0.5**
	1μm,0.6s						
RATI	**Rata**	**19.84**	**118**	⇑*e*P	**P**	**08 33 20.6**	**+1.0**
	293nm,0.2s						
RATI				*e*S	**S**	**08 37 02.1**	**+5.9**
KEDI	**Kedomdong**	**20.25**	**116**	⇑*e*P	**P**	**08 33 23.7**	**-0.3**
	200nm,0.7s						
KEDI				*e*S	**S**	**08 37 09.4**	**+4.6**
MDRS	**Chennai**	**21.49**	**307**	*e*P	**P**	**08 33 37.0**	**+0.4**
MDRS				*e*S	**S**	**08 37 34.0**	**+5.2**
QIZ	**Qiongzhong**	**21.93**	**32**	⇑*i*P	**P**	**08 33 39.8**	**-1.2**
QIZ				AMB	AMB		
	comp=Z,111nm,1.2s,mb5.2						
QIZ				AMB	AMB		
	comp=Z,7μm,8.9s						
QIZ				LR	LR		
	comp=N,48μm,12.8s,MS6.3						
QIZ				LR	LR		
	comp=E,49μm,12.8s,MS6.3						
QIZ				LR	LR		
	comp=Z,43μm,14.5s,MS6.0						
QIZ	**Qiongzhong**	**21.93**	**32**	*e*P	**P**	**08 33 40.6**	**-0.5**
	comp=Z,107nm,1.0s,mb5.2						
VIS	**Vishakhapatnam**	**22.34**	**321**	*e*P	**P**	**08 33 46.9**	**+1.8**
VIS				*e*		08 33 50.0	
	comp=Z,552nm,1.4s						
CUD	**Cuddapah**	**23.47**	**307**	⇑*e*P	**P**	**08 33 57.6**	**+1.3**
CUD				*e*		08 34 21.7	
CUD				*e*S	**S**	**08 38 09.9**	**+5.3**
CUD				*e*		08 56 09.7	
CAL	**Calcutta**	**23.85**	**338**	*e*P	**P**	**08 34 01.0**	**+1.0**
CAL				*e*		08 37 24.8	
CAL				*e*		08 38 10.2	
CAL				*e*		08 42 14.0	
KGD	**Kothagudem**	**24.01**	**316**	⇑*e*P	**P**	**08 34 03.1**	**+1.7**
KGD				*e*		08 34 23.0	
KGD				*e*		08 34 45.9	
KGD				*e*S	**S**	**08 38 18.4**	**+4.4**
KGD				*e*ScP		08 41 17.3	
AGT	**Agartala**	**24.18**	**345**	⇓*i*P	**P**	**08 34 01.0**	**-2.2**
AGT				⇓*i*		08 35 10.0	
IMP	**Imphal**	**24.51**	**351**	*e*P	**P**	**08 34 06.0**	**-0.4**
IMP				*e*		08 34 21.0	
IMP				*e*		08 38 37.0	
KMI	**Kunming**	**25.01**	**11**	⇑*i*P	**P**	**08 34 13.1**	**+1.9**
KMI				AP	pP	08 34 21.9	+4.0
KMI				XP	sP	08 34 26.2	+5.2
KMI				S	**S**	**08 38 39.1**	**+8.1**
KMI				AMB	AMB		
	comp=Z,452nm,1.0s,mb6.0						
KMI				LR	LR		
	comp=N,146μm,15.9s,MS6.6						
KMI				LR	LR		
	comp=E,49μm,18.2s,MS6.6						
KMI				LR	LR		
	comp=Z,172μm,15.9s,MS6.7						
HYB	**Hyderabad**	**25.40**	**313**	⇑*i*P	**P**	**08 34 16.0**	**+1.1**
	comp=Z,270nm,1.0s,mb5.7						
HYB				*e*sP	sP	08 34 26.0	+1.3
HYB				*e*PP	PP	08 35 00.0	+6.0
HYB				*e*S	**S**	**08 38 40.0**	**+2.4**
HYB				*e*SS	SS	08 39 40.0	0.0
HYB				*e*PcS		08 41 24.0	
HYB				LR	LR	08 45 40.0	
	comp=Z,34nm,18.0s						
HYB	**Hyderabad**	**25.40**	**313**	⇑*e*P	**P**	**08 34 16.0**	**+1.1**
HYB				*e*		08 34 26.0	
HYB				*e*S	**S**	**08 38 40.0**	**+2.4**
HYB				pmax	pmax		
	comp=Z,270nm,1.0s,mb5.7						
HYB	**Hyderabad**	**25.40**	**313**	⇑*e*P	**P**	**08 34 16.0**	**+1.1**
	comp=Z,270nm,1.0s,mb5.7						
HYB				*e*		08 34 26.0	
HYB				*e*		08 37 14.0	
HYB				*e*S	**S**	**08 38 40.0**	**+2.4**
SHL	**Shillong**	**25.65**	**348**	*i* P	**P**	**08 34 17.5**	**+0.3**
	comp=Z,614nm,0.8s,mb6.2						
SHL				*e*		08 38 41.5	
MNCY	**Minicoy**	**25.91**	**288**	⇓*i*P	**P**	**08 34 18.0**	**-1.7**
MNCY				*i*		08 36 37.0	
BOK	**Bokaro**	**25.97**	**334**	*i* P	**P**	**08 34 22.0**	**+1.9**
BOK				*i*		08 34 33.0	
SJMP	**San Jose**	**26.01**	**62**	⇑*e*P	**P**	**08 34 21.4**	**+0.8**
BLSP	**Bilaspur**	**26.45**	**326**	*i* P	**P**	**08 34 25.2**	**+0.6**
TGY	**Tagaytay City**	**26.60**	**58**	P	**P**	**08 34 25.1**	**-0.9**
	comp=Z,151nm,0.5s,mb5.8,baz=222,slow=6.5,SNR=3.1						
TGY				LR	LR	08 44 52.5	
	comp=Z,27μm,20.5s,MS5.8,baz=45,slow=36						
OTRP	**Odiongan**	**26.77**	**63**	⇑*e*P	**P**	**08 34 27.9**	**+0.3**
KALP	**Kalibo**	**26.78**	**64**	⇑*e*P	**P**	**08 34 28.1**	**+0.5**
SNPH	**Sibulan**	**26.79**	**70**	⇓*e*P	**P**	**08 34 29.0**	**+1.2**
HKC	**Hong Kong**	**26.95**	**35**	⇑*i*P	**P**	**08 34 30.0**	**+0.8**
RCP	**Roxas**	**27.10**	**65**	*e*P	**P**	**08 34 31.2**	**+0.7**
GZH	**Guangzhou**	**27.11**	**33**	P	**P**	**08 34 32.0**	**+1.4**
GZH			

AAI Ambon 30.62 98⇑ eP P 08 35 02.5 +0.3
BOM Bombay 30.66 308 e P 08 35 08.0 +5.5
comp=Z,208nm,1.5s,mb5.7
BOM i S S 08 40 02.1 -0.3
CD2 Chengdu 30.84 10⇑ iP P 08 35 03.1 -0.9
CD2 PP PP 08 36 05.9 +0.3
CD2 S S 08 40 02.6 -2.6
CD2 AMB AMB
comp=Z,180nm,0.9s,mb5.9
DANN Dangsing 30.87 335 eP P 08 35 04.6 +0.3
JHNI Jhansi 31.10 325⇑ iP P 08 35 03.0 -3.3
JHNI e 08 35 13.0
QZH Quanzhou 31.58 38⇑ iP P 08 35 10.3 -0.3
QZH S S 08 40 17.4 +0.6
ENH Enshi 31.69 19 eP P 08 35 10.3 -1.2
comp=Z,328nm,1.0s,mb6.1
FITZ Fitzroy Crossi 32.96 125⇑ iP P 08 35 20.8 -1.9
comp=Z,54nm,0.9s,mb5.5
FITZ eS S 08 40 33.6 -4.8
FITZ Fitzroy Crossi 32.96 125 P P 08 35 21.0 -1.7
comp=Z,53nm,0.8s,mb5.5,baz=251,slow=2.2,SNR=48
FITZ S S 08 40 34.2 -4.1
comp=Z,4.8nm,0.9s,baz=169,slow=13,SNR=5.2
FITZ LR LR 08 49 50.9
comp=Z,12μm,21.5s,MS5.6,baz=283,slow=38
TATO Taipei 33.45 41 eP P 08 35 26.3 -0.6
comp=Z,87nm,0.9s,mb5.7
TATO LR LR
comp=Z,36μm,21.0s,MS6.1
WHN Wuhan 33.82 26 ⇑P P 08 35 30.0 0.0
WHN AMB AMB
comp=Z,160nm,1.0s,mb5.9
WHN LR LR
comp=N,29μm,16.6s,MS6.5
WHN LR LR
comp=E,68μm,16.0s,MS6.5
WHN LR LR
comp=Z,93μm,13.5s,MS6.7
SONA Sohna 34.07 326 eP P 08 35 31.2 -1.0
SONA e 08 35 43.1
comp=Z,111nm,1.2s
KALG Kalgarh 34.17 330 e P 08 35 27.1 -6.0
AJM Ajmer 34.20 321 eP P 08 35 32.6 -0.7
AJM e 08 35 36.9
comp=Z,196nm,1.7s
AYAN Aya Nagar 34.22 326 eP P 08 35 32.7 -0.8
AYAN e 08 35 44.1
comp=Z,88nm,0.7s
KUDL Kundal 34.32 325 eP P 08 35 32.9 -1.5
KUDL e 08 35 37.2
comp=Z,70nm,0.8s
NDI New Delhi 34.33 327 i P P 08 35 32.0 -2.4
comp=Z,227nm,1.2s,mb6.0
NDI e 08 40 54.0
NDI e 08 41 22.5
KHET Khetri 34.66 324 eP P 08 35 37.1 -0.2
KHET e 08 35 40.8
comp=Z,140nm,1.3s
XAN Xi'an 35.02 16 P P 08 35 39.5 -0.8
XAN AP pP 08 35 49.2 +2.0
XAN PP PP 08 36 59.0 +0.1
XAN S S 08 41 07.9 -2.3
XAN XS 08 41 22.2
XAN LR LR
comp=N,55μm,15.2s,MS6.6
XAN LR LR
comp=E,55μm,15.6s,MS6.6
XAN LR LR
comp=Z,102μm,15.2s,MS6.7
KKR Kurukshetra 35.54 328 eP P 08 35 45.3 +0.5
LZH Lanzhou 35.92 8 ⇑P P 08 35 48.0 0.0
LZH AP pP 08 35 58.5 +3.6
LZH XP sP 08 36 02.1 +4.3
LZH PP PP 08 37 10.5 +0.8
LZH S S 08 41 24.5 +0.4
LZH XS 08 41 41.3
LZH SS SS 08 43 50.2 +3.7
LZH AMB AMB
comp=Z,417nm,1.5s,mb6.1
LZH LR LR
comp=N,32μm,14.9s
LZH LR LR
comp=Z,38μm,17.2s,MS6.2
MUN Mundaring 36.61 153 eP P 08 35 57.4 +3.6
comp=Z,80nm,1.1s,mb5.5
MUN eS S 08 41 36.3 +1.6
MUN Mundaring 36.61 153 eP P 08 35 57.4 +3.6
MUN eS S 08 41 36.3 +1.6
MUN pmax pmax
comp=Z,80nm,1.1s,mb5.5
KAKA Kakadu 36.68 112⇓ iP P 08 35 52.4 -2.1
comp=Z,36nm,0.6s,mb5.4
KAKA eS x 08 38 28.2
JASL Jaisalmer 36.94 318 eP P 08 35 57.2 +0.7
KLBR Kellerberrin 37.01 151 eP P 08 36 00.5 +3.4
comp=Z,35nm,0.6s,mb5.4
NJ2 Nanjing 37.21 30 eP P 08 35 59.2 +0.4
NJ2 AP pP 08 36 09.5 +3.8
NJ2 XP sP 08 36 12.5 +3.9
NJ2 S S 08 41 38.0 -5.8
NJ2 AMB AMB
comp=Z,380nm,1.1s,mb6.1
NJ2 AMB AMB
comp=Z,1μm,6.4s
SSE Sheshan 37.70 34 P P 08 36 03.9 +1.0
SSE AP pP 08 36 13.2 +3.4
SSE SP 08 36 16.8
SSE PP PP 08 37 33.5 +1.5
SSE PCP PcP 08 38 22.6 +2.2
SSE S S 08 41 55.6 +4.3
SSE XS 08 42 09.4
SSE AMB AMB
comp=Z,267nm,0.9s,mb6.0
SSE LR LR
comp=N,24μm,15.6s,MS6.1
SSE LR LR
comp=E,10μm,16.0s,MS6.1
SSE LR LR
comp=Z,35μm,15.3s,MS6.3
NWAO Narrogin (SRO) 37.88 153 P P 08 36 04.5 +0.1
comp=Z,39nm,1.0s,mb5.1,baz=306,slow=9.3,SNR=7.7
NWAO Narrogin (SRO) 37.88 153 eP P 08 36 05.7 +1.3
NWAO pmax pmax
comp=Z,68nm,0.8s
NWAO MLR MLR
comp=Z,27μm,20.0s
NWAO Narrogin (SRO) 37.88 153 eP P 08 36 05.7 +1.3
comp=Z,68nm,0.8s,mb5.4
NWAO LR LR
comp=Z,27μm,20.0s,MS6.1
GTA Gaotai 38.85 2⇑ iP P 08 36 13.0 +0.5
GTA AP pP 08 36 17.5 -1.9
GTA PP PP 08 37 44.1 -1.3
GTA PPP PPP 08 38 07.3 -1.3
GTA PCP PcP 08 38 26.6 +2.7
GTA S S 08 42 08.0 -0.6
GTA PCS 08 42 14.7
GTA SCS ScS 08 46 20.1 +1.2
GTA AMB AMB
comp=Z,87nm,1.2s,mb5.4
GTA LR LR
comp=N,10μm,14.8s,MS6.0
GTA LR LR
comp=E,12μm,16.0s,MS6.0
GTA LR LR
comp=Z,11μm,19.8s,MS5.7
JOW Kunigami 39.32 46 P P 08 36 16.7 +0.1
comp=Z,22nm,0.6s,mb5.1,baz=237,slow=7.1,SNR=26
JOW S S 08 42 14.3 -1.6
comp=Z,10nm,1.2s,baz=292,slow=11,SNR=2.3
JOW LR LR 08 51 36.6
comp=Z,15μm,21.5s,MS5.8,baz=244,slow=35
TIY Taiyuan 39.48 18 ⇑P P 08 36 17.6 -0.2
TIY S S 08 42 17.0 -1.2
TIA Tai'an 39.86 25 ⇑P P 08 36 20.8 -0.2
TIA AP pP 08 36 33.0 +5.1
TIA AMB AMB
comp=Z,74nm,1.1s,mb5.3
TIA LR LR
comp=N,24μm,14.8s,MS6.4
TIA LR LR
comp=E,29μm,15.0s,MS6.4
WRA Warramunga Arr 41.09 122 P P 08 36 30.1 -1.1
comp=E,81nm,0.6s,mb5.5,baz=302,slow=8.9,SNR=214
WRA S S 08 42 38.8 -3.6
comp=E,8.6nm,1.0s,baz=295,slow=15,SNR=7.1
WRA LR LR 08 56 19.9
comp=E,17μm,19.6s,MS5.9,baz=280,slow=40
WRAB Tennant Creek 41.09 122 eP P 08 36 29.9 -1.2
comp=E,4μm,2.0s,mb6.7
WRAB LR LR
comp=Z,19μm,20.0s,MS6.0
WB2 Warramunga Arr 41.10 122⇑ iP P 08 36 30.0 -1.2
BTO Baotou 41.51 14 eP P 08 36 35.8 +1.4
BTO S S 08 42 54.3 +5.9
HHC Hu-ho-hao-te 42.13 16⇑ iP P 08 36 41.7 +2.1
HHC AP pP 08 36 51.4 +4.9
HHC XP sP 08 36 55.8 +6.4
HHC PP PP 08 38 22.7 +2.5
HHC PCP PcP 08 38 35.8 +1.3
HHC SCP 08 42 22.0
HHC PCS 08 42 26.4
HHC S S 08 43 00.5 +2.9
HHC XS 08 43 14.8
HHC SS SS 08 46 06.5 +6.4
HHC SCS ScS 08 46 38.1 -0.2
HHC AMB AMB
comp=Z,193nm,1.1s,mb5.6
HHC LR LR
comp=N,38μm,14.7s,MS6.5
HHC LR LR
comp=E,29μm,14.7s,MS6.5
HHC LR LR
comp=Z,35μm,15.3s,MS6.3
FORT Forrest 42.27 140⇑ iP P 08 36 42.8 +1.9
comp=Z,471nm,0.8s,mb6.2
FORT eS S 08 42 58.4 -1.5
AS12 Alice Springs 42.42 127⇑ iP P 08 36 41.7 -0.5
comp=Z,149nm,0.9s,mb5.6
AS12 eS S 08 43 00.4 -1.8
ASAR Alice Springs 42.42 127 P P 08 36 41.8 -0.4
comp=Z,117nm,0.8s,mb5.6,baz=301,slow=7.7,SNR=211
ASAR S S 08 42 59.0 -3.2
comp=Z,4.2nm,1.0s,baz=297,slow=12,SNR=3.9
ASAR LR LR 08 56 16.7
comp=Z,12μm,20.4s,MS5.8,baz=303,slow=39
BJT Baijiatuao 42.81 21 eP P 08 36 46.5 +1.4
BJT pmax pmax
comp=Z,403nm,1.0s
BJT Baijiatuao 42.81 21 eP P 08 36 46.5 +1.3
comp=Z,403nm,1.0s,mb6.1
BJI Beijing 42.83 21 P P 08 36 47.0 +1.7
BJI AP pP 08 36 56.5 +4.2
BJI XP sP 08 36 59.9 +4.8
BJI PP PP 08 38 30.9 +3.7
BJI S S 08 43 13.3 +5.3
BJI AMB AMB
comp=Z,317nm,1.0s,mb6.0
BJI LR LR
comp=N,38μm,13.8s,MS6.5
BJI LR LR
comp=E,24μm,14.5s,MS6.5
BJI LR LR
comp=Z,20μm,19.7s
KSH Kashi 43.74 335 eP P 08 36 53.2 +0.5
KSH eAP pP 08 37 03.1 +3.5
KSH eXP sP 08 37 07.1 +4.6
KSH ePP PP 08 38 37.2 +0.9
KSH ePCP PcP 08 38 38.8 -1.1
KSH eSCP 08 42 27.4
KSH ePCS 08 42 31.0
KSH eS S 08 43 21.6 +0.5
KSH eXS 08 43 37.9
KSH eSS SS 08 46 29.9 +0.4
KSH eSCS ScS 08 46 47.0 -1.2
KSH AMB AMB
comp=Z,50nm,1.2s,mb5.1
KSH AMB AMB
comp=Z,2μm,6.0s
KSH LR LR
comp=N,15μm,17.6s,MS6.1
KSH LR LR
comp=E,17μm,18.2s,MS6.1
DL2 Dalian 44.08 27⇑ iP P 08 36 56.4 +1.0
DL2 S S 08 43 34.4 +8.4
DL2 LR LR
comp=N,13μm,19.4s
DL2 LR LR
comp=Z,14μm,19.9s,MS5.9
WMQ Urumqi 44.15 349 eP P 08 36 57.0 +1.0
WMQ AP pP 08 37 03.0 +0.1
WMQ XP sP 08 37 05.9 +0.1
WMQ PP PP 08 38 41.2 +0.8
WMQ PCP PcP 08 38 42.5 +1.2
WMQ SCP 08 42 32.0
WMQ S S 08 43 28.2 +1.1
WMQ SS SS 08 46 37.0 +0.2
WMQ SCS ScS 08 46 52.2 +1.5
WMQ AMB AMB
comp=Z,255nm,1.1s,mb5.9
WMQ AMB AMB
comp=Z,3μm,8.6s
WMQ LR LR
comp=N,18μm,19.6s,MS6.2
WMQ LR LR
comp=E,20μm,17.8s,MS6.2
WMQ LR LR
comp=Z,31μm,20.2s,MS6.2
JNU Nakatsue 44.98 40 P P 08 37 02.3 -0.5
comp=Z,174nm,0.9s,mb5.9,baz=152,slow=3.4,SNR=72
JNU S S 08 43 37.1 -2.1
comp=Z,2.7nm,0.3s,baz=240,slow=18,SNR=2.8
JNU LR LR 08 56 24.4
comp=Z,32μm,21.1s,MS6.2,baz=244,slow=37
INCN Inchon 45.45 33 eP P 08 37 05.6 -0.9
comp=Z,61nm,0.9s,mb5.4
INCN LR LR
comp=Z,39μm,20.0s,MS6.3
ULHL Ulahol 45.95 338 P P 08 37 11.2 +0.9
SNR=18
KS15 Wonju Array Si 46.11 34 eP P 08 37 11.6 0.0
KZA Kyzart 46.19 337 P P 08 37 13.5 +1.3
SNR=67
AAA Alma-Ata 46.58 339 i P P 08 37 15.0 -0.3
AAA e 08 39 08.0
AAA i S S 08 44 01.0 -1.0
AAA pmax pmax
comp=Z,4μm,6.0s
AAA smax
comp=E,8μm,8.0s
AAA MLR MLR
comp=Z,7μm,16.0s,MS5.7
UCH Uchtor 46.62 336 P P 08 37 16.8 +1.2
SNR=104
TKM2 Tokmak 2 46.78 338 P P 08 37 17.8 +0.9
SNR=110
KBK Karagaybulak 46.80 337 P P 08 37 18.4 +1.3
SNR=106
AML Almayashu 46.87 335 P P 08 37 18.8 +1.2
SNR=80
AAK Ala-Archa 46.96 336 P P 08 37 19.4 +1.1
SNR=33
FRU Bishkek 47.08 337⇑ iP P 08 37 20.0 +0.7
FRU e 08 39 12.0
FRU i S S 08 44 11.0 +1.9
FRU pmax pmax
comp=Z,600nm,2.6s,mb6.1
FRU pmax pmax
comp=Z,4μm,7.0s
FRU smax
comp=E,6μm,10.0s
FRU MLR MLR
comp=N,18μm,21.0s
FRU MLR MLR
comp=Z,20μm,21.0s,MS6.0
CHMS Chumysh 47.17 337 P P 08 37 20.4 +0.4
SNR=24
EKS2 Erkin-Say 47.28 336 P P 08 37 21.9 +1.1
SNR=59
SNY Shenyang 47.31 26⇑ iP P 08 37 20.7 -0.4
SNY AP pP 08 37 33.8 +5.7
SNY S S 08 44 15.5 +3.1
SNY AMB AMB
comp=Z,260nm,0.9s,mb6.2
SNY LR LR
comp=N,31μm,18.7s,MS6.6
SNY LR LR
comp=E,45μm,15.8s,MS6.6
SNY LR LR
comp=Z,52μm,14.7s,MS6.6
USP Ospenovka 47.49 337 P P 08 37 23.2 +0.6
SNR=82
SONM Songino Array 47.81 8 P P 08 37 25.7 +0.7
comp=Z,184nm,0.9s,mb6.1,baz=188,slow=8.7,SNR=255
SONM S S 08 44 20.1 +0.8
comp=Z,0.7nm,0.5s,baz=169,slow=7.3,SNR=2.0
ULN Ulaanbaatar 47.93 8 P P 08 37 26.8 +0.9
ULN PP PP 08 39 21.5 +4.3
ULN S S 08 44 23.7 +2.7
MKAR Makanchi Array 48.15 346 P P 08 37 27.9 +0.3
comp=Z,141nm,0.7s,mb6.1,baz=157,slow=8.0,SNR=745
MKAR S S 08 44 25.9 +1.9
comp=Z,3.8nm,1.1s,baz=194,slow=12,SNR=1.8
MKAR LR LR 09 03 44.3
comp=Z,7μm,18.2s,MS5.7,baz=160,slow=43
MKAR Makanchi Array 48.15 346 i P P 08 37 27.0 -0.6
GUMO Guam 48.37 72 PFAKE 08 37 40.0 +10
GUMO LR LR
comp=Z,5μm,19.0s,MS5.5
KKAR Karatay Array 49.03 334 i P P 08 37 34.1 -0.4
KKAR pmax pmax
comp=Z,169nm,1.2s,mb6.0
WAU Wau 49.36 100 eP P 08 37 36.4 -0.9
CN2 Changchun 49.72 26 ⇑P P 08 37 39.5 -0.2
CN2 AP pP 08 37 49.0 +2.2
CN2 XP sP 08 37 52.9 +3.4
CN2 PP PP 08 39 35.4 +0.4
CN2 PPP PPP 08 40 29.3 -0.9
CN2 SCP 08 42 53.4
CN2 SCS ScS 08 47 21.6 -5.3
CN2 SS SS 08 48 16.9 +2.0
CN2 AMB AMB
comp=Z,150nm,1.0s,mb6.0
CN2 LR LR
comp=Z,40μm,14.0s,MS6.6
ZAK Zakamensk 49.99 5⇓ iP P 08 37 42.0 +0.3
PMG Port Moresby 50.06 103 P P 08 37 42.2 -0.6
PMG S S 08 44 51.6 +0.3
PMG Port Moresby 50.06 103 P P 08 37 42.2 -0.5
comp=Z,267nm,0.7s,mb6.4,baz=280,slow=4.3,SNR=44
PMG S S 08 44 51.3 +0.1
comp=Z,4.6nm,0.6s,baz=265,slow=14,SNR=1.7
PMG Port Moresby 50.06 103 eP P 08 37 42.2 -0.6
CBIJ Chichi jima 50.15 54 P P 08 37 42.3 -1.0
comp=Z,112nm,0.9s,mb5.9,baz=256,slow=8.6,SNR=5.3
CBIJ LR LR 08 57 51.3
comp=Z,5μm,21.6s,MS5.5,baz=228,slow=35
JHJ Hachijo jima 2 51.09 46 P P 08 37 48.4 -1.9
comp=Z,181nm,1.0s,mb6.0,baz=254,slow=19,SNR=2.2
JHJ LR LR 08 59 06.3
comp=Z,9μm,20.5s,MS5.8,baz=238,slow=36
MOY Mondy 51.13 3 eP P 08 37 50.9 +0.5
TLY Talaya 51.31 5⇑ iP P 08 37 51.3 -0.4
TLY e 08 39 50.4
TLY eS S 08 45 10.4 +2.4
TLY pmax pmax
comp=Z,2μm,0.8s
TLY MLR MLR
comp=Z,341μm,15.0s
CTA Charters Tower 51.59 116⇑ iP P 08 37 53.5 -0.8
comp=Z,56nm,1.1s,mb5.4
CTA Charters Tower 51.59 116 P P 08 37 53.6 -0.7
comp=Z,59nm,1.0s,mb5.5,baz=294,slow=9.5,SNR=18
CTA S S 08 45 12.1 -0.1
comp=Z,2.4nm,0.8s,baz=73,slow=18,SNR=8.7
CTA Charters Tower 51.59 116⇑ iP P 08 37 53.5 -0.8
CTA pmax pmax
comp=Z,56nm,1.1s
CTAO Charters Tower 51.59 116 P P 08 37 53.6 -0.7
CTAO S S 08 45 11.9 -0.3
CTAO ScS ScS 08 47 43.7 +3.7
CTAO Charters Tower 51.59 116 eP P 08 37 53.0 -1.3
CTAO pmax pmax
comp=Z,193nm,1.4s,mb5.8
CTAO MLR MLR
comp=Z,25μm,20.0s,MS6.2
CTAO Charters Tower 51.59 116 eP P 08 37 53.0 -1.3
comp=Z,193nm,1.4s,mb5.8
CTAO LR LR
comp=Z,25μm,20.0s,MS6.2
MAJO Matsushiro 51.84 42 eP P 08 37 54.2 -1.8
MAJO pmax pmax
comp=Z,46nm,1.0s,mb5.4
MAJO MLR MLR
comp=Z,19μm,19.0s,MS6.2
MAJO Matsushiro 51.84 42 eP P 08 37 54.2 -1.8
comp=Z,46nm,1.0s,mb5.4
MAJO LR LR
comp=Z,19μm,19.0s,MS6.2
MAT Matsushiro 51.84 42 P P 08 37 54.0 -2.0
MAT S S 08 45 24.0 +8.5
MAT Matsushiro 51.84 42 eP P 08 37 54.0 -2.0
MAT eS S 08 45 26.0 +10
MAT pmax pmax
comp=Z,580nm,2.4s,mb6.1
MAT MLR MLR
comp=Z,20μm,19.0s,MS6.2
MAT Matsushiro 51.84 42 eP P 08 37 54.0 -2.0
comp=Z,580nm,2.4s,mb6.1
MAT eS S 08 45 26.0 +10
MAT LR LR
comp=Z,20μm,19.0s,MS6.2
IRK Irkutsk 51.92 5 eP P 08 38 14.0 +18
IRK eS S 08 45 21.5 +5.1
HIA Hailar 52.18 18 P P 08 37 58.3 0.0
HIA S S 08 45 23.1 +3.2
HIA Hailar 52.18 18 eP P 08 37 58.1 -0.2
HIA pmax pmax
comp=Z,151nm,0.9s
HIA Hailar 52.18 18 eP P 08 37 58.0 -0.3
comp=Z,151nm,0.9s,mb5.9
VAN Vannovskaya 52.23 320 eP P 08 37 58.0 -0.9
MDJ Mudanjiang 52.24 28 P P 08 37 59.0 +0.1
MDJ Mudanjiang 52.24 28 P P 08 37 59.1 +0.2
MDJ AP pP 08 38 08.1 +2.1
MDJ XP sP 08 38 11.8 +3.1
MDJ PP PP 08 39 57.6 -0.7
MDJ PCS 08 43 07.5
MDJ S S 08 45 23.4 +2.5
MDJ XS 08 45 40.1
MDJ SCS ScS 08 47 46.5 +2.3
MDJ AMB AMB
comp=Z,82nm,1.0s,mb5.6
MDJ Mudanjiang 52.24 28 eP P 08 37 58.9 0.0
comp=Z,64nm,0.9s,mb5.5
VLA Vladivostok 52.30 31⇓ iP P 08 37 59.0 -0.3
VLA i 08 39 08.0
VLA i 08 40 02.0
VLA i S S 08 45 22.0 +0.3
VLA i PS PS 08 45 40.0 +5.5
VLA pmax pmax
comp=Z,6μm,8.0s
VLA pmax pmax
comp=N,2μm,5.0s
VLA pmax pmax
comp=E,2μm,4.0s
VLA pmax pmax
comp=Z,2μm,8.0s
VLA pmax pmax
comp=N,1μm,5.0s
VLA pmax pmax
comp=E,1μm,7.0s
VLA smax
comp=E,2μm,10.0s
VLA smax
comp=Z,2μm,8.0s
VLA smax
comp=N,1μm,6.0s
VLA MLR MLR
comp=N,37μm,16.0s,MS6.7
VLA MLR MLR
comp=Z,44μm,16.0s,MS6.6
VLA MLR MLR
comp=E,34μm,15.0s,MS6.7
STKA Stephens Creek 52.37 132⇑ iP P 08 37 59.7 -0.3
comp=E,47nm,0.6s,mb5.6
STKA i S S 08 45 23.7 +1.0
STKA Stephens Creek 52.37 132 P P 08 37 59.9 -0.1
comp=E,67nm,0.8s,mb5.6,baz=301,slow=7.3,SNR=50
STKA S S 08 45 24.4 +1.7
comp=E,8.1nm,1.2s,baz=35,slow=16,SNR=2.6
STKA LR LR 09 00 27.0
comp=E,9μm,21.6s,MS5.8,baz=293,slow=36
HASS Wahat al Ahsa' 52.58 302 P P 08 38 01.2 -0.5
KURK Kurchatov 52.71 345 i P P 08 38 02.2 -0.1

KURK pmax pmax
comp=Z,131nm,1.0s,mb5.8
LBOS 53.71 287 *i* P **P** **08 38 11.1 +1.0**
ZAL Zalesovo 54.42 351 P **P** **08 38 15.1 +0.3**
comp=Z,135nm,0.7s,mb6.0,baz=205,slow=6.4,SNR=380
ZAL S **S** **08 45 51.6 +1.4**
comp=Z,1.3nm,0.3s,baz=107,slow=19,SNR=2.0
ZAL LR LR 09 05 16.4
comp=Z,13μm,18.3s,MS6.0,baz=207,slow=40
ZAL PKP2bc 09 08 38.1
comp=Z,1.3nm,0.3s,baz=16,slow=10,SNR=4.1
ZAL Zalesovo 54.42 351 *i* P **P** **08 38 15.1 +0.3**
NVS Novosibirsk 55.55 350 *i* P **P** **08 38 21.9 -1.2**
NVS *i* S **S** **08 46 00.9 -4.5**
NVS pmax pmax
comp=N,161nm,1.0s
NVS pmax pmax
comp=E,75nm,1.0s
NVS pmax pmax
comp=Z,277nm,1.0s,mb6.2
NVS smax
comp=N,264nm,2.3s
NVS smax
comp=E,441nm,2.3s
KAMS Al Khamasin 55.67 294 P **P** **08 38 22.8 -1.5**
MZLS Mizel 56.09 299 P **P** **08 38 26.6 -0.7**
TATS Tathlith 56.50 293 P **P** **08 38 29.5 -0.8**
KLR Kul'dur 56.67 26⇓ *i* P **P** **08 38 31.2 0.0**
KLR *e* 08 40 41.5
KLR *e*PPP PPP 08 42 03.5 +6.3
KLR *e*S **S** **08 46 25.0 +4.7**
KLR pmax pmax
comp=N,80nm,1.0s
KLR pmax pmax
comp=E,110nm,1.0s
KLR pmax pmax
comp=Z,180nm,1.0s,mb6.1
KLR smax
comp=N,11μm,10.0s
KLR smax
comp=E,3μm,10.0s
KLR MLR MLR
comp=E,363μm,15.0s
VOSK Vostochnaya 56.74 341 *i* P **P** **08 38 30.4 -1.3**
BVA0 Borovoye Array 57.19 341 *i* P **P** **08 38 33.5 -1.3**
BVA0 pmax pmax
comp=Z,8.0nm,0.8s,mb4.8
BVAR Borovoye Array 57.19 341 P **P** **08 38 33.6 -1.3**
comp=Z,95nm,0.7s,mb5.9,baz=143,slow=7.4,SNR=365
BVAR S **S** **08 46 26.3 -0.8**
comp=Z,0.8nm,0.8s,baz=150,slow=12,SNR=2.7
BVAR LR LR 09 07 05.4
comp=Z,22μm,20.2s,MS6.2,baz=165,slow=40
BVAR PKP2bc 09 08 34.0
comp=Z,0.8nm,0.9s,baz=252,slow=4.7,SNR=4.4
BVAR Borovoye Array 57.19 341 P **P** **08 38 33.6 -1.3**
BVAR S **S** **08 46 26.3 -0.8**
BVAR LR LR 09 07 05.4
BVAR ⇑ *e* 09 08 34.0
BRVK Borovoye 57.25 341 *e*P **P** **08 38 33.6 -1.7**
ZRNK Zerenda 57.60 340⇑ *e*P **P** **08 38 36.2 -1.5**
TOO Toolangi 57.94 136⇓ *i* P **P** **08 38 41.9 +1.6**
comp=Z,25nm,0.9s,mb5.2
TOO *i* S **S** **08 46 44.8 +7.5**
TOO Toolangi 57.94 136⇓ *i* P **P** **08 38 41.9 +1.6**
TOO *i* S **S** **08 46 44.8 +7.5**
TOO pmax pmax
comp=Z,25nm,0.9s,mb5.2
BLJS Baljurashi 58.30 293 P **P** **08 38 43.4 +0.4**
AB31 Akbulak array 58.50 332 *i* P **P** **08 38 42.6 -1.4**
AB31 pmax pmax
comp=Z,67nm,0.8s,mb5.7
BOD Bodaibo 58.66 10⇑ *i* P **P** **08 38 44.6 -0.4**
ASAJ Asahikawa 58.91 36 P **P** **08 38 46.7 -0.3**
comp=Z,22nm,0.4s,mb5.5,baz=254,slow=12,SNR=16
ASAJ S **S** **08 46 54.3 +4.5**
comp=Z,3.1nm,0.4s,baz=342,slow=6.4,SNR=1.7
ASAJ LR LR 09 04 49.4
comp=Z,17μm,19.9s,MS6.2,baz=241,slow=37
CNB Canberra Magne 59.70 132 *e*P **P** **08 38 56.0 +3.5**
comp=Z,68nm,1.0s,mb5.6
HILS Ha'il 60.00 302 P **P** **08 38 54.7 -0.1**
CLNS Chul'man 60.30 17 *c* *i* P **P** **08 38 56.5 +0.1**
CLNS *e* 08 39 40.9
CLNS *e* 08 41 07.1
CLNS *e*S **S** **08 47 08.4 +0.9**
CLNS *e* 08 48 40.0
CLNS *e*SS SS 08 51 09.8 +3.5
CLNS *e*SSS SSS 08 53 42.7 +2.9
CLNS pmax pmax
comp=Z,80nm,0.8s,mb5.8
CLNS pmax pmax
comp=N,40nm,0.9s
CLNS pmax pmax
comp=E,40nm,1.0s
CLNS pmax pmax
comp=Z,30nm,1.2s,mb5.2
CLNS pmax pmax
comp=N,40nm,1.0s
CLNS pmax pmax
comp=E,30nm,1.0s
CLNS smax
comp=E,600nm,12.8s
CLNS smax
comp=Z,2μm,14.6s
CLNS smax
comp=N,3μm,12.2s
CLNS MLR MLR
comp=Z,42μm,15.0s,MS6.7
CLNS MLR MLR
comp=N,18μm,14.0s,MS6.4
CLNS MLR MLR
comp=E,12μm,14.0s,MS6.4
KMBO Kilima Mbogo 60.60 268 P **P** **08 38 59.1 +0.1**
KMBO S **S** **08 47 14.6 +2.7**
KMBO Kilima Mbogo 60.60 268 P **P** **08 38 59.1 +0.1**
comp=E,6.3nm,0.8s,mb4.8,baz=59,slow=9.6,SNR=9.7
KMBO S **S** **08 47 12.8 +0.8**
comp=E,0.4nm,0.3s,baz=335,slow=19,SNR=2.2
KMBO LR LR 09 02 49.1
comp=E,10μm,19.2s,MS6.0,baz=93,slow=34
KMBO Kilima Mbogo 60.60 268 *e*P **P** **08 38 58.4 -0.6**
comp=E,60nm,1.8s,mb5.4
KMBO LR LR
comp=Z,7μm,19.0s,MS5.8
YSS Yuzh-Sakhalins 60.64 34α *i* P **P** **08 38 58.1 -0.7**
YSS *e**PP pP 08 39 07.0 +1.0
YSS *e**SP sP 08 39 12.0 +3.4
YSS *e* 08 41 12.0
YSS *e*S **S** **08 47 12.0 0.0**
YSS *e*PS PS 08 47 30.0 -0.5
YSS *e*PPS PPS 08 47 42.0 +2.9
YSS pmax pmax
comp=N,100nm,0.8s
YSS pmax pmax
comp=E,90nm,0.8s
YSS pmax pmax
comp=Z,320nm,0.8s,mb6.5
YSS pmax pmax
comp=Z,2μm,8.0s
YSS pmax pmax
comp=Z,1μm,7.0s
YSS pmax pmax
comp=N,900nm,9.0s
YSS pmax pmax
comp=E,600nm,9.0s
YSS smax
comp=N,900nm,6.0s
YSS smax
comp=E,700nm,7.0s
YSS MLR MLR
comp=N,19μm,18.0s,MS6.3
YSS MLR MLR
comp=Z,12μm,18.0s,MS6.1
YSS MLR MLR
comp=E,8μm,19.0s,MS6.3
YSS Yuzh-Sakhalins 60.64 34 *e*P **P** **08 38 58.3 -0.5**
comp=E,456nm,1.0s,mb6.6
YSS LR LR
comp=Z,13μm,19.0s,MS6.1
YUK Yuzh-Kuril'sk 60.83 38⇑ *i* P **P** **08 38 58.0 -2.2**
YUK *e* 08 41 15.0
YUK *e*S **S** **08 47 14.0 -0.5**
YUK *e*PS PS 08 47 31.0 -2.0
YUK pmax pmax
comp=Z,7μm,5.0s
YUK pmax pmax
comp=Z,260nm,0.9s,mb6.4
YUK smax
comp=E,2.0nm,8.0s
YUK MLR MLR
comp=Z,4μm,15.0s,MS5.7
YUK MLR MLR
comp=N,5μm,16.0s,MS6.2
YUK MLR MLR
comp=E,13μm,16.0s,MS6.2
MAK Makhachkala 61.73 320 *d* *i* P **P** **08 39 05.0 -1.3**
MAK *e* 08 41 22.0
MAK *i* S **S** **08 47 23.0 -3.0**
MAK *i* PS PS 08 47 41.0 -4.4
MAK *i* 08 48 54.0
MAK *e*SS SS 08 51 23.0 -6.5
MAK pmax pmax
comp=Z,3μm,10.0s
MAK smax
comp=N,4μm,10.0s
MAK smax
comp=E,4μm,10.0s
TAU Tasmania Unive 61.81 141 PFAKE 08 39 20.0 +13
TAU LR LR
comp=Z,11μm,19.0s,MS6.0
TI2 Plekhanov 62.98 318⇑ *i* P **P** **08 39 15.0 +0.4**
SVE Sverdlovsk 63.64 338 *α* *i* P **P** **08 39 17.0 -1.7**
SVE *i* 08 39 30.0
SVE *i* 08 39 51.8
SVE *e* 08 41 37.0
SVE *e*PPP PPP 08 43 11.0 -1.1
SVE *i* S **S** **08 47 48.0 -1.8**
SVE *e*PS ScS 08 49 08.0 +1.1
SVE pmax pmax
comp=Z,300nm,1.3s,mb6.2
SVE pmax pmax
comp=Z,2μm,11.0s
SVE pmax pmax
comp=N,1μm,10.0s
SVE pmax pmax
comp=E,1μm,10.0s
SVE smax
comp=N,3μm,17.0s
SVE smax
comp=E,4μm,17.0s
SVE MLR MLR
comp=Z,12μm,17.0s,MS6.1
SVE MLR MLR
comp=N,6μm,18.0s,MS5.9
SVE MLR MLR
comp=E,5μm,18.0s,MS5.9
ZEI Tsey 64.00 319 *c* *i* P **P** **08 39 21.0 -0.3**
ZEI *e* 08 41 43.0
ZEI *i* S **S** **08 47 56.0 +1.5**
ZEI *e*PS PS 08 48 22.0 +5.0
ZEI pmax pmax
comp=Z,2μm,8.0s
ZEI smax
comp=N,3μm,12.0s
ZEI MLR MLR
comp=Z,6μm,20.0s,MS5.7
ARU Arti 64.14 337⇑ *i* P **P** **08 39 20.6 -1.4**
ARU *i* 08 39 53.8
ARU *i* 08 41 42.8
ARU *i* PPP PPP 08 43 16.1 -1.2
ARU *i* S **S** **08 47 57.5 +1.4**
ARU *e*SS SS 08 52 08.7 +1.8
ARU pmax pmax
comp=Z,129nm,1.3s,mb5.8
ARU MLR MLR
comp=Z,17μm,19.0s,MS6.2
ARU MLR MLR
comp=N,6μm,18.0s,MS6.2
ARU MLR MLR
comp=E,13μm,19.0s,MS6.2
ARU Arti 64.14 337 *e*P **P** **08 39 20.2 -1.9**
comp=E,279nm,1.6s,mb6.0
ARU LR LR
comp=Z,19μm,20.0s,MS6.3
TBKS Tabuk 64.70 301 P **P** **08 39 26.8 +0.6**
PYA Pyatigorsk 65.10 319 *c* *i* P **P** **08 39 27.0 -1.5**
PYA *i* 08 41 53.0
PYA *i* S S 08 48 05.0 -3.0
PYA *i* 08 49 12.0
PYA pmax pmax
comp=Z,1μm,7.0s
PYA smax
comp=N,4μm,18.0s
KIV Kislovodsk 65.31 319 *i* P **P** **08 39 29.0 -0.8**
KIV *e* 08 40 00.0
KIV *e* 08 41 55.1
KIV *i* S S 08 48 09.1 -1.5
KIV *e*SS SS 08 52 23.9 -1.5
KIV pmax pmax
comp=Z,110nm,1.2s,mb5.8
KIV pmax pmax
comp=E,40nm,1.1s
KIV smax
comp=N,2μm,9.1s
KIV Kislovodsk 65.31 319 *e*P **P** **08 39 28.6 -1.2**
comp=N,111nm,1.1s,mb5.8
KIV LR LR
comp=Z,5μm,19.0s,MS5.7
ASF Jabal al Asfar 65.43 305 P **P** **08 39 32.8 +2.0**
comp=Z,15nm,0.8s,mb5.1,baz=12,slow=3.9,SNR=11
ASF S S 08 48 16.2 +3.9
comp=Z,1.1nm,0.5s,baz=322,slow=20,SNR=1.9
JMQS Jabal Moqyreh 65.43 302 P **P** **08 39 30.6 -0.2**
GOF Gofitskoye 65.56 320⇓ *i* P **P** **08 39 30.0 -1.4**
GOF *e* 08 41 50.0
GOF *i* S S 08 48 13.0 -0.7
GOF pmax pmax
comp=Z,180nm,1.8s,mb5.8
GOF pmax pmax
comp=Z,2μm,6.0s
GOF smax
comp=N,12μm,10.0s
GOF smax
comp=E,6μm,10.0s
BDAS Al Bad' 65.99 301 P **P** **08 39 34.4 0.0**
YAK Yakutsk 65.99 16 *e*P **P** **08 39 32.6 -1.2**
YAK pmax pmax
comp=Z,385nm,0.9s,mb6.4
YAK MLR MLR
comp=Z,31μm,20.0s,MS6.5
YAK Yakutsk 65.99 16 *e*P **P** **08 39 32.5 -1.3**
comp=Z,385nm,0.9s,mb6.4
YAK LR LR
comp=Z,31μm,20.0s,MS6.5
JMOS Jabal al Moall 66.15 302 P **P** **08 39 34.8 -0.6**
HAQS Haql 66.28 302 P **P** **08 39 35.9 -0.4**
EIL Elat 66.41 302 P **P** **08 39 36.5 -0.6**
EIL Elat 66.41 302⇑ P **P** **08 39 36.5 -0.6**
ZFRI Zfri 66.43 303 P **P** **08 39 36.7 -0.5**
MBH Mount Berech 66.46 302 P **P** **08 39 37.1 -0.3**
MBH Mount Berech 66.46 302⇑ P **P** **08 39 37.1 -0.3**
DRGI Dragot 66.51 304 P **P** **08 39 37.3 -0.4**
PRNI Paran 66.52 303 P **P** **08 39 37.5 -0.3**
PRNI Paran 66.52 303⇑ P **P** **08 39 37.5 -0.3**
KSHT Keshet 66.53 306 P **P** **08 39 37.9 +0.1**
HMDT Nahal Hemdat 66.57 305 P **P** **08 39 37.7 -0.4**
KMTI Karmit 66.70 303 P **P** **08 39 38.4 -0.5**
MIR Mirnyy 66.91 182⇑ *e*P **P** **08 39 40.0 +0.3**
MIR *e*S S 08 48 31.0 +1.3
MIR pmax pmax
comp=Z,55nm,1.2s,mb5.5
MIR pmax pmax
comp=Z,2μm,7.0s
MIR smax
comp=N,2μm,14.0s
MIR smax
comp=E,2μm,17.0s
MIR MLR MLR
comp=N,4μm,16.0s,MS5.8
MIR MLR MLR
comp=E,2μm,16.0s,MS5.8
MIR MLR MLR
comp=Z,18μm,16.0s,MS6.4
SOC Sochi 67.12 318 *i* P **P** **08 39 39.3 -2.1**
SOC *e* 08 40 09.2
SOC *e* 08 42 06.3
SOC *i* S S 08 48 28.2 -4.4
SOC *e* 08 49 28.0
SOC *e*SS SS 08 52 54.8 +1.2
SOC pmax pmax
comp=Z,107nm,0.9s,mb5.9
SOC pmax pmax
comp=N,91nm,1.3s
SOC pmax pmax
comp=E,38nm,0.8s
SOC smax
comp=N,2μm,7.0s
SOC smax
comp=E,3μm,6.7s
SOC MLR MLR
comp=Z,4μm,20.0s,MS5.6
SOC MLR MLR
comp=N,4μm,22.0s,MS6.0
SOC MLR MLR
comp=E,8μm,21.0s,MS6.0
KZIT Kziot 67.17 303 P **P** **08 39 41.4 -0.5**
CSS Prodhromos 69.04 307 *e*P **P** **08 39 53.3 -0.2**
ANN Anapa 69.10 318 *e*P **P** **08 39 53.0 -0.7**
ANN *e*S S 08 48 52.0 -4.2
ANN pmax pmax
comp=Z,10.0nm,0.9s,mb4.8
ANN smax
comp=N,2μm,11.6s
ANN smax
comp=E,750nm,9.6s
BRTR Keskin Array B 70.10 312 P **P** **08 39 58.4 -1.5**
comp=E,11nm,0.8s,mb4.9,baz=135,slow=7.0,SNR=50
BRTR S S 08 49 05.8 -2.3
comp=E,0.3nm,0.4s,baz=348,slow=28,SNR=2.5
SKR Severo-Kuril's 70.12 35 *e*P **P** **08 39 59.0 -0.8**
SKR *e* pP 08 40 05.0 -2.0
SKR *e* 08 40 19.0
SKR *e*S S 08 49 11.0 +2.9
SKR *e*PS PS 08 49 28.0 -10
SKR *e* 08 49 52.0
SKR pmax pmax
comp=N,2μm,4.0s
SKR pmax pmax
comp=E,3μm,4.0s
SKR pmax pmax
comp=Z,5μm,4.0s
SKR pmax pmax
comp=N,200nm,1.0s
SKR pmax pmax
comp=E,200nm,1.0s
SKR pmax pmax
comp=Z,250nm,1.0s,mb6.1
SKR pmax pmax
comp=N,6μm,16.0s
SKR pmax pmax
comp=E,8μm,16.0s
SKR MLR MLR
comp=N,8μm,18.0s,MS6.2
SKR MLR MLR
comp=E,9μm,18.0s,MS6.2
SKR MLR MLR
comp=Z,17μm,18.0s,MS6.3
NOUC Port Laguerre 70.27 114 *e*P **P** **08 40 01.5 +0.3**
NOUC Port Laguerre 70.27 114 *e*P **P** **08 40 01.4 +0.3**
VOR Voronezh 70.77 326 P **P** **08 40 02.0 -1.7**
VOR *e**SP sP 08 40 15.0 +1.5
VOR *e* 08 49 54.0
VOR pmax pmax
comp=Z,200nm,1.7s,mb5.8
VOR pmax pmax
comp=N,100nm,1.5s
VOR pmax pmax
comp=E,220nm,1.5s
SIM Simferopol' 71.36 318 *c* *i* P **P** **08 40 06.6 -0.9**
SIM *i* S S 08 49 19.5 -3.2
SIM pmax pmax
comp=Z,72nm,1.1s,mb5.5
MA2 Magadan 71.76 25 *e*P **P** **08 40 09.1 -0.5**
MA2 pmax pmax
comp=Z,66nm,1.0s,mb5.5
MA2 MLR MLR
comp=Z,22μm,19.0s,MS6.4
MA2 Magadan 71.76 25 *e*P **P** **08 40 09.1 -0.5**
comp=Z,66nm,1.0s,mb5.5
MA2 LR LR
comp=Z,22μm,19.0s,MS6.4
ISP Isparta 71.96 310 *e*P **P** **08 40 09.4 -1.8**
MAW Mawson 72.10 193⇓ *i* P **P** **08 40 11.6 +0.1**
comp=Z,24nm,0.9s,mb5.1
MAW *i* S S 08 49 34.9 +4.1
MAW Mawson 72.10 193 P **P** **08 40 11.9 +0.4**
comp=Z,65nm,1.2s,mb5.4,baz=344,slow=7.1,SNR=22
MAW S S 08 49 32.9 +2.2
comp=Z,1.5nm,1.0s,baz=336,slow=19,SNR=2.3
MAW LR LR 09 04 55.8
comp=Z,13μm,21.9s,MS6.2,baz=46,slow=30
MAW Mawson 72.10 193⇓ *i* P **P** **08 40 11.6 +0.1**
MAW *i* S S 08 49 34.9 +4.1
MAW pmax pmax
comp=Z,25nm,0.9s
ESKT Eskisehir 72.12 312 *i* P **P** **08 40 11.6 -0.5**
HENT Hendek 72.42 313 *i* P **P** **08 40 11.9 -1.9**
PET Petropavlovsk 72.53 34 *c* *i* P **P** **08 40 14.3 +0.1**
PET *e* 08 42 57.5
PET *i* S S 08 49 40.3 +4.5
PET *e* 08 49 58.2
PET *e*PPS PPS 08 50 17.0 -6.8
PET pmax pmax
comp=Z,239nm,1.1s,mb6.0
PET pmax pmax
comp=Z,3μm,4.7s
PET pmax pmax
comp=N,653nm,4.5s
PET pmax pmax
comp=E,1μm,5.5s
PET pmax pmax
comp=N,881nm,21.1s
PET pmax pmax
comp=Z,4μm,17.5s
PET pmax pmax
comp=E,1μm,17.8s
PET pmax pmax
comp=Z,38nm,1.1s,mb5.2
PET pmax pmax
comp=Z,1μm,17.0s
PET smax
comp=E,1μm,6.6s
PET smax
comp=E,2μm,7.9s
PET MLR MLR
comp=Z,11μm,18.0s,MS6.2
PET MLR MLR
comp=Z,9μm,18.0s
PET Petropavlovsk 72.53 34 *e*P **P** **08 40 13.5 -0.7**
comp=Z,234nm,1.1s,mb6.0
PET LR LR
comp=Z,10μm,19.0s,MS6.1
MOS Moscow 73.32 329 *i* P **P** **08 40 18.2 -0.6**
MOS *e* 08 40 34.6
MOS *e* 08 43 00.3
MOS *i* S S 08 49 41.5 -3.3
MOS *e*PS PS 08 50 14.0 -6.6
MOS *e* 08 50 21.6
MOS *e*SS SS 08 54 24.8 -4.6
MOS pmax pmax
comp=Z,300nm,0.8s,mb6.3
MOS pmax pmax
comp=N,130nm,0.7s
MOS pmax pmax
comp=E,190nm,0.9s
OBN Obninsk 73.61 328 *c* *i* P **P** **08 40 19.2 -1.3**
OBN *e* 08 40 29.4
OBN *e*PPP PPP 08 44 51.5 +0.7
OBN *i* S S 08 49 43.8 -4.3
OBN *i* PPS PPS 08 50 39.3 +0.3
OBN *i* SS SS 08 54 37.5 +3.7
OBN *i* SSS SSS 08 57 45.6 +0.6
OBN pmax pmax
comp=Z,160nm,1.1s,mb5.9
OBN pmax pmax
comp=Z,700nm,6.7s
OBN Obninsk 73.61 328 *e*P **P** **08 40 19.2 -1.3**
comp=Z,309nm,1.5s,mb6.0
OBN LR LR
comp=Z,9μm,19.0s,MS6.1
TIXI Tiksi 73.84 10 *e*P **P** **08 40 20.4 -1.2**
TIXI *e* 08 43 01.4
TIXI *e*S S 08 49 45.4 -4.9
TIXI pmax pmax
comp=Z,1μm,1.0s
TIXI MLR MLR

comp=Z,206µm,17.0s
TIXI Tiksi 73.84 10 *e*P P **08 40 20.7 -0.9**
comp=Z,186nm,0.9s,mb6.0
TIXI LR LR
comp=Z,30µm,19.0s,MS6.6
LBTB Lobatse 74.11 244 *e*P P **08 40 23.5 -0.5**
LBTB *e**PP pP 08 40 31.3 0.0
LBTB pmax pmax
comp=Z,10.0nm,0.9s,mb4.8
LBTB MLR MLR
comp=Z,5µm,19.0s,MS5.8
LBTB Lobatse 74.11 244 P P **08 40 24.1 +0.1**
LBTB pmax pmax
comp=Z,10.0nm,0.9s,mb4.8
LBTB Lobatse 74.11 244 *e*P P **08 40 23.5 -0.6**
comp=Z,10nm,0.9s,mb4.8
LBTB *ep*P pP 08 40 31.3 0.0
LBTB LR LR
comp=Z,5µm,19.0s,MS5.8
SEY Seymchan 74.23 23 *i* P P **08 40 25.2 +1.3**
SEY 08 40 39.4
SEY 08 43 13.5
SEY PPP PPP 08 44 51.2 -5.4
SEY S S 08 49 56.7 +1.9
SEY 08 50 31.6
SEY SS SS 08 54 46.9 +4.0
SEY pmax pmax
comp=N,50nm,0.9s
SEY pmax pmax
comp=E,80nm,0.9s
SEY pmax pmax
comp=Z,240nm,0.9s,mb6.1
SEY smax
comp=N,13µm,15.2s
SEY smax
comp=E,15µm,17.6s
SEY MLR MLR
comp=N,54µm,18.0s,MS7.0
SEY MLR MLR
comp=Z,110µm,18.0s,MS7.2
SEY MLR MLR
comp=E,48µm,17.0s,MS7.0
KDAG Bornova 74.58 310 *i* P P **08 40 26.1 -0.4**
PSN Preselentsi 75.09 315 *i* P P **08 40 31.3 +2.0**
NPS Neapolis 75.28 306 *e*P P **08 40 30.6 0.0**
CFR Carcaliu 75.49 317⇑ *i*P P **08 40 30.7 -0.9**
CFR Carcaliu 75.49 317⇑ *i*P P **08 40 30.7 -0.9**
KIS Kishinev 75.50 319α *i*P P **08 40 30.0 -1.6**
KIS *i* 08 40 51.0
KIS *e* 08 43 22.0
KIS *i* S S 08 50 05.0 -4.3
KIS pmax pmax
comp=Z,300nm,1.0s,mb6.2
KIS pmax pmax
comp=Z,2µm,10.0s
KIS pmax pmax
comp=Z,2µm,12.0s
KIS smax
comp=N,400nm,3.0s
KIS smax
comp=N,4µm,18.0s
HARR Harsova 75.51 316⇓ *i*P P **08 40 31.6 -0.1**
HARR Harsova 75.51 316⇓ *i*P P **08 40 31.6 -0.1**
IDI Anoyia 75.87 306 P P **08 40 34.1 +0.1**
comp=N,32nm,1.0s,mb5.2,baz=112,slow=14,SNR=6.8
JMB Yambol 75.95 314 *i* P P **08 40 34.0 -0.3**
AKASG Malin Array Be 76.26 322 P P **08 40 34.5 -1.4**
comp=N,21nm,0.7s,mb5.2,baz=93,slow=4.4,SNR=135
AKASG S S 08 50 12.8 -4.7
comp=N,0.2nm,0.4s,baz=108,slow=8.8,SNR=3.5
AKASG LR LR 09 18 51.2
comp=N,3µm,20.1s,MS5.7,baz=110,slow=39
VAM Vamos 76.45 306 *e*P P **08 40 37.2 0.0**
VRI Vrincioaia 76.62 317⇑ *i*P P **08 40 38.2 +0.3**
VRI Vrincioaia 76.62 317⇑ *i*P P **08 40 38.4 +0.5**
BUC1 Bucharest 76.76 316⇑ *i*P P **08 40 38.3 -0.4**
BUC1 Bucharest 76.76 316⇑ *i*P P **08 40 38.4 -0.4**
MLR Muntele Rosu 77.07 317 P P **08 40 40.4 -0.1**
comp=N,62nm,1.0s,mb5.5,baz=99,slow=1.7,SNR=41
MLR Muntele Rosu 77.07 317⇑ *i*P P **08 40 40.5 +0.1**
RZN Rozhen 77.16 313 *i* P P **08 40 39.7 -1.3**
VLI Veliai 77.66 307 *e*P P **08 40 44.0 +0.1**
PGB Panagyurishte 77.72 313 P P **08 40 43.0 -1.1**
MMB Musomiste 77.86 312 *i* P P **08 40 44.0 -0.9**
MNK Minsk 78.15 326⇑ *e*P P **08 40 44.0 -2.2**
MNK *e*S S 08 50 34.0 -3.9
RPZ Rata Peaks 78.21 135 P P **08 40 46.9 +0.2**
comp=N,39nm,0.7s,mb5.5,baz=296,slow=2.2,SNR=20
RPZ LR LR 09 14 24.9
comp=N,23µm,21.9s,MS6.5,baz=277,slow=35
KKB Krupnik 78.39 313 *i* P P **08 40 47.0 -0.8**
VTS Vitosha 78.42 313 *i* P P **08 40 47.5 -0.4**
PUL Pulkovo 78.48 331 *e*P P **08 40 48.2 +0.3**
ITM Ithomi 78.53 308 *e*P P **08 40 47.5 -1.2**
VAY Valandovo 78.67 312⇑ *i*P P **08 40 47.9 -1.5**
EVR Evrytania 78.88 310 *e*P P **08 40 49.4 -1.1**
JOF Joensuu 79.12 335 *ep* P **08 40 49.5 -1.8**
THZ Tophouse 79.17 133 *e*P P **08 40 50.9 -1.1**
LVV L'vov 79.27 321 *e*P P **08 40 52.0 -0.4**
LVV *e*S S 08 50 48.0 -1.9
SUR Sutherland 79.27 237 *e*P P **08 40 52.4 -0.4**
comp=N,69nm,1.3s,mb5.4
SUR LR LR
comp=Z,14µm,19.0s,MS6.3
SYO Syowa Base 79.46 198⇑ P P **08 40 53.1 0.0**
SYO Syowa Base 79.46 198⇑ *p*P pP 08 41 00.9 +0.5
SYO Syowa Base 79.46 198⇑ *s*P sP 08 41 05.9 +3.0
SYO Syowa Base 79.46 198⇑ *e*P P **08 40 53.1 0.0**
SYO *e**SP sP 08 41 05.9 +3.0
SYO Syowa Base 79.46 198⇑ *e*P P **08 40 53.1 0.0**
SYO ⇑ *ep*P pP 08 41 00.9 +0.5
SYO *es*P sP 08 41 05.9 +3.0
BOLS Boljevac 79.54 314⇑ *i*P P **08 40 53.1 -0.9**
SKO Skopje 79.62 313 *i* P P **08 40 53.0 -1.5**
VLS Valsamata 79.72 309 *e*P P **08 40 56.5 +1.4**
LVZ Lovozero 79.78 340 *i* P P **08 40 53.7 -1.1**
LVZ *e* 08 43 56.2
LVZ *e*PPP PPP 08 45 45.2 -3.3
LVZ *e*S S 08 50 53.5 -1.4
LVZ *e* 08 51 06.3
LVZ *e*SS SS 08 56 06.3 -0.7
LVZ *e*SSS SSS 08 59 30.6 +3.0
LVZ pmax pmax
comp=Z,30nm,0.9s,mb5.2
LVZ pmax pmax
comp=E,8.0nm,1.1s
LVZ pmax pmax
comp=Z,910nm,3.8s
LVZ pmax pmax
comp=N,130nm,2.8s
LVZ pmax pmax
comp=E,400nm,4.0s
LVZ smax
comp=N,2µm,6.1s
LVZ smax
comp=Z,370nm,4.0s
LVZ smax
comp=E,2µm,6.6s
LVZ Lovozero 79.78 340 *e*P P **08 40 54.5 -0.3**
KWP Kalwaria 80.07 320 *e*P P **08 40 56.3 -0.4**
comp=E,200nm,1.3s,mb5.9
KWP Kalwaria 80.07 320 *e*P P **08 40 56.3 -0.4**
KWP *e* pP 08 41 02.9 -1.2
KWP *e*S S 08 50 58.0 -0.3
KWP *e*SS 08 51 04.1
KWP *e* 08 51 15.3
KWP Kalwaria 80.07 320 *e*P P **08 40 56.3 -0.4**
KWP *ep*P pP 08 40 59.0 -5.1
KWP *e*PcP PcP 08 41 02.9 -1.6
KWP *e*S S 08 50 58.0 -0.3
KWP *e*SS 08 51 04.1
KWP *e*SKS SKS 08 51 15.3 +0.2
APA Apatity 80.08 339⇑ *i*P P **08 40 55.1 -1.3**
APA *i* 08 41 11.6
APA *i* 08 44 02.0
APA *i* PPP PPP 08 45 52.0 +0.9
APA *i* S S 08 50 57.0 -1.0
APA *i* PS PS 08 51 57.0 +11
APA *i* SS SS 08 56 13.0 +1.5
APA *i* SSS SSS 08 59 32.0 -0.6
APA pmax pmax
comp=Z,130nm,1.2s,mb5.7
APA pmax pmax
comp=Z,2µm,6.0s
APA smax
comp=N,3µm,9.0s
APA smax
comp=E,2µm,9.0s
SVIS Svilajnac 80.14 315⇑ *i*P P **08 40 56.4 -0.8**
UZH Uzhgorod 80.15 319 *e*P P **08 40 55.0 -2.2**
UZH *e*S S 08 50 50.0 -9.1
SNZO South Karori 80.42 132 P P **08 40 58.0 -0.8**
comp=E,141nm,1.2s,mb5.8
SNZO LR LR
comp=Z,24µm,21.0s,MS6.5
KEK Kerkira 80.53 310 *e*P P **08 40 58.5 -0.9**
SUW Suwalki 80.67 325 *e*P P **08 40 59.0 -0.8**
comp=Z,400nm,1.1s,mb6.3
SUW Suwalki 80.67 325 *e*P P **08 40 59.0 -0.8**
SUW *e* 08 41 08.6
SUW *e*S S 08 51 01.8 -2.7
SUW *e**SS 08 51 08.9
SUW Suwalki 80.67 325 *e*P P **08 40 59.3 -0.6**
QSH Qafa e Shtames 80.69 312 *i* p P **08 41 02.0 +1.8**
MGZ Maungaku 80.71 130 P P **08 41 01.5 +1.1**
CRVS Cervenica-Dubn 80.74 319 *e*P P **08 41 00.7 +0.4**
CRVS *e* 08 41 23.5
CRVS *e* 08 41 29.1
CRVS *e* 08 42 05.0
CRVS *e* 08 42 26.5
CRVS *e* 08 42 42.6
CRVS *e*S S 08 51 05.8 +0.5
CRVS Cervenica-Dubn 80.74 319 *e*P P **08 41 00.7 +0.4**
CRVS *e*S S 08 51 05.8 +0.5
CNZ Chateau 80.75 130 P P **08 41 01.2 +0.6**
FWVZ Far West T-bar 80.76 130 *e*P P **08 41 01.3 +0.7**
NGZ Ngauruhoe 80.79 130 P P **08 41 01.6 +0.8**
FX1 Attu Island--F 80.84 36 P P **08 41 01.0 +0.3**
comp=Z,61nm,0.8s,mb5.6,baz=273,slow=1.5,SNR=19
FX1 Attu Island--F 80.84 36 *e*P P **08 41 00.6 -0.1**
FINES FINESS Array B 80.98 332 P P **08 41 01.0 -0.3**
comp=Z,22nm,0.8s,mb5.2,baz=104,slow=7.9,SNR=42
FINES LR LR 09 24 09.0
comp=Z,5µm,19.1s,MS5.9,baz=310,slow=41
DIVS Divcibare 80.98 315⇓ *i*P P **08 41 01.1 -0.6**
NVSS Nova Varos 2 81.11 314⇓ *i*P P **08 41 01.7 -0.6**
KECS Kecovo 81.31 319 *e*P P **08 41 03.1 -0.2**
KECS *e* 08 41 30.2
SMY Shemya 81.36 37 *e*P P **08 41 04.0 +0.5**
SMY pmax pmax
comp=Z,349nm,1.1s,mb6.2
SMY Shemya 81.36 37 *e*P P **08 41 04.0 +0.5**
comp=Z,349nm,1.1s,mb6.2
BFZ Birch Farm 81.49 131 *e*P P **08 41 04.6 +0.2**
NIE Niedzica 81.57 320 *e*P P **08 41 05.0 +0.4**
NIE *e* 08 41 29.1
WAR Warsaw 81.60 323 *e*P P **08 41 04.8 +0.1**
WAR *ep*P pP 08 41 06.6 -5.5
WAR *e*PcP PcP 08 41 09.7 -1.4
WAR *e*S S 08 51 14.7 +0.6
WAR *e*S S 08 51 15.5 +1.4
WAR *es*S 08 51 19.2
WAR *e*SKS SKS 08 51 23.7 -2.1
WAR MLR MLR 09 25 29.9
comp=Z,6µm,18.6s,MS6.0
WAR Warsaw 81.60 323 *e*P P **08 41 04.8 +0.1**
WAR *e*S S 08 51 14.7 +0.6
WAR *e*S S 08 51 15.5 +1.4
WAR *e*SS SKS 08 51 19.2 -6.7
WAR MLR MLR
comp=Z,6µm,18.6s,MS6.0
PSZ Piszkesteto 81.61 318⇑ *i*P P **08 41 04.9 0.0**
PSZ Piszkesteto 81.61 318⇑ *e*P P **08 41 04.6 -0.3**
PSZ pmax pmax
comp=Z,116nm,1.3s,mb5.7
PSZ Piszkesteto 81.61 318⇑ *e*P P **08 41 04.6 -0.3**
comp=Z,116nm,1.3s,mb5.7
BILL Bilibino 81.67 21α *i*P P **08 41 04.1 -0.6**
BILL *i* 08 41 20.4
BILL *i* 08 44 11.5
BILL *i* PPP PPP 08 46 03.8 +0.4
BILL *i* 08 51 11.1
BILL *i* PS PS 08 52 19.7 +14
BILL *i* SS SS 08 56 37.2 +1.9
BILL pmax pmax
comp=Z,58nm,2.3s,mb5.1
BILL pmax pmax
comp=Z,1µm,10.8s
BILL Bilibino 81.67 21⇑ *e*P P **08 41 03.9 -0.9**
comp=Z,14nm,0.9s,mb4.9
URZ Urewera 81.84 129 P P **08 41 04.8 -1.4**
comp=Z,15nm,0.7s,mb5.0,baz=38,slow=5.2,SNR=7.6
URZ LR LR 09 19 10.4
comp=Z,16µm,20.1s,MS6.4,baz=85,slow=37
OJC Ojcow 82.03 321⇑ *i*P P **08 41 07.2 +0.2**
OJC *i* S S 08 51 19.9 +1.4
VYHS Vyhne 82.39 319 *i* P P **08 41 09.1 +0.2**
VYHS *e* pP 08 41 14.8 -1.5
VYHS *e* 08 41 22.4
VYHS *e* 08 41 27.6
VYHS *e* 08 41 33.1
VYHS *e* 08 41 43.7
VYHS *e* 08 41 59.9
VYHS *e* 08 42 21.3
VYHS *e* 08 42 49.0
VYHS *e*S S 08 51 21.9 -0.4
VYHS *e*SS SS 08 56 36.2 -10
VYHS Vyhne 82.39 319 *i* P P **08 41 09.1 +0.2**
VYHS *e* 08 41 22.4
VYHS *e*S S 08 51 21.9 -0.4
STON Ston 82.48 313 *i* P P **08 41 08.0 -1.5**
OKC Ostrava-Krasne 83.02 320⇑ *i*P P **08 41 12.4 +0.2**
OKC *e*S S 08 51 28.0 -0.7
OKC L 09 29 00.0
comp=Z,4.5nm,17.1s
RAC Raciborz 83.03 320 *e*P P **08 41 12.8 +0.6**
RAC *e*PcP PcP 08 41 17.0 -0.3
RAC *e*S S 08 51 27.9 -0.8
RAC LME 09 20 25.4
comp=Z,5µm,23.1s
RAC LMN 09 22 30.8
comp=Z,7µm,22.9s
RAC MLR MLR 09 25 02.2
comp=Z,5µm,18.8s,MS5.9
RAC Raciborz 83.03 320 *e*P P **08 41 12.8 +0.6**
RAC *e*S S 08 51 27.9 -0.8
RAC MLR MLR
comp=E,5µm,23.1s,MS6.1
RAC MLR MLR
comp=N,7µm,22.9s,MS6.1
KEV Kevo 83.04 341 *ep* P **08 41 10.4 -1.5**
SOI Samo 83.26 308 *e*P P **08 41 15.6 +2.0**
MORC Moravsky Berou 83.41 320 *e*P P **08 41 14.2 +0.1**
comp=N,48nm,1.3s,mb5.4
PTRP Pietrapertosa 83.47 311 *e*P P **08 41 16.8 +2.2**
ARCES ARCESS Array B 83.48 340 P P **08 41 12.5 -1.6**
comp=N,21nm,0.7s,mb5.3,baz=102,slow=4.2,SNR=4.6
ARCES LR LR 09 25 28.7
comp=N,11µm,19.2s,MS6.2,baz=108,slow=41
ARE0 ARCESS Array S 83.48 340 *e*P P **08 41 13.5 -0.6**
ZST Bratislava 83.50 318 *e*P P **08 41 14.1 -0.6**
ZST *e* 08 41 28.6
ZST *e* 08 41 33.3
ZST *e* 08 41 40.4
ZST *e* 08 41 59.5
ZST *e*S S 08 51 32.8 -0.7
ZST *e* 08 58 49.1
ZST Bratislava 83.50 318 *e*P P **08 41 14.1 -0.6**
ZST *e* 08 41 28.6
ZST *e*S S 08 51 32.8 -0.7
SCLL Scilla 83.55 308 *e*P P **08 41 16.9 +1.8**
FGMS Monte Sant'Ang 83.65 312 *e*P P **08 41 15.0 -0.6**
SISC Sisak 83.71 316 *i* P P **08 41 16.4 +0.7**
MRLC Muro Lucano 83.92 311 *e*P P **08 41 16.8 -0.2**
VRAC Vranov 83.96 319 P P **08 41 16.9 -0.1**
comp=N,4.8nm,0.7s,mb4.8,baz=120,slow=5.6,SNR=8.2
VKA Vienna 84.03 318⇑ *i*P P **08 41 18.5 +1.2**
comp=N,522nm,3.5s
VKA Vienna 84.03 318⇑ *i*P P **08 41 18.5 +1.2**
VKA pmax pmax
comp=Z,522nm,3.5s
SGO Sicignano 84.04 311 *e*P P **08 41 17.6 0.0**
DPC Dobruska-Polom 84.25 320⇑ *i*P P **08 41 19.1 +0.7**
DPC *e*SKS SKS 08 51 40.6 -3.5
DPC L 09 29 30.0
comp=Z,3.7nm,17.1s
KSP Ksiaz 84.33 321⇑ *e*P P **08 41 19.4 +0.6**
KSP *ep*P pP 08 41 21.7 -4.5
KSP *e*PcP PcP 08 41 22.8 -0.1
KSP *e*SKS SKS 08 51 41.4 -3.1
KSP *e*S S 08 51 47.4 +5.8
KSP *es*S 08 51 53.0
KSP MLR MLR 09 23 50.4
comp=Z,8µm,24.3s,MS6.0
KSP Ksiaz 84.33 321⇑ *e*P P **08 41 19.1 +0.3**
KSP *ep*P pP 08 41 28.8 +2.6
KSP *e*PP PP 08 44 36.0 +0.6
KSP *e*SKS SKS 08 51 38.7 -5.8
KSP *e*PPS PPS 08 52 40.0 -23
KSP *e*SS SS 08 56 53.0 -22
KSP LR LR
comp=Z,9µm,24.3s,MS6.1
ARSA Arzberg 84.46 317⇑ *i*P P **08 41 19.8 +0.3**
comp=Z,669nm,4.1s
UPC Upice 84.47 321⇑ *i*P P **08 41 20.0 +0.5**
BOJS Bojanci 84.49 316 *e*P P **08 41 19.8 0.0**
BOJS *e* 09 01 00.3
BOJS *e* 09 03 56.9
VAE Valguarnera 84.52 307 P P **08 41 20.5 +0.4**
comp=Z,15nm,0.5s,mb5.4,baz=78,slow=8.7,SNR=3.3
NVLJ Novalja 84.68 315⇑ *i*P P **08 41 19.6 -1.1**
VISS Visnje 84.81 316 *e*P P **08 41 21.3 0.0**
VISS *e* 08 42 56.0
VISS *e*PP PP 08 44 38.7 -0.7
VISS *e* 08 51 44.9
CPI2 Carpinone 84.86 312 *e*P P **08 41 22.6 +0.9**
CII Carovilli 84.88 312 *e*P P **08 41 21.9 +0.2**
VNDA Vanda 84.94 169 P P **08 41 22.4 +1.1**
comp=Z,12nm,1.0s,mb5.0,baz=300,slow=5.4,SNR=28
VNDA LR LR 09 18 37.5
comp=Z,8µm,18.3s,MS6.1,baz=311,slow=35
VNDA Vanda 84.94 169 P P **08 41 23.5 +2.2**
VNDA pmax pmax
comp=Z,21nm,1.2s
VNDA Vanda 84.94 169 *e*P P **08 41 23.0 +1.8**
comp=Z,21nm,1.3s,mb5.1
VNDA LR LR
comp=Z,4µm,19.0s,MS5.8
RNI2 Rionero Sannit 85.00 312 *e*P P **08 41 27.0 +4.7**
LJU Ljubljana 85.04 316 *e*P P **08 41 22.8 +0.4**
LJU *e* 08 42 57.4
LJU *e* 08 43 27.6
LJU *e*PP PP 08 44 40.1 -1.2
LJU *e* 08 46 40.9
LJU *e*S S 08 51 47.5 -1.3
OBKA Obir 85.07 316⇑ *i*P P **08 41 23.0 +0.4**
comp=Z,703nm,4.2s
PRU Pruhonice 85.36 320⇑ *i*P P **08 41 24.2 +0.3**
comp=Z,32nm,1.0s,mb5.4
PRU *ex* x 08 41 48.9
PRU *ex* x 08 45 23.6
PRU SKS SKS 08 51 49.5 -2.0
PRU L 09 30 20.0
PRU Pruhonice 85.36 320⇑ *i*P P **08 41 24.2 +0.3**
PRU 08 51 49.5
PRU pmax pmax
comp=Z,32nm,1.0s,mb5.4
PRU MLR MLR
comp=Z,4µm,19.0s,MS5.8
PRU Pruhonice 85.36 320⇑ *i*P P **08 41 24.2 +0.3**
comp=Z,32nm,1.0s,mb5.4
PRU *e* 08 41 48.9
PRU PP PP 08 45 23.6 +40
PRU SKS SKS 08 51 49.5 -2.0
PRU LR LR
comp=Z,4µm,19.0s,MS5.8
MOA Molln 85.36 318⇑ *i*P P **08 41 23.8 -0.2**
comp=Z,660nm,4.8s
PVCC Panska Ves 85.39 321⇑ *i*P P **08 41 24.5 +0.4**
PVCC L 09 27 40.0
comp=Z,4.4nm,17.0s
PRA Prague 85.43 320 ⇑P P **08 41 24.0 -0.3**
PRA L 09 30 20.0
VOY Vojsko 85.48 316 *e*P P **08 41 24.5 -0.2**
PTQR Pietraquaria 85.58 312 *e*P P **08 41 25.5 +0.3**
AQU L'Aquila 85.60 312 *e*P P **08 41 25.7 +0.4**
BSD Bornholm Skovb 85.60 325 *i* S S 08 51 51.8 -2.2
BSD *i* 09 01 17.9
comp=Z,4µm,19.0s
BSD Bornholm Skovb 85.60 325⇑ *i*P P **08 41 24.7 -0.3**
BSD *i* S S 08 51 51.8 -2.2
BSD pmax pmax
comp=Z,31nm,0.9s,mb5.5
BSD MLR MLR
comp=Z,4µm,19.0s,MS5.8
BSD Bornholm Skovb 85.60 325⇑ *i*P P **08 41 24.7 -0.3**
comp=Z,31nm,0.9s,mb5.5
BSD *i* S S 08 51 51.8 -2.2
BSD *i* 09 01 17.9
CADS Cadrg 85.61 316 *e*P P **08 41 25.0 -0.2**
TRO Tromso 85.75 340 *e*P P **08 41 25.0 -0.4**
BRG Berggiesshubel 85.81 321 *i* P P **08 41 26.6 +0.4**
BRG *e* 08 44 49.0
BRG *i* S S 08 51 58.0 +1.8
BRG pmax pmax
comp=Z,62nm,1.3s,mb5.7
BRG MLR MLR
comp=N,530nm,21.6s
BRG MLR MLR
comp=E,250nm,21.6s
BRG MLR MLR
comp=Z,550nm,21.8s
BRG Berggiesshubel 85.81 321 *i* P P **08 41 26.6 +0.4**
comp=Z,62nm,1.3s,mb5.7
BRG *ep*P PP 08 44 49.0 +1.7
BRG *e* 08 44 51.4
BRG *i* S S 08 51 58.0 +1.8
BRG *i* PS PS 08 53 05.0 +7.0
BRG *i* SS SS 08 57 44.0 +7.1
BRG LR LR
comp=Z,550nm,21.8s
GEC2 GERESS Array S 85.81 319 *e*P P **08 41 26.6 +0.4**
GEC2 pmax pmax
comp=Z,71nm,1.4s,mb5.7
GEC2 GERESS Array S 85.81 319 *e*P P **08 41 26.6 +0.4**
comp=Z,71nm,1.4s,mb5.7
GERES GERESS Array B 85.81 319 P P **08 41 26.3 +0.1**
comp=Z,11nm,0.8s,mb5.1,baz=104,slow=5.5,SNR=74
GERES PKKPbc 08 59 32.9
comp=Z,0.3nm,0.3s,baz=256,slow=5.5,SNR=3.8
PTCC Patocco-Chiusa 85.88 316⇑ *i*P P **08 41 26.6 0.0**
KHC Kasperske Hory 85.92 319⇑ *i*P P **08 41 26.8 +0.1**
KHC x x 08 41 40.5
KHC *e*S S 08 51 57.7 +0.5
KHC L 09 26 50.0
comp=Z,4.5nm,16.9s
KHC Kasperske Hory 85.92 319⇑ *i*P P **08 41 26.8 +0.1**
KHC *e* 08 51 57.7
KHC MLR MLR
comp=Z,4µm,16.9s,MS5.9
KHC Kasperske Hory 85.92 319⇑ *i*P P **08 41 26.8 +0.1**
KHC *ep* 08 41 27.0
KHC *e* 08 41 40.5
KBA Koelnbreinsper 85.93 317⇑ *i*P P **08 41 26.4 -0.5**
comp=Z,374nm,4.8s
GMNA Gemona 85.95 316 *e*P P **08 41 27.2 +0.2**
SNTG Esanatoglia 85.99 313 *e*P P **08 41 27.3 0.0**
ARV Arcevia 86.00 313⇑ *i*P P **08 41 27.9 +0.6**
RUE Ruedersdorf 86.04 322 *e*P P **08 41 27.3 +0.1**
SBA Scott Base 86.04 169 P P **08 41 29.1 +2.3**
SBA pmax pmax
comp=Z,76nm,1.4s,mb5.7
SBA Scott Base 86.04 169 *e*P P **08 41 28.4 +1.7**
comp=Z,76nm,1.4s,mb5.7
SBA LR LR
comp=Z,7µm,19.0s,MS6.1
WET Wettzell 86.38 319 *e*P P **08 41 29.4 +0.4**
WET pmax pmax
comp=Z,32nm,1.1s,mb5.5
WET Wettzell 86.38 319 *e*P P **08 41 29.4 +0.4**
comp=Z,32nm,1.1s,mb5.5
RSM Repubblica di 86.38 314⇑ *i*P P **08 41 30.1 +0.9**
CLL Collm 86.43 321 ⇑P P **08 41 29.1 -0.1**
comp=Z,logA/T=1.3,mb5.3
CLL *ep*P pP 08 41 39.0 +2.3
CLL *e**SP sP 08 41 43.2 +4.2
CLL *i* 08 41 54.8
CLL *i* 08 42 30.3
CLL *ep*P PP 08 44 56.0 +3.3
CLL *e*S S 08 52 00.0 -2.1
CLL *e*SSS SSS 09 01 24.0 +8.4

CLL **Collm** 86.43 321⇑ *i*P P 08 41 29.1 -0.1
CLL *e*S S 08 52 00.0 -2.1
CLL pmax pmax
comp=Z,29nm,1.3s,mb5.3
CLL MLR MLR
comp=Z,6µm,18.7s,MS6.0
CLL Collm 86.43 321⇑ *i*P **P 08 41 29.1 -0.1**
comp=Z,29nm,1.3s,mb5.3
CLL *i* 08 41 54.8
CLL *e*S S 08 52 00.0 -2.1
CLL LR LR
comp=Z,6µm,18.7s,MS6.0
HFS Hagfors 86.71 330 P **P 08 41 30.5 +0.1**
comp=Z,32nm,0.9s,mb5.5,baz=90,slow=3.0,SNR=24
SFI Santa Sofia 86.81 314⇑ *i*P **P 08 41 32.3 +1.0**
ADK Adak 86.88 38 *e*P **P 08 41 31.6 +0.2**
ADK pmax pmax
comp=Z,188nm,1.2s,mb6.2
ADK Adak 86.88 38 *e*P **P 08 41 31.6 +0.2**
comp=Z,188nm,1.2s,mb6.2
PGD Poggio Sodo 86.90 314 *e*P **P 08 41 32.7 +1.0**
VMG Vicchio 87.03 314 *e*P **P 08 41 33.4 +1.1**
CTI Castel Tesino 87.05 316⇑ *i*P **P 08 41 32.9 +0.6**
COP Copenhagen 87.06 326 *i*P **P 08 41 32.9 +0.8**
COP *i* 08 44 57.2
COP *i*S S 08 52 09.0 +1.0
COP pmax pmax
comp=Z,33nm,1.1s,mb5.5
COP MLR MLR
comp=Z,1µm,18.0s,MS5.3
COP Copenhagen 87.06 326 *i*P **P 08 41 32.9 +0.8**
comp=Z,33nm,1.1s,mb5.5
COP *i* 08 44 57.2
COP *i*S S 08 52 09.0 +1.0
COP *i* 09 04 44.2
COP LR LR
comp=Z,1µm,18.0s,MS5.3
WTTA Wattenberg 87.11 317⇑ *i*P **P 08 41 32.2 -0.4**
comp=Z,370nm,3.9s
WATA Walderalm 87.15 317⇓ *i*P **P 08 41 32.1 -0.7**
comp=Z,21nm,1.3s,mb5.2
WATA *i* 08 41 54.9
comp=Z,30nm,1.3s
MOX Moxa 87.27 321⇑ *i*P **P 08 41 33.6 +0.3**
comp=Z,logA/T=1.5,mb5.5
MOX PP PP 08 45 00.0 0.0
MOX S S 08 52 13.0 +2.9
MOX PS PS 08 53 10.0 -5.8
MOX SS SS 08 58 00.0 +2.2
MOX LQ 09 04 20.0
MOX LR LR 09 10 20.0
MOX L 09 39 20.0
MOX Moxa 87.27 321 *c*e**P P 08 41 33.6 +0.3**
MOX pmax pmax
comp=Z,57nm,1.8s,mb5.5
MOX MLR MLR
comp=Z,2µm,18.0s,MS5.6
MOX Moxa 87.27 321 *e*Pu 08 41 33.6
comp=Z,57nm,1.8s
MOX LR LR
comp=Z,2µm,18.0s,MS5.6
SQTA Sankt Quirin 87.40 317⇑ *i*P **P 08 41 33.9 -0.1**
comp=Z,14nm,1.2s,mb5.0
SQTA *i* 08 41 58.8
comp=Z,68nm,1.8s
GRFL Gerfalco 87.42 313 *e*P **P 08 41 33.7 -0.5**
ZCCA Zocca 87.46 314 *e*P **P 08 41 36.0 +1.7**
MOTA Moosalm 87.47 317⇑ *i*P **P 08 41 34.1 -0.3**
comp=Z,13nm,1.2s,mb5.0
MOTA *i* 08 41 56.9
comp=Z,26nm,1.1s
GRA1 Grafenberg Arr 87.48 320 *e*P **P 08 41 35.0 +0.6**
comp=Z,38nm,1.2s,mb5.5
GRA1 *e*S S 08 52 14.2 +2.0
GRA1 *e*SS SS 08 57 56.2 -4.8
GRA1 LR LR
comp=Z,3µm,21.5s,MS5.7
GRF Grafenberg Arr 87.48 320 *e*P **P 08 41 35.0 +0.6**
GRF *e*S S 08 52 14.2 +2.0
GRF *e*SS SS 08 57 56.2 -4.8
GRF pmax pmax
comp=Z,38nm,1.2s,mb5.5
BDI Bagni Di Lucca 87.72 314 *e*P **P 08 41 35.3 -0.4**
GSCL Gusciola 87.73 314 *e*P **P 08 41 36.8 +1.1**
MAIM 87.79 314 P **P 08 41 34.5 -1.5**
NSS Namsos 87.84 334⇑ *i*P **P 08 41 34.8 -1.0**
NSS *e*PP PP 08 44 58.4 -5.7
NSS *e* 08 52 15.2
NSS *e*SS SS 08 58 10.2 +4.2
NSS AMS AMS 09 27 01.9
comp=Z,9µm,19.9s,MS6.2
SPITS Spitsbergen Ar 87.84 348 P **P 08 41 35.2 -0.3**
comp=Z,60nm,1.0s,mb5.8,baz=120,slow=16,SNR=19
SPITS LR LR 09 28 41.3
comp=Z,528nm,18.3s,baz=284,slow=41
SPB4 Spitsbergen Ar 87.84 348 *e*P **P 08 41 35.6 0.0**
ERBM Eremo 87.86 314 *e*P **P 08 41 37.4 +1.1**
SARO Sassorosso 87.86 314 P **P 08 41 34.9 -1.5**
VALM 87.98 314 P **P 08 41 37.6 +0.7**
NB2 NORSAR Subarra 87.99 331 P **P 08 41 36.3 -0.2**
comp=Z,35nm,1.1s,mb5.5,baz=97,slow=4.6
NB2 NORSAR Subarra 87.99 331 P **P 08 41 36.3 -0.2**
baz=97,slow=4.6
NOA NORSAR Array B 87.99 331 P **P 08 41 35.6 -0.9**
comp=Z,13nm,0.8s,mb5.2,baz=95,slow=4.8,SNR=18
NOA PP PP 08 45 00.0 -5.5
comp=Z,4.4nm,0.9s,baz=91,slow=8.4,SNR=3.6
NOA LR LR 09 29 23.2
comp=Z,4µm,18.1s,MS5.9,baz=95,slow=41
VINC Vinca 88.03 314 P **P 08 41 36.3 -0.9**
BACM 88.10 314 P **P 08 41 36.9 -0.6**
GRAM 88.11 314 P **P 08 41 36.9 -0.6**
NAO01 NORSAR Array S 88.14 331 *e*P **P 08 41 37.2 -0.1**
comp=Z,20nm,0.9s,mb5.3
NAO01 LR LR
comp=Z,5µm,19.0s,MS5.9
DAVOX Davos 88.29 317 P **P 08 41 39.0 +0.7**
comp=Z,15nm,0.8s,mb5.3,baz=108,slow=5.9,SNR=30
DAVOX S S 08 52 18.4 -1.3
comp=Z,1.0nm,0.3s,baz=341,slow=20,SNR=3.6
DAVA Damuels 88.30 317⇑ *i*P **P 08 41 38.7 +0.4**
comp=Z,568nm,3.8s
KONO Kongsberg 88.75 329 *e*PP PP 08 45 08.2 -3.3
KONO *e* 08 52 27.0
KONO *e*SS SS 08 58 24.1 +5.2
KONO AMS AMS 09 27 14.1
comp=Z,5µm,18.0s,MS5.9
KONO Kongsberg 88.75 329 *e*P **P 08 41 39.2 -1.0**
KONO Kongsberg 88.75 329 *e*P **P 08 41 39.3 -0.9**
KONO LR LR
comp=Z,6µm,19.0s,MS6.0
STU Stuttgart 88.79 319 *e*P **P 08 41 40.1 -0.6**
KBS Kingsbay 88.80 349 P **P 08 41 39.7 -0.4**
KBS PP PP 08 45 10.0 -1.6
KBS SKKSac 08 52 20.7
KBS Kingsbay 88.80 349⇑ *i*P **P 08 41 39.7 -0.4**
KBS *e*PP PP 08 45 09.6 -2.1
KBS *e*SKSa 08 52 05.4
KBS *e* 08 52 26.4
KBS AMS AMS 09 31 03.0
comp=Z,10µm,16.0s,MS6.3
KBS Kingsbay 88.80 349 P **P 08 41 39.8 -0.3**
KBS pmax pmax
comp=Z,39nm,1.1s,mb5.7
KBS Kingsbay 88.80 349 *e*P **P 08 41 39.3 -0.8**
comp=Z,39nm,1.1s,mb5.7
KBS LR LR
comp=Z,9µm,20.0s,MS6.2
PGF Pioggiola 88.86 312⇑ *i*P **P 08 41 41.3 +0.2**
comp=Z,90nm,1.5s,mb5.6
MUD Monsted U'grnd 88.91 326⇑ *i*P **P 08 41 42.0 +1.0**
comp=Z,30nm,0.9s,mb5.6
MUD *i* 08 42 06.4
MUD Monsted U'grnd 88.91 326 *i*S S 08 52 27.4 +2.1
comp=Z,4µm,20.0s
MUD Monsted U'grnd 88.91 326⇑ *e*P **P 08 41 42.0 +1.0**
MUD *i*S S 08 52 27.4 +2.1
MUD pmax pmax
comp=Z,30nm,0.9s,mb5.6
MUD MLR MLR
comp=Z,4µm,20.0s,MS5.8
MUD Monsted U'grnd 88.91 326⇑ *e*P **P 08 41 42.0 +1.0**
comp=Z,30nm,0.9s,mb5.6
MUD *i* 08 42 06.4
MUD *i*S S 08 52 27.4 +2.1

VAI Varese 89.05 316 *e*P **P 08 41 41.5 -0.5**
SPAK Spaichingen 89.05 318 PKP **P 08 41 42.1 +0.2**
NVL N'lazarevskaya 89.07 199⇓ *e*P **P 08 41 45.0 +3.5**
NVL *e*S S 08 52 05.0 -21
NVL pmax pmax
comp=Z,340nm,1.9s,mb6.3
MAIT Maitri 89.10 199 *e*P **P 08 41 43.6 +2.0**
MAIT *e*PP PP 08 45 12.2 -2.0
MAIT *e*SKSac 08 52 14.0
PCP Pian Castagno 89.20 314 P **P 08 41 41.9 -0.8**
BFO Black Forest 89.36 318 *e*P **P 08 41 43.2 -0.2**
BFO pmax pmax
comp=Z,18nm,1.1s,mb5.3
BFO Black Forest 89.36 318 *e*P **P 08 41 43.2 -0.2**
comp=Z,18nm,1.1s,mb5.3
FIN Finale Ligure 89.44 314 P **P 08 41 43.4 -0.5**
RORO 89.54 314 P **P 08 41 42.7 -1.7**
MCGN Macugnaga 89.59 316 *e*P **P 08 41 45.0 +0.4**
IMI Imperia 89.67 314 P **P 08 41 44.9 -0.1**
ROB Roburent 89.68 314 P **P 08 41 44.5 -0.5**
LANF Langenberg 89.71 319 *e*P **P 08 41 45.2 +0.2**
MONE Monesi 89.77 314 P **P 08 41 45.4 0.0**
NEGI Negi 89.81 314 P **P 08 41 44.4 -1.1**
SAOF Saorge 89.91 314 *e*P **P 08 41 46.3 +0.2**
BBS Basel-Blauen 89.92 317 PKP **P 08 41 45.9 -0.1**
SBF Sospel 90.00 314⇑ *i*P **P 08 41 46.6 +0.1**
comp=Z,64nm,0.8s,mb5.7
ENR Entracque 90.01 314 P **P 08 41 45.1 -1.4**
WLS Welschbruch 90.01 318 *e*P **P 08 41 46.4 0.0**
CDF Champ du Feu 90.06 318⇑ *i*P **P 08 41 46.6 0.0**
comp=Z,44nm,1.2s,mb5.3
STV2 Anna di Valdie 90.08 314 P **P 08 41 45.8 -1.1**
STV Sta Anna Valdi 90.08 314 P **P 08 41 45.7 -1.2**
AURF Auriere 90.08 314 *e*P **P 08 41 47.2 +0.4**
CMAH Djebel Manchou 90.09 306 P **P 08 41 49.0 +1.9**
BHB Bricherasio 90.11 315 P **P 08 41 44.3 -2.7**
RSP Reno Superiore 90.11 315 P **P 08 41 46.1 -0.9**
TOUF Mont Tournerai 90.14 314 *e*P **P 08 41 47.7 +0.6**
ECH Echery 90.14 318 *e*P **P 08 41 46.9 -0.1**
MOF Molkenrain 90.17 318 *e*P **P 08 41 47.1 0.0**
LSD Ceresole Reale 90.18 315 P **P 08 41 47.5 +0.2**
RUP Ruppelstein 90.19 320 PKP **P 08 41 47.7 +0.5**
MVIF Mont Vial 90.20 314 *e*P **P 08 41 48.2 +0.8**
PZZ Prazzo 90.23 314 P **P 08 41 46.9 -0.6**
FENE Fenestrelle 90.25 315 P **P 08 41 46.9 -0.7**
WTSB Winterswijk 90.31 322 *e*P **P 08 41 47.6 -0.1**
comp=Z,27nm,1.7s,mb5.3
HINF Hinteralfeld 90.35 318⇑ *i*P **P 08 41 47.7 -0.3**
QSPA South Pole Qui 90.37 180 *e*P **P 08 41 49.5 +2.1**
comp=Z,33nm,1.3s,mb5.5
LOMF Lomont 90.38 317 *e*P **P 08 41 47.8 -0.3**
CALN Calern 90.40 314 *e*P **P 08 41 49.2 +0.9**
SURF Saint Ours 90.44 314 *e*P **P 08 41 49.2 +0.7**
RRL Cesana Torines 90.45 315 P **P 08 41 48.4 -0.2**
LPG La Plagne 90.47 315⇑ *i*P **P 08 41 49.0 +0.4**
comp=Z,47nm,0.9s,mb5.5
MBDF Montbardon 90.47 315⇑ *i*P **P 08 41 47.6 -1.0**
comp=Z,26nm,1.0s,mb5.2
LPL La Plagne 90.48 315⇑ *i*P **P 08 41 49.1 +0.5**
comp=Z,77nm,1.0s,mb5.7
OG01 Vacheresse 90.50 316 *e*P **P 08 41 49.0 +0.3**
BNI Bardonecchia 90.53 315 P **P 08 41 49.0 +0.1**
BNI Bardonecchia 90.53 315 *e*P **P 08 41 48.6 -0.3**
CAEH 'Ain El Ouahch 90.54 307 P **P 08 41 45.0 -4.2**
FRF La Foret Royal 90.58 313⇑ *i*P **P 08 41 49.4 +0.2**
comp=Z,70nm,1.1s,mb5.6
LMR La Mourre 90.68 313⇑ *i*P **P 08 41 49.8 +0.2**
comp=Z,27nm,0.9s,mb5.3
HAU Haudompre 90.69 318⇑ *i*P **P 08 41 49.5 0.0**
comp=Z,54nm,0.9s,mb5.6
HAU *e*R
comp=Z,5µm,20.0s
WLF Walferdange 90.78 319 P **P 08 41 51.0 +1.1**
WLF pmax pmax
comp=Z,81nm,1.4s,mb5.9
WLF Walferdange 90.78 319 *e*P **P 08 41 50.5 +0.6**
comp=Z,81nm,1.4s,mb5.9
CASM Ain Smara 90.84 306 P **P 08 41 52.5 +2.0**
HGN Heimansgroeve 90.89 321 *e*P **P 08 41 50.5 +0.1**
comp=Z,11nm,1.0s,mb5.1
HGN *e*PP PP 08 45 04.2 -25
HGN *e*S S 08 52 39.6 -3.7
CABF La Chapelle 90.90 316⇑ *i*P **P 08 41 51.1 +0.5**
comp=Z,86nm,1.1s,mb5.7
CTEI Djebel Teioual 90.91 306 P **P 08 41 53.0 +2.1**
THEF They Montfort 90.93 318 *e*P **P 08 41 50.6 0.0**
TAVF Tavernes 91.00 313 *e*P **P 08 41 52.0 +0.9**
ORIF Oris-en-Rattie 91.09 315⇑ *i*P **P 08 41 52.0 +0.5**
comp=Z,72nm,1.2s,mb5.6
ORIF *e*R
comp=Z,5µm,22.0s
GRN Grenoble 91.18 315 *e*P **P 08 41 52.5 +0.6**
VILF Villemus 91.25 314 *e*P **P 08 41 53.1 +0.9**
PUYF Puyloubier 91.27 313 *e*P **P 08 41 53.1 +0.8**
BERF Bertagne 91.28 313 *e*P **P 08 41 53.4 +1.0**
DFRA Djebel Bou Aff 91.33 306 P **P 08 41 55.5 +2.7**
SMRF Simiane la Rot 91.34 314⇑ *i*P **P 08 41 53.5 +0.9**
comp=Z,41nm,1.1s,mb5.4
TNA Tin City 91.39 25 *e*P **P 08 41 52.2 -0.1**
comp=Z,12nm,1.0s,mb5.2
TNA LR LR
comp=Z,5µm,19.0s,MS6.0
GELF Grande-Etoile 91.47 313 *e*P **P 08 41 53.8 +0.6**
TREF Trevaresse 91.49 313 *e*P **P 08 41 54.1 +0.8**
MEZF Maizieres J'vi 91.54 318 *e*P **P 08 41 53.8 +0.4**
GIVF Givet 91.62 320⇑ *i*P **P 08 41 54.2 +0.4**
comp=Z,52nm,1.1s,mb5.5
PRAF Pradon 91.64 314 *e*P **P 08 41 54.8 +0.8**
NIKO Nikolski 91.67 37 *e*P **P 08 41 53.5 -0.5**
VIVF Saint-Julien-l 91.95 315⇑ *i*P **P 08 41 55.8 +0.4**
comp=Z,38nm,1.2s,mb5.3
BAIF Baives 92.02 320⇑ *i*P **P 08 41 56.3 +0.7**
comp=Z,87nm,1.2s,mb5.7
LOR Lormes 92.40 317⇑ *i*P **P 08 41 57.7 +0.3**
comp=Z,79nm,1.1s,mb5.7
LOR *e*R
comp=Z,5µm,20.2s
SMF Signal de Mont 92.45 317⇑ *i*P **P 08 41 57.8 +0.1**
comp=Z,41nm,0.8s,mb5.5
LASF Ste Croix 92.58 314⇑ *i*P **P 08 41 58.8 +0.5**
comp=Z,40nm,1.2s,mb5.4
PLDF La Plantade 92.64 316 *e*P **P 08 41 58.9 +0.3**
SSF Saint Saulge 92.65 317⇑ *i*P **P 08 41 59.0 +0.4**
comp=Z,89nm,1.5s,mb5.7
AVF Avril sur Loir 92.78 317⇑ *i*P **P 08 41 59.3 +0.1**
comp=Z,60nm,1.2s,mb5.6
LBL Lubilhac 92.94 315 *e*P **P 08 42 00.8 +0.8**
AGO Saint Agoulin 92.97 316 *e*P **P 08 42 00.6 +0.5**
UNV Unalaska Vale 93.02 36 PFAKE 08 42 10.0 +10
UNV LR LR
comp=Z,10µm,19.0s,MS6.3
PYM Petit Puy Mans 93.08 316 *e*P **P 08 42 00.6 0.0**
BGF Bois d'Agland 93.14 316⇑ *i*P **P 08 42 01.4 +0.6**
comp=Z,82nm,1.2s,mb5.7
TCF Toulx Ste Croi 93.60 316⇑ *i*P **P 08 42 03.5 +0.5**
comp=Z,52nm,1.6s,mb5.4
SNAA Sanae 93.75 198 *e* **P 08 42 08.2 +5.1**
SNAA Sanae 93.75 198 *e* **P 08 42 09.5 +6.4**
SNAA Sanae 93.75 198⇓ *i*P **P 08 42 04.3 +1.2**
SNAA *e* 08 42 08.2
SNAA *e* 08 42 09.5
CAF Calviac 93.80 315⇑ *i*P **P 08 42 04.5 +0.6**
comp=Z,54nm,1.5s,mb5.5
MTLF Montolieu 93.81 313⇑ *i*P **P 08 42 04.4 +0.4**
comp=Z,28nm,1.1s,mb5.3
RJF Les Rejaudoux 94.16 315⇑ *i*P **P 08 42 06.3 +0.7**
RJF *e*R
comp=Z,4µm,21.0s
LFF La Frestale 94.74 315 *e*P **P 08 42 08.9 +0.7**
JMIC Jan Mayen 94.90 342 P **P 08 42 10.0 +1.6**
comp=Z,30nm,0.8s,mb5.8,baz=133,slow=13,SNR=2.0
JMIC Jan Mayen 94.90 342 *e*P **P 08 42 10.5 +2.1**
JMIC *e*PP PP 08 45 52.2 -7.5
JMIC *e*SKSa 08 52 42.4
JMIC *e* 08 53 18.0
JMIC AMS AMS 09 27 10.9
comp=Z,2µm,21.3s,MS5.6
LDF La Druitiere 94.96 319 *e*P **P 08 42 09.2 0.0**
FLN La Foliniere 95.18 319 *e*P **P 08 42 10.1 -0.1**
FLN *e*R
comp=Z,4µm,22.0s
MFF Saint Martin d 95.19 317 *e*P **P 08 42 10.4 +0.1**
VNA2 Neumayer--Watz 95.35 199 P **P 08 42 11.0 +0.6**
GRR Gorron 95.47 319 *e*P **P 08 42 11.6 +0.1**

DAG Danmarks Havn 95.49 348⇓ *i*P **P 08 42 10.6 -0.4**
comp=Z,13nm,0.9s,mb5.4
comp=Z,11µm,17.0s
DAG Danmarks Havn 95.49 348⇓ *i*P **P 08 42 10.6 -0.4**
DAG pmax pmax
comp=Z,13nm,0.9s,mb5.4
DAG MLR MLR
comp=N,4µm,17.0s,MS6.3
DAG MLR MLR
comp=Z,11µm,17.0s,MS6.4
DAG MLR MLR
comp=E,8µm,20.0s,MS6.3
ESK Eskdalemuir 95.94 326 PFAKE 08 42 20.0 +6.5
ESK LR LR
comp=Z,4µm,19.0s,MS5.9
IMA Indian Mountai 97.05 23 P **P 08 42 19.7 +1.4**
IMA pmax pmax
comp=Z,130nm,1.0s,mb6.3
IMA Indian Mountai 97.05 23 *e*P **P 08 42 19.3 +1.0**
comp=Z,33nm,1.2s,mb5.6
SVW Sparrevohn 97.58 28 *e*P **P 08 42 21.2 +0.4**
comp=Z,13nm,1.1s,mb5.4
ESDC Sonseca Array 98.81 310 P **P 08 42 27.4 +0.6**
comp=Z,0.2nm,0.3s,baz=217,slow=37,SNR=3.5
ESDC LR LR 09 34 21.3
comp=Z,2µm,19.3s,MS5.6,baz=60,slow=40
ESLA Sonseca Array 98.81 310 PFAKE 08 42 40.0 +13
ESLA LR LR
comp=Z,16µm,19.0s,MS6.5
SCO Scoresbysund 99.21 343 *i*P **P 08 42 29.7 +1.8**
MCK McKinley 99.73 25 P **P 08 42 31.1 +0.7**
MCK pmax pmax
comp=Z,25nm,1.3s,mb5.5
MCK McKinley 99.73 25 *e*P **P 08 42 30.1 -0.3**
comp=Z,25nm,1.4s,mb5.5
MCK LR LR
comp=Z,6µm,20.0s,MS6.1
KDAK Kodiak Island 99.99 31 PFAKE 08 42 40.0 +8.2
KDAK LR LR
comp=Z,15µm,19.0s,MS6.5
FIB Fire Island 100.09 27 PFAKE 08 42 40.0 +7.9
FIB LR LR
comp=Z,19µm,20.0s,MS6.6
ILAR Eielson Array 100.16 23 P P 08 42 30.9 -1.6
comp=Z,1.5nm,0.9s,baz=275,slow=3.9,SNR=13
ILAR PP PP 08 46 34.1 -6.6
comp=Z,3.7nm,0.9s,baz=297,slow=7.1,SNR=5.9
ILAR PKKPbc 08 58 53.2
comp=Z,0.5nm,0.7s,baz=178,slow=1.5,SNR=4.0
PMS Palmer South 100.34 27 *e*P P 08 42 33.9 +0.6
comp=Z,23nm,1.2s
PMR Palmer 100.41 27 *e*P P 08 42 34.0 +0.4
PMR pmax pmax
comp=Z,17nm,1.3s
PMR Palmer 100.41 27 *e*Pdif P 08 42 33.0 -0.6
comp=Z,17nm,1.3s
PMR LR LR
comp=Z,7µm,21.0s,MS6.2
SML Sawmill 100.69 26 *e*P P 08 42 34.8 0.0
BORG Borgarnes 101.68 338 PFAKE 08 42 50.0 +11
BORG LR LR
comp=Z,7µm,20.0s,MS6.2
RAR Rarotonga 101.70 111 PFAKE 08 42 50.0 +10
RAR LR LR
comp=Z,5µm,20.0s,MS6.0
DIV Divide 102.09 26 PFAKE 08 42 50.0 +8.9
DIV LR LR
comp=Z,29µm,20.0s,MS6.8
DBIC Dimbokro 102.55 277 PFAKE 08 43 00.0 +16
DBIC LR LR
comp=Z,2µm,20.0s,MS5.7
KIP Kipapa 103.01 68 PFAKE 08 43 00.0 +14
KIP LR LR
comp=Z,7µm,19.0s,MS6.2
INK Inuvik 103.03 17 Pdiff Pdif 08 42 44.8 -0.3
comp=Z,4.4nm,0.9s,baz=304,slow=5.2,SNR=17
INK PP PP 08 46 57.9 -4.7
comp=Z,7.1nm,0.9s,baz=302,slow=7.1,SNR=5.9
INK PKKPbc 08 58 46.2
comp=Z,0.8nm,0.7s,baz=96,slow=2.0,SNR=3.5
INK Inuvik 103.03 17 P Pdif 08 42 44.9 -0.2
INK pmax pmax
comp=Z,7.0nm,1.0s
INK Inuvik 103.03 17 *e*Pdif Pdif 08 42 44.4 -0.7
comp=Z,7.3nm,1.0s
DAWY Dawson 103.39 22 *e*Pdif Pdif 08 42 46.4 -0.4
POHA Pohakuloa 105.50 69 PFAKE 08 47 20.0
POHA LR LR
comp=Z,3µm,22.0s,MS5.8
SIT Sitka 108.76 28 PFAKE 08 47 30.0
SIT LR LR
comp=Z,10µm,20.0s,MS6.4
DLBC Dease Lake 110.29 25 Pdiff Pdif 08 43 19.7 +2.4
comp=Z,1.1nm,1.1s,baz=197,slow=26,SNR=2.3
YKA Yellowknife Ar 112.67 16 Pdiff Pdif 08 43 27.9 +0.2
comp=Z,0.6nm,0.9s,baz=323,slow=4.3,SNR=8.0
YKA PKiKP 08 47 21.2
comp=Z,1.4nm,0.9s,baz=323,slow=4.3,SNR=6.7
YKA PP PP 08 48 09.3 -4.6
comp=Z,5.2nm,0.9s,baz=336,slow=6.8,SNR=9.4
YKA PKKPbc 08 58 13.3
comp=Z,1.0nm,0.9s,baz=148,slow=3.3,SNR=13
YKA PKKP PKKP 08 58 30.8 +5.5
comp=Z,1.4nm,0.9s,baz=140,slow=3.7,SNR=7.3
YKA Yellowknife Ar 112.67 16 Pdif Pdif 08 43 27.9 +0.2
YKA PKPdf PKPdf 08 47 21.2 -4.8
YKA PP PP 08 48 09.3 -4.6
YKA PKKPbc 08 58 13.3
YKA PKKP PKKP 08 58 30.8 +5.5
OCWA Octopus Mounta 119.74 31 PFAKE 08 47 50.0 +10
OCWA LR LR
comp=Z,5µm,20.0s,MS6.2
FCC Fort Churchill 120.25 7 PKiKP PKPdf 08 47 37.2 -3.7
FCC Fort Churchill 120.25 7 *e*PKP PKPdf 08 47 36.2 -4.6
LON Longmire 121.62 31 *e*PKPdf PKPdf 08 47 43.5 -0.3
COR Corvallis 122.21 34 PFAKE 08 47 50.0 +4.9
COR LR LR
comp=Z,3µm,19.0s,MS5.9
FFC Flin Flon 122.67 14 *e*PKP PKPdf 08 47 41.3 -4.4
FFC LR LR
comp=Z,10µm,19.0s,MS6.5
NEW Newport 122.84 27 PKP PKPdf 08 47 42.5 -3.6
comp=Z,6.3nm,0.9s,baz=30,slow=2.1,SNR=10
NEW Newport 122.84 27 PKiKP PKPdf 08 47 43.5 -2.6
NEW Newport 122.84 27 *e*PKP PKPdf 08 47 42.8 -3.3
NEW LR LR
comp=Z,5µm,19.0s,MS6.2
HAWA Hanford 123.02 30 *e*PKP PKPdf 08 47 43.5 -3.0
HAWA LR LR
comp=Z,4µm,19.0s,MS6.1
SCHQ Schefferville 123.51 349 PKP PKPdf 08 47 43.0 -4.3
comp=Z,7.0nm,0.9s,baz=55,slow=2.4,SNR=6.8
SCHQ Schefferville 123.51 349 *e*PKP PKPdf 08 47 43.4 -3.9
SCHQ LR LR
comp=Z,11µm,21.0s,MS6.5
WALA Waterton Lakes 123.64 25 *e*PKP PKPdf 08 47 44.4 -3.3
HUMO Hull Mountain 123.65 35 *e*PKP PKPdf 08 47 44.9 -3.0
YBH Yreka Blue Hor 124.33 36 PKP PKPdf 08 47 46.2 -3.0
comp=Z,3.4nm,1.0s,baz=127,slow=5.1,SNR=2.8
YBH Yreka Blue Hor 124.33 36 PKiKP PKPdf 08 47 46.9 -2.4
YBH Yreka Blue Hor 124.33 36 *e*PKP PKPdf 08 47 45.8 -3.5
YBH LR LR
comp=Z,4µm,20.0s,MS6.1
EFI East Falkland 125.03 198 PFAKE 08 48 00.0 +10
EFI LR LR
comp=Z,6µm,20.0s,MS6.2
WDC Whiskeytown Da 125.14 37 PKiKP PKPdf 08 47 51.9 +1.0
WDC Whiskeytown Da 125.14 37 *e*PKP PKPdf 08 47 47.1 -3.7
WDC LR LR
comp=Z,3µm,20.0s,MS6.0
MSO Missoula 125.34 26 *e*PKP PKPdf 08 47 47.3 -3.7
MSO LR LR
comp=Z,12µm,19.0s,MS6.6
CHMT Chamberlain Mo 125.58 26 *e*PKP PKPdf 08 47 47.4 -4.1
MOD Modoc 125.61 35 *e*PKP PKPdf 08 47 49.2 -2.6
MOD LR LR
comp=Z,4µm,19.0s,MS6.2
HOPS Hopland 125.76 39 PFAKE 08 48 00.0 +7.9
HOPS LR LR
comp=Z,3µm,19.0s,MS6.0
WVOR Wild Horse Val 126.19 33 *e*PKiKP PKPdf 08 47 51.1 -1.7
WVOR Wild Horse Val 126.19 33 *e*PKP PKPdf 08 47 50.3 -2.5
WVOR LR LR
comp=Z,7µm,19.0s,MS6.3
HRY Holter Researc 126.35 25 *e*PKP PKPdf 08 47 49.9 -3.1
OHCM Honcut 126.54 38 *e*PKP PKPdf 08 47 50.4 -3.1

BOZ	**Bozeman (W)**	**127.27**	**26**	*e*PKIKP	PKPdf	08 47 52.5	-2.3
BOZ	**Bozeman (W)**	**127.27**	**26**	*e*PKP	PKPdf	08 47 52.1	-2.7
BOZ				LR	LR		
	comp=Z,7μm,19.0s,MS6.3						
MCMT	**McKenzie Canyo**	**127.36**	**27**	*e*PKP	PKPdf	08 47 52.5	-2.5
HLID	**Hailey**	**127.58**	**29**	*e*PKP	PKPdf	08 47 53.0	-2.5
HLID				LR	LR		
	comp=Z,8μm,19.0s,MS6.4						
WCN	**Washoe City**	**127.61**	**37**	PKIKP	PKPdf	08 47 53.9	-1.8
WCN	**Washoe City**	**127.61**	**37**	*e*PKP	PKPdf	08 47 52.4	-3.3
QLMT	**Earthquake Lak**	**128.00**	**26**	*e*PKP	PKPdf	08 47 54.1	-2.2
CMB	**Columbia Colle**	**128.02**	**38**	*e*PKP	PKPdf	08 47 53.2	-3.3
CMB				LR	LR		
	comp=Z,4μm,20.0s,MS6.1						
SAO	**San Andreas Ge**	**128.12**	**40**	PFAKE		08 48 10.0	+13
SAO				LR	LR		
	comp=Z,3μm,20.0s,MS5.9						
ULM	**Lac du Bonnet**	**128.18**	**11**	PKP	PKPdf	08 47 51.7	-4.8
	comp=Z,9.7nm,1.1s,baz=5.3,slow=4.5,SNR=9.9						
ULM	**Lac du Bonnet**	**128.18**	**11**	*e*PKP	PKPdf	08 47 52.1	-4.4
ULM				LR	LR		
	comp=Z,18μm,20.0s,MS6.8						
BMN	**Battle Mountai**	**128.33**	**34**	PKIKP	PKPdf	08 47 55.9	-1.2
BMN	**Battle Mountai**	**128.33**	**34**	*e*PKP	PKPdf	08 47 54.6	-2.5
BMN				LR	LR		
	comp=Z,3μm,21.0s,MS6.0						
YMR	**Madison River**	**128.33**	**26**	*e*PKP	PKPdf	08 47 54.9	-2.0
NVAR	**Mina Array Bea**	**129.03**	**37**	PKP	PKPdf	08 47 53.0	-5.5
	comp=Z,3.4nm,0.9s,baz=314,slow=1.1,SNR=15						
KSWY	**Kelly School**	**129.31**	**27**	*e*PKP	PKPdf	08 47 56.4	-2.4
WUWY	**Wally Ulrich**	**129.32**	**27**	*e*PKP	PKPdf	08 47 55.8	-3.1
REDW	**Red Top Meadow**	**129.41**	**27**	*e*PKP	PKPdf	08 47 55.9	-3.1
MTUM	**Tungsten Hills**	**129.57**	**38**	*e*PKP	PKPdf	08 47 58.4	-1.1
AHID	**Auburn Hatcher**	**129.76**	**28**	*e*PKP	PKPdf	08 47 56.4	-3.3
AHID				LR	LR		
	comp=Z,8μm,19.0s,MS6.5						
TPH	**Tonopah**	**129.91**	**36**	PKIKP	PKPdf	08 47 59.1	-1.0
TPH	**Tonopah**	**129.91**	**36**	*e*PKP	PKPdf	08 47 57.7	-2.4
TPH				LR	LR		
	comp=Z,3μm,20.0s,MS6.0						
BGU	**Big Grassy Mou**	**130.22**	**31**	*e*PKP	PKPdf	08 47 57.8	-2.9
HWUT	**Hardware Ranch**	**130.43**	**29**	*e*PKP	PKPdf	08 47 58.0	-3.1
HWUT				LR	LR		
	comp=Z,9μm,19.0s,MS6.5						
BW06	**Boulder Array**	**130.46**	**26**	PFAKE		08 48 10.0	+9.0
BW06				LR	LR		
	comp=Z,6μm,21.0s,MS6.3						
PDAR	**Pinedale Array**	**130.46**	**26**	PKP	PKPdf	08 47 57.2	-3.8
	comp=Z,4.2nm,1.0s,SNR=20						
DAC	**Darwin (Calif)**	**130.86**	**38**	PFAKE		08 48 10.0	+8.0
DAC				LR	LR		
	comp=Z,3μm,19.0s,MS6.1						
TCUT	**Toone Canyon**	**130.88**	**29**	*e*PKP	PKPdf	08 47 58.1	-3.8
CTU	**Camp Tracy**	**131.04**	**30**	*e*PKP	PKPdf	08 47 59.3	-2.9
JLU	**Jordanelle**	**131.25**	**30**	*e*PKP	PKPdf	08 47 59.0	-3.6
NLU	**North Lily Min**	**131.43**	**31**	*e*PKP	PKPdf	08 47 59.5	-3.5
DAU	**Daniels Canyon**	**131.49**	**30**	PKIKP	PKPdf	08 48 02.2	-0.9
DAU	**Daniels Canyon**	**131.49**	**30**	*e*PKP	PKPdf	08 48 00.3	-2.7
RSSD	**Black Hills**	**131.56**	**21**	PP	PP	08 50 16.6	-5.7
RSSD				SKPbc		08 51 23.1	
RSSD	**Black Hills**	**131.56**	**21**	PKIKP	PKPdf	08 48 01.0	-2.1
RSSD	**Black Hills**	**131.56**	**21**	*e*PKP	PKPdf	08 48 00.4	-2.6
RSSD				LR	LR		
	comp=Z,2μm,19.0s,MS5.8						
MPU	**Maple Canyon**	**131.60**	**30**	*e*PKP	PKPdf	08 47 59.9	-3.4
MVU	**Marysvale**	**132.43**	**32**	*e*PKP	PKPdf	08 48 01.6	-3.3
MVU				LR	LR		
	comp=Z,5μm,21.0s,MS6.2						
MSU	**Marysvale**	**132.44**	**32**	PKIKP	PKPdf	08 48 02.4	-2.5
MSU	**Marysvale**	**132.44**	**32**	*e*PKP	PKPdf	08 48 01.1	-3.9
NEN	**Nelson**	**132.95**	**37**	*e*PKP	PKPdf	08 48 03.9	-2.0
LDFC	**Landfair**	**133.17**	**38**	*e*PKP	PKPdf	08 48 03.5	-2.8
PFO	**Pinyon Flat Ob**	**133.28**	**40**	*e*PKP	PKPdf	08 47 55.0	-12
PFO				LR	LR		
	comp=Z,4μm,22.0s,MS6.1						
PV10	**Paradox Valley**	**134.16**	**30**	*e*PKP	PKPdf	08 48 05.9	-2.2
ISCO	**Idaho Springs**	**134.60**	**26**	PKIKP	PKPdf	08 48 06.8	-2.1
ISCO	**Idaho Springs**	**134.60**	**26**	*e*PKP	PKPdf	08 48 05.7	-3.1
ISCO				LR	LR		
	comp=Z,6μm,22.0s,MS6.3						
SADO	**Sadowa**	**134.93**	**357**	PKP	PKPdf	08 48 03.6	-5.7
	comp=Z,7.2nm,0.9s,baz=0.3,slow=2.9,SNR=5.5						
SADO				SKP		08 51 34.4	
	comp=Z,6.5nm,0.9s,baz=312,slow=4.2,SNR=3.9						
WUAZ	**Wupatki**	**135.06**	**34**	*e*PKP	PKPdf	08 48 07.0	-2.9
WUAZ				LR	LR		
	comp=Z,4μm,19.0s,MS6.1						
NCB	**Newcomb**	**135.24**	**352**	*e*PKP	PKPdf	08 48 06.3	-3.7
NCB				LR	LR		
	comp=Z,5μm,19.0s,MS6.3						
HRV	**Harvard--Oak R**	**136.21**	**349**	PFAKE		08 48 20.0	+8.3
HRV				LR	LR		
	comp=Z,1μm,19.0s,MS5.7						
JFWS	**Jewell Farm**	**136.25**	**9**	PFAKE		08 48 20.0	+8.2
JFWS				LR	LR		
	comp=Z,8μm,20.0s,MS6.4						
WES	**Weston**	**136.28**	**348**	PFAKE		08 48 20.0	+8.1
WES				LR	LR		
	comp=Z,2μm,21.0s,MS5.9						
SDCO	**Great Sand Dun**	**136.34**	**27**	*e*PKP	PKPdf	08 48 08.5	-3.6
SDCO				LR	LR		
	comp=Z,7μm,20.0s,MS6.4						
BINY	**Binghamton**	**137.21**	**353**	*e*PKPdf	PKPdf	08 48 09.1	-4.5
BINY				LR	LR		
	comp=Z,6μm,19.0s,MS6.4						
AAM	**Ann Arbor**	**137.46**	**2**	PFAKE		08 48 20.0	+6.0
AAM				LR	LR		
	comp=Z,9μm,20.0s,MS6.5						
ERPA	**Erie**	**137.61**	**358**	PFAKE		08 48 20.0	+5.7
ERPA				LR	LR		
	comp=Z,8μm,20.0s,MS6.5						
TUC	**Tucson**	**137.69**	**37**	*e*PKP	PKPdf	08 48 05.2	-10
TUC				LR	LR		
	comp=Z,3μm,20.0s,MS6.1						
CBKS	**Cedar Bluff**	**137.75**	**21**	PFAKE		08 48 20.0	+5.3
CBKS				LR	LR		
	comp=Z,7μm,19.0s,MS6.4						
ANMO	**Albuquerque**	**138.12**	**30**	*e*PKHKP		08 48 04.1	
ANMO	**Albuquerque**	**138.12**	**30**	*e*PKP	PKPdf	08 48 03.5	-12
ANMO				LR	LR		
	comp=Z,5μm,22.0s,MS6.2						
KSU1	**Kansas State U**	**138.50**	**17**	*e*PKPdf	PKPdf	08 48 12.4	-3.7
SSPA	**Standing Stone**	**138.95**	**355**	*e*PKPdf	PKPdf	08 48 13.1	-3.8
SSPA				LR	LR		
	comp=Z,4μm,20.0s,MS6.2						
MVL	**Millersville**	**139.43**	**353**	*e*PKP	PKPdf	08 48 11.2	-6.5
ACSO	**Alum Creek Sta**	**139.54**	**1**	*e*PKPdf	PKPdf	08 48 14.5	-3.4
ACSO				LR	LR		
	comp=Z,6μm,20.0s,MS6.4						
MCWV	**Mont Chateau**	**140.06**	**357**	PFAKE		08 48 30.0	+11
MCWV				LR	LR		
	comp=Z,10μm,21.0s,MS6.5						
BLO	**Bloomington**	**140.40**	**5**	PKIKP	PKPdf	08 48 13.1	-6.4
BLO	**Bloomington**	**140.40**	**5**	*e*PKP	PKPdf	08 48 12.3	-7.2
SLM	**Saint Louis**	**140.43**	**10**	*e*PKP	PKPdf	08 48 15.1	-4.4
CCM	**Cathedral Cave**	**140.81**	**11**	*e*PKP	PKPdf	08 48 10.1	-10
CCM				LR	LR		
	comp=Z,1μm,21.0s,MS5.7						
FVM	**French Village**	**141.03**	**10**	PKIKP	PKPdf	08 48 14.3	-6.4
FVM	**French Village**	**141.03**	**10**	*e*PKP	PKPdf	08 48 10.6	-10
MNTX	**Cornudas Mount**	**141.22**	**32**	*e*PKP	PKPdf	08 48 13.9	-7.3
MNTX				LR	LR		
	comp=Z,6μm,20.0s,MS6.3						
CBN	**Corbin**	**141.31**	**354**	PFAKE		08 48 30.0	+8.8
CBN				LR	LR		
	comp=Z,9μm,21.0s,MS6.5						
WCI	**Wyandotte Cave**	**141.36**	**5**	*e*PKP	PKPdf	08 48 11.5	-10
WCI				LR	LR		
	comp=Z,9μm,20.0s,MS6.5						
USIN	**University of**	**141.47**	**7**	PKP	PKPdf	08 48 17.7	-3.8
SIUC	**Southern Illin**	**141.50**	**9**	*e*PKP	PKPdf	08 48 12.3	-9.2
WMOK	**Wichita Mounta**	**141.72**	**22**	*e*PKP	PKPdf	08 48 12.4	-10
WMOK				LR	LR		
	comp=Z,5μm,20.0s,MS6.3						
FWV	**Forest Hill**	**142.17**	**358**	*e*PKP	PKPdf	08 48 16.4	-6.2
PWV	**Princeton**	**142.42**	**359**	*e*PKP	PKPdf	08 48 14.7	-8.4
ELN	**Prospectdale**	**142.52**	**358**	*e*PKP	PKPdf	08 48 14.2	-9.1
BLA	**Blacksburg**	**142.53**	**358**	PFAKE		08 48 30.0	+6.7
BLA				LR	LR		
	comp=Z,7μm,20.0s,MS6.4						
PVMO	**Portageville**	**142.69**	**10**	PKP	PKPdf	08 48 18.9	-4.7
RPN	**Rapa Nui**	**142.77**	**138**	PFAKE		08 48 30.0	+6.0
RPN				LR	LR		
	comp=Z,18μm,20.0s,MS6.8						

UTMT	**University of**	**142.90**	**9**	*e*PKP	PKPdf	08 48 17.5	-6.5
BDFB	**Brasilia**	**143.06**	**244**	PKP	PKPdf	08 48 19.0	-5.7
	comp=Z,14nm,1.0s,baz=109,slow=3.9,SNR=12						
WVT	**Waverly**	**143.26**	**8**	*e*PKP	PKPdf	08 48 16.9	-7.7
WVT				LR	LR		
	comp=Z,9μm,19.0s,MS6.5						
BBSR	**BB Station**	**143.45**	**335**	*e*PKP	PKPdf	08 48 16.2	-8.8
BBSR				LR	LR		
	comp=Z,15μm,19.0s,MS6.8						
MIAR	**Mount Ida**	**143.61**	**16**	PKIKP	PKPdf	08 48 20.2	-5.0
MIAR	**Mount Ida**	**143.61**	**16**	*e*PKP	PKPdf	08 48 19.4	-5.8
MIAR				LR	LR		
	comp=Z,9μm,20.0s,MS6.5						
UALR	**University of**	**143.72**	**14**	*e*PKP	PKPdf	08 48 19.7	-5.7
TXAR	**Lajitas Array**	**143.99**	**33**	PKP	PKPdf	08 48 21.3	-4.7
	comp=Z,14nm,1.1s,baz=270,slow=2.5,SNR=86						
CPCT	**Cooper Cave**	**144.25**	**3**	*e*PKP	PKPdf	08 48 20.7	-5.6
PLAL	**Pickwick Lake**	**144.35**	**8**	*e*PKP	PKPdf	08 48 20.4	-6.1
PLAL				LR	LR		
	comp=Z,10μm,19.0s,MS6.6						
SWET	**Sewanee**	**144.38**	**5**	*e*PKP	PKPdf	08 48 20.5	-6.0
OXF	**Oxford**	**144.60**	**10**	PKIKP	PKPdf	08 48 21.9	-5.1
OXF	**Oxford**	**144.60**	**10**	*e*PKP	PKPdf	08 48 21.7	-5.3
OXF				LR	LR		
	comp=Z,6μm,20.0s,MS6.4						
CPUP	**Villa Florida**	**144.84**	**221**	PKP	PKPdf	08 48 23.9	-3.7
	comp=Z,54nm,0.8s,baz=128,slow=3.2,SNR=71						
CPUP	**Villa Florida**	**144.84**	**221**	*e*PKP	PKPdf	08 48 23.9	-3.8
CPUP				LR	LR		
	comp=Z,2μm,19.0s,MS5.9						
LMEL	**Las Melosas**	**144.90**	**197**	*i*P	PKPbc	08 48 27.4	+4.1
JCT	**Junction City**	**144.99**	**27**	*e*PKP	PKPdf	08 48 23.7	-4.1
JCT				LR	LR		
	comp=Z,5μm,19.0s,MS6.3						
MDZ	**Mendoza**	**145.36**	**200**	*e*P	PKPbc	08 48 29.5	+5.1
MDZ				*e*		08 48 45.5	
JSC	**Jenkinsville**	**145.47**	**359**	PKIKP	PKPdf	08 48 24.9	-3.6
JSC	**Jenkinsville**	**145.47**	**359**	*e*PKP	PKPdf	08 48 24.8	-3.7
COW	**Cow Castle Cre**	**146.35**	**358**	*e*PKP	PKPdf	08 48 27.2	-2.8
LRAL	**Lakeview Retre**	**146.42**	**7**	*e*PKP	PKPdf	08 48 26.6	-3.6
LRAL				LR	LR		
	comp=Z,6μm,20.0s,MS6.3						
CSU	**Charleston Sou**	**146.72**	**357**	*e*PKPdf	PKPdf	08 48 28.4	-2.3
MAIG	**Mazatlaan**	**146.73**	**44**	*i*P	PKPbc	08 48 27.6	-0.3
HBF	**Harts Bluff**	**146.78**	**357**	*e*PKPbc	PKPbc	08 48 29.4	+1.6
RGRS	**Roger Stewart**	**146.80**	**357**	*e*PKPbc	PKPbc	08 48 29.7	+1.9
HKT	**Hockley**	**147.11**	**22**	PKPdf	PKPdf	08 48 28.9	-2.5
HKT				PP	PP	08 51 54.2	-4.0
HKT	**Hockley**	**147.11**	**22**	PKP2	PKPab	08 48 29.6	-3.2
HKT	**Hockley**	**147.11**	**22**	*e*PKPdf	PKPdf	08 48 29.0	-2.4
HKT				LR	LR		
	comp=Z,2μm,19.0s,MS6.0						
CMCH	**Combarbala**	**147.63**	**198**	*e*P	PKPdf	08 48 29.7	-2.5
TLL	**Tololo Astrono**	**148.50**	**199**	*i*P	PKPdf	08 48 34.9	+1.2
ZAIG	**Zacatecas**	**149.58**	**39**	*i*P	PKPdf	08 48 34.0	-1.5
CJM	**Chamela**	**150.08**	**47**	*i*P	PKPdf	08 48 39.0	+2.6
SFJM	**Santa Fe**	**150.86**	**43**	*i*P	PKPdf	08 48 41.0	+3.4
DWPF	**Disney**	**151.63**	**359**	PFAKE		08 48 50.0	+11
DWPF				LR	LR		
	comp=Z,2μm,20.0s,MS5.9						
MOIG	**Morelia**	**152.67**	**42**	*i*P	PKPdf	08 48 37.7	-2.5
UNM	**Universidad Na**	**154.24**	**39**	*e*P	PKPdf	08 48 49.0	+6.6
LVC	**Limon Verde**	**154.44**	**209**	*e*PKPbc	PKPdf	08 48 48.9	+6.3
LVC				LR	LR		
	comp=Z,4μm,20.0s,MS6.3						
PPM	**Popocatepetl**	**154.78**	**39**	*e*P	PKPdf	08 48 41.0	-2.1
PPM				*i*P		08 48 44.3	
EVV	**El Vigia**	**157.20**	**34**	*e*P	PKPdf	08 48 54.0	+7.6
VHO	**Vista Hermosa**	**157.46**	**39**	*i*P	PKPdf	08 48 43.4	-3.3
CMIG	**Matias Romero**	**158.56**	**35**	*i*P	PKPdf	08 48 45.0	-3.1
LPAZ	**La Paz**	**159.02**	**221**	PKP	PKPdf	08 48 46.6	-2.0
	comp=Z,1.1nm,0.9s,baz=45,slow=5.7,SNR=5.2						
LPAZ	**La Paz**	**159.02**	**221**	PKIKP	PKPdf	08 48 47.7	-1.0
LPAZ	**La Paz**	**159.02**	**221**	*e*PKPdf	PKPdf	08 48 46.4	-2.2
LPAZ				LR	LR		
	comp=Z,2μm,19.0s,MS6.0						
PCRV	**Puerto La Cruz**	**159.63**	**302**	PKP	PKPdf	08 48 47.7	-1.8
	comp=Z,14nm,1.2s,baz=9.0,slow=19,SNR=1.8						
ARE	**Arequipa**	**160.90**	**213**	*e*P	PKPdf	08 49 07.0	+16
SDV	**Santo Domingo**	**165.25**	**309**	PKP	PKPdf	08 48 51.1	-4.0
	comp=Z,3.5nm,1.0s,baz=291,slow=10,SNR=2.7						
JTS	**JuntasAbangare**	**169.01**	**15**	PFAKE		08 49 10.0	+12
JTS				LR	LR		
	comp=Z,790nm,21.0s						
ROSC	**El Rosal**	**170.58**	**304**	PKP	PKPdf	08 48 56.4	-2.2
	comp=Z,12nm,0.9s,baz=114,slow=20,SNR=4.5						
OTAV	**Otavalo**	**176.23**	**280**	*e*PKPdf	PKPdf	08 48 58.3	-2.7

*TRN **11** 08:30:05.8, 18.03N×61.72W, h42km, MD3.4, M4.1(FDF)*
ISC 11 08:30:05.1±2.0, 18.2N±0.1×61.70W±0.08, h44km±30km, n10, σ0.74/14, Leeward Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CPB	**Codrington**	**0.53**	**193**	*e*P	**P**	**08 30 16.2**	**-0.3**
CPB				*e*S	**S**	**08 30 25.0**	**+0.4**
BPA	**Boggy Peak**	**1.12**	**188**	*e*P	**P**	**08 30 24.4**	**-0.1**
BPA				*e*S	**S**	**08 30 37.8**	**-1.3**
SKI	**Saint Kitts**	**1.29**	**230**	*e*P	**P**	**08 30 29.0**	**+2.0**
SKI				*e*S	**S**	**08 30 44.2**	**+0.8**
STMA	**St. Maarten, A**	**1.35**	**265**	*e*	**S**	**08 30 43.9**	**-0.9**
STAT	**Sint Eustatius**	**1.39**	**242**	*e*P	**P**	**08 30 28.1**	**-0.4**
STAT				*e*S	**S**	**08 30 45.9**	**0.0**
MJHT	**Jackboy Hill**	**1.46**	**198**	*i*P	**P**	**08 30 29.2**	**-0.3**
MLYT		**1.51**	**198**	*e*P	**P**	**08 30 29.9**	**-0.3**
MGH	**Saint George's**	**1.52**	**199**	*i*P	**P**	**08 30 29.9**	**-0.3**
DEG	**La Desirade**	**1.94**	**162**	*e*P	**P**	**08 30 36.6**	**+0.4**
PAG	**Le Parnasse**	**2.12**	**180**	*e*P	**P**	**08 30 39.2**	**+0.4**

*IDC **11** 08:37:51.3±2.1, 6.53S×129.70E, mb4.1/1, mb1 4.4/4, mb1mx4.1/13, ML3.7/3, Error ellipse: s-maj=89.1km s-min=27.3km az=77.0*
ISC 11 08:38:09.5±2.4, 7.5S±0.1×129.4E±0.1, h200km±28km, n5, σ0.59/9, mb3.7/1, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KAKA	**Kakadu**	**6.01**	**151**	*e*P	**P**	**08 39 38.1**	**+0.5**
	16nm,0.4s						
KAKA				*e*S	**S**	**08 40 45.3**	**-0.8**
FITZ	**Fitzroy Crossi**	**11.20**	**199**	Pn	**P**	**08 40 45.7**	**+0.6**
	0.5nm,0.3s,baz=22,slow=13,SNR=12						
FITZ				Sn	**S**	**08 42 46.7**	**-0.4**
	0.7nm,0.3s,baz=176,slow=17,SNR=3.9						
WRA	**Warramunga Arr**	**13.32**	**159**	Pn	**P**	**08 41 11.8**	**-0.2**
	0.3nm,0.3s,baz=345,slow=13,SNR=108						
WRA				Sn	**S**	**08 43 36.4**	**+0.5**
	0.7nm,0.3s,baz=333,slow=23,SNR=6.2						
ASAR	**Alice Springs**	**16.70**	**165**	P	**P**	**08 41 57.8**	**+4.1**
	0.6nm,0.3s,baz=335,slow=8.8,SNR=7.5						
ASAR				S	**S**	**08 44 59.1**	**+7.3**
	0.2nm,0.3s,baz=315,slow=17,SNR=3.2						
MKAR	**Makanchi Array**	**68.26**	**327**	P	**P**	**08 48 50.4**	**-0.4**
	0.8nm,0.4s,mb3.7,baz=120,slow=7.9,SNR=10						

IDC 11 08:47:40.6±8.4, 0.71N×98.40E, mb3.4/3, mb1 3.6/3, mb1mx3.4/16, Error ellipse: s-maj=435.0km s-min=29.1km az=54.0, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**40.76**	**122**	P	P	08 55 23.6	-1.7
	0.4nm,0.9s,baz=299,slow=8.9,SNR=6.2						
ASAR	**Alice Springs**	**42.15**	**127**	P	P	08 55 35.2	-1.5
	0.4nm,0.7s,baz=297,slow=8.1,SNR=4.0						
MKAR	**Makanchi Array**	**48.01**	**345**	P	P	08 56 21.4	-2.0
	0.5nm,0.6s,baz=162,slow=8.1,SNR=6.0						

*NEIC **11** 09:06:19.9±1.4, 6.19S×129.82E, h145km, Error ellipse: s-maj=44.7km s-min=17.5km az=74.0*
*IDC **11** 09:06:25.4±4.2, 6.41S×129.80E, h202km±39km, mb3.5/2, mb1 3.2/5, mb1mx3.1/13, Error ellipse: s-maj=57.0km s-min=16.9km az=75.0*
ISC 11 09:06:17.5±1.3, 6.14S±0.09×130.0E±0.2, h145km, n6, σ0.82/10, mb3.7/2, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**12.63**	**199**	P	**P**	**09 09 13.6**	**+0.5**
	0.3nm,0.3s,baz=28,slow=8.4,SNR=12						
FITZ				S	**S**	**09 11 30.9**	**+0.1**
	0.2nm,0.3s,baz=196,slow=15,SNR=3.3						
WRA	**Warramunga Arr**	**14.36**	**163**	P	**P**	**09 09 36.8**	**+1.6**
	0.1nm,0.3s,baz=344,slow=12,SNR=9.6						
WRA				S	**S**	**09 12 03.8**	**-7.2**
	0.3nm,0.3s,baz=343,slow=21,SNR=10						
WRA	**Warramunga Arr**	**14.36**	**163**	P	**P**	**09 09 36.8**	**+1.6**
WRA				S	**S**	**09 12 03.8**	**-7.2**
ASAR	**Alice Springs**	**17.83**	**168**	P	**P**	**09 10 17.6**	**-0.3**
	0.1nm,0.3s,baz=349,slow=8.5,SNR=9.4						
ASAR				S	**S**	**09 13 28.4**	**-0.8**
	0.1nm,0.3s,baz=349,slow=28,SNR=2.7						
MKAR	**Makanchi Array**	**67.50**	**327**	P	**P**	**09 17 00.2**	**+0.1**
	0.6nm,0.4s,mb3.7,baz=115,slow=7.6,SNR=14						
MKAR				pP	pP	09 17 32.3	-3.0
	0.2nm,0.3s,baz=117,slow=6.4,SNR=4.6						
MAW	**Mawson**	**75.75**	**201**	P	**P**	**09 17 47.4**	**-1.2**
	0.7nm,0.3s,mb3.7,baz=60,slow=16,SNR=3.1						

*IDC **11** 09:10:12.8±2.9, 0.18N×97.63E, mb4.0/7, mb1 4.2/7, mb1mx3.9/17, Error ellipse: s-maj=131.0km s-min=17.6km az=55.0*
*NEIC **11** 09:10:14.1±0.9, 0.12N×97.56E, h10km, Error ellipse: s-maj=23.6km s-min=11.6km az=63.0*
ISC 11 09:10:15.6±1.2, 0.2N±0.1×97.6E±0.2, h33km, n9, σ0.51/9, mb4.0/7, 1C, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
IPM	**Ipoh**	**5.55**	**38**	*e*P	**P**	**09 11 37.7**	**-0.2**
FITZ	**Fitzroy Crossi**	**33.02**	**125**	P	**P**	**09 16 49.7**	**-0.5**
	1.3nm,0.7s,mb4.0,baz=270,slow=13,SNR=3.4						
WRA	**Warramunga Arr**	**41.16**	**121**	P	**P**	**09 17 58.6**	**-0.1**
	1.1nm,0.7s,mb3.6,baz=301,slow=9.0,SNR=11						
ASAR	**Alice Springs**	**42.47**	**126**	P	**P**	**09 18 10.2**	**+0.6**
	2.9nm,1.1s,mb3.8,baz=299,slow=7.7,SNR=11						
SONM	**Songino Array**	**48.07**	**8**	P	**P**	**09 18 54.6**	**+0.7**
	1.6nm,0.6s,mb4.2,baz=173,slow=12,SNR=4.3						
MKAR	**Makanchi Array**	**48.32**	**346**	P	**P**	**09 18 56.0**	**+0.2**
	1.7nm,0.6s,mb4.2,baz=157,slow=8.1,SNR=18						
ZAL	**Zalesovo**	**54.61**	**351**	P	**P**	**09 19 43.5**	**+0.3**
	2.1nm,0.3s,mb4.6,baz=176,slow=4.0,SNR=2.4						
ZAL	**Zalesovo**	**54.61**	**351**	P	**P**	**09 19 43.5**	**+0.3**
BVAR	**Borovoye Array**	**57.34**	**341**	P	**P**	**09 20 01.8**	**-0.9**
	0.7nm,0.6s,mb3.9,baz=135,slow=6.3,SNR=6.0						

JMA 11 09:12:30.1±0.3, 43.95N×147.81E, M3.7, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
NEM2	**Nemuro 2**	**1.61**	**249**	P	Pn	09 12 59.9	0.0
NEM2				*e*S	Sb	09 13 21.5	+0.3
JRA	**Rausu**	**1.94**	**271**	P	Pn	09 13 04.9	+0.2
JRA				*e*S	Sn	09 13 30.4	+0.3
JNK	**Nakash**	**2.27**	**262**	P	Pn	09 13 09.5	+0.1
JNK				*e*S	Sn	09 13 37.9	-0.5
JAK	**Akkeshi**	**2.46**	**248**	P	Pn	09 13 12.1	0.0
JAK				*e*S	Sn	09 13 43.0	-0.3
JAR	**Ashorobuto**	**3.01**	**259**	P	Pn	09 13 20.5	+0.6
JAR				*e*S	Sn	09 13 58.3	+1.2
JCH	**Churui**	**3.51**	**249**	P	Pn	09 13 27.8	+0.7
JNBK	**Urakawa-nobuka**	**4.06**	**247**	P	Pn	09 13 35.4	+0.5

*IDC **11** 09:22:15.9±0.7, 0.14N×97.54E, mb4.4/19, mb1 4.5/19, mb1mx4.4/23, Error ellipse: s-maj=26.4km s-min=13.9km az=53.0*
*BJI **11** 09:22:16.8, 0.30N×97.67E, h8km, mb4.8, Ms5.0, Msz5.0*
*DJA **11** 09:22:18.0, 0.42N×97.63E, h30km, MB4.3, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*
*NEIC **11** 09:22:19.3±0.4, 0.12N×97.61E, h20km, mb4.5/6, Error ellipse: s-maj=10.9km s-min=7.0km az=50.0*
*MOS **11**

comp=Z,11nm,0.5s,mb5.2,baz=231,slow=5.2,SNR=33
ZAL Zalesovo 54.64 351 *i* P **P 09 31 47.5 +0.6**
ZAL pmax pmax
comp=Z,11nm,0.5s
NVS Novosibirsk 55.77 350 *i* P **P 09 31 53.1 -2.0**
NVS pmax pmax
comp=N,11nm,0.7s
NVS pmax pmax
comp=Z,10.0nm,0.7s,mb5.0
KLR Kul'dur 56.99 26 *e*P **P 09 32 03.2 -0.8**
BVA0 Borovoye Array 57.37 341 P **P 09 32 05.5 -1.0**
BVAR Borovoye Array 57.37 341 P **P 09 32 05.6 -1.0**
comp=Z,3.8nm,0.6s,mb4.6,baz=135,slow=8.4,SNR=31
AB31 Akbulak array 58.63 332 *i* P **P 09 32 14.8 -0.6**
AB31 pmax pmax
comp=Z,3.0nm,0.7s,mb4.4
BOD Bodaibo 58.95 10 *e*P **P 09 32 14.7 -2.8**
ASAJ Asahikawa 59.24 36 P **P 09 32 19.2 -0.5**
comp=Z,5.6nm,0.8s,mb4.7,baz=0.5,slow=30,SNR=3.0
YSS Yuzh-Sakhalins 60.97 34 *e*P **P 09 32 31.0 -0.5**
YSS pmax pmax
comp=Z,21nm,0.9s,mb5.3
KIV Kislovodsk 65.37 319 *e*P **P 09 33 00.9 +0.3**
YAK Yakutsk 66.30 16 *e*P **P 09 33 05.2 -1.1**
YAK pmax pmax
comp=Z,12nm,0.6s,mb5.1
BRTR Keskin Array B 70.12 313 P **P 09 33 30.1 -0.4**
comp=Z,0.6nm,0.5s,mb3.8,baz=190,slow=15,SNR=3.8
MAW Mawson 71.80 193 P **P 09 33 39.4 -0.7**
comp=Z,1.4nm,0.7s,mb4.0,baz=50,slow=7.9,SNR=2.6
TIXI Tiksi 74.13 10 *e*P **P 09 33 52.6 -1.1**
TIXI pmax pmax
comp=Z,13nm,1.1s,mb4.8
AKASG Malin Array Be 76.34 323 P **P 09 34 06.5 -0.2**
comp=Z,1.5nm,0.6s,mb4.1,baz=90,slow=4.8,SNR=6.4
MLR Muntele Rosu 77.11 317 P **P 09 34 10.8 -0.4**
comp=Z,2.5nm,0.7s,mb4.2,baz=128,slow=19,SNR=3.8
FX1 Attu Island--F 81.17 36 P **P 09 34 33.3 +0.4**
comp=Z,4.7nm,0.7s,mb4.5,baz=228,slow=16,SNR=3.2
ARCES ARCESS Array B 83.66 340 P **P 09 34 46.4 +1.0**
comp=Z,1.6nm,0.7s,mb4.3,baz=117,slow=5.4,SNR=6.3
GERES GERESS Array B 85.87 319 P **P 09 34 57.4 +0.4**
comp=Z,1.8nm,1.0s,mb4.3,baz=117,slow=2.2,SNR=2.2
SPITS Spitsbergen Ar 88.05 348 P **P 09 35 07.7 +0.8**
comp=Z,6.8nm,1.1s,mb4.8,baz=183,slow=0.3,SNR=2.9
NOA NORSAR Array B 88.12 331 P **P 09 35 08.0 +0.5**
comp=Z,0.5nm,0.6s,mb3.9,baz=162,slow=15,SNR=2.6
TXAR Lajitas Array 144.32 33 PKP PKPdf 09 41 54.1 -3.2
comp=Z,0.5nm,0.7s,baz=245,slow=4,SNR=10.0
CPUP Villa Florida 144.51 221 PKP PKPdf 09 41 56.0 -1.8
comp=Z,1.4nm,0.9s,baz=217,slow=5.4,SNR=4.2

*IDC **11** 09:39:42.1±1.6, 12.89S×167.16E, mb4.1/7, mb1 4.2/7, mb1mx4.0/16, MS4.5/1, Ms1 4.5/1, ms1mx3.7/26, Error ellipse: s-maj=35.3km s-min=31.6km az=37.0*
*NEIC **11** 09:39:43.8±1.3, 12.86S×167.03E, h10km, mb4.3/1, Error ellipse: s-maj=28.3km s-min=22.4km az=216.0*
ISC 11 09:39:46.8±1.8, 13.1S±0.2×166.9E±0.2, h33km, n11, σ1§16/8, mb4.0/6, MS4.5/1, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
PMG	**Port Moresby**	**19.73**	**279**	*e*P		**P**	**P**	**09 44 13.1**	**-3.5**
	18nm,1.2s								
CTA	**Charters Tower**	**20.98**	**248**	P		**P**	**P**	**09 44 28.9**	**-0.8**
	5.2nm,1.1s,baz=127,slow=10,SNR=2.2								
STKA	**Stephens Creek**	**29.83**	**227**	P		**P**	**P**	**09 45 54.8**	**+1.7**
	5.7nm,0.4s,mb4.7,baz=47,slow=9.2,SNR=29								
RPZ	**Rata Peaks**	**30.72**	**174**	P		**P**	**P**	**09 46 01.2**	**+0.2**
	5.2nm,0.7s,mb4.5,baz=175,slow=21,SNR=3.1								
WRA	**Warramunga Arr**	**31.94**	**253**	P		**P**	**P**	**09 46 11.7**	**-0.3**
	0.5nm,1.0s,mb3.3,baz=86,slow=9.1,SNR=5.1								
ASAR	**Alice Springs**	**32.98**	**247**	P		**P**	**P**	**09 46 21.9**	**+0.9**
	1.4nm,0.4s,mb4.2,baz=76,slow=9.0,SNR=33								
JNU	**Nakatsue**	**57.41**	**324**	LR		LR		10 09 50.6	
	comp=Z,415nm,19.9s,MS4.5,baz=241,slow=32								
VNDA	**Vanda**	**64.48**	**181**	P		**P**	**P**	**09 50 20.4**	**-1.5**
	0.4nm,0.6s,mb3.6,baz=353,slow=3.4,SNR=6.0								
MKAR	**Makanchi Array**	**95.80**	**317**	P		**P**	**P**	**09 53 11.6**	**+0.7**
	0.5nm,0.8s,mb4.0,baz=90,slow=5.8,SNR=3.8								
ARCES	**ARCESS Array B**	**118.59**	**346**	PKP		PKPdf	PKPdf	09 58 30.3	-0.7
	2.9nm,1.0s,baz=20,slow=1.3,SNR=7.0								
ARCES	**ARCESS Array B**	**118.59**	**346**	PKP		PKPdf	PKPdf	09 58 30.3	-0.7

*FUNV **11** 09:54:16.2, 10.28N×61.50W, h17km, MW2.5*
*TRN **11** 09:54:18.6, 10.51N×61.47W, h33km, MD2.6*
ISC 11 09:54:15.5±1.4, 10.11N±0.08×61.60W±0.09, h47km±16km, n8, σ1§15/16, 1C, Trinidad

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
TPP	**Pointe-a-Pierr**	**0.25**	**35**↑	*i*P		**P**	**P**	**09 54 24.9**	**+1.0**
TPP				*e*S			**S**	**09 54 30.1**	**+0.3**
TRN	**Trinidad (W)**	**0.57**	**20**	*e*P		**P**	**P**	**09 54 24.8**	**-2.6**
TRN				*e*S			**S**	**09 54 29.5**	**-6.6**
TCE	**Chacachacare**	**0.60**	**345**	*e*P		**P**	**P**	**09 54 27.3**	**-0.6**
TCE				*e*S			**S**	**09 54 33.0**	**-3.9**
GUIV	**Guiria**	**0.81**	**311**	*e*P		**P**	**P**	**09 54 31.3**	**+0.6**
GUIV				*i* S			**S**	**09 54 41.1**	**-0.7**
ITEV	**Isla Los Testi**	**1.95**	**310**	*e*P		**P**	**P**	**09 54 48.1**	**+1.3**
ITEV				*e*S			**S**	**09 55 10.6**	**+0.5**
CUPV	**Cœpira**	**4.13**	**270**	*e*P		**P**	**P**	**09 55 19.1**	**+1.5**
CUPV				*e*S			**S**	**09 56 05.5**	**+0.3**
CAOV	**Caicara del Or**	**5.43**	**240**	*e*P		**P**	**P**	**09 55 36.3**	**+0.5**
CAOV				*e*S			**S**	**09 56 36.5**	**-1.4**
BAUV	**El Baul**	**6.46**	**260**	*e*P		**P**	**P**	**09 55 49.7**	**-0.6**
BAUV				*e*S			**S**	**09 56 59.9**	**-3.7**

*IDC **11** 09:54:39.4±5.7, 2.16N×99.34E, mb3.6/3, mb1 3.8/3, mb1mx3.6/16, Error ellipse: s-maj=310.0km s-min=27.5km az=55.0*
DJA 11 09:54:59.7, 1.87N×99.02E, h43km, MB3.1, 1D, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
PSI	**Prapat**	**0.82**	**353**↓	*e*Pn		P	P	09 55 14.9	-0.1
PSI	**Prapat**	**0.82**	**353**	*e*Sn		S	S	09 55 23.0	-3.2
GSI	**Gunungsitoli**	**1.55**	**249**	*e*Pn		P	P	09 55 23.0	-2.3
WRA	**Warramunga Arr**	**40.87**	**124**	P		P	P	10 02 22.2	-17
	1.4nm,0.4s,baz=302,slow=9.1,SNR=27								
ASAR	**Alice Springs**	**42.37**	**129**	P		P	P	10 02 35.4	-16
	0.1nm,0.4s,baz=302,slow=8.5,SNR=3.9								
MKAR	**Makanchi Array**	**47.06**	**344**	P		P	P	10 03 11.2	-18
	0.3nm,0.5s,baz=156,slow=8.4,SNR=6.2								

*IDC **11** 09:56:36.8±1.0, 31.68N×141.79E, mb3.7/5, mb1 3.9/8, mb1mx3.7/23, ML3.7/3, MS3.4/2, Ms1 3.4/2, ms1mx3.2/33, Error ellipse: s-maj=29.1km s-min=18.5km az=67.0*
*NEIC **11** 09:56:38.2±0.7, 31.68N×141.78E, h10km, mb4.6/1, Error ellipse: s-maj=18.9km s-min=13.0km az=65.0*
ISC 11 09:56:39.9±0.8, 31.52N±0.06×141.6E±0.1, h33km, n12, σ1§08/15, mb3.9/6, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
JHJ	**Hachijo jima 2**	**2.19**	**317**	Pn		**Pn**	**Pn**	**09 57 14.3**	**-0.6**
	15nm,0.3s,baz=216,slow=19,SNR=11								
JHJ				Sn		**Sn**	**Sn**	**09 57 41.9**	**+0.8**
	19nm,0.3s,baz=233,slow=20,SNR=4.2								
JHJ				LR		LR	LR	09 57 56.2	
	comp=Z,672nm,21.9s,baz=298,slow=36								
CBIJ	**Chichi jima**	**4.45**	**173**	Pn		**Pn**	**Pn**	**09 57 47.1**	**+0.3**
	9.8nm,0.3s,baz=276,slow=20,SNR=8.0								
CBIJ				Sn		**Sn**	**Sn**	**09 58 37.1**	**-1.1**
	2.6nm,0.3s,baz=294,slow=19,SNR=2.7								
CBIJ				LR		LR	LR	09 59 03.0	
	comp=Z,544nm,21.4s,baz=22,slow=32								
MAJO	**Matsushiro**	**5.73**	**332**	*e*P		**P**	**P**	**09 58 02.0**	**-2.9**
	4.3nm,0.4s								
JNU	**Nakatsue**	**9.18**	**283**	Pn		**P**	**P**	**09 58 52.9**	**-0.2**
	0.7nm,0.3s,baz=222,slow=27,SNR=2.5								
JNU				Sn			**Sn**	**10 00 36.0**	**-0.5**
	1.9nm,0.3s,baz=9.1,slow=30,SNR=3.1								
MKAR	**Makanchi Array**	**47.33**	**307**	P		**P**	**P**	**10 05 13.6**	**+1.4**
	0.4nm,0.5s,mb3.6,baz=86,slow=9.5,SNR=5.0								
WRAB	**Tennant Creek**	**51.62**	**189**	*e*P		**P**	**P**	**10 05 46.0**	**+0.5**
	7.1nm,0.8s,mb4.7								
WRA	**Warramunga Arr**	**51.64**	**189**	P		**P**	**P**	**10 05 46.1**	**+0.4**
	1.8nm,0.5s,mb4.3,baz=5.6,slow=7.5,SNR=48								
ASAR	**Alice Springs**	**55.36**	**189**	P		**P**	**P**	**10 06 13.9**	**+0.8**
	0.6nm,0.5s,mb3.9,baz=17,slow=13,SNR=15								
YKA	**Yellowknife Ar**	**68.53**	**29**	P		**P**	**P**	**10 07 38.3**	**-2.4**
	0.2nm,0.8s,mb3.1,baz=294,slow=6.9,SNR=4.4								
YKA	**Yellowknife Ar**	**68.53**	**29**	P		**P**	**P**	**10 07 38.3**	**-2.4**
TXAR	**Lajitas Array**	**93.38**	**53**	P		**P**	**P**	**10 09 54.2**	**+1.1**
	0.3nm,0.7s,mb3.8,baz=292,slow=2.2,SNR=6.2								
TXAR	**Lajitas Array**	**93.38**	**53**	P		**P**	**P**	**10 09 54.2**	**+1.1**

*NEIC **11** 10:19:25.1, 30.09S×71.59W, h16km, ML2.8(GUC), After GUC.*
GUC 11 10:19:25.1±0.7, 30.09S×71.59W, h16km±11km, MD3.7, ML2.8, 2C-2D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
LSCH	**La Serena**	**0.35**	**59**↓	*i*P		Pb		10 19 32.3	-0.2
LSCH				*i* S		Sb		10 19 38.1	+0.5
LSCH				AMP				10 19 39.3	
	comp=N,768nm,0.4s								
OVCH	**Ovalle**	**0.61**	**147**↑	*i*P		Pb		10 19 36.7	-0.3
OVCH				*i* S		Sb		10 19 44.8	-0.3
OVCH				AMP				10 19 46.7	
	comp=E,743nm,0.2s								
TLL	**Tololo Astrono**	**0.69**	**96**↓	*i*P		Pb		10 19 38.4	+0.1
TLL				*i* S		Sb		10 19 48.6	+1.4
TLL				AMP				10 19 52.9	
	comp=N,436nm,0.3s								
CMCH	**Combarbala**	**1.19**	**155**↑	*i*P		Pb		10 19 46.1	-0.8
CMCH				*i* S		Sb		10 20 02.2	+0.4
CMCH				AMP				10 20 07.6	
	comp=E,2µm,0.6s								
FCH	**Farellones**	**3.41**	**161**	*e*P		Pn		10 20 19.4	+0.5
FCH				AMP				10 21 15.2	
	comp=E,33nm,0.4s								

*MOS **11** 10:20:23.8±1.4, 51.37N×173.17W, h33km, mb4.6/9, Error ellipse: s-maj=13.6km s-min=9.5km az=67.8*
*BJI **11** 10:20:25.2, 51.95N×173.64W, h17km, mB4.3, mb4.5, Ms4.2, Msz4.1*
*NEIC **11** 10:20:26.7±0.3, 51.47N×173.19W, mb4.3/16, ML3.7(AEIC), Error ellipse: s-maj=9.0km s-min=4.0km az=175.0*
*IDC **11** 10:20:27.3±0.5, 51.64N×173.24W, h39km±3km, mb3.9/19, mb1 4.2/21, mb1mx4.1/29, ML3.9/2, Error ellipse: s-maj=15.7km s-min=8.6km az=174.0*
ISC 11 10:20:25.5±0.3, 51.51N±0.06×173.12W±0.03, h39km, h39km±.9km: pP-P, n117, σ1§21/120, mb4.4/39, MS4.3/4, 3C-2D, Andreanof Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
ATKA	**Atka Island**	**0.96**	**316**	P		**P**	**P**	**10 20 41.4**	**-1.2**
ATKA				S			**S**	**10 20 51.7**	**-3.7**
GSMY	**Great Sitkin M**	**1.90**	**287**	P		**P**	**P**	**10 20 56.4**	**+0.3**
GSTR	**Great Sitkin T**	**1.92**	**289**	P		**P**	**P**	**10 20 56.1**	**-0.1**
GSTD	**Great Sitkin T**	**1.96**	**287**	P		**P**	**P**	**10 20 56.5**	**-0.4**
GSTD				S			**S**	**10 21 22.0**	**+1.6**
GSSP	**Great Sitkin S**	**1.99**	**288**	P		**P**	**P**	**10 20 58.1**	**+0.8**
ETKA	**Kagalaska Isla**	**2.08**	**281**	P		**P**	**P**	**10 20 58.3**	**-0.2**
ETKA				S			**S**	**10 21 24.2**	**+0.8**
ADAG	**Mount Adagdak**	**2.22**	**284**	P		**P**	**P**	**10 21 01.6**	**+1.0**
ADK	**Adak**	**2.25**	**281**	P		**P**	**P**	**10 21 00.9**	**-0.2**
ADK				S			**S**	**10 21 28.9**	**+1.1**
KIRH	**Kanaga Island**	**2.51**	**281**	P		**P**	**P**	**10 21 05.6**	**+0.9**
KINC	**Kanaga Island**	**2.53**	**281**	P		**P**	**P**	**10 21 05.3**	**+0.3**
KIWB	**Kanaga Island**	**2.54**	**279**	P		**P**	**P**	**10 21 05.3**	**+0.2**
KIKV	**Kanaga Island**	**2.55**	**280**	P		**P**	**P**	**10 21 05.5**	**+0.2**
KIMD	**Kanaga Island**	**2.58**	**277**	P		**P**	**P**	**10 21 05.8**	**0.0**
NIKO	**Nikolski**	**3.00**	**59**	P		**P**	**P**	**10 21 13.6**	**+1.8**
NIKO				S			**S**	**10 21 50.1**	**+3.2**
MCIR	**Makushin Cirqu**	**4.50**	**55**	P		**P**	**P**	**10 21 34.4**	**+1.4**
MSW	**Makushin Switc**	**4.54**	**55**	P		**P**	**P**	**10 21 35.6**	**+2.0**
MTBL	**Makushin Table**	**4.62**	**55**	P		**P**	**P**	**10 21 35.7**	**+1.0**
UNV	**Unalaska Valle**	**4.66**	**57**	P		**P**	**P**	**10 21 37.5**	**+2.3**
FX1	**Attu Island--F**	**8.54**	**285**	Pn		**P**	**P**	**10 22 26.1**	**-3.4**
	2.0nm,0.3s,baz=246,slow=18,SNR=24								
FX1				Sn			**S**	**10 24 04.4**	**-1.3**
	baz=99,slow=5.0,SNR=1.9								
FX1	**Attu Island--F**	**8.54**	**285**	*e*P			**P**	**10 22 29.2**	**-0.3**
TNA	**Tin City**	**14.34**	**9**	*e*P			**P**	**10 23 45.6**	**-1.9**
RSO	**Redoubt South**	**14.44**	**44**	P			**P**	**10 23 48.4**	**-0.4**
PMS	**Palmer South**	**16.19**	**44**	*e*P			**P**	**10 24 12.7**	**+1.4**
PMS				pmax		pmax			
	comp=Z,3.0nm,0.5s								
PMS	**Palmer South**	**16.19**	**44**	*e*P			**P**	**10 24 12.7**	**+1.4**
	comp=Z,2.5nm,0.5s								
PMR	**Palmer**	**16.53**	**43**	*e*P			**P**	**10 24 16.8**	**+1.2**
PMR				pmax		pmax			
	comp=Z,2.0nm,1.1s								
PMR	**Palmer**	**16.53**	**43**	*e*P			**P**	**10 24 16.8**	**+1.2**
	comp=Z,2.2nm,1.1s								
IMA	**Indian Mountai**	**17.61**	**27**	*e*P			**P**	**10 24 31.7**	**+2.6**
IMA				pmax		pmax			
	comp=Z,1.0nm,0.3s								
IMA	**Indian Mountai**	**17.61**	**27**	*e*P			**P**	**10 24 31.7**	**+2.6**
	comp=Z,0.5nm,0.3s								
MCK	**McKinley**	**17.67**	**37**	*e*P			**P**	**10 24 28.7**	**-1.2**
MCK				pmax		pmax			
	comp=Z,9.0nm,1.0s								
MCK	**McKinley**	**17.67**	**37**	*e*P			**P**	**10 24 28.7**	**-1.2**
	comp=Z,8.5nm,1.0s								
ILAR	**Eielson Array**	**18.99**	**36**	P			**P**	**10 24 42.5**	**-3.5**
	comp=Z,0.8nm,0.3s,baz=236,slow=10,SNR=62								
ILAR				pP				10 24 55.5	
	comp=Z,1.1nm,0.3s,baz=230,slow=8.4,SNR=13								
BILL	**Bilibino**	**19.38**	**336**	*e*P			**P**	**10 24 49.9**	**-0.4**
BILL				pmax		pmax			
	comp=Z,26nm,1.0s								
BILL	**Bilibino**	**19.38**	**336**	*e*P			**P**	**10 24 49.9**	**-0.5**
	comp=Z,26nm,1.0s								
SEY	**Seymchan**	**21.60**	**315**	*e*P			**P**	**10 25 14.8**	**+1.3**
SEY				pmax		pmax			
	comp=N,20nm,1.3s								
SEY				pmax		pmax			
	comp=E,50nm,1.3s								
SEY				pmax		pmax			
	comp=Z,50nm,1.3s,mb4.8								
DAWY	**Dawson**	**21.61**	**42**	*e*P			**P**	**10 25 11.8**	**-1.9**
MA2	**Magadan**	**21.73**	**306**	P			**P**	**10 25 14.3**	**-0.5**
MA2				pmax		pmax			
	comp=Z,3.0nm,0.8s,mb3.8								
MA2	**Magadan**	**21.73**	**306**	P			**P**	**10 25 14.3**	**-0.5**
	comp=Z,2.8nm,0.8s,mb3.7								
DLBC	**Dease Lake**	**25.31**	**57**	P			**P**	**10 25 51.5**	**+1.9**
	comp=Z,6.0nm,0.9s,mb4.1,baz=272,slow=10,SNR=15								
DLBC				sP		sP		10 26 04.0	-0.7
	comp=Z,8.7nm,0.7s,baz=283,slow=12,SNR=10								
DLBC	**Dease Lake**	**25.31**	**57**	*e*P			**P**	**10 25 51.2**	**+1.7**
INK	**Inuvik**	**25.35**	**34**	P			**P**	**10 25 48.1**	**-1.7**
	comp=Z,8.9nm,0.8s,mb4.3,baz=235,slow=10,SNR=49								
INK				pP		pP		10 26 01.5	+1.2
	comp=Z,25nm,1.0s,baz=241,slow=11,SNR=20								
INK	**Inuvik**	**25.35**	**34**	*e*P			**P**	**10 25 48.6**	**-1.2**
INK				pmax		pmax			
	comp=Z,11nm,0.9s								
INK	**Inuvik**	**25.35**	**34**	*e*P			**P**	**10 25 48.6**	**-1.2**
	comp=Z,11nm,0.9s,mb4.4								
TIXI	**Tiksi**	**32.30**	**330**	*e*P			**P**	**10 26 52.0**	**-0.3**
TIXI				*e*				10 29 37.9	
TIXI				pmax		pmax			
	comp=Z,23nm,1.2s,mb4.9								
YKA	**Yellowknife Ar**	**32.54**	**47**	P			**P**	**10 26 53.4**	**-1.1**
	comp=Z,0.5nm,1.0s,mb3.4,baz=275,slow=8.4,SNR=3.7								
YKA				pP		pP		10 27 05.2	-0.2
	comp=Z,0.7nm,0.5s,baz=272,slow=7.7,SNR=11								
YKA				PcP		PcP		10 29 40.2	-0.4
	comp=Z,0.4nm,0.8s,baz=281,slow=2.6,SNR=4.3								
YKA				pPcP				10 29 53.0	
	comp=Z,1.4nm,1.0s,baz=284,slow=2.8,SNR=6.5								
YKA	**Yellowknife Ar**	**32.54**	**47**	P			**P**	**10 26 53.4**	**-1.1**
YKA				pP		pP		10 27 05.2	-0.2
YKA				PcP		PcP		10 29 40.2	-0.4
YKA				pPcP				10 29 53.0	
YBH	**Yreka Blue Hor**	**35.33**	**86**	P			**P**	**10 27 20.5**	**+1.8**
	comp=Z,2.7nm,0.8s,mb4.2,baz=261,slow=4.5,SNR=5.2								
YBH				sP		sP		10 27 34.2	-0.4
	comp=Z,4.1nm,0.7s,baz=327,slow=5.6,SNR=5.3								
NEW	**Newport**	**35.48**	**73**	P			**P**	**10 27 20.4**	**+0.5**
	comp=Z,3.2nm,0.8s,mb4.3,baz=304,slow=8.9,SNR=6.0								
NEW				pP		pP		10 27 31.4	+0.6
	comp=Z,7.0nm,0.8s,baz=288,slow=3.6,SNR=10.0								
NEW	**Newport**	**35.48**	**73**	*e*P			**P**	**10 27 19.7**	**-0.2**
NEW				pmax		pmax			
	comp=Z,5.0nm,0.8s								
NEW	**Newport**	**35.48**	**73**	*e*P			**P**	**10 27 19.7**	**-0.2**
	comp=Z,4.8nm,0.8s,mb4.5								
MDJ	**Mudanjiang**	**38.04**	**283**	P			**P**	**10 27 40.3**	**-1.2**
MDJ				AP		pP		10 27 49.0	-3.5
MDJ				XP		sP		10 27 53.0	-4.4
MDJ				AMB		AMB			
	comp=Z,4.0nm,0.5s,mb4.4								
MDJ				AMB		AMB			
	comp=Z,126nm,6.8s								
CHMT	**Chamberlain Mo**	**38.42**	**73**	*e*P			**P**	**10 27 44.2**	**-0.4**
CMB	**Columbia Colle**	**38.94**	**89**	P			**P**	**10 27 47.7**	**-1.3**
CMB				pmax		pmax			
	comp=Z,2.0nm,0.8s,mb3.9								
CMB	**Columbia Colle**	**38.94**	**89**	P			**P**	**10 27 47.7**	**-1.3**
	comp=Z,2.1nm,0.8s,mb3.9								
HLID	**Hailey**	**39.46**	**78**	*e*P			**P**	**10 27 53.8**	**+0.6**
	comp=Z,3.0nm,0.8s,mb4.1								
MCMT	**McKenzie Canyo**	**39.73**	**75**	*e*P			**P**	**10 27 56.2**	**+0.7**
NVAR	**Mina Array Bea**	**40.00**	**87**	P			**P**	**10 27 59.4**	**+1.6**
	comp=Z,1.5nm,0.7s,mb3.8,baz=296,slow=6.9,SNR=9.9								
NVAR				pP		pP		10 28 10.7	+1.9
	comp=Z,3.7nm,0.8s,baz=305,slow=6.9,SNR=14								
BOZ	**Bozeman (W)**	**40.04**	**73**	*e*P			**P**	**10 27 58.0**	**0.0**
BOZ				pmax		pmax			
	comp=Z,4.0nm,0.6s,mb4.3								
BOZ	**Bozeman (W)**	**40.04**	**73**	*e*P			**P**	**10 27 58.0**	**-0.1**
	comp=Z,4.3nm,0.6s,mb4.4								
TPH	**Tonopah**	**40.89**	**87**	*e*P			**P**	**10 28 06.1**	**+0.9**
CN2	**Changchun**	**40.99**	**284**	*e*P			**P**	**10 28 05.8**	**-0.2**
BW06	**Boulder Array**	**42.85**	**76**	*e*P			**P**	**10 28 21.3**	**+0.1**
	comp=Z,6.1nm,1.0s,mb4.3								
BW06				*e*			pP	10 28 32.7	+0.4
PDAR	**Pinedale Array**	**42.85**	**76**	P			**P**	**10 28 22.0**	**+0.8**
	comp=Z,3.2nm,0.8s,mb4.1,baz=314,slow=5.2,SNR=28								
PDAR				pP		pP		10 28 32.8	+0.5
	comp=Z,6.9nm,0.8s,baz=304,slow=5.3,SNR=18								
DAU	**Daniels Canyon**	**43.18**	**80**	*e*P			**P**	**10 28 24.9**	**+1.0**
FCC	**Fort Churchill**	**43.26**	**48**	*e*P			**P**	**10 28 23.6**	**-0.7**
FCC				pmax		pmax			
	comp=Z,3.0nm,0.8s,mb4.1								
FCC	**Fort Churchill**	**43.26**	**48**	*e*P			**P**	**10 28 23.6**	**-0.6**
	comp=Z,2.5nm,0.8s,mb4.0								
MSU	**Marysvale**	**43.76**	**83**	*e*P			**P**	**10 28 29.8**	**+1.2**
MSU				*e*			pP	10 28 41.4	+1.7
ULM	**Lac du Bonnet**	**46.59**	**60**	P			**P**	**10 28 51.5**	**+0.5**
	comp=Z,2.0nm,0.7s,mb4.2,baz=94,slow=2.5,SNR=3.1								
ULM				pP			pP	10 29 02.3	+0.2
	comp=Z,1.2nm,0.5s,baz=291,slow=9.6,SNR=2.5								
SDCO	**Great Sand Dun**	**48.35**	**79**	*e*P			**P**	**10 29 05.1**	**+0.1**
ANMO	**Albuquerque**	**49.56**	**82**	P			**P**	**10 29 13.6**	**-0.7**
ZAK	**Zakamensk**	**49.89**	**304**	*e*P			**P**	**10 29 17.8**	**+1.2**
ZAK				*e*				10 30 35.8	
FRB	**Frobisher Bay**	**51.00**	**34**	P			**P**	**10 29 22.6**	**-2.3**
	comp=Z,1.4nm,0.5s,mb4.2,baz=312,slow=8.6,SNR=8.3								
FRB				pP		pP		10 29 35.5	-0.7
	comp=Z,2.8nm,0.9s,baz=78,slow=1.5,SNR=3.0								
SSE	**Sheshan**	**51.55**	**273**	P			**P**	**10 29 29.9**	**+0.4**
SSE				AP		pP		10 29 38.9	-1.8
SSE				XP		sP		10 29 42.8	-2.6
SSE				S			**S**	**10 36 45.8**	**0.0**
SSE				XS				10 37 01.1	
SSE				LR		LR			
	comp=N,68nm,20.3s,MS3.9								
SSE				LR		LR			
	comp=E,102nm,20.8s,MS3.9								
SSE				LR		LR			
	comp=Z,127nm,18.6s,MS4.0								
MNTX	**Cornudas Mount**	**52.41**	**85**	*e*P			**P**	**10 29 35.2**	**-0.6**
MNTX				*e*			pP	10 29 46.8	-0.3
WMOK	**Wichita Mounta**	**54.42**	**77**	*e*P			**P**	**10 29 49.7**	**-1.1**
WMOK				*e**PP			pP	10 30 01.4	-0.8
WMOK				pmax		pmax			
	comp=Z,3.0nm,1.0s,mb4.2								
WMOK	**Wichita Mounta**	**54.42**	**77**	*e*P			**P**	**10 29 49.6**	**-1.1**
	comp=Z,3.0nm,1.0s,mb4.2								

DMN	**Daman**	**75.72**	**296**	*eP*	**P**	**10 32 08.3**	**-0.2**
	comp=Z,24nm,1.0s,mb5.1						
DANN	**Dangsing**	**75.90**	**298**	*eP*	**P**	**10 32 11.1**	**+1.7**
AKASG	**Malin Array Be**	**76.42**	**346**	P	**P**	**10 32 10.6**	**-1.3**
	comp=Z,1.2nm,0.7s,mb3.9,baz=13,slow=5.7,SNR=3.6						
KOLN	**Koldanda**	**76.44**	**297**	*eP*	**P**	**10 32 11.6**	**-0.9**
	comp=Z,14nm,0.9s,mb4.9						
CTAO	**Charters Tower**	**79.67**	**218**	*eP*	**P**	**10 32 26.7**	**-3.8**
GERES	**GERESS Array B**	**79.86**	**355**	P	**P**	**10 32 30.9**	**0.0**
	comp=Z,0.3nm,0.2s,mb3.8,slow=4.0,SNR=3.9						
GERES				pP	pP	10 32 42.9	+0.1
	comp=Z,0.2nm,0.3s,baz=31,slow=7.8,SNR=2.0						
WRAB	**Tennant Creek**	**84.66**	**229**	P	**P**	**10 32 53.7**	**-2.5**
WRA	**Warramunga Arr**	**84.67**	**229**	P	**P**	**10 32 55.7**	**-0.6**
	comp=Z,1.3nm,1.2s,mb3.9,baz=163,slow=6.4,SNR=7.4						
WRA				pP	pP	10 33 08.3	0.0
	comp=Z,0.8nm,0.6s,baz=33,slow=5.7,SNR=4.6						
BRTR	**Keskin Array B**	**86.19**	**340**	P	**P**	**10 33 05.0**	**+1.7**
	comp=Z,2.2nm,1.1s,mb4.3,baz=34,slow=5.2,SNR=3.2						
BRTR				pP	pP	10 33 15.3	0.0
	comp=Z,1.7nm,1.0s,baz=45,slow=3.5,SNR=3.4						
ASAR	**Alice Springs**	**88.08**	**227**	P	**P**	**10 33 13.8**	**+0.9**
	comp=Z,2.5nm,0.8s,mb4.5,baz=32,slow=4.7,SNR=17						
ASAR				pP	pP	10 33 25.2	+0.3
	comp=Z,2.0nm,0.8s,baz=29,slow=4.6,SNR=4.8						
STKA	**Stephens Creek**	**92.07**	**217**	P	**P**	**10 33 32.6**	**+1.2**
	comp=Z,2.2nm,0.9s,mb4.5,baz=360,slow=12,SNR=3.2						
MBWA	**Marble Bar**	**93.03**	**239**	P	**P**	**10 33 33.9**	**-2.3**
MAW	**Mawson**	**148.76**	**218**	PKPbc	PKPdf	10 40 08.8	+5.6
	comp=Z,2.3nm,0.9s,baz=108,slow=3.6,SNR=4.5						
MAW				pPKPbc		10 40 21.2	
	comp=Z,2.9nm,0.7s,baz=74,slow=1.9,SNR=3.9						
VNA3	**Neumayer Olymp**	**158.82**	**165**	⇑*i*	PKPdf	10 40 17.2	+0.1
SNAA	**Sanae**	**159.30**	**171**	⇓*i*	PKPdf	10 40 21.6	+3.9
VNA2	**Neumayer--Watz**	**159.45**	**167**	⇑*i*	PKPdf	10 40 17.4	-0.5
VNA1	**Neumayer--Stat**	**159.57**	**166**	⇓*i*	PKPdf	10 40 15.4	-2.6

*NEIC **11** 10:40:35.1±0.7,24.20S×67.15W,h174km±9km, Error ellipse: s-maj=17.4km s-min=11.1km az=49.0*
*IDC **11** 10:40:38.2±1.6,24.01S×67.46W,h195km±13km,mb3.2/1, mb1 3.2/3,mb1mx3.0/15,MS3.6/1,Ms1 3.7/1,ms1mx3.5/8, Error ellipse: s-maj=33.0km s-min=22.7km az=45.0*

ISC 11 10:40:36.0±0.9,24.20S±0.07×67.5W±0.1,h199km±14km, n12,σ0§80/13,mb3.1/1,1D,Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
LVC	**Limon Verde**	**2.03**	**321**	P	**P**	**10 41 15.5**	**+0.4**
	9.3nm,0.3s,baz=129,slow=5.3,SNR=122						
LVC				S	**S**	**10 41 45.5**	**+0.3**
	16nm,0.3s,baz=307,slow=22,SNR=43						
LVC				LR	LR	10 41 54.7	
	comp=Z,544nm,18.5s,baz=264,slow=40						
LVC	**Limon Verde**	**2.03**	**321**	P	**P**	**10 41 15.5**	**+0.4**
LVC				S	**S**	**10 41 45.5**	**+0.3**
LVC				LR	LR	10 41 54.7	
ANCH	**Antofagasta**	**2.69**	**280**	⇓*i* P	**P**	**10 41 23.0**	**+0.5**
ANCH				*i* S	**S**	**10 41 58.1**	**-0.4**
LPAZ	**La Paz**	**7.89**	**356**	P	**P**	**10 42 28.6**	**0.0**
	0.3nm,0.3s,baz=169,slow=12,SNR=7.6						
LPAZ				S	**S**	**10 43 55.5**	**-1.1**
	0.1nm,0.3s,baz=204,slow=17,SNR=2.6						
LPAZ				LR	LR	10 45 46.4	
	comp=Z,376nm,18.2s,baz=242,slow=40						
CPUP	**Villa Florida**	**9.47**	**105**	P	**P**	**10 42 50.7**	**+1.5**
	0.2nm,0.3s,baz=294,slow=14,SNR=5.9						
CPUP	**Villa Florida**	**9.47**	**105**	*eP*	**P**	**10 42 42.7**	**-6.5**
TRQA	**Tornquist**	**14.60**	**162**	*eP*	**P**	**10 43 53.0**	**-1.4**
	0.1nm,0.6s						
YKA	**Yellowknife Ar**	**94.14**	**340**	P	**P**	**10 53 33.4**	**+0.9**
	0.1nm,0.5s,mb3.1,baz=135,slow=4.5,SNR=6.8						
YKA	**Yellowknife Ar**	**94.14**	**340**	P	**P**	**10 53 33.4**	**+0.9**
WRA	**Warramunga Arr**	**131.23**	**208**	PKP	PKPdf	10 59 27.5	+2.4
	0.6nm,1.2s,baz=154,slow=1.9,SNR=3.4						
MKAR	**Makanchi Array**	**146.98**	**39**	PKPbc	PKPbc	10 59 56.7	+2.4
	0.4nm,0.4s,baz=307,slow=3.2,SNR=7.5						
MKAR	**Makanchi Array**	**146.98**	**39**	PKPbc	PKPbc	10 59 56.7	+2.4

*NEIC **11** 10:46:35.0±1.3,14.61S×167.33E,h10km,mb4.4/3,Error ellipse: s-maj=46.2km s-min=21.2km az=144.0*
*IDC **11** 10:46:36.8±5.5,13.75S×166.62E,mb3.6/4,mb1 3.8/4, mb1mx3.7/14,Error ellipse: s-maj=233.0km s-min=35.0km az=141.0*

ISC 11 10:46:37.4±1.4,14.6S±0.3×167.2E±0.3,h33km,n8, σ0§88/8,mb3.9/6,Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CTAO	**Charters Tower**	**20.68**	**252**	*eP*	**P**	**10 51 16.4**	**-0.9**
	1.7nm,0.3s						
WRAB	**Tennant Creek**	**31.74**	**256**	P	**P**	**10 53 02.6**	**+1.7**
	5.3nm,0.9s,mb4.4						
WRA	**Warramunga Arr**	**31.75**	**256**	P	**P**	**10 53 00.3**	**-0.7**
	0.5nm,0.7s,mb3.5,baz=79,slow=8.5,SNR=5.3						
ASAR	**Alice Springs**	**32.62**	**249**	P	**P**	**10 53 08.2**	**-0.4**
	0.1nm,0.5s,mb3.0,baz=64,slow=9.8,SNR=2.4						
MAW	**Mawson**	**81.95**	**202**	*eP*	**P**	**10 58 55.3**	**+0.3**
	11nm,1.0s,mb4.7						
ILAR	**Eielson Array**	**86.45**	**18**	P	**P**	**10 59 16.8**	**-0.7**
	0.4nm,0.7s,mb3.8,baz=239,slow=5.4,SNR=5.6						
MKAR	**Makanchi Array**	**97.05**	**316**	P	**P**	**11 00 08.1**	**+0.8**
	0.4nm,0.7s,mb4.0,baz=101,slow=6.2,SNR=3.9						
MKAR	**Makanchi Array**	**97.05**	**316**	P	**P**	**11 00 08.1**	**+0.8**

*IDC **11** 11:12:09.2±20.0,14.57S×177.65W,h213km±169km, mb3.6/6,mb1 3.7/6,mb1mx3.4/15,MS4.0/1,Ms1 4.0/1, ms1mx3.4/18,Error ellipse: s-maj=88.4km s-min=30.4km az=40.0*

ISC 11 11:12:05.7±4.6,14.5S±0.5×177.6W±0.5,h200km,n8, σ0§71/7,mb4.0/7,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**24.16**	**190**	P	**P**	**11 17 04.5**	**-0.4**
	7.9nm,0.7s,mb4.4,baz=74,slow=7.4,SNR=4.9						
CTA	**Charters Tower**	**34.92**	**256**	P	**P**	**11 18 41.5**	**+1.1**
	2.2nm,0.6s,mb3.9,baz=76,slow=12,SNR=4.5						
STKA	**Stephens Creek**	**41.04**	**238**	P	**P**	**11 19 31.9**	**+0.7**
	1.8nm,0.6s,mb3.7,baz=70,slow=5.3,SNR=4.0						
WRA	**Warramunga Arr**	**46.12**	**256**	P	**P**	**11 20 11.1**	**-0.9**
	0.5nm,0.3s,mb3.3,baz=90,slow=6.4,SNR=33						
ASAR	**Alice Springs**	**46.56**	**251**	P	**P**	**11 20 14.8**	**-0.6**
	18nm,0.4s,mb4.8,baz=84,slow=8.3,SNR=298						
FITZ	**Fitzroy Crossi**	**54.44**	**258**	P	**P**	**11 21 14.3**	**-0.4**
	0.8nm,0.5s,mb3.5,baz=201,slow=8.1,SNR=5.0						
FITZ				LR	LR	11 41 39.3	
	comp=Z,159nm,21.4s,baz=261,slow=33						
MAW	**Mawson**	**87.35**	**199**	P	**P**	**11 24 31.2**	**+0.5**
	1.8nm,0.5s,mb4.0,baz=89,slow=1.0,SNR=7.7						
ARCES	**ARCESS Array B**	**123.07**	**351**	PKP	PKPdf	11 30 39.7	+1.8
	1.6nm,0.8s,slow=0.9,SNR=4.4						

*FUNV **11** 11:17:15.3,6.79N×73.08W,h173km,MW2.8*
*IDC **11** 11:17:16.3±2.9,6.76N×73.11W,h167km±26km,mb2.9/3, mb1 3.2/4,mb1mx3.0/20,Error ellipse: s-maj=60.5km s-min=32.8km az=100.0*

ISC 11 11:17:14.5±0.7,6.85N±0.08×72.94W±0.09,h170km±7km, n11,σ1§18/17,mb3.1/3,2C-1D,Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CAPV	**Capacho**	**1.19**	**31**	⇑*i* P	**P**	**11 17 44.5**	**+1.5**
CAPV				*eS*	**S**	**11 18 06.0**	**+1.0**
ROSC	**El Rosal**	**2.41**	**215**	P	**P**	**11 17 56.2**	**+0.2**
	22nm,0.3s,baz=290,slow=6.8,SNR=36						
ROSC				S	**S**	**11 18 26.7**	**-1.4**
	30nm,0.3s,baz=52,slow=20,SNR=10						
SOCV	**Socops**	**2.51**	**55**	⇑*i* P	**P**	**11 17 58.4**	**+1.1**
SOCV				*eS*	**S**	**11 18 30.6**	**+0.4**
VIRV	**Villa del Rosa**	**3.67**	**8**	⇓*i* P	**P**	**11 18 11.4**	**-0.4**
VIRV				*eS*	**S**	**11 18 53.4**	**-2.5**
CURV	**Curarigua**	**4.31**	**43**	*eP*	**P**	**11 18 20.9**	**+0.9**
CURV				*eS*	**S**	**11 19 09.0**	**-1.6**
BAUV	**El Baul**	**5.28**	**66**	*i* P	**P**	**11 18 32.5**	**-0.2**
BAUV				*eS*	**S**	**11 19 30.2**	**-3.1**
MONV	**Montecano**	**5.86**	**30**	*eP*	**P**	**11 18 40.5**	**+0.2**
MONV				*eS*	**S**	**11 19 42.8**	**-4.2**
TXAR	**Lajitas Array**	**36.58**	**312**	P	**P**	**11 24 06.3**	**+0.4**
	0.3nm,0.6s,mb3.1,baz=127,slow=9.0,SNR=4.5						
SCHQ	**Schefferville**	**48.10**	**5**	P	**P**	**11 25 40.0**	**+1.3**
	0.8nm,0.6s,mb3.5,baz=297,slow=18,SNR=4.1						
YKA	**Yellowknife Ar**	**63.30**	**340**	P	**P**	**11 27 26.5**	**-0.7**
	0.1nm,0.6s,mb2.8,baz=128,slow=6.8,SNR=5.3						
WRA	**Warramunga Arr**	**150.51**	**241**	PKPbc	PKPdf	11 36 48.6	+7.4
	0.3nm,0.9s,baz=108,slow=2.6,SNR=5.9						

*BER **11** 11:34:08.2±1.7,59.45N×15.53E,h14km±25km, ML2.0(NAO)*

NAO 11 11:34:03.8±3.2,59.33N×15.67E,ML2.0,Sweden

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
HFS	**Hagfors**	**1.28**	**310**	Pg	Pg	11 34 27.5	-2.0
	baz=126,slow=18						
HFS				Lg		11 34 44.3	
	baz=122,slow=37						
HFS				Rg		11 34 50.0	
	baz=128,slow=28						
NB2	**NORSAR Subarra**	**2.81**	**310**	Pn	Pn	11 34 49.6	-1.2
NB2				Lg		11 35 31.7	

*IDC **11** 11:38:59.5±7.3,4.69S×153.06E,h114km±54km,mb3.7/6, mb1 3.7/7,mb1mx3.5/15,Error ellipse: s-maj=61.8km s-min=28.8km az=93.0*

ISC 11 11:38:56.5±5.3,4.7S±0.2×153.2E±0.3,h108km±40km,n10, σ0§63/11,mb3.8/7,New Ireland region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**7.59**	**232**	P	**P**	**11 40 45.7**	**-0.2**
	0.8nm,0.3s,baz=27,slow=14,SNR=2.9						
PMG				S	**S**	**11 42 11.2**	**+0.4**
	3.8nm,0.3s,baz=240,slow=24,SNR=8.3						
KAKA	**Kakadu**	**22.02**	**248**	*eP*	**P**	**11 43 42.4**	**-0.8**
	6.2nm,0.5s,mb4.2						
WB2	**Warramunga Arr**	**23.78**	**229**	*eP*	**P**	**11 44 00.8**	**+0.5**
WB2				*i*		11 44 07.3	
WRA	**Warramunga Arr**	**23.79**	**229**	P	**P**	**11 44 01.4**	**+1.0**
	3.1nm,0.5s,mb3.9,baz=52,slow=9.9,SNR=75						
ASAR	**Alice Springs**	**26.47**	**223**	P	**P**	**11 44 25.1**	**-0.5**
	0.2nm,0.4s,mb2.9,baz=56,slow=8.5,SNR=6.4						
STKA	**Stephens Creek**	**29.12**	**201**	P	**P**	**11 44 49.5**	**0.0**
	1.6nm,0.8s,mb3.7,baz=45,slow=10.0,SNR=2.5						
FITZ	**Fitzroy Crossi**	**30.05**	**242**	*eP*	**P**	**11 44 56.7**	**-1.1**
	1.9nm,0.7s,mb3.8						
FITZ	**Fitzroy Crossi**	**30.05**	**242**	P	**P**	**11 44 57.0**	**-0.8**
	1.1nm,0.4s,mb3.8,baz=53,slow=8.2,SNR=11						
MKAR	**Makanchi Array**	**80.53**	**319**	P	**P**	**11 50 59.2**	**+0.8**
	1.0nm,0.6s,mb3.8,baz=101,slow=6.6,SNR=9.5						
BVAR	**Borovoye Array**	**89.42**	**323**	P	**P**	**11 51 42.1**	**-0.2**
	1.1nm,0.6s,mb4.1,baz=102,slow=6.0,SNR=11						

*STR **11** 11:57:33.6±0.3,48.64N×8.99E,h10km±1km,Ml2.4, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
*LDG **11** 11:57:34.6±0.1,48.65N×8.97E,h10km,Md2.7/1,Ml2.8/8, Error ellipse: s-maj=1.4km s-min=1.3km az=155.0*
*NEIC **11** 11:57:34.0,48.68N×8.96E,h3km,ML2.8(LDG), ML2.6(VIE),ML2.4(STR),ML2.3(LEDBW),After LEDBW.*
NEIC Felt [III] in the epicentral area.
*BGR **11** 11:57:34.5±0.2,48.69N×8.98E,h10km,ML2.0/4, Error ellipse: s-maj=2.2km s-min=2.2km az=135.0*
*LEDBW **11** 11:57:34.1±0.1,48.68N×8.96E,h3km±2km,ML2.3, Error ellipse: s-maj=2.4km s-min=1.4km az=9.0*

ISC 11 11:57:33.1±0.3,48.67N±0.02×8.94E±0.02,h13km±2km, n45,σ0§91/83,6C-5D,Germany

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
LBG	**Lerchenberg**	**0.10**	**266**	⇓*i* Pg	**Pg**	**11 57 36.5**	**+0.3**
LBG				*i* Sg	**Sg**	**11 57 38.2**	**+0.1**
TUBL	**Tuebingen Lnz**	**0.18**	**148**	⇓*i* Pg	**Pg**	**11 57 37.8**	**+0.4**
TUBL				P*	**Pb**	**11 57 38.2**	**+0.5**
TUBL				*i* Sg	**Sg**	**11 57 40.3**	**0.0**
TUBL	**Tuebingen Lnz**	**0.18**	**148**	⇓*i* P	**Pg**	**11 57 37.8**	**+0.4**
TUBL				*i* S	**Sg**	**11 57 40.3**	**0.0**
STU	**Stuttgart**	**0.20**	**60**	Pg	**Pg**	**11 57 37.5**	**-0.2**
STU				*i* Sg	**Sg**	**11 57 40.0**	**-0.7**
STU	**Stuttgart**	**0.20**	**60**	*eP*	**Pg**	**11 57 37.5**	**-0.1**
STU				*eS*	**Sg**	**11 57 40.0**	**-0.7**
BUCH	**Bad Urach**	**0.35**	**129**	⇓*i* Pg	**Pg**	**11 57 40.9**	**+0.3**
BUCH				*i* Sg	**Sg**	**11 57 45.9**	**+0.3**
BFO	**Black Forest**	**0.53**	**230**	⇑*e*Pg	**Pg**	**11 57 44.5**	**+0.6**
BFO				⇑*i* PmP		11 57 46.8	
BFO				*i* Sg	**Sg**	**11 57 52.1**	**+0.9**
SPAK	**Spaichingen**	**0.58**	**190**	Pg	**Pg**	**11 57 44.2**	**-0.8**
GUT	**Gutenstein**	**0.61**	**169**	⇓*e*Pg	**Pg**	**11 57 45.9**	**+0.3**
GUT				Sg	**Sg**	**11 57 54.2**	**+0.3**
SIND	**Sindeldorf**	**0.81**	**33**	Pn	**Pn**	**11 57 49.6**	**+0.4**
SIND				Sn	**Sn**	**11 57 59.9**	**-1.9**
LANF	**Langenberg**	**0.81**	**293**	P	**Pb**	**11 57 50.5**	**+1.9**
LANF	**Langenberg**	**0.81**	**293**	Pg	**Pg**	**11 57 50.4**	**+0.9**
LANF				Sg	**Sg**	**11 58 02.6**	**+2.2**
SWS	**Schriesheim**	**0.83**	**349**	Pg	**Pg**	**11 57 50.2**	**+0.4**
SWS				Sg	**Sg**	**11 58 01.1**	**+0.2**
HDH	**Heidenheim**	**0.85**	**96**	Pg	**Pg**	**11 57 50.6**	**+0.4**
HDH				Sg	**Sg**	**11 58 00.6**	**-0.9**
KTD	**Kalmit**	**0.86**	**319**	Pg	**Pg**	**11 57 51.7**	**+1.2**
TOD	**Tromm**	**0.94**	**355**	Pg	**Pg**	**11 57 52.2**	**+0.2**
TOD				*e*Sg	**Sg**	**11 58 04.3**	**-0.3**
	SNR=8.0						
TOD	**Tromm**	**0.94**	**355**	Pg	**Pg**	**11 57 51.7**	**-0.3**
TOD				Sg	**Sg**	**11 58 05.7**	**+1.1**
SLE	**Schleitheim**	**0.96**	**198**	*e*Pg	**Pg**	**11 57 52.6**	**+0.2**
	SNR=7.8						
SLE				*e*Sg	**Sg**	**11 58 05.4**	**+0.2**
	SNR=9.1						
SISB	**Singen-Sch Ber**	**0.99**	**179**	Pn	**Pn**	**11 57 53.3**	**+0.7**
KIZ	**Kirchzarten**	**0.99**	**224**	Pn	**Pn**	**11 57 52.9**	**+0.2**
KIZ				Pg	**Pg**	**11 57 53.7**	**+0.6**
KIZ				Sn	**Sn**	**11 58 06.6**	**+0.1**
FELD	**Feldberg**	**1.01**	**218**	⇑*i* Pn	**Pn**	**11 57 53.3**	**+0.4**
FELD	**Feldberg**	**1.01**	**218**	Pg	**Pg**	**11 57 53.5**	**0.0**
LIBD	**Limburg**	**1.03**	**240**	*e*Sg	**Sg**	**11 58 08.8**	**+1.1**
	SNR=3.5						
WLS	**Welschbruch**	**1.08**	**257**	Pg	**Pg**	**11 57 55.1**	**+0.2**
WLS				*e*Sg	**Sg**	**11 58 10.0**	**+0.5**
	SNR=5.4						
WLS	**Welschbruch**	**1.08**	**257**	Pg	**Pg**	**11 57 55.1**	**+0.2**
WLS				Sg	**Sg**	**11 58 10.2**	**+0.7**
CDF	**Champ du Feu**	**1.14**	**257**	*e*Pn	**Pn**	**11 57 55.7**	**+1.0**
CDF				*e*Pg	**Pg**	**11 57 56.4**	**+0.5**
CDF				*e*Sg	**Sg**	**11 58 11.2**	**+0.1**
	31nm,0.3s						
WILA	**Wila**	**1.26**	**181**	*e*Pg	**Pg**	**11 57 58.4**	**0.0**
	SNR=3.7						
WILA				*e*Sg	**Sg**	**11 58 15.3**	**0.0**
	SNR=30						
UBR	**Uberruh**	**1.26**	**141**	⇑*e*Pg	**Pg**	**11 57 58.5**	**+0.1**
UBR				Sg	**Sg**	**11 58 15.6**	**+0.2**
ECH	**Echery**	**1.27**	**250**	*e*Pg	**Pg**	**11 57 58.7**	**+0.1**
	SNR=3.6						
ECH				*e*Sg	**Sg**	**11 58 15.2**	**-0.4**
	SNR=11						
ECH	**Echery**	**1.27**	**250**	Pg	**Pg**	**11 57 57.8**	**-0.8**
ECH				Sg	**Sg**	**11 58 15.1**	**-0.5**
KAMOR	**Kamor**	**1.43**	**165**	*e*Pg	**Pg**	**11 58 02.4**	**+0.6**
	SNR=1.8						
MOF	**Molkenrain**	**1.46**	**236**	Pn	**Pn**	**11 57 59.1**	**-0.3**
MOF				Sg	**Sg**	**11 58 21.5**	**-0.4**
ABH	**Alteburg**	**1.51**	**324**	Pg	**Pg**	**11 58 03.3**	**-0.2**
DAVA	**Damuels**	**1.52**	**155**	⇑*i* PN	**Pn**	**11 58 02.0**	**+1.7**
DAVA				*i* PG	**Pg**	**11 58 03.4**	**-0.3**
DAVA				*i* SG	**Sg**	**11 58 24.0**	**0.0**
	20nm,0.4s						
HINF	**Hinteralfeld**	**1.64**	**239**	*e*Pn	**Pn**	**11 58 01.5**	**-0.4**
HINF				*e*Pg	**Pg**	**11 58 05.3**	**-0.6**
HINF				*e*Sn	**Sn**	**11 58 21.8**	**-1.1**
HINF				*e*Sg	**Sg**	**11 58 26.7**	**-1.1**
	22nm,0.3s						
BOURR	**Bourrignon**	**1.72**	**222**	*e*Sg	**Sg**	**11 58 29.6**	**-0.9**
	SNR=1.7						
GRFO	**Grafenberg**	**1.81**	**55**	Sg	**Sg**	**11 58 30.4**	**-3.1**
HAU	**Haudompre**	**1.85**	**250**	*e*Pn	**Pn**	**11 58 04.7**	**-0.3**
HAU				*e*Pg	**Pg**	**11 58 09.4**	**-0.8**
HAU				*e*Sn	**Sn**	**11 58 27.1**	**-1.3**
HAU				*e*Sg	**Sg**	**11 58 33.0**	**-2.0**
	15nm,0.2s						
MOTA	**Moosalm**	**1.97**	**132**	⇑*i* PN	**Pn**	**11 58 07.5**	**+0.8**
MOTA				*i* PG	**Pg**	**11 58 11.6**	**-0.9**
MOTA				*i* SN	**Sn**	**11 58 33.3**	**+1.9**
MOTA				*i* SG	**Sg**	**11 58 36.7**	**-2.1**
	7.5nm,0.4s						
RFYF	**Reffroy**	**2.30**	**270**	*e*Sg	**Sg**	**11 58 48.1**	**-1.6**
	12nm,0.2s						
MOX	**Moxa**	**2.63**	**40**	*e*Sg	**Sg**	**11 58 56.6**	**-4.2**
	SNR=2.0						
SFTF	**Sexfontaines**	**2.64**	**261**	*e*Sg	**Sg**	**11 58 58.1**	**-3.0**
	6.6nm,0.2s						
CABF	**La Chapelle**	**2.82**	**224**	*e*Sg	**Sg**	**11 59 03.5**	**-3.7**
	1.7nm,0.2s						
GEC2	**GERESS Array S**	**3.16**	**85**	*e*Sg	**Sg**	**11 59 13.4**	**-4.9**
	SNR=1.5						
LOR	**Lormes**	**3.69**	**250**	*e*Sg	**Sg**	**11 59 30.7**	**-5.4**
	3.4nm,0.3s						

*IDC **11** 12:37:03.2±1.6,3.00N×122.41E,mb3.8/3,mb1 4.0/3, mb1mx3.6/15,Error ellipse: s-maj=217.0km s-min=24.9km az=62.0*

ISC 11 12:37:05.8±1.6,2.9N±0.5×122.1E±0.7,h33km,n9,σ0§84/9, mb4.2/6,Celebes Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**25.66**	**153**	P	**P**	**12 42 32.9**	**-1.7**
	1.2nm,0.8s,mb3.5,baz=330,slow=12,SNR=5.6						
ASAR	**Alice Springs**	**28.77**	**157**	P	**P**	**12 43 04.7**	**+1.8**
	0.6nm,0.6s,mb3.5,baz=333,slow=7.6,SNR=7.6						
GUN	**Gumba**	**42.59**	**309**	*eP*	**P**	**12 45 01.4**	**+0.6**
	26nm,0.7s,mb5.1						
PKI	**Pulchoki**	**42.79**	**309**	*eP*	**P**	**12 45 02.3**	**-0.1**
KKN	**Kakani**	**43.00**	**309**	*eP*	**P**	**12 45 04.1**	**0.0**
	5.2nm,0.5s,mb4.5						
DMN	**Daman**	**43.05**	**309**	*eP*	**P**	**12 45 04.5**	**0.0**
	7.1nm,0.6s,mb4.6						
GKN	**Gorkha**	**43.60**	**309**	*eP*	**P**	**12 45 08.6**	**-0.4**
KOLN	**Koldanda**	**44.30**	**308**	*eP*	**P**	**12 45 14.2**	**-0.5**
MKAR	**Makanchi Array**	**55.72**	**328**	P	**P**	**12 46 41.9**	**+0.3**
	1.8nm,0.8s,mb4.1,baz=121,slow=8.8,SNR=10						

*NAO **11** 13:02:08.0±5.2,61.01N×10.62E,ML2.0*
*NEIC **11** 13:02:08.7,60.97N×10.60E,After BER.*
*BER **11** 13:02:08.7±1.9,60.97N×10.60E,ML2.0(NAO), Suspected explosion*

ISC 11 13:02:06.1±3.2,61.0N±0.2×10.4E±0.4,n4,σ0§51/5, Southern Norway

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
NAO01	**NORSAR Array S**	**0.26**	**119**	*eP*	**Pg**	**13 02 11.3**	**0.0**
NAO01				*eS*	**Sg**	**13 02 14.9**	**+0.1**
NB2	**NORSAR Subarra**	**0.39**	**80**	Pg	**Pg**	**13 02 14.0**	**+0.1**
NB2				Lg		13 02 18.0	
NB2				Rg		13 02 20.5	
NC6	**NORSAR Subarra**	**0.56**	**114**	Pg	**Pg**	**13 02 16.5**	**-0.7**
NC6				Lg		13 02 22.2	
NC6				Rg		13 02 27.4	
HFS	**Hagfors**	**1.82**	**116**	Pn	**Pn**	**13 02 39.4**	**+0.4**
	baz=306,slow=18						
HFS				Lg		13 03 01.9	
	baz=295,slow=28						

IDC 11 13:10:24.1±19.0,16.22S×175.36W,mb4.4/5,mb1 4.5/5, mb1mx4.0/15,1D,Error ellipse: s-maj=354.0km s-min=136.6km az=78.0,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CTA	**Charters Tower**	**36.63**	**258**	P	P	13 17 32.6	-1.7
	3.7nm,0.9s,baz=85,slow=11,SNR=3.8						
STKA	**Stephens Creek**	**42.00**	**240**	⇓*i* P	P	13 18 17.7	-1.2
	4.6nm,1.3s						
STKA	**Stephens Creek**	**42.00**	**240**	P	P	13 18 17.7	-1.2
	3.9nm,0.6s,baz=94,slow=7.7,SNR=13						
WB2	**Warramunga Arr**	**47.82**	**258**	*eP*	P	13 19 03.2	-2.5
WRA	**Warramunga Arr**	**47.83**	**258**	P	P	13 19 03.4	-2.4
	1.6nm,0.5s,baz=95,slow=7.3,SNR=63						
AS12	**Alice Springs**	**48.07**	**253**	*eP*	P	13 19 02.0	-5.6
	8.5nm,0.6s						
ASAR	**Alice Springs**	**48.07**	**253**	P	P	13 19 05.5	-2.1
	13nm,0.5s,baz=88,slow=8.4,SNR=174						
FITZ	**Fitzroy Crossi**	**56.20**	**259**	P	P	13 20 06.4	-2.2
	0.6nm,0.3s,baz=178,slow=14,SNR=3.8						

ISK 11 13:30:32.0,38.90N×43.65E,h5km,MD3.8,2C,Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res

mb1mx3.6/15,ML3.4/1,Error ellipse: s-maj=108.0km s-min=23.5km az=45.0
*NEIC **11** 13:50:50.9±1.3, 10.90S×113.33E,h10km,mb4.5/1,Error ellipse: s-maj=23.0km s-min=11.7km az=78.0*
*DJA **11** 13:50:50.1±0.9, 11.05S×113.50E,h160km,MD4.8/4, ML5.0/4,Error ellipse: s-maj=28.7km s-min=19.8km az=131.0*

ISC 11 13:50:52.6±1.3,**10.97S**±0.06×**113.5E**±0.1,**h33**km,**n10, σ1§46/16, mb3.8/4,1C-3D,South of Jawa**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
INGI	**Ingas**	**2.71**	**38**	**⇓**	*e*P	**Pn**		**13 51 34.7**	**-0.3**
	561nm,0.3s								
INGI					*e*S	**Sn**		**13 52 08.2**	**+1.1**
KELI	**Kelakatan**	**2.92**	**21**	**⇑**	*e*P	**Pn**		**13 51 38.1**	**+0.1**
	560nm,0.3s								
KELI					*e*S	**Sn**		**13 52 14.0**	**+1.6**
RATI	**Rata**	**3.03**	**43**	**⇓**	*e*P	**Pn**		**13 51 39.1**	**-0.4**
	973nm,0.2s								
RATI					*e*S	**Sn**		**13 52 15.1**	**0.0**
KEDI	**Kedomdong**	**3.60**	**47**	**⇓**	*e*P	**Pn**		**13 51 47.0**	**-0.6**
	277nm,0.2s								
KEDI					*e*S	**Sn**		**13 52 26.7**	**-2.9**
FITZ	**Fitzroy Crossi**	**13.76**	**122**		Pn	**P**		**13 54 05.3**	**-2.5**
	0.2nm,0.3s,baz=315,slow=7.1,SNR=6.4								
FITZ					Sn	**S**		**13 56 27.4**	**-13**
	0.3nm,0.3s,baz=180,slow=20,SNR=4.7								
WRA	**Warramunga Arr**	**22.00**	**116**		P	**P**		**13 55 46.6**	**+0.9**
	0.7nm,0.5s,mb3.4,baz=290,slow=11,SNR=19								
WRA					S	**S**		**13 59 44.4**	**+2.8**
	0.3nm,0.8s,baz=291,slow=26,SNR=4.8								
WRAB	**Tennant Creek**	**22.01**	**116**		*e*P	**P**		**13 55 47.9**	**+2.1**
	23nm,1.3s,mb4.5								
ASAR	**Alice Springs**	**23.21**	**126**		P	**P**		**13 55 59.6**	**+1.8**
	0.9nm,0.5s,mb3.5,baz=302,slow=9.4,SNR=20								
MKAR	**Makanchi Array**	**63.90**	**337**		P	**P**		**14 01 22.8**	**-1.7**
	0.4nm,0.4s,mb3.8,baz=144,slow=6.9,SNR=7.5								
MKAR	**Makanchi Array**	**63.90**	**337**		P	**P**		**14 01 22.8**	**-1.7**

*IDC **11** 14:36:45.6±0.7,6.73N×72.96W,h151km±8km,mb3.4/5, mb1 3.8/8,mb1mx3.5/22,Error ellipse: s-maj=23.5km s-min=7.3km az=129.0*
*NEIC **11** 14:36:47.1±0.6,6.72N×72.99W,h168km±7km,mb4.0/4, Error ellipse: s-maj=12.6km s-min=8.4km az=116.0*
*FUNV **11** 14:36:47.7,6.86N×73.03W,h154km,MW3.3*

ISC 11 14:36:45.1±0.5,**6.81N**±0.06×**72.98W**±0.06,**h162**km±6km, **n30,σ1§01/34,mb3.8/7,7C-4D,Northern Colombia**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
VIGV	**El Vigia**	**2.13**	**35**	**⇑**	*e*P		**P**	**14 37 28.9**	**+6.1**
VIGV					*e*S		**S**	**14 37 59.4**	**+7.5**
ROSC	**El Rosal**	**2.36**	**215**		P		**P**	**14 37 26.9**	**+1.2**
	51nm,0.3s,baz=63,slow=14,SNR=40								
ROSC					S		**S**	**14 37 55.3**	**-1.5**
	73nm,0.3s,baz=147,slow=22,SNR=16								
SOCV	**Socops**	**2.57**	**55**		*e*P		**P**	**14 37 29.4**	**+1.2**
SOCV					*e*S		**S**	**14 37 59.6**	**-1.7**
SDV	**Santo Domingo**	**3.11**	**48**		P		**P**	**14 37 36.5**	**+1.5**
	28nm,0.3s,baz=239,slow=5.4,SNR=166								
SDV					S		**S**	**14 38 13.1**	**-0.2**
	55nm,0.3s,baz=302,slow=14,SNR=19								
ELOV	**Elorza**	**3.48**	**87**	**⇑**	*e*P		**P**	**14 37 41.0**	**+1.3**
VIRV	**Villa del Rosa**	**3.71**	**9**	**⇓**	*e*P		**P**	**14 37 42.0**	**-0.8**
VIRV					*e*S		**S**	**14 38 22.7**	**-4.5**
CURV	**Curarigua**	**4.37**	**43**	**⇓**	*e*P		**P**	**14 37 51.9**	**+0.6**
DABV	**Dabajuro**	**4.70**	**29**	**⇑**	*e*P		**P**	**14 37 56.0**	**+0.4**
SIQV	**Siquisique**	**4.94**	**39**	**⇑**	*e*P		**P**	**14 37 58.7**	**-0.1**
BAUV	**El Baul**	**5.33**	**66**	**⇓**	*e*P		**P**	**14 38 03.3**	**-0.6**
MONV	**Montecano**	**5.91**	**30**	**⇑**	*e*P		**P**	**14 38 11.1**	**-0.5**
TURV	**Turiamo**	**6.24**	**54**	**⇓**	*e*P		**P**	**14 38 15.5**	**-0.5**
CAOV	**Caicara del Or**	**6.63**	**85**	**⇑**	*e*P		**P**	**14 38 20.3**	**-0.8**
BIRV	**Birongo**	**7.57**	**61**		*e*P		**P**	**14 38 33.2**	**-0.5**
CUPV	**Cecpira**	**7.81**	**65**	**⇑**	*e*P		**P**	**14 38 36.7**	**-0.3**
OTAV	**Otavalo**	**8.51**	**220**		*e*P		**P**	**14 38 47.2**	**+1.0**
	2.0nm,0.3s								
PCRV	**Puerto La Cruz**	**8.91**	**67**		P		**P**	**14 38 54.4**	**+3.0**
	1.7nm,0.3s,baz=258,slow=5.7,SNR=3.5								
PCRV					S		**S**	**14 40 30.4**	**+0.3**
	1.5nm,0.3s,baz=167,slow=19,SNR=3.4								
LPAZ	**La Paz**	**23.44**	**168**		P		**P**	**14 41 41.9**	**+0.8**
	1.1nm,0.7s,mb3.4,baz=350,slow=6.1,SNR=4.5								
LPAZ	**La Paz**	**23.44**	**168**		*e*P		**P**	**14 41 41.2**	**+0.2**
	0.8nm,0.8s,mb3.2								
LVC	**Limon Verde**	**29.51**	**172**		P		**P**	**14 42 34.5**	**-2.1**
	3.3nm,1.1s,mb4.0								
PLAL	**Pickwick Lake**	**31.30**	**336**		P		**P**	**14 42 52.5**	**+0.2**
MIAR	**Mount Ida**	**33.51**	**328**		*e*P		**P**	**14 43 09.8**	**-1.5**
	14nm,2.1s,mb4.3								
TXAR	**Lajitas Array**	**36.57**	**312**		P		**P**	**14 43 38.1**	**+0.9**
	1.3nm,0.3s,mb4.0,baz=125,slow=11,SNR=4.5								
ULM	**Lac du Bonnet**	**47.34**	**340**		P		**P**	**14 45 04.1**	**-0.3**
	1.6nm,0.4s,mb4.0,baz=173,slow=8.1,SNR=3.8								
ULM	**Lac du Bonnet**	**47.34**	**340**		P		**P**	**14 45 04.1**	**-0.3**
PDAR	**Pinedale Array**	**48.17**	**324**		P		**P**	**14 45 11.7**	**+0.8**
	0.3nm,0.5s,mb3.2,baz=131,slow=9.6,SNR=3.3								
YKA	**Yellowknife Ar**	**63.32**	**340**		P		**P**	**14 46 58.6**	**-0.3**
	0.6nm,0.6s,mb3.6,baz=132,slow=6.5,SNR=16								
YKA					pP		pP	14 47 35.7	-1.6
	0.2nm,0.7s,baz=131,slow=7.1,SNR=4.7								
YKA	**Yellowknife Ar**	**63.32**	**340**		P		**P**	**14 46 58.6**	**-0.3**
YKA					pP		pP	14 47 35.7	-1.6
ASAR	**Alice Springs**	**149.22**	**234**		PKPbc		PKPdf	14 56 16.4	+5.6
	0.5nm,0.5s,baz=133,slow=3.4,SNR=6.0								
WRA	**Warramunga Arr**	**150.45**	**241**		PKPbc		PKPdf	14 56 19.5	+6.8
	0.4nm,0.4s,baz=107,slow=2.8,SNR=7.1								

*MOS **11** 14:45:07.4±1.2,41.77N×138.22E,h231km,mb3.9/1,Error ellipse: s-maj=20.5km s-min=13.4km az=102.8*
*NEIC **11** 14:45:08.1±0.8,41.70N×138.29E,h225km±9km,mb4.1/7, Error ellipse: s-maj=12.8km s-min=8.0km az=155.0*
*IDC **11** 14:45:08.2±1.3,41.65N×138.27E,h229km±12km, mb3.5/10,mb1 3.7/13,mb1mx3.4/29,Error ellipse: s-maj=16.0km s-min=11.9km az=159.0*
*JMA **11** 14:45:10.4±0.3,41.86N×138.33E,h249km±2km,M3.3*

ISC 11 14:45:09.2±0.3,**41.81N**±0.04×**138.35E**±0.07,**h249**km±4km, **n51,σ1§13/64,mb3.8/15,1D,Eastern Sea of Japan**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
JOSM	**Okushiri--Mats**	**0.88**	**71**		P		**P**	**14 45 44.4**	**+0.8**
JOSM					*e*S		**S**	**14 46 10.9**	**+0.4**
JSH	**Shimam**	**1.51**	**56**		P		**P**	**14 45 48.9**	**+1.1**
JYM2	**Yakumo 2**	**1.54**	**78**		P		**P**	**14 45 49.3**	**+1.3**
JYM2					*e*S		**S**	**14 46 19.6**	**+1.5**
JKB	**Kayabe**	**2.00**	**87**		P		**P**	**14 45 52.8**	**+1.0**
JOT	**Ohata**	**2.07**	**101**		P		**P**	**14 45 53.3**	**+0.9**
JANG	**Nango**	**2.79**	**120**		P		**P**	**14 45 59.6**	**-0.1**
JOM	**Ohasama**	**3.23**	**135**		P		**P**	**14 46 04.8**	**+0.2**
JYK	**Kaneyama**	**3.27**	**151**		P		**P**	**14 46 05.9**	**+0.9**
JYK					*e*S		**S**	**14 46 49.4**	**+1.0**
JNBK	**Urakawa-nobuka**	**3.31**	**80**		P		**P**	**14 46 05.9**	**+0.4**
JNBK					*e*S		**S**	**14 46 47.9**	**-1.3**
JFR	**Furan**	**3.42**	**65**		P		**P**	**14 46 07.2**	**+0.5**
JFR					*e*S		**S**	**14 46 49.4**	**-2.0**
JMK	**Ichinoseki**	**3.60**	**142**		P		**P**	**14 46 08.8**	**+0.1**
JMK					*e*S		**S**	**14 46 55.1**	**+0.1**
JCH	**Churui**	**3.81**	**76**		P		**P**	**14 46 11.3**	**+0.1**
JCH					*e*S		**S**	**14 46 57.1**	**-2.3**
JKK2	**Kamakawa 2**	**3.83**	**56**		P		**P**	**14 46 12.1**	**+0.6**
JKK2					*e*S		**S**	**14 46 58.3**	**-1.6**
ASAJ	**Asahikawa**	**3.88**	**52**		P		**P**	**14 46 12.5**	**+0.5**
	5.0nm,0.3s,baz=251,slow=16,SNR=31								
ASAJ					S		**S**	**14 47 00.7**	**-0.1**
	1.8nm,0.3s,baz=20,slow=29,SNR=9.4								
JAR	**Ashorobuto**	**4.27**	**68**		P		**P**	**14 46 16.2**	**-0.4**
JAR					*e*S		**S**	**14 47 05.8**	**-3.4**
JMM	**Marumori**	**4.36**	**154**		P		**P**	**14 46 17.9**	**+0.2**
JMM					*e*S		**S**	**14 47 10.9**	**-0.2**
JSE	**Soyaes**	**4.41**	**43**		P		**P**	**14 46 19.1**	**+0.8**
JTKR	**Abashiri--Toko**	**4.62**	**60**		P		**P**	**14 46 21.0**	**+0.2**
JTKR					*e*S		**S**	**14 47 14.9**	**-1.8**
MAJO	**Matsushiro**	**5.26**	**181**		P		**P**	**14 46 25.1**	**-3.6**
YSS	**Yuzh-Sakhalins**	**6.03**	**30**	**⇓**	*e*P		**P**	**14 46 38.3**	**0.0**
YSS					*e*			14 47 48.0	
YSS					pmax		pmax		
	comp=N,20nm,1.0s								
YSS	**Yuzh-Sakhalins**	**6.03**	**30**		*e*P		**P**	**14 46 38.4**	**+0.1**
	comp=N,10nm,0.4s								
JHJ	**Hachijo jima 2**	**8.75**	**172**		P		**P**	**14 47 10.4**	**-2.2**
	comp=N,9.6nm,0.3s,baz=84,slow=9.2,SNR=2.3								
JHJ					S		**S**	**14 48 44.0**	**-5.5**
	comp=N,5.7nm,0.3s,baz=226,slow=19,SNR=3.6								
KS15	**Wonju Array Si**	**9.18**	**245**		*e*P		**P**	**14 47 14.1**	**-4.1**
HIA	**Hailar**	**15.00**	**306**		*e*P		**P**	**14 48 29.1**	**-1.4**
HIA					pmax		pmax		
	comp=Z,5.0nm,0.8s								
HIA	**Hailar**	**15.00**	**306**		*e*P		**P**	**14 48 29.1**	**-1.4**
	comp=Z,5.0nm,0.8s								
CBIJ	**Chichi jima**	**15.01**	**167**		P		**P**	**14 48 29.4**	**-1.4**
	comp=Z,1.8nm,0.3s,baz=258,slow=22,SNR=2.3								
CBIJ					S		**S**	**14 51 06.7**	**-4.0**
	comp=Z,4.0nm,0.3s,baz=273,slow=17,SNR=2.5								
BOD	**Bodaibo**	**22.25**	**324**		*e*P		**P**	**14 49 43.6**	**-2.3**
SONM	**Songino Array**	**23.34**	**296**		P		**P**	**14 49 56.4**	**+0.1**
	comp=Z,1.2nm,0.6s,mb3.6,baz=83,slow=8.2,SNR=9.3								
FX1	**Attu Island--F**	**25.81**	**53**		P		**P**	**14 50 20.1**	**+1.1**
	comp=Z,3.3nm,0.3s,mb4.4,baz=32,slow=18,SNR=10								
ENH	**Enshi**	**25.90**	**253**		P		**P**	**14 50 18.9**	**-1.3**
	comp=Z,8.8nm,1.5s,mb4.2								
ZAL	**Zalesovo**	**37.04**	**308**		P		**P**	**14 51 56.0**	**-0.6**
	comp=Z,2.2nm,0.4s,mb4.0,baz=307,slow=9.3,SNR=7.3								
MKAR	**Makanchi Array**	**39.71**	**297**		P		**P**	**14 52 17.8**	**-0.9**
	comp=Z,1.5nm,0.5s,mb3.7,baz=87,slow=9.8,SNR=16								
KURK	**Kurchatov**	**41.22**	**304**		*e*P		**P**	**14 52 29.6**	**-1.4**
GUN	**Gumba**	**44.58**	**269**		*e*P		**P**	**14 52 57.4**	**-0.8**
	comp=Z,9.4nm,0.4s,mb4.5								
KKN	**Kakani**	**45.09**	**269**		*e*P		**P**	**14 53 02.7**	**+0.4**
PKI	**Pulchoki**	**45.11**	**269**		*e*P		**P**	**14 53 03.4**	**+1.0**
DMN	**Daman**	**45.32**	**269**		*e*P		**P**	**14 53 05.2**	**+1.1**
GKN	**Gorkha**	**45.46**	**270**		*e*P		**P**	**14 53 05.5**	**+0.3**
	comp=Z,3.8nm,0.3s,mb4.2								
BVAR	**Borovoye Array**	**45.68**	**308**		P		**P**	**14 53 05.7**	**-0.8**
	comp=Z,0.4nm,0.3s,mb3.2,baz=57,slow=7.9,SNR=7.5								
KOLN	**Koldanda**	**46.36**	**271**		*e*P		**P**	**14 53 13.1**	**+0.9**
ZRNK	**Zerenda**	**46.50**	**309**		*e*P		**P**	**14 53 12.0**	**-0.9**
ILAR	**Eielson Array**	**46.82**	**35**		P		**P**	**14 53 15.6**	**+0.3**
	comp=Z,2.1nm,0.6s,mb3.6,baz=280,slow=8.3,SNR=37								
INK	**Inuvik**	**51.27**	**28**		*e*P		**P**	**14 53 49.1**	**+0.1**
INK					pmax		pmax		
	comp=Z,2.0nm,0.4s								
INK	**Inuvik**	**51.27**	**28**		*e*P		**P**	**14 53 49.1**	**+0.1**
	comp=Z,1.6nm,0.4s,mb3.8								
YKA	**Yellowknife Ar**	**60.89**	**31**		P		**P**	**14 54 56.9**	**-0.2**
	comp=Z,0.5nm,0.5s,mb3.4,baz=303,slow=6.8,SNR=14								
HFS	**Hagfors**	**68.77**	**334**		P		**P**	**14 55 49.3**	**+1.9**
	comp=Z,1.6nm,0.8s,mb3.7,baz=63,slow=9.7,SNR=2.6								
HWUT	**Hardware Ranch**	**75.71**	**47**		P		**P**	**14 56 29.2**	**+0.6**
	comp=Z,1.1nm,0.8s,mb3.5								
PDAR	**Pinedale Array**	**75.98**	**45**		P		**P**	**14 56 31.1**	**+1.1**
	comp=Z,0.7nm,0.5s,mb3.6,baz=282,slow=1.0,SNR=7.6								
PV10	**Paradox Valley**	**79.36**	**48**		P		**P**	**14 56 50.8**	**+2.3**
TXAR	**Lajitas Array**	**89.00**	**50**		P		**P**	**14 57 38.4**	**+1.6**
	comp=Z,0.4nm,0.3s,mb3.8,baz=315,slow=3.8,SNR=3.6								
LPAZ	**La Paz**	**145.87**	**50**		PKPbc		PKPbc	15 04 20.2	+0.8
	comp=Z,0.5nm,0.5s,baz=350,slow=8.5,SNR=3.3								

*DJA **11** 14:47:04.3±1.1,10.73S×115.82E,h2km,MD5.0/3, ML5.6/3,Error ellipse: s-maj=29.1km s-min=22.7km az=28.0*
*NEIC **11** 14:47:18.6±0.6,9.66S×115.68E,h66km±6km,mb4.5/5, Error ellipse: s-maj=14.5km s-min=5.1km az=49.0*
*IDC **11** 14:47:22.0±5.3,9.57S×115.91E,h94km±50km,mb3.7/10, mb1 3.9/11,mb1mx3.8/18,Error ellipse: s-maj=33.5km s-min=11.0km az=51.0*

ISC 11 14:47:18.3±0.9,**9.60S**±0.10×**115.7E**±0.1,**h79**km±8km,**n28, σ0§67/34,mb4.1/12,2C-3D,South of Bali**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
RATI	**Rata**	**0.89**	**347**	**⇓**	*e*P		**P**	**14 47 35.9**	**-0.2**
	3μm,0.2s								
RATI					*e*Sn		**S**	**14 48 00.8**	**+11**
INGI	**Ingas**	**0.96**	**323**	**⇓**	*e*Pn		**P**	**14 47 36.0**	**-1.0**
INGI					*e*Sn		**S**	**14 48 00.8**	**+10**
KEDI	**Kedomdong**	**1.17**	**19**	**⇓**	*e*Pn		**P**	**14 47 40.6**	**+1.0**
	4μm,0.3s								
KELI	**Kelakatan**	**1.84**	**318**	**⇑**	*e*Pn		**P**	**14 47 49.1**	**+0.6**
	2μm,0.2s								
KELI					*e*Sn		**S**	**14 48 20.2**	**+9.4**
FITZ	**Fitzroy Crossi**	**12.80**	**132**		*e*P		**P**	**14 50 12.8**	**-5.8**
	4.6nm,0.5s								
FITZ					*e*S		**S**	**14 52 26.8**	**-13**
FITZ	**Fitzroy Crossi**	**12.80**	**132**		P		**P**	**14 50 12.7**	**-5.9**
	1.2nm,0.3s,baz=347,slow=7.8,SNR=24								
FITZ					S		**S**	**14 52 25.9**	**-14**
	1.2nm,0.3s,baz=189,slow=21,SNR=6.5								
WRA	**Warramunga Arr**	**20.70**	**122**		P		**P**	**14 51 53.7**	**-0.6**
	2.3nm,0.5s,baz=295,slow=12,SNR=44								
WRA					S		**S**	**14 55 38.6**	**+2.6**
	0.6nm,0.6s,baz=289,slow=24,SNR=4.8								
WRAB	**Tennant Creek**	**20.71**	**122**		*e*P		**P**	**14 51 53.7**	**-0.6**
	12nm,0.9s								
WB2	**Warramunga Arr**	**20.71**	**122**	**⇑**	*i*P		**P**	**14 51 53.9**	**-0.5**
ASAR	**Alice Springs**	**22.30**	**131**		P		**P**	**14 52 10.4**	**+0.3**
	3.2nm,0.4s,mb4.0,baz=306,slow=8.5,SNR=104								
NWAO	**Narrogin (SRO)**	**23.26**	**177**		P		**P**	**14 52 20.1**	**+0.7**
	8.7nm,1.2s,mb4.0,baz=293,slow=21,SNR=5.7								
NWAO	**Narrogin (SRO)**	**23.26**	**177**		P		**P**	**14 52 20.4**	**+1.0**
	57nm,1.5s,mb4.7								
PMG	**Port Moresby**	**31.00**	**92**		P		**P**	**14 53 30.9**	**+0.2**
	12nm,1.0s,mb4.6								
CTAO	**Charters Tower**	**31.24**	**113**		P		**P**	**14 53 32.1**	**-0.7**
	21nm,1.8s,mb4.6								
CMAR	**Chiang Mai Arr**	**32.43**	**329**		P		**P**	**14 53 43.9**	**+0.8**
	1.2nm,0.8s,mb3.7,baz=159,slow=7.1,SNR=5.9								
STKA	**Stephens Creek**	**32.65**	**137**		P		**P**	**14 53 45.3**	**+0.4**
	2.4nm,0.5s,mb4.2,baz=306,slow=6.6,SNR=8.1								
LSA	**Lhasa**	**45.68**	**330**		*e*P		**P**	**14 55 33.4**	**+0.2**
	1.4nm,0.4s,mb4.0								
SONM	**Songino Array**	**57.77**	**353**		P		**P**	**14 57 02.9**	**-0.7**
	0.8nm,0.6s,mb3.9,baz=175,slow=7.5,SNR=5.8								
SONM					PcP		PcP	14 57 56.0	+0.9
	0.4nm,0.5s,baz=148,slow=3.2,SNR=3.0								
MKAR	**Makanchi Array**	**63.57**	**335**		P		**P**	**14 57 42.6**	**-0.3**
	0.9nm,0.4s,mb3.9,baz=149,slow=7.2,SNR=13								
KURK	**Kurchatov**	**68.15**	**336**		*e*P		**P**	**14 58 11.4**	**-0.6**
ZAL	**Zalesovo**	**68.49**	**341**		P		**P**	**14 58 13.6**	**-0.4**
	1.3nm,0.3s,mb4.2,baz=1.5,slow=12,SNR=4.7								
ZAL	**Zalesovo**	**68.49**	**341**		P		**P**	**14 58 13.6**	**-0.4**
VNDA	**Vanda**	**71.92**	**171**		P		**P**	**14 58 35.1**	**+0.6**
	0.4nm,0.5s,mb3.5,baz=322,slow=8.7,SNR=4.5								
VNDA	**Vanda**	**71.92**	**171**		P		**P**	**14 58 33.3**	**-1.2**
	0.4nm,0.8s,mb3.3								
BVAR	**Borovoye Array**	**73.34**	**333**		P		**P**	**14 58 44.0**	**+0.9**
	2.3nm,0.9s,mb4.0,baz=135,slow=10,SNR=8.0								
BRVK	**Borovoye**	**73.41**	**333**		P		**P**	**14 58 43.4**	**-0.1**
ZRNK	**Zerenda**	**73.91**	**333**		*e*P		**P**	**14 58 46.5**	**+0.1**
SNAA	**Sanae**	**89.55**	**196**		*e*P		**P**	**15 00 07.6**	**+0.1**

*GUC **11** 14:55:53.0±0.6,32.26S×71.41W,h49km±4km,MD4.0, ML3.6*
*NEIC **11** 14:55:53.0,32.26S×71.41W,h49km,MD4.0(GUC),After GUC.*

ISC 11 14:55:53.4±0.6,**32.25S**±0.02×**71.46W**±0.07,**h46**km±11km, **n20,σ0§37/34,8C-3D,Near coast of central Chile**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
PACH	**Papudo**	**0.28**	**176**	**⇑**	*i*P		**P**	**14 56 02.1**	**+0.1**
PTCH	**Petorca**	**0.45**	**91**	**⇓**	*i*P		**P**	**14 56 03.7**	**-0.1**
PTCH					*i* S		**S**	**14 56 11.0**	**0.0**
PTCH					AMP			14 56 12.3	
	comp=N,21μm,0.3s								
ILCH	**Illapel**	**0.66**	**22**	**⇓**	*i*P		**P**	**14 56 06.5**	**0.0**
ILCH					*i* S		**S**	**14 56 16.0**	**-0.1**
ILCH					AMP			14 56 16.9	
	comp=N,6μm,0.2s								
IHA	**Instituto Hidr**	**0.79**	**191**	**⇑**	*i*P		**P**	**14 56 08.1**	**0.0**
IHA					*i* S		**S**	**14 56 19.3**	**+0.3**
ROCH	**El Roble**	**0.81**	**152**	**⇑**	*i*P		**P**	**14 56 08.5**	**0.0**
ROCH					*i* S		**S**	**14 56 20.3**	**+0.7**
JACH	**Jahuel**	**0.85**	**120**	**⇑**	*i*P		**P**	**14 56 08.8**	**-0.2**
JACH					*i* S		**S**	**14 56 20.3**	**-0.3**
PEL	**Peldehue**	**1.10**	**144**	**⇑**	*i*P		**P**	**14 56 12.6**	**0.0**
PEL					*i* S		**S**	**14 56 26.6**	**-0.3**
PEL					AMP			14 56 27.7	
	comp=N,2μm,0.3s								
CMCH	**Combarbala**	**1.15**	**20**	**⇑**	*i*P		**P**	**14 56 13.4**	**+0.2**
CMCH					*i* S		**S**	**14 56 28.4**	**+0.5**
RCDM	**Rinconada Maip**	**1.35**	**156**		*e*P		**P**	**14 56 15.9**	**-0.4**
RCDM					*i* S		**S**	**14 56 32.8**	**-0.4**
RCDM					AMP			14 56 41.8	
	comp=N,1μm,0.1s								
CLCH	**Cerro Calan**	**1.38**	**146**		*e*P		**P**	**14 56 16.0**	**-0.6**
CLCH					*i* S		**S**	**14 56 33.5**	**-0.5**
CLCH					AMP			14 56 35.7	
	comp=N,882nm,0.8s								
CLCH					AMP			14 56 38.1	
	comp=E,1μm,0.3s								
FCH	**Farellones**	**1.46**	**138**	**⇓**	*i*P		**P**	**14 56 17.6**	**-0.1**
FCH					*i* S		**S**	**14 56 36.3**	**+0.5**
FCH					AMP			14 56 39.7	
	comp=N,469nm,0.2s								
TACH	**Talagante**	**1.46**	**163**		*e*P		**P**	**14 56 17.9**	**+0.1**
ANTU	**Antumapu**	**1.48**	**152**		*i* P		**P**	**14 56 18.2**	**+0.1**
ANTU					*i* S		**S**	**14 56 36.8**	**+0.3**
ANTU					AMP			14 56 42.6	
	comp=E,882nm,0.3s								
PCH	**Pirque**	**1.58**	**150**		*e*P		**P**	**14 56 19.1**	**-0.4**
OVCH	**Ovalle**	**1.66**	**8**		*i* P		**P**	**14 56 20.0**	**-0.5**
OVCH					*i* S		**S**	**14 56 40.8**	**+0.1**
OVCH					AMP			14 56 45.2	
	comp=E,2μm,0.4s								
LNV	**Longovilo**	**1.70**	**179**		*e*P		**P**	**14 56 20.3**	**-0.8**
CHCH	**Chadas Angostu**	**1.81**	**158**		*e*P		**P**	**14 56 23.3**	**+0.6**
CHCH					*i* S		**S**	**14 56 44.1**	**-0.3**
LMEL	**Las Melosas**	**1.91**	**147**	**⇑**	*i*P		**P**	**14 56 24.6**	**+0.5**
LMEL					*i* S		**S**	**14 56 47.3**	**+0.4**
LMEL					AMP			14 56 54.1	
	comp=N,683nm,0.1s								
TLL	**Tololo Astrono**	**2.15**	**15**		*e*P		**P**	**14 56 27.6**	**0.0**
TLL					AMP			14 57 01.1	
	comp=N,1μm,0.5s								
CICH	**Cipreses**	**2.24**	**157**	**⇑**	*i*P		**P**	**14 56 29.4**	**+0.7**

DJA 11 15:36:08.9±0.9,**9.75S**×**115.60E**,**h2**km,**ML4.0**/4,**3C-3D, Error ellipse: s-maj=21.1km s-min=13.5km az=164.0, South of Bali**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
RATI	**Rata**	**1.02**	**356**	**⇓**	*e*Pn		Pn	**15 36 26.9**	**-3.2**
	269nm,0.2s								
RATI					*e*Sn		Sn	**15 36 40.9**	**-4.3**
INGI	**Ingas**	**1.03**	**334**		*e*Pn		Pn	**15 36 27.0**	**-3.2**
	405nm,0.2s								
INGI				**⇑**	*e*Sn		Sn	**15 36 39.8**	**-5.6**
KEDI	**Kedomdong**	**1.35**	**22**	**⇓**	*e*Pn		Pn	**15 36 31.7**	**-3.1**
	72nm,0.2s								
KEDI				**⇑**	*e*Sn		Sn	**15 36 48.8**	**-4.8**
KELI	**Kelakatan**	**1.88**	**324**	**⇑**	*e*Pn		Pn	**15 36 39.8**	**-2.5**
	100nm,0.2s								

*NEIC **11** 15:45:03.1±1.3,50.35N×18.79E,h5km,MG2.1(WAR), Error ellipse: s-maj=19.0km s-min=8.0km az=176.0*
*PRU **11** 15:45:04.3,50.34N×18.77E*

WAR 11 15:45:04.2,50.25N×18.88E,h1km,**Location given by Central Institute of Mining, origin time based upon OJC,Poland**

| Code | Station Name | Δ° | AZ° | Phase

ILAR	**Eielson Array**	**73.85**	**24**	P	**P**	**16 12 33.6**	**-1.2**
	1.8nm,0.6s,mb4.2,baz=248,slow=5.6,SNR=15						
DAWY	**Dawson**	**76.73**	**25**	P	**P**	**16 12 50.9**	**-0.4**
BVAR	**Borovoye Array**	**78.79**	**323**	P	**P**	**16 13 03.1**	**+0.2**
	2.9nm,0.8s,mb4.3,baz=104,slow=6.1,SNR=11						
ZRNK	**Zerenda**	**79.61**	**323**	P	**P**	**16 13 06.9**	**-0.5**
INK	**Inuvik**	**79.95**	**22**	P	**P**	**16 13 08.5**	**-0.5**
	2.5nm,0.9s,mb4.1,baz=223,slow=5.9,SNR=8.6						
INK	**Inuvik**	**79.95**	**22**	*e*P	**P**	**16 13 07.7**	**-1.2**
	5.1nm,1.2s,mb4.3						
DLBC	**Dease Lake**	**80.24**	**32**	P	**P**	**16 13 10.8**	**+0.2**
	1.2nm,0.9s,mb3.8,baz=322,slow=15,SNR=3.7						
VNDA	**Vanda**	**83.43**	**177**	P	**P**	**16 13 27.9**	**+1.0**
	1.6nm,0.8s,mb4.1,baz=323,slow=3.8,SNR=10						
YBH	**Yreka Blue Hor**	**84.70**	**49**	P	**P**	**16 13 34.9**	**+0.9**
	2.2nm,1.0s,mb4.2,baz=95,slow=9.5,SNR=2.4						
YKA	**Yellowknife Ar**	**87.76**	**28**	P	**P**	**16 13 47.9**	**-0.5**
	1.6nm,0.9s,mb4.2,baz=279,slow=5.0,SNR=17						
YKA				LR	LR	16 54 02.2	
	comp=Z,37nm,18.8s,MS3.8,baz=270,slow=36						
MAW	**Mawson**	**93.91**	**203**	P	**P**	**16 14 18.3**	**+1.3**
	2.2nm,1.0s,mb4.6,baz=57,slow=9.9,SNR=3.8						
MAW				LR	LR	16 53 42.9	
	comp=Z,47nm,18.6s,MS4.0,baz=243,slow=34						
PDAR	**Pinedale Array**	**94.25**	**46**	LR	LR	16 49 49.4	
	comp=Z,32nm,21.2s,MS3.8,baz=244,slow=31						
CPUP	**Villa Florida**	**147.34**	**132**	PKPbc	PKPdf	16 20 44.6	+4.1
	2.8nm,0.9s,baz=219,slow=1.4,SNR=10						
DBIC	**Dimbokro**	**151.44**	**295**	PKPbc	PKPdf	16 20 54.9	+7.6
	5.0nm,0.7s,baz=93,slow=11,SNR=8.4						
DBIC				PKPab	PKPab	16 21 04.7	+0.6
	8.0nm,0.8s,baz=6.0,slow=2.8,SNR=5.2						

NEIC ***11*** *16:01:49.3,59.20N×152.11W,h51km,ML3.7(PMR), ML3.5(AEIC),After AEIC.*
IDC ***11*** *16:01:49.2±3.6,59.39N×152.37W,h59km±36km,mb3.8/3, mb1 3.7/7,mb1mx3.5/25,ML3.5/4,MS2.9/1,Ms1 2.9/1, ms1mx2.2/23,Error ellipse: s-maj=26.0km s-min=23.7km az=15.0*

ISC 11 16:01:47.7±0.3,59.19N±0.03×152.00W±0.04,h51km,n82, σ0§96/97,mb3.9/2,Southern Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
XLV	**Seldovia**	**0.30**	**28**	P	**P**	**16 01 58.1**	**+1.2**
XLV				S	**S**	**16 02 05.8**	**+2.2**
CNPM	**China Poot**	**0.52**	**49**	P	**P**	**16 02 00.7**	**+1.4**
CNPM				S	**S**	**16 02 10.0**	**+2.4**
AGU	**Augustine-Summ**	**0.75**	**284**	P	**P**	**16 02 02.6**	**+0.4**
AGU				S	**S**	**16 02 13.6**	**+0.6**
AUL	**Augustine Lava**	**0.76**	**285**	P	**P**	**16 02 02.6**	**+0.3**
AUL				S	**S**	**16 02 13.5**	**+0.4**
BRLK	**Bradley Lake**	**0.81**	**44**	P	**P**	**16 02 04.5**	**+1.5**
BRLK				S	**S**	**16 02 16.1**	**+1.7**
NNL	**Ninilchik**	**0.93**	**22**	P	**P**	**16 02 06.7**	**+2.0**
IVS	**Iliamna South**	**0.99**	**327**	P	**P**	**16 02 05.8**	**+0.3**
ILIM	**Iliamna**	**1.02**	**332**	P	**P**	**16 02 05.9**	**0.0**
ILIM				S	**S**	**16 02 19.3**	**-0.1**
INE	**Iliamna NE**	**1.03**	**329**	P	**P**	**16 02 06.0**	**-0.1**
ILW	**Iliamna West**	**1.05**	**327**	P	**P**	**16 02 06.3**	**0.0**
RSO	**Redoubt South**	**1.33**	**344**	P	**P**	**16 02 10.7**	**+0.3**
KAPH	**Katmai Pasha**	**1.35**	**245**	P	**P**	**16 02 10.7**	**0.0**
KAPH				S	**S**	**16 02 27.7**	**-0.1**
REF	**Redoubt East F**	**1.35**	**345**	P	**P**	**16 02 11.0**	**+0.3**
REF				S	**S**	**16 02 28.0**	**+0.2**
RDT	**Redoubt**	**1.41**	**352**	P	**P**	**16 02 11.6**	**+0.2**
RDT				S	**S**	**16 02 29.4**	**+0.4**
KDAK	**Kodiak Island**	**1.44**	**192**	P	**P**	**16 02 11.8**	**-0.1**
KDAK				S	**S**	**16 02 31.8**	**+1.9**
NCT	**North Crescent**	**1.46**	**342**	P	**P**	**16 02 12.3**	**+0.2**
NCT				S	**S**	**16 02 30.6**	**+0.3**
KAHG	**Katmai Hook Gl**	**1.49**	**243**	P	**P**	**16 02 12.7**	**0.0**
KARR	**Katmai Rainbow**	**1.56**	**245**	P	**P**	**16 02 13.7**	**0.0**
SEW	**Seward**	**1.59**	**54**	P	**P**	**16 02 14.4**	**+0.5**
SLKM	**Skilak Lake**	**1.60**	**33**	*e*P	**P**	**16 02 14.9**	**+0.7**
MPA	**Moose Pass**	**1.87**	**44**	P	**P**	**16 02 19.6**	**+1.7**
BKG	**Blockade Glaci**	**1.89**	**356**	P	**P**	**16 02 18.7**	**+0.5**
MGLS	**Mageik LS**	**1.99**	**242**	P	**P**	**16 02 18.9**	**-0.7**
SPU	**Mount Spurr**	**2.00**	**359**	*e*P	**P**	**16 02 20.1**	**+0.4**
CKL	**Chakachamna La**	**2.02**	**355**	P	**P**	**16 02 20.8**	**+0.8**
CAHL	**Cahill**	**2.07**	**238**	P	**P**	**16 02 20.4**	**-0.3**
ANCK	**Angle Creek**	**2.08**	**243**	P	**P**	**16 02 20.8**	**0.0**
CP2	**Crater Peak Tw**	**2.09**	**357**	P	**P**	**16 02 21.8**	**+0.8**
FIB	**Fire Island**	**2.19**	**24**	P	**P**	**16 02 23.6**	**+1.3**
KJL	**Kejulik**	**2.19**	**240**	P	**P**	**16 02 22.3**	**-0.1**
RC01	**Rabbit Creek A**	**2.22**	**30**	P	**P**	**16 02 23.7**	**+0.9**
GOU	**Gould Hall**	**2.29**	**28**	*e*P	**P**	**16 02 24.8**	**+0.9**
PMS	**Palmer South**	**2.40**	**30**	P	**P**	**16 02 26.2**	**+0.8**
SVW	**Sparrevohn**	**2.64**	**318**	P	**P**	**16 02 28.0**	**-0.9**
PWA	**Palmer West**	**2.69**	**22**	P	**P**	**16 02 30.4**	**+0.8**
PMR	**Palmer**	**2.80**	**29**	*e*P	**P**	**16 02 31.1**	**0.0**
KNK	**Knik Glacier**	**2.85**	**37**	P	**P**	**16 02 31.8**	**0.0**
GHG	**Glory Hole Cre**	**3.01**	**25**	P	**P**	**16 02 33.9**	**-0.1**
HIN	**Hinchinbrook I**	**3.03**	**64**	P	**P**	**16 02 34.9**	**+0.5**
SML	**Sawmill**	**3.19**	**33**	P	**P**	**16 02 37.0**	**+0.3**
CUT	**Chulitna**	**3.34**	**14**	P	**P**	**16 02 39.1**	**+0.4**
CVA	**Cordova**	**3.44**	**64**	P	**P**	**16 02 39.9**	**-0.2**
EYAK	**Cordova Ski Ar**	**3.44**	**64**	P	**P**	**16 02 39.7**	**-0.5**
EYAK				S	**S**	**16 03 17.0**	**-3.0**
VLZ	**Valdez**	**3.44**	**53**	P	**P**	**16 02 39.1**	**-1.1**
SCM	**Sheep Creek Mo**	**3.52**	**39**	P	**P**	**16 02 41.5**	**+0.3**
KLU	**Klutina**	**3.81**	**50**	P	**P**	**16 02 45.3**	**0.0**
HUR	**Hurricane**	**3.97**	**16**	P	**P**	**16 02 47.6**	**-0.1**
TOA	**Tolsona**	**4.10**	**42**	P	**P**	**16 02 49.9**	**+0.5**
BMRM	**Bremner River**	**4.12**	**61**	P	**P**	**16 02 49.8**	**+0.2**
TT01	**Tatalina**	**4.21**	**334**	P	**P**	**16 02 49.8**	**-1.3**
KTH	**Kantishna Hill**	**4.41**	**6**	P	**P**	**16 02 53.7**	**-0.2**
DHY	**Denali Highway**	**4.50**	**28**	P	**P**	**16 02 54.9**	**-0.2**
MCK	**McKinley**	**4.79**	**17**	P	**P**	**16 02 59.3**	**+0.1**
MCK				S	**S**	**16 03 52.5**	**-1.6**
TGL	**Tana Glacier**	**4.87**	**67**	P	**P**	**16 03 00.2**	**-0.1**
PAX	**Paxson**	**4.95**	**37**	P	**P**	**16 03 01.1**	**-0.2**
BWN	**Browne**	**5.15**	**12**	P	**P**	**16 03 04.1**	**0.0**
BALM	**Baldy**	**5.17**	**65**	P	**P**	**16 03 04.7**	**+0.1**
YAH	**Yahtse**	**5.32**	**73**	P	**P**	**16 03 06.6**	**+0.1**
YAH				S	**S**	**16 04 04.2**	**-3.1**
CHX	**Chaix Hills**	**5.59**	**76**	P	**P**	**16 03 10.3**	**0.0**
CTGM	**Chitina Glacie**	**5.63**	**67**	P	**P**	**16 03 10.4**	**-0.4**
HDA	**Harding Lake**	**5.76**	**22**	P	**P**	**16 03 11.9**	**-0.6**
CCB	**Clear Creek Bu**	**5.83**	**18**	P	**P**	**16 03 11.4**	**-2.1**
MLY	**Manley**	**5.89**	**5**	P	**P**	**16 03 14.0**	**-0.5**
SDN	**Sand Point**	**6.01**	**234**	P	**P**	**16 03 13.2**	**-2.9**
PCA	**Pinnacle**	**6.03**	**76**	P	**P**	**16 03 16.2**	**-0.2**
MDM	**Murphy Dome**	**6.06**	**15**	P	**P**	**16 03 15.9**	**-0.9**
IL1	**Eielson Array**	**6.10**	**21**	P	**P**	**16 03 16.1**	**-1.2**
ILAR	**Eielson Array**	**6.10**	**21**	P	**P**	**16 03 16.1**	**-1.3**
	1.5nm,0.3s,baz=213,slow=12,SNR=21						
ILAR				S	**S**	**16 04 22.2**	**-4.5**
	2.7nm,0.3s,baz=207,slow=19,SNR=7.9						
BCA3	**Beaver Creek A**	**6.29**	**47**	P	**P**	**16 03 19.5**	**-0.6**
PNL	**Peninsula**	**6.45**	**80**	P	**P**	**16 03 20.9**	**-1.5**
IM3	**Indian Mountai**	**6.87**	**354**	P	**P**	**16 03 26.4**	**-1.8**
IMA	**Indian Mountai**	**6.95**	**354**	*e*P	**P**	**16 03 28.5**	**-0.9**
PRP	**Porcupine Dome**	**7.03**	**23**	P	**P**	**16 03 28.9**	**-1.5**
WHY	**Whitehorse**	**8.72**	**73**	P	**P**	**16 03 53.2**	**-0.6**
BM3	**Burnt Mountain**	**8.90**	**19**	P	**P**	**16 03 54.4**	**-1.9**
DLBC	**Dease Lake**	**11.41**	**84**	P	**P**	**16 04 29.8**	**-0.5**
	0.1nm,0.3s,baz=283,slow=18,SNR=3.8						
INK	**Inuvik**	**12.21**	**34**	P	**P**	**16 04 40.5**	**-0.5**
	0.1nm,0.3s,baz=241,slow=10,SNR=2.7						
INK				LR	LR	16 10 11.3	
	comp=Z,52nm,18.7s,baz=322,slow=41						
YKA	**Yellowknife Ar**	**18.34**	**64**	P	**P**	**16 05 59.0**	**-0.6**
	0.1nm,0.3s,baz=273,slow=10,SNR=15						
YKA	**Yellowknife Ar**	**18.34**	**64**	P	**P**	**16 05 59.0**	**-0.6**
FX1	**Attu Island--F**	**20.28**	**267**	P	**P**	**16 06 17.6**	**-3.6**
	6.7nm,0.7s,baz=90,slow=21,SNR=4.2						
SPITS	**Spitsbergen Ar**	**42.70**	**4**	P	**P**	**16 09 37.4**	**-2.9**
	2.5nm,1.0s,mb3.9,baz=11,slow=4.6,SNR=9.1						
TXAR	**Lajitas Array**	**44.22**	**111**	P	**P**	**16 09 55.0**	**+1.7**
	0.5nm,0.2s,mb3.8,baz=315,slow=5.1,SNR=3.4						

NEIC ***11*** *16:09:03.5±1.9,36.41N×71.15E,h78km±17km,mb3.8/1, Error ellipse: s-maj=23.8km s-min=7.6km az=62.0*
MOS ***11*** *16:09:03.0±1.3,36.41N×71.13E,h92km,mb4.0/2,Error ellipse: s-maj=19.6km s-min=9.1km az=97.2*
IDC ***11*** *16:09:03.3±6.2,36.27N×71.20E,h82km±52km,mb3.6/12, mb1 3.7/14,mb1mx3.6/23,ML3.6/2,Error ellipse: s-maj=36.0km s-min=18.4km az=35.0*

NNC ***11*** *16:09:15.6±6.0,37.18N×71.05E,h205km±51km,mpv4.0, Error ellipse: s-maj=58.7km s-min=34.4km az=28.0*

ISC 11 16:09:03.3±1.4,36.36N±0.07×71.1E±0.1,h95km±12km, n48,σ0§74/52,mb3.7/12,6C-2D,Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AML	**Almayashu**	**6.10**	**18**	P	**P**	**16 10 32.9**	**+0.4**
	SNR=83						
UCH	**Uchtor**	**6.43**	**23**	P	**P**	**16 10 37.5**	**+0.5**
	SNR=31						
KZA	**Kyzart**	**6.55**	**28**	P	**P**	**16 10 39.0**	**+0.3**
	SNR=26						
EKS2	**Erkin-Say**	**6.62**	**17**	P	**P**	**16 10 40.0**	**+0.2**
	SNR=27						
KK31	**Karatay Array**	**6.75**	**356**	⇑P	**P**	**16 10 41.1**	**-0.4**
	3.9nm,0.2s,baz=175,slow=12,SNR=115						
KK31				⇑S	**S**	**16 11 51.2**	**-6.2**
	14nm,0.3s,baz=194,slow=24,SNR=10						
KKAR	**Karatay Array**	**6.75**	**356**	*e*PN	**P**	**16 10 41.1**	**-0.4**
KKAR				pmax	pmax		
	comp=Z,4.0nm,0.3s						
AAK	**Ala-Archa**	**6.79**	**22**	P	**P**	**16 10 42.4**	**+0.3**
	SNR=48						
KBK	**Karagaybulak**	**6.95**	**24**	P	**P**	**16 10 45.1**	**+0.7**
	SNR=24						
ULHL	**Ulahol**	**7.10**	**33**	P	**P**	**16 10 46.2**	**-0.1**
	SNR=18						
CHMS	**Chumysh**	**7.20**	**22**	P	**P**	**16 10 48.2**	**+0.5**
	SNR=11						
USP	**Ospenovka**	**7.38**	**20**	P	**P**	**16 10 49.7**	**-0.4**
	SNR=11						
TKM2	**Tokmak 2**	**7.41**	**27**	P	**P**	**16 10 51.0**	**+0.4**
	SNR=35						
MK31	**Makanchi Array**	**13.36**	**35**	⇓P	**P**	**16 12 09.6**	**-0.4**
	comp=Z,1.3nm,0.6s						
MKAR	**Makanchi Array**	**13.36**	**35**	P	**P**	**16 12 09.0**	**-1.0**
	comp=Z,0.1nm,0.3s,baz=218,slow=14,SNR=14						
MKAR	**Makanchi Array**	**13.36**	**35**	P	**P**	**16 12 09.0**	**-1.0**
KOLN	**Koldanda**	**13.62**	**125**	*e*P	**P**	**16 12 13.9**	**+0.4**
	comp=Z,4.7nm,0.3s						
KOLN				*e*S	**S**	**16 14 35.7**	**-7.1**
GKN	**Gorkha**	**14.16**	**122**	*e*P	**P**	**16 12 20.2**	**-0.4**
	comp=Z,13nm,0.4s						
GKN				*e*S	**S**	**16 14 47.3**	**-8.4**
DMN	**Daman**	**14.73**	**122**	*e*P	**P**	**16 12 28.1**	**+0.2**
KKN	**Kakani**	**14.74**	**121**	*e*P	**P**	**16 12 27.9**	**-0.1**
	comp=Z,4.0nm,0.3s						
KKN	**Kakani**	**14.74**	**121**	*e*P	**P**	**16 12 27.9**	**-0.1**
KKN				pmax	pmax		
	comp=Z,2.0nm,0.3s						
PKI	**Pulchoki**	**14.96**	**122**	*e*P	**P**	**16 12 31.0**	**+0.1**
	comp=Z,6.9nm,0.4s						
PKI	**Pulchoki**	**14.96**	**122**	*e*P	**P**	**16 12 31.0**	**+0.1**
PKI				pmax	pmax		
	comp=Z,3.0nm,0.4s						
GUN	**Gumba**	**15.08**	**120**	*e*P	**P**	**16 12 32.1**	**-0.3**
AB31	**Akbulak array**	**15.24**	**331**	⇑P	**P**	**16 12 33.3**	**-1.0**
	comp=Z,0.9nm,0.3s,baz=139,slow=15,SNR=62						
AB31				⇑S	**S**	**16 15 11.1**	**-10**
	comp=Z,3.0nm,0.5s,baz=151,slow=24,SNR=10						
AB31	**Akbulak array**	**15.24**	**331**	P	**P**	**16 12 33.1**	**-1.2**
KURK	**Kurchatov**	**15.34**	**18**	⇑P	**P**	**16 12 32.0**	**-3.4**
	comp=Z,3.5nm,1.2s,baz=89,slow=4.6,SNR=8.2						
KURK	**Kurchatov**	**15.34**	**18**	*e*P	**P**	**16 12 31.8**	**-3.6**
ZRNK	**Zerenda**	**16.65**	**356**	⇑P	**P**	**16 12 46.8**	**-5.0**
	comp=Z,2.8nm,0.8s						
BVAR	**Borovoye Array**	**16.67**	**359**	P	**P**	**16 12 52.3**	**+0.2**
	comp=Z,0.7nm,0.3s,baz=164,slow=10,SNR=11						
BRVK	**Borovoye**	**16.70**	**358**	P	**P**	**16 12 52.6**	**+0.1**
ZAL	**Zalesovo**	**19.99**	**24**	P	**P**	**16 13 28.8**	**-1.5**
	comp=Z,7.1nm,0.3s,baz=160,slow=6.9,SNR=14						
SVE	**Sverdlovsk**	**21.65**	**344**	*e*P	**P**	**16 13 39.0**	**-8.0**
ARU	**Arti**	**21.79**	**341**	P	**P**	**16 13 46.2**	**-2.2**
ARU				pmax	pmax		
	comp=Z,2.0nm,0.5s,mb3.7						
ARU	**Arti**	**21.79**	**341**	P	**P**	**16 13 46.2**	**-2.2**
	comp=Z,1.8nm,0.5s,mb3.7						
SONM	**Songino Array**	**28.35**	**55**	P	**P**	**16 14 51.1**	**+0.9**
	comp=Z,0.4nm,0.6s,mb3.1,baz=260,slow=8.8,SNR=3.7						
AKASG	**Malin Array Be**	**33.09**	**309**	P	**P**	**16 15 32.1**	**+0.2**
	comp=Z,0.6nm,0.3s,mb3.9,baz=83,slow=6.9,SNR=4.4						
FINES	**FINESS Array B**	**37.64**	**326**	P	**P**	**16 16 11.2**	**+0.9**
	comp=Z,1.9nm,0.9s,mb3.9,baz=118,slow=11,SNR=7.0						
ARCES	**ARCESS Array B**	**41.30**	**338**	P	**P**	**16 16 41.6**	**+1.2**
	comp=Z,0.9nm,0.5s,mb3.9,baz=116,slow=8.1,SNR=13						
NB2	**NORSAR Subarra**	**44.54**	**323**	P	**P**	**16 17 06.6**	**-0.2**
	comp=Z,0.9nm,0.4s,mb3.9,baz=99,slow=7.4						
NOA	**NORSAR Array B**	**44.54**	**323**	P	**P**	**16 17 07.0**	**+0.2**
	comp=Z,1.0nm,0.4s,mb3.9,baz=100,slow=7.7,SNR=6.4						
TIXI	**Tiksi**	**45.87**	**22**	*e*P	**P**	**16 17 17.3**	**0.0**
SPITS	**Spitsbergen Ar**	**47.65**	**347**	P	**P**	**16 17 32.4**	**+1.2**
	comp=Z,3.7nm,1.0s,mb4.2,baz=126,slow=3.2,SNR=6.5						
INK	**Inuvik**	**74.03**	**9**	P	**P**	**16 20 30.3**	**+0.5**
	comp=Z,1.1nm,0.7s,mb3.7,baz=340,slow=4.2,SNR=13						
ILAR	**Eielson Array**	**74.89**	**16**	P	**P**	**16 20 34.2**	**-0.5**
	comp=Z,0.5nm,0.8s,mb3.3,baz=327,slow=4.9,SNR=5.3						
YKA	**Yellowknife Ar**	**81.38**	**3**	P	**P**	**16 21 10.6**	**+0.3**
	comp=Z,1.5nm,0.7s,mb4.0,baz=349,slow=5.4,SNR=42						
YKA	**Yellowknife Ar**	**81.38**	**3**	P	**P**	**16 21 10.6**	**+0.2**
YKA				pmax	pmax		
	comp=Z,2.0nm,0.7s						
WRA	**Warramunga Arr**	**81.85**	**122**	P	**P**	**16 21 12.3**	**-1.4**
	comp=Z,0.4nm,1.0s,mb3.2,baz=277,slow=1.8,SNR=100						
ASAR	**Alice Springs**	**84.11**	**125**	P	**P**	**16 21 25.7**	**+0.6**
	comp=Z,0.5nm,0.6s,mb3.5,baz=315,slow=4.5,SNR=12						

MOS 11 16:36:33.6±1.0,54.90N×111.36E,h27km,mb4.3/1,1C-1D, Error ellipse: s-maj=36.4km s-min=17.6km az=59.0, Lake Baykal region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YLYR	**Ulyunkhan**	**0.12**	**258**	⇓*i*PG	Pb	16 36 38.8	+0.2
YLYR				*e*		16 36 42.6	
YLYR				pmax	pmax		
	comp=Z,2μm,0.2s						
YLYR				smax			
	comp=E,9μm,0.3s						
KMO	**Kumora**	**0.99**	**355**	⇑*i*PG	Pn	16 36 51.2	-0.7
KMO				*i*		16 37 04.5	
KMO				pmax	pmax		
	comp=Z,259nm,0.5s						
KMO				smax			
	comp=E,508nm,0.6s						
YOA	**Uoyan**	**1.25**	**9**	*e*PN	Pn	16 36 57.6	+2.0
YOA				*i*		16 37 12.9	
YOA				pmax	pmax		
	comp=Z,98nm,0.4s						
YOA				smax			
	comp=N,1μm,0.5s						
UKT	**Uakit**	**1.43**	**65**	*e*PN	Pn	16 36 58.4	+0.3
UKT				*e*		16 37 17.4	
UKT				pmax	pmax		
	comp=Z,75nm,0.2s						
UKT				smax			
	comp=E,469nm,0.3s						
NLYR	**Nelyaty**	**2.93**	**55**	*e*PN	Pn	16 37 19.1	-0.5
NLYR				*e*		16 37 25.8	
NLYR				*e*		16 38 06.2	
NLYR				pmax	pmax		
	comp=Z,6.0nm,0.2s						
NLYR				smax			
	comp=N,181nm,0.6s						
IRK	**Irkutsk**	**4.99**	**241**	*e*PN	Pn	16 38 03.5	+15
IRK				*e*		16 39 08.6	
IRK				pmax	pmax		
	comp=Z,100nm,0.1s						
IRK				smax			
	comp=N,70nm,0.5s						
ARS	**Arshan**	**6.12**	**244**	*e*PG	Pn	16 38 24.7	+20
ARS				*e*		16 39 41.7	
ARS				pmax	pmax		
	comp=Z,3.0nm,0.4s						
ARS				smax			
	comp=E,89nm,0.9s						
ORL	**Orlik**	**7.25**	**256**	*e*PN	Pn	16 38 20.2	-0.4
ORL				*e*		16 38 43.7	
ORL				*e*		16 40 17.1	
ORL				pmax	pmax		
	comp=Z,5.0nm,0.8s						
ORL				smax			
	comp=N,25nm,1.0s						

NEIC ***11*** *17:27:16.7±0.5,30.16S×178.00W,h150km,mb4.5/6, Error ellipse: s-maj=14.2km s-min=11.7km az=214.0*
IDC ***11*** *17:27:20.2±12.0,30.16S×178.11W,h177km±106km, mb3.7/6,mb1 3.9/8,mb1mx3.8/14,MS3.6/2,Ms1 3.5/2, ms1mx3.1/17,Error ellipse: s-maj=43.8km s-min=23.7km az=59.0*

ISC 11 17:27:19.9±1.0,31.00S±0.05×178.8W±0.2,h150km,n35, σ1§39/28,mb4.1/10,Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**7.46**	**198**	*e*P	**P**	**17 28 58.7**	**-8.5**
PUZ				S	**S**	**17 30 31.5**	**+0.8**
URZ	**Urewera**	**7.99**	**204**	P	**P**	**17 29 08.3**	**-5.9**
	1.0nm,0.3s,baz=172,slow=14,SNR=8.6						
URZ				S	**S**	**17 30 48.7**	**+5.4**
	2.0nm,0.3s,baz=201,slow=7.0,SNR=10						
URZ	**Urewera**	**7.99**	**204**	P	**P**	**17 29 07.9**	**-6.3**
BFZ	**Birch Farm**	**10.46**	**201**	S	**S**	**17 31 44.1**	**+2.1**
MRZ	**Mangatainoka R**	**10.66**	**204**	S	**S**	**17 31 47.4**	**+0.7**
THZ	**Tophouse**	**12.64**	**210**	*e*P	**P**	**17 30 13.5**	**-1.8**
KHZ	**Kahutara**	**12.94**	**206**	*e*P	**P**	**17 30 17.8**	**-1.3**
KHZ				*e*S	**S**	**17 32 38.4**	**-1.6**
MQZ	**McQueen's Vall**	**14.38**	**206**	*e*S	**S**	**17 33 11.0**	**-2.2**
RPZ	**Rata Peaks**	**15.02**	**209**	P	**P**	**17 30 43.6**	**-1.9**
	0.5nm,0.3s,baz=316,slow=19,SNR=3.2						
RPZ				S	**S**	**17 33 29.4**	**+1.5**
	0.5nm,0.3s,baz=340,slow=18,SNR=2.7						
CTA	**Charters Tower**	**33.21**	**281**	*e*P	**P**	**17 33 45.6**	**+1.0**
	7.1nm,0.4s,mb4.8						
CTAO	**Charters Tower**	**33.21**	**281**	*e*P	**P**	**17 33 44.9**	**+0.2**
	14nm,0.8s,mb4.8						
STKA	**Stephens Creek**	**33.67**	**258**	*e*P	**P**	**17 33 51.6**	**+3.2**
	4.0nm,1.1s,mb4.1						
STKA	**Stephens Creek**	**33.67**	**258**	P	**P**	**17 33 51.7**	**+3.3**
	4.2nm,0.6s,mb4.3,baz=106,slow=11,SNR=11						
STKA				LR	LR	17 46 59.2	
	comp=Z,97nm,20.3s,baz=27,slow=34						
ASAR	**Alice Springs**	**42.38**	**268**	P	**P**	**17 35 01.8**	**+0.7**
	2.1nm,0.5s,mb4.1,baz=105,slow=7.4,SNR=34						
WB2	**Warramunga Arr**	**43.42**	**273**	*e*P	**P**	**17 35 09.0**	**-0.5**
WRAB	**Tennant Creek**	**43.42**	**273**	*e*P	**P**	**17 35 09.1**	**-0.4**
WRA	**Warramunga Arr**	**43.43**	**273**	P	**P**	**17 35 10.1**	**+0.5**
	5.6nm,0.4s,mb4.5,baz=110,slow=8.0,SNR=113						
SBA	**Scott Base**	**47.39**	**184**	*e*P	**P**	**17 35 42.8**	**+2.5**
	1.7nm,0.6s,mb3.9						
VNDA	**Vanda**	**47.44**	**186**	P	**P**	**17 35 43.3**	**+2.7**
	0.4nm,0.6s,mb3.2,baz=15,slow=8.8,SNR=2.6						
FITZ	**Fitzroy Crossi**	**51.66**	**271**	*e*P	**P**	**17 36 13.1**	**-0.5**
	2.8nm,0.6s,mb4.1						
QSPA	**South Pole Qui**	**59.12**	**180**	*e*P	**P**	**17 37 06.3**	**-0.1**
	9.3nm,0.8s,mb4.7						
MAW	**Mawson**	**71.51**	**201**	P	**P**	**17 38 26.8**	**+1.2**
	2.1nm,1.1s,mb3.8,baz=118,slow=15,SNR=2.2						
SNAA	**Sanae**	**77.58**	**179**	*e*P	**P**	**17 38 58.9**	**-1.3**
NVAR	**Mina Array Bea**	**89.15**	**43**	P	**P**	**17 39 50.8**	**-8.7**
	0.4nm,0.5s,mb3.6,baz=220,slow=7.0,SNR=3.5						
NVAR				tx	tx	17 40 05.7	
	0.6nm,0.7s,baz=214,slow=6.5,SNR=3.4						
TXAR	**Lajitas Array**	**93.30**	**58**	LR	LR	18 14 08.9	
	comp=Z,25nm,19.1s,baz=200,slow=30						
MKAR	**Makanchi Array**	**117.62**	**310**	PKP	PKPdf	17 45 43.9	-3.9
	0.9nm,1.0s,baz=126,slow=0.6,SNR=4.2						
BVAR	**Borovoye Array**	**126.34**	**315**	PKP	PKPdf	17 46 01.2	-3.3
	1.3nm,0.7s,baz=97,slow=2.7,SNR=12						
KAF	**Kangasniemi**	**144.87**	**340**	*e*p	PKPdf	17 46 30.8	-7.4
FINES	**FINESS Array B**	**145.46**	**339**	PKP	PKPdf	17 46 34.5	-4.7
	6.5nm,0.5s,baz=63,slow=3.1,SNR=56						
FINES	**FINESS Array B**	**145.46**	**339**	PKP	PKPdf	17 46 34.5	-4.7
NB2	**NORSAR Subarra**	**149.23**	**350**	PKPab	PKPdf	17

WHN	**Wuhan**	**10.04**	**304**	*eP*	**P**	**17 42 08.2**	**+1.4**
ENH	**Enshi**	**13.79**	**295**	P	**P**	**17 42 56.6**	**+0.8**
	comp=Z,6.7nm,0.7s						
GYA	**Guiyang**	**15.63**	**278**	P	**P**	**17 43 23.4**	**+4.2**
GYA				XP		17 44 02.8	
GYA				S	**S**	**17 46 11.6**	**+3.2**
GYA				AMB	AMB		
	comp=Z,10.0nm,0.6s						
GYA				LR	LR		
	comp=N,270nm,8.1s						
GYA				LR	LR		
	comp=E,380nm,10.2s						
GYA				LR	LR		
	comp=Z,140nm,7.5s						
XAN	**Xi'an**	**15.77**	**308**	P	**P**	**17 43 23.8**	**+3.0**
XAN				AP		17 43 26.9	
XAN				AMB	AMB		
	comp=Z,9.0nm,0.7s						
BJT	**Baijiatuau**	**16.17**	**338**	*eP*	**P**	**17 43 27.8**	**+2.0**
	comp=Z,6.1nm,0.6s						
BJI	**Beijing**	**16.19**	**338**	*eP*	**P**	**17 43 28.1**	**+2.0**
BJI				AMB	AMB		
	comp=Z,11nm,0.8s						
CN2	**Changchun**	**18.61**	**3**	*eP*	**P**	**17 43 55.5**	**+0.9**
CN2				*eS*	**S**	**17 47 14.6**	**+0.2**
CN2				AMB	AMB		
	comp=Z,20nm,0.8s						
HHC	**Hu-ho-hao-te**	**18.73**	**330**	⇑P	**P**	**17 44 01.3**	**+5.4**
HHC				AMB	AMB		
	comp=Z,23nm,1.5s						
HHC				AMB	AMB		
	comp=Z,119nm,4.4s						
KMI	**Kunming**	**19.22**	**274**	*eP*	**P**	**17 44 00.9**	**-0.2**
KMI				AMB	AMB		
	comp=Z,7.0nm,1.3s						
BTO	**Baotou**	**19.29**	**326**	*eP*	**P**	**17 44 01.4**	**-0.4**
BTO				AMB	AMB		
	comp=Z,31nm,1.0s						
MDJ	**Mudanjiang**	**19.92**	**12**	P	**P**	**17 44 07.7**	**-0.6**
MDJ				AP		17 44 32.6	
MDJ				AMB	AMB		
	comp=Z,6.0nm,0.8s						
MDJ				AMB	AMB		
	comp=Z,49nm,5.0s						
LZH	**Lanzhou**	**20.40**	**307**	⇓P	**P**	**17 44 13.5**	**+0.2**
LZH				PP	PP	17 44 41.0	+3.0
LZH				*eS*	**S**	**17 47 46.1**	**-3.1**
LZH				AMB	AMB		
	comp=Z,32nm,1.3s						
LZH				AMB	AMB		
	comp=Z,142nm,4.1s						
CMAR	**Chiang Mai Arr**	**24.15**	**259**	P	**P**	**17 44 51.0**	**+0.9**
	comp=Z,2.7nm,0.7s,mb3.9,baz=61,slow=8.0,SNR=19						
ASAJ	**Asahikawa**	**24.22**	**34**	P	**P**	**17 44 50.5**	**-0.1**
	comp=Z,6.1nm,0.6s,mb4.3,baz=240,slow=7.3,SNR=7.9						
GTA	**Gaotai**	**24.76**	**311**	*eP*	**P**	**17 44 55.8**	**+0.1**
GTA				AP		17 45 25.4	
GTA				AMB	AMB		
	comp=Z,5.0nm,0.7s,mb4.2						
GTA				AMB	AMB		
	comp=Z,58nm,3.8s						
GTA				LR	LR		
	comp=N,67nm,5.7s						
GTA				LR	LR		
	comp=E,49nm,5.3s						
GTA				LR	LR		
	comp=Z,64nm,6.9s						
ULN	**Ulaanbaatar**	**26.29**	**334**	*eP*	**P**	**17 45 09.6**	**-0.2**
ULN	**Ulaanbaatar**	**26.29**	**334**	*eP*	**P**	**17 45 08.1**	**-1.7**
	comp=Z,3.5nm,0.5s,mb4.2						
SONM	**Songino Arbay**	**26.53**	**333**	P	**P**	**17 45 11.2**	**-0.8**
	comp=Z,4.9nm,0.6s,mb4.3,baz=153,slow=9.0,SNR=49						
SONM				pP	pP	17 45 40.8	+0.9
	comp=Z,5.0nm,1.2s,baz=151,slow=10,SNR=3.1						
SONM				PcP	PcP	17 48 33.9	+0.2
	comp=Z,0.2nm,0.5s,baz=146,slow=1.8,SNR=3.7						
SONM				ScP		17 52 00.7	
	comp=Z,0.6nm,0.9s,baz=153,slow=2.8,SNR=4.3						
LSA	**Lhasa**	**29.41**	**286**	P	**P**	**17 45 39.0**	**+0.8**
LSA	**Lhasa**	**29.41**	**286**	*eP*	**P**	**17 45 38.1**	**-0.1**
	comp=Z,4.2nm,0.6s,mb4.3						
ZAK	**Zakamensk**	**29.80**	**333**	*eP*	**P**	**17 45 40.5**	**-0.9**
TLY	**Talaya**	**30.67**	**335**	P	**P**	**17 45 48.0**	**-1.0**
TLY				pmax	pmax		
	comp=Z,32nm,1.1s,mb5.0						
TLY				MLR	MLR		
	comp=Z,300nm,18.0s						
MOY	**Mondy**	**31.72**	**332**	*eP*	**P**	**17 45 58.2**	**0.0**
GUN	**Gumba**	**34.09**	**283**	*eP*	**P**	**17 46 19.3**	**+0.4**
PKI	**Pulchoki**	**34.53**	**283**	*eP*	**P**	**17 46 22.4**	**-0.2**
	comp=Z,8.3nm,0.6s,mb4.5						
KKN	**Kakani**	**34.63**	**283**	*eP*	**P**	**17 46 23.2**	**-0.2**
	comp=Z,9.4nm,0.5s,mb4.7						
DMN	**Daman**	**34.80**	**283**	*eP*	**P**	**17 46 24.7**	**-0.2**
WMQ	**Urumqi**	**34.84**	**311**	*eP*	**P**	**17 46 24.2**	**-0.9**
WMQ				AP	pP	17 46 58.7	+4.3
WMQ				XP	sP	17 47 17.2	+7.3
WMQ				PP	PP	17 47 46.6	-0.4
WMQ				PCP	PcP	17 48 55.3	-0.2
WMQ				S	**S**	**17 51 40.7**	**-4.6**
WMQ				SCP		17 52 24.2	
WMQ				XS		17 52 41.0	
WMQ				SS	SS	17 54 04.3	-3.8
WMQ				SCS	ScS	17 56 26.1	-3.4
WMQ				AMB	AMB		
	comp=Z,12nm,1.4s,mb4.3						
WMQ				AMB	AMB		
	comp=Z,44nm,4.8s						
GKN	**Gorkha**	**35.18**	**283**	*eP*	**P**	**17 46 27.7**	**-0.4**
	comp=Z,7.8nm,0.5s,mb4.6						
KOLN	**Koldanda**	**36.11**	**283**	*eP*	**P**	**17 46 35.2**	**-0.8**
	comp=Z,12nm,1.1s,mb4.5						
YAK	**Yakutsk**	**37.04**	**4**	*eP*	**P**	**17 46 41.6**	**-1.8**
YAK				pmax	pmax		
	comp=Z,16nm,0.7s,mb4.8						
MKAR	**Makanchi Array**	**39.42**	**314**	P	**P**	**17 47 03.0**	**-0.5**
	comp=Z,3.9nm,0.3s,mb4.5,baz=101,slow=9.1,SNR=142						
MKAR				PP	PP	17 48 34.3	-5.2
	comp=Z,1.4nm,0.8s,baz=106,slow=10,SNR=3.4						
MKAR				PcP	PcP	17 49 09.6	+0.2
	comp=Z,0.8nm,0.7s,baz=82,slow=4.7,SNR=3.6						
MKAR				ScP		17 52 45.9	
	comp=Z,0.6nm,1.0s,baz=124,slow=4.4,SNR=4.1						
MKAR	**Makanchi Array**	**39.42**	**314**	P	**P**	**17 47 03.0**	**-0.5**
MKAR				PP	PP	17 48 34.3	-5.2
MKAR				PcP	PcP	17 49 09.6	+0.1
MKAR				ScP		17 52 45.9	
ZAL	**Zalesovo**	**40.83**	**325**	P	**P**	**17 47 14.3**	**-0.5**
	comp=Z,4.9nm,0.7s,mb4.2,baz=263,slow=8.1,SNR=22						
ZAL				PcP	PcP	17 49 13.2	-0.6
	comp=Z,0.9nm,0.3s,baz=39,slow=2.2,SNR=3.0						
ZAL				ScP		17 52 50.9	
	comp=Z,0.6nm,0.3s,baz=263,slow=11,SNR=3.7						
NVS	**Novosibirsk**	**42.07**	**326**	*eP*	**P**	**17 47 24.0**	**-1.0**
KURK	**Kurchatov**	**42.99**	**318**	*eP*	**P**	**17 47 31.5**	**-1.0**
FITZ	**Fitzroy Crossi**	**43.05**	**178**	⇑*iP*	**P**	**17 47 33.2**	**-0.3**
	comp=Z,8.0nm,0.7s,mb4.5						
WRAB	**Tennant Creek**	**45.97**	**166**	*eP*	**P**	**17 47 56.9**	**+0.1**
	comp=Z,20nm,0.8s,mb4.8						
WRA	**Warramunga Arr**	**45.98**	**166**	P	**P**	**17 47 56.8**	**0.0**
	comp=Z,8.5nm,0.4s,mb4.8,baz=348,slow=8.8,SNR=92						
WRA				pP	pP	17 48 25.2	-1.9
	comp=Z,2.9nm,0.9s,baz=347,slow=8.8,SNR=3.0						
WB2	**Warramunga Arr**	**45.98**	**166**	⇑*iP*	**P**	**17 47 57.3**	**+0.5**
TIXI	**Tiksi**	**46.58**	**2**	*eP*	**P**	**17 47 59.4**	**-1.4**
TIXI				pmax	pmax		
	comp=Z,21nm,0.5s,mb5.0						
TIXI	**Tiksi**	**46.58**	**2**	*eP*	**P**	**17 47 59.3**	**-1.6**
BVAR	**Borovoye Array**	**48.53**	**320**	P	**P**	**17 48 15.8**	**-0.4**
	comp=Z,6.5nm,0.4s,mb4.6,baz=103,slow=8.0,SNR=61						
BVAR				PcP	PcP	17 49 40.0	-0.5
	comp=Z,3.2nm,0.5s,baz=104,slow=3.8,SNR=12						
BVAR				ScP		17 53 22.5	
	comp=Z,0.6nm,0.7s,baz=90,slow=5.9,SNR=5.0						
BRVK	**Borovoye**	**48.60**	**320**	*eP*	**P**	**17 48 15.2**	**-1.6**
BRVK				*e*		17 49 39.0	
ZRNK	**Zerenda**	**49.33**	**319**	*eP*	**P**	**17 48 21.4**	**-1.0**
ZRNK				*e*		17 49 41.9	
AS12	**Alice Springs**	**49.51**	**168**	*eP*	**P**	**17 48 24.7**	**+0.6**
	comp=Z,4.4nm,0.4s,mb4.4						
ASAR	**Alice Springs**	**49.51**	**168**	P	**P**	**17 48 24.9**	**+0.8**
	comp=Z,3.2nm,0.5s,mb4.2,baz=353,slow=13,SNR=71						
ASAR				PcP	PcP	17 49 44.8	+0.4
	comp=Z,0.8nm,0.6s,baz=343,slow=3.1,SNR=4.5						
SVE	**Sverdlovsk**	**54.76**	**323**	⇑*eP*	**P**	**17 49 02.5**	**-0.3**
ARU	**Arti**	**55.85**	**322**	⇓*iP*	**P**	**17 49 09.3**	**-1.4**
ARU				*e*		17 50 05.0	
ARU				*e*		17 51 14.4	
ARU				*eS*	**S**	**17 56 46.7**	**+1.0**
ARU				*eSS*	SS	18 00 35.2	+1.8
ARU				pmax	pmax		
	comp=Z,10.0nm,0.7s,mb4.8						
ARU	**Arti**	**55.85**	**322**	*eP*	**P**	**17 49 08.8**	**-2.0**
	comp=Z,5.7nm,0.6s,mb4.6						
STKA	**Stephens Creek**	**59.19**	**163**	*eP*	**P**	**17 49 34.3**	**-0.2**
	comp=Z,2.5nm,2.0s,mb3.7						
STKA	**Stephens Creek**	**59.19**	**163**	P	**P**	**17 49 34.5**	**0.0**
	comp=Z,3.7nm,0.8s,mb4.3,baz=346,slow=8.0,SNR=6.4						
ZEI	**Tsey**	**66.33**	**308**	⇑*eP*	**P**	**17 50 20.5**	**-1.0**
KIV	**Kislovodsk**	**66.93**	**309**	*iP*	**P**	**17 50 25.5**	**+0.3**
KIV				*e*		17 50 52.4	
KIV				*eS*	S	17 59 02.1	-3.8
KIV				pmax	pmax		
	comp=Z,10.0nm,0.8s,mb4.7						
KIV				pmax	pmax		
	comp=E,5.0nm,0.9s						
ILAR	**Eielson Array**	**67.16**	**28**	P	**P**	**17 50 25.6**	**-0.8**
	comp=E,0.6nm,0.4s,mb3.7,baz=268,slow=4.0,SNR=9.3						
OBN	**Obninsk**	**68.28**	**322**	*eP*	**P**	**17 50 32.2**	**-1.2**
OBN				pmax	pmax		
	comp=Z,16nm,1.1s,mb4.7						
KEV	**Kevo**	**68.99**	**338**	*ep*	**P**	**17 50 35.5**	**-2.1**
SPITS	**Spitsbergen Ar**	**69.05**	**348**	P	**P**	**17 50 37.7**	**-0.1**
	comp=Z,4.0nm,0.8s,mb4.2,baz=96,slow=5.0,SNR=31						
SPITS				PcP	PcP	17 51 00.3	-0.8
	comp=Z,6.0nm,1.1s,baz=101,slow=9.2,SNR=3.6						
JOF	**Joensuu**	**69.08**	**331**	*ep*	**P**	**17 50 35.2**	**-3.0**
ARCES	**ARCESS Array B**	**69.56**	**338**	P	**P**	**17 50 40.5**	**-0.6**
	comp=Z,0.7nm,0.4s,mb3.8,baz=74,slow=7.1,SNR=22						
ARCES				PcP	PcP	17 51 03.2	0.0
	comp=Z,3.6nm,0.6s,baz=90,slow=4.9,SNR=15						
ARCES	**ARCESS Array B**	**69.56**	**338**	P	**P**	**17 50 40.5**	**-0.6**
ARCES				PcP	PcP	17 51 03.2	0.0
DAWY	**Dawson**	**70.49**	**28**	*eP*	**P**	**17 50 46.5**	**-0.2**
INK	**Inuvik**	**71.35**	**23**	P	**P**	**17 50 51.1**	**-0.6**
KAF	**Kangasniemi**	**71.54**	**331**	*ep*	**P**	**17 50 48.5**	**-4.5**
FINES	**FINESS Array B**	**71.86**	**330**	P	**P**	**17 50 54.5**	**-0.4**
	comp=Z,2.2nm,0.4s,mb4.2,baz=56,slow=5.0,SNR=26						
FINES	**FINESS Array B**	**71.86**	**330**	*eP*	**P**	**17 50 54.3**	**-0.6**
AKASG	**Malin Array Be**	**73.80**	**319**	P	**P**	**17 51 05.6**	**-0.8**
	comp=Z,1.6nm,0.6s,mb4.0,baz=57,slow=5.6,SNR=10						
BRTR	**Keskin Array B**	**74.61**	**307**	P	**P**	**17 51 11.8**	**+0.5**
	comp=Z,5.6nm,0.7s,mb4.3,baz=101,slow=6.3,SNR=26						
ASF	**Jabal al Asfar**	**74.72**	**299**	P	**P**	**17 51 14.3**	**+2.2**
	comp=Z,7.0nm,0.8s,mb4.4,baz=250,slow=3.5,SNR=7.7						
DLBC	**Dease Lake**	**76.79**	**31**	P	**P**	**17 51 25.2**	**+2.0**
	comp=Z,1.8nm,0.7s,mb3.8,baz=285,slow=6.9,SNR=5.4						
KWP	**Kalwaria**	**78.08**	**319**	*eP*	**P**	**17 51 31.6**	**+1.1**
NB2	**NORSAR Subarra**	**78.51**	**333**	P	**P**	**17 51 32.4**	**-0.2**
	comp=Z,1.1nm,0.5s,mb3.7,baz=50,slow=5.8						
NOA	**NORSAR Array B**	**78.51**	**333**	P	**P**	**17 51 32.5**	**-0.1**
	comp=Z,1.2nm,0.4s,mb3.8,baz=54,slow=5.9,SNR=7.3						
YKA	**Yellowknife Ar**	**81.06**	**24**	P	**P**	**17 51 47.0**	**+0.7**
	comp=Z,1.3nm,0.5s,mb3.8,baz=308,slow=5.1,SNR=43						
YKA				pP	pP	17 52 20.5	+0.7
	comp=Z,0.7nm,0.9s,baz=312,slow=5.0,SNR=3.0						
YKA	**Yellowknife Ar**	**81.06**	**24**	P	**P**	**17 51 47.0**	**+0.7**
YKA				pP	pP	17 52 20.5	+0.7
IDI	**Anoyia**	**82.74**	**305**	P	**P**	**17 51 55.4**	**-0.1**
	comp=Z,5.7nm,0.7s,mb4.4,baz=229,slow=21,SNR=5.7						
GERES	**GERESS Array B**	**83.66**	**321**	P	**P**	**17 52 00.5**	**+0.7**
	comp=Z,2.9nm,1.0s,mb4.0,baz=76,slow=5.5,SNR=11						
DAVOX	**Davos**	**86.94**	**321**	P	**P**	**17 52 17.6**	**+1.6**
	comp=Z,3.2nm,0.8s,mb4.2,baz=2.7,slow=11,SNR=3.1						
EKA	**Eskdalemuir Ar**	**88.00**	**333**	P	**P**	**17 52 21.5**	**+0.6**
	comp=Z,0.5nm,0.6s,mb3.5,baz=56,slow=2.6,SNR=3.8						
NEW	**Newport**	**88.73**	**36**	P	**P**	**17 52 25.2**	**+0.7**
LPG	**La Plagne**	**89.46**	**321**	*eP*	**P**	**17 52 29.1**	**+1.1**
	comp=Z,9.2nm,0.7s,mb4.5						
LPL	**La Plagne**	**89.46**	**321**	*eP*	**P**	**17 52 29.0**	**+1.0**
	comp=Z,7.0nm,0.6s,mb4.4						
PGF	**Pioggiola**	**89.86**	**318**	*eP*	**P**	**17 52 30.4**	**+0.5**
SBF	**Sospel**	**90.03**	**320**	*eP*	**P**	**17 52 30.8**	**+0.1**
	comp=Z,16nm,0.7s,mb4.8						
ORIF	**Oris-en-Rattie**	**90.30**	**321**	*eP*	**P**	**17 52 32.6**	**+0.6**
	comp=Z,13nm,1.0s,mb4.5						
SMF	**Signal de Mont**	**90.38**	**323**	*eP*	**P**	**17 52 32.6**	**+0.3**
	comp=Z,4.8nm,0.7s,mb4.2						
AVF	**Avril sur Loir**	**90.55**	**324**	*eP*	**P**	**17 52 33.3**	**+0.2**
	comp=Z,2.6nm,0.6s,mb4.1						
FRB	**Frobisher Bay**	**90.82**	**6**	P	**P**	**17 52 34.2**	**+0.2**
	comp=Z,2.6nm,0.7s,mb4.4,baz=336,slow=6.4,SNR=3.3						
FRB	**Frobisher Bay**	**90.82**	**6**	P	**P**	**17 52 34.2**	**+0.2**
VIVF	**Saint-Julien-l**	**91.02**	**322**	*eP*	**P**	**17 52 35.6**	**+0.2**
SMRF	**Simiane la Rot**	**91.04**	**321**	*eP*	**P**	**17 52 36.0**	**+0.5**
	comp=Z,12nm,1.0s,mb4.6						
HLID	**Hailey**	**93.14**	**38**	*eP*	**P**	**17 52 47.8**	**+2.7**
	comp=Z,1.5nm,0.8s,mb4.2						

*IDC **11** 18:02:58.1±1.4,4.49S×139.17E,mb3.8/2,mb1 4.0/7, mb1mx3.8/14,ML3.7/5,MS2.9/1,Ms1 2.9/1,ms1mx2.6/20, Error ellipse: s-maj=41.8km s-min=24.3km az=75.0*
*NEIC **11** 18:02:59.3±0.7,4.44S×139.12E,h10km,mb3.8/3,Error ellipse: s-maj=16.9km s-min=11.0km az=75.0*

ISC 11 18:03:02.5±2.1,4.61S±0.07×138.9E±0.1,h46km±20km, n17,σ0°94/23,mb3.7/2,Irian Jaya

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**9.52**	**120**			Pn	**P**	**18 05 12.6**	**-7.4**
	0.9nm,0.3s,baz=297,slow=11,SNR=4.1								
PMG						LR	LR	18 09 08.3	
	comp=Z,68nm,18.1s,baz=182,slow=40								
KAKA	**Kakadu**	**10.26**	**218**	*eP*		**P**	**P**	**18 05 30.7**	**+0.6**
	47nm,0.4s								
KAKA				*eS*		**S**	**S**	**18 07 25.2**	**+0.4**
WRAB	**Tennant Creek**	**15.85**	**196**	*eP*		**P**	**P**	**18 06 44.2**	**0.0**
	11nm,0.5s								
WB2	**Warramunga Arr**	**15.86**	**196**	*eP*		**P**	**P**	**18 06 42.7**	**-1.6**
WB2				*i*				18 06 50.1	
WB2				*eS*		**S**	**S**	**18 09 31.0**	**-7.5**
WRA	**Warramunga Arr**	**15.86**	**196**	Pn		**P**	**P**	**18 06 42.7**	**-1.6**
	0.3nm,0.3s,baz=23,slow=13,SNR=19								
WRA				Sn		**S**	**S**	**18 09 32.9**	**-5.7**
	0.9nm,0.3s,baz=20,slow=22,SNR=7.9								
CTA	**Charters Tower**	**16.99**	**156**	*eP*		**P**	**P**	**18 06 59.5**	**+1.0**
	4.2nm,0.9s								
CTA	**Charters Tower**	**16.99**	**156**	Pn		**P**	**P**	**18 06 59.0**	**+0.4**
	0.3nm,0.3s,baz=331,slow=14,SNR=5.3								
CTAO	**Charters Tower**	**16.99**	**156**	*eP*		**P**	**P**	**18 06 59.4**	**+0.8**
FITZ	**Fitzroy Crossi**	**18.62**	**223**	*eP*		**P**	**P**	**18 07 19.8**	**+1.0**
	3.8nm,0.7s								
FITZ				*eS*		**S**	**S**	**18 10 40.0**	**-1.5**
FITZ	**Fitzroy Crossi**	**18.62**	**223**	P		**P**	**P**	**18 07 19.3**	**+0.5**
	0.8nm,0.3s,baz=29,slow=10,SNR=20								
FITZ				S		**S**	**S**	**18 10 42.1**	**+0.6**
	0.4nm,0.3s,baz=16,slow=19,SNR=3.7								
AS12	**Alice Springs**	**19.54**	**194**	*eP*		**P**	**P**	**18 07 30.2**	**+1.1**
	3.4nm,0.4s								
ASAR	**Alice Springs**	**19.54**	**194**	P		**P**	**P**	**18 07 30.2**	**+1.1**
	0.6nm,0.3s,baz=28,slow=8.8,SNR=27								
ASAR				S		**S**	**S**	**18 11 01.8**	**0.0**
	0.2nm,0.3s,baz=15,slow=28,SNR=5.1								
ULN	**Ulaanbaatar**	**59.24**	**336**	*eP*		**P**	**P**	**18 13 01.2**	**-0.5**
MKAR	**Makanchi Array**	**71.37**	**323**	P		**P**	**P**	**18 14 19.9**	**+0.2**
	0.2nm,0.5s,mb3.3,baz=110,slow=7.6,SNR=5.5								
ZAL	**Zalesovo**	**73.64**	**330**	P		**P**	**P**	**18 14 34.6**	**+1.6**
	0.8nm,0.3s,mb4.1,baz=83,slow=5.4,SNR=2.6								
KURK	**Kurchatov**	**75.34**	**325**	P		**P**	**P**	**18 14 41.8**	**-1.1**
BRVK	**Borovoye**	**81.01**	**325**	P		**P**	**P**	**18 15 13.7**	**-0.4**

*LJU **11** 18:12:36.7,46.07N×14.75E,h10km, ML2.5*
*NEIC **11** 18:12:37.3±0.3,46.09N×14.76E,h10km, ML2.9(VIE), ML2.7(ZAG),ML2.6(LJU),Error ellipse: s-maj=3.7km s-min=2.9km az=173.0*
NEIC Felt [IV] at Litija.
*PRU **11** 18:12:39.0,46.14N×14.66E*

ISC 11 18:12:36.4±0.2,46.08N±0.02×14.75E±0.02,h9km±2km, n50,σ0°88/91,13C-9D,Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
LJU	**Ljubljana**	**0.16**	**256**	⇑*iPg*		**Pg**	**Pg**	**18 12 40.7**	**+0.7**
LJU				*i* Sg		**Sg**	**Sg**	**18 12 42.9**	**+0.4**
	comp=Z,794nm,0.1s								
PDKS	**Podkum**	**0.17**	**91**	⇓*iPg*		**Pg**	**Pg**	**18 12 41.0**	**+0.9**
PDKS				*i* Sg		**Sg**	**Sg**	**18 12 43.4**	**+0.7**
	comp=Z,992nm,0.1s								
VISS	**Visnje**	**0.29**	**168**	⇓*iPg*		**Pg**	**Pg**	**18 12 42.5**	**+0.1**
VISS				*i* Sg		**Sg**	**Sg**	**18 12 46.2**	**-0.1**
	comp=Z,372nm,0.1s								
CEY	**Cerknica**	**0.41**	**214**	⇓*iPg*		**Pg**	**Pg**	**18 12 44.8**	**0.0**
CEY				*i* Sg		**Sg**	**Sg**	**18 12 50.2**	**-0.3**
LEGS	**Legarje**	**0.41**	**109**	⇑*iPg*		**Pg**	**Pg**	**18 12 45.3**	**+0.4**
LEGS				*i* Sg		**Sg**	**Sg**	**18 12 51.2**	**+0.7**
	comp=Z,229nm,0.2s								
OBKA	**Obir**	**0.45**	**342**	⇑*iPG*		**Pg**	**Pg**	**18 12 46.3**	**+0.8**
OBKA				*i* SG		**Sg**	**Sg**	**18 12 52.3**	**+0.7**
	comp=Z,120nm,0.2s								
DOBS	**Dobrina**	**0.50**	**82**	*i* Pg		**Pg**	**Pg**	**18 12 46.9**	**+0.3**
CESS	**Cesta pri Krsk**	**0.51**	**102**	⇑*iPg*		**Pg**	**Pg**	**18 12 47.0**	**+0.3**
CESS				*i* Sg		**Sg**	**Sg**	**18 12 54.0**	**+0.6**
	comp=Z,159nm,0.1s								
CRES	**Cresnjevec ost**	**0.55**	**117**	⇑*iPg*		**Pg**	**Pg**	**18 12 47.5**	**-0.1**
CRES				*i* Sg		**Sg**	**Sg**	**18 12 55.7**	**+0.6**
	comp=Z,76nm,0.1s								
VOY	**Vojsko**	**0.60**	**265**	⇓*ePg*		**Pg**	**Pg**	**18 12 48.6**	**+0.1**
VOY				*eSg*		**Sg**	**Sg**	**18 12 57.8**	**+1.2**
PERS	**Pernice**	**0.61**	**24**	⇓*ePg*		**Pg**	**Pg**	**18 12 49.0**	**+0.3**
PERS				*eSg*		**Sg**	**Sg**	**18 12 57.5**	**+0.7**
	comp=Z,69nm,0.1s								
GOLS	**Golise**	**0.61**	**96**	⇑*iPg*		**Pg**	**Pg**	**18 12 49.0**	**+0.2**
KNDS	**Knezji Dol**	**0.61**	**206**	⇓*iPg*		**Pg**	**Pg**	**18 12 48.4**	**-0.5**
BISS	**Bistriski jare**	**0.62**	**24**	⇓*iPg*		**Pg**	**Pg**	**18 12 49.2**	**+0.3**
BISS				*i* Sg		**Sg**	**Sg**	**18 12 57.8**	**+0.5**
GROS	**Grobnik**	**0.64**	**54**	⇓*iPg*		**Pg**	**Pg**	**18 12 49.5**	**+0.1**
BOJS	**Bojanci**	**0.68**	**149**	⇓*iPg*		**Pg**	**Pg**	**18 12 49.7**	**-0.3**
VBY	**Vinica-Bojanci**	**0.68**	**149**	*eSg*		**Sg**	**Sg**	**18 12 58.0**	**-1.1**
DRE	**Drenchia**	**0.78**	**277**	⇑*ePg*		**Pg**	**Pg**	**18 12 51.4**	**-0.7**
DRE				*eSg*		**Sg**	**Sg**	**18 13 03.6**	**+1.1**
TRI	**Trieste**	**0.79**	**242**	*ePg*		**Pg**	**Pg**	**18 12 51.2**	**-1.0**
TRI				*eSg*		**Sg**	**Sg**	**18 13 03.2**	**+0.4**
LSR	**Lussari**	**0.94**	**295**	⇑*ePg*		**Pg**	**Pg**	**18 12 54.9**	**-0.3**
COLI	**Coloredo**	**0.96**	**273**	*ePg*		**Pg**	**Pg**	**18 12 55.1**	**-0.5**
COLI				*eSg*		**Sg**	**Sg**	**18 13 09.9**	**+1.4**
PTCC	**Patocco-Chiusa**	**1.02**	**289**	*ePg*		**Pg**	**Pg**	**18 12 56.4**	**-0.5**
PTCC				*eSg*		**Sg**	**Sg**	**18 13 10.7**	**+0.0**
BAD	**Bernadia**	**1.06**	**279**	*ePg*		**Pg**	**Pg**	**18 12 56.6**	**-1.1**
BAD				*eSg*		**Sg**	**Sg**	**18 13 12.2**	**+0.3**
GMNA	**Gemona**	**1.07**	**281**	*ePg*		**Pg**	**Pg**	**18 12 58.1**	**+0.3**
GMNA				*eSg*		**Sg**	**Sg**	**18 13 15.3**	**+3.1**
TLI	**Talmassons**	**1.16**	**263**	*ePg*		**Pg**	**Pg**	**18 12 60.0**	**+0.3**
PLRO	**Paularo**	**1.21**	**293**	*ePg*		**Pg**	**Pg**	**18 13 00.5**	**0.0**
PLRO				*eSg*		**Sg**	**Sg**	**18 13 17.4**	**+0.7**
MPRI	**Monte Prat**	**1.24**	**278**	*ePg*		**Pg**	**Pg**	**18 13 01.1**	**-0.1**
MPRI				*eSg*		**Sg**	**Sg**	**18 13 19.5**	**+1.8**
ARSA	**Arzberg**	**1.28**	**24**	⇑*iPN*		**Pn**	**Pn**	**18 13 00.9**	**+0.3**
ARSA				*i* PG		**Pg**	**Pg**	**18 13 01.3**	**-0.8**
ARSA				*i* SG		**Sg**	**Sg**	**18 13 19.2**	**0.0**
	comp=Z,19nm,0.3s								
SISC	**Sisak**	**1.29**	**118**	*i* Pg		**Pg**	**Pg**	**18 13 02.1**	**-0.1**
SISC				*i* Sg		**Sg**	**Sg**	**18 13 19.4**	**-1.0**
ZOU	**Zoufplan**	**1.32**	**292**	*ePg*		**Pg**	**Pg**	**18 13 02.1**	**-0

comp=Z,2.6nm,1.6s,baz=195,slow=6.0,SNR=3.9
KURK Kurchatov 13.03 15 eP P 18 24 17.4 -4.3
DANN Dangsing 13.08 136 eP P 18 24 21.1 -1.3
comp=Z,0.8nm,0.3s
KOLN Koldanda 13.45 138 eP P 18 24 25.9 -1.3
comp=Z,9.4nm,0.4s
GKN Gorkha 13.84 134 eP P 18 24 30.6 -1.5
comp=Z,18nm,0.4s
KKN Kakani 14.37 133 eP P 18 24 37.3 -1.6
comp=Z,32nm,0.7s
KKN Kakani 14.37 133 eP P 18 24 37.3 -1.6
KKN pmax pmax
comp=Z,16nm,0.7s
DMN Daman 14.41 134 eP P 18 24 38.4 -1.0
comp=Z,8.2nm,0.4s
PKI Pulchoki 14.61 133 eP P 18 24 40.3 -1.6
comp=Z,15nm,0.7s
PKI Pulchoki 14.61 133 eP P 18 24 40.3 -1.6
PKI pmax pmax
comp=Z,8.0nm,0.7s
VOSK Vostochnaya 14.61 354 ⇓P P 18 24 39.9 -1.9
comp=Z,3.6nm,1.5s
VOSK Vostochnaya 14.61 354 P P 18 24 41.8 0.0
VOSK pmax pmax
comp=Z,3.0nm,1.2s
GUN Gumba 14.63 131 eP P 18 24 40.9 -1.3
comp=Z,13nm,0.6s
AB31 Akbulak array 14.70 323 P P 18 24 40.5 -2.5
comp=Z,3.8nm,0.5s,baz=136,slow=12,SNR=8.6
AB31 ⇓S S 18 27 11.6 -11
comp=Z,13nm,0.9s,baz=144,slow=20,SNR=16
AB31 Akbulak array 14.70 323 i P P 18 24 40.4 -2.5
AB31 eS S 18 27 11.6 -11
AB31 pmax pmax
comp=Z,2.0nm,0.5s
AB31 smax
comp=Z,3.0nm,0.6s
BVA0 Borovoye Array 14.96 353 ⇑P P 18 24 44.6 -1.6
comp=Z,0.7nm,1.0s,baz=278,slow=36,SNR=17
BVAR Borovoye Array 14.96 353 P P 18 24 45.5 -0.7
comp=Z,0.6nm,0.3s,baz=166,slow=12,SNR=18
BVAR S S 18 27 24.0 -4.3
comp=Z,0.2nm,0.3s,baz=164,slow=21,SNR=4.8
BVAR Borovoye Array 14.96 353 P P 18 24 45.5 -0.7
BVAR S S 18 27 24.0 -4.3
BRVK Borovoye 15.01 353 eP P 18 24 43.1 -3.7
ZRNK Zerenda 15.05 350 ⇑P P 18 24 43.7 -3.7
comp=Z,5.8nm,0.7s
ZRNK Zerenda 15.05 350 eP P 18 24 46.3 -1.1
LSA Lhasa 16.96 115 eP P 18 25 12.7 +1.6
LSA pmax pmax
comp=Z,2.0nm,0.7s
LSA Lhasa 16.96 115 eP P 18 25 12.7 +1.6
comp=Z,1.7nm,0.7s
ZAL Zalesovo 17.55 23 P P 18 25 17.2 -0.9
comp=Z,0.4nm,0.3s,baz=166,slow=11,SNR=9.4
ZAL S S 18 28 28.3 +1.6
comp=Z,0.1nm,0.3s,baz=84,slow=20,SNR=4.0
NVS Novosibirsk 17.91 19 eP P 18 25 19.0 -3.4
ARU Arti 20.74 336 eP P 18 25 51.0 -0.9
ARU pmax pmax
comp=Z,4.0nm,0.6s
ARU Arti 20.74 336 eP P 18 25 51.0 -0.9
comp=Z,4.1nm,0.6s
ZEI Tsey 22.86 291⇑eP P 18 26 16.8 +4.1
KIV Kislovodsk 23.79 294 eP P 18 26 28.8 +7.1
KIV pmax pmax
comp=Z,4.0nm,0.9s,mb4.0
SONM Songino Array 25.77 57 P P 18 26 42.8 +2.5
comp=Z,0.3nm,0.7s,mb3.0,baz=264,slow=12,SNR=4.0
SONM pP pP 18 27 14.6 +5.4
comp=Z,0.8nm,0.9s,baz=244,slow=9.0,SNR=4.6
BRTR Keskin Array B 30.80 285 P P 18 27 26.6 +1.0
comp=Z,1.3nm,0.5s,mb3.9,baz=106,slow=8.1,SNR=9.1
AKASG Malin Array Be 33.44 306 P P 18 27 48.0 -0.3
comp=Z,1.0nm,0.3s,mb4.0,baz=81,slow=8.0,SNR=12
JOF Joensuu 35.40 328 ep P 18 28 03.2 -1.6
FINES FINESS Array B 37.19 324 P P 18 28 20.2 +0.4
comp=Z,2.7nm,0.6s,mb4.1,baz=108,slow=9.3,SNR=16
ARCES ARCESS Array B 40.33 336 P P 18 28 46.5 +0.7
comp=Z,4.7nm,0.6s,mb4.3,baz=110,slow=8.4,SNR=33
HFS Hagfors 42.95 321 P P 18 29 07.7 +0.5
comp=Z,8.4nm,0.5s,mb4.6,baz=98,slow=10,SNR=34
BRG Berggiesshubel 43.11 307 i P P 18 29 10.1 +1.4
BRG pmax pmax
comp=Z,5.0nm,1.0s,mb4.1
BRG Berggiesshubel 43.11 307 i P P 18 29 10.1 +1.4
comp=Z,4.7nm,1.0s,mb4.1
TIXI Tiksi 43.46 22 eP P 18 29 11.7 +0.5
GERES GERESS Array B 43.55 304 P P 18 29 14.2 +2.0
comp=Z,0.6nm,0.7s,mb3.4,baz=45,slow=11,SNR=5.2
CLL Collm 43.65 308 P P 18 29 13.9 +0.9
NB2 NORSAR Subarra 44.20 322 P P 18 29 17.3 0.0
comp=Z,4.6nm,0.5s,mb4.4,baz=92,slow=7.9
NOA NORSAR Array B 44.20 322 P P 18 29 17.6 +0.3
comp=Z,4.1nm,0.5s,mb4.3,baz=92,slow=7.8,SNR=15
HINF Hinteralfeld 48.23 304 eP P 18 29 49.1 -0.1
comp=Z,3.7nm,0.5s,mb3.9
HINF Hinteralfeld 48.23 304 eP P 18 29 49.1 -0.1
HINF pmax pmax
comp=Z,2.0nm,0.5s,mb4.0
HAU Haudompre 48.51 304 eP P 18 29 51.3 0.0
LPG La Plagne 48.91 301 eP P 18 29 55.2 +0.8
comp=Z,5.9nm,0.7s,mb4.0
LPG La Plagne 48.91 301 eP P 18 29 55.2 +0.8
LPG pmax pmax
comp=Z,3.0nm,0.7s,mb4.0
LPL La Plagne 48.92 301 eP P 18 29 55.3 +0.8
comp=Z,6.2nm,0.8s,mb4.0
LPL La Plagne 48.92 301 eP P 18 29 55.3 +0.8
LPL pmax pmax
comp=Z,3.0nm,0.8s,mb4.0
CABF La Chapelle 49.05 303 eP P 18 29 56.8 +1.3
comp=Z,14nm,1.0s,mb4.2
CABF La Chapelle 49.05 303 eP P 18 29 56.8 +1.3
CABF pmax pmax
comp=Z,7.0nm,1.0s,mb4.2
SMF Signal de Mont 50.52 303 eP P 18 30 06.4 -0.3
AVF Avril sur Loir 50.80 304 eP P 18 30 08.5 -0.3
comp=Z,8.6nm,0.8s,mb4.1
AVF Avril sur Loir 50.80 304 eP P 18 30 08.5 -0.3
AVF pmax pmax
comp=Z,4.0nm,0.8s,mb4.1
BGF Bois d'Agland 51.20 303 eP P 18 30 11.6 -0.3
comp=Z,4.6nm,0.5s,mb4.0
BGF Bois d'Agland 51.20 303 eP P 18 30 11.6 -0.3
BGF pmax pmax
comp=Z,2.0nm,0.5s,mb4.0
TCF Toulx Ste Croi 51.71 303 eP P 18 30 15.7 0.0
comp=Z,4.8nm,0.6s,mb4.0
TCF Toulx Ste Croi 51.71 303 eP P 18 30 15.7 0.0
TCF pmax pmax
comp=Z,2.0nm,0.6s,mb3.9
CAF Calviac 52.24 302 eP P 18 30 19.9 +0.2
EKA Eskdalemuir Ar 52.41 315 P P 18 30 20.9 0.0
comp=Z,1.7nm,0.7s,mb3.8,baz=88,slow=8.1,SNR=7.2
RJF Les Rejaudoux 52.48 302 eP P 18 30 21.7 +0.2
LDF La Druitiere 52.50 307 eP P 18 30 20.9 -0.7
comp=Z,6.5nm,0.6s,mb4.3
LDF La Druitiere 52.50 307 eP P 18 30 20.9 -0.7
LDF pmax pmax
comp=Z,3.0nm,0.6s,mb4.2
FLN La Foliniere 52.68 307 eP P 18 30 21.9 -0.9
GRR Gorron 53.03 307 eP P 18 30 24.8 -0.7
comp=Z,14nm,0.8s,mb4.4
GRR Gorron 53.03 307 eP P 18 30 24.8 -0.7
GRR pmax pmax
comp=Z,7.0nm,0.8s,mb4.4
LFF La Frestale 53.12 302 eP P 18 30 26.3 +0.1
ROSF Rostrenen 54.57 307 eP P 18 30 36.1 -0.6
comp=Z,3.2nm,0.6s,mb4.0
ROSF Rostrenen 54.57 307 eP P 18 30 36.1 -0.6
ROSF pmax pmax
comp=Z,2.0nm,0.6s,mb4.0
QUIF Quistinic 54.65 307 eP P 18 30 36.5 -0.8
comp=Z,7.2nm,0.8s,mb4.2
QUIF Quistinic 54.65 307 eP P 18 30 36.5 -0.8
QUIF pmax pmax
comp=Z,4.0nm,0.8s,mb4.2
ILAR Eielson Array 72.59 17 P P 18 32 34.5 +0.4
comp=Z,0.8nm,0.9s,mb3.5,baz=315,slow=5.3,SNR=8.9
YKA Yellowknife Ar 79.43 4 P P 18 33 13.5 +1.0
comp=Z,0.9nm,0.5s,mb3.6,baz=349,slow=5.5,SNR=27
YKA Yellowknife Ar 79.43 4 P P 18 33 13.5 +1.0
YKA pmax pmax
comp=Z,1.0nm,0.5s
WRAB Tennant Creek 81.29 124 eP P 18 33 25.8 +2.5

*NEIC **11** 18:34:27.3, 16.18N×97.09W, h94km, MD4.0(MEX), After MEX.*
*MEX **11** 18:34:28.3±1.2, 15.96N×96.93W, h14km±16km, MD4.0*
ISC 11 18:34:25.4±1.0, 15.98N±0.06×96.96W±0.04, h19km±11km, n11, σ0≤93/19, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
HUIG	**Huatulco**	**0.84**	**104**	*i* P		**Pb**	**18 34 41.4**	**+0.2**
HUIG				*i* S		**Sb**	**18 34 52.4**	**+0.4**
VHO	**Vista Hermosa**	**1.11**	**11**	*i* P		**Pb**	**18 34 45.6**	**-0.1**
VHO				*i* S		**Sb**	**18 35 00.1**	**+0.3**
OXX	**Oaxaca**	**1.12**	**12**	*i* P		**Pb**	**18 34 45.5**	**-0.4**
OXX				*i* S		**Sb**	**18 35 00.0**	**0.0**
PNIG	**Pinotepa**	**1.20**	**290**	*i* P		**Pb**	**18 34 47.4**	**+0.1**
PNIG				*i* S		**Sb**	**18 35 01.4**	**-0.8**
CMIG	**Matias Romero**	**2.28**	**61**	*i* P		**Pn**	**18 35 01.1**	**-1.6**
CMIG				*i* S		**Sn**	**18 35 28.6**	**-2.0**
CMIG	**Matias Romero**	**2.28**	**61**	*i* P		**Pn**	**18 35 01.1**	**-1.6**
CMIG				*i* S		**Sn**	**18 35 31.4**	**+0.9**
EVV	**El Vigia**	**2.90**	**32**	*eP*		**Pn**	**18 35 12.0**	**+0.3**
IISM	**Ciudad Serdan**	**3.02**	**352**	*eP*		**Pn**	**18 35 17.5**	**+4.2**
POHV	**Veracruz**	**3.09**	**354**	*eP*		**Pn**	**18 35 18.8**	**+4.5**
PPM	**Popocatepetl**	**3.46**	**333**	*i* P		**Pn**	**18 35 21.9**	**+2.3**
PPM				*i* S		**Sn**	**18 36 00.2**	**-0.4**
PPM	**Popocatepetl**	**3.46**	**333**	*i* P		**Pn**	**18 35 21.9**	**+2.3**
PPM				*i* S		**Sn**	**18 35 52.8**	**-7.7**

MAN 11 18:38:46.2, 13.61N×121.50E, h9km, mb4.2, ML3.0, MS2.8, 5C, Mindoro

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
BOAC	**Boac**	**0.37**	**114⇑**	*eP*		**Pg**	18 38 54.3	+0.6
BOAC				*eS*		Sg	18 38 59.4	+0.7
PGP	**Puerto Galera**	**0.54**	**259**	*eP*		**Pg**	18 38 57.0	-0.2
PGP				*i* S		Sg	18 39 05.0	+0.6
SJMP	**San Jose**	**1.20**	**198⇑**	*eP*		Pb	18 39 08.7	+0.1
LUBP	**Lubang**	**1.22**	**276⇑**	*eP*		Pb	18 39 08.4	-0.7
OTRP	**Odiongan**	**1.34**	**158⇑**	*eP*		Pb	18 39 09.6	-1.5
BUSP	**Coron**	**2.04**	**219⇑**	*eP*		Pn	18 39 20.8	-0.3

*IDC **11** 18:49:05.2±1.7, 29.43S×72.18W, mb4.2/1, mb1 4.0/4, mb1mx3.8/16, ML4.1/3, MS3.2/2, Ms1 3.2/2, ms1mx2.9/21, Error ellipse: s-maj=42.3km s-min=24.5km az=133.0*
*GUC **11** 18:49:08.1±0.8, 29.84S×71.99W, h9km±6km, ML4.3*
*NEIC **11** 18:49:08.1, 29.84S×71.99W, h9km, ML4.3(GUC), After GUC.*
ISC 11 18:49:06.3±1.6, 29.81S×0.04×72.06W±0.07, h6km±8km, n15, σ0≤80/21, mb3.9/1, MS3.2/1, 4C-1D, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
LSCH	**La Serena**	**0.71**	**98⇑**	*iP*		**Pg**	**18 49 20.6**	**-0.1**
LSCH				*i* S		**Sg**	**18 49 30.5**	**+0.4**
LSCH				AMP			18 49 32.0	
comp=E,11μm,0.3s								
OVCH	**Ovalle**	**1.09**	**137⇑**	*i* P		**Pb**	**18 49 26.9**	**-0.3**
OVCH				*i* S		**Sb**	**18 49 41.2**	**-0.3**
OVCH				AMP			18 49 44.9	
comp=N,14μm,0.4s								
TLL	**Tololo Astrono**	**1.15**	**108⇓**	*i* P		**Pb**	**18 49 28.1**	**0.0**
TLL				*i* S		**Sb**	**18 49 43.1**	**0.0**
TLL				AMP			18 49 48.0	
comp=E,18μm,0.6s								
CMCH	**Combarbala**	**1.64**	**146⇑**	*i* P		**Pn**	**18 49 36.0**	**+0.1**
CMCH				*i* S		**Sb**	**18 49 56.5**	**-0.9**
CMCH				AMP			18 50 04.0	
comp=E,14μm,0.5s								
VACH	**Vallenar**	**1.67**	**43**	*i* P		**Pn**	**18 49 36.6**	**+0.2**
VACH				*i* S		**Sn**	**18 49 58.7**	**+0.3**
VACH				AMP			18 50 02.6	
comp=E,7μm,0.6s								
JACH	**Jahuel**	**3.13**	**157⇑**	*i* P		**Pn**	**18 49 57.8**	**+0.6**
JACH				*i* S		**Sn**	**18 50 36.0**	**+0.7**
MDZ	**Mendoza**	**4.11**	**139**	*eP*		**Pn**	**18 50 12.4**	**+1.2**
MDZ				*e*			18 50 50.8	
MDZ				S		Sn	18 51 30.8	+31
LVC	**Limon Verde**	**7.70**	**22**	Pn		**Pn**	**18 50 56.8**	**-5.0**
comp=E,0.5nm,0.3s,baz=198,slow=9.6,SNR=8.0								
LVC				Sn		**Sn**	**18 52 22.0**	**-8.4**
comp=E,1.2nm,0.3s,baz=242,slow=17,SNR=1.8								
LVC				Lg			18 52 57.0	
comp=E,2.7nm,0.3s,baz=109,slow=20,SNR=5.9								
LVC	**Limon Verde**	**7.70**	**22**	*eP*		**Pn**	**18 50 57.0**	**-4.8**
TRQA	**Tornquist**	**11.73**	**137**	*eP*		**P**	**18 51 57.2**	**-0.1**
CPUP	**Villa Florida**	**13.46**	**79**	Pn		**P**	**18 52 18.9**	**-1.6**
comp=E,0.1nm,0.3s,baz=267,slow=16,SNR=3.2								
CPUP				Sn		**S**	**18 54 52.0**	**+0.6**
comp=E,0.1nm,0.3s,baz=287,slow=7.3,SNR=2.5								
CPUP				Lg			18 56 12.2	
comp=E,0.2nm,0.3s,baz=30,slow=20,SNR=4.5								
CPUP				LR	LR		18 57 38.3	
comp=E,75nm,21.2s,baz=87,slow=38								
LPAZ	**La Paz**	**13.93**	**16**	Pn		**P**	**18 52 27.4**	**+0.6**
comp=E,0.6nm,0.3s,baz=217,slow=5.0,SNR=3.2								
BDFB	**Brasilia**	**26.21**	**63**	P		**P**	**18 54 40.9**	**-2.9**
comp=E,1.5nm,0.3s,mb3.9,baz=191,slow=5.2,SNR=2.7								
BDFB				LR	LR		19 06 30.9	
comp=E,84nm,21.2s,MS3.2,baz=120,slow=40								
WRA	**Warramunga Arr**	**124.38**	**210**	PKP		PKPdf	19 08 06.6	-3.0
comp=E,0.9nm,1.2s,baz=153,slow=1.7,SNR=6.6								
MKAR	**Makanchi Array**	**153.85**	**42**	PKPbc		PKPdf	19 09 06.3	+5.7
comp=E,0.4nm,0.8s,baz=272,slow=1.9,SNR=4.1								

*NEIC **11** 18:56:00.7, 35.44N×3.79W, MG3.6(MDD), After MDD.*
MDD 11 18:55:59.9±0.9, 35.53N×3.80W, mb3.4/9, 1C, Error ellipse: s-maj=7.6km s-min=3.8km az=40.0, PRXIMO AftershockPLICA, Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
EMEL	**Melilla**	**0.72**	**108**	⇑P		Pg	18 56 13.3	-1.0
EMEL	329nm,0.1s,SNR=18				S	Sg	18 56 22.4	-1.6
239nm,0.1s,SNR=6.5								
ERON	**Agron**	**1.48**	**360**	P		Pn	18 56 28.5	+0.5
ERON	2.2nm,0.2s,SNR=7.9				S	Sb	18 56 45.4	-2.0
4.2nm,0.2s,SNR=7.9								
ERON	**Agron**	**1.48**	**360**	P		Pn	18 56 28.5	+0.6
ERON					S	Sb	18 56 49.5	+2.1
EBER	**Berja**	**1.55**	**28**	P		Pn	18 56 28.6	-0.3
EBER	12nm,0.4s,SNR=13				S	Sb	18 56 49.0	-0.3
27nm,0.5s,SNR=4.0								
EBER	**Berja**	**1.55**	**28**	P		Pn	18 56 28.5	-0.4
EBER					S	Sb	18 56 50.2	+0.9
EJIF	**Jimena Fronter**	**1.64**	**305**	P		Pn	18 56 28.5	-1.6
2.3nm,0.2s,SNR=9.1								
EJIF	**Jimena Fronter**	**1.64**	**305**	P		Pn	18 56 29.6	-0.5
EJIF					S	Sb	18 56 52.1	+0.3
ELOJ	**Sierra Loja**	**1.64**	**350**	P		Pn	18 56 30.6	+0.4
0.5nm,0.2s,SNR=5.0								
ELOJ	**Sierra Loja**	**1.64**	**350**	P		Pn	18 56 30.9	+0.8
ELOJ					S	Sb	18 56 53.3	+1.4
ECOG	**Cogollos-Vega**	**1.75**	**6**	P		Pn	18 56 33.0	+1.2
4.1nm,0.4s,SNR=7.9								
ECOG					S	Sn	18 56 55.2	0.0
4.2nm,0.3s,SNR=5.0								
ECOG	**Cogollos-Vega**	**1.75**	**6**	P		Pn	18 56 32.8	+1.0
ECOG					S	Sn	18 56 55.2	0.0
ELIJ	**Sierra de Lija**	**1.89**	**318**	P		Pn	18 56 33.1	-0.6
1.8nm,0.2s,SNR=16								
ELIJ					S	Sn	18 56 58.5	0.0
2.9nm,0.2s,SNR=4.0								
ELIJ	**Sierra de Lija**	**1.89**	**318**	P		Pn	18 56 33.1	-0.6
ELIJ					S	Sn	18 56 58.1	-0.4
ELUQ	**Luque**	**2.06**	**350**	P		Pn	18 56 37.4	+1.2
ELUQ					S	Sn	18 57 03.7	+0.7
ESPR	**Espera**	**2.13**	**309**	P		Pn	18 56 35.9	-1.3
6.5nm,0.3s,SNR=13								
ESPR					S	Sn	18 57 03.5	-1.4
7.6nm,0.3s,SNR=4.7								
ESPR	**Espera**	**2.13**	**309**	P		Pn	18 56 37.7	+0.4
ESPR					S	Sn	18 57 04.0	-0.8
EQES	**Quesada**	**2.34**	**14**	P		Pn	18 56 41.5	+1.3
EQES					S	Sn	18 57 10.1	0.0
EHUE	**Huescar**	**2.48**	**23**	P		Pn	18 56 44.1	+2.0
EHUE					S	Sn	18 57 13.2	-0.4
EBAN	**Banos Encina**	**2.63**	**0**	P		Pn	18 56 46.0	+1.7
EBAN					S	Sn	18 57 16.7	-0.7
EADA	**Adamuz**	**2.71**	**347**	P		Pn	18 56 45.2	-0.2
0.6nm,0.1s,SNR=11								
EADA					S	Sn	18 57 18.6	-0.7
1.8nm,0.2s,SNR=7.9								
EADA	**Adamuz**	**2.71**	**347**	P		Pn	18 56 45.5	+0.1
EADA					S	Sn	18 57 19.4	+0.1
ECAB	**El Cabril**	**2.85**	**333**	P		Pn	18 56 45.7	-1.8
0.2nm,0.1s,SNR=7.8								
ECAB					S	Sn	18 57 22.1	-1.0
4.0nm,0.4s,SNR=6.6								
EMUR	**La Murta**	**3.09**	**41**	P		Pn	18 56 50.4	-0.5
2.7nm,0.5s,SNR=7.9								
EMUR					S	Sn	18 57 29.1	+0.1
9.2nm,0.4s,SNR=7.9								
EMUR	**La Murta**	**3.09**	**41**	P		Pn	18 56 48.8	-2.1
EMUR					S	Sn	18 57 25.6	-3.5
EMIN	**Mina Concepcio**	**3.21**	**315**	P		Pn	18 56 48.8	-3.9
EMIN					S	Sn	18 57 25.9	-6.4
EVIA	**Vianos**	**3.27**	**18**	P		Pn	18 56 51.1	-2.4
EVIA					S	Sn	18 57 30.6	-3.1
EGRO	**El Granado**	**3.58**	**305**	P		Pn	18 56 53.5	-4.4
EGRO					S	Sn	18 57 33.2	-8.2
ETOB	**Tobarra**	**3.59**	**29**	P		Pn	18 56 58.9	+0.9
5.0nm,0.2s,SNR=42								
ETOB					S	Sn	18 57 39.9	-1.9
EBAD	**Badajoz**	**4.12**	**322**	P		Pn	18 57 02.6	-2.9
EBAD					S	Sn	18 57 48.9	-6.2
ESDC	**Sonseca Array**	**4.14**	**358**	P		Pn	18 57 04.8	-1.0
0.4nm,0.3s,baz=175,slow=13,SNR=6.3								
ETOR	**Torete**	**5.46**	**14**	P		Pn	18 57 23.6	-0.8
ECAL	**Calabor**	**6.80**	**341**	P		Pn	18 57 41.0	-2.4
1.2nm,0.3s,SNR=7.9								
ECAL	**Calabor**	**6.80**	**341**	P		Pn	18 57 41.6	-1.8
ECAL					S	Sn	18 58 56.1	-6.4
EALK	**Alkurruntz**	**7.88**	**12**	P		Pn	18 57 57.6	-1.0

*NEIC **11** 19:18:49.8±0.5, 22.08S×169.99E, mb4.2/5, Error ellipse: s-maj=13.6km s-min=10.9km az=198.0*
*IDC **11** 19:18:49.2±0.8, 22.04S×170.12E, h36km±4km, mb4.0/10, mb1 4.1/10, mb1mx4.0/16, MS3.3/5, Ms1 3.3/5, ms1mx3.2/16, Error ellipse: s-maj=20.9km s-min=18.6km az=131.0*
ISC 11 19:18:48.2±1.8, 22.15S±0.09×169.94E±0.09, h38km±15km, h39km±1.6km: pP-P, n36, σ0≤85/27, mb4.1/13, MS3.1/4, Southeast of Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**3.24**	**271**	*eP*		**P**	**19 19 38.2**	**+0.3**
DZM				*eS*		**S**	**19 20 16.0**	**+0.3**
DZM	**Mont Dzumac**	**3.24**	**271**	*eP*		**P**	**19 19 38.2**	**+0.3**
DZM				*eS*		**S**	**19 20 16.0**	**+0.3**
NOUC	**Port Laguerre**	**3.37**	**270**	*eP*		**P**	**19 19 39.7**	**0.0**
NOUC				*eS*		**S**	**19 20 18.2**	**-0.9**
NOUC	**Port Laguerre**	**3.37**	**270**	*eP*		**P**	**19 19 39.7**	**0.0**
NOUC				*eS*		**S**	**19 20 18.1**	**-0.9**
BKM	**Butte a Klehm**	**4.74**	**340**	*i* P		**P**	**19 19 59.0**	**-0.1**
URZ	**Urewera**	**17.20**	**161**	LR		LR	19 28 26.0	
comp=Z,144nm,18.3s,baz=212,slow=33								
RPZ	**Rata Peaks**	**21.53**	**178**	P		**P**	**19 23 36.8**	**+0.9**
11nm,1.0s,mb4.3,baz=296,slow=11,SNR=3.3								
RPZ				LR		LR	19 29 36.7	
comp=Z,8.6nm,19.7s,MS2.1,baz=190,slow=30								
CTA	**Charters Tower**	**22.18**	**271**	P		**P**	**19 23 44.9**	**+2.3**
2.5nm,0.7s,mb3.8,baz=94,slow=14,SNR=3.4								
CTA				LR		LR	19 31 47.3	
comp=Z,157nm,19.5s,MS3.4,baz=300,slow=35								
CTAO	**Charters Tower**	**22.18**	**271**	*eP*		**P**	**19 23 43.6**	**+1.0**
PMG	**Port Moresby**	**25.27**	**297**	P		**P**	**19 24 12.6**	**-0.1**
18nm,0.9s,mb4.6,baz=135,slow=12,SNR=3.2								
PMG				LR		LR	19 32 33.9	
comp=Z,78nm,20.6s,MS3.2,baz=178,slow=32								
STKA	**Stephens Creek**	**26.98**	**243**	*eP*		**P**	**19 24 29.4**	**+1.0**
6.2nm,0.7s,mb4.2								
STKA	**Stephens Creek**	**26.98**	**243**	P		**P**	**19 24 29.7**	**+1.3**
6.4nm,0.7s,mb4.3,baz=87,slow=11,SNR=31								
STKA				pP		pP	19 24 40.8	+1.9
4.2nm,0.7s,baz=101,slow=11,SNR=4.5								
ASAR	**Alice Springs**	**33.17**	**260**	P		**P**	**19 25 23.4**	**-0.1**
1.3nm,0.8s,mb3.9,baz=83,slow=9.0,SNR=19								
ASAR				pP		pP	19 25 35.4	+1.1
1.6nm,0.8s,baz=83,slow=8.7,SNR=5.7								
ASAR				LR		LR	19 37 09.9	
comp=Z,79nm,18.3s,MS3.5,baz=281,slow=33								
WRAB	**Tennant Creek**	**33.24**	**267**	*eP*		**P**	**19 25 22.7**	**-1.4**
WRA	**Warramunga Arr**	**33.25**	**267**	P		**P**	**19 25 23.1**	**-1.1**
2.2nm,0.5s,mb4.3,baz=99,slow=8.4,SNR=42								
WRA				pP		pP	19 25 34.7	-0.3
0.9nm,0.4s,baz=98,slow=8.2,SNR=5.8								
FITZ	**Fitzroy Crossi**	**41.68**	**267**	*eP*		**P**	**19 26 35.6**	**+0.5**
4.5nm,0.9s,mb4.1								
FITZ	**Fitzroy Crossi**	**41.68**	**267**	P		**P**	**19 26 35.6**	**+0.5**
4.5nm,0.8s,mb4.2,baz=180,slow=10,SNR=7.8								
FITZ				pP		pP	19 26 46.8	+0.8
5.3nm,1.0s,baz=186,slow=5.4,SNR=3.4								
VNDA	**Vanda**	**55.56**	**182**	P		**P**	**19 28 20.6**	**-1.0**
0.6nm,0.8s,mb3.6,baz=358,slow=6.3,SNR=3.7								
VNDA				pP		pP	19 28 31.7	-1.2
0.3nm,0.7s,baz=360,slow=7.8,SNR=1.5								
SBA	**Scott Base**	**55.77**	**181**	*eP*		**P**	**19 28 22.8**	**-0.4**
1.5nm,0.7s,mb4.1								
MAW	**Mawson**	**76.00**	**202**	P		**P**	**19 30 32.9**	**+0.2**
0.9nm,0.5s,mb4.0								
CMAR	**Chiang Mai Arr**	**80.29**	**294**	P		**P**	**19 30 59.2**	**+1.9**
1.2nm,0.7s,mb3.9,baz=135,slow=4.0,SNR=6.4								
CMAR				pP		pP	19 31 09.3	+0.3
0.9nm,0.8s,baz=135,slow=4.9,SNR=4.1								
SNAA	**Sanae**	**86.29**	**182**	P		**P**	**19 31 25.8**	**-0.8**
ULN	**Ulaanbaatar**	**89.58**	**323**	*eP*		**P**	**19 31 42.6**	**-0.3**
1.1nm,0.7s,mb4.3								
SONM	**Songino Array**	**89.93**	**323**	P		**P**	**19 31 44.3**	**-0.2**
1.4nm,0.8s,mb4.3,baz=143,slow=6.2,SNR=12								
SONM				pP		pP	19 31 56.8	+0.3
0.7nm,0.9s,baz=146,slow=4.5,SNR=3.7								
VYHS	**Vyhne**	**145.07**	**326**	*e*PKP		PKPdf	19 38 21.0	-0.3
VYHS				*e*			19 38 34.5	
VRAC	**Vranov**	**145.66**	**329**	PKPbc		PKPbc	19 38 23.5	+0.4
3.4nm,0.8s,baz=91,slow=3.4,SNR=5.0								
VRAC				pPKPbc			19 38 35.1	
3.8nm,0.8s,baz=3.3,slow=1.5,SNR=3.3								
BRG	**Berggiesshubel**	**145.75**	**333**	*i* PKP		PKPdf	19 38 23.9	+1.5
BRG				*e*			19 38 28.2	
CLL	**Collm**	**145.82**	**

TCE				eS	S	19 25 26.3	+0.2	
GUNV	Guanoco	0.90	222	eP	P	19 25 18.2	+1.3	
GUNV				eS	S	19 25 31.3	-0.1	
CRUV	Carupano	0.90	260	eP	P	19 25 17.7	+0.7	
CRUV				eS	S	19 25 30.1	-1.4	
TRN	Trinidad (W)	0.93	101	eP	P	19 25 18.7	+1.3	
TRN				eS	S	19 25 31.6	-0.5	
ITEV	Isla Los Testi	0.94	303	eP	P	19 25 18.2	+0.8	
ITEV				eS	S	19 25 31.8	-0.4	
TPP	Pointe-a-Pierr	1.01	121	eS	S	19 25 37.5	+3.9	
GRW	Mount Saint Ca	1.47	26	eP	P	19 25 23.3	-0.5	
GRW				eS	S	19 25 39.2	-4.0	
TPR	Prospect	1.57	77	eP	P	19 25 23.7	-1.3	
TPR				eS	S	19 25 44.2	-1.1	
RIOV	Rio Grande	2.80	169	eS	S	19 26 13.4	-1.1	
CAOV	Caicara del Or	5.26	229	eP	P	19 26 15.0	-0.2	
CAOV				eS	S	19 27 10.1	-5.0	
BAUV	El Baul	5.93	252	eP	P	19 26 23.8	-0.5	
BAUV				eS	S	19 27 25.5	-6.2	

*IDC **11** 19:34:06.0±3.6,5.15S×102.19E,mb3.5/6,mb1 3.6/6, mb1mx3.5/15,MS3.7/1,Ms1 3.6/1,ms1mx3.0/15,Error ellipse: s-maj=149.0km s-min=19.2km az=57.0*

ISC 11 19:34:21.6±3.3,5.0S±0.5×102.4E±0.8,h150km,n6, σ0s78/6,mb3.3/6,Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CMAR	**Chiang Mai Arr**	**23.59**	**352**	P	**P**	**19 39 19.9**	**0.0**
	0.3nm,0.5s,mb3.1,baz=182,slow=8.8,SNR=5.1						
WRA	**Warramunga Arr**	**34.41**	**118**	P	**P**	**19 40 55.8**	**-0.9**
	0.6nm,1.1s,mb3.2,baz=303,slow=9.7,SNR=7.4						
ASAR	**Alice Springs**	**35.54**	**125**	P	**P**	**19 41 06.4**	**+0.2**
	0.6nm,0.5s,mb3.5,baz=296,slow=7.5,SNR=17						
STKA	**Stephens Creek**	**45.35**	**131**	P	**P**	**19 42 27.2**	**+0.6**
	1.2nm,0.8s,mb3.6,baz=53,slow=21,SNR=3.1						
STKA				LR	LR	20 02 13.0	
	comp=Z,79nm,18.1s,baz=332,slow=37						
SONM	**Songino Array**	**52.76**	**3**	P	**P**	**19 43 23.8**	**+0.6**
	0.4nm,0.8s,mb3.2,baz=180,slow=8.6,SNR=3.3						
MKAR	**Makanchi Array**	**54.60**	**343**	P	**P**	**19 43 36.1**	**-0.6**
	0.2nm,0.3s,mb3.3,baz=149,slow=8.8,SNR=8.8						

MAN 11 20:02:09.7,13.50N×120.58E,h74km,mb4.1,ML3.0, MS2.6,14C,Mindoro

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PGP	**Puerto Galera**	**0.36**	**90**	*e*P	P	20 02 23.0	+1.2
LUBP	**Lubang**	**0.40**	**305**	*i*P	P	20 02 24.5	+2.4
LUBP				eS	S	20 02 36.8	+5.4
LUBP	**Lubang**	**0.40**	**305**	*i*P	S	20 02 23.8	+1.7
LUBP				eS	S	20 02 27.5	-3.9
SJMP	**San Jose**	**1.16**	**153**	*i*P	P	20 02 32.3	+1.6
SJMP				eS	S	20 02 50.6	+4.2
SJMP	**San Jose**	**1.16**	**153**	*i*P	P	20 02 32.3	+1.6
BOAC	**Boac**	**1.23**	**92**	*i*P	P	20 02 32.1	+0.5
BOAC				eS	S	20 02 49.8	+1.7
BOAC	**Boac**	**1.23**	**92**	*i*P	P	20 02 32.1	+0.5
BUSP	**Coron**	**1.54**	**194**	*i*P	P	20 02 36.9	+1.0
BUSP				eS	S	20 02 58.6	+3.5
BUSP	**Coron**	**1.54**	**194**	*i*P	P	20 02 36.9	+1.0
OTRP	**Odiongan**	**1.80**	**129**	*i*P	P	20 02 39.1	-0.3
ENPP	**El Nido**	**2.55**	**206**	*i*P	P	20 02 50.4	+0.6
ENPP				eS	S	20 03 27.9	+8.3
ENPP	**El Nido**	**2.55**	**206**	*i*P	P	20 02 50.4	+0.6
CUYO	**Cuyo Island**	**2.67**	**171**	*i*P	P	20 02 51.3	-0.2
CUYO	**Cuyo Island**	**2.67**	**171**	*i*P	P	20 02 50.5	-1.0
CNP	**Catarman**	**4.10**	**103**	*i*P	P	20 03 13.8	+2.4

*IDC **11** 20:04:03.1±2.1,35.45N×23.10E,mb3.6/8,mb1 3.7/15, mb1mx3.6/28,ML3.6/6,Error ellipse: s-maj=40.9km s-min=12.1km az=22.0,Putative timing error at EIL*
*THE **11** 20:04:04.9,35.00N×23.03E,h14km,ML4.0*
*NEIC **11** 20:04:05.6,35.26N×23.28E,h5km,ML3.8(ATH),After ATH.*
*ATH **11** 20:04:05.6,35.26N×23.28E,h5km,MD3.8/16,ML3.8*

ISC 11 20:04:00.5±0.7,34.95N±0.06×22.93E±0.04,h5km,n55, σ1s41/59,mb3.5/8,Central Mediterranean Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
VAM	**Vamos**	**1.14**	**66**	*e*PB	**Pg**	**20 04 20.6**	**-2.6**
KYTH	**Kithira**	**1.33**	**4**	*e*PG	**Pn**	**20 04 25.0**	**-0.7**
IDI	**Anoyia**	**1.65**	**78**	Pg	**Pn**	**20 04 29.6**	**-0.6**
	16nm,0.3s,baz=277,slow=19,SNR=66						
IDI				Lg		20 04 50.4	
	45nm,0.3s,baz=36,slow=16,SNR=7.5						
VLI	**Veliai**	**1.76**	**0**	*e*PB	**Pb**	**20 04 33.5**	**+0.6**
KRIS	**Kristallenia**	**2.13**	**83**	*e*P	**Pb**	**20 04 38.2**	**-1.0**
NPS	**Neapolis**	**2.22**	**81**	*e*PN	**Pb**	**20 04 41.3**	**+0.4**
XRY	**Khrisi**	**2.28**	**90**	*e*PG	**Pb**	**20 04 43.0**	**+1.2**
ITM	**Ithomi**	**2.36**	**340**	*e*PG	**Pg**	**20 04 46.3**	**-1.4**
THR6	**Thira Island,**	**2.45**	**54**	*e*Pn	**Pn**	**20 04 42.7**	**+0.9**
THR5	**Thira Island,**	**2.45**	**53**	*e*Pn	**Pn**	**20 04 42.2**	**+0.3**
THR3	**Thira Island,**	**2.48**	**54**	*e*Pn	**Pn**	**20 04 42.8**	**+0.5**
SANT	**Santorini**	**2.50**	**55**	*e*P	**Pn**	**20 04 41.7**	**-0.8**
THR4	**Thira Island,**	**2.51**	**53**	*e*Pn	**Pn**	**20 04 43.2**	**+0.5**
NAIG	**Nisos Aigina**	**2.83**	**9**	*e*PG	**Pb**	**20 04 51.0**	**-0.3**
NSAL	**Nisos Salamina**	**2.98**	**8**	*e*PN	**Pn**	**20 04 51.3**	**+2.0**
APE	**Apeiranthos**	**2.99**	**44**	*e*PN	**Pn**	**20 04 51.3**	**+1.9**
ATH	**Athens Observa**	**3.08**	**12**	*e*PN	**Pn**	**20 04 53.9**	**+3.1**
PTL	**Penteli**	**3.18**	**13**	*e*PB	**Pb**	**20 04 53.5**	**-3.7**
MKIT	**Kithairon Oros**	**3.23**	**5**	*e*PN	**Pn**	**20 04 55.5**	**+2.5**
MPAR	**Parnis Oros**	**3.26**	**11**	*e*PN	**Pn**	**20 04 55.5**	**+2.2**
KARP	**Karpathos**	**3.52**	**79**	*e*PB	**Pb**	**20 04 59.0**	**-4.0**
VLS	**Valsamata**	**3.73**	**330**	*e*PN	**Pn**	**20 05 00.5**	**+0.6**
EVR	**Evrytania**	**4.05**	**348**	*e*PN	**Pn**	**20 05 08.3**	**+3.7**
AGG	**Agios Georgios**	**4.09**	**353**	*e*PN	**Pn**	**20 05 08.3**	**+1.2**
AGG				eSn	Sn	20 05 52.5	+1.7
LKD	**Levkas**	**4.17**	**335**	*e*Pn	**Pn**	**20 05 08.8**	**+2.6**
AOS	**Alonnisos**	**4.28**	**10**	*e*Pn	**Pn**	**20 05 09.3**	**+1.6**
MEV	**Metsovon**	**5.01**	**345**	*e*Pn	**Pn**	**20 05 20.1**	**+1.9**
IGT	**Igoumenitsa**	**5.02**	**336**	*e*Pn	**Pn**	**20 05 18.3**	**0.0**
IGT				eSn	**Sn**	**20 06 15.9**	**-1.5**
LIT	**Litokhoron**	**5.15**	**356**	*e*Pn	**Pn**	**20 05 22.3**	**+2.2**
OUR	**Ouranopolis**	**5.44**	**9**	*e*Pn	**Pn**	**20 05 24.4**	**+0.2**
SOI	**Samo**	**6.35**	**301**	*e*Pn	**Pn**	**20 05 37.9**	**+0.8**
LCI	**Lecce**	**6.59**	**326**	*e*Pn	**Pn**	**20 05 39.8**	**-0.7**
ORI	**Oriolo Calabro**	**7.24**	**317**	*e*Pn	**Pn**	**20 05 50.2**	**+0.6**
VAE	**Valguarnera**	**7.33**	**293**	Pn	**Pn**	**20 05 51.7**	**+0.8**
	baz=134,slow=21,SNR=2.5						
VAE				Sn	**Sn**	**20 07 15.3**	**0.0**
	0.8nm,0.3s,baz=39,slow=16,SNR=2.3						
PTRP	**Pietrapertosa**	**7.77**	**318**	*e*Pn	**Pn**	**20 05 56.7**	**-0.4**
MGR	**Morigerati**	**7.81**	**314**	*e*Pn	**Pn**	**20 05 57.0**	**-0.6**
SLCN	**Sala Consilina**	**7.93**	**315**	*e*Pn	**Pn**	**20 06 00.3**	**+1.1**
MRLC	**Muro Lucano**	**8.25**	**317**	*e*Pn	**P**	**20 06 03.4**	**-0.3**
FG5	**Orsara di Pugl**	**8.73**	**319**	*e*Pn	**P**	**20 06 10.2**	**-0.2**
BRTR	**Keskin Array B**	**9.77**	**58**	Pn	**P**	**20 06 19.7**	**-5.0**
	0.1nm,0.3s,slow=15,SNR=3.1						
MLR	**Muntele Rosu**	**10.77**	**11**	Pn	**P**	**20 06 31.9**	**-6.6**
	0.1nm,0.3s,baz=198,slow=12,SNR=2.0						
ASF	**Jabal al Asfar**	**11.98**	**99**	Pn	**P**	**20 06 55.0**	**+0.1**
	0.3nm,0.3s,baz=160,slow=6.0,SNR=2.2						
ASF				Sn	**S**	**20 09 11.4**	**+1.3**
	0.4nm,0.3s,baz=73,slow=16,SNR=2.3						
GERES	**GERESS Array B**	**15.47**	**337**	Pn	**P**	**20 07 37.9**	**-3.0**
	0.1nm,0.3s,baz=163,slow=13,SNR=3.8						
AKASG	**Malin Array Be**	**16.39**	**14**	Pn	**P**	**20 07 50.0**	**-2.7**
	0.4nm,0.3s,baz=199,slow=9.0,SNR=5.6						
HFS	**Hagfors**	**25.90**	**349**	P	**P**	**20 09 32.7**	**-2.1**
	0.6nm,0.3s,mb3.5,baz=148,slow=14,SNR=6.9						
FINES	**FINESS Array B**	**26.59**	**3**	P	**P**	**20 09 38.4**	**-2.7**
	0.8nm,0.5s,mb3.5,baz=180,slow=8.3,SNR=4.1						
NOA	**NORSAR Array B**	**27.17**	**348**	P	**P**	**20 09 44.7**	**-1.7**
	0.4nm,0.8s,mb3.0,baz=144,slow=10,SNR=2.6						
EKA	**Eskdalemuir Ar**	**27.18**	**327**	P	**P**	**20 09 48.1**	**+1.6**
	0.6nm,0.6s,mb3.3,baz=117,slow=7.5,SNR=4.1						
ARCES	**ARCESS Array B**	**34.66**	**2**	P	**P**	**20 10 49.5**	**-3.2**
	1.3nm,0.6s,mb4.0,baz=196,slow=8.8,SNR=6.4						
ARCES	**ARCESS Array B**	**34.66**	**2**	P	**P**	**20 10 49.5**	**-3.2**
ZRNK	**Zerenda**	**36.98**	**46**	*e*P	**P**	**20 11 10.8**	**-1.6**
MKAR	**Makanchi Array**	**45.41**	**56**	P	**P**	**20 12 20.2**	**-1.5**
	0.5nm,0.4s,mb3.7,baz=270,slow=8.2,SNR=16						
SONM	**Songino Array**	**61.03**	**50**	P	**P**	**20 14 15.0**	**-2.2**
	0.2nm,0.6s,mb3.5,baz=289,slow=7.0,SNR=4.1						
YKA	**Yellowknife Ar**	**77.07**	**341**	P	**P**	**20 15 55.4**	**-0.4**
	0.1nm,0.3s,mb3.2,baz=31,slow=5.0,SNR=4.3						
YKA	**Yellowknife Ar**	**77.07**	**341**	P	**P**	**20 15 55.4**	**-0.4**

*IDC **11** 20:28:15.4±0.7,0.72N×28.83W,mb4.1/13,mb1 4.3/13, mb1mx4.2/21,MS3.7/10,Ms1 3.7/10,ms1mx3.6/24,Error ellipse: s-maj=34.0km s-min=14.6km az=142.0*
*NEIC **11** 20:28:16.8±0.6,0.64N×28.82W,h10km,mb3.9/2,Error ellipse: s-maj=24.0km s-min=12.7km az=143.0*

ISC 11 20:28:14.9±0.5,0.6N±0.1×28.8W±0.1,h10km,n25, σ1s33/21,mb4.0/14,MS3.7/10,Central Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DBIC	**Dimbokro**	**24.60**	**75**	P	**P**	**20 33 37.2**	**+0.4**
	6.3nm,0.7s,mb4.2,baz=239,slow=11,SNR=9.6						
DBIC	**Dimbokro**	**24.60**	**75**	P	**P**	**20 33 37.2**	**+0.4**
BDFB	**Brasilia**	**24.94**	**229**	P	**P**	**20 33 40.0**	**-0.1**
	11nm,0.8s,mb4.4,baz=56,slow=8.8,SNR=16						
BDFB				LR	LR	20 42 25.4	
	comp=Z,272nm,20.9s,MS3.7,baz=105,slow=34						
CPUP	**Villa Florida**	**38.41**	**224**	P	**P**	**20 35 39.5**	**+1.0**
	3.7nm,0.7s,mb4.2,baz=72,slow=8.8,SNR=13						
CPUP				LR	LR	20 51 14.4	
	comp=Z,277nm,20.0s,MS4.1,baz=120,slow=36						
LPAZ	**La Paz**	**42.31**	**245**	P	**P**	**20 36 11.3**	**+0.4**
	2.8nm,0.7s,mb4.0,baz=71,slow=3.5,SNR=18						
LPAZ				LR	LR	20 53 14.7	
	comp=Z,85nm,19.9s,MS3.6,baz=88,slow=35						
LPAZ	**La Paz**	**42.31**	**245**	P	**P**	**20 36 11.3**	**+0.4**
	2.1nm,0.6s,mb3.9						
LPAZ				LR	LR	20 53 14.7	
SDV	**Santo Domingo**	**42.49**	**282**	P	**P**	**20 36 10.9**	**-1.6**
	5.0nm,0.7s,mb4.2,baz=349,slow=3.3,SNR=5.0						
ESDC	**Sonseca Array**	**45.00**	**27**	P	**P**	**20 36 31.7**	**-0.8**
	0.5nm,0.5s,mb3.6,baz=295,slow=36,SNR=4.5						
ESDC				LR	LR	20 52 12.4	
	comp=Z,52nm,20.5s,MS3.5,baz=300,slow=32						
TRQA	**Tornquist**	**49.15**	**215**	P	**P**	**20 37 04.6**	**-0.5**
OTAV	**Otavalo**	**49.69**	**270**	P	**P**	**20 37 09.0**	**-0.6**
LBTB	**Lobatse**	**58.37**	**120**	P	**P**	**20 38 12.5**	**-0.7**
	1.3nm,1.0s,mb3.9						
GRA1	**Grafenberg Arr**	**59.64**	**29**	*e*P	**P**	**20 38 22.9**	**+1.2**
GERES	**GERESS Array B**	**60.33**	**31**	P	**P**	**20 38 23.9**	**-2.4**
	1.6nm,0.8s,mb4.1,baz=233,slow=6.7,SNR=8.2						
KHC	**Kasperske Hory**	**60.45**	**31**	*e*P	**P**	**20 38 25.0**	**-2.2**
NOA	**NORSAR Array B**	**67.55**	**20**	P	**P**	**20 39 14.5**	**+1.0**
	1.5nm,1.1s,mb3.9,baz=220,slow=7.0,SNR=3.1						
NOA				LR	LR	21 03 46.7	
	comp=Z,39nm,18.1s,MS3.7,baz=115,slow=32						
NOA	**NORSAR Array B**	**67.55**	**20**	P	**P**	**20 39 14.5**	**+1.0**
NOA				LR	LR	21 03 46.6	
BRTR	**Keskin Array B**	**68.66**	**47**	P	**P**	**20 39 22.5**	**+1.7**
	0.8nm,0.7s,mb3.8,baz=232,slow=5.9,SNR=3.2						
BRTR				LR	LR	21 11 11.0	
	comp=Z,48nm,19.8s,MS3.7,baz=310,slow=38						
ASF	**Jabal al Asfar**	**69.21**	**56**	LR	LR	21 12 52.1	
	comp=Z,31nm,19.4s,MS3.5,baz=282,slow=39						
AKASG	**Malin Array Be**	**69.82**	**35**	P	**P**	**20 39 26.0**	**-1.7**
	2.6nm,0.7s,mb4.3,baz=245,slow=6.2,SNR=9.2						
FINES	**FINESS Array B**	**73.40**	**24**	P	**P**	**20 39 51.1**	**+2.2**
	2.7nm,0.8s,mb4.2,baz=153,slow=17,SNR=3.1						
FINES				LR	LR	21 12 58.0	
	comp=Z,34nm,18.9s,MS3.6,baz=198,slow=37						
TXAR	**Lajitas Array**	**76.56**	**300**	P	**P**	**20 40 09.2**	**+1.5**
	0.7nm,0.2s,mb4.2,baz=120,slow=7.3,SNR=1.9						
PDAR	**Pinedale Array**	**82.84**	**313**	LR	LR	21 10 03.5	
	comp=Z,53nm,21.8s,MS3.9,baz=63,slow=30						
YKA	**Yellowknife Ar**	**87.55**	**332**	P	**P**	**20 41 07.9**	**+3.7**
	0.1nm,0.5s,mb3.3,baz=95,slow=5.9,SNR=3.9						
NVAR	**Mina Array Bea**	**89.28**	**308**	LR	LR	21 16 03.2	
	comp=Z,62nm,19.9s,MS4.0,baz=270,slow=32						
ASAR	**Alice Springs**	**151.56**	**145**	PKPbc	PKPdf	20 48 14.3	+7.4
	1.7nm,1.0s,baz=201,slow=2.1,SNR=5.6						

*NIED **11** 20:31:00,24.70N×122.10E,h86km,Mw3.9 Best double couple: Mo8.45×10^14 NP1:φs180°,δ79°,λ57°. NP2:φs73°, δ35°,λ160°.*
*NEIC **11** 20:31:15.5±0.8,24.76N×122.04E,h89km±7km,mb4.0/2, Error ellipse: s-maj=12.4km s-min=9.1km az=72.0*
*JMA **11** 20:31:16.0±0.3,24.69N×122.14E,h82km,M3.6*
*IDC **11** 20:31:16.8±4.3,24.87N×122.25E,h102km±42km,mb3.5/7, mb1 3.6/9,mb1mx3.4/23,Error ellipse: s-maj=31.7km s-min=14.7km az=64.0*
*TAP **11** 20:31:16.1,24.83N×122.09E,h78km,ML4.4*

ISC 11 20:31:14.3±0.5,24.76N±0.06×122.06E±0.04,h94km±5km, n30,σ0s91/40,mb3.8/9,Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
TATO	**Taipei**	**0.56**	**292**	*e*P	**P**	**20 31 30.1**	**0.0**
YOJ	**Yonaguni jima**	**0.92**	**109**	P	**P**	**20 31 33.4**	**-0.2**
YOJ				S	**S**	**20 31 46.0**	**-2.0**
IRIF	**Iriomote-Funau**	**1.58**	**105**	P	**P**	**20 31 41.3**	**-0.4**
IRIF				S	**S**	**20 32 01.7**	**-0.2**
HATJ	**Hateruma jima**	**1.74**	**113**	P	**P**	**20 31 43.9**	**+0.2**
JKRS	**Kuro-shima**	**1.85**	**106**	P	**P**	**20 31 45.4**	**+0.3**
JKRS				S	**S**	**20 32 10.1**	**+2.2**
JIJ	**Ishigaki jima**	**1.94**	**101**	P	**P**	**20 31 45.9**	**-0.4**
JIJ				S	**S**	**20 32 09.3**	**-0.6**
JTJ	**Tarama**	**2.41**	**92**	P	**P**	**20 31 53.6**	**+0.9**
JTJ				S	**S**	**20 32 21.8**	**+0.4**
JMJ	**Miyako jima 2**	**2.94**	**88**	S	**S**	**20 32 33.8**	**-0.7**
JOGS	**Gusukube**	**3.04**	**89**	P	**P**	**20 32 02.4**	**+0.9**
JOGS				*e*S	**S**	**20 32 38.7**	**+1.7**
QZH	**Quanzhou**	**3.15**	**274**	*i*P	**P**	**20 32 03.4**	**+0.3**
QZH				S	**S**	**20 32 34.2**	**-5.6**
QZH				S	S		
	comp=N,580nm,0.9s						
QZH				S	S		
	comp=E,470nm,0.9s						
JKE	**Kume jima 2**	**4.54**	**69**	P	**P**	**20 32 22.9**	**+0.8**
JAGN	**Aguni-jima**	**5.02**	**68**	P	**P**	**20 32 29.1**	**+0.5**
JAGN				*e*S	**S**	**20 33 09.9**	**+0.1**
JIH	**Iheya**	**5.78**	**66**	P	**P**	**20 32 38.6**	**-0.4**
JOW	**Kunigami**	**5.97**	**68**	P	**P**	**20 32 40.4**	**-1.2**
	comp=E,6.4nm,0.3s,baz=236,slow=9.8,SNR=39						
JOW				S	**S**	**20 33 45.7**	**-3.5**
	comp=E,2.0nm,0.3s,baz=114,slow=24,SNR=2.6						
JOW	**Kunigami**	**5.97**	**68**	P	**P**	**20 32 40.4**	**-1.2**
JOW				*e*S	**S**	**20 33 46.3**	**-2.9**
JTK	**Tokunoshima**	**6.88**	**63**	P	**P**	**20 32 52.3**	**-1.9**
JNU	**Nakatsue**	**11.35**	**41**	P	**P**	**20 33 56.8**	**+2.1**
	comp=E,0.2nm,0.3s,baz=190,slow=7.0,SNR=3.9						
ULN	**Ulaanbaatar**	**25.94**	**337**	*e*P	**P**	**20 36 39.6**	**+0.2**
	comp=E,0.5nm,0.5s,mb3.2						
SONM	**Songino Array**	**26.16**	**336**	P	**P**	**20 36 41.7**	**+0.3**
	comp=E,1.1nm,0.8s,mb3.4,baz=152,slow=9.4,SNR=11						
MKAR	**Makanchi Array**	**38.48**	**315**	P	**P**	**20 38 29.3**	**+0.7**
	comp=E,0.7nm,0.7s,mb3.6,baz=100,slow=10,SNR=10.0						
MKAR				pP	pP	20 38 50.9	+0.1
	comp=E,0.4nm,0.5s,baz=102,slow=10.0,SNR=3.5						
WRAB	**Tennant Creek**	**46.01**	**164**	*e*P	**P**	**20 39 30.1**	**0.0**
	comp=E,7.8nm,0.6s,mb4.6						
WRA	**Warramunga Arr**	**46.02**	**164**	P	**P**	**20 39 30.3**	**+0.1**
	comp=E,2.7nm,0.5s,mb4.2,baz=347,slow=8.8,SNR=51						
WB2	**Warramunga Arr**	**46.02**	**164**	*e*P	**P**	**20 39 30.4**	**+0.1**
TIXI	**Tiksi**	**47.08**	**3**	*e*P	**P**	**20 39 36.8**	**-1.1**
BVAR	**Borovoye Array**	**47.74**	**320**	P	**P**	**20 39 42.8**	**-0.5**
	comp=E,0.2nm,0.3s,mb3.4,baz=90,slow=5.8,SNR=2.5						
AS12	**Alice Springs**	**49.49**	**166**	*e*P	**P**	**20 39 57.0**	**-0.3**
	comp=E,3.6nm,0.7s,mb4.4						
ASAR	**Alice Springs**	**49.49**	**166**	P	**P**	**20 39 57.9**	**+0.6**
	comp=E,2.1nm,0.7s,mb4.2,baz=341,slow=6.7,SNR=26						
STKA	**Stephens Creek**	**59.34**	**161**	P	**P**	**20 41 08.1**	**-0.7**
	comp=E,1.4nm,0.8s,mb4.0,baz=9.5,slow=6.1,SNR=4.3						
YKA	**Yellowknife Ar**	**82.13**	**23**	P	**P**	**20 43 25.2**	**-0.3**
	comp=E,0.4nm,0.7s,mb3.3,baz=313,slow=4.7,SNR=11						
YKA	**Yellowknife Ar**	**82.13**	**23**	P	**P**	**20 43 25.2**	**-0.3**

*IDC **11** 20:38:05.7±0.6,15.93S×179.19W,mb4.2/17,mb1 4.4/17, mb1mx4.4/20,MS4.1/18,Ms1 4.1/18,ms1mx4.1/23,Error ellipse: s-maj=27.9km s-min=15.5km az=139.0*
*NEIC **11** 20:38:07.2±0.3,15.91S×179.22W,h10km,mb4.5/10, Error ellipse: s-maj=13.7km s-min=7.4km az=144.0*
*BJI **11** 20:38:07.2,15.90S×179.20W,h10km,mb4.9*

ISC 11 20:38:05.8±0.4,16.01S±0.10×179.21W±0.09,h10km,n54, σ1s03/40,mb4.3/25,MS4.2/17,3C,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAR	**Rarotonga**	**19.13**	**109**	LR	LR	20 48 17.5	
	comp=Z,282nm,19.6s,baz=144,slow=32						
URZ	**Urewera**	**22.41**	**188**	P	**P**	**20 43 01.9**	**-4.1**
	13nm,1.0s,mb4.3,baz=233,slow=19,SNR=3.1						
URZ				LR	LR	20 50 11.4	
	comp=Z,558nm,18.6s,MS4.0,baz=31,slow=32						
RPZ	**Rata Peaks**	**28.84**	**195**	P	**P**	**20 44 05.2**	**-1.2**
	7.7nm,0.9s,mb4.4,baz=63,slow=19,SNR=1.8						
RPZ				LR	LR	20 53 26.5	
	comp=Z,406nm,19.5s,MS4.0,baz=17,slow=32						
CTA	**Charters Tower**	**33.05**	**258**	P	**P**	**20 44 43.3**	**-0.5**
	5.4nm,1.1s,mb4.4,baz=107,slow=8.0,SNR=4.3						
CTA				LR	LR	20 56 16.8	
	comp=Z,414nm,20.6s,MS4.1,baz=82,slow=33						
CTAO	**Charters Tower**	**33.05**	**258**	*e*P	**P**	**20 44 43.6**	**-0.2**
	8.1nm,1.0s,mb4.6						
PMG	**Port Moresby**	**33.43**	**277**	P	**P**	**20 44 46.6**	**-0.6**
	12nm,0.8s,mb4.9,baz=140,slow=17,SNR=2.3						
PMG				LR	LR	20 56 28.8	
	comp=Z,364nm,18.7s,MS4.1,baz=272,slow=33						
STKA	**Stephens Creek**	**38.91**	**239**	*e*P	**P**	**20 45 34.4**	**+0.9**
	7.2nm,0.9s,mb4.4						
STKA	**Stephens Creek**	**38.91**	**239**	P	**P**	**20 45 34.8**	**+1.3**
	7.1nm,1.1s,mb4.3,baz=49,slow=6.9,SNR=6.7						
STKA				LR	LR	20 59 54.7	
	comp=Z,280nm,18.4s,MS4.1,baz=249,slow=34						
WB2	**Warramunga Arr**	**44.25**	**258**	*e*P	**P**	**20 46 16.2**	**-1.2**
WRAB	**Tennant Creek**	**44.25**	**258**	*e*P	**P**	**20 46 16.2**	**-1.3**
	69nm,1.4s,mb5.2						
WRA	**Warramunga Arr**	**44.26**	**258**	P	**P**	**20 46 16.3**	**-1.3**
	4.8nm,1.0s,mb4.2,baz=90,slow=9.3,SNR=28						
WRA				LR	LR	21 02 21.9	
	comp=Z,234nm,19.9s,MS4.1,baz=85,slow=33						
AS12	**Alice Springs**	**44.60**	**252**	*i*P	**P**	**20 46 20.0**	**-0.3**
	34nm,1.4s,mb5.0						
ASAR	**Alice Springs**	**44.60**	**252**	P	**P**	**20 46 20.1**	**-0.2**
	4.8nm,0.6s,mb4.5,baz=84,slow=8.7,SNR=87						
ASAR				LR	LR	21 03 37.8	
	comp=Z,334nm,18.9s,MS4.3,baz=87,slow=34						
ASAR	**Alice Springs**	**44.60**	**252**	P	**P**	**20 46 20.1**	**-0.2**
ASAR				LR	LR	21 03 37.8	
FITZ	**Fitzroy Crossi**	**52.61**	**259**	*e*P	**P**	**20 47 22.1**	**-0.3**
	2.9nm,0.8s,mb4.3						
CBIJ	**Chichi jima**	**56.92**	**318**	LR	LR	21 08 20.6	
	comp=Z,167nm,18.6s,MS4.2,baz=94,slow=32						
SBA	**Scott Base**	**62.26**	**183**	*e*P	**P**	**20 48 31.2**	**+1.3**
	4.2nm,0.9s,mb4.6						
VNDA	**Vanda**	**62.27**	**185**	P	**P**	**20 48 30.6**	**+0.7**
	1.4nm,1.0s,mb4.0,baz=357,slow=7.3,SNR=5.2						
VNDA				LR	LR	21 09 40.7	
	comp=Z,142nm,20.8s,MS4.1,baz=22,slow=30						
TGY	**Tagaytay City**	**66.28**	**294**	LR	LR	21 13 14.9	
	comp=Z,215nm,18.2s,MS4.4,baz=51,slow=32						
QSPA	**South Pole Qui**	**74.04**	**180**	*e*P	**P**	**20 49 43.6**	**+0.6**
	8.7nm,1.0s,mb4.6						
CMB	**Columbia Colle**	**76.99**	**44**	*e*P	**P**	**20 49 59.8**	**-0.9**
YBH	**Yreka Blue Hor**	**77.55**	**40**	P	**P**	**20 50 03.1**

WRAB	**Tennant Creek**	**39.39**	**197**	*e*P	**P**	**22 06 26.5**	**-0.3**
	16nm,0.6s,mb4.7						
WB2	**Warramunga Arr**	**39.40**	**197**	*e*P	**P**	**22 06 27.2**	**+0.4**
WRA	**Warramunga Arr**	**39.40**	**197**	P	**P**	**22 06 27.5**	**+0.6**
	5.2nm,0.6s,mb4.3,baz=17,slow=8.9,SNR=40						
FITZ	**Fitzroy Crossi**	**41.05**	**210**	*e*P	**P**	**22 06 41.1**	**+0.7**
	5.8nm,0.6s,mb4.2						
AS12	**Alice Springs**	**43.06**	**196**	*e*P	**P**	**22 06 57.6**	**+0.8**
	3.0nm,0.5s,mb4.0						
ASAR	**Alice Springs**	**43.06**	**196**	P	**P**	**22 06 57.5**	**+0.7**
	1.6nm,0.5s,mb3.7,baz=17,slow=11,SNR=17						
ULN	**Ulaanbaatar**	**43.37**	**322**	P	**P**	**22 06 59.2**	**+0.3**
SONM	**Songino Array**	**43.74**	**322**	P	**P**	**22 07 02.4**	**+0.6**
	0.2nm,0.6s,mb2.6,baz=141,slow=6.1,SNR=2.8						
CMAR	**Chiang Mai Arr**	**44.44**	**278**	P	**P**	**22 07 08.8**	**+1.0**
	2.1nm,0.9s,mb3.5,baz=67,slow=6.7,SNR=7.9						
STKA	**Stephens Creek**	**49.80**	**185**	P	**P**	**22 07 47.4**	**-1.9**
	2.5nm,1.1s,mb3.5,baz=295,slow=21,SNR=2.2						
MKAR	**Makanchi Array**	**59.02**	**314**	P	**P**	**22 08 54.5**	**-1.2**
	0.3nm,0.4s,mb3.3,baz=91,slow=8.6,SNR=12						
BVAR	**Borovoye Array**	**67.07**	**321**	P	**P**	**22 09 46.7**	**-1.7**
	0.2nm,0.3s,mb3.2,baz=86,slow=5.8,SNR=3.8						
YKA	**Yellowknife Ar**	**78.50**	**28**	P	**P**	**22 10 55.5**	**+0.6**
	0.3nm,0.6s,mb3.1,baz=290,slow=5.4,SNR=8.1						
YKA				pP	pP	22 11 45.4	+1.6
	0.5nm,0.6s,baz=290,slow=5.4,SNR=9.6						
YKA	**Yellowknife Ar**	**78.50**	**28**	P	**P**	**22 10 55.5**	**+0.6**
YKA				pP	pP	22 11 45.4	+1.6
FINES	**FINESS Array B**	**87.54**	**335**	P	**P**	**22 11 38.5**	**-2.2**
	1.8nm,1.0s,mb3.8,baz=76,slow=7.9,SNR=5.3						

NEIC ***11*** *22:12:09.6±0.7,25.52N×142.70E,h40km,mb3.9/2,Error ellipse: s-maj=29.6km s-min=10.1km az=82.0*
IDC ***11*** *22:12:10.4±3.1,25.56N×142.62E,h45km±28km,mb3.4/7, mb1 3.6/7,mb1mx3.5/21,Error ellipse: s-maj=45.7km s-min=19.6km az=85.0*

ISC 11 22:12:09.9±1.9,25.46N±0.09×142.6E±0.3,h59km±17km, n15,σ0°93/16,mb3.7/9,Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CBIJ	**Chichi jima**	**1.67**	**347**	P	**P**		**22 12 35.8**	**-1.7**
	68nm,0.3s,baz=148,slow=15,SNR=49							
CBIJ				S	**S**		**22 12 59.5**	**+1.7**
	80nm,0.3s,baz=276,slow=23,SNR=11							
ULN	**Ulaanbaatar**	**35.78**	**318**	P	**P**		**22 19 06.4**	**+1.2**
	0.8nm,0.7s,mb3.8							
SONM	**Songino Array**	**36.16**	**318**	P	**P**		**22 19 07.4**	**-1.0**
	0.4nm,0.5s,mb3.6,baz=121,slow=7.7,SNR=5.4							
WRAB	**Tennant Creek**	**45.83**	**191**	*e*P	**P**		**22 20 27.8**	**-0.3**
WB2	**Warramunga Arr**	**45.84**	**191**	*e*P	**P**		**22 20 27.9**	**-0.3**
WRA	**Warramunga Arr**	**45.84**	**191**	P	**P**		**22 20 28.2**	**-0.1**
	0.8nm,0.4s,mb4.0,baz=7.8,slow=8.5,SNR=16							
FITZ	**Fitzroy Crossi**	**46.35**	**203**	*e*P	**P**		**22 20 32.7**	**+0.5**
	2.0nm,0.8s,mb4.1							
ASAR	**Alice Springs**	**49.56**	**191**	P	**P**		**22 20 58.5**	**+1.3**
	0.3nm,0.8s,mb3.4,baz=16,slow=13,SNR=4.2							
MKAR	**Makanchi Array**	**51.82**	**311**	P	**P**		**22 21 13.6**	**-0.3**
	0.4nm,0.5s,mb3.6,baz=92,slow=9.7,SNR=11							
BRVK	**Borovoye**	**59.57**	**318**	P	**P**		**22 22 08.2**	**-1.4**
YKA	**Yellowknife Ar**	**73.39**	**28**	P	**P**		**22 23 36.9**	**0.0**
	0.1nm,0.5s,mb3.0,baz=290,slow=6.0,SNR=4.6							
YKA	**Yellowknife Ar**	**73.39**	**28**	P	**P**		**22 23 36.9**	**0.0**
FINES	**FINESS Array B**	**79.58**	**334**	P	**P**		**22 24 12.1**	**+0.2**
	1.8nm,0.9s,mb4.0,baz=79,slow=7.1,SNR=6.9							
NB2	**NORSAR Subarra**	**85.26**	**339**	P	**P**		**22 24 41.0**	**0.0**
	1.2nm,0.8s,mb4.1,baz=45,slow=5.0							
NOA	**NORSAR Array B**	**85.26**	**339**	P	**P**		**22 24 41.4**	**+0.4**
	0.7nm,0.6s,mb4.0,baz=46,slow=4.7,SNR=3.7							

IDC ***11*** *22:21:59.5±0.7,4.92N×62.15E,mb4.0/16,mb1 4.2/16, mb1mx4.1/22,MS3.6/3,Ms1 3.6/3,ms1mx3.1/22,Error ellipse: s-maj=18.9km s-min=16.3km az=178.0*
NEIC ***11*** *22:22:00.8±0.3,4.92N×62.11E,h10km,mb4.8/16,Error ellipse: s-maj=8.5km s-min=7.0km az=202.0*
BJI ***11*** *22:22:01.7,4.90N×62.10E,h10km,mB5.1*

ISC 11 22:21:58.8±0.5,4.90N±0.09×62.10E±0.07,h10km,n63, σ0°92/60,mb4.3/31,MS3.6/3,3C,Carlsberg Ridge

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
DJNS	**Zahran al Janu**	**22.17**	**307**	P	**P**		**22 26 59.6**	**+2.8**
FRSS	**Farasan al Kab**	**22.85**	**303**	P	**P**		**22 27 08.6**	**+4.9**
KAMS	**Al Khamasin**	**22.91**	**313**	P	**P**		**22 27 04.9**	**+0.7**
TATS	**Tathlith**	**23.26**	**310**	P	**P**		**22 27 10.4**	**+2.8**
HASS	**Wahat al Ahsa'**	**23.43**	**331**	P	**P**		**22 27 11.9**	**+2.7**
BLJS	**Baljurashi**	**24.90**	**308**	P	**P**		**22 27 27.9**	**+4.4**
MZLS	**Mizel**	**25.03**	**321**	P	**P**		**22 27 28.4**	**+3.8**
KMBO	**Kilima Mbogo**	**25.53**	**257**	P	**P**		**22 27 32.8**	**+3.3**
	5.2nm,0.9s,mb4.1,baz=50,slow=12,SNR=13							
AFFS	**'Afif**	**26.39**	**318**	P	**P**		**22 27 42.3**	**+4.9**
ASF	**Jabal al Asfar**	**35.95**	**322**	LR	LR		22 42 02.8	
	comp=Z,86nm,21.8s,MS3.5,baz=97,slow=34							
LSA	**Lhasa**	**36.90**	**45**	P	**P**		**22 29 11.6**	**+1.9**
CMAR	**Chiang Mai Arr**	**38.41**	**66**	P	**P**		**22 29 24.3**	**+1.8**
	0.9nm,0.9s,mb3.5,baz=248,slow=8.1,SNR=5.6							
BRTR	**Keskin Array B**	**43.15**	**327**	P	**P**		**22 30 03.0**	**+1.7**
	0.9nm,0.8s,mb3.6,baz=135,slow=10,SNR=4.8							
MKAR	**Makanchi Array**	**45.24**	**20**	P	**P**		**22 30 18.7**	**+0.6**
	1.7nm,0.9s,mb3.9,baz=198,slow=7.7,SNR=14							
MKAR				LR	LR		22 48 23.5	
	comp=Z,61nm,21.6s,MS3.5,baz=203,slow=35							
MKAR	**Makanchi Array**	**45.24**	**20**	P	**P**		**22 30 18.7**	**+0.5**
MKAR				LR	LR		22 48 23.5	
LBTB	**Lobatse**	**46.29**	**228**	P	**P**		**22 30 26.4**	**-0.3**
	1.8nm,0.9s,mb4.0							
KURK	**Kurchatov**	**47.72**	**14**	P	**P**		**22 30 37.7**	**0.0**
BVAR	**Borovoye Array**	**48.46**	**7**	P	**P**		**22 30 42.6**	**-0.8**
	0.2nm,0.5s,baz=180,slow=7.4,SNR=5.4							
ARU	**Arti**	**51.47**	**357**	*e*P	**P**		**22 31 05.8**	**-0.5**
	1.4nm,0.6s,mb4.1							
ZAL	**Zalesovo**	**52.27**	**17**	P	**P**		**22 31 12.4**	**0.0**
	1.2nm,0.4s,mb4.2,baz=165,slow=5.5,SNR=11							
ZAL				LR	LR		22 55 23.8	
	comp=Z,80nm,20.8s,MS3.7,baz=183,slow=38							
AKASG	**Malin Array Be**	**53.30**	**335**	P	**P**		**22 31 19.6**	**-0.6**
	0.2nm,0.3s,mb3.5,baz=133,slow=6.4,SNR=12							
SUR	**Sutherland**	**53.96**	**224**	P	**P**		**22 31 25.1**	**-0.1**
	3.9nm,0.8s,mb4.4,baz=77,slow=14,SNR=2.5							
CRVS	**Cervenica-Dubn**	**55.76**	**329**	*e*P	**P**		**22 31 38.1**	**-0.1**
CRVS				*e*			22 33 16.2	
VYHS	**Vyhne**	**56.91**	**327**	*e*P	**P**		**22 31 46.4**	**0.0**
VYHS				*e*			22 33 30.0	
SONM	**Songino Array**	**57.10**	**34**	P	**P**		**22 31 47.9**	**+0.1**
	1.6nm,0.8s,mb4.1,baz=235,slow=7.4,SNR=16							
ULN	**Ulaanbaatar**	**57.49**	**34**	*e*P	**P**		**22 31 49.6**	**-0.9**
	0.9nm,0.8s,mb3.9							
OKC	**Ostrava-Krasne**	**58.06**	**328**	*e*P	**P**		**22 31 54.0**	**-0.4**
ARSA	**Arzberg**	**58.08**	**324**	⇑*i*P	**P**		**22 31 55.2**	**+0.5**
	3.8nm,0.9s,mb4.4							
MOA	**Molln**	**59.12**	**324**	⇑*i*P	**P**		**22 32 02.0**	**+0.1**
	9.0nm,0.9s,mb4.8							
DPC	**Dobruska-Polom**	**59.31**	**328**	*e*P	**P**		**22 32 02.8**	**-0.4**
UPC	**Upice**	**59.57**	**328**	*e*P	**P**		**22 32 04.8**	**-0.2**
GERES	**GERESS Array B**	**59.95**	**325**	P	**P**		**22 32 07.0**	**-0.6**
	0.3nm,0.6s,mb3.5,baz=180,slow=4.9,SNR=3.2							
PRU	**Pruhonice**	**60.08**	**327**	*e*P	**P**		**22 32 07.0**	**-1.5**
KHC	**Kasperske Hory**	**60.17**	**325**	*e*P	**P**		**22 32 07.8**	**-1.3**
WTTA	**Wattenberg**	**60.39**	**323**	⇑*i*P	**P**		**22 32 10.5**	**-0.1**
	9.5nm,1.2s,mb4.7							
DAVOX	**Davos**	**61.24**	**322**	P	**P**		**22 32 16.4**	**0.0**
	2.3nm,0.7s,mb4.4,baz=291,slow=19,SNR=4.1							
CLL	**Collm**	**61.60**	**327**	P	**P**		**22 32 20.0**	**+1.2**
LPG	**La Plagne**	**62.69**	**319**	*e*P	**P**		**22 32 25.5**	**-0.7**
	16nm,1.2s,mb4.7							
LPL	**La Plagne**	**62.71**	**319**	*e*P	**P**		**22 32 25.4**	**-0.9**
	29nm,1.4s,mb4.9							
ORIF	**Oris-en-Rattie**	**63.04**	**319**	*e*P	**P**		**22 32 28.0**	**-0.5**
	6.3nm,0.9s,mb4.4							
CDF	**Champ du Feu**	**63.53**	**323**	*e*P	**P**		**22 32 31.4**	**-0.3**
	48nm,1.6s,mb5.0							
CABF	**La Chapelle**	**63.55**	**320**	*e*P	**P**		**22 32 31.9**	**+0.1**
	49nm,1.1s,mb5.2							
HAU	**Haudompre**	**63.93**	**322**	*e*P	**P**		**22 32 33.5**	**-0.8**
MEZF	**Maizieres J'vi**	**64.92**	**322**	*e*P	**P**		**22 32 40.5**	**-0.3**
SMF	**Signal de Mont**	**65.00**	**320**	*e*P	**P**		**22 32 40.3**	**-1.0**
LOR	**Lormes**	**65.21**	**320**	*e*P	**P**		**22 32 42.0**	**-0.6**
	12nm,0.9s,mb4.6							
SSF	**Saint Saulge**	**65.36**	**320**	*e*P	**P**		**22 32 42.9**	**-0.7**
	17nm,1.1s,mb4.7							
AVF	**Avril sur Loir**	**65.36**	**320**	*e*P	**P**		**22 32 42.6**	**-1.0**
CAF	**Calviac**	**65.59**	**317**	*e*P	**P**		**22 32 45.0**	**-0.1**
BGF	**Bois d'Agland**	**65.61**	**319**	*e*P	**P**		**22 32 45.0**	**-0.2**
	17nm,0.8s,mb4.8							
TCF	**Toulx Ste Croi**	**65.94**	**319**	*e*P	**P**		**22 32 47.0**	**-0.3**
RJF	**Les Rejaudoux**	**66.08**	**318**	*e*P	**P**		**22 32 48.2**	**0.0**
LFF	**La Frestale**	**66.49**	**317**	*e*P	**P**		**22 32 51.1**	**+0.2**
	17nm,1.0s,mb4.7							
DBIC	**Dimbokro**	**66.59**	**275**	P	**P**		**22 32 53.2**	**+1.2**
	3.0nm,0.7s,mb4.4,baz=294,slow=11,SNR=2.4							
MFF	**Saint Martin d**	**67.58**	**319**	*e*P	**P**		**22 32 57.5**	**-0.3**
ESDC	**Sonseca Array**	**68.53**	**311**	P	**P**		**22 33 04.5**	**+0.6**
	2.2nm,0.8s,mb4.3,baz=65,slow=5.9,SNR=6.5							
EKA	**Eskdalemuir Ar**	**72.07**	**327**	P	**P**		**22 33 24.1**	**-0.9**
	1.7nm,0.8s,mb4.0,baz=90,slow=7.8,SNR=5.3							
WRA	**Warramunga Arr**	**75.10**	**112**	P	**P**		**22 33 43.3**	**-0.1**
	6.3nm,0.9s,mb4.5,baz=289,slow=5.2,SNR=32							
WRAB	**Tennant Creek**	**75.11**	**112**	*e*P	**P**		**22 33 43.4**	**-0.1**
	14nm,0.8s,mb5.0							
WB2	**Warramunga Arr**	**75.11**	**112**	*e*P	**P**		**22 33 43.3**	**-0.2**
ASAR	**Alice Springs**	**75.44**	**116**	P	**P**		**22 33 45.5**	**+0.2**
	3.6nm,0.9s,mb4.3,baz=283,slow=5.6,SNR=23							
PDAR	**Pinedale Array**	**131.96**	**352**	PKP	PKPdf		22 41 15.9	-0.2
	0.5nm,0.7s,baz=45,slow=2.6,SNR=3.3							
TXAR	**Lajitas Array**	**143.32**	**339**	PKP	PKPdf		22 41 35.8	-1.4
	0.3nm,0.3s,baz=90,slow=1.3,SNR=3.8							

BJI ***11*** *22:25:21.8,4.73N×61.80E,h38km,mB5.1,mb4.4*
IDC ***11*** *22:25:21.1±0.6,4.97N×62.17E,mb4.2/19,mb1 4.3/19, mb1mx4.2/24,MS4.0/3,Ms1 4.0/3,ms1mx3.3/22,Error ellipse: s-maj=18.2km s-min=14.2km az=28.0*
NEIC ***11*** *22:25:22.4±0.3,4.96N×62.14E,h10km,mb4.7/25,Error ellipse: s-maj=8.5km s-min=6.4km az=209.0*

ISC 11 22:25:20.6±0.4,4.99N±0.08×62.12E±0.07,h10km,n62, σ0°78/58,mb4.4/44,MS3.9/3,3C-2D,Carlsberg Ridge

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
KMBO	**Kilima Mbogo**	**25.57**	**257**	P	**P**		**22 30 53.7**	**+2.0**
	5.4nm,1.0s,mb4.0,baz=55,slow=14,SNR=8.7							
KMBO				LR	LR		22 39 32.4	
	comp=Z,250nm,19.5s,MS3.8,baz=286,slow=33							
LSA	**Lhasa**	**36.82**	**45**	P	**P**		**22 32 33.2**	**+2.4**
CMAR	**Chiang Mai Arr**	**38.36**	**66**	P	**P**		**22 32 44.9**	**+1.1**
	1.6nm,1.0s,mb3.7,baz=273,slow=9.6,SNR=5.5							
CMAR				LR	LR		22 46 31.2	
	comp=Z,126nm,18.6s,MS3.8,baz=250,slow=33							
BRTR	**Keskin Array B**	**43.09**	**327**	P	**P**		**22 33 24.3**	**+1.7**
	1.3nm,0.9s,mb3.7,baz=135,slow=3.5,SNR=5.3							
WMQ	**Urumqi**	**44.76**	**26**	*e*P	**P**		**22 33 32.5**	**-3.6**
MKAR	**Makanchi Array**	**45.15**	**20**	P	**P**		**22 33 40.0**	**+0.8**
	2.4nm,0.8s,mb4.1,baz=208,slow=9.0,SNR=15							
LBTB	**Lobatse**	**46.36**	**228**	*e*P	**P**		**22 33 49.5**	**+0.4**
	2.1nm,0.9s,mb4.1							
KURK	**Kurchatov**	**47.63**	**14**	*e*P	**P**		**22 33 59.0**	**+0.3**
BVAR	**Borovoye Array**	**48.37**	**7**	P	**P**		**22 34 05.5**	**+1.1**
	0.9nm,0.7s,mb3.9,baz=180,slow=7.4,SNR=8.3							
BRVK	**Borovoye**	**48.39**	**7**	*e*P	**P**		**22 34 05.0**	**+0.5**
TSUM	**Tsumeb**	**49.99**	**240**	P	**P**		**22 34 19.4**	**+2.0**
	2.0nm,0.8s,mb4.2,baz=346,slow=10,SNR=4.9							
ARU	**Arti**	**51.38**	**357**	*e*P	**P**		**22 34 27.6**	**+0.2**
	1.6nm,0.6s,mb4.1							
ZAL	**Zalesovo**	**52.18**	**17**	P	**P**		**22 34 33.9**	**+0.3**
	2.2nm,0.7s,mb4.2,baz=159,slow=6.9,SNR=14							
AKASG	**Malin Array Be**	**53.23**	**334**	P	**P**		**22 34 41.6**	**+0.1**
	1.7nm,0.7s,mb4.1,baz=133,slow=6.5,SNR=11							
CRVS	**Cervenica-Dubn**	**55.70**	**329**	*e*P	**P**		**22 35 01.8**	**+2.3**
VYHS	**Vyhne**	**56.84**	**327**	*e*P	**P**		**22 35 07.8**	**+0.1**
SONM	**Songino Array**	**57.02**	**34**	P	**P**		**22 35 09.1**	**+0.1**
	2.3nm,0.8s,mb4.2,baz=229,slow=6.7,SNR=18							
ULN	**Ulaanbaatar**	**57.40**	**34**	*e*P	**P**		**22 35 11.2**	**-0.5**
	0.8nm,0.8s,mb3.8							
ZST	**Bratislava**	**57.63**	**326**	*e*P	**P**		**22 35 13.2**	**-0.1**
ZST				*e*			22 37 14.3	
ARSA	**Arzberg**	**58.02**	**324**	⇓*i*P	**P**		**22 35 16.2**	**+0.2**
	4.4nm,0.9s,mb4.5							
MOA	**Molln**	**59.06**	**324**	⇓*i*P	**P**		**22 35 23.1**	**-0.2**
	10nm,0.9s,mb4.9							
GERES	**GERESS Array B**	**59.89**	**325**	P	**P**		**22 35 27.4**	**-1.6**
	0.8nm,0.9s,mb3.8,baz=135,slow=7.5,SNR=4.9							
WTTA	**Wattenberg**	**60.33**	**323**	⇑*i*P	**P**		**22 35 31.8**	**-0.2**
	6.3nm,0.9s,mb4.7							
MOTA	**Moosalm**	**60.69**	**323**	⇑*i*P	**P**		**22 35 33.7**	**-0.8**
	4.0nm,1.1s,mb4.5							
DAVOX	**Davos**	**61.19**	**322**	P	**P**		**22 35 37.4**	**-0.5**
	6.0nm,1.0s,mb4.7,baz=135,slow=7.5,SNR=4.8							
DAVA	**Damuels**	**61.41**	**322**	⇑*i*P	**P**		**22 35 39.4**	**+0.1**
	9.1nm,1.4s,mb4.7							
CLL	**Collm**	**61.54**	**327**	P	**P**		**22 35 40.3**	**+0.1**
	logA/T=0.9,mb4.8							
CLL				*e*			22 35 56.0	
CLL	**Collm**	**61.54**	**327**	*i* P	**P**		**22 35 40.3**	**+0.1**
	13nm,1.5s,mb4.8							
CLL				*e*			22 35 56.0	
FRF	**La Foret Royal**	**61.98**	**317**	*e*P	**P**		**22 35 42.9**	**-0.4**
	17nm,0.9s,mb4.9							
LPG	**La Plagne**	**62.64**	**319**	*e*P	**P**		**22 35 47.0**	**-0.6**
	12nm,1.1s,mb4.6							
LPL	**La Plagne**	**62.66**	**319**	*e*P	**P**		**22 35 47.0**	**-0.7**
ORIF	**Oris-en-Rattie**	**62.99**	**318**	*e*P	**P**		**22 35 49.6**	**-0.3**
	11nm,1.0s,mb4.7							
CDF	**Champ du Feu**	**63.48**	**322**	*e*P	**P**		**22 35 52.8**	**-0.3**
	17nm,1.0s,mb4.8							
HINF	**Hinteralfeld**	**63.49**	**322**	*e*P	**P**		**22 35 52.4**	**-0.8**
	5.5nm,0.7s,mb4.5							
CABF	**La Chapelle**	**63.49**	**320**	*e*P	**P**		**22 35 53.4**	**+0.2**
	55nm,1.2s,mb5.3							
HAU	**Haudompre**	**63.88**	**322**	*e*P	**P**		**22 35 55.0**	**-0.8**
LASF	**Ste Croix**	**64.05**	**317**	*e*P	**P**		**22 35 56.9**	**-0.1**
NWAO	**Narrogin (SRO)**	**64.37**	**130**	P	**P**		**22 35 58.4**	**-0.9**
	6.2nm,0.7s,mb4.7,baz=287,slow=11,SNR=3.7							
MEZF	**Maizieres J'vi**	**64.87**	**322**	*e*P	**P**		**22 36 02.0**	**-0.2**
	8.5nm,0.6s,mb4.6							
SMF	**Signal de Mont**	**64.95**	**320**	*e*P	**P**		**22 36 01.9**	**-0.8**
	9.9nm,0.9s,mb4.5							
LOR	**Lormes**	**65.16**	**320**	*e*P	**P**		**22 36 03.5**	**-0.6**
	9.2nm,0.8s,mb4.6							
SSF	**Saint Saulge**	**65.31**	**320**	*e*P	**P**		**22 36 04.5**	**-0.6**
	9.7nm,0.7s,mb4.6							
AVF	**Avril sur Loir**	**65.31**	**320**	*e*P	**P**		**22 36 04.8**	**-0.3**
	7.9nm,1.0s,mb4.4							
CAF	**Calviac**	**65.54**	**317**	*e*P	**P**		**22 36 06.3**	**-0.3**
	3.3nm,0.7s,mb4.2							
BGF	**Bois d'Agland**	**65.56**	**319**	*e*P	**P**		**22 36 06.5**	**-0.2**
	20nm,0.8s,mb4.9							
TCF	**Toulx Ste Croi**	**65.88**	**319**	*e*P	**P**		**22 36 08.4**	**-0.4**
	4.5nm,0.8s,mb4.2							
RJF	**Les Rejaudoux**	**66.03**	**318**	*e*P	**P**		**22 36 09.8**	**+0.1**
LFF	**La Frestale**	**66.44**	**317**	*e*P	**P**		**22 36 12.5**	**+0.2**
	18nm,0.8s,mb4.8							
DBIC	**Dimbokro**	**66.61**	**275**	P	**P**		**22 36 14.1**	**+0.2**
	5.2nm,1.0s,mb4.5,baz=107,slow=7.6,SNR=3.8							
FITZ	**Fitzroy Crossi**	**66.68**	**112**	P	**P**		**22 36 14.5**	**+0.2**
	2.8nm,1.1s,mb4.2,baz=322,slow=7.1,SNR=2.4							
MFF	**Saint Martin d**	**67.53**	**319**	*e*P	**P**		**22 36 19.0**	**-0.2**
ESDC	**Sonseca Array**	**68.49**	**311**	P	**P**		**22 36 25.9**	**+0.5**
	2.2nm,0.7s,mb4.3,baz=85,slow=5.1,SNR=9.8							
ARCES	**ARCESS Array B**	**68.77**	**347**	P	**P**		**22 36 26.4**	**-0.2**
	2.6nm,0.9s,mb4.2,baz=153,slow=11,SNR=5.5							
EKA	**Eskdalemuir Ar**	**72.01**	**327**	P	**P**		**22 36 46.3**	**-0.1**
	1.8nm,0.6s,mb4.2,baz=108,slow=6.8,SNR=9.2							
WRA	**Warramunga Arr**	**75.11**	**112**	P	**P**		**22 37 04.8**	**-0.5**
	5.2nm,0.8s,mb4.5,baz=290,slow=4.8,SNR=24							
WRAB	**Tennant Creek**	**75.12**	**112**	*e*P	**P**		**22 37 04.1**	**-1.2**
	14nm,0.8s,mb4.9							
WB2	**Warramunga Arr**	**75.12**	**112**	*e*P	**P**		**22 37 04.9**	**-0.4**
ASAR	**Alice Springs**	**75.46**	**116**	P	**P**		**22 37 07.0**	**-0.1**
	2.7nm,0.8s,mb4.2,baz=285,slow=5.5,SNR=17							
CTA	**Charters Tower**	**86.20**	**110**	LR	LR		23 12 11.6	
	comp=Z,112nm,18.1s,MS4.3,baz=231,slow=33							
PDAR	**Pinedale Array**	**131.88**	**352**	PKP	PKPdf		22 44 35.8	-2.0
	0.3nm,0.6s,baz=333,slow=2.0,SNR=2.8							
NVAR	**Mina Array Bea**	**136.80**	**0**	PKP	PKPdf		22 44 47.8	+0.9
	1.0nm,0.3s,slow=3.6,SNR=4.9							
TXAR	**Lajitas Array**	**143.25**	**339**	PKP	PKPdf		22 44 56.6	-2.2
	0.4nm,0.2s,baz=45,slow=5.1,SNR=3.6							

KRSC 11 22:40:05.6±1.4,48.99N×156.50E,h40km±28km,ML4.1, East of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
SKR	**Severo-Kuril's**	**1.71**	**352**	*e*P	P		22 40 32.5	-1.0
SKR				*e*S	S		22 40 52.9	-1.5
ALID	**Alaid**	**1.98**	**342**	*e*P	P		22 40 37.7	+0.4
ALID				*e*S	S		22 41 01.2	+0.2
PAU	**Pauzhetka**	**2.49**	**4**	*i* P	P		22 40 45.8	+1.2
PAU				*e*S	S		22 41 13.3	-0.7
PAU				Smax				
	360nm,0.3s							
RUS	**Russkaya**	**3.68**	**20**	*e*P	P		22 41 00.8	-0.7
RUS				*e*S	S		22 41 42.5	-1.6
GRL	**Gorelyy**	**3.70**	**15**	*e*P	P		22 41 01.9	+0.1
GRL				*e*S	S		22 41 42.8	-2.0
UGLR	**Uglovaya**	**4.47**	**18**	*e*P	P		22 41 13.9	+1.2
AVH	**Avacha**	**4.51**	**17**	*e*P	P		22 41 14.1	+0.9
AVH				*e*S	S		22 42 03.8	-1.3
KOK	**Koryaka**	**4.51**	**17**	*e*P	P		22 41 13.8	+0.5
SMAR	**Somma**	**4.52**	**18**	*e*P	P		22 41 13.0	-0.4
SDLR	**Sedlovina**	**4.55**	**18**	*e*P	P		22 41 13.7	-0.1
SPN	**Mys Shipunski**	**4.67**	**27**	*e*P	P		22 41 15.3	-0.3
SPN				*e*S	S		22 42 06.5	-2.8
GNL	**Ganaly**	**4.80**	**10**	*e*P	P		22 41 17.5	+0.2
MKZ	**Mys Kozlova**	**6.45**	**28**	*e*P	P		22 41 39.0	-1.5
KMNR	**Kamenistaya**	**7.15**	**17**	*e*P	P		22 41 48.7	-1.6
KBTR	**Krutoberegovo**	**8.19**	**26**	*e*P	P		22 42 03.2	-1.5

IDC 11 23:16:19.9±2.7,8.15S×110.29E,mb3.6/4,mb1 3.8/4, mb1mx3.5/14,Error ellipse: s-maj=159.0km s-min=25.4km az=51.0,Jawa

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
WRA	**Warramunga Arr**	**26.07**	**119**	P	P		23 21 54.9	-2.2
	0.4nm,0.8s,baz=292,slow=11,SNR=4.5							
ASAR	**Alice Springs**	**27.39**	**127**	P	P		23 22 07.5	-1.6
	0.9nm,0.9s,baz=301,slow=8.8,SNR=5.0							
STKA	**Stephens Creek**	**37.47**	**133**	P	P		23 23 35.5	-1.6
	1.3nm,0.5s,baz=307,slow=15,SNR=2.8							
MKAR	**Makanchi Array**	**60.11**	**338**	P	P		23 26 29.0	-2.4
	0.2nm,0.4s,baz=151,slow=7.4,SNR=6.4							

IDC ***11*** *23:18:12.4±0.7,41.805N×84.78E,mb4.3/12,mb1 4.4/12, mb1mx4.4/13,MS4.0/5,Ms1 3.9/5,ms1mx3.7/13,Error ellipse: s-maj=21.1km s-min=19.1km az=37.0*
BJI ***11*** *23:18:13.1,41.805N×84.80E,h10km,mB5.0,mb4.5*
NEIC ***11*** *23:18:14.1±0.2,41.795N×84.79E,h10km,mb4.9/12,Error ellipse: s-maj=7.7km s-min=6.9km az=75.0*
HRVD ***11*** *23:18:14.1±0.7,41.76N×85.00E,h12km,MW4.9/33, Centroid moment Tensor Solution. LP body waves: s10,c10;Mantle waves: s33,c50; Half duration: 0 Moment tensor: Scale 1016

PDAR	**Pinedale Array**	**169.33**	**80**	PKP	PKPdf	23 38 23.8	+1.7		
	comp=Z,0.6nm,1.0s,baz=135,slow=3.8,SNR=2.9								
PDAR				PKPab	PKPab	23 39 34.0	+0.3		
	comp=Z,1.7nm,1.1s,baz=270,slow=3.0,SNR=6.2								

*IDC **11** 23:22:00.7±0.9, 37.78S×178.21E, mb4.7/8, mb1 4.8/9, mb1mx4.6/14, ML4.4/1, MS4.2/4, Ms1 4.1/4, ms1mx3.8/13, Error ellipse: s-maj=35.3km s-min=11.3km az=148.0*

*NEIC **11** 23:22:03.9±2.5, 37.94S×178.08E, h18km±14km, mb4.9/9, Error ellipse: s-maj=24.4km s-min=14.2km az=182.0*

*HRVD **11** 23:22:03.9±1.0, 37.93S×178.30E, h21km±1km, MW4.9/33, Centroid moment Tensor Solution. LP body waves: s16,c17;Mantle waves: s33,c47; Half duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-2.76±.29; M_{tt}0.40±.18; M_{pp}2.36±.19; M_{rt}0.85±.40; M_{rp}0.42±.12; M_{tp}-1.08±.31; Best double couple: $M_0$2.91×10^{16} NP1:ϕ_s205°, δ37°, λ-64°. NP2:ϕ_s354°, δ57°, λ-108°. Principal axes: T 2.61, Plg10°, Azm97°; N .6, Plg15°, Azm4°; P -3.21, Plg71°, Azm219°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*WEL **11** 23:22:03.4±0.1, 38.03S×178.18E, h5km, ML4.8/16 Error ellipse: s-maj=1.4km s-min=1.0km az=90.0*

ISC 11 23:21:59.6±1.1, 38.15S±0.03×178.51E±0.08, h18km±5km, n94, σ1s46/90, mb4.8/13, MS4.1/4, 2C-2D, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
PUZ	**Puketiti**	**0.21**	**290**	PG		**Pb**	**23 22 05.0**	**+0.2**
PUZ				⇓PG		**Pb**	**23 22 05.0**	**+0.2**
PUZ				SG		**Sb**	**23 22 06.9**	**-1.4**
PUZ				SG		**Sb**	**23 22 07.1**	**-1.2**
MXZ	**Matakaoa Point**	**0.60**	**344**	⇑PG		**Pb**	**23 22 13.0**	**+1.7**
MXZ				eSG		**Sb**	**23 22 18.6**	**-0.7**
MWZ	**Matawai**	**0.80**	**256**	⇑P*		**Pb**	**23 22 15.0**	**+0.4**
MWZ				SG		**Sb**	**23 22 23.9**	**-1.0**
KNZ	**Kokohu**	**1.09**	**217**	P*		**Pb**	**23 22 23.2**	**+3.5**
KNZ				S*		**Sb**	**23 22 38.3**	**+4.8**
URZ	**Urewera**	**1.11**	**264**	Pg		**Pb**	**23 22 20.0**	**0.0**
	1μm,0.3s,baz=79,slow=7.4,SNR=998							
URZ				Lg			23 22 34.0	
	1μm,0.3s,baz=0.5,slow=22,SNR=33							
URZ	**Urewera**	**1.11**	**264**	⇓P*		**Pb**	**23 22 19.9**	**0.0**
URZ				eS*		**Sb**	**23 22 33.5**	**-0.5**
WIZ	**White Island**	**1.21**	**300**	P*		**Pb**	**23 22 21.0**	**-0.7**
EDRZ	**Edgecumbe**	**1.40**	**271**	eP*		**Pb**	**23 22 25.4**	**+0.6**
MARZ	**Manawahe**	**1.46**	**276**	P*		**Pb**	**23 22 25.0**	**-0.8**
TAZ	**Tarawera**	**1.58**	**266**	P*		**Pb**	**23 22 28.5**	**+0.6**
MKRZ	**Makatiti**	**1.61**	**270**	ePN		**Pn**	**23 22 29.1**	**+1.5**
LIRZ	**Lichensteins R**	**1.68**	**274**	PN		**Pn**	**23 22 29.1**	**+0.5**
PATZ	**Paeroa**	**1.79**	**262**	PN		**Pn**	**23 22 31.8**	**+1.7**
TGRZ	**Tauranga**	**1.82**	**282**	PN		**Pn**	**23 22 30.3**	**-0.3**
UTU	**Utuhina**	**1.83**	**268**	PN		**Pn**	**23 22 32.4**	**+1.8**
BKZ	**Black Stump Fm**	**1.88**	**236**	PN		**Pn**	**23 22 32.9**	**+1.6**
WATZ	**Wairara**	**2.25**	**255**	PN		**Pn**	**23 22 38.7**	**+2.0**
PWZ	**Pawanui**	**2.28**	**214**	PN		**Pn**	**23 22 38.0**	**+0.9**
PWZ				eSN		**Sn**	**23 23 08.2**	**+3.3**
TOZ	**Tahuroa Road**	**2.41**	**279**	ePN		**Pn**	**23 22 38.7**	**-0.3**
KAVZ	**Karewarewa**	**2.44**	**246**	PN		**Pn**	**23 22 40.8**	**+1.4**
MGZ	**Maungaku**	**2.48**	**249**	PN		**Pn**	**23 22 41.7**	**+1.7**
NGZ	**Ngauruhoe**	**2.50**	**245**	ePN		**Pn**	**23 22 42.0**	**+1.8**
TUVZ	**Tukino**	**2.50**	**242**	PN		**Pn**	**23 22 42.6**	**+2.3**
CNZ	**Chateau**	**2.55**	**245**	ePN		**Pn**	**23 22 42.3**	**+1.4**
WNVZ	**Wahianoa**	**2.56**	**242**	PN		**Pn**	**23 22 42.9**	**+1.7**
FWVZ	**Far West T-bar**	**2.57**	**243**	PN		**Pn**	**23 22 42.9**	**+1.7**
KUZ	**Kuaotunu**	**2.62**	**301**	PN		**Pn**	**23 23 41.0**	**-1.0**
KUZ				eSN		**Sn**	**23 23 11.5**	**-2.1**
TSZ	**Takapari Road**	**2.75**	**225**	ePN		**Pn**	**23 22 44.6**	**+0.7**
MKAZ	**Moumakai**	**2.85**	**290**	PN		**Pn**	**23 22 44.8**	**-0.5**
HIZ	**Hauiti**	**2.90**	**262**	PN		**Pn**	**23 22 47.3**	**+1.4**
BFZ	**Birch Farm**	**3.08**	**214**	PN		**Pn**	**23 22 48.1**	**-0.4**
OTAZ	**Otara**	**3.09**	**292**	PN		**Pn**	**23 22 48.9**	**+0.3**
VRZ	**Vera Road**	**3.10**	**250**	PN		**Pn**	**23 22 50.8**	**+2.0**
MTAZ	**Motutapu**	**3.17**	**294**	PN		**Pn**	**23 22 49.9**	**+0.2**
WAZ	**Wanganui**	**3.18**	**239**	PN		**Pn**	**23 22 51.4**	**+1.4**
MRZ	**Mangatainoka R**	**3.39**	**221**	PN		**Pn**	**23 22 52.7**	**-0.2**
MRZ				SN		**Sn**	**23 23 31.9**	**-1.1**
NEZ	**North Egmont**	**3.63**	**251**	PN		**Pn**	**23 22 58.8**	**+2.4**
DFE	**Dawson Falls**	**3.64**	**250**	PN		**Pn**	**23 22 58.9**	**+2.5**
MTW	**Mount Morrison**	**3.80**	**217**	PN		**Pn**	**23 22 57.9**	**-0.8**
KIW	**Kapiti Island**	**3.89**	**225**	ePN		**Pn**	**23 22 58.1**	**-1.9**
CAW	**Cannon Point**	**3.98**	**221**	PN		**Pn**	**23 22 59.5**	**-1.7**
WCZ	**Waipu Caves**	**3.99**	**302**	PN		**Pn**	**23 23 00.7**	**-0.8**
MSWZ	**Moikau Station**	**4.12**	**217**	PN		**Pn**	**23 23 01.7**	**-1.6**
MRW	**Makara Radio**	**4.26**	**222**	ePN		**Pn**	**23 23 03.8**	**-1.5**
SNZO	**South Karori**	**4.31**	**222**	PN		**Pn**	**23 23 03.7**	**-2.3**
SNZO	**South Karori**	**4.31**	**222**	eP		**Pn**	**23 23 04.3**	**-1.7**
TCW	**Tory Channel**	**4.48**	**226**	ePN		**Pn**	**23 23 05.9**	**-2.5**
TUWZ	**Tuamarina**	**4.81**	**226**	ePN		**Pn**	**23 23 10.2**	**-2.9**
NNZ	**Nelson**	**5.01**	**231**	PN		**Pn**	**23 23 13.5**	**-2.3**
BSWZ	**Blackbirch Sta**	**5.04**	**224**	PN		**Pn**	**23 23 14.3**	**-2.0**
QRZ	**Quartz Range**	**5.34**	**238**	PN		**Pn**	**23 23 17.8**	**-2.8**
THZ	**Tophouse**	**5.62**	**228**	PN		**Pn**	**23 23 21.6**	**-2.9**
KHZ	**Kahutara**	**5.71**	**220**	PN		**Pn**	**23 23 22.6**	**-3.2**
DSZ	**Denniston Nort**	**6.28**	**233**	PN		**Pn**	**23 23 30.4**	**-3.4**
LTZ	**Lake Taylor**	**6.64**	**224**	PN		**Pn**	**23 23 34.9**	**-4.0**
MQZ	**McQueen's Vall**	**7.11**	**217**	ePN		**Pn**	**23 23 41.6**	**-3.8**
RPZ	**Rata Peaks**	**7.92**	**223**	Pn		**Pn**	**23 23 53.8**	**-3.1**
	5.0nm,0.3s,baz=71,slow=2.9,SNR=14							
RPZ				Sn		**Sn**	**23 25 17.5**	**-9.4**
	5.8nm,0.3s,baz=359,slow=17,SNR=9.8							
ODZ	**Otahua Downs**	**9.06**	**218**	PN		**P**	**23 24 08.3**	**-4.4**
BWZ	**Berwen**	**9.10**	**223**	PN		**P**	**23 24 08.8**	**-4.3**
RAR	**Rarotonga**	**25.21**	**54**	LR		LR	23 35 15.4	
	comp=Z,288nm,19.6s,MS3.8,baz=125,slow=32							
STKA	**Stephens Creek**	**30.73**	**270**	eP		**P**	**23 28 13.7**	**-2.2**
	7.5nm,1.0s,mb4.5							
STKA	**Stephens Creek**	**30.73**	**270**	P		**P**	**23 28 14.0**	**-1.9**
	9.8nm,1.0s,mb4.6,baz=103,slow=8.4,SNR=6.5							
STKA				LR		LR	23 40 17.2	
	comp=Z,576nm,18.2s,MS4.3,baz=293,slow=36							
CTA	**Charters Tower**	**33.20**	**294**	eP		**P**	**23 28 37.7**	**0.0**
	7.7nm,1.0s,mb4.6							
CTAO	**Charters Tower**	**33.20**	**294**	eP		**P**	**23 28 37.0**	**-0.6**
	14nm,1.1s,mb4.8							
AS12	**Alice Springs**	**40.52**	**278**	eP		**P**	**23 29 38.9**	**-0.4**
	6.5nm,0.5s,mb4.5							
ASAR	**Alice Springs**	**40.52**	**278**	P		**P**	**23 29 39.0**	**-0.3**
	5.6nm,0.5s,mb4.5,baz=124,slow=8.4,SNR=47							
FORT	**Forrest**	**41.82**	**264**	eP		**P**	**23 29 49.3**	**-0.6**
	61nm,0.6s,mb5.4							
WB2	**Warramunga Arr**	**42.21**	**283**	eP		**P**	**23 29 52.7**	**-0.6**
WRAB	**Tennant Creek**	**42.22**	**283**	eP		**P**	**23 29 52.7**	**-0.6**
	58nm,1.3s,mb5.0							
WRA	**Warramunga Arr**	**42.22**	**283**	P		**P**	**23 29 52.9**	**-0.5**
	8.5nm,0.8s,mb4.4,baz=124,slow=8.2,SNR=77							
WRA				LR		LR	23 47 27.8	
	comp=Z,229nm,18.6s,MS4.1,baz=140,slow=36							
WRA	**Warramunga Arr**	**42.22**	**283**	P		**P**	**23 29 52.9**	**-0.5**
WRA				LR		LR	23 47 27.8	
KAKA	**Kakadu**	**48.10**	**289**	eP		**P**	**23 30 39.3**	**-1.2**
	29nm,1.5s,mb5.1							
NWAO	**Narrogin (SRO)**	**49.35**	**256**	P		**P**	**23 30 50.9**	**+1.0**
	6.8nm,0.6s,mb4.8,baz=149,slow=9.8,SNR=2.5							
KLBR	**Kellerberrin**	**49.51**	**258**	eP		**P**	**23 30 50.6**	**-0.5**
	22nm,0.9s,mb5.2							
FITZ	**Fitzroy Crossi**	**50.01**	**278**	eP		**P**	**23 30 54.5**	**-0.6**
	8.1nm,1.2s,mb4.6							
FITZ	**Fitzroy Crossi**	**50.01**	**278**	P		**P**	**23 30 55.0**	**-0.1**
	13nm,1.1s,mb4.9,baz=164,slow=8.4,SNR=12							
QSPA	**South Pole Qui**	**51.98**	**180**	eP		**P**	**23 31 24.1**	**+15**
MAW	**Mawson**	**64.06**	**203**	P		**P**	**23 32 37.1**	**+3.0**
	7.5nm,1.2s,mb4.6,baz=115,slow=7.8,SNR=5.6							
MAW				LR		LR	00 01 36.9	
	comp=Z,234nm,19.4s,MS4.4,baz=233,slow=37							
CMAR	**Chiang Mai Arr**	**93.33**	**291**	P		**P**	**23 35 17.4**	**+2.5**
	3.4nm,0.8s,mb4.8,baz=149,slow=3.0,SNR=13							
TXAR	**Lajitas Array**	**98.89**	**60**	P		**P**	**23 35 44.7**	**+4.6**
	0.3nm,0.3s,mb4.3,baz=236,slow=3.3,SNR=2.6							
ILAR	**Eielson Array**	**106.12**	**15**	PKiKP			23 40 25.6	
	0.6nm,0.9s,baz=214,slow=3.3,SNR=4.8							
YKA	**Yellowknife Ar**	**113.64**	**28**	PKiKP			23 40 40.2	
	1.2nm,1.1s,baz=198,slow=1.9,SNR=8.0							
YKA				PP		PP	23 41 31.5	-2.2
	0.7nm,1.1s,baz=240,slow=6.5,SNR=5.2							
YKA	**Yellowknife Ar**	**113.64**	**28**	PKPdf		PKPdf	23 40 40.2	+0.1
YKA				PP		PP	23 41 31.5	-2.2
MKAR	**Makanchi Array**	**120.37**	**308**	PKP		PKPdf	23 40 51.6	-1.9
	0.9nm,0.9s,baz=107,slow=2.8,SNR=6.3							
BVAR	**Borovoye Array**	**129.67**	**312**	PKP		PKPdf	23 41 10.1	-1.2
	0.8nm,0.9s,baz=225,slow=2.1,SNR=4.2							
KEV	**Kevo**	**144.87**	**343**	*ep*		PKPbc	23 41 35.6	+1.1
ARCES	**ARCESS Array B**	**145.37**	**344**	PKP		PKPdf	23 41 37.5	-1.8
	8.5nm,0.8s,baz=17,slow=2.0,SNR=9.5							
ARE0	**ARCESS Array S**	**145.37**	**344**	*e*PKP		PKPdf	23 41 38.1	-1.1
JOF	**Joensuu**	**148.23**	**332**	*ep*		PKPdf	23 41 44.4	+0.3
KAF	**Kangasniemi**	**150.55**	**334**	*ep*		PKPdf	23 41 49.8	+2.0
FINES	**FINESS Array B**	**151.08**	**333**	PKPbc		PKPdf	23 41 53.5	+4.9
	5.2nm,1.0s,baz=41,slow=3.8,SNR=9.9							
BRTR	**Keskin Array B**	**152.73**	**284**	PKPbc		PKPdf	23 41 58.1	+6.4
	1.9nm,0.8s,baz=153,slow=2.8,SNR=7.9							
AKASG	**Malin Array Be**	**154.93**	**310**	PKPbc		PKPdf	23 42 00.7	+6.3
	0.6nm,0.6s,baz=107,slow=0.9,SNR=5.1							
AKASG				PKPab		PKPab	23 42 17.4	+0.3
	0.3nm,0.4s,baz=58,slow=4.2,SNR=4.3							
CLL	**Collm**	**163.33**	**327**	*e*PKP2		PKPab	23 42 57.0	+3.7

DJA 11 23:35:31.8±0.9, 8.71S×116.62E, h30km±6km, MD5.0/4, ML3.8/2, 6C-2D, Error ellipse: s-maj=40.3km s-min=18.6km az=178.0, Sumbawa region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
KEDI	**Kedomdong**	**0.55**	**294**	⇓*e*Pn		Pn	23 35 53.2	+10
	296nm,0.2s							
KEDI				⇑*e*Sn		Sn	23 36 08.5	+17
RATI	**Rata**	**1.07**	**269**	⇑*e*Pn		Pn	23 35 56.7	+5.7
	264nm,0.2s							
RATI				⇑*e*Sn		Sn	23 36 15.0	+10
INGI	**Ingas**	**1.46**	**266**	⇑*e*Pn		Pn	23 36 00.7	+4.2
INGI				⇑*e*Sn		Sn	23 36 22.3	+7.6
KELI	**Kelakatan**	**2.16**	**283**	⇓*e*Pn		Pn	23 36 08.9	+2.4
	26nm,0.2s							
KELI				⇑*e*Sn		Sn	23 36 35.8	+3.3

*NEIC **11** 23:37:41.0, 29.63S×71.51W, h38km, MD4.2(GUC), After GUC.*

GUC 11 23:37:41.0±0.8, 29.63S×71.51W, h38km±2km, MD4.2, ML3.9, 4C-1D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
LSCH	**La Serena**	**0.36**	**140**	⇑*i*P		P	23 37 49.8	-0.1
LSCH				*i* S		S	23 37 56.1	+0.1
LSCH				AMP			23 37 56.7	
	comp=E,14μm,0.3s							
TLL	**Tololo Astrono**	**0.81**	**131**	⇑*i*P		P	23 37 57.2	+1.2
TLL				*i* S		S	23 38 08.8	+1.8
TLL				AMP			23 38 12.4	
	comp=N,8μm,0.5s							
OVCH	**Ovalle**	**1.01**	**165**	⇑*i*P		P	23 37 59.2	+0.4
OVCH				*i* S		S	23 38 12.6	+0.6
OVCH				AMP			23 38 15.2	
	comp=E,3μm,0.3s							
VACH	**Vallenar**	**1.24**	**32**	⇓*i*P		P	23 38 02.7	+0.6
VACH				*i* S		S	23 38 19.8	+1.8
VACH				AMP			23 38 22.6	
	comp=N,13μm,0.1s							
CMCH	**Combarbala**	**1.60**	**164**	⇑*i*P		P	23 38 08.2	+0.9
CMCH				*i* S		S	23 38 28.5	+1.6
CMCH				AMP			23 38 34.1	
	comp=E,7μm,0.7s							
ILCH	**Illapel**	**2.02**	**172**	*i* P		P	23 38 13.6	+0.3
ILCH				*i* S		S	23 38 38.8	+1.4
ILCH				AMP			23 38 48.3	
	comp=N,622nm,0.3s							
CPCH	**Copiapo**	**2.49**	**24**	*i* P		P	23 38 19.8	-0.2
JACH	**Jahuel**	**3.14**	**166**	*i* P		P	23 38 30.4	+1.1
JACH				*i* S		S	23 39 06.5	+0.6
FCH	**Farellones**	**3.83**	**164**	eP		P	23 38 39.1	+0.1
FCH				*i* S		S	23 39 23.7	+0.4
CLCH	**Cerro Calan**	**3.84**	**168**	eP		P	23 38 38.9	-0.3
CLCH				*i* S		S	23 39 23.1	-0.6
TACH	**Talagante**	**4.04**	**173**	eP		P	23 38 41.6	-0.3
PCH	**Pirque**	**4.07**	**168**	eP		P	23 38 41.8	-0.6
LMEL	**Las Melosas**	**4.35**	**165**	eP		P	23 38 46.7	+0.3
LMEL				*i* S		S	23 39 35.6	-0.9
CHCH	**Chadas Angostu**	**4.35**	**171**	eP		P	23 39 46.1	-0.3
CICH	**Cipreses**	**4.76**	**169**	eP		P	23 38 51.5	-0.8
SFDO	**San Fernando**	**4.98**	**175**	eP		P	23 38 54.5	-0.9

*MOS **11** 23:58:52.8±0.9, 12.74N×44.49W, h10km, mb5.1/31, MS4.8/11, Error ellipse: s-maj=10.6km s-min=7.8km az=55.5*

*BJI **11** 23:58:52.4, 12.70N×44.50W, h10km, mB5.0, Ms5.0, Msz4.8*

*IDC **11** 23:58:52.8±0.5, 12.72N×44.50W, mb4.4/28, mb1 4.5/29, mb1mx4.5/29, ML4.2/1, MS4.7/21, Ms1 4.7/21, ms1mx4.7/22, Error ellipse: s-maj=13.5km s-min=9.3km az=162.0*

*NEIC **11** 23:58:54.4±0.2, 12.70N×44.49W, h10km, mb5.0/101, MS4.9/105, MW5.5, Error ellipse: s-maj=6.3km s-min=2.9km az=166.0, Moment Tensor Solution. s19 Moment tensor: Scale 10^{17}Nm; M_{rr}0.29; M_{tt}-1.14; M_{pp}0.85; M_{rt}-0.32; M_{tp}-1.66; M_{rp}-0.74; Best double couple: $M_0$2.1×10^{17} NP1:ϕ_s106°, δ67°, λ178°. NP2:ϕ_s196°, δ88°, λ23°. Principal axes: T 1.94, Plg17°, Azm63°; N .3, Plg67°, Azm201°; P -2.24, Plg14°, Azm329°;*

*HRVD **11** 23:58:54.4±0.2, 12.76N×44.48W, h12km, MW5.5/72, Centroid moment Tensor Solution. LP body waves: s59,c117;Mantle waves: s72,c151; Half duration: 1s3 Moment tensor: Scale 10^{17}Nm; M_{rr}-0.17±.03; M_{tt}0-0.52±.03; M_{pp}0.69±.03; M_{rt}0.07±.07; M_{tp}-1.87±.03; M_{rp}0.08±.08; Best double couple: $M_0$1.97×10^{17} NP1: ϕ_s279°, δ87°, λ-178°. NP2:ϕ_s189°, δ88°, λ-3°. Principal axes: T 2.05, Plg1°, Azm234°; N -.17, Plg86°, Azm334°; P -1.89, Plg4°, Azm144°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 11 23:58:52.8±0.2, 12.75N±0.05×44.48W±0.03, h10km, (h12km±1.1km:pP-P), n395, σ0s98/336, mb4.9/136, MS4.9/134, 23C-7D, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
MVM	**Montagne Vaucl**	**16.05**	**278**	eP		**P**	**00 02 40.3**	**-0.2**
CRM	**Caravelle**	**16.09**	**279**	eP		**P**	**00 02 42.2**	**+1.2**
BIM	**Bigot**	**16.22**	**278**	eP		**P**	**00 02 42.7**	**+0.1**
FDF	**Fort de France**	**16.31**	**279**	eP		**P**	**00 02 45.4**	**+1.6**
TRSB	**Teresina**	**17.59**	**174**	*ce*P		**P**	**00 02 58.0**	**-1.9**
TRSB				*i*			00 06 14.6	
PCRV	**Puerto La Cruz**	**19.92**	**265**	P		**P**	**00 03 26.9**	**-0.9**
	0.7nm,0.3s,baz=114,slow=12,SNR=2.1							
PCRV				S		**S**	**00 07 09.3**	**+3.1**
	0.6nm,0.3s,baz=30,slow=20,SNR=2.1							
SACV	**Santiago Islan**	**20.39**	**81**	eP		**P**	**00 03 34.4**	**+1.7**
SJG	**San Juan**	**21.55**	**287**	P		**P**	**00 03 44.8**	**+0.2**
	10nm,0.6s,mb4.5,baz=106,slow=8.1,SNR=4.3							
SJG				S		**S**	**00 07 47.8**	**+9.4**
	4.3nm,0.5s,baz=259,slow=23,SNR=1.9							
SJG	**San Juan**	**21.55**	**287**	eP		**P**	**00 03 46.3**	**+1.7**
	85nm,1.3s,mb5.0							
SJG				LR		LR		
	comp=Z,985nm,19.0s,MS4.2							
SDV	**Santo Domingo**	**25.96**	**264**	P		**P**	**00 04 27.1**	**-0.5**
	comp=Z,6.7nm,0.6s,mb4.4,baz=30,slow=14,SNR=7.5							
SDV				LR		LR	00 13 29.5	
	comp=Z,974nm,21.0s,MS4.3,baz=230,slow=34							
BBSR	**BB Station**	**26.93**	**320**	PFAKE			00 04 50.0	+14
BBSR				LR		LR		
	comp=Z,6μm,20.0s,MS5.2							
BDFB	**Brasilia**	**28.42**	**187**	P		**P**	**00 04 50.2**	**+0.3**
	comp=Z,8.1nm,0.9s,mb4.4,baz=9.8,slow=8.0,SNR=9.1							
BDFB				LR		LR	00 15 29.9	
	comp=Z,2μm,18.6s,MS4.8,baz=175,slow=35							
ADH	**Angra Heroismo**	**30.01**	**28**	*i* LR		LR	00 12 40.0	
PDA	**Ponta Delgada**	**30.03**	**31**	*e*LR		LR	00 12 46.0	
ROSC	**El Rosal**	**30.49**	**258**	P		**P**	**00 05 08.9**	**+0.4**
	comp=Z,14nm,0.6s,mb4.9,baz=106,slow=13,SNR=8.5							
ROSC				LR		LR	00 16 43.1	
	comp=Z,2μm,21.9s,MS4.7,baz=309,slow=35							
OTAV	**Otavalo**	**35.90**	**252**	eP		**P**	**00 05 55.1**	**-0.4**
	comp=Z,30nm,1.4s,mb5.0							
LPAZ	**La Paz**	**37.14**	**220**	P		**P**	**00 06 06.2**	**+0.4**
	comp=Z,16nm,1.0s,mb4.8,baz=34,slow=10,SNR=22							
LPAZ				LR		LR	00 21 25.4	
	comp=Z,3μm,19.4s,MS5.0,baz=48,slow=36							
LPAZ	**La Paz**	**37.14**	**220**	eP		**P**	**00 06 05.7**	**-0.1**
	comp=Z,22nm,1.3s,mb4.8							
LPAZ				LR		LR		
	comp=Z,2μm,21.0s,MS4.8							
EMMW	**East Machias**	**37.42**	**333**	PFAKE			00 06 20.0	+12
EMMW				LR		LR		
	comp=Z,4μm,22.0s,MS5.2							
WES	**Weston**	**37.60**	**327**	PFAKE			00 06 20.0	+11
WES				LR		LR		
	comp=Z,2μm,22.0s,MS5.0							
DWPF	**Disney**	**37.67**	**300**	PFAKE			00 06 20.0	+10
DWPF				LR		LR		
	comp=Z,1μm,20.0s,MS4.7							
HRV	**Harvard--Oak R**	**37.81**	**327**	PFAKE			00 06 20.0	+8.7
HRV				LR		LR		
	comp=Z,132nm,20.0s,MS3.7							
PAL	**Palisades**	**38.15**	**323**	*e*P		**P**	**00 06 21.4**	**+7.3**
PAL				pmax		pmax		
	comp=Z,56nm,1.8s,mb5.0							
PAL	**Palisades**	**38.15**	**323**	*e*P		**P**	**00 06 13.2**	**-0.8**
	comp=Z,56nm,1.9s,mb5.0							
WVL	**Waterville**	**38.33**	**331**	PFAKE			00 06 30.0	+14
WVL				LR		LR		
	comp=Z,5μm,19.0s,MS5.4							
CBN	**Corbin**	**38.70**	**317**	PFAKE			00 06 30.0	+11
CBN				LR		LR		
	comp=Z,1μm,20.0s,MS4.7							
MVL	**Millersville**	**39.02**	**320**	*e*P		**P**	**00 06 25.7**	**+4.2**
HNH	**Hanover**	**39.03**	**328**	eP		**P**	**00 06 22.5**	**+1.1**
	comp=Z,2.1nm,1.0s,mb3.8							
PQI	**Presque Isle**	**39.20**	**334**	PFAKE			00 06 30.0	+7.2
PQI				LR		LR		
	comp=Z,6μm,20.0s,MS5.4							
LBNH	**Lisbon**	**39.21**	**328**	PFAKE			00 06 30.0	+7.0
LBNH				LR		LR		
	comp=Z,1μm,22.0s,MS4.7							
TIC	**Toumodi**	**39.33**	**95**	eP		**P**	**00 06 23.0**	**-1.3**
	comp=Z,90nm,0.9s,mb5.5							
LIC	**Lamto**	**39.41**	**96**	eP		**P**	**00 06 23.6**	**-1.3**
	comp=Z,37nm,0.8s,mb4.9							
LIC				*e*R				
	comp=Z,1μm,18.8s							
LIC	**Lamto**	**39.41**	**96**	eP		**P**	**00 06 23.7**	**-1.2**
	comp=Z,143nm,1.6s,mb5.5							
LIC	**Lamto**	**39.41**	**96**	eP		**P**	**00 06 23.6**	**-1.3**
	comp=Z,18nm,0.8s,mb4.9							
LIC				LR		LR		
	comp=Z,630nm,18.8s,MS4.5							
DBIC	**Dimbokro**	**39.49**	**95**	P		**P**	**00 06 24.8**	**-0.8**
	comp=Z,17nm,0.6s,mb5.0,baz=256,slow=9.5,SNR=28							
DBIC				LR		LR	00 21 12.2	
	comp=Z,688nm,18.0s,MS4.5,baz=262,slow=34							
KIC	**Kosan Boka**	**39.66**	**95**	eP		**P**	**00 06 26.3**	**-0.7**
	comp=Z,94nm,1.0s,mb5.5							
BINY	**Binghamton**	**40.11**	**323**	PFAKE			00 06 40.0	+10
BINY				LR		LR		
	comp=Z,875nm,22.0s,MS4.6							
NCB	**Newcomb**	**40.24**	**326**	P		**P**	**00 06 35.1**	**+3.6**
	comp=Z,55nm,1.6s,mb5.0							
BLA	**Blacksburg**	**40.30**	**314**	PFAKE			00 06 40.0	+8.0
BLA				LR		LR		
	comp=Z,979nm,22.0s,MS4.6							
PTEO	**Sao Teotonio**	**40.33**	**46**	eP		**P**	**00 06 31.7**	**-0.5**
	comp=Z,146nm,1.7s,mb5.4							
SSPA	**Standing Stone**	**40.35**	**320**	PFAKE			00 06 40.0	+7.6
SSPA				LR		LR		
	comp=Z,4μm,22.0s,MS5.2							
CPUP	**Villa Florida**	**40.80**	**198**	P		**P**	**00 06 35.4**	**-0.9**
	comp=Z,3.7nm,0.9s,mb4.0,baz=44,slow=8.2,SNR=16				

WCI LR LR
comp=Z,4µm,20.0s,MS5.3
PLAL Pickwick Lake 45.14 307 PFAKE 00 07 20.0 +8.4
PLAL LR LR
comp=Z,730nm,21.0s,MS4.6
EVIA Vianos 45.22 48 P **P 00 07 13.2 +1.0**
comp=Z,22nm,0.7s,mb5.1
WVT Waverly 45.33 309 PFAKE 00 07 20.0 +7.0
WVT LR LR
comp=Z,1µm,20.0s,MS4.8
EARI Arriondas 45.47 40 P **P 00 07 13.4 -0.6**
comp=Z,34nm,1.2s,mb5.0
SCHQ Schefferville 45.50 342 P **P 00 07 15.0 +0.9**
comp=Z,3.6nm,0.8s,mb4.3,baz=120,slow=19,SNR=5.3
SCHQ LR LR 00 23 30.0
comp=Z,951nm,20.2s,MS4.7,baz=158,slow=32
SCHQ Schefferville 45.50 342 *e*P **P 00 07 15.0 +0.9**
comp=Z,28nm,1.3s,mb5.0
SCHQ LR LR
comp=Z,1µm,20.0s,MS4.9
ETOB Tobarra 45.91 48 P **P 00 07 17.5 -0.1**
comp=Z,76nm,1.1s,mb5.5
ELAN Lanestosa 46.57 41 P **P 00 07 22.9 +0.2**
comp=Z,23nm,0.9s,mb5.1
SIUC Southern Illin 46.91 310 *e*P **P 00 07 25.9 +0.5**
comp=Z,19nm,0.8s,mb5.1
EALK Alkurruntz 47.82 42 P **P 00 07 31.6 -1.0**
comp=Z,26nm,1.2s,mb5.1
ESAC San Caprasio 47.88 45 P **P 00 07 33.0 -0.1**
comp=Z,63nm,1.2s,mb5.5
EBR Ebro Roquetas 48.20 46 *e*Ts 00 07 40.0
ETSF Etsaut 48.31 43 *e*P **P 00 07 37.0 +0.6**
comp=Z,27nm,0.9s,mb5.0
CCM Cathedral Cave 48.53 310 PFAKE 00 07 50.0 +12
CCM LR LR
comp=Z,1µm,21.0s,MS4.8
EPOB Poblet 48.81 46 P **P 00 07 40.6 +0.4**
comp=Z,45nm,1.2s,mb5.4
EPF Esparros 48.96 43 *e*P **P 00 07 42.1 +0.7**
comp=Z,26nm,0.7s,mb5.1
QUIF Quistinic 49.07 36 *e*P **P 00 07 41.6 -0.6**
comp=Z,97nm,1.4s,mb5.3
MELF Melles 49.18 44 *e*P **P 00 07 44.2 +1.1**
ROSF Rostrenen 49.23 35 *e*P **P 00 07 43.1 -0.3**
comp=Z,47nm,0.9s,mb5.2
EMIR Miracle 49.33 45 P **P 00 07 43.2 -1.1**
MIAR Mount Ida 49.37 305 *e*P **P 00 07 44.2 -0.5**
comp=Z,12nm,1.3s,mb4.8
MIAR LR LR
comp=Z,1µm,21.0s,MS4.9
SALF Salau 49.43 44 *e*P **P 00 07 46.7 +1.7**
JFWS Jewell Farm 49.55 316 PFAKE 00 08 00.0 +14
JFWS LR LR
comp=Z,984nm,22.0s,MS4.8
LCHF La Chataignera 49.88 39⇑ *e*P **P 00 07 46.8 -1.6**
LFF La Frestale 50.03 41 *e*P **P 00 07 49.4 -0.2**
comp=Z,70nm,1.2s,mb5.3
DCN Croghan 50.10 28⇑ *i*P **P 00 07 49.9 -0.1**
MFF Saint Martin d 50.21 39 *e*P **P 00 07 50.8 -0.2**
comp=Z,88nm,1.2s,mb5.4
MTLF Montolieu 50.35 44 *e*P **P 00 07 51.6 -0.5**
comp=Z,15nm,0.8s,mb4.8
HKT Hockley 50.38 298 PFAKE 00 08 00.0 +7.5
HKT LR LR
comp=Z,1µm,22.0s,MS4.8
DLF Lyons Farm 50.42 29⇑ *i*P **P 00 07 52.4 -0.1**
DMUB Kingscourt 50.63 28 *e*P **P 00 07 54.0 0.0**
GRR Gorron 50.64 36 *e*P **P 00 07 53.6 -0.6**
comp=Z,43nm,1.0s,mb5.1
RJF Les Rejaudoux 50.68 41 *e*P **P 00 07 53.8 -0.7**
comp=Z,20nm,0.8s,mb4.8
RJF *e*R
comp=Z,3µm,23.0s
CAF Calviac 50.88 42 *e*P **P 00 07 55.7 -0.3**
comp=Z,75nm,1.2s,mb5.2
FLN La Foliniere 51.04 36 *e*P **P 00 07 56.7 -0.5**
comp=Z,26nm,0.8s,mb4.9
FLN *e*R
comp=Z,2µm,23.0s
LDF La Druitiere 51.16 37 *e*P **P 00 07 57.4 -0.8**
comp=Z,17nm,0.8s,mb4.7
TCF Toulx Ste Croi 51.53 40 *e*P **P 00 08 00.8 -0.2**
comp=Z,103nm,1.4s,mb5.3
LASF Ste Croix 51.73 43 *e*P **P 00 08 02.4 -0.1**
comp=Z,48nm,1.2s,mb5.0
LBL Lubilhac 51.77 42⇑ *e*P **P 00 08 03.6 +0.8**
PYM Petit Puy Mans 51.82 41 *e*P **P 00 08 03.2 0.0**
BGF Bois d'Agland 52.05 40 *e*P **P 00 08 04.5 -0.4**
comp=Z,40nm,0.8s,mb5.1
HYF Humbligny 52.22 39 *e*P **P 00 08 05.9 -0.3**
PLDF La Plantade 52.30 41⇑ *e*P **P 00 08 07.4 +0.6**
AVF Avril sur Loir 52.46 40 *e*P **P 00 08 07.4 -0.6**
comp=Z,23nm,0.9s,mb4.8
VIVF Saint-Julien-l 52.56 43 *e*P **P 00 08 09.0 +0.2**
comp=Z,50nm,1.3s,mb5.0
SSF Saint Saulge 52.67 40 *e*P **P 00 08 08.7 -0.9**
comp=Z,41nm,1.4s,mb4.8
SMF Signal de Mont 52.71 40 *e*P **P 00 08 09.3 -0.6**
comp=Z,44nm,1.3s,mb4.9
KSU1 Kansas State U 52.86 310 *e*P **P 00 08 09.8 -1.3**
LOR Lormes 52.97 40 *e*P **P 00 08 10.9 -0.9**
comp=Z,43nm,1.2s,mb5.0
LOR *e*R
comp=Z,2µm,22.2s
ESK Eskdalemuir 53.20 28 PFAKE 00 08 30.0 +17
ESK LR LR
comp=Z,1µm,21.0s,MS4.9
LMR La Mourre 53.27 45 *e*P **P 00 08 13.2 -0.9**
comp=Z,44nm,1.1s,mb5.0
ORIF Oris-en-Rattie 53.38 43 *e*P **P 00 08 15.3 +0.4**
comp=Z,51nm,1.7s,mb4.9
ORIF *e*R
comp=Z,3µm,21.5s
FRF La Foret Royal 53.44 45 *e*P **P 00 08 14.6 -0.7**
comp=Z,46nm,1.3s,mb4.9
WMOK Wichita Mounta 53.61 304 *e*P **P 00 08 15.1 -1.6**
comp=Z,6.6nm,1.3s,mb4.4
WMOK LR LR
comp=Z,2µm,21.0s,MS5.0
FRB Frobisher Bay 53.66 347 P **P 00 08 17.2 +0.6**
comp=Z,9.4nm,1.1s,mb4.6,baz=144,slow=10,SNR=5.7
JCT Junction City 53.85 298 *e*P **P 00 08 17.4 -1.1**
comp=Z,13nm,1.0s,mb4.8
JCT LR LR
comp=Z,718nm,22.0s,MS4.7
SBF Sospel 54.08 45 *e*P **P 00 08 19.5 -0.5**
comp=Z,38nm,0.9s,mb5.0
CABF La Chapelle 54.12 41 *e*P **P 00 08 20.0 -0.3**
comp=Z,27nm,0.8s,mb4.9
LPL La Plagne 54.15 43 *e*P **P 00 08 20.9 +0.4**
LPG La Plagne 54.16 43 *e*P **P 00 08 21.0 +0.5**
MEZF Maizieres J'vi 54.21 39 *e*P **P 00 08 20.0 -0.8**
comp=Z,49nm,0.8s,mb5.2
BORG Borgarnes 54.35 12 PFAKE 00 08 30.0 +8.3
BORG LR LR
comp=Z,2µm,20.0s,MS5.2
BAIF Baives 54.35 37 *e*P **P 00 08 20.9 -1.0**
comp=Z,50nm,1.1s,mb5.1
GIVF Givet 54.73 37 *e*P **P 00 08 23.5 -1.2**
PGF Pioggiola 54.78 47 *e*P **P 00 08 24.2 -0.9**
comp=Z,22nm,0.8s,mb4.9
HAU Haudompre 54.81 40 *e*P **P 00 08 24.1 -1.2**
comp=Z,40nm,1.2s,mb5.0
HAU *e*R
comp=Z,2µm,22.2s
LOMF Lomont 54.87 40 *e*P **P 00 08 25.4 -0.3**
HINF Hinteralfeld 55.05 40 *e*P **P 00 08 25.8 -1.3**
comp=Z,11nm,0.8s,mb4.6
MCGN Macugnaga 55.13 42 *e*P **P 00 08 28.8 +1.1**
CBKS Cedar Bluff 55.16 309 PFAKE 00 08 40.0 +12
CBKS LR LR
comp=Z,842nm,22.0s,MS4.8
MOF Molkenrain 55.24 40⇑ *e*P **P 00 08 27.8 -0.7**
BBS Basel-Blauen 55.34 41 *e*P **P 00 08 28.6 -0.6**
CDF Champ du Feu 55.54 39 *e*P **P 00 08 29.3 -1.3**
WLS Welschbruch 55.59 39 *e*P **P 00 08 30.1 -0.9**
FELD Feldberg 55.80 40⇑ *e*P **P 00 08 31.9 -0.6**
RUP Ruppelstein 55.89 38 *e*P **P 00 08 33.0 -0.1**
ULM Lac du Bonnet 56.02 323 P **P 00 08 32.2 -1.8**
comp=Z,6.5nm,0.7s,mb4.8,baz=93,slow=8.6,SNR=6.1
ULM LR LR 00 28 54.3
comp=Z,666nm,21.7s,MS4.7,baz=228,slow=32
ULM Lac du Bonnet 56.02 323 *e*P **P 00 08 32.0 -2.0**
comp=Z,13nm,0.9s,mb5.0
ULM LR LR
comp=Z,1µm,22.0s,MS4.9
LANF Langenberg 56.07 39⇑ *e*P **P 00 08 34.3 -0.1**

BFO Black Forest 56.16 40 *e*P **P 00 08 35.4 +0.3**
BFO pmax pmax
comp=Z,29nm,1.3s,mb5.2
BFO Black Forest 56.16 40 *e*P **P 00 08 35.4 +0.3**
comp=Z,29nm,1.3s,mb5.2
SPAK Spaichingen 56.37 40 *e*P **P 00 08 36.6 0.0**
GSCL Gusciola 56.39 45 *e*P **P 00 08 36.5 -0.3**
CSNT Castellina Chi 56.64 46 *e*P **P 00 08 38.9 +0.3**
ZCCA Zocca 56.66 45 *e*P **P 00 08 39.5 +0.7**
DAVA Damuels 56.80 41⇑ *i*P **P 00 08 39.8 +0.1**
comp=Z,125nm,2.9s,mb5.4
BRMO Bormio 56.87 42 *e*P **P 00 08 40.5 +0.3**
TOD Tromm 56.91 38 *e*P **P 00 08 39.9 -0.5**
PGD Poggio Sodo 57.05 46 *e*P **P 00 08 41.0 -0.6**
TXAR Lajitas Array 57.09 297 P **P 00 08 40.9 -1.2**
comp=Z,1.7nm,0.9s,mb4.1,baz=112,slow=6.7,SNR=11
TXAR LR LR 00 31 31.2
comp=Z,364nm,20.1s,MS4.5,baz=80,slow=34
CPRX Cap Rock 57.56 301 *e*P **P 00 08 44.2 -1.1**
MOTA Moosalm 57.60 42⇓ *i*P **P 00 08 44.4 -1.0**
comp=Z,68nm,2.3s,mb5.3
SQTA Sankt Quirin 57.64 42⇓ *i*P **P 00 08 44.2 -1.4**
comp=Z,40nm,1.7s,mb5.2
SNTG Esanatoglia 57.76 47 *e*P **P 00 08 45.8 -0.7**
PTQR Pietraquaria 57.81 48 *e*P **P 00 08 47.5 +0.6**
ARV Arcevia 57.81 46 *e*P **P 00 08 45.7 -1.2**
AQU L'Aquila 57.88 48 *e*P **P 00 08 47.7 +0.3**
AQU L'Aquila 57.88 48 *e*P **P 00 08 47.9 +0.5**
GDL2 Guadalupe Moun 57.91 300 *e*P **P 00 08 46.9 -0.8**
WATA Walderalm 57.91 42⇑ *i*P **P 00 08 46.6 -0.9**
comp=Z,24nm,1.6s,mb5.0
WTTA Wattenberg 57.93 42⇑ *i*P **P 00 08 47.3 -0.3**
comp=Z,233nm,3.2s
FUR Furstenfeldbru 57.97 41 *e*P **P 00 08 48.4 +0.5**
FUR pmax pmax
comp=Z,44nm,1.3s,mb5.3
FUR Furstenfeldbru 57.97 41 *e*P **P 00 08 48.4 +0.5**
comp=Z,44nm,1.3s,mb5.3
SDI San Donato 58.04 49 *e*P **P 00 08 48.1 -0.4**
CII Carovilli 58.41 49 *e*P **P 00 08 51.8 +0.8**
GRA1 Grafenberg Arr 58.41 39 *e*P **P 00 08 50.4 -0.6**
comp=Z,60nm,2.2s,mb5.2
GRA1 *e*S **S 00 17 09.7 +18**
GRA1 *e*SS SS 00 20 50.1 +4.0
GRA1 LR LR
comp=Z,1µm,21.3s,MS5.0
GRF Grafenberg Arr 58.41 39 *e*P **P 00 08 50.4 -0.6**
GRF *e*S **S 00 17 09.7 +18**
GRF *e*SS SS 00 20 50.1 +4.0
GRF pmax pmax
comp=Z,60nm,2.2s,mb5.2
FVI Forni Avoltri 58.49 43 *e*P **P 00 08 51.2 -0.4**
MNTX Cornudas Mount 58.73 299 *e*P **P 00 08 51.9 -1.5**
comp=Z,13nm,1.2s,mb4.8
MNTX LR LR
comp=Z,632nm,19.0s,MS4.8
CSSN Cassano Irpino 58.77 50 *e*P **P 00 08 53.9 +0.2**
PTCC Patocco-Chiusa 58.82 43 *e*P **P 00 08 53.8 -0.1**
MOX Moxa 58.97 38 *i*P **P 00 08 54.9 +0.1**
comp=Z,logA/T=1.3,mb5.1
MOX S **S 00 17 05.0 +5.6**
MOX L 00 30 12.0
MOX Moxa 58.97 38 *e*P **P 00 08 54.9 +0.1**
MOX pmax pmax
comp=Z,33nm,1.6s,mb5.1
MOX MLR MLR
comp=Z,1µm,21.0s,MS4.9
MOX Moxa 58.97 38 *e*P **P 00 08 54.9 +0.1**
comp=Z,33nm,1.6s,mb5.1
MOX LR LR
comp=Z,1µm,21.0s,MS4.9
KBA Koelnbreinsper 58.99 42⇑ *i*P **P 00 08 54.0 -1.1**
comp=Z,49nm,2.4s,mb5.1
MGR Morigerati 59.04 51 *e*P **P 00 08 55.0 -0.6**
VOY Vojsko 59.09 44 *e*P **P 00 08 55.7 -0.1**
MRLC Muro Lucano 59.10 50 *e*P **P 00 08 55.8 -0.1**
WET Wettzell 59.27 40 *e*P **P 00 08 56.9 -0.1**
WET pmax pmax
comp=Z,10.0nm,1.3s,mb4.7
WET Wettzell 59.27 40 *e*P **P 00 08 56.9 -0.1**
comp=Z,10.0nm,1.3s,mb4.7
KNDS Knezji Dol 59.29 44 *e*P **P 00 08 56.0 -1.2**
KNDS *e*PcP PcP 00 09 43.8 -1.3
NVLJ Novalja 59.41 46 *i*P **P 00 08 57.0 -1.1**
SDCO Great Sand Dun 59.44 306 PFAKE 00 09 10.0 +12
SDCO LR LR
comp=Z,443nm,19.0s,MS4.6
RSSD Black Hills 59.46 314 PFAKE 00 09 10.0 +12
RSSD LR LR
comp=Z,866nm,19.0s,MS4.9
LJU Ljubljana 59.52 44 *e*P **P 00 08 58.0 -0.7**
LJU *e*S **S 00 17 13.4 +6.8**
OBKA Obir 59.65 43⇑ *i*P **P 00 08 58.9 -0.7**
comp=Z,285nm,3.6s
GEC2 GERESS Array S 59.71 41 *e*P **P 00 08 59.7 -0.3**
GEC2 pmax pmax
comp=Z,19nm,1.6s,mb4.9
GEC2 GERESS Array S 59.71 41 *e*P **P 00 08 59.7 -0.3**
comp=Z,19nm,1.6s,mb4.9
GERES GERESS Array B 59.71 41 P **P 00 08 58.7 -1.3**
comp=Z,2.1nm,0.8s,mb4.2,baz=256,slow=5.5,SNR=18
KHC Kasperske Hory 59.71 40 *e*P **P 00 08 59.0 -1.0**
KHC x x 00 09 03.0
KHC *e*S **S 00 17 11.8 +2.8**
KHC L 00 30 00.0
comp=Z,0.7nm,19.9s
KHC Kasperske Hory 59.71 40 *e*P **P 00 08 59.0 -1.0**
KHC *i* pP 00 09 03.0 -0.1
KHC *e*S **S 00 17 11.8 +2.8**
KHC MLR MLR
comp=Z,700nm,19.9s,MS4.8
KHC Kasperske Hory 59.71 40 *e*P **P 00 08 59.0 -1.0**
KHC *e* pP 00 09 03.0 -0.1
KHC *e*S **S 00 17 11.8 +2.8**
KHC LR LR
comp=Z,700nm,19.9s,MS4.8
MUD Monsted U'grnd 59.78 31 *i*P **P 00 08 59.7 -0.7**
comp=Z,21nm,1.2s,mb5.0
MUD *i* S **S 00 17 07.6 -2.1**
comp=Z,1µm,19.0s
MUD Monsted U'grnd 59.78 31 *e*P **P 00 08 59.7 -0.7**
MUD *i* S **S 00 17 07.6 -2.1**
MUD pmax pmax
comp=Z,21nm,1.2s,mb5.0
MUD MLR MLR
comp=Z,1µm,19.0s,MS5.0
MUD Monsted U'grnd 59.78 31 *e*P **P 00 08 59.7 -0.7**
comp=Z,21nm,1.2s,mb5.0
MUD *i* S **S 00 17 07.6 -2.1**
MOA Molln 59.80 42⇑ *i*P **P 00 08 59.8 -0.8**
comp=Z,189nm,3.4s
ISCO Idaho Springs 59.82 309 *e*P **P 00 09 00.9 0.0**
comp=Z,22nm,1.2s,mb5.1
ISCO LR LR
comp=Z,931nm,22.0s,MS4.9
BOJS Bojanci 59.89 45 *e*P **P 00 09 00.5 -0.8**
ANMO Albuquerque 59.90 303 *e*P **P 00 09 01.1 -0.4**
ANMO Albuquerque 59.90 303 PFAKE 00 09 10.0 +8.5
ANMO LR LR
comp=Z,1µm,22.0s,MS5.1
SUMG Summit 59.91 2 *e*P **P 00 08 59.8 -1.3**
CLL Collm 60.01 38 P **P 00 09 01.8 -0.2**
comp=Z,logA/T=1.2,mb5.0
CLL *e* 00 09 09.0
CLL *i* 00 09 15.8
CLL *e*S **S 00 17 17.0 +4.2**
CLL *e*SS SS 00 21 12.0 +1.4
CLL *e* 00 24 00.0
CLL Collm 60.01 38 *i*P **P 00 09 01.8 -0.2**
CLL *e*S **S 00 17 17.0 +4.2**
CLL pmax pmax
comp=Z,16nm,1.1s,mb5.0
CLL MLR MLR
comp=Z,2µm,22.2s,MS5.1
CLL Collm 60.01 38 *i*P **P 00 09 01.8 -0.2**
comp=Z,16nm,1.1s,mb5.0
CLL *i* 00 09 15.8
CLL *e*S **S 00 17 17.0 +4.2**
CLL LR LR
comp=Z,2µm,22.2s,MS5.1
PERS Pernice 60.06 43 *e*P **P 00 09 00.9 -1.5**
LAZ Ladron 60.41 302 *e*P **P 00 09 05.4 +0.4**
BRG Berggiesshubel 60.44 38 *i*P **P 00 09 05.7 +0.7**
BRG *e*S **S 00 17 26.0 +7.6**

BRG *e*SS SS 00 21 20.0 +2.5
BRG pmax pmax
comp=Z,2.0nm,0.8s,mb4.2
BRG MLR MLR
comp=N,500nm,24.5s,MS4.9
BRG MLR MLR
comp=E,850nm,24.5s,MS4.9
BRG MLR MLR
comp=Z,1µm,24.5s,MS4.9
BRG Berggiesshubel 60.44 38 *i*P **P 00 09 05.7 +0.7**
comp=Z,2.4nm,0.8s,mb4.3
BRG *e*S **S 00 17 26.0 +7.6**
BRG *e*SS SS 00 21 20.0 +2.5
BRG LR LR
comp=Z,1µm,24.5s,MS4.9
ARSA Arzberg 60.48 43⇑ *i*P **P 00 09 04.2 -1.1**
comp=Z,163nm,3.1s
PRU Pruhonice 60.55 39 *e*P **P 00 09 05.7 -0.1**
PRU *e*S **S 00 17 24.1 +4.3**
PRU L 00 30 20.0
SISC Sisak 60.65 45 *i*P **P 00 09 05.7 -0.8**
PVCC Panska Ves 60.72 39 *e*P **P 00 09 07.3 +0.4**
PVCC L 00 31 00.0
comp=Z,0.9nm,19.2s
FFC Flin Flon 61.14 326 *e*P **P 00 09 08.1 -1.6**
comp=Z,5.8nm,0.9s,mb4.7
FFC LR LR
comp=Z,597nm,21.0s,MS4.7
COP Copenhagen 61.16 33 *i*P **P 00 08 57.9 -12**
comp=Z,19nm,1.1s,mb5.1
COP *e*S **S 00 17 22.9 -4.6**
comp=Z,320nm,19.0s
COP Copenhagen 61.16 33 *e*P **P 00 08 57.9 -12**
COP *e*S **S 00 17 22.9 -4.6**
COP pmax pmax
comp=Z,19nm,1.1s,mb5.1
COP MLR MLR
comp=Z,330nm,19.0s,MS4.5
RW3 Ridgway 61.22 307 *e*P **P 00 09 11.9 +1.5**
KONO Kongsberg 61.34 28 *i* **P 00 09 11.4 +0.4**
KONO *e*S **S 00 17 34.8 +5.0**
KONO *e*SS SS 00 21 34.6 +2.8
KONO AMS AMS 00 30 51.8
comp=Z,611nm,20.0s,MS4.8
KONO Kongsberg 61.34 28 *e*P **P 00 09 09.7 -1.3**
KONO Kongsberg 61.34 28 PFAKE 00 09 20.0 +9.0
KONO LR LR
comp=Z,843nm,20.0s,MS4.9
UPC Upice 61.60 39 *e*P **P 00 09 13.0 +0.1**
DPC Dobruska-Polom 61.75 39 *e*P **P 00 09 13.0 -0.9**
DPC L 00 31 00.0
comp=Z,0.8nm,22.4s
KSP Ksiaz 61.86 39 *e*P **P 00 09 14.2 -0.4**
KSP *e*pP pP 00 09 16.8 -1.0
KSP *e*S **S 00 17 46.4 +10**
KSP MLR MLR 00 30 56.2
comp=Z,2µm,21.7s,MS5.2
KSP Ksiaz 61.86 39 *e*P **P 00 09 14.5 -0.1**
KSP *e*pP pP 00 09 18.6 +0.8
KSP *e*S **S 00 17 39.0 +2.5**
KSP *e*SS SS 00 21 41.0 +0.7
KSP LR LR
comp=Z,2µm,21.7s,MS5.3
PV01 Paradox Valley 61.90 306 *e*P **P 00 09 15.8 +0.7**
JMIC Jan Mayen 62.23 13 *e*S **S 00 17 48.2 +7.4**
JMIC AMS AMS 00 31 02.1
comp=Z,619nm,15.3s,MS4.9
PV10 Paradox Valley 62.29 307 *e*P **P 00 09 17.9 +0.2**
BSD Bornholm Skovb 62.30 34⇑ *i*P **P 00 09 14.0 -3.5**
comp=Z,9.5nm,1.0s,mb4.9
BSD *e*S **S 00 17 39.0 -2.9**
comp=Z,580nm,17.0s
BSD Bornholm Skovb 62.30 34⇑ *e*P **P 00 09 14.0 -3.5**
BSD *e*S **S 00 17 39.0 -2.9**
BSD pmax pmax
comp=Z,10.0nm,1.0s,mb4.9
BSD MLR MLR
comp=Z,590nm,17.0s,MS4.8
BSD Bornholm Skovb 62.30 34⇑ *e*P **P 00 09 14.0 -3.5**
comp=Z,9.5nm,1.0s,mb4.9
BSD *e*S **S 00 17 39.0 -2.9**
NAO01 NORSAR Array S 62.44 27 PFAKE 00 09 30.0 +12
NAO01 LR LR
comp=Z,985nm,20.0s,MS5.0
NB2 NORSAR Subarra 62.67 27 P **P 00 09 19.2 -0.6**
comp=Z,15nm,1.4s,mb4.9,baz=245,slow=6.5
NB2 NORSAR Subarra 62.67 27 P **P 00 09 19.2 -0.6**
comp=Z,15nm,1.4s,mb4.9,baz=245,slow=6.9
NOA NORSAR Array B 62.67 27 P **P 00 09 19.4 -0.5**
comp=Z,4.0nm,1.1s,mb4.5,baz=247,slow=6.4,SNR=5.1
NOA LR LR 00 31 17.4
comp=Z,565nm,19.4s,MS4.8,baz=240,slow=31
OKC Ostrava-Krasne 62.77 40 *e*P **P 00 09 20.7 0.0**
OKC *e*S **S 00 17 54.0 +6.1**
RAC Raciborz 62.86 40 *e*P **P 00 09 21.8 +0.6**
RAC *e*S **S 00 17 47.7 -1.3**
RAC MLR MLR 00 32 59.8
comp=Z,900nm,21.7s,MS4.9
PDAR Pinedale Array 63.19 312 P **P 00 09 22.2 -1.3**
comp=Z,0.7nm,0.5s,mb4.0,baz=101,slow=7.6,SNR=8.8
PDAR LR LR 00 33 57.0
comp=Z,794nm,20.0s,MS4.9,baz=115,slow=33
PDAR Pinedale Array 63.19 312 P **P 00 09 22.2 -1.3**
PDAR LR LR 00 33 57.0
BW06 Boulder Array 63.19 312 PFAKE 00 09 40.0 +16
BW06 LR LR
comp=Z,968nm,20.0s,MS5.0
TUC Tucson 63.34 300 *e*P **P 00 09 24.3 -0.4**
comp=Z,7.9nm,1.0s,mb4.8
TUC LR LR
comp=Z,678nm,19.0s,MS4.8
GRUS Gruza 63.42 47⇓ *i*P **P 00 09 25.9 +0.8**
SRU San Rafael 63.52 307 *e*P **P 00 09 25.9 +0.1**
OJC Ojcow 63.89 40 *e*P **P 00 09 28.1 0.0**
OJC *e*PP PP 00 11 47.5 -2.9
OJC *e*S **S 00 17 53.3 -8.7**
OJC *e*SS SS 00 21 56.3 -16
OJC MLR MLR 00 33 23.8
comp=Z,600nm,21.3s,MS4.8
WUAZ Wupatki 63.95 303 PFAKE 00 09 40.0 +11
WUAZ LR LR
comp=Z,1µm,21.0s,MS5.1
NIE Niedzica 64.06 41 *e*P **P 00 09 30.0 +0.8**
DAU Daniels Canyon 64.19 309 *e*P **P 00 09 29.6 -0.6**
AHID Auburn Hatcher 64.31 311 PFAKE 00 09 40.0 +9.0
AHID LR LR
comp=Z,1µm,19.0s,MS5.1
JLU Jordanelle 64.36 309 *e*P **P 00 09 33.8 +2.5**
TCUT Toone Canyon 64.37 310 *e*P **P 00 09 33.3 +2.0**
YMR Madison River 64.44 314 *e*P **P 00 09 31.3 -0.5**
NSS Namsos 64.48 24 AMS AMS 00 31 30.1
comp=Z,798nm,20.1s,MS4.9
HWUT Hardware Ranch 64.54 310 *e*P **P 00 09 32.1 -0.3**
comp=Z,20nm,1.0s,mb5.1
HWUT LR LR
comp=Z,1µm,22.0s,MS5.0
MSU Marysvale 64.76 307 P **P 00 09 34.5 +0.6**
MVU Marysvale 64.78 307 PFAKE 00 09 50.0 +16
MVU LR LR
comp=Z,478nm,22.0s,MS4.6
WAR Warsaw 65.06 38 *e*P **P 00 09 35.4 -0.2**
WAR *e*S S 00 18 20.4 +4.1
WAR *e*SS 00 18 24.5
WAR MLR MLR 00 32 58.8
comp=Z,1µm,21.7s,MS5.0
DAG Danmarks Havn 65.44 6⇑ *i*P **P 00 09 37.4 -0.3**
comp=Z,2.2nm,0.8s,mb4.2
DAG Danmarks Havn 65.44 6⇑ *e*P **P 00 09 37.4 -0.3**
DAG pmax pmax
comp=Z,2.0nm,0.8s,mb4.2
DAG Danmarks Havn 65.44 6⇑ *e*P **P 00 09 37.4 -0.3**
comp=Z,2.2nm,0.8s,mb4.2
BGU Big Grassy Mou 65.58 309 *e*P **P 00 09 38.9 -0.2**
KWP Kalwaria 65.64 41 *e*P **P 00 09 40.2 +0.8**
KWP *e*pP pP 00 09 44.1 +1.6
KWP *e*S S 00 18 28.7 +5.3
KWP *e*S S 00 18 31.3 +7.9
KWP MLR MLR 00 33 42.7
comp=Z,800nm,25.3s,MS4.8
KWP Kalwaria 65.64 41 *e*P **P 00 09 40.2 +0.8**
KWP *e**PP pP 00 09 44.1 +1.6
KWP *e*S S 00 18 28.7 +5.3
KWP *e*S S 00 18 31.3 +7.9
KWP Kalwaria 65.64 41 *e*P **P 00 09 40.8 +1.4**

KWP pmax pmax
comp=Z,16nm,0.9s,mb5.0
CHMT Chamberlain Mo 66.31 316 *eP* **P 00 09 44.0 +0.3**
SUW Suwalki 66.68 36 *eP* **P 00 09 45.4 -0.6**
SUW *epP* pP 00 09 48.9 -0.2
SUW MLR MLR 00 33 24.1
comp=Z,900nm,23.3s,MS4.9
MSO Missoula 66.77 316 *eP* **P 00 09 45.4 -1.3**
comp=Z,16nm,1.7s,mb4.8
MSO LR LR
comp=Z,807nm,20.0s,MS4.9
HLID Hailey 66.80 312 *eP* **P 00 09 46.8 -0.2**
comp=Z,6.8nm,1.1s,mb4.6
HLID LR LR
comp=Z,878nm,21.0s,MS5.0
MLR Muntele Rosu 67.31 46 ǁ *iP* **P 00 09 59.3 +9.2**
PFO Pinyon Flat Ob 68.11 301 PFAKE 00 10 10.0 +15
PFO LR LR
comp=Z,895nm,19.0s,MS5.0
TPH Tonopah 68.71 306 P **P 00 10 00.0 +1.0**
comp=Z,11nm,1.0s,mb4.7
TPH LR LR
comp=Z,747nm,22.0s,MS4.9
BMN Battle Mountai 68.74 309 P **P 00 10 00.6 +1.4**
comp=Z,8.0nm,1.0s,mb4.6
BMN LR LR
comp=Z,627nm,19.0s,MS4.9
DAC Darwin (Calif) 69.01 304 PFAKE 00 10 10.0 +9.1
DAC LR LR
comp=Z,936nm,22.0s,MS5.0
NEW Newport 69.04 317 *eP* **P 00 09 59.0 -1.9**
comp=Z,22nm,1.3s,mb4.9
NEW LR LR
comp=Z,864nm,20.0s,MS5.0
KIS Kishinev 69.41 44 *eP* **P 00 10 03.0 -0.1**
KIS *e* 00 20 00.6
NVAR Mina Array Bea 69.56 306 P **P 00 10 02.3 -1.9**
comp=Z,0.4nm,0.3s,mb3.8,baz=90,slow=11,SNR=3.6
NVAR LR LR 00 37 05.5
comp=Z,381nm,20.6s,MS4.6,baz=80,slow=33
FINES FINESS Array B 69.61 29 P **P 00 10 03.4 -0.8**
comp=Z,2.7nm,0.8s,mb4.2,baz=198,slow=12,SNR=7.7
FINES LR LR 00 35 38.9
comp=Z,327nm,20.4s,MS4.6,baz=259,slow=32
YKA Yellowknife Ar 69.62 332 P **P 00 10 02.3 -1.9**
comp=Z,1.2nm,0.9s,mb3.8,baz=104,slow=6.6,SNR=18
YKA LR LR 00 37 09.7
comp=Z,599nm,21.4s,MS4.8,baz=105,slow=33
WVOR Wild Horse Val 69.84 311 PFAKE 00 10 20.0 +14
WVOR LR LR
comp=Z,1μm,21.0s,MS5.1
AKASG Malin Array Be 69.92 41 P **P 00 10 05.8 -0.4**
comp=Z,2.6nm,0.7s,mb4.3,baz=266,slow=6.3,SNR=12
AKASG LR LR 00 38 51.5
comp=Z,314nm,19.0s,MS4.6,baz=265,slow=34
USHA Ushuaia 70.30 194 LR LR 00 43 14.5
comp=Z,1μm,18.7s,MS5.2,baz=112,slow=38
HAWA Hanford 70.58 315 PFAKE 00 10 20.0 +10
HAWA LR LR
comp=Z,627nm,21.0s,MS4.8
MOD Modoc 71.08 310 PFAKE 00 10 30.0 +17
MOD LR LR
comp=Z,676nm,20.0s,MS4.9
ARCES ARCESS Array B 71.17 20 P **P 00 10 13.3 -0.2**
comp=Z,17nm,1.2s,mb4.8,baz=270,slow=1.2,SNR=7.3
ARCES LR LR 00 34 36.2
comp=Z,422nm,20.0s,MS4.7,baz=257,slow=30
ARCES ARCESS Array B 71.17 20 P **P 00 10 13.3 -0.2**
ARCES LR LR 00 34 36.2
CMB Columbia Colle 71.21 306 PFAKE 00 10 30.0 +16
CMB LR LR
comp=Z,432nm,19.0s,MS4.7
KBS Kingsbay 71.37 10 *i* **P 00 10 16.3 +1.7**
KBS *eS* S 00 19 33.3 +2.0
KBS *eSS* SS 00 24 09.8 +2.1
KBS AMS AMS 00 34 15.6
comp=Z,255nm,18.0s,MS4.5
KBS Kingsbay 71.37 10 PFAKE 00 10 30.0 +15
KBS LR LR
comp=Z,365nm,20.0s,MS4.6
SPITS Spitsbergen Ar 71.79 11 P **P 00 10 17.9 +0.8**
comp=Z,5.9nm,1.0s,mb4.5,baz=225,slow=13,SNR=3.3
SAO San Andreas Ge 72.10 305 PFAKE 00 10 30.0 +10
SAO LR LR
comp=Z,868nm,20.0s,MS5.0
WDC Whiskeytown Da 72.79 309 PFAKE 00 10 40.0 +16
WDC LR LR
comp=Z,421nm,21.0s,MS4.7
BRTR Keskin Array B 72.88 52 P **P 00 10 24.1 -0.1**
comp=Z,6.7nm,0.7s,mb4.7,baz=259,slow=5.7,SNR=38
BRTR LR LR 00 40 41.1
comp=Z,234nm,20.3s,MS4.5,baz=270,slow=34
YBH Yreka Blue Hor 72.88 310 PFAKE 00 10 40.0 +16
YBH LR LR
comp=Z,619nm,21.0s,MS4.9
COR Corvallis 73.23 313 PFAKE 00 10 40.0 +14
COR LR LR
comp=Z,2μm,20.0s,MS5.4
HOPS Hopland 73.27 307 PFAKE 00 10 40.0 +13
HOPS LR LR
comp=Z,890nm,22.0s,MS5.0
OCWA Octopus Mounta 73.77 316 PFAKE 00 10 40.0 +11
OCWA LR LR
comp=Z,1μm,19.0s,MS5.2
LVZ Lovozero 74.18 23 *eP* **P 00 10 27.2 -4.0**
LVZ *eS* S 00 20 04.3 +1.1
LVZ *eSS* SS 00 24 49.6 -1.3
LVZ pmax pmax
comp=Z,10.0nm,3.5s
LVZ smax
comp=N,90nm,10.0s
OBN Obninsk 74.53 36 *eP* **P 00 10 32.8 -0.7**
OBN *e* 00 10 47.1
OBN *eS* S 00 20 04.6 -2.7
OBN pmax pmax
comp=Z,13nm,0.9s,mb4.9
OBN MLR MLR
comp=Z,400nm,15.0s,MS4.8
OBN Obninsk 74.53 36 *eP* **P 00 10 34.5 +1.1**
comp=Z,25nm,1.3s,mb5.0
OBN LR LR
comp=Z,542nm,22.0s,MS4.8
JMOS Jabal al Moall 74.90 63 P **P 00 10 37.1 +0.9**
BDAS Al Bad' 74.98 64 P **P 00 10 36.3 -0.3**
AYUS 'Aynunah 75.15 64 P **P 00 10 46.0 +8.4**
ASF Jabal al Asfar 76.10 60 P **P 00 10 44.2 +1.3**
comp=Z,4.8nm,0.8s,mb4.5,baz=114,slow=6.4,SNR=4.8
TBKS Tabuk 76.27 64 P **P 00 10 45.3 +1.4**
QURS Qurayyt al Mil 76.55 61 P **P 00 10 47.0 +1.5**
DLBC Dease Lake 76.92 327 *eP* **P 00 10 47.9 +1.0**
INK Inuvik 77.90 338 *eP* **P 00 10 51.8 -0.4**
INK pmax pmax
comp=Z,37nm,1.4s
INK Inuvik 77.90 338 *eP* **P 00 10 51.8 -0.3**
comp=Z,37nm,1.5s,mb5.1
LBTB Lobatse 77.91 119 PFAKE 00 11 00.0 +6.9
LBTB LR LR
comp=Z,428nm,21.0s,MS4.8
KBRS Khaybar 79.00 66 P **P 00 11 01.5 +2.4**
KIV Kislovodsk 79.25 47 *eP* **P 00 10 59.5 -0.6**
KIV *e* 00 13 59.5
KIV *eS* S 00 20 57.4 -1.5
KIV pmax pmax
comp=Z,10.0nm,1.3s,mb4.6
KIV Kislovodsk 79.25 47 *eP* **P 00 11 01.3 +1.2**
comp=Z,18nm,1.1s,mb4.9
KIV LR LR
comp=Z,278nm,19.0s,MS4.6
GOF Gofitskoye 79.36 46 *eP* **P 00 11 02.5 +1.9**
GOF pmax pmax
comp=Z,30nm,1.1s,mb5.1
SIT Sitka 79.88 326 PFAKE 00 11 10.0 +6.9
SIT LR LR
comp=Z,845nm,19.0s,MS5.1
ZEI Tsey 80.29 48 ǁ *eP* **P 00 11 07.0 +1.3**
HILS Ha'il 80.98 64 P **P 00 11 11.3 +1.6**
BLJS Baljurashi 82.13 71 P **P 00 11 18.6 +2.8**
KMBO Kilima Mbogo 82.19 93 P **P 00 11 20.0 +3.8**
comp=Z,0.5nm,0.4s,mb3.8,baz=218,slow=23,SNR=2.2
KMBO LR LR 00 45 43.1
comp=Z,395nm,19.8s,MS4.8,baz=166,slow=34
ARSS Ar Rass 82.52 65 P **P 00 11 19.8 +2.1**
AFFS 'Afif 82.67 67 P **P 00 11 21.2 +2.7**
FRSS Farasan al Kab 83.21 74 P **P 00 11 25.8 +4.4**
ILAR Eielson Array 83.78 335 P **P 00 11 23.8 +0.4**
comp=Z,2.9nm,0.8s,mb4.5,baz=73,slow=4.6,SNR=16
ILAR LR LR 00 50 02.6
comp=Z,346nm,19.1s,MS4.8,baz=243,slow=37
TATS Tathlith 83.93 71 P **P 00 11 27.6 +2.5**
COLA College 84.15 335 *eP* **P 00 11 26.2 +1.0**
COLA College 84.15 335 *eP* **P 00 11 30.7 +5.6**
COLA LR LR
comp=Z,455nm,19.0s,MS4.9
DJNS Zahran al Janu 84.36 73 P **P 00 11 30.7 +3.4**
MZLS Mizel 84.63 67 P **P 00 11 30.6 +2.0**
KAMS Al Khamasin 84.80 70 P **P 00 11 29.4 0.0**
MCK McKinley 84.95 334 PFAKE 00 11 40.0 +11
MCK LR LR
comp=Z,345nm,20.0s,MS4.7
PMR Palmer 85.72 332 PFAKE 00 11 40.0 +6.9
PMR LR LR
comp=Z,504nm,19.0s,MS4.9
IMA Indian Mountai 86.03 337 *eP* **P 00 11 36.1 +1.6**
IMA pmax pmax
comp=Z,120nm,1.5s,mb5.9
IMA Indian Mountai 86.03 337 *eP* **P 00 11 36.1 +1.6**
comp=Z,115nm,1.5s,mb5.9
FIB Fire Island 86.34 332 PFAKE 00 11 50.0 +14
FIB LR LR
comp=Z,1μm,20.0s,MS5.2
ARU Arti 86.56 33 *eP* **P 00 11 38.2 +0.8**
ARU pmax pmax
comp=Z,16nm,1.2s,mb5.1
ARU Arti 86.56 33 *eP* **P 00 11 38.2 +0.8**
comp=Z,16nm,1.2s,mb5.1
ARU LR LR
comp=Z,969nm,22.0s,MS5.2
VNA3 Neumayer Olymp 87.04 169 ǁ *i* **P 00 11 43.2 +3.8**
SVE Sverdlovsk 87.52 32 ǁ *eP* **P 00 11 43.3 +1.3**
SVE *eS* S 00 22 11.0 -10
SVE *ePS* PS 00 23 20.0 -5.8
SVE *eSS* SS 00 28 12.0 +1.9
KDAK Kodiak Island 88.70 329 PFAKE 00 12 00.0 +12
KDAK LR LR
comp=Z,742nm,19.0s,MS5.1
SNAA Sanae 88.70 168 ǁ *i* **P 00 11 47.0 -0.3**
TNA Tin City 91.39 340 PFAKE 00 12 10.0 +10
TNA LR LR
comp=Z,612nm,22.0s,MS5.0
BVAR Borovoye Array 94.19 33 P **P 00 12 14.5 +1.4**
comp=Z,0.4nm,0.8s,mb3.9,baz=230,slow=39,SNR=2.4
TIXI Tiksi 95.68 2 *eP* **P 00 12 19.6 0.0**
TIXI pmax pmax
comp=Z,7.0nm,1.4s,mb4.9
TIXI Tiksi 95.68 2 PFAKE 00 12 30.0 +10
TIXI LR LR
comp=Z,233nm,20.0s,MS4.7
BILL Bilibino 96.44 349 *eP* **P 00 12 24.3 +1.2**
BILL pmax pmax
comp=Z,3.0nm,1.2s,mb4.6
BILL MLR MLR
comp=Z,400nm,20.0s,MS4.9
UNV Unalaska Valle 97.47 330 PFAKE 00 12 40.0 +12
UNV LR LR
comp=Z,2μm,19.0s,MS5.6
QSPA South Pole Qui 102.74 180 PFAKE 00 13 00.0 +8.7
QSPA LR LR
comp=Z,3μm,19.0s,MS5.8
ADK Adak 103.54 332 PFAKE 00 13 10.0 +15
ADK LR LR
comp=Z,146nm,22.0s,MS4.5
YAK Yakutsk 105.32 3 PFAKE 00 17 30.0
YAK LR LR
comp=Z,248nm,20.0s,MS4.8
SMY Shemya 106.85 337 PFAKE 00 17 30.0
SMY LR LR
comp=Z,764nm,21.0s,MS5.2
MA2 Magadan 106.88 352 PFAKE 00 17 30.0
MA2 LR LR
comp=Z,417nm,21.0s,MS5.0
WMQ Urumqi 108.84 35 PDIF Pdif 00 13 20.6 +1.7
WMQ PP PP 00 17 56.7 +2.5
WMQ S 00 25 24.1
WMQ SS SS 00 33 09.7 +1.2
WMQ PP PP
comp=Z,46nm,10.2s
PET Petropavlovsk 111.55 345 PFAKE 00 17 40.0 +10
PET LR LR
comp=Z,367nm,20.0s,MS5.0
VNDA Vanda 113.84 186 PFAKE 00 17 40.0 +5.5
VNDA LR LR
comp=Z,173nm,19.0s,MS4.7
ULN Ulaanbaatar 114.55 21 PFAKE 00 17 50.0 +14
ULN LR LR
comp=Z,246nm,19.0s,MS4.8
HIA Hailar 116.70 12 PFAKE 00 17 50.0 +9.4
HIA LR LR
comp=Z,159nm,20.0s,MS4.6
LSA Lhasa 119.92 45 PFAKE 00 18 00.0 +13
LSA LR LR
comp=Z,259nm,21.0s,MS4.8
YSS Yuzh-Sakhalins 120.22 354 PFAKE 00 18 00.0 +13
YSS LR LR
comp=Z,347nm,20.0s,MS5.0
MDJ Mudanjiang 122.66 5 PKP PKPdf 00 17 47.6 -4.5
MDJ SKS SKS 00 24 58.4 +4.6
MDJ SS SS 00 36 08.4 -1.8
MDJ LR LR
comp=E,248nm,24.7s
MDJ LR LR
comp=Z,256nm,26.6s,MS4.8
MDJ Mudanjiang 122.66 5 PFAKE 00 18 00.0 +7.9
MDJ LR LR
comp=Z,232nm,21.0s,MS4.8
LZH Lanzhou 122.96 30 *e*PKP PKPdf 00 17 52.5 -0.4
LZH XPKP 00 17 57.2
LZH *e*PP PP 00 19 35.8 +2.4
LZH SKKS 00 26 28.1
BJT Baijiatuau 124.51 18 PFAKE 00 18 10.0 +14
BJT LR LR
comp=Z,718nm,21.0s,MS5.3
INCN Inchon 129.34 9 PFAKE 00 18 20.0 +15
INCN LR LR
comp=Z,247nm,20.0s,MS4.9
ENH Enshi 130.43 30 PFAKE 00 18 20.0 +12
ENH LR LR
comp=Z,426nm,20.0s,MS5.1
MAJO Matsushiro 130.91 357 PFAKE 00 18 20.0 +12
MAJO LR LR
comp=Z,263nm,20.0s,MS4.9
MAT Matsushiro 130.91 357 PKP PKPdf 00 18 07.1 -1.3
MAT Matsushiro 130.91 357 *e*PKP PKPdf 00 18 07.0 -1.4
NJ2 Nanjing 132.68 19 *e*PKP PKPdf 00 18 09.1 -2.8
NJ2 PP PP 00 20 37.3 +0.3
NJ2 SKS SKS 00 25 15.0 -7.0
NJ2 PP PP
comp=Z,40nm,4.8s
NJ2 LR LR
comp=Z,560nm,16.6s,MS5.3
TATO Taipei 140.09 20 PFAKE 00 18 40.0 +14
TATO LR LR
comp=Z,353nm,21.0s,MS5.1
CTAO Charters Tower 167.38 233 PFAKE 00 19 10.0 +7.2
CTAO LR LR
comp=Z,619nm,21.0s
PMG Port Moresby 168.10 285 PFAKE 00 19 10.0 +6.7
PMG LR LR
comp=Z,506nm,22.0s
ASAR Alice Springs 169.03 172 PKPab PKPab 00 20 15.7 +1.5
comp=Z,1.7nm,1.1s,baz=180,slow=3.6,SNR=4.1
WRA Warramunga Arr 172.76 171 PKP PKPdf 00 19 04.5 -1.4
comp=Z,0.4nm,1.0s,baz=260,slow=1.9,SNR=3.0
WRAB Tennant Creek 172.77 171 PFAKE 00 19 20.0 +14
WRAB LR LR
comp=Z,566nm,22.0s

NEIC ***12*** *00:03:53.9±4.1,2.45N×126.78E,h75km±40km,mb4.0/2, Error ellipse: s-maj=55.2km s-min=12.8km az=69.0*
IDC ***12*** *00:04:08.2±14.0,2.09N×126.16E,h216km±152km, mb3.2/6,mb1 3.3/6,mb1mx3.2/18,Error ellipse: s-maj=91.4km s-min=21.3km az=61.0*
ISC 12 00:03:45.9±4.4,2.5N±0.2×126.4E±0.5,h18km±32km,n11, σ0s72/12,mb3.8/6,Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
					Op ISC	h m s	ISC
KAKA	**Kakadu**	**16.19**	**159**	*eP*	**P**	**00 07 34.8**	**+0.5**
	5.7nm,0.8s						
FITZ	**Fitzroy Crossi**	**20.45**	**182**	*eP*	**P**	**00 08 25.8**	**+0.5**
	1.7nm,0.6s,baz=5.7,slow=8.1,SNR=7.4						
WRAB	**Tennant Creek**	**23.57**	**161**	*eP*	**P**	**00 08 56.7**	**+0.1**
	6.7nm,0.6s,mb4.2						
WRA	**Warramunga Arr**	**23.58**	**161**	P	**P**	**00 08 56.7**	**0.0**
	2.1nm,0.6s,mb3.8,baz=334,slow=11,SNR=20						
WB2	**Warramunga Arr**	**23.58**	**161**	*eP*	**P**	**00 08 57.1**	**+0.4**
WB2				*eS*	**S**	**00 13 07.1**	**+0.7**
ASAR	**Alice Springs**	**26.97**	**165**	P	**P**	**00 09 28.1**	**-0.5**
	0.9nm,0.7s,mb3.4,baz=348,slow=6.6,SNR=8.6						
STKA	**Stephens Creek**	**37.06**	**158**	P	**P**	**00 10 55.3**	**-1.7**
	1.3nm,0.6s,mb3.9,baz=343,slow=10,SNR=3.3						
SONM	**Songino Array**	**48.40**	**342**	P	**P**	**00 12 30.1**	**+1.2**
	0.2nm,0.4s,mb3.5,baz=173,slow=8.7,SNR=2.5						
MKAR	**Makanchi Array**	**58.43**	**326**	P	**P**	**00 13 42.8**	**-0.2**
	1.0nm,0.9s,mb3.8,baz=120,slow=7.6,SNR=12						
KURK	**Kurchatov**	**62.65**	**328**	*eP*	**P**	**00 14 11.1**	**-0.6**

THE ***12*** *00:26:10.1,37.64N×23.92E,h140km,ML3.3*
NEIC ***12*** *00:26:11.5,37.47N×23.96E,h127km,After ATH.*
ATH ***12*** *00:26:11.5,37.47N×23.96E,h127km±5km,ML3.0*
ISC 12 00:26:09.0±0.9,37.63N±0.05×23.89E±0.07,h151km±12km, n26,σ0s91/32,1C,Southern Greece

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
					Op ISC	h m s	ISC
NAIG	**Nisos Aigina**	**0.34**	**292**	*eP*	**P**	**00 26 30.5**	**+0.2**
ATH	**Athens Observa**	**0.37**	**338**	*eP*	**P**	**00 26 30.9**	**+0.5**
PTL	**Penteli**	**0.42**	**357**	*eP*	**P**	**00 26 31.0**	**+0.4**
NSAL	**Nisos Salamina**	**0.44**	**309**	ǁ *iP*	**P**	**00 26 31.1**	**+0.5**
MPAR	**Parnis Oros**	**0.53**	**347**	*eP*	**P**	**00 26 31.8**	**+0.7**
VLI	**Veliai**	**1.19**	**220**	*eP*	**P**	**00 26 35.9**	**+0.1**
KYTH	**Kithira**	**1.51**	**207**	*eP*	**P**	**00 26 39.0**	**-0.1**
AOS	**Alonnisos**	**1.54**	**360**	*ePb*	**P**	**00 26 39.7**	**+0.3**
ITM	**Ithomi**	**1.63**	**255**	*eP*	**P**	**00 26 42.0**	**+1.7**
THR4	**Thira Island,**	**1.68**	**134**	*ePb*	**P**	**00 26 40.6**	**-0.3**
THR5	**Thira Island,**	**1.68**	**136**	*ePb*	**P**	**00 26 40.3**	**-0.7**
THR3	**Thira Island,**	**1.72**	**135**	*ePb*	**P**	**00 26 41.1**	**-0.3**
THR6	**Thira Island,**	**1.75**	**136**	*ePb*	**P**	**00 26 41.1**	**-0.7**
XOR	**Xorichti**	**1.82**	**343**	*ePb*	**P**	**00 26 43.1**	**+0.7**
AGG	**Agios Georgios**	**1.85**	**319**	*ePb*	**P**	**00 26 43.9**	**+1.1**
AGG				*eSb*	**S**	**00 27 07.6**	**-1.3**
VAM	**Vamos**	**2.23**	**173**	*eP*	**P**	**00 26 47.3**	**-0.1**
LIT	**Litokhoron**	**2.70**	**337**	*ePn*	**P**	**00 26 53.7**	**+0.4**
OUR	**Ouranopolis**	**2.70**	**1**	*ePn*	**P**	**00 26 53.5**	**+0.2**
LKD	**Levkas**	**2.77**	**294**	*ePn*	**P**	**00 26 55.3**	**+1.1**
LKD				*eSn*	**S**	**00 27 28.4**	**-0.3**
KRIS	**Kristallenia**	**2.77**	**152**	*ePn*	**P**	**00 26 52.0**	**-2.2**
KRIS				*eSn*	**S**	**00 27 18.9**	**-10**
MEV	**Metsovon**	**2.99**	**317**	*ePn*	**P**	**00 26 58.5**	**+1.5**
MEV				*eSn*	**S**	**00 27 32.2**	**-1.5**
SOH	**Sokhos**	**3.21**	**353**	*ePn*	**P**	**00 27 00.5**	**+0.6**
IGT	**Igoumenitsa**	**3.37**	**305**	*ePn*	**P**	**00 27 02.0**	**+0.1**
IGT				*eSn*	**S**	**00 27 40.6**	**-1.9**
KNT	**Kendrikon**	**3.61**	**348**	*ePn*	**P**	**00 27 05.8**	**+0.8**
ALN	**Alexandroupoli**	**3.67**	**26**	*ePn*	**P**	**00 27 04.9**	**-0.8**
FNA	**Florina**	**3.71**	**329**	*ePn*	**P**	**00 27 06.4**	**+0.1**
FNA				*eSn*	**S**	**00 27 48.7**	**-1.5**

MAN 12 00:31:00.4,12.26N×123.80E,h19km,mb4.2,ML3.0, MS2.8,9C,Luzon

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
					Op ISC	h m s	ISC
CNP	**Catarman**	**0.88**	**74**	ǁ *eP*	**P**	00 31 16.8	-0.1
CNP				*eS*	Sb	00 31 30.2	+2.0
RCP	**Roxas**	**1.24**	**236**	ǁ *eP*	**P**	00 31 23.4	+0.5
RCP				*eS*	Sb	00 31 40.7	+2.1
PVCP	**Virac**	**1.37**	**15**	ǁ *eP*	**P**	00 31 23.9	-0.9
OCLP	**Ormoc**	**1.45**	**146**	ǁ *eP*	**P**	00 31 28.3	+2.4
AUQP	**San Andres**	**1.52**	**314**	ǁ *eP*	**P**	00 31 27.9	+1.1
AUQP				*eS*	Sn	00 31 50.2	+4.0
KALP	**Kalibo**	**1.54**	**248**	ǁ *iP*	**P**	00 31 26.7	-0.5
KALP						01 05 16.2	
PLP	**Palo**	**1.59**	**133**	*eP*	**P**	00 31 28.3	+0.3
PLP				*eS*	Sn	00 31 48.8	+0.6
BESP	**Borongan**	**1.74**	**112**	ǁ *eP*	**P**	00 31 29.6	-0.4
OTRP	**Odiongan**	**1.74**	**273**	ǁ *eP*	**P**	00 31 29.0	-1.0
LLP	**Lapu-Lapu**	**1.94**	**175**	*eP*	**P**	00 31 31.0	-1.9
LLP				*eS*	Sn	00 31 57.2	+0.2
TBP	**Tagbilaran**	**2.56**	**179**	*eP*	**P**	00 31 41.7	-0.1
CAUP	**Cauayan**	**5.03**	**338**	ǁ *eP*	**P**	00 32 24.1	+7.3

LDG ***12*** *00:36:14.9±0.2,51.66N×7.81E,h1km,Ml2.7/5,Error ellipse: s-maj=3.3km s-min=3.1km az=76.0,Suspected Mining induced.*
BUG ***12*** *00:36:14.0,51.67N×7.75E,h1km,ML2.1*
NEIC ***12*** *00:36:15.6±0.9,51.62N×7.65E,h14km±9km,ML2.7(LDG), ML2.3(SZGRF),Error ellipse: s-maj=13.9km s-min=7.4km az=132.0*
BNS ***12*** *00:36:15.1±1.5,51.65N×7.82E,h1km,ML2.2*
BGR ***12*** *00:36:15.1±0.4,51.60N×7.82E,h1km,ML2.3/4,Error ellipse: s-maj=5.6km s-min=4.4km az=163.0*
ISC 12 00:36:13.3±0.4,51.54N±0.02×7.76E±0.04,n25,σ1s25/52, 1C,Germany

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
					Op ISC	h m s	ISC
BAHL	**Ahlen**	**0.20**	**11**	Pg	**Pg**	**00 36 17.2**	**0.0**
BAHL				Sg	**Sg**	**00 36 19.6**	**-0.2**
BUG	**Bochum--Univer**	**0.33**	**252**	ǁ *i*Pg	**Pg**	**00 36 22.1**	**+2.3**
BUG				Sg	**Sg**	**00 36 27.9**	**+3.7**
BUG	**Bochum--Univer**	**0.33**	**252**	*e*Pg	**Pg**	**00 36 22.0**	**+2.2**
BUG				*e*Sg	**Sg**	**00 36 28.0**	**+3.8**
BNS	**Bensberg**	**0.69**	**213**	*e*Pg	**Pg**	**00 36 30.8**	**+3.7**
BNS				*e*Sg	**Sg**	**00 36 41.8**	**+5.5**
	121nm,0.5s						
WTSB	**Winterswijk**	**0.73**	**306**	*i* Pg	**Pg**	**00 36 27.9**	**0.0**
	6.3nm,0.4s						
WTSB				*e*Sg	**Sg**	**00 36 37.8**	**+0.1**
IBBN	**Ibbenburen**	**0.76**	**360**	*e*Pg	**Pg**	**00 36 29.0**	**+0.5**
	SNR=2.6						
IBBN				*e*Sg	**Sg**	**00 36 37.5**	**-1.3**
	SNR=3.8						
IBBN	**Ibbenburen**	**0.76**	**360**	*e*Pg	**Pg**	**00 36 28.9**	**+0.3**
IBBN				*e*Sg	**Sg**	**00 36 38.4**	**-0.3**
STB	**Steinbach**	**1.11**	**212**	*e*Pg	**Pg**	**00 36 38.0**	**+2.5**
STB				*e*Sg	**Sg**	**00 36 53.7**	**+3.3**
	54nm,0.3s						
KLL	**Kalltalsperre**	**1.28**	**226**	*e*Pg	**Pg**	**00 36 39.5**	**+0.6**
KLL				*e*Sg	**Sg**	**00 36 57.8**	**+1.7**
	33nm,0.4s						
BGG	**Burgeitz**	**1.37**	**192**	*e*Pg	**Pg**	**00 36 39.4**	**-1.2**
BGG				*e*Sg	**Sg**	**00 37 01.1**	**+2.3**
	18nm,0.5s						
HGN	**Heimansgroeve**	**1.39**	**237**	*e*Pg	**Pg**	**00 36 41.2**	**0.0**
	8.7nm,0.5s						
HGN				*e*Sg	**Sg**	**00 37 00.8**	**+1.1**
WLF	**Walferdange**	**2.14**	**209**	*e*Pg	**Pg**	**00 36 56.7**	**+0.6**
	SNR=2.1						
WLF				*e*Sg	**Sg**	**00 37 23.1**	**-1.5**
	SNR=2.4						
GIVF	**Givet**	**2.36**	**233**	*e*Pn	**Pn**	**00 36 53.9**	**+0.1**
GIVF				*e*Pg	**Pg**	**00 36 59.9**	**-0.5**
GIVF				*e*Sg	**Sg**	**00 37 31.3**	**-0.5**
	11nm,0.3s						
MOX	**Moxa**	**2.59**	**109**	*e*Pn	**Pn**	**00 36 58.9**	**+1.7**
MOX				*e*Pg	**Pg**	**00 37 04.0**	**-1.0**
	SNR=1.8						
MOX				*e*Sg	**Sg**	**00 37 36.4**	**-3.1**
	SNR=3.3						
MOX	**Moxa**	**2.59**	**109**	*i* P	**Pn**	**00 36 58.9**	**+1.7**
MOX				Pg	**Pg**	**00 37 05.0**	**0.0**
MOX				Sg	**Sg**	**00 37 37.0**	**-2.6**
MOX	**Moxa**	**2.59**	**109**	*e*Pn	**Pn**	**00 36 58.9**	**+1.7**
MOX				*e*Pg	**Pg**	**00 37 04.9**	**-0.1**
MOX				*e*Sg	**Sg**	**00 37 36.9**	**-2.7**
BAIF	**Baives**	**2.70**	**238**	*e*Pn	**Pn**	**00 36 58.7**	**-0.1**
BAIF				*e*Pg	**Pg**	**00 37 06.5**	**-0.7**
BAIF				*e*Sn	**Sn**	**00 37 30.8**	**-1.8**
BAIF				*e*Sg	**Sg**	**00 37 42.2**	**-1.1**
	5.2nm,0.4s						
CDF	**Champ du Feu**	**3.15**	**186**	*e*Pn	**Pn**	**00 37 05.2**	**0.0**
CDF				*e*Sg	**Sg**	**00 37 57.1**	**-1.1**
	8.3nm,0.6s						
RFYF	**Reffroy**	**3.27**	**208**	*e*Pn	**Pn**	**00 37 07.0**	**+0.2**
CLL	**Collm**	**3.29**	**92**	*e*SG	**Sg**	**00 38 05.0**	**+2.2**
MEZF	**Maizieres J'vi**	**3.51**	**211**	*e*Sn	**Sn**	**00 37 50.9**	**-2.3**
HAU	**Haudompre**	**3.66**	**195**	*e*Pn	**Pn**	**00 37 12.4**	**0.0**

BRG	**Berggiesshubel**	**3.94**	**97**	*e*Sg		**Sg**	**00 38 24.3**	**-0.3**
BRG	**Berggiesshubel**	**3.94**	**97**	*e*Sg		**Sg**	**00 38 24.3**	**-0.3**
LOR	**Lormes**	**4.98**	**212**	*e*Pn		**Pn**	**00 37 30.1**	**-1.0**
LOR				*e*Pg		**Pg**	**00 37 49.0**	**-3.7**
LOR				*e*Sn		**Sn**	**00 38 25.0**	**-5.3**
LOR				*e*Sg		**Sg**	**00 38 54.5**	**-4.6**
	2.0nm,0.3s							

NEIC ***12*** *00:59:56.8±1.0,50.12S×7.76W,h10km,mb4.2/4,MS4.1/1, Error ellipse: s-maj=27.6km s-min=16.6km az=74.0*
IDC ***12*** *01:00:03.4±2.4,48.92S×9.02W,mb4.2/3,mb1 4.3/3, mb1mx3.9/13,MS4.1/5,Ms1 4.1/5,ms1mx3.7/17, Error ellipse: s-maj=178.0km s-min=40.5km az=180.0*
ISC 12 00:59:55.0±1.1,50.1S±0.1×7.7W±0.3,h10km,n22, σ1§21/12,mb4.0/7,MS4.1/6,Southern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SNAA	**Sanae**	**21.76**	**176**	*e*P	**P**	**01 04 47.8**	**-0.4**
PMSA	**Palmer Station**	**32.41**	**222**	*e*P	**P**	**01 06 24.7**	**-1.9**
TRQA	**Tornquist**	**39.95**	**266**	*e*P	**P**	**01 07 30.5**	**-0.5**
	0.1nm,0.3s,mb3.0						
QSPA	**South Pole Qui**	**40.15**	**180**	*e*P	**P**	**01 07 33.6**	**+1.4**
	7.4nm,1.1s,mb4.3						
QSPA				LR	LR		
	comp=Z,290nm,21.5s,MS4.1						
CPUP	**Villa Florida**	**44.60**	**283**	P	**P**	**01 08 09.0**	**-0.1**
	comp=Z,3.0nm,1.2s,mb4.0,baz=158,slow=7.2,SNR=3.8						
CPUP				LR	LR	01 22 10.7	
	comp=Z,102nm,20.4s,MS3.7,baz=40,slow=30						
CPUP	**Villa Florida**	**44.60**	**283**	*e*P	**P**	**01 08 08.0**	**-1.1**
	comp=Z,3.4nm,1.3s,mb4.0						
CPUP				LR	LR	01 22 10.7	
VNDA	**Vanda**	**52.49**	**177**	LR	LR	01 29 53.9	
	comp=Z,269nm,20.0s,MS4.3,baz=184,slow=33						
LVC	**Limon Verde**	**54.61**	**277**	P	**P**	**01 09 26.4**	**+0.6**
	comp=Z,5.3nm,0.6s,mb4.7,baz=124,slow=3.9,SNR=12						
LVC	**Limon Verde**	**54.61**	**277**	*e*P	**P**	**01 09 26.9**	**+1.1**
DBIC	**Dimbokro**	**56.59**	**3**	LR	LR	01 27 53.3	
	comp=Z,133nm,21.1s,MS4.0,baz=249,slow=30						
DBIC	**Dimbokro**	**56.59**	**3**	*e*P	**P**	**01 09 39.3**	**-1.1**
	comp=Z,0.4nm,0.6s,mb3.6						
LPAZ	**La Paz**	**58.76**	**282**	P	**P**	**01 09 55.8**	**+0.3**
	comp=Z,0.7nm,0.4s,mb4.0,baz=168,slow=6.2,SNR=4.5						
LPAZ	**La Paz**	**58.76**	**282**	*e*P	**P**	**01 09 56.0**	**+0.5**
KMBO	**Kilima Mbogo**	**61.94**	**53**	LR	LR	01 35 52.5	
	comp=Z,288nm,18.4s,MS4.5,baz=234,slow=35						
OTAV	**Otavalo**	**77.92**	**285**	*e*P	**P**	**01 11 57.2**	**+2.4**
	comp=Z,1.8nm,0.7s,mb4.1						
BRTR	**Keskin Array B**	**96.56**	**31**	LR	LR	01 55 05.7	
	comp=Z,51nm,19.1s,MS4.0,baz=270,slow=34						
MKAR	**Makanchi Array**	**123.78**	**56**	PKP	PKPdf	01 19 01.4	+5.7
	comp=Z,0.4nm,0.8s,baz=243,slow=3.2,SNR=3.6						
PDAR	**Pinedale Array**	**127.94**	**294**	PKP	PKPdf	01 19 09.3	+5.5
	comp=Z,0.4nm,0.8s,slow=2.7,SNR=3.0						
YKA	**Yellowknife Ar**	**139.86**	**316**	PKhKP		01 19 21.0	
	comp=Z,0.2nm,0.6s,baz=107,slow=3.2,SNR=6.7						
YKA				PKP	PKPdf	01 19 29.7	+4.4
	comp=Z,0.6nm,0.8s,baz=107,slow=2.1,SNR=6.3						
YKA	**Yellowknife Ar**	**139.86**	**316**	PKP	PKPdf	01 19 21.1	-4.3
YKA				PKP	PKPdf	01 19 29.7	+4.3
INK	**Inuvik**	**148.24**	**325**	*e*PKPbc	PKPdf	01 19 40.9	+1.5
INK				*e*PKPab	PKPab	01 19 48.5	+3.6
ILAR	**Eielson Array**	**154.16**	**320**	PKPbc	PKPdf	01 20 00.3	+12
	comp=Z,0.5nm,0.8s,baz=353,slow=1.2,SNR=4.2						
ILAR				PKPab	PKPab	01 20 11.4	+1.7
	comp=Z,0.5nm,1.0s,baz=32,slow=2.8,SNR=4.1						

DJA 12 01:17:48.2±0.5,8.09S×115.43E,h2km,MD4.9/2,3C, Error ellipse: s-maj=10.2km s-min=4.0km az=17.0,Bali region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RATI	**Rata**	**0.64**	**171**	*e*Pg	Pg	01 18 04.2	+3.3
	236nm,0.2s						
RATI				*e*Sg	Sg	01 18 16.3	+6.9
KEDI	**Kedomdong**	**0.78**	**120**	*e*Pg	Pg	01 18 07.1	+3.3
	55nm,0.2s						
KEDI				*e*Sg	Sg	01 18 20.6	+6.3
KELI	**Kelakatan**	**0.94**	**262**	*e*Pg	Pg	01 18 11.9	+5.0
KELI				*e*Sg	Sg	01 18 28.2	+8.8

WEL ***12*** *01:21:09.9±0.3,38.05S×178.28E,h12km,ML4.8/13,Error ellipse: s-maj=2.8km s-min=1.6km az=90.0*
IDC ***12*** *01:21:11.8±7.0,38.40S×178.17E,h31km±46km,mb4.2/5, mb1 4.3/6,mb1mx4.1/14,ML4.2/1,MS3.7/1,Ms1 3.7/1, ms1mx3.2/15,Error ellipse: s-maj=40.5km s-min=31.0km az=12.0*
NEIC ***12*** *01:21:12.4±2.6,38.42S×178.15E,h36km±18km,mb4.6/7, Error ellipse: s-maj=26.5km s-min=15.2km az=58.0*
ISC 12 01:21:05.3±1.2,38.25S±0.04×178.60E±0.08,h14km±7km, n65,σ1§47/71,mb4.4/10,MS3.5/1,2C-2D,Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PUZ	**Puketiti**	**0.32**	**304**	∥PG	**Pg**	**01 21 11.8**	**-0.4**
PUZ				PG	**Pg**	**01 21 11.8**	**-0.4**
PUZ				SG	**Sg**	**01 21 13.8**	**-3.1**
PUZ				SG	**Sg**	**01 21 14.0**	**-2.8**
MXZ	**Matakaoa Point**	**0.73**	**341**	P*	**Pb**	**01 21 19.5**	**+0.3**
MWZ	**Matawai**	**0.85**	**264**	P*	**Pb**	**01 21 22.1**	**+0.8**
MWZ				S*	**Sb**	**01 21 31.3**	**-0.9**
KNZ	**Kokohu**	**1.05**	**223**	P*	**Pb**	**01 21 29.3**	**+4.4**
URZ	**Urewera**	**1.17**	**269**	Pn	**Pn**	**01 21 27.0**	**-0.2**
	1μm,0.3s,baz=81,slow=6.3,SNR=1198						
URZ				Sn	**Sn**	**01 21 39.0**	**-4.0**
	839nm,0.3s,baz=189,slow=22,SNR=26						
WIZ	**White Island**	**1.33**	**303**	P*	**Pb**	**01 21 27.6**	**-1.9**
EDRZ	**Edgecumbe**	**1.47**	**275**	P*	**Pb**	**01 21 32.8**	**+0.8**
MARZ	**Manawahe**	**1.54**	**279**	P*	**Pb**	**01 21 31.8**	**-1.4**
TAZ	**Tarawera**	**1.65**	**270**	PN	**Pn**	**01 21 35.1**	**+1.1**
MKRZ	**Makatiti**	**1.68**	**273**	PN	**Pn**	**01 21 36.6**	**+2.0**
LIRZ	**Lichensteins R**	**1.76**	**277**	PN	**Pn**	**01 21 36.0**	**+0.3**
PATZ	**Paeroa**	**1.84**	**265**	PN	**Pn**	**01 21 38.9**	**+2.0**
BKZ	**Black Stump Fm**	**1.88**	**240**	PN	**Pn**	**01 21 40.2**	**+2.7**
TGRZ	**Tauranga**	**1.92**	**285**	PN	**Pn**	**01 21 37.0**	**-0.9**
PWZ	**Pawanui**	**2.23**	**217**	PN	**Pn**	**01 21 44.9**	**+2.5**
KAVZ	**Karewarewa**	**2.46**	**249**	PN	**Pn**	**01 21 47.8**	**+2.1**
TUVZ	**Tukino**	**2.52**	**245**	PN	**Pn**	**01 21 48.5**	**+2.0**
CNZ	**Chateau**	**2.57**	**247**	PN	**Pn**	**01 21 49.7**	**+2.4**
DRZ	**Dome Shelter**	**2.58**	**246**	PN	**Pn**	**01 21 51.1**	**+3.6**
FWVZ	**Far West T-bar**	**2.58**	**246**	PN	**Pn**	**01 21 49.7**	**+2.3**
KUZ	**Kuaotunu**	**2.74**	**302**	PN	**Pn**	**01 21 48.0**	**-1.7**
HIZ	**Hauiti**	**2.95**	**264**	PN	**Pn**	**01 21 53.8**	**+1.1**
BFZ	**Birch Farm**	**3.03**	**216**	PN	**Pn**	**01 21 54.9**	**+1.1**
VRZ	**Vera Road**	**3.13**	**253**	PN	**Pn**	**01 21 57.4**	**+2.2**
WAZ	**Wanganui**	**3.19**	**241**	PN	**Pn**	**01 21 58.1**	**+2.0**
MRZ	**Mangatainoka R**	**3.35**	**223**	PN	**Pn**	**01 21 59.2**	**+0.7**
MRZ				SN	**Sn**	**01 22 38.9**	**+0.5**
RAEZ	**Rainy Point**	**3.44**	**251**	PN	**Pn**	**01 22 01.9**	**+2.2**
NEZ	**North Egmont**	**3.66**	**252**	PN	**Pn**	**01 22 05.5**	**+2.7**
DFE	**Dawson Falls**	**3.67**	**252**	PN	**Pn**	**01 22 05.7**	**+2.7**
KIW	**Kapiti Island**	**3.86**	**226**	PN	**Pn**	**01 22 05.7**	**+0.1**
CAW	**Cannon Point**	**3.94**	**223**	PN	**Pn**	**01 22 06.9**	**+0.1**
CAW				SN	**Sn**	**01 22 50.4**	**-2.9**
MSWZ	**Moikau Station**	**4.08**	**218**	PN	**Pn**	**01 22 08.5**	**-0.1**
MRW	**Makara Radio**	**4.23**	**224**	PN	**Pn**	**01 22 10.3**	**-0.5**
MRW				SN	**Sn**	**01 22 59.8**	**-0.7**
SNZO	**South Karori**	**4.28**	**223**	PN	**Pn**	**01 22 10.4**	**-1.2**
SNZO				SN	**Sn**	**01 23 01.0**	**-0.8**
SNZO	**South Karori**	**4.28**	**223**	*e*P	**Pn**	**01 22 10.7**	**-0.9**
SNZO				*e*Pb	**Pb**	**01 22 19.8**	**-0.2**
SNZO				*e*Sn	**Sn**	**01 22 59.2**	**-2.7**
TUWZ	**Tuamarina**	**4.79**	**227**	PN	**Pn**	**01 22 17.4**	**-1.3**
NNZ	**Nelson**	**5.00**	**232**	PN	**Pn**	**01 22 20.5**	**-1.2**
QRZ	**Quartz Range**	**5.35**	**239**	PN	**Pn**	**01 22 25.3**	**-1.4**
THZ	**Tophouse**	**5.60**	**229**	PN	**Pn**	**01 22 28.6**	**-1.7**
KHZ	**Kahutara**	**5.68**	**221**	PN	**Pn**	**01 22 29.2**	**-2.1**
LTZ	**Lake Taylor**	**6.61**	**225**	PN	**Pn**	**01 22 42.3**	**-2.3**
MQZ	**McQueen's Vall**	**7.06**	**218**	PN	**Pn**	**01 22 48.2**	**-2.7**
RPZ	**Rata Peaks**	**7.89**	**224**	Pn	**Pn**	**01 22 59.5**	**-3.0**
	3.3nm,0.3s,baz=33,slow=2.9,SNR=15						
RPZ				Sn	**Sn**	**01 24 25.1**	**-7.4**
	10.0nm,0.3s,baz=350,slow=16,SNR=16						
ODZ	**Otahua Downs**	**9.02**	**219**	PN	**P**	**01 23 14.6**	**-3.5**
TAU	**Tasmania Unive**	**24.13**	**249**	P	**P**	**01 26 20.6**	**-0.9**
	111nm,1.5s,mb5.1						

RAR	**Rarotonga**	**25.22**	**54**	LR		LR	01 34 25.0	
	comp=Z,166nm,19.8s,MS3.5,baz=197,slow=31							
STKA	**Stephens Creek**	**30.80**	**271**	*e*P		**P**	**01 27 24.4**	**+1.7**
	4.1nm,1.0s,mb4.2							
STKA	**Stephens Creek**	**30.80**	**271**	P		**P**	**01 27 23.6**	**+0.9**
	3.7nm,0.9s,mb4.2,baz=121,slow=12,SNR=5.0							
CTA	**Charters Tower**	**33.31**	**294**	P		**P**	**01 27 45.0**	**+0.2**
	1.8nm,0.6s,mb4.2,baz=107,slow=11,SNR=3.9							
CTAO	**Charters Tower**	**33.31**	**294**	*e*P		**P**	**01 27 44.7**	**-0.1**
	3.2nm,0.7s,mb4.4							
VNDA	**Vanda**	**40.02**	**186**	*e*P		**P**	**01 28 40.7**	**-0.3**
	0.3nm,0.5s,mb3.3							
AS12	**Alice Springs**	**40.60**	**278**	*i*P		**P**	**01 28 46.0**	**-0.2**
	9.1nm,1.0s,mb4.4							
ASAR	**Alice Springs**	**40.60**	**278**	P		**P**	**01 28 45.7**	**-0.5**
	5.1nm,0.8s,mb4.2,baz=122,slow=8.2,SNR=40							
FORT	**Forrest**	**41.88**	**265**	*e*P		**P**	**01 28 56.9**	**+0.3**
	52nm,0.7s,mb5.3							
WB2	**Warramunga Arr**	**42.30**	**283**	∥*i*P		**P**	**01 28 59.5**	**-0.8**
WRAB	**Tennant Creek**	**42.31**	**283**	*e*P		**P**	**01 28 59.5**	**-0.8**
	9.0nm,0.7s,mb4.5							
WRA	**Warramunga Arr**	**42.31**	**283**	P		**P**	**01 28 59.8**	**-0.5**
	3.8nm,0.7s,mb4.2,baz=126,slow=6.9,SNR=48							
FITZ	**Fitzroy Crossi**	**50.10**	**278**	*i*P		**P**	**01 30 01.0**	**-1.0**
	3.9nm,0.8s,mb4.5							
FITZ	**Fitzroy Crossi**	**50.10**	**278**	P		**P**	**01 30 01.4**	**-0.6**
	6.1nm,1.0s,mb4.6,baz=176,slow=6.4,SNR=11							
QSPA	**South Pole Qui**	**51.87**	**180**	*e*P		**P**	**01 30 24.3**	**+10**
	7.9nm,1.2s,mb4.5							
YKA	**Yellowknife Ar**	**113.71**	**28**	PKiKP			01 39 47.3	
	0.3nm,1.0s,baz=240,slow=1.1,SNR=3.7							
YKA	**Yellowknife Ar**	**113.71**	**28**	PKPdf	PKPdf		01 39 47.3	+1.1
SPITS	**Spitsbergen Ar**	**139.28**	**354**	PKP	PKPdf		01 40 36.1	+1.6
	5.4nm,1.2s,baz=124,slow=7.2,SNR=2.6							
ARCES	**ARCESS Array B**	**145.50**	**344**	PKPbc	PKPbc		01 40 45.2	+2.8
	3.6nm,1.0s,baz=63,slow=2.7,SNR=7.6							
BRTR	**Keskin Array B**	**152.82**	**284**	PKPbc	PKPdf		01 41 03.5	+5.8
	1.3nm,1.0s,baz=11,slow=6.3,SNR=4.1							
BRTR				PKPab	PKPab		01 41 14.0	-0.9
	0.4nm,0.5s,baz=56,slow=4.5,SNR=3.6							

MAN 12 01:33:56.5,11.91N×121.93E,h1km,mb3.4,ML2.0,MS4.1, 5C,Panay

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OTRP	**Odiongan**	**0.46**	**12**	*e*P	Pg	01 34 03.7	-2.0
OTRP				*e*S	Sg	01 34 10.1	-1.8
RCP	**Roxas**	**0.87**	**113**	*e*P	Pg	01 34 13.2	-0.7
SJMP	**San Jose**	**0.96**	**305**	*e*P	Pb	01 34 15.1	-0.6
SJMP				*e*S	Sg	01 34 28.0	-0.5
CUYO	**Cuyo Island**	**1.38**	**220**	*e*P	Pb	01 34 22.1	-0.7
BOAC	**Boac**	**1.54**	**357**	*e*P	Pn	01 34 25.4	+0.2
BOAC				*e*S	Sb	01 34 42.7	-2.9

IDC ***12*** *01:39:26.6±11.0,24.48S×177.60W,h470km±152km, mb3.1/4,mb1 3.3/5,mb1mx3.0/15,Error ellipse: s-maj=233.0km s-min=69.0km az=82.0*
ISC 12 01:39:29.0±4.9,24.6S±0.2×178.3W±0.7,h450km,n7, σ0§37/8,mb3.5/5,1C,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**14.14**	**195**	P	**P**	**01 42 32.4**	**0.0**
	1.4nm,0.3s,baz=328,slow=3.8,SNR=11						
URZ				S	**S**	**01 45 00.0**	**-0.1**
	1.2nm,0.3s,baz=89,slow=18,SNR=5.6						
CTA	**Charters Tower**	**33.04**	**271**	P	**P**	**01 45 26.9**	**0.0**
	0.6nm,0.3s,mb3.5,baz=98,slow=14,SNR=4.3						
STKA	**Stephens Creek**	**35.91**	**249**	P	**P**	**01 45 51.3**	**+0.5**
	0.9nm,0.4s,mb3.6,baz=95,slow=12,SNR=4.3						
ASAR	**Alice Springs**	**43.46**	**261**	P	**P**	**01 46 52.5**	**+0.3**
	0.7nm,0.4s,mb3.5,baz=94,slow=7.5,SNR=13						
WB2	**Warramunga Arr**	**43.90**	**266**	∥*i*P	**P**	**01 46 55.2**	**-0.6**
WRA	**Warramunga Arr**	**43.91**	**266**	P	**P**	**01 46 55.4**	**-0.5**
	0.8nm,0.3s,mb3.6,baz=103,slow=6.9,SNR=36						
FITZ	**Fitzroy Crossi**	**52.33**	**266**	*e*P	**P**	**01 48 00.0**	**+0.4**
	1.6nm,1.2s,mb3.2						

IDC ***12*** *02:32:01.6±0.8,11.68N×85.19W,mb3.7/6,mb1 4.0/6, mb1mx3.8/18,MS3.4/2,Ms1 3.4/2,ms1mx2.8/28,Error ellipse: s-maj=46.5km s-min=11.8km az=72.0*
CASC ***12*** *02:32:03.9±2.1,10.62N×86.30W,h12km±10km,MD4.0, ML4.7,mb4.1(NEIC)*
NEIC ***12*** *02:32:04.9±0.7,11.51N×85.24W,mb4.1/4,Error ellipse: s-maj=33.3km s-min=12.7km az=65.0*
ISC 12 02:32:01.0±0.6,10.50N±0.05×86.49W±0.05,h12km,n48, σ1§12/50,mb3.9/11,MS3.3/1,1C-4D,Off coast of Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CRZC	**La Cruz**	**0.98**	**63**	∥*e*P	**Pb**	**02 32 18.7**	**-0.8**
CONN	**Concepcion**	**1.35**	**39**	∥*e*P	**Pn**	**02 32 24.9**	**-0.8**
APON	**Apoyo**	**1.46**	**16**	∥*e*P	**Pn**	**02 32 27.0**	**-0.3**
CRUN	**El Crucero**	**1.48**	**7**	*e*P	**Pn**	**02 32 29.5**	**+1.9**
JCR	**Jicaral**	**1.50**	**115**	*e*P	**Pn**	**02 32 27.7**	**-0.2**
MASN	**Masaya**	**1.51**	**13**	*e*P	**Pn**	**02 32 28.5**	**+0.5**
JTS	**JuntasAbangare**	**1.52**	**98**	Pg	**Pg**	**02 32 26.7**	**-4.8**
	68nm,0.3s,baz=309,slow=8.7,SNR=219						
JTS				Lg		02 32 46.8	
	315nm,0.3s,baz=283,slow=20,SNR=16						
JTS	**JuntasAbangare**	**1.52**	**98**	*e*Pn	**Pn**	**02 32 26.5**	**-1.7**
JTS				Lg		02 32 46.8	
JTS				*e*S	**Sb**	**02 32 47.4**	**-0.4**
TICN	**Ticuantepe**	**1.54**	**9**	*e*P	**Pn**	**02 32 28.6**	**+0.1**
XAVN	**Gruta Xavier**	**1.64**	**6**	∥*e*P	**Pn**	**02 32 30.2**	**+0.3**
MGAN	**Managua**	**1.65**	**8**	*e*P	**Pn**	**02 32 29.6**	**-0.4**
MGAN				*e*S	**Sn**	**02 32 51.5**	**+0.3**
MGAN				*i*		02 32 60.0	
	comp=N,985nm,0.9s						
COPN	**Copaltepe**	**1.67**	**357**	*e*P	**Pn**	**02 32 32.0**	**+1.8**
WILN	**Americas 2**	**1.67**	**10**	*e*P	**Pn**	**02 32 30.1**	**-0.2**
COFN	**Cofrada**	**1.68**	**13**	∥*e*P	**Pn**	**02 32 30.0**	**-0.4**
FORC	**Fortuna**	**1.79**	**91**	*e*P	**Pn**	**02 32 32.4**	**+0.4**
PYN	**Poneloya**	**1.94**	**344**	*e*P	**Pn**	**02 32 34.9**	**+0.8**
LEON	**Leon**	**1.94**	**348**	*e*P	**Pn**	**02 32 34.6**	**+0.4**
CNGN	**Cerro Negro**	**2.00**	**354**	*e*P	**Pn**	**02 32 36.0**	**+1.0**
CGA2	**Cerro Gallo 2**	**2.05**	**103**	*e*P	**Pn**	**02 32 35.8**	**+0.1**
CGA2				*e*S	**Sn**	**02 32 59.7**	**-1.6**
PYTN	**Playitas**	**2.07**	**12**	*e*P	**Pn**	**02 32 35.4**	**-0.5**
PYTN				*e*S	**Sn**	**02 33 01.5**	**-0.3**
PRS1	**Puriscal**	**2.20**	**103**	*e*P	**Pn**	**02 32 38.0**	**+0.1**
VPS2	**Volcan Poas 2**	**2.24**	**98**	*e*P	**Pn**	**02 32 38.9**	**+0.5**
LAJ	**Bijagual**	**2.42**	**105**	*e*P	**Pn**	**02 32 36.3**	**-4.7**
SJS	**Escuela Geolog**	**2.46**	**103**	*e*P	**Pn**	**02 32 43.4**	**+1.8**
SJS				*e*S	**Sn**	**02 33 12.7**	**+0.9**
LCR2	**La Lucha 2**	**2.56**	**107**	*e*P	**Pn**	**02 32 44.0**	**+0.9**
QUIN	**Quiabu**	**2.61**	**2**	*e*P	**Pn**	**02 32 43.0**	**-0.7**
ICR	**Volcan Irazu**	**2.67**	**101**	*e*P	**Pn**	**02 32 47.3**	**+2.8**
TRTC	**Tortuguero**	**2.73**	**88**	*e*P	**Pn**	**02 32 44.2**	**-1.2**
URSC	**Urasca**	**2.75**	**104**	*e*P	**Pn**	**02 32 46.7**	**+1.0**
BUS	**Buena Vista**	**2.85**	**109**	*e*P	**Pn**	**02 32 48.8**	**+1.7**
LCBS	**La Ceiba**	**3.97**	**322**	*e*P	**Pn**	**02 33 04.1**	**+1.1**
ROSC	**El Rosal**	**13.29**	**114**	LR	LR	02 39 45.0	
	comp=N,136nm,18.9s,baz=158,slow=36						
LRAL	**Lakeview Retre**	**22.43**	**359**	*e*P	**P**	**02 36 59.0**	**-2.1**
	comp=N,5.5nm,0.8s,mb4.0						
TXAR	**Lajitas Array**	**24.67**	**322**	P	**P**	**02 37 23.1**	**0.0**
	comp=N,3.0nm,0.9s,mb3.8,baz=140,slow=9.6,SNR=24						
MIAR	**Mount Ida**	**24.79**	**346**	*e*P	**P**	**02 37 20.2**	**-4.0**
MIAR				*e*pP		02 37 28.2	
WMOK	**Wichita Mounta**	**26.61**	**337**	*e*P	**P**	**02 37 40.7**	**-0.4**
	comp=N,6.2nm,1.0s,mb4.1						
WMOK				*e*pP	pP	02 37 47.3	+2.7
MNTX	**Cornudas Mount**	**27.40**	**323**	P	**P**	**02 37 47.1**	**-1.3**
WCI	**Wyandotte Cave**	**27.61**	**0**	P	**P**	**02 37 41.7**	**-8.5**
	comp=N,5.6nm,0.9s,mb4.2						
LPAZ	**La Paz**	**32.23**	**145**	LR	LR	02 54 01.9	
	comp=N,57nm,18.4s,MS3.3,baz=105,slow=41						
BINY	**Binghamton**	**32.89**	**14**	*e*P	**P**	**02 38 24.2**	**-13**
	comp=N,43nm,1.3s,mb5.2						
BINY				*e*pP	pP	02 38 30.5	-10
PDAR	**Pinedale Array**	**37.92**	**332**	P	**P**	**02 39 18.2**	**-1.7**
	comp=N,0.5nm,1.0s,mb3.2,baz=120,slow=7.3,SNR=2.7						
NVAR	**Mina Array Bea**	**39.78**	**320**	P	**P**	**02 39 37.9**	**+2.3**
	comp=N,1.1nm,0.9s,mb3.6,baz=153,slow=6.0,SNR=3.2						
NVAR				PcP	PcP	02 41 42.6	+0.2
	comp=N,1.0nm,0.7s,baz=127,slow=5.0,SNR=6.1						
HLID	**Hailey**	**40.88**	**329**	*e*P	**P**	**02 39 43.4**	**-1.1**
	comp=N,0.9nm,0.9s,mb3.4						

BDFB	**Brasilia**	**46.11**	**124**	P		**P**	**02 40 25.4**	**-1.8**
	comp=N,3.6nm,0.8s,mb4.3,baz=284,slow=5.5,SNR=7.4							
YKA	**Yellowknife Ar**	**55.73**	**345**	P		**P**	**02 41 34.7**	**-4.8**
	comp=N,0.3nm,0.6s,mb3.5,baz=137,slow=7.6,SNR=14							
YKA	**Yellowknife Ar**	**55.73**	**345**	P		**P**	**02 41 34.7**	**-4.8**
ILAR	**Eielson Array**	**68.17**	**336**	P		**P**	**02 42 59.2**	**-3.8**
	comp=N,0.1nm,0.5s,mb3.1,baz=180,slow=4.3,SNR=4.0							
CMAR	**Chiang Mai Arr**	**150.73**	**349**	PKPbc	PKPdf		02 51 53.1	+1.4
	comp=N,1.1nm,0.4s,slow=2.9,SNR=4.3							

CASC ***12*** *02:35:18.5±1.7,10.48N×86.31W,h35km±60km,MD4.3, ML3.6,mb4.1(NEIC)*
IDC ***12*** *02:35:19.2±3.2,11.51N×85.43W,h17km±22km,mb3.7/6, mb1 4.0/6,mb1mx3.8/18,Error ellipse: s-maj=64.5km s-min=14.9km az=61.0*
NEIC ***12*** *02:35:20.2±0.7,11.45N×85.44W,h25km,mb4.1/3,Error ellipse: s-maj=45.3km s-min=11.7km az=65.0*
ISC 12 02:35:18.0±0.7,10.47N±0.05×86.41W±0.05,h35km,n38, σ0§95/44,mb3.9/9,3C-3D,Off coast of Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CONN	**Concepcion**	**1.33**	**35**	∥*e*P	**P**	**02 35 40.0**	**-0.4**
JTS	**JuntasAbangare**	**1.44**	**97**	Pn	**P**	**02 35 41.8**	**-0.1**
	194nm,0.3s,baz=312,slow=14,SNR=37						
JTS				Pg	**P**	**02 35 42.9**	**+0.9**
	226nm,0.3s,baz=316,slow=16,SNR=211						
JTS				Lg		02 36 02.0	
	113nm,0.3s,baz=312,slow=20,SNR=3.5						
JTS	**JuntasAbangare**	**1.44**	**97**	*e*Pn	**P**	**02 35 41.5**	**-0.4**
JTS				*e*Sg	**S**	**02 36 01.1**	**+1.2**
JTS				Lg		02 36 02.0	
APON	**Apoyo**	**1.47**	**13**	∥*e*P	**P**	**02 35 42.2**	**-0.2**
CRUN	**El Crucero**	**1.51**	**4**	*e*P	**P**	**02 35 40.7**	**-2.2**
MASN	**Masaya**	**1.53**	**9**	*e*P	**P**	**02 35 42.9**	**-0.3**
TICN	**Ticuantepe**	**1.56**	**6**	*e*P	**P**	**02 35 43.7**	**0.0**
TICN				*e*S	**S**	**02 36 03.0**	**0.0**
XAVN	**Gruta Xavier**	**1.67**	**3**	*e*P	**P**	**02 35 45.3**	**+0.1**
MGAN	**Managua**	**1.67**	**5**	*e*P	**P**	**02 35 45.2**	**-0.1**
MGAN				*e*S	**S**	**02 36 05.9**	**+0.2**
	comp=N,880nm,0.4s						
WILN	**Americas 2**	**1.69**	**7**	*e*P	**P**	**02 35 44.9**	**-0.6**
COFN	**Cofrada**	**1.69**	**10**	∥*e*P	**P**	**02 35 45.3**	**-0.3**
COPN	**Copaltepe**	**1.71**	**354**	*e*P	**P**	**02 35 44.7**	**-1.1**
COPN				*e*S	**S**	**02 36 06.8**	**+0.1**
MOMJ	**Momotombo**	**1.93**	**356**	∥*e*P	**P**	**02 35 49.7**	**+0.8**
LEON	**Leon**	**1.99**	**346**	*e*P	**P**	**02 35 49.8**	**0.0**
LEON				*e*S	**S**	**02 36 14.1**	**+0.4**
PYN	**Poneloya**	**1.99**	**342**	∥*e*P	**P**	**02 35 50.2**	**+0.4**
CNGN	**Cer

CRUN	El Crucero	1.46	4	⇓	eP		Pn	02 49 47.6	+1.0
MASN	Masaya	1.48	10	⇑	eP		Pn	02 49 46.9	0.0
MASN					eP			02 49 47.2	
TICN	Ticuantepe	1.52	7	⇑	eP		Pn	02 49 47.9	+0.5
XAVN	Gruta Xavier	1.62	3	⇑	eP		Pn	02 49 49.4	+0.5
MGAN	Managua	1.63	6	⇑	eP		Pn	02 49 49.4	+0.4
MGAN					eS		Sn	02 50 10.2	+1.1
WILN	Americas 2	1.65	8	⇑	eP		Pn	02 49 49.3	+0.1
WILN					eS		Sn	02 50 11.5	+1.8
COFN	Cofrada	1.65	10	⇓	eP		Pn	02 49 49.6	+0.3
COPN	Copaltepe	1.66	354	⇓	eP		Pn	02 49 48.6	-0.9
FORC	Fortuna	1.72	91		eP		Pn	02 49 52.0	+1.7
MOMJ	Momotombo	1.88	356		eP		Pn	02 49 50.7	-1.9
LEON	Leon	1.94	346	⇓	eP		Pn	02 49 54.0	+0.5
LEON					eS		Sn	02 50 18.5	+1.3
PYN	Poneloya	1.95	342	⇑	eP		Pn	02 49 54.4	+0.9
CGA2	Cerro Gallo 2	1.98	104	⇓	eP		Pn	02 49 55.9	+1.9
CNGN	Cerro Negro	1.99	352		eP		Pn	02 49 55.7	+1.5
PYTN	Playitas	2.04	10	⇑	eP		Pn	02 49 54.7	-0.1
PYTN					eS		Sn	02 50 20.1	+0.5
PRS1	Puriscal	2.14	104		eP		Pn	02 49 57.6	+1.3
VPS2	Volcan Poas 2	2.17	98		eP		Pn	02 49 58.5	+1.7
CRIN	San Cristobal	2.26	344	⇓	eP		Pn	02 50 00.8	+2.8
CRIN					eS		Sn	02 50 27.8	+2.6
LAJ	Bijagual	2.35	106		eP		Pn	02 49 57.5	-1.8
SJS	Escuela Geolog	2.39	104		eP		Pn	02 50 03.4	+3.4
LCR2	La Lucha 2	2.50	108		eP		Pn	02 50 02.9	+1.5
QUIN	Quiabu	2.59	360		eP		Pn	02 50 02.6	-0.2
ICR	Volcan Irazu	2.60	102		eP		Pn	02 50 04.8	+1.9
TRTC	Tortuguero	2.66	89	⇓	eP		Pn	02 50 03.1	-0.5
URSC	Urasca	2.68	104	⇓	eP		Pn	02 50 05.4	+1.4
BUS	Buena Vista	2.79	110		eP		Pn	02 50 07.6	+2.0
SOMN	Somoto	2.89	356	⇓	eP		Pn	02 50 08.5	+1.5
BLLM	Bellamira	3.41	329		eS		Sn	02 50 59.6	+5.2
VSM	San Miguel	3.42	328		eP		Pn	02 50 18.8	+4.3
ACR	Cerro Adams	3.70	120	⇑	eP		Pn	02 50 20.1	+1.6
LCBS	La Ceiba	4.00	321		eP		Pn	02 50 24.4	+1.6
LCBS					eS		Sn	02 51 08.9	-0.5
LFRS	El Faro	4.03	320		eP		Pn	02 50 24.7	+1.5
LBRS	Las Brisas	4.11	321		eP		Pn	02 50 26.8	+2.5
LFU	La Fuente	4.16	321		eP		Pn	02 50 30.8	+5.8
LFU					eS		Sn	02 51 15.1	+1.8
SBLS	San Blas	4.55	317		eP		Pn	02 50 34.1	+3.4
ROSC	El Rosal	13.23	114		LR		LR	02 57 06.7	
	comp=Z,679nm,21.4s,baz=121,slow=36								
SJG	San Juan	21.02	67		LR		LR	03 00 19.4	
	comp=Z,179nm,21.7s,MS3.4,baz=87,slow=32								
HKT	Hockley	21.24	337		eP		P	02 54 07.7	-0.2
	111nm,1.6s,mb4.9								
LRAL	Lakeview Retre	22.42	359		eP		P	02 54 18.7	-1.0
	31nm,1.0s,mb4.7								
NATX	Nacogdoches	22.47	341		eP		P	02 54 19.6	-0.7
NATX					epP			02 54 27.3	
JCT	Junction City	23.45	330		eP		P	02 54 30.4	+0.6
	5.2nm,0.6s,mb4.1								
JSC	Jenkinsville	24.12	10		eP		P	02 54 34.8	-1.5
PLAL	Pickwick Lake	24.40	357		eP		P	02 54 37.5	-1.5
	20nm,0.9s,mb4.6								
PLAL					epP			02 54 46.8	
SWET	Sewanee	24.59	1		eP		P	02 54 39.5	-1.4
TXAR	Lajitas Array	24.71	322		P		P	02 54 43.5	+1.4
	8.8nm,0.8s,mb4.3,baz=140,slow=9.7,SNR=85								
TXAR					sP			02 54 57.1	
	32nm,0.8s,baz=140,slow=9.8,SNR=31								
TXAR					PcP		PcP	02 58 21.1	+1.2
	1.4nm,0.8s,baz=153,slow=5.6,SNR=5.7								
TXAR					pPcP			02 58 29.1	
	2.0nm,1.0s,baz=135,slow=3.5,SNR=4.5								
TXAR					LR		LR	03 05 54.3	
	comp=Z,84nm,20.4s,MS3.2,baz=100,slow=40								
UALR	University of	24.75	348		eP		P	02 54 40.4	-2.1
	22nm,0.8s,mb4.7								
MIAR	Mount Ida	24.80	346		eP		P	02 54 41.0	-1.9
	27nm,0.9s,mb4.8								
CPCT	Cooper Cave	24.88	4		eP		P	02 54 43.0	-0.7
CPCT					pP			02 54 52.1	
WVT	Waverly	25.53	357		eP		P	02 54 46.5	-3.3
	8.4nm,1.0s,mb4.2								
GLAT	Glass	25.77	355		P		P	02 54 49.8	-2.2
UTMT	University of	25.80	355		eP		P	02 54 50.7	-1.6
WMOK	Wichita Mounta	26.62	337		eP		P	02 54 58.1	-1.8
	34nm,1.0s,mb4.8								
WMOK					epP		pP	02 55 08.1	+0.2
CLNB	Carlsbad	26.99	326		eP		P	02 55 04.7	+1.4
ELN	Prospectdale	27.08	10		eP		P	02 55 02.9	-1.1
ELN					e			02 55 15.7	
PWV	Princeton	27.14	9		eP		P	02 55 03.5	-1.1
PWV					esP		sP	02 55 15.2	-1.0
SIUC	Southern Illin	27.20	355		eP		P	02 55 03.0	-2.2
	27nm,0.9s,mb4.8								
SIUC					epP		pP	02 55 11.3	-1.8
SIUC					esP		sP	02 55 15.4	-1.4
GDL2	Guadalupe Moun	27.21	325		eP		P	02 55 06.0	+0.6
USIN	University of	27.35	358		eP		P	02 55 04.2	-2.4
USIN					epP		pP	02 55 12.9	-1.7
USIN					esP		sP	02 55 16.8	-1.4
MNTX	Cornudas Mount	27.43	323		eP		P	02 55 07.5	+0.2
	1.5nm,0.7s,mb3.6								
MNTX					esP		sP	02 55 19.6	+0.7
CPRX	Cap Rock	27.57	327		eP		P	02 55 09.2	+0.7
CPRX					sP		sP	02 55 21.5	+1.3
WCI	Wyandotte Cave	27.59	0		eP		P	02 55 06.0	-2.7
WCI					epP		pP	02 55 13.7	-3.0
WCI					esP		sP	02 55 18.5	-1.8
CCM	Cathedral Cave	27.76	352		eP		P	02 55 06.8	-3.4
	36nm,1.4s,mb4.8								
BLO	Bloomington	28.53	360		eP		P	02 55 14.4	-2.8
	17nm,0.8s,mb4.8								
ACSO	Alum Creek Sta	29.75	5		eP		P	02 55 25.8	-2.4
	42nm,0.9s,mb5.2								
ACSO					esP		sP	02 55 37.6	-2.2
BNM	Barren Site	29.93	325		eP		P	02 55 27.3	-2.5
LAZ	Ladron	30.40	325		eP		P	02 55 35.5	+1.6
LAZ					epP		pP	02 55 43.4	+1.4
ANMO	Albuquerque	30.42	326		eP		P	02 55 34.4	+0.2
	2.3nm,0.8s,mb4.0								
SSPA	Standing Stone	30.93	13		eP		P	02 55 36.1	-2.5
	39nm,1.8s,mb4.9								
SSPA					epP		pP	02 55 44.9	-1.7
ERPA	Erie	31.98	9		eP		P	02 55 44.7	-3.1
	20nm,0.7s,mb5.0								
ERPA					esP		sP	02 55 56.0	-3.3
SDCO	Great Sand Dun	32.08	331		P		P	02 55 48.6	-0.1
	1.9nm,0.6s,mb4.1								
LPAZ	La Paz	32.20	146		LR		LR	03 09 48.2	
	comp=Z,255nm,21.4s,MS3.9,baz=79,slow=38								
PV10	Paradox Valley	34.35	328		eP		P	02 56 08.8	+0.4
SADO	Sadowa	34.70	9		P		P	02 56 06.8	-4.6
	4.4nm,0.7s,mb4.5,baz=212,slow=9.0,SNR=8.6								
SADO					sP		sP	02 56 20.5	-2.4
	12nm,0.8s,baz=204,slow=8.1,SNR=11								
MSU	Marysvale	36.17	325		eP		P	02 56 25.5	+1.6
DAU	Daniels Canyon	37.01	328		eP		P	02 56 31.8	+0.9
PDAR	Pinedale Array	37.95	332		P		P	02 56 37.9	-0.8
	1.0nm,0.8s,mb3.6,baz=123,slow=9.8,SNR=8.4								
PDAR					PcP		PcP	02 58 55.2	+0.5
	1.4nm,0.9s,baz=124,slow=5.3,SNR=6.1								
PDAR					LR		LR	03 15 21.0	
	comp=Z,266nm,21.4s,MS4.0,baz=144,slow=41								
HWUT	Hardware Ranch	38.04	329		eP		P	02 56 39.6	+0.1
	2.7nm,0.8s,mb4.0								
REDW	Red Top Meadow	39.01	331		eP		P	02 56 46.8	-0.8
NVAR	Mina Array Bea	39.82	320		P		P	02 56 56.3	+1.9
	0.8nm,0.5s,mb3.7,baz=133,slow=6.9,SNR=6.6								
NVAR					sP		sP	02 57 09.9	+3.9
	4.6nm,0.8s,baz=135,slow=7.7,SNR=13								
NVAR					PcP		PcP	02 59 02.0	+1.3
	3.6nm,0.8s,baz=123,slow=4.8,SNR=9.5								
ULM	Lac du Bonnet	40.38	351		P		P	02 56 55.0	-3.8
	8.1nm,0.8s,mb4.5,baz=158,slow=7.0,SNR=7.2								
ULM					LR		LR	03 14 19.1	
	comp=Z,122nm,18.8s,MS3.8,baz=61,slow=38								
HLID	Hailey	40.91	329		eP		P	02 57 03.8	+0.5
	8.4nm,1.4s,mb4.2								
HLID					epP		pP	02 57 11.2	-0.3
HLID					esP		sP	02 57 16.6	+1.7
MCMT	McKenzie Canyo	41.06	331		eP		P	02 57 05.4	+0.9
MCMT					epP		pP	02 57 12.9	+0.2
MSO	Missoula	43.06	332		eP		P	02 57 19.2	-1.7
	15nm,1.5s,mb4.5								
BDFB	Brasilia	46.06	124		P		P	02 57 45.9	+0.6
	11nm,0.9s,mb4.8,baz=296,slow=5.8,SNR=16								
BDFB					LR		LR	03 19 36.9	
	comp=Z,218nm,18.5s,MS4.1,baz=27,slow=39								
CPUP	Villa Florida	46.27	143		LR		LR	03 20 10.6	
	comp=Z,141nm,19.6s,MS3.9,baz=344,slow=40								
SCHQ	Schefferville	46.84	15		P		P	02 57 45.6	-5.4
	3.3nm,0.8s,mb4.3,baz=213,slow=13,SNR=8.6								
SCHQ					LR		LR	03 18 04.3	
	comp=Z,229nm,18.7s,MS4.2,baz=162,slow=37								
YKA	Yellowknife Ar	55.73	345		P		P	02 58 54.7	-3.3
	2.0nm,0.8s,mb4.2,baz=140,slow=7.3,SNR=42								
YKA					LR		LR	03 27 13.8	
	comp=Z,157nm,18.2s,MS4.1,baz=155,slow=41								
YKA	Yellowknife Ar	55.73	345		P		P	02 58 54.7	-3.3
YKA					LR		LR	03 27 13.8	
YKW3	Yellowknife Ar	55.79	345		eP		P	02 58 55.2	-3.3
DLBC	Dease Lake	58.08	335		LR		LR	03 27 11.4	
	comp=Z,204nm,20.5s,MS4.2,baz=114,slow=39								
DLBC	Dease Lake	58.08	335		eP		P	02 59 13.6	-1.2
INK	Inuvik	65.34	343		LR		LR	03 32 11.1	
	comp=Z,123nm,19.8s,MS4.1,baz=348,slow=40								
USHA	Ushuaia	66.84	169		LR		LR	03 25 20.4	
	comp=Z,116nm,21.3s,MS4.1,baz=191,slow=32								
SML	Sawmill	67.70	333		eP		P	03 00 17.5	-1.0
SML					epP		pP	03 00 24.4	-2.7
ILAR	Eielson Array	68.19	336		P		P	03 00 19.6	-2.0
	1.5nm,0.7s,mb4.1,baz=122,slow=4.1,SNR=16								
ILAR					LR		LR	03 32 58.2	
	comp=Z,121nm,20.1s,MS4.1,baz=128,slow=38								
DBIC	Dimbokro	80.54	85		LR		LR	03 36 35.7	
	comp=Z,63nm,19.7s,MS4.0,baz=270,slow=35								
NOA	NORSAR Array B	84.56	29		LR		LR	03 35 50.5	
	comp=Z,94nm,19.7s,MS4.2,baz=285,slow=33								
ARCES	ARCESS Array B	87.67	19		LR		LR	03 43 55.9	
	comp=Z,106nm,18.7s,MS4.3,baz=252,slow=38								
FX1	Attu Island--F	87.91	323		LR		LR	03 42 30.4	
	comp=Z,1.7nm,20.4s,baz=195,slow=36								
FINES	FINESS Array B	91.24	26		LR		LR	03 40 39.2	
	comp=Z,126nm,19.6s,MS4.4,baz=172,slow=34								
AKASG	Malin Array Be	97.50	35		LR		LR	03 47 24.4	
	comp=Z,77nm,18.5s,MS4.2,baz=310,slow=36								
QSPA	South Pole Qui	100.50	180		eP		P	03 03 22.7	+15
CN2	Changchun	118.67	334		ePKP		PKPdf	03 08 09.1	-3.3
CN2					LR		LR		
	comp=Z,200nm,21.0s,MS4.7								
MKAR	Makanchi Array	122.06	9		PKP		PKPdf	03 08 14.4	-4.4
	comp=Z,0.4nm,0.6s,baz=354,slow=3.1,SNR=4.7								
BJI	Beijing	125.51	339		PKP		PKPdf	03 08 20.1	-5.7
WMQ	Urumqi	125.66	5		ePKP		PKPdf	03 08 22.3	-3.6
SSE	Sheshan	130.88	328		PKP		PKPdf	03 08 31.8	-4.5
NJ2	Nanjing	131.25	331		ePKP		PKPdf	03 08 32.1	-4.9
NJ2					PP		PP	03 10 54.0	-0.6
NJ2					SKS		SKS	03 15 38.0	-7.9
NJ2					LR		LR		
	comp=Z,230nm,24.6s,MS4.8								
LZH	Lanzhou	132.65	349		ePKP		PKPdf	03 08 34.5	-5.0
LZH					XPKP			03 08 50.1	
LZH					LR		LR		
	comp=N,136nm,18.0s								
LZH					LR		LR		
	comp=Z,197nm,20.1s,MS4.8								
ASAR	Alice Springs	139.46	246		PKP		PKPdf	03 08 52.6	+0.3
	comp=Z,1.2nm,0.8s,baz=84,slow=1.6,SNR=9.1								
WB2	Warramunga Arr	139.66	252		eP		PKPdf	03 08 52.9	+0.1
WRA	Warramunga Arr	139.67	252		PKP		PKPdf	03 08 53.6	+0.8
	comp=Z,1.4nm,0.7s,baz=92,slow=1.8,SNR=14								
FITZ	Fitzroy Crossi	148.08	253		eP		PKPdf	03 09 08.7	+1.3
	comp=Z,3.5nm,0.7s								
CMAR	Chiang Mai Arr	150.73	350		PKP		PKPdf	03 09 09.9	-1.6
	comp=Z,4.0nm,0.9s,baz=328,slow=2.6,SNR=7.6								
CMAR					PKPbc		PKPdf	03 09 14.4	+2.9
	comp=Z,3.1nm,0.7s,baz=343,slow=3.4,SNR=12								

WEL 12 03:02:40.7±0.3, 37.99S×176.40E, h153km±2km, ML4.1/7, 2C-3D, Error ellipse: s-maj=2.0km s-min=1.4km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID			Time		Res
					Op	ISC	h	m s	ISC
LIRZ	Lichensteins R	0.02	213		PN	P	03 03 01.1		-0.2
MARZ	Manawahe	0.22	90		PN	P	03 03 01.4		-0.4
UTU	Utuhina	0.25	221		PN	P	03 03 01.6		-0.2
TAZ	Tarawera	0.26	160		PN	P	03 03 01.8		-0.2
PATZ	Paeroa	0.41	196		PN	P	03 03 02.0		-0.5
URZ	Urewera	0.62	116	⇓	PN	P	03 03 02.7		-0.8
TOZ	Tahuroa Road	0.75	290	⇓	PN	P	03 03 03.8		-0.5
MWZ	Matawai	0.96	112		PN	P	03 03 05.4		-0.1
MWZ					SN	S	03 03 24.8		+0.1
BKZ	Black Stump Fm	1.18	176	⇓	PN	P	03 03 07.4		-0.2
BKZ					SN	S	03 03 26.7		-1.7
MGZ	Maungaku	1.22	213		PN	P	03 03 08.2		+0.2
KAVZ	Karewarewa	1.25	208		PN	P	03 03 08.1		-0.3
NGZ	Ngauruhoe	1.34	208		PN	P	03 03 09.0		-0.2
KUZ	Kuaotunu	1.35	336	⇑	PN	P	03 03 08.5		-0.8
CNZ	Chateau	1.38	209		PN	P	03 03 09.6		0.0
WPVZ	Whakapapa	1.39	209		PN	P	03 03 10.0		+0.3
TUVZ	Tukino	1.41	204		PN	P	03 03 09.9		+0.1
FWVZ	Far West T-bar	1.43	207		PN	P	03 03 10.1		0.0
FWVZ					SN	S	03 03 32.6		-0.2
KNZ	Kokohu	1.44	136		PN	P	03 03 10.1		-0.1
DRZ	Dome Shelter	1.44	207		PN	P	03 03 09.0		-1.2
PUZ	Puketiti	1.47	94		PN	P	03 03 09.9		-0.6
WNVZ	Wahianoa	1.48	205		PN	P	03 03 10.5		-0.1
MXZ	Matakaoa Point	1.57	75		PN	P	03 03 11.7		+0.1
VRZ	Vera Road	1.71	228		PN	P	03 03 13.1		-0.1
PWZ	Pawanui	2.07	170	⇑	PN	P	03 03 16.6		-0.6
WAZ	Wanganui	2.08	212		PN	P	03 03 16.7		-0.6
TSZ	Takapari Road	2.10	189		PN	P	03 03 16.3		-1.2
BFZ	Birch Farm	2.69	182		PN	P	03 03 23.0		-1.9
MRZ	Mangatainoka R	2.74	193		PN	P	03 03 23.2		-2.4
CAW	Cannon Point	3.28	198		PN	P	03 03 29.3		-3.2
MRW	Makara Radio	3.49	202		PN	P	03 03 31.7		-3.5
WEL	Wellington	3.52	200		PN	P	03 03 32.7		-3.0
MSWZ	Moikau Station	3.54	194		PN	P	03 03 32.1		-3.7
SNZO	South Karori	3.56	201		PN	P	03 03 32.5		-3.7
BHW	Baring Head	3.61	199		PN	P	03 03 33.0		-3.9
TUWZ	Tuamarina	3.92	208		PN	P	03 03 36.8		-4.1
NNZ	Nelson	3.98	215		PN	P	03 03 37.7		-3.9
QRZ	Quartz Range	4.12	225		PN	P	03 03 39.1		-4.4
BSWZ	Blackbirch Sta	4.20	207		PN	P	03 03 40.3		-4.2
THZ	Tophouse	4.63	214		PN	P	03 03 45.8		-4.4
KHZ	Kahutara	4.94	205		PN	P	03 03 49.4		-4.7
LTZ	Lake Taylor	5.73	212		PN	P	03 03 59.0		-5.8
CRLZ	Canterbury Las	6.27	206		SN	S	03 05 11.9		-11
MQZ	McQueen's Vall	6.38	205		PN	P	03 04 06.7		-6.7
WVZ	Waitaha Valley	6.66	219		SN	S	03 05 20.8		-11
ODZ	Otahua Downs	8.26	210		PN	P	03 04 32.2		-6.4
ODZ					SN	S	03 05 58.0		-13

TIR 12 03:08:10.6, 40.15N×19.87E, h17km
NEIC 12 03:08:11.5, 40.15N×19.77E, h5km, MD3.3(ATH), After ATH.
ATH 12 03:08:16.5, 39.59N×19.90E, h10km, MD3.2/3
ISC 12 03:08:11.2±0.7, 40.12N±0.03×19.78E±0.05, h0km±7km, n15, σ0°94/21, Albania

Code	Station Name	Δ°	AZ°	Phase ID			Time		Res
					Op	ISC	h	m s	ISC
TPE	Tepelena	0.25	45		i Pg	Pg	03 08 15.4		-0.7
TPE					i Sg	Sg	03 08 19.6		+0.3
SRN	Sarande	0.29	145		i Pg	Pg	03 08 17.2		+0.2
SRN					i Sg	Sg	03 08 22.9		+1.9
KEK	Kerkira	0.41	178		ePG	Pg	03 08 19.8		+0.5
VLO	Vlora	0.41	328		i Pg	Pg	03 08 19.3		0.0
VLO					i Sg	Sg	03 08 25.9		+1.1
LSK	Leskovik	0.63	87		i Pg	Pg	03 08 21.9		-1.8
LSK					i Sg	Sg	03 08 31.7		-0.3
JAN	Janina	0.94	119		ePB	Pb	03 08 30.5		+0.4
TIR	Tirane	1.23	3		ePg	Pg	03 08 35.5		-0.1
LCI	Lecce	1.30	280		ePn	Pn	03 08 35.1		-1.4
LCI					eSn	Sn	03 08 55.2		+0.5
QSH	Qafa e Shtames	1.40	4		i Pn	Pn	03 08 37.0		-1.0
QSH					i Sn	Sn	03 08 59.0		+1.6
EVR	Evrytania	1.98	127		ePB	Pb	03 08 47.1		-0.6
VLS	Valsamata	2.04	162		ePn	Pn	03 08 52.0		+4.9
SKO	Skopje	2.23	34		eP	Sg	03 09 26.0		+0.5
ORI	Oriolo Calabro	2.56	270		ePn	Pn	03 08 59.8		+5.3
SGG	Gregorio Mates	4.29	289		ePn	Pn	03 09 19.6		+0.4
CII	Carovilli	4.45	293		ePn	Pn	03 09 20.0		-1.4

NEIC 12 03:08:55.9±1.3, 27.43N×66.24E, h35km, mb3.8/4, Error ellipse: s-maj=29.2km s-min=12.1km az=205.0

IDC 12 03:08:57.1±8.7, 27.43N×65.81E, h45km±79km, mb3.6/10, mb1 3.7/10, mb1mx3.6/22, MS3.4/2, Ms1 3.5/2, ms1mx2.8/30, Error ellipse: s-maj=40.7km s-min=25.9km az=31.0
ISC 12 03:08:51.7±3.2, 27.4N±0.1×66.23E±0.08, h14km±21km, n21, σ1°27/21, mb3.8/10, MS3.3/2, Pakistan

Code	Station Name	Δ°	AZ°	Phase ID			Time		Res
					Op	ISC	h	m s	ISC
NDI	New Delhi	9.79	80		eP	P	03 11 19.0		-3.8
NDI					eS	Sn	03 13 05.5		-0.4
KOLN	Koldanda	15.41	85		eP	P	03 12 31.6		+1.2
	7.9nm,0.6s								
KOLN					eS	S	03 15 20.9		-0.5
DMN	Daman	16.75	85		eP	P	03 12 47.2		-0.4
	10nm,0.8s								
KKN	Kakani	16.89	84		eP	P	03 12 47.8		-1.6
PKI	Pulchoki	17.02	85		eP	P	03 12 51.3		+0.3
	12nm,0.6s								
GUN	Gumba	17.42	84		eP	P	03 12 54.4		-1.6
	23nm,0.7s								
GNI	Garni	21.83	311		P	P	03 13 43.9		-1.6
	3.2nm,0.4s,mb4.2,baz=112,slow=11,SNR=2.4								
MKAR	Makanchi Array	23.09	29		P	P	03 13 59.7		+1.8
	3.6nm,0.5s,mb4.0,baz=209,slow=9.4,SNR=40								
MKAR	Makanchi Array	23.09	29		P	P	03 13 59.7		+1.8
ZRNK	Zerenda	25.56	4		eP	P	03 14 23.5		+1.8
BVAR	Borovoye Array	25.74	6		P	P	03 14 23.4		+0.1
	1.8nm,0.5s,mb3.8,baz=164,slow=11,SNR=15								
BRVK	Borovoye	25.76	6		eP	P	03 14 24.3		+0.8
BRTR	Keskin Array B	29.62	303		LR	LR	03 27 14.5		
	comp=Z,132nm,18.9s,MS3.6,baz=210,slow=37								
CMAR	Chiang Mai Arr	31.35	100		LR	LR	03 30 11.8		
	comp=Z,35nm,18.2s,MS3.1,baz=195,slow=40								
SONM	Songino Array	37.22	46		P	P	03 16 08.3		+4.0
	1.0nm,0.8s,mb3.7,baz=240,slow=10.0,SNR=4.4								
ARCES	ARCESS Array B	48.24	342		P	P	03 17 31.7		-1.9
	2.8nm,0.9s,mb4.3,baz=149,slow=7.1,SNR=8.6								
NOA	NORSAR Array B	49.57	328		P	P	03 17 41.3		-2.7
	0.8nm,0.8s,mb3.8,baz=113,slow=7.3,SNR=3.3								
WRA	Warramunga Arr	81.01	118		P	P	03 21 08.7		+0.8
	0.2nm,0.7s,mb3.2,baz=319,slow=4.6,SNR=7.0								
ASAR	Alice Springs	82.73	121		P	P	03 21 18.2		+1.4
	0.6nm,0.6s,mb3.8,baz=305,slow=5.3,SNR=8.1								
INK	Inuvik	83.42	7		P	P	03 21 19.8		+0.3
	0.9nm,1.0s,mb3.7,baz=343,slow=3.1,SNR=6.0								
YKA	Yellowknife Ar	90.38	0		P	P	03 21 53.9		+0.5
	0.1nm,0.3s,mb3.6,baz=352,slow=4.9,SNR=2.8								

WEL 12 03:22:21.1±0.1, 40.70S×175.84E, h27km, ML3.8/7, 2C-1D, Error ellipse: s-maj=1.4km s-min=0.9km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID			Time		Res
					Op	ISC	h	m s	ISC
MRZ	Mangatainoka R	0.21	281	⇓	P*	Pb	03 22 26.8		-0.2
MRZ					S*	Sb	03 22 30.9		-0.1
BFZ	Birch Farm	0.31	86	⇑	P*	Pb	03 22 29.9		+1.6
BFZ					S*	Sb	03 22 36.0		+2.7
TSZ	Takapari Road	0.65	8		P*	Pb	03 22 32.5		-1.2
CAW	Cannon Point	0.71	235		P*	Pb	03 22 35.2		+0.3
CAW					S*	Sb	03 22 45.8		+1.5
KIW	Kapiti Island	0.73	257		P*	Pb	03 22 35.1		0.0
MSWZ	Moikau Station	0.84

KDAG				*i* S		**Sn**	**03 24 49.1 +5.9**	
APE	**Apeiranthos**	**3.41**	**300**	*e*PN		**Pn**	**03 24 04.1 +0.8**	
KONT	**Konya--Tatoy**	**3.55**	**44**	*e*PN		**Pn**	**03 24 04.7 -0.6**	
IDI	**Anoyia**	**3.55**	**269**	P		**Pn**	**03 24 10.8 +5.4**	
	16nm,0.3s,baz=22,slow=5.6,SNR=78							
IDI				S		**Sn**	**03 24 52.1 +3.8**	
	18nm,0.3s,baz=135,slow=22,SNR=6.0							
AKS	**Akhisar**	**3.62**	**342**	*e*PN		**Pn**	**03 24 05.7 -0.6**	
ALT	**Altintas**	**3.68**	**11**	*e*PN		**Pn**	**03 24 06.4 -0.8**	
KIZT	**Kizilcal**	**4.03**	**31**	*e*PN		**Pn**	**03 24 12.3 +0.1**	
VAM	**Vamos**	**4.11**	**271**	*e*PN		**Pn**	**03 24 20.2 +6.9**	
DST	**Dursunbey**	**4.19**	**354**	*e*PN		**Pn**	**03 24 14.1 -0.3**	
ESKT	**Eskisehir**	**4.27**	**17**	*e*PN		**Pn**	**03 24 16.0 +0.4**	
ESKT	**Eskisehir**	**4.27**	**17**	*i* P		**Pn**	**03 24 13.2 -2.5**	
ESKT				*i* S		**Sn**	**03 25 17.6 +11**	
ULDT	**Uludag**	**4.70**	**359**	*i* P		**Pn**	**03 24 25.7 +4.1**	
ULDT				*i* S		Sn	03 25 41.9 +25	
VLI	**Veliai**	**5.26**	**286**	*e*PN		**Pn**	**03 24 33.1 +3.6**	
HNTI	**Hanita**	**5.45**	**114**	Sn		**Sn**	**03 25 35.6 -0.7**	
BRTR	**Keskin Array B**	**5.53**	**38**	P		**Pn**	**03 24 32.5 -0.9**	
	1.5nm,0.3s,baz=226,slow=16,SNR=33							
BRTR				S		**Sn**	**03 25 31.1 -7.0**	
	1.2nm,0.3s,baz=213,slow=25,SNR=10							
COBT	**Iskenderun**	**5.80**	**77**	*i* P		**Pn**	**03 24 38.2 +1.1**	
COBT				*i* S		**Sn**	**03 25 36.8 -8.2**	
HRI	**Mount Hermon**	**5.80**	**110**	Sn		**Sn**	**03 25 42.4 -2.6**	
KSHT	**Keshet**	**5.98**	**112**	Sn		**Sn**	**03 25 47.8 -1.6**	
HMDT	**Nahal Hemdat**	**6.12**	**119**	Sn		**Sn**	**03 25 53.4 +0.3**	
KZIT	**Kziot**	**6.26**	**135**	Sn		**Sn**	**03 25 56.5 0.0**	
SVTA	**Shivta**	**6.37**	**133**	Sn		**Sn**	**03 25 59.1 -0.2**	
MZDA	**Masada**	**6.58**	**127**	Sn		**Sn**	**03 26 05.4 +1.0**	
MKRJ	**Makawir**	**6.61**	**124**	Sn		**Sn**	**03 26 07.2 +2.0**	
PRNI	**Paran**	**7.02**	**135**	Sn		**Sn**	**03 26 14.1 -1.4**	
KMTI	**Karmit**	**7.05**	**137**	Sn		**Sn**	**03 26 15.5 -0.7**	
ASF	**Jabal al Asfar**	**7.16**	**115**	P		**Pn**	**03 25 02.3 +5.9**	
	1.0nm,0.3s,baz=187,slow=20,SNR=7.2							
ASF				S		**Sn**	**03 26 23.2 +4.1**	
	0.8nm,0.3s,baz=322,slow=19,SNR=3.1							
MBH	**Mount Berech**	**7.39**	**138**	Sn		**Sn**	**03 26 26.2 +1.3**	
EIL	**Elat**	**7.51**	**138**	Sn		**Sn**	**03 26 27.2 -0.5**	
PGF	**Pioggiola**	**17.23**	**300**	*e*P		**P**	**03 27 08.3 -3.1**	
GERES	**GERESS Array B**	**17.62**	**324**	P		**P**	**03 27 17.3 +1.2**	
	0.2nm,0.3s,baz=135,slow=11,SNR=11							
SBF	**Sospel**	**18.73**	**303**	*e*P		**P**	**03 27 29.9 -0.1**	
	43nm,1.1s							
MBDF	**Montbardon**	**19.48**	**305**	*e*P		**P**	**03 27 38.3 -0.5**	
LPG	**La Plagne**	**19.78**	**307**	*e*P		**P**	**03 27 40.9 -1.3**	
LPL	**La Plagne**	**19.80**	**307**	*e*P		**P**	**03 27 41.5 -0.9**	
	6.3nm,0.7s							
MOX	**Moxa**	**19.84**	**325**	*i* P		**P**	**03 27 40.7 -2.1**	
	logA/T=1.1							
MOX				L			03 39 37.0	
MOX	**Moxa**	**19.84**	**325**	*e*P		**P**	**03 27 40.7 -2.1**	
	22nm,1.8s							
ORIF	**Oris-en-Rattie**	**20.14**	**305**	*e*P		**P**	**03 27 45.5 -0.6**	
CABF	**La Chapelle**	**20.65**	**310**	*e*P		**P**	**03 27 49.1 -2.3**	
	9.5nm,0.8s							
VIVF	**Saint-Julien-l**	**20.93**	**304**	*e*P		**P**	**03 27 52.6 -1.7**	
SMF	**Signal de Mont**	**22.09**	**308**	*e*P		**P**	**03 28 04.0 -2.0**	
	23nm,1.1s,mb4.2							
LOR	**Lormes**	**22.31**	**310**	*e*P		**P**	**03 28 06.6 -1.6**	
AVF	**Avril sur Loir**	**22.45**	**308**	*e*P		**P**	**03 28 08.7 -0.9**	
	6.8nm,0.9s,mb3.8							
SSF	**Saint Saulge**	**22.45**	**309**	*e*P		**P**	**03 28 08.6 -1.0**	
	7.1nm,0.8s,mb3.8							
BGF	**Bois d'Agland**	**22.70**	**307**	*e*P		**P**	**03 28 11.4 -0.6**	
RJF	**Les Rejaudoux**	**23.20**	**304**	*e*P		**P**	**03 28 17.0 +0.1**	
ESDC	**Sonseca Array**	**26.56**	**289**	P		**P**	**03 28 50.1 +1.1**	
	1.8nm,0.6s,mb3.8,baz=83,slow=9.4,SNR=8.8							
MKAR	**Makanchi Array**	**40.83**	**57**	P		**P**	**03 30 51.6 -0.9**	
	0.4nm,0.7s,mb3.2,baz=270,slow=5.8,SNR=2.3							
DBIC	**Dimbokro**	**42.41**	**236**	P		**P**	**03 31 09.5 +3.7**	
	5.6nm,1.0s,mb4.2,baz=22,slow=5.4,SNR=4.2							
DBIC	**Dimbokro**	**42.41**	**236**	P		**P**	**03 31 09.5 +3.7**	

JMA 12 03:30:09.7±0.2, 39.12N×144.40E, h44km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyako 2**	**2.05**	**284**	P	P	03 30 42.9	+0.5
MIYJ				*e*S	S	03 31 07.3	+0.4
JTH	**Tanohata**	**2.12**	**293**	P	P	03 30 43.7	+0.2
JTH				*e*S	S	03 31 09.4	+0.6
OFUJ	**Ofunato**	**2.12**	**270**	P	P	03 30 43.9	+0.4
OFUJ				*e*S	S	03 31 09.2	+0.4
JOM	**Ohasama**	**2.44**	**279**	P	P	03 30 48.8	+0.8
JOM				*e*S	S	03 31 17.5	+0.8
JMK	**Ichinoseki**	**2.48**	**267**	P	P	03 30 49.2	+0.6
JMK				*e*S	S	03 31 18.5	+0.6
JMM	**Marumori**	**3.10**	**247**	P	P	03 30 56.6	-0.7
JMM				*e*S	S	03 31 32.2	-1.2
JCH	**Churui**	**3.58**	**348**	P	P	03 31 02.6	-1.6
JCH				*e*S	S	03 31 41.5	-4.2

IDC ***12*** *03:32:39.1±4.9, 39.97N×141.87E, h61km±45km, mb2.9/4, mb1 3.2/5, mb1mx3.1/23, ML3.2/1, Error ellipse: s-maj=41.2km s-min=27.5km az=116.0*

JMA ***12*** *03:32:40.3, 40.14N×141.95E, h62km±1km, M3.6 Broadband fault plane solution: P waves. NP1:φ6°, δ38°, λ77°. NP2:φ202°, δ53°, λ100°. Principal axes: T Plg79°, Azm151°; N Plg8°, Azm16°; P Plg8°, Azm285°.*

JMA Felt II J1.

NEIC ***12*** *03:32:44.1±2.0, 39.99N×141.85E, h108km±21km Error ellipse: s-maj=30.1km s-min=20.8km az=115.0*

ISC 12 03:32:39.4±0.7, 40.17N±0.04×142.01E±0.10, h66km±5km, n18, σθ°70/26, mb3.2/4, 3C-3D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JTH	**Tanohata**	**0.25**	**206**	⇑P	**P**	**03 32 50.3**	**+0.5**
JTH				*e*S	**S**	**03 32 57.2**	**-0.3**
JANG	**Nango**	**0.43**	**299**	⇑P	**P**	**03 32 51.5**	**+0.3**
JANG				S	**S**	**03 32 59.7**	**-0.2**
JKZ	**Kuzumaki**	**0.55**	**251**	⇑P	**P**	**03 32 52.6**	**+0.1**
JKZ				S	**S**	**03 33 01.4**	**-0.6**
JOM	**Ohasama**	**0.89**	**219**	P	**P**	**03 32 56.3**	**-0.1**
JOM				S	**S**	**03 33 08.2**	**-0.8**
JTM	**Tenmabayashi**	**0.95**	**311**	⇓P	**P**	**03 32 57.5**	**+0.3**
JTM				S	**S**	**03 33 10.3**	**-0.1**
JAH	**Hinai**	**1.05**	**272**	⇓P	**P**	**03 32 58.5**	**-0.1**
JAH				S	**S**	**03 33 12.7**	**-0.1**
JMK	**Ichinoseki**	**1.36**	**207**	⇓P	**P**	**03 33 02.4**	**-0.5**
JOT	**Ohata**	**1.41**	**329**	P	**P**	**03 33 03.9**	**+0.3**
JIW	**Iwasaki**	**1.58**	**286**	P	**P**	**03 33 06.1**	**+0.2**
ASAJ	**Asahikawa**	**3.97**	**6**	P	**P**	**03 33 40.3**	**+1.0**
	1.2nm,0.3s,baz=169,slow=19,SNR=3.6						
MAJO	**Matsushiro**	**4.69**	**221**	*e*P	**P**	**03 33 49.7**	**+0.3**
MAT	**Matsushiro**	**4.69**	**221**	P	**P**	**03 33 49.6**	**+0.2**
MAT				*e*S	**S**	**03 34 45.1**	**+2.1**
MAT	**Matsushiro**	**4.69**	**221**	*e*P	**P**	**03 33 50.0**	**+0.6**
MAT				S	**S**	**03 34 45.0**	**+2.0**
MKAR	**Makanchi Array**	**42.92**	**299**	P	**P**	**03 40 31.6**	**-1.3**
	0.5nm,0.8s,mb3.3,baz=84,slow=11,SNR=5.0						
ILAR	**Eielson Array**	**46.62**	**34**	P	**P**	**03 41 02.6**	**+0.3**
	0.2nm,0.8s,mb2.9,baz=267,slow=7.1,SNR=4.5						
WRA	**Warramunga Arr**	**60.22**	**188**	P	**P**	**03 42 39.5**	**-3.6**
	0.4nm,1.0s,mb3.4,baz=4.1,slow=7.1,SNR=6.7						
YKA	**Yellowknife Ar**	**60.88**	**31**	P	**P**	**03 42 46.3**	**-0.7**
	0.1nm,0.4s,mb3.2,baz=300,slow=7.2,SNR=4.1						
YKA	**Yellowknife Ar**	**60.88**	**31**	P	**P**	**03 42 46.3**	**-0.7**

TIF ***12*** *03:42:01.7, 41.56N×47.51E, h20km, Mpv5.2*

IDC ***12*** *03:42:01.3±1.3, 41.45N×47.77E, mb3.8/5, mb1 3.8/8, mb1mx3.6/21, ML3.7/2, Error ellipse: s-maj=27.5km s-min=10.8km az=143.0*

NEIC ***12*** *03:42:04.3±0.8, 41.81N×47.76E, h10km, mb4.0/3, Error ellipse: s-maj=16.2km s-min=9.4km az=166.0*

MOS ***12*** *03:42:06.5±1.6, 41.78N×47.72E, h45km, mb4.3/1, Error ellipse: s-maj=11.3km s-min=6.6km az=108.7*

NNC ***12*** *03:42:08.3±3.8, 41.77N×48.16E, h23km±55km, Error ellipse: s-maj=47.1km s-min=20.3km az=71.0*

ISC 12 03:42:01.4±0.4, 41.59N±0.04×47.90E±0.03, h10km, n51, σ1θ°36/70, mb3.6/7, 14C-5D, Eastern Caucasus

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SEKA	**Sheki**	**0.65**	**234**	*i* P	**Pb**	**03 42 11.5**	**-2.9**
	comp=Z,2μm,0.2s						
SEKA				S	**Sb**	**03 42 19.0**	**-4.3**
	comp=E,8μm,0.4s						
SHKI	**Saki**	**0.66**	**234**	*i* P	Px	03 42 29.5	
	comp=Z,1μm,0.6s						
SHKI				S	Sx	03 42 49.5	
	comp=N,1μm,1.0s						
ZKT	**Zaqatala**	**0.93**	**274**	*i* P	**Pb**	**03 42 16.0**	**-3.1**
	comp=Z,1μm,0.5s						
ZKT				S	**Sb**	**03 42 26.0**	**-5.3**
	comp=E,4μm,0.5s						
PRLS	**Pirkuli**	**0.96**	**147**	*i* P	**Pb**	**03 42 26.0**	**+6.4**
	comp=Z,300nm,0.2s						
PRLS				S	**Sb**	**03 42 43.0**	**+11**
	comp=E,900nm,0.2s						
GNBR	**Gunib**	**1.06**	**319**	P	**Pb**	**03 42 19.8**	**-1.6**
MNSR	**Manas**	**1.12**	**353**	⇓*i* P	**Pb**	**03 42 24.8**	**+2.4**
MNSR				*e*S	**Sb**	**03 42 42.0**	**+5.2**
XNZR	**Khunzakh**	**1.30**	**317**	P	**Pb**	**03 42 24.0**	**-1.5**
BUJR	**Buynaksk**	**1.37**	**335**	⇓*i* P	**Pb**	**03 42 26.0**	**-0.6**
BUJR				*i* S	**Sb**	**03 42 45.5**	**+1.5**
BUJR				pmax	pmax		
	comp=Z,964nm,0.2s						
MAK	**Makhachkala**	**1.40**	**348**	⇑*i* P	**Pn**	**03 42 28.0**	**+0.9**
MAK				*i*		03 42 48.1	
MAK				pmax	pmax		
	comp=Z,560nm,0.6s						
MAK				smax			
	comp=N,6μm,0.5s						
MAK				smax			
	comp=E,12μm,0.5s						
MGC	**Mingacevir**	**1.42**	**207**	*e*P	**Pn**	**03 42 21.0**	**-6.3**
MGC				S	**Sb**	**03 42 36.0**	**-9.5**
	comp=N,5μm,0.4s						
DBC	**Dubki**	**1.63**	**331**	P	**Pn**	**03 42 32.0**	**+1.6**
BTLR	**Botlikh**	**1.65**	**311**	⇓*i* P	**Pn**	**03 42 30.0**	**-0.6**
BTLR				*e*S	**Sn**	**03 42 56.0**	**+4.0**
BTLR				pmax	pmax		
	comp=Z,974nm,1.0s						
DLMR	**Dylym**	**1.75**	**328**	P	**Pn**	**03 42 33.8**	**+1.7**
BAK	**Baki**	**1.89**	**129**	*e*P	**Pn**	**03 42 40.0**	**+5.9**
	comp=Z,500nm,0.8s						
BAK				S	**Sn**	**03 43 13.0**	**+15**
	comp=N,2μm,1.0s						
DGRG	**David-gareji**	**1.91**	**267**	⇓*i* P	**Pn**	**03 42 34.5**	**+0.2**
DGRG				*i* S	**Sn**	**03 42 59.8**	**+1.3**
VAD	**Vardenisi**	**2.16**	**230**	*e*P	**Pn**	**03 42 36.3**	**-1.7**
VAD				*e*S	**Sn**	**03 43 05.3**	**+0.2**
MTA	**Mtatsminda**	**2.33**	**274**	⇑*i* P	**Pn**	**03 42 40.2**	**-0.2**
MTA				*i* S	**Sn**	**03 43 10.0**	**+0.6**
TI2	**Plekhanov**	**2.37**	**274**	⇑*i* P	**Pn**	**03 42 40.1**	**-0.8**
TI2				*i* S	**Sn**	**03 43 10.3**	**0.0**
TBLG	**Delisi**	**2.38**	**274**	⇑*i* P	**Pn**	**03 42 40.6**	**-0.4**
TBLG				*i* S	**Sn**	**03 43 10.8**	**+0.3**
STE	**Stepanavan**	**2.71**	**259**	*i* P	**Pn**	**03 42 45.0**	**-0.8**
GNI	**Garni**	**2.80**	**240**	Pn	**Pn**	**03 42 48.8**	**+1.7**
	comp=N,16nm,0.3s,baz=314,slow=2.7,SNR=24						
GNI				Sn	**Sn**	**03 43 21.8**	**+0.6**
	comp=N,28nm,0.3s,baz=182,slow=1.8,SNR=6.3						
GNI				Lg		03 43 24.9	
	comp=N,94nm,0.3s,baz=139,slow=18,SNR=11						
GNI	**Garni**	**2.80**	**240**	P	**Pn**	**03 42 48.8**	**+1.7**
GNI						03 43 24.9	
ZEI	**Tsey**	**3.20**	**293**	*e*P	**Pn**	**03 42 56.6**	**+3.8**
ZEI	**Tsey**	**3.20**	**293**	*i* P	**Pn**	**03 42 56.6**	**+3.8**
AKH	**Akhalkalaki**	**3.32**	**268**	⇑*i* P	**Pn**	**03 42 54.0**	**-0.5**
KIV	**Kislovodsk**	**4.51**	**303**	*e*P	**Pn**	**03 43 10.1**	**-1.3**
KIV				*e*		03 44 00.6	
KIV	**Kislovodsk**	**4.51**	**303**	*e*Pn	**Pn**	**03 43 10.1**	**-1.3**
KIV				*e*Sn	**Sn**	**03 44 00.6**	**-3.9**
GOF	**Gofitskoye**	**4.96**	**316**	*e*P	**Pn**	**03 43 17.5**	**-0.3**
GOF				*i* S	**Sn**	**03 44 17.5**	**+1.5**
GOF				pmax	pmax		
	comp=Z,20nm,1.0s						
GOF				smax			
	comp=N,120nm,1.2s						
AB31	**Akbulak array**	**11.40**	**44**	⇑Pn	**P**	**03 44 45.8**	**-1.6**
	comp=N,0.8nm,0.3s,baz=230,slow=12,SNR=63						
AB31				⇑Sn	**S**	**03 46 51.5**	**-4.4**
	comp=N,4.1nm,0.6s,baz=229,slow=22,SNR=4.1						
OBN	**Obninsk**	**15.46**	**335**	*e*P	**P**	**03 45 36.8**	**-4.1**
OBN				pmax	pmax		
	comp=Z,5.0nm,0.6s						
OBN	**Obninsk**	**15.46**	**335**	*e*P	**P**	**03 45 36.4**	**-4.5**
	comp=Z,12nm,0.6s						
AKASG	**Malin Array Be**	**15.79**	**312**	Pn	**P**	**03 45 42.3**	**-3.0**
	comp=Z,0.3nm,0.3s,baz=117,slow=12,SNR=3.8						
ARU	**Arti**	**16.38**	**21**	*e*P	**P**	**03 45 51.9**	**-0.9**
ARU	**Arti**	**16.38**	**21**	*e*P	**P**	**03 45 52.1**	**-0.7**
	comp=Z,3.9nm,0.4s						
KK31	**Karatay Array**	**16.78**	**77**	⇑P	**P**	**03 45 59.5**	**+1.6**
	comp=Z,1.0nm,0.5s,baz=269,slow=15,SNR=13						
KK31				⇓S	**S**	**03 49 01.8**	**-1.7**
	comp=Z,2.4nm,0.7s,baz=335,slow=40,SNR=6.2						
SVE	**Sverdlovsk**	**17.32**	**24**	*e*P	**P**	**03 46 02.3**	**-2.3**
ZRNK	**Zerenda**	**18.20**	**44**	⇑P	**P**	**03 46 15.0**	**-0.7**
	comp=Z,3.1nm,0.9s						
ZRNK				⇑S	**S**	**03 49 35.5**	**-0.5**
	comp=Z,3.8nm,1.3s						
ZRNK	**Zerenda**	**18.20**	**44**	*e*P	**P**	**03 46 15.0**	**-0.7**
BVAR	**Borovoye Array**	**18.97**	**45**	Pn	**P**	**03 46 26.1**	**+1.1**
	comp=Z,0.3nm,0.3s,baz=234,slow=12,SNR=6.3						
VOSK	**Vostochnaya**	**19.15**	**47**	⇑P	**P**	**03 46 25.6**	**-1.6**
	comp=Z,1.5nm,0.6s						
VOSK				⇑S	**S**	**03 49 56.6**	**-0.8**
	comp=Z,2.7nm,1.0s						
KURK	**Kurchatov**	**23.01**	**56**	P	**P**	**03 47 08.8**	**+1.6**
JOF	**Joensuu**	**23.51**	**341**	*e*p	**P**	**03 47 13.1**	**+1.2**
FINES	**FINESS Array B**	**23.86**	**333**	P	**P**	**03 47 15.7**	**+0.4**
	comp=Z,3.0nm,0.7s,mb3.8,baz=135,slow=9.8,SNR=14						
KAF	**Kangasniemi**	**24.27**	**335**	*e*p	**P**	**03 47 25.0**	**+5.6**
GERES	**GERESS Array B**	**25.00**	**299**	P	**P**	**03 47 28.0**	**+1.5**
	comp=Z,0.5nm,0.6s,mb3.2,baz=127,slow=13,SNR=3.4						
MK31	**Makanchi Array**	**25.07**	**66**	⇑P	**P**	**03 47 28.9**	**+1.8**
	comp=Z,0.9nm,0.5s,mb3.6,baz=274,slow=7.1,SNR=4.5						
MKAR	**Makanchi Array**	**25.07**	**66**	P	**P**	**03 47 29.2**	**+2.1**
	comp=Z,2.3nm,0.8s,mb3.8,baz=269,slow=8.3,SNR=11						
HFS	**Hagfors**	**27.99**	**323**	P	**P**	**03 47 53.3**	**-0.7**
	comp=Z,0.8nm,0.5s,mb3.6,baz=121,slow=8.6,SNR=5.9						
ULN	**Ulaanbaatar**	**41.59**	**61**	*e*P	**P**	**03 49 52.2**	**+1.5**
ULN				pmax	pmax		
	comp=Z,1.0nm,0.5s,mb3.7						
ULN	**Ulaanbaatar**	**41.59**	**61**	*e*P	**P**	**03 49 52.2**	**+1.5**
	comp=Z,1.3nm,0.5s,mb3.8						
YKA	**Yellowknife Ar**	**75.31**	**352**	P	**P**	**03 53 45.0**	**-0.8**
	comp=Z,0.3nm,0.5s,mb3.5,baz=13,slow=5.9,SNR=13						

IDC 12 03:44:58.8±2.7, 49.18S×106.06E, mb3.5/1, mb1 3.7/1, mb1mx3.5/10, Error ellipse: s-maj=172.0km s-min=57.1km az=125.0, Southeast Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ASAR	**Alice Springs**	**33.57**	**51**	P	P	03 51 40.0	-2.5
	0.3nm,0.4s,baz=210,slow=9.5,SNR=3.7						
NVAR	**Mina Array Bea**	**146.67**	**92**	PKPbc	PKPbc	04 04 42.8	+1.3
	0.7nm,0.7s,baz=233,slow=4.5,SNR=5.9						
TXAR	**Lajitas Array**	**149.92**	**120**	PKPbc	PKPdf	04 04 49.5	+1.9
	0.6nm,1.1s,baz=191,slow=6.4,SNR=3.9						
YKA	**Yellowknife Ar**	**154.08**	**44**	PKPbc	PKPdf	04 04 58.2	+5.7
	0.1nm,0.7s,baz=290,slow=2.2,SNR=3.8						
YKA				PKPab	PKPab	04 05 13.2	-1.6
	0.2nm,0.7s,baz=281,slow=4.2,SNR=3.8						

NEIC ***12*** *03:47:16.7, 28.13N×16.22W, h16km, MN1.5(MDD), After MDD.*

MDD 12 03:47:16.7±0.4, 28.16N×16.21W, h15km±12km, mb3.9/1, mbLg1.4/4, Error ellipse: s-maj=6.5km s-min=4.2km az=172.0, PRXIMO TT-MODEL: Canary, Canary Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CCAN	**Las Canadas**	**0.35**	**281**	P	Pb	03 47 23.7	-0.4
	SNR=25						
CCAN				S	Sb	03 47 28.4	-0.8
	8.0nm,0.1s,SNR=4.0						
CCAN	**Las Canadas**	**0.35**	**281**	P	Pb	03 47 23.7	-0.4
CCAN				S	Sb	03 47 27.6	-1.5
EBAJ	**Bajamar**	**0.40**	**343**	S	Sb	03 47 29.7	-0.7
	9.0nm,0.1s,SNR=7.5						
EBAJ	**Bajamar**	**0.40**	**343**	P	Pb	03 47 24.8	-0.1
EBAJ				S	Sb	03 47 30.2	-0.3
EOSO	**Osorio**	**0.59**	**98**	P	Pb	03 47 28.2	+0.1
	1.4nm,0.1s,SNR=4.0						
EOSO				S	Sb	03 47 34.3	-1.7
	5.0nm,0.2s,SNR=7.0						
EOSO	**Osorio**	**0.59**	**98**	P	Pb	03 47 27.6	-0.5
EOSO				S	Sb	03 47 34.4	-1.5
EGOM	**La Gomera**	**0.88**	**270**	P	Pb	03 47 29.0	-4.1
	0.6nm,0.1s,SNR=4.0						
EGOM				S	Sb	03 47 42.9	-1.5
	1.1nm,0.1s,SNR=4.0						
EGOM	**La Gomera**	**0.88**	**270**	P	Pb	03 47 29.1	-4.1
EGOM				S	Sb	03 47 42.7	-1.7

IDC 12 03:54:57.3±5.4, 49.39S×102.29E, mb4.0/1, mb1 4.2/1, mb1mx3.6/10, Error ellipse: s-maj=379.0km s-min=55.0km az=85.0, Southeast Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
VNDA	**Vanda**	**35.82**	**161**	P	P	04 01 57.8	-2.1
	1.6nm,0.7s,baz=296,slow=8.6,SNR=8.3						
NVAR	**Mina Array Bea**	**149.12**	**95**	PKPbc	PKPdf	04 14 46.8	+2.3
	0.7nm,0.8s,baz=231,slow=5.8,SNR=5.0						
TXAR	**Lajitas Array**	**151.88**	**126**	PKP	PKPdf	04 14 46.8	-2.3
	2.8nm,1.4s,baz=315,slow=1.3,SNR=3.2						
TXAR				PKPbc	PKPdf	04 14 53.9	+4.9
	0.2nm,0.7s,baz=170,slow=5.5,SNR=4.8						
YKA	**Yellowknife Ar**	**155.93**	**43**	PKPbc	PKPdf	04 15 03.3	+10
	0.1nm,0.5s,baz=256,slow=2.5,SNR=3.1						

IDC ***12*** *03:57:37.9±1.3, 49.35S×105.96E, mb4.1/5, mb1 4.3/5, mb1mx4.1/11, MS3.8/5, Ms1 3.8/5, ms1mx3.5/12, Error ellipse: s-maj=52.2km s-min=24.8km az=98.0*

NEIC ***12*** *03:57:39.5±0.6, 49.35S×106.07E, h10km, mb4.3/2, Error ellipse: s-maj=27.5km s-min=11.8km az=112.0*

ISC 12 03:57:37.7±1.0, 49.3S±0.1×106.1E±0.4, h10km, n19, σθ°54/8, mb4.2/6, MS3.8/5, Southeast Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MAW	**Mawson**	**28.19**	**214**	LR	LR	04 12 11.4	
	comp=Z,215nm,19.0s,MS3.8,baz=176,slow=31						
STKA	**Stephens Creek**	**31.74**	**70**	LR	LR	04 14 44.1	
	comp=Z,167nm,19.2s,MS3.7,baz=206,slow=32						
ASAR	**Alice Springs**	**33.67**	**51**	P	**P**	**04 04 20.7**	**0.0**
	1.2nm,0.7s,mb3.9,baz=210,slow=8.0,SNR=7.4						
ASAR				LR	LR	04 15 02.6	
	comp=Z,134nm,22.0s,MS3.6,baz=210,slow=31						
FITZ	**Fitzroy Crossi**	**34.94**	**34**	P	**P**	**04 04 32.9**	**+1.2**
	3.2nm,1.1s,mb4.2,baz=192,slow=9.5,SNR=3.2						
VNDA	**Vanda**	**35.08**	**162**	P	**P**	**04 04 32.3**	**-0.1**
	3.9nm,1.1s,mb4.3,baz=282,slow=8.8,SNR=10						
VNDA				LR	LR	04 17 49.1	
	comp=Z,181nm,18.8s,MS3.9,baz=288,slow=34						
VNDA	**Vanda**	**35.08**	**162**	*e*P	**P**	**04 04 32.3**	**-0.1**
	5.3nm,1.4s,mb4.3						
VNDA				LR	LR	04 17 49.1	
WRA	**Warramunga Arr**	**37.02**	**48**	P	**P**	**04 04 49.2**	**-0.1**
	1.6nm,0.8s,mb3.9,baz=209,slow=7.9,SNR=6.9						
WRA				LR	LR	04 18 11.7	
	comp=Z,172nm,18.8s,MS3.9,baz=270,slow=33						
WRAB	**Tennant Creek**	**37.04**	**48**	*e*P	**P**	**04 04 48.8**	**-0.6**
	8.0nm,1.0s,mb4.5						
SNAA	**Sanae**	**49.42**	**203**	*e*P	**P**	**04 06 29.1**	**+0.2**
CMAR	**Chiang Mai Arr**	**67.79**	**353**	P	**P**	**04 08 37.4**	**-0.5**
	0.9nm,0.3s,mb4.3,baz=172,slow=5.3,SNR=4.6						
ILAR	**Eielson Array**	**139.96**	**40**	PKP	PKPdf	04 17 07.5	-0.7
	0.2nm,0.9s,baz=180,slow=1.8,SNR=4.0						
INK	**Inuvik**	**145.62**	**35**	PKPbc	PKPbc	04 17 16.3	+0.9
	3.4nm,1.2s,baz=267,slow=4.5,SNR=6.6						
INK	**Inuvik**	**145.62**	**35**	*e*PKPdf	PKPdf	04 17 15.9	-1.9
INK				PKPbc	PKPbc	04 17 16.3	+0.9
NVAR	**Mina Array Bea**	**146.66**	**92**	PKPbc	PKPbc	04 17 21.2	+2.4
	1.4nm,0.7s,baz=202,slow=4.4,SNR=10.0		

	4.4nm,0.2s							
ALFC				S		Sn	04 27 56.5	+0.8
ALFC	**Alevga**	**2.75**	**99**	*i*P		**Pn**	**04 27 23.6**	**+2.0**
ALFC				S		**Sn**	**04 27 56.5**	**+0.8**
HDMB	**Hadim**	**2.91**	**62**	*e*PN		**Pn**	**04 27 22.3**	**-1.5**
MANT	**Manisa**	**2.91**	**349**	*i* P		**Pn**	**04 27 30.8**	**+7.0**
MANT				S		**Sn**	**04 27 55.3**	**-4.5**
LEF	**Lefka**	**2.99**	**99**	*e*PN		**Pn**	**04 27 21.8**	**-3.2**
SZAC	**Souni-Zanaja**	**3.08**	**105**	P		**Pn**	**04 27 28.8**	**+2.6**
	3.1nm,0.2s							
SZAC				S		**Sn**	**04 28 05.0**	**+1.1**
KRIS	**Kristallenia**	**3.12**	**263**	*e*Pn		**Pn**	**04 27 31.0**	**+4.2**
SANT	**Santorini**	**3.19**	**284**	Pn		**Pn**	**04 27 26.0**	**-1.8**
IZM	**Izmir**	**3.20**	**330**	*e*PN		**Pn**	**04 27 28.1**	**+0.2**
KDAG	**Bornova**	**3.20**	**330**	*i* P		**Pn**	**04 27 33.4**	**+5.4**
APE	**Apeiranthos**	**3.35**	**296**	*e*PN		**Pn**	**04 27 30.8**	**+0.7**
CSS	**Prodhromos**	**3.38**	**100**	⇑P		**Pn**	**04 27 32.4**	**+1.9**
	0.9nm,0.3s							
CSS				S		**Sn**	**04 28 11.3**	**-0.3**
CSS	**Prodhromos**	**3.38**	**100**	⇑*i*P		**Pn**	**04 27 32.4**	**+1.9**
CSS				S		**Sn**	**04 28 11.3**	**-0.3**
KONT	**Konya--Tatoy**	**3.38**	**46**	*e*PN		**Pn**	**04 27 29.4**	**-1.1**
AKS	**Akhisar**	**3.44**	**341**	*e*PN		**Pn**	**04 27 32.0**	**+0.6**
IDI	**Anoyia**	**3.60**	**266**	Pn		**Pn**	**04 27 37.0**	**+3.3**
	7.8nm,0.3s,baz=77,slow=14,SNR=32							
IDI				Sn		**Sn**	**04 28 18.1**	**+0.9**
	7.1nm,0.3s,baz=326,slow=15,SNR=7.9							
IKL	**Isikli**	**3.62**	**79**	*e*PN		**Pn**	**04 27 32.0**	**-2.0**
KIZT	**Kizilcal**	**3.85**	**32**	*e*PN		**Pn**	**04 27 37.0**	**-0.2**
ESKT	**Eskisehir**	**4.08**	**17**	*e*PN		**Pn**	**04 27 40.1**	**-0.3**
ESKT	**Eskisehir**	**4.08**	**17**	*i* P		**Pn**	**04 27 40.0**	**-0.4**
ULDT	**Uludag**	**4.50**	**359**	*i* P		**Pn**	**04 27 51.0**	**+4.5**
NIG	**Nigde**	**4.94**	**58**	*e*PN		**Pn**	**04 27 51.3**	**-1.3**
KAMT	**Kaman**	**5.13**	**42**	*e*PN		**Pn**	**04 27 55.3**	**-0.1**
BRTR	**Keskin Array B**	**5.35**	**39**	Pn		**Pn**	**04 27 58.3**	**-0.2**
	1.4nm,0.3s,baz=227,slow=16,SNR=21							
BRTR				Pg		**Pg**	**04 28 07.6**	**-15**
	0.7nm,0.3s,baz=187,slow=12,SNR=8.9							
BRTR				Sn		**Sn**	**04 28 57.5**	**-3.9**
	2.7nm,0.3s,baz=224,slow=25,SNR=20							
ASF	**Jabal al Asfar**	**7.21**	**116**	Pn		**Pn**	**04 28 30.3**	**+5.6**
	0.8nm,0.3s,baz=231,slow=6.5,SNR=2.5							
ASF				Sn		**Sn**	**04 29 54.8**	**+6.9**
	0.8nm,0.3s,baz=90,slow=20,SNR=2.9							
VAE	**Valguarnera**	**12.10**	**283**	LR		LR	04 34 34.0	
	comp=Z,40nm,20.5s,baz=313,slow=40							
GERES	**GERESS Array B**	**17.48**	**324**	Pn		**P**	**04 30 42.3**	**+0.3**
	0.1nm,0.3s,baz=131,slow=12,SNR=6.2							
MBDF	**Montbardon**	**19.40**	**305**	*e*P		**P**	**04 31 04.6**	**-0.9**
	4.7nm,0.6s							
LPG	**La Plagne**	**19.69**	**307**	*e*P		**P**	**04 31 06.3**	**-2.5**
	4.3nm,0.6s							
LPL	**La Plagne**	**19.71**	**307**	*e*P		**P**	**04 31 06.5**	**-2.6**
	6.2nm,0.6s							
ORIF	**Oris-en-Rattie**	**20.06**	**305**	*e*P		**P**	**04 31 07.8**	**-5.1**
CABF	**La Chapelle**	**20.55**	**309**	*e*P		**P**	**04 31 15.0**	**-3.0**
	7.9nm,0.6s							
VIVF	**Saint-Julien-l**	**20.86**	**304**	*e*P		**P**	**04 31 17.5**	**-3.7**
	4.8nm,0.6s							
SMF	**Signal de Mont**	**22.00**	**308**	*e*P		**P**	**04 31 30.4**	**-2.3**
	6.6nm,0.5s,mb4.0							
SSF	**Saint Saulge**	**22.36**	**309**	*e*P		**P**	**04 31 35.1**	**-1.2**
AVF	**Avril sur Loir**	**22.36**	**308**	*e*P		**P**	**04 31 35.1**	**-1.2**
HFS	**Hagfors**	**26.51**	**342**	P		**P**	**04 32 12.8**	**-3.1**
	1.5nm,0.6s,mb3.7,baz=160,slow=17,SNR=3.1							
ESDC	**Sonseca Array**	**26.54**	**289**	P		**P**	**04 32 15.3**	**-1.1**
	0.8nm,0.5s,mb3.5,baz=77,slow=10,SNR=5.3							
MKAR	**Makanchi Array**	**40.70**	**57**	P		**P**	**04 34 18.3**	**-0.6**
	0.4nm,0.8s,mb3.1,baz=280,slow=7.2,SNR=3.0							

*ATH **12** 04:31:53.9,36.22N×25.45E,h10km,MD3.3/3*
*NEIC **12** 04:31:56.3±0.9,36.03N×25.38E,h10km,MD3.3(ATH), Error ellipse: s-maj=13.5km s-min=8.0km az=85.0*
*THE **12** 04:31:56.8,36.02N×25.42E,h6km*
ISC 12 04:31:56.6±0.7,36.04N±0.03×25.3E±0.1,h10km,n7, σ0§60/9,Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID			Time		Res
				Op		ISC	h	m	s ISC
THR6	**Thira Island,**	**0.32**	**8**	*e*Pg		**Pg**	**04 32 03.5**		**+0.3**
THR1	**Thera Island**	**0.34**	**16**	*e*Pg		**Pg**	**04 32 03.8**		**+0.1**
THR1				*e*Sg		**Sg**	**04 32 08.9**		**+0.5**
SANT	**Santorini**	**0.34**	**16**	*e*Pg		**Pg**	**04 32 03.3**		**-0.4**
NPS	**Neapolis**	**0.81**	**164**	*e*PB		**Pb**	**04 32 11.7**		**-0.5**
KRIS	**Kristallenia**	**0.87**	**171**	*e*Pg		**Pg**	**04 32 13.2**		**-0.8**
KRIS				*e*Sg		**Sg**	**04 32 26.5**		**+0.8**
VAM	**Vamos**	**1.12**	**236**	*e*PB		**Pb**	**04 32 18.5**		**+0.8**
VLI	**Veliai**	**2.06**	**290**	*e*PN		**Pn**	**04 32 31.0**		**-0.7**

*IDC **12** 04:42:55.7±1.2,16.56S×73.59W,h26km±5km,mb3.9/4, mb1 4.2/6,mb1mx3.8/16,ML4.4/2,Error ellipse: s-maj=49.6km s-min=22.6km az=34.0*
*NEIC **12** 04:42:58.2±2.4,16.72S×73.71W,h53km±20km,Error ellipse: s-maj=25.3km s-min=22.0km az=88.0*
ISC 12 04:42:53.2±1.0,16.99S±0.08×73.96W±0.08,h33km,n13, σ1§11/14,mb4.0/4,Near coast of Peru

Code	Station Name	Δ°	AZ°	Phase ID			Time		Res
				Op		ISC	h	m	s ISC
ARE	**Arequipa**	**2.42**	**78**	*e*P		**P**	**04 43 31.0**		**-0.2**
ARE				*i* S		**S**	**04 43 59.0**		**-1.0**
LPAZ	**La Paz**	**5.63**	**84**	Pn		**Pn**	**04 44 18.1**		**+1.2**
	3.8nm,0.3s,baz=275,slow=11,SNR=101								
LPAZ				Sn		**Sn**	**04 45 24.4**		**+3.2**
	baz=229,slow=15,SNR=0.9								
LPAZ	**La Paz**	**5.63**	**84**	*e*Pn		**Pn**	**04 44 17.6**		**+0.7**
LPAZ				*e*			04 44 21.6		
LPAZ				Sn		**Sn**	**04 45 24.4**		**+3.2**
LVC	**Limon Verde**	**7.34**	**140**	Pn		**Pn**	**04 44 42.5**		**+1.6**
	1.7nm,0.3s,baz=299,slow=10.0,SNR=42								
LVC				Sn		**Sn**	**04 46 02.8**		**-1.0**
	4.8nm,0.3s,baz=93,slow=18,SNR=8.2								
LVC				Lg			04 46 57.9		
	baz=173,slow=21,SNR=3.2								
LVC	**Limon Verde**	**7.34**	**140**	*e*Pn		**Pn**	**04 44 43.6**		**+2.7**
LVC				Sn		**Sn**	**04 46 02.8**		**-1.0**
LVC				Lg			04 46 57.9		
BDFB	**Brasilia**	**24.93**	**91**	P		**P**	**04 48 14.5**		**-0.5**
	2.4nm,0.6s,mb3.9,baz=265,slow=8.5,SNR=6.2								
TXAR	**Lajitas Array**	**54.26**	**328**	P		**P**	**04 52 18.1**		**-0.3**
	0.3nm,0.5s,mb3.5,baz=154,slow=8.8,SNR=6.5								
DBIC	**Dimbokro**	**72.21**	**77**	P		**P**	**04 54 16.4**		**-0.9**
	3.0nm,0.6s,mb4.4,baz=252,slow=7.0,SNR=7.9								
DBIC				pP		pP	04 54 24.2		-3.3
	4.1nm,0.7s,baz=243,slow=3.4,SNR=2.5								
YKA	**Yellowknife Ar**	**85.42**	**342**	P		**P**	**04 55 28.6**		**+0.4**
	1.2nm,0.6s,mb4.2,baz=136,slow=5.4,SNR=42								
YKA				pP		pP	04 55 37.7		-1.1
	0.8nm,0.6s,baz=141,slow=5.2,SNR=9.4								
WRA	**Warramunga Arr**	**133.96**	**218**	PKP		PKPdf	05 02 12.1		+4.0
	0.4nm,0.5s,baz=144,slow=1.8,SNR=7.4								
WRA				pPKP			05 02 21.4		
	0.2nm,0.6s,baz=24,slow=2.3,SNR=1.5								
MKAR	**Makanchi Array**	**144.37**	**28**	PKP		PKPdf	05 02 26.3		+0.3
	1.2nm,1.1s,slow=1.4,SNR=3.3								
SONM	**Songino Array**	**149.24**	**360**	PKPbc		PKPdf	05 02 41.4		+7.4
	1.4nm,0.5s,baz=333,slow=2.8,SNR=5.0								
SONM	**Songino Array**	**149.24**	**360**	PKPbc		PKPdf	05 02 41.4		+7.4

*IDC **12** 05:00:37.8±1.6,14.27S×166.89E,mb4.5/7,mb1 4.7/8, mb1mx4.3/17,ML3.4/1,MS3.8/7,Ms1 3.8/7,ms1mx3.6/18, Error ellipse: s-maj=56.5km s-min=23.4km az=140.0*
*NEIC **12** 05:00:52.0±7.1,14.12S×166.40E,h96km±58km,mb4.5/9, Error ellipse: s-maj=32.3km s-min=16.8km az=68.0*
ISC 12 05:00:39.6±5.1,14.13S±0.09×166.6E±0.1,h11km±30km, n40,σ0§83/26,mb4.6/13,MS3.7/6,1C,Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID			Time		Res
				Op		ISC	h	m	s ISC
BKM	**Butte a Klehm**	**3.88**	**155**	*i* P		**Pn**	**05 01 40.4**		**-0.1**
BKM				S		**Sn**	**05 02 26.6**		**0.0**
PMG	**Port Moresby**	**19.55**	**282**	P		**P**	**05 05 11.4**		**+1.0**
	0.3nm,0.3s,baz=102,slow=9.3,SNR=5.4								
PMG				LR		LR	05 12 19.6		
	comp=Z,290nm,18.2s,baz=58,slow=35								
CTA	**Charters Tower**	**20.28**	**250**	*e*P		**P**	**05 05 19.5**		**+1.3**
	11nm,1.0s								
CTA	**Charters Tower**	**20.28**	**250**	P		**P**	**05 05 19.2**		**+1.1**
	24nm,1.1s,baz=75,slow=12,SNR=5.5								
CTA				LR		LR	05 12 01.3		
	comp=Z,266nm,20.1s,MS3.6,baz=54,slow=33								

CTAO	**Charters Tower**	**20.28**	**250**	*e*P		**P**	**05 05 19.1**	**+0.9**
	32nm,1.3s							
URZ	**Urewera**	**25.80**	**161**	LR		LR	05 14 44.7	
	comp=Z,172nm,18.8s,MS3.6,baz=238,slow=33							
STKA	**Stephens Creek**	**28.87**	**228**	*e*P		**P**	**05 06 40.1**	**-0.4**
	11nm,0.5s,mb4.8							
STKA	**Stephens Creek**	**28.87**	**228**	P		**P**	**05 06 40.4**	**-0.1**
	16nm,0.7s,mb4.9,baz=42,slow=9.2,SNR=17							
STKA				LR		LR	05 17 54.2	
	comp=Z,277nm,20.0s,MS3.9,baz=28,slow=36							
WB2	**Warramunga Arr**	**31.29**	**255**	⇑*i*P		**P**	**05 07 01.0**	**-1.2**
WRA	**Warramunga Arr**	**31.30**	**255**	P		**P**	**05 07 01.2**	**-1.0**
	5.6nm,0.8s,mb4.4,baz=84,slow=8.8,SNR=25							
WRA				LR		LR	05 18 41.1	
	comp=Z,164nm,19.4s,MS3.7,baz=80,slow=34							
AS12	**Alice Springs**	**32.25**	**248**	*e*P		**P**	**05 07 08.7**	**-1.8**
	7.1nm,1.1s,mb4.4							
ASAR	**Alice Springs**	**32.25**	**248**	P		**P**	**05 07 09.4**	**-1.1**
	4.9nm,0.7s,mb4.5,baz=75,slow=9.6,SNR=33							
ASAR				LR		LR	05 19 54.6	
	comp=Z,119nm,18.9s,MS3.6,baz=161,slow=36							
FORT	**Forrest**	**39.01**	**238**	*e*P		**P**	**05 08 07.9**	**-0.2**
	67nm,0.6s,mb5.5							
FITZ	**Fitzroy Crossi**	**39.45**	**259**	*e*P		**P**	**05 08 11.3**	**-0.5**
	4.3nm,0.8s,mb4.2							
VNDA	**Vanda**	**63.45**	**181**	*e*P		**P**	**05 11 12.8**	**+1.4**
	1.1nm,0.8s,mb4.0							
SBA	**Scott Base**	**63.74**	**180**	*e*P		**P**	**05 11 13.9**	**+0.7**
	6.2nm,0.8s,mb4.7							
CMAR	**Chiang Mai Arr**	**74.07**	**294**	P		**P**	**05 12 19.1**	**+1.0**
	1.1nm,0.4s,mb4.1,baz=118,slow=4.7,SNR=7.5							
QSPA	**South Pole Qui**	**75.90**	**180**	*e*P		**P**	**05 12 27.2**	**-0.2**
	5.3nm,0.8s,mb4.5							
ILAR	**Eielson Array**	**86.17**	**18**	P		**P**	**05 13 20.1**	**-1.7**
	0.9nm,0.5s,mb4.2,baz=228,slow=5.7,SNR=12							
NVAR	**Mina Array Bea**	**87.41**	**49**	LR		LR	05 43 52.3	
	comp=Z,67nm,19.8s,MS4.0,slow=30							
GUN	**Gumba**	**88.50**	**299**	*e*P		**P**	**05 13 33.3**	**-0.7**
PKI	**Pulchoki**	**88.80**	**299**	*e*P		**P**	**05 13 35.8**	**+0.4**
	4.6nm,0.6s,mb5.0							
KKN	**Kakani**	**88.97**	**299**	*e*P		**P**	**05 13 36.6**	**+0.4**
DMN	**Daman**	**89.07**	**299**	*e*P		**P**	**05 13 37.3**	**+0.6**
	12nm,0.7s,mb5.3							
GKN	**Gorkha**	**89.58**	**299**	*e*P		**P**	**05 13 39.2**	**+0.1**
MKAR	**Makanchi Array**	**96.29**	**317**	P		**P**	**05 14 10.1**	**+0.6**
	1.0nm,0.8s,mb4.3,baz=91,slow=5.8,SNR=6.9							
MKAR	**Makanchi Array**	**96.29**	**317**	P		**P**	**05 14 10.1**	**+0.5**
ARCES	**ARCESS Array B**	**119.50**	**345**	PKP		PKPdf	05 19 29.1	-3.0
	4.4nm,0.9s,baz=45,slow=3.8,SNR=7.1							
NOA	**NORSAR Array B**	**129.86**	**345**	PKP		PKPdf	05 19 49.8	-2.5
	1.1nm,0.8s,baz=29,slow=2.0,SNR=3.6							
GERES	**GERESS Array B**	**138.79**	**333**	PKP		PKPdf	05 20 12.0	+2.7
	0.3nm,0.3s,baz=51,slow=2.5,SNR=4.4							
GERES				SKPbc			05 23 42.2	
	0.3nm,0.3s,baz=180,slow=1.3,SNR=4.8							
LOR	**Lormes**	**143.94**	**340**	*e*PKP1		PKPbc	05 20 15.3	+1.0
SSF	**Saint Saulge**	**144.23**	**340**	*e*PKP1		PKPbc	05 20 15.6	+0.4
SMF	**Signal de Mont**	**144.48**	**339**	*e*PKP1		PKPbc	05 20 16.2	+0.3
AVF	**Avril sur Loir**	**144.52**	**340**	*e*PKP1		PKPbc	05 20 15.6	-0.4
BGF	**Bois d'Agland**	**144.89**	**340**	*e*PKP1		PKPbc	05 20 17.7	+0.7
MBDF	**Montbardon**	**144.99**	**335**	*e*PKP1		PKPbc	05 20 18.2	+0.9
ORIF	**Oris-en-Rattie**	**145.19**	**336**	*e*PKP1		PKPbc	05 20 19.2	+1.3
	31nm,0.8s							
TCF	**Toulx Ste Croi**	**145.34**	**341**	*e*PKP1		PKPbc	05 20 19.1	+0.9
	11nm,1.0s							
LASF	**Ste Croix**	**146.69**	**337**	*e*PKP1		PKPbc	05 20 21.3	-0.2
	11nm,0.7s							
MTLF	**Montolieu**	**147.93**	**338**	*e*PKP1		PKPdf	05 20 25.5	+0.3

*PRU **12** 05:00:59.1,50.05N×18.37E*
WAR 12 05:00:58.4,50.06N×18.42E,h1km,1D,Location given by Central Institute of Mining, origin time based upon RAC,Poland

Code	Station Name	Δ°	AZ°	Phase ID			Time		Res
				Op		ISC	h	m	s ISC
RAC	**Raciborz**	**0.15**	**279**	⇓*i*Pg		Pg	05 01 02.0		+0.7
RAC				*e*Sg		Sg	05 01 05.0		+1.7
OKC	**Ostrava-Krasne**	**0.28**	**218**	*e*PG		Pg	05 01 04.2		+0.2
OJC	**Ojcow**	**0.90**	**79**	*e*Pg		Pg	05 01 15.1		-1.3
OJC				*e*Sg		Sg	05 01 28.7		+0.3
NIE	**Niedzica**	**1.39**	**117**	*e*Pg		Pg	05 01 24.6		-1.5
NIE				*e*Sg		Sg	05 01 44.1		-0.4
UPC	**Upice**	**1.61**	**287**	*e*PG		Pg	05 01 28.3		-2.2
UPC				*e*SG		Sg	05 01 50.3		-1.6
PRU	**Pruhonice**	**2.50**	**270**	*e*SG		Sg	05 02 15.9		-5.8
KHC	**Kasperske Hory**	**3.28**	**255**	*e*PG		Pg	05 02 00.0		-3.9
KHC				*e*SG		Sg	05 02 41.0		-6.7

MAN 12 05:33:40.3,7.97N×123.19E,h15km,mb4.4,ML3.3,MS3.0, 7C-1D,Mindanao

Code	Station Name	Δ°	AZ°	Phase ID			Time		Res
				Op		ISC	h	m	s ISC
PAGZ	**Pagadian**	**0.23**	**123**	⇑*e*P		Pb	05 33 46.8		+1.2
PAGZ				*e*S		Sb	05 33 51.0		+1.9
DCPH	**Dipolog City**	**0.63**	**151**	⇑*e*P		Pb	05 33 51.9		-0.5
DCPH				*e*S		Sb	05 34 00.2		-0.5
CTBH	**Cotabato--PC H**	**1.29**	**125**	⇑*i*P		Pb	05 34 03.6		-0.1
CTBH				*i* S		Sb	05 34 20.5		+0.6
SNPH	**Sibulan**	**1.36**	**2**	⇑*i*P		Pn	05 34 04.0		-0.9
SNPH				*i* S		Sb	05 34 06.0		-16
CGP	**Cagayan de Oro**	**1.57**	**72**	⇓*e*P		Pn	05 34 05.8		-2.0
CGP				*e*S		Sn	05 34 25.1		-2.8
TBP	**Tagbilaran**	**1.83**	**21**	*e*P		Pn	05 34 11.0		-0.6
TBP				*e*S		Sn	05 34 33.4		-1.3
MSLP	**Maasin**	**2.71**	**37**	⇑*e*P		Pn	05 34 24.4		+0.2
MSLP				*e*S		Sn	05 34 57.3		+0.4
CUYO	**Cuyo Island**	**3.57**	**323**	⇑*e*P		Pn	05 34 36.2		-0.2
ENPP	**El Nido**	**4.91**	**311**	⇑*e*P		Pn	05 34 54.9		-0.5

*IDC **12** 05:37:59.2±4.9,27.73S×176.08W,mb4.1/3,mb1 4.4/3, mb1mx4.0/11,MS3.4/2,Ms1 3.4/2,ms1mx2.8/21,Error ellipse: s-maj=295.0km s-min=29.8km az=158.0*
*NEIC **12** 05:38:00.3±0.6,27.84S×176.05W,h10km,mb4.4/3,Error ellipse: s-maj=24.7km s-min=15.3km az=111.0*
ISC 12 05:37:59.2±1.1,27.9S±0.2×176.1W±0.2,h10km,n13, σ1§16/6,mb4.2/5,MS3.4/1,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID			Time		Res
				Op		ISC	h	m	s ISC
SNZO	**South Karori**	**15.34**	**207**	*e*P		**P**	**05 41 37.1**		**-0.2**
	7.0nm,0.6s								
RAR	**Rarotonga**	**16.27**	**69**	LR		LR	05 45 36.4		
	comp=Z,136nm,20.0s,baz=134,slow=28								
ASAR	**Alice Springs**	**44.98**	**264**	P		**P**	**05 46 17.6**		**+0.9**
	3.0nm,1.2s,mb4.0,baz=95,slow=6.5,SNR=7.0								
ASAR				LR		LR	06 04 58.3		
	comp=Z,53nm,21.4s,MS3.4,baz=186,slow=36								
WRA	**Warramunga Arr**	**45.76**	**269**	P		**P**	**05 46 21.9**		**-0.8**
	1.6nm,0.9s,mb3.9,baz=108,slow=6.2,SNR=16								
SBA	**Scott Base**	**50.62**	**185**	P		**P**	**05 47 01.1**		**+1.2**
	7.9nm,1.5s,mb4.4								
QSPA	**South Pole Qui**	**62.17**	**180**	*e*P		**P**	**05 48 21.5**		**-1.1**
	3.7nm,0.9s,mb4.5								
NVAR	**Mina Array Bea**	**85.29**	**42**	P		**P**	**05 50 37.6**		**0.0**
	3.2nm,1.1s,mb4.3,baz=203,slow=7.6,SNR=8.7								
MKAR	**Makanchi Array**	**117.46**	**311**	PKP		PKPdf	05 56 45.1		-3.0
	0.4nm,0.6s,baz=90,slow=2.4,SNR=4.0								
BVAR	**Borovoye Array**	**125.78**	**317**	PKP		PKPdf	05 57 02.2		-1.9
	0.2nm,0.3s,baz=97,slow=1.6,SNR=3.9								
NB2	**NORSAR Subarra**	**146.53**	**354**	PKP			05 57 41.0		
	1.1nm,0.6s,baz=10.0,slow=2.9								
NOA	**NORSAR Array B**	**146.53**	**354**	PKPbc		PKPbc	05 57 40.8		+0.8
	1.2nm,0.6s,baz=12,slow=4.5,SNR=3.7								
HFS	**Hagfors**	**147.12**	**351**	PKPbc		PKPdf	05 57 42.1		-0.6
	3.6nm,0.7s,baz=180,slow=1.5,SNR=6.4								
AKASG	**Malin Array Be**	**150.26**	**327**	PKPbc		PKPdf	05 57 51.4		+3.3
	1.4nm,0.6s,baz=42,slow=2.3,SNR=11								

*LDG **12** 05:39:11.8±0.1,42.40N×1.99E,h7km,Md2.0/1,Ml1.8/5, Error ellipse: s-maj=1.2km s-min=1.0km az=175.0*
*NEIC **12** 05:39:11.8,42.40N×1.99E,h7km,ML1.8(LDG), MN1.3(MDD),After LDG.*
*MDD **12** 05:39:12.2±0.5,42.39N×1.97E,h1km±4km,mbLg1.4/6, Error ellipse: s-maj=4.0km s-min=2.9km az=79.0,PRXIMO*
ISC 12 05:39:10.8±0.6,42.43N±0.04×1.95E±0.04,h15km±7km, n17,σ0§93/23,Pyrenees

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

CLLI	**Llivia**	**0.05**	**23**	Pg		**Pg**	**05 39 14.0**	**+0.4**
CLLI				Lg			05 39 15.3	
	11nm,0.1s							
VALF	**Valcebollere**	**0.06**	**120**	P		**Pb**	**05 39 13.3**	**+0.1**
CBRU	**Bruguera**	**0.23**	**130**	Pg		**Pg**	**05 39 15.8**	**-0.2**
CBRU				Lg			05 39 18.6	
	17nm,0.1s							
CARF	**Carcanieres**	**0.31**	**22**	P		**Pg**	**05 39 18.7**	**+1.2**
CARF				S		**Sg**	**05 39 23.2**	**+1.3**
CORG	**Organya**	**0.51**	**247**	Pg		**Pg**	**05 39 22.0**	**+0.7**
EMIR	**Miracle**	**0.60**	**211**	Pg		**Pg**	**05 39 23.7**	**+0.6**
	2.2nm,0.1s,SNR=7.9							
EMIR				Lg			05 39 31.9	
	3.9nm,0.1s,SNR=7.9							
EMIR	**Miracle**	**0.60**	**211**	Pg		**Pg**	**05 39 23.7**	**+0.6**
EMIR				Lg			05 39 31.9	
EJON	**La Jonquera**	**0.70**	**88**	Pg		**Pg**	**05 39 25.1**	**+0.1**
	0.5nm,0.1s,SNR=7.9							
EJON				Lg			05 39 34.5	
	3.7nm,0.1s,SNR=7.9							
EJON	**La Jonquera**	**0.70**	**88**	Pg		**Pg**	**05 39 25.2**	**+0.2**
EJON				Lg			05 39 34.6	
MTLF	**Montolieu**	**0.93**	**12**	*e*Pg		**Pg**	**05 39 29.7**	**+0.2**
MTLF				*e*Sg		**Sg**	**05 39 42.3**	**+0.3**
	1.0nm,0.2s							
EPOB	**Poblet**	**1.26**	**211**	Pg		**Pg**	**05 39 34.7**	**-1.4**
	0.6nm,0.1s,SNR=7.9							
EPOB				Lg			05 39 51.4	
	2.2nm,0.2s,SNR=7.9							
EPOB	**Poblet**	**1.26**	**211**	Pg		**Pg**	**05 39 35.7**	**-0.3**
EPOB				Lg			05 39 51.9	
EPF	**Esparros**	**1.33**	**297**	*e*Pn		**Pn**	**05 39 35.9**	**+1.1**
EPF				*e*Pg		**Pg**	**05 39 37.3**	**-0.1**
EPF				*e*Sg		**Sg**	**05 39 55.5**	**+0.4**
	1.6nm,0.2s							
EPF	**Esparros**	**1.33**	**297**	Pg		**Pg**	**05 39 37.3**	**-0.1**
EPF				Lg			05 39 55.5	
	0.8nm,0.2s							
ETSF	**Etsaut**	**1.91**	**285**	*e*Pg		**Pg**	**05 39 48.1**	**-0.8**
ETSF				*e*Sg		**Sg**	**05 40 13.6**	**-0.8**
	2.9nm,0.2s							
LASF	**Ste Croix**	**2.16**	**40**	*e*Pg		**Pg**	**05 39 52.1**	**-1.8**
LASF				*e*Sg		**Sg**	**05 40 19.5**	**-3.2**
	0.4nm,0.2s							
CAF	**Calviac**	**2.49**	**2**	*e*Sg		**Sg**	**05 40 30.8**	**-3.1**
	0.4nm,0.2s							

IDC 12 05:43:05.4±11.0,22.63S×67.66E,mb3.8/4,mb1 4.0/4, mb1mx3.7/19,Error ellipse: s-maj=363.0km s-min=39.0km az=53.0,Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID			Time		Res
				Op		ISC	h	m	s ISC
FITZ	**Fitzroy Crossi**	**54.26**	**97**	P		P	05 52 33.0		-2.6
	1.5nm,0.8s,baz=226,slow=8.8,SNR=5.3								
ASAR	**Alice Springs**	**60.40**	**105**	P		P	05 53 16.9		-2.2
	0.7nm,0.7s,baz=268,slow=5.5,SNR=6.9								
WRA	**Warramunga Arr**	**61.72**	**101**	P		P	05 53 26.3		-1.8
	0

IDC ***12*** *06:16:43.2±1.7,39.22N×16.19E,mb3.8/3,mb1 3.9/4, mb1mx3.5/20,ML3.6/1,Error ellipse: s-maj=59.7km s-min=26.6km az=123.0*
NEIC ***12*** *06:16:54.5,38.37N×15.10E,h158km,MD3.0(ROM),After ROM.*

ROM 12 06:16:54.5±0.6,38.37N×15.10E,h158km±4km,MD3.0/2, ML2.4/3,2C,Error ellipse: s-maj=4.4km s-min=3.8km az=90.0,Sicily

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SLNA	**Salina**	**0.29**	**313**	*e*P	P	06 17 16.3	-0.1
	236nm,0.4s						
SLNA	**Salina**	**0.29**	**313**	*e*Pg	P	06 17 16.3	-0.1
SCLL	**Scilla**	**0.49**	**103**	*e*P	P	06 17 16.4	-0.8
SCLL				S	S	06 17 33.1	-1.5
	392nm,0.3s						
SCLL	**Scilla**	**0.49**	**103**	*e*Pg	P	06 17 16.4	-0.8
SCLL				*e*Sg	S	06 17 33.1	-1.6
MTTG	**Motta San Giov**	**0.59**	**128**	*e*P	P	06 17 17.6	-0.1
MTTG				S	S	06 17 34.6	-0.8
MTTG	**Motta San Giov**	**0.59**	**128**	*e*Pg	P	06 17 17.6	0.0
MTTG				*e*Sg	S	06 17 34.6	-0.9
SOI	**Samo**	**0.81**	**111**	*e*P	P	06 17 18.7	-0.2
SOI				S	S	06 17 36.7	-0.9
SOI	**Samo**	**0.81**	**111**	*e*Pg	P	06 17 18.7	-0.2
SOI				*e*Sg	S	06 17 36.7	-0.9
VAE	**Valguarnera**	**1.04**	**212**	Pn	P	06 17 22.2	+1.7
	16nm,0.3s,baz=270,slow=9.1,SNR=6.4						
VAE				Sn	S	06 17 45.2	+4.6
	8.0nm,0.3s,baz=37,slow=20,SNR=4.4						
GRI	**Girifalco**	**1.13**	**66**	*e*P	P	06 17 21.1	-0.3
	123nm,0.3s						
GRI	**Girifalco**	**1.13**	**66**	*e*Pg	P	06 17 21.1	-0.2
MGR	**Morigerati**	**1.80**	**11**	↑*i*P	P	06 17 27.8	-0.4
	23nm,0.4s						
MGR	**Morigerati**	**1.80**	**11**	↑*i*Pg	P	06 17 27.8	-0.5
SGO	**Sicignano**	**2.20**	**4**	*e*P	P	06 17 32.8	0.0
	16nm,0.5s						
SGO	**Sicignano**	**2.20**	**4**	*e*Pg	P	06 17 32.8	0.0
PTRP	**Pietrapertosa**	**2.28**	**19**	*e*P	P	06 17 34.8	+1.0
PTRP	**Pietrapertosa**	**2.28**	**19**	*e*Pg	P	06 17 34.8	+1.0
FINES	**FINESS Array B**	**24.09**	**13**	P	P	06 21 51.4	-4.8
	3.4nm,0.8s,baz=185,slow=9.7,SNR=16						
ARCES	**ARCESS Array B**	**31.73**	**7**	P	P	06 22 58.5	-6.6
	1.0nm,0.6s,baz=188,slow=8.6,SNR=4.0						
MKAR	**Makanchi Array**	**48.81**	**57**	P	P	06 25 20.8	-4.4
	0.4nm,0.4s,baz=281,slow=6.9,SNR=10						

NEIC ***12*** *06:20:41.8, 18.11N×68.26W,h86km,MD3.5(RSPR), After RSPR.*

RSPR 12 06:20:41.8,18.11N×68.26W,h86km±3km,M3.5,14C-1D, Mona Passage

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LSP	**Las Mesas**	**1.12**	**86**	↓*e*P	P	06 21 01.8	-1.1
LSP				S	S	06 21 02.1	-2.1
MGP	**Maguayo**	**1.12**	**95**	↑*e*P	P	06 21 02.1	-0.7
MGP				S	S	06 21 16.6	-2.0
LRS	**Lares**	**1.36**	**82**	↑*e*P	P	06 21 04.6	-1.4
LRS				S	S	06 21 20.9	-3.0
AOPR	**Arecibo Observ**	**1.45**	**80**	↑*e*P	P	06 21 05.9	-1.3
AOPR	**Arecibo Observ**	**1.45**	**80**	S	S	06 21 23.3	-2.7
PORP	**Portuguez**	**1.54**	**92**	↑*e*P	P	06 21 06.7	-1.7
PORP				S	S	06 21 25.7	-2.3
OBIP	**Obispado Ponce**	**1.57**	**92**	↑*e*P	P	06 21 07.1	-1.7
OBIP	**Obispado Ponce**	**1.57**	**92**	S	S	06 21 26.0	-2.7
CELP	**Cerrillos**	**1.60**	**91**	↑*e*P	P	06 21 07.2	-1.8
CELP				S	S	06 21 26.9	-2.3
CSB	**Colonia Sabana**	**2.01**	**84**	↑*e*P	P	06 21 12.6	-1.8
CSB				S	S	06 21 36.8	-1.8
SJG	**San Juan**	**2.01**	**90**	↑*e*P	P	06 21 13.3	-1.1
SJG				S	S	06 21 35.6	-2.9
SJG	**San Juan**	**2.01**	**90**	↑*e*P	P	06 21 12.5	-2.0
SJG	**San Juan**	**2.01**	**90**	S	S	06 21 36.5	-2.0
SJG	**San Juan**	**2.01**	**90**	↑*e*P	P	06 21 12.5	-2.0
SJG				S	S	06 21 36.5	-2.0
CPD	**Cerro la Pandu**	**2.23**	**91**	↑*e*P	P	06 21 16.9	-0.7
CPD				S	S	06 21 42.0	-2.1
CBYP	**Canovanas**	**2.29**	**86**	↑*e*P	P	06 21 17.0	-1.4
CBYP				S	S	06 21 43.1	-2.5
HUMP	**Col San Antoni**	**2.29**	**89**	↑*e*P	P	06 21 16.8	-1.7
HUMP				S	S	06 21 43.3	-2.4
MTP	**Monte Pirata**	**2.57**	**90**	↑*e*P	P	06 21 20.7	-1.6

IDC ***12*** *06:36:13.6±2.8,10.51S×111.40E,mb3.4/3,mb1 3.6/3, mb1mx3.4/15,Error ellipse: s-maj=137.0km s-min=27.3km az=45.0*
DJA ***12*** *06:36:16.0±1.1,11.24S×111.29E,h196km±129km, MD4.9/3,ML5.0/3,Error ellipse: s-maj=170.7km s-min=40.6km az=8.0*

ISC 12 06:36:22.2±3.3,10.7S±0.2×111.3E±0.2,h90km±31km,n6, σ0s79/9,mb3.2/3,3D,South of Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KELI	**Kelakatan**	**3.99**	**52**	↓*e*Pn	P	**06 37 23.4**	**+1.0**
	259nm,0.3s						
KELI				*e*Sn	S	**06 38 13.6**	**+5.3**
RATI	**Rata**	**4.61**	**65**	↓*e*Pn	P	**06 37 30.3**	**-0.6**
	411nm,0.2s						
RATI				*e*Sn	S	**06 38 24.7**	**+1.2**
KEDI	**Kedomdong**	**5.23**	**66**	↓*e*Pn	P	**06 37 38.6**	**-0.7**
	71nm,0.3s						
KEDI				*e*Sn	S	**06 38 37.9**	**-1.0**
WRA	**Warramunga Arr**	**24.03**	**115**	P	P	**06 41 29.4**	**-0.5**
	0.6nm,0.7s,mb3.0,baz=287,slow=11,SNR=7.5						
ASAR	**Alice Springs**	**25.11**	**124**	P	P	**06 41 41.1**	**+0.8**
	0.6nm,0.9s,mb3.0,baz=286,slow=8.7,SNR=5.1						
MKAR	**Makanchi Array**	**62.82**	**338**	P	P	**06 46 40.5**	**-0.1**
	0.3nm,0.3s,mb3.6,baz=148,slow=8.0,SNR=5.1						

ISK ***12*** *06:44:25.4,38.85N×43.86E,h5km,MD3.5*

ISC 12 06:44:25.7±1.7,38.96N±0.05×44.0E±0.1,h5km,n9, σ1s52/14,2C,Turkey-Iran border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TVAN	**Van**	**0.65**	**229**	↑*i*P	**Pg**	**06 44 38.1**	**-0.5**
TVAN				*i* S	**Sg**	**06 44 47.2**	**+0.1**
VANT	**Van**	**0.71**	**224**	PG	**Pg**	**06 44 38.1**	**-1.8**
AGRT	**Agri**	**1.04**	**309**	PG	**Pg**	**06 44 45.1**	**-1.3**
AGRT				SG	**Sg**	**06 45 00.2**	**0.0**
KARS	**Kars**	**1.80**	**337**	PN	**Pn**	**06 44 58.9**	**+1.2**
BTMT	**Batman**	**2.13**	**250**	*e*PN	**Pn**	**06 45 03.4**	**+1.1**
BTMT				*e*SN	**Sn**	**06 45 29.5**	**0.0**
ERZM	**Erzurum**	**2.27**	**296**	↑*i*P	**Pn**	**06 45 07.5**	**+3.2**
ERZM				*i* S	**Sn**	**06 45 37.6**	**+4.6**
EZM	**Erzurum**	**2.36**	**294**	*e*PN	**Pn**	**06 45 03.9**	**-1.8**
BEST	**Besiri**	**2.41**	**245**	*i* P	**Pn**	**06 45 09.1**	**+2.7**
BEST				*i* S	**Sn**	**06 45 39.9**	**+3.3**
BINT	**Bingol**	**2.76**	**269**	*e*PN	**Pn**	**06 45 09.5**	**-1.9**

IDC ***12*** *06:54:03.3±2.3,16.51S×178.76W,mb3.9/5,mb1 4.1/5, mb1mx3.9/13,Error ellipse: s-maj=131.0km s-min=24.8km az=145.0*

ISC 12 06:54:08.0±2.2,16.1S±0.7×179.1W±0.6,h33km,n5, σ0s54/5,mb3.8/5,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**38.93**	**239**	P	P	**07 01 32.1**	**-0.4**
	0.6nm,0.3s,mb3.8,baz=87,slow=8.5,SNR=5.9						
WRA	**Warramunga Arr**	**44.30**	**258**	P	P	**07 02 17.2**	**+0.3**
	0.5nm,0.7s,mb3.3,baz=100,slow=7.1,SNR=13						
ASAR	**Alice Springs**	**44.64**	**252**	P	P	**07 02 19.7**	**+0.2**
	4.1nm,0.4s,mb4.6,baz=89,slow=8.1,SNR=89						
NVAR	**Mina Array Bea**	**78.61**	**44**	P	P	**07 06 08.8**	**+0.4**
	0.3nm,0.7s,mb3.3,baz=226,slow=5.8,SNR=4.1						
ILAR	**Eielson Array**	**84.29**	**13**	P	P	**07 06 37.0**	**-0.5**
	0.3nm,0.4s,mb3.8,baz=224,slow=5.0,SNR=5.1						

JMA ***12*** *07:10:55.2±0.3,31.98N×141.86E,M3.9*
IDC ***12*** *07:10:55.4±1.0,31.83N×141.85E,mb3.5/6,mb1 3.7/8, mb1mx3.6/22,ML3.8/2,MS2.7/1,Ms1 2.7/1,ms1mx2.3/25, Error ellipse: s-maj=28.6km s-min=16.9km az=73.0*

ISC 12 07:10:56.2±2.3,31.86N±0.05×142.0E±0.1,h15km±15km, n15,σ0s72/19,mb3.5/6,Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHJ2	**Mitsune**	**2.19**	**305**	P	**Pn**	**07 11 31.8**	**-0.8**
JHJ2				S	**Sn**	**07 11 58.7**	**-0.9**
JHJ	**Hachijo jima 2**	**2.22**	**305**	Pn	**Pn**	**07 11 31.9**	**-1.2**
	62nm,0.3s,baz=122,slow=15,SNR=30						
JHJ				Sn	**Sn**	**07 11 59.9**	**-0.4**
	30nm,0.3s,baz=226,slow=22,SNR=4.5						
BSO1	**Boso 1**	**2.90**	**344**	P	**Pn**	**07 11 42.0**	**-0.8**
BSO3	**Boso 3**	**3.17**	**338**	P	**Pn**	**07 11 46.3**	**-0.3**
CBIJ	**Chichi jima**	**4.75**	**177**	Pn	**Pn**	**07 12 08.1**	**-0.9**
	9.7nm,0.3s,baz=270,slow=17,SNR=9.8						
CBIJ				Sn	**Sn**	**07 13 02.6**	**-1.8**
	9.1nm,0.3s,baz=306,slow=16,SNR=3.0						
JRY	**Ryogami san**	**4.86**	**329**	P	**Pn**	**07 12 10.3**	**-0.3**
JHO	**Hitachi**	**4.88**	**347**	P	**Pn**	**07 12 08.9**	**-1.9**
JHO				*e*S	**Sn**	**07 13 02.8**	**-4.8**
JAG	**Ashikaga**	**5.00**	**336**	P	**Pn**	**07 12 12.1**	**-0.5**
JAG				S	**Sn**	**07 13 07.9**	**-2.9**
JNU	**Nakatsue**	**9.44**	**281**	LR	LR	07 16 02.6	
	comp=Z,48nm,19.2s,baz=89,slow=33						
SONM	**Songino Array**	**31.29**	**311**	P	**P**	**07 17 17.6**	**0.0**
	0.3nm,0.5s,mb3.4,baz=207,slow=36,SNR=3.3						
MKAR	**Makanchi Array**	**47.39**	**306**	P	**P**	**07 19 30.5**	**-1.0**
	0.4nm,0.4s,mb3.7,baz=90,slow=9.0,SNR=7.1						
WRA	**Warramunga Arr**	**52.02**	**189**	P	**P**	**07 20 06.1**	**-1.3**
	0.6nm,0.3s,mb4.0,baz=5.4,slow=7.6,SNR=51						
ILAR	**Eielson Array**	**53.68**	**30**	P	**P**	**07 20 18.9**	**-0.3**
	0.2nm,0.7s,mb3.1,baz=266,slow=6.7,SNR=4.9						
ASAR	**Alice Springs**	**55.74**	**189**	P	**P**	**07 20 34.2**	**-0.5**
	0.2nm,0.4s,mb3.5,baz=17,slow=12,SNR=4.3						
YKA	**Yellowknife Ar**	**68.08**	**29**	P	**P**	**07 21 56.8**	**-0.1**
	0.1nm,0.6s,mb3.0,baz=300,slow=6.7,SNR=3.7						

IDC ***12*** *07:19:47.9±0.7,8.20N×83.06W,mb4.3/12,mb1 4.5/17, mb1mx4.4/23,ML4.1/3,MS4.3/19,Ms1 4.3/19, ms1mx4.3/20,Error ellipse: s-maj=28.3km s-min=13.9km az=55.0*
CASC ***12*** *07:19:52.8±2.3,8.35N×82.84W,h2km±9km,MD4.5,ML3.5, mb4.6(NEIC)*
NEIC ***12*** *07:19:55.4±0.5,8.35N×82.78W,h47km±4km,mb4.6/34, Error ellipse: s-maj=9.7km s-min=4.4km az=47.0*
BJI ***12*** *07:19:55.3,8.87N×82.24W,h47km,mB4.7,Ms4.9,Msz4.9*

ISC 12 07:19:51.6±0.3,8.20N±0.04×82.78W±0.04,h31km, h31km±1.0km:pP-P,n145,σ1s26/136,mb4.5/42,MS4.4/16, 12C-16D,Panama-Costa Rica border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PTP1	**Petroterminal**	**0.35**	**90**	↑*i*P	**Pb**	**07 19 58.1**	**-1.8**
DVD	**David**	**0.40**	**55**	↓*i*P	**Pb**	**07 20 01.4**	**+0.8**
ACR	**Cerro Adams**	**0.59**	**320**	↑*e*P	**Pb**	**07 20 02.0**	**-1.5**
ACR	**Cerro Adams**	**0.59**	**320**	↑*e*P	**Pb**	**07 20 02.0**	**-1.6**
BRU2	**Volcan**	**0.59**	**9**	↓*e*P	**Pb**	**07 20 03.6**	**0.0**
BRU2				*e*S	**Sb**	**07 20 12.6**	**+0.8**
BRU2	**Volcan**	**0.59**	**9**	↓*e*P	**Pb**	**07 20 03.8**	**+0.2**
BRU2				*e*S	**Sb**	**07 20 13.1**	**+1.3**
BUS	**Buena Vista**	**1.65**	**324**	↓*i*P	**Pn**	**07 20 19.2**	**+0.1**
BUS				*e*S	**Sn**	**07 20 42.0**	**+2.5**
BUS	**Buena Vista**	**1.65**	**324**	↓*i*P	**Pn**	**07 20 19.3**	**+0.2**
LIO	**Limon**	**1.81**	**352**	↓*e*P	**Pn**	**07 20 21.6**	**+0.3**
LIO	**Limon**	**1.81**	**352**	↓*e*P	**Pn**	**07 20 21.9**	**+0.7**
URSC	**Urasca**	**1.90**	**329**	↓*e*P	**Pn**	**07 20 22.9**	**+0.3**
URSC	**Urasca**	**1.90**	**329**	↓*e*P	**Pn**	**07 20 22.8**	**+0.2**
LCR2	**La Lucha 2**	**1.95**	**322**	↓*e*P	**Pn**	**07 20 23.3**	**0.0**
ICR	**Volcan Irazu**	**2.05**	**330**	↓*e*P	**Pn**	**07 20 25.5**	**+0.8**
ICR	**Volcan Irazu**	**2.05**	**330**	↓*e*P	**Pn**	**07 20 25.6**	**+0.9**
LAJ	**Bijagual**	**2.12**	**321**	*e*P	**Pn**	**07 20 29.6**	**+3.9**
LAJ	**Bijagual**	**2.12**	**321**	*e*P	**Pn**	**07 20 28.6**	**+2.9**
SJS	**Escuela Geolog**	**2.13**	**324**	↓*e*P	**Pn**	**07 20 26.4**	**+0.4**
SJS				*e*S	**Sn**	**07 20 55.2**	**+3.5**
SJS	**Escuela Geolog**	**2.13**	**324**	↑*e*P	**Pn**	**07 20 26.4**	**+0.5**
SJS				*e*S	**Sn**	**07 20 53.1**	**+1.4**
PRS1	**Puriscal**	**2.33**	**320**	*e*P	**Pn**	**07 20 28.6**	**-0.1**
PRS1				*e*S	**Sn**	**07 20 57.5**	**+1.0**
VPS2	**Volcan Poas 2**	**2.44**	**324**	*e*P	**Pn**	**07 20 31.2**	**+0.9**
VPS2				*e*S	**Sn**	**07 21 03.9**	**+4.4**
VPS2	**Volcan Poas 2**	**2.44**	**324**	↓*e*P	**Pn**	**07 20 31.7**	**+1.3**
CGA2	**Cerro Gallo 2**	**2.45**	**317**	*e*P	**Pn**	**07 20 32.6**	**+2.2**
CGA2				*e*S	**Sn**	**07 21 02.0**	**+2.3**
CGA2	**Cerro Gallo 2**	**2.45**	**317**	*e*P	**Pn**	**07 20 33.0**	**+2.5**
AZU	**Azuero**	**2.52**	**99**	↑*e*P	**Pn**	**07 20 34.0**	**+2.6**
TRTC	**Tortuguero**	**2.53**	**339**	↑*e*P	**Pn**	**07 20 31.9**	**+0.3**
TRTC	**Tortuguero**	**2.53**	**339**	↑*e*P	**Pn**	**07 20 32.1**	**+0.5**
JCR	**Jicaral**	**2.82**	**306**	*e*P	**Pn**	**07 20 36.1**	**+0.3**
JCR	**Jicaral**	**2.82**	**306**	*e*P	**Pn**	**07 20 36.5**	**+0.7**
ACH	**Altos**	**2.86**	**81**	↓*e*P	**Pn**	**07 20 40.5**	**+4.2**
FORC	**Fortuna**	**2.92**	**321**	↑*e*P	**Pn**	**07 20 39.3**	**+2.1**
FORC	**Fortuna**	**2.92**	**321**	↑*e*P	**Pn**	**07 20 39.6**	**+2.4**
JTS	**JuntasAbangare**	**2.98**	**314**	Pn	**Pn**	**07 20 37.9**	**-0.1**
	48nm,0.3s,baz=102,slow=14,SNR=92						
JTS				LR	LR	07 20 59.7	
	comp=Z,1μm,20.3s,baz=127,slow=26						
JTS				Sn	**Sn**	**07 21 17.4**	**+4.2**
	99nm,0.3s,baz=335,slow=23,SNR=15						
JTS	**JuntasAbangare**	**2.98**	**314**	*e*Pn	**Pn**	**07 20 37.1**	**-0.9**
JTS				*e*Sn	**Sn**	**07 21 18.4**	**+5.2**
UPA	**Univ. de Panam**	**3.30**	**76**	↑*e*P	**Pn**	**07 20 46.1**	**+3.5**
UPA				*e*S	**Sn**	**07 21 30.5**	**+9.2**
VCR	**Vista de Mar**	**3.40**	**304**	*e*P	**Pn**	**07 20 45.4**	**+1.4**
JEF	**Cerro Jefe**	**3.52**	**73**	↓*e*P	**Pn**	**07 20 48.4**	**+2.8**
CRZC	**La Cruz**	**3.90**	**315**	*e*P	**Pn**	**07 20 52.3**	**+1.3**
CRZC	**La Cruz**	**3.90**	**315**	*e*P	**Pn**	**07 20 52.8**	**+1.8**
CONN	**Concepcion**	**4.36**	**320**	*e*P	**Pn**	**07 21 08.1**	**+0.5**
APON	**Apoyo**	**4.91**	**319**	*e*P	**Pn**	**07 21 06.3**	**+0.9**
COFN	**Cofrada**	**5.11**	**320**	*e*P	**Pn**	**07 21 08.2**	**0.0**
MGAN	**Managua**	**5.20**	**319**	*e*P	**Pn**	**07 21 07.8**	**-1.6**
MGAN				*i*		07 22 40.5	
	comp=E,97nm,0.6s						
PYTN	**Playitas**	**5.38**	**323**	↑*e*P	**Pn**	**07 21 12.0**	**0.0**
COPN	**Copaltepe**	**5.45**	**317**	*e*P	**Pn**	**07 21 13.8**	**+0.8**
CNGN	**Cerro Negro**	**5.75**	**318**	*e*P	**Pn**	**07 21 17.1**	**-0.1**
LCBS	**La Ceiba**	**8.15**	**312**	↑*e*P	**P**	**07 21 51.1**	**+0.3**
LFRS	**El Faro**	**8.19**	**312**	*e*P	**P**	**07 21 52.0**	**+0.6**
BOQS	**Boqueron**	**8.42**	**311**	*e*P	**P**	**07 21 55.2**	**+0.6**
SBLS	**San Blas**	**8.74**	**310**	*e*P	**P**	**07 21 59.7**	**+0.6**
RTR	**El Retiro**	**8.80**	**311**	*e*P	**P**	**07 22 01.2**	**+1.3**
RBDL	**Robledal**	**8.96**	**312**	*e*P	**P**	**07 22 02.7**	**+0.6**
OTAV	**Otavalo**	**9.01**	**151**	*e*Pn	**P**	**07 22 05.1**	**+2.3**
OTAV				*e*Sn	**Sn**	**07 23 36.3**	**-8.0**
ROSC	**El Rosal**	**9.03**	**111**	Pn	**P**	**07 22 05.6**	**+2.5**
	comp=E,1.3nm,0.3s,baz=111,slow=5.1,SNR=13						
ROSC				LR	LR	07 25 14.2	
	comp=E,2μm,20.1s,baz=299,slow=35						
SDV	**Santo Domingo**	**12.03**	**86**	Pn	**P**	**07 22 45.9**	**+1.7**
	comp=E,0.4nm,0.3s,baz=281,slow=8.0,SNR=12						
SDV				LR	LR	07 28 06.5	
	comp=E,2μm,19.0s,baz=350,slow=40						
TEIG	**Tepich**	**13.08**	**337**	LR	LR	07 28 45.4	
	comp=E,2μm,20.0s,baz=173,slow=41						
PCRV	**Puerto La Cruz**	**18.02**	**82**	P	**P**	**07 24 04.1**	**+2.3**
	comp=E,1.2nm,0.3s,baz=235,slow=9.0,SNR=5.6						
SJG	**San Juan**	**18.94**	**57**	P	**P**	**07 24 14.2**	**+1.3**
	comp=E,1.1nm,0.3s,baz=294,slow=9.1,SNR=5.2						
SJG				LR	LR	07 30 49.2	
	comp=E,583nm,18.1s,baz=255,slow=34						
SJG	**San Juan**	**18.94**	**57**	*e*P	**P**	**07 24 14.5**	**+1.6**
	comp=E,53nm,1.0s						
HKT	**Hockley**	**24.86**	**332**	*e*P	**P**	**07 25 12.6**	**-0.5**
	comp=E,27nm,1.3s,mb4.6						
LRAL	**Lakeview Retre**	**25.02**	**352**	*e*P	**P**	**07 25 14.1**	**-0.4**
	comp=E,60nm,1.3s,mb5.0						
JSC	**Jenkinsville**	**25.99**	**3**	*e*P	**P**	**07 25 23.9**	**+0.2**
OXF	**Oxford**	**26.88**	**348**	*e*P	**P**	**07 25 31.4**	**-0.5**
	comp=E,19nm,0.9s,mb4.6						
OXF				*e*		07 25 43.7	
ARE	**Arequipa**	**26.93**	**155**	*e*P	**P**	**07 25 35.0**	**+2.5**
PLAL	**Pickwick Lake**	**27.09**	**350**	*e*P	**P**	**07 25 32.4**	**-1.4**
	comp=E,14nm,1.3s,mb4.3						
PLAL				*e*		07 25 38.0	
PLAL				*e*		07 25 56.6	
JCT	**Junction City**	**27.29**	**327**	*e*P	**P**	**07 25 35.5**	**-0.2**
	comp=E,12nm,1.0s,mb4.4						
MIAR	**Mount Ida**	**28.03**	**341**	*e*P	**P**	**07 25 40.3**	**-2.0**
	comp=E,27nm,1.5s,mb4.7						
WVT	**Waverly**	**28.18**	**351**	*e*P	**P**	**07 25 41.0**	**-2.6**
	comp=E,9.6nm,1.1s,mb4.3						
WVT				*e*		07 25 52.3	
LPAZ	**La Paz**	**28.33**	**149**	P	**P**	**07 25 46.0**	**+0.9**
	comp=E,2.0nm,0.9s,mb3.7,baz=333,slow=12,SNR=9.0						
LPAZ				LR	LR	07 38 15.9	
	comp=E,536nm,18.4s,MS4.2,baz=276,slow=39						
LPAZ	**La Paz**	**28.33**	**149**	*e*P	**P**	**07 25 45.7**	**+0.6**
	comp=E,1.2nm,0.8s,mb3.6						
PWV	**Princeton**	**29.04**	**3**	*e*P	**P**	**07 25 46.5**	**-4.9**
SIUC	**Southern Illin**	**29.95**	**350**	*e*P	**P**	**07 25 55.2**	**-4.3**
	comp=E,34nm,1.5s,mb4.9						
SIUC				*e*		07 26 07.6	
WCI	**Wyandotte Cave**	**30.06**	**354**	*e*P	**P**	**07 25 59.3**	**-1.2**
	comp=E,27nm,1.1s,mb4.9						
WMOK	**Wichita Mounta**	**30.22**	**333**	*e*P	**P**	**07 25 59.4**	**-2.5**
	comp=E,3.6nm,1.0s,mb4.1						
FVM	**French Village**	**30.44**	**348**	*e*P	**P**	**07 26 02.6**	**-1.2**
	comp=E,34nm,1.5s,mb4.9						
CCM	**Cathedral Cave**	**30.69**	**347**	*e*P	**P**	**07 26 03.7**	**-2.3**
	comp=E,7.3nm,0.8s,mb4.6						
CCM				*e*pP	pP	07 26 13.5	-1.6
ACSO	**Alum Creek Sta**	**31.89**	**360**	P	**P**	**07 26 15.0**	**-1.5**
	comp=E,22nm,1.2s,mb4.9						
LVC	**Limon Verde**	**33.50**	**156**	P	**P**	**07 26 32.4**	**+1.6**
	comp=E,11nm,1.2s,mb4.7,baz=270,slow=7.7,SNR=4.9						
LVC	**Limon Verde**	**33.50**	**156**	*e*P	**P**	**07 26 33.1**	**+2.3**
	comp=E,14nm,1.1s,mb4.8						
ANMO	**Albuquerque**	**34.36**	**324**	*e*P	**P**	**07 26 37.4**	**-0.6**
	comp=E,4.9nm,1.2s,mb4.3						
TUC	**Tucson**	**35.36**	**317**	*e*P	**P**	**07 26 47.7**	**+1.1**
	comp=E,19nm,1.6s,mb4.8						
SDCO	**Great Sand Dun**	**35.88**	**329**	P	**P**	**07 26 51.5**	**+0.5**
	comp=E,4.1nm,0.9s,mb4.4						
SADO	**Sadowa**	**36.56**	**4**	P	**P**	**07 26 55.9**	**-0.8**
	comp=E,0.7nm,0.3s,mb3.9,baz=215,slow=8.2,SNR=2.6						
PV01	**Paradox Valley**	**37.81**	**326**	*e*P	**P**	**07 27 07.5**	**+0.3**
PV10	**Paradox Valley**	**38.24**	**326**	*e*P	**P**	**07 27 10.1**	**-0.7**
SRU	**San Rafael**	**39.59**	**325**	*e*P	**P**	**07 27 21.0**	**-1.0**
SRU				*e*PcP	PcP	07 29 29.9	+0.5
RSSD	**Black Hills**	**40.29**	**336**	*e*P	**P**	**07 27 25.7**	**-2.1**
	comp=E,6.5nm,1.1s,mb4.3						
DAU	**Daniels Canyon**	**40.89**	**326**	*e*P	**P**	**07 27 32.6**	**-0.2**
DAU				*e*PcP	PcP	07 29 34.6	+1.0
JLU	**Jordanelle**	**41.13**	**326**	*e*P	**P**	**07 27 34.8**	**+0.1**
JLU				*e*PcP	PcP	07 29 35.1	+0.7
CTU	**Camp Tracy**	**41.36**	**326**	*e*P	**P**	**07 27 36.6**	**0.0**
TCUT	**Toone Canyon**	**41.47**	**327**	*e*P	**P**	**07 27 38.0**	**+0.6**
PDAR	**Pinedale Array**	**41.70**	**330**	P	**P**	**07 27 38.4**	**-1.0**
	comp=E,1.9nm,0.7s,mb3.8,baz=135,slow=8.4,SNR=17						
PDAR				PcP	PcP	07 29 35.4	-0.9
	comp=E,3.0nm,1.2s,baz=153,slow=3.3,SNR=4.9						
PDAR				LR	LR	07 49 24.3	
	comp=E,270nm,19.4s,MS4.1,baz=254,slow=43						
BDFB	**Brasilia**	**41.80**	**124**	P	**P**	**07 27 40.3**	**-0.2**
	comp=E,2.2nm,0.8s,mb3.9,baz=306,slow=10,SNR=7.4						
BDFB				LR	LR	07 45 36.4	
	comp=E,566nm,19.9s,MS4.5,baz=305,slow=37						
HWUT	**Hardware Ranch**	**41.89**	**327**	*e*P	**P**	**07 27 40.2**	**-0.8**
	comp=E,20nm,1.3s,mb4.6						
HWUT				*e*pP	pP	07 27 49.2	-1.0
HWUT				*e*PcP	PcP	07 29 36.4	-0.5
HWUT				*e*		07 29 46.4	
CPUP	**Villa Florida**	**42.30**	**145**	P	**P**	**07 27 43.7**	**-0.8**
	comp=E,3.0nm,1.0s,mb3.9,baz=327,slow=5.8,SNR=5.6						
CPUP	**Villa Florida**	**42.30**	**145**	*e*P	**P**	**07 27 43.3**	**-1.2**
	comp=E,5.4nm,1.4s,mb4.0						
CPUP				*e*pP	pP	07 27 56.1	+2.3
CPUP				*e*		07 28 08.9	

ASAR	**Alice Springs**	**141.67**	**242**	PKhKP			07 39 16.2		
	comp=Z,1.2nm,0.7s,baz=109,slow=3.4,SNR=14								
WB2	**Warramunga Arr**	**142.23**	**248**	*eP*		PKPdf	07 39 18.6	-8.6	
WRA	**Warramunga Arr**	**142.24**	**248**	PKhKP			07 39 18.4		
	comp=Z,3.8nm,1.0s,baz=102,slow=3.3,SNR=13								
KAKA	**Kakadu**	**145.13**	**260**	*eP*		PKPbc	07 39 27.7	+0.2	
	comp=Z,36nm,1.2s								
FITZ	**Fitzroy Crossi**	**150.67**	**248**	*eP*		PKPdf	07 39 37.5	-3.8	
	comp=Z,7.9nm,1.2s								
CMAR	**Chiang Mai Arr**	**153.46**	**356**	PKP		PKPdf	07 39 41.6	-3.7	
	comp=Z,2.0nm,0.8s,baz=319,slow=2.6,SNR=12								
CMAR				PKPbc		PKPdf	07 39 49.4	+4.1	
	comp=Z,5.1nm,1.0s,baz=337,slow=2.9,SNR=10								

IDC ***12*** *07:41:39.1±28.0, 3.90N×123.24E, h398km±347km, mb3.4/5, mb1 3.5/5, mb1mx3.1/19, MS3.4/1, Ms1 3.3/1, ms1mx2.7/12, Error ellipse: s-maj=141.0km s-min=39.2km az=51.0*

NEIC ***12*** *07:41:46.4±0.7, 3.82N×123.29E, h500km, mb4.2/2, Error ellipse: s-maj=39.4km s-min=12.6km az=61.0*

ISC 12 07:41:51.5±0.9, 3.7N±0.2×123.4E±0.3, h600km, n10, σ0s86/10, mb3.8/5, 1C, Celebes Sea

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
KAKA	**Kakadu**	**18.61**	**151**	*eP*		**P**	**07 45 34.9**	**+1.1**
	8.4nm,0.6s							
FITZ	**Fitzroy Crossi**	**21.79**	**174**	*eP*		**P**	**07 46 01.4**	**-1.5**
	2.1nm,0.9s,mb3.8							
FITZ	**Fitzroy Crossi**	**21.79**	**174**	P		**P**	**07 46 01.6**	**-1.4**
	2.1nm,0.8s,mb3.8,baz=354,slow=9.2,SNR=5.4							
WRA	**Warramunga Arr**	**25.86**	**156**	P		**P**	**07 46 38.8**	**-0.4**
	2.2nm,0.3s,mb4.2,baz=336,slow=9.6,SNR=99							
WB2	**Warramunga Arr**	**25.86**	**156**	⇑*iP*		**P**	**07 46 38.7**	**-0.5**
PMG	**Port Moresby**	**27.05**	**119**	P		**P**	**07 46 48.7**	**-0.9**
ASAR	**Alice Springs**	**29.08**	**160**	P		**P**	**07 47 07.4**	**+0.4**
	1.7nm,0.7s,mb3.8,baz=340,slow=7.4,SNR=22							
STKA	**Stephens Creek**	**39.41**	**155**	P		**P**	**07 48 34.1**	**+1.5**
	2.0nm,0.5s,mb3.9,baz=326,slow=11,SNR=4.8							
STKA				LR		LR	08 04 52.6	
	comp=Z,52nm,20.5s,baz=22,slow=35							
MKAR	**Makanchi Array**	**55.70**	**327**	P		**P**	**07 50 34.3**	**+0.1**
	0.9nm,0.3s,mb3.4,baz=121,slow=7.5,SNR=17							
ZRNK	**Zerenda**	**66.24**	**327**	*eP*		**P**	**07 51 42.8**	**0.0**

BER ***12*** *07:42:05.5±2.0, 78.70N×6.58E, h28km±370km, ML2.0(NAO)*

NAO 12 07:41:59.5±4.5, 78.88N×5.91E, ML2.0, Svalbard region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
KBS	**Kingsbay**	**1.17**	**85**	Pn		Pn	07 42 22.2	-0.8
KBS				Lg			07 42 38.7	
SPA0	**Spitsbergen Ar**	**2.21**	**103**	Pn		Pn	07 42 37.5	-0.3
	baz=285,slow=8.6							
SPA0				Lg			07 43 08.0	
	baz=294,slow=37							

NEIC ***12*** *07:50:43.9, 15.62N×97.52W, h28km, MD4.2(MEX), After MEX.*

MEX ***12*** *07:50:43.4±0.8, 15.58N×97.51W, h17km±29km, MD4.3*

ISC 12 07:50:40.5±1.3, 15.58N±0.08×97.55W±0.04, h48km±29km, n12, σ1s03/21, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
PNIG	**Pinotepa**	**0.98**	**326**	*iP*		**P**	**07 50 59.0**	**+0.8**
PNIG				*iS*		**S**	**07 51 11.1**	**-0.1**
HUIG	**Huatulco**	**1.40**	**82**	*iP*		**P**	**07 51 04.5**	**+0.4**
HUIG				*iS*		**S**	**07 51 19.9**	**-1.7**
VHO	**Vista Hermosa**	**1.68**	**28**	*iP*		**P**	**07 51 08.8**	**+0.8**
VHO				*iS*		**S**	**07 51 28.7**	**+0.2**
OXX	**Oaxaca**	**1.69**	**28**	*iP*		**P**	**07 51 09.0**	**+0.8**
OXX				*iS*		**S**	**07 51 27.5**	**-1.3**
CMIG	**Matias Romero**	**2.97**	**59**	*iP*		**P**	**07 51 26.3**	**-0.1**
CMIG				*iS*		**S**	**07 52 00.5**	**-0.5**
CAIG	**El Cayaco**	**2.99**	**300**	*iP*		**P**	**07 51 25.3**	**-1.4**
CAIG				*iS*		**S**	**07 52 00.4**	**-1.2**
IISM	**Ciudad Serdan**	**3.40**	**3**	*eP*		**P**	**07 51 33.0**	**+0.6**
POHV	**Veracruz**	**3.48**	**4**	*iP*		**P**	**07 51 39.0**	**+5.4**
YAIG	**Yautepec**	**3.58**	**336**	*iP*		**P**	**07 51 36.2**	**+1.3**
YAIG				*iS*		**S**	**07 52 14.8**	**-1.5**
PPM	**Popocatepetl**	**3.62**	**344**	*eP*		**P**	**07 51 36.9**	**+1.4**
PPM				*eP*			07 51 39.0	
PPM				*iS*		**S**	**07 52 19.1**	**+1.7**
PPM	**Popocatepetl**	**3.62**	**344**	*eP*		**P**	**07 51 39.0**	**+3.5**
PPM				*iS*		**S**	**07 52 28.1**	**+11**
TUIG	**Tuzandepetl**	**3.86**	**50**	*iP*		**P**	**07 51 39.6**	**+0.6**

IDC 12 08:38:32.0±1.8, 2.54S×141.68E, mb3.3/3, mb1 3.7/4, mb1mx3.5/14, ML3.5/1, Error ellipse: s-maj=93.4km s-min=28.3km az=117.0, Near north coast of New Guinea

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
WRA	**Warramunga Arr**	**18.72**	**202**	P		P	08 42 51.8	-2.6
	0.2nm,0.3s,baz=22,slow=12,SNR=14							
FITZ	**Fitzroy Crossi**	**22.06**	**224**	P		P	08 43 30.4	+0.1
	1.2nm,0.8s,baz=23,slow=7.7,SNR=1.9							
ASAR	**Alice Springs**	**22.31**	**199**	P		P	08 43 29.6	-3.2
	0.6nm,0.7s,baz=30,slow=9.9,SNR=5.9							
ILAR	**Eielson Array**	**84.46**	**24**	P		P	08 51 06.6	-1.0
	0.2nm,0.6s,baz=243,slow=4.0,SNR=4.1							

IDC ***12*** *08:55:14.2±1.3, 35.21N×141.03E, mb4.0/5, mb1 4.2/5, mb1mx3.7/22, ML3.1/1, MS2.5/1, Ms1 2.5/1, ms1mx2.1/34, Error ellipse: s-maj=45.8km s-min=22.8km az=98.0*

JMA ***12*** *08:55:15.3±0.3, 35.25N×141.50E, h50km±4km, M2.8*

ISC 12 08:55:16.0±1.2, 35.22N±0.04×141.47E±0.10, h36km±12km, n17, σ0s84/22, mb4.0/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
CHOJ	**Chosi**	**0.69**	**314**	P		**P**	**08 55 28.7**	**-0.6**
CHOJ				*S*		**S**	**08 55 39.3**	**+0.4**
BSO1	**Boso 1**	**0.70**	**215**	P		**P**	**08 55 29.8**	**+0.4**
BSO1				*S*		**S**	**08 55 40.8**	**+1.7**
BSO3	**Boso 3**	**0.89**	**242**	P		**P**	**08 55 32.0**	**-0.1**
BSO3				*S*		**S**	**08 55 44.4**	**+0.4**
BSO4	**Boso 4**	**0.95**	**256**	P		**P**	**08 55 33.0**	**0.0**
JYT	**Yasato**	**1.44**	**314**	P		**P**	**08 55 40.2**	**+0.2**
JIM2	**Oshima 3**	**1.75**	**254**	P		**P**	**08 55 42.8**	**-1.6**
JOD2	**Odawara 2**	**1.95**	**272**	P		**P**	**08 55 46.1**	**-1.2**
JOD2				*S*		**S**	**08 56 10.1**	**-0.6**
JAG	**Ashikaga**	**2.03**	**307**	P		**P**	**08 55 48.8**	**+0.4**
JFK	**Kawauchi**	**2.19**	**348**	P		**P**	**08 55 50.5**	**-0.2**
JHJ	**Hachijo jima 2**	**2.52**	**214**	Pn		**P**	**08 55 54.9**	**-0.6**
	12nm,0.3s,baz=322,slow=22,SNR=19							
JHJ				Sn		**S**	**08 56 24.7**	**-0.6**
	26nm,0.3s,baz=198,slow=22,SNR=10.0							
MAT	**Matsushiro**	**2.96**	**297**	P		**P**	**08 56 02.4**	**+0.7**
MAT				*eS*		**S**	**08 56 37.2**	**+0.9**
ASAJ	**Asahikawa**	**8.92**	**5**	LR		LR	09 01 24.6	
	comp=Z,29nm,19.4s,baz=2.5,slow=41							
MKAR	**Makanchi Array**	**45.14**	**304**	P		**P**	**09 03 30.2**	**-0.4**
	0.5nm,0.7s,mb3.5,baz=93,slow=9.0,SNR=5.2							
FITZ	**Fitzroy Crossi**	**55.12**	**198**	P		**P**	**09 04 46.9**	**-0.3**
	1.0nm,0.5s,mb4.1,baz=27,slow=9.0,SNR=5.0							
WRA	**Warramunga Arr**	**55.28**	**188**	P		**P**	**09 04 47.4**	**-0.8**
	1.4nm,0.5s,mb4.2,baz=0.9,slow=7.5,SNR=21							
ASAR	**Alice Springs**	**59.00**	**188**	P		**P**	**09 05 16.1**	**+1.4**
	1.2nm,0.6s,mb4.1,baz=14,slow=13,SNR=20							
ULM	**Lac du Bonnet**	**80.99**	**33**	P		**P**	**09 07 31.8**	**+3.6**
	3.4nm,0.8s,mb4.3,baz=326,slow=3.6,SNR=2.5							

NEIC ***12*** *08:58:50.7, 30.71S×71.73W, h30km, ML2.8(GUC), After GUC.*

GUC 12 08:58:50.7±0.6, 30.71S×71.73W, h30km, MD3.8, ML2.8, 3C-2D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
OVCH	**Ovalle**	**0.47**	**77**	⇑*iP*		Pb	08 59 00.5	-0.1
OVCH				*iS*		Sb	08 59 07.7	+0.4
OVCH				AMP			08 59 08.2	
	comp=N,821nm,0.2s							
CMCH	**Combarbala**	**0.78**	**127**	⇑*iP*		Pb	08 59 05.6	0.0
CMCH				*iS*		Sb	08 59 16.1	+0.3
CMCH				AMP			08 59 20.6	
	comp=N,921nm,0.6s							
LSCH	**La Serena**	**0.90**	**28**	⇓*iP*		Pn	08 59 07.0	-0.4
LSCH				*iS*		Sb	08 59 19.1	-0.3
LSCH				AMP			08 59 22.7	
	comp=N,382nm,0.6s							
TLL	**Tololo Astrono**	**0.96**	**56**	⇓*iP*		Pn	08 59 08.8	+0.4
TLL				*iS*		Sn	08 59 22.0	+0.9
TLL				AMP			08 59 26.0	
	comp=N,859nm,0.5s							
ILCH	**Illapel**	**1.04**	**153**	⇑*iP*		Pn	08 59 08.9	-0.5
ILCH				*iS*		Sn	08 59 22.4	-0.5
ILCH				AMP			08 59 24.6	
	comp=N,367nm,0.3s							

IDC ***12*** *09:45:43.7±0.5, 12.71S×26.18E, mb4.4/16, mb1 4.6/18, mb1mx4.5/21, ML3.7/2, MS3.9/10, Ms1 3.9/10, ms1mx3.6/22, Error ellipse: s-maj=21.5km s-min=10.4km az=106.0*

NEIC ***12*** *09:45:45.6±0.3, 12.72S×26.00E, h10km, mb4.7/15, Error ellipse: s-maj=11.0km s-min=6.6km az=113.0*

SYO ***12*** *09:45:45.6, 12.72S×26.00E, h10km, MB4.7*

BJI ***12*** *09:45:45.6, 12.705×26.00E, h10km, mb5.1, Ms4.9, Msz4.4*

ISC 12 09:45:44.0±0.3, 12.66S±0.06×26.05E±0.07, h10km, (h13km±2.3km: pP-P), n82, σ1s03/74, mb4.7/40, MS4.1/11, 3D, Zambia

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
TSUM	**Tsumeb**	**10.42**	**230**	Pn		**P**	**09 48 13.4**	**-3.4**
	13nm,0.3s,baz=30,slow=12,SNR=152							
TSUM				Sn		**S**	**09 50 05.1**	**-10**
	14nm,0.3s,baz=116,slow=22,SNR=8.8							
TSUM				Lg			09 51 15.7	
	13nm,0.3s,baz=112,slow=23,SNR=5.0							
TSUM				LR		LR	09 52 59.1	
	comp=Z,403nm,19.5s,baz=20,slow=42							
KMBO	**Kilima Mbogo**	**15.95**	**45**	Pn		**P**	**09 49 27.5**	**-3.0**
	2.9nm,0.3s,baz=215,slow=14,SNR=55							
KMBO				Sn		**S**	**09 52 17.2**	**-10**
	0.9nm,0.3s,baz=162,slow=20,SNR=4.2							
KMBO				Lg			09 53 44.7	
	1.0nm,0.3s,baz=172,slow=18,SNR=3.4							
KMBO				LR		LR	09 56 05.8	
	comp=Z,244nm,18.8s,baz=259,slow=39							
KMBO	**Kilima Mbogo**	**15.95**	**45**	*eP*		**P**	**09 49 25.9**	**-4.6**
	26nm,0.7s							
KMBO				*eS*		S	09 52 06.0	-21
SUR	**Sutherland**	**20.21**	**193**	P		**P**	**09 50 18.6**	**-3.4**
	34nm,0.9s,baz=25,slow=8.1,SNR=21							
SUR				S		**S**	**09 54 10.6**	**+7.2**
	14nm,0.9s,baz=119,slow=21,SNR=2.5							
SUR				Lg			09 56 17.4	
	62nm,0.9s,baz=287,slow=20,SNR=4.6							
SUR				LR		LR	09 58 21.5	
	comp=Z,192nm,19.7s,MS3.5,baz=45,slow=38							
SUR	**Sutherland**	**20.21**	**193**	*eP*		**P**	**09 50 19.1**	**-2.9**
	56nm,1.0s							
SUR				*eS*		**S**	**09 54 06.4**	**+3.0**
KIC	**Kosan Boka**	**35.96**	**300**	*eP*		**P**	**09 52 47.4**	**+0.2**
	51nm,0.7s,mb5.6							
LIC	**Lamto**	**36.14**	**300**	*eP*		**P**	**09 52 49.8**	**+1.2**
	134nm,2.3s,mb5.5							
DBIC	**Dimbokro**	**36.22**	**300**	P		**P**	**09 52 48.6**	**-0.8**
	10nm,0.8s,mb4.8,baz=104,slow=10,SNR=9.5							
DBIC				LR		LR	10 06 03.6	
	comp=Z,114nm,20.4s,MS3.6,baz=215,slow=34							
DBIC	**Dimbokro**	**36.22**	**300**	P		**P**	**09 52 48.6**	**-0.7**
DBIC				LR		LR	10 06 03.6	
TIC	**Toumodi**	**36.35**	**300**	*eP*		**P**	**09 52 50.6**	**+0.2**
	87nm,0.8s,mb5.7							
EIL	**Elat**	**42.94**	**11**	P		**P**	**09 53 44.2**	**-0.9**
	6.1nm,1.0s,mb4.3							
IDI	**Anoyia**	**47.69**	**359**	P		**P**	**09 54 22.4**	**-0.5**
	12nm,1.2s,mb4.8,baz=145,slow=4.4,SNR=3.3							
BRTR	**Keskin Array B**	**52.59**	**7**	P		**P**	**09 55 00.3**	**+0.1**
	2.6nm,0.9s,mb4.1,baz=172,slow=8.7,SNR=7.4							
SYO	**Syowa Base**	**56.98**	**174**	⇓PcP		PcP	09 56 24.7	-2.2
MLR	**Muntele Rosu**	**57.87**	**360**	P		**P**	**09 55 38.5**	**0.0**
	2.0nm,0.6s,mb4.3,baz=172,slow=12,SNR=3.4							
ESDC	**Sonseca Array**	**59.08**	**333**	P		**P**	**09 55 46.9**	**-0.1**
	1.0nm,0.6s,mb4.1,baz=145,slow=6.7,SNR=4.9							
ESLA	**Sonseca Array**	**59.08**	**333**	P		**P**	**09 55 47.4**	**+0.4**
	2.3nm,1.0s,mb4.2							
SMRF	**Simiane la Rot**	**59.37**	**343**	*eP*		**P**	**09 55 48.8**	**-0.1**
	38nm,1.2s,mb5.0							
MAW	**Mawson**	**59.97**	**165**	*eP*		**P**	**09 55 51.2**	**-1.5**
	3.7nm,0.8s,mb4.5							
MAW	**Mawson**	**59.97**	**165**	P		**P**	**09 55 50.3**	**-2.5**
	4.8nm,0.8s,mb4.5,baz=312,slow=9.4,SNR=8.8							
LPG	**La Plagne**	**60.45**	**345**	*eP*		**P**	**09 55 56.0**	**-0.3**
	7.9nm,0.8s,mb4.5							
LPL	**La Plagne**	**60.47**	**344**	*eP*		**P**	**09 55 56.0**	**-0.5**
SNAA	**Sanae**	**61.52**	**190**	*eP*		**P**	**09 56 02.0**	**-1.2**
CABF	**La Chapelle**	**61.66**	**344**	*eP*		**P**	**09 56 04.2**	**-0.3**
	41nm,0.9s,mb5.2							
VNA1	**Neumayer--Stat**	**61.71**	**192**	*e*		**P**	**09 56 05.7**	**+1.2**
VNA1	**Neumayer--Stat**	**61.71**	**192**	*e*		PcP	09 56 41.5	-4.1
VNA1	**Neumayer--Stat**	**61.71**	**192**	⇓*iP*		**P**	**09 56 02.2**	**-2.3**
VNA1				*e*		pP	09 56 05.7	-2.0
VNA1				*e*			09 56 41.5	
VNA2	**Neumayer--Watz**	**61.75**	**192**	*e*		**P**	**09 56 07.8**	**+3.0**
VNA2	**Neumayer--Watz**	**61.75**	**192**	*e*		PcP	09 56 45.7	-0.1
VNA2	**Neumayer--Watz**	**61.75**	**192**	P		**P**	**09 56 04.7**	**-0.1**
VNA2				*e*		pP	09 56 07.8	-0.1
VNA2				*e*			09 56 45.7	
GERES	**GERESS Array B**	**62.20**	**351**	P		**P**	**09 56 08.1**	**0.0**
	3.1nm,0.7s,mb4.5,baz=169,slow=6.8,SNR=17							
SMF	**Signal de Mont**	**62.30**	**343**	*eP*		**P**	**09 56 09.2**	**+0.3**
VNA3	**Neumayer Olymp**	**62.46**	**192**	*e*		**P**	**09 56 12.6**	**+3.0**
VNA3	**Neumayer Olymp**	**62.46**	**192**	⇓*iP*		**P**	**09 56 10.7**	**+1.1**
VNA3				*e*		pP	09 56 12.6	-0.1
VNA3				*e*			09 57 00.5	
KHC	**Kasperske Hory**	**62.49**	**351**	*eP*		**P**	**09 56 10.0**	**-0.1**
AVF	**Avril sur Loir**	**62.58**	**343**	*eP*		**P**	**09 56 11.2**	**+0.5**
	17nm,0.9s,mb4.9							
HINF	**Hinteralfeld**	**62.58**	**346**	*eP*		**P**	**09 56 10.8**	**+0.1**
SSF	**Saint Saulge**	**62.78**	**343**	*eP*		**P**	**09 56 11.9**	**-0.1**
LOR	**Lormes**	**62.87**	**343**	*eP*		**P**	**09 56 12.9**	**+0.4**
LOR				*eR*				
	78nm,20.8s							
HAU	**Haudompre**	**62.88**	**345**	*eP*		**P**	**09 56 12.0**	**-0.6**
HAU				*eR*				
	36nm,21.2s							
CDF	**Champ du Feu**	**63.04**	**346**	*eP*		**P**	**09 56 12.6**	**-1.1**
AKASG	**Malin Array Be**	**63.15**	**2**	P		**P**	**09 56 13.5**	**-0.8**
	2.6nm,0.8s,mb4.4,baz=189,slow=6.4,SNR=7.1							
GRA1	**Grafenberg Arr**	**63.43**	**349**	*eP*		**P**	**09 56 16.2**	**0.0**
	11nm,1.3s,mb4.8							
MFF	**Saint Martin d**	**63.50**	**340**	*eP*		**P**	**09 56 17.2**	**+0.5**
	12nm,0.8s,mb4.7							
MOX	**Moxa**	**64.28**	**350**	*eP*		**P**	**09 56 24.0**	**+2.2**
GIVF	**Givet**	**65.21**	**345**	*eP*		**P**	**09 56 27.8**	**0.0**
BAIF	**Baives**	**65.32**	**345**	*eP*		**P**	**09 56 28.8**	**+0.2**
SUW	**Suwalki**	**66.45**	**358**	*eP*		**P**	**09 56 35.3**	**-0.4**
KOLN	**Koldanda**	**68.70**	**53**	*eP*		**P**	**09 56 49.2**	**-1.1**
	22nm,0.9s,mb5.1							
GKN	**Gorkha**	**69.63**	**54**	*eP*		**P**	**09 56 56.3**	**+0.3**
	21nm,0.8s,mb5.1							
DMN	**Daman**	**69.82**	**54**	*eP*		**P**	**09 56 58.6**	**+1.4**
KKN	**Kakani**	**70.04**	**54**	*eP*		**P**	**09 56 59.9**	**+1.4**
	17nm,0.6s,mb5.1							
PKI	**Pulchoki**	**70.04**	**54**	*eP*		**P**	**09 57 00.2**	**+1.7**
	18nm,1.1s,mb4.9							
GUN	**Gumba**	**70.56**	**54**	*eP*		**P**	**09 57 03.1**	**+1.4**
	31nm,0.9s,mb5.2							
BDFB	**Brasilia**	**71.55**	**258**	P		**P**	**09 57 08.6**	**+0.7**
	1.2nm,0.4s,mb4.2,baz=116,slow=4.7,SNR=2.6							
BDFB				LR		LR	10 23 05.6	
	comp=Z,160nm,18.2s,MS4.3,baz=203,slow=31							
FINES	**FINESS Array B**	**73.85**	**0**	P		**P**	**09 57 20.2**	**-0.4**
	2.5nm,0.8s,mb4.2,baz=166,slow=12,SNR=4.6							
FINES	**FINESS Array B**	**73.85**	**0**	P		**P**	**09 57 20.2**	**-0.4**
NOA	**NORSAR Array B**	**74.39**	**353**	P		**P**	**09 57 23.7**	**0.0**
	3.1nm,0.9s,mb4.2,baz=169,slow=5.6,SNR=3.8							
LSA	**Lhasa**	**75.51**	**55**	*eP*		**P**	**09 57 31.7**	**+0.9**
	6.8nm,0.8s,mb4.6							
BRVK	**Borovoye**	**75.61**	**26**	*eP*		**P**	**09 57 30.4**	**-0.4**
BVAR	**Borovoye Array**	**75.63**	**26**	P		**P**	**09 57 30.5**	**-0.5**
	2.1nm,0.8s,mb4.1,baz=225,slow=4.2,SNR=11							
QSPA	**South Pole Qui**	**77.46**	**180**	*eP*		**P**	**09 57 43.0**	**+2.2**
	2.5nm,0.7s,mb4.2							
QSPA				*e*			10 01 46.6	
MKAR	**Makanchi Array**	**77.61**	**36**	P		**P**	**09 57 41.0**	**-1.2**
	3.4nm,0.9s,mb4.3,baz=198,slow=3.8,SNR=10.0							
MKAR				LR		LR	10 34 54.0	
	comp=Z,97nm,20.6s,MS4.1,baz=248,slow=38							
CMAR	**Chiang Mai Arr**	**78.23**	**68**	P		**P**	**09 57 45.4**	**-0.7**
	5.7nm,1.0s,mb4.5,baz=257,slow=5.9,SNR=13							
CPUP	**Villa Florida**	**78.64**	**245**	P		**P**	**09 57 48.4**	**+0.1**
	1.8nm,0.8s,mb4.0,baz=141,slow=3.9,SNR=6.3							
CPUP				LR		LR	10 27 45.7	
	comp=Z,84nm,20.1s,MS4.1,baz=148,slow=32							
CPUP	**Villa Florida**	**78.64**	**245**	*eP*		**P**	**09 57 48.1**	**-0.2**
	1.1nm,0.8s,mb3.8							
WMQ	**Urumqi**	**79.32**	**40**	*eP*		**P**	**09 57 50.4**	**-1.2**
WMQ				AP		pP	09 57 56.9	+2.1
WMQ				PP		PP	10 00 51.4	-1.9
WMQ				AMB		AMB		
	comp=Z,6.0nm,1.8s,mb4.2							
WMQ				LR		LR		
	comp=N,24nm,21.3s,MS3.9							
WMQ				LR		LR		
	comp=E,58nm,21.5s,MS3.9							
TRQA	**Tornquist**	**80.79**	**233**	P		**P**	**09 57 59.9**	**+0.3**
	comp=E,1.1nm,1.1s,mb3.7							
ARCES	**ARCESS Array B**	**81.98**	**360**	P		**P**	**09 58 05.5**	**+0.3**
	comp=E,63nm,1.4s,mb5.3,baz=180,slow=4.9,SNR=6.6							
ARCES				LR		LR	10 35 53.1	
	comp=E,31nm,19.1s,MS3.7,baz=149,slow=37							
ZAL	**Zalesovo**	**82.89**	**31**	LR		LR	10 39 14.0	
	comp=E,105nm,20.3s,MS4.2,baz=172,slow=39							
GTA	**Gaotai**	**85.77**	**48**	*eP*		**P**	**09 58 26.9**	**+1.8**
GTA				AP		pP	09 58 31.7	+3.4
GTA				XP		sP	09 58 34.3	+5.0
GTA				AMB		AMB		
	comp=Z,6.0nm,0.7s,mb4.9							
GYA	**Guiyang**	**87.35**	**62**	P		**P**	**09 58 34.6**	**+1.5**
GYA				AMB		AMB		
	comp=Z,10.0nm,0.6s,mb5.2							
LZH	**Lanzhou**	**87.74**	**52**	*eP*		**P**	**09 58 32.7**	**-2.0**
LZH				AMB		AMB		
	comp=Z,24nm,1.4s,mb5.2							
LZH				LR		LR		
	comp=N,261nm,15.2s							
LZH				LR		LR		
	comp=Z,275nm,18.4s,MS4.7							
PCRV	**Puerto La Cruz**	**92.85**	**280**	LR		LR	10 35 58.2	
	comp=Z,57nm,18.6s,MS4.1,baz=95,slow=32							
BJI	**Beijing**	**98.11**	**51**	P		**P**	**09 59 21.3**	**-1.2**
BJI				AMB		AMB		
	comp=Z,5.0nm,0.5s,mb5.3							
BJI				LR		LR		
	comp=N,112nm,16.0s,MS4.6							
BJI				LR		LR		
	comp=E,124nm,15.0s,MS4.6							
BJI				LR		LR		
	comp=Z,62nm,22.2s							
INK	**Inuvik**	**122.83**	**351**	PKP		PKPdf	10 04 41.2	-1.9
	comp=Z,1.1nm,1.0s,baz=224,slow=0.3,SNR=3.4							
YKA	**Yellowknife Ar**	**122.91**	**339**	PKP		PKPdf	10 04 41.2	-2.2
	comp=Z,0.7nm,0.8s,baz=44,slow=2.1,SNR=14							
YKA	**Yellowknife Ar**	**122.91**	**339**	PKP		PKPdf	10 04 41.2	-2.2
ILAR	**Eielson Array**	**127.72**	**356**	PKP		PKPdf	10 04 50.0	-2.7
	comp=Z,0.8nm,0.8s,baz=337,slow=1.4,SNR=8.5							
PDAR	**Pinedale Array**	**131.37**	**317**	PKP		PKPdf	10 04 59.4	-0.9
	comp=Z,0.5nm,0.9s,baz=90,slow=4.4,SNR=4.0							
NVAR	**Mina Array Bea**	**139.26**	**315**	PKP		PKPdf	10 05 14.8	-0.2
	comp=Z,0.7nm,0.8s,baz=117,slow=4.0,SNR=4.4							
NVAR	**Mina Array Bea**	**139.26**	**315**	PKP		PKPdf	10 05 14.8	-0.2

IDC ***12*** *09:45:47.5±0.7, 2.76S×139.03E, mb4.2/8, mb1 4.4/10, mb1mx4.3/14, ML4.2/2, MS3.6/8, Ms1 3.6/8, ms1mx3.4/21, Error ellipse: s-maj=33.3km s-min=11.3km az=93.0*

NEIC ***12*** *09:46:03.2±2.5, 3.18S×138.22E, h121km±22km, mb4.3/8, Error ellipse: s-maj=23.8km s-min=10.1km az=75.0*

SYO ***12*** *09:46:03.2, 3.18S×138.22E, h121km, MB4.3*

ISC 12 09:45:50.6±3.2, 2.89S±0.05×138.7E±0.1, h27km±23km, n38, σ0s92/35, mb4.6/16, MS3.6/5, 2C-2D, Irian Jaya

| Code | Station Name | Δ° | AZ°

LPAZ	**La Paz**	**147.32**	**127**	PKPbc	PKPdf	10 05 33.8	-1.4		
	1.2nm,0.7s,baz=192,slow=2.4,SNR=5.7								

DJA 12 09:46:23.5±1.0, 9.52S×117.00E, h15km, MD5.0/3, ML4.2/3, 1D, Error ellipse: s-maj=25.2km s-min=21.1km az=31.0, Sumbawa region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KEDI	**Kedomdong**	**1.35**	**320**	*e*Pn	Pn	09 46 45.4	-2.5
	124nm,0.2s						
KEDI				*e*Sn	Sn	09 47 02.3	-3.2
RATI	**Rata**	**1.65**	**299**	*e*Pn	Pn	09 46 49.5	-2.7
RATI				*e*Sn	Sn	09 47 08.7	-4.5
INGI	**Ingas**	**1.96**	**291**	*e*Pn	Pn	09 46 53.4	-3.2
	731nm,0.2s						
INGI				*e*Sn	Sn	09 47 16.0	-5.0
KELI	**Kelakatan**	**2.79**	**297**	*e*Pn	Pn	09 47 07.1	-1.5
	47nm,0.2s						

IDC ***12*** *09:46:47.9±5.7, 39.81N×15.36E, h319km±52km, mb3.3/3, mb1 3.1/7, mb1mx2.9/22, Error ellipse: s-maj=51.6km s-min=27.7km az=0.0*

ISC 12 09:46:45.1±4.1, 39.7N±0.3×15.5E±0.2, h313km±36km, n7, σ0§77/7, mb3.5/3, Southern Italy

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
VRAC	**Vranov**	**9.65**	**4**	P	**P**	**09 49 00.0**	**+0.4**
	0.4nm,0.3s,baz=190,slow=12,SNR=3.6						
AKASG	**Malin Array Be**	**14.65**	**37**	P	**P**	**09 49 59.1**	**-0.7**
	2.1nm,0.3s,baz=230,slow=11,SNR=11						
ESDC	**Sonseca Array**	**14.96**	**276**	P	**P**	**09 50 03.2**	**-0.2**
	0.4nm,0.3s,baz=83,slow=10,SNR=4.1						
EKA	**Eskdalemuir Ar**	**19.98**	**328**	P	**P**	**09 50 55.4**	**+0.3**
	0.3nm,0.3s,baz=144,slow=11,SNR=5.0						
FINES	**FINESS Array B**	**22.74**	**13**	P	**P**	**09 51 22.1**	**+0.5**
	1.6nm,0.5s,mb3.6,baz=185,slow=9.6,SNR=13						
ARCES	**ARCESS Array B**	**30.39**	**7**	P	**P**	**09 52 29.4**	**-0.9**
	1.5nm,0.7s,mb3.6,baz=207,slow=8.1,SNR=3.1						
MKAR	**Makanchi Array**	**47.87**	**58**	P	**P**	**09 54 54.3**	**+0.6**
	0.7nm,0.4s,mb3.4,baz=281,slow=7.3,SNR=12						

WEL ***12*** *09:52:57.8±0.1, 40.65S×175.77E, h28km, ML4.9/23, Error ellipse: s-maj=1.1km s-min=0.6km az=90.0*
NEIC ***12*** *09:52:58.1, 40.62S×175.73E, h26km, mb4.8/7, ML4.9(WEL), After WEL.*
NEIC Felt at Wellington.
SYO ***12*** *09:52:58.1, 40.62S×175.73E, h26km, MB4.8*
IDC ***12*** *09:53:00.9-2.6, 40.31S×175.67E, h65km±21km, mb4.5/8, mb1 4.5/10, mb1mx4.3/16, MS3.9/8, Ms1 3.9/8, ms1mx3.8/12, Error ellipse: s-maj=22.7km s-min=16.8km az=175.0*

ISC 12 09:52:55.3±0.4, 40.75S±0.03×175.98E±0.06, h59km±3km, n161, σ1§18/163, mb4.8/11, MS3.9/7, 17C-8D, North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BFZ	**Birch Farm**	**0.21**	**73**	⇑P*	**P**	**09 53 06.1**	**+1.4**
BFZ				S*	**S**	**09 53 12.8**	**+1.2**
BFZ	**Birch Farm**	**0.21**	**73**	⇓P	**P**	**09 53 06.1**	**+1.4**
BFZ				S	**S**	**09 53 12.8**	**+1.2**
MRZ	**Mangatainoka R**	**0.32**	**285**	⇓P*	**P**	**09 53 03.0**	**-2.5**
MRZ				S*	**S**	**09 53 06.7**	**-6.2**
MTW	**Mount Morrison**	**0.55**	**221**	⇓P*	**P**	**09 53 09.2**	**+1.4**
MTW				S*	**S**	**09 53 18.4**	**+1.5**
MTW	**Mount Morrison**	**0.55**	**221**	⇓P	**P**	**09 53 09.2**	**+1.4**
MTW				S	**S**	**09 53 18.6**	**+1.7**
TSZ	**Takapari Road**	**0.68**	**359**	P*	**P**	**09 53 08.7**	**-0.6**
TSZ				⇑P*	**P**	**09 53 08.7**	**-0.6**
TSZ				S*	**S**	**09 53 16.9**	**-3.0**
TSZ				S*	**S**	**09 53 17.8**	**-2.0**
TSZ	**Takapari Road**	**0.68**	**359**	⇑P	**P**	**09 53 08.7**	**-0.6**
CAW	**Cannon Point**	**0.78**	**242**	⇑P*	**P**	**09 53 11.3**	**+0.8**
CAW				S*	**S**	**09 53 21.7**	**-0.2**
CAW	**Cannon Point**	**0.78**	**242**	⇑P	**P**	**09 53 11.3**	**+0.7**
KIW	**Kapiti Island**	**0.82**	**261**	⇑P*	**P**	**09 53 11.3**	**+0.2**
MSWZ	**Moikau Station**	**0.87**	**219**	⇓P*	**P**	**09 53 13.1**	**+1.4**
PWZ	**Pawanui**	**0.98**	**44**	⇑PN	**P**	**09 53 15.0**	**+1.7**
PWZ	**Pawanui**	**0.98**	**44**	⇑P	**P**	**09 53 15.0**	**+1.7**
WEL	**Wellington**	**1.06**	**239**	P*	**P**	**09 53 15.2**	**+0.7**
WEL	**Wellington**	**1.06**	**239**	P	**P**	**09 53 15.2**	**+0.8**
BHW	**Baring Head**	**1.07**	**231**	P*	**P**	**09 53 15.3**	**+0.8**
BHW	**Baring Head**	**1.07**	**231**	P	**P**	**09 53 15.3**	**+0.8**
MRW	**Makara Radio**	**1.08**	**243**	⇑P*	**P**	**09 53 15.3**	**+0.6**
MRW				S*	**S**	**09 53 29.1**	**+0.1**
MRW	**Makara Radio**	**1.08**	**243**	⇑P	**P**	**09 53 15.3**	**+0.6**
SNZO	**South Karori**	**1.12**	**239**	P*	**P**	**09 53 15.8**	**+0.6**
SNZO				P*	**P**	**09 53 15.8**	**+0.7**
SNZO	**South Karori**	**1.12**	**239**	P	**P**	**09 53 15.9**	**+0.8**
SNZO				S	**S**	**09 53 30.1**	**+0.3**
WAZ	**Wanganui**	**1.25**	**322**	PN	**P**	**09 53 17.2**	**+0.3**
WAZ				PN	**P**	**09 53 17.3**	**+0.3**
WAZ	**Wanganui**	**1.25**	**322**	⇑P	**P**	**09 53 17.2**	**+0.3**
WVZ	**Wahianoa**	**1.45**	**348**	PN	**P**	**09 53 20.0**	**+0.3**
TUVZ	**Tukino**	**1.50**	**350**	PN	**P**	**09 53 21.1**	**+0.7**
TUVZ	**Tukino**	**1.50**	**350**	P	**P**	**09 53 21.2**	**+0.7**
DRZ	**Dome Shelter**	**1.50**	**348**	PN	**P**	**09 53 21.3**	**+0.8**
FWVZ	**Far West T-bar**	**1.52**	**347**	PN	**P**	**09 53 21.3**	**+0.5**
WPVZ	**Whakapapa**	**1.57**	**348**	PN	**P**	**09 53 22.1**	**+0.6**
CNZ	**Chateau**	**1.58**	**348**	PN	**P**	**09 53 22.1**	**+0.5**
CNZ	**Chateau**	**1.58**	**348**	P	**P**	**09 53 22.1**	**+0.5**
NGZ	**Ngauruhoe**	**1.59**	**349**	PN	**P**	**09 53 22.4**	**+0.6**
NGZ	**Ngauruhoe**	**1.59**	**349**	P	**P**	**09 53 22.4**	**+0.6**
BKZ	**Black Stump Fm**	**1.62**	**14**	PN	**P**	**09 53 22.5**	**+0.3**
BKZ	**Black Stump Fm**	**1.62**	**14**	⇑P	**P**	**09 53 22.5**	**+0.3**
WTVZ	**West Tongariro**	**1.65**	**349**	PN	**P**	**09 53 23.3**	**+0.7**
KAVZ	**Karewarewa**	**1.66**	**351**	PN	**P**	**09 53 22.8**	**+0.1**
CMWZ	**Cape Campbell**	**1.67**	**232**	PN	**P**	**09 53 23.9**	**+1.1**
TUWZ	**Tuamarina**	**1.68**	**245**	PN	**P**	**09 53 22.7**	**-0.4**
RITZ	**Rihia Road**	**1.77**	**357**	PN	**P**	**09 53 25.1**	**+0.9**
RITZ	**Rihia Road**	**1.77**	**357**	P	**P**	**09 53 25.1**	**+0.9**
MGZ	**Maungaku**	**1.77**	**349**	PN	**P**	**09 53 24.7**	**+0.4**
MGZ	**Maungaku**	**1.77**	**349**	P	**P**	**09 53 24.7**	**+0.4**
KATZ	**Kakaramea**	**1.78**	**353**	PN	**P**	**09 53 24.9**	**+0.6**
KATZ	**Kakaramea**	**1.78**	**353**	P	**P**	**09 53 24.9**	**+0.5**
HATZ	**Hinemaiaia**	**1.85**	**3**	PN	**P**	**09 53 25.5**	**+0.2**
HATZ	**Hinemaiaia**	**1.85**	**3**	P	**P**	**09 53 25.7**	**+0.3**
BSWZ	**Blackbirch Sta**	**1.86**	**238**	PN	**P**	**09 53 25.4**	**-0.1**
VRZ	**Vera Road**	**1.87**	**329**	PN	**P**	**09 53 25.3**	**-0.3**
VRZ	**Vera Road**	**1.87**	**329**	P	**P**	**09 53 25.8**	**+0.2**
RATZ	**Rangitukua**	**1.88**	**355**	PN	**P**	**09 53 26.1**	**+0.4**
RATZ	**Rangitukua**	**1.88**	**355**	P	**P**	**09 53 26.3**	**+0.5**
RAEZ	**Rainy Point**	**1.90**	**320**	PN	**P**	**09 53 26.9**	**+0.9**
RAEZ	**Rainy Point**	**1.90**	**320**	P	**P**	**09 53 26.5**	**+0.5**
DFE	**Dawson Falls**	**2.02**	**314**	PN	**P**	**09 53 28.7**	**+1.0**
DFE	**Dawson Falls**	**2.02**	**314**	P	**P**	**09 53 29.2**	**+1.5**
WATZ	**Wairara**	**2.04**	**355**	PN	**P**	**09 53 28.0**	**0.0**
WATZ	**Wairara**	**2.04**	**355**	P	**P**	**09 53 28.1**	**+0.1**
NEZ	**North Egmont**	**2.06**	**315**	PN	**P**	**09 53 28.8**	**+0.4**
NEZ	**North Egmont**	**2.06**	**315**	P	**P**	**09 53 29.2**	**+0.9**
NRZ	**Ngariki Road**	**2.11**	**311**	PN	**P**	**09 53 30.0**	**+1.1**
NRZ	**Ngariki Road**	**2.11**	**311**	*e*P	**P**	**09 53 30.0**	**+1.1**
KNZ	**Kokohu**	**2.16**	**38**	PN	**P**	**09 53 29.7**	**0.0**
KNZ	**Kokohu**	**2.16**	**38**	P	**P**	**09 53 29.8**	**+0.1**
PKE	**Pukeiti**	**2.18**	**315**	PN	**P**	**09 53 31.0**	**+1.1**
PKE	**Pukeiti**	**2.18**	**315**	P	**P**	**09 53 31.1**	**+1.2**
NWEZ	**Newall Road**	**2.19**	**311**	PN	**P**	**09 53 30.9**	**+0.8**
NWEZ	**Newall Road**	**2.19**	**311**	P	**P**	**09 53 31.2**	**+1.1**
PATZ	**Paeroa**	**2.37**	**5**	P	**P**	**09 53 40.2**	**+7.5**
HIZ	**Hauiti**	**2.39**	**338**	PN	**P**	**09 53 32.5**	**-0.5**
KHZ	**Kahutara**	**2.48**	**227**	PN	**P**	**09 53 33.5**	**-0.7**
KHZ	**Kahutara**	**2.48**	**227**	*e*P	**P**	**09 53 33.5**	**-0.7**
THZ	**Tophouse**	**2.53**	**245**	PN	**P**	**09 53 33.8**	**-1.2**
THZ	**Tophouse**	**2.53**	**245**	P	**P**	**09 53 33.9**	**-1.1**
TAZ	**Tarawera**	**2.54**	**9**	PN	**P**	**09 53 34.4**	**-0.7**
TAZ	**Tarawera**	**2.54**	**9**	P	**P**	**09 53 34.6**	**-0.5**
UTU	**Utuhina**	**2.57**	**4**	PN	**P**	**09 53 35.2**	**-0.4**
UTU	**Utuhina**	**2.57**	**4**	P	**P**	**09 53 35.4**	**-0.1**
QRZ	**Quartz Range**	**2.62**	**267**	PN	**P**	**09 53 34.8**	**-1.4**
QRZ	**Quartz Range**	**2.62**	**267**	*e*P	**P**	**09 53 35.1**	**-1.1**
URZ	**Urewera**	**2.63**	**20**	P	**P**	**09 53 35.0**	**-1.4**
	30nm,0.3s,baz=215,slow=5.8,SNR=49						
URZ				S	**S**	**09 54 05.1**	**-2.1**
	111nm,0.3s,baz=314,slow=24,SNR=14						
URZ				LR	LR	09 54 11.7	
	comp=Z,797nm,20.3s,baz=135,slow=30						
URZ	**Urewera**	**2.63**	**20**	PN	**P**	**09 53 35.0**	**-1.4**
URZ	**Urewera**	**2.63**	**20**	P	**P**	**09 53 35.1**	**+1.3**
MWZ	**Matawai**	**2.69**	**27**	PN	**P**	**09 53 36.0**	**-1.2**
MWZ	**Matawai**	**2.69**	**27**	P	**P**	**09 53 36.1**	**-1.1**
LIRZ	**Lichensteins R**	**2.75**	**7**	PN	**P**	**09 53 35.1**	**-3.0**
TOZ	**Tahuroa Road**	**3.03**	**353**	PN	**P**	**09 53 41.5**	**-0.6**
TOZ	**Tahuroa Road**	**3.03**	**353**	*e*P	**P**	**09 53 41.7**	**-0.4**
PUZ	**Puketiti**	**3.20**	**34**	PN	**P**	**09 53 42.7**	**-1.7**
PUZ	**Puketiti**	**3.20**	**34**	P	**P**	**09 53 42.8**	**-1.6**
DSZ	**Denniston Nort**	**3.30**	**251**	PN	**P**	**09 53 44.3**	**-1.6**
DSZ	**Denniston Nort**	**3.30**	**251**	P	**P**	**09 53 44.5**	**-1.4**
LTZ	**Lake Taylor**	**3.44**	**233**	PN	**P**	**09 53 46.0**	**-1.8**
LTZ	**Lake Taylor**	**3.44**	**233**	*e*P	**P**	**09 53 46.7**	**-1.1**
MXZ	**Matakaoa Point**	**3.66**	**30**	PN	**P**	**09 53 50.0**	**-0.8**
MXZ	**Matakaoa Point**	**3.66**	**30**	P	**P**	**09 53 49.7**	**-1.1**
MKAZ	**Moumakai**	**3.68**	**350**	PN	**P**	**09 53 50.6**	**-0.6**
MKAZ	**Moumakai**	**3.68**	**350**	P	**P**	**09 53 50.7**	**-0.5**
CRLZ	**Canterbury Las**	**3.77**	**220**	PN	**P**	**09 53 51.0**	**-1.5**
CRLZ	**Canterbury Las**	**3.77**	**220**	P	**P**	**09 53 51.2**	**-1.3**
MQZ	**McQueen's Vall**	**3.86**	**219**	PN	**P**	**09 53 51.1**	**-2.5**
MQZ	**McQueen's Vall**	**3.86**	**219**	*e*P	**P**	**09 53 51.7**	**-1.9**
OTAZ	**Otara**	**3.88**	**347**	PN	**P**	**09 53 53.6**	**-0.3**
OTAZ	**Otara**	**3.88**	**347**	P	**P**	**09 53 53.8**	**-0.1**
WTAZ	**Waiatarua**	**3.96**	**343**	PN	**P**	**09 53 54.8**	**-0.3**
WTAZ	**Waiatarua**	**3.96**	**343**	P	**P**	**09 53 55.0**	**-0.1**
KUZ	**Kuaotunu**	**4.00**	**357**	PN	**P**	**09 53 54.1**	**-1.5**
KUZ	**Kuaotunu**	**4.00**	**357**	*e*P	**P**	**09 53 54.8**	**-0.8**
MTAZ	**Motutapu**	**4.04**	**348**	PN	**P**	**09 53 55.3**	**-0.9**
MTAZ	**Motutapu**	**4.04**	**348**	P	**P**	**09 53 55.0**	**-1.2**
WVZ	**Waitaha Valley**	**4.55**	**238**	PN	**P**	**09 54 00.4**	**-3.0**
WVZ	**Waitaha Valley**	**4.55**	**238**	*e*P	**P**	**09 54 01.5**	**-1.9**
RPZ	**Rata Peaks**	**4.71**	**229**	P	**P**	**09 54 04.3**	**-1.3**
	5.6nm,0.3s,baz=31,slow=20,SNR=26						
RPZ				S	**S**	**09 54 53.7**	**-5.9**
	20nm,0.3s,baz=329,slow=5.7,SNR=11						
RPZ	**Rata Peaks**	**4.71**	**229**	PN	**P**	**09 54 03.5**	**-2.1**
RPZ	**Rata Peaks**	**4.71**	**229**	*e*P	**P**	**09 54 04.1**	**-1.5**
WCZ	**Waipu Caves**	**4.96**	**344**	PN	**P**	**09 54 07.7**	**-1.5**
WCZ	**Waipu Caves**	**4.96**	**344**	*e*P	**P**	**09 54 08.2**	**-1.0**
ODZ	**Otahua Downs**	**5.81**	**221**	PN	**P**	**09 54 18.0**	**-2.9**
ODZ	**Otahua Downs**	**5.81**	**221**	*e*P	**P**	**09 54 18.5**	**-2.4**
BWZ	**Berwen**	**5.87**	**228**	PN	**P**	**09 54 19.5**	**-2.2**
AXZ	**Alexandra**	**6.64**	**225**	PN	**P**	**09 54 29.8**	**-2.8**
TUZ	**Tuapeka**	**6.96**	**219**	PN	**P**	**09 54 34.3**	**-2.7**
TUZ	**Tuapeka**	**6.96**	**219**	*e*P	**P**	**09 54 34.7**	**-2.4**
MLZ	**Mavora Lakes**	**7.34**	**229**	PN	**P**	**09 54 40.1**	**-2.1**
MLZ	**Mavora Lakes**	**7.34**	**229**	*e*P	**P**	**09 54 42.2**	**0.0**
TOO	**Toolangi**	**23.79**	**268**	*e*P	**P**	**09 58 06.1**	**+2.9**
	15nm,0.9s,mb4.4						
STKA	**Stephens Creek**	**28.94**	**277**	*e*P	**P**	**09 58 52.1**	**+1.1**
	6.1nm,0.9s,mb4.3						
STKA	**Stephens Creek**	**28.94**	**277**	P	**P**	**09 58 51.0**	**0.0**
	6.0nm,0.9s,mb4.3,baz=99,slow=10,SNR=6.1						
STKA				LR	LR	10 08 57.5	
	comp=Z,256nm,19.4s,MS3.9,baz=290,slow=33						
CTA	**Charters Tower**	**32.63**	**300**	P	**P**	**09 59 23.3**	**-0.4**
	2.5nm,0.8s,mb4.2,baz=142,slow=11,SNR=4.5						
CTA				LR	LR	10 12 02.4	
	comp=Z,305nm,18.7s,MS4.0,baz=129,slow=35						
CTAO	**Charters Tower**	**32.63**	**300**	*e*P	**P**	**09 59 23.2**	**-0.5**
	4.9nm,0.9s,mb4.4						
AS12	**Alice Springs**	**39.05**	**283**	⇑*i*P	**P**	**10 00 18.6**	**+0.6**
	10.0nm,0.4s,mb4.9						
ASAR	**Alice Springs**	**39.05**	**283**	P	**P**	**10 00 18.6**	**+0.7**
	10nm,0.4s,mb4.9,baz=122,slow=6.7,SNR=226						
ASAR				S	**S**	**10 06 11.3**	**-1.4**
	1.1nm,0.9s,baz=132,slow=14,SNR=4.5						
ASAR				LR	LR	10 15 38.0	
	comp=Z,159nm,20.1s,MS3.8,baz=208,slow=35						
PMG	**Port Moresby**	**40.32**	**313**	P	**P**	**10 00 29.4**	**+0.8**
	24nm,0.8s,mb5.0,baz=136,slow=8.0,SNR=5.6						
PMG				LR	LR	10 15 51.4	
	comp=Z,121nm,18.4s,MS3.8,baz=58,slow=34						
PMG	**Port Moresby**	**40.32**	**313**	*e*P	**P**	**10 00 30.7**	**+2.0**
	31nm,1.0s,mb5.0						
WB2	**Warramunga Arr**	**41.00**	**288**	⇑*i*P	**P**	**10 00 34.8**	**+0.7**
WRA	**Warramunga Arr**	**41.01**	**288**	P	**P**	**10 00 34.9**	**+0.7**
	26nm,0.6s,mb5.1,baz=126,slow=8.2,SNR=441						
WRA				S	**S**	**10 06 39.9**	**-2.1**
	1.2nm,1.1s,baz=131,slow=16,SNR=3.3						
WRA				LR	LR	10 16 51.8	
	comp=Z,177nm,21.2s,MS3.9,baz=120,slow=35						
FITZ	**Fitzroy Crossi**	**48.55**	**282**	*e*P	**P**	**10 01 35.0**	**+0.4**
	9.5nm,0.5s,mb5.1						
FITZ	**Fitzroy Crossi**	**48.55**	**282**	P	**P**	**10 01 35.2**	**+0.7**
	14nm,0.7s,mb5.1,baz=166,slow=7.2,SNR=23						
QSPA	**South Pole Qui**	**49.38**	**180**	*e*P	**P**	**10 01 46.2**	**+6.0**
	48nm,0.9s,mb5.5						
MAW	**Mawson**	**60.91**	**204**	LR	LR	10 27 51.9	
	comp=Z,99nm,19.4s,MS4.0,baz=244,slow=34						
MAW	**Mawson**	**60.91**	**204**	*e*P	**P**	**10 03 15.8**	**+12**
	11nm,1.3s,mb4.8						
SYO	**Syowa Base**	**65.90**	**196**	⇑P	**P**	**10 03 39.6**	**+3.1**
SYO	**Syowa Base**	**65.90**	**196**	⇓PcP	PcP	10 04 13.6	+6.8
SYO	**Syowa Base**	**65.90**	**196**	⇑*e*PcP	**P**	**10 03 39.6**	**+3.1**
SYO				⇓*e*PcP	PcP	10 04 13.6	+6.8
VNA3	**Neumayer Olymp**	**68.25**	**178**	⇑*i*	**P**	**10 03 57.6**	**+6.5**
VNA2	**Neumayer--Watz**	**68.61**	**179**	⇑*i*	**P**	**10 03 59.6**	**+6.2**
JNU	**Nakatsue**	**84.46**	**323**	P	**P**	**10 05 24.2**	**+1.5**
	3.8nm,0.7s,mb4.7,baz=153,slow=4.5,SNR=4.1						
CMAR	**Chiang Mai Arr**	**92.45**	**292**	P	**P**	**10 06 03.6**	**+2.4**
	0.5nm,0.3s,mb4.2,baz=153,slow=3.2,SNR=4.4						
CMAR				LR	LR	10 53 40.2	
	comp=Z,57nm,18.1s,MS4.1,baz=180,slow=40						
ILAR	**Eielson Array**	**109.14**	**16**	PKiKP		10 11 22.1	
	0.2nm,0.6s,baz=249,slow=1.7,SNR=4.7						
INK	**Inuvik**	**115.08**	**18**	PKP	PKPdf	10 11 32.6	+3.7
	0.6nm,0.6s,baz=97,slow=2.3,SNR=9.8						
YKA	**Yellowknife Ar**	**116.86**	**29**	PKP	PKPdf	10 11 35.9	+3.5
	0.3nm,0.7s,baz=251,slow=1.5,SNR=13						
YKA				PKKPbc		10 22 03.2	
	0.1nm,0.6s,baz=59,slow=4.0,SNR=5.1						
YKA	**Yellowknife Ar**	**116.86**	**29**	PKP	PKPdf	10 11 35.9	+3.5
YKA				PKKPbc		10 22 03.2	
DBIC	**Dimbokro**	**146.06**	**179**	PKPbc	PKPbc	10 12 34.5	+5.3
	2.9nm,0.6s,baz=158,slow=12,SNR=7.4						
DBIC	**Dimbokro**	**146.06**	**179**	PKPbc	PKPbc	10 12 34.5	+5.3
KEV	**Kevo**	**146.74**	**341**	*ep*	PKPdf	10 12 42.5	+15
ARCES	**ARCESS Array B**	**147.26**	**341**	PKPbc	PKPdf	10 12 34.3	+5.9
	1.7nm,0.6s,baz=96,slow=2.9,SNR=8.6						
JOF	**Joensuu**	**149.51**	**329**	*ep*	PKPdf	10 12 38.9	+6.7
BRTR	**Keskin Array B**	**151.37**	**280**	PKPbc	PKPdf	10 12 44.4	+8.6
	1.7nm,0.8s,baz=143,slow=6.2,SNR=6.3						
KAF	**Kangasniemi**	**151.91**	**330**	*ep*	PKPdf	10 12 34.6	-1.3
FINES	**FINESS Array B**	**152.38**	**329**	PKPbc	PKPdf	10 12 46.7	+10
	1.4nm,0.8s,baz=173,slow=33,SNR=5.1						
FINES				PKPab	PKPab	10 12 56.2	+0.1
	2.5nm,0.7s,baz=56,slow=6.9,SNR=7.7						
FINES	**FINESS Array B**	**152.38**	**329**	PKPbc	PKPdf	10 12 46.7	+10
FINES				PKPab	PKPab	10 12 56.2	+0.1

IDC 12 10:06:18.6±2.8, 13.61S×167.53E, mb4.1/3, mb1 4.2/3, mb1mx3.7/14, Error ellipse: s-maj=109.0km s-min=45.9km az=139.0, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**29.91**	**228**	P	P	10 12 28.4	-2.2
	1.7nm,0.4s,baz=61,slow=8.3,SNR=9.1						
WRA	**Warramunga Arr**	**32.36**	**254**	P	P	10 12 50.1	-2.0
	0.6nm,0.4s,baz=86,slow=9.4,SNR=24						
ASAR	**Alice Springs**	**33.32**	**248**	P	P	10 12 58.5	-2.0
	0.8nm,0.4s,baz=76,slow=9.3,SNR=25						
ARCES	**ARCESS Array B**	**119.24**	**346**	PKP	PKPdf	10 25 08.9	-2.2
	3.4nm,1.0s,baz=90,slow=1.8,SNR=5.5						

LDG ***12*** *10:18:09.4±0.1, 42.82N×2.53E, h4km, Md2.4/1, Ml2.5/7, Error ellipse: s-maj=1.2km s-min=0.9km az=103.0*
NEIC ***12*** *10:18:09.1, 42.81N×2.52E, h5km, ML2.5(LDG), ML2.3(STR), After STR.*
STR ***12*** *10:18:09.1±0.1, 42.81N×2.52E, h5km±1km, Ml2.3, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
MDD ***12*** *10:18:09.8±0.5, 42.84N×2.55E, h11km±1km, mbLg1.8/12, Error ellipse: s-maj=4.8km s-min=2.8km az=71.0, PRXIMO*

ISC 12 10:18:07.8±0.4, 42.87N±0.02×2.52E±0.03, h11km, n19, σ1§30/30, Pyrenees

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LRDF	**Laroque-de-Fa**	**0.07**	**11**	Pg	**Pg**	**10 18 12.0**	**+1.8**
LRDF				Sg	**Sg**	**10 18 14.4**	**+2.6**
FILF	**Fillols**	**0.31**	**175**	Pg	**Pg**	**10 18 14.6**	**+0.4**
FILF				Sg	**Sg**	**10 18 18.2**	**-0.3**
CARF	**Carcanieres**	**0.34**	**244**	Pg	**Pg**	**10 18 15.5**	**+0.7**
CARF				Sg	**Sg**	**10 18 20.6**	**+1.0**
SJAF	**Saint Jean de**	**0.47**	**145**	Pg	**Pg**	**10 18 17.8**	**+0.5**
SJAF				Sg	**Sg**	**10 18 23.3**	**-0.3**
EJON	**La Jonquera**	**0.50**	**147**	Pg	**Pg**	**10 18 18.7**	**+0.8**
	1.7nm,0.1s,SNR=7.9						
EJON				Lg		10 18 24.4	
	5.8nm,0.1s,SNR=7.9						
MTLF	**Montolieu**	**0.52**	**335**	*e*Pg	**Pg**	**10 18 20.2**	**+1.8**
MTLF				*e*Pn	**Pn**	**10 18 22.8**	**+2.0**
MTLF				*e*Sg	**Sg**	**10 18 27.3**	**+1.8**
MTLF				*e*Sn	**Sn**	**10 18 32.2**	**+2.5**
	8.8nm,0.2s						
MTLF	**Montolieu**	**0.52**	**335**	Pg	**Pg**	**10 18 20.2**	**+1.8**
MTLF				Lg		10 18 27.3	
EMIR	**Miracle**	**1.20**	**218**	Pg	**Pg**	**10 18 32.0**	**+0.1**
	2.6nm,0.1s,SNR=7.9						
EMIR				Lg		10 18 48.4	
	1.0nm,0.1s,SNR=7.9						
LASF	**Ste Croix**	**1.55**	**38**	*e*Pg	**Pg**	**10 18 38.9**	**+0.1**
LASF				*e*Sg	**Sg**	**10 18 59.6**	**+0.1**
	3.9nm,0.2s						
EPF	**Esparros**	**1.61**	**277**	*e*Pg	**Pg**	**10 18 39.8**	**-0.2**
EPF				*e*Sg	**Sg**	**10 19 00.8**	**-0.6**
	12nm,0.3s						
EGRA	**Graus**	**1.76**	**248**	Lg		10 19 06.8	
	2.8nm,0.4s,SNR=7.9						
EPOB	**Poblet**	**1.85**	**216**	Pg	**Pg**	**10 18 42.9**	**-1.9**
	0.6nm,0.1s,SNR=7.9						
EPOB				Lg		10 19 07.0	
	2.2nm,0.1s,SNR=7.9						
CAF	**Calviac**	**2.08**	**351**	*e*Pn	**Pn**	**10 18 44.1**	**+0.9**
CAF				*e*Sn	**Sn**	**10 19 09.1**	**-0.2**
CAF				*e*Sg	**Sg**	**10 19 16.0**	**-1.2**
	4.8nm,0.2s						
ETSF	**Etsaut**	**2.26**	**272**	*e*Sg	**Sg**	**10 19 21.1**	**-2.1**
	5.1nm,0.3s						
LFF	**La Frestale**	**2.44**	**329**	*e*Sg	**Sg**	**10 19 27.7**	**-1.3**
	6.9nm,0.3s						
SMRF	**Simiane la Rot**	**2.49**	**62**	*e*Sn	**Sn**	**10 19 17.8**	**-1.8**
ESAC	**San Caprasio**	**2.50**	**244**	Sn	**Sn**	**10 19 18.3**	**-1.5**
	5.5nm,0.3s,SNR=7.9						
ESAC				Lg		10 19 28.3	
	19nm,0.3s,SNR=7.9						
VIVF	**Saint-Julien-l**	**2.52**	**37**	*e*Sn	**Sn**	**10 19 19.6**	**-0.9**
VIVF				*e*Sg	**Sg**	**10 19 29.9**	**-2.0**
	2.6nm,0.2s						
RJF	**

LZH				AMB	AMB			
	comp=Z,25nm,1.3s,mb5.3							
LZH				LR	LR			
	comp=N,267nm,15.0s							
LZH				LR	LR			
	comp=Z,285nm,17.9s,MS4.7							
BJI	**Beijing**	**98.19**	**51**	P	**P**	10 35 35.0	**-2.0**	
SSE	**Sheshan**	**100.83**	**60**	⇑P	P	10 35 47.8	-1.4	
YKA	**Yellowknife Ar**	**123.01 339**		PKP	PKPdf	10 40 56.2	-1.5	
	comp=Z,0.2nm,0.5s,baz=37,slow=1.6,SNR=9.2							
YKA	**Yellowknife Ar**	**123.01 339**		PKP	PKPdf	10 40 56.2	-1.5	
ILAR	**Eielson Array**	**127.83 356**		PKP	PKPdf	10 41 04.8	-2.2	
	comp=Z,0.3nm,0.7s,baz=336,slow=2.9,SNR=4.6							

IDC 12 10:23:44.4±0.8**, 6.86N**×**73.10W, h152**km±13km**, mb2.8**/1, **mb1 3.3**/3**, mb1mx3.0**/20**, Error ellipse: s-maj=50.9km s-min=7.8km az=131.0, Northern Colombia**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ROSC	**El Rosal**	**2.34**	**212**	P	P	10 24 25.7	+1.6
	57nm,0.3s,baz=345,slow=7.9,SNR=70						
ROSC				S	S	10 24 54.8	+0.2
	50nm,0.3s,baz=128,slow=21,SNR=8.7						
SDV	**Santo Domingo**	**3.17**	**50**	P	P	10 24 35.5	+0.9
	6.1nm,0.3s,baz=264,slow=9.8,SNR=27						
SDV				S	S	10 25 12.6	-0.6
	24nm,0.3s,baz=266,slow=22,SNR=43						
YKA	**Yellowknife Ar**	**63.23**	**340**	P	P	10 33 56.1	-2.4
	0.2nm,0.5s,baz=133,slow=6.7,SNR=11						
ASAR	**Alice Springs**	**149.15**	**234**	PKPbc	PKPdf	10 43 15.2	+4.2
	0.7nm,0.6s,baz=119,slow=3.4,SNR=13						
WRA	**Warramunga Arr**	**150.37**	**241**	PKPbc	PKPdf	10 43 18.3	+5.3
	0.6nm,0.4s,baz=107,slow=2.8,SNR=30						

*NEIC **12** 10:27:41.1,36.72N×9.69W,MN2.4(MDD), After MDD.*
*MDD **12** 10:27:41.5±2.1,36.65N×9.61W,mbLg2.3/8, Error ellipse: s-maj=18.8km s-min=14.3km az=97.0, PRXIMO*
*INMG **12** 10:27:42.0±1.0,36.68N×9.79W,h12km±47km,ML2.1, Error ellipse: s-maj=45.7km s-min=6.0km az=63.0*
ISC 12 10:27:41.2±1.7**,36.65N**±0.08×**9.5W**±0.1**, h10**km**, n18, σ1§03/33, West of Gibraltar**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PTEO	**Sao Teotonio**	**1.10**	**35**	*e*P	**Pb**	**10 28 03.6**	**+1.7**
PTEO				*e*S	**Sb**	**10 28 18.7**	**+2.6**
	17nm,0.2s						
PTEO	**Sao Teotonio**	**1.10**	**35**	P	**Pb**	**10 28 03.6**	**+1.7**
PTEO				S	**Sb**	**10 28 18.7**	**+2.6**
	8.6nm,0.2s						
PALC	**Alcoutim**	**1.83**	**63**	*e*Pn	**Pn**	**10 28 13.9**	**+0.8**
PALC				*e*Sn	**Sn**	**10 28 37.8**	**+1.3**
	12nm,0.1s						
PALC	**Alcoutim**	**1.83**	**63**	P	**Pn**	**10 28 13.9**	**+0.8**
PALC				S	**Sn**	**10 28 37.8**	**+1.3**
	6.2nm,0.1s						
EGRO	**El Granado**	**1.86**	**61**	P	**Pn**	**10 28 13.7**	**+0.2**
	0.9nm,0.1s,SNR=7.9						
EGRO				S	**Sn**	**10 28 37.8**	**+0.6**
	4.8nm,0.1s,SNR=7.9						
EGRO	**El Granado**	**1.86**	**61**	P	**Pn**	**10 28 14.2**	**+0.8**
EGRO				S	**Sn**	**10 28 38.1**	**+0.9**
PBEJ	**Beja**	**1.91**	**43**	*e*Sn	**Sn**	**10 28 38.4**	**-0.1**
	6.2nm,0.2s						
PBEJ	**Beja**	**1.91**	**43**	S	**Sn**	**10 28 38.4**	**-0.1**
	3.1nm,0.2s						
MOE	**Montemor**	**2.09**	**26**	*e*Pn	**Pn**	**10 28 16.6**	**-0.2**
MOE				*e*Sn	**Sn**	**10 28 41.9**	**-1.2**
EMIN	**Mina Concepcio**	**2.54**	**63**	P	**Pn**	**10 28 23.3**	**+0.1**
	0.2nm,0.1s,SNR=7.9						
EMIN				S	**Sn**	**10 28 54.6**	**+0.2**
	1.6nm,0.1s,SNR=7.9						
EMIN	**Mina Concepcio**	**2.54**	**63**	P	**Pn**	**10 28 23.2**	**0.0**
EMIN				S	**Sn**	**10 28 55.0**	**+0.5**
EBAD	**Badajoz**	**2.90**	**43**	S	**Sn**	**10 29 02.2**	**-1.4**
	1.9nm,0.1s,SNR=7.9						
EBAD	**Badajoz**	**2.90**	**43**	P	**Pn**	**10 28 27.2**	**-1.1**
EBAD				S	**Sn**	**10 29 02.6**	**-1.0**
ESPR	**Espera**	**2.96**	**85**	P	**Pn**	**10 28 29.7**	**+0.6**
	2.1nm,0.1s,SNR=7.9						
ESPR				S	**Sn**	**10 29 04.9**	**-0.1**
	18nm,0.2s,SNR=7.9						
ESPR	**Espera**	**2.96**	**85**	P	**Pn**	**10 28 29.6**	**+0.5**
ESPR				S	**Sn**	**10 29 05.3**	**+0.3**
ECAB	**El Cabril**	**3.57**	**65**	P	**Pn**	**10 28 37.3**	**-0.6**
	0.2nm,0.1s,SNR=7.9						
ECAB				S	**Sn**	**10 29 19.5**	**-1.1**
	1.2nm,0.1s,SNR=7.9						
EADA	**Adamuz**	**4.22**	**67**	P	**Pn**	**10 28 46.1**	**-1.0**
	0.2nm,0.1s,SNR=4.0						
EADA				S	**Sn**	**10 29 35.2**	**-1.9**
	0.7nm,0.1s,SNR=7.9						
EADA	**Adamuz**	**4.22**	**67**	P	**Pn**	**10 28 46.8**	**-0.3**
EADA				S	**Sn**	**10 29 35.4**	**-1.7**

*LDG **12** 10:43:50.2±0.1,42.82N×2.53E,h4km,Md2.1/1,Ml1.9/3, Error ellipse: s-maj=2.8km s-min=1.3km az=157.0*
*MDD **12** 10:43:50.7±0.5,42.83N×2.50E,h6km±15km,mbLg1.3/3, Error ellipse: s-maj=7.6km s-min=3.0km az=61.0, PRXIMO*
ISC 12 10:43:49.0±1.0**,42.84N**±0.05×**2.48E**±0.05**, h2**km±9km**, n7, σ1§09/11, Pyrenees**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
EJON	**La Jonquera**	**0.49**	**142**	Pg	**Pg**	**10 43 60.0**	**+1.1**
	0.5nm,0.1s,SNR=7.9						
EJON				Lg		10 44 05.6	
	8.1nm,0.3s,SNR=7.9						
MTLF	**Montolieu**	**0.54**	**339**	*e*Pg	**Pg**	**10 44 01.2**	**+1.5**
MTLF				*e*Pn	**Pn**	**10 44 03.7**	**+0.5**
MTLF				*e*Sg	**Sg**	**10 44 08.2**	**+1.4**
MTLF				*e*Sn	**Sn**	**10 44 12.8**	**0.0**
	3.2nm,0.2s						
MTLF	**Montolieu**	**0.54**	**339**	Pg	**Pg**	**10 44 01.2**	**+1.5**
MTLF				Lg		10 44 08.2	
EPF	**Esparros**	**1.58**	**278**	*e*Pn	**Pn**	**10 44 17.9**	**-0.3**
EPF				*e*Sg	**Sg**	**10 44 41.5**	**-0.2**
	3.4nm,0.2s						
LASF	**Ste Croix**	**1.59**	**39**	*e*Pg	**Pg**	**10 44 19.7**	**-1.0**
LASF				*e*Sg	**Sg**	**10 44 40.2**	**-1.7**
	1.2nm,0.3s						
EPOB	**Poblet**	**1.82**	**216**	Lg		10 44 48.0	
	1.2nm,0.2s,SNR=7.9						
ETSF	**Etsaut**	**2.24**	**272**	*e*Sg	**Sg**	**10 45 01.9**	**-1.5**
	0.5nm,0.2s						

*WAR **12** 10:51:28.0,50.27N×18.82E,ML2.5,Mining Induced*
*PRU **12** 10:51:29.2,50.32N×18.76E*
*NEIC **12** 10:51:30.2±1.8,50.23N×18.66E,h5km, Error ellipse: s-maj=23.0km s-min=11.4km az=190.0*
ISC 12 10:51:27.4±0.6**,50.32N**±0.04×**18.75E**±0.04**, n12**, σ1§05/23**, Poland**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OKC	**Ostrava-Krasne**	**0.62**	**219**	*e*PG	**Pg**	**10 51 40.8**	**+1.0**
OKC				*e*SG	**Sg**	**10 51 49.4**	**+1.4**
OJC	**Ojcow**	**0.68**	**98**	*e*PG	**Pg**	**10 51 41.0**	**0.0**
OJC				*e*SG	**Sg**	**10 51 50.0**	**-0.1**
MORC	**Moravsky Berou**	**0.95**	**235**	*e*Pg	**Pg**	**10 51 46.6**	**+0.3**
MORC				*e*Sg	**Sg**	**10 51 59.2**	**+0.2**
NIE	**Niedzica**	**1.36**	**131**	*e*PG	**Pg**	**10 51 53.0**	**-1.5**
NIE				*e*SG	**Sg**	**10 52 12.0**	**-0.6**
DPC	**Dobruska-Polom**	**1.55**	**272**	*e*PG	**Pg**	**10 51 57.5**	**-0.9**
DPC				*e*SG	**Sg**	**10 52 19.2**	**+0.1**
KSP	**Ksiaz**	**1.65**	**289**	*e*PN	**Pn**	**10 51 57.0**	**-0.7**
KSP				*e*PG	**Pg**	**10 52 01.0**	**+0.7**
KSP				*e*SG	**Sg**	**10 52 23.0**	**+0.8**
UPC	**Upice**	**1.76**	**277**	*e*SG	**Sg**	**10 52 25.8**	**-0.1**
VYHS	**Vyhne**	**1.83**	**178**	*e*PN	**Pn**	**10 52 01.2**	**+0.8**
VYHS				*e*PG	**Pg**	**10 52 04.7**	**+0.8**
VYHS				*e*SN	**Sn**	**10 52 23.9**	**-0.7**
VYHS				*e*SG	**Sg**	**10 52 27.5**	**-0.9**
CRVS	**Cervenica-Dubn**	**2.27**	**128**	*e*PN	**Pn**	**10 52 09.4**	**+2.8**
CRVS				*e*SN	**Sn**	**10 52 36.8**	**+1.1**
PSZ	**Piszkesteto**	**2.52**	**162**	*e*Pn	**Pn**	**10 52 09.1**	**-1.1**
PRU	**Pruhonice**	**2.72**	**265**	*e*SG	**Sg**	**10 52 55.4**	**-2.7**
KHC	**Kasperske Hory**	**3.56**	**252**	*e*SG	**Sg**	**10 53 22.3**	**-3.5**

*NEIC **12** 10:59:05.5±0.9,20.08S×69.04W,h120km±10km,mb3.8/4, Error ellipse: s-maj=16.7km s-min=10.0km az=81.0*
*IDC **12** 10:59:05.3±0.7,20.05S×68.99W,h118km±6km,mb3.7/5, mb1 3.8/8,mb1mx3.7/16, Error ellipse: s-maj=21.1km s-min=7.7km az=91.0*
ISC 12 10:59:03.1±0.6**,20.08S**±0.04×**69.24W**±0.09**, h114**km±8km**, h117**km±1.9km**: pP-P, n22**, σ1§58/24**, mb3.9/7, 3C, Northern Chile**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
LVC	**Limon Verde**	**2.54**	**173**	P	**P**	**10 59 46.7**	**+2.8**
	58nm,0.3s,baz=4.2,slow=10.0,SNR=388						
LVC				S	**S**	**11 00 18.0**	**+3.2**
	162nm,0.3s,baz=122,slow=19,SNR=41						
ANCH	**Antofagasta**	**3.75**	**197**	⇑*i*P	**P**	**11 00 00.7**	**+0.5**
ANCH				*i* S	**S**	**11 00 41.9**	**-1.9**
LPAZ	**La Paz**	**3.92**	**16**	P	**P**	**11 00 04.2**	**+1.7**
	5.6nm,0.3s,baz=198,slow=7.6,SNR=128						
LPAZ				S	**S**	**11 00 48.2**	**+0.3**
	2.4nm,0.3s,baz=225,slow=20,SNR=8.2						
ARE	**Arequipa**	**4.18**	**329**	*e*P	**P**	**11 00 06.0**	**-0.1**
ARE				*e*S	**S**	**11 00 52.0**	**-2.4**
CPCH	**Copiapo**	**7.32**	**188**	*i* P	**P**	**11 00 45.8**	**-3.0**
CPCH				*i* S	S	11 01 03.1	-68
CPUP	**Villa Florida**	**12.60**	**122**	P	**P**	**11 01 57.6**	**-1.7**
	0.3nm,0.3s,baz=319,slow=15,SNR=4.2						
TRQA	**Tornquist**	**18.99**	**162**	*e*P	**P**	**11 03 18.0**	**-0.2**
	1.7nm,0.7s						
BDFB	**Brasilia**	**20.68**	**81**	P	**P**	**11 03 34.2**	**-1.6**
	2.0nm,0.6s,baz=208,slow=13,SNR=2.9						
OTAV	**Otavalo**	**22.11**	**335**	*e*P	**P**	**11 03 54.4**	**+4.2**
	5.8nm,0.7s,mb4.0						
OTAV				*e*		11 04 12.2	
SDV	**Santo Domingo**	**28.81**	**357**	P	**P**	**11 04 54.1**	**+1.2**
	5.5nm,0.6s,mb4.4,baz=201,slow=8.6,SNR=5.7						
JTS	**JuntasAbangare**	**33.91**	**331**	P	**P**	**11 05 36.2**	**-1.2**
	0.3nm,0.9s,mb3.1						
VNA3	**Neumayer Olymp**	**61.52**	**161**	⇑*i*	**P**	**11 09 13.3**	**+3.4**
VNA1	**Neumayer--Stat**	**61.72**	**161**	⇑*i*	**P**	**11 09 15.1**	**+3.8**
VNA2	**Neumayer--Watz**	**62.09**	**161**		**P**	**11 09 14.1**	**+0.3**
DBIC	**Dimbokro**	**68.64**	**74**	P	**P**	**11 09 54.4**	**-2.2**
	2.2nm,0.8s,mb4.0,baz=239,slow=5.9,SNR=3.2						
DBIC				pP	pP	11 10 24.4	-0.6
	2.3nm,0.5s,baz=255,slow=12,SNR=2.3						
QSPA	**South Pole Qui**	**70.11**	**180**	*e*P	**P**	**11 10 06.0**	**+1.5**
	2.0nm,0.5s,mb4.2						
NVAR	**Mina Array Bea**	**74.19**	**322**	P	**P**	**11 10 30.6**	**+1.4**
	0.5nm,0.8s,mb3.3,baz=164,slow=6.6,SNR=3.4						
NVAR				pP	pP	11 10 59.7	+1.5
	0.6nm,0.8s,baz=134,slow=6.7,SNR=3.2						
NVAR	**Mina Array Bea**	**74.19**	**322**	P	**P**	**11 10 30.6**	**+1.4**
NVAR				pP	pP	11 10 59.7	+1.5
YKA	**Yellowknife Ar**	**89.75**	**341**	P	**P**	**11 11 49.1**	**-0.2**
	1.1nm,0.6s,mb4.2,baz=133,slow=4.7,SNR=30						
YKA				pP	pP	11 12 19.6	+0.4
	1.0nm,0.6s,baz=134,slow=4.8,SNR=7.6						
YKA	**Yellowknife Ar**	**89.75**	**341**	P	**P**	**11 11 49.1**	**-0.2**
YKA				pP	pP	11 12 19.6	+0.4
ASAR	**Alice Springs**	**131.01**	**209**	PKP	PKPdf	11 18 03.2	+1.1
	0.4nm,0.7s,baz=149,slow=1.1,SNR=4.4						
MKAR	**Makanchi Array**	**144.66**	**34**	PKP	PKPdf	11 18 26.4	+0.1
	0.3nm,0.5s,baz=339,slow=3.1,SNR=5.3						

*NEIC **12** 11:25:47.0, 19.78S×116.92E,h36km, ML3.3(AUST), After AUST.*
AUST 12 11:25:47.9, 19.78S×**116.92E, h36**km**, ML3.3, 1C, Northwest of Australia**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MBWA	**Marble Bar**	**2.97**	**118**	⇑*i*P	P	11 26 32.0	-1.8
MBWA				*e*S	S	11 27 03.1	-5.5
GIRL	**Giralia**	**3.07**	**205**	*e*P	P	11 26 42.0	+6.8
MEEK	**Meekatharra**	**7.00**	**167**	*e*P	P	11 27 26.1	-4.6
MEEK				*e*S	S	11 28 30.0	-20
FITZ	**Fitzroy Crossi**	**8.41**	**80**	*e*P	P	11 27 43.8	-6.5
FITZ				*e*S	S	11 29 11.1	-14
	1.0nm,0.2s						
FITZ	**Fitzroy Crossi**	**8.41**	**80**	*e*P	P	11 27 43.8	-6.5
	1.0nm,0.2s						
FITZ				*e*S	S	11 29 11.1	-14
BLDU	**Ballidu**	**10.79**	**181**	*e*P	P	11 28 16.3	-6.8
KLBR	**Kellerberrin**	**11.79**	**177**	*e*P	P	11 28 30.1	-6.5
KLBR				*e*S	S	11 30 28.9	-19

*IDC **12** 11:35:06.6±3.1, 12.90S×26.28E, mb3.8/5, mb1 4.0/6, mb1mx3.8/20, ML4.1/1, MS3.5/2, Ms1 3.5/2, ms1mx2.9/21, Error ellipse: s-maj=87.0km s-min=38.1km az=173.0*
*NEIC **12** 11:35:09.2±0.8, 12.69S×26.32E, h10km, mb4.4/1, Error ellipse: s-maj=23.3km s-min=14.3km az=121.0*
ISC 12 11:35:07.2±0.9**, 12.7S**±0.1×**26.3E**±0.2**, h10**km**, n10, σ0§56/10, mb3.8/5, MS3.5/1, Zambia**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KMBO	**Kilima Mbogo**	**15.84**	**44**	Pn	**P**	**11 38 51.7**	**-0.4**
	0.7nm,0.3s,baz=215,slow=17,SNR=14						
KMBO				Lg		11 43 18.2	
	0.4nm,0.3s,baz=339,slow=21,SNR=3.7						
KMBO				LR	LR	11 45 03.1	
	comp=Z,144nm,18.0s,baz=71,slow=37						
KMBO	**Kilima Mbogo**	**15.84**	**44**	*e*P	**P**	**11 38 51.3**	**-0.8**
KMBO				*e*S	**S**	**11 41 39.0**	**-9.0**
KMBO				Lg		11 43 18.2	
KMBO				*e*Lg		11 43 24.9	
KMBO				LR	LR	11 45 03.1	
SUR	**Sutherland**	**20.20**	**194**	*e*P	**P**	**11 39 44.8**	**-0.2**
	16nm,0.9s						
DBIC	**Dimbokro**	**36.45**	**300**	P	**P**	**11 42 14.5**	**+0.1**
	2.4nm,0.9s,mb4.1,baz=115,slow=12,SNR=3.3						
GERES	**GERESS Array B**	**62.30**	**351**	P	**P**	**11 45 32.0**	**+0.1**
	0.9nm,0.7s,mb4.0,baz=166,slow=5.5,SNR=5.0						
EKA	**Eskdalemuir Ar**	**72.18**	**343**	P	**P**	**11 46 33.2**	**-0.8**
	0.6nm,0.6s,mb3.7,baz=141,slow=4.5,SNR=3.8						
BVAR	**Borovoye Array**	**75.59**	**26**	P	**P**	**11 46 54.6**	**+0.8**
	0.6nm,0.7s,mb3.6,baz=207,slow=6.4,SNR=5.0						
MKAR	**Makanchi Array**	**77.53**	**36**	P	**P**	**11 47 05.6**	**+0.7**
	0.7nm,0.8s,mb3.6,baz=239,slow=7.1,SNR=5.6						
MKAR				LR	LR	12 21 22.0	
	comp=Z,23nm,18.6s,MS3.5,baz=11,slow=36						
MKAR	**Makanchi Array**	**77.53**	**36**	P	**P**	**11 47 05.6**	**+0.7**
MKAR				LR	LR	12 21 22.0	
YKA	**Yellowknife Ar**	**123.05**	**340**	PKP	PKPdf	11 54 04.4	-2.3
	0.1nm,0.5s,baz=39,slow=1.8,SNR=4.8						

*IDC **12** 11:46:35.9±7.8, 30.02N×85.31E, h51km±62km, mb3.5/5, mb1 3.8/7, mb1mx3.5/20, ML3.4/2, MS3.0/1, Ms1 3.2/1, ms1mx2.4/20, Error ellipse: s-maj=88.8km s-min=21.5km az=70.0*
ISC 12 11:46:32.9±4.9**, 29.9N**±0.2×**85.2E**±0.5**, h42**km±40km**, n7, σ0§66/7, mb3.6/5, Xizang**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CMAR	**Chiang Mai Arr**	**16.97**	**129**	P	**P**	**11 50 29.1**	**+0.3**
	0.1nm,0.3s,baz=308,slow=12,SNR=8.2						
CMAR				LR	LR	11 58 11.6	
	comp=Z,52nm,18.6s,baz=315,slow=41						
MKAR	**Makanchi Array**	**16.99**	**353**	P	**P**	**11 50 28.4**	**-0.5**
	0.1nm,0.3s,baz=166,slow=13,SNR=16						
ZAL	**Zalesovo**	**24.00**	**359**	P	**P**	**11 51 45.4**	**+0.9**
	0.8nm,0.3s,mb3.6,baz=202,slow=7.2,SNR=4.0						
SONM	**Songino Array**	**24.23**	**37**	P	**P**	**11 51 46.5**	**-0.3**
	0.4nm,0.5s,mb3.1,baz=221,slow=11,SNR=5.0						
WRA	**Warramunga Arr**	**68.56**	**130**	P	**P**	**11 57 33.2**	**-0.5**
	2.0nm,0.7s,mb4.1,baz=324,slow=6.3,SNR=19						
ASAR	**Alice Springs**	**70.93**	**133**	P	**P**	**11 57 48.0**	**-0.1**
	0.7nm,0.7s,mb3.7,baz=319,slow=6.3,SNR=11						
YKA	**Yellowknife Ar**	**86.55**	**9**	P	**P**	**11 59 12.3**	**+0.1**
	0.3nm,0.7s,mb3.6,baz=336,slow=5.0,SNR=9.6						

IDC 12 12:15:58.8±71.0**, 20.79S**×**178.05E, h683**km±368km**, mb2.8**/4**, mb1 2.9**/4**, mb1mx2.7**/13**, Error ellipse: s-maj=895.0km s-min=101.6km az=76.0, South of Fiji Islands**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CTA	**Charters Tower**	**29.78**	**266**	P	P	12 21 15.3	-1.1
	1.1nm,0.5s,baz=107,slow=14,SNR=4.2						
STKA	**Stephens Creek**	**34.34**	**244**	P	P	12 21 52.5	-1.8
	0.6nm,0.4s,baz=40,slow=7.9,SNR=3.4						
ASAR	**Alice Springs**	**40.85**	**258**	P	P	12 22 45.7	-1.2
	3.1nm,1.0s,baz=94,slow=7.5,SNR=25						
WB2	**Warramunga Arr**	**40.88**	**263**	*e*P	P	12 22 45.3	-1.9
WRA	**Warramunga Arr**	**40.89**	**263**	P	P	12 22 45.7	-1.6
	0.7nm,0.3s,baz=97,slow=7.6,SNR=52						

*IDC **12** 12:44:21.3±6.8, 1.69N×127.42E, h82km±63km, mb4.0/13, mb1 4.2/14,mb1mx4.1/20,ML4.8/1,MS3.3/2,Ms1 3.3/2, ms1mx2.8/24, Error ellipse: s-maj=37.7km s-min=13.3km az=69.0*
*NEIC **12** 12:44:24.9±0.3, 1.60N×127.20E, h115km, mb4.5/8, Error ellipse: s-maj=16.1km s-min=5.6km az=67.0*
*SYO **12** 12:44:24.8, 1.60N×127.20E, h115km, MB4.5*
ISC 12 12:44:20.1±1.2**, 1.65N**±0.06×**127.2E**±0.1**, h83**km±12km**, n39, σ0§87/40, mb4.4/19, 4C-2D, Halmahera**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GSPH	**General Santos**	**4.92**	**334**	*e*P	**P**	**12 45 33.9**	**+0.7**
GSPH				*i* S	**S**	**12 46 26.4**	**-3.0**
KCP	**Kidapawan**	**5.71**	**339**	⇓*e*P	**P**	**12 45 45.4**	**+1.5**
KCP				*i* S	**S**	**12 46 48.5**	**-0.3**
KAKA	**Kakadu**	**15.18**	**160**	*e*P	**P**	**12 47 51.3**	**+0.1**
	20nm,0.6s						
FITZ	**Fitzroy Crossi**	**19.68**	**184**	*e*P	**P**	**12 48 44.4**	**-0.9**
	18nm,0.6s						
FITZ	**Fitzroy Crossi**	**19.68**	**184**	P	**P**	**12 48 44.8**	**-0.5**
	2.3nm,0.3s,baz=12,slow=7.8,SNR=102						
WRA	**Warramunga Arr**	**22.59**	**162**	P	**P**	**12 49 14.2**	**-0.4**
	29nm,0.6s,mb4.8,baz=342,slow=10,SNR=332						
WB2	**Warramunga Arr**	**22.59**	**162**	⇑*i*P	**P**	**12 49 14.7**	**+0.1**
WB2				*e*S	**S**	**12 53 15.8**	**+4.0**
AS12	**Alice Springs**	**26.01**	**166**	⇑*i*P	**P**	**12 49 46.5**	**-0.8**
	9.5nm,0.5s,mb4.5						
ASAR	**Alice Springs**	**26.01**	**166**	P	**P**	**12 49 46.5**	**-0.7**
	8.6nm,0.5s,mb4.5,baz=348,slow=7.6,SNR=280						
ASAR				LR	LR	13 00 47.4	
	comp=Z,46nm,21.1s,baz=192,slow=38						
CTA	**Charters Tower**	**28.59**	**140**	LR	LR	13 02 16.6	
	comp=Z,71nm,18.3s,baz=134,slow=38						
FORT	**Forrest**	**32.26**	**179**	*e*P	**P**	**12 50 42.0**	**-1.1**
	44nm,0.6s,mb5.4						
CMAR	**Chiang Mai Arr**	**32.32**	**303**	P	**P**	**12 50 42.8**	**-0.8**
	2.0nm,1.1s,mb3.8,baz=125,slow=6.4,SNR=5.1						
KLBR	**Kellerberrin**	**34.24**	**194**	*e*P	**P**	**12 50 59.5**	**-0.7**
	76nm,1.8s,mb5.2						
NWAO	**Narrogin (SRO)**	**35.65**	**194**	P	**P**	**12 51 12.5**	**+0.4**
	6.5nm,0.7s,mb4.7,baz=272,slow=11,SNR=5.7						
STKA	**Stephens Creek**	**36.05**	**159**	⇑*i*P	**P**	**12 51 15.0**	**-0.5**
	22nm,0.7s,mb5.2						
STKA	**Stephens Creek**	**36.05**	**159**	P	**P**	**12 51 15.1**	**-0.5**
	25nm,0.6s,mb5.3,baz=334,slow=8.8,SNR=92						
ARMA	**Armidale**	**39.52**	**146**	*e*P	**P**	**12 51 45.8**	**+1.4**
GUN	**Gumba**	**47.30**	**307**	*e*P	**P**	**12 52 48.1**	**+0.7**
	24nm,0.9s,mb4.9						
PKI	**Pulchoki**	**47.53**	**307**	*e*P	**P**	**12 52 49.4**	**+0.2**
KKN	**Kakani**	**47.72**	**307**	*e*P	**P**	**12 52 50.8**	**0.0**
DMN	**Daman**	**47.78**	**307**	*e*P	**P**	**12 52 51.4**	**+0.2**
	17nm,1.1s,mb4.8						
GKN	**Gorkha**	**48.33**	**307**	*e*P	**P**	**12 52 55.4**	**0.0**
KOLN	**Koldanda**	**49.06**	**306**	*e*P	**P**	**12 53 01.4**	**+0.3**
	13nm,0.8s,mb4.9						
SONM	**Songino Array**	**49.39**	**342**	P	**P**	**12 53 03.0**	**-0.3**
	0.8nm,0.8s,mb3.7,baz=158,slow=7.2,SNR=7.7						
MKAR	**Makanchi Array**	**59.50**	**326**	P	**P**	**12 54 16.8**	**-0.1**
	3.4nm,0.3s,mb4.8,baz=118,slow=7.6,SNR=53						
ZAL	**Zalesovo**	**62.62**	**333**	P	**P**	**12 54 39.3**	**+1.3**
	0.9nm,0.6s,mb3.9,baz=226,slow=3.6,SNR=5.6						
KURK	**Kurchatov**	**63.71**	**328**	*e*P	**P**	**12 54 44.6**	**-0.6**
BVAR	**Borovoye Array**	**69.28**	**327**	P	**P**	**12 55 20.4**	**0.0**
	1.5nm,0.8s,mb3.9,baz=141,slow=9.5,SNR=8.2						
VNDA	**Vanda**	**81.32**	**173**	P	**P**	**12 56 28.0**	**-0.5**
	1.8nm,0.6s,mb4.1,baz=323,slow=6.0,SNR=18						
VNDA	**Vanda**	**81.32**	**173**	*e*P	**P**	**12 56 27.7**	**-0.8**
	0.9nm,0.6s,mb3.8						
MAW	**Mawson**	**81.96**	**200**	P	**P**	**12 56 32.5**	**+0.6**
	2.4nm,0.6s,mb4.2,baz=48,slow=8.9,SNR=8.1						
SBA	**Scott Base**	**82.23**	**172**	*e*P	**P**	**12 56 33.5**	**+0.3**
IMA	**Indian Mountai**	**84.10**	**24**	*e*P	**P**	**12 56 43.4**	**+0.7**
ILAR	**Eielson Array**	**86.79**	**25**	P	**P**	**12 56 55.4**	**-0.6**
	0.3nm,0.8s,mb3.2,baz=233,slow=4.5,SNR=3.7						
SYO	**Syowa Base**	**90.65**	**201**	⇓P	**P**	**12 57 17.2**	**+2.9**
SYO	**Syowa Base**	**90.65**	**201**	⇑pP	pP

MDZ	Mendoza	2.21	174	*e*P		Pn	13 08 46.9	+1.2
PACH	Papudo	2.72	226	*i* P		Pn	13 08 53.4	+0.4
PACH				*i* S		Sn	13 09 28.0	+1.3
FCH	Farellones	2.83	201	*i* S		Sn	13 09 31.8	+2.3
FCH				AMP			13 09 37.3	
	comp=E,58nm,0.3s							

IDC 12 13:13:26.6±17.0, 17.37S×175.00W, mb4.3/5, mb1 4.5/5, mb1mx4.0/15, 1C, Error ellipse: s-maj=327.0km s-min=134.5km az=81.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	Charters Tower	36.74	260	P	P	13 20 35.9	-1.8
	5.2nm,1.1s,baz=112,slow=12,SNR=4.3						
STKA	Stephens Creek	41.73	241	*e*P	P	13 21 18.0	-1.2
	2.6nm,0.9s						
STKA	Stephens Creek	41.73	241	P	P	13 21 18.6	-0.6
	4.0nm,0.8s,baz=93,slow=8.4,SNR=11						
WRA	Warramunga Arr	47.92	259	P	P	13 22 06.2	-2.8
	1.6nm,0.7s,baz=98,slow=6.8,SNR=14						
AS12	Alice Springs	48.06	254	⇑*i*P	P	13 22 07.5	-2.5
	6.4nm,0.5s						
ASAR	Alice Springs	48.06	254	P	P	13 22 07.6	-2.4
	9.2nm,0.4s,baz=90,slow=8.3,SNR=138						
FITZ	Fitzroy Crossi	56.32	260	*e*P	P	13 23 09.8	-2.1
	1.4nm,0.6s						
FITZ	Fitzroy Crossi	56.32	260	P	P	13 23 10.3	-1.7
	1.2nm,0.5s,baz=155,slow=6.2,SNR=9.7						

JMA 12 13:23:46.2±0.3, 35.23N×141.51E, h42km±3km, M2.7
IDC 12 13:23:55.3±1.7, 33.87N×137.96E, mb3.5/3, mb1 3.8/3, mb1mx3.3/22, Error ellipse: s-maj=48.9km s-min=25.1km az=39.0
ISC 12 13:23:46.8±1.1, 35.23N±0.04×141.47E±0.10, h44km±10km, n15, σ0§52/21, mb3.6/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	0.68	314	P	P	13 23 59.7	-0.4
CHOJ				*e*S	S	13 24 10.4	+0.5
BSO1	Boso 1	0.70	215	P	P	13 24 00.2	-0.2
BSO1				*e*S	S	13 24 11.1	+0.7
BSO3	Boso 3	0.89	241	P	P	13 24 03.0	-0.1
KTR	Katsuura	0.94	265	P	P	13 24 03.4	-0.4
BSO4	Boso 4	0.95	256	P	P	13 24 03.9	-0.1
JCN	Nagara	1.05	280	P	P	13 24 05.8	+0.5
JYT	Yasato	1.43	314	P	P	13 24 11.2	+0.3
JHO	Hitachi	1.56	332	P	P	13 24 12.8	+0.2
JIM2	Oshima 3	1.75	253	P	P	13 24 14.0	-1.3
JIM2				*e*S	S	13 24 37.2	+0.7
JOD2	Odawara 2	1.94	272	P	P	13 24 17.2	-0.9
JOD2				*e*S	S	13 24 41.6	+0.2
JHJ	Hachijo jima 2	2.53	214	Pn	P	13 24 26.4	0.0
	13nm,0.3s,baz=44,slow=20,SNR=16						
JHJ				Sn	S	13 24 55.9	-0.3
	31nm,0.3s,baz=110,slow=23,SNR=11						
MAT	Matsushiro	2.95	297	P	P	13 24 32.9	+0.5
MAT				*e*S	S	13 25 06.4	-0.5
MKAR	Makanchi Array	45.13	304	P	P	13 32 00.3	-0.3
	0.3nm,0.7s,mb3.2,baz=85,slow=10,SNR=3.8						
WRA	Warramunga Arr	55.29	188	P	P	13 33 18.4	+0.1
	0.7nm,0.6s,mb3.9,baz=0.7,slow=7.4,SNR=17						
ASAR	Alice Springs	59.01	188	P	P	13 33 45.3	+0.6
	0.4nm,0.6s,mb3.6,slow=8.1,SNR=3.7						

NEIC 12 13:34:59.9±3.1, 50.29N×19.19E, h5km, Error ellipse: s-maj=31.4km s-min=18.5km az=217.0
WAR 12 13:35:01.6, 50.21N×19.10E, ML2.3, Mining Induced
PRU 12 13:35:01.1, 50.33N×19.04E
ISC 12 13:34:60.0±0.7, 50.26N±0.04×19.04E±0.04, n9, σ1§24/18, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OJC	Ojcow	0.49	94	*e*PG	Pg	13 35 10.0	+0.3
OJC				*i* SG	Sg	13 35 16.8	+0.5
OKC	Ostrava-Krasne	0.71	234	*e*PG	Pg	13 35 15.7	+1.5
OKC				*e*SG	Sg	13 35 25.5	+1.8
MORC	Moravsky Berou	1.08	244	*e*Pg	Pg	13 35 22.2	+0.7
MORC				*e*Sg	Sg	13 35 32.9	+0.1
NIE	Niedzica	1.18	135	*e*PG	Pg	13 35 23.0	-0.5
NIE				*e*SG	Sg	13 35 38.0	-1.2
KOLL	Kolacno	1.73	194	*e*PB	Pb	13 35 35.0	+2.6
KOLL				*e*SN	Sn	13 35 55.2	+0.6
DPC	Dobruska-Polom	1.74	274	*e*PG	Pg	13 35 32.2	-2.6
DPC				*e*SG	Sg	13 35 56.2	-1.8
	7.9nm,0.2s						
VYHS	Vyhne	1.77	184	*e*PN	Pn	13 35 31.7	-0.4
VYHS				*e*SN	Sn	13 35 55.3	-0.3
VYHS				*e*SG	Sg	13 35 57.3	-1.6
KSP	Ksiaz	1.85	290	*e*PG	Pg	13 35 38.0	+1.2
KSP				*e*(SG)	Sg	13 36 02.0	+0.5
UPC	Upice	1.95	279	*e*SG	Sg	13 36 03.4	-1.6

IDC 12 13:44:30.8±1.0, 26.75N×143.15E, mb3.6/6, mb1 3.8/6, mb1mx3.6/21, MS2.4/1, Ms1 2.4/1, ms1mx1.7/26, Error ellipse: s-maj=22.8km s-min=18.3km az=50.0
ISC 12 13:44:33.1±6.9, 26.7N±0.1×143.3E±0.1, h30km±49km, n10, σ0§65/10, mb3.6/6, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	Chichi jima	1.02	290	Pn	Pn	13 44 51.6	+0.1
	204nm,0.3s,baz=277,slow=19,SNR=71						
CBIJ				Sn	Sn	13 45 05.0	+0.1
	236nm,0.3s,baz=290,slow=22,SNR=14						
JNU	Nakatsue	12.47	304	LR	LR	13 51 24.5	
	comp=Z,18nm,20.0s,baz=250,slow=33						
WB2	Warramunga Arr	47.20	191	*e*P	P	13 53 05.7	+0.4
WRA	Warramunga Arr	47.20	191	P	P	13 53 05.2	-0.1
	1.3nm,0.5s,mb4.2,baz=12,slow=8.6,SNR=32						
FITZ	Fitzroy Crossi	47.74	203	*e*P	P	13 53 10.6	+1.0
	1.5nm,0.7s,mb4.1						
FITZ	Fitzroy Crossi	47.74	203	P	P	13 53 10.2	+0.6
	1.4nm,0.6s,mb4.2,baz=28,slow=9.6,SNR=5.2						
ASAR	Alice Springs	50.92	191	P	P	13 53 32.9	-1.0
	0.1nm,0.3s,mb3.2,baz=10,slow=7.1,SNR=5.0						
MKAR	Makanchi Array	51.44	310	P	P	13 53 37.0	-0.5
	0.2nm,0.6s,mb3.3,baz=100,slow=8.8,SNR=2.9						
ILAR	Eielson Array	57.57	28	P	P	13 54 21.4	-0.7
	0.4nm,0.9s,mb3.5,baz=252,slow=5.9,SNR=4.2						
YKA	Yellowknife Ar	72.00	29	P	P	13 55 56.8	+1.1
	0.3nm,0.9s,mb3.2,baz=288,slow=5.9,SNR=4.5						

MAN 12 13:48:33.7, 20.05N×121.27E, h34km, mb4.7, ML3.6, MS3.5, 5C, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BBP	Basco	0.76	59	⇑*e*P	P	13 48 49.0	+1.0
BBP				*e*S	S	13 48 58.9	+0.6
APYP	Conner	2.18	181	⇑*e*P	P	13 49 08.1	-0.2
APYP				*e*S	S	13 49 34.6	+0.3
CVP	Callao Caves	2.39	167	*e*P	P	13 49 11.0	-0.4
CVP				*e*S	S	13 49 43.0	+3.2
ABRA	Dolores	2.45	193	⇑*e*P	P	13 49 11.7	-0.5
CAUP	Cauayan	3.13	170	⇑*e*P	P	13 49 23.4	+1.4
BALP	Baler	4.30	176	⇑*e*P	P	13 49 38.7	+0.2

JMA 12 13:51:18.9±0.2, 24.40N×121.77E, h28km, M2.5
TAP 12 13:51:18.6, 24.68N×121.86E, h12km, ML3.2
TAP Felt II J at Suao, I J at Ilan, II J at Nanau.
ISC 12 13:51:19.5±0.3, 24.68N±0.02×121.90E±0.02, h12km, n39, σ0§93/59, 4C-5D, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWC	Suao	0.09	214	⇓*i*P	Pg	13 51 21.5	-0.7
ILA	Ilan	0.16	301	*i* P	Pg	13 51 22.9	-0.5
ILA				S	Sg	13 51 25.5	-0.5
TWE	Neicheng	0.22	281	⇑*i*P	Pg	13 51 23.4	-0.9
TWE				S	Sg	13 51 26.2	-1.3
ENA	Nanau	0.29	210	⇓*i*P	Pg	13 51 25.1	-0.6
ENA				S	Sg	13 51 28.6	-1.2
ENTT	Nioudou	0.31	263	⇑*i*P	Pg	13 51 25.0	-1.0
ENTT				S	Sg	13 51 31.1	+0.7
TWB1	Santiao Chiao	0.34	13	⇓*i*P	Pg	13 51 26.4	-0.1
TWB1				S	Sg	13 51 30.7	-0.5
NWF	Wu-fen Shan	0.40	344	⇓*i*P	Pg	13 51 27.8	0.0
NWF				S	Sg	13 51 34.2	+0.8
TWA	Mucha	0.42	316	⇓*i*P	Pg	13 51 27.8	-0.3
TWA				S	Sg	13 51 33.0	-0.8
NSK	Sanguang	0.50	270	⇑*i*P	Pg	13 51 28.4	-1.2
TAP1	Taipei	0.50	316	S	Sg	13 51 36.1	-0.3
NNS	Nan Shan	0.54	244	⇑*i*P	Pb	13 51 29.2	-1.2
NNS				S	Sb	13 51 36.1	-1.6
TWS1	Kuangyinshan	0.61	314	*e*P	Pb	13 51 32.2	+0.7
TWS1				S	Sb	13 51 40.0	+0.3
TWY	Chenhua	0.65	335	P	Pb	13 51 32.7	+0.3
TWD	Chiawan	0.66	205	P	Pb	13 51 31.8	-0.7
TWD				S	Sb	13 51 40.8	-0.5
NCU	National Centr	0.71	294	*e*P	Pb	13 51 34.2	+0.9
HWA	Hwalien	0.75	201	*e*P	Pb	13 51 33.5	-0.6
TWT	Tachien	0.79	237	*e*P	Pb	13 51 34.3	-0.3
TWT				S	Sb	13 51 44.2	-0.8
WHF	Hehuan Shan	0.79	228	*e*P	Pb	13 51 34.4	-0.3
WHF				S	Sb	13 51 44.2	-0.9
NSTT	Nanjuang	0.82	267	*e*P	Pb	13 51 35.5	+0.3
PCYT	Pengchaiyu	0.96	9	*e*P	Pb	13 51 38.3	+0.8
ESL	Shilin	0.96	207	*e*P	Pb	13 51 35.8	-1.8
ESL				S	Sb	13 51 50.1	0.0
YOJ	Yonaguni jima	1.03	102	P	Pb	13 51 39.0	+0.2
YOJ				S	Sb	13 51 53.6	+1.5
NSY	Sanyi	1.07	256	*e*P	Pb	13 51 41.4	+1.9
NSY				S	Sb	13 51 55.0	+1.7
TWQ1	Liyutan	1.08	252	*e*P	Pb	13 51 40.7	+1.1
SMLT	Sun Moon Lake	1.21	229	*e*P	Pb	13 51 43.0	+1.1
TYC	Yuchr	1.23	231	*e*P	Pb	13 51 42.0	-0.2
TWF1	Yuli	1.43	203	*e*P	Pn	13 51 45.1	-0.3
YUS	Yu-Shan	1.47	216	*e*P	Pn	13 51 46.5	+0.6
ALS	Alishan	1.54	221	*e*P	Pn	13 51 47.8	+0.9
ALS				S	Sb	13 52 08.3	+1.5
CHN5	Tsauling	1.55	226	*e*P	Pn	13 51 48.5	+1.3
CHN5				S	Sb	13 52 09.6	+2.3
ELDTW	Lidau	1.69	209	*e*P	Pn	13 51 50.5	+1.4
IRIF	Iriomote-Funau	1.70	101	P	Pn	13 51 48.4	-0.8
IRIF				*e*S	Sn	13 52 10.7	-0.3
HATJ	Hateruma jima	1.84	109	P	Pn	13 51 50.4	-0.9
WTP	Ta-pu	1.85	220	*e*P	Pn	13 51 54.2	+2.8
TWK	Hsinying	1.91	223	*e*P	Pn	13 51 52.4	+0.2
CHN1	Nanshi	1.95	220	*e*P	Pn	13 51 53.3	+0.5
JKRS	Kuro-shima	1.97	103	P	Pn	13 51 52.8	-0.3
JKRS				*e*S	Sn	13 52 17.2	-0.7
JIJ	Ishigaki jima	2.06	98	P	Pn	13 51 54.5	0.0
JIJ				*e*S	Sn	13 52 20.0	-0.3
JTJ	Tarama	2.55	90	P	Pn	13 52 02.0	+0.6

MAN 12 13:56:06.3, 17.46N×120.62E, h31km, mb4.2, ML3.0, MS2.7, 6C, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ABRA	Dolores	0.20	26	⇑*e*P	Pb	13 56 15.2	+2.5
ABRA				*e*S	Sb	13 56 20.2	+3.1
APYP	Conner	0.71	56	⇑*e*P	Pb	13 56 19.6	-0.7
APYP				*e*S	Sb	13 56 29.6	-0.3
BCPH	Baguio City Da	1.08	182	⇑*i*P	Pn	13 56 23.4	-2.1
BCPH				*i* S	Sn	13 56 38.8	-0.6
CAUP	Cauayan	1.26	114	⇑*e*P	Pn	13 56 28.6	+0.5
BOLP	Bolinao	1.27	212	⇑*e*P	Pn	13 56 32.5	+4.2
BALP	Baler	1.94	152	⇑*e*P	Pn	13 56 37.7	-0.1
BALP				*e*S	Sn	13 56 59.1	-2.3

IDC 12 14:11:46.5±2.3, 34.06N×89.33E, mb3.4/3, mb1 3.7/6, mb1mx3.5/21, ML3.4/3, Error ellipse: s-maj=59.2km s-min=29.5km az=59.0
NEIC 12 14:11:49.4±1.0, 34.23N×89.19E, h10km, Error ellipse: s-maj=30.9km s-min=12.5km az=70.0
ISC 12 14:11:47.4±1.1, 34.3N±0.1×89.2E±0.3, h10km, n7, σ1§23/7, mb3.3/2, Xizang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LSA	Lhasa	4.84	160	*e*P	Pn	14 13 02.5	+0.3
MKAR	Makanchi Array	13.56	339	Pn	P	14 15 00.8	-1.5
	0.1nm,0.3s,baz=139,slow=15,SNR=2.7						
CMAR	Chiang Mai Arr	17.98	149	P	P	14 15 55.4	-3.8
	0.1nm,0.3s,baz=330,slow=12,SNR=8.4						
SONM	Songino Array	18.70	38	P	P	14 16 08.5	+0.6
	0.1nm,0.3s,baz=225,slow=12,SNR=6.3						
ZAL	Zalesovo	19.91	352	P	P	14 16 22.0	+0.1
	2.0nm,0.9s,baz=204,slow=9.1,SNR=9.0						
BVAR	Borovoye Array	23.05	330	P	P	14 16 55.9	+2.2
	0.4nm,0.6s,mb3.0,baz=157,slow=11,SNR=1.9						
ILAR	Eielson Array	72.04	22	P	P	14 23 12.2	-0.8
	0.7nm,1.0s,mb3.6,baz=303,slow=6.0,SNR=6.8						

NEIC 12 14:19:19.2, 30.43S×71.96W, h16km, ML3.5(GUC), After GUC.
GUC 12 14:19:19.2±0.9, 30.43S×71.96W, h16km±6km, MD3.7, ML3.5, 4C-2D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OVCH	Ovalle	0.68	106	⇑*i*P	Pb	14 19 31.5	-0.6
OVCH				*i* S	Sb	14 19 41.3	+0.3
OVCH				AMP		14 19 46.8	
	comp=E,2μm,0.4s						
LSCH	La Serena	0.80	50	⇑*i*P	Pb	14 19 33.7	-0.6
LSCH				*i* S	Sb	14 19 44.5	-0.2
TLL	Tololo Astrono	1.03	76	⇓*i*P	Pb	14 19 38.0	-0.1
TLL				*i* S	Sb	14 19 51.8	+0.6
TLL				AMP		14 19 56.5	
	comp=N,2μm,0.4s						
CMCH	Combarbala	1.11	132	⇑*i*P	Pb	14 19 39.2	-0.3
CMCH				*i* S	Sb	14 19 53.9	+0.4
CMCH				AMP		14 20 03.5	
	comp=N,3μm,0.6s						
ILCH	Illapel	1.38	151	⇑*i*P	Pn	14 19 42.7	-1.3
ILCH				*i* S	Sb	14 20 00.7	-0.7
ILCH				AMP		14 20 08.0	
	comp=E,529nm,0.4s						
PEL	Peldehue	2.92	159	*i* S	Sn	14 20 41.9	+0.9
PEL				AMP		14 20 57.2	
	comp=E,239nm,0.7s						
CLCH	Cerro Calan	3.20	158	AMP		14 21 05.0	
	comp=E,197nm,0.7s						
FCH	Farellones	3.22	154	*e*P	Pn	14 20 11.4	+1.2
FCH				*i* S	Sn	14 20 50.0	+1.3
FCH				AMP		14 21 04.0	
	comp=E,74nm,0.7s						
LMEL	Las Melosas	3.72	157	⇓*i*P	Pn	14 20 17.0	-0.4
LMEL				*i* S	Sn	14 21 01.2	-0.1
LMEL				AMP		14 21 18.9	
	comp=N,58nm,0.5s						

MAN 12 14:35:32.0, 19.13N×121.19E, h21km, mb5.5, ML4.5, MS4.7
IDC 12 14:35:31.9±3.1, 19.02N×121.36E, h43km±28km, mb4.1/22, mb1 4.3/25, mb1mx4.2/29, ML4.1/3, MS3.9/16, Ms1 4.0/16, ms1mx3.8/28, Error ellipse: s-maj=20.3km s-min=11.7km az=74.0
MOS 12 14:35:34.6±0.7, 19.14N×121.17E, h81km, mb4.6/5, Error ellipse: s-maj=21.6km s-min=11.0km az=95.6
NEIC 12 14:35:37.0±1.3, 18.97N×121.22E, h94km±12km, mb4.6/15, Error ellipse: s-maj=8.7km s-min=5.8km az=64.0
BJI 12 14:35:44.8, 20.03N×120.50E, h93km, mB4.4, mb4.4
ISC 12 14:35:33.0±0.5, 19.12N±0.03×121.23E±0.04, h66km±5km, n130, σ1§10/139, mb4.3/46, 23C-7D, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SGCP	Mt. Cagua	1.17	138	⇑*e*P	P	14 35 53.1	-0.6
SGCP				*e*S	S	14 36 09.8	+0.5
APYP	Conner	1.25	180	⇑*e*P	P	14 35 54.0	-1.0
APYP				*e*S	S	14 36 11.4	+0.1
BBP	Basco	1.48	28	⇑*e*P	P	14 35 56.9	-1.2
CVP	Callao Caves	1.52	158	⇓*i*P	P	14 35 58.0	-0.6
CVP				*i* S	S	14 36 19.0	+1.4
ABRA	Dolores	1.55	199	⇑*e*P	P	14 35 57.4	-1.6
ABRA				*e*S	S	14 36 20.7	+2.5
SZP	Santa	1.73	205	⇑*e*P	P	14 36 00.7	-0.8
SZP				*e*S	S	14 36 01.4	-21
CAUP	Cauayan	2.24	165	⇑*e*P	P	14 36 10.4	+1.8
PALP	Palanan	2.34	151	⇑*e*P	P	14 36 11.1	+1.1
PALP				*e*S	S	14 36 42.2	+4.6
BCPH	Baguio City Da	2.80	193	⇑*i*P	P	14 36 16.7	+0.2
BCPH				*i* S	S	14 36 54.3	+5.2
BOLP	Bolinao	3.00	205	⇑*e*P	P	14 36 18.3	-1.1
BOLP				*e*S	S	14 36 59.8	+5.5
BALP	Baler	3.38	174	⇑*e*P	P	14 36 24.0	-0.6
BALP				*e*S	S	14 37 08.5	+4.7
PCPH	Palayan	3.54	182	⇓*e*P	P	14 36 27.2	+0.3
PCPH				*i* S	S	14 37 13.9	+6.0
SCZP	Santa Cruz	3.56	201	⇑*e*P	P	14 36 27.9	+0.7
SCZP				*e*S	S	14 37 18.6	+10
POLP	Polilio Island	4.42	171	⇑*e*P	P	14 36 39.3	+0.1
POLP				*e*S	S	14 37 31.0	+1.1
NBP	Mount Natib	4.42	190	⇓*e*P	P	14 36 40.2	+0.9
QVPH	Quezon City--P	4.45	182	⇓*i*P	P	14 36 43.6	+4.0
QVPH				*e*S	S	14 37 40.1	+10
ARP	Angono	4.56	181	⇑*e*P	P	14 36 41.7	+0.5
TGY	Tagaytay City	5.00	183	⇓*i*P	P	14 36 44.4	-2.9
TGY				*i* S	S	14 36 55.0	-49
TGY	Tagaytay City	5.00	183	P	P	14 36 49.0	+1.7
	14nm,0.3s,baz=206,slow=5.8,SNR=11						
GQP	Guinayangan	5.32	167	*e*P	P	14 36 53.0	+1.4
LUBP	Lubang	5.44	190	⇑*e*P	P	14 36 53.1	-0.2
PGP	Puerto Galera	5.59	183	*e*P	P	14 37 01.5	+6.0
BOAC	Boac	5.66	174	⇑*e*P	P	14 36 58.5	+2.1
AUQP	San Andres	5.93	166	⇑*e*P	P	14 37 05.3	+5.2
PVCP	Virac	6.17	153	⇑*e*P	P	14 37 02.3	-1.2
PVCP				*e*S	S	14 38 09.5	-3.9
QZH	Quanzhou	6.29	338	P	P	14 36 59.3	-5.9
QZH				S	S	14 38 05.1	-11
QZH				S	S		
	comp=N,180nm,0.6s						
QZH				S	S		
	comp=E,260nm,0.6s						
QZH				LR	LR		
	comp=N,790nm,8.7s						
QZH				LR	LR		
	comp=E,2μm,17.2s						
QZH				LR	LR		
	comp=Z,3μm,21.6s						
SJMP	San Jose	6.62	181	⇑*e*P	P	14 37 10.9	+1.0
BUSP	Coron	7.15	188	⇑*e*P	P	14 37 16.5	-0.7
CNP	Catarman	7.36	153	⇑*e*P	P	14 37 19.7	-0.3
CNP				*e*S	S	14 38 41.6	-1.2
ENPP	El Nido	8.06	193	⇑*e*P	P	14 37 28.2	-1.5
GZH	Guangzhou	8.35	300	P	P	14 37 27.4	-6.3
GZH				AMB	AMB		
	comp=Z,55nm,0.4s						
GZH				LR	LR		
	comp=N,725nm,14.7s						
GZH				LR	LR		
	comp=E,1μm,15.2s						
GZH				LR	LR		
	comp=Z,2μm,16.2s						
BESP	Borongan	8.51	151	⇑*e*P	P	14 37 35.4	-0.4
JOW	Kunigami	10.04	39	P	P	14 37 55.0	-1.9
	comp=Z,3.6nm,0.3s,baz=240,slow=15,SNR=12						
JOW				LR	LR	14 41 52.8	
	comp=Z,762nm,20.9s,baz=339,slow=38						
QIZ	Qiongzhong	10.77	271	*e*Pn	P	14 38 00.0	-6.7
QIZ				*e*Sn	S	14 39 51.8	-15
WHN	Wuhan	12.97	333	*e*P	P	14 38 31.0	-5.1
ENH	Enshi	15.38	318	*e*P	P	14 39 04.5	-3.0
	comp=Z,162nm,1.8s						
JNU	Nakatsue	16.40	30	P	P	14 39 20.0	-0.3
	comp=Z,0.3nm,0.3s,baz=136,slow=8.9,SNR=4.8						
JNU				LR	LR	14 45 56.2	
	comp=Z,218nm,19.8s,baz=203,slow=38						
KMI	Kunming	18.14	293	*e*P	P	14 39 42.6	+0.6
KMI				PP	PP	14 39 57.9	+0.2
KMI				AMB	AMB		
	comp=Z,16nm,1.4s						
KMI				AMB	AMB		
	comp=Z,153nm,5.6s						
KMI				LR	LR		
	comp=N,386nm,16.6s						
KMI				LR	LR		
	comp=E,740nm,17.5s						
KMI				LR	LR		
	comp=Z,989nm,14.9s						
CD2	Chengdu	19.68	310	⇓*i*P	P	14 39 58.4	-1.0
CD2				AP		14 40 08.9	
CD2				AMB	AMB		
	comp=Z,50nm,0.8s						
CD2				AMB	AMB		
	comp=Z,410nm,4.9s						
CD2				LR	LR		
	comp=N,670nm,16.8s						
CD2				LR	LR		
	comp=Z,800nm,18.0s						
TIY	Taiyuan	20.05	339	*e*P	P	14 40 03.4	+0.1
TIY				LR	LR		
	comp=N,678nm,16.0s						
TIY				LR	LR		
	comp=Z,583nm,15.0s						
CBIJ	Chichi jima	20.82	64	LR	LR	14 46 24.9	
	comp=Z,311nm,21.7s,baz=314,slow=32						
CMAR	Chiang Mai Arr	21.11	272	P	P	14 40 14.0	-0.3
	comp=Z,6.7nm,1.1s,mb3.9,baz=80,slow=8.9,SNR=18						
CMAR				PcP	PcP	14 44 19.8	+1.0
	comp=Z,2.1nm,0.7s,baz=71,slow=1.2,SNR=10						
CMAR				LR	LR	14 49 18.0	
	comp=Z,428nm,18.6s,baz=90,slow=39						
BJT	Baijiatuao	21.28	349	*e*P	P	14 40 16.2	+0.4
	comp=Z,10nm,0.6s,mb4.3						
BJI	Beijing	21.30	349	P	P	14 40 15.9	-0.1
BJI				AMB	AMB		
	comp=Z,6.0nm,0.6s,mb4.1						
JHJ	Hachijo jima 2	21.67	46	LR	LR	14 47 13.6	
	comp=Z,324nm,20.3s,baz=274,slow=32						
SNY	Shenyang	22.72	5	⇑P	P	14 40 36.4	+6.3
SNY				S	S	14 44 32.0	+2.6
SNY				AMB	AMB		
	comp=Z,10.0nm,0.6s,mb4.3						
SNY				LR	LR		
	comp=E,340nm,16.8s						
SNY				LR	LR		
	comp=Z,220nm,22.0s						
LZH	Lanzhou	22.81	321	*e*P	P	14 40 31.5	+0.5
LZH				AP		14 40 45.0	
LZH				AMB	AMB		
	comp=Z,27nm,1.3s,mb4.4						
LZH				LR	LR		
	comp=N,383nm,12.9s						
LZH				LR	LR		
	comp=Z,452nm,17.2s						
MAT	Matsushiro	22.88	37	P	P	14 40 32.7	+1.0
MAT				S	S	14 44 45.0	+13
MAT	Matsushiro	22.88	37	P	P	14 40 33.3	+1.6
MAT	Matsushiro	22.88	37	P	P	14 40 33.0	+1.3
	comp=Z,25nm,1.5s,mb4.3						
MAT				*e*S	S	14 44 46.0	+14
HHC	Hu-ho-hao-te	23.19	341	*e*P	P	14 40 38

comp=Z,300nm,21.0s
MDJ Mudanjiang 26.36 14 P **P** **14 41 11.1 +6.3**
MDJ AP pP 14 41 27.4 +7.0
MDJ PP PP 14 41 53.2 +3.6
MDJ PCS 14 48 17.6
MDJ AMB AMB
comp=Z,6.0nm,0.9s,mb4.0
MDJ AMB AMB
comp=Z,35nm,3.5s
MDJ LR LR
comp=N,96nm,22.7s
MDJ LR LR
comp=E,335nm,20.2s
MDJ LR LR
comp=Z,296nm,20.2s
GTA Gaotai 27.40 322 *eP* **P** **14 41 17.0 +2.6**
GTA AMB AMB
comp=Z,3.0nm,0.4s,mb4.2
GTA AMB AMB
comp=Z,63nm,6.5s
GTA LR LR
comp=N,103nm,16.4s
GTA LR LR
comp=E,116nm,18.0s
GTA LR LR
comp=Z,165nm,16.4s
LSA Lhasa 29.27 297 P **P** **14 41 31.0 -0.2**
ASAJ Asahikawa 30.67 31 LR LR 14 54 25.5
comp=Z,177nm,22.0s,baz=312,slow=37
ULN Ulaanbaatar 30.91 341 *eP* **P** **14 41 47.3 +1.8**
ULN Ulaanbaatar 30.91 341 *eP* **P** **14 41 46.9 +1.3**
comp=Z,2.0nm,0.8s,mb3.9
SONM Songino Array 31.08 340 P **P** **14 41 48.0 +0.9**
comp=Z,1.5nm,0.8s,mb3.8,baz=162,slow=10,SNR=8.7
SONM PcP PcP 14 44 41.2 -0.1
comp=Z,0.3nm,0.7s,baz=180,slow=1.2,SNR=3.9
KLR Kul'dur 31.21 13 *eP* **P** **14 41 48.5 +0.3**
KLR MLR MLR
comp=E,500nm,18.0s
YSS Yuzh-Sakhalins 32.88 28 *eP* **P** **14 42 03.0 +0.2**
GUN Gumba 33.48 292 *eP* PcP 14 44 47.9 -0.1
comp=E,8.8nm,0.6s
GUN Gumba 33.48 292 *eP* **P** **14 42 08.3 +0.1**
comp=E,19nm,0.8s,mb5.0
GUN *eP* PcP 14 44 47.9 -0.1
PKI Pulchoki 33.85 291 *eP* PcP 14 44 49.3 +0.2
comp=E,20nm,0.8s
PKI Pulchoki 33.85 291 *eP* **P** **14 42 09.9 -1.5**
comp=E,8.5nm,1.0s,mb4.5
PKI *eP* PcP 14 44 49.3 +0.2
KKN Kakani 33.99 292 *eP* PcP 14 44 49.7 +0.2
comp=E,9.8nm,0.7s
KKN Kakani 33.99 292 *eP* **P** **14 42 12.1 -0.5**
comp=E,17nm,1.0s,mb4.8
KKN *eP* PcP 14 44 49.7 +0.2
DMN Daman 34.12 291 *eP* PcP 14 44 50.1 +0.2
comp=E,13nm,0.6s
DMN Daman 34.12 291 *eP* **P** **14 42 13.2 -0.5**
comp=E,15nm,1.0s,mb4.8
DMN *eP* PcP 14 44 50.1 +0.2
ZAK Zakamensk 34.31 340 *eP* **P** **14 42 14.5 -0.5**
ZAK *e* PcP 14 44 49.5 -0.7
GKN Gorkha 34.58 292 *eP* PcP 14 44 50.0 -1.2
GKN Gorkha 34.58 292 *eP* **P** **14 42 16.7 -0.9**
comp=E,22nm,1.1s,mb4.9
GKN *eP* PcP 14 44 50.0 -1.2
TLY Talaya 35.32 341 *eP* **P** **14 42 28.3 +4.7**
TLY pmax pmax
comp=Z,35nm,0.9s,mb5.2
TLY MLR MLR
comp=Z,3μm,18.0s
KOLN Koldanda 35.47 291 *eP* PcP 14 44 53.0 -0.8
comp=Z,6.2nm,0.8s
KOLN Koldanda 35.47 291 *eP* **P** **14 42 25.0 -0.2**
comp=Z,15nm,1.2s,mb4.7
KOLN *eP* PcP 14 44 53.0 -0.8
MOY Mondy 36.17 339 *eP* **P** **14 42 41.5 +11**
FITZ Fitzroy Crossi 37.24 173 *eP* **P** **14 42 38.8 -1.4**
comp=Z,3.3nm,0.9s,mb4.3
FITZ *e* PcP 14 44 59.1 0.0
FITZ Fitzroy Crossi 37.24 173 P **P** **14 42 38.8 -1.4**
comp=Z,3.4nm,0.8s,mb4.4,baz=24,slow=4.5,SNR=7.4
FITZ PcP PcP 14 44 59.2 +0.1
comp=Z,2.2nm,0.6s,baz=197,slow=1.3,SNR=4.6
PMG Port Moresby 38.17 136 LR LR 14 55 36.6
comp=Z,112nm,20.5s,baz=236,slow=32
BOD Bodaibo 39.01 354 *eP* **P** **14 42 53.9 -0.6**
WRA Warramunga Arr 40.89 161 P **P** **14 43 07.7 -2.7**
comp=Z,4.1nm,0.7s,mb4.3,baz=347,slow=8.7,SNR=39
WRA PcP PcP 14 45 11.1 +0.4
comp=Z,2.4nm,0.8s,baz=345,slow=3.6,SNR=9.3
WB2 Warramunga Arr 40.90 161 *eP* **P** **14 43 08.0 -2.5**
WB2 *eS* **S** **14 49 15.7 -1.2**
MKAR Makanchi Array 42.11 320 P **P** **14 43 21.3 +1.2**
comp=Z,2.2nm,0.6s,mb4.1,baz=114,slow=9.4,SNR=16
MKAR PcP PcP 14 45 14.4 0.0
comp=Z,2.3nm,0.8s,baz=86,slow=4.7,SNR=4.2
MKAR LR LR 15 02 35.4
comp=Z,130nm,18.7s,baz=128,slow=38
AS12 Alice Springs 44.29 163 *eP* **P** **14 43 36.2 -2.0**
comp=Z,6.4nm,0.8s,mb4.4
ASAR Alice Springs 44.29 163 P **P** **14 43 36.5 -1.8**
comp=Z,2.7nm,0.3s,mb4.4,baz=342,slow=7.1,SNR=39
NVS Novosibirsk 45.84 330 *eP* **P** **14 43 49.2 -1.0**
NVS *e* 14 45 46.2
NVS pmax pmax
comp=E,9.0nm,1.4s
NVS pmax pmax
comp=Z,10.0nm,1.4s,mb4.3
NVS pmax pmax
comp=N,15nm,1.6s
CTA Charters Tower 46.04 146 LR LR 15 02 36.7
comp=N,164nm,18.4s,baz=339,slow=35
KURK Kurchatov 46.08 323 *eP* **P** **14 43 52.4 +0.3**
BVAR Borovoye Array 51.67 323 P **P** **14 44 36.2 +1.0**
comp=N,1.2nm,0.6s,mb4.1,baz=108,slow=9.4,SNR=10
BVAR PcP PcP 14 45 47.6 -0.5
comp=N,1.9nm,0.6s,baz=126,slow=2.6,SNR=6.1
BVAR LR LR 15 08 46.1
comp=N,137nm,18.4s,baz=130,slow=38
BRVK Borovoye 51.75 323 *eP* **P** **14 44 36.2 +0.4**
NWAO Narrogin (SRO) 51.90 184 *eP* **P** **14 44 34.1 -3.1**
TIXI Tiksi 52.72 3 *eP* **P** **14 44 41.3 -1.5**
TIXI *eS* **S** **14 52 06.0 +1.9**
TIXI pmax pmax
comp=Z,176nm,1.1s
TIXI MLR MLR
comp=Z,1μm,15.0s
TIXI Tiksi 52.72 3 *eP* **P** **14 44 41.6 -1.2**
STKA Stephens Creek 54.34 159 *eP* **P** **14 44 53.6 -1.7**
comp=Z,2.4nm,0.7s,mb4.3
STKA Stephens Creek 54.34 159 P **P** **14 44 52.4 -2.9**
comp=Z,2.9nm,0.8s,mb4.4,baz=337,slow=7.3,SNR=5.7
STKA LR LR 15 06 30.1
comp=Z,107nm,21.3s,baz=24,slow=34
BILL Bilibino 56.43 19 *eP* **P** **14 45 08.8 -1.1**
BILL pmax pmax
comp=Z,3.0nm,0.6s,mb4.5
SVE Sverdlovsk 58.18 326 *eP* **P** **14 45 22.3 -0.1**
ARU Arti 59.21 325 *i/P* **P** **14 45 28.3 -1.2**
ARU *e* 14 46 22.8
ARU pmax pmax
comp=Z,6.0nm,0.7s,mb4.7
ARU MLR MLR
comp=Z,200nm,17.0s
ARU MLR MLR
comp=N,100nm,19.0s
ARU MLR MLR
comp=E,200nm,18.0s
KIV Kislovodsk 68.85 311 *eP* **P** **14 46 38.5 +5.9**
KIV pmax pmax
comp=Z,8.0nm,0.8s,mb4.6
KIV MLR MLR
comp=E,60nm,17.0s
KIV MLR MLR
comp=Z,100nm,17.0s
IMA Indian Mountai 70.71 26 *eP* **P** **14 46 44.3 +0.8**
RSO Redoubt South 71.61 31 *eP* **P** **14 46 49.3 +0.3**
MCK McKinley 72.97 28 *eP* **P** **14 46 56.7 -0.2**
comp=Z,7.0nm,1.1s,mb4.4
SML Sawmill 73.55 30 *eP* **P** **14 47 00.2 -0.2**
ILAR Eielson Array 73.69 27 P **P** **14 47 00.0 -1.1**
comp=Z,1.3nm,0.7s,mb3.8,baz=268,slow=5.2,SNR=10
ARCES ARCESS Array B 74.24 339 P **P** **14 47 04.5 +0.3**
comp=Z,4.0nm,0.6s,mb4.3,baz=59,slow=7.1,SNR=16
ARCES LR LR 15 23 32.1
comp=Z,120nm,21.1s,baz=241,slow=39
SPITS Spitsbergen Ar 74.42 348 P **P** **14 47 05.5 +0.3**
comp=Z,7.6nm,1.1s,mb4.3,baz=9.5,slow=0.2,SNR=5.8
FINES FINESS Array B 75.83 330 P **P** **14 47 13.5 0.0**
comp=Z,2.6nm,0.9s,mb4.0,baz=117,slow=4.3,SNR=5.4
FINES LR LR 15 24 58.6
comp=Z,106nm,18.1s,baz=139,slow=39
FINES FINESS Array B 75.83 330 P **P** **14 47 13.5 0.0**
FINES LR LR 15 24 58.6
BRTR Keskin Array B 76.24 308 LR LR 15 26 26.1
comp=Z,41nm,18.2s,baz=95,slow=40
AKASG Malin Array Be 76.69 319 P **P** **14 47 16.9 -1.6**
comp=Z,1.4nm,0.7s,mb3.8,baz=59,slow=6.1,SNR=6.0
DAWY Dawson 77.01 26 *eP* **P** **14 47 20.4 +0.3**
INK Inuvik 77.89 22 P **P** **14 47 24.9 +0.1**
comp=Z,6.3nm,1.1s,mb4.2,baz=292,slow=6.0,SNR=13
INK Inuvik 77.89 22 *eP* **P** **14 47 24.5 -0.4**
comp=Z,14nm,1.4s,mb4.5
MLR Muntele Rosu 80.20 315 P **P** **14 47 39.0 +1.1**
comp=Z,2.3nm,0.9s,mb4.0,baz=147,slow=4.5,SNR=4.5
MLR Muntele Rosu 80.20 315 P **P** **14 47 39.0 +1.1**
HFS Hagfors 81.99 331 P **P** **14 47 47.4 +0.4**
comp=Z,1.4nm,0.6s,mb4.0,baz=100,slow=8.8,SNR=3.5
NB2 NORSAR Subarra 82.71 333 P **P** **14 47 50.0 -0.6**
comp=Z,3.9nm,1.0s,mb4.2,baz=60,slow=5.3
NOA NORSAR Array B 82.71 333 P **P** **14 47 50.9 +0.3**
comp=Z,0.8nm,0.8s,mb3.6,baz=92,slow=1.7,SNR=3.5
NOA LR LR 15 27 44.1
comp=Z,245nm,19.1s,baz=70,slow=38
NOA NORSAR Array B 82.71 333 P **P** **14 47 50.9 +0.3**
NOA LR LR 15 27 44.1
DLBC Dease Lake 83.27 30 P **P** **14 47 55.8 +2.2**
comp=Z,2.4nm,0.8s,mb4.1,baz=173,slow=24,SNR=6.2
RES Resolute Bay 83.63 9 *eP* **P** **14 47 55.5 +0.6**
comp=Z,12nm,1.4s,mb4.5
KMBO Kilima Mbogo 84.68 267 P **P** **14 48 03.1 +1.4**
comp=Z,1.9nm,0.8s,mb4.1,baz=7.9,slow=23,SNR=5.7
KMBO LR LR 15 23 50.6
comp=Z,81nm,19.2s,baz=93,slow=34
VRAC Vranov 84.85 321 P **P** **14 48 02.1 +0.5**
comp=Z,3.0nm,0.5s,mb4.4,baz=15,slow=7.4,SNR=4.9
BRG Berggiesshubel 85.76 323 *eP* **P** **14 48 15.8 +10**
BRG pmax pmax
comp=Z,2.0nm,0.4s,mb4.4
YKW3 Yellowknife Ar 87.55 23 *eP* **P** **14 48 15.4 +0.8**
YKA Yellowknife Ar 87.60 23 P **P** **14 48 15.7 +0.9**
comp=Z,5.4nm,0.7s,mb4.7,baz=310,slow=4.6,SNR=140
YKA Yellowknife Ar 87.60 23 P **P** **14 48 15.7 +0.9**
VNDA Vanda 99.31 172 P **P** **14 49 07.7 -0.7**
comp=Z,1.4nm,0.8s,mb4.6,baz=330,slow=7.1,SNR=5.4
NVAR Mina Array Bea 100.08 43 P P 14 49 12.9 +0.2
comp=Z,0.4nm,0.7s,baz=279,slow=10,SNR=3.7

*NAO **12** 14:36:39.4±2.9,60.80N×29.05E,ML2.4*
*HEL **12** 14:36:40.3±0.2,60.89N×29.12E,ML1.7,ML2.4(NAO), Explosion*
*BER **12** 14:36:41.0±3.8,60.88N×29.10E,ML2.4(NAO), Suspected explosion*
*IDC **12** 14:36:41.3±2.0,60.85N×28.98E,mb1 3.3/3, mb1mx3.1/19,ML2.9/3,Error ellipse: s-maj=21.3km s-min=12.4km az=2.0*

ISC 12 14:36:36.9±1.4,60.84N±0.09×29.2E±0.1,n15,σ1§50/22, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
FIA0	**FINESS Array S**	**1.63**	**293**	*eP*		**Pn**	**14**	**37 07.8**	**+0.9**
FIA0				*eS*		**Sb**	**14**	**37 28.7**	**+0.2**
FIA0	**FINESS Array S**	**1.63**	**293**	Pn		**Pn**	**14**	**37 07.9**	**+1.0**
	baz=115,slow=16								
FIA0				Lg			14	37 29.4	
	baz=99,slow=37								
FIA0				Rg			14	37 37.4	
	baz=122,slow=37								
FINES	**FINESS Array B**	**1.63**	**293**	Pg		**Pg**	**14**	**37 07.8**	**-1.5**
	2.6nm,0.3s,baz=114,slow=16,SNR=42								
FINES				Lg			14	37 29.4	
	8.7nm,0.3s,baz=99,slow=31,SNR=51								
FINES				Rg			14	37 36.8	
	22nm,0.6s,baz=118,slow=32,SNR=31								
PVF	**Pernaja**	**1.66**	**261**	*eP*		**Pn**	**14**	**37 09.2**	**+1.8**
PVF				*eS*		**Sb**	**14**	**37 30.5**	**+1.0**
KAF	**Kangasniemi**	**1.88**	**314**	*eP*		**Pn**	**14**	**37 12.8**	**+2.2**
KAF				*eS*		**Sn**	**14**	**37 35.8**	**+0.4**
KAF				MSG			14	37 38.8	
	comp=Z,4.6nm,0.1s								
JOF	**Joensuu**	**2.32**	**25**	*eP*		**Pn**	**14**	**37 19.1**	**+2.3**
JOF				*eS*		**Sn**	**14**	**37 47.4**	**+0.9**
KEF	**Keuruu**	**2.46**	**305**	MSG			14	37 55.0	
	comp=Z,1.9nm,0.1s								
APA0	**Apatity Array**	**6.99**	**12**	*eP*		**Pn**	**14**	**38 22.6**	**-0.5**
HFS	**Hagfors**	**7.69**	**272**	Pn		**Pn**	**14**	**38 30.5**	**-2.3**
	baz=86,slow=14								
HFS				Sn		**Sn**	**14**	**39 56.6**	**-5.0**
	baz=88,slow=28								
HFS				Lg			14	40 37.4	
	baz=87,slow=28								
HFS	**Hagfors**	**7.69**	**272**	*eP*		**Pn**	**14**	**38 30.5**	**-2.3**
HFS				*eS*		**Sn**	**14**	**39 56.6**	**-5.0**
HFS				*eSg*			14	40 37.4	
HFS	**Hagfors**	**7.69**	**272**	Pn		**Pn**	**14**	**38 32.0**	**-0.8**
	comp=Z,0.1nm,0.3s,baz=84,slow=15,SNR=5.1								
HFS				Lg			14	40 36.9	
	comp=Z,0.1nm,0.3s,baz=77,slow=25,SNR=4.0								
NOA	**NORSAR Array B**	**8.75**	**279**	Pn		**P**	**14**	**38 45.5**	**-2.1**
	comp=Z,0.1nm,0.3s,baz=61,slow=14,SNR=2.6								
NOA				Lg			14	41 12.1	
	comp=Z,0.2nm,0.3s,baz=53,slow=24,SNR=3.0								
ARA0	**ARCESS Array S**	**8.87**	**352**	Pn		**P**	**14**	**38 47.3**	**-1.9**
	baz=175,slow=12								
ARA0				Sn		**Sn**	**14**	**40 22.8**	**-8.3**
	baz=156,slow=28								
ARA0	**ARCESS Array S**	**8.87**	**352**	*eP*		**P**	**14**	**38 47.3**	**-1.9**
ARA0				*eS*		**Sn**	**14**	**40 22.8**	**-8.3**
ARCES	**ARCESS Array B**	**8.87**	**352**	Pn		**P**	**14**	**38 47.3**	**-1.9**
	comp=Z,0.2nm,0.3s,baz=174,slow=12,SNR=7.7								
ARCES				Lg			14	41 08.9	
	comp=Z,0.3nm,0.3s,baz=169,slow=34,SNR=3.8								

*NEIC **12** 14:48:11.8±0.8,25.55N×142.90E,h40km,Error ellipse: s-maj=38.5km s-min=15.0km az=92.0*
*IDC **12** 14:48:13.4±3.2,25.48N×142.93E,h52km±27km,mb3.4/7, mb1 3.6/7,mb1mx3.4/22,Error ellipse: s-maj=46.7km s-min=16.3km az=84.0*

ISC 12 14:48:11.9±2.7,25.5N±0.1×143.0E±0.3,h63km±22km,n9, σ1§15/10,mb3.7/7,Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**1.75**	**334**	P		**P**	**14**	**48 39.2**	**-1.3**
	41nm,0.3s,baz=141,slow=5.8,SNR=61								
CBIJ				S			**S**	**14 49 03.1**	**+1.4**
	102nm,0.3s,baz=271,slow=22,SNR=19								
WRA	**Warramunga Arr**	**45.97**	**191**	P		**P**	**14**	**56 31.2**	**+0.5**
	1.3nm,0.8s,mb3.9,baz=8.7,slow=8.4,SNR=10								
FITZ	**Fitzroy Crossi**	**46.54**	**203**	P		**P**	**14**	**56 36.3**	**+1.0**
	1.8nm,0.8s,mb4.0,baz=7.0,slow=9.0,SNR=3.6								
TIXI	**Tiksi**	**46.85**	**354**	P		**P**	**14**	**56 36.0**	**-1.1**
ASAR	**Alice Springs**	**49.69**	**191**	P		**P**	**14**	**56 59.0**	**-0.6**
	0.2nm,0.5s,mb3.4,baz=14,slow=7.4,SNR=4.3								
MKAR	**Makanchi Array**	**52.07**	**311**	P		**P**	**14**	**57 16.2**	**-1.2**
	0.1nm,0.5s,mb3.0,baz=100,slow=8.8,SNR=3.0								
ILAR	**Eielson Array**	**54.73**	**28**	P		**P**	**14**	**58 05.7**	**+0.5**
	0.5nm,1.1s,mb3.5,baz=260,slow=5.5,SNR=3.1								
BVAR	**Borovoye Array**	**59.72**	**318**	P		**P**	**14**	**58 11.4**	**-0.8**
	0.7nm,0.4s,mb4.0,baz=93,slow=6.6,SNR=7.7								
FINES	**FINESS Array B**	**79.70**	**334**	P		**P**	**15**	**00 16.4**	**+2.4**
	0.9nm,0.5s,mb3.9,baz=76,slow=5.7,SNR=7.6								

WEL 12 14:53:24.2±0.4,36.22S×178.07E,h78km±7km,ML3.5/1, Error ellipse: s-maj=7.5km s-min=2.9km az=90.0,Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**1.86**	**176**	PN		P		14 53 54.0	-0.7
PUZ				SN		S		14 54 16.1	-1.0
MWZ	**Matawai**	**2.16**	**191**	PN		P		14 53 58.3	-0.6
MWZ				SN		S		14 54 24.3	-0.2
URZ	**Urewera**	**2.18**	**200**	PN		P		14 53 58.5	-0.6
URZ				SN		S		14 54 24.7	-0.3

*IDC **12** 14:58:04.2±6.9,24.39N×108.12W,mb3.8/2,mb1 4.3/5, mb1mx4.0/19,ML3.9/3,MS3.4/4,Ms1 3.4/4,ms1mx3.1/24, Error ellipse: s-maj=109.0km s-min=47.8km az=173.0*
*NEIC **12** 14:58:06.1±2.9,24.43N×108.34W,h10km,mb3.8/5,Error ellipse: s-maj=37.8km s-min=24.3km az=175.0*

ISC 12 14:57:59.2±3.1,23.9N±0.3×108.1W±0.2,h10km,n23, σ1§05/22,mb3.8/2,MS3.4/4,Gulf of California

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
TXAR	**Lajitas Array**	**6.68**	**35**	Pn		**Pn**	**14**	**59 40.1**	**+0.2**
	1.2nm,0.3s,baz=207,slow=14,SNR=5.1								
TXAR				Pg		**Pg**	**15**	**00 19.2**	**+6.6**
	0.7nm,0.3s,baz=211,slow=16,SNR=3.2								
TXAR				Lg			15	01 41.9	
	0.5nm,0.3s,baz=226,slow=32,SNR=2.7								
TUC	**Tucson**	**8.71**	**345**	Pn		**P**	**15**	**00 02.8**	**-5.4**
LAZ	**Ladron**	**10.49**	**4**	P		**P**	**15**	**00 30.2**	**-2.5**
WUAZ	**Wupatki**	**11.92**	**347**	*eP*		**P**	**15**	**00 47.2**	**-5.1**
PV10	**Paradox Valley**	**14.45**	**357**	*eP*		**P**	**15**	**01 26.8**	**+0.9**
MSU	**Marysvale**	**14.97**	**347**	*eP*		**P**	**15**	**01 32.7**	**0.0**
ISCO	**Idaho Springs**	**15.98**	**7**	P		**P**	**15**	**01 48.7**	**+2.9**
	4.2nm,1.0s								
NVAR	**Mina Array Bea**	**16.90**	**331**	Pn		**P**	**15**	**01 58.3**	**+0.8**
	0.1nm,0.3s,baz=148,slow=12,SNR=25								
HWUT	**Hardware Ranch**	**17.89**	**351**	*eP*		**P**	**15**	**02 09.6**	**-0.2**
	9.7nm,1.2s								
BW06	**Boulder Array**	**18.85**	**357**	*eP*		**P**	**15**	**02 21.4**	**-0.2**
	9.8nm,1.1s								
PDAR	**Pinedale Array**	**18.85**	**357**	P		**P**	**15**	**02 21.8**	**+0.1**
	0.1nm,0.3s,baz=164,slow=11,SNR=29								
HLID	**Hailey**	**20.29**	**347**	*eP*		**P**	**15**	**02 36.8**	**-1.1**
	7.4nm,1.4s								
RSSD	**Black Hills**	**20.43**	**8**	*eP*		**P**	**15**	**02 39.1**	**-0.2**
	5.8nm,1.1s								
QLMT	**Earthquake Lak**	**21.05**	**353**	P		**P**	**15**	**02 44.7**	**-1.0**
MCMT	**McKenzie Canyo**	**21.23**	**351**	*eP*		**P**	**15**	**02 47.6**	**+0.1**
CHMT	**Chamberlain Mo**	**23.33**	**351**	*eP*		**P**	**15**	**03 09.5**	**+1.1**
NEW	**Newport**	**25.35**	**346**	LR		LR	**15**	14 17.9	
	comp=Z,54nm,20.5s,MS3.0,baz=345,slow=39								
NEW	**Newport**	**25.35**	**346**	*eP*		**P**	**15**	**03 27.2**	**-0.6**
NLW	**Nelson Butte**	**26.02**	**341**	*eP*		**P**	**15**	**03 32.8**	**-1.3**
ULM	**Lac du Bonnet**	**27.96**	**17**	LR		LR	**15**	14 56.3	
	comp=Z,109nm,20.7s,MS3.4,baz=354,slow=37								
YKA	**Yellowknife Ar**	**38.82**	**355**	P		**P**	**15**	**05 25.3**	**-0.5**
	1.2nm,1.1s,mb3.5,baz=170,slow=7.7,SNR=13								
YKA				LR		LR	15	22 00.5	
	comp=Z,84nm,18.3s,MS3.6,baz=150,slow=38								
YKA	**Yellowknife Ar**	**38.82**	**355**	P		**P**	**15**	**05 25.3**	**-0.5**
YKA				LR		LR	15	22 00.5	
ILAR	**Eielson Array**	**47.96**	**339**	P		**P**	**15**	**06 41.5**	**+1.9**
	1.6nm,0.9s,mb4.0,baz=151,slow=6.9,SNR=12								
ILAR				LR		LR	15	28 09.5	
	comp=Z,35nm,20.2s,MS3.3,baz=56,slow=38								

*NEIC **12** 15:02:39.4±0.8,21.83S×68.16W,h113km±9km,mb4.2/1, Error ellipse: s-maj=19.9km s-min=10.3km az=97.0*
*IDC **12** 15:02:39.2±1.0,21.82S×68.25W,h112km±15km,mb3.7/4, mb1 3.8/5,mb1mx3.6/15,Error ellipse: s-maj=32.0km s-min=23.9km az=102.0*

ISC 12 15:02:38.4±0.9,21.85S±0.09×68.1W±0.2,h118km±12km, n12,σ1§77/13,mb4.0/4,Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
LVC	**Limon Verde**	**1.05**	**223**	P		**P**	**15**	**03 01.4**	**+0.3**
	549nm,0.3s,baz=23,slow=7.6,SNR=3687								
LVC				S		**S**	**15**	**03 17.5**	**-0.5**
	95nm,0.3s,baz=97,slow=23,SNR=8.2								
LVC	**Limon Verde**	**1.05**	**223**	P		**P**	**15**	**03 01.4**	**+0.3**
LVC				S		**S**	**15**	**03 17.5**	**-0.5**
LPAZ	**La Paz**	**5.53**	**360**	P		**P**	**15**	**04 00.3**	**+0.7**
	2.3nm,0.3s,baz=172,slow=6.2,SNR=40								
TRQA	**Tornquist**	**17.00**	**163**	*eP*		**P**	**15**	**06 30.6**	**+0.4**
	0.3nm,0.6s								
BDFB	**Brasilia**	**20.02**	**75**	P		**P**	**15**	**07 03.4**	**-0.7**
	2.2nm,0.5s,baz=271,slow=11,SNR=3.6								
SNAA	**Sanae**	**61.71**	**161**	*eP*		**P**	**15**	**12 45.4**	**-0.7**
DBIC	**Dimbokro**	**68.14**	**73**	P		**P**	**15**	**13 27.3**	**-1.0**
	6.3nm,0.8s,mb4.5,baz=213,slow=8.0,SNR=6.0								
DBIC	**Dimbokro**	**68.14**	**73**	P		**P**	**15**	**13 27.3**	**-1.0**
QSPA	**South Pole Qui**	**68.34**	**180**	*eP*		**P**	**15**	**13 29.1**	**+0.6**
	2.5nm,0.7s,mb4.2								
TSUM	**Tsumeb**	**79.25**	**106**	P		**P**	**15**	**14 34.1**	**+1.5**
	3.4nm,0.9s,mb4.2,baz=221,slow=11,SNR=3.5								
YKA	**Yellowknife Ar**	**91.76**	**340**	P		**P**	**15**	**15 32.8**	**-0.6**
	0.1nm,0.5s,mb3.3,baz=132,slow=4.6,SNR=5.9								
MKAR	**Makanchi Array**	**145.48**	**37**	PKPbc		PKPbc	15	22 04.5	+1.5
	1.4nm,1.0s,baz=315,slow=3.4,SNR=7.0								

*NEIC **12** 15:16:04.9±0.5,8.64S×129.04E,h40km,mb3.9/2,Error ellipse: s-maj=18.8km s-min=8.6km az=64.0*
*IDC **12** 15:16:05.1±3.5,8.59S×128.96E,h40km±30km,mb3.6/5, mb1 4.0/8,mb1mx3.8/15,ML4.0/3,MS3.4/2,Ms1 3.4/2, ms1mx2.7/19,Error ellipse: s-maj=45.6km s-min=19.4km az=64.0*

ISC 12 15:15:58.4±3.3,8.63S±0.06×129.0E±0.1,h10km±21km, n24,σ1§04/25,mb3.8/6,MS3.3/1,1D,Timor Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
KAKA	**Kakadu**	**5.23**	**141**	*i/P*		**Pn**	**15**	**17 18.5**	**-0.1**
	30nm,0.6s								
FITZ	**Fitzroy Crossi**	**9.97**	**199**	*eP*		**P**	**15**	**18 26.1**	**+1.1**
	9.4nm,0.5s								
FITZ				*eS*		**Sn**	**15**	**20 18.1**	**0.0**
FITZ	**Fitzroy Crossi**	**9.97**	**199**	Pn		**P**	**15**	**18 27.4**	**+2.4**
	3.2nm,0.3s,baz=22,slow=8.1,SNR=91								
FITZ				Sn		**Sn**	**15**	**20 16.9**	**-1.2**
	2.6nm,0.3s,baz=178,slow=13,SNR=6.1								
WRA	**Warramunga Arr**	**12.37**	**156**	Pn		**P**	**15**	**18 54.3**	**-3.2**
	1.2nm,0.3s,baz=343,slow=13,SNR=86								
WRA				Sn		**S**	**15**	**21 09.1**	**-7.4**
	1.3nm,0.3s,baz=329,slow=23,SNR=48								
WRA				Lg			15	22 51.2	
	0.1nm,0.3s,baz=340,slow=25,SNR=4.2								
WB2	**Warramunga Arr**	**12.37**	**156**	*eP*		**P**	**15**	**18 54.0**	**-3.6**
WB2				*eS*		**S**	**15**	**21 07.5**	**-9.1**
AS12	**Alice Springs**	**15.67**	**163**	*eP*		**P**	**15**	**19 41.9**	**+0.8**
	2.9nm,0.5s								
AS12				*i*			15	19 48.4	
ASAR	**Alice Springs**	**15.67**	**163**	Pn		**P**	**15**	**19 39.2**	**-1.9**
	0.3nm,0.3s,baz=341,slow=10.0,SNR=20								
ASAR				Sn		**S**	**15**	**22 35.4**	**+0.3**
	0.4nm,0.3s,baz=350,slow=25,SNR=4.6								
ASAR				Lg			15	24 34.8	
	0.2nm,0.3s,baz=346,slow=30,SNR=4.3								
PMG	**Port Moresby**	**17.93**	**94**	LR		LR	15	27 42.3	
	comp=Z,96nm,18.3s,baz=257,slow=39								
CTA	**Charters Tower**	**20.18**	**126**	P		**P**	**15**	**20 36.9**	**+0.8**
CTA				LR		LR	15	29 17.2	
	comp=Z,133nm,18.6s,MS3.3,baz=302,slow=39								
CTA	**Charters Tower**	**20.18**	**126**	P		**P**	**15**	**20 36.9**	**+0.8**
CTA				LR		LR	15	29 17.2	
CTAO	**Charters Tower**	**20.18**	**126**	P		**P**	**15**	**20 36.6**	**+0.4**
STKA	**Stephens Creek**	**25.92**	**155**	*eP*		**P**	**15**	**21 33.9**	**+1.3**
	2.3nm,0.7s,mb3.8								
STKA	**Stephens Creek**	**25.92**	**155**	P		**P**	**15**	**21 33.8**	**+1.2**
	2.2nm,0.7s,mb3.8,baz=348,slow=12,SNR=9.1							

IDC ***12*** *15:20:29.5±0.5, 19.82S×174.76W, mb4.6/16, mb1 4.7/18, mb1mx4.7/21, ML5.0/2, MS3.9/16, Ms1 3.9/16, ms1mx3.8/28, Error ellipse: s-maj=22.6km s-min=14.2km az=129.0*

NEIC ***12*** *15:20:40.4±3.1, 19.83S×174.83W, h84km±27km, mb4.7/20, Error ellipse: s-maj=11.6km s-min=8.5km az=128.0*

SYO ***12*** *15:20:40.4, 19.83S×174.83W, h85km, MB4.7*

BJI ***12*** *15:20:41.0, 19.85S×174.39W, h97km, mB5.2, mb4.6*

ISC 12 15:20:30.5±3.2, 19.83S±0.07×174.88W±0.07, h15km±22km, n145, σ0§91/81, mb4.7/33, MS4.0/18, 1C-8D, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**14.22**	**98**	Pn		**P**	**15 23 43.4**	**-10**
	6.6nm,0.3s,baz=284,slow=8.2,SNR=14							
RAR				Sn		S	15 26 05.9	-26
	1.9nm,0.3s,baz=121,slow=19,SNR=4.6							
RAR				LR		LR	15 28 11.9	
	comp=Z,108nm,21.7s,baz=276,slow=33							
RAR	**Rarotonga**	**14.22**	**98**	*eP*		**P**	**15 23 46.0**	**-7.6**
DZM	**Mont Dzumac**	**17.59**	**259**	*eP*		**P**	**15 24 43.8**	**+7.0**
DZM	**Mont Dzumac**	**17.59**	**259**	*eP*		**P**	**15 24 43.8**	**+7.0**
NOUC	**Port Laguerre**	**17.72**	**259**	*eP*		**P**	**15 24 45.5**	**+7.0**
URZ	**Urewera**	**19.64**	**199**	P		**P**	**15 25 00.8**	**-0.7**
	4.2nm,0.3s,baz=348,slow=4.7,SNR=16							
URZ				S		**S**	**15 28 27.3**	**-9.2**
	0.5nm,0.3s,baz=112,slow=19,SNR=3.6							
RPZ	**Rata Peaks**	**26.58**	**203**	P		**P**	**15 26 09.9**	**+0.1**
	23nm,0.5s,mb5.0,baz=27,slow=1.9,SNR=17							
RPZ	**Rata Peaks**	**26.58**	**203**	P		**P**	**15 26 09.8**	**+0.1**
ARMA	**Armidale**	**32.00**	**244**	*eP*		**P**	**15 26 58.0**	**-0.5**
CTA	**Charters Tower**	**36.48**	**263**	*eP*		**P**	**15 27 37.7**	**+0.6**
	6.2nm,0.4s,mb4.9							
CTA	**Charters Tower**	**36.48**	**263**	P		**P**	**15 27 37.4**	**+0.3**
CTA				LR		LR	15 41 15.1	
	comp=Z,190nm,18.9s,MS3.9,baz=94,slow=34							
CTAO	**Charters Tower**	**36.48**	**263**	*eP*		**P**	**15 27 37.5**	**+0.4**
	8.8nm,0.6s,mb4.9							
JOHN	**Johnston Islan**	**36.71**	**9**	P		**P**	**15 27 37.9**	**-1.1**
PMG	**Port Moresby**	**38.08**	**280**	LR		LR	15 41 40.3	
	comp=Z,111nm,19.3s,MS3.7,baz=44,slow=33							
TOO	**Toolangi**	**38.66**	**234**	*eP*		**P**	**15 27 54.6**	**-0.7**
	4.0nm,0.7s,mb4.3							
STKA	**Stephens Creek**	**40.72**	**244**	*eP*		**P**	**15 28 12.0**	**-0.3**
	4.2nm,0.9s,mb4.1							
STKA	**Stephens Creek**	**40.72**	**244**	P		**P**	**15 28 12.1**	**-0.2**
	3.1nm,0.7s,mb4.1,baz=81,slow=11,SNR=7.2							
STKA				PcP		PcP	15 30 14.5	+0.1
	3.4nm,0.7s,baz=106,slow=5.4,SNR=4.4							
STKA				LR		LR	15 43 46.0	
	comp=Z,261nm,19.0s,MS4.1,baz=29,slow=34							
AS12	**Alice Springs**	**47.53**	**256**	*eP*		**P**	**15 29 06.4**	**-0.9**
	5.2nm,0.6s,mb4.7							
AS12				*e*			15 30 36.8	
ASAR	**Alice Springs**	**47.53**	**256**	P		**P**	**15 29 06.8**	**-0.6**
	5.0nm,0.7s,mb4.7,baz=99,slow=8.3,SNR=31							
ASAR				PcP		PcP	15 30 37.3	-0.5
	5.6nm,0.7s,baz=106,slow=3.8,SNR=12							
ASAR				S		**S**	**15 35 57.7**	**-2.9**
	1.6nm,1.2s,baz=93,slow=16,SNR=2.3							
ASAR				LR		LR	15 47 03.2	
	comp=Z,90nm,18.9s,MS3.8,baz=276,slow=34							
WB2	**Warramunga Arr**	**47.59**	**261**	*eP*		**P**	**15 29 06.9**	**-1.0**
WRA	**Warramunga Arr**	**47.60**	**261**	P		**P**	**15 29 07.5**	**-0.5**
	2.7nm,0.5s,mb4.5,baz=96,slow=7.0,SNR=128							
WRA				PcP		PcP	15 30 37.6	-0.5
	3.4nm,0.8s,baz=92,slow=3.6,SNR=5.2							
WRA				S		**S**	**15 36 01.3**	**-0.5**
	0.9nm,0.9s,baz=89,slow=15,SNR=3.7							
WRA				LR		LR	15 48 09.4	
	comp=Z,186nm,20.9s,MS4.0,baz=100,slow=35							
WRA	**Warramunga Arr**	**47.60**	**261**	P		**P**	**15 29 07.5**	**-0.5**
WRA				PcP		PcP	15 30 37.6	-0.5
WRA				S		**S**	**15 36 01.2**	**-0.5**
WRA				LR		LR	15 48 09.4	
KAKA	**Kakadu**	**50.94**	**270**	*eP*		**P**	**15 29 32.5**	**-1.2**
	6.2nm,0.4s,mb4.9							
FITZ	**Fitzroy Crossi**	**56.03**	**261**	*eP*		**P**	**15 30 09.4**	**-1.9**
	2.2nm,0.6s,mb4.4							
FITZ	**Fitzroy Crossi**	**56.03**	**261**	P		**P**	**15 30 10.4**	**-0.9**
	4.8nm,0.9s,mb4.5,baz=144,slow=4.0,SNR=11							
SBA	**Scott Base**	**58.75**	**184**	*eP*		**P**	**15 30 30.7**	**+0.9**
	14nm,0.8s,mb5.0							
VNDA	**Vanda**	**58.85**	**186**	P		**P**	**15 30 30.6**	**+0.2**
	6.7nm,0.7s,mb4.8,baz=4.1,slow=6.3,SNR=42							
VNDA				LR		LR	15 50 13.1	
	comp=Z,87nm,18.6s,MS3.9,baz=348,slow=30							
VNDA	**Vanda**	**58.85**	**186**	*eP*		**P**	**15 30 30.5**	**0.0**
	3.6nm,0.8s,mb4.5							
CBIJ	**Chichi jima**	**62.50**	**317**	LR		LR	15 52 18.0	
	comp=Z,122nm,21.1s,MS4.0,baz=132,slow=30							
QSPA	**South Pole Qui**	**70.24**	**180**	*i P*		**P**	**15 31 44.5**	**+0.1**
	48nm,0.8s,mb5.5							
QSPA				*e*			15 41 09.5	
QSPA				LR		LR		
	comp=Z,90nm,19.5s,MS4.0							
MAJO	**Matsushiro**	**71.46**	**322**	*eP*		**P**	**15 31 53.1**	**+0.6**
	comp=Z,6.4nm,0.7s,mb4.7							
MAT	**Matsushiro**	**71.46**	**322**	P		**P**	**15 31 52.9**	**+0.4**
MAT	**Matsushiro**	**71.46**	**322**	P		**P**	**15 31 53.0**	**+0.5**
FX1	**Attu Island--F**	**73.14**	**352**	LR		LR	15 59 20.8	
	comp=Z,8.9nm,19.5s,MS3.0,baz=265,slow=32							
JNU	**Nakatsue**	**73.84**	**315**	P		**P**	**15 32 07.5**	**+0.9**
	comp=Z,9.5nm,0.8s,mb4.8,baz=59,slow=19,SNR=4.6							
ASAJ	**Asahikawa**	**74.58**	**330**	P		**P**	**15 32 12.2**	**+1.6**
	comp=Z,20nm,1.3s,mb4.9,baz=216,slow=8.7,SNR=3.9							
NVAR	**Mina Array Bea**	**78.54**	**42**	P		**P**	**15 32 32.7**	**-0.3**
	comp=Z,6.9nm,1.1s,mb4.5,baz=211,slow=7.1,SNR=22							
NVAR	**Mina Array Bea**	**78.54**	**42**	P		**P**	**15 32 32.7**	**-0.3**
TPH	**Tonopah**	**79.02**	**43**	*eP*		**P**	**15 32 35.2**	**-0.4**
TPH				*e*			15 32 50.1	
TUC	**Tucson**	**80.27**	**51**	*eP*		**P**	**15 32 42.2**	**-0.2**
	comp=Z,7.8nm,1.3s,mb4.5							
WUAZ	**Wupatki**	**81.51**	**48**	*eP*		**P**	**15 32 49.1**	**+0.2**
MDJ	**Mudanjiang**	**81.69**	**323**	P		**P**	**15 32 51.5**	**+1.9**
MDJ				S		S	15 42 57.3	-2.9
MDJ				SS		SS	15 48 19.0	-2.2
MDJ				AMB		AMB		
	comp=Z,8.0nm,0.9s,mb4.7							
MDJ				LR		LR		
	comp=E,44nm,20.4s							
MDJ				LR		LR		
	comp=Z,58nm,20.4s,MS3.9							
RSO	**Redoubt South**	**81.99**	**11**	*eP*		**P**	**15 32 50.1**	**-0.8**
RMW	**Rattlesnake Mo**	**82.17**	**33**	*eP*		**P**	**15 32 51.8**	**-0.3**
MSU	**Marysvale**	**82.55**	**45**	*eP*		**P**	**15 32 54.7**	**+0.4**
MAW	**Mawson**	**83.17**	**199**	P		**P**	**15 32 57.4**	**+0.5**
	comp=Z,4.8nm,0.6s,mb4.7,baz=132,slow=8.2,SNR=13							
MAW				LR		LR	16 05 28.7	
	comp=Z,149nm,18.7s,MS4.4,baz=70,slow=32							
MAW	**Mawson**	**83.17**	**199**	*eP*		**P**	**15 32 57.2**	**+0.4**
NLW	**Nelson Butte**	**83.33**	**33**	*eP*		**P**	**15 32 58.4**	**+0.3**
HLID	**Hailey**	**83.92**	**39**	*eP*		**P**	**15 33 01.1**	**-0.1**
	comp=Z,2.9nm,0.8s,mb4.5							
LAZ	**Ladron**	**83.95**	**50**	*eP*		**P**	**15 33 02.0**	**+0.4**
MNTX	**Cornudas Mount**	**83.98**	**53**	*eP*		**P**	**15 33 01.1**	**-0.7**
	comp=Z,9.6nm,1.2s,mb4.8							
BNM	**Barren Site**	**84.21**	**51**	*eP*		**P**	**15 33 03.1**	**+0.2**
TXAR	**Lajitas Array**	**84.23**	**56**	P		**P**	**15 33 02.6**	**-0.5**
	comp=Z,0.7nm,0.3s,mb4.3,baz=239,slow=7.3,SNR=6.3							
TXAR				LR		LR	16 01 50.8	
	comp=Z,72nm,21.1s,MS4.0,baz=345,slow=30							
LPM	**Los Pinos Moun**	**84.28**	**51**	*eP*		**P**	**15 33 03.2**	**-0.1**
PV10	**Paradox Valley**	**84.58**	**46**	*eP*		**P**	**15 33 04.0**	**-0.6**
HWUT	**Hardware Ranch**	**84.60**	**42**	*eP*		**P**	**15 33 04.2**	**-0.4**
	comp=Z,2.2nm,0.4s,mb4.6							
ANMO	**Albuquerque**	**84.71**	**50**	*eP*		**P**	**15 33 05.1**	**-0.3**
	comp=Z,13nm,1.1s,mb5.0							
PV01	**Paradox Valley**	**84.78**	**46**	*eP*		**P**	**15 33 04.6**	**-1.0**
GDL2	**Guadalupe Moun**	**84.98**	**53**	*eP*		**P**	**15 33 06.6**	**-0.2**
GDL2				*e*			15 33 23.8	
NEW	**Newport**	**85.14**	**35**	LR		LR	16 04 21.0	
	comp=Z,129nm,20.0s,MS4.3,baz=274,slow=31							
MCMT	**McKenzie Canyo**	**85.56**	**39**	*eP*		**P**	**15 33 09.6**	**+0.2**
MCK	**McKinley**	**85.71**	**11**	*eP*		**P**	**15 33 09.4**	**-0.3**
	comp=Z,1.2nm,0.4s,mb4.5							
CPRX	**Cap Rock**	**85.73**	**53**	*eP*		**P**	**15 33 10.1**	**-0.4**
DLBC	**Dease Lake**	**86.31**	**22**	*eP*		**P**	**15 33 13.0**	**+0.3**
PDAR	**Pinedale Array**	**86.48**	**42**	P		**P**	**15 33 13.8**	**-0.2**
	comp=Z,0.6nm,0.7s,mb3.9,baz=214,slow=5.3,SNR=5.9							
COLA	**College**	**86.95**	**11**	*eP*		**P**	**15 33 15.0**	**-0.7**
	comp=Z,12nm,0.8s,mb5.2							
ILAR	**Eielson Array**	**87.04**	**12**	P		**P**	**15 33 15.7**	**-0.5**
	comp=Z,2.9nm,0.9s,mb4.5,baz=209,slow=5.6,SNR=22							
ILAR				LR		LR	16 10 29.7	
	comp=Z,63nm,19.1s,MS4.0,baz=37,slow=34							
IMA	**Indian Mountai**	**87.12**	**8**	*eP*		**P**	**15 33 17.5**	**+1.0**
	comp=Z,24nm,1.3s,mb5.3							
SYO	**Syowa Base**	**88.00**	**192**	*⇓P*		**P**	**15 33 19.8**	**-0.9**
SYO	**Syowa Base**	**88.00**	**192**	*⇓PcP*		PcP	15 33 25.8	+2.8
SYO	**Syowa Base**	**88.00**	**192**	*⇓eP*		**P**	**15 33 19.8**	**-0.9**
SYO				*⇓ePcP*		PcP	15 33 25.8	+2.8
DAWY	**Dawson**	**88.03**	**15**	*eP*		**P**	**15 33 21.3**	**+0.4**
ENH	**Enshi**	**88.11**	**303**	*eP*		**P**	**15 33 24.3**	**+2.1**
	comp=Z,4.8nm,0.7s,mb4.8							
SNAA	**Sanae**	**88.58**	**177**	*eP*		**P**	**15 33 22.3**	**-1.1**
VNA3	**Neumayer Olymp**	**88.59**	**175**	*⇓i*		**P**	**15 33 25.5**	**+2.0**
VNA2	**Neumayer--Watz**	**89.07**	**176**	*⇓i*		**P**	**15 33 28.3**	**+2.5**
VNA1	**Neumayer--Stat**	**89.28**	**176**	*⇓i*		**P**	**15 33 28.5**	**+1.7**
RSSD	**Black Hills**	**90.65**	**43**	*eP*		**P**	**15 33 32.7**	**-1.1**
CMAR	**Chiang Mai Arr**	**92.67**	**289**	P		**P**	**15 33 45.6**	**+2.0**
	comp=Z,1.3nm,0.8s,mb4.4,baz=134,slow=2.9,SNR=7.6							
CMAR				LR		LR	16 12 32.2	
	comp=Z,54nm,18.3s,MS4.0,baz=120,slow=34							
INK	**Inuvik**	**92.88**	**14**	*eP*		**P**	**15 33 42.9**	**-0.5**
	comp=Z,3.9nm,1.1s,mb4.8							
YKA	**Yellowknife Ar**	**94.69**	**24**	P		**P**	**15 33 51.4**	**-0.5**
	comp=Z,2.4nm,1.1s,mb4.6,baz=236,slow=4.2,SNR=21							
YKA				LR		LR	16 07 22.6	
	comp=Z,62nm,21.4s,MS4.0,baz=255,slow=30							
SONM	**Songino Array**	**97.19**	**318**	P		**P**	**15 34 06.0**	**+2.4**
	comp=Z,0.2nm,0.4s,mb3.9,baz=116,slow=4.1,SNR=3.7							
ULM	**Lac du Bonnet**	**98.23**	**40**	LR		LR	16 11 21.5	
	comp=Z,164nm,21.3s,MS4.5,baz=308,slow=31							
WMQ	**Urumqi**	**108.71**	**311**	PDIF		Pdif	15 34 55.6	+0.5
WMQ				PP		PP	15 39 31.0	+1.1
WMQ				LR		LR		
	comp=N,85nm,28.2s,MS4.3							
WMQ				LR		LR		
	comp=E,72nm,29.0s,MS4.3							
WMQ				LR		LR		
	comp=Z,131nm,28.6s,MS4.3							
MKAR	**Makanchi Array**	**112.87**	**313**	PKiKP			15 39 06.8	
	comp=Z,2.0nm,1.0s,baz=58,slow=2.8,SNR=12							
KURK	**Kurchatov**	**115.48**	**318**	*e*PKP		PKPdf	15 39 11.6	-3.8
BVAR	**Borovoye Array**	**120.44**	**320**	PKP		PKPdf	15 39 21.2	-3.7
	comp=Z,1.3nm,0.4s,baz=118,slow=2.7,SNR=12							
SPITS	**Spitsbergen Ar**	**121.35**	**357**	PKP		PKPdf	15 39 22.4	-3.9
	comp=Z,11nm,1.2s,baz=135,slow=2.8,SNR=5.2							
ARCES	**ARCESS Array B**	**128.75**	**351**	PKP		PKPdf	15 39 37.3	-3.3
	comp=Z,1.4nm,0.5s,slow=1.8,SNR=27							
FINES	**FINESS Array B**	**135.90**	**346**	PKP		PKPdf	15 39 50.7	-3.5
	comp=Z,1.3nm,0.6s,baz=27,slow=4.3,SNR=4.9							
FINES	**FINESS Array B**	**135.90**	**346**	PKP		PKPdf	15 39 50.7	-3.5
NOA	**NORSAR Array B**	**138.60**	**356**	PP		PP	15 42 48.9	-1.5
	comp=Z,0.4nm,0.5s,baz=50,slow=6.2,SNR=3.6							
KMBO	**Kilima Mbogo**	**142.24**	**240**	PKhKP			15 40 00.7	
	comp=Z,0.5nm,0.3s,baz=217,slow=20,SNR=3.2							
MZLS	**Mizel**	**142.67**	**284**	P		PKPdf	15 40 11.7	+4.3
AKASG	**Malin Array Be**	**143.77**	**334**	PKhKP			15 40 03.0	
	comp=Z,2.3nm,0.5s,baz=38,slow=4.3,SNR=16							
AKASG				SKPbc			15 43 47.3	
	comp=Z,0.9nm,0.4s,baz=34,slow=3.3,SNR=5.0							
TATS	**Tathlith**	**143.94**	**276**	P		PKPbc	15 40 04.5	-0.7
EKA	**Eskdalemuir Ar**	**144.00**	**8**	PKhKP			15 40 03.0	
	comp=Z,1.3nm,0.7s,baz=328,slow=3.2,SNR=6.2							
ARSS	**Ar Rass**	**144.45**	**287**	P		PKPbc	15 40 07.5	+1.0
ELZG	**Elazig**	**145.33**	**310**	*i* P		PKPbc	15 40 10.2	+1.7
HILS	**Ha'il**	**145.66**	**290**	P		PKPbc	15 40 11.7	+2.0
BSEG	**Bad Segeberg**	**145.72**	**355**	*e*PKPbc		PKPbc	15 40 10.0	+1.1
BSEG				*ep*PKPbc			15 40 25.5	
BOYT	**Boyabat**	**146.80**	**317**	*i* P		PKPbc	15 40 14.6	+2.7
GZT	**Gaziantep**	**146.81**	**309**	*i* P		PKPbc	15 40 14.4	+2.3
CLL	**Collm**	**147.98**	**351**	*i* PKP1		PKPdf	15 40 15.7	+0.1
CLL				*i* *PPKP			15 40 32.0	
CRVS	**Cervenica-Dubn**	**148.15**	**339**	*e*PKP		PKPdf	15 40 19.0	+3.0
CRVS				*e*			15 40 21.3	
CRVS				*e*			15 40 23.1	
CRVS				*e*			15 40 30.2	
CRVS				*e*			15 40 35.3	
UPC	**Upice**	**148.19**	**347**	*e*PKPDF		PKPdf	15 40 17.0	+1.0
UPC				*ep*PKP			15 40 32.7	
ELDT	**Eldivan**	**148.24**	**317**	*i* P		PKPdf	15 40 18.2	+1.8
BRG	**Berggiesshubel**	**148.24**	**349**	*i* P		PKPdf	15 40 17.3	+1.3
BRG				*e*			15 40 35.7	
DPC	**Dobruska-Polom**	**148.27**	**346**	*e*PKPDF		PKPdf	15 40 16.7	+0.6
DPC				*ep*PKP			15 40 33.5	
PVCC	**Panska Ves**	**148.46**	**348**	*e*PKPDF		PKPdf	15 40 13.7	-2.7
PVCC				*ep*PKP			15 40 33.8	
BRTR	**Keskin Array B**	**148.50**	**315**	PKPbc		PKPdf	15 40 18.2	+1.4
	comp=Z,4.2nm,0.9s,baz=117,slow=2.8,SNR=12							
PRU	**Pruhonice**	**148.98**	**348**	*e*PKPDF		PKPdf	15 40 18.9	+1.7
PRU				*ep*PKP			15 40 35.3	
ASF	**Jabal al Asfar**	**149.03**	**300**	PKPbc		PKPdf	15 40 21.1	+3.2
	comp=Z,6.2nm,0.8s,baz=330,slow=1.1,SNR=6.2							
MLR	**Muntele Rosu**	**149.16**	**331**	PKPbc		PKPdf	15 40 20.3	+2.6
	comp=Z,12nm,1.1s,baz=319,slow=3.4,SNR=8.9							
VYHS	**Vyhne**	**149.33**	**342**	*e*PKP		PKPdf	15 40 20.4	+2.5
VYHS				*e*			15 40 22.4	
VYHS				*e*			15 40 27.6	
VYHS				*e*			15 40 35.7	
VYHS				*e*			15 40 44.1	
GIVF	**Givet**	**149.79**	**0**	*e*PKIKP		PKPdf	15 40 21.2	+2.7
GRA1	**Grafenberg Arr**	**149.81**	**352**	*e*PKPbc		PKPdf	15 40 21.3	+2.7
GRA1				*ep*PKPbc			15 40 37.0	
BAIF	**Baives**	**149.83**	**1**	*e*PKIKP		PKPdf	15 40 21.3	+2.7
	comp=Z,27nm,1.0s							
KHC	**Kasperske Hory**	**149.99**	**349**	*e*PKPDF		PKPdf	15 40 16.6	-2.3
KHC				*e*PKP		PKPdf	15 40 21.8	+2.9
KHC				*ep*PKP			15 40 35.1	
ZST	**Bratislava**	**150.08**	**344**	*e*PKP		PKPdf	15 40 21.1	+2.0
WET	**Wettzell**	**150.09**	**350**	*e*PKPbc		PKPdf	15 40 21.9	+2.9
WET				*ep*PKPbc			15 40 37.8	
TBKS	**Tabuk**	**150.17**	**292**	P		PKPdf	15 40 20.2	+0.4
GEC2	**GERESS Array S**	**150.24**	**349**	*e*PKPbc		PKPdf	15 40 21.8	+2.5
GEC2				*ep*PKPbc			15 40 37.7	
GERES	**GERESS Array B**	**150.24**	**349**	PKP		PKPdf	15 40 17.2	-2.1
	comp=Z,2.9nm,0.8s,baz=135,slow=1.9,SNR=3.6							
GERES				PKPbc		PKPdf	15 40 22.3	+3.0
	comp=Z,6.3nm,1.1s,baz=45,slow=1.9,SNR=22							
JMQS	**Jabal Moqyreh**	**150.64**	**294**	P		PKPdf	15 40 24.1	+3.6
ROSF	**Rostrenen**	**150.76**	**12**	*e*PKIKP		PKPdf	15 40 22.5	+2.4
	comp=Z,78nm,1.4s							
FLN	**La Foliniere**	**150.78**	**8**	*e*PKIKP		PKPdf	15 40 22.9	+2.8
	comp=Z,37nm,0.8s							
LDF	**La Druitiere**	**150.99**	**7**	*e*PKIKP		PKPdf	15 40 23.4	+3.0
	comp=Z,27nm,0.9s							
GRR	**Gorron**	**151.10**	**8**	*e*PKIKP		PKPdf	15 40 23.8	+3.2
	comp=Z,35nm,0.9s							
ULDT	**Uludag**	**151.13**	**320**	*i* P		PKPdf	15 40 24.5	+3.6
QUIF	**Quistinic**	**151.18**	**12**	*e*PKIKP		PKPdf	15 40 23.5	+2.8
	comp=Z,31nm,1.1s							
EIL	**Elat**	**151.27**	**296**	PKPbc		tx	15 41 50.0	
	comp=Z,10nm,0.8s,baz=46,slow=8.9,SNR=6.0							
BDAS	**Al Bad'**	**151.39**	**293**	P		PKPdf	15 40 25.4	+3.8
MEZF	**Maizieres J'vi**	**151.39**	**0**	*e*PKIKP		PKPdf	15 40 25.1	+4.1
CDF	**Champ du Feu**	**151.43**	**357**	*e*PKIKP		PKPdf	15 40 24.7	+3.6
BFO	**Black Forest**	**151.45**	**356**	*e*PKPbc		PKPdf	15 40 24.8	+3.7
BFO				*ep*PKPbc			15 40 40.1	
TAYS	**Tayyib Ism**	**151.57**	**294**	P		PKPdf	15 40 25.7	+3.8
WTTA	**Wattenberg**	**152.12**	**350**	*⇑i* PKP		PKPdf	15 40 26.0	+3.9
LOR	**Lormes**	**152.61**	**2**	*e*PKIKP		PKPdf	15 40 27.6	+4.8
	comp=Z,6.0nm,0.6s							
SSF	**Saint Saulge**	**152.80**	**2**	*e*PKIKP		PKPdf	15 40 28.0	+4.9
	comp=Z,37nm,1.3s							
MFF	**Saint Martin d**	**152.95**	**8**	*e*PKIKP		PKPdf	15 40 25.9	+2.6
AVF	**Avril sur Loir**	**153.07**	**3**	*e*PKIKP		PKPdf	15 40 28.1	+4.6
	comp=Z,7.8nm,0.9s							
SMF	**Signal de Mont**	**153.23**	**2**	*e*PKIKP		PKPdf	15 40 28.7	+5.0
	comp=Z,7.7nm,0.8s							
CABF	**La Chapelle**	**153.27**	**359**	*e*PKIKP		PKPdf	15 40 28.5	+4.7
	comp=Z,30nm,1.2s							
RJF	**Les Rejaudoux**	**154.42**	**6**	*e*PKIKP		PKPdf	15 40 28.2	+2.8

NEIC ***12*** *15:29:45.2±0.8, 7.36S×120.65E, h564km±11km, mb3.8/3, Error ellipse: s-maj=15.4km s-min=5.6km az=57.0*

IDC ***12*** *15:29:46.1±1.5, 7.35S×120.82E, h574km±18km, mb3.2/8, mb1 3.3/10, mb1mx3.3/17, Error ellipse: s-maj=26.1km s-min=8.7km az=59.0*

ISC 12 15:29:45.2±1.2, 7.3S±0.1×120.7E±0.1, h585km±20km, n31, σ0§57/31, mb4.2/14, 4C, Flores Sea

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**11.75**	**156**	*⇑i* P		**P**	**15 32 21.1**	**-0.4**
	4.7nm,0.4s							
FITZ	**Fitzroy Crossi**	**11.75**	**156**	P		**P**	**15 32 21.2**	**-0.3**
	1.1nm,0.3s,baz=2.9,slow=8.1,SNR=13							
FITZ				S		**S**	**15 34 27.9**	**+0.9**
	0.2nm,0.3s,baz=175,slow=14,SNR=6.1							
KAKA	**Kakadu**	**12.70**	**116**	*⇑i* P		**P**	**15 32 30.7**	**-0.3**
	25nm,0.6s							
WRA	**Warramunga Arr**	**18.24**	**135**	P		**P**	**15 33 24.8**	**+0.3**
	0.5nm,0.3s,baz=314,slow=11,SNR=18							
WRA				S		**S**	**15 36 20.4**	**-0.4**
	0.1nm,0.3s,baz=308,slow=17,SNR=5.7							
WB2	**Warramunga Arr**	**18.25**	**135**	*⇑i* P		**P**	**15 33 24.8**	**+0.2**
ASAR	**Alice Springs**	**20.61**	**143**	P		**P**	**15 33 46.1**	**-0.3**
	1.9nm,0.6s,baz=318,slow=8.3,SNR=20							
ASAR				S		**S**	**15 36 59.3**	**-0.9**
	1.5nm,0.8s,baz=342,slow=26,SNR=4.4							
ASAR				PcP		PcP	15 37 30.9	-0.6
	0.8nm,0.5s,baz=337,slow=2.2,SNR=7.7							
APYP	**Conner**	**25.03**		*1⇑eP*		**P**	**15 34 35.6**	**+9.4**
NWAO	**Narrogin (SRO)**	**25.68**	**187**	P		**P**	**15 34 30.9**	**-0.9**
	3.2nm,0.5s,mb4.2,baz=18,slow=9.6,SNR=4.7							
CTAO	**Charters Tower**	**27.83**	**120**	P		**P**	**15 34 50.9**	**+0.2**
STKA	**Stephens Creek**	**31.25**	**144**	*eP*		**P**	**15 35 19.6**	**-0.2**
	2.8nm,0.4s,mb4.2							
STKA	**Stephens Creek**	**31.25**	**144**	P		**P**	**15 35 19.9**	**+0.1**
	7.0nm,0.7s,mb4.4,baz=318,slow=8.6,SNR=17							
STKA				PcP		PcP	15 37 55.2	-1.2
	1.0nm,0.5s,baz=251,slow=6.7,SNR=3.6							
CMAR	**Chiang Mai Arr**	**33.41**	**320**	P		**P**	**15 35 39.0**	**+1.0**
	2.0nm,0.7s,mb3.9,baz=144,slow=6.8,SNR=10							
CMAR				ScP			15 40 54.7	
	0.7nm,0.6s,baz=175,slow=3.1,SNR=5.4							
LSA	**Lhasa**	**46.49**	**324**	*eP*		**P**	**15 37 23.9**	**+1.2**
	2.9nm,0.8s,mb3.9							
GUN	**Gumba**	**48.56**	**318**	*eP*		**P**	**15 37 38.2**	**-0.1**
	11nm,0.6s,mb4.5							
PKI	**Pulchoki**	**48.66**	**317**	*eP*		**P**	**15 37 38.5**	**-0.5**
	11nm,0.4s,mb4.7							
KKN	**Kakani**	**48.89**	**317**	*eP*		**P**	**15 37 40.2**	**-0.5**
	4.3nm,0.4s,mb4.2							
DMN

	SNR=20							
AJM	**Ajmer**	**8.73**	**164**	*i* P		**P**	**16 16 25.7**	**-0.2**
AJM				*i*			16 17 58.0	
AJM				*e*			16 18 31.9	
	comp=N,46nm,0.5s							
AJM				*e*			16 18 32.3	
	comp=E,69nm,0.2s							
KOLN	**Kolđanda**	**12.26**	**122**	*e*P		**P**	**16 17 12.0**	**-1.1**
	comp=E,21nm,0.4s							
BHPL	**Bhopal**	**12.59**	**156**	*e*P		**P**	**16 17 16.5**	**-1.0**
BHPL				*e*			16 19 28.9	
BHPL				*e*			16 20 11.3	
	comp=E,43nm,0.5s							
BHPL				*e*			16 20 11.8	
	comp=N,24nm,0.3s							
GKN	**Gorkha**	**12.85**	**119**	*e*P		**P**	**16 17 19.9**	**-1.1**
	comp=N,23nm,0.3s							
GKN				*e*S		**S**	**16 19 37.4**	**-4.7**
DMN	**Daman**	**13.42**	**119**	*e*P		**P**	**16 17 27.2**	**-1.1**
	comp=N,49nm,0.6s							
KKN	**Kakani**	**13.44**	**118**	*e*P		**P**	**16 17 27.9**	**-0.7**
	comp=N,49nm,0.5s							
KKN	**Kakani**	**13.44**	**118**	*e*P		**P**	**16 17 27.9**	**-0.7**
KKN				pmax		pmax		
	comp=Z,24nm,0.5s							
PKI	**Pulchoki**	**13.66**	**119**	*e*P		**P**	**16 17 30.6**	**-0.8**
	comp=Z,19nm,0.3s							
PKI	**Pulchoki**	**13.66**	**119**	*e*P		**P**	**16 17 30.6**	**-0.8**
PKI				pmax		pmax		
	comp=Z,10.0nm,0.3s							
GUN	**Gumba**	**13.81**	**117**	*e*P		**P**	**16 17 32.6**	**-0.7**
	comp=Z,24nm,0.3s							
MK31	**Makanchi Array**	**14.20**	**30**	⇑P		**P**	**16 17 38.5**	**+0.2**
	comp=Z,1.5nm,0.5s,baz=205,slow=11,SNR=38							
MKAR	**Makanchi Array**	**14.20**	**30**	P		**P**	**16 17 38.6**	**+0.2**
	comp=Z,0.2nm,0.3s,baz=209,slow=14,SNR=13							
KURK	**Kurchatov**	**16.52**	**15**	⇑P		**P**	**16 18 09.8**	**+2.1**
	comp=Z,15nm,1.1s,baz=200,slow=8.7,SNR=28							
KURK	**Kurchatov**	**16.52**	**15**	eP		**P**	**16 18 09.1**	**+1.4**
AB31	**Akbulak array**	**16.83**	**332**	P		**P**	**16 18 09.0**	**-2.5**
	comp=Z,8.6nm,0.4s,baz=142,slow=12,SNR=403							
AB31				⇓S		**S**	**16 21 04.5**	**-10**
	comp=Z,3.4nm,0.7s,baz=151,slow=25,SNR=6.8							
LSA	**Lhasa**	**17.06**	**102**	P		**P**	**16 18 16.4**	**+1.9**
LSA	**Lhasa**	**17.06**	**102**	P		**P**	**16 18 14.4**	**-0.1**
VOSK	**Vostochnaya**	**17.81**	**358**	⇓P		**P**	**16 18 21.1**	**-2.6**
	comp=Z,4.2nm,0.7s							
BVA0	**Borovoye Array**	**18.13**	**357**	P		**P**	**16 18 25.5**	**-2.0**
	comp=Z,0.9nm,1.0s,baz=155,slow=12,SNR=34							
BVAR	**Borovoye Array**	**18.13**	**357**	P		**P**	**16 18 25.7**	**-1.7**
	comp=Z,0.9nm,0.3s,baz=162,slow=13,SNR=24							
BRVK	**Borovoye**	**18.17**	**357**	⇑P		**P**	**16 18 27.1**	**-0.8**
	comp=Z,3.5nm,1.0s							
BRVK	**Borovoye**	**18.17**	**357**	*e*P		**P**	**16 18 27.0**	**-0.9**
ZAL	**Zalesovo**	**21.05**	**22**	P		**P**	**16 18 59.4**	**+0.7**
	comp=Z,6.1nm,0.4s,mb4.3,baz=167,slow=9.5,SNR=25							
NVS	**Novosibirsk**	**21.42**	**18**	*e*P		**P**	**16 19 01.8**	**-0.4**
GTA	**Gaotai**	**22.63**	**70**	*e*P		**P**	**16 19 20.1**	**+5.9**
GTA				AP			16 19 27.3	
GTA				AMB		AMB		
	comp=Z,4.0nm,0.7s,mb3.9							
ARU	**Arti**	**23.37**	**341**	*e*P		**P**	**16 19 21.9**	**+0.8**
ARU				pmax		pmax		
	comp=Z,5.0nm,0.8s,mb3.9							
ARU	**Arti**	**23.37**	**341**	*e*P		**P**	**16 19 21.9**	**+0.8**
	comp=Z,5.1nm,0.8s,mb3.9							
SONM	**Songino Array**	**28.65**	**53**	pP		pP	16 20 32.7	+1.2
	comp=Z,2.1nm,0.8s,baz=252,slow=9.9,SNR=14							
SONM				sP		sP	16 20 42.5	0.0
	comp=Z,3.6nm,1.3s,baz=272,slow=9.3,SNR=4.0							
CMAR	**Chiang Mai Arr**	**29.05**	**117**	P		**P**	**16 20 16.1**	**+1.8**
	comp=Z,0.6nm,0.4s,mb3.5,baz=297,slow=8.8,SNR=6.6							
CMAR				pP		pP	16 20 36.6	+1.2
	comp=Z,1.1nm,0.7s,baz=297,slow=8.5,SNR=4.9							
CMAR				sP		sP	16 20 46.0	-0.3
	comp=Z,1.8nm,1.0s,baz=299,slow=11,SNR=3.8							
BRTR	**Keskin Array B**	**30.66**	**290**	P		**P**	**16 20 28.7**	**+0.4**
	comp=Z,0.6nm,0.7s,mb3.4,baz=72,slow=4.6,SNR=2.5							
AKASG	**Malin Array Be**	**34.53**	**310**	P		**P**	**16 21 00.7**	**-1.0**
	comp=Z,0.5nm,0.3s,mb3.8,baz=83,slow=7.4,SNR=4.2							
IDI	**Anoyia**	**38.20**	**285**	P		**P**	**16 21 31.8**	**-0.9**
	comp=Z,2.7nm,0.8s,mb4.1,baz=14,slow=12,SNR=3.1							
FINES	**FINESS Array B**	**39.21**	**327**	P		**P**	**16 21 40.7**	**-0.1**
	comp=Z,0.5nm,0.4s,mb3.7,baz=135,slow=8.1,SNR=5.1							
FINES				pP		pP	16 22 01.6	-1.4
	comp=Z,0.6nm,0.4s,baz=113,slow=11,SNR=2.9							
ARCES	**ARCESS Array B**	**42.89**	**338**	P		**P**	**16 22 11.3**	**+0.4**
	comp=Z,3.7nm,0.8s,mb4.2,baz=111,slow=7.7,SNR=11							
ARCES				pP		pP	16 22 32.5	-0.7
	comp=Z,2.3nm,0.6s,baz=113,slow=8.4,SNR=3.0							
ARCES				sP		sP	16 22 43.0	-1.1
	comp=Z,1.8nm,0.7s,baz=113,slow=9.2,SNR=1.6							
ARCES	**ARCESS Array B**	**42.89**	**338**	P		**P**	**16 22 11.3**	**+0.4**
ARCES				pP		pP	16 22 32.5	-0.7
ARCES				sP		sP	16 22 43.0	-1.1
NB2	**NORSAR Subarra**	**46.09**	**324**	P		**P**	**16 22 34.9**	**-1.7**
	comp=Z,0.4nm,0.4s,mb3.5,baz=99,slow=7.9							
NOA	**NORSAR Array B**	**46.09**	**324**	P		**P**	**16 22 35.5**	**-1.2**
	comp=Z,0.4nm,0.7s,mb3.3,baz=95,slow=14,SNR=2.8							
KMBO	**Kilima Mbogo**	**48.35**	**230**	P		**P**	**16 22 56.9**	**+2.0**
	comp=Z,0.5nm,0.3s,mb3.8,baz=218,slow=22,SNR=7.1							
SPITS	**Spitsbergen Ar**	**49.20**	**347**	P		**P**	**16 23 00.9**	**+0.2**
	comp=Z,3.8nm,0.9s,mb4.3,baz=113,slow=6.9,SNR=4.3							
SPITS				pP		pP	16 23 22.2	-1.1
	comp=Z,4.1nm,0.8s,baz=112,slow=11,SNR=2.1							
FITZ	**Fitzroy Crossi**	**73.35**	**127**	P		**P**	**16 25 45.4**	**+1.1**
	comp=Z,1.0nm,0.8s,mb3.7,baz=345,slow=12,SNR=3.5							
DBIC	**Dimbokro**	**75.38**	**268**	P		**P**	**16 25 56.1**	**0.0**
	comp=Z,3.0nm,0.6s,mb4.2,baz=50,slow=12,SNR=5.8							
ILAR	**Eielson Array**	**76.09**	**16**	P		**P**	**16 25 59.9**	**+0.8**
	comp=Z,0.3nm,0.8s,mb3.1,baz=297,slow=4.0,SNR=4.1							
ILAR				pP		pP	16 26 21.4	-2.3
	comp=Z,0.6nm,1.0s,baz=325,slow=5.7,SNR=4.9							
WRA	**Warramunga Arr**	**80.51**	**122**	P		**P**	**16 26 25.8**	**+1.6**
	comp=Z,0.8nm,0.8s,mb3.6,baz=323,slow=5.0,SNR=11							
WRA				pP		pP	16 26 48.3	-0.7
	comp=Z,0.5nm,0.4s,baz=323,slow=4.9,SNR=3.5							
ASAR	**Alice Springs**	**82.73**	**125**	P		**P**	**16 26 37.5**	**+1.9**
	comp=Z,0.6nm,0.6s,mb3.6,baz=309,slow=5.4,SNR=24							
ASAR				pP		pP	16 27 00.3	-0.1
	comp=Z,0.4nm,0.5s,baz=308,slow=5.1,SNR=3.6							
YKA	**Yellowknife Ar**	**82.78**	**3**	P		**P**	**16 26 35.9**	**+0.8**
	comp=Z,0.6nm,0.5s,mb3.7,baz=350,slow=5.3,SNR=18							
YKA				pP		pP	16 26 57.6	-2.4
	comp=Z,0.3nm,0.4s,baz=349,slow=5.5,SNR=3.6							
QSPA	**South Pole Qui**	**124.72**	**180**	*e*P		PKPdf	16 33 08.4	+0.1

*WAR **12** 16:18:49.7, 50.24N×18.97E, h1km, Location given by Central Institute of Mining, origin time based upon OJC*
*PRU **12** 16:18:49.9, 50.31N×18.90E*
*NEIC **12** 16:18:50.0±0.9, 50.23N×18.93E, h5km, MG2.2(WAR), Error ellipse: s-maj=12.7km s-min=6.3km az=174.0*

ISC 12 16:18:48.5±0.5, 50.26N±0.04×18.86E±0.03, n15, σ1§11/29, Poland

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
OJC	**Ojcow**	**0.60**	**93**	*e*Pg		**Pg**	**16 19 00.4**	**-0.2**
OJC				*e*Sg		**Sg**	**16 19 08.2**	**-0.5**
OKC	**Ostrava-Krasne**	**0.62**	**228**	*e*PG		**Pg**	**16 19 02.6**	**+1.7**
OKC				*e*SG		**Sg**	**16 19 11.8**	**+2.6**
MORC	**Moravsky Berou**	**0.97**	**241**	*e*Pg		**Pg**	**16 19 09.4**	**+1.4**
MORC				*e*Sg		**Sg**	**16 19 22.3**	**+1.4**
NIE	**Niedzica**	**1.26**	**131**	e(Pg)		**Pg**	**16 19 13.6**	**-0.1**
NIE				e(Sg)		**Sg**	**16 19 30.7**	**+0.2**
NIE	**Niedzica**	**1.26**	**131**	*e*PG		**Pg**	**16 19 14.0**	**+0.3**
NIE				*e*(SG)		**Sg**	**16 19 31.0**	**+0.5**
DPC	**Dobruska-Polom**	**1.63**	**274**	*e*PG		**Pg**	**16 19 19.8**	**-1.2**
DPC				*e*SG		**Sg**	**16 19 42.2**	**-0.5**
	6.5nm,0.2s							
KSP	**Ksiaz**	**1.74**	**291**	*e*PN		**Pn**	**16 19 21.0**	**+0.8**
KSP				*e*PG		**Pg**	**16 19 23.0**	**-0.2**
KSP				*e*SG		**Sg**	**16 19 47.0**	**+0.6**
VYHS	**Vyhne**	**1.76**	**180**	*e*PN		**Pn**	**16 19 20.7**	**+0.2**
VYHS				*e*PG		**Pg**	**16 19 22.9**	**-0.8**
VYHS				*e*SN		**Sn**	**16 19 43.1**	**-0.9**
VYHS				*e*SG		**Sg**	**16 19 45.2**	**-2.0**
UPC	**Upice**	**1.84**	**279**	*e*SG		**Sg**	**16 19 49.9**	**+0.2**
CRVS	**Cervenica-Dubn**	**2.17**	**128**	*e*PB		**Pb**	**16 19 29.4**	**+1.0**
CRVS				*e*PG		**Pg**	**16 19 32.6**	**+0.8**
CRVS				*e*SN		**Sn**	**16 19 53.4**	**-0.9**
CRVS				*e*SB		**Sb**	**16 19 57.1**	**+1.2**
PSZ	**Piszkesteto**	**2.44**	**163**	*e*Pg		**Pg**	**16 19 35.9**	**-1.3**
KWP	**Kalwaria**	**2.56**	**103**	*e*Pn		**Pn**	**16 19 32.1**	**+0.1**
PRU	**Pruhonice**	**2.79**	**266**	*e*SG		**Sg**	**16 20 18.5**	**-2.9**
	3.0nm,0.4s							
KHC	**Kasperske Hory**	**3.61**	**254**	*e*SG		**Sg**	**16 20 44.7**	**-3.9**
CLL	**Collm**	**3.86**	**288**	*e*SG		**Sg**	**16 20 56.0**	**-1.1**

*NEIC **12** 16:22:45.9, 41.04N×8.49W, h21km, MN2.6(MDD), After MDD.*
*INMG **12** 16:22:46.9±1.1, 41.05N×8.42W, h30km±3km, ML3.0, Error ellipse: s-maj=3.7km s-min=1.5km az=83.0*
*MDD **12** 16:22:46.1±0.4, 41.04N×8.48W, h21km±1km, mbLg2.9/19, Error ellipse: s-maj=4.5km s-min=2.5km az=84.0, PRXIMO*
MDD EMS: III (MM) VILA N. DE GAIA.
*LDG **12** 16:22:48.4±0.3, 40.87N×8.31W, h10km, Ml3.1/3, Error ellipse: s-maj=9.0km s-min=4.2km az=112.0*

ISC 12 16:22:44.8±0.5, 40.99N±0.02×8.24W±0.05, h21km, n57, σ1§47/114, 5C-3D, Portugal

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
PVIS	**Viseu**	**0.38**	**135**	*i* Pg		**Pb**	**16 22 57.1**	**+4.4**
PVIS				*e*Sg		**Sb**	**16 23 04.8**	**+6.6**
	2µm,0.1s							
PVIS	**Viseu**	**0.38**	**135**	⇓Pg		**Pb**	**16 22 57.1**	**+4.4**
PVIS				Lg			16 23 04.8	
	994nm,0.1s							
PVRL	**Vila Real**	**0.49**	**54**	*i* Pg		**Pb**	**16 22 58.1**	**+3.5**
PVRL				*e*Sg		**Sb**	**16 23 06.0**	**+4.6**
	977nm,0.2s							
PVRL	**Vila Real**	**0.49**	**54**	⇑Pg		**Pb**	**16 22 58.1**	**+3.5**
PVRL				Lg			16 23 06.0	
	489nm,0.2s							
MTE	**Manteigas**	**0.79**	**138**	*e*Pn		**Pn**	**16 23 02.6**	**+1.9**
MTE				*e*Sg		**Sb**	**16 23 16.2**	**+6.3**
	191nm,0.4s							
MTE	**Manteigas**	**0.79**	**138**	Pg		**Pn**	**16 23 02.6**	**+1.9**
MTE				Lg			16 23 16.2	
	95nm,0.4s							
MTE	**Manteigas**	**0.79**	**138**	*e*Pg		**Pb**	**16 23 02.5**	**+2.8**
MTE				*e*			16 23 11.8	
MTE				*e*			16 23 16.5	
PCOI	**Coimbra**	**0.84**	**192**	*e*P		**Pb**	**16 23 02.4**	**+1.8**
PCOI				*e*S		**Sb**	**16 23 14.1**	**+2.6**
ELOB	**Lobios**	**0.89**	**9**	⇓Pg		**Pb**	**16 23 02.4**	**+0.9**
	23nm,0.1s,SNR=18							
ELOB				Lg			16 23 14.0	
	1µm,0.1s,SNR=9.4							
ELOB	**Lobios**	**0.89**	**9**	⇓Pg		**Pb**	**16 23 02.6**	**+1.1**
ELOB				Lg			16 23 14.0	
EZAM	**Zamans**	**1.21**	**344**	Pg		**Pn**	**16 23 05.5**	**-1.2**
	5.0nm,0.1s,SNR=72							
EZAM				Lg			16 23 21.0	
	35nm,0.2s,SNR=13							
EZAM	**Zamans**	**1.21**	**344**	Pg		**Pn**	**16 23 05.5**	**-1.2**
EZAM				Lg			16 23 21.0	
PBRG	**Braganca**	**1.40**	**54**	*e*Pn		**Pn**	**16 23 10.3**	**+1.0**
PBRG				*e*Pg		**Pn**	**16 23 13.0**	**+3.7**
PBRG				*e*Sn		**Sn**	**16 23 27.5**	**+0.2**
PBRG				*e*Sg		**Sn**	**16 23 32.1**	**+4.8**
	68nm,0.1s							
PBRG	**Braganca**	**1.40**	**54**	Pn		**Pn**	**16 23 10.3**	**+1.0**
PBRG				Pg		**Pn**	**16 23 13.0**	**+3.7**
PBRG				Lg			16 23 32.1	
	34nm,0.1s							
ECAL	**Calabor**	**1.48**	**49**	Pn		**Pn**	**16 23 11.4**	**+0.8**
	0.9nm,0.1s,SNR=7.9							
ECAL				Pg		**Pn**	**16 23 14.8**	**+4.2**
	11nm,0.1s,SNR=7.9							
ECAL				Sn		**Sn**	**16 23 32.1**	**+2.7**
	25nm,0.1s,SNR=7.9							
ECAL				Lg			16 23 35.3	
	28nm,0.1s,SNR=7.9							
ECAL	**Calabor**	**1.48**	**49**	Pn		**Pn**	**16 23 11.4**	**+0.9**
ECAL				Pg		**Pn**	**16 23 15.0**	**+4.4**
ECAL				Sn		**Sn**	**16 23 32.1**	**+2.7**
ECAL				Lg			16 23 35.3	
ERUA	**La Rua**	**1.63**	**30**	Pn		**Pn**	**16 23 11.9**	**-0.8**
	6.3nm,0.2s,SNR=4.0							
ERUA				Pg		**Pn**	**16 23 16.1**	**+3.4**
	4.8nm,0.2s,SNR=7.9							
ERUA				Lg			16 23 37.9	
	39nm,0.3s,SNR=10							
ERUA	**La Rua**	**1.63**	**30**	Pn		**Pn**	**16 23 11.4**	**-1.3**
ERUA				Pg		**Pn**	**16 23 16.1**	**+3.4**
ERUA				Lg			16 23 37.9	
EINC	**Incio**	**1.80**	**21**	Pn		**Pn**	**16 23 15.0**	**-0.2**
	0.6nm,0.1s,SNR=15							
EINC				Sn		**Sn**	**16 23 37.1**	**-0.5**
	10nm,0.1s,SNR=20							
EINC				Lg			16 23 42.1	
	64nm,0.1s,SNR=7.9							
EINC	**Incio**	**1.80**	**21**	Pn		**Pn**	**16 23 15.3**	**+0.1**
EINC				Sn		**Sn**	**16 23 37.0**	**-0.6**
EINC				Lg			16 23 42.9	
STS	**Santiago**	**1.91**	**353**	Pn		**Pn**	**16 23 16.7**	**-0.1**
	6.8nm,0.1s,SNR=9.9							
STS				Pg		**Pn**	**16 23 19.0**	**+2.3**
	13nm,0.1s,SNR=7.9							
STS				Lg			16 23 43.6	
	55nm,0.1s,SNR=12							
STS	**Santiago**	**1.91**	**353**	Pn		**Pn**	**16 23 16.1**	**-0.6**
STS				Pg		**Pn**	**16 23 18.6**	**+1.8**
STS				Sn		**Sn**	**16 23 36.7**	**-3.7**
STS				Lg			16 23 42.5	
EMAZ	**Mazaricos**	**2.04**	**345**	Pn		**Pn**	**16 23 17.0**	**-1.6**
	1.0nm,0.1s,SNR=22							
EMAZ				Pg		**Pn**	**16 23 20.9**	**+2.4**
	17nm,0.1s,SNR=7.9							
EMAZ				Lg			16 23 45.9	
	24nm,0.1s,SNR=4.8							
EMAZ	**Mazaricos**	**2.04**	**345**	Pn		**Pn**	**16 23 17.1**	**-1.5**
EMAZ				Pg		**Pn**	**16 23 20.6**	**+2.1**
EMAZ				Sn		**Sn**	**16 23 39.2**	**-4.4**
EMAZ				Lg			16 23 45.5	
EBAD	**Badajoz**	**2.42**	**157**	⇑Pn		**Pn**	**16 23 24.8**	**+0.8**
	2.9nm,0.1s,SNR=18							
EBAD				Lg			16 24 05.4	
	11nm,0.1s,SNR=14							
EBAD	**Badajoz**	**2.42**	**157**	⇑Pn		**Pn**	**16 23 24.8**	**+0.8**
EBAD				Pg		**Pn**	**16 23 31.3**	**+7.3**
EBAD				Sn		**Sn**	**16 23 54.1**	**+0.8**
EBAD				Lg			16 24 04.1	
EVO	**Evora**	**2.46**	**176**	ePn		**Pn**	**16 23 24.9**	**+0.4**
EVO				*e*Pg		**Pn**	**16 23 32.6**	**+8.1**
EVO				*e*Sg		**Sn**	**16 24 03.2**	**+8.9**
	39nm,0.2s							
MOE	**Montemor**	**2.46**	**182**	*e*Pn		**Pn**	**16 23 24.6**	**0.0**
MOE				*e*Sn		**Sn**	**16 23 52.5**	**-1.9**
MOE				*e*Sg		**Sn**	**16 24 03.4**	**+9.0**
EPON	**Pontenova**	**2.48**	**19**	Pn		**Pn**	**16 23 24.2**	**-0.6**
	0.8nm,0.1s,SNR=5.6							
EPON				Pg		**Pn**	**16 23 29.2**	**+4.3**
	0.8nm,0.1s,SNR=4.0							
EPON				Sn		**Sn**	**16 23 52.9**	**-1.9**
	8.2nm,0.2s,SNR=7.9							
EPON				Lg			16 24 03.0	
	7.6nm,0.1s,SNR=8.4							
EPON	**Pontenova**	**2.48**	**19**	Pn		**Pn**	**16 23 24.1**	**-0.7**
EPON				Pg		**Pn**	**16 23 30.1**	**+5.3**
EPON				Sn		**Sn**	**16 23 52.4**	**-2.4**
EPON				Lg			16 24 02.8	
GUD	**Guadarrama**	**3.12**	**95**	Pn		**Pn**	**16 23 36.0**	**+1.9**
	0.3nm,0.1s,SNR=4.0							
GUD				Lg			16 24 29.3	
	18nm,0.3s,SNR=11							
GUD	**Guadarrama**	**3.12**	**95**	Pn		**Pn**	**16 23 35.7**	**+1.7**
GUD				Pg		**Pn**	**16 23 43.9**	**+10**
GUD				Lg			16 24 27.1	
EARI	**Arriondas**	**3.23**	**43**	Pn		**Pn**	**16 23 36.1**	**+0.6**
	0.5nm,0.2s,SNR=7.9							
EARI				Sn		**Sn**	**16 24 13.6**	**-0.2**
	2.9nm,0.2s,SNR=7.9							
EARI				Lg			16 24 28.5	
	2.0nm,0.1s,SNR=28							
EARI	**Arriondas**	**3.23**	**43**	Pn		**Pn**	**16 23 36.2**	**+0.7**
EARI				Sn		**Sn**	**16 24 13.2**	**-0.6**
EARI				Lg			16 24 27.3	
EMIN	**Mina Concepcio**	**3.44**	**159**	Pn		**Pn**	**16 23 39.0**	**+0.5**
	8.8nm,0.1s,SNR=78							
EMIN				Sn		**Sn**	**16 24 17.2**	**-1.9**
	1.4nm,0.2s,SNR=7.9							
EMIN				Lg			16 24 36.6	
	3.4nm,0.2s,SNR=7.9							
EMIN	**Mina Concepcio**	**3.44**	**159**	Pn		**Pn**	**16 23 39.0**	**+0.5**
EMIN				Sn		**Sn**	**16 24 17.4**	**-1.7**
EMIN				Lg			16 24 34.6	
PTEO	**Sao Teotonio**	**3.46**	**186**	*e*Pn		**Pn**	**16 23 38.3**	**-0.4**
PTEO				*e*Sn		**Sn**	**16 24 16.7**	**-2.8**
	18nm,0.4s							
PTEO	**Sao Teotonio**	**3.46**	**186**	Pn		**Pn**	**16 23 38.3**	**-0.4**
PTEO				Sn		**Sn**	**16 24 16.7**	**-2.8**
	9.1nm,0.4s							
EGRO	**El Granado**	**3.50**	**170**	Pn		**Pn**	**16 23 39.5**	**+0.2**
	2.3nm,0.1s,SNR=7.9							
EGRO				Sn		**Sn**	**16 24 18.8**	**-1.8**
	7.1nm,0.2s,SNR=7.9							
EGRO				Lg			16 24 37.3	
	5.6nm,0.2s,SNR=4.0							
EGRO	**El Granado**	**3.50**	**170**	Pn		**Pn**	**16 23 39.5**	**+0.1**
EGRO				Sn		**Sn**	**16 24 18.4**	**-2.2**
EGRO				Lg			16 24 35.5	
ESDC	**Sonseca Array**	**3.52**	**110**	Pn		**Pn**	**16 23 40.9**	**+1.2**
	1.2nm,0.2s,baz=293,slow=13,SNR=6.9							
ESDC				Pg		**Pn**	**16 23 50.7**	**+11**
	1.8nm,0.2s,baz=293,slow=13,SNR=6.1							
ESDC				Sn		**Sn**	**16 24 21.4**	**+0.1**
	4.9nm,0.5s,baz=291,slow=23,SNR=7.9							
ESDC				Lg			16 24 39.4	
	19nm,0.4s,baz=296,slow=30,SNR=17							
PALC	**Alcoutim**	**3.57**	**170**	*e*Pn		**Pn**	**16 23 40.4**	**+0.1**
PALC				*e*Sn		**Sn**	**16 24 21.1**	**-1.2**
	14nm,0.5s							
PALC	**Alcoutim**	**3.57**	**170**	Pn		**Pn**	**16 23 40.4**	**+0.1**
PALC				Sn		**Sn**	**16 24 21.1**	**-1.2**
	6.8nm,0.5s							
ECAB	**El Cabril**	**3.63**	**142**	Pn		**Pn**	**16 23 41.9**	**+0.6**
	0.5nm,0.1s,SNR=7.9							
ECAB				Sn		**Sn**	**16 24 22.7**	**-1.3**
	5.9nm,0.2s,SNR=7.9							
ECAB				Lg			16 24 42.6	
	10nm,0.2s,SNR=7.9							
EADA	**Adamuz**	**3.99**	**134**	⇑Pn		**Pn**	**16 23 47.0**	**+0.6**
	0.7nm,0.1s,SNR=18							
EADA				Sn		**Sn**	**16 24 31.7**	**-1.4**
	7.5nm,0.2s,SNR=7.9							
EADA				Lg			16 24 54.9	
	4.3nm,0.2s,SNR=4.0							
EADA	**Adamuz**	**3.99**	**134**	⇑Pn		**Pn**	**16 23 47.0**	**+0.6**
EADA				Sn		**Sn**	**16 24 31.7**	**-1.4**
EADA				Lg			16 24 53.4	
ELAN	**Lanestosa**	**4.22**	**56**	Sn		**Sn**	**16 24 37.0**	**-2.0**
	4.1nm,0.3s,SNR=4.0							
EBAN	**Banos Encina**	**4.45**	**128**	Pn		**Pn**	**16 23 53.2**	**+0.3**
	1.9nm,0.2s,SNR=4.0							
EBAN				Sn		**Sn**	**16 24 44.1**	**-0.7**
	4.7nm,0.2s,SNR=4.0							
EBAN	**Banos Encina**	**4.45**	**128**	Pn		**Pn**	**16 23 53.1**	**+0.2**
EBAN				Sn		**Sn**	**16 24 42.9**	**-1.8**
EBAN				Lg			16 25 06.3	
ESPR	**Espera**	**4.51**	**155**	Pn		**Pn**	**16 23 54.3**	**+0.5**
	0.6nm,0.1s,SNR=7.9							
ESPR				Sn		**Sn**	**16 24 44.9**	**-1.4**
	2.6nm,0.2s,SNR=7.9							
ESPR	**Espera**	**4.51**	**155**	Pn		**Pn**	**16 23 54.0**	**+0.3**
ESPR				Sn		**Sn**	**16 24 44.9**	**-1.4**
ESPR				Lg			16 25 06.8	
ELIJ	**Sierra de Lija**	**4.63**	**150**	Pn		**Pn**	**16 23 55.9**	**+0.5**
	0.3nm,0.1s,SNR=7.9							
ELIJ	**Sierra de Lija**	**4.63**	**150**	Pn		**Pn**	**16 23 56.4**	**+0.9**
ELIJ				Sn		**Sn**	**16 24 48.0**	**-1.4**
ETOB	**Tobarra**	**5.66**	**112**	Pn		**Pn**	**16 24 10.4**	**+0.4**
	0.5nm,0.2s,SNR=4.0							
ETOB				Sn		**Sn**	**16 25 12.1**	**-3.0**
	1.1nm,0.2s,SNR=7.9							
ETOB	**Tobarra**	**5.66**	**112**	Pn		**Pn**	**16 24 10.6**	**+0.6**
ETOB				Sn		**Sn**	**16 25 12.6**	**-2.5**
ETOB				Lg			16 25 44.0	
ETSF	**Etsaut**	**6.04**	**69**	*e*Pn		**Pn**	**16 24 15.8**	**+0.5**
ETSF				*e*Sn		**Sn**	**16 25 23.6**	**-1.0**
	1.7nm,0.2

ARA0	**ARCESS Array S**	**8.71**	**351**	Pn	**P**		**16**	**43**	**17.3 +0.6**
	baz=170,slow=14								
ARA0				Sn	**Sn**		**16**	**44**	**49.2 -7.7**
	baz=163,slow=22								
ARA0				Lg			16	45	35.6
	baz=144,slow=37								
ARA0	**ARCESS Array S**	**8.71**	**351**	*eP*	**P**		**16**	**43**	**17.3 +0.6**
ARA0				*e*			16	44	49.2
ARA0				*e*			16	45	35.6

MAN 12 17:17:28.8, 15.95N×120.09E, h13km, mb3.9, ML2.6, MS2.2, 7C-1D, Luzon

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SCZP	**Santa Cruz**	**0.24**	**226**⇑	*eP*	Pg	17 17 34.9	+0.8
BOLP	**Bolinao**	**0.46**	**338**⇑	*eP*	Pb	17 17 38.0	-0.2
BOLP				*eS*	Sg	17 17 47.0	+2.2
BCPH	**Baguio City Da**	**0.64**	**47**⇓	*iP*	Pb	17 17 42.4	+1.2
BCPH				*i* S	Sb	17 17 54.5	+4.7
BALP	**Baler**	**1.44**	**98**⇑	*eP*	Pn	17 17 53.4	-1.3
ABRA	**Dolores**	**1.79**	**19**⇑	*eP*	Pn	17 17 60.0	+0.2
CAUP	**Cauayan**	**1.93**	**59**⇑	*eP*	Pn	17 18 01.6	-0.1
APYP	**Conner**	**2.20**	**30**⇑	*eP*	Pn	17 18 05.8	+0.3
APYP				*eS*	Sn	17 18 32.8	0.0
PALP	**Palanan**	**2.50**	**63**⇑	*eP*	Pn	17 17 59.8	-10

IDC ***12*** *17:21:09.6±3.3, 31.78S×179.86E, h372km±32km, mb3.5/6, mb1 3.8/8, mb1mx3.6/16, Error ellipse: s-maj=30.5km s-min=18.8km az=29.0*

NEIC ***12*** *17:21:17.1±1.4, 32.50S×179.85E, h470km±14km, mb4.2/1, Error ellipse: s-maj=23.2km s-min=17.0km az=218.0*

ISC 12 17:21:12.2±1.1, 32.33S×0.08×179.7W±0.2, h466km±9km, n91, σ1§14/91, mb3.8/7, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PUZ	**Puketiti**	**5.97**	**196**	P	**P**	**17 22 46.4**	**-1.3**
PUZ	**Puketiti**	**5.97**	**196**	*eP*	**P**	**17 22 46.9**	**-0.8**
PUZ				S	**S**	**17 24 03.4**	**+0.2**
MARZ	**Manawahe**	**6.38**	**207**	P	**P**	**17 22 53.0**	**+1.1**
MARZ	**Manawahe**	**6.38**	**207**	P	**P**	**17 22 53.1**	**+1.2**
MWZ	**Matawai**	**6.41**	**200**	*eP*	**P**	**17 22 52.0**	**-0.2**
EDRZ	**Edgecumbe**	**6.46**	**206**	P	**P**	**17 22 54.2**	**+1.4**
EDRZ	**Edgecumbe**	**6.46**	**206**	P	**P**	**17 22 54.5**	**+1.7**
URZ	**Urewera**	**6.47**	**203**	P	**P**	**17 22 50.1**	**-2.8**
	45nm,0.3s,baz=326,slow=2.5,SNR=101						
URZ				S	**S**	**17 24 12.0**	**-0.5**
	32nm,0.3s,baz=77,slow=22,SNR=25						
URZ	**Urewera**	**6.47**	**203**	P	**P**	**17 22 51.1**	**-1.7**
URZ	**Urewera**	**6.47**	**203**	*eP*	**P**	**17 22 51.1**	**-1.7**
LIRZ	**Lichensteins R**	**6.51**	**209**	P	**P**	**17 22 55.3**	**+2.0**
LIRZ	**Lichensteins R**	**6.51**	**209**	P	**P**	**17 22 55.6**	**+2.3**
TAZ	**Tarawera**	**6.66**	**207**	P	**P**	**17 22 56.4**	**+1.6**
TAZ	**Tarawera**	**6.66**	**207**	P	**P**	**17 22 57.4**	**+2.6**
UTU	**Utuhina**	**6.74**	**209**	P	**P**	**17 22 58.3**	**+2.7**
UTU	**Utuhina**	**6.74**	**209**	P	**P**	**17 22 58.8**	**+3.2**
PATZ	**Paeroa**	**6.89**	**208**	P	**P**	**17 22 58.5**	**+1.3**
PATZ	**Paeroa**	**6.89**	**208**	P	**P**	**17 22 58.7**	**+1.5**
KNZ	**Kokohu**	**7.01**	**197**	P	**P**	**17 22 58.4**	**-0.1**
KNZ				S	**S**	**17 24 23.5**	**+0.8**
KNZ	**Kokohu**	**7.01**	**197**	P	**P**	**17 22 59.0**	**+0.5**
KNZ				S	**S**	**17 24 23.7**	**+1.0**
BKZ	**Black Stump Fm**	**7.50**	**203**	*eP*	**P**	**17 23 02.2**	**-1.5**
MGZ	**Maungaku**	**7.71**	**209**	P	**P**	**17 23 04.7**	**-1.2**
MGZ	**Maungaku**	**7.71**	**209**	P	**P**	**17 23 05.8**	**-0.1**
KAVZ	**Karewarewa**	**7.75**	**208**	P	**P**	**17 23 06.9**	**+0.5**
KAVZ	**Karewarewa**	**7.75**	**208**	P	**P**	**17 23 07.8**	**+1.4**
NGZ	**Ngauruhoe**	**7.83**	**208**	P	**P**	**17 23 04.9**	**-2.4**
NGZ	**Ngauruhoe**	**7.83**	**208**	P	**P**	**17 23 07.2**	**-0.1**
CNZ	**Chateau**	**7.87**	**208**	P	**P**	**17 23 08.0**	**+0.3**
CNZ	**Chateau**	**7.87**	**208**	P	**P**	**17 23 10.0**	**+2.3**
TUVZ	**Tukino**	**7.89**	**207**	P	**P**	**17 23 07.0**	**-0.9**
TUVZ	**Tukino**	**7.89**	**207**	P	**P**	**17 23 07.9**	**0.0**
FWVZ	**Far West T-bar**	**7.92**	**208**	P	**P**	**17 23 08.1**	**-0.1**
FWVZ	**Far West T-bar**	**7.92**	**208**	P	**P**	**17 23 09.2**	**+1.0**
VRZ	**Vera Road**	**8.15**	**212**	*eP*	**P**	**17 23 11.8**	**+1.1**
PWZ	**Pawanui**	**8.17**	**199**	P	**P**	**17 23 10.1**	**-0.9**
PWZ				S	**S**	**17 24 44.2**	**-0.9**
PWZ	**Pawanui**	**8.17**	**199**	*eP*	**P**	**17 23 11.1**	**+0.1**
TSZ	**Takapari Road**	**8.48**	**203**	*eP*	**P**	**17 23 12.1**	**-2.2**
WAZ	**Wanganui**	**8.57**	**209**	*eP*	**P**	**17 23 13.7**	**+0.3**
BFZ	**Birch Farm**	**8.95**	**200**	P	**P**	**17 23 20.5**	**+1.0**
BFZ	**Birch Farm**	**8.95**	**200**	*eP*	**P**	**17 23 19.7**	**+0.2**
MRZ	**Mangatainoka R**	**9.14**	**203**	P	**P**	**17 23 19.2**	**-2.4**
MRZ				S	**S**	**17 25 03.1**	**-1.1**
MTW	**Mount Morrison**	**9.62**	**202**	P	**P**	**17 23 26.5**	**-0.2**
MTW	**Mount Morrison**	**9.62**	**202**	P	**P**	**17 23 26.9**	**+0.2**
CAW	**Cannon Point**	**9.72**	**204**	P	**P**	**17 23 25.9**	**-1.8**
CAW				S	**S**	**17 25 14.8**	**-0.7**
CAW	**Cannon Point**	**9.72**	**204**	P	**P**	**17 23 26.5**	**-1.2**
MRW	**Makara Radio**	**9.96**	**205**	P	**P**	**17 23 29.5**	**-0.8**
MRW	**Makara Radio**	**9.96**	**205**	P	**P**	**17 23 30.2**	**-0.1**
WEL	**Wellington**	**9.98**	**205**	P	**P**	**17 23 28.9**	**-1.7**
WEL	**Wellington**	**9.98**	**205**	P	**P**	**17 23 29.9**	**-0.7**
SNZO	**South Karori**	**10.02**	**205**	P	**P**	**17 23 29.2**	**-1.8**
SNZO				S	**S**	**17 25 21.9**	**+0.3**
SNZO	**South Karori**	**10.02**	**205**	*eP*	**P**	**17 23 31.1**	**+0.1**
BHW	**Baring Head**	**10.05**	**204**	P	**P**	**17 23 31.2**	**-0.2**
BHW	**Baring Head**	**10.05**	**204**	P	**P**	**17 23 31.7**	**+0.3**
NNZ	**Nelson**	**10.47**	**210**	*eP*	**P**	**17 23 34.7**	**-1.1**
QRZ	**Quartz Range**	**10.54**	**214**	P	**P**	**17 23 35.8**	**-0.8**
QRZ	**Quartz Range**	**10.54**	**214**	*eP*	**P**	**17 23 36.0**	**-0.6**
KHZ	**Kahutara**	**11.42**	**206**	P	**P**	**17 23 44.7**	**-1.3**
KHZ				S	**S**	**17 25 51.2**	**+1.9**
KHZ	**Kahutara**	**11.42**	**206**	*eP*	**P**	**17 23 45.3**	**-0.7**
DSZ	**Denniston Nort**	**11.60**	**213**	P	**P**	**17 23 47.3**	**-0.7**
DSZ	**Denniston Nort**	**11.60**	**213**	P	**P**	**17 23 48.3**	**+0.3**
LTZ	**Lake Taylor**	**12.22**	**209**	P	**P**	**17 23 54.6**	**-0.1**
LTZ	**Lake Taylor**	**12.22**	**209**	*eP*	**P**	**17 23 54.8**	**+0.1**
MQZ	**McQueen's Vall**	**12.86**	**206**	P	**P**	**17 24 02.7**	**+1.3**
MQZ	**McQueen's Vall**	**12.86**	**206**	*eP*	**P**	**17 24 03.0**	**+1.6**
WVZ	**Waitaha Valley**	**13.13**	**213**	P	**P**	**17 24 04.8**	**+0.5**
WVZ	**Waitaha Valley**	**13.13**	**213**	*eP*	**P**	**17 24 05.6**	**+1.3**
RPZ	**Rata Peaks**	**13.50**	**210**	P	**P**	**17 24 10.1**	**+1.9**
	3.6nm,0.3s,baz=94,slow=5.3,SNR=11						
RPZ				S	**S**	**17 26 34.6**	**+4.8**
	0.9nm,0.3s,baz=297,slow=24,SNR=6.0						
CTA	**Charters Tower**	**32.77**	**283**	*eP*	**P**	**17 27 06.4**	**-0.2**
	2.8nm,0.4s,mb4.0						
CTA	**Charters Tower**	**32.77**	**283**	P	**P**	**17 27 06.8**	**+0.2**
	4.8nm,0.5s,mb4.2,baz=103,slow=9.4,SNR=18						
CTAO	**Charters Tower**	**32.77**	**283**	*eP*	**P**	**17 27 06.3**	**-0.2**
AS12	**Alice Springs**	**41.62**	**270**	*eP*	**P**	**17 28 19.8**	**+0.2**
	3.0nm,0.7s,mb3.8						
ASAR	**Alice Springs**	**41.62**	**270**	P	**P**	**17 28 19.6**	**+0.1**
	2.1nm,0.4s,mb3.9,baz=105,slow=7.2,SNR=50						
WB2	**Warramunga Arr**	**42.78**	**275**	*eP*	**P**	**17 28 28.0**	**-0.8**
WRA	**Warramunga Arr**	**42.79**	**275**	P	**P**	**17 28 28.4**	**-0.4**
	4.7nm,0.3s,mb4.4,baz=112,slow=7.9,SNR=83						
SBA	**Scott Base**	**46.01**	**184**	*eP*	**P**	**17 28 54.2**	**+0.9**
VNDA	**Vanda**	**46.04**	**185**	P	**P**	**17 29 02.0**	**+8.4**
	0.5nm,0.8s,mb3.0,slow=8.2,SNR=4.8						
FITZ	**Fitzroy Crossi**	**50.96**	**272**	*eP*	**P**	**17 29 31.4**	**0.0**
	1.3nm,0.4s,mb3.6						
FITZ	**Fitzroy Crossi**	**50.96**	**272**	P	**P**	**17 29 31.7**	**+0.2**
	1.7nm,0.6s,mb3.6,baz=169,slow=8.8,SNR=7.8						
QSPA	**South Pole Qui**	**57.78**	**180**	*eP*	**P**	**17 30 28.6**	**+10**
	11nm,1.0s,mb4.1						
SNAA	**Sanae**	**76.26**	**179**	P	**P**	**17 32 12.3**	**+0.1**
NVAR	**Mina Array Bea**	**90.62**	**44**	P	**P**	**17 33 31.3**	**+6.7**
	0.7nm,0.8s,mb3.7,baz=230,slow=11,SNR=4.5						
MKAR	**Makanchi Array**	**117.91**	**310**	PKP	PKPdf	17 39 09.8	+5.4
	0.6nm,0.7s,baz=158,slow=1.6,SNR=6.7						
ARCES	**ARCESS Array B**	**140.15**	**346**	PKhKP		17 39 43.0	
	3.8nm,1.1s,baz=40,slow=1.9,SNR=7.9						
ARCES				PKP	PKPdf	17 39 51.4	+5.6
	0.8nm,0.6s,baz=31,slow=5.3,SNR=5.1						
ARCES	**ARCESS Array B**	**140.15**	**346**	PKP	PKPdf	17 39 43.0	-2.8
ARCES				PKP	PKPdf	17 39 51.4	+5.6
KAF	**Kangasniemi**	**145.85**	**338**	*e*pkp	PKPdf	17 40 01.5	+5.8
	baz=44,slow=2.9						
FINES	**FINESS Array B**	**146.43**	**338**	PKPbc	PKPbc	17 40 04.1	+5.6
	11nm,0.5s,baz=46,slow=4.4,SNR=105						
NB2	**NORSAR Subarra**	**150.41**	**349**	PKP		17 40 14.4	
	1.8nm,0.5s,baz=15,slow=4.1						
NOA	**NORSAR Array B**	**150.41**	**349**	PKPbc	PKPdf	17 40 14.8	+12
	2.5nm,0.7s,baz=18,slow=4.1,SNR=8.8						
NOA				PKPab	PKPab	17 40 21.8	+2.2
	1.7nm,0.6s,baz=23,slow=2.8,SNR=8.0						
NOA	**NORSAR Array B**	**150.41**	**349**	PKPbc	PKPdf	17 40 14.8	+12
NOA				PKPab	PKPab	17 40 21.8	+2.2
AKASG	**Malin Array Be**	**151.90**	**319**	PKPbc	PKPdf	17 40 18.4	+13
	2.0nm,0.4s,baz=54,slow=2.3,SNR=16						
BRTR	**Keskin Array B**	**152.18**	**295**	PKPbc	PKPdf	17 40 19.6	+13
	1.5nm,0.6s,baz=141,slow=3.7,SNR=6.7						

IDC 12 17:23:36.5±17.0, 19.06S×173.19W, mb3.7/4, mb1 3.9/4, mb1mx3.7/17, Error ellipse: s-maj=433.0km s-min=44.2km az=38.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CTA	**Charters Tower**	**38.16**	**262**	P	P	17 30 58.2	-1.3
	0.7nm,0.4s,baz=79,slow=10,SNR=4.1						
ASAR	**Alice Springs**	**49.26**	**255**	P	P	17 32 27.1	-2.0
	0.5nm,0.4s,baz=92,slow=8.2,SNR=11						
WRA	**Warramunga Arr**	**49.30**	**260**	P	P	17 32 27.2	-2.2
	0.3nm,0.3s,baz=97,slow=7.3,SNR=9.4						
VNDA	**Vanda**	**59.78**	**186**	P	P	17 33 42.9	-2.5
	0.7nm,0.8s,slow=6.1,SNR=4.5						

WEL 12 17:29:57.0±0.7, 44.98S×167.49E, h121km±5km, ML3.7/6, 1C, Error ellipse: s-maj=4.6km s-min=3.6km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MSZ	**Milford Sound**	**0.44**	**45**	PN	P	17 30 14.9	0.0
MSZ				SN	S	17 30 28.0	-0.3
MLZ	**Mavora Lakes**	**0.61**	**128**	PN	P	17 30 15.7	-0.2
WHZ	**Wether Hill Ro**	**0.97**	**161**	PN	P	17 30 18.7	-0.4
AXZ	**Alexandra**	**1.33**	**103**	PN	P	17 30 22.6	-0.4
AXZ				SN	S	17 30 40.3	-2.5
BWZ	**Berwen**	**1.76**	**76**	⇑PN	P	17 30 26.8	-1.2
TUZ	**Tuapeka**	**1.79**	**124**	PN	P	17 30 27.9	-0.5
ODZ	**Otahua Downs**	**2.24**	**93**	PN	P	17 30 32.6	-1.4
RPZ	**Rata Peaks**	**2.85**	**65**	PN	P	17 30 39.4	-2.8
WVZ	**Waitaha Valley**	**3.02**	**52**	PN	P	17 30 41.5	-2.9
MQZ	**McQueen's Vall**	**3.91**	**73**	PN	P	17 30 54.0	-2.4
LTZ	**Lake Taylor**	**4.09**	**59**	PN	P	17 30 55.2	-3.6
THZ	**Tophouse**	**5.09**	**53**	PN	P	17 31 08.5	-3.7

IDC ***12*** *18:08:46.8±0.6, 20.78S×174.37W, mb4.8/17, mb1 5.0/19, mb1mx4.9/22, ML4.9/2, MS4.2/9, Ms1 4.3/9, ms1mx4.1/20, Error ellipse: s-maj=20.8km s-min=14.1km az=132.0*

NEIC ***12*** *18:08:48.1±0.2, 20.74S×174.40W, h10km, mb4.9/33, MS4.5/8, Error ellipse: s-maj=8.7km s-min=5.1km az=137.0*

SYO ***12*** *18:08:48.1, 20.74S×174.40W, h10km, MB4.9, MS4.5*

HRVD ***12*** *18:08:48.1±0.3, 21.02S×173.68W, h21km±1km, MW5.1/50, Centroid moment Tensor Solution. LP body waves: s31,c54;Mantle waves: s50,c88; Half duration: 0 Moment tensor: Scale 10^16Nm; Mrr3.64±.22; Mθθ0.08±.15; Mφφ-3.72±.14; Mrθ0.56±.26; Mrφ-1.77±.10; Mθφ2.89±.22; Best double couple: M0 5×10^16 NP1:φs211°, δ28°, λ105°. NP2:φs14°, δ63°, λ82°. Principal axes: T 4.64, Plg71°, Azm268°; N .71, Plg7°, Azm18°; P -5.35, Plg18°, Azm110°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

BJI ***12*** *18:08:50.0, 20.14S×174.41W, h10km, mB5.4, mb5.2, Ms5.0, Msz4.7*

MOS ***12*** *18:08:55.4±2.7, 20.48S×175.39W, h33km, mb5.4/6, Error ellipse: s-maj=19.1km s-min=16.1km az=21.8*

ISC 12 18:08:48.7±0.2, 20.88S±0.06×174.30W±0.06, h24km, h24km±1.3km: pP-P, n257, σ1§02/112, mb4.9/53, MS4.5/25, 27C-20D, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAR	**Rarotonga**	**13.57**	**94**	Pn	**P**	**18 11 51.5**	**-11**
	9.8nm,0.3s,baz=236,slow=5.7,SNR=14						
RAR				Sn	S	18 14 03.4	-30
	1.4nm,0.3s,slow=20,SNR=1.6						
RAR	**Rarotonga**	**13.57**	**94**	*eP*	**P**	**18 11 51.1**	**-11**
NOUC	**Port Laguerre**	**18.10**	**263**	*eP*	**P**	**18 13 02.6**	**+2.2**
NOUC	**Port Laguerre**	**18.10**	**263**	*eP*	**P**	**18 13 02.6**	**+2.2**
URZ	**Urewera**	**18.85**	**201**	P	**P**	**18 13 09.1**	**-0.3**
	1.8nm,0.3s,baz=1.6,slow=7.8,SNR=14						
URZ				S	**S**	**18 16 24.1**	**-11**
	0.6nm,0.3s,baz=180,slow=20,SNR=4.4						
URZ				LR	LR	18 18 47.4	
	comp=Z,543nm,20.0s,baz=355,slow=32						
RPZ	**Rata Peaks**	**25.84**	**205**	P	**P**	**18 14 19.8**	**-0.3**
	29nm,0.7s,mb4.9,baz=82,slow=7.4,SNR=9.8						
CTA	**Charters Tower**	**36.90**	**264**	*eP*	**P**	**18 15 55.6**	**-2.0**
	8.6nm,0.8s,mb4.6						
CTA	**Charters Tower**	**36.90**	**264**	P	**P**	**18 15 57.5**	**-0.1**
	baz=105,slow=12						
CTA				LR	LR	18 28 57.5	
	comp=Z,298nm,20.9s,MS4.1,baz=92,slow=33						
CTAO	**Charters Tower**	**36.90**	**264**	*eP*	**P**	**18 15 56.0**	**-1.6**
	9.8nm,0.8s,mb4.7						
TOO	**Toolangi**	**38.51**	**235**	*eP*	**P**	**18 16 09.8**	**-1.1**
	5.8nm,1.1s,mb4.2						
PMG	**Port Moresby**	**38.81**	**281**	P	**P**	**18 16 12.6**	**-1.1**
	28nm,0.8s,mb5.0,baz=85,slow=6.5,SNR=7.3						
PMG				LR	LR	18 30 22.4	
	comp=Z,398nm,18.2s,MS4.3,baz=266,slow=33						
PMG	**Port Moresby**	**38.81**	**281**	*eP*	**P**	**18 16 12.2**	**-1.5**
	28nm,0.8s,mb5.0						
STKA	**Stephens Creek**	**40.76**	**245**	*eP*	**P**	**18 16 28.3**	**-1.4**
	7.9nm,0.8s,mb4.4						
STKA	**Stephens Creek**	**40.76**	**245**	P	**P**	**18 16 29.1**	**-0.5**
	9.1nm,0.8s,mb4.5,baz=93,slow=9.3,SNR=19						
STKA				LR	LR	18 31 57.9	
	comp=Z,468nm,18.6s,MS4.4,baz=320,slow=34						
AS12	**Alice Springs**	**47.80**	**257**	*i*⇓*iP*	**P**	**18 17 25.0**	**-1.5**
	13nm,0.7s,mb5.1						
ASAR	**Alice Springs**	**47.80**	**257**	P	**P**	**18 17 25.1**	**-1.4**
	17nm,0.8s,mb5.1,baz=101,slow=7.8,SNR=210						
ASAR				PcP	PcP	18 18 55.2	-0.3
	3.7nm,0.8s,baz=113,slow=3.5,SNR=4.3						
ASAR				LR	LR	18 37 06.4	
	comp=Z,264nm,18.3s,MS4.2,baz=251,slow=36						
WB2	**Warramunga Arr**	**47.97**	**262**	*i*⇑*iP*	**P**	**18 17 25.0**	**-2.8**
WRA	**Warramunga Arr**	**47.98**	**262**	P	**P**	**18 17 25.8**	**-2.1**
	7.6nm,0.8s,mb4.8,baz=95,slow=7.7,SNR=79						
WRA				PcP	PcP	18 18 56.1	-0.1
	4.5nm,1.0s,baz=99,slow=3.4,SNR=4.7						
FORT	**Forrest**	**52.33**	**247**	*eP*	**P**	**18 17 58.7**	**-2.3**
	83nm,0.8s,mb5.7						
FITZ	**Fitzroy Crossi**	**56.41**	**262**	*eP*	**P**	**18 18 28.9**	**-2.1**
	4.6nm,1.0s,mb4.5						
FITZ	**Fitzroy Crossi**	**56.41**	**262**	P	**P**	**18 18 29.8**	**-1.2**
	5.2nm,0.9s,mb4.6,baz=89,slow=3.9,SNR=15						
SBA	**Scott Base**	**57.75**	**185**	*eP*	**P**	**18 18 41.1**	**+1.4**
	9.9nm,0.9s,mb4.8						
VNDA	**Vanda**	**57.87**	**186**	P	**P**	**18 18 41.8**	**+1.2**
	4.2nm,0.8s,mb4.5,baz=7.5,slow=7.1,SNR=27						
VNDA				LR	LR	18 41 09.5	
	comp=Z,159nm,18.6s,MS4.2,baz=2.4,slow=34						
VNDA	**Vanda**	**57.87**	**186**	*eP*	**P**	**18 18 41.2**	**+0.7**
	2.2nm,0.8s,mb4.2						
KLBR	**Kellerberrin**	**61.03**	**245**	*eP*	**P**	**18 19 01.7**	**-1.3**
	70nm,1.0s,mb5.7						
QSPA	**South Pole Qui**	**69.19**	**180**	*eP*	**P**	**18 19 55.9**	**+0.9**
	26nm,1.1s,mb5.1						
QSPA				LR	LR		
	comp=Z,140nm,20.0s,MS4.2						
JHJ	**Hachijo jima 2**	**69.31**	**320**	P	**P**	**18 19 55.4**	**-1.1**
	comp=Z,158nm,0.9s,mb5.9,baz=84,slow=7.9,SNR=5.5						
MAJO	**Matsushiro**	**72.61**	**322**	*eP*	**P**	**18 20 15.0**	**-1.4**
	comp=Z,21nm,0.8s,mb5.1						
MAT	**Matsushiro**	**72.61**	**322**	P	**P**	**18 20 15.7**	**-0.6**
MAT				S	S	18 29 36.0	-2.3
MAT	**Matsushiro**	**72.61**	**322**	*eP*	**P**	**18 20 16.0**	**-0.3**
	comp=Z,20nm,0.9s,mb5.0						
FX1	**Attu Island--F**	**74.25**	**352**	LR	LR	18 49 40.4	
	comp=Z,14nm,19.5s,baz=181,slow=33						
JNU	**Nakatsue**	**74.96**	**315**	P	**P**	**18 20 29.6**	**-0.4**
	comp=Z,30nm,0.9s,mb5.2,baz=139,slow=2.2,SNR=9.3						
ASAJ	**Asahikawa**	**75.76**	**329**	P	**P**	**18 20 35.4**	**+1.0**
	comp=Z,10nm,0.8s,mb4.8,baz=75,slow=0.8,SNR=6.4						
CMB	**Columbia Colle**	**77.43**	**41**	*eP*	**P**	**18 20 43.1**	**-0.7**
	comp=Z,5.0nm,0.8s,mb4.5						
CMB				LR	LR		
	comp=Z,256nm,19.0s,MS4.6						
YSS	**Yuzh-Sakhalins**	**77.83**	**331**⇑	*eP*	**P**	**18 20 46.0**	**+0.2**
YSS				*e*	pP	18 20 52.8	-0.6
YSS				pmax	pmax		
	comp=Z,30nm,0.8s,mb5.3						
YSS	**Yuzh-Sakhalins**	**77.83**	**331**	*eP*	**P**	**18 20 46.5**	**+0.7**
MTUM	**Tungsten Hills**	**78.14**	**42**	*eP*	**P**	**18 20 47.6**	**-0.1**
BEKR	**Beckwourth**	**78.61**	**39**	*eP*	**P**	**18 20 49.7**	**-0.6**
	comp=Z,13nm,1.4s,mb4.7						
NVAR	**Mina Array Bea**	**78.96**	**42**	P	**P**	**18 20 52.5**	**+0.3**
	comp=Z,14nm,0.9s,mb4.9,baz=212,slow=7.4,SNR=58						
NVAR				LR	LR	18 51 50.9	
	comp=Z,214nm,18.2s,MS4.5,slow=33						
TPH	**Tonopah**	**79.42**	**42**	*eP*	**P**	**18 20 54.1**	**-0.6**
	comp=Z,13nm,1.1s,mb4.8						
INCN	**Inchon**	**80.35**	**316**	*eP*	**P**	**18 21 00.1**	**+0.4**
	comp=Z,12nm,0.6s,mb5.0						
KDAK	**Kodiak Island**	**80.43**	**12**	*eP*	**P**	**18 20 59.0**	**-0.6**
	comp=Z,13nm,1.0s,mb4.8						
SSE	**Sheshan**	**80.61**	**308**	⇑P	**P**	**18 21 00.9**	**-0.3**
SSE				S	S	18 30 58.6	-6.8
SSE				AMB	AMB		
	comp=Z,29nm,0.7s,mb5.3						
SSE				AMB	AMB		
	comp=Z,48nm,3.5s						
SSE				LR	LR		
	comp=N,54nm,20.0s,MS4.1						
SSE				LR	LR		
	comp=E,73nm,20.0s,MS4.1						
SSE				LR	LR		
	comp=Z,96nm,20.0s,MS4.2						
BMN	**Battle Mountai**	**80.84**	**40**	*eP*	**P**	**18 21 01.6**	**-0.6**
	comp=Z,16nm,1.3s,mb4.8						
MAW	**Mawson**	**82.36**	**199**	*eP*	**P**	**18 21 10.2**	**+0.6**
	comp=Z,6.1nm,0.8s,mb4.6						
MAW	**Mawson**	**82.36**	**199**	P	**P**	**18 21 11.1**	**+1.5**
	comp=Z,6.6nm,0.8s,mb4.6,baz=117,slow=6.5,SNR=13						
RMW	**Rattlesnake Mo**	**82.75**	**33**	*eP*	**P**	**18 21 11.7**	**-0.3**
NJ2	**Nanjing**	**82.81**	**308**	*eP*	**P**	**18 21 14.2**	**+1.5**
NJ2				PP	PP	18 24 25.6	+0.7
NJ2				S	S	18 31 20.0	-8.0
NJ2				SS	SS	18 36 48.0	-6.4
NJ2				AMB	AMB		
	comp=Z,70nm,0.9s,mb5.7						
NJ2				AMB	AMB		
	comp=Z,310nm,7.0s						
NJ2				LR	LR		
	comp=N,330nm,23.0s,MS4.7						
NJ2				LR	LR		
	comp=E,240nm,21.9s,MS4.7						
NJ2				LR	LR		
	comp=Z,240nm,20.9s,MS4.5						
MDJ	**Mudanjiang**	**82.85**	**323**	P	**P**	**18 21 13.3**	**+0.7**
MDJ				AP	pP	18 21 22.0	+1.7
MDJ				XP	sP	18 21 25.1	+2.3
MDJ				AMB	AMB		
	comp=Z,17nm,1.0s,mb5.0						
MDJ				AMB	AMB		
	comp=Z,152nm,4.0s						
MDJ				LR	LR		
	comp=N,106nm,30.4s,MS4.1						
MDJ				LR	LR		
	comp=E,86nm,30.4s,MS4.1						
MDJ				LR	LR		
	comp=Z,98nm,27.6s,MS4.0						
MDJ	**Mudanjiang**	**82.85**	**323**	*eP*	**P**	**18 21 13.3**	**+0.7**
	comp=Z,12nm,0.8s,mb5.0						
MVU	**Marysvale**	**82.89**	**44**	*eP*	**P**	**18 21 13.8**	**+0.9**
	comp=Z,19nm,1.5s,mb4.9						
MSU	**Marysvale**	**82.91**	**44**	*eP*	**P**	**18 21 13.8**	**+0.7**
HAWA	**Hanford**	**83.24**	**35**	*eP*	**P**	**18 21 14.0**	**-0.6**
	comp=Z,20nm,1.4s,mb4.9						
SLKM	**Skilak Lake**	**83.42**	**12**	*eP*	**P**	**18 21 14.0**	**-1.1**
SPU	**Mount Spurr**	**83.72**	**11**	*eP*	**P**	**18 21 15.4**	**-1.2**
NLW	**Nelson Butte**	**83.91**	**33**	*e

CMAR	**Chiang Mai Arr**	**93.52**	**288**	P		**P**	**18 22 06.4**	**+2.0**
	comp=Z,15nm,0.9s,mb5.4,baz=121,slow=2.8,SNR=68							
CMAR				LR		LR	18 59 50.0	
	comp=Z,109nm,18.3s,MS4.3,baz=305,slow=33							
YAK	**Yakutsk**	**93.79**	**337**	*e*P		**P**	**18 22 04.1**	**-0.5**
YAK				MLR		MLR		
	comp=Z,100nm,18.0s,MS4.3							
YKA	**Yellowknife Ar**	**95.43**	**24**	P		**P**	**18 22 12.0**	**-0.2**
	comp=Z,1.3nm,0.8s,mb4.4,baz=235,slow=4.3,SNR=30							
YKA				PP		PP	18 25 59.9	-5.2
	comp=Z,0.4nm,1.0s,baz=236,slow=8.3,SNR=3.7							
YKA				PKKP		PKKP	18 39 04.5	+6.6
	comp=Z,0.2nm,0.7s,baz=38,slow=2.2,SNR=4.3							
YKA	**Yellowknife Ar**	**95.43**	**24**	P		**P**	**18 22 12.0**	**-0.2**
YKA				PP		PP	18 25 59.9	-5.2
YKA				PKKP		PKKP	18 39 04.5	+6.6
ULN	**Ulaanbaatar**	**97.93**	**318**	*e*P		**P**	**18 22 23.7**	**-0.1**
ULN	**Ulaanbaatar**	**97.93**	**318**	*e*P		**P**	**18 22 23.8**	**0.0**
SONM	**Songino Array**	**98.33**	**318**	P		**P**	**18 22 27.7**	**+2.0**
	comp=Z,0.5nm,0.8s,mb4.1,baz=153,slow=2.8,SNR=4.9							
LPAZ	**La Paz**	**98.70**	**111**	LR		LR	19 00 13.5	
	comp=Z,108nm,20.3s,MS4.3,baz=199,slow=31							
TIXI	**Tiksi**	**100.02**	**344**	*e*P		P	18 22 32.9	+0.1
TIXI				MLR		MLR		
	comp=Z,100nm,17.0s,MS4.4							
TIXI	**Tiksi**	**100.02**	**344**	*e*P		P	18 22 32.0	-0.8
AAM	**Ann Arbor**	**104.20**	**50**	PFAKE			18 23 00.0	+7.9
AAM				LR		LR		
	comp=Z,303nm,19.0s,MS4.8							
NVS	**Novosibirsk**	**113.94**	**322**	*e*PKIKP		PKPdf	18 27 24.8	-5.3
NVS				pmax		pmax		
	comp=Z,6.0nm,0.9s							
NVS				pmax		pmax		
	comp=E,4.0nm,1.3s							
MKAR	**Makanchi Array**	**113.98**	**313**	PKiKP			18 27 26.8	
	comp=E,4.1nm,0.8s,baz=70,slow=3.1,SNR=38							
KURK	**Kurchatov**	**116.62**	**317**	*e*PKP		PKPdf	18 27 30.8	-4.5
BRVK	**Borovoye**	**121.65**	**320**	*e*PKP		PKPdf	18 27 40.7	-4.4
SVE	**Sverdlovsk**	**126.25**	**326**⇑	*e*PKIKP		PKPdf	18 27 50.2	-3.5
SVE				pmax		pmax		
	comp=Z,20nm,2.0s							
ARU	**Arti**	**127.46**	**326***c*	*i*PKIKP		PKPdf	18 27 52.4	-3.7
ARU				pmax		pmax		
	comp=Z,13nm,0.8s							
ARU				MLR		MLR		
	comp=Z,100nm,19.0s,MS4.5							
ARU	**Arti**	**127.46**	**326**⇑	*i*PKP		PKPdf	18 27 52.5	-3.6
ARCES	**ARCESS Array B**	**129.87**	**351**	PKP		PKPdf	18 27 57.1	-3.3
	comp=Z,3.2nm,0.7s,baz=18,slow=3.8,SNR=8.4							
FINES	**FINESS Array B**	**137.05**	**346**	PKP		PKPdf	18 28 10.3	-3.6
	comp=Z,3.1nm,0.8s,baz=90,slow=3.8,SNR=7.3							
MOS	**Moscow**	**137.82**	**334**	*e*PKIKP		PKPdf	18 28 12.9	-2.7
MOS				*e*			18 30 58.2	
MOS				pmax		pmax		
	comp=Z,80nm,1.0s							
OBN	**Obninsk**	**138.69**	**333**	*i*PKIKP		PKPdf	18 28 13.4	-3.8
OBN				*e*			18 31 03.7	
OBN				pmax		pmax		
	comp=Z,30nm,1.9s							
OBN				MLR		MLR		
	comp=Z,100nm,18.0s,MS4.6							
NB2	**NORSAR Subarra1**	**139.69**	**356**	PKP			18 28 09.6	
	comp=Z,1.8nm,0.9s,baz=17,slow=2.6							
NOA	**NORSAR Array B**	**139.69**	**356**	PKP		PKPdf	18 28 17.6	-1.2
	comp=Z,2.5nm,0.9s,baz=13,slow=4.1,SNR=4.8							
KMBO	**Kilima Mbogo**	**142.17**	**239**	PKhKP			18 28 17.9	
	comp=Z,2.7nm,1.0s,baz=86,slow=3.8,SNR=5.3							
KMBO	**Kilima Mbogo**	**142.17**	**239**	*e*PKP		PKPdf	18 28 15.2	-9.4
ERZM	**Erzurum**	**144.18**	**310**	*i*P		PKPbc	18 28 23.2	+1.1
SUW	**Suwalki**	**144.34**	**342**	*e*PKP		PKPdf	18 28 22.5	-4.6
SUW	**Suwalki**	**144.34**	**342**	*e*PKP		PKPdf	18 28 22.5	-4.5
MUD	**Monsted U'grnd**	**144.38**	**357**	*i*P		PKPbc	18 28 22.2	+0.1
	comp=Z,23nm,0.8s							
MUD	**Monsted U'grnd**	**144.38**	**357**	*i*PKHKP			18 28 22.2	
MUD				pmax		pmax		
	comp=Z,23nm,0.8s							
AKASG	**Malin Array Be**	**144.95**	**334**	PKP		PKPdf	18 28 22.7	-5.5
	comp=Z,16nm,0.7s,baz=40,slow=4.1,SNR=119							
AFFS	**'Afif**	**145.45**	**282**	P		PKPbc	18 28 27.9	+2.0
KELT	**Kelkit**	**145.58**	**311**	*i*P		PKPbc	18 28 28.3	+2.4
DMUB	**Kingscourt**	**145.65**	**13**⇓	*i*P		PKPbc	18 28 26.8	+1.2
DCN	**Croghan**	**146.09**	**14**⇓	*i*P		PKPbc	18 28 28.1	+1.5
DLF	**Lyons Farm**	**146.30**	**13**⇓	*i*P		PKPbc	18 28 28.7	+1.6
ELZG	**Elazig**	**146.41**	**309**	*i*P		PKPbc	18 28 31.4	+3.5
SIM	**Simferopol'**	**146.46**	**322***c*	*i*PKIKP		PKPdf	18 28 29.9	-1.1
SIM				pmax		pmax		
	comp=Z,45nm,0.8s							
BSEG	**Bad Segeberg**	**146.81**	**355**	*e*PKIKP		PKPdf	18 28 30.6	-0.7
RUE	**Ruedersdorf**	**147.84**	**351**	*e*PKPbc		PKPdf	18 28 32.6	-0.4
GZT	**Gaziantep**	**147.88**	**308**	*i*P		PKPdf	18 28 34.5	+0.9
KIS	**Kishinev**	**147.88**	**330**	*e*PKIKP		PKPdf	18 28 33.0	-0.3
KIS				*e*			18 35 40.0	
KIS				MLR		MLR		
	comp=Z,300nm,20.0s,MS5.1							
KIS				MLR		MLR		
	comp=Z,400nm,20.0s							
BOYT	**Boyabat**	**147.93**	**316**	*i*P		PKPdf	18 28 34.9	+1.3
KWP	**Kalwaria**	**148.28**	**339**	*e*PKP		PKPdf	18 28 34.4	+0.6
KWP				*e*			18 28 34.8	
OJC	**Ojcow**	**148.67**	**342**⇑	*e*PKP		PKPdf	18 28 35.6	+1.2
BALT	**Daday**	**148.84**	**318**	*i*P		PKPdf	18 28 25.4	-10
KSP	**Ksiaz**	**148.96**	**347**	*e*PKP		PKPdf	18 28 36.1	+1.2
KSP				*e*			18 28 36.8	
KSP	**Ksiaz**	**148.96**	**347**	*e*PKP		PKPdf	18 28 36.3	+1.4
WTSB	**Winterswijk**	**148.96**	**359**⇑	*e*P		PKPdf	18 28 36.0	+1.2
	comp=Z,26nm,1.0s							
CLL	**Collm**	**149.10**	**351**⇑	*i*PKP1		PKPdf	18 28 36.7	+1.6
CLL				*i*			18 28 39.4	
CLL				*i*			18 28 44.6	
CLL	**Collm**	**149.10**	**351**	*i*PKIKP		PKPdf	18 28 36.7	+1.6
CLL				pmax		pmax		
	comp=Z,46nm,1.0s							
COBT	**Iskenderun**	**149.16**	**307**	*i*P		PKPdf	18 28 38.2	+2.5
NIE	**Niedzica**	**149.23**	**341**	*e*PKP		PKPdf	18 28 37.7	+2.3
AVNT	**Avonos**	**149.24**	**312**	*i*P		PKPdf	18 28 37.6	+1.8
CRVS	**Cervenica-Dubn**	**149.32**	**339**	*e*PKP		PKPdf	18 28 36.2	+0.7
CRVS				*e*			18 28 37.7	
CRVS				*e*			18 28 41.0	
CRVS	**Cervenica-Dubn**	**149.32**	**339**	*e*PKIKP		PKPdf	18 28 36.2	+0.7
CRVS				*e*			18 28 41.0	
UPC	**Upice**	**149.33**	**347**⇑	*e*PKPB		PKPdf	18 28 37.2	+1.7
ELDT	**Eldivan**	**149.37**	**316**	*i*P		PKPdf	18 28 38.1	+2.2
BRG	**Berggiesshubel**	**149.37**	**350**	*e*PKHKP		PKPdf	18 28 33.8	-1.7
BRG				*i*			18 28 37.7	
BRG				pmax		pmax		
	comp=Z,30nm,1.0s							
DPC	**Dobruska-Polom**	**149.41**	**347**	*e*PKPDF		PKPdf	18 28 33.1	-2.5
DPC				⇑*e*PKPB			18 28 37.2	
DPC				*ex*		x	18 28 46.3	
OKC	**Ostrava-Krasne**	**149.46**	**344**⇑	*e*PKPB		PKPdf	18 28 37.4	+1.7
OKC				*ex*		x	18 28 42.9	
CFR	**Carcaliu**	**149.52**	**328**⇑	*i*P		PKPdf	18 28 45.9	+10
PVCC	**Panska Ves**	**149.59**	**349**⇑	*e*PKPB		PKPdf	18 28 38.3	+2.4
BRTR	**Keskin Array B**	**149.62**	**314**	PKP		PKPdf	18 28 32.8	-3.5
	comp=Z,1.6nm,0.9s,baz=117,slow=2.8,SNR=5.9							
BRTR				PKPbc		PKPdf	18 28 38.4	+2.1
	comp=Z,11nm,0.8s,baz=130,slow=3.3,SNR=41							
MORC	**Moravsky Berou**	**149.67**	**345**	*e*PKPdf		PKPdf	18 28 33.2	-2.8
MORC				*e*PKPbc		PKPdf	18 28 38.3	+2.2
VRI	**Vrincioaia**	**149.70**	**330**⇓	*i*P		PKPdf	18 28 46.7	+10
LIKS	**Likavka**	**149.92**	**342**	*e*PKP		PKPdf	18 28 37.4	+0.9
MOX	**Moxa**	**149.93**	**352**	*e*PKHKP			18 28 38.5	
MOX				pmax		pmax		
	comp=Z,26nm,1.1s							
MOX				MLR		MLR		
	comp=Z,100nm,22.0s,MS4.6							
MOX	**Moxa**	**149.93**	**352**	*e*P		PKPdf	18 28 38.5	+2.1
MOX				*e*			18 28 59.1	
MOX				LR		LR		
	comp=Z,100nm,22.0s,MS4.6							
HARR	**Harsova**	**149.97**	**327**⇓	*i*P		PKPdf	18 28 47.6	+11
KECS	**Kecovo**	**150.01**	**340**	*e*PKP		PKPdf	18 28 40.1	+3.5
PRU	**Pruhonice**	**150.12**	**349**⇑	*e*PKPB		PKPdf	18 28 39.2	+2.4
PRU				*ex*		x	18 28 47.4	
HGN	**Heimansgroeve**	**150.18**	**360**⇓	*e*P		PKPdf	18 28 39.4	+2.6
	comp=Z,12nm,1.0s							
ISR	**Istrita**	**150.34**	**329**⇓	*i*P		PKPdf	18 28 48.5	+11
MLR	**Muntele Rosu**	**150.34**	**331**⇓	*i*P		PKPdf	18 28 47.9	+11
VYHS	**Vyhne**	**150.50**	**342**	*e*PKP		PKPdf	18 28 40.6	+3.2
VYHS				*e*			18 28 43.3	
VYHS				*e*			18 28 45.4	
VYHS	**Vyhne**	**150.50**	**342**	*e*PKHKP		PKPdf	18 28 40.6	+3.2
VYHS				*e*			18 28 45.4	

KOLL	**Kolacno**	**150.54**	**343**	*e*PKP		PKPdf	18 28 40.9	+3.5
KOLL				*e*			18 28 43.0	
KOLL				*e*			18 28 45.6	
HRI	**Mount Hermon**	**150.66**	**301**	P		PKPdf	18 28 41.7	+3.6
KSHT	**Keshet**	**150.68**	**301**	P		PKPdf	18 28 41.7	+3.5
PSZ	**Piszkesteto**	**150.69**	**340**	*e*PKPbc		PKPdf	18 28 40.5	+2.8
HENT	**Hendek**	**150.79**	**319**	*i* P		PKPdf	18 28 40.9	+2.9
GIVF	**Givet**	**150.83**	**1**	*e*PKP1		PKPdf	18 28 40.7	+2.9
	comp=Z,67nm,0.9s							
BAIF	**Baives**	**150.86**	**2**	*e*PKP1		PKPdf	18 28 40.9	+3.0
	comp=Z,69nm,1.0s							
GRA1	**Grafenberg Arr**	**150.91**	**353**	*e*PKPbc		PKPdf	18 28 41.3	+3.3
GRF	**Grafenberg Arr**	**150.91**	**353**	*e*PKIKP		PKPdf	18 28 41.3	+3.3
TBKS	**Tabuk**	**151.06**	**291**	P		PKPdf	18 28 42.9	+4.1
HMDT	**Nahal Hemdat**	**151.11**	**299**	P		PKPdf	18 28 42.7	+3.9
KHC	**Kasperske Hory**	**151.12**	**349**	*e*PKPDF		PKPdf	18 28 35.7	-2.6
KHC				⇑*e*PKPB			18 28 41.8	
MMLI	**Mount Malkishu**	**151.15**	**300**	P		PKPdf	18 28 43.0	+4.1
MKRJ	**Makawir**	**151.20**	**298**	P		PKPdf	18 28 42.8	+3.8
RUP	**Ruppelstein**	**151.22**	**358**	PKP		PKPdf	18 28 42.1	+3.7
WET	**Wettzell**	**151.22**	**350**	*e*PKIKP		PKPdf	18 28 41.6	+3.2
TOD	**Tromm**	**151.23**	**356**	PKP		PKPdf	18 28 41.6	+3.2
ZST	**Bratislava**	**151.24**	**344**	*e*PKP		PKPdf	18 28 42.8	+4.3
ZST				*e*			18 28 47.7	
WLF	**Walferdange**	**151.27**	**359**	*e*PKPbc		PKPdf	18 28 42.1	+3.6
GEC2	**GERESS Array S**	**151.37**	**349**	*e*PKIKP		PKPdf	18 28 42.4	+3.7
GERES	**GERESS Array B**	**151.37**	**349**	PKP		PKPdf	18 28 36.1	-2.6
	comp=Z,0.7nm,0.7s,SNR=7.2							
GERES				PKPbc		PKPdf	18 28 42.5	+3.9
	comp=Z,11nm,0.8s,slow=1.3,SNR=62							
JMQS	**Jabal Moqyreh**	**151.55**	**292**	P		PKPdf	18 28 44.2	+4.6
ESKT	**Eskisehir**	**151.56**	**316**	*i* P		PKPdf	18 28 42.7	+3.4
ROSF	**Rostrenen**	**151.67**	**13**	*e*PKP1		PKPdf	18 28 41.9	+2.8
	comp=Z,18nm,0.9s							
FLN	**La Foliniere**	**151.74**	**9**	*e*PKP1		PKPdf	18 28 42.3	+3.1
	comp=Z,64nm,0.9s							
FLN				*e*R				
	comp=Z,102nm,18.5s							
LANF	**Langenberg**	**151.91**	**357**	PKP		PKPdf	18 28 43.6	+4.1
LDF	**La Druitiere**	**151.96**	**8**	*e*PKP1		PKPdf	18 28 42.7	+3.1
	comp=Z,40nm,0.9s							
CSS	**Prodhromos**	**151.96**	**306**	*e*PKPdf		PKPdf	18 28 37.4	-2.7
CSS				*e*PKPbc		PKPdf	18 28 43.5	+3.5
PRNI	**Paran**	**152.01**	**296**	P		PKPdf	18 28 44.6	+4.4
GRR	**Gorron**	**152.05**	**9**	*e*PKP1		PKPdf	18 28 43.1	+3.4
	comp=Z,48nm,0.8s							
QUIF	**Quistinic**	**152.09**	**13**	*e*PKP1		PKPdf	18 28 42.9	+3.1
JMOS	**Jabal al Moall**	**152.16**	**293**	P		PKPdf	18 28 45.4	+4.9
ALWS	**Ilw as Safayha**	**152.17**	**293**	P		PKPdf	18 28 47.8	+7.3
EIL	**Elat**	**152.20**	**294**	P		PKPdf	18 28 44.9	+4.4
MOA	**Molln**	**152.22**	**348**⇑	*i*PKP		PKPdf	18 28 40.3	+0.3
MOA				*i*			18 28 44.2	
ULDT	**Uludag**	**152.28**	**319**	*i* P		PKPdf	18 28 44.6	+4.3
HAQS	**Haql**	**152.34**	**293**	P		PKPdf	18 28 45.7	+5.0
FUR	**Furstenfeldbru**	**152.41**	**352**	*e*PKIKP		PKPdf	18 28 44.5	+4.3
MEZF	**Maizieres J'vi**	**152.44**	**1**	*e*PKP1		PKPdf	18 28 44.6	+4.4
	comp=Z,65nm,1.2s							
WLS	**Welschbruch**	**152.50**	**358**	PKP		PKPdf	18 28 44.5	+4.2
CDF	**Champ du Feu**	**152.50**	**358**	*e*PKP1		PKPdf	18 28 44.6	+4.3
	comp=Z,30nm,0.9s							
ARSA	**Arzberg**	**152.51**	**345**⇑	*i*PKP		PKPdf	18 28 37.9	-2.5
ARSA				*i*			18 28 43.5	
BFO	**Black Forest**	**152.53**	**356**	*e*PKIKP		PKPdf	18 28 44.5	+4.1
THEF	**They Montfort**	**152.71**	**360**	PKP		PKPdf	18 28 44.7	+4.1
SPAK	**Spaichingen**	**152.73**	**355**	PKP		PKPdf	18 28 44.0	+3.3
HAU	**Haudompre**	**152.93**	**359**	*e*PKP1		PKPdf	18 28 45.4	+4.5
	comp=Z,26nm,0.9s							
HAU				*e*R				
	comp=Z,102nm,20.8s							
FELD	**Feldberg**	**153.00**	**357**	PKP		PKPdf	18 28 45.2	+4.2
MOF	**Molkenrain**	**153.06**	**358**	PKP		PKPdf	18 28 45.4	+4.3
SART	**Tekirdag**	**153.10**	**322**	*i* P		PKPdf	18 28 46.1	+4.7
HINF	**Hinteralfeld**	**153.11**	**358**	*e*PKP1		PKPdf	18 28 45.6	+4.4
	comp=Z,9.4nm,0.8s							
KBA	**Koelnbreinsper**	**153.13**	**348**⇑	*i*PKP		PKPdf	18 28 39.0	-2.3
KBA				*i*			18 28 46.4	
WATA	**Walderalm**	**153.18**	**351**⇑	*i*PKP		PKPdf	18 28 41.3	0.0
WATA				*i*			18 28 46.0	
PERS	**Pernice**	**153.18**	**346**	*e*PKPbc		PKPdf	18 28 45.9	+4.6
MOTA	**Moosalm**	**153.24**	**352**⇓	*i*PKP		PKPdf	18 28 38.7	-2.7
MOTA				*i*			18 28 45.1	
WTTA	**Wattenberg**	**153.24**	**351**⇓	*i*PKP		PKPdf	18 28 40.4	-1.0
WTTA				*i*			18 28 46.8	
SVIS	**Svilajnac**	**153.33**	**335**	*e*PKP		PKPdf	18 28 40.6	-1.0
SQTA	**Sankt Quirin**	**153.34**	**352**⇑	*i*PKP		PKPdf	18 28 41.8	+0.3
SQTA				*i*			18 28 47.2	
BBS	**Basel-Blauen**	**153.44**	**357**	PKP		PKPdf	18 28 44.0	+2.3
DAVA	**Damuels**	**153.44**	**354**⇑	*i*PKP		PKPdf	18 28 39.4	-2.3
DAVA				*i*			18 28 47.9	
HYF	**Humbligny**	**153.56**	**5**	*e*PKP1		PKPdf	18 28 47.1	+5.3
LOMF	**Lomont**	**153.58**	**358**	PKP		PKPdf	18 28 45.2	+3.3
LOR	**Lormes**	**153.63**	**3**	*e*PKP1		PKPdf	18 28 47.0	+5.1
	comp=Z,42nm,1.2s							
LOR				*e*R				
	comp=Z,152nm,19.5s							
SSF	**Saint Saulge**	**153.82**	**3**	*e*PKP1		PKPdf	18 28 47.4	+5.2
	comp=Z,34nm,1.0s							
LJU	**Ljubljana**	**153.88**	**346**	*i*PKPdf		PKPdf	18 28 40.9	-1.4
LJU				*i*PKPbc		PKPdf	18 28 47.7	+5.4
LJU	**Ljubljana**	**153.88**	**346**	*i*PKPdf		PKPdf	18 28 43.0	+0.7
LJU				*i*PKPbc		PKPdf	18 28 47.7	+5.4
MFF	**Saint Martin d**	**153.90**	**9**	*e*PKP1		PKPdf	18 28 47.2	+4.9
	comp=Z,25nm,1.1s							
AVF	**Avril sur Loir**	**154.08**	**4**	*e*PKP1		PKPdf	18 28 47.6	+5.0
	comp=Z,16nm,0.9s							
BOJS	**Bojanci**	**154.21**	**344**	*e*PKPdf		PKPdf	18 28 40.8	-2.0
BOJS				*e*PKPbc		PKPdf	18 28 48.6	+5.8
SMF	**Signal de Mont**	**154.25**	**3**	*e*PKP1		PKPdf	18 28 47.9	+5.1
	comp=Z,32nm,1.3s							
BGF	**Bois d'Agland**	**154.28**	**5**	*e*PKP1		PKPdf	18 28 48.3	+5.4
	comp=Z,15nm,0.7s							
CABF	**La Chapelle**	**154.33**	**359**	*e*PKP1		PKPdf	18 28 48.3	+5.4
	comp=Z,32nm,1.1s							
TCF	**Toulx Ste Croi**	**154.49**	**6**	*e*PKP1		PKPdf	18 28 48.4	+5.3
	comp=Z,27nm,1.1s							

JMA **12** *18:15:18.8±0.1,28.33N×140.98E,h206km,M4.3*
IDC **12** *18:15:18.2±1.0,28.20N×140.46E,h182km±13km,mb3.2/6, mb1 3.4/7,mb1mx3.1/23,Error ellipse: s-maj=30.4km s-min=10.0km az=73.0*
ISC 12 18:15:18.1±0.5,28.41N±0.06×141.3E±0.3,h222km±8km, n21,σ1s00/32,mb3.1/6,Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**1.52**	**150**	P		P	**P**	**18 15 54.5**	**+0.2**
	114nm,0.3s,baz=299,slow=19,SNR=139								
CBIJ				S		S	**S**	**18 16 21.9**	**-0.4**
	151nm,0.3s,baz=309,slow=22,SNR=12								
JHHJ	**Haha-jima-NKT**	**1.93**	**157**	P		P	**P**	**18 15 57.8**	**-0.2**
JHHJ				S		S	**S**	**18 16 27.9**	**-0.8**
JHJ2	**Mitsune**	**4.86**	**345**	P		P	**P**	**18 16 33.2**	**+1.3**
JHJ2				*e*S		S	**S**	**18 17 28.5**	**-0.9**
JHJ	**Hachijo jima 2**	**4.88**	**344**	P		P	**P**	**18 16 33.0**	**+0.9**
	9.4nm,0.3s,baz=62,slow=21,SNR=14								
JHJ				S		S	**S**	**18 17 29.4**	**-0.3**
	12nm,0.3s,baz=81,slow=24,SNR=5.7								
BSO1	**Boso 1**	**6.23**	**357**	P		P	**P**	**18 16 50.4**	**+1.1**
BSO1				*e*S		S	**S**	**18 17 58.7**	**-1.7**
BSO3	**Boso 3**	**6.41**	**354**	P		P	**P**	**18 16 51.9**	**+0.3**
BSO3				*e*S		S	**S**	**18 18 03.7**	**-0.8**
JIM2	**Oshima 3**	**6.49**	**346**	P		P	**P**	**18 16 53.0**	**+0.3**
JIM2				*e*S		S	**S**	**18 18 06.7**	**+0.2**
BSO4	**Boso 4**	**6.61**	**353**	P		P	**P**	**18 16 55.8**	**+1.6**
TATJ	**Tateyama 2**	**6.71**	**350**	P		P	**P**	**18 16 56.6**	**+1.1**
TATJ				*e*S		S	**S**	**18 18 11.5**	**0.0**
JYO	**Yokosk**	**6.94**	**349**	P		P	**P**	**18 16 59.4**	**+1.0**
JOD2	**Odawara 2**	**7.09**	**345**	P		P	**P**	**18 17 00.9**	**+0.5**
JYN	**Shimob**	**7.45**	**342**	P		P	**P**	**18 17 05.8**	**+0.8**
JRY	**Ryogami san**	**7.86**	**345**	P		P	**P**	**18 17 10.0**	**-0.2**
JRY				*e*S		S	**S**	**18 18 34.7**	**-3.3**
MAT	**Matsushiro**	**8.52**	**343**	P		P	**P**	**18 17 18.3**	**-0.6**
MAT				S		S	**S**	**18 18 49.6**	**-3.8**
JMK	**Ichinoseki**	**10.51**	**360**	P		P	**P**	**18 17 45.4**	**+1.0**
JMK				*e*S		S	**S**	**18 19 36.8**	**-2.4**
WRA	**Warramunga Arr**	**48.54**	**189**	P		P	**P**	**18 23 40.4**	**-0.4**
	0.7nm,0.6s,mb3.2,baz=5.8,slow=7.6,SNR=17								
FITZ	**Fitzroy Crossi**	**48.67**	**200**	P		P	**P**	**18 23 41.2**	**-0.6**
	2.2nm,1.0s,mb3.4,baz=32,slow=9.5,SNR=1.8								
MKAR	**Makanchi Array**	**49.06**	**309**	P		P	**P**	**18 23 42.4**	**-1.9**
	0.1nm,0.3s,mb2.6,baz=90,slow=10,SNR=6.8								
ASAR	**Alice Springs**	**52.27**	**189**	P		P	**P**	**18 24 08.5**	**-0.2**
	0.3nm,0.8s,mb2.8,baz=360,slow=4.8,SNR=7.9								
FINES	**FINESS Array B**	**76.44**	**333**	P		P	**P**	**18 26 45.3**	**+1.1**
	0.2nm,0.3s,mb3.2,baz=76,slow=5.7,SNR=3.8								
NVAR	**Mina Array Bea**	**80.30**	**52**	P		P	**P**	**18 27 13.9**	**+8.3**
	0.7nm,0.6s,mb3.5,baz=293,slow=6.9,SNR=3.6								

IDC **12** *18:21:50.6±3.6,15.68S×173.92W,mb3.9/4,mb1 4.1/5, mb1mx3.8/16,ML4.4/1,Error ellipse: s-maj=78.6km s-min=38.7km az=26.0*
ISC 12 18:21:52.5±2.2,15.5S±0.4×173.8W±0.2,h33km,n5, σ0s10/5,mb4.0/4,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**14.50**	**115**	Pn		P	**P**	**18 25 17.3**	**0.0**
	1.7nm,0.3s,baz=206,slow=15,SNR=3.7								
URZ	**Urewera**	**24.04**	**198**	P		P	**P**	**18 27 05.5**	**0.0**
	4.9nm,0.3s,mb4.4,baz=35,slow=19,SNR=8.4								
STKA	**Stephens Creek**	**43.63**	**240**	P		P	**P**	**18 29 55.9**	**+0.1**
	1.2nm,0.7s,mb3.7,baz=90,slow=11,SNR=2.8								
WRA	**Warramunga Arr**	**49.42**	**257**	P		P	**P**	**18 30 41.5**	**0.0**
	0.3nm,0.5s,mb3.6,baz=90,slow=6.8,SNR=9.3								
ASAR	**Alice Springs**	**49.69**	**252**	P		P	**P**	**18 30 43.5**	**-0.1**
	1.1nm,0.5s,mb4.1,baz=90,slow=7.6,SNR=49								

NEIC **12** *18:26:10.9±2.3,21.855N×176.65W,h149km±21km,mb4.6/9, Error ellipse: s-maj=13.2km s-min=7.6km az=157.0*
IDC **12** *18:26:11.0±4.5,21.845N×176.64W,h148km±40km, mb4.1/16,mb1 4.2/18,mb1mx4.2/20,Error ellipse: s-maj=20.3km s-min=14.1km az=159.0*
ISC 12 18:26:08.4±2.8,21.9S±0.1×176.69W±0.08,h137km±25km, n48,σ0s83/39,mb4.2/21,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**15.76**	**91**	P		P	**P**	**18 29 44.4**	**+0.4**
	3.9nm,0.3s,baz=287,slow=7.3,SNR=8.9								
RAR				S		S	**S**	**18 32 26.4**	**-7.8**
	1.9nm,0.3s,baz=116,slow=17,SNR=2.7								
NOUC	**Port Laguerre**	**15.78**	**266**	*e*P		P	**P**	**18 29 51.2**	**+6.9**
URZ	**Urewera**	**17.19**	**197**	P		P	**P**	**18 30

SPA0	**Spitsbergen Ar**	**6.21**	**23**	Pn		**Pn**	**18 40 19.6**	**+1.0**
	baz=212,slow=16								
SPA0				Sn		**Sn**	**18 41 33.8**	**+2.5**
	baz=208,slow=28								
SPA0	**Spitsbergen Ar**	**6.21**	**23**	*e*P		**Pn**	**18 40 19.6**	**+1.0**
SPA0				*e*S		**Sn**	**18 41 33.8**	**+2.5**
SPITS	**Spitsbergen Ar**	**6.21**	**23**	Pn		**Pn**	**18 40 19.4**	**+0.8**
	comp=Z,1.7nm,0.3s,baz=191,slow=9.4,SNR=87								
SPITS				Sn		**Sn**	**18 41 29.3**	**-1.9**
	baz=209,slow=17,SNR=1.6								
KIF	**Kilpisjarvi**	**6.44**	**117**	*e*P		**Pn**	**18 40 21.8**	**-0.2**
KIF				*e*S		**Sn**	**18 41 32.2**	**-4.9**
KBS	**Kingsbay**	**6.49**	**12**	*e*P		**Pn**	**18 40 21.3**	**-1.3**
STOK	**Stokkvaagen**	**7.03**	**152**	*e*P		**Pn**	**18 40 28.7**	**-1.5**
KTK1	**Kautokeino**	**7.10**	**112**	*e*P		**Pn**	**18 40 32.6**	**+1.4**
KTK1				AML		AML	18 41 58.5		
	comp=Z,8.6nm,0.8s								
DAG	**Danmarks Havn**	**7.35**	**314**⇑	*i*P		**Pn**	**18 40 24.3**	**-10**
	comp=Z,6.7nm,0.8s								
DAG				*i*			18 41 37.2		
DAG	**Danmarks Havn**	**7.35**	**314**⇑	*i*P		**Pn**	**18 40 24.3**	**-10**
DAG				pmax		pmax			
	comp=Z,7.0nm,0.8s								
MOR8	**Moi Rana**	**7.39**	**148**	*e*P		**Pn**	**18 40 33.5**	**-1.8**
MOR8				AML		AML	18 42 03.6		
	comp=Z,14nm,0.9s								
ARA0	**ARCESS Array S**	**7.42**	**105**	Pn		**Pn**	**18 40 36.7**	**+1.0**
	baz=304,slow=12								
ARA0				Sn		**Sn**	**18 42 00.8**	**-0.9**
	baz=304,slow=22								
ARA0	**ARCESS Array S**	**7.42**	**105**	*e*P		**Pn**	**18 40 36.9**	**+1.1**
ARCES	**ARCESS Array B**	**7.42**	**105**	Pn		**Pn**	**18 40 36.9**	**+1.2**
	comp=Z,1.9nm,0.3s,baz=312,slow=12,SNR=60								
ARCES				Sn		**Sn**	**18 42 00.8**	**-0.9**
	comp=Z,0.5nm,0.3s,baz=291,slow=20,SNR=2.5								
ARCES				LR		LR	18 43 34.4		
	comp=Z,366nm,22.0s,baz=304,slow=38								
ARCES	**ARCESS Array B**	**7.42**	**105**	Pn		**Pn**	**18 40 36.9**	**+1.2**
ARCES				Sn		**Sn**	**18 42 00.8**	**-0.9**
ARCES				LR		LR	18 43 34.4		
KEV	**Kevo**	**7.73**	**102**	*e*P		**Pn**	**18 40 39.7**	**-0.4**
KEV				MPN			18 40 44.6		
	comp=Z,2.1nm,0.3s								
NSS	**Namsos**	**8.62**	**159**	*e*P		**P**	**18 40 47.7**	**-4.8**
NSS				*e*S		**Sn**	**18 42 19.9**	**-12**
NSS				AML		AML	18 42 25.4		
	comp=Z,20nm,0.8s								
SCO	**Scoresbysund**	**8.69**	**268**	*i* P		**P**	**18 40 42.1**	**-11**
	comp=Z,8.5nm,0.6s								
SCO	**Scoresbysund**	**8.69**	**268**	*i* P		**P**	**18 40 42.1**	**-11**
SCO				pmax		pmax			
	comp=Z,9.0nm,0.6s								
SGF	**Sodankyl**	**9.07**	**115**	*e*P		**P**	**18 40 58.5**	**-0.1**
SGF				MPN			18 41 04.2		
	comp=Z,2.2nm,0.5s								
SGF				*e*S		**Sn**	**18 42 35.0**	**-7.7**
APA0	**Apatity Array**	**10.78**	**104**	Pn		**P**	**18 41 21.4**	**-0.6**
	baz=311,slow=12								
APA0	**Apatity Array**	**10.78**	**104**	*e*P		**P**	**18 41 21.4**	**-0.6**
MSF	**Maaselka**	**10.88**	**117**	*e*P		**P**	**18 41 22.5**	**-0.8**
MSF				MPN			18 41 28.4		
	comp=Z,3.2nm,0.4s								
MSF				*e*S		**S**	**18 43 19.9**	**-7.1**
LVZ	**Lovozero**	**11.07**	**101**	*de*P		**P**	**18 41 29.0**	**+3.0**
LVZ				pmax		pmax			
	comp=Z,10.0nm,2.8s								
LVZ				MLR		MLR			
	comp=Z,70nm,11.0s								
LVZ				MLR		MLR			
	comp=N,70nm,9.0s								
VAF	**Ylistaro**	**11.75**	**136**	*e*P		**P**	**18 41 31.9**	**-3.3**
VAF				MPN			18 41 36.7		
	comp=Z,3.9nm,0.5s								
VAF				*e*S		**S**	**18 43 36.0**	**-12**
NB2	**NORSAR Subarra**	**11.98**	**165**	P		**P**	**18 41 33.8**	**-4.6**
	comp=Z,3.3nm,0.7s,baz=350,slow=11								
NOA	**NORSAR Array B**	**11.98**	**165**	Pn		**P**	**18 41 34.0**	**-4.4**
	comp=Z,0.4nm,0.3s,baz=345,slow=13,SNR=8.0								
NOA				Sn		**S**	**18 43 35.8**	**-18**
	comp=Z,0.2nm,0.3s,baz=360,slow=8.8,SNR=3.5								
NOA				LR		LR	18 46 07.1		
	comp=Z,276nm,19.0s,baz=345,slow=37								
KJN	**Kajaani**	**11.99**	**124**	*e*P		**P**	**18 41 35.7**	**-2.8**
KJN				*e*S		**S**	**18 43 44.9**	**-9.3**
SUMG	**Summit**	**12.69**	**290**	*e*P		**P**	**18 41 40.8**	**-7.1**
HFS	**Hagfors**	**13.10**	**160**	Pn		**P**	**18 41 48.7**	**-4.7**
	baz=349,slow=16								
HFS	**Hagfors**	**13.10**	**160**	*e*P		**P**	**18 41 48.7**	**-4.7**
HFS	**Hagfors**	**13.10**	**160**	Pn		**P**	**18 41 49.9**	**-3.5**
	comp=Z,0.2nm,0.3s,baz=352,slow=10,SNR=28								
HFS				Sn		**S**	**18 44 05.1**	**-16**
	comp=Z,0.1nm,0.3s,slow=29,SNR=2.9								
FIA0	**FINESS Array S**	**13.90**	**133**	Pn		**P**	**18 42 02.3**	**-1.4**
	baz=337,slow=11								
FIA0	**FINESS Array S**	**13.90**	**133**	*e*P		**P**	**18 42 02.3**	**-1.4**
FINES	**FINESS Array B**	**13.90**	**133**	Pn		**P**	**18 42 02.1**	**-1.5**
	comp=Z,0.8nm,0.3s,baz=342,slow=12,SNR=61								
FINES				Sn		**S**	**18 44 29.2**	**-11**
	comp=Z,0.2nm,0.3s,baz=350,slow=24,SNR=3.3								
FINES				LR		LR	18 47 06.2		
	comp=Z,479nm,19.3s,baz=314,slow=36								
EKA	**Eskdalemuir Ar**	**17.76**	**195**	P		**P**	**18 42 48.2**	**-5.1**
	comp=Z,0.1nm,0.3s,baz=4.4,slow=11,SNR=7.8								
SUW	**Suwalki**	**20.32**	**148**	*e*P		**P**	**18 43 21.2**	**-2.3**
MNK	**Minsk**	**20.68**	**140**	*e*P		**P**	**18 43 26.0**	**-1.3**
MOS	**Moscow**	**21.72**	**124**	*e*P		**P**	**18 43 34.7**	**-3.1**
MOS				pmax		pmax			
	comp=Z,60nm,0.7s,mb5.1								
CLL	**Collm**	**21.79**	**166**	P		**P**	**18 43 37.7**	**-0.8**
	comp=Z,logA/T=1.1,mb4.3								
CLL				*i*			18 43 43.1		
CLL				*e*PP		PP	18 44 02.0	-1.4	
CLL				*e*S		**S**	**18 47 36.0**	**+0.6**
CLL	**Collm**	**21.79**	**166**	*i* P		**P**	**18 43 37.7**	**-0.8**
CLL				*i*			18 43 43.1		
CLL				*e*S		**S**	**18 47 36.0**	**+0.6**
CLL				pmax		pmax			
	comp=Z,19nm,1.6s,mb4.3								
CLL	**Collm**	**21.79**	**166**	*i* P		**P**	**18 43 37.7**	**-0.8**
	comp=Z,19nm,1.6s,mb4.3								
CLL				*i*			18 43 43.1		
CLL				*e*S		**S**	**18 47 36.0**	**+0.6**
OBN	**Obninsk**	**22.02**	**126**	*c i*P		**P**	**18 43 41.1**	**+0.2**
OBN				*e*			18 43 48.8		
OBN				*e*S		**S**	**18 47 38.5**	**-1.3**
OBN				pmax		pmax			
	comp=Z,78nm,1.5s,mb4.9								
OBN				MLR		MLR			
	comp=Z,400nm,18.0s,MS3.9								
OBN	**Obninsk**	**22.02**	**126**	*e*P		**P**	**18 43 40.9**	**+0.1**
	comp=Z,9.6nm,0.7s,mb4.3								
BRG	**Berggiesshubel**	**22.29**	**165**	*i* P		**P**	**18 43 46.5**	**+3.0**
BRG				pmax		pmax			
	comp=Z,7.0nm,0.8s,mb4.1								
BRG	**Berggiesshubel**	**22.29**	**165**	*i* P		**P**	**18 43 46.5**	**+3.0**
	comp=Z,7.2nm,0.8s,mb4.2								
MOX	**Moxa**	**22.35**	**168**	*i* P		**P**	**18 43 38.0**	**-6.2**
	comp=Z,logA/T=1.2,mb4.4								
MOX	**Moxa**	**22.35**	**168**	*e*P		**P**	**18 43 38.0**	**-6.2**
MOX				pmax		pmax			
	comp=Z,20nm,1.3s,mb4.4								
MOX	**Moxa**	**22.35**	**168**	*e*P		**P**	**18 43 38.0**	**-6.2**
	comp=Z,20nm,1.3s,mb4.4								
KSP	**Ksiaz**	**22.53**	**161**	*e*P		**P**	**18 43 46.8**	**+1.1**
KSP				*e**PP			18 43 53.0		
KSP				*e*S		**S**	**18 47 54.0**	**+5.1**
KSP				MLR		MLR			
	comp=Z,500nm,17.5s,MS4.0								
PVCC	**Panska Ves**	**22.68**	**164**	L			18 52 50.0		
	comp=Z,0.3nm,15.5s								
GIVF	**Givet**	**22.69**	**180**	*e*P		**P**	**18 43 48.9**	**+1.5**
	comp=Z,27nm,1.0s,mb4.4								
BAIF	**Baives**	**22.73**	**181**	*e*P		**P**	**18 43 49.1**	**+1.3**
	comp=Z,31nm,1.0s,mb4.5								
UPC	**Upice**	**22.83**	**161**	*e*P		**P**	**18 43 48.3**	**-0.5**
DPC	**Dobruska-Polom**	**23.02**	**161**	*e*P		**P**	**18 43 50.0**	**-0.6**
DPC				L			18 52 50.0		
	comp=Z,0.2nm,17.9s								
PRU	**Pruhonice**	**23.22**	**164**	*e*P		**P**	**18 43 52.7**	**+0.2**
	comp=Z,4.1nm,0.7s,mb4.1								
PRU				*ex*		x	18 43 57.7		
PRU				L			18 53 30.0		
PRU	**Pruhonice**	**23.22**	**164**	*e*P		**P**	**18 43 52.7**	**+0.2**
PRU				*e*			18 43 57.7		
PRU				pmax		pmax			
	comp=Z,4.0nm,0.7s,mb4.1								
GRA1	**Grafenberg Arr**	**23.28**	**169**	*e*P		**P**	**18 43 53.6**	**+0.5**
	comp=Z,5.0nm,1.2s,mb3.9								
GRF	**Grafenberg Arr**	**23.28**	**169**	*e*P		**P**	**18 43 53.6**	**+0.5**
GRF				pmax		pmax			
	comp=Z,5.0nm,1.2s,mb3.9								
OJC	**Ojcow**	**23.54**	**155**	*e*P		**P**	**18 43 57.3**	**+1.7**
OJC				*e*S		**S**	**18 48 19.6**	**+13**
OJC				MLR		MLR	18 52 53.4		
	comp=Z,300nm,21.1s,MS3.7								
OJC	**Ojcow**	**23.54**	**155**	*e*P		**P**	**18 43 57.3**	**+1.7**
OJC				MLR		MLR			
	comp=Z,300nm,21.1s,MS3.7								
MORC	**Moravsky Berou**	**23.71**	**159**	*e*P		**P**	**18 44 02.4**	**+5.1**
	comp=Z,7.8nm,1.0s,mb4.2								
OKC	**Ostrava-Krasne**	**23.72**	**158**	*e*P		**P**	**18 43 58.1**	**+0.8**
OKC				*ex*		x	18 44 03.2		
OKC				L			18 53 10.0		
	comp=Z,0.2nm,18.9s								
KHC	**Kasperske Hory**	**23.99**	**166**	*e*P		**P**	**18 43 58.4**	**-1.6**
KHC				*ex*		x	18 44 06.0		
KHC				L			18 54 20.0		
	comp=Z,0.2nm,15.2s								
VRAC	**Vranov**	**24.08**	**161**	P		**P**	**18 43 59.1**	**-1.8**
	comp=Z,2.1nm,0.7s,mb3.8,baz=24,slow=13,SNR=5.3								
FLN	**La Foliniere**	**24.15**	**188**	*e*P		**P**	**18 44 02.4**	**+0.8**
FLN				*e*R					
	comp=Z,110nm,22.8s								
GERES	**GERESS Array B**	**24.29**	**166**	P		**P**	**18 44 03.0**	**+0.1**
	comp=Z,1.4nm,0.7s,mb3.6,slow=8.0,SNR=14								
LDF	**La Druitiere**	**24.30**	**188**	*e*P		**P**	**18 44 04.2**	**+1.1**
	comp=Z,16nm,0.8s,mb4.3								
CDF	**Champ du Feu**	**24.41**	**176**	*e*P		**P**	**18 44 05.9**	**+1.8**
	comp=Z,8.3nm,0.9s,mb4.0								
KWP	**Kalwaria**	**24.50**	**151**	*e*P		**P**	**18 44 04.9**	**-0.1**
KWP				pmax		pmax			
	comp=Z,11nm,0.9s,mb4.6								
KWP	**Kalwaria**	**24.50**	**151**	*e*P		**P**	**18 44 04.9**	**-0.2**
	comp=Z,11nm,0.9s,mb4.6								
GRR	**Gorron**	**24.54**	**189**	*e*P		**P**	**18 44 07.2**	**+1.8**
	comp=Z,17nm,0.8s,mb4.5								
AKASG	**Malin Array Be**	**24.56**	**141**	P		**P**	**18 44 05.8**	**+0.2**
	comp=Z,4.8nm,0.7s,mb4.3,baz=340,slow=9.6,SNR=9.2								
ROSF	**Rostrenen**	**24.73**	**193**	*e*P		**P**	**18 44 08.1**	**+0.9**
	comp=Z,19nm,1.0s,mb4.5								
HAU	**Haudompre**	**24.80**	**177**	*e*P		**P**	**18 44 08.6**	**+0.7**
	comp=Z,25nm,1.1s,mb4.5								
HAU				*e*R					
	comp=Z,157nm,18.2s								
HINF	**Hinteralfeld**	**25.00**	**177**	*e*P		**P**	**18 44 09.0**	**-0.8**
	comp=Z,13nm,0.9s,mb4.3								
LOR	**Lormes**	**25.53**	**181**	*e*P		**P**	**18 44 14.5**	**-0.3**
	comp=Z,25nm,1.0s,mb4.5								
LOR				*e*R					
	comp=Z,141nm,21.2s								
SSF	**Saint Saulge**	**25.74**	**182**	*e*P		**P**	**18 44 17.2**	**+0.4**
	comp=Z,28nm,1.2s,mb4.5								
AVF	**Avril sur Loir**	**26.01**	**182**	*e*P		**P**	**18 44 19.0**	**-0.4**
	comp=Z,22nm,1.0s,mb4.4								
SMF	**Signal de Mont**	**26.15**	**181**	*e*P		**P**	**18 44 20.5**	**-0.2**
	comp=Z,27nm,1.1s,mb4.5								
CABF	**La Chapelle**	**26.19**	**178**	*e*P		**P**	**18 44 22.0**	**+1.0**
	comp=Z,32nm,1.0s,mb4.6								
BGF	**Bois d'Agland**	**26.25**	**183**	*e*P		**P**	**18 44 22.1**	**+0.5**
	comp=Z,21nm,0.9s,mb4.5								
MFF	**Saint Martin d**	**26.29**	**188**	*e*P		**P**	**18 44 22.0**	**+0.1**
	comp=Z,16nm,1.0s,mb4.3								
TCF	**Toulx Ste Croi**	**26.53**	**184**	*e*P		**P**	**18 44 22.8**	**-1.4**
	comp=Z,40nm,1.2s,mb4.7								
FRB	**Frobisher Bay**	**26.76**	**289**	LR		LR	18 53 58.5		
	comp=Z,104nm,18.8s,MS3.4,baz=139,slow=34								
ARU	**Arti**	**26.93**	**98**⇓	*i*P		**P**	**18 44 28.1**	**+0.4**
ARU				*e*S		**S**	**18 49 03.9**	**0.0**
ARU				pmax		pmax			
	comp=Z,5.0nm,0.9s,mb4.2								
ARU				MLR		MLR			
	comp=Z,100nm,19.0s,MS3.4								
ARU				MLR		MLR			
	comp=N,100nm,20.0s,MS3.4								
ARU				MLR		MLR			
	comp=E,30nm,18.0s,MS3.4								
ARU	**Arti**	**26.93**	**98**	P		**P**	**18 44 27.8**	**+0.1**
	comp=E,12nm,1.3s,mb4.5								
RJF	**Les Rejaudoux**	**27.53**	**185**	*e*P		**P**	**18 44 33.6**	**+0.3**
RJF				*e*R					
	comp=E,125nm,20.8s								
VIVF	**Saint-Julien-l**	**27.94**	**180**	*e*P		**P**	**18 44 37.1**	**+0.1**
MBDF	**Montbardon**	**28.08**	**177**	*e*P		**P**	**18 44 38.4**	**+0.1**
	comp=E,19nm,1.2s,mb4.5								
MLR	**Muntele Rosu**	**29.03**	**148**	LR		LR	18 56 44.5		
	comp=E,451nm,18.4s,MS4.1,baz=294,slow=37								
TIXI	**Tiksi**	**31.57**	**30**⇑	*e*P		**P**	**18 45 10.8**	**+1.7**
TIXI				pmax		pmax			
	comp=Z,5.0nm,0.8s,mb4.5								
TIXI				MLR		MLR			
	comp=Z,100nm,21.0s,MS3.5								
BVAR	**Borovoye Array**	**33.38**	**90**	P		**P**	**18 45 27.2**	**+2.1**
	comp=Z,1.0nm,0.7s,mb3.9,baz=329,slow=8.6,SNR=8.3								
BVAR				PcP		PcP	18 48 05.4	-1.5	
	comp=Z,0.8nm,0.8s,baz=315,slow=4.2,SNR=3.7								
ESDC	**Sonseca Array**	**33.40**	**192**	P		**P**	**18 45 23.5**	**-1.9**
	comp=Z,3.3nm,0.9s,mb4.3,baz=356,slow=8.8,SNR=3.2								
SOC	**Sochi**	**33.53**	**131**	*e*P		**P**	**18 45 30.9**	**+4.4**
SOC				*e*S		**S**	**18 50 41.7**	**-6.7**
SOC				*e*SS		SS	18 52 57.2	+6.0	
SOC				pmax		pmax			
	comp=Z,55nm,0.7s,mb5.6								
SOC				pmax		pmax			
	comp=N,118nm,1.0s								
SOC				pmax		pmax			
	comp=E,177nm,0.9s								
SOC				MLR		MLR			
	comp=Z,320nm,22.0s,MS4.0								
SOC				MLR		MLR			
	comp=N,254nm,16.0s								
SOC				MLR		MLR			
	comp=E,278nm,16.0s								
SCHQ	**Schefferville**	**33.60**	**277**	LR		LR	18 57 30.3		
	comp=E,103nm,19.1s,MS3.6,baz=32,slow=34								
KIV	**Kislovodsk**	**33.86**	**127**	*e*P		**P**	**18 45 16.1**	**-13**
KIV				pmax		pmax			
	comp=Z,9.0nm,1.3s,mb4.5								
KIV				MLR		MLR			
	comp=Z,220nm,18.0s,MS3.9								
KIV				MLR		MLR			
	comp=N,150nm,17.0s,MS3.9								
KIV				MLR		MLR			
	comp=E,110nm,19.0s,MS3.9								
ZEI	**Tsey**	**35.27**	**126**	*e*P		**P**	**18 45 48.0**	**+6.5**
ZEI				*e*S		**S**	**18 51 25.0**	**+9.5**
ZEI				MLR		MLR			
	comp=Z,300nm,18.0s,MS4.1								
BRTR	**Keskin Array B**	**35.97**	**141**	LR		LR	19 01 28.5		
	comp=Z,64nm,21.9s,MS3.4,baz=345,slow=38								
INK	**Inuvik**	**36.59**	**335**	P		**P**	**18 45 50.4**	**-2.0**
	comp=Z,0.6nm,0.5s,mb3.6,baz=174,slow=3.7,SNR=3.3								
BOD	**Bodilbo**	**41.12**	**50**	*e*P		**P**	**18 46 28.6**	**-1.6**
DAWY	**Dawson**	**41.37**	**337**	P		**P**	**18 46 30.6**	**-1.6**
ILAR	**Eielson Array**	**41.46**	**342**	P		**P**	**18 46 32.2**	**-0.7**
	comp=Z,1.4nm,0.9s,mb3.7,baz=4.5,slow=7.3,SNR=12								
ILAR				PcP		PcP	18 48 27.9	-3.6	
	comp=Z,0.7nm,0.7s,baz=314,slow=3.4,SNR=4.7								
MKAR	**Makanchi Array**	**42.46**	**84**	P		**P**	**18 46 43.7**	**+2.5**
	comp=Z,1.2nm,0.9s,mb3.6,slow=7.3,SNR=6.3								
MKAR				PP		PP	18 48 22.9	+0.4	
	comp=Z,0.3nm,0.7s,baz=352,slow=10,SNR=3.0								
MKAR				LR		LR	19 08 21.1		
	comp=Z,71nm,18.4s,MS3.6,baz=153,slow=42								
MKAR	**Makanchi Array**	**42.46**	**84**	P		**P**	**18 46 43.7**	**+2.5**
MKAR				PP		PP	18 48 22.9	+0.4	
MKAR				LR		LR	19 08 21.1		
FFC	**Flin Flon**	**43.34**	**306**	*e*P		**P**	**18 46 43.8**	**-4.4**
DLBC	**Dease Lake**	**45.51**	**328**	LR		LR	19 07 19.2		
	comp=Z,173nm,18.9s,MS4.0,baz=328,slow=38								
SADO	**Sadowa**	**46.18**	**281**	LR		LR	19 05 12.7		
	comp=Z,97nm,19.1s,MS3.8,baz=77,slow=35								
SONM	**Songino Array**	**48.35**	**62**	P		**P**	**18 47 29.9**	**+1.8**
	comp=Z,0.4nm,0.8s,mb3.6,baz=315,slow=10,SNR=4.6								
SONM				PcP		PcP	18 48 54.5	-0.7	
	comp=Z,0.4nm,0.9s,baz=326,slow=5.2,SNR=2.8								
BBB	**Bella Bella**	**51.20**	**325**	LR		LR	19 11 26.4		
	comp=Z,116nm,21.8s,MS3.9,baz=321,slow=38								
NEW	**Newport**	**52.81**	**315**	LR		LR	19 10 09.8		
	comp=Z,161nm,18.0s,MS4.1,baz=293,slow=36								
NEW	**Newport**	**52.81**	**315**	P		**P**	**18 47 58.2**	**-4.0**
HAWA	**Hanford**	**55.10**	**316**	PFAKE			18 48 30.0	+11	
HAWA				LR		LR			
	comp=Z,469nm,20.0s,MS4.6								
PDAR	**Pinedale Array**	**56.30**	**306**	P		**P**	**18 48 23.4**	**-4.2**
	comp=Z,0.4nm,0.8s,mb3.5,baz=79,slow=4.6,SNR=3.4								
PDAR				LR		LR	19 15 17.5		
	comp=Z,62nm,18.4s,MS3.7,baz=72,slow=39								
MDJ	**Mudanjiang**	**56.91**	**44**	PFAKE			18 48 40.0	+8.0	
MDJ				LR		LR			
	comp=Z,169nm,20.0s,MS4.1								
KOLN	**Koldanda**	**60.43**	**92**	*e*P		**P**	**18 48 57.0**	**+0.3**
	comp=Z,8.2nm,0.8s,mb4.8								
GKN	**Gorkha**	**60.52**	**91**	*e*P		**P**	**18 48 57.8**	**+0.4**
	comp=Z,9.5nm,0.8s,mb5.0								
KKN	**Kakani**	**60.91**	**90**	*e*P		**P**	**18 49 00.8**	**+0.8**
	comp=Z,15nm,0.8s,mb5.1								
KKN	**Kakani**	**60.91**	**90**	*e*P		**P**	**18 49 00.8**	**+0.8**
KKN				pmax		pmax			
	comp=Z,7.0nm,0.8s,mb4.8								
GUN	**Gumba**	**60.98**	**89**	*e*P		**P**	**18 49 01.7**	**+1.2**
	comp=Z,22nm,1.0s,mb5.2								
DMN	**Daman**	**61.03**	**90**	*e*P		**P**	**18 49 01.6**	**+0.8**
	comp=Z,10nm,0.9s,mb5.0								
PKI	**Pulchoki**	**61.15**	**90**	*e*P		**P**	**18 49 02.6**	**+0.9**
NVAR	**Mina Array Bea**	**62.45**	**312**	P		**P**	**18 49 08.0**	**-2.3**
	comp=Z,0.4nm,0.8s,mb3.7,baz=45,slow=6.4,SNR=3.2								
NVAR				LR		LR	19 15 27.1		
	comp=Z,72nm,18.6s,MS3.9,baz=270,slow=35								
NVAR	**Mina Array Bea**	**62.45**	**312**	P		**P**	**18 49 08.0**	**-2.3**
NVAR				LR		LR	19 15 27.1		
SSE	**Sheshan**	**67.90**	**56**	P		**P**	**18 49 43.7**	**-1.7**
SSE				S		S	18 58 38.2	-5.5	
SSE				XS			18 58 55.4		
SSE				LR		LR			
	comp=N,27nm,18.1s,MS3.5								
SSE				LR		LR			
	comp=E,12nm,18.6s,MS3.5								
CMAR	**Chiang Mai Arr**	**73.76**	**80**	P		**P**	**18 50 22.1**	**+1.2**
	comp=E,0.6nm,0.5s,mb3.9,baz=321,slow=5.8,SNR=4.7								
ASAR	**Alice Springs**	**123.64**	**59**	PKP		PKPdf	18 57 41.3	-3.2	
	comp=E,1.0nm,0.6s,baz=356,slow=1.6,SNR=16								
MAW	**Mawson**	**145.17**	**145**	PKPbc		PKPbc	18 58 21.5	+0.4	
	comp=E,4.6nm,0.8s,baz=309,slow=8.4,SNR=8.3								

IDC ***12*** *19:00:10.9±1.6,37.54N×96.60E,mb3.5/2,mb1 3.7/5, mb1mx3.4/22,ML3.4/3,Error ellipse: s-maj=53.6km s-min=22.6km az=51.0*
BJI ***12*** *19:00:13.0,37.57N×96.65E,h13km,ML3.1,Ms3.0, Msz3.0*

ISC 12 19:00:10.7±1.3,37.7N±0.1×96.65E±0.10,h13km,n6, σ1°54/10,mb3.3/2,Qinghai

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GTA	**Gaotai**	**3.04**	**54**	P	**Pn**	**19 01 04.0**	**+4.5**
GTA				PG	**Pg**	**19 01 09.2**	**-2.2**
GTA				S	**Sn**	**19 01 45.3**	**+9.3**
GTA				SG	**Sg**	**19 01 52.0**	**+0.1**
GTA				S	Sn		
	comp=N,36nm,1.0s						
GTA				S	Sn		
	comp=E,26nm,1.3s						
GTA				LR	LR		
	comp=N,164nm,6.5s						
GTA				LR	LR		
	comp=E,165nm,8.8s						
GTA				LR	LR		
	comp=Z,197nm,7.8s						
SONM	**Songino Array**	**12.43**	**32**	Pn	**P**	**19 03 11.6**	**+1.5**
	comp=Z,0.4nm,0.3s,baz=218,slow=15,SNR=19						
SONM				Lg		19 06 42.0	
	comp=Z,0.1nm,0.3s,baz=223,slow=26,SNR=2.7						
MKAR	**Makanchi Array**	**14.00**	**315**	Pn	**P**	**19 03 27.6**	**-3.3**
	comp=Z,0.1nm,0.3s,baz=131,slow=13,SNR=8.9						
MKAR				Sn	**S**	**19 05 57.1**	**-10**
	baz=125,slow=23,SNR=1.8						
MKAR				Lg		19 07 40.8	
	comp=Z,0.0nm,0.3s,baz=121,slow=25,SNR=2.3						
ZAL	**Zalesovo**	**18.21**	**337**	P	**P**	**19 04 25.0**	**+0.2**
	comp=Z,0.2nm,0.3s,baz=78,slow=14,SNR=2.3						
BVAR	**Borovoye Array**	**23.83**	**319**	P	**P**	**19 05 25.5**	**+1.5**
	comp=Z,1.2nm,0.8s,mb3

ODZ	**Otahua Downs**	**9.86**	**211**	PN	P	19 14 01.5 -7.0
ODZ	**Otahua Downs**	**9.86**	**211**	*eP*	P	19 14 00.0 -8.5

MAN 12 19:40:11.9,11.53N×125.44E,h12km,mb3.8,ML2.5, MS2.0,4C,Samar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BESP	**Borongan**	**0.07**	**358**⇑	*eP*	Pg	19 40 16.5	+2.0
BESP				*eS*	Sg	19 40 22.0	+5.8
PLP	**Palo**	**0.58**	**231**	*eP*	Pb	19 40 23.3	-0.2
PLP				*eS*	Sb	19 40 32.3	+0.9
CNP	**Catarman**	**1.23**	**322**⇑	*eP*	Pb	19 40 33.5	-1.3
CNP				*eS*	Sb	19 40 54.0	+3.6
MSLP	**Maasin**	**1.50**	**202**⇑	*eP*	Pn	19 40 38.2	-0.6
PVCP	**Virac**	**2.41**	**329**⇑	*eP*	Pn	19 40 51.2	-0.6
PVCP				*eS*	Sn	19 41 21.2	-0.2

NEIC ***12*** *19:42:54.6±0.2,25.52N×121.98E,mb4.3/6,Error ellipse: s-maj=9.4km s-min=5.5km az=74.0*
BJI ***12*** *19:42:54.6,25.48N×121.98E,h295km,mB4.5,mb4.2*
IDC ***12*** *19:42:55.0±0.8,25.53N×122.00E,h287km±7km,mb3.8/18, mb1 3.9/22,mb1mx3.9/29,Error ellipse: s-maj=14.5km s-min=9.2km az=71.0*
JMA ***12*** *19:42:56.7±0.3,25.82N×122.10E,h230km,M4.8*
ISC 12 19:42:53.3±0.2,25.52N±0.03×122.18E±0.03,h284km±3km, h285km±.5km:pP-P,n89,σ1§24/110,mb4.0/24,17C-1D, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TATO	**Taipei**	**0.83**	**229**	*eP*	**P**	**19 43 31.3**	**-0.1**
YOJ	**Yonaguni jima**	**1.30**	**144**	P	**P**	**19 43 34.0**	**+0.2**
YOJ				S	**S**	**19 44 03.4**	**-2.1**
IRIF	**Iriomote-Funau**	**1.84**	**130**	P	**P**	**19 43 38.3**	**+0.7**
IRIF				S	**S**	**19 44 10.6**	**-1.5**
HATJ	**Hateruma jima**	**2.08**	**134**	P	**P**	**19 43 41.0**	**+1.5**
HATJ				*eS*	**S**	**19 44 15.3**	**-0.3**
JKRS	**Kuro-shima**	**2.10**	**127**	P	**P**	**19 43 41.2**	**+1.5**
JKRS				S	**S**	**19 44 15.2**	**-0.7**
JIJ	**Ishigaki jima**	**2.13**	**122**	P	**P**	**19 43 41.0**	**+1.1**
JIJ				S	**S**	**19 44 14.7**	**-1.6**
JTJ	**Tarama**	**2.45**	**110**	P	**P**	**19 43 44.8**	**+1.9**
JTJ				S	**S**	**19 44 21.2**	**-0.4**
JMJ	**Miyako jima 2**	**2.91**	**103**	P	**P**	**19 43 49.5**	**+2.1**
JMJ				S	**S**	**19 44 29.6**	**+0.1**
JOGS	**Gusukube**	**3.03**	**104**	P	**P**	**19 43 50.7**	**+2.1**
JOGS				S	**S**	**19 44 31.7**	**+0.1**
QZH	**Quanzhou**	**3.30**	**261**	⇓*i*P	**P**	**19 43 51.4**	**0.0**
QZH				S	**S**	**19 44 35.2**	**-1.5**
JKE	**Kume jima 2**	**4.23**	**78**	P	**P**	**19 44 02.9**	**+1.2**
JKE				S	**S**	**19 44 54.5**	**-0.7**
JAGN	**Aguni-jima**	**4.68**	**76**	P	**P**	**19 44 07.4**	**+0.5**
JAGN				*eS*	**S**	**19 45 02.6**	**-1.9**
NAH1	**Naha**	**5.01**	**81**	P	**P**	**19 44 12.0**	**+1.2**
NAH1				*eS*	**S**	**19 45 09.7**	**-1.9**
JJT2	**Tamagusuku 2**	**5.06**	**82**	P	**P**	**19 44 12.9**	**+1.5**
JJT2				*eS*	**S**	**19 45 11.8**	**-0.8**
JIH	**Iheya**	**5.41**	**73**	P	**P**	**19 44 16.2**	**+0.6**
JIH				*eS*	**S**	**19 45 17.4**	**-2.7**
SSE	**Sheshan**	**5.62**	**351**	P	**P**	**19 44 19.5**	**+1.4**
SSE				AMB	AMB		
	comp=Z,83nm,0.9s						
JOW	**Kunigami**	**5.63**	**75**	P	**P**	**19 44 18.3**	**0.0**
	comp=Z,4.0nm,0.3s,baz=144,slow=20,SNR=16						
JOW				S	**S**	**19 45 21.6**	**-3.2**
	comp=Z,27nm,0.3s,baz=133,slow=27,SNR=19						
JOW	**Kunigami**	**5.63**	**75**	P	**P**	**19 44 18.3**	**0.0**
JOW				*eS*	**S**	**19 45 21.5**	**-3.4**
JTK	**Tokunoshima**	**6.47**	**68**	*eS*	**S**	**19 45 38.7**	**-4.4**
JAM	**Amami Oshima**	**7.23**	**65**	P	**P**	**19 44 42.2**	**+4.4**
JAM				*eS*	**S**	**19 45 56.3**	**-3.6**
SGCP	**Mt. Cagua**	**7.25**	**181**⇑	*eP*	**P**	**19 44 38.2**	**+0.1**
JZK	**Kikaishima**	**7.49**	**67**	P	**P**	**19 44 44.4**	**+3.2**
JZK				*eS*	**S**	**19 46 04.0**	**-1.9**
APYP	**Conner**	**7.67**	**187**⇑	*eP*	**P**	**19 44 43.2**	**-0.2**
APYP				*eS*	**S**	**19 46 07.4**	**-2.5**
ABRA	**Dolores**	**7.95**	**190**⇑	*eP*	**P**	**19 44 47.3**	**+0.4**
ABRA				*eS*	**S**	**19 46 15.1**	**-1.0**
JMZ	**Minamidaito 2**	**8.17**	**86**	P	**P**	**19 44 51.3**	**+1.8**
JMZ				*eS*	**S**	**19 46 18.8**	**-2.0**
PALP	**Palanan**	**8.42**	**178**⇑	*eP*	**P**	**19 44 47.4**	**-5.3**
CAUP	**Cauayan**	**8.54**	**182**⇑	*eP*	**P**	**19 44 56.0**	**+1.7**
BOLP	**Bolinao**	**9.34**	**194**⇑	*eP*	**P**	**19 45 06.9**	**+2.8**
BALP	**Baler**	**9.75**	**183**⇑	*eP*	**P**	**19 45 10.0**	**+0.7**
SCZP	**Santa Cruz**	**9.93**	**193**⇑	*eP*	**P**	**19 45 15.0**	**+3.6**
JNU	**Nakatsue**	**10.72**	**43**	P	**P**	**19 45 24.1**	**+2.9**
	comp=Z,2.4nm,0.3s,baz=279,slow=3.4,SNR=8.5						
JNU				S	**S**	**19 47 32.3**	**+14**
	comp=Z,1.3nm,0.3s,baz=11,slow=26,SNR=7.0						
TGY	**Tagaytay City**	**11.42**	**186**	P	**P**	**19 45 31.7**	**+1.6**
	comp=Z,19nm,0.3s,baz=115,slow=20,SNR=7.2						
LUBP	**Lubang**	**11.87**	**189**⇑	*eP*	**P**	**19 45 36.6**	**+1.0**
BOAC	**Boac**	**12.01**	**182**⇑	*eP*	**P**	**19 45 39.0**	**+1.7**
ENH	**Enshi**	**12.18**	**296**	*eP*	**P**	**19 45 39.0**	**-0.3**
	comp=Z,12nm,0.8s						
SJMP	**San Jose**	**13.03**	**185**⇑	*eP*	**P**	**19 45 50.8**	**+0.9**
BUSP	**Coron**	**13.58**	**188**⇑	*eP*	**P**	**19 45 55.9**	**-0.7**
ENPP	**El Nido**	**14.48**	**191**⇑	*eP*	**P**	**19 46 07.4**	**-0.1**
SCPH	**Surigao**	**15.97**	**168**	*eP*	**P**	**19 46 23.6**	**-1.0**
BUTP	**Butuan**	**16.79**	**168**⇑	*eP*	**P**	**19 46 32.8**	**-0.6**
KMI	**Kunming**	**17.58**	**273**	*eP*	**P**	**19 46 40.8**	**-0.7**
KMI				AMB	AMB		
	comp=Z,8.0nm,0.9s						
PAGZ	**Pagadian**	**17.62**	**176**⇑	*eP*	**P**	**19 46 40.5**	**-1.5**
CBIJ	**Chichi jima**	**18.01**	**81**	P	**P**	**19 46 46.5**	**+0.6**
	comp=Z,9.8nm,0.3s,baz=294,slow=22,SNR=7.3						
CN2	**Changchun**	**18.43**	**8**	*eP*	**P**	**19 46 51.9**	**+1.9**
CN2				AMB	AMB		
	comp=Z,10.0nm,0.8s						
MDJ	**Mudanjiang**	**19.98**	**16**	P	**P**	**19 47 07.5**	**+2.1**
MDJ				AMB	AMB		
	comp=Z,7.0nm,0.8s						
CMAR	**Chiang Mai Arr**	**22.64**	**257**	PcP	PcP	19 51 15.7	-0.2
	comp=Z,1.3nm,0.8s,baz=116,slow=0.3,SNR=8.9						
GTA	**Gaotai**	**23.32**	**312**	*eP*	**P**	**19 47 36.4**	**-1.4**
GTA				AP		19 47 41.9	
GTA				AMB	AMB		
	comp=Z,6.0nm,1.2s,mb3.8						
ASAJ	**Asahikawa**	**24.89**	**37**	P	**P**	**19 47 53.9**	**+1.8**
	comp=Z,4.1nm,0.5s,mb4.1,baz=23,slow=16,SNR=4.7						
ULN	**Ulaanbaatar**	**25.29**	**336**	*eP*	**P**	**19 47 55.0**	**-0.7**
	comp=Z,5.7nm,0.6s,mb4.2						
SONM	**Songino Array**	**25.51**	**335**	P	**P**	**19 47 57.4**	**-0.4**
	comp=Z,15nm,0.7s,mb4.5,baz=150,slow=9.8,SNR=150						
MKAR	**Makanchi Array**	**38.03**	**314**	P	**P**	**19 49 45.3**	**-0.8**
	comp=Z,4.1nm,0.5s,mb4.1,baz=101,slow=9.9,SNR=88						
MKAR				pP	pP	19 50 42.9	-0.6
	comp=Z,1.0nm,0.7s,baz=96,slow=11,SNR=3.0						
MKAR				PcP	PcP	19 51 54.2	-1.4
	comp=Z,1.5nm,0.8s,baz=88,slow=5.0,SNR=7.1						
MKAR				ScP		19 55 14.7	
	comp=Z,0.5nm,0.9s,baz=82,slow=4.9,SNR=4.2						
MKAR	**Makanchi Array**	**38.03**	**314**	P	**P**	**19 49 45.3**	**-0.8**
MKAR				pP	pP	19 50 42.9	-0.6
MKAR				PcP	PcP	19 51 54.2	-1.4
MKAR				ScP		19 55 14.7	
ULHL	**Ulahol**	**41.09**	**306**	P	**P**	**19 50 12.1**	**+0.9**
	SNR=8.7						
KURK	**Kurchatov**	**41.66**	**319**	*eP*	**P**	**19 50 14.4**	**-1.3**
TKM2	**Tokmak 2**	**41.67**	**307**	P	**P**	**19 50 16.6**	**+0.7**
	SNR=6.5						
KBK	**Karagaybulak**	**42.10**	**306**	P	**P**	**19 50 20.1**	**+0.7**
	SNR=7.2						
UCH	**Uchtor**	**42.36**	**305**	P	**P**	**19 50 22.8**	**+1.3**
	SNR=9.9						
AML	**Almayashu**	**42.95**	**305**	P	**P**	**19 50 27.3**	**+1.1**
	SNR=6.1						
FITZ	**Fitzroy Crossi**	**43.49**	**175**⇑	*i*P	**P**	**19 50 29.6**	**-1.2**
	comp=Z,1.7nm,0.3s,mb3.8						
TIXI	**Tiksi**	**46.31**	**3**	*eP*	**P**	**19 50 51.3**	**-1.1**
	comp=Z,9.2nm,0.3s,mb4.6						
WRA	**Warramunga Arr**	**46.71**	**164**	P	**P**	**19 50 55.6**	**-0.5**
	comp=Z,4.2nm,0.6s,mb4.0,baz=347,slow=8.7,SNR=102						
WRA				PcP	PcP	19 52 24.3	-0.8
	comp=Z,1.6nm,0.8s,baz=346,slow=4.0,SNR=6.6						
WB2	**Warramunga Arr**	**46.72**	**164**⇑	*i*P	**P**	**19 50 55.5**	**-0.7**
BRVK	**Borovoye**	**47.30**	**320**	*eP*	**P**	**19 50 58.8**	**-1.4**
AS12	**Alice Springs**	**50.20**	**166**	*eP*	**P**	**19 51 22.5**	**-0.1**
	comp=Z,9.0nm,1.4s,mb3.9						
ASAR	**Alice Springs**	**50.20**	**166**	P	**P**	**19 51 22.5**	**-0.1**
	comp=Z,2.1nm,0.6s,mb3.6,baz=348,slow=6.7,SNR=37						
ASAR				PcP	PcP	19 52 36.9	-0.9
	comp=Z,0.7nm,0.5s,baz=340,slow=3.3,SNR=5.4						
CTAO	**Charters Tower**	**51.02**	**150**	P	**P**	**19 51 29.6**	**+0.9**
ARU	**Arti**	**54.59**	**322**	*eP*	**P**	**19 51 52.0**	**-2.3**
	comp=Z,6.9nm,0.3s,mb4.6						
STKA	**Stephens Creek**	**60.02**	**161**	P	**P**	**19 52 32.2**	**-0.2**
	comp=Z,0.5nm,0.4s,mb3.4,baz=356,slow=14,SNR=3.6						
SML	**Sawmill**	**67.61**	**31**	*eP*	**P**	**19 53 20.9**	**0.0**
ILAR	**Eielson Array**	**67.61**	**28**	P	**P**	**19 53 20.2**	**-0.7**
	comp=Z,1.4nm,0.6s,mb3.9,baz=256,slow=7.2,SNR=28						
KEV	**Kevo**	**68.08**	**338**	*ep*	**P**	**19 53 22.0**	**-1.7**
SPITS	**Spitsbergen Ar**	**68.37**	**348**	P	**P**	**19 53 25.4**	**-0.1**
	comp=Z,4.5nm,0.5s,mb4.5,baz=90,slow=9.9,SNR=12						
SPB4	**Spitsbergen Ar**	**68.38**	**348**	*eP*	**P**	**19 53 25.1**	**-0.4**
ARCES	**ARCESS Array B**	**68.64**	**338**	P	**P**	**19 53 26.7**	**-0.5**
	comp=Z,4.6nm,0.8s,mb4.3,baz=64,slow=7.6,SNR=15						
KAF	**Kangasniemi**	**70.44**	**330**	*ep*	**P**	**19 53 36.9**	**-1.3**
	comp=Z,1.4nm,0.3s,mb4.2,baz=72,slow=5.6						
FINES	**FINESS Array B**	**70.75**	**330**	P	**P**	**19 53 39.6**	**-0.5**
	comp=Z,3.2nm,0.6s,mb4.2,baz=66,slow=5.8,SNR=31						
DAWY	**Dawson**	**70.94**	**27**	*eP*	**P**	**19 53 41.8**	**+0.7**
INK	**Inuvik**	**71.65**	**22**	P	**P**	**19 53 45.1**	**-0.3**
	comp=Z,2.2nm,0.4s,mb4.1,baz=260,slow=5.0,SNR=5.1						
AKASG	**Malin Array Be**	**72.47**	**318**	P	**P**	**19 53 49.0**	**-1.5**
	comp=Z,0.4nm,0.4s,mb3.4,baz=57,slow=6.1,SNR=7.0						
AKASG				pP	pP	19 54 55.3	-1.0
	comp=Z,0.3nm,0.3s,baz=223,slow=22,SNR=3.0						
BRTR	**Keskin Array B**	**73.11**	**306**	P	**P**	**19 53 54.0**	**-0.5**
	comp=Z,1.0nm,0.6s,mb3.7,baz=101,slow=6.3,SNR=5.2						
KWP	**Kalwaria**	**76.77**	**319**	*eP*	**P**	**19 54 14.3**	**-0.6**
DLBC	**Dease Lake**	**77.34**	**31**	P	**P**	**19 54 20.0**	**+2.1**
	comp=Z,2.4nm,0.6s,mb4.1,baz=254,slow=8.1,SNR=6.4						
DLBC	**Dease Lake**	**77.34**	**31**	P	**P**	**19 54 20.0**	**+2.1**
NB2	**NORSAR Subarra**	**77.47**	**332**	P	**P**	**19 54 17.8**	**-0.8**
	comp=Z,2.2nm,0.4s,mb4.2,baz=52,slow=5.6						
NOA	**NORSAR Array B**	**77.47**	**332**	P	**P**	**19 54 17.6**	**-1.0**
	comp=Z,1.9nm,0.4s,mb4.1,baz=55,slow=5.8,SNR=13						
YKA	**Yellowknife Ar**	**81.39**	**23**	P	**P**	**19 54 39.8**	**+0.5**
	comp=Z,3.0nm,0.6s,mb4.2,baz=312,slow=5.0,SNR=77						
YKA				pP	pP	19 55 47.2	+0.8
	comp=Z,0.4nm,0.7s,baz=318,slow=4.7,SNR=2.8						
YKA	**Yellowknife Ar**	**81.39**	**23**	P	**P**	**19 54 39.8**	**+0.5**
YKA				pP	pP	19 55 47.2	+0.8
GERES	**GERESS Array B**	**82.38**	**321**	P	**P**	**19 54 44.5**	**-0.2**
	comp=Z,1.2nm,0.9s,mb3.6,baz=72,slow=4.2,SNR=7.5						
NVAR	**Mina Array Bea**	**94.84**	**43**	P	**P**	**19 55 46.4**	**+2.2**
	comp=Z,0.7nm,0.5s,mb4.0,baz=280,slow=7.0,SNR=7.4						

TAP ***12*** *19:55:05.6,23.21N×121.44E,h22km,ML3.5*
JMA ***12*** *19:55:06.7±0.3,23.26N×121.54E,h98km,M2.4*
ISC 12 19:55:06.6±2.4,23.3N±0.4×121.6E±0.2,h108km±46km,n6, σ0§34/12,Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**1.78**	**48**	P	**P**	**19 55 37.1**	**-0.1**
YOJ				*eS*	**S**	**19 55 59.9**	**-0.1**
HATJ	**Hateruma jima**	**2.20**	**69**	P	**P**	**19 55 42.6**	**-0.1**
HATJ				*eS*	**S**	**19 56 09.2**	**-0.4**
IRIF	**Iriomote-Funau**	**2.25**	**61**	P	**P**	**19 55 43.3**	**0.0**
IRIF				*eS*	**S**	**19 56 11.4**	**+0.5**
JKRS	**Kuro-shima**	**2.44**	**66**	P	**P**	**19 55 46.0**	**+0.1**
JKRS				*eS*	**S**	**19 56 16.1**	**+0.7**
JIJ	**Ishigaki jima**	**2.60**	**65**	P	**P**	**19 55 48.1**	**0.0**
JIJ				*eS*	**S**	**19 56 18.7**	**-0.6**
JTJ	**Tarama**	**3.18**	**64**	P	**P**	**19 55 56.1**	**+0.1**
JTJ				*eS*	**S**	**19 56 33.1**	**-0.2**

IDC ***12*** *20:05:42.5±2.4,11.97S×166.30E,mb4.1/9,mb1 4.3/9, mb1mx4.1/16,MS3.5/5,Ms1 3.5/5,ms1mx3.1/29,Error ellipse: s-maj=79.5km s-min=23.4km az=129.0*
NEIC ***12*** *20:05:46.1±0.7,11.64S×165.93E,h10km,mb4.3/4,Error ellipse: s-maj=23.4km s-min=13.4km az=122.0*
ISC 12 20:05:44.8±0.8,11.7S±0.1×165.9E±0.2,h10km,n18, σ1§05/16,mb4.1/10,MS3.5/5,Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**20.62**	**244**	*eP*	**P**	**20 10 27.3**	**+0.3**
	4.7nm,0.7s						
CTA	**Charters Tower**	**20.62**	**244**	P	**P**	**20 10 27.6**	**+0.6**
	5.7nm,0.7s,baz=71,slow=12,SNR=9.2						
CTA				LR	LR	20 16 36.1	
	comp=Z,94nm,20.0s,MS3.1,baz=271,slow=31						
CTAO	**Charters Tower**	**20.62**	**244**	*eP*	**P**	**20 10 26.5**	**-0.5**
	7.2nm,0.8s						
ARMA	**Armidale**	**22.87**	**213**	*eP*	**P**	**20 10 50.9**	**+1.2**
STKA	**Stephens Creek**	**30.08**	**224**	P	**P**	**20 11 55.0**	**-1.7**
	1.8nm,0.8s,mb3.8,baz=73,slow=12,SNR=3.3						
STKA				LR	LR	20 23 10.1	
	comp=Z,104nm,19.4s,MS3.5,baz=26,slow=35						
WRA	**Warramunga Arr**	**31.38**	**251**	P	**P**	**20 12 07.3**	**-0.9**
	2.5nm,1.0s,mb4.0,baz=81,slow=9.3,SNR=16						
ASAR	**Alice Springs**	**32.62**	**244**	P	**P**	**20 12 17.9**	**-1.1**
	3.4nm,0.7s,mb4.4,baz=74,slow=9.5,SNR=31						
ASAR				LR	LR	20 23 37.9	
	comp=Z,68nm,19.9s,MS3.3,baz=194,slow=33						
FITZ	**Fitzroy Crossi**	**39.33**	**256**	LR	LR	20 26 39.8	
	comp=Z,56nm,19.1s,MS3.4,baz=14,slow=32						
SBA	**Scott Base**	**66.20**	**180**	*eP*	**P**	**20 16 35.3**	**+0.8**
	2.2nm,0.7s,mb4.3						
CMAR	**Chiang Mai Arr**	**72.45**	**294**	P	**P**	**20 17 15.3**	**+1.4**
	0.9nm,0.8s,mb3.8,baz=120,slow=5.2,SNR=4.4						
QSPA	**South Pole Qui**	**78.36**	**180**	*eP*	**P**	**20 17 46.7**	**+0.3**
	5.6nm,1.1s,mb4.4						
SONM	**Songino Array**	**79.21**	**324**	P	**P**	**20 17 52.1**	**+0.4**
	0.8nm,0.7s,mb3.8,baz=149,slow=6.3,SNR=8.8						
ILAR	**Eielson Array**	**84.05**	**18**	P	**P**	**20 18 15.3**	**-1.2**
	0.3nm,0.6s,mb3.6,baz=254,slow=5.2,SNR=3.8						
DAWY	**Dawson**	**86.08**	**21**	P	**P**	**20 18 25.5**	**-1.3**
MKAR	**Makanchi Array**	**94.03**	**317**	P	**P**	**20 19 05.6**	**+1.1**
	3.5nm,0.8s,mb4.8,baz=99,slow=6.3,SNR=28						
ZAL	**Zalesovo**	**94.11**	**324**	P	**P**	**20 19 05.5**	**+0.8**
	0.9nm,0.8s,mb4.2,baz=146,slow=2.9,SNR=5.1						
ZAL	**Zalesovo**	**94.11**	**324**	P	**P**	**20 19 05.5**	**+0.8**
TXAR	**Lajitas Array**	**96.03**	**61**	LR	LR	20 54 46.9	
	comp=Z,36nm,20.3s,MS3.8,baz=155,slow=31						

NEIC ***12*** *20:10:01.1±2.2,23.74S×179.81W,h501km±26km,mb3.9/5, Error ellipse: s-maj=17.4km s-min=12.6km az=189.0*
IDC ***12*** *20:10:04.0±2.1,23.89S×179.92W,h530km±23km, mb3.6/12,mb1 3.8/13,mb1mx3.7/17,Error ellipse: s-maj=19.1km s-min=12.9km az=164.0*
ISC 12 20:10:01.4±2.3,23.78S±0.10×179.91W±0.10, h512km±27km,n45,σ0§90/28,mb4.0/14,6C-4D,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**14.65**	**189**	P	**P**	**20 13 07.4**	**-0.5**
	3.6nm,0.3s,baz=26,slow=6.1,SNR=14						
URZ				S	**S**	**20 15 38.7**	**+0.2**
	1.0nm,0.3s,baz=235,slow=23,SNR=7.9						
RPZ	**Rata Peaks**	**21.23**	**198**	P	**P**	**20 14 10.2**	**-1.2**
	14nm,0.5s,mb4.8,baz=11,slow=16,SNR=9.0						
ARMA	**Armidale**	**26.14**	**249**	*eP*	**P**	**20 14 57.2**	**+1.5**
CTA	**Charters Tower**	**31.56**	**270**	⇓*i*P	**P**	**20 15 43.5**	**+0.7**
	18nm,0.4s,mb5.0						
CTA	**Charters Tower**	**31.56**	**270**	P	**P**	**20 15 43.5**	**+0.8**
	28nm,0.6s,mb5.0,baz=95,slow=10,SNR=80						
CTAO	**Charters Tower**	**31.56**	**270**	*eP*	**P**	**20 15 43.1**	**+0.3**
	171nm,2.1s,mb5.2						
PMG	**Port Moresby**	**34.53**	**289**	P	**P**	**20 16 07.6**	**-0.2**
	13nm,0.8s,mb4.5,baz=122,slow=5.6,SNR=5.2						
STKA	**Stephens Creek**	**34.84**	**248**	*eP*	**P**	**20 16 10.8**	**+0.5**
	2.2nm,0.9s,mb3.7						
STKA	**Stephens Creek**	**34.84**	**248**	P	**P**	**20 16 10.9**	**+0.6**
	2.6nm,0.6s,mb4.0,baz=114,slow=20,SNR=11						
STKA				PcP	PcP	20 18 29.4	-0.4
	1.8nm,0.5s,baz=342,slow=12,SNR=4.7						
AS12	**Alice Springs**	**42.13**	**260**	⇓*i*P	**P**	**20 17 09.7**	**0.0**
	6.8nm,0.5s,mb4.4						
ASAR	**Alice Springs**	**42.13**	**260**	P	**P**	**20 17 09.8**	**+0.1**
	7.4nm,0.5s,mb4.5,baz=96,slow=7.5,SNR=89						
ASAR				S	**S**	**20 22 52.2**	**-0.6**
	0.4nm,0.8s,baz=93,slow=16,SNR=4.7						
WB2	**Warramunga Arr**	**42.48**	**266**	⇓*i*P	**P**	**20 17 12.0**	**-0.6**
WRA	**Warramunga Arr**	**42.50**	**266**	P	**P**	**20 17 12.1**	**-0.5**
	9.6nm,0.3s,mb4.7,baz=96,slow=8.4,SNR=376						
WRA				PcP	PcP	20 18 53.9	-0.5
	1.6nm,0.8s,baz=102,slow=3.6,SNR=5.7						
WRA				S	**S**	**20 22 54.7**	**-3.3**
	0.7nm,0.8s,baz=98,slow=13,SNR=4.5						
FITZ	**Fitzroy Crossi**	**50.92**	**265**	*eP*	**P**	**20 18 16.2**	**-0.7**
	6.2nm,0.6s,mb4.1						
FITZ	**Fitzroy Crossi**	**50.92**	**265**	P	**P**	**20 18 16.5**	**-0.4**
	11nm,0.8s,mb4.2,baz=118,slow=3.1,SNR=44						
SBA	**Scott Base**	**54.50**	**183**	P	**P**	**20 18 42.5**	**+0.7**
	1.3nm,0.7s,mb3.4						
MAW	**Mawson**	**77.89**	**200**	P	**P**	**20 21 06.6**	**+0.1**
	1.2nm,0.5s,mb3.5,baz=135,slow=6.7,SNR=5.5						
CMB	**Columbia Colle**	**83.06**	**43**	P	**P**	**20 21 32.3**	**-1.4**
NVAR	**Mina Array Bea**	**84.61**	**44**	P	**P**	**20 21 43.4**	**+2.0**
	0.3nm,0.5s,mb3.1,baz=243,slow=4.0,SNR=2.9						
CMAR	**Chiang Mai Arr**	**89.56**	**290**	P	**P**	**20 22 07.0**	**+1.8**
	2.1nm,0.9s,mb4.0,baz=145,slow=3.3,SNR=12						
HLID	**Hailey**	**89.95**	**41**	*eP*	**P**	**20 22 06.5**	**0.0**
	0.5nm,0.4s,mb3.7						
DAU	**Daniels Canyon**	**90.25**	**45**	*eP*	**P**	**20 22 08.2**	**+0.3**
ILAR	**Eielson Array**	**91.90**	**14**	P	**P**	**20 22 13.9**	**-1.0**
	0.4nm,0.6s,mb3.6,baz=217,slow=6.2,SNR=4.9						
PDAR	**Pinedale Array**	**92.55**	**44**	P	**P**	**20 22 18.1**	**-0.4**
	0.4nm,0.7s,mb3.5,baz=212,slow=3.8,SNR=3.8						
DAWY	**Dawson**	**93.09**	**17**	P	**P**	**20 22 20.4**	**-0.1**
MKAR	**Makanchi Array**	**112.14**	**313**	PKiKP		20 27 38.0	
	0.8nm,0.5s,baz=194,slow=1.4,SNR=13						
ARCES	**ARCESS Array B**	**131.79**	**348**	PKP	PKPdf	20 28 15.0	-0.2
	2.1nm,0.5s,slow=3.6,SNR=16						
ARCES	**ARCESS Array B**	**131.79**	**348**	PKP	PKPdf	20 28 15.0	-0.2
KAF	**Kangasniemi**	**137.76**	**342**	*ep*	PKPdf	20 28 27.6	+1.2
FINES	**FINESS Array B**	**138.36**	**342**	PKhKP		20 28 20.1	
	0.5nm,0.4s,baz=61,slow=5.0,SNR=9.0						
FINES				PKP	PKPdf	20 28 29.3	+1.8
	0.5nm,0.4s,baz=122,slow=1.7,SNR=8.7						
FINES	**FINESS Array B**	**138.36**	**342**	PKP	PKPdf	20 28 20.1	-7.5
FINES				PKP	PKPdf	20 28 29.3	+1.8
NB2	**NORSAR Subarra**	**141.98**	**351**	PKP		20 28 30.5	
	1.0nm,0.6s,baz=10.0,slow=3.2						
NOA	**NORSAR Array B**	**141.98**	**351**	PKhKP		20 28 30.7	
	1.1nm,0.6s,baz=16,slow=4.6,SNR=4.9						
AKASG	**Malin Array Be**	**144.92**	**327**	PKPbc	PKPbc	20 28 38.8	-1.1
	2.6nm,0.3s,baz=45,slow=4.3,SNR=26						
BRTR	**Keskin Array B**	**147.57**	**307**	PKPbc	PKPdf	20 28 48.6	+4.7
	2.9nm,0.6s,baz=152,slow=5.1,SNR=11						
BRTR				PKPab	PKPab	20 28 52.9	-0.9
	3.0nm,0.5s,baz=88,slow=3.7,SNR=12						
KWP	**Kalwaria**	**148.71**	**331**	*ePKPbc*	PKPdf	20 28 51.1	+5.7
KSP	**Ksiaz**	**150.21**	**339**	*ePKP*	PKPdf	20 28 55.2	+7.4
OKC	**Ostrava-Krasne**	**150.41**	**336**⇑	*ePKPB*	PKPdf	20 28 55.4	+7.3
UPC	**Upice**	**150.59**	**339**⇑	*ePKPB*	PKPdf	20 28 56.0	+7.6
DPC	**Dobruska-Polom**	**150.62**	**339**⇑	*ePKPB*	PKPdf	20 28 56.0	+7.6
DPC				*ePKPAB*	PKPab	20 29 05.7	-0.2
CLL	**Collm**	**

AJM					AMb	AMB	20 30 34.4	
	comp=Z,22nm,0.4s							
AJM					*e*		20 33 33.9	
POO	**Poona**	**19.10**	**254**		*e*	**P**	**20 30 54.0**	**-7.5**
HHC	**Hu-ho-hao-te**	**21.93**	**40**	⇑	P	**P**	**20 31 30.1**	**-0.7**
HHC					AMB	AMB		
	comp=Z,10.0nm,1.2s,mb4.1							
HHC					AMB	AMB		
	comp=Z,55nm,4.6s							
MKAR	**Makanchi Array**	**23.33**	**341**		P	**P**	**20 31 45.2**	**+0.8**
	comp=Z,1.5nm,0.5s,mb3.6,baz=149,slow=12,SNR=21							
MKAR	**Makanchi Array**	**23.33**	**341**		P	**P**	**20 31 45.2**	**+0.8**
SONM	**Songino Array**	**24.98**	**21**		P	**P**	**20 32 00.9**	**+0.5**
	comp=Z,1.7nm,0.6s,mb3.8,baz=204,slow=11,SNR=17							
ULN	**Ulaanbaatar**	**25.22**	**22**		*e*P	**P**	**20 32 02.6**	**-0.1**
	comp=Z,5.4nm,0.8s,mb4.1							
ZAL	**Zalesovo**	**29.47**	**350**		P	**P**	**20 32 40.5**	**-0.9**
	comp=Z,0.7nm,0.5s,mb3.6,baz=258,slow=9.9,SNR=4.9							
ZAL					LR	LR	20 45 14.4	
	comp=Z,50nm,19.4s,MS3.1,baz=56,slow=38							
ZAL	**Zalesovo**	**29.47**	**350**		P	**P**	**20 32 40.5**	**-0.9**
ZAL					LR	LR	20 45 14.4	
CN2	**Changchun**	**32.20**	**46**		*e*P	**P**	**20 33 03.3**	**-2.2**
BRVK	**Borovoye**	**32.81**	**334**		P	**P**	**20 33 09.8**	**-0.9**
MAT	**Matsushiro**	**39.98**	**62**		P	**P**	**20 34 09.9**	**-1.5**
MAT	**Matsushiro**	**39.98**	**62**		*e*P	**P**	**20 34 10.0**	**-1.4**
	comp=Z,5.2nm,0.8s,mb4.3							
TIXI	**Tiksi**	**50.69**	**14**		*e*P	**P**	**20 35 35.5**	**-0.8**
OBN	**Obninsk**	**50.81**	**322**		P	**P**	**20 35 37.4**	**0.0**
	comp=Z,11nm,0.4s,mb5.2							
BRTR	**Keskin Array B**	**51.47**	**302**		P	**P**	**20 35 44.7**	**+2.1**
	comp=Z,0.7nm,0.7s,mb3.7,baz=90,slow=5.1,SNR=3.5							
FITZ	**Fitzroy Crossi**	**53.32**	**140**		P	**P**	**20 35 56.4**	**-0.3**
	comp=Z,1.2nm,0.8s,mb3.9,baz=351,slow=13,SNR=2.7							
AKASG	**Malin Array Be**	**54.64**	**316**		P	**P**	**20 36 05.0**	**-0.9**
	comp=Z,2.4nm,0.4s,mb4.6,baz=83,slow=6.0,SNR=12							
KAF	**Kangasniemi**	**57.33**	**329**		*e*p	**P**	**20 36 25.2**	**0.0**
	baz=98,slow=7.1							
FINES	**FINESS Array B**	**57.35**	**328**		P	**P**	**20 36 25.6**	**+0.3**
	comp=Z,1.8nm,0.6s,mb4.3,baz=104,slow=7.3,SNR=21							
KWP	**Kalwaria**	**58.84**	**314**		*e*P	**P**	**20 36 35.4**	**-0.4**
	comp=Z,7.4nm,0.5s,mb5.0							
ARCES	**ARCESS Array B**	**58.93**	**338**		P	**P**	**20 36 36.7**	**+0.5**
	comp=Z,2.5nm,0.7s,mb4.3,baz=117,slow=5.4,SNR=7.2							
WRA	**Warramunga Arr**	**60.05**	**134**		P	**P**	**20 36 43.9**	**-0.7**
	comp=Z,0.7nm,0.5s,mb4.0,baz=324,slow=7.4,SNR=29							
ASAR	**Alice Springs**	**62.50**	**138**		P	**P**	**20 37 01.1**	**0.0**
	comp=Z,0.8nm,0.8s,mb3.9,baz=320,slow=7.0,SNR=7.6							
VRAC	**Vranov**	**62.84**	**314**		P	**P**	**20 37 04.4**	**+1.4**
	comp=Z,7.6nm,0.9s,mb4.8,baz=69,slow=6.7,SNR=7.0							
HFS	**Hagfors**	**63.38**	**327**		P	**P**	**20 37 06.8**	**+0.4**
	comp=Z,4.3nm,0.5s,mb4.8,baz=90,slow=7.4,SNR=37							
NB2	**NORSAR Subarra**	**64.52**	**328**		P	**P**	**20 37 13.3**	**-0.4**
	comp=Z,1.1nm,0.5s,mb4.1,baz=84,slow=6.2							
NOA	**NORSAR Array B**	**64.52**	**328**		P	**P**	**20 37 13.7**	**0.0**
	comp=Z,1.8nm,0.8s,mb4.2,baz=86,slow=6.6,SNR=7.1							
GERES	**GERESS Array B**	**64.78**	**314**		P	**P**	**20 37 17.0**	**+1.3**
	comp=Z,3.7nm,0.6s,mb4.6,baz=77,slow=6.2,SNR=41							
CDF	**Champ du Feu**	**69.04**	**315**		*e*P	**P**	**20 37 42.7**	**+0.2**
LPG	**La Plagne**	**70.15**	**312**		*e*P	**P**	**20 37 50.2**	**+0.9**
	comp=Z,4.4nm,0.6s,mb4.3							
LPL	**La Plagne**	**70.16**	**312**		*e*P	**P**	**20 37 50.2**	**+0.9**
	comp=Z,3.9nm,0.4s,mb4.3							
MEZF	**Maizieres J'vi**	**70.45**	**315**		*e*P	**P**	**20 37 51.6**	**+0.6**
	comp=Z,4.7nm,0.4s,mb4.4							
LOR	**Lormes**	**71.57**	**314**		*e*P	**P**	**20 37 57.6**	**-0.2**
SMF	**Signal de Mont**	**71.77**	**314**		*e*P	**P**	**20 37 59.1**	**+0.1**
	comp=Z,5.2nm,0.6s,mb4.3							
SSF	**Saint Saulge**	**71.86**	**314**		*e*P	**P**	**20 37 59.8**	**+0.3**
	comp=Z,1.6nm,0.4s,mb4.0							
AVF	**Avril sur Loir**	**72.04**	**314**		*e*P	**P**	**20 38 00.8**	**+0.2**
	comp=Z,1.5nm,0.4s,mb4.0							
TCF	**Toulx Ste Croi**	**72.95**	**314**		*e*P	**P**	**20 38 06.8**	**+0.8**
	comp=Z,2.8nm,0.6s,mb4.1							
EKA	**Eskdalemuir Ar**	**73.20**	**324**		P	**P**	**20 38 07.5**	**+0.2**
	comp=Z,2.0nm,0.9s,mb4.1,baz=74,slow=6.1,SNR=4.5							
ILAR	**Eielson Array**	**79.20**	**22**		P	**P**	**20 38 40.6**	**-0.4**
	comp=Z,0.9nm,0.8s,mb3.8,baz=303,slow=5.4,SNR=9.7							

*NEIC **12** 20:34:29.2,38.12N×20.74E,h14km,ML3.8(ATH),After ATH.*
*ATH **12** 20:34:29.2,38.12N×20.74E,h14km±3km, MD3.8/12, ML3.8*
*IDC **12** 20:34:30.1±1.6,38.61N×21.25E,mb3.6/9,mb1 3.8/13, mb1mx3.7/26,ML3.5/3,Error ellipse: s-maj=31.5km s-min=19.1km az=44.0*
*THE **12** 20:34:33.2,38.35N×20.85E,h10km, ML3.7*
ISC 12 20:34:29.5±0.3,38.14N±0.03×20.72E±0.03,h14km,n62, σ1§34/71,mb3.6/9,3C,Greece

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
VLS	**Valsamata**	**0.11**	**289**	⇑*i*	*i*PG	**Pg**		**20 34 32.5**	**-0.3**
VLS					*e*SG	**Sg**		**20 34 36.0**	**+1.0**
LKD	**Levkas**	**0.57**	**355**		*e*Pg	**Pg**		**20 34 40.6**	**-0.5**
EVR	**Evrytania**	**1.15**	**48**		*e*PB	**Pb**		**20 34 50.0**	**-0.7**
ITM	**Ithomi**	**1.36**	**135**		*e*PB	**Pb**		**20 34 54.5**	**+0.3**
IGT	**Igoumenitsa**	**1.42**	**348**		*e*Pb	**Pb**		**20 34 55.9**	**+0.6**
IGT					*e*Sb	**Sb**		**20 35 15.1**	**+2.0**
JAN	**Janina**	**1.52**	**4**		*e*PB	**Pb**		**20 34 59.0**	**+2.1**
AGG	**Agios Georgios**	**1.54**	**55**		*e*Pb	**Pb**		**20 34 57.5**	**+0.2**
AGG					*e*Sb	**Sb**		**20 35 17.8**	**+1.3**
MEV	**Metsovon**	**1.69**	**13**		*e*Pb	**Pb**		**20 35 00.4**	**+0.5**
KEK	**Kerkira**	**1.72**	**336**		*e*PN	**Pn**		**20 35 01.0**	**+1.6**
VLI	**Veliai**	**2.27**	**128**		*e*PN	**Pn**		**20 35 09.0**	**+1.8**
NEO	**Neokhori**	**2.28**	**59**		*e*PN	**Pn**		**20 35 08.5**	**+1.2**
XOR	**Xorichti**	**2.29**	**57**		*e*Pn	**Pn**		**20 35 09.1**	**+1.7**
ATH	**Athens Observa**	**2.37**	**93**		*e*PB	**Pb**		**20 35 09.0**	**-2.6**
LIT	**Litokhoron**	**2.39**	**35**		*e*Pn	**Pn**		**20 35 09.8**	**+0.8**
LIT					*e*Sn	**Sn**		**20 35 36.9**	**-1.4**
PTL	**Penteli**	**2.48**	**91**		*e*PN	**Pn**		**20 35 11.0**	**+0.7**
KYTH	**Kithira**	**2.62**	**134**		*e*PN	**Pn**		**20 35 14.0**	**+1.7**
AOS	**Alonnisos**	**2.68**	**67**		*e*Pn	**Pn**		**20 35 14.3**	**+1.2**
FNA	**Florina**	**2.69**	**11**		*e*Pn	**Pn**		**20 35 14.3**	**+1.1**
PAIG	**Paliouri**	**2.92**	**51**		*e*Pn	**Pn**		**20 35 18.1**	**+1.7**
LCI	**Lecce**	**2.98**	**310**		*e*Pn	**Pn**		**20 35 18.4**	**+1.1**
PLG	**Polygyros**	**3.07**	**43**		*e*PN	**Pn**		**20 35 19.1**	**+0.4**
OUR	**Ouranopolis**	**3.35**	**48**		*e*Pn	**Pn**		**20 35 22.8**	**+0.2**
SOH	**Sokhos**	**3.36**	**36**		*e*Pn	**Pn**		**20 35 24.0**	**+1.2**
GRI	**Girifalco**	**3.44**	**283**		*e*Pn	**Pn**		**20 35 24.3**	**+0.4**
KNT	**Kendrikon**	**3.45**	**28**		*e*Pn	**Pn**		**20 35 24.3**	**+0.3**
SOI	**Samo**	**3.68**	**270**		*e*Pn	**Pn**		**20 35 28.3**	**+1.0**
SRS	**Serrai**	**3.71**	**36**		*e*Pn	**Pn**		**20 35 28.4**	**+0.7**
SRS					*e*Sn	**Sn**		**20 36 10.1**	**-1.5**
TDS	**Terranova Siba**	**3.74**	**295**		*e*Pn	**Pn**		**20 35 30.6**	**+2.5**
BRT	**Bari-Castellan**	**3.85**	**316**		*e*Pn	**Pn**		**20 35 29.3**	**-0.5**
SKO	**Skopje**	**3.87**	**8**		*i* P	**Pn**		**20 35 45.5**	**+16**
VAM	**Vamos**	**3.91**	**133**		*e*PN	**Pn**		**20 35 29.5**	**-1.0**
THR5	**Thira Island,**	**4.07**	**114**		*e*Pn	**Pn**		**20 35 37.5**	**+4.6**
THR6	**Thira Island,**	**4.14**	**114**		*e*Pn	**Pn**		**20 35 38.1**	**+4.3**
IDI	**Anoyia**	**4.40**	**129**		Pn	**Pn**		**20 35 38.0**	**+0.5**
	0.8nm,0.3s,baz=299,slow=16,SNR=11								
IDI					Sn	**Sn**		**20 36 29.0**	**-0.1**
	2.3nm,0.3s,baz=350,slow=23,SNR=7.2								
SLCN	**Sala Consilina**	**4.54**	**301**		*e*Pn	**Pn**		**20 35 39.8**	**+0.2**
MRLC	**Muro Lucano**	**4.82**	**304**		*e*Pn	**Pn**		**20 35 43.8**	**+0.3**
KRIS	**Kristallenia**	**4.85**	**126**		*e*P	**Pn**		**20 35 42.4**	**-1.5**
ALN	**Alexandroupoli**	**4.95**	**55**		*e*Pn	**Pn**		**20 35 45.0**	**-0.4**
CSSN	**Cassano Irpino**	**5.17**	**303**		*e*Pn	**Pn**		**20 35 49.5**	**+1.0**
FG5	**Orsara di Pugl**	**5.24**	**308**		*e*Pn	**Pn**		**20 35 49.6**	**+0.1**
STON	**Ston**	**5.25**	**335**		*i* Pn	**Pn**		**20 35 46.9**	**-2.7**
STON					*i* Sn	**Sn**		**20 36 44.6**	**-6.0**
RGNG	**Rignano Grg**	**5.29**	**313**		*e*Pn	**Pn**		**20 35 49.5**	**-0.6**
CPI2	**Carpinone**	**6.00**	**307**		*e*Pn	**Pn**		**20 36 00.6**	**+0.4**
CII	**Carovilli**	**6.09**	**308**		*e*Pn	**Pn**		**20 36 01.7**	**+0.3**
AQU	**L'Aquila**	**7.00**	**309**		P	**Pn**		**20 36 13.1**	**-1.1**
MLR	**Muntele Rosu**	**8.31**	**26**		Pn	**P**		**20 36 23.8**	**-8.8**
	0.4nm,0.3s,baz=156,slow=2.9,SNR=18								
VOY	**Vojsko**	**9.37**	**329**		*e*(P)	**P**		**20 36 44.8**	**-2.4**
OBKA	**Obir**	**9.52**	**333**	⇑*i*	PN	**P**		**20 36 46.8**	**-2.5**
OBKA					*i* SN	**Sn**		**20 38 24.1**	**-13**
BRTR	**Keskin Array B**	**10.19**	**77**		Pn	**P**		**20 36 57.5**	**-0.9**
	0.0nm,0.3s,baz=251,slow=12,SNR=2.3								
MOA	**Molln**	**10.79**	**336**	⇑*i*	PN	**P**		**20 37 03.5**	**-3.1**
MOA					*i* SN	**S**		**20 38 54.7**	**-13**
DAVOX	**Davos**	**11.76**	**321**		Pn	**P**		**20 37 20.2**	**+0.3**
	0.2nm,0.3s,baz=163,slow=19,SNR=3.1								
HFS	**Hagfors**	**22.46**	**351**		P	**P**		**20 39 27.2**	**-2.2**
	1.1nm,0.5s,mb3.5,baz=150,slow=12,SNR=5.1								
EKA	**Eskdalemuir Ar**	**23.55**	**325**		P	**P**		**20 39 39.2**	**-0.7**
	1.0nm,0.8s,mb3.3,baz=132,slow=11,SNR=3.5								
FINES	**FINESS Array B**	**23.56**	**6**		P	**P**		**20 39 37.4**	**-2.6**
	0.9nm,0.6s,mb3.4,baz=180,slow=11,SNR=4.1								
FINES	**FINESS Array B**	**23.56**	**6**		P	**P**		**20 39 37.4**	**-2.6**
NB2	**NORSAR Subarra**	**23.68**	**348**		P	**P**		**20 39 38.6**	**-2.6**
	0.9nm,0.6s,mb3.4,baz=151,slow=10								
NOA	**NORSAR Array B**	**23.68**	**348**		P	**P**		**20 39 39.9**	**-1.3**
	0.5nm,0.7s,mb3.1,baz=165,slow=12,SNR=3.5								
ARCES	**ARCESS Array B**	**31.56**	**3**		P	**P**		**20 40 50.3**	**-3.0**
	2.0nm,0.9s,mb3.9,baz=186,slow=9.1,SNR=4.7								
MKAR	**Makanchi Array**	**45.19**	**58**		P	**P**		**20 42 44.5**	**-3.0**
	2.0nm,0.5s,mb4.2,baz=273,slow=7.0,SNR=25								
ZAL	**Zalesovo**	**45.59**	**48**		P	**P**		**20 42 47.5**	**-3.1**
	1.2nm,0.4s,mb4.2,baz=96,slow=7.5,SNR=6.9								
SONM	**Songino Array**	**60.36**	**51**		P	**P**		**20 44 36.5**	**-3.7**
	0.9nm,1.1s,mb3.7,baz=293,slow=9.4,SNR=5.2								
YKA	**Yellowknife Ar**	**73.48**	**340**		P	**P**		**20 46 01.3**	**-1.4**
	0.1nm,0.5s,mb3.0,baz=42,slow=6.2,SNR=5.2								

*GUC **12** 20:36:41.3±0.8,23.73S×70.04W,h55km±20km,ML4.6*
*NEIC **12** 20:36:41.3,23.73S×70.04W,h55km,mb4.7/4,After GUC.*
NEIC Felt [IV] at Taltal; [III] at Antofagasta, Chanaral and Copiapo; [II] at Sierra Gorda.
*SYO **12** 20:36:41.3,23.73S×70.04W,h55km,MB4.7*
*IDC **12** 20:36:42.4±0.6,23.76S×70.08W,h59km±5km, mb3.9/7, mb1 4.2/9,mb1mx4.0/15,MS3.4/5,Ms1 3.4/5,ms1mx3.2/20, Error ellipse: s-maj=18.7km s-min=8.3km az=132.0*
*BJI **12** 20:36:46.3,23.70S×70.00W,h55km*
ISC 12 20:36:41.2±0.4,23.70S±0.04×70.12W±0.07,h61km±4km, h59km±2.2km:pP-P,n47,σ1§15/43,mb4.3/10,4C-5D,Near coast of northern Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ANCH	**Antofagasta**	**0.27**	**274**	⇑*i*	P	**P**		**20 36 50.9**	**-0.4**
ANCH					*i* S	**S**		**20 36 58.9**	**+0.2**
ANCH					AMP			20 36 59.6	
	comp=N,41μm,0.1s								
CPN1	**Cerro Paranal**	**0.95**	**196**		*i* P	**P**		**20 36 59.9**	**+1.0**
CPN1					*i* S	**S**		**20 37 13.3**	**+1.2**
CPN1					AMP			20 37 16.2	
	comp=E,57μm,0.6s								
LVC	**Limon Verde**	**1.55**	**46**		*e*P	**P**		**20 37 07.7**	**+0.4**
LVC					*i* S	**S**		**20 37 27.3**	**+0.9**
LVC					AMP			20 37 30.2	
	comp=N,13μm,0.5s								
LVC	**Limon Verde**	**1.55**	**46**		P	**P**		**20 37 07.7**	**+0.5**
	comp=N,690nm,0.3s,baz=214,slow=11,SNR=4038								
LVC					S	**S**		**20 37 27.9**	**+1.5**
	comp=N,3μm,0.3s,baz=353,slow=16,SNR=39								
LVC	**Limon Verde**	**1.55**	**46**	⇑*i*	P	**P**		**20 37 07.8**	**+0.6**
CPCH	**Copiapo**	**3.65**	**183**		*i* P	**P**		**20 37 35.0**	**-1.6**
CPCH					*i* S	**S**		**20 38 18.3**	**-0.4**
VACH	**Vallenar**	**4.89**	**187**		*e*P	**P**		**20 37 53.6**	**-0.3**
LSCH	**La Serena**	**6.26**	**189**		*i* S	**S**		**20 39 36.5**	**+13**
ARE	**Arequipa**	**7.32**	**350**		*e*P	**P**		**20 38 25.0**	**-2.8**
ARE					*e*S	**S**		**20 39 45.0**	**-5.2**
LPAZ	**La Paz**	**7.61**	**15**		P	**P**		**20 38 31.4**	**-0.4**
	comp=N,1.8nm,0.3s,baz=202,slow=7.2,SNR=21								
LPAZ					S	**S**		**20 40 06.0**	**+8.7**
	baz=283,slow=18,SNR=2.0								
LPAZ					LR	LR		20 41 48.7	
	comp=N,277nm,21.4s,baz=27,slow=40								
LPAZ	**La Paz**	**7.61**	**15**		*e*Pn	**P**		**20 38 31.4**	**-0.4**
CPUP	**Villa Florida**	**11.89**	**105**		P	**P**		**20 39 26.9**	**-3.2**
	comp=N,0.3nm,0.3s,baz=330,slow=9.6,SNR=5.4								
CPUP					LR	LR		20 44 33.7	
	comp=N,93nm,20.6s,baz=302,slow=40								
CPUP	**Villa Florida**	**11.89**	**105**		*e*P	**P**		**20 39 26.9**	**-3.2**
TRQA	**Tornquist**	**15.91**	**156**		*e*P	**P**		**20 40 20.5**	**-2.1**
	comp=N,1.7nm,0.8s								
BDFB	**Brasilia**	**22.28**	**73**		P	**P**		**20 41 34.1**	**-0.4**
	comp=N,4.2nm,0.5s,mb4.2,baz=240,slow=10,SNR=7.8								
BDFB					LR	LR		20 50 00.6	
	comp=N,75nm,18.3s,baz=303,slow=36								
VNA3	**Neumayer Olymp**	**58.37**	**161**	⇑*i*		**P**		**20 46 33.9**	**+1.8**
VNA1	**Neumayer--Stat**	**58.60**	**160**	⇑*i*		**P**		**20 46 35.8**	**+2.0**
VNA2	**Neumayer--Watz**	**58.96**	**160**			**P**		**20 46 38.1**	**+1.8**
SNAA	**Sanae**	**60.58**	**160**		*e*P	**P**		**20 46 45.4**	**-2.0**
SNAA					*e*pP	pP		20 47 05.6	+1.8
TXAR	**Lajitas Array**	**61.82**	**327**		P	**P**		**20 46 55.6**	**-0.7**
	comp=N,0.7nm,0.3s,mb4.2,baz=153,slow=8.4,SNR=4.3								
MNTX	**Cornudas Mount**	**64.60**	**327**		*e*P	**P**		**20 47 13.0**	**-1.6**
MNTX					*e*pP	pP		20 47 28.8	-2.4
QSPA	**South Pole Qui**	**66.50**	**180**		*e*P	**P**		**20 47 25.8**	**-0.2**
	comp=N,13nm,0.6s,mb5.1								
ANMO	**Albuquerque**	**67.76**	**328**		*e*P	**P**		**20 47 34.7**	**+0.1**
	comp=N,1.6nm,0.6s,mb4.3								
SADO	**Sadowa**	**68.64**	**353**		LR	LR		21 17 26.9	
	comp=N,32nm,20.0s,baz=118,slow=36								
DBIC	**Dimbokro**	**70.43**	**73**		LR	LR		21 19 55.4	
	comp=N,38nm,18.5s,baz=112,slow=37								
SRU	**San Rafael**	**73.03**	**328**		*e*P	**P**		**20 48 07.2**	**+0.8**
SRU					*e*pP	pP		20 48 23.1	-0.3
MSU	**Marysvale**	**73.38**	**327**		*e*P	**P**		**20 48 09.9**	**+1.4**
MSU					*e*pP	pP		20 48 25.4	-0.1
SBA	**Scott Base**	**73.47**	**191**		*e*P	**P**		**20 48 07.4**	**-0.9**
VNDA	**Vanda**	**74.50**	**190**		P	**P**		**20 48 15.4**	**+1.2**
	comp=N,0.8nm,0.7s,mb3.8,baz=144,slow=3.1,SNR=6.8								
SYO	**Syowa Base**	**74.84**	**159**		⇓P	**P**		**20 48 15.9**	**-0.5**
SYO	**Syowa Base**	**74.84**	**159**		⇓PcP	PcP		20 48 31.7	+1.3
SYO	**Syowa Base**	**74.84**	**159**		⇓*e*P	**P**		**20 48 15.9**	**-0.5**
SYO					⇓*e*PcP	PcP		20 48 31.7	+1.3
PDAR	**Pinedale Array**	**75.47**	**331**		P	**P**		**20 48 20.5**	**0.0**
	comp=N,0.5nm,0.5s,mb3.7,baz=148,slow=8.1,SNR=5.2								
HWUT	**Hardware Ranch**	**75.47**	**329**		*e*P	**P**		**20 48 20.5**	**-0.1**
	comp=N,4.6nm,0.7s,mb4.5								
HWUT					*e*pP	pP		20 48 36.1	-1.5
NVAR	**Mina Array Bea**	**76.55**	**323**		P	**P**		**20 48 27.8**	**+1.1**
	comp=N,0.9nm,0.7s,mb3.8,baz=150,slow=7.0,SNR=4.3								
NVAR					pP	pP		20 48 45.0	+1.2
	comp=N,1.7nm,0.7s,baz=142,slow=7.3,SNR=4.8								
NVAR	**Mina Array Bea**	**76.55**	**323**		P	**P**		**20 48 27.8**	**+1.0**
NVAR					pP	pP		20 48 45.0	+1.2
YBH	**Yreka Blue Hor**	**81.28**	**323**		pP	pP		20 49 07.7	-1.8
	comp=N,2.5nm,0.8s,baz=170,slow=3.5,SNR=3.7								
MAW	**Mawson**	**82.55**	**164**	⇓*i*	P	**P**		**20 48 58.2**	**-0.2**
	comp=N,6.9nm,0.6s,mb4.9								
MAW					*e*	pP		20 49 14.5	-1.1
MAW	**Mawson**	**82.55**	**164**		P	**P**		**20 48 58.4**	**0.0**
	comp=N,9.5nm,0.6s,mb5.0,baz=215,slow=7.3,SNR=31								
MAW					pP	pP		20 49 14.6	-1.0
	comp=N,4.9nm,0.7s,baz=247,slow=6.4,SNR=5.2								
YKA	**Yellowknife Ar**	**92.89**	**341**		P	**P**		**20 49 47.9**	**-0.3**
	comp=N,1.5nm,0.8s,mb4.5,baz=138,slow=4.5,SNR=32								
YKA					pP	pP		20 50 04.4	-1.3
	comp=N,1.7nm,0.7s,baz=138,slow=4.3,SNR=16								
ASAR	**Alice Springs**	**127.45**	**208**		PKP	PKPdf		20 55 40.5	+0.6
	comp=N,1.1nm,0.7s,baz=132,slow=1.8,SNR=9.2								
ASAR					pPKP			20 55 57.5	
	comp=N,1.5nm,0.9s,baz=143,slow=2.1,SNR=6.5								
WRA	**Warramunga Arr**	**130.50**	**211**		PKP	PKPdf		20 55 47.0	+1.2
	comp=N,1.5nm,0.8s,baz=150,slow=1.8,SNR=18								
WRA					pPKP			20 56 03.7	
	comp=N,3.2nm,1.1s,baz=148,slow=1.6,SNR=8.1								
ZAL	**Zalesovo**	**144.41**	**26**		PKP	PKPdf		20 56 10.2	+0.1
	comp=N,2.6nm,0.9s,baz=73,slow=3.8,SNR=17								
MKAR	**Makanchi Array**	**148.06**	**37**		PKP	PKPdf		20 56 17.7	+1.2
	comp=N,5.1nm,0.8s,baz=315,slow=2.0,SNR=31								
MKAR					PKPbc	PKPdf		20 56 21.0	+4.5
	comp=N,4.1nm,0.7s,baz=297,slow=2.7,SNR=30								
MKAR					pPKPbc			20 56 37.8	
	comp=N,3.2nm,0.7s,baz=345,slow=2.4,SNR=8.5								
MKAR	**Makanchi Array**	**148.06**	**37**		PKP	PKPdf		20 56 17.7	+1.2
MKAR					PKPbc	PKPdf		20 56 21.0	+4.5
MKAR					pPKPbc			20 56 37.8	
WMQ	**Urumqi**	**152.89**	**37**		*e*PKP	PKPdf		20 56 28.9	+5.0
SONM	**Songino Array**	**155.76**	**6**		PKPab	PKPab		20 56 55.7	-1.2
	comp=N,0.3nm,0.6s,baz=327,slow=2.4,SNR=4.2								

*IDC **12** 20:53:01.3±2.3,34.08N×23.84E,mb4.1/8,mb1 4.1/11, mb1mx3.9/25,ML3.5/2,MS3.2/1,Ms1 3.2/1,ms1mx2.3/37, Error ellipse: s-maj=39.8km s-min=23.8km az=7.0*
*NEIC **12** 20:53:04.3,34.05N×24.17E,h4km,MD4.0(ATH),After ATH.*
*ATH **12** 20:53:04.3,34.05N×24.17E,h4km,MD4.0/10*
ISC 12 20:52:57.2±0.8,33.70N±0.06×24.20E±0.06,h4km,n56, σ1§36/58,mb4.0/8,MS3.1/1,1D,Central Mediterranean Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
GAVD	**Gavdhos**	**1.15**	**356**	*e*	PB	**Pb**		**20 53 19.5**	**+0.3**
IDI	**Anoyia**	**1.69**	**20**		Pn	**Pn**		**20 53 30.1**	**+2.5**
	57nm,0.3s,baz=206,slow=16,SNR=415								
IDI					Sn	**Sn**		**20 53 51.9**	**+1.9**
	67nm,0.3s,baz=300,slow=20,SNR=8.7								
VAM	**Vamos**	**1.71**	**0**	*e*	PG	**Pg**		**20 53 29.1**	**-2.1**
XRY	**Khrisi**	**1.71**	**46**	*e*	PB	**Pb**		**20 53 33.0**	**+4.2**
KRIS	**Kristallenia**	**1.83**	**36**	*e*	P	**Pn**		**20 53 33.6**	**+3.9**
NPS	**Neapolis**	**1.95**	**36**	*e*	PG	**Pg**		**20 53 35.8**	**-0.3**
THR6	**Thira Island,**	**2.83**	**20**	*e*	P	**Pn**		**20 53 44.7**	**+0.7**
THR1	**Thera Island**	**2.86**	**21**	*e*	P	**Pn**		**20 53 44.6**	**+0.2**
SANT	**Santorini**	**2.86**	**21**	*e*	P	**Pn**		**20 53 44.6**	**+0.1**
THR5	**Thira Island,**	**2.87**	**19**	*e*	P	**Pn**		**20 53 45.4**	**+0.8**
THR3	**Thira Island,**	**2.88**	**20**	*e*	P	**Pn**		**20 53 45.4**	**+0.7**
THR4	**Thira Island,**	**2.93**	**19**	*e*	P	**Pn**		**20 53 46.2**	**+0.8**
KARP	**Karpathos**	**3.06**	**52**	*e*	PN	**Pn**		**20 53 52.5**	**+5.2**
VLI	**Veliai**	**3.18**	**341**	⇓	*i*PG	**Pg**		**20 53 57.5**	**-3.3**
APE	**Apeiranthos**	**3.54**	**18**	*e*	PB	**Pb**		**20 53 59.5**	**-0.6**
ITM	**Ithomi**	**3.94**	**333**	*e*	PN	**Pn**		**20 54 02.0**	**+2.3**
ARG	**Arkhangelos**	**4.09**	**51**	*e*	PN	**Pn**		**20 54 06.5**	**+4.6**
AGG	**Agios Georgios**	**5.52**	**345**	*e*	P	**Pn**		**20 54 21.4**	**-0.8**
EVR	**Evrytania**	**5.55**	**340**	*e*	PN	**Pn**		**20 54 26.0**	**+3.4**
LKD	**Levkas**	**5.76**	**331**	*e*	P

CARF				S	Sg	21 22 34.3	+2.5			
PAND	**Andorre**	**0.35**	**280**	P	Pg	21 22 30.0	+0.5			
PAND				S	Sg	21 22 34.7	+0.3			
FILF	**Fillols**	**0.42**	**76**	Pg	Pg	21 22 30.4	-0.4			
FILF				Sg	Sg	21 22 35.7	-0.9			
FILF	**Fillols**	**0.42**	**76**	P	Pb	21 22 30.5	-0.2			
FILF				S	Sb	21 22 35.8	-0.8			
CORG	**Organya**	**0.56**	**246**	Pg	Pg	21 22 33.3	-0.3			
EJON	**La Jonquera**	**0.65**	**91**	Pg	Pg	21 22 36.0	+0.7			
	0.4nm,0.1s,SNR=7.9									
EJON				Lg		21 22 45.0				
	3.4nm,0.1s,SNR=18									
EJON	**La Jonquera**	**0.65**	**91**	Pg	Pg	21 22 36.0	+0.7			
EJON				Lg		21 22 45.7				
EMIR	**Miracle**	**0.66**	**213**	Pg	Pg	21 22 35.0	-0.4			
	3.1nm,0.1s,SNR=11									
EMIR				Lg		21 22 43.0				
	2.1nm,0.1s,SNR=14									
EMIR	**Miracle**	**0.66**	**213**	Pg	Pg	21 22 35.0	-0.4			
EMIR				Lg		21 22 42.9				
SALF	**Salau**	**0.67**	**296**	Pg	Pg	21 22 36.8	+1.1			
SALF				Sg	Sg	21 22 45.4	+0.5			
SALF	**Salau**	**0.67**	**296**	P	Pb	21 22 35.6	+0.6			
SALF				S	Sb	21 22 45.0	+1.0			
MTLF	**Montolieu**	**0.89**	**10**	*e*Pg	Pg	21 22 41.5	+1.5			
MTLF				*e*Pn	Pn	21 22 42.0	+2.0			
MTLF				*e*Sg	Sg	21 22 53.7	+1.7			
	2.7nm,0.3s									
MTLF	**Montolieu**	**0.89**	**10**	Pg	Pg	21 22 41.5	+1.5			
MTLF				Lg		21 22 53.7				
	1.4nm,0.3s									
EPOB	**Poblet**	**1.31**	**212**	Pg	Pg	21 22 47.0	-1.3			
	2.7nm,0.1s,SNR=17									
EPOB				Lg		21 23 03.2				
	1.6nm,0.0s,SNR=11									
EPOB	**Poblet**	**1.31**	**212**	Pg	Pg	21 22 47.0	-1.3			
EPOB				Lg		21 23 03.2				
EPF	**Esparros**	**1.35**	**295**	*e*Pn	Pn	21 22 47.5	+0.9			
EPF				*e*Pg	Pg	21 22 49.3	+0.1			
EPF				*e*Sn	Sn	21 23 04.7	+0.3			
EPF				*e*Sg	Sg	21 23 07.1	-0.2			
	5.1nm,0.3s									
EPF	**Esparros**	**1.35**	**295**	Pn	Pn	21 22 47.5	+0.9			
EPF				Pg	Pg	21 22 49.3	+0.1			
EPF				Lg		21 23 07.1				
	2.5nm,0.3s									
ETSF	**Etsaut**	**1.94**	**284**	*e*Pn	Pn	21 22 55.5	+0.5			
ETSF				*e*Pg	Pg	21 23 00.0	-0.9			
ETSF				*e*Sn	Sn	21 23 18.6	-0.8			
ETSF				*e*Sg	Sg	21 23 25.5	-1.4			
	4.4nm,0.3s									
ESAC	**San Caprasio**	**1.99**	**249**	Lg		21 23 25.9				
	9.3nm,0.3s,SNR=7.9									
ESAC	**San Caprasio**	**1.99**	**249**	Pg	Pg	21 22 59.9	-1.9			
ESAC				Lg		21 23 25.0				
LASF	**Ste Croix**	**2.10**	**39**	*e*Pn	Pn	21 22 58.4	+1.1			
LASF				*e*Pg	Pg	21 23 04.3	+0.2			
LASF				*e*Sg	Sg	21 23 31.0	-1.2			
	2.1nm,0.3s									
CAF	**Calviac**	**2.46**	**1**	*e*Pn	Pn	21 23 03.0	+0.5			
CAF				*e*Sn	Sn	21 23 32.0	-0.6			
CAF				*e*Sg	Sg	21 23 42.4	-1.7			
	1.1nm,0.2s									
LFF	**La Frestale**	**2.64**	**340**	*e*Sg	Sg	21 23 47.8	-2.3			
	1.7nm,0.3s									
EALK	**Alkurruntz**	**2.69**	**287**	Pg	Pg	21 23 11.9	-4.0			
EALK				Lg		21 23 48.8				
RJF	**Les Rejaudoux**	**2.86**	**353**	*e*Sg	Sg	21 23 55.0	-2.5			
	0.9nm,0.2s									
VIVF	**Saint-Julien-l**	**3.08**	**38**	*e*Pn	Pn	21 23 11.2	0.0			
VIVF				*e*Sg	Sg	21 24 01.4	-3.1			
	1.2nm,0.2s									

IDC 12 21:27:02.5±5.5, 48.06N×153.10E, mb3.6/4, mb1 3.9/4, mb1mx3.4/22, Error ellipse: s-maj=155.0km s-min=37.6km az=56.0, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h	m s	ISC
MKAR	**Makanchi Array**	**46.34**	**296**	P	P	21 35 29.6		-2.0
	0.2nm,0.5s,baz=66,slow=7.6,SNR=4.4							
CMAR	**Chiang Mai Arr**	**52.68**	**255**	P	P	21 36 19.3		-1.5
	0.5nm,0.5s,baz=38,slow=7.0,SNR=4.1							
WRA	**Warramunga Arr**	**69.75**	**199**	P	P	21 38 13.3		-3.1
	0.2nm,0.5s,baz=11,slow=6.6,SNR=5.3							
ASAR	**Alice Springs**	**73.45**	**198**	P	P	21 38 37.2		-1.3
	1.0nm,0.5s,baz=9.3,slow=5.6,SNR=14							

IDC 12 21:39:18.6±2.4, 6.29S×130.02E, mb3.5/1, mb1 3.5/4, mb1mx3.4/14, ML3.0/3, Error ellipse: s-maj=94.9km s-min=29.5km az=77.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h	m s	ISC
FITZ	**Fitzroy Crossi**	**12.49**	**200**	Pn	P	21 42 19.2		-1.4
	0.1nm,0.3s,baz=77,slow=5.7,SNR=7.2							
FITZ				Sn	S	21 44 25.3		-16
	0.1nm,0.3s,baz=341,slow=20,SNR=2.7							
WRA	**Warramunga Arr**	**14.21**	**163**	Pn	P	21 42 40.5		-2.9
	0.1nm,0.3s,baz=344,slow=13,SNR=3.5							
WRA				Sn	S	21 45 07.4		-16
	0.1nm,0.3s,baz=345,slow=22,SNR=5.2							
ASAR	**Alice Springs**	**17.68**	**168**	P	P	21 43 25.9		-2.1
	0.1nm,0.3s,baz=341,slow=9.0,SNR=4.8							
MKAR	**Makanchi Array**	**67.64**	**327**	P	P	21 50 17.5		-2.1
	0.3nm,0.5s,baz=114,slow=7.7,SNR=4.2							

*THR **12** 21:40:19.4±0.7, 32.31N×48.31E, h20km±5km, MD3.7, ML3.5*
*IDC **12** 21:40:19.4±3.2, 32.48N×48.78E, mb3.8/10, mb1 3.9/12, mb1mx3.8/24, ML3.9/1, MS3.0/1, Ms1 3.1/1, ms1mx3.2/3/24, Error ellipse: s-maj=66.4km s-min=20.9km az=176.0*
*NEIC **12** 21:40:21.6±1.7, 32.55N×48.80E, h10km, mb4.1/1, Error ellipse: s-maj=39.3km s-min=10.3km az=177.0*
ISC 12 21:40:18.3±3.3, 32.35N±0.08×48.73E±0.05, h7km±22km, n24, σ1§41/28, mb3.8/11, MS3.0/1, Western Iran

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h	m s	ISC
NASN	**Na'in**	**3.48**	**81**	*e*PN	Pn	21 41 16.5		+2.6
NASN				SN	Sn	21 41 58.1		+2.2
NASN				AMP		21 42 13.9		
	comp=N,147nm,0.9s							
DAMV	**Damavand**	**4.24**	**39**	*e*PN	Pn	21 41 25.1		+0.3
DAMV				SN	Sn	21 42 14.0		-1.3
DAMV				LG		21 42 38.1		
GHIR	**Ghir-Karzin**	**5.47**	**137**	*e*PN	Pn	21 41 41.8		-0.5
GHIR				SN	Sn	21 42 42.4		-3.9
ASF	**Jabal al Asfar**	**10.02**	**272**	Pn	P	21 42 44.3		-1.4
	comp=N,1.0nm,0.3s,baz=331,slow=11,SNR=8.2							
ASF				Sn	S	21 44 34.1		-5.5
	comp=N,0.4nm,0.3s,baz=319,slow=19,SNR=3.0							
ASF				Lg		21 45 47.4		
	comp=N,0.1nm,0.3s,baz=151,slow=19,SNR=1.7							
BRTR	**Keskin Array B**	**14.24**	**305**	Pn	P	21 43 41.0		-1.5
	baz=130,slow=11,SNR=2.3							
KRIS	**Kristallenia**	**19.51**	**285**	*e*P	P	21 44 49.3		+0.5
	comp=N,12nm,1.1s							
IDI	**Anoyia**	**20.01**	**285**	P	P	21 44 54.5		+0.1
	comp=N,7.8nm,0.8s,baz=106,slow=8.3,SNR=7.3							
MLR	**Muntele Rosu**	**21.96**	**313**	P	P	21 45 15.9		+1.6
	comp=N,3.0nm,0.8s,mb3.8,baz=141,slow=6.5,SNR=5.4							
AKASG	**Malin Array Be**	**23.32**	**328**	P	P	21 45 26.5		-1.1
	comp=N,0.8nm,0.6s,mb3.3,baz=139,slow=9.7,SNR=5.1							
BVAR	**Borovoye Array**	**25.90**	**31**	P	P	21 45 51.0		-1.3
	comp=N,0.9nm,0.6s,mb3.5,baz=225,slow=8.4,SNR=5.5							
KURK	**Kurchatov**	**28.65**	**41**	*e*P	P	21 46 16.4		-1.1
MKAR	**Makanchi Array**	**29.37**	**51**	P	P	21 46 23.3		-0.6
	comp=N,2.0nm,1.1s,mb3.8,baz=250,slow=6.5,SNR=6.8							
FINES	**FINESS Array B**	**32.61**	**340**	P	P	21 46 53.5		+1.1
	comp=N,0.6nm,0.5s,mb3.8,baz=153,slow=12,SNR=3.6							
ZAL	**Zalesovo**	**33.49**	**39**	P	P	21 46 59.3		-0.8
	comp=N,0.7nm,0.3s,mb4.1,baz=271,slow=7.9,SNR=3.7							
MBDF	**Montbardon**	**34.70**	**303**	*e*P	P	21 47 12.4		+1.7
	comp=N,8.6nm,1.0s,mb4.3							
LPL	**La Plagne**	**34.82**	**305**	*e*P	P	21 47 14.0		+2.3
CABF	**La Chapelle**	**35.41**	**306**	*e*P	P	21 47 14.7		-2.0
HFS	**Hagfors**	**36.11**	**331**	P	P	21 47 21.1		-1.4
	comp=N,3.5nm,0.7s,mb4.4,baz=124,slow=11,SNR=7.9							
SMF	**Signal de Mont**	**36.95**	**306**	*e*P	P	21 47 31.4		+1.7
LOR	**Lormes**	**37.02**	**307**	*e*P	P	21 47 32.8		+2.6
	comp=N,4.6nm,0.7s,mb4.1							
NB2	**NORSAR Subarra**	**37.63**	**331**	P	P	21 47 34.7		-0.6
	comp=N,0.6nm,0.6s,mb3.5,baz=121,slow=7.9							
NOA	**NORSAR Array B**	**37.63**	**331**	P	P	21 47 35.3		0.0
	comp=N,1.1nm,0.8s,mb3.6,baz=122,slow=8.4,SNR=4.3							
NOA				LR	LR	22 05 48.8		
	comp=N,20nm,18.2s,MS3.0,baz=135,slow=41							
ULN	**Ulaanbaatar**	**46.14**	**53**	*e*P	P	21 48 44.8		-0.1
YKA	**Yellowknife Ar**	**84.54**	**352**	P	P	21 52 53.3		+0.6
	comp=N,0.2nm,0.7s,mb3.4,baz=17,slow=5.3,SNR=5.6							

*NEIC **12** 21:41:57.7, 31.24S×69.25W, h150km, MD3.3(GUC), After GUC.*
GUC 12 21:41:57.7±0.8, 31.24S×69.25W, h150km, MD3.3, ML3.5, 13C, San Juan Province

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h	m s	ISC
CMCH	**Combarbala**	**1.50**	**272**	*i* P	P	21 42 28.0		+0.4
CMCH				*i* S	S	21 42 50.9		+0.3
CMCH				AMP		21 42 59.9		
	comp=E,1μm,0.9s							
MDZ	**Mendoza**	**1.68**	**168**	⇑*i* P	P	21 42 26.7		-2.8
ILCH	**Illapel**	**1.69**	**256**	⇑*i* P	P	21 42 29.6		0.0
ILCH				*i* S	S	21 42 54.0		-0.2
ILCH				AMP		21 42 58.3		
	comp=E,411nm,0.2s							
TLL	**Tololo Astrono**	**1.71**	**308**	⇑*i* P	P	21 42 30.4		+0.6
TLL				*i* S	S	21 42 55.6		+1.0
TLL				AMP		21 43 03.4		
	comp=E,304nm,0.4s							
PTCH	**Petorca**	**1.76**	**234**	⇑*i* P	P	21 42 30.4		0.0
PTCH				*i* S	S	21 42 55.5		-0.1
PTCH				AMP		21 42 57.3		
	comp=N,1μm,0.2s							
OVCH	**Ovalle**	**1.79**	**290**	⇑*i* P	P	21 42 30.8		+0.1
OVCH				*i* S	S	21 42 55.4		-0.7
OVCH				AMP		21 42 57.5		
	comp=E,421nm,0.4s							
JACH	**Jahuel**	**1.84**	**218**	*i* P	P	21 42 32.2		+0.9
JACH				*i* S	S	21 42 57.0		-0.1
PEL	**Peldehue**	**2.26**	**212**	AMP		21 43 10.9		
	comp=E,166nm,0.2s							
FCH	**Farellones**	**2.26**	**203**	⇑*i* P	P	21 42 37.4		+1.0
FCH				*i* S	S	21 43 07.3		+1.2
FCH				AMP		21 43 16.6		
	comp=E,93nm,0.2s							
PACH	**Papudo**	**2.27**	**235**	⇑*i* P	P	21 42 36.5		+0.1
PACH				*i* S	S	21 43 05.4		-0.7
ROCH	**El Roble**	**2.29**	**220**	*i* P	P	21 42 37.0		+0.3
ROCH				*i* S	S	21 43 07.4		+0.9
RCDM	**Rinconada Maip**	**2.60**	**210**	⇑*i* P	P	21 42 40.9		+0.2
RCDM				*i* S	S	21 43 13.9		+0.3
RCDM				AMP		21 43 16.6		
	comp=E,156nm,0.1s							
PCH	**Pirque**	**2.61**	**204**	⇑*i* P	P	21 42 41.1		+0.4
TACH	**Talagante**	**2.80**	**210**	⇑*i* P	P	21 42 43.1		-0.1
TACH				*i* S	S	21 43 17.6		-0.3
CHCH	**Chadas Angostu**	**2.94**	**203**	⇑*i* P	P	21 42 44.7		-0.2
CHCH				*i* S	S	21 43 21.1		0.0
LCCH	**Las Cruces**	**2.97**	**221**	*i* P	P	21 42 44.9		-0.5
CACH	**El Canelo**	**3.09**	**201**	⇑*i* P	P	21 42 47.5		+0.6
CICH	**Cipreses**	**3.23**	**197**	*i* P	P	21 42 48.7		0.0
LNV	**Longovilo**	**3.27**	**213**	⇑*i* P	P	21 42 48.2		-1.0

*IDC **12** 22:01:45.9±2.2, 21.15S×68.11W, h158km±15km, mb3.3/1, mb1 3.5/2, mb1mx3.2/13, Error ellipse: s-maj=93.1km s-min=11.6km az=100.0*
ISC 12 22:01:46.8±1.3, 21.03S±0.07×69.1W±0.6, h158km, n4, σ0§63/5, mb3.4/1, Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h	m s	ISC
LVC	**Limon Verde**	**1.59**	**173**	P	P	22 02 18.1		-0.1
	9.0nm,0.3s,baz=32,slow=8.7,SNR=107							
LVC				S	S	22 02 42.5		0.0
	13nm,0.3s,baz=257,slow=21,SNR=57							
LPAZ	**La Paz**	**4.81**	**11**	P	P	22 02 59.5		+0.8
	1.0nm,0.3s,baz=159,slow=6.9,SNR=21							
LPAZ				S	S	22 03 53.6		-0.5
	baz=337,slow=23,SNR=1.2							
YKA	**Yellowknife Ar**	**90.68**	**341**	P	P	22 14 32.0		-0.2
	0.2nm,0.5s,mb3.4,baz=134,slow=4.2,SNR=10							
MKAR	**Makanchi Array**	**145.36**	**35**	PKP	PKPdf	22 21 03.1		-2.6
	0.3nm,0.5s,baz=304,slow=4.4,SNR=6.2							

*IDC **12** 22:10:03.6±1.3, 19.40S×70.99W, mb4.1/2, mb1 4.3/5, mb1mx4.0/16, ML4.3/3, MS3.0/3, Ms1 3.0/3, ms1mx2.8/22, Error ellipse: s-maj=26.6km s-min=23.1km az=93.0*
*NEIC **12** 22:10:11.2±1.2, 19.44S×70.74W, h63km±12km, mb4.3/1, Error ellipse: s-maj=21.0km s-min=10.0km az=67.0*
ISC 12 22:10:10.0±0.9, 19.49S±0.08×70.8W±0.2, h63km, n13, σ1§62/16, mb4.2/3, Near coast of northern Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h	m s	ISC
ARE	**Arequipa**	**3.07**	**348**	*e*P	P	22 10 58.0		+0.6
ARE				*e*S	S	22 11 35.0		+1.9
LVC	**Limon Verde**	**3.58**	**151**	Pn	P	22 11 05.0		+0.4
	24nm,0.3s,baz=336,slow=8.8,SNR=259							
LVC				Pg	P	22 11 08.5		+4.0
	73nm,0.3s,baz=337,slow=11,SNR=83							
LVC				Sn	S	22 11 49.1		+3.2
	14nm,0.3s,baz=324,slow=14,SNR=2.6							
LVC				Lg		22 12 00.2		
	126nm,0.3s,baz=90,slow=15,SNR=14							
LVC				LR	LR	22 12 31.6		
	comp=Z,272nm,20.2s,baz=245,slow=40							
LVC	**Limon Verde**	**3.58**	**151**	Pn	P	22 11 05.0		+0.4
LVC				Pg	P	22 11 08.5		+4.0
LVC				Sn	S	22 11 49.1		+3.2
LVC				Lg		22 12 00.2		
LVC				LR	LR	22 12 31.6		
LPAZ	**La Paz**	**4.08**	**39**	Pn	P	22 11 10.5		-1.0
	5.6nm,0.3s,baz=196,slow=7.4,SNR=94							
LPAZ				Pg	P	22 11 21.6		+10
	4.8nm,0.3s,baz=216,slow=14,SNR=14							
LPAZ				Lg		22 12 15.1		
	2.1nm,0.3s,baz=16,slow=17,SNR=1.4							
LPAZ				LR	LR	22 12 46.4		
	comp=Z,135nm,18.4s,baz=199,slow=40							
CPUP	**Villa Florida**	**14.16**	**121**	Pn	P	22 13 26.7		-2.2
	0.2nm,0.3s,baz=310,slow=11,SNR=5.4							
TRQA	**Tornquist**	**20.04**	**159**	*e*P	P	22 14 40.0		-0.4
BDFB	**Brasilia**	**22.07**	**84**	P	P	22 15 01.0		-0.1
	3.5nm,0.5s,mb4.0,baz=270,slow=9.7,SNR=10							
ROSC	**El Rosal**	**24.43**	**352**	LR	LR	22 25 39.0		
	comp=Z,33nm,20.2s,baz=79,slow=38							
MNTX	**Cornudas Mount**	**60.73**	**326**	P	P	22 20 15.5		-2.1
SDCO	**Great Sand Dun**	**65.61**	**330**	P	P	22 20 47.3		-2.4
	3.0nm,0.9s,mb4.3							
YKA	**Yellowknife Ar**	**88.71**	**341**	P	P	22 22 58.1		+0.7
	0.8nm,0.6s,mb4.2,baz=134,slow=4.8,SNR=28							
MKAR	**Makanchi Array**	**144.99**	**33**	PKP	PKPdf	22 29 41.1		+1.1
	0.3nm,0.5s,baz=301,slow=3.4,SNR=8.5							
SONM	**Songino Array**	**151.63**	**4**	PKPbc	PKPdf	22 29 58.8		+8.1
	0.4nm,0.9s,baz=298,slow=2.1,SNR=3.8							
SONM				PKPab	PKPab	22 30 08.8		+0.6
	0.3nm,0.6s,slow=1.2,SNR=3.6							

*NEIC **12** 22:21:00.8±0.4, 51.57N×16.18E, h5km, ML2.9(SZGRF), ML2.9(VIE), ML2.8(FUR), ML2.4(BRG), ML2.4(CLL), Error ellipse: s-maj=4.9km s-min=4.0km az=209.0*
*WAR **12** 22:21:02.8, 51.50N×16.09E, h1km, Location given by Rudna mine, origin time based upon KSP*
*IDC **12** 22:21:02.5±1.1, 51.46N×16.00E, mb1 3.2/5, mb1mx3.1/20, ML2.9/5, Error ellipse: s-maj=16.2km s-min=8.9km az=128.0*
*PRU **12** 22:21:04.0, 51.42N×16.14E*
ISC 12 22:20:60.0±0.5, 51.48N±0.03×16.07E±0.03, n34, σ1§29/67, 2C-1D, Poland

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h	m s	ISC
KSP	**Ksiaz**	**0.66**	**168**	*e*Pg	Pg	22 21 15.0		+1.9
KSP				*e*Sg	Sg	22 21 23.8		+1.9
KSP	**Ksiaz**	**0.66**	**168**	*i* Pg	Pg	22 21 14.9		+1.8
KSP				*i* Sg	Sg	22 21 24.0		+2.1
KSP				*e*		22 21 29.6		
UPC	**Upice**	**0.98**	**182**	*e*PG	Pg	22 21 20.9		+1.4
DPC	**Dobruska-Polom**	**1.15**	**172**	*e*PG	Pg	22 21 23.7		+0.8
DPC				*e*SG	Sg	22 21 38.3		+0.1
	28nm,0.3s							
PVCC	**Panska Ves**	**1.35**	**225**	*e*PG	Pg	22 21 27.5		+0.6
BRG	**Berggiesshubel**	**1.47**	**246**	*e*Pn	Pn	22 21 28.7		+0.8
BRG				*i* Pg	Pg	22 21 30.6		+1.2
BRG				*i* Sg	Sg	22 21 50.6		+1.6
RUE	**Ruedersdorf**	**1.73**	**306**	*e*P	Pn	22 21 31.5		-0.1
PRU	**Pruhonice**	**1.79**	**214**	*e*PN	Pn	22 21 33.2		+0.9
PRU				PG	Pg	22 21 34.8		-0.8
PRU				*i* x	x	22 21 52.3		
PRU				SG	Sg	22 21 58.9		-0.5
	32nm,0.6s							
CLL	**Collm**	**1.93**	**266**	*e*PN	Pn	22 21 35.0		+0.6
CLL				*e*PG	Pg	22 21 38.0		-0.5
CLL				*i*		22 21 41.2		
CLL				*i* SG	Sg	22 22 04.0		-0.3
CLL				*e*L		22 22 11.0		
CLL				*e*L		22 22 22.0		
CLL	**Collm**	**1.93**	**266**	*e*Pn	Pn	22 21 35.0		+0.6
CLL				*e*Pg	Pg	22 21 38.0		-0.5
CLL				*i* Sg	Sg	22 22 04.0		-0.3
RAC	**Raciborz**	**1.94**	**135**	*e*Pg	Pg	22 21 39.5		+0.7
RAC				*e*Sg	Sg	22 22 06.7		+2.0
RAC	**Raciborz**	**1.94**	**135**	*e*P	Pn	22 21 39.0		+4.4
RAC				*e*S	Sn	22 22 07.0		+6.9
MORC	**Moravsky Berou**	**1.95**	**151**	*e*P	Pn	22 21 35.2		+0.5
OKC	**Ostrava-Krasne**	**2.11**	**140**	*e*PG	Pg	22 21 41.3		-0.9
OKC				*e*SG	Sg	22 22 08.3		-2.0
VRAC	**Vranov**	**2.20**	**171**	Pn	Pn	22 21 40.0		+1.7
	2.0nm,0.3s,baz=353,slow=18,SNR=12							
VRAC				Lg		22 22 11.5		
	3.5nm,0.3s,baz=271,slow=23,SNR=7.8							
OJC	**Ojcow**	**2.68**	**117**	*e*Pg	Pg	22 21 52.4		-1.1
OJC				*e*Sg	Sg	22 22 28.1		-1.1
KHC	**Kasperske Hory**	**2.85**	**215**	*e*PN	Pn	22 21 48.4		+0.9
KHC				*e*PG	Pg	22 21 54.4		-2.4
KHC				*ex*	x	22 22 23.5		
KHC				*e*SG	Sg	22 22 32.8		-2.0
MOX	**Moxa**	**2.93**	**255**	*i* P	Pn	22 21 49.2		+0.4
MOX				Pg	Pg	22 21 58.0		-0.6
MOX				Sg	Sg	22 22 37.0		-0.7
MOX	**Moxa**	**2.93**	**255**	*e*Pn	Pn	22 21 49.2		+0.4
MOX				*e*Pg	Pg	22 21 57.5		-1.1
MOX				*e*Sg	Sg	22 22 37.3		-0.4
GEC2	**GERESS Array S**	**3.05**	**211**	*e*Pn	Pn	22 21 52.1		+1.7
GERES	**GERESS Array B**	**3.05**	**211**	Pn	Pn	22 21 51.5		+1.1
	1.2nm,0.3s,baz=31,slow=12,SNR=44							
GERES				Pg	Pg	22 21 57.9		-3.0
	3.1nm,0.3s,baz=27,slow=18,SNR=33							
GERES				Sn	Sn	22 22 26.0		-2.1
	1.2nm,0.3s,baz=14,slow=22,SNR=5.1							
GERES				Lg		22 22 38.7		
	2.5nm,0.3s,baz=28,slow=26,SNR=8.3							
WET	**Wettzell**	**3.11**	**222**	*e*Pn	Pn	22 21 52.0		+0.7
ZST	**Bratislava**	**3.36**	**168**	*e*PG	Pg	22 22 06.0		-1.0
ZST				*e*SN	Sn	22 22 38.9		+2.9
ZST				*e*SG	Sg	22 22 51.7		-0.1
NIE	**Niedzica**	**3.41**	**126**	*e*P	Pn	22 22 05.5		+10
NIE				*e*		22 22 08.4		
NIE				*e*Sg	Sg	22 22 51.5		-2.0
VYHS	**Vyhne**	**3.48**	**148**	*e*PN	Pn	22 21 56.9		+0.3
VYHS				*e*PG	Pg	22 22 08.0		-1.5
VYHS				*e*SG	Sg	22 22 57.1		+1.1
BSD	**Bornholm Skovb**	**3.70**	**350**	*i* P	Pn	22 21 58.4		-1.3
BSD				*i* S	Sn	22 22 38.9		-5.8
MOA	**Molln**	**3.82**	**199**	⇓*i* PN	Pn	22 22 02.2		+0.8
MOA				*i* SG	Sg	22 23 05.6		-1.7
	6.9nm,0.5s							
ARSA	**Arzberg**	**4.25**	**185**	⇑*i* PN	Pn	22 22 08.2		+0.7
ARSA				*i* SG	Sg	22 23 17.6		-4.0
	9.2nm,0.7s							
CRVS	**Cervenica-Dubn**	**4.32**	**125**	*e*PG	Pg	22 22 24.4		-1.8
CRVS				*e*SG	Sg	22 23 25.0		+1.2
KWP	**Kalwaria**	**4.62**	**111**	*e*Pg	Pg	22 22 26.7		-5.5
KBA	**Koelnbreinsper**	**4.76**	**203**	⇑*i* PN	Pn	22 22 15.5		+0.9
KBA				*i* SG	Sg	22 23 36.1		-2.3
	4.5nm,0.5s							
DAVOX	**Davos**	**6.22**	**223**	Pn	Pn	22 22 35.2		0.0
	0.2nm,0.3s,baz=318,slow=17,SNR=2.6							
DAVOX				Lg		22 24 16.5		
	0.1nm,0.3s,baz=320,slow=20,SNR=2.4							
AKASG	**Malin Array Be**	**8.32**	**90**	Pn	P	22 23 01.0		-3.7
	0.4nm,0.3s,baz=280,slow=12,SNR=5.4							
FINES	**FINESS Array B**	**11.40**	**25**	Pn	P	22 23 41.9		-5.0
	0.1nm,0.3s,baz=200,slow=12,SNR=5.4							

*NEIC **12** 22:44:56.8±0.7, 20.54S×66.70

HLID	**Hailey**	**77.37**	**327**	*eP*		**P**		**22 56 27.5**	**+1.3**
	comp=Z,10nm,1.1s,mb4.4									
HLID					*eP*	*P*		22 57 21.6	-1.1
MCMT	**McKenzie Canyo**	**77.48**	**328**	*eP*		**P**		**22 56 28.1**	**+1.3**
ESDC	**Sonseca Array**	**83.75**	**44**	P		**P**		**22 57 00.6**	**+0.8**
	comp=Z,2.3nm,0.8s,mb3.9,baz=239,slow=5.0,SNR=8.4									
MAW	**Mawson**	**84.62**	**163**	P		**P**		**22 57 05.4**	**+1.9**
	comp=Z,2.5nm,0.7s,mb4.1,baz=178,slow=11,SNR=7.1									
YKA	**Yellowknife Ar**	**91.00**	**340**	P		**P**		**22 57 34.2**	**+0.3**
	comp=Z,0.8nm,0.7s,mb3.8,baz=130,slow=4.5,SNR=18									
YKA					pP	pP		22 58 33.3	+1.3
	comp=Z,0.6nm,0.7s,baz=131,slow=4.5,SNR=3.9									
YKA	**Yellowknife Ar**	**91.00**	**340**	P		**P**		**22 57 34.2**	**+0.3**
YKA					pP	pP		22 58 33.3	+1.3
ASAR	**Alice Springs**	**131.66**	**206**	PKP		PKPdf		23 03 43.7	+2.3
	comp=Z,0.9nm,1.0s,baz=180,slow=2.7,SNR=3.8									
ASAR					SKPbc			23 06 46.5		
	comp=Z,1.1nm,0.7s,baz=149,slow=3.9,SNR=8.3									
WRA	**Warramunga Arr**	**134.76**	**208**	PKP		PKPdf		23 03 49.6	+2.5
	comp=Z,0.4nm,0.7s,baz=134,slow=0.2,SNR=9.0									
WRA					SKPbc			23 06 57.4		
	comp=Z,2.6nm,0.8s,baz=160,slow=2.7,SNR=22									
MKAR	**Makanchi Array**	**143.68**	**37**	PKP		PKPdf		23 04 01.9	-0.5
	comp=Z,0.6nm,0.6s,baz=326,slow=4.6,SNR=9.3									
MKAR					SKPbc			23 07 22.1		
	comp=Z,2.2nm,1.1s,baz=315,slow=2.5,SNR=7.0									
SONM	**Songino Array**	**152.24**	**10**	PKPbc		PKPdf		23 04 26.1	+10
	comp=Z,0.4nm,0.6s,baz=342,slow=0.6,SNR=5.9									
SONM					pPKPbc			23 05 26.9		
	comp=Z,1.0nm,0.8s,baz=315,slow=1.7,SNR=3.9									

IDC ***12*** *22:45:13.9±2.8,60.22N×151.96W,mb3.5/1,mb1 3.3/3, mb1mx3.2/20,ML3.0/2,Error ellipse: s-maj=48.4km s-min=22.9km az=137.0*

NEIC ***12*** *22:45:18.9,60.32N×150.81W,h61km,ML3.2(PMR), ML3.1(AEIC),After AEIC.*

ISC 12 22:45:16.9±0.3,60.30N±0.03×150.74W±0.05,h77km±5km, n70,σ0°53/76,mb3.5/1,Kenai Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SLKM	**Skilak Lake**	**0.33**	**51**	P	**P**	**22 45 29.4**	**+0.2**
SLKM				S	**S**	**22 45 37.2**	**-1.1**
BRLK	**Bradley Lake**	**0.54**	**188**	P	**P**	**22 45 31.2**	**+0.3**
BRLK				S	**S**	**22 45 40.9**	**-0.3**
SEW	**Seward**	**0.68**	**106**	P	**P**	**22 45 32.6**	**+0.3**
SEW				S	**S**	**22 45 43.1**	**-0.6**
MPA	**Moose Pass**	**0.71**	**74**	P	**P**	**22 45 33.2**	**+0.6**
MPA				S	**S**	**22 45 44.2**	**-0.1**
CNPM	**China Poot**	**0.81**	**198**	P	**P**	**22 45 34.3**	**+0.5**
RDT	**Redoubt**	**0.87**	**289**	P	**P**	**22 45 34.1**	**-0.3**
FIB	**Fire Island**	**0.91**	**18**	P	**P**	**22 45 36.0**	**+1.1**
RC01	**Rabbit Creek A**	**0.93**	**32**	P	**P**	**22 45 35.8**	**+0.7**
RC01				S	**S**	**22 45 48.5**	**-0.4**
REF	**Redoubt East F**	**0.99**	**282**	P	**P**	**22 45 35.6**	**-0.2**
GOU	**Gould Hall**	**1.01**	**27**	*eP*	**P**	**22 45 37.0**	**+0.9**
RSO	**Redoubt South**	**1.01**	**280**	P	**P**	**22 45 36.0**	**-0.1**
BKG	**Blockade Glaci**	**1.08**	**317**	P	**P**	**22 45 36.9**	**0.0**
SPU	**Mount Spurr**	**1.09**	**325**	*eP*	**P**	**22 45 37.0**	**-0.1**
PMS	**Palmer South**	**1.11**	**31**	P	**P**	**22 45 38.3**	**+0.9**
ILIM	**Iliamna**	**1.13**	**260**	P	**P**	**22 45 37.4**	**-0.2**
INE	**Iliamna NE**	**1.18**	**259**	P	**P**	**22 45 38.2**	**-0.1**
CKL	**Chakachamna La**	**1.19**	**320**	P	**P**	**22 45 38.6**	**+0.2**
ILW	**Iliamna West**	**1.22**	**260**	P	**P**	**22 45 38.8**	**0.0**
PWA	**Palmer West**	**1.42**	**17**	P	**P**	**22 45 42.0**	**+0.5**
PMR	**Palmer**	**1.52**	**31**	*eP*	**P**	**22 45 42.8**	**0.0**
KNK	**Knik Glacier**	**1.58**	**44**	P	**P**	**22 45 44.1**	**+0.5**
AUL	**Augustine Lava**	**1.64**	**237**	P	**P**	**22 45 44.9**	**+0.5**
AGU	**Augustine-Summ**	**1.65**	**236**	P	**P**	**22 45 45.3**	**+0.7**
GHO	**Glory Hole Cre**	**1.72**	**30**	P	**P**	**22 45 46.0**	**+0.4**
SML	**Sawmill**	**1.91**	**37**	P	**P**	**22 45 48.5**	**+0.4**
HIN	**Hinchinbrook I**	**2.11**	**86**	P	**P**	**22 45 50.8**	**0.0**
CUT	**Chulitna**	**2.12**	**6**	P	**P**	**22 45 51.3**	**+0.3**
JPK	**Jack Peak**	**2.18**	**68**	P	**P**	**22 45 51.8**	**0.0**
SCM	**Sheep Creek Mo**	**2.26**	**46**	P	**P**	**22 45 53.5**	**+0.5**
VLZ	**Valdez**	**2.32**	**67**	P	**P**	**22 45 53.7**	**-0.1**
MID	**Middleton Isla**	**2.39**	**110**	P	**P**	**22 45 54.8**	**+0.1**
EYAK	**Cordova Ski Ar**	**2.49**	**82**	P	**P**	**22 45 57.4**	**+1.3**
KAPH	**Katmai Pasha**	**2.51**	**229**	P	**P**	**22 45 56.6**	**+0.2**
SVW	**Sparrevohn**	**2.53**	**291**	P	**P**	**22 45 55.6**	**-1.2**
KLU	**Klutina**	**2.64**	**61**	P	**P**	**22 45 58.4**	**+0.1**
KDAK	**Kodiak Island**	**2.70**	**201**	P	**P**	**22 45 58.0**	**-1.1**
KARR	**Katmai Rainbow**	**2.71**	**230**	P	**P**	**22 45 59.4**	**+0.1**
HUR	**Hurricane**	**2.74**	**11**	P	**P**	**22 45 59.9**	**+0.2**
TOA	**Tolsona**	**2.86**	**49**	P	**P**	**22 46 02.2**	**+0.8**
KABR	**Katmai Barrier**	**3.07**	**227**	P	**P**	**22 46 04.2**	**-0.1**
BMRM	**Bremner River**	**3.10**	**75**	P	**P**	**22 46 03.6**	**-1.1**
MGLS	**Mageik LS**	**3.15**	**230**	P	**P**	**22 46 05.5**	**+0.1**
KAIM	**Kayak Island**	**3.19**	**94**	P	**P**	**22 46 05.4**	**-0.5**
DHY	**Denali Highway**	**3.22**	**28**	P	**P**	**22 46 06.1**	**-0.2**
CAHL	**Cahill**	**3.25**	**228**	P	**P**	**22 46 07.0**	**+0.2**
KTH	**Kantishna Hill**	**3.27**	**359**	P	**P**	**22 46 07.3**	**+0.3**
KJL	**Kejulik**	**3.35**	**230**	P	**P**	**22 46 08.4**	**+0.2**
MCK	**McKinley**	**3.55**	**13**	P	**P**	**22 46 11.3**	**+0.4**
GLB	**Gilahina Butte**	**3.58**	**68**	P	**P**	**22 46 10.7**	**-0.5**
TT01	**Tatalina**	**3.63**	**318**	P	**P**	**22 46 11.5**	**-0.6**
PAX	**Paxson**	**3.68**	**41**	P	**P**	**22 46 13.2**	**+0.5**
BWN	**Browne**	**3.93**	**8**	P	**P**	**22 46 16.0**	**-0.2**
YAH	**Yahtse**	**4.47**	**85**	P	**P**	**22 46 23.5**	**-0.3**
HDA	**Harding Lake**	**4.48**	**22**	P	**P**	**22 46 24.2**	**+0.3**
CCB	**Clear Creek Bu**	**4.57**	**16**	P	**P**	**22 46 25.0**	**-0.1**
DOT	**Dot Lake**	**4.61**	**40**	P	**P**	**22 46 25.1**	**-0.5**
MLY	**Manley**	**4.75**	**0**	P	**P**	**22 46 27.4**	**-0.2**
COLA	**College**	**4.78**	**15**	P	**P**	**22 46 27.7**	**-0.3**
IL1	**Eielson Array**	**4.83**	**20**	P	**P**	**22 46 28.2**	**-0.4**
ILAR	**Eielson Array**	**4.83**	**20**	Pn	**P**	**22 46 28.9**	**+0.3**
	9.8nm,0.3s,baz=203,slow=14,SNR=414						
ILAR				Sn	**S**	**22 47 23.2**	**-0.6**
	1.5nm,0.3s,baz=209,slow=23,SNR=7.1						
GLM	**Gilmore Dome**	**4.95**	**17**	P	**P**	**22 46 29.8**	**-0.6**
BCA3	**Beaver Creek A**	**5.09**	**53**	P	**P**	**22 46 31.8**	**-0.4**
PNL	**Peninsula**	**5.73**	**91**	P	**P**	**22 46 40.5**	**-0.6**
PRP	**Porcupine Dome**	**5.75**	**22**	P	**P**	**22 46 40.8**	**-0.5**
IM3	**Indian Mountai**	**5.87**	**348**	P	**P**	**22 46 42.0**	**-0.9**
IMA	**Indian Mountai**	**5.94**	**348**	*eP*	**P**	**22 46 44.8**	**+0.9**
BM3	**Burnt Mountain**	**7.64**	**18**	P	**P**	**22 47 06.1**	**-1.4**
INK	**Inuvik**	**10.93**	**35**	Pn	**P**	**22 47 52.0**	**+0.1**
	0.1nm,0.3s,baz=244,slow=18,SNR=5.7						
YKA	**Yellowknife Ar**	**17.30**	**67**	P	**P**	**22 49 22.5**	**+8.3**
	0.0nm,0.3s,baz=278,slow=11,SNR=3.1						
SONM	**Songino Array**	**55.52**	**307**	P	**P**	**22 54 46.1**	**+0.4**
	0.3nm,0.5s,mb3.5,baz=45,slow=7.0,SNR=3.8						

JMA ***12*** *22:53:33.8±0.6,23.98N×121.78E,h17km*

TAP ***12*** *22:53:34.2,24.15N×121.65E,h24km,ML3.4*

TAP Felt I J at Nanau, I J at Hehuanshan, I J at Shilin.

ISC 12 22:53:34.1±0.3,24.09N±0.02×121.73E±0.02,h25km±3km, n54,σ0°81/89,4C-3D,Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWD	**Chiawan**	**0.12**	**264**	⇓*i*P	**Pb**	**22 53 38.9**	**-0.1**
TWD				S	**Sb**	**22 53 42.4**	**+0.2**
HWA	**Hwalien**	**0.16**	**224**	⇓*i*P	**Pb**	**22 53 39.7**	**+0.4**
HWA				S	**Sb**	**22 53 44.4**	**+1.6**
ENA	**Nanau**	**0.33**	**2**	⇓*i*P	**Pb**	**22 53 41.4**	**-0.2**
ENA				S	**Sb**	**22 53 46.9**	**+0.1**
ESL	**Shilin**	**0.39**	**224**	*eP*	**Pb**	**22 53 41.7**	**-0.7**
ESL				S	**Sb**	**22 53 48.0**	**-0.1**
WHF	**Hehuan Shan**	**0.42**	**277**	⇑*i*P	**Pb**	**22 53 42.4**	**-0.6**
WHF				S	**Sb**	**22 53 48.6**	**-0.6**
NNS	**Nan Shan**	**0.47**	**317**	*i*P	**Pb**	**22 53 43.2**	**-0.6**
NNS				S	**Sb**	**22 53 49.6**	**-0.9**
TWC	**Suao**	**0.53**	**12**	*i*P	**Pb**	**22 53 44.8**	**+0.1**
TWC				S	**Sb**	**22 53 52.5**	**+0.6**
TWT	**Tachien**	**0.53**	**288**	P	**Pb**	**22 53 44.4**	**-0.3**
TWT				S	**Sb**	**22 53 51.6**	**-0.4**
ENTT	**Nioudou**	**0.56**	**345**	⇑P	**Pb**	**22 53 45.0**	**-0.4**
ENTT				S	**Sb**	**22 53 52.6**	**-0.4**
TWE	**Neicheng**	**0.63**	**355**	*eP*	**Pb**	**22 53 46.3**	**-0.1**
TWE				S	**Sb**	**22 53 54.9**	**+0.1**
NSK	**Sanguang**	**0.67**	**330**	⇑P	**Pb**	**22 53 46.4**	**-0.7**
NSK				S	**Sb**	**22 53 54.9**	**-1.2**
SMLT	**Sun Moon Lake**	**0.78**	**255**	P	**Pb**	**22 53 48.3**	**-0.7**
SMLT				S	**Sb**	**22 53 58.6**	**-0.7**
TYC	**Yuchr**	**0.82**	**257**	P	**Pb**	**22 53 48.8**	**-0.8**
TYC				S	**Sb**	**22 53 59.6**	**-0.6**
TWF1	**Yuli**	**0.84**	**208**	*eP*	**Pb**	**22 53 47.8**	**-2.1**
NSTT	**Nanjuang**	**0.85**	**309**	*eP*	**Pb**	**22 53 50.0**	**-0.1**
NSTT				S	**Sb**	**22 54 00.3**	**-0.8**
TWQ1	**Liyutan**	**0.91**	**286**	*eP*	**Pb**	**22 53 51.6**	**+0.5**
TWQ1				S	**Sb**	**22 54 02.9**	**+0.2**
YUS	**Yu-Shan**	**0.93**	**230**	*eP*	**Pb**	**22 53 51.0**	**-0.5**
YUS				S	**Sb**	**22 54 02.6**	**-0.8**
NSY	**Sanyi**	**0.94**	**290**	*eP*	**Pb**	**22 53 52.0**	**+0.4**
NSY				S	**Sb**	**22 54 04.2**	**+0.6**
TWB1	**Santiao Chiao**	**0.94**	**15**	*eP*	**Pb**	**22 53 52.3**	**+0.6**
TWB1				S	**Sb**	**22 54 04.8**	**+1.0**
TCU	**Taichung**	**0.96**	**273**	*eP*	**Pb**	**22 53 52.3**	**+0.3**
TCU				S	**Sb**	**22 54 05.2**	**+0.9**
NWF	**Wu-fen Shan**	**0.97**	**3**	*eP*	**Pb**	**22 53 53.3**	**+1.1**
WNT	**Mingjian**	**0.98**	**258**	*eP*	**Pb**	**22 53 52.4**	**+0.1**
WNT				S	**Sb**	**22 54 05.4**	**+0.6**
HSN	**Hsinchu**	**0.99**	**316**	*eP*	**Pb**	**22 53 51.8**	**-0.6**
HSN				S	**Sb**	**22 54 05.5**	**+0.5**
NCU	**National Centr**	**1.00**	**331**	*eP*	**Pb**	**22 53 53.8**	**+1.1**
ALS	**Alishan**	**1.02**	**236**	*eP*	**Pn**	**22 53 52.1**	**-0.9**
ALS				S	**Sb**	**22 54 06.5**	**+0.4**
TWS1	**Kuangyinshan**	**1.04**	**344**	*eP*	**Pn**	**22 53 53.5**	**+0.3**
TWS1				S	**Sb**	**22 54 07.4**	**+0.8**
CHKT	**Chengkung**	**1.04**	**199**	*eP*	**Pn**	**22 53 51.2**	**-2.1**
CHKT				S	**Sb**	**22 54 08.1**	**+1.5**
CHN5	**Tsauling**	**1.08**	**243**	*eP*	**Pn**	**22 53 53.7**	**-0.1**
CHN5				S	**Sb**	**22 54 08.6**	**+0.9**
ELDTW	**Lidau**	**1.11**	**216**	*eP*	**Pn**	**22 53 52.4**	**-1.9**
WGK	**Gukeng**	**1.14**	**249**	*eP*	**Pn**	**22 53 54.1**	**-0.6**
TWY	**Chenhua**	**1.18**	**354**	*eP*	**Pn**	**22 53 55.4**	**+0.1**
YOJ	**Yonaguni jima**	**1.23**	**72**	P	**Pn**	**22 53 55.9**	**0.0**
YOJ				S	**Sn**	**22 54 11.7**	**-0.1**
CHN4	**Tsaushan**	**1.27**	**235**	*eP*	**Pn**	**22 53 57.3**	**+0.7**
CHN4				S	**Sn**	**22 54 12.5**	**+0.8**
CHN2	**Minshiung**	**1.27**	**244**	*eP*	**Pn**	**22 53 57.4**	**+0.8**
WTP	**Ta-pu**	**1.32**	**231**	*eP*	**Pn**	**22 53 57.7**	**+0.4**
CHY	**Chiayi**	**1.33**	**244**	*eP*	**Pn**	**22 53 58.2**	**+0.8**
CHY				S	**Sn**	**22 54 14.5**	**+0.1**
TWG	**Pinlang**	**1.40**	**205**	*eP*	**Pn**	**22 53 56.8**	**-1.6**
TWK	**Hsinying**	**1.40**	**234**	*eP*	**Pn**	**22 53 58.8**	**+0.3**
CHN1	**Nanshi**	**1.42**	**231**	*eP*	**Pn**	**22 53 59.1**	**+0.4**
CHN1				S	**Sn**	**22 54 18.9**	**+2.1**
WSF	**Szhu**	**1.45**	**252**	*eP*	**Pn**	**22 53 59.5**	**+0.4**
WSF				S	**Sn**	**22 54 18.8**	**+1.3**
SGST	**Jiashian**	**1.45**	**226**	*eP*	**Pn**	**22 53 59.7**	**+0.6**
ECL	**Taimali**	**1.65**	**206**	*eP*	**Pn**	**22 54 02.4**	**+0.5**
SSD	**Sandimen**	**1.68**	**217**	*eP*	**Pn**	**22 54 03.1**	**+0.8**
IRIF	**Iriomote-Funau**	**1.85**	**82**	P	**Pn**	**22 54 05.6**	**+0.8**
IRIF				*eS*	**Sn**	**22 54 27.4**	**-0.1**
EAST	**Anshuo**	**1.88**	**206**	*eP*	**Pn**	**22 54 06.2**	**+0.9**
HATJ	**Hateruma jima**	**1.90**	**91**	P	**Pn**	**22 54 05.5**	**-0.1**
HATJ				S	**Sn**	**22 54 28.8**	**-0.1**
SCZT	**Fangliau**	**1.99**	**211**	*eP*	**Pn**	**22 54 07.5**	**+0.7**
LAY	**Lan-yu**	**2.05**	**185**	*eP*	**Pn**	**22 54 06.3**	**-1.4**
PNG	**Penghu**	**2.06**	**256**	*eP*	**Pn**	**22 54 06.8**	**-1.0**
PNG				S	**Sn**	**22 54 31.5**	**-1.3**
WDGT	**Dungji**	**2.07**	**247**	*eP*	**Pn**	**22 54 07.2**	**-0.8**
JKRS	**Kuro-shima**	**2.09**	**86**	P	**Pn**	**22 54 08.2**	**-0.1**
JKRS				S	**Sn**	**22 54 34.1**	**+0.4**
JIJ	**Ishigaki jima**	**2.22**	**83**	P	**Pn**	**22 54 09.1**	**-1.1**
JIJ				S	**Sn**	**22 54 35.5**	**-1.6**
TWK1	**Hengchun**	**2.30**	**202**	*eP*	**Pn**	**22 54 12.2**	**+0.9**
JTJ	**Tarama**	**2.77**	**78**	*eS*	**Sn**	**22 54 52.1**	**+1.2**

IDC ***12*** *23:19:14.7±2.6,42.59N×104.63W,mb2.5/1,mb1 3.7/4, mb1mx3.4/21,ML3.3/3,Error ellipse: s-maj=46.4km s-min=10.2km az=152.0*

NEIC ***12*** *23:19:21.9±0.8,43.70N×105.25W,ML3.2,Error ellipse: s-maj=15.0km s-min=7.5km az=157.0,Suspected Mining explosion.*

NEIC 70 km [45 miles] SSE of Gillette.

ISC 12 23:19:19.9±0.5,43.72N±0.05×105.19W±0.06,n25, σ1°39/27,Wyoming

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RSSD	**Black Hills**	**0.92**	**64**	*eP*	**Pg**	**23 19 40.7**	**+2.4**
PDAR	**Pinedale Array**	**3.33**	**255**	Pn	**Pn**	**23 20 15.0**	**+0.6**
	2.3nm,0.3s,baz=86,slow=15,SNR=40						
PDAR				Sn	**Sn**	**23 21 00.9**	**+5.6**
	9.7nm,0.3s,baz=72,slow=34,SNR=11						
LKWY	**Lake**	**3.85**	**284**	P	**Pn**	**23 20 23.2**	**+1.5**
KSWY	**Kelly School**	**3.95**	**270**	P	**Pn**	**23 20 28.0**	**+4.9**
WUWY	**Wally Ulrich**	**4.04**	**269**	P	**Pn**	**23 20 24.4**	**0.0**
REDW	**Red Top Meadow**	**4.14**	**267**	P	**Pn**	**23 20 25.9**	**+0.1**
YMR	**Madison River**	**4.26**	**285**	P	**Pn**	**23 20 26.8**	**+2.2**
AHID	**Auburn Hatcher**	**4.43**	**260**	P	**Pn**	**23 20 35.4**	**+5.5**
QLMT	**Earthquake Lak**	**4.62**	**286**	P	**Pn**	**23 20 23.6**	**-9.1**
BOZ	**Bozeman (W)**	**4.98**	**295**	*eP*	**Pn**	**23 20 36.6**	**-1.2**
HWUT	**Hardware Ranch**	**5.16**	**248**	*eP*	**Pn**	**23 20 38.8**	**-1.5**
	1.8nm,0.4s						
HRY	**Holter Researc**	**5.56**	**305**	*eP*	**Pn**	**23 20 45.4**	**-0.6**
DAU	**Daniels Canyon**	**5.60**	**236**	*eP*	**Pn**	**23 20 46.2**	**-0.3**
JLU	**Jordanelle**	**5.60**	**238**	P	**Pn**	**23 20 45.6**	**-1.0**
RW3	**Ridgway**	**5.79**	**200**	P	**Pn**	**23 20 52.4**	**+3.3**
SDCO	**Great Sand Dun**	**5.98**	**182**	P	**Pn**	**23 20 52.1**	**+0.3**
MPU	**Maple Canyon**	**6.07**	**235**	*eP*	**Pn**	**23 20 53.9**	**+0.7**
PV10	**Paradox Valley**	**6.08**	**210**	*eP*	**Pn**	**23 20 53.1**	**-0.2**
PV10				*e*		23 21 17.8	
SRU	**San Rafael**	**6.11**	**223**	*eP*	**Pn**	**23 20 51.3**	**-2.4**
PV01	**Paradox Valley**	**6.14**	**206**	P	**Pn**	**23 20 54.6**	**+0.4**
MSU	**Marysvale**	**7.41**	**228**	P	**Pn**	**23 21 08.3**	**-3.7**
KSU1	**Kansas State U**	**7.93**	**123**	P	**Pn**	**23 21 19.4**	**+0.2**
ULM	**Lac du Bonnet**	**9.11**	**41**	Pn	**P**	**23 21 33.5**	**-2.1**
	0.6nm,0.3s,baz=237,slow=13,SNR=8.2						
ULM				Sn	**Sn**	**23 23 18.3**	**-1.8**
	0.3nm,0.3s,baz=144,slow=16,SNR=2.4						
NVAR	**Mina Array Bea**	**11.22**	**246**	Pn	**P**	**23 21 58.5**	**-6.1**
	0.3nm,0.3s,baz=49,slow=17,SNR=2.6						
YKA	**Yellowknife Ar**	**19.59**	**347**	P	**P**	**23 23 55.3**	**+3.1**
	0.2nm,0.6s,baz=146,slow=8.9,SNR=5.0						

MOS ***12*** *23:23:52.0±1.5,1.81S×15.34W,h10km,mb5.0/6,MS4.6/9, Error ellipse: s-maj=47.9km s-min=10.2km az=62.3*

IDC ***12*** *23:23:52.1±0.6,1.33S×15.32W,mb4.2/17,mb1 4.4/18, mb1mx4.3/21,ML4.5/1,MS4.5/28,Ms1 4.5/28, ms1mx4.4/31,Error ellipse: s-maj=21.1km s-min=14.6km az=139.0*

NEIC ***12*** *23:23:54.4±0.4,1.61S×15.29W,h10km,mb4.9/15, MS4.5/4,Error ellipse: s-maj=14.4km s-min=8.7km az=116.0*

HRVD ***12*** *23:23:54.4±0.2,1.20S×15.22W,h12km,MW5.3/69, Centroid moment Tensor Solution. LP body waves: s55,c106;Mantle waves: s69,c136; Half duration: 1s2 Moment tensor: Scale 10¹⁷Nm; Mrr-0.10±.02; Mθθ0.47±.02; Mϕϕ-0.37±.02; Mrθ-0.04±.04; Mϕθ-1.02±.01; Mrϕ0.60±.05; Best double couple: M₀1.26×10¹⁷ NP1: ϕ₁260°, δ61°,λ-175°. NP2:ϕ₂168°, δ85°,λ-29°. Principal axes: T 1.26, Plg16°, Azm217°; N 0, Plg61°, Azm339°; P -1.26, Plg23°, Azm120°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 12 23:23:53.2±1.7,1.61S±0.06×15.30W±0.08,h12km±11km, n143,σ1°20/137,mb4.7/56,MS4.5/37,8C-4D,North of Ascension Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LIC	**Lamto**	**12.87**	**53**	*ePn*	**P**	**23 26 52.0**	**-6.9**
LIC				*eSn*	**S**	**23 29 04.3**	**-19**
	55nm,0.3s						
LIC				*eR*			
	4μm,17.8s						
LIC	**Lamto**	**12.87**	**53**	*eP*	**P**	**23 26 52.4**	**-6.5**
	370nm,1.1s						
TIC	**Toumodi**	**13.13**	**51**	*eP*	**P**	**23 26 51.8**	**-11**
	102nm,0.2s						
KIC	**Kosan Boka**	**13.18**	**53**	*eP*	**P**	**23 26 55.3**	**-7.7**
	836nm,1.1s						
DBIC	**Dimbokro**	**13.28**	**52**	Pn	**P**	**23 26 58.8**	**-5.5**
	2.8nm,0.3s,baz=219,slow=15,SNR=63						
DBIC				Sn	**S**	**23 29 14.5**	**-18**
	9.5nm,0.3s,baz=141,slow=14,SNR=8.1						
DBIC				LR	LR	23 31 02.2	
	comp=Z,5μm,18.7s,baz=214,slow=33						
BDFB	**Brasilia**	**35.14**	**245**	P	**P**	**23 30 47.6**	**-1.5**
	7.4nm,1.0s,mb4.6,baz=66,slow=8.2,SNR=5.6						
BDFB				LR	LR	23 42 49.1	
	comp=Z,503nm,18.1s,MS4.3,baz=76,slow=32						
TSUM	**Tsumeb**	**36.63**	**121**	P	**P**	**23 31 01.5**	**-0.2**
	7.5nm,0.9s,mb4.5,baz=286,slow=10,SNR=7.2						
TSUM				LR	LR	23 42 50.9	
	comp=Z,718nm,21.9s,MS4.4,baz=273,slow=31						
ESDC	**Sonseca Array**	**42.38**	**13**	P	**P**	**23 31 47.2**	**-2.1**
	1.6nm,0.9s,mb3.6,baz=294,slow=37,SNR=3.4						
ESDC				LR	LR	23 49 47.8	
	comp=Z,862nm,18.6s,MS4.7,baz=195,slow=37						
ESDC	**Sonseca Array**	**42.38**	**13**	P	**P**	**23 31 47.1**	**-2.1**
ESDC				LR	LR	23 49 47.8	
SUR	**Sutherland**	**45.71**	**136**	P	**P**	**23 32 16.6**	**+0.4**
	6.9nm,0.9s,mb4.6,baz=276,slow=15,SNR=5.7						
SUR				LR	LR	23 48 00.3	
	comp=Z,426nm,18.9s,MS4.4,baz=310,slow=32						
LBTB	**Lobatse**	**45.79**	**124**	*eP*	**P**	**23 32 15.2**	**-1.7**
	9.6nm,0.8s,mb4.8						
ETSF	**Etsaut**	**46.26**	**15**	*eP*	**P**	**23 32 20.9**	**+0.5**
	51nm,1.4s,mb5.0						
EPF	**Esparros**	**46.62**	**16**	*eP*	**P**	**23 32 23.6**	**+0.4**
	47nm,1.3s,mb5.0						
CPUP	**Villa Florida**	**47.26**	**235**	P	**P**	**23 32 29.0**	**+0.5**
	4.6nm,0.8s,mb4.5,baz=99,slow=9.2,SNR=10						
CPUP				LR	LR	23 49 48.6	
	comp=Z,593nm,21.7s,MS4.5,baz=91,slow=33						
CPUP	**Villa Florida**	**47.26**	**235**	P	**P**	**23 32 29.0**	**+0.5**
CPUP				LR	LR	23 49 48.6	
MTLF	**Montolieu**	**47.44**	**17**	*eP*	**P**	**23 32 30.2**	**+0.5**
	50nm,1.6s,mb4.9						
LFF	**La Frestale**	**48.50**	**15**	*eP*	**P**	**23 32 39.1**	**+1.2**
LASF	**Ste Croix**	**48.61**	**18**	*eP*	**P**	**23 32 39.5**	**+0.7**
	105nm,1.6s,mb5.3						
CAF	**Calviac**	**48.84**	**16**	*eP*	**P**	**23 32 40.3**	**-0.3**
LBL	**Lubilhac**	**49.47**	**17**	*eP*	**P**	**23 32 45.7**	**+0.3**
VIVF	**Saint-Julien-l**	**49.57**	**19**	*eP*	**P**	**23 32 46.7**	**+0.5**
	36nm,1.1s,mb5.0						
MFF	**Saint Martin d**	**49.83**	**14**	*eP*	**P**	**23 32 47.9**	**-0.3**
	18nm,1.1s,mb4.7						
PYM	**Petit Puy Mans**	**49.87**	**17**	*eP*	**P**	**23 32 48.3**	**-0.2**
ORIF	**Oris-en-Rattie**	**50.02**	**20**	*eP*	**P**	**23 32 49.4**	**-0.2**
	33nm,1.2s,mb4.9						
ORIF				*eR*			
	1μm,18.5s						
TCF	**Toulx Ste Croi**	**50.14**	**16**	*eP*	**P**	**23 32 50.7**	**+0.2**
MBDF	**Montbardon**	**50.15**	**20**	*eP*	**P**	**23 32 50.8**	**+0.1**
	51nm,1.1s,mb5.2						
AGO	**Saint Agoulin**	**50.18**	**17**	*eP*	**P**	**23 32 49.1**	**-1.7**
PLDF	**La Plantade**	**50.25**	**17**	*eP*	**P**	**23 32 53.0**	**+1.6**
BNI	**Bardonecchia**	**50.40**	**20**	P	**P**	**23 32 52.9**	**+0.4**
PCRV	**Puerto La Cruz**	**50.48**	**285**	LR	LR	23 52 32.2	
	comp=Z,138nm,19.2s,MS4.0,baz=250,slow=34						
LPG	**La Plagne**	**50.82**	**20**	*eP*	**P**	**23 32 56.0**	**+0.3**
	28nm,1.1s,mb4.8						
LPL	**La Plagne**	**50.83**	**20**	*eP*	**P**	**23 32 56.5**	**+0.7**
	40nm,1.1s,mb5.0		

ZST	**Bratislava**	**57.05**	**25**	*e*P	**P**	**23 33 43.8**	**+2.2**
ZST				*e*		23 33 49.6	
ZST				*e*		23 34 04.8	
ZST				*e*		23 34 19.6	
PRU	**Pruhonice**	**57.43**	**22**	*e*P	**P**	**23 33 44.1**	**-0.1**
PRU				*e*S	**S**	**23 41 40.1**	**+1.0**
PRU				L		23 58 00.0	
	comp=Z,0.5nm,14.0s						
PVCC	**Panska Ves**	**57.88**	**22**	L		23 58 00.0	
	comp=Z,0.6nm,18.1s						
BRG	**Berggiesshubel**	**57.93**	**21**	*e*P	**P**	**23 33 48.4**	**+0.7**
BRG				*e*SS	SS	23 45 46.0	+7.8
BRG				pmax	pmax		
	comp=Z,9.0nm,1.2s,mb4.7						
BRG				MLR	MLR		
	comp=N,600nm,16.9s,MS4.8						
BRG				MLR	MLR		
	comp=E,330nm,16.9s,MS4.8						
BRG				MLR	MLR		
	comp=Z,620nm,16.9s,MS4.8						
BRG	**Berggiesshubel**	**57.93**	**21**	*e*P	**P**	**23 33 48.4**	**+0.7**
	comp=Z,9.1nm,1.2s,mb4.7						
BRG				*e*		23 34 11.7	
BRG				*e*S	**S**	**23 41 35.0**	**-11**
BRG				*e*SS	SS	23 45 46.0	+7.8
CLL	**Collm**	**57.95**	**21**	P	**P**	**23 33 50.6**	**+2.8**
	comp=Z,logA/T=0.9,mb4.7						
CLL				*e*		23 34 03.0	
CLL				*e*PP	PP	23 35 54.0	-4.0
CLL				*e*		23 36 00.0	
CLL				*e*PPP	PPP	23 37 20.0	-0.2
CLL				*e*S	**S**	**23 41 48.0**	**+2.1**
CLL	**Collm**	**57.95**	**21**	*i* P	**P**	**23 33 50.6**	**+2.8**
CLL				*e*S	**S**	**23 41 48.0**	**+2.1**
CLL				pmax	pmax		
	comp=Z,10.0nm,1.2s,mb4.7						
CLL	**Collm**	**57.95**	**21**	*i* P	**P**	**23 33 50.6**	**+2.8**
	comp=Z,10.0nm,1.2s,mb4.7						
CLL				*e*		23 34 03.0	
CLL				*e*S	**S**	**23 41 48.0**	**+2.1**
VYHS	**Vyhne**	**58.03**	**26**	*e*P	**P**	**23 33 47.8**	**-0.6**
VYHS				*e*		23 33 57.1	
VYHS				*e*		23 34 05.1	
VYHS				*e*		23 34 12.3	
PSZ	**Piszkesteto**	**58.07**	**27**⇓	*e*P	**P**	**23 33 50.2**	**+1.5**
PSZ	**Piszkesteto**	**58.07**	**27**	*e*P	**P**	**23 33 49.0**	**+0.3**
	comp=Z,12nm,1.0s,mb4.9						
DPC	**Dobruska-Polom**	**58.41**	**23**	*e*P	**P**	**23 33 51.1**	**+0.1**
DPC				*e*S	**S**	**23 41 51.4**	**-0.6**
DPC				L		23 56 40.0	
	comp=Z,0.3nm,19.8s						
UPC	**Upice**	**58.41**	**23**	*e*P	**P**	**23 33 51.6**	**+0.5**
UPC				*ex*	x	23 34 09.7	
OKC	**Ostrava-Krasne**	**58.75**	**25**	*e*P	**P**	**23 33 54.6**	**+1.2**
OKC				L		23 58 30.0	
	comp=Z,0.3nm,16.7s						
KSP	**Ksiaz**	**58.79**	**23**	*e*P	**P**	**23 33 56.6**	**+2.9**
ROSC	**El Rosal**	**59.33**	**277**	LR	LR	23 57 46.4	
	comp=Z,375nm,20.9s,MS4.5,baz=129,slow=34						
NIE	**Niedzica**	**59.37**	**26**	*e*P	**P**	**23 33 59.4**	**+1.7**
MLR	**Muntele Rosu**	**59.41**	**33**↑	*i*P	**P**	**23 34 03.3**	**+5.2**
CRVS	**Cervenica-Dubn**	**59.51**	**27**	*e*P	**P**	**23 34 00.7**	**+2.0**
CRVS				*e*		23 34 09.2	
CRVS				*e*		23 34 18.6	
CRVS				*e*		23 35 02.0	
OJC	**Ojcow**	**59.74**	**25**	*e*P	**P**	**23 34 00.7**	**+0.4**
VRI	**Vrincioaia**	**60.08**	**33**↑	*i*P	**P**	**23 34 07.1**	**+4.4**
KWP	**Kalwaria**	**60.60**	**27**	*e*P	**P**	**23 34 07.2**	**+1.0**
BRTR	**Keskin Array B**	**60.75**	**42**	P	**P**	**23 34 05.0**	**-2.3**
	comp=Z,2.6nm,0.8s,mb4.4,baz=256,slow=5.9,SNR=7.4						
BRTR				LR	LR	23 59 45.5	
	comp=Z,289nm,20.9s,MS4.4,baz=5.0,slow=36						
SUW	**Suwalki**	**63.94**	**24**	*e*P	**P**	**23 34 30.1**	**+1.7**
KONO	**Kongsberg**	**64.13**	**14**	*e*S	**S**	**23 42 56.8**	**-7.8**
KONO				AMS	AMS	00 03 22.0	
	comp=Z,387nm,20.0s,MS4.6						
AKASG	**Malin Array Be**	**64.43**	**30**	P	**P**	**23 34 28.1**	**-3.5**
	comp=Z,3.5nm,0.8s,mb4.5,baz=231,slow=7.3,SNR=22						
AKASG				LR	LR	00 04 30.3	
	comp=Z,726nm,18.2s,MS4.9,baz=230,slow=38						
NB2	**NORSAR Subarra**	**65.74**	**14**	P	**P**	**23 34 36.6**	**-3.3**
	comp=Z,8.1nm,1.1s,mb4.7,baz=207,slow=7.0						
NOA	**NORSAR Array B**	**65.74**	**14**	P	**P**	**23 34 36.1**	**-3.8**
	comp=Z,0.5nm,0.7s,mb3.6,baz=210,slow=12,SNR=4.1						
NOA				LR	LR	00 03 56.1	
	comp=Z,321nm,21.0s,MS4.5,baz=225,slow=37						
USHA	**Ushuaia**	**68.30**	**210**	LR	LR	23 56 58.8	
	comp=Z,604nm,21.5s,MS4.8,baz=66,slow=29						
KIV	**Kislovodsk**	**68.69**	**41**	*e*P	**P**	**23 34 55.9**	**-3.0**
KIV				pmax	pmax		
	comp=Z,10.0nm,1.0s,mb4.7						
KIV				pmax	pmax		
	comp=E,6.0nm,0.8s						
VNA1	**Neumayer--Stat**	**69.08**	**177**↑	*i*	**P**	**23 35 06.0**	**+5.2**
GOF	**Gofitskoye**	**69.38**	**40**	*e*P	**P**	**23 35 05.0**	**+1.9**
VNA2	**Neumayer--Watz**	**69.39**	**177**		**P**	**23 35 06.2**	**+3.4**
VNA3	**Neumayer Olymp**	**69.62**	**178**		**P**	**23 35 05.2**	**+1.1**
SCHG	**Schefferville**	**70.31**	**331**	LR	LR	00 01 45.5	
	comp=E,246nm,19.6s,MS4.5,baz=100,slow=32						
FINES	**FINESS Array B**	**70.37**	**20**	P	**P**	**23 35 05.7**	**-3.1**
	comp=E,3.6nm,0.9s,mb4.3,baz=201,slow=5.3,SNR=7.2						
FINES				LR	LR	00 06 44.9	
	comp=E,226nm,18.2s,MS4.5,baz=84,slow=37						
SNAA	**Sanae**	**70.41**	**176**	*e*P	**P**	**23 35 07.2**	**-1.7**
KAF	**Kangasniemi**	**70.93**	**19**	*ep*	**P**	**23 35 09.8**	**-2.4**
	baz=223,slow=5.9						
MOS	**Moscow**	**71.47**	**28**	*e*P	**P**	**23 35 19.0**	**+3.4**
MOS				pmax	pmax		
	comp=Z,60nm,0.8s,mb5.6						
SADO	**Sadowa**	**72.89**	**318**	LR	LR	00 00 09.9	
	comp=Z,162nm,19.9s,MS4.3,baz=274,slow=30						
TRO	**Tromso**	**74.74**	**12**	*e*S	S	23 45 05.7	-3.6
TRO				*e*SS	SS	23 49 55.0	-4.2
TRO				AMS	AMS	00 11 47.3	
	comp=Z,235nm,16.4s,MS4.6						
ARCES	**ARCESS Array B**	**76.12**	**14**	P	**P**	**23 35 40.8**	**-1.6**
	comp=Z,3.9nm,1.1s,mb4.3,baz=252,slow=2.9,SNR=3.4						
ARCES				LR	LR	00 10 19.2	
	comp=Z,494nm,20.1s,MS4.8,baz=228,slow=37						
DAG	**Danmarks Havn**	**78.31**	**359**	*i* P	**P**	**23 35 54.0**	**-0.4**
DAG	**Danmarks Havn**	**78.31**	**359**	*e*P	**P**	**23 35 54.0**	**-0.4**
KBS	**Kingsbay**	**81.70**	**5**	*e*PP	PP	23 39 14.5	-7.2
KBS				*e*S	S	23 46 22.5	-1.1
KBS				AMS	AMS	00 15 50.6	
	comp=Z,160nm,18.0s,MS4.4						
ARU	**Arti**	**82.47**	**33**⇓	*i*P	**P**	**23 36 17.0**	**+0.2**
ARU				*e*		23 39 25.5	
ARU				*e*S	S	23 46 27.1	-4.6
ARU				pmax	pmax		
	comp=Z,12nm,1.5s,mb4.6						
ARU				MLR	MLR		
	comp=Z,300nm,20.0s,MS4.7						
ARU				MLR	MLR		
	comp=N,100nm,19.0s,MS4.5						
ARU				MLR	MLR		
	comp=E,200nm,19.0s,MS4.5						
ARU	**Arti**	**82.47**	**33**	*e*P	**P**	**23 36 16.8**	**0.0**
	comp=E,23nm,1.4s,mb4.9						
SVE	**Sverdlovsk**	**83.67**	**32**⇓	*e*P	**P**	**23 36 23.2**	**+0.2**
SVE				MLR	MLR		
	comp=Z,500nm,19.0s,MS4.9						
SVE				MLR	MLR		
	comp=N,100nm,17.0s,MS4.9						
SVE				MLR	MLR		
	comp=E,400nm,17.0s,MS4.9						
MAW	**Mawson**	**84.01**	**158**	LR	LR	00 07 06.9	
	comp=E,152nm,18.6s,MS4.4,baz=106,slow=31						
ULM	**Lac du Bonnet**	**85.20**	**321**	LR	LR	00 10 10.4	
	comp=E,150nm,20.4s,MS4.4,baz=69,slow=33						
QSPA	**South Pole Qui**	**88.47**	**180**	*e*P	**P**	**23 36 47.8**	**+1.6**
	comp=E,10.0nm,1.1s,mb5.0						
QSPA				LR	LR		
	comp=Z,210nm,19.9s,MS4.6						
BRVK	**Borovoye**	**88.61**	**37**	*e*P	**P**	**23 36 47.6**	**+0.2**
BVAR	**Borovoye Array**	**88.67**	**37**	LR	LR	00 19 52.2	
	comp=Z,257nm,18.6s,MS4.7,baz=190,slow=38						
TXAR	**Lajitas Array**	**89.36**	**299**	P	**P**	**23 36 49.7**	**-1.8**
	comp=Z,0.1nm,0.3s,mb3.6,baz=264,slow=19,SNR=4.5						
TXAR				LR	LR	00 10 20.2	
	comp=Z,66nm,20.6s,MS4.0,baz=130,slow=31						
MNTX	**Cornudas Mount**	**90.91**	**302**	P	**P**	**23 36 58.4**	**-0.3**
ANMO	**Albuquerque**	**91.87**	**305**	P	**P**	**23 37 05.4**	**+2.4**
PDAR	**Pinedale Array**	**94.22**	**313**	LR	LR	00 18 40.5	
	comp=Z,124nm,18.2s,MS4.4,baz=92,slow=35						
YKA	**Yellowknife Ar**	**95.73**	**333**	P	**P**	**23 37 19.1**	**-1.0**
	comp=Z,0.4nm,1.0s,mb3.8,baz=86,slow=5.1,SNR=3.4						
YKA	**Yellowknife Ar**	**95.73**	**333**	P	**P**	**23 37 19.1**	**-1.0**
MKAR	**Makanchi Array**	**96.37**	**43**	P	**P**	**23 37 21.6**	**-1.8**
	comp=Z,0.3nm,0.9s,mb3.7,baz=124,slow=4.4,SNR=2.5						
MKAR				LR	LR	00 28 52.1	
	comp=Z,200nm,18.3s,MS4.6,baz=279,slow=40						
ZAL	**Zalesovo**	**97.25**	**36**	LR	LR	00 26 07.1	
	comp=Z,285nm,18.2s,MS4.8,baz=249,slow=38						
VNDA	**Vanda**	**100.95**	**179**	P	P	23 37 42.4	-1.0
PPT	**Papeete**	**131.10**	**245**	*e*SKSac		23 50 14.0	
PPT				*e*SS	SS	00 03 11.5	+16
PPT				*e*R		00 25 14.1	
	comp=Z,232nm,24.0s						
ASAR	**Alice Springs**	**140.91**	**132**	PKhKP		23 43 16.8	
	comp=Z,0.3nm,0.7s,baz=229,slow=39,SNR=3.1						
ASAR				PKP	PKPdf	23 43 24.6	-2.9
	comp=Z,0.9nm,0.8s,baz=232,slow=2.2,SNR=7.1						
WRA	**Warramunga Arr**	**143.31**	**127**	PKhKP		23 43 25.4	
	comp=Z,1.0nm,0.5s,baz=235,slow=2.2,SNR=20						
CTA	**Charters Tower**	**151.85**	**141**	PKPbc	PKPdf	23 43 50.6	+4.9
	comp=Z,3.2nm,0.8s,baz=276,slow=4.9,SNR=3.5						

*IDC **12** 23:27:37.3±2.9, 32.37S×178.10W, mb4.0/2, mb1 4.2/3, mb1mx3.9/14, ML3.5/1, Error ellipse: s-maj=69.4km s-min=35.9km az=117.0*

ISC 12 23:27:40.4±5.8, 32.5S±0.2×178.1W±0.9, h33km, n4, σ0§33/4, mb3.9/2, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**6.95**	**213**	Pn	**Pn**		**23 29 22.6**	**0.0**
	0.9nm,0.3s,baz=148,slow=16,SNR=7.8							
URZ				Sn	**Sn**		**23 30 41.3**	**0.0**
	2.7nm,0.3s,baz=190,slow=14,SNR=13							
ASAR	**Alice Springs**	**42.96**	**269**	P	**P**		**23 35 38.4**	**+0.2**
	1.5nm,0.8s,mb3.8,baz=107,slow=7.4,SNR=9.6							
WRA	**Warramunga Arr**	**44.13**	**274**	P	**P**		**23 35 47.5**	**-0.2**
	1.7nm,0.6s,mb4.0,baz=112,slow=8.1,SNR=29							
FINES	**FINESS Array B**	**147.08**	**339**	PKPbc	PKPdf		23 47 20.1	+3.1
	0.9nm,0.7s,baz=47,slow=3.0,SNR=8.4							

IDC 12 23:35:22.6±0.8, 6.71N×72.92W, h161km±10km, mb2.8/1, mb1 3.3/3, mb1mx3.0/21, MS2.8/1, Ms1 2.8/1, ms1mx2.5/8, Error ellipse: s-maj=55.9km s-min=7.5km az=131.0, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
ROSC	**El Rosal**	**2.31**	**217**	P	P		23 36 04.2	+1.7
	14nm,0.3s,baz=69,slow=9.7,SNR=22							
ROSC				S	S		23 36 33.4	+0.2
	54nm,0.3s,baz=95,slow=23,SNR=14							
SDV	**Santo Domingo**	**3.13**	**46**	P	P		23 36 14.1	+1.3
	14nm,0.3s,baz=258,slow=3.8,SNR=59							
SDV				S	S		23 36 50.7	-0.6
	34nm,0.3s,baz=79,slow=20,SNR=46							
PCRV	**Puerto La Cruz**	**8.89**	**67**	LR	LR		23 41 00.6	
	comp=Z,70nm,21.3s,baz=337,slow=38							
YKA	**Yellowknife Ar**	**63.44**	**340**	P	P		23 45 34.8	-2.4
	0.2nm,0.6s,baz=132,slow=6.5,SNR=7.1							
YKA				pP	pP		23 46 10.3	-5.2
	0.1nm,0.5s,baz=131,slow=6.6,SNR=2.8							
ASAR	**Alice Springs**	**149.21**	**234**	PKPbc	PKPdf		23 54 52.2	+3.9
	0.6nm,0.5s,baz=119,slow=3.3,SNR=8.7							
WRA	**Warramunga Arr**	**150.46**	**241**	PKPbc	PKPdf		23 54 55.8	+5.5
	0.6nm,0.4s,baz=108,slow=2.6,SNR=30							

*NEIC **12** 23:37:45.0, 40.69S×175.80E, h27km, ML4.3(WEL), After WEL.*

WEL 12 23:37:45.0±0.1, 40.67S×175.80E, h28km, ML4.3/15, 5C-4D, Error ellipse: s-maj=1.5km s-min=0.8km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
MRZ	**Mangatainoka R**	**0.17**	**273**	⇓P*	Pb		23 37 50.5	0.0
MRZ				S*	Sb		23 37 54.6	+0.3
BFZ	**Birch Farm**	**0.34**	**92**	⇑P*	Pb		23 37 53.6	+0.9
BFZ				S*	Sb		23 37 59.2	+1.1
BFZ	**Birch Farm**	**0.34**	**92**	P	Pb		23 37 53.7	+0.9
BFZ				S	Sb		23 38 00.7	+2.6
MTW	**Mount Morrison**	**0.54**	**205**	⇓P*	Pb		23 37 56.6	+0.7
MTW				S*	Sb		23 38 05.1	+1.8
MTW	**Mount Morrison**	**0.54**	**205**	P	Pb		23 37 56.6	+0.8
TSZ	**Takapari Road**	**0.62**	**12**	⇑P*	Pb		23 37 56.3	-0.9
TSZ				S*	Sb		23 38 04.8	-0.9
TSZ	**Takapari Road**	**0.62**	**12**	P	Pb		23 37 56.4	-0.9
KIW	**Kapiti Island**	**0.70**	**254**	⇑P*	Pb		23 37 58.8	+0.2
KIW	**Kapiti Island**	**0.70**	**254**	P	Pb		23 37 58.8	+0.3
CAW	**Cannon Point**	**0.70**	**232**	P*	Pb		23 37 58.7	+0.2
CAW				S*	Sb		23 38 08.7	+0.7
CAW	**Cannon Point**	**0.70**	**232**	P	Pb		23 37 58.8	+0.2
MSWZ	**Moikau Station**	**0.85**	**209**	P*	Pb		23 38 00.4	-0.6
MSWZ				S*	Sb		23 38 14.4	+2.3
WEL	**Wellington**	**0.99**	**231**	P*	Pb		23 38 02.5	-0.9
WEL				S*	Sb		23 38 15.9	-0.3
WEL	**Wellington**	**0.99**	**231**	P	Pn		23 38 02.7	-0.5
MRW	**Makara Radio**	**1.00**	**236**	⇑P*	Pb		23 38 02.7	-0.3
MRW				S*	Sb		23 38 16.3	-0.1
MRW	**Makara Radio**	**1.00**	**236**	P	Pn		23 38 02.7	-0.6
BHW	**Baring Head**	**1.02**	**223**	P*	Pb		23 38 02.8	-1.1
BHW	**Baring Head**	**1.02**	**223**	P	Pn		23 38 02.8	-0.7
PWZ	**Pawanui**	**1.04**	**52**	PN	Pn		23 38 02.4	-1.4
PWZ	**Pawanui**	**1.04**	**52**	P	Pn		23 38 02.6	-1.2
SNZO	**South Karori**	**1.04**	**232**	⇑P*	Pb		23 38 03.2	-1.1
SNZO				P*	Pb		23 38 03.3	-1.0
SNZO	**South Karori**	**1.04**	**232**	P	Pn		23 38 03.3	-0.6
WAZ	**Wanganui**	**1.11**	**326**	PN	Pn		23 38 04.7	-0.1
WAZ	**Wanganui**	**1.11**	**326**	P	Pn		23 38 05.0	+0.2
WNVZ	**Wahianoa**	**1.35**	**353**	PN	Pn		23 38 07.7	-0.6
DRZ	**Dome Shelter**	**1.41**	**353**	PN	Pn		23 38 09.1	0.0
DRZ	**Dome Shelter**	**1.41**	**353**	P	Pn		23 38 09.3	+0.2
TUVZ	**Tukino**	**1.41**	**355**	PN	Pn		23 38 08.5	-0.6
TUVZ	**Tukino**	**1.41**	**355**	P	Pn		23 38 08.5	-0.6
FWVZ	**Far West T-bar**	**1.43**	**352**	PN	Pn		23 38 09.0	-0.4
FWVZ	**Far West T-bar**	**1.43**	**352**	P	Pn		23 38 09.3	-0.1
WPVZ	**Whakapapa**	**1.48**	**352**	PN	Pn		23 38 10.2	+0.1
CNZ	**Chateau**	**1.48**	**352**	PN	Pn		23 38 10.1	-0.1
CNZ	**Chateau**	**1.48**	**352**	P	Pn		23 38 10.3	+0.1
NGZ	**Ngauruhoe**	**1.50**	**354**	PN	Pn		23 38 10.2	-0.3
NGZ	**Ngauruhoe**	**1.50**	**354**	P	Pn		23 38 10.2	-0.3
WTVZ	**West Tongariro**	**1.56**	**354**	PN	Pn		23 38 11.0	-0.3
KAVZ	**Karewarewa**	**1.58**	**356**	PN	Pn		23 38 11.1	-0.5
KAVZ	**Karewarewa**	**1.58**	**356**	P	Pn		23 38 11.3	-0.2
BKZ	**Black Stump Fm**	**1.59**	**20**	⇓PN	Pn		23 38 10.1	-1.7
BKZ	**Black Stump Fm**	**1.59**	**20**	P	Pn		23 38 10.1	-1.7
TUWZ	**Tuamarina**	**1.59**	**241**	PN	Pn		23 38 10.1	-1.7
CMWZ	**Cape Campbell**	**1.61**	**227**	PN	Pn		23 38 11.3	-0.7
MGZ	**Maungaku**	**1.68**	**353**	PN	Pn		23 38 12.1	-0.9
MGZ	**Maungaku**	**1.68**	**353**	P	Pn		23 38 12.4	-0.6
KATZ	**Kakaramea**	**1.70**	**357**	PN	Pn		23 38 12.3	-0.9
KATZ	**Kakaramea**	**1.70**	**357**	P	Pn		23 38 12.9	-0.3
VRZ	**Vera Road**	**1.74**	**332**	PN	Pn		23 38 13.0	-0.8
VRZ	**Vera Road**	**1.74**	**332**	P	Pn		23 38 13.6	-0.3
RAEZ	**Rainy Point**	**1.75**	**322**	PN	Pn		23 38 14.1	0.0
RAEZ	**Rainy Point**	**1.75**	**322**	P	Pn		23 38 14.5	+0.4
BSWZ	**Blackbirch Sta**	**1.79**	**234**	PN	Pn		23 38 12.4	-2.1
RATZ	**Rangitukua**	**1.80**	**359**	PN	Pn		23 38 13.9	-0.9
RATZ	**Rangitukua**	**1.80**	**359**	P	Pn		23 38 13.9	-0.9
DFE	**Dawson Falls**	**1.87**	**315**	PN	Pn		23 38 16.3	+0.6
DFE	**Dawson Falls**	**1.87**	**315**	P	Pn		23 38 16.3	+0.6
NNZ	**Nelson**	**1.91**	**253**	PN	Pn		23 38 14.8	-1.5
NNZ	**Nelson**	**1.91**	**253**	P	Pn		23 38 14.9	-1.4
NEZ	**North Egmont**	**1.92**	**316**	PN	Pn		23 38 16.1	-0.3
NEZ	**North Egmont**	**1.92**	**316**	P	Pn		23 38 16.6	+0.2
NRZ	**Ngariki Road**	**1.96**	**312**	PN	Pn		23 38 17.4	+0.4
NRZ	**Ngariki Road**	**1.96**	**312**	P	Pn		23 38 17.4	+0.4
WATZ	**Wairara**	**1.96**	**359**	PN	Pn		23 38 15.5	-1.5
WATZ	**Wairara**	**1.96**	**359**	P	Pn		23 38 15.6	-1.4
PKE	**Pukeiti**	**2.03**	**316**	PN	Pn		23 38 18.1	0.0
PKE	**Pukeiti**	**2.03**	**316**	P	Pn		23 38 18.7	+0.7
NWEZ	**Newall Road**	**2.04**	**313**	PN	Pn		23 38 18.3	+0.1
NWEZ	**Newall Road**	**2.04**	**313**	P	Pn		23 38 18.7	+0.6
KNZ	**Kokohu**	**2.19**	**42**	PN	Pn		23 38 17.2	-3.2
KNZ	**Kokohu**	**2.19**	**42**	*e*P	Pn		23 38 17.1	-3.3
HIZ	**Hauiti**	**2.27**	**341**	PN	Pn		23 38 20.4	-1.2
KHZ	**Kahutara**	**2.43**	**223**	PN	Pn		23 38 20.8	-3.0
KHZ	**Kahutara**	**2.43**	**223**	*e*P	Pn		23 38 20.9	-2.9
THZ	**Tophouse**	**2.44**	**243**	PN	Pn		23 38 21.3	-2.7
QRZ	**Quartz Range**	**2.49**	**265**	PN	Pn		23 38 22.2	-2.4
QRZ	**Quartz Range**	**2.49**	**265**	*e*P	Pn		23 38 22.5	-2.1
URZ	**Urewera**	**2.61**	**23**	⇓PN	Pn		23 38 22.5	-3.9
URZ	**Urewera**	**2.61**	**23**	*e*P	Pn		23 38 22.5	-3.9
MWZ	**Matawai**	**2.69**	**30**	PN	Pn		23 38 23.6	-3.9
MWZ	**Matawai**	**2.69**	**30**	P	Pn		23 38 23.6	-3.9
TOZ	**Tahuroa Road**	**2.95**	**355**	PN	Pn		23 38 32.2	+1.1
TOZ	**Tahuroa Road**	**2.95**	**355**	*e*P	Pn		23 38 32.2	+1.1
DSZ	**Denniston Nort**	**3.20**	**249**	PN	Pn		23 38 31.6	-3.1
DSZ	**Denniston Nort**	**3.20**	**249**	P	Pn		23 38 31.8	-2.9
LTZ	**Lake Taylor**	**3.38**	**230**	PN	Pn		23 38 33.6	-3.7
LTZ	**Lake Taylor**	**3.38**	**230**	*e*P	Pn		23 38 33.7	-3.6
CRLZ	**Canterbury Las**	**3.74**	**218**	PN	Pn		23 38 38.9	-3.5
MQZ	**McQueen's Vall**	**3.83**	**217**	PN	Pn		23 38 41.1	-2.5
MQZ	**McQueen's Vall**	**3.83**	**217**	*e*P	Pn		23 38 42.3	-1.3
WVZ	**Waitaha Valley**	**4.48**	**236**	PN	Pn		23 38 48.6	-4.2
RPZ	**Rata Peaks**	**4.66**	**228**	PN	Pn		23 38 51.3	-4.1
ODZ	**Otahua Downs**	**5.78**	**219**	PN	Pn		23 39 06.4	-4.8
ODZ	**Otahua Downs**	**5.78**	**219**	*e*P	Pn		23 39 06.4	-4.9
TUZ	**Tuapeka**	**6.93**	**218**	PN	Pn		23 39 23.0	-4.5

*NNC **12** 23:41:36.7±8.1, 42.05N×71.76E, mpv2.3, Error ellipse: s-maj=137.0km s-min=67.3km az=49.0*
*KNET **12** 23:41:37.3±0.5, 42.06N×72.05E, h1km±1km, ml2.2, Error ellipse: s-maj=5.1km s-min=2.4km az=173.0*

ISC 12 23:41:37.3±1.6, 42.1N±0.1×71.82E±0.08, h10km, n6, σ1§10/11, 8C-3D, Kyrgyzstan

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
AML	**Almayashu**	**1.40**	**86**	⇑P	**Pn**		**23 42 01.1**	**-1.8**
	7.8nm,0.2s,SNR=13							
AML				⇑S	**Sb**		**23 42 19.6**	**-1.2**
	20nm,0.3s							
KK31	**Karatay Array**	**1.42**	**318**	⇑P	**Pn**		**23 42 02.7**	**-0.6**
	0.7nm,0.2s,baz=142,slow=17,SNR=29							
KK31				⇑S	**Sb**		**23 42 22.0**	**+0.5**
	3.4nm,0.3s,baz=137,slow=32,SNR=8.7							
EKS2	**Erkin-Say**	**1.57**	**67**	⇓P	**Pn**		**23 42 04.3**	**-1.1**
	3.8nm,0.1s,SNR=14							
EKS2				⇑S	**Sb**		**23 42 25.5**	**-0.3**
	3.0nm,0.2s							
UCH	**Uchtor**	**2.01**	**84**	⇑P	**Pn**		**23 42 12.3**	**+0.6**
	4.1nm,0.2s,SNR=8.8							
UCH				⇓S	**Sn**		**23 42 38.9**	**+1.8**
	19nm,0.3s							
AAK	**Ala-Archa**	**2.06**	**73**	⇓P	**Pn**		**23 42 13.3**	**+0.8**
	3.7nm,0.2s,SNR=8.9							
KZA	**Kyzart**	**2.55**	**88**	⇑P	**Pn**		**23 42 20.5**	**+1.0**
	7.5nm,0.4s,SNR=10							
KZA				⇑S	**Sn**		**23 42 54.9**	**+4.1**
	32nm,0.8s							

*NIED **12** 23:53:00, 30.30N×142.30E, h5km, Mw4.4 Best double couple: M0 4.16×10^15 NP1:φs 191°, δ84°, λ-99°. NP2:φs 64°, δ11°, λ-37°.*
*BJI **12** 23:53:09.8, 30.04N×143.08E, h9km, mB4.7, mb4.4, Ms4.4, Msz4.0*
*JMA **12** 23:53:16.6±0.2, 30.29N×142.25E, h12km, M4.4*
*IDC **12** 23:53:16.5±0.5, 30.18N×142.09E, mb4.3/18, mb1 4.4/20, mb1mx4.4/25, ML3.9/2, MS3.0/2, Ms1 3.0/2, ms1mx2.8/34, Error ellipse: s-maj=18.4km s-min=13.4km az=91.0*
*NEIC **12** 23:53:17.9±4.3, 30.14N×142.09E, h9km±26km, mb4.5/5, Error ellipse: s-maj=9.9km s-min=7.1km az=108.0*
*MOS **12** 23:53:21.5±1.2, 30.27N×141.97E, h46km, mb4.7/2, Error ellipse: s-maj=22.4km s-min=11.0km az=108.3*

**ISC 12 23:53:17.6±1.7, 30.25N±0.03×142.02E±0.

NEW	**Newport**	**74.70**	**43**	*e*P	**P**	**00 04 58.2**	**0.0**
	comp=Z,2.3nm,0.6s,mb4.3							
FINES	**FINESS Array B**	**75.07**	**333**	P	**P**	**00 05 00.1**	**+0.1**
	comp=Z,0.9nm,0.5s,mb4.0,baz=67,slow=4.5,SNR=15							
WALA	**Waterton Lakes**	**76.17**	**41**	*e*P	**P**	**00 05 06.3**	**-0.2**
	comp=Z,3.9nm,0.7s,mb4.5							
HRY	**Holter Researc**	**78.58**	**42**	P	**P**	**00 05 20.0**	**0.0**
HLID	**Hailey**	**78.66**	**46**	P	**P**	**00 05 20.8**	**+0.3**
	comp=Z,0.5nm,0.6s,mb3.6							
NVAR	**Mina Array Bea**	**78.70**	**52**	P	**P**	**00 05 21.7**	**+0.9**
	comp=Z,3.1nm,0.7s,mb4.3,baz=308,slow=4.3,SNR=12							
NVAR	**Mina Array Bea**	**78.70**	**52**	P	**P**	**00 05 21.7**	**+0.9**
NB2	**NORSAR Subarra**	**80.64**	**338**	P	**P**	**00 05 31.0**	**+0.2**
	comp=Z,2.1nm,0.8s,mb4.1,baz=39,slow=5.3							
NOA	**NORSAR Array B**	**80.64**	**338**	P	**P**	**00 05 31.1**	**+0.4**
	comp=Z,1.5nm,0.7s,mb4.0,baz=41,slow=5.4,SNR=7.9							
HWUT	**Hardware Ranch**	**81.48**	**47**	P	**P**	**00 05 35.5**	**-0.1**
PDAR	**Pinedale Array**	**82.09**	**45**	P	**P**	**00 05 39.2**	**+0.5**
	comp=Z,1.2nm,0.8s,mb3.9,baz=291,slow=2.9,SNR=12							
FRB	**Frobisher Bay**	**83.25**	**13**	P	**P**	**00 05 44.5**	**+0.2**
	comp=Z,8.9nm,1.1s,mb4.7,baz=88,slow=7.8,SNR=3.5							
BRTR	**Keskin Array B**	**83.77**	**313**	P	**P**	**00 05 48.6**	**+1.2**
	comp=Z,2.7nm,0.8s,mb4.4,baz=97,slow=3.2,SNR=12							
PV10	**Paradox Valley**	**84.89**	**48**	*e*P	**P**	**00 05 54.5**	**+1.4**
RW3	**Ridgway**	**85.83**	**48**	*e*P	**P**	**00 05 59.6**	**+1.8**
TXAR	**Lajitas Array**	**93.83**	**53**	P	**P**	**00 06 36.8**	**+1.1**
	comp=Z,2.8nm,0.7s,mb4.8,baz=299,slow=2.9,SNR=41							
LPAZ	**La Paz**	**149.13**	**70**	PKPbc	PKPdf	00 13 08.7	+3.4
	comp=Z,2.4nm,0.8s,baz=340,slow=4.2,SNR=13							

IDC ***13*** *00:10:06.0±2.9,25.41N×123.24E,h173km±29km, mb3.4/13,mb1 3.6/14,mb1mx3.5/24, Error ellipse: s-maj=27.6km s-min=11.8km az=65.0*
NEIC ***13*** *00:10:06.4±0.7,25.40N×123.17E,h175km±6km, mb4.1/4, Error ellipse: s-maj=11.0km s-min=9.0km az=49.0*
JMA ***13*** *00:10:08.5±0.2,25.19N×123.14E,h159km±3km, M4.1*
ISC 13 00:10:05.0±0.4,25.29N±0.06×123.14E±0.05,h178km±5km, n39,σ1°02/52,mb3.7/16,Northeast of Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
YOJ	**Yonaguni jima**	**0.83**	**188**	P		**P**	**00 10 32.2**	**+0.6**
YOJ				*e*S		**S**	**00 10 51.1**	**-1.0**
IRIF	**Iriomote-Funau**	**1.09**	**151**	P		**P**	**00 10 34.0**	**+0.6**
IRIF				S		**S**	**00 10 53.7**	**-1.7**
JIJ	**Ishigaki jima**	**1.30**	**135**	P		**P**	**00 10 36.0**	**+0.8**
JIJ				S		**S**	**00 10 56.8**	**-1.8**
JKRS	**Kuro-shima**	**1.31**	**143**	P		**P**	**00 10 36.4**	**+1.0**
JKRS				S		**S**	**00 10 57.4**	**-1.4**
HATJ	**Hateruma jima**	**1.37**	**154**	P		**P**	**00 10 36.8**	**+0.9**
HATJ				S		**S**	**00 10 58.4**	**-1.4**
TATO	**Taipei**	**1.53**	**258**	*e*Pn		**P**	**00 10 38.7**	**+1.3**
JTJ	**Tarama**	**1.56**	**114**	P		**P**	**00 10 39.2**	**+1.5**
JTJ				S		**S**	**00 11 02.5**	**-0.4**
JMJ	**Miyako jima 2**	**2.01**	**103**	P		**P**	**00 10 44.4**	**+2.0**
JMJ				S		**S**	**00 11 11.3**	**+0.2**
JOGS	**Gusukube**	**2.12**	**104**	P		**P**	**00 10 45.9**	**+2.2**
JOGS				S		**S**	**00 11 13.9**	**+0.5**
JKE	**Kume jima 2**	**3.44**	**72**	P		**P**	**00 11 00.6**	**+0.9**
JKE				*e*S		**S**	**00 11 42.3**	**+0.5**
JAGN	**Aguni-jima**	**3.91**	**70**	P		**P**	**00 11 06.7**	**+1.1**
JAGN				S		**S**	**00 11 52.0**	**-0.4**
JJT2	**Tamagusuku 2**	**4.24**	**78**	P		**P**	**00 11 10.9**	**+1.0**
JIH	**Iheya**	**4.67**	**67**	P		**P**	**00 11 16.1**	**+0.7**
JOW	**Kunigami**	**4.87**	**71**	P		**P**	**00 11 17.5**	**-0.4**
	45nm,0.3s,baz=156,slow=13,SNR=67							
JOW				S		**S**	**00 12 11.3**	**-3.0**
	12nm,0.3s,baz=117,slow=26,SNR=2.9							
JOW	**Kunigami**	**4.87**	**71**	P		**P**	**00 11 18.0**	**+0.1**
JOW				S		**S**	**00 12 12.2**	**-2.2**
JTK	**Tokunoshima**	**5.77**	**63**	P		**P**	**00 11 29.1**	**-0.6**
JAM	**Amami Oshima**	**6.56**	**60**	P		**P**	**00 11 39.0**	**-1.1**
JMZ	**Minamidaito 2**	**7.32**	**84**	P		**P**	**00 11 48.9**	**-1.3**
JMZ				*e*S		**S**	**00 13 04.7**	**-7.4**
KS15	**Wonju Array Si**	**12.77**	**17**	*e*P		**P**	**00 13 07.5**	**+6.4**
SONM	**Songino Array**	**26.10**	**334**	P		**P**	**00 15 23.4**	**-0.5**
	0.9nm,0.7s,mb3.5,baz=157,slow=9.4,SNR=6.0							
MKAR	**Makanchi Array**	**38.81**	**314**	P		**P**	**00 17 14.1**	**0.0**
	3.4nm,0.4s,mb4.4,baz=101,slow=9.6,SNR=91							
MKAR				PcP		PcP	00 19 21.0	-1.1
	0.7nm,0.8s,baz=72,slow=3.8,SNR=4.0							
ZAL	**Zalesovo**	**40.32**	**325**	P		**P**	**00 17 26.1**	**-0.2**
	1.2nm,0.6s,mb3.7,baz=340,slow=2.9,SNR=4.4							
WRA	**Warramunga Arr**	**46.26**	**165**	P		**P**	**00 18 14.5**	**+0.1**
	1.0nm,0.4s,mb3.8,baz=347,slow=8.7,SNR=26							
BVAR	**Borovoye Array**	**47.97**	**320**	P		**P**	**00 18 26.2**	**-1.1**
	0.3nm,0.3s,mb3.4,baz=268,slow=39,SNR=3.6							
ASAR	**Alice Springs**	**49.77**	**167**	P		**P**	**00 18 43.0**	**+1.5**
	0.2nm,0.4s,mb3.1,baz=352,slow=12,SNR=4.8							
ARU	**Arti**	**55.31**	**322**	*e*P		**P**	**00 19 17.7**	**-4.4**
	3.1nm,0.5s,mb4.3							
STKA	**Stephens Creek**	**59.52**	**162**	*e*P		**P**	**00 19 51.7**	**-0.2**
	1.5nm,0.4s,mb4.2							
STKA	**Stephens Creek**	**59.52**	**162**	P		**P**	**00 19 51.0**	**-0.8**
	0.5nm,0.4s,mb3.7,baz=349,slow=16,SNR=2.4							
ARCES	**ARCESS Array B**	**69.18**	**338**	P		**P**	**00 20 53.0**	**-0.7**
	4.7nm,1.0s,mb4.2,baz=90,slow=5.4,SNR=5.1							
ARCES	**ARCESS Array B**	**69.18**	**338**	P		**P**	**00 20 53.0**	**-0.7**
FINES	**FINESS Array B**	**71.39**	**330**	P		**P**	**00 21 06.0**	**-1.2**
	2.5nm,1.0s,mb3.9,baz=52,slow=4.0,SNR=9.3							
INK	**Inuvik**	**71.53**	**22**	*e*P		**P**	**00 21 07.8**	**0.0**
	1.3nm,0.8s,mb3.7							
BRTR	**Keskin Array B**	**73.95**	**307**	P		**P**	**00 21 22.7**	**+0.2**
	0.6nm,0.5s,mb3.6,baz=87,slow=5.3,SNR=4.1							
RES	**Resolute Bay**	**77.28**	**10**	*e*P		**P**	**00 21 40.6**	**0.0**
	2.8nm,0.9s,mb3.9							
NB2	**NORSAR Subarra**	**78.08**	**333**	P		**P**	**00 21 44.9**	**-0.2**
	0.4nm,0.5s,mb3.3,baz=52,slow=5.8							
NOA	**NORSAR Array B**	**78.08**	**333**	P		**P**	**00 21 44.0**	**-1.1**
	0.4nm,0.5s,mb3.3,baz=57,slow=6.0,SNR=3.5							
YKA	**Yellowknife Ar**	**81.26**	**23**	P		**P**	**00 22 02.5**	**+0.4**
	0.6nm,0.7s,mb3.3,baz=314,slow=4.8,SNR=13							
YKA	**Yellowknife Ar**	**81.26**	**23**	P		**P**	**00 22 02.5**	**+0.4**
GERES	**GERESS Array B**	**83.11**	**321**	P		**P**	**00 22 12.3**	**+0.3**
	0.3nm,0.5s,mb3.3,baz=63,slow=6.0,SNR=4.0							

IDC ***13*** *00:26:01.9±0.8, 12.64N×44.36W, mb3.9/9,mb1 4.1/9, mb1mx3.8/21,MS3.6/13,Ms1 3.6/13,ms1mx3.5/24, Error ellipse: s-maj=36.6km s-min=17.7km az=109.0*
NEIC ***13*** *00:26:06.3±0.9, 12.12N×44.05W,h10km, mb3.9/5, Error ellipse: s-maj=26.8km s-min=20.7km az=116.0*
ISC 13 00:26:01.9±0.6,12.6N±0.1×44.3W±0.2,h10km,n23, σ0°91/15,mb3.8/11,MS3.6/13,Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
BDFB	**Brasilia**	**28.29**	**188**	P		**P**	**00 31 57.7**	**-0.1**
	3.5nm,1.0s,mb3.9,baz=351,slow=9.3,SNR=2.5							
BDFB				LR		LR	00 42 40.9	
	comp=Z,89nm,19.3s,MS3.4,baz=137,slow=35							
LPAZ	**La Paz**	**37.15**	**220**	P		**P**	**00 33 15.6**	**+0.6**
	2.8nm,0.9s,mb4.1,baz=20,slow=12,SNR=7.1							
LPAZ				LR		LR	00 48 11.6	
	comp=Z,132nm,18.8s,MS3.8,baz=27,slow=36							
LPAZ	**La Paz**	**37.15**	**220**	*e*P		**P**	**00 33 15.5**	**+0.5**
	1.9nm,0.9s,mb3.9							
DBIC	**Dimbokro**	**39.25**	**95**	*e*P		**P**	**00 33 32.4**	**-0.2**
	1.7nm,1.2s,mb3.6							
CPUP	**Villa Florida**	**40.72**	**198**	P		**P**	**00 33 44.3**	**-0.3**
	1.6nm,0.9s,mb3.6,baz=36,slow=13,SNR=4.5							
CPUP	**Villa Florida**	**40.72**	**198**	*e*P		**P**	**00 33 44.0**	**-0.5**
	1.1nm,0.8s,mb3.5							
LVC	**Limon Verde**	**42.52**	**215**	LR		LR	00 50 43.0	
	comp=Z,114nm,20.9s,MS3.7,baz=19,slow=35							
ESDC	**Sonseca Array**	**44.57**	**45**	P		**P**	**00 34 16.1**	**+0.2**
	1.3nm,0.8s,mb3.8,baz=245,slow=8.3,SNR=5.8							
ESDC				LR		LR	00 47 56.3	
	comp=Z,69nm,20.1s,MS3.6,baz=340,slow=30							
NATX	**Nacogdoches**	**49.95**	**301**	*e*P		**P**	**00 35 04.9**	**+6.7**
BORG	**Borgarnes**	**54.46**	**12**	LR		LR	00 52 10.7	
	comp=Z,111nm,18.2s,MS4.0,baz=121,slow=29							
ULM	**Lac du Bonnet**	**56.28**	**323**	LR		LR	00 54 08.7	
	comp=Z,52nm,20.8s,MS3.6,baz=45,slow=30							
TXAR	**Lajitas Array**	**57.36**	**297**	LR		LR	00 59 47.1	
	comp=Z,24nm,19.2s,MS3.3,baz=140,slow=35							
NOA	**NORSAR Array B**	**62.71**	**27**	LR		LR	00 57 18.9	
	comp=Z,41nm,19.7s,MS3.6,baz=280,slow=30							
PDAR	**Pinedale Array**	**63.46**	**312**	LR		LR	00 59 58.4	
	comp=Z,60nm,19.7s,MS3.8,baz=311,slow=32							
PSZ	**Piszkesteto**	**63.48**	**43**	*e*P		**P**	**00 36 39.6**	**+5.3**
	2.5nm,0.8s,mb4.4							

FINES	**FINESS Array B**	**69.65**	**29**	LR		LR	01 02 02.3	
	comp=Z,36nm,21.6s,MS3.6,baz=151,slow=31							
NVAR	**Mina Array Bea**	**69.83**	**306**	LR		LR	01 05 56.9	
	comp=Z,28nm,19.2s,MS3.5,baz=5.0,slow=34							
YKA	**Yellowknife Ar**	**69.87**	**332**	P		**P**	**00 37 12.7**	**-1.9**
	0.1nm,0.7s,mb2.9,baz=101,slow=6.7,SNR=3.3							
YKA				LR		LR	01 03 31.8	
	comp=Z,52nm,18.4s,MS3.8,baz=95,slow=32							
ARCES	**ARCESS Array B**	**71.25**	**20**	P		**P**	**00 37 22.2**	**-0.8**
	1.5nm,0.8s,mb4.0,baz=239,slow=7.1,SNR=4.8							
ARCES				LR		LR	01 04 24.4	
	comp=Z,37nm,18.8s,MS3.7,baz=240,slow=32							
BRTR	**Keskin Array B**	**72.80**	**52**	P		**P**	**00 37 33.5**	**+0.7**
	1.5nm,0.9s,mb3.9,baz=257,slow=5.7,SNR=5.7							
INK	**Inuvik**	**78.13**	**338**	P		**P**	**00 38 03.3**	**+0.9**
	0.7nm,0.8s,mb3.6,baz=85,slow=6.8,SNR=3.2							
INK	**Inuvik**	**78.13**	**338**	P		**P**	**00 38 06.2**	**+3.8**
	2.8nm,1.2s,mb4.1							
ILAR	**Eielson Array**	**84.02**	**335**	P		**P**	**00 38 34.0**	**+0.5**
	1.0nm,1.1s,mb3.9,baz=57,slow=4.5,SNR=5.4							

NEIC ***13*** *00:33:32.8±0.9, 17.02N×86.08W,h10km, mb4.0/5, Error ellipse: s-maj=20.7km s-min=12.5km az=50.0*
IDC ***13*** *00:33:33.9±5.3, 17.68N×85.59W,mb3.6/6,mb1 3.9/7, mb1mx3.7/22,ML4.4/1,MS4.1/1,Ms1 4.1/1,ms1mx2.8/24, Error ellipse: s-maj=149.0km s-min=35.2km az=23.0*
ISC 13 00:33:33.4±3.7,17.17N±0.07×85.90W±0.09,h28km±29km, n15,σ1°05/17,mb3.7/5,North of Honduras

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
TEIG	**Tepich**	**3.79**	**324**	Pn		**Pn**	**00 34 31.5**	**+0.1**
	31nm,0.3s,baz=123,slow=3.5,SNR=24							
TEIG				Sn		**Sn**	**00 35 15.3**	**-0.3**
	20nm,0.3s,baz=63,slow=22,SNR=11							
TEIG				LR		LR	00 36 14.4	
	comp=Z,3μm,22.0s,baz=173,slow=45							
TEIG	**Tepich**	**3.79**	**324**	*e*Pn		**Pn**	**00 34 31.4**	**-0.1**
SOR	**Soroa**	**6.22**	**25**	*e*P		**Pn**	**00 35 06.6**	**+0.7**
	baz=211							
SOR				*e*S		**Sn**	**00 36 15.3**	**-1.5**
	comp=N,436nm,0.1s							
	comp=E,430nm,0.1s							
OTAV	**Otavalo**	**18.35**	**156**	P		**P**	**00 37 46.3**	**-1.6**
	comp=E,1.3nm,0.7s							
SJG	**San Juan**	**18.84**	**84**	P		**P**	**00 37 57.4**	**+3.6**
	comp=E,32nm,1.1s							
TXAR	**Lajitas Array**	**20.30**	**310**	P		**P**	**00 38 10.3**	**+0.4**
	comp=E,2.0nm,0.7s,baz=130,slow=11,SNR=27							
WMOK	**Wichita Mounta**	**20.95**	**329**	*e*P		**P**	**00 38 16.2**	**-0.5**
	comp=E,4.0nm,1.0s							
WCI	**Wyandotte Cave**	**20.99**	**359**	*e*P		**P**	**00 38 17.6**	**+0.6**
	comp=E,14nm,0.8s							
YKA	**Yellowknife Ar**	**49.52**	**343**	P		**P**	**00 42 22.3**	**-1.2**
	comp=E,0.2nm,0.8s,mb3.2,baz=134,slow=8.3,SNR=5.4							
DLBC	**Dease Lake**	**52.38**	**332**	P		**P**	**00 42 46.2**	**+1.0**
	comp=E,1.3nm,0.8s,mb3.9,baz=142,slow=16,SNR=4.8							
DLBC	**Dease Lake**	**52.38**	**332**	P		**P**	**00 42 46.2**	**+1.0**
INK	**Inuvik**	**59.21**	**341**	P		**P**	**00 43 33.4**	**-0.9**
	comp=E,0.5nm,0.6s,mb3.7,baz=121,slow=12,SNR=7.0							
INK	**Inuvik**	**59.21**	**341**	*e*P		**P**	**00 43 35.5**	**+1.3**
	comp=E,0.7nm,0.7s,mb3.8							
ILAR	**Eielson Array**	**62.37**	**335**	P		**P**	**00 43 55.4**	**-0.3**
	comp=E,0.6nm,0.7s,mb3.8,baz=112,slow=4.5,SNR=6.6							
FINES	**FINESS Array B**	**85.10**	**27**	P		**P**	**00 46 09.0**	**+1.3**
	comp=E,0.6nm,0.8s,mb3.8,baz=270,slow=5.6,SNR=2.6							

JMA ***13*** *00:45:32.9±0.2,23.85N×122.80E,h44km, M2.5*
TAP ***13*** *00:45:34.5,23.76N×122.47E,h4km±1km, ML2.9*
ISC 13 00:45:33.2±2.2,23.9N±0.2×122.8E±0.1,h49km±32km,n6, σ0°47/12,Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
YOJ	**Yonaguni jima**	**0.60**	**17**	P		**P**	**00 45 45.6**	**-0.1**
YOJ				S		**S**	**00 45 54.8**	**0.0**
HATJ	**Hateruma jima**	**0.92**	**79**	P		**P**	**00 45 49.8**	**-0.1**
HATJ				S		**S**	**00 46 02.3**	**0.0**
IRIF	**Iriomote-Funau**	**0.95**	**61**	P		**P**	**00 45 50.6**	**+0.3**
IRIF				*e*S		**S**	**00 46 03.3**	**+0.3**
JKRS	**Kuro-shima**	**1.14**	**72**	P		**P**	**00 45 53.4**	**+0.4**
JKRS				S		**S**	**00 46 08.5**	**+0.7**
JIJ	**Ishigaki jima**	**1.30**	**68**	P		**P**	**00 45 55.0**	**-0.4**
JIJ				S		**S**	**00 46 10.6**	**-1.3**
JTJ	**Tarama**	**1.88**	**66**	P		**P**	**00 46 03.5**	**0.0**
JTJ				S		**S**	**00 46 26.2**	**+0.2**

TIF 13 00:59:27.3,42.00N×46.19E,h16km,Mpv4.2,3D,Eastern Caucasus

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
DGRG	**David-gareji**	**0.82**	**228**	*i*P		Pb	00 59 44.7	+2.0
DGRG				*i* S		Sb	00 59 57.8	+4.5
TBLG	**Delisi**	**1.12**	**257**	*i*P		Pb	00 59 50.2	+2.4
TBLG				*i* S		Sb	01 00 06.8	+4.9
TBLG	**Delisi**	**1.12**	**257**	*i*P		Pb	00 59 50.2	+2.4
TBLG				*i* S		Sb	01 00 06.4	+4.5
ZEI	**Tsey**	**1.86**	**295**	*e*P		Pn	01 00 06.5	+7.5
AKH	**Akhalkalaki**	**2.10**	**255**	*i* S		Sn	01 00 34.4	+6.0

CASC 13 00:59:46.6±1.6,14.14N×91.40W,h76km±9km,MD3.6, ML3.9,3C-1D,Guatemala

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
JAT	**Jato**	**0.29**	**308**	*e*P		P	00 59 58.7	+0.2
JAT				*e*S		S	01 00 08.9	+1.6
JAT				AML		AML	01 00 09.9	
	comp=E,6μm,0.3s							
FUG	**Fuego 3**	**0.62**	**60**	*e*P		P	01 00 01.0	-0.3
PCG	**Pacaya**	**0.81**	**71**	*e*P		P	01 00 03.3	-0.1
PCG				*e*S		S	01 00 16.1	+0.3
IXG	**Ixpaco**	**0.92**	**87**	*e*P		P	01 00 04.6	0.0
IXG				*e*S		S	01 00 18.1	0.0
IXG				AML		AML	01 00 23.8	
	comp=N,5μm,0.4s							
NBG	**Las Nubes**	**1.12**	**66**	*e*P		P	01 00 08.1	+1.0
NBG				*e*S		S	01 00 25.6	+3.1
NBG				AML		AML	01 00 30.2	
	comp=N,3μm,0.5s							
CUSS	**Cusmapa**	**1.43**	**99**	*e*P		P	01 00 10.9	-0.4
CUSS				*e*S		S	01 00 29.7	+0.1
RBDL	**Robledal**	**1.66**	**91**	*e*P		P	01 00 13.8	-0.6
RBDL				*e*S		S	01 00 36.4	+1.5
RTR	**El Retiro**	**1.72**	**98**	*e*P		P	01 00 14.9	-0.3
RTR				*e*S		S	01 00 37.7	+1.4
SBLS	**San Blas**	**1.75**	**99**	*e*P		P	01 00 15.8	+0.2
SBLS				*e*S		S	01 00 38.0	+1.0
SNJE	**San Jose**	**1.76**	**98**	*e*P		P	01 00 16.1	+0.3
SNJE				*e*S		S	01 00 38.0	+0.8
BOQS	**Boqueron**	**2.10**	**101**	*e*P		P	01 00 20.5	+0.2
BOQS				*e*S		S	01 00 46.8	+1.5
LFRS	**El Faro**	**2.33**	**102**	*e*P		P	01 00 23.1	-0.4
LFRS				*e*S		S	01 00 52.0	+1.0
LCBS	**La Ceiba**	**2.40**	**101**	*e*P		P	01 00 24.7	+0.1
LCBS				*e*S		S	01 00 53.6	+0.7
SNVI	**San Vicente**	**2.54**	**101**	*e*P		P	01 00 26.9	+0.3
SNVI				*e*S		S	01 00 56.1	-0.3
CNCH	**Conchagua**	**3.57**	**103**	*e*P		P	01 00 40.8	-0.1

IDC ***13*** *01:11:00.4±6.8,20.38S×168.80E,mb3.6/2,mb1 3.9/2, mb1mx3.6/11,Error ellipse: s-maj=270.0km s-min=58.1km az=148.0*
ISC 13 01:11:05.2±4.0,19.8S±0.3×168.5E±0.6,h42km±20km,n6, σ0°80/7,mb3.6/2,1C,Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
BKM	**Butte a Klehm**	**2.14**	**353**	*i*P		**P**	**01 11 39.2**	**0.0**
DZM	**Mont Dzumac**	**2.98**	**220**	*e*P		**P**	**01 11 51.1**	**-0.2**
DZM				*e*S		**S**	**01 12 25.3**	**-0.8**
NOUC	**Port Laguerre**	**3.09**	**222**	*e*P		**P**	**01 11 53.1**	**+0.2**
NOUC				*e*S		**S**	**01 12 29.7**	**+0.8**
WRA	**Warramunga Arr**	**32.13**	**264**	P		**P**	**01 17 30.4**	**-0.6**
	0.3nm,0.6s,mb3.3,baz=96,slow=8.2,SNR=5.7							
ASAR	**Alice Springs**	**32.35**	**257**	P		**P**	**01 17 33.6**	**+0.6**
	0.9nm,0.5s,mb3.9,baz=88,slow=9.0,SNR=12							
GERES	**GERESS Array B**	**144.66**	**331**	PKPbc		PKPbc	01 30 39.2	+2.1
	0.4nm,0.7s,baz=37,slow=4.9,SNR=3.5							

NEIC ***13*** *01:22:34.0, 38.05S×176.51E,h121km, After WEL.*
WEL 13 01:22:34.4±0.2,38.08S×176.53E,h117km±1km,ML3.9/5, 6C,Error ellipse: s-maj=1.4km s-min=1.2km az=0.0, North Island

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
MKRZ	**Makatiti**	**0.08**	**217**	PN		P	01 22 50.9	+0.3
MKRZ				SN		S	01 23 02.1	-0.5
LIRZ	**Lichensteins R**	**0.13**	**303**	PN		P	01 22 50.2	-0.4
LIRZ	**Lichensteins R**	**0.13**	**303**	P		P	01 22 50.3	-0.3
MARZ	**Manawahe**	**0.15**	**52**	PN		P	01 22 50.3	-0.4
MARZ	**Manawahe**	**0.15**	**52**	P		P	01 22 50.3	-0.3
TAZ	**Tarawera**	**0.16**	**185**	PN		P	01 22 50.7	0.0
TAZ	**Tarawera**	**0.16**	**185**	P		P	01 22 50.7	0.0
EDRZ	**Edgecumbe**	**0.17**	**100**	PN		P	01 22 50.4	-0.3
EDRZ	**Edgecumbe**	**0.17**	**100**	P		P	01 22 50.4	-0.3
UTU	**Utuhina**	**0.28**	**249**	PN		P	01 22 50.8	-0.2
UTU	**Utuhina**	**0.28**	**249**	P		P	01 22 50.9	-0.1
PATZ	**Paeroa**	**0.37**	**215**	⇑PN		P	01 22 51.5	0.0
PATZ	**Paeroa**	**0.37**	**215**	P		P	01 22 51.5	+0.1
TGRZ	**Tauranga**	**0.41**	**329**	PN		P	01 22 50.9	-0.7
TGRZ				SN		S	01 23 04.5	-0.1
TGRZ	**Tauranga**	**0.41**	**329**	P		P	01 22 50.9	-0.7
MWZ	**Matawai**	**0.83**	**108**	⇑PN		P	01 22 54.3	-0.5
MWZ				SN		S	01 23 10.0	-0.1
MWZ	**Matawai**	**0.83**	**108**	P		P	01 22 54.2	-0.6
MWZ				S		S	01 23 11.2	+1.1
WATZ	**Wairara**	**0.89**	**224**	PN		P	01 22 55.0	-0.3
WATZ	**Wairara**	**0.89**	**224**	P		P	01 22 55.0	-0.4
RATZ	**Rangitukua**	**0.99**	**217**	⇑PN		P	01 22 56.1	-0.3
RATZ	**Rangitukua**	**0.99**	**217**	P		P	01 22 56.1	-0.3
BKZ	**Black Stump Fm**	**1.09**	**181**	PN		P	01 22 56.9	-0.5
BKZ				SN		S	01 23 14.1	-0.5
BKZ	**Black Stump Fm**	**1.09**	**181**	P		P	01 22 56.9	-0.5
BKZ				S		S	01 23 14.8	+0.2
KATZ	**Kakaramea**	**1.11**	**216**	PN		P	01 22 57.2	-0.5
KATZ	**Kakaramea**	**1.11**	**216**	P		P	01 22 57.2	-0.4
MGZ	**Maungaku**	**1.21**	**220**	PN		P	01 22 58.5	-0.2
MGZ	**Maungaku**	**1.21**	**220**	P		P	01 22 58.5	-0.2
KAVZ	**Karewarewa**	**1.23**	**214**	PN		P	01 22 58.6	-0.4
KAVZ	**Karewarewa**	**1.23**	**214**	P		P	01 22 58.9	-0.1
WTVZ	**West Tongariro**	**1.27**	**215**	PN		P	01 22 59.0	-0.4
KNZ	**Kokohu**	**1.30**	**137**	PN		P	01 22 59.1	-0.7
KNZ	**Kokohu**	**1.30**	**137**	P		P	01 22 59.1	-0.7
NGZ	**Ngauruhoe**	**1.31**	**213**	PN		P	01 22 59.9	0.0
CNZ	**Chateau**	**1.36**	**214**	PN		P	01 23 00.1	-0.3
CNZ	**Chateau**	**1.36**	**214**	P		P	01 23 00.4	0.0
WPVZ	**Whakapapa**	**1.36**	**214**	PN		P	01 23 00.3	-0.2
PUZ	**Puketiti**	**1.37**	**90**	PN		P	01 22 59.2	-1.3
PUZ				SN		S	01 23 19.2	-1.1
TUVZ	**Tukino**	**1.37**	**210**	⇑PN		P	01 23 00.3	-0.3
TUVZ	**Tukino**	**1.37**	**210**	P		P	01 23 00.3	-0.3
HIZ	**Hauiti**	**1.39**	**251**	PN		P	01 22 59.9	-0.8
HIZ				SN		S	01 23 20.7

RATI Rata 4.05 92⇑ *e*Pn **P** **01 39 44.3 +1.2**
RATI ⇑ *e*Sn **S** **01 40 30.5 +0.8**
RATI Rata 4.05 92⇑ *e*P **P** **01 39 44.0 +0.9**
RATI *e*Sn **S** **01 40 30.2 +0.5**
KEDI Kedomdong 4.63 89⇑ *e*P **P** **01 39 52.4 +1.2**
KEDI Kedomdong 4.63 89⇑ *e*Pn **P** **01 39 51.4 +0.2**
KEDI *e*Sn **S** **01 40 45.2 +1.0**
COCO West Island 14.80 255 *e*P **P** **01 42 19.5 +10**
FITZ Fitzroy Crossi 16.73 126 *e*P **P** **01 42 32.1 -2.0**
7.0nm,0.8s
FITZ *e*S **S** **01 45 19.8 -17**
FITZ Fitzroy Crossi 16.73 126 P **P** **01 42 31.5 -2.5**
0.5nm,0.3s,baz=351,slow=7.5,SNR=14
FITZ S **S** **01 45 19.0 -18**
0.7nm,0.3s,baz=204,slow=20,SNR=5.5
FITZ LR LR 01 49 19.0
comp=Z,127nm,19.2s,baz=296,slow=38
WRA Warramunga Arr 24.86 119 P **P** **01 44 00.2 -0.7**
32nm,1.2s,mb4.7,baz=292,slow=12,SNR=73
WRA PcP PcP 01 47 36.3 -0.4
1.1nm,0.4s,baz=297,slow=4.2,SNR=9.4
WRAB Tennant Creek 24.86 119 *e*P **P** **01 44 00.0 -0.9**
61nm,0.9s,mb5.1
WB2 Warramunga Arr 24.87 119⇓ *i*P **P** **01 44 00.5 -0.5**
WB2 *e*S **S** **01 48 35.2 +18**
AS12 Alice Springs 26.21 128 *e*P **P** **01 44 12.6 -0.9**
5.2nm,0.5s,mb4.3
AS12 *e*S S 01 49 14.8 +35
ASAR Alice Springs 26.21 128 P **P** **01 44 12.5 -1.0**
5.1nm,0.7s,mb4.2,baz=301,slow=8.7,SNR=43
ASAR PcP PcP 01 47 39.2 -0.4
2.6nm,0.4s,baz=308,slow=1.7,SNR=14
ASAR LR LR 01 54 27.2
comp=Z,96nm,21.1s,MS3.3,baz=305,slow=36
CMAR Chiang Mai Arr 29.57 335 P **P** **01 44 43.8 -0.1**
6.1nm,1.0s,mb4.3,baz=170,slow=8.5,SNR=14
CMAR PcP PcP 01 47 48.6 +0.8
2.6nm,0.5s,baz=189,slow=3.4,SNR=7.6
CMAR LR LR 01 57 16.2
comp=Z,139nm,20.8s,MS3.6,baz=155,slow=38
KMI Kunming 34.57 346 *e*P **P** **01 45 30.5 +3.0**
KMI XP sP 01 45 55.2 +5.9
KMI PP PP 01 46 50.5 +5.3
KMI S **S** **01 50 51.8 +0.3**
KMI AMB AMB
comp=Z,10.0nm,0.8s,mb4.8
KMI LR LR
comp=N,154nm,12.4s,MS4.0
KMI LR LR
comp=E,158nm,16.4s,MS4.0
KMI LR LR
comp=Z,185nm,20.9s,MS3.8
CTA Charters Tower 35.53 113 P **P** **01 45 35.1 -0.6**
comp=Z,2.6nm,0.5s,mb4.5,baz=288,slow=12,SNR=7.5
CTAO Charters Tower 35.53 113 *e*P **P** **01 45 35.3 -0.4**
comp=Z,6.5nm,0.9s,mb4.6
STKA Stephens Creek 36.34 134 *e*P **P** **01 45 42.1 -0.4**
comp=Z,6.6nm,0.6s,mb4.7
STKA Stephens Creek 36.34 134 P **P** **01 45 42.0 -0.5**
comp=Z,4.8nm,0.5s,mb4.7,baz=307,slow=8.3,SNR=11
STKA PcP PcP 01 48 06.0 -0.4
comp=Z,7.0nm,0.4s,baz=325,slow=3.5,SNR=7.7
STKA LR LR 02 00 03.4
comp=Z,242nm,20.6s,MS4.0,baz=114,slow=35
ENH Enshi 38.69 357 *e*P **P** **01 46 02.9 +0.8**
comp=Z,6.5nm,0.6s,mb4.5
SSE Sheshan 40.55 13⇓ P **P** **01 46 19.7 +2.2**
SSE S **S** **01 52 21.1 -1.3**
SSE AMB AMB
comp=Z,12nm,1.9s,mb4.2
SSE LR LR
comp=N,63nm,20.0s,MS3.6
SSE LR LR
comp=E,52nm,20.0s,MS3.6
SSE LR LR
comp=Z,66nm,20.0s,MS3.5
NJ2 Nanjing 41.03 10 *e*P **P** **01 46 24.7 +3.2**
NJ2 PP PP 01 48 04.9 +5.2
NJ2 S **S** **01 52 38.0 +8.5**
NJ2 SS SS 01 55 31.0 +1.9
NJ2 AMB AMB
comp=Z,40nm,0.6s,mb5.2
NJ2 AMB AMB
comp=Z,120nm,6.0s
NJ2 LR LR
comp=N,350nm,22.2s,MS4.3
NJ2 LR LR
comp=E,310nm,20.2s,MS4.3
NJ2 LR LR
comp=Z,290nm,22.0s,MS4.1
LSA Lhasa 42.79 334 P **P** **01 46 37.2 +1.2**
LSA Lhasa 42.79 334 *e*P **P** **01 46 36.1 +0.2**
comp=Z,12nm,0.7s,mb4.7
PKI Pulchoki 43.91 326 *e*P **P** **01 46 44.8 -0.3**
comp=Z,4.8nm,0.5s,mb4.5
GUN Gumba 43.91 327 *e*P **P** **01 46 44.2 -0.9**
comp=Z,21nm,0.6s,mb5.1
DMN Daman 44.10 326 *e*P **P** **01 46 46.1 -0.6**
comp=Z,15nm,0.6s,mb4.9
KKN Kakani 44.15 326 *e*P **P** **01 46 46.4 -0.6**
comp=Z,12nm,0.7s,mb4.7
GKN Gorkha 44.67 325 *e*P **P** **01 46 51.0 -0.2**
comp=Z,10nm,0.3s,mb5.1
LZH Lanzhou 45.01 351 *e*P **P** **01 46 57.2 +3.4**
LZH PP PP 01 48 45.7 +5.2
LZH AMB AMB
comp=Z,24nm,1.4s,mb4.8
KOLN Koldanda 45.08 324 *e*P **P** **01 46 53.6 -0.9**
comp=Z,27nm,0.6s,mb5.2
KS15 Wonju Array Si 48.31 18 P **P** **01 47 20.1 +0.4**
BJT Baijiatuan 48.56 5 *e*P **P** **01 47 21.9 +0.2**
comp=Z,20nm,0.6s,mb5.3
BJI Beijing 48.59 5 *e*P **P** **01 47 21.9 0.0**
BJI PCP PcP 01 48 47.6 +0.5
BJI S **S** **01 54 27.8 +10**
BJI AMB AMB
comp=Z,25nm,0.6s,mb5.4
BJI LR LR
comp=Z,88nm,26.2s,MS3.6
GTA Gaotai 48.96 348 *e*P **P** **01 47 26.6 +1.8**
GTA AMB AMB
comp=Z,10.0nm,0.8s,mb4.9
MAJO Matsushiro 51.46 28 *e*P **P** **01 47 42.1 -1.8**
comp=Z,9.3nm,0.7s,mb4.8
MAT Matsushiro 51.46 28 P **P** **01 47 42.3 -1.6**
MAT Matsushiro 51.46 28 *e*P **P** **01 47 42.0 -1.9**
comp=Z,5.2nm,0.8s,mb4.5
CN2 Changchun 53.68 13 *e*P **P** **01 48 02.8 +2.5**
CN2 LR LR
comp=Z,300nm,19.0s,MS4.4
MDJ Mudanjiang 55.45 16 P **P** **01 48 12.5 -0.7**
MDJ XP sP 01 48 41.8 +6.6
MDJ PCP PcP 01 49 11.5 -1.1
MDJ PP PP 01 50 17.2 -1.7
MDJ PCS 01 53 11.3
MDJ S **S** **01 55 50.4 -1.5**
MDJ AMB AMB
comp=Z,8.0nm,0.8s,mb4.8
MDJ LR LR
comp=N,38nm,23.7s,MS3.4
MDJ LR LR
comp=E,8.0nm,28.7s,MS3.4
MDJ LR LR
comp=Z,47nm,25.6s,MS3.5
MDJ Mudanjiang 55.45 16 *e*P **P** **01 48 12.3 -0.9**
comp=Z,8.5nm,0.7s,mb4.9
ULN Ulaanbaatar 56.34 356*c* *i*P **P** **01 48 19.3 -0.3**
ULN Ulaanbaatar 56.34 356 *e*P **P** **01 48 19.1 -0.5**
comp=Z,12nm,0.8s,mb5.0
ULN *e*PcP PcP 01 49 16.2 +0.1
SONM Songino Array 56.36 356 P **P** **01 48 19.3 -0.4**
comp=Z,8.3nm,0.8s,mb4.8,baz=175,slow=8.6,SNR=46
SONM PcP PcP 01 49 15.5 -0.6
comp=Z,5.8nm,0.4s,baz=179,slow=4.1,SNR=18
WMQ Urumqi 56.44 340 *e*P **P** **01 48 21.6 +1.3**
WMQ XP sP 01 48 51.4 +9.0
WMQ PP PP 01 50 30.3 +2.5
WMQ AMB AMB
comp=Z,13nm,1.4s,mb4.8
WMQ AMB AMB
comp=Z,56nm,4.8s
HIA Hailar 58.07 6 *e*P **P** **01 48 31.0 -0.7**
comp=Z,2.3nm,0.4s,mb4.6
ZAK Zakamensk 59.16 354 *e*P **P** **01 48 33.5 -5.8**
ZAK *e* 01 49 26.7
ASAJ Asahikawa 59.57 26 P **P** **01 48 41.5 -0.7**
comp=Z,9.0nm,0.5s,mb5.1,baz=115,slow=34,SNR=6.7
MKAR Makanchi Array 60.95 337 P **P** **01 48 50.8 -0.8**
comp=Z,134nm,0.5s,mb5.3,baz=149,slow=7.3,SNR=134
MKAR PcP PcP 01 49 34.5 +0.2
comp=Z,4.0nm,0.7s,baz=141,slow=5.1,SNR=3.7
MKAR LR LR 02 18 57.1
comp=Z,57nm,20.6s,MS3.7,baz=143,slow=40
MKAR Makanchi Array 60.95 337 *e*P **P** **01 48 50.5 -1.1**
MKAR pmax pmax
comp=Z,4.0nm,0.5s
MKAR Makanchi Array 60.95 337 P **P** **01 48 50.8 -0.8**
MKAR PcP PcP 01 49 34.5 +0.2
MKAR LR LR 02 18 57.1
YSS Yuzh-Sakhalins 61.93 24⇓ *i*P **P** **01 48 57.0 -1.1**
YSS Yuzh-Sakhalins 61.93 24 *e*P **P** **01 48 57.4 -0.8**
comp=Z,31nm,0.4s,mb5.8
RPZ Rata Peaks 62.30 135 LR LR 02 13 13.4
comp=Z,253nm,18.9s,MS4.4,baz=215,slow=33
KKAR Karatay Array 63.50 328 P **P** **01 49 09.4 +0.7**
KURK Kurchatov 65.56 338 *e*P **P** **01 49 20.8 -1.0**
KURK *e*PcP PcP 01 49 52.3 -0.7
URZ Urewera 65.65 128 LR LR 02 20 36.3
comp=Z,107nm,18.3s,MS4.1,baz=0.7,slow=38
BVA0 Borovoye Array 70.60 335 P **P** **01 49 52.1 -1.0**
BVAR Borovoye Array 70.60 335 P **P** **01 49 52.1 -1.0**
comp=Z,5.0nm,0.6s,mb4.6,baz=140,slow=8.6,SNR=38
BVAR pP pP 01 50 08.0 -1.2
comp=Z,1.6nm,0.5s,baz=153,slow=9.9,SNR=5.0
BRVK Borovoye 70.67 335 *e*P **P** **01 49 52.7 -0.8**
ZRNK Zerenda 71.13 334 *e*P **P** **01 49 55.3 -1.0**
KAMS Al Khamasin 71.72 295 P **P** **01 49 59.6 -0.8**
YAK Yakutsk 71.83 9 *e*P **P** **01 49 58.5 -1.8**
YAK pmax pmax
comp=Z,10.0nm,0.8s,mb4.8
YAK pmax pmax
comp=N,3.0nm,1.2s
YAK Yakutsk 71.83 9 *e*P **P** **01 49 59.5 -0.8**
comp=N,33nm,0.6s,mb5.4
MZLS Mizel 72.28 299 P **P** **01 50 03.7 0.0**
TATS Tathlith 72.50 294 P **P** **01 50 05.7 +0.5**
AB31 Akbulak array 73.07 328 P **P** **01 50 07.5 -0.4**
AB31 pmax pmax
comp=Z,16nm,0.7s,mb5.1
VNDA Vanda 73.62 170 P **P** **01 50 10.5 -0.1**
comp=Z,1.8nm,1.0s,mb4.0,baz=302,slow=4.7,SNR=5.9
VNDA LR LR 02 18 17.5
comp=Z,111nm,22.0s,MS4.1,baz=272,slow=32
VNDA Vanda 73.62 170 *e*P **P** **01 50 10.9 +0.3**
comp=Z,2.8nm,1.2s,mb4.1
VNDA *e* 01 50 19.6
KMBO Kilima Mbogo 74.19 271 P **P** **01 50 16.2 +1.0**
comp=Z,4.9nm,1.0s,mb4.4,baz=58,slow=9.7,SNR=12
KMBO LR LR 02 18 43.0
comp=Z,55nm,19.3s,MS3.9,baz=274,slow=32
KMBO Kilima Mbogo 74.19 271 *e*P **P** **01 50 16.5 +1.3**
comp=Z,2.1nm,0.7s,mb4.2
BLJS Baljurashi 74.30 293 P **P** **01 50 17.4 +1.7**
ARSS Ar Rass 74.55 300 P **P** **01 50 17.1 +0.1**
MA2 Magadan 74.84 20 *e*P **P** **01 50 17.2 -0.7**
comp=Z,31nm,1.0s,mb5.2
SYO Syowa Base 75.55 201 ⇓PcP PcP 01 50 37.5 +2.5
SYO Syowa Base 75.55 201 ⇓sP sP 01 50 49.1 +4.8
HILS Ha'il 76.23 301 P **P** **01 50 27.6 +1.0**
SVE Sverdlovsk 77.31 334⇑ *e*P **P** **01 50 32.0 0.0**
KBRS Khaybar 77.95 299 P **P** **01 50 37.8 +1.6**
ARU Arti 77.99 333*c* *i*P **P** **01 50 35.4 -0.3**
ARU pmax pmax
comp=Z,8.0nm,1.0s,mb4.6
ARU Arti 77.99 333 *e*P **P** **01 50 35.4 -0.4**
comp=Z,10nm,1.1s,mb4.7
GNI Garni 78.20 314 P **P** **01 50 37.8 +0.5**
comp=Z,1.7nm,0.5s,mb4.3,baz=10,slow=23,SNR=3.1
YNBS Yanbu' al Bahr 78.69 297 P **P** **01 50 41.6 +1.3**
ZEI Tsey 79.76 316⇑ *e*P **P** **01 50 47.5 +1.8**
TIXI Tiksi 80.91 6⇑ *e*P **P** **01 50 50.4 -0.9**
TIXI pmax pmax
comp=Z,16nm,0.7s,mb5.1
TIXI MLR MLR
comp=Z,100nm,21.0s,MS4.2
TIXI Tiksi 80.91 6 *e*P **P** **01 50 50.4 -0.8**
comp=Z,20nm,0.8s,mb5.1
TBKS Tabuk 80.93 300 P **P** **01 50 53.4 +1.1**
KIV Kislovodsk 81.02 317 *e*P **P** **01 50 52.9 +0.5**
KIV pmax pmax
comp=Z,8.0nm,0.8s,mb4.7
KIV Kislovodsk 81.02 317 *e*P **P** **01 50 52.6 +0.3**
comp=Z,10.0nm,0.6s,mb4.9
QURS Qurayyt al Mil 81.11 304 P **P** **01 50 55.0 +1.9**
QSPA South Pole Qui 81.40 180 *e*P **P** **01 50 54.2 +0.5**
comp=Z,4.0nm,0.9s,mb4.3
JMQS Jabal Moqyreh 81.67 301 P **P** **01 50 55.8 -0.3**
ASF Jabal al Asfar 81.67 304 P **P** **01 50 57.1 +1.0**
comp=Z,7.6nm,0.8s,mb4.7,baz=356,slow=2.8,SNR=9.4
AYUS 'Aynunah 82.01 300 P **P** **01 50 57.2 -0.7**
BDAS Al Bad' 82.22 300 P **P** **01 50 58.4 -0.5**
JMOS Jabal al Moall 82.39 301 P **P** **01 51 00.2 +0.4**
TAYS Tayyib Ism 82.44 300 P **P** **01 50 59.8 -0.3**
EIL Elat 82.64 301 *e*P **P** **01 50 59.9 -1.2**
comp=Z,6.9nm,0.9s,mb4.7
SOC Sochi 82.91 316 *e*P **P** **01 51 00.8 -1.3**
SOC *e* 01 54 12.4
SOC *e*S S 02 01 16.6 +1.8
SOC pmax pmax
comp=Z,139nm,1.4s,mb5.8
SOC pmax pmax
comp=N,107nm,0.9s
SOC pmax pmax
comp=E,111nm,1.0s
SOC MLR MLR
comp=Z,278nm,26.0s,MS4.5
SOC MLR MLR
comp=N,447nm,31.0s,MS4.9
SOC MLR MLR
comp=E,645nm,28.0s,MS4.9
BRTR Keskin Array B 86.18 311 P **P** **01 51 18.9 +0.4**
comp=E,7.3nm,0.8s,mb4.9,baz=127,slow=5.9,SNR=16
BRTR pP pP 01 51 35.4 +0.3
comp=E,6.4nm,0.8s,baz=128,slow=6.5,SNR=10.0
MOS Moscow 88.08 327 *e*P **P** **01 51 23.8 -3.6**
MOS pmax pmax
comp=Z,90nm,0.6s
OBN Obninsk 88.46 326*c* *i*P **P** **01 51 29.3 +0.1**
OBN *i* *PP pP 01 51 46.1 +0.3
OBN *i* PP 01 54 58.9 -1.1
OBN *i* PS ScS 02 02 16.1 +3.2
OBN pmax pmax
comp=Z,39nm,0.7s,mb5.8
OBN Obninsk 88.46 326 *e*P **P** **01 51 29.4 +0.2**
comp=Z,44nm,0.7s,mb5.8
OBN *e* pP 01 51 46.4 +0.7
SNAA Sanae 89.30 197⇓ *i*P **P** **01 51 34.5 +1.7**
SNAA *e* 01 52 01.7
SNAA *e* 01 52 15.0
SNAA *e* 01 55 12.8
SNAA *e* 01 56 32.5
SNAA *e*S S 02 02 25.1 +9.4
VNA2 Neumayer--Watz 90.95 197 P **P** **01 51 39.8 -0.8**
VNA2 *e* 01 52 06.9
VNA2 *e* 01 52 19.5
VNA2 *e* 01 55 18.2
VNA2 *e* 01 56 37.7
VNA2 *e*S S 02 02 30.5 -0.1
VNA3 Neumayer Olymp 91.42 196⇓ *i*P **P** **01 51 46.2 +3.4**
VNA3 *e* 01 52 13.3
VNA3 *e* 01 52 26.2
VNA3 *e* 01 55 24.6
VNA3 *e* 01 56 42.2
AKASG Malin Array Be 91.68 321 P **P** **01 51 44.1 -0.3**
comp=Z,1.9nm,0.6s,mb4.6,baz=86,slow=4.5,SNR=11
AKASG pP pP 01 52 00.6 -0.4
comp=Z,3.2nm,0.9s,baz=83,slow=4.7,SNR=4.4
AKASG LR LR 02 39 31.9
comp=Z,18nm,18.3s,MS3.5,baz=350,slow=40
SANT Santorini 91.81 306 *e*Pg **P** **01 51 41.8 -3.6**
KAF Kangasniemi 95.25 332 *e*pkp **P** **01 51 54.0 -6.4**
FINES FINESS Array B 95.27 331 P **P** **01 52 01.1 +0.6**
comp=Z,1.1nm,0.6s,mb4.5,baz=117,slow=8.5,SNR=9.7
ARCES ARCESS Array B 96.56 339 P **P** **01 52 06.0 -0.2**
comp=Z,3.3nm,0.9s,mb4.8,baz=90,slow=3.6,SNR=4.6
ARCES LR LR 02 45 55.1
comp=Z,35nm,18.9s,MS3.9,baz=98,slow=42
ARCES ARCESS Array B 96.56 339 P **P** **01 52 06.0 -0.2**
ARCES LR LR 02 45 55.1
HFS Hagfors 101.26 330 P **P** **01 52 27.5 -0.2**
comp=Z,2.5nm,0.8s,SNR=5.8
SUMG Summit 113.53 351 *e*PKPdf PKPdf 01 57 14.6 +1.2
YKA Yellowknife Ar 116.76 22 PKP PKPdf 01 57 20.7 +0.9
comp=Z,1.0nm,0.8s,baz=317,slow=1.7,SNR=26
YKA Yellowknife Ar 116.76 22 PKP PKPdf 01 57 20.7 +0.9
CHMT Chamberlain Mo 126.16 37 *e*PKP PKPdf 01 57 40.0 +1.7
NVAR Mina Array Bea 126.43 48 PKP PKPdf 01 57 38.7 -0.4
comp=Z,1.1nm,0.8s,baz=225,slow=3.8,SNR=2.9
NVAR Mina Array Bea 126.43 48 PKP PKPdf 01 57 38.7 -0.4
BOZ Bozeman (W) 127.78 37 *e*PKPdf PKPdf 01 57 44.3 +2.8
PDAR Pinedale Array 130.55 39 PKP PKPdf 01 57 46.7 -0.2
comp=Z,0.5nm,0.7s,baz=90,slow=1.5,SNR=3.6
SCHQ Schefferville 133.87 359 PKP PKPdf 01 57 54.2 +1.4
comp=Z,3.9nm,0.8s,baz=304,slow=10.0,SNR=4.7
SCHQ Schefferville 133.87 359 PKP PKPdf 01 57 54.2 +1.4
TXAR Lajitas Array 141.15 53 PKhKP 01 58 01.9
comp=Z,0.5nm,0.5s,baz=242,slow=2.6,SNR=10
TXAR PKP PKPdf 01 58 08.5 +1.6
comp=Z,0.5nm,0.5s,baz=182,slow=0.7,SNR=8.4
TXAR Lajitas Array 141.15 53 PKP PKPdf 01 58 01.9 -5.0
TXAR PKP PKPdf 01 58 08.5 +1.6
JCT Junction City 143.60 49 *e*PKPdf PKPdf 01 58 10.4 -0.6
CPUP Villa Florida 143.61 197 PKP PKPdf 01 58 10.8 -0.4
comp=Z,1.9nm,0.8s,baz=178,slow=4.0,SNR=7.1
CPUP Villa Florida 143.61 197 PKP PKPdf 01 58 10.8 -0.4
CCM Cathedral Cave 144.24 31 *e*PKPdf PKPdf 01 58 11.7 -0.2
NCB Newcomb 144.42 7 *e*PKPdf PKPdf 01 58 12.7 +0.6
FVM French Village 144.71 31 *e*PKPdf PKPdf 01 58 13.4 +0.7
ACCN Adirondack Com 145.06 7 *e*PKPdf PKPdf 01 58 14.7 +1.6
MIAR Mount Ida 145.44 38 *e*PKPdf PKPdf 01 58 16.4 +2.3
MIAR *e* 01 58 33.3
SIUC Southern Illin 145.52 30 *e*PKPdf PKPdf 01 58 16.0 +1.8
SIUC *e* 01 58 32.7
ALLY Alegheny Colle 145.52 15 *e*PKPdf PKPdf 01 58 15.8 +1.8
BLO Bloomington 145.55 25 *e*PKPdf PKPdf 01 58 16.3 +2.1
BINY Binghamton 145.90 10 *e*PKPbc PKPbc 01 58 17.2 +1.6
ACSO Alum Creek Sta 145.97 20 *e*PKPbc PKPbc 01 58 17.5 +1.6
UALR University of 146.02 36 *e*PKPbc PKPbc 01 58 17.9 +1.8
HRV Harvard--Oak R 146.12 4 *e*PKPdf PKPdf 01 58 17.2 +2.1
WCI Wyandotte Cave 146.44 26 *e*PKPdf PKPdf 01 58 18.0 +2.3
WCI *e*PKPbc PKPbc 01 58 19.5 +2.4
SSPA Standing Stone 147.03 13 *e*PKPbc PKPdf 01 58 20.5 +3.9
PAL Palisades 147.38 8 *e*PKPbc PKPdf 01 58 21.6 +4.4
PAL *e* 01 58 39.6
WVT Waverly 147.45 30 *e*PKPbc PKPdf 01 58 22.0 +4.5
MVL Millersville 147.96 11 *e*PKPdf PKPdf 01 58 19.5 +1.4
MVL *e*PKPbc PKPdf 01 58 23.2 +5.1
PLAL Pickwick Lake 148.23 31 *e*PKPdf PKPdf 01 58 19.9 +1.2
PLAL *e*PKPbc PKPdf 01 58 23.0 +4.3
BDFB Brasilia 148.47 220 PKPbc PKPdf 01 58 24.1 +4.5
comp=Z,4.2nm,0.6s,baz=207,slow=7.3,SNR=11
FWV Forest Hill 149.09 19 *e*PKPbc PKPdf 01 58 24.6 +4.5
SWET Sewanee 149.10 28 *e*PKPbc PKPdf 01 58 25.2 +5.5
SWET *e*PKPab PKPab 01 58 30.2 -0.8
PWV Princeton 149.23 20 *e*PKPbc PKPdf 01 58 26.4 +6.1
PWV *e*PKPab PKPab 01 58 31.7 +0.3
ELN Prospectdale 149.43 19 *e*PKPbc PKPdf 01 58 26.6 +6.0
ELN *e*PKPab PKPab 01 58 31.7 -0.5
CPCT Cooper Cave 149.54 26 *e*PKPbc PKPdf 01 58 27.1 +6.3
CPCT *e*PKPab PKPab 01 58 32.3 -0.4
LRAL Lakeview Retre 150.30 32 *e*PKPbc PKPdf 01 58 29.2 +7.1
LPAZ La Paz 155.27 181 PKP PKPdf 01 58 30.9 +1.4
comp=Z,0.9nm,0.8s,baz=315,slow=2.9,SNR=4.0
LPAZ PKPab PKPab 01 58 59.3 +2.0
comp=Z,0.8nm,0.5s,baz=218,slow=7.4,SNR=4.8

NEIC ***13*** *01:47:18.2,36.35N×25.80E,h0km,mb4.1/15, ML4.2(ATH),ML4.0(THE),After THE.*
NEIC Felt on Ios and Santorini.
THE ***13*** *01:47:18.2,36.35N×25.80E,h10km,ML4.2*
BJI ***13*** *01:47:20.2,36.80N×25.14E,h17km,mB4.5,mb4.5,Ms4.4, Msz4.2*
ATH ***13*** *01:47:21.1,36.54N×25.45E,h26km±2km,MD3.9/16, ML4.2*
MOS ***13*** *01:47:22.1±2.3,36.60N×25.96E,h15km,mb4.8/1,Error ellipse: s-maj=18.9km s-min=5.1km az=108.2*
IDC ***13*** *01:47:23.3±2.8,36.48N×25.38E,h26km±23km,mb4.0/11, mb1 4.2/17,mb1mx4.0/28,ML3.8/6,MS2.9/1,Ms1 2.9/1, ms1mx2.3/26,Error ellipse: s-maj=17.9km s-min=15.9km az=76.0*

ISC 13 01:47:21.2±0.3,**36.52N**±0.03×**25.44E**±0.03,**h17**km±3km, **n144,**σ1**s00**/152,**mb4.2**/24,**MS3.8**/1,**8C-6D,Dodecanese Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THR4	**Thira Island,**	**0.07**	**211**	*e*Pg	**Pb**	**01 47 25.0**	**+0.5**
THR3	**Thira Island,**	**0.12**	**197**	*e*Pg	**Pb**	**01 47 25.2**	**+0.3**
THR5	**Thira Island,**	**0.13**	**216**	*e*Pg	**Pb**	**01 47 25.5**	**+0.4**
SANT	**Santorini**	**0.15**	**175**	*e*Pg	**Pb**	**01 47 25.3**	**-0.1**
THR1	**Thera Island**	**0.15**	**175**	*e*Pg	**Pb**	**01 47 25.7**	**+0.3**
THR1				*e*Sg	**Sb**	**01 47 28.4**	**+0.2**
THR6	**Thira Island,**	**0.17**	**193**	*e*Pg	**Pb**	**01 47 24.7**	**-0.9**
APE	**Apeiranthos**	**0.55**	**7**	*e*PN	**Pn**	**01 47 32.2**	**-1.8**
NPS	**Neapolis**	**1.27**	**174**	*e*PN	**Pn**	**01 47 45.1**	**+0.9**
IDI	**Anoyia**	**1.31**	**200**	Pn	**Pn**	**01 47 45.5**	**+0.6**
IDI	51nm,0.3s,baz=32,slow=12,SNR=374			Lg		01 48 03.4	
KRIS	98nm,0.3s,baz=314,slow=23,SNR=16 **Kristallenia**	**1.34**	**178**	*e*Pg	**Pn**	**01 47 45.5**	**+0.1**
VAM	**Vamos**	**1.50**	**223⇓**	*i*PN	**Pn**	**01 47 48.2**	**+0.6**
SMG	**Samos**	**1.63**	**43**	*e*PN	**Pn**	**01 47 50.1**	**+0.7**
XRY	**Khrisi**	**1.66**	**173**	*e*PN	**Pn**	**01 47 50.7**	**+0.9**
BDRM	**Kayabasi**	**1.69**	**71⇑**	*i*P	**Pn**	**01 47 50.5**	**+0.2**
BDRM				*i* S	**Sn**	**01 48 17.8**	**+6.0**
KARP	**Karpathos**	**1.70**	**124**	*e*PN	**Pn**	**01 47 51.0**	**+0.6**
KYTH	**Kithira**	**1.96**	**264**	*e*PN	**Pn**	**01 47 55.0**	**+0.9**
PTL	**Penteli**	**1.98**	**321**	*e*PB	**Pb**	**01 47 55.1**	**-1.2**
ATH	**Athens Observa**	**2.00**	**317**	*e*PB	**Pb**	**01 47 55.5**	**-1.2**
VLI	**Veliai**	**2.03**	**276**	*e*PB	**Pb**	**01 47 56.0**	**-1.2**
ARG	**Arkhangelos**	**2.19**	**97**	*e*PB	**Pb**	**01 47 58.3**	**-1.6**
AYDN	**Tasoluk**	**2.25**	**59⇑**	*i*P	**Pn**	**01 47 59.2**	**+0.9**
AYDN				*i* S	**Sn**	**01 48 32.9**	**+6.9**
KDAG	**Bornova**	**2.37**	**37**	*i* P	**Pn**	**01 47 59.9**	**-0.2**
KDAG				*i* S	**Sn**	**01 48 37.8**	**+8.8**
PRK	**Paraskevi**	**2.80**	**13**	*e*PN	**Pn**	**01 48 05.5**	**-0.6**
ITM	**Ithomi**	**2.90**	**284**	*e*PB	**Pb**	**01 48 10.0**	**-2.0**
AOS	**Alonnisos**	**2.92**	**335**	*e*Pn	**Pn**	**01 48 09.0**	**+1.2**
AOS				*e*Sn	**Sn**	**01 48 47.7**	**+4.8**
DNZL	**Cakiroluk**	**3.11**	**67**	*i* P	**Pn**	**01 48 11.3**	**+0.8**
DNZL				*i* S	**Sn**	**01 48 53.9**	**+6.3**
MANT	**Manisa**	**3.16**	**51⇑**	*i*P	**Pn**	**01 48 22.0**	**+11**
MANT				*i* S	**Sn**	**01 49 04.1**	**+15**
NEO	**Neokhori**	**3.29**	**328**	*e*PN	**Pn**	**01 48 14.0**	**+0.9**
XOR	**Xorichti**	**3.35**	**329**	*e*Pn	**Pn**	**01 48 14.8**	**+0.8**
AGG	**Agios Georgios**	**3.51**	**316**	*e*Pn	**Pn**	**01 48 17.1**	**+0.9**
AGG				*e*Sn	**Sn**	**01 49 01.9**	**+4.2**
PAIG	**Paliouri**	**3.67**	**338**	*e*Pn	**Pn**	**01 48 18.9**	**+0.3**
EVR	**Evrytania**	**3.74**	**311**	*e*PN	**Pn**	**01 48 21.2**	**+1.6**
OUR	**Ouranopolis**	**3.98**	**344**	*e*Pn	**Pn**	**01 48 23.2**	**+0.4**
PLG	**Polygyros**	**4.15**	**338**	*e*PN	**Pn**	**01 48 24.1**	**-1.3**
LIT	**Litokhoron**	**4.26**	**328**	*e*Pn	**Pn**	**01 48 28.1**	**+1.1**
SART	**Tekirdag**	**4.38**	**18**	*i* P	**Pn**	**01 48 27.5**	**-1.0**
ALN	**Alexandroupoli**	**4.39**	**6**	*e*Pn	**Pn**	**01 48 27.8**	**-1.0**
THE	**Thessaloniki**	**4.54**	**335**	*e*Pn	**Pn**	**01 48 31.4**	**+0.5**
SOH	**Sokhos**	**4.59**	**340**	*e*Pn	**Pn**	**01 48 32.0**	**+0.3**
MEV	**Metsovon**	**4.65**	**316**	*e*Pn	**Pn**	**01 48 34.4**	**+2.0**
IGT	**Igoumenitsa**	**5.03**	**308**	*e*Pn	**Pn**	**01 48 39.1**	**+1.2**
KNT	**Kendrikon**	**5.04**	**338**	*e*Pn	**Pn**	**01 48 38.9**	**+0.9**
KDZ	**Kurdzhali**	**5.12**	**360**	*e*P	**Pn**	**01 48 38.0**	**-1.1**
MMB	**Musomiste**	**5.23**	**346**	*i* P	**Pn**	**01 48 40.0**	**-0.7**
FNA	**Florina**	**5.31**	**324**	*e*Pn	**Pn**	**01 48 42.2**	**+0.4**
DIM	**Dimitrovgrad**	**5.52**	**1**	*i* P	**Pb**	**01 49 04.0**	**+7.2**
KKB	**Krupnik**	**5.64**	**342**	*i* P	**Pn**	**01 48 46.0**	**-0.5**
SKO	**Skopje**	**6.27**	**332**	*e*Pn	**Pn**	**01 48 59.0**	**+3.7**
VTS	**Vitosha**	**6.30**	**345**	*i* P	**Pn**	**01 48 57.0**	**+1.2**
BRTR	**Keskin Array B**	**7.21**	**61**	Pn	**Pn**	**01 49 08.7**	**+0.2**
	0.5nm,0.3s,baz=286,slow=35,SNR=14						
ORI	**Oriolo Calabro**	**7.91**	**299**	*e*Pn	**Pn**	**01 49 18.1**	**-0.2**
SLCN	**Sala Consilina**	**8.61**	**300⇓**	*i*Pn	**P**	**01 49 28.3**	**+0.3**
SGO	**Scignano**	**8.90**	**300⇓**	*i*Pn	**P**	**01 49 31.7**	**-0.4**
MLR	**Muntele Rosu**	**8.97**	**2**	Pn	**P**	**01 49 32.5**	**-0.5**
MLR	0.1nm,0.3s,baz=188,slow=8.5,SNR=7.0			LR	LR	01 53 24.1	
FG4	comp=Z,64nm,18.5s,baz=300,slow=40 **Candela**	**9.01**	**304**	*e*Pn	**P**	**01 49 33.3**	**-0.3**
CSSN	**Cassano Irpino**	**9.22**	**301**	*e*Pn	**P**	**01 49 36.0**	**-0.6**
FG5	**Orsara di Pugl**	**9.24**	**304**	*e*Pn	**P**	**01 49 35.9**	**-0.9**
CPI2	**Carpinone**	**10.02**	**304**	*e*Pn	**P**	**01 49 47.5**	**+0.1**
CII	**Carovilli**	**10.09**	**304**	*e*P	**P**	**01 49 47.7**	**-0.7**

ASF	**Jabal al Asfar**	**10.41**	**111**	Pn		**P**	**01 49 51.3**	**-1.6**
	0.1nm,0.3s,baz=328,slow=15,SNR=2.3							
SDI	**San Donato**	**10.41**	**303**	*e*Pn		**P**	**01 49 53.2**	**+0.3**
AQU	**L'Aquila**	**10.98**	**306**	*e*P		**P**	**01 50 00.9**	**+0.3**
PSZ	**Piszkesteto**	**12.10**	**342**	*e*P		**P**	**01 50 16.2**	**+0.4**
VYHS	**Vyhne**	**12.91**	**340**	*e*PN		**P**	**01 50 27.5**	**+0.9**
ZST	**Bratislava**	**13.18**	**335**	*e*		**P**	**01 50 41.4**	**+11**
MOA	**Molln**	**14.01**	**327**	⇑*i*P		**P**	**01 50 49.9**	**+8.8**
	8.4nm,1.1s							
VRAC	**Vranov**	**14.31**	**336**	Pn		**P**	**01 50 45.9**	**+0.8**
	0.3nm,0.3s,baz=186,slow=9.2,SNR=2.0							
AKASG	**Malin Array Be**	**14.43**	**10**	Pn		**P**	**01 50 53.3**	**+6.7**
	0.5nm,0.3s,baz=201,slow=11,SNR=27							
MORC	**Moravsky Berou**	**14.44**	**339**	*e*P		**P**	**01 50 50.0**	**+3.4**
	9.6nm,1.0s							
WTTA	**Wattenberg**	**14.84**	**321**	⇑*i*P		**P**	**01 50 53.1**	**+1.2**
	14nm,0.9s							
GEC2	**GERESS Array S**	**15.02**	**329**	*e*P		**P**	**01 51 00.9**	**+6.7**
GEC2				pmax	pmax			
	comp=Z,16nm,0.8s							
GEC2	**GERESS Array S**	**15.02**	**329**	*e*P		**P**	**01 51 00.9**	**+6.7**
	comp=Z,16nm,0.8s							
GERES	**GERESS Array B**	**15.02**	**329**	Pn		**P**	**01 51 00.5**	**+6.3**
	comp=Z,0.4nm,0.3s,baz=144,slow=12,SNR=69							
SBF	**Sospel**	**15.57**	**304**	*e*P		**P**	**01 51 00.8**	**-0.8**
	comp=Z,32nm,0.8s							
WET	**Wettzell**	**15.59**	**328**	*e*P		**P**	**01 51 07.1**	**+5.3**
WET				pmax	pmax			
	comp=Z,11nm,0.9s							
WET	**Wettzell**	**15.59**	**328**	*e*P		**P**	**01 51 07.1**	**+5.3**
	comp=Z,11nm,0.9s							
PRU	**Pruhonice**	**15.60**	**333**	*e*P		**P**	**01 51 03.2**	**+1.3**
PRU				pmax	pmax			
	comp=Z,11nm,1.2s							
FUR	**Furstenfeldbru**	**15.62**	**323**	*e*P		**P**	**01 51 07.1**	**+4.9**
FUR				pmax	pmax			
	comp=Z,24nm,1.0s							
FUR	**Furstenfeldbru**	**15.62**	**323**	*e*P		**P**	**01 51 07.1**	**+4.9**
	comp=Z,24nm,1.0s							
KSP	**Ksiaz**	**15.75**	**338**	*e*P		**P**	**01 51 09.5**	**+5.7**
FRF	**La Foret Royal**	**16.00**	**302**	*e*P		**P**	**01 51 07.1**	**+0.1**
	comp=Z,41nm,1.2s							
MBDF	**Montbardon**	**16.35**	**306**	*e*P		**P**	**01 51 11.8**	**+0.3**
	comp=Z,24nm,1.1s							
BRG	**Berggiesshubel**	**16.55**	**334**	⇑*i*P		**P**	**01 51 18.4**	**+4.4**
BRG				pmax	pmax			
	comp=Z,14nm,1.3s							
BRG	**Berggiesshubel**	**16.55**	**334**	⇑*i*P		**P**	**01 51 18.4**	**+4.4**
	comp=Z,14nm,1.3s							
BRG				*i*			01 51 21.3	
LPG	**La Plagne**	**16.68**	**308**	*e*P		**P**	**01 51 16.2**	**+0.5**
	comp=Z,20nm,0.9s							
LPL	**La Plagne**	**16.70**	**308**	*e*P		**P**	**01 51 17.2**	**+1.2**
	comp=Z,18nm,1.1s							
GRA1	**Grafenberg Arr**	**16.73**	**326**	*e*P		**P**	**01 51 20.2**	**+4.0**
	comp=Z,43nm,1.1s							
GRF	**Grafenberg Arr**	**16.73**	**326**	*e*P		**P**	**01 51 20.2**	**+4.0**
GRF				pmax	pmax			
	comp=Z,43nm,1.1s							
ORIF	**Oris-en-Rattie**	**17.01**	**306**	*e*P		**P**	**01 51 21.8**	**+2.0**
	comp=Z,14nm,1.1s							
ORIF				*e*R				
	comp=Z,50nm,21.0s							
CLL	**Collm**	**17.25**	**333**	⇓P		**P**	**01 51 24.3**	**+1.6**
	comp=Z,logA/T=0.9							
CLL				*i*	PP	PP	01 51 34.4	-2.8
CLL				*i*			01 51 39.8	
CLL				*e*			01 52 04.0	
CLL	**Collm**	**17.25**	**333**	⇓*i*P		**P**	**01 51 24.3**	**+1.6**
CLL				pmax	pmax			
	comp=Z,9.0nm,1.1s							
CLL	**Collm**	**17.25**	**333**	⇓*i*P		**P**	**01 51 24.3**	**+1.6**
	comp=Z,9.0nm,1.1s							
MOX	**Moxa**	**17.27**	**329**	*i* P		**P**	**01 51 25.6**	**+2.6**
	comp=Z,logA/T=1.0							
MOX	**Moxa**	**17.27**	**329**	*e*P		**P**	**01 51 25.6**	**+2.6**
MOX				pmax	pmax			
	comp=Z,11nm,1.1s							
MOX	**Moxa**	**17.27**	**329**	*e*P		**P**	**01 51 25.6**	**+2.6**
	comp=Z,11nm,1.1s							
SUW	**Suwalki**	**17.56**	**356**	*e*P		**P**	**01 51 28.0**	**+1.4**
CABF	**La Chapelle**	**17.60**	**311**	*e*P		**P**	**01 51 26.5**	**-0.7**
	comp=Z,34nm,0.9s							
HINF	**Hinteralfeld**	**17.76**	**315**	*e*P		**P**	**01 51 29.6**	**+0.4**
CDF	**Champ du Feu**	**17.86**	**317**	*e*P		**P**	**01 51 31.3**	**+0.9**
	comp=Z,15nm,1.2s							
HAU	**Haudompre**	**18.15**	**315**	*e*P		**P**	**01 51 33.6**	**-0.5**
	comp=Z,13nm,1.0s							
HAU				*e*R				
	comp=Z,41nm,19.0s							
SMF	**Signal de Mont**	**19.01**	**309**	*e*P		**P**	**01 51 42.4**	**-2.1**
	comp=Z,11nm,0.8s							
MEZF	**Maizieres J'vi**	**19.15**	**315**	*e*P		**P**	**01 51 46.4**	**+0.3**
	comp=Z,28nm,1.2s							
WLF	**Walferdange**	**19.19**	**319**	*e*P		**P**	**01 51 46.3**	**-0.3**
	comp=Z,19nm,1.1s							
LOR	**Lormes**	**19.26**	**311**	*e*P		**P**	**01 51 47.6**	**+0.1**
	comp=Z,7.6nm,0.8s							
LOR				*e*R				
	comp=Z,50nm,21.2s							
AVF	**Avril sur Loir**	**19.37**	**309**	*e*P		**P**	**01 51 47.0**	**-1.8**
	comp=Z,16nm,1.1s							
SSF	**Saint Saulge**	**19.39**	**310**	*e*P		**P**	**01 51 48.6**	**-0.4**
	comp=Z,21nm,0.9s							
BGF	**Bois d'Agland**	**19.60**	**308**	*e*P		**P**	**01 51 50.0**	**-1.4**
	comp=Z,14nm,0.9s							
TCF	**Toulx Ste Croi**	**19.91**	**307**	*e*P		**P**	**01 51 54.1**	**-0.7**
	comp=Z,8.6nm,0.8s							
RJF	**Les Rejaudoux**	**20.04**	**303**	*e*P		**P**	**01 51 56.0**	**-0.2**
RJF				*e*R				
	comp=Z,48nm,20.3s							
OBN	**Obninsk**	**20.10**	**19**	P		**P**	**01 52 00.6**	**+3.9**
	comp=Z,9.1nm,0.6s							
GIVF	**Givet**	**20.14**	**319**	*e*P		**P**	**01 51 57.3**	**+0.1**
	comp=Z,28nm,0.9s							
EPF	**Esparros**	**20.32**	**296**	*e*P		**P**	**01 51 57.6**	**-1.5**
	comp=Z,23nm,1.2s							
BSEG	**Bad Segeberg**	**20.34**	**334**	*e*P		**P**	**01 51 58.3**	**-0.9**
BSEG				pmax	pmax			
	comp=Z,35nm,1.0s							
BAIF	**Baives**	**20.45**	**318**	*e*P		**P**	**01 51 59.9**	**-0.5**
	comp=Z,74nm,1.0s							
LFF	**La Frestale**	**20.46**	**302**	*e*P		**P**	**01 51 59.7**	**-0.9**
	comp=Z,19nm,0.8s							
MFF	**Saint Martin d**	**21.55**	**306**	*e*P		**P**	**01 52 10.3**	**-1.3**
	comp=Z,19nm,0.8s,mb4.3							
LDF	**La Druitiere**	**22.25**	**311**	*e*P		**P**	**01 52 18.6**	**0.0**
	comp=Z,12nm,0.8s,mb4.1							
FLN	**La Foliniere**	**22.53**	**311**	*e*P		**P**	**01 52 20.1**	**-1.3**
	comp=Z,16nm,0.8s,mb4.2							
FLN				*e*R				
	comp=Z,61nm,18.0s							
GRR	**Gorron**	**22.62**	**310**	*e*P		**P**	**01 52 22.4**	**+0.1**
	comp=Z,33nm,0.9s,mb4.5							
ESDC	**Sonseca Array**	**23.31**	**287**	P		**P**	**01 52 29.0**	**-0.1**
	comp=Z,3.3nm,0.6s,mb3.9,baz=79,slow=9.9,SNR=14							
ESLA	**Sonseca Array**	**23.31**	**287**	*e*P		**P**	**01 52 29.2**	**+0.1**
	comp=Z,2.7nm,0.9s,mb3.7							
QUIF	**Quistinic**	**23.91**	**307**	*e*P		**P**	**01 52 35.3**	**+0.5**
	comp=Z,28nm,0.9s,mb4.4							
ROSF	**Rostrenen**	**24.11**	**308**	*e*P		**P**	**01 52 35.2**	**-1.6**
	comp=Z,75nm,1.3s,mb4.7							
HFS	**Hagfors**	**24.81**	**346**	P		**P**	**01 52 43.1**	**-0.3**
	comp=Z,3.8nm,0.7s,mb4.0,baz=164,slow=11,SNR=6.4							
FINES	**FINESS Array B**	**24.95**	**1**	P		**P**	**01 52 44.0**	**-0.7**
	comp=Z,8.2nm,0.9s,mb4.3,baz=164,slow=10,SNR=8.7							
KAF	**Kangasniemi**	**25.62**	**1**	*e*p		**P**	**01 52 43.7**	**-7.4**
NB2	**NORSAR Subarra**	**26.15**	**344**	P		**P**	**01 52 57.1**	**+1.1**
	comp=Z,0.7nm,0.7s,mb3.3,baz=163,slow=11							
NOA	**NORSAR Array B**	**26.15**	**344**	P		**P**	**01 52 56.8**	**+0.9**
	comp=Z,1.1nm,0.8s,mb3.4,baz=153,slow=11,SNR=3.8							
EKA	**Eskdalemuir Ar**	**27.08**	**323**	P		**P**	**01 53 03.9**	**-0.7**
	comp=Z,4.5nm,0.8s,mb4.1,baz=117,slow=9.0,SNR=11							
ESK	**Eskdalemuir**	**27.09**	**323**	*e*P		**P**	**01 53 06.3**	**+1.6**
	comp=Z,8.3nm,0.9s,mb4.3							
ARU	**Arti**	**29.83**	**38**	*e*P		**P**	**01 53 28.8**	**-0.6**
	comp=Z,4.7nm,1.1s,mb4.1							
ARCES	**ARCESS Array B**	**33.07**	**0**	P		**P**	**01 53 55.0**	**-2.8**
	comp=Z,12nm,1.1s,mb4.7,baz=177,slow=6.6,SNR=5.3							
ZRNK	**Zerenda**	**34.41**	**48**	*e*P		**P**	**01 54 09.4**	**-0.1**
DBIC	**Dimbokro**	**40.60**	**230**	P		**P**	**01 54 57.7**	**-4.2**
	comp=Z,1.2nm,1.0s,mb3.5							
MKAR	**Makanchi Array**	**42.84**	**58**	P		**P**	**01 55 19.8**	**0.0**
	comp=Z,1.5nm,0.7s,mb3.9,baz=282,slow=6.5,SNR=13							
WMQ	**Urumqi**	**47.13**	**61**	*e*P		**P**	**01 55 55.6**	**+1.4**
WMQ					AP	pP	01 56 01.6	+2.3
WMQ					XP	sP	01 56 04.5	+3.1
WMQ					PP	PP	01 57 46.1	+1.4
WMQ					AMB	AMB		
	comp=Z,4.0nm,1.3s,mb4.2							
WMQ					AMB	AMB		
	comp=Z,24nm,6.3s							
WMQ					LR	LR		
	comp=N,87nm,20.1s,MS3.8							
WMQ					LR	LR		
	comp=E,74nm,20.3s,MS3.8							
WMQ					LR	LR		
	comp=Z,124nm,20.5s,MS3.9							
FRB	**Frobisher Bay**	**59.62**	**329**	P		**P**	**01 57 23.5**	**-2.7**
	comp=Z,3.9nm,0.8s,mb4.5,baz=59,slow=5.9,SNR=3.1							
LZH	**Lanzhou**	**61.40**	**65**	*e*P		**P**	**01 57 38.5**	**-0.2**
LZH					AP	pP	01 57 44.3	+0.3
LZH					XP	sP	01 57 47.0	+1.1
LZH					AMB	AMB		
	comp=Z,23nm,1.5s,mb5.1							
SCHQ	**Schefferville**		**62.30**	**319**	P	**P**	**01 57 43.2**	**-1.3**
	comp=Z,4.4nm,1.0s,mb4.5,baz=108,slow=12,SNR=4.4							
CMAR	**Chiang Mai Arr**	**66.19**	**84**	P		**P**	**01 58 09.3**	**-1.1**
	comp=Z,1.1nm,0.4s,mb4.2,baz=301,slow=7.4,SNR=6.7							
MDJ	**Mudanjiang**	**74.09**	**46**	P		**P**	**01 58 57.8**	**-0.2**
MDJ					AMB	AMB		
	comp=Z,3.0nm,0.7s,mb4.3							
MDJ					AMB	AMB		
	comp=Z,26nm,4.7s							
NJ2	**Nanjing**	**74.20**	**62**	*e*P		**P**	**01 59 00.2**	**+1.3**
YKA	**Yellowknife Ar**	**76.23**	**342**	P		**P**	**01 59 08.2**	**-1.6**
	comp=Z,0.6nm,1.0s,mb3.5,baz=31,slow=5.2,SNR=5.8							
SSE	**Sheshan**	**76.39**	**61**	⇑P		**P**	**01 59 12.2**	**+0.8**

*NEIC **13** 01:52:57.4±0.8,27.76N×84.81E,h65km±9km, Error ellipse: s-maj=28.9km s-min=12.2km az=191.0*
ISC 13 01:52:56.7±1.1,27.8N±0.3×84.8E±0.1,h74km±13km,n7, σ0§37/7,Nepal-India border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GKN	**Gorkha**	**0.26**	**319**	*e*P	**P**	**01 53 08.3**	**+0.2**
DMN	**Daman**	**0.32**	**129**	*e*P	**P**	**01 53 08.6**	**+0.1**
	8.9nm,0.6s						
KKN	**Kakani**	**0.40**	**93**	*e*P	**P**	**01 53 09.0**	**-0.1**
	9.3nm,0.8s						
PKI	**Pulchoki**	**0.57**	**115**	*e*P	**P**	**01 53 10.7**	**0.0**
KOLN	**Koldanda**	**1.09**	**268**	*e*P	**P**	**01 53 16.5**	**-0.2**
	14nm,1.0s						
ZRNK	**Zerenda**	**27.73**	**339**	P	**P**	**01 58 39.8**	**-0.4**
KIV	**Kislovodsk**	**37.31**	**307**	*e*P	**P**	**02 00 03.8**	**+0.5**
KIV				*e*		02 00 15.2	

*TAP **13** 01:53:47.8,24.27N×122.63E,h46km±1km,ML2.9*
*JMA **13** 01:53:47.2±0.2,24.29N×122.60E,h51km,M1.9*
ISC 13 01:53:47.0±2.9,24.8N±0.9×122.7E±0.3,h51km±52km,n4, σ0§11/8,Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
YOJ	**Yonaguni jima**	**0.42**	**135**	P	**P**	**01 53 57.5**	**+0.1**
YOJ				S	**S**	**01 54 04.9**	**0.0**
IRIF	**Iriomote-Funau**	**1.04**	**114**	P	**P**	**01 54 05.4**	**-0.1**
IRIF				S	**S**	**01 54 19.2**	**0.0**
JKRS	**Kuro-shima**	**1.31**	**113**	P	**P**	**01 54 09.6**	**+0.1**
JKRS				S	**S**	**01 54 26.1**	**0.0**
JIJ	**Ishigaki jima**	**1.38**	**106**	P	**P**	**01 54 10.4**	**-0.1**
JIJ				S	**S**	**01 54 27.9**	**+0.1**

IDC 13 02:02:15.8±1.9,6.13S×130.97E,mb3.8/2,mb1 3.6/5, mb1mx3.5/12,ML3.2/3,Error ellipse: s-maj=86.1km s-min=26.0km az=72.0,Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**12.99**	**203**	Pn	P	02 05 20.5	-4.0
	0.2nm,0.3s,baz=24,slow=12,SNR=13						
FITZ				Sn	S	02 07 31.5	-19
	0.2nm,0.3s,baz=6.4,slow=16,SNR=4.7						
WRA	**Warramunga Arr**	**14.11**	**167**	Pn	P	02 05 37.6	-1.9
	0.1nm,0.3s,baz=352,slow=13,SNR=9.8						
WRA				Sn	S	02 08 04.4	-14
	0.3nm,0.3s,baz=340,slow=20,SNR=9.3						
ASAR	**Alice Springs**	**17.66**	**171**	P	P	02 06 25.3	+0.3
	0.1nm,0.3s,baz=347,slow=9.9,SNR=6.8						
STKA	**Stephens Creek**	**27.47**	**160**	P	P	02 08 03.4	-2.4
	1.0nm,0.7s,baz=356,slow=13,SNR=1.9						
MKAR	**Makanchi Array**	**68.04**	**326**	P	P	02 13 17.4	-2.0
	0.4nm,0.5s,baz=135,slow=8.2,SNR=4.7						

IDC 13 02:03:04.4±1.7,22.46S×173.95W,mb4.0/2,mb1 4.3/3, mb1mx3.8/15,ML4.5/1,Error ellipse: s-maj=117.0km s-min=30.7km az=165.0,Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAR	**Rarotonga**	**13.23**	**87**	Pn	P	02 06 12.8	-3.4
	2.3nm,0.3s,baz=260,slow=6.1,SNR=4.1						
ASAR	**Alice Springs**	**47.77**	**258**	P	P	02 11 43.9	-1.6
	1.5nm,0.8s,baz=100,slow=7.7,SNR=14						
WRA	**Warramunga Arr**	**48.08**	**263**	P	P	02 11 45.5	-2.4
	1.8nm,0.8s,baz=101,slow=8.3,SNR=17						
AKASG	**Malin Array Be**	**146.51**	**333**	PKPbc	PKPbc	02 22 46.7	-0.5
	0.2nm,0.3s,baz=40,slow=3.8,SNR=5.7						
GERES	**GERESS Array B**	**152.98**	**349**	PKP	PKPdf	02 22 56.9	-0.9
	0.4nm,0.8s,baz=27,slow=2.2,SNR=3.1						
GERES				PKPbc	PKPdf	02 23 03.2	+5.4
	0.2nm,0.5s,slow=1.0,SNR=3.8						

*NEIC **13** 02:41:21.2±4.1,6.83S×129.41E,h100km±39km,mb4.2/2, Error ellipse: s-maj=32.0km s-min=20.1km az=209.0*
*IDC **13** 02:41:28.4±5.7,7.22S×129.28E,h169km±56km,mb3.5/2, mb1 3.9/5,mb1mx3.6/12,MS3.3/3,Ms1 3.3/3,ms1mx2.8/17, Error ellipse: s-maj=54.2km s-min=22.6km az=60.0*
ISC 13 02:41:25.6±3.0,7.1S±0.1×129.3E±0.1,h159km±30km,n15, σ1§29/20,mb4.1/3,2C-1D,Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**11.48**	**198**	⇑*i*P	P	02 44 08.3	+2.7
	6.7nm,0.3s						
FITZ				*e*S	S	02 46 11.1	-0.1
FITZ	**Fitzroy Crossi**	**11.48**	**198**	P	P	02 44 08.1	+2.4
	2.2nm,0.3s,baz=17,slow=9.4,SNR=42						
FITZ				S	S	02 46 11.2	0.0
	2.8nm,0.3s,baz=143,slow=18,SNR=5.9						
WRAB	**Tennant Creek**	**13.61**	**160**	*e*P	P	02 44 32.4	-0.8
	20nm,0.5s						
WRAB				*e*S	S	02 46 52.9	-8.1
WRA	**Warramunga Arr**	**13.62**	**160**	P	P	02 44 32.5	-0.8
	2.2nm,0.3s,baz=338,slow=13,SNR=108						
WRA				S	S	02 46 59.6	-1.4
	2.5nm,0.3s,baz=335,slow=22,SNR=7.7						
WRA				LR	LR	02 49 57.4	
	comp=Z,61nm,20.8s,baz=350,slow=38						
WB2	**Warramunga Arr**	**13.62**	**160**	⇓*i*P	P	02 44 32.8	-0.5
WB2				*e*S	S	02 47 00.1	-1.1
AS12	**Alice Springs**	**17.00**	**166**	⇑*i*P	P	02 45 17.9	+2.5
	13nm,0.8s						
AS12				*e*S	S	02 48 25.2	+7.6
ASAR	**Alice Springs**	**17.00**	**166**	P	P	02 45 16.8	+1.4
	1.9nm,0.3s,baz=343,slow=11,SNR=72						
ASAR				S	S	02 48 22.1	+4.4
	0.5nm,0.3s,baz=344,slow=23,SNR=3.7						
CTAO	**Charters Tower**	**20.84**	**130**	P	P	02 45 58.2	+2.0
	2.6nm,0.9s						
STKA	**Stephens Creek**	**27.13**	**157**	P	P	02 46 56.6	+0.7
	0.8nm,0.4s,mb3.7,baz=323,slow=10,SNR=3.1						
NWAO	**Narrogin (SRO)**	**28.01**	**202**	P	P	02 47 05.6	+1.7
	39nm,1.3s,mb5.0						
COCO	**West Island**	**32.42**	**259**	*e*P	P	02 47 41.7	-1.2
JNU	**Nakatsue**	**40.07**	**2**	LR	LR	03 03 17.6	
	comp=Z,28nm,20.8s,baz=180,slow=33						
JHJ	**Hachijo jima 2**	**41.25**	**13**	LR	LR	03 03 17.7	
	comp=Z,134nm,20.5s,baz=328,slow=32						
MKAR	**Makanchi Array**	**67.99**	**327**	P	P	02 52 09.2	-0.4
	0.6nm,0.4s,mb3.7,baz=115,slow=8.2,SNR=14						
ZRNK	**Zerenda**	**78.53**	**328**	*e*P	P	02 53 09.5	-1.1

*MEX **13** 02:43:59.8±1.5,18.05N×103.86W,h7km±37km,MD4.5*
*IDC **13** 02:43:59.4±1.1,18.05N×104.14W,mb3.9/9,mb1 4.1/10, mb1mx3.9/20,ML3.2/1,MS3.0/1,Ms1 3.0/1,ms1mx2.4/21, Error ellipse: s-maj=48.1km s-min=17.8km az=54.0*
*NEIC **13** 02:44:01.3,18.11N×103.94W,h7km,mb3.8/6, MD4.5(MEX),After MEX.*
ISC 13 02:43:58.4±2.2,18.16N±0.05×104.00W±0.05,h3km±14km, n35,σ1§22/44,mb3.9/12,Near coast of Jalisco

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
COLM	**Colima**	**1.05**	**16**	*i* P	**Pb**	**02 44 19.0**	**+0.1**
COLM				*i* S	**Sb**	**02 44 32.0**	**-1.0**
CJM	**Chamela**	**1.65**	**324**	*i* P	**Pn**	**02 44 27.5**	**-1.0**
CJM				*i* S	**Sb**	**02 44 51.2**	**+0.8**
ZIIG	**Zihuatanejo**	**2.48**	**103**	*e*P	**Pn**	**02 44 35.5**	**-4.8**
ZIIG				*i* S	**Sn**	**02 45 06.4**	**-5.2**
SFJM	**Santa Fe**	**2.48**	**21**	*i* P	**Pn**	**02 44 40.5**	**+0.1**
SFJM				*i* S	**Sn**	**02 45 19.0**	**+7.4**
MOIG	**Morelia**	**3.06**	**60**	*e*P	**Pn**	**02 44 47.3**	**-1.4**
MOIG				*i* S	**Sn**	**02 45 24.4**	**-1.9**
MOIG	**Morelia**	**3.06**	**60**	*i* P	**Pn**	**02 44 50.2**	**+1.5**
MOIG				*i* S	**Sn**	**02 45 27.5**	**+1.2**
UNM	**Universidad Na**	**4.72**	**75**	*e*P	**Pn**	**02 45 03.5**	**-8.7**
YAIG	**Yautepec**	**4.74**	**81**	*i* P	**Pn**	**02 45 12.4**	**0.0**
YAIG				*i* S	**Sn**	**02 45 59.8**	**-8.9**
YAIG	**Yautepec**	**4.74**	**81**	*i* P	**Pn**	**02 45 15.3**	**+2.8**
YAIG				*i* S	**Sn**	**02 46 07.4**	**-1.3**
ZAIG	**Zacatecas**	**4.78**	**16**	*e*P	**Pn**	**02 45 17.1**	**+4.1**
ZAIG				*i* S	**Sn**	**02 46 14.0**	**+4.3**
PPM	**Popocatepetl**	**5.18**	**79**	*e*P	**Pn**	**02 45 20.0**	**+1.3**
MAIG	**Mazatlaan**	**5.49**	**336**	*e*P	**Pn**	**02 45 20.6**	**-2.4**
MAIG				*i* S	**Sn**	**02 46 28.0**	**+0.4**
OXX	**Oaxaca**	**7.03**	**98**	*e*P	**Pn**	**02 45 44.0**	**-0.7**
TXAR	**Lajitas Array**	**11.12**	**2**	Pn	**P**	**02 46 43.1**	**+1.5**
	0.0nm,0.3s,baz=185,slow=14,SNR=9.4						
TXAR				LR	LR	02 50 48.7	
	comp=Z,73nm,18.6s,baz=65,slow=36						
JCT	**Junction City**	**12.84**	**17**	*e*P	**P**	**02 47 08.4**	**+3.7**
ANMO	**Albuquerque**	**16.86**	**353**	*e*P	**P**	**02 48 00.9**	**+3.8**
	2.4nm,0.8s						
WMOK	**Wichita Mounta**	**17.15**	**15**	*e*P	**P**	**02 47 59.9**	**-0.8**
	1.5nm,0.6s						
WUAZ	**Wupatki**	**18.48**	**341**	P	**P**	**02 48 15.8**	**-1.5**
	4.6nm,1.1s						
PV10	**Paradox Valley**	**20.61**	**349**	*e*P	**P**	**02 48 41.0**	**-0.4**
KSU1	**Kansas State U**	**21.83**	**16**	*e*P	**P**	**02 48 55.1**	**+1.3**
WVT	**Waverly**	**22.91**	**35**	P	**P**	**02 49 00.4**	**-4.2**
NVAR	**Mina Array Bea**	**23.74**	**331**	P	**P**	**02 49 15.4**	**+2.8**
	1.3nm,0.9s,mb3.4,baz=143,slow=12,SNR=6.7						
PDAR	**Pinedale Array**	**24.98**	**350**	P	**P**	**02 49 25.6**	**+1.0**
	0.8nm,0.6s,mb3.4,baz=160,slow=10,SNR=7.2						
YBH	**Yreka Blue Hor**	**28.41**	**330**	P	**P**	**02 49 55.9**	**-0.3**
	0.6nm,0.8s,mb3.3,baz=147,slow=7.2,SNR=2.0						
SDV	**Santo Domingo**	**33.68**	**101**	P	**P**	**02 50 44.5**	**+1.5**
	1.3nm,0.5s,mb4.2,baz=329,slow=6.0,SNR=4.5						
FCC	**Fort Churchill**	**41.19**	**8**	*e*P	**P**	**02 51 44.4**	**-1.3**
	2.3nm,0.7s,mb3.9						
YKA	**Yellowknife Ar**	**44.90**	**353**	P	**P**	**02 52 14.8**	**-1.0**
	0.4nm,0.7s,mb3.4,baz=166,slow=7.7,SNR=11						
YKA				PcP	PcP	02 53 56.8	-1.1
	0.2nm,0.7s,baz=161,slow=3.1,SNR=5.1						
YKA	**Yellowknife Ar**	**44.90**	**353**	P	**P**	**02 52 14.8**	**-1.0**
YKA				PcP	PcP	02 53 56.8	-1.1
LVC	**Limon Verde**	**53.10**	**138**	*e*P	**P**	**02 53 19.6**	**-0.1**
	1.5nm,0.6s,mb4.1						
INK	**Inuvik**	**53.47**	**347**	*e*P	**P**	**02 53 21.3**	**-0.5**
	2.8nm,0.7s,mb4.3						
ILAR	**Eielson Array**	**54.65**	**339**	P	**P**	**02 53 30.6**	**+0.1**
	1.1nm,0.9s,mb3.9,baz=156,slow=6.2,SNR=11						
CPUP	**Villa Florida**	**63.34**	**133**	P	**P**	**02 54 30.8**	**-0.6**
	2.0nm,1.0s,mb4.2,baz=322,slow=8.5,SNR=3.6						
BDFB	**Brasilia**	**64.57**	**118**	P	**P**	**02 54 38.7**	**-1.0**
	1.5nm,0.7s,mb4.1,baz=220,slow=2.4,SNR=3.2						
ARCES	**ARCESS Array B**	**85.57**	**16**	P	**P**	**02 56 40.4**	**+1.6**
	3.3nm,0.9s,mb4.5,baz=306,slow=10,SNR=3.6						
WRA	**Warramunga Arr**	**125.06**	**258**	PKP	PKPdf	03 03 01.7	-1.7
	0.6nm,0.6s,baz=80,slow=2.2,SNR=9.9

SGG	Gregorio Mates	1.93	168	ePN	Pn	02 48 58.7	+0.4	
SEI	Scarperia	1.98	294	ePN	Pn	02 49 02.8	+3.8	
	373nm,0.6s							
SEI	Scarperia	1.98	294	ePn	Pn	02 49 02.8	+3.9	
RGNG	Rignano Grg	2.05	141	ePN	Pn	02 49 00.0	-0.1	
RGNG	Rignano Grg	2.05	141	ePn	Pn	02 48 60.0	-0.1	
GRFL	Gerfalco	2.11	268	ePN	Pn	02 49 03.1	+2.2	
	28nm,0.5s							
GRFL	Gerfalco	2.11	268	ePn	Pn	02 49 03.1	+2.2	
IPES	Pescosannita	2.17	160	ePN	Pn	02 49 02.6	+0.9	
FNVD	Fontana Vidola	2.17	295	ePN	Pn	02 49 05.5	+3.7	
FNVD	Fontana Vidola	2.17	295	ePn	Pn	02 49 05.5	+3.6	
FGMS	Monte Sant'Ang	2.20	135	ePN	Pn	02 49 01.6	-0.7	
	940nm,0.6s							
FGMS	Monte Sant'Ang	2.20	135	ePn	Pn	02 49 01.6	-0.7	
FG5	Orsara di Pugl	2.25	152	ePN	Pn	02 49 02.9	0.0	
	117nm,0.5s							
FG5	Orsara di Pugl	2.25	152	ePn	Pn	02 49 02.9	-0.1	
VBY	Vinica-Bojanci	2.44	24	ePn	Pn	02 49 09.7	+4.0	
VBY				e(Sn)	Sn	02 49 38.5	+2.2	
BDI	Bagni Di Lucca	2.49	290	ePN	Pn	02 49 08.8	+2.4	
	24nm,0.3s							
BDI	Bagni Di Lucca	2.49	290	ePn	Pn	02 49 08.8	+2.4	
CSSN	Cassano Irpino	2.56	160	ePN	Pn	02 49 07.4	0.0	
CSSN	Cassano Irpino	2.56	160	ePn	Pn	02 49 07.4	-0.1	
GSCL	Gusciola	2.60	296	ePn	Pn	02 49 11.9	+4.0	
VLC	Villacollemand	2.67	291	ePn	Pn	02 49 11.6	+2.7	
VOY	Vojsko	2.76	1	ePn	Pn	02 49 10.8	+0.6	
VOY				eSn	Sn	02 49 45.9	+1.6	
MRLC	Muro Lucano	2.80	154	ePn	Pn	02 49 09.4	-1.3	
LJU	Ljubljana	2.81	10	ePn	Pn	02 49 13.0	+2.1	
LJU				ePg	Pg	02 49 21.0	+0.4	
LJU				eSn	Sn	02 49 47.0	+1.4	
STON	Ston	2.84	97	i Pn	Pn	02 49 11.0	-0.4	
STON				i Sn	Sn	02 49 46.0	-0.5	
SGO	Sicignano	2.92	158	ePn	Pn	02 49 12.1	-0.4	
SLCN	Sala Consilina	3.17	155	ePn	Pn	02 49 14.8	-1.3	
OBKA	Obir	3.27	8	⇑i PN	Pn	02 49 18.3	+0.8	
OBKA				i SN	Sn	02 49 56.1	-1.2	
OBKA				i SG	Sg	02 50 13.0	-0.4	
	130nm,0.7s							
BOB	Bobbio (Coli)	3.51	297	ePn	Pn	02 49 23.4	+2.5	
PGF	Pioggiola	3.64	260	ePn	Pn	02 49 23.6	+0.8	
PGF				eSn	Sn	02 50 06.5	-0.2	
	7.5nm,0.4s							
MABI	Malga Bissina	3.66	321	ePn	Pn	02 49 23.8	+0.8	
ORI	Oriolo Calabro	3.75	148	ePn	Pn	02 49 24.0	-0.3	
KBA	Koelnbreinsper	3.82	355	⇑i PN	Pn	02 49 26.2	+0.9	
KBA				i SN	Sn	02 50 11.3	+0.1	
PCP	Pian Castagno	4.04	290	P	Pn	02 49 29.7	+1.3	
BRMO	Bormio	4.05	323	ePn	Pn	02 49 30.2	+1.7	
SCE	Schlegeis	4.06	339	⇑i Pn	Pn	02 49 29.9	+1.2	
OGA	Obergurgl	4.11	332	ePn	Pn	02 49 30.3	+0.8	
RHK1	Bakonya	4.12	45	⇓ eP	Pn	02 49 29.0	-0.6	
ARSA	Arzberg	4.14	16	⇓i PN	Pn	02 49 29.7	-0.2	
ARSA				i SN	Sn	02 50 18.0	-1.4	
FIN	Finale Ligure	4.20	285	P	Pn	02 49 32.1	+1.5	
RORO		4.28	283	P	Pn	02 49 35.7	+3.8	
WTTA	Wattenberg	4.29	339	⇑i PN	Pn	02 49 33.0	+1.1	
WTTA				i SN	Sn	02 50 23.3	+0.3	
SQTA	Sankt Quirin	4.37	336	⇓i PN	Pn	02 49 34.5	+1.5	
SQTA				i SN	Sn	02 50 25.5	+0.5	
WATA	Walderalm	4.37	339	⇑i PN	Pn	02 49 34.4	+1.3	
WATA				i SN	Sn	02 50 25.3	+0.2	
IMI	Imperia	4.38	280	P	Pn	02 49 35.3	+2.0	
BGLD	Berchtesgaden	4.42	353	⇑i Pn	Pn	02 49 35.2	+1.4	
ROB	Roburent	4.45	285	P	Pn	02 49 34.8	+0.5	
DAVOX	Davos	4.50	323	Pn	Pn	02 49 36.9	+2.0	
	12nm,0.3s,baz=151,slow=17,SNR=106							
DAVOX				Sn	Sn	02 50 24.0	-4.3	
	baz=329,slow=19,SNR=2.0							
DAVOX				Lg		02 50 55.1		
	1.5nm,0.3s,baz=156,slow=20,SNR=1.8							
MONE	Monesi	4.50	282	P	Pn	02 49 36.3	+1.4	
NEGI	Negi	4.51	279	P	Pn	02 49 37.5	+2.4	
MOTA	Moosalm	4.51	335	⇓i PN	Pn	02 49 36.6	+1.5	
MOTA				i SN	Sn	02 50 29.2	+0.6	
MOA	Molln	4.58	3	⇑i PN	Pn	02 49 36.8	+0.7	
MOA				i SN	Sn	02 50 29.4	-1.1	
SAOF	Saorge	4.63	281	P	Pn	02 49 38.2	+1.4	
SBF	Sospel	4.70	279	ePn	Pn	02 49 39.1	+1.3	
SBF				eSn	Sn	02 50 29.1	-4.5	
	14nm,0.4s							
ENR	Entracque	4.76	284	P	Pn	02 49 39.4	+0.8	
STV2	Anna di Valdie	4.83	284	P	Pn	02 49 40.5	+0.9	
STV	Sta Anna Valdi	4.83	284	P	Pn	02 49 40.5	+0.8	
DAVA	Damuels	4.89	326	⇑i PN	Pn	02 49 42.0	+1.4	
DAVA				i SN	Sn	02 50 39.5	+1.1	
DOI	San Damiano	4.93	287	ePn	Pn	02 49 41.4	+0.3	
MCGN	Macugnaga	4.97	305	ePn	Pn	02 49 41.4	-0.3	
BHB	Bricherasio	5.00	290	P	Pn	02 49 41.2	-0.8	
PZZ	Prazzo	5.04	286	P	Pn	02 49 41.7	-0.8	
CALN	Calern	5.09	278	P	Pn	02 49 44.9	+1.6	
RSP	Reno Superiore	5.10	294	P	Pn	02 49 41.7	-1.8	
FENE	Fenestrelle	5.19	292	P	Pn	02 49 43.9	-0.9	
FRF	La Foret Royal	5.26	276	ePn	Pn	02 49 47.1	+1.4	
FRF				eSn	Sn	02 50 45.2	-2.4	
	7.5nm,0.4s							
LSD	Ceresole Reale	5.28	297	P	Pn	02 49 44.8	-1.1	
MBDF	Montbardon	5.31	288	ePn	Pn	02 49 45.8	-0.7	
MBDF				eSn	Sn	02 50 45.0	-3.9	
	11nm,0.5s							
RRL	Cesana Torines	5.35	290	P	Pn	02 49 46.4	-0.6	
LMR	La Mourre	5.36	273	ePn	Pn	02 49 46.9	-0.3	
LMR				eSn	Sn	02 50 48.3	-1.8	
	2.2nm,0.3s							
ZST	Bratislava	5.42	24	e	Pn	02 49 40.2	-7.8	
ZST				e		02 50 38.5		
LPG	La Plagne	5.55	296	ePn	Pn	02 49 48.4	-1.5	
LPG				eSn	Sn	02 50 49.8	-5.2	
	12nm,0.4s							
GEC2	GERESS Array S	5.57	359	ePn	Pn	02 49 49.0	-1.1	
GEC2				eSn	Sn	02 50 52.5	-2.9	
GERES	GERESS Array B	5.57	359	Pn	Pn	02 49 49.3	-0.8	
	1.2nm,0.3s,baz=182,slow=13,SNR=43							
GERES				Sn	Sn	02 50 51.8	-3.6	
	4.0nm,0.3s,baz=183,slow=25,SNR=12							
GERES				Lg		02 51 33.8		
	baz=174,slow=29,SNR=2.6							
LPL	La Plagne	5.58	296	ePn	Pn	02 49 48.8	-1.3	
LPL				eSn	Sn	02 50 50.6	-4.9	
	14nm,0.4s							
KHC	Kasperske Hory	5.86	358	ePN	Pn	02 49 52.7	-1.5	
KHC				ex		02 50 01.5		
KHC				eSN	Sn	02 50 58.5	-4.1	
GDM	Grand'Maison	5.89	292	P	Pn	02 49 55.9	+1.4	
WET	Wettzell	5.91	354	ePn	Pn	02 49 53.5	-1.4	
WET				eSn	Sn	02 51 00.0	-3.8	
ORIF	Oris-en-Rattie	5.97	289	ePn	Pn	02 49 55.6	-0.2	
ORIF				eSn	Sn	02 51 01.3	-4.2	
	8.0nm,0.4s							
SMRF	Simiane la Rot	6.05	279	ePn	Pn	02 49 57.9	+1.0	
GRN	Grenoble	6.15	291	P	Pn	02 49 58.6	+0.4	
FELD	Feldberg	6.17	320	P	Pn	02 49 57.2	-1.3	
FELD				S	Sn	02 51 04.8	-5.5	
VYHS	Vyhne	6.27	32	ePN	Pn	02 50 00.7	+0.8	
VYHS				eSN	Sn	02 51 19.6	+6.8	
PSZ	Piszkesteto	6.28	40	ePn	Pn	02 49 59.7	-0.5	
VRAC	Vranov	6.32	16	Pn	Pn	02 50 01.2	+0.5	
	0.2nm,0.3s,baz=164,slow=7.4,SNR=3.3							
VRAC				Sn	Sn	02 51 06.9	-7.3	
	1.0nm,0.3s,baz=238,slow=13,SNR=2.6							
BFO	Black Forest	6.36	325	ePn	Pn	02 50 01.3	+0.1	
BFO				eSn	Sn	02 51 11.5	-3.6	
LOMF	Lomont	6.42	312	P	Pn	02 50 01.0	-1.0	
CABF	La Chapelle	6.44	304	ePn	Pn	02 50 01.4	-1.0	
CABF				eSn	Sn	02 51 11.3	-5.9	
	4.3nm,0.3s							
MOF	Molkenrain	6.57	316	P	Pn	02 50 03.3	-0.9	
MOF				S	Sn	02 51 15.7	-4.7	
HINF	Hinteralfeld	6.69	315	ePn	Pn	02 50 04.0	-1.9	
HINF				eSn	Sn	02 51 17.5	-5.9	
	21nm,0.2s							
PRU	Pruhonice	6.73	4	eSN	Sn	02 51 17.9	-6.5	
VIVF	Saint-Julien-l	6.80	287	ePn	Pn	02 50 06.1	-1.4	
VIVF				eSn	Sn	02 51 20.5	-5.7	
	1.3nm,0.3s							
ECH	Echery	6.81	319	P	Pn	02 50 06.7	-0.8	
ECH				S	Sn	02 51 21.6	-4.7	
CDF	Champ du Feu	6.89	320	ePn	Pn	02 50 07.4	-1.3	
CDF				eSn	Sn	02 51 22.9	-5.5	
	4.1nm,0.3s							
MORC	Moravsky Berou	6.98	20	ePn	Pn	02 49 58.8	-11	
HAU	Haudompre	7.07	315	ePn	Pn	02 50 09.5	-1.8	
HAU				eSn	Sn	02 51 26.6	-6.4	
	31nm,0.3s							
LASF	Ste Croix	7.29	280	ePn	Pn	02 50 13.8	-0.6	
THEF	They Montfort	7.40	315	P	Pn	02 50 14.4	-1.5	
MOX	Moxa	7.53	349	i P	Pn	02 50 15.4	-2.3	
MOX				S	Sn	02 51 37.0	-7.4	
MOX	Moxa	7.53	349	ePn	Pn	02 50 15.4	-2.3	
MOX				eSn	Sn	02 51 37.3	-7.1	
BRG	Berggiesshubel	7.60	0	ePn	Pn	02 50 27.1	+8.4	
BRG				e		02 51 00.9		
BRG				e		02 51 12.2		
BRG				eSn	Sn	02 51 40.1	-6.1	
SMF	Signal de Mont	7.86	299	ePn	Pn	02 50 19.9	-2.4	
SMF				eSn	Sn	02 51 45.1	-7.6	
	9.5nm,0.4s							
CLL	Collm	8.06	356	ePN	P	02 50 24.0	-1.0	
CLL				eSN	Sn	02 51 47.0	-11	
CLL				e		02 52 22.0		
CLL				e		02 52 43.0		
CLL				eSG	Sg	02 52 53.0	+0.2	
CLL				e		02 52 57.0		
MEZF	Maizieres J'vi	8.06	313	ePn	P	02 50 24.1	-1.0	
MEZF				eSn	Sn	02 51 50.6	-7.1	
	5.0nm,0.5s							
LOR	Lormes	8.10	303	ePn	P	02 50 23.3	-2.4	
	baz=120							
LOR				eSn	Sn	02 51 51.8	-6.9	
	7.1nm,0.3s							
AVF	Avril sur Loir	8.23	299	ePn	P	02 50 24.4	-3.0	
AVF				eSn	Sn	02 51 54.8	-7.0	
	1.8nm,0.3s							
SSF	Saint Saulge	8.23	301	ePn	P	02 50 24.7	-2.8	
SSF				eSn	Sn	02 51 54.8	-7.2	
	6.6nm,0.4s							
BGF	Bois d'Agland	8.47	297	ePn	P	02 50 28.6	-2.2	
BGF				eSn	Sn	02 52 00.3	-7.7	
	8.9nm,0.4s							
MTLF	Montolieu	8.49	274	ePn	P	02 50 30.1	-1.0	
TCF	Toulx Ste Croi	8.81	294	ePn	P	02 50 33.4	-2.2	
TCF				eSn	Sn	02 52 08.7	-7.7	
	1.7nm,0.3s							
HYF	Humbligny	8.86	301	ePn	P	02 50 34.6	-1.6	
MLR	Muntele Rosu	8.94	71	Pn	P	02 50 37.8	+0.5	
	0.0nm,0.3s,baz=225,slow=10.0,SNR=1.7							
MFF	Saint Martin d	10.47	293	ePn	P	02 50 56.6	-1.7	
FLN	La Foliniere	11.37	304	ePn	P	02 51 07.7	-2.9	
GRR	Gorron	11.46	302	ePn	P	02 51 10.2	-1.7	
QUIF	Quistinic	12.79	297	ePn	P	02 51 27.8	-1.9	
FINES	FINESS Array B	19.61	18	P	P	02 52 54.7	-1.5	
	0.1nm,0.3s,baz=203,slow=11,SNR=3.7							
FINES	FINESS Array B	19.61	18	P	P	02 52 54.7	-1.5	
MKAR	Makanchi Array	47.10	61	P	P	02 56 58.2	-0.8	
	1.8nm,1.0s,mb4.0,baz=279,slow=7.9,SNR=9.6							
MKAR	Makanchi Array	47.10	61	P	P	02 56 58.2	-0.8	
YKA	Yellowknife Ar	66.79	337	P	P	02 59 17.7	-0.9	
	0.1nm,0.5s,mb3.1,baz=44,slow=5.9,SNR=5.4							

*NEIC **13** 03:21:05.8, 63.11N×150.60W, h121km, mb3.8/2, After AEIC.*

*IDC **13** 03:21:05.7±4.5, 63.27N×150.76W, h114km±35km, mb3.7/7, mb1 3.8/11, mb1mx3.5/23, Error ellipse: s-maj=44.8km s-min=14.8km az=53.0*

ISC 13 03:21:04.7±0.3, **63.12N**±0.02×**150.59W**±0.06, **h124**km±2km, **n87**, σ0**975**/111, **mb3.9**/9, **Central Alaska**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
TRF	Thorofare Moun	0.36	22	P		P	P	03 21 23.3	+0.8
TRF				S		S	S	03 21 36.6	+0.6
HUR	Hurricane	0.46	108	P		P	P	03 21 23.5	+0.4
HUR				S		S	S	03 21 37.0	+0.1
KTH	Kantishna Hill	0.46	341	P		P	P	03 21 23.7	+0.7
KTH				S		S	S	03 21 36.6	-0.3
CUT	Chulitna	0.73	168	P		P	P	03 21 25.4	+0.5
RND	Reindeer	0.84	69	P		P	P	03 21 26.4	+0.6
RND				S		S	S	03 21 42.6	+0.9
MCK	McKinley	0.96	50	P		P	P	03 21 27.7	+0.6
MCK				S		S	S	03 21 43.8	0.0
BWN	Browne	1.17	25	P		P	P	03 21 30.2	+1.0
BWN				S		S	S	03 21 48.0	+0.5
DHY	Denali Highway	1.47	90	P		P	P	03 21 33.1	+0.7
DHY				S		S	S	03 21 54.8	+1.3
PWA	Palmer West	1.51	167	P		P	P	03 21 33.5	+0.5
PWA				S		S	S	03 21 54.2	-0.3
GHO	Glory Hole Cre	1.56	149	P		P	P	03 21 34.0	+0.5
GHO				S		S	S	03 21 56.3	+0.9
NEA	Nenana	1.61	24	P		P	P	03 21 34.2	+0.1
NEA				S		S	S	03 21 54.9	-1.5
PMR	Palmer	1.68	155	P		P	P	03 21 34.7	-0.2
PMR				S		S	S	03 21 57.2	-0.6
SML	Sawmill	1.69	140	P		P	P	03 21 35.0	0.0
SML				S		S	S	03 21 58.0	+0.1
MLY	Manley	1.92	358	P		P	P	03 21 38.1	+0.3
PMS	Palmer South	1.94	165	P		P	P	03 21 38.3	+0.2
PMS				S		S	S	03 22 03.7	+0.3
CCB	Clear Creek Bu	1.97	38	P		P	P	03 21 38.6	+0.3
FIB	Fire Island	1.97	174	P		P	P	03 21 39.4	+0.9
GOU	Gould Hall	1.98	169	P		P	P	03 21 39.4	+0.9
GOU				S		S	S	03 22 03.2	-0.9
KNK	Knik Glacier	1.98	149	P		P	P	03 21 38.6	0.0
SCM	Sheep Creek Mo	1.99	129	P		P	P	03 21 38.6	-0.1
SCM				S		S	S	03 22 04.5	+0.1
CP2	Crater Peak Tw	2.02	203	P		P	P	03 21 40.1	+1.1
SPU	Mount Spurr	2.06	200	eP		P	P	03 21 39.4	-0.2
HDA	Harding Lake	2.07	50	P		P	P	03 21 40.1	+0.4
HDA				S		S	S	03 22 06.2	0.0
RC01	Rabbit Creek A	2.08	168	P		P	P	03 21 40.0	+0.2
RC01				S		S	S	03 22 06.3	-0.1
CKL	Chakachamna La	2.10	204	P		P	P	03 21 40.1	0.0
MDM	Murphy Dome	2.12	28	P		P	P	03 21 40.6	+0.3
COLA	College	2.13	33	P		P	P	03 21 40.8	+0.2
BKG	Blockade Glaci	2.20	202	P		P	P	03 21 41.4	-0.1
TOA	Tolsona	2.28	115	P		P	P	03 21 43.3	+0.8
IL1	Eielson Array	2.33	43	P		P	P	03 21 43.1	0.0
IL1				S		S	S	03 22 10.9	-1.3
ILAR	Eielson Array	2.33	43	P		P	P	03 21 43.1	0.0
	25nm,0.3s,baz=225,slow=13,SNR=1266								
ILAR				S		S	S	03 22 10.7	-1.5
	13nm,0.3s,baz=241,slow=16,SNR=19								
PAX	Paxson	2.34	91	P		P	P	03 21 44.0	+0.8
PAX				S		S	S	03 22 12.8	+0.4
TT01	Tatalina	2.48	267	P		P	P	03 21 45.0	-0.2
SLKM	Skilak Lake	2.63	176	eP		P	P	03 21 46.7	-0.4
RDT	Redoubt	2.70	199	P		P	P	03 21 47.5	-0.5
REF	Redoubt East F	2.83	202	P		P	P	03 21 49.6	-0.1
VLZ	Valdez	2.83	133	P		P	P	03 21 48.3	-1.4
VLZ				S		S	S	03 22 21.8	-2.1
RSO	Redoubt South	2.86	202	eP		P	P	03 21 49.9	-0.2
DOT	Dot Lake	2.99	77	P		P	P	03 21 51.7	-0.2
DOT				S		S	S	03 22 26.0	-1.6
SEW	Seward	3.08	169	P		P	P	03 21 52.3	-0.7
SVW	Sparrevohn	3.11	232	eP		P	P	03 21 53.5	0.0
IM3	Indian Mountai	3.18	336	P		P	P	03 21 54.1	-0.3
IMA	Indian Mountai	3.25	337	eP		P	P	03 21 55.1	-0.2
ILIM	Iliamna	3.25	201	P		P	P	03 21 55.2	-0.2
ILW	Iliamna West	3.30	203	P		P	P	03 21 56.1	0.0
HIN	Hinchinbrook I	3.35	143	P		P	P	03 21 56.1	-0.7
BRLK	Bradley Lake	3.37	183	P		P	P	03 21 56.7	-0.3
EYAK	Cordova Ski Ar	3.45	136	P		P	P	03 21 57.4	-0.6
EYAK				S		S	S	03 22 38.0	-0.7
BMRM	Bremner River	3.55	125	P		P	P	03 21 58.1	-1.2
BMRM				S		S	S	03 22 40.4	-0.7
GLB	Gilahina Butte	3.59	115	P		P	P	03 21 59.7	-0.2
CNPM	China Poot	3.62	185	P		P	P	03 22 00.1	-0.2
AUL	Augustine Lava	4.00	201	P		P	P	03 22 05.9	+0.6
BCA3	Beaver Creek A	4.00	87	P		P	P	03 22 04.8	-0.7
AGU	Augustine-Summ	4.02	201	P		P	P	03 22 06.5	+0.9
FYU	Fort Yukon	4.15	31	P		P	P	03 22 07.1	-0.2
MID	Middleton Isla	4.24	149	P		P	P	03 22 08.7	+0.2
BALM	Baldy	4.41	115	P		P	P	03 22 10.1	-0.7
CTGM	Chitina Glacie	4.87	112	P		P	P	03 22 17.3	+0.3
KAPH	Katmai Pasha	4.90	204	P		P	P	03 22 17.1	-0.3
BM3	Burnt Mountain	4.99	28	P		P	P	03 22 18.4	-0.3
KAHG	Katmai Hook Gl	5.03	204	P		P	P	03 22 18.6	-0.7
KARR	Katmai Rainbow	5.06	205	P		P	P	03 22 19.5	-0.1
DAWY	Dawson	5.09	74	P		P	P	03 22 19.7	-0.3
KAWH	Katmai	5.18	205	P		P	P	03 22 20.9	-0.4
KDAK	Kodiak Island	5.45	191	P		P	P	03 22 23.1	-1.7
KABR	Katmai Barrier	5.45	205	P		P	P	03 22 24.6	-0.3
CHX	Chaix Hills	5.46	120	P		P	P	03 22 25.1	0.0
CAHL	Cahill	5.59	207	P		P	P	03 22 26.8	+0.1
KJL	Kejulik	5.64	208	P		P	P	03 22 27.6	+0.2
PNL	Peninsula	6.39	118	P		P	P	03 22 37.4	-0.3
INK	Inuvik	8.73	46	P		P	P	03 23 08.7	-0.5
	0.3nm,0.3s,baz=238,slow=16,SNR=28								
INK	Inuvik	8.73	46	eP		P	P	03 23 08.3	-0.9
DLBC	Dease Lake	11.07	106	P		P	P	03 23 41.3	+1.2
	0.1nm,0.3s,baz=250,slow=25,SNR=3.1								
YKA	Yellowknife Ar	16.33	76	P		P	P	03 24 46.8	-0.7
	0.2nm,0.3s,baz=285,slow=9.8,SNR=21								
YKA	Yellowknife Ar	16.33	76	P		P	P	03 24 46.8	-0.7
RES	Resolute Bay	22.06	36	eP		P	P	03 25 50.8	+1.1
NEW	Newport	23.65	113	P		P	P	03 26 06.6	+1.7
WALA	Waterton Lakes	24.40	108	eP		P	P	03 26 13.3	+1.1
	2.1nm,0.5s,mb3.7								
HLID	Hailey	28.55	116	P		P	P	03 26 50.9	+0.5
BW06	Boulder Array	31.23	111	eP		P	P	03 27 15.4	+1.2
	0.9nm,0.6s,mb3.7								
PDAR	Pinedale Array	31.23	111	P		P	P	03 27 15.7	+1.5
	4.6nm,1.3s,mb4.1,baz=326,slow=5.3,SNR=8.3								
NVAR	Mina Array Bea	31.45	126	P		P	P	03 27 17.8	+1.7
	1.6nm,0.9s,mb3.7,baz=329,slow=7.5,SNR=5.7								
SPITS	Spitsbergen Ar	38.71	4	P		P	P	03 28 16.9	-0.4
	11nm,1.1s,mb4.6,baz=353,slow=7.3,SNR=13								
TXAR	Lajitas Array	45.16	116	P		P	P	03 29 11.3	+1.1
	0.6nm,0.6s,mb3.5,baz=325,slow=6.7,SNR=8.4								
ARCES	ARCESS Array B	47.60	2	P		P	P	03 29 28.0	-0.9
	1.7nm,0.8s,mb3.9,baz=8.1,slow=8.6,SNR=4.1								
BVAR	Borovoye Array	59.83	333	P		P	P	03 30 57.3	-1.3
	0.8nm,0.5s,mb4.0,baz=53,slow=7.4,SNR=6.3								
MKAR	Makanchi Array	62.70	322	P		P	P	03 31 16.1	-1.9
	0.5nm,0.5s,mb3.8,baz=51,slow=7.1,SNR=9.3								

*BER **13** 03:21:52.9±1.5, 71.28N×6.45W, h7km±8km, MD3.3, ML2.9*

*IDC **13** 03:21:56.3±4.7, 70.97N×4.52W, mb1 3.5/5, mb1mx3.3/24, ML3.1/5, Error ellipse: s-maj=55.4km s-min=30.8km az=89.0.*

ISC 13 03:21:48.9±0.5, **71.0N**±0.1×**6.0W**±0.1, **h7**km, **n14**, σ1**s23**/21, **3C, Jan Mayen Island region**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
JNE	Jan Mayen East	0.76	272	⇑i P		P	Pb	03 22 04.6	+0.6
JNE				eS		S	Sb	03 22 13.6	-0.7
JNW	Jan Mayen West	0.80	275	⇑i P		P	Pb	03 22 05.2	+0.4
JMI	Jan Mayen	0.91	268	⇑i P		P	Pb	03 22 07.0	+0.5
JMI				eS		S	Sb	03 22 17.7	-0.8
JMI				AML		AML	AML	03 22 20.0	
	comp=Z,889nm,0.4s								
LOF	Lofoten	7.39	103	eP		P	Pn	03 23 41.1	+1.3
LOF				eS		S	Sn	03 24 59.3	-5.5
STOK	Stokkvaagen	8.32	115	eP		P	P	03 23 51.9	-0.9
TRO	Tromso	8.49	87	eP		P	P	03 23 52.1	-3.1
TRO				eS		S	Sn	03 25 21.3	-11
TRO				AML		AML	AML	03 25 24.9	
	comp=Z,2.1nm,0.8s								
MOR8	Moi Rana	8.86	113	eP		P	P	03 23 59.1	-1.1
MOR8				eS		S	Sn	03 25 33.8	-7.6
MOR8				AML		AML	AML	03 25 40.5	
	comp=Z,4.5nm,0.5s								
SPITS	Spitsbergen Ar	9.26	29	Pn		P	P	03 24 06.8	+0.9
	comp=Z,0.4nm,0.3s,baz=216,slow=17,SNR=27								
NSS	Namsos	9.35	125	eP		P	P	03 24 06.5	-0.6
NSS				eS		S	Sn	03 25 40.6	-13
NSS				AML		AML	AML	03 25 48.5	
	comp=Z,3.4nm,0.4s								
ARCES	ARCESS Array B	10.67	83	Pn		P	P	03 24 24.7	-0.3
	comp=Z,0.1nm,0.3s,baz=297,slow=12,SNR=7.5								
ARCES		

KHET e 04 04 40.8
comp=N,389nm,0.8s
KUDL Kundal 7.25 99 *e*P **Pn 04 02 31.3 -0.9**
KKR Kurukshetra 7.35 85 *e*P **Pn 04 02 34.8 +1.1**
AYAN Aya Nagar 7.73 96 *e*P **Pn 04 02 38.2 -0.8**
SONA Sohna 7.74 97 *e*P **Pn 04 02 39.6 +0.6**
SONA *e*S **Sn 04 04 02.3 -5.6**
SONA *e* 04 05 21.5
comp=E,167nm,0.8s
comp=E,356nm,1.1s
SONA *e* 04 05 21.7
comp=N,428nm,0.8s
NDI New Delhi 7.78 94 *e*P **Pn 04 02 40.0 +0.4**
comp=N,107nm,0.6s
NDI *e*S **Sn 04 04 03.0 -6.0**
AGRA Agra 8.73 103 *e*P **P 04 02 52.2 -0.7**
AGRA *e*S **Sn 04 04 27.6 -5.1**
AGRA *e* 04 05 46.4
comp=N,1μm,1.1s
AGRA *e* 04 05 46.6
comp=E,908nm,0.8s
KALG Kalgarh 9.04 88 *e*P **P 04 02 53.3 -3.9**
KALG *e*S **Sn 04 04 30.0 -10**
JHNI Jhansi 9.89 112 *e*S **Sn 04 04 53.0 -8.4**
BHPL Bhopal 10.25 126 *e*P **P 04 03 12.1 -1.8**
BHPL AMb AMB 04 03 20.4
comp=Z,41nm,0.6s
BHPL *e*S **S 04 05 04.2 -6.0**
BHPL *e* 04 06 29.0
comp=N,209nm,1.0s
BHPL *e* 04 06 29.0
comp=E,221nm,0.8s
BOM Bombay 11.34 158 *e*P **P 04 03 28.4 -0.5**
BOM *e* 04 05 49.5
BOM *e* 04 06 16.1
BOM *e* 04 09 10.7
KSH Kashi 11.75 30 ⇑P **P 04 03 34.6 +0.3**
KSH *e*AP 04 03 40.0
KSH *e*XP 04 03 43.8
KSH *e*S **S 04 05 41.6 -5.3**
KSH *e*XS 04 05 50.5
KSH *e*SS SS 04 05 56.1 -4.8
KSH *e*SCP 04 12 56.5
KSH *e*PCS 04 12 58.5
KSH *e*SCS ScS 04 16 30.6 +1.2
KSH AMB AMB
comp=Z,50nm,1.2s
POO Poona 12.04 154 *e*P **P 04 03 37.9 -0.5**
POO *e*S **S 04 05 44.3 -10**
POO *e* 04 06 21.8
comp=N,26nm,0.9s
POO *e* 04 06 21.9
comp=E,54nm,1.0s
JBP Jabalpur 12.18 119 ⇑*i*P **P 04 03 40.1 -0.1**
JBP *i*S **S 04 05 48.7 -8.7**
AML Almayashu 13.28 17 P **P 04 03 51.4 -3.3**
SNR=286
KAD Karad 13.29 155 *e*P **P 04 03 53.9 -1.0**
LATR Latur 13.35 144 *e*P **P 04 03 54.8 -1.0**
comp=E,36nm,0.9s
LATR *e* 04 06 42.0
KOLN Koldanda 13.48 94 *e*P **P 04 03 55.7 -1.8**
comp=E,217nm,1.0s
KOLN *e*S **S 04 06 19.0 -10**
DANN Dangsing 13.52 91 *e*P **P 04 03 55.5 -2.5**
UCH Uchtor 13.59 20 P **P 04 03 56.1 -2.8**
SNR=199
KK31 Karatay Array 13.64 7 ⇓P **P 04 03 56.0 -3.5**
comp=E,32nm,0.6s,baz=187,slow=14,SNR=386
KK31 ⇑S **S 04 06 21.3 -11**
comp=E,35nm,0.8s,baz=189,slow=22,SNR=8.6
KK31 ⇓Rg 04 09 40.5
comp=E,2μm,9.5s,baz=261,slow=15,SNR=5.3
KKAR Karatay Array 13.64 7 *i*P **P 04 03 56.1 -3.4**
KKAR S **S 04 06 21.2 -11**
KKAR pmax pmax
comp=Z,6.0nm,0.3s
KKAR smax
comp=Z,49nm,0.9s
KZA Kyzart 13.69 22 P **P 04 03 58.7 -1.4**
SNR=14
EKS2 Erkin-Say 13.79 17 P **P 04 03 59.3 -2.2**
SNR=100
AAK Ala-Archa 13.96 19 P **P 04 04 00.9 -2.8**
SNR=129
KBK Karagaybulak 14.12 20 P **P 04 04 07.2 +1.4**
SNR=25
ULHL Ulahol 14.18 24 P **P 04 04 06.4 -0.2**
SNR=13
FRU Bishkek 14.18 19 ⇓*i*P **P 04 04 05.6 -1.0**
FRU pmax pmax
comp=Z,20nm,1.8s
GKN Gorkha 14.34 92 *e*P **P 04 04 06.6 -2.2**
comp=Z,30nm,0.3s
GKN *e*S **S 04 06 38.9 -10**
CHMS Chumysh 14.37 19 P **P 04 04 07.0 -2.1**
SNR=50
BLSP Bilaspur 14.41 118 *e*P **P 04 04 08.6 -1.1**
BLSP *e* 04 06 39.9
USP Ospenovka 14.55 18 P **P 04 04 08.5 -3.0**
SNR=21
TKM2 Tokmak 2 14.56 22 P **P 04 04 10.1 -1.4**
SNR=173
DMN Daman 14.82 93 *e*P **P 04 04 13.7 -1.4**
KKN Kakani 14.94 93 *e*P **P 04 04 13.6 -3.1**
comp=Z,46nm,0.5s
KKN *e*S **S 04 06 53.4 -10**
PKI Pulchoki 15.09 93 *e*P **P 04 04 16.7 -2.0**
comp=Z,87nm,0.6s
HYB Hyderabad 15.24 140 *i*P **P 04 04 19.5 -1.2**
HYB *e*S **S 04 07 25.0 +14**
HYB LR LR 04 11 32.0
comp=Z,9.1nm,12.0s
HYB Hyderabad 15.24 140 *e*P **P 04 04 19.5 -1.2**
HYB *e*S **S 04 07 25.0 +14**
GUN Gumba 15.44 92 *e*P **P 04 04 20.1 -3.1**
comp=Z,129nm,0.5s
KGD Kothagudem 16.37 134 *e*Pn **P 04 04 37.3 +2.1**
KGD *e* 04 05 56.9
KGD *e* 04 07 35.0
KGD *e*S **S 04 07 49.4 +13**
KGD *e*PcP PcP 04 09 25.6 -3.7
CUD Cuddapah 17.80 145 *e*P **P 04 04 51.5 -1.7**
CUD *e*PP 04 05 12.5
CUD *e* 04 05 53.2
CUD *e*S **S 04 08 20.1 +10**
CUD *e*PcP PcP 04 09 32.1 +0.6
CUD *e*ScS ScS 04 16 42.1 -2.8
LSA Lhasa 19.80 84 P **P 04 05 20.4 +3.3**
LSA AP 04 05 28.4
LSA XP 04 05 33.5
LSA PP PP 04 05 38.3 +2.7
LSA PPP PPP 04 05 46.0 +1.4
LSA S **S 04 08 51.0 -3.5**
LSA XS 04 09 04.8
LSA SS SS 04 09 18.8 -3.2
LSA Lhasa 19.80 84 *e*P **P 04 05 20.0 +3.0**
comp=Z,11nm,0.5s
MK31 Makanchi Array 20.35 28 ⇑P **P 04 05 20.4 -2.5**
comp=Z,43nm,0.6s,slow=0.1,SNR=356
MK31 ⇑S **S 04 09 03.0 -3.0**
comp=Z,10nm,1.2s,baz=273,slow=18,SNR=4.2
MKAR Makanchi Array 20.35 28 P **P 04 05 20.7 -2.1**
comp=Z,9.7nm,0.7s,baz=218,slow=28,SNR=71
MKAR Makanchi Array 20.35 28 P **P 04 05 20.6 -2.3**
MKAR pmax pmax
comp=Z,29nm,0.6s
AB31 Akbulak array 20.71 344 ⇑P **P 04 05 24.9 -1.7**
comp=Z,50nm,0.5s,baz=152,slow=13,SNR=1014
AB31 ⇓S **S 04 09 16.7 +3.4**
comp=Z,2.6nm,0.8s
AB31 Akbulak array 20.71 344 *i*P **P 04 05 24.9 -1.7**
AB31 pmax pmax
comp=Z,37nm,0.5s
WMQ Urumqi 20.98 42 *e*P **P 04 05 31.8 +2.4**
WMQ AP 04 05 38.4
WMQ XP 04 05 42.1
WMQ PP PP 04 05 54.5 +2.5
WMQ S **S 04 09 18.6 0.0**
WMQ XS 04 09 28.3
WMQ PCP PcP 04 09 40.3 +3.3
WMQ SS SS 04 09 50.8 +0.3
WMQ SCP 04 13 13.8
WMQ PCS 04 13 16.8
WMQ SCS ScS 04 16 55.8 +0.8
WMQ AMB AMB
comp=Z,101nm,0.8s
WMQ AMB AMB
comp=Z,584nm,4.7s
WMQ LR LR
comp=Z,5μm,17.3s,MS4.9
AGT Agartala 21.18 100 ⇑*i* **P 04 05 39.0 +7.4**
AGT ⇑*i* 04 06 15.0
SHL Shillong 21.20 95 *i* **P 04 05 34.7 +2.9**
SHL *e*S **S 04 09 13.7 -9.3**
MZLS Mizel 21.39 261 P **P 04 05 34.0 +0.2**
MAK Makhachkala 21.44 314 *e*P **P 04 05 34.5 +0.4**
MAK *e*PPP PPP 04 06 13.0 +5.5
MAK *e*S **S 04 09 24.0 -3.3**
MAK *e*SS SS 04 10 06.0 +4.0
MAK pmax pmax
comp=Z,2μm,6.0s
MAK smax
comp=N,2μm,10.0s
MAK smax
comp=E,2μm,10.0s
MAK smax
comp=Z,900nm,10.0s
GNI Garni 22.04 305 P **P 04 05 44.1 +4.0**
comp=Z,16nm,0.6s,mb4.6,baz=350,slow=9.3,SNR=8.8
GNI LR LR 04 15 20.7
comp=Z,1μm,19.3s,MS4.3,baz=119,slow=40
TRD Trivandrum 22.42 157 ⇑*i* **P 04 05 59.4 +15**
TRD *i* 04 10 07.4
KURK Kurchatov 22.51 17 P **P 04 05 44.8 +0.1**
comp=Z,46nm,1.0s,mb4.9,baz=192,slow=7.2,SNR=51
KURK ⇑S **S 04 09 42.0 -5.0**
comp=Z,6.6nm,1.1s
KURK Kurchatov 22.51 17 *e*P **P 04 05 44.5 -0.2**
ARSS Ar Rass 22.54 267 P **P 04 05 45.8 +0.5**
VOSK Vostochnaya 23.24 4 ⇓P **P 04 05 50.9 -0.9**
comp=Z,86nm,0.8s,mb5.3
VOSK ⇓S **S 04 10 05.3 +5.2**
comp=Z,15nm,1.5s
AFFS 'Afif 23.32 262 P **P 04 05 54.4 +1.5**
ZRNK Zerenda 23.39 1 ⇑P **P 04 05 53.4 +0.1**
comp=Z,93nm,0.9s,mb5.2
ZRNK ⇑S **S 04 10 01.9 -0.9**
comp=Z,22nm,2.8s
ZRNK Zerenda 23.39 1 *e*P **P 04 05 53.6 +0.3**
KAMS Al Khamasin 23.42 252 P **P 04 05 51.9 -2.0**
HILS Ha'il 23.46 271 P **P 04 05 56.0 +1.8**
BVA0 Borovoye Array 23.51 3 ⇑P **P 04 05 55.0 +0.6**
comp=Z,15nm,0.8s,mb4.5,baz=169,slow=13,SNR=435
BVA0 ⇓S **S 04 10 03.6 -1.2**
comp=Z,3.9nm,2.5s,baz=240,slow=9.8,SNR=6.3
BVA0 Borovoye Array 23.51 3 *i*P **P 04 05 54.1 -0.3**
BVA0 pmax pmax
comp=Z,1.0nm,0.8s
BVAR Borovoye Array 23.51 3 P **P 04 05 54.9 +0.5**
comp=Z,65nm,0.6s,mb5.2,baz=173,slow=9.0,SNR=107
BVAR PcP PcP 04 09 42.5 +0.6
comp=Z,1.5nm,0.5s,baz=207,slow=4.6,SNR=5.2
BVAR LR LR 04 16 47.9
comp=Z,3μm,20.0s,MS4.7,baz=180,slow=41
BRVK Borovoye 23.54 3 *e*P **P 04 05 54.4 -0.3**
ZEI Tsey 23.67 311 ⇓*e*P **P 04 05 59.9 +3.8**
ZEI *e* 04 06 42.0
ZEI pmax pmax
comp=Z,500nm,5.0s
ZEI MLR MLR
comp=Z,800nm,14.0s,MS4.3
TATS Tathlith 24.70 252 P **P 04 06 08.9 +2.6**
PYA Pyatigorsk 24.78 313 *e*P **P 04 06 12.0 +5.1**
KIV Kislovodsk 24.99 312 *e*P **P 04 06 10.0 +1.2**
KIV *e*S **S 04 10 30.7 +0.5**
KIV *e*SS SS 04 11 23.9 -4.7
KIV pmax pmax
comp=Z,10.0nm,0.9s,mb4.3
KIV MLR MLR
comp=Z,390nm,17.0s,MS4.0
KIV MLR MLR
comp=E,300nm,16.0s
KIV Kislovodsk 24.99 312 *e*P **P 04 06 11.1 +2.2**
comp=E,57nm,1.1s,mb5.0
GOF Gofitskoye 25.28 315 *i*P **P 04 06 14.0 +2.4**
GOF pmax pmax
comp=Z,60nm,1.5s,mb4.9
KBRS Khaybar 26.03 269 P **P 04 06 27.3 +8.5**
BLJS Baljurashi 26.11 255 P **P 04 06 25.7 +6.1**
SOC Sochi 26.80 309 *e*P **P 04 06 25.9 +0.2**
SOC *e* 04 07 21.0
SOC *e*SS SS 04 12 30.4 +18
SOC pmax pmax
comp=Z,67nm,0.8s,mb5.2
SOC pmax pmax
comp=N,69nm,0.9s
SOC pmax pmax
comp=E,127nm,1.1s
SOC MLR MLR
comp=Z,603nm,13.0s,MS4.3
SOC MLR MLR
comp=N,468nm,12.0s,MS4.7
SOC MLR MLR
comp=E,1μm,14.0s,MS4.7
ASF Jabal al Asfar 27.11 284 P **P 04 06 27.9 -0.8**
comp=E,1.5nm,0.3s,mb4.0,baz=176,slow=4.0,SNR=2.0
NVS Novosibirsk 27.46 19 *e*P **P 04 06 30.2 -1.4**
NVS *e* 04 12 15.2
NVS pmax pmax
comp=E,13nm,1.6s
NVS pmax pmax
comp=Z,31nm,1.6s,mb4.6
NVS pmax pmax
comp=N,45nm,1.7s
GTA Gaotai 27.60 61 P **P 04 06 35.3 +2.2**
GTA AP pP 04 06 42.3 +7.5
GTA XP sP 04 06 45.3 +10
GTA PP PP 04 07 25.8 +4.6
GTA S **S 04 11 19.1 +5.8**
GTA PCS 04 13 34.3
GTA AMB AMB
comp=Z,9.0nm,1.3s,mb4.2
GTA AMB AMB
comp=Z,128nm,7.6s
GTA LR LR
comp=N,1μm,17.6s
GTA LR LR
comp=E,906nm,10.7s
GTA LR LR
comp=E,658nm,10.7s
ARU Arti 27.76 348 ⇓*i*P **P 04 06 34.9 +0.5**
ARU *e* 04 07 18.6
ARU *e*PPP PPP 04 07 27.2 -7.9
ARU *e*S **S 04 11 14.8 -0.9**
ARU *e*SS SS 04 12 26.5 -8.6
ARU *e*SSS SSS 04 12 42.6 -11
ARU pmax pmax
comp=Z,25nm,0.7s,mb5.0
ARU MLR MLR
comp=Z,400nm,13.0s,MS4.2
ARU MLR MLR
comp=N,300nm,14.0s
ARU Arti 27.76 348 *e*P **P 04 06 34.7 +0.4**
comp=N,32nm,0.7s,mb5.0
SVE Sverdlovsk 27.82 351 ⇓*e*P **P 04 06 35.8 +0.9**
SVE *e* 04 07 21.6
SVE pmax pmax
comp=Z,60nm,2.0s,mb4.9
SVE MLR MLR
comp=N,3μm,11.0s,MS5.2
SVE MLR MLR
comp=E,2μm,11.0s,MS5.2
SVE MLR MLR
comp=Z,4μm,11.0s,MS5.3
CM31 Chiang Mai Arr 29.93 105 *e*P **P 04 06 55.4 +1.1**
comp=Z,12nm,0.7s,mb4.7
CMAR Chiang Mai Arr 29.93 105 P **P 04 06 55.1 +0.8**
comp=Z,1.7nm,0.5s,mb4.0,baz=301,slow=9.1,SNR=8.2
CMAR LR LR 04 19 34.8
comp=Z,524nm,19.9s,MS4.2,baz=285,slow=38
BRTR Keskin Array B 30.17 299 P **P 04 06 56.0 -0.3**
comp=Z,3.1nm,0.7s,mb4.2,baz=120,slow=7.6,SNR=15
LZH Lanzhou 30.39 68 ⇑P **P 04 07 00.5 +2.3**
LZH PP PP 04 08 00.6 +3.1
LZH *e*S **S 04 11 55.8 -2.2**
LZH *e*SS SS 04 13 38.3 +1.2
LZH AMB AMB
comp=Z,35nm,1.4s,mb4.9
LZH AMB AMB
comp=Z,121nm,4.1s
LZH LR LR
comp=N,709nm,10.5s
LZH LR LR
comp=Z,952nm,13.8s,MS4.6
CD2 Chengdu 30.52 78 P **P 04 07 02.3 +2.9**
CD2 PP PP 04 08 05.1 +5.8
CD2 PPP PPP 04 08 20.1 +6.3
CD2 S **S 04 12 04.4 +4.3**
CD2 AMB AMB
comp=Z,10.0nm,1.2s,mb4.5
CD2 AMB AMB
comp=Z,110nm,6.9s
CD2 LR LR
comp=Z,2μm,11.6s,MS4.9
KMI Kunming 30.77 90 ⇑*e*P **P 04 07 03.0 +1.4**
KMI AP pP 04 07 10.5 +7.1
KMI XP sP 04 07 13.8 +10
KMI S **S 04 12 07.3 +3.2**
KMI XS 04 12 14.9
KMI SS SS 04 13 43.8 -2.1
KMI AMB AMB
comp=Z,18nm,0.8s,mb5.0
KMI LR LR
comp=N,1μm,19.2s
KMI LR LR
comp=E,778nm,13.9s
KMI LR LR
comp=Z,740nm,15.0s,MS4.5
VOR Voronezh 30.98 324 *e*P **P 04 07 02.5 -0.7**
VOR pmax pmax
comp=Z,60nm,1.6s,mb5.2
VOR pmax pmax
comp=N,30nm,1.5s
VOR pmax pmax
comp=E,50nm,1.5s
SIM Simferopol' 31.04 309 *d*P **P 04 07 04.8 +1.0**
SIM *i*S **S 04 12 09.4 +1.3**
SIM pmax pmax
comp=Z,24nm,0.9s,mb5.0
MOY Mondy 32.76 38 *e*P **P 04 07 20.5 +1.7**
ZAK Zakamensk 33.45 42 *e*P **P 04 07 24.6 -0.2**
GYA Guiyang 33.84 86 P **P 04 07 29.5 +1.0**
GYA AP pP 04 07 38.8 +8.6
GYA XP sP 04 07 43.1 +12
GYA PP PP 04 08 47.0 +5.4
GYA S **S 04 12 53.4 +1.5**
GYA AMB AMB
comp=Z,10.0nm,0.8s,mb4.8
GYA LR LR
comp=N,790nm,15.3s,MS4.6
GYA LR LR
comp=E,240nm,15.0s,MS4.6
GYA LR LR
comp=Z,610nm,17.4s,MS4.4
MOS Moscow 34.10 329 *i*P **P 04 07 31.2 +0.8**
MOS *e* 04 08 43.2
MOS *e*S **S 04 12 56.3 +0.7**
MOS pmax pmax
comp=Z,260nm,1.6s
MOS pmax pmax
comp=Z,600nm,2.0s
OBN Obninsk 34.21 327 ⇓*e*P **P 04 07 30.9 -0.5**
OBN pmax pmax
comp=Z,35nm,0.6s,mb5.5
OBN MLR MLR
comp=Z,700nm,16.0s,MS4.5
OBN Obninsk 34.21 327 *e*P **P 04 07 31.3 0.0**
comp=Z,51nm,0.7s,mb5.6
TLY Talaya 34.22 40 *i*P **P 04 07 33.1 +1.6**
TLY *e* 04 08 52.7
TLY *i*S **S 04 12 58.4 +0.9**
TLY *e*SS SS 04 14 59.9 -6.1
TLY pmax pmax
comp=Z,151nm,1.8s,mb5.6
TLY MLR MLR
comp=Z,6μm,15.0s,MS5.5
SONM Songino Array 34.41 47 P **P 04 07 34.2 +1.1**
comp=Z,24nm,1.0s,mb5.1,baz=255,slow=9.0,SNR=46
SONM Songino Array 34.41 47 P **P 04 07 34.2 +1.1**
SONM LR LR 04 24 38.6
XAN Xi'an 34.59 72 P **P 04 07 35.6 +0.7**
XAN AP pP 04 07 40.4 +3.8
XAN AMB AMB
comp=Z,10.0nm,0.7s,mb4.8
ULN Ulaanbaatar 34.84 47 *c*P **P 04 07 38.3 +1.5**
ULN Ulaanbaatar 34.84 47 *e*P **P 04 07 38.2 +1.4**
comp=Z,9.4nm,0.7s,mb4.8
KIS Kishinev 35.17 311 *e*P **P 04 07 40.0 +0.3**
KIS *e* 04 09 00.0
KIS *e*S **S 04 13 08.0 -4.3**
KIS *e*SS SS 04 15 57.0 +29
KIS pmax pmax
comp=Z,290nm,2.0s,mb5.9
KIS MLR MLR
comp=E,400nm,14.0s
KIS MLR MLR
comp=Z,400nm,14.0s,MS4.3
KIS MLR MLR
comp=Z,400nm,14.0s
CFR Carcaliu 35.19 308 ⇓*i*P **P 04 07 48.3 +8.4**
CFR Carcaliu 35.19 308 ⇓*i*P **P 04 07 48.3 +8.5**
ENH Enshi 35.50 78 *e*P **P 04 07 43.6 +0.9**
comp=Z,33nm,0.6s,mb5.4
BTO Baotou 35.52 61 *e*P **P 04 07 45.4 +2.6**
AKASG Malin Array Be 36.07 317 P **P 04 07 46.1 -1.2**
comp=Z,17nm,0.8s,mb5.0,baz=104,slow=7.0,SNR=55
AKASG PP PP 04 09 08.6 -0.6
comp=Z,0.3nm,0.3s,baz=85,slow=7.9,SNR=3.1
AKASG PcP PcP 04 10 13.0 -0.8
comp=Z,1.7nm,0.6s,baz=94,slow=2.7,SNR=7.0
AKASG LR LR 04 24 38.6
comp=Z,282nm,19.9s,MS4.0,baz=105,slow=40
ISR Istrita 36.28 307 ⇓*i*P **P 04 07 59.8 +11**
ISR Istrita 36.28 307 ⇓*i*P **P 04 07 59.8 +11**
VRI Vrincioaia 36.30 308 ⇓*i*P **P 04 07 58.9 +10**
VRI Vrincioaia 36.30 308 ⇓*i*P **P 04 07 59.1 +10**
KRIS Kristallenia 36.44 290 *e*P **P 04 07 57.2 +6.6**
comp=Z,17nm,0.8s,mb5.0
HHC Hu-ho-hao-te 36.71 60 *e*P **P 04 07 53.9 +1.1**
HHC AP pP 04 08 00.9 +6.3
HHC XP sP 04 08 04.4 +9.1
HHC PP PP 04 09 20.8 +3.2
HHC PCP PcP 04 10 18.6 +2.8
HHC S **S 04 13 38.0 +1.9**
HHC XS 04 13 43.0
HHC PCS 04 14 02.3
HHC SCS ScS 04 18 08.5 +1.3
HHC AMB AMB
comp=Z,10.0nm,1.0s,mb4.6
HHC AMB AMB
comp=Z,124nm,6.8s
HHC LR LR
comp=N,599nm,15.1s,MS4.6
HHC LR LR
comp=E,389nm,10.6s,MS4.6
HHC LR LR
comp=Z,465nm,12.3s,MS4.5
MLR Muntele Rosu 36.77 308 ⇓*i*P **P 04 08 02.9 +10**
MLR Muntele Rosu 36.77 308 ⇓*e*P **P 04 08 02.9 +10**
QIZ Qiongzhong 39.03 96 P **P 04 08 14.6 +2.1**
QIZ S **S 04 14 10.8 -0.8**
QIZ AMB AMB
comp=Z,32nm,1.6s,mb4.8
QIZ LR LR
comp=N,566nm,20.5s,MS4.5
QIZ LR LR
comp=E,421nm,21.1s,MS4.5
QIZ LR LR
comp=Z,450nm,14.1s
QIZ Qiongzhong 39.03 96 P **P 04 08 14.1 +1.6**
comp=Z,80nm,1.4s,mb5.2
BOLS Boljevac 39.35 304 ⇑*i*P **P 04 08 16.3 +1.4**
WHN Wuhan 39.59 77 *e*P **P 04 08 19.5 +2.5**
WHN S **S 04 14 17.0 -3.0**
WHN LR LR
comp=Z,1μm,13.0s,MS5.0
SKO Skopje 39.60 301 *i*P **P 04 08 18.0 +1.0**
PUL Pulkovo 39.62 331 *de*P **P 04 08 16.2 -0.7**
PUL *e* 04 09 48.7
PUL *e*S **S 04 14 14.9 -5.2**
PUL pmax pmax
comp=Z,10.0nm,0.3s,mb5.0
PUL smax

comp=E,60nm,6.3s
PUL MLR MLR
comp=N,310nm,9.0s
PUL MLR MLR
comp=Z,520nm,9.0s
PUL MLR MLR
comp=E,270nm,8.0s
KWP Kalwaria 39.77 313 *e*P **P 04 08 19.6 +1.3**
KWP MLR MLR 04 26 17.8
comp=E,300nm,24.4s,MS4.0
BJI Beijing 40.20 62 *e*P **P 04 08 24.8 +2.9**
BJI PP PP 04 10 03.3 +5.1
BJI S **S 04 14 32.3 +3.3**
BJI AMB AMB
comp=Z,35nm,1.9s,mb4.8
BJI LR LR
comp=Z,351nm,22.6s,MS4.2
CRVS Cervenica-Dubn 40.42 312 *e*P **P 04 08 24.7 +1.1**
CRVS *e* 04 08 28.9
CRVS *e* 04 08 34.8
CRVS Cervenica-Dubn 40.42 312 *e*P **P 04 08 24.7 +1.1**
CRVS *e* 04 08 34.8
SUW Suwalki 40.68 320 *e*P **P 04 08 25.9 +0.2**
SUW MLR MLR 04 29 28.7
comp=Z,600nm,18.2s,MS4.5
KECS Kecovo 40.98 311 *e*P **P 04 08 28.9 +0.7**
NIE Niedzica 41.26 313 *e*P **P 04 08 31.3 +0.8**
PSZ Piszkesteto 41.28 310⇓ *e*P **P 04 08 32.8 +2.1**
PSZ Piszkesteto 41.28 310 *e*P **P 04 08 30.3 -0.4**
comp=Z,32nm,0.8s,mb5.0
OJC Ojcow 41.73 314 *e*P **P 04 08 34.4 +0.1**
OJC *e*PP PP 04 10 15.3 +1.2
OJC *e*S **S 04 14 53.7 +2.1**
OJC MLR MLR 04 31 16.3
comp=Z,300nm,19.2s,MS4.2
VYHS Vyhne 42.06 311 *e*P **P 04 08 38.1 +1.0**
VYHS *e*sP sP 04 08 50.6 +11
VYHS *e* 04 08 58.0
VYHS *e* 04 09 08.6
VYHS *e*PCP PcP 04 10 30.3 -2.3
VYHS *e*S **S 04 15 00.6 +4.1**
VYHS Vyhne 42.06 311 *e*P **P 04 08 38.1 +1.0**
VYHS *e* 04 08 50.6
VYHS *e* 04 10 30.3
VYHS *e*S **S 04 15 00.6 +4.1**
BOD Bodaibo 42.22 35 *e*P **P 04 08 37.8 -0.5**
FINES FINESS Array B 42.28 331 P **P 04 08 38.7 0.0**
comp=Z,9.0nm,0.5s,mb4.6,baz=117,slow=13,SNR=44
FINES LR LR 04 29 50.6
comp=Z,1µm,18.1s,MS4.8,baz=285,slow=41
FINES FINESS Array B 42.28 331 P **P 04 08 38.7 0.0**
FINES LR LR 04 29 50.6
KAF Kangasniemi 42.52 332 *e*p **P 04 08 39.4 -1.2**
comp=Z,19nm,0.6s,mb5.0,baz=119,slow=8.1
KAF Kangasniemi 42.52 332 *e*P **P 04 08 39.4 -1.2**
KAF pmax pmax
comp=Z,19nm,0.6s,mb5.0
KMBO Kilima Mbogo 42.59 230 P **P 04 08 45.0 +3.1**
comp=Z,0.9nm,0.5s,mb3.8,baz=41,slow=22,SNR=4.1
KMBO LR LR 04 27 08.0
comp=Z,262nm,19.1s,MS4.1,baz=96,slow=37
KMBO Kilima Mbogo 42.59 230 *e*P **P 04 08 45.4 +3.6**
comp=Z,0.9nm,0.6s
OKC Ostrava-Krasne 42.71 313 *e*P **P 04 08 43.3 +0.9**
OKC L 04 32 00.0
comp=Z,0.5nm,11.0s
MORC Moravsky Berou 43.09 313 *e*P **P 04 08 44.9 -0.6**
comp=Z,7.5nm,0.7s,mb4.5
NJ2 Nanjing 43.11 73 *e*P **P 04 08 47.0 +1.1**
NJ2 AP pP 04 08 52.4 +4.7
NJ2 XP sP 04 08 57.8 +9.4
NJ2 PP PP 04 10 29.6 +1.2
NJ2 S **S 04 15 11.0 -1.1**
NJ2 XS 04 15 23.0
NJ2 SS SS 04 18 16.0 -1.9
NJ2 AMB AMB
comp=Z,50nm,0.7s,mb5.3
NJ2 AMB AMB
comp=Z,430nm,4.0s
NJ2 LR LR
comp=Z,2µm,22.5s,MS4.8
ZST Bratislava 43.17 310 *e*P **P 04 08 46.6 +0.4**
ZST *e*pP pP 04 08 53.4 +5.4
ZST *e* 04 09 02.1
ZST *e* 04 09 13.5
LVZ Lovozero 43.25 342 *de*P **P 04 08 47.3 +0.7**
LVZ *e* 04 10 35.2
LVZ *e*S **S 04 15 11.7 -2.0**
LVZ pmax pmax
comp=Z,60nm,8.6s
LVZ pmax pmax
comp=E,20nm,5.1s
LVZ smax
comp=N,50nm,10.3s
LVZ smax
comp=E,50nm,7.7s
LVZ MLR MLR
comp=N,110nm,5.0s
LVZ MLR MLR
comp=E,180nm,5.0s
LVZ MLR MLR
comp=Z,330nm,5.0s
HIA Hailar 43.36 48 *e*P **P 04 08 48.8 +1.2**
comp=Z,15nm,0.8s,mb4.8
APA Apatity 43.36 341⇑ *i*P **P 04 08 48.0 +0.5**
APA *i* 04 08 55.4
APA *e*S **S 04 15 14.8 -0.5**
APA pmax pmax
comp=Z,40nm,0.8s,mb5.2
APA MLR MLR
comp=Z,2µm,10.0s,MS5.2
DPC Dobruska-Polom 43.95 313 *e*P **P 04 08 53.9 +1.4**
DPC *e*S **S 04 15 21.8 -2.3**
DPC L 04 32 20.0
comp=Z,0.4nm,12.4s
KSP Ksiaz 44.04 314 *e*P **P 04 08 54.4 +1.2**
KSP MLR MLR 04 31 59.3
comp=Z,500nm,18.0s,MS4.5
KSP Ksiaz 44.04 314 *e*P **P 04 08 54.0 +0.8**
KSP *e*PP PP 04 10 32.0 -5.5
KSP *e*S **S 04 15 20.0 -5.4**
KSP *e*SS SS 04 18 37.0 +2.6
KSP LR LR
comp=Z,600nm,18.0s,MS4.5
CRES Cresnjevec ost 44.11 307 *i* P **P 04 08 55.1 +1.3**
ARSA Arzberg 44.15 309⇑ *i*P **P 04 08 54.3 +0.2**
comp=Z,19nm,1.1s,mb4.7
UPC Upice 44.17 313 *e*P **P 04 08 55.6 +1.4**
VISS Visnje 44.54 307 *i* P **P 04 08 58.7 +1.4**
MOA Molln 45.04 310⇑ *i*P **P 04 09 00.9 -0.4**
comp=Z,16nm,0.8s,mb4.9
PRU Pruhonice 45.05 313 *e*P **P 04 09 02.0 +0.7**
comp=Z,5.6nm,0.7s,mb4.5
PRU *e*S **S 04 15 46.7 +6.8**
PRU L 04 30 40.0
PRU Pruhonice 45.05 313 *e*P **P 04 09 02.0 +0.7**
PRU *e*S **S 04 15 46.7 +6.8**
PRU pmax pmax
comp=Z,6.0nm,0.7s,mb4.5
PVCC Panska Ves 45.09 313 *e*P **P 04 09 02.7 +1.1**
PVCC L 04 32 40.0
comp=Z,0.3nm,16.6s
VOY Vojsko 45.21 307 *e*P **P 04 09 02.9 +0.3**
SSE Sheshan 45.25 74 ⇓P **P 04 09 03.9 +0.7**
SSE S **S 04 15 41.1 -2.0**
SSE XS 04 15 52.3
SSE SS SS 04 19 01.5 +4.2
SSE AMB AMB
comp=Z,31nm,0.7s,mb5.2
SSE LR LR
comp=N,812nm,20.0s,MS4.7
SSE LR LR
comp=E,172nm,20.0s,MS4.7
SSE LR LR
comp=Z,730nm,13.7s
GEC2 GERESS Array S 45.49 311 *e*P **P 04 09 05.6 +0.8**
GEC2 pmax pmax
comp=Z,6.0nm,0.8s,mb4.5
GEC2 GERESS Array S 45.49 311 *e*P **P 04 09 05.6 +0.8**
comp=Z,6.0nm,0.8s,mb4.5
GERES GERESS Array B 45.49 311 P **P 04 09 05.6 +0.8**
comp=Z,4.4nm,0.7s,mb4.4,baz=96,slow=6.9,SNR=30
GERES PcP PcP 04 10 43.6 -0.6
comp=Z,1.3nm,0.8s,baz=108,slow=3.1,SNR=3.3
GERES GERESS Array B 45.49 311 P **P 04 09 05.6 +0.8**
GERES PcP PcP 04 10 43.6 -0.6
BRG Berggiesshubel 45.52 314⇓ *i*P **P 04 09 06.5 +1.4**
BRG *e*S **S 04 15 51.0 +4.3**
BRG pmax pmax
comp=Z,11nm,0.9s,mb4.8
BRG MLR MLR
comp=N,590nm,11.8s,MS4.9
BRG MLR MLR
comp=E,490nm,11.8s,MS4.9
BRG MLR MLR
comp=Z,590nm,11.8s,MS4.8
BRG Berggiesshubel 45.52 314⇓ *i*P **P 04 09 06.5 +1.4**
comp=Z,11nm,0.9s,mb4.8
BRG *e*S **S 04 15 51.0 +4.3**
BRG LR LR
comp=Z,590nm,11.8s,MS4.8
KHC Kasperske Hory 45.59 311 *e*P **P 04 09 05.8 +0.2**
KHC *e*S **S 04 15 51.4 +3.7**
KHC L 04 34 40.0
comp=Z,0.4nm,13.3s
KBA Koelnbreinsper 45.62 308⇑ *i*P **P 04 09 06.8 +0.9**
comp=Z,11nm,0.7s,mb4.9
ARV Arcevia 45.88 303 *e*P **P 04 09 09.6 +1.6**
SNTG Esanatoglia 45.88 303 *e*P **P 04 09 09.3 +1.3**
CLL Collm 46.16 314 P **P 04 09 10.5 +0.4**
comp=Z,logA/T=1.2,mb4.9
CLL *e* 04 09 43.0
CLL *e*PP PP 04 11 07.0 +8.4
CLL *e*S **S 04 16 01.0 +5.2**
CLL Collm 46.16 314 *i* P **P 04 09 10.5 +0.4**
CLL *e*S **S 04 16 01.0 +5.2**
CLL pmax pmax
comp=Z,26nm,1.8s,mb4.9
CLL Collm 46.16 314 *i* P **P 04 09 10.5 +0.4**
comp=Z,26nm,1.8s,mb4.9
CLL *e* 04 09 43.0
CLL *e*S **S 04 16 01.0 +5.2**
KEV Kevo 46.57 342 *ep* **P 04 09 10.0 -3.1**
comp=Z,10.0nm,0.6s,mb4.9
KEV Kevo 46.57 342 *e*P **P 04 09 10.0 -3.1**
KEV pmax pmax
comp=Z,10.0nm,0.6s,mb4.9
CRE Caprese Michel 46.59 304 *e*P **P 04 09 15.4 +1.7**
SFI Santa Sofia 46.66 304 *e*P **P 04 09 16.2 +2.0**
PGD Poggio Sodo 46.75 304 *e*P **P 04 09 17.3 +2.4**
CTI Castel Tesino 46.77 307 *e*P **P 04 09 15.3 +0.3**
WTTA Wattenberg 46.79 309⇑ *i*P **P 04 09 15.0 -0.1**
comp=Z,18nm,1.1s,mb4.9
WATA Walderalm 46.84 309⇑ *i*P **P 04 09 16.3 +0.8**
comp=Z,9.5nm,1.1s,mb4.6
ARCES ARCESS Array B 46.86 341 P **P 04 09 14.5 -0.9**
comp=Z,22nm,0.6s,mb5.3,baz=127,slow=7.5,SNR=120
ARCES LR LR 04 29 52.1
comp=Z,421nm,20.4s,MS4.4,baz=228,slow=37
ARE0 ARCESS Array S 46.86 341 *e*P **P 04 09 15.4 0.0**
VMG Vicchio 46.88 304 *e*P **P 04 09 17.3 +1.4**
MOX Moxa 46.97 313 *i* P **P 04 09 17.8 +1.3**
comp=Z,logA/T=1.4,mb5.1
MOX S **S 04 16 12.0 +4.6**
MOX L 04 33 09.0
MOX Moxa 46.97 313 *e*P **P 04 09 17.8 +1.3**
MOX pmax pmax
comp=Z,41nm,1.8s,mb5.1
MOX MLR MLR
comp=Z,300nm,18.0s,MS4.3
MOX Moxa 46.97 313 *e*P **P 04 09 17.8 +1.3**
comp=Z,41nm,1.8s,mb5.1
MOX LR LR
comp=Z,300nm,18.0s,MS4.3
CN2 Changchun 47.05 56 *e*P **P 04 09 18.5 +1.3**
CN2 *e*AP pP 04 09 26.3 +7.3
CN2 *e*S **S 04 16 07.1 -1.5**
CN2 *e*SS SS 04 19 28.1 -0.4
CN2 AMB AMB
comp=Z,10.0nm,0.9s,mb4.8
CN2 LR LR
comp=Z,700nm,14.0s,MS4.8
CSNT Castellina Chi 47.08 303 *e*P **P 04 09 18.4 +0.9**
SQTA Sankt Quirin 47.08 309⇑ *i*P **P 04 09 17.2 -0.2**
comp=Z,6.7nm,1.0s,mb4.5
MOTA Moosalm 47.16 309⇑ *i*P **P 04 09 17.3 -0.7**
comp=Z,8.8nm,1.1s,mb4.6
GRA1 Grafenberg Arr 47.16 312 *e*P **P 04 09 19.7 +1.7**
comp=Z,15nm,0.9s,mb4.9
GRA1 LR LR
comp=Z,200nm,20.2s,MS4.1
GRF Grafenberg Arr 47.16 312 *e*P **P 04 09 19.7 +1.7**
GRF pmax pmax
comp=Z,15nm,0.9s,mb4.9
GRF MLR MLR
comp=Z,200nm,20.2s,MS4.1
KTK1 Kautokeino 47.23 340 *e*P **P 04 09 18.3 0.0**
KTK1 AMb AMB 04 09 20.2
comp=Z,52nm,1.7s,mb5.2
KTK1 Kautokeino 47.23 340 *e*P **P 04 09 18.3 0.0**
comp=Z,52nm,1.7s,mb5.2
GSCL Gusciola 47.55 305 *e*P **P 04 09 14.5 -6.7**
BDI Bagni Di Lucca 47.56 304 *e*P **P 04 09 21.1 -0.1**
PII Pisa 47.62 304 *e*P **P 04 09 21.7 -0.1**
ERBM Eremo 47.67 305 *e*P **P 04 09 23.2 +1.0**
DAVA Damuels 47.99 309⇑ *i*P **P 04 09 24.4 -0.2**
comp=Z,18nm,1.1s,mb5.0
BSEG Bad Segeberg 48.08 318 *e*P **P 04 09 25.9 +0.8**
BSEG pmax pmax
comp=Z,17nm,0.8s,mb5.1
BOB Bobbio (Coli) 48.35 305 *e*P **P 04 09 28.2 +0.8**
NB2 NORSAR Subarra 48.82 327 P **P 04 09 28.2 -2.6**
comp=Z,16nm,0.7s,mb5.2,baz=106,slow=7.4
NB2 NORSAR Subarra 48.82 327 P **P 04 09 28.2 -2.6**
baz=106,slow=7.9
NOA NORSAR Array B 48.82 327 P **P 04 09 28.4 -2.3**
comp=Z,13nm,0.7s,mb5.1,baz=107,slow=7.5,SNR=96
NOA LR LR 04 33 17.2
comp=Z,329nm,18.4s,MS4.3,baz=120,slow=40
NOA NORSAR Array B 48.82 327 P **P 04 09 28.4 -2.3**
NOA LR LR 04 33 17.2
TRO Tromso 48.87 339 *e*P **P 04 09 30.6 -0.5**
TRO *e*S S **04 16 30.5 -3.5**
TRO AMS AMS 04 31 32.8
comp=Z,188nm,16.6s,MS4.2
TRO Tromso 48.87 339 *e*P **P 04 09 30.7 -0.4**
NAO01 NORSAR Array S 48.93 327 *e*P **P 04 09 29.9 -1.7**
comp=Z,6.4nm,0.7s,mb4.8
MOR8 Moi Rana 48.96 334 *e*P **P 04 09 31.1 -0.7**
MOR8 AMb AMB 04 09 31.6
comp=Z,25nm,0.7s,mb5.4
MOR8 Moi Rana 48.96 334 *e*P **P 04 09 31.1 -0.7**
comp=Z,25nm,0.6s,mb5.4
KONO Kongsberg 49.31 325 *e*P **P 04 09 34.3 -0.3**
KONO *e*S **S 04 16 39.7 -0.6**
KONO *e*SS SS 04 20 15.1 +7.4
KONO AMS AMS 04 34 50.4
comp=Z,360nm,20.0s,MS4.4
NSS Namsos 49.40 332 *e*P **P 04 09 33.4 -1.9**
NSS AMb AMB 04 09 37.2
comp=Z,36nm,1.9s,mb5.1
NSS AMS AMS 04 34 18.2
comp=Z,1µm,18.9s,MS4.9
NSS Namsos 49.40 332 *e*P **P 04 09 32.7 -2.5**
comp=Z,36nm,1.9s,mb5.1
KS15 Wonju Array Si 49.54 64 *e*P **P 04 09 37.0 +0.4**
CDF Champ du Feu 49.73 310 *e*P **P 04 09 36.7 -1.3**
SBF Sospel 49.85 304 *e*P **P 04 09 37.5 -1.4**
comp=Z,51nm,0.9s,mb5.3
MDJ Mudanjiang 49.98 55 P **P 04 09 40.6 +0.7**
MDJ AP pP 04 09 45.8 +4.0
MDJ PCP PcP 04 11 00.1 -0.2
MDJ SCP 04 14 54.3
MDJ PCS 04 14 57.5
MDJ S **S 04 16 55.1 +5.4**
MDJ XS 04 17 01.8
MDJ AMB AMB
comp=Z,11nm,1.4s,mb4.7
MDJ AMB AMB
comp=Z,72nm,5.2s
MDJ LR LR
comp=Z,1µm,14.7s,MS5.0
MDJ Mudanjiang 49.98 55 *e*P **P 04 09 40.7 +0.8**
comp=Z,7.9nm,0.6s,mb4.9
LOF Lofoten 50.00 336 *e*P **P 04 09 41.8 +2.0**
HINF Hinteralfeld 50.03 309 *e*P **P 04 09 38.9 -1.4**
comp=Z,7.3nm,0.6s,mb4.6
LPG La Plagne 50.21 306 *e*P **P 04 09 41.1 -0.6**
comp=Z,18nm,0.8s,mb4.9
LPL La Plagne 50.23 306 *e*P **P 04 09 41.1 -0.7**
comp=Z,12nm,0.7s,mb4.8
MBDF Montbardon 50.25 305 *e*P **P 04 09 41.5 -0.5**
comp=Z,37nm,0.9s,mb5.1
BNI Bardonecchia 50.30 306 *e*P **P 04 09 42.1 -0.2**
HAU Haudompre 50.36 310 *e*P **P 04 09 41.8 -1.0**
comp=Z,12nm,0.7s,mb4.7
HAU *e*R
comp=Z,264nm,18.2s
CABF La Chapelle 50.61 308 *e*P **P 04 09 44.3 -0.4**
comp=Z,19nm,0.9s,mb4.7
MOL Molde 50.84 329 *e*P **P 04 09 48.2 +2.0**
MOL AMb AMB 04 09 51.9
comp=Z,27nm,1.8s,mb4.9
MOL Molde 50.84 329 *e*P **P 04 09 48.4 +2.2**
comp=Z,27nm,1.8s,mb4.9
BLS5 Blasjo 50.86 324 *e*P **P 04 09 47.9 +1.4**
BLS5 AMb AMB 04 09 53.0
comp=Z,17nm,1.7s,mb4.7
BLS5 Blasjo 50.86 324 *e*P **P 04 09 47.9 +1.4**
comp=Z,17nm,1.7s,mb4.7
ORIF Oris-en-Rattie 50.87 306 *e*P **P 04 09 45.3 -1.4**
comp=Z,5.7nm,0.7s,mb4.3
ORIF *e*R
comp=Z,353nm,20.8s
YAK Yakutsk 50.96 32 *e*P **P 04 09 45.0 -2.1**
YAK pmax pmax
comp=Z,12nm,0.8s,mb4.9
YAK pmax pmax
comp=Z,10.0nm,0.9s,mb4.8
YAK pmax pmax
comp=N,5.0nm,1.1s
YAK pmax pmax
comp=E,2.0nm,0.9s
YAK MLR MLR
comp=Z,554nm,13.0s,MS4.8
YAK MLR MLR
comp=N,126nm,12.0s,MS4.7
YAK MLR MLR
comp=E,377nm,11.0s,MS4.7
YAK Yakutsk 50.96 32 *e*P **P 04 09 46.4 -0.8**
comp=E,58nm,0.6s,mb5.7
KLR Kul'dur 51.21 49 *e*P **P 04 09 50.2 +1.0**
KLR MLR MLR
comp=E,1µm,15.0s
GIVF Givet 51.30 312 *e*P **P 04 09 49.9 0.0**
BAIF Baives 51.70 312 *e*P **P 04 09 52.8 -0.2**
comp=E,25nm,0.8s,mb4.9
VIVF Saint-Julien-l 51.73 306 *e*P **P 04 09 52.3 -1.0**
comp=E,21nm,0.8s,mb4.8
LOR Lormes 52.09 309 *e*P **P 04 09 54.5 -1.4**
comp=E,7.6nm,0.7s,mb4.4
LOR *e*R
comp=E,309nm,20.0s
SMF Signal de Mont 52.15 308 *e*P **P 04 09 55.3 -1.1**
comp=E,23nm,0.7s,mb4.9
SSF Saint Saulge 52.34 309 *e*P **P 04 09 56.7 -1.1**
comp=E,16nm,0.7s,mb4.8
LASF Ste Croix 52.40 305 *e*P **P 04 09 57.5 -0.8**
comp=E,16nm,0.8s,mb4.7
AVF Avril sur Loir 52.47 308 *e*P **P 04 09 57.5 -1.3**
comp=E,5.1nm,0.7s,mb4.2
BGF Bois d'Agland 52.84 308 *e*P **P 04 10 01.0 -0.6**
comp=E,7.5nm,0.6s,mb4.5
TIXI Tiksi 53.04 20 *e*P **P 04 10 01.4 -1.3**
TIXI *e* 04 10 20.3
TIXI *e* 04 11 11.7
TIXI *e*S **S 04 17 31.5 +0.1**
TIXI pmax pmax
comp=Z,139nm,0.6s
TIXI MLR MLR
comp=Z,4µm,11.0s
TIXI Tiksi 53.04 20 *e*P **P 04 10 01.4 -1.3**
comp=Z,27nm,0.7s,mb5.3
TIXI *e*PcP PcP 04 11 11.6 +0.3
TCF Toulx Ste Croi 53.30 308 *e*P **P 04 10 04.2 -0.8**
comp=Z,17nm,1.0s,mb4.6
CAF Calviac 53.56 306 *e*P **P 04 10 06.3 -0.6**
comp=Z,19nm,0.8s,mb4.8
MTLF Montolieu 53.67 304 *e*P **P 04 10 06.8 -0.9**
comp=Z,10nm,0.7s,mb4.6
SPB4 Spitsbergen Ar 53.80 348 *e*P **P 04 10 08.7 +0.4**
RJF Les Rejaudoux 53.90 307 *e*P **P 04 10 08.7 -0.7**
comp=Z,13nm,0.8s,mb4.6
RJF *e*R
comp=Z,274nm,20.0s
EMIR Miracle 54.40 302 P **P 04 10 11.0 -2.1**
comp=Z,4.1nm,0.4s,mb4.7
LFF La Frestale 54.50 306 *e*P **P 04 10 11.8 -2.0**
LDF La Druitiere 54.63 311 *e*P **P 04 10 13.2 -1.5**
comp=Z,18nm,0.7s,mb4.9
EPOB Poblet 54.83 302 P **P 04 10 14.2 -2.1**
comp=Z,3.8nm,0.6s,mb4.6
FLN La Foliniere 54.85 311 *e*P **P 04 10 14.8 -1.5**
comp=Z,6.2nm,0.5s,mb4.6
FLN *e*R
comp=Z,222nm,22.2s
MFF Saint Martin d 54.88 308 *e*P **P 04 10 15.1 -1.5**
comp=Z,15nm,0.9s,mb4.7
KBS Kingsbay 54.94 349 *e*P **P 04 10 17.3 +0.6**
KBS *e*PP PP 04 12 20.0 -1.2
KBS *e*S **S 04 17 58.0 +0.9**
KBS AMS AMS 04 39 32.7
comp=Z,342nm,16.0s,MS4.5
EPF Esparros 55.08 304 *e*P **P 04 10 17.0 -1.1**
comp=Z,5.0nm,0.6s,mb4.4
GRR Gorron 55.14 311 *e*P **P 04 10 16.9 -1.6**
EBR Ebro Roquetas 55.36 301 *e*Ts 04 10 20.5
ETSF Etsaut 55.75 304 *e*P **P 04 10 22.0 -0.9**
comp=Z,34nm,0.9s,mb5.1
ESAC San Caprasio 55.90 303 P **P 04 10 21.2 -2.8**
comp=Z,8.3nm,0.6s,mb4.9
ESK Eskdalemuir 55.95 319 *e*P **P 04 10 23.3 -0.9**
comp=Z,8.3nm,0.7s,mb4.9
EMOS Mosqueruela 56.17 301 P **P 04 10 24.0 -2.0**
comp=Z,2.4nm,0.6s,mb4.4
ETOB Tobarra 57.37 299 P **P 04 10 32.7 -1.9**
comp=Z,3.8nm,0.6s,mb4.6
MAJO Matsushiro 57.80 63 *e*P **P 04 10 37.7 0.0**
comp=Z,8.2nm,0.5s,mb5.0
EVIA Vianos 58.09 299 P **P 04 10 40.0 +0.3**
comp=Z,5.0nm,0.8s,mb4.6
EHUE Huescar 58.37 298 P **P 04 10 40.5 -1.1**
EQES Quesada 58.74 299 P **P 04 10 43.2 -1.0**
comp=Z,2.6nm,0.8s,mb4.3
YSS Yuzh-Sakhalins 58.79 50 *e*P **P 04 10 44.0 -0.4**
YSS *e* 04 10 50.0
YSS pmax pmax
comp=Z,30nm,0.8s,mb5.4
YSS MLR MLR
comp=N,500nm,15.0s
YSS MLR MLR
comp=Z,500nm,15.0s,MS4.8
YSS Yuzh-Sakhalins 58.79 50 *e*P **P 04 10 44.0 -0.4**
comp=Z,26nm,0.6s,mb5.4
EBER Berja 58.83 297 P **P 04 10 44.3 -0.5**
comp=Z,1.5nm,0.3s,mb4.5
GUD Guadarrama 58.85 302 P **P 04 10 44.6 -0.3**
comp=Z,6.4nm,0.8s,mb4.7
ESDC Sonseca Array 58.94 301 P **P 04 10 43.8 -1.8**
comp=Z,4.4nm,0.6s,mb4.7,baz=65,slow=7.4,SNR=24
ESDC Sonseca Array 58.94 301 P **P 04 10 43.4 -2.1**
comp=Z,6.2nm,0.8s,mb4.7
ESLA Sonseca Array 58.94 301 *e*P **P 04 10 44.7 -0.8**
comp=Z,2.6nm,0.9s,mb4.3
EARI Arriondas 59.01 305 P **P 04 10 41.8 -4.2**
EBAN Banos Encina 59.19 299 P **P 04 10 45.8 -1.5**
ECOG Cogollos-Vega 59.25 298 P **P 04 10 46.8 -1.0**
comp=Z,1.1nm,0.6s,mb4.1
ERON Agron 59.51 298 P **P 04 10 48.5 -1.0**
ELUQ Luque 59.72 299 P **P 04 10 49.5 -1.4**
ELOJ Sierra Loja 59.74 298 P **P 04 10 49.9 -1.2**
EADA Adamuz 59.79 299 P **P 04 10 49.6 -1.8**
comp=Z,1.8nm,0.9s,mb4.1
EINC Incio 60.68 305 P **P 04 10 52.9 -4.5**
ELIJ Sierra de Lija 60.75 298 P **P 04 10 56.4 -1.6**
DAG Danmarks Havn 60.81 345⇓ *i*P **P 04 10 57.8 -0.1**
comp=Z,4.7nm,0.6s,mb4.8
DAG Danmarks Havn 60.81 345⇓ *i*P **P 04 10 57.8 -0.1**
DAG pmax pmax
comp=Z,5.0nm,0.6s,mb4.8
ESPR Espera 61.13 298 P **P 04 10 58.7 -1.8**
MA2 Magadan 61.25 35 *e*P **P 04 11 03.0 +1.9**
SEY Seymchan 61.45 31 *e*P **P 04 11 02.9 +0.5**
SEY 04 11 44.4
SEY 04 13 21.8

SEY				*e*PPP	PPP	04 14 46.7	-1.7
SEY				*e*S	**S**	**04 19 25.4**	**+3.1**
SEY						04 20 48.5	
SEY				pmax	pmax		
	comp=Z,20nm,0.6s,mb5.4						
SEY				pmax	pmax		
	comp=E,20nm,0.7s						
SEY				smax			
	comp=N,240nm,5.1s						
SEY				smax			
	comp=E,120nm,4.1s						
EBAD	**Badajoz**	**61.47**	**301**	P	**P**	**04 10 59.9**	**-2.9**
EMIN	**Mina Concepcio**	**61.49**	**299**	P	**P**	**04 11 00.6**	**-2.5**
	comp=E,1.3nm,0.5s,mb4.3						
EMAZ	**Mazaricos**	**61.77**	**306**	P	**P**	**04 10 59.5**	**-5.3**
EGRO	**El Granado**	**62.17**	**299**	P	**P**	**04 11 04.9**	**-2.7**
EVO	**Evora**	**62.28**	**301**	*e*P	**P**	**04 11 07.4**	**-1.0**
	comp=E,22nm,1.0s,mb5.0						
EVO				*e*R			
	comp=E,175nm,21.0s						
BILL	**Bilibino**	**65.83**	**24***c*	*i*P	**P**	**04 11 31.7**	**+0.7**
BILL				*e*S	S	04 20 09.2	-7.4
BILL				pmax	pmax		
	comp=Z,26nm,1.8s,mb5.0						
BILL				MLR	MLR		
	comp=Z,1μm,17.0s,MS5.1						
BILL	**Bilibino**	**65.83**	**24**	*e*P	**P**	**04 11 31.6**	**+0.7**
	comp=Z,9.2nm,0.6s,mb5.0						
SUMG	**Summit**	**66.94**	**342**	*e*P	**P**	**04 11 38.5**	**+0.5**
LBTB	**Lobatse**	**68.04**	**222**	*e*P	**P**	**04 11 47.3**	**+1.6**
	comp=Z,9.6nm,1.3s,mb4.7						
DBIC	**Dimbokro**	**72.17**	**268**	P	**P**	**04 12 10.8**	**-0.2**
	comp=Z,5.6nm,1.0s,mb4.5,baz=55,slow=12,SNR=8.2						
DBIC				LR	LR	04 44 29.9	
	comp=Z,300nm,18.8s,MS4.6,baz=39,slow=36						
DBIC	**Dimbokro**	**72.17**	**268**	*e*P	**P**	**04 12 11.4**	**+0.4**
	comp=Z,7.8nm,1.2s,mb4.5						
RES	**Resolute Bay**	**75.46**	**355**	*e*P	**P**	**04 12 29.3**	**+0.2**
	comp=Z,2.8nm,0.7s,mb4.3						
TNA	**Tin City**	**75.82**	**21**	*e*P	**P**	**04 12 31.8**	**+0.5**
	comp=Z,3.1nm,0.7s,mb4.3						
ANM	**Nome**	**77.30**	**21**	*e*P	**P**	**04 12 41.3**	**+1.7**
IMA	**Indian Mountai**	**79.40**	**16**	*e*P	**P**	**04 12 52.6**	**+1.5**
	comp=Z,6.8nm,0.8s,mb4.6						
WRA	**Warramunga Arr**	**80.35**	**119**	P	**P**	**04 12 57.9**	**+0.8**
	comp=Z,5.9nm,0.7s,mb4.7,baz=319,slow=4.8,SNR=55						
WRAB	**Tennant Creek**	**80.35**	**119**	*e*P	**P**	**04 12 57.0**	**-0.1**
	comp=Z,50nm,1.1s,mb5.4						
WB2	**Warramunga Arr**	**80.36**	**119**	*e*P	**P**	**04 12 57.8**	**+0.7**
INK	**Inuvik**	**81.10**	**8**	*e*P	**P**	**04 13 00.1**	**+0.1**
	comp=Z,19nm,0.6s,mb5.2						
COLA	**College**	**81.75**	**15**‖	*e*P	**P**	**04 13 04.9**	**+1.4**
COLA	**College**	**81.75**	**15**	*e*P	**P**	**04 13 05.0**	**+1.5**
	comp=Z,22nm,1.3s,mb4.9						
ILAR	**Eielson Array**	**82.05**	**14**	P	**P**	**04 13 04.4**	**-0.7**
	comp=Z,2.2nm,0.5s,mb4.3,baz=335,slow=4.2,SNR=31						
ILAR				PP	PP	04 16 10.7	-4.4
	comp=Z,1.5nm,0.9s,baz=321,slow=8.8,SNR=5.0						
ILAR				LR	LR	04 51 48.3	
	comp=Z,221nm,21.5s,MS4.5,baz=334,slow=37						
AS12	**Alice Springs**	**82.23**	**123**	*e*P	**P**	**04 13 07.4**	**+0.6**
	comp=Z,10nm,0.6s,mb4.9						
ASAR	**Alice Springs**	**82.23**	**123**	P	**P**	**04 13 07.4**	**+0.6**
	comp=Z,11nm,0.6s,mb5.0,baz=309,slow=5.3,SNR=97						
ASAR				LR	LR	04 56 30.9	
	comp=Z,104nm,18.9s,MS4.2,baz=119,slow=41						
MCK	**McKinley**	**82.48**	**16**	*e*P	**P**	**04 13 07.3**	**0.0**
	comp=Z,5.7nm,0.6s,mb4.7						
SVW	**Sparrevohn**	**82.86**	**20**	*e*P	**P**	**04 13 11.6**	**+2.3**
	comp=Z,2.6nm,0.9s,mb4.3						
DAWY	**Dawson**	**84.17**	**12**	*e*P	**P**	**04 13 15.8**	**-0.1**
RSO	**Redoubt South**	**84.21**	**19**	P	**P**	**04 13 17.0**	**+0.8**
PMR	**Palmer**	**84.25**	**17**	*e*P	**P**	**04 13 17.3**	**+1.0**
	comp=Z,5.7nm,0.5s,mb5.0						
SML	**Sawmill**	**84.26**	**17**	*e*P	**P**	**04 13 16.6**	**+0.2**
TOA	**Tolsona**	**84.53**	**16**	*e*P	**P**	**04 13 20.7**	**+3.0**
	comp=Z,16nm,0.7s,mb5.3						
SLKM	**Skilak Lake**	**84.88**	**18**	*e*P	**P**	**04 13 20.1**	**+0.6**
KDAK	**Kodiak Island**	**86.46**	**21**	*e*P	**P**	**04 13 28.7**	**+1.2**
	comp=Z,28nm,0.6s,mb5.2						
SCHQ	**Schefferville**	**87.58**	**336**	P	**P**	**04 13 34.5**	**+1.6**
	comp=Z,3.8nm,0.7s,mb4.7,baz=291,slow=19,SNR=5.2						
SCHQ				LR	LR	04 55 28.9	
	comp=Z,184nm,18.1s,MS4.5,baz=64,slow=38						
YKW3	**Yellowknife Ar**	**88.19**	**1**	*e*P	**P**	**04 13 36.4**	**+0.8**
YKA	**Yellowknife Ar**	**88.26**	**1**	LR	LR	04 57 42.3	
	comp=Z,483nm,20.0s,MS4.9,baz=20,slow=39						
CTAO	**Charters Tower**	**89.74**	**113**	P	**P**	**04 13 45.0**	**+1.0**
	comp=Z,2.5nm,0.7s,mb4.7						
FCC	**Fort Churchill**	**90.83**	**351**	*e*P	**P**	**04 13 49.5**	**+1.3**
	comp=Z,5.2nm,0.8s,mb4.9						
DLBC	**Dease Lake**	**91.02**	**10**	*e*P	**P**	**04 13 50.3**	**+1.3**
STKA	**Stephens Creek**	**92.50**	**125**	P	**P**	**04 13 57.5**	**+0.9**
	comp=Z,1.6nm,0.6s,mb4.6,baz=257,slow=8.5,SNR=4.9						
STKA				LR	LR	04 54 55.1	
	comp=Z,208nm,19.5s,MS4.6,baz=22,slow=35						
STKA	**Stephens Creek**	**92.50**	**125**	P	**P**	**04 13 57.5**	**+0.9**
STKA				LR	LR	04 54 55.1	
FFC	**Flin Flon**	**95.67**	**354**	*e*P	**P**	**04 14 10.8**	**+0.3**
	comp=Z,3.2nm,0.6s,mb5.1						
ULM	**Lac du Bonnet**	**99.34**	**350**	LR	LR	05 04 58.5	
	comp=Z,186nm,19.0s,MS4.6,baz=7.4,slow=39						
NVAR	**Mina Array Bea**	**112.09**	**6**	PKiKP		04 19 22.2	
	comp=Z,0.3nm,0.6s,baz=333,slow=2.0,SNR=3.9						
QSPA	**South Pole Qui**	**119.36**	**180**	*e*PKP	PKPdf	04 19 28.1	-7.1
QSPA				LR	LR		
	comp=Z,170nm,21.7s,MS4.6						
TXAR	**Lajitas Array**	**120.97**	**352**	PKhKP		04 19 33.8	
	comp=Z,0.1nm,0.6s,baz=333,slow=4.0,SNR=3.1						
TXAR				PKP	PKPdf	04 19 39.6	+0.1
	comp=Z,0.4nm,0.8s,baz=225,slow=1.8,SNR=5.2						

*IDC **13** 04:48:19.1±1.4,20.50S×173.65W,mb4.0/10,mb1 4.3/11, mb1mx4.2/18,ML4.7/1,MS4.0/1,Ms1 3.9/1,ms1mx3.2/18, Error ellipse: s-maj=85.2km s-min=17.5km az=155.0*
*NEIC **13** 04:48:22.7±0.6,21.15S×173.31W,h35km,mb4.5/5,Error ellipse: s-maj=33.6km s-min=11.7km az=164.0*
ISC 13 04:48:20.3±0.6,21.2S±0.2×173.3W±0.1,h33km,n21, σ1©31/20,mb4.2/13,MS4.0/1,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
RAR	**Rarotonga**	**12.57**	**92**	Pn		**P**	**04 51 17.7**	**-2.0**
	3.8nm,0.3s,baz=255,slow=11,SNR=11							
RAR				Sn		**S**	**04 53 29.1**	**-10**
	0.6nm,0.3s,baz=277,slow=12,SNR=2.4							
CTA	**Charters Tower**	**37.84**	**264**	*e*P		**P**	**04 55 35.6**	**-0.2**
	3.1nm,0.6s,mb4.2							
CTA	**Charters Tower**	**37.84**	**264**	P		**P**	**04 55 36.0**	**+0.2**
	1.6nm,0.4s,mb4.1,baz=105,slow=10,SNR=8.9							
CTAO	**Charters Tower**	**37.84**	**264**	*e*P		**P**	**04 55 36.0**	**+0.1**
	5.2nm,0.7s,mb4.4							
TAU	**Tasmania Unive**	**39.32**	**227**	P		**P**	**04 55 49.8**	**+1.8**
	43nm,1.2s,mb5.0							
PMG	**Port Moresby**	**39.83**	**281**	P		**P**	**04 55 50.4**	**-2.0**
	9.1nm,0.8s,mb4.6,baz=135,slow=10.0,SNR=3.8							
STKA	**Stephens Creek**	**41.51**	**246**	P		**P**	**04 56 07.2**	**+1.1**
	2.4nm,0.8s,mb3.9,baz=121,slow=5.9,SNR=2.2							
STKA				LR		LR	05 11 39.3	
	comp=Z,181nm,18.7s,MS4.0,baz=25,slow=34							
AS12	**Alice Springs**	**48.68**	**257**	*e*P		**P**	**04 57 04.1**	**+0.6**
	14nm,1.6s,mb4.7							
ASAR	**Alice Springs**	**48.68**	**257**	P		**P**	**04 57 03.9**	**+0.3**
	2.2nm,0.7s,mb4.3,baz=102,slow=7.5,SNR=21							
WB2	**Warramunga Arr**	**48.88**	**262**	*e*P		**P**	**04 57 01.4**	**-3.8**
WB2				*e*			04 57 05.0	
WRAB	**Tennant Creek**	**48.89**	**262**	*e*P		**P**	**04 57 04.0**	**-1.2**
	8.0nm,0.9s,mb4.8							
WRA	**Warramunga Arr**	**48.90**	**262**	P		**P**	**04 57 04.5**	**-0.7**
	1.9nm,0.7s,mb4.2,baz=96,slow=7.7,SNR=35							
FITZ	**Fitzroy Crossi**	**57.33**	**262**	P		**P**	**04 58 07.4**	**-0.4**
	0.8nm,0.6s,mb3.9,baz=131,slow=9.3,SNR=4.7							
NVAR	**Mina Array Bea**	**78.57**	**41**	P		**P**	**05 00 20.9**	**+0.6**
	0.9nm,0.7s,mb3.8,baz=233,slow=11,SNR=7.4							
NVAR	**Mina Array Bea**	**78.57**	**41**	P		**P**	**05 00 20.9**	**+0.6**
MOD	**Modoc**	**79.61**	**37**	P		**P**	**05 00 28.1**	**+2.1**
	2.3nm,0.6s,mb4.3							
TXAR	**Lajitas Array**	**83.75**	**55**	P		**P**	**05 00 51.5**	**+3.7**
	0.4nm,0.8s,mb3.6,baz=217,slow=6.3,SNR=5.2							
PDAR	**Pinedale Array**	**86.50**	**41**	P		**P**	**05 01 02.0**	**+1.0**
	0.3nm,0.8s,mb3.5,baz=211,slow=5.3,SNR=2.8							
ILAR	**Eielson Array**	**88.10**	**11**	P		**P**	**05 01 07.6**	**-0.6**
	0.3nm,0.6s,mb3.7,baz=215,slow=6.2,SNR=4.5							
AKASG	**Malin Array Be**	**145.68**	**334**	PKP		PKPdf	05 07 56.6	+1.4
	1.3nm,0.5s,baz=38,slow=3.9,SNR=11							
BRTR	**Keskin Array B**	**150.55**	**315**	PKPbc		PKPdf	05 08 12.1	+8.7
	0.4nm,0.4s,baz=63,slow=3.2,SNR=3.2							

*LDG **13** 05:20:23.6±0.1,49.17N×6.82E,h1km,Md2.6/1,Ml2.4/9, Error ellipse: s-maj=2.3km s-min=1.7km az=83.0, Suspected Mining induced.*
*NEIC **13** 05:20:23.6,49.17N×6.80E,h1km,ML2.4(LDG), ML2.0(STR),After STR.*
*BGR **13** 05:20:23.8±0.3,49.17N×6.86E,h1km,ML1.4/1,Error ellipse: s-maj=4.4km s-min=2.2km az=91.0*
ISC 13 05:20:21.8±0.4,49.16N±0.02×6.81E±0.03,n28,σ1©13/46, Germany

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
RUP	**Ruppelstein**	**0.56**	**17**	*e*Pg		**Pg**	**05 20 34.4**	**+1.4**
	SNR=3.5							
RUP				*e*Sg		**Sg**	**05 20 41.6**	**+1.0**
	SNR=2.7							
RUP	**Ruppelstein**	**0.56**	**17**	Pg		**Pg**	**05 20 34.6**	**+1.6**
WLF	**Walferdange**	**0.66**	**320**	*e*Pg		**Pg**	**05 20 36.5**	**+1.6**
WLF	**Walferdange**	**0.66**	**320**	*e*Pg		**Pg**	**05 20 36.3**	**+1.4**
CDF	**Champ du Feu**	**0.81**	**157**	*e*Pg		**Pg**	**05 20 39.2**	**+1.2**
CDF				*e*Pn		**Pn**	**05 20 39.9**	**-0.3**
CDF				*e*Sg		**Sg**	**05 20 50.5**	**+1.6**
	13nm,0.2s							
WLS	**Welschbruch**	**0.83**	**154**	*e*Sg		**Sg**	**05 20 49.9**	**+0.4**
	SNR=2.8							
WLS	**Welschbruch**	**0.83**	**154**	Pg		**Pg**	**05 20 37.2**	**-1.2**
WLS				Sg		**Sg**	**05 20 52.3**	**+2.7**
ECH	**Echery**	**0.98**	**166**	*e*Pg		**Pg**	**05 20 42.2**	**+0.9**
	SNR=5.5							
ECH				*e*Sg		**Sg**	**05 20 55.5**	**+1.2**
	SNR=2.5							
ECH	**Echery**	**0.98**	**166**	Pg		**Pg**	**05 20 42.6**	**+1.3**
ECH				Sg		**Sg**	**05 20 56.3**	**+2.0**
RFYF	**Reffroy**	**1.03**	**239**	*e*Pg		**Pg**	**05 20 43.7**	**+1.4**
	baz=60							
RFYF				*e*Sg		**Sg**	**05 20 57.5**	**+1.5**
	16nm,0.3s							
THEF	**They Montfort**	**1.08**	**210**	*e*Pg		**Pg**	**05 20 43.7**	**+0.3**
	SNR=2.7							
THEF				*e*Sg		**Sg**	**05 20 59.1**	**+1.3**
	SNR=2.7							
THEF	**They Montfort**	**1.08**	**210**	Pg		**Pg**	**05 20 44.1**	**+0.7**
THEF				Sg		**Sg**	**05 20 59.2**	**+1.4**
HAU	**Haudompre**	**1.20**	**195**	*e*Pg		**Pg**	**05 20 45.9**	**+0.2**
HAU				*e*Sg		**Sg**	**05 21 02.1**	**+0.4**
	8.1nm,0.3s							
BFO	**Black Forest**	**1.31**	**129**	*e*Pg		**Pg**	**05 20 48.1**	**+0.2**
BFO				*e*Sg		**Sg**	**05 21 04.7**	**-0.7**
	SNR=2.3							
MOF	**Molkenrain**	**1.33**	**170**	*e*Pg		**Pg**	**05 20 48.1**	**-0.3**
	SNR=2.8							
MOF				*e*Sg		**Sg**	**05 21 05.9**	**-0.2**
	SNR=2.8							
MOF	**Molkenrain**	**1.33**	**170**	Pg		**Pg**	**05 20 48.7**	**+0.3**
MOF				Sg		**Sg**	**05 21 06.2**	**+0.1**
MEZF	**Maizieres J'vi**	**1.33**	**241**	*e*Sg		**Sg**	**05 21 06.0**	**-0.2**
	7.3nm,0.3s							
HINF	**Hinteralfeld**	**1.35**	**179**	*e*Pg		**Pg**	**05 20 48.6**	**-0.1**
HINF				*e*Sg		**Sg**	**05 21 06.5**	**-0.2**
	9.0nm,0.3s							
TOD	**Tromm**	**1.38**	**71**	*e*Sg		**Sg**	**05 21 06.1**	**-1.6**
	SNR=1.9							
SFTF	**Sexfontaines**	**1.51**	**231**	*e*Sg		**Sg**	**05 21 12.0**	**-0.2**
	4.5nm,0.2s							
FELD	**Feldberg**	**1.52**	**148**	*e*Sg		**Sg**	**05 21 11.0**	**-1.2**
	SNR=3.1							
GIVF	**Givet**	**1.59**	**307**	*e*Pn		**Pn**	**05 20 51.2**	**-0.2**
GIVF				*e*Sg		**Sg**	**05 21 14.6**	**-0.3**
	7.7nm,0.3s							
BAIF	**Baives**	**1.91**	**299**	*e*Pn		**Pn**	**05 20 55.4**	**-0.5**
CABF	**La Chapelle**	**2.60**	**191**	*e*Pg		**Pg**	**05 21 11.8**	**-1.9**
LOR	**Lormes**	**2.73**	**227**	*e*Pn		**Pn**	**05 21 06.9**	**-0.8**
LOR				*e*Sn		**Sn**	**05 21 39.3**	**-2.6**
LOR				*e*Sg		**Sg**	**05 21 49.1**	**-3.7**
	3.4nm,0.3s,baz=42							
SSF	**Saint Saulge**	**3.05**	**228**	*e*Pn		**Pn**	**05 21 10.8**	**-1.4**
SSF				*e*Sg		**Sg**	**05 21 59.6**	**-3.8**
	1.6nm,0.3s							
SMF	**Signal de Mont**	**3.21**	**219**	*e*Pn		**Pn**	**05 21 13.1**	**-1.4**
AVF	**Avril sur Loir**	**3.32**	**226**	*e*Pn		**Pn**	**05 21 14.8**	**-1.2**

*NEIC **13** 05:23:01.7, 17.35N×99.52W,h58km,MD4.1(MEX),After MEX.*
*MEX **13** 05:23:01.7±1.2, 17.35N×99.53W,h59km±18km,MD4.1*
ISC 13 05:22:60.0±0.8,17.33N±0.04×99.54W±0.04,h61km±16km, n16,σ1©20/29,Guerrero

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
ACX	**Acapulco**	**0.58**	**218**	*i*P		**P**	**05 23 12.4**	**-0.7**
ACX				*e*S		**S**	**05 23 22.6**	**-0.1**
CAIG	**El Cayaco**	**0.75**	**248**	*i*P		**P**	**05 23 15.2**	**+0.2**
CAIG				*i*S		**S**	**05 23 27.2**	**+1.0**
YAIG	**Yautepec**	**1.59**	**16**	*e*P		**P**	**05 23 25.4**	**-1.0**
YAIG				*e*S		**S**	**05 23 44.4**	**-1.6**
PNIG	**Pinotepa**	**1.64**	**124**	*i*P		**P**	**05 23 28.2**	**+1.0**
PNIG				*i*S		**S**	**05 23 47.6**	**+0.3**
CHVM	**Chichinautzin**	**1.79**	**12**	*i*S		**S**	**05 23 50.3**	**-0.5**
ZIIG	**Zihuatanejo**	**1.86**	**279**	*e*P		**P**	**05 23 30.6**	**+0.5**
ZIIG				*i*S		**S**	**05 23 50.4**	**-2.1**
IIZ	**Mezontepec**	**1.87**	**9**	*i*P		**P**	**05 23 29.5**	**-0.8**
PPM	**Popocatepetl**	**1.93**	**26**	*e*P		**P**	**05 23 31.8**	**+0.6**
PPM				*i*P			05 23 34.4	
PPM				*i*S		**S**	**05 23 54.5**	**+0.2**
PPM				*i*S		**S**	**05 23 56.5**	**+2.2**
PPM				*i*S		**S**	**05 23 56.7**	**+2.4**
PPM	**Popocatepetl**	**1.93**	**26**	*e*P		**P**	**05 23 31.8**	**+0.6**
PPM				*i*S		**S**	**05 23 54.5**	**+0.2**
UNM	**Universidad Na**	**2.02**	**10**	*e*P		**P**	**05 23 33.5**	**+1.1**
UNM				*i*P			05 23 33.9	
IISM	**Ciudad Serdan**	**2.63**	**51**	*e*P		**P**	**05 23 39.3**	**-1.9**
VHO	**Vista Hermosa**	**2.69**	**95**	*i*P		**P**	**05 23 42.3**	**+0.3**
VHO				*i*S		**S**	**05 24 11.2**	**-2.2**
OXX	**Oaxaca**	**2.70**	**95**	*e*P		**P**	**05 23 44.0**	**+1.9**
OXX				*i*S		**S**	**05 24 12.0**	**-1.7**
POHV	**Veracruz**	**2.76**	**51**	*e*P		**P**	**05 23 44.5**	**+1.6**
POHV				*i*S		**S**	**05 24 17.0**	**+1.9**
MOIG	**Morelia**	**2.81**	**326**	*i*P		**P**	**05 23 44.7**	**+1.0**
MOIG				*i*S		**S**	**05 24 16.6**	**+0.1**
CMIG	**Matias Romero**	**4.45**	**92**	*e*P		**P**	**05 24 06.2**	**-0.5**

*IDC **13** 05:36:48.5±1.6,3.09N×127.08E,mb3.8/6,mb1 4.0/6, mb1mx3.8/17,Error ellipse: s-maj=74.9km s-min=15.2km az=63.0*
*NEIC **13** 05:36:50.2±0.6,3.22N×127.32E,h15km,mb4.0/2,Error ellipse: s-maj=27.9km s-min=7.8km az=63.0*
ISC 13 05:36:48.4±1.0,3.2N±0.2×127.2E±0.3,h15km,n12, σ0©41/13,mb3.8/7,Talaud Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
FITZ	**Fitzroy Crossi**	**21.26**	**184**	*e*P		**P**	**05 41 35.7**	**-0.8**
	1.7nm,0.6s,mb3.5							
FITZ	**Fitzroy Crossi**	**21.26**	**184**	P		**P**	**05 41 35.5**	**-1.0**
	2.7nm,0.7s,mb3.7,baz=360,slow=10,SNR=11							
WRAB	**Tennant Creek**	**24.06**	**163**	*e*P		**P**	**05 42 04.7**	**+0.4**
	10nm,0.8s,mb4.3							
WRA	**Warramunga Arr**	**24.07**	**163**	P		**P**	**05 42 04.7**	**+0.4**
	1.5nm,0.4s,mb3.7,baz=343,slow=10,SNR=42							
WRA				S		**S**	**05 46 23.5**	**+5.6**
	0.3nm,0.7s,baz=333,slow=20,SNR=3.1							
WB2	**Warramunga Arr**	**24.07**	**163**	*e*P		**P**	**05 42 04.6**	**+0.2**
ASAR	**Alice Springs**	**27.52**	**167**	P		**P**	**05 42 36.2**	**-0.4**
	0.4nm,0.7s,mb3.2,baz=351,slow=8.0,SNR=5.3							
CMAR	**Chiang Mai Arr**	**31.56**	**301**	P		**P**	**05 43 12.8**	**+0.1**
	0.8nm,0.8s,mb3.6,baz=111,slow=7.7,SNR=3.5							
STKA	**Stephens Creek**	**37.49**	**160**	P		**P**	**05 44 03.6**	**+0.1**
	0.9nm,0.4s,mb4.0,baz=329,slow=10,SNR=5.5							
DGAR	**Diego Garcia**	**55.68**	**259**	P		**P**	**05 46 27.4**	**+0.5**
MKAR	**Makanchi Array**	**58.25**	**325**	P		**P**	**05 46 44.7**	**0.0**
	1.3nm,0.5s,mb4.2,baz=118,slow=7.4,SNR=12							
KURK	**Kurchatov**	**62.43**	**327**	*e*P		**P**	**05 47 13.1**	**-0.1**
ZRNK	**Zerenda**	**68.73**	**326**	*e*P		**P**	**05 47 53.3**	**-0.4**

*KNET **13** 05:40:17.8±0.4,42.28N×76.29E,h16km±1km,ml2.8,Error ellipse: s-maj=3.3km s-min=1.6km az=110.0*
*NNC **13** 05:40:20.1±2.5,42.51N×76.61E,mpv2.9,Error ellipse: s-maj=30.5km s-min=8.1km az=165.0*
ISC 13 05:40:17.0±1.2,42.27N±0.07×76.46E±0.07,h11km±6km, n13,σ0©91/22,16C-7D,Lake Issyk-Kul region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
ULHL	**Ulahol**	**0.16**	**260**	⇓P		**Pg**	**05 40 20.6**	**-0.1**
	962nm,0.1s,SNR=988							
ULHL				⇑S		**Sg**	**05 40 24.1**	**+0.9**
	1μm,0.2s							
TKM2	**Tokmak 2**	**0.91**	**316**	⇑P		**Pb**	**05 40 33.4**	**-0.9**
	36nm,0.1s,SNR=249							
TKM2				⇑S		**Sb**	**05 40 46.0**	**-0.1**
	373nm,0.1s							
KZA	**Kyzart**	**0.92**	**258**	P		**Pb**	**05 40 33.2**	**-1.3**
	117nm,0.3s,SNR=344							
KZA				⇑S		**Sb**	**05 40 45.6**	**-0.9**
	174nm,0.2s							
KBK	**Karagaybulak**	**1.18**	**289**	⇑P		**Pb**	**05 40 38.0**	**-0.9**
	28nm,0.1s,SNR=68							
KBK				⇑S		**Sb**	**05 40 54.3**	**+0.2**
	217nm,0.2s							
UCH	**Uchtor**	**1.44**	**269**	⇑P		**Pn**	**05 40 42.2**	**-1.0**
	26nm,0.2s,SNR=45							
UCH				⇑S		**Sb**	**05 41 01.2**	**-0.5**
	55nm,0.2s							
CHMS	**Chumysh**	**1.45**	**301**	⇓P		**Pn**	**05 40 42.6**	**-0.8**
	12nm,0.1s,SNR=25							
CHMS				⇑S		**Sb**	**05 41 02.0**	**0.0**
	82nm,0.1s							
AAK	**Ala-Archa**	**1.50**	**285**	⇑P		**Pn**	**05 40 43.3**	**-0.7**
	16nm,0.1s,SNR=54							
AAK				⇓S		**Sb**	**05 41 03.2**	**-0.1**
	130nm,0.2s							
USP	**Ospenovka**	**1.75**	**305**	⇓P		**Pn**	**05 40 48.1**	**+0.5**
	20nm,0.2s,SNR=7.8							
USP				⇑S		**Sn**	**05 41 10.7**	**+0.6**
	179nm,0.3s							
EKS2	**Erkin-Say**	**2.02**	**282**	⇑P		**Pn**	**05 40 53.0**	**+1.5**
	14nm,0.2s,SNR=21							
AML	**Almayashu**	**2.06**	**267**	⇑P		**Pn**	**05 40 53.4**	**+1.4**
	21nm,0.2s,SNR=32							
AML				⇓S		**Sn**	**05 41 20.2**	**+2.3**
	95nm,0.3s							
KK31	**Karatay Array**	**4.46**	**283**	Pn		**Pn**	**05 41 35.3**	**+9.1**
	3.5nm,0.8s,baz=104,slow=15,SNR=29							
KK31				⇓Sn		**Sn**	**05 42 31.6**	**+13**
	4.3nm,0.5s,baz=100,slow=29,SNR=32							
KK31				⇓Lg			05 42 41.2	
	7.6nm,0.3s,baz=96,slow=27,SNR=23							
MK31	**Makanchi Array**	**6.15**	**41**	⇑Pn		**Pn**	**05 41 50.6**	**+0.6**
	0.2nm,0.3s,baz=218,slow=15,SNR=11							
MK31				⇑Lg			05 43 25.4	
	1.8nm,0.6s,baz=223,slow=28,SNR=3.6							
KURK	**Kurchatov**	**8.57**	**9**	⇑Lg			05 44 46.0	
	2.6nm,0.9s,baz=110,slow=16,SNR=3.7							

*IDC **13** 05:43:56.6±0.9,6.70N×72.91W,h165km±12km,mb3.0/5, mb1 3.4/7,mb1mx3.1/22,Error ellipse: s-maj=40.2km s-min=7.8km az=132.0*
*NEIC **13** 05:43:57.4±0.7,6.68N×72.90W,h175km±10km,Error ellipse: s-maj=30.0km s-min=9.7km az=127.0*
ISC 13 05:43:56.4±0.9,6.8N±0.3×73.0W±0.4,h171km±25km,n10, σ0©55/11,mb3.3/5,Northern Colombia

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
ROSC	**El Rosal**	**2.34**	**215**	P		**P**	**05 44 38.0**	**+0.8**
	25nm,0.3s,baz=356,slow=2.0,SNR=51							
ROSC				S		**S**	**05 45 07.9**	**-0.8**
	45nm,0.3s,baz=57,slow=19,SNR=13							
SDV	**Santo Domingo**	**3.12**	**48**	P		**P**	**05 44 47.6**	**+0.8**
	19nm,0.3s,baz=241,slow=4.6,SNR=122							
SDV				S		**S**	**05 45 25.1**	**-0.5**
	7.8nm,0.3s,baz=279,slow=21,SNR=11							
OTAV	**Otavalo**	**8.49**	**220**	P		**P**	**05 45 57.3**	**+0

IDC 13 05:59:48.7±3.3, 30.29S×138.49E, mb1 2.9/3, mb1mx2.9/9, ML2.3/3, Error ellipse: s-maj=82.6km s-min=15.1km az=44.0, South Australia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**3.10**	**122**	Pn	Pn	06 00 38.4	-1.4
	0.2nm,0.3s,baz=313,slow=12,SNR=3.4						
STKA				Pg	Pg	06 00 46.8	-3.7
	0.5nm,0.3s,baz=300,slow=17,SNR=7.5						
STKA				Sn	Sn	06 01 15.9	-2.2
	0.5nm,0.3s,baz=252,slow=20,SNR=3.5						
STKA				Lg		06 01 26.4	
	1.0nm,0.3s,baz=225,slow=19,SNR=6.0						
ASAR	**Alice Springs**	**7.76**	**327**	Pn	Pn	06 01 43.0	-2.7
	0.0nm,0.3s,baz=148,slow=14,SNR=2.8						
ASAR				Sn	Sn	06 03 10.7	-4.6
	0.1nm,0.3s,baz=148,slow=22,SNR=2.8						
WRA	**Warramunga Arr**	**10.96**	**339**	Pn	P	06 02 26.8	-3.2
	0.0nm,0.3s,baz=155,slow=12,SNR=4.5						
WRA				Sn	S	06 04 33.9	-0.7
	0.0nm,0.3s,baz=163,slow=24,SNR=2.9						

MDD 13 06:01:14.3±0.2, 28.10N×16.12W, mbLg2.0/2, Error ellipse: s-maj=5.1km s-min=0.8km az=9.0, PRXIMO TT-MODEL: Canary
NEIC 13 06:01:15.2, 28.04N×16.16W, h26km, MN2.2(MDD), After MDD.

ISC 13 06:01:12.9±1.2, 27.97N±0.08×16.20W±0.04, h10km, n8, σ1§03/13, 1C-2D, Canary Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CCAN	**Las Canadas**	**0.44**	**306**	⇓P	**Pg**	**06 01 23.7**	**+1.9**
	16nm,0.1s,SNR=18						
CCAN	**Las Canadas**	**0.44**	**306**	⇓P	**Pg**	**06 01 23.7**	**+1.9**
CCAN				S	**Sg**	**06 01 28.2**	**+0.5**
CTFE	**Tenerife**	**0.51**	**354**	S	**Sg**	**06 01 29.5**	**-0.7**
	155nm,0.4s,SNR=7.9						
CTFE	**Tenerife**	**0.51**	**354**	P	**Pg**	**06 01 24.1**	**+0.9**
CTFE				S	**Sg**	**06 01 29.1**	**-1.1**
EOSO	**Osorio**	**0.58**	**80**	⇑P	**Pg**	**06 01 25.1**	**+0.5**
	7.7nm,0.1s,SNR=18						
EOSO				S	**Sg**	**06 01 32.0**	**-0.6**
	14nm,0.1s,SNR=19						
EOSO	**Osorio**	**0.58**	**80**	P	**Pg**	**06 01 24.9**	**+0.2**
EOSO				S	**Sg**	**06 01 31.9**	**-0.7**
EGOM	**La Gomera**	**0.91**	**282**	P	**Pb**	**06 01 30.4**	**+0.1**
	1.5nm,0.1s,SNR=7.9						
EGOM	**La Gomera**	**0.91**	**282**	P	**Pb**	**06 01 29.4**	**-0.9**
EGOM				S	**Sb**	**06 01 40.6**	**-1.6**

IDC 13 06:11:09.4±2.2, 0.04N×123.60E, h157km±19km, mb3.7/8, mb1 3.9/9, mb1mx3.8/15, Error ellipse: s-maj=36.4km s-min=9.3km az=70.0
NEIC 13 06:11:16.2±3.5, 0.10S×123.35E, h230km±37km, mb4.4/18, Error ellipse: s-maj=20.5km s-min=7.5km az=57.0

ISC 13 06:11:13.8±3.6, 0.03N±0.08×123.4E±0.1, h219km±36km, n34, σ1§00/37, mb4.3/23, 1C-1D, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**18.14**	**173**	⇓*i*P	**P**	**06 15 09.0**	**-3.4**
	6.3nm,0.4s						
FITZ				*e*S	**S**	**06 18 26.7**	**+2.6**
FITZ	**Fitzroy Crossi**	**18.14**	**173**	P	**P**	**06 15 09.1**	**-3.3**
	1.4nm,0.3s,baz=2.5,slow=7.0,SNR=44						
FITZ				S	**S**	**06 18 28.6**	**+4.5**
	0.1nm,0.3s,baz=350,slow=12,SNR=3.0						
WRAB	**Tennant Creek**	**22.53**	**152**	*e*P	**P**	**06 15 55.6**	**-0.6**
	15nm,0.5s,mb4.8						
WRAB				*e*		06 16 00.6	
WRA	**Warramunga Arr**	**22.54**	**152**	P	**P**	**06 15 55.3**	**-0.9**
	5.3nm,0.6s,mb4.3,baz=330,slow=10,SNR=106						
WRA				S	**S**	**06 19 50.6**	**+6.9**
	1.8nm,0.8s,baz=336,slow=16,SNR=4.8						
WRA				ScP		06 23 08.3	
	0.3nm,0.7s,baz=323,slow=2.6,SNR=6.3						
WB2	**Warramunga Arr**	**22.54**	**152**	⇑*i*P	**P**	**06 15 55.7**	**-0.6**
WB2				*e*S	**S**	**06 19 50.9**	**+7.1**
QIZ	**Qiongzhong**	**23.12**	**325**	*e*P	**P**	**06 16 03.2**	**+1.3**
	15nm,0.8s,mb4.6						
PMG	**Port Moresby**	**25.40**	**112**	*e*P	**P**	**06 16 24.6**	**+1.4**
	29nm,1.1s,mb4.8						
AS12	**Alice Springs**	**25.65**	**157**	*e*P	**P**	**06 16 24.8**	**-0.6**
	3.2nm,0.6s,mb4.1						
ASAR	**Alice Springs**	**25.65**	**157**	P	**P**	**06 16 25.2**	**-0.2**
	2.4nm,0.7s,mb4.0,baz=347,slow=14,SNR=20						
ASAR				PcP	PcP	06 19 51.9	+1.4
	0.7nm,0.3s,baz=332,slow=1.9,SNR=7.4						
ASAR				ScP		06 23 17.2	
	0.4nm,0.5s,baz=339,slow=3.0,SNR=4.1						
CMAR	**Chiang Mai Arr**	**30.25**	**309**	P	**P**	**06 17 08.3**	**+1.7**
	1.7nm,0.5s,mb3.9,baz=136,slow=7.0,SNR=10						
ENH	**Enshi**	**32.88**	**337**	*e*P	**P**	**06 17 30.5**	**+1.1**
	7.9nm,0.7s,mb4.3						
STKA	**Stephens Creek**	**36.08**	**153**	*e*P	**P**	**06 17 56.9**	**+0.4**
	1.9nm,0.4s,mb4.0						
STKA	**Stephens Creek**	**36.08**	**153**	P	**P**	**06 17 57.0**	**+0.6**
	3.0nm,0.6s,mb4.0,baz=359,slow=7.5,SNR=5.6						
LSA	**Lhasa**	**42.63**	**317**	*e*P	**P**	**06 18 49.1**	**-1.5**
	4.2nm,0.6s,mb4.0						
MDJ	**Mudanjiang**	**44.73**	**6**	*e*P	**P**	**06 19 06.8**	**-0.3**
	6.5nm,0.5s,mb4.2						
GUN	**Gumba**	**45.44**	**311**	*e*P	**P**	**06 19 13.3**	**+0.4**
	36nm,0.4s,mb5.0						
PKI	**Pulchoki**	**45.62**	**310**	*e*P	**P**	**06 19 14.3**	**-0.1**
	11nm,0.6s,mb4.4						
KKN	**Kakani**	**45.83**	**310**	*e*P	**P**	**06 19 15.8**	**-0.2**
	13nm,0.4s,mb4.6						
DMN	**Daman**	**45.87**	**310**	*e*P	**P**	**06 19 16.3**	**0.0**
	24nm,0.9s,mb4.5						
GKN	**Gorkha**	**46.43**	**310**	*e*P	**P**	**06 19 21.0**	**+0.4**
	15nm,0.4s,mb4.7						
KOLN	**Koldanda**	**47.11**	**309**	*e*P	**P**	**06 19 26.6**	**+0.7**
	21nm,0.5s,mb4.7						
SONM	**Songino Array**	**49.87**	**345**	P	**P**	**06 19 46.7**	**-0.1**
	2.5nm,0.5s,mb3.8,baz=161,slow=9.7,SNR=8.2						
MKAR	**Makanchi Array**	**58.82**	**328**	P	**P**	**06 20 50.4**	**-1.1**
	1.7nm,0.4s,mb4.0,baz=120,slow=8.9,SNR=25						
MKAR				PcP	PcP	06 21 38.0	-0.4
	1.9nm,0.7s,baz=118,slow=5.5,SNR=6.6						
MKAR	**Makanchi Array**	**58.82**	**328**	P	**P**	**06 20 50.4**	**-1.1**
MKAR				PcP	PcP	06 21 38.0	-0.4
KURK	**Kurchatov**	**63.17**	**330**	*e*P	**P**	**06 21 19.4**	**-1.2**
BRVK	**Borovoye**	**68.76**	**329**	*e*P	**P**	**06 21 55.1**	**-0.8**
ZRNK	**Zerenda**	**69.37**	**328**	*e*P	**P**	**06 21 58.2**	**-1.4**
TIXI	**Tiksi**	**71.59**	**2**	*e*P	**P**	**06 22 12.6**	**-0.1**
	4.9nm,0.9s,mb4.1						
BILL	**Bilibino**	**73.96**	**15**	*e*P	**P**	**06 22 28.1**	**+1.5**
	2.7nm,0.7s,mb4.0						
VNDA	**Vanda**	**80.21**	**172**	P	**P**	**06 23 02.2**	**+1.3**
	1.1nm,0.6s,mb3.7,baz=304,slow=5.1,SNR=8.2						
VNDA	**Vanda**	**80.21**	**172**	*e*P	**P**	**06 23 01.8**	**+0.9**
	1.2nm,0.9s,mb3.5						
ILAR	**Eielson Array**	**89.83**	**25**	P	**P**	**06 23 48.1**	**-0.4**
	0.2nm,0.5s,mb3.2,baz=275,slow=3.7,SNR=4.7						
QSPA	**South Pole Qui**	**89.96**	**180**	P	**P**	**06 23 48.2**	**-0.6**
	9.6nm,0.8s,mb4.7						
TXAR	**Lajitas Array**	**126.44**	**53**	PKP	PKPdf	06 29 55.9	+4.5
	0.3nm,0.8s,baz=207,slow=2.0,SNR=4.4						

IDC 13 06:17:34.1±2.5, 1.12Sx14.28W, mb3.9/5, mb1 4.2/6, mb1mx3.9/19, ML4.1/1, MS3.8/16, Ms1 3.8/16, ms1mx3.7/22, Error ellipse: s-maj=88.3km s-min=33.7km az=151.0

ISC 13 06:17:37.2±2.5, 0.4S±0.5×14.6W±0.2, h10km, n25, σ0§71/11, mb3.9/5, MS3.8/16, North of Ascension Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LIC	**Lamto**	**11.62**	**55**	*e*P	**P**	**06 20 26.9**	**+0.6**
	72nm,1.2s						
TIC	**Toumodi**	**11.86**	**54**	*e*P	**P**	**06 20 29.9**	**+0.3**
	25nm,0.2s						
KIC	**Kosan Boka**	**11.93**	**55**	*e*P	**P**	**06 20 30.9**	**+0.4**
	105nm,0.9s						
DBIC	**Dimbokro**	**12.01**	**54**	Pn	**P**	**06 20 31.2**	**-0.4**
	1.0nm,0.3s,baz=223,slow=16,SNR=28						
DBIC				Sn	**S**	**06 22 46.6**	**0.0**
	1.0nm,0.3s,baz=342,slow=19,SNR=4.0						
DBIC				LR	LR	06 24 35.7	
	comp=Z,577nm,18.3s,baz=226,slow=35						
BDFB	**Brasilia**	**36.28**	**244**	LR	LR	06 36 36.8	
	comp=Z,111nm,19.2s,MS3.6,baz=202,slow=32						
ESDC	**Sonseca Array**	**41.07**	**13**	LR	LR	06 42 49.8	
	comp=Z,108nm,19.2s,MS3.7,baz=195,slow=36						
CPUP	**Villa Florida**	**48.51**	**234**	LR	LR	06 43 00.1	
	comp=Z,96nm,19.8s,MS3.8,baz=352,slow=32						
KMBO	**Kilima Mbogo**	**51.85**	**91**	LR	LR	06 47 35.8	
	comp=Z,149nm,18.4s,MS4.0,baz=286,slow=35						
SJG	**San Juan**	**53.90**	**293**	LR	LR	06 44 33.0	
	comp=Z,79nm,19.1s,MS3.8,baz=266,slow=30						
GERES	**GERESS Array B**	**54.82**	**23**	P	**P**	**06 27 10.1**	**+0.3**
	1.4nm,0.9s,mb4.0,baz=214,slow=4.8,SNR=5.4						
LPAZ	**La Paz**	**55.05**	**250**	LR	LR	06 49 02.0	
	comp=Z,115nm,19.5s,MS4.0,baz=99,slow=34						
BRTR	**Keskin Array B**	**59.40**	**42**	P	**P**	**06 27 40.8**	**-1.7**
	0.7nm,0.7s,mb3.8,baz=231,slow=9.2,SNR=2.7						
BRTR				LR	LR	06 53 19.0	
	comp=Z,50nm,19.4s,MS3.6,baz=270,slow=36						
ROSC	**El Rosal**	**59.89**	**276**	LR	LR	06 51 40.6	
	comp=Z,99nm,18.4s,MS4.0,baz=194,slow=34						
AKASG	**Malin Array Be**	**63.05**	**30**	LR	LR	06 57 46.4	
	comp=Z,58nm,18.8s,MS3.8,baz=220,slow=38						
NB2	**NORSAR Subarra**	**64.42**	**14**	P	**P**	**06 28 16.1**	**+0.3**
	1.0nm,0.8s,mb3.9,baz=209,slow=6.5						
NOA	**NORSAR Array B**	**64.42**	**14**	P	**P**	**06 28 14.8**	**-1.0**
	1.8nm,0.9s,mb4.1,baz=202,slow=7.2,SNR=4.7						
NOA				LR	LR	06 57 29.9	
	comp=Z,42nm,21.4s,MS3.6,baz=230,slow=37						
FINES	**FINESS Array B**	**69.02**	**20**	P	**P**	**06 28 44.6**	**-0.3**
	2.6nm,1.0s,mb4.1,baz=211,slow=8.1,SNR=4.2						
FINES				LR	LR	07 00 11.6	
	comp=Z,37nm,19.3s,MS3.6,baz=166,slow=37						
ARCES	**ARCESS Array B**	**74.80**	**14**	LR	LR	07 04 03.8	
	comp=Z,88nm,18.7s,MS4.1,baz=54,slow=37						
SPITS	**Spitsbergen Ar**	**80.23**	**6**	LR	LR	07 07 06.3	
	comp=Z,3.5nm,19.1s,MS2.7,baz=358,slow=37						
ULM	**Lac du Bonnet**	**84.73**	**320**	LR	LR	07 06 56.6	
	comp=Z,53nm,18.5s,MS4.0,baz=37,slow=35						
TXAR	**Lajitas Array**	**89.39**	**299**	P	**P**	**06 30 37.0**	**+0.9**
	0.3nm,0.9s,mb3.6,baz=117,slow=2.0,SNR=2.9						
PDAR	**Pinedale Array**	**93.93**	**313**	LR	LR	07 07 23.8	
	comp=Z,38nm,18.7s,MS3.9,baz=249,slow=32						
MKAR	**Makanchi Array**	**95.03**	**43**	LR	LR	07 14 53.5	
	comp=Z,31nm,21.7s,MS3.7,baz=107,slow=36						
ASAR	**Alice Springs**	**141.16**	**130**	PKP	PKPdf	06 37 04.8	-7.3
	0.6nm,0.8s,baz=243,slow=2.0,SNR=5.7						
WRA	**Warramunga Arr**	**143.46**	**125**	PKP	PKPdf	06 37 09.5	-6.6
	0.3nm,0.5s,baz=237,slow=2.7,SNR=9.2						

NEIC 13 06:19:21.8, 15.74N×97.55W, h7km, mb3.7/5, MD4.4(MEX), After MEX.
MEX 13 06:19:21.6±1.2, 15.72N×97.55W, h8km±22km, MD4.4

ISC 13 06:19:18.9±1.1, 15.77N±0.07×97.52W±0.04, h10km, n21, σ1§23/30, mb3.9/2, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PNIG	**Pinotepa**	**0.85**	**317**	*i* P	**Pb**	**06 19 36.8**	**+1.5**
PNIG				*i* S	**Sb**	**06 19 47.2**	**+0.7**
VHO	**Vista Hermosa**	**1.50**	**30**	*e*P	**Pn**	**06 19 46.3**	**+0.3**
VHO				*e*S	**Sb**	**06 20 06.5**	**+1.1**
OXX	**Oaxaca**	**1.51**	**30**	*i* P	**Pn**	**06 19 46.0**	**-0.2**
OXX				*i* S	**Sb**	**06 20 04.5**	**-1.2**
ACX	**Acapulco**	**2.55**	**296**	*e*P	**Pn**	**06 19 59.0**	**-2.0**
CMIG	**Matias Romero**	**2.85**	**62**	*e*P	**Pn**	**06 20 04.0**	**-1.3**
CMIG				*i* S	**Sn**	**06 20 40.0**	**-0.1**
CAIG	**El Cayaco**	**2.93**	**296**	*i* P	**Pn**	**06 20 07.3**	**+0.9**
CAIG				*i* S	**Sn**	**06 20 37.7**	**-4.3**
IISM	**Ciudad Serdan**	**3.21**	**2**	*e*P	**Pn**	**06 20 11.5**	**+1.2**
POHV	**Veracruz**	**3.29**	**4**	*e*P	**Pn**	**06 20 15.0**	**+3.4**
EVV	**El Vigia**	**3.38**	**38**	*e*P	**Pn**	**06 20 21.0**	**+8.1**
YAIG	**Yautepec**	**3.41**	**335**	*e*P	**Pn**	**06 20 12.3**	**-1.0**
YAIG				*i* S	**Sn**	**06 20 53.4**	**-0.9**
PPM	**Popocatepetl**	**3.45**	**342**	*e*P	**Pn**	**06 20 17.6**	**+3.9**
PPM				*e*P		06 20 18.0	
PPM				*i* S	**Sn**	**06 20 54.8**	**-0.3**
PPM	**Popocatepetl**	**3.45**	**342**	*e*P	**Pn**	**06 20 18.0**	**+4.2**
PPM				*i* S	**Sn**	**06 21 01.1**	**+6.0**
IIZ	**Mezontepec**	**3.78**	**334**	*e*P	**Pn**	**06 20 25.0**	**+6.5**
UNM	**Universidad Na**	**3.88**	**336**	*e*P	**Pn**	**06 20 19.8**	**-0.1**
UNM				*i* S	**Sn**	**06 21 06.2**	**+0.1**
MOIG	**Morelia**	**5.23**	**319**	*i* S	**Sn**	**06 21 38.5**	**-1.6**
MNTX	**Cornudas Mount**	**17.40**	**337**	P	**P**	**06 23 29.0**	**+5.5**
	1.0nm,0.8s						
MIAR	**Mount Ida**	**19.03**	**10**	*e*P	**P**	**06 23 46.8**	**+3.2**
	4.0nm,0.9s						
ANMO	**Albuquerque**	**20.72**	**339**	*e*P	**P**	**06 24 06.5**	**+4.4**
	3.2nm,1.1s						
SWET	**Sewanee**	**21.98**	**26**	*e*P	**P**	**06 24 13.1**	**-1.7**
WVT	**Waverly**	**22.04**	**21**	*e*P	**P**	**06 24 16.4**	**+1.0**
	3.2nm,0.7s,mb3.9						
INK	**Inuvik**	**57.30**	**345**	*e*P	**P**	**06 29 09.2**	**+0.2**
	1.1nm,0.9s,mb3.9						

NEIC 13 06:37:44.8±3.6, 17.99S×178.08W, h495km±38km, mb4.4/14, Error ellipse: s-maj=21.8km s-min=14.9km az=59.0
BJI 13 06:37:44.7, 18.00S×178.10W, h495km, mB4.4, mb4.3
SYO 13 06:37:44.7, 17.99S×178.08W, h495km, MB4.4
IDC 13 06:37:56.8±1.9, 18.30S×178.44W, h632km±23km, mb3.6/12, mb1 3.8/12, mb1mx3.7/15, Error ellipse: s-maj=17.5km s-min=11.3km az=151.0

ISC 13 06:37:54.0±2.2, 18.2S±0.1×178.5W±0.1, h610km±27km, n89, σ1§10/35, mb4.3/22, 12C-6D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**20.40**	**190**	P	**P**	**06 41 50.7**	**-1.5**
	8.0nm,0.3s,baz=315,slow=1.5,SNR=14						
URZ				S	**S**	**06 45 00.4**	**-3.2**
	7.4nm,0.9s,baz=106,slow=14,SNR=3.0						
RPZ	**Rata Peaks**	**26.97**	**197**	P	**P**	**06 42 45.8**	**-4.7**
	8.6nm,0.8s,mb4.4,baz=38,slow=6.5,SNR=2.9						
CTA	**Charters Tower**	**33.32**	**261**	⇓*i*P	**P**	**06 43 45.4**	**+0.7**
	6.8nm,0.8s,mb4.3						
CTAO	**Charters Tower**	**33.32**	**261**	*e*P	**P**	**06 43 45.4**	**+0.7**
	7.3nm,0.7s,mb4.4						
PMG	**Port Moresby**	**34.42**	**280**	P	**P**	**06 43 54.1**	**+0.2**
	40nm,0.8s,mb5.1,baz=82,slow=4.9,SNR=9.2						
PMG	**Port Moresby**	**34.42**	**280**	*e*P	**P**	**06 43 53.7**	**-0.1**
	54nm,0.9s,mb5.2						
STKA	**Stephens Creek**	**38.44**	**241**	*e*P	**P**	**06 44 28.5**	**+1.9**
	6.5nm,1.0s,mb4.1						
STKA	**Stephens Creek**	**38.44**	**241**	P	**P**	**06 44 28.5**	**+1.9**
	5.2nm,0.6s,mb4.3,baz=74,slow=8.1,SNR=7.7						
STKA				PcP	PcP	06 46 24.5	+0.4
	0.6nm,0.4s,baz=36,slow=4.7,SNR=3.5						
WB2	**Warramunga Arr**	**44.49**	**260**	⇓*i*P	**P**	**06 45 14.3**	**-0.4**
WB2				*e*		06 46 44.4	
WRAB	**Tennant Creek**	**44.49**	**260**	*e*P	**P**	**06 45 14.0**	**-0.7**
	25nm,0.6s,mb4.9						
WRA	**Warramunga Arr**	**44.51**	**260**	P	**P**	**06 45 14.8**	**+0.1**
	8.5nm,0.5s,mb4.5,baz=96,slow=7.4,SNR=396						
WRA				PcP	PcP	06 46 44.7	0.0
	2.0nm,0.4s,baz=90,slow=3.8,SNR=9.0						
WRA				S	**S**	**06 51 05.2**	**-2.3**
	2.0nm,0.9s,baz=100,slow=13,SNR=5.8						
AS12	**Alice Springs**	**44.64**	**254**	⇓*i*P	**P**	**06 45 16.2**	**+0.4**
	41nm,1.0s,mb4.9						
ASAR	**Alice Springs**	**44.64**	**254**	P	**P**	**06 45 16.3**	**+0.5**
	40nm,0.6s,mb5.1,baz=87,slow=8.4,SNR=565						
ASAR				PcP	PcP	06 46 44.9	-0.2
	5.7nm,0.7s,baz=96,slow=4.1,SNR=13						
ASAR				S	**S**	**06 51 08.6**	**-0.8**
	3.7nm,0.9s,baz=95,slow=16,SNR=16						
FORT	**Forrest**	**49.83**	**245**	*e*P	**P**	**06 45 54.3**	**-0.3**
	39nm,0.5s,mb5.1						
FITZ	**Fitzroy Crossi**	**52.91**	**261**	⇓*i*P	**P**	**06 46 16.8**	**-0.1**
	2.2nm,0.4s,mb3.8						
KLBR	**Kellerberrin**	**58.64**	**244**	*e*P	**P**	**06 46 55.7**	**-0.5**
	12nm,0.6s,mb4.2						
QSPA	**South Pole Qui**	**71.90**	**180**	*e*P	**P**	**06 48 19.3**	**+1.7**
	4.6nm,0.8s,mb4.1						
MDJ	**Mudanjiang**	**78.34**	**325**	P	**P**	**06 48 54.5**	**+0.9**
MDJ				AP	pP	06 50 44.1	-17
MDJ				XP	sP	06 51 36.9	-25
MDJ				PP	PP	06 52 00.9	-1.7
MDJ				S	S	06 58 09.8	+9.4
MDJ				SCS	ScS	06 58 27.0	+10
MDJ				SS	SS	07 03 27.1	+2.3
MDJ				AMB	AMB		
MDJ				AMB	AMB		
	comp=Z,15nm,1.2s,mb4.3						
MDJ	**Mudanjiang**	**78.34**	**325**	*e*P	**P**	**06 48 54.3**	**+0.7**
	comp=Z,76nm,5.3s						
NVAR	**Mina Array Bea**	**79.66**	**44**	P	**P**	**06 49 02.4**	**+1.7**
	comp=Z,0.4nm,0.7s,baz=222,slow=7.6,SNR=3.9						
PMR	**Palmer**	**82.86**	**14**	*e*P	**P**	**06 49 14.9**	**-1.6**
	comp=Z,2.2nm,0.5s,mb3.9						
BJT	**Baijiatuao**	**83.89**	**315**	P	**P**	**06 49 22.2**	**+0.2**
	comp=Z,6.3nm,0.4s,mb4.5						
ENH	**Enshi**	**84.34**	**304**	*e*P	**P**	**06 49 25.4**	**+0.9**
	comp=Z,14nm,0.6s,mb4.7						
MCK	**McKinley**	**84.80**	**13**	*e*P	**P**	**06 49 24.6**	**-1.3**
	comp=Z,2.1nm,0.8s,mb3.8						
COLA	**College**	**86.03**	**13**	*e*P	**P**	**06 49 29.5**	**-2.3**
	comp=Z,4.2nm,0.7s,mb4.2						
ILAR	**Eielson Array**	**86.14**	**13**	P	**P**	**06 49 30.8**	**-1.5**
	comp=Z,1.3nm,0.5s,mb3.8,baz=221,slow=5.1,SNR=18						
TXAR	**Lajitas Array**	**86.20**	**58**	P	**P**	**06 49 33.7**	**+0.2**
	comp=Z,0.9nm,0.9s,mb3.4,baz=223,slow=6.4,SNR=12						
PDAR	**Pinedale Array**	**87.59**	**43**	P	**P**	**06 49 39.6**	**0.0**
	comp=Z,0.7nm,0.7s,mb3.5,baz=225,slow=2.1,SNR=6.2						
CMAR	**Chiang Mai Arr**	**88.89**	**290**	P	**P**	**06 49 47.0**	**+0.7**
	comp=Z,4.2nm,0.8s,mb4.3,baz=108,slow=3.0,SNR=16						
SYO	**Syowa Base**	**88.90**	**193**	⇑P	**P**	**06 49 46.5**	**+1.3**
SNAA	**Sanae**	**90.36**	**179**	*e*P	**P**	**06 49 52.2**	**+0.4**
SONM	**Songino Array**	**93.68**	**319**	P	**P**	**06 50 08.4**	**+0.9**
	comp=Z,0.5nm,0.5s,mb3.9,baz=140,slow=3.9,SNR=3.7						
MKAR	**Makanchi Array**	**109.24**	**314**	PKiKP		06 55 15.8	
	comp=Z,1.0nm,0.5s,baz=125,slow=1.0,SNR=19						
ARCES	**ARCESS Array B**	**126.54**	**350**	PKP	PKPdf	06 55 48.7	+0.4
	comp=Z,4.7nm,0.9s,baz=45,slow=1.7,SNR=11						
KAF	**Kangasniemi**	**132.78**	**344**	*e*p	PKPdf	06 55 56.0	-4.3
	comp=Z,1.2nm,0.4s						
FINES	**FINESS Array B**	**133.40**	**344**	PKP	PKPdf	06 56 01.2	-0.3
	comp=Z,0.7nm,0.4s,baz=45,slow=2.7,SNR=6.0						
NB2	**NORSAR Subarra**	**136.61**	**353**	PKPbc	PKPdf	06 56 07.8	+0.4
	comp=Z,0.6nm,0.7s,baz=42,slow=2.7						
NOA	**NORSAR Array B**	**136.61**	**353**	PKhKP		06 56 00.8	
	comp=Z,1.7nm,1.1s,baz=65,slow=4.2,SNR=4.0						
NOA				PKP	PKPdf	06 56 08.0	+0.6
	comp=Z,0.4nm,0.6s,baz=18,slow=2.6,SNR=3.0						
HFS	**Hagfors**	**137.16**	**351**	PKhKP		06 55 59.9	
	comp=Z,0.7nm,0.3s,baz=63,slow=3.2,SNR=9.1						
HFS				PKP	PKPdf	06 56 08.6	+0.2
	comp=Z,1.6nm,0.8s,baz=61,slow=2.1,SNR=3.6						
AKASG	**Malin Array Be**	**140.74**	**332**	PKhKP		06 56 09.9	
	comp=Z,0.5nm,0.3s,baz=40,slow=4.0,SNR=6.9						
AKASG				PKP	PKPdf	06 56 17.1	+2.0
	comp=Z,1.1nm,0.3s,baz=38,slow=3.1,SNR=6.6						
EKA	**Eskdalemuir Ar**	**142.72**	**4**	PKhKP		06 56 11.2	
	comp=Z,0.2nm,0.4s,baz=345,slow=2.0,SNR=2.5						
EKA				PKP	PKPdf	06 56 17.7	-0.7
	comp=Z,0.9nm,0.6s,baz=330,slow=3.3,SNR=4.2						
BOYT	**Boyabat**	**143.24**	**316**	*i* P	PKPbc	06 56 20.3	+1.7
CTKT	**Corum**	**143.69**	**315**	*i* P	PKPbc	06 56 21.4	+1.5
BALT	**Daday**	**144.17**	**317**	*i* P	PKPdf	06 56 22.1	+0.8
ELDT	**Eldivan**	**144.67**	**316**	*i* P	PKPdf	06 56 22.9	+0.7
OJC	**Ojcow**	**144.81**	**340**	*e*PKP	PKPdf	06 56 24.2	+2.1
BRTR	**Keskin Array B**	**144.89**	**314**	PKPbc	PKPbc	06 56 24.9	+1.6
	comp=Z,5.7nm,0.7s,baz=117,slow=2.8,SNR=22						
NIE	**Niedzica**	**145.32**	**338**	*e*PKP	PKPdf	06 56 25.7	+2.7
KSP	**Ksiaz**	**145.32**	**343**	*e*P	PKPdf	06 56 25.9	+3.0
CRVS	**Cervenica-Dubn**	**145.33**	**337**	*e*PKP	PKPdf	06 56 25.0	+2.0
CLL	**Collm**	**145.68**	**347**	⇑*i*PKP1	PKPbc	06 56 26.3	+1.3
UPC	**Upice**	**145.70**	**344**	⇑*e*PKPB	PKPbc	06 56 26.6	+1.5
DPC	**Dobruska-Polom**	**145.76**	**343**	⇑*e*PKPB	PKPbc	06 56 27.4	+2.2
BRG	**

AB31			⇓S	S	07 01 26.5	-5.9	
	2.3nm,0.5s,baz=130,slow=25,SNR=12						
PKI	Pulchoki	14.88 126	eP	P	06 58 52.8	-0.1	
	11nm,0.6s						
GUN	Gumba	14.96 124	eP	P	06 58 54.0	+0.1	
	9.3nm,0.4s						
VOSK	Vostochnaya	15.55 358	⇓P	P	06 58 60.0	-1.1	
	3.0nm,0.8s						
BVA0	Borovoye Array	15.88 357	⇑P	P	06 59 05.2	+0.2	
	0.7nm,0.7s,baz=165,slow=14,SNR=19						
ZRNK	Zerenda	15.90 354	⇑P	P	06 59 04.9	-0.4	
	1.7nm,0.5s						

MOS ***13*** *06:58:48.6±1.8,62.15N×1.97E,h10km,mb4.0/1,Error ellipse: s-maj=28.5km s-min=19.7km az=82.9*
IDC ***13*** *06:58:49.1±0.9,62.09N×1.98E,mb3.7/7,mb1 4.0/14, mb1mx3.9/24,ML3.9/6,Error ellipse: s-maj=27.2km s-min=10.3km az=16.0*
NAO ***13*** *06:58:50.7±1.4,62.07N×2.09E,ML3.4*
HEL ***13*** *06:58:50.8±0.2,62.04N×1.91E,h10km,ML3.7, mb3.8(NEIC),ML3.2(BER)*
NEIC ***13*** *06:58:53.5,62.40N×2.18E,h15km,mb3.8/3,ML3.4(BER), After BER.*
BGS ***13*** *06:58:53.6±1.3,62.04N×1.92E,h15km±40km, ML3.5*
BER ***13*** *06:58:53.2±4.8,62.16N×1.96E,h20km±26km, MD3.6, ML3.2,MW3.2,ML3.4(NAO)*

ISC 13 06:58:48.7±0.3,62.24N±0.03×2.21E±0.06,h10km,n99,
σ1§42/157,mb3.7/10,3C-10D,Norwegian Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
FOO	Floro	1.49	114	⇓	iP		Pn	06 59 18.1	+2.5
FOO					eS		Sb	06 59 36.6	+1.8
FOO	Floro	1.49	114		eP		Pn	06 59 18.1	+2.5
FOO					eS		Sb	06 59 37.2	+2.3
SUE	Sulen	1.70	133	⇓	iP		Pn	06 59 20.1	+1.5
SUE					eS		Sn	06 59 41.3	+0.6
SUE					AML		AML	06 59 42.7	
	comp=N,307nm,0.3s								
SUE					AML		AML	06 59 42.8	
	comp=E,444nm,0.3s								
SUE	Sulen	1.70	133		P		Pn	06 59 20.1	+1.5
SUE					S		Sn	06 59 41.3	+0.6
SUE					AML		AML	06 59 42.7	
	comp=E,307nm,0.3s								
SUE					AML		AML	06 59 42.8	
	comp=E,444nm,0.3s								
SUE	Sulen	1.70	133		eP		Pn	06 59 20.5	+1.8
SUE					eS		Sn	06 59 40.6	0.0
SUE					AML		AML	06 59 43.1	
	comp=Z,297nm,0.2s								
HYA	Hoyanger	2.18	118	⇑	iP		Pn	06 59 29.1	+3.5
HYA	Hoyanger	2.18	118		eP		Pn	06 59 29.1	+3.5
HYA					eS		Sn	06 59 55.3	+2.4
HYA					eS		Sn	06 59 55.5	+2.6
HYA	Hoyanger	2.18	118	⇑	iP		Pn	06 59 29.1	+3.5
HYA					eS		Sn	06 59 55.3	+2.4
HYA					eS		Sn	06 59 55.5	+2.6
ASK	Askoy	2.28	139	⇓	iP		Pn	06 59 28.2	+1.3
ASK	Askoy	2.28	139		eP		Pn	06 59 28.1	+1.2
ASK					eS		Sn	06 59 55.5	+0.2
YEL1	Yell	2.32	224		eP		Pn	06 59 43.6	+16
RUND	Rundenannen	2.38	139		eP		Pn	06 59 30.0	+1.5
BER	Bergen	2.40	140	⇓	iP		Pn	06 59 30.1	+1.5
BER	Bergen	2.40	140		eP		Pn	06 59 29.9	+1.2
BER					eS		Sn	06 59 57.2	-1.1
EGD	Espegrend	2.46	142		eP		Pn	06 59 30.4	+0.9
EGD	Espegrend	2.46	142		eP		Pn	06 59 30.4	+0.9
EGD					eS		Sn	06 59 58.1	-1.7
EGD					AML		AML	07 00 05.4	
	comp=Z,76nm,0.4s								
MOL	Molde	2.51	80	⇓	iP		Pn	06 59 35.1	+4.9
MOL					eS		Sn	07 00 04.5	+3.2
MOL	Molde	2.51	80		eP		Pn	06 59 35.1	+4.8
MOL					eS		Sn	07 00 05.5	+4.3
MOL					AML		AML	07 00 09.4	
	comp=Z,183nm,0.3s								
MOL	Molde	2.51	80	⇓	iP		Pn	06 59 35.1	+4.8
MOL					eS		Sn	07 00 05.5	+4.3
MOL					AML		AML	07 00 09.4	
	comp=Z,183nm,0.3s								
LRW	Lerwick	2.67	219		iP		Pn	06 59 48.8	+16
LRW					eS		Sn	07 00 18.0	+13
LRW					AML		AML	07 00 20.3	
	comp=E,238nm,0.4s								
LRW					AML		AML	07 00 20.7	
	comp=N,234nm,0.4s								
WAL1	Walls	2.71	225		eP		Pn	06 59 49.2	+16
SAN1	Sandwick	2.79	218	⇓	iP		Pn	06 59 50.1	+16
ODD1	Odda	3.17	135		eP		Pn	06 59 39.9	+0.2
ODD1	Odda	3.17	135		eP		Pn	06 59 40.0	+0.3
ODD1					eS		Sn	07 00 15.5	-2.5
ODD1					AML		AML	07 00 20.9	
	comp=Z,109nm,0.5s								
DOMB	Dombas	3.23	90		eP		Pn	06 59 43.9	+3.4
DOMB	Dombas	3.23	90	⇑	iP		Pn	06 59 43.8	+3.4
KMY	Karmoy	3.38	152		eP		Pn	06 59 42.6	-0.1
KMY					eS		Sn	07 00 19.8	-3.6
KMY	Karmoy	3.38	152	⇓	iP		Pn	06 59 42.6	-0.1
KMY					eS		Sn	07 00 19.8	-3.6
BLS5	Blasjo	3.51	142	⇓	iP		Pn	06 59 46.0	+1.6
BLS5					eS		Sn	07 00 24.2	-2.3
BLS5	Blasjo	3.51	142		eP		Pn	06 59 46.0	+1.6
BLS5					eS		Sn	07 00 24.4	-2.1
BLS5					AML		AML	07 00 28.8	
	comp=Z,80nm,0.3s								
BLS5	Blasjo	3.51	142	⇓	iP		Pn	06 59 46.1	+1.6
BLS5					eS		Sn	07 00 24.4	-2.1
BLS5					AML		AML	07 00 28.8	
	comp=Z,80nm,0.3s								
STAV	Stavanger	3.74	151		eS		Sn	07 00 28.0	-4.3
STAV					AML		AML	07 00 30.2	
	comp=Z,133nm,0.4s								
OWE	Westray	3.90	224		eP		Pn	06 59 47.8	-2.2
OST	Stronsay	3.94	219		eP		Pn	06 59 48.5	-2.0
TRON	Trondheim	3.96	68		eP		Pn	06 59 55.9	+4.9
TRON					eS		Sn	07 00 43.2	+5.2
TRON	Trondheim	3.96	68		eP		Pn	06 59 55.9	+4.9
TRON					eS		Sn	07 00 39.2	+1.2
FSV	Svinoy	4.00	274		eP		Pn	06 59 49.7	-1.8
FTO	Torshavn	4.25	271		eP		Pn	06 59 53.4	-1.6
OHO	Hoy	4.35	221		eP		Pn	06 59 54.2	-2.2
NAO01	NORSAR Array S	4.38	105		eP	n	Pn	06 59 58.5	+1.6
KONO	Kongsberg	4.44	122		eP		Pn	06 59 58.4	+0.7
KONO					eS		Sn	07 00 47.8	-2.4
NB2	NORSAR Subarra	4.46	102		eP		Pn	06 59 59.5	+1.5
NB2					eS		Sn	07 00 51.2	+0.6
NOA	NORSAR Array B	4.46	102		Pn		Pn	06 59 59.1	+1.1
	comp=Z,6.3nm,0.3s,baz=295,slow=12,SNR=33								
NOA					Sn		Sn	07 00 48.4	-2.3
	comp=Z,8.2nm,0.3s,baz=289,slow=14,SNR=4.4								
NOA					Lg			07 01 12.0	
	comp=Z,12nm,0.3s,baz=291,slow=24,SNR=3.5								
FVA	Vagar	4.49	272		eP		Pn	06 59 56.5	-1.8
OBR	Brabster	4.50	219		eP		Pn	06 59 55.9	-2.7
SNART	Snartemo	4.64	145		eP		Pn	07 00 00.1	-0.4
SNART					eS		Sn	07 00 49.0	-6.1
SNART					AML		AML	07 01 04.6	
	comp=Z,89nm,0.4s								
OSL	Oslo	4.74	115		eP		Pn	07 00 02.8	+0.9
ORE	Reay	4.74	221		eP		Pn	06 59 59.5	-2.5
ORE					AML		AML	07 00 50.5	
	comp=E,100nm,0.4s								
ORE					AML		AML	07 01 00.9	
	comp=N,68nm,0.3s								
NSS	Namsos	4.96	58		eP		Pn	07 00 05.9	+0.9
NSS					eS		Sn	07 01 00.5	-2.6
NSS					AML		AML	07 01 05.0	
	comp=Z,127nm,0.3s								
OTO	Tongue	4.98	224		eP		Pn	07 00 02.8	-2.6
HFS	Hagfors	5.94	106		Pn		Pn	07 00 19.7	+0.8
	baz=288,slow=12								
HFS					Sn		Sn	07 01 23.4	-4.6
	baz=286,slow=22								
HFS	Hagfors	5.94	106		eP		Pn	07 00 19.7	+0.8
HFS					eS		Sn	07 01 23.4	-4.6
HFS	Hagfors	5.94	106		Pn		Pn	07 00 19.9	+0.9
	comp=Z,1.1nm,0.3s,baz=288,slow=12,SNR=128								
HFS					Sn		Sn	07 01 23.0	-4.9
	comp=Z,1.4nm,0.3s,baz=285,slow=22,SNR=8.5								
HFS					Lg			07 01 56.5	
	comp=Z,1.2nm,0.3s,baz=289,slow=26,SNR=4.4								
STOK	Stokkvaagen	6.24	44		eP		Pn	07 00 23.1	-0.1
STOK					eS		Sn	07 01 29.1	-6.3
STOK					AML		AML	07 01 35.2	
	comp=Z,163nm,0.4s								
MOR8	Moi Rana	6.63	48		eP		Pn	07 00 31.1	+2.4
MOR8					eS		Sn	07 01 45.6	+0.4
MOR8					AML		AML	07 01 54.6	
	comp=Z,69nm,0.2s								
EKA	Eskdalemuir Ar	7.46	204		Pn		Pn	07 00 36.8	-3.6
	comp=Z,1.2nm,0.3s,baz=14,slow=12,SNR=18								
EKA					Sn		Sn	07 01 52.7	-13
	comp=Z,4.9nm,0.3s,baz=14,slow=23,SNR=8.2								
ESK	Eskdalemuir	7.49	204		ePn		Pn	07 00 37.0	-3.7
ESK					eSn		Sn	07 01 54.5	-12
LOF	Lofoten	7.59	34		eP		Pn	07 00 43.3	+1.3
LOF					eS		Sn	07 01 59.7	-9.2
LOF					AML		AML	07 02 10.2	
	comp=Z,40nm,0.4s								
VAF	Ylistaro	9.45	76		eP		P	07 01 08.5	+0.5
VAF					eS		Sn	07 02 47.9	-7.4
RGN	Rugen	9.66	138		eP		P	07 01 05.3	-5.3
KIF	Kilpisjarvi	10.21	40		eP		P	07 01 18.4	+0.2
KIF					eS		S	07 03 04.3	-10
KEF	Keuruu	10.57	80		eP		P	07 01 23.1	-0.1
KEF					eS		S	07 03 15.1	-7.6
MEF	Metsahovi	10.87	91		eP		P	07 01 27.5	+0.2
MEF					eS		S	07 03 23.0	-7.0
OUL	Oulu	10.88	64		eP		P	07 01 27.5	+0.2
OUL					MPN			07 01 29.2	
	comp=Z,2.7nm,0.3s								
OUL					eS		S	07 03 19.9	-10
KTK1	Kautokeino	10.97	43		eP		P	07 01 28.1	-0.6
KTK1					eS		S	07 03 21.7	-11
KTK1					AML		AML	07 03 27.9	
	comp=Z,9.4nm,0.4s								
KTK1	Kautokeino	10.97	43		eP		P	07 01 28.3	-0.3
KTK1					eS		S	07 03 21.7	-11
SUF	Sumiainen	11.07	77		eP		P	07 01 30.2	+0.2
SUF					eS		S	07 03 24.8	-10
KAF	Kangasniemi	11.24	80		eP		P	07 01 32.6	+0.2
KAF					eS		S	07 03 31.1	-8.0
FIA0	FINESS Array S	11.29	83		Pn		P	07 01 33.0	0.0
	baz=288,slow=11								
FIA0					Sn		S	07 03 32.0	-8.2
	baz=281,slow=22								
FIA0	FINESS Array S	11.29	83		eP		P	07 01 34.2	+1.3
FIA0					eS		S	07 03 32.0	-8.2
FINES	FINESS Array B	11.29	83		Pn		P	07 01 32.9	0.0
	comp=Z,1.1nm,0.3s,baz=283,slow=11,SNR=18								
FINES					Sn		S	07 03 32.3	-7.9
	comp=Z,1.0nm,0.3s,baz=285,slow=22,SNR=6.3								
PVF	Pernaja	11.45	88		eP		P	07 01 33.9	-1.2
PVF					eS		S	07 03 35.0	-9.0
SGF	Sodankyl	11.53	53		eP		P	07 01 33.9	-2.4
SGF					MPN			07 01 37.6	
	comp=Z,2.3nm,0.2s								
SGF					eS		S	07 03 35.7	-10
KJN	Kajaani	11.64	70		eP		P	07 01 36.7	-1.1
KJN					eS		S	07 03 40.1	-8.7
ARA0	ARCESS Array S	11.93	42		Pn		P	07 01 40.2	-1.4
	baz=231,slow=12								
ARA0					Sn		S	07 03 43.7	-12
	baz=236,slow=22								
ARA0	ARCESS Array S	11.93	42		eP		P	07 01 40.2	-1.4
ARA0					e			07 03 43.7	
ARCES	ARCESS Array B	11.93	42		Pn		P	07 01 40.4	-1.2
	comp=Z,1.0nm,0.3s,baz=234,slow=14,SNR=54								
ARCES					Sn		S	07 03 44.0	-12
	comp=Z,1.2nm,0.3s,baz=239,slow=21,SNR=6.2								
ARE0	ARCESS Array S	11.93	42		eP		P	07 01 40.5	-1.2
ARE0					eS		S	07 03 43.4	-12
MSF	Maaselka	12.25	61		eP		P	07 01 45.1	-0.8
MSF					MPN			07 01 45.9	
	comp=Z,2.0nm,0.2s								
MSF					eS		S	07 03 52.0	-12
KEV	Kevo	12.50	42		eP		P	07 01 48.1	-1.1
KEV					eS		S	07 03 59.2	-10
APA0	Apatity Array	14.00	54		Pn		P	07 02 06.2	-2.7
	baz=257,slow=12								
APA0					Sn		S	07 04 31.3	-14
	baz=257,slow=28								
APA0	Apatity Array	14.00	54		eP		P	07 02 06.2	-2.7
APA0					e			07 04 31.3	
SPA0	Spitsbergen Ar	16.62	10		P		P	07 02 47.2	+4.3
	baz=175,slow=16								
SPA0	Spitsbergen Ar	16.62	10		eP		P	07 02 47.2	+4.3
SPITS	Spitsbergen Ar	16.62	10		Pn		P	07 02 46.5	+3.7
	comp=Z,0.1nm,0.3s,baz=176,slow=14,SNR=14								
KBS	Kingsbay	17.03	6		eP		P	07 02 55.2	+7.1
AKASG	Malin Array Be	18.70	116		P		P	07 03 07.4	-1.6
	baz=318,slow=12,SNR=3.9								
OBN	Obninsk	19.04	96		eP		P	07 03 15.8	+2.8
OBN					pmax		pmax		
	comp=Z,8.0nm,0.5s								
FCC	Fort Churchill	43.33	311		P		P	07 06 51.8	0.0
	comp=Z,1.5nm,0.9s,mb3.7								
MKAR	Makanchi Array	45.78	71		P		P	07 07 13.1	+1.5
	comp=Z,0.5nm,0.5s,mb3.7,baz=324,slow=5.8,SNR=7.8								
INK	Inuvik	45.92	339		eP		P	07 07 13.3	+0.8
	comp=Z,0.3nm,0.4s,mb3.6								
YKW3	Yellowknife Ar	46.75	325		P		P	07 07 19.6	+0.6
YKA	Yellowknife Ar	46.80	325		P		P	07 07 19.8	+0.3
	comp=Z,1.5nm,1.0s,mb3.9,baz=33,slow=8.4,SNR=20								
ULM	Lac du Bonnet	50.56	305		P		P	07 07 48.5	-0.4
	comp=Z,1.3nm,0.4s,mb4.2,baz=353,slow=5.5,SNR=2.5								
ILAR	Eielson Array	51.23	344		P		P	07 07 55.7	+2.0
	comp=Z,0.8nm,0.9s,mb3.6,baz=22,slow=6.3,SNR=6.4								
PDAR	Pinedale Array	61.97	309		P		P	07 09 09.8	-0.8
	comp=Z,0.6nm,0.5s,mb4.0,baz=51,slow=5.8,SNR=6.9								
HLID	Hailey	62.98	313		eP		P	07 09 17.4	+0.1
	comp=Z,1.1nm,0.7s,mb4.1								
NVAR	Mina Array Bea	68.89	314		P		P	07 09 56.4	+1.3
	comp=Z,0.3nm,0.7s,mb3.3,baz=45,slow=5.1,SNR=4.0								
TXAR	Lajitas Array	71.41	298		P		P	07 10 10.9	+0.3
	comp=Z,0.1nm,0.4s,mb3.1,baz=63,slow=6.0,SNR=3.1								

IDC ***13*** *07:11:52.0±0.6,11.93S×166.32E,mb4.4/14,mb1 4.6/15, mb1mx4.5/17,ML3.6/1,MS4.2/14,Ms1 4.2/14, ms1mx4.1/23,Error ellipse: s-maj=22.2km s-min=16.8km az=118.0*
NEIC ***13*** *07:11:53.8±0.3,11.87S×166.27E,h10km,mb5.1/23,Error ellipse: s-maj=10.3km s-min=7.4km az=108.0*
HRVD ***13*** *07:11:53.8±0.3,12.01S×166.01E,h28km,MW5.0/47, Centroid moment Tensor Solution. LP body waves: s32,c46;Mantle waves: s47,c72; Half duration: 0 Moment tensor: Scale 10^16^Nm; Mrr3.58±.19; Mθθ-0.35±.12; Mφφ-3.23±.12; Mrθ1.68±.25; Mθφ0.95±.08; Mφr-0.94±.18; Best double couple: M₀4.02×10^16^ NP1:φs359°, δ36°,λ117°. NP2:φs146°, δ58°,λ71°. Principal axes: T 4.24, Plg70°, Azm13°; N -.46, Plg16°, Azm156°; P -3.79, Plg11°, Azm249°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
SYO ***13*** *07:11:53.7, 11.87S×166.27E,h10km,MB5.1*
BJI ***13*** *07:11:56.6, 11.21S×165.91E,h10km,mB5.1,mb5.2, Ms4.8,Msz4.5*

ISC 13 07:11:52.7±0.3,11.90S±0.05×166.19E±0.07,h10km,
(h14km±1.0km:pP-P),n80,σ1§12/69,mb5.0/40,MS4.4/17,
5C-3D,Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
BKM	Butte a Klehm	6.07	161		iP		Pn	07 13 25.6	+0.7
BKM					S		Sn	07 14 51.9	+17
NOUC	Port Laguerre	10.15	179		eP		P	07 14 20.7	-1.0
NOUC					eS		S	07 16 32.3	+16
PMG	Port Moresby	18.87	276		P		P	07 16 16.0	+0.4
	0.6nm,0.3s,baz=102,slow=10.0,SNR=4.2								
PMG					LR		LR	07 22 34.7	
	comp=Z,1μm,20.6s,baz=104,slow=34								
PMG	Port Moresby	18.87	276		eP		P	07 16 16.1	+0.5
	49nm,1.1s								
CTA	Charters Tower	20.81	244	⇓	iP		P	07 16 36.9	-0.1
	18nm,1.1s								
CTA	Charters Tower	20.81	244		P		P	07 16 37.0	+0.1
	18nm,0.9s,baz=68,slow=12,SNR=22								
CTA					PcP		PcP	07 20 45.0	-0.9
	3.7nm,0.8s,baz=74,slow=2.1,SNR=4.3								
CTA					LR		LR	07 23 46.4	
	comp=Z,784nm,18.9s,MS4.1,baz=36,slow=34								
CTAO	Charters Tower	20.81	244		eP		P	07 16 36.8	-0.2
	35nm,1.0s								
ARMA	Armidale	22.85	214		eP		P	07 16 58.5	+1.1
URZ	Urewera	28.01	161		P		P	07 17 48.5	+2.6
	6.2nm,0.8s,mb4.3,baz=344,slow=7.4,SNR=3.9								
STKA	Stephens Creek	30.14	225		eP		P	07 18 06.3	+1.1
	6.1nm,0.8s,mb4.4								
STKA	Stephens Creek	30.14	225		P		P	07 18 05.4	+0.2
	2.4nm,0.7s,mb4.1,baz=44,slow=13,SNR=4.2								
STKA					PcP		PcP	07 21 04.9	-1.7
	1.5nm,0.5s,baz=255,slow=7.3,SNR=3.1								
STKA					LR		LR	07 29 33.6	
	comp=Z,829nm,21.2s,MS4.3,baz=38,slow=35								
WB2	Warramunga Arr	31.60	251		eP		P	07 18 16.2	-2.0
WB2					e			07 21 09.6	
WRA	Warramunga Arr	31.61	251		P		P	07 18 16.6	-1.6
	2.8nm,0.9s,mb4.1,baz=83,slow=9.3,SNR=17								
WRA					PcP		PcP	07 21 10.1	-0.5
	1.2nm,0.8s,baz=80,slow=2.9,SNR=48								
WRA					ScP			07 24 53.3	
	4.0nm,1.2s,baz=78,slow=4.1,SNR=7.0								
WRA					LR		LR	07 30 25.6	
	comp=Z,387nm,19.0s,MS4.1,baz=85,slow=35								
RPZ	Rata Peaks	31.98	173		P		P	07 18 20.3	-1.0
	20nm,0.8s,mb5.0,baz=288,slow=3.2,SNR=8.6								
RPZ					LR		LR	07 29 01.8	
	comp=Z,551nm,21.0s,MS4.2,baz=337,slow=32								
AS12	Alice Springs	32.81	245		eP		P	07 18 26.6	-2.1
	6.1nm,0.9s,mb4.5								
AS12					e			07 21 12.7	
ASAR	Alice Springs	32.81	245		P		P	07 18 26.6	-2.1
	2.0nm,0.7s,mb4.2,baz=71,slow=9.3,SNR=22								
ASAR					PcP		PcP	07 21 13.0	-0.8
	7.8nm,0.8s,baz=83,slow=2.4,SNR=26								
ASAR					ScP			07 24 57.8	
	2.0nm,0.9s,baz=70,slow=3.2,SNR=9.1								
ASAR					LR		LR	07 30 51.8	
	comp=Z,280nm,19.9s,MS4.0,baz=58,slow=35								
ASAR	Alice Springs	32.81	245		P		P	07 18 26.6	-2.1
ASAR					PcP		PcP	07 21 13.0	-0.8
ASAR					ScP			07 24 57.8	
ASAR					LR		LR	07 30 51.8	
RAR	Rarotonga	33.85	110		LR		LR	07 30 00.6	
	comp=Z,396nm,19.1s,MS4.2,baz=48,slow=32								
FITZ	Fitzroy Crossi	39.59	256		eP		P	07 19 25.8	-0.5
	8.5nm,1.1s,mb4.4								
FITZ	Fitzroy Crossi	39.59	256		PcP		PcP	07 21 34.0	-0.1
	2.4nm,0.8s,baz=86,slow=3.1,SNR=2.6								
FITZ					LR		LR	07 34 58.3	
	comp=Z,242nm,18.7s,MS4.1,baz=89,slow=35								
PPT	Papeete	43.08	103		eS		S	07 26 22.1	+1.6
PPT					eL			07 30 12.9	
PPT					eR			07 32 15.7	
	444nm,22.5s,baz=274								
TBI	Tubuai	43.61	111		eS		S	07 26 36.8	+8.6
TBI					eR			07 32 40.6	
	390nm,24.5s								
MAJO	Matsushiro	54.92	332		eP		P	07 21 24.6	-1.6
	9.9nm,0.8s,mb4.9								
ASAJ	Asahikawa	59.73	341		P		P	07 21 59.7	-0.5
	7.0nm,0.8s,mb4.7,baz=213,slow=11,SNR=4.9								
ASAJ					LR		LR	07 43 14.0	
	comp=Z,272nm,21.3s,MS4.3,baz=162,slow=32								
KS15	Wonju Array Si	60.83	326		eP		P	07 22 07.2	-0.5
YSS	Yuzh-Sakhalins	62.22	342		P		P	07 22 16.3	-0.7
	30nm,1.5s,mb5.2								
NJ2	Nanjing	62.93	315		eP		P	07 22 22.3	+0.4
NJ2					AP		pP	07 22 27.5	+2.5
NJ2					XP		sP	07 22 29.0	+2.9
NJ2					S		S	07 30 52.0	+1.9
NJ2					XS			07 31 01.0	
NJ2					PS		PS	07 31 11.0	+2.0
NJ2					AMB		AMB		
	comp=Z,50nm,0.7s,mb5.8								
NJ2					LR		LR		
	comp=N,550nm,27.4s,MS4.7								
NJ2					LR		LR		
	comp=E,500nm,27.1s,MS4.7								
NJ2					LR		LR		
	comp=Z,3μm,25.0s,MS5.4								
QIZ	Qiongzhong	63.47	298		eP		P	07 22 22.3	-3.3
QIZ					S		S	07 31 00.8	+3.9
FX1	Attu Island--F	64.79	5		LR		LR	07 52 00.4	
	comp=Z,7.8nm,18.0s,baz=32,slow=37								
MDJ	Mudanjiang	65.30	332		P		P	07 22 37.0	-0.2
MDJ					AMB		AMB		
	comp=Z,13nm,1.4s,mb4.8								
MDJ					AMB		AMB		
	comp=Z,66nm,8.2s								
MDJ	Mudanjiang	65.30	332		eP		P	07 22 37.0	-0.2
	comp=Z,21nm,1.0s,mb5.1								
VNDA	Vanda	65.66	181		P		P	07 22 37.8	-1.2
	comp=Z,30nm,1.4s,mb5.1,baz=2.2,slow=7.4,SNR=18								
VNDA	Vanda	65.66	181		eP		P	07 22 37.9	-1.1
	comp=Z,16nm,1.3s,mb4.9								
SBA	Scott Base	65.95	180		eP		P	07 22 40.6	-0.3
	comp=Z,26nm,0.9s,mb5.3								
CN2	Changchun	66.69	329		eP		P	07 22 45.6	-0.5
CN2					AMB		AMB		
	comp=Z,30nm,0.9s,mb5.3								
CN2					LR		LR		
	comp=N,300nm,22.0s,MS4.6								
CN2					LR		LR		
	comp=E,300nm,22.0s,MS4.6								
CN2					LR		LR		
	comp=Z,300nm,21.0s,MS4.5

GTA				AMB	AMB			
	comp=Z,40nm,1.3s,mb5.2							
LSA	**Lhasa**	**83.17**	**302**	*eP*	**P**	**07 24 22.7**	**+1.8**
	comp=Z,4.2nm,0.7s,mb4.6							
COLA	**College**	**83.95**	**18**	*eP*	**P**	**07 24 22.3**	**-1.8**
	comp=Z,6.0nm,1.0s,mb4.7							
ILAR	**Eielson Array**	**84.18**	**18**	P	**P**	**07 24 24.0**	**-1.2**
	comp=Z,2.5nm,1.0s,mb4.3,baz=212,slow=6.9,SNR=13							
ILAR				LR	LR	07 58 17.1		
	comp=Z,74nm,18.5s,MS4.1,baz=235,slow=33							
NVAR	**Mina Array Bea**	**86.24**	**50**	P	**P**	**07 24 35.4**	**-0.7**
	comp=Z,0.6nm,0.8s,baz=220,slow=6.9,SNR=6.3							
GUN	**Gumba**	**87.11**	**299**	*eP*	**P**	**07 24 41.6**	**+1.0**
	comp=Z,56nm,1.3s,mb5.6							
PKI	**Pulchoki**	**87.43**	**299**	*eP*	**P**	**07 24 42.7**	**+0.5**
	comp=Z,36nm,1.0s,mb5.5							
KKN	**Kakani**	**87.59**	**299**	*eP*	**P**	**07 24 43.6**	**+0.6**
	comp=Z,67nm,1.3s,mb5.7							
DMN	**Daman**	**87.70**	**299**	*eP*	**P**	**07 24 43.0**	**-0.5**
	comp=Z,60nm,1.0s,mb5.8							
GKN	**Gorkha**	**88.20**	**299**	*eP*	**P**	**07 24 45.8**	**0.0**
	comp=Z,42nm,1.0s,mb5.6							
KOLN	**Koldanda**	**89.03**	**298**	*eP*	**P**	**07 24 49.4**	**-0.4**
	comp=Z,19nm,1.0s,mb5.4							
WMQ	**Urumqi**	**90.00**	**315**	*eP*	**P**	**07 24 54.5**	**+0.5**
WMQ				AP	pP	07 24 58.5	+1.3
WMQ				XP	sP	07 25 01.0	+2.8
WMQ				PP	PP	07 28 29.9	+0.4
WMQ				AMB	AMB			
	comp=Z,42nm,2.5s,mb5.3							
WMQ				AMB	AMB			
	comp=Z,125nm,5.9s							
WMQ				LR	LR			
	comp=N,475nm,22.8s,MS5.0							
WMQ				LR	LR			
	comp=E,412nm,20.6s,MS5.0							
WMQ				LR	LR			
	comp=Z,652nm,21.8s,MS5.0							
SYO	**Syowa Base**	**91.10**	**197**	⇑P	**P**	**07 24 58.9**	**+0.4**
SYO	**Syowa Base**	**91.10**	**197**	⇓PcP	PcP	07 25 00.7	+0.9
SYO	**Syowa Base**	**91.10**	**197**	⇑*e*P	**P**	**07 24 58.9**	**+0.4**
SYO				⇓*e*PcP	PcP	07 25 00.7	+0.9
PDAR	**Pinedale Array**	**93.81**	**47**	LR	LR	08 02 34.7		
	comp=Z,159nm,18.7s,MS4.5,baz=199,slow=32							
MKAR	**Makanchi Array**	**94.44**	**317**	P	**P**	**07 25 14.9**	**+0.5**
	comp=Z,32nm,0.7s,mb5.8,baz=98,slow=6.4,SNR=267							
MKAR				LR	LR	08 06 23.5		
	comp=Z,87nm,20.1s,MS4.2,baz=103,slow=35							
YKA	**Yellowknife Ar**	**95.52**	**27**	P	**P**	**07 25 18.9**	**0.0**
	comp=Z,0.3nm,0.6s,baz=257,slow=4.9,SNR=8.7							
YKA				LR	LR	08 01 19.9		
	comp=Z,73nm,20.1s,baz=260,slow=31							
TXAR	**Lajitas Array**	**95.85**	**61**	P	**P**	**07 25 23.1**	**+1.8**
	comp=Z,0.2nm,0.8s,baz=207,slow=4.0,SNR=2.7							
TXAR				PKKPbc		07 42 11.7		
	comp=Z,0.3nm,0.8s,baz=90,slow=3.8,SNR=4.1							
KSH	**Kashi**	**97.62**	**309**	*eP*	**P**	**07 25 33.9**	**+4.9**
KSH				*e*AP	pP	07 25 38.5	+6.2
KSH				*e*XP	sP	07 25 41.3	+8.0
USHA	**Ushuaia**	**99.25**	**151**	LR	LR	08 02 18.8		
	comp=Z,233nm,20.7s,MS4.7,baz=338,slow=30							
BVAR	**Borovoye Array**	**102.89**	**322**	Pdiff	Pdif	07 25 50.9	-1.5	
	comp=Z,1.3nm,0.8s,baz=108,slow=4.7,SNR=9.1							
ARCES	**ARCESS Array B**	**117.26**	**345**	PKP	PKPdf	07 30 38.0	-3.1	
	comp=Z,1.5nm,0.6s,baz=64,slow=1.9,SNR=7.4							
SDV	**Santo Domingo**	**124.10**	**87**	PKP	PKPdf	07 30 52.1	-3.5	
	comp=Z,1.7nm,0.8s,baz=281,slow=7.2,SNR=3.8							
KMBO	**Kilima Mbogo**	**127.67**	**259**	PKP	PKPdf	07 31 01.3	-1.4	
	comp=Z,3.9nm,0.9s,baz=22,slow=4.5,SNR=8.7							
KMBO	**Kilima Mbogo**	**127.67**	**259**	*e*PKPdf	PKPdf	07 31 02.0	-0.7	
AKASG	**Malin Array Be**	**127.81**	**327**	PKP	PKPdf	07 30 58.5	-3.4	
	comp=Z,0.2nm,0.3s,baz=82,slow=1.8,SNR=7.2							
BRTR	**Keskin Array B**	**129.86**	**312**	PKP	PKPdf	07 31 04.1	-2.1	
	comp=Z,1.2nm,0.9s,baz=14,slow=5.1,SNR=5.2							
TSUM	**Tsumeb**	**136.27**	**225**	PKP	PKPdf	07 31 16.0	-2.6	
	comp=Z,2.8nm,0.9s,baz=277,slow=8.1,SNR=3.9							
GERES	**GERESS Array B**	**136.66**	**334**	PKP	PKPdf	07 31 17.0	-1.5	
	comp=Z,0.6nm,0.5s,baz=190,slow=31,SNR=5.7							
GERES				SKPbc		07 34 50.5		
	comp=Z,0.3nm,0.2s,baz=117,slow=3.0,SNR=3.9							

NEIC ***13*** *07:14:39.1±0.3,55.45S×27.70W,h25km,mb5.2/13, MS4.7/17,Error ellipse: s-maj=10.6km s-min=7.1km az=56.0*

HRVD ***13*** *07:14:39.1±0.8,55.75S×27.64W,h38km±5km,MW5.0/41, Centroid moment Tensor Solution. LP body waves: s6,c6; Mantle waves: s41,c55; Half duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr-0.94±.38; Mθθ-0.12±.30; Mϕϕ 1.05±.36; Mrθ-3.14±.52; Mrϕ-0.42±.19; Mθϕ-1.17±.29; Best double couple: Mo3.37×10¹⁶ NP1:ϕ₁221°, δ3°, λ-118°. NP2:ϕ₂69°, δ87°, λ-88°. Principal axes: T 2.78, Plg42°, Azm157°; N 1.18, Plg2°, Azm249°; P -3.96, Plg48°, Azm340°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

BJI ***13*** *07:14:39.1,55.40S×27.70W,h25km,mB5.2,Ms5.1, Msz5.0*

SYO ***13*** *07:14:39.1,55.45S×27.70W,h25km,MB5.2,MS4.7*

IDC ***13*** *07:14:41.8±1.7,55.56S×27.81W,h47km±14km,mb4.6/13, mb1 4.6/13,mb1mx4.5/16,MS4.1/11,Ms1 4.1/11, ms1mx4.0/15,Error ellipse: s-maj=20.1km s-min=15.6km az=35.0*

ISC 13 07:14:34.8±0.3,55.49S±0.06×27.6W±0.1,h10km,n85, σ1s11/41,mb5.0/24,MS4.6/28,9C-4D,South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
VNA1	**Neumayer--Stat**	**17.41**	**158**	⇑*i*P		**P**	**07 18 43.0**	**+4.0**
VNA3	**Neumayer Olymp**	**17.60**	**161**	⇑*i*P		**P**	**07 18 44.9**	**+3.5**
VNA2	**Neumayer--Watz**	**17.80**	**158**	⇑*i*P		**P**	**07 18 46.9**	**+3.0**
EFI	**East Falkland**	**18.40**	**269**	*e*P		**P**	**07 18 50.5**	**-1.0**
	123nm,1.1s							
SNAA	**Sanae**	**19.36**	**156**	⇑*i*P		**P**	**07 19 01.9**	**-0.9**
PMSA	**Palmer Station**	**20.10**	**228**	*e*P		**P**	**07 19 11.8**	**+0.8**
MAIT	**Maitri**	**22.84**	**147**	*e*P		**P**	**07 19 38.8**	**+0.2**
USHA	**Ushuaia**	**23.10**	**255**	P		**P**	**07 19 41.7**	**+0.4**
	6.8nm,0.8s,mb4.1,baz=52,slow=12,SNR=3.1							
TRQA	**Tornquist**	**28.88**	**293**	*e*P		**P**	**07 20 35.0**	**-0.5**
	2.1nm,0.8s,mb3.9							
TRQA				*e*			07 20 49.0	
SYO	**Syowa Base**	**32.17**	**141**	⇓P		**P**	**07 21 03.7**	**-0.6**
SYO	**Syowa Base**	**32.17**	**141**	⇑pP		pP	07 21 09.0	+1.7
SYO	**Syowa Base**	**32.17**	**141**	⇑sP		sP	07 21 14.5	+5.9
SYO	**Syowa Base**	**32.17**	**141**	⇓PnPn			07 22 06.8	
SYO	**Syowa Base**	**32.17**	**141**	⇓*e*P		**P**	**07 21 03.7**	**-0.6**
SYO				⇑*e*pP		pP	07 21 09.0	+1.7
SYO				*e*sP		sP	07 21 14.5	+5.9
SYO				⇓*e*PnPn			07 22 06.8	
QSPA	**South Pole Qui**	**34.77**	**180**	⇑*i*P		**P**	**07 21 26.8**	**+0.1**
	45nm,0.5s,mb5.7							
QSPA				LR	LR			
	comp=Z,610nm,21.7s,MS4.3							
CAM4	**Nova Friburgo**	**34.91**	**335**	(P)		**P**	**07 21 28.8**	**+0.3**
CAM4	**Nova Friburgo**	**34.91**	**335**	P		**P**	**07 21 28.8**	**+0.3**
CPUP	**Villa Florida**	**36.26**	**311**	P		**P**	**07 21 39.5**	**-0.4**
	comp=Z,18nm,0.7s,mb5.1,baz=172,slow=7.4,SNR=67							
CPUP				ScP			07 27 44.5	
	comp=Z,8.2nm,1.4s,baz=249,slow=2.3,SNR=3.4							
CPUP				LR	LR		07 35 11.4	
	comp=Z,343nm,19.6s,MS4.1,baz=166,slow=34							
CPUP	**Villa Florida**	**36.26**	**311**	*e*P		**P**	**07 21 39.3**	**-0.6**
	comp=Z,12nm,0.7s,mb4.9							
SUR	**Sutherland**	**40.73**	**76**	P		**P**	**07 22 19.5**	**+2.4**
	comp=Z,5.6nm,0.9s,mb4.2,baz=197,slow=11,SNR=3.6							
SUR	**Sutherland**	**40.73**	**76**	*e*P		**P**	**07 22 19.9**	**+2.8**
	comp=Z,5.9nm,0.8s,mb4.3							
BDFB	**Brasilia**	**42.75**	**330**	P		**P**	**07 22 34.8**	**+0.9**
	comp=Z,7.9nm,1.1s,mb4.4,baz=159,slow=3.6,SNR=9.3							
BDFB				LR	LR		07 37 26.6	
	comp=Z,472nm,20.6s,MS4.4,baz=184,slow=32							
LVC	**Limon Verde**	**44.81**	**300**	*e*P		**P**	**07 22 51.5**	**+1.0**
	comp=Z,43nm,0.6s,mb5.5							
SBA	**Scott Base**	**46.63**	**184**	*e*P		**P**	**07 23 04.3**	**+0.2**
	comp=Z,64nm,1.2s,mb5.4							
VNDA	**Vanda**	**47.13**	**183**	P		**P**	**07 23 08.2**	**+0.1**
	comp=Z,24nm,0.6s,mb5.3,baz=1.6,slow=4.0,SNR=67							
VNDA				LR	LR		07 40 53.1	
	comp=Z,236nm,20.3s,MS4.1,baz=189,slow=33							
VNDA	**Vanda**	**47.13**	**183**	*e*P		**P**	**07 23 08.1**	**0.0**
	comp=Z,14nm,0.6s,mb5.1							
VNDA				LR	LR			
	comp=Z,238nm,20.0s,MS4.2							
LBTB	**Lobatse**	**49.08**	**74**	*e*P		**P**	**07 23 24.4**	**+0.4**
	comp=Z,8.2nm,1.2s,mb4.6							
TSUM	**Tsumeb**	**49.62**	**62**	P		**P**	**07 23 29.5**	**+1.3**
	comp=Z,2.7nm,1.0s,mb4.2,baz=270,slow=12,SNR=2.8							
LPAZ	**La Paz**	**49.86**	**305**	P		**P**	**07 23 31.1**	**+1.1**
	comp=Z,34nm,0.7s,mb5.5,baz=154,slow=6.5,SNR=198							
LPAZ				LR		LR	07 44 01.3	
	comp=Z,124nm,21.8s,MS3.9,baz=352,slow=35							
LPAZ	**La Paz**	**49.86**	**305**	*e*P		**P**	**07 23 30.9**	**+0.8**
LPAZ				LR		LR		
	comp=Z,139nm,19.0s,MS4.0							
ARE	**Arequipa**	**51.30**	**302**	*e*P		**P**	**07 23 43.0**	**+2.0**
LIC	**Lamto**	**64.28**	**25**	*e*P		**P**	**07 25 11.8**	**-0.7**
	comp=Z,56nm,1.1s,mb5.5							
KIC	**Kosan Boka**	**64.48**	**25**	*e*P		**P**	**07 25 12.4**	**-1.4**
	comp=Z,52nm,0.9s,mb5.5							
TIC	**Toumodi**	**64.69**	**25**	*e*P		**P**	**07 25 14.1**	**-1.0**
	comp=Z,39nm,0.7s,mb5.5							
DBIC	**Dimbokro**	**64.75**	**25**	P		**P**	**07 25 14.8**	**-0.8**
	comp=Z,5.8nm,0.7s,mb4.7,baz=164,slow=6.8,SNR=12							
DBIC				LR		LR	07 46 49.1	
	comp=Z,99nm,19.8s,MS4.0,baz=206,slow=30							
DBIC	**Dimbokro**	**64.75**	**25**	*e*P		**P**	**07 25 14.4**	**-1.2**
	comp=Z,3.8nm,0.7s,mb4.5							
OTAV	**Otavalo**	**69.14**	**304**	*e*P		**P**	**07 25 37.5**	**-5.8**
	comp=Z,8.8nm,0.7s,mb4.8							
ROSC	**El Rosal**	**71.36**	**310**	P		**P**	**07 25 57.1**	**+0.3**
	comp=Z,7.2nm,0.8s,mb4.7,baz=197,slow=19,SNR=5.1							
ROSC				LR		LR	07 59 09.3	
	comp=Z,89nm,19.9s,MS4.0,baz=172,slow=37							
PCRV	**Puerto La Cruz**	**72.36**	**322**	P		**P**	**07 26 02.8**	**0.0**
	comp=Z,42nm,0.7s,mb5.5,baz=160,slow=3.3,SNR=25							
SDV	**Santo Domingo**	**73.44**	**315**	P		**P**	**07 26 08.8**	**-0.3**
	comp=Z,18nm,0.7s,mb5.1,baz=190,slow=5.0,SNR=25							
KMBO	**Kilima Mbogo**	**75.06**	**70**	LR		LR	07 58 50.2	
	comp=Z,137nm,18.2s,MS4.3,baz=271,slow=35							
TAU	**Tasmania Unive**	**81.88**	**176**	*e*P		**P**	**07 26 53.5**	**-1.7**
	comp=Z,49nm,1.2s,mb5.3							
TAU				*e*			07 27 01.6	
URZ	**Urewera**	**84.26**	**199**	LR		LR	07 58 37.4	
	comp=Z,136nm,19.7s,MS4.3,baz=190,slow=31							
STKA	**Stephens Creek**	**92.50**	**171**	P		**P**	**07 27 46.1**	**-0.7**
	comp=Z,1.5nm,0.6s,mb4.5,baz=124,slow=1.1,SNR=7.4							
STKA				LR		LR	08 09 05.2	
	comp=Z,183nm,19.5s,MS4.5,baz=204,slow=35							
BBSR	**BB Station**	**93.09**	**329**	PFAKE			07 28 00.0	+10
BBSR				LR		LR		
	comp=Z,747nm,20.0s,MS5.1							
RAR	**Rarotonga**	**93.48**	**224**	*e*P		**P**	**07 27 48.8**	**-2.8**
	comp=Z,26nm,0.9s,mb5.7							
DWPF	**Disney**	**95.08**	**314**	PFAKE			07 28 10.0	+11
DWPF				LR		LR		
	comp=Z,329nm,21.0s,MS4.8							
ESDC	**Sonseca Array**	**96.92**	**18**	LR		LR	08 06 51.2	
	comp=Z,85nm,20.0s,MS4.2,baz=170,slow=32							
ESLA	**Sonseca Array**	**96.92**	**18**	PFAKE			07 28 20.0	+13
ESLA				LR		LR		
	comp=Z,828nm,19.0s,MS5.2							
ASAR	**Alice Springs**	**99.60**	**163**	P		**P**	**07 28 18.4**	**-1.1**
	comp=Z,1.6nm,0.7s,mb4.6,baz=183,slow=4.2,SNR=14							
ASAR				PP		PP	07 32 18.7	-7.1
	comp=Z,1.4nm,0.8s,baz=193,slow=5.8,SNR=7.6							
ASAR				LR		LR	08 10 38.4	
	comp=Z,75nm,19.4s,MS4.2,baz=200,slow=34							
WRA	**Warramunga Arr**	**103.32**	**163**	Pdiff		Pdif	07 28 34.1	-2.1
	comp=Z,0.6nm,0.7s,baz=199,slow=4.1,SNR=4.5							
WRA				PP		PP	07 32 50.0	-4.3
	comp=Z,0.6nm,0.7s,baz=185,slow=6.5,SNR=5.1							
CTAO	**Charters Tower**	**104.55**	**174**	PFAKE			07 28 50.0	+8.4
CTAO				LR		LR		
	comp=Z,375nm,20.0s,MS4.9							
WMOK	**Wichita Mounta**	**108.37**	**305**	PFAKE			07 33 20.0	
WMOK				LR		LR		
	comp=Z,390nm,20.0s,MS5.0							
MOX	**Moxa**	**110.69**	**25**	*e*P		PKPdf	07 33 44.0	+34
ANMO	**Albuquerque**	**112.24**	**299**	PFAKE			07 33 20.0	+6.9
ANMO				LR		LR		
	comp=Z,225nm,20.0s,MS4.8							
SDCO	**Great Sand Dun**	**113.99**	**302**	PFAKE			07 33 30.0	+13
SDCO				LR		LR		
	comp=Z,223nm,20.0s,MS4.8							
PMG	**Port Moresby**	**115.20**	**174**	PFAKE			07 33 30.0	+11
PMG				LR		LR		
	comp=Z,209nm,19.0s,MS4.8							
FINES	**FINESS Array B**	**123.99**	**28**	PKP		PKPdf	07 33 32.6	-2.8
	comp=Z,1.0nm,0.5s,baz=207,slow=4.3,SNR=5.8							
CMAR	**Chiang Mai Arr**	**125.49**	**111**	PKP		PKPdf	07 33 37.5	-1.7
	comp=Z,1.5nm,0.4s,baz=238,slow=4.4,SNR=5.2							
LSA	**Lhasa**	**130.06**	**95**	PFAKE			07 34 00.0	+12
LSA				LR		LR		
	comp=Z,87nm,20.0s,MS4.5							
ARCES	**ARCESS Array B**	**130.50**	**22**	PKP		PKPdf	07 33 45.4	-2.1
	comp=Z,3.1nm,1.0s,baz=230,slow=1.4,SNR=6.3							
ARCES	**ARCESS Array B**	**130.50**	**22**	PKP		PKPdf	07 33 45.4	-2.1
YKA	**Yellowknife Ar**	**135.59**	**319**	PKP		PKPdf	07 33 54.8	-2.4
	comp=Z,0.3nm,0.5s,baz=126,slow=2.3,SNR=14							
YKA				PP		PP	07 36 28.3	-7.2
	comp=Z,0.8nm,0.8s,baz=124,slow=6.2,SNR=7.8							
YKA				SKPbc			07 37 20.4	
	comp=Z,0.9nm,0.8s,baz=130,slow=2.8,SNR=9.9							
YKA				SKP			07 37 26.4	
	comp=Z,0.4nm,0.6s,baz=135,slow=2.2,SNR=5.7							
YKA	**Yellowknife Ar**	**135.59**	**319**	PKP		PKPdf	07 33 54.9	-2.4
YKA				PP		PP	07 36 28.3	-7.2
YKA				SKPbc			07 37 20.4	
YKA				SKP			07 37 26.4	
MKAR	**Makanchi Array**	**136.93**	**71**	PKP		PKPdf	07 33 58.0	-2.0
	comp=Z,0.2nm,0.6s,baz=180,slow=1.4,SNR=3.2							
WMQ	**Urumqi**	**138.02**	**78**	PKP		PKPdf	07 34 02.1	-0.1
WMQ				XPKP			07 34 16.5	
WMQ				PP		PP	07 36 55.0	+3.4
WMQ				SKS		SKS	07 41 07.3	-4.7
WMQ				SKKS			07 43 40.5	
WMQ				SS		SS	07 54 59.8	+0.3
WMQ				PP		PP		
	comp=Z,143nm,12.0s							
WMQ				LR		LR		
	comp=N,254nm,30.0s							
WMQ				LR		LR		
	comp=E,125nm,23.2s							
WMQ				LR		LR		
	comp=Z,407nm,28.9s,MS5.0							
DLBC	**Dease Lake**	**139.79**	**307**	*e*PKPpre			07 33 52.5	
ENH	**Enshi**	**140.63**	**112**	PFAKE			07 34 20.0	+13
ENH				LR		LR		
	comp=Z,130nm,20.0s,MS4.7							
LZH	**Lanzhou**	**141.94**	**100**	*e*PKP		PKPdf	07 34 08.1	-1.2
LZH				APKP			07 34 16.3	
LZH				XPKP			07 34 19.3	
LZH				LR		LR		
	comp=Z,249nm,20.0s,MS5.0							
INK	**Inuvik**	**145.21**	**321**	*e*PKPdf		PKPdf	07 34 11.9	-2.1
DAWY	**Dawson**	**146.23**	**313**	*e*PKPdf		PKPdf	07 34 14.5	-1.4
NJ2	**Nanjing**	**146.84**	**121**	*e*PKP		PKPdf	07 34 16.6	-1.3
SSE	**Sheshan**	**147.16**	**125**	⇑PKP		PKPdf	07 34 17.6	-0.8
EYAK	**Cordova Ski Ar**	**147.93**	**305**	*e*PKPbc		PKPdf	07 34 18.9	+0.2
ILAR	**Eielson Array**	**149.56**	**312**	PKPbc		PKPdf	07 34 24.0	+2.8
	comp=Z,2.8nm,0.6s,baz=126,slow=3.1,SNR=37							
COLA	**College**	**149.98**	**312**	*e*PKPdf		PKPdf	07 34 20.0	-1.9
COLA				*e*PKPbc		PKPdf	07 34 29.0	+7.1
COLA				LR		LR		
	comp=Z,119nm,19.0s,MS4.7							
MCK	**McKinley**	**150.23**	**310**	*e*PKPbc		PKPdf	07 34 25.8	+3.6
MCK				LR		LR		
	comp=Z,92nm,19.0s,MS4.6							
KDAK	**Kodiak Island**	**150.35**	**297**	*e*PKPbc		PKPdf	07 34 26.5	+3.9
SONM	**Songino Array**	**150.93**	**86**	PKPbc		PKPdf	07 34 27.9	+4.1
	comp=Z,7.2nm,0.6s,baz=223,slow=3.5,SNR=37							
SONM				PKPab		PKPab	07 34 38.1	+1.9
	comp=Z,5.4nm,0.6s,baz=216,slow=2.8,SNR=12							
SPU	**Mount Spurr**	**151.07**	**304**	*e*PKPdf		PKPdf	07 34 24.0	+0.3
SPU				*e*PKPbc		PKPdf	07 34 28.8	+5.2
RSO	**Redoubt South**	**151.22**	**303**	*e*PKPbc		PKPdf	07 34 30.1	+6.3
ULN	**Ulaanbaatar**	**151.32**	**86**	PFAKE			07 34 30.0	+5.6
ULN				LR		LR		
	comp=Z,111nm,20.0s,MS4.7							
BJT	**Baijiatuau**	**151.55**	**108**	PFAKE			07 34 40.0	+15
BJT				LR		LR		
	comp=Z,175nm,22.0s,MS4.8							
IMA	**Indian Mountai**	**152.55**	**314**	*e*PKPbc		PKPdf	07 34 33.1	+7.5
MDJ	**Mudanjiang**	**161.85**	**117**	PFAKE			07 34 50.0	+12
MDJ				LR		LR		
	comp=Z,183nm,19.0s							

DJA ***13*** *07:18:48.9,0.31N×97.76E,h81km,MB3.9,Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*

NEIC ***13*** *07:18:56.2±1.1,0.22N±0.09×97.5E±0.1,h24km, h24km±1.2km:pP-P,n15,σ0s88/13,mb3.9/6,2C-1D, Northern Sumatera*

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
GSI	**Gunungsitoli**	**1.08**	**3**	⇑*e*Pn		**Pn**	**07 19 17.1**	**+1.2**
PSI	**Prapat**	**2.83**	**30**	⇓*e*Pn		**Pn**	**07 19 41.0**	**0.0**
PPI	**Padang Panjang**	**2.96**	**103**	*e*Pn		**Pn**	**07 19 42.0**	**-0.8**
PPI	**Padang Panjang**	**2.96**	**103**	*e*Sn		**Sn**	**07 20 22.0**	**+4.1**
TSI	**Tuntungan**	**3.42**	**18**	*e*Pn		**Pn**	**07 19 58.0**	**+8.6**
IPM	**Ipoh**	**5.57**	**39**	⇑*e*P		**Pn**	**07 20 18.8**	**-1.0**
CMAR	**Chiang Mai Arr**	**18.18**	**4**	P		**P**	**07 23 08.0**	**-1.0**
	0.4nm,0.3s,baz=199,slow=12,SNR=5.0							
WRA	**Warramunga Arr**	**41.26**	**121**	P		**P**	**07 26 41.2**	**-0.1**
	0.7nm,0.6s,mb3.5,baz=302,slow=9.0,SNR=10							
WRA				pP		pP	07 26 48.1	-0.6
	0.9nm,0.5s,baz=304,slow=8.8,SNR=7.7							
WRAB	**Tennant Creek**	**41.26**	**121**	P		**P**	**07 26 41.3**	**-0.1**
	6.0nm,0.7s,mb4.3							
WRAB				*e*		pP	07 26 48.5	-0.3
ASAR	**Alice Springs**	**42.56**	**126**	P		**P**	**07 26 52.1**	**0.0**
	1.1nm,0.6s,mb3.7,baz=295,slow=7.7,SNR=9.0							
ASAR				pP		pP	07 26 58.9	-0.6
	1.6nm,0.7s,baz=301,slow=7.8,SNR=9.6							
SONM	**Songino Array**	**48.05**	**8**	P		**P**	**07 27 36.0**	**+0.4**
	0.9nm,0.6s,mb4.0,baz=188,slow=8.8,SNR=4.7							
SONM				pP		pP	07 27 43.1	+0.1
	0.5nm,0.4s,baz=195,slow=10,SNR=2.7							
MKAR	**Makanchi Array**	**48.26**	**346**	P		**P**	**07 27 38.1**	**+0.8**
	1.1nm,0.6s,mb4.1,baz=167,slow=7.5,SNR=6.5							
BVAR	**Borovoye Array**	**57.27**	**341**	P		**P**	**07 28 43.9**	**-0.3**
	1.1nm,0.8s,mb4.0,baz=143,slow=7.4,SNR=5.0							
BVAR				pP		pP	07 28 52.9	+1.2
	0.6nm,0.5s,baz=150,slow=8.5,SNR=3.8							
TXAR	**Lajitas Array**	**144.32**	**33**	PKP		PKPdf	07 38 32.4	-3.2
	0.2nm,0.8s,baz=225,slow=1.3,SNR=3.1							
TXAR				pPKP			07 38 41.1	
	0.2nm,0.5s,SNR=3.4							
CPUP	**Villa Florida**	**144.49**	**221**	PKP		PKPdf	07 38 34.2	-1.7
	2.7nm,0.8s,baz=112,slow=3.1,SNR=8.5							
CPUP				pPKP			07 38 43.3	
	1.6nm,0.9s,baz=90,slow=2.0,SNR=2.6							

IDC ***13*** *07:24:17.6±1.4,12.06S×166.45E,mb3.7/4,mb1 3.9/4, mb1mx3.7/13,Error ellipse: s-maj=45.5km s-min=37.6km az=135.0*

ISC 13 07:24:38.8±3.9,12.5S±0.3×166.0E±0.2,h176km±34km,n7, σ0s35/7,mb3.8/4,Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
BKM	**Butte a Klehm**	**5.59**	**157**	*i* P		**P**	**07 26 01.1**	**0.0**
BKM				S		**S**	**07 27 16.0**	**+11**
CTA	**Charters Tower**	**20.34**	**246**	P		**P**	**07 29 03.4**	**+0.4**
	4.4nm,1.0s,baz=63,slow=12,SNR=4.4							
WRA	**Warramunga Arr**	**31.20**	**252**	P		**P**	**07 30 43.4**	**-0.5**
	0.4nm,0.8s,mb3.2,baz=82,slow=8.9,SNR=4.3							
WRA				PcP		PcP	07 33 36.1	+1.8
	1.0nm,0.9s,baz=89,slow=3.3,SNR=5.5							
ASAR	**Alice Springs**	**32.34**	**245**	P		**P**	**07 30 53.8**	**0.0**
	0.9nm,1.0s,mb3.5,baz=73,slow=9.4,SNR=4.7							
ASAR				Pc

ISC 13 07:44:48.1±1.6, 12.1S±0.2×166.4E±0.3, h10km, n8, σ@87/8, mb3.8/5, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**20.93**	**245**	P	**P**	**07 49 33.2**	**-0.3**
	5.1nm,1.1s,baz=66,slow=9.3,SNR=4.7						
CTA	**Charters Tower**	**20.93**	**245**	P	**P**	**07 49 33.2**	**-0.4**
CTAO	**Charters Tower**	**20.93**	**245**	*eP*	**P**	**07 49 33.1**	**-0.4**
	8.2nm,1.1s						
WRA	**Warramunga Arr**	**31.76**	**252**	P	**P**	**07 51 16.6**	**+1.8**
	0.4nm,0.8s,mb3.3,baz=84,slow=9.2,SNR=5.6						
WRA				PcP	PcP	07 54 05.0	-1.3
	0.8nm,1.2s,baz=70,slow=2.6,SNR=4.5						
ASAR	**Alice Springs**	**32.94**	**245**	P	**P**	**07 51 23.9**	**-1.2**
	0.5nm,0.7s,mb3.5,baz=65,slow=8.9,SNR=4.3						
ASAR				PcP	PcP	07 54 08.9	-0.6
	1.0nm,0.6s,baz=70,slow=2.5,SNR=7.5						
VNDA	**Vanda**	**65.50**	**181**	P	**P**	**07 55 33.4**	**+0.1**
	0.5nm,0.9s,mb3.6,baz=7.1,slow=8.1,SNR=2.2						
SONM	**Songino Array**	**79.86**	**324**	P	**P**	**07 56 58.3**	**-0.2**
	1.0nm,0.7s,mb3.9,baz=127,slow=7.2,SNR=4.9						
MKAR	**Makanchi Array**	**94.70**	**317**	P	**P**	**07 58 10.9**	**0.0**
	3.0nm,0.7s,mb4.9,baz=98,slow=6.2,SNR=22						

MAN 13 07:46:05.9, 7.86N×121.98E, h42km, mb5.2, ML4.1, MS4.2
NEIC 13 07:46:10.9±1.9, 7.88N×122.24E, h74km±18km, mb4.5/9, Error ellipse: s-maj=17.1km s-min=10.4km az=64.0
IDC 13 07:46:13.2±3.0, 7.96N×122.35E, h93km±29km, mb3.5/8, mb1 3.7/9, mb1mx3.5/19, MS3.0/2, Ms1 3.0/2, ms1mx2.8/19, Error ellipse: s-maj=30.7km s-min=14.9km az=72.0

ISC 13 07:46:06.7±0.6, 7.91N±0.03×122.02E±0.04, h41km±6km, n55, σ1§27/73, mb4.2/15, MS3.2/1, 22C-4D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZMPH	**Zamboanga City**	**0.95**	**178**	*iP*	**P**	**07 46 23.0**	**-0.7**
PAGZ	**Pagadian**	**1.35**	**92**	*eP*	**P**	**07 46 29.6**	**+0.2**
PAGZ				*eS*	**S**	**07 46 46.5**	**+0.1**
DCPH	**Dipolog City**	**1.48**	**63**	*eP*	**P**	**07 46 31.4**	**+0.1**
SNPH	**Sibulan**	**1.86**	**40**	*iP*	**P**	**07 46 37.0**	**+0.3**
SNPH				*i S*	**S**	**07 47 01.0**	**+1.8**
CTBH	**Cotabato--PC H**	**2.31**	**107**	*iP*	**P**	**07 46 42.4**	**-0.6**
AAP	**Anini-y**	**2.50**	**358**	*iP*	**P**	**07 46 46.0**	**+0.2**
AAP				*i S*	**S**	**07 47 15.0**	**-0.2**
TBP	**Tagbilaran**	**2.54**	**46**	*eP*	**P**	**07 46 45.9**	**-0.4**
TBP				*eS*	**S**	**07 47 14.6**	**-1.7**
CGP	**Cagayan de Oro**	**2.70**	**78**	*eP*	**P**	**07 46 48.8**	**+0.1**
LLP	**Lapu-Lapu**	**3.07**	**39**	*iP*	**P**	**07 46 53.6**	**-0.3**
LLP				*i S*	**S**	**07 47 28.5**	**-1.3**
CUYO	**Cuyo Island**	**3.09**	**341**	*eP*	**P**	**07 46 54.8**	**+0.6**
CUYO				*eS*	**S**	**07 47 29.3**	**-0.9**
KCP	**Kidapawan**	**3.17**	**106**	*eP*	**P**	**07 46 56.0**	**+0.6**
MSLP	**Maasin**	**3.57**	**52**	*eP*	**P**	**07 47 02.3**	**+1.3**
MSLP				*eS*	**S**	**07 47 42.6**	**+0.1**
RCP	**Roxas**	**3.70**	**11**	*eP*	**P**	**07 47 03.5**	**+0.7**
RCP				*eS*	**S**	**07 47 46.8**	**+1.1**
KALP	**Kalibo**	**3.76**	**5**	*iP*	**P**	**07 47 04.6**	**+0.9**
SCPH	**Surigao**	**3.90**	**61**	*eP*	**P**	**07 47 06.4**	**+0.7**
SCPH				*eS*	**S**	**07 47 46.5**	**-4.3**
OCLP	**Ormoc**	**4.03**	**39**	*eP*	**P**	**07 47 07.0**	**-0.5**
ENPP	**El Nido**	**4.16**	**322**	*eP*	**P**	**07 47 08.8**	**-0.6**
ENPP				*eS*	**S**	**07 47 53.7**	**-3.7**
BATP	**Bataraza**	**4.27**	**282**	*eP*	**P**	**07 47 08.4**	**-2.5**
BATP				*eS*	**S**	**07 47 54.1**	**-6.1**
PLP	**Palo**	**4.36**	**42**	*eP*	**P**	**07 47 11.3**	**-0.8**
PLP				*eS*	**S**	**07 47 55.5**	**-6.8**
OTRP	**Odiongan**	**4.42**	**360**	*eP*	**P**	**07 47 13.2**	**0.0**
OTRP				*eS*	**S**	**07 48 02.8**	**-1.3**
BUSP	**Coron**	**4.45**	**336**	*eP*	**P**	**07 47 13.0**	**-0.4**
BUSP				*eS*	**S**	**07 48 01.6**	**-3.0**
SJMP	**San Jose**	**4.61**	**349**	*eP*	**P**	**07 47 15.6**	**-0.2**
SJMP				*eS*	**S**	**07 48 05.8**	**-2.9**
BESP	**Borongan**	**4.98**	**42**	*eP*	**P**	**07 47 21.0**	**0.0**
CNP	**Catarman**	**5.26**	**29**	*eP*	**P**	**07 47 27.8**	**+2.9**
BOAC	**Boac**	**5.52**	**358**	*eP*	**P**	**07 47 29.2**	**+0.7**
BOAC				*eS*	**S**	**07 48 28.9**	**-2.6**
PGP	**Puerto Galera**	**5.66**	**349**	*eP*	**P**	**07 47 31.0**	**+0.6**
LUBP	**Lubang**	**6.05**	**343**	*eP*	**P**	**07 47 35.2**	**-0.6**
LUBP				*eS*	**S**	**07 48 41.1**	**-3.6**
TGY	**Tagaytay City**	**6.25**	**350**	P	**P**	**07 47 41.1**	**+2.4**
	43nm,0.3s,baz=217,slow=10,SNR=2.8						
TGY				S	**S**	**07 48 54.5**	**+4.8**
	22nm,0.3s,baz=217,slow=20,SNR=2.3						
TGY				LR	LR	07 50 13.5	
	comp=Z,56nm,21.8s,baz=187,slow=38						
TGY	**Tagaytay City**	**6.25**	**350**	P	**P**	**07 47 41.1**	**+2.4**
TGY				S	**S**	**07 48 54.5**	**+4.8**
TGY				LR	LR	07 50 13.5	
BALP	**Baler**	**7.80**	**357**	*eP*	**P**	**07 48 03.0**	**+2.7**
CAUP	**Cauayan**	**8.98**	**359**	*eP*	**P**	**07 48 19.4**	**+2.7**
APYP	**Conner**	**9.92**	**356**	*eP*	**P**	**07 48 31.9**	**+2.1**
JOW	**Kunigami**	**19.73**	**17**	P	**P**	**07 50 35.5**	**-0.3**
	1.4nm,0.3s,baz=229,slow=9.7,SNR=5.6						
CMAR	**Chiang Mai Arr**	**24.76**	**297**	P	**P**	**07 51 27.9**	**+1.7**
	1.9nm,0.8s,mb3.7,baz=119,slow=8.3,SNR=7.2						
FITZ	**Fitzroy Crossi**	**26.09**	**172**	*eP*	**P**	**07 51 37.0**	**-1.7**
	3.4nm,0.8s,mb3.9						
FITZ	**Fitzroy Crossi**	**26.09**	**172**	P	**P**	**07 51 39.4**	**+0.7**
	2.4nm,0.8s,mb3.8,baz=0.6,slow=8.9,SNR=5.4						
CBIJ	**Chichi jima**	**27.00**	**43**	LR	LR	08 02 02.7	
	comp=Z,71nm,20.4s,MS3.2,baz=134,slow=36						
WRAB	**Tennant Creek**	**30.21**	**156**	P	**P**	**07 52 13.0**	**-2.8**
	18nm,1.3s,mb4.6						
WRA	**Warramunga Arr**	**30.21**	**156**	P	**P**	**07 52 13.5**	**-2.4**
	1.0nm,0.9s,mb3.5,baz=337,slow=9.4,SNR=5.5						
ASAR	**Alice Springs**	**33.46**	**160**	P	**P**	**07 52 43.7**	**-0.6**
	0.4nm,0.7s,mb3.4,baz=342,slow=6.6,SNR=4.3						
GUN	**Gumba**	**39.50**	**305**	*eP*	**P**	**07 53 36.7**	**+1.5**
	10.0nm,0.5s,mb4.8						
KKN	**Kakani**	**39.94**	**304**	*eP*	**P**	**07 53 39.8**	**+0.9**
	16nm,0.9s,mb4.7						
DMN	**Daman**	**40.02**	**304**	*eP*	**P**	**07 53 40.0**	**+0.5**
	29nm,1.4s,mb4.8						
GKN	**Gorkha**	**40.55**	**304**	*eP*	**P**	**07 53 44.8**	**+0.9**
KOLN	**Koldanda**	**41.32**	**303**	*eP*	**P**	**07 53 50.9**	**+0.7**
	12nm,1.0s,mb4.5						
MKAR	**Makanchi Array**	**51.48**	**326**	P	**P**	**07 55 11.2**	**+0.9**
	1.3nm,0.8s,mb3.9,baz=133,slow=8.5,SNR=9.2						
KURK	**Kurchatov**	**55.73**	**328**	*eP*	**P**	**07 55 41.4**	**-0.1**
ZRNK	**Zerenda**	**62.00**	**327**	P	**P**	**07 56 23.8**	**-1.2**
IMA	**Indian Mountai**	**80.51**	**24**	*eP*	**P**	**07 58 16.8**	**+1.0**
	11nm,1.0s,mb4.7						
MCK	**McKinley**	**82.54**	**27**	*eP*	**P**	**07 58 25.8**	**-0.7**
	1.4nm,0.7s,mb4.1						
PMR	**Palmer**	**82.55**	**29**	*eP*	**P**	**07 58 23.2**	**-3.4**
	1.9nm,0.6s,mb4.3						
ILAR	**Eielson Array**	**83.37**	**26**	P	**P**	**07 58 28.9**	**-1.7**
	0.3nm,0.7s,mb3.4,baz=251,slow=4.7,SNR=4.6						
KMBO	**Kilima Mbogo**	**84.97**	**268**	P	**P**	**07 58 41.4**	**+1.6**
	0.4nm,0.2s,mb4.1,baz=48,slow=15,SNR=3.9						
KMBO	**Kilima Mbogo**	**84.97**	**268**	P	**P**	**07 58 41.4**	**+1.6**
YKA	**Yellowknife Ar**	**97.58**	**23**	P	**P**	**07 59 34.0**	**-3.6**
	0.0nm,0.4s,baz=291,slow=5.3,SNR=3.1						

NIED 13 08:25:00, 35.20N×141.40E, h35km, Mw4.2 Best double couple: M○2.65×10^15 NP1:φs4°, δ62°, λ93°. NP2:φs178°, δ28°, λ84°.
IDC 13 08:25:36.2±0.5, 35.23N×141.16E, mb4.1/18, mb1 4.3/21, mb1mx4.3/27, ML4.2/3, Error ellipse: s-maj=18.1km s-min=12.7km az=107.0
JMA 13 08:25:38.9±0.2, 35.24N×141.43E, h36km±3km, M4.2
BJI 13 08:25:41.7, 35.28N×141.22E, h66km, mB4.7, mb4.7, Ms4.0, Msz3.9
NEIC 13 08:25:43.8±1.2, 35.20N×141.12E, h57km±10km, mb4.2/10, Error ellipse: s-maj=9.0km s-min=6.4km az=110.0

ISC 13 08:25:40.6±0.6, 35.18N±0.04×141.24E±0.05, h45km±5km, n66, σ1§05/75, mb4.2/30, MS3.9/2, 2C-5D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**0.56**	**202**	P	**P**	**08 25 52.3**	**-0.1**
CHOJ	**Chosi**	**0.61**	**330**	*iP*	**P**	**08 25 51.5**	**-1.5**
BSO3	**Boso 3**	**0.70**	**238**	*iP*	**P**	**08 25 55.0**	**+0.8**
KTR	**Katsuura**	**0.76**	**268**	*iP*	**P**	**08 25 55.5**	**+0.5**
BSO4	**Boso 4**	**0.76**	**256**	*iP*	**P**	**08 25 56.0**	**+1.0**
BSO4				*eS*	**S**	**08 26 08.6**	**+3.0**
JCN	**Nagara**	**0.88**	**286**	P	**P**	**08 25 57.7**	**+1.0**
JYT	**Yasato**	**1.35**	**321**	P	**P**	**08 26 03.0**	**-0.5**
JHO	**Hitachi**	**1.53**	**339**	*iP*	**P**	**08 26 04.4**	**-1.6**
JIM2	**Oshima 3**	**1.55**	**253**	P	**P**	**08 26 05.9**	**-0.4**
JHJ	**Hachijo jima 2**	**2.38**	**211**	Pn	**P**	**08 26 17.8**	**-0.2**
	81nm,0.3s,baz=239,slow=21,SNR=24						
JHJ				Sn	**S**	**08 26 46.0**	**-0.1**
	75nm,0.3s,baz=234,slow=22,SNR=6.0						
MAJO	**Matsushiro**	**2.81**	**300**	*ePn*	**P**	**08 26 24.2**	**0.0**
MAT	**Matsushiro**	**2.81**	**300**	P	**P**	**08 26 25.5**	**+1.3**
MAT				S	**S**	**08 26 58.8**	**+1.6**
MAT	**Matsushiro**	**2.81**	**300**	*eP*	**P**	**08 26 26.0**	**+1.8**
MAT				*eS*	**S**	**08 27 10.0**	**+13**
CBIJ	**Chichi jima**	**8.10**	**174**	Pn	**P**	**08 27 34.9**	**-3.4**
	16nm,0.3s,baz=289,slow=18,SNR=8.0						
CBIJ				Sn	**S**	**08 29 00.1**	**-9.4**
	5.5nm,0.3s,baz=267,slow=23,SNR=3.2						
ASAJ	**Asahikawa**	**8.99**	**6**	Pn	**P**	**08 27 44.1**	**-6.5**
	3.0nm,0.3s,baz=230,slow=14,SNR=11						
ASAJ				Sn	**S**	**08 29 25.5**	**-6.1**
	0.9nm,0.3s,baz=324,slow=31,SNR=3.4						
YSS	**Yuzh-Sakhalins**	**11.82**	**5**	*eP*	**P**	**08 28 22.8**	**-6.3**
MDJ	**Mudanjiang**	**12.98**	**320**	P	**P**	**08 28 42.9**	**-1.8**
MDJ				AMB	AMB		
	comp=Z,5.0nm,1.6s						
MDJ				AMB	AMB		
	comp=Z,53nm,6.2s						
SSE	**Sheshan**	**17.28**	**262**	*iP*	**P**	**08 29 39.1**	**-0.9**
SSE				S	**S**	**08 32 46.8**	**-2.1**
SSE				AMB	AMB		
	comp=Z,28nm,0.8s						
SSE				LR	LR		
	comp=N,186nm,15.0s						
SSE				LR	LR		
	comp=E,248nm,15.0s						
SSE				LR	LR		
	comp=Z,341nm,14.0s						
NJ2	**Nanjing**	**18.90**	**267**	*eP*	**P**	**08 30 00.1**	**+0.2**
NJ2				AP		08 30 10.5	
NJ2				XP		08 30 16.6	
NJ2				S	**S**	**08 33 25.0**	**-0.4**
NJ2				SS	SS	08 33 51.0	-0.6
NJ2				AMB	AMB		
	comp=Z,10.0nm,0.6s						
NJ2				LR	LR		
	comp=N,250nm,14.8s						
NJ2				LR	LR		
	comp=E,240nm,12.6s						
HHC	**Hu-ho-hao-te**	**23.99**	**293**	*eP*	**P**	**08 30 52.8**	**+1.1**
MA2	**Magadan**	**25.20**	**11**	P	**P**	**08 31 02.8**	**-0.4**
	comp=E,37nm,1.1s,mb4.8						
ENH	**Enshi**	**27.09**	**269**	P	**P**	**08 31 20.7**	**-0.4**
	comp=E,5.7nm,0.7s,mb4.2						
SONM	**Songino Array**	**28.74**	**307**	P	**P**	**08 31 35.4**	**-0.4**
	comp=E,1.0nm,0.6s,mb3.7,baz=112,slow=8.6,SNR=7.0						
LZH	**Lanzhou**	**30.29**	**283**	*eP*	**P**	**08 31 48.8**	**-0.8**
LZH				AP	pP	08 32 01.3	-0.4
LZH				AMB	AMB		
	comp=Z,27nm,1.3s,mb4.8						
LZH				LR	LR		
	comp=N,191nm,13.1s						
LZH				LR	LR		
	comp=Z,219nm,17.2s,MS3.9						
GYA	**Guiyang**	**30.82**	**263**	P	**P**	**08 31 56.9**	**+2.5**
GYA				S	**S**	**08 36 55.3**	**+1.9**
GYA				AMB	AMB		
	comp=Z,10.0nm,0.8s,mb4.7						
GYA				LR	LR		
	comp=N,200nm,7.8s						
GYA				LR	LR		
	comp=E,130nm,8.7s						
GYA				LR	LR		
	comp=Z,250nm,8.4s						
KMI	**Kunming**	**34.58**	**264**	*eP*	**P**	**08 32 22.8**	**-4.3**
KMI				S	**S**	**08 37 52.8**	**+0.7**
KMI				AMB	AMB		
	comp=Z,9.0nm,0.7s,mb4.8						
TIXI	**Tiksi**	**37.12**	**354**	*eP*	**P**	**08 32 47.2**	**-0.9**
	comp=Z,4.5nm,1.0s,mb4.2						
CMAR	**Chiang Mai Arr**	**40.92**	**257**	P	**P**	**08 33 19.8**	**-0.5**
	comp=Z,1.5nm,0.8s,mb3.7,baz=52,slow=7.7,SNR=6.1						
WMQ	**Urumqi**	**41.58**	**299**	*eP*	**P**	**08 33 26.3**	**+0.9**
WMQ				AP	pP	08 33 38.6	+0.8
WMQ				XP	sP	08 33 44.0	+0.7
WMQ				PP	PP	08 35 06.0	+1.2
WMQ				LR	LR		
	comp=N,121nm,17.2s,MS3.9						
WMQ				LR	LR		
	comp=E,98nm,17.3s,MS3.9						
WMQ				LR	LR		
	comp=Z,178nm,18.4s,MS4.0						
MKAR	**Makanchi Array**	**45.01**	**304**	P	**P**	**08 33 53.2**	**+0.1**
	comp=Z,2.7nm,0.5s,mb4.3,baz=90,slow=10,SNR=36						
MKAR	**Makanchi Array**	**45.01**	**304**	P	**P**	**08 33 53.2**	**+0.1**
KURK	**Kurchatov**	**46.98**	**309**	*eP*	**P**	**08 34 08.7**	**0.0**
RSO	**Redoubt South**	**48.46**	**37**	*eP*	**P**	**08 34 22.5**	**+2.4**
ILAR	**Eielson Array**	**51.14**	**32**	P	**P**	**08 34 40.0**	**-0.7**
	comp=Z,0.9nm,0.6s,mb3.9,baz=269,slow=6.1,SNR=15						
ILAR				PcP	PcP	08 35 54.5	-1.4
	comp=Z,0.3nm,0.5s,baz=273,slow=3.4,SNR=4.1						
BVAR	**Borovoye Array**	**51.73**	**313**	P	**P**	**08 34 44.9**	**-0.3**
	comp=Z,0.6nm,0.4s,mb3.9,baz=80,slow=9.0,SNR=6.9						
BRVK	**Borovoye**	**51.79**	**313**	P	**P**	**08 34 44.0**	**-1.6**
ZRNK	**Zerenda**	**52.57**	**313**	*eP*	**P**	**08 34 51.3**	**-0.2**
FITZ	**Fitzroy Crossi**	**55.01**	**198**	*eP*	**P**	**08 35 09.6**	**-0.3**
	comp=Z,5.9nm,0.7s,mb4.7						
FITZ	**Fitzroy Crossi**	**55.01**	**198**	P	**P**	**08 35 10.2**	**+0.2**
	comp=Z,6.8nm,0.7s,mb4.8,baz=21,slow=5.5,SNR=18						
WRAB	**Tennant Creek**	**55.19**	**188**	*eP*	**P**	**08 35 10.2**	**-1.0**
	comp=Z,32nm,0.8s,mb5.4						
WB2	**Warramunga Arr**	**55.20**	**188**	*iP*	**P**	**08 35 10.3**	**-1.0**
WRA	**Warramunga Arr**	**55.20**	**188**	P	**P**	**08 35 10.4**	**-0.9**
	comp=Z,9.1nm,0.5s,mb5.0,baz=1.3,slow=7.5,SNR=167						
INK	**Inuvik**	**56.11**	**27**	P	**P**	**08 35 16.6**	**-0.5**
	comp=Z,0.4nm,0.5s,mb3.7,baz=314,slow=6.1,SNR=7.9						
INK	**Inuvik**	**56.11**	**27**	*eP*	**P**	**08 35 16.4**	**-0.7**
	comp=Z,2.3nm,1.1s,mb4.1						
ARU	**Arti**	**57.66**	**319**	*eP*	**P**	**08 35 33.3**	**+4.9**
	comp=Z,127nm,0.7s						
AS12	**Alice Springs**	**58.93**	**188**	*eP*	**P**	**08 35 37.9**	**+0.3**
	comp=Z,9.1nm,0.6s,mb5.0						
ASAR	**Alice Springs**	**58.93**	**188**	P	**P**	**08 35 37.6**	**0.0**
	comp=Z,3.6nm,0.6s,mb4.6,baz=1.6,slow=6.7,SNR=26						
DLBC	**Dease Lake**	**60.18**	**37**	P	**P**	**08 35 46.1**	**+0.3**
	comp=Z,0.9nm,0.9s,mb3.8,baz=259,slow=5.2,SNR=3.1						
RES	**Resolute Bay**	**64.43**	**14**	*eP*	**P**	**08 36 13.3**	**-0.5**
	comp=Z,2.1nm,0.9s,mb4.2						
KAF	**Kangasniemi**	**69.89**	**333**	*ep*	**P**	**08 36 44.3**	**-4.0**
	comp=Z,0.6nm,0.4s,mb3.9						
FINES	**FINESS Array B**	**70.39**	**333**	P	**P**	**08 36 50.8**	**-0.5**
	comp=Z,4.1nm,1.1s,mb4.3,baz=37,slow=9.5,SNR=5.9						
NWAO	**Narrogin (SRO)**	**71.39**	**201**	P	**P**	**08 36 57.1**	**-0.7**
	comp=Z,14nm,1.0s,mb4.8						
HRY	**Holter Researc**	**75.41**	**43**	*eP*	**P**	**08 37 21.1**	**+0.1**
AKASG	**Malin Array Be**	**75.68**	**323**	P	**P**	**08 37 22.6**	**+0.1**
	comp=Z,2.0nm,0.6s,mb4.2,baz=45,slow=5.9,SNR=8.6						
HLID	**Hailey**	**75.75**	**47**	P	**P**	**08 37 23.2**	**+0.2**
	comp=Z,1.0nm,0.8s,mb3.8						
NB2	**NORSAR Subarra**	**75.84**	**337**	P	**P**	**08 37 23.3**	**+0.1**
	comp=Z,1.1nm,0.7s,mb3.9,baz=41,slow=5.6						
NOA	**NORSAR Array B**	**75.84**	**337**	P	**P**	**08 37 23.7**	**+0.5**
	comp=Z,1.5nm,0.7s,mb4.0,baz=39,slow=5.7,SNR=7.1						
NVAR	**Mina Array Bea**	**76.22**	**53**	P	**P**	**08 37 27.5**	**+1.6**
	comp=Z,1.0nm,0.6s,mb3.9,baz=297,slow=4.0,SNR=12						
PDAR	**Pinedale Array**	**79.07**	**45**	P	**P**	**08 37 42.9**	**+1.3**
	comp=Z,0.9nm,0.6s,mb3.9,baz=297,slow=2.3,SNR=10						
BRTR	**Keskin Array B**	**79.98**	**312**	P	**P**	**08 37 46.0**	**-0.5**
	comp=Z,0.7nm,0.8s,mb3.6,baz=108,slow=3.9,SNR=3.6						
SRU	**San Rafael**	**80.75**	**48**	*eP*	**P**	**08 37 51.7**	**+1.1**
GERES	**GERESS Array B**	**84.22**	**328**	P	**P**	**08 38 08.0**	**-0.1**
	comp=Z,0.5nm,0.4s,mb4.0,baz=27,slow=3.0,SNR=7.5						
ANMO	**Albuquerque**	**85.89**	**50**	*eP*	**P**	**08 38 19.4**	**+2.6**
	comp=Z,1.1nm,0.9s,mb4.1						
TXAR	**Lajitas Array**	**91.37**	**52**	P	**P**	**08 38 44.4**	**+1.4**
	comp=Z,0.7nm,0.9s,mb4.0,baz=304,slow=1.8,SNR=6.8						
TXAR	**Lajitas Array**	**91.37**	**52**	P	**P**	**08 38 44.4**	**+1.4**
LPAZ	**La Paz**	**147.72**	**62**	PKPbc	PKPdf	08 45 23.9	+6.1
	comp=Z,1.2nm,0.6s,baz=233,slow=4.1,SNR=8.0						

NIED 13 08:30:00, 35.30N×141.40E, h29km, Mw4.3 Best double couple: M○3×10^15 NP1:φs352°, δ65°, λ68°. NP2:φs215°, δ33°, λ128°.
IDC 13 08:30:25.8±0.6, 35.31N×141.13E, mb4.1/16, mb1 4.3/19, mb1mx4.2/26, ML4.1/3, Error ellipse: s-maj=19.9km s-min=12.9km az=106.0
JMA 13 08:30:28.3±0.5, 35.25N×141.43E, h46km±5km, M4.1
NEIC 13 08:30:32.3±1.5, 35.35N×141.23E, h45km±14km, mb4.5/6, Error ellipse: s-maj=14.3km s-min=10.6km az=103.0

ISC 13 08:30:29.1±0.4, 35.24N±0.04×141.36E±0.06, h33km, n45, σ1§20/50, mb4.2/21, 4D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.61**	**319**	*iP*	**P**	**08 30 40.8**	**-0.4**
CHOJ				S	**S**	**08 30 50.8**	**+0.8**
BSO1	**Boso 1**	**0.67**	**208**	P	**P**	**08 30 42.2**	**+0.2**
BSO1				S	**S**	**08 30 53.3**	**+2.0**
BSO3	**Boso 3**	**0.82**	**238**	*iP*	**P**	**08 30 44.2**	**0.0**
KTR	**Katsuura**	**0.86**	**264**	P	**P**	**08 30 43.9**	**-0.8**
BSO4	**Boso 4**	**0.87**	**253**	*iP*	**P**	**08 30 45.2**	**+0.3**
JCN	**Nagara**	**0.96**	**281**	P	**P**	**08 30 47.3**	**+1.1**
TATJ	**Tateyama 2**	**1.22**	**260**	*iP*	**P**	**08 30 50.6**	**+0.7**
JYT	**Yasato**	**1.36**	**316**	P	**P**	**08 30 52.4**	**+0.4**
JHJ	**Hachijo jima 2**	**2.49**	**212**	Pn	**Pn**	**08 31 07.6**	**-0.7**
	50nm,0.3s,baz=72,slow=23,SNR=27						
JHJ				Sn	**Sn**	**08 31 36.9**	**-1.0**
	100nm,0.3s,baz=78,slow=23,SNR=10						
MAJO	**Matsushiro**	**2.87**	**298**	*ePn*	**Pn**	**08 31 14.4**	**+0.8**
MAT	**Matsushiro**	**2.87**	**298**	P	**P**	**08 31 14.5**	**+1.0**
MAT				S	**S**	**08 31 47.9**	**+0.7**
MAT	**Matsushiro**	**2.87**	**298**	*eP*	**P**	**08 31 15.0**	**+1.5**
MAT				*eS*	**S**	**08 31 53.0**	**+5.8**
CBIJ	**Chichi jima**	**8.16**	**175**	Pn	**P**	**08 32 22.9**	**-5.0**
	8.5nm,0.3s,baz=268,slow=22,SNR=4.7						
CBIJ				Sn	**Sn**	**08 33 49.8**	**-10**
	5.6nm,0.3s,baz=289,slow=24,SNR=3.4						
ASAJ	**Asahikawa**	**8.91**	**6**	Pn	**P**	**08 32 33.4**	**-5.1**
	3.1nm,0.3s,baz=241,slow=5.6,SNR=9.7						
ASAJ				Sn	**Sn**	**08 34 15.0**	**-4.0**
	1.4nm,0.3s,baz=326,slow=27,SNR=2.9						
YSS	**Yuzh-Sakhalins**	**11.75**	**5**	P	**P**	**08 33 13.6**	**-3.7**
	14nm,0.7s						
GUMO	**Guam**	**21.79**	**171**	P	**P**	**08 35 22.2**	**+2.1**
	100nm,1.0s,mb5.2						
SONM	**Songino Array**	**28.78**	**307**	P	**P**	**08 36 24.3**	**-1.5**
	1.2nm,0.6s,mb3.8,baz=110,slow=9.0,SNR=6.5						
CMAR	**Chiang Mai Arr**	**41.03**	**257**	P	**P**	**08 38 08.9**	**-2.1**
	0.9nm,0.4s,mb3.8,baz=55,slow=7.4,SNR=4.9						
MKAR	**Makanchi Array**	**45.05**	**304**	P	**P**	**08 38 42.6**	**-0.8**
	3.1nm,0.7s,mb4.3,baz=81,slow=10,SNR=11						
KURK	**Kurchatov**	**47.02**	**309**	*eP*	**P**	**08 38 54.4**	**-4.4**
ILAR	**Eielson Array**	**51.03**	**32**	P	**P**	**08 39 29.6**	**0.0**
	0.7nm,0.6s,mb3.8,baz=268,slow=5.8,SNR=9.8						
BVAR	**Borovoye Array**	**51.75**	**313**	P	**P**	**08 39 33.8**	**-1.3**
	1.7nm,0.7s,mb4.1,baz=83,slow=14,SNR=3.4						
FITZ	**Fitzroy Crossi**	**55.11**	**198**	*eP*	**P**	**08 39 58.7**	**-1.8**
	4.8nm,0.7s,mb4.6						
FITZ	**Fitzroy Crossi**	**55.11**	**198**	P	**P**	**08 39 59.2**	**-1.3**
	5.0nm,0.6s,mb4.7,baz=17,slow=6.0,SNR=12						
CTAO	**Charters Tower**	**55.22**	**174**	*eP*	**P**	**08 40 09.9**	**+8.6**
	3.2nm,1.0s,mb4.3						
WRAB	**Tennant Creek**	**55.27**	**188**	*eP*	**P**	**08 39 58.1**	**-3.5**
	35nm,0.9s,mb5.4						
WRA	**Warramunga Arr**	**55.28**	**188**	P	**P**	**08 39 59.9**	**-1.8**
	11nm,0.7s,mb5.0,baz=4.3,slow=7.6,SNR=52						
INK	**Inuvik**	**56.00**	**27**	P	**P**	**08 40 05.7**	**-0.6**
	0.8nm,0.8s,mb3.8,baz=323,slow=2.8,SNR=9.0						
AS12	**Alice Springs**	**59.01**	**188**	*eP*	**P**	**08 40 29.6**	**+1.5**
	7.4nm,

JASL	**Jaisalmer**	**9.38**	**181**	*e*P		**P**	**08 34 06.2**	**-4.2**
SONA	**Sohna**	**9.50**	**146**	*e*P		**P**	**08 34 11.8**	**-0.2**
SONA				*e*S		**S**	**08 35 49.4**	**-8.0**
SONA				*e*			08 35 52.9	
	comp=N,66nm,1.0s							
SONA				*e*			08 35 52.9	
	comp=E,83nm,0.6s							
AJM	**Ajmer**	**10.27**	**162**	*i* S		**S**	**08 36 08.0**	**-7.7**
AGRA	**Agra**	**10.76**	**146**	*e*S		**S**	**08 36 19.2**	**-8.2**
AGRA				*e*			08 36 25.8	
	comp=N,212nm,0.9s							
AGRA				*e*			08 36 26.0	
	comp=E,192nm,0.5s							
DANN	**Dangsing**	**13.31**	**123**	*e*P		**P**	**08 35 00.6**	**-1.6**
DANN	**Dangsing**	**13.31**	**123**	*e*P		**P**	**08 35 01.0**	**-1.2**
MK31	**Makanchi Array**	**13.37**	**35**	P		**P**	**08 35 02.4**	**-0.5**
	comp=E,5.8nm,0.8s,baz=188,slow=12,SNR=6.7							
MKAR	**Makanchi Array**	**13.37**	**35**	P		**P**	**08 35 02.2**	**-0.7**
	comp=E,0.2nm,0.3s,baz=214,slow=13,SNR=8.1							
KOLN	**Koldanda**	**13.58**	**125**	*e*P		**P**	**08 35 03.5**	**-2.2**
	comp=E,34nm,0.7s							
KOLN	**Koldanda**	**13.58**	**125**	*e*P		**P**	**08 35 04.0**	**-1.7**
	comp=E,34nm,0.7s							
GKN	**Gorkha**	**14.13**	**122**	*e*P		**P**	**08 35 11.6**	**-1.1**
	comp=E,73nm,0.5s							
GKN				*e*S		**S**	**08 37 37.7**	**-8.9**
BHPL	**Bhopal**	**14.14**	**156**	*e*P		**P**	**08 35 13.2**	**+0.3**
BHPL				*e*			08 37 38.3	
DMN	**Daman**	**14.70**	**122**	*e*P		**P**	**08 35 18.7**	**-1.3**
	comp=E,45nm,0.6s							
DMN				*e*S		**S**	**08 37 52.0**	**-7.9**
DMN	**Daman**	**14.70**	**122**	*e*P		**P**	**08 35 18.5**	**-1.5**
	comp=E,22nm,0.6s							
DMN				*e*S		**S**	**08 37 52.0**	**-7.9**
KKN	**Kakani**	**14.70**	**121**	*e*P		**P**	**08 35 18.1**	**-2.0**
	comp=E,37nm,0.5s							
KKN	**Kakani**	**14.70**	**121**	*e*P		**P**	**08 35 18.2**	**-1.9**
	comp=E,37nm,0.5s							
PKI	**Pulchoki**	**14.93**	**122**	*e*P		**P**	**08 35 21.2**	**-1.7**
	comp=E,40nm,0.6s							
PKI	**Pulchoki**	**14.93**	**122**	*e*P		**P**	**08 35 21.1**	**-1.8**
	comp=E,40nm,0.6s							
PKI	**Pulchoki**	**14.93**	**122**	*e*P		**P**	**08 35 21.1**	**-1.8**
	comp=E,20nm,0.6s							
GUN	**Gumba**	**15.04**	**120**	*e*P		**P**	**08 35 22.7**	**-1.7**
	comp=E,34nm,0.5s							
GUN	**Gumba**	**15.04**	**120**	*e*P		**P**	**08 35 22.5**	**-1.9**
	comp=E,34nm,0.5s							
GUN	**Gumba**	**15.04**	**120**	*e*P		**P**	**08 35 22.5**	**-1.9**
	comp=E,17nm,0.5s							
AB31	**Akbulak array**	**15.28**	**331**	⇑P		**P**	**08 35 25.6**	**-1.6**
	comp=E,3.6nm,0.5s,baz=140,slow=11,SNR=82							
AB31				⇑S		**S**	**08 37 59.6**	**-14**
	comp=E,20nm,0.7s,baz=148,slow=24,SNR=19							
AB31	**Akbulak array**	**15.28**	**331**	*i* P		**P**	**08 35 26.4**	**-0.8**
AB31				pmax		pmax		
	comp=Z,1.0nm,0.3s							
KURK	**Kurchatov**	**15.36**	**18**	*e*P		**P**	**08 35 29.8**	**+1.6**
VOSK	**Vostochnaya**	**16.39**	**360**	⇓P		**P**	**08 35 39.4**	**-1.7**
	comp=Z,3.4nm,0.7s							
ZRNK	**Zerenda**	**16.69**	**356**	⇑P		**P**	**08 35 43.3**	**-1.4**
	comp=Z,3.5nm,0.7s							
ZRNK	**Zerenda**	**16.69**	**356**	*e*P		**P**	**08 35 43.2**	**-1.5**
BVA0	**Borovoye Array**	**16.70**	**358**	⇑P		**P**	**08 35 43.6**	**-1.3**
	comp=Z,0.8nm,0.6s							
BVA0	**Borovoye Array**	**16.70**	**358**	P		**P**	**08 35 45.2**	**+0.3**
BVAR	**Borovoye Array**	**16.70**	**358**	P		**P**	**08 35 44.5**	**-0.4**
	comp=Z,1.0nm,0.3s,baz=173,slow=11,SNR=22							
BRVK	**Borovoye**	**16.74**	**358**	*e*P		**P**	**08 35 45.3**	**0.0**
POO	**Poona**	**17.89**	**172**	*e*		**P**	**08 35 51.5**	**-8.1**
LSA	**Lhasa**	**18.04**	**106**	P		**P**	**08 36 03.3**	**+2.2**
LSA	**Lhasa**	**18.04**	**106**	*e*P		**P**	**08 36 03.0**	**+1.9**
	comp=Z,35nm,1.2s							
HYB	**Hyderabad**	**19.95**	**159**	*i* P		**P**	**08 36 26.0**	**+4.3**
HYB				*e*S		**S**	**08 39 55.5**	**+1.4**
HYB	**Hyderabad**	**19.95**	**159**	*e*P		**P**	**08 36 26.0**	**+4.3**
SHL	**Shillong**	**20.75**	**115**	*e*P		**P**	**08 36 31.5**	**+1.8**
SHL				*e*			08 40 11.0	
GNI	**Garni**	**21.04**	**288**	P		**P**	**08 36 31.3**	**-1.2**
	comp=Z,4.4nm,0.4s,mb4.2,baz=94,slow=10,SNR=2.4							
GNI	**Garni**	**21.04**	**288**	P		**P**	**08 36 31.3**	**-1.2**
GNI				pmax		pmax		
	comp=Z,4.0nm,0.4s							
GNI	**Garni**	**21.04**	**288**	P		**P**	**08 36 31.3**	**-1.2**
ARU	**Arti**	**21.83**	**341**	*e*P		**P**	**08 36 46.5**	**+6.4**
	comp=Z,37nm,0.4s,mb5.1							
GTA	**Gaotai**	**22.82**	**74**	*e*P		**P**	**08 36 55.3**	**+5.4**
GTA				AMB		AMB		
	comp=Z,4.0nm,1.0s,mb3.7							
KIV	**Kislovodsk**	**22.96**	**298**	*e*P		**P**	**08 36 51.4**	**+0.2**
SONM	**Songino Array**	**28.35**	**55**	P		**P**	**08 37 42.7**	**+1.2**
	comp=Z,0.9nm,0.8s,mb3.4,baz=276,slow=11,SNR=3.8							
CMAR	**Chiang Mai Arr**	**30.29**	**119**	P		**P**	**08 37 58.0**	**-0.9**
	comp=Z,0.8nm,0.4s,mb3.7,baz=297,slow=10,SNR=4.6							
CMAR	**Chiang Mai Arr**	**30.29**	**119**	P		**P**	**08 37 58.0**	**-0.9**
CMAR				pmax		pmax		
	comp=Z,1.0nm,0.4s							
AKASG	**Malin Array Be**	**33.13**	**309**	P		**P**	**08 38 23.9**	**+0.6**
	comp=Z,0.9nm,0.4s,mb3.9,baz=80,slow=7.4,SNR=6.6							
FINES	**FINESS Array B**	**37.68**	**326**	P		**P**	**08 39 03.1**	**+1.3**
	comp=Z,2.4nm,0.9s,mb4.0,baz=114,slow=8.9,SNR=3.1							
FINES	**FINESS Array B**	**37.68**	**326**	P		**P**	**08 39 03.1**	**+1.4**
FINES				pmax		pmax		
	comp=Z,2.0nm,0.9s							
ARCES	**ARCESS Array B**	**41.34**	**338**	P		**P**	**08 39 33.3**	**+1.4**
	comp=Z,0.8nm,0.6s,mb3.8,baz=109,slow=7.9,SNR=5.4							
ARCES	**ARCESS Array B**	**41.34**	**338**	P		**P**	**08 39 33.3**	**+1.4**
ARCES				pmax		pmax		
	comp=Z,1.0nm,0.6s							
NB2	**NORSAR Subarra**	**44.58**	**323**	P		**P**	**08 39 58.2**	**+0.1**
	comp=Z,2.1nm,0.6s,mb4.0,baz=95,slow=7.4							
NOA	**NORSAR Array B**	**44.58**	**323**	P		**P**	**08 39 58.6**	**+0.6**
	comp=Z,1.8nm,0.5s,mb4.0,baz=98,slow=7.8,SNR=11							
NOA	**NORSAR Array B**	**44.58**	**323**	P		**P**	**08 39 58.7**	**+0.6**
NOA				pmax		pmax		
	comp=Z,2.0nm,0.5s							
TIXI	**Tiksi**	**45.90**	**22**	P		**P**	**08 40 09.9**	**+1.5**
TIXI				pmax		pmax		
	comp=Z,8.0nm,1.0s,mb4.4							
BILL	**Bilibino**	**58.72**	**26**	P		**P**	**08 41 38.2**	**-5.5**
	comp=Z,2.0nm,0.6s,mb4.3							
INK	**Inuvik**	**74.06**	**9**	P		**P**	**08 43 21.4**	**+0.8**
	comp=Z,2.3nm,1.1s,mb3.8,baz=342,slow=6.2,SNR=8.5							
INK	**Inuvik**	**74.06**	**9**	P		**P**	**08 43 21.4**	**+0.8**
INK				pmax		pmax		
	comp=Z,2.0nm,1.2s							
INK	**Inuvik**	**74.06**	**9**	*e*P		**P**	**08 43 21.9**	**+1.4**
	comp=Z,1.6nm,0.8s,mb3.8							
COLA	**College**	**74.61**	**16**	P		**P**	**08 43 30.4**	**+6.6**
	comp=Z,1.8nm,0.7s,mb3.9							
YKA	**Yellowknife Ar**	**81.41**	**3**	P		**P**	**08 44 02.3**	**+1.2**
	comp=Z,0.7nm,0.8s,mb3.5,baz=350,slow=5.1,SNR=13							
YKA	**Yellowknife Ar**	**81.41**	**3**	P		**P**	**08 44 02.3**	**+1.2**
YKA				pmax		pmax		
	comp=Z,1.0nm,0.8s							
WRA	**Warramunga Arr**	**81.81**	**122**	P		**P**	**08 44 03.9**	**-0.1**
	comp=Z,0.6nm,0.6s,mb3.6,baz=324,slow=4.9,SNR=9.0							
WRA	**Warramunga Arr**	**81.81**	**122**	P		**P**	**08 44 03.9**	**-0.2**
WRA				pmax		pmax		
	comp=Z,1.0nm,0.6s							
WRAB	**Tennant Creek**	**81.82**	**122**	P		**P**	**08 44 02.3**	**-1.7**
	comp=Z,4.5nm,0.8s,mb4.3							
ASAR	**Alice Springs**	**84.07**	**125**	P		**P**	**08 44 14.2**	**-1.3**
	comp=Z,0.9nm,0.6s,mb3.8,baz=306,slow=4.7,SNR=9.0							
CTA	**Charters Tower**	**90.38**	**115**	P		**P**	**08 44 45.9**	**0.0**
	comp=Z,0.7nm,0.5s,mb4.0,baz=287,slow=6.9,SNR=3.7							
CTA	**Charters Tower**	**90.38**	**115**	P		**P**	**08 44 45.9**	**0.0**
CTA				pmax		pmax		
	comp=Z,1.0nm,0.5s							
CTAO	**Charters Tower**	**90.38**	**115**	P		**P**	**08 44 46.1**	**+0.2**
	comp=Z,0.9nm,0.6s,mb4.1							

IDC ***13*** *08:34:05.8±31.0, 5.53N×125.61E, mb3.9/4, mb1 4.1/4, mb1mx3.7/18, MS3.8/1, Ms1 3.7/1, ms1mx2.7/25, Error ellipse: s-maj=525.0km s-min=113.6km az=151.0*

MAN ***13*** *08:34:11.8, 6.09N×125.35E, h101km, mb4.4, ML3.3, MS3.0*

ISC 13 08:34:10.9±0.6, 6.04N±0.07×125.36E±0.09, h104km±9km**, n10, σ0°57/13, mb3.7/4, 3C-1D, Mindanao**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GSPH	**General Santos**	**0.41**	**277**	*e*P	**P**	**08 34 26.8**	**+0.2**
GSPH				*i* S	**S**	**08 34 38.3**	**-0.2**
KCP	**Kidapawan**	**1.00**	**345**	⇑*i*P	**P**	**08 34 32.0**	**+0.1**
BIPH	**Bislig**	**2.35**	**25**	⇓*e*P	**P**	**08 34 49.3**	**+0.4**
BIPH				*e*S	**S**	**08 35 16.8**	**-0.6**
PAGZ	**Pagadian**	**2.66**	**313**	⇑*e*P	**P**	**08 34 53.1**	**0.0**
PAGZ				*e*S	**S**	**08 35 24.5**	**-0.3**
BUTP	**Butuan**	**2.93**	**5**	⇑*e*P	**P**	**08 34 57.4**	**+0.7**
FITZ	**Fitzroy Crossi**	**23.98**	**179**	P	**P**	**08 39 17.9**	**+1.0**
	1.4nm,0.3s,mb3.7,baz=3.7,slow=11,SNR=13						
WRA	**Warramunga Arr**	**27.28**	**161**	P	**P**	**08 39 47.0**	**-0.8**
	0.8nm,0.6s,mb3.4,baz=340,slow=9.9,SNR=13						
WB2	**Warramunga Arr**	**27.29**	**161**	*e*P	**P**	**08 39 47.2**	**-0.6**
WB2				*e*		08 39 59.9	
ASAR	**Alice Springs**	**30.68**	**165**	P	**P**	**08 40 17.4**	**-0.7**
	0.6nm,0.4s,mb3.7,baz=341,slow=6.8,SNR=13						
STKA	**Stephens Creek**	**40.76**	**159**	P	**P**	**08 41 44.0**	**+0.7**
	2.2nm,0.9s,mb4.0,baz=343,slow=8.3,SNR=3.5						
STKA				LR	LR	08 59 04.3	
	comp=Z,118nm,20.3s,baz=24,slow=37						

IDC ***13*** *09:04:36.2±1.8, 7.40S×128.22E, mb3.7/2, mb1 4.1/4, mb1mx3.9/11, ML3.9/2, Error ellipse: s-maj=258.0km s-min=25.2km az=63.0*

NEIC ***13*** *09:04:37.6±1.3, 6.91S×129.48E, h15km, Error ellipse: s-maj=34.9km s-min=15.0km az=68.0*

ISC 13 09:04:53.2±2.9, 7.8S±0.1×129.1E±0.1, h205km±35km**, n8, σ0°64/14, mb3.3/2, Banda Sea**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**10.78**	**198**	*e*P	**P**	**09 07 24.6**	**+1.3**
	2.1nm,0.4s						
FITZ				*e*S	**S**	**09 09 20.2**	**-0.7**
WRAB	**Tennant Creek**	**13.07**	**158**	*e*P	**P**	**09 07 51.7**	**-0.6**
	12nm,0.8s						
WRAB				*e*S	**S**	**09 10 13.9**	**+0.3**
WRA	**Warramunga Arr**	**13.07**	**158**	Pn	**P**	**09 07 51.8**	**-0.5**
	0.7nm,0.3s,baz=330,slow=14,SNR=40						
WRA				Sn	**S**	**09 10 14.4**	**+0.7**
	1.7nm,0.3s,baz=334,slow=22,SNR=18						
WB2	**Warramunga Arr**	**13.08**	**158**	*e*P	**P**	**09 07 52.2**	**-0.2**
WB2				*e*S	**S**	**09 10 13.6**	**-0.2**
AS12	**Alice Springs**	**16.42**	**164**	*e*P	**P**	**09 08 38.4**	**+4.7**
	3.3nm,0.5s						
AS12				*e*S	**S**	**09 11 37.6**	**+8.8**
ASAR	**Alice Springs**	**16.42**	**164**	Pn	**P**	**09 08 38.1**	**+4.4**
	0.6nm,0.3s,baz=343,slow=10,SNR=49						
ASAR				Sn	**S**	**09 11 38.0**	**+9.1**
	0.4nm,0.3s,baz=354,slow=24,SNR=8.2						
STKA	**Stephens Creek**	**26.61**	**156**	P	**P**	**09 10 23.1**	**+8.5**
	1.9nm,0.9s,mb3.7,baz=333,slow=9.2,SNR=6.2						
MKAR	**Makanchi Array**	**68.43**	**327**	P	**P**	**09 15 34.9**	**0.0**
	0.1nm,0.4s,mb2.8,baz=112,slow=7.8,SNR=3.4						

PGC 13 09:14:20.4, 59.20N×136.67W, h1km**, ML3.2/3, Near Glacier Bay, Alaska., Southeastern Alaska**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WHY	**Whitehorse**	**1.72**	**31**	Pn	Pn	09 14 50.9	-0.8
WHY				Pg	Pg	09 14 51.8	-3.0
WHY				Sg	Sg	09 15 14.5	-3.2
WHY				Trac		09 15 15.4	
	comp=Z,265nm,0.2s						
DLBC	**Dease Lake**	**3.54**	**100**	Pn	Pn	09 15 15.0	-2.6
DLBC				Pg	Pg	09 15 24.1	-6.9
DLBC				Sg	Sg	09 16 10.1	-8.0
DLBC				Trac		09 16 13.6	
	comp=Z,23nm,0.2s						
DAWY	**Dawson**	**5.05**	**346**	Pn	Pn	09 15 36.8	-2.4
DAWY				Sg	Sg	09 16 56.9	-12
DAWY				Trac		09 17 02.4	
	comp=Z,4.0nm,0.2s						
FNBB	**Fort Nelson**	**7.05**	**87**	Pn	Pn	09 16 03.8	-3.6
FNBB				Sg	Sg	09 17 59.6	-16
FNBB				Trac		09 18 11.9	
	comp=Z,2.0nm,0.5s						
INK	**Inuvik**	**9.25**	**7**	Trac		09 19 27.1	
	comp=Z,2.0nm,1.1s						
YKW3	**Yellowknife Ar**	**11.24**	**63**	Pn	P	09 16 59.6	-5.4
YKW3				Trac		09 20 17.8	

IDC ***13*** *09:22:14.7±1.1, 50.58N×177.03E, mb3.6/10, mb1 3.8/11, mb1mx3.7/27, ML3.2/1, MS3.3/2, Ms1 3.3/2, ms1mx2.6/41, Error ellipse: s-maj=27.0km s-min=12.5km az=26.0*

NEIC ***13*** *09:22:19.2±0.8, 50.69N×177.03E, h30km, mb3.8/3, Error ellipse: s-maj=21.2km s-min=9.8km az=6.0*

ISC 13 09:22:17.9±0.9, 50.8N±0.1×177.1E±0.1, h30km**, n23, σ1°00/22, mb3.7/13, MS3.2/2, Rat Islands**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FX1	**Attu Island--F**	**3.19**	**312**	Pn	**Pn**	**09 23 06.8**	**-0.5**
	9.2nm,0.3s,baz=42,slow=16,SNR=64						
FX1				Sn	**Sn**	**09 23 44.1**	**-0.7**
	45nm,0.3s,baz=236,slow=22,SNR=39						
FX1	**Attu Island--F**	**3.19**	**312**	*e*P	**Pn**	**09 23 06.7**	**-0.6**
NIKO	**Nikolski**	**8.96**	**71**	P	**P**	**09 24 26.2**	**-2.2**
UNV	**Unalaska Valle**	**10.49**	**67**	P	**P**	**09 24 48.4**	**-1.0**
ILAR	**Eielson Array**	**23.32**	**40**	LR	LR	09 35 58.1	
	comp=Z,42nm,19.9s,MS2.9,baz=232,slow=35						
INK	**Inuvik**	**29.41**	**35**	P	**P**	**09 28 20.4**	**0.0**
	0.5nm,0.7s,mb3.3,baz=238,slow=8.9,SNR=4.8						
INK	**Inuvik**	**29.41**	**35**	P	**P**	**09 28 20.4**	**0.0**
YKA	**Yellowknife Ar**	**37.49**	**45**	P	**P**	**09 29 30.2**	**0.0**
	0.3nm,0.6s,mb3.3,baz=285,slow=7.5,SNR=10						
YKA				PcP	PcP	09 31 48.2	-0.4
	0.1nm,0.5s,baz=289,slow=3.2,SNR=6.0						
YKA	**Yellowknife Ar**	**37.49**	**45**	P	**P**	**09 29 30.2**	**0.0**
YKA				PcP	PcP	09 31 48.2	-0.4
NEW	**Newport**	**41.51**	**67**	P	**P**	**09 30 04.9**	**+1.3**
	0.5nm,0.4s,mb3.5,baz=304,slow=8.0,SNR=4.7						
HLID	**Hailey**	**45.59**	**71**	P	**P**	**09 30 37.6**	**+0.9**
BOZ	**Bozeman (W)**	**46.08**	**67**	*e*P	**P**	**09 30 41.0**	**+0.5**
	1.5nm,0.5s,mb4.2						
BW06	**Boulder Array**	**48.95**	**69**	*e*P	**P**	**09 31 03.7**	**+0.6**
	0.4nm,0.4s,mb3.8						
PDAR	**Pinedale Array**	**48.95**	**69**	P	**P**	**09 31 03.6**	**+0.6**
	0.6nm,0.7s,mb3.7,baz=314,slow=3.1,SNR=6.1						
SPITS	**Spitsbergen Ar**	**50.73**	**355**	P	**P**	**09 31 16.8**	**+0.5**
	10nm,1.2s,mb4.6,baz=11,slow=6.6,SNR=11						
PV10	**Paradox Valley**	**51.95**	**74**	*e*P	**P**	**09 31 24.2**	**-1.8**
FRB	**Frobisher Bay**	**54.84**	**30**	LR	LR	09 55 57.6	
	comp=Z,40nm,18.6s,MS3.5,baz=129,slow=37						
MKAR	**Makanchi Array**	**58.32**	**306**	P	**P**	**09 32 12.7**	**+0.7**
	0.1nm,0.4s,mb3.2,baz=63,slow=6.4,SNR=2.4						
MNTX	**Cornudas Mount**	**58.61**	**77**	P	**P**	**09 32 14.7**	**+0.5**
	0.4nm,0.7s,mb3.6						
BVAR	**Borovoye Array**	**59.60**	**318**	P	**P**	**09 32 21.4**	**+0.6**
	1.2nm,0.5s,mb4.2,baz=45,slow=6.3,SNR=7.0						
TXAR	**Lajitas Array**	**61.31**	**78**	P	**P**	**09 32 32.9**	**0.0**
	0.2nm,0.5s,mb3.5,baz=309,slow=5.8,SNR=4.8						
AKASG	**Malin Array Be**	**75.23**	**340**	P	**P**	**09 34 00.1**	**+1.2**
	0.4nm,0.4s,mb3.7,baz=18,slow=3.0,SNR=4.3						
WRA	**Warramunga Arr**	**79.85**	**220**	P	**P**	**09 34 22.7**	**-2.4**
	0.1nm,0.6s,mb2.9,baz=34,slow=6.0,SNR=4.7						

IDC ***13*** *09:45:55.2±1.1, 58.64S×28.61W, mb4.5/6, mb1 4.5/6, mb1mx4.3/13, Error ellipse: s-maj=67.1km s-min=23.0km az=62.0*

NEIC ***13*** *09:46:02.0±0.5, 58.87S×30.15W, h35km, mb4.3/5, Error ellipse: s-maj=28.3km s-min=10.7km az=51.0*

BJI ***13*** *09:46:02.0, 58.90S×30.20W, h35km*

SYO ***13*** *09:46:02.0, 58.87S×30.15W, h35km, MB4.3*

ISC 13 09:45:58.5±9.3, 58.9S±0.2×30.2W±0.4, h15km±59km**, n33, σ1°12/17, mb4.3/8, 5C-2D, South Sandwich Islands region**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SNAA	**Sanae**	**16.91**	**150**	*e*P	**P**	**09 49 56.2**	**+0.5**
EFI	**East Falkland**	**17.35**	**282**	*e*P	**P**	**09 50 00.4**	**-1.0**
	457nm,1.7s						
MAIT	**Maitri**	**20.86**	**142**	*e*P	**P**	**09 50 39.6**	**-2.2**
TRQA	**Tornquist**	**29.20**	**302**	*e*P	**P**	**09 52 00.8**	**-0.4**
	0.1nm,0.5s						
SYO	**Syowa Base**	**30.45**	**138**	⇓X	**P**	**09 52 13.0**	**+0.9**
SYO	**Syowa Base**	**30.45**	**138**	⇑sP	sP	09 52 24.7	+6.3
SYO	**Syowa Base**	**30.45**	**138**	⇑PP	PP	09 53 13.9	+2.0
SYO	**Syowa Base**	**30.45**	**138**	⇓*e*P	**P**	**09 52 13.0**	**+0.9**
SYO				⇑*e*sP	sP	09 52 24.7	+6.3
SYO				⇑*e*PP	PP	09 53 13.9	+2.0
QSPA	**South Pole Qui**	**31.33**	**180**	*e*P	**P**	**09 52 19.8**	**+0.1**
	4.6nm,1.0s,mb4.3						
VNDA	**Vanda**	**43.62**	**184**	P	**P**	**09 54 03.4**	**+0.4**
	2.1nm,0.8s,mb3.9,baz=188,slow=6.7,SNR=12						
VNDA	**Vanda**	**43.62**	**184**	*e*P	**P**	**09 54 03.1**	**+0.1**
	1.4nm,0.8s,mb3.7						
LVC	**Limon Verde**	**45.50**	**306**	P	**P**	**09 54 21.7**	**+2.8**
	3.8nm,0.8s,mb4.4,baz=124,slow=11,SNR=5.0						
LVC	**Limon Verde**	**45.50**	**306**	*e*P	**P**	**09 54 21.8**	**+3.0**
	5.5nm,0.9s,mb4.5						
LPAZ	**La Paz**	**50.86**	**310**	P	**P**	**09 55 00.5**	**0.0**
	7.6nm,1.2s,mb4.5,baz=147,slow=7.3,SNR=15						
LPAZ	**La Paz**	**50.86**	**310**	*e*P	**P**	**09 55 01.0**	**+0.5**
	2.8nm,0.9s,mb4.2						
OTAV	**Otavalo**	**70.01**	**307**	*e*P	**P**	**09 57 11.8**	**+0.4**
	2.6nm,0.8s,mb4.2						
PCRV	**Puerto La Cruz**	**74.26**	**325**	P	**P**	**09 57 35.9**	**-0.8**
	23nm,1.1s,mb5.0,baz=186,slow=7.6,SNR=4.4						
SDV	**Santo Domingo**	**74.99**	**318**	P	**P**	**09 57 40.1**	**-0.8**
	6.4nm,0.9s,mb4.5,baz=159,slow=5.9,SNR=6.1						
ASAR	**Alice Springs**	**96.68**	**165**	P	**P**	**09 59 25.9**	**-3.1**
	0.5nm,0.8s,mb4.0,baz=181,slow=3.3,SNR=5.4						
CMAR	**Chiang Mai Arr**	**125.44**	**115**	PKP	PKPdf	10 04 57.7	-4.8
	0.8nm,0.4s,baz=225,slow=2.0,SNR=4.5						
YKA	**Yellowknife Ar**	**137.20**	**317**	PKP	PKPdf	10 05 19.3	-4.1
	1.0nm,0.6s,baz=130,slow=2.3,SNR=51						
MKAR	**Makanchi Array**	**139.23**	**76**	PKP	PKPdf	10 05 18.8	-8.8
	0.5nm,1.0s,baz=135,slow=4.1,SNR=2.9						
WMQ	**Urumqi**	**139.94**	**84**	*e*PKP	PKPdf	10 05 26.9	-2.1
LZH	**Lanzhou**	**142.50**	**107**	*e*PKP	PKPdf	10 05 31.8	-1.8
LZH				APKP		10 05 42.8	
LZH				XPKP		10 05 46.5	
SSE	**Sheshan**	**146.10**	**133**	⇑PKP	PKPdf	10 05 38.8	-1.2
INK	**Inuvik**	**146.94**	**318**	PKPbc	PKPbc	10 05 38.4	+0.2
	4.1nm,0.8s,baz=94,slow=3.2,SNR=22						
INK	**Inuvik**	**146.94**	**318**	*e*PKPbc	PKPbc	10 05 38.4	+0.2
DAWY	**Dawson**	**147.44**	**310**	*e*PKPbc	PKPdf	10 05 39.7	-1.5
EYAK	**Cordova Ski Ar**	**148.63**	**301**	*e*PKPbc	PKPdf	10 05 44.1	+1.0
SML	**Sawmill**	**150.29**	**302**	*e*PKPbc	PKPdf	10 05 47.6	+1.9
ILAR	**Eielson Array**	**150.72**	**308**	PKPbc	PKPdf	10 05 48.5	+2.1
	8.4nm,0.7s,baz=150,slow=1.7,SNR=100						
MCK	**McKinley**	**151.24**	**306**	*e*PKPbc	PKPdf	10 05 50.2	+3.0
RSO	**Redoubt South**	**151.75**	**298**	*e*PKPbc	PKPdf	10 05 50.5	+2.6
RSO				*e*		10 06 01.0	

BJI ***13*** *09:58:41.6, 3.27S×151.05E, h10km, mB6.1, mb5.6, Ms6.3, Msz6.2*

NEIC ***13*** *09:58:43.5±0.1, 3.58S×150.73E, h10km, mb5.8/86, ME6.9, MS6.3/107, MW6.2, Error ellipse: s-maj=4.9km s-min=3.9km az=117.0 Broadband fault plane solution: P waves. NP1:φs100°, δ80°, λ-2°. NP2:φs190°, δ88°, λ-170°. Principal axes: T Plg6°, Azm324°; N Plg0°, Azm0°; P Plg8°, Azm55°; Moment Tensor Solution. s24 Moment tensor: Scale 10^18 Nm; Mrr=0.29; Mθθ=0.73; Mφφ=-1.02; Mrθ=0.32; Mrφ=2.13; Mθφ=0.46; Best double couple: Mo=2.4×10^18 NP1: φs102°, δ77°, λ7°. NP2:φs10°, δ83°, λ166°. Principal axes: T 2.29, Plg15°, Azm325°; N .17, Plg75°, Azm163°; P -2.46, Plg4°, Azm57°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism.*

SYO ***13*** *09:58:43.4, 3.58S×150.73E, h10km, MB5.8, MS6.3*

HRVD ***13*** *09:58:43.5±0.1, 3.52S×150.75E, h15km, MW6.3/81, Centroid moment Tensor Solution. LP body waves: s81,c198; Mantle waves: s80,c160; Half duration: 3s5 Moment tensor: Scale 10^18Nm; Mrr-0.05±.02; Mθθ 1.89±.02; Mφφ-1.84±.02; Mrθ-1.31±.14; Mφφ2.93±.02; Mθr0.55±.14; Best double couple: Mo3.75×10^18 NP1: φs197°, δ68°, λ-178°. NP2:φs106°, δ88°, λ-22°. Principal axes: T 3.72, Plg14°, Azm153°; N .07, Plg68°, Azm280°; P -3.79, Plg

CBIJ LR LR 10 16 29.9
comp=Z,35µm,21.7s,MS6.0,baz=149,slow=34
TOO Toolangi 34.13 187 *e*P **P 10 05 28.2 -0.9**
comp=Z,32nm,1.0s,mb5.2
TOO *e*S **S 10 10 49.7 -4.8**
TGY Tagaytay City 34.37 301 P **P 10 05 32.4 +1.0**
comp=Z,205nm,0.3s,mb6.5,baz=35,slow=11,SNR=3.4
TGY LR LR 10 17 33.8
comp=Z,15µm,21.2s,MS5.7,baz=117,slow=33
FORT Forrest 34.45 216 *e*P **P 10 05 31.1 -0.8**
comp=Z,789nm,0.9s,mb6.6
FORT *e*S **S 10 10 50.2 -9.3**
BALP Baler 34.65 304⇑ *e*P **P 10 05 31.1 -2.7**
KEDI Kedomdong 34.72 260⇑ *e*P **P 10 05 32.6 -1.9**
comp=Z,436nm,1.6s,mb5.8
LUBP Lubang 34.79 300⇑ *e*P **P 10 05 34.5 -0.5**
CAUP Cauayan 35.09 306⇑ *e*P **P 10 05 40.9 +3.3**
RATI Rata 35.32 260 *e*P **P 10 05 39.6 +0.1**
comp=Z,511nm,1.3s,mb6.0
CVP Callao Caves 35.51 308 *e*P **P 10 05 40.5 -0.6**
INGI Ingas 35.71 260⇑ *i*P **P 10 05 43.5 +0.6**
KKM Kota Kinabalu 35.75 285 *e*P **P 10 05 43.0 -0.2**
BCPH Baguio City Da 35.80 305⇓ *i*P **P 10 05 42.9 -0.7**
APYP Conner 36.05 307⇑ *e*P **P 10 05 42.5 -3.2**
KELI Kelakatan 36.30 261⇑ *i*P **P 10 05 46.2 -1.6**
comp=Z,441nm,1.4s,mb5.9
JOW Kunigami 37.23 326 P **P 10 05 55.5 0.0**
comp=Z,31nm,0.8s,mb5.2,baz=163,slow=5.6,SNR=4.7
JOW LR LR 10 18 20.9
comp=Z,41µm,19.6s,MS6.2,baz=111,slow=31
OUZ Omahuta 37.93 149 P **P 10 06 02.2 +0.9**
TAU Tasmania Unive 39.24 184 PFAKE 10 06 20.0 +7.8
TAU LR LR
comp=Z,45µm,21.0s,MS6.3
TATO Taipei 40.16 317 *e*P **P 10 06 19.7 -0.3**
comp=Z,317nm,1.2s,mb5.9
TATO LR LR
comp=Z,38µm,19.9s,MS6.2
JNU Nakatsue 41.08 334 P **P 10 06 27.3 -0.2**
comp=Z,83nm,0.9s,mb5.3,baz=98,slow=7.8,SNR=14
MAJO Matsushiro 41.62 345⇑ *i*P **P 10 06 28.8 -3.2**
comp=Z,88nm,1.1s,mb5.3
MAJO LR LR
comp=Z,26µm,19.0s,MS6.1
MAT Matsushiro 41.62 345 P **P 10 06 28.8 -3.2**
MAT S **S 10 12 37.0 -12**
MAT Matsushiro 41.62 345 *e*P **P 10 06 29.0 -3.0**
comp=Z,47nm,1.2s,mb5.0
MAT *e*S **S 10 12 38.0 -11**
MAT LR LR
comp=Z,17µm,20.0s,MS5.9
KLBR Kellerberrin 41.64 224 *e*P **P 10 06 32.3 +0.2**
comp=Z,69nm,1.0s,mb5.2
KLBR *e* 10 06 49.2
KLBR *e*PP PP 10 08 05.5 -6.1
QRZ Quartz Range 41.93 155 P **P 10 06 34.9 +0.4**
CNZ Chateau 41.99 151 *e*P **P 10 06 35.9 +0.9**
NGZ Ngauruhoe 42.00 151 P **P 10 06 35.5 +0.5**
FWVZ Far West T-bar 42.04 151 P **P 10 06 36.4 +1.0**
URZ Urewera 42.07 148 P **P 10 06 35.0 -0.6**
comp=Z,46nm,0.7s,mb5.2,baz=11,slow=5.2,SNR=29
QZH Quanzhou 42.17 314⇑ *i*P **P 10 06 36.3 -0.3**
QZH PP PP 10 08 15.3 -2.2
QZH S **S 10 12 53.0 -3.8**
QZH AMB AMB
comp=Z,480nm,1.4s,mb5.9
QZH LR LR
comp=N,28µm,17.7s,MS6.4
QZH LR LR
comp=E,39µm,21.0s,MS6.4
QZH LR LR
comp=Z,77µm,28.6s
PUZ Puketiti 42.54 147 P **P 10 06 38.8 -0.6**
NWAO Narrogin (SRO) 42.77 223 P **P 10 06 38.6 -2.8**
comp=Z,11nm,0.9s,mb4.6,baz=45,slow=10.0,SNR=2.9
NWAO Narrogin (SRO) 42.77 223 *e*P **P 10 06 41.6 +0.2**
comp=Z,306nm,1.3s,mb5.9
NWAO LR LR
comp=Z,21µm,20.0s,MS6.0
THZ Tophouse 42.87 155 *e*P **P 10 06 40.4 -1.7**
KNZ Kokohu 42.93 149 *e*P **P 10 06 40.4 -2.2**
MRZ Mangatainoka R 43.16 152 *e*P **P 10 06 43.0 -1.5**
MRW Makara Radio 43.21 153 *e*P **P 10 06 44.1 -0.8**
SNZO South Karori 43.27 153⇑ *i*P **P 10 06 43.8 -1.6**
comp=Z,484nm,1.3s,mb6.1
SNZO LR LR
comp=Z,75µm,21.0s,MS6.6
CAW Cannon Point 43.27 153 P **P 10 06 44.1 -1.3**
LTZ Lake Taylor 43.47 157 P **P 10 06 45.7 -1.2**
BFZ Birch Farm 43.48 152 P **P 10 06 45.7 -1.4**
RPZ Rata Peaks 43.81 159 P **P 10 06 48.7 -1.0**
comp=Z,78nm,0.8s,mb5.5,baz=335,slow=4.5,SNR=21
RPZ Rata Peaks 43.81 159 P **P 10 06 48.6 -1.1**
HKC Hong Kong 44.03 308⇑ *i*P **P 10 06 50.0 -1.8**
HKC *i*S **S 10 13 28.0 +4.1**
MIDW Midway 44.11 42 PFAKE 10 07 00.0 +7.7
MIDW LR LR
comp=Z,168µm,22.0s,MS6.9
BWZ Berwen 44.11 160 *e*P **P 10 06 50.7 -1.5**
JOHN Johnston Islan 44.18 62 P **P 10 06 54.6 +1.6**
SSE Sheshan 44.54 323⇑ P **P 10 06 55.4 -0.4**
SSE AP pP 10 06 58.4 +0.8
SSE S **S 10 13 31.6 +0.5**
SSE XS 10 13 38.0
SSE AMB AMB
comp=Z,87nm,1.5s,mb5.4
SSE AMB AMB
comp=Z,2µm,9.7s
SSE LR LR
comp=N,10µm,15.0s,MS6.2
SSE LR LR
comp=E,21µm,15.0s,MS6.2
SSE LR LR
comp=Z,28µm,15.0s,MS6.3
TUZ Tuapeka 45.29 161 *e*P **P 10 07 00.5 -1.1**
KS15 Wonju Array Si 46.03 335 *e*P **P 10 07 04.6 -3.0**
QIZ Qiongzhong 46.07 301 P **P 10 07 08.9 +0.7**
QIZ S **S 10 13 54.8 +1.4**
QIZ Qiongzhong 46.07 301 P **P 10 07 08.3 +0.2**
QIZ XP sP 10 07 21.3 +11
QIZ PP PP 10 08 54.6 -1.9
QIZ PPP PPP 10 09 45.3 +5.4
QIZ SCP 10 12 32.5
QIZ S **S 10 13 55.1 +1.8**
QIZ SS SS 10 17 13.4 +2.9
QIZ AMB AMB
comp=Z,2µm,9.6s
QIZ LR LR
comp=N,15µm,23.9s
QIZ LR LR
comp=Z,22µm,24.3s,MS6.0
QIZ Qiongzhong 46.07 301⇑ *e*P **P 10 07 08.4 +0.3**
comp=Z,95nm,1.1s,mb5.6
INCN Inchon 46.61 333⇑ *e*P **P 10 07 11.5 -0.7**
comp=Z,505nm,1.4s,mb6.3
INCN LR LR
comp=Z,14µm,20.0s,MS5.9
NJ2 Nanjing 46.62 322 *e*P **P 10 07 12.9 +0.6**
NJ2 AP pP 10 07 17.8 +3.6
NJ2 XP sP 10 07 20.5 +5.6
NJ2 PP PP 10 09 02.8 +0.9
NJ2 S **S 10 14 06.0 +4.9**
NJ2 AMB AMB
comp=Z,220nm,1.1s,mb6.0
NJ2 LR LR
comp=N,59µm,24.2s,MS6.6
NJ2 LR LR
comp=E,54µm,23.3s,MS6.6
NJ2 LR LR
comp=Z,85µm,24.4s,MS6.6
YUK Yuzh-Kuril'sk 47.64 355⇑ *i*P **P 10 07 19.0 -1.2**
YUK *e* 10 09 10.0
YUK *e*PPP PPP 10 09 52.9 -7.0
YUK *i*S **S 10 14 13.0 -2.2**
YUK *e*SS SS 10 17 32.0 -5.4
YUK *i*SSS SSS 10 18 49.0 -1.9
YUK pmax pmax
comp=N,5µm,5.0s
YUK pmax pmax
comp=Z,5µm,5.0s
YUK pmax pmax
comp=E,2µm,4.0s
YUK smax
comp=N,5µm,12.0s
YUK smax
comp=E,12µm,12.0s
YUK MLR MLR
comp=N,6µm,18.0s,MS5.8
YUK MLR MLR
comp=Z,14µm,18.0s,MS6.0
YUK MLR MLR
comp=E,6µm,13.0s,MS5.8
KGM Kluang 47.69 276⇑ *e*P **P 10 07 23.2 +2.2**
comp=E,178nm,1.2s,mb6.0
ASAJ Asahikawa 48.07 352 P **P 10 07 22.9 -0.7**
comp=E,50nm,1.2s,mb5.4,baz=212,slow=12,SNR=12
WHN Wuhan 48.57 317 *e*P **P 10 07 27.0 -0.6**
WHN S **S 10 14 37.0 +8.4**
WHN AMB AMB
comp=Z,2µm,7.0s
WHN LR LR
comp=N,43µm,25.6s,MS6.5
WHN LR LR
comp=E,53µm,28.4s,MS6.5
WHN LR LR
comp=Z,63µm,22.7s
VLA Vladivostok 49.53 342⇓ *i*P **P 10 07 35.0 +0.2**
VLA *i* 10 07 50.0
VLA *i* 10 09 28.0
VLA *i* 10 10 30.0
VLA *i*S **S 10 14 40.0 -1.8**
VLA *i*PS PS 10 15 00.0 +10
VLA *i*SS SS 10 17 59.0 -11
VLA *i*SSS SSS 10 19 30.0 -5.0
VLA pmax pmax
comp=N,2µm,6.0s
VLA pmax pmax
comp=E,1µm,6.0s
VLA pmax pmax
comp=Z,3µm,6.0s
VLA pmax pmax
comp=N,2µm,6.0s
VLA pmax pmax
comp=Z,4µm,6.0s
VLA pmax pmax
comp=E,1µm,5.0s
VLA smax
comp=N,20µm,17.0s
VLA smax
comp=Z,6µm,11.0s
VLA smax
comp=E,6µm,14.0s
DL2 Dalian 50.11 330⇑ P **P 10 07 38.9 -0.4**
DL2 S **S 10 14 40.6 -9.3**
DL2 AMB AMB
comp=Z,70nm,1.3s,mb5.5
DL2 AMB AMB
comp=Z,1µm,8.0s
DL2 LR LR
comp=N,7µm,23.3s
DL2 LR LR
comp=Z,12µm,27.9s,MS5.8
IPM Ipoh 50.30 279⇓ *e*P **P 10 07 43.0 +1.9**
TIA Tai'an 50.54 325⇑ P **P 10 07 41.5 -1.2**
TIA S **S 10 14 54.5 -1.4**
TIA AMB AMB
comp=Z,1µm,9.0s
TIA LR LR
comp=N,13µm,18.0s
TIA LR LR
comp=E,5µm,12.0s
YSS Yuzh-Sakhalins 50.84 353⍺ *e*P **P 10 07 42.2 -2.6**
YSS *e* 10 07 48.2
YSS *e**SP sP 10 08 00.0 +13
YSS *e*PPP PPP 10 10 34.0 -6.6
YSS *e*S **S 10 14 59.0 -0.9**
YSS *e*SS SS 10 18 28.0 -4.2
YSS *e*SSS SSS 10 19 56.0 -10
YSS pmax pmax
comp=Z,30nm,0.9s,mb5.2
YSS smax
comp=N,8µm,16.0s
YSS smax
comp=E,6µm,15.0s
YSS MLR MLR
comp=Z,8µm,18.0s,MS5.8
YSS MLR MLR
comp=N,7µm,20.0s
YSS Yuzh-Sakhalins 50.84 353 *e*P **P 10 07 43.3 -1.5**
comp=N,46nm,0.8s,mb5.5
YSS LR LR
comp=Z,11µm,21.0s,MS5.8
RAR Rarotonga 51.17 114 P **P 10 07 48.0 +0.5**
comp=Z,40nm,0.8s,mb5.4,baz=292,slow=4.3,SNR=4.5
RAR LR LR 10 26 37.6
comp=Z,8µm,20.1s,MS5.7,baz=276,slow=33
RAR Rarotonga 51.17 114 P **P 10 07 48.9 +1.3**
RAR pmax pmax
comp=Z,510nm,1.8s
RAR Rarotonga 51.17 114 *e*P **P 10 07 47.8 +0.2**
comp=Z,129nm,1.1s,mb5.8
RAR LR LR
comp=Z,7µm,20.0s,MS5.7
SNY Shenyang 51.52 334⇑ P **P 10 07 48.8 -1.2**
SNY S **S 10 15 03.3 -6.1**
SNY LR LR
comp=N,12µm,24.3s
SNY LR LR
comp=Z,21µm,36.7s
MDJ Mudanjiang 51.61 341 P **P 10 07 49.6 -1.0**
MDJ AP pP 10 07 53.0 +0.5
MDJ XP sP 10 07 54.4 +1.2
MDJ PCP PcP 10 09 02.9 -1.7
MDJ PP PP 10 09 47.5 -1.4
MDJ S **S 10 15 08.6 -1.9**
MDJ XS 10 15 17.4
MDJ AMB AMB
comp=Z,2µm,11.2s
MDJ LR LR
comp=N,13µm,37.5s,MS6.0
MDJ LR LR
comp=E,22µm,38.3s,MS6.0
MDJ LR LR
comp=Z,25µm,36.7s,MS6.0
MDJ Mudanjiang 51.61 341⇑ *e*P **P 10 07 49.3 -1.3**
comp=Z,72nm,1.0s,mb5.5
ENH Enshi 51.83 314⇑ *e*P **P 10 07 51.6 -0.9**
comp=Z,332nm,1.2s,mb6.1
GYA Guiyang 52.02 308⇑ *i*P **P 10 07 54.9 +0.9**
GYA AP pP 10 08 01.1 +5.2
GYA XP sP 10 08 03.8 +7.2
GYA PP PP 10 09 56.5 +3.6
GYA S **S 10 15 18.6 +2.1**
GYA SS SS 10 18 53.8 +2.3
GYA AMB AMB
comp=Z,90nm,1.1s,mb5.6
GYA AMB AMB
comp=Z,2µm,7.5s
GYA LR LR
comp=N,11µm,16.8s,MS6.2
GYA LR LR
comp=E,15µm,15.6s,MS6.2
GYA LR LR
comp=Z,22µm,18.0s,MS6.2
CN2 Changchun 52.39 337 *e*P **P 10 07 54.9 -1.7**
CN2 *e*AP pP 10 07 59.8 +1.4
CN2 PP PP 10 09 54.9 -1.4
CN2 *e*S **S 10 15 19.8 -1.4**
CN2 *e*SS SS 10 18 56.9 -0.6
CN2 AMB AMB
comp=Z,70nm,1.2s,mb5.5
CN2 LR LR
comp=N,15µm,20.0s,MS6.1
CN2 LR LR
comp=E,8µm,20.0s,MS6.1
CN2 LR LR
comp=Z,16µm,21.0s,MS6.0
BJT Baijiatuan 53.76 327⇑ *i*P **P 10 08 05.6 -1.1**
comp=Z,320nm,1.4s,mb6.1
BJI Beijing 53.77 327 *e*P **P 10 08 04.5 -2.3**
BJI PP PP 10 10 05.4 -4.0
BJI S **S 10 15 35.1 -4.9**
BJI LR LR
comp=N,21µm,22.2s,MS6.2
BJI LR LR
comp=E,12µm,20.0s,MS6.2
BJI LR LR
comp=Z,29µm,24.2s,MS6.2
COCO West Island 53.95 258 P **P 10 08 08.2 -0.2**
comp=Z,102nm,0.7s,mb5.9
COCO LR LR
comp=Z,11µm,22.0s,MS5.9
SKR Severo-Kuril's 54.29 4 *e*P **P 10 08 08.0 -2.5**
SKR *e* 10 08 22.0
SKR *e*PPP PPP 10 11 21.0 -3.0
SKR *e*S **S 10 15 46.0 -0.9**
SKR *e*SS SS 10 19 28.0 -0.4
SKR *e*SSS SSS 10 21 14.0 -10
SKR pmax pmax
comp=E,130nm,1.0s
SKR pmax pmax
comp=Z,180nm,1.0s,mb6.0
SKR pmax pmax
comp=N,100nm,0.9s
SKR pmax pmax
comp=Z,4µm,5.0s
SKR pmax pmax
comp=E,3µm,6.0s
SKR smax
comp=E,15µm,12.0s
SKR smax
comp=N,8µm,18.0s
SKR MLR MLR
comp=E,6µm,16.0s,MS6.0
SKR MLR MLR
comp=Z,7µm,16.0s,MS5.8
SKR MLR MLR
comp=N,7µm,14.0s,MS6.0
TIY Taiyuan 54.32 323⇑ P **P 10 08 09.0 -1.9**
TIY S **S 10 15 49.0 +1.4**
TIY LR LR
comp=E,16µm,17.0s
TIY LR LR
comp=Z,24µm,20.0s,MS6.2
XAN Xi'an 54.34 317 P **P 10 08 09.0 -2.0**
XAN S **S 10 15 42.5 -5.3**
XAN AMB AMB
comp=Z,2µm,10.4s
XAN LR LR
comp=N,12µm,19.2s,MS6.1
XAN LR LR
comp=E,11µm,20.7s,MS6.1
XAN LR LR
comp=Z,24µm,21.7s,MS6.2
KMI Kunming 54.60 304⇑ *e*P **P 10 08 14.3 +1.2**
KMI AP pP 10 08 17.4 +2.5
KMI XP sP 10 08 20.0 +4.3
KMI PCP PcP 10 09 17.8 +1.7
KMI PP PP 10 10 16.3 -0.8
KMI S **S 10 15 53.6 +2.2**
KMI XS 10 15 58.3
KMI SCS ScS 10 18 04.3 +4.7
KMI SS SS 10 19 35.0 +1.2
KMI AMB AMB
comp=Z,2µm,6.9s
KMI LR LR
comp=N,8µm,22.5s,MS5.9
KMI LR LR
comp=E,10µm,25.5s,MS5.9
KMI LR LR
comp=Z,17µm,33.4s
KLR Kul'dur 55.15 345 *e*P **P 10 08 15.3 -1.5**
KLR *e*S **S 10 15 56.0 -2.5**
KLR pmax pmax
comp=Z,170nm,2.2s,mb5.7
KLR smax
comp=N,7µm,11.0s
KLR smax
comp=E,5µm,11.0s
CM31 Chiang Mai Arr 55.49 295 *e*P **P 10 08 20.1 +0.4**
comp=E,40nm,0.7s,mb5.6
CM31 LR LR
comp=Z,13µm,18.1s,MS6.0
CMAR Chiang Mai Arr 55.49 295 P **P 10 08 20.4 +0.7**
comp=Z,9.8nm,0.7s,mb5.0,baz=114,slow=5.7,SNR=36
CMAR LR LR 10 31 42.0
comp=Z,10µm,20.3s,MS5.9,baz=115,slow=36
CMAR PKP2bc 10 38 35.0
comp=Z,8.6nm,1.3s,baz=295,slow=3.7,SNR=6.3
CMAR Chiang Mai Arr 55.49 295 P **P 10 08 20.4 +0.7**
CMAR LR LR 10 31 42.0
CMAR ⇑ *e* 10 38 35.0
KIP Kipapa 56.02 61 *e*P **P 10 08 24.9 +1.5**
comp=Z,108nm,0.9s,mb5.9
KIP LR LR
comp=Z,25µm,20.0s,MS6.3
CD2 Chengdu 56.39 311 P **P 10 08 25.8 -0.2**
CD2 PP PP 10 10 33.6 +0.4
CD2 PPP PPP 10 11 51.8 +1.9
CD2 S **S 10 16 13.1 -2.2**
CD2 SS SS 10 20 05.0 +2.3
CD2 AMB AMB
comp=Z,140nm,1.3s,mb5.8
CD2 AMB AMB
comp=Z,3µm,5.7s
CD2 LR LR
comp=N,26µm,22.0s
CD2 LR LR
comp=Z,34µm,21.3s,MS6.4
PET Petropavlovsk 56.83 6 *e*P **P 10 08 27.5 -1.4**
PET *e*S **S 10 16 22.2 +1.4**
PET *e* 10 18 14.3
PET *e*SS SS 10 20 10.2 +0.3
PET pmax pmax
comp=E,30nm,0.9s,mb5.3
PET pmax pmax
comp=Z,1µm,5.5s
PET pmax pmax
comp=Z,361nm,13.6s
PET smax
comp=E,7µm,9.1s
PET smax
comp=E,10µm,21.3s
PET smax
comp=E,7µm,14.4s
PET smax
comp=N,7µm,19.6s
PET smax
comp=N,4µm,18.1s
PET MLR MLR
comp=N,9µm,17.0s,MS6.0
PET MLR MLR
comp=N,9µm,15.0s
PET MLR MLR
comp=E,5µm,15.0s,MS6.0
PET MLR MLR
comp=Z,8µm,17.0s,MS5.9
PET MLR MLR
comp=Z,6µm,14.0s
PET MLR MLR
comp=E,5µm,15.0s
PET Petropavlovsk 56.83 6 *e*P **P 10 08 27.6 -1.3**
comp=E,81nm,0.9s,mb5.8
PET LR LR
comp=Z,10µm,19.0s,MS6.0
HHC Hu-ho-hao-te 56.88 325⇑ P **P 10 08 29.3 -0.1**
HHC AP pP 10 08 32.4 +1.1
HHC XP sP 10 08 38.3 +6.3
HHC PP PP 10 10 38.6 +1.1
HHC SCP 10 13 22.3
HHC S **S 10 16 24.8 +3.2**
HHC XS 10 16 33.1
HHC SCS ScS 10 18 13.8 -1.9
HHC AMB AMB
comp=Z,2µm,7.2s
HHC LR LR
comp=N,11µm,18.4s,MS6.2
HHC LR LR
comp=E,11µm,17.8s,MS6.2
HHC LR LR
comp=Z,9µm,18.0s,MS5.9
BTO Baotou 57.62 324 *e*P **P 10 08 34.4 -0.2**
BTO S **S 10 16 32.3 +1.0**
BTO AMB AMB
comp=Z,233nm,2.3s,mb5.8
POHA Pohakuloa 57.68 64 *e*P **P 10 08 34.3 -1.1**
comp=Z,142nm,0.9s,mb6.0
POHA LR LR
comp=Z,36µm,20.0s,MS6.5
LZH Lanzhou 58.94 316⇑ P **P 10 08 44.3 +0.4**
LZH AP pP 10 08 47.5 +1.7
LZH XP sP 10 08 49.0 +2.6
LZH PP PP 10 10 56.5 +0.5
LZH S **S 10 16 49.3 +0.6**
LZH XS 10 16 55.3
LZH SS SS 10 20 44.5 +0.5
LZH AMB AMB

comp=Z,295nm,1.5s,mb6.1
LZH AMB AMB
comp=Z,2µm,7.1s
LZH LR LR
comp=N,7µm,14.8s
LZH LR LR
comp=Z,13µm,18.3s,MS6.1
HIA Hailar 59.12 337⇑ *iP* **P 10 08 43.8 -1.2**
comp=Z,217nm,1.2s
FX1 Attu Island--F 59.40 16 LR LR 10 28 24.9
comp=Z,524nm,21.8s,baz=223,slow=30
FX1 Attu Island--F 59.40 16⇑ *iP* **P 10 08 46.1 -0.7**
SMY Shemya 59.52 16 PFAKE 10 09 00.0 +12
SMY LR LR
comp=Z,14µm,20.0s,MS6.1
PPT Papeete 60.07 108 P **P 10 08 52.2 +0.2**
comp=Z,51nm,1.0s,mb5.5,baz=305,slow=7.7,SNR=3.9
IMP Imphal 61.90 300⇓ *iP* **P 10 09 04.0 -0.3**
MA2 Magadan 63.00 0 *d iP* **P 10 09 09.6 -1.5**
MA2 *e* 10 09 42.9
MA2 *e* 10 11 36.2
MA2 *e* PPP PPP 10 12 57.1 -5.2
MA2 *e* S **S 10 17 38.9 -1.3**
MA2 *e* SS SS 10 21 50.3 +2.6
MA2 *e* SSS SSS 10 24 36.2 +4.3
MA2 pmax pmax
comp=N,30nm,1.3s
MA2 pmax pmax
comp=Z,70nm,1.3s,mb5.6
MA2 pmax pmax
comp=E,10.0nm,1.0s
MA2 MLR MLR
comp=Z,13µm,20.0s,MS6.1
MA2 Magadan 63.00 0⇑ *eP* **P 10 09 09.8 -1.3**
comp=Z,107nm,1.1s,mb5.9
MA2 LR LR
comp=Z,9µm,19.0s,MS6.0
GTA Gaotai 63.38 318 P **P 10 09 14.4 +0.5**
GTA AP pP 10 09 18.8 +3.0
GTA XP sP 10 09 21.6 +5.2
GTA PCP PcP 10 09 50.3 -0.4
GTA S **S 10 17 49.8 +4.6**
GTA SCS ScS 10 19 01.8 -2.1
GTA AMB AMB
comp=Z,2µm,8.0s
GTA LR LR
comp=N,4µm,20.9s,MS5.8
GTA LR LR
comp=E,6µm,20.5s,MS5.8
GTA LR LR
comp=Z,8µm,19.8s,MS5.9
CLNS Chul'man 63.80 345 *eP* **P 10 09 19.2 +2.8**
CLNS *eS* **S 10 17 47.1 -3.2**
CLNS pmax pmax
comp=Z,70nm,0.9s,mb5.7
CLNS pmax pmax
comp=N,50nm,1.1s
CLNS pmax pmax
comp=E,20nm,1.0s
CLNS pmax pmax
comp=Z,10.0nm,1.0s,mb4.8
CLNS pmax pmax
comp=N,10.0nm,1.1s
CLNS pmax pmax
comp=E,20nm,1.0s
CLNS smax
comp=N,2µm,11.1s
CLNS smax
comp=Z,2µm,12.9s
CLNS smax
comp=E,2µm,12.4s
CLNS MLR MLR
comp=Z,7µm,15.0s,MS6.0
CLNS MLR MLR
comp=N,6µm,16.0s,MS5.9
CLNS MLR MLR
comp=E,1µm,14.0s,MS5.9
ULN Ulaanbaatar 63.90 329 P **P 10 09 17.2 0.0**
ULN pmax pmax
comp=Z,130nm,1.5s,mb5.7
ULN Ulaanbaatar 63.90 329⇑ *iP* **P 10 09 17.0 -0.2**
comp=Z,135nm,1.5s,mb5.8
ULN LR LR
comp=Z,18µm,22.0s,MS6.2
SHL Shillong 63.91 301 *eP* **P 10 09 17.5 -0.2**
SHL *eS* **S 10 17 55.5 +3.3**
AGT Agartala 63.96 299⇓ *i* **P 10 09 21.0 +3.0**
AGT *i* 10 10 04.0
SONM Songino Array 64.22 328 P **P 10 09 19.0 -0.3**
comp=Z,17nm,1.0s,mb5.0,baz=143,slow=6.2,SNR=22
NIKO Nikolski 65.83 25 *eP* **P 10 09 28.2 -1.4**
LSA Lhasa 65.85 305 P **P 10 09 32.0 +1.8**
LSA XP sP 10 09 42.8 +10
LSA PP PP 10 12 01.0 +3.6
LSA S S 10 18 15.0 -1.0
LSA AMB AMB
comp=Z,70nm,1.4s,mb5.5
LSA LR LR
comp=N,6µm,27.4s,MS5.8
LSA LR LR
comp=E,5µm,29.6s,MS5.8
LSA LR LR
comp=Z,12µm,29.6s,MS5.9
LSA Lhasa 65.85 305⇑ *eP* **P 10 09 31.3 +1.1**
comp=Z,78nm,1.1s,mb5.7
CAL Calcutta 66.17 296 *e* **P 10 09 40.0 +7.7**
CAL *e* 10 10 17.0
SEY Seymchan 66.38 1 *eP* **P 10 09 32.9 -0.1**
SEY 10 10 01.2
SEY 10 11 59.2
SEY PPP PPP 10 13 34.8 -2.2
SEY *eS* S 10 18 21.9 0.0
SEY PS PS 10 18 43.8 -0.6
SEY 10 19 21.6
SEY *eSS* SS 10 22 37.2 -2.5
SEY SSS SSS 10 25 32.8 -2.7
SEY pmax pmax
comp=Z,160nm,1.4s,mb5.9
SEY pmax pmax
comp=N,40nm,1.1s
SEY smax
comp=E,17µm,12.2s
SEY smax
comp=N,1µm,7.2s
SEY MLR MLR
comp=N,19µm,19.0s,MS6.3
SEY MLR MLR
comp=E,4µm,19.0s,MS6.3
SEY MLR MLR
comp=Z,27µm,19.0s,MS6.5
ZAK Zakamensk 67.41 329⇓ *iP* **P 10 09 39.3 -0.4**
YAK Yakutsk 67.42 349 *eP* **P 10 09 39.0 -0.6**
YAK *e* 10 10 06.7
YAK *e* 10 12 11.7
YAK *e* PPP PPP 10 13 39.6 -7.4
YAK *eS* S 10 18 33.8 -0.6
YAK *ePS* PS 10 19 01.5 +3.2
YAK *e* 10 19 34.6
YAK *eSSS* SSS 10 25 57.3 +3.0
YAK pmax pmax
comp=Z,64nm,1.2s,mb5.5
YAK pmax pmax
comp=N,19nm,0.9s
YAK pmax pmax
comp=E,19nm,1.2s
YAK pmax pmax
comp=Z,8.0nm,0.9s,mb4.8
YAK pmax pmax
comp=E,7.0nm,1.3s
YAK smax
comp=N,855nm,8.4s
YAK smax
comp=E,1µm,9.6s
YAK MLR MLR
comp=Z,4µm,18.0s,MS5.7
YAK MLR MLR
comp=N,3µm,17.0s,MS5.7
YAK MLR MLR
comp=E,2µm,21.0s,MS5.7
YAK Yakutsk 67.42 349⇑ *eP* **P 10 09 37.9 -1.7**
comp=E,470nm,1.4s,mb6.3
YAK LR LR
comp=Z,9µm,20.0s,MS6.0
UNV Unalaska Valle 67.45 26 *eP* **P 10 09 35.7 -4.2**
comp=Z,247nm,1.0s,mb6.2
UNV LR LR
comp=Z,32µm,21.0s,MS6.5
BOD Bodaibo 67.96 340 *eP* **P 10 09 41.0 -2.0**
TLY Talaya 68.02 331 *c iP* **P 10 09 43.6 +0.1**
TLY *e* 10 10 04.3
TLY *iS* S 10 18 42.9 +1.1
TLY pmax pmax
comp=Z,481nm,1.1s,mb6.4
TLY MLR MLR
comp=Z,108µm,17.0s,MS7.2
IRK Irkutsk 68.07 331 *eP* **P 10 09 43.5 -0.3**
MOY Mondy 69.34 329 *eP* **P 10 09 52.3 +0.6**
VIS Vishakhapatnam 69.70 290 *eP* **P 10 09 57.2 +2.8**
GUN Gumba 69.73 301 *eP* **P 10 09 54.7 +0.2**
comp=Z,1µm,1.9s,mb6.6
PKI Pulchoki 70.04 301 *eP* **P 10 09 55.0 -1.4**
comp=Z,729nm,1.7s,mb6.3
KKN Kakani 70.20 301 *eP* **P 10 09 57.4 0.0**
comp=Z,422nm,1.5s,mb6.1
DMN Daman 70.31 301 *eP* **P 10 09 58.2 +0.2**
comp=Z,501nm,1.4s,mb6.3
GKN Gorkha 70.81 301 *eP* **P 10 10 00.7 -0.4**
comp=Z,668nm,1.6s,mb6.3
SDN Sand Point 71.09 27 P **P 10 10 01.7 -0.6**
SDN pmax pmax
comp=Z,260nm,1.2s,mb6.0
SDN Sand Point 71.09 27 P **P 10 09 60.0 -2.3**
comp=Z,376nm,1.3s,mb6.2
SDPT Sand Point 71.10 27 *eP* **P 10 10 01.0 -1.4**
comp=Z,191nm,1.4s,mb5.8
KOLN Koldanda 71.64 301 *eP* **P 10 10 05.8 -0.3**
comp=Z,469nm,1.5s,mb6.2
BLSP Bilaspur 71.67 295 *e* **P 10 10 09.8 +3.5**
MDRS Chennai 71.87 285 *eP* **P 10 10 09.0 +1.4**
MDRS *i* 10 12 45.0
KGD Kothagudem 72.18 290 *eP* **P 10 10 12.3 +2.8**
KGD *e* 10 14 25.6
KGD *eS* S 10 19 31.2 +0.2
KGD *e* 10 24 24.3
KGD *e* 10 27 30.0
BILL Bilibino 72.33 6 *d iP* **P 10 10 08.9 -0.6**
BILL *iS* S 10 19 30.2 -1.7
BILL pmax pmax
comp=Z,78nm,1.4s,mb5.5
BILL Bilibino 72.33 6⇓ *eP* **P 10 10 08.5 -1.0**
comp=Z,76nm,1.0s,mb5.6
WMQ Urumqi 73.47 318 *eP* **P 10 10 17.5 +0.9**
WMQ AP pP 10 10 21.3 +2.8
WMQ XP sP 10 10 23.5 +4.4
WMQ PCP PcP 10 10 34.0 +1.0
WMQ PP PP 10 13 03.1 +0.8
WMQ S S 10 19 44.9 -0.3
WMQ XS 10 19 52.8
WMQ SKS SKS 10 20 18.5 -4.3
WMQ PS PS 10 20 19.5 +0.7
WMQ SCS ScS 10 20 22.3 -0.2
WMQ SS SS 10 24 29.5 -0.5
WMQ LR LR
comp=N,11µm,24.2s,MS6.2
WMQ LR LR
comp=E,10µm,24.1s,MS6.2
WMQ LR LR
comp=Z,17µm,24.0s,MS6.2
CUD Cuddapah 73.49 286 *eP* **P 10 10 13.8 -3.4**
CUD *eS* S 10 19 43.8 -2.2
JBP Jabalpur 73.82 295⇓ *i* **P 10 10 24.9 +5.9**
JBP *i* 10 19 55.2
VNDA Vanda 74.08 177 P **P 10 10 18.6 -1.0**
comp=Z,13nm,0.9s,mb4.9,baz=332,slow=5.9,SNR=32
VNDA LR LR 10 39 04.2
comp=Z,7µm,21.8s,MS5.9,baz=359,slow=33
VNDA Vanda 74.08 177 *eP* **P 10 10 18.7 -0.8**
comp=Z,185nm,2.0s,mb5.7
VNDA LR LR
comp=Z,4µm,21.0s,MS5.7
HYB Hyderabad 74.13 289 *i* P **P 10 10 24.0 +3.0**
comp=Z,50nm,1.0s,mb5.4
HYB *eS* S 10 19 54.0 +0.8
HYB Hyderabad 74.13 289 *eP* **P 10 10 24.0 +3.0**
comp=Z,50nm,1.0s,mb5.4
HYB *eS* S 10 19 54.0 +0.8
MIR Mirnyy 74.28 201⇓ *eP* **P 10 10 20.5 -0.3**
MIR *e* 10 13 17.0
MIR *eS* S 10 19 53.0 -0.8
MIR pmax pmax
comp=Z,280nm,1.7s,mb5.9
MIR smax
comp=N,4µm,1.2s
SBA Scott Base 74.67 177 P **P 10 10 23.9 +1.0**
SBA pmax pmax
comp=Z,370nm,2.0s,mb6.0
SBA Scott Base 74.67 177 *eP* **P 10 10 23.2 +0.2**
comp=Z,201nm,1.6s,mb5.8
SBA LR LR
comp=Z,11µm,20.0s,MS6.1
TNA Tin City 75.25 17⇓ *eP* **P 10 10 25.2 -1.2**
comp=Z,29nm,1.1s,mb5.1
TNA LR LR
comp=Z,5µm,19.0s,MS5.8
ANM Nome 75.29 18 *eP* **P 10 10 27.2 +0.5**
KDAK Kodiak Island 76.08 27⇓ *eP* **P 10 10 30.5 -0.8**
comp=Z,114nm,1.1s,mb5.7
KDAK LR LR
comp=Z,14µm,22.0s,MS6.2
AKL Akola 76.09 292 *i* **P 10 10 25.0 -7.2**
comp=Z,171nm,1.2s,mb5.8
AKL *i* 10 13 16.2
BHPL Bhopal 76.14 295 *eP* **P 10 10 34.3 +1.9**
BHPL *e* 10 10 40.5
comp=Z,97nm,0.8s
TIXI Tiksi 76.47 353 *eP* **P 10 10 31.7 -1.6**
TIXI *eS* S 10 20 09.5 -8.4
TIXI *e* 10 20 59.0
TIXI pmax pmax
comp=Z,315nm,1.3s,mb6.1
TIXI Tiksi 76.47 353 *eP* **P 10 10 31.7 -1.5**
comp=Z,124nm,1.6s,mb5.6
TIXI LR LR
comp=Z,5µm,19.0s,MS5.8
SVW Sparrevohn 76.57 24 *eP* **P 10 10 35.0 +1.0**
comp=Z,170nm,1.7s,mb5.7
NDI New Delhi 77.33 300 *eP* **P 10 10 38.5 -0.4**
RSO Redoubt South 77.40 25 *eP* **P 10 10 37.7 -0.9**
DGAR Diego Garcia 77.90 263 P **P 10 10 42.8 +0.5**
SPU Mount Spurr 78.06 25 *eP* **P 10 10 41.2 -1.0**
MKAR Makanchi Array 78.07 319 P **P 10 10 42.8 +0.2**
comp=Z,29nm,0.9s,mb5.2,baz=99,slow=7.0,SNR=55
MKAR LR LR 10 43 48.8
comp=Z,12µm,21.4s,MS6.2,baz=106,slow=35
MKAR Makanchi Array 78.07 319 *i* P **P 10 10 42.9 +0.3**
MKAR pmax pmax
comp=Z,186nm,1.3s
KAD Karad 78.25 288⇓ *iP* **P 10 10 43.0 -1.1**
KAD *eP* pP 10 10 46.4 +0.3
KAD *e* 10 10 52.1
comp=Z,75nm,1.5s
GOA Goa 78.36 287 *e* **P 10 10 50.3 +5.6**
SLKM Skilak Lake 78.50 26 P **P 10 10 44.8 +0.1**
SLKM Skilak Lake 78.50 26 *eP* **P 10 10 44.2 -0.5**
POO Poona 78.72 290 *eP* **P 10 10 48.7 +2.0**
POO *e* 10 10 54.9
comp=Z,87nm,1.6s
FIB Fire Island 78.84 25⇓ *eP* **P 10 10 46.1 -0.5**
FIB LR LR
comp=Z,26µm,22.0s,MS6.5
GOU Gould Hall 79.01 25 *eP* **P 10 10 48.3 +0.8**
AJM Ajmer 79.18 298⇓ *iP* **P 10 10 49.0 -0.1**
AJM *e* 10 10 53.7
AJM *e* 10 10 57.4
comp=Z,234nm,1.6s
PMR Palmer 79.49 25 P **P 10 10 49.0 -1.1**
PMR pmax pmax
comp=Z,150nm,1.4s,mb5.7
PMR Palmer 79.49 25 *eP* **P 10 10 49.5 -0.6**
comp=Z,169nm,1.5s,mb5.8
BOM Bombay 79.75 290 *eP* **P 10 10 55.5 +3.2**
SML Sawmill 79.93 25 *eP* **P 10 10 51.7 -0.7**
IMA Indian Mountai 80.06 20 P **P 10 10 53.0 0.0**
IMA pmax pmax
comp=Z,460nm,1.4s,mb6.2
IMA Indian Mountai 80.06 20 *eP* **P 10 10 53.2 +0.2**
comp=Z,113nm,1.5s,mb5.6
NVS Novosibirsk 80.21 327 *i* P **P 10 10 52.6 -1.4**
NVS *eS* S 10 20 58.5 +0.3
NVS pmax pmax
comp=N,92nm,1.9s
NVS pmax pmax
comp=Z,165nm,1.9s,mb5.6
NVS pmax pmax
comp=E,75nm,1.8s
NVS smax
comp=E,1µm,4.6s
KSH Kashi 80.59 311⇑ *iP* **P 10 10 58.3 +1.9**
KSH AP pP 10 11 02.3 +4.0
KSH XP sP 10 11 05.4 +6.5
KSH PP PP 10 14 04.6 +2.7
KSH S S 10 21 04.3 +1.8
KSH SKS SKS 10 21 10.9 -3.5
KSH XS 10 21 12.5
KSH PS PS 10 21 53.3 +3.9
KSH SS SS 10 26 21.8 +3.9
KSH LR LR
comp=N,10µm,16.7s,MS6.5
KSH LR LR
comp=E,14µm,18.4s,MS6.5
MCK McKinley 80.59 23⇓ *eP* **P 10 10 54.5 -1.4**
comp=E,151nm,1.1s,mb5.8
MCK LR LR
comp=Z,4µm,19.0s,MS5.7
DIV Divide 80.73 26 PFAKE 10 11 10.0 +13
DIV LR LR
comp=Z,29µm,21.0s,MS6.6
TOA Tolsona 80.97 25 *eP* **P 10 10 58.8 +0.9**
comp=Z,48nm,0.9s,mb5.4
COLA College 81.55 22 P **P 10 11 00.0 -0.9**
COLA pmax pmax
comp=Z,43nm,0.9s,mb5.4
COLA College 81.55 22 *eP* **P 10 10 59.9 -1.0**
comp=Z,112nm,1.3s,mb5.6
KURK Kurchatov 81.56 322 *i P* **P 10 11 01.5 +0.3**
KURK pmax pmax
comp=Z,154nm,1.8s,mb5.6
KURK Kurchatov 81.56 322⇑ *eP* **P 10 11 00.9 -0.3**
TKM2 Tokmak 2 81.61 314 P **P 10 11 03.6 +1.9**
SNR=20
KZA Kyzart 81.68 313 P **P 10 11 03.9 +1.9**
SNR=60
ILAR Eielson Array 81.87 23 P **P 10 11 01.2 -1.3**
comp=Z,19nm,1.0s,mb5.0,baz=251,slow=5.3,SNR=60
ILAR LR LR 10 43 49.0
comp=Z,5µm,19.3s,MS5.8,baz=268,slow=33
KBK Karagaybulak 82.02 314 P **P 10 11 05.9 +2.1**
SNR=11
CHMS Chumysh 82.23 314 P **P 10 11 05.7 +0.8**
SNR=12
UCH Uchtor 82.25 313 P **P 10 11 07.1 +2.1**
SNR=32
FRU Bishkek 82.30 314 *eP* **P 10 11 07.0 +1.8**
FRU pmax pmax
comp=Z,160nm,2.0s,mb5.6
FRU MLR MLR
comp=Z,7µm,18.0s,MS6.1
AAK Ala-Archa 82.34 314 P **P 10 11 07.6 +2.1**
SNR=11
USP Ospenovka 82.47 314 P **P 10 11 08.4 +2.3**
SNR=12
AML Almayashu 82.82 313 P **P 10 11 10.1 +2.1**
SNR=38
EKS2 Erkin-Say 82.87 314 P **P 10 11 11.1 +2.8**
SNR=7.8
BHUJ Bhuj 83.21 294 *e* **P 10 11 18.9 +8.5**
SIT Sitka 84.37 32 P **P 10 11 17.4 +1.9**
SIT pmax pmax
comp=Z,140nm,1.4s,mb5.9
SIT Sitka 84.37 32 *eP* **P 10 11 17.1 +1.6**
comp=Z,97nm,1.4s,mb5.7
DAWY Dawson 84.58 25⇓ *eP* **P 10 11 16.3 -0.1**
KKAR Karatay Array 85.31 314 *i P* **P 10 11 21.4 +0.8**
KKAR pmax pmax
comp=Z,542nm,1.3s,mb6.5
QSPA South Pole Qui 86.33 180 *eP* **P 10 11 24.6 -0.3**
comp=Z,58nm,1.3s,mb5.7
QSPA *e* 10 29 28.8
QSPA LR LR
comp=Z,5µm,21.7s,MS5.9
QUE Quetta 86.41 300 *eP* **P 10 11 29.5 +3.1**
QUE *eS* S 10 21 56.0 -5.1
VOSK Vostochnaya 86.65 323 P **P 10 11 26.2 -0.8**
VOSK pmax pmax
comp=Z,27nm,1.0s,mb5.4
VOSK Vostochnaya 86.65 323 *i P* **P 10 11 26.2 -0.8**
BVA0 Borovoye Array 87.05 323 *i P* **P 10 11 28.7 -0.2**
BVAR Borovoye Array 87.05 323 P **P 10 11 28.5 -0.5**
comp=Z,20nm,0.8s,mb5.4,baz=108,slow=4.7,SNR=48
BRVK Borovoye 87.12 323 P **P 10 11 29.4 +0.2**
BRVK Borovoye 87.12 323⇑ *eP* **P 10 11 28.9 -0.4**
BBB Bella Bella 87.43 38 P **P 10 11 32.1 +1.3**
comp=Z,29nm,1.1s,mb5.4,baz=255,slow=5.8,SNR=6.7
BBB LR LR 10 42 40.3
comp=Z,15µm,21.3s,MS6.4,baz=316,slow=30
DLBC Dease Lake 87.45 31 P **P 10 11 32.2 +1.5**
comp=Z,41nm,1.3s,mb5.5,baz=213,slow=6.3,SNR=24
DLBC Dease Lake 87.45 31⇓ *eP* **P 10 11 31.0 +0.3**
ZRNK Zerenda 87.86 323 P **P 10 11 32.0 -0.8**
ZRNK pmax pmax
comp=Z,69nm,1.3s,mb5.7
ZRNK Zerenda 87.86 323⇑ *iP* **P 10 11 31.7 -1.1**
INK Inuvik 88.11 21 P **P 10 11 33.6 -0.1**
comp=Z,32nm,1.2s,mb5.4,baz=246,slow=5.6,SNR=24
INK Inuvik 88.11 21 P **P 10 11 32.7 -1.0**
INK pmax pmax
comp=Z,95nm,1.2s
INK Inuvik 88.11 21⇓ *eP* **P 10 11 32.5 -1.2**
comp=Z,121nm,1.3s,mb6.0
HOPS Hopland 89.31 51 PFAKE 10 11 50.0 +10
HOPS LR LR
comp=Z,14µm,19.0s,MS6.4
OCWA Octopus Mounta 89.37 42 *eP* **P 10 11 42.3 +2.2**
comp=Z,54nm,1.1s,mb5.8
OCWA LR LR
comp=Z,10µm,20.0s,MS6.2
NSHM Saint Helena R 89.64 52 *eP* **P 10 11 44.4 +2.7**
COR Corvallis 89.66 45 PFAKE 10 11 50.0 +8.4
COR LR LR
comp=Z,17µm,22.0s,MS6.4
HSO Harness Mounta 89.71 47 *eP* **P 10 11 42.7 +0.8**
HUMO Hull Mountain 89.73 47 *eP* **P 10 11 41.8 -0.1**
YBH Yreka Blue Hor 89.83 48 P **P 10 11 43.2 +0.7**
comp=Z,12nm,0.9s,mb5.2,baz=255,slow=2.1,SNR=17
YBH Yreka Blue Hor 89.83 48 P **P 10 11 43.2 +0.7**
YBH pmax pmax
comp=Z,66nm,1.3s
YBH Yreka Blue Hor 89.83 48⇓ *eP* **P 10 11 42.6 +0.2**
comp=Z,94nm,1.4s,mb5.9
YBH LR LR
comp=Z,23µm,21.0s,MS6.6
WDC Whiskeytown Da 89.86 50 P **P 10 11 42.7 +0.1**
WDC pmax pmax
comp=Z,77nm,1.3s,mb5.9
WDC Whiskeytown Da 89.86 50 *eP* **P 10 11 42.4 -0.3**
comp=Z,129nm,1.4s,mb6.1
WDC LR LR
comp=Z,10µm,20.0s,MS6.2
BMW Boistfort Moun 89.89 44 *eP* **P 10 11 43.5 +0.9**
PGC Sidney 89.94 41 *eP* **P 10 11 42.2 -0.6**
comp=Z,130nm,1.4s,mb6.1
GNW Green Mountain 90.26 43 *eP* **P 10 11 44.6 +0.3**
SAO San Andreas Ge 90.42 53 PFAKE 10 12 00.0 +15
SAO LR LR
comp=Z,11µm,21.0s,MS6.3
OHCM Honcut 90.57 51 *eP* **P 10 11 46.7 +0.7**
LRV Little Rabbit 90.74 54 P **P 10 11 46.6 -0.2**
LON Longmire 90.88 43 *eP* **P 10 11 47.2 0.0**
RMW Rattlesnake Mo 90.94 43 *eP* **P 10 11 48.2 +0.8**
RPW Rockport 91.21 42 *eP* **P 10 11 49.0 +0.4**
RPW *ePP* PP 10 15 28.9 +0.8
CMB Columbia Colle 91.34 52 *eP* **P 10 11 49.8 +0.2**
comp=Z,39nm,1.3s,mb5.6
CMB LR LR
comp=Z,13µm,19.0s,MS6.4
BEKR Beckwourth 91.48 50 *eP* **P 10 11 50.2 +0.2**
comp=Z,20nm,0.8s,mb5.5
MOD Modoc 91.64 48 *eP* **P 10 11 51.1 +0.3**
comp=Z,75nm,1.0s,mb6.0
MOD LR LR
comp=Z,22µm,21.0s,MS6.6
WCN Washoe City 91.91 51 P **P 10 11 53.4 +1.3**
WCN pmax pmax
comp=Z,39nm,1.1s,mb5.7
WCN Washoe City 91.91 51 *eP* **P 10 11 52.0 -0.1**
comp=Z,42nm,1.0s,mb5.7
NLW Nelson Butte 91.97 42 *eP* **P 10 11 50.5 -1.7**

PAHR **Pah Rah Range** 92.22 51 eP P 10 11 54.2 +0.7
comp=Z,34nm,0.9s,mb5.7
HAWA **Hanford** 92.43 44 eP P 10 11 54.6 +0.3
comp=Z,27nm,0.9s,mb5.6
HAWA LR LR
comp=Z,9µm,20.0s,MS6.2
MTUM **Tungsten Hills** 92.75 53 eP P 10 11 56.5 +0.5
WVOR **Wild Horse Val** 92.90 48 eP P 10 11 57.0 +0.4
comp=Z,131nm,1.5s,mb6.1
WVOR LR LR
comp=Z,28µm,22.0s,MS6.7
NVAR **Mina Arroy Bea** 93.00 52 P P 10 11 58.1 +1.0
comp=Z,5.1nm,0.8s,mb5.0,baz=255,slow=4.3,SNR=28
NVAR PP PP 10 15 40.8 -1.9
comp=Z,2.3nm,1.1s,baz=257,slow=6.4,SNR=4.4
NVAR LR LR 10 53 03.7
comp=Z,8µm,18.6s,MS6.2,baz=315,slow=35
NVAR **Mina Arroy Bea** 93.00 52 P P 10 11 58.1 +1.0
NVAR PP PP 10 15 40.8 -1.9
NVAR LR LR 10 53 03.7
MWC **Mount Wilson** 93.03 56 P P 10 11 58.1 +0.7
MWC **Mount Wilson** 93.03 56 eP P 10 11 57.3 -0.1
SVE **Sverdlovsk** 93.04 327 iP P 10 11 57.8 +0.9
SVE ePPP PP 10 15 44.0 +1.4
SVE e 10 22 28.0
SVE ePS S 10 23 00.0 -0.8
SVE e 10 24 07.0
SVE eSS SS 10 29 24.0 +4.7
SVE pmax pmax
comp=Z,140nm,2.4s,mb6.0
SVE MLR MLR
comp=N,4µm,19.0s,MS6.5
SVE MLR MLR
comp=E,15µm,19.0s,MS6.5
SVE MLR MLR
comp=Z,20µm,19.0s,MS6.6
AB31 **Akbulak array** 93.21 319 i P P 10 11 56.4 -1.4
AB31 pmax pmax
comp=Z,43nm,1.1s,mb5.8
LNOR **Lincton Mounta** 93.28 44 P P 10 11 59.3 +1.1
LNOR **Lincton Mounta** 93.28 44 eP P 10 11 58.1 -0.1
DPW **Davenport** 93.39 42 P P 10 11 59.9 +1.2
DPW **Davenport** 93.39 42 eP P 10 11 58.9 +0.2
DAC **Darwin (Calif)** 93.49 54 P P 10 12 01.8 +2.3
DAC pmax pmax
comp=Z,32nm,1.0s,mb5.7
DAC **Darwin (Calif)** 93.49 54 eP P 10 12 00.1 +0.7
comp=Z,103nm,1.3s,mb6.1
DAC LR LR
comp=Z,14µm,19.0s,MS6.4
TPH **Tonopah** 93.84 52 P P 10 12 01.9 +0.9
TPH pmax pmax
comp=Z,61nm,1.4s,mb5.8
TPH **Tonopah** 93.84 52 eP P 10 12 01.0 0.0
comp=Z,60nm,1.4s,mb5.8
TPH LR LR
comp=Z,9µm,20.0s,MS6.2
BMN **Battle Mountai** 93.90 50 P P 10 12 02.3 +1.1
BMN pmax pmax
comp=Z,59nm,1.4s,mb5.8
BMN **Battle Mountai** 93.90 50 eP P 10 12 01.1 -0.2
comp=Z,70nm,1.4s,mb5.9
BMN LR LR
comp=Z,9µm,19.0s,MS6.2
SYO **Syowa Base** 94.08 200 ⇓P P 10 12 05.0 +3.6
SYO **Syowa Base** 94.08 200 ⇓pP pP 10 12 07.4 +4.1
SYO **Syowa Base** 94.08 200 ⇑sP sP 10 12 10.5 +6.6
SYO **Syowa Base** 94.08 200 ⇓eP P 10 12 05.0 +3.6
SYO ⇓epP pP 10 12 07.4 +4.1
SYO ⇑esP sP 10 12 10.5 +6.6
SYO ⇑ePP PP 10 15 46.5 -4.0
NEW **Newport** 94.13 42 P P 10 12 02.8 +0.7
comp=Z,5.7nm,0.8s,mb5.0,baz=253,slow=5.2,SNR=14
NEW LR LR 10 50 00.9
comp=Z,12µm,19.3s,MS6.4,baz=264,slow=33
NEW **Newport** 94.13 42 P P 10 12 02.6 +0.5
NEW pmax pmax
comp=Z,45nm,1.1s
NEW **Newport** 94.13 42 eP P 10 12 02.5 +0.5
comp=Z,45nm,1.1s,mb5.8
NEW LR LR
comp=Z,12µm,20.0s,MS6.4
BAR **Barrett** 94.14 58 ⇑eP P 10 12 03.6 +1.1
ARU **Arti** 94.18 326 eP P 10 12 00.6 -1.5
ARU pmax pmax
comp=Z,29nm,1.1s,mb5.6
ARU MLR MLR
comp=Z,22µm,21.0s,MS6.6
ARU **Arti** 94.18 326 eP P 10 12 01.8 -0.3
comp=Z,28nm,1.0s,mb5.7
PFO **Pinyon Flat Ob** 94.35 57 P P 10 12 04.4 +0.9
PFO pmax pmax
comp=Z,65nm,1.2s,mb5.9
PFO **Pinyon Flat Ob** 94.35 57 eP P 10 12 03.6 +0.2
comp=Z,88nm,1.0s,mb6.1
PFO LR LR
comp=Z,21µm,20.0s,MS6.6
YKW3 **Yellowknife Ar** 95.35 28 eP P 10 12 07.1 -0.2
YKA **Yellowknife Ar** 95.36 28 P P 10 12 07.1 -0.3
comp=Z,4.3nm,0.9s,mb4.9,baz=271,slow=4.7,SNR=65
YKA PKKPbc 10 29 03.3
comp=Z,0.2nm,0.7s,baz=112,slow=2.9,SNR=6.3
YKA LR LR 10 52 31.6
comp=Z,5µm,19.9s,MS6.0,baz=275,slow=34
YKA **Yellowknife Ar** 95.36 28 P P 10 12 07.1 -0.3
YKA PKKPbc 10 29 03.4
YKA LR LR 10 52 31.6
LDFC **Landfair** 95.49 55 eP P 10 12 09.0 +0.3
NEN **Nelson** 95.71 55 ⇑iP P 10 12 10.4 +0.8
HLID **Hailey** 96.02 47 eP P 10 12 11.0 +0.1
comp=Z,26nm,1.3s,mb5.5
HLID LR LR
comp=Z,14µm,19.0s,MS6.5
WALA **Waterton Lakes** 96.25 41 eP P 10 12 12.3 +0.5
comp=Z,167nm,1.5s,mb6.2
MSO **Missoula** 96.29 43 eP P 10 12 14.1 +2.0
comp=Z,23nm,1.3s,mb5.5
MSO ePP PP 10 15 57.0 -11
MSO LR LR
comp=Z,11µm,22.0s,MS6.3
CHMT **Chamberlain Mo** 96.76 43 eP P 10 12 13.9 -0.2
CHMT ePP PP 10 15 57.2 -14
MCMT **McKenzie Canyo** 97.11 45 eP P 10 12 16.1 +0.3
RPN **Rapa Nui** 97.20 118 PFAKE 10 12 30.0 +13
RPN LR LR
comp=Z,37µm,22.0s,MS6.8
HVU **Hansel Valley** 97.26 49 P P 10 12 19.7 +3.2
HVU **Hansel Valley** 97.26 49 eP P 10 12 17.1 +0.6
HRY **Holter Researc** 97.74 44 eP P 10 12 21.7 +3.1
MVU **Marysvale** 97.78 52 eP P 10 12 20.7 +1.8
comp=Z,20nm,1.5s,mb5.4
MSU **Marysvale** 97.81 52 P P 10 12 21.1 +2.0
MSU **Marysvale** 97.81 52 eP P 10 12 20.0 +0.9
NLU **North Lily Min** 97.85 50 eP P 10 12 19.7 +0.5
BOZ **Bozeman (W)** 97.94 45 P P 10 12 20.2 +0.7
BOZ pmax pmax
comp=Z,35nm,1.5s,mb5.7
BOZ **Bozeman (W)** 97.94 45 eP P 10 12 19.9 +0.5
comp=Z,11nm,0.9s,mb5.4
BOZ LR LR
comp=Z,14µm,22.0s,MS6.4
QLMT **Earthquake Lak** 98.12 45 eP P 10 12 22.5 +2.2
HWUT **Hardware Ranch** 98.17 49 eP P 10 12 20.0 -0.7
comp=Z,14nm,1.2s,mb5.4
HWUT LR LR
comp=Z,6µm,22.0s,MS6.1
JLU **Jordanelle** 98.30 50 eP P 10 12 21.6 +0.4
TCUT **Toone Canyon** 98.31 49 eP P 10 12 21.0 -0.2
DAU **Daniels Canyon** 98.46 50 P P 10 12 24.3 +2.4
DAU **Daniels Canyon** 98.46 50 eP P 10 12 22.3 +0.4
DAU ePP PP 10 16 22.0 -2.9
AHID **Auburn Hatcher** 98.46 47 eP P 10 12 24.1 +2.2
AHID LR LR
comp=Z,17µm,21.0s,MS6.5
WUAZ **Wupatki** 98.54 55 eP P 10 12 23.9 +1.5
comp=Z,45nm,1.2s,mb5.9
WUAZ LR LR
comp=Z,11µm,19.0s,MS6.4
SRU **San Rafael** 99.08 51 P P 10 12 25.3 +0.5
SRU **San Rafael** 99.08 51 eP P 10 12 24.5 -0.3
TUC **Tucson** 99.12 58 P P 10 12 26.9 +1.8
TUC pmax pmax
comp=Z,15nm,1.4s,mb5.3
TUC **Tucson** 99.12 58 ePdif P 10 12 26.0 +0.9
comp=Z,9.3nm,1.0s,mb5.3
TUC LR LR
comp=Z,14µm,20.0s,MS6.5
BW06 **Boulder Array** 99.60 47 PFAKE 10 12 40.0 +13
BW06 LR LR
comp=Z,20µm,22.0s,MS6.6
PDAR **Pinedale Array** 99.60 47 P P 10 12 26.6 -0.5
comp=Z,2.1nm,0.8s,mb4.6,baz=270,slow=1.8,SNR=15
PDAR PP PP 10 16 31.9 -1.5
comp=Z,2.4nm,1.1s,baz=236,slow=5.3,SNR=3.9
PDAR LR LR 10 49 37.3
comp=Z,15µm,21.8s,MS6.5,baz=269,slow=31
RES **Resolute Bay** 99.79 14 P P 10 12 26.8 -0.4
RES pmax pmax
comp=Z,28nm,1.3s,mb5.5
RES **Resolute Bay** 99.79 14 ePdif P 10 12 26.6 -0.6
comp=Z,24nm,1.0s,mb5.6
PV10 **Paradox Valley** 100.28 52 ePdif P 10 12 30.3 0.0
PV01 **Paradox Valley** 100.66 52 ePdif P 10 12 31.2 -0.8
KBS **Kingsbay** 101.92 353 eSS SS 10 31 24.3 +1.1
KBS AMS AMS 11 08 05.0
comp=Z,6µm,20.0s,MS6.1
MAK **Makhachkala** 102.11 313 P Pdif 10 12 33.0 -5.5
MAK *i* 10 16 52.0
MAK ePPP PPP 10 19 08.0 +3.5
MAK *i* 10 23 20.0
MAK pmax pmax
comp=Z,2µm,9.0s
BNM **Barren Site** 102.50 56 ePdif Pdif 10 12 42.2 +1.8
ANMO **Albuquerque** 102.58 55 P Pdif 10 12 42.3 +1.6
ANMO pmax pmax
comp=Z,17nm,1.7s
ANMO **Albuquerque** 102.58 55 ePdif Pdif 10 12 42.0 +1.3
comp=Z,17nm,1.7s
ANMO LR LR
comp=Z,7µm,22.0s,MS6.2
SNAA **Sanae** 102.90 188 ⇑iP Pdif 10 12 44.9 +3.6
SNAA *e* 10 12 59.4
SNAA *e* 10 17 00.0
SDCO **Great Sand Dun** 103.11 52 PFAKE 10 12 50.0 +7.0
SDCO LR LR
comp=Z,8µm,20.0s,MS6.3
RSSD **Black Hills** 103.45 46 P Pdif 10 12 46.2 +1.9
RSSD pmax pmax
comp=Z,18nm,1.4s
RSSD **Black Hills** 103.45 46 ePdif Pdif 10 12 45.1 +0.7
comp=Z,6.4nm,0.9s
RSSD LR LR
comp=Z,4µm,20.0s,MS5.9
APA **Apatity** 103.51 339 ⇑eP Pdif 10 12 46.8 +2.8
APA *i* 10 23 25.0
APA eS S 10 24 25.0 -3.9
APA *i* PS PS 10 26 01.0 -9.1
APA *i* SS SS 10 31 39.0 -6.1
APA pmax pmax
comp=Z,34nm,1.3s
APA MLR MLR
comp=Z,4µm,19.0s,MS6.0
MNTX **Cornudas Mount** 103.73 58 PFAKE 10 13 00.0 +14
MNTX LR LR
comp=Z,11µm,20.0s,MS6.4
VNA2 **Neumayer--Watz** 104.20 187 P Pdif 10 12 45.4 -1.6
VNA2 *e* 10 12 59.5
VNA2 *e* 10 17 00.6
KEV **Kevo** 104.57 343 ep 10 17 06.4
comp=Z,0.3nm,0.4s
ZEI **Tsey** 104.77 313 oeP Pdif 10 12 56.0 +5.9
ZEI *i* 10 17 06.0
ZEI *i* SS SS 10 32 12.0 +9.2
ZEI pmax pmax
comp=Z,200nm,6.0s
ZEI pmax pmax
comp=E,600nm,8.0s
ZEI pmax pmax
comp=Z,1µm,8.0s
ZEI MLR MLR
comp=Z,12µm,20.0s,MS6.5
ARCES **ARCESS Array B** 105.13 343 PKiKP 10 17 06.1
comp=Z,2.8nm,0.9s,slow=1.2,SNR=4.3
PYA **Pyatigorsk** 105.17 315 eP Pdif 10 12 53.0 +1.1
PYA *i* 10 17 13.0
PYA *e* 10 23 32.0
PYA pmax pmax
comp=Z,2µm,8.0s
PYA MLR MLR
comp=Z,7µm,24.0s,MS6.2
TXAR **Lajitas Array** 105.39 61 Pdiff Pdif 10 12 58.2 +5.1
comp=Z,0.6nm,0.8s,baz=252,slow=4.0,SNR=7.2
TXAR PP PP 10 17 11.3 -6.4
comp=Z,0.6nm,0.8s,baz=242,slow=5.0,SNR=4.0
TXAR PKKPab 10 28 50.7
comp=Z,2.4nm,1.0s,baz=127,slow=6.3,SNR=8.4
TXAR **Lajitas Array** 105.39 61 Pdif Pdif 10 12 58.2 +5.1
TXAR PP PP 10 17 11.3 -6.4
TXAR PKKPab 10 28 50.7
KIV **Kislovodsk** 105.45 315 ePP PP 10 17 16.8 -0.9
KIV LR LR
comp=Z,6µm,20.0s,MS6.1
MOS **Moscow** 105.84 327 eP Pdif 10 12 55.2 +0.7
MOS *e* 10 17 17.2
MOS ePPP PPP 10 19 32.0 -3.9
MOS *e* 10 24 12.9
MOS eSP SP 10 26 32.7 -0.3
MOS eSS SS 10 32 34.3 +17
MOS pmax pmax
comp=Z,89nm,1.2s
MOS MLR MLR
comp=Z,26µm,20.4s,MS6.8
MOS MLR MLR
comp=E,20µm,20.2s
OBN **Obninsk** 106.61 327 eP Pdif 10 12 59.0 +1.1
OBN eS SKS 10 23 36.7 -4.5
OBN ePS PS 10 26 41.6 +0.2
OBN eSS SS 10 32 34.5 +6.9
OBN pmax pmax
comp=Z,11nm,0.7s
OBN MLR MLR
comp=Z,15µm,22.0s,MS6.5
OBN **Obninsk** 106.61 327 PFAKE 10 17 20.0
OBN LR LR
comp=Z,14µm,21.0s,MS6.5
TRO **Tromso** 106.95 344 *e* 10 17 08.9
TRO eSKSa 10 23 35.8
TRO eSS SS 10 32 28.2 -3.6
TRO AMS AMS 11 01 16.5
comp=Z,3µm,19.9s,MS5.8
CBKS **Cedar Bluff** 107.47 51 PFAKE 10 17 20.0
CBKS LR LR
comp=Z,11µm,21.0s,MS6.4
ULM **Lac du Bonnet** 107.62 38 PFAKE 10 17 20.0
ULM LR LR
comp=Z,18µm,21.0s,MS6.6
SOC **Sochi** 107.63 315 eP Pdif 10 13 03.1 +0.4
SOC *e* 10 17 34.7
SOC *e* 10 26 49.8
SOC eSS SS 10 32 42.4 +0.6
SOC eSSS SSS 10 36 40.2 -5.3
SOC pmax pmax
comp=Z,91nm,1.3s
SOC pmax pmax
comp=N,91nm,1.1s
SOC pmax pmax
comp=E,156nm,1.9s
SOC MLR MLR
comp=Z,6µm,20.0s,MS6.1
SOC MLR MLR
comp=N,5µm,19.0s,MS6.2
SOC MLR MLR
comp=E,6µm,22.0s,MS6.2
JCT **Junction City** 108.61 59 PFAKE 10 17 20.0
JCT LR LR
comp=Z,20µm,22.0s,MS6.6
KAF **Kangasniemi** 108.69 336 ep PP 10 17 31.3 -10
WMOK **Wichita Mounta** 108.88 55 PFAKE 10 17 30.0
WMOK LR LR
comp=Z,13µm,20.0s,MS6.5
SIM **Simferopol'** 111.18 317 eP Pdif 10 13 33.7 +15
SIM *e* 10 17 58.0
SIM ePS PS 10 27 32.0 +5.8
SIM pmax pmax
comp=Z,180nm,9.3s
SIM MLR MLR
comp=Z,6µm,21.0s,MS6.2
MNK **Minsk** 111.52 328 ePKIKP PKPdf 10 17 30.0 +11
MNK ePPP PPP 10 20 30.0 +6.5
MNK ePS PS 10 27 28.0 -1.0
MNK eSS SS 10 33 34.0 +0.4
MNK MLR MLR
comp=Z,10µm,20.0s,MS6.4
HKT **Hockley** 112.09 59 PFAKE 10 17 30.0 +9.5
HKT LR LR
comp=Z,5µm,22.0s,MS6.1
AKASG **Malin Array Be** 112.32 324 PKiKP 10 17 19.4
comp=Z,1.8nm,0.7s,baz=55,slow=2.3,SNR=5.9
AKASG PKKPab 10 28 19.9
comp=Z,0.2nm,0.3s,baz=254,slow=4.3,SNR=4.2
KIEV **Kiev** 112.33 324 PP PP 10 18 07.3 -0.8
KIEV SS SS 10 33 49.0 +4.4
NSS **Namsos** 112.39 342 ePP PP 10 17 58.0 -10
NSS AMS AMS 11 06 00.9
comp=Z,8µm,22.7s,MS6.2
BRTR **Keskin Array B** 112.96 312 PKKPbc 10 28 09.1
comp=Z,1.8nm,1.1s,baz=225,slow=2.0,SNR=3.6
MIAR **Mount Ida** 113.14 54 PFAKE 10 17 30.0 +7.4
MIAR LR LR
comp=Z,16µm,20.0s,MS6.6
KMBO **Kilima Mbogo** 113.32 267 PFAKE 10 17 30.0 +6.5
KMBO LR LR
comp=Z,3µm,19.0s,MS5.9
JFWS **Jewell Farm** 113.49 44 PFAKE 10 17 30.0 +6.9
JFWS LR LR
comp=Z,8µm,20.0s,MS6.3
CCM **Cathedral Cave** 114.14 50 PFAKE 10 17 40.0 +15
CCM LR LR
comp=Z,1µm,21.0s,MS5.5
SUW **Suwalki** 114.17 329 ePKIKP PKPdf 10 17 28.7 +4.6
SUW eSKS SKS 10 24 31.6 +19
SUW eSP SP 10 27 49.5 -3.8
SUW MLR MLR 11 06 33.7
comp=Z,13µm,21.4s,MS6.5
SUW **Suwalki** 114.17 329 *i* PKIKP PKPdf 10 17 28.7 +4.6
SUW *e* 10 24 31.6
SUW eSP SP 10 27 49.5 -3.8
SUW MLR MLR
comp=Z,13µm,21.4s,MS6.5
FVM **French Village** 114.78 50 ePKPdf PKPdf 10 17 27.9 +2.2
NB2 **NORSAR Subarra** 115.09 340 PKPdf PKPdf 10 17 24.7 -1.0
comp=Z,1.9nm,0.8s,baz=45,slow=1.9
NB2 **NORSAR Subarra** 115.09 340 PKPd 10 17 24.7
baz=44,slow=1.9
NOA **NORSAR Array B** 115.09 340 PKP PKPdf 10 17 24.3 -1.4
comp=Z,1.2nm,0.7s,baz=47,slow=1.9,SNR=4.6
NOA PP PP 10 18 24.9 -3.0
comp=Z,2.4nm,0.9s,baz=38,slow=7.3,SNR=3.6
NAO01 **NORSAR Array S** 115.34 340 PFAKE 10 17 40.0 +14
NAO01 LR LR
comp=Z,8µm,20.0s,MS6.3
WAR **Warsaw** 116.19 328 ePKIKP PKPdf 10 17 27.9 -0.2
WAR ePP PP 10 18 36.8 +1.1
WAR eSKS SKS 10 24 34.9 +15
WAR eSP SP 10 28 12.2 -0.1
WAR MLR MLR 11 07 09.8
comp=Z,14µm,22.4s,MS6.5
WAR **Warsaw** 116.19 328 *i* PKIKP PKPdf 10 17 27.9 -0.2
WAR *e* 10 18 36.8
WAR *e* 10 24 34.9
WAR eSP SP 10 28 12.2 -0.1
WAR MLR MLR
comp=Z,14µm,22.4s,MS6.5
MLR **Muntele Rosu** 116.41 320 PKP PKPdf 10 17 27.8 -0.9
comp=Z,2.3nm,0.8s,baz=72,slow=2.1,SNR=3.5
MLR **Muntele Rosu** 116.41 320 ⇑iP PKPdf 10 17 38.3 +10
OXF **Oxford** 116.49 53 PFAKE 10 17 40.0 +11
OXF LR LR
comp=Z,14µm,20.0s,MS6.6
KWP **Kalwaria** 116.56 325 ePKIKP PKPdf 10 17 29.5 +0.6
KWP ePP PP 10 18 38.2 -0.2
KWP eSKS SKS 10 24 34.5 +13
KWP eSP SP 10 28 14.3 -1.5
KWP MLR MLR 11 05 28.8
comp=Z,19µm,24.1s,MS6.6
KWP **Kalwaria** 116.56 325 *i* PKIKP PKPdf 10 17 29.5 +0.6
KWP *e* 10 18 38.2
KWP *e* 10 24 34.5
KWP eSP SP 10 28 14.3 -1.5
KWP MLR MLR
comp=Z,19µm,24.1s,MS6.6
KONO **Kongsberg** 116.65 339 ePP PP 10 18 34.5 -4.2
KONO eSS SS 10 34 41.5 +0.5
KONO AMS AMS 11 11 00.1
comp=Z,5µm,20.0s,MS6.1
KONO **Kongsberg** 116.65 339 PFAKE 10 17 40.0 +11
KONO LR LR
comp=Z,6µm,21.0s,MS6.2
WVT **Waverly** 117.29 51 PFAKE 10 17 40.0 +9.3
WVT LR LR
comp=Z,11µm,19.0s,MS6.5
BLO **Bloomington** 117.35 47 ePKPdf PKPdf 10 17 30.2 -0.5
BLO ePP PP 10 18 35.7 -8.5
PLAL **Pickwick Lake** 117.42 52 PFAKE 10 17 40.0 +9.1
PLAL LR LR
comp=Z,12µm,21.0s,MS6.5
BSD **Bornholm Skovb** 117.54 333 ⇑iP PP 10 18 44.1 -1.0
comp=Z,45nm,1.0s
BSD *i* 10 27 25.7
BSD *i* 10 28 26.5
BSD *i* 10 35 05.2
BSD *i* 10 39 16.3
comp=Z,7µm,19.0s
CRVS **Cervenica-Dubn** 117.63 325 ePKP PKPdf 10 17 30.2 -0.8
WCI **Wyandotte Cave** 117.82 48 PKIKP PKPdf 10 17 35.5 +3.9
WCI **Wyandotte Cave** 117.82 48 ePKPdf PKPdf 10 17 33.3 +1.7
WCI ePP PP 10 18 38.2 -9.3
WCI LR LR
comp=Z,13µm,22.0s,MS6.5
OJC **Ojcow** 117.90 327 ePdiff Pdif 10 13 50.5 +2.8
OJC ePKP(df) 10 17 30.0
OJC ePP PP 10 18 46.1 -1.6
OJC eSKS(ac) 10 24 24.2
OJC eSKKS(ac) 10 25 42.2
OJC eSP SP 10 28 26.8 -1.0
OJC eSS SS 10 35 00.3 +2.8
OJC MLR MLR 11 09 10.6
comp=Z,12µm,20.7s,MS6.5
OJC **Ojcow** 117.90 327 ⇑ePKIKP PKPdf 10 17 30.0 -1.4
OJC *e* 10 18 46.1
OJC *e* 10 24 24.2
OJC eSP SP 10 28 26.8 -1.0
OJC eSS SS 10 35 00.3 +2.8
OJC MLR MLR
comp=Z,12µm,20.7s,MS6.5
NIE **Niedzica** 118.02 326 ePKP PKPdf 10 17 31.6 -0.1
AAM **Ann Arbor** 118.26 43 PFAKE 10 17 40.0 +7.6
AAM LR LR
comp=Z,7µm,21.0s,MS6.3
COP **Copenhagen** 118.26 335 *i* P PP 10 18 46.6 -3.5
COP *i* 10 28 31.0
COP *i* 10 35 13.2
comp=Z,4µm,20.0s
BORG **Borgarnes** 118.73 356 PFAKE 10 17 40.0 +7.2
BORG LR LR
comp=Z,4µm,20.0s,MS6.1
LRAL **Lakeview Retre** 118.81 54 ePKPdf PKPdf 10 17 32.3 -1.4
LRAL ePP PP 10 18 49.9 -4.7
RAC **Raciborz** 118.84 327 ePKP(df) 10 17 29.8
RAC ePP PP 10 18 54.3 0.0
RAC eSP SP 10 28 32.0 -4.3
RAC eSS SS 10 35 04.8 -5.0
RAC LMN 11 02 34.8
comp=Z,11µm,22.0s
RAC LME 11 03 28.9
comp=Z,10µm,25.8s
RAC MLR MLR 11 10 36.1
comp=Z,10µm,19.4s,MS6.5
OKC **Ostrava-Krasne** 119.00 327 ePKPDF PKPdf 10 17 34.8 +1.1
OKC ePP PP 10 18 51.5 -3.9
OKC eSP SP 10 28 31.5 -6.2
OKC L 11 10 00.0
comp=Z,7.6nm,18.9s
PSZ **Piszkesteto** 119.02 324 ePP PP 10 18 55.2 -0.4
PSZ **Piszkesteto** 119.02 324 ePKPdf PKPdf 10 17 30.6 -3.2
VYHS **Vyhne** 119.33 325 ePKP PKPdf 10 17 33.3 -1.0
VYHS ePP PP 10 18 56.0 -1.5
VYHS ePS PS 10 28 37.1 -4.4
VYHS eSS SS 10 35 08.1 -8.2
MORC **Moravsky Berou** 119.36 327 ePKPdf PKPdf 10 17 33.9 -0.3
KSP **Ksiaz** 119.43 329 ePKP PKPdf 10 17 35.0 +0.6
KSP ePP PP 10 18 54.0 -4.0
KSP eSP SP 10 28 43.0 +1.5

KSP MLR MLR 11 09 13.1
comp=Z,22µm,21.6s,MS6.8
KSP Ksiaz 119.43 329 *e*PKIKP PKPdf 10 17 35.0 +0.6
KSP *e* 10 18 53.0
KSP MLR MLR
comp=Z,26µm,21.3s,MS6.8
KSP Ksiaz 119.43 329 *e*PKP PKPdf 10 17 35.0 +0.6
KSP *e*PP PP 10 18 53.0 -5.0
KSP *e*SP SP 10 28 30.0 -12
KSP *e*PPS PPS 10 30 30.0 +25
KSP *e*SS SS 10 34 50.0 -27
KSP *e*SSS SSS 10 39 24.0 -20
KSP LR LR
comp=Z,26µm,21.3s,MS6.8
ACSO Alum Creek Sta 119.53 45 PFAKE 10 17 50.0 +15
ACSO LR LR
comp=Z,10µm,20.0s,MS6.5
DPC Dobruska-Polom 119.69 328 *e*PKPDF PKPdf 10 17 34.9 0.0
DPC *e*pPKP 10 17 40.3
DPC *e*PP PP 10 18 58.6 -1.0
DPC *e*SP SP 10 28 39.5 -4.4
DPC L 11 09 30.0
comp=Z,12nm,19.0s
EFI East Falkland 119.72 160 PFAKE 10 17 50.0 +15
EFI LR LR
comp=Z,6µm,19.0s,MS6.3
UPC Upice 119.77 328 *e*PKPDF PKPdf 10 17 35.1 +0.1
VRAC Vranov 120.14 327 PKP PKPdf 10 17 35.2 -0.6
comp=Z,3.2nm,0.3s,baz=248,slow=6.8,SNR=5.3
ZST Bratislava 120.47 326 *e*PKP PKPdf 10 17 34.6 -1.9
ZST *e*PP PP 10 19 01.3 -3.5
ZST *e*SS SS 10 35 26.8 -4.3
PVCC Panska Ves 120.50 329 *e*PKPDF PKPdf 10 17 35.7 -0.8
PVCC *e*pPKP 10 17 41.7
PVCC *e*PP PP 10 19 04.9 0.0
PVCC L 11 09 50.0
comp=Z,9.9nm,21.3s
SUR Sutherland 120.54 229 PFAKE 10 17 50.0 +13
SUR LR LR
comp=Z,10µm,21.0s,MS6.4
SCHQ Schefferville 120.60 24 PFAKE 10 17 50.0 +13
SCHQ LR LR
comp=Z,14µm,22.0s,MS6.6
BRG Berggiesshubel 120.61 330 *i* PKIKP PKPdf 10 17 36.3 -0.4
BRG *i* 10 17 42.6
BRG *e* 10 28 48.0
BRG *e*SS SS 10 35 34.0 +1.2
BRG pmax pmax
comp=Z,40nm,1.6s
BRG MLR MLR
comp=N,6µm,19.8s,MS6.4
BRG MLR MLR
comp=E,7µm,19.8s,MS6.4
BRG MLR MLR
comp=Z,11µm,19.8s,MS6.5
BRG Berggiesshubel 120.61 330 *i* PKP PKPdf 10 17 36.3 -0.4
BRG *i* 10 17 42.6
BRG *e* 10 28 48.0
BRG *e* 10 30 54.0
BRG *e*SS SS 10 35 34.0 +1.2
BRG LR LR
comp=Z,11µm,19.8s,MS6.5
CLL Collm 120.81 331 *e* PKPdf 10 17 35.0 -2.1
CLL *i* 10 17 46.3
CLL *e* 10 18 58.0
CLL *e* 10 19 09.0
CLL *e* 10 19 26.0
CLL *e*PPP PPP 10 21 54.0 +12
CLL *e*SKKS 10 26 06.0
CLL *e*PS PS 10 28 43.0 -12
CLL *e*PPS PPS 10 30 51.0 +32
CLL *e*SS SS 10 35 41.0 +5.6
CLL *e*SSS SSS 10 39 42.0 -23
CLL Collm 120.81 331 *e*PKIKP PKPdf 10 17 35.0 -2.1
CLL *i* 10 17 46.3
CLL pmax pmax
comp=Z,6.0nm,0.9s
ERPA Erie 120.81 42 PFAKE 10 17 50.0 +13
ERPA LR LR
comp=Z,7µm,19.0s,MS6.3
PRU Pruhonice 120.83 329 *e*PKPDF PKPdf 10 17 35.5 -1.7
PRU *e*pPKP 10 17 47.6
PRU *e*PP PP 10 19 07.3 0.0
PRU *e*SP SP 10 28 52.9 -1.3
PRU L 11 10 00.0
comp=Z,11nm,20.0s
SKO Skopje 120.85 318 *i* PKP PKPdf 10 17 36.0 -1.5
VKA Vienna 120.87 326 (PKP) 10 17 30.0
IDI Anoyia 120.92 309 PKP PKPdf 10 17 36.8 -0.9
comp=Z,23nm,1.2s,baz=349,slow=2.2,SNR=3.9
KHC Kasperske Hory 121.85 328 *e*PKPDF PKPdf 10 17 38.1 -1.1
KHC *e*pPKP 10 17 43.6
KHC *e*PP PP 10 19 07.0 -7.4
KHC *e*SP SP 10 28 56.6 -6.8
KHC L 11 10 20.0
comp=Z,13nm,23.1s
MOX Moxa 121.91 331 *i* P PKPdf 10 17 31.9 -7.4
MOX PP PP 10 19 19.0 +4.2
MOX *e* 10 28 59.0
MOX SS SS 10 36 00.0 +10
MOX L 11 13 25.0
MOX Moxa 121.91 331 *e*PKIKP PKPdf 10 17 31.9 -7.4
MOX MLR MLR
comp=Z,6µm,22.0s,MS6.2
GERES GERESS Array B 121.96 328 PKP PKPdf 10 17 37.7 -1.7
comp=Z,4.4nm,0.7s,baz=45,slow=1.4,SNR=24
MCWV Mont Chateau 121.97 45 PFAKE 10 17 50.0 +10
MCWV LR LR
comp=Z,13µm,21.0s,MS6.6
FWV Forest Hill 122.11 47 *e*PKP PKPdf 10 17 43.1 +3.2
BLA Blacksburg 122.54 47 PFAKE 10 17 50.0 +9.3
BLA LR LR
comp=Z,7µm,20.0s,MS6.3
GRA1 Grafenberg Arr 122.71 330 *e*PKP PKPdf 10 17 39.9 -0.8
GRA1 *e*PP PP 10 19 21.7 +1.3
GRA1 LR LR
comp=Z,9µm,19.9s,MS6.4
GRF Grafenberg Arr 122.71 330 *e*PKIKP PKPdf 10 17 39.9 -0.8
GRF *e* 10 19 21.7
GRF MLR MLR
comp=Z,9µm,19.9s,MS6.4
LEGS Legarje 122.73 324 *i* PKPdf PKPdf 10 17 40.8 0.0
SSPA Standing Stone 122.89 43 *e*PKPdf PKPdf 10 17 40.2 -1.1
SSPA *e*PP PP 10 19 11.3 -11
SSPA LR LR
comp=Z,6µm,20.0s,MS6.3
BOJS Bojanci 123.01 324 *e*PKPdf PKPdf 10 17 41.1 -0.3
BOJS *e* 10 17 52.9
KBA Koelnbreinsper 123.20 326⇑ *i*PKP PKPdf 10 17 40.5 -1.3
BINY Binghamton 123.41 40 *e*PKPdf PKPdf 10 17 41.5 -0.9
CADS Cadrg 123.48 325 *i* PKPdf PKPdf 10 17 42.2 -0.2
CADS *e* 10 17 51.6
NCB Newcomb 123.61 38 *e*PKPdf PKPdf 10 17 42.2 -0.5
NCB *e*PP PP 10 19 24.4 -2.5
NCB LR LR
comp=Z,9µm,21.0s,MS6.4
WTTA Wattenberg 124.02 327⇑ *i*PKP PKPdf 10 17 42.3 -1.2
MVL Millersville 124.23 43 *e*PKPdf PKPdf 10 17 43.0 -1.1
MVL *e*PP PP 10 19 27.2 -3.9
MOTA Moosalm 124.25 328⇑ *i*PKP PKPdf 10 17 42.4 -1.5
ACCN Adirondack Com 124.27 38 PKP PKPdf 10 17 42.2 -1.8
ACCN *e*PP PP 10 19 24.6 -6.6
SQTA Sankt Quirin 124.27 328⇑ *i*PKP PKPdf 10 17 43.3 -0.6
EKA Eskdalemuir Ar 124.29 342 PKP PKPdf 10 17 43.4 -0.4
comp=Z,4.6nm,0.9s,baz=34,slow=3.0,SNR=11
ESK Eskdalemuir 124.32 342 PFAKE 10 17 50.0 +6.2
ESK LR LR
comp=Z,6µm,22.0s,MS6.2
CBN Corbin 124.33 45 PFAKE 10 17 50.0 +5.7
CBN LR LR
comp=Z,10µm,19.0s,MS6.5
HGN Heimansgroeve 124.48 334 *e*PP PP 10 19 24.5 -7.8
HGN *e*Rg 10 28 34.9
HGN *e*SS SS 10 36 17.5 -4.7
RUP Ruppelstein 124.72 332 PKP PKPdf 10 17 43.4 -1.3
DWPF Disney 124.78 58 PFAKE 10 18 00.0 +15
DWPF LR LR
comp=Z,2µm,20.0s,MS5.7
LBNH Lisbon 124.85 36 *e*PKPdf PKPdf 10 17 44.0 -1.2
LANF Langenberg 124.86 331 PKP PKPdf 10 17 45.4 +0.4
DAVA Damuels 124.94 328⇑ *i*PKP PKPdf 10 17 43.9 -1.3
SPAK Spaichingen 124.97 330 PKP PKPdf 10 17 44.3 -1.0
WLF Walferdange 125.17 333 PKIKP PKPdf 10 17 46.0 +0.4
WLF Walferdange 125.17 333 *e*PKPdf PKPdf 10 17 45.0 -0.6
BRMO Bormio 125.19 327 *e*PKP PKPdf 10 17 45.2 -0.5
DAVOX Davos 125.26 328 PKP PKPdf 10 17 44.4 -1.4
comp=Z,20nm,1.2s,baz=55,slow=1.0,SNR=9.5
GIVF Givet 125.45 334 *e*PKP1 PKPdf 10 17 45.7 -0.4
comp=Z,47nm,1.0s
WLS Welschbruch 125.47 331 PKP PKPdf 10 17 44.5 -1.7
CDF Champ du Feu 125.51 331 *e*PKP1 PKPdf 10 17 45.3 -1.0
comp=Z,27nm,1.2s
FELD Feldberg 125.51 330 PKP PKPdf 10 17 44.7 -1.6
PQI Presque Isle 125.57 32 PFAKE 10 18 00.0 +14
PQI LR LR
comp=Z,34µm,20.0s,MS7.0
CSSN Cassano Irpino 125.62 319 *e*PKP PKPdf 10 17 52.8 +6.0
QUA2 Belchertown 125.68 39 *e*PKPdf PKPdf 10 17 46.3 -0.5
ECH Echery 125.70 331 PKP PKPdf 10 17 46.0 -0.7
BAIF Baives 125.76 334 *e*PKP1 PKPdf 10 17 46.2 -0.5
comp=Z,16nm,0.9s
SFI Santa Sofia 125.92 324 *e*PKP PKPdf 10 17 47.6 +0.4
HRV Harvard--Oak R 126.04 38 PFAKE 10 18 00.0 +13
HRV LR LR
comp=Z,2µm,20.0s,MS5.8
HINF Hinteralfeld 126.12 331 *e*PKP1 PKPdf 10 17 46.5 -0.9
comp=Z,55nm,1.1s
ZCCA Zocca 126.16 325 *e*PKP PKPdf 10 17 48.1 +0.5
HAU Haudompre 126.24 331 *e*PKP1 PKPdf 10 17 46.9 -0.7
comp=Z,33nm,0.9s
HAU *e*R
comp=Z,9µm,21.8s
WES Weston 126.25 38 PFAKE 10 18 00.0 +12
WES LR LR
comp=Z,15µm,20.0s,MS6.7
THEF They Montfort 126.26 331 PKP PKPdf 10 17 47.7 0.0
BRYW Bryant College 126.38 39 *e*PKPdf PKPdf 10 17 49.1 +1.1
LOMF Lomont 126.45 330 PKP PKPdf 10 17 46.9 -1.1
MEZF Maizieres J'vi 126.50 332 *e*PKP1 PKPdf 10 17 48.0 -0.1
BDI Bagni Di Lucca 126.55 325 *e*PKP PKPdf 10 17 46.4 -1.9
BOB Bobbio (Coli) 126.76 326 *e*PKP PKPdf 10 17 53.8 +5.1
MCGN Macugnaga 126.79 328 *e*PKP PKPdf 10 17 48.6 0.0
EMMW East Machias 127.12 34 PFAKE 10 18 00.0 +11
EMMW LR LR
comp=Z,35µm,22.0s,MS7.0
CABF La Chapelle 127.33 330 *e*PKP1 PKPdf 10 17 49.7 -0.1
comp=Z,89nm,1.1s
LPL La Plagne 127.74 328 *e*PKP1 PKPdf 10 17 50.3 -0.4
comp=Z,51nm,1.3s
LPG La Plagne 127.74 328 *e*PKP1 PKPdf 10 17 50.4 -0.3
comp=Z,43nm,1.2s
LOR Lormes 127.95 332 *e*PKP1 PKPdf 10 17 50.4 -0.6
comp=Z,68nm,1.3s
LOR *e*R
comp=Z,9µm,22.2s
BNI Bardonecchia 128.08 328 PKIKP PKPdf 10 17 51.6 +0.2
BNI Bardonecchia 128.08 328 *e*PKPdf PKPdf 10 17 50.8 -0.5
MBDF Montbardon 128.25 328 *e*PKP1 PKPdf 10 17 50.8 -0.9
comp=Z,27nm,1.1s
SSF Saint Saulge 128.26 332 *e*PKP1 PKPdf 10 17 51.2 -0.5
comp=Z,85nm,1.4s
SAOF Saorge 128.31 327 PKP PKPdf 10 17 54.8 +3.0
PGF Pioggiola 128.40 324 *e*PKP1 PKPdf 10 17 51.3 -0.7
comp=Z,125nm,1.3s
SMF Signal de Mont 128.41 331 *e*PKP1 PKPdf 10 17 51.3 -0.6
comp=Z,83nm,1.4s
SBF Sospel 128.45 326 *e*PKP1 PKPdf 10 17 51.3 -0.8
comp=Z,118nm,1.2s
AURF Auriere 128.50 327 PKP PKPdf 10 17 56.7 +4.5
AVF Avril sur Loir 128.53 332 *e*PKP1 PKPdf 10 17 51.2 -1.0
comp=Z,41nm,1.3s
MVIF Mont Vial 128.59 327 PKP PKPdf 10 17 55.4 +3.0
ORIF Oris-en-Rattie 128.59 328 *e*PKP1 PKPdf 10 17 51.7 -0.6
comp=Z,120nm,1.6s
ORIF *e*R
comp=Z,17µm,22.2s
TSUM Tsumeb 128.62 242 PKP PKPdf 10 17 54.1 +1.1
comp=Z,2.0nm,0.9s,baz=132,slow=3.3,SNR=2.2
LDF La Druitiere 128.71 335 *e*PKP1 PKPdf 10 17 51.8 -0.7
comp=Z,56nm,1.4s
FLN La Foliniere 128.73 336 *e*PKP1 PKPdf 10 17 51.8 -0.7
comp=Z,23nm,0.8s
FLN *e*R
comp=Z,8µm,19.8s
BGF Bois d'Agland 128.94 332 *e*PKP1 PKPdf 10 17 52.5 -0.5
PLDF La Plantade 129.00 331 PKP PKPdf 10 17 53.6 +0.5
FRF La Foret Royal 129.08 327 *e*PKP1 PKPdf 10 17 52.6 -0.7
comp=Z,194nm,1.6s
GRR Forrzen 129.18 336 *e*PKP1 PKPdf 10 17 52.9 -0.5
VIVF Saint-Julien-l 129.26 329 *e*PKP1 PKPdf 10 17 53.0 -0.6
LMR La Mourre 129.31 327 *e*PKP1 PKPdf 10 17 53.1 -0.7
comp=Z,209nm,1.6s
SMRF Simiane la Rot 129.39 328 *e*PKP1 PKPdf 10 17 53.7 -0.2
TCF Toulx Ste Croi 129.44 332 *e*PKP1 PKPdf 10 17 53.5 -0.4
comp=Z,135nm,1.7s
PYM Petit Puy Mans 129.45 331 PKP PKPdf 10 17 55.8 +1.8
LASF Ste Croix 130.22 329 *e*PKP1 PKPdf 10 17 55.3 -0.2
MFF Saint Martin d 130.27 334 *e*PKP1 PKPdf 10 17 55.0 -0.5
RJF Les Rejaudoux 130.49 332 *e*PKP1 PKPdf 10 17 55.7 -0.2
RJF *e*R
comp=Z,8µm,21.8s
CAF Calviac 130.51 331 *e*PKP1 PKPdf 10 17 56.1 +0.1
OTAV Otavalo 130.77 93 *e*PKPdf PKPdf 10 17 55.9 -1.5
OTAV *e*PP PP 10 20 20.7 +5.9
LFF La Frestale 131.13 332 *e*PKP1 PKPdf 10 17 57.0 -0.2
ETSF Etsaut 133.28 331 *e*PKP1 PKPdf 10 18 02.0 +0.8
comp=Z,39nm,1.0s
LVC Limon Verde 133.35 126 PFAKE 10 18 10.0 +8.1
LVC LR LR
comp=Z,6µm,21.0s,MS6.3
ROSC El Rosal 135.08 87 PKP PKPdf 10 18 04.8 -0.6
comp=Z,11nm,0.6s,baz=138,slow=22,SNR=3.8
BBSR BB Station 136.21 45 PFAKE 10 18 20.0 +13
BBSR LR LR
comp=Z,34µm,22.0s,MS7.0
LPAZ La Paz 136.81 118 PKhKP 10 17 55.4
comp=Z,3.8nm,1.1s,baz=36,slow=4.7,SNR=5.8
LPAZ PKP PKPdf 10 18 09.1 +0.8
comp=Z,4.2nm,0.8s,baz=322,slow=4.7,SNR=7.3
LPAZ La Paz 136.81 118 *e*PKPpre 10 17 56.5
LPAZ *e*PKPdf PKPdf 10 18 07.6 -0.7
LPAZ PKP PKPdf 10 18 09.1 +0.8
LPAZ *e*SKP 10 21 50.1
PBRG Braganca 136.95 335 *e*- 10 18 32.9
ESLA Sonseca Array 137.40 331 PFAKE 10 18 20.0 +11
ESLA LR LR
comp=Z,22µm,21.0s,MS6.9
CPUP Villa Florida 139.72 139 PKP PKPdf 10 18 11.0 -2.5
comp=Z,4.7nm,1.0s,baz=219,slow=3.8,SNR=6.8
CPUP Villa Florida 139.72 139 *e*PKPdf PKPdf 10 18 10.4 -3.2
CPUP LR LR
comp=Z,2µm,21.0s,MS5.9
EVO Evora 140.20 334 *e*PKIKP PKPdf 10 18 11.5 -2.6
comp=Z,51nm,1.3s
EVO *e*R
comp=Z,7µm,21.5s
SJG San Juan 141.16 65 PKP PKPdf 10 18 15.2 -1.2
comp=Z,5.1nm,0.3s,baz=308,slow=4.2,SNR=2.7
SJG San Juan 141.16 65 *e*PKPdf PKPdf 10 18 15.4 -1.0
SJG LR LR
comp=Z,9µm,22.0s,MS6.5
PCRV Puerto La Cruz 144.34 78 PKP PKPdf 10 18 20.7 -1.3
comp=Z,54nm,1.2s,baz=336,slow=4.0,SNR=4.7
SEG Port Louis 145.90 66 *e*P PKPbc 10 18 29.5 +6.6
BBL Barber's Block 146.20 67 *e*P PKPbc 10 18 28.7 +5.1
BBL Barber's Block 146.20 67 *e*P PKPbc 10 18 30.2 +6.5
MDN Morne-Daniel 146.33 68 *e*P PKPbc 10 18 22.7 -1.2
DEG La Desirade 146.34 66 *e*P PKPbc 10 18 31.8 +7.8
FDF Fort de France 146.72 69 *e*P PKPbc 10 18 27.6 +2.7
BIM Bigot 146.86 69 *e*P PKPbc 10 18 28.4 +3.3
CRM Caravelle 146.94 68 *e*P PKPbc 10 18 28.0 +2.7
MVM Montagne Vaucl 147.01 69 *e*P PKPdf 10 18 26.8 +0.2
TRN Trinidad (W) 147.41 76 *e*P PKPdf 10 18 29.6 +2.4
TPP Pointe-a-Pierr 147.42 77 *e*P PKPdf 10 18 30.0 +2.8
CAM4 Nova Friburgo 151.11 154 *e*P PKPdf 10 18 37.4 +4.6
CAM4 *i* 10 18 49.3
CAM4 *i* 10 18 54.7
BDFB Brasilia 153.37 136 PKP PKPdf 10 18 35.0 -1.1
comp=Z,1.6nm,0.6s,baz=94,slow=4.6,SNR=3.5
BDFB PKPbc PKPdf 10 18 42.5 +6.3
comp=Z,10nm,0.9s,baz=176,slow=1.9,SNR=12
BDFB PKPab PKPab 10 18 54.0 -1.8
comp=Z,24nm,1.0s,baz=229,slow=4.5,SNR=11
CAM3 Guarapari 153.41 156 (P) PKPdf 10 18 39.0 +2.8
CAM3 *i* 10 18 45.9
CAM3 *i* 10 19 07.6
CAM3 *i* 10 19 19.5
CAM3 Guarapari 153.41 156 P PKPdf 10 18 39.0 +2.8
CAM3 *i* 10 18 45.9
CAM3 *i* 10 19 07.6
CAM3 *i* 10 19 19.5
KIC Kosan Boka 155.39 277 *e*P PKPdf 10 18 45.3 +6.3
comp=Z,157nm,1.3s
DBIC Dimbokro 155.47 278 PKPbc PKPdf 10 18 48.0 +8.8
comp=Z,11nm,0.9s,baz=135,slow=4.3,SNR=3.4
DBIC PKPab PKPab 10 19 03.0 -1.7
comp=Z,14nm,1.0s,baz=318,slow=5.6,SNR=4.6
DBIC Dimbokro 155.47 278 PKPbc PKPdf 10 18 48.0 +8.8
DBIC PKPab PKPab 10 19 03.0 -1.7
DBIC LR LR
comp=Z,3µm,20.0s,MS6.1
TIC Toumodi 155.64 278 *e*P PKPdf 10 18 43.1 +3.8
comp=Z,26nm,0.5s
LIC Lamto 155.69 277 *e*PKIKP PKPdf 10 18 37.2 -2.2
comp=Z,67nm,1.4s
LIC *e*R
comp=Z,10µm,22.8s
LIC Lamto 155.69 277 *e*P PKPdf 10 18 45.5 +6.1
comp=Z,134nm,1.7s

ISK ***13*** *10:17:27.4, 39.78N×40.74E, h5km, MD3.9, ML3.7*
IDC ***13*** *10:17:34.7±1.3, 40.34N×40.87E, mb3.3/2, mb1 3.6/6, mb1mx3.5/21, ML3.2/2, MS3.3/1, Ms1 3.3/1, ms1mx2.9/19, Error ellipse: s-maj=35.8km s-min=9.4km az=12.0*
ISC 13 10:17:29.7±0.4, 39.78N±0.04×40.78E±0.04, h5km, n29, σ1§41/39, mb3.1/2, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time (h m s)	Res ISC
EZM	**Erzurum**	**0.37**	**71**	*i* PG		**Pg**	**10 17 38.1**	**+0.9**
ERZM	**Erzurum**	**0.47**	**75**	*i* P		**Pg**	**10 17 38.1**	**-1.1**
ERZM				*i* S		**Sg**	**10 17 45.6**	**+0.1**
EZC	**Erzincan**	**0.74**	**268**	*i* PG		**Pn**	**10 17 48.9**	**+2.3**
EZC				*i* SG		**Sn**	**10 18 05.1**	**+6.8**
BINT	**Bingol**	**0.93**	**194**	*i* PG		**Pg**	**10 17 46.2**	**-2.2**
BINT				*i* SG		**Sg**	**10 18 00.1**	**-0.7**
GUMT	**Gumushane**	**1.20**	**305**	*i* PN		**Pn**	**10 17 51.1**	**-2.1**
KELT	**Kelkit**	**1.22**	**288**	*i* P		**Pb**	**10 17 51.8**	**-1.2**
KELT				*i* S		**Sb**	**10 18 09.7**	**+0.8**
BTMT	**Batman**	**1.68**	**160**	*i* PN		**Pn**	**10 18 00.2**	**+0.1**
BCA	**Borcka**	**1.78**	**21**	*i* PN		**Pn**	**10 18 00.8**	**-0.6**
ELZG	**Elazig**	**1.89**	**228**	*i* P		**Pn**	**10 18 02.6**	**-0.5**
ELZG				*i* S		**Sn**	**10 18 19.6**	**-7.9**
BEST	**Besiri**	**1.93**	**168**	*i* P		**Pn**	**10 18 04.0**	**+0.4**
BEST				*i* S		**Sn**	**10 18 32.0**	**+3.5**
DIY	**Diyarbakir**	**1.93**	**193**	*e*PN		**Pn**	**10 18 03.2**	**-0.4**
MYA	**Malataya**	**2.34**	**232**	*e*PN		**Pn**	**10 18 08.0**	**-1.4**
VANB	**Van**	**2.35**	**119**	PN		**Pn**	**10 18 08.7**	**-0.9**
TVAN	**Van**	**2.40**	**121**	*i* P		**Pn**	**10 18 12.5**	**+2.2**
TVAN				*i* S		**Sn**	**10 18 45.7**	**+5.3**
SVSK	**Karacayir**	**2.91**	**274**	*i* PN		**Pn**	**10 18 16.1**	**-1.5**
SVST	**Sivas**	**2.94**	**271**	*i* P		**Pn**	**10 18 21.0**	**+2.9**
SVST				*i* S		**Sn**	**10 19 07.8**	**+13**
GNI	**Garni**	**3.07**	**82**	Pn		**Pn**	**10 18 24.0**	**+4.1**
	2.0nm,0.3s,baz=10,slow=11,SNR=5.0							
GNI				Pg		**Pg**	**10 18 29.4**	**-1.7**
	5.8nm,0.3s,baz=306,slow=4.5,SNR=16							
GNI				Lg			10 19 16.4	
	2.3nm,0.3s,baz=325,slow=21,SNR=3.6							
TOKT	**Tokat**	**3.29**	**281**	*e*PN		**Pn**	**10 18 22.5**	**-0.5**
GZT	**Gaziantep**	**3.49**	**227**	*i* P		**Pn**	**10 18 28.7**	**+2.8**
GAZ	**Gaziantep**	**3.82**	**228**	*e*PN		**Pn**	**10 18 29.8**	**-0.8**
AVNT	**Avonos**	**4.70**	**260**	*i* P		**Pn**	**10 18 54.8**	**+12**
BOYT	**Boyabat**	**4.76**	**292**	*i* P		**Pn**	**10 18 53.9**	**+10**
BOYT				*i* S		**Sn**	**10 19 54.4**	**+14**
COBT	**Iskenderun**	**4.83**	**229**	*i* P		**Pn**	**10 18 46.3**	**+1.4**
BRTR	**Keskin Array B**	**5.50**	**272**	Pn		**Pn**	**10 19 01.1**	**+6.7**
	0.4nm,0.3s,baz=102,slow=14,SNR=5.6							
BRTR				Pg		**Pg**	**10 19 15.8**	**-3.7**
	0.8nm,0.3s,baz=104,slow=15,SNR=10.0							
BRTR				Lg			10 20 31.5	
	0.1nm,0.3s,baz=77,slow=31,SNR=1.9							
BRTR				LR		LR	10 21 09.7	
	comp=Z,305nm,19.6s,baz=335,slow=38							
BALT	**Daday**	**5.88**	**290**	*i* P		Px	10 19 19.7	
MLR	**Muntele Rosu**	**12.31**	**302**	Pn		**P**	**10 20 29.2**	**+0.6**
	0.4nm,0.3s,baz=164,slow=7.4,SNR=2.5							
AKASG	**Malin Array Be**	**13.60**	**327**	Pn		**P**	**10 20 41.5**	**-4.1**
	0.2nm,0.3s,baz=139,slow=13,SNR=3.0							
FINES	**FINESS Array B**	**23.50**	**342**	P		**P**	**10 22 40.8**	**-0.1**
	0.8nm,0.7s,mb3.3,baz=149,slow=16,SNR=3.0							
MKAR	**Makanchi Array**	**30.74**	**63**	P		**P**	**10 23 49.6**	**+1.9**
	0.1nm,0.4s,mb3.0,baz=283,slow=8.6,SNR=3.5							

NEIC ***13*** *10:18:55.2, 38.09S×176.13E, h211km, After WEL*
WEL 13 10:18:55.5±0.2, 38.12S×176.18E, h208km±1km, ML4.2/7, 15C-4D, Error ellipse: s-maj=1.7km s-min=1.5km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time (h m s)	Res ISC
UTU	**Utuhina**	**0.06**	**173**	PN		P	10 19 22.5	-0.2
UTU	**Utuhina**	**0.06**	**173**	P		P	10 19 22.6	-0.2
LIRZ	**Lichensteins R**	**0.19**	**55**	PN		P	10 19 22.6	-0.3
LIRZ	**Lichensteins R**	**0.19**	**55**	P		P	10 19 22.7	-0.3
PATZ	**Paeroa**	**0.27**	**167**	PN		P	10 19 23.1	0.0
TAZ	**Tarawera**	**0.28**	**114**	PN		P	10 19 23.1	0.0
TAZ	**Tarawera**	**0.28**	**114**	P		P	10 19 23.3	+0.2
TGRZ	**Tauranga**	**0.39**	**9**	⇓PN		P	10 19 22.7	-0.7
TGRZ						S	10 19 44.5	-0.5
TGRZ	**Tauranga**	**0.39**	**9**	P		P	10 19 22.7	-0.7
MARZ	**Manawahe**	**0.41**	**72**	PN		P	10 19 23.1	-0.3
MARZ	**Manawahe**	**0.41**	**72**	P		P	10 19 23.2	-0.3
EDRZ	**Edgecumbe**	**0.44**	**89**	PN		P	10 19 23.2	-0.4
EDRZ	**Edgecumbe**	**0.44**	**89**	P		P	10 19 23.2	-0.4
RATZ	**Rangitukua**	**0.82**	**203**	⇑PN		P	10 19 24.9	-0.2
RATZ	**Rangitukua**	**0.82**	**203**	P		P	10 19 24.9	-0.2
KATZ	**Kakaramea**	**0.94**	**204**	⇑PN		P	10 19 25.7	-0.1
KATZ	**Kakaramea**	**0.94**	**204**	P		P	10 19 25.7	-0.1
WIZ	**White Island**	**0.99**	**54**	PN		P	10 19 25.3	-0.8
MGZ	**Maungaku**	**1.02**	**210**	⇑PN		P	10 19 26.3	0.0
MGZ						S	10 19 50.6	+0.4
MGZ	**Maungaku**	**1.02**	**210**	P		P	10 19 26.4	+0.1
KAVZ	**Karewarewa**	**1.07**	**203**	PN		P	10 19 26.5	-0.1
KAVZ	**Karewarewa**	**1.07**	**203**	P		P	10 19 26.5	-0.2
BKZ	**Black Stump Fm**	**1.08**	**167**	PN		P	10 19 26.7	0.0
BKZ						S	10 19 49.5	-1.4
MWZ	**Matawai**	**1.08**	**102**	⇓PN		P	10 19 26.5	-0.3
MWZ						S	10 19 49.9	-1.2
WTVZ	**West Tongariro**	**1.10**	**205**	PN		P	10 19 26.6	-0.3
HIZ	**Hauiti**	**1.12**	**249**	⇑PN		P	10 19 26.5	-0.6
HIZ						S	10 19 51.0	-0.5
NGZ	**Ngauruhoe**	**1.15**	**203**	PN		P	10 19 27.2	-0.1
NGZ						S	10 19 50.9	-1.1
NGZ	**Ngauruhoe**	**1.15**	**203**	P		P	10 19 27.2	-0.1
CNZ	**Chateau**	**1.19**	**204**	PN		P	10 19 27.3	-0.3
CNZ	**Chateau**	**1.19**	**204**	P		P	10 19 27.4	-0.2
WPVZ	**Whakapapa**	**1.20**	**204**	⇑PN		P	10 19 27.4	-0.3
WPVZ						S	10 19 52.0	-0.6
TUVZ	**Tukino**	**1.22**	**200**	⇓PN		P	10 19 27.7	-0.2
TUVZ	**Tukino**	**1.22**	**200**	P		P	10 19 27.7	-0.2
FWVZ	**Far West T-bar**	**1.24**	**203**	PN		P	10 19 27.8	-0.2
FWVZ						S	10 19 52.6	-0.6
FWVZ	**Far West T-bar**	**1.24**	**203**	*e*P		P	10 19 27.8	-0.2
DRZ	**Dome Shelter**	**1.25**	**203**	PN		P	10 19 28.6	+0.4
WNVZ	**Wahianoa**	**1.29**	**201**	⇑PN		P	10 19 28.2	-0.3
WNVZ						S	10 19 52.7	-1.3
KNZ	**Kokohu**	**1.48**	**128**	⇓PN		P	10 19 30.3	+0.3
KNZ						S	10 19 55.6	-1.0
KNZ	**Kokohu**	**1.48**	**128**	*e*P		P	10 19 30.4	+0.4
VRZ	**Vera Road**	**1.50**	**227**	⇑PN		P	10 19 29.6	-0.7
VRZ	**Vera Road**	**1.50**	**227**	P		P	10 19 29.6	-0.7
PUZ	**Puketiti**	**1.64**	**89**	PN		P	10 19 30.8	-0.6
PUZ						S	10 19 57.9	-1.3
PUZ	**Puketiti**	**1.64**	**89**	*e*P		P	10 19 30.9	-0.6
MXZ	**Matakaoa Point**	**1.77**	**72**	PN		P	10 19 32.1	-0.5
MXZ						S	10 20 00.3	-1.0
RAEZ	**Rainy Point**	**1.82**	**230**	PN		P	10 19 32.8	-0.4
RAEZ	**Rainy Point**	**1.82**	**230**	P		P	10 19 32.3	-0.9
WAZ	**Wanganui**	**1.89**	**209**	⇑PN		P	10 19 32.8	-1.0
WAZ	**Wanganui**	**1.89**	**209**	*e*P		P	10 19 32.8	-1.0
TSZ	**Takapari Road**	**1.95**	**185**	⇑PN		P	10 19 33.8	-0.6
TSZ						S	10 20 02.1	-2.2
TSZ	**Takapari Road**	**1.95**	**185**	P		P	10 19 33.8	-0.6
TSZ						S	10 20 01.1	-3.3
PWZ	**Pawanui**	**1.98**	**165**	PN		P	10 19 34.5	-0.2
PWZ	**Pawanui**	**1.98**	**165**	*e*P		P	10 19 34.5	-0.2
NEZ	**North Egmont**	**2.00**	**234**	PN		P	10 19 34.6	-0.3

NEZ	**North Egmont**	**2.00**	**234**	P	P	10 19 34.6	-0.3	
DFE	**Dawson Falls**	**2.03**	**233**	PN	P	10 19 34.7	-0.5	
DFE	**Dawson Falls**	**2.03**	**233**	P	P	10 19 34.7	-0.5	
PKE	**Pukeiti**	**2.03**	**237**	PN	P	10 19 34.6	-0.6	
PKE	**Pukeiti**	**2.03**	**237**	P	P	10 19 34.6	-0.6	
NRZ	**Ngariki Road**	**2.14**	**235**	PN	P	10 19 35.3	-1.1	
NRZ	**Ngariki Road**	**2.14**	**235**	P	P	10 19 35.4	-1.0	
NWEZ	**Newall Road**	**2.15**	**237**	PN	P	10 19 35.9	-0.6	
NWEZ	**Newall Road**	**2.15**	**237**	P	P	10 19 35.9	-0.6	
MRZ	**Mangatainoka R**	**2.58**	**190**	⇑PN	P	10 19 39.6	-1.6	
MRZ				SN	S	10 20 13.8	-2.9	
MTW	**Mount Morrison**	**3.08**	**190**	⇑PN	P	10 19 44.6	-2.4	
MTW				SN	S	10 20 22.7	-4.1	
CAW	**Cannon Point**	**3.11**	**196**	⇑PN	P	10 19 45.0	-2.3	
CAW				SN	S	10 20 23.7	-3.7	
CAW	**Cannon Point**	**3.11**	**196**	P	P	10 19 45.0	-2.3	
MRW	**Makara Radio**	**3.31**	**200**	PN	P	10 19 47.1	-2.6	
MRW				SN	S	10 20 27.6	-4.1	
MRW	**Makara Radio**	**3.31**	**200**	P	P	10 19 47.2	-2.5	
WEL	**Wellington**	**3.35**	**199**	PN	P	10 19 47.5	-2.6	
WEL	**Wellington**	**3.35**	**199**	P	P	10 19 47.6	-2.6	
MSWZ	**Moikau Station**	**3.37**	**192**	⇑PN	P	10 19 47.8	-2.7	
MSWZ				SN	S	10 20 28.2	-4.8	
SNZO	**South Karori**	**3.39**	**199**	PN	P	10 19 47.9	-2.7	
SNZO				SN	S	10 20 28.8	-4.5	
SNZO	**South Karori**	**3.39**	**199**	P	P	10 19 47.9	-2.7	
BHW	**Baring Head**	**3.44**	**197**	⇑PN	P	10 19 48.5	-2.8	
BHW				SN	S	10 20 29.5	-4.9	
BHW	**Baring Head**	**3.44**	**197**	P	P	10 19 48.5	-2.8	
TUWZ	**Tuamarina**	**3.73**	**207**	PN	P	10 19 51.4	-3.5	
NNZ	**Nelson**	**3.78**	**214**	PN	P	10 19 51.8	-3.6	
NNZ	**Nelson**	**3.78**	**214**	*e*P	P	10 19 51.9	-3.5	
QRZ	**Quartz Range**	**3.91**	**225**	PN	P	10 19 52.7	-4.4	
QRZ	**Quartz Range**	**3.91**	**225**	*e*P	P	10 19 52.8	-4.3	
CMWZ	**Cape Campbell**	**3.93**	**202**	PN	P	10 19 55.0	-2.3	
BSWZ	**Blackbirch Sta**	**4.01**	**206**	PN	P	10 19 55.2	-3.0	
THZ	**Tophouse**	**4.43**	**214**	PN	P	10 19 59.5	-4.1	
THZ	**Tophouse**	**4.43**	**214**	*e*P	P	10 19 59.7	-3.8	
KHZ	**Kahutara**	**4.75**	**204**	⇑PN	P	10 20 04.4	-3.2	
KHZ	**Kahutara**	**4.75**	**204**	P	P	10 20 04.4	-3.1	
DSZ	**Denniston Nort**	**4.95**	**222**	PN	P	10 20 05.2	-4.9	
DSZ	**Denniston Nort**	**4.95**	**222**	*e*P	P	10 20 05.3	-4.8	
LTZ	**Lake Taylor**	**5.53**	**211**	PN	P	10 20 12.4	-5.1	
LTZ	**Lake Taylor**	**5.53**	**211**	*e*P	P	10 20 12.9	-4.7	
CRLZ	**Canterbury Las**	**6.09**	**205**	PN	P	10 20 19.9	-4.8	
CRLZ	**Canterbury Las**	**6.09**	**205**	*e*P	P	10 20 20.1	-4.6	
MQZ	**McQueen's Vall**	**6.19**	**204**	PN	P	10 20 21.0	-5.0	
MQZ	**McQueen's Vall**	**6.19**	**204**	P	P	10 20 21.0	-5.0	
WVZ	**Waitaha Valley**	**6.46**	**218**	PN	P	10 20 24.7	-4.8	
WVZ	**Waitaha Valley**	**6.46**	**218**	*e*P	P	10 20 24.7	-4.8	
RPZ	**Rata Peaks**	**6.81**	**213**	PN	P	10 20 28.8	-5.3	
RPZ	**Rata Peaks**	**6.81**	**213**	*e*P	P	10 20 29.4	-4.6	
ODZ	**Otahua Downs**	**8.07**	**209**	PN	P	10 20 45.9	-4.5	
ODZ	**Otahua Downs**	**8.07**	**209**	*e*P	P	10 20 46.0	-4.4	
TUZ	**Tuapeka**	**9.22**	**210**	PN	P	10 21 01.2	-4.1	
TUZ	**Tuapeka**	**9.22**	**210**	*e*P	P	10 21 01.2	-4.2	

INMG ***13*** *10:44:34.8±0.8,36.63N×11.21W,h10km,ML2.2, Error ellipse: s-maj=7.6km s-min=6.3km az=156.0*
MDD ***13*** *10:44:35.9±4.3,36.82N×10.87W,mb3.8/2, Error ellipse: s-maj=45.9km s-min=38.2km az=161.0,PRXIMO*
ISC 13 10:44:34.1±1.6,**36.74N**±0.09×**11.0W**±0.1,**h10km**,**n14**, σ0§**84**/24,**Azores-Cape St. Vincent Ridge**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PTEO	**Sao Teotonio**	**1.99**	**66**	*e*Pn	**Pn**	**10 45 09.1**	**+0.9**
PTEO	13nm,0.5s			*e*Sn	**Sn**	**10 45 34.9**	**+1.6**
PTEO	**Sao Teotonio**	**1.99**	**66**	Pn	**Pn**	**10 45 09.1**	**+0.9**
PTEO	6.3nm,0.5s			Sn	**Sn**	**10 45 34.9**	**+1.6**
MOE	**Montemor**	**2.75**	**49**	*e*Pn	**Pn**	**10 45 19.6**	**+0.5**
MOE				*e*Sn	**Sn**	**10 45 53.8**	**+1.0**
PBEJ	**Beja**	**2.81**	**62**	*e*Sn	**Sn**	**10 45 54.7**	**+0.6**
PBEJ	3.9nm,0.1s **Beja**	**2.81**	**62**	Sn	**Sn**	**10 45 54.7**	**+0.6**
PALC	**Alcoutim**	**2.91**	**75**	*e*Pn	**Pn**	**10 45 22.2**	**+0.9**
PALC	4.5nm,0.2s			*e*Sn	**Sn**	**10 45 57.3**	**+0.6**
PALC	**Alcoutim**	**2.91**	**75**	Pn	**Pn**	**10 45 22.2**	**+0.9**
PALC	2.2nm,0.2s			Sn	**Sn**	**10 45 57.3**	**+0.6**
EGRO	**El Granado**	**2.92**	**73**	Sn	**Sn**	**10 45 57.9**	**+0.9**
EMIN	4.6nm,0.2s,SNR=7.9 **Mina Concepcio**	**3.60**	**72**	Pn	**Pn**	**10 45 31.2**	**+0.1**
EMIN	1.2nm,0.1s,SNR=7.6			Sn	**Sn**	**10 46 13.4**	**-0.8**
EBAD	1.2nm,0.1s,SNR=7.8 **Badajoz**	**3.75**	**56**	Pn	**Pn**	**10 45 33.3**	**0.0**
EBAD	0.8nm,0.1s,SNR=7.9			Sn	**Sn**	**10 46 17.1**	**-0.8**
ESPR	2.4nm,0.2s,SNR=7.9 **Espera**	**4.13**	**87**	Pn	**Pn**	**10 45 38.6**	**-0.2**
ESPR	1.4nm,0.1s,SNR=7.9			Sn	**Sn**	**10 46 27.0**	**-0.6**
PCBR	9.8nm,0.2s,SNR=7.9 **Castelo Branco**	**4.15**	**41**	*e*Pn	**Pn**	**10 45 38.8**	**-0.2**
PCBR				*e*Sn	**Sn**	**10 46 26.9**	**-1.3**
ECAB	**El Cabril**	**4.64**	**72**	Pn	**Pn**	**10 45 44.8**	**-1.1**
ECAB	0.7nm,0.1s,SNR=7.0			Sn	**Sn**	**10 46 39.2**	**-1.4**
EADA	2.5nm,0.3s,SNR=5.6 **Adamuz**	**5.30**	**73**	Pn	**Pn**	**10 45 54.8**	**-0.5**
	0.6nm,0.1s,SNR=6.6						

IDC ***13*** *10:58:41.2±3.7,7.65S×127.41E,h97km±33km,mb3.9/7, mb1 4.1/11,mb1mx4.0/17,Error ellipse: s-maj=26.2km s-min=18.4km az=59.0*
NEIC ***13*** *10:58:42.4±1.7,7.67S×127.44E,h106km±16km,mb4.6/10, Error ellipse: s-maj=14.4km s-min=9.4km az=64.0*
ISC 13 10:58:35.9±2.7,**7.72S**±0.07×**127.3E**±0.1,**h62**km±26km, **n28**,σ1§**10**/33,**mb4.4**/12,**1C**,**Banda Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**10.44**	**189**	*e*P	**P**	**11 01 09.6**	**+4.3**
FITZ	8.9nm,0.3s			*e*S	**S**	**11 03 00.7**	**-1.0**
FITZ	**Fitzroy Crossi**	**10.44**	**189**	P	**P**	**11 01 09.9**	**+4.5**
FITZ	4.3nm,0.3s,baz=22,slow=9.8,SNR=96			S	**S**	**11 03 00.7**	**-1.0**
WRAB	5.7nm,0.3s,baz=358,slow=18,SNR=8.4 **Tennant Creek**	**13.93**	**151**	*e*P	**P**	**11 01 51.2**	**-0.6**
WRAB	36nm,0.8s			*e*S	**S**	**11 04 11.6**	**-14**
WRA	**Warramunga Arr**	**13.93**	**151**	P	**P**	**11 01 51.3**	**-0.5**
WRA	1.0nm,0.3s,baz=322,slow=14,SNR=67			S	**S**	**11 04 18.4**	**-7.0**
WB2	2.8nm,0.3s,baz=328,slow=24,SNR=8.7 **Warramunga Arr**	**13.94**	**151**	*e*P	**P**	**11 01 50.9**	**-1.0**
WB2				*e*S	**S**	**11 04 15.1**	**-10**
AS12	**Alice Springs**	**17.07**	**159**	*e*P	**P**	**11 02 34.8**	**+2.9**
AS12	19nm,0.8s			*e*S	**S**	**11 05 33.5**	**-4.7**
ASAR	**Alice Springs**	**17.07**	**159**	P	**P**	**11 02 34.6**	**+2.7**
ASAR	6.1nm,0.3s,baz=337,slow=11,SNR=257			S	**S**	**11 05 37.8**	**-0.4**
PMG	0.8nm,0.3s,baz=329,slow=24,SNR=5.9 **Port Moresby**	**19.71**	**96**	P	**P**	**11 03 03.2**	**+0.2**
CTA	0.8nm,0.3s,baz=270,slow=14,SNR=5.3 **Charters Tower**	**22.09**	**126**	*e*P	**P**	**11 03 27.6**	**+0.3**
CTA	1.6nm,0.8s,mb3.5 **Charters Tower**	**22.09**	**126**	P	**P**	**11 03 27.6**	**+0.4**
CTAO	1.5nm,0.7s,mb3.5,baz=288,slow=16,SNR=5.1 **Charters Tower**	**22.09**	**126**	*e*P	**P**	**11 03 27.3**	**0.0**
FORT	5.5nm,1.1s,mb3.9 **Forrest**	**22.95**	**178**	*e*P	**P**	**11 03 39.5**	**+3.8**
NWAO	21nm,0.7s,mb4.7 **Narrogin (SRO)**	**26.76**	**199**	P	**P**	**11 04 14.8**	**+2.9**
NWAO	5.3nm,0.6s,mb4.2,baz=98,slow=3.7,SNR=7.2 **Narrogin (SRO)**	**26.76**	**199**	*e*P	**P**	**11 04 14.4**	**+2.5**
STKA	9.0nm,0.9s,mb4.3 **Stephens Creek**	**27.48**	**153**	⇑*i*P	**P**	**11 04 18.3**	**-0.1**
STKA	6.0nm,0.4s,mb4.5 **Stephens Creek**	**27.48**	**153**	P	**P**	**11 04 18.4**	**-0.1**
TOO	9.1nm,0.6s,mb4.5,baz=325,slow=8.7,SNR=47 **Toolangi**	**33.99**	**154**	*e*P	**P**	**11 05 17.2**	**+1.5**
ENH	**Enshi**	**41.47**	**336**	*e*P	**P**	**11 06 19.0**	**+0.6**
	4.3nm,0.4s,mb4.4						

RPZ	**Rata Peaks**	**52.34**	**141**	P	**P**	**11 07 42.9**	**-0.8**	
ULN	8.5nm,0.7s,mb4.8,baz=356,slow=15,SNR=3.5 **Ulaanbaatar**	**58.17**	**344**	*e*P	**P**	**11 08 25.0**	**-0.7**	
MKAR	1.8nm,0.7s,mb4.2 **Makanchi Array**	**67.39**	**328**	P	**P**	**11 09 26.1**	**-0.8**	
YAK	1.8nm,0.8s,mb4.2,baz=129,slow=7.4,SNR=14 **Yakutsk**	**69.56**	**1**	*e*P	**P**	**11 09 40.9**	**+0.9**	
VNDA	14nm,0.4s,mb5.3 **Vanda**	**72.07**	**173**	P	**P**	**11 09 54.6**	**-0.2**	
BVAR	0.5nm,0.5s,mb3.7,baz=328,slow=10,SNR=5.7 **Borovoye Array**	**77.27**	**329**	P	**P**	**11 10 24.3**	**-0.8**	
ZRNK	0.6nm,0.6s,mb3.7,baz=121,slow=8.6,SNR=3.9 **Zerenda**	**77.94**	**328**	*e*P	**P**	**11 10 28.6**	**-0.3**	
QSPA	**South Pole Qui**	**82.26**	**180**	*e*P	**P**	**11 10 51.0**	**-0.4**	
CPUP	23nm,0.6s,mb5.3 **Villa Florida**	**145.85**	**173**	PKPbc	PKPbc	11 18 09.7	+0.4	
LPAZ	2.2nm,0.9s,baz=132,slow=3.2,SNR=5.0 **La Paz**	**151.67**	**147**	PKPbc	PKPdf	11 18 25.5	+7.7	
LPAZ	1.4nm,0.4s,baz=355,slow=2.2,SNR=13			PKPab	PKPab	11 18 34.8	-0.6	
	5.5nm,0.8s,baz=220,slow=5.6,SNR=17							

IDC ***13*** *11:03:16.6±6.0,3.85S×150.71E,h72km±57km,mb3.6/6, mb1 3.8/8,mb1mx3.7/16,ML3.1/2, Error ellipse: s-maj=64.8km s-min=33.7km az=123.0*
NEIC ***13*** *11:03:17.7±3.2,3.89S×150.64E,h80km±26km,mb4.4/2, Error ellipse: s-maj=42.3km s-min=23.1km az=97.0*
ISC 13 11:03:15.0±4.5,**3.8S**±0.2×**150.6E**±0.3,**h68**km±40km,**n12**, σ0§**30**/12,**mb3.7**/7,**New Ireland region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**6.52**	**212**	P	**P**	**11 04 50.7**	**+0.2**
PMG	0.7nm,0.3s,baz=49,slow=9.3,SNR=2.3			P		11 04 50.7	
PMG	**Port Moresby**	**6.52**	**212**	*e*P	**P**	**11 04 50.3**	**-0.2**
CTA	**Charters Tower**	**16.72**	**194**	P	**P**	**11 07 06.3**	**+0.1**
CTAO	0.1nm,0.3s,baz=12,slow=13,SNR=7.2 **Charters Tower**	**16.72**	**194**	*e*P	**P**	**11 07 06.1**	**-0.2**
WRAB	18nm,1.2s **Tennant Creek**	**22.54**	**223**	*e*P	**P**	**11 08 09.9**	**-0.5**
WRA	29nm,1.1s,mb4.5 **Warramunga Arr**	**22.55**	**223**	P	**P**	**11 08 10.5**	**0.0**
ASAR	2.2nm,0.6s,mb3.7,baz=49,slow=9.9,SNR=5.9 **Alice Springs**	**25.49**	**218**	P	**P**	**11 08 39.4**	**+0.6**
FITZ	4.1nm,0.8s,mb3.9,baz=51,slow=8.8,SNR=7.6 **Fitzroy Crossi**	**28.27**	**238**	P	**P**	**11 09 04.0**	**-0.3**
MKAR	1.9nm,0.6s,mb3.8,baz=28,slow=6.9,SNR=2.0 **Makanchi Array**	**78.17**	**319**	P	**P**	**11 15 09.0**	**+0.3**
BVAR	0.2nm,0.5s,mb3.1,baz=121,slow=7.1,SNR=4.1 **Borovoye Array**	**87.17**	**323**	P	**P**	**11 15 54.8**	**0.0**
YKA	0.5nm,0.6s,mb3.7,baz=90,slow=5.9,SNR=4.8 **Yellowknife Ar**	**95.58**	**28**	P	**P**	**11 16 33.4**	**-0.2**
	0.1nm,0.6s,mb3.4,baz=269,slow=4.6,SNR=5.0						

IDC 13 11:07:03.0±7.9,**18.25S**×**176.50W**,**mb3.6**/3,**mb1 3.9**/3, **mb1mx3.7**/13,**Error ellipse: s-maj=345.0km s-min=37.9km az=143.0**,**Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**46.36**	**260**	P	P	11 15 30.6	-2.4
ASAR	0.2nm,0.3s,baz=97,slow=7.5,SNR=19 **Alice Springs**	**46.45**	**254**	P	P	11 15 32.8	-1.0
ILAR	1.5nm,1.0s,baz=91,slow=8.9,SNR=7.2 **Eielson Array**	**85.82**	**12**	P	P	11 19 44.0	-1.3
	0.2nm,0.4s,baz=223,slow=4.8,SNR=5.4						

IDC ***13*** *11:19:34.0±0.6,3.72S×150.62E,mb4.4/17,mb1 4.6/19, mb1mx4.6/21,ML3.4/2,MS4.2/1,Ms1 4.2/1,ms1mx3.8/13, Error ellipse: s-maj=22.2km s-min=11.8km az=118.0*
NEIC ***13*** *11:19:35.0±0.4,3.68S×150.74E,h10km,mb4.7/11, Error ellipse: s-maj=13.5km s-min=8.5km az=114.0*
MOS ***13*** *11:19:35.8±1.6,3.67S×150.78E,h33km,mb5.2/4, Error ellipse: s-maj=26.0km s-min=13.8km az=77.4*
BJI ***13*** *11:19:35.0,3.70S×150.70E,h10km,mb4.8,Ms5.2,Msz5.0*
ISC 13 11:19:33.5±0.4,**3.64S**±0.05×**150.60E**±0.08,**h10**km,**n54**, σ1§**23**/55,**mb4.5**/29,**MS4.6**/4,**1C-3D**,**New Ireland region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAB	**Rabaul**	**1.66**	**109**	*e*P	**Pn**	**11 20 00.3**	**-2.6**
WAU	**Wau**	**5.33**	**226**	*e*P	**Pn**	**11 20 58.2**	**+3.0**
PMG	**Port Moresby**	**6.67**	**211**	Pn	**Pn**	**11 21 13.6**	**-0.4**
PMG	2.0nm,0.3s,baz=63,slow=3.9,SNR=7.8 **Port Moresby**	**6.67**	**211**	*e*P	**Pn**	**11 21 13.8**	**-0.2**
CTA	33nm,0.8s **Charters Tower**	**16.89**	**194**	*e*P	**P**	**11 23 35.7**	**+4.0**
CTA	13nm,1.1s **Charters Tower**	**16.89**	**194**	Pn	**P**	**11 23 33.0**	**+1.3**
CTAO	0.3nm,0.3s,baz=19,slow=12,SNR=16 **Charters Tower**	**16.89**	**194**	*e*P	**P**	**11 23 33.9**	**+2.1**
WRAB	28nm,1.1s **Tennant Creek**	**22.66**	**223**	*e*P	**P**	**11 24 35.3**	**-1.1**
WB2	74nm,0.8s,mb5.2 **Warramunga Arr**	**22.66**	**223**	⇓*i*P	**P**	**11 24 35.6**	**-0.9**
WRA	**Warramunga Arr**	**22.67**	**223**	P	**P**	**11 24 35.8**	**-0.7**
	11nm,0.7s,mb4.4,baz=50,slow=10,SNR=102			S	**S**	**11 28 47.1**	**+7.3**
WRA	3.9nm,1.4s,baz=40,slow=18,SNR=4.9						
AS12	**Alice Springs**	**25.62**	**218**	⇓*i*P	**P**	**11 25 06.3**	**+1.3**
ASAR	19nm,0.8s,mb4.7 **Alice Springs**	**25.62**	**218**	P	**P**	**11 25 04.6**	**-0.4**
ASAR	16nm,0.6s,mb4.7,baz=51,slow=8.5,SNR=86			LR	LR	11 35 41.7	
FITZ	comp=Z,489nm,18.9s,MS4.0,baz=2.3,slow=38 **Fitzroy Crossi**	**28.35**	**238**	*e*P	**P**	**11 25 29.4**	**-0.6**
FITZ	22nm,1.0s,mb4.8 **Fitzroy Crossi**	**28.35**	**238**	P	**P**	**11 25 29.2**	**-0.8**
STKA	23nm,1.1s,mb4.7,baz=39,slow=7.6,SNR=16 **Stephens Creek**	**29.34**	**196**	P	**P**	**11 25 38.1**	**-0.7**
JNU	1.9nm,0.6s,mb4.0,baz=50,slow=12,SNR=6.0 **Nakatsue**	**41.05**	**334**	P	**P**	**11 27 20.4**	**+1.5**
NWAO	15nm,0.8s,mb4.7,baz=146,slow=11,SNR=5.6 **Narrogin (SRO)**	**42.68**	**223**	*e*P	**P**	**11 27 27.9**	**-4.4**
RPZ	48nm,1.3s,mb5.1 **Rata Peaks**	**43.83**	**159**	P	**P**	**11 27 41.3**	**-0.2**
SSE	9.7nm,0.7s,mb4.6,baz=156,slow=20,SNR=3.5 **Sheshan**	**44.49**	**323**	⇑P	**P**	**11 27 44.9**	**-2.2**
SSE	comp=Z,44nm,0.7s,mb5.3			AMB	AMB		
NJ2	**Nanjing**	**46.57**	**322**	*e*P	**P**	**11 28 04.3**	**+0.7**
NJ2				AP	pP	11 28 14.3	+7.7
NJ2				XP	sP	11 28 18.3	+10
NJ2				PP	PP	11 29 53.6	+0.5
NJ2				S	**S**	**11 34 49.0**	**-2.6**
NJ2				XS		11 35 08.0	
NJ2				SS	SS	11 38 10.0	-0.2
NJ2	comp=Z,20nm,0.8s,mb5.1			AMB	AMB		
NJ2	comp=N,1μm,19.7s,MS5.0			LR	LR		
NJ2	comp=E,1μm,21.0s,MS5.0			LR	LR		
NJ2	comp=Z,1μm,20.0s,MS4.9			LR	LR		
MDJ	**Mudanjiang**	**51.59**	**341**	P	**P**	**11 28 41.1**	**-1.1**
MDJ	comp=Z,7.0nm,1.5s,mb4.4			AMB	AMB		
CN2	**Changchun**	**52.37**	**337**	*e*P	**P**	**11 28 48.1**	**+0.1**
CMAR	**Chiang Mai Arr**	**55.40**	**295**	P	**P**	**11 29 12.2**	**+1.5**
PET	comp=Z,2.4nm,0.8s,mb4.3,baz=116,slow=6.0,SNR=10 **Petropavlovsk**	**56.86**	**6**	*e*P	**P**	**11 29 16.7**	**-4.0**
PET	comp=Z,100nm,4.0s			pmax	pmax		
PET	comp=Z,400nm,15.0s,MS4.6			MLR	MLR		
HIA	**Hailar**	**59.10**	**337**	P	**P**	**11 29 36.6**	**+0.2**
ULN	comp=Z,7.8nm,1.2s,mb4.6 **Ulaanbaatar**	**63.87**	**329**	*e*P	**P**	**11 30 07.1**	**-1.5**
ULN	**Ulaanbaatar**	**63.87**	**329**	P	**P**	**11 30 09.2**	**+0.6**
ZAK	comp=Z,9.5nm,1.3s,mb4.7 **Zakamensk**	**67.37**	**329**	*e*P	**P**	**11 30 32.5**	**+1.4**
YAK	**Yakutsk**	**67.42**	**349**	*e*P	**P**	**11 30 31.3**	**+0.1**
YAK	comp=Z,8.0nm,0.5s,mb5.0			pmax	pmax		
BOD	**Bodaibo**	**67.94**	**340**	*e*P	**P**	**11 30 31.9**	**-2.7**
BILL	**Bilibino**	**72.36**	**6**	*e*P	**P**	**11 31 00.5**	**-0.8**
BILL	comp=Z,6.0nm,1.2s,mb4.4			pmax	pmax		
BILL				MLR	MLR		

	comp=Z,400nm,20.0s,MS4.7							
BILL	**Bilibino**	**72.36**	**6**	*e*P	**P**	**11 30 59.1**	**-2.2**	
VNDA	comp=Z,10nm,1.4s,mb4.6 **Vanda**	**74.07**	**177**	P	**P**	**11 31 11.1**	**0.0**	
	comp=Z,0.5nm,0.7s,mb3.6,baz=336,slow=5.4,SNR=5.1							
VNDA	**Vanda**	**74.07**	**177**	*e*P	**P**	**11 31 11.3**	**+0.2**	
TIXI	comp=Z,0.9nm,1.0s,mb3.6 **Tiksi**	**76.48**	**353**	*e*P	**P**	**11 31 25.1**	**+0.2**	
TIXI				pmax	pmax			
MKAR	comp=Z,17nm,0.9s,mb5.0 **Makanchi Array**	**78.02**	**319**	P	**P**	**11 31 35.3**	**+1.4**	
	comp=Z,0.9nm,0.8s,mb3.8,baz=101,slow=6.6,SNR=8.5							
MCK	**McKinley**	**80.65**	**23**	*e*P	**P**	**11 31 47.1**	**-0.8**	
COLA	comp=Z,6.6nm,1.2s,mb4.4 **College**	**81.61**	**22**	*e*P	**P**	**11 31 52.6**	**-0.2**	
ILAR	**Eielson Array**	**81.93**	**23**	P	**P**	**11 31 54.0**	**-0.4**	
QSPA	comp=Z,2.0nm,0.7s,mb4.1,baz=250,slow=5.5,SNR=26 **South Pole Qui**	**86.31**	**180**	P	**P**	**11 32 17.7**	**+1.3**	
BVAR	comp=Z,4.1nm,1.3s,mb5.5 **Borovoye Array**	**87.00**	**323**	P	**P**	**11 32 21.3**	**+1.0**	
BRVK	comp=Z,3.0nm,0.7s,mb4.7,baz=104,slow=6.1,SNR=26 **Borovoye**	**87.07**	**323**	*e*P	**P**	**11 32 19.7**	**-0.9**	
DLBC	**Dease Lake**	**87.53**	**31**	P	**P**	**11 32 24.1**	**+1.4**	
ZRNK	comp=Z,1.3nm,0.8s,mb4.2,baz=208,slow=7.5,SNR=3.4 **Zerenda**	**87.82**	**323**	*e*P	**P**	**11 32 23.9**	**-0.4**	
INK	**Inuvik**	**88.17**	**21**	P	**P**	**11 32 25.9**	**+0.4**	
INK	comp=Z,1.7nm,0.9s,mb4.3,baz=241,slow=4.4,SNR=3.7 **Inuvik**	**88.17**	**21**	P	**P**	**11 32 25.9**	**+0.4**	
YBH	**Yreka Blue Hor**	**89.93**	**48**	P	**P**	**11 32 36.6**	**+2.1**	
NVAR	comp=Z,2.2nm,0.9s,mb4.5,baz=254,slow=7.1,SNR=2.5 **Mina Array Bea**	**93.10**	**52**	P	**P**	**11 32 52.2**	**+3.0**	
NVAR	comp=Z,0.9nm,0.8s,mb4.3,baz=253,slow=13,SNR=7.1 **Mina Array Bea**	**93.10**	**52**	P	**P**	**11 32 52.2**	**+3.0**	
ARU	**Arti**	**94.14**	**326**	*de*P	**P**	**11 32 52.2**	**-1.3**	
YKA	**Yellowknife Ar**	**95.43**	**28**	P	**P**	**11 33 00.1**	**+0.8**	
	comp=Z,0.6nm,0.7s,mb4.2,baz=272,slow=4.8,SNR=23							
YKA	**Yellowknife Ar**	**95.43**	**28**	P	**P**	**11 33 00.1**	**+0.8**	
PDAR	**Pinedale Array**	**99.69**	**47**	P	**P**	**11 33 25.1**	**+5.9**	
	comp=Z,3.9nm,0.8s,mb3.8,baz=225,slow=2.1,SNR=3.5							
GERES	**GERESS Array B**	**121.92**	**328**	PKP	PKPdf	11 38 30.5	-0.9	
	comp=Z,0.6nm,0.6s,SNR=4.5							

JMA ***13*** *11:53:51.1±0.1,35.26N×141.40E,h33km±2km,M3.2*
NEIC ***13*** *11:54:01.9±0.8,34.44N×139.14E,h40km,mb4.9/2, Error ellipse: s-maj=37.8km s-min=11.6km az=78.0*
IDC ***13*** *11:54:03.9±3.4,34.40N×139.03E,h51km±32km,mb3.6/6, mb1 3.8/7,mb1mx3.6/23,ML3.8/1, Error ellipse: s-maj=36.2km s-min=17.9km az=94.0*
ISC 13 11:53:47.3±1.9,**35.22N**±0.07×**141.7E**±0.1,**h19**km±10km, **n24**,σ0§**87**/29,**mb4.4**/6,**1C**,**Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**0.81**	**226**	P	**Pb**	**11 54 04.4**	**+1.9**
CHOJ	**Chosi**	**0.83**	**306**	P	**Pb**	**11 54 03.3**	**+0.5**
CHOJ				*e*S	**Sb**	**11 54 11.9**	**-1.6**
BSO3	**Boso 3**	**1.05**	**247**	P	**Pb**	**11 54 06.9**	**+0.3**
KTR	**Katsuura**	**1.12**	**267**	P	**Pb**	**11 54 07.4**	**-0.5**
BSO4	**Boso 4**	**1.12**	**259**	P	**Pb**	**11 54 07.9**	**0.0**
JCN	**Nagara**	**1.23**	**280**	P	**Pn**	**11 54 09.6**	**0.0**
JYT	**Yasato**	**1.57**	**310**	P	**Pn**	**11 54 15.0**	**+0.4**
JHO	**Hitachi**	**1.66**	**327**	P	**Pn**	**11 54 16.3**	**+0.6**
JHJ	**Hachijo jima 2**	**2.62**	**217**	P	**Pn**	**11 54 28.0**	**-1.6**
JHJ	17nm,0.3s,baz=6.6,slow=13,SNR=9.8			S	**Sn**	**11 54 45.2**	**-16**
MAJO	37nm,0.3s,baz=74,slow=22,SNR=5.1 **Matsushiro**	**3.12**	**296**	*e*Pn	**Pn**	**11 54 36.6**	**+0.1**
MAT	**Matsushiro**	**3.12**	**296**	P	**Pn**	**11 54 37.1**	**+0.5**
MAT				S	**Sn**	**11 55 14.2**	**+0.6**
MAT	**Matsushiro**	**3.12**	**296**	*e*P	**Pn**	**11 54 37.0**	**+0.4**
MAT				*e*S	**Sn**	**11 55 14.0**	**+0.4**
CBIJ	**Chichi jima**	**8.11**	**177**	P	**P**	**11 55 45.7**	**-1.3**
CBIJ	4.0nm,0.3s,baz=60,slow=16,SNR=4.6			S	**Sn**	**11 57 10.8**	**-8.4**
PMG	1.3nm,0.3s,baz=251,slow=20,SNR=2.9 **Port Moresby**	**44.68**	**172**	P	**P**	**12 02 09.3**	**+8.2**
MKAR	17nm,0.9s,mb4.9 **Makanchi Array**	**45.28**	**304**	P	**P**	**12 02 05.3**	**-0.1**
KURK	1.0nm,0.5s,mb3.9,baz=91,slow=8.5,SNR=4.5 **Kurchatov**	**47.24**	**309**	P	**P**	**12 02 21.5**	**+0.8**
ZRNK	**Zerenda**	**52.80**	**314**	P	**P**	**12 03 01.7**	**-1.6**
FITZ	**Fitzroy Crossi**	**55.17**	**199**	*e*P	**P**	**12

KURK	**Kurchatov**	**19.52**	**296**	*eP*	**P**	**11 58 14.3**	**-5.2**
KKN	**Kakani**	**24.60**	**232**	*eP*	**P**	**11 59 10.6**	**-0.3**
	comp=Z,35nm,0.6s,mb5.1						
PKI	**Pulchoki**	**24.70**	**231**	*eP*	**P**	**11 59 10.3**	**-1.6**
BVAR	**Borovoye Array**	**24.76**	**301**	P	**P**	**11 59 13.1**	**+0.9**
	comp=Z,1.3nm,0.4s,mb3.8,baz=98,slow=10,SNR=15						
GKN	**Gorkha**	**24.79**	**233**	*eP*	**P**	**11 59 14.0**	**+1.2**
	comp=Z,23nm,0.8s,mb4.8						
BRVK	**Borovoye**	**24.83**	**301**	*eP*	**P**	**11 59 13.3**	**+0.5**
DMN	**Daman**	**24.84**	**232**	*eP*	**P**	**11 59 12.5**	**-0.7**
	comp=Z,28nm,0.8s,mb4.9						
KOLN	**Koldanda**	**25.56**	**234**	*eP*	**P**	**11 59 20.0**	**0.0**
	comp=Z,21nm,0.7s,mb4.8						
ZRNK	**Zerenda**	**25.60**	**301**	*eP*	**P**	**11 59 20.4**	**+0.3**
CM31	**Chiang Mai Arr**	**27.73**	**196**	P	**P**	**11 59 39.4**	**-0.7**
	comp=Z,2.7nm,0.6s,mb4.0						
ARU	**Arti**	**31.70**	**308**	*eP*	**P**	**12 00 14.2**	**-0.8**
ARU				pmax	pmax		
	comp=Z,12nm,0.7s,mb4.8						
ARU				MLR	MLR		
	comp=Z,1μm,23.0s,MS4.5						
BILL	**Bilibino**	**37.53**	**32**	*eP*	**P**	**12 01 03.7**	**-1.2**
BILL				pmax	pmax		
	comp=Z,2.0nm,0.8s,mb3.9						
BILL				MLR	MLR		
	comp=Z,500nm,22.0s,MS4.3						
BILL	**Bilibino**	**37.53**	**32**	*eP*	**P**	**12 01 04.8**	**-0.1**
	comp=Z,1.7nm,0.6s,mb4.0						
JOF	**Joensuu**	**44.59**	**321**	*ep*	**P**	**12 02 13.0**	**+10**
	comp=Z,0.4nm,0.3s,mb3.7						
KEV	**Kevo**	**44.83**	**331**	*ep*	**P**	**12 02 04.7**	**-0.1**
	comp=Z,0.3nm,0.3s,mb3.6						
FINES	**FINESS Array B**	**47.37**	**320**	P	**P**	**12 02 24.7**	**-0.3**
	comp=Z,1.7nm,0.9s,mb4.0,baz=90,slow=9.5,SNR=5.6						
FINES	**FINESS Array B**	**47.37**	**320**	P	**P**	**12 02 24.7**	**-0.3**
FINES				pmax	pmax		
	comp=Z,2.0nm,0.9s						
BRTR	**Keskin Array B**	**52.49**	**291**	P	**P**	**12 03 05.0**	**+0.4**
	comp=Z,1.1nm,0.6s,mb4.0,baz=90,slow=6.2,SNR=6.3						
NOA	**NORSAR Array B**	**54.06**	**323**	P	**P**	**12 03 14.8**	**-1.0**
	comp=Z,0.2nm,0.4s,mb3.4,baz=62,slow=6.4,SNR=2.2						
INK	**Inuvik**	**57.97**	**22**	P	**P**	**12 03 42.9**	**-1.0**
	comp=Z,4.5nm,1.4s,mb4.3,baz=323,slow=5.6,SNR=3.0						
INK	**Inuvik**	**57.97**	**22**	P	**P**	**12 03 42.9**	**-1.0**
INK				pmax	pmax		
	comp=Z,5.0nm,1.4s						
INK	**Inuvik**	**57.97**	**22**	*eP*	**P**	**12 03 42.6**	**-1.3**
	comp=Z,1.5nm,1.0s,mb4.0						
INK				P		12 03 42.9	
INK				P		12 03 49.4	
RAB	**Rabaul**	**63.77**	**128**	*eP*	**P**	**12 04 26.3**	**+2.3**
WRA	**Warramunga Arr**	**69.73**	**152**	P	**P**	**12 05 02.8**	**+1.1**
	comp=Z,0.7nm,0.8s,mb3.6,baz=344,slow=6.9,SNR=6.1						
WRA	**Warramunga Arr**	**69.73**	**152**	P	**P**	**12 05 02.8**	**+1.1**
WRA				pmax	pmax		
	comp=Z,1.0nm,0.8s						
ASAR	**Alice Springs**	**73.08**	**154**	P	**P**	**12 05 23.6**	**+1.8**
	comp=Z,0.9nm,0.5s,mb4.0,baz=347,slow=6.3,SNR=12						

NEIC ***13*** *12:14:09.1,34.74N×2.73W,MG3.5(MDD),After MDD.*
MDD ***13*** *12:14:18.2±1.0,35.41N×3.12W,mb3.3/1,Error ellipse: s-maj=11.6km s-min=3.3km az=60.0,PRXIMO*

ISC 13 12:14:14.0±2.0,35.1N±0.1×2.82W±0.09,h27km±6km,n10, σ1s20/18,Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
EMEL	**Melilla**	**0.23**	**330**	P		**Pb**	**12 14 19.7**	**-0.5**
	66nm,0.1s,SNR=7.9							
EMEL				S		**Sb**	**12 14 24.6**	**+0.2**
	163nm,0.1s,SNR=7.9							
EBER	**Berja**	**1.79**	**358**	P		**Pn**	**12 14 45.8**	**+2.0**
	0.3nm,0.2s,SNR=4.0							
EBER				S		**Sn**	**12 15 04.5**	**-1.3**
	6.2nm,0.3s,SNR=7.9							
EBER	**Berja**	**1.79**	**358**	P		**Pn**	**12 14 45.4**	**+1.6**
EQES	**Quesada**	**2.70**	**356**	P		**Pn**	**12 14 58.1**	**+1.3**
	0.6nm,0.1s,SNR=7.9							
EQES				S		**Sn**	**12 15 30.5**	**+1.5**
	2.0nm,0.2s,SNR=7.9							
EQES	**Quesada**	**2.70**	**356**	P		**Pn**	**12 14 58.1**	**+1.3**
EQES				S		**Sn**	**12 15 30.9**	**+2.0**
ESPR	**Espera**	**3.03**	**306**	P		**Pn**	**12 15 00.5**	**-0.9**
ESPR				S		**Sn**	**12 15 39.8**	**+2.5**
EADA	**Adamuz**	**3.37**	**336**	S		**Sn**	**12 15 45.2**	**-0.7**
	0.5nm,0.1s,SNR=7.9							
ETOB	**Tobarra**	**3.68**	**16**	P		**Pn**	**12 15 10.3**	**-0.4**
ETOB				S		**Sn**	**12 15 52.7**	**-1.0**
EGRO	**El Granado**	**4.48**	**304**	P		**Pn**	**12 15 21.4**	**-0.7**
	0.5nm,0.1s,SNR=7.9							
EGRO				S		**Sn**	**12 16 12.6**	**-1.3**
	1.1nm,0.2s,SNR=7.9							
EGRO	**El Granado**	**4.48**	**304**	P		**Pn**	**12 15 21.6**	**-0.5**
EGRO				S		**Sn**	**12 16 13.2**	**-0.8**

NEIC ***13*** *12:14:54.4±1.6,3.76S×151.17E,h39km±17km,mb4.5/11, Error ellipse: s-maj=18.3km s-min=8.8km az=133.0*
IDC ***13*** *12:14:57.9±5.5,3.80S×151.04E,h71km±51km,mb3.8/8, mb1 4.1/10,mb1mx4.0/15,ML3.3/2,MS3.8/2,Ms1 3.8/2, ms1mx3.5/19,Error ellipse: s-maj=48.3km s-min=26.2km az=121.0*

ISC 13 12:14:52.4±2.1,3.7S±0.1×151.1E±0.1,h34km±21km,n28, σ0s84/28,mb4.3/16,2C-2D,New Ireland region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
RAB	**Rabaul**	**1.17**	**114**	*eP*		**P**	**12 15 11.7**	**-0.8**
PMG	**Port Moresby**	**6.87**	**214**	P		**P**	**12 16 35.2**	**+1.8**
	1.5nm,0.3s,baz=30,slow=8.1,SNR=6.1							
PMG				LR		LR	12 19 31.2	
	comp=Z,608nm,18.6s,baz=197,slow=40							
PMG	**Port Moresby**	**6.87**	**214**	*ePn*		**P**	**12 16 34.6**	**+1.2**
PMG				P			12 16 35.2	
PMG				LR		LR	12 19 31.2	
CTA	**Charters Tower**	**16.94**	**196**	*iP*	↑	**P**	**12 18 50.1**	**+1.5**
	20nm,1.1s							
CTA				*eS*			12 20 31.6	
CTA	**Charters Tower**	**16.94**	**196**	P		**P**	**12 18 50.4**	**+1.8**
	0.1nm,0.3s,baz=8.9,slow=12,SNR=8.7							
CTA				LR		LR	12 24 50.3	
	comp=Z,296nm,18.8s,baz=19,slow=35							
CTAO	**Charters Tower**	**16.94**	**196**	*eP*		**P**	**12 18 49.1**	**+0.6**
	50nm,1.2s							
WRAB	**Tennant Creek**	**22.94**	**224**	*eP*		**P**	**12 19 53.4**	**-1.5**
	25nm,0.8s,mb4.7							
WB2	**Warramunga Arr**	**22.95**	**224**	*iP*	↓	**P**	**12 19 54.7**	**-0.3**
WRA	**Warramunga Arr**	**22.96**	**224**	P		**P**	**12 19 54.5**	**-0.5**
	3.3nm,0.6s,mb3.9,baz=50,slow=9.9,SNR=34							
AS12	**Alice Springs**	**25.87**	**218**	*iP*		**P**	**12 20 22.5**	**-0.5**
	12nm,1.1s,mb4.3							
ASAR	**Alice Springs**	**25.87**	**218**	P		**P**	**12 20 22.4**	**-0.6**
	2.6nm,0.6s,mb3.9,baz=52,slow=8.7,SNR=26							
FITZ	**Fitzroy Crossi**	**28.73**	**238**	*iP*	↑	**P**	**12 20 45.0**	**-4.1**
	6.6nm,0.9s,mb4.4							
FITZ	**Fitzroy Crossi**	**28.73**	**238**	P		**P**	**12 20 47.9**	**-1.1**
	2.7nm,0.6s,mb4.1,baz=5.3,slow=3.5,SNR=5.9							
STKA	**Stephens Creek**	**29.40**	**197**	P		**P**	**12 20 54.3**	**-0.6**
	2.5nm,0.8s,mb4.0,baz=18,slow=13,SNR=4.7							
YSS	**Yuzh-Sakhalins**	**50.99**	**353**	*eP*		**P**	**12 23 52.2**	**-0.8**
	4.5nm,0.6s,mb4.6							
ENH	**Enshi**	**52.17**	**313**	*eP*		**P**	**12 24 02.0**	**-0.2**
	4.8nm,0.9s,mb4.4							
CMAR	**Chiang Mai Arr**	**55.88**	**295**	P		**P**	**12 24 38.1**	**+8.6**
	1.1nm,0.8s,mb3.9,baz=94,slow=5.2,SNR=4.8							
BILL	**Bilibino**	**72.38**	**6**	*eP*		**P**	**12 26 16.6**	**0.0**
	3.4nm,0.9s,mb4.3							
MKAR	**Makanchi Array**	**78.39**	**319**	P		**P**	**12 26 51.8**	**+0.5**
	1.1nm,0.8s,mb3.9,baz=100,slow=6.6,SNR=9.6							
PMR	**Palmer**	**79.42**	**25**	*eP*		**P**	**12 26 56.2**	**-0.4**
	8.2nm,1.1s,mb4.6							
SML	**Sawmill**	**79.85**	**25**	*eP*		**P**	**12 26 59.3**	**+0.4**
MCK	**McKinley**	**80.53**	**23**	*eP*		**P**	**12 27 02.2**	**-0.3**
	6.5nm,0.9s,mb4.6							
MCK				*e*			12 27 09.2	
COLA	**College**	**81.49**	**22**	*eP*		**P**	**12 27 07.4**	**-0.2**
	4.2nm,0.9s,mb4.4							
ILAR	**Eielson Array**	**81.81**	**22**	P		**P**	**12 27 08.4**	**-0.7**
	2.3nm,0.8s,mb4.2,baz=251,slow=5.4,SNR=29							
DAWY	**Dawson**	**84.51**	**24**	*eP*		**P**	**12 27 24.3**	**+1.4**
QSPA	**South Pole Qui**	**86.24**	**180**	*eP*		**P**	**12 27 31.9**	**+0.8**
	27nm,1.1s,mb5.4							
BRVK	**Borovoye**	**87.43**	**323**	*eP*		**P**	**12 27 38.2**	**+0.7**
YKA	**Yellowknife Ar**	**95.27**	**28**	P		**P**	**12 28 14.9**	**+1.2**

0.7nm,0.9s,mb4.1,baz=269,slow=4.8,SNR=11

CASC ***13*** *12:45:45.6±2.1,12.65N×88.00W,h51km±29km,MD4.3, ML4.4,mb4.2(NEIC)*
IDC ***13*** *12:45:46.3±0.8,12.86N×87.66W,h69km±6km,mb3.8/10, mb1 4.0/11,mb1mx3.9/22,MS3.2/1,Ms1 3.2/1, ms1mx2.9/24,Error ellipse: s-maj=31.5km s-min=9.8km az=52.0*
NEIC ***13*** *12:45:50.1±1.0,12.74N×87.78W,h110km±13km,mb4.2/8, MD4.5(CASC),MD4.5(SNET),Error ellipse: s-maj=23.8km s-min=10.4km az=56.0*
NEIC Felt [II] at Zacatecoluca, El Salvador.

ISC 13 12:45:45.2±0.3,12.71N±0.05×87.94W±0.04,h72km±3km, h68km±1.0km:pP-P,n88,σ1s01/104,mb4.1/18,12C-12D, Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
CNCH	**Conchagua**	**0.57**	**11**	*iP*	↓	**P**	**12 45 59.5**	**+0.4**
CNCH				*eS*		**S**	**12 46 09.7**	**+0.4**
BLLM	**Bellamira**	**0.79**	**339**	*eP*		**P**	**12 46 01.6**	**+0.2**
BLLM				*eS*		**S**	**12 46 13.1**	**-0.3**
VSM	**San Miguel**	**0.79**	**336**	*eP*	↓	**P**	**12 46 01.6**	**+0.2**
VSM				*eS*		**S**	**12 46 14.6**	**+1.1**
CRIN	**San Cristobal**	**0.87**	**90**	*eP*	↓	**P**	**12 46 03.1**	**+0.7**
CHIN	**Chinandega**	**0.90**	**94**	*eP*		**P**	**12 46 03.3**	**+0.6**
CHIN				*eS*		**S**	**12 46 14.9**	**-0.8**
PYN	**Poneloya**	**0.95**	**110**	*eP*	↓	**P**	**12 46 03.0**	**-0.5**
LEON	**Leon**	**1.06**	**106**	*eP*	↓	**P**	**12 46 04.1**	**-0.7**
LEON				*eS*		**S**	**12 46 17.6**	**-1.9**
TEL3	**Telica 3**	**1.08**	**97**	*eP*	↓	**P**	**12 46 05.1**	**+0.1**
CAHU	**Cacacuatique**	**1.09**	**346**	*eP*	↓	**P**	**12 46 06.0**	**+0.8**
CAHU				*eS*		**S**	**12 46 21.2**	**+1.2**
TELN	**Telica**	**1.09**	**95**	*eP*	↑	**P**	**12 46 05.2**	**0.0**
TELN				*eS*		**S**	**12 46 18.4**	**-1.6**
CNGN	**Cerro Negro**	**1.23**	**100**	*eP*	↑	**P**	**12 46 07.1**	**0.0**
SNVI	**San Vicente**	**1.25**	**316**	*eP*		**P**	**12 46 07.0**	**-0.4**
SNVI				*eS*		**S**	**12 46 23.2**	**-0.7**
LCBS	**La Ceiba**	**1.38**	**313**	*eP*	↑	**P**	**12 46 08.9**	**-0.3**
MOMJ	**Momotombo**	**1.40**	**102**	*eP*		**P**	**12 46 08.2**	**-1.3**
MOMJ				*eS*		**S**	**12 46 24.6**	**-2.8**
COPN	**Copaltepe**	**1.42**	**112**	*eP*		**P**	**12 46 09.3**	**-0.4**
LFRS	**El Faro**	**1.42**	**310**	*iP*	↑	**P**	**12 46 09.3**	**-0.4**
SOMN	**Somoto**	**1.48**	**61**	*eP*	↓	**P**	**12 46 13.1**	**+2.7**
LBRS	**Las Brisas**	**1.48**	**314**	*eP*		**P**	**12 46 10.4**	**-0.1**
LBRS				*eS*		**S**	**12 46 28.6**	**-0.5**
LFU	**La Fuente**	**1.54**	**312**	*eP*	↑	**P**	**12 46 11.2**	**0.0**
QUIN	**Quiabu**	**1.54**	**74**	*eP*	↓	**P**	**12 46 11.9**	**+0.6**
SNET	**Serv Nac Est T**	**1.59**	**308**	*eP*		**P**	**12 46 11.9**	**0.0**
SNET				*eS*		**S**	**12 46 30.2**	**-1.4**
SNET				*i*			12 46 36.5	
	comp=Z,7μm,0.5s							
APYN	**Apoyeque**	**1.62**	**107**	*eP*		**P**	**12 46 13.3**	**+0.9**
BOQS	**Boqueron**	**1.66**	**308**	*eP*	↑	**P**	**12 46 12.8**	**0.0**
BOQS				*eS*		**S**	**12 46 32.5**	**-0.6**
XAVN	**Gruta Xavier**	**1.67**	**109**	*eP*	↑	**P**	**12 46 13.1**	**0.0**
MGAN	**Managua**	**1.75**	**108**	*eP*	↑	**P**	**12 46 11.9**	**-0.1**
MGAN				*eS*		**S**	**12 46 34.6**	**-0.7**
MGAN				*i*			12 46 40.0	
	comp=N,2μm,0.3s							
CRUN	**El Crucero**	**1.76**	**114**	*iP*		**P**	**12 46 15.9**	**+1.7**
WILN	**Americas 2**	**1.80**	**107**	*eP*		**P**	**12 46 14.7**	**0.0**
WILN				*eS*		**S**	**12 46 36.5**	**0.0**
TICN	**Ticuantepe**	**1.80**	**112**	*eP*		**P**	**12 46 14.9**	**+0.2**
PYTN	**Playitas**	**1.85**	**95**	*eP*		**P**	**12 46 15.3**	**0.0**
COFN	**Cofrada**	**1.87**	**107**	*eP*		**P**	**12 46 15.8**	**0.0**
MASN	**Masaya**	**1.89**	**112**	*eP*		**P**	**12 46 16.1**	**+0.1**
SBLS	**San Blas**	**1.99**	**305**	*eP*		**P**	**12 46 17.5**	**+0.2**
SNJE	**San Jose**	**1.99**	**306**	*iP*	↓	**P**	**12 46 17.4**	**+0.1**
SNJE				*eS*		**S**	**12 46 38.0**	**-3.0**
APON	**Apoyo**	**1.99**	**113**	*eP*		**P**	**12 46 17.8**	**+0.4**
RTR	**El Retiro**	**2.04**	**306**	*eP*		**P**	**12 46 18.0**	**0.0**
MTO2	**Montecristo 2**	**2.18**	**321**	*iP*	↓	**P**	**12 46 20.2**	**+0.2**
RBDL	**Robledal**	**2.20**	**310**	*eP*		**P**	**12 46 20.6**	**+0.4**
CUSS	**Cusmapa**	**2.29**	**302**	*eP*		**P**	**12 46 20.9**	**-0.6**
CONN	**Concepcion**	**2.53**	**116**	*eP*		**P**	**12 46 25.2**	**+0.2**
CRZC	**La Cruz**	**2.88**	**127**	*eP*		**P**	**12 46 30.4**	**+0.5**
CRZC				*eS*		**S**	**12 47 03.7**	**+0.2**
CRZC	**La Cruz**	**2.88**	**127**	*eP*		**P**	**12 46 32.6**	**+2.7**
CRZC				*eS*		**S**	**12 47 04.7**	**+1.2**
JTS	**JuntasAbangare**	**3.79**	**129**	P		**P**	**12 46 42.3**	**-0.2**
	comp=N,5.2nm,0.3s,baz=315,slow=18,SNR=19							
JTS				S		**S**	**12 47 23.6**	**-2.6**
	baz=286,slow=18,SNR=2.3							
JTS				LR		LR	12 48 17.9	
	comp=N,285nm,19.0s,baz=19,slow=41							
JTS	**JuntasAbangare**	**3.79**	**129**	*ePn*		**P**	**12 46 44.3**	**+1.8**
JTS				*eS*		**S**	**12 47 30.9**	**+4.7**
JCR	**Jicaral**	**3.97**	**135**	*eP*		**P**	**12 46 45.6**	**+0.5**
JCR	**Jicaral**	**3.97**	**135**	*eP*		**P**	**12 46 46.0**	**+1.0**
CGA2	**Cerro Gallo 2**	**4.33**	**128**	*eP*		**P**	**12 46 53.0**	**+2.8**
CGA2	**Cerro Gallo 2**	**4.33**	**128**	*eP*		**P**	**12 46 53.7**	**+3.6**
PRS1	**Puriscal**	**4.47**	**127**	*eP*		**P**	**12 46 55.9**	**+3.8**
LAJ	**Bijagual**	**4.69**	**127**	*eP*		**P**	**12 46 55.5**	**+0.3**
ICR	**Volcan Irazu**	**4.86**	**123**	*eP*		**P**	**12 47 01.7**	**+4.3**
LCR2	**La Lucha 2**	**4.86**	**127**	*eP*		**P**	**12 46 57.6**	**+0.2**
LCR2	**La Lucha 2**	**4.86**	**127**	*eP*		**P**	**12 47 00.8**	**+3.4**
URSC	**Urasca**	**4.98**	**125**	*eP*		**P**	**12 47 03.4**	**+4.3**
BUS	**Buena Vista**	**5.16**	**127**	*eP*		**P**	**12 47 04.8**	**+3.2**
BUS				*eS*		**S**	**12 48 00.7**	**+0.2**
ACR	**Cerro Adams**	**6.18**	**130**	*eP*		**P**	**12 47 14.1**	**-1.6**
TXAR	**Lajitas Array**	**22.07**	**321**	P		**P**	**12 50 36.8**	**+1.4**
	comp=N,4.7nm,0.7s,mb4.0,baz=136,slow=10,SNR=21							
MIAR	**Mount Ida**	**22.33**	**348**	*eP*		**P**	**12 50 38.8**	**+0.9**
	comp=N,8.2nm,0.5s,mb4.3							
MIAR				*eS*		**S**	**12 54 43.8**	**+10**
WMOK	**Wichita Mounta**	**24.04**	**338**	*eP*		**P**	**12 50 55.7**	**+1.3**
	comp=N,2.1nm,0.7s,mb3.6							
MNTX	**Cornudas Mount**	**24.79**	**322**	*eP*		**P**	**12 51 01.5**	**-0.3**
	comp=N,1.4nm,0.6s,mb3.6							
CPRX	**Cap Rock**	**24.93**	**327**	*eP*		**P**	**12 51 03.6**	**+0.5**
CCM	**Cathedral Cave**	**25.41**	**354**	*eP*		**P**	**12 51 06.6**	**-1.1**
	comp=N,5.7nm,0.7s,mb4.1							
PV10	**Paradox Valley**	**31.71**	**327**	*eP*		**P**	**12 52 03.9**	**-0.4**
SADO	**Sadowa**	**32.83**	**12**	P		**P**	**12 52 12.8**	**-1.1**
	comp=N,3.9nm,0.6s,mb4.5,baz=219,slow=9.7,SNR=5.7							
RSSD	**Black Hills**	**34.22**	**339**	*eP*		**P**	**12 52 26.5**	**+0.6**
	comp=N,3.6nm,0.7s,mb4.3							
TCUT	**Toone Canyon**	**34.97**	**328**	*eP*		**P**	**12 52 33.0**	**+0.7**
PDAR	**Pinedale Array**	**35.32**	**332**	P		**P**	**12 52 35.5**	**+0.3**
	comp=N,1.3nm,0.5s,mb4.0,baz=125,slow=11,SNR=15							
HWUT	**Hardware Ranch**	**35.41**	**329**	*eP*		**P**	**12 52 36.5**	**+0.4**
	comp=N,6.4nm,0.7s,mb4.6							
NVAR	**Mina Array Bea**	**37.19**	**319**	P		**P**	**12 52 52.4**	**+1.3**
	comp=N,0.8nm,0.7s,mb3.8,baz=122,slow=9.2,SNR=9.1							
NVAR				PcP		PcP	12 55 10.5	+0.3
	comp=N,0.6nm,0.5s,baz=122,slow=4.9,SNR=6.8							
NVAR				pPcP			12 55 29.3	
	comp=N,0.6nm,0.5s,baz=116,slow=4.5,SNR=6.2							
QLMT	**Earthquake Lak**	**37.78**	**332**	*eP*		**P**	**12 52 57.6**	**+1.7**
ULM	**Lac du Bonnet**	**38.00**	**352**	P		**P**	**12 52 55.8**	**-1.9**
	comp=N,3.1nm,0.6s,mb4.3,baz=168,slow=5.8,SNR=5.7							
HLID	**Hailey**	**38.27**	**328**	*eP*		**P**	**12 53 00.6**	**+0.6**
	comp=N,1.5nm,0.5s,mb4.1							
MCMT	**McKenzie Canyo**	**38.43**	**331**	*eP*		**P**	**12 53 02.9**	**+1.5**
MCMT				*e*		pP	12 53 20.4	+1.3
BOZ	**Bozeman (W)**	**38.50**	**333**	*eP*		**P**	**12 53 02.5**	**+0.6**
	comp=N,2.8nm,0.6s,mb4.3							
BOZ				*e*		pP	12 53 19.5	-0.1
NLW	**Nelson Butte**	**44.38**	**329**	*eP*		**P**	**12 53 49.5**	**-0.7**
SCHQ	**Schefferville**	**45.17**	**17**	P		**P**	**12 53 54.9**	**-1.5**
	comp=N,4.4nm,0.5s,mb4.5,baz=282,slow=16,SNR=9.9							
RPW	**Rockport**	**45.22**	**329**	*eP*		**P**	**12 53 55.5**	**-1.3**
CPUP	**Villa Florida**	**48.91**	**143**	P		**P**	**12 54 24.4**	**-1.6**
	comp=N,0.9nm,0.5s,mb4.0,baz=330,slow=7.9,SNR=3.8							
CPUP	**Villa Florida**	**48.91**	**143**	P		**P**	**12 54 24.4**	**-1.6**
YKA	**Yellowknife Ar**	**53.24**	**345**	P		**P**	**12 54 56.2**	**-2.1**
	comp=N,0.6nm,0.4s,mb4.0,baz=136,slow=8.1,SNR=30							
YKA				pP		pP	12 55 13.2	-3.5
	comp=N,0.6nm,0.5s,baz=145,slow=6.7,SNR=6.9							
YKA				PcP		PcP	12 56 02.4	-2.7
	comp=N,0.3nm,0.5s,baz=150,slow=3.8,SNR=7.2							
YKA	**Yellowknife Ar**	**53.24**	**345**	P		**P**	**12 54 56.2**	**-2.1**
YKA				pP		pP	12 55 13.2	-3.5
YKA				PcP		PcP	12 56 02.4	-2.8
DLBC	**Dease Lake**	**55.47**	**335**	P		**P**	**12 55 14.5**	**-0.2**
	comp=N,2.3nm,0.8s,mb4.3,baz=185,slow=7.6,SNR=8.3							
DLBC				pP		pP	12 55 32.1	-1.1
	comp=N,2.5nm,0.7s,baz=150,slow=8.6,SNR=5.9							
INK	**Inuvik**	**62.82**	**343**	P		**P**	**12 56 03.0**	**-2.3**
	comp=N,1.1nm,1.1s,mb3.7,baz=158,slow=9.0,SNR=7.1							
INK				pP		pP	12 56 21.2	-3.0
	comp=N,1.0nm,0.8s,baz=138,slow=6.2,SNR=3.3							
INK	**Inuvik**	**62.82**	**343**	P		**P**	**12 56 03.0**	**-2.3**
INK				pP		pP	12 56 21.2	-3.0
WB2	**Warramunga Arr**	**138.87**	**254**	*eP*		PKPdf	13 05 00.9	-3.2
WRA	**Warramunga Arr**	**138.88**	**254**	PKhKP			13 05 00.3	
	comp=N,0.4nm,0.9s,baz=17,slow=0.7,SNR=8.4							
WRA				PKP		PKPdf	13 05 05.3	+1.2
	comp=N,0.4nm,0.6s,baz=87,slow=0.7,SNR=11							
WRA				pPKP			13 05 27.0	
	comp=N,1.1nm,1.1s,baz=88,slow=1.9,SNR=2.6							
ASAR	**Alice Springs**	**138.92**	**249**	PKhKP			13 04 58.8	
	comp=N,0.3nm,0.6s,baz=110,slow=3.2,SNR=3.1							
ASAR				PKP		PKPdf	13 05 08.0	+3.9
	comp=N,0.6nm,0.6s,baz=110,slow=2.7,SNR=4.5							
FITZ	**Fitzroy Crossi**	**147.22**	**256**	PKPbc		PKPdf	13 05 22.5	+3.7
	comp=N,1.1nm,0.7s,baz=85,slow=11,SNR=4.1							
CMAR	**Chiang Mai Arr**	**148.30**	**347**	PKPbc		PKPdf	13 05 24.1	+3.6
	comp=N,0.7nm,0.8s,baz=335,slow=3.4,SNR=4.3							

BER ***13*** *12:58:46.4±1.1,59.78N×13.07E,ML2.5(NAO), Suspected explosion*

NAO 13 12:58:45.1±3.1,59.75N×13.04E,h4km±40km,ML2.5, Sweden

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
HFS	**Hagfors**	**0.51**	**40**	Pg		Pg	12 58 54.1	-1.1
	baz=220,slow=18							
HFS				Lg			12 59 01.2	
	baz=222,slow=37							
HFS				Rg			12 59 04.5	
	baz=223,slow=56							
NB2	**NORSAR Subarra**	**1.58**	**326**	Pn		Pn	12 59 12.9	-1.1
NB2				Lg			12 59 34.1	
KON	**Kongsberg**	**1.75**	**268**	Pn		Pn	12 59 16.9	+0.5
KON				Lg			12 59 41.0	
KONO	**Kongsberg**	**1.75**	**268**	Pn		Pn	12 59 16.9	+0.5
KONO				Lg			12 59 41.0	

JMA ***13*** *13:00:35.1±0.2,24.95N×122.36E,h36km,M2.2*
TAP ***13*** *13:00:36.1,24.30N×122.20E,h23km,ML3.1*

ISC 13 13:00:34.6±2.9,24.7N±0.3×122.2E±0.1,h32km±12km,n6, σ0s72/10,Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
YOJ	**Yonaguni jima**	**0.77**	**108**	P		**Pn**	**13 00 49.4**	**+0.2**
YOJ				*eS*		**Sb**	**13 00 59.6**	**0.0**
IRIF	**Iriomote-Funau**	**1.43**	**105**	P		**Pn**	**13 00 58.5**	**-0.2**
IRIF				*eS*		**Sn**	**13 01 15.9**	**-0.7**
HATJ	**Hateruma jima**	**1.59**	**114**	*eS*		**Sn**	**13 01 21.6**	**+1.0**
JKRS	**Kuro-shima**	**1.70**	**106**	P		**Pn**	**13 01 02.8**	**+0.2**
JKRS				*eS*		**Sn**	**13 01 23.6**

BCPH					*i* S		**S**	13 12 59.5	**-0.2**
SJMP	**San Jose**		**2.54**	**134**⇑	*e*P		**P**	13 12 31.2	**+0.6**
SJMP					*e*S		**S**	13 12 59.2	**-1.5**
BOAC	**Boac**		**2.65**	**106**⇑	*e*P		**P**	13 12 30.8	**-1.3**
BOAC					*e*S		**S**	13 13 04.5	**+1.1**
POLP	**Polilio Island**		**2.67**	**79**⇑	*e*P		**P**	13 12 33.4	**+1.0**
POLP					*e*S		**S**	13 13 04.5	**+0.6**
BALP	**Baler**		**2.72**	**56**⇑	*e*P		**P**	13 12 33.3	**+0.3**
BALP					*e*S		**S**	13 13 04.3	**-0.8**
ENPP	**El Nido**		**3.01**	**176**⇑	*e*P		**P**	13 12 38.0	**+0.8**
ENPP					*e*S		**S**	13 13 10.9	**-1.7**
OTRP	**Odiongan**		**3.29**	**124**⇑	*e*P		**P**	13 12 41.5	**+0.3**
CAUP	**Cauayan**		**3.68**	**42**⇑	*e*P		**P**	13 12 47.4	**+0.7**
ABRA	**Dolores**		**3.69**	**23**⇑	*e*P		**P**	13 12 47.0	**+0.2**
CUYO	**Cuyo Island**		**3.79**	**152**⇑	*e*P		**P**	13 12 47.9	**-0.3**
CUYO					*e*S		**S**	13 13 27.7	**-4.5**
KALP	**Kalibo**		**3.95**	**130**	*e*P		**P**	13 12 50.9	**+0.3**
APYP	**Conner**		**4.10**	**28**⇑	*e*P		**P**	13 12 54.0	**+1.4**
APYP					*e*S		**S**	13 13 38.6	**-1.5**
BATP	**Bataraza**		**5.58**	**195**⇑	*e*P		**P**	13 13 13.1	**-0.5**
BATP					*e*S		**S**	13 14 13.4	**-4.0**
MBWA	**Marble Bar**		**35.17**	**179**	P		**P**	13 18 43.3	**-0.5**
WRAB	**Tennant Creek**		**37.06**	**156**	*e*P		**P**	13 18 59.3	**-0.5**
	9.4nm,0.6s,mb4.8								
WRA	**Warramunga Arr**		**37.07**	**156**	P		**P**	13 18 59.5	**-0.3**
	2.6nm,0.6s,mb4.3,baz=335,slow=9.6,SNR=56								
WB2	**Warramunga Arr**		**37.07**	**156**⇑	*i*P		**P**	13 18 59.7	**-0.2**
AS12	**Alice Springs**		**40.30**	**159**	*e*P		**P**	13 19 27.7	**+0.9**
	2.1nm,0.5s,mb4.1								
ASAR	**Alice Springs**		**40.30**	**159**	P		**P**	13 19 27.6	**+0.8**
	4.1nm,0.8s,mb4.2,baz=339,slow=7.2,SNR=40								
ASAR					PcP		PcP	13 21 31.8	+1.1
	0.5nm,0.7s,baz=352,slow=2.9,SNR=4.5								
CTA	**Charters Tower**		**43.24**	**141**	P		**P**	13 19 51.6	**+0.6**
	2.1nm,0.4s,mb4.2,baz=312,slow=7.4,SNR=4.1								
CTAO	**Charters Tower**		**43.24**	**141**	*e*P		**P**	13 19 51.5	**+0.5**
	2.7nm,0.6s,mb4.2								
KURK	**Kurchatov**		**48.96**	**327**	*e*P		**P**	13 20 40.5	**+4.6**
STKA	**Stephens Creek**		**50.61**	**155**	P		**P**	13 20 48.5	**-0.3**
	1.0nm,0.5s,mb4.0,baz=323,slow=10,SNR=3.2								
MCK	**McKinley**		**78.17**	**27**	*e*P		**P**	13 23 49.6	**+1.5**
	0.9nm,0.6s,mb3.9								
YKA	**Yellowknife Ar**		**92.83**	**22**	P		**P**	13 25 04.2	**+3.2**
	0.2nm,0.7s,mb3.7,baz=309,slow=4.4,SNR=6.2								
YKA	**Yellowknife Ar**		**92.83**	**22**	P		**P**	13 25 04.2	**+3.2**

NAO ***13*** *13:18:21.0±3.2,58.00N×6.51E,ML2.3*
NEIC ***13*** *13:18:23.7,58.18N×6.22E,ML2.3(BER), After BER.*
BER ***13*** *13:18:26.6±3.4,58.30N×6.40E,MD2.1,ML2.1, ML2.3(NAO),Explosion*

ISC 13 13:18:23.5±1.4,58.28N±0.07×6.4E±0.1,n18,σ1§35/30, Southern Norway

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SNART	**Snartemo**	**0.43**	**82**	*e*P	**Pg**	13 18 32.9	**+0.8**
SNART				*e*S	**Sg**	13 18 39.5	**+1.6**
KMY	**Karmoy**	**1.11**	**328**	*e*P	**Pb**	13 18 44.5	**-0.7**
KMY				*e*S	**Sb**	13 19 00.0	**0.0**
KMY	**Karmoy**	**1.11**	**328**	*e*P	**Pb**	13 18 44.6	**-0.6**
KMY				*e*S	**Sb**	13 19 00.0	**0.0**
BLS5	**Blasjo**	**1.14**	**2**	*e*P	**Pb**	13 18 46.2	**+0.4**
BLS5				*e*S	**Sb**	13 19 03.7	**+2.6**
BLS5				AML	AML	13 19 09.1	
	comp=Z,21nm,0.2s						
ODD1	**Odda**	**1.64**	**4**	*e*P	**Pn**	13 18 53.0	**-0.7**
ODD1				*e*S	**Sb**	13 19 14.2	**-1.3**
ODD1				AML	AML	13 19 17.5	
	comp=Z,17nm,0.2s						
EGD	**Espegrend**	**2.08**	**344**	*e*P	**Pn**	13 18 59.8	**-0.3**
EGD				AML	AML	13 19 32.6	
	comp=Z,64nm,0.3s						
EGD	**Espegrend**	**2.08**	**344**	*e*P	**Pn**	13 18 59.8	**-0.3**
EGD				*e*S	**Sn**	13 19 28.8	**+1.7**
KON	**Kongsberg**	**2.15**	**49**	Pn	**Pn**	13 19 01.0	**0.0**
KON				Lg		13 19 33.9	
KONO	**Kongsberg**	**2.15**	**49**	Pn	**Pn**	13 19 01.0	**0.0**
KONO				Lg		13 19 33.9	
BER	**Bergen**	**2.18**	**346**	*e*P	**Pn**	13 19 02.9	**+1.4**
BER				*e*S	**Sn**	13 19 31.8	**+2.3**
RUND	**Rundenannen**	**2.20**	**347**	*e*P	**Pn**	13 19 01.6	**-0.1**
RUND				*e*S	**Sn**	13 19 31.4	**+1.3**
ASK	**Askoy**	**2.29**	**345**	*e*P	**Pn**	13 19 02.6	**-0.4**
ASK				*e*S	**Sn**	13 19 30.8	**-1.6**
ASK				AML	AML	13 19 39.0	
	comp=Z,38nm,0.2s						
ASK	**Askoy**	**2.29**	**345**	*e*P	**Pn**	13 19 03.1	**0.0**
ASK				*e*S	**Sn**	13 19 30.8	**-1.6**
HYA	**Hoyanger**	**2.89**	**358**	*e*P	**Pn**	13 19 12.6	**+0.9**
HYA				*e*S	**Sn**	13 19 53.1	**+5.4**
SUE	**Sulen**	**2.90**	**344**	*e*S	**Sn**	13 19 44.9	**-3.0**
NB2	**NORSAR Subarra**	**3.69**	**39**	Pn	**Pn**	13 19 21.7	**-1.3**
NB2				Lg		13 20 22.1	
HFS	**Hagfors**	**4.18**	**61**	Pn	**Pn**	13 19 28.6	**-1.4**
	baz=245,slow=14						
HFS				Sn	**Sn**	13 20 17.1	**-3.2**
	baz=242,slow=28						
MOL	**Molde**	**4.34**	**7**	*e*S	**Sn**	13 20 22.1	**-2.2**

IDC 13 13:35:36.7±6.6,19.44N×143.93E,mb3.6/4,mb1 3.7/4, mb1mx3.5/21,Error ellipse: s-maj=266.0km s-min=24.9km az=78.0,Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**40.25**	**194**	P	P	13 43 15.9	-1.2
	0.7nm,0.4s,baz=13,slow=8.5,SNR=15						
ASAR	**Alice Springs**	**43.94**	**193**	P	P	13 43 44.6	-2.7
	0.2nm,0.5s,baz=13,slow=7.1,SNR=4.9						
MKAR	**Makanchi Array**	**56.74**	**314**	P	P	13 45 23.7	-1.0
	0.2nm,0.5s,baz=102,slow=7.6,SNR=2.6						
BVAR	**Borovoye Array**	**64.84**	**320**	P	P	13 46 16.1	-3.5
	0.7nm,0.6s,baz=104,slow=5.9,SNR=4.7						

NEIC ***13*** *13:38:47.2±4.1,7.90S×109.02E,h63km±36km,mb4.4/7, Error ellipse: s-maj=33.8km s-min=10.8km az=53.0*
DJA ***13*** *13:38:47.6±0.3,7.11S×109.18E,h200km,MD4.7/4, ML5.3/4,Error ellipse: s-maj=69.2km s-min=4.3km az=10.0.*
IDC ***13*** *13:38:47.8±9.8,7.83S×109.12E,h67km±83km,mb3.7/6, mb1 3.8/7,mb1mx3.6/17,ML3.6/1,Error ellipse: s-maj=114.0km s-min=20.1km az=50.0*

ISC 13 13:38:50.6±0.7,7.8S±0.1×109.19E±0.06,h111km±6km, n35,σ1§08/34,mb4.1/11,6C-5D,Jawa

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
LEM	**Lembang**	**1.85**	**303**	*e*Pn	**P**	13 39 22.7	**+0.6**
SINI	**Singah**	**1.86**	**296**	*e*Pn	**P**	13 39 20.4	**-1.8**
PACI	**Pancar Gunung**	**2.57**	**298**	*e*Pn	**P**	13 39 30.5	**-1.2**
KALI	**Kaliastana**	**2.61**	**286**	*e*Pn	**P**	13 39 34.0	**+1.8**
KELI	**Kelakatan**	**5.27**	**95**⇓	*i*Pn	**P**	13 40 10.1	**+1.8**
	278nm,0.2s						
KELI				⇓*i*Sn	**S**	13 41 08.7	**+0.4**
INGI	**Ingas**	**5.98**	**100**⇑	*i*Pn	**P**	13 40 20.1	**+2.2**
	186nm,0.2s						
INGI				⇓*i*Sn	**S**	13 41 25.2	**-0.4**
RATI	**Rata**	**6.34**	**98**⇑	*i*Pn	**P**	13 40 23.5	**+0.6**
	563nm,0.2s						
RATI				⇑*i*Sn	**S**	13 41 32.2	**-2.3**
KEDI	**Kedomdong**	**6.89**	**96**⇓	*i*Pn	**P**	13 40 29.7	**-0.8**
	115nm,0.2s						
KEDI				⇑*i*Sn	**S**	13 41 41.8	**-6.0**
MBWA	**Marble Bar**	**16.71**	**144**	P	**P**	13 42 34.4	**-5.0**
FITZ	**Fitzroy Crossi**	**18.99**	**124**⇑	*i*P	**P**	13 43 05.8	**-0.3**
	0.6nm,0.3s						
FITZ				*e*S	**S**	13 46 20.0	**-10**
FITZ	**Fitzroy Crossi**	**18.99**	**124**	P	**S**	13 43 05.4	**-0.7**
	0.1nm,0.3s,baz=174,slow=8.9,SNR=6.3						
FITZ				S	**S**	13 46 21.9	**-8.4**
	0.1nm,0.3s,baz=163,slow=17,SNR=2.7						
WRA	**Warramunga Arr**	**27.18**	**119**	P	**P**	13 44 26.1	**+0.2**
	0.8nm,0.4s,mb3.6,baz=289,slow=12,SNR=28						
WRA				PcP	PcP	13 47 44.2	+0.5
	0.5nm,0.7s,baz=306,slow=2.1,SNR=7.1						
WRAB	**Tennant Creek**	**27.18**	**119**	*e*P	**P**	13 44 25.4	**-0.5**
	8.9nm,0.9s,mb4.3						
WB2	**Warramunga Arr**	**27.19**	**119**⇓	*i*P	**P**	13 44 25.8	**-0.2**
AS12	**Alice Springs**	**28.45**	**126**	*e*P	**P**	13 44 37.1	**-0.2**
	2.3nm,0.9s,mb3.7						
ASAR	**Alice Springs**	**28.45**	**126**	P	**P**	13 44 36.9	**-0.5**
	1.4nm,0.7s,mb3.6,baz=305,slow=9.1,SNR=19						
ASAR				PcP	PcP	13 47 47.6	+0.8
	0.5nm,0.3s,baz=306,slow=2.2,SNR=8.0						
STKA	**Stephens Creek**	**38.48**	**133**⇑	*i*P	**P**	13 46 03.9	**+0.4**
	1.6nm,0.4s,mb4.2						
STKA	**Stephens Creek**	**38.48**	**133**	P	**P**	13 46 03.4	**-0.2**
	1.5nm,0.4s,mb4.2,baz=324,slow=12,SNR=7.4						
ULN	**Ulaanbaatar**	**55.48**	**358**	*e*P	**P**	13 48 17.0	**+0.8**
	1.6nm,0.8s,mb4.1						
MKAR	**Makanchi Array**	**59.42**	**339**	P	**P**	13 48 43.2	**-0.7**
	0.7nm,0.5s,mb4.0,baz=152,slow=7.6,SNR=10						
MKAR	**Makanchi Array**	**59.42**	**339**	P	**P**	13 48 43.2	**-0.7**
YSS	**Yuzh-Sakhalins**	**62.17**	**25**	*e*P	**P**	13 49 02.4	**0.0**
	14nm,1.0s,mb4.9						
KURK	**Kurchatov**	**64.03**	**339**	*e*P	**P**	13 49 14.2	**-0.5**
BVAR	**Borovoye Array**	**68.99**	**336**	P	**P**	13 49 45.7	**-0.2**
	0.5nm,0.5s,mb3.6,baz=135,slow=6.3,SNR=4.6						
ZRNK	**Zerenda**	**69.50**	**335**	*e*P	**P**	13 49 46.9	**-2.2**
TIXI	**Tiksi**	**80.38**	**6**	*e*P	**P**	13 50 51.2	**+0.4**
	5.4nm,0.9s,mb4.4						
BRTR	**Keskin Array B**	**84.00**	**311**	P	**P**	13 51 11.3	**+1.3**
	1.8nm,0.9s,mb3.9,baz=121,slow=7.2,SNR=7.1						
BILL	**Bilibino**	**85.58**	**18**	*e*P	**P**	13 51 18.5	**+1.3**
	3.0nm,1.2s,mb4.1						
MCK	**McKinley**	**102.24**	**26**	*e*P	Pdif	13 52 35.6	+1.5
	0.6nm,0.5s						
YKA	**Yellowknife Ar**	**116.87**	**21**	PKP	PKPdf	13 57 24.2	+2.4
	0.1nm,0.4s,baz=317,slow=1.9,SNR=5.2						
YKA	**Yellowknife Ar**	**116.87**	**21**	PKP	PKPdf	13 57 24.2	+2.4
CCM	**Cathedral Cave**	**144.69**	**28**	*e*PKPdf	PKPdf	13 58 17.1	+2.6
JCT	**Junction City**	**144.74**	**46**	*e*PKPdf	PKPdf	13 58 18.2	+3.3
MIAR	**Mount Ida**	**146.16**	**35**	*e*PKPbc	PKPbc	13 58 22.7	+4.3
WVT	**Waverly**	**147.83**	**26**	*e*PKPbc	PKPdf	13 58 26.0	+6.1

MEX 13 13:45:05.8±0.5,18.61N×105.50W,h11km±254km,MD4.1, Off coast of Jalisco

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CJM	**Chamela**	**0.98**	**26**	*i*P	Pb	13 45 21.5	-2.8
CJM				*i*S	Sb	13 45 34.1	-3.0
COLM	**Colima**	**1.80**	**71**	*i*P	Pn	13 45 33.9	-3.3
COLM				*e*S	Sn	13 45 54.1	-6.1
SFJM	**Santa Fe**	**2.98**	**51**	*e*P	Pn	13 45 51.0	-2.9

IDC ***13*** *13:45:39.6±1.8,2.41N×126.70E,mb3.7/5,mb1 3.9/5, mb1mx3.7/16,Error ellipse: s-maj=105.0km s-min=24.6km az=68.0*
NEIC ***13*** *13:45:47.7±0.6,2.49N×127.02E,h75km,mb3.9/3,Error ellipse: s-maj=23.3km s-min=11.2km az=83.0*

ISC 13 13:45:41.5±0.6,2.56N±0.08×126.9E±0.2,h33km,n15, σ0§95/15,mb3.9/6,1C,Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**20.57**	**183**⇑	*i*P	**P**	13 50 20.0	**-0.2**
	0.9nm,0.6s						
FITZ	**Fitzroy Crossi**	**20.57**	**183**	P	**P**	13 50 19.4	**-0.8**
	0.8nm,0.5s,baz=1.3,slow=8.4,SNR=9.5						
GUMO	**Guam**	**20.86**	**57**	*e*P	**P**	13 50 21.8	**-1.4**
	192nm,1.3s						
WRAB	**Tennant Creek**	**23.52**	**162**	*e*P	**P**	13 50 50.5	**+0.8**
	5.2nm,0.7s,mb4.1						
WRA	**Warramunga Arr**	**23.52**	**162**	P	**P**	13 50 49.8	**+0.2**
	0.7nm,0.3s,mb3.5,baz=339,slow=11,SNR=37						
WB2	**Warramunga Arr**	**23.53**	**162**	*e*P	**P**	13 50 50.3	**+0.6**
MBWA	**Marble Bar**	**24.60**	**196**	*e*P	**P**	13 50 58.1	**-2.1**
	0.1nm,0.5s						
AS12	**Alice Springs**	**26.94**	**166**	*e*P	**P**	13 51 21.7	**-0.4**
	8.3nm,1.3s,mb4.1						
ASAR	**Alice Springs**	**26.94**	**166**	P	**P**	13 51 22.1	**0.0**
	0.4nm,0.5s,mb3.2,baz=346,slow=12,SNR=11						
STKA	**Stephens Creek**	**36.98**	**159**	P	**P**	13 52 50.7	**+1.0**
	2.5nm,0.5s,mb4.3,baz=345,slow=8.0,SNR=3.8						
MKAR	**Makanchi Array**	**58.61**	**326**	P	**P**	13 55 38.2	**+0.5**
	0.3nm,0.4s,mb3.7,baz=124,slow=6.9,SNR=4.1						
MKAR	**Makanchi Array**	**58.61**	**326**	P	**P**	13 55 38.2	**+0.5**
KURK	**Kurchatov**	**62.82**	**328**	*e*P	**P**	13 56 05.2	**-1.0**
ZRNK	**Zerenda**	**69.11**	**327**	*e*P	**P**	13 56 47.2	**+0.9**
BILL	**Bilibino**	**70.63**	**15**	*e*P	**P**	13 56 56.0	**+0.7**
	1.7nm,0.5s,mb4.2						

NIED ***13*** *13:56:00,43.90N×145.50E,h125km,Mw4.5 Best double couple: M0 7.36×10^15 NP1:φs329°,δ71°,λ-38°. NP2:φs73°, δ54°,λ-157°.*
MOS ***13*** *13:56:01.8±1.4,44.06N×145.41E,h136km,mb4.5/14, Error ellipse: s-maj=13.7km s-min=7.1km az=108.0*
SKHL ***13*** *13:56:01.9±0.1,43.90N×145.40E,h132km±7km,mb5.9/1, msh5.9/2*
BJI ***13*** *13:56:01.5,44.11N×145.38E,h137km,mB4.8,mb4.9*
JMA ***13*** *13:56:02.7±0.1,43.89N×145.51E,h130km±1km,M4.2 JMA Felt II J1.*
NEIC ***13*** *13:56:03.2±0.3,44.01N×145.32E,mb4.7/34,Error ellipse: s-maj=7.0km s-min=4.6km az=139.0*
NEIC Recorded [1 JMA] in the Bekkai area.
IDC ***13*** *13:56:03.6±0.6,44.04N×145.40E,h133km±4km,mb4.2/24, mb1 4.3/26,mb1mx4.3/29,MS3.3/1,Ms1 3.3/1, ms1mx2.6/32,Error ellipse: s-maj=11.0km s-min=7.1km az=157.0*

ISC 13 13:56:01.4±0.2,43.96N±0.03×145.45E±0.04,h129km, h129km±2.3km:pP-P,n199,σ1§12/224,mb4.5/74,13C-29D, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JRA	**Rausu**	**0.24**	**265**	P	**P**	13 56 20.6	**+1.4**
JRA				S	**S**	13 56 34.1	**+1.3**
YUK	**Yuzh-Kuril'sk**	**0.31**	**76**⇓	*i*P	**P**	13 56 20.4	**+1.0**
YUK				AMB	AMB	13 56 24.6	
	17μm,2.0s						
YUK				AMB	AMB	13 56 24.6	
	15μm,0.6s						
YUK				AMB	AMB	13 56 24.6	
	5μm,0.8s						
YUK				*i*S	**S**	13 56 34.4	**+1.2**
YUK				A		13 56 35.2	
	50μm,1.0s						
YUK				A		13 56 35.2	
	105μm,1.0s						
YUK				A		13 56 36.4	
	23μm,0.6s						
YUK				A		13 56 36.4	
	42μm,0.8s						
YUK	**Yuzh-Kuril'sk**	**0.31**	**76**⇓	*i*PN	**P**	13 56 20.4	**+1.0**
YUK				*i*S	**S**	13 56 34.4	**+1.2**
YUK				pmax	pmax		
	comp=N,6μm,0.5s						
YUK				pmax	pmax		
	comp=Z,21μm,0.5s						
YUK				pmax	pmax		
	comp=E,4μm,0.5s						
YUK				pmax	pmax		
	comp=Z,17μm,2.0s						
YUK				pmax	pmax		
	comp=N,5μm,0.8s						
YUK				pmax	pmax		
	comp=E,15μm,0.6s						
YUK				smax			
	comp=N,50μm,1.0s						
YUK				smax			
	comp=E,105μm,1.0s						
YUK				smax			
	comp=N,23μm,0.6s						
YUK				smax			
	comp=E,42μm,0.8s						
NEM2	**Nemuro 2**	**0.63**	**160**	⇓P	**P**	13 56 22.0	**+0.8**
NEM2				S	**S**	13 56 36.1	**-0.3**
JNK	**Nakash**	**0.65**	**235**	⇑P	**P**	13 56 22.8	**+1.5**
JNK				S	**S**	13 56 37.7	**+1.1**
JAK	**Akkeshi**	**1.11**	**210**	⇑P	**P**	13 56 26.4	**+0.9**
JAK				S	**S**	13 56 43.7	**0.0**
JTKR	**Abashiri--Toko**	**1.11**	**271**	⇑P	**P**	13 56 27.0	**+1.5**
JTKR				*e*S	**S**	13 56 44.5	**+0.7**
JAR	**Ashorobuto**	**1.39**	**242**	⇑P	**P**	13 56 30.0	**+1.5**
JAR				*e*S	**S**	13 56 51.2	**+2.0**
JMP	**Maruseppu**	**1.51**	**273**	⇑P	**P**	13 56 31.4	**+1.5**
JMP				*e*S	**S**	13 56 52.7	**+1.1**
JOB	**Onbets**	**1.58**	**229**	⇑P	**P**	13 56 31.9	**+1.2**
JOB				*e*S	**S**	13 56 53.3	**+0.3**
JKK2	**Kamakawa 2**	**1.95**	**268**	P	**P**	13 56 37.0	**+1.9**
JKK2				*e*S	**S**	13 57 02.8	**+2.1**
JCH	**Churui**	**2.03**	**229**	⇑P	**P**	13 56 36.9	**+0.8**
JCH				*e*S	**S**	13 57 01.3	**-1.2**
ASAJ	**Asahikawa**	**2.06**	**275**	P	**P**	13 56 38.5	**+2.1**
	comp=E,130nm,0.3s,baz=92,slow=12,SNR=1360						
ASAJ				S	**S**	13 57 05.4	**+2.3**
	comp=E,21nm,0.3s,baz=5.5,slow=27,SNR=4.0						
ASAJ				LR	LR	13 57 19.8	
	comp=E,634nm,18.9s,baz=21,slow=38						
ASAJ	**Asahikawa**	**2.06**	**275**	⇓P	**P**	13 56 38.6	**+2.1**
ASAJ				*e*S	**S**	13 57 05.4	**+2.3**
KUR	**Kuril'sk**	**2.15**	**53**⇓	*i*P	**P**	13 56 39.7	**+2.2**
KUR				⇓*i*P		13 56 39.7	
KUR				AMB	AMB	13 56 40.0	
	comp=E,3μm,1.0s						
KUR				AMB	AMB	13 56 40.2	
	comp=E,319nm,0.6s						
KUR				AMB	AMB	13 56 40.2	
	comp=E,304nm,0.6s						
KUR				AMB	AMB	13 56 40.2	
	comp=E,17176μm,0.6s						
KUR				*i*S	**S**	13 57 08.0	**+3.0**
KUR				A		13 57 09.0	
	comp=E,28μm,1.0s						
KUR				A		13 57 09.0	
	comp=E,9μm,1.0s						
KUR				A		13 57 09.3	
	comp=E,3μm,0.5s						
KUR				A		13 57 09.3	
	comp=E,1μm,0.5s						
KUR	**Kuril'sk**	**2.15**	**53**⇖	*i*PN	**P**	13 56 39.7	**+2.2**
KUR				*i*S	**S**	13 57 08.0	**+3.0**
KUR				pmax	pmax		
	comp=Z,3μm,1.0s						
KUR				pmax	pmax		
	comp=N,320nm,0.6s						
KUR				pmax	pmax		
	comp=E,300nm,0.6s						
KUR				pmax	pmax		
	comp=Z,2μm,0.6s						
KUR				smax			
	comp=N,28μm,1.0s						
KUR				smax			
	comp=E,9μm,1.0s						
KUR				smax			
	comp=N,3μm,0.5s						
KUR				smax			
	comp=E,1μm,0.5s						
JFR	**Furan**	**2.22**	**250**	⇑P	**P**	13 56 40.1	**+1.5**
JFR				*e*S	**S**	13 57 07.7	**+0.9**
YSS	**Yuzh-Sakhalins**	**3.54**	**329**	*e*P	**P**	13 56 56.3	**+0.3**
YSS				AMB	AMB	13 56 59.0	
	comp=E,60nm,1.0s						
YSS				AMB	AMB	13 56 59.0	
	comp=E,40nm,1.0s						
YSS				*e*S	**S**	13 57 37.3	**-0.4**
YSS				A		13 57 40.0	
	comp=E,130nm,1.0s						
YSS				A		13 57 40.0	
	comp=E,300nm,1.0s						
YSS	**Yuzh-Sakhalins**	**3.54**	**329**	*e*PN	**P**	13 56 56.3	**+0.3**
YSS				*e*S	**S**	13 57 37.3	**-0.4**
YSS				pmax	pmax		
	comp=E,60nm,1.0s						
YSS				pmax	pmax		
	comp=Z,40nm,1.0s						
YSS				smax			
	comp=N,130nm,1.0s						
YSS				smax			
	comp=E,300nm,1.0s						
YSS	**Yuzh-Sakhalins**	**3.54**	**329**	*e*Pn	**P**	13 56 57.2	**+1.2**
UGL	**Uglegorsk**	**5.63**	**337**	*e*P	**P**	13 57 25.0	**+1.1**
UGL				AMB	AMB	13 57 26.0	
	comp=E,51nm,0.7s						
UGL				*e*S	**S**	13 58 30.0	**+2.2**
UGL				A		13 58 36.0	
	comp=E,2μm,4.0s						
UGL				A		13 58 36.0	
	comp=E,2μm,4.0s						
UGL				A		13 58 36.0	
	comp=E,1μm,4.0s						
UGL	**Uglegorsk**	**5.63**	**337**	*e*PN	**P**	13 57 25.0	**+1.1**
UGL				S	**S**	13 58 30.0	**+2.2**
UGL				pmax	pmax		
	comp=Z,51nm,0.7s						
UGL				smax			
	comp=N,2μm,4.0s						
UGL				smax			
	comp=E,2μm,4.0s						
UGL				smax			
	comp=Z,1μm,4.0s						
TEY	**Ternei**	**6.42**	**283**	*e*P	**P**	13 57 36.0	**+1.4**
TEY				AMB	AMB	13 57 37.0	
	comp=Z,130nm,0.7s						
TEY				AMB	AMB	13 57 37.0	
	comp=Z,50nm,0.8s						
TEY				AMB	AMB	13 57 37.0	
	comp=Z,1μm,0.6s						
TYV	**Tymovskoe**	**7.16**	**346**	*e*P	**P**	13 57 43.1	**-1.6**
TYV				*e*rx	rx	13 57 46.0	
MAJO	**Matsushiro**	**9.24**	**219**	*e*P	**P**	13 58 11.3	**-1.3**
MAT	**Matsushiro**	**9.24**	**219**	P	**P**	13 58 11.4	**-1.2**
MAT				S	**S**	13 59 53.2	**-2.0**
MAT	**Matsushiro**	**9.24**	**219**	*e*P	**P**	13 58 11.0	**-1.6**
	comp=Z,36nm,0.7s						
MAT				*e*S	**S**	13 59 53.0	**-2.2**
SKR	**Severo-Kuril's**	**9.88**	**43**	*e*P	**P**	13 58 19.5	**-1.4**
SKR				AMB	AMB	13 58 21.5	
	comp=Z,60nm,0.5s						
SKR				AMB	AMB	13 58 21.5	
	comp=Z,160nm,0.5s						
SKR				AMB	AMB	13 58 21.5	
	comp=Z,80nm,0.4s						
SKR				*e*S	**S**	14 00 05.5	**-4.7**
SKR				A		14 00 12.4	
	comp=Z,70nm,0.4s						
SKR				A		14 00 12.4	
	comp=Z,40nm,0.4s						
SKR				A		14 00 12.4	
	comp=Z,110nm,0.2s						
SKR	**

SEY					pmax	pmax			
	comp=Z,50nm,1.2s								
YAK	**Yakutsk**	**20.33**	**338**	*e*P	**P**	**14 00 26.1**	**-2.8**		
YAK					pmax	pmax			
	comp=Z,22nm,1.3s								
YAK	**Yakutsk**	**20.33**	**338**	*e*P	**P**	**14 00 26.1**	**-2.8**		
	comp=Z,14nm,0.8s								
FX1	**Attu Island--F**	**20.34**	**54**	P	**P**	**14 00 29.8**	**+0.8**		
	comp=Z,84nm,0.9s,baz=0.8,slow=3.2,SNR=13								
FX1				S	**S**	**14 04 09.6**	**+5.0**		
	comp=Z,15nm,0.5s,baz=120,slow=15,SNR=7.3								
FX1	**Attu Island--F**	**20.34**	**54**	*e*P	**P**	**14 00 27.3**	**-1.7**		
JOW	**Kunigami**	**22.02**	**225**	P	**P**	**14 00 48.1**	**+2.2**		
	comp=Z,18nm,0.7s,mb4.6,baz=334,slow=3.8,SNR=6.9								
BJI	**Beijing**	**22.05**	**270**	*e*P	**P**	**14 00 44.9**	**-1.2**		
BJT	**Baijiatuau**	**22.06**	**270**	*e*P	**P**	**14 00 45.1**	**-1.1**		
	comp=Z,38nm,0.7s,mb4.9								
SSE	**Sheshan**	**23.03**	**244**	⇓P	**P**	**14 00 58.6**	**+2.9**		
SSE				AMB	AMB				
	comp=Z,46nm,0.7s,mb5.0								
SSE				AMB	AMB				
	comp=Z,70nm,6.2s								
BOD	**Bodaibo**	**23.93**	**317**	*e*P	**P**	**14 00 59.7**	**-4.3**		
NJ2	**Nanjing**	**23.98**	**249**	*e*P	**P**	**14 01 06.0**	**+1.2**		
NJ2				PP	PP	14 01 50.5	+7.0		
NJ2				S	**S**	**14 05 09.0**	**-0.2**		
NJ2				LR	LR				
	comp=N,210nm,15.0s								
NJ2				LR	LR				
	comp=E,260nm,16.3s								
NJ2				LR	LR				
	comp=Z,190nm,15.2s								
HHC	**Hu-ho-hao-te**	**25.11**	**275**	*e*P	**P**	**14 01 15.6**	**+0.1**		
HHC				AMB	AMB				
	comp=Z,20nm,1.2s,mb4.5								
HHC				AMB	AMB				
	comp=Z,161nm,5.7s								
BTO	**Baotou**	**26.30**	**275**	*e*P	**P**	**14 01 27.0**	**+0.5**		
BTO				AMB	AMB				
	comp=Z,71nm,0.6s,mb5.5								
BILL	**Bilibino**	**26.51**	**17**	*e*P	**P**	**14 01 24.6**	**-3.5**		
BILL				*e*		14 02 09.8			
BILL				pmax	pmax				
	comp=Z,4.0nm,1.6s,mb3.8								
BILL	**Bilibino**	**26.51**	**17**	*e*P	**P**	**14 01 24.5**	**-3.6**		
	comp=Z,1.6nm,0.5s,mb3.9								
ULN	**Ulaanbaatar**	**26.81**	**292**	*d i*P	**P**	**14 01 30.6**	**-0.4**		
ULN				pmax	pmax				
	comp=Z,24nm,1.0s,mb4.8								
ULN	**Ulaanbaatar**	**26.81**	**292**	*e*P	**P**	**14 01 30.7**	**-0.4**		
	comp=Z,26nm,1.0s,mb4.8								
SONM	**Songino Array**	**27.25**	**292**	P	**P**	**14 01 34.8**	**-0.3**		
	comp=Z,21nm,0.8s,mb4.8,baz=83,slow=8.7,SNR=29								
WHN	**Wuhan**	**27.96**	**252**	⇑P	**P**	**14 01 41.0**	**-0.7**		
TIXI	**Tiksi**	**28.91**	**349**	*e*P	**P**	**14 01 45.8**	**-4.0**		
TIXI				*e*		14 02 18.7			
TIXI				*e*		14 02 32.3			
TIXI				pmax	pmax				
	comp=Z,19nm,0.8s,mb4.9								
ZAK	**Zakamensk**	**29.07**	**298**	⇓*e*P	**P**	**14 01 50.4**	**-1.0**		
ZAK				*e*	pP	14 02 22.1	+3.1		
ZAK				*e*		14 04 55.3			
ZAK				*e*		14 06 34.9			
XAN	**Xi'an**	**29.85**	**263**	P	**P**	**14 01 56.9**	**-1.7**		
XAN				AMB	AMB				
	comp=Z,11nm,0.7s,mb4.7								
ENH	**Enshi**	**31.50**	**256**	*e*P	**P**	**14 02 11.6**	**-1.4**		
	comp=Z,12nm,0.6s,mb4.8								
LZH	**Lanzhou**	**32.54**	**270**	⇓P	**P**	**14 02 22.1**	**+0.1**		
LZH				AMB	AMB				
	comp=Z,53nm,1.3s,mb5.1								
GTA	**Gaotai**	**34.05**	**278**	P	**P**	**14 02 35.0**	**+0.1**		
GTA				AMB	AMB				
	comp=Z,8.0nm,0.8s,mb4.5								
CD2	**Chengdu**	**35.21**	**263**	*e*P	**P**	**14 02 41.9**	**-2.9**		
CD2				AMB	AMB				
	comp=Z,60nm,0.6s,mb5.4								
GYA	**Guiyang**	**35.79**	**254**	P	**P**	**14 02 48.9**	**-0.9**		
GYA				AP	pP	14 03 19.3	+0.8		
GYA				XP	sP	14 03 31.8	-1.8		
GYA				S	**S**	**14 08 14.8**	**-2.0**		
GYA				SS	SS	14 10 39.1	-7.0		
GYA				AMB	AMB				
	comp=Z,10.0nm,0.5s,mb4.7								
IMA	**Indian Mountai**	**39.20**	**34**	*e*P	**P**	**14 03 18.1**	**+0.2**		
	comp=Z,47nm,0.8s,mb5.2								
IMA				*e*pP	pP	14 03 47.3	+0.4		
KMI	**Kunming**	**39.37**	**256**	*e*P	**P**	**14 03 19.9**	**+0.2**		
KMI				XP	sP	14 04 01.6	-2.3		
KMI				PP	PP	14 04 55.5	0.0		
KMI				AMB	AMB				
	comp=Z,23nm,1.0s,mb4.8								
KMI				AMB	AMB				
	comp=Z,81nm,4.0s								
RSO	**Redoubt South**	**39.65**	**43**	*e*P	**P**	**14 03 22.5**	**+0.9**		
ZAL	**Zalesovo**	**39.90**	**307**	P	**P**	**14 03 23.1**	**-0.6**		
	comp=Z,3.2nm,0.4s,mb4.3,baz=283,slow=7.4,SNR=12								
ZAL				PcP	PcP	14 05 27.2	-0.3		
	comp=Z,4.1nm,0.6s,baz=267,slow=3.7,SNR=13								
ZAL				ScP		14 09 02.7			
	comp=Z,0.6nm,0.6s,baz=96,slow=9.3,SNR=3.7								
ZAL	**Zalesovo**	**39.90**	**307**	P	**P**	**14 03 23.1**	**-0.6**		
ZAL				PcP	PcP	14 05 27.2	-0.4		
ZAL				ScP		14 09 02.7			
SPU	**Mount Spurr**	**39.94**	**42**	*e*P	**P**	**14 03 25.6**	**+1.5**		
SPU				*e*pP	pP	14 03 54.4	+1.3		
NVS	**Novosibirsk**	**40.62**	**308**	*e*P	**P**	**14 03 26.1**	**-3.6**		
NVS				pmax	pmax				
	comp=Z,5.0nm,1.3s,mb4.0								
WMQ	**Urumqi**	**40.87**	**291**	P	**P**	**14 03 32.3**	**+0.5**		
WMQ				AP	pP	14 04 00.6	-0.3		
WMQ				XP	sP	14 04 15.3	-0.8		
WMQ				PP	PP	14 05 11.6	+0.8		
WMQ				PCP	PcP	14 05 31.5	+0.7		
WMQ				SCP		14 09 08.1			
WMQ				PCS		14 09 21.3			
WMQ				S	**S**	**14 09 34.0**	**+0.8**		
WMQ				XS		14 10 23.5			
WMQ				SS	SS	14 12 35.4	+0.7		
WMQ				SCS	ScS	14 13 21.6	+0.7		
MCK	**McKinley**	**41.22**	**38**	*e*P	**P**	**14 03 35.1**	**+0.6**		
	comp=Z,11nm,1.0s,mb4.4								
PMR	**Palmer**	**41.31**	**41**	*e*P	**P**	**14 03 36.0**	**+0.7**		
	comp=Z,4.9nm,0.7s,mb4.2								
COLA	**College**	**41.63**	**36**	*c i*P	**P**	**14 03 38.6**	**+0.9**		
COLA	**College**	**41.63**	**36**	*e*P	**P**	**14 03 38.4**	**+0.7**		
	comp=Z,19nm,0.9s,mb4.7								
COLA				*e*pP	pP	14 04 09.0	+2.2		
SML	**Sawmill**	**41.66**	**41**	*e*P	**P**	**14 03 39.4**	**+1.3**		
SML				*e*pP	pP	14 04 09.0	+1.8		
ILAR	**Eielson Array**	**42.05**	**36**	P	**P**	**14 03 41.3**	**+0.2**		
	comp=Z,29nm,1.1s,mb4.8,baz=265,slow=6.7,SNR=92								
ILAR				pP	pP	14 04 11.5	+1.2		
	comp=Z,3.9nm,0.8s,baz=267,slow=7.1,SNR=4.4								
MKAR	**Makanchi Array**	**43.40**	**297**	P	**P**	**14 03 51.8**	**-0.5**		
	comp=Z,11nm,0.7s,mb4.6,baz=81,slow=8.9,SNR=99								
MKAR				PcP	PcP	14 05 38.4	-0.7		
	comp=Z,2.3nm,0.6s,baz=56,slow=3.7,SNR=5.8								
MKAR				ScP		14 09 17.3			
	comp=Z,1.0nm,0.7s,baz=62,slow=4.1,SNR=7.9								
MKAR	**Makanchi Array**	**43.40**	**297**	*i* P	**P**	**14 03 51.8**	**-0.5**		
MKAR				pmax	pmax				
	comp=Z,3.0nm,0.4s								
KURK	**Kurchatov**	**44.39**	**303**	*e*P	**P**	**14 03 58.6**	**-1.6**		
KURK				*e*PcP	PcP	14 05 41.6	-0.7		
LSA	**Lhasa**	**44.96**	**270**	P	**P**	**14 04 06.4**	**+1.3**		
LSA	**Lhasa**	**44.96**	**270**	*e*P	**P**	**14 04 06.1**	**+1.0**		
	comp=Z,12nm,0.7s,mb4.6								
DAWY	**Dawson**	**45.37**	**37**	*e*P	**P**	**14 04 08.3**	**+0.5**		
CM31	**Chiang Mai Arr**	**46.41**	**252**	*e*P	**P**	**14 04 16.9**	**+0.2**		
	comp=Z,5.2nm,0.7s,mb4.3								
CMAR	**Chiang Mai Arr**	**46.41**	**252**	P	**P**	**14 04 16.9**	**+0.2**		
	comp=Z,4.7nm,0.8s,mb4.2,baz=42,slow=7.2,SNR=24								
INK	**Inuvik**	**46.84**	**30**	P	**P**	**14 04 18.2**	**-1.2**		
	comp=Z,2.9nm,0.3s,mb4.3,baz=300,slow=7.0,SNR=84								
INK	**Inuvik**	**46.84**	**30**	*e*P	**P**	**14 04 18.3**	**-1.1**		
	comp=Z,5.5nm,0.6s,mb4.4								
INK				*e*pP	pP	14 04 49.0	0.0		
BVA0	**Borovoye Array**	**48.41**	**309**	*i* P	**P**	**14 04 30.9**	**-0.9**		
BVAR	**Borovoye Array**	**48.41**	**309**	P	**P**	**14 04 31.1**	**-0.8**		
	comp=Z,3.7nm,0.5s,mb4.3,baz=81,slow=9.0,SNR=28								
BVAR				PcP	PcP	14 05 56.0	-0.5		
	comp=Z,2.6nm,0.3s,baz=62,slow=4.1,SNR=8.5								
BRVK	**Borovoye**	**48.46**	**309**	*e*P	**P**	**14 04 30.9**	**-1.3**		
BRVK				*e*PcP	PcP	14 05 56.0	-0.8		
ZRNK	**Zerenda**	**49.22**	**309**	*e*P	**P**	**14 04 36.7**	**-1.3**		
TKM2	**Tokmak 2**	**49.30**	**295**	P	**P**	**14 04 38.9**	**+0.1**		
	SNR=37								
KBK	**Karagaybulak**	**49.85**	**295**	P	**P**	**14 04 43.0**	**+0.1**		
	SNR=33								
USP	**Ospenovka**	**49.87**	**295**	P	**P**	**14 04 42.9**	**-0.2**		
	SNR=25								
AAK	**Ala-Archa**	**50.16**	**295**	P	**P**	**14 04 45.2**	**-0.2**		
	SNR=19								
KKN	**Kakani**	**50.28**	**272**	*e*P	**P**	**14 04 46.1**	**-0.4**		
	comp=Z,95nm,1.2s,mb5.3								
PKI	**Pulchoki**	**50.31**	**272**	*e*P	**P**	**14 04 46.4**	**-0.3**		
	comp=Z,79nm,1.1s,mb5.2								
DMN	**Daman**	**50.51**	**272**	*e*P	**P**	**14 04 48.1**	**-0.1**		
	comp=Z,75nm,1.0s,mb5.3								
EKS2	**Erkin-Say**	**50.61**	**295**	P	**P**	**14 04 48.6**	**-0.2**		
	SNR=16								
GKN	**Gorkha**	**50.62**	**273**	*e*P	**P**	**14 04 48.6**	**-0.5**		
	comp=Z,30nm,0.5s,mb5.2								
KSH	**Kashi**	**50.64**	**290**	*e*P	**P**	**14 04 49.1**	**+0.1**		
KSH				*e*AP	pP	14 05 17.9	-1.2		
KSH				*e*XP	sP	14 05 32.1	-1.1		
KSH				*e*PCP	PcP	14 06 05.6	+0.7		
KSH				*e*PP	PP	14 06 47.6	+0.8		
KSH				*e*SCP		14 09 47.5			
KSH				*e*PCS		14 10 01.1			
KSH				*e*S	**S**	**14 11 51.8**	**-0.5**		
KSH				*e*XS		14 12 43.3			
KSH				*e*SCS	ScS	14 14 23.3	-0.1		
KSH				*e*SS	SS	14 15 25.9	0.0		
KSH				LR	LR				
	comp=N,200nm,4.3s								
KSH				LR	LR				
	comp=E,220nm,7.0s								
AML	**Almayashu**	**50.91**	**294**	P	**P**	**14 04 51.4**	**+0.3**		
	SNR=19								
DANN	**Dangsing**	**51.05**	**274**	*e*P	**P**	**14 04 52.6**	**+0.3**		
KOLN	**Koldanda**	**51.50**	**273**	*e*P	**P**	**14 04 55.6**	**-0.1**		
	comp=E,27nm,0.5s,mb5.1								
KKAR	**Karatay Array**	**52.52**	**297**	*i* P	**P**	**14 05 02.1**	**-1.1**		
KKAR				pmax	pmax				
	comp=Z,4.0nm,0.5s,mb4.4								
ARU	**Arti**	**53.35**	**316**	⇓*i*P	**P**	**14 05 07.4**	**-1.7**		
ARU				*e*		14 06 13.7			
ARU				*e*S	**S**	**14 12 24.6**	**-4.4**		
ARU				*e*SS	SS	14 16 07.9	-2.3		
ARU				pmax	pmax				
	comp=Z,7.0nm,0.6s,mb4.6								
ARU	**Arti**	**53.35**	**316**	*e*P	**P**	**14 05 06.8**	**-2.2**		
	comp=Z,20nm,0.7s,mb5.0								
ARU				*e*PcP	PcP	14 06 14.0	-0.7		
RES	**Resolute Bay**	**55.12**	**16**	*e*P	**P**	**14 05 19.3**	**-2.5**		
	comp=Z,4.9nm,0.6s,mb4.4								
NDI	**New Delhi**	**55.56**	**278**	*e*	**P**	**14 05 24.0**	**-1.5**		
AB31	**Akbulak array**	**55.97**	**308**	*e*P	**P**	**14 05 26.9**	**-1.3**		
AB31				pmax	pmax				
	comp=Z,4.0nm,0.4s,mb4.6								
YKA	**Yellowknife Ar**	**56.31**	**33**	P	**P**	**14 05 29.7**	**-0.7**		
	comp=Z,0.8nm,0.5s,mb3.8,baz=299,slow=7.0,SNR=20								
YKA				pP	pP	14 06 01.2	+0.2		
	comp=Z,2.9nm,0.8s,baz=302,slow=7.1,SNR=8.3								
YKA	**Yellowknife Ar**	**56.31**	**33**	P	**P**	**14 05 29.7**	**-0.7**		
YKA				pP	pP	14 06 01.2	+0.2		
KEV	**Kevo**	**58.08**	**339**	*ep*	**P**	**14 05 39.5**	**-3.2**		
	comp=Z,0.7nm,0.3s,mb4.0								
KEV	**Kevo**	**58.08**	**339**	*e*P	**P**	**14 05 39.5**	**-3.2**		
KEV				pmax	pmax				
	comp=Z,1.0nm,0.3s,mb4.1								
ARCES	**ARCESS Array B**	**58.62**	**339**	P	**P**	**14 05 44.9**	**-1.6**		
	comp=Z,2.2nm,0.8s,mb4.0,baz=40,slow=8.1,SNR=13								
JOF	**Joensuu**	**61.32**	**332**	*ep*	**P**	**14 06 02.2**	**-2.9**		
	comp=Z,1.7nm,0.3s,mb4.3								
JOF	**Joensuu**	**61.32**	**332**	*e*P	**P**	**14 06 02.2**	**-2.9**		
JOF				pmax	pmax				
	comp=Z,2.0nm,0.3s,mb4.4								
KAF	**Kangasniemi**	**63.57**	**333**	*ep*	**P**	**14 06 16.5**	**-3.3**		
	comp=Z,1.1nm,0.4s,mb4.0,baz=44,slow=6.2								
KAF	**Kangasniemi**	**63.57**	**333**	*e*P	**P**	**14 06 16.5**	**-3.3**		
KAF				pmax	pmax				
	comp=Z,1.0nm,0.4s,mb4.0								
FINES	**FINESS Array B**	**64.12**	**332**	P	**P**	**14 06 22.0**	**-1.4**		
	comp=Z,10nm,0.5s,mb4.9,baz=46,slow=8.0,SNR=75								
POO	**Poona**	**64.23**	**271**	*e*	**P**	**14 06 21.0**	**-3.8**		
FITZ	**Fitzroy Crossi**	**64.37**	**201**	⇑*i*P	**P**	**14 06 25.5**	**-0.2**		
	comp=Z,2.1nm,0.8s,mb4.0								
FITZ	**Fitzroy Crossi**	**64.37**	**201**	P	**P**	**14 06 25.7**	**0.0**		
	comp=Z,2.4nm,0.7s,mb4.1,baz=3.2,slow=5.5,SNR=9.2								
WRAB	**Tennant Creek**	**64.39**	**192**	*e*P	**P**	**14 06 24.7**	**-1.1**		
	comp=Z,25nm,1.1s,mb5.0								
WB2	**Warramunga Arr**	**64.40**	**192**	⇑*i*P	**P**	**14 06 24.8**	**-1.1**		
WRA	**Warramunga Arr**	**64.40**	**192**	P	**P**	**14 06 25.0**	**-0.9**		
	comp=Z,3.9nm,0.8s,mb4.3,baz=10,slow=6.7,SNR=26								
OBN	**Obninsk**	**64.41**	**323**	*d i*P	**P**	**14 06 23.7**	**-1.7**		
OBN				pmax	pmax				
	comp=Z,19nm,1.0s,mb4.9								
FCC	**Fort Churchill**	**66.45**	**29**	*e*P	**P**	**14 06 37.4**	**-1.0**		
	comp=Z,3.1nm,0.6s,mb4.3								
FCC				*e*	pP	14 07 06.3	-3.6		
ASAR	**Alice Springs**	**68.12**	**191**	P	**P**	**14 06 49.2**	**-0.2**		
	comp=Z,1.7nm,0.7s,mb3.9,baz=8.2,slow=6.1,SNR=27								
NVAR	**Mina Array Bea**	**68.50**	**57**	P	**P**	**14 06 52.8**	**+1.2**		
	comp=Z,1.3nm,0.7s,mb3.8,baz=288,slow=7.9,SNR=9.1								
NVAR				pP	pP	14 07 23.4	+0.2		
	comp=Z,6.9nm,0.7s,baz=298,slow=4.7,SNR=32								
NVAR	**Mina Array Bea**	**68.50**	**57**	P	**P**	**14 06 52.8**	**+1.2**		
NVAR				pP	pP	14 07 23.4	+0.2		
KIV	**Kislovodsk**	**68.70**	**311**	*e*P	**P**	**14 06 51.5**	**-1.2**		
KIV				*e*S	S	14 16 00.8	+17		
KIV				pmax	pmax				
	comp=N,10.0nm,0.7s								
KIV				pmax	pmax				
	comp=E,10.0nm,0.7s								
KIV				pmax	pmax				
	comp=Z,40nm,0.7s,mb5.3								
KIV	**Kislovodsk**	**68.70**	**311**	*e*P	**P**	**14 06 52.7**	**+0.1**		
	comp=Z,60nm,0.8s,mb5.4								
ZEI	**Tsey**	**68.81**	**309**	⇓*e*P	**P**	**14 06 53.0**	**-0.3**		
NB2	**NORSAR Subarra**	**68.96**	**338**	P	**P**	**14 06 52.8**	**-1.1**		
	comp=Z,10nm,0.7s,mb4.7,baz=33,slow=6.2								
NOA	**NORSAR Array B**	**68.96**	**338**	P	**P**	**14 06 53.0**	**-0.9**		
	comp=Z,7.0nm,0.6s,mb4.6,baz=34,slow=6.2,SNR=30								
SOC	**Sochi**	**70.56**	**312**	*e*P	**P**	**14 07 03.1**	**-0.8**		
SOC				*e*PPP	PPP	14 11 26.1	+1.6		
SOC				*e*S	S	14 15 56.2	-9.2		
SOC				pmax	pmax				
	comp=Z,73nm,1.2s,mb5.3								
SOC				pmax	pmax				
	comp=N,44nm,0.9s								
SOC				pmax	pmax				
	comp=E,56nm,1.1s								
AKASG	**Malin Array Be**	**70.68**	**323**	P	**P**	**14 07 03.5**	**-1.0**		
	comp=E,10nm,0.5s,mb4.8,baz=40,slow=6.1,SNR=56								
SUW	**Suwalki**	**70.68**	**328**	*e*P	**P**	**14 07 04.3**	**-0.2**		
PDAR	**Pinedale Array**	**70.71**	**49**	P	**P**	**14 07 05.7**	**+0.8**		
	comp=E,1.3nm,0.5s,mb3.9,baz=16,slow=0.4,SNR=13								
PDAR				pP	pP	14 07 36.9	+0.1		
	comp=E,1.3nm,0.6s,baz=315,slow=2.1,SNR=4.6								
ANN	**Anapa**	**70.93**	**314**	*e*P	**P**	**14 07 04.9**	**-1.2**		
ANN				pmax	pmax				
	comp=Z,12nm,0.5s,mb4.9								
KWP	**Kalwaria**	**74.24**	**325**	⇓*e*P	**P**	**14 07 25.7**	**+0.3**		
OJC	**Ojcow**	**74.95**	**327**	⇓*i*P	**P**	**14 07 29.7**	**+0.3**		
CRVS	**Cervenica-Dubn**	**75.32**	**326**	*i* P	**P**	**14 07 32.0**	**+0.4**		
NIE	**Niedzica**	**75.38**	**326**	⇓*e*P	**P**	**14 07 32.3**	**+0.4**		
STKA	**Stephens Creek**	**75.55**	**183**	P	**P**	**14 07 33.6**	**+0.4**		
	comp=Z,1.9nm,0.9s,mb3.7,slow=8.1,SNR=3.1								
KSP	**Ksiaz**	**75.77**	**330**	*e*P	**P**	**14 07 34.6**	**+0.6**		
OKC	**Ostrava-Krasne**	**75.89**	**328**	⇓*e*P	**P**	**14 07 34.9**	**+0.2**		
UPC	**Upice**	**76.15**	**329**	⇓*e*P	**P**	**14 07 36.8**	**+0.6**		
DPC	**Dobruska-Polom**	**76.16**	**329**	⇓*i*P	**P**	**14 07 36.8**	**+0.6**		
MORC	**Moravsky Berou**	**76.17**	**328**	*e*P	**P**	**14 07 36.6**	**+0.3**		
	comp=Z,14nm,0.9s,mb4.6								
BRTR	**Keskin Array B**	**76.50**	**313**	P	**P**	**14 07 38.5**	**+0.1**		
	comp=Z,3.4nm,0.7s,mb4.1,baz=86,slow=3.6,SNR=16								
CLL	**Collm**	**76.55**	**332**	⇓P	**P**	**14 07 38.1**	**-0.3**		
	comp=Z,logA/T=1.3,mb4.7								
CLL				*e*		14 07 46.0			
CLL	**Collm**	**76.55**	**332**	⇓*i*P	**P**	**14 07 38.1**	**-0.3**		
CLL				*e*		14 07 46.0			
CLL				pmax	pmax				
	comp=Z,13nm,0.7s,mb4.7								
CLL	**Collm**	**76.55**	**332**	⇓*i*P	**P**	**14 07 38.1**	**-0.3**		
	comp=Z,13nm,0.7s,mb4.7								
CLL				*e*		14 07 46.0			
PVCC	**Panska Ves**	**76.65**	**330**	⇓*i*P	**P**	**14 07 39.3**	**+0.3**		
VYHS	**Vyhne**	**76.70**	**327**	*i* P	**P**	**14 07 40.1**	**+0.8**		
VYHS				*e*S	S	14 17 20.5	+6.5		
PSZ	**Piszkesteto**	**76.74**	**326**	*e*P	**P**	**14 07 39.5**	**-0.1**		
	comp=Z,12nm,0.8s,mb4.6								
PRU	**Pruhonice**	**77.11**	**330**	⇓*e*P	**P**	**14 07 41.7**	**+0.1**		
	comp=Z,7.9nm,0.6s,mb4.5								
PRU	**Pruhonice**	**77.11**	**330**	*e*P	**P**	**14 07 41.7**	**+0.1**		
PRU				pmax	pmax				
	comp=Z,8.0nm,0.6s,mb4.5								
MOX	**Moxa**	**77.59**	**332**	*e*P	**P**	**14 07 44.0**	**-0.2**		
ZST	**Bratislava**	**77.62**	**328**	*i* P	**P**	**14 07 47.3**	**+2.9**		
SCHQ	**Schefferville**	**77.82**	**18**	P	**P**	**14 07 46.6**	**+1.2**		
	comp=Z,2.4nm,0.5s,mb4.1,baz=312,slow=12,SNR=6.4								
KHC	**Kasperske Hory**	**78.17**	**330**	⇓*i*P	**P**	**14 07 47.8**	**+0.4**		
GERES	**GERESS Array B**	**78.37**	**330**	P	**P**	**14 07 48.0**	**-0.5**		
	comp=Z,3.7nm,0.9s,mb4.0,baz=37,slow=6.7,SNR=10								
GRA1	**Grafenberg Arr**	**78.53**	**332**	*e*P	**P**	**14 07 49.8**	**+0.5**		
	comp=Z,17nm,1.0s,mb4.6								
GRF	**Grafenberg Arr**	**78.53**	**332**	*e*P	**P**	**14 07 49.8**	**+0.5**		
GRF				pmax	pmax				
	comp=Z,17nm,1.0s,mb4.6								
PERS	**Pernice**	**79.68**	**328**	*e*P	**P**	**14 07 56.2**	**+0.5**		
VISS	**Visnje**	**80.47**	**327**	*i* P	**P**	**14 07 59.7**	**-0.2**		
MMLI	**Mount Malkishu**	**80.79**	**306**	P	**P**	**14 08 02.3**	**+0.4**		
CDF	**Champ du Feu**	**80.95**	**333**	*e*P	**P**	**14 08 02.1**	**-0.3**		
	comp=Z,16nm,0.9s,mb4.4								
MKRJ	**Makawir**	**81.30**	**306**	P	**P**	**14 08 05.3**	**+0.7**		
HAU	**Haudompre**	**81.61**	**334**	*e*P	**P**	**14 08 05.3**	**-0.5**		
HINF	**Hinteralfeld**	**81.61**	**333**	*e*P	**P**	**14 08 05.1**	**-0.7**		
ZFRI	**Zfri**	**82.30**	**305**	P	**P**	**14 08 10.1**	**+0.3**		
PRNI	**Paran**	**82.55**	**305**	P	**P**	**14 08 11.7**	**+0.7**		
MBH	**Mount Berech**	**83.01**	**305**	P	**P**	**14 08 14.2**	**+0.8**		
LOR	**Lormes**	**83.04**	**335**	*e*P	**P**	**14 08 12.7**	**-0.5**		
EIL	**Elat**	**83.08**	**305**	P	**P**	**14 08 14.3**	**+0.6**		
GRR	**Gorron**	**83.39**	**338**	*e*P	**P**	**14 08 14.9**	**0.0**		
TXAR	**Lajitas Array**	**83.55**	**55**	P	**P**	**14 08 18.8**	**+2.7**		
	comp=Z,0.9nm,0.2s,mb4.1,baz=297,slow=2.8,SNR=4.3								
TXAR				pP	pP	14 08 49.1	+0.1		
	comp=Z,3.1nm,0.8s,baz=295,slow=3.7,SNR=2.4								
TXAR	**Lajitas Array**	**83.55**	**55**	P	**P**	**14 08 18.8**	**+2.7**		
TXAR				pP	pP	14 08 49.1	+0.1		
SMF	**Signal de Mont**	**83.60**	**334**	*e*P	**P**	**14 08 16.0**	**+0.1**		
	comp=Z,17nm,0.8s,mb4.5								
AVF	**Avril sur Loir**	**83.62**	**335**	*e*P	**P**	**14 08 16.1**	**+0.1**		
	comp=Z,17nm,1.0s,mb4.4								
LPG	**La Piagne**	**83.68**	**332**	*e*P	**P**	**14 08 17.1**	**+0.8**		
	comp=Z,6.2nm,0.7s,mb4.2								
ROSF	**Rostrenen**	**84.07**	**340**	*e*P	**P**	**14 08 18.9**	**+0.7**		
	comp=Z,9.6nm,0.6s,mb4.4								
TCF	**Toulx Ste Croi**	**84.42**	**335**	*e*P	**P**	**14 08 20.3**	**+0.3**		
	comp=Z,5.1nm,0.6s,mb4.1								
MFF	**Saint Martin d**	**84.83**	**337**	*e*P	**P**	**14 08 22.5**	**+

9.3nm,0.2s,SNR=20
MK31 Makanchi Array 5.09 40 Pn **Pn 14 22 40.1 +0.2**
0.5nm,0.2s,baz=219,slow=15,SNR=34
MK31 ⇑Pg **Pg 14 22 57.6 -5.0**
1.1nm,0.4s,baz=226,slow=16,SNR=9.0
MK31 ⇑Sn **Sn 14 23 39.2 -0.8**
3.2nm,0.5s,baz=218,slow=25,SNR=7.3
MK31 ⇓Lg 14 23 56.8
2.2nm,0.5s,baz=220,slow=27,SNR=6.3
KK31 Karatay Array 5.17 274 ⇓Pn **Pn 14 22 51.1 +10**
0.8nm,0.3s,baz=88,slow=15,SNR=15
KK31 ⇓Sn **Sn 14 23 58.3 +16**
6.0nm,0.5s,baz=88,slow=28,SNR=17
KURK Kurchatov 7.79 5 ⇑Lg 14 25 22.0
4.9nm,1.2s,baz=85,slow=6.5,SNR=4.2
VOSK Vostochnaya 10.72 338 ⇓Lg 14 26 54.8
4.8nm,1.1s
BVA0 Borovoye Array 11.15 337 ⇓Lg 14 27 07.9
0.7nm,0.8s,baz=154,slow=28,SNR=4.3
BRVK Borovoye 11.21 337 Lg 14 27 09.8
ZRNK Zerenda 11.51 333 ⇑Sn **S 14 26 07.2 -12**
0.8nm,0.8s
ZRNK ⇑Lg 14 27 24.7
4.5nm,1.1s

NEIC ***13*** *14:25:52.7±3.0, 13.38S×75.27W, h63km±28km, Error ellipse: s-maj=40.0km s-min=17.5km az=76.0*
IDC ***13*** *14:25:52.9±6.5, 13.44S×75.27W, h68km±64km, mb3.3/4, mb1 3.6/6, mb1mx3.5/18, ML4.2/2, MS2.6/1, Ms1 2.7/1, ms1mx2.6/9, Error ellipse: s-maj=79.8km s-min=29.4km az=75.0*
ISC 13 14:25:53.0±4.7, 13.6S±0.1×75.2W±0.4, h87km±44km, n10, σ1§02/11, mb3.4/4, Central Peru

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LPAZ	**La Paz**	**7.38**	**112**	P	**P**	**14 27 39.5**	**-0.4**
	1.1nm,0.3s,baz=313,slow=10,SNR=27						
LPAZ				LR	LR	14 30 56.0	
	comp=Z,45nm,20.3s,baz=208,slow=41						
LPAZ	**La Paz**	**7.38**	**112**	*eP*	**P**	**14 27 39.2**	**-0.7**
LPAZ				P		14 27 39.5	
LPAZ				LR	LR	14 30 56.0	
LVC	**Limon Verde**	**10.82**	**147**	P	**P**	**14 28 27.7**	**+1.1**
	0.4nm,0.3s,baz=330,slow=12,SNR=3.5						
LVC				S	**S**	**14 30 25.2**	**-1.3**
	0.3nm,0.3s,baz=86,slow=19,SNR=3.7						
LVC	**Limon Verde**	**10.82**	**147**	P	**P**	**14 28 27.7**	**+1.1**
LVC				*eP*		14 28 27.8	
LVC				S	**S**	**14 30 25.2**	**-1.3**
CPUP	**Villa Florida**	**21.05**	**130**	P	**P**	**14 30 33.8**	**+2.0**
	0.5nm,0.6s,mb3.1,baz=331,slow=13,SNR=3.3						
SDV	**Santo Domingo**	**22.76**	**12**	P	**P**	**14 30 48.7**	**0.0**
	2.5nm,0.4s,mb3.9,baz=192,slow=19,SNR=3.6						
PDAR	**Pinedale Array**	**64.29**	**333**	P	**P**	**14 36 21.0**	**-0.5**
	0.3nm,0.7s,mb3.3,baz=125,slow=11,SNR=2.2						
YKA	**Yellowknife Ar**	**81.80**	**343**	P	**P**	**14 38 02.9**	**-0.5**
	0.4nm,0.7s,mb3.3,baz=140,slow=5.3,SNR=8.5						
YKA	**Yellowknife Ar**	**81.80**	**343**	P	**P**	**14 38 02.9**	**-0.5**
ULN	**Ulaanbaatar**	**145.75**	**357**	*e*PKPdf	PKPdf	14 45 23.6	+2.3

IDC ***13*** *14:28:45.6±1.5, 3.33S×150.74E, mb3.8/7, mb1 4.1/7, mb1mx3.9/14, MS3.3/6, Ms1 3.3/6, ms1mx3.1/20, Error ellipse: s-maj=63.0km s-min=21.0km az=119.0*
NEIC ***13*** *14:28:47.3±1.0, 3.32S×150.64E, h10km, mb4.3/4, Error ellipse: s-maj=34.6km s-min=13.3km az=111.0*
ISC 13 14:28:45.8±1.0, 3.3S±0.1×150.6E±0.2, h10km, n18, σ0§96/13, mb3.9/9, MS3.2/4, 1C, New Ireland region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**6.95**	**209**	LR	LR	14 33 07.3	
	comp=Z,273nm,18.4s,baz=24,slow=37						
CTA	**Charters Tower**	**17.21**	**194**	LR	LR	14 38 39.3	
	Z,94nm,19.5s,baz=25,slow=34						
CTAO	**Charters Tower**	**17.21**	**194**	*eP*	**P**	**14 32 47.6**	**-0.5**
	3.7nm,0.9s						
WRAB	**Tennant Creek**	**22.89**	**223**	*eP*	**P**	**14 33 50.4**	**-0.7**
	20nm,0.8s,mb4.6						
WB2	**Warramunga Arr**	**22.90**	**223**	⇑*i*P	**P**	**14 33 51.1**	**0.0**
WRA	**Warramunga Arr**	**22.91**	**223**	P	**P**	**14 33 50.6**	**-0.6**
	5.0nm,0.8s,mb4.0,baz=50,slow=10,SNR=23						
AS12	**Alice Springs**	**25.88**	**217**	*eP*	**P**	**14 34 20.8**	**+1.1**
	13nm,1.6s,mb4.2						
ASAR	**Alice Springs**	**25.88**	**217**	P	**P**	**14 34 20.4**	**+0.7**
	1.8nm,0.7s,mb3.7,baz=52,slow=8.6,SNR=28						
FITZ	**Fitzroy Crossi**	**28.52**	**237**	*eP*	**P**	**14 34 45.9**	**+2.1**
	5.2nm,1.1s,mb4.2						
FITZ	**Fitzroy Crossi**	**28.52**	**237**	P	**P**	**14 34 45.5**	**+1.7**
	2.0nm,0.8s,mb3.9,baz=90,slow=5.3,SNR=5.8						
FITZ				LR	LR	14 46 36.1	
	comp=Z,72nm,20.8s,MS3.2,baz=46,slow=37						
STKA	**Stephens Creek**	**29.66**	**196**	LR	LR	14 47 40.9	
	comp=Z,115nm,19.2s,MS3.5,baz=204,slow=38						
CM31	**Chiang Mai Arr**	**55.24**	**295**	*eP*	**P**	**14 38 20.2**	**-1.6**
	3.0nm,0.7s,mb4.4						
FX1	**Attu Island--F**	**59.12**	**16**	LR	LR	14 58 56.2	
	comp=Z,2.9nm,21.9s,MS2.4,baz=84,slow=31						
MKAR	**Makanchi Array**	**77.75**	**319**	P	**P**	**14 40 46.1**	**+1.4**
	0.6nm,0.8s,mb3.5,baz=90,slow=8.6,SNR=2.8						
ZAL	**Zalesovo**	**78.69**	**327**	P	**P**	**14 40 49.2**	**-0.6**
	0.5nm,0.8s,mb3.5,baz=246,slow=10.0,SNR=2.7						
ILAR	**Eielson Array**	**81.62**	**23**	P	**P**	**14 41 05.5**	**+0.3**
	0.5nm,0.8s,mb3.5,baz=257,slow=5.5,SNR=5.1						
BVAR	**Borovoye Array**	**86.72**	**323**	LR	LR	15 22 17.6	
	comp=Z,33nm,21.5s,MS3.7,baz=10.0,slow=37						
YKA	**Yellowknife Ar**	**95.14**	**28**	P	**P**	**14 42 10.0**	**-0.2**
	0.2nm,0.8s,mb3.6,baz=276,slow=5.0,SNR=3.0						

IDC ***13*** *14:36:41.3±2.5, 9.60S×118.66E, mb3.4/2, mb1 3.8/4, mb1mx3.6/14, ML3.8/2, Error ellipse: s-maj=202.0km s-min=24.6km az=51.0*
DJA ***13*** *14:36:47.7±0.8, 9.61S×118.73E, h191km±22km, MD4.7/3, ML5.4/4, Error ellipse: s-maj=69.0km s-min=29.0km az=2.0*
NEIC ***13*** *14:36:50.4±2.4, 8.80S×118.82E, h157km±45km, mb4.6/1, Error ellipse: s-maj=60.7km s-min=14.1km az=52.0*
ISC 13 14:36:50.0±1.0, 10.3S±0.2×118.5E±0.2, h119km±21km, n19, σ1§22/31, mb3.5/1, 9C-7D, South of Sumbawa

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KEDI	**Kedomdong**	**2.94**	**308**	⇑*i*Pn	**P**	**14 37 35.8**	**-0.7**
	2µm,0.2s						
KEDI	**Kedomdong**	**2.94**	**308**	⇑*i*P	**P**	**14 37 36.1**	**-0.4**
KEDI				⇓*i*Sn	**S**	**14 38 10.7**	**-0.9**
KEDI	**Kedomdong**	**2.94**	**308**	⇑*i*Pn	**P**	**14 37 35.8**	**-0.7**
KEDI				*e*Sn	**S**	**14 38 12.0**	**+0.4**
RATI	**Rata**	**3.29**	**299**	⇓*i*Pn	**P**	**14 37 41.0**	**-0.1**
	1µm,0.2s						
RATI	**Rata**	**3.29**	**299**	⇑*i*P	**P**	**14 37 41.1**	**0.0**
RATI				⇓*i*Sn	**S**	**14 38 20.2**	**+0.3**
RATI	**Rata**	**3.29**	**299**	⇑*i*Pn	**P**	**14 37 41.1**	**0.0**
RATI				*i* Sn	**S**	**14 38 20.5**	**+0.6**
INGI	**Ingas**	**3.59**	**294**	⇑*i*Pn	**P**	**14 37 45.5**	**+0.4**
	790nm,0.2s						
INGI				⇓*i*Sn	**S**	**14 38 28.5**	**+1.4**
INGI	**Ingas**	**3.59**	**294**	⇓*i*Pn	**P**	**14 37 45.5**	**+0.4**
INGI				*e*Sn	**S**	**14 38 28.4**	**+1.3**
KELI	**Kelakatan**	**4.43**	**298**	⇑*i*Pn	**P**	**14 37 55.7**	**-0.8**
	528nm,0.2s						
KELI				⇑*e*Sn	**S**	**14 38 45.4**	**-2.1**
KELI	**Kelakatan**	**4.43**	**298**	⇓*e*Pn	**P**	**14 37 55.8**	**-0.7**
KELI				*e*Sn	**S**	**14 38 45.4**	**-2.1**
FITZ	**Fitzroy Crossi**	**10.40**	**139**	⇑*i*P	**P**	**14 39 18.3**	**+1.2**
	1.9nm,0.6s						
FITZ				*e*S	**S**	**14 41 11.2**	**-0.8**
FITZ	**Fitzroy Crossi**	**10.40**	**139**	Pn	**P**	**14 39 17.9**	**+0.8**
	0.7nm,0.3s,baz=346,slow=8.6,SNR=35						
FITZ				Sn	**S**	**14 41 10.7**	**-1.3**
	0.8nm,0.3s,baz=5.3,slow=23,SNR=8.8						
WRA	**Warramunga Arr**	**18.06**	**124**	P	**P**	**14 40 56.2**	**+1.5**
	0.2nm,0.3s,baz=296,slow=13,SNR=18						
WRA				S	**S**	**14 44 06.9**	**-2.1**
	0.1nm,0.3s,baz=299,slow=26,SNR=4.7						
WRA	**Warramunga Arr**	**18.06**	**124**	P	**P**	**14 40 56.2**	**+1.5**
WRA				S	**S**	**14 44 06.9**	**-2.1**
WB2	**Warramunga Arr**	**18.07**	**124**	⇓*i*P	**P**	**14 40 56.9**	**+2.1**
WB2				*e*S	**S**	**14 44 04.9**	**-4.3**
AS12	**Alice Springs**	**19.83**	**134**	*e*P	**P**	**14 41 22.1**	**+8.4**
	5.1nm,1.2s						
ASAR	**Alice Springs**	**19.83**	**134**	P	**P**	**14 41 18.1**	**+4.4**
	0.4nm,0.5s,baz=312,slow=9.9,SNR=9.8						
MKAR	**Makanchi Array**	**65.39**	**334**	P	**P**	**14 47 22.0**	**0.0**
	0.4nm,0.5s,mb3.5,baz=140,slow=9.5,SNR=6.5						
WMOK	**Wichita Mounta**	**138.27**	**48**	*e*P	PKPdf	14 55 52.5	-9.3

IDC ***13*** *15:14:31.6±1.9, 29.55N×68.42E, mb3.7/5, mb1 3.9/5, mb1mx3.6/21, Error ellipse: s-maj=67.5km s-min=29.8km az=69.0*
NEIC ***13*** *15:14:33.5±1.3, 29.64N×68.55E, h10km, mb4.6/2, Error ellipse: s-maj=27.7km s-min=22.9km az=105.0*
ISC 13 15:14:32.2±3.1, 29.6N±0.1×68.5E±0.1, h11km±20km, n17, σ1§10/19, mb4.0/6, Pakistan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DRP	**Derazinda**	**2.62**	**35**	P	**Pn**	**15 15 19.6**	**+4.3**
SBDP	**Sheikh Budin**	**3.37**	**36**	P	**Pn**	**15 15 24.6**	**-1.3**
THW	**Thamme Wali**	**4.26**	**41**	P	**Pn**	**15 15 39.0**	**+0.5**
THW				S	**Sn**	**15 16 30.0**	**+1.2**
CEP	**Cherat**	**5.14**	**34**	P	**Pn**	**15 15 51.4**	**+0.3**
CEP				S	**Sn**	**15 16 50.0**	**-1.2**
CHCP	**Chirah Chowk**	**5.76**	**44**	P	**Pn**	**15 16 00.4**	**+0.5**
MKAR	**Makanchi Array**	**20.27**	**28**	P	**P**	**15 19 08.7**	**-1.8**
	0.9nm,0.4s,baz=214,slow=9.4,SNR=15						
KURK	**Kurchatov**	**22.44**	**17**	*eP*	**P**	**15 19 28.9**	**-3.5**
ZRNK	**Zerenda**	**23.34**	**1**	*eP*	**P**	**15 19 41.0**	**-0.2**
BVAR	**Borovoye Array**	**23.45**	**3**	P	**P**	**15 19 44.0**	**+1.7**
	2.8nm,0.9s,mb3.7,baz=180,slow=9.9,SNR=9.6						
BRVK	**Borovoye**	**23.48**	**3**	P	**P**	**15 19 44.4**	**+1.8**
ULN	**Ulaanbaatar**	**34.76**	**47**	*eP*	**P**	**15 21 18.1**	**-6.4**
SANT	**Santorini**	**36.46**	**292**	P	**P**	**15 21 34.8**	**-4.2**
KRIS	**Kristallenia**	**36.48**	**290**	*eP*	**P**	**15 21 39.2**	**0.0**
	39nm,1.3s,mb5.2						
ARCES	**ARCESS Array B**	**46.83**	**341**	P	**P**	**15 23 02.3**	**-1.2**
	1.1nm,0.5s,mb4.0,baz=135,slow=6.9,SNR=8.6						
INK	**Inuvik**	**81.03**	**8**	*eP*	**P**	**15 26 48.2**	**+0.1**
	1.1nm,0.6s,mb4.0						
ASAR	**Alice Springs**	**82.21**	**123**	P	**P**	**15 26 55.0**	**0.0**
	0.4nm,0.6s,mb3.5,baz=306,slow=5.4,SNR=11						
YKA	**Yellowknife Ar**	**88.20**	**1**	P	**P**	**15 27 24.4**	**+0.3**
	0.3nm,0.7s,mb3.6,baz=349,slow=5.1,SNR=12						

NIED ***13*** *15:28:00.24.00N×121.50E, h32km, Mw3.7 Best double couple: M0 4.65×10^14 NP1:ψs 179°, δ68°, λ37°. NP2:ψs 73°, δ56°, λ154°.*
IDC ***13*** *15:28:45.2±0.8, 23.97N×121.62E, mb3.8/10, mb1 4.0/11, mb1mx3.8/23, ML3.9/1, MS3.0/3, Ms1 3.0/3, ms1mx2.7/25, Error ellipse: s-maj=27.3km s-min=16.4km az=67.0*
TAP ***13*** *15:28:49.5, 24.06N×121.52E, h20km, ML4.2*
TAP Felt III J at Chiawan, IV J at Hualien, III J at Hehuanshan, IV J at Shilin, II J at Tachien, II J at Nanshan, II J at Nanau, I J at Nioudou, I J at Ryuetan, I J at Mingjian.
JMA ***13*** *15:28:49.3±0.2, 24.03N×121.47E, h60km, MS7.7*
NEIC ***13*** *15:28:50.3±0.5, 23.97N×121.65E, h35km, ML4.6(TAP), Error ellipse: s-maj=13.5km s-min=9.1km az=62.0*
NEIC Recorded [4 TAP] in Hua-lien; [3 TAP] in Nan-t'ou; [2 TAP] in I-lan and T'ai-chung Counties.
BJI ***13*** *15:28:59.9, 24.71N×120.95E, h35km, ML3.4*
ISC 13 15:28:49.9±0.2, 24.03N±0.01×121.61E±0.02, h23km±2km, n94, σ1§24/146, mb3.8/10, MS2.9/2, 6C-8D, Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TWD	**Chiawan**	**0.05**	**344**	⇓*i*P	**Pb**	**15 28 53.8**	**-0.1**
TWD				S	**Sb**	**15 28 56.4**	**-0.2**
HWA	**Hwalien**	**0.05**	**186**	⇑*i*P	**Pb**	**15 28 54.2**	**+0.3**
ESL	**Shilin**	**0.27**	**217**	*i* P	**Pb**	**15 28 55.3**	**-1.0**
WHF	**Hehuan Shan**	**0.34**	**290**	⇓*i*P	**Pb**	**15 28 56.1**	**-1.2**
ENA	**Nanau**	**0.41**	**17**	⇓*i*P	**Pb**	**15 28 58.5**	**0.0**
ENA				S	**Sb**	**15 29 04.6**	**+0.2**
TWT	**Tachien**	**0.46**	**299**	⇑*i*P	**Pb**	**15 28 58.5**	**-0.7**
TWT				S	**Sb**	**15 29 04.2**	**-1.4**
NNS	**Nan Shan**	**0.46**	**332**	⇑*i*P	**Pb**	**15 28 58.8**	**-0.6**
NNS				S	**Sb**	**15 29 04.6**	**-1.2**
ENTT	**Nioudou**	**0.61**	**356**	⇓*i*P	**Pb**	**15 29 01.6**	**-0.2**
ENTT				S	**Sb**	**15 29 09.9**	**0.0**
TWC	**Suao**	**0.61**	**21**	⇓P	**Pb**	**15 29 01.9**	**+0.1**
TWC				S	**Sb**	**15 29 10.9**	**+0.8**
SMLT	**Sun Moon Lake**	**0.67**	**257**	P	**Pb**	**15 29 01.6**	**-1.2**
SMLT				S	**Sb**	**15 29 09.5**	**-2.1**
NSK	**Sanguang**	**0.68**	**340**	P	**Pb**	**15 29 02.5**	**-0.5**
NSK				S	**Sb**	**15 29 11.7**	**-0.3**
TWE	**Neicheng**	**0.69**	**4**	⇓P	**Pb**	**15 29 03.0**	**-0.1**
TWE				S	**Sb**	**15 29 12.4**	**+0.2**
TYC	**Yuchr**	**0.70**	**260**	⇑P	**Pb**	**15 29 02.1**	**-1.2**
TYC				S	**Sb**	**15 29 10.0**	**-2.5**
TWF1	**Yuli**	**0.73**	**203**	*e*P	**Pb**	**15 29 01.7**	**-2.2**
TWF1				S	**Sb**	**15 29 13.0**	**-0.5**
YUS	**Yu-Shan**	**0.81**	**228**	⇓*i*P	**Pb**	**15 29 04.8**	**-0.4**
YUS				S	**Sb**	**15 29 15.5**	**-0.1**
NSTT	**Nanjuang**	**0.82**	**317**	⇑P	**Pb**	**15 29 04.9**	**-0.4**
NSTT				S	**Sb**	**15 29 15.2**	**-0.7**
TWQ1	**Liyutan**	**0.83**	**293**	⇑*i*P	**Pb**	**15 29 05.2**	**-0.2**
TWQ1				S	**Sb**	**15 29 16.0**	**-0.2**
TCU	**Taichung**	**0.86**	**278**	*e*P	**Pb**	**15 29 06.1**	**+0.1**
TCU				S	**Sb**	**15 29 17.6**	**+0.5**
WNT	**Mingjian**	**0.86**	**260**	*e*P	**Pb**	**15 29 06.0**	**0.0**
WNT				S	**Sb**	**15 29 17.6**	**+0.5**
NSY	**Sanyi**	**0.87**	**296**	*e*P	**Pb**	**15 29 06.3**	**+0.2**
NSY				S	**Sb**	**15 29 17.8**	**+0.5**
ALS	**Alishan**	**0.90**	**235**	⇓P	**Pb**	**15 29 06.5**	**-0.3**
ALS				S	**Sb**	**15 29 18.9**	**+0.5**
TATO	**Taipei**	**0.95**	**353**	*e*P	**Pb**	**15 29 07.3**	**+0.1**
CHKT	**Chengkung**	**0.95**	**194**	*e*P	**Pb**	**15 29 06.2**	**-1.4**
CHKT				S	**Sb**	**15 29 19.2**	**-0.7**
CHN5	**Tsauling**	**0.96**	**243**	*e*P	**Pb**	**15 29 07.5**	**-0.1**
CHN5				S	**Sb**	**15 29 20.8**	**+0.9**
HSN	**Hsinchu**	**0.96**	**323**	*e*P	**Pb**	**15 29 08.7**	**+0.9**
HSN				S	**Sb**	**15 29 22.6**	**+2.5**
ELDTW	**Lidau**	**1.00**	**213**	*e*P	**Pb**	**15 29 06.2**	**-2.1**
ELDTW				S	**Sb**	**15 29 20.3**	**-0.8**
TAP1	**Taipei**	**1.01**	**355**	*e*P	**Pb**	**15 29 09.2**	**+0.7**
TAP1				S	**Sb**	**15 29 22.4**	**+1.1**
TAP	**Taipei**	**1.01**	**355**	*e*P	**Pb**	**15 29 09.4**	**+0.9**
TAP				S	**Sb**	**15 29 22.1**	**+0.7**
NCU	**National Centr**	**1.01**	**338**	*e*P	**Pb**	**15 29 09.5**	**+0.9**
NCU				S	**Sb**	**15 29 24.3**	**+2.8**
WGK	**Gukeng**	**1.02**	**251**	*e*P	**Pb**	**15 29 08.7**	**0.0**
WGK				S	**Sb**	**15 29 22.6**	**+0.8**
NWF	**Wu-fen Shan**	**1.05**	**8**	*e*P	**Pb**	**15 29 09.2**	**0.0**
NWF				S	**Sb**	**15 29 23.4**	**+0.9**
TWS1	**Kuangyinshan**	**1.08**	**351**	*e*P	**Pb**	**15 29 10.4**	**+0.6**
TWS1				S	**Sb**	**15 29 26.4**	**+3.0**
CHN2	**Minshiung**	**1.15**	**245**	*e*P	**Pn**	**15 29 11.2**	**+0.4**
CHN2				S	**Sb**	**15 29 27.5**	**+1.9**
CHN4	**Tsaushan**	**1.15**	**234**	*e*P	**Pn**	**15 29 11.5**	**+0.7**
CHN4				S	**Sb**	**15 29 28.4**	**+2.9**
WTP	**Ta-pu**	**1.20**	**230**	*e*P	**Pn**	**15 29 11.6**	**+0.1**
WTP				S	**Sb**	**15 29 28.2**	**+1.2**
CHY	**Chiayi**	**1.21**	**244**	*e*P	**Pn**	**15 29 11.8**	**+0.2**
CHY				S	**Sb**	**15 29 28.0**	**+0.7**
WTCT	**Ta-ch'eng**	**1.23**	**262**	*e*P	**Pn**	**15 29 11.5**	**-0.3**
WTCT				S	**Sb**	**15 29 27.7**	**0.0**
TWY	**Chenhua**	**1.24**	**360**	*e*P	**Pn**	**15 29 11.8**	**-0.2**
TWY				S	**Sb**	**15 29 30.3**	**+2.3**
TWK	**Hsinying**	**1.28**	**234**	*e*P	**Pn**	**15 29 13.1**	**+0.5**
TWK				S	**Sn**	**15 29 30.6**	**+1.4**
CHN1	**Nanshi**	**1.30**	**230**	*e*P	**Pn**	**15 29 13.7**	**+0.8**
CHN1				S	**Sn**	**15 29 31.6**	**+1.8**
TWG	**Pinlang**	**1.30**	**202**	*e*P	**Pn**	**15 29 10.2**	**-2.8**
WSF	**Szhu**	**1.33**	**253**	*e*P	**Pn**	**15 29 13.3**	**0.0**
WSF				S	**Sn**	**15 29 30.7**	**+0.2**
SGST	**Jiashian**	**1.33**	**225**	*e*P	**Pn**	**15 29 14.1**	**+0.7**
SGST				S	**Sn**	**15 29 33.3**	**+2.7**
YOJ	**Yonaguni jima**	**1.35**	**71**	P	**Pn**	**15 29 14.1**	**+0.5**
YOJ				S	**Sn**	**15 29 32.5**	**+1.6**
CHN8	**Yiju**	**1.45**	**242**	*e*P	**Pn**	**15 29 15.4**	**+0.3**
CHN8				S	**Sn**	**15 29 35.6**	**+2.0**
CHN3	**Shinhua**	**1.49**	**231**	*e*P	**Pn**	**15 29 17.3**	**+1.7**
ECL	**Taimali**	**1.55**	**203**	*e*P	**Pn**	**15 29 14.3**	**-2.2**
SCLT	**Jiali**	**1.55**	**237**	*e*P	**Pn**	**15 29 17.7**	**+1.2**
SCLT				S	**Sn**	**15 29 38.0**	**+1.8**
SSD	**Sandimen**	**1.56**	**215**	*e*P	**Pn**	**15 29 17.0**	**+0.3**
SSD				S	**Sn**	**15 29 38.3**	**+1.9**
TAI1	**Yung-k'ang**	**1.61**	**232**	*e*P	**Pn**	**15 29 18.1**	**+0.8**
TWM1	**Shoushan**	**1.62**	**222**	*e*P	**Pn**	**15 29 19.8**	**+2.3**
PCYT	**Pengchaiyu**	**1.65**	**15**	*e*P	**Pn**	**15 29 18.4**	**+0.5**
EAST	**Anshuo**	**1.78**	**203**	*e*P	**Pn**	**15 29 19.2**	**-0.6**
SCZT	**Fangliau**	**1.89**	**209**	*e*P	**Pn**	**15 29 22.6**	**+1.3**
PNG	**Penghu**	**1.94**	**257**	*e*P	**Pn**	**15 29 20.9**	**-1.2**
PNG				S	**Sn**	**15 29 44.8**	**-1.1**
WDGT	**Dungji**	**1.95**	**247**	*e*P	**Pn**	**15 29 21.9**	**-0.3**
WDGT				S	**Sn**	**15 29 45.8**	**-0.3**
IRIF	**Iriomote-Funau**	**1.96**	**81**	P	**Pn**	**15 29 22.6**	**+0.3**
IRIF				*e*S	**Sn**	**15 29 48.0**	**+1.6**
LAY	**Lan-yu**	**1.98**	**182**	*e*P	**Pn**	**15 29 20.2**	**-2.5**
HATJ	**Hateruma jima**	**2.01**	**89**	P	**Pn**	**15 29 23.5**	**+0.5**
HATJ				*e*S	**Sn**	**15 29 48.6**	**+1.0**
TWP	**Hsiaoliuchiu**	**2.03**	**215**	*e*P	**Pn**	**15 29 24.9**	**+1.5**
JKRS	**Kuro-shima**	**2.20**	**84**	P	**Pn**	**15 29 26.4**	**+0.6**
JKRS				*e*S	**Sn**	**15 29 54.8**	**+2.2**
TWK1	**Hengchun**	**2.21**	**200**	*e*P	**Pn**	**15 29 27.8**	**+1.9**
JIJ	**Ishigaki jima**	**2.33**	**81**	P	**Pn**	**15 29 27.6**	**-0.1**
JIJ				*e*S	**Sn**	**15 29 55.5**	**-0.5**
JTJ	**Tarama**	**2.88**	**77**	P	**Pn**	**15 29 35.6**	**+0.1**
JTJ				*e*S	**Sn**	**15 30 11.2**	**+1.3**
QZH	**Quanzhou**	**2.90**	**289**	P	**Pn**	**15 29 33.4**	**-2.3**
QZH				S	**Sn**	**15 30 06.0**	**-4.2**
QZH				S	Sn		
	comp=N,200nm,1.0s						
QZH				S	Sn		
	comp=E,100nm,0.5s						
KNM	**Kinmen**	**2.93**	**278**	*e*P	**Pn**	**15 29 35.7**	**-0.4**
JMJ	**Miyako jima 2**	**3.45**	**76**	*e*S	**Sn**	**15 30 24.6**	**+0.5**
JOGS	**Gusukube**	**3.54**	**77**	P	**Pn**	**15 29 45.2**	**+0.4**
JOGS				*e*S	**Sn**	**15 30 27.8**	**+1.4**
JKE	**Kume jima 2**	**5.21**	**63**	P	**Pn**	**15 30 07.7**	**-0.9**
JKE				*e*S	**Sn**	**15 31 08.7**	**-0.1**
JAGN	**Aguni-jima**	**5.70**	**62**	P	**Pn**	**15 30 14.2**	**-1.2**
JIH	**Iheya**	**6.47**	**61**	P	**Pn**	**15 30 24.4**	**-1.9**
JOW	**Kunigami**	**6.64**	**64**	Pn	**Pn**	**15 30 25.0**	**-3.6**
	comp=E,5.6nm,0.3s,baz=214,slow=8.5,SNR=24						
JOW				Sn	**Sn**	**15 31 42.4**	**-2.0**
	comp=E,0.7nm,0.3s,baz=121,slow=28,SNR=1.7						
JOW	**Kunigami**	**6.64**	**64**	P	**Pn**	**15 30 26.0**	**-2.7**
JTK	**Tokunoshima**	**7.59**	**59**	P	**Pn**	**15 30 38.7**	**-3.3**
NJ2	**Nanjing**	**8.35**	**344**	*e*P	**P**	**15 30 49.3**	**-3.3**
NJ2				S	**Sn**	**15 32 20.8**	**-6.4**
NJ2				S	Sn		
	comp=N,110nm,0.6s						
NJ2				S	Sn		
	comp=E,100nm,0.7s						
JAM	**Amami Oshima**	**8.40**	**57**	P	**P**	**15 30 49.3**	**-4.0**
JMZ	**Minamidaito 2**	**8.90**	**76**	P	**P**	**15 30 54.0**	**-6.2**
KS15	**Wonju Array Si**	**14.41**	**20**	P	**P**	**15 32 06.5**	**-8.0**
CBIJ	**Chichi jima**	**18.81**	**76**	LR	LR	15 39 37.1	
	comp=E,31nm,18.6s,baz=195,slow=35						
CMAR	**Chiang Mai Arr**	**21.83**	**260**	LR	LR	15 42 02.2	
	comp=E,24nm,18.3s,MS2.6,baz=210,slow=36						
SONM	**Songino Array**	**26.66**	**337**	P	**P**	**15 34 27.6**	**-1.3**
	comp=E,1.8nm,0.9s,mb3.6,baz=162,slow=4.6,SNR=3.0						
MKAR	**Makanchi Array**	**38.72**	**316**	P	**P**	**15 36 10.1**	**-3.9**
	comp=E,1.7nm,0.8s,mb3.9,baz=103,slow=9.2,SNR=18						
ZAL	**Zalesovo**	**40.59**	**327**	P	**P**	**15 36 27.5**	**-1.8**
	comp=E,0.7nm,0.4s,mb3.6,baz=96,slow=12,SNR=3.5						
ZAL				LR	LR	15 55 10.0	
	comp=E,36nm,21.4s,MS3.2,baz=339,slow=39						
KURK	**Kurchatov**	**42.46**	**320**	P	**P**	**15 36 43.0**	**-1.7**
WRA	**Warramunga Arr**	**45.43**	**163**	P	**P**	**15 37 05.3**	**-3.8**
	comp=E,0.6nm,0.4s,mb3.7,baz=345,slow=8.7,SNR=10						
BVAR	**Borovoye Array**	**48.04**	**321**	P	**P**	**15 37 27.1**	**-2.1**
	comp=E,1.0nm,0.8s,mb3.9,baz=98,slow=7.4,SNR=5.7						
ZRNK	**Zerenda**	**48.82**	**320**

BUS	**Buena Vista**	**3.60**	**329**⇑	*eP*	**Pn**	**16**	**12**	**38.5**	**0.0**
BUS				*eS*	**Sn**	**16**	**13**	**23.8**	**+1.6**
URSC	**Urasca**	**3.85**	**331**⇑	*eP*	**Pn**	**16**	**12**	**42.1**	**+0.1**
LCR2	**La Lucha 2**	**3.88**	**327**⇑	*eP*	**Pn**	**16**	**12**	**41.9**	**-0.6**
ICR	**Volcan Irazu**	**4.00**	**331**⇓	*eP*	**Pn**	**16**	**12**	**45.1**	**+1.0**
ICR				*eS*	**Sn**	**16**	**13**	**32.4**	**0.0**
SJS	**Escuela Geolog**	**4.08**	**328**⇓	*eP*	**Pn**	**16**	**12**	**45.2**	**-0.1**
SJS				*eS*	**Sn**	**16**	**13**	**33.8**	**-0.5**
PRS1	**Puriscal**	**4.25**	**325**	*eP*	**Pn**	**16**	**12**	**45.0**	**-2.8**
TRTC	**Tortuguero**	**4.47**	**336**⇑	*eP*	**Pn**	**16**	**12**	**52.6**	**+1.7**
VCR	**Vista de Mar**	**5.21**	**315**	*eP*	**Pn**	**16**	**12**	**56.2**	**-5.1**
VCR				*eS*	**Sn**	**16**	**13**	**51.6**	**-11**
OTAV	**Otavalo**	**7.06**	**151**	*eP*n	**Pn**	**16**	**13**	**22.5**	**-5.0**
LPAZ	**La Paz**	**26.38**	**149**	P	**P**	**16**	**17**	**23.3**	**+3.0**
	0.7nm,0.5s,mb3.5,baz=318,slow=5.5,SNR=3.5								
LPAZ				LR	LR	16	28	45.0	
	comp=Z,177nm,19.2s,MS3.6,baz=293,slow=38								
LPAZ	**La Paz**	**26.38**	**149**	P	**P**	**16**	**17**	**20.6**	**+0.3**
	1.3nm,1.1s,mb3.5								
LPAZ				LR	LR	16	28	45.0	
TXAR	**Lajitas Array**	**30.67**	**321**	LR	LR	16	31	19.5	
	comp=Z,40nm,18.6s,MS3.1,baz=160,slow=38								
BDFB	**Brasilia**	**40.08**	**124**	LR	LR	16	35	55.2	
	comp=Z,87nm,19.2s,MS3.6,baz=115,slow=36								
CPUP	**Villa Florida**	**40.37**	**145**	LR	LR	16	39	05.8	
	comp=Z,73nm,18.4s,MS3.6,baz=337,slow=41								
PDAR	**Pinedale Array**	**43.65**	**330**	P	**P**	**16**	**19**	**48.7**	**+0.4**
	0.7nm,1.0s,mb3.4,baz=146,slow=5.3,SNR=4.0								
HWUT	**Hardware Ranch**	**43.84**	**328**	*eP*	**P**	**16**	**19**	**49.7**	**-0.2**
	2.7nm,0.8s,mb4.0								
ULM	**Lac du Bonnet**	**45.19**	**347**	P	**P**	**16**	**19**	**59.1**	**-1.6**
	2.5nm,0.9s,mb4.2,baz=138,slow=14,SNR=4.6								
NVAR	**Mina Array Bea**	**45.80**	**319**	P	**P**	**16**	**20**	**06.7**	**+1.0**
	0.7nm,0.9s,mb3.7,baz=126,slow=7.8,SNR=4.2								
YKA	**Yellowknife Ar**	**60.84**	**343**	LR	LR	16	48	31.6	
	comp=Z,37nm,18.1s,MS3.6,baz=245,slow=36								
ILAR	**Eielson Array**	**73.69**	**336**	LR	LR	16	57	08.7	
	comp=Z,27nm,19.5s,MS3.5,baz=14,slow=37								
DBIC	**Dimbokro**	**76.42**	**85**	LR	LR	16	53	55.6	
	comp=Z,33nm,20.4s,MS3.6,baz=140,slow=33								
ASAR	**Alice Springs**	**141.63**	**240**	PKP	PKPdf	16	31	16.9	+0.4
	0.3nm,1.1s,baz=93,slow=2.1,SNR=3.9								

IDC ***13*** *16:31:01.4±1.0, 1.27S×138.02E, mb3.9/8, mb1 4.2/9, mb1mx4.2/14, ML4.4/1, Error ellipse: s-maj=39.9km s-min=17.6km az=78.0*

NEIC ***13*** *16:31:04.5±0.6, 1.31S×137.94E, h20km, mb4.0/7, Error ellipse: s-maj=22.2km s-min=8.9km az=88.0*

ISC 13 16:31:06.4±3.9, 1.42S±0.09×137.9E±0.2, h50km±37km, n19, σ1$ 04/21, mb4.0/8, Near north coast of Irian Jaya

Code	Station Name	Δ°	AZ°	Phase	ID		Time			Res
				Op		ISC	h	m	s	ISC
WRAB	**Tennant Creek**	**18.72**	**190**	*eP*	**P**		**16**	**35**	**23.3**	**-0.2**
	19nm,0.6s									
WB2	**Warramunga Arr**	**18.73**	**190**	*eP*	**P**		**16**	**35**	**21.9**	**-1.7**
WRA	**Warramunga Arr**	**18.73**	**190**	P	**P**		**16**	**35**	**22.8**	**-0.8**
	1.1nm,0.3s,baz=14,slow=12,SNR=34									
WRA				S	**S**		**16**	**38**	**40.2**	**-7.1**
	0.1nm,0.3s,baz=12,slow=22,SNR=6.1									
CTA	**Charters Tower**	**20.30**	**157**	*eP*	**P**		**16**	**35**	**43.9**	**+3.2**
	2.4nm,0.6s									
CTA	**Charters Tower**	**20.30**	**157**	P	**P**		**16**	**35**	**41.6**	**+0.9**
	1.7nm,0.5s,baz=333,slow=11,SNR=7.3									
CTAO	**Charters Tower**	**20.30**	**157**	*eP*	**P**		**16**	**35**	**42.0**	**+1.2**
	3.2nm,0.6s									
FITZ	**Fitzroy Crossi**	**20.46**	**215**	*eP*	**P**		**16**	**35**	**43.2**	**+0.8**
	4.1nm,1.1s									
FITZ				*eS*	**S**		**16**	**39**	**22.0**	**-1.7**
FITZ	**Fitzroy Crossi**	**20.46**	**215**	P	**P**		**16**	**35**	**42.9**	**+0.5**
	5.3nm,0.9s,baz=21,slow=8.8,SNR=8.2									
AS12	**Alice Springs**	**22.45**	**190**	*eP*	**P**		**16**	**36**	**03.6**	**+1.3**
	18nm,0.9s,mb4.5									
ASAR	**Alice Springs**	**22.45**	**190**	P	**P**		**16**	**36**	**04.0**	**+1.7**
	13nm,0.8s,mb4.4,baz=19,slow=11,SNR=87									
STKA	**Stephens Creek**	**30.50**	**174**	*eP*	**P**		**16**	**37**	**16.9**	**-0.2**
	2.2nm,0.6s,mb4.2									
STKA	**Stephens Creek**	**30.50**	**174**	P	**P**		**16**	**37**	**16.9**	**-0.2**
	2.4nm,0.6s,mb4.2,baz=329,slow=9.7,SNR=11									
CMAR	**Chiang Mai Arr**	**43.05**	**299**	P	**P**		**16**	**39**	**04.3**	**+0.9**
	1.5nm,1.2s,mb3.6,baz=125,slow=6.7,SNR=4.1									
CMAR				PcP	PcP		16	40	53.6	+0.3
	0.9nm,1.1s,baz=135,slow=2.0,SNR=4.3									
YAK	**Yakutsk**	**63.58**	**356**	*eP*	**P**		**16**	**41**	**33.5**	**-0.5**
	5.8nm,0.7s,mb4.7									
MKAR	**Makanchi Array**	**68.24**	**322**	P	**P**		**16**	**42**	**04.4**	**+0.4**
	1.2nm,0.5s,mb4.2,baz=106,slow=9.0,SNR=21									
BILL	**Bilibino**	**72.06**	**11**	P	**P**		**16**	**42**	**25.1**	**-1.7**
	2.0nm,1.2s,mb3.9									
VNDA	**Vanda**	**77.14**	**175**	P	**P**		**16**	**42**	**57.2**	**+1.3**
	0.5nm,0.6s,mb3.6,baz=304,slow=3.3,SNR=4.1									
ILAR	**Eielson Array**	**85.02**	**25**	P	**P**		**16**	**43**	**37.0**	**-0.5**
	0.4nm,0.6s,mb3.7,baz=259,slow=5.0,SNR=4.8									
KIV	**Kislovodsk**	**94.70**	**314**	P	**P**		**16**	**44**	**24.1**	**+0.5**

JMA ***13*** *17:00:22.4±0.4, 35.27N×141.49E, h51km±5km, M2.7*

IDC ***13*** *17:00:32.9±1.7, 33.71N×137.71E, mb3.4/3, mb1 3.7/3, mb1mx3.4/23, Error ellipse: s-maj=43.9km s-min=23.9km az=23.0*

ISC 13 17:00:24.0±1.2, 35.26N±0.05×141.4E±0.1, h49km±10km, n13, σ0$ 86/18, mb3.5/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time			Res
				Op		ISC	h	m	s	ISC
CHOJ	**Chosi**	**0.63**	**315**	P	**P**		**17**	**00**	**36.0**	**-0.9**
CHOJ				*eS*	**S**		**17**	**00**	**47.2**	**+0.9**
BSO1	**Boso 1**	**0.70**	**211**	P	**P**		**17**	**00**	**37.3**	**-0.5**
BSO1				*eS*	**S**		**17**	**00**	**49.3**	**+1.4**
BSO3	**Boso 3**	**0.87**	**239**	P	**P**		**17**	**00**	**39.1**	**-0.9**
KTR	**Katsuura**	**0.90**	**263**	P	**P**		**17**	**00**	**39.5**	**-1.0**
KTR				*eS*	**S**		**17**	**00**	**52.9**	**+0.1**
BSO4	**Boso 4**	**0.92**	**253**	P	**P**		**17**	**00**	**40.0**	**-0.7**
JCN	**Nagara**	**1.00**	**279**	P	**P**		**17**	**00**	**42.0**	**+0.1**
JYT	**Yasato**	**1.38**	**315**	P	**P**		**17**	**00**	**47.0**	**-0.4**
JHO	**Hitachi**	**1.51**	**333**	P	**P**		**17**	**00**	**48.8**	**-0.4**
JHJ	**Hachijo jima 2**	**2.52**	**213**	Pn	**P**		**17**	**01**	**05.5**	**+2.0**
	11nm,0.3s,baz=219,slow=22,SNR=3.4									
JHJ				Sn	**S**		**17**	**01**	**32.1**	**-1.0**
	20nm,0.3s,baz=112,slow=22,SNR=4.3									
MAT	**Matsushiro**	**2.90**	**297**	P	**P**		**17**	**01**	**09.5**	**+0.7**
MAT				S	**S**		**17**	**01**	**43.0**	**+0.3**
MKAR	**Makanchi Array**	**45.08**	**304**	P	**P**		**17**	**08**	**37.2**	**+0.5**
	0.2nm,0.4s,mb3.3,baz=84,slow=11,SNR=3.6									
WRA	**Warramunga Arr**	**55.30**	**188**	P	**P**		**17**	**09**	**54.3**	**-0.8**
	0.5nm,0.5s,mb3.8,baz=1.7,slow=7.6,SNR=13									
ASAR	**Alice Springs**	**59.03**	**188**	P	**P**		**17**	**10**	**22.3**	**+1.0**
	0.4nm,0.8s,mb3.5,baz=2.4,slow=5.4,SNR=5.9									

BJI ***13*** *17:18:54.9, 29.75S×177.16W, h15km, mB5.4, mb5.4, Ms5.4, Msz5.3*

IDC ***13*** *17:18:54.6±0.6, 29.87S×177.51W, mb4.9/11, mb1 5.0/14, mb1mx5.0/16, ML4.7/3, MS4.7/7, Ms1 4.7/7, ms1mx4.4/24, Error ellipse: s-maj=28.3km s-min=14.8km az=163.0*

NEIC ***13*** *17:18:55.4±0.2, 30.12S×177.55W, h10km, mb5.3/42, MS5.0/5, Error ellipse: s-maj=12.1km s-min=6.6km az=139.0*

HRVD ***13*** *17:18:55.4±0.4, 30.01S×177.16W, h17km, MW5.4/56, Centroid moment Tensor Solution. LP body waves: s36,c53;Mantle waves: s56,c94; Half duration: 1s2 Moment tensor: Scale 10^{17}Nm; M_{rr}0.95±.05; $M_{\theta\theta}$-0.13±.05; $M_{\phi\phi}$-0.82±.04; $M_{r\theta}$-0.06±.14; $M_{\theta\phi}$-0.35±.04; $M_{\phi r}$1.22±.11; Best double couple: M_o1.55×10^{17} NP1: ϕ_s218°,δ22°,λ123°. NP2:ϕ_s4°,δ72°,λ78°. Principal axes: T 1.6, Plg61°, Azm255°; N -.1, Plg12°, Azm7°; P -1.5, Plg26°, Azm103°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

SYO ***13*** *17:18:55.4, 30.12S×177.55W, h10km, MB5.3, MS5.0*

MOS ***13*** *17:18:58.9±2.8, 29.85S×177.53W, h33km, mb5.6/7, MS5.3/7, Error ellipse: s-maj=24.1km s-min=16.3km az=121.9*

ISC 13 17:18:54.1±0.2, 30.30S±0.04×177.51W±0.06, h10km, (h22km±5.8km: pP-P), n325, σ1$ 06/162, mb5.2/58, MS5.2/19, 30C-10D, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time			Res
				Op		ISC	h	m	s	ISC
PUZ	**Puketiti**	**8.51**	**203**	*eP*	**P**		**17**	**20**	**57.2**	**-3.1**
PUZ				*eS*	**Sn**		**17**	**22**	**39.1**	**+1.6**
WCZ	**Waipu Caves**	**8.85**	**228**	P	**P**		**17**	**21**	**13.2**	**+8.2**
OUZ	**Omahuta**	**8.96**	**234**	P	**P**		**17**	**21**	**14.8**	**+8.3**
URZ	**Urewera**	**9.11**	**208**	Pn	**P**		**17**	**21**	**05.8**	**-2.7**
	1.4nm,0.3s,baz=174,slow=18,SNR=13									
URZ				Sn	**Sn**		**17**	**22**	**52.8**	**+0.6**
	9.8nm,0.3s,baz=305,slow=22,SNR=9.9									
URZ	**Urewera**	**9.11**	**208**	P	**P**		**17**	**21**	**05.7**	**-2.8**
KNZ	**Kokohu**	**9.56**	**203**	*eP*	**P**		**17**	**21**	**10.6**	**-4.3**
BFZ	**Birch Farm**	**11.54**	**204**	*eS*	**S**		**17**	**23**	**45.1**	**-6.8**
MRZ	**Mangatainoka R**	**11.77**	**207**	*eP*	**P**		**17**	**21**	**38.1**	**-7.0**
MRZ				*eS*	**S**		**17**	**23**	**50.5**	**-7.1**
SNZO	**South Karori**	**12.67**	**208**	*eP*	**P**		**17**	**21**	**56.6**	**-0.6**
SNZO				*eS*	**S**		**17**	**24**	**09.6**	**-10**
QRZ	**Quartz Range**	**13.26**	**215**	*eP*	**P**		**17**	**22**	**02.5**	**-2.5**
THZ	**Tophouse**	**13.81**	**211**	*eP*	**P**		**17**	**22**	**06.9**	**-5.4**
THZ				*eS*	**S**		**17**	**24**	**37.5**	**-9.2**
KHZ	**Kahutara**	**14.07**	**208**	*eP*	**P**		**17**	**22**	**10.9**	**-4.8**
KHZ				*S*	**S**		**17**	**24**	**43.5**	**-9.4**
DSZ	**Denniston Nort**	**14.32**	**214**	*eP*	**P**		**17**	**22**	**18.0**	**-0.9**
LTZ	**Lake Taylor**	**14.91**	**211**	*eP*	**P**		**17**	**22**	**23.0**	**-3.6**
LTZ				*eS*	**S**		**17**	**24**	**59.9**	**-13**
MQZ	**McQueen's Vall**	**15.51**	**208**	*eS*	**S**		**17**	**25**	**12.8**	**-14**
WVZ	**Waitaha Valley**	**15.84**	**213**	*eP*	**P**		**17**	**22**	**35.1**	**-3.6**
RPZ	**Rata Peaks**	**16.19**	**211**	Pn	**P**		**17**	**22**	**43.4**	**+0.2**
	9.5nm,0.3s,baz=58,slow=2.4,SNR=23									
RPZ				Sn	**S**		**17**	**25**	**29.6**	**-13**
	0.9nm,0.3s,baz=21,slow=14,SNR=4.1									
RPZ	**Rata Peaks**	**16.19**	**211**	*eP*	**P**		**17**	**22**	**38.5**	**-4.7**
DZM	**Mont Dzumac**	**16.56**	**296**	*eP*	**P**		**17**	**22**	**54.4**	**+6.4**
DZM	**Mont Dzumac**	**16.56**	**296**	*eP*	**P**		**17**	**22**	**54.4**	**+6.4**
NOUC	**Port Laguerre**	**16.65**	**296**	*eP*	**P**		**17**	**22**	**55.7**	**+6.5**
NOUC	**Port Laguerre**	**16.65**	**296**	*eP*	**P**		**17**	**22**	**55.7**	**+6.5**
BWZ	**Berwen**	**17.36**	**212**	*eP*	**P**		**17**	**22**	**57.9**	**0.0**
BKM	**Butte a Klehm**	**18.07**	**311**	*i P*	**P**		**17**	**23**	**05.3**	**-1.8**
AXZ	**Alexandra**	**18.17**	**211**	*eP*	**P**		**17**	**23**	**08.4**	**+0.3**
RAR	**Rarotonga**	**18.34**	**65**	Pn	**P**		**17**	**23**	**01.9**	**-8.4**
	3.3nm,0.3s,baz=186,slow=7.4,SNR=6.2									
RAR				Sn	S		17	26	05.7	-26
	1.4nm,0.3s,baz=72,slow=12,SNR=2.7									
RAR				LR	LR		17	29	08.0	
	comp=Z,441nm,19.1s,baz=258,slow=34									
RAR	**Rarotonga**	**18.34**	**65**	P	**P**		**17**	**22**	**57.6**	**-13**
RAR				Pn	**P**		**17**	**23**	**01.9**	**-8.4**
RAR				Sn	S		17	26	05.7	-26
RAR				LR	LR		17	29	08.0	
MSZ	**Milford Sound**	**18.39**	**215**	*eP*	**P**		**17**	**23**	**09.9**	**-0.9**
TUZ	**Tuapeka**	**18.58**	**209**	*eP*	**P**		**17**	**23**	**14.1**	**+0.9**
ARMA	**Armidale**	**26.60**	**262**	*eP*	**P**		**17**	**24**	**37.9**	**+3.5**
CNB	**Canberra Magne**	**28.21**	**251**	*eP*	**P**		**17**	**24**	**53.5**	**+4.5**
	33nm,0.9s,mb5.0									
TAU	**Tasmania Unive**	**30.69**	**236**	P	**P**		**17**	**25**	**12.9**	**+1.8**
	47nm,1.1s,mb5.2									
TOO	**Toolangi**	**31.40**	**247**	*i*⇓*P*	**P**		**17**	**25**	**20.1**	**+2.7**
	21nm,0.8s,mb5.0									
CTA	**Charters Tower**	**34.20**	**279**	*eP*	**P**		**17**	**25**	**43.3**	**+1.3**
	54nm,0.8s,mb5.5									
CTA				*i*			17	25	56.6	
CTA				*eS*	S		17	31	30.9	+23
CTA	**Charters Tower**	**34.20**	**279**	P	**P**		**17**	**25**	**43.0**	**+1.1**
	baz=96,slow=12									
CTA				LR	LR		17	38	24.3	
	comp=Z,4μm,18.5s,MS5.2,baz=173,slow=34									
CTAO	**Charters Tower**	**34.20**	**279**	*eP*	**P**		**17**	**25**	**42.5**	**+0.5**
	185nm,1.0s,mb6.0									
CTAO				*e*			17	25	56.5	
CTAO				LR	LR					
	comp=Z,4μm,19.0s,MS5.2									
STKA	**Stephens Creek**	**34.92**	**257**⇑	*i P*	**P**		**17**	**25**	**50.0**	**+2.0**
	comp=Z,64nm,0.9s,mb5.5									
STKA	**Stephens Creek**	**34.92**	**257**	P	**P**		**17**	**25**	**50.1**	**+2.1**
	comp=Z,15nm,0.4s,mb5.2,baz=95,slow=9.6,SNR=76									
STKA				LR	LR		17	39	18.4	
	comp=Z,3μm,18.1s,MS5.1,baz=92,slow=35									
PMG	**Port Moresby**	**38.95**	**295**	P	**P**		**17**	**26**	**21.8**	**-0.3**
	comp=Z,22nm,0.9s,mb4.9,baz=154,slow=9.5,SNR=4.5									
PMG				PcP	PcP		17	28	32.5	-0.7
	comp=Z,26nm,1.0s,baz=192,slow=4.4,SNR=4.2									
PMG	**Port Moresby**	**38.95**	**295**	*eP*	**P**		**17**	**26**	**21.7**	**-0.4**
	comp=Z,35nm,1.0s,mb5.0									
WAU	**Wau**	**40.56**	**297**	*eP*	**P**		**17**	**26**	**37.3**	**+1.9**
AS12	**Alice Springs**	**43.54**	**267**	*eP*	**P**		**17**	**26**	**59.8**	**0.0**
	comp=Z,50nm,1.0s,mb5.2									
ASAR	**Alice Springs**	**43.54**	**267**	P	**P**		**17**	**26**	**59.9**	**0.0**
	comp=Z,39nm,1.0s,mb5.1,baz=102,slow=7.1,SNR=109									
ASAR				PcP	PcP		17	28	49.0	+0.8
	comp=Z,3.9nm,0.5s,baz=120,slow=4.0,SNR=3.8									
ASAR				ScP			17	32	39.8	
	comp=Z,2.5nm,1.0s,baz=96,slow=3.9,SNR=4.7									
WB2	**Warramunga Arr**	**44.51**	**272**⇑	*iP*	**P**		**17**	**27**	**07.4**	**-0.3**
WB2				*eS*	**S**		**17**	**33**	**39.8**	**-2.6**
WRAB	**Tennant Creek**	**44.52**	**272**	*eP*	**P**		**17**	**27**	**07.5**	**-0.3**
	comp=Z,276nm,1.0s,mb6.0									
WRAB				*e*			17	27	21.1	
WRAB				LR	LR					
	comp=Z,3μm,20.0s,MS5.2									
WRA	**Warramunga Arr**	**44.52**	**272**	P	**P**		**17**	**27**	**07.6**	**-0.2**
	comp=Z,22nm,0.5s,mb5.3,baz=111,slow=8.0,SNR=149									
WRA				PcP	PcP		17	28	51.7	+0.2
	comp=Z,12nm,1.0s,baz=107,slow=3.3,SNR=4.0									
WRA				ScP			17	32	45.4	
	comp=Z,2.6nm,0.9s,baz=111,slow=4.9,SNR=4.9									
WRA				S	**S**		**17**	**33**	**44.5**	**+1.9**
	comp=Z,9.1nm,1.2s,baz=110,slow=14,SNR=4.8									
WRA	**Warramunga Arr**	**44.52**	**272**	P	**P**		**17**	**27**	**07.6**	**-0.2**
WRA				PP	PP		17	28	51.7	-1.3
WRA				*S*	**S**		**17**	**33**	**44.5**	**+1.9**
FORT	**Forrest**	**46.49**	**255**	*eP*	**P**		**17**	**27**	**23.3**	**0.0**
	comp=Z,105nm,0.7s,mb5.9									
SBA	**Scott Base**	**48.17**	**184**	*eP*	**P**		**17**	**27**	**40.1**	**+4.2**
	comp=Z,97nm,1.3s,mb5.7									
SBA				*e*			17	27	46.1	
VNDA	**Vanda**	**48.24**	**186**	P	**P**		**17**	**27**	**40.1**	**+3.7**
	comp=Z,3.8nm,0.8s,mb4.5,baz=7.2,slow=8.5,SNR=18									
VNDA				LR	LR		17	46	08.6	
	comp=Z,575nm,18.6s,MS4.6,baz=63,slow=34									
VNDA	**Vanda**	**48.24**	**186**	*eP*	**P**		**17**	**27**	**39.8**	**+3.3**
	comp=Z,11nm,1.2s,mb4.8									
VNDA				*e*			17	27	53.7	
VNDA				LR	LR					
	comp=Z,363nm,22.0s,MS4.3									
FITZ	**Fitzroy Crossi**	**52.79**	**270**	*eP*	**P**		**17**	**28**	**10.9**	**-1.0**
	comp=Z,21nm,0.8s,mb5.1									
KIP	**Kipapa**	**54.73**	**22**	*eP*	**P**		**17**	**28**	**24.8**	**-1.3**
	comp=Z,72nm,0.9s,mb5.7									
KLBR	**Kellerberrin**	**54.79**	**251**	*eP*	**P**		**17**	**28**	**24.7**	**-1.7**
	comp=Z,78nm,1.2s,mb5.6									
NWAO	**Narrogin (SRO)**	**54.83**	**249**	*eP*	**P**		**17**	**28**	**26.3**	**-0.5**
	comp=Z,46nm,1.3s,mb5.3									
NWAO				LR	LR					
	comp=Z,912nm,20.0s,MS4.8									
QSPA	**South Pole Qui**	**59.81**	**180**⇑	*iP*	**P**		**17**	**29**	**04.0**	**+2.6**
	comp=Z,43nm,1.0s,mb5.4									
QSPA				*e*			17	29	11.9	
QSPA				LR	LR					
	comp=Z,1μm,19.9s,MS5.0									
USHA	**Ushuaia**	**75.77**	**146**	LR	LR		17	55	33.4	
	comp=Z,563nm,20.9s,MS4.8,baz=1.9,slow=29									
SYO	**Syowa Base**	**77.31**	**193**	⇓P	**P**		**17**	**30**	**50.3**	**+0.4**
SYO	**Syowa Base**	**77.31**	**193**	⇑PcP	PcP		17	31	02.1	+1.2
SYO	**Syowa Base**	**77.31**	**193**	⇓pP	pP		17	31	12.6	+20
SYO	**Syowa Base**	**77.31**	**193**	⇑sP	sP		17	31	25.9	+32
SNAA	**Sanae**	**78.25**	**178**	⇑*i*	**P**		**17**	**30**	**56.2**	**+1.2**
SNAA	**Sanae**	**78.25**	**178**	⇑*i*	**P**		**17**	**31**	**06.0**	**+11**
SNAA	**Sanae**	**78.25**	**178**	⇑*i*	**P**		**17**	**31**	**09.3**	**+14**
VNA3	**Neumayer Olymp**	**78.38**	**176**	⇑*i*	**P**		**17**	**30**	**59.4**	**+3.7**
VNA3	**Neumayer Olymp**	**78.38**	**176**	⇑*i*	**P**		**17**	**31**	**09.3**	**+14**
VNA3	**Neumayer Olymp**	**78.38**	**176**	⇑*i*	**P**		**17**	**31**	**10.9**	**+15**
VNA3	**Neumayer Olymp**	**78.38**	**176**	⇑*i*	**P**		**17**	**31**	**14.4**	**+19**
MAJO	**Matsushiro**	**78.40**	**325**	P	**P**		**17**	**30**	**48.9**	**-7.6**
	comp=Z,18nm,1.0s,mb5.0									
MAT	**Matsushiro**	**78.40**	**325**	P	**P**		**17**	**30**	**55.4**	**-1.1**
MAT	**Matsushiro**	**78.40**	**325**	*eP*	**P**		**17**	**30**	**56.0**	**-0.5**
	comp=Z,15nm,1.0s,mb4.9									
VNA2	**Neumayer--Watz**	**78.82**	**177**	⇓*i*	**P**		**17**	**31**	**02.5**	**+4.4**
VNA2	**Neumayer--Watz**	**78.82**	**177**	⇑*i*	**P**		**17**	**31**	**12.8**	**+15**
VNA2	**Neumayer--Watz**	**78.82**	**177**	⇑*i*	**P**		**17**	**31**	**15.1**	**+17**
MAIT	**Maitri**	**79.00**	**183**	*eP*	**P**		**17**	**31**	**01.3**	**+2.2**
VNA1	**Neumayer--Stat**	**79.05**	**176**	⇓*i*	**P**		**17**	**31**	**03.5**	**+4.1**
VNA1	**Neumayer--Stat**	**79.05**	**176**	⇑*i*	**P**		**17**	**31**	**11.9**	**+13**
VNA1	**Neumayer--Stat**	**79.05**	**176**	⇓*i*	**P**		**17**	**31**	**14.5**	**+15**
VNA1	**Neumayer--Stat**	**79.05**	**176**	⇓*i*	**P**		**17**	**31**	**17.9**	**+19**
QZH	**Quanzhou**	**82.25**	**305**	P	**P**		**17**	**31**	**16.3**	**-0.9**
SSE	**Sheshan**	**84.36**	**311**	⇑P	**P**		**17**	**31**	**28.1**	**+0.2**
SSE				PP	PP		17	34	40.1	-4.5
SSE				AMB	AMB					
	comp=Z,45nm,0.7s,mb5.7									
SSE				AMB	AMB					
	comp=Z,204nm,10.0s									
YSS	**Yuzh-Sakhalins**	**84.84**	**334**⇑	*eP*	**P**		**17**	**31**	**30.0**	**+0.1**
YSS				*e*PP*	pP		17	31	37.0	+3.9
YSS				*e*SP*	sP		17	31	46.7	+13
YSS				S	S		17	41	40.0	-17
YSS				pmax	pmax					
	comp=Z,160nm,1.0s,mb6.1									
YSS				pmax	pmax					
	comp=N,20nm,1.1s									
YSS				pmax	pmax					
	comp=E,110nm,1.0s									
YSS				pmax	pmax					
	comp=Z,60nm,1.0s,mb5.7									
YSS				pmax	pmax					
	comp=E,40nm,1.1s									
YSS				MLR	MLR					
	comp=E,500nm,18.0s									
YSS				MLR	MLR					
	comp=Z,1μm,18.0s,MS5.3									
YSS	**Yuzh-Sakhalins**	**84.84**	**334**	*eP*	**P**		**17**	**31**	**30.5**	**+0.6**
	comp=Z,237nm,1.1s,mb6.2									
PET	**Petropavlovsk**	**85.53**	**346**	*eP*	**P**		**17**	**31**	**32.8**	**-0.4**
PET				*e*			17	42	02.3	
PET				pmax	pmax					
	comp=Z,45nm,1.4s,mb5.5									
PET				pmax	pmax					
	comp=Z,150nm,12.8s									
PET				MLR	MLR					
	comp=Z,941nm,17.0s,MS5.2									
CMB	**Columbia Colle**	**86.40**	**42**	*eP*	**P**		**17**	**31**	**37.7**	**-0.3**
	comp=Z,25nm,1.0s,mb5.4									
NJ2	**Nanjing**	**86.50**	**310**	*eP*	**P**		**17**	**31**	**38.8**	**+0.2**
NJ2				AP	pP		17	31	49.3	+7.5
NJ2				XP	sP		17	31	53.1	+10

BILL pmax pmax
comp=Z,8.0nm,2.2s,mb4.9
LZH Lanzhou 99.00 306 *e*P **P** **17 32 37.5 +1.2**
LZH AP pP 17 32 40.8 +1.3
LZH XP sP 17 32 42.3 +1.8
LZH *e*PP PP 17 36 41.6 +0.9
LZH LR LR
comp=Z,737nm,17.9s,MS5.2
RSSD Black Hills 99.84 44 *e*P **P** **17 32 38.2 -1.8**
comp=Z,4.3nm,0.8s,mb4.9
YAK Yakutsk 101.31 337 *e*P P 17 32 44.2 -2.0
YAK pmax pmax
comp=Z,18nm,1.7s
ULN Ulaanbaatar 102.98 318 *e*P Pdif 17 32 52.1 -1.9
ULN pmax pmax
comp=Z,3.0nm,1.2s
ULN Ulaanbaatar 102.98 318 P Pdif 17 32 52.6 -1.4
comp=Z,3.3nm,1.2s
YKA Yellowknife Ar 105.17 25 PP PP 17 37 26.3 -0.8
comp=Z,1.3nm,1.1s,baz=226,slow=6.4,SNR=4.8
ZAK Zakamensk 106.38 319 *e*P Pdif 17 33 11.2 +2.4
TIXI Tiksi 108.28 344 P 17 37 20.1
WMQ Urumqi 113.50 308 PKP PKPdf 17 37 34.9 -0.5
WMQ PP PP 17 38 31.3 +2.4
WMQ PKS PKS 17 41 10.4 +2.4
WMQ PP PP
comp=Z,36nm,10.2s
WMQ LR LR
comp=Z,1μm,28.6s,MS5.4
MKAR Makanchi Array 118.03 310 PKP PKPdf 17 37 41.2 -2.8
comp=Z,5.8nm,1.1s,baz=181,slow=1.6,SNR=18
MKAR Makanchi Array 118.03 310 PKP PKPdf 17 37 41.2 -2.8
NVS Novosibirsk 119.34 319 *e*PKIKP PKPdf 17 37 42.1 -4.3
NVS pmax pmax
comp=Z,6.0nm,1.2s
ULHL Ulahol 121.06 304 P PKPdf 17 37 48.6 -1.5
SNR=11
KURK Kurchatov 121.28 314 *e*PKPdf PKPdf 17 37 46.5 -3.9
TKM2 Tokmak 2 121.68 304 P PKPdf 17 37 48.9 -2.5
SNR=6.0
KZA Kyzart 121.73 303 P PKPdf 17 37 50.3 -1.1
SNR=12
KBK Karagaybulak 122.09 304 P PKPdf 17 37 50.2 -1.9
SNR=5.8
UCH Uchtor 122.30 303 P PKPdf 17 37 50.9 -1.5
SNR=8.2
AML Almayashu 122.87 303 P PKPdf 17 37 52.4 -1.1
SNR=10
EKS2 Erkin-Say 122.93 304 P PKPdf 17 37 52.0 -1.6
SNR=6.0
BRVK Borovoye 126.69 316 *e*PKPdf PKPdf 17 37 57.6 -2.9
ZRNK Zerenda 127.46 316 *e*PKPdf PKPdf 17 37 59.3 -2.8
SVE Sverdlovsk 132.09 321⇑ *e*PKIKP PKPdf 17 38 11.0 +0.2
DAG Danmarks Havn 132.39 6⇑ *i*P PKPdf 17 38 07.0 -4.0
comp=Z,1.7nm,0.9s
DAG Danmarks Havn 132.39 6⇑ *e*PKIKP PKPdf 17 38 07.0 -4.0
DAG pmax pmax
comp=Z,2.0nm,0.9s
ARU Arti 133.28 321⇓ *i*PKIKP PKPdf 17 38 10.9 -2.1
ARU *i* 17 40 34.3
ARU *i* SS SS 17 58 13.8 -8.6
ARU pmax pmax
comp=Z,11nm,0.8s
ARU MLR MLR
comp=E,200nm,17.0s
ARU MLR MLR
comp=Z,300nm,17.0s,MS5.1
ARU Arti 133.28 321 *e*PKPdf PKPdf 17 38 10.6 -2.4
KMBO Kilima Mbogo 134.48 233 PKP PKPdf 17 38 17.1 +0.7
comp=Z,2.3nm,0.9s,baz=40,slow=6.8,SNR=4.2
LVZ Lovozero 137.88 343 *e i*PKIKP PKPdf 17 38 15.8 -5.5
LVZ Lovozero 137.88 343 *e*PKP PKPdf 17 38 18.3 -3.0
KEV Kevo 138.11 348 *e*pkp PKPdf 17 38 11.1 -11
ARCES ARCESS Array B 138.58 348 PKhKP 17 38 11.9
comp=Z,3.3nm,0.9s,baz=120,slow=2.1,SNR=7.1
ARCES PKP PKPdf 17 38 20.9 -1.6
comp=Z,18nm,1.1s,baz=27,slow=2.7,SNR=10.0
JOF Joensuu 142.48 339 *e*pkp PKPdf 17 38 24.0 -5.5
MOS Moscow 144.49 326 *e*PKIKP PKPdf 17 38 29.9 -3.2
MOS *e* 17 41 56.4
MOS pmax pmax
comp=Z,240nm,1.3s
MOS pmax pmax
comp=E,100nm,0.8s
KAF Kangasniemi 144.59 341 *e*pkp PKPdf 17 38 27.4 -5.7
ZEI Tsey 144.81 302 *exe*PKIKP PKPdf 17 38 32.5 -1.7
ZEI *e* 17 45 38.0
ZEI pmax pmax
comp=Z,100nm,2.0s
ZEI MLR MLR
comp=Z,2μm,20.0s,MS5.8
GOF Gofitskoye 145.08 306⇑ *i*PKIKP PKPdf 17 38 31.0 -3.5
GOF pmax pmax
comp=Z,130nm,1.3s
PUL Pulkovo 145.09 336 *e*PKHKP 17 38 23.9
PUL MLR MLR
comp=Z,140nm,10.0s,MS5.0
FINES FINESS Array B 145.19 340 PKP PKPdf 17 38 31.1 -3.1
comp=Z,63nm,0.8s,baz=59,slow=3.7,SNR=184
PYA Pyatigorsk 145.24 305 *i*PKIKP PKPdf 17 38 32.0 -2.9
OBN Obninsk 145.33 326 *i*PKIKP PKPdf 17 38 32.0 -2.6
OBN pmax pmax
comp=Z,290nm,1.3s
OBN Obninsk 145.33 326 *e*PKPdf PKPdf 17 38 32.1 -2.6
TVAN Van 145.49 295 *i*P PKPbc 17 38 34.0 +0.9
VOR Voronezh 145.52 319 *e*PKIKP PKPdf 17 38 32.5 -2.6
VOR pmax pmax
comp=N,50nm,1.4s
VOR pmax pmax
comp=Z,200nm,1.4s
VOR pmax pmax
comp=E,140nm,1.3s
KIV Kislovodsk 145.52 305 *i*PKIKP PKPdf 17 38 33.3 -2.0
KIV *e* 17 41 50.8
KIV *e*SS SS 18 00 39.9 -6.0
KIV pmax pmax
comp=Z,80nm,1.4s
KIV Kislovodsk 145.52 305 *e*PKPdf PKPdf 17 38 33.1 -2.2
ERZM Erzurum 147.00 298 *i*P PKPdf 17 38 39.4 +1.4
VSU Vasula 147.30 336 *e*PKP PKPdf 17 38 37.7 -0.2
SOC Sochi 147.70 305 *i*PKP2 PKPab 17 38 40.1 -3.1
SOC *e* 17 42 16.4
SOC *e*PPP PPP 17 45 23.6 -5.4
NB2 NORSAR Subarra 148.71 352 PKP 17 38 41.3
comp=Z,76nm,1.2s,baz=10.0,slow=2.6
NB2 NORSAR Subarra 148.71 352 PKPa 17 38 41.3
baz=10,slow=2.6
NOA NORSAR Array B 148.71 352 PKPbc PKPdf 17 38 41.3 +1.2
comp=Z,25nm,0.8s,baz=15,slow=4.3,SNR=40
NAO01 NORSAR Array S 148.94 352 *e*PKPdf PKPdf 17 38 39.7 -0.7
ELZG Elazig 148.96 295 *i*P PKPdf 17 38 44.5 +3.3
ANN Anapa 149.01 308 *e*PKP2 PKPab 17 38 44.0 -4.4
ANN pmax pmax
comp=Z,50nm,1.0s
HFS Hagfors 149.22 349 PKPbc PKPdf 17 38 42.0 +1.2
comp=Z,32nm,0.9s,baz=270,slow=4.4,SNR=17
HFS Hagfors 149.22 349 PKPbc PKPdf 17 38 42.0 +1.2
GZT Gaziantep 150.15 293 *i*P PKPdf 17 38 47.0 +4.0
KONO Kongsberg 150.26 353 *e*PKPbc PKPdf 17 38 44.7 +2.2
SVST Sivas 150.40 298 *i*P PKPdf 17 38 46.9 +3.5
SIM Simferopol' **151.21 309** *i*PKIKP PKPdf 17 38 49.8 +5.4
SIM *e* 17 38 56.7
SIM *e* 17 42 25.0
SIM *e*PPP PPP 17 45 54.0 -1.8
SIM pmax pmax
comp=Z,53nm,1.0s
COBT Iskenderun 151.24 291 *i*P PKPdf 17 38 49.7 +5.0
AKASG Malin Array Be 151.47 323 PKPbc PKPdf 17 38 47.8 +3.2
comp=Z,18nm,0.8s,baz=45,slow=2.3,SNR=11
AKASG PKPab PKPab 17 38 56.7 -1.8
comp=Z,38nm,0.7s,baz=47,slow=2.6,SNR=28
KSHT Keshet 151.57 284 P PKPdf 17 38 43.7 -1.7
MKRJ Makawir 151.59 281 P PKPdf 17 38 43.5 -1.9
BOYT Boyabat 151.64 302 *i*P PKPdf 17 38 50.1 +4.9
HRI Mount Hermon 151.65 285 P PKPdf 17 38 43.9 -1.6
HMDT Nahal Hemdat 151.76 283 P PKPdf 17 38 44.1 -1.6
MZDA Masada 151.80 281 P PKPdf 17 38 43.8 -2.0
DRGI Dragot 151.81 281 P PKPdf 17 38 43.8 -2.0
MMLI Mount Malkishu 151.86 283 P PKPdf 17 38 44.5 -1.3
CTKT Corum 151.89 300 *i*P PKPdf 17 38 51.7 +6.1
EIL Elat 151.93 277 P PKPdf 17 38 44.2 -1.8
SUW Suwalki 151.97 334 *e*PKP PKPdf 17 38 49.9 +4.6
SUW *e* 17 39 00.5
MBH Mount Berech 151.98 277 P PKPdf 17 38 44.6 -1.5

PRNI Paran 151.99 278 P PKPdf 17 38 44.4 -1.7
AVNT Avonos 152.14 296 *i*P PKPdf 17 38 50.9 +4.9
SLTI Sal'it 152.17 282 P PKPdf 17 38 44.8 -1.5
SVTA Shivta 152.39 280 P PKPdf 17 38 45.1 -1.5
KZIT Kziot 152.58 279 P PKPdf 17 38 45.5 -1.4
BALT Daday 152.72 303 *i*P PKPdf 17 38 52.3 +5.6
BRTR Keskin Array B 152.92 299 PKP PKPdf 17 38 44.7 -2.4
comp=Z,0.6nm,0.6s,baz=117,slow=2.8,SNR=4.1
BRTR PKPbc PKPdf 17 38 52.6 +5.5
comp=Z,12nm,1.0s,baz=135,slow=3.5,SNR=40
ELDT Eldivan 152.93 301 *i*P PKPdf 17 38 52.8 +5.8
MUD Monsted U'grnd 153.43 352 *i*P PKPab 17 39 05.1 -1.4
comp=Z,29nm,1.1s
MUD Monsted U'grnd 153.43 352 *i* PKP2 PKPab 17 39 05.1 -1.4
MUD pmax pmax
comp=Z,29nm,1.1s
BSD Bornholm Skovb 153.65 344 *i*P PKPab 17 39 13.8 +6.3
comp=Z,28nm,0.8s
BSD Bornholm Skovb 153.65 344 *e*P PKPab 17 39 13.8 +6.3
CSS Prodhromos 153.67 288 *e*PKPbc PKPdf 17 38 53.3 +5.1
LIC Lamto 155.03 162 *e*PKIKP PKPdf 17 38 49.7 -1.0
comp=Z,30nm,1.2s
LIC Lamto 155.03 162 *e*P PKPdf 17 38 56.7 +6.0
comp=Z,40nm,1.1s
ESKT Eskisehir 155.07 299 *i*P PKPdf 17 38 45.8 -4.2
KIC Kosan Boka 155.24 163 *e*P PKPdf 17 38 55.1 +4.1
comp=Z,103nm,1.2s
KWP Kalwaria 155.38 327 *e*PKP PKPab 17 39 13.8 -1.2
KWP Kalwaria 155.38 327 *e*PKP PKPdf 17 39 02.7 +13
KWP *e* 17 39 13.7
KWP *e*PKP PKPdf 17 39 13.8 +24
TIC Toumodi 155.44 162 *e*P PKPdf 17 38 55.9 +4.7
comp=Z,9.9nm,0.2s
BSEG Bad Segeberg 155.71 349 *e*PKP2 PKPab 17 39 14.7 -1.5
OJC Ojcow 156.22 332 *e*PKP PKPab 17 39 18.1 -0.5
CRVS Cervenica-Dubn 156.47 328 *i*PKP PKPab 17 39 19.1 -0.6
CRVS *e* 17 39 31.2
CRVS *e*PP PP 17 43 02.4 +3.8
CRVS Cervenica-Dubn 156.47 328 *i* PKP2 PKPab 17 39 19.1 -0.6
CRVS *e* 17 43 02.4
NIE Niedzica 156.61 330 *e*PKP PKPdf 17 38 52.0 +0.3
NIE *e* 17 39 19.8
KSP Ksiaz 157.03 337 *e*PKP PKPab 17 39 21.2 -0.8
KSP *e* 17 39 29.4
KSP Ksiaz 157.03 337 *e*PKP2 PKPab 17 39 20.2 -1.8
KSP *e* 17 42 56.0
KSP Ksiaz 157.03 337 *e*PKPdf PKPdf 17 38 50.0 -2.2
KSP *ep*PKPdf 17 39 02.0
KSP *e*PKPab PKPab 17 39 20.2 -1.8
KSP *ep*PKPab 17 39 29.0
KSP *e*PP PP 17 42 56.0 -5.3
OKC Ostrava-Krasne 157.19 333 *e*PKPab PKPab 17 39 21.6 -1.1
KECS Kecovo 157.22 328 *i*PKP PKPab 17 39 23.2 +0.3
UPC Upice 157.41 337 *e*PKPab PKPab 17 39 22.8 -0.8
DPC Dobruska-Polom 157.43 336 *e*PKPab PKPab 17 39 22.7 -1.1
CLL Collm 157.60 343 *e* PKPdf 17 38 47.0 -6.0
CLL *i* 17 39 03.3
CLL *i* PKP2 PKPab 17 39 22.7 -1.7
CLL *i* *PPKP2 17 39 31.3
CLL *e* 17 39 37.0
CLL *e*PP PP 17 43 00.0 -4.7
CLL *e*PPP PPP 17 46 36.0 -7.9
CLL *e*PPS PPS 17 56 18.0 -0.5
CLL *e*SS SS 18 02 57.0 -1.5
CLL Collm 157.60 343 *e*PKIKP PKPdf 17 38 47.0 -6.0
CLL *i* 17 39 03.3
CLL *i* 17 39 22.7
CLL MLR MLR
comp=Z,1μm,17.9s,MS5.8
BRG Berggiesshubel 157.73 341 *e*PKIKP PKPdf 17 38 53.4 +0.3
BRG *e* 17 39 05.4
BRG pmax pmax
comp=Z,14nm,1.6s
BRG Berggiesshubel 157.73 341 *e*PKP PKPdf 17 38 53.4 +0.3
BRG *e* 17 39 05.4
BRG *e* 17 39 24.5
PVCC Panska Ves 157.85 339 *e*PKPab PKPab 17 39 24.3 -1.3
VYHS Vyhne 157.95 330 *i*PKP PKPab 17 39 25.2 -0.9
VYHS *e* 17 39 32.9
VYHS *e* 17 39 40.1
VYHS *e*PP PP 17 43 04.1 -2.9
VYHS Vyhne 157.95 330 *i* PKP2 PKPab 17 39 25.2 -0.9
VYHS *e* 17 43 04.1
WTSB Winterswijk 158.12 353 *e*P PKPab 17 39 24.1 -2.5
comp=Z,16nm,1.5s
PRU Pruhonice 158.33 339 *e*PKPab PKPab 17 39 26.1 -1.6
MOX Moxa 158.55 344 *e*PKP2 PKPab 17 39 26.4 -2.2
MOX pmax pmax
comp=Z,31nm,1.4s
MOX MLR MLR
comp=Z,800nm,19.0s,MS5.6
ZST Bratislava 158.91 332 *i*PKP PKPab 17 39 29.4 -0.8
KHC Kasperske Hory 159.39 339 *e*PKPab PKPab 17 39 31.5 -0.7
HGN Heimansgroeve 159.39 354 *e*P PKPab 17 39 30.8 -1.4
comp=Z,9.5nm,1.6s
GRF Grafenberg Arr 159.53 344 *e*PKP2 PKPab 17 39 31.9 -0.9
WET Wettzell 159.59 340 *e*PKP2 PKPab 17 39 32.1 -1.0
GEC2 GERESS Array S 159.60 338 *e*PKP2 PKPab 17 39 32.0 -1.1
GERES GERESS Array B 159.60 338 PKP PKPdf 17 38 51.9 -3.6
comp=Z,1.1nm,1.0s,baz=153,slow=3.0,SNR=6.1
GERES PKPab PKPab 17 39 32.5 -0.6
comp=Z,17nm,1.1s,baz=27,slow=3.0,SNR=29
GIVF Givet 160.14 356 *e*PKP2 PKPab 17 39 33.1 -2.3
BAIF Baives 160.22 357 *e*PKP2 PKPab 17 39 33.6 -2.1
MOA Molln 160.27 336⇑ *i*PKP PKPab 17 39 35.6 -0.5
ARSA Arzberg 160.30 333⇓ *i*PKP PKPab 17 39 36.1 -0.1
SKO Skopje 160.81 313 *i*PKP PKPab 17 39 38.8 +0.2
comp=Z,0.0nm,1.1s
LANF Langenberg 160.91 349 PKP PKPab 17 39 28.0 -11
FUR Furstenfeldbru 160.93 342 *e*PKP2 PKPab 17 39 38.2 -0.7
KBA Koelnbreinsper 161.26 336⇑ *i*PKP PKPab 17 39 39.6 -0.7
FLN La Foliniere 161.42 6 *e*PKP2 PKPab 17 39 38.5 -2.5
comp=Z,85nm,1.1s
BFO Black Forest 161.44 348 *e*PKP2 PKPab 17 39 38.8 -2.3
WLS Welschbruch 161.53 350 PKP PKPab 17 39 28.4 -13
CDF Champ du Feu 161.54 350 *e*PKP2 PKPab 17 39 39.9 -1.6
WATA Walderalm 161.59 340⇓ *i*PKP PKPab 17 39 41.0 -0.8
LDF La Druitiere 161.62 6 *e*PKP2 PKPab 17 39 39.3 -2.6
comp=Z,47nm,1.4s
WTTA Wattenberg 161.64 340⇓ *i*PKP PKPab 17 39 40.8 -1.2
MEZF Maizieres J'vi 161.71 355 *e*PKP2 PKPab 17 39 40.3 -2.0
MOTA Moosalm 161.72 341⇑ *i*PKP PKPab 17 39 41.5 -0.9
ECH Echery 161.75 350 PKP PKPab 17 39 30.6 -12
GRR Gorron 161.75 7 *e*PKP2 PKPab 17 39 40.3 -2.2
comp=Z,65nm,1.2s
SQTA Sankt Quirin 161.81 341⇑ *i*PKP PKPab 17 39 42.1 -0.7
THEF They Montfort 161.89 352 PKP PKPab 17 39 33.0 -10
HAU Haudompre 162.07 352 *e*PKP2 PKPab 17 39 41.8 -2.1
DAVA Damuels 162.10 343⇑ *i*PKP PKPab 17 39 41.4 -2.6
MOF Molkenrain 162.11 350 PKP PKPab 17 39 31.9 -12
HINF Hinteralfeld 162.19 350 *e*PKP2 PKPab 17 39 42.3 -2.1
LOMF Lomont 162.64 350 PKP PKPab 17 39 34.0 -12
LOR Lormes 163.02 357 *e*PKP2 PKPab 17 39 45.8 -2.2
comp=Z,30nm,1.1s
SSF Saint Saulge 163.24 358 *e*PKP2 PKPab 17 39 46.8 -2.2
comp=Z,39nm,1.1s
AVF Avril sur Loir 163.52 358 *e*PKP2 PKPab 17 39 47.9 -2.3
comp=Z,16nm,1.0s
MFF Saint Martin d 163.59 6 *e*PKP2 PKPab 17 39 48.4 -2.1
comp=Z,58nm,1.2s
SMF Signal de Mont 163.64 357 *e*PKP2 PKPab 17 39 48.6 -2.2
comp=Z,50nm,1.1s
BGF Bois d'Agland 163.76 359 *e*PKP2 PKPab 17 39 49.1 -2.2
TCF Toulx Ste Croi 164.03 1 *e*PKP2 PKPab 17 39 50.1 -2.4
comp=Z,18nm,1.2s
LPL La Plagne 164.44 349 *e*PKP2 PKPab 17 39 53.5 -0.8
comp=Z,27nm,1.2s
LPG La Plagne 164.46 349 *e*PKP2 PKPab 17 39 53.7 -0.6
comp=Z,59nm,1.3s
RJF Les Rejaudoux 165.00 3 *e*PKP2 PKPab 17 39 54.3 -2.4
ORIF Oris-en-Rattie 165.16 351 *e*PKP2 PKPab 17 39 56.2 -1.2
comp=Z,50nm,1.2s
MBDF Montbardon 165.20 348 *e*PKP2 PKPab 17 39 57.0 -0.6
comp=Z,29nm,1.2s
LFF La Frestale 165.32 5 *e*PKP2 PKPab 17 39 56.1 -2.0
VIVF Saint-Julien-l 165.36 354 *e*PKP2 PKPab 17 39 56.8 -1.5
CAF Calviac 165.39 1 *e*PKP2 PKPab 17 39 56.5 -1.9
SBF Sospel 165.90 345 *e*PKP2 PKPab 17 39 59.5 -1.2
comp=Z,59nm,0.8s
SMRF Simiane la Rot 166.13 351 *e*PKP2 PKPab 17 40 00.6 -1.1
comp=Z,93nm,1.5s
FRF La Foret Royal 166.35 347 *e*PKP2 PKPab 17 40 00.8 -1.9
comp=Z,61nm,1.2s

LMR La Mourre 166.60 347 *e*PKP2 PKPab 17 40 02.2 -1.5
comp=Z,93nm,1.5s
PGF Pioggiola 166.70 339 *e*PKP2 PKPab 17 40 02.6 -1.6
comp=Z,74nm,1.2s
EVO Evora 168.06 44 *e*PKIKP PKPdf 17 39 02.6 -0.8
comp=Z,26nm,1.1s
ESDC Sonseca Array 169.25 28 PKP PKPdf 17 39 03.2 -0.9
comp=Z,0.3nm,0.4s,baz=332,slow=2.7,SNR=6.0
ESDC PKPab PKPab 17 40 13.9 -1.5
comp=Z,1.6nm,0.7s,baz=318,slow=3.7,SNR=6.5

MEX ***13*** *17:24:35.6±1.2, 17.04N×94.11W, h172km±15km, MD4.1*
NEIC ***13*** *17:24:37.4, 15.66N×94.45W, h30km, mb4.3/2, MD4.1(MEX), After MEX.*
IDC ***13*** *17:24:37.0±22.0, 17.55N×93.49W, h168km±151km, mb3.3/3, mb1 3.5/4, mb1mx3.2/18, ML3.7/1, Error ellipse: s-maj=182.0km s-min=83.6km az=177.0*
ISC 13 17:24:34.9±0.7, 17.1N±0.1×94.14W±0.06, h160km±8km, n11, σt 930/16, mb3.5/3, Chiapas

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
CMIG	**Matias Romero**	**0.71**	**272**	*i* P	P		**17 24 59.6**	**+0.8**
CMIG				*i* S	S		**17 25 17.7**	**+0.3**
CCIG	**Comitan**	**2.07**	**112**	*e*P	P		**17 25 12.0**	**+0.2**
CCIG				*i* S	S		**17 25 39.0**	**-1.3**
CCIG	**Comitan**	**2.07**	**112**	*i* P	P		**17 25 11.6**	**-0.2**
CCIG				*i* S	S		**17 25 39.0**	**-1.3**
HUIG	**Huatulco**	**2.29**	**236**	*i* P	P		**17 25 13.2**	**-1.2**
HUIG				*i* S	S		**17 25 45.2**	**+0.3**
OXX	**Oaxaca**	**2.47**	**271**	*e*P	P		**17 25 19.0**	**+2.3**
OXX				*e*S	S		**17 25 47.0**	**-1.8**
JTS	**JuntasAbangare** 0.4nm,0.9s	**11.18**	**126**	P	P		**17 27 12.7**	**+1.7**
TXAR	**Lajitas Array** 0.1nm,0.3s,baz=146,slow=14,SNR=5.2	**15.02**	**326**	P	P		**17 28 00.7**	**+0.6**
UALR	**University of** 23nm,0.9s	**17.71**	**5**	*e*P	P		**17 28 48.3**	**+16**
NVAR	**Mina Array Bea** 0.5nm,0.8s,mb3.3,baz=139,slow=9.6,SNR=3.8	**30.01**	**320**	P	P		**17 30 30.6**	**0.0**
YKA	**Yellowknife Ar** 0.6nm,0.6s,mb3.4,baz=152,slow=7.3,SNR=16	**47.59**	**347**	P	P		**17 32 52.8**	**-3.1**
ARCES	**ARCESS Array B** 0.8nm,0.6s,mb3.6,baz=315,slow=5.1,SNR=4.5	**83.88**	**18**	P	P		**17 36 44.4**	**-2.8**

TAP 13 17:26:15.7, 22.34N×120.62E, h23km, ML3.6, Taiwan

NEIC ***13*** *17:34:36.3±0.1, 11.74N×144.25E, h24km, mb5.8/93, MS5.3/106, MW5.8, Error ellipse: s-maj=4.8km s-min=3.9km az=100.0, Moment Tensor Solution. s17 Moment tensor: Scale 10^17 Nm; Mrr=-0.66; Mθθ=4.55; Mϕϕ=-3.89; Mrθ=0.27; Mrϕ=3.62; Mθr=-0.22; Best double couple: M=5.6×10^17 NP1:ϕs=25°, δ=86°, λ=-178°. NP2:ϕs=295°, δ=88°, λ=-4°. Principal axes: T 5.89, Plg2°, Azm340°; N -.64, Plg86°, Azm92°; P -5.25, Plg4°, Azm250°; Broadband fault plane solution: P waves. NP1:ϕs=5°, δ=85°, λ=-165°. NP2:ϕs=274°, δ=75°, λ=-5°. Principal axes: T Plg7°, Azm138°; N Plg0°; Azm0°; P Plg14°, Azm230°; Depth from synthetics of broadband displacement seismograms.*
NEIC Felt on Guam.
HRVD ***13*** *17:34:36.3±0.1, 11.70N×144.30E, h28km, MW5.7/78, Centroid moment Tensor Solution. LP body waves: s69,c143;Mantle waves: s78,c171; Half duration: 1s8 Moment tensor: Scale 10^17Nm; Mrr=1.19±.07; Mθθ=4.63±.06; Mϕϕ-3.44±.07; Mrθ=0.78±.12; Mϕϕ2.79±.06; Mθr=0.04±.13; Best double couple: M=4.95×10^17 NP1:ϕs=27°, δ=83°, λ=178°. NP2:ϕs=118°, δ=88°, λ=7°. Principal axes: T 5.59, Plg6°, Azm343°; N -1.26, Plg83°, Azm133°; P -4.32, Plg4°, Azm252°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
SYO ***13*** *17:34:36.2, 11.74N×144.25E, h24km, MB5.8, MS5.3*
BJI ***13*** *17:34:37.1, 12.21N×144.26E, h24km, mB5.6, mb5.8, Ms5.4, Msz5.1*
MOS ***13*** *17:34:38.2±0.9, 12.28N×144.24E, h33km, mb6.0/45, MS5.2/40, Error ellipse: s-maj=10.1km s-min=6.3km az=93.6*
IDC ***13*** *17:34:38.0±1.8, 11.73N×144.32E, h38km±14km, mb5.2/31, mb1 5.2/32, mb1mx5.2/34, ML5.4/1, MS5.1/19, Ms1 5.1/19, ms1mx4.9/29, Error ellipse: s-maj=12.3km s-min=7.6km az=90.0*
ORF ***13*** *17:35:09.9, 17.50N×142.65E, h30km, mb5.5*
ISC 13 17:34:35.5±0.7, 11.75N±0.02×144.28E±0.02, h29km±4km, h29km±1.3km: pP-P, n534, σt 919/451, mb5.8/149, MS5.3/159, 107C-31D, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**1.92**	**17**	*e*Pn	Pn		**17 35 07.3**	**+0.4**
GUMO				*e*Sn	Sn		**17 35 25.4**	**-4.8**
SAPN	**Saipan**	**3.73**	**22**⇑	*i*P	Pn		**17 35 32.5**	**-0.2**
ANA2	**Anatahan**	**4.77**	**17**	*e*P	Pn		**17 35 48.6**	**+1.2**
SARN	**Sarigan**	**5.13**	**16**⇑	*i*P	Pn		**17 35 53.2**	**+0.7**
CBIJ	**Chichi jima** 58nm,0.3s,baz=219,slow=6.0,SNR=35	**15.39**	**353**	Pn	P		**17 38 11.8**	**-0.8**
RAB	**Rabaul**	**17.67**	**153**	*e*P	P		**17 38 41.4**	**0.0**
BESP	**Borongan**	**18.46**	**271**⇓	*e*P	P		**17 38 51.4**	**+0.1**
BUTP	**Butuan**	**18.57**	**263**⇓	*e*P	P		**17 38 53.4**	**+0.9**
SCPH	**Surigao**	**18.57**	**266**	*e*P	P		**17 38 51.6**	**-1.0**
PLP	**Palo**	**18.93**	**270**	*e*P	P		**17 38 57.1**	**+0.2**
DAV	**Davao City (W)**	**19.02**	**258**	*e*P	P		**17 39 01.0**	**+2.9**
WAU	**Wau**	**19.12**	**173**	*e*P	P		**17 38 57.8**	**-1.4**
MSLP	**Maasin**	**19.14**	**267**‖	*e*P	P		**17 39 00.3**	**+0.9**
CNP	**Catarman**	**19.20**	**274**‖	*e*P	P		**17 39 01.2**	**+1.1**
OCLP	**Ormoc**	**19.30**	**270**‖	*e*P	P		**17 39 03.2**	**+2.0**
KCP	**Kidapawan** 11μm,1.0s	**19.51**	**258**‖	*e*P	P		**17 39 03.0**	**-0.6**
CGP	**Cagayan de Oro**	**19.56**	**262**‖	*e*P	P		**17 39 04.8**	**+0.6**
PVCP	**Virac**	**19.73**	**278**‖	*e*P	P		**17 39 06.5**	**+0.5**
GSPH	**General Santos**	**19.91**	**255**‖	*e*P	P		**17 39 06.0**	**-2.0**
TBP	**Tagbilaran**	**20.17**	**266**	*e*P	P		**17 39 09.1**	**-1.6**
CTBH	**Cotabato--PC H**	**20.27**	**259**‖	*e*P	P		**17 39 11.8**	**+0.1**
SNPH	**Sibulan**	**20.83**	**265**‖	*e*P	P		**17 39 17.0**	**-0.5**
PAGZ	**Pagadian**	**20.95**	**261**‖	*e*P	P		**17 39 19.9**	**+1.1**
RCP	**Roxas**	**21.10**	**272**‖	*e*P	P		**17 39 20.6**	**+0.3**
AUQP	**San Andres**	**21.15**	**277**‖	*e*P	P		**17 39 23.3**	**+2.5**
PMG	**Port Moresby** 197nm,0.8s,mb5.5,baz=2.3,slow=6.7,SNR=51	**21.21**	**172**	P	P		**17 39 15.9**	**-1.9**
PMG				LR	LR		17 47 11.8	
	comp=Z,4μm,19.3s,MS4.8,baz=126,slow=36							
PMG	**Port Moresby**	**21.21**	**172**‖	*e*P	P		**17 39 19.4**	**-2.0**
JOW	**Kunigami** 1μm,1.1s,mb6.1,baz=145,slow=11,SNR=174	**21.26**	**317**	P	P		**17 39 21.9**	**+0.2**
KALP	**Kalibo**	**21.49**	**272**	*e*P	P		**17 39 24.1**	**-0.1**
JHJ	**Hachijo jima 2** 655nm,0.8s,mb6.1,baz=48,slow=24,SNR=11	**21.67**	**350**	P	P		**17 39 25.9**	**0.0**
JHJ				LR	LR		17 46 53.4	
	comp=Z,5μm,20.9s,MS4.9,baz=110,slow=34							
OTRP	**Odiongan**	**21.78**	**274**⇑	*e*P	P		**17 39 27.4**	**+0.3**
PALP	**Palanan**	**21.81**	**287**⇑	*e*P	P		**17 39 28.6**	**+1.1**
POLP	**Polillo Island**	**21.95**	**280**⇑	*e*P	P		**17 39 29.8**	**+1.0**
BOAC	**Boac**	**21.96**	**277**⇑	*e*P	P		**17 39 30.0**	**+1.0**
CAUP	**Cauayan**	**22.36**	**286**⇑	*e*P	P		**17 39 35.2**	**+2.4**
BALP	**Baler**	**22.41**	**283**⇑	*e*P	P		**17 39 34.0**	**+0.6**
SGCP	**Mt. Cagua**	**22.42**	**289**⇑	*e*P	P		**17 39 35.7**	**+2.3**
CVP	**Callao Caves**	**22.50**	**288**	*e*P	P		**17 39 37.0**	**+2.6**
SJMP	**San Jose**	**22.66**	**274**⇑	*e*P	P		**17 39 37.3**	**+1.3**
CUYO	**Cuyo Island**	**22.83**	**270**⇑	*e*P	P		**17 39 38.3**	**+0.6**
PGP	**Puerto Galera**	**22.83**	**277**	*e*P	P		**17 39 38.0**	**+0.3**
TGY	**Tagaytay City**	**22.87**	**278**‖	*e*P	P		**17 39 39.5**	**+1.5**
TGY				*e*S			17 39 48.8	
TGY	**Tagaytay City** 3μm,0.9s,mb6.7,baz=154,slow=1.5,SNR=75	**22.87**	**278**	P	P		**17 39 39.9**	**+1.8**
TGY				LR	LR		17 48 16.7	
	comp=Z,4μm,18.3s,MS4.9,baz=270,slow=36							
APYP	**Conner**	**23.08**	**288**⇑	*e*P	P		**17 39 41.5**	**+1.4**
BBP	**Basco**	**23.10**	**295**⇑	*e*P	P		**17 39 44.3**	**+4.1**
BCPH	**Baguio City Da**	**23.44**	**284**⇑	*i*P	P		**17 39 44.5**	**+1.0**
LUBP	**Lubang**	**23.53**	**277**⇑	*e*P	P		**17 39 45.6**	**+1.2**
ABRA	**Dolores**	**23.53**	**287**⇑	*e*P	P		**17 39 45.3**	**+0.9**
BUSP	**Coron**	**23.57**	**273**⇑	*e*P	P		**17 39 45.6**	**+0.8**
SCZP	**Santa Cruz**	**24.00**	**282**⇑	*e*P	P		**17 39 48.9**	**-0.1**
BOLP	**Bolinao**	**24.08**	**284**⇑	*e*P	P		**17 39 50.8**	**+1.1**
ENPP	**El Nido**	**24.37**	**271**⇑	*e*P	P		**17 39 54.1**

JNU LR LR 17 47 29.8
comp=Z,3μm,20.7s,MS4.8,baz=323,slow=31
TATO Taipei 25.27 305 PFAKE 17 40 10.0 +8.9
TATO LR LR
comp=Z,4μm,20.0s,MS5.0
MAJO Matsushiro 25.29 348 P **P** **17 39 58.5 -2.7**
MAJO S **S** **17 44 23.4 +0.9**
MAJO Matsushiro 25.29 348⇑ *eP* **P** **17 39 58.4 -2.8**
MAJO pmax pmax
comp=Z,730nm,0.7s,mb6.3
MAJO MLR MLR
comp=Z,3μm,20.0s,MS4.9
MAJO Matsushiro 25.29 348⇑ *eP* **P** **17 39 58.4 -2.8**
comp=Z,733nm,0.7s,mb6.3
MAJO LR LR
comp=Z,3μm,20.0s,MS4.9
MAT Matsushiro 25.29 348 P **P** **17 39 58.6 -2.6**
MAT S **S** **17 44 23.0 +0.5**
MAT Matsushiro 25.29 348 *eP* **P** **17 39 59.0 -2.2**
MAT *eS* **S** **17 44 23.0 +0.5**
MAT LR LR
comp=Z,5μm,18.0s,MS5.1
BATP Bataraza 26.22 266⇑ *eP* **P** **17 40 11.3 +1.3**
QZH Quanzhou 27.63 302 P **P** **17 40 21.6 -1.2**
QZH S **S** **17 44 54.3 -6.7**
QZH LR LR
comp=N,10μm,20.4s,MS5.5
QZH LR LR
comp=E,6μm,18.2s,MS5.5
QZH LR LR
comp=Z,5μm,29.2s
KKM Kota Kinabalu 28.29 261 *eP* **P** **17 40 29.0 +0.1**
SSE Sheshan 28.75 316 ⇑P **P** **17 40 31.4 -1.5**
SSE S **S** **17 45 17.1 -2.0**
SSE AMB AMB
comp=Z,124nm,0.8s,mb5.7
SSE LR LR
comp=N,5μm,15.0s,MS5.3
SSE LR LR
comp=E,4μm,15.0s,MS5.3
SSE LR LR
comp=Z,2μm,15.0s,MS4.9
KS15 Wonju Array Si 29.51 333⇑ *eP* **P** **17 40 36.8 -3.0**
INCN Inchon 30.12 331⇑ *eP* **P** **17 40 42.1 -3.0**
comp=Z,56nm,0.8s,mb5.3
INCN LR LR
comp=Z,3μm,19.0s,MS4.9
NJ2 Nanjing 30.92 315 *eP* **P** **17 40 51.4 -0.8**
NJ2 AP pP 17 41 00.1 -0.6
NJ2 XP sP 17 41 04.1 -0.3
NJ2 PP PP 17 41 53.4 -0.8
NJ2 S **S** **17 45 52.0 -1.5**
NJ2 XS 17 46 08.0
NJ2 SS SS 17 47 35.0 -2.7
NJ2 AMB AMB
comp=Z,140nm,0.8s,mb5.8
NJ2 AMB AMB
comp=Z,500nm,9.1s
NJ2 LR LR
comp=N,8μm,15.3s,MS5.6
NJ2 LR LR
comp=E,7μm,18.3s,MS5.6
NJ2 LR LR
comp=Z,6μm,17.5s,MS5.3
GZH Guangzhou 31.53 295 P **P** **17 40 56.9 -0.8**
GZH S **S** **17 45 58.3 -4.7**
GZH LR LR
comp=N,5μm,21.6s,MS5.2
GZH LR LR
comp=E,1μm,17.6s,MS5.2
GZH LR LR
comp=Z,2μm,15.7s,MS4.9
CTA Charters Tower 31.70 176⇑ *iP* **P** **17 40 57.7 -1.4**
comp=Z,30nm,0.9s,mb5.1
CTA Charters Tower 31.70 176 P **P** **17 40 57.8 -1.3**
comp=Z,31nm,0.9s,mb5.2,baz=358,slow=9.6,SNR=41
CTA LR LR 17 53 55.2
comp=Z,2μm,18.2s,MS4.9,baz=359,slow=36
CTAO Charters Tower 31.70 176⇑ *eP* **P** **17 40 57.8 -1.3**
CTAO pmax pmax
comp=Z,130nm,1.2s,mb5.6
CTAO MLR MLR
comp=Z,3μm,19.0s,MS5.0
CTAO Charters Tower 31.70 176⇑ *eP* **P** **17 40 57.8 -1.4**
comp=Z,130nm,1.3s,mb5.6
CTAO LR LR
comp=Z,3μm,19.0s,MS5.0
YUK Yuzh-Kuril'sk 32.20 2 *eP* **P** **17 40 59.2 -4.1**
YUK pmax pmax
comp=E,570nm,1.0s
YUK pmax pmax
comp=Z,820nm,1.0s,mb6.5
YUK pmax pmax
comp=Z,3μm,1.0s
YUK pmax pmax
comp=E,1μm,2.0s
YUK MLR MLR
comp=Z,6μm,18.0s,MS5.3
ASAJ Asahikawa 32.28 358 P **P** **17 41 02.4 -1.7**
comp=Z,105nm,0.7s,mb5.8,baz=228,slow=13,SNR=43
WRAB Tennant Creek 32.97 197⇑ *iP* **P** **17 41 08.6 -1.6**
comp=Z,402nm,0.9s,mb6.3
WRAB *e* 17 41 23.0
WRAB LR LR
comp=Z,3μm,19.0s,MS5.0
WB2 Warramunga Arr 32.97 197 *iP* **P** **17 41 08.7 -1.6**
WB2 *i* 17 41 24.6
WRA Warramunga Arr 32.98 197 P **P** **17 41 08.8 -1.5**
comp=Z,33nm,0.8s,mb5.3,baz=22,slow=10.0,SNR=120
WRA S **S** **17 46 24.6 -1.0**
comp=Z,2.5nm,0.9s,baz=27,slow=15,SNR=5.2
VLA Vladivostok 33.05 343⇑ *iP* **P** **17 41 09.0 -1.8**
VLA *i* 17 42 20.0
VLA *i* PPP PPP 17 42 32.0 -5.9
VLA pmax pmax
comp=N,500nm,2.0s
VLA pmax pmax
comp=Z,500nm,2.0s,mb6.1
VLA pmax pmax
comp=N,1μm,7.0s
VLA pmax pmax
comp=Z,1μm,7.0s
VLA pmax pmax
comp=E,500nm,9.0s
VLA MLR MLR
comp=N,2μm,15.0s,MS5.2
VLA MLR MLR
comp=E,2μm,15.0s,MS5.2
VLA MLR MLR
comp=Z,2μm,15.0s,MS5.0
WHN Wuhan 33.44 309 ⇑P **P** **17 41 14.3 +0.1**
WHN AP pP 17 41 20.0 -2.7
WHN PP PP 17 42 27.0 +0.5
WHN S **S** **17 46 31.0 -1.7**
WHN AMB AMB
comp=Z,123nm,1.1s,mb5.8
WHN LR LR
comp=N,15μm,29.0s
WHN LR LR
comp=E,15μm,36.0s
WHN LR LR
comp=Z,4μm,17.5s
DL2 Dalian 33.73 327 ⇑P **P** **17 41 14.8 -1.9**
DL2 S **S** **17 46 33.9 -3.2**
DL2 AMB AMB
comp=Z,200nm,0.8s,mb6.1
DL2 LR LR
comp=N,1μm,18.6s
QIZ Qiongzhong 33.94 287 ⇓P **P** **17 41 19.6 +0.9**
QIZ XP sP 17 41 33.5 +2.6
QIZ PPP PPP 17 42 47.8 -2.7
QIZ S **S** **17 46 38.3 -2.2**
QIZ XS 17 46 54.8
QIZ SS SS 17 48 43.6 -4.6
QIZ AMB AMB
comp=Z,85nm,1.0s,mb5.6
QIZ LR LR
comp=N,2μm,18.5s,MS4.9
QIZ LR LR
comp=E,1μm,22.5s,MS4.9
QIZ LR LR
comp=Z,2μm,20.1s,MS4.9
QIZ Qiongzhong 33.94 287 *eP* **P** **17 41 19.9 +1.2**
comp=Z,105nm,1.0s,mb5.7
QIZ *e* 17 41 24.2
TIA Tai'an 34.55 319 ⇑P **P** **17 41 23.1 -0.6**
TIA S **S** **17 46 48.9 -0.9**
TIA LR LR
comp=N,1μm,12.0s,MS4.9
TIA LR LR
comp=E,493nm,12.0s,MS4.9
FITZ Fitzroy Crossi 34.91 212 *eP* **P** **17 41 25.8 -1.2**
comp=E,18nm,0.8s,mb5.0
FITZ *eS* **S** **17 46 50.4 -5.1**
FITZ Fitzroy Crossi 34.91 212 P **P** **17 41 26.5 -0.5**
comp=E,17nm,1.1s,mb4.9,baz=24,slow=6.0,SNR=16
SNY Shenyang 35.01 333 ⇑P **P** **17 41 26.0 -1.6**
SNY S **S** **17 46 55.1 -1.8**
SNY LR LR
comp=N,1μm,15.6s,MS5.0
SNY LR LR
comp=E,2μm,15.3s,MS5.0
SNY LR LR
comp=Z,2μm,16.3s,MS5.0
MDJ Mudanjiang 35.10 342 P **P** **17 41 27.1 -1.3**
MDJ AP pP 17 41 35.3 -1.6
MDJ XP sP 17 41 39.3 -1.3
MDJ PP PP 17 42 47.1 -0.2
MDJ S **S** **17 47 00.9 +2.6**
MDJ SCP 17 47 40.3
MDJ SCS ScS 17 51 45.8 +1.2
MDJ AMB AMB
comp=Z,109nm,1.2s,mb5.7
MDJ LR LR
comp=N,2μm,22.8s,MS5.0
MDJ LR LR
comp=E,3μm,27.3s,MS5.0
MDJ LR LR
comp=Z,3μm,33.4s
MDJ Mudanjiang 35.10 342 *eP* **P** **17 41 27.1 -1.3**
comp=Z,106nm,0.9s,mb5.8
YSS Yuzh-Sakhalins 35.11 358⇑ *eP* **P** **17 41 25.5 -3.0**
YSS *e**SP sP 17 41 42.3 +1.6
YSS *e* 17 42 44.0
YSS *eS* **S** **17 46 53.0 -5.5**
YSS pmax pmax
comp=N,120nm,1.0s
YSS pmax pmax
comp=E,40nm,1.0s
YSS pmax pmax
comp=Z,130nm,1.0s,mb5.8
YSS pmax pmax
comp=N,40nm,1.0s
YSS pmax pmax
comp=Z,60nm,1.0s,mb5.5
YSS MLR MLR
comp=Z,2μm,19.0s,MS4.9
YSS MLR MLR
comp=N,2μm,18.0s,MS5.0
YSS MLR MLR
comp=E,2μm,17.0s,MS5.0
YSS Yuzh-Sakhalins 35.11 358⇑ *iP* **P** **17 41 25.9 -2.6**
comp=E,191nm,1.1s,mb5.9
YSS *e* 17 41 43.6
YSS *e*PcP PcP 17 44 04.2 +4.4
YSS LR LR
comp=Z,2μm,19.0s,MS4.9
CN2 Changchun 35.84 336 *eP* **P** **17 41 33.1 -1.6**
CN2 PP PP 17 42 56.5 +0.3
CN2 *eS* **S** **17 47 07.5 -2.3**
CN2 AMB AMB
comp=Z,60nm,1.2s,mb5.4
CN2 LR LR
comp=N,3μm,16.0s,MS5.2
CN2 LR LR
comp=E,2μm,16.0s,MS5.2
CN2 LR LR
comp=Z,3μm,17.0s,MS5.1
AS12 Alice Springs 36.63 196⇑ *iP* **P** **17 41 40.3 -1.2**
comp=Z,55nm,0.9s,mb5.4
ASAR Alice Springs 36.63 196 P **P** **17 41 40.5 -1.0**
comp=Z,16nm,0.7s,mb4.9,baz=16,slow=10,SNR=113
ASAR S **S** **17 47 25.2 +3.1**
comp=Z,1.3nm,1.1s,baz=169,slow=28,SNR=3.1
ASAR LR LR 17 57 26.7
comp=Z,2μm,18.5s,MS4.9,baz=16,slow=37
ENH Enshi 37.14 305 *eP* **P** **17 41 46.2 +0.5**
comp=Z,337nm,0.9s,mb6.2
ENH *e*PcP PcP 17 44 11.2 +5.2
ENH *eS* **S** **17 47 24.7 -5.1**
BJT Baijiatuau 37.54 324 *eP* **P** **17 41 48.5 -0.5**
comp=Z,424nm,0.7s,mb6.3
BJT *e*PcP PcP 17 44 14.0 +6.8
BJI Beijing 37.55 324 *eP* **P** **17 41 48.8 -0.3**
BJI PP PP 17 43 14.1 -3.7
BJI S **S** **17 47 31.9 -4.1**
BJI LR LR
comp=N,4μm,21.4s,MS5.3
BJI LR LR
comp=E,4μm,21.4s,MS5.3
BJI LR LR
comp=Z,3μm,26.5s
GYA Guiyang 38.28 298⇑ *iP* **P** **17 41 57.5 +2.2**
GYA PP PP 17 43 30.0 +3.5
GYA PCP PcP 17 44 15.5 +5.9
GYA S **S** **17 47 47.4 +0.2**
GYA AMB AMB
comp=Z,90nm,1.0s,mb5.5
GYA LR LR
comp=N,1μm,19.7s,MS5.0
GYA LR LR
comp=E,2μm,20.3s,MS5.0
GYA LR LR
comp=Z,2μm,20.0s,MS4.8
TIY Taiyuan 38.47 318 ⇑P **P** **17 41 56.0 -0.8**
TIY S **S** **17 47 49.0 -0.9**
TIY AMB AMB
comp=Z,278nm,0.6s,mb6.2
TIY LR LR
comp=E,2μm,17.0s
TIY LR LR
comp=Z,1μm,15.0s,MS4.8
KLR Kul'dur 38.79 347 *iP* **P** **17 41 57.2 -2.2**
KLR *e* 17 44 14.0
KLR pmax pmax
comp=N,52nm,0.8s
KLR pmax pmax
comp=E,78nm,0.8s
KLR pmax pmax
comp=Z,78nm,0.8s,mb5.5
KLR MLR MLR
comp=N,2μm,15.0s,MS5.2
KLR MLR MLR
comp=E,1μm,15.0s,MS5.2
XAN Xi'an 39.11 310 P **P** **17 42 00.0 -2.3**
XAN S **S** **17 47 51.8 -7.9**
XAN XS 17 48 07.0
XAN SS SS 17 50 39.0 -5.9
XAN LR LR
comp=N,964nm,20.3s,MS4.8
XAN LR LR
comp=E,1μm,19.1s,MS4.8
XAN LR LR
comp=Z,2μm,18.7s,MS5.0
MIDW Midway 39.38 60 PFAKE 17 42 20.0 +15
MIDW LR LR
comp=Z,13μm,20.0s,MS5.8
NOUC Port Laguerre 39.98 147 *eP* **P** **17 42 08.5 -1.1**
DZM Mont Dzumac 40.03 147 *eP* **P** **17 42 09.2 -0.8**
DZM Mont Dzumac 40.03 147 *eP* **P** **17 42 09.2 -0.8**
HHC Hu-ho-hao-te 40.81 321 ⇑P **P** **17 42 16.8 +0.6**
HHC AP pP 17 42 26.3 +1.5
HHC PP PP 17 43 55.9 +2.5
HHC PCS 17 48 10.4
HHC S **S** **17 48 27.0 +1.9**
HHC SCS ScS 17 52 16.4 -0.7
HHC AMB AMB
comp=Z,125nm,1.0s,mb5.5
HHC AMB AMB
comp=Z,579nm,7.4s
HHC LR LR
comp=N,2μm,18.6s,MS5.2
HHC LR LR
comp=E,2μm,19.0s,MS5.2
HHC LR LR
comp=Z,2μm,20.0s,MS5.1
KMI Kunming 41.42 295 ⇓ *iP* **P** **17 42 23.5 +2.1**
KMI AP pP 17 42 31.4 +1.4
KMI PP PP 17 44 03.3 +3.2
KMI S **S** **17 48 35.3 +1.0**
KMI SS SS 17 51 33.0 -1.1
KMI AMB AMB
comp=Z,78nm,0.9s,mb5.3
KMI LR LR
comp=N,3μm,20.2s,MS5.3
KMI LR LR
comp=E,1μm,17.6s,MS5.3
BTO Baotou 41.63 320 *eP* **P** **17 42 23.6 +0.6**
BTO S **S** **17 48 37.0 -0.3**
KGM Kluang 41.74 260⇓ *eP* **P** **17 42 24.9 +0.7**
comp=E,197nm,1.0s,mb5.7
CD2 Chengdu 41.99 303 ⇓ *iP* **P** **17 42 26.8 +0.7**
CD2 PP PP 17 44 04.5 -1.9
CD2 PPP PPP 17 44 37.5 -0.7
CD2 S **S** **17 48 42.6 -0.2**
CD2 XS 17 48 57.5
CD2 SS SS 17 51 43.1 -1.7
CD2 AMB AMB
comp=Z,520nm,5.3s
CD2 LR LR
comp=N,3μm,15.1s
CD2 LR LR
comp=Z,2μm,23.7s
ARMA Armidale 42.52 171⇑ *iP* **P** **17 42 29.3 -1.1**
HIA Hailar 42.57 336 *eP* **P** **17 42 30.1 -0.5**
comp=Z,147nm,0.8s,mb5.8
HIA *e*PP PP 17 44 15.2 +3.3
HIA *e*PcP PcP 17 44 30.0 +6.8
PET Petropavlovsk 42.75 13 *eP* **P** **17 42 30.7 -1.3**
PET *eS* **S** **17 48 50.7 -2.9**
PET *e*SS SS 17 51 54.4 -4.2
PET pmax pmax
comp=Z,55nm,1.1s,mb5.2
PET pmax pmax
comp=Z,367nm,15.4s
PET smax
comp=E,609nm,39.2s
PET smax
comp=N,730nm,37.0s
PET MLR MLR
comp=Z,1μm,20.0s,MS4.8
PET Petropavlovsk 42.75 13 *eP* **P** **17 42 28.6 -3.4**
comp=Z,55nm,1.0s,mb5.2
PET *e*PcP PcP 17 44 26.2 +2.5
PET LR LR
comp=Z,2μm,19.0s,MS5.0
IPM Ipoh 43.36 264⇑ *eP* **P** **17 42 38.2 +0.7**
STKA Stephens Creek 43.45 183⇑ *iP* **P** **17 42 36.0 -1.9**
comp=Z,12nm,0.6s,mb4.8
STKA *e* 17 42 51.0
STKA *eS* **S** **17 49 05.6 +1.5**
STKA Stephens Creek 43.45 183 P **P** **17 42 36.0 -2.0**
comp=Z,15nm,0.9s,mb4.8,baz=355,slow=8.4,SNR=40
STKA LR LR 18 01 37.8
comp=Z,3μm,18.2s,MS5.2,baz=358,slow=37
LZH Lanzhou 43.75 311⇑ *iP* **P** **17 42 41.5 +1.2**
LZH XP sP 17 42 51.8 -0.7
LZH PP PP 17 44 25.3 +1.4
LZH S **S** **17 49 08.5 +0.2**
LZH SS SS 17 52 16.8 +0.1
LZH AMB AMB
comp=Z,239nm,1.5s,mb5.7
LZH AMB AMB
comp=Z,789nm,5.1s
LZH LR LR
comp=N,3μm,13.2s
LZH LR LR
comp=Z,3μm,17.0s,MS5.3
CM31 Chiang Mai Arr 44.19 284 *eP* **P** **17 42 45.3 +1.2**
comp=Z,157nm,0.9s,mb5.7
CM31 LR LR
comp=Z,2μm,19.0s,MS5.1
CMAR Chiang Mai Arr 44.19 284 P **P** **17 42 45.6 +1.5**
comp=Z,66nm,0.7s,mb5.5,baz=85,slow=6.3,SNR=167
CMAR S **S** **17 49 15.2 +0.3**
comp=Z,0.2nm,0.5s,baz=77,slow=16,SNR=2.5
CMAR LR LR 18 00 36.7
comp=Z,2μm,18.9s,MS5.0,baz=269,slow=35
FORT Forrest 45.07 200 *eP* **P** **17 42 50.1 -0.9**
comp=Z,126nm,0.6s,mb5.9
FORT *e* 17 43 06.3
FX1 Attu Island--F 47.11 24 P **P** **17 43 05.6 -1.2**
comp=Z,39nm,0.5s,mb5.6,baz=85,slow=0.3,SNR=12
FX1 Attu Island--F 47.11 24 *eP* **P** **17 43 05.0 -1.8**
SMY Shemya 47.36 24 PFAKE 17 43 20.0 +11
SMY LR LR
comp=Z,5μm,20.0s,MS5.5
CLNS Chul'man 47.41 346 *eP* **P** **17 43 08.1 -1.1**
CLNS *e* 17 44 33.9
CLNS *e* 17 44 59.6
CLNS *eS* **S** **17 50 02.0 +1.5**
CLNS *e*SS SS 17 53 09.9 -12
CLNS pmax pmax
comp=Z,150nm,0.9s,mb5.9
CLNS pmax pmax
comp=N,50nm,0.8s
CLNS pmax pmax
comp=E,30nm,0.9s
CLNS pmax pmax
comp=Z,20nm,0.9s,mb5.0
CLNS pmax pmax
comp=N,40nm,1.2s
CLNS pmax pmax
comp=E,10.0nm,1.0s
CLNS smax
comp=N,730nm,16.1s
CLNS smax
comp=Z,80nm,11.3s
CLNS smax
comp=E,110nm,15.7s
CLNS MLR MLR
comp=Z,1μm,15.0s,MS5.0
CLNS MLR MLR
comp=N,700nm,14.0s,MS4.8
CLNS MLR MLR
comp=E,300nm,13.0s,MS4.8
ULN Ulaanbaatar 47.58 327⇑ *iP* **P** **17 43 10.7 +0.1**
ULN Ulaanbaatar 47.58 327⇑ *iP* **P** **17 43 10.5 -0.1**
comp=E,164nm,0.9s,mb6.1
ULN *e*PcP PcP 17 44 46.8 +6.3
ULN LR LR
comp=Z,2μm,19.0s,MS5.1
SONM Songino Array 47.91 326 P **P** **17 43 13.4 +0.2**
comp=Z,86nm,0.6s,mb5.9,baz=145,slow=7.6,SNR=165
SONM S **S** **17 50 09.3 +1.5**
comp=Z,1.7nm,0.7s,baz=151,slow=26,SNR=2.4
MA2 Magadan 47.98 4*c* *iP* **P** **17 43 11.9 -1.7**
MA2 *e* 17 44 47.0
MA2 *e* 17 45 07.4
MA2 *e*PPP PPP 17 45 44.5 -11
MA2 *e*S **S** **17 50 03.9 -4.6**
MA2 *e*PS PS 17 50 16.4 -4.1
MA2 *e*SSS SSS 17 54 40.3 -8.4
MA2 pmax pmax
comp=N,30nm,0.8s
MA2 pmax pmax
comp=Z,80nm,0.8s,mb5.8
MA2 MLR MLR
comp=Z,7μm,18.0s,MS5.7
MA2 Magadan 47.98 4⇑ *iP* **P** **17 43 11.4 -2.2**
comp=Z,127nm,0.7s,mb6.1
MA2 LR LR
comp=Z,2μm,22.0s,MS5.0
GTA Gaotai 47.98 313 ⇑P **P** **17 43 14.5 +0.6**
GTA AP pP 17 43 25.1 +2.5
GTA PP PP 17 45 07.4 +2.2
GTA S **S** **17 50 08.0 -0.8**
GTA SS SS 17 53 30.8 -1.6
GTA AMB AMB
comp=Z,294nm,0.7s,mb6.4
GTA AMB AMB
comp=Z,468nm,6.5s
GTA LR LR
comp=N,645nm,14.5s,MS4.8
GTA LR LR
comp=E,703nm,18.7s,MS4.8
TOO Toolangi 49.07 179⇑ *iP* **P** **17 43 21.9 -0.4**
comp=E,44nm,1.0s,mb5.5
IMP Imphal 49.28 293 *iP* **P** **17 43 22.0 -2.1**
KLBR Kellerberrin 50.04 210 *eP* **P** **17 43 28.0 -1.8**
comp=E,27nm,0.8s,mb5.3
ZAK Zakamensk 51.05 327 ⇓ *iP* **P** **17 43 36.8 -0.5**
ZAK *e* 17 44 59.7
ZAK *e* 17 50 50.8
SHL Shillong 51.21 293 *iP* **P** **17 43 39.0 +0.2**
SHL AMb AMB 17 43 40.6
comp=Z,169nm,1.3s,mb5.8

SHL *e*S **S** **17 50 54.0 +0.2**
YAK Yakutsk 51.30 351*c i*P **P** **17 43 36.6 -2.4**
YAK *e**PP pP 17 43 43.6 -4.2
YAK *e* 17 44 54.6
YAK *e* 17 45 29.7
YAK *e*S **S** **17 50 49.6 -5.1**
YAK *e*PS PS 17 51 04.9 -2.4
YAK *e* 17 53 27.9
YAK pmax pmax
comp=Z,179nm,1.0s,mb6.0
YAK pmax pmax
comp=N,71nm,1.1s
YAK pmax pmax
comp=E,26nm,1.0s
YAK pmax pmax
comp=Z,13nm,0.9s,mb4.9
YAK pmax pmax
comp=N,11nm,1.0s
YAK pmax pmax
comp=E,9.0nm,0.9s
YAK smax
comp=N,11nm,1.1s
YAK smax
comp=E,9.0nm,1.0s
YAK MLR MLR
comp=Z,928nm,17.0s,MS4.9
YAK MLR MLR
comp=N,526nm,16.0s,MS4.8
YAK MLR MLR
comp=E,462nm,17.0s,MS4.8
YAK Yakutsk 51.30 351⇑*i*P **P** **17 43 36.5 -2.5**
comp=E,306nm,0.7s,mb6.3
YAK LR LR
comp=Z,2µm,19.0s,MS5.1
NWAO Narrogin (SRO) 51.38 209 P **P** **17 43 38.9 -1.1**
comp=Z,15nm,0.9s,mb4.9,baz=21,slow=12,SNR=7.6
NWAO Narrogin (SRO) 51.38 209 *e*P **P** **17 43 38.7 -1.3**
NWAO pmax pmax
comp=Z,37nm,1.1s
NWAO MLR MLR
comp=Z,2µm,19.0s
NWAO Narrogin (SRO) 51.38 209 *e*P **P** **17 43 38.7 -1.3**
comp=Z,38nm,1.1s,mb5.2
NWAO LR LR
comp=Z,2µm,19.0s,MS5.2
BOD Bodaibo 51.43 340⇑*i*P **P** **17 43 38.1 -1.9**
SEY Seymchan 51.43 5 *i* P **P** **17 43 39.7 -0.3**
SEY *e* 17 44 54.7
SEY 17 45 38.8
SEY *e*S **S** **17 50 59.1 +2.7**
SEY PS PS 17 51 10.4 +1.2
SEY 17 53 26.9
SEY pmax pmax
comp=Z,1µm,1.9s,mb6.4
SEY pmax pmax
comp=N,140nm,0.8s
SEY pmax pmax
comp=E,70nm,1.4s
SEY MLR MLR
comp=N,3µm,19.0s,MS5.4
SEY MLR MLR
comp=E,2µm,19.0s,MS5.4
SEY MLR MLR
comp=Z,6µm,19.0s,MS5.7
TLY Talaya 51.61 329⇑*i*P **P** **17 43 41.2 -0.3**
TLY *e* 17 44 59.2
TLY *e* 17 45 39.7
TLY *i*S **S** **17 50 59.9 +0.8**
TLY pmax pmax
comp=Z,2µm,0.8s
TLY MLR MLR
comp=Z,10µm,18.0s,MS5.9
IRK Irkutsk 51.63 330 *e*P **P** **17 43 40.2 -1.4**
IRK *e* 17 43 57.2
AGT Agartala 51.65 291⇓*i*P **P** **17 43 44.0 +1.9**
AGT ⇓*i* 17 44 12.0
LSA Lhasa 52.34 298 P **P** **17 43 49.0 +1.7**
LSA AP pP 17 43 59.0 +2.9
LSA S **S** **17 51 10.0 +0.6**
LSA XS 17 51 24.9
LSA AMB AMB
comp=Z,120nm,0.8s,mb5.9
LSA Lhasa 52.34 298 *e*P **P** **17 43 48.6 +1.3**
comp=Z,138nm,0.8s,mb5.9
COCO West Island 52.77 245 PFAKE 17 44 00.0 +9.3
COCO LR LR
comp=Z,1µm,20.0s,MS5.0
MOY Mondy 52.97 328 *e*P **P** **17 43 51.7 0.0**
TAU Tasmania Unive 54.46 177 *e*P **P** **17 44 00.9 -1.8**
TAU pmax pmax
comp=Z,85nm,1.2s,mb5.5
TAU MLR MLR
comp=Z,3µm,21.0s,MS5.4
TAU Tasmania Unive 54.46 177 *e*P **P** **17 44 00.9 -1.9**
comp=Z,85nm,1.2s,mb5.5
TAU LR LR
comp=Z,3µm,21.0s,MS5.4
NIKO Nikolski 55.52 32⇑*i*P **P** **17 44 08.0 -2.3**
KIP Kipapa 55.87 72 *e*P **P** **17 44 14.1 +0.8**
KIP pmax pmax
comp=Z,110nm,0.8s,mb5.9
KIP Kipapa 55.87 72 *e*P **P** **17 44 14.1 +0.8**
comp=Z,115nm,0.8s,mb6.0
PKI Pulchoki 57.15 295 *e*P **P** **17 44 21.8 -0.5**
comp=Z,496nm,1.1s,mb6.5
UNV Unalaska Valle 57.18 32⇑*e*P **P** **17 44 19.9 -2.3**
comp=Z,345nm,1.0s,mb6.3
UNV LR LR
comp=Z,10µm,21.0s,MS5.9
KKN Kakani 57.27 295 *e*P **P** **17 44 22.8 -0.4**
comp=Z,331nm,1.0s,mb6.3
DMN Daman 57.41 295 *e*P **P** **17 44 24.2 0.0**
comp=Z,488nm,1.0s,mb6.5
GKN Gorkha 57.85 296 *e*P **P** **17 44 26.9 -0.4**
comp=Z,675nm,1.2s,mb6.6
WMQ Urumqi 58.00 315⇑*i*P **P** **17 44 28.1 0.0**
WMQ AP pP 17 44 38.3 +1.3
WMQ XP sP 17 44 42.1 +1.8
WMQ PCP PcP 17 45 20.3 +0.6
WMQ PP PP 17 46 37.9 -0.4
WMQ SCP 17 49 16.3
WMQ PCS 17 49 20.1
WMQ S **S** **17 52 23.3 -1.6**
WMQ PS PS 17 52 40.9 -1.1
WMQ XS 17 52 40.0
WMQ SCS ScS 17 54 11.3 -0.6
WMQ SS SS 17 56 15.5 -2.2
WMQ AMB AMB
comp=Z,242nm,1.5s,mb6.0
WMQ AMB AMB
comp=Z,1µm,5.8s
WMQ LR LR
comp=Z,6µm,19.4s,MS5.7
BILL Bilibino 58.06 10*c i*P **P** **17 44 25.9 -2.3**
BILL *e*S **S** **17 52 16.1 -9.2**
BILL pmax pmax
comp=Z,134nm,1.0s,mb5.9
BILL Bilibino 58.06 10⇑*i*P **P** **17 44 25.9 -2.2**
comp=Z,99nm,0.8s,mb5.9
POHA Pohakuloa 58.22 74 *e*P **P** **17 44 35.3 +5.3**
comp=Z,201nm,1.0s,mb6.1
MGZ Maungaku 58.30 152 *e*P **P** **17 44 30.3 +0.1**
CNZ Chateau 58.46 152 P **P** **17 44 31.2 -0.2**
URZ Urewera 58.46 150 P **P** **17 44 29.8 -1.6**
comp=Z,25nm,0.7s,mb5.4,baz=339,slow=2.2,SNR=5.8
NGZ Ngauruhoe 58.47 152 P **P** **17 44 31.1 -0.3**
TUVZ Tukino 58.56 152 P **P** **17 44 31.6 -0.5**
DANN Dangsing 58.65 296 *e*P **P** **17 44 33.4 +0.6**
KOLN Koldanda 58.76 295 *e*P **P** **17 44 33.2 -0.4**
comp=Z,307nm,0.9s,mb6.3
VIS Vishakhapatnam 59.04 284 *e*P **P** **17 44 35.4 -0.3**
VIS *e*S **S** **17 52 37.9 -1.0**
SNZO South Karori 59.79 154 *e*P **P** **17 44 37.0 -3.5**
comp=Z,123nm,1.0s,mb5.9
SNZO LR LR
comp=Z,2µm,19.0s,MS5.2
BLSP Bilaspur 60.00 289 *e*P **P** **17 44 41.9 -0.4**
MSZ Milford Sound 60.11 161 P **P** **17 44 41.4 -1.3**
RPZ Rata Peaks 60.35 158 P **P** **17 44 42.5 -1.9**
comp=Z,47nm,0.8s,mb5.6,baz=342,slow=3.1,SNR=12
RPZ LR LR 18 09 12.9
comp=Z,2µm,18.4s,MS5.2,baz=344,slow=34
RPZ Rata Peaks 60.35 158 P **P** **17 44 43.7 -0.7**
RPZ *e*E 17 44 56.2
TIXI Tiksi 60.60 354 *e*P **P** **17 44 42.8 -2.9**
TIXI *e* 17 46 56.1
TIXI *e*S **S** **17 52 53.7 -4.4**
TIXI *e* 17 54 29.0
TIXI pmax pmax
comp=Z,266nm,0.9s,mb6.4
TIXI MLR MLR
comp=Z,8µm,18.0s,MS5.9
TIXI Tiksi 60.60 354 *e*P **P** **17 44 42.6 -3.1**
comp=Z,49nm,0.9s,mb5.6
TIXI LR LR
comp=Z,1µm,20.0s,MS5.1
BWZ Berwen 60.64 159 P **P** **17 44 44.5 -1.8**
SDN Sand Point 60.98 32 *e*P **P** **17 44 46.2 -2.2**
SDN pmax pmax
comp=Z,340nm,0.8s,mb6.5
SDN Sand Point 60.98 32 *e*P **P** **17 44 46.6 -1.8**
comp=Z,185nm,0.8s,mb6.3
SDPT Sand Point 60.99 32 *e*P **P** **17 44 46.5 -2.0**
comp=Z,244nm,0.6s,mb6.5
KGD Kothagudem 61.59 284 *e*P **P** **17 44 53.2 +0.1**
KGD *e* 17 49 42.4
KGD *e*S **S** **17 53 14.3 +2.7**
KGD *e* 18 00 07.2
MKAR Makanchi Array 62.42 317 P **P** **17 44 58.1 -0.2**
comp=Z,72nm,0.7s,mb5.9,baz=92,slow=7.9,SNR=404
MKAR S **S** **17 53 21.2 -0.4**
comp=Z,7.9nm,1.1s,baz=111,slow=12,SNR=7.7
MKAR LR LR 18 13 20.8
comp=Z,972nm,19.8s,MS5.0,baz=113,slow=37
MKAR PKP2bc 18 14 12.0
comp=Z,0.6nm,0.8s,baz=315,slow=3.4,SNR=3.6
MKAR Makanchi Array 62.42 317 *i* P **P** **17 44 58.0 -0.3**
MKAR pmax pmax
comp=Z,71nm,0.7s
MKAR Makanchi Array 62.42 317 P **P** **17 44 58.1 -0.2**
MKAR S **S** **17 53 21.2 -0.4**
MKAR LR LR 18 13 20.8
MKAR ⇑*e* 18 14 12.0
TNA Tin City 62.76 20⇑*i*P **P** **17 44 58.2 -2.0**
comp=Z,41nm,1.2s,mb5.4
TNA LR LR
comp=Z,744nm,20.0s,MS4.8
ANM Nome 63.10 22 *e*P **P** **17 45 01.2 -1.3**
HYB Hyderabad 63.61 284 *i* P **P** **17 45 06.0 -0.6**
comp=Z,90nm,1.0s,mb5.8
HYB *e*sP sP 17 45 18.5 -0.3
HYB *e* 17 45 50.0
HYB *e*S **S** **17 53 40.0 +3.0**
HYB Hyderabad 63.61 284 *e*P **P** **17 45 06.0 -0.6**
comp=Z,90nm,1.0s,mb5.8
HYB *e*S **S** **17 53 38.0 +1.0**
CUD Cuddapah 63.68 280⇓*e*P **P** **17 45 06.8 -0.3**
CUD *e*S **S** **17 53 42.1 +4.2**
NVS Novosibirsk 63.95 326 *i* P **P** **17 45 06.4 -1.8**
NVS *i* S **S** **17 53 39.2 -1.3**
NVS *e* 17 54 55.2
NVS pmax pmax
comp=Z,249nm,1.3s,mb6.1
NVS pmax pmax
comp=N,74nm,1.4s
NVS pmax pmax
comp=E,151nm,1.3s
NVS smax
comp=N,288nm,2.2s
NVS smax
comp=E,136nm,2.4s
NDI New Delhi 64.41 296⇓*i*P **P** **17 45 10.0 -1.7**
NDI AMb AMB 17 45 19.6
comp=Z,186nm,0.7s,mb6.2
NDI *e* 17 53 44.0
LATR Latur 65.42 285 *e*P **P** **17 45 17.8 -0.5**
comp=Z,113nm,1.0s,mb5.8
LATR AMb AMB 17 45 27.6
comp=Z,136nm,0.7s,mb6.1
KOD Kodaikanal 65.47 276 *e*P **P** **17 45 19.1 +0.3**
KOD AMb AMB 17 45 20.9
comp=Z,61nm,0.9s,mb5.6
SVW Sparrevohn 65.55 28 *e*P **P** **17 45 18.4 0.0**
comp=Z,51nm,0.8s,mb5.6
KURK Kurchatov 65.62 321⇑*i*P **P** **17 45 18.5 -0.6**
KSH Kashi 65.91 308 P **P** **17 45 22.8 +1.6**
KSH *e*XP sP 17 45 37.0 +3.7
KSH *e*PCP PcP 17 45 54.3 +2.6
KSH *e*PP PP 17 47 50.0 +1.4
KSH *e*SCP 17 49 52.9
KSH *e*PCS 17 49 57.1
KSH *e*S S 17 54 06.0 +1.0
KSH *e*SCS ScS 17 55 12.1 +0.8
KSH *e*SS SS 17 58 22.3 +0.9
KSH AMB AMB
comp=Z,150nm,0.6s,mb6.2
KSH LR LR
comp=N,2µm,16.4s,MS5.5
KSH LR LR
comp=E,900nm,13.5s,MS5.5
KDAK Kodiak Island 65.93 32⇑*i*P **P** **17 45 19.6 -1.3**
comp=E,209nm,1.3s,mb6.0
KDAK LR LR
comp=Z,2µm,19.0s,MS5.3
ULHL Ulahol 65.96 311 P **P** **17 45 22.0 +0.6**
SNR=38
TKM2 Tokmak 2 66.50 312 P **P** **17 45 25.3 +0.4**
SNR=51
RSO Redoubt South 66.65 29 *e*P **P** **17 45 23.6 -2.0**
KZA Kyzart 66.67 311 P **P** **17 45 27.6 +1.6**
SNR=80
AJM Ajmer 66.73 294 *e*P **P** **17 45 26.0 -0.6**
AJM *e* pP 17 45 33.9 -1.7
comp=Z,191nm,1.0s
KBK Karagaybulak 66.95 311 P **P** **17 45 28.2 +0.5**
SNR=54
CHMS Chumysh 67.13 312 P **P** **17 45 28.9 0.0**
SNR=33
SPU Mount Spurr 67.20 28 *e*P **P** **17 45 26.5 -2.5**
FRU Bishkek 67.21 312 *e*P **P** **17 45 30.0 +0.6**
FRU *i* 17 45 35.0
FRU *e* 17 54 20.0
FRU pmax pmax
comp=Z,320nm,1.6s,mb6.1
FRU MLR MLR
comp=Z,1µm,16.0s,MS5.1
UCH Uchtor 67.23 311 P **P** **17 45 30.9 +1.4**
SNR=79
AAK Ala-Archa 67.28 311 P **P** **17 45 30.2 +0.3**
SNR=29
USP Ospenovka 67.33 312 P **P** **17 45 29.8 -0.4**
SNR=12
KAD Karad 67.78 284 *e*P **P** **17 45 32.7 -0.7**
KAD *e* pP 17 45 42.1 -0.2
comp=Z,144nm,1.6s
EKS2 Erkin-Say 67.81 311 P **P** **17 45 33.6 +0.4**
SNR=36
AML Almayashu 67.83 311 P **P** **17 45 34.5 +1.1**
SNR=73
SLKM Skilak Lake 67.86 29 *e*P **P** **17 45 31.1 -2.1**
POO Poona 67.97 285 *e*P **P** **17 45 34.4 -0.2**
POO *e* 17 54 24.0
FIB Fire Island 68.07 28⇑*i*P **P** **17 45 33.0 -1.4**
FIB LR LR
comp=Z,3µm,20.0s,MS5.5
IMA Indian Mountai 68.16 23 *e*P **P** **17 45 33.6 -1.3**
IMA pmax pmax
comp=Z,200nm,1.2s,mb6.0
IMA Indian Mountai 68.16 23 *e*P **P** **17 45 33.8 -1.2**
comp=Z,265nm,1.3s,mb6.1
IMA *e*PP PP 17 48 03.1 -4.2
GOU Gould Hall 68.25 28 *e*P **P** **17 45 35.4 -0.2**
GOA Goa 68.31 282 *e*P **P** **17 45 36.2 -0.5**
PMR Palmer 68.67 28⇑*i*P **P** **17 45 36.0 -2.2**
PMR pmax pmax
comp=Z,89nm,0.8s,mb5.8
PMR MLR MLR
comp=Z,2µm,22.0s,MS5.3
PMR Palmer 68.67 28 *e*P **P** **17 45 36.2 -2.0**
comp=Z,98nm,0.9s,mb5.7
SML Sawmill 69.09 28⇑*i*P **P** **17 45 39.4 -1.4**
MCK McKinley 69.33 26⇑*e*P **P** **17 45 40.0 -2.2**
comp=Z,32nm,1.2s,mb5.1
MCK LR LR
comp=Z,1µm,21.0s,MS5.2
EYAK Cordova Ski Ar 70.02 30⇑*i*P **P** **17 45 45.6 -0.9**
COLA College 70.09 25 *e*P **P** **17 45 45.2 -1.6**
COLA pmax pmax
comp=Z,33nm,0.7s,mb5.4
COLA College 70.09 25 *e*P **P** **17 45 45.2 -1.6**
comp=Z,33nm,0.7s,mb5.4
TOA Tolsona 70.15 28 *e*P **P** **17 45 46.2 -1.0**
comp=Z,58nm,1.1s,mb5.4
KKAR Karatay Array 70.23 312 *i* P **P** **17 45 47.9 -0.2**
KKAR pmax pmax
comp=Z,103nm,0.8s,mb5.8
ILAR Eielson Array 70.47 25 P **P** **17 45 46.5 -2.6**
comp=Z,31nm,0.6s,mb5.4,baz=256,slow=5.0,SNR=238
ILAR LR LR 18 17 15.0
comp=Z,1µm,19.1s,MS5.1,baz=279,slow=36
VOSK Vostochnaya 70.63 322 P **P** **17 45 49.5 -0.8**
VOSK pmax pmax
comp=Z,50nm,0.7s,mb5.5
VOSK Vostochnaya 70.63 322 *i* P **P** **17 45 49.6 -0.7**
BVA0 Borovoye Array 71.02 322 *i* P **P** **17 45 52.4 -0.2**
BVA0 pmax pmax
comp=Z,4.0nm,0.7s
BRVK Borovoye 71.08 322⇑*i*P **P** **17 45 52.8 -0.2**
BHUJ Bhuj 71.45 291 *e*P **P** **17 45 56.5 +0.7**
BHUJ *e* pP 17 46 05.3 +0.5
comp=Z,241nm,1.5s
ZRNK Zerenda 71.84 322 P **P** **17 45 57.2 -0.4**
ZRNK pmax pmax
comp=Z,233nm,1.0s,mb6.1
ZRNK Zerenda 71.84 322 *i* P **P** **17 45 57.2 -0.4**
DAWY Dawson 73.53 26⇑*i*P **P** **17 46 06.8 -0.5**
SIT Sitka 75.00 34 *e*P **P** **17 46 17.1 +1.1**
SIT pmax pmax
comp=Z,120nm,1.1s,mb5.7
SIT MLR MLR
comp=Z,1µm,20.0s,MS5.3
SIT Sitka 75.00 34 *e*P **P** **17 46 17.1 +1.1**
comp=Z,118nm,1.1s,mb5.7
SIT LR LR
comp=Z,1µm,20.0s,MS5.2
INK Inuvik 76.28 22 P **P** **17 46 22.1 -0.9**
comp=Z,45nm,0.9s,mb5.4,baz=275,slow=5.6,SNR=65
INK Inuvik 76.28 22⇑*i*P **P** **17 46 21.8 -1.2**
INK pmax pmax
comp=Z,63nm,0.9s
INK Inuvik 76.28 22⇑*i*P **P** **17 46 21.8 -1.2**
comp=Z,63nm,0.9s,mb5.5
VIB Van Inlet 76.61 38 T 19 11 21.0
SNR=6.7
SVE Sverdlovsk 76.79 326⇑*i*P **P** **17 46 26.1 +0.1**
SVE *e*S S 17 56 05.0 -5.0
SVE *e*PS PS 17 56 54.0 +1.6
SVE pmax pmax
comp=Z,460nm,1.9s,mb6.1
SVE MLR MLR
comp=Z,2µm,18.0s,MS5.3
SVE MLR MLR
comp=N,300nm,17.0s
AB31 Akbulak array 77.52 318 P **P** **17 46 30.0 -0.3**
AB31 pmax pmax
comp=Z,49nm,0.6s,mb5.6
DLBC Dease Lake 77.83 32 P **P** **17 46 32.4 +0.6**
comp=Z,25nm,0.8s,mb5.2,baz=285,slow=5.5,SNR=40
ARU Arti 77.95 325⇑*i*P **P** **17 46 32.1 -0.3**
ARU *i* 17 46 38.2
ARU *i* 17 49 29.3
ARU *i* PPP PPP 17 51 19.1 -0.4
ARU *i*S S 17 56 19.2 -3.3
ARU *e* 17 56 36.2
ARU pmax pmax
comp=Z,88nm,0.7s,mb5.8
ARU Arti 77.95 325⇑*e*P **P** **17 46 32.0 -0.4**
comp=Z,126nm,0.9s,mb5.8
ARU *e* 17 46 38.4
ARU LR LR
comp=Z,810nm,19.0s,MS5.1
BBB Bella Bella 79.36 39 P **P** **17 46 41.4 +1.2**
comp=Z,17nm,0.6s,mb5.1,baz=282,slow=3.5,SNR=11
BBB Bella Bella 79.36 39 P **P** **17 46 41.4 +1.1**
OCWA Octopus Mounta 82.44 43⇓*e*P **P** **17 46 58.9 +2.3**
comp=Z,71nm,0.9s,mb5.6
OCWA LR LR
comp=Z,2µm,22.0s,MS5.3
STW Striped Peak 82.71 42 P **P** **17 47 00.3 +2.3**
PGC Sidney 82.78 42 *e*P **P** **17 46 58.6 +0.3**
comp=Z,162nm,1.2s,mb5.9
KEBM Edson Butte 83.12 48 *e*P **P** **17 47 01.8 +1.6**
HDW Hoodsport 83.21 43 P **P** **17 47 02.0 +1.5**
BMW Boistfort Moun 83.29 44 *e*P **P** **17 47 02.0 +1.0**
GNW Green Mountain 83.37 43 *e*P **P** **17 47 02.9 +1.5**
COR Corvallis 83.57 46 *e*P **P** **17 47 04.9 +2.4**
COR pmax pmax
comp=Z,120nm,1.1s,mb5.9
COR MLR MLR
comp=Z,2µm,21.0s,MS5.4
COR Corvallis 83.57 46 *e*P **P** **17 47 04.9 +2.4**
comp=Z,120nm,1.1s,mb5.9
COR LR LR
comp=Z,2µm,21.0s,MS5.4
KRMB Red Mountain 83.66 49 *e*P **P** **17 47 04.5 +1.5**
JCW Jim Creek 83.85 42 P **P** **17 47 05.7 +1.8**
HSO Harness Mounta 83.90 47 *e*P **P** **17 47 05.5 +1.3**
KHMM Horse Mountain 83.91 50 *e*P **P** **17 47 06.1 +1.8**
KHMM *e* 17 47 11.8
SHW Mount Saint He 84.02 44 *e*P **P** **17 47 04.3 -0.4**
RMW Rattlesnake Mo 84.07 43 *e*P **P** **17 47 05.5 +0.5**
RPW Rockport 84.08 42 *e*P **P** **17 47 05.3 +0.3**
SSOR Sweet Springs 84.11 46 *e*P **P** **17 47 05.7 +0.5**
HUMO Hull Mountain 84.17 48 *e*P **P** **17 47 06.8 +1.2**
LON Longmire 84.20 44⇓*e*P **P** **17 47 06.7 +1.1**
YBH Yreka Blue Hor 84.51 49 P **P** **17 47 08.5 +1.2**
comp=Z,38nm,0.8s,mb5.6,baz=283,slow=2.6,SNR=71
YBH Yreka Blue Hor 84.51 49 *e*P **P** **17 47 08.1 +0.8**
YBH pmax pmax
comp=Z,57nm,0.9s
YBH MLR MLR
comp=Z,2µm,21.0s
YBH Yreka Blue Hor 84.51 49 *e*P **P** **17 47 08.1 +0.8**
comp=Z,57nm,0.9s,mb5.7
YBH LR LR
comp=Z,2µm,21.0s,MS5.5
YKW3 Yellowknife Ar 84.72 27 *e*P **P** **17 47 07.6 -0.3**
HOPS Hopland 84.75 51 PFAKE 17 47 20.0 +11
HOPS LR LR
comp=Z,2µm,19.0s,MS5.4
YKA Yellowknife Ar 84.75 27 P **P** **17 47 07.8 -0.1**
comp=Z,16nm,0.5s,mb5.4,baz=287,slow=5.2,SNR=175
YKA LR LR 18 23 34.7
comp=Z,2µm,20.6s,MS5.5,baz=295,slow=35
YKA Yellowknife Ar 84.75 27 P **P** **17 47 07.8 -0.1**
YKA LR LR 18 23 34.7
WDC Whiskeytown Da 84.85 50 *e*P **P** **17 47 10.2 +1.2**
WDC pmax pmax
comp=Z,25nm,0.8s,mb5.4
WDC MLR MLR
comp=Z,2µm,20.0s,MS5.6
WDC Whiskeytown Da 84.85 50 *e*P **P** **17 47 10.2 +1.1**
comp=Z,25nm,0.8s,mb5.4
WDC LR LR
comp=Z,3µm,20.0s,MS5.6
NLW Nelson Butte 84.92 42 *e*P **P** **17 47 09.8 +0.6**
VGB Gordon Butte 85.15 45 *e*P **P** **17 47 11.6 +1.2**
NSHM Saint Helena R 85.19 52 *e*P **P** **17 47 11.8 +1.0**
SPB4 Spitsbergen Ar 85.77 351 *e*P **P** **17 47 13.1 +0.3**
HAWA Hanford 85.81 44 *e*P **P** **17 47 14.5 +0.8**
comp=Z,95nm,1.2s,mb5.9
HAWA LR LR
comp=Z,2µm,20.0s,MS5.4
GBL Gable Mountain 85.82 43 P **P** **17 47 14.9 +1.2**
OHCM Honcut 85.89 51 *e*P **P** **17 47 15.1 +0.9**
KBS Kingsbay 85.93 352 *e* **P** **17 47 18.6 +5.0**
KBS *e*SKSa 17 57 37.5
KBS *e*SS SS 18 03 24.8 -0.2
KBS AMS AMS 18 28 25.8
comp=Z,519nm,20.0s,MS4.9
KBS Kingsbay 85.93 352 *e*P **P** **17 47 13.2 -0.4**
KBS pmax pmax
comp=Z,65nm,0.8s,mb5.9
KBS MLR MLR
comp=Z,680nm,20.0s,MS5.0
KBS Kingsbay 85.93 352 *e*P **P** **17 47 13.2 -0.4**
comp=Z,65nm,0.8s,mb5.9
KBS LR LR
comp=Z,681nm,20.0s,MS5.0
MOD Modoc 86.24 48 *e*P **P** **17 47 17.0 +1.1**
comp=Z,40nm,0.9s,mb5.6
MOD LR LR
comp=Z,2µm,19.0s,MS5.5
DPW Davenport 86.37 42 *e*P **P** **17 47 16.7 +0.3**
LVZ Lovozero 86.40 339*ce*P **P** **17 47 20.3 +4.2**

LVZ *i* S S 17 57 36.9 -11
LVZ pmax pmax
comp=Z,190nm,9.4s
LVZ smax
comp=N,110nm,12.6s
LVZ smax
comp=E,200nm,11.1s
LVZ MLR MLR
comp=Z,240nm,10.0s,MS4.9
LVZ MLR MLR
comp=N,100nm,9.0s
LVZ MLR MLR
comp=E,290nm,11.0s
LVZ Lovozero 86.40 339 *i* Pr 17 47 15.6
SAO San Andreas Ge 86.44 53 PFAKE 17 47 30.0 +13
SAO LR LR
comp=Z,917nm,19.0s,MS5.2
RES Resolute Bay 86.46 13 *e*P **P** **17 47 16.1 -0.2**
RES pmax pmax
comp=Z,70nm,0.8s,mb5.9
RES Resolute Bay 86.46 13 *e*P **P** **17 47 16.1 -0.1**
comp=Z,70nm,0.8s,mb5.9
BEKR Beckwourth 86.63 50 *e*P **P** **17 47 18.3 +0.4**
comp=Z,57nm,1.1s,mb5.7
LNOR Lincton Mounta 86.78 44 *e*P **P** **17 47 18.2 -0.2**
LNOR Lincton Mounta 86.78 44 *e*P **P** **17 47 18.3 -0.1**
LRV Little Rabbit 86.85 54 *e*P **P** **17 47 20.4 +1.3**
APA Apatity 86.97 339⇓ *i*P **P** **17 47 17.8 -1.1**
APA *i* 17 47 23.6
APA *i* 17 47 35.8
APA *i* 17 57 45.0
APA pmax pmax
comp=Z,140nm,1.3s,mb6.0
APA MLR MLR
comp=Z,1μm,18.0s,MS5.4
NEW Newport 86.98 41 P **P** **17 47 20.0 +0.6**
comp=Z,41nm,0.7s,mb5.8,baz=261,slow=3.1,SNR=31
NEW Newport 86.98 41 *e*P **P** **17 47 20.0 +0.6**
NEW pmax pmax
comp=Z,130nm,1.0s
NEW MLR MLR
comp=Z,2μm,20.0s
NEW Newport 86.98 41 *e*P **P** **17 47 19.9 +0.6**
comp=Z,130nm,1.0s,mb6.1
NEW LR LR
comp=Z,2μm,20.0s,MS5.5
MAK Makhachkala 86.99 313 *e*P **P** **17 47 25.0 +5.4**
MAK *e* 17 57 46.0
MAK pmax pmax
comp=Z,800nm,6.0s
MAK smax
comp=N,700nm,8.0s
MAK smax
comp=E,1μm,8.0s
CMB Columbia Colle 87.00 52 *e*P **P** **17 47 20.0 +0.3**
CMB pmax pmax
comp=Z,34nm,0.8s,mb5.6
CMB MLR MLR
comp=Z,610nm,20.0s,MS5.0
CMB Columbia Colle 87.00 52 *e*P **P** **17 47 20.0 +0.2**
comp=Z,34nm,0.8s,mb5.6
CMB LR LR
comp=Z,606nm,20.0s,MS5.0
WCN Washoe City 87.21 51 *e*P **P** **17 47 22.1 +1.4**
WCN pmax pmax
comp=Z,23nm,0.8s,mb5.5
WCN Washoe City 87.21 51 *e*P **P** **17 47 22.1 +1.4**
comp=Z,23nm,0.8s,mb5.5
WVOR Wild Horse Val 87.33 47 *e*P **P** **17 47 21.8 +0.6**
WVOR pmax pmax
comp=Z,38nm,1.0s,mb5.6
WVOR MLR MLR
comp=Z,2μm,19.0s,MS5.6
WVOR Wild Horse Val 87.33 47 *e*P **P** **17 47 21.8 +0.6**
comp=Z,38nm,1.0s,mb5.6
WVOR LR LR
comp=Z,2μm,19.0s,MS5.6
KEV Kevo 88.08 342 *e*p **P** **17 47 23.8 -0.4**
comp=Z,3.7nm,0.4s,mb5.0
KEV Kevo 88.08 342 *e*P **P** **17 47 23.8 -0.4**
KEV pmax pmax
comp=Z,4.0nm,0.4s,mb5.0
NVAR Mina Array Bea 88.51 51 P **P** **17 47 28.2 +1.3**
comp=Z,27nm,0.6s,mb5.7,baz=271,slow=4.0,SNR=135
MTUM Tungsten Hills 88.56 52 *e*P **P** **17 47 28.3 +1.0**
ARCES ARCESS Array B 88.65 342 P **P** **17 47 26.8 -0.1**
comp=Z,12nm,0.6s,mb5.4,baz=65,slow=6.1,SNR=111
ARCES LR LR 18 31 43.8
comp=Z,828nm,18.7s,MS5.2,baz=66,slow=39
ARE0 ARCESS Array S 88.65 342 *e*P **P** **17 47 26.9 0.0**
WALA Waterton Lakes 88.82 40 *e*P **P** **17 47 29.6 +1.5**
comp=Z,98nm,1.3s,mb6.0
BMN Battle Mountai 88.84 49 *e*P **P** **17 47 29.0 +0.5**
BMN pmax pmax
comp=Z,32nm,0.9s,mb5.7
BMN MLR MLR
comp=Z,2μm,20.0s,MS5.5
BMN Battle Mountai 88.84 49 *e*P **P** **17 47 29.0 +0.5**
comp=Z,32nm,0.9s,mb5.7
BMN LR LR
comp=Z,2μm,20.0s,MS5.5
TPH Tonopah 89.42 51⇓ *i*P **P** **17 47 32.1 +0.8**
TPH pmax pmax
comp=Z,46nm,0.8s,mb5.9
TPH MLR MLR
comp=Z,670nm,21.0s,MS5.0
TPH Tonopah 89.42 51⇓ *i*P **P** **17 47 32.1 +0.8**
comp=Z,46nm,0.8s,mb5.9
TPH LR LR
comp=Z,669nm,21.0s,MS5.0
MSO Missoula 89.44 42⇓ *e*P **P** **17 47 32.8 +1.6**
comp=Z,35nm,1.3s,mb5.5
MSO LR LR
comp=Z,2μm,20.0s,MS5.5
MOS Moscow 89.54 327 *e*P **P** **17 47 30.6 -0.8**
MOS *i* 17 47 36.8
MOS *e* 17 51 00.2
MOS *e*S S 17 58 10.3 -7.6
MOS *e*PS PS 17 59 24.6 -5.2
MOS pmax pmax
comp=Z,180nm,1.0s,mb6.4
MOS MLR MLR
comp=Z,2μm,17.0s,MS5.6
DAC Darwin (Calif) 89.58 53 *e*P **P** **17 47 33.1 +1.0**
DAC pmax pmax
comp=Z,48nm,1.0s,mb5.8
DAC MLR MLR
comp=Z,990nm,19.0s,MS5.3
DAC Darwin (Calif) 89.58 53 *e*P **P** **17 47 33.1 +1.0**
comp=Z,48nm,0.9s,mb5.8
DAC LR LR
comp=Z,988nm,19.0s,MS5.3
GOF Gofitskoye 89.58 316⇑ *i*P **P** **17 47 31.0 -0.9**
GOF *e*S S 17 58 10.0 -8.6
GOF pmax pmax
comp=Z,130nm,1.6s,mb6.0
GOF MLR MLR
comp=N,2μm,20.0s,MS5.7
GOF MLR MLR
comp=E,2μm,20.0s,MS5.7
GOF MLR MLR
comp=Z,2μm,20.0s,MS5.5
ZEI Tsey 89.61 314⇑ *e*P **P** **17 47 31.8 -0.3**
VNDA Vanda 89.68 176 P **P** **17 47 31.7 0.0**
comp=Z,1.8nm,0.9s,baz=12,slow=9.3,SNR=2.1
VNDA LR LR 18 28 49.0
comp=Z,820nm,19.0s,MS5.2,baz=343,slow=36
VNDA Vanda 89.68 176 *e*P **P** **17 47 30.8 -0.8**
VNDA pmax pmax
comp=Z,4.0nm,1.0s
VNDA MLR MLR
comp=Z,440nm,20.0s
VNDA Vanda 89.68 176 *e*P **P** **17 47 30.8 -0.8**
comp=Z,4.2nm,1.0s,mb4.7
GNI Garni 89.69 311 LR LR 18 35 03.5
comp=Z,546nm,18.7s,MS5.0,baz=67,slow=40
MWC Mount Wilson 89.71 55⇑ *e*P **P** **17 47 33.6 +0.8**
JOF Joensuu 89.72 335 *e*p **P** **17 47 29.7 -2.4**
comp=Z,18nm,0.6s,mb5.6
JOF Joensuu 89.72 335 *e*P **P** **17 47 29.7 -2.4**
JOF pmax pmax
comp=Z,18nm,0.6s,mb5.6
CHMT Chamberlain Mo 89.86 42 *e*P **P** **17 47 33.4 +0.2**
VOR Voronezh 90.00 323 *e*P **P** **17 47 32.5 -1.2**
VOR *e* 17 47 38.0
VOR *e**SP sP 17 47 46.5 +0.6
VOR *e*S S 17 58 20.0 -2.3
VOR pmax pmax
comp=E,60nm,1.2s
VOR pmax pmax
comp=Z,50nm,1.2s,mb5.7
VOR smax
comp=N,100nm,1.5s
VOR smax
comp=E,100nm,1.5s
HLID Hailey 90.03 45 *e*P **P** **17 47 34.9 +0.8**
comp=E,84nm,1.2s,mb6.0
HLID *e*PP PP 17 51 06.2 -3.5
HLID LR LR
comp=Z,1μm,20.0s,MS5.3
KIV Kislovodsk 90.13 315 *e*P **P** **17 47 33.6 -0.9**
KIV *e*PPP PPP 17 53 03.7 -5.8
KIV *e* 17 58 02.7
KIV pmax pmax
comp=Z,40nm,1.1s,mb5.7
KIV pmax pmax
comp=N,8.0nm,0.8s
KIV MLR MLR
comp=Z,630nm,21.0s,MS5.0
KIV MLR MLR
comp=N,400nm,19.0s
KIV Kislovodsk 90.13 315 *e*P **P** **17 47 34.1 -0.3**
comp=N,48nm,0.8s,mb5.9
KIV LR LR
comp=Z,1μm,20.0s,MS5.3
OBN Obninsk 90.32 327 *e*P **P** **17 47 34.3 -0.8**
OBN *e* 17 51 12.9
OBN *e*S S 17 58 07.7 -17
OBN *e*PS PS 17 59 27.5 -11
OBN pmax pmax
comp=Z,303nm,1.3s,mb6.5
OBN Obninsk 90.32 327 *e*P **P** **17 47 34.1 -1.0**
comp=Z,404nm,1.3s,mb6.6
OBN *e* 17 47 39.9
OBN LR LR
comp=Z,859nm,21.0s,MS5.2
SBA Scott Base 90.34 175 PFAKE 17 47 50.0 +15
SBA LR LR
comp=Z,841nm,19.0s,MS5.2
TRO Tromso 90.51 343 *e*P **P** **17 47 35.2 -0.4**
TRO *e*PP PP 17 51 09.8 -3.1
TRO *e*SKSa 17 58 02.2
TRO AMS AMS 18 33 44.4
comp=Z,644nm,20.2s,MS5.0
MCMT McKenzie Canyo 90.75 44 *e*P **P** **17 47 38.1 +0.8**
MCMT *e*PP PP 17 51 09.4 -5.9
HRY Holter Researc 90.86 42 *e*P **P** **17 47 38.7 +0.9**
DAG Danmarks Havn 91.07 356⇑ *i*P **P** **17 47 37.2 -0.9**
comp=Z,2.8nm,0.5s,mb4.8
DAG Danmarks Havn 91.07 356⇑ *e*P **P** **17 47 37.2 -0.9**
DAG pmax pmax
comp=Z,3.0nm,0.5s,mb4.9
DAG Danmarks Havn 91.07 356⇑ *e*P **P** **17 47 37.2 -0.9**
comp=Z,2.8nm,0.5s,mb4.8
PFO Pinyon Flat Ob 91.15 55⇑ *e*P **P** **17 47 40.0 +0.6**
PFO *e* 17 47 46.2
PFO pmax pmax
comp=Z,140nm,1.4s,mb6.1
PFO MLR MLR
comp=Z,1μm,19.0s,MS5.4
PFO Pinyon Flat Ob 91.15 55⇑ *e*P **P** **17 47 40.0 +0.6**
comp=Z,139nm,1.4s,mb6.1
PFO *e* 17 47 46.2
PFO LR LR
comp=Z,1μm,19.0s,MS5.4
BAR Barrett 91.21 56 *e*P **P** **17 47 40.5 +0.8**
BOZ Bozeman (W) 91.32 43 *e*P **P** **17 47 40.1 +0.2**
BOZ *e* 17 51 13.0
BOZ pmax pmax
comp=Z,17nm,0.8s,mb5.4
BOZ MLR MLR
comp=Z,1μm,20.0s,MS5.3
BOZ Bozeman (W) 91.32 43 *e*P **P** **17 47 40.1 +0.2**
comp=Z,17nm,0.8s,mb5.4
BOZ *e*PP PP 17 51 13.0 -6.9
BOZ LR LR
comp=Z,1μm,20.0s,MS5.3
PUL Pulkovo 91.54 332⇑ *e*P **P** **17 47 46.0 +5.5**
PUL *e* 17 58 07.2
PUL *e*S S 17 58 37.6 +1.9
PUL pmax pmax
comp=Z,80nm,0.8s,mb6.1
PUL smax
comp=E,90nm,5.6s
PUL MLR MLR
comp=Z,400nm,12.0s,MS5.1
PUL MLR MLR
comp=N,410nm,13.0s,MS5.1
PUL MLR MLR
comp=E,270nm,16.0s,MS5.1
HVU Hansel Valley 91.70 47 *e*P **P** **17 47 43.0 +1.2**
HVU *e* 17 51 23.2
QLMT Earthquake Lak 91.71 44 *e*P **P** **17 47 42.9 +1.2**
BGU Big Grassy Mou 91.77 48 *e*P **P** **17 47 43.2 +1.1**
BGU *e*PP PP 17 51 22.9 -0.7
LDFC Landfair 91.84 54⇑ *e*P **P** **17 47 44.0 +1.4**
NEN Nelson 91.89 53 *e*P **P** **17 47 44.1 +1.4**
NEN *e*PP PP 17 51 24.2 -0.5
YMR Madison River 92.07 44 *e*P **P** **17 47 44.6 +1.2**
YMR *e* 17 47 51.0
SPUT South Promonto 92.08 47 *e*P **P** **17 47 44.5 +1.0**
KAF Kangasniemi 92.15 335 *e*p **P** **17 47 41.5 -1.8**
comp=E,28nm,0.7s,mb5.7,baz=57,slow=4.4
KAF Kangasniemi 92.15 335 *e*P **P** **17 47 41.5 -1.8**
KAF pmax pmax
comp=Z,28nm,0.7s,mb5.7
ERZM Erzurum 92.24 311 *i* P **P** **17 47 44.4 +0.1**
SOC Sochi 92.29 315 *e*P **P** **17 47 45.2 +0.8**
SOC *e* 17 51 28.0
SOC *e*S S 17 58 15.2 -28
SOC *e*SS SS 18 05 05.3 +8.1
SOC pmax pmax
comp=E,62nm,1.0s
SOC pmax pmax
comp=Z,67nm,1.6s,mb5.7
SOC pmax pmax
comp=N,26nm,0.8s
SOC pmax pmax
comp=E,890nm,20.0s
SOC pmax pmax
comp=N,467nm,21.0s
SOC pmax pmax
comp=E,396nm,16.0s
LKWY Lake 92.49 44 *e*P **P** **17 47 47.1 +1.8**
LKWY pmax pmax
comp=Z,25nm,1.0s,mb5.5
LKWY Lake 92.49 44 *e*P **P** **17 47 47.1 +1.8**
comp=Z,25nm,1.0s,mb5.5
REDW Red Top Meadow 92.57 45 *e*P **P** **17 47 47.9 +2.2**
REDW *e*PP PP 17 51 28.5 -1.5
FINES FINESS Array B 92.58 335 P **P** **17 47 44.4 -0.9**
comp=Z,17nm,0.7s,mb5.6,baz=73,slow=5.2,SNR=77
FINES PP PP 17 51 25.5 -4.1
comp=Z,24nm,1.3s,baz=90,slow=9.5,SNR=5.2
FINES LR LR 18 32 40.2
comp=Z,724nm,18.7s,MS5.2,baz=242,slow=38
AHID Auburn Hatcher 92.59 46 *e*P **P** **17 47 47.8 +2.0**
comp=Z,45nm,1.0s,mb5.9
AHID 17 47 52.5
AHID *e* LR LR
comp=Z,1μm,19.0s,MS5.4
HWUT Hardware Ranch 92.62 47⇑ *e*P **P** **17 47 46.7 +0.7**
comp=Z,39nm,1.1s,mb5.8
HWUT LR LR
comp=Z,2μm,20.0s,MS5.5
KSWY Kelly School 92.64 45 *e*P **P** **17 47 47.5 +1.5**
KSWY *e*PP PP 17 51 30.4 -0.1
NLU North Lily Min 92.76 48 *e*P **P** **17 47 48.0 +1.3**
CTU Camp Tracy 92.77 48 *e*P **P** **17 47 47.6 +1.0**
TCUT Toone Canyon 92.89 47 *e*P **P** **17 47 48.0 +0.8**
TCUT *e*PP PP 17 51 30.5 -2.0
JLU Jordanelle 93.02 48 *e*P **P** **17 47 48.7 +0.9**
JLU *e*PP PP 17 51 36.4 +2.8
MVU Marysvale 93.10 50 *e*P **P** **17 47 49.7 +1.5**
comp=Z,13nm,0.9s,mb5.4
MVU *e*PP PP 17 51 37.7 +3.4
MVU LR LR
comp=Z,2μm,21.0s,MS5.5
MSU Marysvale 93.12 50 *e*P **P** **17 47 49.8 +1.4**
DAU Daniels Canyon 93.22 48 *e*P **P** **17 47 49.9 +1.2**
DAU *e* 17 51 33.8
ANN Anapa 93.44 317 *e*P **P** **17 47 53.5 +3.8**
ANN pmax pmax
comp=Z,70nm,1.1s,mb6.0
BW06 Boulder Array 93.66 45 PFAKE 17 48 00.0 +9.3
BW06 LR LR
comp=Z,1μm,20.0s,MS5.4
PDAR Pinedale Array 93.66 45 P **P** **17 47 51.1 +0.4**
comp=Z,4.2nm,0.7s,mb5.0,baz=269,slow=3.6,SNR=15
PDAR PP PP 17 51 35.5 -3.2
comp=Z,3.9nm,1.0s,baz=270,slow=1.5,SNR=5.6
PDAR PKKPbc 18 04 55.4
comp=Z,0.6nm,0.8s,SNR=4.3
FFC Flin Flon 93.66 32 *e*P **P** **17 47 49.5 -0.9**
comp=Z,34nm,1.0s,mb5.7
FFC LR LR
comp=Z,933nm,20.0s,MS5.2
VSU Vasula 93.78 332 *e*Pr 17 47 50.3
ELZG Elazig 94.44 311 *i* P **P** **17 47 54.8 +0.3**
WUAZ Wupatki 94.64 52 *e*P **P** **17 47 56.8 +1.4**
comp=Z,42nm,0.9s,mb5.9
WUAZ LR LR
comp=Z,889nm,20.0s,MS5.2
MNK Minsk 95.17 328⇑ *e*P **P** **17 47 58.0 +0.6**
FCC Fort Churchill 95.45 26 *e*P **P** **17 47 57.8 -0.8**
FCC pmax pmax
comp=Z,41nm,1.1s,mb5.8
FCC Fort Churchill 95.45 26 *e*P **P** **17 47 57.8 -0.8**
comp=Z,41nm,1.1s,mb5.8
PV10 Paradox Valley 95.50 49 *e*P **P** **17 48 00.2 +0.9**
PV10 *e*PP PP 17 51 50.3 -2.1
SUMG Summit 95.84 1 *e*P **P** **17 48 01.7 +1.6**
SUMG *e*PP PP 17 51 51.8 -2.6
GZT Gaziantep 95.87 310 *e*P **P** **17 48 01.0 -0.1**
NSS Namsos 95.89 341 AMS AMS 18 31 13.0
comp=Z,994nm,21.1s,MS5.3
PV01 Paradox Valley 95.93 49 *e*P **P** **17 47 57.1 -4.2**
PV01 *e*PP PP 17 51 56.6 +0.7
TUC Tucson 96.09 55 *e*P **P** **17 48 01.7 -0.5**
comp=Z,13nm,1.1s,mb5.3
TUC *e*PP PP 17 51 59.4 +2.1
TUC LR LR
comp=Z,848nm,19.0s,MS5.2
AKASG Malin Array Be 96.18 325 P **P** **17 48 00.6 -1.5**
comp=Z,3.7nm,0.8s,mb4.8,baz=49,slow=3.5,SNR=12
AKASG PP PP 17 51 53.5 -4.1
comp=Z,4.6nm,0.9s,baz=54,slow=7.5,SNR=5.2
AKASG LR LR 18 34 09.1
comp=Z,993nm,18.6s,MS5.3,baz=50,slow=37
BOYT Boyabat 96.38 314 *i* P **P** **17 47 45.2 -18**
RW3 Ridgway 96.54 49 *e*P **P** **17 48 05.0 +0.9**
RSSD Black Hills 96.91 42 *e*P **P** **17 48 05.8 +0.3**
RSSD *e* 17 52 01.0
RSSD pmax pmax
comp=Z,30nm,1.2s,mb5.6
RSSD MLR MLR
comp=Z,220nm,20.0s,MS4.6
RSSD Black Hills 96.91 42 *e*P **P** **17 48 05.8 +0.2**
comp=Z,30nm,1.3s,mb5.6
RSSD *e*PP PP 17 52 01.0 -2.6
RSSD LR LR
comp=Z,221nm,20.0s,MS4.6
BALT Daday 97.39 315 *e*P **P** **17 48 07.5 -0.2**
SUW Suwalki 97.77 329 *e*P **P** **17 48 08.7 -0.5**
SUW *e* 17 48 14.6
BRTR Keskin Array B 97.90 313 P **P** **17 48 09.6 -0.6**
comp=Z,2.7nm,0.9s,mb4.8,baz=63,slow=2.8,SNR=9.1
BRTR PP PP 17 52 02.5 -9.2
comp=Z,5.2nm,0.8s,baz=95,slow=6.8,SNR=6.8
KIS Kishinev 98.09 321 *e*P **P** **17 48 15.0 +4.2**
KIS MLR MLR
comp=Z,1μm,17.0s,MS5.5
KIS MLR MLR
comp=E,1μm,18.0s
KIS MLR MLR
comp=Z,1μm,17.0s
LAZ Ladron 98.29 52 *e*P **P** **17 48 11.9 -0.1**
SDCO Great Sand Dun 98.33 49 PFAKE 17 48 20.0 +7.9
SDCO LR LR
comp=Z,1μm,20.0s,MS5.3
NB2 NORSAR Subarra 98.56 339 P **P** **17 48 11.7 -0.8**
comp=Z,8.3nm,0.9s,mb5.3,baz=42,slow=4.6
NB2 NORSAR Subarra 98.56 339 P **P** **17 48 11.7 -0.8**
baz=42,slow=4.6
NOA NORSAR Array B 98.56 339 P **P** **17 48 11.8 -0.8**
comp=Z,2.4nm,1.1s,mb4.7,baz=58,slow=3.9,SNR=7.2
NOA PP PP 17 52 10.1 -5.7
comp=Z,6.3nm,0.8s,baz=47,slow=7.8,SNR=9.5
NOA LR LR 18 36 41.0
comp=Z,576nm,19.9s,MS5.1,baz=45,slow=38
ANMO Albuquerque 98.62 52 PFAKE 17 48 30.0 +17
ANMO LR LR
comp=Z,1μm,20.0s,MS5.3
NAO01 NORSAR Array S 98.81 339 PFAKE 17 48 30.0 +16
NAO01 LR LR
comp=Z,1μm,21.0s,MS5.4
ULM Lac du Bonnet 99.08 34 P **P** **17 48 16.0 +0.9**
comp=Z,5.5nm,0.8s,mb5.2,baz=296,slow=3.6,SNR=6.7
ULM LR LR 18 29 36.2
comp=Z,1μm,19.9s,MS5.5,baz=119,slow=33
ULM Lac du Bonnet 99.08 34 *e*P **P** **17 48 15.7 +0.5**
comp=Z,12nm,0.9s,mb5.4
ULM LR LR
comp=Z,2μm,19.0s,MS5.7
VRI Vrincioaia 99.89 321⇓ *i*P **P** **17 48 25.5 +6.5**
KONO Kongsberg 100.11 338 *e*PP PP 17 52 19.5 -8.3
KONO *e*SS SS 18 06 43.8 -3.0
KONO AMS AMS 18 36 19.8
comp=Z,637nm,20.0s,MS5.1
KONO Kongsberg 100.11 338 PFAKE 17 48 30.0 +10
KONO LR LR
comp=Z,1μm,20.0s,MS5.4
KWP Kalwaria 100.36 326 *e*P P 17 48 21.1 +0.1
KWP *e* 17 48 27.0
MLR Muntele Rosu 100.56 321⇓ *i*P P 17 48 28.1 +6.1
MNTX Cornudas Mount 100.62 54 *e*Pdif P 17 48 22.7 0.0
comp=Z,19nm,1.1s
MNTX *e*PP PP 17 52 21.7 -11
MNTX LR LR
comp=Z,503nm,20.0s,MS5.0
FRB Frobisher Bay 100.65 14 P P 17 48 22.0 0.0
comp=Z,5.1nm,0.7s,baz=358,slow=6.2,SNR=3.7
GDL2 Guadalupe Moun 101.25 54 *e*P P 17 48 26.0 +0.6
CRVS Cervenica-Dubn 101.44 326 PDIF P 17 48 26.5 +0.6
CRVS Cervenica-Dubn 101.44 326 *e*P P 17 48 26.5 +0.6
OJC Ojcow 101.61 327 *e*P P 17 48 27.2 +0.6
OJC *e* 17 48 32.5
OJC *e*SKS(ac) 17 59 05.4
OJC *e*SP SP 18 01 31.0 -6.8
OJC MLR MLR 18 37 44.4
comp=Z,900nm,20.3s,MS5.3
OJC Ojcow 101.61 327⇑ *e*P P 17 48 27.2 +0.6
OJC *e* 17 59 05.4
OJC *e*SP SP 18 01 31.0 -6.8
OJC MLR MLR
comp=Z,900nm,20.3s,MS5.3
NIE Niedzica 101.78 326 *e*P P 17 48 28.0 +0.6
NIE *e* 17 48 34.9
CBKS Cedar Bluff 102.06 46 PFAKE 17 48 40.0 +11
CBKS LR LR
comp=Z,1μm,21.0s,MS5.4
OKC Ostrava-Krasne 102.70 328 *e*PDIF Pdif 17 48 37.5 +6.1
OKC L 18 40 40.0
comp=Z,1.1nm,16.7s
OKC Ostrava-Krasne 102.70 328 *i* P Pdif 17 48 37.5 +6.1
OKC MLR MLR
comp=Z,1μm,16.7s,MS5.5
TXAR Lajitas Array 102.85 56 P Pdif 17 48 34.2 +1.6
comp=Z,1.3nm,0.7s,baz=288,slow=4.0,SNR=5.4
TXAR PP PP 17 52 47.3 -2.2
comp=Z,0.4nm,0.2s,baz=309,slow=5.8,SNR=4.0
KSP Ksiaz 103.05 329 *e*P Pdif 17 48 34.7 +1.8
KSP *e* 17 48 38.7
KSP Ksiaz 103.05 329 *e*P Pdif 17 48 33.8 +0.9
KSP *e* 17 59 10.0
KSP *e*SP SP 18 01 46.0 -7.2
KSP *e*SS SS 18 07 22.0 -6.2
KSP MLR MLR
comp=Z,3μm,18.6s,MS5.8
KSP Ksiaz 103.05 329 *e*Pdif Pdif 17 48 33.8 +0.9
KSP *e* 17 48 38.4
KSP *e*SKS SKS 17 59 10.0 -7.6
KSP *e*SP SP 18 01 46.0 -7.2
KSP *e*SS SS 18 07 22.0 -6.2
KSP LR LR

comp=Z,3µm,18.6s,MS5.8
VYHS Vyhne 103.11 326 PDIF Pdif 17 48 33.7 +0.5
VYHS Vyhne 103.11 326 *eP* Pdif 17 48 33.7 +0.5
VYHS *eS* x 17 59 17.5
DPC Dobruska-Polom 103.33 329 *e*PDIF Pdif 17 48 38.8 +4.6
DPC *e*PP PP 17 52 58.6 +6.1
DPC *e*SKS SKS 17 59 24.7 +5.8
DPC L 18 36 50.0
comp=Z,1.2nm,19.6s
DPC Dobruska-Polom 103.33 329 *eP* Pdif 17 48 38.8 +4.6
DPC MLR MLR
comp=Z,1µm,19.6s,MS5.4
UPC Upice 103.39 329 *e*PDIF Pdif 17 48 36.2 +1.8
PVCC Panska Ves 104.10 330 *e*PDIF Pdif 17 48 43.4 +5.8
PVCC L 18 41 40.0
comp=Z,1.3nm,18.7s
BRG Berggiesshubel 104.19 330 *eP* Pdif 17 48 44.1 +6.1
BRG *e* 17 52 54.1
BRG *e* 18 01 59.0
BRG pmax pmax
comp=Z,22nm,0.6s
BRG MLR MLR
comp=N,1µm,21.8s,MS5.6
BRG MLR MLR
comp=E,1µm,21.8s,MS5.6
BRG MLR MLR
comp=Z,1µm,21.8s,MS5.3
BRG Berggiesshubel 104.19 330 *eP* Pdif 17 48 44.1 +6.1
comp=Z,22nm,1.6s
BRG *e* 17 48 56.2
BRG *e* 17 52 05.7
BRG *e*PP PP 17 52 54.1 -4.6
BRG *e* 17 59 23.0
BRG *e* 18 01 59.0
BRG *e*SS SS 18 08 10.0 +27
BRG LR LR
comp=Z,1µm,21.8s,MS5.3
ZST Bratislava 104.22 327 *eP* Pdif 17 48 45.0 +6.9
CLL Collm 104.36 331 P Pdif 17 48 38.4 -0.3
CLL *i* 17 48 44.5
CLL *i* *PP 17 48 53.4
CLL *e* 17 49 17.0
CLL *e* 17 51 55.0
CLL *i* PP PP 17 52 56.8 -3.3
CLL *i* *PPP 17 53 03.9
CLL *e*PPP PPP 17 55 11.0 -3.1
CLL *e*SKS SKS 17 59 22.0 -1.6
CLL *e*PS PS 18 02 02.0 -7.8
CLL *e*SS SS 18 08 12.0 +26
CLL *e*SSS SSS 18 11 48.0 +4.6
CLL Collm 104.36 331 *i* P Pdif 17 48 38.4 -0.3
CLL *e* 17 59 22.0
CLL Collm 104.36 331 *i* P Pdif 17 48 38.4 -0.3
CLL *i* 17 48 44.5
CLL *e*SKS SKS 17 59 22.0 -1.6
PRU Pruhonice 104.46 329 *e*PDIF Pdif 17 48 45.3 +6.2
comp=Z,27nm,1.6s
PRU *e*PP PP 17 52 53.5 -7.3
PRU L 18 41 40.0
comp=Z,1.1nm,18.0s
PRU Pruhonice 104.46 329 *i* P Pdif 17 48 45.3 +6.2
PRU *e* 17 52 53.5
PRU pmax pmax
comp=Z,27nm,1.6s
PRU MLR MLR
comp=Z,1µm,18.0s,MS5.4
WMOK Wichita Mounta 104.51 49 PFAKE 17 48 50.0 +10
WMOK LR LR
comp=Z,851nm,19.0s,MS5.3
SKO Skopje 105.15 320 *i* P Pdif 17 48 48.8 +6.4
MOX Moxa 105.46 331 *i* P Pdif 17 48 49.6 +6.1
comp=Z,logA/T=1.0
MOX PP PP 17 53 00.0 -8.4
MOX Moxa 105.46 331 *eP* Pdif 17 48 49.6 +6.1
MOX pmax pmax
comp=Z,16nm,1.6s
MOX Moxa 105.46 331 *eP* Pdif 17 48 49.6 +6.1
comp=Z,16nm,1.6s
KHC Kasperske Hory 105.48 329 *e*PDIF Pdif 17 48 49.5 +5.8
KHC *e*PP PP 17 53 04.3 -4.3
KHC *e*SKS SKS 17 59 32.4 +3.7
KHC L 18 40 00.0
comp=Z,1.4nm,19.8s
KHC Kasperske Hory 105.48 329 *eP* Pdif 17 48 49.5 +5.8
KHC *e* 17 53 04.3
KHC MLR MLR
comp=Z,1µm,19.8s,MS5.5
JCT Junction City 105.51 54 PFAKE 17 53 10.0
JCT LR LR
comp=Z,725nm,21.0s,MS5.2
GERES GERESS Array B 105.60 329 Pdiff Pdif 17 48 44.7 +0.5
comp=Z,3.2nm,1.0s,slow=1.3,SNR=7.1
GERES PP PP 17 53 05.6 -3.9
comp=Z,4.4nm,0.8s,baz=59,slow=7.8,SNR=8.9
ARSA Arzberg 105.64 327⇑ *i*P Pdif 17 48 44.7 +0.3
comp=Z,8.6nm,1.1s
ARSA *i* 17 48 51.0
comp=Z,32nm,1.3s
MOA Molln 105.94 328⇑ *i*P Pdif 17 48 44.9 -0.8
comp=Z,3.3nm,0.9s
MOA *i* 17 48 52.2
comp=Z,14nm,1.5s
SYO Syowa Base 106.15 201 ⇓Pdiff Pdif 17 48 49.2 +3.0
SYO Syowa Base 106.15 201⇑ PP PP 17 53 10.1 -2.9
SYO Syowa Base 106.15 201⇓ *e*Pdif Pdif 17 48 49.2 +3.0
SYO ⇑ *e*PP PP 17 53 10.1 -2.9
JFWS Jewell Farm 106.27 39 PFAKE 17 53 10.0
JFWS LR LR
comp=Z,2µm,20.0s,MS5.7
GRA1 Grafenberg Arr 106.28 330 *e*Pdif Pdif 17 48 53.7 +6.5
GRA1 *e*PP PP 17 53 10.6 -3.9
GRF Grafenberg Arr 106.28 330 *eP* Pdif 17 48 53.7 +6.5
GRF *e* 17 53 10.6
WTSB Winterswijk 106.72 334 *eP* 17 53 11.6
comp=Z,11nm,0.6s
BOJS Bojanci 106.85 325 *e* Pdif 17 48 51.6 +1.8
BOJS *e* 17 48 56.7
KMBO Kilima Mbogo 106.90 272 PFAKE 17 53 10.0
KMBO LR LR
comp=Z,265nm,20.0s,MS4.8
ESK Eskdalemuir 107.82 341 PFAKE 17 53 10.0
ESK LR LR
comp=Z,863nm,19.0s,MS5.3
HGN Heimansgroeve 107.97 334⇑ *eP* 17 53 22.7
comp=Z,0.4nm,0.2s
RUP Ruppelstein 108.23 332 *eP* 17 53 24.5
CCM Cathedral Cave 108.26 43 PFAKE 17 53 10.0
CCM LR LR
comp=Z,247nm,21.0s,MS4.8
MIAR Mount Ida 108.42 47 PFAKE 17 53 10.0
MIAR LR LR
comp=Z,1µm,21.0s,MS5.5
SCHQ Schefferville 108.67 18 PFAKE 17 53 10.0
SCHQ LR LR
comp=Z,1µm,20.0s,MS5.5
HKT Hockley 108.84 53 PFAKE 17 53 20.0
HKT LR LR
comp=Z,200nm,20.0s,MS4.7
WLS Welschbruch 109.01 331 *eP* PP 17 53 30.1 -5.2
ECH Echery 109.25 331 *eP* PP 17 53 30.1 -6.9
MOF Molkenrain 109.52 331 *eP* PP 17 53 32.5 -6.4
AAM Ann Arbor 110.55 36 PFAKE 17 53 20.0 +10
AAM LR LR
comp=Z,3µm,21.0s,MS5.9
DLF Lyons Farm 110.58 342 *eP* PP 17 53 39.0 -7.1
DCN Croghan 110.76 342 *eP* PP 17 53 40.0 -7.4
LPL La Plagne 111.36 329 *eP* Pdif 17 49 15.1 +5.5
comp=Z,15nm,1.1s
LPG La Plagne 111.36 329 *eP* Pdif 17 49 16.5 +6.8
comp=Z,9.1nm,1.0s
OXF Oxford 111.39 46 PFAKE 17 53 20.0 +7.9
OXF LR LR
comp=Z,1µm,22.0s,MS5.5
WCI Wyandotte Cave 111.42 41 PFAKE 17 53 20.0 +7.9
WCI LR LR
comp=Z,1µm,20.0s,MS5.5
WVT Waverly 111.60 43 PFAKE 17 53 20.0 +7.5
WVT LR LR
comp=Z,959nm,19.0s,MS5.4
PLAL Pickwick Lake 112.06 45 PFAKE 17 53 20.0 +6.6
PLAL LR LR
comp=Z,1µm,21.0s,MS5.5
ACSO Alum Creek Sta 112.25 37 PFAKE 17 53 20.0 +6.3
ACSO LR LR
comp=Z,3µm,20.0s,MS5.8
ERPA Erie 112.74 34 PFAKE 17 53 20.0 +5.4
ERPA LR LR
comp=Z,2µm,22.0s,MS5.6
LRAL Lakeview Retre 113.88 46 PFAKE 17 53 30.0 +13
LRAL LR LR
comp=Z,1µm,19.0s,MS5.6
NCB Newcomb 114.42 30 PFAKE 17 53 30.0 +12
NCB LR LR
comp=Z,2µm,22.0s,MS5.6
SSPA Standing Stone 114.91 34 PFAKE 17 53 30.0 +11
SSPA LR LR
comp=Z,2µm,20.0s,MS5.6
PQI Presque Isle 115.05 24 PFAKE 17 53 30.0 +11
PQI LR LR
comp=Z,9µm,22.0s,MS6.3
LBNH Lisbon 115.30 28 PFAKE 17 53 30.0 +10
LBNH LR LR
comp=Z,1µm,22.0s,MS5.5
BLA Blacksburg 115.71 39 PFAKE 17 53 30.0 +9.4
BLA LR LR
comp=Z,2µm,21.0s,MS5.7
WVL Waterville 116.06 26 PFAKE 17 53 30.0 +8.9
WVL LR LR
comp=Z,5µm,21.0s,MS6.1
HRV Harvard--Oak R 116.80 29 PFAKE 17 53 30.0 +7.5
HRV LR LR
comp=Z,387nm,22.0s,MS5.0
CBN Corbin 116.86 36 PFAKE 17 53 30.0 +7.2
CBN LR LR
comp=Z,3µm,20.0s,MS5.9
EMMW East Machias 116.87 25 PFAKE 17 53 30.0 +7.4
EMMW LR LR
comp=Z,7µm,19.0s,MS6.3
SNAA Sanae 116.88 191⇓ *i* PKPdf 17 53 25.0 +3.0
SNAA Sanae 116.88 191⇓ *i* PKPdf 17 53 39.3 +17
SNAA Sanae 116.88 191 *e*PKPdf PKPdf 17 53 17.0 -5.0
WES Weston 117.00 29 PFAKE 17 53 30.0 +7.1
WES LR LR
comp=Z,1µm,19.0s,MS5.6
VNA2 Neumayer--Watz 118.33 190 PKPdf 17 53 28.6 +3.8
VNA2 Neumayer--Watz 118.33 190 PKPdf 17 53 43.1 +18
VNA3 Neumayer Olymp 118.43 189⇓ *i* PKPdf 17 53 26.3 +1.3
VNA3 Neumayer Olymp 118.43 189⇑ *i* PKPdf 17 53 42.3 +17
VNA1 Neumayer--Stat 118.71 190⇑ *i* PKPdf 17 53 45.9 +20
DWPF Disney 120.61 47 PFAKE 17 53 40.0 +10
DWPF LR LR
comp=Z,304nm,21.0s,MS4.9
LBTB Lobatse 120.77 248 PFAKE 17 53 40.0 +9.3
LBTB LR LR
comp=Z,207nm,20.0s,MS4.8
ESDC Sonseca Array 120.94 332 PKP PKPdf 17 53 29.0 -1.6
comp=Z,0.3nm,0.3s,baz=62,slow=2.7,SNR=3.4
ESDC PP PP 17 54 55.3 -3.7
comp=Z,6.8nm,1.0s,baz=22,slow=8.0,SNR=6.5
ESLA Sonseca Array 120.94 332 PFAKE 17 53 40.0 +9.3
ESLA LR LR
comp=Z,4µm,19.0s,MS6.0
MTE Manteigas 121.92 335 *e*PKPdf PKPdf 17 53 35.3 +2.8
EVO Evora 123.68 334 *e*PKIKP PKPdf 17 53 34.5 -1.5
comp=Z,48nm,1.3s
SUR Sutherland 124.39 239 PFAKE 17 53 50.0 +12
SUR LR LR
comp=Z,547nm,21.0s,MS5.2
BBSR BB Station 128.11 31 PFAKE 17 53 50.0 +5.2
BBSR LR LR
comp=Z,3µm,21.0s,MS5.9
OTAV Otavalo 135.93 77 *e*PKPdf PKPdf 17 53 58.8 -1.1
SJG San Juan 137.78 46 PFAKE 17 54 10.0 +6.8
SJG LR LR
comp=Z,918nm,22.0s,MS5.5
DBIC Dimbokro 144.26 299 PKP PKPdf 17 54 09.3 -5.5
comp=Z,39nm,0.8s,baz=53,slow=4.1,SNR=40
DBIC Dimbokro 144.26 299 *e*PKPdf PKPdf 17 54 09.2 -5.6
DBIC LR LR
comp=Z,267nm,19.0s,MS5.0
KIC Kosan Boka 144.32 299⇓ *i*PKP1 PKPbc 17 54 09.4 -0.1
comp=Z,244nm,0.9s
TIC Toumodi 144.42 299⇓ *i*PKP1 PKPbc 17 54 09.7 0.0
comp=Z,405nm,1.1s
LIC Lamto 144.64 299⇓ *i*PKIKP PKPdf 17 54 10.5 -5.0
comp=Z,124nm,0.7s
LIC Lamto 144.64 299⇓ *i*PKP1 PKPbc 17 54 10.4 +0.1
comp=Z,202nm,0.7s
TRQA Tornquist 144.83 143 *e*PKPdf PKPdf 17 54 10.0 -5.2
ARE Arequipa 145.02 102 *eP* PKPbc 17 54 14.0 +2.7
ARE *i* 17 54 21.4
LVC Limon Verde 146.57 113 *e*PKPbc PKPbc 17 54 17.9 +3.0
LVC LR LR
comp=Z,417nm,19.0s,MS5.2
LPAZ La Paz 148.25 102 PKPbc PKPdf 17 54 20.3 -1.1
comp=Z,5.1nm,0.8s,baz=310,slow=2.2,SNR=10
LPAZ La Paz 148.25 102 *e*PKPdf PKPdf 17 54 19.3 -2.1
LPAZ LR LR
comp=Z,219nm,21.0s,MS4.9
SACV Santiago Islan 150.87 335 *e*PKPbc PKPdf 17 54 29.8 +4.2
BDFB Brasilia 167.44 109 PKP PKPdf 17 54 40.9 -3.6
comp=Z,1.5nm,0.4s,baz=260,slow=2.8,SNR=4.4
CAM4 Nova Friburgo 167.59 149 (P) PKPdf 17 54 49.1 +4.7
CAM4 *i* 17 54 52.5
CAM4 *i* 17 54 58.0
CAM4 *i* 17 55 04.6
CAM4 *i* 17 55 12.2
CAM3 Guarapari 169.95 153 (P) PKPdf 17 54 51.6 +5.7
CAM3 *i* 17 55 00.2
CAM3 *i* 17 55 04.5
CAM3 *i* 17 55 14.0
CAM3 *i* 17 55 33.0
RCBR Riachuelo 174.11 2 PFAKE 17 55 00.0 +12
RCBR LR LR
comp=Z,2.0nm,19.0s

IDC ***13*** *17:37:37.0±1.1,29.74S×177.31W,mb4.5/6,mb1 4.6/8, mb1mx4.5/15,ML4.3/2,Error ellipse: s-maj=37.4km s-min=28.5km az=164.0*
NEIC ***13*** *17:37:39.5±0.8,29.94S×177.33W,h15km,mb5.3/3,Error ellipse: s-maj=19.5km s-min=14.3km az=79.0*
ISC 13 17:37:57.3±3.9, 30.7S±0.1×178.4W±0.2, h127km±32km, n32,σ1§22/27, mb4.7/9, 3C, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**7.84**	**200**	S		**S**		**17 41 22.2**	**+4.7**
URZ	**Urewera**	**8.39**	**205**	Pn		**P**		**17 39 49.8**	**-7.4**
	1.1nm,0.3s,baz=156,slow=21,SNR=6.8								
URZ				Sn		S		**17 41 33.3**	**+2.6**
	5.7nm,0.3s,baz=204,slow=23,SNR=7.3								
URZ	**Urewera**	**8.39**	**205**	*eP*		**S**		**17 39 50.0**	**-7.2**
BFZ	**Birch Farm**	**10.85**	**202**	*e*S		**S**		**17 42 28.9**	**-0.6**
MRZ	**Mangatainoka R**	**11.06**	**205**	*e*S		**S**		**17 42 32.1**	**-2.4**
SNZO	**South Karori**	**11.95**	**206**	P		**P**		**17 40 44.2**	**-0.2**
SNZO				*e*Sn		**S**		**17 42 54.1**	**-1.4**
THZ	**Tophouse**	**13.06**	**210**	*eP*		**P**		**17 40 55.5**	**-3.4**
THZ				*e*S		**S**		**17 43 22.8**	**+1.2**
RPZ	**Rata Peaks**	**15.44**	**210**	Pn		**P**		**17 41 29.4**	**+0.2**
	2.2nm,0.3s,baz=40,slow=3.1,SNR=13								
CTA	**Charters Tower**	**33.50**	**280**	P		**P**		**17 44 26.8**	**+0.2**
	5.7nm,0.5s,mb4.7,baz=99,slow=11,SNR=5.8								
CTAO	**Charters Tower**	**33.50**	**280**	*eP*		**P**		**17 44 26.8**	**+0.1**
STKA	**Stephens Creek**	**34.07**	**257**	P		**P**		**17 44 34.2**	**+2.8**
	21nm,0.9s,mb5.0,baz=42,slow=12,SNR=8.3								
ASAR	**Alice Springs**	**42.74**	**267**	P		**P**		**17 45 43.2**	**-0.4**
	2.8nm,0.4s,mb4.3,baz=105,slow=7.3,SNR=18								
WRAB	**Tennant Creek**	**43.76**	**273**	*eP*		**P**		**17 45 51.9**	**+0.1**
	38nm,0.9s,mb5.1								
WRA	**Warramunga Arr**	**43.76**	**273**	P		**P**		**17 45 51.2**	**-0.7**
	4.8nm,0.4s,mb4.6,baz=111,slow=8.0,SNR=25								
SBA	**Scott Base**	**47.70**	**184**	P		**P**		**17 46 22.5**	**+0.2**
VNDA	**Vanda**	**47.75**	**186**	P		**P**		**17 46 23.4**	**+0.6**
	0.7nm,0.6s,mb3.7,baz=15,slow=5.6,SNR=5.7								
FITZ	**Fitzroy Crossi**	**52.01**	**270**	P		**P**		**17 46 55.1**	**-0.9**
	3.7nm,1.0s,mb4.3,baz=161,slow=18,SNR=5.2								
NWAO	**Narrogin (SRO)**	**53.96**	**250**	P		**P**		**17 47 10.2**	**+0.1**
	111nm,1.8s,mb5.6								
QSPA	**South Pole Qui**	**59.40**	**180**	*eP*		**P**		**17 47 47.2**	**-0.9**
	4.8nm,0.6s,mb4.7								
QSPA				*e*				17 58 25.3	
SNAA	**Sanae**	**77.86**	**179**⇑	*i*		**P**		**17 49 44.5**	**+2.9**
SNAA	**Sanae**	**77.86**	**179**⇑	*i*		**P**		**17 49 48.3**	**+6.7**
VNA3	**Neumayer Olymp**	**78.02**	**176**⇑	*i*		**P**		**17 49 52.1**	**+10**
VNA2	**Neumayer--Watz**	**78.45**	**177**			**P**		**17 49 55.0**	**+10**
VNA2	**Neumayer--Watz**	**78.45**	**177**			**P**		**17 49 59.0**	**+14**
MKAR	**Makanchi Array**	**117.70**	**310**	PKP	PKPdf			17 56 24.1	-4.0
	0.5nm,0.7s,baz=224,slow=0.4,SNR=6.6								
ARCES	**ARCESS Array B**	**138.82**	**347**	PKhKP				17 56 56.9	
	5.8nm,1.1s,slow=6.3,SNR=4.6								
ARCES				PKP	PKPdf			17 57 04.7	-2.9
	1.7nm,0.8s,baz=135,slow=1.7,SNR=5.2								
KAF	**Kangasniemi**	**144.72**	**340**	*e*pkp	PKPdf			17 57 09.6	-8.5
	baz=40,slow=3.2								
FINES	**FINESS Array B**	**145.31**	**340**	PKP	PKPdf			17 57 14.2	-5.0
	12nm,0.7s,baz=58,slow=3.9,SNR=68								
NB2	**NORSAR Subarra**	**149.00**	**351**	PKP				17 57 24.1	
	3.4nm,0.7s,baz=14,slow=2.8								
NOA	**NORSAR Array B**	**149.00**	**351**	PKPbc	PKPdf			17 57 24.6	-0.6
	2.4nm,0.7s,baz=16,slow=4.4,SNR=7.1								
AKASG	**Malin Array Be**	**151.33**	**322**	PKPbc	PKPdf			17 57 31.6	+2.5
	2.8nm,0.7s,baz=46,slow=2.7,SNR=16								
AKASG				PKPab	PKPab			17 57 38.2	-8.0
	1.8nm,0.4s,baz=50,slow=2.9,SNR=13								
BRTR	**Keskin Array B**	**152.44**	**298**	PKPbc	PKPdf			17 57 36.0	+5.0
	0.5nm,0.6s,baz=135,slow=5.2,SNR=3.8								

IDC ***13*** *17:51:30.9±2.4,7.97N×125.95E,mb3.6/4,mb1 3.8/4, mb1mx3.5/18,Error ellipse: s-maj=142.0km s-min=27.3km az=68.0*
MAN ***13*** *17:51:33.5,8.17N×125.92E,h1km,mb4.7,ML3.7,MS3.5*
ISC 13 17:51:33.1±0.5, 8.10N±0.03×126.00E±0.03, h1km, n22, σ1§28/33, mb3.5/4, 9C-2D, Mindanao

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
BIPH	**Bislig**	**0.37**	**78**⇓	*eP*		**Pg**		**17 51 39.9**	**-0.5**
BIPH				*i*	S	**Sg**		**17 51 46.7**	**+1.3**
BUTP	**Butuan**	**0.94**	**337**⇑	*eP*		**Pg**		**17 51 50.5**	**-1.3**
BUTP				*e*	S	**Sg**		**17 52 04.9**	**+0.6**
DMPH	**Davao City--Mi**	**1.12**	**206**⇑	*i*P		**Pb**		**17 51 56.0**	**+1.0**
DMPH				*i*	S	**Sb**		**17 52 14.7**	**+4.7**
CGP	**Cagayan de Oro**	**1.34**	**285**⇑	*eP*		**Pb**		**17 51 56.7**	**-1.9**
CGP				*e*	S	**Sb**		**17 52 16.6**	**+0.4**
KCP	**Kidapawan**	**1.41**	**220**	*i* P		**Pb**		**17 51 59.0**	**-0.9**
KCP				*i*	S	**Sb**		**17 52 20.0**	**+1.7**
SCPH	**Surigao**	**1.74**	**343**	*eP*		**Pn**		**17 52 02.7**	**-2.0**
SCPH				*e*	S	**Sn**		**17 52 20.0**	**-7.8**
CTBH	**Cotabato--PC H**	**1.95**	**243**⇓	*i*P		**Pn**		**17 52 06.8**	**-0.8**
CTBH				*i*	S	**Sn**		**17 52 33.3**	**+0.3**
GSPH	**General Santos**	**2.26**	**208**	*eP*		**Pn**		**17 52 11.4**	**-0.6**
MSLP	**Maasin**	**2.31**	**331**⇑	*eP*		**Pn**		**17 52 10.9**	**-1.9**
PAGZ	**Pagadian**	**2.60**	**265**⇑	*eP*		**Pn**		**17 52 20.1**	**+3.1**
PAGZ				*e*	S	**Sn**		**17 52 52.3**	**+2.5**
TBP	**Tagbilaran**	**2.63**	**307**	*eP*		**Pn**		**17 52 15.6**	**-1.9**
DCPH	**Dipolog City**	**2.66**	**280**	*eP*		**Pn**		**17 52 17.7**	**-0.1**
SNPH	**Sibulan**	**3.00**	**294**	*eP*		**Pn**		**17 52 21.3**	**-1.3**
PLP	**Palo**	**3.20**	**342**	*eP*		**Pn**		**17 52 26.3**	**+0.7**
PLP				*e*	S	**Sn**		**17 53 06.0**	**+1.1**
OCLP	**Ormoc**	**3.23**	**335**⇑	*eP*		**Pn**		**17 52 26.4**	**+0.5**
BESP	**Borongan**	**3.52**	**351**⇑	*eP*		**Pn**		**17 52 30.2**	**+0.2**
BESP				*e*	S	**Sn**		**17 53 13.8**	**+0.9**
CNP	**Catarman**	**4.57**	**343**⇑	*eP*		**Pn**		**17 52 45.1**	**+0.1**
CNP				*e*	S	**Sn**		**17 53 42.1**	**+2.6**
PVCP	**Virac**	**5.75**	**342**⇑	*eP*		**Pn**		**17 53 01.4**	**-0.3**
FITZ	**Fitzroy Crossi**	**26.04**	**181**	P		**P**		**17 57 04.8**	**-5.1**
	2.0nm,0.9s,mb3.8,baz=25,slow=10,SNR=7.5								
WRA	**Warramunga Arr**	**29.05**	**164**	P		**P**		**17 57 31.4**	**-5.9**
	0.3nm,0.7s,mb3.2,baz=344,slow=9.1,SNR=4.8								
ASAR	**Alice Springs**	**32.51**	**166**	P		**P**		**17 58 03.1**	**-4.7**
	0.5nm,0.7s,mb3.6,baz=338,slow=7.7,SNR=5.6								
MKAR	**Makanchi Array**	**53.59**	**324**	P		**P**		**18 00 54.4**	**-3.7**
	0.3nm,0.7s,mb3.5,baz=124,slow=8.3,SNR=3.6								

FUNV ***13*** *17:54:50.8, 10.29N×61.67W, h23km, MW2.4*
TRN ***13*** *17:54:53.0, 10.38N×61.71W, h35km, MD2.5*
ISC 13 17:54:52.3±1.4, 10.35N±0.08×61.75W±0.06, h40km±20km, n8, σ0§39/16, 1C, Trinidad

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
TPP	**Pointe-a-Pierr**	**0.29**	**96**	*eP*		**P**		**17 55 00.9**	**+0.4**
TPP				*e*	S	**S**		**17 55 06.0**	**-0.1**
TCE	**Chacachacare**	**0.35**	**359**	*eP*		**P**		**17 55 01.1**	**0.0**
TCE				*e*	S	**S**		**17 55 07.5**	**+0.2**
TRN	**Trinidad (W)**	**0.45**	**48**	*eP*		**P**		**17 55 02.4**	**0.0**
TRN				*e*	S	**S**		**17 55 09.5**	**0.0**
GUIV	**Guiria**	**0.56**	**302**⇑	*i*P		**P**		**17 55 03.4**	**-0.4**
GUIV				*i*	S	**S**		**17 55 11.6**	**-0.5**
GUNV	**Guanoco**	**1.19**	**261**	*eP*		**P**		**17 55 12.8**	**+0.1**
GUNV				*e*	S	**S**		**17 55 28.5**	**+0.5**
CRUV	**Carupano**	**1.50**	**283**	*eP*		**P**		**17 55 16.8**	**-0.5**
CRUV				*e*	S	**S**		**17 55 35.8**	**0.0**
ITEV	**Isla Los Testi**	**1.69**	**306**	*eP*		**P**		**17 55 19.5**	**-0.4**
ITEV				*e*	S	**S**		**17 55 41.3**	**+0.8**
BAUV	**El Baul**	**6.36**	**258**	*eP*		**P**		**17 56 21.6**	**-4.4**
BAUV				*e*	S	**S**		**17 57 30.1**	**-8.2**

IDC 13 18:07:45.6±40.0, 20.60S×179.07W, h611km±337km, mb2.9/4, mb1 3.0/4, mb1mx2.9/12, Error ellipse: s-maj=356.0km s-min=104.6km az=74.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**32.48**	**265**	P		P		18 13 28.6	-0.6
	1.6nm,0.4s,baz=93,slow=10,SNR=5.8								
STKA	**Stephens Creek**	**36.84**	**244**	P		P		18 14 02.3	-2.9
	1.2nm,0.7s,baz=100,slow=13,SNR=4.8								
ASAR	**Alice Springs**	**43.52**	**257**	P		P		18 14 57.5	-1.1
	1.2nm,0.6s,baz=83,slow=8.6,SNR=36								
ASAR				PcP		PcP		18 16 30.6	-2.1
	0.3nm,0.6s,baz=105,slow=3.9,SNR=4.3								
WRA	**Warramunga Arr**	**43.59**	**262**	P		P		18 14 57.8	-1.5
	0.6nm,0.3s,baz=93,slow=7.7,SNR=26								

NEIC ***13*** *18:10:24.6±0.5,29.97S×177.34W,h15km,mb5.1/11, Error ellipse: s-maj=12.9km s-min=11.1km az=130.0*
HRVD ***13*** *18:10:24.6±0.9,29.95S×176.89W,h35km±1km,MW5.0/29, Centroid moment Tensor Solution. LP body waves: s14,c18;Mantle waves: s29,c44; Half duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr3.26±.40; Mθθ-0.11±.30; Mϕϕ-3.15±.27; Mrθ0.37±.27; Mrϕ-1.28±.18; Mθϕ1.86±.19; Best double couple: M₀3.93×10¹⁶ NP1:ϕs205°, δ31°, λ99°. NP2:ϕs15°, δ59°, λ85°. Principal axes: T 3.76, Plg75°, Azm271°; N .34, Plg4°, Azm18°; P -4.1, Plg14°, Azm109°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
BJI ***13*** *18:10:24.6, 30.00S×177.30W, h15km, mB5.3, mb5.2*
SYO ***13*** *18:10:24.6, 29.97S×177.34W, h15km, MB5.1*
IDC ***13*** *18:10:27.8±6.6, 29.95S×177.27W, h36km±51km, mb4.4/5, mb1 4.5/8, mb1mx4.3/14, ML4.3/3, MS4.4/6, Ms1 4.4/6, ms1mx4.0/23, Error ellipse: s-maj=32.7km s-min=23.2km az=166.0*
ISC 13 18:10:24.1±3.0, 30.35S±0.06×177.8W±0.1, h3km±19km, n82,σ1§63/50, mb5.0/13, MS4.5/5, 5C-7D, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**8.36**	**202**	*eP*		**P**		**18 12 26.1**	**-3.0**
PUZ				*e*	S	**Sn**		**18 14 03.9**	**-1.3**
URZ	**Urewera**	**8.94**	**207**	Pn		**P**		**18 12 34.5**	**-2.6**
	1.1nm,0.3s,baz=356,slow=24,SNR=13								
URZ				Sn		**Sn**		**18 14 19.6**	**+0.2**
	4.4nm,0.3s,baz=143,slow=23,SNR=8.6								
URZ	**Urewera**	**8.94**	**207**	*eP*		**P**		**18 12 33.2**	**-3.9**
BFZ	**Birch Farm**	**11.38**	**203**	*eP*		**P**		**18 13 05.8**	**-4.9**
BFZ				*e*	S	**S**		**18 15 12.2**	**-7.4**
MRZ	**Mangatainoka R**	**11.61**	**206**	*eP*		**P**		**18 13 07.9**	**-5.8**
MRZ				*e*	S	**S**		**18 15 16.9**	**-8.1**
SNZO	**South Karori**	**12.50**	**207**	P		**P**		**18 13 27.8**	**+2.0**
QRZ	**Quartz Range**	**13.07**	**214**	*eP*		**P**		**18 13 34.0**	**+0.7**
THZ	**Tophouse**	**13.63**	**211**	*eP*		**P**		**18 13 39.3**	**-1.5**
THZ				*e*	S	**S**		**18 16 06.5**	**-7.3**
KHZ	**Kahutara**	**13.90**	**208**	*eP*		**P**		**18 13 42.6**	**-1.7**
LTZ	**Lake Taylor**	**14.73**	**210**	*eP*		**P**		**18 13 45.9**	**-9.3**
MQZ	**McQueen's Vall**	**15.34**	**207**	*e*S		**S**		**18 16 41.8**	**-13**
RPZ	**Rata Peaks**	**16.01**	**210**	Pn		**P**		**18 14 14.3**	**+2.5**
	2.5nm,0.3s,baz=64,slow=3.9,SNR=13								
RPZ				Sn		**S**		**18 17 00.5**	**-10**
	0.5nm,0.3s,baz=296,slow=22,SNR=4.7								
NOUC	**Port Laguerre**	**16.43**	**296**	*eP*		**P**		**18 14 24.9**	**+7.6**
RAR	**Rarotonga**	**18.61**	**65**	P		**P**		**18 14 34.7**	**-10**

1.6nm,0.3s,baz=203,slow=13,SNR=3.3
RAR LR LR 18 20 38.2
comp=Z,246nm,18.3s,baz=271,slow=34
ARMA Armidale 26.32 262 *e*P **P 18 16 07.0 +4.1**
TOO Toolangi 31.12 247 *e*P **P 18 16 48.4 +2.3**
8.9nm,1.0s,mb4.5
CTA Charters Tower 33.94 279 *e*P **P 18 17 12.3 +1.5**
13nm,0.9s,mb4.8
CTA Charters Tower 33.94 279 P **P 18 17 12.8 +1.9**
15nm,0.7s,mb5.0,baz=108,slow=11,SNR=16
CTA LR LR 18 30 09.5
comp=Z,933nm,18.2s,MS4.5,baz=153,slow=34
CTAO Charters Tower 33.94 279 *e*P **P 18 17 12.2 +1.4**
60nm,1.3s,mb5.4
STKA Stephens Creek 34.64 257 *e*P **P 18 17 18.7 +1.9**
9.8nm,0.6s,mb4.9
STKA Stephens Creek 34.64 257 P **P 18 17 19.3 +2.5**
5.8nm,0.4s,mb4.9,baz=98,slow=11,SNR=34
STKA LR LR 18 30 36.3
comp=Z,637nm,18.2s,MS4.4,baz=287,slow=34
PMG Port Moresby 38.72 295 LR LR 18 31 01.6
comp=Z,474nm,19.8s,MS4.3,baz=125,slow=32
AS12 Alice Springs 43.26 267 *e*P **P 18 18 28.6 -0.1**
14nm,1.2s,mb4.6
ASAR Alice Springs 43.26 267 P **P 18 18 28.7 0.0**
11nm,1.0s,mb4.5,baz=110,slow=7.7,SNR=29
ASAR LR LR 18 36 34.0
comp=Z,741nm,18.2s,MS4.6,baz=103,slow=36
WB2 Warramunga Arr 44.24 272 *e*P **P 18 18 36.2 -0.5**
WRAB Tennant Creek 44.24 272 *e*P **P 18 18 36.1 -0.6**
117nm,1.2s,mb5.5
WRA Warramunga Arr 44.25 272 P **P 18 18 36.2 -0.5**
8.7nm,0.7s,mb4.6,baz=110,slow=8.1,SNR=22
WRA LR LR 18 36 59.4
comp=Z,415nm,18.3s,MS4.4,baz=100,slow=36
SBA Scott Base 48.10 184 *e*P **P 18 19 08.4 +1.8**
26nm,1.3s,mb5.1
SBA *e* 18 19 15.8
VNDA Vanda 48.16 186 P **P 18 19 07.7 +0.7**
1.0nm,0.7s,mb4.0,baz=16,slow=6.4,SNR=8.3
VNDA Vanda 48.16 186 *e*P **P 18 19 07.6 +0.5**
3.2nm,1.4s,mb4.2
QSPA South Pole Qui 59.76 180 *e*P **P 18 20 32.1 -0.1**
9.4nm,0.8s,mb4.9
SYO Syowa Base 77.20 193 ⇓P **P 18 22 22.7 +2.2**
SYO Syowa Base 77.20 193 ⇓pP pP 18 22 25.4 +4.0
SYO Syowa Base 77.20 193 ⇑PcP PcP 18 22 33.9 +2.3
SYO Syowa Base 77.20 193 ⇓*e*P **P 18 22 22.7 +2.2**
SYO ⇓*e*pP pP 18 22 25.4 +4.0
SYO ⇑*e*PcP PcP 18 22 33.9 +2.3
SYO ⇓*e*PP PP 18 25 12.0 -3.9
SNAA Sanae 78.21 178 ⇓*i* **P 18 22 25.3 -0.6**
SNAA Sanae 78.21 178 **P 18 22 33.6 +7.7**
SNAA Sanae 78.21 178 ⇑*i* **P 18 22 42.5 +17**
VNA3 Neumayer Olymp 78.35 176 ⇑*i* **P 18 22 27.4 +0.7**
VNA3 Neumayer Olymp 78.35 176 ⇑*i* **P 18 22 38.2 +11**
VNA2 Neumayer--Watz 78.79 177 **P 18 22 31.0 +1.9**
VNA2 Neumayer--Watz 78.79 177 **P 18 22 40.7 +12**
YSS Yuzh-Sakhalins 84.76 334 *e*P **P 18 22 58.2 -2.6**
46nm,1.0s,mb5.6
MDJ Mudanjiang 88.67 325 P **P 18 23 17.8 -2.1**
MDJ AMB AMB
comp=Z,11nm,1.9s,mb4.9
MDJ Mudanjiang 88.67 325 *e*P **P 18 23 17.2 -2.7**
comp=Z,6.6nm,0.8s,mb5.0
CN2 Changchun 90.19 323 *e*P **P 18 23 23.0 -4.1**
CN2 AMB AMB
comp=Z,30nm,1.2s,mb5.5
ENH Enshi 91.70 304 *e*P **P 18 23 32.7 -1.7**
comp=Z,29nm,1.5s,mb5.4
MKAR Makanchi Array 117.85 310 PKP PKPdf 18 29 08.4 -5.7
comp=Z,0.5nm,0.9s,baz=76,slow=5.0,SNR=4.2
BVAR Borovoye Array 126.47 316 PKP PKPdf 18 29 25.7 -4.8
comp=Z,0.5nm,0.4s,baz=101,slow=3.1,SNR=5.9
ARCES ARCESS Array B 138.57 348 PKhKP 18 29 40.4
comp=Z,1.9nm,0.8s,slow=3.6,SNR=3.7
ARCES PKP PKPdf 18 29 47.4 -5.5
comp=Z,3.6nm,1.0s,baz=111,slow=1.5,SNR=5.6
GNI Garni 144.18 298 PKP PKPdf 18 30 00.3 -3.2
comp=Z,7.1nm,0.9s,baz=186,slow=9.2,SNR=6.1
GNI Garni 144.18 298 PKP PKPdf 18 30 00.3 -3.2
KAF Kangasniemi 144.55 341 *e*pkp PKPdf 18 29 56.3 -7.2
baz=36,slow=3.3
FINES FINESS Array B 145.15 340 PKP PKPdf 18 29 59.2 -5.3
comp=Z,8.8nm,0.7s,baz=48,slow=4.5,SNR=78
OBN Obninsk 145.21 325 *e*P PKPbc 18 29 59.9 -3.1
NB2 NORSAR Subarra148.72 352 PKP 18 30 09.3
comp=Z,17nm,1.1s,baz=17,slow=4.1
NOA NORSAR Array B148.72 352 PKPbc PKPdf 18 30 09.5 -1.0
comp=Z,5.5nm,0.9s,baz=15,slow=4.3,SNR=10
ASF Jabal al Asfar 150.34 283 PKPbc PKPdf 18 30 16.9 +2.9
comp=Z,12nm,1.0s,baz=217,slow=1.4,SNR=12
ASF PKPab PKPab 18 30 22.8 -2.7
comp=Z,6.1nm,0.9s,baz=247,slow=2.8,SNR=5.8
KSHT Keshet 151.32 284 P PKPdf 18 30 19.0 +3.6
MKRJ Makawir 151.33 281 P PKPdf 18 30 18.9 +3.4
AKASG Malin Array Be 151.35 323 PKPbc PKPdf 18 30 16.8 +1.9
AKASG PKPab PKPab 18 30 24.8 -4.3
comp=Z,26nm,1.1s,baz=48,slow=2.7,SNR=23
HRI Mount Hermon 151.40 285 P PKPdf 18 30 19.3 +3.8
HMDT Nahal Hemdat 151.50 283 P PKPdf 18 30 19.6 +3.9
AQBJ Aqaba 151.59 277 P PKPdf 18 30 19.5 +3.6
MMLI Mount Malkishu 151.60 283 P PKPdf 18 30 19.9 +4.1
EIL Elat 151.66 277 P PKPdf 18 30 19.5 +3.5
MBH Mount Berech 151.71 277 P PKPdf 18 30 19.8 +3.7
PRNI Paran 151.72 278 P PKPdf 18 30 19.7 +3.6
SUW Suwalki 151.90 333 *e*PKP PKPdf 18 30 18.4 +2.8
SUW *e* 18 30 27.5
SUW *e* 18 30 42.1
KMTI Karmit 151.92 278 P PKPdf 18 30 20.1 +3.7
KZIT Kziot 152.32 279 P PKPdf 18 30 20.9 +4.0
BRTR Keskin Array B 152.71 299 PKPbc PKPdf 18 30 21.1 +3.9
comp=Z,2.3nm,0.9s,baz=135,slow=3.5,SNR=14
BRTR PKPab PKPab 18 30 34.2 -1.1
comp=Z,1.8nm,0.6s,baz=153,slow=2.8,SNR=7.3
KWP Kalwaria 155.27 327 *e*PKP PKPab 18 30 42.0 -3.7
CRVS Cervenica-Dubn 156.37 327 *e*PKP PKPab 18 30 47.3 -3.1
KSP Ksiaz 156.97 337 *e*PKP PKPab 18 30 49.5 -3.4
UPC Upice 157.34 337 *e*PKPAB PKPab 18 30 49.7 -4.9
DPC Dobruska-Polom 157.37 336 *e*PKPAB PKPab 18 30 51.0 -3.7
CLL Collm 157.56 342 ⇓*i*PKP2 PKPab 18 30 51.0 -4.5
PVCC Panska Ves 157.80 339 *e*PKPAB PKPab 18 30 52.8 -3.7
PRU Pruhonice 158.28 338 *e*PKPAB PKPab 18 30 54.9 -3.7
comp=Z,183μm,1.4s
KHC Kasperske Hory 159.33 338 *e*PKPAB PKPdf 18 30 59.7 -3.5
GERES GERESS Array B 159.54 338 PKPab PKPab 18 31 00.2 -3.9
comp=Z,2.7nm,1.0s,baz=56,slow=4.8,SNR=15

IDC ***13*** *18:12:50.2±1.6,7.54S×124.78E,mb3.9/2,mb1 4.4/5, mb1mx4.0/14,ML4.1/3,Error ellipse: s-maj=102.0km s-min=22.9km az=63.0*
NEIC ***13*** *18:13:01.8±0.9,8.29S×123.94E,h100km,mb4.4/3,Error ellipse: s-maj=47.7km s-min=12.3km az=56.0*
ISC 13 18:13:11.3±2.9,9.1S±0.2×123.6E±0.2,h245km±38km**,n10, σ0§88/15,mb3.7/3,Timor region**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**9.19**	**168**	*e*P		**P**		**18 15 20.6**	**+0.1**
	1.6nm,0.3s								
FITZ				*e*S		**S**		**18 17 00.9**	**-0.9**
FITZ	**Fitzroy Crossi**	**9.19**	**168**	Pn		**P**		**18 15 20.8**	**+0.3**
	0.6nm,0.3s,baz=7.8,slow=8.8,SNR=34								
FITZ				Sn		**S**		**18 17 02.5**	**+0.7**
	5.5nm,0.3s,baz=164,slow=5.3,SNR=16								
WRA	**Warramunga Arr**	**14.96**	**137**	Pn		**P**		**18 16 30.8**	**-2.0**
	1.4nm,0.3s,baz=323,slow=13,SNR=42								
WRA				Sn		**S**		**18 19 12.3**	**+0.1**
	1.7nm,0.3s,baz=319,slow=24,SNR=6.3								
WRAB	**Tennant Creek**	**14.96**	**137**	*e*P		**P**		**18 16 34.3**	**+1.5**
	16nm,0.6s								
WB2	**Warramunga Arr**	**14.97**	**137**	*e*P		**P**		**18 16 33.1**	**+0.3**
WB2				*e*S		**S**		**18 19 12.2**	**-0.2**
AS12	**Alice Springs**	**17.53**	**147**	*e*P		**P**		**18 17 05.8**	**+4.2**
	6.1nm,0.8s								
ASAR	**Alice Springs**	**17.53**	**147**	P		**P**		**18 17 06.0**	**+4.4**
	0.8nm,0.3s,baz=331,slow=12,SNR=54								
ASAR				S		**S**		**18 20 16.7**	**+10**
	0.5nm,0.3s,baz=317,slow=18,SNR=4.8								
CMAR	**Chiang Mai Arr**	**36.63**	**318**	P		**P**		**18 19 55.9**	**-0.4**
	1.2nm,1.1s,mb3.3,baz=146,slow=6.3,SNR=4.3								
ENH	**Enshi**	**41.41**	**341**	P		**P**		**18 20 26.0**	**-10**
	2.0nm,0.4s,mb3.9								
MKAR	**Makanchi Array**	**66.69**	**330**	P		**P**		**18 23 38.1**	**+0.3**
	1.3nm,0.5s,mb3.8,baz=132,slow=7.5,SNR=33								

IDC ***13*** *19:18:57.9±1.9,21.73S×174.72W,mb4.0/8,mb1 4.3/8, mb1mx4.2/14,Error ellipse: s-maj=102.0km s-min=21.1km az=150.0*
NEIC ***13*** *19:19:05.5±0.5,21.60S×174.87W,h50km,mb4.5/7,Error ellipse: s-maj=20.0km s-min=14.7km az=144.0*
ISC 13 19:19:03.8±0.6,21.7S±0.1×174.9W±0.1,h50km**,n19, σ1§05/15,mb4.2/15,Tonga Islands**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
CTAO	**Charters Tower**	**36.30**	**265**	P		**P**		**19 26 03.3**	**-1.4**
	2.3nm,0.5s,mb4.4								
STKA	**Stephens Creek**	**39.95**	**246**	P		**P**		**19 26 35.9**	**+0.9**
	1.1nm,0.5s,mb3.8,baz=224,slow=14,SNR=6.0								
ASAR	**Alice Springs**	**47.11**	**257**	P		**P**		**19 27 32.4**	**-0.7**
	2.6nm,1.1s,mb4.1,baz=96,slow=8.7,SNR=21								
WRAB	**Tennant Creek**	**47.34**	**262**	P		**P**		**19 27 34.1**	**-0.7**
	5.9nm,0.8s,mb4.6								
WRA	**Warramunga Arr**	**47.34**	**262**	P		**P**		**19 27 33.5**	**-1.4**
	1.0nm,0.7s,mb3.8,baz=96,slow=8.2,SNR=15								
SBA	**Scott Base**	**56.92**	**185**	*e*P		**P**		**19 28 46.8**	**+0.9**
	8.4nm,1.2s,mb4.7								
VNDA	**Vanda**	**57.03**	**186**	P		**P**		**19 28 46.0**	**-0.6**
	0.8nm,1.0s,mb3.7								
QSPA	**South Pole Qui**	**68.41**	**180**	*e*P		**P**		**19 30 02.0**	**+0.2**
	2.0nm,0.9s,mb4.2								
NVAR	**Mina Array Bea**	**79.90**	**42**	P		**P**		**19 31 08.5**	**-0.6**
	1.1nm,0.7s,mb3.9,baz=211,slow=7.7,SNR=5.6								
TXAR	**Lajitas Array**	**85.25**	**56**	P		**P**		**19 31 35.9**	**-0.9**
	0.5nm,0.3s,mb4.2,baz=236,slow=3.3,SNR=3.1								
ILAR	**Eielson Array**	**88.83**	**12**	P		**P**		**19 31 53.1**	**-0.1**
	0.6nm,0.7s,mb4.0,baz=217,slow=5.4,SNR=5.3								
ENH	**Enshi**	**89.12**	**303**	*e*P		**P**		**19 31 57.2**	**+1.8**
	10nm,1.1s,mb5.1								
ENH				*e*				19 32 02.2	
CM31	**Chiang Mai Arr**	**93.26**	**288**	P		**P**		**19 32 16.6**	**+1.7**
	2.9nm,0.9s,mb4.7								
CMAR	**Chiang Mai Arr**	**93.26**	**288**	P		**P**		**19 32 16.5**	**+1.6**
	1.3nm,0.8s,mb4.4,baz=108,slow=3.8,SNR=6.4								
YKA	**Yellowknife Ar**	**96.36**	**24**	P		**P**		**19 32 27.5**	**-0.4**
	0.2nm,0.8s,mb3.6,baz=235,slow=4.3,SNR=5.5								
AKASG	**Malin Array Be**	**145.42**	**333**	PKPbc		PKPbc		19 38 37.3	+0.7
	2.6nm,0.8s,baz=37,slow=4.0,SNR=18								
BRTR	**Keskin Array B**	**149.78**	**313**	PKPbc		PKPdf		19 38 50.4	+6.8
	1.7nm,1.0s,baz=117,slow=2.8,SNR=5.6								
CLL	**Collm**	**149.78**	**350**	*e*PKP1		PKPdf		19 38 50.0	+6.8
GERES	**GERESS Array B**	**152.03**	**348**	PKPbc		PKPdf		19 38 56.6	+10
	0.5nm,0.7s,baz=56,slow=3.5,SNR=3.8								
GERES				PKPab		PKPab		19 39 05.0	-0.1
	0.4nm,0.6s,baz=27,slow=3.0,SNR=4.5								

NEIC ***13*** *19:20:51.9±0.8,8.69S×67.62E,h10km,mb4.1/3,Error ellipse: s-maj=29.7km s-min=19.4km az=35.0*
IDC ***13*** *19:20:51.4±1.5,8.68S×67.81E,mb3.9/5,mb1 4.2/5, mb1mx3.8/16,Error ellipse: s-maj=50.8km s-min=25.5km az=48.0*
ISC 13 19:20:49.9±1.2,8.6S±0.2×67.8E±0.1,h10km**,n16, σ1§28/11,mb4.0/8,Mid-Indian Ridge**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
DGAR	**Diego Garcia**	**4.79**	**76**	*e*Pn		**Pn**		**19 22 02.2**	**-1.7**
DGAR				*e*Sn		**Sn**		**19 22 53.6**	**-6.5**
CM31	**Chiang Mai Arr**	**40.85**	**49**	*e*P		**P**		**19 28 34.9**	**+1.1**
	2.0nm,0.6s,mb3.9								
CMAR	**Chiang Mai Arr**	**40.85**	**49**	P		**P**		**19 28 36.4**	**+2.6**
	1.9nm,0.7s,mb3.8,baz=241,slow=9.2,SNR=16								
CSS	**Prodhromos**	**54.17**	**325**	*e*P		**P**		**19 30 15.4**	**-2.5**
MKAR	**Makanchi Array**	**56.64**	**12**	P		**P**		**19 30 35.3**	**-0.3**
	0.6nm,0.6s,mb3.8,baz=202,slow=7.6,SNR=9.0								
BRTR	**Keskin Array B**	**57.52**	**329**	P		**P**		**19 30 43.0**	**+1.0**
	0.7nm,0.7s,mb3.8,baz=126,slow=12,SNR=4.1								
ASAR	**Alice Springs**	**64.79**	**112**	P		**P**		**19 31 31.5**	**+0.1**
	1.2nm,0.6s,mb4.1,baz=278,slow=6.0,SNR=18								
WRA	**Warramunga Arr**	**65.16**	**108**	P		**P**		**19 31 34.1**	**+0.2**
	1.6nm,0.8s,mb4.1,baz=282,slow=6.4,SNR=13								
WRAB	**Tennant Creek**	**65.17**	**108**	*e*P		**P**		**19 31 34.0**	**+0.1**
	7.5nm,0.8s,mb4.8								
DBIC	**Dimbokro**	**73.96**	**279**	P		**P**		**19 32 24.0**	**-4.0**
	1.0nm,1.1s,mb3.7								
YKA	**Yellowknife Ar**	**126.17**	**1**	PKP		PKPdf		19 39 55.7	+0.2
	0.2nm,0.8s,slow=2.5,SNR=3.6								
ARE	**Arequipa**	**132.62**	**238**	*e*P		PKPdf		19 40 07.0	-2.2
PDAR	**Pinedale Array**	**145.88**	**356**	PKPbc		PKPbc		19 40 33.5	+3.3
	0.3nm,0.5s,baz=63,slow=2.0,SNR=2.8								
NVAR	**Mina Array Bea**	**149.79**	**9**	PKPbc		PKPdf		19 40 45.7	+6.9
	0.6nm,0.7s,baz=24,slow=2.3,SNR=4.3								
NVAR	**Mina Array Bea**	**149.79**	**9**	PKPbc		PKPdf		19 40 45.7	+6.9
PV01	**Paradox Valley**	**150.40**	**354**	*e*PKPbc		PKPdf		19 40 45.4	+5.7

IDC ***13*** *19:43:07.3±2.7,47.25N×124.22W,mb3.3/2,mb1 3.6/6, mb1mx3.5/22,ML3.0/4,MS2.7/1,Ms1 2.7/1,ms1mx2.4/16, Error ellipse: s-maj=43.8km s-min=12.4km az=13.0*
NEIC ***13*** *19:43:14.1,47.92N×124.24W,MD3.1(SEA),After SEA. NEIC Felt at Forks.*
PNSN ***13*** *19:43:14.1,47.92N×124.24W,h0km,MD3.1,Fault plane solution: NP1:φ=255°,δ65°, NP2:φ=21°,δ38°, Principal axes: T Plg59°, Azm208°; P Plg15°, Azm324°;*
PGC ***13*** *19:43:14.1,47.92N×124.24W,h0km,ML3.3/27, MD3.1(SEA),West coast Olympic Peninsula, Washington.*
ISC 13 19:43:12.8±0.4,47.97N±0.01×124.31W±0.03,h5km±3km**, n102,σ1§19/136,mb3.3/1,6C-9D,Near coast of Washington**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
OTR	**Olympics--Tyee**	**0.12**	**348**	⇓P		**Pg**		**19 43 17.5**	**+2.3**
OBC	**Olympics--Boni**	**0.17**	**67**	⇑P		**Pg**		**19 43 17.3**	**+1.1**
OCWA	**Octopus Mounta**	**0.24**	**158**	⇓P		**Pg**		**19 43 17.4**	**-0.2**
OCWA				S		**Sg**		**19 43 20.9**	**+0.1**
OCWA	**Octopus Mounta**	**0.24**	**158**	*e*P		**Pg**		**19 43 17.2**	**-0.4**
OOW	**Octopus West**	**0.25**	**161**	⇓P		**Pg**		**19 43 17.8**	**0.0**
OSD	**Olympics--Snow**	**0.43**	**110**	⇓P		**Pg**		**19 43 21.2**	**-0.3**
STW	**Striped Peak**	**0.46**	**67**	⇑P		**Pg**		**19 43 22.5**	**+0.5**
PFB	**Port Renfrew**	**0.61**	**352**	P		**Pg**		**19 43 25.6**	**+0.7**
PFB				S		**Sg**		**19 43 35.3**	**+2.2**
PFB				Trac				19 43 37.6	
	comp=Z,1μm,0.2s								
LZB	**Mount Lazard**	**0.72**	**27**	⇓P		**Pg**		**19 43 26.8**	**-0.4**
LZB				S		**Sg**		**19 43 37.2**	**+0.5**
LZB				Trac				19 43 40.6	
	comp=Z,698nm,0.2s								
VGZ	**Gonzales**	**0.79**	**56**	P		**Pg**		**19 43 17.6**	**-11**
VGZ				S		**Sg**		**19 43 28.6**	**-11**
VGZ				Trac				19 43 31.3	
	comp=Z,945nm,0.2s								
SQM	**Sequim**	**0.85**	**83**	⇑P		**Pg**		**19 43 30.5**	**+0.7**
PGC	**Sidney**	**0.89**	**40**	P		**Pb**		**19 43 29.4**	**-0.9**
PGC				S		**Sg**		**19 43 41.7**	**-0.7**
PGC				Trac				19 43 44.2	
	comp=Z,753nm,0.3s								
PGC	**Sidney**	**0.89**	**40**	*e*P		**Pb**		**19 43 29.4**	**-0.9**
BLN	**Blyn Mountain**	**0.90**	**87**	⇓P		**Pb**		**19 43 30.2**	**-0.2**
HDW	**Hoodsport**	**0.91**	**110**	P		**Pb**		**19 43 29.4**	**-1.2**
SMW	**South Mountain**	**0.92**	**135**	P		**Pb**		**19 43 30.3**	**-0.6**
SMW				S		**Sg**		**19 43 44.3**	**+0.8**
MGB	**Mount Grey**	**1.06**	**346**	⇓P		**Pb**		**19 43 33.0**	**-0.3**
MGB				S		**Sb**		**19 43 48.3**	**+1.0**
MGB				Trac				19 43 50.4	
	comp=Z,773nm,0.2s								
GNW	**Green Mountain**	**1.08**	**112**	⇓P		**Pb**		**19 43 33.0**	**-0.6**
GNW				S		**Sb**		**19 43 48.7**	**+0.8**
SNB	**Saturna Island**	**1.11**	**43**	P		**Pb**		**19 43 33.5**	**-0.5**
SNB				S		**Sb**		**19 43 48.5**	**-0.1**
SNB				Trac				19 43 51.3	
	comp=Z,711nm,0.5s								
GMW	**Gold Mountain**	**1.11**	**112**	P		**Pb**		**19 43 33.2**	**-0.9**
GOBB	**Galiano Island**	**1.11**	**28**	P		**Pb**		**19 43 33.8**	**-0.4**
GOBB				S		**Sb**		**19 43 50.3**	**+1.4**
GOBB				Trac				19 43 53.9	
	comp=Z,1μm,0.6s								
MCW	**Mount Constitu**	**1.21**	**54**	P		**Pb**		**19 43 35.2**	**-0.7**
OZB	**Mount Ozzard**	**1.27**	**322**	P		**Pb**		**19 43 35.7**	**-1.1**
OZB				Pg		**Pg**		**19 43 38.5**	**+0.4**
OZB				Trac				19 43 56.1	
	comp=Z,389nm,0.5s								
CPW	**Capitol Peak**	**1.27**	**141**	⇑P		**Pb**		**19 43 35.2**	**-1.8**
NLLB	**Nanaimo Lost L**	**1.28**	**9**	⇓P		**Pb**		**19 43 36.1**	**-0.9**
NLLB				S		**Sb**		**19 43 53.6**	**+0.1**
NLLB				Trac				19 43 56.0	
	comp=Z,494nm,0.3s								
MEW	**McNeil Island**	**1.36**	**124**	P		**Pb**		**19 43 38.8**	**+0.3**
CMW	**Cultus Mountai**	**1.53**	**72**	P		**Pn**		**19 43 40.5**	**-0.4**
BIB	**Bowen Island**	**1.58**	**24**	P		**Pn**		**19 43 41.1**	**-0.6**
BIB				S		**Sb**		**19 44 00.8**	**-1.7**
BIB				Trac				19 44 04.3	
	comp=Z,68nm,0.2s								
JCW	**Jim Creek**	**1.61**	**81**	⇑P		**Pn**		**19 43 41.1**	**-1.0**
SHB	**Sechelt**	**1.65**	**10**	P		**Pn**		**19 43 42.3**	**-0.4**
SHB				S		**Sb**		**19 44 04.4**	**-0.1**
SHB				Trac				19 44 06.5	
	comp=Z,164nm,0.3s								
GHW	**Garrison Hill**	**1.66**	**123**	P		**Pn**		**19 43 42.9**	**0.0**
BMW	**Boistfort Moun**	**1.67**	**153**	P		**Pn**		**19 43 40.5**	**-2.4**
HTW	**Haystack Looko**	**1.72**	**95**	P		**Pn**		**19 43 42.7**	**-0.9**
TXB	**Texada**	**1.73**	**357**	P		**Pn**		**19 43 43.5**	**-0.3**
TXB				S		**Sn**		**19 44 06.4**	**-0.1**
TXB				Trac				19 44 10.9	
	comp=Z,562nm,0.5s								
HNB	**Haney**	**1.74**	**41**	⇑P		**Pn**		**19 43 43.5**	**-0.5**
HNB				S		**Sn**		**19 44 05.8**	**-0.9**
HNB				Trac				19 44 14.2	
	comp=Z,306nm,0.5s								
RMW	**Rattlesnake Mo**	**1.77**	**106**	P		**Pn**		**19 43 44.2**	**-0.1**
VDB	**Vedder Mountai**	**1.81**	**53**	P		**Pn**		**19 43 44.6**	**-0.3**
VDB				S		**Sn**		**19 44 08.3**	**-0.2**
VDB				Trac				19 44 18.0	
	comp=Z,141nm,0.6s								
WPB	**Watts Point**	**1.84**	**23**	P		**Pn**		**19 43 44.6**	**-0.7**
WPB				S		**Sn**		**19 44 08.4**	**-0.9**
WPB				Trac				19 44 15.3	
	comp=Z,238nm,0.5s								
GSM	**Grass Mountain**	**1.87**	**113**	P		**Pn**		**19 43 46.7**	**+0.9**
RVC	**Mount Rainier-**	**1.89**	**122**	P		**Pn**		**19 43 46.4**	**+0.4**
LMW	**Ladd Mountain**	**1.89**	**133**	P		**Pn**		**19 43 47.2**	**+1.1**
RPW	**Rockport**	**1.93**	**75**	⇑P		**Pn**		**19 43 45.9**	**-0.7**
CZM	**Crazy Man Moun**	**1.97**	**141**	P		**Pn**		**19 43 47.6**	**+0.5**
NLO	**Nicolai Mounta**	**1.97**	**162**	⇑P		**Pn**		**19 43 45.2**	**-2.1**
REMR	**Mount Rainier-**	**2.03**	**124**	P		**Pn**		**19 43 49.2**	**+1.1**
ETB	**Estevan Point**	**2.04**	**314**	P		**Pn**		**19 43 49.1**	**+0.9**
ETB				Pg		**Pg**		**19 43 54.3**	**+0.8**
RCS	**Mount Rainier-**	**2.07**	**121**	P		**Pn**		**19 43 50.1**	**+1.5**
FMW	**Mount Fremont**	**2.07**	**119**	P		**Pn**		**19 43 48.5**	**-0.2**
KOSW	**Kosmos**	**2.09**	**136**	P		**Pn**		**19 43 50.6**	**+1.7**
LON	**Longmire**	**2.09**	**125**	P		**Pn**		**19 43 48.6**	**-0.4**
GDR	**Gold River**	**2.14**	**329**	P		**Pn**		**19 43 50.2**	**+0.6**
GDR				Pg		**Pg**		**19 43 51.9**	**-3.6**
GDR				S		**Sn**		**19 44 20.2**	**+3.2**
GDR				Trac				19 44 20.9	
	comp=Z,161nm,0.4s								
TDL	**Tradedollar La**	**2.16**	**138**	P		**Pn**		**19 43 50.4**	**+0.5**
CBB	**Campbell River**	**2.18**	**342**	P		**Pn**		**19 43 50.3**	**+0.1**
CBB				Pg		**Pg**		**19 43 52.7**	**-3.6**
CBB				S		**Sn**		**19 44 18.4**	**+0.5**
CBB				Trac				19 44 26.1	
	comp=Z,181nm,0.6s								
FL2	**Flat Top 2**	**2.22**	**142**	P		**Pn**		**19 43 49.3**	**-1.6**
WPW	**White Pass**	**2.27**	**123**	P		**Pn**		**19 43 53.6**	**+2.1**
SHW	**Mount Saint He**	**2.27**	**141**	Pn		**Pn**		**19 43 49.7**	**-1.9**
SOSW	**Source of Smit**	**2.28**	**139**	P		**Pn**		**19 43 51.0**	**-0.6**
ESD	**East Dome**	**2.31**	**139**	P		**Pn**		**19 43 53.5**	**+1.4**
HSR	**South Ridge**	**2.31**	**140**	P		**Pn**		**19 43 54.2**	**+2.1**
GLK	**Glacier Lake**	**2.31**	**126**	P		**Pn**		**19 43 54.3**	**+2.1**
WSLR	**Whistler**	**2.34**	**22**	P		**Pn**		**19 43 52.6**	**0.0**
WSLR				S		**Sn**		**19 44 23.7**	**+1.6**
WSLR				Trac				19 44 28.1	
	comp=Z,203nm,0.5s								
HOPB	**Hope**	**2.38**	**52**	P		**Pn**		**19 43 55.2**	**+2.1**
HOPB				Trac				19 44 32.3	
	comp=Z,102nm,0.4s								
MTMW	**Mount Mitchell**	**2.42**	**143**	P		**Pn**		**19 43 55.8**	**+2.1**
LTY	**Liberty**	**2.56**	**105**	P		**Pn**		**19 43 58.9**	**+3.2**
ASR	**Mount Adams--S**	**2.60**	**133**	P		**Pn**		**19 43 59.4**	**+3.1**
TBM	**Table Mountain**	**2.64**	**106**	P		**Pn**		**19 43 56.0**	**-0.8**
WOSB	**Woss**	**2.65**	**327**	P		**Pn**		**19 43 56.8**	**-0.2**
WOSB				Pg		**Pg**		**19 43 59.9**	**-5.8**
WOSB				Trac				19 44 44.3	
	comp=Z,48nm,0.4s								
EDB	**Eliza Dome**	**2.66**	**317**	P		**Pn**		**19 43 55.8**	**-1.3**
EDB				Pg		**Pg**		**19 44 02.4**	**-3.5**
EDB				Trac				19 44 47.0	
	comp=Z,31nm,0.5s								
NLW	**Nelson Butte**	**2.67**	**86**	*e*Pn		**Pn

Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**1.77**	**17**	*e*Pn	**P**	**19 50 54.0**	**+0.8**
GUMO				*e*Sn	**S**	**19 51 13.7**	**-0.8**
SAPN	**Saipan**	**3.58**	**23**	*e*P	**P**	**19 51 19.0**	**0.0**
SAPN				*e*S	**S**	**19 52 00.3**	**-0.2**
PMG	**Port Moresby**	**21.35**	**172**	LR	LR	20 02 11.3	
	comp=Z,89nm,18.6s,MS3.2,baz=127,slow=34						
PMG	**Port Moresby**	**21.35**	**172**	*e*P	**P**	**19 55 11.6**	**+1.5**
	40nm,1.3s,mb4.6						
JNU	**Nakatsue**	**24.46**	**332**	P	**P**	**19 55 41.0**	**+0.5**
	3.2nm,0.4s,mb4.1,baz=213,slow=28,SNR=4.1						
MAJO	**Matsushiro**	**25.15**	**348**	*e*P	**P**	**19 55 46.5**	**-0.7**
	10nm,0.5s,mb4.6						
WRA	**Warramunga Arr**	**33.13**	**197**	P	**P**	**19 56 55.8**	**-3.0**
	0.5nm,0.7s,mb3.5,baz=19,slow=9.3,SNR=4.5						
ASAR	**Alice Springs**	**36.78**	**196**	P	**P**	**19 57 27.3**	**-2.6**
	0.3nm,0.6s,mb3.3,baz=18,slow=10,SNR=4.3						
CMAR	**Chiang Mai Arr**	**44.19**	**284**	P	**P**	**19 58 33.0**	**+1.8**
	1.6nm,1.0s,mb3.7,baz=85,slow=6.8,SNR=7.1						
ULN	**Ulaanbaatar**	**47.48**	**326**	*e*P	**P**	**19 58 57.1**	**+0.3**
	0.7nm,0.6s,mb3.8						
LSA	**Lhasa**	**52.31**	**298**	*e*P	**P**	**19 59 33.8**	**-0.3**
	1.8nm,0.7s,mb4.1						
MKAR	**Makanchi Array**	**62.34**	**317**	P	**P**	**20 00 44.8**	**0.0**
	0.6nm,0.6s,mb3.9,baz=95,slow=9.3,SNR=8.0						
ZAL	**Zalesovo**	**62.70**	**325**	P	**P**	**20 00 47.0**	**0.0**
	0.3nm,0.3s,mb3.9,baz=84,slow=22,SNR=1.7						
KURK	**Kurchatov**	**65.54**	**320**	*e*P	**P**	**20 01 04.5**	**-1.1**
ILAR	**Eielson Array**	**70.32**	**25**	P	**P**	**20 01 35.5**	**+0.4**
	0.5nm,0.6s,mb3.6,baz=252,slow=6.4,SNR=4.5						
BVAR	**Borovoye Array**	**70.92**	**322**	P	**P**	**20 01 39.3**	**+0.3**
	1.6nm,0.4s,mb4.3,baz=107,slow=7.6,SNR=31						
BRVK	**Borovoye**	**70.99**	**322**	*e*P	**P**	**20 01 39.0**	**-0.3**
BRVK				*e*		20 01 46.0	
ZRNK	**Zerenda**	**71.75**	**322**	*e*P	**P**	**20 01 43.6**	**-0.3**
ZRNK				*e*		20 01 50.7	
YKA	**Yellowknife Ar**	**84.60**	**27**	P	**P**	**20 02 55.0**	**+0.9**
	0.2nm,0.4s,mb3.6,baz=288,slow=5.5,SNR=3.5						
YKA	**Yellowknife Ar**	**84.60**	**27**	P	**P**	**20 02 55.0**	**+0.9**

IDC ***13*** *20:11:01.0±1.2,20.78N×144.73E,mb3.7/6,mb1 3.9/6, mb1mx3.6/22,Error ellipse: s-maj=47.4km s-min=29.7km az=104.0*

ISC 13 20:11:04.3±1.1,20.8N±0.2×144.7E±0.3,h33km,n6, σ0§69/6,mb3.6/6,Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**41.71**	**195**	P	**P**	**20 18 51.9**	**0.0**
	0.6nm,0.8s,mb3.3,baz=17,slow=8.9,SNR=4.7						
MKAR	**Makanchi Array**	**56.39**	**313**	P	**P**	**20 20 44.6**	**-0.1**
	0.3nm,0.6s,mb3.5,baz=91,slow=10,SNR=3.2						
ILAR	**Eielson Array**	**62.21**	**27**	P	**P**	**20 21 23.9**	**-0.7**
	0.4nm,1.1s,mb3.5,baz=270,slow=4.5,SNR=4.2						
YKA	**Yellowknife Ar**	**76.60**	**28**	P	**P**	**20 22 53.5**	**+0.6**
	0.3nm,0.5s,mb3.5,baz=291,slow=5.7,SNR=6.7						
ARCES	**ARCESS Array B**	**80.26**	**342**	P	**P**	**20 23 13.4**	**+0.6**
	1.5nm,0.9s,mb3.9,baz=66,slow=8.9,SNR=5.1						
FINES	**FINESS Array B**	**84.64**	**335**	P	**P**	**20 23 35.0**	**-0.4**
	1.3nm,0.8s,mb4.1,baz=80,slow=8.5,SNR=5.9						

IDC ***13*** *20:17:46.1±0.5,36.78S×20.81W,mb4.6/14,mb1 4.7/14, mb1mx4.7/16,MS4.3/12,Ms1 4.3/12,ms1mx4.3/15,Error ellipse: s-maj=22.2km s-min=14.6km az=3.0*

NEIC ***13*** *20:17:48.0±0.2,36.79S×20.82W,h10km,mb5.2/28, MS4.9/9,Error ellipse: s-maj=9.1km s-min=8.3km az=145.0*

SYO ***13*** *20:17:47.9,36.79S×20.82W,h10km,MB5.2,MS4.9*

BJI ***13*** *20:17:47.9,36.80S×20.80W,h10km,mB5.3,Ms5.3, Msz5.1*

HRVD ***13*** *20:17:48.0±0.2,36.72S×20.72W,h12km,MW5.2/63, Centroid moment Tensor Solution. LP body waves: s46,c71;Mantle waves: s63,c117; Half duration: 1§0 Moment tensor: Scale 10^{17}Nm; M_{rr}-0.45±.02; $M_{\theta\theta}$0.60±.02; $M_{\phi\phi}$-0.15±.02; $M_{r\theta}$0.03±.05; $M_{r\phi}$-0.55±.01; $M_{\theta\phi}$0.39±.05; Best double couple: M_o.86×10^{17} NP1:ϕ262°, δ54°,λ-149°. NP2:ϕ152°,δ65°,λ-41°. Principal axes: T .91, Plg7°; Azm210°; N -.1, Plg43°, Azm306°; P -.81, Plg46°, Azm112°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

MOS ***13*** *20:17:49.3±0.5,37.12S×18.18W,h10km,mb5.6/7 Error ellipse: s-maj=99.9km s-min=18.7km az=73.2*

ISC 13 20:17:47.0±0.3,36.73S±0.06×20.85W±0.08,h10km,n148, σ0§84/116,mb5.0/69,MS4.6/23,15C-6D,Southern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAM3	**Guarapari**	**23.42**	**308**	*e*P	**P**	**20 22 57.6**	**+0.5**
CAM3				*i*		20 23 00.1	
CAM3				*i*		20 23 04.8	
CAM3				*i*		20 23 15.6	
CAM3				*i*		20 23 16.6	
CAM3				*i*		20 23 22.2	
CAM3				*i*		20 23 27.0	
CAM4	**Nova Friburgo**	**23.63**	**301**	*e*P	**P**	**20 22 59.8**	**+0.6**
CAM4				*i*		20 23 02.1	
CAM4				*i*		20 23 16.1	
CAM4				*i*		20 23 20.6	
CAM4				*i*		20 23 24.4	
CAM4				*i*		20 23 36.9	
CAM4				*i*		20 23 49.2	
BDFB	**Brasilia**	**31.98**	**304**	P	**P**	**20 24 14.3**	**-1.3**
	26nm,1.2s,mb4.9,baz=132,slow=9.2,SNR=14						
BDFB				LR	LR	20 35 06.6	
	comp=Z,1μm,19.3s,MS4.7,baz=336,slow=32						
BDFB	**Brasilia**	**31.98**	**304**	P	**P**	**20 24 14.3**	**-1.3**
BDFB				LR	LR	20 35 06.5	
TRQA	**Tornquist**	**32.52**	**255**	*e*P	**P**	**20 24 18.7**	**-1.3**
	3.2nm,1.1s,mb4.2						
CPUP	**Villa Florida**	**32.60**	**278**	P	**P**	**20 24 18.4**	**-2.6**
	4.3nm,0.8s,mb4.4,baz=139,slow=7.9,SNR=7.3						
CPUP				LR	LR	20 35 56.9	
	comp=Z,733nm,19.0s,MS4.4,baz=145,slow=33						
CPUP	**Villa Florida**	**32.60**	**278**	*e*P	**P**	**20 24 20.0**	**-1.0**
	20nm,1.4s,mb4.8						
SUR	**Sutherland**	**34.39**	**95**	P	**P**	**20 24 33.9**	**-2.5**
	10nm,0.8s,mb4.8,baz=256,slow=8.0,SNR=9.8						
SUR				LR	LR	20 34 51.4	
	comp=Z,823nm,21.2s,MS4.4,baz=251,slow=30						
VNA1	**Neumayer--Stat**	**34.64**	**173**	⇑*i*	**P**	**20 24 41.3**	**+3.2**
VNA2	**Neumayer--Watz**	**34.99**	**172**	⇓*i*	**P**	**20 24 44.2**	**+3.1**
VNA2	**Neumayer--Watz**	**34.99**	**172**		**P**	**20 24 53.7**	**+13**
VNA3	**Neumayer Olymp**	**35.07**	**174**	⇓*i*	**P**	**20 24 44.5**	**+2.7**
VNA3	**Neumayer Olymp**	**35.07**	**174**	⇑*i*	**P**	**20 24 47.4**	**+5.6**
SNAA	**Sanae**	**36.23**	**170**	*e*P	**P**	**20 24 51.1**	**-0.6**
SNAA				*e*PcP	PcP	20 27 14.8	-2.4
TSUM	**Tsumeb**	**37.87**	**73**	P	**P**	**20 25 03.9**	**-2.1**
	9.7nm,0.9s,mb4.5,baz=228,slow=9.0,SNR=18						
MAIT	**Maitri**	**38.18**	**163**	*e*P	**P**	**20 25 08.0**	**0.0**
LBTB	**Lobatse**	**41.18**	**87**	*e*P	**P**	**20 25 31.9**	**-1.4**
	3.7nm,0.6s,mb4.2						
LBTB				LR	LR		
	comp=Z,806nm,19.0s,MS4.6						
LVC	**Limon Verde**	**43.63**	**275**	P	**P**	**20 25 52.9**	**-0.5**
	comp=Z,4.3nm,0.7s,mb4.3,baz=98,slow=10,SNR=6.1						
LVC	**Limon Verde**	**43.63**	**275**	*e*P	**P**	**20 25 52.9**	**-0.5**
	comp=Z,53nm,1.5s,mb5.0						
LIC	**Lamto**	**45.23**	**22**	*e*P	**P**	**20 26 06.1**	**-0.3**
	comp=Z,49nm,1.1s,mb5.0						
LIC				*e*R			
	comp=Z,173nm,18.0s						
LIC	**Lamto**	**45.23**	**22**	*e*P	**P**	**20 26 05.5**	**-0.9**
	comp=Z,75nm,1.3s,mb5.4						
KIC	**Kosan Boka**	**45.44**	**23**	*e*P	**P**	**20 26 06.0**	**-2.1**
	comp=Z,109nm,1.1s,mb5.6						
TIC	**Toumodi**	**45.63**	**22**	*e*P	**P**	**20 26 07.7**	**-1.9**
	comp=Z,140nm,1.1s,mb5.8						
DBIC	**Dimbokro**	**45.70**	**22**	P	**P**	**20 26 09.2**	**-1.0**
	comp=Z,14nm,1.1s,mb4.8,baz=172,slow=11,SNR=6.9						
DBIC				LR	LR	20 41 07.0	
	comp=Z,120nm,18.2s,MS3.9,baz=154,slow=31						
DBIC	**Dimbokro**	**45.70**	**22**	*e*P	**P**	**20 26 08.5**	**-1.7**
	comp=Z,11nm,1.0s,mb4.8						
SYO	**Syowa Base**	**45.71**	**154**	⇓P	**P**	**20 26 08.7**	**-0.8**
SYO	**Syowa Base**	**45.71**	**154**	⇑pP	pP	20 26 11.0	-1.5
SYO	**Syowa Base**	**45.71**	**154**	⇓*e*P	**P**	**20 26 08.7**	**-0.8**
SYO				⇑*e*pP	pP	20 26 11.0	-1.5
LPAZ	**La Paz**	**46.42**	**283**	P	**P**	**20 26 15.1**	**-0.7**
	comp=Z,9.6nm,1.1s,mb4.7,baz=113,slow=8.4,SNR=23						
LPAZ				LR	LR	20 44 11.4	
	comp=Z,207nm,20.9s,MS4.1,baz=294,slow=34						
LPAZ	**La Paz**	**46.42**	**283**	*e*P	**P**	**20 26 14.6**	**-1.2**
	comp=Z,18nm,1.2s,mb4.9						
QSPA	**South Pole Qui**	**53.52**	**180**	⇓*i*P	**P**	**20 27 10.0**	**+0.6**
	comp=Z,37nm,0.9s,mb5.3						
QSPA				LR	LR		
	comp=Z,130nm,21.1s,MS4.0						
KMBO	**Kilima Mbogo**	**64.15**	**71**	P	**P**	**20 28 23.6**	**-0.7**
	comp=Z,2.0nm,1.0s,mb4.1,baz=242,slow=5.8,SNR=4.8						
KMBO				LR	LR	20 53 51.9	
	comp=Z,1μm,18.5s,MS5.1,baz=98,slow=34						
KMBO	**Kilima Mbogo**	**64.15**	**71**	*e*P	**P**	**20 28 23.6**	**-0.7**
	comp=Z,4.5nm,1.3s,mb4.3						
KMBO				LR	LR		
	comp=Z,683nm,20.0s,MS4.8						
OTAV	**Otavalo**	**64.66**	**291**	*e*P	**P**	**20 28 28.1**	**+0.5**
	comp=Z,21nm,1.3s,mb5.0						
ROSC	**El Rosal**	**64.77**	**298**	P	**P**	**20 28 28.8**	**+0.6**
	comp=Z,6.2nm,0.3s,mb5.1,baz=233,slow=20,SNR=4.8						
ROSC				LR	LR	20 55 48.4	
	comp=Z,2μm,19.0s,MS5.3,baz=131,slow=35						
SDV	**Santo Domingo**	**65.09**	**304**	P	**P**	**20 28 29.9**	**-0.4**
	comp=Z,16nm,1.0s,mb5.0,baz=57,slow=4.3,SNR=4.4						
SBA	**Scott Base**	**65.59**	**182**	*e*P	**P**	**20 28 32.8**	**+0.3**
	comp=Z,24nm,0.9s,mb5.2						
SBA				*e*		20 28 40.8	
VNDA	**Vanda**	**66.01**	**181**	P	**P**	**20 28 35.1**	**0.0**
	comp=Z,6.5nm,1.0s,mb4.6,baz=194,slow=5.8,SNR=25						
VNDA				LR	LR	20 51 44.0	
	comp=Z,166nm,21.9s,MS4.2,baz=293,slow=31						
VNDA	**Vanda**	**66.01**	**181**	*e*P	**P**	**20 28 34.7**	**-0.5**
	comp=Z,15nm,1.4s,mb4.8						
VNDA				*e*		20 28 43.3	
JTS	**JuntasAbangare**	**76.14**	**294**	*e*P	**P**	**20 29 36.2**	**-1.0**
	comp=Z,1.3nm,1.3s,mb3.7						
ESDC	**Sonseca Array**	**77.60**	**13**	P	**P**	**20 29 44.8**	**-0.1**
	comp=Z,6.0nm,1.2s,mb4.4,baz=186,slow=6.2,SNR=14						
ESDC				LR	LR	21 02 21.5	
	comp=Z,107nm,18.5s,MS4.2,baz=170,slow=34						
ESLA	**Sonseca Array**	**77.60**	**13**	*e*P	**P**	**20 29 42.8**	**-2.1**
	comp=Z,3.7nm,1.2s,mb4.2						
ESLA				LR	LR		
	comp=Z,615nm,19.0s,MS5.0						
BBSR	**BB Station**	**80.04**	**323**	PFAKE		20 30 10.0	+12
BBSR				LR	LR		
	comp=Z,1μm,21.0s,MS5.2						
ETSF	**Etsaut**	**81.38**	**15**	*e*P	**P**	**20 30 05.5**	**+0.3**
	comp=Z,26nm,1.1s,mb4.8						
SJPF	**Ste Jean**	**81.45**	**14**	*e*P	**P**	**20 30 05.8**	**+0.3**
	comp=Z,31nm,1.1s,mb4.8						
EPF	**Esparros**	**81.70**	**16**	*e*P	**P**	**20 30 07.1**	**+0.3**
	comp=Z,18nm,1.1s,mb4.6						
MTLF	**Mcotieu**	**82.41**	**17**	*e*P	**P**	**20 30 11.0**	**+0.5**
PGF	**Pioggiola**	**83.47**	**22**	*e*P	**P**	**20 30 16.6**	**+0.6**
	comp=Z,18nm,1.1s,mb4.7						
LFF	**La Frestale**	**83.61**	**15**	*e*P	**P**	**20 30 16.7**	**+0.1**
	comp=Z,31nm,1.2s,mb5.0						
SMRF	**Simiane la Rot**	**83.83**	**19**	*e*P	**P**	**20 30 18.4**	**+0.6**
	comp=Z,88nm,1.6s,mb5.3						
CAF	**Calviac**	**83.88**	**16**	*e*P	**P**	**20 30 17.8**	**-0.2**
	comp=Z,38nm,1.5s,mb5.0						
RJF	**Les Rejaudoux**	**84.12**	**16**	*e*P	**P**	**20 30 19.0**	**-0.2**
	comp=Z,75nm,1.7s,mb5.2						
RJF				*e*R			
	comp=Z,147nm,17.2s						
VIVF	**Saint-Julien-l**	**84.43**	**18**	*e*P	**P**	**20 30 21.0**	**+0.2**
	comp=Z,71nm,1.6s,mb5.3						
GRFL	**Gerfalco**	**84.62**	**23**	*e*P	**P**	**20 30 22.1**	**+0.4**
ORIF	**Oris-en-Rattie**	**84.79**	**19**	*e*P	**P**	**20 30 23.2**	**+0.6**
	comp=Z,19nm,0.9s,mb4.9						
ORIF				*e*R			
	comp=Z,154nm,22.5s						
MBDF	**Montbardon**	**84.85**	**19**	*e*P	**P**	**20 30 23.4**	**+0.6**
	comp=Z,19nm,1.1s,mb4.8						
PII	**Pisa**	**85.00**	**22**	*e*P	**P**	**20 30 23.8**	**+0.2**
MFF	**Saint Martin d**	**85.02**	**14**	*e*P	**P**	**20 30 23.8**	**+0.2**
	comp=Z,43nm,1.4s,mb5.1						
TCF	**Toulx Ste Croi**	**85.21**	**16**	*e*P	**P**	**20 30 24.9**	**+0.3**
	comp=Z,66nm,1.7s,mb5.2						
LPG	**La Plagne**	**85.56**	**19**	*e*P	**P**	**20 30 27.1**	**+0.7**
	comp=Z,30nm,1.0s,mb5.2						
LPL	**La Plagne**	**85.57**	**19**	*e*P	**P**	**20 30 27.0**	**+0.6**
	comp=Z,34nm,1.0s,mb5.2						
BGF	**Bois d'Agland**	**85.60**	**16**	*e*P	**P**	**20 30 26.7**	**+0.1**
QUIF	**Quistinic**	**85.74**	**12**	*e*P	**P**	**20 30 26.9**	**-0.3**
	comp=Z,77nm,1.4s,mb5.4						
SMF	**Signal de Mont**	**85.91**	**17**	*e*P	**P**	**20 30 28.2**	**+0.1**
	comp=Z,42nm,1.4s,mb5.2						
AVF	**Avril sur Loir**	**85.94**	**16**	*e*P	**P**	**20 30 28.5**	**+0.3**
	comp=Z,42nm,1.3s,mb5.2						
DWPF	**Disney**	**86.02**	**310**	PFAKE		20 30 40.0	+11
DWPF				LR	LR		
	comp=Z,495nm,22.0s,MS4.9						
ROSF	**Rostrenen**	**86.13**	**12**	*e*P	**P**	**20 30 28.9**	**-0.2**
	comp=Z,34nm,1.3s,mb5.1						
SSF	**Saint Saulge**	**86.23**	**16**	*e*P	**P**	**20 30 29.7**	**0.0**
	comp=Z,25nm,1.2s,mb5.0						
HYF	**Humbligny**	**86.23**	**16**	*e*P	**P**	**20 30 30.0**	**+0.3**
LOR	**Lormes**	**86.50**	**17**	*e*P	**P**	**20 30 31.0**	**0.0**
	comp=Z,22nm,1.2s,mb5.0						
LOR				*e*R			
	comp=Z,189nm,18.8s						
LDF	**La Druitiere**	**86.93**	**14**	*e*P	**P**	**20 30 32.7**	**-0.4**
	comp=Z,28nm,1.3s,mb5.0						
FLN	**La Foliniere**	**87.03**	**13**	*e*P	**P**	**20 30 33.0**	**-0.5**
	comp=Z,30nm,1.2s,mb5.1						
FLN				*e*R			
	comp=Z,196nm,20.5s						
SKO	**Skopje**	**87.34**	**30**	*i*P	**P**	**20 30 35.0**	**-0.2**
CTI	**Castel Tesino**	**87.44**	**22**	*e*P	**P**	**20 30 36.5**	**+0.9**
HINF	**Hinteralfeld**	**87.74**	**18**	*e*P	**P**	**20 30 36.7**	**-0.3**
	comp=Z,29nm,1.4s,mb5.0						
HAU	**Haudompre**	**87.79**	**18**	*e*P	**P**	**20 30 37.2**	**0.0**
	comp=Z,12nm,1.0s,mb4.8						
HAU				*e*R			
	comp=Z,111nm,17.8s						
MEZF	**Maizieres J'vi**	**87.94**	**17**	*e*P	**P**	**20 30 38.2**	**+0.3**
	comp=Z,31nm,1.0s,mb5.2						
DAVA	**Damuels**	**88.05**	**20**	⇑*i*P	**P**	**20 30 38.9**	**+0.4**
	comp=Z,18nm,1.4s,mb5.1						
FVI	**Forni Avoltri**	**88.28**	**22**	*e*P	**P**	**20 30 40.5**	**+0.9**
SQTA	**Sankt Quirin**	**88.37**	**21**	⇑*i*P	**P**	**20 30 40.1**	**+0.1**
	comp=Z,30nm,1.6s,mb5.3						
CDF	**Champ du Feu**	**88.39**	**18**	*e*P	**P**	**20 30 40.2**	**+0.1**
	comp=Z,70nm,1.5s,mb5.4						
MOTA	**Moosalm**	**88.45**	**21**	⇑*i*P	**P**	**20 30 40.6**	**+0.2**
	comp=Z,34nm,2.1s,mb5.2						
WTTA	**Wattenberg**	**88.54**	**21**	⇑*i*P	**P**	**20 30 41.4**	**+0.6**
	comp=Z,25nm,1.6s,mb5.3						
WATA	**Walderalm**	**88.58**	**21**	⇑*i*P	**P**	**20 30 41.2**	**+0.2**
	comp=Z,34nm,1.6s,mb5.4						
BFO	**Black Forest**	**88.59**	**19**	*e*P	**P**	**20 30 41.1**	**+0.1**
BFO				pmax	pmax		
	comp=Z,23nm,1.4s,mb5.3						
BFO	**Black Forest**	**88.59**	**19**	*e*P	**P**	**20 30 41.1**	**+0.1**
	comp=Z,23nm,1.4s,mb5.3						
KBA	**Koelnbreinsper**	**88.89**	**23**	⇑*i*P	**P**	**20 30 43.2**	**+0.7**
	comp=Z,12nm,1.2s,mb5.1						
BAIF	**Baives**	**89.21**	**16**	*e*P	**P**	**20 30 44.1**	**+0.2**
	comp=Z,58nm,1.3s,mb5.4						
FUR	**Furstenfeldbru**	**89.25**	**21**	*e*P	**P**	**20 30 44.5**	**+0.3**
FUR				pmax	pmax		
	comp=Z,62nm,1.5s,mb5.7						
FUR	**Furstenfeldbru**	**89.25**	**21**	*e*P	**P**	**20 30 44.5**	**+0.3**
	comp=Z,62nm,1.5s,mb5.7						
WLF	**Walferdange**	**89.28**	**17**	*e*P	**P**	**20 30 42.8**	**-1.5**
	comp=Z,37nm,1.3s,mb5.5						
GIVF	**Givet**	**89.39**	**16**	*e*P	**P**	**20 30 45.0**	**+0.2**
	comp=Z,89nm,1.5s,mb5.6						
ARSA	**Arzberg**	**89.73**	**24**	⇑*i*P	**P**	**20 30 47.5**	**+1.0**
	comp=Z,19nm,1.4s,mb5.2						
MOA	**Molln**	**89.86**	**23**	⇑*i*P	**P**	**20 30 47.4**	**+0.4**
	comp=Z,23nm,1.6s,mb5.2						
GEC2	**GERESS Array S**	**90.57**	**22**	*e*P	**P**	**20 30 50.3**	**0.0**
GEC2				pmax	pmax		
	comp=Z,17nm,1.4s,mb5.2						
GEC2	**GERESS Array S**	**90.57**	**22**	*e*P	**P**	**20 30 50.3**	**0.0**
	comp=Z,17nm,1.4s,mb5.2						
GERES	**GERESS Array B**	**90.57**	**22**	P	**P**	**20 30 50.7**	**+0.4**
GERES				PP	PP	20 34 28.5	+0.9
	comp=Z,2.1nm,0.8s,mb4.5,baz=191,slow=6.8,SNR=21						
	comp=Z,0.4nm,0.7s,baz=212,slow=9.3,SNR=2.8						
WET	**Wettzell**	**90.59**	**21**	*e*P	**P**	**20 30 50.5**	**+0.1**
WET				pmax	pmax		
	comp=Z,38nm,1.4s,mb5.5						
WET	**Wettzell**	**90.59**	**21**	*e*P	**P**	**20 30 50.5**	**+0.1**
	comp=Z,38nm,1.4s,mb5.5						
GRA1	**Grafenberg Arr**	**90.61**	**20**	*e*P	**P**	**20 30 50.9**	**+0.4**
	comp=Z,47nm,1.4s,mb5.6						
GRA1				LR	LR		
	comp=Z,100nm,19.2s,MS4.3						
GRF	**Grafenberg Arr**	**90.61**	**20**	*e*P	**P**	**20 30 50.9**	**+0.4**
GRF				pmax	pmax		
	comp=Z,47nm,1.4s,mb5.6						
GRF				MLR	MLR		
	comp=Z,100nm,19.2s,MS4.3						
KHC	**Kasperske Hory**	**90.79**	**22**	*e*P	**P**	**20 30 51.6**	**+0.3**
ZST	**Bratislava**	**91.07**	**24**	*e*PKP	**P**	**20 30 53.6**	**+1.0**
BRTR	**Keskin Array B**	**91.10**	**39**	P	**P**	**20 30 53.5**	**+0.5**
	comp=Z,3.4nm,1.0s,mb4.6,baz=180,slow=7.4,SNR=18						
BRTR				LR	LR	21 12 01.1	
	comp=Z,40nm,18.8s,MS3.9,baz=170,slow=36						
MOX	**Moxa**	**91.58**	**20**	*i*P	**P**	**20 30 55.6**	**+0.7**
MOX				SS	SS	20 48 01.0	-1.3
MOX	**Moxa**	**91.58**	**20**	*e*P	**P**	**20 30 55.6**	**+0.7**
PSZ	**Piszkesteto**	**91.79**	**26**	*e*P	**P**	**20 30 53.0**	**-2.9**
	comp=Z,22nm,1.5s,mb5.3						
PRU	**Pruhonice**	**91.84**	**22**	*e*P	**P**	**20 30 56.6**	**+0.5**
	comp=Z,52nm,1.7s,mb5.6						
PRU	**Pruhonice**	**91.84**	**22**	*e*P	**P**	**20 30 56.6**	**+0.5**
PRU				pmax	pmax		
	comp=Z,52nm,1.7s,mb5.6						
VYHS	**Vyhne**	**91.91**	**25**	*i*PKP	**P**	**20 30 57.0**	**+0.5**
VYHS				*e*SKSDF		20 37 58.6	
MLR	**Muntele Rosu**	**92.08**	**31**	⇑*i*P	**P**	**20 30 57.7**	**+0.3**
PVCC	**Panska Ves**	**92.32**	**22**	*e*P	**P**	**20 30 58.8**	**+0.5**
CLL	**Collm**	**92.56**	**20**	P	**P**	**20 31 01.0**	**+1.6**
CLL				*e*		20 31 12.0	
CLL				*e*		20 32 50.0	
CLL				*e*PP	PP	20 34 42.0	-1.6
CLL				*e*S	S	20 42 05.0	+4.1
CLL				*e*PS	PS	20 43 17.0	-1.6
CLL				*e*SS	SS	20 48 09.0	-7.6
CLL				*e*SSS	SSS	20 52 29.0	+34
CLL	**Collm**	**92.56**	**20**	*e*P	**P**	**20 31 01.0**	**+1.6**
CLL				*e*S	S	20 42 05.0	+4.1
MORC	**Moravsky Berou**	**92.59**	**24**	*e*P	**P**	**20 30 58.1**	**-1.4**
	comp=Z,22nm,1.4s,mb5.4						
DPC	**Dobruska-Polom**	**92.70**	**23**	*e*P	**P**	**20 31 01.0**	**+0.9**
VRI	**Vrincioaia**	**92.71**	**31**	⇑*i*P	**P**	**20 31 00.0**	**-0.2**
UPC	**Upice**	**92.74**	**23**	*e*P	**P**	**20 31 01.4**	**+1.1**
CFR	**Carcaliu**	**92.75**	**32**	⇑*i*P	**P**	**20 31 00.5**	**0.0**
AKASG	**Malin Array Be**	**97.57**	**29**	LR	LR	21 09 19.0	
	comp=Z,36nm,22.0s,MS3.8,baz=210,slow=32						
SCHQ	**Schefferville**	**99.36**	**335**	LR	LR	21 08 20.7	
	comp=Z,203nm,18.1s,MS4.7,baz=182,slow=30						
PPT	**Papeete**	**107.50**	**231**	*e*PP	PP	20 36 33.7	-4.7
PPT				*e*SS	SS	20 51 52.3	+7.3
PPT				*e*R		21 07 57.5	
	comp=Z,470nm,32.8s						
ASAR	**Alice Springs**	**115.38**	**154**	PKP	PKPdf	20 36 29.1	-3.3
	comp=Z,1.5nm,0.7s,baz=184,slow=1.3,SNR=17						
WRA	**Warramunga Arr**	**118.96**	**153**	PKP	PKPdf	20 36 35.8	-3.5
	comp=Z,2.5nm,0.7s,baz=227,slow=1.8,SNR=26						
WRAB	**Tennant Creek**	**118.97**	**153**	*e*PKPdf	PKPdf	20 36 35.6	-3.8
CTA	**Charters Tower**	**122.19**	**166**	PKP	PKPdf	20 36 42.9	-2.7
	comp=Z,1.6nm,0.6s,baz=120,slow=7.8,SNR=3.8						
CTAO	**Charters Tower**	**122.19**	**166**	*e*PKPdf	PKPdf	20 36 42.4	-3.2
CTAO				LR	LR		
	comp=Z,428nm,22.0s,MS5.0						
YKA	**Yellowknife Ar**	**123.49**	**326**	PKP	PKPdf	20 36 43.0	-4.0
	comp=Z,0.6nm,0.6s,baz=111,slow=2.1,SNR=14						
YKA	**Yellowknife

PSI	**Prapat**	**3.60**	**93**	⇓	*e*Pn	**P**	**21 10 06.0**	**+0.3**
IPM	**Ipoh**	**5.94**	**73**	⇓	*e*P	**P**	**21 10 38.3**	**-0.4**
CMAR	**Chiang Mai Arr**	**15.90**	**13**		Pn	**P**	**21 12 54.0**	**+0.3**
	0.2nm,0.3s,baz=201,slow=11,SNR=11							
WRA	**Warramunga Arr**	**44.50**	**122**		P	**P**	**21 17 20.9**	**+0.1**
	0.4nm,0.4s,mb3.5,baz=299,slow=9.4,SNR=6.1							
WRAB	**Tennant Creek**	**44.50**	**122**		*e*P	**P**	**21 17 19.6**	**-1.1**
	23nm,1.3s,mb4.8							
MKAR	**Makanchi Array**	**45.21**	**347**		P	**P**	**21 17 25.9**	**-0.1**
	0.3nm,0.4s,mb3.5,baz=163,slow=8.2,SNR=4.1							
ZAL	**Zalesovo**	**51.64**	**352**		P	**P**	**21 18 15.2**	**-0.6**
	1.1nm,0.6s,mb4.0,baz=222,slow=9.5,SNR=5.1							
PMG	**Port Moresby**	**53.06**	**104**		*e*P	**P**	**21 18 27.5**	**+0.5**
BVAR	**Borovoye Array**	**54.09**	**342**		P	**P**	**21 18 34.0**	**0.0**
	0.9nm,0.6s,mb3.9,baz=153,slow=9.3,SNR=12							
BRVK	**Borovoye**	**54.15**	**342**		P	**P**	**21 18 30.3**	**-4.2**
ZRNK	**Zerenda**	**54.47**	**341**		*e*P	**P**	**21 18 36.3**	**-0.5**
CTAO	**Charters Tower**	**54.91**	**117**		*e*P	**P**	**21 18 41.0**	**+0.4**
	5.4nm,1.1s,mb4.5							
FINES	**FINESS Array B**	**77.67**	**333**		P	**P**	**21 21 05.3**	**+0.3**
	0.9nm,0.7s,mb3.8,baz=124,slow=6.9,SNR=4.3							
ARCES	**ARCESS Array B**	**80.35**	**340**		P	**P**	**21 21 20.4**	**+1.0**
	1.3nm,0.8s,mb3.9,baz=100,slow=5.5,SNR=4.2							

IDC ***13*** *21:09:22.0±1.3, 0.69S×125.64E, mb3.8/5, mb1 4.0/6, mb1mx3.8/17, ML3.9/1, MS4.1/1, Ms1 4.1/1, ms1mx3.1/17, Error ellipse: s-maj=112.0km s-min=18.6km az=66.0*
NEIC ***13*** *21:09:23.9±0.8, 0.53S×126.10E, h15km, mb4.0/2, Error ellipse: s-maj=50.5km s-min=11.2km az=68.0*
ISC 13 21:09:21.7±1.0**, 0.5S**±0.2×**126.2E**±0.4**, h15**km**, n10, σ0s73/9, mb3.9/4, MS4.0/1, Southern Molucca Sea**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
FITZ	**Fitzroy Crossi**	**17.51**	**182**	*e*P		**P**		**21 13 27.3**	**+0.2**
	1.9nm,0.6s								
FITZ	**Fitzroy Crossi**	**17.51**	**182**	P		**P**		**21 13 26.7**	**-0.3**
	0.3nm,0.3s,baz=16,slow=5.4,SNR=16								
WRAB	**Tennant Creek**	**20.93**	**158**	*e*P		**P**		**21 14 05.4**	**-1.0**
	34nm,1.4s								
WRA	**Warramunga Arr**	**20.93**	**158**	P		**P**		**21 14 06.0**	**-0.4**
	1.4nm,0.5s,baz=334,slow=11,SNR=20								
WB2	**Warramunga Arr**	**20.93**	**158**	*e*P		**P**		**21 14 05.9**	**-0.6**
ASAR	**Alice Springs**	**24.24**	**162**	P		**P**		**21 14 40.2**	**+1.0**
	1.8nm,0.7s,mb3.6,baz=342,slow=9.2,SNR=16								
CTA	**Charters Tower**	**27.69**	**136**	LR		LR		21 26 55.4	
	comp=Z,380nm,18.5s,MS4.0,baz=248,slow=38								
STKA	**Stephens Creek**	**34.46**	**156**	P		**P**		**21 16 12.3**	**+1.2**
	1.0nm,0.5s,mb4.0,baz=350,slow=8.0,SNR=4.6								
MKAR	**Makanchi Array**	**60.71**	**327**	P		**P**		**21 19 34.5**	**-0.4**
	0.7nm,0.4s,mb4.2,baz=126,slow=8.4,SNR=16								
BVAR	**Borovoye Array**	**70.54**	**328**	P		**P**		**21 20 38.2**	**+0.2**
	0.4nm,0.5s,mb3.6,baz=101,slow=7.6,SNR=5.1								

IDC ***13*** *21:17:42.4±1.0, 7.20S×145.40E, mb4.0/6, mb1 4.2/10, mb1mx4.1/15, ML3.5/4, MS3.9/6, Ms1 3.9/6, ms1mx3.7/13, Error ellipse: s-maj=26.4km s-min=17.4km az=68.0*
NEIC ***13*** *21:17:45.4±0.5, 7.27S×145.23E, h15km, mb4.6/11, Error ellipse: s-maj=10.4km s-min=8.3km az=81.0*
ISC 13 21:17:45.1±3.6**, 7.36S**±0.08×**145.25E**±0.07**, h25**km±26km**, n28, σ1s06/30, mb4.3/15, MS3.8/4, Near south coast of New Guinea**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
WAU	**Wau**	**1.46**	**89**	*e*P		**Pn**		**21 18 10.8**	**+0.6**
PMG	**Port Moresby**	**2.78**	**137**	Pn		**Pn**		**21 18 28.3**	**-0.7**
	10nm,0.3s,baz=15,slow=2.0,SNR=22								
PMG				Pg		**Pn**		**21 18 33.8**	**+4.8**
	11nm,0.3s,baz=327,slow=6.7,SNR=17								
PMG				Sn		**Sn**		**21 19 00.7**	**-1.3**
	25nm,0.3s,baz=131,slow=18,SNR=11								
PMG	**Port Moresby**	**2.78**	**137**	*e*P		**Pn**		**21 18 30.4**	**+1.4**
PMG				*e*S		**Sn**		**21 19 00.3**	**-1.7**
CTA	**Charters Tower**	**12.69**	**176**	Pn		**P**		**21 20 47.9**	**+1.0**
	0.2nm,0.3s,baz=8.4,slow=18,SNR=2.9								
CTAO	**Charters Tower**	**12.69**	**176**	*e*P		**P**		**21 20 48.2**	**+1.3**
WRAB	**Tennant Creek**	**16.36**	**219**	*e*P		**P**		**21 21 33.1**	**-1.9**
	46nm,0.9s								
WRAB				*e*S		**S**		**21 24 28.9**	**-6.4**
WB2	**Warramunga Arr**	**16.37**	**219**	*e*P		**P**		**21 21 34.2**	**-0.8**
WRA	**Warramunga Arr**	**16.38**	**219**	Pn		**P**		**21 21 34.8**	**-0.4**
	0.4nm,0.3s,baz=30,slow=13,SNR=20								
WRA				LR		LR		21 28 31.3	
	comp=Z,526nm,21.1s,baz=55,slow=39								
AS12	**Alice Springs**	**19.53**	**213**	*e*P		**P**		**21 22 13.1**	**-0.6**
	40nm,1.0s								
ASAR	**Alice Springs**	**19.53**	**213**	P		**P**		**21 22 13.7**	**0.0**
	0.7nm,0.3s,baz=44,slow=7.5,SNR=47								
ASAR				LR		LR		21 30 31.8	
	comp=Z,565nm,19.0s,baz=41,slow=39								
FITZ	**Fitzroy Crossi**	**21.88**	**239**	*e*P		**P**		**21 22 38.4**	**+0.3**
	1.5nm,0.4s,mb3.8								
FITZ	**Fitzroy Crossi**	**21.88**	**239**	P		**P**		**21 22 38.9**	**+0.8**
	5.3nm,1.2s,mb3.9,baz=75,slow=6.9,SNR=6.1								
FITZ				LR		LR		21 31 48.2	
	comp=Z,244nm,20.1s,MS3.6,baz=79,slow=38								
STKA	**Stephens Creek**	**24.63**	**187**	P		**P**		**21 23 06.9**	**+1.9**
	4.2nm,1.1s,mb3.9,baz=333,slow=11,SNR=3.0								
STKA				LR		LR		21 34 19.4	
	comp=Z,318nm,18.7s,MS3.8,baz=133,slow=40								
JOW	**Kunigami**	**37.77**	**335**	LR		LR		21 38 40.1	
	comp=Z,48nm,18.1s,MS3.3,baz=310,slow=33								
CM31	**Chiang Mai Arr**	**52.38**	**300**	P		**P**		**21 26 59.3**	**+1.5**
	1.8nm,0.6s,mb4.2								
CMAR	**Chiang Mai Arr**	**52.38**	**300**	P		**P**		**21 26 57.4**	**-0.4**
	4.2nm,1.1s,mb4.3,baz=114,slow=5.7,SNR=15								
LSA	**Lhasa**	**63.68**	**308**	*e*P		**P**		**21 28 17.6**	**+0.5**
	1.8nm,0.8s,mb4.2								
KKN	**Kakani**	**67.62**	**304**	*e*P		**P**		**21 28 42.0**	**-0.3**
	11nm,0.8s,mb4.9								
DMN	**Daman**	**67.69**	**304**	*e*P		**P**		**21 28 42.2**	**-0.6**
	13nm,0.8s,mb5.0								
GKN	**Gorkha**	**68.22**	**304**	*e*P		**P**		**21 28 44.8**	**-1.3**
	46nm,1.4s,mb5.3								
KOLN	**Koldanda**	**69.00**	**303**	*e*P		**P**		**21 28 51.2**	**+0.3**
	13nm,0.9s,mb4.9								
VNDA	**Vanda**	**70.67**	**176**	LR		LR		21 57 22.6	
	comp=Z,134nm,19.1s,MS4.2,baz=227,slow=34								
VNDA	**Vanda**	**70.67**	**176**	*e*P		**P**		**21 29 01.0**	**+0.7**
	2.8nm,1.5s,mb4.0								
MKAR	**Makanchi Array**	**77.45**	**321**	P		**P**		**21 29 40.0**	**0.0**
	0.3nm,0.7s,mb3.3,baz=129,slow=7.8,SNR=4.6								
QSPA	**South Pole Qui**	**82.61**	**180**	*e*P		**P**		**21 30 08.9**	**+1.9**
	3.1nm,0.7s,mb4.5								
MCK	**McKinley**	**86.17**	**24**	*e*P		**P**		**21 30 24.3**	**-0.8**
	3.8nm,0.8s,mb4.7								
BVAR	**Borovoye Array**	**86.84**	**324**	P		**P**		**21 30 29.3**	**+0.6**
	0.2nm,0.3s,mb3.8,baz=146,slow=5.2,SNR=3.9								
ILAR	**Eielson Array**	**87.41**	**23**	P		**P**		**21 30 29.4**	**-1.7**
	3.2nm,0.8s,mb4.6,baz=259,slow=4.6,SNR=24								

NEIC ***13*** *21:19:48.6, 31.61S×71.65W, h35km, ML2.9(GUC), After GUC.*
GUC 13 21:19:48.6±0.9**, 31.61S×71.65W, h35**km±3km**, MD3.7, ML2.9, 1C, Near coast of central Chile**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
ILCH	**Illapel**	**0.41**	**94**	⇑	*i*P	P		21 19 58.2	+0.4
ILCH					*i*S	S		21 20 05.1	+0.7
ILCH					AMP			21 20 06.0	
	comp=E,878nm,0.1s								
CMCH	**Combarbala**	**0.70**	**52**		*i*P	P		21 20 02.2	+0.1
CMCH					*i*S	S		21 20 12.1	+0.3
CMCH					AMP			21 20 14.3	
	comp=E,1μm,0.6s								
PTCH	**Petorca**	**0.89**	**137**		*e*P	P		21 20 04.4	-0.3
PTCH					*i*S	S		21 20 16.9	+0.4
PTCH					AMP			21 20 18.6	
	comp=E,977nm,0.2s								
JACH	**Jahuel**	**1.39**	**140**		*e*P	P		21 20 13.2	+1.3
JACH					*i*S	S		21 20 31.7	+2.4
ROCH	**El Roble**	**1.46**	**159**		*e*P	P		21 20 14.2	+1.4
TLL	**Tololo Astrono**	**1.61**	**27**		*e*P	P		21 20 16.2	+1.2
TLL					*i*S	S		21 20 38.1	+3.2
TLL					AMP			21 20 43.4	
	comp=E,228nm,0.5s								
PEL	**Peldehue**	**1.73**	**152**		*e*P	P		21 20 19.0	+2.2
PEL					*i*S	S		21 20 39.7	+1.8
PEL					AMP			21 20 46.9	
	comp=E,363nm,0.3s								

RCDM	**Rinconada Maip**	**2.00**	**159**	*e*P		P	21 20 21.5	+0.9
RCDM				AMP			21 20 58.4	
	comp=E,132nm,0.1s							
FCH	**Farellones**	**2.06**	**147**	*e*P		P	21 20 23.3	+1.8
FCH				*i*S		S	21 20 48.9	+2.7
FCH				AMP			21 20 55.1	
	comp=E,110nm,0.2s							
TACH	**Talagante**	**2.12**	**164**	*e*P		P	21 20 22.6	+0.2
LMEL	**Las Melosas**	**2.54**	**152**	*e*P		P	21 20 30.0	+1.7

NEIC ***13*** *21:29:21.7, 31.71S×69.70W, h129km, MD3.5(GUC), After GUC.*
GUC 13 21:29:21.7±0.7**, 31.71S×69.70W, h129**km±9km**, MD3.5, ML3.8, 9C-4D, San Juan Province**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
PTCH	**Petorca**	**1.18**	**242**	⇑	*i*P	P		21 29 46.7	+0.1
PTCH					*i*S	S		21 30 05.5	0.0
PTCH					AMP			21 30 09.4	
	comp=N,2μm,0.2s								
JACH	**Jahuel**	**1.23**	**218**	⇑	*i*P	P		21 29 47.4	+0.3
JACH					*i*S	S		21 30 06.2	-0.2
CMCH	**Combarbala**	**1.24**	**295**	⇑	*i*P	P		21 29 47.8	+0.5
CMCH					*i*S	S		21 30 07.0	+0.4
CMCH					AMP			21 30 09.4	
	comp=E,3μm,0.6s								
ILCH	**Illapel**	**1.26**	**273**	⇑	*i*P	P		21 29 47.6	+0.1
ILCH					*i*S	S		21 30 07.1	+0.1
ILCH					AMP			21 30 08.9	
	comp=N,787nm,0.3s								
PEL	**Peldehue**	**1.65**	**210**	⇑	*i*P	P		21 29 51.9	0.0
PEL					*i*S	S		21 30 14.7	-0.2
PEL					AMP			21 30 15.8	
	comp=E,1μm,0.5s								
ROCH	**El Roble**	**1.68**	**221**	⇓	*i*P	P		21 29 52.2	+0.1
ROCH					*i*S	S		21 30 15.8	+0.4
FCH	**Farellones**	**1.69**	**197**	⇓	*i*P	P		21 29 53.0	+0.7
FCH					*i*S	S		21 30 16.8	+1.2
FCH					AMP			21 30 18.7	
	comp=E,680nm,0.2s								
TLL	**Tololo Astrono**	**1.81**	**328**	⇑	*i*P	P		21 29 54.3	+0.5
TLL					*i*S	S		21 30 18.7	+0.5
TLL					AMP			21 30 21.6	
	comp=E,802nm,0.6s								
CLCH	**Cerro Calan**	**1.82**	**203**	⇓	*i*P	P		21 29 54.1	+0.3
CLCH					*i*S	S		21 30 18.9	+0.5
CLCH					AMP			21 30 20.8	
	comp=E,761nm,0.6s								
RCDM	**Rinconada Maip**	**2.00**	**208**	⇑	*i*P	P		21 29 56.1	+0.1
RCDM					*i*S	S		21 30 22.4	+0.2
RCDM					AMP			21 30 24.7	
	comp=E,917nm,0.1s								
ANTU	**Antumapu**	**2.01**	**203**	⇑	*i*P	P		21 29 56.2	+0.1
ANTU					*i*S	S		21 30 22.8	+0.4
ANTU					AMP			21 30 24.9	
	comp=E,516nm,0.3s								
PCH	**Pirque**	**2.02**	**200**	*e*P		P		21 29 56.5	+0.2
LMEL	**Las Melosas**	**2.17**	**191**	⇓	*i*P	P		21 29 58.5	+0.2
LMEL					AMP			21 30 33.4	
	comp=N,579nm,0.2s								
TACH	**Talagante**	**2.20**	**208**	*e*P		P		21 29 57.9	-0.8
TACH					*i*S	S		21 30 26.4	-0.3
LSCH	**La Serena**	**2.24**	**323**	*i*P		P		21 29 58.3	-0.8
LSCH					*i*S	S		21 30 26.5	-1.1
LSCH					AMP			21 30 27.8	
	comp=E,763nm,0.3s								
LCCH	**Las Cruces**	**2.36**	**221**	⇑	*i*P	P		21 30 00.4	-0.3
SFDO	**San Fernando**	**3.10**	**201**	*i*P		P		21 30 09.2	-1.2
SFDO					*i*S	S		21 30 46.2	-1.3
VACH	**Vallenar**	**3.26**	**343**	*i*S		S		21 30 49.3	-2.1

KRSC 13 21:36:10.2±1.0**, 54.99N×162.61E, h21**km±5km**, ML3.9, Near east coast of Kamchatka Peninsula**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
MKZ	**Mys Kozlova**	**0.67**	**230**	*i*P		Pb		21 36 22.9	-0.2
MKZ				*i*S		Sb		21 36 32.0	+0.1
KBTR	**Krutoberegovo**	**1.23**	**5**	*e*P		Pn		21 36 31.7	-0.6
KBTR				*e*S		Sb		21 36 49.3	+1.3
KBG	**Krutoberegovo**	**1.27**	**2**	*e*P		Pn		21 36 32.3	-0.6
KBG				*e*S		Sb		21 36 50.0	+0.8
KBG				Smax					
	860nm,0.7s								
TUMR	**Tumrok**	**1.45**	**283**	*e*P		Pn		21 36 36.0	+0.5
TUMR				*e*S		Sn		21 36 54.6	+0.7
ZLN	**Zelenaya**	**1.45**	**316**	*e*P		Pn		21 36 35.9	+0.3
ZLN				*e*S		Sn		21 36 54.2	0.0
CIRR	**Tsirk**	**1.55**	**318**	*e*P		Pn		21 36 37.2	+0.3
CIRR				*e*S		Sn		21 36 56.4	-0.1
LGNR	**Loginova**	**1.55**	**316**	*e*P		Pn		21 36 37.3	+0.4
KMNR	**Kamenistaya**	**1.56**	**301**	*e*P		Pn		21 36 37.3	+0.2
KMNR				*e*S		Sn		21 36 56.6	-0.2
KPT	**Kopyto**	**1.68**	**307**	*e*P		Pn		21 36 39.8	+1.1
KPT				*e*S		Sn		21 37 00.9	+1.1
KLY	**Klyuchi**	**1.73**	**321**	*e*P		Pn		21 36 39.0	-0.5
KLY				*e*S		Sn		21 36 59.3	-1.8
SVLR	**Shiveluch**	**1.77**	**334**	*e*P		Pn		21 36 40.8	+0.6
SVLR				*e*S		Sn		21 37 02.6	+0.3
KOZ	**Kozyrevsk**	**1.89**	**306**	*e*P		Pn		21 36 42.4	+0.6
KOZ				*e*S		Sn		21 37 05.5	+0.3
BKI	**Bering**	**1.94**	**82**	*e*S		Sn		21 37 03.2	-3.4
SRDR	**Sredinnyy**	**2.11**	**310**	*e*P		Pn		21 36 45.3	+0.3
SRDR				*e*S		Sn		21 37 10.7	-0.2
ESO	**Esso**	**2.42**	**294**	*e*P		Pn		21 36 49.6	+0.2
SPN	**Mys Shipunski**	**2.43**	**220**	*e*P		Pn		21 36 48.8	-0.8
SPN				*e*S		Sn		21 37 17.6	-1.4
NLC	**Nalytchevo**	**2.65**	**228**	*i*P		Pn		21 36 53.3	+0.6
NLC				*e*S		Sn		21 37 25.1	+0.6
SDLR	**Sedlovina**	**2.78**	**233**	*e*P		Pn		21 36 55.5	+0.9
SMAR	**Somma**	**2.83**	**234**	*e*P		Pn		21 36 55.7	+0.4
UGLR	**Uglovaya**	**2.86**	**233**	*e*P		Pn		21 36 56.9	+1.3
AVH	**Avacha**	**2.86**	**234**	*e*P		Pn		21 36 56.8	+0.9
AVH				*e*S		Sn		21 37 29.9	0.0
KOK	**Koryaka**	**2.89**	**236**	*e*P		Pn		21 36 57.3	+1.2
GNL	**Ganaly**	**3.02**	**247**	*e*P		Pn		21 36 58.7	+0.7
GNL				*e*S		Sn		21 37 33.7	-0.3
PET	**Petropavlovsk**	**3.06**	**231**	*e*P		Pn		21 36 58.9	+0.4
PET				*e*S		Sn		21 37 34.7	-0.1
KRMR	**Karymshinskiy**	**3.42**	**233**	*e*		Sn		21 37 38.5	-5.6
RUS	**Russkaya**	**3.53**	**225**	*e*P		Pn		21 37 05.0	-0.3
RUS				*e*S		Sn		21 37 45.0	-1.9
GRL	**Gorelyy**	**3.63**	**230**	*e*P		Pn		21 37 07.6	+0.9
GRL				*e*S		Sn		21 37 49.4	-0.1
APC	**Apacha**	**3.83**	**240**	*e*P		Pn		21 37 11.1	+1.7

IDC ***13*** *21:36:56.6±2.2, 2.86N×95.37E, mb3.7/4, mb1 3.8/5, mb1mx3.6/18, ML3.6/1, Error ellipse: s-maj=92.2km s-min=27.6km az=56.0*
ISC 13 21:36:59.6±1.7**, 2.8N**±0.2×**95.3E**±0.3**, h33**km**, n5, σ0s74/5, mb3.6/4, Off west coast of northern Sumatera**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
CMAR	**Chiang Mai Arr**	**15.93**	**13**			Pn		**21 40 43.4**	**+0.3**
	0.1nm,0.3s,baz=198,slow=11,SNR=8.2								
WRA	**Warramunga Arr**	**44.48**	**122**			P		**21 45 09.8**	**-0.1**
	0.3nm,0.5s,mb3.3,baz=300,slow=9.3,SNR=7.3								
MKAR	**Makanchi Array**	**45.24**	**347**			P		**21 45 14.9**	**-0.7**
	0.6nm,0.4s,mb3.8,baz=162,slow=7.6,SNR=16								
ZAL	**Zalesovo**	**51.67**	**352**			P		**21 46 04.9**	**-0.4**
	0.7nm,0.5s,mb3.9,baz=220,slow=5.4,SNR=3.3								
FINES	**FINESS Array B**	**77.70**	**333**			P		**21 48 55.3**	**+0.8**
	0.3nm,0.5s,mb3.5,baz=328,slow=36,SNR=3.7								

JMA ***13*** *22:15:36.8±0.4, 21.95N×121.72E, h106km*
TAP ***13*** *22:15:36.5, 22.04N×121.52E, h10km, ML3.2*
ISC 13 22:15:35.9±2.4**, 22.0N**±0.3×**121.9E**±0.3**, h10**km**, n6, σ0s37/10, Taiwan region**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
YOJ	**Yonaguni jima**	**2.70**	**23**			P		**22 16 20.2**	**-0.1**
HATJ	**Hateruma jima**	**2.75**	**41**			P		**22 16 21.2**	**+0.2**
IRIF	**Iriomote-Funau**	**2.92**	**36**			P		**22 16 23.5**	**+0.1**
IRIF						*e*S		**22 16 58.7**	**-0.3**
JKRS	**Kuro-shima**	**3.01**	**41**			P		**22 16 25.0**	**+0.3**
JKRS						S		**22 17 02.0**	**+0.8**

JIJ	**Ishigaki jima**	**3.19**	**41**		P		**Pn**	**22 16 26.8**	**-0.3**
JIJ					S		**Sn**	**22 17 05.6**	**0.0**
JTJ	**Tarama**	**3.74**	**44**		P		**Pn**	**22 16 34.8**	**-0.2**
JTJ					S		**Sn**	**22 17 19.0**	**-0.5**

MEX 13 22:19:16.8±0.4**, 18.10N×102.13W, h20**km±15km**, MD3.9, Michoacan**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
ZIIG	**Zihuatanejo**	**0.80**	**128**	*i*	P		Pb	22 19 29.7	-2.2
ZIIG				*i*	S		Sb	22 19 39.4	-2.8
MOIG	**Morelia**	**1.81**	**29**	*i*	P		Pn	22 19 44.2	-3.2
MOIG				*i*	S		Sn	22 20 05.5	-4.3
PPM	**Popocatepetl**	**3.46**	**73**	*i*	S		Sn	22 20 48.5	-3.3

KNET ***13*** *22:37:08.2±0.3, 42.60N×74.62E, h16km±2km, ml2.9, Error ellipse: s-maj=2.1km s-min=1.2km az=103.0*
NNC ***13*** *22:37:09.3±1.7, 42.83N×74.60E, mpv3.5, Error ellipse: s-maj=18.0km s-min=7.9km az=166.0*
ISC 13 22:37:09.4±0.5**, 42.62N**±0.03×**74.62E**±0.04**, h12**km±3km**, n17, σ0s37/25, 16C-8D, Kyrgyzstan**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
AAK	**Ala-Archa**	**0.10**	**280**	⇑	P		**Pg**	**22 37 12.1**	**-0.2**
	1μm,0.1s,SNR=7355								
AAK				⇓	S		**Sg**	**22 37 14.2**	**0.0**
	8μm,0.2s								
KBK	**Karagaybulak**	**0.24**	**80**	⇑	P		**Pg**	**22 37 15.0**	**+0.2**
	266nm,0.1s,SNR=260								
KBK				⇓	S		**Sg**	**22 37 19.0**	**+0.7**
	2μm,0.2s								
CHMS	**Chumysh**	**0.39**	**14**		P		**Pg**	**22 37 17.5**	**-0.1**
	221nm,0.1s,SNR=290								
CHMS				⇑	S		**Sg**	**22 37 23.1**	**+0.1**
	777nm,0.1s								
UCH	**Uchtor**	**0.40**	**192**	⇓	P		**Pg**	**22 37 17.4**	**-0.2**
	112nm,0.1s,SNR=396								
UCH				⇑	S		**Sg**	**22 37 22.7**	**-0.4**
	3μm,0.2s								
EKS2	**Erkin-Say**	**0.62**	**274**	⇑	P		**Pb**	**22 37 21.8**	**+0.1**
	135nm,0.2s,SNR=605								
EKS2				⇑	S		**Sb**	**22 37 30.8**	**+0.7**
	286nm,0.1s								
USP	**Ospenovka**	**0.66**	**352**		P		**Pb**	**22 37 22.2**	**-0.1**
	328nm,0.2s,SNR=218								
USP				⇑	S		**Sb**	**22 37 31.1**	**0.0**
	396nm,0.2s								
KZA	**Kyzart**	**0.71**	**139**		P		**Pb**	**22 37 23.2**	**0.0**
	182nm,0.3s,SNR=338								
KZA				⇑	S		**Sb**	**22 37 33.1**	**+0.4**
	324nm,0.3s								
TKM2	**Tokmak 2**	**0.78**	**67**		P		**Pb**	**22 37 24.1**	**-0.3**
	63nm,0.1s,SNR=206								
TKM2				⇑	S		**Sb**	**22 37 34.6**	**0.0**
	331nm,0.2s								
AML	**Almayashu**	**0.84**	**235**		P		**Pb**	**22 37 25.4**	**-0.1**
	64nm,0.1s,SNR=88								
AML				⇑	S		**Sb**	**22 37 36.5**	**+0.1**
	338nm,0.2s								
ULHL	**Ulahol**	**1.25**	**107**	⇓	P		**Pb**	**22 37 32.5**	**0.0**
	22nm,0.1s,SNR=30								
KK31	**Karatay Array**	**3.06**	**281**	⇑	Pn		**Pn**	**22 38 03.3**	**+4.7**
	10nm,0.6s,baz=99,slow=16,SNR=149								
KK31				⇑	Lg			22 38 43.4	
	16nm,0.3s,baz=99,slow=30,SNR=20								
MK31	**Makanchi Array**	**6.88**	**50**	⇓	Pn		**Pn**	**22 38 51.7**	**-0.9**
	2.1nm,0.4s,baz=228,slow=14,SNR=69								
MK31				⇓	Lg			22 40 43.5	
	2.9nm,0.6s,baz=239,slow=27,SNR=3.5								
KURK	**Kurchatov**	**8.55**	**17**	⇓	Lg			22 41 35.7	
	13nm,1.2s,baz=173,slow=17,SNR=14								
VOSK	**Vostochnaya**	**10.40**	**348**		Sn		**S**	**22 41 27.8**	**-11**
VOSK					Lg			22 42 34.0	
BVA0	**Borovoye Array**	**10.79**	**346**	⇑	Sn		**S**	**

1.0nm,0.7s,mb3.8,baz=127,slow=9.5,SNR=4.8
ARCES ARCESS Array B 80.35 340 P **P** **23 38 15.3 +0.9**
2.6nm,0.9s,mb4.1,baz=27,slow=5.4,SNR=3.9
ARCES ARCESS Array B 80.35 340 P **P** **23 38 15.3 +0.9**

IDC 13 23:38:54.9±1.8, 8.11S×123.92E, mb3.4/1, mb1 3.4/4, mb1mx3.4/14, ML3.0/3, Error ellipse: s-maj=119.0km s-min=27.6km az=64.0, Flores region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op	ISC		h m s	ISC
FITZ	**Fitzroy Crossi**	**10.07**	**171**	Pn	P		23 41 20.4	-3.6
	0.1nm,0.3s,baz=355,slow=8.6,SNR=6.7							
FITZ				Sn	S		23 43 01.7	-17
	0.7nm,0.3s,baz=174,slow=7.6,SNR=11							
WRA	**Warramunga Arr**	**15.50**	**140**	Pn	P		23 42 36.1	-0.5
	0.1nm,0.3s,baz=315,slow=13,SNR=8.0							
WRA				Sn	S		23 45 14.3	-16
	0.2nm,0.3s,baz=320,slow=24,SNR=8.2							
ASAR	**Alice Springs**	**18.19**	**149**	P	P		23 43 08.8	-1.9
	0.1nm,0.3s,baz=326,slow=13,SNR=4.8							
MKAR	**Makanchi Array**	**66.00**	**330**	P	P		23 49 43.2	-2.2
	0.3nm,0.8s,baz=147,slow=8.2,SNR=4.2							

ISK ***13*** *23:40:45.7, 39.91N×40.76E, h5km, MD3.5*
ISC 13 23:40:46.5±0.6, 39.93N±0.05×40.77E±0.05, h5km, n15, σ1ŝ**13/21, 1C, Turkey**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op	ISC		h m s	ISC
EZM	**Erzurum**	**0.36**	**95**	*i* PG	**Pg**		**23 40 55.0**	**+1.3**
ERZM	**Erzurum**	**0.46**	**93**	⇑*i* P	**Pg**		**23 40 55.0**	**-0.8**
ERZM				*i* S	**Sg**		**23 41 01.3**	**-0.6**
EZC	**Erzincan**	**0.75**	**256**	*i* PN	**Pn**		**23 41 07.0**	**+3.5**
BINT	**Bingol**	**1.08**	**192**	*i* PG	**Pg**		**23 41 06.4**	**-1.6**
BINT				*i* SG	**Sg**		**23 41 21.1**	**-1.3**
GUMT	**Gumushane**	**1.12**	**299**	*i* PN	**Pn**		**23 41 07.7**	**-1.0**
KELT	**Kelkit**	**1.18**	**281**	*i* P	**Pb**		**23 41 08.9**	**-0.1**
KELT				*i* S	**Sb**		**23 41 31.5**	**+7.1**
BCA	**Borcka**	**1.65**	**23**	*i* PN	**Pn**		**23 41 16.2**	**-0.1**
BTMT	**Batman**	**1.83**	**162**	*i* PN	**Pn**		**23 41 19.4**	**+0.6**
KARS	**Kars**	**1.91**	**68**	*e*PN	**Pn**		**23 41 19.6**	**-0.4**
ELZG	**Elazig**	**1.99**	**225**	*i* P	**Pn**		**23 41 22.9**	**+1.7**
ELZG				*i* S	**Sn**		**23 41 54.6**	**+7.8**
BEST	**Besiri**	**2.08**	**169**	*i* P	**Pn**		**23 41 24.6**	**+2.2**
BEST				*i* S	**Sn**		**23 41 54.7**	**+5.7**
DIY	**Diyarbakir**	**2.08**	**192**	*e*PN	**Pn**		**23 41 22.5**	**+0.1**
MYA	**Malataya**	**2.43**	**229**	*e*PN	**Pn**		**23 41 27.3**	**-0.1**
SVSK	**Karacayir**	**2.90**	**271**	*e*PN	**Pn**		**23 41 33.5**	**-0.7**
SVST	**Sivas**	**2.94**	**268**	*i* P	**Pn**		**23 41 40.6**	**+5.9**
SVST				*i* S	**Sn**		**23 42 28.1**	**+17**

IDC ***13*** *23:49:15.2±0.7, 11.89S×166.30E, mb4.3/12, mb1 4.5/13, mb1mx4.4/16, ML3.5/1, MS4.5/12, Ms1 4.5/12, ms1mx4.3/21, Error ellipse: s-maj=23.8km s-min=18.0km az=118.0*
NEIC ***13*** *23:49:17.0±0.5, 11.85S×166.21E, h10km, mb5.0/14, MS4.5/14, Error ellipse: s-maj=13.6km s-min=10.1km az=125.0*
SYO ***13*** *23:49:16.9, 11.85S×166.21E, h10km, MB5.0, MS4.5*
BJI ***13*** *23:49:16.6, 11.57S×166.60E, h13km, mB5.2, mb5.0, Ms4.8, Msz4.5*
HRVD ***13*** *23:49:17.0±0.3, 12.02S×165.90E, h27km, MW5.1/56, Centroid moment Tensor Solution. LP body waves: s49,c70;Mantle waves: s56,c79; Half duration: 0 Moment tensor: Scale 10^16 Nm; Mrr 4.70±.22; Mθθ 0.04±.16; Mφφ -4.74±.16; Mrθ 3.28±.36; Mrφ 1.19±.13; Mθφ -1.87±.28; Best double couple: M0 6.12×10^16 NP1: φs 7°, δ 35°, λ 129°. NP2: φs 142°, δ 64°, λ 66°. Principal axes: T 6.51, Plg 63°, Azm 13°; N -.77, Plg 21°, Azm 153°; P -5.74, Plg 16°, Azm 249°; nsta1 refers to body waves, cutoff=50s. nsta2 refers to surface waves, cutoff=50s.*
MOS ***13*** *23:49:18.4±0.8, 12.05S×166.26E, h33km, mb5.6/3 Error ellipse: s-maj=29.9km s-min=19.7km az=4.8*
ISC 13 23:49:16.8±0.5, 11.99S±0.07×166.21E±0.10, h16km, h16km±2.0km: pP-P, n82, σ1ŝ**05/60, mb5.0/34, MS4.6/35, 6C-1D, Santa Cruz Islands**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op	ISC		h m s	ISC
PMG	**Port Moresby**	**18.89**	**276**	P	**P**		**23 53 39.3**	**+0.1**
	0.4nm,0.3s,baz=48,slow=16,SNR=4.4							
PMG	**Port Moresby**	**18.89**	**276**	P	**P**		**23 53 36.0**	**-3.2**
	74nm,1.4s							
PMG				P			23 53 39.3	
PMG				*e*			23 53 59.0	
CTA	**Charters Tower**	**20.78**	**245**	*e*P	**P**		**23 54 00.1**	**+0.1**
	30nm,0.9s							
CTA				*e*S	**S**		**23 58 01.6**	**+15**
CTA	**Charters Tower**	**20.78**	**245**	P	**P**		**23 54 00.0**	**0.0**
	19nm,1.1s,baz=74,slow=14,SNR=9.0							
CTA				LR	LR		00 01 10.5	
	comp=Z,1μm,19.4s,MS4.3,baz=57,slow=34							
CTAO	**Charters Tower**	**20.78**	**245**	*e*P	**P**		**23 54 00.4**	**+0.4**
	78nm,1.2s							
ARMA	**Armidale**	**22.78**	**214**	*e*P	**P**		**23 54 21.5**	**+1.5**
ARMA				*e*			23 54 28.9	
STKA	**Stephens Creek**	**30.08**	**225**	*e*P	**P**		**23 55 28.9**	**+1.0**
	6.4nm,0.8s,mb4.4							
STKA	**Stephens Creek**	**30.08**	**225**	P	**P**		**23 55 27.8**	**-0.2**
	6.0nm,1.1s,mb4.2,baz=147,slow=4.1,SNR=3.6							
STKA				LR	LR		00 07 07.1	
	comp=Z,1μm,19.5s,MS4.6,baz=39,slow=36							
TOO	**Toolangi**	**31.51**	**213**	*e*P	**P**		**23 55 47.2**	**+6.7**
	5.5nm,0.7s,mb4.5							
WRAB	**Tennant Creek**	**31.59**	**251**	*e*P	**P**		**23 55 40.2**	**-1.1**
	78nm,1.4s,mb5.3							
WRAB				LR	LR			
	comp=Z,833nm,20.0s,MS4.4							
WB2	**Warramunga Arr**	**31.59**	**251**	*e*P	**P**		**23 55 38.6**	**-2.7**
WRA	**Warramunga Arr**	**31.60**	**251**	P	**P**		**23 55 39.9**	**-1.4**
	comp=Z,2.9nm,0.8s,mb4.2,baz=82,slow=9.3,SNR=18							
WRA				PcP	PcP		23 58 33.5	-0.3
	comp=Z,3.3nm,0.9s,baz=73,slow=2.7,SNR=8.8							
WRA				LR	LR		00 07 59.5	
	comp=Z,552nm,18.8s,MS4.3,baz=70,slow=35							
RPZ	**Rata Peaks**	**31.89**	**173**	P	**P**		**23 55 44.5**	**+0.8**
	comp=Z,13nm,0.7s,mb4.8,baz=22,slow=18,SNR=6.2							
RPZ				LR	LR		00 07 00.1	
	comp=Z,628nm,20.2s,MS4.3,baz=342,slow=33							
AS12	**Alice Springs**	**32.79**	**245**	*e*P	**P**		**23 55 50.3**	**-1.4**
	comp=Z,8.8nm,0.7s,mb4.8							
ASAR	**Alice Springs**	**32.79**	**245**	P	**P**		**23 55 50.5**	**-1.3**
	comp=Z,3.3nm,0.7s,mb4.4,baz=74,slow=9.4,SNR=27							
ASAR				PcP	PcP		23 58 36.5	-0.5
	comp=Z,5.4nm,0.9s,baz=78,slow=2.7,SNR=15							
ASAR				LR	LR		00 08 15.2	
	comp=Z,486nm,18.4s,MS4.2,baz=74,slow=35							
FITZ	**Fitzroy Crossi**	**39.58**	**256**	*e*P	**P**		**23 56 48.7**	**-0.7**
	comp=Z,6.2nm,0.9s,mb4.3							
NWAO	**Narrogin (SRO)**	**49.32**	**237**	PFAKE			23 58 20.0	+13
NWAO				LR	LR			
	comp=Z,1μm,19.0s,MS4.9							
MAJO	**Matsushiro**	**55.02**	**333**	PFAKE			23 59 00.0	+10
MAJO				LR	LR			
	comp=Z,313nm,19.0s,MS4.4							
SSE	**Sheshan**	**60.84**	**316**	⇓P	**P**		**23 59 31.8**	**+0.7**
SSE				XP	sP		23 59 36.3	-1.4
SSE				AMB	AMB			
	comp=Z,127nm,7.7s							
SSE				LR	LR			
	comp=N,102nm,20.0s,MS4.1							
SSE				LR	LR			
	comp=E,78nm,20.0s,MS4.1							
SSE				LR	LR			
	comp=Z,134nm,20.0s,MS4.1							
YSS	**Yuzh-Sakhalins**	**62.32**	**342**	P	**P**		**23 59 45.5**	**+4.6**
NJ2	**Nanjing**	**63.01**	**315**	*e*P	**P**		**23 59 45.9**	**+0.3**
NJ2				AP	pP		23 59 51.8	+1.4
NJ2				XP	sP		23 59 59.1	+6.9
NJ2				AMB	AMB			
	comp=Z,80nm,1.2s,mb5.7							
PET	**Petropavlovsk**	**65.08**	**355**	*e*P	**P**		**23 59 57.5**	**-1.3**
PET				*e*S	S		00 08 36.2	-2.7
PET				pmax	pmax			
	comp=Z,75nm,17.9s							
PET				smax				
	comp=N,71nm,27.2s							
MDJ	**Mudanjiang**	**65.39**	**332**	PFAKE			00 00 10.0	+9.0
MDJ				LR	LR			
	comp=Z,195nm,20.0s,MS4.3							
VNDA	**Vanda**	**65.56**	**181**	P	**P**		**00 00 00.7**	**-0.9**
	comp=Z,5.3nm,1.1s,mb4.5,baz=6.3,slow=6.2,SNR=14							
VNDA	**Vanda**	**65.56**	**181**	*e*P	**P**		**00 00 01.0**	**-0.6**
	comp=Z,21nm,1.6s,mb4.9							
VNDA				*e*			00 00 14.3	
SBA	**Scott Base**	**65.86**	**180**	*e*P	**P**		**00 00 03.7**	**+0.3**
	comp=Z,111nm,1.8s,mb5.6							
SBA				*e*			00 00 16.0	
CN2	**Changchun**	**66.78**	**329**	*e*P	**P**		**00 00 09.9**	**0.0**
CN2				*e*AP	pP		00 00 15.0	+0.3
CN2				*e*S	S		00 08 59.0	-0.9
CN2				AMB	AMB			
	comp=Z,20nm,1.2s,mb5.0							
CN2				LR	LR			
	comp=Z,2μm,21.0s,MS5.3							
KLR	**Kul'dur**	**68.10**	**336**	*e*P	**P**		**00 00 13.0**	**-5.1**
ENH	**Enshi**	**68.84**	**309**	*e*P	**P**		**00 00 21.9**	**-1.1**
	comp=Z,41nm,1.1s,mb5.3							
ENH				*e*			00 00 29.5	
ENH				LR	LR			
	comp=Z,183nm,19.0s,MS4.3							
GYA	**Guiyang**	**69.32**	**304**	P	**P**		**00 00 26.5**	**+0.5**
GYA				AP	pP		00 00 36.8	+5.9
GYA				XP	sP		00 00 39.4	+6.8
GYA				AMB	AMB			
	comp=Z,20nm,1.0s,mb5.0							
BJT	**Baijiatuan**	**69.49**	**321**	*e*P	**P**		**00 00 26.7**	**-0.2**
	comp=Z,48nm,1.3s,mb5.3							
BJT				LR	LR			
	comp=Z,434nm,22.0s,MS4.7							
BJI	**Beijing**	**69.50**	**321**	*e*P	**P**		**00 00 27.1**	**+0.2**
BJI				S	S		00 09 25.0	-7.4
BJI				SS	SS		00 13 57.3	-4.4
BJI				AMB	AMB			
	comp=Z,31nm,1.2s,mb5.1							
BJI				AMB	AMB			
	comp=Z,179nm,4.3s							
BJI				LR	LR			
	comp=N,232nm,19.5s,MS4.6							
BJI				LR	LR			
	comp=E,239nm,21.9s,MS4.6							
BJI				LR	LR			
	comp=Z,342nm,22.3s,MS4.5							
MA2	**Magadan**	**72.40**	**352**	*e*P	**P**		**00 00 51.8**	**+7.7**
HHC	**Hu-ho-hao-te**	**72.84**	**320**	⇑*e*P	**P**		**00 00 48.3**	**+1.3**
HHC				AP	pP		00 00 53.0	+1.1
HHC				XP	sP		00 00 55.9	+2.3
HHC				PCP	PcP		00 01 07.6	+3.2
HHC				PP	PP		00 03 34.8	+3.5
HHC				S	S		00 10 17.4	+6.3
HHC				XS			00 10 26.4	
HHC				SKS	SKS		00 10 47.3	-5.8
HHC				SCS	ScS		00 10 54.0	+3.4
HHC				AMB	AMB			
	comp=Z,27nm,1.5s,mb5.0							
HHC				AMB	AMB			
	comp=Z,131nm,4.9s							
HHC				LR	LR			
	comp=Z,236nm,18.3s,MS4.5							
CMAR	**Chiang Mai Arr**	**72.90**	**294**	P	**P**		**00 00 47.1**	**-0.7**
	comp=Z,1.6nm,0.7s,mb4.1,baz=96,slow=6.3,SNR=8.1							
HIA	**Hailar**	**73.41**	**330**	*e*P	**P**		**00 00 48.7**	**-1.4**
	comp=Z,42nm,1.4s,mb5.2							
HIA				LR	LR			
	comp=Z,223nm,19.0s,MS4.5							
CD2	**Chengdu**	**73.53**	**307**	P	**P**		**00 00 51.6**	**+0.3**
CD2				AMB	AMB			
	comp=Z,20nm,1.3s,mb4.9							
BTO	**Baotou**	**73.69**	**319**	*e*P	**P**		**00 00 52.6**	**+0.6**
BTO				AMB	AMB			
	comp=Z,35nm,1.0s,mb5.2							
LZH	**Lanzhou**	**75.72**	**312**	⇑P	**P**		**00 01 05.1**	**+1.3**
LZH				AP	pP		00 01 08.5	-0.2
LZH				XP	sP		00 01 09.8	-0.6
LZH				PP	PP		00 03 56.8	+1.2
LZH				*e*S	S		00 10 45.3	+1.9
LZH				XS			00 10 52.1	
LZH				SS	SS		00 15 37.5	-0.5
LZH				AMB	AMB			
	comp=Z,54nm,1.4s,mb5.3							
LZH				AMB	AMB			
	comp=Z,321nm,5.1s							
LZH				LR	LR			
	comp=Z,1μm,18.0s,MS5.3							
QSPA	**South Pole Qui**	**78.02**	**180**	*e*P	**P**		**00 01 16.1**	**+0.4**
	comp=Z,6.4nm,0.9s,mb4.5							
ULN	**Ulaanbaatar**	**79.33**	**324**	PFAKE			00 01 30.0	+6.5
ULN				LR	LR			
	comp=Z,158nm,20.0s,MS4.3							
SONM	**Songino Array**	**79.69**	**324**	P	**P**		**00 01 26.2**	**+0.8**
	comp=Z,9.4nm,1.0s,mb4.7,baz=135,slow=5.2,SNR=24							
GTA	**Gaotai**	**80.03**	**314**	P	**P**		**00 01 28.9**	**+1.4**
GTA				AP	pP		00 01 40.1	+7.7
GTA				PP	PP		00 04 34.1	+3.0
GTA				S	S		00 11 32.6	+3.0
GTA				SKS	SKS		00 11 38.1	-7.2
GTA				SS	SS		00 16 41.6	-1.3
GTA				AMB	AMB			
	comp=Z,31nm,1.4s,mb5.0							
GTA				AMB	AMB			
	comp=Z,143nm,5.0s							
GTA				LR	LR			
	comp=N,62nm,22.2s,MS4.2							
GTA				LR	LR			
	comp=E,88nm,17.6s,MS4.2							
GTA				LR	LR			
	comp=Z,114nm,19.5s,MS4.2							
ZAK	**Zakamensk**	**82.73**	**325**	⇑*i* P	**P**		**00 01 41.9**	**+0.6**
MCK	**McKinley**	**82.89**	**18**	PFAKE			00 01 50.0	+8.1
MCK				LR	LR			
	comp=Z,207nm,20.0s,MS4.5							
TLY	**Talaya**	**83.16**	**326**	*c* *i* P	**P**		**00 01 43.4**	**-0.1**
TLY				*e*S	S		00 12 03.3	+1.9
TLY				pmax	pmax			
	comp=Z,351nm,1.8s							
TLY				MLR	MLR			
	comp=Z,1μm,19.0s,MS5.3							
LSA	**Lhasa**	**83.24**	**302**	*e*P	**P**		**00 01 45.8**	**+1.4**
	comp=Z,18nm,1.6s,mb4.8							
LSA				LR	LR			
	comp=Z,133nm,19.0s,MS4.3							
COLA	**College**	**84.04**	**18**	PFAKE			00 02 00.0	+12
COLA				LR	LR			
	comp=Z,392nm,20.0s,MS4.8							
ILAR	**Eielson Array**	**84.26**	**18**	P	**P**		**00 01 47.1**	**-1.7**
	comp=Z,0.7nm,0.7s,mb3.9,baz=259,slow=4.6,SNR=4.7							
ILAR				LR	LR		00 36 20.7	
	comp=Z,131nm,19.3s,MS4.3,baz=237,slow=34							
CMB	**Columbia Colle**	**84.61**	**49**	PFAKE			00 02 00.0	+8.8
CMB				LR	LR			
	comp=Z,760nm,20.0s,MS5.1							
NVAR	**Mina Array Bea**	**86.29**	**50**	P	**P**		**00 01 59.4**	**-0.1**
	comp=Z,0.2nm,0.3s,baz=248,slow=9.7,SNR=2.5							
NVAR				LR	LR		00 33 57.9	
	comp=Z,626nm,19.9s,MS5.0,baz=310,slow=31							
TPH	**Tonopah**	**86.99**	**50**	PFAKE			00 02 10.0	+7.0
TPH				LR	LR			
	comp=Z,570nm,20.0s,MS5.0							
TIXI	**Tiksi**	**87.10**	**349**	*e*P	**P**		**00 02 00.6**	**-2.1**
TIXI				*e*S	S		00 12 40.0	+0.5
TIXI				pmax	pmax			
	comp=Z,79nm,1.7s,mb5.7							
TIXI				MLR	MLR			
	comp=Z,800nm,16.0s,MS5.2							
PKI	**Pulchoki**	**87.49**	**299**	*e*P	**P**		**00 02 06.3**	**+0.7**
	comp=Z,49nm,1.1s,mb5.6							
KKN	**Kakani**	**87.65**	**299**	*e*P	**P**		**00 02 07.0**	**+0.6**
	comp=Z,72nm,1.5s,mb5.7							
DMN	**Daman**	**87.75**	**299**	*e*P	**P**		**00 02 07.7**	**+0.8**
	comp=Z,85nm,1.3s,mb5.8							
GKN	**Gorkha**	**88.26**	**299**	*e*P	**P**		**00 02 09.2**	**-0.1**
	comp=Z,35nm,1.1s,mb5.5							
KOLN	**Koldanda**	**89.09**	**298**	*e*P	**P**		**00 02 12.9**	**-0.4**
	comp=Z,31nm,1.3s,mb5.5							
WMQ	**Urumqi**	**90.08**	**315**	*e*P	**P**		**00 02 18.3**	**+0.8**
WMQ				AP	pP		00 02 22.3	-0.2
WMQ				XP	sP		00 02 24.8	+0.7
WMQ				PP	PP		00 05 53.8	+0.5
WMQ				SKS	SKS		00 12 46.8	-5.2
WMQ				S	S		00 13 08.5	+0.7
WMQ				XS			00 13 16.5	
WMQ				SS	SS		00 19 10.4	0.0
WMQ				AMB	AMB			
	comp=Z,212nm,6.3s							
WMQ				LR	LR			
	comp=Z,1μm,23.6s,MS5.3							
SYO	**Syowa Base**	**91.02**	**197**	⇑P	**P**		**00 02 29.7**	**+8.4**
SYO	**Syowa Base**	**91.02**	**197**	⇑*e*P	**P**		**00 02 29.7**	**+8.4**
HWUT	**Hardware Ranch**	**92.14**	**48**	PFAKE			00 02 40.0	+13
HWUT				LR	LR			
	comp=Z,352nm,20.0s,MS4.8							
PDAR	**Pinedale Array**	**93.86**	**47**	LR	LR		00 39 58.8	
	comp=Z,234nm,18.3s,MS4.7,baz=92,slow=32							
MKAR	**Makanchi Array**	**94.52**	**317**	P	**P**		**00 02 38.5**	**+0.6**
	comp=Z,14nm,0.6s,mb5.6,baz=93,slow=6.5,SNR=168							
MKAR				LR	LR		00 44 53.5	
	comp=Z,114nm,21.5s,MS4.3,baz=94,slow=35							
MKAR	**Makanchi Array**	**94.52**	**317**	P	**P**		**00 02 38.5**	**+0.6**
MKAR				LR	LR		00 44 53.5	
ZAL	**Zalesovo**	**94.59**	**324**	P	**P**		**00 02 37.9**	**-0.1**
	comp=Z,1.4nm,0.8s,mb4.5,baz=268,slow=5.4,SNR=12							
ZAL				LR	LR		00 43 27.4	
	comp=Z,166nm,18.6s,MS4.5,baz=279,slow=34							
ZAL	**Zalesovo**	**94.59**	**324**	P	**P**		**00 02 37.9**	**-0.1**
ZAL				LR	LR		00 43 27.4	
YKA	**Yellowknife Ar**	**95.60**	**27**	P	**P**		**00 02 39.9**	**-2.6**
	comp=Z,0.2nm,0.7s,baz=259,slow=4.5,SNR=3.7							
YKA				LR	LR		00 47 49.7	
	comp=Z,149nm,18.4s,MS4.5,baz=260,slow=37							
TXAR	**Lajitas Array**	**95.88**	**61**	LR	LR		00 38 36.1	
	comp=Z,247nm,18.6s,MS4.7,baz=265,slow=31							
KSH	**Kashi**	**97.70**	**309**	*e*P	**P**		**00 02 55.1**	**+2.6**
KSH				*e*AP	pP		00 02 59.8	+2.3
KSH				*e*XP	sP		00 03 02.1	+3.0
ARCES	**ARCESS Array B**	**117.36**	**345**	PKP	PKPdf		00 08 01.4	-3.7
	comp=Z,1.9nm,0.8s,baz=76,slow=2.1,SNR=22							
FINES	**FINESS Array B**	**122.81**	**338**	PKP	PKPdf		00 08 12.6	-3.1
	comp=Z,3.6nm,1.2s,baz=90,slow=3.8,SNR=6.5							
FINES	**FINESS Array B**	**122.81**	**338**	PKP	PKPdf		00 08 12.6	-3.2
KMBO	**Kilima Mbogo**	**127.66**	**259**	PKP	PKPdf		00 08 23.7	-2.7
	comp=Z,2.2nm,0.8s,baz=180,slow=1.0,SNR=5.7							
BRTR	**Keskin Array B**	**129.93**	**312**	PKP	PKPdf		00 08 27.2	-2.9
	comp=Z,0.5nm,0.6s,baz=333,slow=2.8,SNR=3.8							
LOR	**Lormes**	**141.83**	**340**	*e*PKIKP	PKPdf		00 08 48.6	-3.1
	comp=Z,8.4nm,1.0s							
MBDF	**Montbardon**	**142.92**	**335**	*e*PKIKP	PKPdf		00 08 52.1	-1.6
ORIF	**Oris-en-Rattie**	**143.12**	**337**	*e*PKIKP	PKPdf		00 08 51.9	-2.1
	comp=Z,28nm,1.4s							
MFF	**Saint Martin d**	**143.62**	**344**	*e*PKIKP	PKPdf		00 08 52.7	-2.1
	comp=Z,4.5nm,0.7s							
LASF	**Ste Croix**	**144.60**	**338**	*e*PKIKP	PKPdf		00 08 54.2	-2.4
	comp=Z,46nm,1.2s							
ESDC	**Sonseca Array**	**151.09**	**344**	PKPbc	PKPdf		00 09 08.9	+1.5
	comp=Z,0.3nm,0.7s,baz=54,slow=4.0,SNR=3.4							
ESDC				PKPab	PKPab		00 09 17.6	-1.9
	comp=Z,0.8nm,0.8s,baz=8.3,slow=5.3,SNR=3.2							
ESDC	**Sonseca Array**	**151.09**	**344**	PKPbc	PKPdf		00 09 08.8	+1.5
ESDC				PKPab	PKPab		00 09 17.6	-1.9

PRU ***14*** *00:06:11.2, 50.22N×18.75E*
NEIC ***14*** *00:06:12.6±1.3, 50.06N×18.38E, h5km, ML2.4(VIE), Error ellipse: s-maj=24.0km s-min=7.8km az=32.0*
WAR 14 00:06:10.3, 50.22N×18.83E, ML2.7, 1C, Mining Induced, Poland

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op	ISC		h m s	ISC
RAC	**Raciborz**	**0.43**	**252**	*e*Pg	Pg		00 06 19.4	+0.5
RAC				*e*Sg	Sg		00 06 25.9	+1.2
RAC	**Raciborz**	**0.43**	**252**	*e*PG	Pg		00 06 19.0	+0.1
RAC				*e*SG	Sg		00 06 26.0	+1.3
OKC	**Ostrava-Krasne**	**0.58**	**229**	*e*PG	Pg		00 06 21.6	-0.3
OJC	**Ojcow**	**0.62**	**90**	*e*PG	Pg		00 06 23.3	+0.6
OJC				*i* Sg	Sg		00 06 32.3	+1.3
LIKS	**Likavka**	**1.19**	**171**	*e*PN	Pn		00 06 34.1	+0.1
LIKS				*e*SN	Sn		00 06 51.9	+0.8
NIE	**Niedzica**	**1.25**	**129**	*e*Pg	Pg		00 06 34.3	-1.0
NIE				*e*Sg	Sg		00 06 52.0	0.0
DPC	**Dobruska-Polom**	**1.61**	**276**	*e*PG	Pg		00 06 39.1	-3.4
DPC				*e*SG	Sg		00 07 00.6	-3.4
	17nm,0.3s							
VYHS	**Vyhne**	**1.73**	**180**	*e*PN	Pn		00 06 41.0	-0.8
VYHS				*i* PG	Pg		00 06 43.5	-1.3
VYHS				*e*SN	Sn		00 07 04.0	-0.9
VYHS	**Vyhne**	**1.73**	**180**	*i* Pg	Pg		00 06 43.5	-1.3
VYHS				*e*Sn	Sn		00 07 04.0	-0.9
KSP	**Ksiaz**	**1.73**	**292**	*e*PN	Pn		00 06 41.0	-0.9
KSP				*e*PG	Pg		00 06 43.0	-1.9
KSP				*e*SG	Sg		00 07 06.0	-2.1
UPC	**Upice**	**1.83**	**280**	*e*PG	Pg		00 06 44.1	-2.7
UPC				*e*SG	Sg		00 07 08.7	-2.4
CRVS	**Cervenica-Dubn**	**2.16**	**127**	*e*PN	Pn		00 06 51.3	+3.3
CRVS				*e*SN	Sn		00 07 15.9	0.0
PRU	**Pruhonice**	**2.77**	**267**	*e*PG	Pg		00 06 59.2	-6.4
PRU				*e*SG	Sg		00 07 35.8	-6.7
	9.9nm,0.8s							
BRG	**Berggiesshubel**	**3.19**	**284**	*e*Pg	Pg		00 07 09.9	-4.0
BRG				*i* Sg	Sg		00 07 51.1	-5.2
KHC	**Kasperske Hory**	**3.58**	**254**	*e*PG	Pg		00 07 14.7	-7.1
KHC				*e*SG	Sg		00 08 02.5	-7.0
ARSA	**Arzberg**	**3.69**	**218**	⇑*i* PN	Pn		00 07 10.5	+0.7
ARSA				*i* SG	Sg		00 08 09.1	-4.1
	2.6nm,0.5s							
MOA	**Molln**	**3.83**	**233**	*i* SG	Sg		00 08 10.2	-7.5
	4.5nm,0.6s							
MOA	**Mol

σ1938/357, 33C-6D, Northern Italy

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res
RSP	Reno Superiore	0.11	280	⇑	P		Pg	00 30 37.2	+1.0
RSP					S		Sg	00 30 39.0	+0.9
FENE	Fenestrale	0.26	247	⇓	P		Pg	00 30 39.6	+0.6
FENE					S		Sg	00 30 42.4	-0.3
BHB	Bricherasio	0.31	199	⇑	P		Pg	00 30 40.7	+0.9
BHB					S		Sg	00 30 44.3	+0.2
LSD	Ceresole Reale	0.37	332		P		Pg	00 30 42.4	+1.4
LSD					S		Sg	00 30 47.8	+1.7
RRL	Cesana Torines	0.49	245	⇑	P		Pg	00 30 43.7	+0.3
RRL					S		Sg	00 30 49.4	-0.6
BNI	Bardonecchia	0.52	261		*e*Pg		Pg	00 30 44.4	+0.4
BNI					*e*Sg		Sg	00 30 50.6	-0.4
LPG	La Plagne	0.59	309		*e*Pg		Pg	00 30 46.1	+0.8
LPG					*e*Sg		Sg	00 30 53.7	+0.4
	4µm,0.4s,SNR=1.0								
MBDF	Montbardon	0.61	228		*e*Pg		Pg	00 30 46.0	+0.3
	SNR=1.0								
MBDF					*e*Sg		Sg	00 30 53.8	0.0
	1µm,0.2s,SNR=1.0								
LPL	La Plagne	0.61	309		*e*Pg		Pg	00 30 46.6	+0.9
LPL					*e*Sg		Sg	00 30 54.0	0.0
	5µm,0.5s,SNR=1.0								
DOI	San Damiano	0.64	190		*i* PG		Pg	00 30 45.8	-0.5
DOI					SG		Sg	00 30 55.0	+0.1
DOI	San Damiano	0.64	190		*i* Pg		Pg	00 30 45.8	-0.4
DOI					*i*Sg		Sg	00 30 55.0	+0.1
ORO	Oropa	0.64	39		*e*PG		Pg	00 30 47.3	+1.0
ORO					SG		Sg	00 30 56.9	+2.0
ORO	Oropa	0.64	39		*e*Pg		Pg	00 30 47.2	+0.9
ORO					*e*Sg		Sg	00 30 56.9	+2.0
PZZ	Prazzo	0.66	199	⇓	P		Pb	00 30 46.2	-0.4
PZZ					S		Sb	00 30 54.6	-1.0
SURF	Saint Ours	0.78	213		Pg		Pg	00 30 49.0	0.0
SURF					Sg		Sg	00 30 58.9	-0.5
STV2	Anna di Valdie	0.89	184		P		Pb	00 30 49.9	-0.6
STV2					S		Sb	00 31 01.7	-0.5
STV	Sta Anna Valdi	0.89	184		P		Pb	00 30 49.9	-0.5
STV					S		Sb	00 31 01.3	-0.9
ROB	Roburent	0.90	158	⇑	P		Pb	00 30 51.7	+1.0
ROB					S		Sb	00 31 03.0	+0.5
ENR	Entracque	0.91	179	⇑	P		Pb	00 30 50.2	-0.5
ENR					S		Sb	00 31 01.2	-1.4
GDM	Grand'Maison	0.92	275		Pg		Pg	00 30 52.2	+0.4
GDM					Sg		Sg	00 31 04.9	+0.9
MCGN	Macugnaga	0.92	26		*e*PG		Pg	00 30 52.0	+0.1
MCGN					SG		Sg	00 31 05.3	+1.1
MCGN	Macugnaga	0.92	26		*e*Pg		Pg	00 30 52.0	+0.1
MCGN					*e*Sg		Sg	00 31 05.3	+1.1
DIX	Grande Dixence	0.95	0	⇑	*i*Pg		Pg	00 30 52.9	+0.5
	414nm,2.0s								
EMV	Vieux Emosson	1.00	339	⇑	*i*Pg		Pg	00 30 54.2	+0.8
	306nm,2.0s								
EMV					*e*Sg		Sg	00 31 07.0	+0.3
	36nm,0.3s								
MMK	Mattmark	1.00	23	⇓	*i*Pg		Pg	00 30 53.3	-0.1
	493nm,2.0s								
PCP	Pian Castagno	1.00	126	⇑	P		Pb	00 30 54.2	+1.8
PCP					S		Sb	00 31 06.7	+1.3
SALAN	Lac Salanfe	1.06	343	⇑	*i*Pg		Pg	00 30 55.3	+0.7
	27nm,0.3s								
MONE	Monesi	1.08	167		P		Pb	00 30 53.9	+0.1
MONE					S		Sb	00 31 07.5	-0.3
FIN	Finale Ligure	1.09	148		*e*PN		Pn	00 30 55.3	+0.7
FIN					SN		Sn	00 31 10.7	+1.0
	491nm,0.2s								
FIN	Finale Ligure	1.09	148		*e*Pg		Pg	00 30 55.3	+0.1
FIN					*e*Sg		Sg	00 31 10.7	+1.0
ORIF	Oris-en-Rattie	1.10	259		*e*Pn		Pn	00 30 55.2	+0.3
	SNR=1.0								
ORIF					*e*Sg		Sg	00 31 11.3	+1.0
	814nm,0.2s								
RORO		1.12	155		P		Pb	00 30 55.0	+0.5
TOUF	Mont Tournerai	1.12	186		Pg		Pg	00 30 54.4	-1.5
GRYON	Gryon	1.14	350	⇑	*i*Pg		Pg	00 30 56.8	+0.6
	46nm,0.4s								
SAOF	Saorge	1.15	175		Pg		Pg	00 30 54.4	-2.0
GRN	Grenoble	1.18	276		Pg		Pg	00 30 57.5	+0.5
VAI	Varese	1.21	52		*e*PN		Pn	00 30 58.8	+0.5
SENIN	Lac Senin	1.23	357	⇑	*e*Pg		Pg	00 30 58.2	+0.1
	237nm,2.0s								
AURF	Auriere	1.25	183		Pg		Pg	00 30 55.8	-2.5
MVIF	Mont Vial	1.25	188		Pg		Pg	00 30 56.1	-2.3
AIGLE	Aigle	1.25	345	⇑	*i*Pg		Pg	00 30 58.9	+0.5
	712nm,2.0s								
LKBD	Leukerbad	1.27	7	⇑	*i*Pg		Pg	00 30 58.8	+0.1
	91nm,0.4s								
SBF	Sospel	1.27	179		*e*Pn		Pn	00 30 56.2	-1.0
	SNR=1.0								
SBF					*e*Pg		Pg	00 30 57.2	-1.6
	SNR=1.0								
SBF					*e*Sg		Sg	00 31 11.7	-4.1
	406nm,0.3s								
NEGI	Negi	1.30	170		P		Pb	00 30 56.9	-0.6
GENL	Genova Univers	1.33	123		P		Pb	00 30 58.1	+0.1
REVF	Revere	1.39	181		Pg		Pg	00 30 58.8	-2.5
MUGIO	Muggio	1.39	55	⇓	*i*Pg		Pg	00 30 59.5	-1.8
	144nm,2.0s								
CALN	Calern	1.43	195		Pg		Pg	00 30 59.7	-2.3
BOB	Bobbio (Coli)	1.50	103		*e*PN		Pn	00 31 03.7	+3.2
BOB	Bobbio (Coli)	1.50	103		*e*Pg		Pg	00 31 03.7	+0.4
WIMIS	Wimmis	1.54	6		*e*Pn		Pn	00 31 04.1	+3.0
	314nm,2.0s								
GIMEL	Gimel	1.61	331	⇑	*e*Pn		Pn	00 31 05.6	+3.5
	129nm,2.0s								
FRF	La Foret Royal	1.66	199		*e*Pg		Pg	00 31 03.9	-2.8
FRF					*e*Sn		Sn	00 31 21.9	-2.5
	SNR=1.0								
FRF					*e*Sg		Sg	00 31 25.9	-3.0
	320nm,0.3s,SNR=1.0								
TORNY	Torny	1.67	349	⇑	*i*Pn		Pn	00 31 06.7	+3.7
	321nm,2.0s								
HASLI	Hasliberg	1.71	17	⇑	*i*Pn		Pn	00 31 06.5	+3.0
	265nm,2.0s								
CABF	La Chapelle	1.74	329		*e*Pn		Pn	00 31 07.2	+3.2
	SNR=1.0								
CABF					*e*Pg		Pg	00 31 08.6	+0.4
CABF					*e*Sn		Sn	00 31 28.9	+2.5
	572nm,0.5s,SNR=1.0								
SMRF	Simiane la Rot	1.75	229		*e*Pn		Pn	00 31 06.0	+1.9
	SNR=1.0								
SMRF					*e*Pg		Pg	00 31 08.3	0.0
SMRF					*e*Sn		Sn	00 31 26.7	+0.2
SMRF					*e*Sg		Sg	00 31 31.7	+0.1
	249nm,0.3s								
VILF	Villemus	1.76	224		Pg		Pg	00 31 08.2	-0.4
VILF					Sg		Sg	00 31 33.6	+1.5
TAVF	Tavernes	1.80	213		Pg		Pg	00 31 08.3	-1.0
TAVF					Sg		Sg	00 31 32.5	-0.8
BNALP	Bannalp	1.88	22		*e*Pn		Pn	00 31 08.5	+2.6
	137nm,2.0s								
APL	Alpnach	1.91	17	⇑	*i*Pn		Pn	00 31 10.2	+3.8
	367nm,0.6s								
LMR	La Mourre	1.91	200		*e*Pn		Pn	00 31 06.8	+0.4
	SNR=1.0								
LMR					*e*Pg		Pg	00 31 09.6	-2.0
	SNR=1.0								
LMR					*e*Sn		Sn	00 31 27.9	-2.8
	SNR=1.0								
LMR					*e*Sg		Sg	00 31 33.5	-3.6
	268nm,0.4s								
VIVF	Saint-Julien-l	1.96	263		*e*Pn		Pn	00 31 09.4	+2.3
	SNR=1.0								
VIVF					*e*Sn		Sn	00 31 33.3	+1.4
	296nm,0.6s,SNR=1.0								
VIVF					*e*Sg		Sg	00 31 39.4	+0.7
	392nm,0.7s								
GRAM		2.00	108		P		Pn	00 31 09.7	+2.0
PUYF	Puyloubier	2.01	218		Pg		Pg	00 31 12.1	-1.6
PUYF					Sg		Sg	00 31 39.2	-1.3
PRAF	Pradon	2.08	231		Pg		Pg	00 31 13.7	-1.3
BACM		2.08	113		P		Pn	00 31 10.2	+1.4
TREF	Trevaresse	2.09	225		Pg		Pg	00 31 13.7	-1.5
TREF					Sg		Sg	00 31 43.9	+0.8
VALM		2.17	110		P		Pn	00 31 11.7	+1.6
VINC	Vinca	2.20	116		P		Pn	00 31 11.4	+1.0
BERF	Bertagne	2.20	215		Pg		Pg	00 31 12.9	-4.4
GELF	Grande-Etoile	2.25	220		Pg		Pg	00 31 15.6	-2.8
LOMF	Lomont	2.25	350		Pn		Pn	00 31 14.0	+2.7
LOMF					Pg		Pg	00 31 18.9	+0.4
ERBM	Eremo	2.26	107		*e*PN		Pn	00 31 11.0	-0.4
	185nm,0.6s								
ERBM	Eremo	2.26	107		*e*Pg		Pg	00 31 11.0	-7.5
BBS	Basel-Blauen	2.33	2		P		Pn	00 31 14.8	+2.3
SARO	Sassorosso	2.34	113		P		Pn	00 31 12.3	-0.2
VLC	Villacollemand	2.34	114		*e*Pn		Pn	00 31 18.1	+5.5
MABI	Malga Bissina	2.37	66		*e*PN		Pn	00 31 13.6	+0.6
MABI	Malga Bissina	2.37	66		*e*Pg		Pg	00 31 13.6	-7.2
BRMO	Bormio	2.47	56		*e*PN		Pn	00 31 14.9	+0.5
BRMO	Bormio	2.47	56		*e*Pg		Pg	00 31 14.8	-7.9
MAIM		2.52	118		P		Pn	00 31 15.5	+0.4
HINF	Hinteralfeld	2.71	352		*e*Pn		Pn	00 31 19.6	+1.7
	SNR=1.0								
HINF					*e*Pg		Pg	00 31 26.7	-0.9
HINF					*e*Sn		Sn	00 31 51.4	+0.3
	245nm,0.3s,SNR=1.0								
HINF					*e*Sg		Sg	00 32 01.0	-2.8
	320nm,0.4s								
MOF	Molkenrain	2.73	356		Pn		Pn	00 31 19.8	+1.7
MOF					Pg		Pg	00 31 27.3	-0.6
MOF					Sg		Sg	00 32 03.1	-1.1
LASF	Ste Croix	2.75	249		*e*Pn		Pn	00 31 19.3	+0.9
	SNR=1.0								
LASF					*e*Pg		Pg	00 31 26.9	-1.4
LASF					*e*Sn		Sn	00 31 51.7	-0.2
	122nm,0.6s,SNR=1.0								
DAVA	Damuels	2.76	38	⇑	*i*PN		Pn	00 31 21.0	+2.5
DAVA					*i* SN		Sn	00 31 53.3	+1.1
DAVA					*i* SG		Sg	00 32 04.8	-0.4
	229nm,0.5s								
DAVA	Damuels	2.76	38	⇑	*i*PN		Pn	00 31 21.0	+2.5
DAVA					*i* SN		Sn	00 31 53.3	+1.1
DAVA					*i* SG		Sg	00 32 04.8	-0.4
	229nm,0.5s								
FELD	Feldberg	2.78	8		P		Pn	00 31 20.1	+1.3
PLDF	La Plantade	2.79	289		Pn		Pn	00 31 20.9	+1.9
PGF	Pioggiola	2.83	155		*e*Pn		Pn	00 31 18.6	-0.9
	SNR=1.0								
PGF					*e*Sn		Sn	00 31 47.1	-6.9
	24nm,0.4s,SNR=1.0								
KIZ	Kirchzarten	2.85	7		*e*P		Pn	00 31 20.9	+1.1
SMF	Signal de Mont	2.91	303		*e*Pn		Pn	00 31 22.7	+1.9
	SNR=1.0								
SMF					*e*Pg		Pg	00 31 31.6	0.0
SMF					*e*Sn		Sn	00 31 57.1	+0.9
SMF					*e*Sg		Sg	00 32 07.4	-3.1
	540nm,0.9s								
LBL	Lubilhac	2.94	273		Pn		Pn	00 31 23.1	+1.9
HAU	Haudompre	2.97	346		*e*Pn		Pn	00 31 23.3	+1.8
	SNR=1.0								
HAU					*e*Pg		Pg	00 31 31.3	-1.3
HAU					*e*Sn		Sn	00 31 56.9	-0.6
	193nm,0.4s,SNR=1.0								
HAU					*e*Sg		Sg	00 32 11.3	-0.9
	187nm,0.3s								
ECH	Echery	3.09	357		Pn		Pn	00 31 24.7	+1.5
CTI	Castel Tesino	3.12	71		*e*PN		Pn	00 31 24.3	+0.7
	45nm,0.3s								
SPAK	Spaichingen	3.12	17		P		Pn	00 31 24.2	+0.5
AGO	Saint Agoulin	3.14	289		Pn		Pn	00 31 25.9	+1.9
PYM	Petit Puy Mans	3.16	283		Pn		Pn	00 31 25.8	+1.6
UBR	Uberruh	3.16	35		P		Pn	00 31 25.6	+1.3
GUT	Gutenstein	3.17	21		*e*P		Pn	00 31 25.2	+0.9
GUT					S		Sn	00 32 03.3	+0.7
CSNT	Castellina Chi	3.25	119		*e*PN		Pn	00 31 26.2	+0.8
	50nm,0.7s								
THEF	They Montfort	3.25	343		Pn		Pn	00 31 27.2	+1.7
THEF					Pg		Pg	00 31 37.9	-0.3
BFO	Black Forest	3.26	11		*e*Pn		Pn	00 31 26.4	+0.7
BFO					*e*Sg		Sg	00 32 21.0	-1.0
LOR	Lormes	3.26	312		*e*Pn		Pn	00 31 27.5	+1.8
	baz=133,SNR=1.0								
LOR					*e*Pg		Pg	00 31 37.9	-0.6
	baz=136								
LOR					*e*Sg		Sg	00 32 17.0	-5.0
	190nm,0.5s,baz=141								
AVF	Avril sur Loir	3.28	302		*e*Pn		Pn	00 31 27.5	+1.6
	SNR=1.0								
AVF					*e*Pg		Pg	00 31 37.0	-1.9
AVF					*e*Sn		Sn	00 32 05.9	+0.5
AVF					*e*Sg		Sg	00 32 18.5	-4.1
	165nm,0.8s								
CDF	Champ du Feu	3.28	358		*e*Pn		Pn	00 31 27.3	+1.3
	SNR=1.0								
CDF					*e*Pg		Pg	00 31 36.9	-2.1
CDF					*e*Sn		Sn	00 32 03.8	-1.7
CDF					*e*Sg		Sg	00 32 20.4	-2.3
	123nm,0.4s								
WLS	Welschbruch	3.28	359		Pn		Pn	00 31 27.0	+1.0
SSF	Saint Saulge	3.33	307		*e*Pn		Pn	00 31 28.7	+2.0
	SNR=1.0								
SSF					*e*Pg		Pg	00 31 39.4	-0.5
SSF					*e*Sn		Sn	00 32 06.6	-0.1
SSF					*e*Sg		Sg	00 32 23.2	-1.1
	129nm,0.6s								
SQTA	Sankt Quirin	3.37	50	⇑	*i*PN		Pn	00 31 28.9	+1.7
SQTA					*i* SN		Sn	00 32 07.4	-0.2
SQTA					*i* SG		Sg	00 32 22.6	-2.9
	48nm,0.5s								
SQTA	Sankt Quirin	3.37	50	⇑	*i*PN		Pn	00 31 28.9	+1.7
SQTA					*i* SN		Sn	00 32 07.4	-0.2
SQTA					*i* SG		Sg	00 32 22.6	-2.9
	48nm,0.5s								
MOTA	Moosalm	3.39	48	⇑	*i*PN		Pn	00 31 28.8	+1.3
MOTA					*i* SN		Sn	00 32 07.8	-0.4
MOTA					*i* SG		Sg	00 32 23.5	-2.7
	40nm,0.6s								
MOTA	Moosalm	3.39	48	⇑	*i*PN		Pn	00 31 28.8	+1.3
MOTA					*i* SN		Sn	00 32 07.8	-0.4
MOTA					*i* SG		Sg	00 32 23.5	-2.7
	40nm,0.6s								
SFTF	Sexfontaines	3.48	333		*e*Pn		Pn	00 31 30.9	+2.1
	baz=144								
SFTF					*e*Pg		Pg	00 31 41.0	-1.9
	baz=145								
SFTF					*e*Sn		Sn	00 32 09.8	-0.7
SFTF					*e*Sg		Sg	00 32 27.1	-2.2
	199nm,0.5s,baz=146								
BGF	Bois d'Agland	3.49	296		*e*Pn		Pn	00 31 30.8	+1.8
	SNR=1.0								
BGF					*e*Sn		Sn	00 32 11.0	+0.2
BGF					*e*Sg		Sg	00 32 24.8	-4.9
	302nm,0.7s								
BUCH	Bad Urach	3.58	21		P		Pn	00 31 30.6	+0.4
BUCH					S		Sn	00 32 13.2	+0.2
WTTA	Wattenberg	3.63	53	⇑	*i*PN		Pn	00 31 32.8	+1.9
WTTA					*i* SN		Sn	00 32 13.5	-0.8
WTTA	Wattenberg	3.63	53	⇑	*i*PN		Pn	00 31 32.8	+1.9
WTTA					*i* SN		Sn	00 32 13.5	-0.8
WATA	Walderalm	3.64	51	⇓	*i*PN		Pn	00 31 32.5	+1.5
WATA					*i* SN		Sn	00 32 13.9	-0.6
WATA	Walderalm	3.64	51	⇓	*i*PN		Pn	00 31 32.5	+1.5
WATA					*i* SN		Sn	00 32 13.9	-0.6
MEZF	Maizieres J'vi	3.74	335		*e*Pn		Pn	00 31 34.3	+1.8
	baz=150,SNR=1.0								
MEZF					*e*Pg		Pg	00 31 45.9	-2.2
	baz=152								
MEZF					*e*Sn		Sn	00 32 15.5	-1.5
	baz=159,SNR=1.0								
MEZF					*e*Sg		Sg	00 32 35.6	-2.3
	209nm,0.6s,SNR=1.0								
RFYF	Reffroy	3.74	340		*e*Pn		Pn	00 31 34.8	+2.3
	baz=156								
RFYF					*e*Pg		Pg	00 31 46.0	-2.1
	baz=155								
RFYF					*e*Sn		Sn	00 32 16.1	-1.0
	baz=166								
RFYF					*e*Sg		Sg	00 32 35.4	-2.6
	84nm,0.3s								
CAF	Calviac	3.79	269		*e*Pn		Pn	00 31 35.2	+2.0
	SNR=1.0								
CAF					*e*Sn		Sn	00 32 17.6	-0.8
CAF					*e*Sg		Sg	00 32 37.7	-2.0
	78nm,0.7s								
TCF	Toulx Ste Croi	3.82	289		*e*Pn		Pn	00 31 35.3	+1.7
	SNR=1.0								
TCF					*e*Sn		Sn	00 32 18.5	-0.6
	SNR=1.0								
TCF					*e*Sg		Sg	00 32 37.9	-2.7
	165nm,0.6s								
STU	Stuttgart	3.84	18		*e*Pn		Pn	00 31 34.0	+0.1
STU					*e*Sg		Sg	00 32 38.7	-2.6
HYF	Humbligny	3.94	305		*e*Pn		Pn	00 31 37.4	+2.1
HYF					*e*Sg		Sg	00 32 42.1	-2.5
FVI	Forni Avoltri	4.03	67		*e*PN		Pn	00 31 38.8	+2.2
	20nm,0.5s								
MTLF	Montolieu	4.14	246		*e*Pn		Pn	00 31 38.8	+0.7
	SNR=1.0								
MTLF					*e*Pg		Pg	00 31 51.9	-4.1
	SNR=1.0								
MTLF					*e*Sn		Sn	00 32 25.0	-2.1
	SNR=1.0								
MTLF					*e*Sg		Sg	00 32 46.6	-4.6
	30nm,0.6s,SNR=1.0								
RJF	Les Rejaudoux	4.17	274		*e*Pn		Pn	00 31 40.2	+1.7
	SNR=1.0								
RJF					*e*Sn		Sn	00 32 26.5	-1.4
RJF					*e*Sg		Sg	00 32 47.4	-4.7
	88nm,0.7s								
EJON	La Jonquera	4.23	232		P		Pn	00 31 39.9	+0.4
GMNA	Gemona	4.24	72		*e*PN		Pn	00 31 38.9	-0.7
	66nm,0.9s								
GMNA	Gemona	4.24	72		*e*Pn		Pn	00 31 38.9	-0.7
PTCC	Patocco-Chiusa	4.35	71		*e*PN		Pn	00 31 41.2	0.0
	21nm,0.8s								
PTCC	Patocco-Chiusa	4.35	71		*e*Pn		Pn	00 31 41.1	0.0
SIND	Sindeldorf	4.48	19		P		Pn	00 31 41.9	-1.1
SIND					S		Sn	00 32 34.3	-1.4
KBA	Koelnbreinsper	4.56	63	⇑	*i*PN		Pn	00 31 44.7	+0.5
KBA					*i* SN		Sn	00 32 36.0	-2.0
KBA	Koelnbreinsper	4.56	63	⇑	*i*PN		Pn	00 31 44.7	+0.5
KBA					*i* SN		Sn	00 32 36.0	-2.0
WLF	Walferdange	4.61	350		*e*Pn		Pn	00 31 46.2	+1.3
WLF					*e*Pg		Pg	00 32 04.6	-1.0
VOY	Vojsko	4.64	77		*e*Pn		Pn	00 31 44.1	-1.2
VOY					*e*Sn		Sn	00 32 35.5	-4.4
LFF	La Frestale	4.73	270		*e*Pn		Pn	00 31 48.4	+1.9
	SNR=1.0								
LFF					*e*Sg		Sg	00 33 08.1	-2.8
	61nm,0.6s,SNR=1.0								
OBKA	Obir	5.18	72	⇑	*i*PN		Pn	00 31 52.3	-0.6
OBKA					*i* SN		Sn	00 32 50.3	-3.1
OBKA					*i* SG		Sg	00 33 21.3	-4.6
	14nm,0.8s								
OBKA	Obir	5.18	72	⇑	*i*PN		Pn	00 31 52.3	-0.6
OBKA					*i* SN		Sn	00 32 50.3	-3.1
OBKA					*i* SG		Sg	00 33 21.3	-4.6
	14nm,0.8s								
OBKA	Obir	5.18	72	⇑	*i*Pn		Pn	00 31 52.3	-0.6
	14nm,0.8s								
OBKA					*i* Sn		Sn	00 32 50.3	-3.1
OBKA					*i* Sg		Sg	00 33 21.3	-4.6
GRA1	Grafenberg Arr	5.25	28		*e*Pn		Pn	00 31 51.0	-2.8
GRA1					*e*Sg		Sg	00 33 23.7	-4.3
GIVF	Givet	5.27	342		*e*Pn		Pn	00 31 55.3	+1.1
	SNR=1.0								
GIVF					*e*Pg		Pg	00 32 13.8	-4.8
	SNR=1.0								
GIVF					*e*Sg		Sg	00 33 23.1	-5.8
	64nm,0.6s								
NVLJ	Novalja	5.34	93		*i* Pn		Pn	00 31 53.3	-1.9
NVLJ					*i* Sn		Sn	00 32 50.6	-6.8
EMIR	Miracle	5.35	235		P		Pn	00 31 56.4	+1.1
EMIR					S		Sn	00 32 59.1	+1.4
BAIF	Baives	5.38	337		*e*Pn		Pn	00 31 57.2	+1.4
	SNR=1.0								
BAIF					*e*Pg		Pg	00 32 16.2	-4.7
BAIF					*e*Sg		Sg	00 33 27.4	-5.2
	35nm,0.7s,SNR=1.0								
MOA	Molln	5.46	58	⇑	*i*PN		Pn	00 31 56.3	-0.6
MOA					*i* SN		Sn	00 32 58.2	-2.3
MOA					*i* SG		Sg	00 33 31.8	-3.4
	6.9nm,0.6s								
MOA	Molln	5.46	58	⇑	*i*PN		Pn	00 31 56.3	-0.6
MOA					*i* SN		Sn	00 32 58.2	-2.3
MOA					*i* SG		Sg	00 33 31.8	-3.4
	6.9nm,0.6s								
MOA	Molln	5.46	58	⇑	*i*Pn		Pn	00 31 56.3	-0.6
	6.9nm,0.6s								
MOA					*i* Sn		Sn	00 32 58.2	-2.3
MOA					*i* Sg		Sg	00 33 31.8	-3.4
MFF	Saint Martin d	5.48	288		*e*Pn		Pn	00 31 58.5	+1.4
	SNR=1.0								
MFF					*e*Sn		Sn	00 32 58.1	-2.8
MFF					*e*Sg		Sg	00 33 30.4	-5.3
	33nm,0.5s								
EPF	Esparros	5.51	250		*e*Pn		Pn	00 31 58.0	+0.5
	SNR=1.0								
EPF					*e*Sg		Sg	00 33 29.6	-7.2
	14nm,0.5s,SNR=1.0								
GEC2	GERESS Array S	5.69	47		*e*Pn		Pn	00 31 59.2	-0.8
GEC2					*e*Sn		Sn	00 33 02.0	-4.2
HGN	Heimansgroeve	5.72	351		*e*P		Pn	00 32 01

EARI	**Arriondas**	**9.24 263**	P	**P**	**00 32 49.7**	**-0.1**
EARI			S	**Sn**	**00 34 29.4**	**-5.6**
ESDC	**Sonseca Array**	**10.02 241**	P	**P**	**00 33 00.4**	**-0.1**
	0.3nm,0.1s					
ECAL	**Calabor**	**10.75 258**	P	**P**	**00 33 10.4**	**-0.1**
	0.8nm,0.2s					
DLF	**Lyons Farm**	**12.22 317**	*e*P	**P**	**00 33 31.0**	**+0.6**

*IDC **14** 00:36:53.0±0.9,9.12N×126.46E,mb3.8/8,mb1 3.9/8, mb1mx3.8/20,Error ellipse: s-maj=61.2km s-min=18.5km az=77.0*
*MAN **14** 00:36:56.8,9.21N×126.74E,h14km,mb4.5,ML3.4,MS3.2*
*NEIC **14** 00:37:01.6±0.5,9.02N×126.32E,h65km,Error ellipse: s-maj=34.8km s-min=11.1km az=78.0*

ISC 14 00:36:57.1±1.2,9.19N±0.04×126.83E±0.08,h39km±11km**, n21,σ1$47/31,mb3.7/8,5C-3D,Mindanao**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BIPH	**Bislig**	**1.11**	**205**	*e*P	**P**	**00 37 15.8**	**-0.4**
BIPH				*e*S	**S**	**00 37 28.3**	**-2.3**
BUTP	**Butuan**	**1.22**	**259**	*e*P	**P**	**00 37 16.3**	**-1.5**
BUTP				*e*S	**S**	**00 37 32.2**	**-1.2**
MSLP	**Maasin**	**2.16**	**296**	*e*P	**P**	**00 37 32.1**	**+0.8**
CGP	**Cagayan de Oro**	**2.24**	**251**	*e*P	**P**	**00 37 32.3**	**-0.1**
CGP				*e*S	**S**	**00 38 01.4**	**+2.4**
PLP	**Palo**	**2.68**	**317**	*e*P	**P**	**00 37 38.7**	**0.0**
PLP				*e*S	**S**	**00 38 07.4**	**-2.8**
BESP	**Borongan**	**2.76**	**330**	*e*P	**P**	**00 37 41.4**	**+1.5**
BESP				*e*S	**S**	**00 38 11.5**	**-0.8**
KCP	**Kidapawan**	**2.77**	**219**	*e*P	**P**	**00 37 42.5**	**+2.4**
KCP				*i* S	**S**	**00 38 14.4**	**+1.7**
TBP	**Tagbilaran**	**2.97**	**280**	*e*P	**P**	**00 37 42.8**	**-0.1**
TBP				*e*S	**S**	**00 38 16.0**	**-1.7**
LLP	**Lapu-Lapu**	**3.04**	**292**	*e*P	**P**	**00 37 44.6**	**+0.7**
LLP				*e*S	**S**	**00 38 22.8**	**+3.4**
PAGZ	**Pagadian**	**3.67**	**249**	*e*P	**P**	**00 37 53.4**	**+0.6**
PAGZ				*e*S	**S**	**00 38 40.2**	**+4.9**
CNP	**Catarman**	**3.92**	**327**	*e*P	**P**	**00 37 56.2**	**-0.2**
CNP				*e*S	**S**	**00 38 35.6**	**-6.3**
FITZ	**Fitzroy Crossi**	**27.15**	**182**	P	**P**	**00 42 38.2**	**-0.8**
	1.0nm,0.4s,mb3.7,baz=356,slow=11,SNR=6.2						
WRA	**Warramunga Arr**	**29.88**	**166**	P	**P**	**00 43 01.9**	**-1.6**
	0.3nm,0.5s,mb3.3,baz=347,slow=9.3,SNR=6.6						
ASAR	**Alice Springs**	**33.38**	**168**	P	**P**	**00 43 33.3**	**-0.9**
	0.2nm,0.3s,mb3.5,baz=353,slow=6.6,SNR=4.0						
MKAR	**Makanchi Array**	**53.21**	**323**	P	**P**	**00 46 12.0**	**-1.9**
	1.4nm,0.6s,mb4.1,baz=122,slow=7.8,SNR=19						
ZRNK	**Zerenda**	**63.61**	**325**	*e*P	**P**	**00 47 24.0**	**-2.3**
INK	**Inuvik**	**85.08**	**22**	P	**P**	**00 49 31.6**	**+1.9**
	0.3nm,0.5s,mb3.7,baz=326,slow=8.0,SNR=3.9						
ARCES	**ARCESS Array B**	**85.39**	**340**	P	**P**	**00 49 31.3**	**+0.1**
	0.8nm,0.6s,mb4.0,baz=84,slow=6.0,SNR=7.9						
FINES	**FINESS Array B**	**87.09**	**332**	P	**P**	**00 49 39.8**	**+0.1**
	0.5nm,0.7s,mb3.9,baz=129,slow=8.9,SNR=5.2						
RES	**Resolute Bay**	**92.45**	**10**	*e*P	**P**	**00 50 06.5**	**+1.8**
YKA	**Yellowknife Ar**	**94.51**	**24**	P	**P**	**00 50 16.5**	**+2.3**
	0.2nm,0.6s,mb3.7,baz=302,slow=4.6,SNR=3.3						

*LDG **14** 00:39:41.8±0.4,45.06N×7.47E,h2km,Md2.5/3,Ml2.3/9, Error ellipse: s-maj=8.0km s-min=4.0km az=71.0*
*NEIC **14** 00:39:41.2,45.11N×7.35E,h11km,ML2.7(GEN), ML2.3(LDG),ML2.1(STR),After GEN.*
*STR **14** 00:39:41.1±1.6,45.10N×7.40E,h5km±1km,Ml2.1,Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*

ISC 14 00:39:40.3±0.4,45.08N±0.02×7.42E±0.03,h5km±3km**,n39, σ0$92/66,Northern Italy**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RSP	**Reno Superiore**	**0.13**	**303**	P	**Pg**	**00 39 43.7**	**+0.6**
RSP				S	**Sg**	**00 39 45.4**	**+0.4**
FENE	**Fenestrelle**	**0.26**	**259**	P	**Pg**	**00 39 46.0**	**+0.6**
FENE				S	**Sg**	**00 39 49.0**	**+0.1**
BHB	**Bricherasio**	**0.26**	**205**	P	**Pg**	**00 39 47.4**	**+1.8**
BHB				S	**Sg**	**00 39 51.2**	**+2.0**
LSD	**Ceresole Reale**	**0.42**	**334**	P	**Pg**	**00 39 49.0**	**+0.3**
LSD				S	**Sg**	**00 39 54.1**	**-0.3**
RRL	**Cesana Torines**	**0.48**	**251**	P	**Pg**	**00 39 50.2**	**+0.4**
RRL				S	**Sg**	**00 39 56.0**	**-0.2**
BNI	**Bardonecchia**	**0.52**	**267**	*e*Pg	**Pg**	**00 39 50.8**	**0.0**
BNI				*e*Sg	**Sg**	**00 39 57.0**	**-0.8**
MBDF	**Montbardon**	**0.58**	**233**	*e*Pg	**Pg**	**00 39 52.5**	**+0.6**
MBDF				*e*Sg	**Sg**	**00 40 00.0**	**+0.4**
	45nm,0.2s						
DOI	**San Damiano**	**0.59**	**192**	*e*Pg	**Pg**	**00 39 52.3**	**+0.2**
DOI				*e*Sg	**Sg**	**00 40 01.2**	**+1.2**
PZZ	**Prazzo**	**0.62**	**201**	P	**Pg**	**00 39 52.9**	**+0.2**
PZZ				S	**Sg**	**00 40 01.1**	**+0.2**
LPG	**La Plagne**	**0.63**	**312**	*e*Pg	**Pg**	**00 39 52.5**	**-0.4**
LPG				*e*Sg	**Sg**	**00 40 00.1**	**-1.2**
	63nm,0.2s						
LPL	**La Plagne**	**0.65**	**312**	*e*Pg	**Pg**	**00 39 52.9**	**-0.4**
LPL				*e*Sg	**Sg**	**00 40 00.5**	**-1.5**
	45nm,0.3s						
ORO	**Oropa**	**0.68**	**36**	*e*Pg	**Pg**	**00 39 54.2**	**+0.4**
ORO				*e*Sg	**Sg**	**00 40 03.1**	**+0.2**
SURF	**Saint Ours**	**0.74**	**216**	Pg	**Pg**	**00 39 55.8**	**+0.8**
SURF				Sg	**Sg**	**00 40 05.2**	**+0.3**
STV2	**Anna di Valdie**	**0.84**	**184**	P	**Pb**	**00 39 56.2**	**-0.7**
STV2				S	**Sb**	**00 40 08.1**	**-0.1**
STV	**Sta Anna Valdi**	**0.84**	**185**	P	**Pb**	**00 39 56.4**	**-0.5**
STV				S	**Sb**	**00 40 08.1**	**-0.2**
ROB	**Roburent**	**0.85**	**157**	P	**Pb**	**00 39 58.2**	**+1.1**
ENR	**Entracque**	**0.85**	**180**	P	**Pb**	**00 39 56.6**	**-0.6**
ENR				S	**Sb**	**00 40 08.5**	**-0.2**
PCP	**Pian Castagno**	**0.97**	**123**	P	**Pb**	**00 40 00.1**	**+1.0**
MONE	**Monesi**	**1.03**	**166**	P	**Pb**	**00 40 00.5**	**+0.3**
FIN	**Finale Ligure**	**1.04**	**147**	P	**Pb**	**00 40 00.9**	**+0.6**
RORO		**1.07**	**154**	P	**Pb**	**00 40 00.9**	**0.0**
SAOF	**Saorge**	**1.10**	**175**	Pg	**Pg**	**00 40 01.1**	**-1.1**
SAOF				Sg	**Sg**	**00 40 18.2**	**+1.3**
ORIF	**Oris-en-Rattie**	**1.10**	**262**	*e*Pn	**Pn**	**00 40 01.7**	**-0.6**
ORIF				*e*Sg	**Sg**	**00 40 18.0**	**+1.0**
	12nm,0.2s						
AURF	**Auriere**	**1.19**	**183**	Pg	**Pg**	**00 40 03.8**	**-0.3**
MVIF	**Mont Vial**	**1.20**	**189**	Pg	**Pg**	**00 40 05.0**	**+0.8**
SBF	**Sospel**	**1.22**	**179**	*e*Pg	**Pg**	**00 40 03.6**	**-1.0**
SBF				*e*Sg	**Sg**	**00 40 18.2**	**-2.6**
	3.9nm,0.2s						
NEGI	**Negi**	**1.25**	**170**	P	**Pb**	**00 40 03.1**	**-0.8**
FRF	**La Foret Royal**	**1.62**	**200**	*e*Pg	**Pg**	**00 40 10.4**	**-2.2**
FRF				*e*Sg	**Sg**	**00 40 32.4**	**-1.7**
	11nm,0.3s						
SMRF	**Simiane la Rot**	**1.72**	**231**	*e*Pg	**Pg**	**00 40 14.8**	**+0.2**
SMRF				*e*Sg	**Sg**	**00 40 38.3**	**+0.8**
	4.6nm,0.3s						
CABF	**La Chapelle**	**1.79**	**329**	*e*Pn	**Pn**	**00 40 13.6**	**+1.5**
CABF				*e*Pg	**Pg**	**00 40 15.1**	**-1.0**
CABF				*e*Sn	**Sn**	**00 40 35.3**	**-0.2**
	2.3nm,0.2s						
LMR	**La Mourre**	**1.86**	**201**	*e*Pg	**Pg**	**00 40 16.1**	**-1.4**
LMR				*e*Sg	**Sg**	**00 40 40.1**	**-2.2**
	6.4nm,0.2s						
VIVF	**Saint-Julien-l**	**1.96**	**264**	*e*Pn	**Pn**	**00 40 16.0**	**+1.5**
VIVF				*e*Sn	**Sn**	**00 40 39.7**	**-0.1**
VIVF				*e*Sg	**Sg**	**00 40 45.0**	**-0.6**
	2.3nm,0.3s						
LASF	**Ste Croix**	**2.73**	**250**	*e*Pn	**Pn**	**00 40 26.0**	**+0.4**
PGF	**Pioggiola**	**2.78**	**155**	*e*Pn	**Pn**	**00 40 24.5**	**-1.7**
SMF	**Signal de Mont**	**2.95**	**303**	*e*Pn	**Pn**	**00 40 29.1**	**+0.4**
SMF				*e*Sg	**Sg**	**00 41 14.2**	**-4.2**
	1.6nm,0.3s						
LOR	**Lormes**	**3.30**	**313**	*e*Sg	**Sg**	**00 41 23.2**	**-7.0**
	1.3nm,0.3s						
AVF	**Avril sur Loir**	**3.31**	**303**	*e*Pn	**Pn**	**00 40 33.7**	**-0.1**
BGF	**Bois d'Agland**	**3.52**	**296**	*e*Pn	**Pn**	**00 40 37.3**	**+0.5**
CAF	**Calviac**	**3.80**	**270**	*e*Pn	**Pn**	**00 40 41.6**	**+0.9**

*ROM **14** 01:20:11.8±0.5,45.14N×7.21E,h10km,MD2.3/3,ML1.7/2, Error ellipse: s-maj=4.9km s-min=2.0km az=90.0*
*NEIC **14** 01:20:14.0,45.12N×7.35E,h10km,MD2.3(ROM), ML2.7(GEN),ML2.5(LDG),ML2.2(STR),After GEN.*
*LDG **14** 01:20:14.7±0.4,45.07N×7.45E,h5km,Md2.5/3,Ml2.5/10, Error ellipse: s-maj=9.6km s-min=4.6km az=72.0*
*STR **14** 01:20:15.5±2.1,45.05N×7.34E,h5km±1km,Ml2.2,Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*

ISC 14 01:20:12.9±0.3,45.10N±0.01×7.41E±0.03,h7km±3km**,n48, σ1$02/78,Northern Italy**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RSP	**Reno Superiore**	**0.12**	**296**	P	**Pg**	**01 20 16.3**	**+0.8**
RSP				S	**Sg**	**01 20 17.9**	**+0.6**
FENE	**Fenestrelle**	**0.25**	**254**	P	**Pg**	**01 20 18.7**	**+0.6**
FENE				S	**Sg**	**01 20 21.8**	**+0.2**
BHB	**Bricherasio**	**0.28**	**201**	P	**Pg**	**01 20 19.9**	**+1.3**
BHB				S	**Sg**	**01 20 23.7**	**+1.3**
LSD	**Ceresole Reale**	**0.40**	**334**	P	**Pg**	**01 20 21.5**	**+0.5**
LSD				S	**Sg**	**01 20 26.5**	**+0.2**
RRL	**Cesana Torines**	**0.48**	**248**	P	**Pg**	**01 20 22.8**	**+0.3**
RRL				S	**Sg**	**01 20 28.9**	**0.0**
BNI	**Bardonecchia**	**0.52**	**265**	*e*Pg	**Pg**	**01 20 23.3**	**0.0**
BNI				*e*Sg	**Sg**	**01 20 29.4**	**-0.9**
MBDF	**Montbardon**	**0.59**	**231**	*e*Pg	**Pg**	**01 20 25.1**	**+0.4**
MBDF				*e*Sg	**Sg**	**01 20 32.7**	**+0.2**
	56nm,0.2s						
DOI	**San Damiano**	**0.61**	**191**	*e*PG	**Pg**	**01 20 25.0**	**-0.1**
DOI				SG	**Sg**	**01 20 33.7**	**+0.4**
	27nm,0.3s						
DOI	**San Damiano**	**0.61**	**191**	*e*Pg	**Pg**	**01 20 24.9**	**-0.2**
DOI				*e*Sg	**Sg**	**01 20 33.7**	**+0.4**
LPG	**La Plagne**	**0.61**	**311**	*e*Pg	**Pg**	**01 20 25.0**	**-0.1**
LPG				*e*Sg	**Sg**	**01 20 32.5**	**-0.8**
	63nm,0.2s						
LPL	**La Plagne**	**0.63**	**311**	*e*Pg	**Pg**	**01 20 25.5**	**-0.1**
LPL				*e*Sg	**Sg**	**01 20 33.0**	**-1.0**
	69nm,0.3s						
PZZ	**Prazzo**	**0.63**	**200**	P	**Pg**	**01 20 26.0**	**+0.4**
PZZ				S	**Sg**	**01 20 34.3**	**+0.2**
ORO	**Oropa**	**0.67**	**37**	*e*PG	**Pg**	**01 20 27.4**	**+1.1**
ORO				SG	**Sg**	**01 20 37.2**	**+2.1**
	52nm,0.2s						
ORO	**Oropa**	**0.67**	**37**	*e*Pg	**Pg**	**01 20 27.4**	**+1.2**
ORO				*e*Sg	**Sg**	**01 20 37.2**	**+2.0**
SURF	**Saint Ours**	**0.75**	**214**	Pg	**Pg**	**01 20 28.4**	**+0.4**
SURF				Sg	**Sg**	**01 20 37.9**	**-0.1**
STV2	**Anna di Valdie**	**0.86**	**184**	P	**Pb**	**01 20 29.0**	**-0.8**
STV	**Sta Anna Valdi**	**0.86**	**184**	P	**Pb**	**01 20 28.9**	**-0.9**
ROB	**Roburent**	**0.87**	**157**	P	**Pb**	**01 20 30.8**	**+0.8**
ROB				S	**Sb**	**01 20 42.2**	**+0.6**
ENR	**Entracque**	**0.88**	**179**	P	**Pb**	**01 20 29.4**	**-0.7**
MCGN	**Macugnaga**	**0.95**	**25**	*e*PG	**Pg**	**01 20 31.2**	**-0.7**
MCGN				SG	**Sg**	**01 20 44.2**	**-0.4**
	12nm,0.3s						
MCGN	**Macugnaga**	**0.95**	**25**	*e*Pn	**Pn**	**01 20 31.2**	**-1.4**
MCGN				*e*Sn	**Sn**	**01 20 44.2**	**-2.3**
PCP	**Pian Castagno**	**0.98**	**124**	P	**Pb**	**01 20 32.9**	**+0.9**
PCP				S	**Sb**	**01 20 45.9**	**+0.9**
MONE	**Monesi**	**1.05**	**166**	P	**Pb**	**01 20 33.3**	**+0.2**
FIN	**Finale Ligure**	**1.06**	**147**	*e*PN	**Pn**	**01 20 34.4**	**+0.2**
FIN				SN	**Sn**	**01 20 50.0**	**+0.7**
	14nm,0.2s						
FIN	**Finale Ligure**	**1.06**	**147**	P	**Pb**	**01 20 34.2**	**+0.9**
TOUF	**Mont Tournerai**	**1.09**	**186**	Pg	**Pg**	**01 20 36.4**	**+1.6**
RORO		**1.10**	**154**	P	**Pb**	**01 20 33.8**	**0.0**
ORIF	**Oris-en-Rattie**	**1.10**	**261**	*e*Pn	**Pn**	**01 20 34.3**	**-0.4**
ORIF				*e*Sg	**Sg**	**01 20 50.6**	**+1.1**
	26nm,0.3s						
SAOF	**Saorge**	**1.12**	**174**	Pg	**Pg**	**01 20 35.3**	**0.0**
AURF	**Auriere**	**1.22**	**183**	Pg	**Pg**	**01 20 37.0**	**-0.2**
VAI	**Varese**	**1.23**	**51**	*e*PN	**Pn**	**01 20 35.1**	**-1.4**
VAI	**Varese**	**1.23**	**51**	*e*Pn	**Pn**	**01 20 35.1**	**-1.4**
SBF	**Sospel**	**1.24**	**179**	*e*Pg	**Pg**	**01 20 36.1**	**-1.6**
SBF				*e*Sg	**Sg**	**01 20 51.0**	**-3.2**
	22nm,0.4s						
NEGI	**Negi**	**1.27**	**170**	P	**Pb**	**01 20 35.9**	**-0.9**
CALN	**Calern**	**1.40**	**196**	Pg	**Pg**	**01 20 40.6**	**-0.3**
FRF	**La Foret Royal**	**1.63**	**200**	*e*Pg	**Pg**	**01 20 43.0**	**-2.6**
FRF				*e*Sg	**Sg**	**01 21 05.0**	**-2.4**
	9.2nm,0.3s						
SMRF	**Simiane la Rot**	**1.73**	**230**	*e*Pg	**Pg**	**01 20 47.2**	**-0.2**
SMRF				*e*Sg	**Sg**	**01 21 10.9**	**+0.5**
	8.0nm,0.4s						
CABF	**La Chapelle**	**1.77**	**329**	*e*Pg	**Pg**	**01 20 47.6**	**-0.7**
CABF				*e*Sg	**Sg**	**01 21 11.1**	**-0.8**
	6.5nm,0.4s						
LMR	**La Mourre**	**1.88**	**200**	*e*Pg	**Pg**	**01 20 48.6**	**-1.9**
LMR				*e*Sg	**Sg**	**01 21 12.6**	**-3.0**
	11nm,0.3s						
VIVF	**Saint-Julien-l**	**1.96**	**264**	*e*Pn	**Pn**	**01 20 48.9**	**+2.0**
VIVF				*e*Sn	**Sn**	**01 21 12.2**	**+0.2**
VIVF				*e*Sg	**Sg**	**01 21 17.5**	**-0.5**
	3.3nm,0.3s						
LASF	**Ste Croix**	**2.73**	**249**	*e*Pn	**Pn**	**01 20 58.5**	**+0.4**
HINF	**Hinteralfeld**	**2.74**	**352**	*e*Sg	**Sg**	**01 21 40.0**	**-4.3**
	2.9nm,0.3s						
PGF	**Pioggiola**	**2.80**	**155**	*e*Pn	**Pn**	**01 20 56.6**	**-2.4**
SMF	**Signal de Mont**	**2.93**	**303**	*e*Pn	**Pn**	**01 21 01.8**	**+0.9**
SMF				*e*Sg	**Sg**	**01 21 46.8**	**-3.7**
	3.8nm,0.3s						
LOR	**Lormes**	**3.28**	**313**	*e*Pn	**Pn**	**01 21 06.7**	**+0.8**
LOR				*e*Sg	**Sg**	**01 21 56.0**	**-6.2**
	2.0nm,0.3s						
AVF	**Avril sur Loir**	**3.29**	**302**	*e*Pn	**Pn**	**01 21 07.1**	**+1.0**
BGF	**Bois d'Agland**	**3.50**	**296**	*e*Pn	**Pn**	**01 21 10.1**	**+1.1**
CAF	**Calviac**	**3.79**	**269**	*e*Pn	**Pn**	**01 21 14.4**	**+1.3**

*IDC **14** 01:41:58.3±0.5,3.14S×142.36E,mb4.7/17,mb1 4.8/20, mb1mx4.8/22,ML4.2/3,MS4.4/17,Ms1 4.4/17, ms1mx4.3/23,Error ellipse: s-maj=16.3km s-min=9.6km az=92.0*
*BJI **14** 01:42:02.0,3.35S×142.83E,h64km,mB5.3,mb5.2,Ms4.8, Msz4.7*
*MOS **14** 01:42:03.4±0.8,2.84S×142.22E,h33km,mb5.2/6,Error ellipse: s-maj=48.9km s-min=15.3km az=110.7*
*NEIC **14** 01:42:04.7±1.0,3.22S×142.26E,h44km±9km,mb5.1/27, Error ellipse: s-maj=6.9km s-min=5.2km az=84.0*
*SYO **14** 01:42:04.6,3.22S×142.26E,h44km,MB5.1*
*HRVD **14** 01:42:04.7±0.2,3.06S×142.37E,h25km±2km,MW5.2/63, Centroid moment Tensor Solution. LP body waves: s46,c71;Mantle waves: s63,c117; Half duration: 1s0 Moment tensor: Scale 10^{16}Nm; M_{rr}-0.69±.25; $M_{\theta\theta}$4.39±.22; $M_{\phi\phi}$-3.70±.25; $M_{r\theta}$1.48±.37; $M_{\theta\phi}$3.26±.20; $M_{\phi r}$4.65±.80; Best double couple: M_o7.14×10^{16} NP1: ϕ_s112°,δ47°,λ-7°. NP2:ϕ_s207°,δ85°,λ-137°. Principal axes: T 6.91, Plg25°, Azm332°; N .46, Plg47°, Azm212°; P -7.37, Plg33°, Azm79°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 14 01:42:04.0±0.2,3.26S±0.03×142.30E±0.05,h53km**, h53**km±2.5km**:pP-P,n174,σ0$99/144,mb5.0/61,MS4.5/38, 18C-3D,Near north coast of New Guinea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WAU	**Wau**	**5.99**	**133**	*e*P	**P**	**01 43 32.8**	**+0.7**
PMG	**Port Moresby**	**7.79**	**142**	Pn	**P**	**01 43 55.9**	**-1.3**
	3.5nm,0.3s,baz=343,slow=7.1,SNR=20						
PMG				Lg		01 46 07.7	
	1.6nm,0.3s,baz=159,slow=18,SNR=2.5						
PMG	**Port Moresby**	**7.79**	**142**	*e*P	**P**	**01 43 56.3**	**-0.9**
PMG				*e*S	S	01 46 11.8	+47
CTA	**Charters Tower**	**17.17**	**167**	*i*P	**P**	**01 46 06.0**	**+4.2**
	17nm,1.0s						
CTA				*e*S	PcP	01 50 45.7	+1.2
CTA	**Charters Tower**	**17.17**	**167**	P	**P**	**01 46 05.3**	**+3.5**
	0.7nm,0.3s,baz=325,slow=11,SNR=11						
CTA				LR	LR	01 52 48.3	
	comp=Z,2μm,19.4s,baz=359,slow=38						
CTAO	**Charters Tower**	**17.17**	**167**	*e*P	**P**	**01 46 05.5**	**+3.7**
	5.7nm,0.6s						
WRAB	**Tennant Creek**	**18.30**	**204**	*e*P	**P**	**01 46 15.6**	**-0.3**
	63nm,0.7s						
WB2	**Warramunga Arr**	**18.31**	**204**	*e*P	**P**	**01 46 14.1**	**-1.9**
WB2				*e*S	**S**	**01 49 42.3**	**+7.2**
WRA	**Warramunga Arr**	**18.31**	**204**	P	**P**	**01 46 14.8**	**-1.3**
	2.5nm,0.3s,baz=27,slow=13,SNR=87						
WRA				S	**S**	**01 49 44.6**	**+9.5**
	0.4nm,0.3s,baz=18,slow=21,SNR=4.3						
WRA				Lg		01 51 40.4	
	baz=22,slow=34,SNR=3.4						
SCPH	**Surigao**	**21.17**	**308**	*e*P	**P**	**01 46 45.1**	**-1.9**
AS12	**Alice Springs**	**21.85**	**201**	*i*P	**P**	**01 46 53.4**	**-0.4**
	78nm,0.9s,mb5.1						
AS12				*e*S	**S**	**01 50 50.7**	**+3.7**
ASAR	**Alice Springs**	**21.85**	**201**	P	**P**	**01 46 53.5**	**-0.4**
	18nm,0.7s,mb4.6,baz=32,slow=9.3,SNR=57						
ASAR				S	**S**	**01 50 51.5**	**+4.5**
	5.2nm,0.9s,baz=20,slow=21,SNR=3.3						
FITZ	**Fitzroy Crossi**	**22.00**	**227**	*i*P	**P**	**01 46 53.7**	**-1.6**
	48nm,1.0s,mb4.9						
FITZ				*e*S	**S**	**01 50 54.5**	**+4.8**
FITZ	**Fitzroy Crossi**	**22.00**	**227**	P	**P**	**01 46 53.9**	**-1.4**
	18nm,0.6s,mb4.7,baz=19,slow=10,SNR=34						
FITZ				S	**S**	**01 50 55.0**	**+5.3**
	21nm,1.0s,baz=170,slow=11,SNR=2.6						
FITZ				LR	LR	01 56 09.9	
	comp=Z,403nm,20.6s,MS3.8,baz=70,slow=38						
RCP	**Roxas**	**24.39**	**307**	*e*P	**P**	**01 47 19.6**	**+0.9**
	60μm,0.5s						
KALP	**Kalibo**	**24.78**	**307**	*e*P	**P**	**01 47 23.0**	**+0.4**
TGY	**Tagaytay City**	**27.32**	**310**	P	**P**	**01 47 44.4**	**-1.7**
	218nm,0.5s,mb5.9,baz=146,slow=7.4,SNR=12						
TGY				LR	LR	01 57 54.9	
	comp=Z,1μm,19.8s,MS4.4,baz=123,slow=35						
STKA	**Stephens Creek**	**28.48**	**181**	*i*P	**P**	**01 47 56.4**	**0.0**
	18nm,0.7s,mb4.8						
STKA	**Stephens Creek**	**28.48**	**181**	P	**P**	**01 47 56.2**	**-0.3**
	26nm,0.9s,mb4.9,baz=349,slow=8.2,SNR=44						
STKA				LR	LR	01 59 45.9	
	comp=Z,1μm,18.6s,MS4.6,baz=359,slow=37						
DZM	**Mont Dzumac**	**29.98**	**131**	*e*P	**P**	**01 48 08.7**	**-1.2**
DZM	**Mont Dzumac**	**29.98**	**131**	*e*P	**P**	**01 48 08.7**	**-1.3**
CBIJ	**Chichi jima**	**30.17**	**360**	LR	LR	01 59 11.3	
	comp=Z,297nm,18.3s,MS4.0,baz=116,slow=34						
FORT	**Forrest**	**30.50**	**205**	*i*P	**P**	**01 48 14.5**	**+0.1**
	163nm,0.6s,mb6.0						
CNB	**Canberra Magne**	**32.56**	**169**	*i*P	**P**	**01 48 33.3**	**+0.8**
	192nm,1.9s,mb5.7						
JOW	**Kunigami**	**32.84**	**336**	LR	LR	01 59 24.3	
	comp=Z,1μm,19.5s,MS4.6,baz=292,slow=32						
TOO	**Toolangi**	**34.27**	**175**	*i*P	**P**	**01 48 48.9**	**+1.7**
	19nm,0.8s,mb5.1						
JHJ	**Hachijo jima 2**	**36.26**	**356**	LR	LR	02 00 55.2	
	comp=Z,1μm,18.9s,MS4.6,baz=64,slow=32						
QZH	**Quanzhou**	**36.27**	**322**	P	**P**	**01 49 03.6**	**-0.7**
QZH				S	**S**	**01 54 43.3**	**+2.8**
QZH				LR	LR		
	comp=Z,2μm,30.7s,MS4.7						
KLBR	**Kellerberrin**	**36.44**	**217**	*i*P	**P**	**01 49 04.9**	**-0.8**
	comp=Z,23nm,1.0s,mb5.1						
NWAO	**Narrogin (SRO)**	**37.71**	**216**	P	**P**	**01 49 17.1**	**+0.9**
	comp=Z,37nm,1.3s,mb5.0,baz=43,slow=7.2,SNR=5.2						
NWAO	**Narrogin (SRO)**	**37.71**	**216**	*e*P	**P**	**01 49 17.3**	**+1.0**
JNU	**Nakatsue**	**37.76**	**344**	P	**P**	**01 49 14.8**	**-1.9**
	comp=Z,17nm,1.0s,mb4.7,baz=144,slow=8.8,SNR=4.2						
JNU				LR	LR	02 01 43.7	
	comp=Z,503nm,20.3s,MS4.3,baz=156,slow=32						
GZH	**Guangzhou**	**38.51**	**314**	P	**P**	**01 49 22.4**	**-0.7**
GZH				S	**S**	**01 55 19.6**	**+5.0**
GZH				LR	LR		
	comp=N,2μm,9.6s						
GZH				LR	LR		
	comp=E,750nm,8.8s						
GZH				LR	LR		
	comp=Z,937nm,17.9s,MS4.7						
QIZ	**Qiongzhong**	**38.86**	**306**	P	**P**	**01 49 29.9**	**+3.9**
QIZ				PP	PP	01 51 01.5	+2.1
QIZ				S	**S**	**01 55 23.8**	**+3.9**
QIZ				AMB	AMB		
	comp=Z,21nm,1.6s,mb4.6						
QIZ				LR	LR		
	comp=N,263nm,19.1s						
QIZ				LR	LR		
	comp=E,397nm,24.4s						
QIZ				LR	LR		
	comp=Z,858nm,21.1s,MS4.5						
SSE	**Sheshan**	**39.65**	**331**	*i*P	**P**	**01 49 32.3**	**-0.1**
SSE				PP	PP	01 51 09.5	+1.6
SSE				S	**S**	**01 55 34.0**	**+2.4**
SSE				XS		01 55 57.9	
SSE				AMB	AMB		
	comp=Z,54nm,1.3s,mb5.1						
SSE				AMB	AMB		
	comp=Z,189nm,11.6s						
SSE				LR	LR		
	comp=N,495nm,15.0s,MS4.5						
SSE				LR	LR		
	comp=E,221nm,15.0s,MS4.5						
SSE				LR	LR		
	comp=Z,702nm,15.0s,MS4.6						
MAT	**Matsushiro**	**39.

MDJ AP pP 01 51 00.1 -1.4
MDJ XP sP 01 51 06.0 -1.7
MDJ PCP PcP 01 52 06.0 -5.1
MDJ PP PP 01 52 42.0 +0.7
MDJ S **S** **01 57 49.6 +2.9**
MDJ XS 01 58 15.4
MDJ AMB AMB
comp=Z,17nm,1.0s,mb5.0
MDJ AMB AMB
comp=Z,103nm,10.1s
MDJ LR LR
comp=N,260nm,18.6s,MS4.3
MDJ LR LR
comp=E,153nm,19.2s,MS4.3
MDJ LR LR
comp=Z,413nm,16.0s,MS4.5
MDJ Mudanjiang 49.00 348 *e*P **P** **01 50 46.4 -1.0**
CN2 Changchun 49.23 344 *e*P **P** **01 50 48.8 -0.4**
CN2 *e*AP pP 01 51 04.3 +0.9
CN2 *e*S **S** **01 57 49.9 -0.1**
CN2 *e*SS SS 02 01 18.3 +0.6
CN2 AMB AMB
comp=Z,20nm,1.0s,mb5.1
CN2 AMB AMB
comp=Z,200nm,5.0s
CN2 LR LR
comp=N,2μm,21.0s,MS5.1
CN2 LR LR
comp=E,1μm,21.0s,MS5.1
CN2 LR LR
comp=Z,600nm,21.0s,MS4.6
BJT Baijiatuau 49.29 334 *e*P **P** **01 50 48.4 -1.3**
comp=Z,7.7nm,0.6s,mb4.9
BJI Beijing 49.30 334 P **P** **01 50 49.0 -0.8**
BJI XP sP 01 51 09.4 -0.7
BJI PP PP 01 52 40.3 -4.1
BJI S **S** **01 57 50.4 -0.6**
BJI AMB AMB
comp=Z,23nm,1.5s,mb5.0
BJI AMB AMB
comp=Z,235nm,4.2s
BJI LR LR
comp=N,678nm,19.2s,MS4.7
BJI LR LR
comp=E,448nm,20.2s,MS4.7
BJI LR LR
comp=Z,780nm,21.9s,MS4.7
YSS Yuzh-Sakhalins 50.00 0 *e*P **P** **01 50 53.0 -2.1**
YSS *e* 01 51 01.7
YSS *e* 01 58 09.0
YSS pmax pmax
comp=Z,30nm,1.0s,mb5.3
YSS MLR MLR
comp=Z,400nm,19.0s,MS4.4
YSS Yuzh-Sakhalins 50.00 0 *e*P **P** **01 50 53.9 -1.2**
CD2 Chengdu 50.03 316 P **P** **01 50 55.8 +0.3**
CD2 AMB AMB
comp=Z,80nm,1.3s,mb5.6
CD2 LR LR
comp=E,750nm,17.2s
CD2 LR LR
comp=Z,800nm,20.4s,MS4.7
HHC Hu-ho-hao-te 52.10 331 *e*P **P** **01 51 10.3 -0.7**
HHC AP pP 01 51 23.3 -2.0
HHC PCP PcP 01 52 18.6 -3.9
HHC PP PP 01 53 10.1 -0.2
HHC SCP 01 56 13.8
HHC PCS 01 56 17.4
HHC S **S** **01 58 31.5 +1.9**
HHC SCS ScS 02 00 49.3 -3.6
HHC SS SS 02 02 05.1 -0.4
HHC AMB AMB
comp=Z,10.0nm,1.0s,mb4.7
HHC AMB AMB
comp=Z,227nm,5.2s
HHC LR LR
comp=N,221nm,19.4s,MS4.3
HHC LR LR
comp=E,202nm,18.8s,MS4.3
HHC LR LR
comp=Z,252nm,21.0s,MS4.2
BTO Baotou 52.69 329 *e*P **P** **01 51 14.9 -0.6**
BTO AMB AMB
comp=Z,36nm,1.9s,mb5.0
KLR Kul'dur 53.07 351 *e*P **P** **01 51 17.0 -1.2**
LZH Lanzhou 53.11 321 ⇑P **P** **01 51 19.5 +0.8**
LZH AP pP 01 51 33.9 +0.9
LZH XP sP 01 51 39.8 +0.7
LZH PP PP 01 53 21.5 +1.1
LZH *e*S **S** **01 58 45.4 +2.0**
LZH AMB AMB
comp=Z,39nm,1.3s,mb5.2
LZH AMB AMB
comp=Z,158nm,5.1s
LZH LR LR
comp=N,737nm,13.2s
LZH LR LR
comp=Z,937nm,17.3s,MS4.9
HIA Hailar 55.85 342 *e*P **P** **01 51 36.9 -1.5**
SHL Shillong 56.60 304 *e*P **P** **01 51 44.5 +0.3**
SHL *e*S PP 01 53 57.0 +5.1
GTA Gaotai 57.67 322 ⇑P **P** **01 51 52.0 +0.4**
GTA AP pP 01 52 06.3 +0.2
GTA AMB AMB
comp=Z,33nm,1.5s,mb5.1
GTA AMB AMB
comp=Z,244nm,4.6s
GTA LR LR
comp=N,110nm,19.1s,MS4.2
GTA LR LR
comp=E,148nm,23.7s,MS4.2
GTA LR LR
comp=Z,184nm,26.0s,MS4.1
LSA Lhasa 58.86 308 *e*P **P** **01 52 00.9 +0.9**
comp=Z,6.2nm,0.6s,mb4.8
ULN Ulaanbaatar 59.51 333 *e*P **P** **01 52 03.8 -0.4**
comp=Z,45nm,1.8s,mb5.2
SONM Songino Array 59.79 333 P **P** **01 52 05.8 -0.3**
comp=Z,2.6nm,0.9s,mb4.2,baz=153,slow=2.8,SNR=7.3
CLNS Chul'man 61.55 349 *e*P **P** **01 52 07.3 -11**
CLNS pmax pmax
comp=Z,20nm,1.3s,mb5.1
CLNS pmax pmax
comp=N,10.0nm,1.1s
CLNS pmax pmax
comp=E,10.0nm,0.8s
CLNS pmax pmax
comp=N,110nm,15.9s
CLNS pmax pmax
comp=Z,70nm,14.3s
CLNS pmax pmax
comp=E,50nm,12.2s
FX1 Attu Island--F 61.67 21 LR LR 02 17 50.0
comp=E,6.2nm,18.0s,baz=45,slow=35
FX1 Attu Island--F 61.67 21 P **P** **01 52 19.2 +0.4**
PKI Pulchoki 62.73 303 *e*P **P** **01 52 26.2 0.0**
comp=E,80nm,1.1s,mb5.8
KKN Kakani 62.91 303 *e*P **P** **01 52 27.5 0.0**
comp=E,103nm,0.9s,mb6.0
DMN Daman 63.00 303 *e*P **P** **01 52 28.3 +0.3**
comp=E,99nm,0.8s,mb6.0
ZAK Zakamensk 63.05 333 ⇓*i*P **P** **01 52 26.6 -1.4**
GKN Gorkha 63.52 303 *e*P **P** **01 52 31.4 -0.1**
comp=E,77nm,0.5s,mb6.0
TLY Talaya 63.81 334 *c i*P **P** **01 52 32.9 -0.1**
TLY *e* 01 53 09.4
TLY *e* 01 54 52.4
TLY *i*S **S** **02 01 09.8 +7.4**
TLY *i*SS SS 02 05 16.0 +3.2
TLY pmax pmax
comp=Z,266nm,1.5s,mb6.0
DANN Dangsing 64.36 303 *e*P **P** **01 52 37.0 0.0**
BOD Bodaibo 64.99 344 *e*P **P** **01 52 38.7 -1.8**
YAK Yakutsk 65.82 354 *c i*P **P** **01 52 44.9 -0.9**
YAK *e* 01 52 50.1
YAK pmax pmax
comp=N,7.0nm,1.2s
YAK pmax pmax
comp=E,2.0nm,1.2s
YAK pmax pmax
comp=Z,15nm,1.2s,mb4.9
YAK pmax pmax
comp=Z,15nm,1.1s,mb4.9
YAK pmax pmax
comp=N,8.0nm,1.0s
YAK pmax pmax
comp=E,4.0nm,1.0s
WMQ Urumqi 67.69 320 P **P** **01 52 57.5 -0.4**
WMQ AP pP 01 53 10.5 -2.3
WMQ PP PP 01 55 28.8 -0.7
WMQ S S 02 01 49.6 -0.2
WMQ LR LR
comp=N,158nm,20.5s,MS4.3
WMQ LR LR
comp=E,112nm,20.1s,MS4.3
WMQ LR LR
comp=Z,202nm,20.1s,MS4.3
PPT Papeete 68.17 108 *e*S S 02 01 56.4 +0.4
PPT *e*L 02 11 24.2
PPT *e*R 02 13 51.8
comp=Z,396nm,22.8s
NDI New Delhi 69.96 302 *e*P **P** **01 53 10.5 -1.7**
NDI *e* 02 02 22.0
MKAR Makanchi Array 72.43 321 P **P** **01 53 26.9 +0.3**
comp=Z,4.6nm,0.6s,mb4.6,baz=106,slow=7.3,SNR=46
MKAR LR LR 02 23 39.7
comp=Z,220nm,19.7s,MS4.4,baz=108,slow=35
MKAR Makanchi Array 72.43 321 *i*P **P** **01 53 26.9 +0.3**
MKAR pmax pmax
comp=Z,58nm,1.4s
BILL Bilibino 73.09 9 *e*P **P** **01 53 30.7 +0.6**
BILL pmax pmax
comp=Z,4.0nm,1.0s,mb4.3
BILL Bilibino 73.09 9 *e*P **P** **01 53 30.0 -0.1**
comp=Z,5.4nm,1.1s,mb4.4
KSH Kashi 74.08 313 *e*P **P** **01 53 37.3 +0.8**
KSH *e*PCP PcP 01 53 52.4 +0.7
KSH *e*AP pP 01 53 53.3 +1.8
KSH *e*XP sP 01 54 00.3 +3.0
KSH *e*PP PP 01 56 25.3 +1.3
KSH *e*S S 02 03 04.4 +0.6
KSH *e*XS 02 03 33.4
KSH *e*SKS SKS 02 03 34.0 -0.4
KSH *e*SCS ScS 02 03 38.6 0.0
KSH LR LR
comp=N,460nm,12.7s,MS5.1
KSH LR LR
comp=E,460nm,12.3s,MS5.1
ZAL Zalesovo 74.24 329 P **P** **01 53 36.6 -0.5**
comp=E,2.3nm,0.3s,mb4.6,baz=246,slow=4.6,SNR=11
ZAL LR LR 02 26 02.1
comp=E,536nm,20.1s,MS4.8,baz=250,slow=36
ZAL Zalesovo 74.24 329 P **P** **01 53 36.6 -0.5**
ZAL LR LR 02 26 02.1
ULHL Ulahol 74.75 315 P **P** **01 53 41.3 +1.0**
SNR=9.9
VNDA Vanda 74.94 176 P **P** **01 53 40.8 0.0**
comp=E,4.3nm,0.7s,mb4.5,baz=323,slow=6.3,SNR=32
VNDA LR LR 02 26 26.3
comp=E,630nm,18.5s,MS4.9,baz=350,slow=36
VNDA Vanda 74.94 176 *e*P **P** **01 53 40.8 0.0**
comp=E,2.7nm,0.8s,mb4.2
TIXI Tiksi 75.28 356 *e*P **P** **01 53 41.4 -1.4**
TIXI *e*S S 02 03 23.8 +7.2
TIXI pmax pmax
comp=Z,103nm,1.6s,mb5.5
KZA Kyzart 75.39 315 P **P** **01 53 46.0 +2.0**
SNR=28
TKM2 Tokmak 2 75.42 316 P **P** **01 53 44.9 +0.8**
SNR=14
SBA Scott Base 75.66 175 *e*P **P** **01 53 45.9 +1.0**
comp=Z,6.9nm,1.1s,mb4.5
KBK Karagaybulak 75.79 315 P **P** **01 53 47.3 +1.1**
SNR=5.1
UCH Uchtor 75.96 315 P **P** **01 53 48.8 +1.6**
SNR=12
CHMS Chumysh 76.03 316 P **P** **01 53 48.5 +0.9**
SNR=5.3
FRU Bishkek 76.07 315 *e*P **P** **01 53 49.0 +1.2**
KURK Kurchatov 76.24 324 *e*P **P** **01 53 48.5 -0.1**
USP Ospenovka 76.29 316 P **P** **01 53 49.5 +0.5**
SNR=10
AML Almayashu 76.51 315 P **P** **01 53 51.8 +1.5**
SNR=15
EKS2 Erkin-Say 76.61 315 P **P** **01 53 52.1 +1.2**
SNR=6.3
KKAR Karatay Array 79.04 315 *i*P **P** **01 54 04.6 +0.3**
KKAR pmax pmax
comp=Z,5.0nm,0.9s,mb4.4
KDAK Kodiak Island 79.78 30 *e*P **P** **01 54 08.4 +0.4**
comp=Z,19nm,1.0s,mb5.0
BVA0 Borovoye Array 81.82 325 *i*P **P** **01 54 19.4 +0.6**
BVA0 pmax pmax
comp=Z,1.0nm,0.8s
BVAR Borovoye Array 81.82 325 LR LR 02 31 14.2
comp=Z,268nm,20.6s,MS4.6,baz=115,slow=36
BRVK Borovoye 81.89 325 *e*P **P** **01 54 19.5 +0.3**
SLKM Skilak Lake 81.94 27 *e*P **P** **01 54 19.6 +0.3**
ZRNK Zerenda 82.60 324 *e*P **P** **01 54 22.9 0.0**
IMA Indian Mountai 82.71 22 *e*P **P** **01 54 24.4 +1.2**
comp=Z,36nm,0.8s,mb5.5
PMR Palmer 82.83 27 *e*P **P** **01 54 23.5 -0.3**
comp=Z,5.7nm,0.8s,mb4.7
SML Sawmill 83.26 27 *e*P **P** **01 54 26.5 +0.5**
MCK McKinley 83.66 25 *e*P **P** **01 54 27.9 -0.1**
comp=Z,20nm,1.4s,mb5.0
COLA College 84.50 24 *e*P **P** **01 54 32.2 0.0**
ILAR Eielson Array 84.86 24 P **P** **01 54 32.9 -1.1**
comp=Z,8.6nm,0.6s,mb5.0,baz=258,slow=4.7,SNR=73
ILAR LR LR 02 28 37.5
comp=Z,95nm,19.1s,MS4.2,baz=276,slow=33
QSPA South Pole Qui 86.69 180 *e*P **P** **01 54 43.8 +1.1**
comp=Z,22nm,0.8s,mb5.4
QSPA LR LR
comp=Z,450nm,18.8s,MS4.9
AB31 Akbulak array 87.45 319 *i*P **P** **01 54 46.5 -0.5**
AB31 pmax pmax
comp=Z,5.0nm,0.9s,mb4.7
DAWY Dawson 87.81 26 *e*P **P** **01 54 49.5 +1.1**
SVE Sverdlovsk 88.14 327 ⇓*e*P **P** **01 54 50.2 +0.1**
ARU Arti 89.22 326 *e*P **P** **01 54 54.8 -0.5**
INK Inuvik 90.85 22 P **P** **01 55 02.5 -0.1**
comp=Z,1.7nm,0.9s,mb4.4,baz=255,slow=8.4,SNR=10
INK Inuvik 90.85 22 *e*P **P** **01 55 03.0 +0.3**
comp=Z,2.7nm,1.0s,mb4.5
SYO Syowa Base 91.52 201 ⇑PcP PcP 01 55 11.2 +4.4
YBH Yreka Blue Hor 95.88 49 P **P** **01 55 27.7 +1.4**
comp=Z,0.7nm,0.5s,mb4.4,baz=221,slow=4.0,SNR=4.9
ZEI Tsey 98.37 313 *e*P **P** **01 55 37.0 -0.6**
WVOR Wild Horse Val 98.88 48 *e*P **P** **01 55 40.9 +1.0**
comp=Z,3.9nm,0.9s,mb4.9
YKA Yellowknife Ar 98.92 27 P **P** **01 55 39.5 0.0**
comp=Z,0.4nm,0.7s,mb4.1,baz=281,slow=4.8,SNR=10
YKA PP PP 01 59 44.9 +0.9
comp=Z,0.2nm,0.7s,baz=274,slow=7.9,SNR=3.6
YKA PKiKP 02 00 10.1
comp=Z,0.2nm,0.7s,baz=295,slow=1.4,SNR=3.8
YKA PKKPbc 02 12 05.4
comp=Z,0.1nm,0.4s,baz=93,slow=3.3,SNR=5.3
YKA LR LR 02 38 53.9
comp=Z,122nm,19.6s,MS4.4,baz=270,slow=35
YKA Yellowknife Ar 98.92 27 P **P** **01 55 39.5 0.0**
YKA PP PP 01 59 44.9 +0.9
NVAR Mina Array Bea 99.38 52 LR LR 02 34 23.9
comp=Z,138nm,20.4s,MS4.5,baz=120,slow=32
AKASG Malin Array Be 107.00 322 PP PP 02 00 39.0 -6.8
comp=Z,0.1nm,0.3s,baz=69,slow=5.5,SNR=6.5
TXAR Lajitas Array 112.49 60 PKKPab 02 11 32.0
comp=Z,0.3nm,0.8s,baz=121,slow=7.3,SNR=3.7
OKC Ostrava-Krasne 113.95 324 L 02 52 50.0
comp=Z,0.3nm,22.7s
DPC Dobruska-Polom 114.78 325 L 02 51 10.0
comp=Z,0.3nm,18.8s
PVCC Panska Ves 115.68 326 L 02 50 50.0
comp=Z,0.4nm,20.5s
PRU Pruhonice 115.96 325 L 02 51 20.0
CLL Collm 116.16 327 *e*PS PS 02 11 24.0 -5.6
KHC Kasperske Hory 116.92 325 L 02 53 50.0
comp=Z,0.3nm,22.3s
GERES GERESS Array B 116.99 325 PKP PKPdf 02 00 45.7 +2.6
comp=Z,0.6nm,0.6s,baz=90,slow=1.3,SNR=4.0
CDF Champ du Feu 120.84 327 *e*PKP1 PKPdf 02 00 52.4 +1.8
HINF Hinteralfeld 121.41 326 *e*PKP1 PKPdf 02 00 53.5 +1.8
comp=Z,5.8nm,0.8s
HAU Haudompre 121.58 327 *e*PKP1 PKPdf 02 00 54.0 +2.0
comp=Z,11nm,1.0s
CABF La Chapelle 122.53 326 *e*PKP1 PKPdf 02 00 56.5 +2.6
LPG La Plagne 122.78 324 *e*PKP1 PKPdf 02 00 56.9 +2.5
comp=Z,13nm,1.1s
LPL La Plagne 122.78 324 *e*PKP1 PKPdf 02 00 56.9 +2.5
comp=Z,4.3nm,0.8s
PGF Pioggiola 122.96 320 *e*PKP1 PKPdf 02 00 56.9 +2.1
comp=Z,9.5nm,0.8s
LOR Lormes 123.37 327 *e*PKP1 PKPdf 02 00 57.6 +2.1
ORIF Oris-en-Rattie 123.61 324 *e*PKP1 PKPdf 02 00 59.0 +3.0
comp=Z,12nm,1.0s
SSF Saint Saulge 123.69 327 *e*PKP1 PKPdf 02 00 58.4 +2.3
comp=Z,5.6nm,0.8s
PLAL Pickwick Lake 123.72 49 *e*PKPdf PKPdf 02 00 58.0 +1.6
SMF Signal de Mont 123.76 327 *e*PKP1 PKPdf 02 00 58.4 +2.1
AVF Avril sur Loir 123.94 327 *e*PKP1 PKPdf 02 00 58.4 +1.8
SMRF Simiane la Rot 124.32 323 *e*PKP1 PKPdf 02 01 00.0 +2.6
comp=Z,43nm,1.3s
VIVF Saint-Julien-l 124.35 325 *e*PKP1 PKPdf 02 00 59.8 +2.3
comp=Z,5.3nm,0.8s
BGF Bois d'Agland 124.36 327 *e*PKP1 PKPdf 02 00 59.7 +2.3
comp=Z,6.1nm,0.7s
LDF La Druitiere 124.58 331 *e*PKP1 PKPdf 02 00 59.8 +2.0
FLN La Foliniere 124.64 331 *e*PKP1 PKPdf 02 01 00.0 +2.1
GRR Gorron 125.08 331 *e*PKP1 PKPdf 02 01 00.9 +2.1
EVO Evora 135.66 326 *e*PKIKP PKPdf 02 01 21.0 +1.9
comp=Z,50nm,1.5s
LVC Limon Verde 140.13 132 *e*PKPdf PKPdf 02 01 30.7 +3.1
ROSC El Rosal 143.43 86 PKP PKPdf 02 01 33.9 +0.1
comp=Z,9.1nm,0.5s,baz=168,slow=8.8,SNR=7.0
LPAZ La Paz 144.20 124 PKP PKPdf 02 01 36.7 +1.8
comp=Z,5.0nm,0.9s,baz=264,slow=2.6,SNR=22
LPAZ La Paz 144.20 124 *e*PKPdf PKPdf 02 01 36.7 +1.8
CPUP Villa Florida 144.99 148 PKPbc PKPbc 02 01 37.1 +0.7
comp=Z,3.6nm,0.6s,baz=266,slow=6.3,SNR=16
CPUP Villa Florida 144.99 148 *e*PKPdf PKPdf 02 01 37.1 +1.0
SDV Santo Domingo 146.80 79 PKPbc PKPbc 02 01 42.9 +1.9
comp=Z,32nm,0.8s,baz=307,slow=2.8,SNR=12
KIC Kosan Boka 147.02 277 *e*PKIKP PKPdf 02 01 44.1 +4.2
comp=Z,75nm,0.9s
DBIC Dimbokro 147.11 277 PKPbc PKPdf 02 01 44.2 +4.1
comp=Z,6.6nm,0.7s,baz=85,slow=1.1,SNR=16
TIC Toumodi 147.27 277 *e*PKIKP PKPdf 02 01 44.3 +4.0
comp=Z,77nm,0.9s
LIC Lamto 147.31 276 *e*PKIKP PKPdf 02 01 44.4 +4.0
comp=Z,87nm,1.1s
SJG San Juan 148.47 60 PKPbc PKPdf 02 01 46.1 +4.1
comp=Z,46nm,0.8s,baz=40,slow=3.6,SNR=11
SJG San Juan 148.47 60 *e*PKPbc PKPdf 02 01 47.1 +5.1
BDFB Brasilia 158.63 152 PKP PKPdf 02 01 59.2 +2.8
comp=Z,2.7nm,1.0s,baz=48,slow=4.9,SNR=3.8

IDC ***14*** *01:54:55.2*s*0.8,26.04*N*×102.61E,mb3.8/10,mb1 3.9/11, mb1mx3.8/20,ML4.1/1,Error ellipse: s-maj=30.7km s-min=15.7km az=74.0*

BJI ***14*** *01:54:57.4,25.65*N*×102.33E,h48*km*,mb3.8,ML3.8, Ms3.9,Msz3.8*

NEIC ***14*** *01:55:02.7*±*1.3,25.92*N*×102.43E,h58*km*±14km,Error ellipse: s-maj=15.4km s-min=10.3km az=88.0*

ISC 14 01:54:57.9±1.3**,25.80N**±0.05×**102.31E**±0.09**,h34**km±13km**, n29,**σ**0**§**90/33,mb4.0**/15**,Yunnan**

Code	Station Name	Δ°	AZ°	Phase	Op	ID ISC	Time h m s	Res ISC
KMI	**Kunming**	**0.78**	**149**	*e*P	**P**		**01 55 11.4**	**-1.0**
KMI				S	**S**		**01 55 22.8**	**-0.2**
KMI				S	S			
	comp=N,3μm,0.5s							
KMI				S	S			
	comp=E,3μm,0.8s							
GYA	**Guiyang**	**3.97**	**79**	P	**P**		**01 55 58.6**	**+0.6**
GYA				S	**S**		**01 56 44.3**	**+0.2**
GYA				LR	LR			
	comp=N,2μm,9.6s							
GYA				LR	LR			
	comp=E,610nm,9.3s							
GYA				LR	LR			
	comp=Z,550nm,9.0s							
CD2	**Chengdu**	**5.25**	**14**	P	**P**		**01 56 16.6**	**+0.5**
CD2				S	**S**		**01 57 10.8**	**-5.6**
CD2				S	S			
	comp=N,753nm,1.6s							
CD2				S	S			
	comp=E,267nm,1.0s							
CD2				LR	LR			
	comp=Z,600nm,6.7s							
ENH	**Enshi**	**7.75**	**53**	*e*P	**P**		**01 56 50.0**	**-1.2**
	comp=Z,7.3nm,0.5s							
ENH				*e*Sn	**S**		**01 58 10.6**	**-8.2**
CMAR	**Chiang Mai Arr**	**7.94**	**204**	Pn	**P**		**01 56 58.0**	**+4.3**
	comp=Z,0.7nm,0.3s,baz=18,slow=2.8,SNR=4.8							
CMAR				Pg	P		01 57 27.9	+34
	comp=Z,0.7nm,0.3s,baz=3.0,slow=17,SNR=7.1							
CMAR				Lg			01 59 15.5	
	comp=Z,1.0nm,0.3s,baz=23,slow=30,SNR=6.1							
SONM	**Songino Array**	**22.23**	**7**	P	**P**		**01 59 53.6**	**+0.6**
	comp=Z,0.6nm,0.6s,mb3.2,baz=315,slow=4.1,SNR=1.8							
ULN	**Ulaanbaatar**	**22.34**	**8**	*e*P	**P**		**01 59 55.6**	**+1.5**
	comp=Z,9.1nm,1.3s,mb4.0							
MKAR	**Makanchi Array**	**26.31**	**328**	P	**P**		**02 00 32.1**	**-0.1**
	comp=Z,2.2nm,0.5s,mb3.9,baz=132,slow=11,SNR=26							
MKAR	**Makanchi Array**	**26.31**	**328**	P	**P**		**02 00 32.1**	**-0.1**
BVAR	**Borovoye Array**	**36.18**	**327**	P	**P**		**02 01 57.7**	**-1.3**
	comp=Z,0.7nm,0.6s,mb3.7,baz=130,slow=12,SNR=5.3							
BRVK	**Borovoye**	**36.26**	**327**	*e*P	**P**		**02 01 58.6**	**-1.1**
WRAB	**Tennant Creek**	**55.09**	**143**	*e*P	**P**		**02 04 29.0**	**-0.2**
WRA	**Warramunga Arr**	**55.09**	**143**	P	**P**		**02 04 29.2**	**0.0**
	comp=Z,0.9nm,0.4s,mb4.2,baz=332,slow=8.3,SNR=28							
ASAR	**Alice Springs**	**57.91**	**145**	P	**P**		**02 04 49.5**	**+0.3**
	comp=Z,0.7nm,0.5s,mb4.0,baz=327,slow=6.5,SNR=9.9							
FINES	**FINESS Array B**	**61.14**	**328**	P	**P**		**02 05 12.2**	**+1.2**
	comp=Z,0.5nm,0.6s,mb3.9,baz=76,slow=7.9,SNR=4.3							
ARCES	**ARCESS Array B**	**61.48**	**337**	P	**P**		**02 05 13.6**	**+0.4**
	comp=Z,2.6nm,1.0s,mb4.3,baz=90,slow=7.3,SNR=5.4							
NB2	**NORSAR Subarra**	**68.30**	**328**	P	**P**		**02 05 55.6**	**-1.7**
	comp=Z,0.9nm,0.8s,mb3.9,baz=76,slow=6.5							
NOA	**NORSAR Array B**	**68.30**	**328**	P	**P**		**02 05 55.9**	**-1.4**
	comp=Z,0.8nm,0.8s,mb3.8,baz=76,slow=6.3,SNR=4.6							
LPG	**La Plagne**	**75.74**	**314**	*e*P	**P**		**02 06 42.3**	**+0.5**
	comp=Z,5.9nm,0.8s,mb4.3							
LPL	**La Plagne**	**75.75**	**314**	*e*P	**P**		**02 06 42.2**	**+0.4**
	comp=Z,4.2nm,0.6s,mb4.2							
SBF	**Sospel**	**75.91**	**312**	*e*P	**P**		**02 06 42.4**	**-0.4**
	comp=Z,13nm,0.9s,mb4.6							
ORIF	**Oris-en-Rattie**	**76.53**	**313**	*e*P	**P**		**02 06 45.9**	**-0.4**
FRF	**La Foret Royal**	**76.55**	**312**	*e*P	**P**		**02 06 46.2**	**-0.2**
LOR	**Lormes**	**76.90**	**316**	*e*P	**P**		**02 06 48.4**	**+0.1**
SMF	**Signal de Mont**	**77.16**	**316**	*e*P	**P**		**02 06 50.3**	**+0.5**
SSF	**Saint Saulge**	**77.20**	**316**	*e*P	**P**		**02 06 49.8**	**-0.2**
	comp=Z,4.6nm,0.9s,mb4.1							
INK	**Inuvik**	**77.67**	**18**	P	**P**		**02 06 51.4**	**-0.8**
	comp=Z,0.9nm,0.7s,mb3.8,baz=324,slow=5.3,SNR=4.2							
INK	**Inuvik**	**77.67**	**18**	P	**P**		**02 06 51.4**	**-0.8**
YKA	**Yellowknife Ar**	**87.21**	**16**	P	**P**		**02 07 42.1**	**+0.7**
	comp=Z,0.1nm,0.4s,mb3.4,baz=332,slow=5.7,SNR=4.5							

NEIC ***14*** *02:00:03.8,43.07*N*×0.90W,h10*km*,ML2.2(STR), ML1.7(LDG),After STR.*

STR ***14*** *02:00:03.8*±*0.1,43.07*N*×0.90W,h10*km*±1km,Ml2.2,Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*

LDG ***14*** *02:00:04.7*±*0.1,43.07*N*×0.89W,h5*km*,Md2.1/2,Ml1.7/5, Error ellipse: s-maj=1.4km s-min=0.8km az=11.0*

MDD ***14*** *02:00:05.2*±*0.4,43.12*N*×0.86W,mbLg1.4/5,Error ellipse: s-maj=5.8km s-min=1.8km az=21.0,PRXIMO*

ISC 14 02:00:03.8±0.4**,43.16N**±0.03×**0.83W**±0.03**,h10**km**,n17,**σ1§15/25,Pyrenees**

Code	Station Name	Δ°	AZ°	Phase	Op	ID ISC	Time h m s	Res ISC
ORDF	**Ordiarp**	**0.10**	**303**	Pg	**Pg**		**02 00 07.8**	**+1.4**
ORDF				Sg	**Sg**		**02 00 10.4**	**+2.2**
LARF	**Larrau**	**0.17**	**224**	Pg	**Pg**		**02 00 06.7**	**-1.0**
LARF				Sg	**Sg**		**02 00 08.4**	**-1.9**
SJPF	**Ste Jean**	**0.30**	**261**	*e*Pg	**Pg**		**02 00 09.9**	**-0.1**
SJPF				*e*Sg	**Sg**		**02 00 13.4**	**-0.7**
	19nm,0.2s							
ETSF	**Etsaut**	**0.33**	**143**	*e*Pg	**Pg**		**02 00 10.7**	**+0.1**
ETSF				*e*Sg	**Sg**		**02 00 14.7**	**-0.4**
	38nm,0.3s							
REYF	**Montagne du Re**	**0.33**	**106**	Pg	**Pg**		**02 00 11.6**	**+0.9**
REYF				Sg	**Sg**		**02 00 16.7**	**+1.5**
OSSF	**Osses**	**0.33**	**287**	Pg	**Pg**		**02 00 11.1**	**+0.4**
OSSF				Sg	**Sg**		**02 00 15.7**	**+0.4**
EALK	**Alkurruntz**	**0.50**	**277**	Pg	**Pg**		**02 00 14.2**	**+0.2**
	1.0nm,0.1s,SNR=17							
EALK				Lg			02 00 20.7	
	17nm,0.3s,SNR=21							
VIEF	**Viey**	**0.68**	**114**	Pg	**Pg**		**02 00 17.6**	**0.0**

VIEF				Sg		Sg	02 00 27.4	+0.7
EPF	**Esparros**	**0.86**	**98**	*e*Pg		Pg	02 00 22.1	+0.9
EPF				*e*Sg		Sg	02 00 34.1	+1.4
	2.7nm,0.2s							
ESAC	**San Caprasio**	**1.46**	**169**	Pg		Pg	02 00 32.5	-0.6
	3.2nm,0.1s,SNR=7.9							
ESAC				Lg			02 00 51.8	
	5.2nm,0.2s,SNR=7.9							
LFF	**La Frestale**	**2.11**	**32**	*e*Sg		Sg	02 01 14.2	+0.2
	1.6nm,0.3s							
MTLF	**Montolieu**	**2.23**	**84**	*e*Sg		Sg	02 01 16.5	-1.6
	0.5nm,0.2s							
EPOB	**Poblet**	**2.29**	**141**	Lg			02 01 17.5	
	0.7nm,0.2s,SNR=7.9							
RJF	**Les Rejaudoux**	**2.73**	**37**	*e*Sg		Sg	02 01 33.3	-1.3
	0.7nm,0.2s							
CAF	**Calviac**	**2.73**	**49**	*e*Sn		Sn	02 01 21.0	-0.9
CAF				*e*Sg		Sg	02 01 33.4	-1.4
	1.6nm,0.4s							
MFF	**Saint Martin d**	**3.48**	**8**	*e*PKP1		Pn	02 01 02.5	+3.4
TCF	**Toulx Ste Croi**	**3.80**	**34**	*e*PKP1		Pn	02 01 00.8	-3.0
	13nm,0.9s							

LDG ***14*** *02:08:46.4±0.0,42.81N×2.54E,h5km,Md2.9/1,Ml2.7/17, Error ellipse: s-maj=0.9km s-min=0.6km az=126.0*
NEIC ***14*** *02:08:46.2,42.81N×2.53E,h5km,ML2.5(STR), MN1.8(MDD),After STR.*
STR ***14*** *02:08:46.2±0.1,42.81N×2.53E,h5km±1km,Ml2.9,Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
MDD ***14*** *02:08:46.7±0.2,42.82N×2.54E,h8km±2km,mbLg2.0/22, Error ellipse: s-maj=1.8km s-min=1.4km az=49.0,PRXIMO*
ISC 14 02:08:44.6±0.2,**42.88N**±0.01×**2.58E**±0.02,**h10km,n57,** σ1§**23**/110,**Pyrenees**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LRDF	**Laroque-de-Fa**	**0.07**	**336**	Pg	**Pg**	**02 08 48.9**	**+2.0**
LRDF				Sg	**Sg**	**02 08 51.2**	**+2.9**
LRDF	**Laroque-de-Fa**	**0.07**	**336**	P	**Pg**	**02 08 49.0**	**+2.2**
LRDF				S	**Sg**	**02 08 51.3**	**+3.0**
FILF	**Fillols**	**0.32**	**182**	Pg	**Pg**	**02 08 51.5**	**+0.3**
FILF				Sg	**Sg**	**02 08 55.3**	**-0.3**
FILF	**Fillols**	**0.32**	**182**	P	**Pg**	**02 08 51.6**	**+0.4**
FILF				S	**Sg**	**02 08 55.3**	**-0.3**
CARF	**Carcanieres**	**0.38**	**245**	Pg	**Pg**	**02 08 52.8**	**+0.3**
CARF				Sg	**Sg**	**02 08 57.6**	**-0.1**
CARF	**Carcanieres**	**0.38**	**245**	P	**Pg**	**02 08 52.7**	**+0.2**
CARF				S	**Sg**	**02 08 57.6**	**-0.1**
SJAF	**Saint Jean de**	**0.45**	**150**	Pg	**Pg**	**02 08 54.4**	**+0.6**
SJAF				Sg	**Sg**	**02 09 00.2**	**+0.2**
SJAF	**Saint Jean de**	**0.45**	**150**	P	**Pg**	**02 08 54.6**	**+0.7**
SJAF				S	**Sg**	**02 09 00.3**	**+0.3**
EJON	**La Jonquera**	**0.49**	**152**	Pg	**Pg**	**02 08 55.1**	**+0.6**
	1.0nm,0.1s,SNR=35						
EJON				Lg		02 09 01.5	
	10nm,0.1s,SNR=43						
EJON	**La Jonquera**	**0.49**	**152**	Pg	**Pg**	**02 08 55.2**	**+0.7**
EJON				Lg		02 09 01.4	
LPEF	**Le Peyrat**	**0.50**	**278**	P	**Pg**	**02 08 55.5**	**+0.8**
LPEF				S	**Sg**	**02 09 02.5**	**+1.1**
MTLF	**Montolieu**	**0.53**	**331**	*e*Pg	**Pg**	**02 08 57.0**	**+1.6**
MTLF				*e*Pn	**Pn**	**02 09 00.0**	**+2.1**
MTLF				*e*Sg	**Sg**	**02 09 04.2**	**+1.6**
	19nm,0.2s						
MTLF				*e*Sn	**Sn**	**02 09 09.5**	**+2.6**
MTLF	**Montolieu**	**0.53**	**331**	Pg	**Pg**	**02 08 57.0**	**+1.6**
MTLF				Lg		02 09 04.2	
	9.6nm,0.2s						
CLLI	**Llivia**	**0.60**	**228**	Pg	**Pg**	**02 08 56.4**	**-0.3**
CLLI				Lg		02 09 03.9	
	5.8nm,0.1s						
VALF	**Valcebollere**	**0.63**	**221**	Pg	**Pg**	**02 08 57.0**	**-0.3**
VALF				Sg	**Sg**	**02 09 04.7**	**-1.1**
VALF	**Valcebollere**	**0.63**	**221**	P	**Pb**	**02 08 57.2**	**-0.1**
VALF				S	**Sg**	**02 09 04.8**	**-0.9**
CBRU	**Bruguera**	**0.66**	**206**	Pg	**Pg**	**02 08 57.6**	**-0.3**
CBRU				Lg		02 09 05.4	
	19nm,0.2s						
GRBF	**Gourbit**	**0.77**	**268**	P	**Pb**	**02 09 00.2**	**+0.7**
GRBF				S	**Sb**	**02 09 10.9**	**+1.1**
PAND	**Andorre**	**0.84**	**245**	P	**Pb**	**02 09 01.4**	**+0.6**
PAND				S	**Sb**	**02 09 11.6**	**-0.3**
SALF	**Salau**	**1.03**	**264**	Pg	**Pg**	**02 09 05.1**	**-0.1**
SALF				Sg	**Sg**	**02 09 18.7**	**-0.2**
SALF	**Salau**	**1.03**	**264**	P	**Pb**	**02 09 05.2**	**+1.1**
SALF				S	**Sb**	**02 09 18.6**	**+1.3**
MLS	**Moulis**	**1.09**	**275**	Pg	**Pg**	**02 09 06.5**	**0.0**
MLS				Sg	**Sg**	**02 09 21.2**	**+0.1**
MLS	**Moulis**	**1.09**	**275**	P	**Pb**	**02 09 06.8**	**+1.6**
MLS				S	**Sb**	**02 09 21.5**	**+2.3**
CFON	**Fontmartina**	**1.12**	**185**	Pg	**Pg**	**02 09 06.3**	**-0.7**
CFON				Lg		02 09 20.1	
	46nm,0.2s						
CORG	**Organya**	**1.13**	**236**	Pg	**Pg**	**02 09 06.9**	**-0.4**
CORG				Lg		02 09 21.2	
	2.5nm,0.1s						
CSOR	**Sort**	**1.18**	**245**	Pg	**Pg**	**02 09 07.7**	**-0.5**
CSOR				Lg		02 09 22.9	
	11nm,0.2s						
EMIR	**Miracle**	**1.24**	**219**	Pg	**Pg**	**02 09 08.7**	**-0.7**
	8.4nm,0.3s,SNR=29						
EMIR				Lg		02 09 24.7	
	5.3nm,0.1s,SNR=8.6						
MELF	**Melles**	**1.34**	**270**	P	**Pb**	**02 09 10.8**	**+1.5**
MELF				S	**Sb**	**02 09 28.2**	**+1.9**
LASF	**Ste Croix**	**1.52**	**37**	*e*Pn	**Pn**	**02 09 13.5**	**+1.5**
LASF				*e*Pg	**Pg**	**02 09 16.1**	**+1.1**
LASF				*e*Sn	**Sn**	**02 09 33.4**	**+1.5**
LASF				*e*Sg	**Sg**	**02 09 36.9**	**+1.6**
	17nm,0.3s						
EPF	**Esparros**	**1.65**	**276**	*e*Pn	**Pn**	**02 09 14.1**	**+0.2**
EPF				*e*Pg	**Pg**	**02 09 16.9**	**-0.7**
EPF				*e*Sn	**Sn**	**02 09 33.8**	**-1.5**
EPF				*e*Sg	**Sg**	**02 09 37.7**	**-1.9**
	27nm,0.2s						
CAVN	**Les Avellanes**	**1.68**	**234**	Pg	**Pg**	**02 09 16.7**	**-1.5**
CAVN				Lg		02 09 38.2	
	17nm,0.2s						
EPOB	**Poblet**	**1.89**	**217**	Pg	**Pg**	**02 09 19.3**	**-3.0**
	1.0nm,0.1s,SNR=16						
EPOB				Lg		02 09 44.3	
	3.7nm,0.1s,SNR=11						
EPOB	**Poblet**	**1.89**	**217**	Pg	**Pg**	**02 09 19.7**	**-2.6**
EPOB				Lg		02 09 44.2	
CGAR	**Garraf**	**1.91**	**215**	Pg	**Pg**	**02 09 15.8**	**-7.0**
CGAR				Lg		02 09 36.6	
	3.0nm,0.1s						
CAF	**Calviac**	**2.08**	**350**	*e*Pn	**Pn**	**02 09 21.1**	**+1.0**
CAF				*e*Pg	**Pg**	**02 09 26.4**	**+0.2**
CAF				*e*Sn	**Sn**	**02 09 46.1**	**-0.1**
CAF				*e*Sg	**Sg**	**02 09 53.2**	**-0.8**
	18nm,0.3s						
ETSF	**Etsaut**	**2.30**	**272**	*e*Pn	**Pn**	**02 09 22.6**	**-0.7**
ETSF				*e*Pg	**Pg**	**02 09 28.8**	**-1.9**
ETSF				*e*Sn	**Sn**	**02 09 50.1**	**-1.8**
ETSF				*e*Sg	**Sg**	**02 09 58.2**	**-3.2**
	11nm,0.3s						
LBL	**Lubilhac**	**2.40**	**11**	Pn	**Pn**	**02 09 26.4**	**+1.7**
LBL				Pg	**Pg**	**02 09 33.3**	**+0.7**
SMRF	**Simiane la Rot**	**2.44**	**62**	*e*Pn	**Pn**	**02 09 25.7**	**+0.4**
SMRF				*e*Sn	**Sn**	**02 09 54.8**	**-0.7**
SMRF				*e*Sg	**Sg**	**02 10 05.6**	**-0.5**
	7.9nm,0.4s						
LFF	**La Frestale**	**2.45**	**328**	*e*Pn	**Pn**	**02 09 25.8**	**+0.4**
LFF				*e*Pg	**Pg**	**02 09 33.4**	**-0.2**
LFF				*e*Sg	**Sg**	**02 10 04.3**	**-2.0**
	13nm,0.2s						
VIVF	**Saint-Julien-l**	**2.49**	**37**	*e*Pn	**Pn**	**02 09 26.9**	**+0.9**
VIVF				*e*Pg	**Pg**	**02 09 34.0**	**-0.4**
VIVF				*e*Sn	**Sn**	**02 09 56.9**	**+0.2**
VIVF				*e*Sg	**Sg**	**02 10 06.9**	**-0.8**
	6.9nm,0.3s						
ESAC	**San Caprasio**	**2.54**	**244**	Lg		02 10 05.9	
	2.6nm,0.1s,SNR=6.0						
ESAC	**San Caprasio**	**2.54**	**244**	Pn	**Pn**	**02 09 27.4**	**+0.9**
ESAC				Lg		02 10 05.9	
RJF	**Les Rejaudoux**	**2.54**	**343**	*e*Pn	**Pn**	**02 09 27.3**	**+0.6**
RJF				*e*Pg	**Pg**	**02 09 35.0**	**-0.4**
RJF				*e*Sn	**Sn**	**02 09 57.5**	**-0.5**
RJF				*e*Sg	**Sg**	**02 10 07.4**	**-2.0**
	7.8nm,0.2s						

SJPF	**Ste Jean**	**2.80**	**276**	*e*Pn		Pn	02 09 29.7	-0.6
SJPF				*e*Pg		Pg	02 09 37.9	-2.6
SJPF				*e*Sg		Sg	02 10 14.3	-3.5
	4.1nm,0.3s							
LMR	**La Mourre**	**2.92**	**80**	*e*Pn		Pn	02 09 32.1	+0.1
LMR				*e*Sn		Sn	02 10 06.0	-1.5
LMR				*e*Sg		Sg	02 10 18.8	-3.0
	4.2nm,0.3s							
EALK	**Alkurruntz**	**3.01**	**278**	Pn		Pn	02 09 34.2	+0.8
	0.7nm,0.3s,SNR=4.0							
EALK				Lg			02 10 22.2	
	2.6nm,0.4s,SNR=7.9							
EALK	**Alkurruntz**	**3.01**	**278**	Pn		Pn	02 09 34.6	+1.3
EALK				Sn		Sn	02 10 08.9	-0.9
EALK				Lg			02 10 23.4	
FRF	**La Foret Royal**	**3.05**	**76**	*e*Pn		Pn	02 09 34.7	+0.8
FRF				*e*Sn		Sn	02 10 11.1	+0.2
FRF				*e*Sg		Sg	02 10 23.3	-3.0
	5.2nm,0.2s							
EMOS	**Mosqueruela**	**3.40**	**223**	Pg		Pg	02 09 48.5	-4.0
	0.3nm,0.2s,SNR=7.9							
EMOS				Lg			02 10 34.2	
	0.9nm,0.2s,SNR=7.9							
EMOS	**Mosqueruela**	**3.40**	**223**	Pg		Pg	02 09 48.0	-4.4
EMOS				Lg			02 10 33.4	
TCF	**Toulx Ste Croi**	**3.42**	**356**	*e*Pn		Pn	02 09 40.4	+1.2
TCF				*e*Pg		Pg	02 09 51.0	-1.9
TCF				*e*Sg		Sg	02 10 35.9	-2.6
	6.7nm,0.4s							
BGF	**Bois d'Agland**	**3.69**	**3**	*e*Sg		Sg	02 10 43.9	-3.4
	10nm,0.3s							
SMF	**Signal de Mont**	**3.87**	**13**	*e*Pg		Pg	02 10 00.6	-1.4
AVF	**Avril sur Loir**	**3.95**	**8**	*e*Sg		Sg	02 10 54.7	-1.5
	1.3nm,0.3s							
ETOR	**Torete**	**4.02**	**241**	Pn		Pn	02 09 48.0	+0.2
	0.1nm,0.2s,SNR=7.9							
ETOR				Lg			02 10 52.5	
	0.3nm,0.6s,SNR=7.9							
MFF	**Saint Martin d**	**4.20**	**333**	*e*Pg		Pg	02 10 04.8	-3.7
PDAR				*e*Sg		Sg	02 10 59.8	-4.6
	1.5nm,0.2s							
SSF	**Saint Saulge**	**4.24**	**9**	*e*Sg		Sg	02 11 01.6	-4.1
	0.8nm,0.2s							

NEIC ***14*** *02:12:15.0,38.35N×23.70E,h4km,ML2.5(ATH),After ATH.*
THE ***14*** *02:12:15.9,38.35N×23.85E,h18km,ML2.4*
ATH ***14*** *02:12:15.0,38.35N×23.70E,h4km,MD2.8/5,ML2.5*
ISC 14 02:12:14.9±0.8,**38.32N**±0.04×**23.81E**±0.09,**h19**km±17km, **n9,**σ0§**70**/15,**1C,Greece**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PTL	**Penteli**	**0.28**	**170**	*e*PG	**Pb**	**02 12 21.0**	**-0.1**
PTL				*e*SG	**Sb**	**02 12 25.0**	**-0.4**
ATH	**Athens Observa**	**0.36**	**191**	⇑*i*PG	**Pb**	**02 12 22.5**	**+0.1**
ATH				*e*SG	**Sb**	**02 12 27.6**	**0.0**
LKR	**Lokris**	**0.71**	**298**	*e*PG	**Pb**	**02 12 26.8**	**-1.7**
AOS	**Alonnisos**	**0.85**	**4**	*e*Pg	**Pb**	**02 12 30.4**	**-0.4**
AOS				*e*Sg	**Sb**	**02 12 42.9**	**+1.2**
NEO	**Neokhori**	**1.08**	**335**	*e*PG	**Pb**	**02 12 34.5**	**-0.3**
NEO				*e*SG	**Sb**	**02 12 48.4**	**-0.1**
XOR	**Xorichti**	**1.15**	**335**	*e*Pg	**Pb**	**02 12 35.9**	**+0.1**
XOR				*e*Sg	**Sb**	**02 12 50.1**	**-0.2**
AGG	**Agios Georgios**	**1.35**	**302**	*e*Pb	**Pb**	**02 12 39.1**	**-0.2**
AGG				*e*Sb	**Sb**	**02 12 57.0**	**+0.8**
VLI	**Veliai**	**1.74**	**204**	*e*PB	**Pb**	**02 12 47.5**	**+1.5**
OUR	**Ouranopolis**	**2.01**	**4**	*e*Pn	**Pn**	**02 12 48.0**	**-0.4**

NEIC ***14*** *02:19:50.2,35.19N×3.88W,MN1.7(MDD),After MDD.*
MDD 14 02:19:51.1±1.7,**35.15N×3.84W,mb3.5/1,Error ellipse: s-maj=19.0km s-min=6.3km az=15.0,PRXIMO AftershockPLICA,Strait of Gibraltar**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EMEL	**Melilla**	**0.74**	**78**	P	Pg	02 20 04.2	-1.6
	72nm,0.2s,SNR=14						
EMEL				S	Sg	02 20 14.8	-0.9
	90nm,0.2s,SNR=6.7						
MELI	**Melilla**	**0.75**	**78**	P	Pg	02 20 04.6	-1.5
MELI				S	Sg	02 20 16.0	-0.2
EBER	**Berja**	**1.91**	**23**	P	Pn	02 20 22.7	-2.5
	0.4nm,0.2s,SNR=7.9						
EBER				S	Sn	02 20 46.8	-3.5
	1.1nm,0.2s,SNR=5.5						
EBER	**Berja**	**1.91**	**23**	P	Pn	02 20 22.5	-2.7
EBER				S	Sn	02 20 45.8	-4.5
EQES	**Quesada**	**2.72**	**13**	P	Pn	02 20 35.9	-0.9
	0.2nm,0.1s,SNR=7.9						
EQES				S	Sn	02 21 08.6	-2.4
	1.3nm,0.3s,SNR=7.9						
EQES	**Quesada**	**2.72**	**13**	P	Pn	02 20 32.6	-4.2
EQES				S	Sn	02 21 06.6	-4.3
EADA	**Adamuz**	**3.07**	**349**	P	Pn	02 20 39.1	-2.7
EMIN	**Mina Concepcio**	**3.47**	**320**	P	Pn	02 20 45.5	-2.0
	0.1nm,0.1s,SNR=7.9						
EMIN				S	Sn	02 21 23.8	-6.2
	0.2nm,0.2s,SNR=7.9						
EMIN	**Mina Concepcio**	**3.47**	**320**	P	Pn	02 20 44.5	-3.0
EMIN				S	Sn	02 21 23.3	-6.6
EGRO	**El Granado**	**3.79**	**310**	P	Pn	02 20 50.6	-1.3
	0.5nm,0.2s,SNR=7.9						
EGRO	**El Granado**	**3.79**	**310**	P	Pn	02 20 46.8	-5.2
EGRO				S	Sn	02 21 30.7	-7.1

NNC ***14*** *03:42:33.0±17.0,39.39N×73.96E,h223km±141km,mpv4.0, Error ellipse: s-maj=156.3km s-min=129.9km az=154.0*
ISC 14 03:42:23.2±1.5,**38.5N**±0.2×**73.7E**±0.3,**h206**km±32km,**n16,** σ0§**70**/18,**3C-1D,Tajikistan-Xinjiang border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AML	**Almayashu**	**3.61**	**1**	P	**P**	**03 43 20.4**	**-0.5**
	SNR=72						
KZA	**Kyzart**	**3.76**	**18**	P	**P**	**03 43 22.1**	**-0.7**
	SNR=74						
UCH	**Uchtor**	**3.76**	**10**	P	**P**	**03 43 22.9**	**0.0**
	SNR=90						
EKS2	**Erkin-Say**	**4.14**	**1**	P	**P**	**03 43 28.0**	**+0.5**
	SNR=51						
AAK	**Ala-Archa**	**4.16**	**9**	P	**P**	**03 43 28.3**	**+0.5**
	SNR=25						
ULHL	**Ulahol**	**4.22**	**27**	P	**P**	**03 43 27.9**	**-0.6**
	SNR=81						
KBK	**Karagaybulak**	**4.25**	**13**	P	**P**	**03 43 29.3**	**+0.4**
	SNR=18						
CHMS	**Chumysh**	**4.55**	**10**	P	**P**	**03 43 33.1**	**+0.4**
	SNR=20						
TKM2	**Tokmak 2**	**4.64**	**18**	P	**P**	**03 43 34.2**	**+0.4**
	SNR=20						
KK31	**Karatay Array**	**5.16**	**334**	⇓P	**P**	**03 43 41.5**	**+1.0**
	8.8nm,0.3s,baz=129,slow=12,SNR=234						
KK31				⇑S	**S**	**03 44 37.6**	**-2.9**
	13nm,0.5s,baz=148,slow=23,SNR=9.4						
KOLN	**Koldanda**	**13.57**	**139**	*e*P	**P**	**03 45 28.9**	**+0.5**
	5.8nm,0.3s						
GKN	**Gorkha**	**13.93**	**136**	*e*P	**P**	**03 45 33.3**	**+0.4**
	6.4nm,0.2s						
KKN	**Kakani**	**14.45**	**134**	*e*P	**P**	**03 45 38.9**	**-0.5**
	5.7nm,0.4s						
DMN	**Daman**	**14.50**	**135**	*e*P	**P**	**03 45 39.4**	**-0.6**
AB31	**Akbulak array**	**14.57**	**322**	⇑P	**P**	**03 45 44.9**	**+4.3**
	0.6nm,0.5s,baz=130,slow=14						
AB31				⇑S	**S**	**03 48 16.9**	**-0.1**
	1.2nm,0.5s,baz=128,slow=26						
PKI	**Pulchoki**	**14.69**	**135**	*e*P	**P**	**03 45 42.1**	**-0.3**
	5.1nm,0.3s						

NEIC ***14*** *04:01:18.1±3.4,17.84S×178.62W,h609km±41km,mb4.0/7, Error ellipse: s-maj=39.7km s-min=16.5km az=151.0*
IDC ***14*** *04:01:18.4±5.2,17.97S×178.58W,h614km±65km, mb3.5/10,mb1 3.8/10,mb1mx3.6/15,Error ellipse: s-maj=53.7km s-min=25.1km az=153.0*
ISC 14 04:01:17.0±1.0,**17.8S**±0.3×**178.7W**±0.2,**h609**km,**n31,** σ0§**62**/27,**mb4.0**/17,**2C-1D,Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**33.20**	**260**	*e*P	**P**	**04 07 07.5**	**+0.7**
	4.7nm,0.8s,mb4.2						
CTA	**Charters Tower**	**33.20**	**260**	P	**P**	**04 07 07.2**	**+0.5**
	7.8nm,0.8s,mb4.4,baz=90,slow=10,SNR=9.1						
CTAO	**Charters Tower**	**33.20**	**260**	*e*P	**P**	**04 07 07.4**	**+0.6**
PMG	**Port Moresby**	**34.18**	**280**	P	**P**	**04 07 16.8**	**+1.8**
	10nm,0.5s,mb4.7,baz=325,slow=1.8,SNR=4.6						
PMG	**Port Moresby**	**34.18**	**280**	*e*P	**P**	**04 07 16.7**	**+1.7**
	19nm,0.8s,mb4.8						
STKA	**Stephens Creek**	**38.44**	**241**	*e*P	**P**	**04 07 50.4**	**+0.6**
	5.7nm,1.0s,mb4.1						
STKA	**Stephens Creek**	**38.44**	**241**	P	**P**	**04 07 49.2**	**-0.5**
	5.2nm,0.7s,mb4.2,baz=68,slow=7.2,SNR=7.8						
STKA	**Stephens Creek**	**38.44**	**241**	P	**P**	**04 07 49.2**	**-0.5**
WB2	**Warramunga Arr**	**44.38**	**259**	*e*P	**P**	**04 08 36.2**	**-0.7**
WRAB	**Tennant Creek**	**44.38**	**259**	*e*P	**P**	**04 08 36.5**	**-0.4**
	7.2nm,0.5s,mb4.5						
WRA	**Warramunga Arr**	**44.39**	**259**	P	**P**	**04 08 36.7**	**-0.3**
	2.9nm,0.5s,mb4.0,baz=96,slow=7.2,SNR=57						
AS12	**Alice Springs**	**44.56**	**254**	⇓*i*P	**P**	**04 08 38.1**	**-0.1**
	15nm,1.0s,mb4.5						
ASAR	**Alice Springs**	**44.56**	**254**	P	**P**	**04 08 38.1**	**-0.1**
	15nm,0.6s,mb4.7,baz=87,slow=8.7,SNR=135						
KAKA	**Kakadu**	**47.36**	**269**	⇑*i*P	**P**	**04 08 59.4**	**-0.2**
	5.8nm,0.4s,mb4.5						
NVAR	**Mina Array Bea**	**79.54**	**44**	P	**P**	**04 12 23.6**	**+0.4**
	1.7nm,0.7s,mb3.5,baz=214,slow=7.8,SNR=16						
WVOR	**Wild Horse Val**	**81.51**	**40**	*e*P	**P**	**04 12 33.1**	**-0.1**
	4.2nm,1.0s,mb3.9						
RMW	**Rattlesnake Mo**	**82.54**	**35**	*e*P	**P**	**04 12 38.6**	**+0.3**
HLID	**Hailey**	**84.74**	**41**	*e*P	**P**	**04 12 49.7**	**+0.5**
	0.8nm,0.6s,mb3.5						
HWUT	**Hardware Ranch**	**85.61**	**44**	*e*P	**P**	**04 12 53.2**	**-0.2**
	0.6nm,0.6s,mb3.4						
COLA	**College**	**85.74**	**13**	*e*P	**P**	**04 12 52.9**	**-0.7**
	2.1nm,0.6s,mb3.9						
ILAR	**Eielson Array**	**85.86**	**13**	P	**P**	**04 12 53.5**	**-0.6**
	1.0nm,0.5s,mb3.7,baz=222,slow=5.0,SNR=22						
TXAR	**Lajitas Array**	**86.17**	**58**	P	**P**	**04 12 57.3**	**+0.9**
	2.1nm,0.7s,mb3.9,baz=219,slow=6.6,SNR=22						
MCMT	**McKenzie Canyo**	**86.34**	**41**	*e*P	**P**	**04 12 57.4**	**+0.6**
PDAR	**Pinedale Array**	**87.47**	**44**	P	**P**	**04 13 02.1**	**-0.1**
	1.3nm,0.6s,mb3.8,baz=220,slow=2.5,SNR=13						
INK	**Inuvik**	**91.87**	**15**	*e*P	**P**	**04 13 21.2**	**-0.7**
	1.6nm,0.8s,mb4.1						
YKA	**Yellowknife Ar**	**94.36**	**25**	P	**P**	**04 13 32.8**	**-0.5**
	0.2nm,0.5s,mb3.5,baz=239,slow=4.5,SNR=11						
YKA	**Yellowknife Ar**	**94.36**	**25**	P	**P**	**04 13 32.8**	**-0.6**
ARCES	**ARCESS Array B**	**126.18**	**350**	PKP	PKPdf	04 19 11.3	+0.6
	2.4nm,1.0s,slow=1.2,SNR=8.1						
ARCES	**ARCESS Array B**	**126.18**	**350**	PKP	PKPdf	04 19 11.3	+0.6
CLL	**Collm**	**145.32**	**347**	⇑*i*PKP1	PKPbc	04 19 49.1	+1.9
GERES	**GERESS Array B**	**147.46**	**345**	PKPbc	PKPdf	04 19 55.1	+5.4
	1.4nm,0.5s,slow=2.7,SNR=15						

INMG ***14*** *04:16:48.6±1.1,35.07N×4.18W,h18km±10km,ML2.6, Error ellipse: s-maj=5.8km s-min=3.7km az=13.0*
NEIC ***14*** *04:16:48.5,35.08N×4.18W,h12km,MG3.5(MDD),After MDD.*
MDD ***14*** *04:16:48.1±1.0,35.18N×4.22W,mb3.7/14,Error ellipse: s-maj=11.3km s-min=4.4km az=16.0,PRXIMO AftershockPLICA*
ISC 14 04:16:47.7±0.7,**35.17N**±0.05×**4.28W**±0.03,**h18**km,**n56,** σ1§**09**/96,**Strait of Gibraltar**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EMEL	**Melilla**	**1.09**	**83**	P	**Pb**	**04 17 07.3**	**-0.3**
	34nm,0.1s,SNR=17						
EMEL				S	**Sb**	**04 17 20.6**	**-0.8**
	296nm,0.2s,SNR=10						
MELI	**Melilla**	**1.11**	**83**	P	**Pb**	**04 17 08.2**	**+0.2**
MELI				S	**Sb**	**04 17 21.1**	**-0.8**
EMAL	**Malaga-Limoner**	**1.59**	**356**	P	**Pn**	**04 17 15.1**	**-0.2**
	14nm,0.2s,SNR=7.9						
EJIF	**Jimena Fronter**	**1.60**	**323**	P	**Pn**	**04 17 15.1**	**-0.4**
	0.5nm,0.1s,SNR=17						
EJIF	**Jimena Fronter**	**1.60**	**323**	P	**Pn**	**04 17 16.9**	**+1.4**
EJIF				S	**Sn**	**04 17 39.5**	**+3.7**
ERON	**Agron**	**1.89**	**12**	P	**Pn**	**04 17 19.3**	**-0.2**
	2.7nm,0.2s,SNR=12						
ERON	**Agron**	**1.89**	**12**	P	**Pn**	**04 17 20.0**	**+0.6**
ERON				S	**Sn**	**04 17 43.7**	**+0.7**
ELIJ	**Sierra de Lija**	**1.96**	**333**	P	**Pn**	**04 17 22.6**	**+2.1**
	3.0nm,0.4s,SNR=14						
ELIJ	**Sierra de Lija**	**1.96**	**333**	P	**Pn**	**04 17 22.6**	**+2.1**
ELIJ				S	**Sn**	**04 17 47.6**	**+2.7**
ELOJ	**Sierra Loja**	**1.98**	**3**	S	**Sn**	**04 17 46.2**	**+0.8**
	8.3nm,0.4s,SNR=5.5						
ELOJ	**Sierra Loja**	**1.98**	**3**	P	**Pn**	**04 17 21.3**	**+0.5**
ELOJ				S	**Sn**	**04 17 46.3**	**+1.0**
EBER	**Berja**	**2.06**	**33**	P	**Pn**	**04 17 20.4**	**-1.6**
	2.3nm,0.2s,SNR=14						
EBER				S	**Sn**	**04 17 48.1**	**+0.7**
	7.1nm,0.2s,SNR=9.1						
EBER	**Ber

EBAD				S		Sn	04 18 38.4	-3.1
	5.7nm,0.2s,SNR=4.5							
EBAD	**Badajoz**		4.20	329	P	Pn	04 17 52.7	+0.3
EBAD					S	Sn	04 18 38.3	-3.3
PTEO	**Sao Teotonio**		4.30	305	*e*Pn	Pn	04 17 54.5	+0.6
PTEO					*e*Sn	Sn	04 18 43.5	-0.7
	12nm,0.6s							
PTEO	**Sao Teotonio**		4.30	305	Pn	Pn	04 17 54.5	+0.6
PTEO					Sn	Sn	04 18 43.5	-0.7
	5.8nm,0.6s							
ESDC	**Sonseca Array**		4.50	3	P	Pn	04 17 56.4	-0.4
	3.8nm,0.3s,baz=180,slow=12,SNR=12							
ESDC					S	Sn	04 18 47.0	-2.4
	SNR=7.9							
PLOU	**Loures**		5.38	315	*e*Sn	Sn	04 19 09.8	-1.6
	16nm,0.4s							
PLOU	**Loures**		5.38	315	Sn	Sn	04 19 09.8	-1.6
	7.9nm,0.4s							
MTE	**Manteigas**		5.83	335	*e*Pn	Pn	04 18 15.4	-0.1
MTE					*e*Sn	Sn	04 19 18.1	-4.5
	6.9nm,0.7s							
MTE	**Manteigas**		5.83	335	Pn	Pn	04 18 15.4	-0.1
MTE					Sn	Sn	04 19 18.1	-4.5
	3.5nm,0.7s							
ETOR	**Torete**		5.91	17	P	Pn	04 18 15.8	-0.8
	0.1nm,0.1s,SNR=4.5							
PVIS	**Viseu**		6.23	334	*e*Sn	Sn	04 19 27.9	-4.8
	4.0nm,0.2s							
PVIS	**Viseu**		6.23	334	Sn	Sn	04 19 27.9	-4.8
	2.0nm,0.2s							
PVRL	**Vila Real**		6.67	337	*e*Sn	Sn	04 19 39.6	-4.1
	7.3nm,0.2s							
PVRL	**Vila Real**		6.67	337	Sn	Sn	04 19 39.6	-4.1
	3.7nm,0.2s							
PBRG	**Braganca**		6.90	344	*e*Pn	Pn	04 18 30.0	-0.6
	2.4nm,0.3s							
ECAL	**Calabor**		7.03	345	P	Pn	04 18 32.1	-0.3
	2.6nm,0.3s,SNR=7.9							
ECAL					S	Sn	04 19 46.7	-6.0
	1.8nm,0.3s,SNR=7.9							
ECAL	**Calabor**		7.03	345	P	Pn	04 18 31.6	-0.8
ECAL					S	Sn	04 19 46.8	-5.9
ELOB	**Lobios**		7.32	337	S	Sn	04 19 53.6	-6.2
	1.8nm,0.3s,SNR=7.9							
ELOB	**Lobios**		7.32	337	P	Pn	04 18 35.2	-1.2
ELOB					S	Sn	04 19 55.3	-4.5
EINC	**Incio**		7.85	343	P	Pn	04 18 43.2	-0.8
	0.0nm,0.1s,SNR=7.9							
EINC					S	Sn	04 20 07.1	-6.1
	0.1nm,0.2s,SNR=7.9							

NEIC ***14*** *04:16:47.9±0.7,24.31N×94.06E,h83km±10km, Error ellipse: s-maj=17.8km s-min=6.4km az=224.0*
IDC ***14*** *04:16:49.5±6.2,24.39N×94.36E,h91km±42km, mb3.5/5, mb1 3.7/6, mb1mx3.4/19, Error ellipse: s-maj=102.0km s-min=22.3km az=81.0*

ISC 14 04:16:47.3±0.8,24.2N±0.1×93.87E±0.08,h104km±10km, n28,σ0$98/39,mb3.7/5,1C,Myanmar-India border region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
SHL	**Shillong**	2.27	308	*i*P		P	04 17 25.0	+0.8
SHL				*e*S		S	04 17 52.0	+0.2
LSA	**Lhasa**	6.01	337	*e*Pn		P	04 18 13.7	-1.4
	9.4nm,0.3s							
CM31	**Chiang Mai Arr**	7.40	139	Pn		P	04 18 33.5	-0.7
	9.4nm,0.5s							
CMAR	**Chiang Mai Arr**	7.40	139	P		P	04 18 32.4	-1.8
	0.9nm,0.3s,baz=319,slow=13,SNR=17							
CMAR				Lg			04 20 24.9	
	0.8nm,0.3s,baz=308,slow=33,SNR=4.1							
GUN	**Gumba**	8.09	299	*e*P		P	04 18 44.5	+0.9
	122nm,0.3s							
GUN	**Gumba**	8.09	299	*e*Pn		P	04 18 44.5	+0.9
GUN				*e*Sn		S	04 20 13.8	-0.2
	82nm,0.3s							
PKI	**Pulchoki**	8.34	296	*e*P		P	04 18 48.6	+1.7
	25nm,0.2s							
PKI	**Pulchoki**	8.34	296	*e*Pn		P	04 18 47.9	+1.0
PKI				*e*Sn		S	04 20 20.2	+0.2
	78nm,0.5s							
PKI	**Pulchoki**	8.34	296	*e*Pn		P	04 18 47.9	+1.0
PKI				*e*Sn		S	04 20 20.2	+0.2
KKN	**Kakani**	8.52	297	*e*Pn		P	04 18 50.1	+0.7
KKN				*e*Sn		S	04 20 24.1	-0.5
	41nm,0.2s							
KKN	**Kakani**	8.52	297	*e*P		P	04 18 50.1	+0.7
	28nm,0.2s							
KKN				*e*Sn		S	04 20 24.1	-0.5
DMN	**Daman**	8.60	295	*e*P		P	04 18 51.5	+1.1
	26nm,0.2s							
DMN	**Daman**	8.60	295	*e*Pn		P	04 18 51.4	+1.0
DMN				*e*Sn		S	04 20 26.3	-0.1
	66nm,0.4s							
DMN	**Daman**	8.60	295	*e*Pn		P	04 18 51.4	+1.0
DMN				*e*Sn		S	04 20 26.3	-0.1
GKN	**Gorkha**	9.13	297	*e*Pn		P	04 18 58.1	+0.5
GKN				*e*Sn		S	04 20 37.6	-1.7
	100nm,0.3s							
GKN	**Gorkha**	9.13	297	*e*P		P	04 18 58.0	+0.4
	72nm,0.3s							
GKN				*e*Sn		S	04 20 37.6	-1.7
KOLN	**Koldanda**	9.91	293	*e*P		P	04 19 08.4	+0.3
	43nm,0.2s							
KOLN	**Koldanda**	9.91	293	*e*Pn		P	04 19 08.3	+0.2
KOLN				*e*Sn		S	04 20 55.7	-2.4
	58nm,0.4s							
KOLN	**Koldanda**	9.91	293	*e*Pn		P	04 19 08.3	+0.2
KOLN				*e*Sn		S	04 20 55.7	-2.4
DANN	**Dangsing**	9.98	297	*e*P		P	04 19 09.8	+0.7
DANN	**Dangsing**	9.98	297	*e*Pn		P	04 19 10.2	+1.1
DANN	**Dangsing**	9.98	297	*e*Pn		P	04 19 10.2	+1.1
SONM	**Songino Array**	25.62	20	P		P	04 22 08.9	+0.3
	0.8nm,0.4s,mb3.5,baz=190,slow=8.8,SNR=3.1							
FITZ	**Fitzroy Crossi**	52.22	141	P		P	04 25 51.7	+1.8
	1.3nm,0.9s,mb4.0,baz=309,slow=14,SNR=3.6							
WRA	**Warramunga Arr**	58.97	135	P		P	04 26 38.2	-0.2
	0.4nm,0.3s,mb3.9,baz=319,slow=7.7,SNR=18							
ASAR	**Alice Springs**	61.41	138	P		P	04 26 55.2	+0.2
	0.7nm,0.6s,mb3.9,baz=324,slow=6.6,SNR=9.3							
GERES	**GERESS Array B**	65.87	315	pP		pP	04 27 44.7	-5.2
	2.1nm,0.7s,baz=76,slow=5.5,SNR=11							
ILAR	**Eielson Array**	79.81	22	P		P	04 28 44.5	-0.7
	0.5nm,0.7s,mb3.5,baz=302,slow=4.6,SNR=7.5							

MOS ***14*** *04:18:46.6±1.4,36.37N×71.14E,h110km,mb4.1/8, Error ellipse: s-maj=15.3km s-min=8.5km az=90.0*
NEIC ***14*** *04:18:47.9±0.6,36.36N×71.34E,mb4.8/8, Error ellipse: s-maj=15.5km s-min=6.8km az=55.0*
IDC ***14*** *04:18:47.6±1.2,36.24N×71.26E,h117km±8km,mb3.7/10, mb1 3.9/12,mb1mx3.7/22, Error ellipse: s-maj=26.9km s-min=16.8km az=35.0*
BJI ***14*** *04:18:49.0,36.64N×71.22E,h112km,mb4.6*
NNC ***14*** *04:18:54.3±16.0,36.87N×69.92E,h133km±169km,mpv5.2, Error ellipse: s-maj=133.1km s-min=97.7km az=19.0*

ISC 14 04:18:45.6±0.5,36.28N±0.02×71.15E±0.06,h109km±5km, h114km±5.7km;pP-P,n97,σ1$25/114,mb4.2/18,11C-6D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
CEP	**Cherat**	2.53	166	↓P		P	04 19 29.3	+3.1
CHCP	**Chirah Chowk**	3.14	146	P		P	04 19 37.8	+3.3
THW	**Thamme Wali**	3.51	172	↓P		P	04 19 41.4	+1.9
SBDP	**Sheikh Budin**	3.98	184	↑P		P	04 19 47.1	+1.2
SARP	**Sargodha**	4.53	163	↓P		P	04 19 54.5	+1.2
DRP	**Derazinda**	4.59	190	P		P	04 19 55.2	+1.0
KSH	**Kashi**	5.00	48	↓P		P	04 20 03.3	+3.6
KSH				S		S	04 20 59.8	+3.1
KSH				S		S		
	comp=N,700nm,0.6s							
KSH				S		S		
	comp=E,820nm,0.6s							
AML	**Almayashu**	6.17	18	P		P	04 20 15.9	+0.3
	SNR=681							
UCH	**Uchtor**	6.49	23	P		P	04 20 20.3	+0.3
	SNR=117							
BHK	**Bhakra**	6.54	136	*e*		P	04 20 36.0	+15
BHK				*e*S		S	04 21 31.0	-3.3
KZA	**Kyzart**	6.61	28	P		P	04 20 22.2	+0.5
	SNR=33							
EKS2	**Erkin-Say**	6.69	17	P		P	04 20 22.9	+0.1
	SNR=82							
KK31	**Karatay Array**	6.83	356	↓P		P	04 20 23.6	-1.2
	comp=E,61nm,0.3s,baz=174,slow=12,SNR=1588							
KK31				↑S		S	04 21 35.1	-6.5
	comp=E,110nm,0.7s,baz=189,slow=23,SNR=8.4							
KKAR	**Karatay Array**	6.83	356	PN		P	04 20 23.6	-1.2
KKAR				pmax		pmax		
	comp=Z,40nm,0.3s							
AAK	**Ala-Archa**	6.85	21	P		P	04 20 25.2	+0.2
	SNR=156							
KBK	**Karagaybulak**	7.01	24	P		P	04 20 28.2	+1.0
	SNR=54							
FRU	**Bishkek**	7.07	21	↓*e*PN		P	04 20 28.5	+0.5
FRU				pmax		pmax		
	comp=Z,110nm,1.8s							
ULHL	**Ulahol**	7.15	32	P		P	04 20 29.5	+0.5
	SNR=29							
CHMS	**Chumysh**	7.26	21	P		P	04 20 30.6	-0.1
	SNR=16							
USP	**Ospenovka**	7.44	19	P		P	04 20 33.4	+0.3
	SNR=21							
TKM2	**Tokmak 2**	7.47	26	P		P	04 20 33.6	+0.2
	SNR=11							
KKR	**Kurukshetra**	7.89	141	*e*P		P	04 20 39.3	+0.1
RTK	**Rohtak**	8.48	147	*e*P		P	04 20 45.8	-1.3
BHGR	**Bahadurgarh**	9.01	146	*e*P		P	04 20 56.2	+2.0
BHGR				*e*			04 22 30.0	
KHET	**Khetri**	9.08	153	*e*P		P	04 20 54.2	-1.0
KHET				*e*S		S	04 22 29.4	-6.9
KHET				*e*			04 22 33.6	
	comp=N,176nm,0.5s							
KHET				*e*			04 22 33.8	
	comp=E,198nm,0.6s							
NDI	**New Delhi**	9.14	144	*e*P		P	04 20 57.2	+1.2
NDI				*e*S		S	04 22 30.1	-7.7
AYAN	**Aya Nagar**	9.27	145	*e*P		P	04 20 55.9	-1.8
KUDL	**Kundal**	9.29	149	*e*P		P	04 20 57.8	-0.1
JASL	**Jaisalmer**	9.33	181	*e*P		P	04 20 57.0	-1.6
SONA	**Sohna**	9.45	146	*e*P		P	04 20 59.5	-0.6
SONA				*e*S		S	04 22 38.7	-6.4
SONA				*e*			04 22 41.9	
	comp=N,100nm,0.5s							
SONA				*e*			04 22 41.9	
	comp=E,148nm,0.5s							
PTH	**Pithoragarh**	10.15	129	*e*P		P	04 21 09.0	-0.5
PTH				*e*S		S	04 22 54.0	-8.0
AJM	**Ajmer**	10.22	162	*e*P		P	04 21 10.0	-0.4
AJM				*e*S		S	04 22 57.6	-5.9
AGRA	**Agra**	10.71	145	*e*P		P	04 21 14.2	-2.8
MKAR	**Makanchi Array**	13.40	35	P		P	04 21 51.4	-0.9
	comp=E,0.5nm,0.3s,baz=222,slow=15,SNR=22							
MKAR	**Makanchi Array**	13.40	35	P		P	04 21 51.2	-1.1
MKAR				pmax		pmax		
	comp=Z,1.0nm,0.4s							
MKAR	**Makanchi Array**	13.40	35	P		P	04 21 51.4	-0.9
KOLN	**Koldanda**	13.54	125	*e*P		P	04 21 53.5	-0.7
	comp=Z,40nm,0.5s							
GKN	**Gorkha**	14.09	122	*e*P		P	04 22 00.9	-0.3
	comp=Z,99nm,0.6s							
GKN				*e*S		S	04 24 27.4	-7.7
BHPL	**Bhopal**	14.09	156	*e*P		P	04 21 59.4	-1.9
DMN	**Daman**	14.65	122	*e*P		P	04 22 08.5	-0.1
	comp=Z,35nm,0.4s							
DMN				*e*S		S	04 24 40.3	-8.2
KKN	**Kakani**	14.66	121	*e*P		P	04 22 08.1	-0.6
	comp=Z,64nm,0.5s							
WMQ	**Urumqi**	14.73	54	P		P	04 22 08.8	-0.6
PKI	**Pulchoki**	14.89	122	*e*P		P	04 22 10.9	-0.7
	comp=Z,60nm,0.6s							
GUN	**Gumba**	15.00	120	*e*P		P	04 22 12.4	-0.6
	comp=Z,47nm,0.4s							
AB31	**Akbulak array**	15.33	331	↑P		P	04 22 14.6	-2.5
	comp=Z,9.3nm,0.4s							
AB31				↑S		S	04 24 49.7	-14
	comp=Z,21nm,0.7s							
AB31	**Akbulak array**	15.33	331	P		P	04 22 14.5	-2.5
AB31				pmax		pmax		
	comp=Z,4.0nm,0.3s							
KURK	**Kurchatov**	15.40	18	*e*P		P	04 22 17.9	0.0
VOSK	**Vostochnaya**	16.44	360	↑P		P	04 22 27.8	-3.0
	comp=Z,4.8nm,0.5s							
ZRNK	**Zerenda**	16.74	355	↑P		P	04 22 32.2	-2.3
	comp=Z,6.1nm,0.5s							
ZRNK	**Zerenda**	16.74	355	*e*P		P	04 22 32.1	-2.4
BVA0	**Borovoye Array**	16.75	358	↑P		P	04 22 33.3	-1.4
	comp=Z,1.3nm,0.6s,baz=168,slow=13,SNR=92							
BVAR	**Borovoye Array**	16.75	358	P		P	04 22 32.1	-2.6
	comp=Z,2.9nm,0.3s,baz=171,slow=11,SNR=53							
BVAR				S		S	04 25 40.6	+4.5
	comp=Z,0.5nm,0.3s,baz=169,slow=22,SNR=3.7							
BRVK	**Borovoye**	16.79	358	*e*P		P	04 22 34.2	-0.9
POO	**Poona**	17.84	172	*e*		P	04 22 44.0	-4.4
LSA	**Lhasa**	18.00	106	*e*P		P	04 22 51.6	+1.4
	comp=Z,14nm,0.8s							
KAD	**Karad**	19.09	171	*e*		P	04 23 10.0	+7.7
HYB	**Hyderabad**	19.90	159	*i*P		P	04 23 11.5	+0.7
HYB				*e*S		S	04 26 43.0	-0.7
HYB	**Hyderabad**	19.90	159	*e*P		P	04 23 11.5	+0.7
HYB				*e*S		S	04 26 43.0	-0.7
ZAL	**Zalesovo**	20.05	24	P		P	04 23 11.5	-0.6
	comp=Z,10.0nm,0.3s,baz=157,slow=6.0,SNR=30							
ZAL	**Zalesovo**	20.05	24	P		P	04 23 11.5	-0.6
ZAL				pmax		pmax		
	comp=Z,10.0nm,0.3s							
ZAL	**Zalesovo**	20.05	24	P		P	04 23 11.5	-0.6
KGD	**Kothagudem**	20.45	153	*e*P		P	04 23 18.9	+2.5
KGD				*e*			04 26 56.1	
SHL	**Shillong**	20.71	115	*e*P		P	04 23 20.0	+1.0
SHL				*e*S		S	04 27 00.0	+1.1
GNI	**Garni**	21.07	289	P		P	04 23 24.8	+2.2
	comp=Z,25nm,0.7s,mb4.7,baz=308,slow=1.7,SNR=11							
GNI	**Garni**	21.07	289	P		P	04 23 24.8	+2.2
GNI				pmax		pmax		
	comp=Z,25nm,0.7s							
SVE	**Sverdlovsk**	21.74	344	↑*e*P		P	04 23 30.0	+1.0
SVE				*e*			04 24 04.9	
SVE				pmax		pmax		
	comp=Z,30μm,1.8s							
ARU	**Arti**	21.88	341	↑*i*P		P	04 23 30.9	+0.5
ARU				*e*S		S	04 27 26.4	+6.3
ARU				*e*SS		SS	04 28 07.0	+0.2
ARU				pmax		pmax		
	comp=Z,19nm,1.0s,mb4.4							
ARU	**Arti**	21.88	341	*e*P		P	04 23 32.1	+1.7
	comp=Z,6.5nm,0.5s,mb4.2							
ZEI	**Tsey**	21.94	296	↑*e*P		P	04 23 33.5	+2.4
GTA	**Gaotai**	22.81	73	*e*P		P	04 23 43.1	+3.5
GTA				AMB		AMB		
	comp=Z,7.0nm,1.3s,mb3.8							
KIV	**Kislovodsk**	23.00	298	*e*P		P	04 23 42.0	+0.7
KIV				pmax		pmax		
	comp=Z,5.0nm,0.7s,mb4.0							
ZAK	**Zakamensk**	27.04	48	*e*P		P	04 24 19.9	+0.5
ZAK				*e*		pP	04 24 40.1	-3.0
ULN	**Ulaanbaatar**	28.80	55	*e*P		P	04 24 37.2	+1.9
ULN				pmax		pmax		
	comp=Z,2.0nm,0.8s,mb3.8							
OBN	**Obninsk**	30.18	320	*e*P		P	04 24 46.8	-0.7
OBN				*e*S		S	04 29 36.3	-1.0
OBN				pmax		pmax		
	comp=Z,9.0nm,0.5s,mb4.7							
AKASG	**Malin Array Be**	33.18	309	P		P	04 25 13.2	-0.4
	comp=Z,0.7nm,0.4s,mb3.9,baz=81,slow=6.8,SNR=7.2							
BOD	**Bodaibo**	35.44	39	*e*P		P	04 25 31.3	-1.6
FINES	**FINESS Array B**	37.73	326	P		P	04 25 52.1	+0.1
	comp=Z,1.3nm,0.5s,mb4.1,baz=110,slow=9.7,SNR=7.5							
FINES				pP		pP	04 26 18.5	+1.5
	comp=Z,1.3nm,0.7s,baz=112,slow=10,SNR=2.7							
FINES	**FINESS Array B**	37.73	326	P		P	04 25 52.2	+0.2
FINES				*PP		pP	04 26 18.5	+1.5
FINES				pmax		pmax		
	comp=Z,1.0nm,0.5s							
FINES				pmax		pmax		
	comp=N,1.0nm,0.7s							
FINES	**FINESS Array B**	37.73	326	P		P	04 25 52.1	+0.1
FINES				pP		pP	04 26 18.5	+1.5
NJ2	**Nanjing**	39.39	82	*e*P		P	04 26 09.1	+3.0
NJ2				AMB		AMB		
	comp=Z,20nm,0.5s,mb5.2							
ARCES	**ARCESS Array B**	41.39	338	P		P	04 26 22.4	+0.2
	comp=Z,1.0nm,0.5s,mb3.9,baz=116,slow=8.4,SNR=14							
ARCES	**ARCESS Array B**	41.39	338	P		P	04 26 22.4	+0.2
ARCES				pmax		pmax		
	comp=Z,1.0nm,0.5s							
ARCES	**ARCESS Array B**	41.39	338	P		P	04 26 22.4	+0.2
SSE	**Sheshan**	41.59	82	↑P		P	04 26 28.0	+3.8
SSE				AMB		AMB		
	comp=Z,37nm,0.7s,mb5.2							
YAK	**Yakutsk**	44.08	35	*e*P		P	04 26 45.5	+1.5
YAK				pmax		pmax		
	comp=Z,11nm,0.5s,mb4.8							
NB2	**NORSAR Subarra**	44.63	323	P		P	04 26 47.2	-1.2
	comp=Z,2.5nm,0.6s,mb4.1,baz=96,slow=7.9							
NOA	**NORSAR Array B**	44.63	323	P		P	04 26 47.6	-0.9
	comp=Z,2.1nm,0.6s,mb4.1,baz=97,slow=7.8,SNR=13							
NOA				pP		pP	04 27 14.5	+0.7
	comp=Z,1.4nm,0.7s,baz=96,slow=8.0,SNR=3.0							
NOA	**NORSAR Array B**	44.63	323	P		P	04 26 47.6	-0.8
NOA				*PP		pP	04 27 14.5	+0.7
NOA				pmax		pmax		
	comp=Z,2.0nm,0.6s							
NOA				pmax		pmax		
	comp=N,1.0nm,0.7s							
NOA	**NORSAR Array B**	44.63	323	P		P	04 26 47.6	-0.9
NOA				pP		pP	04 27 14.5	+0.7
TIXI	**Tiksi**	45.93	22	P		P	04 26 58.9	+0.2
TIXI				*e*			04 28 54.8	
TIXI				pmax		pmax		
	comp=Z,22nm,0.8s,mb4.9							
BILL	**Bilibino**	58.75	26	*e*P		P	04 28 35.1	+1.1
BILL				pmax		pmax		
	comp=Z,1.0nm,0.5s,mb4.1							
ILAR	**Eielson Array**	74.96	16	P		P	04 30 16.5	+0.7
	comp=Z,0.4nm,0.9s,baz=318,slow=5.8,SNR=5.4							
YKA	**Yellowknife Ar**	81.46	3	P		P	04 30 51.4	-0.1
	comp=Z,0.6nm,0.5s,mb3.7,baz=351,slow=5.4,SNR=11							
YKA				pP		pP	04 31 21.9	+2.2
	comp=Z,0.4nm,0.6s,baz=350,slow=5.5,SNR=2.7							
YKA	**Yellowknife Ar**	81.46	3	P		P	04 30 51.4	-0.1
YKA				*PP		pP	04 31 21.9	+2.2
YKA				pmax		pmax		
	comp=Z,1.0nm,0.5s							
WRA	**Warramunga Arr**	81.77	122	P		P	04 30 52.9	-1.1
	comp=Z,0.6nm,0.6s,mb3.6,baz=324,slow=4.9,SNR=14							
WRA	**Warramunga Arr**	81.77	122	P		P	04 30 52.9	-1.1
WRA				pmax		pmax		
	comp=Z,1.0nm,0.6s							
ASAR	**Alice Springs**	84.03	125	P		P	04 31 04.6	-0.8
	comp=Z,0.8nm,0.7s,mb3.7,baz=312,slow=4.7,SNR=6.2							

IDC 14 04:27:33.3±4.8,11.94S×167.17E,mb3.6/4,mb1 3.8/4, mb1mx3.6/15,Error ellipse: s-maj=231.0km s-min=31.1km az=141.0,Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
WRA	**Warramunga Arr**	32.51	252	P		P	04 34 05.8	-2.4
	0.4nm,0.7s,baz=83,slow=8.6,SNR=6.7							
ASAR	**Alice Springs**	33.66	245	P		P	04 34 16.1	-2.1
	0.7nm,1.1s,baz=71,slow=10.0,SNR=5.6							
FITZ	**Fitzroy Crossi**	40.51	256	P		P	04 35 14.6	-1.3
	0.6nm,0.6s,baz=90,slow=19,SNR=4.9							
ILAR	**Eielson Array**	83.92	18	P		P	04 40 04.8	-1.3
	0.4nm,0.6s,baz=236,slow=6.5,SNR=7.3							

LDG ***14*** *04:55:02.1±0.0,43.01N×0.19E,h15km,Md2.7/2,Ml2.4/7, Error ellipse: s-maj=0.8km s-min=0.7km az=42.0*
NEIC ***14*** *04:55:02.1,43.01N×0.19E,h15km,ML2.4(LDG), MN1.8(MDD), After LDG.*
STR ***14*** *04:55:02.5±0.1,42.99N×0.21E,h5km±1km,Ml2.6, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
MDD ***14*** *04:55:02.8±0.2,43.00N×0.20E,h11km,mbLg1.8/18, Error ellipse: s-maj=2.9km s-min=1.6km az=9.0, PRXIMO*

ISC 14 04:55:00.9±0.3,43.10N±0.02×0.23E±0.02,h10km±3km, n40,σ1$12/66,France

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
EPF	**Esparros**	0.10	130	*e*Pg		Pg	04 55 05.6	+2.0
EPF				*e*Sg		Sg	04 55 07.8	+2.4
	329nm,0.2s							
LABF	**Labassere**	0.13	247	Pg		Pg	04 55 05.4	+1.5
LABF				Sg		Sg	04 55 07.9	+1.9
LABF	**Labassere**	0.13	247	P		Pg	04 55 05.5	+1.6
LABF				S		Sg	04 55 08.0	+2.0
VIEF	**Viey**	0.26	216	Pg		Pg	04 55 06.2	-0.2
VIEF				Sg		Sg	04 55 09.4	-0.7
VIEF	**Viey**	0.26	216	P		Pg	04 55 06.3	0.0
VIEF				S		Sg	04 55 09.4	-0.7
RESF	**Ens**	0.30	165	Pg		Pg	04 55 07.1	0.0
RESF				Sg		Sg	04 55 10.2	-1.0
RESF	**Ens**	0.30	165	P		Pg	04 55 07.1	0.0
RESF				S		Sg	04 55 10.3	-0.9
MELF	**Melles**	0.45	120	Pg		Pg	04 55 10.2	+0.2
MELF				Sg		Sg	04 55 16.8	+0.8
MELF	**Melles**	0.45	120	P		Pg	04 55 10.1	+0.2
MELF				S		Sg	04 55 16.7	+0.7
REYF	**Montagne du Re**	0.46	267	P		Pg	04 55 10.6	+0.4
REYF				S		Sg	04 55 17.3	+0.9
ETSF	**Etsaut**	0.61	251	*e*Pg		Pg	04 55 13.1	-0.1
ETSF				*e*Sg		Sg	04 55 20.5	-1.0
	21nm,0.2s							
MLS	**Moulis**	0.65	102	Pg		Pg	04 55 14.8	+0.9
MLS				Sg		Sg	04 55 24.2	+1.6
MLS	**Moulis**	0.65	102	P		Pb	04 55 15.1	+1.3
MLS				S		Sg	04 55 24.4	+1.7
ATE	**Arette**	0.68	269	P		Pb	04 55 15.0	+0.6
ATE				S		Sb	04 55 24.3	+0.6
SALF	**Salau**	0.78	115	Pg		Pg	04

CAF	**Calviac**	**2.26**	**35**	*e*Pn		**Pn**	**04 55 38.4**	**-0.4**
CAF				*e*Pg		**Pg**	**04 55 45.8**	**-0.2**
CAF				*e*Sg		**Sg**	**04 56 16.1**	**0.0**
	2.4nm,0.2s							
RJF	**Les Rejaudoux**	**2.39**	**22**	*e*Pg		**Pg**	**04 55 48.4**	**-0.3**
RJF				*e*Sg		**Sg**	**04 56 20.4**	**-0.2**
	2.8nm,0.2s							
LASF	**Ste Croix**	**2.81**	**68**	*e*Pg		**Pg**	**04 55 54.9**	**-2.1**
LASF				*e*Sg		**Sg**	**04 56 32.0**	**-2.5**
	5.3nm,0.3s							
VIVF	**Saint-Julien-l**	**3.66**	**60**	*e*Pg		**Pg**	**04 56 11.0**	**-2.9**
VIVF				*e*Sg		**Sg**	**04 56 59.0**	**-3.6**
	1.5nm,0.3s							

GUC 14 05:13:36.8±0.6, 32.81S×71.73W, h5km, MD3.6, ML2.2, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PTCH	**Petorca**	**0.87**	**52**	*i* P	Pb	05 13 53.5	-0.5
PTCH				*i* S	Sb	05 14 06.7	+1.0
PTCH				AMP		05 14 07.8	
	comp=E,237nm,0.2s						
PEL	**Peldehue**	**0.94**	**111**	*e*P	Pb	05 13 52.6	-2.7
PEL				*e*P		05 13 55.0	
PEL				*i* S	Sb	05 14 08.4	+0.5
CLCH	**Cerro Calan**	**1.16**	**121**	*e*P	Pb	05 13 58.3	-0.7
CLCH				*i* S	Sb	05 14 15.1	+0.8
CLCH				AMP		05 14 24.1	
	comp=N,76nm,0.4s						
FCH	**Farellones**	**1.32**	**114**	*e*P	Pb	05 14 01.2	-0.5
FCH				*i* S	Sb	05 14 19.9	+1.2
FCH				AMP		05 14 27.6	
	comp=N,53nm,0.6s						
LMEL	**Las Melosas**	**1.65**	**129**	*e*P	Pn	05 14 06.5	-0.1
LMEL				*i* S	Sb	05 14 28.5	+0.2
LMEL				AMP		05 14 32.8	
	comp=N,57nm,0.1s						

LDG 14 05:17:44.9±0.1, 43.27N×1.09W, h5km, Md1.9/2, Ml1.8/1, Error ellipse: s-maj=2.7km s-min=0.9km az=162.0
MDD 14 05:17:44.1±0.6, 42.87N×1.29W, mbLg1.1/3, Error ellipse: s-maj=5.4km s-min=2.8km az=37.0, PRXIMO
ISC 14 05:17:44.0±1.5, 43.29N±0.09×1.05W±0.06, h5km, n5, σ0§43/8, Pyrenees

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SJPF	**Ste Jean**	**0.22**	**216**	*e*Pg	**Pg**	**05 17 48.7**	**+0.2**
SJPF				*e*Sg	**Sg**	**05 17 51.4**	**-0.1**
	30nm,0.2s						
EALK	**Alkurruntz**	**0.34**	**258**	Pg	**Pg**	**05 17 51.0**	**+0.2**
	0.9nm,0.2s,SNR=22						
EALK				Lg		05 17 57.6	
	17nm,0.3s,SNR=5.8						
ETSF	**Etsaut**	**0.53**	**138**	*e*Pg	**Pg**	**05 17 53.6**	**-1.0**
ETSF				*e*Sg	**Sg**	**05 18 02.1**	**+0.4**
	5.3nm,0.3s						
EPF	**Esparros**	**1.05**	**104**	*e*Pg	**Pg**	**05 18 05.0**	**+0.1**
EPF				*e*Sg	**Sg**	**05 18 19.1**	**+0.2**
	2.5nm,0.3s						
ESAC	**San Caprasio**	**1.63**	**165**	Pg	**Pn**	**05 18 08.0**	**-5.4**
	11nm,0.3s,SNR=7.9						
ESAC				Lg		05 18 25.8	
	9.0nm,0.2s,SNR=7.9						

IDC 14 06:12:31.6±3.1, 30.36S×177.17W, mb3.7/2, mb1 3.9/3, mb1mx3.7/13, ML2.8/1, MS3.6/1, Ms1 3.5/1, ms1mx2.7/24, Error ellipse: s-maj=73.3km s-min=36.6km az=114.0
ISC 14 06:12:27.0±5.6, 30.6S±0.2×176.1W±0.8, h33km, n5, σ0§10/4, mb3.7/2, MS3.5/1, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**9.52**	**215**	Pn	**P**	**06 14 44.7**	**0.0**
	0.1nm,0.3s,baz=192,slow=22,SNR=2.0						
URZ				Sn	**Sn**	**06 16 31.8**	**0.0**
	0.5nm,0.3s,baz=47,slow=22,SNR=5.6						
STKA	**Stephens Creek**	**36.07**	**257**	LR	LR	06 31 24.4	
	comp=Z,81nm,18.6s,MS3.5,baz=204,slow=32						
ASAR	**Alice Springs**	**44.78**	**266**	P	**P**	**06 20 39.5**	**+0.1**
	0.8nm,1.0s,mb3.5,baz=106,slow=8.2,SNR=4.0						
WRA	**Warramunga Arr**	**45.78**	**271**	P	**P**	**06 20 47.4**	**-0.1**
	0.6nm,0.3s,mb4.0,baz=111,slow=8.1,SNR=31						
FINES	**FINESS Array B**	**145.87**	**341**	PKPbc	PKPbc	06 32 09.7	+7.3
	0.6nm,0.3s,baz=27,slow=3.1,SNR=7.5						

IDC 14 06:19:35.2±1.7, 23.10S×66.22W, h177km±73km, mb1 3.4/4, mb1mx3.1/15, Error ellipse: s-maj=55.2km s-min=22.8km az=70.0, Jujuy Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LVC	**Limon Verde**	**2.53**	**281**	P	P	06 20 19.1	+0.5
	33nm,0.3s,baz=90,slow=9.3,SNR=304						
LVC				S	S	06 20 52.0	0.0
	16nm,0.3s,baz=271,slow=16,SNR=16						
LPAZ	**La Paz**	**7.01**	**345**	P	P	06 21 16.9	+0.4
	1.3nm,0.3s,baz=165,slow=4.7,SNR=47						
LPAZ				S	S	06 22 36.1	+0.9
	0.3nm,0.3s,baz=257,slow=24,SNR=14						
CPUP	**Villa Florida**	**8.70**	**113**	P	P	06 21 37.8	-0.8
	0.1nm,0.3s,baz=314,slow=13,SNR=3.4						
BDFB	**Brasilia**	**18.70**	**70**	P	P	06 23 40.0	-2.5
	0.2nm,0.3s,baz=258,slow=9.4,SNR=6.4						

FUNV 14 06:25:27.4, 10.27N×62.02W, h10km, MW3.1
TRN 14 06:25:29.6, 10.37N×62.00W, h7km, MD4.1
IDC 14 06:25:31.1±7.0, 10.35N×62.18W, h68km±23km, mb2.9/2, mb1 3.6/5, mb1mx3.3/23, MS2.6/1, Ms1 2.6/1, ms1mx2.3/15, Error ellipse: s-maj=118.0km s-min=14.7km az=131.0
ISC 14 06:25:27.5±0.5, 10.22N±0.02×62.14W±0.02, h19km±5km, n37, σ1§11/56, mb3.3/2, 4C-4D, Near coast of Venezuela

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUIV	**Guiria**	**0.44**	**349**	⇓*i* P	**Pb**	**06 25 35.6**	**-0.8**
GUIV				*e*S	**Sb**	**06 25 41.3**	**-1.1**
ALNG	**Atlantic LNG**	**0.44**	**95**	*e*P	**Pb**	**06 25 37.6**	**+1.2**
BUAY	**Buenos Aires**	**0.46**	**104**	*e*P	**Pb**	**06 25 37.8**	**+1.1**
BUAY				*e*S	**Sb**	**06 25 43.4**	**+0.4**
TCE	**Chacachacare**	**0.61**	**38**	⇓*i* P	**Pb**	**06 25 38.0**	**-1.3**
SIPA	**Siparia**	**0.63**	**97**	*e*P	**Pb**	**06 25 40.6**	**+1.0**
TPP	**Pointe-a-Pierr**	**0.68**	**82**	⇑*i* P	**Pb**	**06 25 40.6**	**+0.1**
GUNV	**Guanoco**	**0.79**	**266**	⇓*e* P	**Pb**	**06 25 44.5**	**+2.0**
GUNV				*e*S	**Sb**	**06 25 56.7**	**+4.0**
TRN	**Trinidad (W)**	**0.84**	**59**	⇑*i* P	**Pb**	**06 25 41.6**	**-1.6**
TRN				*e*S	**Sb**	**06 25 51.9**	**-2.2**
TBH	**Brigand Hill**	**1.09**	**76**	*e*P	**Pb**	**06 25 46.9**	**-0.5**
CRUV	**Carupano**	**1.17**	**293**	⇑*i* P	**Pb**	**06 25 49.1**	**+0.2**
CRUV				*e*S	**Sb**	**06 26 04.8**	**+1.2**
ITEV	**Isla Los Testi**	**1.50**	**319**	⇓*i* P	**Pn**	**06 25 53.6**	**0.0**
ITEV				*i* S	**Sn**	**06 26 13.9**	**+1.2**
TPR	**Prospect**	**1.65**	**54**	*e*P	**Pn**	**06 25 56.0**	**+0.2**
TPR				*e*S	**Sn**	**06 26 16.4**	**-0.2**
BOT	**Bacolet**	**1.69**	**56**	*e*P	**Pn**	**06 25 56.7**	**+0.4**
BOT				*e*S	**Sn**	**06 26 17.1**	**-0.4**
GRW	**Mount Saint Ca**	**1.99**	**14**	*e*P	**Pn**	**06 26 02.6**	**+2.0**
GRW				*e*S	**Sn**	**06 26 25.1**	**0.0**
GRHS	**Sauteurs**	**2.05**	**14**	*e*P	**Pn**	**06 26 01.7**	**+0.1**
GRHS				*e*S	**Sn**	**06 26 26.4**	**-0.5**
GRSS	**Sisters**	**2.13**	**14**	*e*P	**Pn**	**06 26 03.6**	**+0.9**
GRSS				*e*S	**Sn**	**06 26 30.1**	**+1.2**
RIOV	**Rio Grande**	**2.16**	**171**	*e*P	**Pn**	**06 26 03.1**	**0.0**
RIOV				*e*S	**Sn**	**06 26 30.8**	**+1.2**
GRCU	**Cariacou**	**2.34**	**17**	*e*P	**Pn**	**06 26 05.9**	**+0.3**
GRCU				*e*S	**Sn**	**06 26 34.0**	**-0.1**
PCRV	**Puerto La Cruz**	**2.46**	**269**	P	**Pn**	**06 26 08.3**	**+0.9**
	6.6nm,0.3s,baz=83,slow=4.7,SNR=56						
PCRV				Pg	**Pn**	**06 26 14.5**	**+7.1**
	53nm,0.3s,baz=95,slow=11,SNR=63						
PCRV				Lg		06 26 47.5	
	15nm,0.3s,baz=252,slow=6.3,SNR=4.5						
GURV	**El Guri**	**2.61**	**201**	*e*P	**Pn**	**06 26 09.7**	**+0.1**
GURV				*e*S	**Sn**	**06 26 41.3**	**+0.2**
PARV	**Pariaguan**	**2.90**	**245**	*e*P	**Pn**	**06 26 15.0**	**+1.3**
PARV				*e*S	**Sn**	**06 26 49.5**	**+1.1**
SVB	**Belmont**	**3.16**	**16**	*e*P	**Pn**	**06 26 17.5**	**+0.2**
SVV	**Soufriere Volc**	**3.21**	**16**	*e*P	**Pn**	**06 26 19.1**	**+1.0**
SSV	**Crater Summit**	**3.23**	**17**	*e*	**Pn**	**06 26 13.4**	**-4.9**
SSV	**Crater Summit**	**3.23**	**17**	*e*P	**Pn**	**06 26 21.3**	**+3.0**
CUPV	**Cœpira**	**3.60**	**268**	*e*P	**Pn**	**06 26 23.9**	**+0.3**
CUPV				*e*S	**Sn**	**06 27 05.4**	**-0.6**
MERV	**Las Mercedes**	**4.21**	**257**	*e*P	**Pn**	**06 26 32.1**	**-0.1**
MERV				*e*S	**Sn**	**06 27 19.9**	**-1.6**
LUEV	**Luepa**	**4.40**	**171**	*e*P	**Pn**	**06 26 32.9**	**-2.1**
LUEV				*e*S	**Sn**	**06 27 21.9**	**-4.3**
FDF	**Fort de France**	**4.59**	**12**	⇑*i* P	**Pn**	**06 26 36.7**	**-1.0**
CAOV	**Caicara del Or**	**5.04**	**236**	*e*P	**Pn**	**06 26 43.2**	**-0.8**
CAOV				*e*S	**Sn**	**06 27 38.6**	**-3.7**
BAUV	**El Baul**	**5.96**	**258**	*e*P	**Pn**	**06 26 55.1**	**-1.9**
ELOV	**Elorza**	**7.93**	**247**	*e*P	**Pn**	**06 27 22.5**	**-2.2**
SDV	**Santo Domingo**	**8.48**	**262**	P	**P**	**06 27 29.7**	**-2.6**
	1.5nm,0.3s,baz=86,slow=8.4,SNR=12						
SJG	**San Juan**	**8.76**	**334**	LR	LR	06 30 34.9	
	comp=Z,40nm,21.5s,baz=68,slow=35						
ROSC	**El Rosal**	**13.21**	**247**	P	**P**	**06 28 36.5**	**-0.2**
	0.9nm,0.3s,baz=61,slow=19,SNR=4.9						
PDAR	**Pinedale Array**	**52.43**	**317**	P	**P**	**06 34 36.8**	**-4.4**
	0.5nm,0.8s,mb3.5,baz=108,slow=8.6,SNR=4.5						
YKA	**Yellowknife Ar**	**64.25**	**336**	P	**P**	**06 35 57.4**	**-5.9**
	0.1nm,0.5s,mb3.1,baz=109,slow=7.2,SNR=4.4						

IDC 14 06:35:50.1±1.6, 4.85S×145.61E, mb3.6/4, mb1 3.8/6, mb1mx3.7/14, ML3.2/2, MS2.8/1, Ms1 2.8/1, ms1mx2.4/21, Error ellipse: s-maj=40.0km s-min=26.1km az=106.0
ISC 14 06:35:49.8±5.8, 4.9S±0.1×145.6E±0.2, h7km±37km, n7, σ0§53/8, mb3.5/4, Near north coast of New Guinea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**4.77**	**161**	Pn	**Pn**	**06 37 03.8**	**-0.1**
	3.5nm,0.3s,baz=309,slow=6.5,SNR=7.6						
PMG				Sn	**Sn**	**06 38 00.2**	**0.0**
	1.0nm,0.3s,baz=310,slow=21,SNR=3.3						
PMG				LR	LR	06 39 12.9	
	comp=Z,99nm,18.3s,baz=125,slow=42						
WRA	**Warramunga Arr**	**18.55**	**215**	P	**P**	**06 40 09.2**	**0.0**
	0.1nm,0.3s,baz=43,slow=12,SNR=11						
ASAR	**Alice Springs**	**21.82**	**210**	P	**P**	**06 40 45.5**	**+0.8**
	0.5nm,0.8s,mb3.0,baz=42,slow=6.8,SNR=3.1						
FITZ	**Fitzroy Crossi**	**23.51**	**234**	*e*P	**P**	**06 41 00.8**	**-0.7**
	3.0nm,0.9s,mb3.7						
FITZ	**Fitzroy Crossi**	**23.51**	**234**	P	**P**	**06 41 01.2**	**-0.3**
	3.3nm,0.8s,mb3.8,baz=46,slow=8.8,SNR=7.5						
STKA	**Stephens Creek**	**27.13**	**187**	P	**P**	**06 41 35.3**	**-0.2**
	1.4nm,0.7s,mb3.6,baz=355,slow=14,SNR=2.4						
ILAR	**Eielson Array**	**85.01**	**23**	P	**P**	**06 48 27.0**	**+0.1**
	0.4nm,0.8s,mb3.6,baz=250,slow=5.3,SNR=4.9						

IDC 14 06:48:48.1±0.6, 22.54S×12.69W, mb4.4/17, mb1 4.5/17, mb1mx4.5/19, MS4.5/13, Ms1 4.6/13, ms1mx4.4/21, Error ellipse: s-maj=21.9km s-min=15.2km az=161.0
NEIC 14 06:48:50.3±0.3, 22.54S×12.58W, h10km, mb4.7/16, MS4.6/11, Error ellipse: s-maj=10.2km s-min=9.8km az=141.0
BJI 14 06:48:50.3, 22.50S×12.60W, h10km, Ms4.5, Msz4.3
SYO 14 06:48:50.3, 22.54S×12.58W, h10km, MB4.7, MS4.6
ISC 14 06:48:48.6±0.3, 22.45S±0.06×12.58W±0.07, h10km, n112, σ1§14/95, mb4.6/40, MS4.6/22, 2C-8D, Southern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAUB	**Caruaru**	**26.62**	**299**	*e*P	**P**	**06 54 26.7**	**-2.6**
CAUB				*i*		06 54 31.8	
TSUM	**Tsumeb**	**28.36**	**89**	P	**P**	**06 54 43.6**	**-1.4**
	8.4nm,1.0s,mb4.3,baz=240,slow=10,SNR=7.9						
TSUM				LR	LR	07 03 57.2	
	comp=Z,821nm,18.2s,MS4.4,baz=252,slow=32						
LIC	**Lamto**	**29.45**	**15**	*e*P	**P**	**06 54 55.3**	**+0.4**
	91nm,1.3s,mb5.0						
LIC				*e*R			
	1µm,17.8s						
LIC	**Lamto**	**29.45**	**15**	*e*P	**P**	**06 54 55.7**	**+0.8**
	91nm,1.3s,mb5.3						
KIC	**Kosan Boka**	**29.65**	**16**	*e*P	**P**	**06 54 54.4**	**-2.3**
	60nm,0.8s,mb5.4						
TIC	**Toumodi**	**29.85**	**15**	*e*P	**P**	**06 54 56.0**	**-2.5**
	46nm,0.8s,mb5.3						
DBIC	**Dimbokro**	**29.92**	**16**	P	**P**	**06 54 57.6**	**-1.5**
	7.6nm,0.8s,mb4.5,baz=183,slow=14,SNR=6.6						
DBIC				LR	LR	07 03 55.6	
	comp=Z,1µm,20.4s,MS4.6,baz=173,slow=30						
DBIC	**Dimbokro**	**29.92**	**16**	P	**P**	**06 54 57.6**	**-1.5**
DBIC				LR	LR	07 03 55.6	
SUR	**Sutherland**	**31.14**	**116**	P	**P**	**06 55 09.8**	**+0.1**
	9.3nm,0.9s,mb4.6,baz=330,slow=8.7,SNR=4.1						
SUR				LR	LR	07 04 40.5	
	comp=Z,1µm,21.3s,MS4.5,baz=202,slow=30						
SUR	**Sutherland**	**31.14**	**116**	P	**P**	**06 55 09.5**	**-0.2**
SUR				LR	LR		
	comp=Z,2µm,22.0s,MS4.6						
BDFB	**Brasilia**	**34.11**	**275**	P	**P**	**06 55 34.4**	**-1.4**
	comp=Z,7.5nm,1.0s,mb4.6,baz=106,slow=5.6,SNR=19						
BDFB				LR	LR	07 06 44.3	
	comp=Z,1µm,21.7s,MS4.6,baz=113,slow=32						
LBTB	**Lobatse**	**34.97**	**102**	*e*P	**P**	**06 55 42.9**	**-0.2**
	comp=Z,4.4nm,0.6s,mb4.6						
LBTB				LR	LR		
	comp=Z,621nm,20.0s,MS4.3						
CPUP	**Villa Florida**	**40.79**	**255**	P	**P**	**06 56 30.1**	**-1.7**
	comp=Z,5.6nm,0.9s,mb4.2,baz=124,slow=6.7,SNR=13						
CPUP				LR	LR	07 10 37.2	
	comp=Z,734nm,18.2s,MS4.6,baz=122,slow=32						
CPUP	**Villa Florida**	**40.79**	**255**	*e*P	**P**	**06 56 31.4**	**-0.4**
	comp=Z,6.3nm,1.0s,mb4.2						
CPUP				LR	LR		
	comp=Z,433nm,19.0s,MS4.3						
TRQA	**Tornquist**	**44.90**	**238**	*e*P	**P**	**06 57 03.0**	**-2.2**
	comp=Z,3.4nm,1.0s,mb4.1						
VNA2	**Neumayer--Watz**	**48.58**	**178**	⇓*i* P	**P**	**06 57 34.0**	**+0.2**
VNA2				*e*		06 58 58.7	
VNA2				*e*S	**S**	**07 04 27.7**	**-6.7**
VNA3	**Neumayer Olymp**	**48.84**	**179**	⇓*i* P	**P**	**06 57 33.3**	**-2.4**
VNA3				*e*		06 58 58.0	
VNA3				*e*S	**S**	**07 04 26.1**	**-12**
SNAA	**Sanae**	**49.56**	**176**	*e*P	**P**	**06 57 39.3**	**-1.9**
LVC	**Limon Verde**	**51.75**	**258**	P	**P**	**06 57 56.5**	**-2.1**
	comp=Z,2.2nm,0.9s,mb4.1,baz=100,slow=11,SNR=3.1						
LVC	**Limon Verde**	**51.75**	**258**	P	**P**	**06 57 56.9**	**-1.7**
USHA	**Ushuaia**	**52.40**	**217**	LR	LR	07 14 19.1	
	comp=Z,446nm,20.0s,MS4.5,baz=198,slow=29						
LPAZ	**La Paz**	**52.52**	**266**	P	**P**	**06 58 02.7**	**-1.8**
	comp=Z,2.0nm,0.7s,mb4.2,baz=94,slow=7.5,SNR=10.0						
LPAZ				LR	LR	07 20 06.0	
	comp=Z,395nm,19.0s,MS4.5,baz=288,slow=36						
LPAZ	**La Paz**	**52.52**	**266**	*e*P	**P**	**06 58 04.5**	**0.0**
	comp=Z,1.4nm,0.8s,mb3.9						
LPAZ				LR	LR		
	comp=Z,150nm,20.0s,MS4.0						
KMBO	**Kilima Mbogo**	**52.84**	**73**	P	**P**	**06 58 08.2**	**+1.3**
	comp=Z,0.5nm,0.4s,mb3.8,baz=256,slow=8.0,SNR=5.9						
KMBO	**Kilima Mbogo**	**52.84**	**73**	*e*P	**P**	**06 58 08.8**	**+1.9**
	comp=Z,22nm,1.9s,mb4.8						
KMBO				LR	LR		
	comp=Z,294nm,19.0s,MS4.3						
ARE	**Arequipa**	**55.58**	**265**	*e*P	**P**	**06 58 29.0**	**+2.1**
SYO	**Syowa Base**	**56.04**	**160**	⇓P	**P**	**06 58 23.8**	**-5.7**
SYO	**Syowa Base**	**56.04**	**160**	⇓pP	pP	06 58 32.5	-0.1
SYO	**Syowa Base**	**56.04**	**160**	⇓*e*P	**P**	**06 58 23.8**	**-5.7**
SYO				⇓*e*pP	pP	06 58 32.5	-0.1
PCRV	**Puerto La Cruz**	**60.44**	**297**	LR	LR	07 22 26.1	
	comp=Z,651nm,20.0s,MS4.8,baz=140,slow=33						
EVO	**Evora**	**60.81**	**4**	*e*P	**P**	**06 59 02.3**	**-1.0**
	comp=Z,15nm,0.8s,mb4.9						
EVO				*e*R			
	comp=Z,602nm,20.0s						
ESDC	**Sonseca Array**	**62.33**	**8**	P	**P**	**06 59 13.3**	**-0.2**
	comp=Z,0.6nm,0.4s,mb4.0,baz=188,slow=7.9,SNR=4.0						
ESDC				LR	LR	07 26 25.0	
	comp=Z,107nm,18.7s,MS4.0,baz=150,slow=36						
ESDC	**Sonseca Array**	**62.33**	**8**	P	**P**	**06 59 13.3**	**-0.2**
ESDC				LR	LR	07 26 25.0	
ESLA	**Sonseca Array**	**62.33**	**8**	P	**P**	**06 59 12.3**	**-1.2**
ETSF	**Etsaut**	**65.96**	**10**	*e*P	**P**	**06 59 36.9**	**-0.3**
SJPF	**Ste Jean**	**66.07**	**9**	*e*P	**P**	**06 59 37.6**	**-0.3**
	comp=Z,9.0nm,0.7s,mb4.6						
ROSC	**El Rosal**	**66.15**	**286**	LR	LR	07 27 25.0	
	comp=Z,1µm,18.8s,MS5.1,baz=355,slow=35						
EPF	**Esparros**	**66.24**	**10**	*e*P	**P**	**06 59 38.7**	**-0.2**
KRIS	**Kristallenia**	**67.75**	**33**	*e*P	**P**	**06 59 50.6**	**+1.9**
QSPA	**South Pole Qui**	**67.75**	**180**	*e*P	**P**	**06 59 48.8**	**+0.8**
	comp=Z,19nm,1.1s,mb5.0						
QSPA				LR	LR		
	comp=Z,510nm,21.8s,MS4.7						
FRF	**La Foret Royal**	**68.02**	**15**	*e*P	**P**	**06 59 49.7**	**-0.5**
LFF	**La Frestale**	**68.16**	**10**	*e*P	**P**	**06 59 50.5**	**-0.6**
CAF	**Calviac**	**68.37**	**11**	*e*P	**P**	**06 59 51.8**	**-0.6**
RJF	**Les Rejaudoux**	**68.64**	**11**	*e*P	**P**	**06 59 53.6**	**-0.5**
RJF				*e*R			
	comp=Z,569nm,19.8s						
ORIF	**Oris-en-Rattie**	**69.13**	**14**	*e*P	**P**	**06 59 57.2**	**+0.1**
	comp=Z,9.6nm,0.8s,mb4.5						
ORIF				*e*R			
	comp=Z,1µm,19.2s						
MBDF	**Montbardon**	**69.15**	**15**	*e*P	**P**	**06 59 57.3**	**+0.1**
	comp=Z,12nm,0.9s,mb4.5						
MFF	**Saint Martin d**	**69.64**	**9**	*e*P	**P**	**06 59 59.8**	**-0.4**
	comp=Z,10nm,0.8s,mb4.5						
TCF	**Toul-Ste Croi**	**69.72**	**11**	*e*P	**P**	**07 00 00.5**	**-0.1**
LPG	**La Plagne**	**69.88**	**14**	*e*P	**P**	**07 00 02.3**	**+0.7**
LPL	**La Plagne**	**69.89**	**14**	*e*P	**P**	**07 00 01.9**	**+0.2**
	comp=Z,12nm,0.8s,mb4.6						
SMF	**Signal de Mont**	**70.36**	**12**	*e*P	**P**	**07 00 04.1**	**-0.4**
AVF	**Avril sur Loir**	**70.41**	**12**	*e*P	**P**	**07 00 04.7**	**-0.1**
	comp=Z,22nm,1.2s,mb4.7						
QUIF	**Quistinic**	**70.55**	**7**	*e*P	**P**	**07 00 04.6**	**-1.1**
SSF	**Saint Saulge**	**70.70**	**12**	*e*P	**P**	**07 00 06.2**	**-0.4**
CABF	**La Chapelle**	**70.78**	**14**	*e*P	**P**	**07 00 06.7**	**-0.4**
	comp=Z,14nm,0.9s,mb4.6						
ROSF	**Rostrenen**	**70.96**	**7**	*e*P	**P**	**07 00 07.9**	**-0.2**
LOR	**Lormes**	**70.96**	**12**	*e*P	**P**	**07 00 07.8**	**-0.4**
LOR				*e*R			
	comp=Z,409nm,22.0s						
GRR	**Gorron**	**71.29**	**8**	*e*P	**P**	**07 00 09.6**	**-0.6**
SKO	**Skopje**	**71.41**	**26**	*i* P	**P**	**07 00 19.3**	**+8.3**
LDF	**La Druitiere**	**71.59**	**9**	*e*P	**P**	**07 00 11.5**	**-0.5**
FLN	**La Foliniere**	**71.71**	**8**	*e*P	**P**	**07 00 12.0**	**-0.7**
FLN				*e*R			
	comp=Z,386nm,19.8s						
KKB	**Krupnik**	**72.01**	**27**	*e*P	**P**	**07 00 16.0**	**+1.4**
MMB	**Musomiste**	**72.06**	**28**	*e*P	**P**	**07 00 22.0**	**+7.1**
RZN	**Rozhen**	**72.57**	**28**	*e*P	**P**	**07 00 25.0**	**+7.1**
VTS	**Vitosha**	**72.66**	**27**	*e*P	**P**	**07 00 20.0**	**+1.6**
KDZ	**Kurdzhali**	**72.85**	**29**	*e*P	**P**	**07 00 20.0**	**+0.5**
BAIF	**Baives**	**73.71**	**11**	*e*P	**P**	**07 00 23.9**	**-0.5**
GERES	**GERESS Array B**	**74.76**	**18**	P	**P**	**07 00 30.0**	**-0.5**
	comp=Z,1.0nm,0.6s,mb3.9,baz=194,slow=5.5,SNR=5.9						
GRA1	**Grafenberg Arr**	**74.88**	**16**	*e*P	**P**	**07 00 31.1**	**0.0**
	comp=Z,6.0nm,0.9s,mb4.5						
GRA1				*e*PcP	PcP	07 00 45.4	0.0
GRA1				*e*		07 00 53.7	
BRTR	**Keskin Array B**	**75.41**	**35**	P	**P**	**07 00 34.8**	**+0.4**
	comp=Z,9.0nm,1.0s,mb4.7,baz=202,slow=6.7,SNR=25						
BRTR				LR	LR	07 33 35.4	
	comp=Z,86nm,20.0s,MS4.0,baz=195,slow=36						
MOX	**Moxa**	**75.85**	**16**	*e*P	**P**	**07 00 38.0**	**+1.3**
MOX				L		07 33 45.0	
PSZ	**Piszkesteto**	**75.88**	**22**	*e*P	**P**	**07 00 36.3**	**-0.6**
	comp=Z,19nm,1.3s,mb4.9						
PRU	**Pruhonice**	**76.03**	**18**	L		07 32 20.0	
MLR	**Muntele Rosu**	**76.16**	**27**	⇓*i* P	**P**	**07 00 39.7**	**+1.1**
PVCC	**Panska Ves**	**76.52**	**17**	L		07 32 50.0	
	comp=Z,0.5nm,20.2s						
MORC	**Moravsky Berou**	**76.73**	**20**	*e*P	**P**	**07 00 42.9**	**+1.2**
	comp=Z,2.6nm,0.8s,mb4.2						
VRI	**Vrincioaia**	**76.79**	**27**	⇓*i* P	**P**	**07 00 49.4**	**+7.3**
DPC	**Dobruska-Polom**	**76.86**	**19**	L		07 33 10.0	
	comp=Z,0.4nm,15.4s						
OKC	**Ostrava-Krasne**	**76.97**	**20**	L		07 34 30.0	
	comp=Z,0.5nm,16.7s						
OJC	**Ojcow**	**77.83**	**21**	*e*P	**P**	**07 00 45.0**	**-2.7**
OJC				*e*S	S	07 10 37.8	-1.3
OJC				MLR	MLR	07 34 12.5	
	comp=Z,300nm,21.3s,MS4.6						
SBA	**Scott Base**	**79.91**	**180**	*e*P	**P**	**07 01 00.1**	**+1.6**
	comp=Z,6.0nm,0.6s,mb4.7						
VNDA	**Vanda**	**80.19**	**179**	P	**P**	**07 01 00.1**	**+0.1**
	comp=Z,1.5nm,0.7

mb1 4.7/18,mb1mx4.7/19,ML3.8/1,MS4.8/13,Ms1 4.9/13, ms1mx4.8/20 Error ellipse: s-maj=18.1km s-min=14.4km az=132.0

SYO **14** *06:51:59.8,11.91S×166.25E,h20km,MB5.3,MS5.0*

MOS **14** *06:52:02.4±1.3,11.70S×165.64E,h33km,mb5.5/10, MS5.2/7,Error ellipse: s-maj=49.9km s-min=15.5km az=109.7*

ISC 14 06:51:56.1±1.5,**11.94S**±0.04×**166.21E**±0.05,**h5**km±9km, **h29**km±2.4km:**pP-P,n189,**σ**0§90**/127,**mb5.2**/52,**MS5.0**/46, **12C-7D,Santa Cruz Islands**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**6.02**	**161**	⇑*i*P		**Pn**		**06 53 30.4**	**+2.4**
BKM				S		**Sn**		**06 54 55.6**	**+17**
DZM	**Mont Dzumac**	**10.08**	**179**	*e*P		**P**		**06 54 23.2**	**-1.4**
DZM				eS		**S**		**06 56 10.8**	**-8.4**
DZM	**Mont Dzumac**	**10.08**	**179**	*e*P		**P**		**06 54 23.2**	**-1.5**
DZM				eS		**S**		**06 56 10.8**	**-8.4**
NOUC	**Port Laguerre**	**10.10**	**179**	*e*P		**P**		**06 54 24.8**	**-0.2**
NOUC				eS		**S**		**06 56 14.3**	**-5.6**
PMG	**Port Moresby**	**18.89**	**276**	P		**P**		**06 56 20.6**	**+0.8**
	1.0nm,0.3s,baz=99,slow=9.8,SNR=11								
PMG	**Port Moresby**	**18.89**	**276**	*e*P		**P**		**06 56 21.1**	**+1.3**
	140nm,1.5s								
WAU	**Wau**	**19.75**	**282**	*e*P		**P**		**06 56 31.2**	**+1.4**
CTA	**Charters Tower**	**20.80**	**245**	*e*P		**P**		**06 56 40.7**	**-0.3**
	54nm,1.0s								
CTA				eS		**S**		**07 00 37.7**	**+9.1**
CTA				*e*PCP		PcP		07 00 49.3	-0.7
CTA	**Charters Tower**	**20.80**	**245**	P		**P**		**06 56 40.9**	**-0.1**
	64nm,1.0s,baz=67,slow=13,SNR=34								
CTA				PcP		PcP		07 00 49.6	-0.3
	7.4nm,0.7s,baz=118,slow=4.0,SNR=6.2								
CTA				LR		LR		07 03 50.6	
	comp=Z,3μm,19.4s,MS4.7,baz=69,slow=34								
CTA				ScP				07 04 24.8	
	4.0nm,0.8s,baz=114,slow=21,SNR=3.6								
CTAO	**Charters Tower**	**20.80**	**245**	*e*P		**P**		**06 56 41.3**	**+0.3**
	274nm,1.5s								
ARMA	**Armidale**	**22.82**	**214**	*e*P		**P**		**06 57 02.6**	**+1.4**
RIV	**Riverview**	**25.76**	**210**	*e*P		**P**		**06 57 30.8**	**+1.3**
URZ	**Urewera**	**27.96**	**161**	P		**P**		**06 57 49.2**	**-0.4**
	5.3nm,0.8s,mb4.2,baz=152,slow=19,SNR=4.2								
URZ				LR		LR		07 07 35.3	
	comp=Z,2μm,21.0s,MS4.7,baz=1.5,slow=34								
STKA	**Stephens Creek**	**30.12**	**225**	*e*P		**P**		**06 58 09.1**	**0.0**
	14nm,0.8s,mb4.8								
STKA				eS		**S**		**07 03 07.1**	**+0.1**
STKA	**Stephens Creek**	**30.12**	**225**	P		**P**		**06 58 09.1**	**0.0**
	17nm,0.8s,mb4.8,baz=36,slow=8.4,SNR=12								
STKA				PcP		PcP		07 01 10.0	-0.7
	5.3nm,0.8s,baz=354,slow=5.5,SNR=3.0								
STKA				LR		LR		07 09 37.3	
	comp=Z,4μm,21.0s,MS5.0,baz=49,slow=35								
TOO	**Toolangi**	**31.55**	**212**	*e*P		**P**		**06 58 21.8**	**+0.1**
	9.9nm,0.8s,mb4.7								
WB2	**Warramunga Arr**	**31.60**	**251**	*e*P		**P**		**06 58 21.6**	**-0.7**
WB2				*e*PCP		PcP		07 01 14.5	-0.2
WB2				eS		**S**		**07 03 26.4**	**-4.1**
WRA	**Warramunga Arr**	**31.61**	**251**	P		**P**		**06 58 21.2**	**-1.1**
	1.3nm,0.7s,baz=93,slow=1.2,SNR=42								
WRA				PcP		PcP		07 01 14.1	-0.7
	11nm,0.8s,baz=81,slow=3.2,SNR=14								
WRA				S		**S**		**07 03 27.0**	**-3.6**
	1.4nm,1.1s,baz=71,slow=32,SNR=4.7								
WRA				ScP				07 04 55.8	
	5.3nm,1.2s,baz=78,slow=3.7,SNR=9.8								
WRA				LR		LR		07 10 39.6	
	comp=Z,2μm,18.9s,MS4.7,baz=85,slow=35								
RPZ	**Rata Peaks**	**31.94**	**173**	P		**P**		**06 58 24.8**	**-0.1**
	64nm,0.7s,mb5.5,baz=152,slow=8.6,SNR=28								
AS12	**Alice Springs**	**32.81**	**245**	*e*P		**P**		**06 58 31.6**	**-1.1**
	13nm,1.0s,mb4.8								
AS12				*e*PCP		PcP		07 01 17.4	-0.5
ASAR	**Alice Springs**	**32.81**	**245**	P		**P**		**06 58 31.2**	**-1.5**
	9.6nm,0.8s,mb4.8,baz=68,slow=9.4,SNR=63								
ASAR				PcP		PcP		07 01 16.5	-1.4
	14nm,0.8s,baz=86,slow=3.0,SNR=21								
ASAR				ScP				07 05 01.0	
	3.5nm,1.0s,baz=69,slow=4.0,SNR=7.7								
ASAR				LR		LR		07 10 55.8	
	comp=Z,1μm,19.0s,MS4.7,baz=76,slow=35								
KAKA	**Kakadu**	**33.03**	**265**	*e*P		**P**		**06 58 32.9**	**-1.8**
	23nm,0.6s,mb5.3								
KAKA				*e*PCP		PcP		07 01 17.9	-0.7
FITZ	**Fitzroy Crossi**	**39.60**	**256**	*e*P		**P**		**06 59 30.1**	**-0.3**
	13nm,0.8s,mb4.7								
FITZ				eS		**S**		**07 05 32.5**	**-1.0**
FITZ	**Fitzroy Crossi**	**39.60**	**256**	P		**P**		**06 59 30.2**	**-0.2**
	7.2nm,0.7s,mb4.5,baz=131,slow=4.0,SNR=24								
FITZ				LR		LR		07 15 32.8	
	comp=Z,1μm,18.8s,MS4.7,baz=88,slow=36								
FORT	**Forrest**	**39.91**	**236**	*e*P		**P**		**06 59 33.3**	**+0.4**
	125nm,0.8s,mb5.7								
KLBR	**Kellerberrin**	**48.62**	**238**	*e*P		**P**		**07 00 41.3**	**-1.7**
	30nm,1.1s,mb5.2								
NWAO	**Narrogin (SRO)**	**49.35**	**237**	LR		LR		07 23 05.8	
	comp=Z,30nm,18.9s,baz=29,slow=38								
NWAO	**Narrogin (SRO)**	**49.35**	**237**	*e*P		**P**		**07 00 48.7**	**+0.1**
TGY	**Tagaytay City**	**51.80**	**299**	LR		LR		07 21 57.9	
	comp=Z,666nm,19.6s,MS4.7,baz=166,slow=35								
MAJO	**Matsushiro**	**54.97**	**333**	*e*P		**P**		**07 01 28.8**	**-1.9**
MAJO				LR		LR			
	comp=Z,889nm,19.0s,MS4.9								
MAT	**Matsushiro**	**54.97**	**333**	P		**P**		**07 01 28.9**	**-1.8**
MAT				S		**S**		**07 09 12.0**	**+0.7**
MAT	**Matsushiro**	**54.97**	**333**	*e*P		**P**		**07 01 29.0**	**-1.7**
	comp=Z,17nm,1.0s,mb5.0								
MAT				eS		**S**		**07 09 13.0**	**+1.7**
MAT				LR		LR			
	comp=Z,690nm,19.0s,MS4.8								
QZH	**Quanzhou**	**59.16**	**309**	⇑*i*P		**P**		**07 01 59.3**	**-1.2**
QZH				S		**S**		**07 10 06.9**	**+0.1**
QZH				LR		LR			
	comp=N,570nm,9.8s								
QZH				LR		LR			
	comp=E,1μm,16.6s								
QZH				LR		LR			
	comp=Z,1μm,22.1s								
SSE	**Sheshan**	**60.81**	**316**	⇑P		**P**		**07 02 11.5**	**-0.3**
SSE				AMB		AMB			
	comp=Z,57nm,0.7s,mb5.8								
SSE				AMB		AMB			
	comp=Z,170nm,9.3s								
SSE				LR		LR			
	comp=N,401nm,15.0s,MS4.8								
SSE				LR		LR			
	comp=E,342nm,15.0s,MS4.8								
SSE				LR		LR			
	comp=Z,527nm,15.0s,MS4.8								
KS15	**Wonju Array Si**	**60.88**	**326**	*e*P		**P**		**07 02 11.8**	**-0.4**
YSS	**Yuzh-Sakhalins**	**62.27**	**342**	*e*P		**P**		**07 02 19.5**	**-2.0**
YSS				pmax		pmax			
	comp=Z,38nm,1.2s,mb5.4								
YSS	**Yuzh-Sakhalins**	**62.27**	**342**	*e*P		**P**		**07 02 21.1**	**-0.4**
NJ2	**Nanjing**	**62.97**	**315**	*e*P		**P**		**07 02 27.8**	**+1.5**
NJ2				PP		PP		07 04 48.3	+1.9
NJ2				S		**S**		**07 10 57.0**	**+1.7**
NJ2				AMB		AMB			
	comp=Z,70nm,1.1s,mb5.7								
NJ2				LR		LR			
	comp=N,470nm,13.6s,MS5.0								
NJ2				LR		LR			
	comp=E,680nm,14.9s,MS5.0								
QIZ	**Qiongzhong**	**63.50**	**298**	⇑P		**P**		**07 02 30.4**	**+0.4**
QIZ				S		**S**		**07 11 01.5**	**-0.7**
QIZ				SS		SS		07 15 10.1	-0.8
QIZ				LR		LR			
	comp=N,258nm,19.5s,MS4.6								
QIZ				LR		LR			
	comp=E,279nm,21.6s,MS4.6								
PET	**Petropavlovsk**	**65.03**	**355**	*e*P		**P**		**07 02 40.5**	**+1.1**
PET				*e*				07 03 11.4	
PET				*e*				07 05 08.0	
PET				eS		S		07 11 18.7	-1.7
PET				*e*				07 12 28.5	
PET				*e*SS		SS		07 15 35.6	+1.4
PET				pmax		pmax			
	comp=Z,100nm,11.7s								
PET				smax					
	comp=E,98nm,17.8s								
WHN	**Wuhan**	**65.32**	**312**	*e*P		**P**		**07 02 41.0**	**-0.7**
WHN				S		S		07 11 25.0	+0.5
WHN				LR		LR			
	comp=N,1μm,21.6s,MS5.2								
WHN				LR		LR			
	comp=E,1μm,22.4s,MS5.2								
WHN				LR		LR			
	comp=Z,2μm,22.3s,MS5.2								
MDJ	**Mudanjiang**	**65.35**	**332**	P		**P**		**07 02 42.3**	**+0.7**
MDJ				AP		pP		07 02 51.6	+8.3
MDJ				XP		sP		07 02 55.1	+11
MDJ				PCP		PcP		07 03 13.8	+0.1
MDJ				PP		PP		07 05 06.0	-1.6
MDJ				S		S		07 11 26.9	+2.3
MDJ				SS		SS		07 15 30.1	-9.1
MDJ				AMB		AMB			
	comp=Z,29nm,1.2s,mb5.2								
MDJ				LR		LR			
	comp=N,319nm,17.9s,MS4.7								
MDJ				LR		LR			
	comp=E,361nm,20.5s,MS4.7								
MDJ				LR		LR			
	comp=Z,497nm,21.8s,MS4.7								
MDJ	**Mudanjiang**	**65.35**	**332**	*e*P		**P**		**07 02 41.3**	**-0.3**
	comp=Z,46nm,1.3s,mb5.3								
MDJ				LR		LR			
	comp=Z,518nm,20.0s,MS4.7								
DL2	**Dalian**	**65.46**	**323**	P		**P**		**07 02 42.6**	**+0.1**
DL2				AP		pP		07 02 50.8	+6.7
DL2				AMB		AMB			
	comp=Z,50nm,1.0s,mb5.5								
DL2				AMB		AMB			
	comp=Z,140nm,9.9s								
DL2				LR		LR			
	comp=N,260nm,18.2s,MS4.5								
DL2				LR		LR			
	comp=E,150nm,17.3s,MS4.5								
VNDA	**Vanda**	**65.61**	**181**	P		**P**		**07 02 42.0**	**-0.9**
	comp=E,13nm,0.9s,mb5.0,baz=359,slow=7.2,SNR=26								
VNDA	**Vanda**	**65.61**	**181**	*e*P		**P**		**07 02 42.0**	**-0.8**
	comp=E,24nm,1.3s,mb5.1								
VNDA				LR		LR			
	comp=Z,474nm,19.0s,MS4.7								
SBA	**Scott Base**	**65.91**	**180**	*e*P		**P**		**07 02 44.8**	**+0.1**
	comp=Z,85nm,1.1s,mb5.7								
SBA				LR		LR			
	comp=Z,985nm,21.0s,MS5.0								
CN2	**Changchun**	**66.74**	**329**	*e*P		**P**		**07 02 50.1**	**-0.4**
CN2				PCP		PcP		07 03 17.5	-2.0
CN2				AMB		AMB			
	comp=Z,60nm,1.0s,mb5.6								
CN2				LR		LR			
	comp=Z,600nm,21.0s,MS4.8								
IPM	**Ipoh**	**66.85**	**280**	⇑*e*P		**P**		**07 02 52.5**	**+0.7**
KLR	**Kul'dur**	**68.05**	**336**	*e*P		**P**		**07 02 57.7**	**-1.0**
KLR				MLR		MLR			
	comp=E,700nm,17.0s								
ENH	**Enshi**	**68.81**	**309**	*e*P		**P**		**07 03 04.0**	**+0.2**
	comp=E,61nm,1.1s,mb5.4								
GYA	**Guiyang**	**69.29**	**304**	P		**P**		**07 03 07.8**	**+1.0**
GYA				XP		sP		07 03 21.6	+13
GYA				S		S		07 12 14.0	+1.6
GYA				AMB		AMB			
	comp=Z,10.0nm,0.8s,mb4.8								
GYA				LR		LR			
	comp=N,380nm,21.3s,MS4.8								
GYA				LR		LR			
	comp=E,490nm,19.5s,MS4.8								
GYA				LR		LR			
	comp=Z,480nm,20.4s,MS4.7								
BJT	**Baijiatuan**	**69.45**	**321**	*e*P		**P**		**07 03 07.4**	**-0.1**
	comp=Z,70nm,1.1s,mb5.5								
BJT				LR		LR			
	comp=Z,1μm,22.0s,MS5.1								
BJI	**Beijing**	**69.46**	**321**	P		**P**		**07 03 07.6**	**0.0**
BJI				AP		pP		07 03 14.1	+4.9
BJI				XP		sP		07 03 18.3	+8.5
BJI				S		S		07 12 14.1	0.0
BJI				AMB		AMB			
	comp=Z,56nm,1.2s,mb5.4								
BJI				AMB		AMB			
	comp=Z,432nm,3.8s								
BJI				LR		LR			
	comp=N,616nm,20.6s,MS4.9								
BJI				LR		LR			
	comp=E,559nm,24.9s,MS4.9								
BJI				LR		LR			
	comp=Z,1μm,21.2s,MS5.0								
TIY	**Taiyuan**	**70.52**	**317**	⇑P		**P**		**07 03 14.0**	**-0.1**
TIY				S		S		07 12 25.0	-1.6
TIY				LR		LR			
	comp=E,315nm,14.0s								
TIY				LR		LR			
	comp=Z,583nm,15.0s,MS5.0								
XAN	**Xi'an**	**71.06**	**312**	P		**P**		**07 03 18.0**	**+0.6**
XAN				AP		pP		07 03 23.9	+4.8
XAN				AMB		AMB			
	comp=Z,19nm,1.0s,mb5.0								
KMI	**Kunming**	**71.97**	**301**	*e*P		**P**		**07 03 24.9**	**+1.8**
KMI				S		S		07 12 45.3	+1.7
KMI				SS		SS		07 17 15.5	-6.4
KMI				SSS		SSS		07 20 31.8	+1.0
KMI				AMB		AMB			
	comp=Z,19nm,1.3s,mb4.9								
KMI				LR		LR			
	comp=N,307nm,19.8s,MS4.9								
KMI				LR		LR			
	comp=E,588nm,19.8s,MS4.9								
MA2	**Magadan**	**72.35**	**352**	*e*P		**P**		**07 03 22.3**	**-2.4**
MA2				pmax		pmax			
	comp=Z,750nm,10.0s								
MIR	**Mirnyy**	**72.44**	**204**	⇓*e*P		**P**		**07 03 25.5**	**+0.4**
MIR				*e*				07 03 50.0	
MIR				pmax		pmax			
	comp=Z,80nm,1.0s,mb5.6								
MIR				MLR		MLR			
	comp=Z,1μm,14.0s,MS5.2								
HHC	**Hu-ho-hao-te**	**72.80**	**320**	*e*P		**P**		**07 03 28.8**	**+1.0**
HHC				AP		pP		07 03 38.6	+9.2
HHC				PCP		PcP		07 03 45.3	+0.1
HHC				PP		PP		07 06 14.9	+3.1
HHC				S		S		07 12 54.9	+2.1
HHC				SKS		SKS		07 13 28.3	-4.6
HHC				SCS		ScS		07 13 34.5	+2.1
HHC				AMB		AMB			
	comp=Z,46nm,1.3s,mb5.2								
HHC				AMB		AMB			
	comp=Z,275nm,3.7s								
HHC				LR		LR			
	comp=N,284nm,17.9s,MS4.7								
HHC				LR		LR			
	comp=E,227nm,18.4s,MS4.7								
HHC				LR		LR			
	comp=Z,349nm,19.0s,MS4.7								
CMAR	**Chiang Mai Arr**	**72.88**	**294**	P		**P**		**07 03 28.6**	**0.0**
	comp=Z,5.4nm,0.8s,mb4.5,baz=120,slow=4.7,SNR=18								
CMAR				LR		LR		07 34 39.2	
	comp=Z,276nm,19.4s,MS4.5,baz=105,slow=35								
HIA	**Hailar**	**73.37**	**330**	*e*P		**P**		**07 03 30.3**	**-0.6**
	comp=Z,50nm,1.1s,mb5.3								
HIA				LR		LR			
	comp=Z,603nm,20.0s,MS4.9								
CD2	**Chengdu**	**73.50**	**307**	P		**P**		**07 03 33.1**	**+1.1**
CD2				PP		PP		07 06 20.3	+2.5
CD2				PPP		PPP		07 08 05.8	+4.0
CD2				S		S		07 12 57.8	-3.1
CD2				SKS		SKS		07 13 30.5	-7.8
CD2				SS		SS		07 17 44.1	-1.7
CD2				AMB		AMB			
	comp=Z,30nm,1.1s,mb5.1								
CD2				AMB		AMB			
	comp=Z,430nm,7.8s								
CD2				LR		LR			
	comp=N,530nm,18.0s								
CD2				LR		LR			
	comp=Z,490nm,18.5s,MS4.8								
BTO	**Baotou**	**73.66**	**319**	*e*P		**P**		**07 03 33.8**	**+1.1**
BTO				S		S		07 13 06.8	+4.3
BTO				AMB		AMB			
	comp=Z,81nm,1.1s,mb5.6								
LZH	**Lanzhou**	**75.69**	**312**	⇓P		**P**		**07 03 45.0**	**+0.4**
LZH				AP		pP		07 03 55.1	+8.9
LZH				XP		sP		07 03 59.3	+13
LZH				PP		PP		07 06 37.1	+0.9
LZH				AMB		AMB			
	comp=Z,67nm,1.1s,mb5.5								
LZH				AMB		AMB			
	comp=Z,518nm,9.1s								
LZH				LR		LR			
	comp=N,697nm,14.5s								
LZH				LR		LR			
	comp=Z,1μm,17.8s,MS5.2								
CLNS	**Chul'man**	**76.57**	**338**	*e*P		**P**		**07 03 49.6**	**+0.5**
CLNS				pmax		pmax			
	comp=Z,20nm,1.4s,mb4.8								
CLNS				pmax		pmax			
	comp=N,10.0nm,0.9s								
CLNS				pmax		pmax			
	comp=E,6.0nm,1.0s								
CLNS				pmax		pmax			
	comp=N,190nm,11.3s								
CLNS				pmax		pmax			
	comp=Z,70nm,11.8s								
CLNS				pmax		pmax			
	comp=E,130nm,12.9s								
QSPA	**South Pole Qui**	**78.07**	**180**	*e*P		**P**		**07 03 57.0**	**+0.1**
	comp=E,56nm,1.0s,mb5.5								
YAK	**Yakutsk**	**79.08**	**343**	*e*P		**P**		**07 03 59.0**	**-3.8**
YAK				*e*				07 04 09.7	
YAK				pmax		pmax			
	comp=Z,9.0nm,0.8s,mb4.8								
YAK				pmax		pmax			
	comp=N,2.0nm,0.9s								
YAK				pmax		pmax			
	comp=N,19nm,1.0s								
YAK				pmax		pmax			
	comp=N,4.0nm,1.1s								
YAK				pmax		pmax			
	comp=E,6.0nm,1.2s								
YAK				MLR		MLR			
	comp=Z,694nm,18.0s,MS5.0								
YAK				MLR		MLR			
	comp=N,450nm,19.0s,MS4.9								
YAK				MLR		MLR			
	comp=E,231nm,18.0s,MS4.9								
SONM	**Songino Array**	**79.65**	**324**	P		**P**		**07 04 06.5**	**+0.3**
	comp=E,26nm,0.9s,mb5.2,baz=135,slow=3.1,SNR=64								
BILL	**Bilibino**	**79.77**	**0**	⇑*e*P		**P**		**07 04 06.1**	**-0.3**
BILL				pmax		pmax			
	comp=Z,8.0nm,1.1s,mb4.6								
BILL	**Bilibino**	**79.77**	**0**	*e*P		**P**		**07 04 05.2**	**-1.2**
	comp=Z,4.7nm,0.7s,mb4.5								
GTA	**Gaotai**	**80.00**	**314**	⇑P		**P**		**07 04 09.4**	**+1.2**
GTA				S		S		07 14 14.6	+3.2
GTA				SKS		SKS		07 14 17.3	-7.8
GTA				AMB		AMB			
	comp=Z,67nm,1.8s,mb5.3								
GTA				AMB		AMB			
	comp=Z,314nm,6.9s								
GTA				LR		LR			
	comp=N,210nm,19.9s,MS4.7								
GTA				LR		LR			
	comp=E,245nm,20.6s,MS4.7								
GTA				LR		LR			
	comp=Z,267nm,19.5s,MS4.6								
PMR	**Palmer**	**81.24**	**20**	*e*P		**P**		**07 04 12.7**	**-1.6**
	comp=Z,3.6nm,1.0s,mb4.3								
PMR				LR		LR			
	comp=Z,1μm,19.0s,MS5.3								
SHL	**Shillong**	**81.34**	**298**	*e*P		**P**		**07 04 16.0**	**+0.4**
SHL				*e*S		PcP		07 04 24.0	+1.8
BOD	**Bodaibo**	**81.53**	**335**	*e*P		**P**		**07 04 14.9**	**-1.0**
ZAK	**Zakamensk**	**82.69**	**325**	⇓*i*P		**P**		**07 04 21.4**	**-0.7**
TLY	**Talaya**	**83.11**	**326**	*c i*P		**P**		**07 04 24.2**	**0.0**
TLY				*i*				07 04 31.8	
TLY				*i* S		S		07 14 44.2	+1.0
TLY				*e*SS		SS		07 20 00.3	-10
TLY				pmax		pmax			
	comp=Z,551nm,1.0s								
TLY				MLR		MLR			
	comp=Z,3μm,19.0s,MS5.7								
YBH	**Yreka Blue Hor**	**84.19**	**45**	P		**P**		**07 04 30.2**	**+0.2**
	comp=Z,1.6nm,0.7s,mb4.2,baz=152,slow=0.7,SNR=4.9								
YBH	**Yreka Blue Hor**	**84.19**	**45**	*e*P		**P**		**07 04 30.4**	**+0.4**
ILAR	**Eielson Array**	**84.21**	**18**	P		**P**		**07 04 28.4**	**-1.1**
	comp=Z,3.8nm,0.7s,mb4.6,baz=234,slow=5.7,SNR=8.9								
ILAR				PKKPbc				07 22 41.1	
	comp=Z,0.4nm,0.8s,baz=18,slow=2.9,SNR=4.5								
ILAR				LR		LR		07 43 03.9	
	comp=Z,420nm,18.1s,MS4.9,baz=8.7,slow=36								
MOY	**Mondy**	**84.57**	**325**	*e*P		**P**		**07 04 32.9**	**+1.3**
NVAR	**Mina Array Bea**	**86.25**	**50**	P		**P**		**07 04 40.0**	**-0.3**
	comp=Z,1.1nm,0.8s,mb4.1,baz=223,slow=6.4,SNR=9.9								
NVAR				LR		LR		07 36 49.4	
	comp=Z,2μm,19.7s,MS5.5,baz=295,slow=31								
TIXI	**Tiksi**	**87.05**	**349**	*e*P		**P**		**07 04 43.7**	**+0.2**
TIXI				eS		S		07 15 15.9	-5.4
TIXI				pmax		pmax			
	comp=Z,80nm,1.2s,mb5.8								
TIXI				MLR		MLR			
	comp=Z,2μm,17.0s,MS5.7								
GUN	**Gumba**	**87.15**	**299**	*e*P		**P**		**07 04 45.2**	**+0.2**
	comp=Z,82nm,1.3s,mb5.8								
WVOR	**Wild Horse Val**	**87.28**	**46**	*e*P		**P**		**07 04 45.6**	**+0.4**
WVOR				LR		LR			
	comp=Z,1μm,20.0s,MS5.3								
PKI	**Pulchoki**	**87.46**	**299**	*e*P		**P**		**07 04 46.7**	**+0.2**
	comp=Z,177nm,1.4s,mb6.1								
KKN	**Kakani**	**87.63**	**299**	*e*P		**P**		**07 04 47.3**	**0.0**
	comp=Z,79nm,1.2s,mb5.8								
LDFC	**Landfair**	**87.71**	**54**	*e*P		**P**		**07 04 47.6**	**+0.1**
DMN	**Daman**	**87.73**	**299**	*e*P		**P**		**07 04 48.1**	**+0.3**
	comp=Z,116nm,1.2s,mb6.0								
NEN	**Nelson**	**88.08**	**53**	P		**P**		**07 04 48.9**	**-0.4**
GKN	**Gorkha**	**88.23**	**299**	*e*P		**P**		**07 04 50.1**	**-0.1**
	comp=Z,39nm,0.8s,mb5.7								
KOLN	**Koldanda**	**89.07**	**298**	*e*P		**P**		**07 04 53.3**	**-0.9**
	comp=Z,74nm,1.4s,mb5.8								
WMQ	**Urumqi**	**90.04**	**315**	*e*P		**P**		**07 04 59.4**	**+1.0**
WMQ				AP		pP		07 05 10.0	+10
WMQ				XP		sP		07 05 13.9	+13
WMQ				AMB		AMB			
	comp=Z,47nm,1.5s,mb5.6								
WMQ				AMB		AMB			
	comp=Z,311nm,7.6s								
WMQ				LR		LR			
	comp=N,678nm,17.2s,MS5.2								
WMQ				LR		LR			
	comp=E,465nm,18.7s,MS5.2								
WMQ				LR		LR			
	comp=Z,747nm,18.0s,MS5.2								
HLID	**Hailey**	**90.58**	**46**	*e*P		**P**		**07 05 01.0**	**+0.2**
	comp=Z,3.2nm,1.3s,mb4.5								
HLID				LR		LR			
	comp=Z,504nm,20.0s,MS5.0								
INK	**Inuvik**	**90.60**	**19**	PKKPbc		

VNA3				*e*			07 09 20.7		
VNA3				*e*			07 10 04.0		
VNA2	**Neumayer--Watz**	**97.22**	**182**	⇓*iP*		**P**	**07 05 32.4**	**+1.8**
VNA2				*e*			07 05 52.2		
VNA2				*e*			07 09 22.5		
KURK	**Kurchatov**	**97.61**	**320**	*eP*		**P**	**07 05 32.4**	**-0.4**
KSH	**Kashi**	**97.67**	**309**	*eP*		**P**	**07 05 39.0**	**+5.6**
USHA	**Ushuaia**	**99.21**	**151**	LR		LR	07 39 12.3		
	comp=Z,294nm,21.8s,MS4.7,baz=300,slow=29								
KKAR	**Karatay Array**	**102.19**	**312**	*i* P		Pdif	07 05 53.3	-0.4	
KKAR				pmax		pmax			
	comp=Z,1.0nm,0.6s								
BVA0	**Borovoye Array**	**102.93**	**322**	*i* P		Pdif	07 05 55.6	-1.1	
BRVK	**Borovoye**	**103.00**	**322**	*e*Pdif		Pdif	07 05 56.5	-0.5	
ZRNK	**Zerenda**	**103.76**	**322**	*e*Pdif		Pdif	07 05 59.8	-0.6	
ARCES	**ARCESS Array B**	**117.31**	**345**	PKP		PKPdf	07 10 42.6	-2.1	
	comp=Z,1.7nm,0.5s,baz=87,slow=2.1,SNR=27								
ARE0	**ARCESS Array S**	**117.31**	**345**	*e*PKPdf		PKPdf	07 10 43.0	-1.7	
ZEI	**Tsey**	**121.62**	**313**	*i* PKIKP		PKPdf	07 10 52.0	-1.8	
ZEI				*e*			07 12 24.0		
ZEI				MLR		MLR			
	comp=Z,500nm,20.0s,MS5.2								
OBN	**Obninsk**	**121.80**	**329**	*i* PKIKP		PKPdf	07 10 53.2	-0.6	
OBN				pmax		pmax			
	comp=Z,6.0nm,1.1s								
KIV	**Kislovodsk**	**122.18**	**315**	*d* iPKIKP		PKPdf	07 10 53.5	-1.3	
KIV				pmax		pmax			
	comp=Z,3.0nm,0.5s								
FINES	**FINESS Array B**	**122.77**	**339**	PKP		PKPdf	07 10 53.5	-1.9	
	comp=Z,1.5nm,0.7s,baz=90,slow=1.9,SNR=6.0								
MZLS	**Mizel**	**122.97**	**291**	P		PKPdf	07 10 56.4	-0.3	
CPUP	**Villa Florida**	**123.09**	**132**	PKKPbc			07 20 46.2		
	comp=Z,1.5nm,0.7s,baz=226,slow=16,SNR=4.9								
KAMS	**Al Khamasin**	**123.55**	**286**	P		PKPdf	07 10 57.2	-0.7	
SOC	**Sochi**	**124.34**	**315**	*eP*		Pdif	07 07 27.1	-4.1	
SOC				*e*			07 10 56.3		
SOC				*e*			07 12 44.8		
SOC				*e*			07 17 56.9		
SOC				*e*SS		SS	07 29 39.6	+4.1	
SOC				pmax		pmax			
	comp=Z,12nm,0.6s								
SOC				pmax		pmax			
	comp=N,21nm,1.0s								
SOC				pmax		pmax			
	comp=E,4.0nm,0.4s								
SOC				pmax		pmax			
	comp=Z,16nm,0.9s								
SOC				pmax		pmax			
	comp=N,15nm,1.2s								
SOC				pmax		pmax			
	comp=E,16nm,0.9s								
SOC				MLR		MLR			
	comp=Z,261nm,18.0s,MS4.9								
SOC				MLR		MLR			
	comp=N,260nm,20.0s,MS5.2								
SOC				MLR		MLR			
	comp=E,440nm,23.0s,MS5.2								
DJNS	**Zahran al Janu**	**124.45**	**283**	P		PKPdf	07 10 59.7	-0.1	
TATS	**Tathlith**	**124.57**	**286**	P		PKPdf	07 11 00.2	+0.1	
SUR	**Sutherland**	**124.89**	**216**	PKP		PKPdf	07 10 59.7	-0.7	
	comp=E,5.6nm,0.8s,baz=260,slow=8.0,SNR=4.2								
SUR	**Sutherland**	**124.89**	**216**	*e*PKPdf		PKPdf	07 10 59.4	-1.1	
AFFS	**'Afif**	**124.98**	**291**	P		PKPdf	07 11 00.2	-0.6	
ANN	**Anapa**	**125.50**	**317**	*e*PKIKP		PKPdf	07 10 57.2	-4.0	
ANN				pmax		pmax			
	comp=Z,10.0nm,0.8s								
FRSS	**Farasan al Kab**	**125.77**	**282**	P		PKPdf	07 11 01.1	-1.3	
HILS	**Ha'il**	**125.87**	**295**	P		PKPdf	07 11 01.9	-0.5	
BLJS	**Baljurashi**	**126.34**	**286**	P		PKPdf	07 11 03.7	+0.3	
LBTB	**Lobatse**	**126.85**	**226**	*e*PKPdf		PKPdf	07 11 03.3	-1.0	
KMBO	**Kilima Mbogo**	**127.67**	**259**	*e*PKPdf		PKPdf	07 11 05.6	-0.7	
	comp=Z,6.8nm,0.9s,baz=47,slow=5.4,SNR=15								
KMBO	**Kilima Mbogo**	**127.67**	**259**	*e*PKPdf		PKPdf	07 11 06.2	0.0	
NB2	**NORSAR Subarra**	**127.68**	**345**	PKPdf		PKPdf	07 11 02.4	-2.5	
	comp=Z,4.0nm,1.1s,baz=31,slow=1.9								
NOA	**NORSAR Array B**	**127.68**	**345**	PKP		PKPdf	07 11 03.2	-1.8	
	comp=Z,0.7nm,0.7s,baz=39,slow=4.3,SNR=4.2								
NOA	**NORSAR Array B**	**127.68**	**345**	PKP		PKPdf	07 11 03.2	-1.8	
AKASG	**Malin Array Be**	**127.86**	**327**	PKP		PKPdf	07 11 04.1	-1.5	
	comp=Z,0.4nm,0.3s,baz=62,slow=0.9,SNR=10								
AKASG				PP		PP	07 13 03.9	-5.5	
	comp=Z,0.2nm,0.3s,baz=53,slow=6.3,SNR=4.7								
KBRS	**Khaybar**	**128.26**	**293**	P		PKPdf	07 11 07.0	-0.1	
ASF	**Jabal al Asfar**	**129.40**	**302**	PKP		PKPdf	07 11 08.8	-0.3	
	comp=Z,6.4nm,0.9s,baz=352,slow=5.0,SNR=5.0								
YNBS	**Yanbu' al Bahr**	**129.53**	**292**	P		PKPdf	07 11 09.6	0.0	
BRTR	**Keskin Array B**	**129.90**	**312**	PKP		PKPdf	07 11 09.1	-0.7	
	comp=Z,1.3nm,0.6s,baz=135,slow=3.5,SNR=8.2								
BRTR				PP		PP	07 13 21.6	-1.5	
	comp=Z,1.1nm,1.0s,baz=14,slow=5.9,SNR=3.5								
PCRV	**Puerto La Cruz**	**130.12**	**87**	PKP		PKPdf	07 11 10.4	-0.5	
	comp=Z,10nm,1.0s,baz=213,slow=0.9,SNR=3.0								
TBKS	**Tabuk**	**130.38**	**297**	P		PKPdf	07 11 09.7	-1.4	
JMQS	**Jabal Moqyreh**	**130.86**	**298**	P		PKPdf	07 11 11.5	-0.4	
JMOS	**Jabal al Moall**	**131.48**	**298**	P		PKPdf	07 11 12.4	-0.7	
ALWS	**Ilw as Safayha**	**131.49**	**299**	P		PKPdf	07 11 11.9	-1.2	
BDAS	**Al Bad'**	**131.61**	**297**	P		PKPdf	07 11 13.0	-0.4	
TSUM	**Tsumeb**	**136.25**	**225**	PKP		PKPdf	07 11 21.7	-0.4	
	comp=Z,3.1nm,0.7s,baz=148,slow=7.4,SNR=6.0								
KHC	**Kasperske Hory**	**136.54**	**334**	*e*PKPDF		PKPdf	07 11 22.5	+0.7	
GERES	**GERESS Array B**	**136.70**	**334**	PKP		PKPdf	07 11 21.4	-0.7	
	comp=Z,6.7nm,1.2s,baz=72,slow=4.2,SNR=11								
GERES				SKP			07 14 55.0		
	comp=Z,1.0nm,0.9s,baz=45,slow=1.9,SNR=5.6								
GRA1	**Grafenberg Arr**	**137.08**	**336**	*e*PKPdf		PKPdf	07 11 23.5	+0.7	
GRA1				LR		LR			
	comp=Z,400nm,21.2s,MS5.1								
GRF	**Grafenberg Arr**	**137.08**	**336**	*e*PKIKP		PKPdf	07 11 23.5	+0.7	
GRF				MLR		MLR			
	comp=Z,400nm,21.2s,MS5.1								
KRIS	**Kristallenia**	**137.59**	**310**	*e*PKPdf		PKPdf	07 11 22.3	-2.0	
LPL	**La Plagne**	**142.24**	**336**	*e*PKP1		PKPdf	07 11 29.8	-2.5	
LPG	**La Plagne**	**142.25**	**336**	*e*PKP1		PKPdf	07 11 29.1	-3.2	
MBDF	**Montbardon**	**142.88**	**335**	*e*PKP1		PKPdf	07 11 30.4	-3.0	
ORIF	**Oris-en-Rattie**	**143.07**	**337**	*e*PKP1		PKPbc	07 11 30.8	+1.6	
	comp=Z,27nm,1.0s								
SBF	**Sospel**	**143.30**	**334**	*e*PKP1		PKPbc	07 11 29.1	-0.8	
	comp=Z,49nm,0.9s								
MFF	**Saint Martin d**	**143.57**	**344**	*e*PKP1		PKPbc	07 11 31.7	+1.0	
	comp=Z,12nm,0.8s								
VIVF	**Saint-Julien-l**	**143.58**	**338**	*e*PKP1		PKPbc	07 11 31.0	+0.2	
PGF	**Pioggiola**	**143.63**	**331**	*e*PKP1		PKPbc	07 11 30.3	-0.7	
	comp=Z,37nm,1.0s								
FRF	**La Foret Royal**	**143.88**	**334**	*e*PKP1		PKPbc	07 11 31.3	-0.4	
SMRF	**Simiane la Rot**	**143.98**	**336**	*e*PKP1		PKPbc	07 11 32.2	+0.2	
	comp=Z,69nm,1.4s								
LMR	**La Mourre**	**144.12**	**334**	*e*PKP1		PKPbc	07 11 32.2	-0.2	
	comp=Z,82nm,1.3s								
RJF	**Les Rejaudoux**	**144.27**	**341**	*e*PKP1		PKPbc	07 11 33.1	+0.3	
CAF	**Calviac**	**144.44**	**341**	*e*PKP1		PKPbc	07 11 34.0	+0.8	
	comp=Z,103nm,1.4s								
LASF	**Ste Croix**	**144.55**	**338**	*e*PKP1		PKPbc	07 11 34.3	+0.7	
	comp=Z,58nm,1.0s								
LFF	**La Frestale**	**144.84**	**342**	*e*PKP1		PKPbc	07 11 35.0	+0.6	
	comp=Z,22nm,0.7s								
MTLF	**Montolieu**	**145.78**	**339**	*e*PKP1		PKPbc	07 11 35.6	-1.2	
	comp=Z,120nm,1.4s								
CMAH	**Djebel Manchou**	**148.88**	**326**	P		PKPdf	07 11 48.0	+4.2	
CASM	**Ain Smara**	**149.65**	**326**	P		PKPdf	07 11 50.0	+5.0	
DFRA	**Djebel Bou Aff**	**149.77**	**327**	P		PKPdf	07 11 51.0	+5.8	
CTEI	**Djebel Teioual**	**149.84**	**326**	P		PKPdf	07 11 50.5	+5.2	
ESDC	**Sonseca Array**	**151.04**	**344**	PKP		PKPdf	07 11 45.0	-2.0	
	comp=Z,0.3nm,0.3s,baz=85,slow=3.5,SNR=4.0								
ESDC				PKPbc		PKPdf	07 11 51.8	+4.8	
	comp=Z,1.2nm,0.5s,baz=11,slow=1.8,SNR=12								
KIC	**Kosan Boka**	**169.49**	**239**	*eP*		PKPab	07 13 19.5	-1.0	
	comp=Z,104nm,1.3s								
LIC	**Lamto**	**169.65**	**237**	*eP*		PKPab	07 13 21.3	+0.1	
	comp=Z,82nm,1.5s								
TIC	**Toumodi**	**169.87**	**239**	*eP*		PKPab	07 13 22.3	+0.1	
	comp=Z,246nm,1.6s								

NEIC ***14*** *07:25:05.7, 30.91S×71.64W, h30km, ML3.4(GUC), After GUC.*

GUC 14 07:25:05.7±0.8, 30.91S×71.64W, h30km±2km, MD3.7, ML3.4, 7C-2D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
OVCH	**Ovalle**	**0.48**	**51**	⇑*iP*		Pb	07 25 15.7	-0.1
OVCH				*eS*		Sb	07 25 22.9	+0.2
CMCH	**Combarbala**	**0.60**	**116**	⇑*iP*		Pb	07 25 18.0	+0.2
CMCH				*i* S		Sb	07 25 26.8	+0.8
CMCH				AMP			07 25 27.2	

	comp=N,5μm,0.1s								
ILCH	**Illapel**	**0.83**	**151**	⇓*iP*		Pn	07 25 20.8	-0.6	
ILCH				*i* S		Sb	07 25 32.1	-0.1	
TLL	**Tololo Astrono**	**1.03**	**44**	*i* P		Pn	07 25 24.4	+0.1	
LSCH	**La Serena**	**1.06**	**19**	*eP*		Pn	07 25 24.6	-0.1	
PTCH	**Petorca**	**1.48**	**156**	⇑*iP*		Pn	07 25 31.1	+0.4	
PTCH				*i* S		Sn	07 25 50.3	+1.2	
PTCH				AMP			07 25 53.3		
	comp=E,1μm,0.2s								
PACH	**Papudo**	**1.63**	**174**	⇑*iP*		Pn	07 25 33.3	+0.4	
PACH				*i* S		Sn	07 25 54.5	+1.5	
JACH	**Jahuel**	**1.98**	**154**	⇑*iP*		Pn	07 25 38.8	+1.0	
JACH				*i* S		Sn	07 26 03.6	+1.8	
ROCH	**El Roble**	**2.12**	**166**	*i* P		Pn	07 25 41.2	+1.3	
ROCH				*i* S		Sn	07 26 07.9	+2.3	
PEL	**Peldehue**	**2.37**	**160**	*i* S		Sn	07 26 13.0	+1.2	
PEL				AMP			07 26 23.8		
	comp=E,330nm,0.8s								
VACH	**Vallenar**	**2.45**	**18**	⇑*iP*		Pn	07 25 45.2	+0.6	
VACH				*i* S		Sn	07 26 14.7	+0.8	
CLCH	**Cerro Calan**	**2.65**	**160**	*i* P		Pn	07 25 48.2	+0.7	
CLCH				*i* S		Sn	07 26 20.2	+1.3	
CLCH				AMP			07 26 32.7		
	comp=E,179nm,0.5s								
RCDM	**Rinconada Maip**	**2.67**	**165**	AMP			07 26 32.0		
	comp=E,132nm,0.1s								
FCH	**Farellones**	**2.67**	**155**	⇓*iP*		Pn	07 25 48.4	+0.7	
FCH				*i* S		Sn	07 26 21.2	+1.8	
FCH				AMP			07 26 29.4		
	comp=N,94nm,0.4s								
ANTU	**Antumapu**	**2.78**	**162**	AMP			07 26 33.0		
	comp=N,94nm,0.3s								
LNV	**Longovilo**	**3.04**	**176**	⇑*iP*		Pn	07 25 53.1	+0.1	
LNV				*i* S		Sn	07 26 29.5	+0.7	
CHCH	**Chadas Angostu**	**3.13**	**165**	*i* P		Pn	07 25 54.4	+0.2	
LMEL	**Las Melosas**	**3.17**	**158**	*i* P		Pn	07 25 56.3	+1.4	
LMEL				*i* S		Sn	07 26 33.7	+1.6	
LMEL				AMP			07 26 48.2		
	comp=N,122nm,0.2s								

NEIC ***14*** *07:35:47.3±2.6, 18.18S×178.03W, h541km±29km, mb4.3/16, Error ellipse: s-maj=14.9km s-min=13.6km az=61.0*
BJI ***14*** *07:35:47.3, 18.20S×178.00W, h540km, mB4.6, mb4.6*
IDC ***14*** *07:35:47.7±2.5, 18.27S×178.02W, h542km±27km, mb3.7/13, mb1 3.8/13, mb1mx3.8/16, Error ellipse: s-maj=17.6km s-min=16.4km az=171.0*

ISC 14 07:35:49.6±2.1, 18.3S±0.1×178.20W±0.10, h576km±27km, n61, σ1§15/41, mb4.3/24, 7D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**20.36**	**191**	P		**P**	**07 39 46.0**	**-2.8**
	17nm,0.4s,baz=331,slow=2.2,SNR=30							
RPZ	**Rata Peaks**	**26.96**	**197**	P		**P**	**07 40 45.0**	**-2.6**
	6.5nm,0.6s,mb4.4,baz=27,slow=2.3,SNR=4.1							
ARMA	**Armidale**	**29.95**	**240**	⇓*iP*		**P**	**07 41 14.8**	**+1.3**
CTA	**Charters Tower**	**33.59**	**261**	⇓*iP*		**P**	**07 41 44.7**	**+0.4**
	12nm,0.5s,mb4.8							
CTA	**Charters Tower**	**33.59**	**261**	P		**P**	**07 41 44.6**	**+0.3**
	10.0nm,0.4s,mb4.8,baz=89,slow=13,SNR=18							
CTAO	**Charters Tower**	**33.59**	**261**	*eP*		**P**	**07 41 44.4**	**+0.1**
	16nm,0.6s,mb4.8							
PMG	**Port Moresby**	**34.71**	**280**	P		**P**	**07 41 54.7**	**+1.0**
	34nm,0.8s,mb5.0,baz=96,slow=6.4,SNR=8.7							
PMG	**Port Moresby**	**34.71**	**280**	*eP*		**P**	**07 41 54.6**	**+0.8**
	39nm,0.9s,mb5.0							
TOO	**Toolangi**	**37.11**	**231**	*eP*		**P**	**07 42 14.8**	**+1.6**
	3.2nm,0.5s,mb4.1							
STKA	**Stephens Creek**	**38.64**	**242**	⇓*iP*		**P**	**07 42 27.2**	**+1.4**
	8.1nm,0.6s,mb4.4							
STKA	**Stephens Creek**	**38.64**	**242**	P		**P**	**07 42 27.2**	**+1.4**
	10nm,0.5s,mb4.6,baz=96,slow=10,SNR=34							
WB2	**Warramunga Arr**	**44.76**	**260**	⇓*iP*		**P**	**07 43 13.7**	**-0.7**
WB2				*eS*		**S**	**07 49 07.8**	**-2.6**
WRA	**Warramunga Arr**	**44.77**	**260**	P		**P**	**07 43 13.8**	**-0.7**
	8.6nm,0.3s,mb4.7,baz=96,slow=7.0,SNR=617							
WRA				S		**S**	**07 49 08.1**	**-2.4**
	0.9nm,0.8s,baz=98,slow=13,SNR=4.8							
AS12	**Alice Springs**	**44.89**	**255**	⇓*iP*		**P**	**07 43 15.5**	**+0.1**
	54nm,0.5s,mb5.3							
ASAR	**Alice Springs**	**44.89**	**255**	P		**P**	**07 43 15.6**	**+0.2**
	78nm,0.5s,baz=88,slow=8.5,SNR=1188							
ASAR				PcP		PcP	07 44 44.4	-0.3
	2.9nm,0.5s,baz=96,slow=4.0,SNR=5.3							
ASAR				ScP			07 47 45.2	
	1.6nm,0.7s,baz=346,slow=11,SNR=9.0							
ASAR				S		**S**	**07 49 12.5**	**+0.3**
	1.6nm,0.7s,baz=91,slow=16,SNR=11							
KAKA	**Kakadu**	**47.82**	**269**	⇓*iP*		**P**	**07 43 36.7**	**-1.0**
	15nm,0.6s,mb4.7							
FORT	**Forrest**	**50.04**	**245**	*eP*		**P**	**07 43 53.4**	**-0.7**
	50nm,0.5s,mb5.2							
FITZ	**Fitzroy Crossi**	**53.17**	**261**	⇓*iP*		**P**	**07 44 16.5**	**-0.2**
	2.7nm,0.4s,mb3.9							
KLBR	**Kellerberrin**	**58.86**	**244**	*eP*		**P**	**07 44 54.8**	**-0.9**
	10nm,0.5s,mb4.2							
NWAO	**Narrogin (SRO)**	**59.23**	**242**	*eP*		**P**	**07 44 58.1**	**0.0**
VNDA	**Vanda**	**60.13**	**185**	P		**P**	**07 45 04.0**	**+0.6**
	0.8nm,0.7s,baz=1.8,slow=6.7,SNR=5.9							
VNDA	**Vanda**	**60.13**	**185**	*eP*		**P**	**07 45 04.0**	**+0.6**
MAJO	**Matsushiro**	**68.30**	**323**	P		**P**	**07 45 54.4**	**-1.0**
FX1	**Attu Island--F**	**71.22**	**354**	*eP*		**P**	**07 46 11.1**	**-1.3**
QSPA	**South Pole Qui**	**71.81**	**180**	*eP*		**P**	**07 46 16.9**	**+1.5**
	2.9nm,0.6s,mb4.0							
MDJ	**Mudanjiang**	**78.58**	**325**	*eP*		**P**	**07 46 54.4**	**+1.2**
	7.5nm,0.7s,mb4.1							
CN2	**Changchun**	**80.41**	**322**	*eP*		**P**	**07 47 04.0**	**+1.1**
CN2				AMB		AMB		
	comp=Z,10.0nm,0.8s,mb4.2							
ENH	**Enshi**	**84.62**	**304**	*eP*		**P**	**07 47 25.6**	**+1.3**
	comp=Z,5.0nm,0.6s,mb4.3							
MCK	**McKinley**	**84.83**	**13**	*eP*		**P**	**07 47 23.4**	**-1.0**
	comp=Z,1.3nm,0.4s,mb3.9							
TXAR	**Lajitas Array**	**86.01**	**58**	P		**P**	**07 47 32.5**	**+1.5**
	comp=Z,0.7nm,0.8s,mb3.4,baz=225,slow=7.1,SNR=9.2							
COLA	**College**	**86.06**	**12**	*eP*		**P**	**07 47 28.9**	**-1.5**
	comp=Z,2.8nm,0.6s,mb4.1							
ILAR	**Eielson Array**	**86.17**	**13**	P		**P**	**07 47 29.9**	**-1.0**
	comp=Z,1.4nm,0.5s,mb3.9,baz=221,slow=5.2,SNR=28							
ILAR				pP		pP	07 49 34.8	-1.0
	comp=Z,0.6nm,1.0s,baz=234,slow=4.5,SNR=4.5							
PDAR	**Pinedale Array**	**87.46**	**43**	P		**P**	**07 47 37.9**	**+0.4**
	comp=Z,0.5nm,0.7s,baz=225,slow=2.1,SNR=5.4							
CMAR	**Chiang Mai Arr**	**89.19**	**290**	P		**P**	**07 47 47.9**	**+1.7**
	comp=Z,2.0nm,0.7s,mb4.1,baz=119,slow=3.1,SNR=12							
INK	**Inuvik**	**92.16**	**15**	*eP*		**P**	**07 47 57.7**	**-0.9**
	comp=Z,1.9nm,0.8s,mb4.2							
ULN	**Ulaanbaatar**	**93.54**	**319**	*eP*		**P**	**07 48 06.0**	**+0.6**
	comp=Z,1.0nm,0.5s,mb4.2							
SONM	**Songino Array**	**93.94**	**319**	P		**P**	**07 48 07.8**	**+0.6**
	comp=Z,0.8nm,0.4s,mb4.2,baz=135,slow=1.7,SNR=4.0							
YKA	**Yellowknife Ar**	**94.55**	**25**	P		**P**	**07 48 09.4**	**-0.2**
	comp=Z,0.3nm,0.5s,mb3.7,baz=240,slow=4.6,SNR=13							
MKAR	**Makanchi Array**	**109.51**	**314**	PKiKP			07 53 15.7	
	comp=Z,0.6nm,0.5s,baz=324,slow=1.1,SNR=9.2							
ZRNK	**Zerenda**	**118.07**	**321**	*e*PKPdf		PKPdf	07 53 31.7	+0.5
ARCES	**ARCESS Array B**	**126.68**	**350**	PKP		PKPdf	07 53 47.8	+0.4
	comp=Z,0.6nm,0.4s,baz=77,slow=0.8,SNR=17							
FINES	**FINESS Array B**	**133.57**	**344**	PKP		PKPdf	07 54 01.1	+0.5
	comp=Z,0.9nm,0.6s,baz=76,slow=5.7,SNR=3.3							
FINES	**FINESS Array B**	**133.57**	**344**	PKP		PKPdf	07 54 01.1	+0.5
AKASG	**Malin Array Be**	**140.95**	**332**	PKhKP			07 54 04.4	
	comp=Z,1.7nm,0.8s,baz=30,slow=3.5,SNR=5.3							
EKA	**Eskdalemuir Ar**	**142.79**	**5**	PKhKP			07 54 11.8	
	comp=Z,0.9nm,0.7s,baz=326,slow=2.6,SNR=2.8							
KWP	**Kalwaria**	**144.46**	**336**	*e*PKPdf		PKPdf	07 54 22.2	+1.8
BRTR	**Keskin Array B**	**145.16**	**315**	PKPbc		PKPbc	07 54 24.8	+1.8
	comp=Z,2.4nm,0.5s,baz=130,slow=2.9,SNR=12							
KSP	**Ksiaz**	**145.49**	**344**	*eP*		PKPdf	07 54 25.6	+3.5
ASF	**Jabal al Asfar**	**145.52**	**301**	PKPbc		PKPbc	07 54 25.6	+1.5
	comp=Z,3.6nm,0.9s,baz=229,slow=1.4,SNR=5.4							
CLL	**Collm**	**145.84**	**347**	P		PKPdf	07 54 23.0	+0.3
CLL	**Collm**	**145.84**	**347**	*i* PKP1		PKPbc	07 54 26.3	+2.1
CLL	**Collm**	**145.84**	**347**	*eP*		PKPdf	07 54 23.0	+0.3
CLL				*i*			07 54 26.3	
BRG	**Berggiesshubel**	**146.04**	**346**	*eP*		PKPdf	07 54 27.2	+4.2
BRG				*i*			07 54 29.2	
BRG				LR		LR		
	comp=Z,520nm,19.8s							
MORC	**Moravsky Berou**	**146.09**	**342**	*e*PKPbc		PKPbc	07 54 27.0	+2.1
MLR	**Muntele Rosu**	**146.22**	**329**	PKPbc		PKPbc	07 54 26.7	+1.4
	comp=Z,3.4nm,0.7s,baz=353,slow=5.8,SNR=6.3							
MOX	**Moxa**	**146.74**	**349**	*eP*		PKPdf	07 54 28.0	+3.8

JMQS	**Jabal Moqyreh**	**147.12**	**295**	P		PKPdf	07 54 31.4	+5.9	
BDAS	**Al Bad'**	**147.88**	**295**	P		PKPdf	07 54 32.9	+6.2	
HAQS	**Haql**	**147.91**	**296**	P		PKPdf	07 54 32.9	+6.1	
GERES	**GERESS Array B**	**147.99**	**345**	PKPbc		PKPdf	07 54 32.2	+6.0	
	comp=Z,2.6nm,0.5s,baz=27,slow=3.0,SNR=24								
DAVOX	**Davos**	**150.78**	**349**	PKPbc		PKPdf	07 54 39.0	+8.4	
	comp=Z,9.9nm,0.7s,baz=354,slow=3.8,SNR=9.0								

NEIC ***14*** *07:45:13.7, 34.79N×3.77W, h16km, MG3.7(MDD), After MDD.*
MDD ***14*** *07:45:14.2±1.4, 34.93N×3.87W, mb3.8/18, Error ellipse: s-maj=14.8km s-min=4.9km az=5.0, PRXIMO AftershockPLICA*

ISC 14 07:45:14.3±0.8, 35.09N±0.05×3.95W±0.03, h10km, n50, σ1§47/78, 2C, Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
EMEL	**Melilla**	**0.84**	**75**	⇑P		**Pb**	**07 45 29.1**	**-1.4**
	749nm,0.1s,SNR=18							
EMEL				S		**Sb**	**07 45 39.8**	**-1.8**
	5μm,0.4s							
MELI	**Melilla**	**0.86**	**76**	⇑P		**Pb**	**07 45 29.5**	**-1.3**
MELI				S		**Sb**	**07 45 42.3**	**+0.2**
EMAL	**Malaga-Limoner**	**1.71**	**347**	P		**Pn**	**07 45 47.2**	**+2.7**
	1.0nm,0.1s,SNR=4.0							
EJIF	**Jimena Fronter**	**1.83**	**318**	P		**Pn**	**07 45 47.7**	**+1.5**
	2.6nm,0.2s,SNR=5.0							
EJIF	**Jimena Fronter**	**1.83**	**318**	P		**Pn**	**07 45 47.5**	**+1.3**
ERON	**Agron**	**1.93**	**3**	P		**Pn**	**07 45 48.8**	**+1.3**
	3.1nm,0.2s,SNR=5.0							
ERON				S		**Sn**	**07 46 14.7**	**+2.7**
	15nm,0.2s,SNR=5.0							
ERON	**Agron**	**1.93**	**3**	P		**Pn**	**07 45 49.1**	**+1.6**
ERON				S		**Sn**	**07 46 15.9**	**+3.9**
EBER	**Berja**	**2.00**	**25**	P		**Pn**	**07 45 47.0**	**-1.5**
EBER				S		**Sn**	**07 46 11.8**	**-1.9**
ELOJ	**Sierra Loja**	**2.06**	**356**	P		**Pn**	**07 45 50.2**	**+0.8**
	1.5nm,0.2s,SNR=5.0							
ELOJ	**Sierra Loja**	**2.06**	**356**	P		**Pn**	**07 45 50.1**	**+0.7**
ELOJ				S		**Sn**	**07 46 15.4**	**+0.1**
ELIJ	**Sierra de Lija**	**2.16**	**328**	P		**Pn**	**07 45 53.

MAT S **S** 07 52 48.3 0.0
MKAR Makanchi Array 45.80 305 P **P** 07 59 23.1 +0.5
0.3nm,0.6s,mb3.4,baz=90,slow=12,SNR=2.5
WRA Warramunga Arr 53.42 188 P **P** 08 00 21.1 -0.3
1.0nm,0.3s,mb4.2,baz=6.2,slow=7.6,SNR=44
ASAR Alice Springs 57.15 188 P **P** 08 00 48.2 -0.1
0.6nm,0.5s,mb3.9,baz=7.5,slow=7.1,SNR=11

IDC 14 07:59:30.8±3.8, 51.90N×36.19E, mb2.9/1, mb1 3.5/3, mb1mx3.3/18, ML3.3/3, Error ellipse: s-maj=54.8km s-min=18.1km az=137.0, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AKASG	**Malin Array Be**	**4.53**	**257**	Pn	Pn	08 00 41.0	-1.3
	0.4nm,0.3s,baz=70,slow=16,SNR=3.1						
AKASG				Sn	Sn	08 01 30.3	-6.3
	1.5nm,0.3s,baz=139,slow=8.8,SNR=4.0						
AKASG				Lg		08 01 48.4	
	2.5nm,0.3s,baz=68,slow=30,SNR=4.5						
FINES	**FINESS Array B**	**11.05**	**334**	Pn	P	08 02 05.5	-7.6
	0.2nm,0.3s,baz=157,slow=14,SNR=4.1						
FINES				Sn	S	08 03 58.3	-20
	0.2nm,0.3s,baz=156,slow=22,SNR=4.1						
ARCES	**ARCESS Array B**	**18.39**	**348**	P	P	08 03 45.5	-3.2
	0.3nm,0.3s,baz=159,slow=10,SNR=10						
YKA	**Yellowknife Ar**	**63.64**	**345**	P	P	08 10 02.4	-2.7
	0.1nm,0.7s,baz=12,slow=6.7,SNR=3.4						

MAN 14 08:03:54.7, 13.33N×120.14E, h1km, mb4.4, ML3.3, MS3.1, 6C-1D, Mindoro

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LUBP	**Lubang**	**0.41**	**15**↑	*eP*	Pg	08 04 03.0	0.0
LUBP				*eS*	Sg	08 04 08.5	0.0
PGP	**Puerto Galera**	**0.81**	**78**↑	*eP*	Pg	08 04 10.0	-0.9
PGP				*i* S	Sg	08 04 13.0	-8.7
TGY	**Tagaytay City**	**1.09**	**45**↑	*eP*	Pb	08 04 17.1	+1.0
TGY				*i* S	Sb	08 04 33.7	+3.1
SJMP	**San Jose**	**1.29**	**132**↑	*eP*	Pb	08 04 19.2	-0.3
SJMP				*eS*	Sb	08 04 35.9	-0.5
BUSP	**Coron**	**1.32**	**177**↑	*eP*	Pb	08 04 20.4	+0.4
BUSP				*eS*	Sb	08 05 16.0	+39
NBP	**Mount Natib**	**1.43**	**11**	*eP*	Pn	08 04 21.0	-0.8
ARP	**Angono**	**1.55**	**39**	*eP*	Pn	08 04 22.2	-1.4
QVPH	**Quezon City--P**	**1.59**	**34**↓	*iP*	Pn	08 04 19.6	-4.5
QVPH				*eS*	Sb	08 04 44.1	-1.0
ENPP	**El Nido**	**2.23**	**198**↑	*eP*	Pn	08 04 33.0	-0.2

IDC 14 08:08:14.8±2.2, 2.24N×127.62E, mb3.5/3, mb1 3.7/3, mb1mx3.5/15, Error ellipse: s-maj=161.0km s-min=25.8km az=67.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**23.01**	**164**	P	P	08 13 20.6	-2.1
	0.7nm,0.5s,baz=343,slow=11,SNR=16						
ASAR	**Alice Springs**	**26.47**	**167**	P	P	08 13 54.6	-1.0
	0.7nm,0.7s,baz=348,slow=8.3,SNR=5.0						
ALBI	**Allahabad**	**49.69**	**302**	*eP*	P	08 17 17.5	+6.7
MKAR	**Makanchi Array**	**59.27**	**325**	P	P	08 18 18.4	-2.2
	0.3nm,0.4s,baz=120,slow=8.0,SNR=5.6						

*NEIC **14** 08:26:48.9±1.3,5.57N×76.35W, h105km±14km, Error ellipse: s-maj=23.8km s-min=13.9km az=130.0*
*IDC **14** 08:26:52.4±2.6,5.37N×76.02W, h133km±25km, mb3.4/3, mb1 3.6/4, mb1mx3.3/18, Error ellipse: s-maj=35.6km s-min=21.5km az=89.0*

ISC 14 08:26:51.8±2.1, 5.4N±0.1×76.0W±0.2, h144km±19km, n7, σ0°69°/8, mb3.5/3, Colombia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ROSC	**El Rosal**	**1.74**	**107**	P	**P**	**08 27 23.7**	**-0.2**
	30nm,0.3s,baz=341,slow=3.8,SNR=45						
ROSC				S	**S**	**08 27 48.7**	**+0.1**
	24nm,0.3s,baz=354,slow=17,SNR=7.9						
OTAV	**Otavalo**	**5.64**	**206**	*e*Pn	**P**	**08 28 06.2**	**-8.4**
	10.0nm,0.5s						
SDV	**Santo Domingo**	**6.38**	**56**	P	**P**	**08 28 24.9**	**+0.4**
	2.7nm,0.3s,baz=249,slow=11,SNR=11						
SDV				S	**S**	**08 29 36.3**	**-0.2**
	4.9nm,0.3s,baz=275,slow=22,SNR=7.8						
BDFB	**Brasilia**	**34.69**	**127**	P	**P**	**08 33 29.8**	**0.0**
	1.4nm,0.4s,mb3.9,baz=281,slow=3.9,SNR=3.4						
YKA	**Yellowknife Ar**	**63.68**	**341**	P	**P**	**08 37 08.9**	**-0.9**
	0.4nm,0.5s,mb3.5,baz=133,slow=6.3,SNR=16						
ILAR	**Eielson Array**	**77.08**	**335**	P	**P**	**08 38 31.2**	**+0.8**
	0.3nm,0.7s,mb3.1,baz=124,slow=3.3,SNR=5.8						
ASAR	**Alice Springs**	**145.93**	**235**	PKPbc	PKPbc	08 46 16.5	+1.2
	0.5nm,0.7s,baz=120,slow=4.0,SNR=9.8						

*MOS **14** 08:28:56.0±1.5,72.25N×1.49W, h10km, mb4.7/13, Error ellipse: s-maj=30.8km s-min=8.0km az=101.5*
*NAO **14** 08:28:57.7±1.9,71.80N×2.13W*
*IDC **14** 08:28:57.7±0.6,71.77N×1.64W, mb3.9/13, mb1 4.2/19, mb1mx4.1/26, ML3.8/6, MS4.0/15, Ms1 4.0/15, ms1mx3.8/26, Error ellipse: s-maj=18.3km s-min=11.5km az=42.0*
*BJI **14** 08:28:58.4,71.80N×1.50W, h10km, mB4.7, mb4.9, Ms4.5, Msz4.1*
*NEIC **14** 08:28:59.5±0.3,71.85N×1.52W, h10km, mb4.5/16, Error ellipse: s-maj=6.8km s-min=4.4km az=217.0*
*ZUR_RM **14** 08:28:59,71.85N×1.52W, h9km, Mw4.7/17, Moment Tensor Solution. s17 Moment tensor: Scale 10^16 Nm; Mrr-1.39; Mθθ 0.60; Mφφ 0.78; Mrθ-0.11; Mθφ 0.49; Mφr-0.58; Best double couple: M0 1.41×10^16 NP1:φ±29°, δ57°, λ-100°. NP2:φ±228°, δ35°, λ-75°. Principal axes: T 1.293, Plg11°, Azm127°; N .238, Plg9°, Azm35°; P -1.531, Plg76°, Azm268°;*
*CSEM **14** 08:29:00.9,71.89N×1.62W, h33km, mb4.6*
*BER **14** 08:29:01.7±3.4,71.79N×1.63W, h6km±19km, MD2.6, ML2.7*

ISC 14 08:28:57.9±0.2, 71.96N±0.03×1.20W±0.10, h10km, (h19km±5.0km: pP-P), n148, σ1s38/162, mb4.4/51, MS4.0/26, 4C-7D, Jan Mayen Island region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JMIC	**Jan Mayen**	**2.53**	**251**	Pn	**Pn**	**08 29 35.1**	**-4.6**
JMIC	**Jan Mayen**	**2.53**	**251**	*eP*	**Pn**	**08 29 39.2**	**-0.5**
JMIC				*eS*	**Sn**	**08 30 06.6**	**-4.3**
LOF	**Lofoten**	**6.33**	**120**	*eP*	**Pn**	**08 30 33.9**	**+0.3**
LOF				*eS*	**Sn**	**08 31 41.0**	**-5.8**
LOF				AML	AML	08 31 47.3	
	comp=Z,8.4nm,0.4s						
LOF				*e*		08 36 08.7	
LOF	**Lofoten**	**6.33**	**120**	*eP*	**Pn**	**08 30 33.9**	**+0.3**
LOF				*eS*	**Sn**	**08 31 41.0**	**-5.8**
LOF				*e*		08 36 08.7	
DAG	**Danmarks Havn**	**6.72**	**324**↓	*iP*	**Pn**	**08 30 34.0**	**-5.1**
	comp=Z,19nm,0.8s						
DAG				*i*		08 31 41.2	
DAG	**Danmarks Havn**	**6.72**	**324**↓	*eP*	**Pn**	**08 30 34.0**	**-5.1**
DAG				*i*		08 31 41.2	
DAG				pmax	pmax		
	comp=Z,19nm,0.8s						
DAG	**Danmarks Havn**	**6.72**	**324**↓	*eP*	**Pn**	**08 30 34.0**	**-5.1**
	comp=Z,19nm,0.8s						
DAG				*i*		08 31 41.2	
SCO	**Scoresbysund**	**6.84**	**267**	*i* P	**Pn**	**08 30 34.9**	**-5.9**
TRO	**Tromso**	**7.02**	**100**	*eP*	**Pn**	**08 30 41.4**	**-1.9**
TRO				*eS*	**Sn**	**08 31 56.3**	**-7.8**
TRO				AML	AML	08 31 59.5	
	comp=Z,8.4nm,0.6s						
TRO	**Tromso**	**7.02**	**100**	*eP*	**Pn**	**08 30 41.2**	**-2.1**
TRO				*eS*	**Sn**	**08 31 55.8**	**-8.3**
STOK	**Stokkvaagen**	**7.57**	**131**	*eP*	**Pn**	**08 30 48.3**	**-2.8**
STOK				*eS*	**Sn**	**08 32 06.1**	**-12**
STOK				AML	AML	08 32 13.0	
	comp=Z,12nm,0.4s						
STOK	**Stokkvaagen**	**7.57**	**131**	*eP*	**Pn**	**08 30 47.4**	**-3.6**
STOK				*eS*	**Sn**	**08 32 06.1**	**-12**
SPB4	**Spitsbergen Ar**	**7.67**	**28**	*eP*	**Pn**	**08 30 53.8**	**+1.4**
SPA0	**Spitsbergen Ar**	**7.67**	**28**	Pn	**Pn**	**08 30 54.4**	**+2.0**
	baz=214,slow=14						
SPA0				Sn	**Sn**	**08 32 24.3**	**+4.1**
	baz=220,slow=18						
SPITS	**Spitsbergen Ar**	**7.67**	**28**	Pn	**Pn**	**08 30 53.6**	**+1.2**
	comp=Z,1.4nm,0.3s,baz=205,slow=14,SNR=267						
KBS	**Kingsbay**	**7.71**	**19**	Pn	**Pn**	**08 30 52.6**	**-0.4**
KBS				Sn	**Sn**	**08 32 19.6**	**-1.7**
KBS	**Kingsbay**	**7.71**	**19**	*eP*	**Pn**	**08 30 53.0**	**0.0**
	comp=Z,8.5nm,0.8s						
MOR8	**Moi Rana**	**8.04**	**128**	*eP*	**P**	**08 30 55.9**	**-1.7**
MOR8				*eS*	**Sn**	**08 32 20.3**	**-9.4**
MOR8				AML	AML	08 32 26.4	
	comp=Z,10nm,0.3s						
KTK1	**Kautokeino**	**8.66**	**98**	*eP*	**P**	**08 31 05.0**	**-1.2**
KTK1				*eS*	**Sn**	**08 32 39.0**	**-5.9**
NSS	**Namsos**	**8.89**	**140**	*eP*	**P**	**08 31 05.9**	**-3.6**
ARA0	**ARCESS Array S**	**9.10**	**92**	Pn	**P**	**08 31 11.0**	**-1.4**
	baz=293,slow=12						
ARCES	**ARCESS Array B**	**9.10**	**92**	Pn	**P**	**08 31 11.0**	**-1.3**
	comp=Z,1.7nm,0.3s,baz=285,slow=11,SNR=132						
ARCES				LR	LR	08 34 24.8	
	comp=Z,584nm,19.7s,baz=288,slow=35						
ARCES	**ARCESS Array B**	**9.10**	**92**	Pn	**P**	**08 31 11.0**	**-1.3**
ARCES				LR	LR	08 34 24.8	
ARE0	**ARCESS Array S**	**9.10**	**92**	*eP*	**P**	**08 31 10.7**	**-1.6**
KEV	**Kevo**	**9.47**	**90**	*ep*	**P**	**08 31 15.0**	**-2.4**
MOL	**Molde**	**10.01**	**156**	*ePn*	**P**	**08 31 22.9**	**-1.7**
MOL				*eSn*	**Sn**	**08 33 06.4**	**-12**
MOL				AML	AML	08 33 19.9	
	comp=Z,4.7nm,0.6s						
MOL	**Molde**	**10.01**	**156**	*eP*	**P**	**08 31 23.4**	**-1.1**
MOL				*eS*	**Sn**	**08 33 06.4**	**-12**
SUMG	**Summit**	**11.25**	**291**	*eP*	**P**	**08 31 38.4**	**-3.2**
NB2	**NORSAR Subarra**	**11.99**	**150**	P	**P**	**08 31 47.7**	**-4.0**
	comp=Z,4.4nm,0.9s,baz=344,slow=12						
NOA	**NORSAR Array B**	**11.99**	**150**	Pn	**P**	**08 31 48.2**	**-3.4**
	comp=Z,0.7nm,0.3s,baz=342,slow=13,SNR=8.2						
NOA				LR	LR	08 36 11.4	
	comp=Z,682nm,20.0s,baz=335,slow=36						
NOA	**NORSAR Array B**	**11.99**	**150**	Pn	**P**	**08 31 48.2**	**-3.4**
NOA				LR	LR	08 36 11.4	
APA0	**Apatity Array**	**12.46**	**94**	Pn	**P**	**08 31 56.0**	**-1.9**
	baz=302,slow=11						
APA	**Apatity**	**12.61**	**93**↓	*iP*	**P**	**08 31 57.9**	**-2.0**
APA				pmax	pmax		
	comp=Z,25nm,1.2s						
LVZ	**Lovozero**	**12.81**	**91**	*eP*	**P**	**08 31 59.9**	**-2.7**
LVZ				pmax	pmax		
	comp=Z,20nm,0.8s						
LVZ				pmax	pmax		
	comp=N,7.0nm,0.9s						
LVZ				pmax	pmax		
	comp=E,10.0nm,0.8s						
LVZ				MLR	MLR		
	comp=Z,380nm,19.0s						
LVZ				MLR	MLR		
	comp=N,150nm,18.0s						
LVZ				MLR	MLR		
	comp=E,220nm,19.0s						
HFS	**Hagfors**	**13.26**	**146**	Pn	**P**	**08 32 05.2**	**-3.4**
	baz=337,slow=16						
HFS	**Hagfors**	**13.26**	**146**	Pn	**P**	**08 32 05.5**	**-3.1**
	comp=E,0.7nm,0.3s,baz=344,slow=11,SNR=52						
KAF	**Kangasniemi**	**14.40**	**119**	*ep*	**P**	**08 32 20.3**	**-3.1**
	baz=327,slow=12						
FIA0	**FINESS Array S**	**14.90**	**121**	Pn	**P**	**08 32 28.1**	**-1.8**
	baz=338,slow=12						
FINES	**FINESS Array B**	**14.90**	**121**	Pn	**P**	**08 32 28.1**	**-1.8**
	comp=E,0.4nm,0.3s,baz=338,slow=10,SNR=30						
FINES				LR	LR	08 37 41.9	
	comp=E,671nm,19.6s,baz=123,slow=35						
JOF	**Joensuu**	**15.18**	**110**	*ep*	**P**	**08 32 28.5**	**-5.1**
EKA	**Eskdalemuir Ar**	**16.71**	**184**	Pn	**P**	**08 32 51.4**	**-2.0**
	comp=E,0.1nm,0.3s,baz=3.8,slow=11,SNR=3.5						
WTSB	**Winterswijk**	**20.38**	**166**	*eP*	**P**	**08 33 38.8**	**+1.8**
	comp=E,9.8nm,1.0s						
SUW	**Suwalki**	**20.84**	**137**	*eP*	**P**	**08 33 40.4**	**-1.4**
SUW				*e*		08 33 42.2	
SUW				MLR	MLR	08 41 11.3	
	comp=E,700nm,18.5s,MS4.1						
MNK	**Minsk**	**21.45**	**129**	*eP*	**P**	**08 33 47.0**	**-1.0**
HGN	**Heimansgroeve**	**21.51**	**168**	*eP*	**P**	**08 33 47.8**	**-0.9**
	comp=E,4.6nm,1.3s,mb3.8						
CLL	**Collm**	**21.68**	**155**	P	**P**	**08 33 50.9**	**+0.6**
	comp=E,logA/T=1.3,mb4.5						
CLL				*e*		08 34 04.0	
CLL				*e*		08 34 23.0	
CLL				*eS*	**S**	**08 37 55.0**	**+10**
CLL	**Collm**	**21.68**	**155**	*i* P	**P**	**08 33 50.9**	**+0.6**
CLL				*eS*	**S**	**08 37 55.0**	**+10**
CLL				pmax	pmax		
	comp=Z,37nm,1.8s,mb4.5						
CLL	**Collm**	**21.68**	**155**	*i* P	**P**	**08 33 50.9**	**+0.6**
	comp=Z,37nm,1.8s,mb4.5						
CLL				*eS*	**S**	**08 37 55.0**	**+10**
GIVF	**Givet**	**22.10**	**170**	*eP*	**P**	**08 33 55.4**	**+0.8**
MOX	**Moxa**	**22.16**	**158**	*i* P	**P**	**08 33 56.7**	**+1.6**
	comp=Z,logA/T=1.3,mb4.5						
MOX	**Moxa**	**22.16**	**158**	*eP*	**P**	**08 33 56.7**	**+1.6**
MOX				pmax	pmax		
	comp=Z,38nm,1.8s,mb4.5						
MOX	**Moxa**	**22.16**	**158**	*eP*	**P**	**08 33 56.7**	**+1.6**
	comp=Z,38nm,1.8s,mb4.5						
KSP	**Ksiaz**	**22.60**	**150**	*eP*	**P**	**08 33 59.1**	**-0.2**
KSP				*e*		08 34 00.3	
KSP				MLR	MLR	08 42 01.1	
	comp=Z,800nm,20.5s,MS4.1						
KSP	**Ksiaz**	**22.60**	**150**	*eP*	**P**	**08 33 58.8**	**-0.5**
KSP				*epP*		08 34 04.7	
PVCC	**Panska Ves**	**22.65**	**153**	*eP*	**P**	**08 34 02.2**	**+2.4**
PVCC				L		08 42 50.0	
	comp=Z,0.3nm,18.3s						
UPC	**Upice**	**22.88**	**151**	*eP*	**P**	**08 34 03.8**	**+1.7**
MOS	**Moscow**	**22.94**	**115**	*eP*	**P**	**08 34 00.9**	**-1.7**
MOS				*ePPP*	PPP	08 34 26.8	-15
MOS				MLR	MLR		
	comp=Z,1μm,16.0s,MS4.5						
GRA1	**Grafenberg Arr**	**23.05**	**159**	*eP*	**P**	**08 34 07.0**	**+3.2**
	comp=Z,35nm,1.6s,mb4.5						
GRA1				LR	LR		
	comp=Z,300nm,21.4s,MS3.7						
GRF	**Grafenberg Arr**	**23.05**	**159**	*eP*	**P**	**08 34 07.0**	**+3.2**
GRF				pmax	pmax		
	comp=Z,35nm,1.6s,mb4.5						
GRF				MLR	MLR		
	comp=Z,300nm,21.4s,MS3.7						
DPC	**Dobruska-Polom**	**23.08**	**151**	*eP*	**P**	**08 34 04.2**	**+0.1**
DPC				L		08 42 10.0	
	comp=Z,0.4nm,19.7s						
PRU	**Pruhonice**	**23.17**	**154**	*eP*	**P**	**08 34 06.1**	**+1.1**
	comp=Z,14nm,1.2s,mb4.3						
PRU				L		08 42 00.0	
PRU	**Pruhonice**	**23.17**	**154**	*eP*	**P**	**08 34 06.1**	**+1.1**
PRU				pmax	pmax		
	comp=Z,14nm,1.2s,mb4.3						
OBN	**Obninsk**	**23.19**	**117**	*d iP*	**P**	**08 34 06.2**	**+1.2**
OBN				pmax	pmax		
	comp=Z,54nm,1.5s,mb4.8						
OBN				MLR	MLR		
	comp=Z,700nm,17.0s,MS4.2						
LDF	**La Druitiere**	**23.45**	**178**	*eP*	**P**	**08 34 07.1**	**-0.6**
GRR	**Gorron**	**23.65**	**179**	*eP*	**P**	**08 34 08.5**	**-1.1**
OJC	**Ojcow**	**23.78**	**145**	*eP*	**P**	**08 34 13.1**	**+2.2**
OJC				*eS*	**S**	**08 38 16.4**	**-6.5**
OJC				MLR	MLR	08 43 31.8	
	comp=Z,700nm,19.5s,MS4.1						
WET	**Wettzell**	**23.78**	**157**	*eP*	**P**	**08 34 13.4**	**+2.5**
WET				pmax	pmax		
	comp=Z,25nm,1.8s,mb4.3						
WET	**Wettzell**	**23.78**	**157**	*eP*	**P**	**08 34 13.4**	**+2.5**
	comp=Z,25nm,1.8s,mb4.3						
MORC	**Moravsky Berou**	**23.83**	**149**	P	**P**	**08 34 13.2**	**+1.8**
	comp=Z,1.6nm,0.8s,mb3.5						
OKC	**Ostrava-Krasne**	**23.87**	**148**	*eP*	**P**	**08 34 12.0**	**+0.3**
OKC				L		08 44 00.0	
	comp=Z,0.4nm,16.7s						
KHC	**Kasperske Hory**	**23.88**	**156**	*eP*	**P**	**08 34 14.8**	**+2.9**
KHC				L		08 43 30.0	
	comp=Z,0.3nm,18.1s						
CDF	**Champ du Feu**	**23.95**	**166**	*eP*	**P**	**08 34 13.3**	**+0.8**
BFO	**Black Forest**	**24.11**	**164**	*eP*	**P**	**08 34 16.1**	**+2.0**
BFO				pmax	pmax		
	comp=Z,49nm,2.1s,mb4.6						
BFO	**Black Forest**	**24.11**	**164**	*eP*	**P**	**08 34 16.1**	**+2.0**
	comp=Z,49nm,2.1s,mb4.6						
VRAC	**Vranov**	**24.14**	**151**	P	**P**	**08 34 14.9**	**+0.6**
	comp=Z,5.8nm,0.9s,mb4.0,baz=325,slow=9.6,SNR=7.2						
GEC2	**GERESS Array S**	**24.18**	**155**	*eP*	**P**	**08 34 16.1**	**+1.3**
GEC2				pmax	pmax		
	comp=Z,13nm,1.5s,mb4.1						
GEC2	**GERESS Array S**	**24.18**	**155**	*eP*	**P**	**08 34 16.1**	**+1.3**
	comp=Z,13nm,1.5s,mb4.1						
GERES	**GERESS Array B**	**24.18**	**155**	P	**P**	**08 34 15.3**	**+0.5**
	comp=Z,0.4nm,0.3s,mb3.3,baz=8.1,slow=9.4,SNR=7.8						
RES	**Resolute Bay**	**24.39**	**320**	P	**P**	**08 34 17.5**	**+0.9**
	comp=Z,9.6nm,1.2s,mb4.1						
NIE	**Niedzica**	**24.64**	**145**	*eP*	**P**	**08 34 28.8**	**+10**
LOR	**Lormes**	**24.88**	**172**	*eP*	**P**	**08 34 21.0**	**-0.6**
	comp=Z,33nm,1.1s,mb4.5						
LOR				*eR*			
	comp=Z,262nm,19.2s						
SSF	**Saint Saulge**	**25.07**	**172**	*eP*	**P**	**08 34 22.7**	**-0.7**
	comp=Z,16nm,0.8s,mb4.3						
FRB	**Frobisher Bay**	**25.25**	**286**	LR	LR	08 43 37.7	
	comp=Z,343nm,18.6s,MS3.9,baz=140,slow=35						
AKASG	**Malin Array Be**	**25.29**	**131**	LR	LR	08 44 04.3	
	comp=Z,417nm,18.5s,MS4.0,baz=330,slow=36						
AVF	**Avril sur Loir**	**25.34**	**173**	*eP*	**P**	**08 34 26.0**	**+0.1**
	comp=Z,21nm,1.0s,mb4.3						
MFF	**Saint Martin d**	**25.44**	**178**	*eP*	**P**	**08 34 26.4**	**-0.5**
	comp=Z,16nm,0.9s,mb4.3						
SMF	**Signal de Mont**	**25.50**	**172**	*eP*	**P**	**08 34 27.8**	**+0.3**
	comp=Z,48nm,1.3s,mb4.6						
BGF	**Bois d'Agland**	**25.55**	**174**	*eP*	**P**	**08 34 27.9**	**0.0**
	comp=Z,22nm,0.7s,mb4.5						
CABF	**La Chapelle**	**25.66**	**168**	*eP*	**P**	**08 34 30.1**	**+1.2**
	comp=Z,56nm,1.3s,mb4.6						
TCF	**Toulx Ste Croi**	**25.80**	**175**	*eP*	**P**	**08 34 30.8**	**+0.5**
	comp=Z,20nm,0.9s,mb4.4						
RJF	**Les Rejaudoux**	**26.77**	**176**	*eP*	**P**	**08 34 39.3**	**+0.1**
	comp=Z,15nm,0.8s,mb4.3						
RJF				*eR*			
	comp=Z,301nm,19.2s						
LPG	**La Plagne**	**26.81**	**168**	*eP*	**P**	**08 34 40.8**	**+1.2**
CAF	**Calviac**	**27.16**	**175**	*eP*	**P**	**08 34 43.5**	**+0.7**
ORIF	**Oris-en-Rattie**	**27.33**	**169**	*eP*	**P**	**08 34 44.7**	**+0.4**
	comp=Z,22nm,1.2s,mb4.3						
ORIF				*eR*			
	comp=Z,516nm,22.0s						
ARU	**Arti**	**28.69**	**91**↑	*iP*	**P**	**08 34 57.2**	**+0.7**
ARU				*e*		08 35 45.3	
ARU				*eS*	**S**	**08 39 41.5**	**-2.4**
ARU				pmax	pmax		
	comp=Z,9.0nm,1.2s,mb4.4						
ARU				MLR	MLR		
	comp=Z,200nm,19.0s,MS3.7						
ARU				MLR	MLR		
	comp=N,200nm,18.0s,MS3.8						
ARU				MLR	MLR		
	comp=E,100nm,19.0s,MS3.8						
SVE	**Sverdlovsk**	**29.00**	**88**↓	*eP*	**P**	**08 35 06.5**	**+7.2**
SVE				MLR	MLR		
	comp=Z,400nm,14.0s,MS4.2						
MLR	**Muntele Rosu**	**29.49**	**139**	LR	LR	08 47 08.8	
	comp=Z,658nm,18.9s,MS4.3,baz=281,slow=37						
SCHQ	**Schefferville**	**31.85**	**273**	LR	LR	08 47 06.1	
	comp=Z,285nm,19.4s,MS4.0,baz=14,slow=34						
ESDC	**Sonseca Array**	**32.39**	**184**	P	**P**	**08 35 27.8**	**-1.7**
	comp=Z,0.4nm,0.4s,mb3.6,baz=2.6,slow=8.2,SNR=5.6						
ANN	**Anapa**	**32.80**	**125**	*eP*	**P**	**08 35 34.0**	**+1.0**
ANN				pmax	pmax		
	comp=Z,10.0nm,1.2s,mb4.6						
TIXI	**Tiksi**	**33.09**	**26**	*eP*	**P**	**08 35 38.3**	**+3.0**
TIXI				pmax	pmax		
	comp=Z,60nm,1.1s,mb5.4						
TIXI	**Tiksi**	**33.09**	**26**	*eP*	**P**	**08 35 44.5**	**+9.3**
GOF	**Gofitskoye**	**34.05**	**118**↓	*iP*	**P**	**08 35 46.0**	**+2.2**
GOF				pmax	pmax		
	comp=Z,30nm,1.1s,mb5.1						
SOC	**Sochi**	**34.53**	**123**	*eP*	**P**	**08 35 53.5**	**+5.6**
SOC				*eS*	**S**	**08 41 13.2**	**-2.4**
SOC				pmax	pmax		
	comp=Z,24nm,1.0s,mb5.1						
SOC				pmax	pmax		
	comp=N,47nm,1.2s						
SOC				pmax	pmax		
	comp=E,21nm,0.7s						
SOC				MLR	MLR		
	comp=Z,386nm,18.0s,MS4.2						
SOC				MLR	MLR		
	comp=N,446nm,22.0s,MS4.5						
SOC				MLR	MLR		
	comp=E,911nm,23.0s,MS4.5						
ZRNK	**Zerenda**	**34.88**	**85**	P	**P**	**08 35 53.4**	**+2.5**
KIV	**Kislovodsk**	**34.98**	**119**	*eP*	**P**	**08 35 52.7**	**+0.9**
KIV				pmax	pmax		
	comp=Z,5.0nm,0.5s,mb4.7						
KIV				MLR	MLR		
	comp=Z,200nm,17.0s,MS3.9						
BRVK	**Borovoye**	**35.18**	**83**	*eP*	**P**	**08 35 55.6**	**+2.1**
ZEI	**Tsey**	**36.40**	**118**↑	*eP*	**P**	**08 36 05.3**	**+1.4**
INK	**Inuvik**	**36.47**	**332**	*eP*	**P**	**08 36 04.1**	**-0.2**
	comp=Z,8.2nm,1.3s,mb4.5						
BRTR	**Keskin Array B**	**36.67**	**132**	P	**P**	**08 36 05.8**	**-0.4**
	comp=Z,2.9nm,1.1s,mb4.0,baz=350,slow=7.5,SNR=4.4						
BRTR				LR	LR	08 52 15.5	
	comp=Z,132nm,19.1s,MS3.7,baz=310,slow=38						
YKA	**Yellowknife Ar**	**38.36**	**317**	P	**P**	**08 36 19.5**	**-0.6**
	comp=Z,1.3nm,0.8s,mb3.7,baz=26,slow=8.6,SNR=19						
YKA				PcP	PcP	08 38 33.0	-1.3
	comp=Z,0.9nm,0.9s,baz=22,slow=3.1,SNR=14						
YKA				LR	LR	08 51 34.1	
	comp=Z,212nm,21.1s,MS3.9,baz=30,slow=35						
YKA	**Yellowknife Ar**	**38.36**	**317**	P	**P**	**08 36 19.6**	**-0.6**
YKA				PcP	PcP	08 38 33.0	-1.3
YKA				LR	LR	08 51 34.

comp=Z,10.0nm,0.6s,mb5.0
PV10 Paradox Valley 59.17 299 *e*P **P 08 39 00.6 -0.2**
PV01 Paradox Valley 59.27 299 *e*P **P 08 39 01.0 -0.4**
WMOK Wichita Mounta 59.66 289 *e*P **P 08 39 02.4 -1.8**
MSU Marysvale 59.88 302 *e*P **P 08 39 05.5 -0.2**
LZH Lanzhou 60.55 64 *e*P **P 08 39 10.8 +0.6**
LZH AP pP 08 39 15.6 +2.3
LZH AMB AMB
comp=Z,25nm,1.4s,mb5.2
LZH LR LR
comp=N,256nm,13.0s
LZH LR LR
comp=Z,293nm,17.2s,MS4.5
NVAR Mina Array Bea 61.53 307 P **P 08 39 16.8 -0.1**
comp=Z,0.2nm,0.4s,mb3.6,baz=45,slow=5.2,SNR=4.1
NVAR LR LR 09 06 16.7
comp=Z,73nm,20.0s,MS3.8,baz=205,slow=36
ANMO Albuquerque 61.67 296 *e*P **P 08 39 23.4 +5.5**
ANMO Albuquerque 61.67 296 *e*P **P 08 39 17.3 -0.5**
comp=Z,4.3nm,1.1s,mb4.5
WUAZ Wupatki 62.49 300 *e*P **P 08 39 24.1 +0.7**
NEN Nelson 63.28 303 *e*P **P 08 39 28.0 -0.6**
JCT Junction City 63.94 288 *e*P **P 08 39 32.1 -0.7**
MNTX Cornudas Mount 64.42 294 *e*P **P 08 39 34.5 -1.4**
comp=Z,4.0nm,1.1s,mb4.4
TUC Tucson 65.35 299 *e*P **P 08 39 43.2 +1.3**
comp=Z,13nm,1.6s,mb4.7
TXAR Lajitas Array 66.15 291 P **P 08 39 46.0 -1.1**
comp=Z,1.8nm,0.8s,mb4.1,baz=63,slow=2.8,SNR=7.2
TXAR LR LR 09 08 16.0
comp=Z,105nm,19.6s,MS4.0,baz=75,slow=36
NJ2 Nanjing 68.33 52 *e*P **P 08 40 00.8 0.0**
NJ2 AP pP 08 40 10.5 +6.5
NJ2 XP sP 08 40 14.6 +10
NJ2 S S 08 48 58.0 -2.3
NJ2 XS 08 49 15.0
NJ2 LR LR
comp=N,266nm,19.8s,MS5.0
NJ2 LR LR
comp=E,1μm,23.1s,MS5.0
SSE Sheshan 69.81 51 ⇑P **P 08 40 10.3 +0.3**
SSE AMB AMB
comp=Z,26nm,0.7s,mb5.3
SSE AMB AMB
comp=Z,51nm,5.3s
CMAR Chiang Mai Arr 75.70 75 P **P 08 40 45.3 +0.5**
comp=Z,0.7nm,0.3s,mb4.1,baz=323,slow=7.2,SNR=6.1
ASAR Alice Springs 125.57 53 PKP PKPdf 08 47 58.5 -3.5
comp=Z,0.7nm,0.8s,baz=331,slow=3.1,SNR=5.2

CASC 14 08:31:06.2±1.5, 12.92N×88.75W, h44km±33km, MD3.7, ML3.3, 8C-7D, Off coast of central America

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
VSM	**San Miguel**	**0.69**	**43**	*e*P	P	08 31 20.4	+0.8
VSM				*e*S	S	08 31 31.6	+2.2
SNVI	**San Vicente**	**0.69**	**353**⇓	*e*P	P	08 31 20.2	+0.5
SNVI				*e*S	S	08 31 30.2	+0.7
BLLM	**Bellamira**	**0.72**	**44**⇓	*e*P	P	08 31 20.3	+0.2
BLLM				*e*S	S	08 31 31.0	+0.8
LFRS	**El Faro**	**0.76**	**337**⇑	*e*P	P	08 31 20.9	+0.3
LCBS	**La Ceiba**	**0.76**	**343**⇓	*e*P	P	08 31 20.8	+0.2
LCBS				*e*S	S	08 31 31.0	-0.2
LBRS	**Las Brisas**	**0.86**	**341**⇑	*e*P	P	08 31 22.7	+0.7
LBRS				*e*S	S	08 31 33.9	+0.3
SNET	**Serv Nac Est T**	**0.89**	**329**	*e*P	P	08 31 22.5	0.0
SNET				*e*S	S	08 31 34.7	+0.2
SNET				*i*		08 31 36.8	
	comp=Z,2μm,0.3s						
LFU	**La Fuente**	**0.90**	**337**⇓	*e*P	P	08 31 23.0	+0.5
LFU				*e*S	S	08 31 34.4	-0.1
PICS	**Picacho**	**0.95**	**329**⇑	*e*P	P	08 31 24.0	+0.7
PICS				*e*S	S	08 31 37.1	+1.2
BOQS	**Boqueron**	**0.96**	**328**⇑	*e*P	P	08 31 23.8	+0.4
BOQS				*e*S	S	08 31 36.9	+0.8
CNCH	**Conchagua**	**0.96**	**68**⇑	*e*P	P	08 31 23.7	+0.2
CNCH				*e*S	S	08 31 37.3	+1.1
CAHU	**Cacacuatique**	**1.00**	**32**⇑	*e*P	P	08 31 24.1	+0.1
CAHU				*e*S	S	08 31 38.1	+1.1
SBLS	**San Blas**	**1.25**	**317**⇓	*e*P	P	08 31 28.0	+0.5
SBLS				*e*S	S	08 31 43.8	+0.5
SNJE	**San Jose**	**1.25**	**319**⇓	*e*P	P	08 31 28.0	+0.4
SNJE				*e*S	S	08 31 43.8	+0.2
RTR	**El Retiro**	**1.30**	**318**⇑	*e*P	P	08 31 28.8	+0.4
RTR				*e*S	S	08 31 45.2	+0.3
RBDL	**Robledal**	**1.49**	**323**	*e*P	P	08 31 31.2	+0.2
RBDL				*e*S	S	08 31 49.2	-0.4
CUSS	**Cusmapa**	**1.52**	**310**	*e*P	P	08 31 31.3	-0.1
CUSS				*e*S	S	08 31 50.4	+0.2
MTO2	**Montecristo 2**	**1.58**	**338**⇓	*i*P	P	08 31 32.1	-0.2
PYN	**Poneloya**	**1.77**	**107**	*e*P	P	08 31 34.5	-0.5
PYN				*e*S	S	08 31 53.5	-2.9
TEL3	**Telica 3**	**1.89**	**100**⇑	*e*P	P	08 31 36.4	-0.3
MGAN	**Managua**	**2.56**	**107**	*e*S	S	08 32 14.5	-2.0
MGAN				*i*		08 32 16.7	
	comp=E,93nm,0.8s						

IDC 14 08:33:11.2±6.8, 20.11S×177.65W, mb3.7/2, mb1 4.0/2, mb1mx3.6/12, Error ellipse: s-maj=302.0km s-min=105.9km az=154.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ASAR	**Alice Springs**	**44.93**	**256**	P	P	08 41 27.1	-2.8
	0.4nm,0.5s,baz=90,slow=7.5,SNR=14						
WRA	**Warramunga Arr**	**44.98**	**262**	P	P	08 41 29.6	-0.8
	0.6nm,0.3s,baz=96,slow=8.3,SNR=33						
AKASG	**Malin Array Be**	**142.83**	**332**	PKP	PKPdf	08 52 46.1	-2.3
	1.1nm,0.6s,baz=43,slow=4.3,SNR=4.6						

NEIC ***14*** *08:45:15.7, 15.63N×97.53W, h20km, MD4.0(MEX), After MEX.*
MEX ***14*** *08:45:15.0±1.4, 15.60N×97.52W, h20km±65km, MD4.0*
ISC 14 08:45:12.3±1.8, 15.7N±0.1×97.43W±0.06, h20km, n9, σ0§79/16, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PNIG	**Pinotepa**	**0.99**	**318**	*i*P	**Pb**	**08 45 30.8**	**+0.1**
PNIG				*i*S	**Sb**	**08 45 42.2**	**-1.1**
HUIG	**Huatulco**	**1.28**	**85**	*i*P	**Pn**	**08 45 35.4**	**0.0**
HUIG				*i*S	**Sb**	**08 45 50.5**	**-1.2**
OXX	**Oaxaca**	**1.58**	**25**	*i*P	**Pn**	**08 45 41.0**	**+1.4**
OXX				*i*S	**Sn**	**08 45 59.5**	**-0.1**
CMIG	**Matias Romero**	**2.84**	**59**	*e*P	**Pn**	**08 45 57.7**	**+0.2**
CMIG				*i*S	**Sn**	**08 46 31.8**	**+0.3**
CMIG	**Matias Romero**	**2.84**	**59**	*e*P	**Pn**	**08 45 57.7**	**+0.2**
CMIG				*i*S	**Sn**	**08 46 35.8**	**+4.3**
IISM	**Ciudad Serdan**	**3.32**	**1**	*e*P	**Pn**	**08 46 09.0**	**+4.6**
POHV	**Veracruz**	**3.40**	**2**	*e*P	**Pn**	**08 46 11.0**	**+5.4**
PPM	**Popocatepetl**	**3.58**	**342**	*e*P	**Pn**	**08 46 09.2**	**+1.0**
PPM				*e*P		08 46 15.0	
PPM				*i*S	**Sn**	**08 46 50.4**	**0.0**
PPM	**Popocatepetl**	**3.58**	**342**	*e*P	**Pn**	**08 46 15.0**	**+6.8**
PPM				*i*S	**Sn**	**08 46 50.4**	**0.0**

NEIC ***14*** *08:48:08.0, 36.48S×179.16W, h54km, ML4.3(WEL), After WEL.*
WEL ***14*** *08:48:08.8±0.3, 36.54S×179.37W, h12km, ML4.4/4, Error ellipse: s-maj=5.7km s-min=5.4km az=0.0*
ISC 14 08:48:05.1±1.2, 37.1S±0.1×178.9W±0.1, h12km, n32, σ1§29/39, mb4.2/1, East of North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MXZ	**Matakaoa Point**	**2.25**	**258**	PN	**Pn**	**08 48 43.1**	**+0.4**
MXZ				SN	**Sn**	**08 49 09.0**	**-1.7**
PUZ	**Puketiti**	**2.43**	**247**	PN	**Pn**	**08 48 47.5**	**+2.2**
PUZ				SN	**Sn**	**08 49 16.7**	**+1.5**
PUZ	**Puketiti**	**2.43**	**247**	*e*P	**Pn**	**08 48 47.6**	**+2.3**
PUZ				S	**Sn**	**08 49 18.1**	**+2.9**
MWZ	**Matawai**	**3.06**	**246**	PN	**Pn**	**08 48 55.6**	**+1.3**
MWZ				SN	**Sn**	**08 49 30.3**	**-0.9**
KNZ	**Kokohu**	**3.28**	**234**	PN	**Pn**	**08 48 60.0**	**+2.6**
KNZ	**Kokohu**	**3.28**	**234**	*e*P	**Pn**	**08 49 00.3**	**+2.9**
URZ	**Urewera**	**3.34**	**249**	PN	**Pn**	**08 48 59.4**	**+1.1**
URZ				SN	**Sn**	**08 49 37.9**	**-0.4**
URZ	**Urewera**	**3.34**	**249**	*e*P	**Pn**	**08 48 59.6**	**+1.3**

BKZ	**Black Stump Fm**	**4.15**	**239**	PN	**Pn**	**08 49 11.0**	**+1.3**
BKZ				SN	**Sn**	**08 49 58.8**	**+0.2**
PWZ	**Pawanui**	**4.39**	**228**	PN	**Pn**	**08 49 14.4**	**+1.2**
PWZ				SN	**Sn**	**08 50 04.1**	**-0.7**
PWZ	**Pawanui**	**4.39**	**228**	*e*P	**Pn**	**08 49 14.4**	**+1.3**
NGZ	**Ngauruhoe**	**4.78**	**243**	PN	**Pn**	**08 49 19.5**	**+0.9**
CNZ	**Chateau**	**4.82**	**243**	PN	**Pn**	**08 49 11.8**	**-7.4**
WNVZ	**Wahianoa**	**4.84**	**242**	PN	**Pn**	**08 49 21.8**	**+2.3**
TSZ	**Takapari Road**	**4.96**	**232**	PN	**Pn**	**08 49 21.4**	**+0.2**
TSZ	**Takapari Road**	**4.96**	**232**	*e*P	**Pn**	**08 49 21.6**	**+0.4**
BFZ	**Birch Farm**	**5.17**	**225**	PN	**Pn**	**08 49 24.5**	**+0.3**
BFZ	**Birch Farm**	**5.17**	**225**	*e*P	**Pn**	**08 49 24.2**	**0.0**
MRZ	**Mangatainoka R**	**5.55**	**229**	PN	**Pn**	**08 49 29.4**	**-0.1**
MTW	**Mount Morrison**	**5.91**	**226**	PN	**Pn**	**08 49 33.9**	**-0.7**
MTW	**Mount Morrison**	**5.91**	**226**	P	**Pn**	**08 49 33.9**	**-0.7**
CAW	**Cannon Point**	**6.13**	**228**	PN	**Pn**	**08 49 35.6**	**-2.1**
NNZ	**Nelson**	**7.24**	**233**	PN	**Pn**	**08 49 52.0**	**-1.3**
QRZ	**Quartz Range**	**7.61**	**238**	PN	**Pn**	**08 49 56.2**	**-2.4**
QRZ	**Quartz Range**	**7.61**	**238**	*e*P	**Pn**	**08 49 57.7**	**-0.8**
THZ	**Tophouse**	**7.83**	**231**	PN	**Pn**	**08 50 00.7**	**-0.9**
THZ	**Tophouse**	**7.83**	**231**	*e*P	**Pn**	**08 50 00.8**	**-0.8**
KHZ	**Kahutara**	**7.84**	**225**	PN	**Pn**	**08 50 01.6**	**-0.2**
LTZ	**Lake Taylor**	**8.80**	**228**	PN	**P**	**08 50 13.7**	**-1.4**
LTZ	**Lake Taylor**	**8.80**	**228**	*e*P	**P**	**08 50 13.7**	**-1.4**
AS12	**Alice Springs**	**42.44**	**275**	*e*P	**P**	**08 56 01.0**	**-0.5**
	5.9nm,1.0s,mb4.2						
AS12				*e*		08 56 10.8	
WB2	**Warramunga Arr**	**44.02**	**280**	*e*P	**P**	**08 56 12.2**	**-2.2**
WB2				*i*		08 56 23.5	

IDC ***14*** *09:30:18.1±4.7, 16.95S×73.62W, h92km±41km, mb3.7/2, mb1 3.8/4, mb1mx3.5/16, Error ellipse: s-maj=38.5km s-min=27.8km az=109.0*
ISC 14 09:30:16.5±4.0, 17.0S±0.1×73.7W±0.2, h92km±36km, n4, σ0§79/6, mb3.8/2, Near coast of Peru

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LPAZ	**La Paz**	**5.36**	**83**	P	**P**	**09 31 34.9**	**-0.6**
	5.4nm,0.3s,baz=275,slow=11,SNR=124						
LPAZ				S	**S**	**09 32 36.9**	**+0.4**
	baz=9.0,slow=19,SNR=2.8						
LVC	**Limon Verde**	**7.17**	**142**	P	**P**	**09 32 00.6**	**+0.2**
	1.3nm,0.3s,baz=334,slow=10,SNR=18						
LVC				S	**S**	**09 33 20.9**	**0.0**
	3.8nm,0.3s,baz=71,slow=20,SNR=15						
DBIC	**Dimbokro**	**71.94**	**77**	P	**P**	**09 41 31.7**	**-0.6**
	2.0nm,0.5s,mb4.2,baz=208,slow=6.3,SNR=5.4						
YKA	**Yellowknife Ar**	**85.50**	**342**	P	**P**	**09 42 45.4**	**+0.6**
	0.3nm,0.6s,mb3.4,baz=139,slow=5.2,SNR=14						

IDC ***14*** *09:36:12.1±1.0, 10.11N×125.47E, mb3.9/7, mb1 4.1/7, mb1mx3.9/19, MS3.5/5, Ms1 3.5/5, ms1mx3.1/29, Error ellipse: s-maj=61.1km s-min=19.2km az=81.0*
MAN ***14*** *09:36:15.0, 10.06N×125.17E, h13km, mb4.8, ML3.7, MS3.7*
NEIC ***14*** *09:36:21.8±0.4, 10.06N×125.39E, h80km, mb4.4/5, Error ellipse: s-maj=14.3km s-min=8.2km az=69.0*
ISC 14 09:36:16.0±0.5, 10.03N±0.04×125.23E±0.05, h36km±5km, n35, σ1§15/35, mb4.1/12, MS3.5/4, 6C-1D, Leyte

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SCPH	**Surigao**	**0.35**	**134**	*e*P	**P**	**09 36 23.6**	**-1.0**
SCPH				*i*S	**S**	**09 36 31.8**	**+1.2**
MSLP	**Maasin**	**0.38**	**286**⇑	*e*P	**P**	**09 36 22.6**	**-2.5**
MSLP						19 42 39.0	
BUTP	**Butuan**	**1.12**	**160**⇑	*e*P	**P**	**09 36 36.2**	**+0.8**
PLP	**Palo**	**1.16**	**348**	*i*P	**P**	**09 36 35.0**	**-0.9**
PLP				*i*S	**S**	**09 36 51.2**	**+0.4**
OCLP	**Ormoc**	**1.19**	**329**⇑	*e*P	**P**	**09 36 38.0**	**+1.6**
LLP	**Lapu-Lapu**	**1.28**	**283**	*e*P	**P**	**09 36 37.4**	**-0.3**
LLP				*e*S	**S**	**09 36 53.4**	**-0.6**
TBP	**Tagbilaran**	**1.39**	**256**	*e*P	**P**	**09 36 37.9**	**-1.5**
TBP				*e*S	**S**	**09 36 59.7**	**+2.9**
BESP	**Borongan**	**1.58**	**7**⇑	*e*P	**P**	**09 36 41.9**	**-0.1**
CGP	**Cagayan de Oro**	**1.65**	**199**⇓	*e*P	**P**	**09 36 42.7**	**-0.4**
CNP	**Catarman**	**2.53**	**347**⇑	*e*P	**P**	**09 36 57.5**	**+1.8**
PAGZ	**Pagadian**	**2.83**	**220**⇑	*e*P	**P**	**09 37 01.3**	**+1.3**
RCP	**Roxas**	**2.88**	**302**	*e*P	**P**	**09 37 00.8**	**+0.2**
RCP				*e*S	**S**	**09 37 33.0**	**-1.5**
TGY	**Tagaytay City**	**5.83**	**314**	LR	LR	09 40 15.9	
	comp=Z,187nm,21.4s,baz=100,slow=41						
KAKA	**Kakadu**	**23.68**	**162**	*e*P	**P**	**09 41 26.0**	**+0.5**
	9.0nm,0.6s,mb4.4						
FITZ	**Fitzroy Crossi**	**27.95**	**179**	P	**P**	**09 42 04.9**	**-0.7**
	1.9nm,0.8s,mb3.8,baz=358,slow=5.5,SNR=7.9						
MAJO	**Matsushiro**	**28.90**	**22**	*e*P	**P**	**09 42 11.7**	**-2.1**
PMG	**Port Moresby**	**29.14**	**131**	LR	LR	09 52 48.5	
	comp=Z,139nm,18.6s,MS3.6,baz=263,slow=34						
WRA	**Warramunga Arr**	**31.10**	**163**	P	**P**	**09 42 31.6**	**-2.0**
	0.6nm,0.6s,mb3.6,baz=344,slow=9.7,SNR=11						
ASAR	**Alice Springs**	**34.54**	**166**	P	**P**	**09 43 02.9**	**-0.6**
	1.2nm,0.8s,mb3.9,baz=342,slow=6.7,SNR=13						
ASAJ	**Asahikawa**	**37.15**	**21**	LR	LR	09 56 03.5	
	comp=Z,50nm,20.7s,MS3.3,baz=194,slow=32						
GUN	**Gumba**	**41.01**	**301**	*e*P	**P**	**09 43 59.2**	**+1.6**
	17nm,0.8s,mb4.8						
PKI	**Pulchoki**	**41.31**	**301**	*e*P	**P**	**09 44 00.2**	**+0.1**
KKN	**Kakani**	**41.48**	**301**	*e*P	**P**	**09 44 02.7**	**+1.2**
	15nm,1.0s,mb4.6						
DMN	**Daman**	**41.58**	**300**	*e*P	**P**	**09 44 02.9**	**+0.5**
	6.4nm,0.5s,mb4.5						
KOLN	**Koldanda**	**42.90**	**300**	*e*P	**P**	**09 44 13.7**	**+0.5**
	9.2nm,1.0s,mb4.5						
STKA	**Stephens Creek**	**44.51**	**160**	P	**P**	**09 44 26.4**	**+0.2**
	3.4nm,1.0s,mb4.1,slow=10,SNR=4.8						
MKAR	**Makanchi Array**	**51.60**	**323**	P	**P**	**09 45 20.8**	**-0.3**
	1.6nm,1.0s,mb3.9,baz=139,slow=11,SNR=5.4						
ZAL	**Zalesovo**	**54.35**	**332**	LR	LR	10 12 31.6	
	comp=Z,33nm,18.1s,MS3.4,baz=9.9,slow=40						
KURK	**Kurchatov**	**55.69**	**326**	*e*P	**P**	**09 45 54.1**	**+3.0**
BRVK	**Borovoye**	**61.36**	**326**	P	**P**	**09 46 30.3**	**-0.4**
ILAR	**Eielson Array**	**80.10**	**26**	P	**P**	**09 48 22.3**	**-1.3**
	0.4nm,0.7s,mb3.5,baz=240,slow=4.3,SNR=7.0						
INK	**Inuvik**	**84.88**	**21**	*e*P	**P**	**09 48 48.2**	**+0.1**
NOA	**NORSAR Array B**	**92.52**	**334**	LR	LR	10 35 15.6	
	comp=Z,32nm,18.2s,MS3.8,baz=240,slow=38						
YKA	**Yellowknife Ar**	**94.39**	**24**	P	**P**	**09 49 33.3**	**+0.2**
	0.3nm,0.7s,mb3.9,baz=299,slow=4.6,SNR=12						
YKA	**Yellowknife Ar**	**94.39**	**24**	P	**P**	**09 49 33.3**	**+0.2**

NEIC ***14*** *09:40:29.1±0.3, 0.80S×133.27E, h10km, mb4.5/9, Error ellipse: s-maj=12.2km s-min=5.1km az=67.0*
IDC ***14*** *09:40:32.1±3.8, 0.78S×133.43E, h32km±28km, mb4.0/8, mb1 4.2/11, mb1mx4.1/19, ML4.1/3, MS3.7/1, Ms1 3.7/1, ms1mx2.7/24, Error ellipse: s-maj=34.9km s-min=12.9km az=81.0*
ISC 14 09:40:30.5±0.5, 0.94S±0.04×133.13E±0.10, h32km, n30, σ1§03/35, mb4.4/13, MS3.6/1, Indian Jaya region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KAKA	**Kakadu**	**11.70**	**184**	*e*P	**P**	**09 43 17.9**	**-0.6**
	24nm,0.6s						
KAKA				*e*S	**S**	**09 45 26.8**	**-2.2**
PMG	**Port Moresby**	**16.30**	**122**	Pn	**P**	**09 44 18.0**	**-0.9**
	0.5nm,0.3s,baz=274,slow=14,SNR=2.1						
FITZ	**Fitzroy Crossi**	**18.57**	**203**	*e*P	**P**	**09 44 47.6**	**+0.3**
	7.1nm,0.5s						
FITZ				*e*S	**S**	**09 48 07.9**	**-2.0**
FITZ	**Fitzroy Crossi**	**18.57**	**203**	P	**P**	**09 44 48.1**	**+0.8**
	1.0nm,0.3s,baz=29,slow=8.2,SNR=29						
FITZ				S	**S**	**09 48 09.4**	**-0.5**
	0.6nm,0.3s,baz=181,slow=12,SNR=6.9						
WB2	**Warramunga Arr**	**18.92**	**176**	*e*P	**P**	**09 44 51.6**	**+0.2**
WB2				*e*S	**S**	**09 48 16.8**	**-0.9**
WRA	**Warramunga Arr**	**18.92**	**176**	P	**P**	**09 44 51.7**	**+0.3**
	1.0nm,0.3s,baz=355,slow=12,SNR=53						
WRA				S	**S**	**09 48 18.7**	**+1.0**
	0.4nm,0.3s,baz=7.9,slow=22,SNR=6.2						
AS12	**Alice Springs**	**22.60**	**178**	*e*P	**P**	**09 45 31.0**	**+1.0**
	24nm,0.8s,mb4.7						
ASAR	**Alice Springs**	**22.60**	**178**	P	**P**	**09 45 31.3**	**+1.3**
	13nm,0.9s,mb4.3,baz=5.0,slow=12,SNR=51						
ASAR				S	**S**	**09 49 39.8**	**+9.0**
	0.9nm,0.7s,baz=6.1,slow=25,SNR=3.1						
CTA	**Charters Tower**	**22.95**	**147**	*e*P	**P**	**09 45 34.9**	**+1.4**
	4.8nm,1.1s,mb3.8						
CTA	**Charters Tower**	**22.95**	**147**	P	**P**	**09 45 34.3**	**+0.8**
	4.2nm,0.9s,mb3.9,baz=332,slow=13,SNR=5.9						
CTAO	**Charters Tower**	**22.95**	**147**	*e*P	**P**	**09 45 34.9**	**+1.4**
	10nm,1.1s,mb4.2						
STKA	**Stephens Creek**	**31.79**	**166**	P	**P**	**09 46 54.5**	**0.0**
	2.9nm,0.9s,mb4.1,baz=352,slow=12,SNR=4.0						
STKA				LR	LR	10 01 12.3	
	comp=Z,135nm,18.7s,MS3.6,baz=202,slow=39						
NWAO	**Narrogin (SRO)**	**35.15**	**204**	P	**P**	**09 47 26.1**	**+2.4**
	7.0nm,0.9s,mb4.6,baz=46,slow=14,SNR=3.7						
LSA	**Lhasa**	**50.31**	**311**	*e*P	**P**	**09 49 27.9**	**+1.4**
	3.7nm,0.4s,mb4.8						
ULN	**Ulaanbaatar**	**53.65**	**338**	*e*P	**P**	**09 49 50.6**	**-0.7**
PKI	**Pulchoki**	**53.87**	**306**	*e*P	**P**	**09 49 52.9**	**-0.3**
	9.0nm,0.5s,mb4.9						
SONM	**Songino Array**	**53.87**	**338**	P	**P**	**09 49 53.0**	**0.0**
	0.4nm,0.3s,mb3.8,baz=135,slow=6.1,SNR=3.4						
KKN	**Kakani**	**54.06**	**306**	*e*P	**P**	**09 49 55.3**	**+0.7**
DMN	**Daman**	**54.13**	**306**	*e*P	**P**	**09 49 55.4**	**+0.3**
GKN	**Gorkha**	**54.67**	**306**	*e*P	**P**	**09 49 58.8**	**-0.3**
	7.2nm,0.6s,mb4.8						
KOLN	**Koldanda**	**55.42**	**305**	*e*P	**P**	**09 50 04.5**	**-0.1**
	17nm,0.8s,mb5.1						
MKAR	**Makanchi Array**	**65.04**	**324**	P	**P**	**09 51 09.6**	**-0.5**
	5.9nm,0.8s,mb4.7,baz=117,slow=8.0,SNR=38						
KURK	**Kurchatov**	**69.12**	**326**	*e*P	**P**	**09 51 34.8**	**-0.9**
BRVK	**Borovoye**	**74.79**	**326**	*e*P	**P**	**09 52 09.1**	**-0.4**
ZRNK	**Zerenda**	**75.46**	**326**	*e*P	**P**	**09 52 12.7**	**-0.6**
VNDA	**Vanda**	**78.07**	**174**	P	**P**	**09 52 28.4**	**+1.0**
	1.2nm,0.9s,mb3.8,baz=324,slow=6.7,SNR=6.5						
VNDA	**Vanda**	**78.07**	**174**	*e*P	**P**	**09 52 28.4**	**+1.1**
	1.1nm,0.9s,mb3.8						
ILAR	**Eielson Array**	**86.57**	**25**	P	**P**	**09 53 09.2**	**-2.4**
	0.7nm,0.8s,mb4.0,baz=252,slow=4.5,SNR=10						
QSPA	**South Pole Qui**	**88.99**	**180**	*e*P	**P**	**09 53 24.6**	**+1.6**
	3.9nm,1.0s,mb4.7						
CPUP	**Villa Florida**	**151.07**	**160**	PKPbc	PKPdf	10 00 23.5	+3.0
	1.3nm,0.7s,baz=225,slow=4.3,SNR=3.4						

HEL ***14*** *09:53:00.5±0.5, 55.94N×28.24E, ML2.1, Explosion*
NAO ***14*** *09:53:11.6±6.4, 56.46N×22.98E, ML2.4*
BER ***14*** *09:53:11.6±3.3, 56.34N×23.09E, ML2.4(NAO), Suspected explosion*
ISC 14 09:53:07.7±2.8, 56.5N±0.2×23.0E±0.2, n8, σ1§39/13, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MEF	**Metsahovi**	**3.82**	**10**	*e*P	**Pn**	**09 54 12.7**	**+3.6**
MEF				*e*S	**Sn**	**09 55 07.3**	**+12**
PVF	**Pernaja**	**4.34**	**19**	*e*P	**Pn**	**09 54 13.8**	**-2.8**
PVF				*e*SG	**Sg**	**09 55 27.4**	**-4.9**
PVF				MSG		09 55 30.2	
	comp=Z,2.5nm,0.3s						
FIA0	**FINESS Array S**	**5.23**	**16**	Pn	**Pn**	**09 54 30.9**	**+1.9**
	baz=202,slow=11						
FIA0				Sn	**Sn**	**09 55 31.7**	**+0.7**
	baz=194,slow=22						
FIA0				Lg		09 55 55.0	
	baz=198,slow=37						
FIA0	**FINESS Array S**	**5.23**	**16**	*e*S	**Sn**	**09 55 27.6**	**-3.3**
KEF	**Keuruu**	**5.79**	**9**	*e*P	**Pn**	**09 54 36.8**	**-0.1**
KEF				*e*S	**Sn**	**09 55 45.3**	**+0.2**
KAF	**Kangasniemi**	**5.90**	**15**	*e*S	**Sn**	**09 55 42.8**	**-5.0**
HFS	**Hagfors**	**6.13**	**311**	Pn	**Pn**	**09 54 41.6**	**-0.2**
	baz=133,slow=12						
HFS				Sn	**Sn**	**09 55 53.7**	**0.0**
	baz=128,slow=28						
HFS				Lg		09 56 23.3	
	baz=120,slow=37						
SUF	**Sumiainen**	**6.46**	**13**	*e*P	**Pn**	**09 54 42.0**	**-4.5**

ISK ***14*** *10:32:07.9, 38.29N×26.79E, h11km, MD3.2, ML2.9*
ATH ***14*** *10:32:08.5, 38.28N×27.04E, h43km, MD3.2/3*
ISC 14 10:32:08.8±0.9, 38.31N±0.03×26.79E±0.05, h6km±6km, n22, σ0§94/32, 1C, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
IZM	**Izmir**	**0.38**	**77**	*i*PG	**Pg**	**10 32 16.6**	**+0.1**
IZM				*i*SG	**Sg**	**10 32 22.0**	**+0.4**
KDAG	**Bornova**	**0.39**	**76**⇑	*i*P	**Pg**	**10 32 16.7**	**+0.1**
KDAG				*i*S	**Sg**	**10 32 22.1**	**+0.3**
SMG	**Samos**	**0.60**	**176**	*e*P	**Pg**	**10 32 21.4**	**+0.6**
AKS	**Akhisar**	**0.98**	**54**	PG	**Pg**	**10 32 27.5**	**-0.9**
AKS				SG	**Sg**	**10 32 41.5**	**0.0**
PRK	**Paraskevi**	**1.02**	**337**	*e*P	**Pn**	**10 32 28.9**	**+0.5**
PRK				*e*S	**Sb**	**10 32 44.5**	**+2.7**
AYDN	**Tasoluk**	**1.08**	**127**	*i*P	**Pb**	**10 32 29.3**	**-0.1**
AYDN				*i*S	**Sb**	**10 32

UNM	**Universidad Na**	**2.65**	**5**	*e*P		**Pn**	**10 39 44.0**	**+2.1**
IISM	**Ciudad Serdan**	**3.01**	**40**	*i* P		**Pn**	**10 39 45.5**	**-1.5**
IISM				*i* S		**Sn**	**10 40 24.2**	**0.0**
POHV	**Veracruz**	**3.13**	**40**	*i* P		**Pn**	**10 39 53.2**	**+4.5**
POHV				*i* S		**Sn**	**10 40 25.9**	**-1.4**
EVV	**El Vigia**	**4.26**	**65**	*i* P		**Pn**	**10 40 05.0**	**+0.2**
CMIG	**Matias Romero**	**4.36**	**84**	*i* P		**Pn**	**10 40 03.8**	**-2.4**
CMIG				*i* S		**Sn**	**10 40 56.0**	**-2.3**
SFJM	**Santa Fe**	**5.12**	**318**	*e*P		**Pn**	**10 40 18.6**	**+1.6**

TAP ***14*** *10:45:46.2, 23.92N×121.66E, h22km, ML3.5*
TAP Felt I J at Hualien, I J at Chiawan, II J at Shilin, I J at Nanau.
ISC 14 10:45:45.7±0.6, 23.86N±0.02×121.76E±0.04, h20km±5km, n45, σ0°83/69, 8C-8D, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HWA	**Hwalien**	**0.18**	**309**	⇑*i*P	**Pb**	**10 45 50.9**	**+0.2**
HWA				S	**Sb**	**10 45 54.4**	**+0.5**
TWD	**Chiawan**	**0.26**	**325**	⇑*i*P	**Pb**	**10 45 51.7**	**-0.1**
TWD				S	**Sb**	**10 45 55.6**	**-0.3**
ESL	**Shilin**	**0.30**	**261**	⇓*i*P	**Pb**	**10 45 52.2**	**-0.3**
ESL				S	**Sb**	**10 45 56.5**	**-0.5**
WHF	**Hehuan Shan**	**0.53**	**302**	⇑*i*P	**Pb**	**10 45 55.7**	**-0.6**
WHF				S	**Sb**	**10 46 02.7**	**-0.7**
ENA	**Nanau**	**0.56**	**358**	⇓*i*P	**Pb**	**10 45 56.6**	**-0.1**
ENA				S	**Sb**	**10 46 04.6**	**+0.2**
WDT	**Danda**	**0.58**	**260**	⇓*i*P	**Pb**	**10 45 57.0**	**-0.1**
WDT				S	**Sb**	**10 46 04.4**	**-0.6**
TWT	**Tachien**	**0.66**	**306**	⇑*i*P	**Pb**	**10 45 58.3**	**-0.1**
TWT				S	**Sb**	**10 46 06.4**	**-0.7**
TWF1	**Yuli**	**0.66**	**220**	⇓*i*P	**Pb**	**10 45 58.1**	**-0.4**
NNS	**Nan Shan**	**0.68**	**328**	⇑*i*P	**Pb**	**10 45 58.1**	**-0.5**
NNS				S	**Sb**	**10 46 07.0**	**-0.6**
TWC	**Suao**	**0.75**	**6**	P	**Pb**	**10 46 00.0**	**+0.1**
TWC				S	**Sb**	**10 46 11.0**	**+1.4**
SMLT	**Sun Moon Lake**	**0.79**	**272**	*i* P	**Pb**	**10 46 00.3**	**-0.3**
SMLT				S	**Sb**	**10 46 09.6**	**-1.2**
ENTT	**Nioudou**	**0.79**	**347**	⇑P	**Pb**	**10 46 00.4**	**-0.3**
ENTT				S	**Sb**	**10 46 11.0**	**0.0**
TYC	**Yuchr**	**0.83**	**273**	⇓*i*P	**Pb**	**10 46 00.8**	**-0.5**
TYC				S	**Sb**	**10 46 10.8**	**-1.2**
CHKT	**Chengkung**	**0.84**	**206**	*e*P	**Pb**	**10 46 01.0**	**-0.5**
TWE	**Neicheng**	**0.86**	**354**	*e*P	**Pb**	**10 46 01.7**	**-0.1**
NSK	**Sanguang**	**0.89**	**336**	⇑P	**Pb**	**10 46 01.8**	**-0.6**
NSK				S	**Sb**	**10 46 12.5**	**-1.2**
ALS	**Alishan**	**0.94**	**248**	⇓*i*P	**Pb**	**10 46 03.4**	**+0.1**
ELDTW	**Lidau**	**0.96**	**226**	*e*P	**Pb**	**10 46 02.5**	**-1.0**
WNT	**Mingjian**	**0.98**	**271**	*e*P	**Pb**	**10 46 04.4**	**+0.4**
WNT				S	**Sb**	**10 46 17.4**	**+0.8**
TWQ1	**Liyutan**	**1.02**	**298**	*e*P	**Pb**	**10 46 04.2**	**-0.5**
TWQ1				S	**Sb**	**10 46 18.8**	**+1.1**
CHN5	**Tsauling**	**1.03**	**255**	⇓*i*P	**Pb**	**10 46 05.0**	**+0.4**
CHN5				S	**Sb**	**10 46 19.2**	**+1.5**
TCU	**Taichung**	**1.03**	**286**	*e*P	**Pb**	**10 46 05.0**	**+0.2**
TCU				S	**Sb**	**10 46 18.6**	**+0.7**
NSTT	**Nanjuang**	**1.03**	**318**	⇑P	**Pb**	**10 46 04.5**	**-0.3**
NSTT				S	**Sb**	**10 46 16.1**	**-1.8**
NSY	**Sanyi**	**1.07**	**301**	*e*P	**Pb**	**10 46 05.8**	**+0.4**
NSY				S	**Sb**	**10 46 20.2**	**+1.3**
TWB1	**Santiao Chiao**	**1.16**	**10**	*e*P	**Pb**	**10 46 07.2**	**+0.2**
TWB1				S	**Sb**	**10 46 22.9**	**+1.3**
CHN4	**Tsaushan**	**1.19**	**245**	*e*P	**Pb**	**10 46 07.5**	**+0.1**
CHN4				S	**Sb**	**10 46 23.6**	**+1.3**
NWF	**Wu-fen Shan**	**1.20**	**1**	*e*P	**Pn**	**10 46 07.4**	**-0.2**
TWG	**Pinlang**	**1.22**	**212**	*e*P	**Pn**	**10 46 06.0**	**-1.8**
WTP	**Ta-pu**	**1.22**	**240**	⇓*i*P	**Pn**	**10 46 08.0**	**+0.1**
WTP				S	**Sb**	**10 46 25.0**	**+1.7**
NCU	**National Centr**	**1.22**	**335**	*e*P	**Pn**	**10 46 08.5**	**+0.6**
TWS1	**Kuangyinshan**	**1.27**	**346**	*e*P	**Pn**	**10 46 07.8**	**-0.8**
TWS1				S	**Sb**	**10 46 25.7**	**+0.9**
CHY	**Chiayi**	**1.28**	**254**	*e*P	**Pn**	**10 46 08.5**	**-0.2**
CHY				S	**Sb**	**10 46 26.3**	**+1.4**
TWK	**Hsinying**	**1.31**	**243**	*e*P	**Pn**	**10 46 09.1**	**-0.1**
CHN1	**Nanshi**	**1.32**	**239**	*e*P	**Pn**	**10 46 09.1**	**-0.2**
SGST	**Jiashian**	**1.33**	**235**	*e*P	**Pn**	**10 46 09.6**	**+0.1**
WTCT	**Ta-ch'eng**	**1.35**	**270**	*e*P	**Pn**	**10 46 09.7**	**-0.1**
TWY	**Chenhua**	**1.42**	**354**	*e*P	**Pn**	**10 46 12.5**	**+1.8**
ECL	**Taimali**	**1.46**	**211**	*e*P	**Pn**	**10 46 08.4**	**-1.9**
SSD	**Sandimen**	**1.52**	**223**	*e*P	**Pn**	**10 46 12.8**	**+0.6**
TWM1	**Shoushan**	**1.61**	**230**	*e*P	**Pn**	**10 46 14.9**	**+1.5**
EAST	**Anshuo**	**1.69**	**210**	*e*P	**Pn**	**10 46 15.8**	**+1.1**
SCZT	**Fangliau**	**1.82**	**216**	*e*P	**Pn**	**10 46 17.6**	**+1.1**
WDGT	**Dungji**	**2.02**	**253**	*e*P	**Pn**	**10 46 18.2**	**-1.1**
PNG	**Penghu**	**2.04**	**262**	*e*P	**Pn**	**10 46 19.1**	**-0.5**
TWK1	**Hengchun**	**2.10**	**205**	*e*P	**Pn**	**10 46 20.0**	**-0.5**

MEX 14 10:51:29.5±1.1, 16.57N×99.65W, h5km±7km, MD3.7, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ACX	**Acapulco**	**0.40**	**319**	*i* P	Pg	10 51 37.0	-0.5
ACX				*i* S	Sg	10 51 42.0	-0.8
CAIG	**El Cayaco**	**0.77**	**309**	*i* P	Pg	10 51 43.6	-1.2
CAIG				*i* S	Sg	10 51 53.7	-1.4
ZIIG	**Zihuatanejo**	**2.03**	**301**	*i* P	Pn	10 52 00.5	-4.2
ZIIG				*i* S	Sn	10 52 24.7	-5.9

THR ***14*** *10:56:40.6±0.8, 30.75N×50.42E, h17km±14km, MD3.8, ML3.6*
IDC ***14*** *10:56:40.6±4.0, 30.73N×50.29E, h44km±36km, mb3.8/17, mb1 4.0/19, mb1mx3.9/25, ML3.7/2, MS3.2/1, Ms1 3.3/1, ms1mx2.4/30, Error ellipse: s-maj=30.0km s-min=18.4km az=23.0*
NEIC ***14*** *10:56:41.6±2.1, 30.78N×50.42E, h50km±19km, mb4.4/7, Error ellipse: s-maj=13.4km s-min=6.6km az=198.0*
SNSN ***14*** *10:56:47.6, 30.41N×49.92E, h126km, Ml5.1*
ISC 14 10:56:37.8±0.7, 30.76N±0.04×50.35E±0.04, h34km±8km, n48, σ0°93/49, mb4.2/27, MS3.2/1, Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NASN	**Na'in**	**2.92**	**45**	*e*PN	**P**	**10 57 24.4**	**+1.5**
NASN				SN	**S**	**10 57 56.8**	**-0.4**
NASN				AMP		10 58 15.5	
	comp=N,342nm,0.7s						
GHIR	**Ghir-Karzin**	**3.37**	**136**	*e*PN	**P**	**10 57 30.8**	**+1.4**
GHIR				SN	**S**	**10 58 07.0**	**-1.8**
DAMV	**Damavand**	**5.04**	**15**	*e*PN	**P**	**10 57 53.8**	**+0.7**
DAMV				SN	**S**	**10 58 48.9**	**-2.1**
HASS	**Wahat al Ahsa'**	**5.58**	**186**	P	**P**	**10 58 03.6**	**+3.0**
MZLS	**Mizel**	**8.11**	**215**	P	**P**	**10 58 36.4**	**+0.3**
HILS	**Ha'il**	**8.21**	**248**	P	**P**	**10 58 37.5**	**+0.1**
AFFS	**'Afif**	**9.43**	**226**	P	**P**	**10 58 53.8**	**-0.5**
ASF	**Jabal al Asfar**	**11.57**	**280**	P	**P**	**10 59 22.7**	**-0.9**
	comp=N,0.7nm,0.3s,baz=309,slow=7.0,SNR=4.0						
TBKS	**Tabuk**	**12.28**	**262**	P	**P**	**10 59 32.7**	**-0.5**
TATS	**Tathlith**	**12.78**	**211**	P	**P**	**10 59 39.0**	**-0.9**
BRTR	**Keskin Array B**	**16.30**	**308**	P	**P**	**11 00 27.1**	**+1.4**
	comp=N,0.2nm,0.3s,baz=131,slow=13,SNR=8.7						
IDI	**Anoyia**	**21.80**	**289**	P	**P**	**11 01 31.1**	**+2.5**
	comp=N,8.4nm,0.6s,mb4.3,baz=21,slow=18,SNR=2.5						
MLR	**Muntele Rosu**	**24.06**	**315**	P	**P**	**11 01 54.7**	**+4.0**
	comp=N,2.3nm,0.6s,mb3.8,baz=264,slow=14,SNR=4.8						
AKASG	**Malin Array Be**	**25.39**	**328**	P	**P**	**11 02 03.3**	**-0.2**
	comp=N,0.7nm,0.3s,mb3.7,baz=138,slow=9.1,SNR=11						
ZRNK	**Zerenda**	**26.02**	**26**	*e*P	**P**	**11 02 09.3**	**0.0**
BRVK	**Borovoye**	**26.59**	**27**	*e*P	**P**	**11 02 14.3**	**-0.3**
BVAR	**Borovoye Array**	**26.61**	**28**	P	**P**	**11 02 15.1**	**+0.3**
	comp=N,3.4nm,0.7s,mb4.0,baz=223,slow=7.9,SNR=21						
KURK	**Kurchatov**	**28.98**	**38**	*e*P	**P**	**11 02 36.5**	**+0.3**
KOLN	**Koldanda**	**29.10**	**87**	*e*P	**P**	**11 02 37.4**	**-0.2**
MKAR	**Makanchi Array**	**29.35**	**48**	P	**P**	**11 02 40.0**	**+0.4**
	comp=N,1.3nm,0.3s,mb4.1,baz=248,slow=8.1,SNR=27						
GKN	**Gorkha**	**29.94**	**87**	*e*P	**P**	**11 02 44.8**	**-0.2**
	comp=N,6.6nm,0.3s,mb4.8						
DMN	**Daman**	**30.44**	**87**	*e*P	**P**	**11 02 48.7**	**-0.7**
	comp=N,9.2nm,0.5s,mb4.8						
KKN	**Kakani**	**30.54**	**87**	*e*P	**P**	**11 02 49.8**	**-0.6**
	comp=N,14nm,0.6s,mb5.0						
PKI	**Pulchoki**	**30.71**	**87**	*e*P	**P**	**11 02 51.6**	**-0.2**
	comp=N,17nm,0.7s,mb5.0						
GERES	**GERESS Array B**	**33.04**	**314**	P	**P**	**11 03 11.6**	**-0.4**
	comp=N,0.4nm,0.5s,mb3.6,baz=101,slow=10.0,SNR=2.8						
ZAL	**Zalesovo**	**33.89**	**37**	P	**P**	**11 03 19.4**	**+0.2**
	comp=N,3.2nm,0.4s,mb4.6,baz=137,slow=7.9,SNR=6.8						
FINES	**FINESS Array B**	**34.58**	**340**	P	**P**	**11 03 24.4**	**-0.7**
	comp=N,1.1nm,0.6s,mb4.0,baz=153,slow=8.5,SNR=6.3						
FINES	**FINESS Array B**	**34.58**	**340**	P	**P**	**11 03 24.4**	**-0.7**
LPG	**La Plagne**	**36.85**	**306**	*e*P	**P**	**11 03 43.2**	**-1.4**
	comp=N,7.8nm,0.8s,mb4.3						
LPL	**La Plagne**	**36.86**	**306**	*e*P	**P**	**11 03 42.2**	**-2.5**
	comp=N,7.6nm,0.9s,mb4.2						
CABF	**La Chapelle**	**37.47**	**308**	*e*P	**P**	**11 03 49.1**	**-0.7**
	comp=N,16nm,1.0s,mb4.5						
SMF	**Signal de Mont**	**39.01**	**307**	*e*P	**P**	**11 04 02.4**	**-0.2**
	comp=N,4.7nm,0.6s,mb4.1						
NOA	**NORSAR Array B**	**39.69**	**331**	P	**P**	**11 04 07.6**	**-0.5**
	comp=N,0.2nm,0.3s,mb3.3,baz=118,slow=8.8,SNR=2.8						
ARCES	**ARCESS Array B**	**41.31**	**347**	P	**P**	**11 04 22.0**	**+0.5**
	comp=N,1.6nm,1.0s,mb3.6,baz=153,slow=10,SNR=5.0						
ESDC	**Sonseca Array**	**44.57**	**297**	LR	LR	11 24 44.4	
	comp=N,26nm,20.1s,MS3.2,baz=220,slow=38						
CMAR	**Chiang Mai Arr**	**45.53**	**94**	P	**P**	**11 04 56.5**	**+0.2**
	comp=N,1.1nm,0.6s,mb4.0,baz=296,slow=7.7,SNR=5.0						
ULN	**Ulaanbaatar**	**46.02**	**51**	*e*P	**P**	**11 05 00.2**	**+0.4**
	comp=N,1.7nm,0.7s,mb4.1						
RES	**Resolute Bay**	**72.38**	**351**	P	**P**	**11 08 02.1**	**+0.5**
SCHQ	**Schefferville**	**79.19**	**328**	P	**P**	**11 08 41.4**	**+0.8**
	comp=N,2.4nm,0.4s,mb4.5,baz=132,slow=12,SNR=12						
INK	**Inuvik**	**81.19**	**1**	P	**P**	**11 08 51.5**	**+0.5**
	comp=N,1.0nm,0.7s,mb3.9,baz=54,slow=6.1,SNR=9.4						
INK	**Inuvik**	**81.19**	**1**	*e*P	**P**	**11 08 51.2**	**+0.2**
	comp=N,2.4nm,1.0s,mb4.1						
COLA	**College**	**83.63**	**8**	*e*P	**P**	**11 09 04.2**	**+0.7**
	comp=N,0.8nm,0.4s,mb4.2						
ILAR	**Eielson Array**	**83.83**	**7**	P	**P**	**11 09 05.2**	**+0.7**
	comp=N,0.8nm,0.9s,mb3.9,baz=327,slow=5.2,SNR=9.1						
YKA	**Yellowknife Ar**	**86.29**	**353**	P	**P**	**11 09 17.7**	**+1.0**
	comp=N,0.3nm,0.4s,mb3.9,baz=8.1,slow=5.4,SNR=14						
YKA	**Yellowknife Ar**	**86.29**	**353**	P	**P**	**11 09 17.7**	**+0.9**
FITZ	**Fitzroy Crossi**	**87.09**	**113**	P	**P**	**11 09 22.6**	**+0.9**
	comp=N,1.5nm,0.6s,mb4.4,baz=325,slow=1.2,SNR=11						
ASAR	**Alice Springs**	**96.58**	**113**	P	**P**	**11 10 05.0**	**-0.7**
	comp=N,0.4nm,0.8s,mb3.9,baz=304,slow=4.6,SNR=5.2						
QSPA	**South Pole Qui**	**120.60**	**180**	*e*P	PKPdf	11 15 27.7	+2.4

TAP ***14*** *11:08:00.7, 23.64N×121.60E, h28km, ML3.6*
JMA ***14*** *11:08:02.3±0.3, 23.71N×121.71E, h75km, M2.8*
ISC 14 11:08:01.7±2.3, 23.9N±0.4×121.7E±0.2, h97km±28km, n6, σ0°41/12, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**1.35**	**63**	P	**S**	**11 08 26.5**	**0.0**
YOJ				S	**S**	**11 08 44.6**	**-0.3**
IRIF	**Iriomote-Funau**	**1.93**	**75**	P	**S**	**11 08 34.2**	**+0.4**
IRIF				S	**S**	**11 08 58.2**	**+0.8**
HATJ	**Hateruma jima**	**1.95**	**84**	P	**S**	**11 08 33.8**	**-0.2**
HATJ				S	**S**	**11 08 57.4**	**-0.5**
JKRS	**Kuro-shima**	**2.16**	**79**	P	**S**	**11 08 37.1**	**+0.2**
JKRS				S	**S**	**11 09 03.6**	**+0.6**
JIJ	**Ishigaki jima**	**2.30**	**77**	P	**S**	**11 08 38.5**	**-0.4**
JIJ				S	**S**	**11 09 06.0**	**-0.5**
JTJ	**Tarama**	**2.86**	**74**	P	**S**	**11 08 46.6**	**0.0**
JTJ				S	**S**	**11 09 20.1**	**-0.1**

SOF ***14*** *11:09:35.9, 43.54N×26.45E, h3km, MD3.8*
NEIC ***14*** *11:09:40.2±1.5, 43.45N×26.41E, h24km±17km, MD4.2(BUC), Error ellipse: s-maj=9.7km s-min=4.7km az=71.0*
ISC 14 11:09:36.9±0.3, 43.48N±0.02×26.44E±0.03, h3km, n61, σ1°19/70, 12C-1D, Bulgaria

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PRD	**Provadia**	**0.75**	**111**	*i* Pg	**Pg**	**11 09 52.0**	**+0.1**
BUC1	**Bucharest**	**0.92**	**341**	⇓*i*P	**Sg**	**11 10 06.4**	**-1.1**
BUC1	**Bucharest**	**0.92**	**341**	⇑*e*P	**Pb**	**11 09 57.8**	**+2.7**
BUC	**Bucharest**	**0.97**	**345**	⇑*e*P	**Sg**	**11 10 06.2**	**-2.9**
JMB	**Yambol**	**1.01**	**174**	*i* Pg	**Pg**	**11 09 57.5**	**+0.4**
PSN	**Preselentsi**	**1.28**	**80**	*i* Pg	**Pg**	**11 10 00.0**	**-2.5**
DIM	**Dimitrovgrad**	**1.57**	**205**	*i* P	**Pn**	**11 10 06.5**	**+0.7**
DIM				*i* Pg	**Pg**	**11 10 08.0**	**-0.3**
HARR	**Harsova**	**1.62**	**41**	⇑*i*P	**Pn**	**11 10 06.2**	**-0.3**
HARR	**Harsova**	**1.62**	**41**	⇑*e*P	**Pn**	**11 10 06.2**	**-0.3**
ISR	**Istrita**	**1.64**	**3**	⇑*i*P	**Pn**	**11 10 08.8**	**+2.0**
ISR	**Istrita**	**1.64**	**3**	⇑*e*P	**Pn**	**11 10 08.8**	**+2.0**
EDRB	**Edirne**	**1.64**	**172**	P	**Pn**	**11 10 08.7**	**+1.8**
EDRB				S	**Sb**	**11 10 27.4**	**-1.1**
PLD	**Plovdiv**	**1.88**	**224**	*i* P	**Pn**	**11 10 11.0**	**+0.9**
PGB	**Panagyurishte**	**1.91**	**242**	*i* Pg	**Pg**	**11 10 14.5**	**-0.4**
KDZ	**Kurdzhali**	**1.98**	**203**	*i* P	**Pn**	**11 10 12.5**	**+0.9**
MLR	**Muntele Rosu**	**2.04**	**350**	⇑*i*P	**Pn**	**11 10 14.7**	**+2.1**
MLR	**Muntele Rosu**	**2.04**	**350**	⇑*e*P	**Pn**	**11 10 14.7**	**+2.2**
CFR	**Carcaliu**	**2.09**	**35**	⇑*i*P	**Pn**	**11 10 13.1**	**-0.1**
CFR	**Carcaliu**	**2.09**	**35**	⇑*e*P	**Pn**	**11 10 13.0**	**-0.3**
RZZN	**Rozhen**	**2.19**	**216**	*i* P	**Pn**	**11 10 15.5**	**+0.8**
RZN				*i* Pg	**Pg**	**11 10 19.5**	**-1.2**
VRI	**Vrincioaia**	**2.40**	**5**	⇑*i*P	**Pn**	**11 10 20.0**	**+2.4**
VRI	**Vrincioaia**	**2.40**	**5**	⇑*e*P	**Pn**	**11 10 20.0**	**+2.4**
VTS	**Vitosha**	**2.53**	**251**	*i* P	**Pn**	**11 10 20.2**	**+0.7**
VTS				*i* Pg	**Pg**	**11 10 27.0**	**-0.4**
ALN	**Alexandroupoli**	**2.59**	**187**	*e*P	**Pn**	**11 10 20.6**	**+0.2**
ALN				*e*S	**Sn**	**11 10 59.7**	**+6.8**
SLVT	**Silivri**	**2.60**	**149**	P	**Pn**	**11 10 20.9**	**+0.3**
MMB	**Musomiste**	**2.75**	**228**	*i* P	**Pn**	**11 10 24.5**	**+1.8**
CTT	**Catalca**	**2.76**	**147**	P	**Pn**	**11 10 22.7**	**-0.1**
SART	**Tekirdag**	**2.84**	**169**	*i* P	**Pn**	**11 10 24.2**	**+0.3**
BGKT	**Bogazkoy**	**2.87**	**142**	P	**Pn**	**11 10 24.4**	**0.0**
KLYT	**Kilyos**	**2.94**	**138**	P	**Pn**	**11 10 25.3**	**-0.1**
KKB	**Krupnik**	**2.95**	**238**	*i* P	**Pn**	**11 10 26.5**	**+1.0**
KKB				*i* Pg	**Pg**	**11 10 35.0**	**-0.8**
MRMT	**Marmara Adasi**	**3.00**	**163**	P	**Pn**	**11 10 25.3**	**-0.9**
ISK	**Istanbul-Kandi**	**3.10**	**140**	P	**Pn**	**11 10 27.1**	**-0.5**
SRS	**Serrai**	**3.17**	**223**	*e*P	**Pn**	**11 10 29.4**	**+0.8**
BOLS	**Boljevac**	**3.27**	**278**	*e*Pn	**Pn**	**11 10 32.0**	**+1.9**
BOLS				S	**Sn**	**11 11 21.0**	**+5.2**
BADT	**Buyukada**	**3.29**	**142**	P	**Pn**	**11 10 30.5**	**+0.1**
BNT	**Bandirma**	**3.31**	**160**	P	**Pn**	**11 10 29.7**	**-0.9**
KNT	**Kendrikon**	**3.50**	**230**	*e*P	**Pn**	**11 10 34.8**	**+1.5**
SOH	**Sokhos**	**3.51**	**222**	*e*P	**Pn**	**11 10 33.6**	**+0.2**
KCT	**Karacabey**	**3.51**	**155**	P	**Pn**	**11 10 32.5**	**-1.0**
HRT	**Hereke**	**3.58**	**137**	P	**Pn**	**11 10 34.8**	**+0.3**
VAY	**Valandovo**	**3.59**	**234**	*i* Pg	**Sn**	**11 11 17.0**	**-1.0**
VAY				*i* Sg	**Sg**	**11 11 34.4**	**-1.8**
OUR	**Ouranopolis**	**3.64**	**211**	*e*P	**Pn**	**11 10 34.9**	**-0.4**
YLV	**Yalova**	**3.64**	**142**	P	**Pn**	**11 10 35.0**	**-0.2**
OSMT	**Osmaniye**	**3.76**	**139**	P	**Pn**	**11 10 37.2**	**+0.2**
THE	**Thessaloniki**	**3.84**	**223**	*e*P	**Pn**	**11 10 39.9**	**+1.7**
ULDT	**Uludag**	**3.89**	**148**	*i* P	**Pg**	**11 10 49.3**	**-5.3**
GRG	**Griva**	**3.92**	**231**	*e*P	**Pn**	**11 10 40.6**	**+1.4**
SKO	**Skopje**	**3.98**	**250**	*i* Pn	**Pg**	**11 10 54.5**	**-1.8**
PAIG	**Paliouri**	**4.11**	**211**	*e*P	**Pn**	**11 10 41.2**	**-0.7**
GRUS	**Gruza**	**4.17**	**278**	*e*Pn	**Pn**	**11 10 41.9**	**-1.0**
GRUS				Sn	**Sn**	**11 11 39.7**	**+6.8**
HENT	**Hendek**	**4.25**	**127**	*i* P	**Pn**	**11 10 45.6**	**+1.7**
LIT	**Litokhoron**	**4.48**	**223**	*e*P	**Pn**	**11 10 48.0**	**+0.7**
FNA	**Florina**	**4.63**	**236**	*e*P	**Pn**	**11 10 49.9**	**+0.5**
XOR	**Xorichti**	**4.78**	**212**	*e*P	**Pn**	**11 10 50.4**	**-1.0**
ESKT	**Eskisehir**	**5.16**	**139**	*i* P	**Pn**	**11 10 56.0**	**-0.8**
AGG	**Agios Georgios**	**5.42**	**216**	*e*P	**Pn**	**11 11 00.3**	**-0.3**
BALT	**Daday**	**5.49**	**108**	*i* P	**Pn**	**11 10 59.3**	**-2.2**
ELDT	**Eldivan**	**6.00**	**117**	*i* P	**Pn**	**11 10 59.3**	**-9.4**
PSZ	**Piszkesteto**	**6.38**	**316**	Pn	**Pn**	**11 11 11.7**	**-2.4**
CII	**Carovilli**	**9.12**	**263**	*e*Pn	**P**	**11 11 49.5**	**-2.8**

IDC ***14*** *11:20:28.5±0.6, 4.40N×126.41E, mb4.2/16, mb1 4.3/16, mb1mx4.2/22, MS3.4/6, Ms1 3.5/6, ms1mx3.1/27, Error ellipse: s-maj=37.6km s-min=12.8km az=74.0*
BJI ***14*** *11:20:32.1, 4.30N×126.30E, h38km, mb4.7*
NEIC ***14*** *11:20:34.1±0.3, 4.33N×126.33E, mb4.3/2, Error ellipse: s-maj=20.6km s-min=6.3km az=74.0*
MAN ***14*** *11:21:04.5, 6.01N×124.87E, h11km, mb4.7, ML3.6, MS3.5*
ISC 14 11:20:37.4±1.2, 4.28N±0.07×126.3E±0.2, h86km±11km, n40, σ0°99/37, mb4.1/18, 2C-2D, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GSPH	**General Santos**	**2.23**	**324**	⇓*i*P	**P**	**11 21 12.4**	**-0.8**
KCP	**Kidapawan**	**2.96**	**337**	⇓*e*P	**P**	**11 21 23.7**	**+0.3**
KCP				*i* S	**S**	**11 22 03.8**	**+5.9**
CTBH	**Cotabato--PC H**	**3.55**	**325**	⇓*i*P	**P**	**11 21 32.4**	**+0.8**

ZMPH	**Zamboanga City**	**4.96**	**303**	⇑*e*P		**P**	**11 21 52.0**	**+1.0**
SCPH	**Surigao**	**5.52**	**352**	*e*P		**P**	**11 22 03.8**	**+5.2**
TGY	**Tagaytay City**	**11.09**	**332**	LR		LR	11 27 54.3	
	comp=Z,217nm,20.8s,baz=322,slow=40							
KAKA	**Kakadu**	**17.93**	**160**	*e*P		**P**	**11 24 40.2**	**-2.5**
	8.7nm,0.7s							
FITZ	**Fitzroy Crossi**	**22.25**	**182**	*e*P		**P**	**11 25 27.3**	**-0.8**
	8.8nm,0.9s,mb4.1							
FITZ	**Fitzroy Crossi**	**22.25**	**182**	P		**P**	**11 25 27.5**	**-0.6**
	11nm,0.9s,mb4.2,baz=18,slow=13,SNR=24							
WRA	**Warramunga Arr**	**25.34**	**162**	P		**P**	**11 25 58.1**	**+0.1**
	14nm,0.7s,mb4.5,baz=343,slow=10,SNR=71							
WB2	**Warramunga Arr**	**25.34**	**162**	*e*P		**P**	**11 25 57.8**	**-0.3**
CBIJ	**Chichi jima**	**27.30**	**32**	LR		LR	11 36 35.5	
	comp=Z,28nm,19.1s,baz=268,slow=36							
ASAR	**Alice Springs**	**28.75**	**165**	P		**P**	**11 26 28.8**	**-0.4**
	1.7nm,0.7s,mb3.8,baz=353,slow=7.5,SNR=14							
CMAR	**Chiang Mai Arr**	**30.21**	**300**	P		**P**	**11 26 43.4**	**+1.3**
	0.8nm,0.3s,mb3.8,baz=119,slow=7.0,SNR=6.2							
CMAR				LR		LR	11 38 41.2	
	comp=Z,50nm,18.5s,baz=125,slow=36							
BJI	**Beijing**	**36.75**	**347**	*e*P		**P**	**11 27 37.6**	**-0.7**
BJI				AMB		AMB		
	comp=Z,14nm,0.7s,mb5.0							
NWAO	**Narrogin (SRO)**	**37.98**	**192**	P		**P**	**11 27 49.4**	**+0.8**
	comp=Z,5.6nm,0.9s,mb4.4,baz=27,slow=11,SNR=2.5							
STKA	**Stephens Creek**	**38.80**	**159**	*e*P		**P**	**11 27 55.8**	**+0.4**
	comp=Z,7.9nm,1.1s,mb4.5							
STKA	**Stephens Creek**	**38.80**	**159**	P		**P**	**11 27 56.2**	**+0.8**
	comp=Z,12nm,1.1s,mb4.7,baz=352,slow=4.8,SNR=7.8							
STKA	**Stephens Creek**	**38.80**	**159**	P		**P**	**11 27 56.2**	**+0.8**
HIA	**Hailar**	**45.17**	**354**	*e*P		**P**	**11 28 47.8**	**+0.6**
	comp=Z,11nm,1.0s,mb4.5							
ULN	**Ulaanbaatar**	**46.46**	**342**	P		**P**	**11 28 55.9**	**-1.5**
SONM	**Songino Array**	**46.64**	**342**	P		**P**	**11 28 57.8**	**-1.0**
	comp=Z,0.9nm,0.7s,mb3.6,baz=162,slow=4.6,SNR=3.7							
MKAR	**Makanchi Array**	**56.85**	**325**	P		**P**	**11 30 14.8**	**-0.6**
	comp=Z,0.8nm,0.4s,mb4.

CMWZ	**Cape Campbell**	**1.02**	**97**	PN	P	11 25 51.5	+2.0
LTZ	**Lake Taylor**	**1.24**	**200**	⇑PN	P	11 25 51.8	-0.4
LTZ				SN	S	11 26 08.9	-0.3
LTZ	**Lake Taylor**	**1.24**	**200**	P	P	11 25 51.8	-0.4
SNZO	**South Karori**	**1.42**	**78**	PN	P	11 25 53.8	-0.7
SNZO				⇑PN	P	11 25 53.9	-0.6
SNZO	**South Karori**	**1.42**	**78**	P	P	11 25 53.8	-0.8
MRW	**Makara Radio**	**1.44**	**75**	⇓PN	P	11 25 54.1	-0.7
MRW				SN	S	11 26 12.1	-1.4
MRW	**Makara Radio**	**1.44**	**75**	P	P	11 25 54.2	-0.6
WEL	**Wellington**	**1.48**	**77**	PN	P	11 25 54.5	-0.7
WEL				SN	S	11 26 12.9	-1.3
WEL	**Wellington**	**1.48**	**77**	P	P	11 25 54.6	-0.6
BHW	**Baring Head**	**1.53**	**83**	⇓PN	P	11 25 54.8	-1.1
BHW				SN	S	11 26 13.2	-2.2
BHW	**Baring Head**	**1.53**	**83**	P	P	11 25 54.8	-1.1
KIW	**Kapiti Island**	**1.73**	**64**	⇓PN	P	11 25 58.1	-0.3
KIW	**Kapiti Island**	**1.73**	**64**	P	P	11 25 58.2	-0.3
CAW	**Cannon Point**	**1.74**	**74**	PN	P	11 25 57.6	-1.1
CAW				SN	S	11 26 18.1	-2.1
CAW	**Cannon Point**	**1.74**	**74**	P	P	11 25 57.7	-1.0
MSWZ	**Moikau Station**	**1.81**	**84**	⇓PN	P	11 25 58.0	-1.5
MSWZ				SN	S	11 26 19.3	-2.4
CRLZ	**Canterbury Las**	**1.96**	**185**	PN	P	11 25 59.3	-2.3
CRLZ	**Canterbury Las**	**1.96**	**185**	*eP*	P	11 25 59.5	-2.1
MTW	**Mount Morrison**	**2.04**	**78**	⇓PN	P	11 26 00.9	-1.8
MTW				SN	S	11 26 24.6	-2.6
MTW	**Mount Morrison**	**2.04**	**78**	P	P	11 26 00.9	-1.8
MQZ	**McQueen's Vall**	**2.09**	**184**	PN	P	11 26 00.9	-2.4
WVZ	**Waitaha Valley**	**2.14**	**227**	PN	P	11 26 02.6	-1.5
WVZ	**Waitaha Valley**	**2.14**	**227**	P	P	11 26 03.1	-0.9
MRZ	**Mangatainoka R**	**2.27**	**66**	⇓PN	P	11 26 04.1	-1.7
NRZ	**Ngariki Road**	**2.43**	**20**	PN	P	11 26 08.6	+0.6
NRZ	**Ngariki Road**	**2.43**	**20**	P	P	11 26 09.0	+0.9
NWEZ	**Newall Road**	**2.47**	**19**	PN	P	11 26 09.4	+0.8
WAZ	**Wanganui**	**2.47**	**42**	PN	P	11 26 09.1	+0.5
WAZ				SN	S	11 26 39.4	+1.6
WAZ	**Wanganui**	**2.47**	**42**	*eP*	P	11 26 09.2	+0.5
DFE	**Dawson Falls**	**2.48**	**23**	PN	P	11 26 09.2	+0.4
DFE	**Dawson Falls**	**2.48**	**23**	P	P	11 26 09.5	+0.7
NEZ	**North Egmont**	**2.53**	**22**	PN	P	11 26 10.1	+0.6
PKE	**Pukeiti**	**2.58**	**20**	PN	P	11 26 10.5	+0.4
PKE	**Pukeiti**	**2.58**	**20**	P	P	11 26 10.7	+0.6
RAEZ	**Rainy Point**	**2.61**	**27**	PN	P	11 26 11.3	+0.7
RAEZ	**Rainy Point**	**2.61**	**27**	P	P	11 26 11.6	+1.0
BFZ	**Birch Farm**	**2.73**	**71**	PN	P	11 26 09.4	-2.9
BFZ	**Birch Farm**	**2.73**	**71**	P	P	11 26 09.4	-2.8
TSZ	**Takapari Road**	**2.83**	**57**	PN	P	11 26 10.4	-3.2
TSZ	**Takapari Road**	**2.83**	**57**	*eP*	P	11 26 10.7	-2.9
VRZ	**Vera Road**	**2.89**	**31**	PN	P	11 26 14.8	+0.4
VRZ	**Vera Road**	**2.89**	**31**	P	P	11 26 14.9	+0.4
WNVZ	**Wahianoa**	**3.10**	**43**	PN	P	11 26 16.4	-1.1
DRZ	**Dome Shelter**	**3.12**	**42**	PN	P	11 26 16.6	-1.1
FWVZ	**Far West T-bar**	**3.13**	**42**	PN	P	11 26 16.8	-1.1
FWVZ	**Far West T-bar**	**3.13**	**42**	P	P	11 26 17.6	-0.3
WPVZ	**Whakapapa**	**3.17**	**41**	PN	P	11 26 12.7	-5.6
CNZ	**Chateau**	**3.17**	**41**	PN	P	11 26 17.4	-1.0
TUVZ	**Tukino**	**3.18**	**43**	PN	P	11 26 17.0	-1.4
NGZ	**Ngauruhoe**	**3.22**	**41**	PN	P	11 26 18.8	-0.3
NGZ				PN	P	11 26 20.1	+1.0
NGZ	**Ngauruhoe**	**3.22**	**41**	P	P	11 26 20.1	+1.0
KAVZ	**Karewarewa**	**3.30**	**41**	PN	P	11 26 21.8	+1.6
KAVZ	**Karewarewa**	**3.30**	**41**	P	P	11 26 21.9	+1.7
MGZ	**Maungaku**	**3.33**	**39**	PN	P	11 26 19.4	-1.1
KATZ	**Kakaramea**	**3.42**	**40**	PN	P	11 26 22.6	+0.8
KATZ	**Kakaramea**	**3.42**	**40**	P	P	11 26 23.3	+1.5
HIZ	**Hauiti**	**3.46**	**27**	PN	P	11 26 20.9	-1.5
RATZ	**Rangitukua**	**3.54**	**40**	PN	P	11 26 25.3	+1.7
RATZ	**Rangitukua**	**3.54**	**40**	P	P	11 26 25.4	+1.9
BWZ	**Berwen**	**3.63**	**216**	PN	P	11 26 21.0	-3.7
WATZ	**Wairara**	**3.65**	**38**	PN	P	11 26 25.5	+0.5
WATZ	**Wairara**	**3.65**	**38**	P	P	11 26 25.5	+0.5
BKZ	**Black Stump Fm**	**3.71**	**50**	PN	P	11 26 22.7	-3.1
ODZ	**Otahua Downs**	**3.78**	**205**	PN	P	11 26 23.5	-3.3
ODZ	**Otahua Downs**	**3.78**	**205**	*eP*	P	11 26 24.0	-2.8
URZ	**Urewera**	**4.69**	**46**	PN	P	11 26 34.7	-4.7
URZ	**Urewera**	**4.69**	**46**	*eP*	P	11 26 34.9	-4.4
MSZ	**Milford Sound**	**4.72**	**228**	PN	P	11 26 37.1	-2.7
MKAZ	**Moumakai**	**4.85**	**22**	PN	P	11 26 40.6	-0.9
MKAZ	**Moumakai**	**4.85**	**22**	P	P	11 26 40.6	-0.9
MWZ	**Matawai**	**4.86**	**49**	PN	P	11 26 36.2	-5.5
WTAZ	**Waiatarua**	**4.87**	**16**	P	P	11 26 41.9	+0.1
TUZ	**Tuapeka**	**4.92**	**207**	PN	P	11 26 39.3	-3.2
TUZ	**Tuapeka**	**4.92**	**207**	*eP*	P	11 26 39.1	-3.4
OTAZ	**Otara**	**4.93**	**20**	PN	P	11 26 42.2	-0.5
OTAZ	**Otara**	**4.93**	**20**	P	P	11 26 42.2	-0.5
KUZ	**Kuaotunu**	**5.35**	**25**	PN	P	11 26 47.2	-1.2
KUZ	**Kuaotunu**	**5.35**	**25**	*eP*	P	11 26 47.4	-1.0
WCZ	**Waipu Caves**	**5.79**	**12**	PN	P	11 26 53.0	-1.4
WCZ	**Waipu Caves**	**5.79**	**12**	*eP*	P	11 26 53.5	-0.9

*IDC **14** 11:52:06.7±0.7,28.79N×139.49E,h418km±8km,mb3.2/15, mb1 3.4/19,mb1mx3.3/26,Error ellipse: s-maj=15.5km s-min=11.1km az=81.0*
*JMA **14** 11:52:07.3±0.3,28.93N×139.94E,h439km±5km,M3.7*
*NEIC **14** 11:52:08.3±1.1,28.88N×139.47E,h431km±11km,mb3.9/6, Error ellipse: s-maj=12.4km s-min=10.0km az=137.0*

ISC 14 11:52:06.3±0.4,28.82N±0.04×139.46E±0.09,h425km±4km, n42,σ0⁰90/53,mb3.5/18,Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**2.96**	**125**	P	**P**	**11 53 11.4**	**0.0**
	71nm,0.3s,baz=350,slow=2.1,SNR=71						
CBIJ				S	**S**	**11 54 01.9**	**-1.0**
	328nm,0.3s,baz=264,slow=23,SNR=33						
CBIJ	**Chichi jima**	**2.96**	**125**	P	**P**	**11 53 11.6**	**+0.1**
CBIJ				*eS*	**S**	**11 54 02.1**	**-0.8**
JHHJ	**Haha-jima-NKT**	**3.25**	**132**	P	**P**	**11 53 13.9**	**0.0**
JHHJ				S	**S**	**11 54 06.8**	**-0.3**
JHJ2	**Mitsune**	**4.29**	**4**	P	**P**	**11 53 24.3**	**+1.1**
JHJ2				*eS*	**S**	**11 54 24.2**	**+0.5**
JHJ	**Hachijo jima 2**	**4.30**	**4**	P	**P**	**11 53 24.2**	**+1.0**
	36nm,0.3s,baz=262,slow=21,SNR=17						
JHJ				S	**S**	**11 54 22.7**	**-1.1**
	14nm,0.3s,baz=42,slow=16,SNR=4.2						
JWZ	**Kozaga**	**5.69**	**327**	P	**P**	**11 53 39.7**	**+2.5**
BSO1	**Boso 1**	**5.96**	**12**	P	**P**	**11 53 40.1**	**+0.1**
BSO1				*eS*	**S**	**11 54 53.4**	**-0.4**
JIE	**Ise**	**6.03**	**338**	P	**P**	**11 53 43.9**	**+3.1**
JOD2	**Odawara 2**	**6.43**	**357**	P	**P**	**11 53 45.8**	**+0.6**
JOD2				*eS*	**S**	**11 55 02.6**	**-0.6**
JRY	**Ryogami san**	**7.19**	**356**	P	**P**	**11 53 53.5**	**0.0**
JRY				*eS*	**S**	**11 55 17.5**	**-0.7**
MAJO	**Matsushiro**	**7.78**	**353**	*ePn*	**P**	**11 53 59.6**	**-0.5**
	13nm,0.6s						
MAT	**Matsushiro**	**7.78**	**353**	P	**P**	**11 53 59.2**	**-0.8**
MAT				*eS*	**S**	**11 55 29.2**	**-0.7**
MAT	**Matsushiro**	**7.78**	**353**	P	**P**	**11 53 59.7**	**-0.3**
MAT	**Matsushiro**	**7.78**	**353**	*eP*	**P**	**11 53 59.0**	**-1.0**
	8.0nm,0.6s						
MAT				S	**S**	**11 55 29.0**	**-0.9**
JOW	**Kunigami**	**10.10**	**261**	P	**P**	**11 54 28.8**	**+2.4**
	2.9nm,0.3s,baz=115,slow=9.7,SNR=11						
JMK	**Ichinoseki**	**10.21**	**8**	P	**P**	**11 54 27.7**	**+0.1**
JMK				*eS*	**S**	**11 56 19.8**	**+0.1**
ASAJ	**Asahikawa**	**15.47**	**8**	P	**P**	**11 55 25.6**	**+1.1**
	0.6nm,0.3s,baz=246,slow=6.3,SNR=4.2						
ENH	**Enshi**	**26.09**	**281**	*eP*	**P**	**11 57 04.8**	**-0.6**
	11nm,0.7s,mb4.4						
ULN	**Ulaanbaatar**	**31.42**	**316**	*eP*	**P**	**11 57 52.1**	**+0.3**
	3.5nm,0.9s,mb3.7						
SONM	**Songino Array**	**31.81**	**316**	P	**P**	**11 57 55.6**	**+0.5**
	2.0nm,0.6s,mb3.6,baz=131,slow=7.6,SNR=10						
FX1	**Attu Island--F**	**34.53**	**36**	P	**P**	**11 58 19.3**	**+1.2**
ZAL	**Zalesovo**	**46.62**	**318**	P	**P**	**11 59 55.2**	**-0.5**
	0.9nm,0.6s,mb3.3,baz=281,slow=10,SNR=4.5						
MKAR	**Makanchi Array**	**47.52**	**308**	P	**P**	**12 00 02.3**	**-0.4**
	9.0nm,1.1s,mb4.0,baz=91,slow=8.8,SNR=18						
MKAR				PcP	PcP	12 01 24.4	-0.9
	0.5nm,0.4s,baz=104,slow=5.0,SNR=4.4						
WRA	**Warramunga Arr**	**48.73**	**186**	P	**P**	**12 00 11.6**	**-0.6**
	0.8nm,0.6s,mb3.2,baz=6.5,slow=7.6,SNR=16						
WRA				ScP		12 04 41.7	
	0.3nm,0.8s,baz=360,slow=4.5,SNR=4.9						
KURK	**Kurchatov**	**50.06**	**314**	*eP*	**P**	**12 00 20.4**	**-1.4**
ASAR	**Alice Springs**	**52.45**	**186**	P	**P**	**12 00 39.0**	**-0.9**
	0.4nm,0.7s,mb2.8,baz=4.3,slow=7.5,SNR=9.3						
BRVK	**Borovoye**	**55.21**	**317**	*eP*	**P**	**12 00 58.3**	**-0.9**
ZRNK	**Zerenda**	**55.98**	**317**	*eP*	**P**	**12 01 03.6**	**-1.0**
ILAR	**Eielson Array**	**57.38**	**29**	P	**P**	**12 01 12.7**	**-1.3**
	0.7nm,0.7s,mb3.1,baz=265,slow=6.0,SNR=14						
INK	**Inuvik**	**62.48**	**25**	P	**P**	**12 01 47.2**	**-0.7**
	0.5nm,0.4s,mb3.4,baz=309,slow=7.8,SNR=14						
INK	**Inuvik**	**62.48**	**25**	*eP*	**P**	**12 01 47.0**	**-0.9**
	0.7nm,0.5s,mb3.5						
ARCES	**ARCESS Array B**	**71.12**	**340**	P	**P**	**12 02 41.5**	**+0.3**
	1.1nm,0.6s,mb3.6,baz=67,slow=7.7,SNR=12						
YKA	**Yellowknife Ar**	**71.77**	**28**	P	**P**	**12 02 44.8**	**-0.3**
	2.7nm,1.1s,mb3.7,baz=295,slow=6.0,SNR=15						
YKA	**Yellowknife Ar**	**71.77**	**28**	P	**P**	**12 02 44.8**	**-0.3**
FINES	**FINESS Array B**	**75.33**	**333**	P	**P**	**12 03 05.3**	**-0.1**
	0.7nm,0.4s,mb3.7,baz=69,slow=5.6,SNR=10						
AKASG	**Malin Array Be**	**79.80**	**323**	P	**P**	**12 03 29.4**	**-0.3**
	0.5nm,0.4s,mb3.5,baz=48,slow=4.8,SNR=7.2						
NOA	**NORSAR Array B**	**81.11**	**337**	P	**P**	**12 03 36.1**	**-0.3**
	0.7nm,1.0s,mb3.4,baz=57,slow=3.9,SNR=2.5						
HLID	**Hailey**	**81.25**	**45**	*eP*	**P**	**12 03 38.6**	**+1.2**
	0.5nm,0.4s,mb3.6						
NVAR	**Mina Array Bea**	**81.33**	**51**	P	**P**	**12 03 39.6**	**+1.6**
	2.4nm,1.0s,mb3.9,baz=315,slow=4.8,SNR=14						
BOZ	**Bozeman (W)**	**81.82**	**42**	P	**P**	**12 03 40.5**	**+0.2**
BRTR	**Keskin Array B**	**83.07**	**312**	P	**P**	**12 03 47.0**	**+0.2**
	1.3nm,0.6s,mb3.8,baz=90,slow=4.9,SNR=5.3						
PDAR	**Pinedale Array**	**84.66**	**44**	P	**P**	**12 03 56.1**	**+1.5**
	0.3nm,0.5s,mb3.3,baz=226,slow=0.5,SNR=4.5						

*MEX **14** 12:01:11.9±1.5,16.04N×97.56W,h20km±59km,MD4.1*
*NEIC **14** 12:01:12.0,16.09N×97.57W,h18km,MD4.1(MEX),After MEX.*

ISC 14 12:01:09.9±2.1,16.10N±0.07×97.48W±0.04,h15km±17km, n12,σ1⁰28/20,Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	**Pinotepa**	**0.69**	**295**	*i* P	**Pb**	**12 01 22.0**	**-1.1**
PNIG				*i* S	**Sb**	**12 01 30.4**	**-1.6**
OXX	**Oaxaca**	**1.22**	**37**	*i* P	**Pb**	**12 01 32.0**	**-0.2**
OXX				*i* S	**Sb**	**12 01 46.5**	**-1.0**
HUIG	**Huatulco**	**1.36**	**104**	*i* P	**Pn**	**12 01 35.1**	**+0.6**
HUIG				*i* S	**Sb**	**12 01 50.3**	**-1.4**
ACX	**Acapulco**	**2.46**	**288**	*eP*	**Pn**	**12 01 51.0**	**+0.8**
CMIG	**Matias Romero**	**2.68**	**68**	*i* P	**Pn**	**12 01 51.4**	**-1.9**
CMIG				*i* S	**Sn**	**12 02 25.3**	**-0.5**
CAIG	**El Cayaco**	**2.83**	**290**	*i* P	**Pn**	**12 01 54.9**	**-0.6**
CAIG				*i* S	**Sn**	**12 02 24.1**	**-5.5**
IISM	**Ciudad Serdan**	**2.88**	**2**	*eP*	**Pn**	**12 01 54.0**	**-2.2**
POHV	**Veracruz**	**2.96**	**4**	*eP*	**Pn**	**12 01 59.0**	**+1.6**
YAIG	**Yautepec**	**3.14**	**331**	*i* P	**Pn**	**12 02 01.4**	**+1.5**
YAIG				*i* S	**Sn**	**12 02 34.8**	**-2.6**
PPM	**Popocatepetl**	**3.15**	**340**	*i* P	**Pn**	**12 01 58.6**	**-1.5**
PPM				*eP*		12 01 59.0	
PPM				*i* S	**Sn**	**12 02 39.1**	**+1.5**
PPM	**Popocatepetl**	**3.15**	**340**	*i* P	**Pn**	**12 01 58.6**	**-1.5**
PPM				*i* S	**Sn**	**12 02 39.1**	**+1.5**
ZIIG	**Zihuatanejo**	**4.10**	**292**	*i* S	**Sn**	**12 02 52.5**	**-9.2**

WEL 14 12:13:55.9±0.2,38.07S×176.48E,h156km±2km,ML3.8/1, 2C-1D,Error ellipse: s-maj=2.4km s-min=2.1km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**0.53**	**111**	⇑PN	P	12 14 17.9	-0.5
URZ				SN	S	12 14 35.1	-0.7
MWZ	**Matawai**	**0.87**	**108**	PN	P	12 14 20.3	-0.1
MWZ				SN	S	12 14 39.1	-0.3
BKZ	**Black Stump Fm**	**1.10**	**179**	⇑PN	P	12 14 22.1	-0.1
BKZ				SN	S	12 14 41.8	-0.7
MGZ	**Maungaku**	**1.19**	**218**	PN	P	12 14 23.0	0.0
NGZ	**Ngauruhoe**	**1.30**	**212**	PN	P	12 14 24.3	+0.1
CNZ	**Chateau**	**1.34**	**213**	PN	P	12 14 24.4	-0.2
TUVZ	**Tukino**	**1.36**	**208**	PN	P	12 14 24.6	-0.2
FWVZ	**Far West T-bar**	**1.39**	**211**	PN	P	12 14 24.9	-0.1
WNVZ	**Wahianoa**	**1.43**	**208**	PN	P	12 14 25.3	-0.2
WNVZ				SN	S	12 14 47.6	-0.7
MXZ	**Matakaoa Point**	**1.53**	**71**	PN	P	12 14 26.0	-0.5
PWZ	**Pawanui**	**1.98**	**171**	⇓PN	P	12 14 30.8	-0.6
TSZ	**Takapari Road**	**2.03**	**191**	PN	P	12 14 30.9	-1.0
WAZ	**Wanganui**	**2.05**	**214**	PN	P	12 14 31.4	-0.8
BFZ	**Birch Farm**	**2.62**	**184**	PN	P	12 14 36.7	-2.5
MRZ	**Mangatainoka R**	**2.68**	**195**	PN	P	12 14 37.6	-2.4
MTW	**Mount Morrison**	**3.18**	**193**	PN	P	12 14 42.8	-3.5
CAW	**Cannon Point**	**3.22**	**199**	PN	P	12 14 43.6	-3.4
CAW				SN	S	12 15 22.9	-3.4
MSWZ	**Moikau Station**	**3.47**	**195**	PN	P	12 14 46.3	-3.9
TUWZ	**Tuamarina**	**3.88**	**209**	PN	P	12 14 51.6	-4.0
QRZ	**Quartz Range**	**4.11**	**227**	PN	P	12 14 53.8	-4.8
THZ	**Tophouse**	**4.60**	**216**	PN	P	12 15 01.2	-3.8
KHZ	**Kahutara**	**4.89**	**206**	PN	P	12 15 04.1	-4.7
LTZ	**Lake Taylor**	**5.70**	**213**	PN	P	12 15 14.7	-4.8
MQZ	**McQueen's Vall**	**6.33**	**206**	SN	S	12 16 28.4	-11

IDC 14 12:14:54.7±7.7,17.53S×174.06W,mb3.7/3,mb1 4.0/3, mb1mx3.7/15,Error ellipse: s-maj=337.0km s-min=38.0km az=141.0,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**48.77**	**259**	P	P	12 23 41.2	-2.5
	0.8nm,1.2s,baz=96,slow=7.1,SNR=5.5						
ASAR	**Alice Springs**	**48.88**	**254**	P	P	12 23 43.0	-1.5
	1.5nm,0.5s,baz=89,slow=8.3,SNR=41						
ILAR	**Eielson Array**	**84.64**	**11**	P	P	12 27 29.8	-1.3
	0.2nm,0.5s,baz=222,slow=5.8,SNR=5.6						

IDC 14 12:20:40.7±8.2,19.05S×176.47W,mb3.7/3,mb1 4.0/3, mb1mx3.7/15,Error ellipse: s-maj=359.0km s-min=37.2km az=143.0,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**46.25**	**260**	P	P	12 29 07.1	-2.8
	0.3nm,0.6s,baz=99,slow=6.6,SNR=5.8						
ASAR	**Alice Springs**	**46.27**	**255**	P	P	12 29 08.9	-1.1
	1.6nm,0.5s,baz=90,slow=8.4,SNR=50						
ILAR	**Eielson Array**	**86.60**	**12**	P	P	12 33 25.6	-1.2
	0.2nm,0.4s,baz=220,slow=5.7,SNR=7.1						

*TAP **14** 12:26:21.7,25.32N×122.10E,h231km,ML3.7*
*JMA **14** 12:26:25.7±0.4,25.15N×122.15E,h195km,M2.9*

ISC 14 12:26:25.7±1.9,25.3N±0.3×122.2E±0.2,h187km±30km,n8, σ0⁰31/16,Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**1.12**	**138**	P	**P**	**12 26 55.3**	**+0.1**
YOJ				S	**S**	**12 27 18.4**	**+0.4**
IRIF	**Iriomote-Funau**	**1.70**	**124**	P	**P**	**12 27 00.0**	**-0.5**
IRIF				S	**S**	**12 27 27.1**	**-0.2**
HATJ	**Hateruma jima**	**1.92**	**130**	P	**P**	**12 27 02.8**	**+0.1**
HATJ				S	**S**	**12 27 31.0**	**-0.3**
JKRS	**Kuro-shima**	**1.96**	**122**	P	**P**	**12 27 03.3**	**+0.1**
JKRS				S	**S**	**12 27 32.4**	**+0.3**
JIJ	**Ishigaki jima**	**2.00**	**117**	P	**P**	**12 27 03.3**	**-0.3**
JIJ				S	**S**	**12 27 32.3**	**-0.5**
JTJ	**Tarama**	**2.37**	**106**	P	**P**	**12 27 07.9**	**+0.1**
JTJ				S	**S**	**12 27 40.3**	**+0.1**
JOGS	**Gusukube**	**2.97**	**100**	P	**P**	**12 27 15.4**	**+0.6**
JOGS				S	**S**	**12 27 52.9**	**+0.3**
JKE	**Kume jima 2**	**4.27**	**75**	P	**P**	**12 27 30.8**	**-0.2**
JKE				S	**S**	**12 28 21.5**	**-0.1**

*IDC **14** 12:30:56.0±1.4,12.06S×166.39E,mb3.9/8,mb1 4.1/8, mb1mx4.0/14,MS3.5/4,Ms1 3.5/4,ms1mx3.2/24,Error ellipse: s-maj=62.5km s-min=21.1km az=133.0*
*NEIC **14** 12:30:58.1±0.9,11.90S×166.25E,h10km,mb4.1/5,Error ellipse: s-maj=30.8km s-min=14.9km az=127.0*

ISC 14 12:31:09.2±3.7,12.0S±0.2×165.9E±0.2,h99km±36km,n19, σ1⁰09/16,mb4.0/11,Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**6.06**	**158**	*i* P	**P**	**12 32 38.0**	**+0.2**
PMG	**Port Moresby**	**18.55**	**276**	LR	LR	12 41 58.6	
	comp=Z,162nm,18.4s,baz=100,slow=35						
CTA	**Charters Tower**	**20.45**	**244**	*eP*	**P**	**12 35 40.9**	**-0.1**
	3.9nm,0.8s						
CTA	**Charters Tower**	**20.45**	**244**	P	**P**	**12 35 40.8**	**-0.2**
	2.8nm,0.5s,baz=72,slow=12,SNR=7.1						
CTA				LR	LR	12 42 30.5	
	comp=Z,87nm,20.9s,baz=272,slow=33						
CTAO	**Charters Tower**	**20.45**	**244**	*eP*	**P**	**12 35 40.8**	**-0.3**
	5.6nm,0.9s						
ARMA	**Armidale**	**22.56**	**214**	*eP*	**P**	**12 36 03.5**	**+1.6**
STKA	**Stephens Creek**	**29.81**	**225**	P	**P**	**12 37 09.1**	**-0.1**
	1.0nm,0.4s,mb3.8,slow=10,SNR=2.0						
STKA				LR	LR	12 49 13.6	
	comp=Z,114nm,18.9s,baz=205,slow=36						
WRA	**Warramunga Arr**	**31.26**	**251**	P	**P**	**12 37 20.9**	**-1.1**
	0.5nm,0.5s,mb3.5,baz=82,slow=8.5,SNR=15						
WRA				PcP	PcP	12 40 14.0	-0.2
	0.7nm,0.8s,baz=78,slow=3.3,SNR=5.5						
ASAR	**Alice Springs**	**32.46**	**245**	P	**P**	**12 37 31.0**	**-1.4**
	1.4nm,0.7s,mb3.8,baz=70,slow=9.5,SNR=23						
ASAR				PcP	PcP	12 40 17.5	+0.1
	0.9nm,0.8s,baz=87,slow=3.7,SNR=6.7						
ASAR				LR	LR	12 48 33.4	
	comp=Z,67nm,20.0s,baz=96,slow=32						
FITZ	**Fitzroy Crossi**	**39.24**	**256**	*eP*	**P**	**12 38 30.0**	**+0.2**
	0.8nm,0.6s,mb3.7						
QSPA	**South Pole Qui**	**77.98**	**180**	*eP*	**P**	**12 42 57.3**	**-0.4**
	6.4nm,1.1s,mb4.3						
ULN	**Ulaanbaatar**	**79.15**	**324**	*eP*	**P**	**12 43 05.8**	**+1.0**
	8.2nm,1.1s,mb4.5						
SONM	**Songino Array**	**79.52**	**324**	P	**P**	**12 43 07.3**	**+0.6**
	1.4nm,0.5s,mb4.0,baz=143,slow=6.2,SNR=6.7						
ILAR	**Eielson Array**	**84.40**	**18**	P	**P**	**12 43 29.1**	**-2.5**
	0.4nm,0.7s,mb3.3,baz=234,slow=5.1,SNR=6.1						
MKAR	**Makanchi Array**	**94.31**	**317**	P	**P**	**12 44 20.1**	**+1.3**
	5.3nm,0.6s,mb5.1,baz=92,slow=6.5,SNR=16						
ZAL	**Zalesovo**	**94.42**	**324**	P	**P**	**12 44 19.5**	**+0.4**
	0.9nm,0.6s,mb4.3,baz=279,slow=8.1,SNR=3.4						
YKA	**Yellowknife Ar**	**95.79**	**27**	P	**P**	**12 44 21.2**	**-3.9**
	0.1nm,0.7s,mb3.4,baz=253,slow=4.5,SNR=3.9						
ARCES	**ARCESS Array B**	**117.31**	**345**	PKP	PKPdf	12 49 42.7	+0.1
	1.3nm,0.8s,baz=63,slow=2.7,SNR=6.2						
ARCES	**ARCESS Array B**	**117.31**	**345**	PKP	PKPdf	12 49 42.7	+0.1

*IDC **14** 12:37:56.2±1.0,37.57N×96.77E,mb3.9/8,mb1 4.0/12, mb1mx3.9/24,ML3.8/4,Error ellipse: s-maj=46.4km s-min=18.8km az=57.0*
*BJI **14** 12:37:57.9,37.55N×96.58E,h10km,mB4.4,mb4.5,ML4.1, Ms3.7,Msz3.7*
*NEIC **14** 12:37:58.2±0.5,37.55N×96.64E,h10km,Error ellipse: s-maj=12.0km s-min=9.4km az=56.0*

ISC 14 12:37:56.2±1.9,37.61N±0.06×96.69E±0.08,h7km±12km, n27,σ1⁰22/31,mb4.0/10,Qinghai

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GTA	**Gaotai**	**3.04**	**53**	P	**Pn**	**12 38 50.8**	**+5.1**
GTA				PG	**Pg**	**12 38 56.6**	**-0.4**
GTA				SG	**Sg**	**12 39 37.1**	**-0.4**
GTA				S	Sn		
	comp=N,195nm,1.0s						
GTA				S	Sn		
	comp=E,114nm,0.8s						
GTA				LR	LR		
	comp=N,675nm,8.0s						
GTA				LR	LR		
	comp=E,744nm,9.6s						
GTA				LR	LR		
	comp=Z,871nm,8.8s						
LZH	**Lanzhou**	**5.93**	**103**	PG	**Pg**	**12 39 46.5**	**-8.2**
LZH				SG	**Sg**	**12 41 02.5**	**-11**
LZH				S	Sn		
	comp=N,125nm,1.2s						
LZH

comp=Z,30nm,18.1s,MS3.6,baz=215,slow=38
STKA Stephens Creek 74.28 122 LR LR 13 21 03.7
comp=Z,97nm,18.4s,MS4.1,baz=204,slow=34
NOA NORSAR Array B 77.07 335 LR LR 13 23 51.8
comp=Z,31nm,19.3s,MS3.6,baz=110,slow=35
ARCES ARCESS Array B 77.57 346 LR LR 13 24 09.8
comp=Z,43nm,19.4s,MS3.8,baz=98,slow=35

NEIC ***14*** *12:49:01.9±3.5, 28.36S×178.00W, h245km±33km, Error ellipse: s-maj=29.6km s-min=21.3km az=177.0*
IDC ***14*** *12:49:02.1±7.8, 28.42S×177.99W, h247km±78km, mb3.3/4, mb1 3.7/5, mb1mx3.5/13, Error ellipse: s-maj=65.8km s-min=25.0km az=176.0*

ISC 14 12:49:01.9±4.6, 28.4S±0.2×178.0W±0.2, h256km±45km, n15, σ0§68/8, mb3.5/5, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**10.66**	**201**	P	**P**	**12 51 29.0**	**-0.5**
	0.8nm,0.3s,baz=315,slow=21,SNR=13						
URZ				S	**S**	**12 53 26.4**	**+0.6**
	1.0nm,0.3s,baz=77,slow=19,SNR=4.5						
ASAR	**Alice Springs**	**43.22**	**265**	P	**P**	**12 56 40.0**	**+0.3**
	0.4nm,0.5s,mb2.9,baz=92,slow=6.6,SNR=10						
WRA	**Warramunga Arr**	**44.02**	**270**	P	**P**	**12 56 45.8**	**-0.3**
	0.6nm,0.2s,mb3.4,baz=108,slow=6.2,SNR=79						
VNDA	**Vanda**	**50.10**	**186**	P	**P**	**12 57 31.7**	**-0.7**
QSPA	**South Pole Qui**	**61.73**	**180**	*e*P	**P**	**12 59 00.5**	**+5.8**
	4.2nm,0.6s,mb4.2						
NVAR	**Mina Array Bea**	**86.78**	**43**	P	**P**	**13 01 18.9**	**+0.6**
	1.1nm,0.9s,mb3.7,baz=217,slow=7.8,SNR=6.4						
PDAR	**Pinedale Array**	**94.69**	**43**	P	**P**	**13 01 55.0**	**0.0**
	0.4nm,1.0s,mb3.5,baz=202,slow=4.9,SNR=3.1						
ZRNK	**Zerenda**	**125.75**	**317**	*e*PKP	PKPdf	13 07 33.6	+0.9
ARCES	**ARCESS Array B**	**136.60**	**348**	PKP	PKPdf	13 07 55.1	+2.4
	0.9nm,0.6s,baz=45,slow=1.3,SNR=8.0						
FINES	**FINESS Array B**	**143.23**	**341**	PKhKP		13 08 02.5	
	1.3nm,0.9s,baz=45,slow=2.7,SNR=7.0						
NB2	**NORSAR Subarra**	**146.75**	**352**	PKP		13 08 13.3	
	0.9nm,0.6s,baz=12,slow=2.9						
NOA	**NORSAR Array B**	**146.75**	**352**	PKPbc	PKPbc	13 08 13.6	+1.1
	1.0nm,0.6s,baz=15,slow=4.5,SNR=4.3						
NOA	**NORSAR Array B**	**146.75**	**352**	PKPbc	PKPbc	13 08 13.6	+1.1
AKASG	**Malin Array Be**	**149.65**	**325**	PKPbc	PKPdf	13 08 21.8	+6.1
	3.1nm,0.7s,baz=42,slow=3.3,SNR=12						
AKASG				PKPab	PKPab	13 08 27.0	-1.9
	2.4nm,0.8s,baz=46,slow=3.9,SNR=4.9						
BRTR	**Keskin Array B**	**151.55**	**302**	PKPbc	PKPdf	13 08 27.3	+8.4
	0.8nm,0.5s,baz=172,slow=3.7,SNR=3.6						

NEIC ***14*** *12:52:33.8, 37.70S×73.44W, h5km, ML3.7(GUC), After GUC.*

GUC 14 12:52:33.8±0.5, 37.70S×73.44W, h5km±7km, ML3.7, 2D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TMCH	**Temuco**	**1.23**	**149**	⇓*i*P	Pb	12 52 55.5	-1.7
TMCH				*i* S	Sb	12 53 12.3	-1.0
TMCH				AMP		12 53 16.6	
	comp=N,2μm,0.7s						
CCHI	**Chillan**	**1.54**	**45**	*e*P	Pn	12 53 01.1	-1.0
CCHI				*i* S	Sb	12 53 21.9	-0.3
CCHI				AMP		12 53 23.3	
	comp=E,2μm,0.4s						
CCHI				AMP		12 53 23.6	
	comp=E,4μm,0.5s						
COCH	**Cobquecura**	**1.65**	**19**	*e*P	Pn	12 53 02.7	-0.8
COCH				AMP		12 53 28.1	
	comp=N,663nm,0.5s						
SFDO	**San Fernando**	**3.65**	**33**	⇓*i*P	Pn	12 53 28.8	-3.3
CICH	**Cipreses**	**4.16**	**37**	*e*P	Pn	12 53 35.7	-3.8
TACH	**Talagante**	**4.52**	**27**	*e*P	Pn	12 53 40.2	-4.3
PCH	**Pirque**	**4.71**	**31**	*e*P	Pn	12 53 43.1	-4.2
FCH	**Farellones**	**5.06**	**31**	*e*P	Pn	12 53 47.8	-4.4
FCH				*i* S	Sn	12 54 47.0	-4.8

MAN 14 12:57:26.2, 13.51N×120.74E, h34km, mb4.3, ML3.2, MS2.9, 4C, Mindoro

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PGP	**Puerto Galera**	**0.21**	**91**	*e*P	P	12 57 34.0	+1.1
PGP				*e*S	S	12 57 40.0	+2.4
LUBP	**Lubang**	**0.53**	**295**	⇑*e*P	P	12 57 38.0	+0.8
LUBP				*e*S	S	12 57 44.8	-0.2
TGY	**Tagaytay City**	**0.62**	**18**	⇑*e*P	P	12 57 44.5	+6.1
TGY				*i* S	S	12 57 55.9	+8.5
SJMP	**San Jose**	**1.10**	**160**	⇑*e*P	P	12 57 46.2	+0.9
SJMP				*e*S	S	12 57 58.4	-1.2
BUSP	**Coron**	**1.58**	**200**	⇑*e*P	P	12 57 52.5	+0.2
BUSP				*e*S	S	12 58 09.5	-2.2
KALP	**Kalibo**	**2.39**	**139**	*e*P	P	12 58 03.5	-0.3

NAO ***14*** *13:13:27.8±9.8, 58.01N×12.05E, h1km±43km, ML2.1*
BER ***14*** *13:13:32.1±3.6, 58.14N×12.09E, ML2.1(NAO), Suspected explosion*

ISC 14 13:13:27.3±5.3, 58.0N±0.3×12.1E±0.5, n4, σ0§93/5, Sweden

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KON	**Kongsberg**	**2.10**	**322**	Pn	**Pn**	**13 14 04.8**	**+0.6**
KON				Lg		13 14 33.4	
KONO	**Kongsberg**	**2.10**	**322**	Pn	**Pn**	**13 14 04.8**	**+0.6**
KONO				Lg		13 14 33.4	
HFS	**Hagfors**	**2.27**	**20**	Pn	**Pn**	**13 14 06.9**	**+0.3**
	baz=211,slow=16						
HFS				Sn	**Sn**	**13 14 35.9**	**+0.2**
	baz=196,slow=28						
HFS				Lg		13 14 40.3	
	baz=210,slow=37						
HFS				Rg		13 14 48.9	
	baz=206,slow=28						
NB2	**NORSAR Subarra**	**3.07**	**352**	Pn	**Pn**	**13 14 16.9**	**-1.1**
NB2				Lg		13 15 04.8	

IDC ***14*** *13:34:30.1±1.1, 29.03S×73.00W, mb4.3/2, mb1 4.1/4, mb1mx3.8/16, ML4.2/2, MS3.1/2, Ms1 3.1/2, ms1mx2.8/23, Error ellipse: s-maj=67.6km s-min=26.5km az=111.0*
NEIC ***14*** *13:34:35.2±0.9, 28.91S×72.89W, h35km, Error ellipse: s-maj=54.3km s-min=13.2km az=108.0*

ISC 14 13:34:32.9±1.8, 28.9S±0.2×72.8W±0.5, h33km, n12, σ1§27/6, mb4.2/3, MS3.0/1, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LVC	**Limon Verde**	**7.15**	**30**	Pn	**Pn**	**13 36 17.5**	**-0.5**
	1.6nm,0.3s,baz=211,slow=8.6,SNR=20						
LVC				Sn	**Sn**	**13 37 38.4**	**-0.5**
	1.3nm,0.3s,baz=288,slow=23,SNR=11						
LPAZ	**La Paz**	**13.25**	**20**	Pn	**P**	**13 37 41.6**	**+0.4**
	0.2nm,0.3s,baz=202,slow=5.4,SNR=3.9						
CPUP	**Villa Florida**	**13.94**	**83**	LR	LR	13 42 31.6	
	comp=Z,72nm,18.5s,baz=88,slow=34						
USHA	**Ushuaia**	**26.12**	**174**	P	**P**	**13 40 04.4**	**-1.1**
	3.5nm,0.7s,mb4.0,baz=354,slow=10,SNR=3.5						
BDFB	**Brasilia**	**26.37**	**65**	LR	LR	13 51 23.1	
	comp=Z,39nm,18.3s,MS3.0,baz=115,slow=38						
QSPA	**South Pole Qui**	**61.34**	**180**	*e*P	**P**	**13 44 47.2**	**0.0**
	2.5nm,0.8s,mb4.4						
DBIC	**Dimbokro**	**74.22**	**73**	P	**P**	**13 46 10.6**	**+1.8**
	3.8nm,1.0s,mb4.3,baz=243,slow=3.5,SNR=5.3						
ASAR	**Alice Springs**	**121.78**	**209**	PKP	PKPdf	13 53 25.1	+1.0
	0.1nm,0.6s,baz=163,slow=1.6,SNR=4.4						
WRA	**Warramunga Arr**	**124.85**	**212**	PKP	PKPdf	13 53 31.5	+1.4
	0.7nm,0.6s,baz=160,slow=1.7,SNR=12						
ZAL	**Zalesovo**	**150.10**	**27**	PKPbc	PKPdf	13 54 23.7	+9.1
	4.4nm,0.6s,baz=100,slow=2.8,SNR=21						
MKAR	**Makanchi Array**	**153.58**	**41**	PKPbc	PKPdf	13 54 30.9	+11
	0.3nm,0.7s,slow=3.6,SNR=4.3						
MKAR				PKPab	PKPab	13 54 45.0	+2.3
	0.9nm,0.7s,baz=315,slow=5.1,SNR=7.1						
MKAR	**Makanchi Array**	**153.58**	**41**	PKPbc	PKPdf	13 54 30.9	+11
MKAR				PKPab	PKPab	13 54 45.0	+2.3

MDD ***14*** *13:34:43.6±2.6, 36.62N×11.02W, mb3.9/3, Error ellipse: s-maj=24.7km s-min=20.8km az=1.0, PRXIMO*

ISC 14 13:34:43.9±1.7, 36.70N±0.09×10.88W±0.10, h10km, n11, σ1§16/20, Azores-Cape St. Vincent Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PTEO	**Sao Teotonio**	**1.92**	**63**	*e*Pn	**Pn**	**13 35 18.2**	**+1.3**
PTEO				*e*Sn	**Sn**	**13 35 43.7**	**+2.4**
	9.7nm,0.2s						
PTEO	**Sao Teotonio**	**1.92**	**63**	Pn	**Pn**	**13 35 18.2**	**+1.3**
PTEO				Sn	**Sn**	**13 35 43.7**	**+2.4**
	4.8nm,0.2s						
MOE	**Montemor**	**2.71**	**47**	*e*Pn	**Pn**	**13 35 29.2**	**+0.9**
MOE				*e*Sn	**Sn**	**13 36 02.6**	**+1.2**
PBEJ	**Beja**	**2.74**	**60**	*e*Sn	**Sn**	**13 36 03.3**	**+1.1**
EGRO	**El Granado**	**2.84**	**72**	Sn	**Sn**	**13 36 05.7**	**+0.9**
	1.5nm,0.1s,SNR=5.0						
EMIN	**Mina Concepcio**	**3.52**	**71**	Pn	**Pn**	**13 35 40.1**	**+0.3**
	0.2nm,0.1s,SNR=9.1						
EMIN				Sn	**Sn**	**13 36 21.6**	**-0.4**
	2.1nm,0.1s,SNR=5.0						
EBAD	**Badajoz**	**3.69**	**55**	Pn	**Pn**	**13 35 42.8**	**+0.6**
	1.3nm,0.1s,SNR=6.2						
EBAD				Sn	**Sn**	**13 36 26.1**	**0.0**
	5.4nm,0.2s,SNR=7.9						
ESPR	**Espera**	**4.04**	**86**	Pn	**Pn**	**13 35 46.8**	**-0.3**
	0.8nm,0.1s,SNR=6.1						
ESPR				Sn	**Sn**	**13 36 33.5**	**-1.5**
	19nm,0.2s						
ECAB	**El Cabril**	**4.56**	**71**	Pn	**Pn**	**13 35 54.6**	**0.0**
	0.9nm,0.2s,SNR=7.9						
ECAB				Sn	**Sn**	**13 36 46.7**	**-1.6**
	6.4nm,0.3s,SNR=7.9						
EADA	**Adamuz**	**5.22**	**72**	Pn	**Pn**	**13 36 04.1**	**+0.1**
	0.3nm,0.1s,SNR=7.9						
EADA				Sn	**Sn**	**13 37 03.3**	**-1.7**
	2.3nm,0.2s,SNR=7.9						
ELOB	**Lobios**	**5.60**	**22**	Pn	**Pn**	**13 36 07.9**	**-1.4**
	0.9nm,0.1s,SNR=7.9						
ELOB				Sn	**Sn**	**13 37 12.5**	**-2.0**
	0.9nm,0.1s,SNR=4.0						

NAO ***14*** *13:41:26.2±1.1, 60.78N×10.92E, h7km±13km, ML2.1*
NEIC ***14*** *13:41:27.3, 60.81N×10.94E, ML2.1(BER), After BER.*
BER ***14*** *13:41:27.3±1.9, 60.81N×10.94E, ML2.1(NAO), Suspected explosion*

ISC 14 13:41:25.6±0.7, 60.77N±0.05×11.01E±0.10, n11, σ0§47/13, Southern Norway

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
NAO01	**NORSAR Array S**	**0.09**	**321**	*e*Pg	**Pg**	**13 41 28.3**	**+0.8**
NAO01				*e*Sg	**Sg**	**13 41 28.9**	**+0.2**
NAO	**NORSAR Subarra**	**0.10**	**301**	Pg	**Pg**	**13 41 27.1**	**-0.5**
NAO				Lg		13 41 29.1	
NC6	**NORSAR Subarra**	**0.22**	**96**	Pg	**Pg**	**13 41 31.1**	**+1.0**
NC6				Lg		13 41 35.7	
NBO	**NORSAR Subarra**	**0.28**	**337**	Pg	**Pg**	**13 41 31.2**	**0.0**
NBO				Lg		13 41 35.0	
NB2	**NORSAR Subarra**	**0.29**	**21**	Pg	**Pg**	**13 41 31.0**	**-0.4**
NB2				Lg		13 41 35.4	
NC4	**NORSAR Subarra**	**0.46**	**48**	Pg	**Pg**	**13 41 34.9**	**0.0**
NC4				Lg		13 41 41.1	
NC4				Rg		13 41 45.5	
NC2	**NORSAR Subarra**	**0.52**	**351**	Pg	**Pg**	**13 41 35.5**	**-0.4**
NC2				Lg		13 41 41.7	
NC2				Rg		13 41 46.4	
NC3	**NORSAR Subarra**	**0.53**	**22**	Pg	**Pg**	**13 41 35.9**	**-0.3**
NC3				Lg		13 41 42.3	
NC3				Rg		13 41 48.0	
KON	**Kongsberg**	**1.33**	**213**	Pn	**Pn**	**13 41 51.2**	**-0.2**
KON				Lg		13 42 10.2	
KONO	**Kongsberg**	**1.33**	**213**	Pn	**Pn**	**13 41 51.2**	**-0.2**
KONO				Lg		13 42 10.2	
HFS	**Hagfors**	**1.48**	**115**	Pn	**Pn**	**13 41 53.6**	**+0.1**
	baz=297,slow=18						
HFS				Sn	**Sn**	**13 42 13.4**	**-0.5**
	baz=299,slow=37						
HFS				Lg		13 42 15.0	
	baz=295,slow=37						

THE ***14*** *13:42:60.0, 38.04N×20.27E, h10km, ML3.1*
NEIC ***14*** *13:43:03.0, 38.12N×20.49E, h5km, MD3.3(ATH), After ATH.*
ATH ***14*** *13:43:03.0, 38.12N×20.49E, h5km, MD3.3/5*

ISC 14 13:43:00.2±1.3, 38.04N±0.05×20.4E±0.1, h5km, n11, σ1§16/14, 1D, Greece

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
VLS	**Valsamata**	**0.23**	**54**	⇓*i*PG	**Pg**	**13 43 04.8**	**-0.1**
LKD	**Levkas**	**0.70**	**19**	*e*Pg	**Pg**	**13 43 12.8**	**-1.5**
LKD				*e*Sg	**Sg**	**13 43 23.6**	**0.0**
EVR	**Evrytania**	**1.44**	**52**	*e*PB	**Pb**	**13 43 28.4**	**+1.3**
IGT	**Igoumenitsa**	**1.49**	**359**	*e*Pb	**Pb**	**13 43 27.1**	**-0.8**
IGT				*e*Sb	**Sb**	**13 43 48.4**	**+1.3**
ITM	**Ithomi**	**1.52**	**124**	*e*PN	**Pn**	**13 43 29.7**	**+1.5**
KEK	**Kerkira**	**1.72**	**346**	*e*PB	**Pb**	**13 43 34.6**	**+2.6**
AGG	**Agios Georgios**	**1.83**	**57**	*e*Pb	**Pb**	**13 43 32.3**	**-1.6**
AGG				*e*Sb	**Sb**	**13 43 58.0**	**+0.9**
MEV	**Metsovon**	**1.87**	**21**	*e*Pb	**Pb**	**13 43 33.5**	**-1.0**
VLI	**Veliai**	**2.45**	**122**	*e*PG	**Pg**	**13 43 48.5**	**-0.6**
LIT	**Litokhoron**	**2.64**	**38**	*e*Pn	**Pn**	**13 43 44.5**	**+0.2**
FNA	**Florina**	**2.85**	**16**	*e*Pn	**Pn**	**13 43 46.0**	**-1.2**

NEIC ***14*** *14:14:21.8±2.0, 5.30S×145.71E, h104km±18km, mb3.9/2, Error ellipse: s-maj=25.7km s-min=15.2km az=154.0*
IDC ***14*** *14:14:21.2±6.1, 5.32S×145.84E, h98km±56km, mb3.3/3, mb1 3.5/5, mb1mx3.3/15, Error ellipse: s-maj=53.0km s-min=30.9km az=128.0*

ISC 14 14:14:22.3±2.3, 5.5S±0.2×145.7E±0.1, h120km±22km, n11, σ0§88/13, mb3.5/4, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WAU	**Wau**	**2.11**	**153**	*e*P	**P**	**14 14 58.7**	**+1.0**
PMG	**Port Moresby**	**4.17**	**160**	P	**P**	**14 15 24.8**	**-0.4**
	9.5nm,0.3s,baz=7.2,slow=5.5,SNR=32						
PMG				S	**S**	**14 16 12.8**	**-0.5**
	12nm,0.3s,baz=134,slow=21,SNR=14						
PMG	**Port Moresby**	**4.17**	**160**	*e*P	**P**	**14 15 24.7**	**-0.5**
PMG				*e*S	**S**	**14 16 12.8**	**-0.5**
KAKA	**Kakadu**	**15.00**	**240**	*e*P	**P**	**14 17 49.3**	**-0.1**
	7.7nm,0.6s						
WB2	**Warramunga Arr**	**18.17**	**217**	*e*P	**P**	**14 18 27.1**	**-1.1**
WRA	**Warramunga Arr**	**18.17**	**217**	P	**P**	**14 18 27.1**	**-1.2**
	0.3nm,0.3s,baz=36,slow=11,SNR=37						
ASAR	**Alice Springs**	**21.39**	**211**	P	**P**	**14 19 03.4**	**+1.6**
	1.1nm,1.0s,mb3.1,baz=32,slow=14,SNR=16						
FITZ	**Fitzroy Crossi**	**23.31**	**236**	*e*P	**P**	**14 19 21.2**	**+0.7**
	2.5nm,0.6s,mb3.7						
STKA	**Stephens Creek**	**26.57**	**188**	P	**P**	**14 19 51.7**	**+0.6**
	0.9nm,0.4s,mb3.6,baz=40,slow=7.9,SNR=2.5						
STKA	**Stephens Creek**	**26.57**	**188**	P	**P**	**14 19 51.7**	**+0.6**
ILAR	**Eielson Array**	**85.48**	**23**	P	**P**	**14 26 46.9**	**-0.6**
	0.7nm,1.0s,mb3.5,baz=247,slow=4.9,SNR=4.8						
ILAR				pP	pP	14 27 12.9	-5.6
	0.4nm,0.6s,baz=250,slow=5.2,SNR=4.7						

ISK ***14*** *14:47:40.5, 37.51N×29.64E, h8km, MD3.2, ML3.4*
NEIC ***14*** *14:47:44.6±1.3, 37.21N×29.90E, h44km±19km, Error ellipse: s-maj=28.8km s-min=12.7km az=151.0*
IDC ***14*** *14:47:45.0±1.8, 37.22N×29.84E, h50km±18km, mb3.2/2, mb1 3.7/6, mb1mx3.4/22, ML3.7/4, Error ellipse: s-maj=48.1km s-min=10.0km az=149.0, putative timing error at EIL*

ISC 14 14:47:40.5±0.8, 37.50N±0.04×29.67E±0.04, h6km±6km, n32, σ0§92/41, mb3.3/2, 1C, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DNZL	**Cakiroluk**	**0.53**	**291**	⇑*i*P	**Pg**	**14 47 50.8**	**-0.3**
DNZL				*i* S	**Sg**	**14 47 59.2**	**+1.0**
DENT	**Denizli**	**0.56**	**296**	PG	**Pg**	**14 47 51.4**	**-0.4**
DENT				SG	**Sg**	**14 47 59.2**	**-0.2**
ELL	**Elmali**	**0.78**	**166**	PG	**Pg**	**14 47 55.4**	**-0.7**
KHL	**Karahalli**	**0.83**	**352**	PG	**Pg**	**14 47 56.7**	**-0.4**
YER	**Yerkesik**	**1.17**	**252**	*i* PN	**Pn**	**14 48 03.2**	**-0.1**
MANT	**Manisa**	**1.32**	**319**	*i* P	**Pb**	**14 48 05.4**	**+0.1**
MANT				*i* S	**Sb**	**14 48 25.5**	**+3.1**
ALT	**Altintas**	**1.59**	**12**	*e*PN	**Pn**	**14 48 09.6**	**+0.2**
ARG	**Arkhangelos**	**1.79**	**224**	*e*P	**Pn**	**14 48 14.0**	**+1.8**
BDRM	**Kayabasi**	**1.83**	**257**	*i* P	**Pn**	**14 48 13.3**	**+0.5**
BDRM				*i* S	**Sn**	**14 48 37.1**	**+0.6**
AKS	**Akhisar**	**2.01**	**314**	PN	**Pn**	**14 48 14.8**	**-0.6**
KDAG	**Bornova**	**2.10**	**296**	*i* P	**Pn**	**14 48 16.0**	**-0.7**
KDAG				*i* S	**Sn**	**14 48 52.5**	**+9.0**
IZM	**Izmir**	**2.10**	**296**	PN	**Pn**	**14 48 16.4**	**-0.3**
ESKT	**Eskisehir**	**2.22**	**24**	*e*PN	**Pn**	**14 48 19.4**	**+1.0**
ESKT	**Eskisehir**	**2.22**	**24**	*i* P	**Pn**	**14 48 14.5**	**-3.9**
ESKT				*i* S	**Sn**	**14 48 56.0**	**+10**
KIZT	**Kizilcal**	**2.22**	**51**	PN	**Pn**	**14 48 18.7**	**+0.3**
DST	**Dursunbey**	**2.25**	**339**	*e*PN	**Pn**	**14 48 19.0**	**+0.1**
SMG	**Samos**	**2.26**	**276**	*e*P	**Pn**	**14 48 19.1**	**+0.1**
HDMB	**Hadim**	**2.31**	**103**	*e*PN	**Pn**	**14 48 20.8**	**+1.1**
BALB	**Balikesir**	**2.55**	**327**	*e*PN	**Pn**	**14 48 23.2**	**0.0**
ULDT	**Uludag**	**2.67**	**351**	*i* P	**Pn**	**14 48 23.6**	**-1.3**
ULDT				*i* S	**Sn**	**14 49 04.3**	**+6.4**
KARP	**Karpathos**	**2.81**	**227**	*e*P	**Pn**	**14 48 28.2**	**+1.3**
BNT	**Bandirma**	**3.16**	**335**	*e*PN	**Pn**	**14 48 31.8**	**0.0**
PRK	**Paraskevi**	**3.19**	**304**	*e*P	**Pn**	**14 48 32.0**	**-0.2**
APE	**Apeiranthos**	**3.33**	**264**	*e*PN	**Pn**	**14 48 34.4**	**+0.1**
LEF	**Lefka**	**3.52**	**132**	*e*PN	**Pn**	**14 48 37.5**	**+0.5**
BRTR	**Keskin Array B**	**3.82**	**53**	P	**Pn**	**14 48 41.2**	**0.0**
	2.1nm,0.3s,baz=243,slow=17,SNR=29						
BRTR				S	**Sn**	**14 49 27.6**	**+0.7**
	0.5nm,0.3s,baz=221,slow=24,SNR=11						
KRIS	**Kristallenia**	**4.09**	**237**	*e*Pn	**Pn**	**14 48 45.3**	**+0.3**
IDI	**Anoyia**	**4.45**	**242**	P	**Pn**	**14 48 49.4**	**-0.7**
	3.4nm,0.3s,baz=60,slow=12,SNR=17						
IDI				S	**Sn**	**14 49 41.2**	**-1.7**
	5.0nm,0.3s,baz=115,slow=18,SNR=3.3						
GERES	**GERESS Array B**	**16.22**	**319**	P	**P**	**14 51 34.3**	**+3.9**
	0.1nm,0.3s,baz=139,slow=14,SNR=5.6						
MKAR	**Makanchi Array**	**39.45**	**59**	P	**P**	**14 55 11.3**	**-1.7**
	0.7nm,0.7s,mb3.5,baz=278,slow=7.4,SNR=5.7						
MKAR	**Makanchi Array**	**39.45**	**59**	P	**P**	**14 55 11.3**	**-1.7**
YKA	**Yellowknife Ar**	**76.28**	**344**	P	**P**	**14 59 29.0**	**-2.2**
	0.2nm,0.7s,mb3.2,baz=27,slow=5.2,SNR=5.6						

IDC 14 14:48:21.1±1.9, 51.28S×139.33E, mb3.8/3, mb1 3.9/4, mb1mx3.8/9, ML3.5/1, MS3.6/2, Ms1 3.8/2, ms1mx3.0/17, Error ellipse: s-maj=117.0km s-min=41.1km az=84.0, Western Indian-Antarctic Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**19.46**	**6**	*e*P	P	14 52 53.4	+1.5
	4.0nm,0.9s						
STKA	**Stephens Creek**	**19.46**	**6**	P	P	14 52 51.2	-0.7
	0.1nm,0.3s,baz=188,slow=15,SNR=2.1						
RPZ	**Rata Peaks**	**22.59**	**83**	LR	LR	14 59 06.1	
	comp=Z,118nm,21.1s,baz=172,slow=28						
ASAR	**Alice Springs**	**27.89**	**349**	P	P	14 54 12.3	-2.2
	0.5nm,0.6s,baz=162,slow=9.6,SNR=8.6						
ASAR				PcP	PcP	14 57 27.8	-2.9
	0.3nm,0.7s,baz=164,slow=2.4,SNR=6.0						
WB2	**Warramunga Arr**	**31.52**	**351**	*e*P	P	14 54 44.6	-2.3
WRA	**Warramunga Arr**	**31.52**	**351**	P	P	14 54 44.5	-2.4
	2.2nm,1.0s,baz=173,slow=8.4,SNR=14						
WRA				PcP	PcP	14 57 37.1	-2.8
	0.5nm,0.6s,baz=179,slow=2.3,SNR=9.6						
FITZ	**Fitzroy Crossi**	**34.84**	**337**	*e*P	P	14 55 11.7	-4.1
	0.9nm,0.9s						
FITZ				*e*		14 55 18.8	
FITZ	**Fitzroy Crossi**	**34.84**	**337**	P	P	14 55 13.1	-2.7
	1.9nm,1.1s,baz=179,slow=16,SNR=2.3						
FITZ				PcP	PcP	14 57 47.0	-2.2
	0.5nm,0.5s,baz=171,slow=13,SNR=5.7						
CMAR	**Chiang Mai Arr**	**77.92**	**321**	LR	LR	15 32 02.9	
	comp=Z,50nm,18.6s,baz=213,slow=34						
ARCES	**ARCESS Array B**	**144.85**	**326**	PKP	PKPdf	15 07 58.1	-2.1
	1.1nm,0.6s,baz=90,slow=2.7,SNR=9.5						

LDG ***14*** *14:54:53.5±0.1, 46.23N×7.15E, h2km, Md2.1/1, Ml2.2/4, Error ellipse: s-maj=2.9km s-min=0.8km az=83.0*
NEIC ***14*** *14:54:53.8, 46.20N×7.00E, h5km, ML2.2(LDG), ML1.5(ZUR), After ZUR.*
ZUR ***14*** *14:54:53.3, 46.23N×7.00E, ML1.3/6, Suspected Mining explosion.*

ISC 14 14:54:53.9±0.4, 46.23N±0.02×6.97E±0.04, n13, σ0§95/23, 3C, Switzerland

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SALAN	**Lac Salanfe**	**0.09**	**178**	⇑*i*Pg	**Pg**	**14 54 55.9**	**+0.3**
	45nm,0.8s						
SALAN				*i* Sg	**Sg**	**14 54 57.4**	**+0.7**
	45nm,0.8s						
GRYON	**Gryon**	**0.10**	**78**	⇑*i*Pg	**Pg**	**14 54 56.0**	**+0.1**
	7.5nm,0.7s						
GRYON				*e*Sg	**Sg**	**14 54 57.6**	**+0.3**
	7.5nm,0.7s						
AIGLE	**Aigle**	**0.11**	**355**	*e*Pg	**Pg**	**14 54 56.3**	**+0.1**
	8.1nm,0.6s						
AIGLE				*i* Sg	**Sg**	**14 54 58.2**	**+0.5**
	8.1nm,0.6s						
EMV	**Vieux Emosson**	**0.17**	**196**	⇑*i*Pg	**Pg**	**14 54 57.6**	**+0.2**
	8.5nm,0.6s	

MEX 14 15:25:05.5±0.6, 15.55N×94.25W, h35km±142km, MD3.9, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CMIG	**Matias Romero**	**1.65**	**338**	*i* P	P	15 25 30.5	-2.0
CMIG				*i* S	S	15 25 49.9	-2.9
HUIG	**Huatulco**	**1.81**	**277**	*e*P	P	15 25 32.8	-1.9
HUIG				*i* S	S	15 25 52.7	-3.9
CCIG	**Comitan**	**2.16**	**70**	*i* P	S	15 25 37.8	-1.9
CCIG				*i* S	S	15 26 02.1	-3.4
OXX	**Oaxaca**	**2.82**	**303**	*i* P	P	15 25 50.0	+0.7
OXX				*i* S	S	15 26 23.0	+0.5

IDC 14 15:38:13.4±1.7, 33.90N×138.09E, mb3.4/3, mb1 3.6/3, mb1mx3.3/23, Error ellipse: s-maj=52.3km s-min=25.2km az=40.0

ISC 14 15:38:16.5±1.5, 33.8N±0.3×138.0E±0.2, h33km, n4, σ0§80/5, mb3.3/3, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHJ	**Hachijo jima 2**	**1.62**	**116**	Pn	**Pn**	**15 38 43.3**	**0.0**
	6.0nm,0.3s,baz=71,slow=23,SNR=7.5						
JHJ				Sn	**Sn**	**15 39 13.8**	**+10**
	19nm,0.3s,baz=286,slow=23,SNR=8.2						
MKAR	**Makanchi Array**	**43.57**	**305**	P	**P**	**15 46 18.9**	**0.0**
	0.2nm,0.5s,mb3.1,baz=85,slow=11,SNR=3.5						
WRA	**Warramunga Arr**	**53.59**	**184**	P	**P**	**15 47 36.0**	**-0.8**
	0.2nm,0.4s,mb3.4,baz=1.1,slow=7.6,SNR=11						
ASAR	**Alice Springs**	**57.32**	**185**	P	**P**	**15 48 04.6**	**+0.8**
	0.3nm,0.7s,mb3.4,baz=3.9,slow=7.6,SNR=6.0						

IDC 14 15:54:29.1±6.0, 10.24S×162.87E, mb3.9/3, mb1 3.9/3, mb1mx3.6/15, Error ellipse: s-maj=189.0km s-min=44.6km az=111.0, Bougainville - Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**29.18**	**219**	P	P	16 00 32.2	-2.2
	1.5nm,0.8s,baz=31,slow=5.9,SNR=2.8						
ASAR	**Alice Springs**	**30.68**	**240**	P	P	16 00 45.8	-2.1
	0.3nm,0.8s,baz=63,slow=10,SNR=3.1						
MKAR	**Makanchi Array**	**91.01**	**317**	P	P	16 07 35.3	-1.3
	0.8nm,0.6s,baz=87,slow=6.0,SNR=8.9						

IDC 14 16:21:30.6±1.5, 1.40N×126.62E, mb3.7/4, mb1 3.9/5, mb1mx3.6/17, ML3.2/1, Error ellipse: s-maj=101.0km s-min=23.6km az=68.0

ISC 14 16:21:33.1±1.5, 1.4N±0.2×126.5E±0.5, h33km, n6, σ0§13/6, mb3.7/4, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**19.38**	**183**	P	**P**	**16 25 59.0**	**0.0**
	0.1nm,0.3s,baz=346,slow=17,SNR=3.5						
WRA	**Warramunga Arr**	**22.54**	**160**	P	**P**	**16 26 31.5**	**-0.2**
	2.3nm,0.4s,mb3.9,baz=340,slow=11,SNR=38						
WB2	**Warramunga Arr**	**22.54**	**160**	*e*P	**P**	**16 26 31.7**	**0.0**
ASAR	**Alice Springs**	**25.91**	**164**	P	**P**	**16 27 04.2**	**0.0**
	0.5nm,0.6s,mb3.2,baz=339,slow=6.2,SNR=13						
ASAR				PcP	PcP	16 30 35.1	+2.1
	0.2nm,0.7s,baz=340,slow=2.1,SNR=4.0						
STKA	**Stephens Creek**	**36.03**	**158**	P	**P**	**16 28 33.5**	**+0.1**
	2.5nm,1.1s,mb4.1,baz=333,slow=11,SNR=2.8						
MKAR	**Makanchi Array**	**59.36**	**326**	P	**P**	**16 31 34.5**	**0.0**
	0.2nm,0.3s,mb3.6,baz=114,slow=7.4,SNR=5.2						

MOS 14 16:34:16.1±0.9, 37.35N×29.67E, h10km, mb4.2/11, Error ellipse: s-maj=10.4km s-min=4.8km az=106.3
THE 14 16:34:17.7, 37.53N×30.11E, h7km, ML4.4
NEIC 14 16:34:18.6, 37.55N×29.65E, h9km, mb4.0/8, MD4.1(ISK), ML4.3(NIC), ML4.1(GII), After ISK.
GRAL 14 16:34:18.4±1.5, 37.18N×29.12E, h14km±38km
ISK 14 16:34:18.6, 37.55N×29.65E, h9km, MD4.3, ML4.1
NIC 14 16:34:23.9±0.4, 37.33N×29.42E, h25km, mb4.6, ML4.3, MW4.0
IDC 14 16:34:23.4±1.2, 37.47N×29.69E, h46km±12km, mb3.8/15, mb1 4.1/26, mb1mx4.0/33, ML4.3/10, MS3.5/6, Ms1 3.5/6, ms1mx3.1/33, Error ellipse: s-maj=17.5km s-min=9.2km az=156.0, putative timing error at EIL
DUSS 14 16:34:26.4±0.3, 37.30N×29.70E, h15km
NSSC 14 16:34:51.4, 36.19N×31.84E, h40km

ISC 14 16:34:18.7±0.1, 37.51N±0.02×29.71E±0.02, h15km, n303, σ1§19/333, mb4.3/40, MS3.4/6, 9C-4D, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DNZL	**Cakiroluk**	**0.56**	**289**	⇑*i*P	**Pb**	**16 34 29.0**	**-0.6**
DNZL				*i* S	**Sb**	**16 34 34.6**	**-2.4**
DENT	**Denizli**	**0.59**	**294**	*i* PG	**Pg**	**16 34 29.5**	**-1.3**
ISP	**Isparta**	**0.71**	**62**	*i* PG	**Pg**	**16 34 33.0**	**-0.2**
KHL	**Karahalli**	**0.82**	**350**	*i* PG	**Pg**	**16 34 34.5**	**-0.8**
KHL				SG	**Sg**	**16 34 45.4**	**-1.0**
KHL	**Karahalli**	**0.82**	**350**	Pg	**Pg**	**16 34 34.5**	**-0.8**
KHL				Sg	**Sg**	**16 34 45.5**	**-0.9**
ANTB	**Antalya**	**0.97**	**129**	PG	**Pg**	**16 34 38.8**	**+0.6**
MANT	**Manisa**	**1.33**	**317**	*i* P	**Pn**	**16 34 43.3**	**+0.5**
MANT				*i* S	**Sb**	**16 34 57.6**	**-2.0**
AYDN	**Tasoluk**	**1.46**	**276**	*i* P	**Pn**	**16 34 45.8**	**+1.1**
AYDN				*i* S	**Sb**	**16 35 04.1**	**+0.8**
ALT	**Altintas**	**1.57**	**11**	*i* PN	**Pn**	**16 34 47.7**	**+1.4**
ARG	**Arkhangelos**	**1.81**	**225**	*e*P	**Pn**	**16 34 51.5**	**+1.8**
BDRM	**Kayabasi**	**1.86**	**257**	*i* P	**Pn**	**16 34 51.4**	**+1.0**
BDRM				*i* S	**Sn**	**16 35 14.8**	**+1.0**
AKS	**Akhisar**	**2.02**	**313**	*i* PN	**Pn**	**16 34 52.8**	**+0.1**
KDAG	**Bornova**	**2.13**	**295**	*i* P	**Pn**	**16 34 54.4**	**+0.2**
KDAG				*i* S	**Sn**	**16 35 27.1**	**+6.7**
IZM	**Izmir**	**2.13**	**295**	*i* PN	**Pn**	**16 34 54.6**	**+0.4**
KIZT	**Kizilcal**	**2.19**	**51**	*i* PN	**Pn**	**16 34 57.1**	**+2.0**
ESKT	**Eskisehir**	**2.19**	**24**	*i* PN	**Pn**	**16 34 56.2**	**+1.0**
NISR	**Nisiros**	**2.25**	**247**	*e*P	**Pn**	**16 35 00.7**	**+4.7**
DST	**Dursunbey**	**2.25**	**338**	*i* PN	**Pn**	**16 34 56.5**	**+0.4**
HDMB	**Hadim**	**2.28**	**103**	*e*PN	**Pn**	**16 34 58.4**	**+2.0**
HDMB	**Hadim**	**2.28**	**103**	Pn	**Pn**	**16 34 59.4**	**+3.0**
SMG	**Samos**	**2.29**	**276**	*e*P	**Pn**	**16 34 57.0**	**+0.4**
BALB	**Balikesir**	**2.56**	**327**	PN	**Pn**	**16 35 01.2**	**+0.7**
ORLT	**Orhaneli**	**2.61**	**346**	*e*PN	**Pn**	**16 35 01.6**	**+0.5**
ULDT	**Uludag**	**2.66**	**350**	*i* P	**Pn**	**16 35 03.1**	**+1.2**
ULDT				*i* S	**Sn**	**16 35 42.9**	**+8.8**
GPA	**Golpazari**	**2.81**	**9**	*e*PN	**Pn**	**16 35 05.6**	**+1.6**
KARP	**Karpathos**	**2.84**	**227**	*e*P	**Pn**	**16 35 05.0**	**+0.6**
KCT	**Karacabey**	**2.94**	**339**	PN	**Pn**	**16 35 05.9**	**0.0**
BNT	**Bandirma**	**3.16**	**334**	PN	**Pn**	**16 35 09.1**	**+0.1**
MDU	**Mudurnu**	**3.17**	**21**	PN	**Pn**	**16 35 10.6**	**+1.5**
EDC	**Edincik**	**3.17**	**334**	PN	**Pn**	**16 35 08.9**	**-0.3**
AKMC	**Akamas**	**3.26**	**139**	⇓P	**Pn**	**16 35 12.3**	**+1.9**
HRT	**Hereke**	**3.31**	**359**	PN	**Pn**	**16 35 11.2**	**+0.2**
ALFC	**Alevga**	**3.31**	**134**	P	**Pn**	**16 35 13.9**	**+2.8**
	17nm,0.3s						
ALFC				S	**Sn**	**16 35 52.3**	**+1.8**
APE	**Apeiranthos**	**3.36**	**264**	*e*PN	**Pn**	**16 35 12.2**	**+0.4**
APE	**Apeiranthos**	**3.36**	**264**	*e*P	**Pn**	**16 35 12.0**	**+0.2**
BADT	**Buyukada**	**3.37**	**352**	PN	**Pn**	**16 35 11.4**	**-0.5**
ANTO	**Ankara**	**3.37**	**45**	PN	**Pn**	**16 35 12.6**	**+0.7**
PPCY	**Paphos**	**3.38**	**140**	P	**Pn**	**16 35 14.7**	**+2.6**
IKL	**Isikli**	**3.43**	**111**	*i* PN	**Pn**	**16 35 14.8**	**+2.0**
HENT	**Hendek**	**3.43**	**15**	*i* P	**Pn**	**16 35 13.8**	**+1.0**
HENT				*i* S	**Sn**	**16 36 13.6**	**+20**
KGT	**Karabiga**	**3.48**	**328**	*e*PN	**Pn**	**16 35 13.7**	**+0.2**
LEF	**Lefka**	**3.51**	**132**	*e*PN	**Pn**	**16 35 15.5**	**+1.6**
SANT	**Santorini**	**3.59**	**253**	*e*Pn	**Pn**	**16 35 16.9**	**+1.9**
SANT				*e*		16 35 26.9	
SANT				*e*Sg	**Sg**	**16 36 19.4**	**+1.1**
THR4	**Thira Island,**	**3.61**	**254**	*e*Pn	**Pn**	**16 35 16.4**	**+1.1**
THR3	**Thira Island,**	**3.62**	**254**	*e*Pn	**Pn**	**16 35 16.5**	**+0.9**
THR6	**Thira Island,**	**3.64**	**253**	*e*Pn	**Pn**	**16 35 17.3**	**+1.5**
KAMT	**Kaman**	**3.65**	**58**	*i* PN	**Pn**	**16 35 16.8**	**+0.9**
THR5	**Thira Island,**	**3.66**	**254**	*e*Pn	**Pn**	**16 35 18.1**	**+2.1**
LPK	**Lapseki**	**3.67**	**322**	*i* PN	**Pn**	**16 35 16.3**	**+0.2**
MAMC	**Mammari**	**3.67**	**128**	P	**Pn**	**16 35 19.3**	**+3.1**
CTT	**Catalca**	**3.76**	**345**	*e*PN	**Pn**	**16 35 17.3**	**-0.2**
SZAC	**Souni-Zanaja**	**3.76**	**136**	⇑P	**Pn**	**16 35 19.6**	**+2.1**
	21nm,1.0s						
SZAC				S	**Sn**	**16 36 05.3**	**+3.3**
SZAC	**Souni-Zanaja**	**3.76**	**136**	⇑*i*P	**Pn**	**16 35 19.6**	**+2.1**
SZAC				S	**Sn**	**16 36 05.3**	**+3.3**
BRTR	**Keskin Array B**	**3.79**	**53**	P	**Pn**	**16 35 19.0**	**+1.1**
	12nm,0.3s,baz=241,slow=17,SNR=162						
BRTR				S	**Sn**	**16 36 04.2**	**+1.7**
	3.2nm,0.3s,baz=221,slow=23,SNR=7.7						
BRTR				LR	LR	16 37 21.9	
	comp=Z,507nm,20.4s,baz=175,slow=47						
CSS	**Prodhromos**	**3.88**	**130**	⇑P	**Pn**	**16 35 21.5**	**+2.4**
	6.5nm,0.6s						
CSS				S	**Sn**	**16 36 07.7**	**+2.8**
CSS	**Prodhromos**	**3.88**	**130**	*e*Pn	**Pn**	**16 35 21.3**	**+2.2**
NIG	**Nigde**	**3.93**	**80**	*i* PN	**Pn**	**16 35 22.1**	**+2.3**
NPS	**Neapolis**	**4.00**	**237**	*e*P	**Pn**	**16 35 20.5**	**-0.3**
KRIS	**Kristallenia**	**4.12**	**237**	*e*Pn	**Pn**	**16 35 22.0**	**-0.6**
ELDT	**Eldivan**	**4.15**	**43**	*i* P	**Pn**	**16 35 23.7**	**+0.7**
XRY	**Khrisi**	**4.18**	**232**	*e*P	**Pn**	**16 35 23.1**	**-0.4**
PHNC	**Paralimni**	**4.30**	**124**	P	**Pn**	**16 35 29.2**	**+4.1**
CANT	**Cankiri**	**4.34**	**43**	*e*PN	**Pn**	**16 35 26.7**	**+1.0**
SAFT	**Safranbolu**	**4.38**	**31**	*e*PN	**Pn**	**16 35 26.8**	**+0.5**
ALN	**Alexandroupoli**	**4.42**	**321**	*e*Pn	**Pn**	**16 35 26.4**	**-0.4**
IDI	**Anoyia**	**4.48**	**242**	P	**Pn**	**16 35 28.4**	**+0.7**
	25nm,0.3s,baz=56,slow=13,SNR=79						
IDI				S	**Sn**	**16 36 19.3**	**-0.7**
	25nm,0.3s,baz=329,slow=23,SNR=6.6						
PTL	**Penteli**	**4.66**	**278**	*e*P	**Pn**	**16 35 30.3**	**0.0**
ATH	**Athens Observa**	**4.77**	**277**	*e*P	**Pn**	**16 35 30.7**	**-1.2**
CEYT	**Ceyhan**	**4.84**	**94**	*e*PN	**Pn**	**16 35 34.8**	**+2.0**
TOS	**Tosya**	**4.86**	**42**	*e*PN	**Pn**	**16 35 33.8**	**+0.8**
RDO	**Rodhopi**	**4.86**	**320**	*e*P	**Pn**	**16 35 33.0**	**-0.1**
YOZ	**Yozgat**	**4.88**	**62**	*e*PN	**Pn**	**16 35 34.2**	**+0.8**
VAM	**Vamos**	**4.91**	**246**	*e*P	**Pn**	**16 35 36.2**	**+2.4**
NSAL	**Nisos Salamina**	**4.97**	**276**	*e*P	**Pn**	**16 35 39.5**	**+4.9**
CTKT	**Corum**	**5.03**	**50**	*i* P	**Pn**	**16 35 36.1**	**+0.6**
OUR	**Ouranopolis**	**5.28**	**304**	*e*Pn	**Pn**	**16 35 39.1**	**+0.1**
ARNB	**Al Arnab**	**5.29**	**106**	⇑P	**Pn**	**16 35 41.3**	**+2.0**
ARNB				⇑S	Sn	16 36 19.4	-21
PAIG	**Paliouri**	**5.30**	**299**	*e*Pn	**Pn**	**16 35 38.7**	**-0.6**
KDZ	**Kurdzhali**	**5.30**	**323**	*i* P	**Pn**	**16 35 38.0**	**-1.3**
KDZ	**Kurdzhali**	**5.30**	**323**	*i* P	**Pn**	**16 35 38.0**	**-1.3**
KDZ	**Kurdzhali**	**5.30**	**323**	*i* P	**Pn**	**16 35 38.0**	**-1.3**
COBT	**Iskenderun**	**5.33**	**99**	*i* P	**Pn**	**16 35 41.4**	**+1.7**
XOR	**Xorichti**	**5.44**	**292**	*e*Pn	**Pn**	**16 35 41.1**	**-0.2**
VLI	**Veliai**	**5.47**	**264**	*e*P	**Pn**	**16 35 42.8**	**+1.1**
KYTH	**Kithira**	**5.49**	**259**	*e*P	**Pn**	**16 35 43.9**	**+1.9**
JMB	**Yambol**	**5.50**	**335**	*i* P	**Pn**	**16 35 42.0**	**-0.1**
JMB	**Yambol**	**5.50**	**335**	*i* P	**Pn**	**16 35 42.0**	**-0.1**
JMB	**Yambol**	**5.50**	**335**	*i* P	**Pn**	**16 35 42.0**	**-0.1**
BZK	**Bozkurt**	**5.54**	**35**	*e*PN	**Pn**	**16 35 43.1**	**+0.5**
DIM	**Dimitrovgrad**	**5.56**	**326**	*i* P	**Pn**	**16 35 42.0**	**-0.9**
DIM	**Dimitrovgrad**	**5.56**	**326**	*i* P	**Pn**	**16 35 42.0**	**-0.9**
DIM	**Dimitrovgrad**	**5.56**	**326**	*i* P	**Pn**	**16 35 42.0**	**-0.9**
PLG	**Polygyros**	**5.66**	**302**	*e*P	**Pn**	**16 35 44.0**	**-0.3**
RZN	**Rozhen**	**5.68**	**319**	*i* P	**Pn**	**16 35 44.0**	**-0.6**
RZN	**Rozhen**	**5.68**	**319**	*i* P	**Pn**	**16 35 44.0**	**-0.6**
RZN	**Rozhen**	**5.68**	**319**	*i* P	**Pn**	**16 35 44.0**	**-0.6**
SOH	**Sokhos**	**5.94**	**306**	*e*Pn	**Pn**	**16 35 49.0**	**+0.6**
SRS	**Serrai**	**5.95**	**309**	*e*Pn	**Pn**	**16 35 47.6**	**-0.9**
GAZ	**Gaziantep**	**5.99**	**91**	*e*PN	**Pn**	**16 35 51.6**	**+2.6**
PLD	**Plovdiv**	**5.99**	**322**	*i* P	**Pn**	**16 35 48.0**	**-1.0**
PLD	**Plovdiv**	**5.99**	**322**	*i* P	**Pn**	**16 35 48.0**	**-1.0**
PLD	**Plovdiv**	**5.99**	**322**	*i* P	**Pn**	**16 35 48.0**	**-1.0**
AGG	**Agios Georgios**	**6.00**	**287**	*e*Pn	**Pn**	**16 35 49.6**	**+0.4**
HWQ	**Hawqa**	**6.00**	**121**	*e*PN	**Pn**	**16 35 50.5**	**+1.3**
HWQ				SN	**Sn**	**16 36 57.9**	**-0.5**
BHL	**Bhannes**	**6.03**	**125**	*e*PN	**Pn**	**16 35 49.6**	**0.0**
BHL				SN	**Sn**	**16 36 56.1**	**-2.9**
MATL	**Matirih**	**6.09**	**130**	*e*PN	**Pn**	**16 35 49.2**	**-1.3**
MMB	**Musomiste**	**6.16**	**313**	*i* P	**Pn**	**16 35 50.0**	**-1.4**
MMB	**Musomiste**	**6.16**	**313**	*i* P	**Pn**	**16 35 50.0**	**-1.4**
MMB	**Musomiste**	**6.16**	**313**	*i* P	**Pn**	**16 35 50.0**	**-1.4**
ITM	**Ithomi**	**6.21**	**269**	*e*P	**Pn**	**16 35 55.0**	**+2.9**
PSN	**Preselentsi**	**6.27**	**350**	*i* P	**Pn**	**16 35 51.0**	**-2.0**
PSN	**Preselentsi**	**6.27**	**350**	*i* P	**Pn**	**16 35 51.0**	**-2.0**
PSN	**Preselentsi**	**6.27**	**350**	*i* P	**Pn**	**16 35 51.0**	**-2.0**
HNTI	**Hanita**	**6.28**	**133**	P	**Pn**	**16 35 52.8**	**-0.4**
HNTI				S	**Sn**	**16 37 01.6**	**-3.8**
EVR	**Evrytania**	**6.38**	**285**	*e*P	**Pn**	**16 35 55.0**	**+0.5**
KNT	**Kendrikon**	**6.42**	**307**	*e*Pn	**Pn**	**16 35 54.9**	**-0.1**
HAF	**Haifa**	**6.42**	**136**	P	**Pn**	**16 35 54.7**	**-0.4**
HAF				S	**Sn**	**16 37 03.4**	**-5.4**
HRI	**Mount Hermon**	**6.49**	**129**	P	**Pn**	**16 35 56.6**	**+0.5**
HRI				S	**Sn**	**16 37 07.7**	**-2.9**
KSDI	**Kefar Szold**	**6.50**	**130**	P	**Pn**	**16 35 56.8**	**+0.6**
BRBR	**Barbar**	**6.53**	**127**	⇑P	**Pn**	**16 35 56.2**	**-0.5**
BRBR				⇑S	Sn	16 36 43.2	-28
PGB	**Panagyurishte**	**6.59**	**322**	*i* P	**Pn**	**16 35 56.0**	**-1.5**
PGB	**Panagyurishte**	**6.59**	**322**	*i* P	**Pn**	**16 35 56.0**	**-1.5**
PGB	**Panagyurishte**	**6.59**	**322**	*i* P	**Pn**	**16 35 56.0**	**-1.5**
PVL	**Pavlikeni**	**6.60**	**331**	*i* P	**Pn**	**16 35 57.0**	**-0.7**
PVL	**Pavlikeni**	**6.60**	**331**	*i* P	**Pn**	**16 35 57.0**	**-0.7**
PVL	**Pavlikeni**	**6.60**	**331**	*i* P	**Pn**	**16 35 57.0**	**-0.7**
GRG	**Griva**	**6.63**	**303**	*e*Pn	**Pn**	**16 35 58.1**	**0.0**
QASN	**Qassioun**	**6.66**	**125**	⇓P	**Pn**	**16 35 57.4**	**-1.2**
QASN				⇓S	Sn	16 36 46.4	-29
DUSS	**Damascus Unive**	**6.69**	**125**	*i* P	**Pn**	**16 36 01.2**	**+2.4**
DUSS				*i* P		16 36 01.3	
DUSS				*i* P		16 36 01.3	
DUSS				*e*		16 36 01.6	
	baz=307,slow=16						
DUSS				*e*S	**Sn**	**16 37 11.4**	**-4.0**
KKB	**Krupnik**	**6.71**	**312**	*i* P	**Pn**	**16 35 58.0**	**-1.2**
KKB	**Krupnik**	**6.71**	**312**	*i* P	**Pn**	**16 35 58.0**	**-1.2**
KKB	**Krupnik**	**6.71**	**312**	*i* P	**Pn**	**16 35 58.0**	**-1.2**
KSHT	**Keshet**	**6.73**	**130**	P	**Pn**	**16 36 00.1**	**+0.6**
KSHT				S	**Sn**	**16 37 13.7**	**-2.9**
SLTI	**Sal'it**	**6.84**	**139**	P	**Pn**	**16 36 00.1**	**-1.0**
SLTI				S	**Sn**	**16 37 14.6**	**-4.8**
TOTH	**TOTAH**	**6.87**	**125**	⇑P	**Pn**	**16 36 01.3**	**-0.1**
TOTH				⇑S	Sn	16 36 50.7	-29
MMLI	**Mount Malkishu**	**6.90**	**136**	P	**Pn**	**16 36 01.6**	**-0.2**
TCHB	**Talchebab**	**7.05**	**131**	⇑P	**Pn**	**16 36 03.6**	**-0.3**
TCHB				⇑S	Sn	16 36 55.2	-29
HMDT	**Nahal Hemdat**	**7.10**	**136**	P	**Pn**	**16 36 04.7**	**+0.1**
VTS	**Vitosha**	**7.11**	**318**	*i* P	**Pn**	**16 36 04.0**	**-0.8**
VTS	**Vitosha**	**7.11**	**318**	*i* P	**Pn**	**16 36 04.0**	**-0.8**
VTS	**Vitosha**	**7.11**	**318**	*i* P	**Pn**	**16 36 04.0**	**-0.8**
FNA	**Florina**	**7.25**	**299**	*e*Pn	**Pn**	**16 36 07.5**	**+0.7**
DRGI	**Dragot**	**7.54**	**140**	P	**Pn**	**16 36 10.5**	**-0.3**
IGT	**Igoumenitsa**	**7.62**	**288**	*e*Pn	**Pn**	**16 36 13.8**	**+1.8**
KZIT	**Kziot**	**7.65**	**148**	P	**Pn**	**16 36 10.7**	**-1.6**
KZIT				S	**Sn**	**16 37 32.7**	**-6.8**
MKRJ	**Makawir**	**7.70**	**139**	P	**Pn**	**16 36 12.9**	**-0.1**
SVTA	**Shivta**	**7.72**	**147**	P	**Pn**	**16 36 12.3**	**-1.1**
MASH	**Mash'abbe Sade**	**7.74**	**146**	P	**Pn**	**16 36 12.0**	**-1.6**
MZDA	**Masada**	**7.75**	**141**	P	**Pn**	**16 36 13.5**	**-0.3**
MZDA				S	**Sn**	**16 37 35.9**	**-6.2**
SKO	**Skopje**	**7.77**	**308**	*i* Pn	**Pn**	**16 36 14.3**	**+0.2**
SKO				*i*		16 36 18.7	
	comp=Z,0.0nm,0.7s						
SKO	**Skopje**	**7.77**	**308**	*i* Pn	**Pn**	**16 36 14.3**	**+0.2**
	comp=Z,37nm,0.7s						
ASF	**Jabal al Asfar**	**7.95**	**130**	P	**Pn**	**16 36 16.9**	**+0.3**
	comp=Z,3.3nm,0.3s,baz=194,slow=12,SNR=20						
ASF				S	**Sn**	**16 37 50.1**	**+3.0**
	comp=Z,1.6nm,0.3s,baz=16,slow=24,SNR=3.0						
SIM	**Simferopol'**	**8.13**	**23**	*e*P	**P**	**16 36 18.7**	**-0.4**
SIM				S	**Sn**	**16 37 56.6**	**+4.9**
SIM				pmax	pmax		
	comp=Z,20nm,0.6s						
SIM				MLR	MLR		
	comp=N,150nm,14.9s						
ZFRI	**Zfri**	**8.29**	**145**	P	**P**	**16 36 20.3**	**-1.0**
PRNI	**Paran**	**8.39**	**147**	P	**P**	**16 36 21.4**	**-1.2**
PRNI				S	**Sn**	**16 37 50.8**	**-7.1**
MLR	**Muntele Rosu**	**8.46**	**342**	P	**P**	**16 36 23.7**	**+0.1**
	comp=N,2.2nm,0.3s,baz=260,slow=1.5,SNR=27						
MLR	**Muntele Rosu**	**8.46**	**342**	⇑P	**P**	**16 36 23.8**	**+0.2**
MLR	**Muntele Rosu**	**8.46**	**342**	P	**P**	**16 36 23.7**	**+0.1**
MLR				pmax	pmax		
	comp=Z,2.0nm,0.3s						
KMTI	**Karmit**	**8.48**	**149**	P	**P**	**16 36 22.4**	**-1.6**
KMTI				S	**Sn**	**16 37 53.7**	**-6.7**
VRI	**Vrincioaia**	**8.64**	**346**	⇑*i*P	**P**	**16 36 25.3**	**-0.8**
ALWS	**Ilw as Safayha**	**9.32**	**150**	P	**P**	**16 36 35.1**	**-0.5**
JMOS	**Jabal al Moall**	**9.46**	**150**	P	**P**	**16 36 37.1**	**-0.5**
HAQS	**Haql**	**9.50**	**151**	P	**P**	**16 36 37.2**	**-0.8**
KIS	**Kishinev**	**9.50**	**356**	*e*P	**P**	**16 36 40.0**	**+2.0**
KIS				MLR	MLR		
	comp=Z,400nm,10.0s						
KIS				MLR	MLR		
	comp=Z,500nm,10.0s						
SOC	**Sochi**	**9.73**	**48**	*e*P	**P**	**16 36 42.6**	**+1.4**
SOC				*e*S	**Sn**	**16 38 31.4**	**+0.2**
SOC				pmax	pmax		
	comp=Z,6.0nm,0.5s						
SOC				pmax	pmax		
	comp=N,4.0nm,0.6s						
SOC				pmax	pmax		
	comp=E,24nm,0.7s						
SOC				MLR	MLR		
	comp=Z,330nm,13.0s						
SOC				MLR	MLR		
	comp=N,337nm,15.0s						
SOC				MLR	MLR		
	comp=E,716nm,15.0s						
JMQS	**Jabal Moqyreh**	**10.03**	**147**	P	**P**	**16 36 44.8**	**-0.6**
BDAS	**Al Bad'**	**10.12**	**152**	P	**P**	**16 36 45.4**	**-1.2**
AYUS	**'Aynunah**	**10.40**	**152**	P	**P**	**16 36 49.3**	**-1.2**
TDS	**Terranova Siba**	**10.69**	**286**	*e*P	**P**	**16 36 59.1**	**+4.8**
SLCN	**Sala Consilina**	**11.33**	**289**	*e*P	**P**	**16 37 03.9**	**+0.8**
MRLC	**Muro Lucano**	**11.51**	**291**	*e*P	**P**	**16 37 05.3**	**-0.3**
SGO	**Sicignano**	**11.61**	**290**	*e*P	**P**	**16 37 07.0**	**+0.1**
KIV	**Kislovodsk**	**11.75**	**53**	*e*P	**P**	**16 37 05.1**	**-3.7**
KIV				pmax	pmax		
	comp=Z,4.0nm,0.7s						
KIV				MLR	MLR		
	comp=Z,100nm,13.0s						
PZI	**Palazzolo**	**11.77**	**272**	*e*P	**P**	**16 37 07.7**	**-1.4**
ZEI	**Tsey**	**12.06**	**60**	⇓*e*P	**P**	**16 37 20.0**	**+7.1**
VAE	**Valguarnera**	**12.15**	**274**	P	**P**	**16 37 14.3**	**0.0**
	comp=Z,1.1nm,0.3s,baz=114,slow=19,SNR=4.8						
VAE	**Valguarnera**	**12.15**	**274**	P	**P**	**16 37 14.3**	**0.0**
AKASG	**Malin Array Be**	**13.19**	**359**	P	**P**	**16 37 26.7**	**-1.3**
	comp=Z,0.5nm,0.3s,baz=174,slow=12,SNR=6.5						
OKC	**Ostrava-Krasne**	**14.87**	**330**	*e*P	**P**	**16 37 56.3**	**+6.3**
OKC				L		16 44 30.0	
	comp=Z,0.5nm,11.9s						
MORC	**Moravsky Berou**	**15.07**	**328**	*e*P	**P**	**16 37 58.8**	**+6.1**
	comp=Z,3.2nm,0.8s						
VRAC	**Vranov**	**15.13**	**325**	P	**P**	**16 37 58.9**	**+5.5**
	comp=Z,1.5nm,0.3s,baz=144,slow=7.5,SNR=7.9						
GRFL	**Gerfalco**	**15.35**	**297**	*e*P	**P**	**16 38 01.8**	**+5.5**
CTI	**Castel Tesino**	**15.92**	**308**	*e*P	**P**	**16 38 06.9**	**+3.2**
GSCL	**Gusciola**	**15.97**	**301**	*e*P	**P**	**16 38 10.2**	**+5.9**
DPC	**Dobruska-Polom**	**16.02**	**327**	*e*P	**P**	**16 38 07.6**	**+2.7**
DPC				L		16 45 30.0	
	comp=Z,0.4nm,11.6s						
GEC2	**GERESS Array S**	**16.23**	**319**	*e*P	**P**	**16 38 12.0**

	comp=Z,18nm,1.1s,mb4.1							
BAIF	**Baives**	**22.15**	**313**	*e*P		**P**	**16 39 13.9**	**-1.5**
	comp=Z,27nm,1.0s,mb4.3							
RJF	**Les Rejaudoux**	**22.45**	**299**	*e*P		**P**	**16 39 19.6**	**+1.2**
	comp=Z,12nm,0.7s,mb4.1							
RJF				*e*R				
	comp=Z,108nm,22.5s							
LFF	**La Frestale**	**22.93**	**298**	*e*P		**P**	**16 39 21.9**	**-1.2**
MFF	**Saint Martin d**	**23.84**	**302**	*e*P		**P**	**16 39 30.8**	**-1.1**
	comp=Z,51nm,0.8s,mb4.7							
FINES	**FINESS Array B**	**24.06**	**356**	P		**P**	**16 39 34.0**	**+0.1**
	comp=Z,2.0nm,0.6s,mb3.7,baz=159,slow=9.5,SNR=12							
FINES	**FINESS Array B**	**24.06**	**356**	P		**P**	**16 39 34.0**	**+0.1**
FINES				pmax		pmax		
	comp=Z,2.0nm,0.6s							
FINES	**FINESS Array B**	**24.06**	**356**	P		**P**	**16 39 34.0**	**+0.1**
LDF	**La Druitiere**	**24.30**	**307**	*e*P		**P**	**16 39 34.7**	**-1.6**
	comp=Z,14nm,0.7s,mb4.2							
FLN	**La Foliniere**	**24.57**	**307**	*e*P		**P**	**16 39 37.5**	**-1.5**
	comp=Z,13nm,0.7s,mb4.3							
FLN				*e*R				
	comp=Z,138nm,21.2s							
GRR	**Gorron**	**24.72**	**306**	*e*P		**P**	**16 39 38.9**	**-1.5**
	comp=Z,30nm,0.8s,mb4.6							
KAF	**Kangasniemi**	**24.72**	**356**	*e*p		**P**	**16 39 39.6**	**-0.6**
AB31	**Akbulak array**	**24.74**	**52**	*i* P		**P**	**16 39 40.6**	**0.0**
AB31				pmax		pmax		
	comp=Z,4.0nm,0.6s,mb4.1							
HFS	**Hagfors**	**24.84**	**341**	P		**P**	**16 39 42.9**	**+1.4**
	comp=Z,6.1nm,0.9s,mb4.1,baz=173,slow=12,SNR=3.2							
HFS	**Hagfors**	**24.84**	**341**	P		**P**	**16 39 42.9**	**+1.5**
HFS				pmax		pmax		
	comp=Z,6.0nm,0.9s							
JOF	**Joensuu**	**25.45**	**2**	*e*p		**P**	**16 39 43.6**	**-3.6**
QUIF	**Quistinic**	**26.12**	**304**	*e*P		**P**	**16 39 53.1**	**-0.4**
	comp=Z,12nm,0.8s,mb4.2							
NB2	**NORSAR Subarra**	**26.27**	**340**	P		**P**	**16 39 54.4**	**-0.4**
	comp=Z,2.0nm,0.8s,mb3.7,baz=146,slow=9.3							
NOA	**NORSAR Array B**	**26.27**	**340**	P		**P**	**16 39 55.5**	**+0.6**
	comp=Z,0.8nm,0.8s,mb3.3,baz=139,slow=10,SNR=3.9							
NOA				LR		LR	16 51 03.0	
	comp=Z,58nm,18.5s,MS3.1,baz=150,slow=38							
NOA	**NORSAR Array B**	**26.27**	**340**	P		**P**	**16 39 55.5**	**+0.7**
NOA				pmax		pmax		
	comp=Z,1.0nm,0.8s							
NOA				MLR		MLR		
	comp=Z,58nm,18.5s							
ROSF	**Rostrenen**	**26.27**	**305**	*e*P		**P**	**16 39 52.8**	**-2.2**
	comp=Z,20nm,1.0s,mb4.3							
ARU	**Arti**	**26.99**	**36**⇑	*i*P		**P**	**16 40 01.0**	**-0.5**
ARU				*e*			16 40 43.1	
ARU				*e*PPP		PPP	16 40 54.9	-4.5
ARU				*e*			16 43 17.4	
ARU				*e*S		**S**	**16 44 41.7**	**+5.3**
ARU				*e*SS		SS	16 45 52.5	+2.1
ARU				pmax		pmax		
	comp=Z,5.0nm,0.8s,mb4.1							
ARU				MLR		MLR		
	comp=Z,40nm,15.0s,MS3.1							
ARU				MLR		MLR		
	comp=N,40nm,16.0s,MS3.2							
ARU				MLR		MLR		
	comp=E,30nm,15.0s,MS3.2							
ARU	**Arti**	**26.99**	**36**	*e*P		**P**	**16 40 01.6**	**+0.2**
	comp=E,5.7nm,0.8s,mb4.2							
SVE	**Sverdlovsk**	**28.18**	**37**⇑	*e*P		**P**	**16 40 25.9**	**+14**
EKA	**Eskdalemuir Ar**	**28.45**	**319**	P		**P**	**16 40 12.3**	**-2.4**
	comp=E,2.1nm,1.0s,mb3.7,baz=106,slow=12,SNR=4.1							
EKA	**Eskdalemuir Ar**	**28.45**	**319**	P		**P**	**16 40 12.3**	**-2.4**
EKA				pmax		pmax		
	comp=Z,2.0nm,1.0s							
ZRNK	**Zerenda**	**31.23**	**48**	P		**P**	**16 40 39.0**	**-0.5**
ZRNK				pmax		pmax		
	comp=Z,10.0nm,1.0s,mb4.6							
ZRNK	**Zerenda**	**31.23**	**48**	*e*P		**P**	**16 40 39.2**	**-0.3**
BVA0	**Borovoye Array**	**32.06**	**48**	*e*P		**P**	**16 40 46.0**	**-0.8**
BVAR	**Borovoye Array**	**32.06**	**48**	P		**P**	**16 40 46.5**	**-0.3**
	comp=Z,2.6nm,0.9s,mb4.1,baz=259,slow=7.6,SNR=14							
ARCES	**ARCESS Array B**	**32.16**	**357**	P		**P**	**16 40 45.9**	**-1.6**
	comp=Z,7.1nm,0.8s,mb4.1,baz=180,slow=4.9,SNR=6.8							
ARCES				LR		LR	16 54 34.1	
	comp=Z,72nm,18.1s,MS3.4,baz=306,slow=38							
ARCES	**ARCESS Array B**	**32.16**	**357**	P		**P**	**16 40 45.9**	**-1.6**
ARCES				pmax		pmax		
	comp=Z,3.0nm,0.8s							
ARCES				MLR		MLR		
	comp=Z,73nm,18.1s							
ARCES	**ARCESS Array B**	**32.16**	**357**	P		**P**	**16 40 45.9**	**-1.6**
ARCES				LR		LR	16 54 34.1	
VOSK	**Vostochnaya**	**32.35**	**49**	P		**P**	**16 40 48.5**	**-0.8**
VOSK				pmax		pmax		
	comp=Z,7.0nm,0.9s,mb4.5							
KURK	**Kurchatov**	**36.84**	**53**	*e*P		**P**	**16 41 27.5**	**-0.3**
MKAR	**Makanchi Array**	**39.41**	**59**	P		**P**	**16 41 49.1**	**-0.3**
	comp=Z,6.7nm,0.7s,mb4.5,baz=272,slow=8.6,SNR=59							
MKAR	**Makanchi Array**	**39.41**	**59**	*e*P		**P**	**16 41 49.2**	**-0.3**
MKAR				pmax		pmax		
	comp=Z,2.0nm,0.5s							
ZAL	**Zalesovo**	**40.70**	**48**	P		**P**	**16 41 59.2**	**-0.8**
	comp=Z,0.8nm,0.8s,mb3.4,baz=108,slow=6.4,SNR=3.6							
ZAL				LR		LR	17 02 45.8	
	comp=Z,67nm,19.6s,MS3.5,baz=123,slow=42							
ZAL	**Zalesovo**	**40.70**	**48**	P		**P**	**16 41 59.2**	**-0.8**
ZAL				pmax		pmax		
	comp=Z,1.0nm,0.8s							
ZAL				MLR		MLR		
	comp=Z,67nm,19.6s							
ZAL	**Zalesovo**	**40.70**	**48**	P		**P**	**16 41 59.2**	**-0.8**
ZAL				LR		LR	17 02 45.8	
KOLN	**Koldanda**	**45.87**	**86**	*e*P		**P**	**16 42 41.0**	**-1.2**
	comp=Z,15nm,1.1s,mb4.8							
GKN	**Gorkha**	**46.59**	**85**	*e*P		**P**	**16 42 46.5**	**-1.4**
	comp=Z,2.8nm,0.3s,mb4.6							
DMN	**Daman**	**47.13**	**85**	*e*P		**P**	**16 42 49.2**	**-3.0**
	comp=Z,14nm,0.7s,mb5.0							
KKN	**Kakani**	**47.19**	**85**	*e*P		**P**	**16 42 50.8**	**-1.9**
	comp=Z,8.8nm,0.7s,mb4.8							
PKI	**Pulchoki**	**47.39**	**85**	*e*P		**P**	**16 42 52.1**	**-2.1**
	comp=Z,16nm,1.1s,mb4.8							
ZAK	**Zakamensk**	**52.43**	**51**	*e*P		**P**	**16 43 31.1**	**-1.4**
SONM	**Songino Array**	**55.15**	**53**	P		**P**	**16 43 51.5**	**-1.1**
	comp=Z,0.4nm,0.4s,mb3.8,baz=286,slow=10,SNR=3.2							
BOD	**Bodaibo**	**56.32**	**40**	*e*P		**P**	**16 43 58.3**	**-2.6**
TSUM	**Tsumeb**	**57.55**	**194**	LR		LR	17 13 39.3	
	comp=Z,41nm,19.0s,MS3.5,baz=252,slow=41							
TIXI	**Tiksi**	**57.65**	**22**⇑	*e*P		**P**	**16 44 09.0**	**-1.2**
TIXI				pmax		pmax		
	comp=Z,2.0nm,1.0s,mb4.1							
CMAR	**Chiang Mai Arr**	**62.71**	**87**	P		**P**	**16 44 43.2**	**-2.3**
	comp=Z,0.6nm,0.9s,mb3.7,baz=285,slow=7.8,SNR=4.5							
CMAR	**Chiang Mai Arr**	**62.71**	**87**	P		**P**	**16 44 43.2**	**-2.3**
CMAR				pmax		pmax		
	comp=Z,1.0nm,1.0s							
SCHQ	**Schefferville**	**63.76**	**320**	P		**P**	**16 44 50.7**	**-1.1**
	comp=Z,4.5nm,0.7s,mb4.6,baz=84,slow=6.6,SNR=6.7							
BILL	**Bilibino**	**69.84**	**16**	*e*P		**P**	**16 45 29.5**	**-0.6**
YKA	**Yellowknife Ar**	**76.28**	**344**	P		**P**	**16 46 07.1**	**-0.8**
	comp=Z,2.0nm,0.7s,mb4.1,baz=34,slow=5.4,SNR=41							
YKA				LR		LR	17 23 32.4	
	comp=Z,38nm,18.8s,MS3.7,baz=55,slow=39							
YKA	**Yellowknife Ar**	**76.28**	**344**	P		**P**	**16 46 07.1**	**-0.8**
YKA				pmax		pmax		
	comp=Z,2.0nm,0.7s							
YKA				MLR		MLR		
	comp=Z,38nm,18.8s							
ILAR	**Eielson Array**	**78.02**	**359**	P		**P**	**16 46 16.9**	**-0.5**
	comp=Z,1.9nm,1.0s,mb4.0,baz=357,slow=4.1,SNR=16							
ILAR	**Eielson Array**	**78.02**	**359**	P		**P**	**16 46 17.0**	**-0.4**
ILAR				pmax		pmax		
	comp=Z,2.0nm,1.0s							
NEW	**Newport**	**89.64**	**339**	P		**P**	**16 47 16.5**	**-0.3**
	comp=Z,1.3nm,0.4s,mb4.6,baz=24,slow=12,SNR=3.9							
NEW	**Newport**	**89.64**	**339**	P		**P**	**16 47 16.5**	**-0.3**
NEW				pmax		pmax		
	comp=Z,1.0nm,0.4s							
PDAR	**Pinedale Array**	**91.92**	**331**	P		**P**	**16 47 26.7**	**-0.8**
	comp=Z,0.6nm,0.8s,mb4.0,baz=51,slow=5.8,SNR=4.5							
ASAR	**Alice Springs**	**114.89**	**102**	PKP		PKPdf	16 52 58.0	-4.7
	comp=Z,0.3nm,0.9s,baz=299,slow=1.4,SNR=4.2							

IDC 14 17:26:55.3±5.2,29.55S×177.91W,mb3.5/2,mb1 3.7/2, mb1mx3.6/12,Error ellipse: s-maj=289.0km s-min=74.4km az=165.0,Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ASAR	**Alice Springs**	**43.24**	**266**	P	P	17 34 58.3	-1.8
	0.3nm,0.5s,baz=104,slow=6.7,SNR=8.8						
WRA	**Warramunga Arr**	**44.15**	**271**	P	P	17 35 05.9	-1.7
	0.3nm,0.4s,baz=109,slow=8.0,SNR=9.7						
FINES	**FINESS Array B**	**144.37**	**340**	PKP	PKPdf	17 46 32.3	-2.1
	4.9nm,1.2s,baz=56,slow=1.8,SNR=15						

*IDC **14** 17:44:06.8±5.7,25.19N×112.91W,mb3.8/3,mb1 4.0/6, mb1mx3.8/20,ML4.2/2,MS3.5/3,Ms1 3.5/3,ms1mx3.0/27, Error ellipse: s-maj=96.2km s-min=36.7km az=15.0*

ISC 14 17:44:04.6±3.8,24.9N±0.4×112.9W±0.2,h10km,n8, σ0§93/6,mb3.7/3,MS3.6/2,Baja California

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TXAR	**Lajitas Array**	**9.35**	**60**	Pn	**P**	**17 46 22.7**	**+0.3**
	0.6nm,0.3s,baz=250,slow=15,SNR=5.2						
TXAR				LR	LR	17 49 56.4	
	comp=Z,154nm,18.1s,baz=225,slow=38						
NVAR	**Mina Array Bea**	**14.19**	**343**	Pn	**P**	**17 47 28.0**	**+0.1**
	0.1nm,0.3s,baz=157,slow=13,SNR=2.3						
PDAR	**Pinedale Array**	**18.00**	**8**	P	**P**	**17 48 16.6**	**+0.1**
	0.1nm,0.3s,baz=180,slow=7.2,SNR=4.3						
YKA	**Yellowknife Ar**	**37.55**	**359**	P	**P**	**17 51 19.3**	**-1.3**
	0.4nm,0.7s,mb3.3,baz=177,slow=8.2,SNR=7.2						
SDV	**Santo Domingo**	**43.30**	**104**	LR	LR	18 10 30.8	
	comp=Z,89nm,20.1s,MS3.7,baz=212,slow=37						
SCHQ	**Schefferville**	**45.07**	**36**	P	**P**	**17 52 22.2**	**-0.2**
	3.4nm,1.0s,mb4.1,baz=259,slow=17,SNR=2.8						
ILAR	**Eielson Array**	**45.44**	**340**	P	**P**	**17 52 26.1**	**+0.9**
	1.3nm,0.9s,mb3.8,baz=153,slow=7.5,SNR=10.0						
PCRV	**Puerto La Cruz**	**48.08**	**99**	LR	LR	18 11 24.3	
	comp=Z,58nm,20.7s,MS3.5,baz=351,slow=34						

MEX 14 17:52:45.7±0.5,15.60N×97.59W,h5km,MD3.7,Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PNIG	**Pinotepa**	**0.94**	**327**	*i* P	Pb	17 53 01.4	-2.8
PNIG				*i* S	Sb	17 53 14.4	-2.4
HUIG	**Huatulco**	**1.43**	**83**	*e*P	Pn	17 53 09.3	-3.1
HUIG				*i* S	Sb	17 53 27.6	-3.4
OXX	**Oaxaca**	**1.69**	**29**	*e*P	Pn	17 53 12.0	-4.1
OXX				*i* S	Sn	17 53 33.0	-5.4
CMIG	**Matias Romero**	**2.99**	**60**	*e*P	Pn	17 53 31.5	-3.2
CMIG				*i* S	Sn	17 54 06.3	-5.1

MAN 14 17:54:11.3,16.15N×119.94E,h31km,mb4.3,ML3.2, MS2.9,13C,Luzon

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BOLP	**Bolinao**	**0.23**	**354**⇑	*e*P	Pb	17 54 19.4	+1.4
BOLP				*e*S	Sb	17 54 26.2	+3.6
BOLP	**Bolinao**	**0.23**	**354**⇑	*e*P	Pb	17 54 19.4	+1.4
BOLP				*e*S	Sb	17 54 25.6	+3.1
SCZP	**Santa Cruz**	**0.37**	**184**⇑	*e*P	Pb	17 54 20.9	+1.1
SCZP				*e*S	Sb	17 54 27.8	+2.1
PCPH	**Palayan**	**1.26**	**117**	*e*P	Pn	17 54 31.1	-1.9
PCPH				*i* S	Sn	17 54 46.7	-2.3
BALP	**Baler**	**1.63**	**104**⇑	*e*P	Pn	17 54 37.6	-0.7
BALP	**Baler**	**1.63**	**104**⇑	*e*P	Pn	17 54 37.7	-0.6
ABRA	**Dolores**	**1.67**	**26**⇑	*e*P	Pn	17 54 28.2	-11
ABRA	**Dolores**	**1.67**	**26**⇑	*e*P	Pn	17 54 28.2	-11
CAUP	**Cauayan**	**1.97**	**66**⇑	*e*P	Pn	17 54 43.4	+0.2
CAUP	**Cauayan**	**1.97**	**66**⇑	*e*P	Pn	17 54 43.9	+0.7
APYP	**Conner**	**2.11**	**36**⇑	*e*P	Pn	17 54 44.3	-1.0
APYP				*e*S	Sn	17 55 10.3	-0.5
APYP	**Conner**	**2.11**	**36**⇑	*e*P	Pn	17 54 44.5	-0.8
APYP				*e*S	Sn	17 55 11.2	+0.5
LUBP	**Lubang**	**2.42**	**173**⇑	*e*P	Pn	17 54 49.9	+0.3
PALP	**Palanan**	**2.55**	**69**⇑	*e*P	Pn	17 54 52.1	+0.5

IDC 14 18:15:47.6±2.4,11.84S×165.88E,mb3.6/4,mb1 3.8/4, mb1mx3.7/13,MS3.5/2,Ms1 3.4/2,ms1mx3.1/19,Error ellipse: s-maj=75.7km s-min=38.3km az=120.0,Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**29.96**	**224**	LR	LR	18 32 57.6	
	comp=Z,101nm,18.3s,baz=26,slow=34						
WRA	**Warramunga Arr**	**31.34**	**251**	P	P	18 22 10.7	-1.6
	0.2nm,0.5s,baz=81,slow=9.3,SNR=4.4						
WRA				PcP	PcP	18 25 04.0	-2.3
	0.8nm,0.8s,baz=81,slow=3.4,SNR=7.3						
ASAR	**Alice Springs**	**32.56**	**244**	P	P	18 22 20.6	-2.3
	0.3nm,0.7s,baz=68,slow=9.6,SNR=4.7						
ASAR				PcP	PcP	18 25 06.8	-2.8
	1.0nm,0.7s,baz=76,slow=2.2,SNR=11						
ASAR				LR	LR	18 34 16.8	
	comp=Z,52nm,19.5s,baz=104,slow=34						
CMAR	**Chiang Mai Arr**	**72.55**	**294**	P	P	18 27 16.7	-2.3
	0.6nm,0.8s,baz=132,slow=3.7,SNR=4.1						
SONM	**Songino Array**	**79.38**	**324**	P	P	18 27 56.0	-1.0
	1.8nm,1.0s,baz=135,slow=5.2,SNR=9.7						
MKAR	**Makanchi Array**	**94.19**	**317**	P	P	18 29 08.7	-1.0
	2.8nm,0.7s,baz=99,slow=6.5,SNR=23						

*NEIC **14** 18:41:11.5±1.5,24.19S×179.50W,h500km,mb3.9/2, Error ellipse: s-maj=33.8km s-min=17.3km az=55.0*
*IDC **14** 18:41:13.0±8.9,24.19S×179.68W,h503km±91km,mb3.4/5, mb1 3.5/6,mb1mx3.3/15,Error ellipse: s-maj=71.0km s-min=27.9km az=42.0*

ISC 14 18:41:07.3±4.5,23.7S±0.2×178.8W±0.4,h542km±53km, n14,σ0§38/14,mb4.0/7,1D,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**14.89**	**193**	P	**P**	**18 44 15.5**	**+0.1**
	1.0nm,0.3s,baz=14,slow=4.2,SNR=5.9						
URZ				S	**S**	**18 46 47.4**	**+0.2**
	0.4nm,0.3s,baz=22,slow=16,SNR=5.2						
RPZ	**Rata Peaks**	**21.61**	**200**	P	**P**	**18 45 19.4**	**0.0**
	6.4nm,0.8s,mb4.3,baz=112,slow=5.4,SNR=3.8						
CTA	**Charters Tower**	**32.61**	**270**	P	**P**	**18 46 56.4**	**+0.7**
	6.4nm,0.4s,mb4.5,baz=93,slow=12,SNR=17						
CTA	**Charters Tower**	**32.61**	**270**	P	**P**	**18 46 56.4**	**+0.7**
CTAO	**Charters Tower**	**32.61**	**270**	*e*P	**P**	**18 46 56.2**	**+0.4**
	6.0nm,0.5s,mb4.4						
STKA	**Stephens Creek**	**35.83**	**248**	P	**P**	**18 47 21.8**	**-0.8**
	1.9nm,0.8s,mb3.7,baz=96,slow=11,SNR=6.8						
STKA	**Stephens Creek**	**35.83**	**248**	P	**P**	**18 47 21.8**	**-0.8**
ASAR	**Alice Springs**	**43.18**	**260**	P	**P**	**18 48 21.7**	**-0.2**
	1.2nm,0.6s,mb3.6,baz=95,slow=6.9,SNR=36						
WB2	**Warramunga Arr**	**43.54**	**266**	⇓*i*P	**P**	**18 48 24.4**	**-0.3**
WRA	**Warramunga Arr**	**43.55**	**266**	P	**P**	**18 48 24.6**	**-0.2**
	2.9nm,0.4s,mb4.1,baz=100,slow=8.2,SNR=79						
KAKA	**Kakadu**	**47.47**	**274**	*e*P	**P**	**18 48 55.1**	**+0.1**
	3.5nm,0.7s,mb4.0						
FITZ	**Fitzroy Crossi**	**51.97**	**265**	*e*P	**P**	**18 49 29.0**	**+0.7**
	2.2nm,0.6s,mb3.7						
SBA	**Scott Base**	**54.60**	**184**	P	**P**	**18 49 46.1**	**-0.1**
HFS	**Hagfors**	**142.61**	**350**	PKP	PKPdf	18 59 48.2	+10
	1.0nm,0.4s,baz=90,slow=3.0,SNR=10						

*IDC **14** 18:49:05.7±1.5,41.96N×110.67W,mb2.6/1,mb1 3.3/2, mb1mx3.1/20,ML2.8/1,Error ellipse: s-maj=39.4km s-min=11.1km az=142.0*
*NEIC **14** 18:49:06.8±0.4,41.66N×110.76W,ML2.3,Error ellipse: s-maj=5.4km s-min=4.8km az=74.0,Suspected Mining explosion.*
NEIC 45 km [30 miles] NNE of Evanston.

ISC 14 18:49:06.5±0.5,41.66N±0.04×110.78W±0.06,n26, σ0§64/26,1C,Wyoming

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HWUT	**Hardware Ranch**	**0.59**	**265**	*e*Pg	**Pg**	**18 49 18.5**	**+0.2**
TCUT	**Toone Canyon**	**0.72**	**221**	*e*Pg	**Pg**	**18 49 20.7**	**-0.2**
AHID	**Auburn Hatcher**	**1.13**	**348**	*e*Pg	**Pg**	**18 49 27.3**	**-1.7**
JLU	**Jordanelle**	**1.17**	**206**	*e*Pn	**Pn**	**18 49 29.6**	**-0.5**
CTU	**Camp Tracy**	**1.21**	**217**	*e*Pn	**Pn**	**18 49 30.7**	**+0.1**
DAU	**Daniels Canyon**	**1.30**	**196**	*e*Pn	**Pn**	**18 49 31.3**	**-0.5**
SPUT	**South Promonto**	**1.30**	**255**	*e*Pn	**Pn**	**18 49 31.9**	**0.0**
PDAR	**Pinedale Array**	**1.43**	**39**	Pg	**Pg**	**18 49 29.0**	**-6.0**
	4.0nm,0.3s,baz=221,slow=17,SNR=120						
PDAR				Lg		18 49 49.8	
	3.9nm,0.3s,baz=216,slow=26,SNR=10						
HVU	**Hansel Valley**	**1.50**	**275**⇑	*i*Pn	**Pn**	**18 49 34.3**	**-0.4**
MPU	**Maple Canyon**	**1.77**	**202**	*e*Pn	**Pn**	**18 49 38.7**	**+0.2**
BGU	**Big Grassy Mou**	**1.85**	**247**	*e*Pn	**Pn**	**18 49 39.8**	**+0.1**
NLU	**North Lily Min**	**1.97**	**210**	*e*Pn	**Pn**	**18 49 41.6**	**+0.2**
SRU	**San Rafael**	**2.56**	**176**	*e*Pn	**Pn**	**18 49 50.3**	**+0.5**
QLMT	**Earthquake Lak**	**3.20**	**352**	*e*P	**Pn**	**18 50 00.6**	**+1.5**
HLID	**Hailey**	**3.29**	**307**	*e*Pn	**Pn**	**18 50 00.1**	**-0.2**
MSU	**Marysvale**	**3.32**	**199**	*e*Pn	**Pn**	**18 50 00.9**	**+0.1**
MVU	**Marysvale**	**3.34**	**200**	*e*Pn	**Pn**	**18 50 01.2**	**+0.2**
MCMT	**McKenzie Canyo**	**3.51**	**335**	*e*P	**Pn**	**18 50 03.9**	**+0.5**
PV10	**Paradox Valley**	**3.54**	**157**	*e*Pn	**Pn**	**18 50 03.6**	**-0.2**
PV01	**Paradox Valley**	**3.91**	**154**	*e*Pn	**Pn**	**18 50 07.7**	**-1.4**
PV01				*e*		18 50 17.4	
BOZ	**Bozeman (W)**	**4.03**	**351**	Pn	**Pn**	**18 50 10.3**	**-0.5**
RW3	**Ridgway**	**4.15**	**144**	*e*Pb	**Pb**	**18 50 20.8**	**+0.5**
ISCO	**Idaho Springs**	**4.34**	**114**	*e*Pb	**Pb**	**18 50 23.5**	**0.0**
RSSD	**Black Hills**	**5.53**	**61**	*e*Pb	**Pb**	**18 50 44.4**	**+0.6**
	2.8nm,0.7s						
NVAR	**Mina Array Bea**	**6.61**	**243**	Pn	**Pn**	**18 50 48.2**	**+0.9**
	0.2nm,0.3s,baz=62,slow=13,SNR=8.6						
YKA	**Yellowknife Ar**	**20.99**	**355**	P	**P**	**18 53 48.6**	**-4.9**
	0.2nm,0.8s,baz=170,slow=10,SNR=4.9						

*SOF **14** 19:06:56.6,42.39N×21.70E,h2km,MD4.0*
*BEO **14** 19:06:59.0±0.4,42.49N×21.66E,h9km±1km*
*NEIC **14** 19:07:00.1±0.3,42.41N×21.71E,h10km,MD3.9(PDG), ML4.1(SKO),Error ellipse: s-maj=4.8km s-min=4.2km az=198.0*
NEIC Felt [IV] at Skopje, former Yugoslav Republic of Macedonia.
*THE **14** 19:07:00.4,42.38N×21.87E,h10km,ML3.9*
*IDC **14** 19:07:00.6±3.9,42.36N×21.57E,h21km±26km,mb3.6/8, mb1 3.8/18,mb1mx3.7/30,ML3.5/10,MS2.9/4,Ms1 3.0/4, ms1mx2.5/31,Error ellipse: s-maj=16.1km s-min=10.9km az=16.0*
*LDG **14** 19:07:05.4±0.6,42.68N×21.43E,h10km,Ml3.7/5,Error ellipse: s-maj=16.3km s-min=11.8km az=23.0*

ISC 14 19:06:58.1±0.2,42.50N±0.01×21.76E±0.02,h10km,n163, σ1§35/213,mb3.6/7,MS2.9/1,26C-15D,Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KPJ	**Monastery St.**	**0.53**	**122**⇑	*i*Pg	**Pg**	**19 07 09.5**	**+0.7**
KPJ				*i* Sg	**Sg**	**19 07 16.5**	**+0.5**
SKO	**Skopje**	**0.57**	**204**⇑	*i*Pg	**Pg**	**19 07 08.6**	**-1.1**
SKO				*i*		19 07 11.0	
SKO				*i* Sg	**Sg**	**19 07 15.6**	**-1.8**
SKO				Smax		19 07 16.5	
	comp=E,32nm,0.4s						
SKO				Smax		19 07 17.5	
	comp=N,25nm,0.4s						
VTS	**Vitosha**	**1.08**	**84**	*i* Pg	**Pg**	**19 07 20.0**	**+0.4**
KKB	**Krupnik**	**1.17**	**122**	*i* Pg	**Pg**	**19 07 21.0**	**-0.5**
BCI	**Bajram Curri**	**1.26**	**265**	*i* Pn	**Pn**	**19 07 22.0**	**+0.3**
BCI				*i* Sn	**Sn**	**19 07 39.0**	**+0.2**
PVY	**Plav**	**1.32**	**275**⇓	*i*Pg	**Pg**	**19 07 22.2**	**-2.3**
PVY				*e*Sg	**Sg**	**19 07 41.4**	**-0.7**
VAY	**Valandovo**	**1.32**	**152**⇑	*i*Pg	**Pg**	**19 07 22.4**	**-2.1**
VAY				*i*		19 07 24.4	
VAY				*i*		19 07 25.8	
VAY				*i* Sg	**Sg**	**19 07 40.5**	**-1.7**
BOLS	**Boljevac**	**1.34**	**6**⇑	*i*Pg	**Pg**	**19 07 24.3**	**-0.6**
BOLS				Sg	**Sg**	**19 07 42.6**	**-0.2**
IVA	**Berane**	**1.42**	**286**⇓	*i*Pg	**Pg**	**19 07 24.4**	**-2.1**
IVA				*e*Sg	**Sg**	**19 07 44.5**	**-0.9**
PUK	**Puka**	**1.46**	**252**	*i* Pn	**Pn**	**19 07 25.0**	**+0.4**
PUK				*i* Sn	**Sn**	**19 07 45.4**	**+1.6**
BIA	**Bitola**	**1.51**	**193**⇑	*i*Pn	**Pn**	**19 07 24.2**	**-1.1**
BIA				*i*		19 07 27.0	
BIA				*i* Sg	**Sg**	**19 07 44.2**	**-4.2**
BIA	**Bitola**	**1.51**	**193**⇑	*i*Pn	**Pn**	**19 07 24.2**	**-1.1**
BIA				*i* Sg	**Sg**	**19 07 44.2**	**-4.2**
OHR	**Ohrid**	**1.56**	**208**⇑	*i*

SART	Tekirdag	4.45	112	*i*	P		Pn	19 08 08.2 +0.9
RHK1	Bakonya	4.46	325⇓	*e*	P		Pn	19 08 07.2 -0.2
PKSN	Nyarlorinc	4.60	344⇑	*e*	P		Pn	19 08 09.9 +0.5
RGNG	Rignano Grg	4.67	262	*e*	Pn		Pn	19 08 10.7 +0.4
PRK	Paraskevi	4.72	132	*e*	P		Pn	19 08 11.9 +0.9
PKS9	Tamasi	4.79	330⇑	*e*	P		Pn	19 08 11.5 -0.5
PSN	Preselentsi	4.85	74	*i*	P		Pn	19 08 13.0 +0.1
PKS7	Kunszentmiklos	4.91	339⇓	*e*	P		Pn	19 08 13.9 +0.1
VRI	Vrincioaia	4.91	45⇑	*i*	P		Pn	19 08 16.0 +2.2
VRI	Vrincioaia	4.91	45⇑	*i*	P		Pn	19 08 16.0 +2.2
HARR	Harsova	4.99	62⇑	*i*	P		Pn	19 08 16.3 +1.4
MRLC	Muro Lucano	5.01	252	*e*	Pn		Pn	19 08 16.3 +1.1
SLCN	Sala Consilina	5.06	247	*e*	Pn		Pn	19 08 16.2 +0.3
SGO	Sicignano	5.21	250	*e*	Pn		Pn	19 08 17.1 -0.9
MGR	Morigerati	5.23	245	*e*	Pn		Pn	19 08 19.0 +0.7
CSSN	Cassano Irpino	5.30	254	*e*	Pn		Pn	19 08 19.2 -0.1
BUD	Budapest	5.35	340	*e*	Pn		Pn	19 08 20.3 +0.3
NVLJ	Novalja	5.42	295	*i*	Pn		Pn	19 08 20.9 0.0
NVLJ				*i*	Sn		Sn	19 09 22.5 -1.5
PKSG		5.45	335⇑	*e*	P		Pn	19 08 21.3 0.0
PSZ	Piszkesteto	5.58	347⇑	*i*	Pn		Pn	19 08 23.0 -0.2
PSZ	Piszkesteto	5.58	347	*e*	P		Pn	19 08 22.9 -0.3
	comp=N,42nm,0.6s							
CII	Carovilli	5.60	265	*e*	Pn		Pn	19 08 24.8 +1.3
CPI2	Carpinone	5.61	263	*e*	Pn		Pn	19 08 24.1 +0.4
RNI2	Rionero Sannit	5.71	265	*e*	Pn		Pn	19 08 26.6 +1.6
RFI	Roccamonfina	5.92	261	*e*	Pn		Pn	19 08 29.6 +1.6
SDI	San Donato	5.96	265	*e*	Pn		Pn	19 08 28.6 0.0
ULDT	Uludag	6.03	110	*i*	P		Pn	19 08 28.7 -0.9
AQU	L'Aquila	6.19	271	*e*	Pn		Pn	19 08 33.1 +1.4
SOI	Samo	6.21	226	*e*	Pn		Pn	19 08 29.8 -2.3
ARSA	Arzberg	6.50	319⇑	*i*	PN		Pn	19 08 34.9 -1.2
ARSA				*i*	SN		Sn	19 09 48.0 -3.1
SNTG	Esanatoglia	6.52	280	*e*	Pn		Pn	19 08 35.1 -1.4
OBKA	Obir	6.53	310⇑	*i*	PN		Pn	19 08 35.8 -0.8
OBKA				*i*	SN		Sn	19 09 49.5 -2.4
ARV	Arcevia	6.54	282	*e*	Pn		Pn	19 08 35.7 -1.1
VOY	Vojsko	6.66	305	*e*	Pn		Pn	19 08 38.0 -0.4
FSSB	Fossombrone	6.68	283	*e*	Pn		Pn	19 08 37.6 -1.1
MNS	Montasola	6.72	272	*e*	Pn		Pn	19 08 38.9 -0.3
PTCC	Patocco-Chiusa	7.17	306	*e*	Pn		Pn	19 08 44.5 -1.1
GMNA	Gemona	7.18	305	*e*	Pn		Pn	19 08 45.6 -0.1
CRE	Caprese Michel	7.27	282	*e*	Pn		Pn	19 08 47.8 +0.8
SFI	Santa Sofia	7.38	284	*e*	Pn		Pn	19 08 48.2 -0.3
PGD	Poggio Sodo	7.46	284	*e*	Pn		Pn	19 08 49.5 -0.2
ESKT	Eskisehir	7.49	110	*i*	P		Pn	19 08 47.6 -2.5
MOA	Molln	7.53	318⇑	*i*	PN		Pn	19 08 47.8 -2.8
MOA				*i*	SN		Sn	19 10 12.5 -4.3
KBA	Koelnbreinsper	7.54	310⇑	*i*	PN		Pn	19 08 50.5 -0.2
KBA				*i*	SN		Sn	19 10 13.8 -3.3
IDI	Anoyia	7.60	160		Pn		Pn	19 08 49.5 -2.1
	comp=N,0.3nm,0.3s,baz=338,slow=14,SNR=2.5							
FVI	Forni Avoltri	7.61	306	*e*	Pn		Pn	19 08 51.5 -0.2
VRAC	Vranov	7.70	334		Pn		Pn	19 08 53.5 +0.4
	comp=N,0.3nm,0.3s,baz=157,slow=12,SNR=6.7							
VRAC					Sn		Sn	19 10 22.0 +0.7
	comp=N,0.4nm,0.3s,baz=131,slow=20,SNR=3.1							
OKC	Ostrava-Krasne	7.76	342	*e*	PN		Pn	19 08 55.9 +2.1
MORC	Moravsky Berou	7.85	340	*e*	Pn		Pn	19 08 54.0 -1.1
	comp=N,4.5nm,0.9s							
MORC				*e*	S		Sn	19 10 24.8 0.0
CTI	Castel Tesino	8.07	300	*e*	Pn		P	19 08 56.2 -2.1
BDI	Bagni Di Lucca	8.29	285	*e*	Pn		P	19 09 00.8 -0.4
GSCL	Gusciola	8.34	287	*e*	Pn		P	19 09 02.8 +0.9
GERES	GERESS Array B	8.49	321		Pn		P	19 09 03.9 -0.1
	comp=N,0.5nm,0.3s,baz=152,slow=13,SNR=21							
GERES					Sn		Sn	19 10 38.4 -2.5
	baz=144,slow=17,SNR=2.1							
WTTA	Wattenberg	8.62	307⇑	*i*	PN		P	19 09 05.9 +0.1
WTTA				*i*	SN		Sn	19 10 40.5 -3.7
WATA	Walderalm	8.69	307⇓	*i*	PN		P	19 09 07.2 +0.4
WATA				*i*	SN		Sn	19 10 43.0 -2.9
DPC	Dobruska-Polom	8.70	336	*e*	PN		P	19 09 07.6 +0.6
KHC	Kasperske Hory	8.75	322	*e*	PN		P	19 09 07.5 -0.1
KHC				x			x	19 09 24.5
KHC				*e*	SN		Sn	19 10 49.6 +2.2
KHC	Kasperske Hory	8.75	322	*e*	Pn		P	19 09 07.5 -0.1
KHC				*e*				19 09 24.5
KHC				*e*	Sn		Sn	19 10 49.6 +2.2
SQTA	Sankt Quirin	8.85	306⇑	*i*	PN		P	19 09 08.7 -0.4
SQTA				*i*	SN		Sn	19 10 46.5 -3.5
MOTA	Moosalm	8.98	306⇑	*i*	PN		P	19 09 10.1 -0.7
MOTA				*i*	SN		Sn	19 10 49.3 -3.7
PRU	Pruhonice	9.00	329	*e*	SN		Sn	19 10 56.0 +2.3
BRTR	Keskin Array B	9.39	103		Pn		P	19 09 16.2 -0.2
	comp=N,0.1nm,0.3s,baz=294,slow=14,SNR=2.8							
PGF	Pioggiola	9.42	275	*e*	Pn		P	19 09 14.8 -2.1
DAVOX	Davos	9.49	301		Pn		P	19 09 16.8 -1.1
	comp=N,0.7nm,0.3s,baz=129,slow=20,SNR=6.8							
AKASG	Malin Array Be	9.68	29		Pn		P	19 09 21.2 +0.8
	comp=N,0.4nm,0.3s,baz=228,slow=13,SNR=4.4							
SBF	Sospel	10.55	282	*e*	Pn		P	19 09 30.2 -2.2
SBF				*e*	Sn		S	19 11 19.2 -13
	comp=N,7.9nm,0.7s							
CLL	Collm	10.65	329	*e*	SN		S	19 11 32.0 -2.1
CLL				*e*				19 12 08.0
MOX	Moxa	10.72	323	*i*	P		P	19 09 27.2 -7.5
BFO	Black Forest	11.09	306	*e*	Pn		P	19 09 38.4 -1.3
MBDF	Montbardon	11.09	287	*e*	Pn		P	19 09 35.9 -3.9
MBDF				*e*	Sn		S	19 11 31.7 -13
	comp=N,4.0nm,0.6s							
FRF	La Foret Royal	11.12	281	*e*	Pn		P	19 09 38.1 -2.0
LMR	La Mourre	11.22	279	*e*	Pn		P	19 09 39.1 -2.4
LPG	La Plagne	11.22	291	*e*	Pn		P	19 09 40.0 -1.5
LPG				*e*	Sn		S	19 11 35.7 -12
	comp=N,5.5nm,0.6s							
LPL	La Plagne	11.24	291	*e*	Pn		P	19 09 40.1 -1.6
LPL				*e*	Sn		S	19 11 34.2 -14
	comp=N,2.8nm,0.5s							
ORIF	Oris-en-Rattie	11.75	287	*e*	Pn		P	19 09 44.3 -4.4
CDF	Champ du Feu	11.76	305	*e*	Pn		P	19 09 45.6 -3.2
HINF	Hinteralfeld	11.79	302	*e*	Pn		P	19 09 47.0 -2.2
HINF				*e*	Sn		S	19 11 47.1 -15
	comp=N,1.0nm,0.3s							
CABF	La Chapelle	11.91	296	*e*	Pn		P	19 09 48.6 -2.3
HAU	Haudompre	12.17	302	*e*	Pn		P	19 09 54.4 0.0
ASF	Jabal al Asfar	15.82	126		LR		LR	19 16 56.3
	comp=N,41nm,18.1s,baz=5.9,slow=38							
HFS	Hagfors	18.34	347		P		P	19 11 13.1 -1.0
	comp=N,0.0nm,0.3s,baz=286,slow=10,SNR=2.8							
FINES	FINESS Array B	19.16	6		P		P	19 11 23.0 -0.8
	comp=N,0.1nm,0.3s,baz=190,slow=12,SNR=5.9							
FINES					LR		LR	19 18 04.8
	comp=N,31nm,18.7s,baz=197,slow=34							
NB2	NORSAR Subarra	19.64	345		P		P	19 11 28.2 -1.2
	comp=N,1.0nm,0.6s,baz=157,slow=10							
NOA	NORSAR Array B	19.64	345		P		P	19 11 27.8 -1.6
	comp=N,0.2nm,0.3s,baz=157,slow=12,SNR=5.7							
NOA					LR		LR	19 20 21.2
	comp=N,34nm,19.0s,baz=195,slow=41							
EKA	Eskdalemuir Ar	20.67	317		P		P	19 11 38.8 -1.7
	comp=N,3.6nm,0.7s,baz=116,slow=10,SNR=14							
ARCES	ARCESS Array B	27.17	3		P		P	19 12 41.9 -1.2
	comp=N,1.3nm,0.7s,mb3.6,baz=190,slow=7.4,SNR=8.9							
ARCES					LR		LR	19 23 17.1
	comp=N,35nm,19.4s,MS2.9,baz=44,slow=36							
ZRNK	Zerenda	32.90	55	*e*	P		P	19 13 35.9 +1.8
BRVK	Borovoye	33.67	55	*e*	P		P	19 13 41.8 +0.9
SPITS	Spitsbergen Ar	35.86	358		P		P	19 13 59.6 +0.1
	comp=N,2.3nm,1.0s,mb4.1,SNR=4.5							
ZAL	Zalesovo	42.18	52		P		P	19 14 53.0 +0.9
	comp=N,1.7nm,0.8s,mb3.7,baz=104,slow=7.7,SNR=6.5							
MKAR	Makanchi Array	42.35	63		P		P	19 14 54.8 +1.1
	comp=N,0.9nm,0.5s,mb3.7,baz=280,slow=6.9,SNR=17							
SONM	Songino Array	57.05	53		P		P	19 16 46.7 +0.3
	comp=N,0.6nm,0.7s,mb3.7,baz=278,slow=8.7,SNR=5.0							
YKA	Yellowknife Ar	69.66	340		P		P	19 18 08.1 -1.0
	comp=N,0.1nm,0.3s,mb3.2,baz=36,slow=5.5,SNR=4.2							
PDAR	Pinedale Array	84.50	326		P		P	19 19 32.6 +0.5
	comp=N,0.3nm,0.6s,mb3.6,baz=39,slow=5.8,SNR=3.2							
WRA	Warramunga Arr	119.69	91		PKP		PKPdf	19 25 50.2 -1.3
	comp=N,0.3nm,0.9s,baz=319,slow=1.9,SNR=2.5							
ASAR	Alice Springs	121.62	94		PKP		PKPdf	19 25 52.6 -2.7
	comp=N,0.5nm,0.7s,baz=292,slow=1.5,SNR=6.7							

IDC 14 19:07:33.9±71.0, 16.35S×170.91W, mb3.9/3, mb1 4.1/3, mb1mx3.7/16, MS3.9/1, Ms1 3.9/1, ms1mx2.9/26, Error ellipse: s-maj=1393.0km s-min=212.9km az=81.0, Samoa Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RPZ	Rata Peaks	31.28	206	LR	LR	19 25 37.2	
	comp=Z,181nm,18.2s,baz=352,slow=35						
STKA	Stephens Creek	45.66	241	*e*P	P	19 15 56.9	-1.4
	3.9nm,0.9s						
STKA	Stephens Creek	45.66	241	P	P	19 15 56.9	-1.4
	4.3nm,0.8s,baz=105,slow=11,SNR=5.5						
WRA	Warramunga Arr	51.97	257	P	P	19 16 46.3	-1.0
	0.4nm,0.8s,baz=96,slow=7.8,SNR=3.7						
ASAR	Alice Springs	52.10	253	P	P	19 16 45.1	-3.1
	1.5nm,0.8s,baz=89,slow=7.5,SNR=18						

ISK 14 19:24:26.7, 39.92N×40.91E, h5km, MD3.8
MOS 14 19:24:29.0±2.2, 39.83N×40.66E, h10km, mb4.1/1, Error ellipse: s-maj=17.6km s-min=11.2km az=82.3
IDC 14 19:24:30.5±1.9, 40.12N×40.89E, mb3.2/4, mb1 3.4/8, mb1mx3.3/23, ML3.1/1, MS3.2/5, Ms1 3.2/5, ms1mx2.9/19, Error ellipse: s-maj=44.6km s-min=12.0km az=16.0
NEIC 14 19:24:35.5±3.4, 40.29N×40.88E, h29km±30km, Error ellipse: s-maj=17.6km s-min=7.9km az=179.0
ISC 14 19:24:28.4±0.3, 39.94N±0.03×40.87E±0.03, h5km, n43, σ1§21/48, mb3.3/5, MS3.1/4, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EZM	Erzurum	0.28	99	*i* PG	Pg	19 24 34.7	+0.7
ERZM	Erzurum	0.38	95	*i* P	Pg	19 24 34.5	-1.5
ERZM				*i* S	Sg	19 24 41.8	+0.6
EZC	Erzincan	0.84	257	*i* PN	Pn	19 24 50.5	+3.9
BINT	Bingol	1.11	196	PN	Pn	19 24 48.3	-2.1
BINT				SN	Sn	19 25 04.9	-1.3
GUMT	Gumushane	1.19	296	PN	Pn	19 24 51.2	-0.4
KELT	Kelkit	1.26	280	*i* P	Pb	19 24 52.4	+0.2
KELT				*i* S	Sb	19 25 08.6	0.0
BCA	Borcka	1.60	21	*i* PN	Pn	19 24 57.5	-0.1
AGRT	Agri	1.66	101	*i* PN	Pn	19 24 57.6	-0.8
BTMT	Batman	1.81	164	PN	Pn	19 25 00.9	+0.4
KARS	Kars	1.82	68	*e*PN	Pn	19 25 00.4	-0.3
ELZG	Elazig	2.06	226	*i* P	Pn	19 25 04.3	+0.3
ELZG				*i* S	Sn	19 25 35.7	+5.3
BEST	Besiri	2.07	171	*i* P	Pn	19 25 05.3	+1.1
BEST				*i* S	Sn	19 25 35.7	+5.0
DIY	Diyarbakir	2.10	194	*e*PN	Pn	19 25 04.1	-0.6
TVAN	Van	2.42	125	*i* P	Pn	19 25 12.0	+2.7
TVAN				*i* S	Sn	19 25 46.4	+6.7
MYA	Malataya	2.50	230	PN	Pn	19 25 10.4	+0.1
GNI	Garni	2.98	85	Pn	Pn	19 25 20.4	+3.2
	6.5nm,0.3s,baz=274,slow=6.0,SNR=23						
SVSK	Karacayir	2.98	271	*e*PN	Pn	19 25 17.8	+0.6
SVST	Sivas	3.02	268	*i* P	Pn	19 25 24.2	+6.4
SVST				*i* S	Sn	19 25 55.5	+0.7
ZEI	Tsey	3.63	38	*e*P	Pn	19 25 31.0	+4.6
ZEI				*e*S	Sn	19 26 16.0	+5.8
ZEI				pmax	pmax		
	comp=Z,50nm,1.0s						
ZEI				MLR	MLR		
	comp=Z,200nm,6.0s						
GZT	Gaziantep	3.66	226	*i* P	Pn	19 25 25.9	-0.9
SOC	Sochi	3.74	347	*e*P	Pn	19 25 27.4	-0.6
SOC				*e*S	Sn	19 26 13.8	+0.8
SOC				pmax	pmax		
	comp=Z,106nm,1.1s						
SOC				pmax	pmax		
	comp=N,147nm,1.2s						
SOC				pmax	pmax		
	comp=E,86nm,1.3s						
SOC				smax			
	comp=N,204nm,0.9s						
SOC				smax			
	comp=E,305nm,1.0s						
SOC				MLR	MLR		
	comp=Z,250nm,14.0s						
SOC				MLR	MLR		
	comp=N,326nm,11.0s						
SOC				MLR	MLR		
	comp=E,1μm,14.0s						
GAZ	Gaziantep	3.99	227	*e*PN	Pn	19 25 31.9	+0.4
KIV	Kislovodsk	4.23	18	*e*P	Pn	19 25 42.0	+7.0
KIV				pmax	pmax		
	comp=Z,11nm,1.2s						
KIV	Kislovodsk	4.23	18	*e*Pn	Pn	19 25 33.8	-1.2
GOF	Gofitskoye	5.36	17	*e*P	Pn	19 25 52.0	+1.1
BRTR	Keskin Array B	5.57	270	Pn	Pn	19 25 57.0	+3.0
	comp=Z,0.0nm,0.3s,baz=90,slow=15,SNR=3.1						
ASF	Jabal al Asfar	8.39	204	Pn	P	19 26 42.7	+9.1
	comp=Z,0.2nm,0.3s,baz=225,slow=10,SNR=4.6						
ASF				Lg		19 29 01.6	
	comp=Z,0.2nm,0.3s,baz=250,slow=19,SNR=5.6						
MLR	Muntele Rosu	12.29	302	Pn	P	19 27 26.6	-0.4
	baz=155,slow=14						
MLR				LR	LR	19 32 44.0	
	comp=Z,52nm,19.9s,baz=291,slow=40						
AKASG	Malin Array Be	13.51	327	Pn	P	19 27 40.9	-2.1
	comp=Z,1.7nm,0.3s,baz=135,slow=11,SNR=13						
ARU	Arti	20.18	29	P	P	19 29 04.0	-2.4
VAE	Valguarnera	20.77	272	LR	LR	19 36 39.7	
	comp=Z,66nm,20.5s,MS3.0,baz=299,slow=35						
COLI	Coloredo	20.97	296	*e*Pg	P	19 29 17.6	+3.0
SVE	Sverdlovsk	21.26	31	*e*P	P	19 29 16.2	-1.3
GERES	GERESS Array B	21.27	304	P	P	19 29 16.4	-1.3
	comp=Z,0.6nm,0.8s,mb3.0,baz=98,slow=6.9,SNR=4.4						
CLL	Collm	22.42	310	*e*PP		19 29 35.0	
GRA1	Grafenberg Arr	23.05	305	*e*P	P	19 29 36.7	+1.4
	comp=Z,5.0nm,1.0s,mb3.9						
GRF	Grafenberg Arr	23.05	305	*e*P	P	19 29 36.7	+1.4
GRF				pmax	pmax		
	comp=Z,5.0nm,1.0s,mb3.9						
FINES	FINESS Array B	23.37	342	P	P	19 29 38.0	-0.2
	comp=Z,1.5nm,0.8s,mb3.5,baz=149,slow=11,SNR=4.8						
FINES				LR	LR	19 39 27.6	
	comp=Z,46nm,18.0s,MS3.0,baz=8.0,slow=39						
BVAR	Borovoye Array	23.97	47	P	P	19 29 44.8	+0.6
	comp=Z,0.2nm,0.4s,mb2.9,baz=225,slow=4.1,SNR=2.8						
NOA	NORSAR Array B	27.90	329	LR	LR	19 42 18.3	
	comp=Z,56nm,19.2s,MS3.2,baz=100,slow=38						
MKAR	Makanchi Array	30.60	63	P	P	19 30 46.2	+1.0
	comp=Z,0.4nm,0.7s,mb3.4,baz=279,slow=7.8,SNR=4.0						
ARCES	ARCESS Array B	30.76	349	LR	LR	19 43 15.0	
	comp=Z,73nm,18.0s,MS3.4,baz=41,slow=37						
BOD	Bodaibo	48.73	43	*e*P	P	19 33 14.3	-1.1

IDC 14 19:26:50.5±0.8, 17.04S×177.06W, mb4.4/13, mb1 4.7/13, mb1mx4.6/17, MS4.2/17, Ms1 4.2/17, ms1mx4.1/24, Error ellipse: s-maj=38.1km s-min=15.4km az=144.0
NEIC 14 19:26:56.5±0.3, 17.04S×177.16W, h40km, mb4.8/21, Error ellipse: s-maj=13.5km s-min=6.0km az=146.0
BJI 14 19:26:56.7, 17.00S×177.20W, h40km, mB5.0, mb4.6
MOS 14 19:26:58.8±1.9, 16.16S×177.84W, h33km, mb5.5/2, Error ellipse: s-maj=28.4km s-min=26.0km az=136.7
ISC 14 19:26:54.3±0.3, 17.01S±0.10×177.21W±0.08, h33km, n132, σ0§97/68, mb4.7/38, MS4.2/17, 1C-1D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	Rarotonga	17.00	107	LR	LR	19 35 48.1	
	comp=Z,736nm,19.7s,baz=280,slow=32						
URZ	Urewera	21.75	192	P	P	19 31 43.6	-1.2
	20nm,0.8s,mb4.6,baz=59,slow=2.4,SNR=6.4						
URZ				LR	LR	19 39 30.2	
	comp=Z,603nm,19.6s,MS4.0,baz=302,slow=35						
ARMA	Armidale	31.38	239	*e*P	P	19 33 15.5	+1.0
CTA	Charters Tower	34.73	259	*e*P	P	19 33 43.7	+0.1
	15nm,1.0s,mb4.9						
CTA	Charters Tower	34.73	259	P	P	19 33 43.6	+0.1
	18nm,0.9s,mb5.0,baz=93,slow=10,SNR=16						
CTA				LR	LR	19 45 47.6	
	comp=Z,904nm,21.1s,MS4.5,baz=80,slow=33						
CTAO	Charters Tower	34.73	259	*e*P	P	19 33 43.5	-0.1
	22nm,1.0s,mb5.0						
PMG	Port Moresby	35.45	278	LR	LR	19 45 45.5	
	comp=Z,140nm,21.1s,MS3.7,baz=110,slow=32						
TOO	Toolangi	38.62	230	*e*P	P	19 34 17.4	+1.2
	7.5nm,0.9s,mb4.4						
STKA	Stephens Creek	40.06	241	*e*P	P	19 34 29.3	+1.1
	19nm,0.8s,mb4.9						
STKA	Stephens Creek	40.06	241	P	P	19 34 29.4	+1.2
	22nm,0.8s,mb4.9,baz=76,slow=8.2,SNR=22						
STKA				LR	LR	19 49 13.6	
	comp=Z,468nm,20.1s,MS4.3,baz=39,slow=33						
STKA	Stephens Creek	40.06	241	P	P	19 34 29.4	+1.2
STKA				LR	LR	19 49 13.6	
WB2	Warramunga Arr	45.91	259	*e*P	P	19 35 15.0	-1.0
WRA	Warramunga Arr	45.92	259	P	P	19 35 15.6	-0.5
	2.7nm,0.9s,mb4.2,baz=93,slow=7.0,SNR=15						
WRA				PcP	PcP	19 36 53.1	-0.1
	2.0nm,0.9s,baz=83,slow=3.9,SNR=6.3						
WRA				LR	LR	19 53 14.4	
	comp=Z,390nm,19.5s,MS4.4,baz=105,slow=34						
WRA	Warramunga Arr	45.92	259	P	P	19 35 15.6	-0.5
WRA				PcP	PcP	19 36 53.1	-0.1
WRA				LR	LR	19 53 14.4	
AS12	Alice Springs	46.14	253⇑	*i* P	P	19 35 17.2	-0.5
	20nm,1.1s,mb5.0						
ASAR	Alice Springs	46.14	253	P	P	19 35 17.4	-0.4
	6.5nm,0.8s,mb4.6,baz=85,slow=8.3,SNR=32						
ASAR				LR	LR	19 53 05.9	
	comp=Z,826nm,20.7s,MS4.7,baz=87,slow=34						
KAKA	Kakadu	48.79	268	*e*P	P	19 35 37.8	-0.8
	8.9nm,0.9s,mb4.8						
FITZ	Fitzroy Crossi	54.31	260	*e*P	P	19 36 18.4	-1.7
	4.6nm,1.1s,mb4.3						
FITZ	Fitzroy Crossi	54.31	260	P	P	19 36 19.4	-0.7
	2.3nm,0.9s,mb4.1,baz=145,slow=9.5,SNR=4.1						
FITZ				LR	LR	19 58 12.7	
	comp=Z,310nm,19.5s,MS4.4,baz=98,slow=35						
FITZ	Fitzroy Crossi	54.31	260	P	P	19 36 19.4	-0.7
FITZ				LR	LR	19 58 12.7	
CBIJ	Chichi jima	58.94	317	LR	LR	19 58 43.1	
	comp=Z,201nm,19.4s,MS4.3,baz=151,slow=32						
KLBR	Kellerberrin	60.25	243	*e*P	P	19 36 58.8	-3.2
	24nm,1.1s,mb5.1						
VNDA	Vanda	61.43	185	LR	LR	19 58 20.9	
	comp=Z,66nm,19.3s,MS3.8,baz=264,slow=31						
MAJO	Matsushiro	67.88	322	P	P	19 37 50.6	-1.1
MAT	Matsushiro	67.88	322	P	P	19 37 50.4	-1.3
MAT	Matsushiro	67.88	322	*e*P	P	19 37 50.0	-1.7
	4.5nm,0.8s,mb4.5						
QSPA	South Pole Qui	73.04	180	*e*P	P	19 38 22.2	0.0
	9.9nm,1.0s,mb4.7						
QSPA				LR	LR		
	comp=Z,80nm,21.1s,MS4.0						
YBH	Yreka Blue Hor	77.11	39	*e*P	P	19 38 46.1	-0.2
	comp=Z,7.1nm,1.0s,mb4.5						
BEKR	Beckwourth	77.47	41	*e*P	P	19 38 48.0	-0.4
	comp=Z,16nm,1.5s,mb4.7						
NVAR	Mina Array Bea	77.99	43	P	P	19 38 50.6	-0.6
	comp=Z,2.9nm,0.9s,mb4.2,baz=220,slow=7.3,SNR=14						
WVOR	Wild Horse Val	79.99	40	*e*P	P	19 39 01.2	-0.9
	comp=Z,5.5nm,1.0s,mb4.4						
CN2	Changchun	80.02	322	*e*P	P	19 39 06.5	+4.3
CN2				AMB	AMB		
	comp=Z,10.0nm,1.4s,mb4.5						
TUC	Tucson	80.25	52	*e*P	P	19 39 03.8	+0.1
	comp=Z,7.8nm,1.1s,mb4.5						
WHN	Wuhan	81.00	306	*e*P	P	19 39 12.5	+4.8
LNOR	Lincton Mounta	82.12	37	P	P	19 39 12.6	-0.6
MSU	Marysvale	82.15	46	*e*P	P	19 39 14.0	+0.5
TNA	Tin City	82.62	4	*e*P	P	19 39 15.0	-0.3
	comp=Z,18nm,1.3s,mb4.9						
SEY	Seymchan	83.17	347	*e*P	P	19 39 17.6	-0.5
SEY				pmax	pmax		
	comp=N,10.0nm,0.9s						
SEY				pmax	pmax		
	comp=E,10.0nm,0.9s						
SEY				pmax	pmax		
	comp=Z,50nm,0.9s,mb5.5						
HLID	Hailey	83.21	41	*e*P	P	19 39 18.7	-0.1
	comp=Z,6.2nm,0.9s,mb4.6						
MCK	McKinley	83.42	12	*e*P	P	19 39 18.3	-1.1
	comp=Z,3.1nm,0.9s,mb4.3						
SRU	San Rafael	83.57	46	*e*P	P	19 39 20.8	0.0
LAZ	Ladron	83.91	51	*e*P	P	19 39 23.6	+1.0
BJI	Beijing	83.96	315	*e*P	P	19 39 26.9	+4.2
BJI				AMB	AMB		
	comp=Z,9.0nm,1.1s,mb4.8						
HWUT	Hardware Ranch	84.06	43	*e*P	P	19 39 22.3	-0.8
	comp=Z,6.8nm,1.1s,mb4.7						
MNTX

	comp=Z,logA/T=0.8							
MOX	**Moxa**	**145.71**	**350**	*e*PKIKP	PKPdf	19 46 34.5	+5.2
MOX				pmax	pmax			
	comp=Z,9.0nm,1.6s							
PRU	**Pruhonice**	**145.76**	**346**	*e*PKP	PKPdf	19 46 31.5	+2.1
PRU				*ex*	x	19 46 34.8		
VRAC	**Vranov**	**145.89**	**344**	PKPbc	PKPbc	19 46 32.9	+2.3
	comp=Z,9.1nm,1.0s,baz=26,slow=5.1,SNR=13							
PSZ	**Piszkesteto**	**146.13**	**339**	*e*PKPdf	PKPdf	19 46 31.6	+1.5
GRA1	**Grafenberg Arr**	**146.69**	**350**	*e*PKP	PKPdf	19 46 37.8	+6.8
GRF	**Grafenberg Arr**	**146.69**	**350**	*e*PKP2	PKPab	19 46 37.8	+1.9
KHC	**Kasperske Hory**	**146.78**	**347**	*e*PKP	PKPdf	19 46 34.0	+2.8
KHC				*ex*	x	19 46 38.0		
GIVF	**Givet**	**146.95**	**358**	*e*PKP1	PKPbc	19 46 36.1	+3.1
BAIF	**Baives**	**147.01**	**358**	*e*PKP1	PKPdf	19 46 35.8	+4.3
	comp=Z,16nm,0.8s							
GERES	**GERESS Array B**	**147.02**	**347**	PKPbc	PKPdf	19 46 35.2	+3.6
	comp=Z,1.6nm,0.7s,baz=45,slow=1.9,SNR=9.7							
WLF	**Walferdange**	**147.31**	**356**	*e*PKPab	PKPab	19 46 38.0	-0.4
FLN	**La Foliniere**	**148.22**	**4**	*e*PKP1	PKPdf	19 46 40.0	+6.5
	comp=Z,41nm,0.9s							
FLN				*e*R				
	comp=Z,108nm,18.8s							
ROSF	**Rostrenen**	**148.37**	**8**	*e*PKP1	PKPdf	19 46 41.5	+7.7
	comp=Z,16nm,0.9s							
LDF	**La Druitiere**	**148.41**	**4**	*e*PKP1	PKPdf	19 46 40.7	+6.9
	comp=Z,12nm,0.7s							
CDF	**Champ du Feu**	**148.47**	**354**	*e*PKP1	PKPdf	19 46 40.6	+6.7
	comp=Z,26nm,1.3s							
MEZF	**Maizieres J'vi**	**148.54**	**357**	*e*PKP1	PKPdf	19 46 42.9	+8.9
	comp=Z,8.7nm,0.6s							
GRR	**Gorron**	**148.56**	**5**	*e*PKP1	PKPdf	19 46 41.6	+7.5
	comp=Z,17nm,1.0s							
ECH	**Echery**	**148.67**	**354**	PKP	PKPdf	19 46 43.0	+8.7
THEF	**They Montfort**	**148.76**	**356**	PKP	PKPdf	19 46 43.0	+8.6
QUIF	**Quistinic**	**148.79**	**8**	*e*PKP1	PKPdf	19 46 42.7	+8.2
HAU	**Haudompre**	**148.95**	**355**	*e*PKP1	PKPdf	19 46 43.4	+8.7
	comp=Z,26nm,1.0s							
HAU				*e*R				
	comp=Z,123nm,20.2s							
HINF	**Hinteralfeld**	**149.10**	**355**	*e*PKP1	PKPdf	19 46 43.8	+8.8
LOMF	**Lomont**	**149.56**	**355**	PKP	PKPdf	19 46 42.8	+7.1
DAVOX	**Davos**	**149.74**	**350**	PKPbc	PKPdf	19 46 42.8	+6.8
	comp=Z,2.1nm,0.7s,baz=2.2,slow=21,SNR=2.4							
DAVOX				PKPab	PKPab	19 46 47.1	-1.2
	comp=Z,4.8nm,0.7s,baz=276,slow=3.7,SNR=6.3							
SSF	**Saint Saulge**	**150.03**	**359**	*e*PKP1	PKPdf	19 46 45.3	+8.8
	comp=Z,26nm,1.2s							
AVF	**Avril sur Loir**	**150.30**	**359**	*e*PKP1	PKPdf	19 46 46.6	+10
	comp=Z,21nm,1.1s							
CABF	**La Chapelle**	**150.36**	**355**	*e*PKP1	PKPdf	19 46 46.1	+9.1
	comp=Z,27nm,1.0s							
MFF	**Saint Martin d**	**150.39**	**4**	*e*PKP1	PKPdf	19 46 47.0	+10
	comp=Z,35nm,1.1s							
SMF	**Signal de Mont**	**150.44**	**359**	*e*PKP1	PKPdf	19 46 47.3	+10
	comp=Z,46nm,1.5s							
BGF	**Bois d'Agland**	**150.54**	**360**	*e*PKP1	PKPdf	19 46 46.6	+9.3
	comp=Z,16nm,0.9s							
TCF	**Toulx Ste Croi**	**150.80**	**1**	*e*PKP1	PKPdf	19 46 47.3	+10
	comp=Z,14nm,1.1s							
PLDF	**La Plantade**	**151.12**	**359**	PKP	PKPdf	19 46 50.4	+12
PYM	**Petit Puy Mans**	**151.34**	**360**	PKP	PKPdf	19 46 49.5	+11
LPL	**La Plagne**	**151.39**	**354**	*e*PKP1	PKPdf	19 46 46.9	+8.3
	comp=Z,13nm,0.9s							
LPG	**La Plagne**	**151.40**	**354**	*e*PKP1	PKPdf	19 46 47.4	+8.8
	comp=Z,20nm,1.1s							
RJF	**Les Rejaudoux**	**151.77**	**2**	*e*PKP1	PKPdf	19 46 50.3	+11
	comp=Z,15nm,0.9s							
RJF				*e*R				
	comp=Z,107nm,19.8s							
BNI	**Bardonecchia**	**151.85**	**354**	*e*PKPdf	PKPdf	19 46 41.1	+1.9
BNI				*e*PKPbc	PKPdf	19 46 48.3	+9.0
LBL	**Lubilhac**	**151.86**	**359**	PKP	PKPdf	19 46 51.1	+12
ORIF	**Oris-en-Rattie**	**152.06**	**355**	*e*PKP1	PKPdf	19 46 50.5	+11
	comp=Z,13nm,0.8s							
ORIF				*e*R				
	comp=Z,95nm,21.2s							
LFF	**La Frestale**	**152.10**	**3**	*e*PKP1	PKPdf	19 46 51.1	+11
	comp=Z,19nm,0.8s							
CAF	**Calviac**	**152.16**	**1**	*e*PKP1	PKPdf	19 46 51.4	+12
	comp=Z,15nm,1.1s							
MBDF	**Montbardon**	**152.16**	**354**	*e*PKP1	PKPdf	19 46 50.4	+11
	comp=Z,8.3nm,0.7s							
VIVF	**Saint-Julien-l**	**152.19**	**357**	*e*PKP1	PKPdf	19 46 50.9	+11
	comp=Z,14nm,0.9s							
LASF	**Ste Croix**	**153.00**	**358**	*e*PKP1	PKPdf	19 46 53.7	+13
	comp=Z,9.1nm,0.8s							
FRF	**La Foret Royal**	**153.33**	**354**	*e*PKP1	PKPdf	19 46 53.0	+12
	comp=Z,13nm,0.8s							

MEX 14 19:36:49.0±1.1, 14.87N×93.99W, h16km±69km, MD4.1, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SCX	**San Cristobal**	**2.27**	**35**	*i* P	Pn	19 37 24.0	-2.5
SCX				*i* S	Sn	19 37 49.0	-5.3
CCIG	**Comitan**	**2.27**	**52**	*i* P	Pn	19 37 22.8	-3.7
CCIG				*i* S	Sn	19 37 49.1	-5.3
CMIG	**Matias Romero**	**2.37**	**339**	*i* P	Pn	19 37 23.7	-4.3
CMIG				*i* S	Sn	19 37 51.9	-5.0

*NEIC **14** 20:48:22.7, 15.93N×97.66W, h33km, mb4.2/1, MD4.3(MEX), After MEX.*
*MEX **14** 20:48:24.0±2.1, 16.03N×97.68W, h29km±48km, MD4.3*
ISC 14 20:48:21.2±0.8, 15.98N±0.05×97.65W±0.03, h40km±13km, n22, σ1§13/39, mb4.2/1, 1D, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PNIG	**Pinotepa**	**0.61**	**312**	⇓*i*P	**P**	**20 48 33.4**	**-0.1**
PNIG				*i* S	**S**	**20 48 42.0**	**-0.3**
OXX	**Oaxaca**	**1.41**	**39**	*i* P	**P**	**20 48 44.9**	**+0.1**
OXX				*i* S	**S**	**20 49 02.1**	**-0.2**
HUIG	**Huatulco**	**1.50**	**98**	*e*P	**P**	**20 48 46.1**	**+0.1**
HUIG				*i* S	**S**	**20 49 06.3**	**+1.7**
ACX	**Acapulco**	**2.35**	**292**	*e*P	**P**	**20 48 58.4**	**+0.2**
ACX				*i* S	**S**	**20 49 25.2**	**-0.8**
CAIG	**El Cayaco**	**2.73**	**293**	*i* P	**P**	**20 49 03.6**	**0.0**
CAIG				*i* S	**S**	**20 49 32.9**	**-2.7**
CMIG	**Matias Romero**	**2.87**	**67**	*e*P	**P**	**20 49 04.1**	**-1.6**
CMIG				*i* S	**S**	**20 49 37.6**	**-1.7**
IISM	**Ciudad Serdan**	**3.00**	**5**	*e*P	**P**	**20 49 07.0**	**-0.4**
IISM				*i* S	**S**	**20 49 42.5**	**0.0**
IIB	**San Bernardino**	**3.04**	**347**	*e*P	**P**	**20 49 11.8**	**+3.8**
IIB				*i* S	**S**	**20 49 47.6**	**+4.0**
POHV	**Veracruz**	**3.09**	**6**	*e*P	**P**	**20 49 09.0**	**+0.3**
POHV				*i* S	**S**	**20 49 45.0**	**+0.2**
YAIG	**Yautepec**	**3.17**	**335**	*e*P	**P**	**20 49 09.1**	**-0.7**
YAIG				*i* S	**S**	**20 49 46.2**	**-0.6**
PPM	**Popocatepetl**	**3.21**	**343**	*e*P	**P**	**20 49 10.5**	**+0.1**
PPM				*e*P		20 49 12.2	
PPM				*i* S	**S**	**20 49 47.2**	**-0.6**
PPM	**Popocatepetl**	**3.21**	**343**	*e*P	**P**	**20 49 12.2**	**+1.9**
PPM				*i* S	**S**	**20 49 52.7**	**+4.9**
EVV	**El Vigia**	**3.30**	**41**	*e*P	**P**	**20 49 11.5**	**-0.2**
EVV				*i* S	**S**	**20 49 50.0**	**-0.1**
UNM	**Universidad Na**	**3.63**	**337**	*e*P	**P**	**20 49 20.0**	**+3.6**
TUIG	**Tuzandepetl**	**3.70**	**56**	*e*P	**P**	**20 49 18.8**	**+1.4**
TUIG				*i* S	**S**	**20 49 59.6**	**-0.7**
LVIG	**Laguna Verde**	**3.90**	**17**	*e*P	**P**	**20 49 18.5**	**-1.7**
LVIG				*i* S	**S**	**20 50 06.9**	**+1.5**
ZIIG	**Zihuatanejo**	**4.00**	**294**	*e*P	**P**	**20 49 32.7**	**+11**
ZIIG				*i* S	**S**	**20 50 04.0**	**-3.9**
MOIG	**Morelia**	**4.99**	**318**	*e*P	**P**	**20 49 37.3**	**+1.7**
MOIG				*i* S	**S**	**20 50 33.9**	**+1.1**
GDL2	**Guadalupe Moun**	**17.26**	**340**	*e*P	**P**	**20 52 25.0**	**+4.1**
CPRX	**Cap Rock**	**17.88**	**343**	*e*P	**P**	**20 52 31.4**	**+2.7**
SWET	**Sewanee**	**21.84**	**27**	*e*P	**P**	**20 53 11.2**	**-0.8**
WVT	**Waverly**	**21.89**	**22**	*e*P	**P**	**20 53 12.1**	**-0.5**
	14nm,1.3s,mb4.2						

*ROM **14** 21:05:33.4±0.1, 44.39N×9.98E, h5km, MD3.2/4, ML2.5/16, Error ellipse: s-maj=1.6km s-min=1.1km az=0.0*
*LDG **14** 21:05:34.4±0.3, 44.34N×10.17E, h10km, Ml3.1/23, Error ellipse: s-maj=5.6km s-min=3.0km az=111.0*
*NEIC **14** 21:05:34.0, 44.44N×10.01E, h9km, MD3.2(ROM), ML3.2(GEN), ML3.2(STR), ML3.1(LDG), ML2.8(SZGRF), ML2.8(FUR), After GEN.*
*STR **14** 21:05:37.0±0.2, 44.57N×9.66E, h10km±1km, Ml3.2, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
ISC 14 21:05:33.6±0.3, 44.41N±0.02×9.97E±0.02, h15km±2km, n123, σ1§02/186, 12C-4D, Northern Italy

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GRAM		**0.10**	**40**	⇑P	**Pb**	**21 05 36.2**	**-0.6**
GRAM				S	**Sb**	**21 05 37.9**	**-1.0**
BACM		**0.15**	**152**	⇓P	**Pg**	**21 05 37.8**	**+0.1**
BACM				S	**Sg**	**21 05 40.5**	**+0.1**
VALM		**0.21**	**108**	⇑P	**Pg**	**21 05 38.1**	**-0.5**
VALM				S	**Sg**	**21 05 41.3**	**-0.6**
VINC	**Vinca**	**0.30**	**155**	P	**Pg**	**21 05 40.1**	**-0.1**
VINC				S	**Sg**	**21 05 44.9**	**+0.3**
ERBM	**Eremo**	**0.32**	**89**	⇑*i*PG	**Pg**	**21 05 40.2**	**-0.3**
ERBM				SG	**Sg**	**21 05 45.8**	**+0.8**
ERBM	**Eremo**	**0.32**	**89**	⇑*i*Pg	**Pg**	**21 05 40.2**	**-0.3**
ERBM				*e*Sg	**Sg**	**21 05 45.8**	**+0.8**
SARO	**Sassorosso**	**0.38**	**126**	⇓P	**Pb**	**21 05 41.2**	**-0.4**
SARO				S	**Sb**	**21 05 46.7**	**-0.3**
VLC	**Villacollemand**	**0.39**	**130**	*e*Pg	**Pg**	**21 05 41.9**	**0.0**
GSCL	**Gusciola**	**0.45**	**98**	*e*PG	**Pg**	**21 05 42.5**	**-0.4**
GSCL				SG	**Sg**	**21 05 49.9**	**+0.8**
GSCL	**Gusciola**	**0.45**	**98**	*e*Pg	**Pg**	**21 05 42.5**	**-0.5**
GSCL				*e*Sg	**Sg**	**21 05 49.9**	**+0.8**
BOB	**Bobbio (Coli)**	**0.52**	**314**	*e*PG	**Pg**	**21 05 44.2**	**-0.1**
BOB				SG	**Sg**	**21 05 52.2**	**+0.8**
BOB	**Bobbio (Coli)**	**0.52**	**314**	*e*Pg	**Pg**	**21 05 44.2**	**-0.1**
BOB				*e*Sg	**Sg**	**21 05 52.2**	**+0.8**
BDI	**Bagni Di Lucca**	**0.57**	**128**	*e*PG	**Pg**	**21 05 44.4**	**-0.9**
BDI				SG	**Sg**	**21 05 53.1**	**0.0**
	204nm,0.2s						
BDI	**Bagni Di Lucca**	**0.57**	**128**	*e*Pg	**Pg**	**21 05 44.4**	**-0.9**
BDI				*e*Sg	**Sg**	**21 05 53.1**	**0.0**
MAIM		**0.62**	**143**	P	**Pb**	**21 05 45.8**	**+0.1**
MAIM				S	**Sb**	**21 05 54.0**	**+0.1**
GENL	**Genova Univers**	**0.72**	**270**	P	**Pb**	**21 05 48.0**	**+0.6**
GENL				S	**Sb**	**21 05 57.6**	**+0.9**
PII	**Pisa**	**0.80**	**150**	*e*PG	**Pg**	**21 05 49.0**	**-0.8**
PII	**Pisa**	**0.80**	**150**	*e*Pg	**Pg**	**21 05 49.0**	**-0.7**
FNVD	**Fontana Vidola**	**0.86**	**106**	*e*PG	**Pg**	**21 05 50.2**	**-0.8**
FNVD				SG	**Sg**	**21 06 03.3**	**+0.7**
FNVD	**Fontana Vidola**	**0.86**	**106**	*e*Pg	**Pg**	**21 05 50.2**	**-0.8**
FNVD				*e*Sg	**Sg**	**21 06 03.4**	**+0.7**
PCP	**Pian Castagno**	**1.03**	**278**	P	**Pb**	**21 05 53.4**	**+0.7**
PCP				S	**Sb**	**21 06 06.5**	**+0.8**
SEI	**Scarperia**	**1.06**	**109**	*e*PG	**Pg**	**21 05 54.2**	**-0.7**
	428nm,0.3s						
SAL	**Salo**	**1.26**	**18**	*e*PN	**Pn**	**21 05 57.8**	**+1.1**
	569nm,0.5s						
SAL	**Salo**	**1.26**	**18**	*e*Pg	**Pg**	**21 05 57.8**	**-1.1**
FIN	**Finale Ligure**	**1.28**	**262**	*e*PN	**Pn**	**21 05 57.2**	**+0.1**
	46nm,0.3s						
FIN	**Finale Ligure**	**1.28**	**262**	P	**Pb**	**21 05 56.9**	**-0.1**
CSNT	**Castellina Chi**	**1.34**	**134**	*e*PN	**Pn**	**21 05 58.4**	**+0.5**
	91nm,0.5s						
PGD	**Poggio Sodo**	**1.37**	**112**	*e*PN	**Pn**	**21 05 59.0**	**+0.7**
	31nm,0.4s						
PGD	**Poggio Sodo**	**1.37**	**112**	*e*Pn	**Pn**	**21 05 59.0**	**+0.7**
RORO		**1.40**	**258**	P	**Pn**	**21 05 58.0**	**-0.8**
GRFL	**Gerfalco**	**1.46**	**150**	*e*PN	**Pn**	**21 06 00.5**	**+0.9**
	24nm,0.5s						
GRFL	**Gerfalco**	**1.46**	**150**	*e*Pn	**Pn**	**21 06 00.5**	**+0.9**
ROB	**Roburent**	**1.51**	**266**	P	**Pn**	**21 06 00.2**	**-0.2**
MONE	**Monesi**	**1.63**	**259**	P	**Pn**	**21 06 02.1**	**0.0**
CRE	**Caprese Michel**	**1.63**	**118**	*e*PN	**Pn**	**21 06 02.9**	**+0.8**
	49nm,0.4s						
CRE	**Caprese Michel**	**1.63**	**118**	*e*Pn	**Pn**	**21 06 02.9**	**+0.8**
MABI	**Malga Bissina**	**1.69**	**13**	*e*PN	**Pn**	**21 06 03.8**	**+0.9**
MABI	**Malga Bissina**	**1.69**	**13**	*e*Pn	**Pn**	**21 06 03.8**	**+0.9**
VAI	**Varese**	**1.69**	**330**	*e*PN	**Pn**	**21 06 04.0**	**+1.1**
	73nm,0.5s						
VAI	**Varese**	**1.69**	**330**	*e*Pn	**Pn**	**21 06 04.0**	**+1.1**
NEGI	**Negi**	**1.73**	**252**	P	**Pn**	**21 06 03.0**	**-0.5**
SAOF	**Saorge**	**1.79**	**257**	Pg	**Pg**	**21 06 05.0**	**-4.5**
SAOF				Sg	**Sg**	**21 06 26.9**	**-6.5**
ENR	**Entracque**	**1.84**	**265**	P	**Pn**	**21 06 05.0**	**-0.1**
ORO	**Oropa**	**1.86**	**311**	*e*PN	**Pn**	**21 06 06.4**	**+1.0**
	47nm,0.3s						
ORO	**Oropa**	**1.86**	**311**	*e*Pn	**Pn**	**21 06 06.4**	**+1.0**
STV2	**Anna di Valdie**	**1.91**	**266**	P	**Pn**	**21 06 06.0**	**-0.1**
SBF	**Sospel**	**1.91**	**254**	*e*Pn	**Pn**	**21 06 06.2**	**+0.2**
SBF				*e*Sn	**Sn**	**21 06 30.0**	**+0.1**
	114nm,0.3s						
STV	**Sta Anna Valdi**	**1.91**	**266**	P	**Pn**	**21 06 05.9**	**-0.2**
DOI	**San Damiano**	**1.96**	**274**	*e*PN	**Pn**	**21 06 07.1**	**+0.4**
	42nm,0.4s						
DOI	**San Damiano**	**1.96**	**274**	*e*Pn	**Pn**	**21 06 07.1**	**+0.4**
AURF	**Auriere**	**1.98**	**256**	Pg	**Pg**	**21 06 07.4**	**-5.8**
AURF				Sg	**Sg**	**21 06 32.4**	**-7.2**
BHB	**Bricherasio**	**1.98**	**283**	P	**Pn**	**21 06 06.6**	**-0.5**
PGF	**Pioggiola**	**1.99**	**201**	*e*Pn	**Pn**	**21 06 07.2**	**-0.1**
PGF				*e*Sn	**Sn**	**21 06 31.4**	**-0.7**
	21nm,0.2s						
REVF	**Revere**	**2.00**	**251**	Pg	**Pg**	**21 06 08.7**	**-4.9**
REVF				Sg	**Sg**	**21 06 33.7**	**-6.5**
TOUF	**Mont Tournerai**	**2.00**	**259**	Pg	**Pg**	**21 06 08.3**	**-5.4**
TOUF				Sg	**Sg**	**21 06 33.2**	**-7.2**
CTI	**Castel Tesino**	**2.02**	**35**	*e*PN	**Pn**	**21 06 07.7**	**+0.1**
	93nm,0.5s						
CTI	**Castel Tesino**	**2.02**	**35**	*e*Pn	**Pn**	**21 06 07.7**	**0.0**
PZZ	**Prazzo**	**2.06**	**274**	P	**Pn**	**21 06 07.6**	**-0.6**
RSP	**Reno Superiore**	**2.07**	**292**	P	**Pn**	**21 06 07.7**	**-0.7**
BRMO	**Bormio**	**2.08**	**8**	*e*PN	**Pn**	**21 06 09.8**	**+1.2**
	27nm,0.5s						
BRMO	**Bormio**	**2.08**	**8**	*e*Pn	**Pn**	**21 06 09.8**	**+1.3**
MVIF	**Mont Vial**	**2.10**	**257**	Pg	**Pn**	**21 06 09.7**	**+1.0**
MVIF				Sg	**Sn**	**21 06 35.8**	**+1.1**
FSSB	**Fossombrone**	**2.15**	**109**	*e*PN	**Pn**	**21 06 10.0**	**+0.5**
	18nm,0.4s						
FSSB	**Fossombrone**	**2.15**	**109**	*e*Pn	**Pn**	**21 06 10.0**	**+0.5**
FENE	**Fenestrelle**	**2.17**	**288**	P	**Pn**	**21 06 09.0**	**-0.7**
LSD	**Ceresole Reale**	**2.26**	**299**	P	**Pn**	**21 06 11.0**	**0.0**
MBDF	**Montbardon**	**2.31**	**279**	*e*Pn	**Pn**	**21 06 12.6**	**+0.8**
MBDF				*e*Sn	**Sn**	**21 06 42.3**	**+2.2**
	56nm,0.6s						
CALN	**Calern**	**2.32**	**255**	Pg	**Pg**	**21 06 12.4**	**-7.6**
ARV	**Arcevia**	**2.33**	**112**	*e*PN	**Pn**	**21 06 13.0**	**+0.9**
	9.0nm,0.3s						
ARV	**Arcevia**	**2.33**	**112**	*e*Pn	**Pn**	**21 06 13.0**	**+0.9**
RRL	**Cesana Torines**	**2.33**	**284**	P	**Pn**	**21 06 13.5**	**+1.4**
SNTG	**Esanatoglia**	**2.44**	**117**	*e*PN	**Pn**	**21 06 14.7**	**+1.1**
	7.0nm,0.3s						
LPG	**La Plagne**	**2.53**	**297**	*e*Pn	**Pn**	**21 06 16.1**	**+1.1**
LPG				*e*Sn	Sn		
	23nm,0.5s						
FRF	**La Foret Royal**	**2.55**	**252**	*e*Pn	**Pn**	**21 06 14.9**	**-0.3**
FRF				*e*Sn	**Sn**	**21 06 44.6**	**-1.6**
	30nm,0.3s						
LPL	**La Plagne**	**2.55**	**297**	*e*Pn	**Pn**	**21 06 16.6**	**+1.3**
LPL				*e*Sn	Sn		
	19nm,0.4s						
LMR	**La Mourre**	**2.73**	**248**	*e*Pn	**Pn**	**21 06 17.0**	**-0.8**
LMR				*e*Sn	**Sn**	**21 06 47.8**	**-2.9**
	24nm,0.3s						
MNS	**Montasola**	**2.83**	**135**	*e*PN	**Pn**	**21 06 20.1**	**+0.9**
	8.0nm,0.5s						
DAVA	**Damuels**	**2.88**	**359**	⇑*i*PN	**Pn**	**21 06 21.4**	**+1.5**
DAVA				*i* SN	**Sn**	**21 06 57.3**	**+2.8**
SCE	**Schlegeis**	**2.90**	**24**	⇑*i*Pn	**Pn**	**21 06 20.7**	**+0.6**
TAVF	**Tavernes**	**2.94**	**256**	Pg	**Pn**	**21 06 21.2**	**+0.5**
TAVF				Sg	**Sn**	**21 06 57.7**	**+1.7**
SQTA	**Sankt Quirin**	**2.94**	**17**	⇑*i*PN	**Pn**	**21 06 21.9**	**+1.1**
SQTA				*i* SN	**Sn**	**21 06 58.1**	**+2.0**
FVI	**Forni Avoltri**	**2.94**	**41**	*e*PN	**Pn**	**21 06 21.5**	**+0.7**
	16nm,0.3s						
FVI	**Forni Avoltri**	**2.94**	**41**	*e*Pn	**Pn**	**21 06 21.5**	**+0.6**
ORIF	**Oris-en-Rattie**	**2.96**	**281**	*e*Pn	**Pn**	**21 06 23.4**	**+2.3**
ORIF				*e*Sn	**Sn**	**21 06 58.5**	**+1.8**
	19nm,0.3s						
MOTA	**Moosalm**	**3.04**	**15**	⇑*i*PN	**Pn**	**21 06 23.7**	**+1.5**
MOTA				*i* SN	**Sn**	**21 06 59.9**	**+1.3**
WTTA	**Wattenberg**	**3.08**	**22**	⇑*i*PN	**Pn**	**21 06 24.1**	**+1.3**
WTTA				*i* SN	**Sn**	**21 07 00.9**	**+1.3**
VILF	**Villemus**	**3.12**	**261**	Pg	**Pn**	**21 06 24.0**	**+0.7**
VILF				Sg	**Sn**	**21 07 01.8**	**+1.2**
WATA	**Walderalm**	**3.13**	**20**	⇑*i*PN	**Pn**	**21 06 23.9**	**+0.4**
WATA				*i* SN	**Sn**	**21 07 02.1**	**+1.2**
SMRF	**Simiane la Rot**	**3.19**	**264**	*e*Pn	**Pn**	**21 06 25.2**	**+0.8**
SMRF				*e*Sn	**Sn**	**21 07 02.1**	**-0.4**
	19nm,0.5s						
PUYF	**Puyloubier**	**3.21**	**256**	Pg	**Pn**	**21 06 24.8**	**+0.2**
VOY	**Vojsko**	**3.21**	**58**	*e*Pn	**Pn**	**21 06 23.4**	**-1.2**
VOY				*e*Sn	**Sn**	**21 07 00.8**	**-2.1**
CABF	**La Chapelle**	**3.51**	**310**	*e*Pn	**Pn**	**21 06 29.5**	**+0.7**
CABF				*e*Sn	**Sn**	**21 07 10.1**	**-0.3**
	9.2nm,0.4s						
NVLJ	**Novalja**	**3.51**	**86**	*i* Pn	**Pn**	**21 06 28.8**	**-0.1**
NVLJ				*i* Sn	**Sn**	**21 07 08.7**	**-1.8**
KBA	**Koelnbreinsper**	**3.56**	**40**	⇑*i*PN	**Pn**	**21 06 30.0**	**+0.4**
KBA				*i* SN	**Sn**	**21 07 12.0**	**+0.2**
LOMF	**Lomont**	**3.67**	**324**	Pg	**Pn**	**21 06 30.3**	**-0.8**
SPAK	**Spaichingen**	**3.78**	**348**	Pg	**Pn**	**21 06 32.6**	**-0.1**
VIVF	**Saint-Julien-l**	**3.81**	**279**	*e*Pn	**Pn**	**21 06 32.8**	**-0.3**
VIVF				*e*Sn	**Sn**	**21 07 15.3**	**-2.8**
	4.1nm,0.4s						
OBKA	**Obir**	**3.84**	**55**	⇓*i*PN	**Pn**	**21 06 33.3**	**-0.3**
OBKA				*i* SN	**Sn**	**21 07 18.1**	**-0.8**
MOF	**Molkenrain**	**3.97**	**331**	Pg	**Pn**	**21 06 35.1**	**-0.3**
MOF				Sg	**Sn**	**21 07 21.7**	**-0.4**
HINF	**Hinteralfeld**	**4.04**	**329**	*e*Pn	**Pn**	**21 06 36.0**	**-0.4**
HINF				*e*Sn	**Sn**	**21 07 22.9**	**-1.0**
	14nm,0.4s						
BFO	**Black Forest**	**4.08**	**344**	*e*Pn	**Pn**	**21 06 36.3**	**-0.7**
BFO				*e*Sn	**Sn**	**21 07 21.3**	**-3.7**
ECH	**Echery**	**4.28**	**334**	Pg	**Pn**	**21 06 38.8**	**-1.0**
ECH				Sg	**Sn**	**21 07 29.9**	**0.0**
HAU	**Haudompre**	**4.39**	**326**	*e*Pn	**Pn**	**21 06 41.3**	**-0.1**
HAU				*e*Sn	**Sn**	**21 07 32.3**	**-0.4**
	15nm,0.3s						
LASF	**Ste Croix**	**4.41**	**268**	*e*Pn	**Pn**	**21 06 40.3**	**-1.3**
LASF				*e*Sn	**Sn**	**21 07 29.6**	**-3.7**
	5.5nm,0.5s						
CDF	**Champ du Feu**	**4.41**	**336**	*e*Pn	**Pn**	**21 06 41.0**	**-0.7**
CDF				*e*Sn	**Sn**	**21 07 29.0**	**-4.4**
	7.0nm,0.3s						
MOA	**Molln**	**4.55**	**39**	⇑*i*PN	**Pn**	**21 06 43.2**	**-0.5**
MOA				*i* SN	**Sn**	**21 07 36.1**	**-0.8**
THEF	**They Montfort**	**4.71**	**326**	Pg	**Pn**	**21 06 44.6**	**-1.3**
PLDF	**La Plantade**	**4.75**	**291**	Pg	**Pn**	**21 06 45.0**	**-1.5**
PLDF				Sg	**Sn**	**21 07 41.0**	**-1.0**
ARSA	**Arzberg**	**4.81**	**52**	⇓*i*PN	**Pn**	**21 06 46.7**	**-0.6**
ARSA				*i* SN	**Sn**	**21 07 40.1**	**-3.2**
SMF	**Signal de Mont**	**4.85**	**300**	*e*Pn	**Pn**	**21 06 48.1**	**+0.1**
SMF				*e*Sn	**Sn**	**21 07 42.5**	**-2.0**
	4.9nm,0.3s						
LBL	**Lubilhac**	**4.86**	**282**	Pg	**Pn**	**21 06 47.2**	**-0.8**
GEC2	**GERESS Array S**	**5.12**	**29**	*e*Pn	**Pn**	**21 06 50.0**	**-1.8**
GEC2				*e*Sn	**Sn**	**21 07 47.9**	**-3.4**
WET	**Wettzell**	**5.14**	**22**	*e*Pn	**Pn**	**21 06 50.5**	**-1.4**
WET				*e*Sn	**Sn**	**21 07 47.9**	**-3.7**
AVF	**Avril sur Loir**	**5.22**	**299**	*e*Pn	**Pn**	**21 06 53.0**	**-0.1**
AVF				*e*Sn	**Sn**	**21 07 50.3**	**-3.4**
	1.4nm,

comp=Z,14nm,0.7s,mb4.9,baz=3.3,slow=11,SNR=18
GYA Guiyang 32.23 330 P **P** 21 19 24.9 +6.0
GYA AMB AMB
comp=Z,10.0nm,1.0s,mb4.6
WHN Wuhan 32.97 345 *eP* **P** 21 19 30.5 +5.2
CBIJ Chichi jima 33.33 31 LR LR 21 31 16.6
comp=Z,118nm,21.9s,MS3.6,baz=242,slow=33
NJ2 Nanjing 33.54 352 *eP* **P** 21 19 30.9 +0.7
NJ2 PP PP 21 20 43.8 +1.0
NJ2 AMB AMB
comp=Z,20nm,0.9s,mb5.0
NJ2 LR LR
comp=N,490nm,20.9s,MS4.4
NJ2 LR LR
comp=E,600nm,23.7s,MS4.4
NJ2 LR LR
comp=Z,950nm,26.6s,MS4.4
STKA Stephens Creek 34.69 153 ⇑*iP* **P** 21 19 40.0 -0.1
comp=Z,19nm,0.9s,mb5.0
STKA Stephens Creek 34.69 153 P **P** 21 19 39.5 -0.6
comp=Z,28nm,0.9s,mb5.2,baz=328,slow=7.6,SNR=23
STKA LR LR 21 35 26.8
comp=Z,387nm,18.8s,MS4.2,baz=190,slow=39
JNU Nakatsue 34.91 10 LR LR 21 34 14.2
comp=Z,66nm,20.1s,MS3.4,baz=314,slow=37
CD2 Chengdu 37.34 331 *eP* **P** 21 20 07.5 +5.0
CD2 S **S** 21 25 50.9 +2.8
CD2 AMB AMB
comp=Z,20nm,0.9s,mb5.0
CD2 AMB AMB
comp=Z,70nm,5.3s
CD2 LR LR
comp=E,590nm,17.1s
CD2 LR LR
comp=Z,380nm,21.8s,MS4.2
XAN Xi'an 37.89 340 P **P** 21 20 12.3 +5.2
XAN AP pP 21 20 19.1 +4.1
XAN AMB AMB
comp=Z,8.0nm,1.0s,mb4.4
ARMA Armidale 39.12 140 *eP* **P** 21 20 18.6 +1.1
MAJO Matsushiro 39.98 18 *eP* **P** 21 20 23.1 -1.5
comp=Z,15nm,0.8s,mb4.8
MAT Matsushiro 39.98 18 P **P** 21 20 22.5 -2.1
MAT *eS* **S** 21 26 44.0 +16
MAT Matsushiro 39.98 18 *eP* **P** 21 20 23.0 -1.6
comp=Z,8.4nm,0.9s,mb4.5
MAT S **S** 21 26 45.0 +17
TOO Toolangi 41.20 154 ⇑*iP* **P** 21 20 36.2 +1.7
comp=Z,14nm,1.1s,mb4.5
LZH Lanzhou 41.64 335 *eP* **P** 21 20 40.3 +2.1
LZH AP pP 21 20 51.3 +5.1
LZH XP sP 21 20 54.8 +5.3
LZH AMB AMB
comp=Z,28nm,1.3s,mb4.7
LZH LR LR
comp=N,251nm,13.0s
LZH LR LR
comp=Z,289nm,17.3s,MS4.2
BJI Beijing 41.77 351 *eP* **P** 21 20 39.1 -0.2
BJI AMB AMB
comp=Z,5.0nm,1.0s,mb4.1
BJI AMB AMB
comp=Z,150nm,4.5s
BJI LR LR
comp=N,159nm,19.5s,MS4.0
BJI LR LR
comp=E,130nm,19.5s,MS4.0
BJI LR LR
comp=Z,238nm,23.3s,MS4.0
MDJ Mudanjiang 46.04 6 P **P** 21 21 13.3 -0.3
MDJ AP pP 21 21 22.3 +0.7
MDJ XP sP 21 21 26.1 +1.2
MDJ PP PP 21 23 04.9 +3.1
MDJ AMB AMB
comp=Z,26nm,0.9s,mb5.2
MDJ AMB AMB
comp=Z,42nm,4.5s
MDJ LR LR
comp=N,149nm,23.1s,MS4.0
MDJ LR LR
comp=E,120nm,26.6s,MS4.0
MDJ LR LR
comp=Z,250nm,22.1s,MS4.1
GTA Gaotai 46.16 334 *eP* **P** 21 21 14.9 +0.2
GTA AMB AMB
comp=Z,4.0nm,1.2s,mb4.2
ASAJ Asahikawa 48.26 18 P **P** 21 21 31.4 +0.4
comp=Z,19nm,1.1s,mb5.0,baz=218,slow=20,SNR=3.6
ASAJ pP pP 21 21 37.0 -2.2
comp=Z,19nm,0.8s,baz=328,slow=22,SNR=4.1
ASAJ LR LR 21 41 34.9
comp=Z,168nm,20.1s,MS4.0,baz=171,slow=36
HYB Hyderabad 48.36 295 *iP* **P** 21 21 39.0 +6.8
HYB Hyderabad 48.36 295 *eP* **P** 21 21 39.0 +6.8
KLR Kul'dur 50.83 7 *eP* **P** 21 21 49.2 -1.5
ULN Ulaanbaatar 51.15 346 *eP* **P** 21 21 52.7 -0.5
comp=Z,5.1nm,0.8s,mb4.5
SONM Songino Array 51.29 345 P **P** 21 21 53.7 -0.5
comp=Z,4.5nm,1.0s,mb4.3,baz=160,slow=9.0,SNR=24
SONM sP sP 21 22 02.3 -3.2
comp=Z,7.3nm,0.6s,baz=163,slow=8.5,SNR=26
ZAK Zakamensk 54.45 344 *eP* **P** 21 22 16.9 -0.8
WMQ Urumqi 55.37 329 *eP* **P** 21 22 33.0 +8.4
TLY Talaya 55.53 345 *eP* **P** 21 22 32.9 +7.3
TLY pmax pmax
comp=Z,80nm,0.8s
TLY MLR MLR
comp=Z,2μm,22.0s,MS5.1
MOY Mondy 56.25 343 *eP* **P** 21 22 30.6 -0.1
CLNS Chul'man 57.99 1 *eP* **P** 21 22 47.8 +4.8
CLNS pmax pmax
comp=Z,10.0nm,0.8s,mb4.9
CLNS pmax pmax
comp=N,5.0nm,0.6s
CLNS pmax pmax
comp=E,10.0nm,1.1s
CLNS pmax pmax
comp=N,4.0nm,1.0s
CLNS pmax pmax
comp=Z,1.0nm,0.6s,mb4.0
CLNS pmax pmax
comp=E,3.0nm,1.0s
RPZ Rata Peaks 59.44 142 P **P** 21 22 53.6 +0.3
comp=E,21nm,0.7s,mb5.3,baz=336,slow=3.6,SNR=14
BOD Bodaibo 59.50 354 *eP* **P** 21 22 52.3 -1.2
MKAR Makanchi Array 60.19 328 P **P** 21 22 56.6 -1.8
comp=E,0.9nm,0.3s,mb4.3,baz=127,slow=8.6,SNR=23
MKAR LR LR 21 50 38.5
comp=E,126nm,18.9s,MS4.1,baz=259,slow=38
MKAR Makanchi Array 60.19 328 P **P** 21 22 55.3 -3.1
MKAR pmax pmax
comp=Z,5.0nm,0.7s
URZ Urewera 60.98 134 P **P** 21 23 03.3 -0.5
comp=Z,26nm,1.2s,mb5.2,baz=331,slow=2.6,SNR=3.6
YAK Yakutsk 63.35 3*d iP* **P** 21 23 17.0 -2.4
YAK *i* *PP pP 21 23 34.2 +6.5
YAK pmax pmax
comp=N,2.0nm,1.0s
YAK pmax pmax
comp=Z,8.0nm,1.0s,mb4.8
YAK pmax pmax
comp=E,2.0nm,0.9s
YAK Yakutsk 63.35 3 *eP* **P** 21 23 17.9 -1.5
comp=E,13nm,0.6s,mb5.2
ZAL Zalesovo 63.88 335 P **P** 21 23 21.6 -1.3
comp=E,0.9nm,0.3s,mb4.2,baz=344,slow=2.4,SNR=3.1
ZAL pP pP 21 23 28.6 -2.7
comp=E,1.6nm,0.3s,baz=258,slow=5.5,SNR=5.9
MA2 Magadan 64.29 15 *eP* **P** 21 23 25.3 -0.3
MA2 *e**SP sP 21 24 01.1 +24
MA2 *e* 21 33 07.6
MA2 pmax pmax
comp=Z,10.0nm,0.8s,mb4.9
MA2 MLR MLR
comp=Z,350nm,25.0s,MS4.5
KURK Kurchatov 64.55 330 *eP* **P** 21 23 34.3 +6.9
KKAR Karatay Array 65.08 320 *iP* **P** 21 23 27.2 -3.7
KKAR pmax pmax
comp=Z,1.0nm,0.5s,mb4.1
SEY Seymchan 67.59 14 *eP* **P** 21 23 47.0 +0.4
SEY *PP pP 21 24 13.7 +19
SEY 21 26 13.5
SEY *ePPP PPP 21 27 52.2 -2.3
SEY *eS S 21 32 30.2 -10
SEY *SS 21 33 14.3
SEY 21 33 31.1
SEY pmax pmax
comp=Z,50nm,1.1s,mb5.5
SEY pmax pmax
comp=N,20nm,1.3s
SEY pmax pmax
comp=E,8.0nm,1.3s
SEY smax
comp=N,70nm,4.3s
SEY smax
comp=E,20nm,5.2s
SEY MLR MLR
comp=Z,310nm,22.0s,MS4.5
SEY MLR MLR
comp=N,180nm,25.0s
SEY MLR MLR
comp=E,3.0nm,16.0s
FX1 Attu Island--F 67.88 30 P **P** 21 23 48.8 +0.3
comp=E,25nm,0.8s,mb5.3,baz=47,slow=15,SNR=6.7
VOSK Vostochnaya 69.60 329 P **P** 21 23 59.1 -0.1
VOSK pmax pmax
comp=Z,1.0nm,0.7s,mb3.9
BVA0 Borovoye Array 70.06 329 *eP* **P** 21 24 02.3 +0.3
BVAR Borovoye Array 70.06 329 P **P** 21 24 01.4 -0.6
comp=Z,0.3nm,0.6s,baz=225,slow=40,SNR=5.1
BVAR pP pP 21 24 09.1 -1.2
comp=Z,0.9nm,0.4s,baz=149,slow=8.6,SNR=7.4
BRVK Borovoye 70.13 329 P **P** 21 24 01.2 -1.2
BRVK *e* pP 21 24 09.5 -1.2
ZRNK Zerenda 70.74 328 P **P** 21 24 02.5 -3.7
ZRNK pmax pmax
comp=Z,7.0nm,1.1s,mb4.5
ZRNK Zerenda 70.74 328 *eP* **P** 21 24 04.2 -2.0
TIXI Tiksi 72.93 2 *eP* **P** 21 24 17.1 -1.8
TIXI *e* 21 24 34.5
TIXI *eS S 21 33 44.0 +1.6
TIXI pmax pmax
comp=Z,139nm,1.0s,mb5.8
TIXI Tiksi 72.93 2 *eP* **P** 21 24 17.3 -1.6
comp=Z,5.6nm,0.3s,mb5.0
AB31 Akbulak array 74.30 322 P **P** 21 24 26.3 -0.9
AB31 pmax pmax
comp=Z,1.0nm,0.5s,mb4.0
BILL Bilibino 75.16 15 *eP* **P** 21 24 28.7 -3.1
BILL pmax pmax
comp=Z,6.0nm,1.5s,mb4.3
SVE Sverdlovsk 76.80 330 *eP* **P** 21 24 49.4 +8.1
ARU Arti 77.71 329 ⇑*iP* **P** 21 24 52.5 +6.2
ARU *i* pP 21 25 02.0 +7.3
ARU *e* 21 27 48.5
ARU *ePPP PPP 21 29 36.8 +4.5
ARU *eS S 21 34 36.5 +1.1
ARU *eSS SS 21 39 42.4 +3.9
ARU pmax pmax
comp=E,9μm,1.6s
ARU MLR MLR
comp=Z,100nm,20.0s,MS4.1
ARU MLR MLR
comp=N,30nm,16.0s,MS4.0
ARU MLR MLR
comp=E,50nm,18.0s,MS4.0
ARU Arti 77.71 329 P **P** 21 24 46.1 -0.2
comp=E,4.6nm,0.9s,mb4.4
MAW Mawson 78.04 200 P **P** 21 24 47.6 -0.3
baz=98,slow=3.5
VNDA Vanda 78.81 172 P **P** 21 24 52.0 0.0
comp=E,2.6nm,0.7s,mb4.3,baz=290,slow=6.1,SNR=5.4
VNDA LR LR 21 58 42.6
comp=E,307nm,20.0s,MS4.6,baz=338,slow=35
KIV Kislovodsk 84.56 314 *eP* **P** 21 25 32.4 +10
KIV pmax pmax
comp=Z,7.0nm,1.3s,mb4.6
KMBO Kilima Mbogo 86.58 269 P **P** 21 25 34.8 +1.3
comp=Z,1.1nm,0.8s,mb4.4,baz=72,slow=6.1,SNR=7.2
IMA Indian Mountai 88.15 24 *eP* **P** 21 25 41.2 +1.5
comp=Z,8.8nm,0.8s,mb5.0
QSPA South Pole Qui 88.60 180 *eP* **P** 21 25 42.6 +0.9
comp=Z,3.6nm,0.7s,mb4.8
QSPA LR LR
comp=Z,130nm,21.1s,MS4.3
OBN Obninsk 89.53 325 *eP* **P** 21 25 54.1 +7.5
OBN pmax pmax
comp=Z,15nm,1.4s,mb5.1
ILAR Eielson Array 90.88 25 P **P** 21 25 51.3 -1.3
comp=Z,0.5nm,1.0s,mb3.8,baz=225,slow=4.0,SNR=4.6
ILAR sP sP 21 26 03.5 -0.4
comp=Z,0.7nm,0.6s,baz=246,slow=5.6,SNR=5.6
AKASG Malin Array Be 93.97 321 LR LR 22 18 03.9
comp=Z,35nm,18.1s,MS3.9,baz=100,slow=42
DAWY Dawson 94.16 26 *eP* **P** 21 26 08.5 +0.8
ARCES ARCESS Array B 94.17 340 P **P** 21 26 09.9 +2.3
comp=Z,1.3nm,1.0s,mb4.3,baz=90,slow=4.5,SNR=2.9
FINES FINESS Array B 94.90 331 LR LR 22 16 13.8
comp=Z,86nm,18.0s,MS4.3,baz=150,slow=40
YKA Yellowknife Ar 105.27 24 PP PP 21 31 24.1 +2.2
comp=Z,0.1nm,0.4s,baz=288,slow=3.9,SNR=3.9
YKA PKKPbc 21 42 36.0
comp=Z,0.1nm,0.5s,baz=117,slow=2.9,SNR=5.8
PDAR Pinedale Array 117.03 42 PKP PKPdf 21 31 35.1 -2.8
comp=Z,0.4nm,0.9s,baz=170,slow=5.5,SNR=3.0
PDAR PKKPbc 21 42 02.9
comp=Z,1.2nm,0.8s,baz=108,slow=4.7,SNR=9.3
ANMO Albuquerque 122.52 49 *i* PKIKP PKPdf 21 31 46.9 -1.9
TXAR Lajitas Array 126.93 54 PKP PKPdf 21 31 55.1 -2.4
comp=Z,0.1nm,0.3s,baz=281,slow=1.8,SNR=2.1
CPUP Villa Florida 152.47 178 PKPbc PKPdf 21 32 47.6 +5.0
comp=Z,3.7nm,0.6s,baz=177,slow=1.8,SNR=6.8
CPUP PKPab PKPab 21 32 56.6 -0.9
comp=Z,7.2nm,1.0s,baz=173,slow=1.4,SNR=5.9
LVC Limon Verde 153.14 153 PKPbc PKPdf 21 32 50.5 +6.8
comp=Z,3.6nm,0.7s,baz=332,slow=1.3,SNR=4.5
LPAZ La Paz 158.86 146 PKPab PKPab 21 33 27.3 +2.3
comp=Z,3.4nm,1.0s,baz=276,slow=4.8,SNR=5.5
BDFB Brasilia 161.31 205 PKPab PKPab 21 33 36.0 +0.5
comp=Z,3.4nm,0.8s,baz=66,slow=1.5,SNR=4.7

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*ATH **14** 21:34:05.1,34.02N×25.27E,h3km,MD4.0/18,ML4.3*
*NEIC **14** 21:34:08.3,34.23N×25.25E,h16km,mb4.5/24, MD4.1(ISK),ML4.2(ATH),After ATH.*
*ZUR_RM **14** 21:34:08,34.23N×25.25E,h21km,Mw4.3/9,Moment Tensor Solution. s9 Moment tensor: Scale 10^{15}Nm; M_{rr}-2.95; $M_{\theta\theta}$2.77; $M_{\phi\phi}$0.17; $M_{r\theta}$1.38; $M_{r\phi}$-0.79; $M_{\theta\phi}$-0.16; Best double couple: $M_0$3.28×10^{15} NP1:ϕ_s282°, δ57°, λ-94°. NP2:ϕ_s110°, δ33°, λ-83°. Principal axes: T:3.296, Plg12°, Azm15°; N:-.034, Plg4°, Azm284°; P:-3.262, Plg77°, Azm178°;*
*MOS **14** 21:34:09.0±2.1,34.38N×25.04E,h33km,mb4.1/1 Error ellipse: s-maj=19.0km s-min=10.4km az=82.1*
*THE **14** 21:34:11.4,34.40N×25.22E,h16km, ML4.3*
*IDC **14** 21:34:15.0±1.9,34.68N×25.30E,h58km±10km,mb3.8/12, mb1 3.9/18,mb1mx3.8/28,MS3.3/1,Ms1 3.3/1, ms1mx2.6/36,Error ellipse: s-maj=27.6km s-min=13.9km az=8.0*
*NIC **14** 21:34:16.4±0.3,33.88N×25.85E,h25km,mb4.1,ML3.2, MW3.5*

ISC 14 21:34:08.7±0.5,34.26N±0.03×25.24E±0.03,h36km±5km, n198,σ1§17/217,mb4.2/46,6C-4D,Crete

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
XRY	**Khrisi**	**0.72**	**31**	⇓*i*	PG	**P**		**21 34 23.0**	**+0.6**
KRIS	**Kristallenia**	**0.94**	**13**	*e*	Pg	**P**		**21 34 26.0**	**+0.4**
NPS	**Neapolis**	**1.05**	**17**	*e*	PB	**P**		**21 34 28.0**	**+0.9**
IDI	**Anoyia**	**1.07**	**344**	P		**P**		**21 34 28.6**	**+1.2**
IDI	140nm,0.3s,baz=154,slow=18,SNR=433			S		**S**		**21 34 41.1**	**-0.2**
VAM	**Vamos**	**1.43**	**324**	⇓*i*	PG	**P**		**21 34 35.7**	**+3.1**
KARP	**Karpathos**	**2.04**	**50**	*e*	PN	**P**		**21 34 44.5**	**+3.3**
THR6	**Thira Island,**	**2.10**	**3**	*e*	Pb	**P**		**21 34 43.0**	**+0.9**
SANT	**Santorini**	**2.12**	**5**	*e*	Pn	**P**		**21 34 42.6**	**+0.3**
THR1	**Thera Island**	**2.12**	**5**	*e*	Pb	**P**		**21 34 43.1**	**+0.8**
THR3	**Thira Island,**	**2.15**	**3**	*e*	Pn	**P**		**21 34 43.5**	**+0.7**
THR5	**Thira Island,**	**2.16**	**2**	*e*	Pn	**P**		**21 34 43.4**	**+0.4**
THR4	**Thira Island,**	**2.20**	**3**	*e*	Pn	**P**		**21 34 44.8**	**+1.2**
KYTH	**Kithira**	**2.71**	**319**	*e*	PB	**P**		**21 34 55.6**	**+4.8**
NISR	**Nisiros**	**2.81**	**33**	*e*	PB	**P**		**21 34 58.0**	**+5.7**
APE	**Apeiranthos**	**2.82**	**5**	P		**P**		**21 34 51.5**	**-0.9**
APE				S		**S**		**21 35 29.2**	**+3.7**
APE	**Apeiranthos**	**2.82**	**5**	*e*	Pn	**P**		**21 34 53.7**	**+1.3**
ARG	**Arkhangelos**	**3.07**	**50**	*e*	PN	**P**		**21 34 58.1**	**+2.2**
VLI	**Veliai**	**3.09**	**323**	*e*	Pn	**P**		**21 34 57.5**	**+1.2**
BDRM	**Kayabasi**	**3.33**	**32**	*i*	P	**P**		**21 35 00.4**	**+0.8**

SMG Samos 3.68 20 *e*PN **P** 21 35 04.2 -0.4
NAIG Nisos Aigina 3.77 338 *e*PB **P** 21 35 13.0 +7.1
YER Yerkesik 3.79 40 PN **P** 21 35 07.0 +0.8
ATH Athens Observa 3.91 342 *e*PN **P** 21 35 08.0 +0.1
NSAL Nisos Salamina 3.92 339 *e*PB **P** 21 35 14.7 +6.7
PTL Penteli 3.95 344 *e*PN **P** 21 35 10.0 +1.6
ITM Ithomi 3.97 318 *e*PN **P** 21 35 08.5 -0.3
MPAR Parnis Oros 4.07 343 *e*PB **P** 21 35 17.1 +6.9
MKIT Kithairon Oros 4.24 338 *e*PN **P** 21 35 18.6 +6.1
IZM Izmir 4.44 21 *e*PN **P** 21 35 15.0 -0.5
KDAG Bornova 4.45 21 *i* P **P** 21 35 15.9 +0.4
DNZL Cakiroluk 4.61 41 *i* P **P** 21 35 18.0 +0.1
DENT Denizli 4.65 40 PN **P** 21 35 18.6 +0.2
MANT Manisa 5.00 31 *i* P **P** 21 35 23.1 -0.3
AOS Alonnisos 5.03 348 *e*Pn **P** 21 35 22.9 -0.8
PRK Paraskevi 5.05 9 *e*PN **P** 21 35 28.3 +4.3
AKS Akhisar 5.06 23 PN **P** 21 35 24.1 0.0
AGG Agios Georgios 5.30 335 *e*Pn **P** 21 35 27.7 +0.2
EVR Evrytania 5.41 330 *e*PN **P** 21 35 31.5 +2.5
VLS Valsamata 5.43 317 *e*PN **P** 21 35 30.5 +1.2
ISP Isparta 5.57 48 *e*PN **P** 21 35 32.5 +1.2
LKD Levkas 5.78 322 *e*Pn **P** 21 35 34.7 +0.5
AKMC Akamas 5.89 80 ⇑P **P** 21 35 35.2 -0.6
AKMC S **S** 21 36 38.0 -5.1
PPCY Paphos 5.89 82 P **P** 21 35 35.6 -0.2
OUR Ouranopolis 6.15 351 *e*Pn **P** 21 35 38.5 -1.0
ALT Altintas 6.18 38 PN **P** 21 35 40.5 +0.6
SZAC Souni-Zanaja 6.33 83 ⇑P **P** 21 35 41.5 -0.5
5.9nm,0.1s
SZAC S **S** 21 36 47.9 -6.1
SZAC Souni-Zanaja 6.33 83 ⇑*iP* **S** 21 35 41.5 -0.5
SZAC S **S** 21 36 47.9 -6.1
LEF Lefka 6.36 80 *e*PN **P** 21 35 41.5 -0.9
IGT Igoumenitsa 6.57 325 *e*Pn **P** 21 35 45.0 -0.4
IGT *e*Sn **S** 21 36 55.9 -4.1
MAMC Mammari 6.63 80 ⇓P **P** 21 35 46.5 +0.2
MAMC Mammari 6.63 80 ⇓*iP* **P** 21 35 46.5 +0.2
ULDT Uludag 6.65 27 *i* P **P** 21 35 43.4 -3.1
CSS Prodhromos 6.71 82 ⇑P **P** 21 35 46.4 -0.9
2.3nm,0.2s
CSS S **S** 21 36 58.1 -5.3
CSS Prodhromos 6.71 82 *e*Pn **S** 21 35 46.0 -1.4
CSS Sn **S** 21 36 59.1 -4.2
ESKT Eskisehir 6.91 39 *e*PN **P** 21 35 51.2 +1.0
ESKT Eskisehir 6.91 39 *i* P **P** 21 35 48.7 -1.5
KEK Kerkira 6.97 323 *e*PN **P** 21 35 49.2 -1.8
KIZT Kizilcal 7.06 47 *i* PN **P** 21 35 51.4 -0.8
KNT Kendrikon 7.14 346 *e*Pn **P** 21 35 52.6 -0.8
FNA Florina 7.20 336 *e*Pn **P** 21 35 54.0 -0.3
FNA *e*Sn **S** 21 37 10.6 -5.1
PHNC Paralimni 7.29 82 P **P** 21 35 55.3 -0.1
LCI Lecce 8.31 319 *e*Pn **P** 21 36 07.5 -2.1
SOI Samo 8.35 300 *e*Pn **P** 21 36 09.6 -0.5
HNTI Hanita 8.36 95 Pn **P** 21 36 09.6 -0.7
HNTI Sn **S** 21 37 36.2 -8.4
KZIT Kziot 8.42 111 Pn **P** 21 36 10.3 -0.8
KZIT Sn **S** 21 37 38.5 -7.4
SLTI Sal'it 8.45 101 Pn **P** 21 36 10.2 -1.3
SLTI Sn **S** 21 37 38.8 -8.0
SVTA Shivta 8.58 110 Pn **P** 21 36 13.2 -0.1
MTTG Motta San Giov 8.58 299 *e*Pn **P** 21 36 12.9 -0.4
RTMM Retamin 8.58 109 Pn **P** 21 36 13.0 -0.4
BRTR Keskin Array B 8.65 48 P **P** 21 36 13.4 -1.0
0.3nm,0.3s,baz=218,slow=16,SNR=5.6
BRTR S **S** 21 37 45.7 -6.2
0.2nm,0.3s,baz=216,slow=27,SNR=3.0
BRTR Keskin Array B 8.65 48 P **P** 21 36 13.4 -1.0
BRTR S **S** 21 37 45.7 -6.2
MASH Mash'abbe Sade 8.68 109 Pn **P** 21 36 14.5 -0.2
MMLI Mount Malkishu 8.71 99 Pn **P** 21 36 14.6 -0.5
KSDI Kefar Szold 8.74 94 Pn **P** 21 36 15.0 -0.6
HRI Mount Hermon 8.79 94 Pn **P** 21 36 14.8 -1.5
PZI Palazzolo 8.83 291 *e*Pn **P** 21 36 16.5 -0.4
HMDT Nahal Hemdat 8.84 100 Pn **P** 21 36 16.1 -0.9
MEU Monte Lauro 8.86 292 *e*Pn **P** 21 36 18.1 +0.9
KSHT Keshet 8.91 95 Pn **P** 21 36 17.0 -0.9
DRGI Dragot 8.94 104 Pn **P** 21 36 17.7 -0.6
MZDA Masada 9.01 106 Pn **P** 21 36 18.9 -0.5
MZDA Sn **S** 21 37 53.2 -7.5
KMTI Karmit 9.04 115 Pn **P** 21 36 20.1 +0.4
KMTI Sn **S** 21 37 54.0 -7.4
ORI Oriolo Calabro 9.10 312 *e*Pn **P** 21 36 18.8 -1.7
PRNI Paran 9.13 113 Pn **P** 21 36 21.5 +0.5
PRNI Sn **S** 21 37 56.2 -7.5
MKRJ Makawir 9.15 104 Pn **P** 21 36 21.1 -0.1
ZFRI Zfri 9.17 111 Pn **P** 21 36 21.3 -0.3
VAE Valguarnera 9.36 293 P **P** 21 36 23.7 -0.5
1.4nm,0.3s,baz=277,slow=14,SNR=3.8
MGR Morigerati 9.70 310 *e*Pn **P** 21 36 26.7 -2.2
ALWS Ilw as Safayha 9.70 118 P **P** 21 36 30.1 +1.2
ALWS S **S** 21 38 13.7 -4.1
HAQS Haql 9.75 120 P **P** 21 36 30.0 +0.5
HAQS S **S** 21 38 14.2 -4.5
SLCN Sala Consilina 9.80 311 *e*Pn **P** 21 36 29.0 -1.2
JMOS Jabal al Moall 9.81 118 P **P** 21 36 31.3 +0.8
JMOS S **S** 21 38 16.2 -4.3
ASF Jabal al Asfar 9.98 99 P **P** 21 36 32.1 -0.7
0.9nm,0.3s,baz=196,slow=5.9,SNR=8.8
ASF S **S** 21 38 20.8 -3.9
1.4nm,0.3s,baz=211,slow=21,SNR=3.8
SGO Sicignano 10.10 311 *e*Pn **P** 21 36 32.2 -2.1
MRLC Muro Lucano 10.10 313 *e*Pn **P** 21 36 31.8 -2.5
BDAS Al Bad' 10.23 122 P **P** 21 36 36.1 -0.1
CSSN Cassano Irpino 10.45 312 *e*Pn **P** 21 36 37.4 -1.7
AYUS 'Aynunah 10.50 122 P **P** 21 36 39.6 -0.2
JMQS Jabal Moqyreh 10.53 118 P **P** 21 36 41.3 +1.0
SGG Gregorio Mates 11.15 313 *e*Pn **P** 21 36 48.4 -0.3
MLR Mumie Rosu 11.23 3 LR LR 21 41 25.9
comp=Z,147nm,19.8s,baz=318,slow=40
TBKS Tabuk 11.39 119 P **P** 21 36 52.7 +0.8
TBKS S **S** 21 38 54.9 -4.1
CII Carovilli 11.40 314 *e*Pn **P** 21 36 51.3 -0.7
CII Sn **S** 21 38 48.8 -10
PGF Pioggiola 15.17 308 *eP* **P** 21 37 44.3 +2.4
6.5nm,0.8s
VRAC Vranov 16.35 340 P **P** 21 37 58.4 +1.6
0.1nm,0.3s,baz=168,slow=8.9,SNR=5.2
KIV Kislovodsk 16.62 49*c iP* **P** 21 38 03.7 +3.4
KIV pmax pmax
comp=Z,23nm,0.9s
KIV Kislovodsk 16.62 49 *eP* **P** 21 38 03.0 +2.7
comp=Z,42nm,1.3s
AKASG Malin Array Be 16.69 9 P **P** 21 38 00.7 -0.5
comp=Z,3.4nm,0.3s,baz=201,slow=11,SNR=15
ZEI Tsey 16.87 54 *eP* **P** 21 38 05.0 +1.5
GERES GERESS Array B 16.91 333 P **P** 21 38 04.9 +0.9
comp=Z,0.3nm,0.3s,baz=140,slow=10,SNR=13
KHC Kasperske Hory 17.20 333 *eP* **P** 21 38 12.0 +4.5
KHC x 21 38 19.0
KHC Kasperske Hory 17.20 333 *eP* **P** 21 38 12.0 +4.5
KHC *e* 21 38 19.0
GOF Gofitskoye 17.40 46 ⇓*iP* **P** 21 38 22.0 +12
GOF pmax pmax
comp=Z,30nm,1.3s
MBDF Montbardon 17.64 312 *eP* **P** 21 38 13.9 +0.7
comp=Z,12nm,1.0s
LPG La Plagne 18.05 314 *eP* **P** 21 38 18.5 +0.2
LPL La Plagne 18.07 314 *eP* **P** 21 38 18.5 0.0
GRA1 Grafenberg Arr 18.57 330 *eP* **P** 21 38 23.6 -1.1
GRF Grafenberg Arr 18.57 330 *eP* **P** 21 38 23.6 -1.1
CABF La Chapelle 19.04 316 *eP* **P** 21 38 29.6 -0.7
comp=Z,7.7nm,0.7s
LASF Ste Croix 19.22 307 *eP* **P** 21 38 31.7 -0.6
CLL Collm 19.22 336 *e**SP 21 38 39.0
HINF Hinteralfeld 19.32 320 *eP* **P** 21 38 32.5 -1.0
comp=Z,4.3nm,0.5s
CDF Champ du Feu 19.48 322 *eP* **P** 21 38 32.2 -3.0
comp=Z,15nm,1.0s
HAU Haudompre 19.71 320 *eP* **P** 21 38 33.8 -3.9
comp=Z,6.2nm,0.5s
EIBI Ibiza 19.74 291 P **P** 21 38 42.9 +4.9
comp=Z,50nm,1.5s
SUW Suwalki 19.81 356 *eP* **P** 21 38 35.9 -2.8
MTLF Montolieu 20.06 304 *eP* **P** 21 38 41.5 0.0
EPOB Poblet 20.33 297 P **P** 21 38 44.8 +0.5
comp=Z,26nm,1.6s
SMF Signal de Mont 20.38 314 *eP* **P** 21 38 44.9 +0.1
comp=Z,2.9nm,0.5s
MEZF Maizieres J'vi 20.70 320 *eP* **P** 21 38 47.6 -0.5
CAF Calviac 20.73 308 *eP* **P** 21 38 48.2 -0.3
comp=Z,9.0nm,1.0s
AVF Avril sur Loir 20.74 314 *eP* **P** 21 38 48.8 +0.2

SSF	Saint Saulge	20.79	314	*eP*		P		21 38 47.2	-1.8
EBEN	Beniarda	20.93	290	P		P		21 38 45.1	-5.5
BGF	Bois d'Agland	20.94	313	*eP*		P		21 38 50.1	-0.5
	comp=Z,10nm,0.5s								
THR	Tehran	21.23	78	P		P		21 38 55.8	+2.1
	comp=Z,4.9nm,0.7s,mb4.0,baz=253,slow=7.4,SNR=21								
RJF	Les Rejaudoux	21.23	308	*eP*		P		21 38 52.8	-0.8
	comp=Z,15nm,0.9s,mb4.0								
EPF	Esparros	21.27	302	*eP*		P		21 38 54.4	+0.4
LFF	La Frestale	21.61	307	*eP*		P		21 38 56.6	-0.7
	comp=Z,18nm,1.0s,mb4.2								
GIVF	Givet	21.79	323	*eP*		P		21 38 57.1	-2.0
BAIF	Baives	22.08	322	*eP*		P		21 39 01.3	-0.7
	comp=Z,12nm,0.6s,mb4.2								
OBN	Obninsk	22.30	17	*eP*		P		21 39 08.1	+4.0
OBN				*e*				21 39 20.5	
OBN					pmax	pmax			
	comp=Z,11nm,1.0s,mb4.2								
SJPF	Ste Jean	22.40	301	*eP*		P		21 39 06.5	+1.3
	comp=Z,13nm,1.0s,mb4.0								
ETOR	Torete	22.56	295	P		P		21 39 09.6	+2.8
EVIA	Vianos	22.70	289	P		P		21 39 07.1	-1.2
EHUE	Huescar	22.75	287	P		P		21 39 07.7	-1.0
MFF	Saint Martin d	22.81	310	*eP*		P		21 39 09.0	-0.2
	comp=Z,9.7nm,0.5s,mb4.2								
EBER	Berja	23.00	285	P		P		21 39 13.3	+2.1
	comp=Z,40nm,1.4s,mb4.7								
MOS	Moscow	23.13	18	*eP*		P		21 39 11.4	-0.8
EQES	Quesada	23.13	287	P		P		21 39 12.2	-0.2
	comp=Z,14nm,1.3s,mb4.2								
ECOG	Cogollos-Vega	23.53	286	P		P		21 39 15.0	-1.4
	comp=Z,5.9nm,0.7s,mb4.1								
LDF	La Druitiere	23.67	315	*eP*		P		21 39 17.5	0.0
	comp=Z,2.4nm,0.3s,mb3.8								
EBAN	Banos Encina	23.70	288	P		P		21 39 16.2	-1.8
ERON	Agron	23.73	285	P		P		21 39 16.8	-1.4
	comp=Z,9.2nm,0.5s,mb4.5								
ESDC	Sonseca Array	23.90	292	P		P		21 39 22.5	+2.7
	comp=Z,1.5nm,0.5s,mb3.7,baz=85,slow=9.0,SNR=9.9								
ESLA	Sonseca Array	23.90	292	*eP*		P		21 39 21.4	+1.6
FLN	La Foliniere	23.96	315	*eP*		P		21 39 20.9	+0.6
	comp=Z,9.2nm,0.6s,mb4.1								
ELAN	Lanestosa	24.00	300	P		P		21 39 17.0	-3.8
ELOJ	Sierra Loja	24.00	285	P		P		21 39 22.9	+2.0
	comp=Z,2.9nm,0.8s,mb3.8								
GRR	Gorron	24.01	314	*eP*		P		21 39 21.6	+0.8
	comp=Z,2.4nm,0.4s,mb3.7								
ELUQ	Luque	24.08	286	P		P		21 39 23.7	+2.0
	comp=Z,4.1nm,0.6s,mb4.0								
GUD	Guadarrama	24.12	294	P		P		21 39 24.7	+2.7
	comp=Z,5.7nm,0.6s,mb4.2								
EADA	Adamuz	24.32	288	P		P		21 39 25.8	+1.8
	comp=Z,12nm,1.6s,mb4.1								
ELIJ	Sierra de Lija	24.99	285	P		P		21 39 31.8	+1.2
	comp=Z,3.4nm,0.5s,mb4.1								
QUIF	Quistinic	25.22	311	*eP*		P		21 39 31.4	-1.1
	comp=Z,6.9nm,0.4s,mb4.2								
EARI	Arriondas	25.29	300	P		P		21 39 32.2	-1.0
ESPR	Espera	25.38	285	P		P		21 39 34.4	+0.2
	comp=Z,5.3nm,0.5s,mb4.3								
ROSF	Rostrenen	25.45	312	*eP*		P		21 39 32.8	-1.9
	comp=Z,6.2nm,0.5s,mb4.1								
EMIN	Mina Concepcio	25.98	287	P		P		21 39 42.6	+2.8
	comp=Z,2.2nm,0.6s,mb3.9								
ECAL	Calabor	26.20	296	P		P		21 39 41.5	-0.2
	comp=Z,14nm,0.9s,mb4.5								
EBAD	Badajoz	26.23	289	P		P		21 39 43.5	+1.3
	comp=Z,5.1nm,0.5s,mb4.3								
EGRO	El Granado	26.64	287	P		P		21 39 46.5	+0.6
	comp=Z,7.8nm,0.6s,mb4.2								
EPON	Pontenova	26.69	299	P		P		21 39 47.0	+0.8
	comp=Z,42nm,1.4s,mb4.8								
HFS	Hagfors	26.97	347	P		P		21 39 47.8	-0.9
	comp=Z,3.0nm,0.8s,mb3.9,baz=180,slow=7.4,SNR=10								
EVO	Evora	27.02	289	*eP*		P		21 39 51.3	+2.0
	comp=Z,8.3nm,0.8s,mb4.0								
FINES	FINESS Array B	27.21	1	P		P		21 39 47.5	-3.4
	comp=Z,0.6nm,0.3s,mb3.5,baz=165,slow=12,SNR=7.8								
FINES					PcP	PcP		21 43 10.8	+0.1
	comp=Z,0.6nm,0.5s,baz=180,slow=3.8,SNR=5.1								
FINES	FINESS Array B	27.21	1	P		P		21 39 47.5	-3.4
FINES					PcP	PcP		21 43 10.8	+0.1
KAF	Kangasniemi	27.89	1	*ep*		P		21 39 50.5	-6.5
EKA	Eskdalemuir Ar	28.82	326	P		P		21 40 04.8	-0.5
	comp=Z,1.2nm,0.6s,mb3.8,baz=127,slow=10,SNR=5.3								
JOF	Joensuu	28.94	6	*ep*		P		21 40 02.0	-4.3
ARU	Arti	31.75	35	*eP*		P		21 40 29.8	-1.6
	comp=Z,1.9nm,0.4s,mb4.3								
ARCES	ARCESS Array B	35.33	0	P		P		21 40 59.3	-2.9
	comp=Z,1.4nm,0.8s,mb3.9,baz=180,slow=8.5,SNR=8.7								
ARCES					PcP	PcP		21 43 32.0	-0.2
	comp=Z,0.3nm,0.3s,baz=180,slow=2.4,SNR=3.6								
MKAR	Makanchi Array	44.22	56	P		P		21 42 16.6	+0.6
	comp=Z,2.8nm,0.7s,mb4.1,baz=272,slow=6.5,SNR=18								
MKAR					PcP	PcP		21 44 02.0	+1.3
	comp=Z,2.1nm,0.9s,baz=278,slow=5.2,SNR=2.8								
ZAL	Zalesovo	45.57	46	P		P		21 42 26.4	-0.3
	comp=Z,3.9nm,0.4s,mb4.7,baz=118,slow=5.5,SNR=13								
DANN	Dangsing	49.77	80	*eP*		P		21 43 01.8	+2.0
KOLN	Koldanda	49.86	81	*eP*		P		21 43 01.2	+0.7
	comp=Z,17nm,0.9s,mb5.1								
GKN	Gorkha	50.61	80	*eP*		P		21 43 07.3	+1.1
	comp=Z,24nm,0.7s,mb5.2								
DMN	Daman	51.15	80	*eP*		P		21 43 11.5	+1.2
	comp=Z,28nm,0.8s,mb5.3								
KKN	Kakani	51.22	80	*eP*		P		21 43 11.8	+1.0
	comp=Z,17nm,0.6s,mb5.2								
PKI	Pulchoki	51.41	80	*eP*		P		21 43 13.5	+1.2
	comp=Z,26nm,0.9s,mb5.2								
ZAK	Zakamensk	57.30	48	*eP*		P		21 43 55.4	+0.4
SONM	Songino Array	60.01	50	P		P		21 44 14.3	+0.3
	comp=Z,0.8nm,0.4s,mb4.1,baz=288,slow=8.3,SNR=17								
BOD	Bodaibo	61.13	38	*eP*		P		21 44 15.4	-6.0
SCHQ	Schefferville	63.92	320	P		P		21 44 39.8	0.0
	comp=Z,1.6nm,0.5s,mb4.3,baz=35,slow=3.5,SNR=9.7								
CMAR	Chiang Mai Arr	66.61	83	P		P		21 44 58.4	+0.6
	comp=Z,1.5nm,0.6s,mb4.2,baz=297,slow=8.3,SNR=12								
BILL	Bilibino	73.92	14	*eP*		sP		21 45 58.7	+2.4
BILL					pmax	pmax			
	comp=Z,1.0nm,0.9s,mb3.8								
YKA	Yellowknife Ar	78.33	342	P		P		21 46 06.0	-0.3
	comp=Z,0.3nm,0.6s,mb3.4,baz=32,slow=5.4,SNR=6.9								
WRA	Warramunga Arr	116.42	97	PKP		PKPdf		21 52 52.1	+3.0
	comp=Z,0.2nm,0.5s,baz=219,slow=1.6,SNR=5.8								

*IDC **14** 21:37:39.8±0.6,55.39N×164.86E,mb3.9/18,mb1 4.2/20, mb1mx4.1/27,ML3.8/2,MS3.2/1,Ms1 3.4/1,ms1mx2.8/29, Error ellipse: s-maj=17.4km s-min=11.6km az=11.0*
*MOS **14** 21:37:43.4±1.2,55.17N×165.05E,h50km,mb4.2/10,Error ellipse: s-maj=13.3km s-min=10.3km az=61.5*
*KRSC **14** 21:37:44.0±0.7,55.12N×165.06E,h40km±6km,ML4.7*
*NEIC **14** 21:37:46.6±0.8,55.19N×164.97E,h54km±8km,mb4.5/10, Error ellipse: s-maj=8.4km s-min=5.2km az=169.0*

ISC 14 21:37:43.5±0.4,**55.12N**±0.03×**165.03E**±0.04,**h44**km±4km, **n101**,σ1§**12**/132,**mb4.2**/30,**MS3.1**/1,**Komandorsky Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKI	**Bering**	**0.55**	**81**	*i* P	**P**	**21 37 54.1**	**-1.0**
BKI				*i* S	**S**	**21 38 02.0**	**-1.4**
BKI				Smax			
	15μm,0.3s						
KBTR	**Krutoberegovo**	**1.66**	**312**	P	**P**	**21 38 08.4**	**-2.3**
KBTR				S	**S**	**21 38 25.9**	**-5.0**
KBTR	**Krutoberegovo**	**1.66**	**312**	*eP*	**P**	**21 38 08.4**	**-2.3**
KBTR				*eS*	**S**	**21 38 28.3**	**-2.6**
KBG	**Krutoberegovo**	**1.73**	**312**	*eP*	**P**	**21 38 09.8**	**-2.0**
KBG				*eS*	**S**	**21 38 31.3**	**-1.5**
KBG				Smax			
	1μm,0.8s						
MKZ	**Mys Kozlova**	**1.99**	**255**	P	**P**	**21 38 15.7**	**+0.3**
MKZ				S	**S**	**21 38 38.2**	**-1.0**
MKZ	**Mys Kozlova**	**1.99**	**255**	*i* P	**P**	**21 38 15.7**	**+0.3**
MKZ				*eS*	**S**	**21 38 38.6**	**-0.6**
ZLN	**Zelenaya**	**2.56**	**292**	*eP*	**P**	**21 38 24.5**	**+1.0**
ZLN				*eS*	**S**	**21 38 54.2**	**+0.6**
SVLR	**Shiveluch**	**2.59**	**306**	*eP*	**P**	**21 38 25.8**	**+1.8**
SVLR				*eS*	**S**	**21 38 56.3**	**+1.8**
CIRR	**Tsirk**	**2.62**	**294**	*eP*	**P**	**21 38 25.4**	**+1.0**
CIRR				*eS*	**S**	**21 38 54.8**	**-0.4**
LGNR	**Loginova**	**2.64**	**293**	*eP*	**P**	**21 38 25.6**	**+0.9**
LGNR				*eS*	**S**	**21 38 55.7**	**0.0**
KLY	**Klyuchi**	**2.75**	**298**	*eP*	**P**	**21 38 25.4**	**-0.8**
KLY				*eS*	**S**	**21 38 54.9**	**-3.5**
KMNR	**Kamenistaya**	**2.80**	**285**	*i* P	**P**	**21 38 28.1**	**+1.1**
KMNR				*eS*	**S**	**21 38 59.6**	**-0.2**
TUMR	**Tumrok**	**2.80**	**275**	*eP*	**P**	**21 38 28.1**	**+1.1**
TUMR				*eS*	**S**	**21 38 59.5**	**-0.3**
KPT	**Kopyto**	**2.86**	**289**	*eP*	**P**	**21 38 28.9**	**+1.1**
KPT				*eS*	**S**	**21 39 01.3**	**+0.1**
KOZ	**Kozyrevsk**	**3.07**	**290**	P	**P**	**21 38 32.9**	**+2.1**
KOZ				S	**S**	**21 39 08.0**	**+1.4**
KOZ	**Kozyrevsk**	**3.07**	**290**	*eP*	**P**	**21 38 32.1**	**+1.3**
KOZ				*eS*	**S**	**21 39 06.9**	**+0.3**
SRDR	**Sredinnyy**	**3.23**	**294**	*eP*	**P**	**21 38 34.6**	**+1.5**
SRDR				*eS*	**S**	**21 39 10.9**	**+0.2**
KII	**Karymskiy**	**3.42**	**254**	P	**P**	**21 38 36.7**	**+0.9**
KII	**Karymskiy**	**3.42**	**254**	*eP*	**P**	**21 38 36.6**	**+0.8**
SPN	**Mys Shipunski**	**3.58**	**237**	P	**P**	**21 38 37.9**	**-0.1**
SPN	**Mys Shipunski**	**3.58**	**237**	*eP*	**P**	**21 38 37.7**	**-0.3**
ESO	**Esso**	**3.68**	**285**	*eP*	**P**	**21 38 40.5**	**+1.0**
ESO				Smax			
	100nm,0.8s						
NLC	**Nalytchevo**	**3.87**	**242**	P	**P**	**21 38 42.0**	**-0.1**
NLC				*S*	**S**	**21 39 24.3**	**-2.6**
NLC	**Nalytchevo**	**3.87**	**242**	*eP*	**P**	**21 38 42.1**	**0.0**
NLC				*eS*	**S**	**21 39 25.7**	**-1.2**
SDLR	**Sedlovina**	**4.05**	**245**	*eP*	**P**	**21 38 45.4**	**+0.7**
SDLR				*eS*	**S**	**21 39 29.7**	**-1.8**
SMAR	**Somma**	**4.10**	**246**	*eP*	**P**	**21 38 46.5**	**+1.1**
UGLR	**Uglovaya**	**4.12**	**245**	*eP*	**P**	**21 38 46.5**	**+0.9**
AVH	**Avacha**	**4.14**	**246**	*i* P	**P**	**21 38 47.0**	**+1.1**
AVH				*eS*	**S**	**21 39 32.5**	**-1.1**
KOK	**Koryaka**	**4.18**	**247**	*eP*	**P**	**21 38 47.6**	**+1.2**
KOK				*eS*	**S**	**21 39 33.0**	**-1.6**
OSSR	**Ossora**	**4.27**	**346**	*i* P	**P**	**21 38 45.2**	**-2.6**
OSSR				Smax			
	250nm,0.2s						
PET	**Petropavlovsk**	**4.30**	**243**	P	**P**	**21 38 48.9**	**+0.7**
PET				*S*	**S**	**21 39 35.4**	**-2.4**
PET	**Petropavlovsk**	**4.30**	**243**	*eP*	**P**	**21 38 48.9**	**+0.7**
PET				*eS*	**S**	**21 39 36.2**	**-1.6**
PET	**Petropavlovsk**	**4.30**	**243**	*e*PN	**P**	**21 38 49.0**	**+0.8**
PET				*eS*	**S**	**21 39 36.4**	**-1.4**
PET				pmax	pmax		
	comp=Z,59nm,0.4s						
PET				smax			
	comp=N,287nm,0.5s						
PET				smax			
	comp=E,194nm,0.4s						
PET				MLR	MLR		
	comp=Z,168nm,22.0s						
PET	**Petropavlovsk**	**4.30**	**243**	*e*Pn	**P**	**21 38 48.8**	**+0.6**
PET				*e*Sn	**S**	**21 39 36.2**	**-1.6**
GNL	**Ganaly**	**4.38**	**254**	*eP*	**P**	**21 38 50.5**	**+1.2**
GNL				*eS*	**S**	**21 39 38.1**	**-1.6**
KRMR	**Karymshinskiy**	**4.67**	**243**	*e*	**P**	**21 38 51.6**	**-1.9**
RUS	**Russkaya**	**4.71**	**238**	P	**P**	**21 38 54.0**	**0.0**
RUS				S	**S**	**21 39 44.7**	**-3.3**
RUS	**Russkaya**	**4.71**	**238**	*eP*	**P**	**21 38 54.3**	**+0.3**
RUS				*eS*	**S**	**21 39 45.6**	**-2.4**
GRL	**Gorelyy**	**4.86**	**241**	*eP*	**P**	**21 38 57.1**	**+1.0**
APC	**Apacha**	**5.13**	**248**	*eP*	**P**	**21 39 01.3**	**+1.4**
FX1	**Attu Island--F**	**5.30**	**112**	Pn	**P**	**21 39 02.2**	**0.0**
	comp=Z,6.9nm,0.3s,baz=322,slow=6.3,SNR=18						
FX1				Sn	**S**	**21 39 57.1**	**-5.7**
	comp=Z,4.0nm,0.3s,baz=175,slow=16,SNR=3.1						
FX1	**Attu Island--F**	**5.30**	**112**	*e*Pn	**P**	**21 39 03.0**	**+0.8**
FX1				*e*Sn	**S**	**21 40 00.0**	**-2.8**
PAU	**Pauzhetka**	**6.14**	**237**	*eP*	**P**	**21 39 14.6**	**+0.7**
SKR	**Severo-Kuril's**	**6.99**	**234**	*eP*	**P**	**21 39 25.4**	**-0.5**
SKR				*eS*	**S**	**21 40 39.8**	**-5.0**
SKR	**Severo-Kuril's**	**6.99**	**234**	*e*PN	**P**	**21 39 25.4**	**-0.5**
SKR				pmax	pmax		
	comp=Z,40nm,0.5s						
ALID	**Alaid**	**7.13**	**237**	*eP*	**P**	**21 39 28.8**	**+0.9**
KAMR	**Kamenskoye**	**7.38**	**4**	*i* P	**P**	**21 39 30.1**	**-1.2**
KAMR				Smax			
	comp=Z,20nm,1.1s						
BILL	**Bilibino**	**12.97**	**2**	*e*Pn	**P**	**21 40 48.0**	**+0.6**
	comp=Z,2.4nm,0.6s						
ASAJ	**Asahikawa**	**18.15**	**242**	P	**P**	**21 41 53.0**	**-0.7**
	comp=Z,0.7nm,0.3s,baz=194,slow=31,SNR=2.6						
ASAJ	**Asahikawa**	**18.15**	**242**	P	**P**	**21 41 53.0**	**-0.7**
ASAJ				pmax	pmax		
	comp=Z,1.0nm,0.3s						
IMA	**Indian Mountai**	**22.57**	**45**	*eP*	**P**	**21 42 42.7**	**+2.2**
	comp=Z,11nm,1.1s,mb4.2						
TIXI	**Tiksi**	**22.58**	**331**	*eP*	**P**	**21 42 41.5**	**+0.9**
TIXI				*e*		21 42 53.8	
TIXI				pmax	pmax		
	comp=Z,9.0nm,0.8s,mb4.2						
TIXI	**Tiksi**	**22.58**	**331**	*eP*	**P**	**21 42 41.2**	**+0.6**
RSO	**Redoubt South**	**22.81**	**59**	*eP*	**P**	**21 42 46.3**	**+3.4**
ILAR	**Eielson Array**	**25.31**	**48**	P	**P**	**21 43 06.4**	**-0.6**
	comp=Z,1.5nm,0.6s,mb3.7,baz=260,slow=8.5,SNR=23						
ILAR				LR	LR	21 54 06.9	
	comp=Z,56nm,18.4s,MS3.1,baz=130,slow=39						
ILAR	**Eielson Array**	**25.31**	**48**	P	**P**	**21 43 06.4**	**-0.6**
ILAR				pmax	pmax		
	comp=Z,2.0nm,0.6s						
ILAR				MLR	MLR		
	comp=Z,56nm,18.4s						
SONM	**Songino Array**	**36.26**	**283**	P	**P**	**21 44 44.3**	**+0.3**
	comp=Z,1.0nm,0.6s,mb3.9,baz=49,slow=8.4,SNR=6.4						
SONM				PcP	PcP	21 47 08.8	+0.1
	comp=Z,0.4nm,0.6s,baz=45,slow=1.7,SNR=3.7						
YKA	**Yellowknife Ar**	**39.68**	**46**	P	**P**	**21 45 12.0**	**-0.4**
	comp=Z,0.7nm,0.7s,mb3.5,baz=299,slow=8.1,SNR=12						
YKA	**Yellowknife Ar**	**39.68**	**46**	P	**P**	**21 45 12.0**	**-0.4**
YKA				pmax	pmax		
	comp=Z,1.0nm,0.7s						
YKA	**Yellowknife Ar**	**39.68**	**46**	P	**P**	**21 45 12.0**	**-0.4**
KURK	**Kurchatov**	**49.10**	**303**	*eP*	**P**	**21 46 27.6**	**-0.3**
FFC	**Flin Flon**	**49.51**	**50**	*eP*	**P**	**21 46 30.9**	**-0.1**
	comp=Z,2.2nm,0.8s,mb4.2						
MKAR	**Makanchi Array**	**49.86**	**297**	P	**P**	**21 46 33.3**	**-0.6**
	comp=Z,0.9nm,0.6s,mb4.0,baz=57,slow=5.7,SNR=6.5						
MKAR	**Makanchi Array**	**49.86**	**297**	P	**P**	**21 46 33.3**	**-0.6**
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.6s						
FCC	**Fort Churchill**	**50.05**	**42**	*eP*	**P**	**21 46 34.6**	**-0.6**
	comp=Z,2.9nm,0.8s,mb4.4						
HLID	**Hailey**	**50.91**	**68**	*eP*	**P**	**21 46 42.4**	**+0.5**
	comp=Z,1.3nm,0.8s,mb3.9						
BVAR	**Borovoye Array**	**51.37**	**310**	P	**P**	**21 46 44.9**	**-0.4**
	comp=Z,1.0nm,0.5s,mb4.0,baz=63,slow=6.6,SNR=6.6						
ARCES	**ARCESS Array B**	**52.22**	**343**	P	**P**	**21 46 49.6**	**-1.8**
	comp=Z,1.7nm,0.9s,mb4.0,baz=45,slow=10,SNR=4.1						
ARCES	**ARCESS Array B**	**52.22**	**343**	P	**P**	**21 46 49.6**	**-1.8**
ARCES				pmax	pmax		
	comp=Z,2.0nm,0.9s						
NVAR	**Mina Array Bea**	**52.36**	**75**	P	**P**	**21 46 52.5**	**-0.4**
	comp=Z,0.7nm,0.7s,mb3.7,baz=322,slow=7.6,SNR=5.8						
NVAR	**Mina Array Bea**	**52.36**	**75**	P	**P**	**21 46 52.5**	**-0.4**
BW06	**Border Array**	**54.01**	**65**	*eP*	**P**	**21 47 05.6**	**+0.5**
	comp=Z,2.5nm,0.9s,mb4.1						
PDAR	**Pinedale Array**	**54.01**	**65**	P	**P**	**21 47 05.2**	**+0.1**
	comp=Z,2.0nm,0.9s,mb4.1,baz=326,slow=5.3,SNR=13						
ULM	**Lac du Bonnet**	**55.30**	**50**	P	**P**	**21 47 13.8**	**-0.6**
	comp=Z,2.0nm,0.4s,mb4.5,baz=300,slow=4.9,SNR=5.2						
MSU	**Marysvale**	**55.66**	**70**	*eP*	**P**	**21 47 18.7**	**+1.6**
RSSD	**Black Hills**	**55.87**	**60**	P	**P**	**21 47 18.4**	**-0.2**
SRU	**San Rafael**	**56.12**	**69**	*eP*	**P**	**21 47 21.1**	**+0.7**
FINES	**FINESS Array B**	**59.35**	**338**	P	**P**	**21 47 40.5**	**-2.4**
	comp=Z,1.2nm,0.7s,mb4.0,slow=3.8,SNR=4.7						
FINES	**FINESS Array B**	**59.35**	**338**	P	**P**	**21 47 40.5**	**-2.3**
FINES				pmax	pmax		
	comp=Z,1.0nm,0.7s						
CMAR	**Chiang Mai Arr**	**61.40**	**261**	P	**P**	**21 47 57.7**	**+0.3**
	comp=Z,1.2nm,0.7s,mb4.2,baz=28,slow=7.1,SNR=7.5						
CMAR	**Chiang Mai Arr**	**61.40**	**261**	P	**P**	**21 47 57.7**	**+0.3**
CMAR				pmax	pmax		
	comp=Z,1.0nm,0.7s						
KKN	**Kakani**	**61.95**	**279**	*eP*	**P**	**21 48 01.3**	**+0.4**
	comp=Z,12nm,0.8s,mb5.1						
PKI	**Pulchoki**	**62.05**	**279**	*eP*	**P**	**21 48 01.8**	**+0.2**
	comp=Z,13nm,0.8s,mb5.1						
GKN	**Gorkha**	**62.15**	**280**	*eP*	**P**	**21 48 02.3**	**0.0**
	comp=Z,13nm,0.9s,mb5.0						
DMN	**Daman**	**62.19**	**279**	*eP*	**P**	**21 48 02.9**	**+0.4**
	comp=Z,7.3nm,0.8s,mb4.9						
NB2	**NORSAR Subarra**	**62.34**	**346**	P	**P**	**21 48 02.5**	**-0.6**
	comp=Z,1.9nm,0.8s,mb4.3,baz=30,slow=6.2						
NOA	**NORSAR Array B**	**62.34**	**346**	P	**P**	**21 48 01.2**	**-1.9**
	comp=Z,0.6nm,0.6s,mb3.9,baz=18,slow=6.5,SNR=4.0						
NOA	**NORSAR Array B**	**62.34**	**346**	P	**P**	**21 48 01.2**	**-1.9**
NOA				pmax	pmax		
	comp=Z,1.0nm,0.6s						
NOA	**NORSAR Array B**	**62.34**	**346**	P	**P**	**21 48 01.2**	**-1.9**
HFS	**Hagfors**	**62.84**	**344**	P	**P**	**21 48 04.5**	**-1.9**
	comp=Z,3.6nm,1.0s,mb4.5,slow=5.9,SNR=4.5						
HFS	**Hagfors**	**62.84**	**344**	P	**P**	**21 48 04.5**	**-2.0**
HFS				pmax	pmax		
	comp=Z,4.0nm,1.0s						
KOLN	**Koldanda**	**62.92**	**280**	*eP*	**P**	**21 48 07.3**	**-0.1**
	comp=Z,8.1nm,0.8s,mb4.9						
WMOK	**Wichita Mounta**	**65.59**	**64**	*eP*	**P**	**21 48 24.3**	**-0.3**
	comp=Z,2.9nm,0.9s,mb4.3						
TXAR	**Lajitas Array**	**67.20**	**71**	P	**P**	**21 48 35.1**	**+0.3**
	comp=Z,0.9nm,0.5s,mb4.1,baz=304,slow=5.3,SNR=8.5						
LRAL	**Lakeview Retre**	**72.83**	**57**	P	**P**	**21 49 08.5**	**-0.5**
GERES	**GERESS Array B**	**73.64**	**341**	P	**P**	**21 49 13.6**	**+0.2**
	comp=Z,0.3nm,0.5s,mb3.5,baz=37,slow=6.7,SNR=4.5						
WRA	**Warramunga Arr**	**79.21**	**209**	P	**P**	**21 49 45.6**	**+0.2**
	comp=Z,0.8nm,0.6s,mb3.8,baz=20,slow=5.8,SNR=5.3						
WRA	**Warramunga Arr**	**79.21**	**209**	P	**P**	**21 49 45.6**	**+0.2**
WRA				pmax	pmax		
	comp=Z,1.0nm,0.6s						
ASAR	**Alice Springs**	**82.87**	**209**	P	**P**	**21 50 06.3**	**+1.8**
	comp=Z,0.9nm,0.5s,mb4.0,baz=19,slow=4.2,SNR=8.7						
ESDC	**Sonseca Array**	**85.10**	**351**	P	**P**	**21 50 16.5**	**+1.1**
	comp=Z,0.3nm,0.5s,mb3.7,slow=4.4,SNR=4.1						
QSPA	**South Pole Qui**	**144.87**	**180**	*eP*	PKPdf	21 57 14.5	+0.8

*IDC **14** 22:06:48.2±2.1,9.88N×104.48W,mb4.1/7,mb1 4.2/8, mb1mx4.1/18,MS3.7/10,Ms1 3.7/10,ms1mx3.5/20,Error ellipse: s-maj=95.2km s-min=17.7km az=62.0*
*NEIC **14** 22:06:52.4±1.0,10.10N×103.79W,h10km,mb4.0/6,Error ellipse: s-maj=26.2km s-min=12.9km az=64.0*

ISC 14 22:06:49.7±1.1,**10.0N**±0.1×**104.1W**±0.2,**h10**km,**n30**, σ1§**22**/22,**mb4.1**/13,**MS3.5**/9,**Northern East Pacific Rise**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OXX	**Oaxaca**	**10.08**	**45**	*i* P	**P**	**22 09 11.0**	**-6.8**
JTS	**JuntasAbangare**	**18.86**	**87**	LR	LR	22 16 20.9	
	comp=Z,250nm,20.8s,baz=309,slow=30						
TXAR	**Lajitas Array**	**19.28**	**1**	P	**P**	**22 11 15.4**	**-2.0**
	baz=155,slow=17,SNR=3.4						
TXAR				LR	LR	22 17 43.0	
	comp=Z,133nm,20.1s,baz=320,slow=34						
HKT	**Hockley**	**21.34**	**20**	*eP*	**P**	**22 11 38.9**	**-0.4**
	37nm,1.5s,mb4.5						
MNTX	**Cornudas Mount**	**21.67**	**357**	*eP*	**P**	**22 11 43.6**	**+1.1**
	8.5nm,1.1s,mb4.1						
GDL2	**Guadalupe Moun**	**22.14**	**359**	*eP*	**P**	**22 11 48.0**	**+0.7**
TUC	**Tucson**	**23.09**	**345**	*eP*	**P**	**22 11 58.4**	**+1.6**
LAZ	**Ladron**	**24.49**	**354**	*eP*	**P**	**22 12 13.0**	**+2.6**
ANMO	**Albuquerque**	**24.97**	**355**	*eP*	**P**	**22 12 15.6**	**+0.6**
	3.5nm,1.0s,mb3.8						
WMOK	**Wichita Mounta**	**25.14**	**10**	P	**P**	**22 12 17.1**	**+0.6

RTK	**Rohtak**	**8.87**	**153**	*e*P		**P**	**22 13 26.1**	**-1.0**
RTK				*e*S		**S**	**22 15 02.1**	**-4.7**
NDI	**New Delhi**	**9.50**	**150**	*e*P		**P**	**22 13 35.0**	**-0.8**
NDI				*e*S		**S**	**22 15 18.5**	**-3.7**
KALG	**Kalgarh**	**9.51**	**140**	*e*P		**P**	**22 13 36.1**	**+0.2**
KHET	**Khetri**	**9.55**	**158**	*e*P		**P**	**22 13 35.4**	**-1.2**
KHET				*e*S		**S**	**22 15 19.8**	**-3.8**
KHET				*e*			22 15 30.8	
	comp=N,49nm,0.5s							
KHET					AML	AML	22 15 31.1	
	comp=E,43nm,0.6s							
AYAN	**Aya Nagar**	**9.64**	**151**	*e*P		**P**	**22 13 36.3**	**-1.5**
AYAN					AML	AML	22 15 25.5	
	comp=Z,46nm,0.6s							
KUDL	**Kundal**	**9.71**	**154**	*e*P		**P**	**22 13 37.7**	**-1.0**
KUDL				*e*S		**S**	**22 15 23.2**	**-4.2**
KUDL					AML	AML	22 15 35.0	
	comp=Z,43nm,0.5s							
SONA	**Sohna**	**9.83**	**151**	*e*P		**P**	**22 13 40.8**	**+0.4**
SONA				*e*S		**S**	**22 15 25.6**	**-4.8**
SONA					AML	AML	22 15 34.6	
	comp=E,46nm,0.8s							
SONA					AML	AML	22 15 37.1	
	comp=N,44nm,0.5s							
JASL	**Jaisalmer**	**10.10**	**184**	*e*P		**P**	**22 13 42.7**	**-1.3**
PTH	**Pithoragarh**	**10.27**	**134**	*e*P		**P**	**22 13 47.0**	**+0.6**
PTH				*e*			22 15 51.0	
AJM	**Ajmer**	**10.79**	**166**	*e*P		**P**	**22 13 53.0**	**-0.5**
AJM				*e*S		**S**	**22 15 47.0**	**-6.9**
MK31	**Makanchi Array**	**12.51**	**35**	P		**P**	**22 14 14.9**	**-1.5**
	comp=N,6.9nm,0.6s,baz=194,slow=36,SNR=40							
MKAR	**Makanchi Array**	**12.51**	**35**	P		**P**	**22 14 15.4**	**-1.1**
	comp=N,0.3nm,0.3s,baz=225,slow=12,SNR=45							
MKAR	**Makanchi Array**	**12.51**	**35**	*e*P		**P**	**22 14 14.9**	**-1.6**
MKAR					pmax	pmax		
	comp=Z,4.0nm,0.6s							
KOLN	**Koldanda**	**13.59**	**129**	*e*P		**P**	**22 14 28.2**	**-2.7**
	comp=Z,59nm,0.8s							
WMQ	**Urumqi**	**13.89**	**56**	*e*P		**P**	**22 14 36.0**	**+1.3**
GKN	**Gorkha**	**14.09**	**126**	*e*P		**P**	**22 14 32.8**	**-4.6**
	comp=Z,69nm,0.5s							
KURK	**Kurchatov**	**14.54**	**18**	⇑P		**P**	**22 14 39.3**	**-3.8**
	comp=Z,12nm,1.0s,baz=200,slow=9.5,SNR=38							
KURK	**Kurchatov**	**14.54**	**18**	*e*Pn		**P**	**22 14 39.7**	**-3.4**
BHPL	**Bhopal**	**14.58**	**159**	*e*P		**P**	**22 14 46.5**	**+2.7**
BHPL				*e*			22 17 12.7	
KKN	**Kakani**	**14.65**	**125**	*e*P		**P**	**22 14 40.4**	**-4.3**
	comp=Z,46nm,0.6s							
DMN	**Daman**	**14.66**	**126**	*e*P		**P**	**22 14 40.7**	**-4.2**
	comp=Z,54nm,0.7s							
PKI	**Pulchoki**	**14.88**	**125**	*e*P		**P**	**22 14 43.8**	**-3.9**
	comp=Z,56nm,0.7s							
AB31	**Akbulak array**	**14.94**	**329**	⇓P		**P**	**22 14 44.3**	**-4.0**
	comp=Z,6.1nm,0.6s							
AB31				⇓S		**S**	**22 17 22.6**	**-10**
	comp=Z,6.9nm,0.6s							
AB31	**Akbulak array**	**14.94**	**329**	P		**P**	**22 14 44.3**	**-4.0**
AB31				S		**S**	**22 17 22.5**	**-10**
AB31					pmax	pmax		
	comp=Z,1.0nm,0.3s							
AB31					smax			
	comp=Z,7.0nm,0.6s							
VOSK	**Vostochnaya**	**15.71**	**358**	⇑P		**P**	**22 14 54.0**	**-4.1**
	comp=Z,11nm,1.0s							
BVA0	**Borovoye Array**	**16.03**	**357**	P		**P**	**22 14 58.5**	**-3.8**
	comp=Z,2.4nm,1.0s,baz=163,slow=13,SNR=70							
BVA0	**Borovoye Array**	**16.03**	**357**	*i* P		**P**	**22 14 58.4**	**-3.8**
BVAR	**Borovoye Array**	**16.03**	**357**	P		**P**	**22 14 58.7**	**-3.6**
	comp=Z,0.8nm,0.3s,baz=166,slow=12,SNR=28							
BVAR					LR	LR	22 21 55.6	
	comp=Z,75nm,21.7s,baz=125,slow=40							
ZRNK	**Zerenda**	**16.04**	**354**	⇑P		**P**	**22 14 59.0**	**-3.4**
	comp=Z,22nm,0.7s							
ZRNK	**Zerenda**	**16.04**	**354**	*e*P		**P**	**22 14 58.9**	**-3.5**
BRVK	**Borovoye**	**16.07**	**357**	*e*P		**P**	**22 14 60.0**	**-2.7**
THR	**Tehran**	**16.64**	**272**	P		**P**	**22 15 10.2**	**+0.2**
	comp=Z,0.1nm,0.3s,baz=21,slow=7.6,SNR=6.8							
THR					LR	LR	22 23 17.7	
	comp=Z,130nm,18.0s,baz=26,slow=43							
ZAL	**Zalesovo**	**19.17**	**24**	P		**P**	**22 15 38.5**	**-2.3**
	comp=Z,2.9nm,0.3s,baz=162,slow=6.3,SNR=60							
ZAL					LR	LR	22 23 58.9	
	comp=Z,92nm,18.8s,baz=340,slow=40							
ZAL	**Zalesovo**	**19.17**	**24**	P		**P**	**22 15 38.5**	**-2.3**
ZAL					pmax	pmax		
	comp=Z,3.0nm,0.3s							
ZAL					MLR	MLR		
	comp=Z,92nm,18.8s							
ZAL	**Zalesovo**	**19.17**	**24**	P		**P**	**22 15 38.5**	**-2.3**
ZAL					LR	LR	22 23 58.9	
HYB	**Hyderabad**	**20.43**	**161**	*i* P		**P**	**22 15 53.0**	**-1.6**
HYB				*e*S		**S**	**22 19 39.0**	**+3.4**
HYB	**Hyderabad**	**20.43**	**161**	*e*P		**P**	**22 15 53.0**	**-1.6**
HYB				*e*			22 20 01.5	
SVE	**Sverdlovsk**	**21.16**	**343**	⇓*e*P		**P**	**22 16 02.1**	**+0.3**
SVE					pmax	pmax		
	comp=Z,40nm,1.0s,mb4.7							
SVE					MLR	MLR		
	comp=Z,400nm,9.0s							
GNI	**Garni**	**21.32**	**287**	P		**P**	**22 16 06.1**	**+2.6**
	comp=Z,10nm,0.6s,mb4.4,baz=30,slow=2.2,SNR=15							
GNI	**Garni**	**21.32**	**287**	P		**P**	**22 16 06.1**	**+2.6**
GNI					pmax	pmax		
	comp=Z,10.0nm,0.6s							
ARU	**Arti**	**21.35**	**340**	⇑*i*P		**P**	**22 16 02.6**	**-1.0**
ARU				*i*			22 16 24.4	
ARU				*e*S		**S**	**22 19 54.9**	**+2.2**
ARU				*e*SS		SS	22 20 15.3	-14
ARU					pmax	pmax		
	comp=Z,27nm,0.8s,mb4.6							
ARU					MLR	MLR		
	comp=Z,200nm,15.0s,MS3.6							
ARU					MLR	MLR		
	comp=N,100nm,14.0s,MS3.5							
ARU					MLR	MLR		
	comp=E,100nm,15.0s,MS3.5							
ARU	**Arti**	**21.35**	**340**	*e*P		**P**	**22 16 02.1**	**-1.5**
	comp=E,28nm,0.9s,mb4.6							
ZEI	**Tsey**	**22.08**	**294**	⇑*e*P		**P**	**22 16 13.3**	**+2.3**
GTA	**Gaotai**	**22.13**	**75**	*e*P		**P**	**22 16 13.8**	**+2.2**
GTA				AP			22 16 17.9	
GTA				XP			22 16 21.4	
GTA					AMB	AMB		
	comp=Z,5.0nm,0.7s,mb4.0							
GTA					LR	LR		
	comp=N,92nm,12.2s,MS3.5							
GTA					LR	LR		
	comp=E,76nm,12.6s,MS3.5							
HASS	**Wahat al Ahsa'**	**22.22**	**244**	P		**P**	**22 16 12.6**	**+0.1**
GOF	**Gofitskoye**	**23.02**	**299**	⇓*i*P		**P**	**22 16 21.0**	**+0.8**
GOF					pmax	pmax		
	comp=Z,30nm,1.1s,mb4.6							
KIV	**Kislovodsk**	**23.10**	**297**	*de*P		**P**	**22 16 20.8**	**-0.1**
KIV				*e**PP			22 16 34.8	
KIV					pmax	pmax		
	comp=Z,17nm,0.9s,mb4.5							
KIV					MLR	MLR		
	comp=Z,100nm,15.0s,MS3.4							
KIV	**Kislovodsk**	**23.10**	**297**	*e*P		**P**	**22 16 21.6**	**+0.7**
	comp=Z,6.2nm,0.6s,mb4.2							
SOC	**Sochi**	**25.20**	**295**	*e*P		**P**	**22 16 43.7**	**+2.4**
SOC				*e*			22 17 15.2	
SOC				*e*S		**S**	**22 21 00.7**	**+0.3**
SOC				*e*SS		SS	22 22 01.3	-2.2
SOC				*e*SSS		SSS	22 22 27.4	+6.5
SOC					pmax	pmax		
	comp=Z,27nm,1.4s,mb4.6							
SOC					pmax	pmax		
	comp=N,17nm,1.3s							
SOC					pmax	pmax		
	comp=E,3.0nm,0.3s							
SOC					MLR	MLR		
	comp=Z,193nm,27.0s,MS3.5							
SOC					MLR	MLR		
	comp=N,137nm,23.0s,MS3.6							
SOC					MLR	MLR		
	comp=E,165nm,21.0s,MS3.6							
MOY	**Mondy**	**25.30**	**45**	*e*P		**P**	**22 16 43.9**	**+1.8**
LZH	**Lanzhou**	**25.72**	**82**	*e*P		**P**	**22 16 48.5**	**+2.2**
LZH				AP		pP	22 16 55.3	-3.5
LZH				XP		sP	22 16 58.4	-6.5
LZH					AMB	AMB		
	comp=Z,23nm,1.2s,mb4.6							
ZAK	**Zakamensk**	**26.18**	**49**	⇓*i*P		**P**	**22 16 51.1**	**+0.7**
MZLS	**Mizel**	**26.19**	**248**	P		**P**	**22 16 51.3**	**+0.6**

ARSS	**Ar Rass**	**26.66**	**254**	P		**P**	**22 16 55.1**	**+0.1**
HILS	**Ha'il**	**27.03**	**258**	P		**P**	**22 16 59.5**	**+1.1**
SONM	**Songino Array**	**27.53**	**56**	P		**P**	**22 17 03.2**	**+0.4**
	comp=Z,1.7nm,0.9s,mb3.7,baz=272,slow=9.2,SNR=11								
AFFS	**'Afif**	**27.90**	**250**	P		**P**	**22 17 06.5**	**+0.1**
ULN	**Ulaanbaatar**	**27.97**	**56**	*e*P		**P**	**22 17 06.3**	**-0.4**
KAMS	**Al Khamasin**	**28.95**	**242**	P		**P**	**22 17 14.9**	**-0.9**
ASF	**Jabal al Asfar**	**29.01**	**271**	LR		LR	22 31 40.6		
	comp=Z,89nm,19.6s,MS3.4,baz=122,slow=42								
KBRS	**Khaybar**	**29.78**	**257**	P		**P**	**22 17 24.6**	**+1.5**	
BRTR	**Keskin Array B**	**29.86**	**287**	P		**P**	**22 17 24.1**	**+0.4**	
	comp=Z,2.5nm,0.9s,mb3.9,baz=100,slow=7.5,SNR=9.6								
OBN	**Obninsk**	**29.95**	**318**	*ce*P		**P**	**22 17 24.0**	**-0.3**	
OBN				*e**PP		pP	22 17 39.7	+2.5	
OBN					pmax	pmax			
	comp=Z,28nm,1.4s,mb4.8								
CMAR	**Chiang Mai Arr**	**30.18**	**120**	P		**P**	**22 17 31.6**	**+4.9**	
	comp=Z,2.6nm,0.8s,mb4.0,baz=312,slow=8.7,SNR=15								
CMAR	**Chiang Mai Arr**	**30.18**	**120**	P		**P**	**22 17 31.6**	**+4.9**	
CMAR					pmax	pmax			
	comp=Z,3.0nm,0.8s								
TATS	**Tathlith**	**30.23**	**243**	P		**P**	**22 17 27.3**	**+0.1**	
CSS	**Prodhromos**	**31.03**	**278**	P		**P**	**22 17 33.0**	**-1.0**	
GYA	**Guiyang**	**31.34**	**100**	P		**P**	**22 17 38.3**	**+1.4**	
GYA					AMB	AMB			
	comp=Z,10.0nm,0.8s,mb4.7								
BLJS	**Baljurashi**	**31.36**	**245**	P		**P**	**22 17 38.6**	**+1.4**	
DJNS	**Zahran al Janu**	**31.41**	**240**	P		**P**	**22 17 38.1**	**+0.5**	
AKASG	**Malin Array Be**	**33.10**	**308**	P		**P**	**22 17 51.3**	**-0.7**	
	comp=Z,3.8nm,0.6s,mb4.5,baz=81,slow=7.1,SNR=22								
BOD	**Bodaibo**	**34.55**	**39**	*e*P		**P**	**22 18 04.3**	**-0.1**	
BJI	**Beijing**	**34.60**	**71**	*e*P		**P**	**22 18 06.0**	**+1.0**	
BJI				S		S	**22 23 31.4**	**+1.6**	
BJI					AMB	AMB			
	comp=Z,7.0nm,0.8s,mb4.6								
BJI					LR	LR			
	comp=N,113nm,12.2s,MS4.0								
BJI					LR	LR			
	comp=E,123nm,14.2s,MS4.0								
JOF	**Joensuu**	**35.73**	**329**	*ep*		**P**	**22 18 12.0**	**-2.4**	
KRIS	**Kristallenia**	**37.14**	**281**	*e*P		**P**	**22 18 26.0**	**-0.5**	
	comp=E,27nm,0.9s,mb5.1								
KWP	**Kalwaria**	**37.20**	**306**	*e*P		**P**	**22 18 27.6**	**+0.7**	
	comp=E,4.6nm,0.6s,mb4.5								
FINES	**FINESS Array B**	**37.40**	**326**	P		**P**	**22 18 28.1**	**-0.3**	
	comp=E,2.5nm,0.6s,mb4.2,baz=112,slow=9.5,SNR=22								
FINES					LR	LR	22 37 28.4		
	comp=E,27nm,18.9s,MS3.1,baz=175,slow=42								
FINES	**FINESS Array B**	**37.40**	**326**	P		**P**	**22 18 28.2**	**-0.2**	
FINES					pmax	pmax			
	comp=Z,3.0nm,0.6s								
FINES					MLR	MLR			
	comp=Z,27nm,18.9s								
KAF	**Kangasniemi**	**37.52**	**327**	*ep*		**P**	**22 18 29.2**	**-0.3**	
	baz=110,slow=8.6								
NIE	**Niedzica**	**38.76**	**305**	*e*P		**P**	**22 18 41.3**	**+1.4**	
NJ2	**Nanjing**	**38.80**	**83**	*e*P		**P**	**22 18 44.6**	**+4.2**	
NJ2					AMB	AMB			
	comp=Z,20nm,0.6s,mb5.0								
OJC	**Ojcow**	**39.08**	**307**	*e*P		**P**	**22 18 43.5**	**+0.9**	
KEV	**Kevo**	**40.55**	**338**	*ep*		**P**	**22 18 53.1**	**-1.4**	
MORC	**Moravsky Berou**	**40.55**	**306**	*e*P		**P**	**22 18 54.5**	**-0.3**	
	comp=Z,1.8nm,0.5s,mb4.0								
ARCES	**ARCESS Array B**	**40.90**	**337**	P		**P**	**22 18 57.4**	**0.0**	
	comp=Z,15nm,0.8s,mb4.7,baz=111,slow=8.4,SNR=66								
ARCES					LR	LR	22 37 07.7		
	comp=Z,123nm,21.2s,MS3.7,baz=246,slow=38								
ARCES	**ARCESS Array B**	**40.90**	**337**	P		**P**	**22 18 57.4**	**0.0**	
ARCES					pmax	pmax			
	comp=Z,15nm,0.8s								
ARCES					MLR	MLR			
	comp=Z,123nm,21.2s								
ARE0	**ARCESS Array S**	**40.90**	**337**	*e*P		**P**	**22 18 57.5**	**+0.1**	
BRG	**Berggiesshubel**	**42.78**	**308**	*e*P		**P**	**22 19 14.3**	**+1.3**	
BRG					pmax	pmax			
	comp=Z,4.0nm,0.9s,mb4.2								
BRG	**Berggiesshubel**	**42.78**	**308**	*e*P		**P**	**22 19 14.3**	**+1.3**	
	comp=Z,3.6nm,0.8s,mb4.2								
GERES	**GERESS Array B**	**43.13**	**305**	P		**P**	**22 19 16.7**	**+0.8**	
	comp=Z,0.8nm,0.8s,mb3.5,baz=79,slow=6.8,SNR=6.6								
GERES					PcP	PcP	22 21 04.0	-1.5	
	comp=Z,0.5nm,0.8s,baz=79,slow=6.8,SNR=3.6								
GERES	**GERESS Array B**	**43.13**	**305**	P		**P**	**22 19 16.7**	**+0.8**	
GERES							22 21 04.0		
GERES					pmax	pmax			
	comp=Z,1.0nm,0.8s								
GERES					pmax	pmax			
	comp=Z,1.0nm,0.8s								
CLL	**Collm**	**43.34**	**309**	P		**P**	**22 19 17.0**	**-0.6**	
CLL	**Collm**	**43.34**	**309**	*e*P		**P**	**22 19 17.0**	**-0.6**	
NB2	**NORSAR Subarra**	**44.33**	**323**	P		**P**	**22 19 25.1**	**-0.3**	
	comp=Z,13nm,0.8s,mb4.7,baz=93,slow=7.9								
NOA	**NORSAR Array B**	**44.33**	**323**	P		**P**	**22 19 25.1**	**-0.4**	
	comp=Z,7.8nm,0.6s,mb4.6,baz=95,slow=7.8,SNR=31								
NOA					LR	LR	22 38 47.7		
	comp=Z,55nm,18.3s,MS3.5,baz=80,slow=37								
NOA	**NORSAR Array B**	**44.33**	**323**	P		**P**	**22 19 25.1**	**-0.3**	
NOA					pmax	pmax			
	comp=Z,8.0nm,0.6s								
NOA					MLR	MLR			
	comp=Z,55nm,18.3s								
NAO01	**NORSAR Array S**	**44.48**	**322**	*e*P		**P**	**22 19 26.4**	**-0.2**	
	comp=Z,18nm,1.0s,mb4.8								
GRA1	**Grafenberg Arr**	**44.64**	**306**	*e*P		**P**	**22 19 29.7**	**+1.7**	
	comp=Z,5.0nm,0.9s,mb4.3								
GRA1				*e*			22 19 33.8		
GRF	**Grafenberg Arr**	**44.64**	**306**	*e*P		**P**	**22 19 29.7**	**+1.7**	
GRF					pmax	pmax			
	comp=Z,5.0nm,0.9s,mb4.3								
TIXI	**Tiksi**	**45.06**	**22**	*e*P		**P**	**22 19 30.6**	**-0.5**	
TIXI				*e*			22 19 55.9		
TIXI					pmax	pmax			
	comp=Z,63nm,0.8s,mb5.5								
TIXI					MLR	MLR			
	comp=Z,400nm,14.0s,MS4.5								
TIXI	**Tiksi**	**45.06**	**22**	*e*P		**P**	**22 19 30.7**	**-0.4**	
	comp=Z,10nm,0.6s,mb4.8								
SPB4	**Spitsbergen Ar**	**47.13**	**347**	*e*P		**P**	**22 19 47.9**	**+0.5**	
CDF	**Champ du Feu**	**47.41**	**305**	*e*P		**P**	**22 19 50.1**	**+0.1**	
	comp=Z,4.8nm,0.8s,mb4.2								
PGF	**Pioggiola**	**47.58**	**297**	*e*P		**P**	**22 19 51.1**	**-0.3**	
	comp=Z,21nm,1.2s,mb4.8								
HINF	**Hinteralfeld**	**47.81**	**305**	*e*P		**P**	**22 19 52.8**	**-0.3**	
	comp=Z,5.6nm,0.7s,mb4.4								
WLF	**Walferdange**	**47.90**	**307**	*e*P		**P**	**22 19 52.1**	**-1.7**	
	comp=Z,8.0nm,0.9s,mb4.8								
HAU	**Haudompre**	**48.10**	**305**	*e*P		**P**	**22 19 55.1**	**-0.3**	
KBS	**Kingsbay**	**48.24**	**347**	*e*P		**P**	**22 19 55.6**	**-0.5**	
	comp=Z,8.3nm,0.8s,mb4.8								
SBF	**Sospel**	**48.34**	**299**	*e*P		**P**	**22 19 57.4**	**+0.1**	
	comp=Z,22nm,0.9s,mb4.9								
LPG	**La Plagne**	**48.40**	**302**	*e*P		**P**	**22 19 58.0**	**+0.3**	
	comp=Z,9.8nm,0.8s,mb4.6								
LPL	**La Plagne**	**48.41**	**302**	*e*P		**P**	**22 19 58.2**	**+0.4**	
	comp=Z,9.8nm,0.7s,mb4.6								
MBDF	**Flintbardon**	**48.57**	**301**	*e*P		**P**	**22 19 58.8**	**-0.3**	
	comp=Z,9.9nm,0.7s,mb4.7								
CABF	**La Chapelle**	**48.58**	**303**	*e*P		**P**	**22 19 59.0**	**-0.1**	
	comp=Z,8.2nm,0.7s,mb4.6								
GIVF	**Givet**	**48.66**	**308**	*e*P		**P**	**22 19 59.4**	**-0.2**	
MEZF	**Maizieres J'vi**	**48.84**	**306**	*e*P		**P**	**22 20 01.5**	**+0.4**	
	comp=Z,14nm,1.0s,mb4.7								
FRF	**La Foret Royal**	**48.97**	**299**	*e*P		**P**	**22 20 01.9**	**-0.2**	
	comp=Z,25nm,0.9s,mb5.0								
BAIF	**Baives**	**49.05**	**308**	*e*P		**P**	**22 20 03.2**	**+0.5**	
	comp=Z,12nm,0.9s,mb4.6								
SMRF	**Simiane la Rot**	**49.60**	**300**	*e*P		**P**	**22 20 07.1**	**+0.1**	
KMBO	**Kilima Mbogo**	**49.64**	**228**	P		**P**	**22 20 08.3**	**+0.6**	
	comp=Z,2.0nm,0.8s,mb4.2,baz=32,slow=15,SNR=6.1								
VIVF	**Saint-Julien-l**	**49.98**	**301**	*e*P		**P**	**22 20 10.2**	**+0.3**	
	comp=Z,8.8nm,0.8s,mb4.5								
SMF	**Signal de Mont**	**50.07**	**304**	*e*P		**P**	**22 20 10.2**	**-0.4**	
	comp=Z,14nm,0.8s,mb4.8								
SSF	**Saint Saulge**	**50.19**	**304**	*e*P		**P**	**22 20 10.9**	**-0.6**	
	comp=Z,5.3nm,0.9s,mb4.3								
AVF	**Avril sur Loir**	**50.36**	**304**	*e*P		**P**	**22 20 12.4**	**-0.4**	
	comp=Z,16nm,0.7s,mb4.8								
HYF	**Humbligny**	**50.71**	**305**	*e*P		**P**	**22 20 15.4**	**0.0**	
BGF	**Bois d'Agland**	**50.76**	**304**	*e*P		**P**	**22 20 15.3**	**-0.5**	
	comp=Z,5.4nm,0.6s,mb4.3								
LASF	**Ste Croix**	**50.76**	**300**	*e*P		**P**	**22 20 16.2**	**+0.3**	
	comp=Z,40nm,1.3s,mb4.9								
TCF	**Toulx Ste Croi**	**51.26**	**304**	*e*P		**P**	**22 20 19.5**	**-0.1**	
	comp=Z,19nm,1.0s,mb4.7								
CAF	**Calviac**	**51.74**	**302**	*e*P		**P**	**22 20 23.3**	**+0.1**	
	comp=Z,8.1nm,0.8s,mb4.4								

RJF	**Les Rejaudoux**	**52.00**	**303**	*e*P		**P**	**22 20 25.3**	**+0.1**	
	comp=Z,5.0nm,0.8s,mb4.2								
MTLF	**Montolieu**	**52.12**	**300**	*e*P		**P**	**22 20 26.0**	**-0.1**	
	comp=Z,6.9nm,0.7s,mb4.4								
LDF	**La Druitiere**	**52.15**	**307**	*e*P		**P**	**22 20 25.5**	**-0.8**	
	comp=Z,4.7nm,0.6s,mb4.3								
FLN	**La Foliniere**	**52.34**	**307**	*e*P		**P**	**22 20 26.8**	**-0.8**	
	comp=Z,12nm,0.8s,mb4.5								
LFF	**La Frestale**	**52.63**	**302**	*e*P		**P**	**22 20 29.8**	**-0.1**	
	comp=Z,12nm,0.8s,mb4.6								
GRR	**Gorron**	**52.68**	**307**	*e*P		**P**	**22 20 29.4**	**-0.8**	
	comp=Z,8.5nm,0.7s,mb4.5								
MFF	**Saint Martin d**	**52.73**	**305**	*e*P		**P**	**22 20 29.7**	**-0.9**	
	comp=Z,9.6nm,0.8s,mb4.5								
EPF	**Esparros**	**53.52**	**300**	*e*P		**P**	**22 20 35.9**	**-0.6**	
	comp=Z,6.6nm,0.8s,mb4.3								
ETSF	**Etsaut**	**54.18**	**300**	*e*P		**P**	**22 20 41.3**	**-0.1**	
	comp=Z,8.5nm,0.7s,mb4.5								
ROSF	**Rostrenen**	**54.24**	**307**	*e*P		**P**	**22 20 40.9**	**-0.8**	
	comp=Z,9.3nm,0.8s,mb4.5								
QUIF	**Quistinic**	**54.30**	**307**	*e*P		**P**	**22 20 41.2**	**-1.0**	
	comp=Z,12nm,1.0s,mb4.5								
DAG	**Danmarks Havn**	**54.40**	**344**	⇑*i*P		**P**	**22 20 42.8**	**+0.2**	
	comp=Z,3.0nm,0.8s,mb4.3								
DAG	**Danmarks Havn**	**54.40**	**344**	⇑*e*P		**P**	**22 20 42.8**	**+0.2**	
DAG					pmax	pmax			
	comp=Z,3.0nm,0.8s,mb4.3								
DAG	**Danmarks Havn**	**54.40**	**344**	⇑*e*P		**P**	**22 20 42.8**	**+0.2**	
	comp=Z,3.0nm,0.8s,mb4.3								
ESDC	**Sonseca Array**	**57.76**	**298**	P		**P**	**22 21 06.5**	**-0.6**	
	comp=Z,6.9nm,0.9s,mb4.7,baz=54,slow=7.4,SNR=12								
BILL	**Bilibino**	**57.87**	**26**	*de*P		**P**	**22 21 07.1**	**-0.4**	
BILL				*e*			22 23 17.2		
BILL					pmax	pmax			
	comp=Z,4.0nm,0.9s,mb4.5								
BILL	**Bilibino**	**57.87**	**26**	*e*P		**P**	**22 21 06.8**	**-0.7**	
	comp=Z,1.1nm,0.3s,mb4.4								
RES	**Resolute Bay**	**68.22**	**356**	*e*P		**P**	**22 22 15.2**	**-0.4**	
	comp=Z,2.2nm,0.8s,mb4.2								
IMA	**Indian Mountai**	**71.44**	**18**	*e*P		**P**	**22 22 34.6**	**-0.7**	
INK	**Inuvik**	**73.29**	**10**	P		**P**	**22 22 46.1**	**0.0**	
	comp=Z,3.6nm,0.5s,mb4.6,baz=352,slow=5.3,SNR=6.2								
INK	**Inuvik**	**73.29**	**10**	P		**P**	**22 22 46.1**	**0.0**	
INK					pmax	pmax			
	comp=Z,4.0nm,0.5s								
INK	**Inuvik**	**73.29**	**10**	*e*P		**P**	**22 22 44.4**	**-1.7**	
	comp=Z,5.0nm,0.5s,mb4.7								
ILAR	**Eielson Array**	**74.11**	**16**	P		**P**	**22 22 51.0**	**+0.1**	
	comp=Z,1.5nm,0.9s,mb3.9,baz=317,slow=5.3,SNR=13								
ILAR	**Eielson Array**	**74.11**	**16**	P		**P**	**22 22 51.1**	**+0.1**	
ILAR					pmax	pmax			
	comp=Z,2.0nm,0.9s								
FITZ	**Fitzroy Crossi**	**74.72**	**127**	*e*P		**P**	**22 22 56.0**	**+0.6**	
	comp=Z,2.8nm,0.9s,mb4.2								
FITZ	**Fitzroy Crossi**	**74.72**	**127**	P		**P**	**22 22 56.2**	**+0.8**	
	comp=Z,3.2nm,0.9s,mb4.3,baz=337,slow=4.9,SNR=6.6								
DAWY	**Dawson**	**76.27**	**14**	*e*P		**P**	**22 23 03.5**	**+0.2**	
SML	**Sawmill**	**76.30**	**18**	*e*P		**P**	**22 23 03.7**	**+0.1**	
YKW3	**Yellowknife Ar**	**80.62**	**3**	*e*P		**P**	**22 23 27.2**	**0.0**	
YKA	**Yellowknife Ar**	**80.69**	**3**	P		**P**	**22 23 27.5**	**-0.1**	
	comp=Z,3.0nm,0.5s,mb4.5,baz=348,slow=5.4,

PMG Port Moresby 34.58 284 P P 00 07 18.4 +0.6
34nm,0.6s,mb5.1,baz=101,slow=5.5,SNR=12
PMG Port Moresby 34.58 284 eP P 00 07 17.8 0.0
96nm,1.4s,mb5.2
TOO Toolangi 35.05 234 eP P 00 07 21.8 +0.3
3.8nm,0.6s,mb4.2
STKA Stephens Creek 36.91 244 eP P 00 07 37.7 +0.9
6.8nm,0.4s,mb4.5
STKA Stephens Creek 36.91 244 P P 00 07 37.8 +1.1
9.3nm,0.6s,mb4.5,baz=94,slow=9.4,SNR=24
AS12 Alice Springs 43.63 257 ⇓iP P 00 08 30.6 +0.1
70nm,1.3s,mb5.0
ASAR Alice Springs 43.63 257 P P 00 08 30.7 +0.2
40nm,0.7s,mb5.0,baz=96,slow=7.5,SNR=390
ASAR PcP PcP 00 10 03.8 +0.2
3.2nm,0.5s,baz=106,slow=3.7,SNR=7.6
ASAR ScP 00 13 00.1
2.0nm,0.7s,baz=104,slow=4.4,SNR=7.0
ASAR S S 00 14 17.0 +0.1
3.6nm,1.0s,baz=93,slow=15,SNR=9.9
WB2 Warramunga Arr 43.71 263 ⇓iP P 00 08 30.6 -0.6
WB2 eS S 00 14 14.5 -3.5
WRA Warramunga Arr 43.73 263 P P 00 08 30.7 -0.5
17nm,0.3s,mb5.0,baz=97,slow=7.7,SNR=729
WRA PcP PcP 00 10 03.5 -0.5
0.7nm,0.5s,baz=97,slow=2.8,SNR=5.2
WRA S S 00 14 18.3 +0.1
3.3nm,1.1s,baz=97,slow=13,SNR=8.1
WRA Warramunga Arr 43.73 263 P P 00 08 30.7 -0.6
WRA PP PcP 00 10 03.4 -0.5
WRA S S 00 14 18.3 +0.1
KAKA Kakadu 47.17 272 ⇑iP P 00 08 56.5 -1.1
16nm,0.3s,mb5.0
FORT Forrest 48.41 247 eP P 00 09 05.8 -0.8
61nm,0.5s,mb5.4
FITZ Fitzroy Crossi 52.15 263 ⇓iP P 00 09 33.8 -0.1
9.8nm,0.4s,mb4.5
FITZ Fitzroy Crossi 52.15 263 P P 00 09 33.9 0.0
9.5nm,0.4s,mb4.4,baz=144,slow=2.7,SNR=96
KLBR Kellerberrin 57.17 245 eP P 00 10 08.1 -0.4
19nm,1.0s,mb4.3
NWAO Narrogin (SRO) 57.49 244 P P 00 10 10.5 -0.1
6.9nm,0.8s,mb3.9,baz=358,slow=11,SNR=7.8
NWAO Narrogin (SRO) 57.49 244 P P 00 10 10.5 -0.1
VNDA Vanda 57.56 185 P P 00 10 11.3 +0.7
2.8nm,0.5s,mb3.7,baz=13,slow=6.6,SNR=11
VNDA Vanda 57.56 185 eP P 00 10 11.0 +0.4
CBIJ Chichi jima 60.70 320 P P 00 10 31.1 -0.9
22nm,0.4s,mb4.7,baz=276,slow=18,SNR=5.1
QSPA South Pole Qui 69.29 180 eP P 00 11 25.2 +0.6
18nm,0.5s,mb4.8
JOW Kunigami 69.70 311 P P 00 11 28.3 +0.5
9.1nm,0.4s,mb4.6,baz=69,slow=6.7,SNR=6.1
MAT Matsushiro 69.94 324 P P 00 11 28.5 -0.6
MAT Matsushiro 69.94 324 eP P 00 11 29.0 -0.1
8.7nm,0.6s,mb4.4
JNU Nakatsue 71.90 317 P P 00 11 40.1 -0.4
1.3nm,0.3s,mb3.9,baz=24,slow=8.3,SNR=4.5
SMY Shemya 73.44 356 eP P 00 11 48.4 -0.5
53nm,0.3s,mb5.5
ASAJ Asahikawa 73.57 332 P P 00 11 51.1 +1.4
8.1nm,0.4s,mb4.6,baz=249,slow=5.8,SNR=5.5
FX1 Attu Island--F 73.67 355 P P 00 11 49.1 -1.0
18nm,0.5s,mb4.8,baz=271,slow=17,SNR=10.0
FX1 Attu Island--F 73.67 355 eP P 00 11 48.5 -1.6
UNV Unalaska Valle 75.08 8 eP P 00 11 56.0 -1.9
SSE Sheshan 77.22 310 P P 00 12 14.3 +4.3
SDN Sand Point 77.42 11 eP P 00 12 10.0 -0.6
56nm,0.5s,mb5.2
CMB Columbia Colle 80.24 43 eP P 00 12 25.3 -0.5
26nm,1.4s,mb4.4
OHCM Honcut 80.32 42 eP P 00 12 26.7 +0.6
WDC Whiskeytown Da 80.43 40 eP P 00 12 26.2 -0.5
36nm,1.4s,mb4.5
MAW Mawson 81.02 200 P P 00 12 30.2 +1.1
1.2nm,0.4s,mb3.7,baz=314,slow=23,SNR=5.5
MTUM Tungsten Hills 81.03 45 eP P 00 12 30.2 +0.5
YBH Yreka Blue Hor 81.03 39 eP P 00 12 30.4 +0.6
30nm,1.2s,mb4.6
BEKR Beckwourth 81.33 42 eP P 00 12 31.2 -0.1
32nm,1.4s,mb4.6
WCN Washoe City 81.38 42 eP P 00 12 32.2 +0.7
26nm,1.3s,mb4.5
HUMO Hull Mountain 81.43 38 eP P 00 12 32.0 +0.3
NVAR Mina Array Bea 81.81 44 P P 00 12 34.5 +0.7
5.6nm,0.6s,mb4.3,baz=233,slow=8.8,SNR=37
NVAR Mina Array Bea 81.81 44 P P 00 12 34.5 +0.7
HSO Harness Mounta 81.92 37 eP P 00 12 34.5 +0.3
CN2 Changchun 82.00 323 eP P 00 12 35.3 +0.7
CN2 AMB AMB
comp=Z,20nm,1.5s,mb4.4
TPH Tonopah 82.31 45 eP P 00 12 36.5 +0.2
comp=Z,35nm,1.4s,mb4.7
MOD Modoc 82.57 40 eP P 00 12 37.7 +0.2
comp=Z,65nm,1.5s,mb4.9
NEN Nelson 82.60 48 eP P 00 12 38.0 +0.2
SSOR Sweet Springs 83.11 37 eP P 00 12 40.3 +0.2
BMN Battle Mountai 83.62 43 eP P 00 12 42.8 0.0
comp=Z,16nm,1.2s,mb4.4
SVW Sparrevohn 83.73 11 eP P 00 12 43.0 +0.2
comp=Z,2.5nm,0.4s,mb4.1
TUC Tucson 83.81 52 eP P 00 12 44.5 +0.6
comp=Z,14nm,1.4s,mb4.3
MA2 Magadan 83.83 345 eP P 00 12 42.7 -0.6
MA2 pmax pmax
comp=Z,30nm,1.8s,mb4.5
WVOR Wild Horse Val 83.88 40 eP P 00 12 43.7 -0.3
comp=Z,28nm,1.5s,mb4.6
OCWA Octopus Mounta 84.00 34 eP P 00 12 45.2 +0.7
comp=Z,35nm,1.3s,mb4.7
SLKM Skilak Lake 84.27 14 eP P 00 12 44.9 -0.6
BBB Bella Bella 85.05 29 P P 00 12 50.1 +0.7
comp=Z,5.6nm,0.6s,mb4.4,baz=214,slow=15,SNR=2.2
RMW Rattlesnake Mo 85.07 35 eP P 00 12 49.6 -0.1
EYAK Cordova Ski Ar 85.38 16 eP P 00 12 50.0 -0.7
PMR Palmer 85.48 14 eP P 00 12 51.0 -0.3
comp=Z,8.1nm,0.4s,mb4.7
BJI Beijing 85.50 316 eP P 00 12 52.8 +0.9
BJI AMB AMB
comp=Z,14nm,1.3s,mb4.4
HAWA Hanford 85.67 37 eP P 00 12 52.3 -0.2
comp=Z,49nm,1.5s,mb4.9
MSU Marysvale 85.91 46 eP P 00 12 54.7 +0.9
LNOR Lincton Mounta 86.07 38 eP P 00 12 53.7 -0.8
WTV Waterville 86.21 35 P P 00 12 55.4 +0.3
NLW Nelson Butte 86.23 35 eP P 00 12 55.1 -0.1
SEY Seymchan 86.45 347 eP P 00 12 56.3 +0.5
SEY 00 22 28.3
SEY SS SS 00 28 44.4 +0.4
SEY pmax pmax
comp=Z,70nm,1.4s,mb5.1
TOA Tolsona 86.61 15 eP P 00 12 57.1 +0.5
comp=Z,12nm,0.4s,mb5.0
HLID Hailey 87.09 41 eP P 00 12 59.9 +0.7
comp=Z,17nm,1.4s,mb4.6
SPUT South Promonto 87.15 44 eP P 00 12 59.5 -0.2
DPW Davenport 87.27 36 eP P 00 13 00.1 0.0
SRU San Rafael 87.32 46 eP P 00 13 00.2 -0.2
MCK McKinley 87.42 13 eP P 00 12 58.9 -1.5
comp=Z,10nm,1.0s,mb4.5
JLU Jordanelle 87.44 45 eP P 00 13 01.3 +0.3
MNTX Cornudas Mount 87.60 55 eP P 00 13 02.0 +0.1
comp=Z,16nm,1.4s,mb4.6
SNAA Sanae 87.76 179 eP P 00 13 01.5 -0.3
LPM Los Pinos Moun 87.82 52 eP P 00 13 03.2 +0.2
HWUT Hardware Ranch 87.87 44 eP P 00 13 02.9 -0.1
TXAR Lajitas Array 87.92 58 P P 00 13 04.5 +1.0
comp=Z,4.1nm,0.9s,mb4.2,baz=225,slow=5.3,SNR=27
TXAR pP pP 00 15 17.6 +0.1
comp=Z,0.5nm,0.9s,baz=198,slow=5.7,SNR=3.6
PV10 Paradox Valley 87.98 48 eP P 00 13 03.2 -0.4
NEW Newport 88.09 36 P P 00 13 03.8 -0.1
comp=Z,1.9nm,0.6s,mb4.0,baz=301,slow=7.9,SNR=6.0
ANMO Albuquerque 88.23 52 deP P 00 12 57.0 -7.9
ANMO Albuquerque 88.23 52 eP P 00 13 05.1 +0.2
comp=Z,11nm,1.3s,mb4.4
DLBC Dease Lake 88.64 23 P P 00 13 06.8 +0.7
comp=Z,1.4nm,0.5s,mb4.1,baz=205,slow=11,SNR=8.4
COLA College 88.66 13 eP P 00 13 05.1 -1.0
COLA pmax pmax
comp=Z,32nm,1.2s,mb5.0
COLA College 88.66 13 eP P 00 13 05.1 -1.0
comp=Z,32nm,1.2s,mb5.0
IMA Indian Mountai 88.66 10 eP P 00 13 06.6 +0.5
comp=Z,4.1nm,0.6s,mb4.4
MCMT McKenzie Canyo 88.71 41 eP P 00 13 07.1 +0.3

KMI Kunming 88.72 297 eP P 00 13 09.3 +1.9
KMI AMB AMB
comp=Z,11nm,1.4s,mb4.5
ILAR Eielson Array 88.77 13 P P 00 13 05.5 -1.1
comp=Z,6.0nm,0.6s,mb4.6,baz=214,slow=5.0,SNR=68
ILAR pP pP 00 15 17.7 -3.3
comp=Z,2.0nm,1.2s,baz=232,slow=6.0,SNR=4.6
BILL Bilibino 89.22 354 diP P 00 13 07.7 -1.0
BILL e 00 16 48.8
BILL pmax pmax
comp=Z,10.0nm,1.4s,mb4.5
CMAR Chiang Mai Arr 89.41 290 P P 00 13 12.8 +2.2
comp=Z,7.6nm,1.0s,mb4.5,baz=111,slow=3.2,SNR=21
CHMT Chamberlain Mo 89.56 39 eP P 00 13 10.1 -0.6
QLMT Earthquake Lak 89.58 41 eP P 00 13 12.1 +1.2
BW06 Boulder Array 89.74 44 eP P 00 13 11.2 -0.5
comp=Z,5.1nm,0.8s,mb4.4
PDAR Pinedale Array 89.74 44 P P 00 13 11.8 +0.1
comp=Z,4.2nm,0.7s,mb4.4,baz=217,slow=3.9,SNR=43
PDAR PP PP
comp=Z,0.4nm,0.8s,baz=260,slow=5.5,SNR=4.0
DAWY Dawson 89.96 16 eP P 00 13 11.7 -0.4
SDCO Great Sand Dun 90.17 49 eP P 00 13 14.0 +0.2
WMOK Wichita Mounta 93.89 54 P P 00 13 30.9 +0.1
INK Inuvik 94.76 15 P P 00 13 33.0 -0.9
comp=Z,2.1nm,0.8s,mb4.3,baz=225,slow=4.9,SNR=9.3
INK Inuvik 94.76 15 eP P 00 13 32.4 -1.6
comp=Z,1.7nm,0.8s,mb4.2
INK epP pP 00 15 52.1 +2.9
ULN Ulaanbaatar 95.02 319 ⇑eP P 00 13 35.4 -0.2
SONM Songino Array 95.41 319 P P 00 13 37.5 +0.2
comp=Z,0.5nm,0.5s,mb3.9,baz=122,slow=2.8,SNR=4.0
SONM pP pP 00 15 54.1 +1.5
comp=Z,0.5nm,0.9s,baz=117,slow=2.8,SNR=3.0
YKA Yellowknife Ar 97.12 25 P P 00 13 44.0 -0.7
comp=Z,0.6nm,0.6s,mb4.0,baz=238,slow=4.5,SNR=20
YKA pP pP 00 15 57.4 -2.7
comp=Z,0.2nm,0.8s,baz=248,slow=5.1,SNR=3.4
YKA PP PP 00 17 46.8 -6.3
comp=Z,1.4nm,1.3s,baz=237,slow=6.7,SNR=5.3
YKA PKiKP 00 18 14.7
comp=Z,0.1nm,0.4s,baz=227,slow=1.6,SNR=5.6
YKA Yellowknife Ar 97.12 25 P P 00 13 44.0 -0.7
YKA pP pP 00 15 57.4 -2.7
YKA PP PP 00 17 46.8 -6.3
TIXI Tiksi 98.80 345 eP P 00 13 49.8 -2.3
ZAL Zalesovo 110.19 321 PKiKP 00 18 39.3
comp=Z,1.3nm,0.4s,baz=247,slow=2.9,SNR=8.0
MKAR Makanchi Array 110.77 313 Pdiff Pdif 00 14 49.8 +4.4
comp=Z,0.4nm,0.6s,baz=90,slow=2.9,SNR=4.3
MKAR PKiKP 00 18 40.9
comp=Z,1.8nm,0.4s,baz=143,slow=0.8,SNR=35
KURK Kurchatov 113.62 317 ePKP PKPdf 00 18 45.4 -0.3
SCHQ Schefferville 119.41 38 PKP PKPdf 00 18 57.0 +0.1
comp=Z,1.8nm,0.9s,baz=88,slow=12,SNR=3.1
ZRNK Zerenda 119.58 320 ePKP PKPdf 00 18 57.4 +0.2
SVE Sverdlovsk 123.73 325 ⇑ePKiKP PKPdf 00 19 06.2 +1.1
ARU Arti 124.94 325 iPKiKP PKPdf 00 19 08.6 +1.2
ARU e 00 21 09.2
ARU Arti 124.94 325 ePKP PKPdf 00 19 08.0 +0.6
KEV Kevo 128.58 349 ep PKPdf 00 19 14.2 +0.1
ARCES ARCESS Array B 129.03 349 PKhKP 00 19 03.5
comp=Z,0.7nm,0.6s,SNR=7.2
ARCES PKP PKPdf 00 19 15.6 +0.6
comp=Z,4.4nm,0.5s,baz=35,slow=0.8,SNR=45
ARCES ARCESS Array B 129.03 349 PKP PKPdf 00 19 03.5 -11
ARCES PKP PKPdf 00 19 15.6 +0.6
ARE0 ARCESS Array S 129.03 349 ePKP PKPdf 00 19 15.1 +0.2
JOF Joensuu 133.13 342 ep PKPdf 00 19 22.8 0.0
KAF Kangasniemi 135.18 343 ep PKPdf 00 19 27.0 +0.5
FINES FINESS Array B 135.79 343 PKhKP 00 19 15.8
comp=Z,0.5nm,0.4s,baz=9.1,slow=3.1,SNR=13
FINES PKP PKPdf 00 19 29.7 +2.0
comp=Z,2.0nm,0.5s,baz=90,slow=2.4,SNR=12
FINES SKP 00 22 05.8
comp=Z,4.5nm,0.7s,baz=27,slow=4.3,SNR=12
FINES FINESS Array B 135.79 343 PKP PKPdf 00 19 15.8 -12
FINES PKP PKPdf 00 19 29.7 +2.0
FINES SKP 00 22 05.8
OBN Obninsk 136.59 331 iPKiKP PKPdf 00 19 30.2 +0.8
OBN pmax pmax
comp=Z,10.0nm,1.4s
KMBO Kilima Mbogo 138.46 243 SKPbc 00 22 17.0
comp=Z,0.5nm,0.5s,baz=254,slow=24,SNR=4.1
KIV Kislovodsk 138.53 314 iPKiKP PKPdf 00 19 37.2 +4.0
NB2 NORSAR Subarra 139.15 352 PKP 00 19 26.2
comp=Z,0.6nm,0.4s,baz=10.0,slow=3.1
NOA NORSAR Array B 139.15 352 PKhKP 00 19 26.7
comp=Z,0.7nm,0.4s,baz=15,slow=4.4,SNR=6.5
NOA PKP PKPdf 00 19 34.9 +1.0
comp=Z,0.8nm,0.5s,baz=15,slow=4.1,SNR=4.8
NOA SKPbc 00 22 15.7
comp=Z,1.7nm,0.7s,baz=46,slow=3.2,SNR=3.6
NOA NORSAR Array B 139.15 352 PKP PKPdf 00 19 26.7 -7.2
NOA PKP PKPdf 00 19 34.9 +1.0
NOA SKPbc 00 22 15.7
HFS Hagfors 139.67 350 PKhKP 00 19 28.5
comp=Z,7.0nm,0.3s,baz=63,slow=3.3,SNR=86
HFS SKPbc 00 22 16.1
comp=Z,3.0nm,0.7s,baz=90,slow=1.5,SNR=4.5
SOC Sochi 140.67 314 iPKHKP 00 19 28.5
ERZM Erzurum 140.76 308 iP PKPdf 00 19 33.6 -3.7
BLJS Baljurashi 142.08 276 P PKPdf 00 19 40.6 +0.5
SUW Suwalki 142.79 338 ⇓ePKP PKPdf 00 19 39.2 -1.1
AKASG Malin Array Be 142.84 330 PKhKP 00 19 39.1
comp=Z,22nm,0.4s,baz=43,slow=4.2,SNR=114
AKASG SKPbc 00 22 24.1
comp=Z,2.3nm,0.8s,baz=34,slow=1.9,SNR=6.5
ELZG Elazig 142.95 307 iP PKPdf 00 19 42.3 +1.2
SIM Simferopol' 143.65 319 diPKHKP 00 19 43.3
SIM e 00 23 00.0
SIM pmax pmax
comp=Z,50nm,15.9s
MUD Monsted U'grnd 143.87 352 iP PKPbc 00 19 42.1 +0.3
comp=Z,19nm,0.5s
MUD Monsted U'grnd 143.87 352 iPKHKP 00 19 42.1
MUD pmax pmax
comp=Z,19nm,0.5s
COP Copenhagen 144.12 349 ⇑iP PKPbc 00 19 44.1 +1.6
comp=Z,12nm,0.6s
COP Copenhagen 144.12 349 ⇑iPKHKP 00 19 44.1
COP pmax pmax
comp=Z,12nm,0.6s
BSD Bornholm Skovb 144.16 346 ⇓iP PKPbc 00 19 43.5 +0.9
comp=Z,32nm,0.5s
BSD Bornholm Skovb 144.16 346 ⇓iPKHKP 00 19 43.5
BSD pmax pmax
comp=Z,32nm,0.5s
GZT Gaziantep 144.36 306 iP PKPdf 00 19 45.5 +1.9
KBRS Khaybar 144.67 286 P PKPdf 00 19 47.6 +3.1
BOYT Boyabat 144.80 313 iP PKPdf 00 19 47.1 +2.9
GMK Mull of Kintyr 145.12 7 ⇓eP PKPdf 00 19 46.4 +2.1
GCL Cushendall 145.32 7 eP PKPdf 00 19 48.5 +3.9
EKA Eskdalemuir Ar 145.35 4 PKPbc PKPbc 00 19 46.9 +1.0
comp=Z,5.9nm,0.6s,baz=334,slow=2.8,SNR=25
KIS Kishinev 145.49 326 ePKHKP 00 19 48.0
COBT Iskenderun 145.61 305 iP PKPdf 00 19 49.4 +3.6
YNBS Yanbu' al Bahr 145.81 283 P PKPdf 00 19 50.9 +4.4
AVNT Avonos 145.90 309 iP PKPdf 00 19 49.3 +3.1
QURS Qurayyt al Mil 145.93 296 P PKPdf 00 19 50.8 +4.4
ASF Jabal al Asfar 146.15 297 PKPbc PKPbc 00 19 51.6 +3.0
comp=Z,7.0nm,0.6s,baz=313,slow=3.1,SNR=12
ASF PKPab PKPab 00 19 54.4 -0.1
comp=Z,6.4nm,0.8s,baz=24,slow=1.4,SNR=6.7
BSEG Bad Segeberg 146.15 350 ePKiKP PKPdf 00 19 49.7 +3.6
GMM Mts of Mourne 146.16 7 eP PKPdf 00 19 49.5 +3.4
ELDT Eldivan 146.21 313 iP PKPdf 00 19 50.8 +4.1
DMUB Kingscourt 146.37 9 eP PKPdf 00 19 49.6 +3.2
BRTR Keskin Array B 146.39 311 PKPbc PKPbc 00 19 51.0 +2.1
comp=Z,7.2nm,0.6s,baz=140,slow=4.3,SNR=43
BRTR pPKPbc 00 22 12.7
comp=Z,0.4nm,0.8s,baz=139,slow=30,SNR=3.0
WIM Isle of Man 146.39 6 ⇓eP PKPdf 00 19 50.2 +3.7
WIM AMB AMB 00 19 52.9
comp=Z,70nm,1.4s
KWP Kalwaria 146.47 334 ⇓ePKP PKPdf 00 19 51.2 +4.4
DCN Croghan 146.86 9 eP PKPdf 00 19 50.9 +3.6
RUE Ruedersdorf 146.86 346 ePKPbc PKPbc 00 19 51.6 +2.1
TBKS Tabuk 146.99 290 P PKPdf 00 19 54.0 +5.7
DLF Lyons Farm 147.01 8 eP PKPdf 00 19 51.1 +3.6
OJC Ojcow 147.10 338 ⇓iPKP PKPdf 00 19 52.6 +4.8
WCB1 Church Bay 147.17 6 ⇓eP PKPdf 00 19 51.9 +4.2
WME Myndd Eilian 147.17 6 ⇓eP PKPdf 00 19 51.9 +4.1
WLF1 Llynfaes 147.27 6 ⇓eP PKPdf 00 19 52.3 +4.3

WLF1 AMB AMB 00 19 55.2
comp=Z,40nm,1.7s
VRI Vrincioaia 147.33 326 ⇑iP PKPdf 00 19 53.5 +5.2
WPM1 Penmaenmawr 147.35 6 ⇓eP PKPdf 00 19 52.4 +4.3
WPM1 AMB AMB 00 19 55.6
comp=Z,39nm,1.7s
YLL Llanberis 147.44 6 eP PKPdf 00 19 52.5 +4.3
YLL AMB AMB 00 19 54.7
comp=Z,21nm,1.4s
JMQS Jabal Moqyreh 147.51 291 P PKPdf 00 19 55.2 +6.0
YRE Yr Eifl 147.57 6 ⇓eP PKPdf 00 19 52.9 +4.4
NIE Niedzica 147.57 336 ⇓ePKP PKPdf 00 19 54.0 +5.4
KSP Ksiaz 147.70 342 ⇓ePKP PKPdf 00 19 54.5 +5.8
KSP Ksiaz 147.70 342 iPKIKP PKPdf 00 19 54.5 +5.8
KSP e 00 19 59.0
KSP Ksiaz 147.70 342 ePKP PKPdf 00 19 50.3 +1.6
KSP iPKPdf PKPdf 00 19 54.5 +5.8
KSP e 00 19 59.0
WIT Witteveen 147.73 354 ePKP PKPdf 00 19 55.2 +6.5
RAC Raciborz 147.77 339 ePKP(df) 00 19 55.0
MLR Muntele Rosu 147.99 326 PKPbc PKPdf 00 19 55.1 +5.8
MLR pPKPbc 00 22 17.4
comp=Z,2.9nm,0.8s,baz=118,slow=4.7,SNR=3.6
MLR Muntele Rosu 147.99 326 ⇑iP PKPdf 00 19 55.2 +5.9
OKC Ostrava-Krasne 147.99 339 ⇑iPKPB 00 19 55.0
UPC Upice 148.08 342 ⇑iPKPB 00 19 55.5
UPC iPKPAB PKPab 00 20 00.9 -0.5
UPC Upice 148.08 342 iPKP PKPdf 00 19 55.5 +6.2
UPC i 00 20 00.9
AYUS 'Aynunah 148.12 290 P PKPdf 00 19 56.3 +6.3
DPC Dobruska-Polom 148.12 341 ⇑iPKPB 00 19 55.7
DPC iPKPAB PKPab 00 20 01.2 -0.4
CLL Collm 148.13 346 e PKPdf 00 19 52.0 +2.6
CLL iPKP1 PKPdf 00 19 55.1 +5.7
CLL iPKP1 PKPdf 00 19 56.6 +7.2
CLL iPKP2 PKPab 00 20 00.3 -1.3
CLL iPKP2 PKPab 00 20 01.1 -0.5
CLL e*PPKP 00 22 15.0
CLL Collm 148.13 346 ePKP PKPdf 00 19 52.0 +2.6
CLL iPKP PKPdf 00 19 55.1 +5.7
CLL iPKP PKPdf 00 20 00.3 +11
JMQS Jabal al Moall 148.14 292 P PKPdf 00 19 56.6 +6.5
ALWS Ilw as Safayha 148.16 292 P PKPdf 00 19 57.0 +6.9
EIL Elat 148.21 293 PKPbc Px 00 21 21.1
comp=Z,8.4nm,0.7s,baz=29,slow=4.2,SNR=14
EIL PKPab Px 00 21 27.1
comp=Z,5.3nm,0.7s,baz=81,slow=18,SNR=5.5
BDAS Al Bad' 148.24 291 P PKPdf 00 19 56.7 +6.5
MORC Moravsky Berou 148.25 340 ePKPbc PKPdf 00 19 55.1 +5.5
BRG Berggiesshubel 148.31 344 iPKHKP 00 19 55.9
BRG i 00 20 01.4
BRG pmax pmax
comp=Z,13nm,0.7s
HAQS Haql 148.31 292 P PKPdf 00 19 57.0 +6.6
PVCC Panska Ves 148.46 343 ⇑iPKPB 00 19 56.3
PVCC iPKPAB PKPab 00 20 02.0 -1.0
PVCC epPKP 00 22 17.0
WTSB Winterswijk 148.55 353 ePKP PKPdf 00 19 56.1 +6.1
comp=Z,22nm,0.9s
PRU Pruhonice 148.96 343 ⇑iPKPB 00 19 57.0
PRU iPKPAB PKPab 00 20 04.1 -1.0
PRU epPKP 00 22 21.9
PSZ Piszkesteto 148.96 335 ePKPbc PKPdf 00 19 56.8 +6.1
VRAC Vranov 148.96 340 PKPbc PKPdf 00 19 57.1 +6.4
comp=Z,4.6nm,0.9s,baz=26,slow=4.5,SNR=12
VRAC PKPab PKPab 00 20 03.8 -1.3
comp=Z,5.9nm,0.8s,baz=37,slow=4.1,SNR=9.0
VRAC pPKPbc 00 22 20.0
comp=Z,1.0nm,0.5s,baz=156,slow=18,SNR=0.9
MOX Moxa 149.06 347 ePKHKP 00 19 57.5
MOX e 00 20 04.1
MOX pmax pmax
comp=Z,49nm,1.9s
ULDT Uludag 149.27 315 iP PKPdf 00 19 57.8 +6.3
HGN Heimansgroeve 149.83 354 ePKP PKPdf 00 19 59.1 +7.1
comp=Z,6.3nm,0.8s
HGN ex x 00 20 07.0
KHC Kasperske Hory 150.00 344 ePKPDF PKPdf 00 19 53.6 +1.3
KHC ⇑iPKPB 00 19 59.9
KHC iPKPAB PKPab 00 20 08.6 -0.8
KHC epPKP 00 22 29.9
KHC Kasperske Hory 150.00 344 ePKP PKPdf 00 19 53.6 +1.3
KHC i 00 19 59.9
KHC i 00 20 08.6
KHC e 00 22 29.9
GRA1 Grafenberg Arr 150.04 347 ePKPbc PKPdf 00 20 00.1 +7.7
GRA1 ePKPab PKPab 00 20 08.9 -0.6
GRA1 epPKPbc 00 22 25.4
GRF Grafenberg Arr 150.04 347 ePKHKP 00 20 00.1
GRF Grafenberg Arr 150.04 347 ePKP2 PKPab 00 20 08.9 -0.6
WET Wettzell 150.17 344 ePKPbc PKPdf 00 20 00.8 +8.2
WET ePKPab PKPab 00 20 09.5 -0.6
GEC2 GERESS Array S 150.23 343 ePKPbc PKPdf 00 20 00.4 +7.7
GEC2 ePKPab PKPab 00 20 09.5 -0.8
GERES GERESS Array B 150.23 343 PKP PKPdf 00 19 54.0 +1.3
comp=Z,0.6nm,0.8s,baz=191,slow=6.8,SNR=4.5
GERES PKPbc PKPdf 00 20 00.3 +7.6
comp=Z,4.6nm,0.6s,baz=27,slow=2.7,SNR=45
GERES PKPab PKPab 00 20 08.9 -1.4
comp=Z,1.0nm,0.5s,baz=45,slow=3.8,SNR=5.7
DIM Dimitrovgrad 150.44 321 eP PKPdf 00 20 01.0 +7.8
GIVF Givet 150.59 355 ePKP1 PKPdf 00 20 00.5 +7.3
comp=Z,30nm,0.7s
BAIF Baives 150.68 356 ePKP1 PKPdf 00 20 00.8 +7.5
comp=Z,11nm,0.6s
KDZ Kurdzhali 150.75 321 eP PKPdf 00 20 01.0 +7.3
WLF Walferdange 150.89 353 ePKPbc PKPdf 00 20 01.9 +8.2
MOA Molln 150.97 342 ⇑iPKP PKPdf 00 20 01.6 +7.8
MOA i 00 20 12.8
ARSA Arzberg 151.11 339 ⇑iPKP PKPdf 00 20 02.1 +8.0
RZN Rozhen 151.14 322 eP PKPdf 00 20 01.0 +6.7
VTS Vitosha 151.40 325 eP PKPdf 00 20 03.0 +8.4
FUR Furstenfeldbru 151.47 346 ePKPbc PKPdf 00 20 03.1 +8.6
FUR ePKPab PKPab 00 20 14.7 -0.9
MMB Musomiste 151.77 322 eP PKPdf 00 20 03.0 +7.8
PERS Pernice 151.78 339 iPKPbc PKPdf 00 20 03.2 +8.2
BFO Black Forest 151.90 350 ePKPbc PKPdf 00 20 03.7 +8.6
BFO ePKPab PKPab 00 20 16.1 -1.3
KBA Koelnbreinsper 151.93 342 ⇑iPKP PKPdf 00 20 03.2 +8.0
KKB Krupnik 151.96 324 eP PKPdf 00 20 04.0 +8.6
CDF Champ du Feu 151.98 351 ePKP1 PKPdf 00 20 03.6 +8.4
comp=Z,8.1nm,0.6s
FLN La Foliniere 152.05 2 ePKP1 PKPdf 00 20 03.3 +8.0
comp=Z,10nm,0.6s
MEZF Maizieres J'vi 152.16 354 ePKP1 PKPdf 00 20 04.2 +8.7
comp=Z,9.6nm,0.6s
WATA Walderalm 152.17 345 ⇑iPKP PKPdf 00 20 04.4 +8.9
WATA i 00 20 17.9
WTTA Wattenberg 152.22 344 ⇑iPKP PKPdf 00 20 04.9 +9.3
WTTA i 00 20 18.2
LDF La Druitiere 152.23 2 ePKP1 PKPdf 00 20 03.6 +8.0
comp=Z,8.4nm,0.6s
MOTA Moosalm 152.28 345 ⇑iPKP PKPdf 00 20 04.6 +8.9
MOTA i 00 20 18.0
ROSF Rostrenen 152.28 6 ePKP1 PKPdf 00 20 03.5 +7.8
comp=Z,4.7nm,0.5s
SQTA Sankt Quirin 152.37 345 ⇓iPKP PKPdf 00 20 05.0 +9.2
SQTA i 00 20 18.2
GRR Gorron 152.41 3 ePKP1 PKPdf 00 20 04.2 +8.4
comp=Z,7.4nm,0.6s
LJU Ljubljana 152.50 339 iPKPbc PKPdf 00 20 05.3 +9.2
HAU Haudompre 152.50 352 ePKP1 PKPdf 00 20 04.5 +8.5
comp=Z,7.2nm,0.5s
DAVA Damuels 152.61 347 ⇑iPKP PKPdf 00 20 05.7 +10
DAVA i 00 20 19.5
HINF Hinteralfeld 152.62 352 ePKP1 PKPdf 00 20 04.7 +8.5
comp=Z,4.7nm,0.6s
QUIF Quistinic 152.71 6 ePKP1 PKPdf 00 20 04.5 +8.2
DAVOX Davos 153.09 347 PKP PKPdf 00 19 58.4 +1.5
comp=Z,1.9nm,0.7s,baz=122,slow=9.6,SNR=3.8
DAVOX PKPbc PKPdf 00 20 07.0 +10
comp=Z,8.5nm,0.5s,baz=242,slow=3.1,SNR=27
DAVOX PKPab PKPab 00 20 20.7 -1.7
comp=Z,6.2nm,0.8s,baz=129,slow=2.5,SNR=4.8
SSF Saint Saulge 153.71 356 ePKP1 PKPdf 00 20 08.4 +11
comp=Z,3.0nm,0.4s
CABF La Chapelle 153.91 352 ePKP1 PKPdf 00 20 08.3 +10
comp=Z,7.7nm,0.7s
AVF Avril sur Loir 153.99 356 ePKP1 PKPdf 00 20 07.3 +9.2
MFF Saint Martin d 154.22 2 ePKP1 PKPdf 00 20 08.1 +10
comp=Z,4.9nm,0.7s
BGF Bois d'Agland 154.24 357 ePKP1 PKPdf 00 20 08.4 +10
TCF Toulx Ste Croi 154.54 358 ePKP1 PKPdf 00 20 08.9 +10

IDI	**Anoyia**	**154.59**	**310**	PKPbc	PKPdf	00 20 11.2	+12
	comp=Z,7.5nm,0.7s,baz=152,slow=11,SNR=2.7						
LPL	**La Plagne**	**154.89**	**351**	*e*PKP1	PKPdf	00 20 10.6	+11
	comp=Z,3.3nm,0.6s						
LPG	**La Plagne**	**154.91**	**351**	*e*PKP1	PKPdf	00 20 10.6	+11
	comp=Z,4.5nm,0.7s						
ORIF	**Oris-en-Rattie**	**155.60**	**352**	*e*PKP1	PKPdf	00 20 11.6	+11
	comp=Z,2.1nm,0.6s						
MBDF	**Montbardon**	**155.66**	**350**	*e*PKP1	PKPdf	00 20 12.2	+12
	comp=Z,5.2nm,0.7s						
VIVF	**Saint-Julien-l**	**155.80**	**354**	*e*PKP1	PKPdf	00 20 11.9	+11
CAF	**Calviac**	**155.90**	**358**	*e*PKP1	PKPdf	00 20 10.6	+10
ESDC	**Sonseca Array**	**160.67**	**12**	PKPab	PKPab	00 20 54.0	-1.0
	comp=Z,1.4nm,0.6s,baz=348,slow=4.2,SNR=9.0						
DBIC	**Dimbokro**	**164.84**	**157**	PKPab	PKPab	00 21 13.7	-0.3
	comp=Z,5.7nm,1.1s,baz=285,slow=21,SNR=4.3						

IDC ***15*** *00:13:59.7±3.4,2.57N×128.20E,h274km±33km, mb3.2/6, mb1 3.4/6, mb1mx3.2/19, Error ellipse: s-maj=52.2km s-min=11.2km az=70.0*

ISC 15 00:13:54.9±4.7,2.7N±0.2×128.4E±0.4,h242km±47km,n8, σ0§39/9,mb3.6/5,Halmahera

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**20.88**	**187**	*e*P	**P**	**00 18 19.1**	**-0.2**
	2.5nm,0.8s						
FITZ	**Fitzroy Crossi**	**20.88**	**187**	P	**P**	**00 18 19.1**	**-0.1**
	1.9nm,0.9s,baz=25,slow=11,SNR=5.8						
WRA	**Warramunga Arr**	**23.29**	**166**	P	**P**	**00 18 42.4**	**-0.3**
	1.0nm,0.5s,mb3.6,baz=345,slow=10,SNR=15						
WRA				S	**S**	**00 22 34.2**	**0.0**
	0.4nm,1.0s,baz=341,slow=14,SNR=2.7						
WB2	**Warramunga Arr**	**23.29**	**166**	*e*P	**P**	**00 18 43.5**	**+0.9**
ASAR	**Alice Springs**	**26.79**	**169**	P	**P**	**00 19 14.3**	**-0.5**
	0.7nm,0.4s,mb3.6,baz=356,slow=8.1,SNR=11						
CMAR	**Chiang Mai Arr**	**32.78**	**301**	P	**P**	**00 20 07.7**	**+0.1**
	1.1nm,0.4s,mb3.8,baz=126,slow=7.8,SNR=4.8						
SONM	**Songino Array**	**48.77**	**340**	P	**P**	**00 22 17.0**	**-0.2**
	0.5nm,0.3s,mb3.3,baz=169,slow=7.3,SNR=5.6						
MKAR	**Makanchi Array**	**59.30**	**325**	P	**P**	**00 23 33.5**	**+0.2**
	1.0nm,0.6s,mb3.6,baz=119,slow=8.3,SNR=11						

NEIC ***15*** *00:14:51.6±0.9,24.23S×66.77W,h176km±9km, Error ellipse: s-maj=19.6km s-min=11.0km az=225.0*

IDC ***15*** *00:14:53.6±2.5,24.00S×66.88W,h180km±14km, mb3.0/4, mb1 3.5/8,mb1mx3.4/16, Error ellipse: s-maj=36.4km s-min=21.5km az=2.0*

ISC 15 00:14:51.4±1.1,24.16S±0.09×66.8W±0.1,h182km±10km, n15,σ0§87/15,mb3.3/5,Salta Province

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LVC	**Limon Verde**	**2.45**	**309**	P	**P**	**00 15 35.1**	**+1.1**
	39nm,0.3s,baz=128,slow=7.9,SNR=298						
LVC				S	**S**	**00 16 06.5**	**-0.4**
	22nm,0.3s,baz=72,slow=19,SNR=21						
LPAZ	**La Paz**	**7.92**	**351**	P	**P**	**00 16 45.4**	**+0.9**
	1.4nm,0.3s,baz=163,slow=12,SNR=38						
LPAZ				S	**S**	**00 18 11.8**	**-1.1**
	baz=316,slow=16,SNR=2.1						
LPAZ	**La Paz**	**7.92**	**351**	P	**P**	**00 16 45.4**	**+0.9**
LPAZ				S	**S**	**00 18 11.8**	**-1.1**
CPUP	**Villa Florida**	**8.88**	**106**	P	**P**	**00 17 07.0**	**+10**
	0.2nm,0.3s,baz=238,slow=5.7,SNR=4.6						
CPUP	**Villa Florida**	**8.88**	**106**	P	**P**	**00 16 53.9**	**-3.1**
TRQA	**Tornquist**	**14.46**	**164**	*e*P	**P**	**00 18 07.9**	**-0.7**
	0.9nm,0.8s						
BDFB	**Brasilia**	**19.61**	**68**	P	**P**	**00 19 08.4**	**+0.7**
	0.5nm,0.3s,baz=241,slow=9.4,SNR=9.5						
TXAR	**Lajitas Array**	**63.89**	**324**	P	**P**	**00 25 06.6**	**-0.4**
	0.2nm,0.7s,mb3.1,baz=153,slow=8.1,SNR=2.8						
ANMO	**Albuquerque**	**69.76**	**326**	*e*P	**P**	**00 25 43.0**	**-0.8**
	7.1nm,1.9s,mb4.1						
PDAR	**Pinedale Array**	**77.36**	**329**	P	**P**	**00 26 27.1**	**-0.4**
	0.2nm,0.5s,mb3.0,baz=146,slow=6.5,SNR=2.8						
NVAR	**Mina Array Bea**	**78.75**	**321**	P	**P**	**00 26 36.7**	**+1.4**
	0.2nm,0.5s,mb3.0,baz=153,slow=6.0,SNR=2.3						
YKA	**Yellowknife Ar**	**94.32**	**340**	P	**P**	**00 27 50.8**	**+0.2**
	0.2nm,0.5s,mb3.5,baz=132,slow=4.4,SNR=11						
ZAL	**Zalesovo**	**143.47**	**28**	PKP	PKPdf	00 34 04.1	+0.4
	0.7nm,0.3s,baz=70,slow=7.7,SNR=2.4						
ZAL	**Zalesovo**	**143.47**	**28**	PKP	PKPdf	00 34 04.1	+0.4
MKAR	**Makanchi Array**	**146.55**	**40**	PKPbc	PKPbc	00 34 11.7	+0.9
	0.6nm,0.8s,baz=299,slow=2.8,SNR=4.1						

MEX ***15*** *00:47:17.6±1.5,16.76N×94.46W,h120km±14km,MD3.8*
NEIC ***15*** *00:47:18.8,16.96N×94.37W,h113km,MD3.8(MEX), After MEX.*

ISC 15 00:47:15.6±1.3,16.80N±0.10×94.47W±0.05, h121km±13km,n5,σ0§92/10,Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CMIG	**Matias Romero**	**0.50**	**306**	*i* P	**S**	**00 47 34.6**	**+0.8**
CMIG				*i* S	**S**	**00 47 47.3**	**-0.2**
HUIG	**Huatulco**	**1.88**	**237**	*i* P	**S**	**00 47 47.1**	**-1.0**
HUIG				*i* S	**S**	**00 48 12.3**	**-0.3**
OXX	**Oaxaca**	**2.18**	**278**	*i* P	**S**	**00 47 55.0**	**+3.0**
OXX				*i* S	**S**	**00 48 20.0**	**+0.6**
CCIG	**Comitan**	**2.29**	**103**	*i* P	**S**	**00 47 53.9**	**+0.5**
CCIG				*i* S	**S**	**00 48 21.4**	**-0.5**
IISM	**Ciudad Serdan**	**3.53**	**309**	*e*P	**P**	**00 48 10.0**	**+0.1**
IISM				*i* S	**S**	**00 48 50.0**	**-1.3**

IDC ***15*** *00:52:02.5±4.2,3.01S×139.27E,h220km±50km,mb2.9/3, mb1 3.0/5,mb1mx2.9/14, Error ellipse: s-maj=38.6km s-min=17.2km az=102.0*

ISC 15 00:51:52.6±5.7,2.9S±0.1×139.0E±0.3,h125km±63km,n6, σ1§63/8,mb3.5/2,Irian Jaya

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WB2	**Warramunga Arr**	**17.53**	**195**	*e*P	**P**	**00 55 50.1**	**-0.6**
WRA	**Warramunga Arr**	**17.53**	**195**	P	**P**	**00 55 50.0**	**-0.8**
	0.3nm,0.3s,baz=18,slow=12,SNR=15						
WRA				S	**S**	**00 58 58.5**	**-0.9**
	0.1nm,0.3s,baz=20,slow=24,SNR=4.9						
CTA	**Charters Tower**	**18.49**	**158**	P	**P**	**00 56 01.7**	**+0.1**
	0.2nm,0.3s,baz=68,slow=12,SNR=2.7						
FITZ	**Fitzroy Crossi**	**19.98**	**220**	P	**P**	**00 56 18.9**	**+1.5**
	1.1nm,1.0s,baz=32,slow=19,SNR=3.6						
FITZ				S	**S**	**00 59 55.7**	**+5.7**
	0.7nm,0.8s,baz=20,slow=6.8,SNR=1.7						
ASAR	**Alice Springs**	**21.22**	**193**	P	**P**	**00 56 31.9**	**+2.1**
	0.6nm,0.4s,mb3.3,baz=15,slow=11,SNR=8.7						
MKAR	**Makanchi Array**	**70.11**	**322**	P	**P**	**01 02 52.2**	**-1.1**
	0.9nm,0.7s,mb3.7,baz=108,slow=8.7,SNR=5.9						

JMA ***15*** *00:57:42.7±0.3,35.25N×141.47E,h36km±3km,M2.8*
IDC ***15*** *00:57:42.8±2.2,35.11N×140.99E,mb3.7/4,mb1 3.9/5, mb1mx3.5/24,ML3.2/1,MS3.4/1,Ms1 3.4/1,ms1mx2.5/29, Error ellipse: s-maj=61.3km s-min=28.6km az=81.0*

ISC 15 00:57:43.4±1.3,35.23N±0.04×141.4E±0.1,h32km±6km, n13,σ0§97/17,mb3.8/4,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.63**	**319**	P	**Pb**	**00 57 55.6**	**-0.5**
CHOJ				*e*S	**Sb**	**00 58 04.0**	**-0.8**
BSO1	**Boso 1**	**0.66**	**210**	P	**Pb**	**00 57 56.2**	**-0.2**
BSO1				*e*S	**Sb**	**00 58 07.5**	**+2.2**
BSO3	**Boso 3**	**0.82**	**239**	P	**Pn**	**00 57 58.8**	**0.0**
BSO4	**Boso 4**	**0.88**	**255**	P	**Pn**	**00 57 59.9**	**+0.3**
JYT	**Yasato**	**1.39**	**317**	P	**Pn**	**00 58 07.2**	**+0.4**
JHO	**Hitachi**	**1.53**	**335**	P	**Pn**	**00 58 08.9**	**0.0**
JIM2	**Oshima 3**	**1.67**	**253**	P	**Pn**	**00 58 10.1**	**-0.8**
JHJ	**Hachijo jima 2**	**2.48**	**213**	Pn	**Pn**	**00 58 21.6**	**-0.9**
	15nm,0.3s,baz=300,slow=18,SNR=5.2						
JHJ				LR	LR	00 58 49.0	
	comp=Z,864nm,20.5s,baz=109,slow=30						
JHJ				Sn	**Sn**	**00 58 50.7**	**-1.3**
	25nm,0.3s,baz=60,slow=18,SNR=4.7						
MAT	**Matsushiro**	**2.89**	**298**	P	**Pn**	**00 58 28.3**	**0.0**
MAT				*e*S	**Sn**	**00 59 03.1**	**+0.8**
MKAR	**Makanchi Array**	**45.07**	**304**	P	**P**	**01 05 59.1**	**+1.1**
	0.4nm,0.7s,mb3.4,baz=83,slow=11,SNR=4.6						
FITZ	**Fitzroy Crossi**	**55.10**	**198**	P	**P**	**01 07 14.6**	**-0.3**
	1.9nm,0.9s,mb4.1,baz=6.3,slow=9.2,SNR=3.2						
WRA	**Warramunga Arr**	**55.27**	**188**	P	**P**	**01 07 14.8**	**-1.3**
	0.6nm,0.5s,mb3.9,baz=0.6,slow=7.4,SNR=14						
ASAR	**Alice Springs**	**58.99**	**188**	P	**P**	**01 07 44.9**	**+2.4**
	0.6nm,0.5s,mb3.9,baz=15,slow=13,SNR=7.5						

NEIC ***15*** *02:13:51.9±1.1,64.38S×178.76E,h10km,mb4.6/2, MS4.0/1,Error ellipse: s-maj=35.6km s-min=10.2km az=87.0*

IDC ***15*** *02:13:57.4±1.2,64.59S×175.80E,mb4.2/2,mb1 4.4/3, mb1mx4.1/9,ML3.5/1,MS4.0/10,Ms1 3.9/10,ms1mx3.8/16, Error ellipse: s-maj=52.3km s-min=33.9km az=47.0*

ISC 15 02:13:50.6±1.9,64.41S±0.09×178.4E±0.9,h10km,n22, σ0§60/9,mb4.4/4,MS4.0/10,Balleny Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SBA	**Scott Base**	**13.97**	**190**	*e*P	**P**	**02 17 10.7**	**+0.4**
VNDA	**Vanda**	**14.13**	**195**	Pn	**P**	**02 17 12.1**	**-0.3**
	0.2nm,0.3s,baz=32,slow=17,SNR=12						
VNDA				LR	LR	02 21 16.8	
	comp=Z,508nm,19.7s,baz=43,slow=32						
VNDA	**Vanda**	**14.13**	**195**	Pn	**P**	**02 17 12.1**	**-0.3**
VNDA				*e*P		02 17 12.2	
VNDA				LR	LR	02 21 16.8	
RPZ	**Rata Peaks**	**21.16**	**345**	LR	LR	02 24 54.5	
	comp=Z,459nm,20.8s,MS3.8,baz=206,slow=31						
SNZO	**South Karori**	**23.24**	**353**	*e*P	**P**	**02 18 58.3**	**-0.3**
QSPA	**South Pole Qui**	**25.68**	**180**	*e*P	**P**	**02 19 29.0**	**+7.4**
	11nm,1.0s,mb4.3						
QSPA				LR	LR		
	comp=Z,430nm,18.1s,MS4.0						
URZ	**Urewera**	**26.20**	**358**	LR	LR	02 27 36.3	
	comp=Z,327nm,21.6s,MS3.8,baz=280,slow=31						
STKA	**Stephens Creek**	**39.73**	**307**	LR	LR	02 35 48.3	
	comp=Z,135nm,19.2s,MS3.8,baz=202,slow=34						
MAW	**Mawson**	**40.51**	**212**	LR	LR	02 38 18.3	
	comp=Z,126nm,18.3s,MS3.8,baz=63,slow=37						
RAR	**Rarotonga**	**45.55**	**29**	LR	LR	02 37 08.6	
	comp=Z,196nm,21.0s,MS4.0,baz=213,slow=30						
CTAO	**Charters Tower**	**49.23**	**319**	*e*P	**P**	**02 22 42.0**	**+1.1**
	comp=Z,15nm,1.5s,mb4.8						
ASAR	**Alice Springs**	**49.95**	**303**	P	**P**	**02 22 46.8**	**+0.4**
	comp=Z,2.6nm,0.8s,mb4.3,baz=155,slow=6.7,SNR=17						
ASAR				LR	LR	02 39 45.8	
	comp=Z,99nm,21.7s,MS3.8,baz=190,slow=32						
WB2	**Warramunga Arr**	**53.21**	**305**	*e*P	**P**	**02 23 10.4**	**-0.6**
WRA	**Warramunga Arr**	**53.21**	**305**	P	**P**	**02 23 10.4**	**-0.6**
	comp=Z,2.6nm,0.7s,mb4.3,baz=157,slow=6.6,SNR=26						
WRA				LR	LR	02 42 36.4	
	comp=Z,226nm,21.1s,MS4.2,baz=130,slow=33						
CPUP	**Villa Florida**	**79.74**	**131**	LR	LR	02 59 09.8	
	comp=Z,84nm,19.6s,MS4.1,baz=49,slow=34						
BDFB	**Brasilia**	**92.69**	**136**	LR	LR	03 06 54.4	
	comp=Z,70nm,20.1s,MS4.1,baz=296,slow=34						
ILAR	**Eielson Array**	**131.36**	**19**	PKhKP		02 33 06.6	
	comp=Z,0.8nm,0.8s,baz=272,slow=1.7,SNR=3.3						
ILAR				PKP	PKPdf	02 33 11.2	+6.3
	comp=Z,1.0nm,0.8s,baz=224,slow=3.0,SNR=11						
YKA	**Yellowknife Ar**	**135.97**	**38**	PKhKP		02 33 05.6	
	comp=Z,0.4nm,1.1s,baz=246,slow=8.5,SNR=4.0						
YKA				PKP	PKPdf	02 33 20.0	+6.5
	comp=Z,0.2nm,0.8s,baz=192,slow=2.2,SNR=4.2						
YKA	**Yellowknife Ar**	**135.97**	**38**	PKP	PKPdf	02 33 05.6	-7.8
YKA				PKP	PKPdf	02 33 20.0	+6.5
INK	**Inuvik**	**136.74**	**24**	PKhKP		02 33 12.6	
	comp=Z,0.7nm,0.9s,baz=298,slow=2.5,SNR=3.7						
SCHQ	**Schefferville**	**147.13**	**75**	PKPbc	PKPdf	02 33 42.6	+9.5
BRTR	**Keskin Array B**	**147.89**	**237**	PKPbc	PKPdf	02 33 40.0	+5.1
	comp=Z,2.1nm,0.9s,baz=134,slow=4.4,SNR=11						

NEIC ***15*** *02:32:49.2±3.9,20.00S×177.72W,h458km±43km,mb4.3/7, Error ellipse: s-maj=18.4km s-min=14.6km az=52.0*

IDC ***15*** *02:32:53.4±2.7,19.87S×177.90W,h498km±30km, mb3.5/12,mb1 3.7/13,mb1mx3.6/17,Error ellipse: s-maj=20.6km s-min=12.0km az=153.0*

ISC 15 02:32:50.2±2.4,20.0S±0.1×177.86W±0.09,h478km±26km, n49,σ0§93/30,mb3.9/17,2C-1D,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**18.69**	**192**	P	**P**	**02 36 36.6**	**-1.4**
	3.1nm,0.3s,baz=354,slow=4.1,SNR=10						
URZ				S	**S**	**02 39 47.4**	**+5.6**
	0.4nm,0.3s,baz=86,slow=15,SNR=3.5						
RPZ	**Rata Peaks**	**25.38**	**199**	P	**P**	**02 37 37.7**	**-2.0**
	4.5nm,0.5s,mb4.2,baz=60,slow=7.2,SNR=6.7						
ARMA	**Armidale**	**29.40**	**243**	*e*P	**P**	**02 38 16.3**	**+1.1**
CTA	**Charters Tower**	**33.67**	**264**	*i* P	**P**	**02 38 52.8**	**+1.2**
	5.5nm,0.4s,mb4.3						
CTAO	**Charters Tower**	**33.67**	**264**	*e*P	**P**	**02 38 52.6**	**+1.0**
	7.7nm,0.5s,mb4.4						
STKA	**Stephens Creek**	**38.12**	**244**	*e*P	**P**	**02 39 29.7**	**+1.3**
	2.7nm,0.6s,mb3.9						
STKA	**Stephens Creek**	**38.12**	**244**	P	**P**	**02 39 29.7**	**+1.4**
	3.2nm,0.5s,mb4.0,baz=86,slow=12,SNR=7.3						
AS12	**Alice Springs**	**44.76**	**256**	*e*P	**P**	**02 40 21.9**	**+0.2**
	10nm,1.2s,mb4.1						
ASAR	**Alice Springs**	**44.76**	**256**	P	**P**	**02 40 21.9**	**+0.3**
	4.2nm,0.5s,mb4.1,baz=88,slow=7.9,SNR=79						
ASAR				S	**S**	**02 46 23.4**	**+0.2**
	0.2nm,0.4s,baz=93,slow=15,SNR=3.3						
WB2	**Warramunga Arr**	**44.79**	**262**	*i* P	**P**	**02 40 21.6**	**-0.4**
WRA	**Warramunga Arr**	**44.80**	**262**	P	**P**	**02 40 21.9**	**-0.1**
	3.8nm,0.3s,mb4.3,baz=95,slow=7.4,SNR=214						
WRA				S	**S**	**02 46 22.7**	**-1.2**
	0.4nm,0.8s,baz=94,slow=13,SNR=2.9						
KAKA	**Kakadu**	**48.14**	**271**	*e*P	**P**	**02 40 46.9**	**-0.8**
	2.1nm,0.2s,mb4.1						
FITZ	**Fitzroy Crossi**	**53.23**	**262**	*e*P	**P**	**02 41 24.8**	**-0.3**
	0.9nm,0.4s,mb3.5						
FITZ	**Fitzroy Crossi**	**53.23**	**262**	P	**P**	**02 41 25.0**	**-0.1**
SBA	**Scott Base**	**58.35**	**184**	*e*P	**P**	**02 42 00.1**	**+0.2**
	13nm,1.0s,mb4.2						
VNDA	**Vanda**	**58.39**	**185**	P	**P**	**02 42 01.1**	**+0.9**
	1.9nm,0.6s,mb3.6,baz=348,slow=6.9,SNR=10						
CBIJ	**Chichi jima**	**60.77**	**319**	P	**P**	**02 42 16.1**	**-0.6**
	17nm,0.5s,mb4.8,baz=294,slow=23,SNR=2.5						
QSPA	**South Pole Qui**	**70.04**	**180**	*e*P	**P**	**02 43 15.0**	**+1.1**
	8.7nm,0.7s,mb4.4						
NVAR	**Mina Array Bea**	**80.59**	**43**	P	**P**	**02 44 13.6**	**+0.4**
	0.4nm,0.7s,mb3.1,baz=220,slow=7.0,SNR=3.5						
MAW	**Mawson**	**82.05**	**200**	P	**P**	**02 44 20.9**	**+0.9**
	16nm,1.4s,mb4.4,baz=141,slow=6.5,SNR=3.7						
TXAR	**Lajitas Array**	**86.69**	**57**	P	**P**	**02 44 44.3**	**+0.7**
	0.7nm,1.0s,mb3.3,baz=239,slow=5.3,SNR=3.7						
PV10	**Paradox Valley**	**86.76**	**47**	P	**P**	**02 44 44.3**	**+0.5**
NEW	**Newport**	**86.91**	**36**	P	**P**	**02 44 43.5**	**-0.7**
	0.9nm,0.5s,mb3.8,baz=150,slow=12,SNR=2.9						
ILAR	**Eielson Array**	**87.82**	**13**	P	**P**	**02 44 46.8**	**-1.4**
	0.4nm,0.7s,mb3.3,baz=228,slow=5.2,SNR=4.7						
SNAA	**Sanae**	**88.48**	**178**	P	**P**	**02 44 49.7**	**-1.4**
PDAR	**Pinedale Array**	**88.53**	**43**	P	**P**	**02 44 52.4**	**+0.4**
	0.3nm,0.7s,mb3.2,baz=214,slow=3.3,SNR=3.1						
PDAR	**Pinedale Array**	**88.53**	**43**	P	**P**	**02 44 52.4**	**+0.4**
ARCES	**ARCESS Array B**	**128.48**	**350**	PKP	PKPdf	02 51 02.0	+0.7
	1.3nm,0.8s,baz=45,slow=1.3,SNR=3.8						
FINES	**FINESS Array B**	**135.36**	**344**	PKhKP		02 51 11.2	
	2.3nm,1.1s,baz=90,slow=1.9,SNR=3.3						
FINES				PKP	PKPdf	02 51 16.8	+2.4
	2.8nm,1.1s,baz=108,slow=4.4,SNR=3.8						
HFS	**Hagfors**	**139.10**	**351**	PKhKP		02 51 12.8	
	0.5nm,0.5s,baz=27,slow=3.2,SNR=4.8						
AKASG	**Malin Array Be**	**142.67**	**331**	PKhKP		02 51 25.2	
	0.5nm,0.3s,baz=42,slow=4.0,SNR=5.1						
EKA	**Eskdalemuir Ar**	**144.52**	**5**	PKP	PKPdf	02 51 31.2	+0.4
	1.1nm,0.5s,baz=326,slow=3.0,SNR=6.7						
CLL	**Collm**	**147.63**	**347**	*i* PKP1	PKPdf	02 51 41.1	+5.0
CLL				*i* PKP2	PKPab	02 51 44.6	-1.1
GERES	**GERESS Array B**	**149.78**	**345**	PKPbc	PKPdf	02 51 46.6	+7.0
	1.4nm,0.6s,baz=45,slow=1.9,SNR=17						
GIVF	**Givet**	**149.92**	**357**	*e*PKP1	PKPdf	02 51 46.6	+6.8
	8.0nm,0.5s						
BAIF	**Baives**	**149.99**	**357**	*e*PKP1	PKPdf	02 51 46.9	+7.0
	5.2nm,0.6s						
FLN	**La Foliniere**	**151.25**	**4**	*e*PKP1	PKPdf	02 51 49.2	+7.4
	3.6nm,0.5s						
CDF	**Champ du Feu**	**151.38**	**353**	*e*PKP1	PKPdf	02 51 50.5	+8.5
	3.1nm,0.7s						
ROSF	**Rostrenen**	**151.42**	**8**	*e*PKP1	PKPdf	02 51 49.3	+7.2
LDF	**La Druitiere**	**151.44**	**3**	*e*PKP1	PKPdf	02 51 49.5	+7.4
	2.7nm,0.4s						
MEZF	**Maizieres J'vi**	**151.50**	**356**	*e*PKP1	PKPdf	02 51 50.2	+8.0
GRR	**Gorron**	**151.60**	**4**	*e*PKP1	PKPdf	02 51 50.1	+7.8
	3.4nm,0.4s						
HAU	**Haudompre**	**151.88**	**354**	*e*PKP1	PKPdf	02 51 50.9	+8.2
HINF	**Hinteralfeld**	**152.02**	**353**	*e*PKP1	PKPdf	02 51 51.1	+8.2
	2.0nm,0.5s						
DAVOX	**Davos**	**152.57**	**348**	PKPbc	PKPdf	02 51 53.0	+9.3
	0.8nm,0.4s,baz=63,slow=4.5,SNR=4.0						
SSF	**Saint Saulge**	**153.01**	**358**	*e*PKP2	PKPab	02 52 06.3	-1.9
MFF	**Saint Martin d**	**153.43**	**4**	*e*PKP1	PKPdf	02 51 54.1	+9.2
TCF	**Toulx Ste Croi**	**153.81**	**360**	*e*PKP1	PKPdf	02 51 55.7	+10
	2.4nm,0.8s						
ESDC	**Sonseca Array**	**159.73**	**14**	PKPab	PKPab	02 52 35.7	-1.4
	0.7nm,0.6s,baz=73,slow=38,SNR=3.1						

IDC ***15*** *02:40:14.4±6.2,33.46N×27.78E,mb3.9/3,mb1 3.6/7, mb1mx3.4/21,ML3.1/4,Error ellipse: s-maj=92.1km s-min=32.4km az=176.0,Putative timing error at EIL*

ISC 15 02:40:18.1±3.6,33.4N±0.2×27.8E±0.1,h49km±21km,n9, σ1§10/11,mb3.7/3,Eastern Mediterranean Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
IDI	**Anoyia**	**3.02**	**309**	Pn	**P**	**02 41 03.9**	**-0.7**
	1.5nm,0.3s,baz=113,slow=15,SNR=18						
IDI				Sn	**S**	**02 41 39.4**	**-0.4**
	5.2nm,0.3s,baz=279,slow=15,SNR=9.7						
AYDN	**Tasoluk**	**4.24**	**1**	*i* P	**P**	**02 41 25.1**	**+3.2**
DNZL	**Cakiroluk**	**4.39**	**13**	*i* P	**P**	**02 41 25.2**	**+1.2**
MANT	**Manisa**	**5.11**	**7**	*i* P	**P**	**02 41 35.0**	**+1.0**
BRTR	**Keskin Array B**	**7.88**	**35**	Pn	**P**	**02 42 09.6**	**-3.0**
	0.1nm,0.3s,baz=249,slow=35,SNR=2.6						
BRTR				Sn	**S**	**02 43 40.6**	**-0.7**
	0.4nm,0.3s,baz=214,slow=26,SNR=7.8						
GERES	**GERESS Array B**	**18.65**	**330**	P	**P**	**02 44 34.5**	**+0.4**
	0.1nm,0.3s,baz=148,slow=13,SNR=2.8						
FINES	**FINESS Array B**	**28.06**	**358**	P	**P**	**02 46 07.3**	**+0.6**
	1.3nm,0.8s,mb3.6,baz=170,slow=12,SNR=3.5						
HFS	**Hagfors**	**28.29**	**345**	P	**P**	**02 46 07.8**	**-0.9**
	2.1nm,0.9s,mb3.8,baz=153,slow=9.7,SNR=3.2						
ARCES	**ARCESS Array B**	**36.19**	**359**	P	**P**	**02 47 17.9**	**+0.4**
	0.7nm,0.7s,mb3.7,baz=174,slow=8.2,SNR=6.0						

IDC ***15*** *04:24:32.2±2.5,0.95S×133.81E,mb3.6/2,mb1 3.7/4, mb1mx3.6/17,ML3.5/2,Error ellipse: s-maj=97.1km s-min=24.9km az=80.0*

ISC 15 04:24:34.2±2.5,1.0S±0.2×134.1E±0.6,h33km,n4,σ1§34/4, mb3.6/2,Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**18.87**	**179**	P	**P**	**04 28 53.6**	**-0.9**
	0.2nm,0.3s,baz=356,slow=11,SNR=11						
FITZ	**Fitzroy Crossi**	**18.94**	**205**	P	**P**	**04 28 55.3**	**0.0**
	0.1nm,0.3s,baz=18,slow=9.6,SNR=3.4						
ASAR	**Alice Springs**	**22.58**	**180**	P	**P**	**04 29 34.2**	**+1.0**
	0.8nm,0.4s,mb3.5,baz=0.3,slow=12,SNR=11						
MKAR	**Makanchi Array**	**65.59**	**324**	P	**P**	**04 35 17.0**	**-0.1**
	0.4nm,0.5s,mb3.7,baz=110,slow=8.4,SNR=7.4						

IDC 15 05:03:34.3±2.8,1.11S×133.32E,mb3.3/2,mb1 3.6/3, mb1mx3.5/17,ML3.3/1,Error ellipse: s-maj=135.0km s-min=27.7km az=75.0,Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**18.74**	**177**	P	P	05 07 54.4	-2.5
	0.1nm,0.3s,baz=356,slow=11,SNR=11						
ASAR	**Alice Springs**	**22.43**	**179**	P	P	05 08 35.3	-1.0

TYC					S		**S**	**05 08 33.0 +0.2**
EHY	**Hungye**	**1.45**	**202**	*e*P		P	**S**	**05 08 13.9 -1.6**
WNT	**Mingjian**	**1.49**	**229**	⇓*i*P		P	**S**	**05 08 16.7 +0.8**
WNT					S		**S**	**05 08 36.0 +0.4**
TWF1	**Yuli**	**1.60**	**201**	*e*P		P	**S**	**05 08 16.1 -1.3**
YUS	**Yu-Shan**	**1.62**	**213**	⇓*i*P		P	**S**	**05 08 18.8 +1.2**
YUS					S		**S**	**05 08 41.3 +2.7**
ALS	**Alishan**	**1.68**	**217**	*e*P		P	**S**	**05 08 19.7 +1.3**
ALS					S		**S**	**05 08 41.9 +2.0**
CHN5	**Tsauling**	**1.69**	**222**	⇓*i*P		P	**S**	**05 08 19.1 +0.7**
CHN5					S		**S**	**05 08 39.9 -0.1**
WGK	**Gukeng**	**1.70**	**227**	*e*P		P	**S**	**05 08 19.5 +0.9**
WGK					S		**S**	**05 08 41.4 +1.2**
IRIF	**Iriomote-Funau**	**1.74**	**107**	P		P	**S**	**05 08 18.9 -0.1**
IRIF					S		**S**	**05 08 40.6 -0.4**
WTCT	**Ta-ch'eng**	**1.79**	**237**	*e*P		P	**S**	**05 08 20.1 +0.4**
WTCT					S		**S**	**05 08 41.8 -0.4**
CHKT	**Chengkung**	**1.82**	**196**	*e*P		P	**S**	**05 08 19.6 -0.6**
CHKT					S		**S**	**05 08 40.9 -2.1**
ELDTW	**Lidau**	**1.86**	**206**	*e*P		P	**S**	**05 08 20.5 0.0**
CHN2	**Minshiung**	**1.86**	**225**	*e*P		P	**S**	**05 08 21.7 +1.0**
HATJ	**Hateruma jima**	**1.90**	**115**	P		P	**S**	**05 08 21.5 +0.3**
HATJ					S		**S**	**05 08 45.7 +1.0**
CHY	**Chiayi**	**1.92**	**225**	*e*P		P	**S**	**05 08 21.4 -0.1**
CHY					S		**S**	**05 08 44.6 -0.5**
CHN4	**Tsaushan**	**1.93**	**219**	*e*P		P	**S**	**05 08 22.3 +0.8**
CHN4					S		**S**	**05 08 48.8 +3.6**
WSF	**Szhu**	**1.97**	**232**	*e*P		P	**S**	**05 08 22.5 +0.5**
WSF					S		**S**	**05 08 46.1 0.0**
WTP	**Ta-pu**	**2.00**	**217**	⇓*i*P		P	**S**	**05 08 23.0 +0.6**
JKRS	**Kuro-shima**	**2.01**	**108**	P		P	**S**	**05 08 22.9 +0.3**
JKRS					S		**S**	**05 08 47.9 +0.8**
TWK	**Hsinying**	**2.05**	**220**	⇓*i*P		P	**S**	**05 08 23.7 +0.5**
JIJ	**Ishigaki jima**	**2.09**	**103**	P		P	**S**	**05 08 23.5 -0.2**
JIJ					S		**S**	**05 08 49.2 +0.1**
CHN1	**Nanshi**	**2.10**	**217**	⇓*i*P		P	**S**	**05 08 24.3 +0.5**
CHN1					S		**S**	**05 08 49.9 +0.7**
SGST	**Jiashian**	**2.15**	**215**	⇓*i*P		P	**S**	**05 08 25.3 +0.8**
SGST					S		**S**	**05 08 48.7 -1.9**
CHN8	**Yiju**	**2.17**	**226**	*e*P		P	**S**	**05 08 24.3 -0.5**
TWG	**Pinlang**	**2.17**	**201**	*e*P		P	**S**	**05 08 23.4 -1.4**
TTN	**Taitung**	**2.21**	**199**	*e*P		P	**S**	**05 08 24.5 -0.9**
CHN3	**Shinhua**	**2.27**	**219**	*e*P		P	**S**	**05 08 26.7 +0.5**
TAI1	**Yung-k'ang**	**2.38**	**221**	*e*P		P	**S**	**05 08 27.5 -0.1**
SSD	**Sandimen**	**2.41**	**209**	⇓*i*P		P	**S**	**05 08 28.9 +0.8**
ECL	**Taimali**	**2.42**	**201**	*e*P		P	**S**	**05 08 27.0 -1.3**
ECL					S		**S**	**05 08 55.2 -2.0**
TWM1	**Shoushan**	**2.45**	**214**	*e*P		P	**S**	**05 08 29.6 +1.0**
SGLT	**Jiouru**	**2.49**	**212**	*e*P		P	**S**	**05 08 30.1 +0.9**
PNG	**Penghu**	**2.51**	**240**	⇓P		P	**S**	**05 08 28.4 -1.0**
PNG					S		**S**	**05 08 57.0 -2.3**
JTJ	**Tarama**	**2.55**	**94**	P		P	**S**	**05 08 30.4 +0.5**
JTJ					S		**S**	**05 09 01.0 +0.8**
WDGT	**Dungji**	**2.60**	**233**	*e*P		P	**S**	**05 08 30.3 -0.5**
EAST	**Anshuo**	**2.65**	**202**	*e*P		P	**S**	**05 08 30.5 -0.9**
SCZT	**Fangliau**	**2.75**	**206**	*e*P		P	**S**	**05 08 33.3 +0.6**
LAY	**Lan-yu**	**2.83**	**187**	*e*P		P	**S**	**05 08 32.4 -1.4**
TWP	**Hsiaoliuchiu**	**2.88**	**210**	*e*P		P	**S**	**05 08 35.6 +1.0**
QZH	**Quanzhou**	**3.02**	**272**	⇓*i*P		P	**S**	**05 08 35.8 -0.6**
QZH					S		**S**	**05 09 04.1 -7.7**
QZH					S		S	
	comp=N,3μm,0.8s							
QZH					S		S	
	comp=E,2μm,1.2s							
HEN	**Hengchun**	**3.04**	**201**	*e*P		P	**S**	**05 08 34.6 -2.2**
JMJ	**Miyako jima 2**	**3.07**	**90**	P		P	**S**	**05 08 38.0 +0.8**
JMJ					S		**S**	**05 09 13.6 +0.5**
TWK1	**Hengchun**	**3.08**	**200**	*e*P		P	**S**	**05 08 36.1 -1.1**
TWK1					S		**S**	**05 09 12.5 -0.8**
JOGS	**Gusukube**	**3.18**	**91**	P		P	**S**	**05 08 39.7 +1.1**
JOGS					S		**S**	**05 09 16.7 +1.0**
KNM	**Kinmen**	**3.20**	**263**	⇑P		P	**S**	**05 08 39.7 +0.8**
BBP	**Basco**	**4.40**	**179**	*e*P		P	**S**	**05 08 53.2 -2.2**
BBP					eS		**S**	**05 09 40.4 -5.4**
JKE	**Kume jima 2**	**4.63**	**71**	P		P	**S**	**05 08 59.7 +1.2**
JKE					S		**S**	**05 09 55.8 +4.3**
JAGN	**Aguni-jima**	**5.11**	**69**	P		P	**S**	**05 09 05.9 +1.0**
JOW	**Kunigami**	**6.06**	**70**	P		P	**S**	**05 09 17.3 -0.6**
	comp=E,12nm,0.3s,baz=240,slow=9.1,SNR=34							
JOW					S		**S**	**05 10 25.1 -1.5**
	comp=E,10.0nm,0.3s,baz=123,slow=24,SNR=5.7							
JOW					LR		LR	05 12 17.5
	comp=E,68nm,19.1s,baz=284,slow=44							
JOW	**Kunigami**	**6.06**	**70**	P		P	**S**	**05 09 17.2 -0.7**
JOW					S		**S**	**05 10 24.5 -2.0**
SSE	**Sheshan**	**6.24**	**354**	P		P	**S**	**05 09 19.4 -1.1**
SSE					S		**S**	**05 10 34.3 +3.3**
SSE					S		S	
	comp=N,76nm,0.9s							
SSE					S		S	
	comp=E,83nm,0.9s							
JTK	**Tokunoshima**	**6.95**	**64**	P		P	**S**	**05 09 28.9 -1.4**
APYP	**Conner**	**6.99**	**185**	*e*P		P	**S**	**05 09 29.8 -1.1**
APYP					eS		**S**	**05 10 45.8 -3.7**
CVP	**Callao Caves**	**7.12**	**181**	⇑*e*P		P	**S**	**05 09 33.0 +0.3**
ABRA	**Dolores**	**7.26**	**189**	*e*P		P	**S**	**05 09 36.3 +1.8**
ABRA					eS		**S**	**05 10 58.1 +2.1**
NJ2	**Nanjing**	**7.65**	**340**	*e*P		P	**S**	**05 09 43.3 +3.5**
NJ2					S		**S**	**05 11 05.0 -0.5**
NJ2					LR		LR	
	comp=N,250nm,14.0s							
NJ2					LR		LR	
	comp=E,610nm,11.6s							
JAM	**Amami Oshima**	**7.74**	**61**	P		P	**S**	**05 09 39.0 -2.0**
PALP	**Palanan**	**7.78**	**176**	*e*P		P	**S**	**05 09 43.8 +2.2**
PALP					eS		**S**	**05 11 05.9 -2.7**
WHN	**Wuhan**	**8.77**	**312**	*e*P		P	**S**	**05 09 54.5 -0.4**
WHN					S		**S**	**05 11 27.6 -5.2**
WHN					LR		LR	
	comp=Z,470nm,6.6s							
KS15	**Wonju Array Si**	**13.54**	**21**	*e*P		P	**S**	**05 11 01.7 +3.4**
KS15				*e*				05 11 06.0
GYA	**Guiyang**	**13.85**	**280**	⇑*i*P		P	**S**	**05 11 05.4 +3.0**
GYA					AMB		AMB	
	comp=Z,30nm,1.0s							
GYA					LR		LR	
	comp=N,970nm,4.3s							
GYA					LR		LR	
	comp=E,540nm,5.0s							
GYA					LR		LR	
	comp=Z,200nm,4.9s							
XAN	**Xi'an**	**14.54**	**312**	P		P	**S**	**05 11 11.4 +0.1**
XAN					AMB		AMB	
	comp=Z,4.0nm,0.7s							
BJI	**Beijing**	**15.88**	**344**	*e*P		P	**S**	**05 11 30.1 +1.8**
BJI					S		**S**	**05 14 28.0 +6.9**
BJI					AMB		AMB	
	comp=Z,12nm,1.6s							
CD2	**Chengdu**	**17.14**	**295**	*e*P		P	**S**	**05 11 44.5 +0.5**
CD2					S		**S**	**05 14 52.6 +3.1**
CD2					AMB		AMB	
	comp=Z,30nm,0.9s							
CD2					AMB		AMB	
	comp=Z,100nm,4.7s							
CD2					LR		LR	
	comp=N,320nm,3.8s							
CD2					LR		LR	
	comp=Z,240nm,8.5s							
JHJ	**Hachijo jima 2**	**17.65**	**58**	LR		LR	**S**	05 18 18.8
	comp=Z,104nm,20.5s,baz=288,slow=36							
HHC	**Hu-ho-hao-te**	**18.14**	**334**	⇓P		P	**S**	**05 11 58.9 +2.9**
HHC					AMB		AMB	
	comp=Z,23nm,1.4s							
HHC					AMB		AMB	
	comp=Z,131nm,8.6s							
MAJO	**Matsushiro**	**18.19**	**46**	*e*P		P	**S**	**05 11 51.8 -4.9**
	comp=Z,6.4nm,0.8s							
CBIJ	**Chichi jima**	**18.36**	**79**	LR		LR	**S**	05 18 39.7
	comp=Z,39nm,20.4s,baz=155,slow=36							
BTO	**Baotou**	**18.59**	**331**	*e*P		P	**S**	**05 12 01.5 +0.4**
BTO					AMB		AMB	
	comp=Z,26nm,1.2s							
CN2	**Changchun**	**19.11**	**8**	*e*P		P	**S**	**05 12 07.3 +0.4**
CN2					AMB		AMB	
	comp=Z,10.0nm,1.1s							
LZH	**Lanzhou**	**19.14**	**310**	*e*P		P	**S**	**05 12 11.5 +4.2**
LZH					AP			05 12 21.3
LZH					AMB		AMB	
	comp=Z,39nm,1.3s							
LZH					LR		LR	
	comp=N,257nm,13.0s							
LZH					LR		LR	
	comp=Z,279nm,17.3s							
MDJ	**Mudanjiang**	**20.67**	**16**	P		P	**S**	**05 12 23.3 +0.1**
MDJ					AMB		AMB	
	comp=Z,14nm,1.1s							
MDJ					AMB		AMB	
	comp=Z,33nm,5.5s							
CMAR	**Chiang Mai Arr**	**22.26**	**258**	P		P	**S**	**05 12 41.0 +1.9**
	comp=Z,3.4nm,0.9s,mb3.7,baz=58,slow=8.6,SNR=11							
CMAR					pP			05 13 04.2
	comp=Z,1.6nm,0.5s,baz=60,slow=8.5,SNR=3.9							
CMAR					LR		LR	05 21 43.8
	comp=Z,54nm,18.0s,baz=110,slow=37							
GTA	**Gaotai**	**23.59**	**313**	P		P	**S**	**05 12 54.5 +2.7**
GTA					AMB		AMB	
	comp=Z,9.0nm,1.3s,mb3.9							
KLR	**Kul'dur**	**25.51**	**15**	*e*P		P	**S**	**05 13 10.0 -0.1**
ASAJ	**Asahikawa**	**25.56**	**36**	P		P	**S**	**05 13 09.1 -1.5**
	comp=Z,7.1nm,0.6s,mb4.3,baz=282,slow=31,SNR=2.7							
ASAJ					LR		LR	05 23 47.5
	comp=Z,70nm,20.4s,baz=151,slow=38							
ULN	**Ulaanbaatar**	**25.80**	**337**	*c i*P		P	**S**	**05 13 12.6 -0.1**
ULN	**Ulaanbaatar**	**25.80**	**337**	⇑*e*P		P	**S**	**05 13 12.9 +0.1**
	comp=Z,3.7nm,0.6s,mb4.0							
SONM	**Songino Array**	**26.01**	**336**	P		P	**S**	**05 13 15.5 +0.8**
	comp=Z,6.1nm,0.9s,mb4.0,baz=153,slow=11,SNR=23							
SONM					pP		pP	05 13 37.8 +1.2
	comp=Z,2.6nm,0.8s,baz=150,slow=10.0,SNR=2.9							
YSS	**Yuzh-Sakhalins**	**27.61**	**32**	*e*P		P	**S**	**05 13 30.3 +1.0**
YSS					pmax		pmax	
	comp=Z,49nm,1.5s,mb4.8							
YAK	**Yakutsk**	**37.53**	**6**	*e*P		P	**S**	**05 14 54.1 -1.0**
YAK					pmax		pmax	
	comp=Z,8.0nm,0.7s,mb4.7							
MKAR	**Makanchi Array**	**38.32**	**315**	P		P	**S**	**05 15 02.4 +0.6**
	comp=Z,3.1nm,0.5s,mb4.4,baz=100,slow=10,SNR=40							
MKAR					pP		pP	05 15 26.0 +0.9
	comp=Z,3.6nm,0.9s,baz=97,slow=9.8,SNR=5.1							
MKAR					sP		sP	05 15 38.5 +1.7
	comp=Z,1.4nm,0.6s,baz=90,slow=8.5,SNR=3.2							
MKAR	**Makanchi Array**	**38.32**	**315**	P		P		**05 15 02.4 +0.6**
MKAR					pP		pP	05 15 26.0 +0.9
MKAR					sP		sP	05 15 38.5 +1.7
ZAL	**Zalesovo**	**40.05**	**326**	P		P		**05 15 16.4 +0.3**
ZAL					pP		pP	05 15 41.0 +1.6
	comp=Z,1.2nm,0.4s,baz=274,slow=5.8,SNR=1.9							
ZAL					sP		sP	05 15 53.5 +2.4
	comp=Z,1.2nm,0.7s,baz=243,slow=8.0,SNR=1.3							
ZAL	**Zalesovo**	**40.05**	**326**	P		P		**05 15 16.4 +0.3**
ZAL					pP		pP	05 15 41.0 +1.6
ZAL					sP		sP	05 15 53.5 +2.4
KURK	**Kurchatov**	**42.01**	**319**	P		P		**05 15 32.3 +0.2**
PMG	**Port Moresby**	**42.03**	**141**	*e*P		P		**05 15 32.2 -0.6**
	comp=Z,7.9nm,0.8s,mb4.5							
WRA	**Warramunga Arr**	**46.15**	**164**	P		P		**05 16 05.0 -0.9**
	comp=Z,1.2nm,0.4s,mb4.0,baz=346,slow=8.5,SNR=29							
WB2	**Warramunga Arr**	**46.15**	**164**	*e*P		P		**05 16 04.9 -1.0**
TIXI	**Tiksi**	**46.98**	**3**	*e*P		P		**05 16 10.3 -1.5**
TIXI					pmax		pmax	
	comp=Z,110nm,1.1s,mb5.5							
TIXI	**Tiksi**	**46.98**	**3**	*e*P		P		**05 16 10.4 -1.4**
	comp=Z,17nm,1.1s,mb4.7							
BVAR	**Borovoye Array**	**47.58**	**320**	P		P		**05 16 16.1 -0.6**
	comp=Z,0.7nm,0.4s,mb3.9,baz=90,slow=7.4,SNR=6.4							
BRVK	**Borovoye**	**47.65**	**320**	*e*P		P		**05 16 17.5 +0.3**
BRVK					pP		pP	05 16 42.2 +1.2
ZRNK	**Zerenda**	**48.37**	**320**	*e*P		P		**05 16 22.3 -0.5**
ZRNK					epP		pP	05 16 45.1 -1.5
ZRNK					PcP		PcP	05 17 43.6 -4.6
ASAR	**Alice Springs**	**49.62**	**166**	P		P		**05 16 32.8 -0.1**
	comp=Z,1.0nm,0.6s,mb3.9,baz=342,slow=7.0,SNR=12							
ASAR					pP		pP	05 16 59.5 +2.7
	comp=Z,0.9nm,0.6s,baz=348,slow=11,SNR=3.5							
CTA	**Charters Tower**	**50.57**	**150**	P		P		**05 16 39.7 -0.5**
	comp=Z,1.7nm,0.3s,mb4.6,baz=151,slow=15,SNR=10.0							
CTA	**Charters Tower**	**50.57**	**150**	P		P		**05 16 39.7 -0.5**
BILL	**Bilibino**	**50.82**	**20**	⇓*i*P		P		**05 16 40.5 -0.9**
BILL				*e*				05 17 56.0
BILL				*e*				05 18 38.2
BILL					pmax		pmax	
	comp=Z,7.0nm,1.2s,mb4.6							
SVE	**Sverdlovsk**	**53.90**	**323**	⇑*e*P		P		**05 17 02.4 -2.1**
ARU	**Arti**	**54.97**	**323**	⇓*i*P		P		**05 17 11.3 -1.0**
ARU				*e*				05 19 15.4
ARU				*e*S		S		**05 24 42.1 -2.5**
ARU					pmax		pmax	
	comp=Z,4.0nm,1.1s,mb4.4							
NWAO	**Narrogin (SRO)**	**57.64**	**185**	P		P		**05 17 32.8 +1.2**
	comp=Z,5.9nm,0.8s,mb4.7,baz=45,slow=7.1,SNR=3.3							
ZEI	**Tsey**	**65.05**	**307**	⇑*e*P		P		**05 18 21.7 +0.3**
KIV	**Kislovodsk**	**65.68**	**309**	*c i*P		P		**05 18 25.4 0.0**
KIV					pmax		pmax	
	comp=Z,12nm,1.1s,mb4.6							
OBN	**Obninsk**	**67.38**	**322**	*c e*P		P		**05 18 35.1 -0.8**
OBN				*e*		pP		05 19 02.0 +0.9
OBN					pmax		pmax	
	comp=Z,19nm,1.8s,mb4.6							
SOC	**Sochi**	**67.86**	**309**	*e*P		P		**05 18 34.8 -4.2**
SOC				*e*				05 19 06.4
SOC				*e*PPP		PPP		05 22 44.3 -4.8
SOC				*e*PS		PS		05 28 01.5 -5.3
SOC				*e*SSS		SSS		05 34 45.5 -8.1
SOC					pmax		pmax	
	comp=Z,8.0nm,0.6s,mb4.7							
SOC					pmax		pmax	
	comp=N,5.0nm,0.4s							
COLA	**College**	**67.88**	**27**	*e*P		P		**05 18 38.4 -0.4**
ILAR	**Eielson Array**	**68.31**	**27**	P		P		**05 18 40.3 -1.1**
	comp=N,0.7nm,1.1s,mb3.4,baz=289,slow=10,SNR=5.9							
ILAR					LR		LR	05 50 10.5
	comp=N,36nm,19.4s,baz=19,slow=37							
JOF	**Joensuu**	**68.44**	**331**	*e*P		P		**05 18 41.5 -0.8**
KEV	**Kevo**	**68.60**	**338**	*e*P		P		**05 18 42.2 -1.0**
ARCES	**ARCESS Array B**	**69.16**	**338**	P		P		**05 18 45.7 -0.9**
	comp=N,3.6nm,1.0s,mb4.2,baz=72,slow=8.6,SNR=5.0							
ARCES	**ARCESS Array B**	**69.16**	**338**	P		P		**05 18 45.7 -0.9**
KAF	**Kangasniemi**	**70.90**	**330**	*e*P		P		**05 18 57.2 -0.1**
FINES	**FINESS Array B**	**71.20**	**330**	P		P		**05 18 58.8 -0.3**
	comp=N,4.8nm,0.9s,mb4.3,baz=58,slow=6.6,SNR=14							
FINES					pP		pP	05 19 26.2 +1.6
	comp=N,0.7nm,0.5s,baz=117,slow=4.3,SNR=1.3							
DAWY	**Dawson**	**71.63**	**27**	*e*P		P		**05 19 01.0 -0.6**
DAWY					pP		pP	05 19 28.4 +1.1
INK	**Inuvik**	**72.35**	**22**	*e*P		P		**05 19 04.3 -1.5**
	comp=N,3.2nm,0.8s,mb4.2							
INK					epP		pP	05 19 32.5 +1.0
AKASG	**Malin Array Be**	**72.81**	**318**	P		P		**05 19 08.0 -0.8**
	comp=N,0.4nm,0.3s,mb3.7,baz=59,slow=5.7,SNR=10							
BRTR	**Keskin Array B**	**73.31**	**306**	P		P		**05 19 11.4 -0.4**
	comp=N,2.1nm,0.8s,mb4.0,baz=90,slow=3.7,SNR=9.3							
BRTR					pP		pP	05 19 39.5 +1.9
	comp=N,1.1nm,0.9s,baz=108,slow=3.9,SNR=3.0							
NB2	**NORSAR Subarra**	**77.94**	**332**	P		P		**05 19 38.0 +0.3**
	comp=N,1.2nm,0.7s,mb3.7,baz=60,slow=5.6							
NOA	**NORSAR Array B**	**77.94**	**332**	P		P		**05 19 37.8 +0.1**
	comp=N,0.9nm,0.8s,mb3.6,baz=58,slow=5.6,SNR=4.5							
BBB	**Bella Bella**	**82.04**	**36**	P		P		**05 19 59.9 0.0**
	comp=N,5.1nm,1.0s,mb4.3,baz=313,slow=6.4,SNR=3.6							
YKA	**Yellowknife Ar**	**82.09**	**23**	P		P		**05 19 58.9 -0.9**
	comp=N,1.2nm,0.7s,mb3.8,baz=308,slow=5.0,SNR=33							
YKA					pP		pP	05 20 27.2 +1.3
	comp=N,0.6nm,0.7s,baz=312,slow=5.0,SNR=4.6							
YKA	**Yellowknife Ar**	**82.09**	**23**	P		P		**05 19 58.9 -0.9**
YKA					pP		pP	05 20 27.2 +1.3
GERES	**GERESS Array B**	**82.74**	**321**	P		P		**05 20 03.9 +0.4**
	comp=N,0.2nm,0.4s,mb3.3,baz=16,slow=9.7,SNR=4.0							
NEW	**Newport**	**90.07**	**35**	P		P		**05 20 41.1 +2.0**
	comp=N,1.6nm,0.7s,mb4.2,baz=284,slow=8.3,SNR=2.8							
YBH	**Yreka Blue Hor**	**90.81**	**43**	P		P		**05 20 44.7 +1.9**
	comp=N,1.9nm,0.9s,mb4.2,baz=73,slow=3.3,SNR=3.6							
NVAR	**Mina Array Bea**	**95.49**	**43**	P		P		**05 21 05.4 +1.2**
	comp=N,1.2nm,1.0s,mb4.3,baz=287,slow=3.0,SNR=6.9							

CASC 15 05:11:16.0±1.8, 13.88N×91.66W, h17km±10km, MD3.8, ML4.6, Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
JAT	**Jato**	**0.44**	**2**	*e*P		Pb	05 11 23.8	-1.1
JAT				*e*S		Sb	05 11 32.7	+1.8
JAT				AML		AML	05 11 33.2	
	comp=N,60μm,0.2s							
IXG	**Ixpaco**	**1.20**	**76**	*e*P		Pb	05 11 36.7	-1.2
IXG				*e*S		Sb	05 11 54.3	+1.3
IXG				AML		AML	05 12 01.6	
	comp=E,15μm,0.4s							
NBG	**Las Nubes**	**1.45**	**61**	*e*P		Pn	05 11 40.0	-1.7
NBG				*e*S		Sb	05 12 01.5	+1.2
NBG				AML		AML	05 12 02.5	
	comp=N,6μm,0.4s							
CUSS	**Cusmapa**	**1.66**	**89**	*e*P		Pn	05 11 44.5	-0.2
CUSS				*e*S		Sn	05 12 05.6	-0.1
RBDL	**Robledal**	**1.93**	**83**	*e*P		Pn	05 11 47.3	-1.2
RBDL				*e*S		Sn	05 12 12.3	-0.2
RTR	**El Retiro**	**1.95**	**89**	*e*P		Pn	05 11 48.6	-0.2
RTR				*e*S		Sn	05 12 14.4	+1.3
SBLS	**San Blas**	**1.97**	**91**	*e*P		Pn	05 11 48.4	-0.8
SBLS				*e*S		Sn	05 12 15.0	+1.3
SNJE	**San Jose**	**1.99**	**90**	*e*P		Pn	05 11 48.9	-0.5
SNJE				*e*S		Sn	05 12 15.2	+1.0
BOQS	**Boqueron**	**2.31**	**93**	*e*P		Pn	05 11 53.6	-0.4
BOQS				*e*S		Sn	05 12 23.0	+0.7
LFU	**La Fuente**	**2.47**	**93**	*e*P		Pn	05 11 55.9	-0.4
LFRS	**El Faro**	**2.53**	**95**	*e*P		Pn	05 11 56.9	-0.3
LFRS				*e*S		Sn	05 12 27.9	0.0
LCBS	**La Ceiba**	**2.61**	**95**	*e*P		Pn	05 11 58.4	+0.1
LCBS				*e*S		Sn	05 12 30.0	+0.1

NEIC ***15*** *05:17:20.8±0.9, 3.64S×135.43E, h10km, Error ellipse: s-maj=25.0km s-min=12.7km az=80.0*
IDC ***15*** *05:17:33.5±4.9, 4.01S×135.09E, h126km±47km, mb3.5/3, mb1 3.5/7, mb1mx3.4/16, Error ellipse: s-maj=40.7km s-min=13.8km az=84.0*

ISC 15 05:17:27.4±2.9, 3.88S±0.09×135.3E±0.2, h88km±29km, n13, σ1s29/19, mb3.7/3, 1D, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
KAKA	**Kakadu**	**9.21**	**198**	*e*P		P	**05 19 37.8**	**-1.4**
	8.3nm,0.6s							
KAKA					eS		**S**	**05 21 23.3 +1.4**
WB2	**Warramunga Arr**	**15.99**	**183**	*e*P		P	**05 21 03.7**	**-4.9**
WB2				*e*			05 21 11.4	
WB2					eS		**S**	**05 23 55.6 -7.3**
WRA	**Warramunga Arr**	**15.99**	**183**	P		P	**05 21 03.4**	**-5.2**
	0.1nm,0.3s,baz=4.8,slow=13,SNR=8.1							
WRA					S		**S**	**05 23 55.7 -7.2**
	0.2nm,0.3s,baz=8.6,slow=23,SNR=7.9							
FITZ	**Fitzroy Crossi**	**16.98**	**213**	*e*P		P	**05 21 22.2**	**+1.3**
	2.1nm,0.6s							
FITZ					eS		**S**	**05 24 23.9 -1.5**
FITZ	**Fitzroy Crossi**	**16.98**	**213**	P		P	**05 21 22.5**	**+1.6**
	0.2nm,0.3s,baz=26,slow=11,SNR=6.3							
FITZ					S		**S**	**05 24 23.9 -1.5**
	0.3nm,0.3s,baz=189,slow=15,SNR=4.6							
CTA	**Charters Tower**	**19.36**	**147**	P		P	**05 21 47.9**	**-0.8**
	0.1nm,0.3s,baz=302,slow=19,SNR=2.4							
CTAO	**Charters Tower**	**19.36**	**147**	*e*P		P	**05 21 47.8**	**-1.0**
	4.2nm,0.8s							
AS12	**Alice Springs**	**19.72**	**184**	⇓*i*P		P	**05 21 53.2**	**+0.7**
	13nm,0.7s							
AS12				*i*			05 22 05.2	
ASAR	**Alice Springs**	**19.72**	**184**	P		P	**05 21 53.3**	**+0.8**
	0.5nm,0.3s,baz=9.7,slow=11,SNR=95							
ASAR					S		**S**	**05 25 27.1 +2.2**
	0.1nm,0.3s,baz=5.7,slow=27,SNR=3.6							
SONM	**Songino Array**	**57.37**	**337**	P		P	**05 27 10.4**	**+1.4**
	1.2nm,0.8s,mb4.0,baz=153,slow=6.4,SNR=2.5							
MKAR	**Makanchi Array**	**68.64**	**324**	P		P	**05 28 22.8**	**-0.5**
	0.7nm,0.6s,mb3.6,baz=111,slow=8.6,SNR=7.2							
MKAR	**Makanchi Array**	**68.64**	**324**	P		P	**05 28 22.8**	**-0.5**
BVAR	**Borovoye Array**	**78.31**	**326**	P		P	**05 29 18.8**	**-0.7**
	0.8nm,0.7s,mb3.6,baz=108,slow=9.1,SNR=5.2							

WEL 15 05:19:06.2±0.3, 36.95S×178.96E, h12km, ML3.6/2, 1D, Error ellipse: s-maj=3.2km s-min=1.3km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
MXZ	**Matakaoa Point**	**0.80**	**220**	P*		Pb	05 19 21.3	-0.3
MXZ			

CRZC	**La Cruz**	**6.23**	**333**	*e*P	P	06 12 10.4	-0.8

LDG ***15*** *06:17:37.4±0.1,43.03N×0.07W,h11km,Md1.7/2,Ml1.5/1, Error ellipse: s-maj=2.5km s-min=1.0km az=1.0*
NEIC ***15*** *06:17:37.5,43.03N×0.08W,h5km,ML2.2(STR), ML1.5(LDG),After STR.*
STR ***15*** *06:17:37.5±0.0,43.03N×0.08W,h5km±1km,Ml2.2,Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*

ISC 15 06:17:36.8±0.7,43.08N±0.06×0.07W±0.03,h11km,n7, σ0§66/13,Pyrenees

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
LABF	**Labassere**	**0.11**	**107**	Pg		**Pg**	**06 17 40.3**	**+0.5**
LABF				Sg		**Sg**	**06 17 42.4**	**+0.7**
VIEF	**Viey**	**0.21**	**161**	Pg		**Pg**	**06 17 41.3**	**-0.1**
VIEF				Sg		**Sg**	**06 17 43.9**	**-0.6**
REYF	**Montagne du Re**	**0.24**	**268**	Pg		**Pg**	**06 17 42.4**	**+0.4**
REYF				Sg		**Sg**	**06 17 46.1**	**+0.7**
EPF	**Esparros**	**0.30**	**99**	*e*Pg		**Pg**	**06 17 43.7**	**+0.5**
EPF				*e*Sg		**Sg**	**06 17 48.1**	**+0.6**
	4.2nm,0.2s							
ETSF	**Etsaut**	**0.40**	**244**	*e*Pg		**Pg**	**06 17 45.2**	**+0.1**
ETSF				*e*Sg		**Sg**	**06 17 50.4**	**-0.2**
	4.2nm,0.2s							
SJPF	**Ste Jean**	**0.85**	**273**	*e*Pg		**Pg**	**06 17 53.1**	**-0.8**
SJPF				*e*Sg		**Sg**	**06 18 04.9**	**-0.4**
	1.2nm,0.3s							
MTLF	**Montolieu**	**1.69**	**80**	*e*Sg		**Sg**	**06 18 31.6**	**-1.7**
	0.6nm,0.2s							

IDC ***15*** *06:25:45.7±0.5,6.79N×73.02W,h163km±5km,mb3.1/6, mb1 3.4/9,mb1mx3.2/21,Error ellipse: s-maj=16.0km s-min=7.2km az=125.0*
NEIC ***15*** *06:25:46.2±0.4,6.75N×73.07W,mb4.0/2,Error ellipse: s-maj=11.1km s-min=8.4km az=117.0*

ISC 15 06:25:45.5±0.6,6.82N±0.08×73.06W±0.07,h173km±8km, n20,σ0§72/19,mb3.5/7,1C,Northern Colombia

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
ROSC	**El Rosal**	**2.32**	**213**	P		**P**	**06 26 26.5**	**+0.4**
	64nm,0.3s,baz=316,slow=16,SNR=69							
ROSC				S		**S**	**06 26 57.3**	**-0.2**
	85nm,0.3s,baz=122,slow=16,SNR=18							
SDV	**Santo Domingo**	**3.16**	**49**	P		**P**	**06 26 36.2**	**-0.2**
	6.0nm,0.3s,baz=248,slow=6.0,SNR=58							
SDV				S		**S**	**06 27 14.5**	**-1.2**
	14nm,0.3s,baz=323,slow=17,SNR=13							
OTAV	**Otavalo**	**8.46**	**220**	*e*P		**P**	**06 27 46.1**	**+0.3**
	2.0nm,0.6s							
PCRV	**Puerto La Cruz**	**8.97**	**68**	P		**P**	**06 27 54.6**	**+2.1**
	0.1nm,0.3s,baz=358,slow=23,SNR=3.2							
PCRV				S		**S**	**06 29 32.2**	**+0.4**
	0.2nm,0.3s,baz=176,slow=3.9,SNR=2.4							
LPAZ	**La Paz**	**23.47**	**168**	P		**P**	**06 30 40.0**	**-0.7**
	0.4nm,0.3s,mb3.3,baz=347,slow=8.2,SNR=3.5							
LPAZ				pP			06 31 14.1	
	1.7nm,0.7s,baz=346,slow=14,SNR=7.2							
LPAZ	**La Paz**	**23.47**	**168**	P		**P**	**06 30 40.0**	**-0.7**
LPAZ				pP			06 31 14.1	
PLAL	**Pickwick Lake**	**31.26**	**336**	P		**P**	**06 31 51.4**	**+0.1**
	5.5nm,1.2s,mb4.2							
BDFB	**Brasilia**	**33.37**	**132**	P		**P**	**06 32 09.1**	**-0.5**
	1.4nm,0.6s,mb3.9,baz=330,slow=8.1,SNR=4.1							
TXAR	**Lajitas Array**	**36.51**	**312**	P		**P**	**06 32 36.3**	**+0.2**
	0.3nm,0.6s,mb3.1,baz=121,slow=7.3,SNR=4.7							
ULM	**Lac du Bonnet**	**47.31**	**340**	P		**P**	**06 34 03.2**	**-0.2**
	0.7nm,0.4s,mb3.6,baz=131,slow=9.3,SNR=2.0							
ULM	**Lac du Bonnet**	**47.31**	**340**	P		**P**	**06 34 03.2**	**-0.2**
PDAR	**Pinedale Array**	**48.12**	**324**	P		**P**	**06 34 10.3**	**+0.5**
	0.1nm,0.4s,mb2.8,baz=135,slow=12,SNR=2.7							
SCHQ	**Schefferville**	**48.14**	**5**	P		**P**	**06 34 10.0**	**+0.2**
	baz=191,slow=11							
SCHQ	**Schefferville**	**48.14**	**5**	P		**P**	**06 34 10.0**	**+0.2**
YKA	**Yellowknife Ar**	**63.29**	**340**	P		**P**	**06 35 56.9**	**-1.0**
	0.5nm,0.7s,mb3.5,baz=132,slow=6.6,SNR=22							
YKA				pP		pP	06 36 35.2	-3.3
	0.2nm,0.5s,baz=133,slow=6.7,SNR=5.3							
YKA	**Yellowknife Ar**	**63.29**	**340**	P		**P**	**06 35 56.9**	**-1.0**
YKA				pP		pP	06 36 35.2	-3.3
MKAR	**Makanchi Array**	**122.31**	**20**	PKP		PKPdf	06 44 20.8	+0.6
	0.3nm,0.5s,baz=301,slow=3.2,SNR=5.4							
ASAR	**Alice Springs**	**149.16**	**234**	PKPbc		PKPbc	06 45 14.9	+5.2
	1.5nm,0.7s,baz=118,slow=3.6,SNR=18							
WB2	**Warramunga Arr**	**150.38**	**241**	↑*i*P		PKPdf	06 45 17.8	+6.1
WRA	**Warramunga Arr**	**150.39**	**241**	PKPbc		PKPdf	06 45 18.0	+6.3
	0.9nm,0.5s,baz=109,slow=2.6,SNR=34							
WRA				pPKPbc			06 46 00.3	
	0.4nm,0.5s,baz=106,slow=2.7,SNR=7.0							

IDC ***15*** *07:01:53.1±6.7,31.78S×179.74E,h331km±72km,mb3.5/3, mb1 3.6/5,mb1mx3.4/14,Error ellipse: s-maj=75.5km s-min=38.0km az=1.0*

ISC 15 07:01:58.6±2.4,32.4S±0.1×179.8E±0.5,h420km±22km, n15,σ0§95/16,mb3.6/3,South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
URZ	**Urewera**	**6.25**	**200**	P		**P**	**07 03 34.3**	**-1.0**
	14nm,0.3s,baz=272,slow=3.2,SNR=95							
URZ				S		**S**	**07 04 51.5**	**-0.1**
	2.5nm,0.3s,baz=58,slow=20,SNR=6.5							
URZ	**Urewera**	**6.25**	**200**	P		**P**	**07 03 34.0**	**-1.4**
MGZ	**Maungaku**	**7.45**	**206**	P		**P**	**07 03 50.3**	**+1.7**
TUVZ	**Tukino**	**7.64**	**205**	*e*P		**P**	**07 03 52.1**	**+1.3**
FWVZ	**Far West T-bar**	**7.67**	**205**	P		**P**	**07 03 51.2**	**+0.1**
BFZ	**Birch Farm**	**8.75**	**198**	*e*P		**P**	**07 04 03.4**	**+0.1**
MRZ	**Mangatainoka R**	**8.92**	**201**	P		**P**	**07 04 04.5**	**-0.8**
QRZ	**Quartz Range**	**10.24**	**213**	P		**P**	**07 04 19.5**	**-0.8**
THZ	**Tophouse**	**10.85**	**208**	*e*P		**P**	**07 04 25.8**	**-1.5**
RPZ	**Rata Peaks**	**13.23**	**209**	P		**P**	**07 04 55.1**	**+1.5**
	0.6nm,0.3s,baz=16,slow=18,SNR=4.2							
RPZ				S		**S**	**07 07 13.6**	**-0.1**
	0.4nm,0.3s,baz=24,slow=23,SNR=2.8							
STKA	**Stephens Creek**	**32.24**	**260**	P		**P**	**07 07 52.8**	**+1.2**
	3.8nm,1.0s,mb3.7,baz=78,slow=11,SNR=6.5							
ASAR	**Alice Springs**	**41.17**	**270**	P		**P**	**07 09 05.8**	**0.0**
	1.4nm,0.7s,mb3.4,baz=106,slow=7.4,SNR=14							
WB2	**Warramunga Arr**	**42.34**	**276**	*e*P		**P**	**07 09 14.5**	**-0.7**
WRA	**Warramunga Arr**	**42.35**	**276**	P		**P**	**07 09 14.8**	**-0.5**
	1.9nm,0.3s,mb3.9,baz=113,slow=7.9,SNR=68							
FINES	**FINESS Array B**	**146.31**	**337**	PKPbc		PKPbc	07 20 51.6	+2.1
	0.9nm,0.7s,baz=63,slow=4.3,SNR=7.3							

NAO ***15*** *07:09:39.7±3.7,60.37N×6.17E,ML2.0*
NEIC ***15*** *07:09:39.9,60.07N×6.29E,ML2.0(BER),After BER.*
NEIC Rockfall occurred at Tokheim.
BER ***15*** *07:09:40.6±4.8,60.06N×6.11E,MD1.9,ML1.7, ML2.0(NAO)*

ISC 15 07:09:38.4±0.6,60.13N±0.06×6.37E±0.07,n15,σ0§88/17, Southern Norway

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
ODD1	**Odda**	**0.25**	**149**	*e*P		**Pg**	**07 09 44.0**	**+0.5**
ODD1				AML		AML	07 09 54.1	
	comp=Z,144nm,0.8s							
RUND	**Rundenannen**	**0.57**	**300**	*e*P		**Pg**	**07 09 50.4**	**+0.5**
RUND				AML		AML	07 10 07.0	
	comp=Z,28nm,0.4s							
BER	**Bergen**	**0.58**	**297**	*e*P		**Pg**	**07 09 50.2**	**+0.3**
EGD	**Espegrend**	**0.59**	**285**	*e*P		**Pg**	**07 09 50.0**	**-0.1**
ASK	**Askoy**	**0.68**	**302**	*e*P		**Pg**	**07 09 52.1**	**0.0**
BLS5	**Blasjo**	**0.71**	**176**	*e*P		**Pg**	**07 09 51.7**	**-0.9**
BLS5				AML		AML	07 10 08.7	
	comp=Z,19nm,0.4s							
HYA	**Hoyanger**	**1.04**	**355**	*e*P		**Pb**	**07 09 59.7**	**+0.6**
HYA				AML		AML	07 10 24.9	
	comp=Z,26nm,0.4s							
SUE	**Sulen**	**1.22**	**320**	*e*P		**Pb**	**07 10 01.3**	**-0.8**
SUE				AML		AML	07 10 28.4	
	comp=Z,24nm,0.4s							
FOO	**Floro**	**1.61**	**337**	*e*P		**Pn**	**07 10 13.6**	**+5.3**
FOO				AML		AML	07 10 38.4	
	comp=Z,21nm,0.5s							
KON	**Kongsberg**	**1.70**	**105**	Pn		**Pn**	**07 10 14.2**	**+4.7**
KON				Lg			07 10 36.5	
KONO	**Kongsberg**	**1.70**	**105**	Pn		**Pn**	**07 10 14.2**	**+4.7**
KONO				Lg			07 10 36.5	
DOMB	**Dombas**	**2.33**	**33**	AML		AML	07 11 00.5	
	comp=Z,6.9nm,0.7s							
NAO01	**NORSAR Array S**	**2.35**	**70**	*e*P		**Pn**	**07 10 18.6**	**-0.3**
NAO01				*e*S		**Sn**	**07 10 48.2**	**-0.6**
NC6	**NORSAR Subarra**	**2.60**	**74**	Pn		**Pn**	**07 10 22.4**	**-0.1**
NC6				Pg		**Pg**	**07 10 28.4**	**-1.9**
NC6				Lg			07 11 02.9	
HFS	**Hagfors**	**3.67**	**87**	Pn		**Pn**	**07 10 39.7**	**+2.1**
	baz=253,slow=16							
HFS				Sn		**Sn**	**07 11 23.0**	**+0.8**
	baz=272,slow=37							
HFS				Lg			07 11 39.7	
	baz=261,slow=28							

IDC 15 07:20:17.4±10.0,18.29S×177.18W,mb3.4/2,mb1 3.7/2, mb1mx3.5/14,Error ellipse: s-maj=444.0km s-min=65.0km az=144.0,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op		ISC	h m s	ISC
WRA	**Warramunga Arr**	**45.71**	**260**	P		P	07 28 39.9	-2.5
	0.5nm,1.0s,baz=98,slow=6.0,SNR=3.2							
ASAR	**Alice Springs**	**45.81**	**255**	P		P	07 28 42.0	-1.1
	0.4nm,0.5s,baz=88,slow=8.5,SNR=9.7							
BRTR	**Keskin Array B**	**145.88**	**315**	PKPbc		PKPbc	07 39 58.4	-0.8
	1.7nm,0.9s,baz=63,slow=2.8,SNR=5.3							

IDC ***15*** *07:28:10.4±0.8,16.85S×177.23W,mb4.4/13,mb1 4.6/13, mb1mx4.5/19,MS4.6/16,Ms1 4.6/16,ms1mx4.5/21,Error ellipse: s-maj=34.2km s-min=15.3km az=148.0*
NEIC ***15*** *07:28:12.1±0.4,16.73S×177.38W,h10km,mb4.8/16, MS4.6/7,Error ellipse: s-maj=20.3km s-min=8.9km az=149.0*
BJI ***15*** *07:28:12.0,16.70S×177.40W,h10km,mB5.1,mb4.8, Ms4.8*

ISC 15 07:28:13.7±4.5,16.7S±0.1×177.45W±0.08,h29km±31km, n102,σ1§19/58,mb4.6/30,MS4.6/23,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op		ISC	h m s	ISC
RAR	**Rarotonga**	**17.30**	**108**	LR		LR	07 37 08.2	
	comp=Z,2μm,19.2s,baz=260,slow=32							
URZ	**Urewera**	**21.97**	**192**	P		**P**	**07 33 05.2**	**-1.9**
	18nm,1.0s,mb4.5,baz=356,slow=7.0,SNR=4.5							
URZ				LR		LR	07 40 07.6	
	comp=Z,4μm,18.5s,MS4.8,baz=92,slow=33							
RPZ	**Rata Peaks**	**28.61**	**198**	LR		LR	07 44 41.4	
	comp=Z,3μm,19.5s,MS4.8,baz=34,slow=35							
CTA	**Charters Tower**	**34.56**	**259**	*e*P		**P**	**07 35 03.3**	**+1.1**
	10nm,1.1s,mb4.7							
CTA				*e*S		**S**	**07 40 27.9**	**-0.4**
CTA	**Charters Tower**	**34.56**	**259**	P		**P**	**07 35 03.6**	**+1.4**
	19nm,1.1s,mb4.9,baz=83,slow=11,SNR=11							
CTAO	**Charters Tower**	**34.56**	**259**	*e*P		**P**	**07 35 02.9**	**+0.7**
	25nm,1.2s,mb5.0							
PMG	**Port Moresby**	**35.20**	**277**	P		**P**	**07 35 07.9**	**+0.2**
	8.1nm,0.8s,mb4.7,baz=177,slow=11,SNR=2.4							
PMG	**Port Moresby**	**35.20**	**277**	P		**P**	**07 35 07.0**	**-0.7**
STKA	**Stephens Creek**	**40.01**	**240**	*e*P		**P**	**07 35 48.9**	**+1.1**
	11nm,0.9s,mb4.6							
STKA	**Stephens Creek**	**40.01**	**240**	P		**P**	**07 35 49.0**	**+1.1**
	13nm,1.1s,mb4.6,baz=59,slow=9.2,SNR=9.7							
STKA				LR		LR	07 49 22.0	
	comp=Z,372nm,20.6s,MS4.2,baz=67,slow=32							
WRAB	**Tennant Creek**	**45.75**	**259**	*e*P		**P**	**07 36 35.0**	**+0.3**
WRA	**Warramunga Arr**	**45.76**	**258**	P		**P**	**07 36 34.1**	**-0.6**
	1.3nm,0.8s,mb3.9,baz=89,slow=7.4,SNR=10							
WRA				PcP		PcP	07 38 11.8	-0.8
	1.1nm,1.0s,baz=103,slow=3.1,SNR=3.8							
WRA				LR		LR	07 54 31.3	
	comp=Z,433nm,19.0s,MS4.4,baz=70,slow=34							
AS12	**Alice Springs**	**46.00**	**253**	*e*P		**P**	**07 36 36.9**	**+0.3**
	13nm,1.0s,mb4.8							
ASAR	**Alice Springs**	**46.00**	**253**	P		**P**	**07 36 36.8**	**+0.2**
	5.9nm,0.7s,mb4.6,baz=86,slow=8.3,SNR=50							
ASAR				LR		LR	07 54 55.7	
	comp=Z,2μm,18.6s,MS5.0,baz=94,slow=35							
KAKA	**Kakadu**	**48.58**	**268**	*e*P		**P**	**07 36 54.2**	**-2.7**
	9.5nm,0.8s,mb4.9							
FITZ	**Fitzroy Crossi**	**54.14**	**260**	P		**P**	**07 37 38.8**	**0.0**
	5.4nm,1.1s,mb4.4,baz=88,slow=2.2,SNR=4.2							
FITZ				LR		LR	07 59 21.5	
	comp=Z,730nm,19.7s,MS4.8,baz=96,slow=34							
FITZ	**Fitzroy Crossi**	**54.14**	**260**	*e*P		**P**	**07 37 35.5**	**-3.3**
	5.0nm,1.5s,mb4.2							
FITZ				P			07 37 38.8	
FITZ				LR		LR	07 59 21.5	
VNDA	**Vanda**	**61.69**	**185**	LR		LR	08 00 51.7	
	comp=Z,310nm,20.2s,MS4.5,baz=27,slow=32							
MAT	**Matsushiro**	**67.53**	**322**	P		**P**	**07 39 10.7**	**+1.0**
MAT				S		S	07 48 07.0	+4.3
MAT	**Matsushiro**	**67.53**	**322**	*e*P		**P**	**07 39 11.0**	**+1.3**
MAT				*e*S		S	07 48 08.0	+5.3
TGY	**Tagaytay City**	**68.12**	**293**	LR		LR	08 04 46.1	
	comp=Z,358nm,21.3s,MS4.6,baz=118,slow=32							
JNU	**Nakatsue**	**69.94**	**316**	P		**P**	**07 39 26.9**	**+2.3**
	3.6nm,0.6s,mb4.5,baz=190,slow=16,SNR=3.2							
QSPA	**South Pole Qui**	**73.32**	**180**	*e*P		**P**	**07 39 45.4**	**+1.5**
	7.8nm,0.9s,mb4.6							
QSPA				LR		LR		
	comp=Z,160nm,20.8s,MS4.3							
CMB	**Columbia Colle**	**76.36**	**43**	PFAKE			07 40 10.0	+7.8
CMB				LR		LR		
	comp=Z,216nm,19.0s,MS4.5							
NVAR	**Mina Array Bea**	**77.94**	**44**	P		**P**	**07 40 12.0**	**+1.0**
	comp=Z,1.7nm,0.8s,mb4.0,baz=221,slow=6.7,SNR=13							
NEN	**Nelson**	**78.87**	**47**	*e*P		**P**	**07 40 16.3**	**+0.3**
CN2	**Changchun**	**79.66**	**322**	*e*P		**P**	**07 40 25.5**	**+5.3**
CN2				AMB		AMB		
	comp=Z,10.0nm,1.0s,mb4.7							
WVOR	**Wild Horse Val**	**79.92**	**40**	*e*P		**P**	**07 40 20.0**	**-1.6**
	comp=Z,5.3nm,1.1s,mb4.4							
TUC	**Tucson**	**80.26**	**52**	*e*P		**P**	**07 40 26.3**	**+2.7**
	comp=Z,0.8nm,0.6s,mb3.8							
RMW	**Rattlesnake Mo**	**80.98**	**35**	*e*P		**P**	**07 40 26.0**	**-1.1**
PMR	**Palmer**	**81.25**	**13**	PFAKE			07 40 40.0	+12
PMR				LR		LR		
	comp=Z,338nm,21.0s,MS4.7							
MVU	**Marysvale**	**82.09**	**46**	*e*P		**P**	**07 40 34.6**	**+1.5**
MSU	**Marysvale**	**82.12**	**46**	*e*P		**P**	**07 40 33.5**	**+0.2**
TNA	**Tin City**	**82.36**	**4**	*e*P		**P**	**07 40 31.5**	**-2.5**
	comp=Z,12nm,1.3s,mb4.7							
HLID	**Hailey**	**83.14**	**41**	*e*P		**P**	**07 40 37.9**	**-0.5**
	comp=Z,5.8nm,1.0s,mb4.6							
HLID				LR		LR		
	comp=Z,237nm,20.0s,MS4.6							
SRU	**San Rafael**	**83.54**	**46**	*e*P		**P**	**07 40 41.1**	**+0.4**
BJI	**Beijing**	**83.60**	**315**	*e*P		**P**	**07 40 47.8**	**+6.9**
BJI				SKS		SKS	07 51 04.1	-1.7
BJI				S		S	07 51 10.1	+10
BJI				AMB		AMB		
	comp=Z,8.0nm,1.3s,mb4.7							
BJI				LR		LR		
	comp=N,181nm,18.2s,MS4.6							
BJI				LR		LR		
	comp=E,168nm,17.5s,MS4.6							
TCUT	**Toone Canyon**	**83.88**	**44**	*e*P		**P**	**07 40 42.8**	**+0.5**
HWUT	**Hardware Ranch**	**84.01**	**43**	*e*P		**P**	**07 40 40.6**	**-2.3**
	comp=E,4.8nm,1.1s,mb4.5							
HWUT				LR		LR		
	comp=Z,307nm,20.0s,MS4.7							
NEW	**Newport**	**84.03**	**36**	P		**P**	**07 40 42.3**	**-0.6**
MNTX	**Cornudas Mount**	**84.15**	**55**	*e*P		**P**	**07 40 46.4**	**+2.5**
	comp=Z,16nm,1.5s,mb4.9							
BNM	**Barren Site**	**84.19**	**52**	*e*P		**P**	**07 40 45.3**	**+1.3**
PV10	**Paradox Valley**	**84.25**	**47**	*e*P		**P**	**07 40 43.7**	**-0.5**
COLA	**College**	**84.43**	**12**	*e*P		**P**	**07 40 44.4**	**-0.1**
	comp=Z,14nm,1.1s,mb5.0							
COLA				LR		LR		
	comp=Z,619nm,20.0s,MS5.0							
IMA	**Indian Mountai**	**84.46**	**10**	*e*P		**P**	**07 40 45.0**	**+0.4**
	comp=Z,39nm,1.4s,mb5.3							
PV01	**Paradox Valley**	**84.47**	**48**	*e*P		**P**	**07 40 44.3**	**-1.1**
ILAR	**Eielson Array**	**84.54**	**13**	P		**P**	**07 40 44.3**	**-0.7**
	comp=Z,6.2nm,1.0s,mb4.7,baz=229,slow=5.9,SNR=20							
ILAR				LR		LR	08 11 03.7	
	comp=Z,376nm,21.8s,MS4.7,baz=48,slow=30							
TXAR	**Lajitas Array**	**84.59**	**57**	P		**P**	**07 40 46.4**	**+0.2**
	comp=Z,2.7nm,0.9s,mb4.3,baz=202,slow=6.7,SNR=18							
TXAR				LR		LR	08 12 26.9	
	comp=Z,116nm,19.5s,MS4.3,baz=255,slow=31							
TXAR	**Lajitas Array**	**84.59**	**57**	P		**P**	**07 40 46.4**	**+0.2**
TXAR				LR		LR	08 12 26.9	
ANMO	**Albuquerque**	**84.65**	**51**	*e*P		**P**	**07 40 48.5**	**+2.2**
	comp=Z,12nm,1.5s,mb4.8							
ANMO				LR		LR		
	comp=Z,253nm,19.0s,MS4.6							
MCMT	**McKenzie Canyo**	**84.75**	**40**	*e*P		**P**	**07 40 46.7**	**+0.1**
GDL2	**Guadalupe Moun**	**85.14**	**54**	*e*P		**P**	**07 40 48.7**	**-0.2**
MAW	**Mawson**	**85.27**	**200**	LR		LR	08 15 19.2	
	comp=Z,635nm,20.5s,MS5.0,baz=98,slow=33							
REDW	**Red Top Meadow**	**85.31**	**42**	*e*P		**P**	**07 40 48.6**	**-0.8**
BILL	**Bilibino**	**85.36**	**354**	*e*P		**P**	**07 40 49.2**	**+0.2**
	comp=Z,8.2nm,1.0s,mb4.8							
CHMT	**Chamberlain Mo**	**85.55**	**38**	*e*P		**P**	**07 40 48.4**	**-2.1**
QLMT	**Earthquake Lak**	**85.64**	**41**	P		**P**	**07 40 51.9**	**+0.9**
DAWY	**Dawson**	**85.71**	**16**	*e*P		**P**	**07 40 50.9**	**+0.1**
BW06	**Boulder Array**	**85.87**	**43**	*e*P		**P**	**07 40 52.3**	**+0.1**
	comp=Z,2.1nm,1.0s,mb4.3							
PDAR	**Pinedale Array**	**85.87**	**43**	P		**P**	**07 40 50.8**	**-1.4**
	comp=Z,1.5nm,0.9s,mb4.2,baz=207,slow=3.3,SNR=12							
PDAR				LR		LR	08 16 55.2	
	comp=Z,148nm,18.7s,MS4.4,baz=252,slow=34							
BOZ	**Bozeman (W)**	**85.90**	**40**	*e*P		**P**	**07 40 52.1**	**-0.2**
	comp=Z,12nm,1.4s,mb4.9							
HRY	**Holter Researc**	**86.30**	**39**	*e*P		**P**	**07 40 54.8**	**+0.6**
HHC	**Hu-ho-hao-te**	**87.11**	**314**	*e*P		**P**	**07 41 05.3**	**+7.0**
HHC				AMB		AMB		
	comp=Z,15nm,1.0s,mb5.2							
CMAR	**Chiang Mai Arr**	**89.36**	**289**	LR		LR	08 18 59.4	
	comp=Z,153nm,19.0s,MS4.4,baz=105,slow=34							
YKA	**Yellowknife Ar**	**92.89**	**24**	P		**P**	**07 41 23.1**	**-1.7**
	comp=Z,0.6nm,1.0s,mb4.0,baz=246,slow=4.6,SNR=4.7							
YKA				LR		LR	08 15 17.0	
	comp=Z,629nm,21.8s,MS5.0,baz=245,slow=30							
ULM	**Lac du Bonnet**	**97.42**	**40**	LR		LR	08 18 47.6	
	comp=Z,249nm,20.4s,MS4.7,baz=269,slow=31							
AKASG	**Malin Array Be**	**139.94**	**334**	PKP		PKPdf	07 47 40.4	-3.9
	comp=Z,0.2nm,0.3s,baz=13,slow=1.5,SNR=2.6							
BRTR	**Keskin Array B**	**144.59**	**317**	PKP		PKPdf	07 47 49.1	-3.7
	comp=Z,14nm,0.9s,baz=90,slow=2.5,SNR=21							
UPC	**Upice**	**144.61**	**345**	*e*PKP		PKPdf	07 47 50.9	-1.5
OKC	**Ostrava-Krasne**	**144.65**	**342**	*e*PKP		PKPdf	07 47 52.1	-0.4
DPC	**Dobroselska-Polom**	**144.68**	**345**	*e*PKP		PKPdf	07 47 49.2	-3.4
BRG	**Berggiesshubel**	**144.74**	**347**	*e*P		PKPbc	07 47 57.1	+10
MORC	**Moravsky Berou**	**144.88**	**343**	*e*PKP		PKPdf	07 47 49.6	-3.4
MOX	**Moxa**	**145.40**	**350**	*i* P		PKPbc	07 47 47.6	-1.7
	comp=Z,logA/T=0.9							
MOX	**Moxa**	**145.40**	**350**	*e*PKP		PKPdf	07 47 47.6	-6.2
PRU	**Pruhonice**	**145.44**	**346**	*e*PKP		PKPdf	07 47 50.2	-3.7
GRA1	**Grafenberg Arr**	**146.38**	**350**	*e*PKPdf		PKPdf	07 47 54.6	-0.9
ZST	**Bratislava**	**146.43**	**342**	*e*PKP		PKPdf	07 47 49.3	-6.3
KHC	**Kasperske Hory**	**146.46**	**347**	*e*PKP		PKPdf	07 47 55.1	-0.6
GERES	**GERESS Array B**	**146.71**	**347**	PKPbc		PKPdf	07 47 54.3	+1.8
	comp=Z,1.2nm,0.8s,slow=1.3,SNR=7.3							
BAIF	**Baives**	**146.73**	**358**	*e*PKP1		PKPbc	07 47 56.6	+4.1
	comp=Z,19nm,1.0s							
WLF	**Walferdange**	**147.02**	**356**	PKPbc		PKPdf	07 47 56.5	-0.1
CSS	**Prodhromos**	**147.08**	**309**	*e*PKPbc		PKPdf	07 47 56.9	-0.2
FLN	**La Foliniere**	**147.96**	**4**	*e*PKP1		PKPdf	07 47 58.4	+0.3
	comp=Z,38nm,1.0s							
FLN				*e*R				
	comp=Z,345nm,21.2s							
LDF	**La Druitiere**	**148.15**	**3**	*e*PKP1		PKPdf	07 47 58.9	+0.5
	comp=Z,19nm,1.0s							
CDF	**Champ du Feu**	**148.17**	**354**	*e*PKP1		PKPdf	07 48 00.9	+2.4
GRR	**Gorron**	**148.31**	**4**	*e*PKP1		PKPdf	07 48 00.8	+2.1
HAU	**Haudompre**	**148.66**	**355**	*e*PKP1		PKPdf	07 48 01.9	+2.6
HAU				*e*R				
	comp=Z,245nm,20.2s							
HINF	**Hinteralfeld**	**148.80**	**354**	*e*PKP1		PKPdf	07 48 02.2	+2.7
SSF	**Sa

0.7nm,0.5s,baz=90,slow=1.9,SNR=1.8
FINES **FINESS Array B** **125.70** **28** PKP PKPdf 07 51 28.3 +0.9
FINES pPKP 07 51 45.2
WVOR **Wild Horse Val** **126.00 294** *e*PKPdf PKPdf 07 51 30.7 +2.3
CHMT **Chamberlain Mo** **126.81 301** *e*PKPdf PKPdf 07 51 32.3 +2.4
MSO **Missoula** **127.06 301** *e*PKPdf PKPdf 07 51 32.5 +2.1
ARCES **ARCESS Array B** **132.41** **22** PKP PKPdf 07 51 40.8 +0.7
1.7nm,0.8s,baz=232,slow=2.4,SNR=13
YKA **Yellowknife Ar** **138.04 316** PKhKP 07 51 42.1
0.2nm,0.4s,baz=122,slow=2.9,SNR=10.0
YKA PKP PKPdf 07 51 51.8 +1.2
1.3nm,0.4s,baz=130,slow=2.1,SNR=39
YKA pPKP 07 52 08.7
1.8nm,0.7s,baz=126,slow=2.3,SNR=6.8
YKA PP PP 07 54 39.6 -3.8
0.2nm,0.7s,baz=118,slow=6.5,SNR=4.4
YKA SKPbc 07 55 20.4
0.2nm,0.8s,baz=132,slow=2.8,SNR=4.2
YKA **Yellowknife Ar** **138.04 316** PKP PKPdf 07 51 42.1 -8.5
YKA PKP PKPdf 07 51 51.9 +1.3
YKA pPKP 07 52 08.7
YKA PP PP 07 54 39.6 -3.8
YKA SKPbc 07 55 20.4
YKW3 **Yellowknife Ar** **138.09 316** *e*PKPdf PKPdf 07 51 51.8 +1.1
INK **Inuvik** **147.71 318** PKPbc PKPdf 07 52 11.7 +4.7
12nm,0.7s,baz=88,slow=2.6,SNR=136
INK **Inuvik** **147.71 318** *e*PKPbc PKPdf 07 52 11.6 +4.6
DAWY **Dawson** **148.57 309** *e*PKPbc PKPdf 07 52 14.1 +5.6
SONM **Songino Array** **150.07 89** PKPbc PKPdf 07 52 17.8 +6.4
2.7nm,0.4s,baz=223,slow=2.9,SNR=8.5
SONM pPKPbc 07 52 35.3
1.0nm,0.4s,baz=198,slow=3.9,SNR=2.7
EYAK **Cordova Ski Ar** **150.07 301** *e*PKPbc PKPdf 07 52 18.7 +7.7
SML **Sawmill** **151.69 302** *e*PKPbc PKPdf 07 52 22.0 +8.6
ILAR **Eielson Array** **151.89 309** PKPbc PKPdf 07 52 22.1 +8.5
8.9nm,0.6s,baz=141,slow=2.5,SNR=118
ILAR pPKPbc 07 52 39.5
1.8nm,0.9s,baz=76,slow=3.6,SNR=2.3
PMR **Palmer** **151.98 302** *e*PKPbc PKPdf 07 52 22.6 +8.7
SLKM **Skilak Lake** **152.13 299** *e*PKPbc PKPdf 07 52 23.1 +9.0
COLA **College** **152.31 309** *e*PKPbc PKPdf 07 52 23.1 +8.8
MCK **McKinley** **152.50 306** *e*PKPbc PKPdf 07 52 23.9 +9.4
IMA **Indian Mountai** **154.91 311** *e*PKPbc PKPdf 07 52 29.4 +12

WAR ***15*** *07:35:33.8,51.52N×16.11E,h1km, Location given by Rudna mine, origin time based upon KSP*
NEIC ***15*** *07:35:34.9±2.1,51.42N×15.95E,h5km,ML2.8(VIE), ML2.1(BRG),Error ellipse: s-maj=25.3km s-min=9.4km az=203.0*
PRU ***15*** *07:35:35.2,51.46N×16.12E,Felt In Harrachov*
ISC 15 07:35:31.1±0.8,51.49N±0.05×16.09E±0.04,n15,σ1§23/32, 1C,Poland

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KSP	**Ksiaz**	**0.66**	**169**	*e*Pg	**Pg**	**07 35 46.3**	**+2.0**
KSP				*e*Sg	**Sg**	**07 35 55.9**	**+2.9**
KSP	**Ksiaz**	**0.66**	**169**	*i* Pg	**Pg**	**07 35 46.2**	**+1.9**
KSP				*e*SG	**Sg**	**07 35 56.2**	**+3.2**
KSP	**Ksiaz**	**0.66**	**169**	*i* Pg	**Pg**	**07 35 46.3**	**+2.0**
KSP				*e*		07 35 49.0	
KSP				*e*Sg	**Sg**	**07 35 55.7**	**+2.7**
DPC	**Dobruska-Polom**	**1.15**	**173**	*e*PG	**Pg**	**07 35 55.0**	**+1.0**
DPC				*e*SG	**Sg**	**07 36 11.5**	**+2.2**
14nm,0.2s							
PVCC	**Panska Ves**	**1.36**	**226**	*e*PG	**Pg**	**07 35 59.2**	**+0.9**
BRG	**Berggiesshubel**	**1.48**	**246**	*i* Pg	**Pg**	**07 36 01.3**	**+0.5**
BRG				*i* Sg	**Sg**	**07 36 22.1**	**+1.5**
PRU	**Pruhonice**	**1.79**	**214**	PG	**Pg**	**07 36 06.3**	**-0.7**
PRU				*i* x	x	07 36 10.6	
PRU				*i* x	x	07 36 23.6	
PRU				SG	**Sg**	**07 36 29.3**	**-1.6**
22nm,0.4s							
CLL	**Collm**	**1.94**	**266**	*i* PN	**Pn**	**07 36 06.2**	**+0.5**
CLL				*i* PG	**Pg**	**07 36 09.5**	**-0.4**
CLL				*i*		07 36 13.2	
CLL				*e*SG	**Sg**	**07 36 36.0**	**+0.2**
CLL	**Collm**	**1.94**	**266**	*i* Pn	**Pn**	**07 36 06.2**	**+0.5**
CLL				*i* Pg	**Pg**	**07 36 09.5**	**-0.4**
CLL				*e*SG	**Sg**	**07 36 36.0**	**+0.2**
MORC	**Moravsky Berou**	**1.95**	**151**	*e*P	**Pn**	**07 36 06.2**	**+0.4**
MORC				*e*S	**Sn**	**07 36 35.4**	**+4.1**
OKC	**Ostrava-Krasne**	**2.11**	**141**	*e*PG	**Pg**	**07 36 13.3**	**+0.1**
OKC				*e*SG	**Sg**	**07 36 40.1**	**-1.2**
OJC	**Ojcow**	**2.67**	**117**	*e*Pg	**Pg**	**07 36 23.1**	**-1.4**
OJC				*e*Sg	**Sg**	**07 36 59.1**	**-0.9**
KHC	**Kasperske Hory**	**2.86**	**215**	*e*PN	**Pn**	**07 36 19.5**	**+0.7**
KHC				*e*PG	**Pg**	**07 36 26.0**	**-2.1**
KHC				*e*SG	**Sg**	**07 37 04.8**	**-1.4**
MOX	**Moxa**	**2.95**	**255**	*e*Pg	**Pg**	**07 36 28.9**	**-1.1**
MOX				*e*Sg	**Sg**	**07 37 08.8**	**-0.4**
MOA	**Molln**	**3.83**	**199⇑**	*i*PN	**Pn**	**07 36 33.8**	**+1.2**
MOA				*i* SG	**Sg**	**07 37 37.2**	**-1.4**
3.9nm,0.5s							

DJA 15 07:37:38.1±14.0,7.66S×117.18E,h95km±30km,MD4.5/2, ML4.8/2,5C,Error ellipse: s-maj=392.7km s-min=40.3km az=61.0,Bali Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KEDI	**Kedomdong**	**1.34**	**232⇑**	*e*Pn	P	07 38 02.3	-0.3
1µm,0.1s							
KEDI	**Kedomdong**	**1.34**	**232⇑**	*i*P	P	07 38 02.8	+0.2
RATI	**Rata**	**1.95**	**237⇑**	*i*Pn	P	07 38 10.1	-0.2
657nm,0.1s							
RATI	**Rata**	**1.95**	**237⇑**	*i*P	P	07 38 10.6	+0.3
KELI	**Kelakatan**	**2.72**	**258⇑**	*e*Pn	P	07 38 20.4	-0.6

KRSC 15 07:46:30.0±0.3,49.29N×153.93E,h237km±9km,ML3.8, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SKR	**Severo-Kuril's**	**1.98**	**45**	*e*P	P	07 47 11.5	0.0
PAU	**Pauzhetka**	**2.85**	**39**	*e*P	P	07 47 20.2	-0.3
MIPR	**Malaya Ipel'ka**	**3.49**	**30**	*e*P	P	07 47 27.0	-0.7
APC	**Apacha**	**4.17**	**28**	*e*P	P	07 47 34.8	-1.0
GRL	**Gorelyy**	**4.19**	**37**	*e*P	P	07 47 36.5	+0.5
RUS	**Russkaya**	**4.28**	**41**	*e*P	P	07 47 37.5	+0.3
RUS				*e*S	S	07 48 26.9	-2.5
KOK	**Koryaka**	**4.98**	**35**	*e*P	P	07 47 46.3	+0.6
UGLR	**Uglovaya**	**4.98**	**36**	*e*P	P	07 47 46.6	+0.8
AVI	**Avacha**	**4.99**	**35**	*e*P	P	07 47 46.8	+0.9
SMAR	**Somma**	**5.02**	**36**	*e*P	P	07 47 46.8	+0.6
SDLR	**Sedlovina**	**5.06**	**36**	*e*P	P	07 47 47.2	+0.5
GNL	**Ganaly**	**5.07**	**28**	*e*P	P	07 47 46.8	-0.1
SPN	**Mys Shipunski**	**5.40**	**43**	*e*P	P	07 47 50.1	-0.9
SPN				*e*S	S	07 48 48.4	-5.8
MKZ	**Mys Kozlova**	**7.14**	**39**	*e*P	P	07 48 12.6	-0.4
KBTR	**Krutoberegovo**	**8.77**	**34**	*e*P	P	07 48 34.0	+0.1

IDC ***15*** *07:48:26.5±1.4,15.63S×177.89W,mb3.9/9,mb1 4.1/9, mb1mx4.0/16,MS4.2/13,Ms1 4.2/13,ms1mx3.9/28,Error ellipse: s-maj=76.3km s-min=19.8km az=152.0*
NEIC ***15*** *07:48:27.0±0.6,16.04S×177.69W,h10km,mb4.5/5,Error ellipse: s-maj=31.2km s-min=11.7km az=151.0*
ISC 15 07:48:25.3±0.6,16.1S±0.2×177.7W±0.1,h10km,n30, σ1§10/18,mb4.1/13,MS4.2/12,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAR	**Rarotonga**	**17.75**	**109**	LR	LR	07 57 39.2	
comp=Z,450nm,18.2s,baz=284,slow=31							
URZ	**Urewera**	**22.55**	**191**	LR	LR	08 00 02.4	
comp=Z,733nm,18.3s,MS4.2,baz=43,slow=30							
RPZ	**Rata Peaks**	**29.14**	**197**	LR	LR	08 04 21.1	
comp=Z,649nm,20.2s,MS4.2,baz=36,slow=32							
CTA	**Charters Tower**	**34.44**	**258**	*e*P	**P**	**07 55 18.2**	**+2.8**
3.0nm,0.9s,mb4.2							
CTA	**Charters Tower**	**34.44**	**258**	P	**P**	**07 55 14.3**	**-1.1**
1.4nm,0.8s,mb4.0,baz=96,slow=20,SNR=2.1							
CTA				LR	LR	08 07 50.2	
comp=Z,309nm,18.2s,MS4.1,baz=56,slow=34							
CTA	**Charters Tower**	**34.44**	**258**	P	**P**	**07 55 14.3**	**-1.1**
CTA				*e*P	pP	07 55 18.2	-0.1
CTA				LR	LR	08 07 50.2	
CTAO	**Charters Tower**	**34.44**	**258**	P	**P**	**07 55 16.7**	**+1.4**
4.8nm,0.9s,mb4.4							
PMG	**Port Moresby**	**34.86**	**277**	P	**P**	**07 55 18.0**	**-1.1**
7.2nm,0.7s,mb4.7,baz=220,slow=6.8,SNR=2.5							
PMG				LR	LR	08 08 33.8	
comp=Z,137nm,18.1s,MS3.7,baz=279,slow=35							
STKA	**Stephens Creek**	**40.10**	**239**	P	**P**	**07 56 04.1**	**+1.2**
4.5nm,0.8s,mb4.3,baz=36,slow=8.7,SNR=2.6							
WRAB	**Tennant Creek**	**45.63**	**258**	P	**P**	**07 56 46.1**	**-2.0**
9.3nm,1.1s,mb4.7							
WRA	**Warramunga Arr**	**45.64**	**258**	P	**P**	**07 56 49.9**	**+1.8**
0.3nm,0.9s,mb3.2,baz=92,slow=7.4,SNR=4.8							
ASAR	**Alice Springs**	**45.94**	**253**	P	**P**	**07 56 51.2**	**+0.8**
2.3nm,0.7s,mb4.2,baz=86,slow=7.7,SNR=17							
ASAR				LR	LR	08 15 10.6	
comp=Z,251nm,19.2s,MS4.2,baz=79,slow=35							
FITZ	**Fitzroy Crossi**	**54.00**	**259**	LR	LR	08 18 40.5	
comp=Z,122nm,20.3s,MS4.0,baz=90,slow=34							
VNDA	**Vanda**	**62.30**	**185**	P	**P**	**07 58 48.2**	**-1.5**
5.4nm,2.2s,mb4.3							
ASAJ	**Asahikawa**	**70.02**	**331**	LR	LR	08 23 57.6	
comp=Z,167nm,20.3s,MS4.3,baz=262,slow=31							
NEW	**Newport**	**83.66**	**36**	LR	LR	08 34 11.8	
comp=Z,104nm,19.2s,MS4.2,baz=46,slow=33							
HWUT	**Hardware Ranch**	**83.73**	**44**	P	**P**	**08 00 56.6**	**+0.6**
1.8nm,1.1s,mb4.1							
DLBC	**Dease Lake**	**83.91**	**23**	LR	LR	08 32 16.9	
comp=Z,198nm,19.6s,MS4.5,baz=290,slow=32							
ILAR	**Eielson Array**	**83.98**	**13**	P	**P**	**08 00 56.1**	**-0.6**
2.0nm,1.1s,mb4.2,baz=232,slow=6.3,SNR=11							
ILAR				LR	LR	08 31 16.2	
comp=Z,89nm,20.3s,MS4.1,baz=228,slow=31							
PV10	**Paradox Valley**	**84.00**	**47**	*e*P	**P**	**08 00 57.3**	**-0.2**
PV01	**Paradox Valley**	**84.23**	**48**	*e*P	**P**	**08 00 58.6**	**0.0**
TXAR	**Lajitas Array**	**84.47**	**58**	P	**P**	**08 01 01.2**	**+1.1**
0.9nm,1.1s,mb3.8,baz=225,slow=8.8,SNR=5.0							
PDAR	**Pinedale Array**	**85.58**	**43**	P	**P**	**08 01 06.0**	**+0.7**
0.2nm,0.5s,mb3.6,baz=45,slow=2.1,SNR=3.3							
INK	**Inuvik**	**89.97**	**15**	LR	LR	08 33 32.3	
comp=Z,158nm,20.6s,MS4.4,baz=184,slow=30							
INK	**Inuvik**	**89.97**	**15**	*e*P	**P**	**08 01 25.9**	**+0.1**
18nm,2.3s,mb5.0							
YKA	**Yellowknife Ar**	**92.41**	**24**	P	**P**	**08 01 35.9**	**-1.3**
0.1nm,0.9s,mb3.2,baz=270,slow=5.1,SNR=3.3							
YKA				LR	LR	08 34 08.7	
comp=Z,172nm,20.6s,MS4.5,baz=250,slow=30							
BRTR	**Keskin Array B**	**143.94**	**317**	PKP	PKPdf	08 08 03.4	-0.9
4.6nm,1.0s,baz=90,slow=2.5,SNR=11							
MLR	**Muntele Rosu**	**144.60**	**331**	PKP	PKPdf	08 08 05.2	-0.1
1.2nm,0.6s,baz=341,slow=0.9,SNR=2.9							
VRAC	**Vranov**	**144.88**	**344**	PKP	PKPdf	08 08 06.2	+0.6
1.8nm,0.4s,baz=80,slow=13,SNR=4.6							
KHC	**Kasperske Hory**	**145.78**	**347**	*e*PKP	PKPdf	08 08 09.0	+1.8

IDC 15 07:56:14.5±3.1,56.55S×30.02W,mb4.2/2,mb1 4.3/2, mb1mx3.8/13,MS4.0/2,Ms1 4.1/2,ms1mx3.4/12,Error ellipse: s-maj=106.0km s-min=56.3km az=171.0,South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
VNDA	**Vanda**	**45.99**	**184**	LR	LR	08 22 15.5	
comp=Z,75nm,20.0s,baz=290,slow=34							
LPAZ	**La Paz**	**49.41**	**309**	P	P	08 05 06.6	-1.4
1.2nm,0.7s,baz=135,slow=2.9,SNR=5.6							
DBIC	**Dimbokro**	**66.31**	**27**	P	P	08 07 04.6	-2.2
7.0nm,1.1s,baz=247,slow=7.7,SNR=3.1							
ESDC	**Sonseca Array**	**98.36**	**20**	LR	LR	08 50 00.9	
comp=Z,149nm,20.6s,baz=330,slow=33							
YKA	**Yellowknife Ar**	**135.49**	**319**	PKP	PKPdf	08 15 34.3	-2.9
0.1nm,0.5s,baz=129,slow=2.0,SNR=4.0							
ILAR	**Eielson Array**	**149.26**	**312**	PKPbc	PKPdf	08 16 03.1	+2.2
1.0nm,0.9s,baz=134,slow=1.8,SNR=9.7							

IDC ***15*** *08:06:32.2±1.8,16.49S×177.48W,mb3.9/4,mb1 4.2/4, mb1mx3.8/14,MS3.5/1,Ms1 3.5/1,ms1mx2.8/27,Error ellipse: s-maj=118.0km s-min=27.6km az=145.0*
ISC 15 08:06:35.9±1.6,16.5S±0.6×177.6W±0.5,h33km,n6, σ0§47/4,mb3.9/4,MS3.5/1,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**40.03**	**240**	P	**P**	**08 14 09.8**	**+0.3**
2.3nm,0.8s,mb4.0,baz=56,slow=7.3,SNR=2.6							
ASAR	**Alice Springs**	**45.97**	**253**	P	**P**	**08 14 57.8**	**-0.3**
1.0nm,0.8s,mb3.8,baz=86,slow=8.5,SNR=7.7							
FITZ	**Fitzroy Crossi**	**54.08**	**259**	LR	LR	08 35 43.1	
comp=Z,42nm,18.7s,MS3.5,baz=1.2,slow=32							
ILAR	**Eielson Array**	**84.35**	**13**	P	**P**	**08 19 05.8**	**+0.2**
2.1nm,1.2s,mb4.1,baz=220,slow=6.8,SNR=6.6							
TXAR	**Lajitas Array**	**84.56**	**57**	P	**P**	**08 19 07.4**	**-0.1**
0.5nm,0.9s,mb3.7,baz=231,slow=5.8,SNR=4.3							
BRTR	**Keskin Array B**	**144.36**	**317**	PKP	PKPdf	08 26 10.3	+1.4
2.0nm,0.9s,baz=45,slow=2.0,SNR=6.0							

IDC ***15*** *08:16:31.7±1.2,3.31S×141.24E,mb3.9/4,mb1 4.2/6, mb1mx4.0/14,ML3.4/2,Error ellipse: s-maj=36.9km s-min=22.3km az=78.0*
NEIC ***15*** *08:16:33.0±0.6,3.35S×141.46E,h15km,mb4.4/1,Error ellipse: s-maj=13.9km s-min=9.6km az=89.0*
ISC 15 08:16:31.8±1.0,3.36S±0.09×141.3E±0.1,h15km,n17, σ0§80/14,mb4.2/5,New Guinea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**8.35**	**136**	Pn	**P**	**08 18 34.7**	**-0.4**
0.6nm,0.3s,baz=302,slow=15,SNR=2.4							
PMG	**Port Moresby**	**8.35**	**136**	*e*P	**P**	**08 18 31.6**	**-3.6**
PMG				Pn	**P**	**08 18 34.7**	**-0.4**
KAKA	**Kakadu**	**12.80**	**223**	*e*P	**P**	**08 19 35.1**	**-1.1**
19nm,0.4s							
KAKA				*e*		08 20 28.1	
WRAB	**Tennant Creek**	**17.82**	**202**	*e*P	**P**	**08 20 41.9**	**+0.8**
30nm,0.8s							
WB2	**Warramunga Arr**	**17.83**	**202**	*e*P	**P**	**08 20 41.3**	**+0.2**
WB2				*e*		08 21 35.4	
WRA	**Warramunga Arr**	**17.83**	**202**	P	**P**	**08 20 42.2**	**+1.0**
0.4nm,0.3s,baz=19,slow=13,SNR=28							
FITZ	**Fitzroy Crossi**	**21.23**	**225**	*e*P	**P**	**08 21 16.7**	**-2.9**
2.9nm,0.6s,mb3.8							
FITZ	**Fitzroy Crossi**	**21.23**	**225**	P	**P**	**08 21 19.5**	**-0.1**
2.6nm,0.6s,mb3.7,baz=17,slow=16,SNR=9.8							
AS12	**Alice Springs**	**21.42**	**199**	*e*P	**P**	**08 21 21.4**	**-0.1**
13nm,1.3s,mb4.1							
ASAR	**Alice Springs**	**21.42**	**199**	P	**P**	**08 21 21.6**	**0.0**
2.6nm,0.9s,mb3.6,baz=30,slow=10,SNR=28							
CMAR	**Chiang Mai Arr**	**47.03**	**299**	P	**P**	**08 25 04.8**	**-0.1**
3.4nm,1.1s,mb4.2,baz=112,slow=5.9,SNR=5.9							
MKAR	**Makanchi Array**	**71.91**	**322**	P	**P**	**08 27 56.4**	**0.0**
14nm,0.4s,mb5.2,baz=113,slow=11,SNR=166							
BVAR	**Borovoye Array**	**81.34**	**325**	P	**P**	**08 28 49.6**	**+0.5**
1.7nm,0.8s,mb4.0,baz=108,slow=4.6,SNR=8.8							
LPAZ	**La Paz**	**144.94**	**125**	PKPbc	PKPbc	08 36 12.3	+2.7
2.2nm,0.9s,baz=283,slow=2.8,SNR=6.2							
LPAZ	**La Paz**	**144.94**	**125**	*e*PKP	PKPdf	08 36 12.2	-0.8
LPAZ				PKPbc	PKPbc	08 36 12.3	+2.7
DBIC	**Dimbokro**	**146.16**	**277**	PKPbc	PKPbc	08 36 12.8	0.0
2.6nm,0.6s,baz=41,slow=5.1,SNR=5.9							
DBIC	**Dimbokro**	**146.16**	**277**	PKPbc	PKPbc	08 36 12.8	0.0

NIED ***15*** *08:20:00,29.20N×139.70E,h400km,Mw4.8 Best double couple: Mo1.5×10^16 NP1:φs335°,δ87°,λ-48°. NP2:φs68°, δ42°,λ-176°.*
JMA ***15*** *08:20:05.3±0.2,29.25N×139.74E,h426km±4km,M4.9*
BJI ***15*** *08:20:05.7,29.27N×139.27E,h410km,mB4.8,mb5.1*
NEIC ***15*** *08:20:06.5±0.1,29.26N×139.34E,mb4.8/60,Error ellipse: s-maj=3.5km s-min=2.9km az=137.0*
IDC ***15*** *08:20:06.2±0.4,29.23N×139.35E,h409km±4km,mb4.3/33, mb1 4.4/37,mb1mx4.4/38,Error ellipse: s-maj=8.2km s-min=5.5km az=86.0,Putative timing error at GNI*
MOS ***15*** *08:20:08.4±0.6,29.41N×139.33E,h439km,mb4.8/21, Error ellipse: s-maj=17.2km s-min=7.4km az=110.3*
ISC 15 08:20:05.4±0.3,29.24N±0.03×139.37E±0.03,h414km±2km, h412km±3.4km:pP-P,n338,σ0§89/364,mb4.7/120,6C-28D, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CBIJ	**Chichi jima**	**3.28**	**130**	P	**P**	**08 21 11.2**	**-1.2**
2µm,0.3s,baz=331,slow=0.9,SNR=927							
CBIJ				S	**S**	**08 22 03.0**	**-2.2**
2µm,0.3s,baz=274,slow=22,SNR=8.8							
JHHJ	**Haha-jima-NKT**	**3.60**	**136**	P	**P**	**08 21 13.9**	**-1.3**
JHHJ				S	**S**	**08 22 08.0**	**-2.1**
JHJ2	**Mitsune**	**3.88**	**6**	P	**P**	**08 21 18.2**	**+0.5**
JHJ	**Hachijo jima 2**	**3.88**	**5**	P	**P**	**08 21 18.4**	**+0.6**
229nm,0.3s,baz=51,slow=21,SNR=28							
JHJ				S	**S**	**08 22 13.3**	**-1.3**
156nm,0.3s,baz=90,slow=22,SNR=9.5							
JWZ	**Kozaga**	**5.29**	**325**	P	**P**	**08 21 34.4**	**+2.6**
JIM2	**Oshima 3**	**5.46**	**1**	P	**P**	**08 21 33.5**	**0.0**
BSO1	**Boso 1**	**5.57**	**14**	P	**P**	**08 21 34.2**	**-0.4**
BSO1				S	**S**	**08 22 44.0**	**-0.6**
JIE	**Ise**	**5.61**	**337**	P	**P**	**08 21 37.7**	**+2.7**
JOD2	**Odawara 2**	**6.01**	**358**	P	**P**	**08 21 39.0**	**-0.3**
JOD2				S	**S**	**08 22 54.5**	**+1.4**
JTO	**Tosashimizu**	**6.69**	**304**	P	**P**	**08 21 49.8**	**+3.0**
JRY	**Ryogami san**	**6.77**	**357**	P	**P**	**08 21 47.2**	**-0.5**
JRY				S	**S**	**08 23 07.7**	**-0.6**
MAJO	**Matsushiro**	**7.35**	**353**	*e*P	**P**	**08 21 52.8**	**-1.4**
51nm,0.6s							
MAT	**Matsushiro**	**7.35**	**353**	P	**P**	**08 21 53.3**	**-0.9**
MAT				S	**S**	**08 23 19.8**	**-0.1**
MAT	**Matsushiro**	**7.35**	**353**	*e*P	**P**	**08 21 53.0**	**-1.2**
41nm,0.7s							
MAT				*e*S	**S**	**08 23 20.0**	**+0.1**
JHS	**Saijyo**	**7.81**	**319**	P	**P**	**08 22 02.0**	**+2.6**
JMZ	**Minamidaito 2**	**8.00**	**247**	P	**P**	**08 22 03.6**	**+2.1**
JNU	**Nakatsue**	**8.24**	**300**	P	**P**	**08 22 07.4**	**+3.2**
12nm,0.3s,baz=96,slow=10,SNR=126							
JNU				S	**S**	**08 23 45.5**	**+7.4**
baz=58,slow=38,SNR=4.1							
JAM	**Amami Oshima**	**8.60**	**267**	P	**P**	**08 22 11.0**	**+2.6**
JSJ	**Shimokoshiki**	**8.68**	**289**	P	**P**	**08 22 12.1**	**+2.8**
JMK	**Ichinoseki**	**9.81**	**9**	P	**P**	**08 22 21.8**	**-0.4**
JTU	**Tsushima**	**9.98**	**304**	P	**P**	**08 22 26.9**	**+2.7**
JOW	**Kunigami**	**10.09**	**259**	P	**P**	**08 22 27.9**	**+2.4**
baz=104,slow=8.0							
JOW				S	**S**	**08 24 23.9**	**+7.3**
baz=166,slow=28,SNR=3.1							
JKE	**Kume jima 2**	**11.51**	**258**	P	**P**	**08 22 43.1**	**+1.3**
JOT	**Ohata**	**12.19**	**6**	P	**P**	**08 22 49.0**	**-0.4**
JKB	**Kayabe**	**12.69**	**6**	P	**P**	**08 22 54.0**	**-0.9**
JOSM	**Okushiri--Mats**	**12.81**	**0**	P	**P**	**08 22 55.8**	**-0.5**
INCN	**Inchon**	**13.44**	**311**	*e*P	**P**	**08 23 00.9**	**-2.1**
51nm,0.7s							
NEM2	**Nemuro 2**	**14.99**	**18**	P	**P**	**08 23 18.9**	**-0.5**
ASAJ	**Asahikawa**	**15.07**	**9**	P	**P**	**08 23 20.5**	**+0.4**
4.9nm,0.3s,baz=238,slow=12,SNR=18							
ASAJ				S	**S**	**08 26 06.8**	**+10**
0.8nm,0.3s,baz=17,slow=31,SNR=2.7							
JTKR	**Abashiri--Toko**	**15.14**	**13**	P	**P**	**08 23 21.3**	**+0.5**
YUK	**Yuzh-Kuril'sk**	**15.65**	**18**	*e*P	**P**	**08 23 26.0**	**+0.1**
YUK				pmax	pmax		
comp=Z,3µm,0.6s							
YUK				pmax	pmax		
comp=Z,350nm,0.5s							
YUK				pmax	pmax		
comp=N,270nm,0.6s							
YUK				pmax	pmax		
comp=E,70nm,0.4s							
SSE	**Sheshan**	**15.84**	**281**	P	**P**	**08 23 26.6**	**-1.3**
SSE				S	**S**	**08 26 09.1**	**-2.3**
SSE				PCP	PcP	08 27 59.6	-1.3
SSE				PCS		08 31 33.9	
SSE				AMB	AMB		
comp=Z,80nm,0.8s							
SSE				AMB	AMB		
comp=Z,115nm,8.0s							
MDJ	**Mudanjiang**	**17.20**	**336**	P	**P**	**08 23 42.3**	**+0.7**
MDJ				S	**S**	**08 26 35.5**	**-1.2**
MDJ				PCS		08 31 33.6	
MDJ				AMB	AMB		
comp=Z,52nm,1.1s							
MDJ				AMB	AMB		
comp=Z,89nm,6.5s							
DL2	**Dalian**	**17.55**	**308**	P	**P**	**08 23 45.0**	**-0.2**
DL2				AMB	AMB		
comp=Z,40nm,0.6s							
NJ2	**Nanjing**	**17.87**	**284**	*e*P	**P**	**08 23 47.9**	**-0.6**
NJ2				S	**S**	**08 26 45.0**	**-4.0**
NJ2				AMB	AMB		
comp=Z,170nm,1.0s							
NJ2				AMB	AMB		
comp=Z,310nm,8.6s							
YSS	**Yuzh-Sakhalins**	**17.88**	**8⇑**	*e*P	**P**	**08 23 48.5**	**0.0**
YSS				pmax	pmax		
comp=Z,60nm,0.9s							
YSS	**Yuzh-Sakhalins**	**17.88**	**8**	*e*P	**P**	**08 23 48.7**	**+0.2**
comp=Z,49nm,0.8s							
CN2	**Changchun**	**18.30**	**326**	*e*P	**P**	**08 23 53.3**	**+0.6**
CN2				AMB	AMB		
comp=Z,80nm,0.8s							
QZH	**Quanzhou**	**18.98**	**262⇓**	*i*P	**P**	**08 23 59.8**	**+0.3**
QZH				S	**S**	**08 27 10.0**	**+1.3**
TIA	**Tai'an**	**19.94**	**296**	⇓P	**P**	**08 24 09.0**	**+0.3**
TIA				AMB	AMB		
comp=Z,50nm,0.9s							
KLR	**Kul'dur**	**20.79**	**346**	*e*P	**P**	**08 24 17.8**	**+1.0

TLY **Talaya** 34.71 320 *d* iP P 08 26 20.3 +0.6
TLY pmax pmax
comp=Z,415nm,0.6s
MOY **Mondy** 36.20 319 *e* P P 08 26 35.5 +3.3
CM31 **Chiang Mai Arr** 38.33 263 *e* P P 08 26 50.5 +0.4
comp=Z,28nm,0.8s,mb4.7
CMAR **Chiang Mai Arr** 38.33 263 P P 08 26 50.7 +0.7
comp=Z,17nm,0.8s,mb4.4,baz=47,slow=9.2,SNR=52
CMAR PcP PcP 08 28 55.4 +0.7
comp=Z,2.0nm,0.7s,baz=69,slow=1.8,SNR=4.0
CMAR ScP 08 32 02.5
comp=Z,3.1nm,0.9s,baz=55,slow=2.2,SNR=8.8
PMG **Port Moresby** 39.15 168 P P 08 26 57.6 +0.8
comp=Z,2.6nm,0.3s,mb4.0,baz=24,slow=10.0,SNR=3.0
ADK **Adak** 39.52 43 *e* P P 08 26 59.7 +0.2
ADK pmax pmax
comp=Z,38nm,0.6s,mb4.9
ADK **Adak** 39.52 43 *e* P P 08 26 59.7 +0.2
comp=Z,38nm,0.6s,mb4.9
BILL **Bilibino** 41.97 15 *c* iP P 08 27 19.1 +0.1
BILL *e*PP pP 08 28 39.1 -0.1
BILL *e* 08 29 04.2
BILL *i* 08 29 13.2
BILL pmax pmax
comp=Z,40nm,0.8s,mb4.8
BILL **Bilibino** 41.97 15 *e* P P 08 27 18.8 -0.3
comp=Z,3.7nm,0.4s,mb4.1
SHL **Shillong** 42.10 277 ⇓ *i* P P 08 27 20.6 0.0
KAKA **Kakadu** 42.23 190 *e* P P 08 27 21.3 -0.5
comp=Z,18nm,0.8s,mb4.5
TIXI **Tiksi** 42.85 355 *e* P P 08 27 25.3 -0.7
TIXI *e* S S 08 33 17.8 -1.7
TIXI pmax pmax
comp=Z,54nm,0.7s,mb5.0
TIXI **Tiksi** 42.85 355 *e* P P 08 27 25.1 -0.9
comp=Z,8.6nm,0.6s,mb4.3
WMQ **Urumqi** 43.31 304 P P 08 27 30.5 +0.5
NIKO **Nikolski** 44.43 43 *e* P P 08 27 37.7 -1.0
UNV **Unalaska Valle** 45.98 42 *e* P P 08 27 49.8 -1.1
ZAL **Zalesovo** 46.25 318 P P 08 27 52.3 -0.6
comp=Z,24nm,0.4s,mb4.9,baz=277,slow=8.3,SNR=44
ZAL PcP PcP 08 29 19.9 -1.0
comp=Z,4.5nm,0.4s,baz=195,slow=2.1,SNR=3.3
ZAL ScP 08 32 31.7
comp=Z,5.5nm,0.5s,baz=262,slow=4.4,SNR=13
ZAL S S 08 34 05.8 -2.1
comp=Z,1.1nm,0.5s,baz=117,slow=19,SNR=6.7
ZAL **Zalesovo** 46.25 318 P P 08 27 52.3 -0.6
ZAL PcP PcP 08 29 19.9 -1.0
ZAL ScP 08 32 31.7
ZAL S S 08 34 05.8 -2.1
GUN **Gumba** 46.65 282 *e* P P 08 27 57.5 +1.1
comp=Z,334nm,0.3s
PKI **Pulchoki** 47.14 282 *e* P P 08 28 00.6 +0.4
KKN **Kakani** 47.19 282 *e* P P 08 28 01.0 +0.4
comp=Z,124nm,0.4s,mb5.6
MKAR **Makanchi Array** 47.20 308 P P 08 27 59.6 -0.7
comp=Z,18nm,0.4s,mb4.8,baz=88,slow=10,SNR=166
MKAR PcP PcP 08 29 23.2 -1.2
comp=Z,3.6nm,0.5s,baz=76,slow=5.9,SNR=4.0
MKAR ScP 08 32 36.0
comp=Z,3.0nm,0.7s,baz=79,slow=5.4,SNR=6.2
MKAR **Makanchi Array** 47.20 308 P P 08 27 59.9 -0.4
MKAR pmax pmax
comp=Z,9.0nm,0.5s
MKAR **Makanchi Array** 47.20 308 P P 08 27 59.6 -0.7
MKAR PcP PcP 08 29 23.2 -1.2
MKAR ScP 08 32 36.0
NVS **Novosibirsk** 47.30 319 *i* P P 08 27 59.3 -1.7
NVS *e*S S 08 34 20.4 -2.1
NVS pmax pmax
comp=N,7.0nm,0.6s
NVS pmax pmax
comp=E,17nm,0.6s
NVS pmax pmax
comp=Z,35nm,0.6s,mb4.9
NVS smax
comp=N,28nm,1.9s
NVS smax
comp=E,20nm,1.9s
DMN **Daman** 47.39 282 *e* P P 08 28 02.6 +0.5
comp=E,106nm,0.4s,mb5.5
GKN **Gorkha** 47.69 283 *e* P P 08 28 04.6 +0.3
comp=E,112nm,0.3s,mb5.7
DANN **Dangsing** 48.34 283 *e* P P 08 28 10.2 +0.9
TNA **Tin City** 48.53 26 *e* P P 08 28 09.9 -0.3
KOLN **Koldanda** 48.63 283 *e* P P 08 28 12.1 +0.6
comp=E,268nm,0.8s,mb5.6
FITZ **Fitzroy Crossi** 48.90 197 *e* P P 08 28 10.6 -3.0
comp=E,12nm,0.7s,mb4.3
FITZ *e* 08 32 43.6
FITZ **Fitzroy Crossi** 48.90 197 P P 08 28 13.6 -0.1
comp=E,14nm,0.7s,mb4.4,baz=7.4,slow=6.7,SNR=14
FITZ ScP 08 32 44.5
comp=E,3.9nm,0.8s,baz=67,slow=1.8,SNR=4.3
WRAB **Tennant Creek** 49.13 186 *e* P P 08 28 14.2 -1.1
comp=E,31μm,1.1s
WB2 **Warramunga Arr** 49.13 186 ⇓ *i* P P 08 28 14.3 -1.1
WB2 *e* 08 32 44.9
WB2 *e*S S 08 34 43.7 -4.4
WRA **Warramunga Arr** 49.14 186 P P 08 28 14.3 -1.1
comp=E,28nm,0.6s,mb4.8,baz=1.8,slow=7.7,SNR=395
WRA pP pP 08 29 37.2 -1.1
comp=E,2.5nm,0.6s,baz=7.4,slow=8.5,SNR=1.9
WRA ScP 08 32 44.7
comp=E,2.6nm,0.6s,baz=359,slow=4.6,SNR=7.0
WRA S S 08 34 43.8 -4.3
comp=E,1.8nm,0.8s,baz=8.6,slow=13,SNR=7.0
ANM **Nome** 49.20 28 *e* P P 08 28 15.8 +0.5
CTA **Charters Tower** 49.49 171 *e* P P 08 28 17.7 -0.4
comp=E,4.2nm,0.8s,mb3.8
CTA **Charters Tower** 49.49 171 P P 08 28 17.9 -0.2
comp=E,3.7nm,0.6s,mb3.9,baz=6.2,slow=9.1,SNR=7.2
SDN **Sand Point** 49.65 41 *e* P P 08 28 17.8 -1.0
comp=E,37nm,0.4s,mb5.1
KURK **Kurchatov** 49.71 313 *e* P P 08 28 18.4 -1.0
ULHL **Ulahol** 51.77 303 P P 08 28 35.0 +0.3
SNR=13
TKM2 **Tokmak 2** 52.16 303 P P 08 28 37.8 +0.2
SNR=17
KSH **Kashi** 52.36 299 *e* P P 08 28 40.0 +1.0
KZA **Kyzart** 52.52 302 P P 08 28 41.4 +1.2
SNR=19
KBK **Karagaybulak** 52.67 303 P P 08 28 41.5 +0.2
SNR=22
CHMS **Chumysh** 52.77 304 P P 08 28 41.7 -0.3
SNR=8.0
SVW **Sparrevohn** 52.83 34 *e* P P 08 28 42.8 +0.6
comp=E,48nm,1.1s,mb4.6
AS12 **Alice Springs** 52.86 186 *e* P P 08 28 41.3 -1.7
comp=E,10nm,0.5s,mb4.3
ASAR **Alice Springs** 52.86 186 P P 08 28 41.8 -1.2
comp=E,3.0nm,0.5s,mb3.8,baz=359,slow=3.5,SNR=53
ASAR PcP PcP 08 29 46.8 +1.2
comp=E,2.5nm,0.8s,baz=9.4,slow=4.2,SNR=4.1
ASAR pP pP 08 30 07.8 +0.5
comp=E,2.4nm,1.0s,baz=360,slow=4.5,SNR=1.7
ASAR S S 08 35 36.7 -1.9
comp=E,1.8nm,1.0s,baz=15,slow=22,SNR=9.2
FRU **Bishkek** 52.88 303 ⇓ *i* P P 08 28 43.0 +0.2
FRU pmax pmax
comp=Z,60nm,1.9s,mb4.5
AAK **Ala-Archa** 53.00 303 P P 08 28 43.5 -0.1
SNR=16
UCH **Uchtor** 53.04 303 P P 08 28 44.9 +0.9
SNR=27
EKS2 **Erkin-Say** 53.52 303 P P 08 28 47.3 -0.2
SNR=9.9
AML **Almayashu** 53.66 303 P P 08 28 49.2 +0.8
SNR=14
NDI **New Delhi** 53.79 286 ⇓ *i* P P 08 28 48.0 -1.6
AYAN **Aya Nagar** 53.92 285 *e* P P 08 28 50.1 -0.5
BHGR **Bahadurgarh** 54.02 286 *e* P P 08 28 49.8 -1.4
KDAK **Kodiak Island** 54.17 38 *e* P P 08 28 50.5 -1.3
comp=Z,132nm,1.3s,mb5.0
RSO **Redoubt South** 54.18 34 *e* P P 08 28 51.2 -0.8
IMA **Indian Mountai** 54.32 28 *e* P P 08 28 52.4 -0.5
IMA *e*PcP PcP 08 29 50.8 +0.1
KUDL **Kundal** 54.56 285 *e* P P 08 28 54.0 -1.1
KUDL *e* 08 28 55.5
comp=Z,61nm,0.5s
SPU **Mount Spurr** 54.56 34 *e* P P 08 28 54.1 -0.5
BVA0 **Borovoye Array** 54.78 316 *i* P P 08 28 55.5 -0.8
BVA0 pmax pmax
comp=Z,3.0nm,0.4s,mb3.9
BVAR **Borovoye Array** 54.78 316 P P 08 28 55.6 -0.7
comp=Z,62nm,0.4s,mb5.2,baz=90,slow=7.2,SNR=383
BVAR PcP PcP 08 29 52.1 -0.5
comp=Z,5.2nm,0.4s,baz=126,slow=2.9,SNR=5.2
BVAR ScP 08 33 08.9
comp=Z,4.2nm,0.6s,baz=92,slow=5.2,SNR=7.8
BVAR S S 08 36 01.9 -1.8
comp=Z,2.4nm,0.9s,baz=98,slow=10,SNR=5.9
BVAR **Borovoye Array** 54.78 316 P P 08 28 55.6 -0.7
BVAR PcP PcP 08 29 52.1 -0.5
BVAR ScP 08 33 08.9
BVAR S S 08 36 01.9 -1.8
BRVK **Borovoye** 54.85 316 *e* P P 08 28 55.8 -0.9
KHET **Khetri** 55.16 285 *e* P P 08 28 58.7 -0.6
KHET *e* 08 28 59.4
comp=Z,74nm,0.6s
BHPL **Bhopal** 55.34 279 *e* P P 08 28 59.6 -1.0
BHPL *e* 08 29 00.1
comp=Z,64nm,0.5s
SLKM **Skilak Lake** 55.44 34 *e* P P 08 29 00.1 -0.7
ZRNK **Zerenda** 55.62 316 *e* P P 08 29 01.2 -1.0
KKAR **Karatay Array** 55.82 304 *e* P P 08 29 03.1 -0.6
KKAR pmax pmax
comp=Z,14nm,0.4s,mb4.6
PMR **Palmer** 55.98 33 *e* P P 08 29 03.4 -1.2
comp=Z,40nm,1.1s,mb4.7
MCK **McKinley** 56.13 31 *e* P P 08 29 04.3 -1.3
comp=Z,33nm,1.0s,mb4.6
SML **Sawmill** 56.37 33 *e* P P 08 29 06.0 -1.3
HYB **Hyderabad** 56.53 272 ⇓ *i* P P 08 29 08.5 -0.5
comp=Z,50nm,1.0s,mb4.8
HYB *e*pP pP 08 30 32.0 -2.9
HYB *e*sP sP 08 31 18.0 -1.1
HYB **Hyderabad** 56.53 272 ⇓ *e* P P 08 29 08.5 -0.5
comp=Z,50nm,1.0s,mb4.8
AJM **Ajmer** 56.64 284 *e* P P 08 29 08.8 -0.8
AJM AMb AMB 08 29 09.2
comp=Z,74nm,0.9s,mb5.0
COLA **College** 56.64 29 *e* P P 08 29 09.0 -0.1
COLA pmax pmax
comp=Z,22nm,0.7s,mb4.6
COLA **College** 56.64 29 *e* P P 08 29 09.0 -0.1
comp=Z,22nm,0.7s,mb4.6
ILAR **Eielsen Array** 57.05 29 P P 08 29 10.2 -1.7
comp=Z,45nm,1.2s,mb4.7,baz=272,slow=5.0,SNR=132
ILAR PcP PcP 08 30 01.2 -0.1
comp=Z,0.6nm,0.7s,baz=283,slow=3.9,SNR=2.1
TOA **Tolsona** 57.38 33 *e* P P 08 29 14.3 +0.1
comp=Z,25nm,0.7s,mb4.7
CUD **Cuddapah** 57.57 269 ⇓ *e* P P 08 29 16.2 +0.1
EYAK **Cordova Ski Ar** 57.65 34 *e* P P 08 29 15.4 -0.7
JASL **Jaisalmer** 59.65 286 *e* P P 08 29 28.3 -1.6
SVE **Sverdlovsk** 60.01 322 ⇓ *i* P P 08 29 31.8 -0.1
SVE *e* 08 30 11.6
SVE *e* pP 08 31 02.0 +2.5
SVE pmax pmax
comp=Z,80nm,1.7s,mb4.9
POO **Poona** 60.19 276 *e* P P 08 29 33.1 -0.5
POO AMb AMB 08 29 34.2
comp=Z,85nm,0.6s,mb5.3
DAWY **Dawson** 60.33 30 *e* P P 08 29 33.7 -0.3
KAD **Karad** 60.39 274 *e* P P 08 29 34.5 -0.5
KAD *e* 08 29 34.9
comp=Z,55nm,0.4s
ARMA **Armidale** 60.47 168 *e* P P 08 29 34.9 -0.5
FORT **Forrest** 60.65 191 ⇓ *i* P P 08 29 36.1 -0.5
comp=Z,65nm,0.4s,mb5.4
STKA **Stephens Creek** 60.82 178 *e* P P 08 29 37.1 -0.5
comp=Z,5.3nm,1.5s,mb3.8
STKA **Stephens Creek** 60.82 178 P P 08 29 37.1 -0.5
comp=Z,3.1nm,0.7s,mb3.9,baz=334,slow=6.2,SNR=6.2
ARU **Arti** 61.21 321 ⇓ *i* P P 08 29 39.2 -0.6
ARU *e* 08 30 16.2
ARU *e* 08 31 55.9
ARU *e*S S 08 37 25.4 -0.5
ARU *e*SS SS 08 41 35.0 -1.3
ARU pmax pmax
comp=Z,26nm,0.9s,mb4.7
ARU **Arti** 61.21 321 *e* P P 08 29 39.1 -0.7
comp=Z,80nm,0.6s,mb5.3
AB31 **Akbulak array** 61.82 313 *i* P P 08 29 43.3 -0.7
AB31 pmax pmax
comp=Z,9.0nm,0.4s,mb4.7
INK **Inuvik** 62.13 25 P P 08 29 45.1 -0.7
comp=Z,28nm,0.5s,mb5.0,baz=295,slow=5.7,SNR=683
INK S S 08 37 36.2 -1.1
comp=Z,1.6nm,1.0s,baz=180,slow=33,SNR=8.1
INK **Inuvik** 62.13 25 *e* P P 08 29 44.9 -0.9
KLBR **Kellerberrin** 63.89 200 *e* P P 08 29 55.8 -1.9
comp=Z,17nm,0.8s,mb4.6
DLBC **Dease Lake** 65.89 35 P P 08 30 10.7 +0.8
comp=Z,7.5nm,0.7s,mb4.5,baz=288,slow=7.9,SNR=22
DLBC **Dease Lake** 65.89 35 *e* P P 08 30 09.9 0.0
TOO **Toolangi** 66.71 175 *e* P P 08 30 15.8 +0.4
comp=Z,5.1nm,1.3s,mb4.0
SPITS **Spitsbergen Ar** 67.83 349 P P 08 30 22.2 +0.6
comp=Z,7.2nm,1.0s,mb4.3,baz=87,slow=1.2,SNR=9.4
LVZ **Lovozero** 68.54 337 *de* P P 08 30 22.9 -3.2
LVZ pmax pmax
comp=Z,36nm,1.9s,mb4.7
BBB **Bella Bella** 68.94 41 P P 08 30 28.7 0.0
comp=Z,4.7nm,0.6s,mb4.3,baz=305,slow=7.8,SNR=5.4
KEV **Kevo** 70.13 340 *ep* P P 08 30 34.9 -0.7
comp=Z,5.3nm,0.6s,mb4.2
KEV **Kevo** 70.13 340 *e* P P 08 30 34.9 -0.7
KEV pmax pmax
comp=Z,5.0nm,0.6s,mb4.2
RES **Resolute Bay** 70.56 13 *e* P P 08 30 37.7 -0.4
ARCES **ARCESS Array B** 70.70 340 P P 08 30 39.1 +0.2
comp=Z,5.4nm,0.4s,mb4.4,baz=68,slow=8.8,SNR=137
ARE0 **ARCESS Array S** 70.70 340 *e* P P 08 30 38.8 -0.2
YKW3 **Yellowknife Ar** 71.40 28 *e* P P 08 30 42.0 -1.2
YKA **Yellowknife Ar** 71.43 28 P P 08 30 42.8 -0.5
comp=Z,11nm,0.7s,mb4.5,baz=296,slow=6.1,SNR=240
YKA pP pP 08 32 12.5 -2.2
comp=Z,0.6nm,0.6s,baz=297,slow=5.9,SNR=2.6
JOF **Joensuu** 72.06 333 *ep* P P 08 30 45.6 -1.4
comp=Z,16nm,0.5s,mb4.8
JOF **Joensuu** 72.06 333 *e* P P 08 30 45.6 -1.4
JOF pmax pmax
comp=Z,16nm,0.5s,mb4.8
OCWA **Octopus Mounta** 73.00 45 P P 08 30 54.2 +1.5
PGC **Sidney** 73.06 43 *e* P P 08 30 53.7 +0.6
OBN **Obninsk** 73.35 324 *k* iP P 08 30 54.3 -0.3
OBN pmax pmax
comp=Z,42nm,0.8s,mb5.0
OBN **Obninsk** 73.35 324 *e* P P 08 30 54.1 -0.5
GNW **Green Mountain** 73.91 44 *e* P P 08 30 58.3 +0.4
BMW **Boistfort Moun** 74.13 45 *e* P P 08 31 00.1 +0.9
JCW **Jim Creek** 74.18 43 P P 08 31 00.3 +0.9
RPW **Rockport** 74.31 43 *e* P P 08 31 00.3 +0.1
KAF **Kangasniemi** 74.46 333 *ep* P P 08 31 00.0 -0.7
baz=54,slow=5.3
ZEI **Tsey** 74.49 310 ⇓ *e* P P 08 31 01.6 +0.3
RMW **Rattlesnake Mo** 74.58 44 *e* P P 08 31 02.6 +0.9
KIV **Kislovodsk** 74.77 312 *d* iP P 08 31 03.4 +0.5
KIV pmax pmax
comp=Z,44nm,0.9s,mb5.1
KIV **Kislovodsk** 74.77 312 *e* P P 08 31 03.3 +0.5
comp=Z,47nm,1.1s,mb5.0
SHW **Mount Saint He** 74.87 45 *e* P P 08 31 04.3 +1.0
LON **Longmire** 74.89 45 *e* P P 08 31 03.4 -0.1
COR **Corvallis** 74.91 47 *e* P P 08 31 04.4 +0.8
comp=Z,61nm,1.1s,mb5.2
FINES **FINESS Array B** 74.92 333 P P 08 31 03.1 -0.2
comp=Z,8.5nm,0.4s,mb4.7,baz=72,slow=5.5,SNR=142
FINES S S 08 40 03.1 -2.7
comp=Z,3.9nm,1.1s,baz=82,slow=14,SNR=4.7
KEBM **Edson Butte** 74.99 49 *e* P P 08 31 05.3 +1.2
GNI **Garni** 75.04 308 P P 08 30 55.2 -9.3
comp=Z,29nm,0.4s,mb5.3,baz=5.3,slow=6.9,SNR=16
NLW **Nelson Butte** 75.18 43 *e* P P 08 31 05.5 +0.4
KBO **Bosley Butte** 75.35 50 *e* P P 08 31 06.8 +0.6
LTY **Liberty** 75.36 44 P P 08 31 06.5 +0.4
HSO **Harness Mounta** 75.52 48 *e* P P 08 31 07.9 +0.8
EBG **Ellensburg** 75.58 44 P P 08 31 08.3 +1.0
WTV **Waterville** 75.58 43 P P 08 31 07.7 +0.3
URZ **Urewera** 75.85 150 P P 08 31 09.1 0.0
comp=Z,10nm,0.9s,mb4.5,baz=11,slow=10,SNR=3.4
HUMO **Hull Mountain** 76.02 49 *e* P P 08 31 10.5 +0.6
HAWA **Hanford** 76.45 44 *e* P P 08 31 12.6 +0.4
comp=Z,11nm,0.4s,mb4.8
DPW **Davenport** 76.55 43 *e* P P 08 31 13.0 +0.4
YBH **Yreka Blue Hor** 76.58 50 *e* P P 08 31 13.9 +0.9
comp=Z,15nm,0.8s,mb4.7
SOC **Sochi** 76.86 313 *e* P P 08 31 14.3 -0.2
SOC *e*PPP PPP 08 36 01.8 -3.6
SOC *e*S S 08 40 27.2 +0.3
SOC pmax pmax
comp=Z,26nm,0.6s,mb5.0
SOC pmax pmax
comp=N,13nm,0.7s
SOC pmax pmax
comp=E,38nm,0.8s
NEW **Newport** 76.99 42 P P 08 31 15.7 +0.6
comp=E,20nm,0.7s,mb4.9,baz=301,slow=4.0,SNR=62
NEW **Newport** 76.99 42 *e* P P 08 31 15.2 +0.2
comp=E,32nm,0.9s,mb5.0
WDC **Whiskeytown Da** 77.22 51 *e* P P 08 31 16.4 -0.1
comp=E,49nm,1.6s,mb4.9
LNOR **Lincton Mounta** 77.46 44 *e* P P 08 31 18.3 +0.6
MOD **Modoc** 78.09 49 *e* P P 08 31 21.4 +0.2
comp=E,21nm,1.2s,mb4.6
RPZ **Rata Peaks** 78.19 157 P P 08 31 21.2 -0.5
comp=E,5.5nm,0.5s,mb4.4,baz=16,slow=8.6,SNR=8.6
OHCM **Honcut** 78.52 51 *e* P P 08 31 23.2 -0.3
WVOR **Wild Horse Val** 78.92 48 *e* P P 08 31 26.3 +0.8
comp=E,41nm,1.1s,mb5.0
BEKR **Beckwourth** 79.03 50 *e* P P 08 31 26.5 +0.3
comp=E,34nm,0.7s,mb5.1
AKASG **Malin Array Be** 79.42 323 P P 08 31 27.7 -0.3
comp=E,11nm,0.5s,mb4.8,baz=50,slow=5.1,SNR=82
MSO **Missoula** 79.57 42 *e* P P 08 31 28.7 -0.2
comp=E,5.3nm,0.6s,mb4.3
SIM **Simferopol'** 79.69 316 *e* P P 08 31 30.1 +0.5
SIM pmax pmax
comp=Z,20nm,0.7s,mb4.9
WCN **Washoe City** 79.71 51 *e* P P 08 31 30.5 +0.7
comp=Z,23nm,1.2s,mb4.7
CMB **Columbia Colle** 79.90 52 *e* P P 08 31 31.1 +0.3
comp=Z,27nm,0.8s,mb4.9
CHMT **Chamberlain Mo** 79.93 42 *e* P P 08 31 30.7 -0.1
SUW **Suwalki** 80.52 328 *e* P P 08 31 33.6 -0.1
SUW **Suwalki** 80.52 328 *e* P P 08 31 33.5 -0.3
NB2 **NORSAR Subarra** 80.69 337 P P 08 31 33.9 -0.6
comp=Z,22nm,1.0s,mb4.8,baz=46,slow=5.0
NB2 **NORSAR Subarra** 80.69 337 P P 08 31 33.9 -0.6
baz=46,slow=5.1
NOA **NORSAR Array B** 80.69 337 P P 08 31 34.1 -0.4
comp=E,8.5nm,0.7s,mb4.6,baz=46,slow=5.0,SNR=30
NOA PP PP 08 34 47.4 +1.2
comp=Z,0.5nm,0.7s,baz=50,slow=7.8,SNR=3.8
BMN **Battle Mountai** 80.84 49 *e* P P 08 31 36.4 +0.7
comp=Z,15nm,1.1s,mb4.6
HRY **Holter Researc** 80.86 41 *e* P P 08 31 36.4 +0.7
HLID **Hailey** 81.01 45 *e* P P 08 31 37.5 +1.0
comp=Z,11nm,0.9s,mb4.6
BOYT **Boyabat** 81.02 312 *i* P P 08 31 36.5 0.0
NVAR **Mina Array Bea** 81.13 51 P P 08 31 38.4 +1.1
comp=Z,23nm,0.7s,mb5.0,baz=283,slow=6.2,SNR=182
NVAR pP pP 08 33 08.6 -2.3
comp=Z,0.9nm,0.8s,baz=292,slow=4.9,SNR=2.4
FFC **Flin Flon** 81.21 31 *e* P P 08 31 36.6 -0.7
comp=Z,8.7nm,0.9s,mb4.5
MCMT **McKenzie Canyo** 81.29 43 *e* P P 08 31 38.0 +0.2
GZT **Gaziantep** 81.31 308 *i* P P 08 31 37.9 -0.2
CTKT **Corum** 81.50 312 *i* P P 08 31 39.7 +0.6
BOZ **Bozeman (W)** 81.56 42 *e* P P 08 31 39.7 +0.4
comp=Z,11nm,0.8s,mb4.7
BALT **Daday** 81.93 313 *i* P P 08 31 41.7 +0.4
MZLS **Mizel** 82.02 293 P P 08 31 43.0 +0.9
TPH **Tonopah** 82.04 51 *e* P P 08 31 42.6 +0.7
comp=Z,36nm,1.0s,mb5.1
QLMT **Earthquake Lak** 82.13 43 *e* P P 08 31 43.3 +1.1
AVNT **Avonos** 82.42 310 *i* P P 08 31 44.4 +0.6
ELDT **Eldivan** 82.46 312 *i* P P 08 31 44.0 +0.1
YMR **Madison River** 82.50 43 *e* P P 08 31 44.9 +0.9
COBT **Iskenderun** 82.63 308 *i* P P 08 31 44.8 -0.2
ARSS **Ar Rass** 82.71 295 P P 08 31 46.0 +0.4
BRTR **Keskin Array B** 82.73 312 P P 08 31 45.7 +0.4
comp=Z,15nm,0.7s,mb4.8,baz=98,slow=4.2,SNR=58
BRTR pP pP 08 33 19.8 +0.5
comp=Z,1.8nm,1.1s,baz=72,slow=4.6,SNR=1.4
LKWY **Lake** 82.89 43 *e* P P 08 31 48.9 +2.9
HVU **Hansel Valley** 82.98 46 *e* P P 08 31 47.8 +1.2
HILS **Ha'il** 83.12 297 P P 08 31 48.4 +0.8
KSWY **Kelly School** 83.28 43 *e* P P 08 31 49.7 +1.6
BGU **Big Grassy Mou** 83.29 47 *e* P P 08 31 49.0 +0.8
REDW **Red Top Meadow** 83.29 44 *e* P P 08 31 49.0 +0.9
MWC **Mount Wilson** 83.43 54 *e* P P 08 31 49.2 +0.2
KWP **Kalwaria** 83.44 324 *e* P P 08 31 49.5 +0.8
HWUT **Hardware Ranch** 83.84 45 *e* P P 08 31 51.9 +1.0
comp=Z,40nm,0.8s,mb5.2
AFFS **'Afif** 83.84 294 P P 08 31 52.3 +1.0
TCUT **Toone Canyon** 84.21 46 *e* P P 08 31 53.6 +0.9
CTU **Camp Tracy** 84.23 46 *e* P P 08 31 53.4 +0.5
KAMS **Al Khamasin** 84.31 290 P P 08 31 54.0 +0.3
BW06 **Boulder Array** 84.41 44 *e* P P 08 31 54.0 +0.3
comp=Z,15nm,1.1s,mb4.6
PDAR **Pinedale Array** 84.41 44 P P 08 31 54.2 +0.5
comp=Z,18nm,1.1s,mb4.7,baz=302,slow=1.9,SNR=61
PDAR pP pP 08 33 30.1 +1.9
comp=Z,0.5nm,0.7s,baz=326,slow=3.3,SNR=2.5
PDAR PP PP 08 35 15.6 -0.6
comp=Z,0.8nm,0.7s,baz=326,slow=5.3,SNR=6.1
NLU **North Lily Min** 84.43 47 *e* P P 08 31 54.7 +0.8
JLU **Jordanelle** 84.47 46 *e* P P 08 31 54.6 +0.6
MPU **Maple Canyon** 84.68 47 *e* P P 08 31 55.8 +0.8
DAU **Daniels Canyon** 84.70 46 *e* P P 08 31 56.3 +1.1
PFO **Pinyon Flat Ob** 84.89 54 *e* P P 08 31 56.1 -0.1
comp=Z,47nm,0.6s,mb5.4
NEN **Nelson** 84.93 52 *e* P P 08 31 56.8 +0.4
MVU **Marysvale** 85.14 48 *e* P P 08 31 58.5 +1.1
comp=Z,17nm,1.1s,mb4.7
MSU **Marysvale** 85.16 48 *e* P P 08 31 58.6 +1.2
BAR **Barrett** 85.22 55 *e* P P 08 31 58.0 +0.1
OKC **Ostrava-Krasne** 85.58 326 *e* P P 08 31 59.3 +0.1
TATS **Tathlith** 85.58 290 P P 08 32 00.3 +0.4
KSP **Ksiaz** 85.79 328 *e* P P 08 32 00.2 +0.1
KSP **Ksiaz** 85.79 328 ⇓ *e* P P 08 32 00.2 +0.1
KBRS **Khaybar** 85.87 297 P P 08 32 01.7 +0.5
SRU **San Rafael** 85.90 47 *e* P P 08 32 01.4 +0.4
DPC **Dobruska-Polom** 86.11 327 *e* P P 08 32 01.8 +0.1
UPC **Upice** 86.15 328 *e* P P 08 32 01.8 -0.1
DJNS **Zahran al Janu** 86.42 288 P P 08 32 04.9 +1.0
RSSD **Black Hills** 86.83 40 *e* P P 08 32 05.1 -0.2
comp=Z,8.5nm,0.8s,mb4.5
BRG **Berggiesshubel** 86.85 329 *e* P P 08 32 05.1 -0.1
BRG pmax pmax
comp=Z,5.0nm,0.8s,mb4.3
BRG **Berggiesshubel** 86.85 329 *e* P P 08 32 05.1 -0.1
comp=Z,5.2nm,0.8s,mb4.3
JMQS **Jabal Moqyreh** 86.86 301 P P 08 32 05.6 -0.3
BLJS **Baljurashi** 86.96 291 P P 08 32 07.1 +0.6
CLL **Collm** 86.96 330 ⇓ P P 08 32 05.2 -0.5
comp=Z,logA/T=1.0,mb4.5
CLL **Collm** 86.96 330 ⇓ *i* P P 08 32 05.2 -0.5
CLL pmax pmax
comp=Z,15nm,1.5s,mb4.5
CLL **Collm** 86.96 330 ⇓ *i* P P 08 32 05.2 -0.5
comp=Z,15nm,1.5s,mb4.5
ULM **Lac du Bonnet** 86.98 32 P P 08 32 05.9 +0.1
comp=Z,3.3nm,0.5s,mb4.3,baz=275,slow=3.6,SNR=8.0
ULM **Lac du Bonnet** 86.98 32 *e* P P 08 32 05.2 -0.6
comp=Z,3.5nm,0.5s,mb4.3
PRU **Pruhonice** 87.19 328 *e* P P 08 32 06.6 -0.3
PV10 **Paradox Valley** 87.27 47 *e* P P 08 32 08.7 +1.1
WUAZ **Wupatki** 87.37 50 *e* P P 08 32 08.8 +0.7
comp=Z,6.7nm,1.0s,mb4.3
PV01 **Paradox Valley** 87.71 47 *e* P P 08 32 10.0 +0.4
MOX **Moxa** 88.05 330 *i* P P 08 32 10.5 -0.4
MOX **Moxa** 88.05 330 *e* P P 08 32 10.5 -0.4
KHC **Kasperske Hory** 88.24 328 *e* P P 08 32 11.6 -0.2
GEC2 **GERESS Array S** 88.38 328 *e* P P 08 32 12.1 -0.4
GEC2 pmax pmax
comp=Z,4.0nm,0.8s,mb4.2
GEC2 **GERESS Array S** 88.38 328 *e* P P 08 32 12.1 -0.4
comp=Z,4.0nm,0.8s,mb4.2
GERES **GERESS Array B** 88.38 328 P P 08 32 12.1 -0.4
comp=Z,1.9nm,0.6s,mb4.0,baz=45,slow=3.8,SNR=19
GERES PP PP 08 35 42.9 -5.6
comp=Z,0.2nm,0.3s,baz=80,slow=6.0,SNR=2.3
GRA1 **Grafenberg Arr** 88.91 329 *e* P P 08 32 14.7 -0.3
comp=Z,14nm,1.4s,mb4.5
GRF **Grafenberg Arr** 88.91 329 *e* P P 08 32 14.7 -0.3
GRF pmax pmax
comp=Z,14nm,1.4s,mb4.5
PERS **Pernice** 89.24 325 *e* P P 08 32 16.1 -0.4
SDCO **Great Sand Dun** 89.89 46 *e* P P 08 32 20.7 +0.9
comp=Z,3.4nm,0.7s,mb4.3
LJU **Ljubljana** 89.95 325 *e* P P 08 32 19.1 -0.8

BOJS	**Bojanci**	**89.96**	**324**	*i* P		**P**	**08 32 19.8**	**-0.1**
FUR	**Furstenfeldbru**	**90.00**	**328**	*e*P		**P**	**08 32 20.1**	**+0.1**
FUR				pmax	pmax			
	comp=Z,28nm,1.0s,mb5.0							
FUR	**Furstenfeldbru**	**90.00**	**328**	*e*P		**P**	**08 32 20.1**	**+0.1**
	comp=Z,28nm,1.0s,mb5.0							
JAVS	**Javornik**	**90.28**	**325**	*e*P		**P**	**08 32 20.2**	**-1.2**
ANMO	**Albuquerque**	**90.96**	**49**	*e*P		**P**	**08 32 25.6**	**+0.8**
	comp=Z,21nm,1.0s,mb4.9							
BFO	**Black Forest**	**91.20**	**330**	*e*P		**P**	**08 32 25.1**	**-0.5**
BFO				pmax	pmax			
	comp=Z,12nn,1.2s,mb4.6							
BFO	**Black Forest**	**91.20**	**330**	*e*P		**P**	**08 32 25.1**	**-0.5**
	comp=Z,12nn,1.2s,mb4.6							
BNM	**Barren Site**	**91.33**	**49**	*e*P		**P**	**08 32 27.5**	**+0.9**
BAIF	**Baives**	**91.60**	**333**	*e*P		**P**	**08 32 25.9**	**-1.5**
CDF	**Champ du Feu**	**91.60**	**330**	*e*P		**P**	**08 32 26.7**	**-0.7**
	comp=Z,11nn,0.8s,mb4.6							
HINF	**Hinteralfeld**	**92.24**	**330**	*e*P		**P**	**08 32 29.2**	**-1.2**
	comp=Z,8.1nn,0.9s,mb4.3							
HAU	**Haudompre**	**92.31**	**331**	*e*P		**P**	**08 32 29.6**	**-1.2**
MEZF	**Maizieres J'vi**	**92.47**	**332**	*e*P		**P**	**08 32 30.9**	**-0.6**
SCHQ	**Schefferville**	**93.29**	**15**	P		**P**	**08 32 35.3**	**+0.2**
	comp=Z,1.7nm,0.9s,mb4.0,baz=37,slow=12,SNR=2.8							
CABF	**La Chapelle**	**93.50**	**330**	*e*P		**P**	**08 32 34.6**	**-1.6**
MNTX	**Cornudas Mount**	**93.65**	**51**	*e*P		**P**	**08 32 37.5**	**+0.3**
	comp=Z,5.2nn,0.7s,mb4.7							
GDL2	**Guadalupe Moun**	**94.03**	**50**	*e*P		**P**	**08 32 39.2**	**+0.3**
LPL	**La Plagne**	**94.05**	**329**	*e*P		**P**	**08 32 38.1**	**-0.6**
	comp=Z,7.8nn,0.6s,mb4.6							
LPG	**La Plagne**	**94.06**	**329**	*e*P		**P**	**08 32 38.3**	**-0.4**
	comp=Z,8.4nn,0.6s,mb4.6							
SSF	**Saint Saulge**	**94.25**	**331**	*e*P		**P**	**08 32 38.6**	**-1.0**
	comp=Z,3.6nn,0.6s,mb4.3							
SMF	**Signal de Mont**	**94.44**	**331**	*e*P		**P**	**08 32 39.5**	**-1.0**
	comp=Z,12nn,0.9s,mb4.6							
AVF	**Avril sur Loir**	**94.53**	**331**	*e*P		**P**	**08 32 40.0**	**-0.9**
	comp=Z,9.7nn,0.9s,mb4.5							
MBDF	**Montbardon**	**94.64**	**328**	*e*P		**P**	**08 32 39.9**	**-1.5**
	comp=Z,4.0nn,0.7s,mb4.3							
ORIF	**Oris-en-Rattie**	**94.90**	**329**	*e*P		**P**	**08 32 41.4**	**-1.2**
	comp=Z,4.6nn,0.8s,mb4.3							
TXAR	**Lajitas Array**	**96.27**	**52**	P		**P**	**08 32 50.2**	**+0.9**
	comp=Z,4.2nn,0.6s,mb4.8,baz=307,slow=3.5,SNR=63							
TXAR				pP	pP		08 34 24.2	-1.0
	comp=Z,0.7nn,0.7s,baz=297,slow=2.0,SNR=4.7							
TXAR				PP	PP		08 36 46.4	-3.8
	comp=Z,0.5nn,0.9s,baz=304,slow=4.5,SNR=4.4							
TXAR	**Lajitas Array**	**96.27**	**52**	P		**P**	**08 32 50.2**	**+0.9**
TXAR				pP	pP		08 34 24.2	-1.0
TXAR				PP	PP		08 36 46.4	-3.8
QSPA	**South Pole Qui**	**119.00**	**180**	*e*P	PKPdf		08 38 05.2	+0.3
QSPA				*e*			08 40 59.6	
DBIC	**Dimbokro**	**130.41**	**310**	SKPbc			08 41 12.3	
	comp=Z,11nn,1.1s,baz=22,slow=6.2,SNR=12							
LPAZ	**La Paz**	**151.64**	**69**	PKP	PKPdf		08 39 08.2	+3.0
	comp=Z,1.1nn,1.0s,baz=218,slow=7.3,SNR=2.4							
LPAZ				PKPbc	PKPdf		08 39 14.8	+10
	comp=Z,7.2nn,0.5s,baz=335,slow=3.2,SNR=42							
LPAZ				PKPab	PKPab		08 39 24.8	-0.1
	comp=Z,5.0nn,0.6s,baz=258,slow=19,SNR=6.1							
LPAZ				pPKPbc			08 40 56.9	
	comp=Z,2.5nn,1.0s,baz=13,slow=8.1,SNR=2.6							
LPAZ	**La Paz**	**151.64**	**69**	PKP	PKPdf		08 39 08.2	+3.0
LPAZ				*e*PKPbc	PKPdf		08 39 14.5	+9.3
LPAZ				PKPbc	PKPdf		08 39 14.8	+10
LPAZ				PKPab	PKPab		08 39 24.8	-0.1
LPAZ				pPKPbc			08 40 56.9	
LVC	**Limon Verde**	**153.76**	**82**	PKPbc	PKPdf		08 39 18.9	+11
	comp=Z,0.6nn,0.3s,baz=313,slow=4.0,SNR=5.3							
LVC				PKPab	PKPab		08 39 34.7	+1.0
	comp=Z,5.8nn,1.0s,baz=331,slow=2.4,SNR=8.7							
LVC				pPKPbc			08 41 01.7	
	comp=Z,1.2nn,0.8s,baz=154,slow=6.4,SNR=2.4							
CPUP	**Villa Florida**	**164.94**	**83**	PKPab	PKPab		08 40 21.6	-0.1
	comp=Z,3.7nn,0.7s,baz=276,slow=6.5,SNR=9.8							

*IDC **15** 08:29:36.5±13.0,51.77N×176.34W,mb3.6/4,mb1 4.0/5, mb1mx3.6/25,ML4.5/1,Error ellipse: s-maj=246.0km s-min=57.2km az=75.0*
*NEIC **15** 08:30:16.3,52.83N×172.93W,h218km,mb3.2/1,After AEIC.*
ISC 15 08:30:15.4±0.6,52.8N±0.2×173.0W±0.2,h216km±11km, n19,σ0ˢ56/25,mb3.3/5,Andreanof Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op	ISC		h m s	ISC
ATKA	**Atka Island**	**0.97**	**233**	P	**P**		**08 30 47.2**	**+0.4**
ATKA				S	**S**		**08 31 10.7**	**-0.5**
GSIG	**Igitkin Island**	**2.00**	**247**	P	**P**		**08 30 55.3**	**-0.1**
GSMY	**Great Sitkin M**	**2.05**	**250**	P	**P**		**08 30 56.0**	**0.0**
GSTD	**Great Sitkin T**	**2.09**	**251**	P	**P**		**08 30 56.4**	**-0.1**
GSTD				S	**S**		**08 31 28.2**	**+0.1**
GSSP	**Great Sitkin S**	**2.10**	**252**	P	**P**		**08 30 56.7**	**+0.1**
ETKA	**Kagalaska Isla**	**2.32**	**248**	P	**P**		**08 30 58.9**	**0.0**
ETKA				S	**S**		**08 31 32.1**	**-0.3**
ADAG	**Mount Adagdak**	**2.38**	**251**	P	**P**		**08 30 59.9**	**+0.3**
ADK	**Adak**	**2.47**	**250**	P	**P**		**08 31 00.6**	**+0.2**
ADK				S	**S**		**08 31 34.8**	**-0.5**
KIRH	**Kanaga Island**	**2.70**	**252**	P	**P**		**08 31 03.2**	**+0.3**
KINC	**Kanaga Island**	**2.71**	**253**	P	**P**		**08 31 03.0**	**-0.1**
KINC				S	**S**		**08 31 40.7**	**+0.8**
KIWB	**Kanaga Island**	**2.75**	**252**	P	**P**		**08 31 03.8**	**+0.3**
KIKV	**Kanaga Island**	**2.75**	**252**	P	**P**		**08 31 03.9**	**+0.3**
KIMD	**Kanaga Island**	**2.83**	**250**	P	**P**		**08 31 04.7**	**+0.3**
KIMD				S	**S**		**08 31 41.5**	**-0.9**
ILAR	**Eielson Array**	**17.89**	**38**	P	**P**		**08 34 10.4**	**-0.5**
	0.6nn,0.3s,baz=215,slow=10,SNR=45							
INK	**Inuvik**	**24.22**	**35**	P	**P**		**08 35 12.8**	**-0.3**
	0.4nn,0.4s,mb3.4,baz=252,slow=8.6,SNR=5.6							
NEW	**Newport**	**35.01**	**74**	P	**P**		**08 36 49.8**	**+1.1**
	1.1nn,0.4s,mb3.7,baz=319,slow=9.3,SNR=3.4							
PDAR	**Pinedale Array**	**42.45**	**77**	P	**P**		**08 37 51.5**	**+1.3**
	0.6nn,0.5s,mb3.3,baz=311,slow=3.7,SNR=6.7							
MNTX	**Cornudas Mount**	**52.19**	**86**	P	**P**		**08 39 04.5**	**-1.1**
	0.7nn,0.9s,mb3.1							
TXAR	**Lajitas Array**	**54.91**	**86**	P	**P**		**08 39 24.6**	**-0.9**
	0.2nn,0.5s,mb2.9,baz=333,slow=4.0,SNR=3.7							

*ATH **15** 08:45:56.4,38.18N×19.67E,h10km,MD3.2/3*
THE 15 08:46:11.3,39.08N×19.74E,h4km,ML2.7, Greece-Albania border region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op	ISC		h m s	ISC
KEK	**Kerkira**	**0.63**	**4**	*e*PG			08 46 25.0	+0.5
IGT	**Igoumenitsa**	**0.64**	**45**	*e*Pg			08 46 23.4	-0.7
IGT				*e*Sg			08 46 32.4	-0.3
LKD	**Levkas**	**0.80**	**118**	*e*Pg			08 46 26.2	-1.1
LKD				*e*Sg			08 46 37.6	-0.4
JAN	**Janina**	**1.03**	**56**	*e*PG			08 46 29.5	-2.4
MEV	**Metsovon**	**1.35**	**58**	*e*Pb			08 46 36.0	-0.8
MEV				*e*Sb			08 46 54.4	+0.2
EVR	**Evrytania**	**1.62**	**95**	*e*PN			08 46 30.0	-11
AGG	**Agios Georgios**	**2.02**	**91**	*e*Pn			08 46 45.4	-1.0

*MEX **15** 08:49:46.4±0.8, 15.43N×97.73W,h10km,MD3.8*
*NEIC **15** 08:49:49.0, 15.62N×97.69W,h1km,MD3.8(MEX),After MEX.*
ISC 15 08:49:44.7±3.2,15.5N±0.3×97.6W±0.2,h2km±46km,n6, σ1ˢ23/11,Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op	ISC		h m s	ISC
HUIG	**Huatulco**	**1.45**	**79**	*e*P	**Pn**		**08 50 10.4**	**-1.6**
HUIG				*i* S	**Sb**		**08 50 31.7**	**+0.8**
OXX	**Oaxaca**	**1.77**	**28**	*i* P	**Pn**		**08 50 18.0**	**+1.4**
OXX				*i* S	**Sn**		**08 50 38.0**	**-2.1**
CMIG	**Matias Romero**	**3.04**	**58**	*i* P	**Pn**		**08 50 35.3**	**+0.6**
CMIG				*i* S	**Sn**		**08 51 11.4**	**-0.7**
CMIG	**Matias Romero**	**3.04**	**58**	*i* P	**Pn**		**08 50 35.3**	**+0.6**
CMIG				*i* S	**Sn**		**08 51 13.6**	**+1.4**
IISM	**Ciudad Serdan**	**3.47**	**3**	*e*P	**Pn**		**08 50 40.0**	**-0.9**
PPM	**Popocatepetl**	**3.68**	**344**	*e*P	**Pn**		**08 50 39.2**	**-4.6**
PPM				*i* S	**Sn**		**08 51 29.3**	**+0.9**

IDC 15 09:00:48.3±13.0,18.01S×175.71W,mb3.6/2,mb1 3.9/2, mb1mx3.5/14,Error ellipse: s-maj=646.0km s-min=42.3km az=141.0,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op	ISC		h m s	ISC
ASAR	**Alice Springs**	**47.24**	**254**	P	P		09 09 23.4	-1.9
	0.5nn,0.6s,baz=89,slow=8.4,SNR=7.0							
ILAR	**Eielson Array**	**85.43**	**12**	P	P		09 13 27.3	-1.3
	0.6nn,1.1s,baz=225,slow=6.4,SNR=3.5							
BRTR	**Keskin Array B**	**146.65**	**317**	PKPbc	PKPbc		09 20 31.8	-0.2
	1.6nn,1.0s,baz=45,slow=4.1,SNR=3.2							

IDC 15 09:08:21.1±8.2,19.42S×174.70W,mb3.8/3,mb1 4.1/3, mb1mx3.7/15,MS3.7/1,Ms1 3.7/1,ms1mx3.0/20,Error ellipse: s-maj=357.0km s-min=38.5km az=143.0,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op	ISC		h m s	ISC
ASAR	**Alice Springs**	**47.79**	**255**	P	P		09 16 59.3	-3.0
	1.1nn,0.9s,baz=87,slow=7.6,SNR=8.6							
ASAR				LR	LR		09 33 12.0	
	comp=Z,79nm,20.1s,baz=286,slow=31							
WRA	**Warramunga Arr**	**47.83**	**260**	P	P		09 17 01.8	-0.9
	0.4nn,0.3s,baz=96,slow=8.3,SNR=28							
ILAR	**Eielson Array**	**86.61**	**12**	P	P		09 21 05.8	-1.3
	0.7nn,0.9s,baz=225,slow=6.4,SNR=5.7							

BJI 15 09:21:44.6,42.17N×81.78E,h18km,ML3.5,1C-1D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op	ISC		h m s	ISC
MK31	**Makanchi Array**	**4.64**	**4**	⇓Pn	Pn		09 22 51.4	-4.2
	2.9nn,0.6s,baz=182,slow=12,SNR=29							
MK31				⇑Lg			09 23 59.9	
	17nn,0.6s,baz=186,slow=28,SNR=5.4							
WMQ	**Urumqi**	**4.64**	**67**	*e*P	Pn		09 22 57.1	+1.4
WMQ				S	Sn		09 23 42.0	-7.7
WMQ				S	Sn			
	comp=N,18nm,0.6s							
WMQ				S	Sn			
	comp=E,20nm,0.6s							

*NEIC **15** 09:28:05.3,29.04S×70.75W,h15km,ML3.4(GUC),After GUC.*
GUC 15 09:28:05.3±0.8,29.04S×70.75W,h15km±5km,MD3.7, ML3.4,3C,Central Chile

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op	ISC		h m s	ISC
VACH	**Vallenar**	**0.46**	**359**	⇑*i*P	Pb		09 28 14.5	-0.1
VACH				*i* S	Sb		09 28 21.3	+0.4
VACH				AMP			09 28 22.5	
	comp=N,5μm,0.1s							
LSCH	**La Serena**	**0.97**	**207**	*e*P	Pb		09 28 22.2	-1.0
LSCH				*i* S	Sb		09 28 35.4	-0.2
LSCH				AMP			09 28 35.9	
	comp=E,2μm,0.2s							
TLL	**Tololo Astrono**	**1.12**	**182**	⇑*i*P	Pb		09 28 25.1	-0.8
TLL				*i* S	Sb		09 28 39.9	-0.2
TLL				AMP			09 28 42.2	
	comp=E,516nm,0.4s							
OVCH	**Ovalle**	**1.61**	**194**	*e*P	Pn		09 28 33.1	-0.3
OVCH				*i* S	Sn		09 28 53.2	-0.8
OVCH				AMP			09 28 55.5	
	comp=E,734nm,0.2s							
CPCH	**Copiapo**	**1.71**	**12**	*i* P	Pn		09 28 34.5	-0.4
CPCH				*i* S	Sn		09 28 56.4	-0.2
CMCH	**Combarbala**	**2.14**	**186**	⇑*i*P	Pn		09 28 41.4	+0.4
CMCH				*i* S	Sn		09 29 08.4	+1.1
CMCH				AMP			09 29 16.1	
	comp=E,2μm,0.7s							

*IDC **15** 09:32:08.8±0.7,17.05S×172.47W,mb4.0/13,mb1 4.2/13, mb1mx4.2/19,MS3.3/1,Ms1 3.3/1,ms1mx2.7/23,Error ellipse: s-maj=31.8km s-min=16.3km az=135.0*
*NEIC **15** 09:32:09.9±0.4, 17.17S×172.38W,h10km,mb4.5/1,Error ellipse: s-maj=14.2km s-min=9.7km az=158.0*
ISC 15 09:32:08.5±0.6,17.1S±0.1×172.5W±0.1,h10km,n32, σ1ˢ01/19,mb4.1/14,Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op	ISC		h m s	ISC
RAR	**Rarotonga**	**12.67**	**111**	LR	LR		09 39 06.4	
	comp=Z,131nm,19.8s,baz=145,slow=33							
RAR	**Rarotonga**	**12.67**	**111**	P		**P**	**09 35 07.9**	**-3.8**
URZ	**Urewera**	**22.96**	**201**	P		**P**	**09 37 16.4**	**+2.2**
	8.4nn,0.4s,mb4.5,baz=40,slow=8.8,SNR=12							
RPZ	**Rata Peaks**	**29.96**	**204**	P		**P**	**09 38 30.8**	**+12**
	20nn,1.2s,mb4.7,baz=17,slow=11,SNR=4.1							
CTA	**Charters Tower**	**39.16**	**259**	P		**P**	**09 39 38.0**	**-0.4**
	1.9nn,0.8s,mb3.9,baz=63,slow=12,SNR=3.4							
STKA	**Stephens Creek**	**43.98**	**242**	P		**P**	**09 40 18.9**	**+1.0**
	3.3nn,1.0s,mb4.0,baz=83,slow=16,SNR=3.5							
WB2	**Warramunga Arr**	**50.33**	**258**	*e*P		**P**	**09 41 07.2**	**-0.7**
WRAB	**Tennant Creek**	**50.33**	**258**	*e*P		**P**	**09 41 07.4**	**-0.5**
	18nn,1.1s,mb5.0							
WRAB				*e*			09 41 31.3	
WRA	**Warramunga Arr**	**50.34**	**258**	P		**P**	**09 41 07.3**	**-0.6**
	1.9nn,0.8s,mb4.2,baz=97,slow=6.7,SNR=36							
AS12	**Alice Springs**	**50.45**	**253**	*e*P		**P**	**09 41 08.7**	**0.0**
	11nn,0.9s,mb4.9							
ASAR	**Alice Springs**	**50.45**	**253**	P		**P**	**09 41 08.9**	**+0.2**
	9.8nn,0.8s,mb4.9,baz=86,slow=8.5,SNR=72							
VNDA	**Vanda**	**61.77**	**186**	P		**P**	**09 42 28.5**	**-0.9**
	0.6nn,0.6s,mb3.9,baz=356,slow=8.2,SNR=3.5							
VNDA	**Vanda**	**61.77**	**186**	P		**P**	**09 42 26.8**	**-2.6**
	7.2nn,2.0s,mb4.5							
QSPA	**South Pole Qui**	**72.94**	**180**	P		**P**	**09 43 38.7**	**-0.7**
NVAR	**Mina Array Bea**	**75.01**	**41**	P		**P**	**09 43 52.6**	**+0.4**
	0.5nn,0.7s,mb3.6,baz=234,slow=7.8,SNR=5.1							
TXAR	**Lajitas Array**	**80.83**	**56**	P		**P**	**09 44 24.0**	**-0.5**
	0.4nn,0.8s,mb3.4,baz=211,slow=7.3,SNR=5.8							
PDAR	**Pinedale Array**	**82.95**	**41**	P		**P**	**09 44 36.5**	**+1.4**
	0.2nn,0.4s,mb3.5,baz=243,slow=2.2,SNR=2.5							
ILAR	**Eielson Array**	**83.95**	**11**	P		**P**	**09 44 39.1**	**-0.7**
	0.5nn,0.7s,mb3.8,baz=219,slow=5.7,SNR=8.1							
MAW	**Mawson**	**86.46**	**198**	P		**P**	**09 44 53.2**	**+0.9**
	3.1nn,1.1s,mb4.4,baz=158,slow=5.4,SNR=2.9							
YKA	**Yellowknife Ar**	**91.31**	**23**	P		**P**	**09 45 15.8**	**+0.5**
	0.2nn,0.8s,mb3.5,baz=238,slow=4.4,SNR=4.6							
FLN	**La Foliniere**	**147.77**	**10**	*e*PKP1	PKPdf		09 51 54.7	+1.0
	7.2nn,0.7s							
GERES	**GERESS Array B**	**147.96**	**352**	PKPbc	PKPdf		09 51 56.0	+2.0
	0.3nn,0.7s,baz=56,slow=3.5,SNR=3.5							
LDF	**La Druitiere**	**147.99**	**10**	*e*PKP1	PKPdf		09 51 55.2	+1.1
	5.3nn,0.7s							
BRTR	**Keskin Array B**	**148.04**	**320**	PKPbc	PKPdf		09 51 57.4	+2.9
	1.1nn,0.8s,baz=45,slow=1.7,SNR=4.8							
GRR	**Gorron**	**148.06**	**11**	*e*PKP1	PKPdf		09 51 55.7	+1.5
CDF	**Champ du Feu**	**148.78**	**0**	*e*PKP1	PKPdf		09 51 58.0	+2.7
SSF	**Saint Saulge**	**149.95**	**5**	*e*PKP1	PKPdf		09 52 01.0	+3.7
	6.8nn,0.8s							
AVF	**Avril sur Loir**	**150.21**	**6**	*e*PKP1	PKPdf		09 52 01.2	+3.5
	6.5nn,1.0s							
SMF	**Signal de Mont**	**150.40**	**5**	*e*PKP1	PKPdf		09 52 01.7	+3.8
CABF	**La Chapelle**	**150.56**	**2**	*e*PKP1	PKPdf		09 51 59.5	+1.3
	8.3nn,0.5s							
TCF	**Toulx Ste Croi**	**150.58**	**8**	*e*PKP1	PKPdf		09 52 02.1	+3.9
MBDF	**Montbardon**	**152.47**	**1**	*e*PKP1	PKPdf		09 52 04.8	+3.7
	7.0nn,0.9s							

IDC 15 09:46:55.1±50.0,15.11S×171.47W,mb4.1/3,mb1 4.3/3, mb1mx3.7/16,Error ellipse: s-maj=975.0km s-min=199.6km az=79.0,Samoa Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op	ISC		h m s	ISC
STKA	**Stephens Creek**	**45.79**	**240**	P	P		09 55 18.9	-1.6
	10nn,1.4s,baz=89,slow=15,SNR=4.2							
WRA	**Warramunga Arr**	**51.72**	**256**	P	P		09 56 04.1	-2.5
	0.2nn,0.6s,baz=93,slow=7.1,SNR=5.6							
ASAR	**Alice Springs**	**51.97**	**252**	P	P		09 56 06.5	-1.9
	2.8nn,0.5s,baz=89,slow=8.0,SNR=52							

*IDC **15** 09:56:03.6±1.2,20.06S×70.66W,mb3.6/2,mb1 3.9/4, mb1mx3.7/15,ML3.9/2,MS3.3/1,Ms1 3.2/1,ms1mx2.8/18, Error ellipse: s-maj=119.0km s-min=16.6km az=59.0*
*NEIC **15** 09:56:08.1±6.0,20.28S×71.11W,h29km±42km,Error ellipse: s-maj=44.6km s-min=14.9km az=72.0*
ISC 15 09:56:04.5±3.9,20.43S±0.07×71.3W±0.1,h22km±30km, n12,σ0ˢ78/16,mb3.6/2,MS3.2/1,Off coast of northern Chile

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op	ISC		h m s	ISC
LVC	**Limon Verde**	**3.12**	**134**	P	**Pn**		**09 56 54.9**	**+1.2**
	6.4nn,0.3s,baz=312,slow=9.2,SNR=66							
LVC				Sn	**Sn**		**09 57 30.4**	**-0.4**
	8.4nn,0.3s,baz=254,slow=22,SNR=4.7							
LVC				Lg			09 57 37.3	
	14nn,0.3s,baz=51,slow=19,SNR=13							
LVC	**Limon Verde**	**3.12**	**134**	*e*Pn	**Pn**		**09 56 54.8**	**+1.1**
LVC				*e*Sn	**Sn**		**09 57 28.6**	**-2.2**
LVC				Sn	**Sn**		**09 57 30.4**	**-0.4**
LVC				Lg			09 57 37.3	
ARE	**Arequipa**	**3.95**	**358**	*e*P	**Pn**		**09 57 05.0**	**-0.4**
ARE				*e*			09 57 16.0	
ARE				*e*S	**Sn**		**09 57 45.0**	**-6.7**
LPAZ	**La Paz**	**5.12**	**37**	Pn	**Pn**		**09 57 20.9**	**-1.1**
	1.3nn,0.3s,baz=208,slow=12,SNR=20							
LPAZ				Pg	**Pn**		**09 57 31.7**	**+10**
	2.3nn,0.3s,baz=185,slow=7.4,SNR=18							
LPAZ				Lg			09 58 30.9	
	0.5nn,0.3s,baz=239,slow=24,SNR=2.0							
LPAZ	**La Paz**	**5.12**	**37**	*e*P	**Pn**		**09 57 20.7**	**-1.3**
LPAZ				Pg	**Pn**		**09 57 31.7**	**+10**
LPAZ				*e*S	**Sn**		**09 58 21.6**	**+0.5**
LPAZ				Lg			09 58 30.9	
BDFB	**Brasilia**	**22.66**	**82**	LR	LR		10 11 09.3	
	comp=Z,83nm,19.4s,MS3.2,baz=298,slow=41							
PDAR	**Pinedale Array**	**72.08**	**331**	P		**P**	**10 07 28.9**	**-0.2**
	0.2nn,0.7s,mb3.2,baz=149,slow=5.3,SNR=3.2							
PDAR	**Pinedale Array**	**72.08**	**331**	P		**P**	**10 07 28.9**	**-0.2**
YKA	**Yellowknife Ar**	**89.45**	**341**	P		**P**	**10 09 01.1**	**+0.4**
	0.6nn,0.7s,mb4.0,baz=135,slow=4.6,SNR=20							
YKA	**Yellowknife Ar**	**89.45**	**341**	P		**P**	**10 09 01.1**	**+0.4**
WRA	**Warramunga Arr**	**132.66**	**214**	PKP	PKPdf		10 15 23.2	+0.2
	0.3nn,0.7s,baz=150,slow=1.8,SNR=3.8							
MKAR	**Makanchi Array**	**146.04**	**33**	PKPbc	PKPbc		10 15 43.1	+0.2
	2.0nn,0.8s,baz=303,slow=4.3,SNR=10							

*NIED **15** 10:01:00,38.90N×141.70E,h68km,Mw3.5 Best double couple: M0 2.28×10¹⁴ NP1:φˢ214°,δ86°,λ75°. NP2:φˢ110°, δ15°,λ166°.*
*NEIC **15** 10:01:44.5±1.6,38.97N×141.83E,h71km±14km,mb4.4/1, Error ellipse: s-maj=17.9km s-min=13.6km az=96.0*
NEIC Recorded [2 JMA] in Iwate and [1 JMA] in Miyagi Prefectures.
*IDC **15** 10:01:44.2±1.1,38.92N×141.97E,h70km±6km,mb3.5/8, mb1 3.6/9,mb1mx3.3/26,Error ellipse: s-maj=36.9km s-min=13.2km az=87.0*
*JMA **15** 10:01:45.4±0.1,38.87N×141.65E,h73km±1km,M3.7 Broadband fault plane solution: P waves. NP1:φˢ133°, δ20°,λ-161°. NP2:φˢ25°,δ84°,λ-71°. Principal axes: T Plg36°, Azm99°; N Plg19°, Azm203°; P Plg48°, Azm315°;*
JMA Felt II J1.
ISC 15 10:01:43.7±0.6,38.87N±0.04×141.77E±0.10,h80km±3km, n30,σ0ˢ88/38,mb3.7/8,9C-2D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op	ISC		h m s	ISC
OFUJ	**Ofunato**	**0.23**	**340**	⇑P		**P**	**10 01 56.6**	**+1.0**
OFUJ				S		**S**	**10 02 04.5**	**-0.1**
JMK	**Ichinoseki**	**0.44**	**282**	⇑P		**P**	**10 01 57.2**	**+0.2**
JMK				S		**S**	**10 02 05.8**	**-1.2**
JIO	**Ouri**	**0.53**	**219**	⇓P		**P**	**10 01 58.3**	**+0.5**
JIO				S		**S**	**10 02 07.4**	**-0.9**
JOM	**Ohasama**	**0.71**	**329**	⇑P		**P**	**10 02 00.3**	**+0.6**
JOM				S		**S**	**10 02 11.7**	**+0.2**
JOU	**Okura**	**1.00**	**240**	⇑P		**P**	**10 02 03.3**	**+0.4**
JOU				S		**S**	**10 02 16.9**	**-0.5**
JYK	**Kaneyama**	**1.10**	**273**	⇑P		**P**	**10 02 04.4**	**+0.2**
JYK				*e*S		**S**	**10 02 19.2**	**-0.4**
JMM	**Marumori**	**1.26**	**218**	⇑P		**P**	**10 02 06.3**	**+0.1**
JMM				*e*S		**S**	**10 02 21.9**	**-1.3**
JYS	**Shirataka**	**1.48**	**245**	⇑P		**P**	**10 02 09.7**	**+0.4**
JANG	**Nango**	**1.52**	**353**	P		**P**	**10 02 10.4**	**+0.7**
JAH	**Hinai**	**1.58**	**327**	⇑P		**P**	**10 02 11.5**	**+0.9**
JYA	**Atsumi**	**1.63**	**261**	⇑P		**P**	**10 02 11.4**	**+0.2**
JFK	**Kawauchi**	**1.66**	**206**	⇓P		**P**	**10 02 12.1**	**+0.6**
MAJO	**Matsushiro**	**3.66**	**

0.7nm,0.4s,baz=93,slow=9.1,SNR=4.8
WRA Warramunga Arr 37.15 157 P **P 10 20 25.3 -2.4**
0.6nm,0.3s,mb3.9,baz=330,slow=10,SNR=35
WRA pP pP 10 20 37.8 -2.0
0.8nm,0.6s,baz=336,slow=9.5,SNR=9.7
WB2 Warramunga Arr 37.15 157 *eP* **P 10 20 25.3 -2.4**
ASAR Alice Springs 40.40 160 P **P 10 20 53.7 -1.0**
0.4nm,0.3s,mb3.6,baz=335,slow=7.0,SNR=11
KURK Kurchatov 48.96 326 P **P 10 22 03.2 +0.3**
ARCES ARCESS Array B 77.98 339 P **P 10 25 17.8 +3.8**
2.1nm,1.0s,mb4.0,baz=90,slow=6.3,SNR=4.1
SPITS Spitsbergen Ar 78.62 348 P **P 10 25 20.7 +3.4**
6.2nm,1.1s,mb4.5,baz=117,slow=6.0,SNR=3.3
FINES FINESS Array B 79.10 331 pP pP 10 25 32.2 -1.3
1.6nm,1.1s,baz=63,slow=4.3,SNR=6.0
YKA Yellowknife Ar 92.46 22 P **P 10 26 26.5 +0.3**
0.2nm,0.5s,mb3.7,baz=309,slow=4.5,SNR=14
TXAR Lajitas Array 119.64 44 PKP PKPdf 10 32 06.8 +2.0
0.6nm,1.0s,baz=315,slow=1.8,SNR=4.1
TXAR Lajitas Array 119.64 44 PKP PKPdf 10 32 06.8 +2.0

IDC 15 10:38:19.6±2.2, 15.64S×177.66W, mb3.7/3, mb1 4.1/3, mb1mx3.6/14, MS3.5/2, Ms1 3.5/2, ms1mx2.9/25, Error ellipse: s-maj=131.0km s-min=32.9km az=148.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**23.00**	**191**	LR	LR	10 51 05.0	
	comp=Z,96nm,21.9s,baz=12,slow=33						
CTA	**Charters Tower**	**34.59**	**257**	LR	LR	10 56 48.2	
	comp=Z,85nm,20.2s,baz=207,slow=32						
ASAR	**Alice Springs**	**46.13**	**252**	P	P	10 46 46.2	-1.7
	0.8nm,0.6s,baz=87,slow=8.6,SNR=20						
ILAR	**Eielson Array**	**83.53**	**13**	P	P	10 50 49.0	-1.4
	1.2nm,1.2s,baz=202,slow=4.9,SNR=3.5						
TXAR	**Lajitas Array**	**84.18**	**58**	P	P	10 50 53.6	-1.0
	0.3nm,0.9s,baz=217,slow=6.3,SNR=3.7						
BRTR	**Keskin Array B**	**143.65**	**317**	PKP	PKPdf	10 57 55.9	-2.7
	1.9nm,0.9s,baz=45,slow=2.0,SNR=3.4						

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*IDC **15** 10:55:23.6±1.8, 0.66N×126.47E, mb3.4/3, mb1 3.6/4, mb1mx3.5/18, ML3.1/1, Error ellipse: s-maj=117.0km s-min=23.3km az=69.0*
ISC 15 10:55:26.9±1.8, 0.5N±0.3×126.1E±0.6, h33km, n4, σ1s16/4, mb3.4/3, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**18.49**	**181**	P	**P**	**10 59 42.4**	**-0.1**
	0.0nm,0.3s,baz=358,slow=23,SNR=2.2						
WRA	**Warramunga Arr**	**21.88**	**159**	P	**P**	**11 00 18.1**	**-0.7**
	0.3nm,0.4s,mb3.0,baz=339,slow=10,SNR=12						
ASAR	**Alice Springs**	**25.20**	**163**	P	**P**	**11 00 52.2**	**+0.9**
	0.3nm,0.5s,mb3.1,baz=346,slow=11,SNR=3.9						
MKAR	**Makanchi Array**	**59.83**	**327**	P	**P**	**11 05 31.5**	**0.0**
	0.5nm,0.4s,mb3.9,baz=127,slow=8.0,SNR=11						

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*NEIC **15** 11:00:55.8±0.9, 20.78S×68.02W, h168km±16km, Error ellipse: s-maj=22.8km s-min=13.5km az=59.0*
*IDC **15** 11:00:56.1±0.9, 20.73S×67.97W, h164km±13km, mb3.3/1, mb1 3.3/5, mb1mx3.1/16, Error ellipse: s-maj=26.3km s-min=11.1km az=98.0*
ISC 15 11:00:55.3±0.7, 20.74S±0.06×68.0W±0.1, h173km±12km, n11, σ0s86/16, mb3.5/1, 1C, Southern Bolivia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LVC	**Limon Verde**	**2.06**	**205**	P	**P**	**11 01 33.7**	**+0.8**
	7.1nm,0.3s,baz=27,slow=9.4,SNR=78						
LVC				S	**S**	**11 02 02.1**	**+0.2**
	31nm,0.3s,baz=346,slow=14,SNR=15						
LVC	**Limon Verde**	**2.06**	**205**	*eP*	**P**	**11 01 33.1**	**+0.2**
LVC				*eS*	**S**	**11 02 01.8**	**-0.1**
LPAZ	**La Paz**	**4.43**	**358**	P	**P**	**11 02 04.2**	**+1.6**
	0.9nm,0.3s,baz=180,slow=4.0,SNR=14						
LPAZ				S	**S**	**11 02 54.6**	**+0.1**
	0.3nm,0.3s,baz=308,slow=22,SNR=4.6						
LPAZ	**La Paz**	**4.43**	**358**	*eP*	**P**	**11 02 04.2**	**+1.6**
LPAZ				*eS*	**S**	**11 02 53.7**	**-0.8**
ARE	**Arequipa**	**5.42**	**321**	*eP*	**P**	**11 02 14.0**	**-1.3**
ARE				*eS*	**S**	**11 03 12.0**	**-5.4**
CPUP	**Villa Florida**	**11.22**	**122**	P	**P**	**11 03 30.8**	**-0.9**
	0.1nm,0.3s,baz=292,slow=14,SNR=3.5						
BDFB	**Brasilia**	**19.61**	**78**	P	**P**	**11 05 12.7**	**+0.3**
	0.3nm,0.3s,baz=254,slow=15,SNR=2.2						
VNA3	**Neumayer Olymp**	**60.51**	**162**	*i*	**P**	**11 10 39.2**	**-10**
VNA2	**Neumayer--Watz**	**61.07**	**161**		**P**	**11 10 45.4**	**-7.3**
YKA	**Yellowknife Ar**	**90.77**	**340**	P	**P**	**11 13 39.7**	**+0.3**
	0.2nm,0.4s,mb3.5,baz=132,slow=4.6,SNR=13						
YKA				pP	pP	11 14 21.6	-1.4
	0.2nm,0.8s,baz=132,slow=5.1,SNR=3.8						
YKA	**Yellowknife Ar**	**90.77**	**340**	P	**P**	**11 13 39.7**	**+0.3**
YKA				pP	pP	11 14 21.6	-1.4

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*BJI **15** 11:01:20.8, 30.00S×177.30W, h10km, mb5.2*
*NEIC **15** 11:01:22.8±0.3, 29.95S×177.29W, h10km, mb4.8/8, Error ellipse: s-maj=12.9km s-min=8.4km az=148.0*
*SYO **15** 11:01:22.8, 29.955S×177.29W, h10km, MB4.8*
*IDC **15** 11:01:31.3±8.3, 29.98S×177.48W, h70km±70km, mb4.2/11, mb1 4.3/14, mb1mx4.3/19, ML3.9/3, MS4.2/9, Ms1 4.1/9, ms1mx3.8/23, Error ellipse: s-maj=26.1km s-min=24.0km az=62.0, Putative timing error at EIL*
ISC 15 11:01:28.4±2.2, 30.78S±0.06×177.3W±0.1, h76km±20km, n103, σ1s18/57, mb4.5/19, 2C-8D, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WCZ	**Waipu Caves**	**8.67**	**231**	*eP*	**P**	**11 03 41.0**	**+7.8**
URZ	**Urewera**	**8.77**	**210**	P	**P**	**11 03 33.9**	**-0.5**
	0.6nm,0.3s,baz=136,slow=13,SNR=11						
URZ				S	**S**	**11 05 19.7**	**+7.0**
	4.0nm,0.3s,baz=113,slow=20,SNR=9.2						
URZ	**Urewera**	**8.77**	**210**	*eP*	**P**	**11 03 33.2**	**-1.3**
MRZ	**Mangatainoka R**	**11.43**	**208**	*eP*	**P**	**11 04 06.2**	**-4.2**
MRZ				*eS*	**S**	**11 06 17.0**	**0.0**
SNZO	**South Karori**	**12.33**	**209**	*eP*	**P**	**11 04 28.0**	**+5.5**
THZ	**Tophouse**	**13.50**	**213**	*eP*	**P**	**11 04 37.3**	**-0.5**
THZ				*eS*	**S**	**11 07 06.3**	**-0.1**
KHZ	**Kahutara**	**13.74**	**210**	*eS*	**S**	**11 07 11.5**	**-0.5**
LTZ	**Lake Taylor**	**14.59**	**212**	*eP*	**P**	**11 04 53.5**	**+1.5**
LTZ				*eS*	**S**	**11 07 28.9**	**-3.3**
MQZ	**McQueen's Vall**	**15.16**	**209**	*eS*	**S**	**11 07 41.0**	**-4.6**
RPZ	**Rata Peaks**	**15.87**	**212**	P	**P**	**11 05 08.5**	**+0.2**
	1.0nm,0.3s,baz=227,slow=17,SNR=7.1						
RPZ				S	**S**	**11 08 00.1**	**-1.7**
	0.5nm,0.3s,baz=3.2,slow=18,SNR=4.2						
RPZ	**Rata Peaks**	**15.87**	**212**	P	**P**	**11 05 08.6**	**+0.2**
RPZ				S	**S**	**11 08 00.1**	**-1.7**
NOUC	**Port Laguerre**	**17.02**	**297**	*eP*	**P**	**11 05 22.7**	**-0.1**
RAR	**Rarotonga**	**18.40**	**63**	P	**P**	**11 05 31.3**	**-8.4**
	0.4nm,0.3s,baz=248,slow=16,SNR=2.4						
RAR				LR	LR	11 10 55.7	
	comp=Z,348nm,18.5s,baz=235,slow=31						
RAR	**Rarotonga**	**18.40**	**63**	P	**P**	**11 05 32.5**	**-7.3**
	111nm,1.5s						
ARMA	**Armidale**	**26.70**	**263**	*eP*	**P**	**11 07 05.6**	**+3.2**
TOO	**Toolangi**	**31.37**	**247**	*eP*	**P**	**11 07 47.0**	**+3.0**
	7.1nm,0.9s,mb4.4						
CTA	**Charters Tower**	**34.45**	**279**	P	**P**	**11 08 11.1**	**+0.3**
	16nm,0.7s,mb5.0,baz=98,slow=10,SNR=12						
CTA	**Charters Tower**	**34.45**	**279**	P	**P**	**11 08 11.1**	**+0.3**
CTAO	**Charters Tower**	**34.45**	**279**	*eP*	**P**	**11 08 10.7**	**-0.1**
	16nm,0.7s,mb5.0						
CTAO				LR	LR		
	comp=Z,664nm,21.9s						
STKA	**Stephens Creek**	**34.98**	**257**	*eP*	**P**	**11 08 17.2**	**+2.0**
	comp=Z,111nm,0.9s,mb4.7						
STKA	**Stephens Creek**	**34.98**	**257**	P	**P**	**11 08 17.3**	**+2.1**
	comp=Z,5.9nm,0.4s,mb4.7,baz=97,slow=12,SNR=9.0						
STKA				LR	LR	11 21 36.5	
	comp=Z,516nm,19.0s,baz=290,slow=34						
STKA	**Stephens Creek**	**34.98**	**257**	P	**P**	**11 08 17.3**	**+2.1**
STKA				LR	LR	11 21 36.5	
PMG	**Port Moresby**	**39.30**	**295**	P	**P**	**11 08 51.1**	**-0.5**
	comp=Z,4.6nm,0.7s,mb4.4,baz=117,slow=11,SNR=1.8						
AS12	**Alice Springs**	**43.68**	**267**	*eP*	**P**	**11 09 28.8**	**+1.2**
	comp=Z,7.7nm,0.8s,mb4.5						
ASAR	**Alice Springs**	**43.68**	**267**	P	**P**	**11 09 27.5**	**-0.1**
	comp=Z,9.4nm,0.9s,mb4.5,baz=103,slow=7.9,SNR=25						
ASAR				PcP	PcP	11 11 14.8	+0.8
	comp=Z,1.4nm,0.6s,baz=119,slow=3.6,SNR=3.9						
ASAR				LR	LR	11 26 56.8	
	comp=Z,489nm,18.1s,baz=59,slow=35						
WB2	**Warramunga Arr**	**44.70**	**272**	*eP*	**P**	**11 09 34.8**	**-0.9**
WRAB	**Tennant Creek**	**44.70**	**272**	P	**P**	**11 09 35.7**	**-0.1**
	comp=Z,45nm,0.8s,mb5.2						
WRA	**Warramunga Arr**	**44.71**	**272**	P	**P**	**11 09 35.2**	**-0.6**
	comp=Z,16nm,0.8s,mb4.8,baz=110,slow=8.1,SNR=17						
WRA				PcP	PcP	11 11 21.1	+3.6
	comp=Z,2.5nm,0.9s,baz=118,slow=3.4,SNR=3.0						
WRA				LR	LR	11 27 32.5	
	comp=Z,267nm,18.4s,baz=115,slow=35						
SBA	**Scott Base**	**47.71**	**185**	*eP*	**P**	**11 10 08.0**	**+9.2**
	comp=Z,5.8nm,0.8s,mb4.5						
VNDA	**Vanda**	**47.78**	**186**	P	**P**	**11 10 07.1**	**+7.7**
	comp=Z,1.3nm,0.7s,mb3.9,baz=28,slow=6.2,SNR=9.1						
VNDA	**Vanda**	**47.78**	**186**	*eP*	**P**	**11 10 07.1**	**+7.7**
	comp=Z,3.0nm,1.3s,mb4.0						
FITZ	**Fitzroy Crossi**	**52.95**	**270**	P	**P**	**11 10 39.5**	**0.0**
	comp=Z,3.9nm,0.8s,mb4.5,baz=175,slow=23,SNR=3.7						
QSPA	**South Pole Qui**	**59.34**	**180**	*eP*	**P**	**11 11 31.2**	**+7.0**
CBIJ	**Chichi jima**	**69.35**	**322**	LR	LR	11 36 56.5	
	comp=Z,66nm,20.2s,baz=139,slow=31						
MAW	**Mawson**	**72.17**	**200**	P	**P**	**11 12 52.2**	**+6.0**
	comp=Z,4.3nm,0.8s,mb4.3,baz=121,slow=9.7,SNR=6.0						
MAW				LR	LR	11 44 44.1	
	comp=Z,123nm,19.1s,baz=252,slow=36						
MAW	**Mawson**	**72.17**	**200**	*eP*	**P**	**11 12 52.1**	**+5.8**
	comp=Z,28nm,1.4s,mb4.9						
SYO	**Syowa Base**	**76.88**	**193**	⇓P	**P**	**11 13 21.0**	**+7.7**
SYO	**Syowa Base**	**76.88**	**193**	⇑PcP	PcP	11 13 31.7	+7.2
SYO	**Syowa Base**	**76.88**	**193**	⇓*e*P	**P**	**11 13 21.0**	**+7.7**
SYO				⇑*e*PcP	PcP	11 13 31.7	+7.2
SYO				⇓*e*PP	PP	11 16 16.7	+8.4
SNAA	**Sanae**	**77.76**	**178**	*eP*	**P**	**11 13 21.7**	**+3.6**
MAJO	**Matsushiro**	**78.89**	**325**	*eP*	**P**	**11 13 21.1**	**-3.9**
	comp=Z,12nm,1.0s,mb4.7						
ASAJ	**Asahikawa**	**83.05**	**332**	LR	LR	11 49 18.4	
	comp=Z,112nm,19.2s,baz=169,slow=35						
NIKO	**Nikolski**	**83.72**	**5**	P	**P**	**11 13 46.0**	**-3.8**
UNV	**Unalaska Valle**	**84.79**	**6**	P	**P**	**11 13 54.9**	**-0.3**
	comp=Z,54nm,0.5s						
CMB	**Columbia Colle**	**86.64**	**42**	*eP*	**P**	**11 14 04.2**	**-0.5**
	comp=Z,11nm,1.3s,mb4.6						
CMB				*e*		11 14 17.4	
NVAR	**Mina Array Bea**	**88.11**	**42**	P	**P**	**11 14 12.2**	**+0.5**
	comp=Z,3.0nm,0.8s,mb4.3,baz=209,slow=6.8,SNR=22						
TPH	**Tonopah**	**88.51**	**43**	*eP*	**P**	**11 14 14.3**	**+0.7**
	comp=Z,8.0nm,1.1s,mb4.7						
TPH				LR	LR		
	comp=Z,117nm,18.6s						
MDJ	**Mudanjiang**	**89.27**	**325**	P	**P**	**11 14 16.3**	**-0.8**
MDJ				AMB	AMB		
	comp=Z,13nm,1.6s,mb4.7						
CN2	**Changchun**	**90.80**	**322**	*eP*	**P**	**11 14 23.3**	**-1.0**
CN2				AMB	AMB		
	comp=Z,20nm,1.3s,mb5.1						
BMW	**Boistfort Moun**	**91.09**	**34**	P	**P**	**11 14 22.8**	**-2.8**
TXAR	**Lajitas Array**	**92.09**	**57**	P	**P**	**11 14 31.7**	**+1.1**
	comp=Z,0.4nm,0.8s,mb3.7,baz=233,slow=6.3,SNR=5.4						
TXAR	**Lajitas Array**	**92.09**	**57**	P	**P**	**11 14 31.7**	**+1.1**
SRU	**San Rafael**	**93.21**	**46**	*eP*	**P**	**11 14 35.6**	**+0.1**
PDAR	**Pinedale Array**	**96.00**	**43**	P	**P**	**11 14 47.5**	**-0.6**
	comp=Z,0.4nm,0.8s,mb3.9,baz=207,slow=3.3,SNR=3.9						
PDAR				LR	LR	11 55 30.3	
	comp=Z,134nm,18.4s,baz=257,slow=34						
CPUP	**Villa Florida**	**99.28**	**128**	LR	LR	11 51 18.1	
	comp=Z,86nm,18.8s,baz=63,slow=30						
YKA	**Yellowknife Ar**	**105.53**	**25**	PKKPbc		11 31 11.6	
	comp=Z,0.2nm,0.7s,baz=43,slow=3.0,SNR=6.4						
YKA				PKKP	PKKP	11 31 24.6	+17
	comp=Z,0.3nm,1.0s,baz=29,slow=3.1,SNR=3.8						
MKAR	**Makanchi Array**	**118.47**	**310**	PKP	PKPdf	11 20 08.3	+1.1
	comp=Z,0.4nm,0.5s,baz=76,slow=5.0,SNR=3.9						
MKAR	**Makanchi Array**	**118.47**	**310**	PKP	PKPdf	11 20 08.3	+1.1
ZAL	**Zalesovo**	**118.72**	**318**	PKP	PKPdf	11 20 08.5	+1.1
	comp=Z,1.2nm,0.3s,baz=140,slow=3.4,SNR=3.1						
ZAL	**Zalesovo**	**118.72**	**318**	PKP	PKPdf	11 20 08.5	+1.1
BVAR	**Borovoye Array**	**127.09**	**316**	PKP	PKPdf	11 20 25.2	+1.6
	comp=Z,1.4nm,0.7s,baz=135,slow=2.1,SNR=10						
ZRNK	**Zerenda**	**127.92**	**315**	*e*PKPdf	PKPdf	11 20 26.3	+1.1
SPITS	**Spitsbergen Ar**	**132.12**	**356**	PKP	PKPdf	11 20 34.1	+1.5
	comp=Z,6.3nm,0.8s,baz=90,slow=6.0,SNR=6.5						
ARCES	**ARCESS Array B**	**139.08**	**348**	PKP	PKPdf	11 20 48.6	+3.0
	comp=Z,1.8nm,0.7s,baz=69,slow=1.6,SNR=6.1						
GNI	**Garni**	**144.77**	**297**	PKP	PKPdf	11 20 59.1	+2.7
	comp=Z,4.5nm,0.5s,baz=354,slow=20,SNR=3.8						
KAF	**Kangasniemi**	**145.10**	**341**	*e*pkp	PKPdf	11 20 54.3	-1.9
	baz=37,slow=3.2						
FINES	**FINESS Array B**	**145.70**	**340**	PKP	PKPdf	11 20 58.3	+1.0
	comp=Z,15nm,0.5s,baz=63,slow=4.3,SNR=77						
OBN	**Obninsk**	**145.82**	**325**	*e*PKPdf	PKPdf	11 20 59.7	+2.1
NB2	**NORSAR Subarra**	**149.21**	**352**	PKP		11 21 08.5	
	comp=Z,10nm,0.8s,baz=12,slow=2.8						
NOA	**NORSAR Array B**	**149.21**	**352**	PKPbc	PKPdf	11 21 08.6	+5.5
	comp=Z,7.2nm,0.8s,baz=14,slow=4.4,SNR=17						
HFS	**Hagfors**	**149.73**	**349**	PKPbc	PKPdf	11 21 09.7	+5.8
	comp=Z,9.6nm,0.7s,baz=90,slow=1.5,SNR=20						
ASF	**Jaal al Asfar**	**150.86**	**282**	PKPbc	PKPdf	11 21 16.4	+10
	comp=Z,12nm,0.8s,baz=13,slow=2.1,SNR=8.5						
ASF				PKPab	PKPab	11 21 21.6	-0.4
	comp=Z,5.5nm,0.6s,baz=164,slow=2.2,SNR=4.5						
AKASG	**Malin Array Be**	**151.96**	**323**	PKPbc	PKPdf	11 21 15.8	+8.2
	comp=Z,0.3nm,0.3s,baz=42,slow=2.2,SNR=15						
AKASG				PKPab	PKPab	11 21 23.8	-2.2
	comp=Z,20nm,0.9s,baz=48,slow=2.8,SNR=20						
EIL	**Elat**	**152.15**	**276**	PKPbc	Px	11 22 43.2	
	comp=Z,12nm,0.9s,baz=128,slow=5.3,SNR=6.2						
BRTR	**Kekin Array B**	**153.30**	**298**	PKPbc	PKPdf	11 21 20.3	+11
	comp=Z,2.7nm,0.9s,baz=153,slow=2.8,SNR=8.9						
EKA	**Eskdalemuir Ar**	**155.10**	**8**	PKPab	PKPab	11 21 37.7	-1.4
	comp=Z,1.9nm,0.8s,slow=3.3,SNR=6.1						
OKC	**Ostrava-Krasne**	**157.69**	**333**	⇓*e*PKP	PKPab	11 21 48.6	-1.8
UPC	**Upice**	**157.91**	**337**	⇓*e*PKP	PKPab	11 21 49.8	-1.5
DPC	**Dobruska-Polom**	**157.94**	**336**	*e*PKP	PKPab	11 21 50.4	-1.1
CLL	**Collm**	**158.11**	**342**	*i* PKP2	PKPab	11 21 49.7	-2.4
PVCC	**Panska Ves**	**158.36**	**339**	⇓*e*PKP	PKPab	11 21 52.0	-1.2
PRU	**Pruhonice**	**158.84**	**338**	⇓*i* PKP	PKPab	11 21 53.8	-1.5
	comp=Z,26nm,1.5s						
KHC	**Kaskese Hory**	**159.90**	**339**	⇓*i* PKP	PKPab	11 21 58.6	-1.3
WET	**Wettzell**	**160.10**	**340**	P	PKPab	11 21 59.5	-1.3
GEC2	**GERESS Array S**	**160.11**	**338**	P	PKPab	11 21 59.4	-1.4
GERES	**GERESS Array B**	**160.11**	**338**	PKPab	PKPab	11 21 58.7	-2.1
	comp=Z,2.4nm,0.8s,baz=63,slow=3.0,SNR=13						
GIVF	**Givet**	**160.63**	**356**	*e*PKP2	PKPab	11 22 00.7	-2.3
BAIF	**Baives**	**160.71**	**357**	*e*PKP2	PKPab	11 22 01.1	-2.2
FLN	**La Foliniere**	**161.88**	**7**	*e*PKP2	PKPab	11 22 06.1	-2.4
	comp=Z,11nm,0.9s						
CDF	**Champ du Feu**	**162.04**	**350**	*e*PKP2	PKPab	11 22 07.6	-1.7
LDF	**La Druitiere**	**162.08**	**6**	*e*PKP2	PKPab	11 22 06.8	-2.6
GRR	**Gorron**	**162.20**	**8**	*e*PKP2	PKPab	11 22 07.6	-2.3
	comp=Z,9.4nm,0.9s						
MEZF	**Maizieres J'vi**	**162.21**	**355**	*e*PKP2	PKPab	11 22 07.9	-2.0
HAU	**Haudompre**	**162.57**	**352**	*e*PKP2	PKPab	11 22 09.2	-2.3
HINF	**Hinteralfeld**	**162.69**	**351**	*e*PKP2	PKPab	11 22 10.0	-2.0
	comp=Z,3.2nm,0.6s						
SSF	**Saint Saulge**	**163.73**	**358**	*e*PKP2	PKPab	11 22 14.4	-2.2
	comp=Z,6.4nm,0.8s						
AVF	**Avril sur Loir**	**164.00**	**358**	*e*PKP2	PKPab	11 22 15.3	-2.5
	comp=Z,6.4nm,1.0s						
SMF	**Signal de Mont**	**164.13**	**357**	*e*PKP2	PKPab	11 22 16.1	-2.3
	comp=Z,1.1nm,0.9s						
LPL	**La Plagne**	**164.95**	**349**	*e*PKP2	PKPab	11 22 20.1	-1.8
LPG	**La Plagne**	**164.96**	**349**	*e*PKP2	PKPab	11 22 21.0	-1.0
	comp=Z,13nm,1.2s						
ORIF	**Oris-en-Rattie**	**165.66**	**351**	*e*PKP2	PKPab	11 22 22.7	-2.4
MBDF	**Montbardon**	**165.71**	**348**	*e*PKP2	PKPab	11 22 23.6	-1.7
VIVF	**Saint-Julien-l**	**165.86**	**354**	*e*PKP2	PKPab	11 22 24.1	-1.9

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*BJI **15** 11:01:36.1, 4.30N×126.30E, h65km, mB4.7, mb4.5*
*MAN **15** 11:01:37.3, 4.03N×126.28E, h72km, mb4.6, ML3.5, MS3.4*
*NEIC **15** 11:01:38.1±0.2, 4.33N×126.25E, mb4.5/11, Error ellipse: s-maj=12.6km s-min=5.1km az=67.0*
*IDC **15** 11:01:39.0±0.6, 4.30N×126.22E, h70km±5km, mb4.1/23, mb1 4.2/23, mb1mx4.1/29, MS3.5/5, Ms1 3.6/5, ms1mx3.1/28, Error ellipse: s-maj=20.4km s-min=9.3km az=76.0*
ISC 15 11:01:37.2±0.3, 4.22N±0.05×126.23E±0.08, h68km, h68km±2.5km: pP-P, n69, σ1s27/68, mb4.3/32, 4C-1D, Talaud Islands

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

GSPH	**General Santos**	**2.25**	**326**	⇑*e*P	**P**	**11 02 14.5**	**+1.5**
DAV	**Davao City (W)**	**2.90**	**347**	*eP*	**P**	**11 02 24.0**	**+1.8**
KCP	**Kidapawan**	**2.99**	**338**	⇓*e*P	**P**	**11 02 23.7**	**+0.2**
CTBH	**Cotabato--PC H**	**3.57**	**327**	⇑*i*P	**P**	**11 02 37.0**	**+5.4**
BIPH	**Bislig**	**3.94**	**2**	⇑*e*P	**P**	**11 02 40.6**	**+4.0**
BIPH				*e*S	**S**	**11 03 28.2**	**+6.2**
PAGZ	**Pagadian**	**4.58**	**322**	*eP*	**P**	**11 02 48.7**	**+3.0**
BUTP	**Butuan**	**4.75**	**353**	*eP*	**P**	**11 02 50.7**	**+2.7**
ZMPH	**Zamboanga City**	**4.95**	**303**	⇑*e*P	**P**	**11 02 53.0**	**+2.2**
SCPH	**Surigao**	**5.57**	**352**	*eP*	**P**	**11 03 01.5**	**+2.1**
MSLP	**Maasin**	**6.03**	**347**	*eP*	**P**	**11 03 11.5**	**+5.8**
MSLP				*e*S	S	11 03 43.2	-31
TGY	**Tagaytay City**	**11.12**	**332**	LR	LR	11 08 56.3	
	comp=Z,318nm,20.9s,baz=97,slow=40						
KAKA	**Kakadu**	**17.90**	**160**	*eP*	**P**	**11 05 41.9**	**-1.3**
	20nm,0.6s						
FITZ	**Fitzroy Crossi**	**22.19**	**181**	*eP*	**P**	**11 06 30.0**	**+1.0**
	12nm,0.9s,mb4.2						
FITZ				*e*		11 06 48.6	
FITZ	**Fitzroy Crossi**	**22.19**	**181**	P	**P**	**11 06 29.5**	**+0.5**
	14nm,0.9s,mb4.3,baz=5.3,slow=6.3,SNR=20						
FITZ				pP		11 06 45.8	
	26nm,0.7s,baz=4.5,slow=9.1,SNR=14						
JOW	**Kunigami**	**22.57**	**5**	P	**P**	**11 06 33.4**	**+0.6**
	5.7nm,0.6s,mb4.1,baz=212,slow=10,SNR=4.3						
PMG	**Port Moresby**	**24.87**	**123**	P	**P**	**11 06 56.1**	**+0.9**
	6.6nm,0.8s,mb4.1,baz=305,slow=5.7,SNR=2.8						
PMG	**Port Moresby**	**24.87**	**123**	P	**P**	**11 06 54.4**	**-0.8**
	8.1nm,0.9s,mb4.2						
WRAB	**Tennant Creek**	**25.30**	**162**	*eP*	**P**	**11 06 59.2**	**0.0**
	96nm,0.9s,mb5.2						
WRA	**Warramunga Arr**	**25.30**	**162**	P	**P**	**11 06 58.9**	**-0.3**
	22nm,0.6s,mb4.8,baz=343,slow=10,SNR=89						
WB2	**Warramunga Arr**	**25.31**	**162**	*eP*	**P**	**11 06 58.9**	**-0.4**
CBIJ	**Chichi jima**	**27.38**	**32**	LR	LR	11 15 59.1	
	comp=Z,123nm,21.6s,baz=166,slow=32						
AS12	**Alice Springs**	**28.71**	**165**	*eP*	**P**	**11 07 30.2**	**-0.2**
	7.0nm,0.7s,mb4.4						
ASAR	**Alice Springs**	**28.71**	**165**	P	**P**	**11 07 30.1**	**-0.3**
	2.6nm,0.8s,mb3.9,baz=352,slow=7.5,SNR=21						
JNU	**Nakatsue**	**29.08**	**8**	P	**P**	**11 07 32.0**	**-1.5**
	3.0nm,0.5s,mb4.2,baz=274,slow=40,SNR=2.3						
JNU				pP	pP	11 07 50.0	+0.1
	19nm,1.0s,baz=181,slow=9.4,SNR=5.4						
CMAR	**Chiang Mai Ar**	**30.19**	**300**	P	**P**	**11 07 43.9**	**+0.3**
	2.4nm,1.0s,mb3.8,baz=109,slow=8.2,SNR=6.4						
CMAR				pP	pP	11 07 59.7	-0.4
	3.2nm,0.9s,baz=113,slow=7.5,SNR=4.9						
CMAR				ScP		11 14 22.6	
	1.7nm,1.0s,baz=9.1,slow=0.9,SNR=4.7						
CMAR				LR	LR	11 19 19.3	
	comp=Z,83nm,19.4s,baz=110,slow=35						
CMAR	**Chiang Mai Arr**	**30.19**	**300**	P	**P**	**11 07 43.9**	**+0.3**
CMAR				pP	pP	11 07 59.7	-0.4
CMAR				ScP		11 14 22.6	
CMAR				LR	LR	11 19 19.3	
CTA	**

*IDC **15** 11:04:58.4±2.9,22.83N×142.22E,h49km±33km,mb3.7/6, mb1 3.8/7,mb1mx3.5/25,ML3.1/1,Error ellipse: s-maj=59.8km s-min=18.2km az=92.0*
ISC 15 11:04:56.4±3.0,**22.8N**±0.1×**142.1E**±0.4,**h48**km±31km,**n7, σ0§27/8,mb3.9/6,Volcano Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**4.26**	**1**	P	**P**	**11 06 00.2**	**-0.2**
	2.0nm,0.3s,baz=300,slow=20,SNR=4.1						
CBIJ				S	**S**	**11 06 49.8**	**+0.2**
	5.4nm,0.3s,baz=255,slow=19,SNR=3.1						
CTA	**Charters Tower**	**42.83**	**174**	P	**P**	**11 12 51.8**	**+0.1**
	1.2nm,0.6s,mb3.8,baz=16,slow=7.4,SNR=3.0						
WRA	**Warramunga Arr**	**43.17**	**191**	P	**P**	**11 12 54.7**	**+0.2**
	2.8nm,0.7s,mb4.1,baz=9.4,slow=8.7,SNR=4.9						
ASAR	**Alice Springs**	**46.88**	**190**	P	**P**	**11 13 24.1**	**+0.1**
	1.6nm,0.6s,mb4.2,baz=17,slow=12,SNR=6.8						
STKA	**Stephens Creek**	**54.38**	**181**	P	**P**	**11 14 20.6**	**-0.3**
	1.7nm,0.3s,mb4.4,baz=315,slow=20,SNR=2.7						
BVAR	**Borovoye Array**	**61.19**	**319**	P	**P**	**11 15 08.3**	**-0.1**
	0.3nm,0.4s,mb3.8,baz=90,slow=7.2,SNR=2.7						
YKA	**Yellowknife Ar**	**75.94**	**28**	P	**P**	**11 16 39.4**	**-0.1**
	0.2nm,0.5s,mb3.3,baz=292,slow=5.7,SNR=6.1						

*IDC **15** 11:07:15.1±1.3,9.05S×153.35E,mb3.9/6,mb1 4.2/6, mb1mx4.0/14,MS3.4/1,Ms1 3.4/1,ms1mx2.6/27,Error ellipse: s-maj=49.4km s-min=25.0km az=129.0*
ISC 15 11:07:14.5±1.5,**9.2S**±0.2×**153.5E**±0.3,**h10**km,**n9,σ0§39/7, mb3.8/6,D'Entrecasteaux Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**6.27**	**267**	LR	LR	11 11 10.3	
	comp=Z,378nm,20.5s,baz=79,slow=38						
WRA	**Warramunga Arr**	**21.39**	**238**	P	**P**	**11 12 04.5**	**-0.2**
	3.2nm,0.8s,mb3.7,baz=62,slow=10,SNR=6.6						
ASAR	**Alice Springs**	**23.64**	**230**	P	**P**	**11 12 26.9**	**0.0**
	5.4nm,0.8s,mb4.0,baz=64,slow=9.5,SNR=9.7						
STKA	**Stephens Creek**	**25.15**	**204**	*e*P	**P**	**11 12 41.7**	**+0.2**
	5.6nm,0.8s,mb4.2						
STKA	**Stephens Creek**	**25.15**	**204**	P	**P**	**11 12 41.9**	**+0.4**
	4.5nm,0.7s,mb4.1,baz=24,slow=9.5,SNR=5.5						
FITZ	**Fitzroy Crossi**	**28.46**	**249**	P	**P**	**11 13 11.7**	**-0.3**
	0.6nm,0.5s,mb3.5,baz=180,slow=11,SNR=3.0						
MKAR	**Makanchi Array**	**84.06**	**319**	P	**P**	**11 19 47.5**	**+0.7**
	0.6nm,0.7s,mb3.8,baz=108,slow=4.6,SNR=3.7						
ILAR	**Eielson Array**	**85.93**	**22**	P	**P**	**11 19 55.2**	**-0.5**
	0.7nm,0.9s,mb3.9,baz=254,slow=5.5,SNR=6.3						
BDFB	**Brasilia**	**147.41**	**139**	PKPbc	PKPdf	11 27 03.6	+3.4
	1.7nm,0.5s,baz=188,slow=7.8,SNR=4.8						

*NEIC **15** 11:09:00.6±0.5,51.55N×16.13E,h5km,ML3.0(SZGRF), ML3.0(VIE),ML3.0(FUR),ML2.7(BRG),ML2.5(CLL),Error ellipse: s-maj=5.6km s-min=4.7km az=49.0*
*WAR **15** 11:09:02.3,51.49N×16.09E,h1km,Location given by Rudna mine, origin time based upon KSP*
*IDC **15** 11:09:02.9±0.9,51.45N×15.95E,mb1 3.3/4, mb1mx3.1/21,ML3.0/4,Error ellipse: s-maj=16.6km s-min=7.4km az=104.0*
*PRU **15** 11:09:04.6,51.36N×16.11E*
ISC 15 11:08:59.7±0.5,**51.47N**±0.03×**16.09E**±0.03,**n28,σ1§38/59, 3C,Poland**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.64**	**168**	*e*Pg	**Pg**	**11 09 14.2**	**+1.7**
KSP				*e*Sg	**Sg**	**11 09 23.9**	**+2.9**
KSP	**Ksiaz**	**0.64**	**168**	*e*Pg	**Pg**	**11 09 14.4**	**+1.9**
KSP				*e*Sg	**Sg**	**11 09 23.0**	**+2.0**
KSP				*e*		11 09 27.2	
DPC	**Dobruska-Polom**	**1.13**	**172**	*e*PG	**Pg**	**11 09 23.2**	**+0.9**
DPC				*e*SG	**Sg**	**11 09 38.0**	**+0.7**
	28nm,0.3s						
PVCC	**Panska Ves**	**1.35**	**226**	*e*PG	**Pg**	**11 09 27.3**	**+0.7**
BRG	**Berggiesshubel**	**1.48**	**247**	*e*Pn	**Pn**	**11 09 28.9**	**+1.3**
BRG				*i* Pg	**Pg**	**11 09 29.8**	**+0.6**
BRG				*i* Sg	**Sg**	**11 09 49.8**	**+0.9**
RUE	**Ruedersdorf**	**1.75**	**306**	Pn	**Pn**	**11 09 29.6**	**-2.0**
RUE				*e*Pg	**Pg**	**11 09 35.5**	**+0.8**
RUE				*e*S	**Sn**	**11 09 57.0**	**+2.2**
PRU	**Pruhonice**	**1.78**	**214**	*e*PN	**Pn**	**11 09 32.4**	**+0.5**
PRU				PG	**Pg**	**11 09 34.6**	**-0.6**
PRU				*i* x	x	11 09 38.4	
PRU				*i* x	x	11 09 51.6	
PRU				SG	**Sg**	**11 09 58.3**	**-0.7**
	18nm,0.6s						
RAC	**Raciborz**	**1.93**	**135**	*e*P	**Pn**	**11 09 40.0**	**+6.0**
RAC				*e*S	**Sn**	**11 10 05.0**	**+5.7**
MORC	**Moravsky Berou**	**1.93**	**151**	*e*P	**Pn**	**11 09 34.8**	**+0.7**
MORC				*e*S	**Sn**	**11 10 02.6**	**+3.2**
CLL	**Collm**	**1.94**	**266**	*i* PN	**Pn**	**11 09 34.9**	**+0.6**
CLL				*i* PG	**Pg**	**11 09 37.6**	**-0.9**
CLL				*i*		11 09 41.7	
CLL				*i* SG	**Sg**	**11 10 03.8**	**-0.5**
CLL	**Collm**	**1.94**	**266**	*i* Pn	**Pn**	**11 09 34.9**	**+0.6**
CLL				*i* Pg	**Pg**	**11 09 37.6**	**-0.9**
CLL				*i* Sg	**Sg**	**11 10 03.8**	**-0.5**
OKC	**Ostrava-Krasne**	**2.09**	**141**	*e*PG	**Pg**	**11 09 41.1**	**-0.4**
OKC				*e*SG	**Sg**	**11 10 07.0**	**-2.4**
VRAC	**Vranov**	**2.19**	**171**	Pn	**Pn**	**11 09 39.9**	**+2.1**
	2.3nm,0.3s,baz=350,slow=18,SNR=15						
VRAC				Lg		11 10 11.5	
	4.5nm,0.3s,baz=96,slow=18,SNR=9.2						
OJC	**Ojcow**	**2.66**	**117**	*e*Pg	**Pg**	**11 09 51.9**	**-0.9**
OJC				*e*Sg	**Sg**	**11 10 26.8**	**-1.5**
OJC	**Ojcow**	**2.66**	**117**	*e*(PN)	**Pn**	**11 09 45.0**	**+0.4**
OJC				*e*PG	**Pg**	**11 09 52.0**	**-0.8**
OJC				*i* SG	**Sg**	**11 10 26.8**	**-1.5**
KHC	**Kasperske Hory**	**2.84**	**216**	*e*PN	**Pn**	**11 09 48.1**	**+1.0**
KHC				*e*PG	**Pg**	**11 09 54.2**	**-2.2**
KHC				x	x	11 10 19.0	
KHC				*e*SG	**Sg**	**11 10 32.3**	**-2.0**
MOX	**Moxa**	**2.94**	**255**	*e*Pg	**Pg**	**11 09 57.5**	**-0.9**
MOX				*e*Sg	**Sg**	**11 10 37.2**	**-0.5**
GEC2	**GERESS Array S**	**3.04**	**211**	*e*Pn	**Pn**	**11 09 51.8**	**+1.8**
GERES	**GERESS Array B**	**3.04**	**211**	Pn	**Pn**	**11 09 51.7**	**+1.7**
	1.2nm,0.3s,baz=280,slow=12,SNR=24						
GERES				Pg	**Pg**	**11 09 57.5**	**-2.9**
	2.7nm,0.3s,baz=28,slow=17,SNR=25						
GERES				Sn	**Sn**	**11 10 28.1**	**+0.4**
	1.4nm,0.3s,baz=29,slow=22,SNR=3.6						
GERES				Lg		11 10 38.6	
	3.7nm,0.3s,baz=28,slow=27,SNR=9.8						
GERES	**GERESS Array B**	**3.04**	**211**	Pn	**Pn**	**11 09 51.7**	**+1.7**
GERES				Pg	**Pg**	**11 09 57.5**	**-2.9**
GERES				Sn	**Sn**	**11 10 28.1**	**+0.4**
GERES				Lg		11 10 38.6	
WET	**Wettzell**	**3.11**	**223**	*e*Pn	**Pn**	**11 09 51.6**	**+0.7**
NIE	**Niedzica**	**3.39**	**126**	*e*P	**Pg**	**11 10 10.0**	**+2.6**
NIE				*e*S	**Sg**	**11 10 52.0**	**-0.6**
MOA	**Molln**	**3.81**	**199**	*i* PN	**Pn**	**11 10 00.9**	**0.0**
MOA				*i* SG	**Sg**	**11 11 04.9**	**-1.7**
	10nm,0.5s						
ARSA	**Arzberg**	**4.24**	**185**	*i* PN	**Pn**	**11 10 06.2**	**-0.8**
ARSA				*i* SG	**Sg**	**11 11 15.5**	**-5.3**
	11nm,0.8s						
PSZ	**Piszkesteto**	**4.33**	**144**	*e*P	**Pn**	**11 10 03.5**	**-4.7**
KBA	**Koelnbreinsper**	**4.75**	**203**	*i* PN	**Pn**	**11 10 14.3**	**+0.1**
KBA				*i* SG	**Sg**	**11 11 34.5**	**-3.3**
	5.1nm,0.5s						
NOA	**NORSAR Array B**	**9.97**	**346**	Pn	**P**	**11 11 23.8**	**-3.3**
	0.1nm,0.3s,baz=166,slow=12,SNR=2.6						
FINES	**FINESS Array B**	**11.40**	**25**	Pn	**P**	**11 11 43.1**	**-3.7**
	0.1nm,0.3s,baz=220,slow=11,SNR=3.3						
FINES				Sn	**S**	**11 13 48.3**	**-7.8**
	0.1nm,0.3s,baz=212,slow=21,SNR=2.4						

*IDC **15** 11:11:55.0±0.8,22.72N×143.00E,mb3.7/8,mb1 3.9/9, mb1mx3.7/26,ML3.1/1,MS4.0/3,Ms1 4.0/3,ms1mx3.0/38, Error ellipse: s-maj=52.9km s-min=15.5km az=99.0*
*NEIC **15** 11:12:01.0±1.5,22.62N×143.16E,h43km±15km,Error ellipse: s-maj=30.8km s-min=9.4km az=91.0*
ISC 15 11:11:55.5±4.2,**22.64N**±0.06×**143.2E**±0.2,**h15**km±27km, **n17,σ0§93/14,mb3.8/9,MS4.1/3,1C,Volcano Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**4.53**	**348**	Pn	**Pn**	**11 13 04.0**	**-1.3**
	2.0nm,0.3s,baz=274,slow=19,SNR=4.5						
CBIJ				Sn	**Sn**	**11 13 58.4**	**+0.1**
	0.9nm,0.3s,baz=294,slow=19,SNR=1.9						
GUMO	**Guam**	**9.14**	**170**	P	**P**	**11 14 09.9**	**0.0**
	391nm,1.8s						
MAJO	**Matsushiro**	**14.52**	**344**	P	**P**	**11 15 24.2**	**+1.8**
	12nm,1.7s						
CTA	**Charters Tower**	**42.57**	**176**	P	**P**	**11 19 54.3**	**+1.6**
	0.9nm,0.6s,mb3.7,baz=276,slow=21,SNR=2.4						
WRAB	**Tennant Creek**	**43.19**	**192**	*e*P	**P**	**11 19 56.6**	**-1.2**
	17nm,1.2s,mb4.7						
WRA	**Warramunga Arr**	**43.20**	**192**	P	**P**	**11 19 57.4**	**-0.5**
	2.1nm,0.8s,mb3.9,baz=12,slow=8.9,SNR=9.0						
FITZ	**Fitzroy Crossi**	**43.99**	**204**	P	**P**	**11 20 04.7**	**+0.4**
	0.7nm,0.5s,mb3.6,baz=173,slow=21,SNR=2.0						
ASAR	**Alice Springs**	**46.91**	**192**	P	**P**	**11 20 27.1**	**-0.4**
	1.0nm,0.6s,mb3.9,baz=21,slow=7.7,SNR=9.2						
ILAR	**Eielson Array**	**61.19**	**27**	P	**P**	**11 22 11.2**	**-0.5**
	0.3nm,0.9s,mb3.4,baz=252,slow=5.9,SNR=3.5						
INK	**Inuvik**	**66.69**	**24**	P	**P**	**11 22 46.6**	**-0.9**
	0.3nm,0.6s,mb3.5,baz=323,slow=14,SNR=3.7						
YKA	**Yellowknife Ar**	**75.61**	**28**	P	**P**	**11 23 42.2**	**+1.1**
	0.4nm,0.7s,mb3.5,baz=292,slow=5.6,SNR=8.8						
YKA				LR	LR	11 59 23.6	
	comp=Z,65nm,18.8s,MS4.0,baz=140,slow=38						
YKA	**Yellowknife Ar**	**75.61**	**28**	P	**P**	**11 23 42.2**	**+1.1**
YKA				LR	LR	11 59 23.6	
FINES	**FINESS Array B**	**82.35**	**334**	P	**P**	**11 24 17.4**	**-0.4**
	1.5nm,0.9s,mb3.9,baz=59,slow=8.1,SNR=2.6						
FRB	**Frobisher Bay**	**90.37**	**14**	LR	LR	12 04 58.3	
	comp=Z,67nm,18.9s,MS4.1,baz=306,slow=35						
SCHQ	**Schefferville**	**98.65**	**17**	LR	LR	12 11 19.5	
	comp=Z,103nm,18.2s,MS4.4,baz=16,slow=36						
VNA2	**Neumayer--Watz**	**128.77**	**192**		PKPdf	11 31 00.2	-5.4
VNA3	**Neumayer Olymp**	**128.92**	**191**	*i*	PKPdf	11 30 55.2	-11

*NEIC **15** 11:12:05.4±1.7,3.62S×153.65E,h445km±19km,mb4.3/8, Error ellipse: s-maj=16.8km s-min=11.6km az=80.0*
*IDC **15** 11:12:05.8±1.9,3.59S×153.73E,h450km±21km,mb3.4/12, mb1 3.6/14,mb1mx3.5/20,Error ellipse: s-maj=16.6km s-min=11.2km az=123.0*
ISC 15 11:12:03.7±1.6,**3.59S**±0.09×**153.7E**±0.1,**h439**km±17km, **n30,σ0§96/34,mb3.9/18,3D,New Ireland region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**8.66**	**228**	P	**P**	**11 14 09.9**	**+2.3**
	2.1nm,0.3s,baz=27,slow=7.5,SNR=8.5						
PMG				S	**S**	**11 15 55.0**	**+9.4**
	0.4nm,0.3s,baz=201,slow=3.1,SNR=2.9						
PMG	**Port Moresby**	**8.66**	**228**	*e*P	**P**	**11 14 09.0**	**+1.5**
PMG				P		11 14 09.9	
PMG				S	**S**	**11 15 55.0**	**+9.4**
PIAM	**Paiam**	**10.64**	**260**	*e*P	**P**	**11 14 28.2**	**-1.6**
CTA	**Charters Tower**	**17.92**	**203**	*e*P	**P**	**11 15 47.3**	**+1.2**
	7.0nm,0.4s						
CTA	**Charters Tower**	**17.92**	**203**	P	**P**	**11 15 47.6**	**+1.6**
	1.8nm,0.3s,baz=25,slow=11,SNR=31						
CTAO	**Charters Tower**	**17.92**	**203**	*e*P	**P**	**11 15 47.4**	**+1.3**
	12nm,0.6s						
KAKA	**Kakadu**	**22.88**	**245**	*e*P	**P**	**11 16 33.2**	**-0.2**
	5.9nm,0.5s,mb4.2						
WRAB	**Tennant Creek**	**24.87**	**228**	*e*P	**P**	**11 16 50.9**	**-0.4**
	9.1nm,0.6s,mb4.4						
WB2	**Warramunga Arr**	**24.87**	**228**	*i* P	**P**	**11 16 51.3**	**0.0**
WB2				*e*		11 19 58.2	
WRA	**Warramunga Arr**	**24.88**	**228**	P	**P**	**11 16 51.5**	**+0.1**
	2.9nm,0.2s,mb4.3,baz=51,slow=9.0,SNR=138						
WRA				S	**S**	**11 20 43.4**	**+1.2**
	0.5nm,0.6s,baz=47,slow=15,SNR=3.5						
ARMA	**Armidale**	**26.76**	**184**	*e*P	**P**	**11 17 08.3**	**+0.2**
AS12	**Alice Springs**	**27.61**	**222**	*i* P	**P**	**11 17 15.4**	**-0.3**
	9.9nm,0.3s,mb4.6						
ASAR	**Alice Springs**	**27.61**	**222**	P	**P**	**11 17 15.5**	**-0.2**
	9.2nm,0.3s,mb4.6,baz=54,slow=9.1,SNR=256						
ASAR				S	**S**	**11 21 25.8**	**+0.3**
	1.7nm,1.1s,baz=48,slow=13,SNR=4.9						
STKA	**Stephens Creek**	**30.34**	**201**	P	**P**	**11 17 39.7**	**+0.4**
	1.7nm,0.4s,mb3.8,baz=68,slow=16,SNR=3.5						
FITZ	**Fitzroy Crossi**	**30.99**	**240**	*i* P	**P**	**11 17 44.3**	**-0.7**
	1.6nm,0.3s,mb3.8						
FITZ	**Fitzroy Crossi**	**30.99**	**240**	P	**P**	**11 17 44.4**	**-0.6**
	2.4nm,0.4s,mb3.9,baz=37,slow=7.0,SNR=46						
FORT	**Forrest**	**36.26**	**219**	*e*P	**P**	**11 18 27.1**	**-2.3**
	38nm,0.4s,mb5.1						
URZ	**Urewera**	**40.61**	**151**	P	**P**	**11 19 05.0**	**-0.1**
	7.9nm,0.9s,mb4.0,baz=328,slow=15,SNR=3.5						
RPZ	**Rata Peaks**	**42.83**	**161**	P	**P**	**11 19 21.9**	**-0.8**
	6.1nm,1.0s,mb3.9,baz=301,slow=5.9,SNR=2.7						
KLBR	**Kellerberrin**	**43.75**	**226**	*e*P	**P**	**11 19 29.4**	**-0.8**
	19nm,1.3s,mb4.3						
NWAO	**Narrogin (SRO)**	**44.84**	**225**	P	**P**	**11 19 37.9**	**-0.9**
ULN	**Ulaanbaatar**	**65.43**	**327**	*e*P	**P**	**11 22 03.8**	**+0.4**
	2.4nm,0.9s,mb3.8						
SONM	**Songino Array**	**65.77**	**327**	P	**P**	**11 22 06.7**	**+1.2**
	1.4nm,0.5s,mb3.8,baz=134,slow=5.0,SNR=4.7						
VNDA	**Vanda**	**74.00**	**178**	P	**P**	**11 22 54.9**	**+0.8**
	0.9nm,0.5s,mb3.7,baz=335,slow=5.3,SNR=12						
VNDA	**Vanda**	**74.00**	**178**	*e*P	**P**	**11 22 54.2**	**+0.1**
	0.5nm,0.6s,mb3.3						
MKAR	**Makanchi Array**	**79.98**	**319**	P	**P**	**11 23 28.9**	**+1.7**
	0.2nm,0.4s,mb3.1,baz=353,slow=9.8,SNR=6.5						
ILAR	**Eielson Array**	**80.72**	**22**	P	**P**	**11 23 29.1**	**-1.5**
	0.8nm,0.7s,mb3.6,baz=253,slow=5.6,SNR=8.4						
QSPA	**South Pole Qui**	**86.36**	**180**	*e*P	**P**	**11 23 59.1**	**+0.7**
	2.5nm,0.7s,mb4.0						
INK	**Inuvik**	**87.03**	**21**	P	**P**	**11 24 01.3**	**-0.5**
	0.5nm,0.6s,mb3.5,baz=236,slow=5.3,SNR=8.5						
YKA	**Yellowknife Ar**	**93.97**	**28**	P	**P**	**11 24 34.4**	**+0.4**
	0.2nm,0.7s,mb3.3,baz=270,slow=4.9,SNR=6.1						

*STR **15** 11:13:13.5±0.9,43.70N×8.00E,h5km±1km,Ml1.9,Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
*LDG **15** 11:13:15.2±0.1,43.60N×7.72E,h15km,Md1.7/1,Ml1.4/3, Error ellipse: s-maj=3.4km s-min=2.5km az=41.0*
*NEIC **15** 11:13:15.2,43.60N×7.72E,h15km,ML1.9(STR), ML1.4(LDG),After LDG.*
ISC 15 11:13:13.5±1.3,**43.56N**±0.04×**7.76E**±0.08,**h3**km±12km, **n11,σ1§12/18,Near south coast of France**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SBF	**Sospel**	**0.39**	**322**	*e*Pg	**Pg**	**11 13 22.1**	**+0.8**
SBF				*e*Sg	**Sg**	**11 13 27.1**	**+0.6**
	19nm,0.2s						
SAOF	**Saorge**	**0.46**	**341**	Pg	**Pg**	**11 13 21.1**	**-1.5**
SAOF				Sg	**Sg**	**11 13 28.1**	**-0.6**
AURF	**Auriere**	**0.46**	**317**	Pg	**Pg**	**11 13 23.3**	**+0.6**
AUTN	**L'Aution**	**0.50**	**331**	Pg	**Pg**	**11 13 24.1**	**+0.5**
AUTN				Sg	**Sg**	**11 13 30.5**	**+0.2**
MVIF	**Mont Vial**	**0.56**	**308**	Pg	**Pg**	**11 13 26.0**	**+1.3**
MVIF				Sg	**Sg**	**11 13 34.6**	**+2.5**
FRF	**La Foret Royal**	**0.81**	**271**	*e*Pg	**Pg**	**11 13 30.1**	**+0.4**
FRF				*e*Sg	**Sg**	**11 13 41.1**	**+0.5**
	2.7nm,0.2s						
LMR	**La Mourre**	**0.94**	**257**	*e*Sg	**Sg**	**11 13 44.0**	**-0.8**
	0.8nm,0.1s						
PGF	**Pioggiola**	**1.35**	**138**	*e*Pn	**Pn**	**11 13 38.9**	**-0.5**
MBDF	**Montbardon**	**1.37**	**329**	*e*Pg	**Pg**	**11 13 40.3**	**-0.6**
MBDF				*e*Sg	**Sg**	**11 13 56.8**	**-2.4**
	0.8nm,0.2s						
RSP	**Reno Superiore**	**1.64**	**347**	P	**Pn**	**11 13 44.4**	**+1.0**
RSP				S	**Sb**	**11 14 04.9**	**-0.2**
SMRF	**Simiane la Rot**	**1.64**	**286**	*e*Sg	**Sg**	**11 14 05.6**	**-2.5**
	0.2nm,0.2s						

*IDC **15** 11:22:23.1±1.7,31.77N×82.43E,mb3.6/7,mb1 3.8/9, mb1mx3.6/21,ML3.6/2,Error ellipse: s-maj=70.7km s-min=20.4km az=58.0*
*NEIC **15** 11:22:24.5±1.2,31.81N×82.51E,h10km,Error ellipse: s-maj=40.9km s-min=14.3km az=58.0*
ISC 15 11:22:23.2±1.2,**31.8N**±0.2×**82.6E**±0.3,**h10**km,**n12, σ1§07/12,mb3.5/7,Xizang**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MKAR	**Makanchi Array**	**14.95**	**359**	Pn	**P**	**11 25 54.6**	**-1.6**
	0.1nm,0.3s,baz=186,slow=13,SNR=2.5						
CMAR	**Chiang Mai Arr**	**19.85**	**128**	P	**P**	**11 26 56.4**	**-0.9**
	0.3nm,0.3s,baz=304,slow=10,SNR=6.0						
ZAL	**Zalesovo**	**22.15**	**3**	P	**P**	**11 27 21.9**	**+1.3**
	0.9nm,0.5s,mb3.5,baz=282,slow=9.3,SNR=3.1						
ZAL	**Zalesovo**	**22.15**	**3**	P	**P**	**11 27 21.9**	**+1.3**
BVAR	**Borovoye Array**	**22.96**	**341**	P	**P**	**11 27 30.3**	**+1.8**
	0.7nm,0.7s,mb3.2,baz=166,slow=5.9,SNR=3.7						
ZRNK	**Zerenda**	**23.30**	**339**	*e*P	**P**	**11 27 31.6**	**-0.3**
FINES	**FINESS Array B**	**46.70**	**327**	P	**P**	**11 30 53.3**	**-0.3**
	1.1nm,0.8s,mb3.8,baz=117,slow=8.5,SNR=4.2						
ARCES	**ARCESS Array B**	**49.17**	**337**	P	**P**	**11 31 11.2**	**-1.6**
	1.7nm,1.0s,mb4.0,baz=90,slow=8.5,SNR=5.7						
WRA	**Warramunga Arr**	**71.45**	**129**	P	**P**	**11 33 46.8**	**+0.8**
	0.3nm,0.5s,mb3.5,baz=322,slow=6.4,SNR=3.9						
ILAR	**Eielson Array**	**76.27**	**20**	P	**P**	**11 34 13.7**	**+0.4**
	0.4nm,0.8s,mb3.4,baz=301,slow=5.3,SNR=3.8						
YKA	**Yellowknife Ar**	**84.99**	**8**	P	**P**	**11 34 59.7**	**+0.3**
	0.2nm,0.6s,mb3.4,baz=337,slow=5.3,SNR=7.8						
YKA	**Yellowknife Ar**	**84.99**	**8**	P	**P**	**11 34 59.7**	**+0.3**

*KRSC **15** 11:43:34.0±1.5,48.75N×155.58E,h50km±31km,ML4.4*
*MOS **15** 11:43:35.5±1.4,48.94N×155.66E,h55km,mb4.2/2,Error ellipse: s-maj=29.4km s-min=9.7km az=68.8*
*NEIC **15** 11:43:37.3±0.5,48.94N×155.41E,Error ellipse: s-maj=15.2km s-min=10.3km az=143.0*
*IDC **15** 11:43:37.5±0.7,48.93N×155.49E,h46km±6km,mb3.3/9, mb1 3.9/12,mb1mx3.6/26,ML4.0/3,Error ellipse: s-maj=26.4km s-min=14.0km az=136.0*
ISC 15 11:43:36.1±1.0,**48.88N**±0.07×**155.7E**±0.1,**h54**km±10km, **h46**km±1.7km**:pP-P,n43,σ1§10/56,mb3.6/9,Kuril Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**1.83**	**9**	*e*S	**S**	**11 44 30.1**	**+2.4**
SKR	**Severo-Kuril's**	**1.83**	**9**	*e*PN	**P**	**11 44 04.0**	**-1.7**
SKR				pmax	pmax		
	comp=N,140nm,0.4s						
SKR				pmax	pmax		
	comp=E,70nm,0.4s						
SKR				pmax	pmax		
	comp=Z,160nm,0.4s						
ALID	**Alaid**	**1.99**	**358**	*e*P	**P**	**11 44 07.8**	**-0.2**
ALID				*e*S	**S**	**11 44 32.2**	**+0.5**
PAU	**Pauzhetka**	**2.69**	**16**	*e*P	**P**	**11 44 17.8**	**-0.2**
PAU				*e*S	**S**	**11 44 49.0**	**-0.5**
PAU				Smax			
	comp=Z,500nm,0.3s						
MIPR	**Malaya Ipel'ka**	**3.47**	**11**	*e*P	**P**	**11 44 29.6**	**+0.6**
GRL	**Gorelyy**	**3.98**	**22**	*e*P	**P**	**11 44 37.1**	**+0.9**
GRL				*e*S	**S**	**11 45 22.5**	**+0.5**
RUS	**Russkaya**	**3.99**	**26**	P	**P**	**11 44 35.5**	**-0.8**
RUS				S	**S**	**11 45 20.0**	**-2.3**
RUS	**Russkaya**	**3.99**	**26**	*e*P	**P**	**11 44 35.5**	**-0.8**
RUS				*e*S	**S**	**11 45 21.7**	**-0.6**
APC	**Apacha**	**4.16**	**13**	*i* P	**P**	**11 44 40.8**	**+2.2**
PET	**Petropavlovsk**	**4.56**	**23**	P	**P**	**11 44 44.3**	**0.0**
PET				S	**S**	**11 45 35.3**	**-1.2**
PET	**Petropavlovsk**	**4.56**	**23**	*e*P	**P**	**11 44 45.4**	**+0.2**
PET				*e*S	**S**	**11 45 35.3**	**-1.2**
PET	**Petropavlovsk**	**4.56**	**23**	*e*PN	**P**	**11 44 45.8**	**+1.5**
PET				*e*S	**S**	**11 45 37.1**	**+0.6**
PET				smax			
	comp=E,75nm,0.5s						
PET	**Petropavlovsk**	**4.56**	**23**	*e*P	**P**	**11 44 43.7**	**-0.6**
PET				*e*S	**S**	**11 45 34.5**	**-2.1**
UGLR	**Uglovaya**	**4.77**	**24**	*e*P	**P**	**11 44 48.1**	**+0.9**
KOK	**Koryaka**	**4.80**	**22**	*e*P	**P**	**11 44 48.8**	**+1.2**
AVH	**Avacha**	**4.80**	**23**	*e*P	**P**	**11 44 48.9**	**+1.3**
AVH				*e*S	**S**	**11 45 42.8**	**+0.2**
SMAR	**Somma**	**4.81**	**23**	*e*P	**P**	**11 44 48.6**	**+0.8**
SDLR	**Sedlovina**	**4.85**	**24**	*e*P	**P**	**11 44 48.8**	**+0.5**
GNL	**Ganaly**	**5.03**	**16**	*e*P	**P**	**11 44 50.2**	**-0.6**
SPN	**Mys Shipunski**	**5.04**	**31**	P	**P**	**11 44 50.0**	**-1.0**
SPN				S	**S**	**11 45 45.0**	**-3.6**
SPN	**Mys Shipunski**	**5.04**	**31**	*e*P	**P**	**11 44 50.3**	**-0.7**
SPN				*e*S	**S**	**11 45 47.8**	**-0.8**
MKZ	**Mys Kozlova**	**6.82**	**31**	P	**P**	**11 45 12.8**	**-3.1**
MKZ	**Mys Kozlova**	**6.82**	**31**	*e*P	**P**	**11 45 14.2**	**-

comp=Z,109nm,19.0s,MS3.9,baz=94,slow=35
QSPA South Pole Qui 73.39 180 P **P** 11 55 29.2 -1.6
QSPA *eP* 11 55 29.6
NVAR Mina Array Bea 77.75 44 P **P** 11 55 56.4 0.0
0.5nm,0.8s,mb3.5,baz=218,slow=6.8,SNR=5.1
HWUT Hardware Ranch 83.82 43 P **P** 11 56 27.8 -0.6
1.6nm,0.8s,mb4.2
TXAR Lajitas Array 84.38 57 P **P** 11 56 32.4 +0.8
1.7nm,1.1s,mb4.1,baz=243,slow=5.6,SNR=8.1
ILAR Eielson Array 84.42 13 P **P** 11 56 30.4 -0.5
6.5nm,1.2s,mb4.6,baz=225,slow=5.1,SNR=14
MCMT McKenzie Canyo 84.57 40 P **P** 11 56 32.6 +0.5
MAW Mawson 85.41 199 P **P** 11 56 38.1 +2.3
1.1nm,0.7s,mb4.1,baz=8.4,slow=14,SNR=1.8
PDAR Pinedale Array 85.68 43 P **P** 11 56 37.0 -0.7
0.3nm,0.9s,mb3.5,baz=249,slow=7.7,SNR=2.5
YKA Yellowknife Ar 92.73 24 P **P** 11 57 11.2 +0.6
0.5nm,1.2s,mb3.8,baz=248,slow=3.8,SNR=5.1
YKA Yellowknife Ar 92.73 24 P **P** 11 57 11.2 +0.6
BRTR Keskin Array B 144.67 317 PKP PKPdf 12 03 35.5 -2.0
3.5nm,1.0s,baz=92,slow=2.6,SNR=7.3
GERES GERESS Array B 146.68 347 PKPbc PKPbc 12 03 42.1 +3.0
0.2nm,0.2s,slow=6.7,SNR=3.6

*HEL **15** 11:45:29.4±0.2,68.15N×33.11E,ML1.8,ML1.8(UPP), ML1.5(BER), Explosion*
*NAO **15** 11:45:30.3±2.6,68.13N×32.95E,ML2.0*
ISC 15 11:45:27.9±1.4,68.16N±0.04×33.1E±0.3,n15,σ1§07/25,
Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
APA0	**Apatity Array**	**0.56**	**183**	*i* P		**Pg**	**11 45 39.1**	**0.0**
APA0				*i* S		**Sg**	**11 45 46.2**	**-0.3**
APA0				*e*RG			11 45 49.7	
APA0	**Apatity Array**	**0.56**	**183**	Pg		**Pg**	**11 45 39.1**	**0.0**
	baz=5.9,slow=14							
APA0				Lg			11 45 46.2	
	baz=329,slow=37							
APA0				Rg			11 45 49.7	
	baz=5.0,slow=37							
SGF	**Sodankyl**	**2.59**	**257**	*e*P		**Pn**	**11 46 12.5**	**+0.8**
SGF				*e*S		**Sn**	**11 46 44.2**	**-0.1**
SGF				MSG			11 46 53.6	
	comp=Z,3.0nm,0.1s							
KEV	**Kevo**	**2.71**	**309**	*e*P		**Pn**	**11 46 14.9**	**+1.4**
KEV				*e*S		**Sn**	**11 46 47.9**	**+0.5**
MSF	**Maaselka**	**2.76**	**217**	*e*P		**Pn**	**11 46 15.6**	**+1.5**
MSF				*e*SB		**Sb**	**11 46 52.9**	**+0.5**
ARA0	**ARCESS Array S**	**3.07**	**300**	*e*P		**Pn**	**11 46 19.2**	**+0.7**
ARA0				*e*PG		**Pg**	**11 46 26.9**	**-2.3**
ARA0				*e*S		**Sn**	**11 46 55.9**	**-0.6**
ARA0				*e*SG		**Sg**	**11 47 03.6**	**-6.5**
ARA0	**ARCESS Array S**	**3.07**	**300**	Pn		**Pn**	**11 46 19.2**	**+0.7**
	baz=114,slow=16							
ARA0				Pg		**Pg**	**11 46 26.9**	**-2.3**
	baz=107,slow=16							
ARA0				Sn		**Sn**	**11 46 55.9**	**-0.6**
	baz=119,slow=28							
ARA0				Lg			11 47 03.6	
	baz=119,slow=28							
KTK1	**Kautokeino**	**3.71**	**288**	*e*P		**Pn**	**11 46 27.5**	**-0.1**
KTK1				AML		AML	11 47 28.4	
	comp=Z,3.1nm,0.6s							
OUL	**Oulu**	**4.21**	**226**	*e*P		**Pn**	**11 46 34.9**	**+0.1**
OUL				*e*SG		**Sg**	**11 47 38.6**	**-9.3**
OUL				MSG			11 47 42.2	
	comp=Z,1.2nm,0.3s							
JOF	**Joensuu**	**5.32**	**189**	*e*S		**Sn**	**11 47 46.1**	**-7.3**
FIA0	**FINESS Array S**	**7.37**	**207**	*e*P		**Pn**	**11 47 17.8**	**-1.6**
SPA0	**Spitsbergen Ar**	**11.09**	**342**	Pn		**P**	**11 48 06.0**	**-4.5**
	baz=141,slow=14							
SPA0	**Spitsbergen Ar**	**11.09**	**342**	*e*P		**P**	**11 48 06.0**	**-4.5**
HFS	**Hagfors**	**11.62**	**236**	Pn		**P**	**11 48 14.3**	**-3.5**
	baz=44,slow=14							
HFS	**Hagfors**	**11.62**	**236**	*e*P		**P**	**11 48 14.3**	**-3.5**

*IDC **15** 11:50:43.2±0.8,16.45S×176.62E,mb4.2/11,mb1 4.4/11, mb1mx4.3/16,MS3.9/8,Ms1 3.9/8,ms1mx3.7/19,Error ellipse: s-maj=27.7km s-min=18.7km az=133.0*
*NEIC **15** 11:50:50.7±0.5,16.55S×176.62E,h60km,mb4.4/7,Error ellipse: s-maj=16.0km s-min=10.2km az=146.0*
ISC 15 11:50:53.9±0.5,16.7S±0.1×176.6E±0.1,h100km,n44,
σ1§02/26,mb4.2/16,1C-1D,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
URZ	**Urewera**	**21.54**	**179**	P		**P**	**11 55 35.8**	**-0.6**
	7.0nm,0.9s,mb4.0,baz=91,slow=20,SNR=2.5							
ARMA	**Armidale**	**26.57**	**234**	*e*P		**P**	**11 56 25.8**	**+1.3**
RPZ	**Rata Peaks**	**27.38**	**189**	P		**P**	**11 56 31.7**	**-0.2**
	5.5nm,0.9s,mb4.1,baz=352,slow=12,SNR=2.5							
CTA	**Charters Tower**	**28.93**	**259**	*e*P		**P**	**11 56 45.9**	**-0.1**
	4.0nm,1.1s,mb4.0							
CTA	**Charters Tower**	**28.93**	**259**	P		**P**	**11 56 45.7**	**-0.2**
	5.7nm,1.1s,mb4.1,baz=86,slow=11,SNR=5.1							
CTA	**Charters Tower**	**28.93**	**259**	P		**P**	**11 56 45.7**	**-0.2**
CTAO	**Charters Tower**	**28.93**	**259**	*e*P		**P**	**11 56 45.3**	**-0.6**
	5.6nm,1.0s,mb4.2							
PMG	**Port Moresby**	**29.50**	**280**	LR		LR	12 04 50.7	
	comp=Z,214nm,20.8s,baz=303,slow=29							
STKA	**Stephens Creek**	**35.11**	**238**	*e*P		**P**	**11 57 41.0**	**+1.4**
	16nm,0.7s,mb5.0							
STKA	**Stephens Creek**	**35.11**	**238**	P		**P**	**11 57 41.1**	**+1.5**
	23nm,0.8s,mb5.1,baz=72,slow=8.7,SNR=31							
STKA				LR		LR	12 10 47.4	
	comp=Z,349nm,18.5s,baz=33,slow=34							
WB2	**Warramunga Arr**	**40.12**	**259**	⇓*i*P		**P**	**11 58 20.7**	**-0.9**
WRAB	**Tennant Creek**	**40.12**	**259**	*e*P		**P**	**11 58 20.8**	**-0.7**
	10nm,0.6s,mb4.8							
WRA	**Warramunga Arr**	**40.13**	**259**	P		**P**	**11 58 21.0**	**-0.6**
	6.2nm,0.6s,mb4.6,baz=92,slow=9.1,SNR=150							
AS12	**Alice Springs**	**40.52**	**253**	*e*P		**P**	**11 58 24.8**	**0.0**
	14nm,0.8s,mb4.8							
ASAR	**Alice Springs**	**40.52**	**253**	P		**P**	**11 58 24.8**	**0.0**
	12nm,0.8s,mb4.8,baz=81,slow=9.0,SNR=124							
KAKA	**Kakadu**	**42.83**	**269**	⇑*i*P		**P**	**11 58 43.7**	**-0.2**
	27nm,1.4s,mb4.8							
FITZ	**Fitzroy Crossi**	**48.48**	**260**	*e*P		**P**	**11 59 28.6**	**-0.1**
	2.8nm,0.6s,mb4.3							
JHJ	**Hachijo jima 2**	**60.68**	**325**	LR		LR	12 20 51.8	
	comp=Z,86nm,20.3s,baz=124,slow=30							
VNDA	**Vanda**	**61.34**	**184**	P		**P**	**12 01 02.7**	**+1.7**
	0.3nm,0.5s,mb3.6,baz=9.8,slow=6.6,SNR=3.6							
VNDA				LR		LR	12 22 08.0	
	comp=Z,91nm,20.9s,baz=23,slow=31							
VNDA	**Vanda**	**61.34**	**184**	P		**P**	**12 00 59.8**	**-1.2**
	1.6nm,1.4s,mb3.9							
VNDA				LR		LR	12 22 08.0	
JNU	**Nakatsue**	**65.96**	**319**	LR		LR	12 23 35.9	
	comp=Z,70nm,21.9s,baz=232,slow=30							
QSPA	**South Pole Qui**	**73.40**	**180**	*e*P		**P**	**12 02 21.4**	**+5.2**
	10.0nm,1.2s,mb4.5							
NVAR	**Mina Array Bea**	**81.94**	**46**	P		**P**	**12 03 02.5**	**-1.6**
	0.2nm,0.6s,mb3.1,baz=264,slow=8.2,SNR=3.0							
CMAR	**Chiang Mai Arr**	**83.93**	**291**	LR		LR	12 37 24.4	
	comp=Z,51nm,18.5s,baz=180,slow=33							
ILAR	**Eielson Array**	**85.83**	**15**	P		**P**	**12 03 24.6**	**+1.6**
	1.6nm,0.9s,mb4.0,baz=230,slow=4.7,SNR=11							
HLID	**Hailey**	**86.92**	**43**	*e*P		**P**	**12 03 26.8**	**-2.0**
	1.2nm,1.0s,mb3.8							
PV10	**Paradox Valley**	**88.48**	**49**	*e*P		**P**	**12 03 37.2**	**+0.8**
TXAR	**Lajitas Array**	**89.44**	**59**	P		**P**	**12 03 41.6**	**+0.5**
	0.2nm,0.8s,mb3.2,baz=243,slow=6.0,SNR=2.1							
TXAR				LR		LR	12 38 33.5	
	comp=Z,86nm,18.7s,baz=220,slow=32							
PDAR	**Pinedale Array**	**89.81**	**45**	LR		LR	12 35 14.7	
	comp=Z,64nm,20.6s,baz=251,slow=30							
YKA	**Yellowknife Ar**	**95.25**	**26**	P		**P**	**12 04 08.2**	**+1.1**
	0.2nm,0.9s,mb3.6,baz=247,slow=4.4,SNR=5.1							
YKA	**Yellowknife Ar**	**95.25**	**26**	P		**P**	**12 04 08.2**	**+1.1**
KHC	**Kasperske Hory**	**144.76**	**341**	*e*PKP		PKPdf	12 10 26.5	+7.7
GRA1	**Grafenberg Arr**	**144.96**	**343**	*e*PKPbc		PKPbc	12 10 26.2	+6.8
GERES	**GERESS Array B**	**144.97**	**340**	PKP		PKPdf	12 10 20.4	+1.2
	0.2nm,0.3s,baz=45,slow=2.8,SNR=3.0							
GIVF	**Givet**	**145.96**	**350**	*e*PKP1		PKPbc	12 10 27.9	+5.9
BAIF	**Baives**	**146.10**	**351**	*e*PKP1		PKPbc	12 10 28.7	+6.4
	15nm,0.9s							
CDF	**Champ du Feu**	**147.12**	**347**	*e*PKP1		PKPab	12 10 31.8	+2.6
	16nm,0.9s							
FLN	**La Foliniere**	**147.88**	**356**	*e*PKP1		PKPab	12 10 31.3	-0.8
	14nm,0.9s							
LDF	**La Druitiere**	**148.02**	**356**	*e*PKP1		PKPab	12 10 31.7	-1.0
	9.8nm,0.8s							
GRR	**Gorron**	**148.27**	**357**	*e*PKP1		PKPab	12 10 32.6	-1.1
	17nm,0.9s							
CABF	**La Chapelle**	**149.09**	**347**	*e*PKP1		PKPab	12 10 35.6	-1.5
	31nm,1.4s							
SSF	**Saint Saulge**	**149.13**	**351**	*e*PKP1		PKPab	12 10 38.8	+1.5
	21nm,1.3s							
TCF	**Toulx Ste Croi**	**150.07**	**352**	*e*PKP1		PKPab	12 10 40.3	-0.9
MBDF	**Montbardon**	**150.71**	**345**	*e*PKP1		PKPab	12 10 43.7	-0.2
	9.1nm,1.0s							

*NNC **15** 12:01:50.9±8.8,45.67N×85.46E,mpv3.9,Error ellipse: s-maj=68.4km s-min=41.9km az=116.0*
*IDC **15** 12:01:50.7±1.2,45.78N×85.29E,mb3.2/3,mb1 3.6/7, mb1mx3.4/24,ML3.5/4,Error ellipse: s-maj=17.9km s-min=12.4km az=31.0*
*BJI **15** 12:01:52.3,45.78N×85.28E,h15km,ML3.7*
*NEIC **15** 12:01:53.1±1.1,45.70N×85.45E,h10km,Error ellipse: s-maj=22.8km s-min=13.6km az=194.0*
ISC 15 12:01:50.2±2.4,45.82N±0.09×85.60E±0.10,h2km±19km,
n13,σ1§11/17,mb3.2/3,3C,Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
WMQ	**Urumqi**	**2.49**	**143**	*e*P		**Pn**	**12 02 36.0**	**+3.6**
WMQ				SG		**Sg**	**12 03 12.3**	**-0.9**
WMQ				S		Sn		
	comp=N,331nm,1.0s							
WMQ				S		Sn		
	comp=E,367nm,0.9s							
MK31	**Makanchi Array**	**2.49**	**294**	⇑Pn		**Pn**	**12 02 32.4**	**-0.1**
	comp=E,42nm,0.6s,baz=113,slow=18,SNR=375							
MK31				⇑Sn		**Sn**	**12 03 04.3**	**+0.5**
	comp=E,170nm,0.6s,baz=117,slow=29,SNR=27							
MKAR	**Makanchi Array**	**2.49**	**294**	Pn		**Pn**	**12 02 32.4**	**0.0**
	comp=E,12nm,0.3s,baz=111,slow=17,SNR=216							
MKAR				Lg			12 03 05.2	
	comp=E,73nm,0.3s,baz=118,slow=29,SNR=22							
MKAR	**Makanchi Array**	**2.49**	**294**	Pn		**Pn**	**12 02 32.4**	**0.0**
MKAR				Lg			12 03 05.2	
KURK	**Kurchatov**	**6.76**	**319**	⇑Lg			12 05 26.3	
	comp=E,54nm,1.0s							
ZAL	**Zalesovo**	**8.14**	**357**	Pn		**P**	**12 03 52.6**	**+0.4**
	comp=E,2.2nm,0.3s,baz=214,slow=8.2,SNR=8.1							
ZAL				Sn		**Sn**	**12 05 23.9**	**-2.1**
	comp=E,1.0nm,0.3s,baz=164,slow=23,SNR=6.3							
ZAL				Lg			12 06 09.5	
	comp=E,1.1nm,0.3s,baz=282,slow=18,SNR=6.0							
ZAL	**Zalesovo**	**8.14**	**357**	Pn		**P**	**12 03 52.6**	**+0.4**
ZAL				Sn		**Sn**	**12 05 23.9**	**-2.0**
ZAL				Lg			12 06 09.5	
BVAR	**Borovoye Array**	**12.24**	**312**	Pn		**P**	**12 04 42.5**	**-5.8**
	comp=E,0.1nm,0.3s,baz=118,slow=15,SNR=2.8							
BVAR				Sn		**S**	**12 06 54.6**	**-12**
	comp=E,0.4nm,0.3s,baz=122,slow=22,SNR=5.2							
BVAR				Lg			12 08 08.8	
	comp=E,0.1nm,0.3s,baz=101,slow=24,SNR=4.2							
ZRNK	**Zerenda**	**12.94**	**309**	*e*P		**P**	**12 04 52.0**	**-5.8**
SONM	**Songino Array**	**14.37**	**74**	Pn		**P**	**12 05 19.3**	**+2.7**
	comp=E,0.1nm,0.3s,baz=270,slow=14,SNR=2.5							
SONM				Lg			12 09 33.4	
	comp=E,0.1nm,0.3s,baz=270,slow=27,SNR=5.4							
ILAR	**Eielson Array**	**62.40**	**23**	P		**P**	**12 12 16.6**	**+0.3**
	comp=E,0.2nm,0.9s,mb3.2,baz=323,slow=5.6,SNR=4.9							
YKA	**Yellowknife Ar**	**70.83**	**10**	P		**P**	**12 13 09.3**	**-0.3**
	comp=E,0.2nm,0.7s,mb3.1,baz=344,slow=5.9,SNR=5.2							
WRA	**Warramunga Arr**	**78.96**	**134**	P		**P**	**12 13 56.3**	**-0.7**
	comp=E,0.3nm,0.8s,mb3.3,baz=337,slow=4.8,SNR=3.3							

*IDC **15** 12:07:10.9±6.0,31.38N×49.08E,h41km±37km,mb3.7/5, mb1 3.8/8,mb1mx3.4/25,ML3.4/3,Error ellipse: s-maj=60.4km s-min=17.7km az=149.0*
ISC 15 12:07:07.1±4.7,31.4N±0.2×49.0E±0.1,h23km±35km,n8,
σ0§76/10,mb3.8/4,Western Iran

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
THR	**Tehran**	**4.84**	**21**	P		**Pn**	**12 08 21.1**	**+0.5**
	0.4nm,0.3s,baz=184,slow=8.4,SNR=12							
THR				S		**Sn**	**12 09 16.8**	**0.0**
	0.6nm,0.3s,baz=150,slow=21,SNR=5.9							
THR				Lg			12 09 41.3	
	0.6nm,0.3s,baz=63,slow=20,SNR=3.7							
ASF	**Jabal al Asfar**	**10.31**	**277**	P		**P**	**12 09 36.0**	**-0.9**
	1.0nm,0.3s,baz=24,slow=10.0,SNR=3.6							
ASF				S		**S**	**12 11 32.8**	**-0.1**
	0.5nm,0.3s,baz=250,slow=23,SNR=3.1							
ASF				Lg			12 12 39.8	
	0.4nm,0.3s,baz=313,slow=20,SNR=3.2							
BRTR	**Keskin Array B**	**14.98**	**308**	P		**P**	**12 10 46.7**	**+7.4**
	0.2nm,0.3s,baz=131,slow=15,SNR=7.7							
IDI	**Anoyia**	**20.48**	**287**	P		**P**	**12 11 48.1**	**+2.0**
	7.7nm,0.8s,baz=44,slow=20,SNR=3.5							
BVAR	**Borovoye Array**	**26.62**	**29**	P		**P**	**12 12 45.1**	**-0.4**
	1.4nm,0.6s,mb3.7,baz=228,slow=8.9,SNR=8.4							
FINES	**FINESS Array B**	**33.58**	**340**	P		**P**	**12 13 46.8**	**-0.6**
	2.7nm,1.1s,mb4.1,baz=139,slow=13,SNR=4.7							
HFS	**Hagfors**	**37.05**	**331**	P		**P**	**12 14 16.8**	**-0.1**
	1.5nm,0.6s,mb4.0,baz=141,slow=9.5,SNR=7.6							
YKA	**Yellowknife Ar**	**85.51**	**352**	P		**P**	**12 19 44.0**	**0.0**
	0.2nm,0.7s,mb3.5,baz=17,slow=5.7,SNR=6.2							

*IDC **15** 12:35:42.5±0.7,29.95S×177.36W,mb4.4/11,mb1 4.6/14, mb1mx4.6/18,ML4.3/3,MS3.9/8,Ms1 3.9/8,ms1mx3.5/24, Error ellipse: s-maj=27.0km s-min=18.3km az=153.0*
*NEIC **15** 12:35:43.9±0.4,30.15S×177.39W,h10km,mb4.8/8,Error ellipse: s-maj=14.5km s-min=10.5km az=130.0*
*SYO **15** 12:35:43.9,30.15S×177.39W,h10km,MB4.8*
ISC 15 12:35:43.1±4.3,30.32S±0.08×177.5W±0.1,h15km±30km,
n61,σ1§32/42,mb4.5/16,MS3.9/8,3C-6D,Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
URZ	**Urewera**	**9.11**	**208**	Pn		**P**	**12 37 55.8**	**-1.3**
	2.1nm,0.3s,baz=34,slow=1.9,SNR=12							
URZ				Sn		**Sn**	**12 39 38.6**	**-1.8**
	2.9nm,0.3s,baz=343,slow=19,SNR=6.4							
QRZ	**Quartz Range**	**13.27**	**215**	*e*P		**P**	**12 38 55.5**	**+1.9**
THZ	**Tophouse**	**13.82**	**212**	*e*P		**P**	**12 39 03.4**	**+2.6**
MQZ	**McQueen's Vall**	**15.51**	**208**	*e*S		**S**	**12 42 03.1**	**-12**
WVZ	**Waitaha Valley**	**15.85**	**213**	*e*P		**P**	**12 39 26.1**	**-1.2**
RPZ	**Rata Peaks**	**16.20**	**211**	Pn		**P**	**12 39 31.7**	**-0.1**
	1.3nm,0.3s,baz=41,slow=19,SNR=9.3							
RPZ				Sn		**S**	**12 42 21.4**	**-9.5**
	0.7nm,0.3s,baz=66,slow=19,SNR=4.5							
RAR	**Rarotonga**	**18.30**	**64**	P		**P**	**12 39 51.8**	**-6.5**
	1.4nm,0.3s,baz=254,slow=7.4,SNR=2.7							
MSZ	**Milford Sound**	**18.40**	**215**	*e*P		**P**	**12 39 56.8**	**-2.5**
CNB	**Canberra Magne**	**28.25**	**251**	*e*P		**P**	**12 41 42.0**	**+4.3**
	20nm,1.2s,mb4.6							
TOO	**Toolangi**	**31.43**	**247**	*e*P		**P**	**12 42 08.7**	**+2.7**
	4.6nm,0.7s,mb4.4							
CTA	**Charters Tower**	**34.26**	**279**	⇓*i*P		**P**	**12 42 31.8**	**+1.0**
	11nm,0.9s,mb4.8							
CTA	**Charters Tower**	**34.26**	**279**	P		**P**	**12 42 31.9**	**+1.1**
	4.4nm,0.4s,mb4.7,baz=98,slow=9.2,SNR=16							
CTA				LR		LR	12 55 20.6	
	comp=Z,216nm,18.1s,MS3.9,baz=152,slow=34							
CTAO	**Charters Tower**	**34.26**	**279**	*e*P		**P**	**12 42 31.8**	**+1.0**
	12nm,0.7s,mb4.9							
CTAO				LR		LR		
	comp=Z,218nm,20.4s,MS3.9							
STKA	**Stephens Creek**	**34.96**	**257**	⇓*i*P		**P**	**12 42 38.5**	**+1.8**
	comp=Z,9.8nm,0.6s,mb4.9							
STKA	**Stephens Creek**	**34.96**	**257**	P		**P**	**12 42 38.6**	**+1.9**
	comp=Z,7.5nm,0.6s,mb4.8,baz=95,slow=11,SNR=28							
STKA				LR		LR	12 56 05.6	
	comp=Z,180nm,18.4s,MS3.9,baz=25,slow=35							
PMG	**Port Moresby**	**39.00**	**295**	LR		LR	12 56 10.8	
	comp=Z,99nm,21.2s,MS3.6,baz=335,slow=32							
AS12	**Alice Springs**	**43.59**	**267**	*e*P		**P**	**12 43 48.2**	**-0.3**
	comp=Z,4.3nm,0.5s,mb4.4							
ASAR	**Alice Springs**	**43.59**	**267**	P		**P**	**12 43 48.9**	**+0.4**
	comp=Z,3.7nm,0.4s,mb4.5,baz=105,slow=7.7,SNR=54							
ASAR				PcP		PcP	12 45 36.9	+0.2
	comp=Z,1.6nm,0.7s,baz=125,slow=4.0,SNR=4.8							
ASAR				ScP			12 49 32.8	
	comp=Z,0.5nm,0.9s,baz=117,slow=4.0,SNR=3.1							
ASAR				LR		LR	13 01 44.8	
	comp=Z,183nm,18.5s,MS4.0,baz=30,slow=36							
ASAR	**Alice Springs**	**43.59**	**267**	P		**P**	**12 43 48.9**	**+0.4**
ASAR				PcP		PcP	12 45 36.9	+0.2
ASAR				ScP			12 49 32.8	
ASAR				LR		LR	13 01 44.8	
WB2	**Warramunga Arr**	**44.56**	**272**	⇓*i*P		**P**	**12 43 56.0**	**-0.5**
WRAB	**Tennant Creek**	**44.57**	**272**	*e*P		**P**	**12 43 56.0**	**-0.5**
	comp=Z,19nm,0.5s,mb5.2							
WRA	**Warramunga Arr**	**44.57**	**272**	P		**P**	**12 43 56.3**	**-0.3**
	comp=Z,9.6nm,0.4s,mb5.0,baz=110,slow=8.1,SNR=80							
WRA				LR		LR	13 02 28.3	
	comp=Z,111nm,19.4s,MS3.8,baz=105,slow=36							
FORT	**Forrest**	**46.53**	**255**	*e*P		**P**	**12 44 11.6**	**-0.3**
	comp=Z,31nm,0.8s,mb5.3							
VNDA	**Vanda**	**48.23**	**186**	P		**P**	**12 44 27.9**	**+3.3**
	comp=Z,1.0nm,0.6s,mb4.0,baz=11,slow=7.3,SNR=12							
VNDA	**Vanda**	**48.23**	**186**	*e*P		**P**	**12 44 27.9**	**+3.2**
	comp=Z,0.5nm,0.6s,mb3.7							
FITZ	**Fitzroy Crossi**	**52.84**	**270**	⇓*i*P		**P**	**12 45 00.2**	**-0.3**
	comp=Z,3.2nm,0.6s,mb4.4							
FITZ	**Fitzroy Crossi**	**52.84**	**270**	P		**P**	**12 44 59.9**	**-0.7**
	comp=Z,3.7nm,0.7s,mb4.5,baz=184,slow=7.4,SNR=15							
QSPA	**South Pole Qui**	**59.79**	**180**	⇑*i*P		**P**	**12 45 52.4**	**+2.9**
QSPA				*e*			12 46 01.3	
MAW	**Mawson**	**72.55**	**200**	P		**P**	**12 47 12.6**	**+1.7**
	comp=Z,4.5nm,0.8s,mb4.5,baz=98,slow=9.5,SNR=7.4							
MAW	**Mawson**	**72.55**	**200**	P		**P**	**12 47 12.0**	**+1.1**
	comp=Z,6.3nm,0.8s,mb4.6							
SYO	**Syowa Base**	**77.30**	**193**	⇓P		**P**	**12 47 39.9**	**+1.8**
SYO	**Syowa Base**	**77.30**	**193**	⇑PcP		PcP	12 47 52.2	+3.0
SYO	**Syowa Base**	**77.30**	**193**	⇓*e*P		**P**	**12 47 39.9**	**+1.8**
SYO				⇑*e*PcP		PcP	12 47 52.2	+3.0
SNAA	**Sanae**	**78.22**	**178**	*e*P		**P**	**12 47 43.1**	**0.0**
MAIT	**Maitri**	**78.98**	**183**	*e*P		**P**	**12 47 46.8**	**-0.5**
YSS	**Yuzh-Sakhalins**	**84.88**	**334**	*e*P		**P**	**12 48 19.2**	**+0.8**
NVAR	**Mina Array Bea**	**87.86**	**42**	P		**P**	**12 48 33.4**	**+0.2**
	comp=Z,2.3nm,0.8s,mb4.5,baz=210,slow=6.8,SNR=16							
NVAR				LR		LR	13 23 51.5	
	comp=Z,53nm,18.2s,MS4.0,baz=260,slow=33							
NEN	**Nelson**	**88.13**	**46**	*e*P		**P**	**12 48 34.9**	**+0.3**
TXAR	**Lajitas Array**	**91.94**	**57**	P		**P**	**12 48 52.4**	**-0.2**
	comp=Z,0.2nm,0.8s,mb3.5,baz=191,slow=6.4,SNR=3.7							
TXAR				LR		LR	13 19 56.4	
	comp=Z,40nm,20.4s,MS3.9,baz=250,slow=29							
PDAR	**Pinedale Array**	**95.75**	**43**	P		**P**	**12 49 09.3**	**-0.4**
	comp=Z,1.3nm,1.2s,mb4.2,baz=236,slow=3.3,SNR=3.4							
COLA	**College**	**97.65**	**12**	P		**P**	**12 49 16.4**	**-1.4**
	comp=Z,1.0nm,0.5s,mb4.6							
ILAR	**Eielson Array**	**97.74**	**13**	P		**P**	**12 49 16.6**	**-1.6**
	comp=Z,0.4nm,0.9s,mb3.9,baz=221,slow=5.7,SNR=6.7							
CPUP	**Villa Florida**	**99.66**	**128**	LR		LR	13 30 31.1	
	comp=Z,52nm,18.9s,MS4.1,baz=330,slow=33							
YKA	**Yellowknife Ar**	**105.16**	**25**	PKIKP			12 54 03.0	
YKA	comp=Z,0.1nm,0.6s,baz=253,slow=1.6,SNR=6.0			PKKPbc			13 05 31.9	
	comp=Z,0.2nm,0.5s,baz=38,slow=3.1,SNR=7.5							
MKAR	**Makanchi Array**	**118.08**	**310**	PKP		PKPdf	12 54 29.2	-3.8
	comp=Z,0.4nm,0.5s,baz=89,slow=4.9,SNR=4.4							
KURK	**Kurchatov**	**121.34**	**314**	*e*PKP		PKPdf	12 54 33.3	-6.0
ZRNK	**Zerenda**	**127.51**	**316**	*e*PKPdf		PKPdf	12 54 47.8	-3.2
ARCES	**ARCESS Array B**	**138.61**	**348**	PKhKP			12 54 58.5	
	comp=Z,2.4nm,0.9s,baz=315,slow=5.1,SNR=4.0							
ARCES				PKP		PKPdf	12 55 09.5	-1.9
	comp=Z,1.2nm,0.8s,baz=134,slow=1.8,SNR=6.6							
JOF	**Joensuu**	**142.52**	**339**	*e*pkp		PKPdf	12 55 17.3	-1.1
KAF	**Kangasniemi**	**144.63**	**341**	*e*pkp		PKPdf	12 55

KRNR	**Karanay**	**0.25**	**203**	⇓*i*	PG	**Pg**	**14 14 46.5**	**-1.3**
KRNR				*e*	S	**Sg**	**14 14 50.5**	**-0.7**
KRNR					pmax	pmax		
	comp=Z,1μm,0.2s							
DLMR	**Dylym**	**0.30**	**272**	*i*	PG	**Pg**	**14 14 48.5**	**-0.2**
DLMR				*i*	S	**Sg**	**14 14 55.0**	**+2.2**
DLMR					pmax	pmax		
	comp=Z,2μm,0.2s							
MAK	**Makhachkala**	**0.35**	**106**	⇓*i*	PG	**Pg**	**14 14 49.4**	**-0.4**
MAK				*i*			14 14 54.5	
MAK					pmax	pmax		
	comp=Z,540nm,0.4s							
MAK					pmax	pmax		
	comp=Z,600nm,0.2s							
MAK					smax			
	comp=N,5μm,0.4s							
MAK					smax			
	comp=E,6μm,0.4s							
UNCR	**Uncukul**	**0.39**	**208**	⇑*i*	PG	**Pg**	**14 14 50.2**	**-0.3**
UNCR				*i*	S	**Sg**	**14 14 56.7**	**+1.0**
ARKR	**Arakani**	**0.46**	**184**	*i*	PG	**Pg**	**14 14 50.0**	**-1.9**
ARKR				*i*	S	**Sg**	**14 14 57.0**	**-1.0**
ARKR					pmax	pmax		
	comp=Z,216nm,0.3s							
MNSR	**Manas**	**0.61**	**125**	⇑*i*	PG	**Pg**	**14 14 54.0**	**-0.9**
MNSR				*e*	S	**Sg**	**14 15 05.0**	**+1.9**
GNBR	**Gunib**	**0.67**	**185**	*e*	PG	**Pg**	**14 14 54.5**	**-1.6**
GNBR				*e*	S	**Sg**	**14 15 04.5**	**-0.6**
BTLR	**Botlikh**	**0.72**	**237**	*e*	PG	**Pg**	**14 14 56.0**	**-1.1**
BTLR				*i*	S	**Sg**	**14 15 07.8**	**+1.1**
BTLR					pmax	pmax		
	comp=Z,178nm,0.2s							
SGKR	**Sergokala**	**0.75**	**143**	*i*	PG	**Pg**	**14 14 58.0**	**+0.3**
SGKR				*i*	S	**Sg**	**14 15 11.5**	**+3.8**
KMKR	**Kumukh**	**0.93**	**177**	*e*	PG	**Pg**	**14 15 00.5**	**-0.7**
KMKR				*i*	S	**Sg**	**14 15 14.0**	**+0.4**
KMKR					pmax	pmax		
	comp=Z,154nm,0.2s							
AKT	**Akhty**	**1.66**	**162**	*i*	PN	**Pn**	**14 15 13.0**	**+0.1**
AKT					S	**Sb**	**14 15 36.0**	**+1.2**
KSMR	**Kasumkent**	**1.66**	**151**	*i*	PN	**Pn**	**14 15 13.0**	**+0.1**
KSMR				*e*	S	**Sb**	**14 15 36.0**	**+1.0**
KIV	**Kislovodsk**	**3.29**	**287**	*k*	PN	**Pg**	**14 15 47.1**	**-1.3**
KIV				*e*	S	**Sn**	**14 16 15.3**	**-1.1**
KIV				*i*			14 16 28.4	
KIV					pmax	pmax		
	comp=Z,12nm,0.6s							
KIV					pmax	pmax		
	comp=Z,34nm,0.6s							
KIV					smax			
	comp=E,29nm,0.6s							
KIV					smax			
	comp=E,70nm,0.7s							
GOF	**Gofitskoye**	**3.51**	**306**	⇑*i*	PN	**Pg**	**14 15 54.5**	**+1.7**
GOF				*i*	S	**Sn**	**14 16 38.0**	**+16**
GOF					pmax	Sg		
	comp=Z,30nm,0.8s							
GOF					smax			
	comp=N,120nm,1.2s							
AB31	**Akbulak array**	**10.88**	**51**	⇑	P	**P**	**14 17 17.4**	**-4.9**
	comp=N,0.2nm,0.3s,baz=238,slow=12,SNR=17							
AB31				⇑	S	**S**	**14 19 12.9**	**-13**
	comp=N,0.5nm,0.3s,baz=245,slow=25,SNR=9.0							

*IDC **15** 15:07:53.0±16.0, 11.58S×164.82E, h162km±153km, mb3.6/8, mb1 3.7/9, mb1mx3.5/17, ML3.6/1, MS3.4/3, Ms1 3.3/3, ms1mx3.0/20, Error ellipse: s-maj=52.8km s-min=26.1km az=24.0*

*NEIC **15** 15:08:10.0±4.9, 12.13S×164.53E, h332km±49km, mb4.1/5, Error ellipse: s-maj=30.0km s-min=18.5km az=45.0*

ISC 15 15:08:08.5±0.9, 12.2S±0.1×164.6E±0.1, h332km, n14, σ0§80/14, mb3.7/11, Santa Cruz Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**17.30**	**277**	P		**P**	**15 11 50.9**	**-0.1**
	32nm,1.7s							
CTA	**Charters Tower**	**19.25**	**243**	P		**P**	**15 12 11.0**	**+0.5**
	0.1nm,0.3s,baz=70,slow=13,SNR=2.7							
CTA				LR		LR	15 18 06.6	
	comp=Z,74nm,18.4s,baz=233,slow=31							
CTAO	**Charters Tower**	**19.25**	**243**	P		**P**	**15 12 11.1**	**+0.6**
	3.7nm,0.8s							
URZ	**Urewera**	**28.31**	**159**	P		**P**	**15 13 34.6**	**0.0**
	7.4nm,0.9s,mb3.9,baz=344,slow=18,SNR=1.9							
STKA	**Stephens Creek**	**28.83**	**223**	P		**P**	**15 13 43.2**	**+4.0**
	2.2nm,0.8s,mb3.5,baz=37,slow=10,SNR=2.8							
STKA				LR		LR	15 25 31.2	
	comp=Z,84nm,18.8s,baz=198,slow=36							
WRAB	**Tennant Creek**	**29.99**	**251**	*e*	P	**P**	**15 13 47.3**	**-2.2**
	22nm,1.6s,mb4.1							
WRA	**Warramunga Arr**	**30.01**	**251**	P		**P**	**15 13 49.7**	**+0.1**
	0.6nm,1.1s,mb2.8,baz=80,slow=8.5,SNR=3.7							
ASAR	**Alice Springs**	**31.25**	**244**	P		**P**	**15 14 00.8**	**+0.5**
	0.4nm,0.5s,mb2.9,baz=66,slow=10,SNR=6.4							
ASAR				LR		LR	15 26 53.0	
	comp=Z,59nm,19.7s,baz=5.8,slow=36							
QSPA	**South Pole Qui**	**77.85**	**180**	*e*	P	**P**	**15 19 26.4**	**-4.5**
	1.7nm,0.9s,mb3.8							
ULN	**Ulaanbaatar**	**78.51**	**325**	*e*	P	**P**	**15 19 35.3**	**+0.3**
	2.4nm,0.6s,mb4.1							
SONM	**Songino Array**	**78.87**	**324**	P		**P**	**15 19 36.6**	**-0.2**
	0.9nm,0.8s,mb3.6,baz=116,slow=5.6,SNR=4.6							
ILAR	**Eielson Array**	**84.94**	**19**	P		**P**	**15 20 06.9**	**-0.6**
	0.2nm,0.7s,mb3.1,baz=230,slow=7.0,SNR=2.9							
MKAR	**Makanchi Array**	**93.53**	**317**	P		**P**	**15 20 49.4**	**+1.0**
	3.0nm,0.6s,mb4.5,baz=94,slow=6.5,SNR=33							
ZAL	**Zalesovo**	**93.78**	**324**	P		**P**	**15 20 49.2**	**0.0**
	0.7nm,0.2s,mb4.2,baz=252,slow=19,SNR=3.2							

DJA 15 15:13:48.0±1.0, 9.84S×113.98E, h30km±5km, MD4.7/1, ML4.0/4, 6C-2D, Error ellipse: s-maj=21.2km s-min=17.2km az=34.0, South of Jawa

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
INGI	**Ingas**	**1.54**	**49**	⇓*i*	Pn	Pn	15 14 11.8	-2.0
	157nm,0.2s							
INGI				⇑*i*	Sn	Sn	15 14 29.9	-3.1
KELI	**Kelakatan**	**1.69**	**17**	⇑*i*	Pn	Pn	15 14 14.6	-1.5
	134nm,0.2s							
KELI				⇑*e*	Sn	Sn	15 14 33.4	-3.5
RATI	**Rata**	**1.89**	**54**	⇓*e*	Pn	Pn	15 14 16.7	-2.3
	114nm,0.2s							
RATI				⇑*i*	Sn	Sn	15 14 38.7	-3.4
KEDI	**Kedomdong**	**2.50**	**58**	⇑*e*	Pn	Pn	15 14 26.1	-1.5
	27nm,0.2s							
KEDI	**Kedomdong**	**2.50**	**58**	⇑*i*	P	Pn	15 14 27.3	-0.3

*CASC **15** 15:22:14.1±2.0, 6.93N×78.72W, h17km, MD4.8, MW4.5, mb3.9(NEIC)*

*IDC **15** 15:22:21.9±1.1, 7.04N×79.66W, mb3.7/8, mb1 4.1/12, mb1mx4.0/22, ML3.7/4, MS3.3/5, Ms1 3.3/5, ms1mx3.1/22, Error ellipse: s-maj=34.5km s-min=18.4km az=40.0*

*NEIC **15** 15:22:23.6±5.3, 6.99N×79.68W, h17km±35km, mb3.9/4, Error ellipse: s-maj=18.0km s-min=11.8km az=46.0*

ISC 15 15:22:23.1±0.5, 7.19N±0.05×79.47W±0.04, h17km, n39, σ1§27/42, mb3.8/11, MS3.2/4, 5C-1D, South of Panama

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
AZU	**Azuero**	**0.99**	**307**	⇑*i*	P	**Pb**	**15 22 39.3**	**-2.2**
ACH	**Altos**	**1.53**	**343**	⇑*e*	P	**Pn**	**15 22 49.2**	**-0.8**
UPA	**Univ. de Panam**	**1.78**	**358**	⇑*e*	P	**Pn**	**15 22 53.6**	**+0.1**
UPA				*e*	S	**Sn**	**15 23 17.0**	**+1.1**
JEF	**Cerro Jefe**	**2.02**	**3**	⇑*e*	P	**Pn**	**15 22 57.4**	**+0.5**
JEF				*e*	S	**Sn**	**15 23 21.6**	**-0.3**
PTP1	**Petroterminal**	**3.10**	**289**	⇓*e*	P	**Pn**	**15 23 16.6**	**+4.3**
PTP1				*e*	S	**Sn**	**15 24 09.6**	**+20**
DVD	**David**	**3.20**	**293**	*e*	P	**Pn**	**15 23 13.2**	**-0.6**
DVD				*e*	S	**Sn**	**15 24 01.9**	**+10**
ACR	**Cerro Adams**	**3.94**	**292**	*e*	P	**Pn**	**15 23 23.0**	**-1.2**
BUS	**Buena Vista**	**4.85**	**299**	*e*	P	**Pn**	**15 23 37.3**	**+0.2**
BUS				*e*	S	**Sn**	**15 24 44.2**	**+11**
URSC	**Urasca**	**5.00**	**302**	*e*	P	**Pn**	**15 23 38.8**	**-0.5**
LCR2	**La Lucha 2**	**5.15**	**300**	⇑*e*	P	**Pn**	**15 23 41.6**	**+0.2**
LCR2				*e*	S	**Sn**	**15 24 50.7**	**+10**
LAJ	**Bijagual**	**5.31**	**300**	*e*	P	**Pn**	**15 23 49.0**	**+5.4**
TRTC	**Tortuguero**	**5.37**	**309**	*e*	P	**Pn**	**15 23 46.2**	**+1.7**
ROSC	**El Rosal**	**5.62**	**114**	Pn		**Pn**	**15 23 48.6**	**+0.7**
	14nm,0.3s,baz=326,slow=3.2,SNR=16							
ROSC				LR		LR	15 26 21.8	
	comp=Z,237nm,19.7s,baz=311,slow=42							
CGA2	**Cerro Gallo 2**	**5.68**	**300**	*e*	P	**Pn**	**15 23 50.4**	**+1.5**
JCR	**Jicaral**	**6.17**	**296**	*e*	P	**Pn**	**15 23 55.7**	**-0.2**
JTS	**JuntasAbangare**	**6.23**	**300**	Pn		**Pn**	**15 23 52.6**	**-4.1**
	1.7nm,0.3s,baz=274,slow=22,SNR=7.2							
JTS				Sn		**Sn**	**15 25 18.6**	**+10**
	0.3nm,0.3s,baz=131,slow=19,SNR=2.1							
OTAV	**Otavalo**	**6.98**	**172**	*e*	Pn	**Pn**	**15 24 03.6**	**-3.6**
OTAV				*e*	Pg	Pn	15 24 34.1	+27
SDV	**Santo Domingo**	**8.91**	**79**	Pn		**P**	**15 24 34.5**	**+0.4**
	2.5nm,0.3s,baz=270,slow=6.9,SNR=18							
SDV				Sn		**Sn**	**15 26 12.0**	**-3.2**
	6.2nm,0.3s,baz=45,slow=19,SNR=10							
PCRV	**Puerto La Cruz**	**14.96**	**78**	Pn		**P**	**15 25 56.8**	**+1.0**
	0.5nm,0.3s,baz=251,slow=1.0,SNR=2.8							
LPAZ	**La Paz**	**25.89**	**154**	P		**P**	**15 27 56.8**	**+0.7**
	1.6nm,0.8s,mb3.6,baz=286,slow=6.5,SNR=4.4							
LPAZ				LR		LR	15 38 48.9	
	comp=Z,58nm,21.3s,MS3.1,baz=88,slow=38							
LPAZ	**La Paz**	**25.89**	**154**	*e*	P	**P**	**15 27 56.5**	**+0.4**
	1.0nm,0.8s,mb3.4							
LPAZ				LR		LR	15 38 48.9	
PLAL	**Pickwick Lake**	**28.77**	**345**	P		**P**	**15 28 22.2**	**0.0**
TXAR	**Lajitas Array**	**31.69**	**317**	P		**P**	**15 28 46.3**	**-1.9**
	0.1nm,0.4s,mb3.0,baz=135,slow=6.4,SNR=2.9							
TXAR				LR		LR	15 42 49.1	
	comp=Z,45nm,18.3s,MS3.2,baz=160,slow=39							
CCM	**Cathedral Cave**	**32.53**	**343**	*e*	P	**P**	**15 28 53.8**	**-1.6**
	2.7nm,0.6s,mb4.3							
ANMO	**Albuquerque**	**37.13**	**322**	*e*	P	**P**	**15 29 33.1**	**-1.8**
	2.4nm,1.0s,mb4.0							
BDFB	**Brasilia**	**38.54**	**126**	LR		LR	15 44 50.6	
	comp=Z,66nm,21.1s,MS3.4,baz=106,slow=35							
CPUP	**Villa Florida**	**39.65**	**148**	LR		LR	15 47 13.4	
	comp=Z,45nm,19.8s,MS3.3,baz=333,slow=38							
ISCO	**Idaho Springs**	**40.05**	**328**	*e*	P	**P**	**15 29 56.2**	**-2.9**
WUAZ	**Wupatki**	**40.62**	**319**	P		**P**	**15 30 03.9**	**+0.1**
	1.9nm,0.8s,mb3.8							
PV10	**Paradox Valley**	**40.96**	**324**	*e*	P	**P**	**15 30 08.0**	**+1.4**
PDAR	**Pinedale Array**	**44.25**	**328**	P		**P**	**15 30 35.0**	**+1.6**
	0.6nm,0.6s,mb3.5,baz=131,slow=8.3,SNR=8.4							
ULM	**Lac du Bonnet**	**45.06**	**345**	P		**P**	**15 30 39.8**	**-0.1**
	2.4nm,0.6s,mb4.2,baz=136,slow=4.6,SNR=3.5							
NVAR	**Mina Array Bea**	**46.84**	**318**	P		**P**	**15 30 55.1**	**+1.0**
	0.5nm,0.7s,mb3.5,baz=135,slow=7.7,SNR=3.2							
SCHQ	**Schefferville**	**48.58**	**10**	P		**P**	**15 31 09.4**	**+1.9**
	1.6nm,0.7s,mb4.2,baz=200,slow=9.2,SNR=2.9							
YKA	**Yellowknife Ar**	**60.86**	**342**	P		**P**	**15 32 35.0**	**-1.9**
	0.4nm,0.6s,mb3.8,baz=134,slow=7.0,SNR=13							
ILAR	**Eielson Array**	**74.00**	**336**	P		**P**	**15 34 00.3**	**+1.0**
	0.4nm,0.6s,mb3.5,baz=111,slow=3.6,SNR=5.0							
ASAR	**Alice Springs**	**144.03**	**239**	PKhKP			15 41 56.1	
	0.5nm,0.5s,baz=115,slow=3.7,SNR=11							
WB2	**Warramunga Arr**	**144.85**	**245**	*e*	P	PKPbc	15 41 59.2	-1.1
WRA	**Warramunga Arr**	**144.86**	**245**	PKP		PKPdf	15 41 58.6	-5.4
	2.1nm,0.8s,baz=104,slow=3.1,SNR=21							

*NIED **15** 15:37:00, 37.30N×141.80E, h35km, Mw4.5 Best double couple: M0 7.21×10^15 NP1:φs19°, δ72°, λ86°. NP2:φs212°, δ19°, λ103°.*

*BJI **15** 15:37:39.0, 37.26N×141.90E, h48km, mB4.8, mb4.6, Ms4.0, Msz3.8*

*JMA **15** 15:37:40.5±0.2, 37.30N×141.76E, h44km±3km, M4.6*

JMA Felt II J1.

*NEIC **15** 15:37:41.4±0.2, 37.32N×141.78E, mb4.8/27, Error ellipse: s-maj=6.3km s-min=4.3km az=141.0*

NEIC Recorded [2 JMA] in Fukushima and Miyagi; [1 JMA] in Iwate and Tochigi Prefectures.

*IDC **15** 15:37:41.5±0.4, 37.28N×141.73E, h37km±3km, mb4.1/23, mb1 4.3/27, mb1mx4.3/29, ML4.0/4, MS3.8/15, Ms1 3.8/15, ms1mx3.5/37, Error ellipse: s-maj=12.0km s-min=9.8km az=105.0*

*MOS **15** 15:37:41.3±0.8, 37.62N×141.60E, h35km, mb5.1/20, Error ellipse: s-maj=16.6km s-min=6.9km az=110.4*

ISC 15 15:37:39.4±0.6, 37.27N±0.03×141.81E±0.04, h36km±4km, h37km±1.1km:pP-P, n190, σ1§04/204, mb4.7/85, MS3.9/25, 8C-14D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.75**	**278**	⇓	P	**P**	**15 37 54.2**	**+0.6**
JFK				*e*	S	**S**	**15 38 03.5**	**-0.4**
ONAJ	**Iwakimizuishiy**	**0.83**	**259**	⇓	P	**P**	**15 37 55.4**	**+0.8**
ONAJ				*e*	S	**S**	**15 38 05.5**	**-0.3**
JMM	**Marumori**	**1.00**	**307**	⇓	P	**P**	**15 37 57.6**	**+0.4**
JMM				*e*	S	**S**	**15 38 10.2**	**-0.1**
JHO	**Hitachi**	**1.19**	**237**	⇓	P	**P**	**15 38 00.1**	**+0.2**
JHO				*e*	S	**S**	**15 38 14.3**	**-0.9**
JFT	**Otama**	**1.20**	**282**	⇓	P	**P**	**15 38 01.4**	**+1.5**
JFT				*e*	S	**S**	**15 38 15.8**	**+0.5**
JIO	**Ouri**	**1.24**	**343**	⇓	P	**P**	**15 38 00.8**	**+0.3**
JIO				*e*	S	**S**	**15 38 14.6**	**-1.7**
JOU	**Okura**	**1.42**	**321**	⇓	P	**P**	**15 38 03.9**	**+0.7**
JOU				*e*	S	**S**	**15 38 21.2**	**+0.3**
JYS	**Shirataka**	**1.68**	**305**	⇓	P	**P**	**15 38 07.9**	**+1.1**
JYS				*e*	S	**S**	**15 38 28.6**	**+1.3**
JFY	**Yanaizu**	**1.68**	**275**	⇓	P	**P**	**15 38 08.0**	**+1.1**
JFY				*e*	S	**S**	**15 38 27.8**	**+0.3**
JMK	**Ichinoseki**	**1.74**	**345**	⇓	P	**P**	**15 38 08.3**	**+0.5**
JMK				*e*	S	**S**	**15 38 28.3**	**-0.7**
MAJO	**Matsushiro**	**2.98**	**257**	*e*	P	**P**	**15 38 26.9**	**+1.5**
MAJO				*e*	S	**S**	**15 38 55.7**	**-4.6**
MAT	**Matsushiro**	**2.98**	**257**	P		**P**	**15 38 26.9**	**+1.5**
MAT				S		**S**	**15 38 58.3**	**-2.0**
MAT	**Matsushiro**	**2.98**	**257**	*e*	P	**P**	**15 38 27.0**	**+1.6**
MAT				*e*	S	**S**	**15 38 58.0**	**-2.3**
JHJ	**Hachijo jima 2**	**4.46**	**202**	Pn		**P**	**15 38 46.6**	**+0.1**
	49nm,0.3s,baz=5.3,slow=22,SNR=17							
JHJ				Sn		**S**	**15 39 35.5**	**-2.4**
	64nm,0.3s,baz=84,slow=23,SNR=10							
JHJ				LR		LR	15 40 46.3	
	comp=Z,458nm,19.5s,baz=334,slow=42							
ASAJ	**Asahikawa**	**6.87**	**5**	Pn		**P**	**15 39 18.9**	**-1.4**
	3.4nm,0.3s,baz=252,slow=7.5,SNR=21							
ASAJ				Sn		**S**	**15 40 36.5**	**-1.6**
	5.0nm,0.3s,baz=53,slow=33,SNR=6.7							
YUK	**Yuzh-Kuril'sk**	**7.42**	**23**	*e*	P	**P**	**15 39 25.4**	**-2.7**
YUK				*i*	S	**S**	**15 40 42.8**	**-9.2**
YUK					pmax	pmax		
	comp=N,70nm,0.3s							
YUK					pmax	pmax		
	comp=Z,110nm,0.3s							
YUK					smax			
	comp=N,950nm,0.4s							
YUK					smax			
	comp=E,520nm,0.6s							
YUK					smax			
	comp=N,1μm,0.8s							
YUK					smax			
	comp=E,1μm,0.6s							
KUR	**Kuril'sk**	**9.17**	**28**	P		**P**	**15 40 01.5**	**+9.3**
KUR				*e*	S	**S**	**15 41 25.0**	**-10**
KUR					smax			
	comp=E,100nm,0.5s							
YSS	**Yuzh-Sakhalins**	**9.70**	**4**	*e*	P	**P**	**15 39 57.0**	**-2.6**
YSS				*e*	S	**S**	**15 41 35.0**	**-13**
YSS					pmax	pmax		
	comp=N,20nm,0.9s							
YSS					pmax	pmax		
	comp=Z,20nm,0.9s							
YSS					smax			
	comp=Z,30nm,1.1s							
YSS					MLR	MLR		
	comp=Z,500nm,19.0s							
YSS	**Yuzh-Sakhalins**	**9.70**	**4**	*e*	P	**P**	**15 39 56.3**	**-3.3**
	comp=Z,21nm,0.8s							
JNU	**Nakatsue**	**9.86**	**248**	Pn		**P**	**15 40 01.1**	**-0.6**
	comp=Z,0.7nm,0.3s,baz=32,slow=15,SNR=6.9							
JNU				LR		LR	15 43 59.9	
	comp=Z,348nm,21.5s,baz=269,slow=39							
CBIJ	**Chichi jima**	**10.15**	**178**	Pn		**P**	**15 40 04.5**	**-1.4**
	comp=Z,4.1nm,0.3s,baz=265,slow=22,SNR=8.8							
CBIJ				Sn		**S**	**15 41 47.8**	**-12**
	comp=Z,6.0nm,0.3s,baz=278,slow=22,SNR=5.8							
KS15	**Wonju Array Si**	**11.09**	**275**	*e*	P	**P**	**15 40 19.7**	**+1.1**
CN2	**Changchun**	**14.04**	**303**	*e*	P	**P**	**15 40 59.3**	**+1.5**
CN2					AMB	AMB		
	comp=Z,10.0nm,0.9s							
SNY	**Shenyang**	**14.78**	**294**	*e*	P	**P**	**15 41 09.1**	**+1.5**
SNY					LR	LR		
	comp=E,400nm,17.7s							
SNY					LR	LR		
	comp=Z,430nm,18.0s							
DL2	**Dalian**	**15.98**	**282**	P		**P**	**15 41 23.3**	**+0.3**
DL2					AMB	AMB		
	comp=Z,20nm,0.8s							
DL2					LR	LR		
	comp=N,110nm,13.2s							
DL2					LR	LR		
	comp=E,150nm,18.0s							
DL2					LR	LR		
	comp=Z,250nm,21.0s							
SSE	**Sheshan**	**18.13**	**256**	P		**P**	**15 41 51.8**	**+1.7**
SSE				S		**S**	**15 45 09.9**	**+1.9**
SSE				PCP		PcP	15 46 26.5	+3.1
SSE					AMB	AMB		
	comp=Z,36nm,0.7s							
SSE					AMB	AMB		
	comp=Z,54nm,5.7s							
SSE					LR	LR		
	comp=N,151nm,22.5s							
SSE					LR	LR		
	comp=E,160nm,22.7s							
SSE					LR	LR		
	comp=Z,231nm,19.5s							
NJ2	**Nanjing**	**19.57**	**261**	*e*	P	**P**	**15 42 08.8**	**+1.7**
NJ2					AP		15 42 19.9	
NJ2					PP	PP	15 42 25.0	-0.3
NJ2					AMB	AMB		
	comp=Z,20nm,0.5s							
NJ2					AMB	AMB		
	comp=Z,310nm,8.6s							
NJ2					LR	LR		
	comp=N,280nm,16.2s							
NJ2					LR	LR		
	comp=E,420nm,22.4s							
NJ2					LR	LR		
	comp=Z,410nm,23.5s							
PET	**Petropavlovsk**	**19.65**	**31**	*e*	P	**P**	**15 42 01.4**	**-6.3**
PET					pmax	pmax		
	comp=Z,62nm,1.8s							
PET	**Petropavlovsk**	**19.65**	**31**	*e*	P	**P**	**15 42 07.3**	**-0.4**
	comp=Z,244nm,2.4s							
TIA	**Tai'an**	**19.80**	**274**	*e*	P	**P**	**15 42 07.3**	**-2.2**
BJI	**Beijing**	**20.19**	**286**	*e*	P	**P**	**15 42 10.8**	**-2.8**
BJI					S	**S**	**15 45 49.9**	**-3.4**
BJI					AMB	AMB		
	comp=Z,16nm,1.0s							
BJI					LR	LR		
	comp=N,89nm,15.7s,MS3.4							
BJI					LR	LR		
	comp=E,126nm,19.2s,MS3.4							
CLNS	**Chul'man**	**22.60**	**335**	*e*	P	**P**	**15 42 35.9**	**-1.8**
CLNS					pmax	pmax		
	comp=Z,10.0nm,0.8s,mb4.3							
CLNS					pmax	pmax		
	comp=N,10.0nm,1.2s							
CLNS					pmax	pmax		
	comp=E,10.0nm,1.0s							
MA2	**Magadan**	**23.06**	**12**	*e*	P	**P**	**15 42 43.5**	**+1.3**
MA2				*e*	S	**S**	**15 46 45.0**	**-1.4**
MA2					pmax	pmax		
	comp=Z,10.0nm,0.8s,mb4.3							
MA2					MLR	MLR		
	comp=Z,470nm,17.0s,MS4.0							
MA2	**Magadan**	**23.06**	**12**	*e*	P	**P**	**15 42 42.8**	**+0.6**
	comp=Z,16nm,0.8s,mb4.5							
HHC	**Hu-ho-hao-te**	**23.70**	**288**	*e*	P	**P**	**15 42 51.8**	**+3.2**
HHC					AP		15 43 02.6	
HHC					AMB	AMB		
	comp=Z,15nm,1.1s,mb4.3							
HHC					AMB	AMB		
	comp=Z,86nm,4.9s							
HHC					LR	LR		
	comp=N,98nm,13.3s,MS3.8							
HHC					LR	LR		
	comp=E,190nm,15.1s,MS3.8							
YAK	**Yakutsk**	**25.91**	**347**	*e*	P	**P**	**15 43 08.4**	**-1.2**
YAK				*e*	PP	pP	15 43 19.3	-0.3
YAK				*e*			15 43 26.8	
YAK				*e*	S	**S**	**15 47 34.3**	**-0.6**
YAK				*e*	SS	SS	15 47 49.0	-53
YAK					pmax	pmax		
	comp=N,9.0nm,1.1s							
YAK					pmax	pmax		
	comp=E,4.0nm,1.1s							
YAK					pmax	pmax		
	comp=Z,23nm,1.1s,mb4.6							
YAK					pmax			
	comp=N,4.0nm,0.9s							
YAK					pmax	pmax		
	comp=E,4.0nm,0.9s							
YAK					pmax	pmax		
	comp=Z,10.0nm,0.9s,mb4.3							
YAK					smax			
	comp=E,4.0nm,1.6s							
YAK					smax			
	comp=N,3.0nm,1.2s							
YAK	**Yakutsk**	**25.91**	**347**	*e*	P	**P**	**15 43 07.8**	**-1.8**
	comp=N,43nm,0.8s,mb5.0							
XAN	**Xi'an**	**26.84**	**273**	P		**P**	**15 43 16.8**	**-1.7**
XAN					AMB	AMB		
	comp=Z,7.0nm,0.8s,mb4.2							
ULN	**Ulaanbaatar**	**27.49**	**304**	*e*	P	**P**	**15 43 24.4**	**+0.2**
ULN	**Ulaanbaatar**	**27.49**	**304**	*e*	P	**P**	**15 43 24.0**	**-0.2**
	comp=Z,11nm,1.0s,mb4.3							
BOD	**Bodaibo**	**27.50**	**327**	⇓*i*	P	**P**	**15 43 22.9**	**-1.4**
BOD				*e*	pP	pP	15 43 33.5	-0.8
SONM	**Songino Array**	**27.92**	**303**	P		**P**	**15 43 27.7**	**-0.5**
	comp=Z,8.0nm,0.6s,mb4.5,baz=101,slow=9.2,SNR=32							
SONM					pP	pP	15 43 37.7	-0.5
	comp=Z,7.9nm,0.7s,baz=93,slow=8.4,SNR=12							
TGY	**Tagaytay City**	**29.63**	**224**	P		**P**	**15 43 43.8**	**0.0**
	comp=Z,44nm,0.4s,mb5.6,baz=163,slow=4.7,SNR=3.2							
LZH	**Lanzhou**	**30.34**	**279**	*e*	P	**P**	**15

TIXI MLR MLR
comp=Z,600nm,18.0s,MS4.4
TIXI Tiksi 35.09 353 *e*P **P** **15 44 29.4 -1.5**
comp=Z,14nm,2.1s,mb4.5
KMI Kunming 35.31 261 *e*P **P** **15 44 31.8 -1.4**
KMI AP pP 15 44 43.3 -0.2
KMI AMB AMB
comp=Z,16nm,1.0s,mb4.9
KMI LR LR
comp=N,116nm,14.6s,MS4.0
KMI LR LR
comp=E,151nm,15.2s,MS4.0
KMI LR LR
comp=Z,196nm,22.1s
WMQ Urumqi 41.02 297 P **P** **15 45 22.3 +1.7**
CMAR Chiang Mai Arr 41.86 255 P **P** **15 45 28.2 +0.3**
comp=Z,1.5nm,0.8s,mb3.7,baz=55,slow=6.6,SNR=7.3
CMAR LR LR 16 03 38.8
comp=Z,73nm,20.1s,MS3.5,baz=70,slow=37
ZAL Zalesovo 42.00 312 P **P** **15 45 28.8 +0.2**
comp=Z,17nm,1.2s,mb4.6,baz=294,slow=7.7,SNR=32
ZAL pP pP 15 45 39.5 +0.4
comp=Z,9.4nm,1.0s,baz=302,slow=8.7,SNR=13
ZAL LR LR 16 04 16.6
comp=Z,179nm,18.5s,MS4.0,baz=119,slow=38
NVS Novosibirsk 42.91 314 *i* P **P** **15 45 34.3 -1.6**
NVS *i* pP 15 45 45.3 -1.2
NVS pmax pmax
comp=Z,13nm,0.9s,mb4.7
NVS pmax pmax
comp=E,12nm,0.9s
NVS pmax pmax
comp=N,3.0nm,0.7s
MKAR Makanchi Array 44.26 302 P **P** **15 45 46.7 -0.3**
comp=N,21nm,0.8s,mb4.9,baz=89,slow=10.0,SNR=36
MKAR pP pP 15 45 57.1 -0.5
comp=N,20nm,0.8s,baz=90,slow=9.9,SNR=11
MKAR LR LR 16 05 25.4
comp=N,70nm,18.9s,MS3.6,baz=264,slow=38
MKAR Makanchi Array 44.26 302 *i* P **P** **15 45 46.6 -0.4**
MKAR pmax pmax
comp=Z,18nm,0.8s
MKAR Makanchi Array 44.26 302 P **P** **15 45 46.7 -0.3**
MKAR pP pP 15 45 57.1 -0.5
MKAR LR LR 16 05 25.4
KURK Kurchatov 46.04 308 *i* P **P** **15 46 10.9 +10**
KURK pmax pmax
comp=Z,30nm,1.0s,mb5.2
KURK Kurchatov 46.04 308 *e*P **P** **15 46 00.4 -0.8**
KURK *e*pP pP 15 46 11.2 -0.5
IMA Indian Mountai 46.32 31 P **P** **15 46 01.0 -2.2**
comp=Z,4.9nm,0.7s,mb4.5
IMA *e*pP pP 15 46 11.4 -2.3
PKI Pulchoki 47.97 275 *e*P **P** **15 46 15.5 -1.2**
comp=Z,24nm,1.0s,mb5.2
KKN Kakani 47.98 276 *e*P **P** **15 46 16.1 -0.6**
comp=Z,37nm,0.9s,mb5.4
DMN Daman 48.20 276 *e*P **P** **15 46 17.9 -0.5**
comp=Z,26nm,1.1s,mb5.2
GKN Gorkha 48.39 276 *e*P **P** **15 46 19.6 -0.3**
comp=Z,86nm,1.0s,mb5.8
COLA College 48.71 32 *e*P **P** **15 46 20.9 -0.9**
DANN Dangsing 48.94 277 *e*P **P** **15 46 23.8 -0.3**
ILAR Eielson Array 49.12 32 P **P** **15 46 25.0 -0.1**
comp=Z,3.7nm,0.7s,mb4.5,baz=269,slow=6.5,SNR=46
KOLN Koldanda 49.32 277 *e*P **P** **15 46 26.9 -0.1**
comp=Z,54nm,1.2s,mb5.5
TKM2 Tokmak 2 49.80 298 P **P** **15 46 31.0 +0.4**
SNR=10
KZA Kyzart 50.30 297 P **P** **15 46 35.4 +1.1**
SNR=7.2
KBK Karagaybulak 50.33 298 P **P** **15 46 34.8 +0.2**
SNR=14
VOSK Vostochnaya 50.36 312 P **P** **15 46 33.8 -0.9**
VOSK pmax pmax
comp=Z,14nm,1.0s,mb5.0
BVAR Borovoye Array 50.65 312 LR LR 16 09 12.2
comp=Z,124nm,18.6s,MS4.0,baz=50,slow=37
BRVK Borovoye 50.70 312 *e*P **P** **15 46 36.6 -0.7**
EKS2 Erkin-Say 51.15 299 P **P** **15 46 40.4 -0.4**
SNR=7.3
AML Almayashu 51.38 298 P **P** **15 46 43.5 +1.0**
SNR=15
ZRNK Zerenda 51.48 312 P **P** **15 46 42.2 -1.0**
ZRNK Zerenda 51.48 312 *e*P **P** **15 46 42.4 -0.8**
KKAR Karatay Array 53.28 300 *i* P **P** **15 46 55.5 -1.3**
KKAR pmax pmax
comp=Z,1.0nm,0.6s,mb3.9
INK Inuvik 54.03 27 P **P** **15 47 02.1 +0.1**
comp=Z,4.0nm,0.8s,mb4.4,baz=284,slow=6.6,SNR=19
SVE Sverdlovsk 55.18 319 *e*P **P** **15 47 07.5 -3.0**
SVE pmax pmax
comp=Z,40nm,1.2s,mb5.3
ARU Arti 56.39 319⇑ *i*P **P** **15 47 18.1 -1.1**
ARU *i* 15 48 12.9
ARU *i* 15 49 20.8
ARU *e*S **S** **15 55 03.3 -2.3**
ARU *e*SS SS 15 58 50.3 -3.0
ARU pmax pmax
comp=Z,24nm,1.0s,mb5.2
ARU Arti 56.39 319 *e*P **P** **15 47 18.2 -1.0**
comp=Z,19nm,0.9s,mb5.1
FITZ Fitzroy Crossi 57.15 198 *e*P **P** **15 47 24.8 -0.3**
comp=Z,2.2nm,0.8s,mb4.2
WRAB Tennant Creek 57.33 188 *e*P **P** **15 47 24.6 -1.8**
comp=Z,6.3nm,0.7s,mb4.8
WB2 Warramunga Arr 57.34 188 *e*P **P** **15 47 25.0 -1.4**
WRA Warramunga Arr 57.34 188 P **P** **15 47 25.1 -1.4**
comp=Z,2.9nm,0.8s,mb4.4,baz=5.9,slow=6.9,SNR=45
WRA pP pP 15 47 37.2 -0.1
comp=Z,3.4nm,0.8s,baz=4.8,slow=7.3,SNR=8.5
AB31 Akbulak array 58.03 310 *i* P **P** **15 47 29.5 -1.4**
AB31 pmax pmax
comp=Z,4.0nm,0.6s,mb4.6
DLBC Dease Lake 58.24 38 P **P** **15 47 33.4 +1.2**
comp=Z,3.7nm,1.1s,mb4.3,baz=176,slow=26,SNR=6.2
DLBC Dease Lake 58.24 38 P **P** **15 47 33.4 +1.2**
HYB Hyderabad 58.53 269 *i* P **P** **15 47 33.5 -1.3**
HYB Hyderabad 58.53 269 *e*P **P** **15 47 33.5 -1.3**
ASAR Alice Springs 61.07 188 P **P** **15 47 51.2 -0.9**
comp=Z,1.5nm,0.8s,mb4.2,baz=6.2,slow=6.1,SNR=16
ASAR pP pP 15 48 02.4 -0.6
comp=Z,1.4nm,0.7s,baz=12,slow=5.6,SNR=8.3
KEV Kevo 63.33 339 *ep* **P** **15 48 05.5 -1.2**
YKA Yellowknife Ar 63.45 30 P **P** **15 48 07.2 -0.3**
comp=Z,1.2nm,0.6s,mb4.2,baz=303,slow=6.5,SNR=37
ARCES ARCESS Array B 63.89 339 P **P** **15 48 09.4 -0.8**
comp=Z,3.7nm,0.8s,mb4.5,baz=48,slow=7.0,SNR=14
ARCES LR LR 16 21 04.9
comp=Z,69nm,18.7s,MS3.9,baz=244,slow=41
JOF Joensuu 65.90 332 *ep* **P** **15 48 21.5 -1.8**
OBN Obninsk 68.10 323κ *i*P **P** **15 48 36.8 -0.4**
OBN *e* pP 15 48 49.7 +1.5
OBN pmax pmax
comp=Z,22nm,1.3s,mb5.0
OBN MLR MLR
comp=Z,100nm,17.0s,MS4.1
KAF Kangasniemi 68.24 333 *ep* **P** **15 48 36.6 -1.4**
baz=49,slow=6.0
FINES FINESS Array B 68.75 332 P **P** **15 48 40.5 -0.7**
comp=Z,4.9nm,0.8s,mb4.5,baz=56,slow=6.9,SNR=18
FINES pP pP 15 48 52.4 +0.2
comp=Z,3.5nm,0.7s,baz=48,slow=5.8,SNR=8.9
FINES LR LR 16 21 02.4
comp=Z,51nm,18.5s,MS3.8,baz=167,slow=38
STKA Stephens Creek 68.79 180 P **P** **15 48 41.8 -0.1**
comp=Z,4.3nm,1.1s,mb4.3,baz=280,slow=11,SNR=2.8
THR Tehran 69.86 300 P **P** **15 48 48.1 -0.2**
comp=Z,1.0nm,0.5s,mb4.0,baz=234,slow=1.0,SNR=4.2
THR pP pP 15 49 00.4 +1.0
comp=Z,3.4nm,1.0s,baz=266,slow=17,SNR=4.4
ZEI Tsey 70.91 309⇑ *e*P **P** **15 48 54.2 -0.5**
KIV Kislovodsk 70.99 311 *c* P **P** **15 48 55.1 0.0**
KIV *e**PP pP 15 49 07.3 +1.1
KIV pmax pmax
comp=Z,23nm,0.9s,mb5.1
KIV Kislovodsk 70.99 311 *e*P **P** **15 48 55.2 0.0**
comp=Z,30nm,0.9s,mb5.2
KIV *e*pP pP 15 49 06.9 +0.7
SOC Sochi 72.98 312 *e*P **P** **15 49 03.0 -3.9**
SOC *e* 15 49 22.7
SOC *e* 15 51 44.9
SOC *e* 15 59 04.0
SOC *e*SSS SSS 16 06 22.2 -1.1
SOC pmax pmax
comp=Z,42nm,2.3s,mb5.0
SOC pmax pmax
comp=N,5.0nm,0.7s
SOC pmax pmax
comp=E,22nm,0.8s
SOC MLR MLR
comp=Z,164nm,22.0s,MS4.3
SOC MLR MLR
comp=N,109nm,23.0s,MS4.2
SOC MLR MLR
comp=E,65nm,18.0s,MS4.2
FFC Flin Flon 73.33 33 *e*P **P** **15 49 09.3 +0.5**
comp=E,13nm,1.3s,mb4.7
FFC *e*pP pP 15 49 17.7 -2.1
NB2 NORSAR Subarra 74.09 337 P **P** **15 49 12.9 -0.1**
comp=E,11nm,1.0s,mb4.8,baz=39,slow=5.8
NOA NORSAR Array B 74.09 337 P **P** **15 49 12.9 -0.2**
comp=E,4.6nm,0.8s,mb4.4,baz=39,slow=5.8,SNR=12
NOA pP pP 15 49 25.0 +0.9
comp=E,3.5nm,0.7s,baz=38,slow=5.9,SNR=7.9
NOA LR LR 16 24 04.6
comp=E,90nm,21.9s,MS4.0,baz=20,slow=38
AKASG Malin Array Be 74.31 322 P **P** **15 49 14.0 -0.5**
comp=E,11nm,0.9s,mb4.8,baz=45,slow=5.6,SNR=25
AKASG pP pP 15 49 26.1 +0.5
comp=E,5.4nm,0.5s,baz=46,slow=6.0,SNR=14
AKASG LR LR 16 25 03.0
comp=E,62nm,18.3s,MS3.9,baz=35,slow=38
BOZ Bozeman (W) 74.32 44 *e*P **P** **15 49 16.0 +1.3**
comp=E,2.4nm,0.9s,mb4.1
NVAR Mina Array Bea 74.59 53 P **P** **15 49 18.4 +1.9**
comp=E,1.4nm,0.9s,mb3.9,baz=293,slow=3.5,SNR=6.6
NVAR pP pP 15 49 28.5 +1.1
comp=E,3.7nm,1.0s,baz=296,slow=3.5,SNR=6.4
NVAR LR LR 16 15 55.2
comp=E,26nm,21.1s,MS3.5,baz=130,slow=31
NVAR Mina Array Bea 74.59 53 P **P** **15 49 18.4 +1.9**
NVAR pP pP 15 49 28.5 +1.1
NVAR LR LR 16 15 55.2
FRB Frobisher Bay 76.47 13 LR LR 16 25 35.0
comp=E,67nm,19.5s,MS4.0,baz=334,slow=38
HWUT Hardware Ranch 76.84 48 *e*P **P** **15 49 30.1 +0.9**
comp=E,3.8nm,1.1s,mb4.2
PDAR Pinedale Array 77.28 46 P **P** **15 49 32.4 +0.8**
comp=E,0.7nm,0.6s,mb3.8,baz=291,slow=3.2,SNR=8.1
PDAR pP pP 15 49 44.2 +1.5
comp=E,1.0nm,0.8s,baz=285,slow=2.8,SNR=6.9
CTU Camp Tracy 77.29 48 *e*P **P** **15 49 32.1 +0.3**
MSU Marysvale 78.39 50 P **P** **15 49 39.5 +1.7**
MSU *e*pP pP 15 49 47.9 -1.0
BRTR Keskin Array B 78.93 312 P **P** **15 49 41.2 +0.4**
comp=E,2.2nm,0.8s,mb4.2,baz=135,slow=3.5,SNR=8.4
OJC Ojcow 79.02 326⇑ *i*P **P** **15 49 41.6 +0.6**
ULM Lac du Bonnet 79.13 34 P **P** **15 49 41.9 +0.2**
comp=E,0.9nm,0.5s,mb4.0,baz=334,slow=7.6,SNR=3.3
ULM LR LR 16 28 37.0
comp=E,49nm,18.9s,MS3.9,baz=7.5,slow=39
CRVS Cervenica-Dubn 79.22 325 *i* P **P** **15 49 42.2 +0.1**
CRVS *e* 15 49 47.1
NIE Niedzica 79.37 325 *e*P **P** **15 49 44.8 +1.9**
BSEG Bad Segeberg 79.99 333 *e*P **P** **15 49 47.1 +0.9**
BSEG pmax pmax
comp=Z,36nm,1.5s,mb5.1
OKC Ostrava-Krasne 80.03 327 *e*P **P** **15 49 46.8 +0.3**
KSP Ksiaz 80.07 328 *e*P **P** **15 49 46.8 +0.1**
PV10 Paradox Valley 80.38 49 *e*P **P** **15 49 50.5 +1.9**
PV10 *e*pP pP 15 50 00.7 +1.0
DPC Dobruska-Polom 80.43 328 *e*P **P** **15 49 49.3 +0.7**
UPC Upice 80.44 328 *e*P **P** **15 49 49.3 +0.7**
VYHS Vyhne 80.71 326 *i*P **P** **15 49 51.0 +0.9**
BRG Berggiesshubel 81.01 330 *e*P **P** **15 49 52.1 +0.4**
BRG pmax pmax
comp=Z,10.0nm,1.1s,mb4.7
BRG Berggiesshubel 81.01 330 *e*P **P** **15 49 52.1 +0.4**
comp=Z,9.5nm,1.1s,mb4.6
PVCC Panska Ves 81.02 329 *e*P **P** **15 49 52.8 +1.1**
CLL Collm 81.05 330 P **P** **15 49 51.3 -0.6**
comp=Z,logA/T=1.2,mb4.9
CLL *i* *SP sP 15 50 04.3 -2.6
CLL *i* 15 50 16.3
CLL Collm 81.05 330 *i* P **P** **15 49 51.3 -0.6**
CLL pmax pmax
comp=Z,16nm,1.1s,mb4.9
CLL Collm 81.05 330 *i* P **P** **15 49 51.3 -0.6**
comp=Z,16nm,1.1s,mb4.9
PRU Pruhonice 81.45 329 P **P** **15 49 54.5 +0.5**
comp=Z,13nm,1.1s,mb4.8
PRU Pruhonice 81.45 329 P **P** **15 49 54.5 +0.5**
PRU pmax pmax
comp=Z,13nm,1.1s,mb4.8
MOX Moxa 82.11 331 *i* P **P** **15 49 58.0 +0.6**
comp=Z,logA/T=0.8,mb4.5
MOX Moxa 82.11 331 *e*P **P** **15 49 58.0 +0.6**
MOX pmax pmax
comp=Z,9.0nm,1.5s,mb4.5
MOX Moxa 82.11 331 *e*P **P** **15 49 58.0 +0.6**
comp=Z,9.0nm,1.5s,mb4.5
KHC Kasperske Hory 82.51 329 *e*P **P** **15 50 00.0 +0.6**
KHC *e*pP pP 15 50 12.7 +2.1
GEC2 GERESS Array S 82.68 328 *e*P **P** **15 50 00.6 +0.3**
GEC2 pmax pmax
comp=Z,8.0nm,1.2s,mb4.6
GEC2 GERESS Array S 82.68 328 *e*P **P** **15 50 00.6 +0.3**
comp=Z,8.0nm,1.2s,mb4.6
GERES GERESS Array B 82.68 328 P **P** **15 50 00.5 +0.2**
comp=Z,2.4nm,0.6s,mb4.4,baz=34,slow=4.8,SNR=19
GERES pP pP 15 50 12.7 +1.2
comp=Z,1.2nm,0.6s,baz=34,slow=4.8,SNR=6.1
WET Wettzell 82.79 329 *e*P **P** **15 50 00.9 0.0**
WET pmax pmax
comp=Z,6.0nm,1.0s,mb4.6
WET Wettzell 82.79 329 *e*P **P** **15 50 00.9 0.0**
comp=Z,6.0nm,1.0s,mb4.6
GRA1 Grafenberg Arr 83.02 330 *e*P **P** **15 50 02.9 +0.9**
comp=Z,17nm,0.4s,mb5.4
GRF Grafenberg Arr 83.02 330 *e*P **P** **15 50 02.9 +0.9**
GRF pmax pmax
comp=Z,17nm,0.4s,mb5.4
PERS Pernice 83.77 326 *e*P **P** **15 50 06.4 +0.5**
ANMO Albuquerque 84.19 50 *e*P **P** **15 50 09.4 +1.1**
RPZ Rata Peaks 84.87 159 LR LR 16 26 08.9
comp=Z,117nm,18.8s,MS4.3,baz=191,slow=34
SCHQ Schefferville 85.02 16 P **P** **15 50 12.8 +0.8**
comp=Z,2.6nm,0.7s,mb4.5,baz=16,slow=3.4,SNR=5.9
SCHQ Schefferville 85.02 16 P **P** **15 50 12.8 +0.8**
BFO Black Forest 85.25 331 *e*P **P** **15 50 13.7 +0.5**
BFO pmax pmax
comp=Z,13nm,1.0s,mb5.0
BFO Black Forest 85.25 331 *e*P **P** **15 50 13.7 +0.5**
comp=Z,13nm,1.0s,mb5.0
BAIF Baives 85.34 334 *e*P **P** **15 50 14.0 +0.4**
comp=Z,8.9nm,0.8s,mb4.6
CDF Champ du Feu 85.59 332 *e*P **P** **15 50 15.5 +0.6**
comp=Z,19nm,0.9s,mb5.0
HINF Hinteralfeld 86.24 331 *e*P **P** **15 50 18.3 +0.2**
comp=Z,3.6nm,0.6s,mb4.5
MEZF Maizieres J'vi 86.34 333 *e*P **P** **15 50 19.4 +0.8**
comp=Z,9.2nm,0.7s,mb4.8
FLN La Foliniere 88.02 336 *e*P **P** **15 50 27.2 +0.5**
comp=Z,12nm,0.9s,mb4.8
FLN *e*R
comp=Z,102nm,23.0s
LDF La Druitiere 88.05 336 *e*P **P** **15 50 27.3 +0.5**
comp=Z,4.7nm,0.7s,mb4.5
SSF Saint Saulge 88.12 333 *e*P **P** **15 50 27.7 +0.5**
comp=Z,11nm,1.0s,mb4.7
LPL La Plagne 88.19 330 *e*P **P** **15 50 28.2 +0.6**
comp=Z,4.0nm,0.7s,mb4.5
LPG La Plagne 88.20 330 *e*P **P** **15 50 28.3 +0.7**
comp=Z,9.0nm,0.9s,mb4.7
SMF Signal de Mont 88.35 333 *e*P **P** **15 50 29.1 +0.8**
AVF Avril sur Loir 88.41 333 *e*P **P** **15 50 29.2 +0.6**
comp=Z,7.3nm,0.8s,mb4.7
GRR Gorron 88.47 336 *e*P **P** **15 50 29.6 +0.7**
comp=Z,24nm,1.0s,mb5.0
MBDF Montbardon 88.82 330 *e*P **P** **15 50 31.4 +0.8**
comp=Z,5.5nm,0.9s,mb4.6
ORIF Oris-en-Rattie 89.02 330 *e*P **P** **15 50 32.5 +0.9**
ORIF *e*R
comp=Z,61nm,21.0s
TCF Toulx Ste Croi 89.25 333 *e*P **P** **15 50 33.2 +0.6**
ROSF Rostrenen 89.28 338 *e*P **P** **15 50 33.5 +0.8**
comp=Z,6.3nm,0.7s,mb4.8
QUIF Quistinic 89.62 337 *e*P **P** **15 50 34.6 +0.3**
comp=Z,13nm,0.9s,mb5.0
TXAR Lajitas Array 89.73 53 P **P** **15 50 36.7 +1.4**
comp=Z,0.9nm,0.7s,mb4.2,baz=296,slow=2.9,SNR=12
TXAR pP pP 15 50 47.6 +1.0
comp=Z,1.0nm,0.8s,baz=312,slow=4.9,SNR=7.4
MFF Saint Martin d 89.80 335 *e*P **P** **15 50 36.0 +0.8**
comp=Z,12nm,1.0s,mb4.9
RJF Les Rejaudoux 90.34 333 *e*P **P** **15 50 38.5 +0.7**
comp=Z,11nm,1.0s,mb4.8
RJF *e*R
comp=Z,70nm,21.2s
CAF Calviac 90.47 333 *e*P **P** **15 50 39.5 +1.1**
comp=Z,6.6nm,0.8s,mb4.7
LASF Ste Croix 90.52 331 *e*P **P** **15 50 39.4 +0.8**
comp=Z,4.0nm,0.8s,mb4.5
ESDC Sonseca Array 97.22 334 LR LR 16 39 21.7
comp=Z,72nm,20.1s,MS4.2,baz=330,slow=38
DBIC Dimbokro 126.33 317 PKP PKPdf 15 56 40.5 +1.3
comp=Z,2.1nm,0.8s,baz=353,slow=8.1,SNR=3.0
VNA2 Neumayer--Watz 142.63 196 P Pdif 15 54 31.9 +3.1
VNA3 Neumayer Olymp 142.88 195⇑ *i*P Pdif 15 54 31.0 +1.1
VNA1 Neumayer--Stat 143.03 196⇑ *i*P Pdif 15 54 34.8 +4.2
LPAZ La Paz 146.30 60 PKPbc PKPbc 15 57 19.2 +2.5
comp=Z,3.3nm,1.0s,baz=323,slow=3.4,SNR=10.0
LPAZ pPKPbc 15 57 29.1
comp=Z,2.3nm,0.8s,baz=323,slow=4.1,SNR=5.1
LPAZ La Paz 146.30 60 *e*PKPdf PKPdf 15 57 18.7 +3.2

*NEIC **15** 15:49:29.1±1.4, 19.07N×145.70E, h201km±13km, mb4.4/1, Error ellipse: s-maj=24.3km s-min=11.9km az=84.0*
*IDC **15** 15:49:45.5±6.2, 19.01N×145.03E, h357km±66km, mb3.0/8, mb1 3.2/9, mb1mx3.1/24, Error ellipse: s-maj=31.5km s-min=13.2km az=92.0*
ISC 15 15:49:28.2±1.3, 19.08N±0.08×145.5E±0.2, h202km±13km, n17, σ0°87/17, mb3.5/10, 1D, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
SARN	**Sarigan**	**2.38**	**174**	‖*e*P		**P**		**15 50 11.0**	**-0.3**
JOW	**Kunigami**	**17.62**	**299**	P		**P**		**15 53 23.2**	**+0.9**
	1.5nm,0.3s,baz=122,slow=14,SNR=6.7								
MAJO	**Matsushiro**	**18.54**	**341**	P		**P**		**15 53 31.8**	**0.0**
MAT	**Matsushiro**	**18.54**	**341**	P		**P**		**15 53 31.7**	**-0.1**
MAT	**Matsushiro**	**18.54**	**341**	*e*P		**P**		**15 53 32.0**	**+0.2**
FX1	**Attu Island--F**	**40.00**	**26**	P		**P**		**15 56 49.6**	**+5.1**
	24nm,0.8s,mb4.7,baz=240,slow=8.1,SNR=2.9								
WRAB	**Tennant Creek**	**40.28**	**196**	*e*P		**P**		**15 56 47.1**	**-0.1**
	9.4nm,0.8s,mb4.3								
WB2	**Warramunga Arr**	**40.29**	**196**	*e*P		**P**		**15 56 47.5**	**+0.2**
WRA	**Warramunga Arr**	**40.29**	**196**	P		**P**		**15 56 47.7**	**+0.3**
	1.7nm,0.6s,mb3.7,baz=18,slow=9.0,SNR=39								
FITZ	**Fitzroy Crossi**	**41.78**	**209**	P		**P**		**15 56 59.9**	**+0.3**
	0.7nm,0.3s,mb3.5,baz=45,slow=6.7,SNR=11								
SONM	**Songino Array**	**42.73**	**321**	P		**P**		**15 57 06.9**	**0.0**
	1.9nm,1.1s,mb3.4,baz=136,slow=7.5,SNR=4.4								
ASAR	**Alice Springs**	**43.97**	**195**	P		**P**		**15 57 17.0**	**-0.2**
	0.4nm,0.4s,mb3.1,baz=15,slow=8.1,SNR=10.0								
MKAR	**Makanchi Array**	**58.06**	**314**	P		**P**		**15 59 01.6**	**-0.6**
	0.2nm,0.5s,mb3.0,baz=97,slow=8.4,SNR=3.9								
YKA	**Yellowknife Ar**	**77.74**	**28**	P		**P**		**16 01 04.9**	**+1.0**
	0.2nm,0.7s,mb2.8,baz=288,slow=5.6,SNR=2.9								
NVAR	**Mina Array Bea**	**83.06**	**52**	P		**P**		**16 01 33.7**	**+1.2**
	0.5nm,0.5s,mb3.5,baz=270,slow=6.3,SNR=5.7								
FINES	**FINESS Array B**	**86.46**	**335**	P		**P**		**16 01 46.7**	**-2.1**
	0.6nm,0.7s,mb3.4,baz=45,slow=5.9,SNR=4.5								
SRU	**San Rafael**	**88.49**	**49**	*e*P		**P**		**16 01 55.9**	**-3.0**

*NEIC **15** 16:05:41.3, 43.98N×7.47E, h5km, ML1.7(STR), ML1.5(LDG), After STR.*
*STR **15** 16:05:41.3±0.1, 43.98N×7.47E, h5km±1km, Ml1.7, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
*LDG **15** 16:05:42.2±0.5, 43.87N×7.57E, h2km, Md1.5/2, Ml1.5/1, Error ellipse: s-maj=9.7km s-min=8.4km az=124.0*
ISC 15 16:05:40.9±1.6, 43.98N±0.06×7.47E±0.08, h11km±8km, n8, σ0°35/15, Near south coast of France

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
AUTN	**L'Aution**	**0.04**	**297**	Pg		**Pg**		**16 05 42.9**	**-0.1**
AUTN				Sg		**Sg**		**16 05 43.9**	**-0.5**
SAOF	**Saorge**	**0.06**	**84**	Pg		**Pg**		**16 05 43.4**	**+0.1**
SAOF				Sg		**Sg**		**16 05 44.7**	**-0.1**
SBF	**Sospel**	**0.12**	**192**	*e*Pg		**Pg**		**16 05 44.4**	**+0.4**
SBF				*e*Sg		**Sg**		**16 05 46.2**	**+0.1**
	22nm,0.2s								
AURF	**Auriere**	**0.14**	**228**	Pg		**Pg**		**16 05 44.6**	**+0.3**
AURF				Sg		**Sg**		**16 05 46.6**	**0.0**
TOUF	**Mont Tournerai**	**0.16**	**282**	Pg		**Pg**		**16 05 44.8**	**0.0**
MVIF	**Mont Vial**	**0.24**	**250**	Pg		**Pg**		**16 05 46.5**	**+0.3**
MVIF				Sg		**Sg**		**16 05 50.5**	**+0.8**
FRF	**La Foret Royal**	**0.73**	**235**	*e*Pg		**Pg**		**16 05 55.4**	**-0.2**
FRF				*e*Sg		**Sg**		**16 06 05.2**	**-0.2**
	0.8nm,0.2s								
LMR	**La Mourre**	**0.95**	**228**	*e*Pg		**Pg**		**16 05 59.8**	**-0.2**
LMR				*e*Sg		**Sg**		**16 06 12.1**	**-0.7**
	1.2nm,0.2s								

*IDC **15** 16:13:52.1±0.8, 3.52N×126.81E, mb4.2/10, mb1 4.3/10, mb1mx4.0/24, Error ellipse: s-maj=40.8km s-min=14.6km az=76.0*
*NEIC **15** 16:13:53.5±0.5, 3.46N×126.68E, h10km, mb4.7/2, Error ellipse: s-maj=32.0km s-min=8.5km az=68.0*
ISC 15 16:13:51.4±0.6, 3.51N±0.09×126.7E±0.2, h10km, n19, σ0°70/19, mb4.2/11, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**21.50**	**183**	*e*P		**P**		**16 18 42.1**	**-0.6**
	4.9nm,0.5s,mb4.1								
FITZ	**Fitzroy Crossi**	**21.50**	**183**	P		**P**		**16 18 42.2**	**-0.5**
	6.7nm,0.8s,mb4.0,baz=2.8,slow=12,SNR=25								
WRAB	**Tennant Creek**	**24.48**	**162**	*e*P		**P**		**16 19 11.8**	**-0.3**
	50nm,0.7s,mb5.1								
WRA	**Warramunga Arr**	**24.48**	**162**	P		**P**		**16 19 12.2**	**+0.1**
	13nm,0.5s,mb4.7,baz=343,slow=10,SNR=132								
WB2	**Warramunga Arr**	**24.48**	**162**	*e*P		**P**		**16 19 12.0**	**-0.2**
AS12	**Alice Springs**	**27.91**	**166**	*e*P		**P**		**16 19 43.2**	**-0.7**
	3.4nm,0.3s,mb4.5								
ASAR	**Alice Springs**	**27.91**	**166**	P		**P**		**16 19 43.0**	**-0.9**
	2.0nm,0.3s,mb4.2,baz=349,slow=7.6,SNR=35								
CTA	**Charters Tower**	**30.31**	**141**	P		**P**		**16 20 06.5**	**+1.0**
	3.7nm,1.1s,mb4.0,baz=311,slow=9.3,SNR=3.2								
CTA	**Charters Tower**	**30.31**	**141**	P		**P**		**16 20 06.5**	**+1.0**
CTAO	**Charters Tower**	**30.31**	**141**	*e*P		**P**		**16 20 05.3**	**-0.2**
	2.6nm,0.9s,mb4.0								
NWAO	**Narrogin (SRO)**	**37.33**	**193**	P		**P**		**16 21 07.5**	**+1.6**
	5.6nm,0.6s,mb4.6,baz=27,slow=7.7,SNR=9.9								
STKA	**Stephens Creek**	**37.93**	**159**	*e*P		**P**		**16 21 10.9**	**-0.1**
	4.7nm,0.4s,mb4.6								
STKA	**Stephens Creek**	**37.93**	**159**	P		**P**		**16 21 11.1**	**+0.1**
	5.2nm,0.4s,mb4.6,baz=342,slow=8.8,SNR=26								
ASAJ	**Asahikawa**	**42.81**	**17**	P		**P**		**16 21 51.2**	**0.0**
	6.3nm,1.0s,mb4.3,baz=98,slow=31,SNR=2.4								
SONM	**Songino Array**	**47.50**	**342**	P		**P**		**16 22 29.8**	**+1.2**
	0.6nm,0.8s,mb3.6,baz=143,slow=7.2,SNR=2.8								
MKAR	**Makanchi Array**	**57.72**	**325**	P		**P**		**16 23 45.0**	**+0.2**
	0.2nm,0.4s,mb3.5,baz=124,slow=7.6,SNR=5.8								
BVAR	**Borovoye Array**	**67.49**	**327**	P		**P**		**16 24 49.8**	**0.0**
	0.3nm,0.4s,mb3.7,baz=108,slow=9.1,SNR=3.8								
BRVK	**Borovoye**	**67.56**	**327**	P		**P**		**16 24 49.3**	**-0.9**
ZRNK	**Zerenda**	**68.21**	**327**	*e*P		**P**		**16 24 53.5**	**-0.8**

*IDC **15** 16:30:03.6±1.7, 7.97S×129.86E, mb3.9/2, mb1 3.7/5, mb1mx3.5/15, ML3.2/3, Error ellipse: s-maj=74.5km s-min=25.5km az=76.0*
ISC 15 16:30:04.3±4.2, 7.80S±0.08×130.5E±0.1, h18km±32km, n5, σ1°41/8, mb3.8/2, Tanimbar Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**11.28**	**204**	Pn		**P**		**16 32 48.4**	**+0.6**
	0.3nm,0.3s,baz=26,slow=11,SNR=38								
FITZ				Sn		**S**		**16 34 53.9**	**-0.4**
	0.2nm,0.3s,baz=170,slow=19,SNR=3.6								
WRA	**Warramunga Arr**	**12.64**	**163**	Pn		**P**		**16 33 05.4**	**-0.8**
	0.1nm,0.3s,baz=339,slow=13,SNR=14								
WRA				Sn		**S**		**16 35 26.2**	**-1.1**
	0.4nm,0.3s,baz=340,slow=23,SNR=10.0								
ASAR	**Alice Springs**	**16.11**	**169**	Pn		**P**		**16 33 52.4**	**+0.6**
	0.1nm,0.3s,baz=346,slow=13,SNR=9.3								
ASAR				Sn		**S**		**16 36 51.0**	**+1.2**
	0.1nm,0.3s,baz=348,slow=25,SNR=4.5								
SONM	**Songino Array**	**59.35**	**341**	P		**P**		**16 40 06.9**	**-0.8**

0.3nm,0.4s,mb3.7,baz=135,slow=6.1,SNR=2.4
ILAR Eielson Array 93.86 25 P **P 16 43 24.7 +3.2**
0.3nm,0.5s,mb4.0,baz=252,slow=5.4,SNR=4.5

NIED ***15*** *16:35:00,44.30N×147.70E,h86km,Mw3.9 Best double couple: M0 7.79×10^14 NP1:φs42°,δ88°,λ-116°. NP2: φs308°,δ26°,λ-5°.*
MOS ***15*** *16:35:50.5±1.5,44.56N×147.39E,h107km,mb3.8/3,Error ellipse: s-maj=21.6km s-min=19.8km az=120.8*
JMA ***15*** *16:35:50.2±0.3,44.35N×147.72E,h55km,M4.0*
NEIC ***15*** *16:35:55.8±1.7,44.59N×147.12E,h130km±15km,Error ellipse: s-maj=15.9km s-min=12.8km az=155.0*
IDC ***15*** *16:35:55.2±3.2,44.58N×147.15E,h126km±30km, mb3.2/10,mb1 3.5/11,mb1mx3.3/25,Error ellipse: s-maj=24.5km s-min=18.3km az=124.0*
ISC 15 16:35:50.8±0.5,44.53N±0.05×147.43E±0.07,h102km±4km, n38,σ1§15/50,mb3.5/10,1C-1D,Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
KUR	**Kuril'sk**	**0.77**	**24**	⇑*i*	PN		**P**	**16 36 09.0**	**-0.3**
KUR				*eS*	S		**S**	**16 36 22.9**	**-0.2**
KUR					pmax	pmax			
	comp=N,270nm,0.3s								
KUR					pmax	pmax			
	comp=E,320nm,0.3s								
KUR					pmax	pmax			
	comp=Z,1μm,0.3s								
KUR					pmax	pmax			
	comp=Z,2μm,0.8s								
KUR					smax				
	comp=N,6μm,1.0s								
KUR					smax				
	comp=E,8μm,1.0s								
KUR					smax				
	comp=N,3μm,0.4s								
KUR					smax				
	comp=E,2μm,0.4s								
YUK	**Yuzh-Kuril'sk**	**1.23**	**247**	⇓*i*	PN		**P**	**16 36 13.7**	**-0.6**
YUK				*i*	S		**S**	**16 36 30.0**	**-2.0**
YUK					pmax	pmax			
	comp=Z,1μm,0.4s								
YUK					pmax	pmax			
	comp=N,220nm,0.3s								
YUK					pmax	pmax			
	comp=E,530nm,0.4s								
YUK					pmax	pmax			
	comp=E,1μm,0.6s								
YUK					pmax	pmax			
	comp=Z,2μm,0.6s								
YUK					smax				
	comp=N,2μm,0.5s								
YUK					smax				
	comp=E,2.0nm,0.5s								
YUK					smax				
	comp=N,3μm,0.6s								
YUK					smax				
	comp=E,4μm,0.7s								
NEM2	**Nemuro 2**	**1.68**	**227**	P			**P**	**16 36 18.6**	**-1.3**
NEM2				*eS*			**S**	**16 36 39.5**	**-2.0**
JRA	**Rausu**	**1.76**	**251**	P			**P**	**16 36 21.0**	**+0.2**
JRA				*eS*			**S**	**16 36 43.7**	**+0.5**
JNK	**Nakash**	**2.17**	**245**	P			**P**	**16 36 26.5**	**+0.3**
JNK				*eS*			**S**	**16 36 52.7**	**+0.1**
JAK	**Akkeshi**	**2.50**	**233**	P			**P**	**16 36 30.0**	**-0.8**
JAK				*eS*			**S**	**16 37 01.5**	**+0.8**
JTKR	**Abashiri--Toko**	**2.59**	**259**	P			**P**	**16 36 32.4**	**+0.4**
JAR	**Ashorobuto**	**2.92**	**246**	P			**P**	**16 36 37.4**	**+1.0**
JAR				*eS*			**S**	**16 37 12.1**	**+1.3**
JMP	**Maruseppu**	**2.97**	**261**	P			**P**	**16 36 37.7**	**+0.6**
JOB	**Onbets**	**3.07**	**239**	P			**P**	**16 36 38.9**	**+0.4**
JOB				*eS*			**S**	**16 37 14.8**	**+0.3**
JKK2	**Kamakawa 2**	**3.43**	**261**	P			**P**	**16 36 44.6**	**+1.2**
JSE	**Soyaes**	**3.48**	**279**	P			**P**	**16 36 45.0**	**+0.9**
ASAJ	**Asahikawa**	**3.49**	**265**	P			**P**	**16 36 45.2**	**+0.9**
	comp=E,2.2nm,0.3s,baz=90,slow=15,SNR=11								
ASAJ	**Asahikawa**	**3.49**	**265**	PN			**P**	**16 36 45.2**	**+0.9**
ASAJ					pmax	pmax			
	comp=Z,2.0nm,0.3s								
JCH	**Churui**	**3.52**	**238**	P			**P**	**16 36 44.9**	**+0.2**
JCH				*eS*			**S**	**16 37 25.3**	**-0.2**
JFR	**Furan**	**3.75**	**250**	*e*PN			**S**	**16 37 34.4**	**+3.1**
JWK2	**Keihoku**	**4.01**	**283**	P			**P**	**16 36 54.0**	**+2.7**
YSS	**Yuzh-Sakhalins**	**4.07**	**308**	*e*PN			**P**	**16 36 53.0**	**+0.8**
YSS				*eS*			**S**	**16 37 38.0**	**-1.1**
YSS					pmax	pmax			
	comp=Z,30nm,0.3s								
YSS	**Yuzh-Sakhalins**	**4.07**	**308**	*e*P			**P**	**16 36 53.4**	**+1.2**
YSS				*eS*			**S**	**16 37 37.0**	**-2.1**
JNBK	**Urakawa-nobuka**	**4.08**	**238**	P			**P**	**16 36 51.6**	**-0.7**
MAJO	**Matsushiro**	**10.62**	**224**	P			**P**	**16 38 18.7**	**-2.3**
NVS	**Novosibirsk**	**41.39**	**308**	*e*P			**P**	**16 43 25.9**	**-2.1**
NVS				*eS*			**S**	**16 49 34.7**	**-0.1**
MKAR	**Makanchi Array**	**44.41**	**297**	P			**P**	**16 43 52.9**	**+0.4**
	comp=Z,0.7nm,0.6s,mb3.5,baz=77,slow=9.6,SNR=7.3								
MKAR	**Makanchi Array**	**44.41**	**297**	P			**P**	**16 43 52.9**	**+0.4**
MKAR					pmax	pmax			
	comp=Z,1.0nm,0.6s								
KURK	**Kurchatov**	**45.26**	**303**	P			**P**	**16 43 58.4**	**-0.9**
ZRNK	**Zerenda**	**49.97**	**309**	P			**P**	**16 44 34.3**	**-1.5**
YKA	**Yellowknife Ar**	**55.05**	**34**	P			**P**	**16 45 13.7**	**+0.2**
	comp=Z,0.2nm,0.4s,mb3.5,baz=301,slow=6.9,SNR=7.5								
YKA	**Yellowknife Ar**	**55.05**	**34**	P			**P**	**16 45 13.7**	**+0.2**
YBH	**Yreka Blue Hor**	**62.31**	**58**	P			**P**	**16 46 05.4**	**+1.3**
	comp=Z,0.5nm,0.4s,mb3.9,baz=297,slow=6.8,SNR=3.1								
YBH	**Yreka Blue Hor**	**62.31**	**58**	P			**P**	**16 46 05.4**	**+1.3**
YBH					pmax	pmax			
	comp=Z,1.0nm,0.4s								
FINES	**FINESS Array B**	**64.27**	**333**	P			**P**	**16 46 14.5**	**-2.1**
	comp=Z,0.7nm,0.8s,mb3.5,baz=59,slow=8.1,SNR=4.3								
FINES	**FINESS Array B**	**64.27**	**333**	P			**P**	**16 46 14.5**	**-2.1**
FINES					pmax	pmax			
	comp=Z,1.0nm,0.8s								
WRA	**Warramunga Arr**	**65.26**	**194**	P			**P**	**16 46 23.0**	**-0.7**
	comp=Z,0.3nm,0.5s,mb3.4,baz=6.7,slow=6.4,SNR=8.2								
NVAR	**Mina Array Bea**	**67.00**	**58**	P			**P**	**16 46 35.8**	**+1.3**
	comp=Z,0.4nm,0.6s,mb3.5,baz=300,slow=6.8,SNR=4.4								
NOA	**NORSAR Array B**	**68.95**	**339**	P			**P**	**16 46 44.6**	**-1.5**
	comp=Z,0.2nm,0.7s,mb3.1,baz=29,slow=9.6,SNR=2.4								
ASAR	**Alice Springs**	**68.98**	**193**	P			**P**	**16 46 47.1**	**+0.1**
	comp=Z,0.4nm,0.9s,mb3.2,baz=7.8,slow=5.0,SNR=4.7								
PDAR	**Pinedale Array**	**69.20**	**50**	P			**P**	**16 46 49.6**	**+1.3**
	comp=Z,0.4nm,0.7s,mb3.4,baz=270,slow=2.7,SNR=3.2								
TXAR	**Lajitas Array**	**82.05**	**57**	P			**P**	**16 48 02.5**	**+1.5**
	comp=Z,0.6nm,0.6s,mb3.6,baz=299,slow=3.5,SNR=10								

NEIC ***15*** *16:51:37.1,38.06S×176.17E,h191km,After WEL.*
WEL ***15*** *16:51:37.4±0.3,38.09S×176.19E,h189km±2km,ML4.1/8, Error ellipse: s-maj=1.8km s-min=1.8km az=90.0*
ISC 15 16:51:34.6±0.6,38.24S±0.04×176.19E±0.06,h212km±5km, n85,σ1§15/109,10C-4D,North Island

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
UTU	**Utuhina**	**0.06**	**3**	PN			**P**	**16 52 02.5**	**0.0**
UTU	**Utuhina**	**0.06**	**3**	P			**P**	**16 52 02.4**	**0.0**
TAZ	**Tarawera**	**0.25**	**90**	⇓PN			**P**	**16 52 02.9**	**+0.2**
TAZ	**Tarawera**	**0.25**	**90**	P			**P**	**16 52 02.9**	**+0.2**
LIRZ	**Lichensteins R**	**0.28**	**34**	PN			**P**	**16 52 02.0**	**-0.8**
LIRZ	**Lichensteins R**	**0.28**	**34**	P			**P**	**16 52 02.0**	**-0.8**
EDRZ	**Edgecumbe**	**0.45**	**74**	PN			**P**	**16 52 03.0**	**-0.2**
EDRZ	**Edgecumbe**	**0.45**	**74**	P			**P**	**16 52 03.1**	**-0.1**
MARZ	**Manawahe**	**0.46**	**57**	PN			**P**	**16 52 03.0**	**-0.2**
MARZ	**Manawahe**	**0.46**	**57**	P			**P**	**16 52 03.0**	**-0.2**
TGRZ	**Tauranga**	**0.51**	**6**	⇑PN			**P**	**16 52 02.4**	**-1.0**
TGRZ				SN			**S**	**16 52 23.0**	**-2.8**
TGRZ	**Tauranga**	**0.51**	**6**	P			**P**	**16 52 02.4**	**-1.0**
TGRZ				S			**S**	**16 52 23.0**	**-2.8**
RATZ	**Rangitukua**	**0.71**	**207**	⇑PN			**P**	**16 52 05.1**	**+0.8**
RATZ	**Rangitukua**	**0.71**	**207**	P			**P**	**16 52 05.0**	**+0.8**
URZ	**Urewera**	**0.73**	**92**	⇑PN			**P**	**16 52 04.0**	**-0.2**
URZ				SN			**S**	**16 52 24.5**	**-2.9**
URZ	**Urewera**	**0.73**	**92**	P			**P**	**16 52 04.0**	**-0.3**
KATZ	**Kakaramea**	**0.83**	**207**	PN			**P**	**16 52 05.9**	**+1.1**
KATZ	**Kakaramea**	**0.83**	**207**	P			**P**	**16 52 05.9**	**+1.1**
MGZ	**Maungaku**	**0.92**	**213**	PN			**P**	**16 52 06.6**	**+1.4**
MGZ	**Maungaku**	**0.92**	**213**	P			**P**	**16 52 06.6**	**+1.3**
BKZ	**Black Stump Fm**	**0.96**	**166**	⇑PN			**P**	**16 52 06.9**	**+1.4**
BKZ				SN			**S**	**16 52 28.6**	**-0.9**
KAVZ	**Karewarewa**	**0.96**	**206**	PN			**P**	**16 52 06.7**	**+1.2**
KAVZ	**Karewarewa**	**0.96**	**206**	P			**P**	**16 52 06.8**	**+1.3**
WTVZ	**West Tongariro**	**1.00**	**208**	PN			**P**	**16 52 07.0**	**+1.3**
NGZ	**Ngauruhoe**	**1.05**	**206**	PN			**P**	**16 52 07.5**	**+1.4**
NGZ	**Ngauruhoe**	**1.05**	**206**	P			**P**	**16 52 07.5**	**+1.4**
MWZ	**Matawai**	**1.06**	**96**	PN			**P**	**16 52 06.6**	**+0.5**
MWZ				SN			**S**	**16 52 28.4**	**-2.3**
HIZ	**Hauiti**	**1.08**	**255**	⇑PN			**P**	**16 52 06.9**	**+0.5**
HIZ				*e*SN			**S**	**16 52 30.2**	**-0.8**
CNZ	**Chateau**	**1.09**	**207**	PN			**P**	**16 52 07.7**	**+1.3**
CNZ	**Chateau**	**1.09**	**207**	P			**P**	**16 52 07.7**	**+1.3**
WPVZ	**Whakapapa**	**1.09**	**207**	⇑PN			**P**	**16 52 07.8**	**+1.4**
TUVZ	**Tukino**	**1.11**	**202**	⇓PN			**P**	**16 52 08.1**	**+1.5**
TUVZ	**Tukino**	**1.11**	**202**	P			**P**	**16 52 08.1**	**+1.5**
FWVZ	**Far West T-bar**	**1.14**	**206**	PN			**P**	**16 52 08.0**	**+1.2**
FWVZ	**Far West T-bar**	**1.14**	**206**	*e*P			**P**	**16 52 08.0**	**+1.2**
WNVZ	**Wahianoa**	**1.19**	**203**	⇑PN			**P**	**16 52 08.6**	**+1.4**
KNZ	**Kokohu**	**1.40**	**124**	⇑PN			**P**	**16 52 10.5**	**+1.6**
KNZ				SN			**S**	**16 52 35.2**	**-0.2**
KNZ	**Kokohu**	**1.40**	**124**	P			**P**	**16 52 10.5**	**+1.6**
VRZ	**Vera Road**	**1.43**	**231**	PN			**P**	**16 52 10.3**	**+1.1**
VRZ				SN			**S**	**16 52 36.1**	**+0.3**
VRZ	**Vera Road**	**1.43**	**231**	P			**P**	**16 52 10.3**	**+1.2**
KUZ	**Kuaotunu**	**1.53**	**346**	⇓PN			**P**	**16 52 08.2**	**-1.8**
KUZ	**Kuaotunu**	**1.53**	**346**	*e*P			**P**	**16 52 08.2**	**-1.8**
PUZ	**Puketiti**	**1.64**	**85**	PN			**P**	**16 52 11.5**	**+0.5**
PUZ				SN			**S**	**16 52 36.3**	**-2.7**
PUZ	**Puketiti**	**1.64**	**85**	*e*P			**P**	**16 52 11.5**	**+0.6**
WAZ	**Wanganui**	**1.79**	**211**	PN			**P**	**16 52 13.4**	**+1.2**
WAZ	**Wanganui**	**1.79**	**211**	*e*P			**P**	**16 52 13.5**	**+1.2**
MXZ	**Matakaoa Point**	**1.80**	**69**	PN			**P**	**16 52 12.6**	**+0.1**
MXZ				SN			**S**	**16 52 39.1**	**-2.5**
TSZ	**Takapari Road**	**1.83**	**185**	⇑PN			**P**	**16 52 14.3**	**+1.6**
TSZ				SN			**S**	**16 52 43.3**	**+1.2**
PWZ	**Pawanui**	**1.87**	**164**	⇓PN			**P**	**16 52 15.1**	**+2.0**
PWZ				SN			**S**	**16 52 44.5**	**+1.8**
BFZ	**Birch Farm**	**2.44**	**179**	PN			**P**	**16 52 20.4**	**+1.3**
BFZ				SN			**S**	**16 52 52.9**	**-0.5**
BFZ	**Birch Farm**	**2.44**	**179**	*e*P			**P**	**16 52 20.4**	**+1.3**
MRZ	**Mangatainoka R**	**2.47**	**191**	⇑PN			**P**	**16 52 20.3**	**+1.0**
MRZ				SN			**S**	**16 52 53.4**	**-0.6**
MTW	**Mount Morrison**	**2.97**	**190**	PN			**P**	**16 52 25.4**	**+0.5**
MTW				SN			**S**	**16 53 03.4**	**-0.6**
CAW	**Cannon Point**	**3.00**	**196**	PN			**P**	**16 52 25.9**	**+0.7**
CAW				SN			**S**	**16 53 03.9**	**-0.7**
CAW	**Cannon Point**	**3.00**	**196**	P			**P**	**16 52 26.0**	**+0.7**
MRW	**Makara Radio**	**3.20**	**201**	PN			**P**	**16 52 27.9**	**+0.2**
MRW				SN			**S**	**16 53 07.8**	**-1.1**
MRW	**Makara Radio**	**3.20**	**201**	P			**P**	**16 52 28.1**	**+0.4**
WEL	**Wellington**	**3.24**	**199**	PN			**P**	**16 52 28.6**	**+0.4**
WEL				SN			**S**	**16 53 08.9**	**-0.7**
WEL	**Wellington**	**3.24**	**199**	P			**P**	**16 52 28.6**	**+0.5**
MSWZ	**Moikau Station**	**3.26**	**193**	PN			**P**	**16 52 28.7**	**+0.4**
MSWZ				SN			**S**	**16 53 08.6**	**-1.4**
SNZO	**South Karori**	**3.28**	**200**	PN			**P**	**16 52 28.6**	**0.0**
SNZO				SN			**S**	**16 53 08.6**	**-1.8**
SNZO	**South Karori**	**3.28**	**200**	P			**P**	**16 52 28.7**	**+0.1**
TUWZ	**Tuamarina**	**3.63**	**208**	PN			**P**	**16 52 32.9**	**0.0**
TUWZ				SN			**S**	**16 53 16.7**	**-1.2**
NNZ	**Nelson**	**3.68**	**215**	PN			**P**	**16 52 33.1**	**-0.4**
NNZ				SN			**S**	**16 53 18.3**	**-0.8**
NNZ	**Nelson**	**3.68**	**215**	*e*P			**P**	**16 52 33.1**	**-0.4**
QRZ	**Quartz Range**	**3.83**	**226**	PN			**P**	**16 52 34.5**	**-0.9**
QRZ				SN			**S**	**16 53 20.2**	**-2.2**
QRZ	**Quartz Range**	**3.83**	**226**	*e*P			**P**	**16 52 34.5**	**-0.8**
BSWZ	**Blackbirch Sta**	**3.90**	**206**	PN			**P**	**16 52 36.6**	**+0.4**
THZ	**Tophouse**	**4.33**	**215**	PN			**P**	**16 52 41.3**	**-0.2**
THZ	**Tophouse**	**4.33**	**215**	*e*P			**P**	**16 52 41.5**	**0.0**
KHZ	**Kahutara**	**4.64**	**205**	PN			**P**	**16 52 45.0**	**+0.2**
KHZ	**Kahutara**	**4.64**	**205**	*e*P			**P**	**16 52 45.6**	**+0.4**
DSZ	**Denniston Nort**	**4.86**	**222**	PN			**P**	**16 52 48.5**	**+0.3**
DSZ	**Denniston Nort**	**4.86**	**222**	P			**P**	**16 52 48.5**	**+0.3**
LTZ	**Lake Taylor**	**5.44**	**212**	PN			**P**	**16 52 54.7**	**-0.8**
LTZ	**Lake Taylor**	**5.44**	**212**	*e*P			**P**	**16 52 54.7**	**-0.8**
MQZ	**McQueen's Vall**	**6.09**	**205**	PN			**P**	**16 53 02.3**	**-1.6**
MQZ				*e*SN			**S**	**16 54 08.6**	**-4.8**
MQZ	**McQueen's Vall**	**6.09**	**205**	*e*P			**P**	**16 53 02.3**	**-1.5**
WVZ	**Waitaha Valley**	**6.37**	**219**	PN			**P**	**16 53 06.6**	**-0.8**
RPZ	**Rata Peaks**	**6.71**	**214**	PN			**P**	**16 53 10.8**	**-1.0**
RPZ	**Rata Peaks**	**6.71**	**214**	*e*P			**P**	**16 53 11.0**	**-0.9**
ODZ	**Otahua Downs**	**7.97**	**210**	*e*PN			**P**	**16 53 27.8**	**-0.3**
ODZ	**Otahua Downs**	**7.97**	**210**	*e*P			**P**	**16 53 27.9**	**-0.3**
VNA3	**Neumayer Olymp**	**70.75**	**178**				**P**	**17 02 26.2**	**-2.5**
VNA2	**Neumayer--Watz**	**71.12**	**179**				**P**	**17 02 24.0**	**-6.9**

NEIC ***15*** *16:53:18.8±0.5,14.90N×93.12W,mb4.1/14,MD4.4(MEX), Error ellipse: s-maj=10.6km s-min=7.1km az=218.0*
IDC ***15*** *16:53:19.1±0.9,15.05N×92.93W,h71km±6km,mb3.7/14, mb1 4.0/16,mb1mx3.8/23,MS3.3/4,Ms1 3.2/4, ms1mx2.8/28,Error ellipse: s-maj=19.6km s-min=14.8km az=41.0*
MEX ***15*** *16:53:20.0±0.9,14.95N×93.31W,h66km±94km,MD4.4*
CASC ***15*** *16:53:21.6±2.1,15.14N×92.85W,MD4.3,ML4.5, mb4.1(NEIC)*
ISC 15 16:53:18.9±0.5,14.98N±0.05×93.29W±0.04,h83km±4km, h69km±1.4km:pP-P,n77,σ1§26/89,mb4.0/21,3C-2D,Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**1.71**	**40**	*i*	P		**P**	**16 53 46.6**	**-0.9**
CCIG				*i*	S		**S**	**16 54 07.4**	**-1.2**
JAT	**Jato**	**1.73**	**112**	⇓*e*P			**P**	**16 53 47.7**	**-0.1**
JAT				*e*S			**S**	**16 54 09.3**	**+0.2**
JAT					AML	AML		16 54 20.0	
	comp=N,9μm,0.3s								
SCX	**San Cristobal**	**1.86**	**20**	*i*	P		**P**	**16 53 49.0**	**-0.5**
SCX				*i*	S		**S**	**16 54 13.0**	**+0.9**
TP2	**Tecpan 2**	**2.20**	**95**	*e*P			**P**	**16 53 54.7**	**+0.4**
TP2				*e*S			**S**	**16 54 21.7**	**+1.3**
TP2					AML	AML		16 54 45.2	
	comp=N,2μm,0.5s								
FUG	**Fuego 3**	**2.42**	**102**	*e*P			**P**	**16 53 57.4**	**-0.1**
CMIG	**Matias Romero**	**2.60**	**324**	*i*	P		**P**	**16 53 59.2**	**-0.6**
CMIG				*i*	S		**S**	**16 54 28.7**	**-1.7**
PCG	**Pacaya**	**2.66**	**102**	*e*P			**P**	**16 54 00.2**	**-0.4**
HUIG	**Huatulco**	**2.83**	**286**	*i*	P		**P**	**16 54 01.0**	**-2.1**
HUIG				*i*	S		**S**	**16 54 32.4**	**-3.7**
IXG	**Ixpaco**	**2.86**	**106**	*e*P			**P**	**16 54 03.4**	**0.0**
IXG				*e*S			**S**	**16 54 40.7**	**+3.9**
IXG					AML	AML		16 54 44.7	
	comp=N,18μm,0.5s								
NBG	**Las Nubes**	**2.87**	**97**	*e*P			**P**	**16 54 06.3**	**+2.7**
TUIG	**Tuzandepetl**	**3.23**	**340**	*e*P			**P**	**16 54 09.3**	**+0.7**
TUIG				*i*	S		**S**	**16 54 42.5**	**-3.5**
CUSS	**Cusmapa**	**3.41**	**108**	*e*P			**P**	**16 54 11.6**	**+0.5**
CUSS				*e*S			**S**	**16 54 48.7**	**-1.8**
RBDL	**Robledal**	**3.59**	**103**	⇑*e*P			**P**	**16 54 14.2**	**+0.5**
RTR	**El Retiro**	**3.69**	**106**	⇓*e*P			**P**	**16 54 15.8**	**+0.8**
RTR				*e*S			**S**	**16 54 57.0**	**-0.5**
SBLS	**San Blas**	**3.73**	**107**	*e*P			**P**	**16 54 16.0**	**+0.5**
SBLS				*e*S			**S**	**16 54 58.4**	**0.0**
SNJE	**San Jose**	**3.73**	**107**	*e*P			**P**	**16 54 16.4**	**+0.8**
SNJE				*e*S			**S**	**16 54 58.8**	**+0.2**
OXX	**Oaxaca**	**3.91**	**303**	*e*P			**P**	**16 54 18.0**	**0.0**
OXX				*i*	S		**S**	**16 55 02.5**	**-0.4**
BOQS	**Boqueron**	**4.08**	**107**	⇑*e*P			**P**	**16 54 21.0**	**+0.7**
BOQS				*e*S			**S**	**16 55 06.9**	**-0.2**
LFRS	**El Faro**	**4.31**	**108**	*e*P			**P**	**16 54 24.2**	**+0.6**
LFRS				*e*S			**S**	**16 55 12.3**	**-0.7**
LCBS	**La Ceiba**	**4.38**	**107**	*e*P			**P**	**16 54 24.9**	**+0.4**
LCBS				*e*S			**S**	**16 55 14.0**	**-0.7**
SNVI	**San Vicente**	**4.52**	**107**	⇑*e*P			**P**	**16 54 27.7**	**+1.2**
SNVI				*e*S			**S**	**16 55 19.9**	**+1.6**
CNCH	**Conchagua**	**5.56**	**107**	*e*P			**P**	**16 54 42.2**	**+1.5**
CNCH				*e*S			**S**	**16 55 41.8**	**-2.0**
POHV	**Veracruz**	**5.58**	**317**	*e*P			**P**	**16 54 40.0**	**-0.9**
IISM	**Ciudad Serdan**	**5.58**	**316**	*e*P			**P**	**16 54 40.0**	**-1.0**
PPM	**Popocatepetl**	**6.53**	**309**	*e*P			**P**	**16 54 57.5**	**+3.4**
PPM				*i*	S		**S**	**16 56 10.7**	**+2.9**
ACX	**Acapulco**	**6.65**	**287**	*e*P			**P**	**16 54 55.0**	**-0.8**
TEIG	**Tepich**	**7.08**	**42**	P			**P**	**16 54 57.6**	**-4.2**
	comp=N,26nm,0.3s,baz=163,slow=10,SNR=36								
TEIG					S		**S**	**16 56 12.9**	**-8.4**
	comp=N,26nm,0.3s,baz=325,slow=22,SNR=8.3								
TEIG	**Tepich**	**7.08**	**42**	*e*P			**P**	**16 54 57.3**	**-4.5**
JTS	**JuntasAbangare**	**9.37**	**119**	P			**P**	**16 55 31.9**	**-1.2**
	comp=N,2.3nm,0.3s,baz=322,slow=18,SNR=8.1								
JTS	**JuntasAbangare**	**9.37**	**119**	*e*P			**P**	**16 55 31.4**	**-1.6**
	comp=N,0.4nm,0.6s								
HKT	**Hockley**	**15.08**	**351**	*e*P			**P**	**16 56 48.1**	**-0.6**
JCT	**Junction City**	**16.55**	**340**	*e*P			**P**	**16 57 10.3**	**+3.1**
	comp=N,7.5nm,0.8s								
TXAR	**Lajitas Array**	**17.20**	**328**	P			**P**	**16 57 18.1**	**+2.8**
	comp=N,0.2nm,0.3s,baz=148,slow=14,SNR=30								
TXAR					LR		LR	17 04 35.3	
	comp=N,40nm,19.1s,baz=165,slow=39								
LRAL	**Lakeview Retre**	**18.86**	**17**	*e*P			**P**	**16 57 34.6**	**-0.4**
	comp=N,9.4nm,1.0s								
MIAR	**Mount Ida**	**19.48**	**359**	*e*P			**P**	**16 57 39.2**	**-2.6**
	comp=N,34nm,1.1s								
UALR	**University of**	**19.73**	**2**	*e*P			**P**	**16 57 43.9**	**-0.5**
	comp=N,14nm,0.8s								
CLNB	**Carlsbad**	**19.73**	**333**	*e*P			**P**	**16 57 45.2**	**+0.7**
GDL2	**Guadalupe Moun**	**19.90**	**331**	*e*P			**P**	**16 57 47.6**	**+1.4**
MNTX	**Cornudas Mount**	**19.98**	**328**	*e*P			**P**	**16 57 46.4**	**-0.6**
	comp=N,2.8nm,0.8s								
WMOK	**Wichita Mounta**	**20.29**	**347**	*e*P			**P**	**16 57 51.5**	**+1.2**
	comp=N,2.7nm,0.7s								
CPRX	**Cap Rock**	**20.38**	**334**	*e*P			**P**	**16 57 51.6**	**+0.4**
PLAL	**Pickwick Lake**	**20.46**	**12**	*e*P			**P**	**16 57 53.5**	**+1.4**
	comp=N,19nm,0.8s								
SWET	**Sewanee**	**21.21**	**17**	P			**P**	**16 57 57.6**	**-2.0**
WVT	**Waverly**	**21.62**	**12**	*e*P			**P**	**16 58 04.2**	**+0.5**
	comp=N,14nm,0.7s,mb4.4								
BNM	**Barren Site**	**22.57**	**330**	*e*P			**P**	**16 58 16.5**	**+3.4**
BNM				*e*				16 58 29.3	
SIUC	**Southern Illin**	**22.93**	**8**	P			**P**	**16 58 19.0**	**+2.5**
	comp=N,22nm,1.6s,mb4.2								
SDV	**Santo Domingo**	**22.97**	**103**	P			**P**	**16 58 15.6**	**-1.5**
	comp=N,2.6nm,0.6s,mb3.7,baz=1.2,slow=11,SNR=3.5								
LAZ	**Ladron**	**23.02**	**330**	*e*P			**P**	**16 58 22.8**	**+5.4**
CCM	**Cathedral Cave**	**23.06**	**4**	*e*P			**P**	**16 58 15.7**	**-2.0**
	comp=N,6.8nm,0.8s,mb4.0								
CCM				*e*				16 58 26.7	
ANMO	**Albuquerque**	**23.15**	**332**	*e*P			**P**	**16 58 20.7**	**+2.1**
	comp=N,2.5nm,0.6s,mb3.7								
WUAZ	**Wupatki**	**26.10**	**325**	*e*P			**P**	**16 58 51.7**	**+4.9**
	comp=N,4.0nm,0.9s,mb3.9								
HWUT	**Hardware Ranch**	**30.89**	**333**	P			**P**	**16 59 30.7**	**+1.0**
	comp=N,2.1nm,0.8s,mb3.9								
PDAR	**Pinedale Array**	**31.02**	**336**	P			**P**	**16 59 31.2**	**+0.4**
	comp=N,0.7nm,0.8s,mb3.5,baz=137,slow=11,SNR=5.6								
SADO	**Sadowa**	**32.02**	**19**	LR			LR	17 13 51.7	
	comp=N,52nm,20.3s,baz=214,slow=39								
NVAR	**Mina Array Bea**	**32.13**	**321**	P			**P**	**16 59 43.1**	**+2.5**
	comp=N,2.3nm,0.7s,mb4.0,baz=127,slow=8.8,SNR=23								
NVAR					pP		pP	17 00 00.1	-0.1
	comp=N,3.9nm,0.7s,baz=129,slow=9.7,SNR=13								
HLID	**Hailey**	**33.73**	**332**

ASAJ				Sn	S		17 40 01.1	+14	
	comp=E,1.3nm,0.3s,baz=200,slow=32,SNR=3.2								
JFR	**Furan**	**4.16**	**257**	P	**P**		17 39 05.6	**+2.2**	
JNBK	**Urakawa-nobuka**	**4.39**	**246**	P	**P**		17 39 06.8	**+0.2**	
YSS	**Yuzh-Sakhalins**	**4.68**	**308**	*e*PN	**P**		17 39 08.8	**-1.8**	
ILAR	**Eielson Array**	**40.69**	**37**	P	**P**		17 45 36.6	**+1.4**	
	comp=E,0.2nm,0.5s,mb3.2,baz=271,slow=8.6,SNR=3.6								
MKAR	**Makanchi Array**	**45.01**	**298**	P	**P**		17 46 11.1	**+0.6**	
	comp=E,0.5nm,0.5s,mb3.5,baz=84,slow=8.3,SNR=8.6								
MKAR	**Makanchi Array**	**45.01**	**298**	P	**P**		17 46 11.1	**+0.6**	
MKAR				pmax	pmax				
	comp=Z,1.0nm,0.5s								
YKA	**Yellowknife Ar**	**55.02**	**34**	P	**P**		17 47 26.3	**-0.2**	
	comp=Z,0.4nm,0.5s,mb3.7,baz=299,slow=6.9,SNR=9.7								
FINES	**FINESS Array B**	**64.79**	**333**	P	**P**		17 48 31.3	**-2.1**	
	comp=Z,1.4nm,1.1s,mb3.7,baz=63,slow=4.3,SNR=4.8								
FINES	**FINESS Array B**	**64.79**	**333**	P	**P**		17 48 31.3	**-2.1**	
FINES				pmax	pmax				
	comp=Z,1.0nm,1.1s								
NOA	**NORSAR Array B**	**69.43**	**339**	P	**P**		17 49 02.1	**-0.4**	
	comp=Z,1.6nm,1.1s,mb3.7,baz=149,slow=22,SNR=2.5								
NOA	**NORSAR Array B**	**69.43**	**339**	P	**P**		17 49 02.1	**-0.4**	
NOA				pmax	pmax				
	comp=Z,2.0nm,1.2s								

JMA 15 17:46:58.3±0.3, 43.95N×147.98E, M3.6, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
NEM2	**Nemuro 2**	**1.73**	**251**	P		Pn	17 47 29.9	+0.1
NEM2				*e*S		Sb	17 47 53.0	+0.2
JRA	**Rausu**	**2.06**	**271**	P		Pn	17 47 35.0	+0.4
JRA				*e*S		Sn	17 48 01.7	+0.3
JNK	**Nakash**	**2.39**	**262**	P		Pn	17 47 39.6	+0.3
JNK				*e*S		Sn	17 48 09.2	-0.5
JAK	**Akkeshi**	**2.57**	**249**	P		Pn	17 47 42.1	+0.2
JAK				*e*S		Sn	17 48 15.2	+0.8
JAR	**Ashorobuto**	**3.13**	**259**	P		Pn	17 47 50.7	+0.9
JAR				*e*S		Sn	17 48 28.8	+0.4
JOB	**Onbets**	**3.20**	**252**	*e*S		Sn	17 48 31.2	+1.0
JCH	**Churui**	**3.63**	**250**	P		Pn	17 47 57.9	+1.0
JNBK	**Urakawa-nobuka**	**4.17**	**248**	P		Pn	17 48 05.4	+0.7
JKB	**Kayabe**	**5.50**	**250**	P		Pn	17 48 23.4	-0.1
JKB				*e*S		Sn	17 49 25.7	-2.7

*NEIC **15** 17:56:33.4,31.56S×69.05W,h150km, mb4.0/1, MD3.6(GUC), After GUC.*
*GUC **15** 17:56:33.4±0.9,31.56S×69.05W,h150km±20km, MD3.6, ML3.7*

ISC 15 17:56:32.0±1.1, 31.51S±0.05×68.71W±0.09, h112km±17km, n13, σ0§89/23, 5C-1D, San Juan Province

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
MDZ	**Mendoza**	**1.38**	**185**	⇑*i*P		P	**17 56 57.6**	**-0.3**
MDZ				*e*			17 57 15.5	
MDZ				*e*S		S	**17 57 16.7**	**-0.7**
JACH	**Jahuel**	**1.98**	**233**	⇑*i*P		P	**17 57 06.1**	**+0.8**
JACH				*i* S		S	**17 57 30.9**	**+0.7**
CMCH	**Combarbala**	**1.99**	**279**	⇓*i*P		P	**17 57 06.2**	**+0.8**
CMCH				*i* S		S	**17 57 30.8**	**+0.3**
CMCH				AMP			17 57 33.1	
	comp=E,2μm,1.0s							
PTCH	**Petorca**	**2.04**	**248**	*i* P		P	**17 57 06.3**	**+0.3**
PTCH				*i* S		S	**17 57 30.4**	**-1.1**
PTCH				AMP			17 57 31.9	
	comp=N,812nm,0.2s							
ILCH	**Illapel**	**2.11**	**266**	*i* P		P	**17 57 06.9**	**0.0**
ILCH				*i* S		S	**17 57 32.0**	**-1.1**
ILCH				AMP			17 57 35.6	
	comp=E,419nm,0.2s							
TLL	**Tololo Astrono**	**2.25**	**306**	⇑*i*P		P	**17 57 10.1**	**+1.3**
TLL				*i* S		S	**17 57 37.9**	**+1.5**
TLL				AMP			17 57 41.0	
	comp=N,628nm,0.6s							
FCH	**Farellones**	**2.26**	**216**	*e*P		P	**17 57 09.8**	**+0.9**
FCH				*i* S		S	**17 57 38.1**	**+1.4**
PEL	**Peldehue**	**2.34**	**225**	*i* S		S	**17 57 37.9**	**-0.8**
PEL				AMP			17 57 42.0	
	comp=E,229nm,0.3s							
CLCH	**Cerro Calan**	**2.44**	**219**	*i* S		S	**17 57 41.3**	**+0.2**
ROCH	**El Roble**	**2.44**	**233**	*i* P		P	**17 57 11.6**	**+0.2**
ROCH				*i* S		S	**17 57 40.5**	**-0.5**
RCDM	**Rinconada Maip**	**2.66**	**221**	⇑*i*P		P	**17 57 14.2**	**-0.1**
RCDM				*i* S		S	**17 57 45.3**	**-0.9**
RCDM				AMP			17 57 50.7	
	comp=N,149nm,0.4s							
LSCH	**La Serena**	**2.71**	**305**	⇑*i*P		P	**17 57 15.1**	**+0.1**
LSCH				*i* S		S	**17 57 46.0**	**-1.4**
LSCH				AMP			17 57 47.6	
	comp=E,561nm,0.2s							
LVC	**Limon Verde**	**8.86**	**359**	*e*P		P	**17 58 36.6**	**-1.8**
	comp=E,1.7nm,0.4s							

*MEX **15** 18:10:06.5±1.0, 14.10N×92.56W, h73km±69km, MD4.6*
*NEIC **15** 18:10:08.5±0.7, 14.24N×92.36W, h74km±6km, mb4.3/12, MD4.6(MEX), Error ellipse: s-maj=11.5km s-min=6.3km az=219.0*
*CASC **15** 18:10:08.2±1.9, 14.43N×92.28W, h74km±12km, MD4.4, ML4.7, mb4.3(NEIC)*
*IDC **15** 18:10:10.3±2.7, 14.51N×92.16W, h82km±23km, mb3.8/11, mb1 4.0/13, mb1mx3.8/24, MS3.5/9, Ms1 3.5/9, ms1mx3.3/24, Error ellipse: s-maj=27.6km s-min=12.6km az=57.0*

ISC 15 18:10:05.7±0.5, 14.23N±0.04×92.47W±0.03, h56km±5km, n106, σ1§17/122, mb4.1/19, MS3.7/9, 10C-5D, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JAT	**Jato**	**0.81**	**83**	*e*P		P	**18 10 21.7**	**+0.5**
JAT				*e*S		S	**18 10 34.4**	**+1.7**
JAT				AML		AML	18 10 39.6	
	comp=N,96μm,0.2s							
TP2	**Tecpan 2**	**1.50**	**68**	*e*P		P	**18 10 30.7**	**-0.2**
TP2				*e*S		S	**18 10 48.9**	**-0.7**
TP2				AML		AML	18 10 53.3	
	comp=E,16μm,0.5s							
GCG	**Guatemala City**	**1.91**	**79**	*e*P		P	**18 10 36.2**	**-0.2**
GCG				*e*S		S	**18 10 59.0**	**-0.3**
GCG				AML		AML	18 11 07.4	
	comp=N,6μm,0.4s							
IXG	**Ixpaco**	**1.95**	**91**	*e*P		P	**18 10 36.7**	**-0.4**
IXG				*e*S		S	**18 10 59.6**	**-0.8**
IXG				AML		AML	18 11 06.4	
	comp=E,60μm,0.5s							
CCIG	**Comitan**	**2.07**	**9**	*i* P		P	**18 10 39.6**	**+0.9**
CCIG				*i* S		S	**18 11 05.7**	**+2.4**
NBG	**Las Nubes**	**2.08**	**80**	*e*P		P	**18 10 40.0**	**+1.1**
NBG				*e*S		S	**18 11 05.4**	**+1.7**
NBG				AML		AML	18 11 09.2	
	comp=N,26μm,0.5s							
CUSS	**Cusmapa**	**2.46**	**97**	⇑*e*P		P	**18 10 44.1**	**-0.3**
CUSS				*e*S		S	**18 11 13.3**	**0.0**
SCX	**San Cristobal**	**2.50**	**356**	*i* P		P	**18 10 47.0**	**+2.1**
SCX				*i* S		S	**18 11 17.0**	**+2.7**
RBDL	**Robledal**	**2.70**	**92**	⇓*e*P		P	**18 10 48.0**	**+0.3**
RTR	**El Retiro**	**2.75**	**96**	⇑*e*P		P	**18 10 48.5**	**0.0**
RTR				*e*S		S	**18 11 20.1**	**-0.6**
SBLS	**San Blas**	**2.79**	**98**	⇑*e*P		P	**18 10 48.3**	**-0.6**
SBLS				*e*S		S	**18 11 20.8**	**-0.7**
SNJE	**San Jose**	**2.80**	**97**	⇑*e*P		P	**18 10 49.2**	**0.0**
SNJE				*e*S		S	**18 11 21.1**	**-0.7**
MTO2	**Montecristo 2**	**3.01**	**86**	⇑*e*P		P	**18 10 51.6**	**-0.6**
BQQS	**Boqueron**	**3.13**	**99**	⇑*e*P		P	**18 10 53.9**	**0.0**
BQQS				*e*S		S	**18 11 29.1**	**-1.1**
PICS	**Picacho**	**3.15**	**98**	*e*P		P	**18 10 54.1**	**-0.1**
SNET	**Serv Nac Est T**	**3.18**	**99**	⇑*e*P		P	**18 10 54.7**	**+0.1**
SNET				*e*S		S	**18 11 29.9**	**-1.6**
SNET				*i*			18 11 41.8	
	comp=Z,2μm,0.3s							
LFU	**La Fuente**	**3.29**	**98**	*e*P		P	**18 10 56.0**	**-0.1**
LBRS	**Las Brisas**	**3.36**	**98**	*e*P		P	**18 10 57.4**	**+0.4**
LFRS	**El Faro**	**3.36**	**100**	⇑*e*P		P	**18 10 57.2**	**+0.1**
LFRS				*e*S		S	**18 11 34.4**	**-1.6**
LCBS	**La Ceiba**	**3.43**	**99**	⇑*e*P		P	**18 10 58.4**	**+0.4**
LCBS				*e*S		S	**18 11 37.4**	**-0.4**
SNVI	**San Vicente**	**3.57**	**99**	⇓*e*P		P	**18 11 00.0**	**-0.1**
SNVI				*e*S		S	**18 11 40.9**	**-0.5**
CMIG	**Matias Romero**	**3.68**	**321**	*i* P		P	**18 11 00.5**	**-1.1**
CMIG				*i* S		S	**18 11 44.2**	**+0.1**
HUIG	**Huatulco**	**3.84**	**294**	*i* P		P	**18 11 00.7**	**-3.1**
HUIG				*i* S		S	**18 11 44.1**	**-4.0**
BLLM	**Bellamira**	**4.18**	**100**	*e*P		P	**18 11 07.7**	**-0.9**
BLLM				*e*S		S	**18 11 56.6**	**0.0**
TUIG	**Tuzandepetl**	**4.23**	**334**	*i* P		P	**18 11 07.9**	**-1.3**
TUIG				*i* S		S	**18 11 55.6**	**-2.2**
CNCH	**Conchagua**	**4.60**	**101**	*e*P		P	**18 11 14.1**	**-0.4**
CNCH				*e*S		S	**18 12 06.6**	**-0.6**
OXX	**Oaxaca**	**4.99**	**305**	*i* P		P	**18 11 18.0**	**-1.9**
OXX				*i* S		S	**18 12 16.0**	**-0.9**
PYN	**Poneloya**	**5.61**	**108**	⇓*e*P		P	**18 11 27.1**	**-1.4**
TEL3	**Telica 3**	**5.71**	**106**	*e*P		P	**18 11 30.7**	**+0.8**
CNGN	**Cerro Negro**	**5.87**	**106**	*e*P		P	**18 11 34.0**	**+1.9**
CNGN				*e*S		S	**18 12 40.2**	**+1.3**
MIRN	**Miramar**	**5.87**	**107**	⇓*e*P		P	**18 11 32.3**	**+0.1**
COPN	**Copaltepe**	**6.07**	**109**	⇑*e*P		P	**18 11 35.6**	**+0.7**
XAVN	**Gruta Xavier**	**6.33**	**108**	*e*P		P	**18 11 38.1**	**-0.4**
TICN	**Ticuantepe**	**6.45**	**109**	*e*P		P	**18 11 42.7**	**+2.4**
POHV	**Veracruz**	**6.67**	**317**	*e*P		P	**18 11 42.0**	**-1.4**
IISM	**Ciudad Serdan**	**6.68**	**316**	*e*P		P	**18 11 42.0**	**-1.5**
TEIG	**Tepich**	**7.18**	**33**	P		P	**18 11 47.4**	**-3.1**
	comp=Z,26nm,0.3s,baz=165,slow=11,SNR=35							
TEIG				S		S	**18 13 03.9**	**-7.6**
	comp=Z,8.2nm,0.3s,baz=131,slow=23,SNR=2.9							
TEIG	**Tepich**	**7.18**	**33**	*e*P		P	**18 11 47.3**	**-3.3**
TEIG				S		S	**18 13 03.9**	**+7.6**
CRZC	**La Cruz**	**7.45**	**115**	*e*P		P	**18 11 55.1**	**+0.9**
PPM	**Popocatepetl**	**7.62**	**310**	*e*P		P	**18 11 58.0**	**+1.5**
PPM				*e*P			18 11 58.6	
PPM				*i* S		S	**18 13 18.9**	**-3.4**
PPM	**Popocatepetl**	**7.62**	**310**	*e*P		P	**18 11 58.0**	**+1.5**
PPM				*i* S		S	**18 13 18.7**	**-3.6**
YAIG	**Yautepec**	**7.83**	**307**	*i* P		P	**18 12 01.3**	**+1.8**
YAIG				*i* S		S	**18 13 26.3**	**-1.3**
CAIG	**El Cayaco**	**8.02**	**291**	*i* P		P	**18 12 02.5**	**+0.5**
IIZ	**Mezontepec**	**8.15**	**308**	*e*P		P	**18 12 00.0**	**-3.9**
JTS	**JuntasAbangare**	**8.32**	**117**	P		P	**18 12 06.0**	**-0.2**
	comp=Z,2.0nm,0.3s,baz=322,slow=19,SNR=9.7							
JTS				S		S	**18 13 40.1**	**+0.4**
	comp=Z,1.3nm,0.3s,baz=192,slow=18,SNR=2.1							
JTS	**JuntasAbangare**	**8.32**	**117**	*e*P		P	**18 12 05.3**	**-0.8**
	comp=Z,0.7nm,0.6s							
JTS				*e*S		S	**18 13 40.4**	**+0.7**
JCR	**Jicaral**	**8.40**	**120**	⇓*e*P		P	**18 12 09.0**	**+1.7**
CGA2	**Cerro Gallo 2**	**8.87**	**117**	*e*P		P	**18 12 14.5**	**+0.8**
LAJ	**Bijagual**	**9.24**	**117**	*e*P		P	**18 12 16.3**	**-2.5**
ZIIG	**Zihuatanejo**	**9.29**	**292**	*i* P		P	**18 12 20.3**	**+0.8**
ICR	**Volcan Irazu**	**9.44**	**116**	*e*P		P	**18 12 26.4**	**+4.9**
URSC	**Urasca**	**9.55**	**116**	*e*P		P	**18 12 26.2**	**+3.0**
MOIG	**Morelia**	**9.95**	**304**	*i* P		P	**18 12 28.0**	**-0.7**
MOIG	**Morelia**	**9.95**	**304**	*e*P		P	**18 12 31.1**	**+2.4**
TXAR	**Lajitas Array**	**18.26**	**327**	P		P	**18 14 17.8**	**+1.0**
	comp=Z,0.3nm,0.3s,baz=150,slow=10,SNR=33							
TXAR				PcS			18 22 23.9	
	comp=Z,0.0nm,0.3s,baz=153,slow=4.0,SNR=5.9							
TXAR				LR		LR	18 23 02.3	
	comp=Z,45nm,18.2s,baz=330,slow=42							
LRAL	**Lakeview Retre**	**19.37**	**14**	*e*P		P	**18 14 29.6**	**0.0**
	comp=Z,24nm,1.0s							
ROSC	**El Rosal**	**20.14**	**116**	P		P	**18 14 37.7**	**-0.2**
	comp=Z,5.7nm,0.3s,baz=136,slow=22,SNR=3.7							
MIAR	**Mount Ida**	**20.25**	**357**	*e*P		P	**18 14 41.5**	**+2.5**
	comp=Z,27nm,0.8s							
UALR	**University of**	**20.46**	**0**	*e*P		P	**18 14 40.9**	**-0.2**
	comp=Z,13nm,0.7s							
UALR				*e*			18 14 52.7	
CLNB	**Carlsbad**	**20.76**	**332**	*e*P		P	**18 14 44.0**	**-0.2**
CLNB				*e*			18 15 03.2	
GDL2	**Guadalupe Moun**	**20.94**	**331**	*e*P		P	**18 14 46.1**	**0.0**
MNTX	**Cornudas Mount**	**21.03**	**328**	*e*P		P	**18 14 46.4**	**-0.6**
	comp=Z,8.9nm,0.8s,mb4.2							
WMOK	**Wichita Mounta**	**21.20**	**345**	*e*P		P	**18 14 46.6**	**-2.1**
	comp=Z,3.9nm,0.8s,mb3.8							
CPRX	**Cap Rock**	**21.41**	**333**	*e*P		P	**18 14 50.8**	**+0.1**
SWET	**Sewanee**	**21.71**	**15**	*e*P		P	**18 14 59.5**	**+5.8**
SDV	**Santo Domingo**	**22.03**	**102**	P		P	**18 14 56.4**	**-0.6**
	comp=Z,2.5nm,0.4s,mb4.0,baz=341,slow=3.9,SNR=5.4							
WVT	**Waverly**	**22.20**	**10**	P		P	**18 15 01.6**	**+3.0**
	comp=Z,21nm,1.2s,mb4.5							
BNM	**Barren Site**	**23.62**	**330**	*e*P		P	**18 15 14.2**	**+1.8**
LPM	**Los Pinos Moun**	**23.75**	**330**	*e*P		P	**18 15 14.5**	**+0.8**
LAZ	**Ladron**	**24.07**	**329**	*e*P		P	**18 15 18.1**	**+1.3**
ANMO	**Albuquerque**	**24.19**	**331**	*e*P		P	**18 15 19.1**	**+1.1**
	comp=Z,5.4nm,0.9s,mb4.0							
TUC	**Tucson**	**24.57**	**320**	*e*P		P	**18 15 23.3**	**+1.5**
	comp=Z,6.7nm,0.9s,mb3.8							
SJG	**San Juan**	**25.56**	**78**	LR		LR	18 24 55.9	
	comp=Z,87nm,20.9s,MS3.3,baz=264,slow=35							
PCRV	**Puerto La Cruz**	**27.49**	**95**	LR		LR	18 27 13.8	
	comp=Z,61nm,18.5s,MS3.2,baz=143,slow=38							
PV01	**Paradox Valley**	**27.77**	**332**	*e*P		P	**18 15 52.3**	**+1.0**
PV10	**Paradox Valley**	**28.18**	**332**	*e*P		P	**18 15 54.8**	**-0.2**
MSU	**Marysvale**	**29.82**	**328**	*e*P		P	**18 16 10.4**	**+0.7**
DAU	**Daniels Canyon**	**30.83**	**331**	*e*P		P	**18 16 18.7**	**+0.1**
PDAR	**Pinedale Array**	**32.03**	**336**	P		P	**18 16 27.6**	**-1.6**
	comp=Z,0.5nm,0.9s,mb3.3,baz=131,slow=8.3,SNR=2.8							
SADO	**Sadowa**	**32.48**	**118**	LR		LR	18 31 07.7	
	comp=Z,141nm,18.6s,MS3.7,baz=48,slow=39							
NVAR	**Mina Array Bea**	**33.21**	**321**	P		P	**18 16 40.9**	**+1.4**
	comp=Z,5.5nm,0.7s,mb4.6,baz=130,slow=9.8,SNR=41							
HLID	**Hailey**	**34.76**	**332**	*e*P		P	**18 16 52.9**	**+0.2**
	comp=Z,3.7nm,1.0s,mb4.3							
MCMT	**McKenzie Canyo**	**35.07**	**334**	*e*P		P	**18 16 56.4**	**+1.1**
WVOR	**Wild Horse Val**	**36.05**	**326**	*e*P		P	**18 17 03.7**	**0.0**
	comp=Z,4.6nm,0.8s,mb4.5							
MOD	**Modoc**	**36.62**	**324**	*e*P		P	**18 17 09.0**	**+0.5**
	comp=Z,3.3nm,1.0s,mb4.1							
LPAZ	**La Paz**	**38.69**	**141**	P		P	**18 17 27.1**	**+1.1**
	comp=Z,0.5nm,0.6s,mb3.4,baz=315,slow=7.1,SNR=2.7							
NEW	**Newport**	**39.59**	**334**	LR		LR	18 36 50.4	
	comp=Z,44nm,20.4s,MS3.3,baz=113,slow=40							
YKA	**Yellowknife Ar**	**50.70**	**347**	P		P	**18 18 58.7**	**-2.8**
	comp=Z,1.4nm,0.5s,mb4.2,baz=153,slow=7.3,SNR=30							
YKA				ScP			18 24 07.1	
	comp=Z,0.5nm,0.9s,baz=143,slow=3.1,SNR=2.7							
YKA	**Yellowknife Ar**	**50.70**	**347**	P		P	**18 18 58.7**	**-2.9**
YKA				ScP			18 24 07.1	
FRB	**Frobisher Bay**	**52.20**	**13**	P		P	**18 19 09.6**	**-3.2**
	comp=Z,0.6nm,0.3s,mb4.0,baz=196,slow=5.8,SNR=2.4							
DLBC	**Dease Lake**	**52.26**	**336**	P		P	**18 19 13.0**	**-0.3**
	comp=Z,2.5nm,1.0s,mb4.1,baz=169,slow=9.8,SNR=4.8							
DLBC	**Dease Lake**	**52.26**	**336**	P		P	**18 19 13.0**	**-0.3**
BDFB	**Brasilia**	**53.02**	**122**	LR		LR	18 41 40.2	
	comp=Z,58nm,19.8s,MS3.6,baz=290,slow=36							
INK	**Inuvik**	**60.09**	**344**	P		P	**18 20 07.0**	**-2.2**
	comp=Z,2.9nm,0.6s,mb4.5,baz=143,slow=8.0,SNR=11							
ILAR	**Eielson Array**	**62.45**	**337**	P		P	**18 20 23.4**	**-1.8**
	comp=Z,2.8nm,1.1s,mb4.3,baz=135,slow=4.5,SNR=12							
ILAR				pP		pP	18 20 38.9	-1.7
	comp=Z,1.7nm,0.9s,baz=133,slow=4.4,SNR=8.6							
RAR	**Rarotonga**	**74.86**	**243**	LR		LR	18 44 49.9	
	comp=Z,411nm,22.0s,MS4.7,baz=114,slow=28							
BILL	**Bilibino**	**81.08**	**338**	*e*P		P	**18 22 15.8**	**-0.2**
	comp=Z,20nm,1.4s,mb4.8							
BILL				*e*		pP	18 22 31.8	-0.2
NOA	**NORSAR Array B**	**84.16**	**28**	LR		LR	18 57 09.9	
	comp=Z,36nm,20.5s,MS3.7,baz=295,slow=34							
ARCES	**ARCESS Array B**	**86.06**	**18**	P		P	**18 22 39.5**	**-1.6**
	comp=Z,1.0nm,0.6s,mb4.2,baz=315,slow=6.9,SNR=4.1							
ARCES				LR		LR	18 58 44.4	
	comp=Z,54nm,20.2s,MS3.9,baz=48,slow=34							
FINES	**FINESS Array B**	**90.49**	**25**	LR		LR	19 00 19.6	
	comp=Z,18nm,21.5s,MS3.5,baz=187,slow=33							
MKAR	**Makanchi Array**	**119.08**	**4**	PKP		PKPdf	18 28 49.1	+0.6
	comp=Z,0.2nm,0.6s,baz=311,slow=1.5,SNR=3.6							
STKA	**Stephens Creek**	**127.78**	**241**	PKP		PKPdf	18 29 06.8	+1.1
	comp=Z,1.3nm,0.7s,baz=103,slow=23,SNR=3.0							
WRA	**Warramunga Arr**	**135.01**	**256**	PKP		PKPdf	18 29 20.3	+0.7
	comp=Z,0.4nm,0.7s,baz=101,slow=1.6,SNR=8.2							
ASAR	**Alice Springs**	**135.31**	**251**	PKhKP			18 29 18.6	
	comp=Z,0.2nm,0.7s,baz=59,slow=5.3,SNR=3.1							
FITZ	**Fitzroy Crossi**	**143.24**	**259**	PKhKP			18 29 33.3	
	comp=Z,1.7nm,0.9s,baz=170,slow=3.4,SNR=3.6							
CMAR	**Chiang Mai Arr**	**145.63**	**341**	PKPbc		PKPbc	18 29 39.5	+0.2
	comp=Z,5.3nm,0.9s,baz=341,slow=3.7,SNR=23							
CMAR				pPKPbc			18 29 56.4	
	comp=Z,6.4nm,1.1s,baz=335,slow=4.2,SNR=7.0							

*NEIC **15** 18:10:23.4, 37.87S×73.07W, h21km, ML3.6(GUC), After GUC.*

GUC 15 18:10:23.4±0.8, 37.87S×73.07W, h21km±11km, MD3.8,

ML3.6, 2D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
TMCH	**Temuco**	**0.95**	**158**	⇓*i*P		Pb	18 10 40.1	-0.9
TMCH				*i* S		Sb	18 10 52.3	-0.9
TMCH				AMP			18 10 57.0	
	comp=N,4μm,0.4s							
CCHI	**Chillan**	**1.49**	**32**	*e*P		Pn	18 10 48.8	-0.5
CCHI				*i* S		Sn	18 11 08.2	0.0
CCHI				AMP			18 11 13.6	
	comp=N,2μm,0.5s							
COCH	**Cobquecura**	**1.75**	**7**	*i* P		Pn	18 10 52.8	-0.1
COCH				AMP			18 11 26.0	
	comp=E,714nm,0.5s							
VLCH	**Valdivia**	**1.94**	**184**	⇓*i*P		Pn	18 10 55.5	-0.2
VLCH				*i* S		Sn	18 11 21.1	+1.5
TALC	**Talca**	**2.72**	**25**	*i* P		Pn	18 11 04.8	-2.1
TALC				*i* S		Sn	18 11 37.9	-1.6
LMEL	**Las Melosas**	**4.64**	**31**	*e*P		Pn	18 11 31.6	-2.5
LMEL				*i* S		Sn	18 12 25.1	-2.9
FCH	**Farellones**	**5.06**	**27**	*i* P		Pn	18 11 36.5	-3.6
FCH				*i* S		Sn	18 12 34.4	-4.3

*JMA **15** 18:18:00.4±0.3, 25.03N×121.70E, h143km, M2.5*
*TAP **15** 18:18:00.7, 25.05N×121.60E, h140km±1km, ML3.4*

ISC 15 18:18:00.9±2.5, 25.3N±0.6×121.8E±0.3, h127km±50km, n6, σ0§40/10, Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
YOJ	**Yonaguni jima**	**1.38**	**128**	P		**P**	**18 18 27.6**	**-0.3**
YOJ				*e*S		**S**	**18 18 48.7**	**+0.3**
IRIF	**Iriomote-Funau**	**2.00**	**119**	P		**P**	**18 18 34.8**	**-0.3**
IRIF				S		**S**	**18 19 00.8**	**-0.2**
HATJ	**Hateruma jima**	**2.20**	**124**	*e*S		**S**	**18 19 06.3**	**+0.6**
JKRS	**Kuro-shima**	**2.27**	**118**	P		**P**	**18 18 38.5**	**-0.1**
JKRS				*e*S		**S**	**18 19 06.8**	**-0.4**
JIJ	**Ishigaki jima**	**2.32**	**114**	P		**P**	**18 18 39.0**	**-0.3**
JIJ				S		**S**	**18 19 08.1**	**-0.3**
JTJ	**Tarama**	**2.71**	**104**	P		**P**	**18 18 45.2**	**+0.8**

MAN 15 18:21:40.1, 8.27N×125.83E, h73km, mb4.2, ML3.0, MS2.7, 1C-1D, Mindanao

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
BUTP	**Butuan**	**0.72**	**343**	*e*P		P	18 21 57.0	+1.4
BUTP				*e*S		S	18 22 39.0	+32
CGP	**Cagayan de Oro**	**1.14**	**279**	⇑*i*P		P	18 22 01.6	+0.8
CGP				*i* S		S	18 22 09.3	-6.9
CTBH	**Cotabato--PC H**	**1.89**	**236**	⇓*i*P		P	18 22 11.2	+0.4
CTBH				*i* S		S	18 22 26.2	-7.3
MSLP	**Maasin**	**2.08**	**333**	*e*P		P	18 22 28.4	+15
MSLP				*e*S		S	18 22 55.1	+17
PAGZ	**Pagadian**	**2.46**	**260**	*e*P		P	18 22 18.8	-0.1
PAGZ				*e*S		S	18 22 40.9	-7.0

*IDC **15** 18:28:26.5±3.5, 7.32S×130.47E, mb1 3.4/3, mb1mx3.2/15, ML2.8/3, Error ellipse: s-maj=80.2km s-min=45.9km az=82.0*

ISC 15 18:28:28.0±3.2, 7.4S±0.2×130.0E±0.2, h33km, n4, σ1§35/6, Tanimbar Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**11.51**	**201**	Pn		**P**	**18 31 14.1**	**+1.0**
	0.1nm,0.3s,baz=41,slow=11,SNR=11							
FITZ				Sn		**S**	**18 33 20.9**	**-0.6**
	0.1nm,0.3s,baz=229,sl

CPUP				LR	LR		
	comp=Z,79nm,18.1s,MS4.0						
BDFB	**Brasilia**	**71.93**	**267**	P	**P**	**19 05 41.6**	**+0.2**
	comp=Z,1.6nm,0.5s,mb4.2,baz=108,slow=6.4,SNR=3.1						
BDFB				LR	LR	19 30 02.3	
	comp=Z,552nm,21.6s,MS4.8,baz=291,slow=30						
STKA	**Stephens Creek**	**78.71**	**125**	*eP*	**P**	**19 06 19.2**	**-0.6**
	comp=Z,8.2nm,0.8s,mb4.7						
STKA	**Stephens Creek**	**78.71**	**125**	P	**P**	**19 06 19.1**	**-0.7**
	comp=Z,6.3nm,0.9s,mb4.5,baz=254,slow=6.8,SNR=8.3						
STKA				LR	LR	19 32 56.9	
	comp=Z,360nm,20.4s,MS4.7,baz=208,slow=30						
FITZ	**Fitzroy Crossi**	**79.19**	**105**	*eP*	**P**	**19 06 23.3**	**+0.7**
	comp=Z,2.3nm,0.8s,mb4.2						
FITZ	**Fitzroy Crossi**	**79.19**	**105**	LR	LR	19 35 39.1	
	comp=Z,132nm,19.2s,MS4.3,baz=171,slow=31						
AS12	**Alice Springs**	**80.37**	**114**	*eP*	**P**	**19 06 28.1**	**-0.8**
	comp=Z,5.6nm,0.7s,mb4.6						
ASAR	**Alice Springs**	**80.37**	**114**	P	**P**	**19 06 28.5**	**-0.4**
	comp=Z,3.8nm,0.9s,mb4.3,baz=218,slow=2.8,SNR=17						
ASAR				LR	LR	19 36 56.4	
	comp=Z,136nm,18.6s,MS4.3,baz=210,slow=32						
LVC	**Limon Verde**	**80.56**	**247**	*eP*	**P**	**19 06 30.1**	**+0.2**
	comp=Z,9.9nm,1.1s,mb4.7						
RPZ	**Rata Peaks**	**82.01**	**151**	LR	LR	19 39 38.4	
	comp=Z,276nm,18.5s,MS4.7,baz=168,slow=33						
WRA	**Warramunga Arr**	**83.40**	**112**	P	**P**	**19 06 44.4**	**-0.4**
	comp=Z,2.4nm,0.8s,mb4.3,baz=217,slow=5.1,SNR=13						
WB2	**Warramunga Arr**	**83.41**	**112**	*eP*	**P**	**19 06 45.5**	**+0.7**
LPAZ	**La Paz**	**84.75**	**252**	P	**P**	**19 06 52.6**	**+1.0**
	comp=Z,1.0nm,0.6s,mb4.2,baz=76,slow=2.5,SNR=5.3						
LPAZ	**La Paz**	**84.75**	**252**	*eP*	**P**	**19 06 53.4**	**+1.8**
	comp=Z,13nm,1.8s,mb4.8						
THR	**Tehran**	**85.04**	**15**	P	**P**	**19 06 53.3**	**+0.7**
	comp=Z,1.8nm,0.8s,mb4.2,baz=100,slow=4.0,SNR=5.2						
THR				LR	LR	19 47 12.5	
	comp=Z,154nm,18.1s,MS4.4,baz=343,slow=37						
BRTR	**Keskin Array B**	**87.12**	**1**	P	**P**	**19 07 03.3**	**+0.5**
	comp=Z,1.0nm,0.8s,mb4.1,baz=172,slow=8.7,SNR=4.1						
URZ	**Urewera**	**88.87**	**153**	LR	LR	19 45 17.1	
	comp=Z,304nm,18.2s,MS4.8,baz=57,slow=34						
CMAR	**Chiang Mai Arr**	**88.93**	**61**	P	**P**	**19 07 12.1**	**+0.2**
	comp=Z,1.7nm,1.1s,mb4.3,baz=210,slow=31,SNR=4.1						
CMAR				LR	LR	19 41 41.6	
	comp=Z,174nm,18.1s,MS4.5,baz=235,slow=32						
CTA	**Charters Tower**	**90.47**	**121**	LR	LR	19 42 05.6	
	comp=Z,189nm,18.4s,MS4.6,baz=207,slow=32						
TGY	**Tagaytay City**	**99.57**	**80**	LR	LR	19 46 39.3	
	comp=Z,190nm,18.1s,MS4.6,baz=226,slow=32						
SCHQ	**Schefferville**	**131.47**	**310**	PKP	PKPdf	19 13 30.4	-0.6
	comp=Z,3.4nm,1.1s,baz=99,slow=19,SNR=2.8						
SWET	**Sewanee**	**133.06**	**278**	PKPdf	PKPdf	19 13 30.3	-4.4
TXAR	**Lajitas Array**	**141.38**	**258**	PKhKP		19 13 43.7	
	comp=Z,0.8nm,0.9s,baz=143,slow=6.3,SNR=4.3						
TXAR	**Lajitas Array**	**141.38**	**258**	PKP	PKPdf	19 13 43.7	-6.2
CLNB	**Carlsbad**	**143.38**	**261**	PKP	PKPdf	19 13 52.6	-0.7
MNTX	**Cornudas Mount**	**144.03**	**259**	*e*PKP	PKPdf	19 13 50.4	-4.0
ULM	**Lac du Bonnet**	**146.31**	**294**	PKPbc	PKPbc	19 13 58.0	+2.1
	comp=Z,4.0nm,0.6s,baz=204,slow=0.9,SNR=3.9						
BNM	**Barren Site**	**146.35**	**261**	PKP	PKPdf	19 13 59.2	+0.8
LPM	**Los Pinos Moun**	**146.45**	**262**	*e*PKP	PKPdf	19 13 58.7	+0.2
ANMO	**Albuquerque**	**146.71**	**263**	*e*PKP	PKPdf	19 13 60.0	+1.0
LAZ	**Ladron**	**146.84**	**261**	*e*PKP	PKPdf	19 14 00.3	+1.1
TUC	**Tucson**	**147.97**	**255**	*e*PKP	PKPdf	19 14 01.2	+0.1
BILL	**Bilibino**	**149.43**	**32**	*e*PKPbc	PKPdf	19 14 06.7	+4.4
RSSD	**Black Hills**	**149.54**	**280**	*e*PKPbc	PKPdf	19 14 06.3	+3.1
PV01	**Paradox Valley**	**149.88**	**266**	*e*PKPbc	PKPdf	19 14 06.4	+2.4
PV01				*e*PKPab	PKPab	19 14 13.9	+0.4
WUAZ	**Wupatki**	**150.31**	**259**	*e*PKPdf	PKPdf	19 14 04.3	-0.4
WUAZ				*e*PKPbc	PKPdf	19 14 09.5	+4.8
WUAZ				*e*PKPab	PKPab	19 14 13.8	-1.6
SRU	**San Rafael**	**151.69**	**266**	*e*PKPbc	PKPdf	19 14 05.8	-0.8
SRU				*e*PKPab	PKPab	19 14 21.6	+0.5
MSU	**Marysvale**	**152.50**	**264**	*e*PKPdf	PKPdf	19 14 07.3	-0.6
MSU				*e*PKPbc	PKPdf	19 14 14.8	+7.0
MSU				*e*PKPab	PKPab	19 14 21.1	-3.4
MVU	**Marysvale**	**152.52**	**264**	*e*PKPdf	PKPdf	19 14 08.2	+0.3
PDAR	**Pinedale Array**	**152.70**	**274**	PKPbc	PKPdf	19 14 13.7	+5.8
	comp=Z,0.6nm,0.7s,baz=90,slow=3.0,SNR=6.8						
PDAR				PKPab	PKPab	19 14 24.0	-1.2
	comp=Z,1.5nm,0.7s,baz=135,slow=2.1,SNR=6.6						
HWUT	**Hardware Ranch**	**153.57**	**270**	*e*PKPbc	PKPdf	19 14 15.7	+6.5
YKA	**Yellowknife Ar**	**156.26**	**321**	PKP	PKPdf	19 14 09.9	-2.2
	comp=Z,0.2nm,0.6s,baz=44,slow=1.8,SNR=5.5						
YKA				PKPbc	PKPdf	19 14 19.7	+7.7
	comp=Z,0.3nm,0.6s,baz=52,slow=1.9,SNR=7.4						
INK	**Inuvik**	**158.15**	**346**	PKPab	PKPab	19 14 46.8	-0.8
	comp=Z,0.6nm,0.4s,baz=80,slow=1.8,SNR=3.3						

CASC 15 19:15:14.6±1.8, 11.67N×86.40W, h136km±9km, MD3.5, 9C-1D, Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
TICN	**Ticuantepe**	**0.40**	**25**	*e*P		P	19 15 33.9	-0.6
APON	**Apoyo**	**0.41**	**53**	*e*P		P	19 15 33.8	-0.7
APON				*e*S		S	19 15 48.9	-0.7
COPN	**Copaltepe**	**0.54**	**340**	*e*P		P	19 15 34.4	-0.7
COPN				*e*S		S	19 15 50.0	-0.8
MOMJ	**Momotombo**	**0.75**	**350**	*e*P		P	19 15 35.3	-1.1
MOMJ				*e*S		S	19 15 53.7	+0.6
CONN	**Concepcion**	**0.77**	**98**	*i*P		P	19 15 36.0	-0.5
MIRN	**Miramar**	**0.82**	**338**	*e*P		P	19 15 36.6	-0.3
CNGN	**Cerro Negro**	**0.88**	**341**	*e*P		P	19 15 36.7	-0.6
CNGN				*e*S		S	19 15 56.6	+1.9
LEON	**Leon**	**0.88**	**327**	*e*P		P	19 15 37.0	-0.3
PYN	**Poneloya**	**0.93**	**319**	*e*P		P	19 15 37.8	0.0
PYN				*e*S		S	19 15 56.0	+0.6
TEL3	**Telica 3**	**1.00**	**334**	*e*P		P	19 15 38.0	-0.2
CRZC	**La Cruz**	**1.06**	**132**	*e*P		P	19 15 39.5	+0.6
CRZC				*e*S		S	19 15 58.0	+0.5
JCR	**Jicaral**	**2.21**	**145**	*e*P		P	19 15 52.6	+0.7
JCR				*e*S		S	19 16 20.5	0.0
CGA2	**Cerro Gallo 2**	**2.51**	**131**	*i*P		P	19 15 56.8	+1.0
PRS1	**Puriscal**	**2.65**	**129**	*e*P		P	19 16 03.5	+5.8
LAJ	**Bijagual**	**2.87**	**128**	*e*P		P	19 15 58.8	-1.8
URSC	**Urasca**	**3.16**	**125**	*e*P		P	19 16 05.8	+1.5

*NIED **15** 19:15:00, 34.10N×141.60E, h23km, Mw4.0 Best double couple: M₀9.92×10¹⁴ NP1:φ₂257°, δ60°, λ-137°. NP2: φ₂142°, δ54°, λ-39°.*
*JMA **15** 19:15:49.0±0.3, 34.11N×141.63E, h29km±2km, M3.7*
*NEIC **15** 19:15:52.7±1.5, 34.08N×141.52E, h42km±13km, mb4.5/2, Error ellipse: s-maj=13.6km s-min=8.8km az=87.0*
*IDC **15** 19:15:52.6±3.3, 34.08N×141.56E, h39km±30km, mb3.6/16, mb1 3.9/18, mb1mx3.8/27, ML3.9/2, MS3.2/1, Ms1 3.2/1, ms1mx2.4/34, Error ellipse: s-maj=20.3km s-min=16.4km az=83.0*

ISC 15 19:15:48.9±1.1, 34.12N±0.04×141.66E±0.05, h28km±7km, n42, σ0§96/53, mb3.9/18, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
BSO1	**Boso 1**	**0.78**	**314**	P		**Pb**	**19 16 03.4**	**-0.4**
BSO1				*e*S		**Sb**	**19 16 13.9**	**-0.2**
BSO3	**Boso 3**	**1.17**	**306**	P		**Pn**	**19 16 10.0**	**+0.3**
BSO3				*e*S		**Sn**	**19 16 23.4**	**-1.4**
BSO4	**Boso 4**	**1.40**	**309**	P		**Pn**	**19 16 13.8**	**+0.9**
BSO4				*e*S		**Sn**	**19 16 32.2**	**+1.6**
CHOJ	**Chosi**	**1.72**	**338**	P		**Pn**	**19 16 18.0**	**+0.5**
CHOJ				*e*S		**Sn**	**19 16 37.7**	**-0.9**
TATJ	**Tateyama 2**	**1.72**	**303**	P		**Pn**	**19 16 18.4**	**+0.8**
JHJ2	**Mitsune**	**1.84**	**237**	P		**Pn**	**19 16 20.2**	**+1.0**
JHJ2				*e*S		**Sn**	**19 16 42.7**	**+1.0**
JHJ	**Hachijo jima 2**	**1.85**	**238**	Pn		**Pn**	**19 16 20.5**	**+1.0**
	126nm,0.3s,baz=186,slow=2.2,SNR=26							
JHJ				Sn		**Sn**	**19 16 42.6**	**+0.4**
	434nm,0.3s,baz=89,slow=23,SNR=20							
JIM2	**Oshima 3**	**1.94**	**289**	P		**Pn**	**19 16 20.3**	**-0.4**
JKO	**Kozu shima**	**2.09**	**273**	P		**Pn**	**19 16 23.0**	**+0.1**
JIZS	**Izushimoda**	**2.38**	**285**	P		**Pn**	**19 16 26.7**	**-0.3**
JIZS				*e*S		**Sn**	**19 16 54.0**	**-1.5**
JOD2	**Odawara 2**	**2.41**	**299**	P		**Pn**	**19 16 26.7**	**-0.7**
MAJO	**Matsushiro**	**3.72**	**312**	*e*P		**Pn**	**19 16 46.3**	**+0.3**
MAJO				*e*S		**Sn**	**19 17 29.3**	**-0.1**
MAT	**Matsushiro**	**3.72**	**312**	P		**Pn**	**19 16 46.7**	**+0.7**
MAT				S		**Sn**	**19 17 30.0**	**+0.6**
MAT	**Matsushiro**	**3.72**	**312**	*e*P		**Pn**	**19 16 47.0**	**+1.0**
MAT				*e*S		**Sn**	**19 17 30.0**	**+0.6**
CBIJ	**Chichi jima**	**7.01**	**176**	Pn		**Pn**	**19 17 30.7**	**-1.9**
	17nm,0.3s,baz=87,slow=20,SNR=14							
CBIJ				Sn		**Sn**	**19 18 45.0**	**-7.1**
	7.8nm,0.3s,baz=259,slow=22,SNR=4.3							
CBIJ				LR		LR	19 20 17.4	
	comp=Z,165nm,18.5s,baz=101,slow=38							
ASAJ	**Asahikawa**	**10.01**	**4**	Pn		**P**	**19 18 09.2**	**-4.9**
	0.4nm,0.3s,baz=62,slow=30,SNR=4.8							
ASAJ				Sn		**S**	**19 19 58.1**	**-8.5**
	0.2nm,0.3s,baz=96,slow=33,SNR=3.7							
SONM	**Songino Array**	**29.66**	**308**	P		**P**	**19 21 54.4**	**0.0**
	1.0nm,0.6s,mb3.7,baz=106,slow=9.0,SNR=5.1							
CMAR	**Chiang Mai Arr**	**41.04**	**259**	P		**P**	**19 23 31.4**	**-0.3**
	1.3nm,1.1s,mb3.5,baz=46,slow=6.7,SNR=4.2							
ZAL	**Zalesovo**	**44.08**	**315**	P		**P**	**19 23 56.7**	**+0.7**
	0.6nm,0.5s,mb3.6,baz=98,slow=14,SNR=4.2							
ZAL	**Zalesovo**	**44.08**	**315**	P		**P**	**19 23 56.7**	**+0.7**
MKAR	**Makanchi Array**	**45.89**	**305**	P		**P**	**19 24 09.8**	**-0.8**
	0.5nm,0.5s,mb3.7,baz=85,slow=9.1,SNR=9.7							
KURK	**Kurchatov**	**47.93**	**310**	*e*P		**P**	**19 24 25.1**	**-1.6**
ILAR	**Eielson Array**	**51.87**	**31**	P		**P**	**19 24 57.5**	**+0.9**
	1.8nm,0.7s,mb4.1,baz=267,slow=6.5,SNR=20							
BVAR	**Borovoye Array**	**52.71**	**314**	P		**P**	**19 25 02.9**	**-0.2**
	0.6nm,0.4s,mb3.9,baz=228,slow=38,SNR=5.4							
BRVK	**Borovoye**	**52.77**	**314**	*e*P		**P**	**19 25 01.2**	**-2.3**
ZRNK	**Zerenda**	**53.55**	**314**	*e*P		**P**	**19 25 08.8**	**-0.4**
FITZ	**Fitzroy Crossi**	**54.12**	**199**	*e*P		**P**	**19 25 14.0**	**+0.1**
	3.2nm,1.5s,mb4.0							
WRAB	**Tennant Creek**	**54.20**	**188**	*e*P		**P**	**19 25 12.1**	**-2.3**
	15nm,1.1s,mb4.8							
WB2	**Warramunga Arr**	**54.20**	**188**	*e*P		**P**	**19 25 13.8**	**-0.7**
WRA	**Warramunga Arr**	**54.21**	**188**	P		**P**	**19 25 13.7**	**-0.8**
	2.6nm,0.8s,mb4.2,baz=5.9,slow=7.5,SNR=48							
INK	**Inuvik**	**56.90**	**26**	P		**P**	**19 25 33.8**	**+0.4**
	1.0nm,0.5s,mb4.1,baz=225,slow=7.8,SNR=4.2							
ASAR	**Alice Springs**	**57.93**	**188**	P		**P**	**19 25 40.9**	**-0.3**
	1.3nm,0.7s,mb4.0,baz=14,slow=9.8,SNR=17							
STKA	**Stephens Creek**	**65.64**	**180**	P		**P**	**19 26 35.4**	**+2.5**
	1.0nm,0.8s,mb3.9,baz=15,slow=19,SNR=2.0							
YKA	**Yellowknife Ar**	**66.23**	**30**	P		**P**	**19 26 35.9**	**-0.2**
	0.2nm,0.6s,mb3.3,baz=294,slow=6.5,SNR=6.9							
FINES	**FINESS Array B**	**71.49**	**333**	P		**P**	**19 27 08.9**	**+0.3**
	1.7nm,0.9s,mb4.0,baz=68,slow=10,SNR=5.7							
AKASG	**Malin Array Be**	**76.73**	**323**	P		**P**	**19 27 38.9**	**-0.2**
	0.2nm,0.3s,mb3.5,baz=48,slow=5.0,SNR=4.1							
NB2	**NORSAR Subarra**	**76.95**	**338**	P		**P**	**19 27 40.7**	**+0.6**
	0.7nm,0.7s,mb3.7,baz=40,slow=5.8							
NOA	**NORSAR Array B**	**76.95**	**338**	P		**P**	**19 27 40.3**	**+0.2**
	2.8nm,1.1s,mb4.1,baz=39,slow=5.7,SNR=5.2							
GERES	**GERESS Array B**	**85.30**	**328**	P		**P**	**19 28 25.1**	**+0.9**
	0.6nm,0.8s,mb3.8,baz=34,slow=4.8,SNR=4.7							
TXAR	**Lajitas Array**	**91.74**	**53**	P		**P**	**19 28 57.3**	**+2.0**
	0.2nm,0.7s,mb3.6,baz=326,slow=9.0,SNR=3.9							
TXAR	**Lajitas Array**	**91.74**	**53**	P		**P**	**19 28 57.3**	**+2.0**
LPAZ	**La Paz**	**147.90**	**64**	PKPbc	PKPdf		19 35 34.2	+0.4
	1.0nm,0.6s,baz=6.8,slow=12,SNR=5.3							

*TAP **15** 19:25:02.8, 23.94N×122.67E, h21km±1km, ML2.6*
*JMA **15** 19:25:03.2±0.2, 24.04N×122.62E, h26km, M1.7*

ISC 15 19:25:02.9±2.6, 24.1N±0.3×122.6E±0.2, h29km±31km, n5, σ0§43/10, Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
YOJ	**Yonaguni jima**	**0.56**	**44**	P		**Pb**	**19 25 14.2**	**+0.1**
YOJ				*e*S		**Sb**	**19 25 21.8**	**-0.1**
IRIF	**Iriomote-Funau**	**1.08**	**75**	P		**Pn**	**19 25 22.3**	**+0.1**
IRIF				*e*S		**Sn**	**19 25 36.7**	**+0.4**
HATJ	**Hateruma jima**	**1.11**	**90**	P		**Pn**	**19 25 22.4**	**-0.3**
HATJ				*e*S		**Sn**	**19 25 37.1**	**0.0**
JKRS	**Kuro-shima**	**1.31**	**82**	P		**Pn**	**19 25 26.0**	**+0.5**
JKRS				*e*S		**Sn**	**19 25 42.7**	**+0.5**
JIJ	**Ishigaki jima**	**1.45**	**78**	P		**Pn**	**19 25 27.2**	**-0.3**
JIJ				*e*S		**Sn**	**19 25 44.8**	**-0.9**

*NEIC **15** 19:26:41.9±0.2, 44.05N×105.20W, mb4.4/10, ML4.1, Error ellipse: s-maj=3.7km s-min=2.8km az=5.0, Suspected Mining explosion.*
NEIC 35 km [20 miles] SE of Gillette.
*IDC **15** 19:26:41.3±0.4, 43.98N×105.38W, mb4.2/18, mb1 4.2/27, mb1mx4.2/33, ML3.9/9, Error ellipse: s-maj=11.0km s-min=6.5km az=154.0*

ISC 15 19:26:40.0±0.2, 44.04N±0.03×105.24W±0.03, n134, σ1§02/132, mb4.4/46, Wyoming

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
RSSD	**Black Hills**	**0.87**	**84**	*e*Pg		**Pn**	**19 27 00.1**	**+0.7**
BW06	**Boulder Array**	**3.39**	**249**	*e*Pn		**Pn**	**19 27 36.1**	**+0.8**
PDAR	**Pinedale Array**	**3.39**	**249**	Pn		**Pn**	**19 27 35.6**	**+0.3**
	6.3nm,0.3s,baz=62,slow=16,SNR=1.8							
PDAR				Lg			19 28 23.1	
	76nm,0.3s,baz=65,slow=31,SNR=12							
LKWY	**Lake**	**3.74**	**280**	*e*Pn		**Pn**	**19 27 42.8**	**+2.6**
KSWY	**Kelly School**	**3.92**	**266**	*e*Pn		**Pn**	**19 27 45.0**	**+2.2**
WUWY	**Wally Ulrich**	**4.01**	**265**	*e*Pn		**Pn**	**19 27 45.9**	**+1.8**
REDW	**Red Top Meadow**	**4.12**	**262**	*e*Pn		**Pn**	**19 27 46.3**	**+0.6**
YMR	**Madison River**	**4.15**	**281**	*e*Pn		**Pn**	**19 27 46.6**	**+0.5**
ISCO	**Idaho Springs**	**4.25**	**184**	*e*Pn		**Pn**	**19 27 49.5**	**+2.0**
AHID	**Auburn Hatcher**	**4.45**	**255**	*e*Pn		**Pn**	**19 27 50.8**	**+0.4**
QLMT	**Earthquake Lak**	**4.50**	**282**	*e*Pn		**Pn**	**19 27 51.7**	**+0.6**
BOZ	**Bozeman (W)**	**4.82**	**292**	*e*Pn		**Pn**	**19 27 54.3**	**-1.2**
HWUT	**Hardware Ranch**	**5.25**	**245**	*e*Pn		**Pn**	**19 28 01.5**	**-0.2**
HRY	**Holter Researc**	**5.35**	**302**	*e*Pn		**Pn**	**19 28 02.3**	**-0.8**
TCUT	**Toone Canyon**	**5.41**	**239**	*e*Pn		**Pn**	**19 28 04.2**	**+0.3**
MCMT	**McKenzie Canyo**	**5.50**	**281**	*e*Pn		**Pn**	**19 28 06.5**	**+1.3**
JLU	**Jordanelle**	**5.74**	**235**	*e*Pn		**Pn**	**19 28 09.2**	**+0.5**
DAU	**Daniels Canyon**	**5.75**	**233**	*e*Pn		**Pn**	**19 28 09.7**	**+0.9**
CTU	**Camp Tracy**	**5.87**	**237**	*e*Pn		**Pn**	**19 28 10.1**	**-0.2**
SPUT	**South Promonto**	**5.97**	**245**	*e*Pn		**Pn**	**19 28 12.2**	**+0.3**
HVU	**Hansel Valley**	**5.97**	**250**	*e*Pn		**Pn**	**19 28 11.5**	**-0.4**
RW3	**Ridgway**	**6.07**	**198**	*e*Pn		**Pn**	**19 28 15.1**	**+1.8**
MPU	**Maple Canyon**	**6.23**	**232**	*e*Pn		**Pn**	**19 28 15.0**	**-0.5**
SDCO	**Great Sand Dun**	**6.29**	**182**	*e*Pn		**Pn**	**19 28 17.3**	**+0.9**
CHMT	**Chamberlain Mo**	**6.32**	**300**	*e*Pn		**Pn**	**19 28 15.7**	**-1.1**
SRU	**San Rafael**	**6.32**	**221**	*e*Pn		**Pn**	**19 28 16.1**	**-0.6**
PV10	**Paradox Valley**	**6.34**	**208**	*e*Pn		**Pn**	**19 28 13.1**	**-4.0**
PV01	**Paradox Valley**	**6.41**	**204**	*e*Pn		**Pn**	**19 28 19.0**	**+0.9**
NLU	**North Lily Min**	**6.52**	**234**	*e*Pn		**Pn**	**19 28 18.6**	**-1.1**
BGU	**Big Grassy Mou**	**6.54**	**244**	*e*Pn		**Pn**	**19 28 18.9**	**-1.0**
HLID	**Hailey**	**6.65**	**269**	*e*Pn		**Pn**	**19 28 22.4**	**+0.9**
MSO	**Missoula**	**6.72**	**298**	*e*Pn		**Pn**	**19 28 21.3**	**-1.1**
MSU	**Marysvale**	**7.60**	**226**	*e*Pn		**Pn**	**19 28 34.1**	**-0.6**
MVU	**Marysvale**	**7.62**	**226**	*e*Pn		**Pn**	**19 28 34.7**	**-0.4**
BSMT	**Basoo Peak**	**7.66**	**303**	P		**Pn**	**19 28 34.8**	**-0.8**
KSU1	**Kansas State U**	**8.14**	**124**	*e*Pn		**P**	**19 28 42.0**	**-0.3**
ULM	**Lac du Bonnet**	**8.90**	**42**	Pn		**P**	**19 28 50.8**	**-2.1**
	2.4nm,0.3s,baz=229,slow=12,SNR=14							
ULM				Lg			19 31 17.6	
ULM	**Lac du Bonnet**	**8.90**	**42**	*e*Pn		**P**	**19 28 50.4**	**-2.5**
NEW	**Newport**	**9.26**	**301**	Pn		**P**	**19 28 55.8**	**-2.0**
	0.4nm,0.3s,baz=107,slow=13,SNR=3.6							
NEW				Lg			19 31 26.9	
	0.3nm,0.3s,baz=267,slow=18,SNR=2.7							
NEW	**Newport**	**9.26**	**301**	*e*Pn		**P**	**19 28 55.5**	**-2.3**
	3.0nm,0.7s							
LNOR	**Lincton Mounta**	**9.43**	**286**	*e*Pn		**P**	**19 29 00.8**	**+0.7**
BMN	**Battle Mountai**	**9.59**	**252**	*e*Pn		**P**	**19 29 02.1**	**-0.2**
WUAZ	**Wupatki**	**9.73**	**211**	*e*Pn		**P**	**19 29 02.6**	**-1.7**
WVOR	**Wild Horse Val**	**9.91**	**265**	*e*Pn		**P**	**19 29 05.7**	**-1.1**
WRD	**Warden**	**10.16**	**291**	P		**P**	**19 29 09.8**	**-0.3**
GBL	**Gable Mountain**	**10.34**	**289**	P		**P**	**19 29 11.7**	**-0.9**
HAWA	**Hanford**	**10.35**	**288**	*e*P		**P**	**19 29 11.2**	**-1.6**
GBB	**Gable Butte**	**10.45**	**289**	P		**P**	**19 29 14.3**	**+0.1**
WMOK	**Wichita Mounta**	**10.55**	**150**	*e*P		**P**	**19 29 12.5**	**-3.0**
TPH	**Tonopah**	**10.83**	**241**	*e*P		**P**	**19 29 19.4**	**+0.1**
CPRX	**Cap Rock**	**11.05**	**174**	*e*P		**P**	**19 29 21.2**	**-1.2**
ETW	**Entiat**	**11.11**	**294**	P		**P**	**19 29 22.0**	**-1.3**
EBG	**Ellensburg**	**11.14**	**290**	P		**P**	**19 29 23.0**	**-0.5**
TBM	**Table Mountain**	**11.20**	**292**	P		**P**	**19 29 23.6**	**-0.9**
NVAR	**Mina Array Bea**	**11.31**	**245**	Pn		**P**	**19 29 25.6**	**-0.4**
	0.4nm,0.3s,baz=57,slow=13,SNR=54							
NVAR				Lg			19 32 31.0	
	0.1nm,0.3s,baz=73,slow=27,SNR=3.3							
NVAR	**Mina Array Bea**	**11.31**	**245**	Pn		**P**	**19 29 25.6**	**-0.4**
NVAR				Lg			19 32 31.0	
LON	**Longmire**	**11.96**	**289**	*e*P		**P**	**19 29 33.0**	**-1.7**
CCM	**Cathedral Cave**	**12.14**	**115**	*e*P		**P**	**19 29 33.9**	**-3.3**
YBH	**Yreka Blue Hor**	**13.02**	**266**	Pn		**P**	**19 29 52.1**	**+3.2**
	0.5nm,0.3s,baz=51,slow=7.6,SNR=19							
YBH	**Yreka Blue Hor**	**13.02**	**266**	*e*P		**P**	**19 29 51.0**	**+2.1**
	2.8nm,0.6s							
MIAR	**Mount Ida**	**13.09**	**132**	*e*P		**P**	**19 29 46.9**	**-3.0**
JCT	**Junction City**	**14.21**	**161**	*e*P		**P**	**19 30 03.6**	**-1.1**
	16nm,0.7s							
TXAR	**Lajitas Array**	**14.73**	**175**	Pn		**P**	**19 30 10.7**	**-0.8**
	0.1nm,0.3s,baz=356,slow=11,SNR=8.5							
WCI	**Wyandotte Cave**	**15.40**	**106**	*e*P		**P**	**19 30 17.5**	**-2.8**
	17nm,1.0s							
WVT	**Waverly**	**15.48**	**115**	*e*P		**P**	**19 30 18.4**	**-2.8**
	8.8nm,0.5s							
BBB	**Bella Bella**	**17.25**	**306**	P		**P**	**19 30 44.0**	**+0.3**
	0.2nm,0.3s,baz=111,slow=12,SNR=7.0							
CPCT	**Cooper Cave**	**18.06**	**111**	*e*P		**P**	**19 30 52.8**	**-1.2**
SADO	**Sadowa**	**18.64**	**79**	P		**P**	**19 31 01.9**	**+0.8**
	0.4nm,0.3s,baz=284,slow=10,SNR=3.2							
YKA	**Yellowknife Ar**	**19.27**	**347**	P		**P**	**19 31 06.0**	**-2.6**
	0.2nm,0.3s,baz=155,slow=11,SNR=31							
YKA	**Yellowknife Ar**	**19.27**	**347**	P		**P**	**19 31 06.0**	**-2.6**
PWV	**Princeton**	**19.50**	**102**	*e*P		**P**	**19 31 10.8**	**-0.5**
VIB	**Van Inlet**	**20.14**	**307**	P		**P**	**19 31 17.2**	**-1.2**
	SNR=4.4							
DLBC	**Dease Lake**	**21.00**	**322**	P		**P**	**19 31 28.2**	**+1.0**
	6.7nm,0.9s,baz=133,slow=9.6,SNR=17							
SCHQ	**Schefferville**	**26.88**	**53**	*e*P		**P**	**19 32 24.8**	**+0.8**
	5.4nm,1.0s,mb4.2							
INK	**Inuvik**	**28.45**	**338**	P		**P**	**19 32 36.9**	**-1.3**
	2.2nm,1.1s,mb3.9,baz=163,slow=5.0,SNR=4.6							
FRB	**Frobisher Bay**	**28.64**	**34**	P		**P**	**19 32 39.8**	**-0.1**
	2.3nm,

11C-4D, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase Op	ID ISC	Time h m s	Res ISC
JAT	**Jato**	**1.44**	**91**	*eP*	**P**	**19 31 06.0**	**+1.2**
JAT				AML	AML	19 31 37.5	
	comp=E,48μm,0.3s						
TP2	**Tecpan 2**	**2.08**	**78**	*eP*	**P**	**19 31 16.4**	**+2.5**
TP2				AML	AML	19 31 53.7	
	comp=N,14μm,0.5s						
CCIG	**Comitan**	**2.15**	**26⎍**	*eP*	**P**	**19 31 18.1**	**+3.3**
CCIG				*eS*	**S**	**19 31 49.7**	**+9.3**
FUG	**Fuego 3**	**2.21**	**87**	*eP*	**P**	**19 31 15.6**	**-0.2**
SCX	**San Cristobal**	**2.42**	**11⎍**	*eP*	**P**	**19 31 21.5**	**+2.8**
SCX				*eS*	**S**	**19 31 54.6**	**+7.2**
PCG	**Pacaya**	**2.44**	**89**	*eP*	**P**	**19 31 19.5**	**+0.5**
IXG	**Ixpaco**	**2.59**	**93**	*eP*	**P**	**19 31 21.5**	**+0.3**
IXG				AML	AML	19 32 06.4	
	comp=E,37μm,0.4s						
CUSS	**Cusmapa**	**3.11**	**98**	*eP*	**P**	**19 31 29.1**	**+0.5**
CUSS				*eS*	**S**	**19 32 17.3**	**+12**
HUIG	**Huatulco**	**3.21**	**296**	*eP*	**P**	**19 31 22.8**	**-7.3**
HUIG				*i S*	**S**	**19 32 00.3**	**-7.2**
CMIG	**Matias Romero**	**3.21**	**328⎍**	*eP*	**P**	**19 31 28.1**	**-1.9**
CMIG				*eS*	**S**	**19 32 05.4**	**-2.1**
RBDL	**Robledal**	**3.34**	**94**	*eP*	**P**	**19 31 31.8**	**-0.1**
RTR	**El Retiro**	**3.40**	**97**	*eP*	**P**	**19 31 32.5**	**-0.2**
SBLS	**San Blas**	**3.43**	**98**	*eP*	**P**	**19 31 32.8**	**-0.3**
SNJE	**San Jose**	**3.45**	**98**	*eP*	**P**	**19 31 33.2**	**-0.1**
BOQS	**Boqueron**	**3.78**	**99**	*eP*	**P**	**19 31 38.3**	**+0.3**
BOQS				*eS*	**S**	**19 32 36.7**	**+15**
PICS	**Picacho**	**3.80**	**99**	*eP*	**P**	**19 31 39.4**	**+1.0**
TUIG	**Tuzandepetl**	**3.87**	**341**	*i P*	**P**	**19 31 37.3**	**-2.1**
TUIG				*i S*	**S**	**19 32 27.4**	**+3.2**
LFU	**La Fuente**	**3.94**	**98**	*eP*	**P**	**19 31 40.0**	**-0.2**
LBRS	**Las Brisas**	**4.00**	**98**	*eP*	**P**	**19 31 40.5**	**-0.8**
LFRS	**El Faro**	**4.01**	**100⎍**	*eP*	**P**	**19 31 40.8**	**-0.5**
LCBS	**La Ceiba**	**4.08**	**99**	*eP*	**P**	**19 31 42.0**	**-0.3**
SNVI	**San Vicente**	**4.22**	**99**	*eP*	**P**	**19 31 44.5**	**+0.1**
OXX	**Oaxaca**	**4.41**	**309**	*eP*	**P**	**19 31 43.7**	**-3.2**
OXX				*i S*	**S**	**19 32 32.8**	**-4.9**
EVV	**El Vigia**	**4.61**	**333**	*eP*	**P**	**19 31 47.5**	**-2.4**
EVV				*i S*	**S**	**19 32 41.7**	**-1.1**
VSM	**San Miguel**	**4.80**	**100**	*eP*	**P**	**19 31 54.6**	**+2.2**
PNIG	**Pinotepa**	**5.24**	**293**	*eP*	**P**	**19 31 53.4**	**-5.2**
PNIG				*eS*	**S**	**19 32 48.5**	**-10**
IISM	**Ciudad Serdan**	**6.16**	**319**	*eP*	**P**	**19 32 10.2**	**-1.3**
IISM				*i S*	**S**	**19 33 16.8**	**-4.8**
POHV	**Veracruz**	**6.16**	**320**	*eP*	**P**	**19 32 09.7**	**-1.8**
POHV				*i S*	**S**	**19 33 16.6**	**-5.0**
LVIG	**Laguna Verde**	**6.21**	**330**	*eP*	**P**	**19 32 11.3**	**-0.9**
LVIG				*eS*	**S**	**19 33 22.1**	**-0.7**
PYN	**Poneloya**	**6.25**	**107**	*eP*	**P**	**19 32 12.9**	**0.0**
TEL3	**Telica 3**	**6.36**	**105⎍**	*eP*	**P**	**19 32 12.8**	**-1.6**
LEON	**Leon**	**6.36**	**107**	*eP*	**P**	**19 32 16.5**	**+2.1**
CNGN	**Cerro Negro**	**6.51**	**106**	*eP*	**P**	**19 32 17.7**	**+1.1**
CNGN				*eS*	**S**	**19 33 45.5**	**+15**
MIRN	**Miramar**	**6.52**	**106**	*eP*	**P**	**19 32 18.1**	**+1.5**
COPN	**Copaltepe**	**6.71**	**108⎍**	*eP*	**P**	**19 32 18.5**	**-0.9**
XAVN	**Gruta Xavier**	**6.97**	**107**	*eP*	**P**	**19 32 23.5**	**+0.6**
ACX	**Acapulco**	**7.01**	**292**	*eP*	**P**	**19 32 19.6**	**-3.9**
ACX				*i S*	**S**	**19 33 30.2**	**-13**
PPM	**Popocatepetl**	**7.06**	**312**	*eP*	**P**	**19 32 19.8**	**-4.4**
PPM				*eP*		19 32 20.3	
PPM				*i S*	**S**	**19 33 37.4**	**-6.6**
PPM				*i S*	**S**	**19 33 38.8**	**-5.3**
PPM	**Popocatepetl**	**7.06**	**312**	*eP*	**P**	**19 32 19.8**	**-4.4**
PPM				*i S*	**S**	**19 33 38.8**	**-5.3**
YAIG	**Yautepec**	**7.25**	**309**	*eP*	**P**	**19 32 25.1**	**-1.8**
YAIG	**Yautepec**	**7.25**	**309⎍**	*eP*	**P**	**19 32 26.1**	**-0.8**
CAIG	**El Cayaco**	**7.39**	**292**	*eP*	**P**	**19 32 21.1**	**-7.7**
CAIG				*i S*	**S**	**19 33 43.8**	**-8.4**
TEIG	**Tepich**	**7.46**	**38**	P	**P**	**19 32 29.4**	**-0.3**
	comp=E,83nm,0.3s,baz=0.8,slow=1.0,SNR=38						
TEIG				S	**S**	**19 33 55.3**	**+1.4**
	comp=E,42nm,0.3s,baz=305,slow=20,SNR=3.6						
TEIG				LR	LR	19 35 49.7	
	comp=E,35μm,21.5s,baz=185,slow=41						
TEIG	**Tepich**	**7.46**	**38**	*eP*	**P**	**19 32 29.0**	**-0.7**
IIZ	**Mezontepec**	**7.58**	**310**	*eP*	**P**	**19 32 30.0**	**-1.5**
UNM	**Universidad Na**	**7.62**	**311**	*eP*	**P**	**19 32 29.0**	**-3.0**
UNM				*i S*	**S**	**19 33 48.2**	**-10**
CRZC	**La Cruz**	**8.08**	**114**	*eP*	**P**	**19 32 36.5**	**-1.9**
ZIIG	**Zihuatanejo**	**8.65**	**293**	*eP*	**P**	**19 32 41.0**	**-5.2**
ZIIG				*eS*	**S**	**19 34 12.7**	**-11**
JTS	**JuntasAbangare**	**8.94**	**116**	P	**P**	**19 32 49.8**	**-0.5**
	comp=E,1.7nm,0.3s,baz=323,slow=18,SNR=8.1						
JTS	**JuntasAbangare**	**8.94**	**116**	*eP*	**P**	**19 32 50.5**	**+0.2**
	comp=E,0.4nm,0.5s						
JCR	**Jicaral**	**9.02**	**119**	*eP*	**P**	**19 32 51.3**	**-0.1**
FORC	**Fortuna**	**9.11**	**114**	*eP*	**P**	**19 32 57.3**	**+4.7**
MOIG	**Morelia**	**9.36**	**306**	*eP*	**P**	**19 32 53.1**	**-3.0**
MOIG				*eS*	**S**	**19 34 36.7**	**-4.5**
MOIG	**Morelia**	**9.36**	**306⎍**	*eP*	**P**	**19 32 56.0**	**-0.1**
MOIG				*eS*	**S**	**19 34 41.6**	**+0.4**
CGA2	**Cerro Gallo 2**	**9.49**	**116**	*eP*	**P**	**19 32 59.2**	**+1.3**
LAJ	**Bijagual**	**9.87**	**116**	*eP*	**P**	**19 32 58.6**	**-4.5**
ICR	**Volcan Irazu**	**10.07**	**114**	*eP*	**P**	**19 33 07.9**	**+2.0**
COLM	**Colima**	**11.20**	**297**	*eP*	**P**	**19 33 16.6**	**-4.8**
COLM				*i S*	**S**	**19 35 14.5**	**-12**
COLM	**Colima**	**11.20**	**297**	*eP*	**P**	**19 33 20.6**	**-0.8**
COLM				*i S*	**S**	**19 35 14.5**	**-12**
SFJM	**Santa Fe**	**11.26**	**304**	*eP*	**P**	**19 33 21.8**	**-0.4**
ACR	**Cerro Adams**	**11.28**	**119**	*eP*	**P**	**19 33 22.3**	**-0.1**
ZAIG	**Zacatecas**	**12.26**	**314**	*eP*	**P**	**19 33 34.9**	**-0.7**
HKT	**Hockley**	**15.73**	**351**	*eP*	**P**	**19 34 21.0**	**-0.1**
HKT				pmax	pmax		
	comp=Z,1μm,2.3s						
HKT	**Hockley**	**15.73**	**351**	*eP*	**P**	**19 34 21.0**	**-0.2**
	comp=Z,1μm,2.3s						
JCT	**Junction City**	**17.19**	**340**	P	**P**	**19 34 40.3**	**+0.7**
JCT				pmax	pmax		
	comp=Z,110nm,1.1s						
JCT	**Junction City**	**17.19**	**340**	P	**P**	**19 34 40.3**	**+0.7**
	comp=Z,105nm,1.1s						
TXAR	**Lajitas Array**	**17.82**	**329**	P	**P**	**19 34 48.1**	**+0.6**
	comp=Z,0.4nm,0.3s,baz=143,slow=12,SNR=14						
TXAR				LR	LR	19 41 51.2	
	comp=Z,2μm,18.8s,baz=75,slow=37						
LPIG	**La Paz**	**18.89**	**303⎍**	*eP*	**P**	**19 35 02.4**	**+1.8**
LRAL	**Lakeview Retre**	**19.42**	**16**	*eP*	**P**	**19 35 07.0**	**+0.4**
	comp=Z,38nm,1.0s						
MIAR	**Mount Ida**	**20.11**	**359**	PFAKE		19 35 30.0	+16
MIAR				LR	LR		
	comp=Z,1μm,22.0s,MS4.2						
OTAV	**Otavalo**	**20.18**	**133**	*eP*	**P**	**19 35 16.1**	**+1.3**
	comp=Z,14nm,1.1s						
OXF	**Oxford**	**20.36**	**9**	PFAKE		19 35 30.0	+13
OXF				LR	LR		
	comp=Z,3μm,21.0s,MS4.6						
CLNB	**Carlsbad**	**20.36**	**333**	*eP*	**P**	**19 35 16.9**	**+0.3**
GDL2	**Guadalupe Moun**	**20.53**	**332**	*eP*	**P**	**19 35 19.4**	**+1.1**
MNTX	**Cornudas Mount**	**20.60**	**329**	*eP*	**P**	**19 35 19.3**	**+0.3**
	comp=Z,46nm,0.8s						
MNTX				LR	LR		
	comp=Z,3μm,19.0s,MS4.6						
ROSC	**El Rosal**	**20.77**	**115**	P	**P**	**19 35 22.0**	**+1.0**
	comp=Z,14nm,0.6s,baz=103,slow=22,SNR=6.9						
WMOK	**Wichita Mounta**	**20.94**	**347**	*eP*	**P**	**19 35 21.9**	**-0.6**
WMOK				pmax	pmax		
	comp=Z,15nm,0.8s						
WMOK				MLR	MLR		
	comp=Z,2μm,21.0s,MS4.4						
WMOK	**Wichita Mounta**	**20.94**	**347**	*eP*	**P**	**19 35 21.9**	**-0.6**
	comp=Z,15nm,0.8s						
WMOK				LR	LR		
	comp=Z,2μm,21.9s,MS4.4						
CPRX	**Cap Rock**	**21.01**	**334**	*eP*	**P**	**19 35 23.3**	**0.0**
CPRX				*e*		19 35 31.6	
PLAL	**Pickwick Lake**	**21.05**	**12**	P	**P**	**19 35 24.2**	**+0.6**
	comp=Z,57nm,1.0s,mb4.9						
PLAL				LR	LR		
	comp=Z,5μm,20.0s,MS4.9						
SWET	**Sewanee**	**21.77**	**16**	*eP*	**P**	**19 35 32.9**	**+2.1**
HBF	**Harts Bluff**	**21.84**	**30**	*eP*	**P**	**19 35 33.3**	**+1.7**
CSU	**Charleston Sou**	**22.03**	**30**	P	**P**	**19 35 33.2**	**-0.2**
COW	**Cow Castle Cre**	**22.06**	**29**	*eP*	**P**	**19 35 33.7**	**0.0**
TWB	**Tillmans-White**	**22.12**	**30**	*eP*	**P**	**19 35 34.6**	**+0.3**
WVT	**Waverly**	**22.20**	**11**	P	**P**	**19 35 34.6**	**-0.6**
WVT				*e*		19 35 43.1	
WVT				pmax	pmax		
	comp=Z,31nm,0.9s,mb4.7						
WVT				MLR	MLR		
	comp=Z,5μm,20.0s,MS4.9						
WVT	**Waverly**	**22.20**	**11**	P	**P**	**19 35 34.6**	**-0.6**
	comp=Z,31nm,0.8s,mb4.8						
WVT				*e*		19 35 43.1	
WVT				LR	LR		
	comp=Z,5μm,20.0s,MS4.9						
CPCT	**Cooper Cave**	**22.39**	**19**	P	**P**	**19 35 36.6**	**-0.4**
CPCT				*e*		19 35 42.8	
JSC	**Jenkinsville**	**22.56**	**26**	*eP*	**P**	**19 35 38.6**	**-0.2**
JSC				*e*		19 35 50.6	
SDV	**Santo Domingo**	**22.68**	**101**	P	**P**	**19 35 40.5**	**+0.4**
	comp=Z,9.9nm,0.7s,mb4.4,baz=309,slow=5.8,SNR=12						
BNM	**Barren Site**	**23.20**	**331**	*eP*	**P**	**19 35 47.1**	**+2.1**
LPM	**Los Pinos Moun**	**23.33**	**331**	*eP*	**P**	**19 35 48.2**	**+1.9**
LENM	**Lemitar**	**23.38**	**330**	*eP*	**P**	**19 35 49.1**	**+2.4**
LAZ	**Ladron**	**23.65**	**330**	*eP*	**P**	**19 35 51.9**	**+2.5**
CCM	**Cathedral Cave**	**23.67**	**4**	*eP*	**P**	**19 35 48.1**	**-1.5**
CCM				pmax	pmax		
	comp=Z,44nm,0.9s,mb4.9						
CCM				MLR	MLR		
	comp=Z,2μm,22.0s,MS4.5						
CCM	**Cathedral Cave**	**23.67**	**4**	*eP*	**P**	**19 35 48.1**	**-1.4**
	comp=Z,44nm,0.9s,mb4.9						
CCM				LR	LR		
	comp=Z,2μm,22.0s,MS4.5						
ANMO	**Albuquerque**	**23.78**	**332**	P	**P**	**19 35 52.4**	**+1.8**
ANMO				sS		19 40 16.8	
ANMO				P'P'ab		20 16 18.9	
ANMO	**Albuquerque**	**23.78**	**332**	*eP*	**P**	**19 35 52.2**	**+1.6**
ANMO				*e*		19 36 00.6	
ANMO				pmax	pmax		
	comp=Z,42nm,1.1s						
ANMO				MLR	MLR		
	comp=Z,920nm,18.0s						
ANMO	**Albuquerque**	**23.78**	**332**	*eP*	**P**	**19 35 52.1**	**+1.5**
	comp=Z,42nm,1.2s,mb4.8						
ANMO				*e*		19 36 00.6	
ANMO				LR	LR		
	comp=Z,919nm,19.0s,MS4.3						
TUC	**Tucson**	**24.07**	**321**	*eP*	**P**	**19 35 55.1**	**+1.6**
TUC				pmax	pmax		
	comp=Z,53nm,1.1s,mb4.9						
TUC				MLR	MLR		
	comp=Z,4μm,21.0s,MS4.9						
TUC	**Tucson**	**24.07**	**321**	*eP*	**P**	**19 35 55.1**	**+1.6**
	comp=Z,53nm,1.1s,mb4.9						
TUC				LR	LR		
	comp=Z,4μm,21.0s,MS4.9						
SLM	**Saint Louis**	**24.33**	**5**	*eP*	**P**	**19 35 55.8**	**-0.1**
SLM				pmax	pmax		
	comp=Z,36nm,0.6s,mb5.0						
SLM	**Saint Louis**	**24.33**	**5**	*eP*	**P**	**19 35 55.8**	**-0.2**
	comp=Z,36nm,0.6s,mb5.0						
WCI	**Wyandotte Cave**	**24.55**	**13**	PFAKE		19 36 10.0	+12
WCI				LR	LR		
	comp=Z,18μm,19.0s,MS5.6						
KSU1	**Kansas State U**	**24.85**	**354**	*eP*	**P**	**19 36 00.1**	**-0.9**
CBKS	**Cedar Bluff**	**25.06**	**348**	PFAKE		19 36 20.0	+17
CBKS				LR	LR		
	comp=Z,2μm,21.0s,MS4.5						
PWV	**Princeton**	**25.30**	**23**	P	**P**	**19 36 05.8**	**+0.6**
ELN	**Prospectdale**	**25.31**	**24**	*eP*	**P**	**19 36 04.9**	**-0.5**
BLA	**Blacksburg**	**25.43**	**24**	PFAKE		19 36 20.0	+14
BLA				LR	LR		
	comp=Z,9μm,19.0s,MS5.3						
FWV	**Forest Hill**	**25.60**	**23**	*eP*	**P**	**19 36 06.3**	**-1.8**
FWV				*e*		19 36 23.2	
SDCO	**Great Sand Dun**	**25.77**	**337**	*eP*	**P**	**19 36 11.0**	**+1.4**
	comp=Z,27nm,1.3s,mb4.6						
SDCO				LR	LR		
	comp=Z,2μm,19.0s,MS4.6						
SJG	**San Juan**	**26.16**	**78**	PFAKE		19 36 20.0	+6.5
SJG				LR	LR		
	comp=Z,3μm,22.0s,MS4.7						
WUAZ	**Wupatki**	**26.71**	**325**	*eP*	**P**	**19 36 19.5**	**+1.1**
	comp=Z,75nm,1.6s,mb5.0						
WUAZ				LR	LR		
	comp=Z,7μm,19.0s,MS5.3						
RW3	**Ridgway**	**27.08**	**334**	*eP*	**P**	**19 36 23.4**	**+1.6**
RW3				*e*		19 36 30.6	
ACSO	**Alum Creek Sta**	**27.27**	**17**	PFAKE		19 36 40.0	+16
ACSO				LR	LR		
	comp=Z,4μm,20.0s,MS5.0						
PV01	**Paradox Valley**	**27.36**	**333**	*eP*	**P**	**19 36 25.7**	**+1.3**
CBN	**Corbin**	**27.56**	**28**	PFAKE		19 36 40.0	+14
CBN				LR	LR		
	comp=Z,10μm,20.0s,MS5.4						
ISCO	**Idaho Springs**	**27.63**	**339**	*eP*	**P**	**19 36 27.5**	**+0.8**
ISCO				*e*	pP	19 36 35.7	-1.8
ISCO				pmax	pmax		
	comp=Z,140nm,2.1s,mb5.2						
ISCO				MLR	MLR		
	comp=Z,990nm,20.0s,MS4.4						
ISCO	**Idaho Springs**	**27.63**	**339**	*eP*	**P**	**19 36 27.5**	**+0.8**
	comp=Z,141nm,2.1s,mb5.2						
ISCO				*e*	pP	19 36 35.7	-1.8
ISCO				LR	LR		
	comp=Z,989nm,20.0s,MS4.4						
PV10	**Paradox Valley**	**27.77**	**332**	*eP*	**P**	**19 36 28.5**	**+0.4**
MCWV	**Mont Chateau**	**27.78**	**22**	PFAKE		19 36 40.0	+12
MCWV				LR	LR		
	comp=Z,9μm,20.0s,MS5.3						
PFO	**Pinyon Flat Ob**	**28.55**	**316**	PFAKE		19 36 50.0	+15
PFO				LR	LR		
	comp=Z,4μm,19.0s,MS5.1						
JFWS	**Jewell Farm**	**28.57**	**4**	*eP*	**P**	**19 36 33.5**	**-1.7**
JFWS				pmax	pmax		
	comp=Z,33nm,0.9s,mb5.1						
JFWS				MLR	MLR		
	comp=Z,2μm,20.0s,MS4.8						
JFWS	**Jewell Farm**	**28.57**	**4**	*eP*	**P**	**19 36 33.5**	**-1.7**
	comp=Z,33nm,0.8s,mb5.1						
JFWS				LR	LR		
	comp=Z,2μm,20.0s,MS4.8						
AAM	**Ann Arbor**	**29.03**	**15**	PFAKE		19 36 50.0	+11
AAM				LR	LR		
	comp=Z,6μm,19.0s,MS5.2						
SRU	**San Rafael**	**29.05**	**331**	*eP*	**P**	**19 36 40.0**	**+0.6**
SSPA	**Standing Stone**	**29.38**	**24**	PFAKE		19 36 50.0	+7.6
SSPA				LR	LR		
	comp=Z,31μm,19.0s,MS6.0						
MSU	**Marysvale**	**29.38**	**329**	*eP*	**P**	**19 36 44.0**	**+1.6**
MVU	**Marysvale**	**29.39**	**328**	PFAKE		19 36 50.0	+7.5
MVU				LR	LR		
	comp=Z,7μm,20.0s,MS5.3						
MVL	**Millersville**	**29.48**	**27**	P	**P**	**19 36 41.1**	**-2.2**
ERPA	**Erie**	**29.91**	**20**	PFAKE		19 37 00.0	+13
ERPA				LR	LR		
	comp=Z,7μm,19.0s,MS5.3						
DAU	**Daniels Canyon**	**30.43**	**332**	*eP*	**P**	**19 36 53.0**	**+1.3**
NLU	**North Lily Min**	**30.45**	**330**	*eP*	**P**	**19 36 53.0**	**+1.1**
JLU	**Jordanelle**	**30.67**	**332**	*eP*	**P**	**19 36 54.1**	**+0.3**
CTU	**Camp Tracy**	**30.88**	**332**	*eP*	**P**	**19 36 56.4**	**+0.7**
CTU				*e*	pP	19 37 05.0	-1.6
DAC	**Darwin (Calif)**	**30.92**	**319**	PFAKE		19 37 10.0	+14
DAC				LR	LR		
	comp=Z,4μm,19.0s,MS5.0						
TCUT	**Toone Canyon**	**31.06**	**333**	*eP*	**P**	**19 36 58.6**	**+1.2**
RSSD	**Black Hills**	**31.10**	**345**	*eP*	**P**	**19 36 57.9**	**+0.2**
RSSD				pmax	pmax		
	comp=Z,11nm,0.8s,mb4.7						
RSSD				MLR	MLR		
	comp=Z,730nm,20.0s,MS4.3						
RSSD	**Black Hills**	**31.10**	**345**	*eP*	**P**	**19 36 57.9**	**+0.2**
	comp=Z,11nm,0.8s,mb4.7						
RSSD				LR	LR		
	comp=Z,726nm,20.0s,MS4.3						
BINY	**Binghamton**	**31.46**	**25**	PFAKE		19 37 10.0	+9.2
BINY				LR	LR		
	comp=Z,12μm,19.0s,MS5.6						
BBSR	**BB Station**	**31.52**	**50**	PFAKE		19 37 10.0	+8.6
BBSR				LR	LR		
	comp=Z,11μm,20.0s,MS5.5						
HWUT	**Hardware Ranch**	**31.53**	**333**	*eP*	**P**	**19 37 01.3**	**-0.1**
	comp=Z,44nm,1.6s,mb5.0						
HWUT				LR	LR		
	comp=Z,3μm,19.0s,MS5.0						
BGU	**Big Grassy Mou**	**31.66**	**331**	*eP*	**P**	**19 37 03.4**	**+0.9**
BW06	**Boulder Array**	**31.66**	**337**	PFAKE		19 37 10.0	+7.4
BW06				LR	LR		
	comp=Z,2μm,20.0s,MS4.7						
PDAR	**Pinedale Array**	**31.66**	**337**	P	**P**	**19 37 01.9**	**-0.7**
	comp=Z,2.1nm,0.8s,mb4.0,baz=136,slow=9.6,SNR=7.5						
PDAR				PcP	PcP	19 39 52.9	-1.1
	comp=Z,0.9nm,0.9s,baz=180,slow=3.6,SNR=2.5						
PDAR				LR	LR	19 52 31.5	
	comp=Z,1μm,19.2s,MS4.6,baz=155,slow=41						
SPUT	**South Promonto**	**31.68**	**332**	*eP*	**P**	**19 37 02.9**	**+0.1**
TPH	**Tonopah**	**31.85**	**322**	*eP*	**P**	**19 37 05.0**	**+0.7**
TPH				pmax	pmax		
	comp=Z,27nm,1.4s,mb4.9						
TPH				MLR	MLR		
	comp=Z,6μm,21.0s,MS5.2						
TPH	**Tonopah**	**31.85**	**322**	*eP*	**P**	**19 37 05.0**	**+0.7**
	comp=Z,27nm,1.5s,mb4.9						
TPH				LR	LR		
	comp=Z,6μm,21.0s,MS5.2						
MTUM	**Tungsten Hills**	**32.20**	**320**	*eP*	**P**	**19 37 08.8**	**+1.4**
HVU	**Hansel Valley**	**32.21**	**332**	*eP*	**P**	**19 37 08.1**	**+0.7**
HVU				*e*	pP	19 37 16.3	-2.0
AHID	**Auburn Hatcher**	**32.28**	**335**	*eP*	**P**	**19 37 08.4**	**+0.4**
	comp=Z,154nm,1.7s,mb5.6						
AHID				LR	LR		
	comp=Z,3μm,21.0s,MS5.0						
SADO	**Sadowa**	**32.57**	**19**	LR	LR	19 52 05.4	
	comp=Z,5μm,19.2s,MS5.2,baz=212,slow=39						
REDW	**Red Top Meadow**	**32.67**	**336**	*eP*	**P**	**19 37 12.2**	**+0.7**
REDW				*e*		19 37 19.4	
NVAR	**Mina Array Bea**	**32.72**	**322**	P	**P**	**19 37 13.2**	**+1.3**
	comp=Z,12nm,0.9s,mb4.8,baz=131,slow=9.5,SNR=54						
NVAR				PcP	PcP	19 39 56.7	-0.2
	comp=Z,2.2nm,0.8s,baz=122,slow=4.5,SNR=4.9						
NVAR				LR	LR	19 52 12.1	
	comp=Z,4μm,19.7s,MS5.1,baz=105,slow=39						
NVAR	**Mina Array Bea**	**32.72**	**322**	P	**P**	**19 37 13.2**	**+1.3**
NVAR				PcP	PcP	19 39 56.7	-0.2
NVAR				LR	LR	19 52 12.1	
WUWY	**Wally Ulrich**	**32.78**	**336**	*eP*	**P**	**19 37 13.1**	**+0.7**
WUWY				*e*		19 37 20.7	
KSWY	**Kelly School**	**32.80**	**336**	*eP*	**P**	**19 37 13.8**	**+1.2**
KSWY				*e*		19 37 21.6	
BMN	**Battle Mountai**	**33.45**	**326**	*eP*	**P**	**19 37 19.1**	**+1.0**
BMN				pmax	pmax		
	comp=Z,15nm,1.0s,mb4.9						
BMN				MLR	MLR		
	comp=Z,2μm,19.0s,MS4.8						
BMN	**Battle Mountai**	**33.45**	**326**	*eP*	**P**	**19 37 19.1**	**+1.0**
	comp=Z,15nm,1.0s,mb4.9						
BMN				LR	LR		
	comp=Z,2μm,19.0s,MS4.8						
NCB	**Newcomb**	**33.65**	**25**	PFAKE		19 37 30.0	+10
NCB				LR	LR		
	comp=Z,9μm,19.0s,MS5.5						
HRV	**Harvard--Oak R**	**33.66**	**29**	PFAKE		19 37 30.0	+10
HRV				LR	LR		
	comp=Z,2μm,19.0s,MS4.9						
WES	**Weston**	**33.69**	**30**	PFAKE		19 37 30.0	+10
WES				LR	LR		
	comp=Z,8μm,20.0s,MS5.4						
SAO	**San Andreas Ge**	**33.71**	**317**	PFAKE		19 37 30.0	+10
SAO				LR	LR		
	comp=Z,2μm,20.0s,MS4.8						
CMB	**Columbia Colle**	**33.76**	**319**	*eP*	**P**	**19 37 20.9**	**+0.1**
CMB				pmax	pmax		
	comp=Z,8.0nm,1.0s,mb4.6						
CMB				MLR	MLR		
	comp=Z,3μm,19.0s,MS5.0						
CMB	**Columbia Colle**	**33.76**	**319**	*eP*	**P**	**19 37 20.9**	**+0.1**
	comp=Z,8.0nm,1.0s,mb4.6						
CMB				LR	LR		
	comp=Z,3μm,19.0s,MS5.0						
YMR	**Madison River**	**33.82**	**337**	P	**P**	**19 37 21.2**	**-0.1**
YMR				*e*	pP	19 37 29.2	-3.1
QLMT	**Earthquake Lak**	**34.13**	**337**	*eP*	**P**	**19 37 25.4**	**+1.4**
QLMT				*e*		19 37 32.7	
WCN	**Washoe City**	**34.15**	**322**	*eP*	**P**	**19 37 26.3**	**+2.1**
WCN				*e*		19 37 33.7	
WCN				pmax	pmax		
	comp=Z,27nm,1.3s,mb5.0						
WCN	**Washoe City**	**34.15**	**322**	*eP*	**P**	**19 37 26.3**	**+2.1**
	comp=Z,27nm,1.3s,mb5.0						
WCN				*e*		19 37 33.7	
HLID	**Hailey**	**34.35**	**332**	*eP*	**P**	**19 37 26.4**	**+0.5**
	comp=Z,7.0nm,0.8s,mb4.6						
HLID				LR	LR		
	comp=Z,5μm,19.0s,MS5.2						
MCMT	**McKenzie Canyo**	**34.69**	**335**	*eP*	**P**	**19 37 30.6**	**+1.8**
MCMT				*e*	pP	19 37 42.0	+2.2
BEKR	**Beckwourth**	**34.87**	**322**	*eP*	**P**	**19 37 31.3**	**+1.0**
	comp=Z,18nm,1.3s,mb4.8						
BOZ	**Bozeman (W)**	**34.89**	**337**	*eP*	**P**	**19 37 30.9**	**+0.4**
BOZ				pmax	pmax		
	comp=Z,19nm,1.1s,mb4.9						
BOZ				MLR	MLR		
	comp=Z,2μm,19.0s,MS4.9						
BOZ	**Bozeman (W)**	**34.89**	**337**	*eP*	**P**	**19 37 30.9**	**+0.4**
	comp=Z,19nm,1.1s,

LPAZ LR LR
comp=Z,833nm,21.3s,MS4.5
NEW Newport 39.21 335 P **P** **19 38 06.8 +0.1**
comp=Z,5.5nm,0.8s,mb4.3,baz=132,slow=11,SNR=7.0
NEW Newport 39.21 335 *e*P **P** **19 38 07.6 +0.9**
NEW pmax pmax
comp=Z,5.0nm,0.8s
NEW MLR MLR
comp=Z,4μm,19.0s
NEW Newport 39.21 335 *e*P **P** **19 38 07.6 +0.9**
comp=Z,5.1nm,0.8s,mb4.3
NEW LR LR
comp=Z,4μm,19.0s,MS5.3
SSOR Sweet Springs 39.28 327 *e*P **P** **19 38 07.5 +0.1**
DPW Davenport 39.37 333 *e*P **P** **19 38 08.6 +0.6**
COR Corvallis 39.56 326 PFAKE 19 38 20.0 +10
COR LR LR
comp=Z,6μm,19.0s,MS5.5
LON Longmire 40.23 329 *e*P **P** **19 38 15.9 +0.7**
NLW Nelson Butte 40.48 332 *e*P **P** **19 38 18.6 +1.3**
BMW Boistfort Moun 40.76 328 *e*P **P** **19 38 20.8 +1.2**
FFC Flin Flon 40.88 352 *e*P **P** **19 38 19.4 -1.1**
FFC pmax pmax
comp=Z,7.0nm,0.8s,mb4.3
FFC MLR MLR
comp=Z,1μm,19.0s,MS4.8
FFC Flin Flon 40.88 352 *e*P **P** **19 38 19.4 -1.1**
comp=Z,7.0nm,0.8s,mb4.3
FFC LR LR
comp=Z,1μm,19.0s,MS4.8
RPW Rockport 41.29 331 *e*P **P** **19 38 24.4 +0.5**
OCWA Octopus Mounta 42.09 329 *e*P **P** **19 38 32.7 +2.2**
comp=Z,14nm,1.0s,mb4.5
OCWA LR LR
comp=Z,4μm,21.0s,MS5.2
LVC Limon Verde 43.72 147 P **P** **19 38 43.6 -0.6**
comp=Z,7.1nm,1.3s,mb4.2,baz=36,slow=6.6,SNR=2.4
LVC Limon Verde 43.72 147 P **P** **19 38 46.8 +2.6**
LVC LR LR
comp=Z,792nm,22.0s,MS4.6
RPN Rapa Nui 44.13 201 PFAKE 19 39 00.0 +13
RPN LR LR
comp=Z,7μm,21.0s,MS5.6
SCHQ Schefferville 45.28 21 P **P** **19 38 55.9 -0.4**
comp=Z,2.0nm,0.6s,mb4.1,baz=290,slow=11,SNR=3.3
SCHQ LR LR 19 59 09.3
comp=Z,6μm,19.1s,MS5.5,baz=203,slow=38
BBB Bella Bella 46.93 331 P **P** **19 39 09.9 +0.7**
comp=Z,2.4nm,0.7s,mb4.2,baz=138,slow=9.1,SNR=5.0
YKA Yellowknife Ar 50.45 347 P **P** **19 39 35.9 -0.5**
comp=Z,19nm,0.7s,mb5.2,baz=152,slow=7.3,SNR=132
YKA PcP PcP 19 40 52.9 -1.5
comp=Z,1.1nm,0.6s,baz=154,slow=3.5,SNR=2.9
DLBC Dease Lake 51.90 336 P **P** **19 39 48.5 +1.1**
comp=Z,6.0nm,0.7s,mb4.6,baz=151,slow=8.7,SNR=12
FRB Frobisher Bay 52.23 14 P **P** **19 39 48.5 -1.3**
comp=Z,6.0nm,0.6s,mb4.7,baz=206,slow=7.5,SNR=10
SIT Sitka 53.24 333 PFAKE 19 40 10.0 +13
SIT LR LR
comp=Z,2μm,21.0s,MS5.1
CPUP Villa Florida 53.35 139 P **P** **19 39 56.0 -2.7**
comp=Z,4.6nm,1.1s,mb4.3,baz=102,slow=6.5,SNR=2.3
CPUP LR LR 20 02 34.8
comp=Z,662nm,20.5s,MS4.7,baz=352,slow=36
BDFB Brasilia 53.63 122 P **P** **19 40 02.2 +1.3**
comp=Z,8.3nm,1.1s,mb4.6,baz=223,slow=7.9,SNR=3.4
BDFB LR LR 20 05 14.3
comp=Z,1μm,18.9s,MS4.9,baz=313,slow=39
INK Inuvik 59.80 344 P **P** **19 40 43.1 -1.0**
comp=Z,10nm,0.7s,mb5.0,baz=126,slow=7.9,SNR=39
INK LR LR 20 11 11.3
comp=Z,2μm,18.5s,MS5.3,baz=146,slow=41
PMR Palmer 61.62 333 PFAKE 19 41 10.0 +14
PMR LR LR
comp=Z,1μm,20.0s,MS5.0
KDAK Kodiak Island 61.85 328 PFAKE 19 41 10.0 +12
KDAK LR LR
comp=Z,1μm,19.0s,MS5.0
ILAR Eielson Array 62.09 337 P **P** **19 40 58.8 -0.8**
comp=Z,3.9nm,0.8s,mb4.6,baz=139,slow=4.4,SNR=40
ILAR LR LR 20 10 27.4
comp=Z,1μm,19.2s,MS5.0,baz=152,slow=38
COLA College 62.51 337 *e*P **P** **19 41 02.1 -0.3**
COLA pmax pmax
comp=Z,12nm,0.9s,mb5.0
COLA MLR MLR
comp=Z,1μm,20.0s,MS5.0
COLA College 62.51 337 *e*P **P** **19 41 02.0 -0.4**
comp=Z,12nm,0.8s,mb5.1
COLA LR LR
comp=Z,1μm,20.0s,MS5.0
RSO Redoubt South 62.83 331 *e*P **P** **19 41 03.9 -0.7**
RSO *e* pP 19 41 15.2 -1.1
USHA Ushuaia 72.02 165 LR LR 20 09 33.8
comp=Z,1μm,18.1s,MS5.2,baz=62,slow=32
EFI East Falkland 72.46 158 PFAKE 19 42 10.0 +5.1
EFI LR LR
comp=Z,949nm,22.0s,MS5.0
DAG Danmarks Havn 72.58 13⇑ *i*P **P** **19 42 05.5 +0.3**
comp=Z,5.5nm,0.4s,mb4.5
DAG Danmarks Havn 72.58 13⇑ *i*P **P** **19 42 05.5 +0.3**
DAG pmax pmax
comp=Z,3.0nm,0.4s,mb4.6
RAR Rarotonga 74.34 243 LR LR 20 06 07.2
comp=Z,471nm,19.3s,MS4.8,baz=93,slow=28
JMIC Jan Mayen 74.78 20 *e*P **P** **19 42 18.9 +0.7**
JMIC AMS AMS 20 15 50.4
comp=Z,3μm,19.0s,MS5.6
PVIS Viseu 77.22 51 *e*P **P** **19 42 30.4 -2.2**
comp=Z,14nm,1.1s,mb4.8
EVO Evora 77.44 53 *e*P **P** **19 42 30.2 -3.6**
comp=Z,25nm,1.2s,mb4.7
EVO *e*R
comp=Z,1μm,23.0s
MTE Manteigas 77.53 51 *e*P **P** **19 42 32.4 -1.9**
comp=Z,18nm,1.5s,mb4.8
MTE *e*LR LR 20 07 20.8
comp=Z,1μm,21.9s
PCBR Castelo Branco 77.66 52 *e*P **P** **19 42 33.5 -1.5**
comp=Z,15nm,1.9s,mb4.6
ESK Eskdalemuir 78.30 36 PFAKE 19 42 50.0 +12
ESK LR LR
comp=Z,2μm,19.0s,MS5.5
MIDW Midway 78.37 296 PFAKE 19 42 50.0 +11
MIDW LR LR
comp=Z,5μm,20.0s,MS5.8
KBS Kingsbay 78.88 11 *e* **P** **19 42 23.2 -18**
KBS *e*S S 19 52 39.5 +4.5
KBS AMS AMS 20 20 35.7
comp=Z,2μm,20.0s,MS5.4
KBS Kingsbay 78.88 11 PFAKE 19 42 50.0 +9.0
KBS LR LR
comp=Z,2μm,19.0s,MS5.5
ROSF Rostrenen 79.33 43 *e*P **P** **19 42 41.8 -2.2**
QUIF Quistinic 79.47 43 *e*P **P** **19 42 42.6 -2.2**
comp=Z,4.1nm,0.6s,mb4.3
ESDC Sonseca Array 80.36 52 P **P** **19 42 47.6 -2.1**
comp=Z,1.7nm,0.6s,mb4.2,baz=288,slow=5.6,SNR=16
ESDC LR LR 20 15 17.1
comp=Z,925nm,20.0s,MS5.1,baz=260,slow=33
ESLA Sonseca Array 80.36 52 PFAKE 19 43 00.0 +10
ESLA LR LR
comp=Z,7μm,20.0s,MS6.0
BILL Bilibino 80.73 338*c i*P **P** **19 42 51.7 +0.6**
BILL *e* 19 45 59.2
BILL *i*S S 19 53 04.6 +10
BILL *e*SS SS 19 58 13.5 +2.4
BILL pmax pmax
comp=Z,61nm,2.2s,mb5.1
BILL Bilibino 80.73 338 *e*P **P** **19 42 51.6 +0.5**
comp=Z,18nm,1.1s,mb4.9
GRR Gorron 80.91 42 *e*P **P** **19 42 50.6 -1.8**
comp=Z,6.2nm,0.6s,mb4.4
FX1 Attu Island--F 80.92 322 P **P** **19 42 53.0 +0.6**
comp=Z,24nm,0.8s,mb5.2,baz=198,slow=9.5,SNR=2.9
FLN La Foliniere 81.08 42 *e*P **P** **19 42 51.6 -1.7**
comp=Z,9.3nm,0.9s,mb4.4
FLN *e*R
comp=Z,1μm,19.0s
LDF La Druitiere 81.35 42 *e*P **P** **19 42 53.0 -1.7**
comp=Z,4.9nm,0.7s,mb4.2
MFF Saint Martin d 81.74 44 *e*P **P** **19 42 55.7 -1.1**
comp=Z,9.7nm,1.1s,mb4.3
ETSF Etsaut 82.23 48 *e*P **P** **19 42 58.0 -1.4**
comp=Z,4.2nm,0.6s,mb4.2
LFF La Frestale 82.71 46 *e*P **P** **19 43 00.1 -1.7**
comp=Z,7.6nm,0.7s,mb4.5

EPF Esparros 82.85 48 *e*P **P** **19 43 01.2 -1.4**
RJF Les Rejaudoux 83.16 45 *e*P **P** **19 43 02.3 -1.8**
comp=Z,3.9nm,0.7s,mb4.3
RJF *e*R
comp=Z,1μm,22.5s
TCF Toulx Ste Croi 83.40 44 *e*P **P** **19 43 03.3 -2.0**
comp=Z,6.4nm,0.9s,mb4.3
NSS Namsos 83.52 25 AMS AMS 20 21 05.6
comp=Z,2μm,18.5s,MS5.5
BGF Bois d'Agland 83.76 44 *e*P **P** **19 43 05.4 -1.8**
comp=Z,8.7nm,0.6s,mb4.8
BAIF Baives 83.77 40 *e*P **P** **19 43 05.9 -1.2**
AVF Avril sur Loir 84.04 43 *e*P **P** **19 43 06.5 -2.1**
comp=Z,9.3nm,1.0s,mb4.6
KONO Kongsberg 84.05 30 *e* **P** **19 42 57.1 -11**
KONO *e*PP PP 19 46 18.6 -5.6
KONO *e*SKSa 19 53 32.3
KONO AMS AMS 20 18 42.1
comp=Z,998nm,22.0s,MS5.2
KONO Kongsberg 84.05 30 PFAKE 19 43 20.0 +12
KONO LR LR
comp=Z,1μm,20.0s,MS5.2
TRO Tromso 84.07 19⇑ *i*P **P** **19 43 09.8 +1.6**
TRO *e*SKSa 19 53 33.2
TRO AMS AMS 20 20 58.3
comp=Z,2μm,17.5s,MS5.6
SSF Saint Saulge 84.08 43 *e*P **P** **19 43 06.9 -1.8**
comp=Z,5.6nm,0.8s,mb4.4
MTLF Montolieu 84.11 47 *e*P **P** **19 43 07.5 -1.5**
NAO01 NORSAR Array S 84.27 29 PFAKE 19 43 20.0 +11
NAO01 LR LR
comp=Z,2μm,21.0s,MS5.4
NB2 NORSAR Subarra 84.36 28 P **P** **19 43 09.2 -0.6**
comp=Z,9.3nm,1.2s,mb4.8,baz=290,slow=5.0
NB2 NORSAR Subarra 84.36 28 P **P** **19 43 09.2 -0.6**
comp=Z,9.3nm,1.2s,mb4.8,baz=290,slow=5.1
NOA NORSAR Array B 84.36 28 P **P** **19 43 09.9 +0.1**
comp=Z,1.5nm,0.7s,mb4.2,baz=290,slow=5.1,SNR=11
NOA LR LR 20 19 08.6
comp=Z,1μm,21.4s,MS5.3,baz=280,slow=34
SMF Signal de Mont 84.41 43 *e*P **P** **19 43 08.4 -2.0**
comp=Z,5.8nm,0.8s,mb4.4
MEZF Maizieres J'vi 84.71 41 *e*P **P** **19 43 10.6 -1.3**
comp=Z,7.1nm,0.7s,mb4.6
MUD Monsted U'grnd 84.83 33 *i* S S 19 53 51.2 +15
comp=Z,1μm,19.0s
MUD Monsted U'grnd 84.83 33 *i* P **P** **19 43 14.3 +2.1**
MUD MLR MLR
comp=Z,2μm,19.0s,MS5.4
MUD Monsted U'grnd 84.83 33 *i* P **P** **19 43 14.3 +2.1**
MUD *i* S S 19 53 51.2 +15
LASF Ste Croix 85.08 46 *e*P **P** **19 43 12.4 -1.4**
HAU Haudompre 85.68 42 *e*P **P** **19 43 15.5 -1.2**
comp=Z,8.2nm,0.7s,mb4.7
HAU *e*R
comp=Z,1μm,19.5s
CABF La Chapelle 85.91 43 *e*P **P** **19 43 16.8 -1.0**
comp=Z,9.0nm,1.0s,mb4.7
HINF Hinteralfeld 86.06 42 *e*P **P** **19 43 18.3 -0.2**
ARCES ARCESS Array B 86.15 18 P **P** **19 43 18.4 -0.1**
comp=Z,3.1nm,0.7s,mb4.7,baz=288,slow=4.6,SNR=18
ARCES LR LR 20 22 18.9
comp=Z,2μm,18.6s,MS5.4,baz=306,slow=36
CDF Champ du Feu 86.16 41 *e*P **P** **19 43 18.0 -1.0**
ORIF Oris-en-Rattie 86.24 45 *e*P **P** **19 43 19.1 -0.4**
comp=Z,15nm,1.1s,mb4.8
ORIF *e*R
comp=Z,942nm,19.2s
SMRF Simiane la Rot 86.30 46 *e*P **P** **19 43 18.9 -0.9**
KEV Kevo 86.47 18 *e*p **P** **19 43 20.0 -0.1**
LIC Lamto 86.64 84 *e*P **P** **19 43 21.2 -1.0**
comp=Z,69nm,1.5s,mb5.4
LIC *e*R
comp=Z,403nm,19.8s
LPL La Plagne 86.65 44 *e*P **P** **19 43 20.8 -0.7**
DBIC Dimbokro 86.70 84 P **P** **19 43 22.0 -0.5**
comp=Z,2.9nm,0.8s,mb4.5,baz=219,slow=6.5,SNR=3.0
DBIC LR LR 20 19 37.3
comp=Z,330nm,20.6s,MS4.7,baz=272,slow=34
BNI Bardonecchia 86.75 44 *e*P **P** **19 43 22.9 +0.9**
COP Copenhagen 86.81 33 *i* P **P** **19 43 16.8 -5.2**
comp=Z,16nm,0.8s,mb5.3
COP Copenhagen 86.81 33 *i* S S 19 53 59.4 +4.2
comp=Z,600nm,18.0s
COP Copenhagen 86.81 33 *i* P **P** **19 43 16.8 -5.2**
COP *i* S S 19 53 59.4 +4.2
COP pmax pmax
comp=Z,16nm,0.8s,mb5.3
COP MLR MLR
comp=Z,610nm,18.0s,MS5.0
MBDF Montbardon 86.91 45 *e*P **P** **19 43 22.4 -0.4**
comp=Z,6.0nm,0.7s,mb4.6
LMR La Mourre 87.13 46 *e*P **P** **19 43 23.0 -0.9**
comp=Z,14nm,1.1s,mb4.8
FRF La Foret Royal 87.16 46 *e*P **P** **19 43 23.1 -0.9**
comp=Z,20nm,1.1s,mb5.0
SBF Sospel 87.62 45 *e*P **P** **19 43 25.5 -0.7**
MOX Moxa 88.12 38 *e*P **P** **19 43 29.0 +0.6**
MOX S S 19 54 09.0 +1.4
MOX L 20 26 56.0
GRA1 Grafenberg Arr 88.21 39 *e*P **P** **19 43 30.3 +1.4**
comp=Z,9.0nm,1.6s,mb4.8
GRA1 LR LR
comp=Z,1μm,20.4s,MS5.2
GRF Grafenberg Arr 88.21 39 *e*P **P** **19 43 30.3 +1.4**
GRF pmax pmax
comp=Z,9.0nm,1.6s,mb4.8
GRF MLR MLR
comp=Z,1μm,20.4s,MS5.2
BSD Bornholm Skovb 88.33 33 *i* S S 19 54 02.7 -6.8
comp=Z,2μm,18.0s
BSD Bornholm Skovb 88.33 33⇓ *i*P **P** **19 43 32.4 +3.1**
BSD *i* S S 19 54 02.7 -6.8
BSD pmax pmax
comp=Z,25nm,1.3s,mb5.3
BSD MLR MLR
comp=Z,2μm,18.0s,MS5.5
BSD Bornholm Skovb 88.33 33⇓ *i*P **P** **19 43 32.4 +3.1**
comp=Z,25nm,1.3s,mb5.3
BSD *i* S S 19 54 02.7 -6.8
CLL Collm 88.70 37 P **P** **19 43 31.0 -0.2**
CLL *e*S S 19 54 24.0 +11
CLL *e*SS SS 19 59 54.0 -14
CLL Collm 88.70 37 *e*P **P** **19 43 30.0 -1.2**
CLL MLR MLR
comp=Z,1μm,21.3s,MS5.3
CLL Collm 88.70 37 *e*P **P** **19 43 30.0 -1.2**
CLL *e*S S 19 54 24.0 +11
CLL LR LR
comp=Z,1μm,21.3s,MS5.3
PGF Pioggiola 89.11 46 *e*P **P** **19 43 32.3 -1.1**
comp=Z,15nm,1.1s,mb4.9
PET Petropavlovsk 89.25 325 *e*P **P** **19 43 34.3 +0.5**
PET *e* 19 47 12.6
PET *e*S S 19 54 13.3 -4.8
PET pmax pmax
comp=N,54nm,15.9s
PET pmax pmax
comp=Z,219nm,14.2s
PET pmax pmax
comp=E,88nm,14.8s
PET pmax pmax
comp=Z,105nm,13.5s
PET smax
comp=N,754nm,16.6s
PET Petropavlovsk 89.25 325 PFAKE 19 43 50.0 +16
PET LR LR
comp=Z,487nm,19.0s,MS5.0
BRG Berggiesshubel 89.41 37 *e*P **P** **19 43 36.1 +1.5**
TIXI Tiksi 89.69 348 *e*P **P** **19 43 35.1 -0.4**
TIXI *e* 19 47 06.2
TIXI pmax pmax
comp=Z,46nm,0.7s,mb5.9
TIXI Tiksi 89.69 348 *e*P **P** **19 43 35.1 -0.4**
comp=Z,24nm,1.6s,mb5.3
TIXI LR LR
comp=Z,927nm,20.0s,MS5.2
LVZ Lovozero 89.81 17 *e*P **P** **19 43 35.1 -1.0**
LVZ *e* 19 47 07.4
LVZ *e*S S 19 54 09.3 -14
LVZ pmax pmax
comp=Z,5.0nm,1.0s,mb4.8
LVZ pmax pmax
comp=E,5.0nm,1.8s
LVZ smax
comp=Z,80nm,13.5s
LVZ smax
comp=N,120nm,11.5s
LVZ smax
comp=E,170nm,11.8s
LVZ MLR MLR
comp=N,950nm,19.0s,MS5.4
LVZ MLR MLR
comp=E,1μm,19.0s,MS5.4
LVZ MLR MLR
comp=Z,2μm,19.0s,MS5.5
KHC Kasperske Hory 89.84 39 *e*P **P** **19 43 37.9 +1.2**
KHC *e*SKS SKS 19 54 15.2 +13
KHC *ex* x 19 55 41.4
KHC L 20 27 30.0
comp=Z,0.7nm,17.4s
PVCC Panska Ves 89.91 37 L 20 24 10.0
comp=Z,1.1nm,18.9s
GERES GERESS Array B 90.03 39 P **P** **19 43 36.8 -0.7**
comp=Z,0.9nm,0.7s,mb4.2,baz=297,slow=3.0,SNR=9.5
PRU Pruhonice 90.10 38 *e*P **P** **19 43 37.4 -0.4**
PRU *e*SKS SKS 19 54 17.6 +14
PRU L 20 25 40.0
comp=Z,1.6nm,19.0s
MA2 Magadan 90.29 333 *e*P **P** **19 43 39.1 +0.6**
MA2 pmax pmax
comp=Z,30nm,2.7s,mb5.2
MA2 MLR MLR
comp=Z,300nm,19.0s,MS4.7
MA2 Magadan 90.29 333 PFAKE 19 43 50.0 +11
MA2 LR LR
comp=Z,472nm,19.0s,MS4.9
KAF Kangasniemi 90.38 24 *e*p **P** **19 43 40.3 +1.4**
FINES FINESS Array B 90.65 25 P **P** **19 43 39.4 -0.7**
comp=Z,1.2nm,0.6s,mb4.4,baz=151,slow=0.7,SNR=11
FINES LR LR 20 26 14.3
comp=Z,1μm,18.1s,MS5.3,baz=320,slow=37
UPC Upice 90.77 37 *e*P **P** **19 43 41.6 +0.6**
DPC Dobruska-Polom 91.01 37 *e*P **P** **19 43 42.6 +0.5**
DPC *e*SKS SKS 19 54 25.5 +17
DPC L 20 23 50.0
comp=Z,1.1nm,21.3s
CADS Cadrg 91.03 42 *e*P **P** **19 43 43.1 +0.8**
JAVS Javornik 91.36 42 *e*P **P** **19 43 44.4 +0.6**
LJU Ljubljana 91.61 42 *e*P **P** **19 43 44.4 -0.5**
PERS Pernice 91.75 41 *e*P **P** **19 43 46.1 +0.5**
JOF Joensuu 91.83 22 *e*p **P** **19 43 44.6 -1.0**
OKC Ostrava-Krasne 92.29 37 *e*P **P** **19 43 49.3 +1.3**
OKC *e*SKS SKS 19 54 30.9 +15
OKC L 20 28 20.0
comp=Z,1.2nm,18.2s
OKC Ostrava-Krasne 92.29 37 *e*P **P** **19 43 49.3 +1.3**
OKC MLR MLR
comp=Z,1μm,18.2s,MS5.4
ZST Bratislava 92.36 39 *e*S S 19 54 24.3 -22
SISC Sisak 93.02 42 *i*P **P** **19 43 46.5 -4.9**
PUL Pulkovo 93.32 25 *e*P **P** **19 43 51.8 -0.7**
PUL *e* 19 47 36.4
PUL *e*S S 19 54 26.4 -28
PUL pmax pmax
comp=N,10.0nm,0.6s
PUL pmax pmax
comp=Z,20nm,0.6s,mb5.7
PUL pmax pmax
comp=E,80nm,0.7s
PUL smax
comp=Z,30nm,9.6s
PUL smax
comp=N,260nm,11.5s
PUL smax
comp=E,300nm,11.3s
PUL MLR MLR
comp=N,860nm,17.0s,MS5.3
PUL MLR MLR
comp=Z,1μm,17.0s,MS5.4
PUL MLR MLR
comp=E,660nm,19.0s,MS5.3
WAKE Wake Island 94.68 291 PFAKE 19 44 10.0 +10
WAKE LR LR
comp=Z,2μm,20.0s,MS5.6
YAK Yakutsk 96.78 341 *e*P **P** **19 44 08.6 +0.4**
YAK pmax pmax
comp=Z,4.0nm,0.9s,mb4.8
YAK MLR MLR
comp=Z,500nm,22.0s,MS5.0
YAK Yakutsk 96.78 341 PFAKE 19 44 20.0 +12
YAK LR LR
comp=Z,689nm,19.0s,MS5.2
AKASG Malin Array Be 98.03 33 LR LR 20 31 23.1
comp=Z,765nm,18.4s,MS5.2,baz=305,slow=37
URZ Urewera 98.55 233 LR LR 20 18 39.1
comp=Z,269nm,21.0s,MS4.7,baz=16,slow=29
OBN Obninsk 98.86 27 P **P** **19 44 17.0 -0.7**
OBN *e* 19 48 19.7
OBN *e* 19 54 59.1
OBN *e*PS PS 19 57 19.8 +2.9
OBN MLR MLR
comp=Z,1μm,20.0s,MS5.3
OBN Obninsk 98.86 27 PFAKE 19 44 30.0 +12
OBN LR LR
comp=Z,1μm,20.0s,MS5.4
KIS Kishinev 99.87 36 *e*P **P** **19 44 24.0 +1.4**
KIS *e* 19 55 02.0
KIS MLR MLR
comp=Z,1μm,18.0s,MS5.4
KIS MLR MLR
comp=N,500nm,17.0s,MS5.4
KIS MLR MLR
comp=E,900nm,18.0s,MS5.4
KIS MLR MLR
comp=Z,1μm,18.0s
SNZO South Karori 100.93 230 PFAKE 19 44 40.0 +13
SNZO LR LR
comp=Z,1μm,20.0s,MS5.4
YSS Yuzh-Sakhalins 101.13 325 PFAKE 19 44 40.0 +12
YSS LR LR
comp=Z,488nm,19.0s,MS5.0
QSPA South Pole Qui 104.29 180 PFAKE 19 44 50.0 +8.5
QSPA LR LR
comp=Z,4μm,20.0s,MS6.0
ARU Arti 105.62 16 PFAKE 19 49 10.0
ARU LR LR
comp=Z,2μm,20.0s,MS5.7
SBA Scott Base 106.06 193 PFAKE 19 49 10.0
SBA LR LR
comp=Z,1μm,21.0s,MS5.4
SOC Sochi 108.04 34 *e*P Pdif 19 44 52.4 -6.4
SOC *e* 19 55 33.9
SOC pmax pmax
comp=Z,18nm,0.8s
SOC pmax pmax
comp=N,7.0nm,0.7s
SOC pmax pmax
comp=E,20nm,0.8s
SOC pmax pmax
comp=Z,10.0nm,0.7s
SOC pmax pmax
comp=N,14nm,0.9s
SOC pmax pmax
comp=E,15nm,0.6s
KIV Kislovodsk 109.37 32 PFAKE 19 49 20.0
KIV LR LR
comp=Z,482nm,20.0s,MS5.1
MDJ Mudanjiang 109.65 329 PDIF Pdif 19 45 06.5 +0.6
MDJ SKS SKS 19 56 16.3 +35
MDJ SS SS 20 05 02.8 +2.1
MDJ LR LR
comp=N,195nm,21.0s,MS5.0
MDJ LR LR
comp=E,379nm,20.3s,MS5.0
MDJ LR LR
comp=Z,447nm,20.7s,MS5.0
MAJO Matsushiro 109.98 318 PFAKE 19 49 20.0
MAJO LR LR
comp=Z,361nm,20.0s,MS5.0
CN2 Changchun 112.26 331 *e*PKP PKPdf 19 49 16.1 +3.7
CN2 PP PP 19 50 04.0 +1.7
CN2 SKS SKS 19 56 27.3 +36
CN2 SS SS 20 05 39.0 +3.7
CN2 LR LR
comp=N,300nm,17.0s,MS5.2
CN2 LR LR
comp=E,500nm,17.0s,MS5.2
CN2 LR LR
comp=Z,500nm,21.0s,MS5.1
ULN Ulaanbaatar 115.50 345 *i* PKIKP PKPdf 19 49 17.1 -1.5

ULN	**Ulaanbaatar**	**115.50**	**345**	PFAKE			19 49 30.0	+11
ULN				LR	LR			
	comp=Z,608nm,19.0s,MS5.2							
INCN	**Inchon**	**116.33**	**325**	PFAKE			19 49 30.0	+10
INCN				LR	LR			
	comp=Z,531nm,20.0s,MS5.2							
SUR	**Sutherland**	**117.64**	**119**	PFAKE			19 49 40.0	+17
SUR				LR	LR			
	comp=Z,644nm,20.0s,MS5.2							
MKAR	**Makanchi Array**	**119.00**	**4**	PKP		PKPdf	19 49 26.2	+0.8
	comp=Z,0.7nm,0.9s,baz=270,slow=4.3,SNR=4.0							
PMG	**Port Moresby**	**120.94**	**268**	PFAKE			19 49 40.0	+10
PMG				LR	LR			
	comp=Z,396nm,21.0s,MS5.0							
LBTB	**Lobatse**	**121.74**	**111**	PFAKE			19 49 40.0	+8.8
LBTB				LR	LR			
	comp=Z,258nm,19.0s,MS4.9							
WMQ	**Urumqi**	**122.11**	**359**	PKP		PKPdf	19 49 34.3	+2.8
WMQ				PP	PP		19 51 13.5	+2.5
WMQ				PKS	PKS		19 53 09.6	+2.3
WMQ				SKS	SKS		19 56 41.1	+14
WMQ				SKKS			19 58 02.0	
WMQ				SS	SS		20 07 48.3	+4.3
WMQ				PP	PP			
	comp=Z,66nm,11.0s							
WMQ				LR	LR			
	comp=N,748nm,26.4s,MS5.4							
WMQ				LR	LR			
	comp=E,735nm,25.6s,MS5.4							
WMQ				LR	LR			
	comp=Z,1μm,27.1s,MS5.4							
CTAO	**Charters Tower**	**123.24**	**255**	PFAKE			19 49 50.0	+16
CTAO				LR	LR			
	comp=Z,484nm,20.0s,MS5.2							
SSE	**Sheshan**	**124.07**	**324**	PKP		PKPdf	19 49 38.0	+2.4
SSE				SS	SS		20 08 17.3	+8.5
SSE				LR	LR			
	comp=N,82nm,28.0s,MS4.7							
SSE				LR	LR			
	comp=E,208nm,28.0s,MS4.7							
SSE				LR	LR			
	comp=Z,392nm,20.0s							
MAW	**Mawson**	**124.52**	**169**	PFAKE			19 49 50.0	+14
MAW				LR	LR			
	comp=Z,863nm,19.0s,MS5.4							
STKA	**Stephens Creek**	**127.28**	**241**	PKP		PKPdf	19 49 43.3	+1.5
	comp=Z,1.2nm,0.7s,baz=185,slow=16,SNR=2.5							
TATO	**Taipei**	**128.36**	**319**	PFAKE			19 50 00.0	+16
TATO				LR	LR			
	comp=Z,396nm,19.0s,MS5.1							
KMBO	**Kilima Mbogo**	**129.24**	**80**	PFAKE			19 50 00.0	+14
KMBO				LR	LR			
	comp=Z,340nm,20.0s,MS5.0							
WRA	**Warramunga Arr**	**134.42**	**256**	PKP		PKPdf	19 49 55.9	+0.2
	comp=Z,0.7nm,0.9s,baz=306,slow=1.6,SNR=8.0							
ASAR	**Alice Springs**	**134.75**	**251**	PKP		PKPdf	19 49 56.0	-0.2
	comp=Z,0.6nm,0.7s,baz=93,slow=2.4,SNR=6.2							
FITZ	**Fitzroy Crossi**	**142.64**	**259**	PKP		PKPdf	19 50 09.3	-1.3
	comp=Z,2.6nm,1.0s,baz=109,slow=8.1,SNR=4.5							
CM31	**Chiang Mai Arr**	**145.30**	**340**	*e*P		PKPdf	19 50 16.1	+0.9
CMAR	**Chiang Mai Arr**	**145.30**	**340**	PKPbc		PKPbc	19 50 16.3	+0.7
	comp=Z,7.8nm,0.8s,baz=341,slow=3.7,SNR=44							
NWAO	**Narrogin (SRO)**	**146.78**	**231**	PFAKE			19 50 30.0	+13
NWAO				LR	LR			
	comp=Z,356nm,19.0s,MS5.2							
HYB	**Hyderabad**	**147.39**	**15**	*i* PKP		PKPdf	19 50 22.0	+3.3
	comp=Z,50nm,1.0s							
HYB				*es*PKP			19 50 33.0	
HYB	**Hyderabad**	**147.39**	**15**	*e*P		PKPdf	19 50 22.0	+3.3
HYB				*e*			19 50 33.0	
COCO	**West Island**	**170.07**	**281**	PFAKE			19 51 00.0	+15
COCO				LR	LR			
	comp=Z,1μm,20.0s							

*JMA **15** 19:30:41.6±0.5,34.07N×141.82E,h17km±4km,M3.6*
*IDC **15** 19:30:53.7±1.1,32.73N×138.61E,mb3.5/4,mb1 3.8/4, mb1mx3.5/22,Error ellipse: s-maj=27.6km s-min=19.0km az=148.0*
ISC 15 19:30:42.2±1.1,34.10N±0.06×141.81E±0.10,h17km,n13, σ0§87/19,mb3.5/4,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**0.88**	**309**	P		**Pb**	**19 30 58.3**	**-0.4**
BSO1				*e*S		**Sb**	**19 31 11.7**	**+1.7**
BSO3	**Boso 3**	**1.28**	**304**	P		**Pn**	**19 31 05.5**	**0.0**
BSO4	**Boso 4**	**1.50**	**307**	P		**Pn**	**19 31 09.6**	**+0.9**
JHJ2	**Mitsune**	**1.93**	**240**	P		**Pn**	**19 31 15.7**	**+0.9**
JHJ2				*e*S		**Sn**	**19 31 38.9**	**+0.1**
JHJ	**Hachijo jima 2**	**1.95**	**241**	Pn		**Pn**	**19 31 15.3**	**+0.3**
	45nm,0.3s,baz=66,slow=11,SNR=15							
JHJ				Sn		**Sn**	**19 31 34.6**	**-4.8**
	37nm,0.3s,baz=312,slow=22,SNR=5.9							
JIM2	**Oshima 3**	**2.06**	**288**	P		**Pn**	**19 31 15.6**	**-1.0**
JIM2				*e*S		**Sn**	**19 31 41.1**	**-1.0**
JIZS	**Izushimoda**	**2.50**	**285**	P		**Pn**	**19 31 22.4**	**-0.5**
JOD2	**Odawara 2**	**2.53**	**298**	P		**Pn**	**19 31 22.5**	**-0.8**
JOD2				*e*S		**Sn**	**19 31 54.9**	**+1.0**
MAT	**Matsushiro**	**3.82**	**311**	P		**Pn**	**19 31 42.4**	**+0.7**
MAT				S		**Sn**	**19 32 24.9**	**-1.9**
MKAR	**Makanchi Array**	**46.00**	**305**	P		**P**	**19 39 06.8**	**+0.5**
	0.4nm,0.7s,mb3.5,baz=88,slow=7.9,SNR=3.6							
WRA	**Warramunga Arr**	**54.21**	**189**	P		**P**	**19 40 09.0**	**-0.3**
	0.5nm,0.5s,mb3.7,baz=5.8,slow=7.6,SNR=15							
ASAR	**Alice Springs**	**57.93**	**189**	P		**P**	**19 40 36.0**	**-0.1**
	0.4nm,0.9s,mb3.5,baz=3.5,slow=7.9,SNR=6.3							
NOA	**NORSAR Array B**	**77.02**	**338**	P		**P**	**19 42 50.3**	**+15**
	0.5nm,0.7s,mb3.5,baz=56,slow=5.4,SNR=3.4							

*LDG **15** 19:55:59.5±0.6,13.99S×166.66E,h10km,Error ellipse: s-maj=177.6km s-min=12.7km az=88.0*
*NEIC **15** 19:56:12.5±3.7,14.94S×167.42E,h138km±33km,Error ellipse: s-maj=32.3km s-min=18.0km az=189.0*
*IDC **15** 19:56:12.4±15.0,14.85S×167.39E,h135km±144km, mb3.5/9,mb1 3.6/9,mb1mx3.5/19,Error ellipse: s-maj=54.1km s-min=20.6km az=30.0*
ISC 15 19:56:11.9±4.1,15.1S±0.2×167.4E±0.2,h140km±36km, n29,σ1§08/13,mb3.8/9,Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**7.03**	**187**	*e*P		**P**	**19 57 54.4**	**+1.0**
DZM				*e*S		**S**	**19 59 10.8**	**-1.5**
CTA	**Charters Tower**	**20.72**	**253**	P		**P**	**20 00 44.5**	**+1.6**
	2.2nm,0.7s,baz=81,slow=13,SNR=3.4							
CTA	**Charters Tower**	**20.72**	**253**	P		**P**	**20 00 44.5**	**+1.6**
URZ	**Urewera**	**24.67**	**161**	P		**P**	**20 01 21.7**	**+0.5**
	3.6nm,0.7s,mb4.0,baz=311,slow=18,SNR=2.3							
RPZ	**Rata Peaks**	**28.74**	**174**	P		**P**	**20 01 59.1**	**+0.7**
	4.3nm,0.8s,mb4.3,baz=346,slow=9.4,SNR=2.1							
STKA	**Stephens Creek**	**28.84**	**230**	P		**P**	**20 02 00.7**	**+1.3**
	0.9nm,0.4s,mb3.9,baz=42,slow=10,SNR=4.3							
WRAB	**Tennant Creek**	**31.81**	**256**	*e*P		**P**	**20 02 20.1**	**-5.5**
	11nm,1.1s,mb4.5							
WRA	**Warramunga Arr**	**31.82**	**256**	P		**P**	**20 02 24.4**	**-1.4**
	0.3nm,0.9s,mb3.0,baz=85,slow=9.0,SNR=6.2							
ASAR	**Alice Springs**	**32.63**	**250**	P		**P**	**20 02 31.5**	**-1.2**
	0.3nm,0.4s,mb3.4,baz=77,slow=8.8,SNR=17							
FITZ	**Fitzroy Crossi**	**40.03**	**260**	P		**P**	**20 03 35.2**	**+0.2**
	1.8nm,1.1s,mb3.6,baz=84,slow=9.7,SNR=4.6							
ILAR	**Eielson Array**	**86.81**	**18**	P		**P**	**20 08 40.0**	**-1.1**
	0.5nm,0.9s,mb3.3,baz=234,slow=4.0,SNR=4.7							
MKAR	**Makanchi Array**	**97.49**	**316**	P		**P**	**20 09 31.0**	**0.0**
	0.5nm,0.8s,mb3.9,baz=90,slow=7.2,SNR=3.2							
CABF	**La Chapelle**	**144.86**	**337**	*e*PKP1		PKPbc	20 15 33.9	+1.5
	17nm,1.2s							
FLN	**La Foliniere**	**144.93**	**346**	*e*PKP1		PKPbc	20 15 32.8	+0.2
	4.2nm,0.7s							
LDF	**La Druitiere**	**145.00**	**345**	*e*PKP1		PKPbc	20 15 33.0	+0.2
	2.9nm,0.7s							
SSF	**Saint Saulge**	**145.37**	**340**	*e*PKP1		PKPbc	20 15 35.2	+1.5
	14nm,0.9s							
GRR	**Gorron**	**145.37**	**346**	*e*PKP1		PKPbc	20 15 34.1	+0.4
LPL	**La Plagne**	**145.52**	**336**	*e*PKP1		PKPbc	20 15 36.2	+2.0
	3.9nm,0.6s							
LPG	**La Plagne**	**145.53**	**336**	*e*PKP1		PKPbc	20 15 36.3	+2.1
	6.4nm,0.8s							
SMF	**Signal de Mont**	**145.62**	**340**	*e*PKP1		PKPbc	20 15 35.8	+1.4
	6.7nm,1.0s							
AVF	**Avril sur Loir**	**145.65**	**340**	*e*PKP1		PKPbc	20 15 35.8	+1.3
ROSF	**Rostrenen**	**145.92**	**349**	*e*PKP1		PKPbc	20 15 36.6	+1.5
BGF	**Bois d'Agland**	**146.02**	**341**	*e*PKP1		PKPbc	20 15 36.4	+1.0
MBDF	**Montbardon**	**146.15**	**335**	*e*PKP1		PKPbc	20 15 37.5	+1.8
	2.4nm,0.6s							
ORIF	**Oris-en-Rattie**	**146.35**	**336**	*e*PKP1		PKPbc	20 15 39.0	+2.8
	6.0nm,0.8s							
TCF	**Toulx Ste Croi**	**146.46**	**341**	*e*PKP1		PKPbc	20 15 38.3	+1.9
	7.8nm,1.1s							
SBF	**Sospel**	**146.57**	**333**	*e*PKP1		PKPbc	20 15 38.3	+1.6
	7.8nm,0.8s							
PGF	**Pioggiola**	**146.87**	**330**	*e*PKP1		PKPbc	20 15 39.6	+2.1
LFF	**La Frestale**	**148.13**	**342**	*e*PKP1		PKPdf	20 15 41.0	+3.2

*IDC **15** 20:01:00.4±2.0,19.31N×64.97W,mb3.6/6,mb1 3.8/7, mb1mx3.6/24,ML3.6/1,Error ellipse: s-maj=48.0km s-min=22.2km az=104.0*
ISC 15 20:01:07.2±8.5,19.2N±0.2×65.0W±0.2,h33km±70km,n8, σ1§24/9,mb3.5/6,Virgin Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
SJG	**San Juan**	**1.54**	**226**	Pn		**Pn**	**20 01 29.2**	**-3.6**
	34nm,0.3s,baz=73,slow=16,SNR=36							
SJG				Sn		**Sn**	**20 01 47.1**	**-4.7**
	109nm,0.3s,baz=287,slow=16,SNR=26							
PCRV	**Puerto La Cruz**	**8.96**	**178**	Pn		**P**	**20 03 15.0**	**-2.2**
	0.6nm,0.3s,baz=352,slow=7.1,SNR=2.6							
TXAR	**Lajitas Array**	**36.54**	**294**	P		**P**	**20 08 09.2**	**-2.5**
	0.2nm,0.7s,mb3.0,baz=105,slow=14,SNR=2.8							
PDAR	**Pinedale Array**	**44.21**	**312**	P		**P**	**20 09 11.9**	**-3.0**
	0.5nm,0.5s,mb3.5,baz=106,slow=10.0,SNR=5.0							
FRB	**Frobisher Bay**	**44.60**	**358**	P		**P**	**20 09 13.6**	**-4.2**
	1.0nm,0.3s,mb4.1,baz=198,slow=6.4,SNR=2.3							
YBH	**Yreka Blue Hor**	**53.54**	**308**	P		**P**	**20 10 21.9**	**-5.1**
	0.6nm,0.6s,mb3.7,baz=106,slow=7.4,SNR=3.1							
YKA	**Yellowknife Ar**	**55.00**	**334**	P		**P**	**20 10 31.2**	**-6.2**
	0.2nm,0.6s,mb3.4,baz=112,slow=7.4,SNR=6.3							
INK	**Inuvik**	**64.42**	**337**	P		**P**	**20 11 36.8**	**-5.2**
	0.2nm,0.3s,mb3.6,baz=97,slow=17,SNR=3.0							

*NEIC **15** 20:02:22.0±0.3,6.71N×72.98W,mb4.0/3,Error ellipse: s-maj=8.2km s-min=6.9km az=118.0*
*IDC **15** 20:02:21.6±0.5,6.76N×72.97W,h162km±4km,mb3.5/11, mb1 3.7/15,mb1mx3.6/24,MS3.1/1,Ms1 3.1/1, ms1mx3.0/27,Error ellipse: s-maj=12.0km s-min=6.7km az=125.0*
ISC 15 20:02:20.3±0.4,6.79N±0.06×73.01W±0.06,h161km, h161km±3.0km:pP-P,n36,σ1§26/29,mb3.9/13,Northern Colombia

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
ROSC	**El Rosal**	**2.33**	**215**	P		**P**	**20 03 02.7**	**+2.3**
	59nm,0.3s,baz=117,slow=24,SNR=75							
ROSC				S		**S**	**20 03 33.0**	**+1.8**
	190nm,0.3s,baz=128,slow=20,SNR=12							
ROSC				LR		LR	20 04 03.7	
	comp=Z,438nm,19.7s,baz=107,slow=44							
SDV	**Santo Domingo**	**3.14**	**48**	P		**P**	**20 03 12.3**	**+1.8**
	45nm,0.3s,baz=245,slow=9.0,SNR=188							
SDV				S		**S**	**20 03 49.6**	**+0.5**
	73nm,0.3s,baz=98,slow=20,SNR=31							
OTAV	**Otavalo**	**8.48**	**220**	*e*P		**P**	**20 04 20.9**	**0.0**
	2.8nm,0.5s							
PCRV	**Puerto La Cruz**	**8.94**	**67**	P		**P**	**20 04 28.7**	**+1.8**
	1.7nm,0.3s,baz=237,slow=6.9,SNR=5.1							
PCRV				S		**S**	**20 06 07.5**	**+1.6**
	0.6nm,0.3s,baz=294,slow=23,SNR=2.0							
JTS	**JuntasAbangare**	**12.31**	**287**	P		**P**	**20 05 14.5**	**+3.4**
	0.4nm,0.3s,baz=353,slow=18,SNR=2.5							
LPAZ	**La Paz**	**23.43**	**168**	P		**P**	**20 07 16.4**	**+0.3**
	2.1nm,0.8s,mb3.6,baz=343,slow=14,SNR=6.4							
LPAZ				pP			20 07 49.2	
	2.1nm,0.9s,baz=340,slow=12,SNR=3.6							
LPAZ	**La Paz**	**23.43**	**168**	*e*P		**P**	**20 07 15.5**	**-0.7**
	2.5nm,1.1s,mb3.6							
LPAZ				pP			20 07 49.2	
LVC	**Limon Verde**	**29.49**	**172**	P		**P**	**20 08 10.2**	**-1.5**
	1.3nm,0.7s,mb3.8,baz=94,slow=20,SNR=2.4							
LVC	**Limon Verde**	**29.49**	**172**	P		**P**	**20 08 10.2**	**-1.5**
BDFB	**Brasilia**	**33.31**	**132**	P		**P**	**20 08 44.9**	**0.0**
	3.9nm,0.6s,mb4.3,baz=296,slow=13,SNR=5.6							
CCM	**Cathedral Cave**	**35.25**	**335**	*e*P		**P**	**20 09 01.1**	**-0.1**
	4.5nm,0.8s,mb4.2							
CCM				*e*		pP	20 09 34.8	-1.2
TXAR	**Lajitas Array**	**36.57**	**312**	P		**P**	**20 09 12.5**	**+0.1**
	0.6nm,0.5s,mb3.5,baz=126,slow=9.3,SNR=9.4							
TXAR				pP		pP	20 09 48.4	+1.0
	0.2nm,0.7s,baz=129,slow=8.0,SNR=2.8							
TXAR	**Lajitas Array**	**36.57**	**312**	P		**P**	**20 09 12.5**	**+0.1**
TXAR				pP		pP	20 09 48.4	+1.0
ULM	**Lac du Bonnet**	**47.35**	**340**	P		**P**	**20 10 39.0**	**-0.7**
	1.3nm,0.3s,mb4.0,baz=258,slow=3.8,SNR=2.8							
SCHQ	**Schefferville**	**48.16**	**5**	P		**P**	**20 10 46.4**	**+0.5**
	baz=207,slow=11							
PDAR	**Pinedale Array**	**48.17**	**324**	P		**P**	**20 10 46.3**	**+0.1**
	0.3nm,0.7s,mb3.1,baz=131,slow=9.6,SNR=2.6							
FRB	**Frobisher Bay**	**56.94**	**2**	P		**P**	**20 11 49.4**	**-1.3**
	1.2nm,0.3s,mb4.2,baz=127,slow=5.1,SNR=7.3							
FRB	**Frobisher Bay**	**56.94**	**2**	P		**P**	**20 11 49.4**	**-1.3**
YKA	**Yellowknife Ar**	**63.33**	**340**	P		**P**	**20 12 33.1**	**-1.1**
	0.6nm,0.7s,mb3.5,baz=132,slow=6.5,SNR=14							
YKA				pP		pP	20 13 11.5	-0.9
	1.2nm,0.9s,baz=133,slow=6.7,SNR=4.9							
YKA	**Yellowknife Ar**	**63.33**	**340**	P		**P**	**20 12 33.1**	**-1.1**
YKA				pP		pP	20 13 11.5	-0.9
TIC	**Toumodi**	**67.46**	**86**	*e*P		**P**	**20 12 59.4**	**-2.0**
	126nm,1.6s							
LIC	**Lamto**	**67.49**	**86**	*e*P		**P**	**20 13 00.2**	**-1.4**
	41nm,1.1s							
DBIC	**Dimbokro**	**67.62**	**86**	P		**P**	**20 13 00.8**	**-1.6**
	2.7nm,0.6s,mb4.2,baz=340,slow=5.5,SNR=6.2							
KIC	**Kosan Boka**	**67.76**	**86**	*e*P		**P**	**20 13 01.5**	**-1.8**
	14nm,0.5s,mb5.0							
NOA	**NORSAR Array B**	**81.30**	**29**	P		**P**	**20 14 20.4**	**+0.6**
	0.6nm,0.7s,mb3.4,baz=270,slow=5.0,SNR=3.1							
ARCES	**ARCESS Array B**	**86.66**	**20**	P		**P**	**20 14 46.7**	**+0.3**
	0.9nm,0.7s,mb3.7,baz=270,slow=3.6,SNR=7.7							
ZAL	**Zalesovo**	**116.68**	**14**	PKP		PKPdf	20 20 46.4	+1.2
ZAL	**Zalesovo**	**116.68**	**14**	PKP		PKPdf	20 20 46.4	+1.2
MKAR	**Makanchi Array**	**122.31**	**20**	PKP		PKPdf	20 20 57.3	+1.0
	0.5nm,0.4s,baz=297,slow=2.3,SNR=13							
STKA	**Stephens Creek**	**139.22**	**228**	PKP		PKPdf	20 21 30.5	+1.8
	1.9nm,0.8s,baz=186,slow=15,SNR=2.1							
AS12	**Alice Springs**	**149.19**	**234**	*e*P		PKPdf	20 21 50.8	+4.8
	2.5nm,0.6s							
ASAR	**Alice Springs**	**149.19**	**234**	PKPbc		PKPdf	20 21 51.0	+5.0
	2.6nm,0.6s,baz=120,slow=3.6,SNR=8.1							
ASAR				PKPab		PKPab	20 21 56.6	-0.9
	0.5nm,0.4s,baz=117,slow=3.5,SNR=4.3							
WB2	**Warramunga Arr**	**150.41**	**241**	*e*P		PKPdf	20 21 54.1	+6.2
WRAB	**Tennant Creek**	**150.42**	**241**	*e*PKPdf		PKPdf	20 21 48.9	+1.0
WRAB				*e*PKPdf		PKPdf	20 21 54.2	+6.3
WRA	**Warramunga Arr**	**150.42**	**241**	PKP		PKPdf	20 21 49.5	+1.6
	2.2nm,0.4s,baz=108,slow=2.5,SNR=7.5							
WRA				PKPbc		PKPdf	20 21 54.1	+6.2
	2.1nm,0.4s,baz=108,slow=2.6,SNR=33							
WRA				pPKPbc			20 22 35.8	
	0.8nm,0.5s,baz=108,slow=2.6,SNR=2.6							
CMAR	**Chiang Mai Arr**	**153.69**	**17**	PKPbc		PKPdf	20 22 02.6	+10
	1.3nm,0.6s,baz=318,slow=3.4,SNR=9.8							

*CASC **15** 20:11:04.4±1.8,14.26N×93.46W,h84km±92km,MD4.8, ML4.8,mb4.9(NEIC)*
*MOS **15** 20:11:06.5±0.8,14.34N×93.17W,h28km,mb5.3/6,Error ellipse: s-maj=42.6km s-min=19.9km az=99.8*
*NEIC **15** 20:11:07.2,14.15N×93.57W,h14km,mb4.9/53,MS4.6/78, MD4.9(MEX),After MEX.*
*MEX **15** 20:11:07.1±3.1,14.10N×93.58W,h16km±32km,MD4.9*
*BJI **15** 20:11:07.2,14.10N×93.60W,h14km,Ms5.0,Msz5.1*
*HRVD **15** 20:11:07.2±0.2,14.32N×93.44W,h13km,MW5.1/61, Centroid moment Tensor Solution. LP body waves: s46,c71;Mantle waves: s61,c95; Half duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}4.00±.17; $M_{\theta\theta}$-3.06±.12; $M_{\phi\phi}$-0.93±.13; $M_{r\theta}$3.84±.38; $M_{\theta\phi}$1.29±.08; $M_{\phi r}$-3.26±.39; Best double couple: $M_0$6.32×10^{16} NP1:ϕ_s287°,δ20°,λ71°. NP2:ϕ_s127°,δ72°,λ97°. Principal axes: T 6.56, Plg63°, Azm47°; N -.47, Plg6°, Azm305°; P -6.08, Plg26°, Azm212°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*IDC **15** 20:11:14.9±2.8,14.56N×93.08W,h80km±24km,mb4.1/20, mb1 4.3/23,mb1mx4.2/27,MS4.5/20,Ms1 4.5/20, ms1mx4.4/28 Error ellipse: s-maj=24.9km s-min=11.0km az=49.0*
ISC 15 20:11:07.1±0.9,14.36N±0.04×93.24W±0.03,h33km±7km, n310,σ1§39/260,mb4.8/87,MS4.7/98,9C-3D,Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
JAT	**Jato**	**1.55**	**91**	*e*P		**Pn**	**20 11 33.7**	**+0.8**
JAT				*e*S		**Sn**	**20 11 56.3**	**+4.3**
JAT				AML		AML	20 12 02.5	
	comp=N,13μm,0.8s							
CCIG	**Comitan**	**2.18**	**29**	*i* P		**Pn**	**20 11 45.2**	**+3.3**
CCIG				*i* S		**Sn**	**20 12 14.7**	**+6.7**
TP2	**Tecpan 2**	**2.19**	**79**	*e*P		**Pn**	**20 11 43.8**	**+1.8**
FUG	**Fuego 3**	**2.32**	**88**	*e*P		**Pn**	**20 11 43.5**	**-0.4**
SCX	**San Cristobal**	**2.43**	**14**	*i* P		**Pn**	**20 11 48.0**	**+2.6**
SCX				*i* S		**Sn**	**20 12 20.5**	**+6.2**
PCG	**Pacaya**	**2.55**	**89**	*e*P		**Pn**	**20 11 47.2**	**+0.1**
GCG	**Guatemala City**	**2.63**	**85**	*e*P		**Pn**	**20 11 49.0**	**+0.8**
NBG	**Las Nubes**	**2.81**	**85**	*e*P		**Pn**	**20 11 52.0**	**+1.2**
HUIG	**Huatulco**	**3.11**	**297**	*e*P		**Pn**	**20 11 51.7**	**-3.3**
HUIG				*i* S		**Sn**	**20 12 23.3**	**-8.2**
CMIG	**Matias Romero**	**3.14**	**330**	*i* P		**Pn**	**20 11 54.6**	**-0.9**
CMIG				*i* S		**Sn**	**20 12 30.3**	**-2.1**
CUSS	**Cusmapa**	**3.22**	**98**	*e*P		**Pn**	**20 11 57.9**	**+1.3**
RBDL	**Robledal**	**3.45**	**94‖**	*e*P		**Pn**	**20 11 59.6**	**-0.3**
RTR	**El Retiro**	**3.51**	**97**	*e*P		**Pn**	**20 11 59.9**	**-1.0**
SBLS	**San Blas**	**3.54**	**98‖**	*e*P		**Pn**	**20 12 01.2**	**0.0**
SNJE	**San Jose**	**3.56**	**97**	*e*P		**Pn**	**20 12 00.7**	**-0.8**
MTO2	**Montecristo 2**	**3.75**	**89**	*e*P		**Pn**	**20 12 10.4**	**+6.2**
TUIG	**Tuzandepetl**	**3.82**	**343**	*i* P		**Pn**	**20 12 04.6**	**-0.6**
TUIG				*i* S		**Sn**	**20 12 51.5**	**+1.9**
TUIG	**Tuzandepetl**	**3.82**	**343**	*i* P		**Pn**	**20 12 04.6**	**-0.6**
TUIG				*i* S		**Sn**	**20 12 51.7**	**+2.2**
BOQS	**Boqueron**	**3.89**	**99**	*e*P		**Pn**	**20 12 05.0**	**-1.2**
PICS	**Picacho**	**3.91**	**99‖**	*e*P		**Pn**	**20 12 05.5**	**-1.0**
LFRS	**El Faro**	**4.12**	**100**	*e*P		**Pn**	**20 12 08.6**	**-0.8**
LCBS	**La Ceiba**	**4.19**	**99**	*e*P		**Pn**	**20 12 09.0**	**-1.5**
OXX	**Oaxaca**	**4.31**	**309**	*e*P		**Pn**	**20 12 09.1**	**-3.0**
OXX				*i* S		**Sn**	**20 12 59.2**	**-2.8**
SNVI	**San Vicente**	**4.33**	**99**	*e*P		**Pn**	**20 12 15.5**	**+3.1**
SNVI				*e*P			20 12 15.6	
EVV	**El Vigia**	**4.55**	**334**	*e*P		**Pn**	**20 12 14.3**	**-1.2**
EVV				*i* S		**Sn**	**20 13 04.4**	**-3.5**
PNIG	**Pinotepa**	**5.13**	**294**	*e*P		**Pn**	**20 12 21.8**	**-1.9**
PNIG	**Pinotepa**	**5.13**	**294**	*e*P		**Pn**	**20 12 22.4**	**-1.3**
CNCH	**Conchagua**	**5.36**	**101‖**	*e*P		**Pn**	**20 12 25.7**	**-1.3**
IISM	**Ciudad Serdan**	**6.07**	**320**	*e*P		**Pn**	**20 12 33.3**	**-3.7**
IISM				*i* S		**Sn**	**20 13 42.3**	**-3.8**
POHV	**Veracruz**	**6.08**	**321**	*e*P		**Pn**	**20 12 34.8**	**-2.3**
POHV				*i* S		**Sn**	**20 13 44.0**	**-2.2**
LVIG	**Laguna Verde**	**6.14**	**331**	*e*P		**Pn**	**20 12 37.2**	**-0.7**
LVIG				*e*S		**Sn**	**20 13 47.5**	**-0.2**
ACX	**Acapulco**	**6.90**	**292**	*e*P		**Pn**	**20 12 42.0**	**-6.7**
ACX				*i* S		**Sn**	**20 13 58.7**	**-8.1**
PPM	**Popocatepetl**	**6.97**	**313**	*e*P		**Pn**	**20 12 46.0**	**-3.6**
PPM				*i* S		**Sn**	**20 14 02.0**	**-6.5**
YAIG	**Yautepec**	**7.16**	**309**	*e*P		**Pn**	**20 12 51.2**	**-1.1**
YAIG				*i* S		**Sn**	**20 13 07.5**	**-5.8**
YAIG	**Yautepec**	**7.16**	**309**	*e*P		**Pn**	**20 12 54.9**	**+2.6**
YAIG				*i* S		**Sn**	**20 14 09.9**	**-3.4**
CAIG	**El Cayaco**	**7.28**	**292**	*e*P		**Pn**	**20 12 47.3**	**-6.6**
CAIG				*i* S		**Sn**	**20 14 07

comp=Z,14nm,1.0s,mb4.3
CCM Cathedral Cave 23.66 4 *e*P P **20 16 15.7 -0.8**
comp=Z,65nm,1.0s,mb5.0
CCM LR LR
comp=Z,590nm,21.0s,MS4.0
ANMO Albuquerque 23.71 332*ce*P P **20 16 18.3 +1.3**
ANMO pmax pmax
comp=Z,4.0nm,1.1s
ANMO Albuquerque 23.71 332 *e*P P **20 16 18.8 +1.9**
comp=Z,45nm,1.1s,mb4.8
ANMO LR LR
comp=Z,524nm,19.0s,MS4.0
TUC Tucson 23.99 321 *e*P P **20 16 21.8 +2.1**
comp=Z,55nm,1.1s,mb4.9
TUC LR LR
comp=Z,1µm,19.0s,MS4.3
USIN University of 24.02 11 *e*P P **20 16 18.4 -1.5**
comp=Z,61nm,1.6s,mb4.8
SLM Saint Louis 24.32 6 *e*P P **20 16 23.0 +0.1**
comp=Z,44nm,0.8s,mb4.9
WCI Wyandotte Cave 24.55 13 *e*P P **20 16 25.3 +0.1**
comp=Z,50nm,1.3s,mb4.9
WCI LR LR
comp=Z,5µm,19.0s,MS5.0
KSU1 Kansas State U 24.82 354 *e*P P **20 16 27.1 -0.6**
CBKS Cedar Bluff 25.02 348 PFAKE 20 16 40.0 +10
CBKS LR LR
comp=Z,514nm,21.0s,MS4.0
PWV Princeton 25.32 23 P P **20 16 30.2 -2.3**
ELN Prospectdale 25.34 24 P P **20 16 32.1 -0.6**
BLO Bloomington 25.41 12 P P **20 16 31.4 -1.9**
comp=Z,18nm,1.0s,mb4.5
BLA Blacksburg 25.46 24 PFAKE 20 16 50.0 +16
BLA LR LR
comp=Z,2µm,19.0s,MS4.7
SDCO Great Sand Dun 25.71 337 *e*P P **20 16 37.9 +1.8**
comp=Z,31nm,1.3s,mb4.7
SJG San Juan 25.26 78 LR LR 20 26 37.7
comp=Z,852nm,20.8s,MS4.3,baz=164,slow=35
SJG San Juan 26.26 78 PFAKE 20 17 00.0 +19
SJG LR LR
comp=Z,942nm,21.0s,MS4.3
WUAZ Wupatki 26.63 325 *e*P P **20 16 46.2 +1.5**
comp=Z,45nm,1.1s,mb4.9
WUAZ LR LR
comp=Z,2µm,19.0s,MS4.7
RW3 Ridgway 27.02 334 P P **20 16 47.8 -0.4**
ACSO Alum Creek Sta 27.29 17 PFAKE 20 17 10.0 +19
ACSO LR LR
comp=Z,1µm,21.0s,MS4.5
PV01 Paradox Valley 27.30 333 *e*P P **20 16 52.4 +1.6**
ISCO Idaho Springs 27.57 339 *e*P P **20 16 54.1 +0.9**
comp=Z,25nm,1.3s,mb4.7
ISCO LR LR
comp=Z,466nm,19.0s,MS4.1
CBN Corbin 27.59 28 PFAKE 20 17 10.0 +17
CBN LR LR
comp=Z,3µm,19.0s,MS4.9
PV10 Paradox Valley 27.71 333 *e*P P **20 16 55.2 +0.7**
MCWV Mont Chateau 27.81 23 PFAKE 20 17 10.0 +15
MCWV LR LR
comp=Z,3µm,20.0s,MS4.8
PCRV Puerto La Cruz 28.24 95 LR LR 20 29 53.7
comp=Z,731nm,18.7s,MS4.3,baz=112,slow=40
PFO Pinyon Flat Ob 28.47 316 *e*P P **20 17 01.6 +0.3**
comp=Z,12nm,1.0s,mb4.5
PFO LR LR
comp=Z,1µm,19.0s,MS4.6
JFWS Jewell Farm 28.57 5 PFAKE 20 17 20.0 +18
JFWS LR LR
comp=Z,777nm,20.0s,MS4.3
SRU San Rafael 28.98 331 *e*P P **20 17 06.0 +0.2**
AAM Ann Arbor 29.05 15 PFAKE 20 17 20.0 +14
AAM LR LR
comp=Z,2µm,19.0s,MS4.7
MSU Marysvale 29.31 329 *e*P P **20 17 10.1 +1.3**
MVU Marysvale 29.32 329 *e*P P **20 17 10.3 +1.5**
comp=Z,14nm,1.1s,mb4.6
SSPA Standing Stone 29.41 24 PFAKE 20 17 30.0 +20
SSPA LR LR
comp=Z,8µm,19.0s,MS5.4
ERPA Erie 29.94 20 PFAKE 20 17 30.0 +16
ERPA LR LR
comp=Z,2µm,21.0s,MS4.7
MPU Maple Canyon 30.22 331 P P **20 17 17.1 +0.3**
DAU Daniels Canyon 30.36 332 *e*P P **20 17 19.1 +1.0**
CTU Camp Tracy 30.81 332 *e*P P **20 17 23.3 +1.2**
DAC Darwin (Calif) 30.84 319 PFAKE 20 17 30.0 +7.6
DAC LR LR
comp=Z,1µm,19.0s,MS4.5
TCUT Toone Canyon 31.00 333 *e*P P **20 17 25.3 +1.6**
RSSD Black Hills 31.06 345 *e*P P **20 17 24.3 +0.1**
comp=Z,11nm,0.8s,mb4.8
RSSD LR LR
comp=Z,680nm,21.0s,MS4.3
HWUT Hardware Ranch 31.46 333 *e*P P **20 17 28.5 +0.6**
comp=Z,46nm,1.8s,mb5.0
HWUT LR LR
comp=Z,858nm,20.0s,MS4.4
BGU Big Grassy Mou 31.59 331 *e*P P **20 17 30.3 +1.3**
BBSR BB Station 31.59 51 *e*P P **20 17 26.2 -2.9**
comp=Z,8.2nm,0.7s,mb4.7
BBSR LR LR
comp=Z,4µm,19.0s,MS5.1
BW06 Boulder Array 31.61 337 PFAKE 20 17 40.0 +11
BW06 LR LR
comp=Z,708nm,22.0s,MS4.3
PDAR Pinedale Array 31.61 337 P P **20 17 29.4 +0.3**
comp=Z,3.6nm,0.9s,mb4.2,baz=141,slow=9.5,SNR=25
PDAR LR LR 20 32 06.7
comp=Z,410nm,18.1s,MS4.1,baz=155,slow=40
SPUT South Promonto 31.62 332 *e*P P **20 17 30.2 +1.0**
TPH Tonopah 31.77 322 *e*P P **20 17 32.3 +1.7**
comp=Z,16nm,1.1s,mb4.8
TPH LR LR
comp=Z,2µm,22.0s,MS4.7
MTUM Tungsten Hills 32.12 320 *e*P P **20 17 35.2 +1.6**
HVU Hansel Valley 32.14 332 *e*P P **20 17 34.8 +1.0**
AHID Auburn Hatcher 32.22 335 *e*P P **20 17 34.9 +0.5**
comp=Z,141nm,1.8s,mb5.5
AHID LR LR
comp=Z,982nm,21.0s,MS4.5
SADO Sadowa 32.59 19 P P **20 17 37.5 -0.2**
comp=Z,3.8nm,0.7s,mb4.4,baz=217,slow=1.6,SNR=2.8
SADO Sadowa 32.59 19 P P **20 17 37.5 -0.2**
REDW Red Top Meadow 32.61 336 *e*P P **20 17 38.6 +0.7**
NVAR Mina Array Bea 32.64 322 P P **20 17 40.2 +2.0**
comp=Z,13nm,0.8s,mb4.9,baz=130,slow=9.8,SNR=72
NVAR PcP PcP 20 20 24.4 +0.6
comp=Z,1.4nm,0.9s,baz=120,slow=3.5,SNR=3.5
NVAR Mina Array Bea 32.64 322 P P **20 17 40.2 +2.0**
NVAR PcP PcP 20 20 24.4 +0.6
WUWY Wally Ulrich 32.72 336 *e*P P **20 17 39.8 +1.0**
KSWY Kelly School 32.74 336 *e*P P **20 17 40.6 +1.5**
BMN Battle Mountai 33.37 326 *e*P P **20 17 46.1 +1.6**
comp=Z,30nm,1.2s,mb5.1
BMN LR LR
comp=Z,585nm,20.0s,MS4.3
LKWY Lake 33.46 338 P P **20 17 46.0 +0.8**
comp=Z,18nm,1.1s,mb4.9
SAO San Andreas Ge 33.62 317 PFAKE 20 18 00.0 +13
SAO LR LR
comp=Z,875nm,19.0s,MS4.5
CMB Columbia Colle 33.67 319 *e*P P **20 17 47.6 +0.4**
comp=Z,16nm,1.2s,mb4.8
CMB LR LR
comp=Z,745nm,19.0s,MS4.4
HRV Harvard--Oak R 33.70 29 PFAKE 20 18 00.0 +13
HRV LR LR
comp=Z,559nm,19.0s,MS4.3
WES Weston 33.73 30 PFAKE 20 18 00.0 +12
WES LR LR
comp=Z,2µm,21.0s,MS4.9
YMR Madison River 33.76 337 *e*P P **20 17 50.0 +2.2**
WCN Washoe City 34.07 322 *e*P P **20 17 51.9 +1.4**
comp=Z,18nm,1.1s,mb4.9
QLMT Earthquake Lak 34.07 337 *e*P P **20 17 52.7 +2.2**
HLID Hailey 34.29 332 *e*P P **20 17 53.5 +1.1**
comp=Z,16nm,1.0s,mb4.9
HLID LR LR
comp=Z,1µm,19.0s,MS4.7
MCMT McKenzie Canyo 34.63 335 *e*P P **20 17 57.2 +2.0**
BEKR Beckwourth 34.79 322 *e*P P **20 17 58.1 +1.4**
comp=Z,24nm,1.2s,mb5.0
BOZ Bozeman (W) 34.84 337 *e*P P **20 17 57.7 +0.7**
comp=Z,27nm,1.3s,mb5.0
BOZ LR LR
comp=Z,697nm,19.0s,MS4.4
WVOR Wild Horse Val 35.53 327 *e*P P **20 18 03.9 +0.9**
comp=Z,50nm,1.3s,mb5.3
WVOR LR LR
comp=Z,632nm,19.0s,MS4.4
HRY Holter Researc 35.81 338 *e*P P **20 18 05.9 +0.6**
ULM Lac du Bonnet 35.85 357 P P **20 18 02.8 -2.9**
comp=Z,11nm,0.8s,mb4.8,baz=182,slow=8.2,SNR=7.9
ULM LR LR 20 35 54.9
comp=Z,504nm,18.3s,MS4.3,baz=201,slow=42
ULM Lac du Bonnet 35.85 357 *e*P P **20 18 03.0 -2.7**
comp=Z,16nm,0.8s,mb5.0
ULM *e* 20 18 23.3
ULM LR LR
comp=Z,977nm,20.0s,MS4.6
HOPS Hopland 35.94 319 PFAKE 20 18 20.0 +13
HOPS LR LR
comp=Z,1µm,19.0s,MS4.7
MOD Modoc 36.07 325 P P **20 18 08.3 +0.7**
comp=Z,19nm,1.0s,mb5.0
MOD LR LR
comp=Z,844nm,21.0s,MS4.5
WVL Waterville 36.17 29 PFAKE 20 18 20.0 +12
WVL LR LR
comp=Z,3µm,19.0s,MS5.1
CHMT Chamberlain Mo 36.51 337 *e*P P **20 18 11.9 +0.7**
WDC Whiskeytown Da 36.54 321 PFAKE 20 18 20.0 +8.5
WDC LR LR
comp=Z,681nm,20.0s,MS4.4
MSO Missoula 36.71 336 *e*P P **20 18 13.6 +0.7**
comp=Z,26nm,1.0s,mb5.0
MSO LR LR
comp=Z,1µm,19.0s,MS4.7
EMMW East Machias 37.34 31 PFAKE 20 18 30.0 +12
EMMW LR LR
comp=Z,14µm,19.0s,MS5.8
YBH Yreka Blue Hor 37.35 323 P P **20 18 17.6 -0.7**
comp=Z,6nm,0.7s,mb4.2,baz=115,slow=5.3,SNR=6.5
YBH Yreka Blue Hor 37.35 323 *e*P P **20 18 17.8 -0.5**
comp=Z,11nm,1.5s,mb4.5
YBH LR LR
comp=Z,1µm,19.0s,MS4.7
LNOR Lincton Mounta 37.83 331 *e*P P **20 18 22.1 -0.3**
PQI Presque Isle 38.51 28 PFAKE 20 18 40.0 +12
PQI LR LR
comp=Z,4µm,20.0s,MS5.2
HAWA Hanford 38.80 331 PFAKE 20 18 40.0 +10
HAWA LR LR
comp=Z,1µm,20.0s,MS4.7
KEBM Edson Butte 39.00 323 *e*P P **20 18 33.3 +1.3**
NEW Newport 39.15 335 P P **20 18 33.5 +0.3**
comp=Z,2.8nm,0.7s,mb4.1,baz=158,slow=9.4,SNR=9.9
NEW Newport 39.15 335 P P **20 18 33.5 +0.3**
NEW LR LR
comp=Z,1µm,19.0s,MS4.8
SSOR Sweet Springs 39.21 327 *e*P P **20 18 34.1 +0.3**
LPAZ La Paz 39.28 140 P P **20 18 37.7 +3.1**
comp=Z,0.8nm,0.8s,mb3.5,slow=9.1,SNR=2.5
LPAZ LR LR 20 33 24.3
comp=Z,414nm,21.9s,MS4.2,baz=113,slow=34
LPAZ La Paz 39.28 140 P P **20 18 37.7 +3.1**
LPAZ LR LR 20 33 24.3
DPW Davenport 39.30 333 *e*P P **20 18 35.8 +1.2**
COR Corvallis 39.39 326 *e*P P **20 18 37.5 +1.4**
comp=Z,36nm,1.0s,mb5.0
COR LR LR
comp=Z,2µm,20.0s,MS5.0
LON Longmire 40.16 329 *e*P P **20 18 42.4 +0.8**
NLW Nelson Butte 40.41 332 *e*P P **20 18 44.3 +0.6**
BMW Boistfort Moun 40.69 328 P P **20 18 46.8 +0.7**
FFC Flin Flon 40.85 352 *e*P P **20 18 46.5 -0.7**
comp=Z,12nm,1.1s,mb4.4
RPW Rockport 41.22 331 *e*P P **20 18 50.8 +0.4**
GNW Green Mountain 41.23 330 *e*P P **20 18 51.1 +0.7**
OCWA Octopus Mounta 42.02 329 PFAKE 20 19 10.0 +13
OCWA LR LR
comp=Z,905nm,19.0s,MS4.7
LVC Limon Verde 43.80 147 P P **20 19 14.5 +2.6**
comp=Z,2.2nm,0.9s,mb3.9,baz=336,slow=8.0,SNR=4.2
LVC Limon Verde 43.80 147 P P **20 19 14.5 +2.6**
LVC LR LR
comp=Z,344nm,19.0s,MS4.3
SCHQ Schefferville 45.31 21 LR LR 20 39 53.1
comp=Z,2µm,18.2s,MS5.2,baz=277,slow=38
SCHQ Schefferville 45.31 21 PFAKE 20 19 40.0 +16
SCHQ LR LR
comp=Z,3µm,19.0s,MS5.2
BBB Bella Bella 46.86 331 P P **20 19 37.6 +1.9**
comp=Z,2.7nm,0.8s,mb4.3,baz=168,slow=5.1,SNR=7.2
YKA Yellowknife Ar 50.41 347 P P **20 20 02.6 -0.5**
comp=Z,24nm,0.8s,mb5.3,baz=152,slow=7.3,SNR=415
YKA LR LR 20 43 49.1
comp=Z,315nm,18.3s,MS4.4,baz=185,slow=39
YKA Yellowknife Ar 50.41 347 P P **20 20 02.6 -0.5**
YKA LR LR 20 43 49.1
DLBC Dease Lake 51.84 336 LR LR 20 45 11.0
comp=Z,603nm,19.5s,MS4.6,baz=126,slow=39
FRB Frobisher Bay 52.24 14 P P **20 20 15.9 -1.0**
FRB LR LR 20 44 37.2
comp=Z,828nm,18.1s,MS4.8,baz=107,slow=38
FRB Frobisher Bay 52.24 14 P P **20 20 15.9 -1.0**
FRB LR LR 20 44 37.2
SIT Sitka 53.17 333 PFAKE 20 20 40.0 +16
SIT LR LR
comp=Z,591nm,20.0s,MS4.6
BDFB Brasilia 53.73 122 P P **20 20 28.9 +0.3**
comp=Z,5.3nm,1.1s,mb4.4,baz=311,slow=11,SNR=3.7
BDFB LR LR 20 45 22.4
comp=Z,314nm,18.0s,MS4.4,baz=313,slow=38
INK Inuvik 59.76 344 LR LR 20 49 27.7
comp=Z,584nm,18.3s,MS4.8,baz=298,slow=38
PMR Palmer 61.55 333 P P **20 21 21.9 -1.3**
comp=Z,8.4nm,0.5s,mb5.1
PMR LR LR
comp=Z,380nm,19.0s,MS4.6
PMS Palmer South 61.60 333 *e*P P **20 21 23.7 +0.2**
comp=Z,27nm,1.1s,mb5.3
KDAK Kodiak Island 61.78 328 PFAKE 20 21 40.0 +15
KDAK LR LR
comp=Z,680nm,20.0s,MS4.8
ILAR Eielson Array 62.04 337 P P **20 21 25.6 -0.7**
comp=Z,8.2nm,0.9s,mb4.8,baz=135,slow=4.3,SNR=75
ILAR LR LR 20 51 03.5
comp=Z,328nm,20.2s,MS4.5,baz=140,slow=39
COLA College 62.45 337*ce*P P **20 21 28.2 -0.9**
COLA College 62.45 337 *e*P P **20 21 28.8 -0.3**
comp=Z,18nm,1.2s,mb5.1
COLA LR LR
comp=Z,321nm,20.0s,MS4.5
RSO Redoubt South 62.76 331 *e*P P **20 21 30.8 -0.4**
IMA Indian Mountai 65.16 337 P P **20 21 45.7 -1.1**
comp=Z,11nm,0.9s,mb4.9
DAG Danmarks Havn 72.59 13⇑ *i*P P **20 22 32.3 -0.1**
comp=Z,5.8nm,1.3s,mb4.3
DAG Danmarks Havn 72.59 13⇑ *e*P P **20 22 32.3 -0.1**
DAG pmax pmax
comp=Z,6.0nm,1.3s,mb4.4
DAG Danmarks Havn 72.59 13⇑ *e*P P **20 22 32.3 -0.1**
comp=Z,5.8nm,1.3s,mb4.3
EVO Evora 77.51 53 *e*P P **20 22 56.1 -5.3**
comp=Z,22nm,1.2s,mb4.7
EVO *e*R
comp=Z,396nm,22.5s
ESK Eskdalemuir 78.35 36 PFAKE 20 23 20.0 +14
ESK LR LR
comp=Z,810nm,19.0s,MS5.1
KBS Kingsbay 78.89 11 PFAKE 20 23 20.0 +12
KBS LR LR
comp=Z,535nm,19.0s,MS4.9
ROSF Rostrenen 79.40 43 *e*P P **20 23 06.8 -4.7**
comp=Z,21nm,1.2s,mb4.7
ESDC Sonseca Array 80.43 52 P P **20 23 15.8 -1.4**
comp=Z,1.6nm,0.8s,mb4.0,baz=287,slow=6.0,SNR=9.6
ESDC LR LR 20 55 43.8
comp=Z,325nm,18.5s,MS4.7,baz=285,slow=33
ESLA Sonseca Array 80.43 52 PFAKE 20 23 30.0 +13
ESLA LR LR
comp=Z,2µm,20.0s,MS5.5
BILL Bilibino 80.68 338*c i*P P **20 23 18.3 +0.4**
BILL *i* 20 23 25.1
BILL *e* 20 23 31.6
BILL *i* 20 26 21.7
BILL pmax pmax
comp=Z,51nm,1.9s,mb5.1
BILL Bilibino 80.68 338 *e*P P **20 23 18.5 +0.5**
comp=Z,36nm,1.2s,mb5.2
FLN La Foliniere 81.14 42 *e*P P **20 23 18.0 -2.8**
FLN *e*R
comp=Z,552nm,23.0s
SJPF Ste Jean 81.78 48 *e*P P **20 23 21.3 -2.9**
comp=Z,16nm,1.2s,mb4.5
MFF Saint Martin d 81.81 44 *e*P P **20 23 21.0 -3.3**
comp=Z,22nm,1.4s,mb4.6
ETSF Etsaut 82.30 48 *e*P P **20 23 24.8 -2.1**
EPF Esparros 82.92 48 *e*P P **20 23 27.2 -2.8**
comp=Z,16nm,1.2s,mb4.6
TCF Toulx Ste Croi 83.47 44 *e*P P **20 23 29.4 -3.4**
comp=Z,14nm,1.3s,mb4.5
BAIF Baives 83.83 40 *e*P P **20 23 31.7 -2.8**
BGF Bois d'Agland 83.83 44 *e*P P **20 23 31.5 -3.1**
KONO Kongsberg 84.09 30 PFAKE 20 23 50.0 +14
KONO LR LR
comp=Z,483nm,20.0s,MS4.9
AVF Avril sur Loir 84.11 43 *e*P P **20 23 32.6 -3.4**
SSF Saint Saulge 84.14 43 *e*P P **20 23 32.9 -3.3**
comp=Z,9.2nm,1.1s,mb4.5
MTLF Montolieu 84.18 47 *e*P P **20 23 33.6 -2.9**
comp=Z,30nm,1.5s,mb4.9
NB2 NORSAR Subarra 84.40 28 P P **20 23 36.7 -0.4**
comp=Z,32nm,1.7s,mb5.2,baz=290,slow=5.0
NB2 NORSAR Subarra 84.40 28 P P **20 23 36.7 -0.4**
baz=290,slow=5.3
NOA NORSAR Array B 84.40 28 P P **20 23 37.5 +0.4**
comp=Z,3.8nm,1.1s,mb4.4,baz=291,slow=5.1,SNR=6.9
NOA LR LR 20 59 35.4
comp=Z,362nm,21.4s,MS4.7,baz=295,slow=34
SMF Signal de Mont 84.47 43 *e*P P **20 23 34.5 -3.3**
comp=Z,9.4nm,1.1s,mb4.5
MEZF Maizieres J'vi 84.77 41 *e*P P **20 23 36.8 -2.5**
LASF Ste Croix 85.15 46 *e*P P **20 23 39.1 -2.2**
comp=Z,31nm,1.5s,mb4.9
VIVF Saint-Julien-l 85.50 45 *e*P P **20 23 41.2 -1.8**
comp=Z,81nm,1.7s,mb5.4
HAU Haudompre 85.74 42 *e*P P **20 23 41.5 -2.6**
HAU *e*R
comp=Z,478nm,19.8s
CABF La Chapelle 85.97 43 *e*P P **20 23 44.3 -0.9**
comp=Z,35nm,1.5s,mb5.1
HINF Hinteralfeld 86.12 42 *e*P P **20 23 45.1 -0.8**
comp=Z,20nm,1.2s,mb4.9
ARCES ARCESS Array B 86.17 18 P P **20 23 46.2 +0.5**
comp=Z,3.8nm,0.8s,mb4.7,baz=288,slow=3.8,SNR=9.5
ARCES LR LR 21 02 35.8
comp=Z,445nm,18.6s,MS4.9,baz=256,slow=36
ARCES ARCESS Array B 86.17 18 P P **20 23 46.2 +0.5**
ARCES LR LR 21 02 35.8
CDF Champ du Feu 86.22 41 *e*P P **20 23 45.8 -0.6**
comp=Z,30nm,1.5s,mb5.0
ORIF Oris-en-Rattie 86.31 45 *e*P P **20 23 45.1 -1.9**
comp=Z,23nm,1.3s,mb4.9
ORIF *e*R
comp=Z,392nm,22.2s
SMRF Simiane la Rot 86.37 46 *e*P P **20 23 44.4 -2.9**
comp=Z,53nm,1.7s,mb5.2
LPL La Plagne 86.71 44 *e*P P **20 23 47.6 -1.3**
comp=Z,51nm,1.6s,mb5.2
LPG La Plagne 86.73 44 *e*P P **20 23 47.9 -1.1**
comp=Z,51nm,1.6s,mb5.2
DBIC Dimbokro 86.81 84 P P **20 23 50.4 +0.3**
comp=Z,3.2nm,0.8s,mb4.6,baz=289,slow=9.1,SNR=2.4
DBIC LR LR 20 59 53.7
comp=Z,176nm,18.2s,MS4.5,baz=291,slow=34
DBIC Dimbokro 86.81 84 P P **20 23 50.4 +0.3**
DBIC LR LR 20 59 53.7
BNI Bardonecchia 86.81 44 *e*P P **20 23 50.2 +0.8**
MBDF Montbardon 86.97 45 *e*P P **20 23 48.3 -1.9**
comp=Z,6.5nm,0.8s,mb4.6
LMR La Mourre 87.20 46 *e*P P **20 23 49.1 -2.2**
comp=Z,69nm,1.8s,mb5.3
FRF La Foret Royal 87.23 46 *e*P P **20 23 49.3 -2.2**
comp=Z,49nm,1.6s,mb5.2
SBF Sospel 87.69 45 *e*P P **20 23 51.3 -2.4**
comp=Z,19nm,1.2s,mb4.9
SEY Seymchan 87.93 335 *e*P P **20 23 55.9 +1.6**
SEY pmax pmax
comp=E,10.0nm,1.3s
SEY pmax pmax
comp=Z,30nm,1.3s,mb5.4
MOX Moxa 88.17 38 *i* P P **20 23 56.9 +1.1**
comp=Z,logA/T=1.1,mb5.1
MOX L 21 07 18.0
MOX Moxa 88.17 38 *e*P P **20 23 56.9 +1.1**
MOX pmax pmax
comp=Z,24nm,2.0s,mb5.1
MOX MLR MLR
comp=Z,300nm,17.0s,MS4.8
MOX Moxa 88.17 38 *e*P P **20 23 56.9 +1.1**
comp=Z,24nm,2.0s,mb5.1
MOX LR LR
comp=Z,300nm,17.0s,MS4.8
GRA1 Grafenberg Arr 88.26 39 *e*P P **20 23 56.4 +0.1**
comp=Z,24nm,1.9s,mb5.1
GRA1 *e*pP pP 20 24 05.9 -0.9
GRF Grafenberg Arr 88.26 39 *e*P P **20 23 56.4 +0.1**
GRF *e**PP pP 20 24 05.9 -0.9
GRF pmax pmax
comp=Z,24nm,1.9s,mb5.1
PGF Pioggiola 89.18 46 *e*P P **20 23 57.8 -3.1**
comp=Z,23nm,1.4s,mb5.0
BRG Berggiesshubel 89.47 37 *e*P P **20 24 02.7 +0.7**
BRG pmax pmax
comp=Z,10.0nm,1.6s,mb4.9
BRG Berggiesshubel 89.47 37 *e*P P **20 24 02.7 +0.7**
comp=Z,10nm,1.6s,mb4.9
TIXI Tiksi 89.65 348 *e*P P **20 24 02.3 -0.1**
TIXI *e* 20 27 32.7
TIXI Tiksi 89.65 348 PFAKE 20 24 20.0 +18
TIXI LR LR
comp=Z,240nm,20.0s,MS4.6
KHC Kasperske Hory 89.90 39 *e*P P **20 24 03.5 -0.6**
GERES GERESS Array B 90.08 39 P P **20 24 05.1 +0.2**
comp=Z,0.9nm,0.8s,mb4.2,baz=315,slow=3.8,SNR=9.6
MA2 Magadan 90.23 333*c i*P P **20 24 06.1 +0.8**
MA2 pmax pmax
comp=Z,17nm,1.6s,mb5.1
MA2 Magadan 90.23 333 PFAKE 20 24 20.0 +15
MA2 LR LR
comp=Z,179nm,20.0s,MS4.5
FINES FINESS Array B 90.68 25 P P **20 24 07.6 +0.2**
comp=Z,1.2nm,0.8s,mb4.2,baz=243,slow=4.3,SNR=6.0
FINES LR LR 21 03 10.3
comp=Z,222nm,21.7s,MS4.6,baz=120,slow=34
WAKE Wake Island 94.58 291 PFAKE 20 24 40.0 +14
WAKE LR LR
comp=Z,2µm,19.0s,MS5.5
YAK Yakutsk 96.73 341 *e*P P **20 24 35.7 +0.6**
YAK pmax pmax
comp=Z,5.0nm,0.8s,mb5.0
YAK Yakutsk 96.73 341 PFAKE 20 24 50.0 +15
YAK LR LR
comp=Z,188nm,20.0s,MS4.6
AKASG Malin Array Be 98.08 33 LR LR 21 13 50.4
comp=Z,222nm,18.1s,MS4.7,baz=305,slow=38
OBN Obninsk 98.90 27 PFAKE 20 25 00.0 +15
OBN LR LR
comp=Z,383nm,21.0s,MS4.9
YSS Yuzh-Sakhalins 101.06 325 PFAKE 20 25 10.0 +15
YSS LR LR
comp=Z,246nm,20.0s,MS4.7
VNA3 Neumayer Olymp 101.43 161⇑ *i*P P 20 25 02.2 +6.0
VNA2 Neumayer--Watz 102.11 160 P Pdif 20 25 03.0 +3.8
QSPA South Pole Qui 104.31 180 PFAKE 20 25 20.0 +11
QSPA LR LR
comp=Z,1µm,22.0s,MS5.3
ARU Arti 105.64 16 PFAKE 20 29 40.0
ARU LR LR
comp=Z,555nm,20.0s,MS5.1
SBA Scott Base 106.06 193 PFAKE 20 29 40.0
SBA LR LR
comp=Z,940nm,21.0s,MS5.3
KIV Kislovodsk 109.41 32 PFAKE 20 29 50.0
KIV LR LR
comp=Z,229nm,19.0s,MS4.8
MAJO Matsushiro 109.90 318 PFAKE 20 29 50.0
MAJO LR LR
comp=Z,224nm,19.0s,MS4.8
ZAL Zalesovo 111.96 1 PP PP 20 30 22.9 -3.8
comp=Z,0.9nm,0.4s,baz=48,slow=8.1,SNR=9.8
ULN Ulaanbaatar 115.46 345 *i* PKIKP PKPdf 20 29 46.7 +1.0
ULN Ulaanbaatar 115.46 345 PFAKE 20 30 00.0 +14
ULN LR LR

	comp=Z,204nm,19.0s,MS4.8								
SONM	**Songino Array**	**115.65**	**345**	PP	PP	20 30 49.7	-4.0		
	comp=Z,1.2nm,1.1s,slow=7.4,SNR=4.4								
INCN	**Inchon**	**116.25**	**325**	PFAKE		20 30 00.0	+12		
INCN				LR	LR				
	comp=Z,182nm,20.0s,MS4.7								
MKAR	**Makanchi Array**	**119.00**	**4**	PKP	PKPdf	20 29 53.0	+0.4		
	comp=Z,0.9nm,0.9s,baz=53,slow=6.1,SNR=3.7								
PMG	**Port Moresby**	**120.83**	**268**	PFAKE		20 30 10.0	+13		
PMG				LR	LR				
	comp=Z,1μm,20.0s,MS5.5								
TAU	**Tasmania Unive**	**121.15**	**228**	PFAKE		20 30 10.0	+13		
TAU				LR	LR				
	comp=Z,1μm,19.0s,MS5.6								
LBTB	**Lobatse**	**121.85**	**111**	PFAKE		20 30 10.0	+11		
LBTB				LR	LR				
	comp=Z,88nm,22.0s,MS4.4								
WMQ	**Urumqi**	**122.10**	**359**	*e*PKP	PKPdf	20 30 00.3	+1.6		
CTAO	**Charters Tower**	**123.14**	**255**	PFAKE		20 30 20.0	+19		
CTAO				LR	LR				
	comp=Z,3μm,19.0s,MS5.9								
SSE	**Sheshan**	**123.99**	**324**	PKP	PKPdf	20 30 11.0	+8.3		
SSE				LR	LR				
	comp=N,220nm,18.5s,MS4.9								
SSE				LR	LR				
	comp=E,53nm,18.5s,MS4.9								
SSE				LR	LR				
	comp=Z,392nm,20.0s,MS5.1								
NJ2	**Nanjing**	**124.55**	**327**	*e*PKP	PKPdf	20 30 12.3	+8.5		
NJ2				PKS	PKS	20 33 41.0	+1.5		
NJ2				SKS	SKS	20 37 19.0	+16		
NJ2				LR	LR				
	comp=Z,890nm,17.5s,MS5.5								
STKA	**Stephens Creek**	**127.19**	**241**	PKP	PKPdf	20 30 09.8	+0.9		
	comp=Z,1.7nm,0.8s,baz=231,slow=8.2,SNR=3.4								
STKA	**Stephens Creek**	**127.19**	**241**	PKP	PKPdf	20 30 09.8	+0.9		
LZH	**Lanzhou**	**127.29**	**343**	*e*PKP	PKPdf	20 30 09.5	+0.5		
TATO	**Taipei**	**128.27**	**319**	PFAKE		20 30 30.0	+19		
TATO				LR	LR				
	comp=Z,304nm,20.0s,MS5.0								
KMBO	**Kilima Mbogo**	**129.34**	**79**	PFAKE		20 30 30.0	+17		
KMBO				LR	LR				
	comp=Z,167nm,20.0s,MS4.7								
WRA	**Warramunga Arr**	**134.32**	**256**	PKP	PKPdf	20 30 23.6	+0.9		
	comp=Z,0.6nm,0.8s,baz=60,slow=0.4,SNR=8.8								
ASAR	**Alice Springs**	**134.65**	**251**	PKP	PKPdf	20 30 23.7	+0.5		
	comp=Z,0.6nm,0.9s,baz=99,slow=2.3,SNR=6.7								
CM31	**Chiang Mai Arr**	**145.25**	**339**	*e*PKPdf	PKPdf	20 30 43.2	+1.0		
CMAR	**Chiang Mai Arr**	**145.25**	**339**	PKPbc	PKPbc	20 30 42.9	+0.2		
	comp=Z,8.6nm,0.9s,baz=340,slow=3.9,SNR=40								
NWAO	**Narrogin (SRO)**	**146.71**	**231**	PFAKE		20 31 00.0	+16		
NWAO				LR	LR				
	comp=Z,803nm,19.0s,MS5.5								
HYB	**Hyderabad**	**147.40**	**15**	*i* PKP	PKPdf	20 30 49.0	+3.1		
HYB				*e*		20 30 55.0			
HYB				*e*		20 30 59.0			
HYB	**Hyderabad**	**147.40**	**15**	*e*P	PKPdf	20 30 49.0	+3.1		
COCO	**West Island**	**169.96**	**281**	PFAKE		20 31 30.0	+18		
COCO				LR	LR				
	comp=Z,1μm,21.0s								

MDD 15 20:33:16.3±3.7, 35.41N×4.34W, mb3.5/1, Error ellipse: s-maj=33.6km s-min=17.2km az=178.0, PRXIMO SIN SOLUCIN AftershockPLICA, Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EQES	**Quesada**	**2.60**	**23**	P	Pn	20 33 58.1	-2.2
	1.3nm,0.1s,SNR=7.9						
EQES				S	Sn	20 34 29.8	-3.3
	1.5nm,0.3s,SNR=7.9						
EADA	**Adamuz**	**2.76**	**356**	P	Pn	20 34 00.8	-1.8
	0.0nm,0.0s,SNR=7.9						
EADA				S	Sn	20 34 33.8	-3.4
	0.3nm,0.1s,SNR=7.9						
EMIN	**Mina Concepcio**	**3.01**	**322**	P	Pn	20 34 04.1	-2.1
	0.0nm,0.0s,SNR=7.9						
EMIN				S	Sn	20 34 38.5	-5.1
	0.2nm,0.2s,SNR=7.9						
EGRO	**El Granado**	**3.31**	**311**	S	Sn	20 34 46.7	-4.3
	0.7nm,0.2s,SNR=7.9						
EBAD	**Badajoz**	**3.97**	**328**	S	Sn	20 35 02.3	-5.4
	0.8nm,0.2s,SNR=7.9						

*NAO **15** 20:33:31.0±2.6, 67.69N×33.78E, ML2.0*
*HEL **15** 20:33:32.2±0.4, 67.69N×33.70E, ML2.0, ML2.0(NAO), Explosion*

ISC 15 20:33:35.1±0.8, 67.74N±0.04×32.7E±0.1, n11, σ1s45/20, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
APA0	**Apatity Array**	**0.16**	**143**	*i* P	**Pg**	**20 33 37.0**	**-1.4**
APA0				*i* S	**Sg**	**20 33 40.9**	**+0.5**
APA0				*e*RG		20 33 42.8	
APA0	**Apatity Array**	**0.16**	**143**	Pg	**Pg**	**20 33 37.0**	**-1.4**
	baz=90,slow=16						
APA0				Lg		20 33 40.9	
	baz=71,slow=37						
APA0				Rg		20 33 42.8	
	baz=85,slow=37						
MSF	**Maaselka**	**2.34**	**220**	*e*P	**Pn**	**20 34 15.4**	**-0.1**
MSF				*e*SB	**Sb**	**20 34 49.6**	**+2.0**
MSF				MSG		20 34 54.8	
	comp=Z,4.1nm,0.3s						
SGF	**Sodankyl**	**2.40**	**266**	*e*PB	**Pb**	**20 34 20.3**	**+1.3**
SGF				*e*SB	**Sb**	**20 34 55.5**	**+6.3**
KEV	**Kevo**	**2.91**	**317**	*e*P	**Pn**	**20 34 23.9**	**+0.3**
KEV				*e*S	**Sn**	**20 35 01.9**	**+2.1**
KEV				MSG		20 35 13.2	
	comp=Z,5.9nm,0.3s						
ARA0	**ARCESS Array S**	**3.21**	**308**	*e*P	**Pn**	**20 34 27.6**	**-0.2**
ARA0				*e*PG	**Pg**	**20 34 36.4**	**-2.7**
ARA0				*e*S	**Sn**	**20 35 08.8**	**+1.6**
ARA0				*e*SG	**Sg**	**20 35 20.6**	**-1.2**
ARA0	**ARCESS Array S**	**3.21**	**308**	Pn	**Pn**	**20 34 27.6**	**-0.2**
	baz=122,slow=16						
ARA0				Pg	**Pg**	**20 34 36.4**	**-2.7**
	baz=121,slow=16						
ARA0				Sn	**Sn**	**20 35 08.8**	**+1.6**
	baz=125,slow=28						
ARA0				Lg		20 35 20.6	
	baz=124,slow=28						
OUL	**Oulu**	**3.83**	**229**	*e*SG	**Sg**	**20 35 39.8**	**-2.7**
KIF	**Kilpisjarvi**	**4.60**	**292**	*e*S	**Sn**	**20 35 41.2**	**-1.2**
FIA0	**FINESS Array S**	**6.93**	**208**	*e*S	**Sn**	**20 36 35.0**	**-6.0**
FIA0				*e*SG		20 37 08.2	
FIA0	**FINESS Array S**	**6.93**	**208**	Sn	**Sn**	**20 36 35.0**	**-6.0**
	baz=28,slow=28						
FIA0				Lg		20 37 08.2	

MEX 15 20:50:24.0±0.9, 14.90N×93.65W, h16km±195km, MD4.1, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**2.01**	**47**	*i* P	Pn	20 50 54.1	-3.6
CCIG				*i* S	Sn	20 51 17.5	-5.1
SCX	**San Cristobal**	**2.08**	**28**	*i* P	Pn	20 50 58.0	-0.7
CMIG	**Matias Romero**	**2.48**	**332**	*i* P	Pn	20 50 59.1	-5.4
CMIG				*i* S	Sn	20 51 29.8	-4.9

*NEIC **15** 20:58:52.3, 38.73N×22.55E, h16km, ML3.1(ATH), After ATH.*
*ATH **15** 20:58:52.3, 38.73N×22.55E, h16km±5km, MD3.2/6, ML3.1*
*THE **15** 20:58:53.5, 38.73N×22.56E, h10km, ML2.5*

ISC 15 20:58:52.5±0.6, 38.68N±0.04×22.57E±0.04, h10km, n16, σ0s85/23, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AGG	**Agios Georgios**	**0.39**	**331**	*e*Pg	**Pg**	**20 58 59.8**	**-0.7**
AGG				*e*Sg	**Sg**	**20 59 05.6**	**-0.2**
EVR	**Evrytania**	**0.64**	**292**	*e*PN	**Pg**	**20 59 04.0**	**-1.4**
NEO	**Neokhori**	**0.81**	**39**	*e*PN	**Pg**	**20 59 07.0**	**-1.7**
XOR	**Xorichti**	**0.84**	**35**	*e*Pg	**Pg**	**20 59 08.9**	**-0.4**
XOR				*e*Sg	**Sg**	**20 59 20.6**	**0.0**
AOS	**Alonnisos**	**1.13**	**64**	*e*Pg	**Pg**	**20 59 14.5**	**-0.7**
AOS				*e*Sg	**Sg**	**20 59 30.6**	**+0.3**
ATH	**Athens Observa**	**1.15**	**128**	*e*PN	**Pn**	**20 59 15.0**	**+0.5**
PTL	**Penteli**	**1.20**	**121**	*e*PN	**Pn**	**20 59 15.5**	**+0.3**
LIT	**Litokhoron**	**1.42**	**358**	*e*Pb	**Pb**	**20 59 18.7**	**+0.1**
LIT				*e*Sb	**Sb**	**20 59 39.1**	**+2.4**
LKD	**Levkas**	**1.50**	**272**	*e*Pb	**Pg**	**20 59 21.6**	**-0.9**
MEV	**Metsovon**	**1.52**	**317**	*e*Pb	**Pb**	**20 59 20.8**	**+0.5**
MEV				*e*Sb	**Sb**	**20 59 40.8**	**+1.4**
ITM	**Ithomi**	**1.58**	**199**	*e*PN	**Pn**	**20 59 22.0**	**+1.3**
JAN	**Janina**	**1.66**	**307**	*e*PN	**Pn**	**20 59 23.0**	**+1.2**
IGT	**Igoumenitsa**	**1.94**	**297**	*e*Pb	**Pb**	**20 59 27.1**	**-0.3**
IGT				*e*Sb	**Sb**	**20 59 51.2**	**-0.5**
GRG	**Griva**	**2.28**	**357**	*e*Pn	**Pn**	**20 59 30.4**	**-0.3**
FNA	**Florina**	**2.29**	**337**	*e*Pn	**Pn**	**20 59 31.1**	**+0.1**
FNA				*e*Sn	**Sn**	**20 59 59.3**	**-0.2**
KNT	**Kendrikon**	**2.49**	**6**	*e*Pn	**Pn**	**20 59 33.7**	**-0.1**

*IDC **15** 21:18:03.7±9.3, 13.53N×92.50W, mb3.7/4, mb1 4.0/5, mb1mx3.7/19, ML3.6/1, MS3.4/1, Ms1 3.3/1, ms1mx2.7/30, Error ellipse: s-maj=200.0km s-min=94.3km az=16.0*
*NEIC **15** 21:18:14.9, 14.29N×93.67W, h24km, mb4.4/1, MD4.4(MEX), After MEX.*
*MEX **15** 21:18:14.4±2.0, 14.21N×93.62W, h19km±244km, MD4.3*

ISC 15 21:18:13.4±4.0, 14.4N±0.1×93.63W±0.10, h14km±29km, n12, σ1s47/15, mb3.8/5, MS3.4/1, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**2.32**	**38**	*i* P	**Pn**	**21 18 52.5**	**+0.6**
CCIG				*i* S	**Sn**	**21 19 19.4**	**-1.1**
SCX	**San Cristobal**	**2.47**	**23**	*i* P	**Pn**	**21 18 50.0**	**-4.0**
SCX				*i* S	**Sn**	**21 19 28.0**	**+3.8**
CMIG	**Matias Romero**	**2.90**	**335**	*e*P	**Pn**	**21 18 59.1**	**-0.9**
CMIG				*e*S	**Sn**	**21 19 35.7**	**+0.7**
CMIG	**Matias Romero**	**2.90**	**335**	*e*P	**Pn**	**21 18 59.1**	**-0.9**
CMIG				*i* S	**Sn**	**21 19 33.1**	**-1.9**
TXAR	**Lajitas Array**	**17.49**	**330**	P	**P**	**21 22 25.8**	**+7.2**
	0.0nm,0.3s,baz=147,slow=13,SNR=8.6						
TXAR	**Lajitas Array**	**17.49**	**330**	P	**P**	**21 22 25.8**	**+7.2**
HWUT	**Hardware Ranch**	**31.22**	**334**	*e*P	**P**	**21 24 34.9**	**+0.3**
	14nm,2.2s,mb4.4						
PDAR	**Pinedale Array**	**31.38**	**337**	P	**P**	**21 24 37.2**	**+1.1**
	0.2nm,0.6s,mb3.1,baz=146,slow=9.8,SNR=2.3						
NVAR	**Mina Array Bea**	**32.35**	**322**	P	**P**	**21 24 47.0**	**+2.5**
	0.9nm,0.8s,mb3.7,baz=127,slow=7.7,SNR=6.3						
SCHQ	**Schefferville**	**45.37**	**21**	LR	LR	21 47 18.3	
	comp=Z,39nm,18.4s,MS3.4,baz=266,slow=38						
YKA	**Yellowknife Ar**	**50.24**	**348**	P	**P**	**21 27 09.6**	**-1.3**
	1.3nm,0.6s,mb4.1,baz=153,slow=7.3,SNR=42						
INK	**Inuvik**	**59.57**	**344**	P	**P**	**21 28 17.4**	**-1.4**
	0.9nm,0.8s,mb3.9,baz=122,slow=6.6,SNR=4.1						

*IDC **15** 21:21:33.1±0.5, 16.68S×177.11W, mb4.7/17, mb1 4.9/18, mb1mx4.8/20, ML3.5/1, MS4.7/16, Ms1 4.7/16, ms1mx4.5/24, Error ellipse: s-maj=24.1km s-min=12.8km az=143.0*
*NEIC **15** 21:21:36.0±0.2, 16.52S×177.19W, mb5.2/33, MS4.8/93, Error ellipse: s-maj=9.7km s-min=3.8km az=148.0*
*BJI **15** 21:21:35.9, 16.50S×177.20W, h18km, mB5.2, mb5.1, Ms5.1, Msz4.8*
*HRVD **15** 21:21:36.0±0.1, 16.72S×177.03W, h12km, MW5.3/71, Centroid moment Tensor Solution. LP body waves: s50,c93;Mantle waves: s71,c140; Half duration: 1s1 Moment tensor: Scale 10^17 Nm; Mrr=0.14±.02; Mθθ=-1.19±.02; Mφφ 1.33±.02; Mrθ 0.04±.04; Mθφ=-0.12±.02; Mφr 0.18±.04; Best double couple: M0 1.28×10^17 NP1: φs=312°, δ83°, λ 177°. NP2:φs=42°, δ87°, λ 7°. Principal axes: T 1.36, Plg 7°, Azm267°; N -.16, Plg 83°, Azm66°; P -1.2, Plg 3°, Azm177°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*MOS **15** 21:21:41.6±2.2, 15.61S×176.67W, h33km, mb5.5/9, MS4.9/12 Error ellipse: s-maj=49.9km s-min=18.5km az=106.6*

ISC 15 21:21:34.6±0.2, 16.74S±0.07×177.09W±0.05, h21km, h21km±2.1km: pP-P, n386, σ0s96/139, mb5.0/58, MS4.8/113, 20C-4D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**16.41**	**249**	*e*P	**P**	**21 25 26.3**	**+0.8**
DZM	**Mont Dzumac**	**16.41**	**249**	*e*P	**P**	**21 25 26.3**	**+0.8**
NOUC	**Port Laguerre**	**16.55**	**249**	*e*P	**P**	**21 25 27.4**	**+0.1**
RAR	**Rarotonga**	**16.97**	**108**	Pn	**P**	**21 25 32.2**	**-0.4**
	0.2nm,0.3s,baz=312,slow=16,SNR=2.7						
RAR				LR	LR	21 30 31.1	
	comp=Z,3μm,18.9s,baz=275,slow=32						
RAR	**Rarotonga**	**16.97**	**108**	*e*P	**P**	**21 25 30.8**	**-1.8**
URZ	**Urewera**	**22.04**	**192**	P	**P**	**21 26 28.5**	**-1.2**
	52nm,1.2s,mb4.8,baz=348,slow=5.0,SNR=5.6						
URZ				LR	LR	21 34 14.5	
	comp=Z,4μm,19.1s,MS4.9,baz=226,slow=34						
SNZO	**South Karori**	**25.49**	**194**	PFAKE		21 27 20.0	+17
SNZO				LR	LR		
	comp=Z,5μm,21.0s,MS5.0						
RPZ	**Rata Peaks**	**28.71**	**198**	P	**P**	**21 27 33.4**	**+0.8**
	comp=Z,7.7nm,1.1s,mb4.3,baz=97,slow=15,SNR=2.5						
RPZ				LR	LR	21 38 06.0	
	comp=Z,3μm,20.0s,MS4.9,baz=29,slow=34						
ARMA	**Armidale**	**31.62**	**239**	*e*P	**P**	**21 27 59.0**	**+0.5**
CTA	**Charters Tower**	**34.90**	**259**	*e*P	**P**	**21 28 26.2**	**-0.8**
	comp=Z,40nm,1.4s,mb5.2						
CTA				*e*S	**S**	**21 33 46.0**	**-10**
CTA	**Charters Tower**	**34.90**	**259**	P	**P**	**21 28 26.2**	**-0.8**
	comp=Z,40nm,1.1s,mb5.3,baz=82,slow=11,SNR=26						
CTA				LR	LR	21 38 35.7	
	comp=Z,408nm,20.1s,MS4.2,baz=270,slow=29						
CTAO	**Charters Tower**	**34.90**	**259**	*e*P	**P**	**21 28 25.8**	**-1.2**
	comp=Z,92nm,1.3s,mb5.5						
CTAO				LR	LR		
	comp=Z,3μm,19.0s,MS5.0						
PMG	**Port Moresby**	**35.54**	**277**	P	**P**	**21 28 31.9**	**-0.6**
	comp=Z,8.0nm,1.0s,mb4.6,baz=39,slow=6.2,SNR=5.6						
PMG	**Port Moresby**	**35.54**	**277**	P	**P**	**21 28 31.7**	**-0.8**
PMG				LR	LR		
	comp=Z,1μm,20.0s,MS4.6						
TOO	**Toolangi**	**38.88**	**230**	*e*P	**P**	**21 29 00.1**	**-0.4**
	comp=Z,14nm,1.0s,mb4.7						
TAU	**Tasmania Unive**	**39.95**	**222**	PFAKE		21 29 20.0	+11
TAU				LR	LR		
	comp=Z,1μm,19.0s,MS4.8						
STKA	**Stephens Creek**	**40.30**	**240**	*e*P	**P**	**21 29 12.0**	**-0.2**
	comp=Z,41nm,1.0s,mb5.1						
STKA				*e*S	**S**	**21 35 19.2**	**+0.8**
STKA	**Stephens Creek**	**40.30**	**240**	P	**P**	**21 29 12.4**	**+0.2**
	comp=Z,45nm,1.0s,mb5.2,baz=72,slow=9.0,SNR=25						
STKA				LR	LR	21 42 36.7	
	comp=Z,782nm,20.2s,MS4.5,baz=73,slow=31						
WB2	**Warramunga Arr**	**46.08**	**258**	*e*P	**P**	**21 29 58.1**	**-1.2**
WRAB	**Tennant Creek**	**46.08**	**258**	*e*P	**P**	**21 29 57.5**	**-1.8**
	comp=Z,123nm,1.5s,mb5.6						
WRA	**Warramunga Arr**	**46.09**	**258**	P	**P**	**21 29 57.9**	**-1.5**
	comp=Z,6.2nm,0.9s,mb4.5,baz=93,slow=8.1,SNR=27						
WRA				PcP	PcP	21 31 37.9	+2.0
	comp=Z,7.6nm,1.1s,baz=85,slow=4.0,SNR=5.9						
WRA				LR	LR	21 47 45.8	
	comp=Z,871nm,18.2s,MS4.7,baz=75,slow=34						
WRA	**Warramunga Arr**	**46.09**	**258**	P	**P**	**21 29 57.9**	**-1.5**
WRA				PcP	PcP	21 31 37.9	+2.0
WRA				LR	LR	21 47 45.8	
AS12	**Alice Springs**	**46.33**	**253**	*e*P	**P**	**21 29 59.6**	**-1.6**
	comp=Z,28nm,0.8s,mb5.2						
ASAR	**Alice Springs**	**46.33**	**253**	P	**P**	**21 29 59.6**	**-1.6**
	comp=Z,25nm,0.8s,mb5.2,baz=86,slow=8.3,SNR=80						
ASAR				LR	LR	21 47 58.7	
	comp=Z,3μm,20.6s,MS5.2,baz=95,slow=34						
FORT	**Forrest**	**51.65**	**244**	*e*P	**P**	**21 30 42.7**	**+0.5**
	comp=Z,98nm,0.9s,mb5.7						
FITZ	**Fitzroy Crossi**	**54.47**	**259**	*e*P	**P**	**21 31 02.7**	**-0.6**
	comp=Z,14nm,1.4s,mb4.7						
KLBR	**Kellerberrin**	**60.48**	**243**	*e*P	**P**	**21 31 42.3**	**-3.3**
	comp=Z,95nm,1.3s,mb5.7						
NWAO	**Narrogin (SRO)**	**60.87**	**241**	PFAKE		21 32 00.0	+12
NWAO				LR	LR		
	comp=Z,757nm,21.0s,MS4.8						
SBA	**Scott Base**	**61.66**	**184**	PFAKE		21 32 10.0	+17
SBA				LR	LR		
	comp=Z,882nm,20.0s,MS4.9						
MAJO	**Matsushiro**	**67.74**	**322**	*e*P	**P**	**21 32 31.2**	**-1.9**
	comp=Z,68nm,1.5s,mb5.5						
MAJO				LR	LR		
	comp=Z,341nm,21.0s,MS4.5						
MAT	**Matsushiro**	**67.74**	**322**	P	**P**	**21 32 31.8**	**-1.3**
MAT				S	S	21 41 25.0	-3.1
MAT	**Matsushiro**	**67.74**	**322**	*e*P	**P**	**21 32 32.0**	**-1.1**
	comp=Z,15nm,0.9s,mb5.0						
MAT				*e*S	S	21 41 25.0	-3.1
SMY	**Shemya**	**69.60**	**354**	PFAKE		21 32 50.0	+5.8
SMY				LR	LR		
	comp=Z,3μm,21.0s,MS5.5						
FX1	**Attu Island--F**	**69.84**	**354**	LR	LR	21 58 01.4	
	comp=Z,25nm,19.1s,baz=190,slow=31						
PET	**Petropavlovsk**	**72.57**	**345**	PFAKE		21 33 10.0	+7.9
PET				LR	LR		
	comp=Z,972nm,21.0s,MS5.0						
TATO	**Taipei**	**72.80**	**303**	PFAKE		21 33 10.0	+6.0
TATO				LR	LR		
	comp=Z,306nm,19.0s,MS4.6						
YSS	**Yuzh-Sakhalins**	**72.95**	**332**	PFAKE		21 33 10.0	+5.5
YSS				LR	LR		
	comp=Z,328nm,20.0s,MS4.6						
QSPA	**South Pole Qui**	**73.31**	**180**	*e*P	**P**	**21 33 06.0**	**0.0**
	comp=Z,26nm,1.0s,mb5.1						
QSPA				LR	LR		
	comp=Z,300nm,18.6s,MS4.6						
SAO	**San Andreas Ge**	**74.71**	**43**	PFAKE		21 33 30.0	+15
SAO				LR	LR		
	comp=Z,377nm,19.0s,MS4.7						
HOPS	**Hopland**	**74.97**	**41**	PFAKE		21 33 30.0	+14
HOPS				LR	LR		
	comp=Z,414nm,20.0s,MS4.7						
INCN	**Inchon**	**75.54**	**317**	P	**P**	**21 33 18.6**	**-1.1**
INCN				LR	LR		
	comp=Z,242nm,20.0s,MS4.5						
CMB	**Columbia Colle**	**76.13**	**43**	*e*P	**P**	**21 33 22.4**	**-0.6**
	comp=Z,14nm,1.2s,mb4.8						
CMB				LR	LR		
	comp=Z,270nm,20.0s,MS4.5						
WDC	**Whiskeytown Da**	**76.24**	**40**	*e*P	**P**	**21 33 22.0**	**-1.5**
	comp=Z,46nm,1.7s,mb5.1						
WDC				LR	LR		
	comp=Z,238nm,20.0s,MS4.5						
PFO	**Pinyon Flat Ob**	**76.44**	**48**	*e*P	**P**	**21 33 24.2**	**-0.6**
PFO				LR	LR		
	comp=Z,362nm,19.0s,MS4.7						
YBH	**Yreka Blue Hor**	**76.83**	**39**	*e*P	**P**	**21 33 27.0**	**+0.2**
	comp=Z,20nm,1.3s,mb4.9						
YBH				LR	LR		
	comp=Z,223nm,19.0s,MS4.5						
MTUM	**Tungsten Hills**	**76.95**	**44**	*e*P	**P**	**21 33 27.4**	**-0.2**
KDAK	**Kodiak Island**	**76.97**	**13**	PFAKE		21 33 40.0	+13
KDAK				LR	LR		
	comp=Z,1μm,21.0s,MS5.2						
DAC	**Darwin (Calif)**	**77.03**	**46**	P	**P**	**21 33 28.1**	**0.0**
DAC				LR	LR		
	comp=Z,418nm,19.0s,MS4.8						
BEKR	**Beckwourth**	**77.18**	**41**	*e*P	**P**	**21 33 28.3**	**-0.6**
	comp=Z,24nm,1.4s,mb4.9						
HUMO	**Hull Mountain**	**77.21**	**38**	*e*P	**P**	**21 33 27.6**	**-1.3**
WCN	**Washoe City**	**77.25**	**42**	*e*P	**P**	**21 33 28.7**	**-0.5**
	comp=Z,26nm,1.3s,mb5.0						
NVAR	**Mina Array Bea**	**77.71**	**43**	P	**P**	**21 33 31.8**	**0.0**
	comp=Z,5.1nm,1.0s,mb4.4,baz=218,slow=7.7,SNR=26						
NVAR				LR	LR	22 00 19.5	
	comp=Z,217nm,19.7s,MS4.5,baz=195,slow=30						
MDJ	**Mudanjiang**	**77.97**	**324**	P	**P**	**21 33 35.9**	**+2.9**
MDJ				AP	pP	21 33 39.0	-0.6
MDJ				PCP	PcP	21 33 41.1	-2.1
MDJ				AMB	AMB		
	comp=Z,134nm,5.0s						
MDJ				LR	LR		
	comp=N,253nm,39.3s						
MDJ				LR	LR		
	comp=E,248nm,34.1s						
MDJ				LR	LR		
	comp=Z,316nm,20.1s						
NJ2	**Nanjing**	**78.18**	**309**	*e*P	**P**	**21 33 39.3**	**+4.8**
NJ2				XP	sP	21 33 49.8	+6.5
NJ2				PP	PP	21 36 37.6	+4.3
NJ2				S	S	21 43 29.0	+2.4
NJ2				LR	LR		
	comp=Z,370nm,17.4s,MS4.8						
COR	**Corvallis**	**78.21**	**36**	PFAKE		21 33 50.0	+16
COR				LR	LR		
	comp=Z,1μm,20.0s,MS5.2						
TPH	**Tonopah**	**78.24**	**44**	*e*P	**P**	**21 33 34.2**	**-0.4**
	comp=Z,35nm,1.5s,mb5.1						
TPH				LR	LR		
	comp=Z,307nm,20.0s,MS4.6						
MOD	**Modoc**	**78.38**	**40**	PFAKE		21 33 50.0	+15
MOD				LR	LR		
	comp=Z,236nm,19.0s,MS4.5						
NEN	**Nelson**	**78.62**	**47**	*e*P	**P**	**21 33 37.0**	**+0.2**
SSOR	**Sweet Springs**	**78.85**	**36**	*e*P	**P**	**21 33 37.1**	**-0.8**
RSO	**Redoubt South**	**79.40**	**12**	*e*P	**P**	**21 33 39.7**	**-0.8**
BMW	**Boistfort Moun**	**79.42**	**35**	*e*P	**P**	**21 33 39.9**	**-1.0**
BMN	**Battle Mountai**	**79.50**	**42**	*e*P	**P**	**21 33 41.2**	**-0.3**
BMN				LR	LR		
	comp=Z,271nm,22.0s,MS4.5						
OCWA	**Octopus Mounta**	**79.70**	**33**	PFAKE		21 33 50.0	+7.6
OCWA				LR	LR		
	comp=Z,275nm,20.0s,MS4.6						
WVOR	**Wild Horse Val**	**79.70**	**40**	PFAKE		21 33 50.0	+7.4
WVOR				LR	LR		
	comp=Z,366nm,21.0s,MS4.7						
KLR	**Kul'dur**	**79.76**	**329**	*e*P	**P**	**21 33 44.8**	**+2.1**
SHW	**Mount Saint He**	**79.79**	**35**	*e*P	**P**	**21 33 43.1**	**+0.2**
TUC	**Tucson**	**79.99**	**52**	*e*P	**P**	**21 33 44.4**	**+0.1**
	comp=Z,53nm,1.6s,mb5.2						
TUC				LR	LR		
	comp=Z,304nm,20.0s,MS4.6						
GNW	**Green Mountain**	**80.

HVU Hansel Valley 83.07 43 eP P 21 34 00.2 0.0
CTU Camp Tracy 83.22 44 eP P 21 34 00.9 0.0
SRU San Rafael 83.30 46 eP P 21 34 01.8 +0.4
JLU Jordanelle 83.37 44 eP P 21 34 01.9 +0.1
DAU Daniels Canyon 83.41 45 eP P 21 34 01.9 -0.1
LAZ Ladron 83.65 51 eP P 21 34 03.8 +0.5
TCUT Toone Canyon 83.65 44 eP P 21 34 03.9 +0.7
LENM Lemitar 83.67 52 eP P 21 34 04.3 +0.8
HWUT Hardware Ranch 83.78 43 eP P 21 34 03.3 -0.6
comp=E,18nm,1.3s,mb5.0
HWUT LR LR
comp=Z,391nm,20.0s,MS4.8
NEW Newport 83.83 36 P P 21 34 03.8 -0.1
NEW Newport 83.83 36 eP P 21 34 03.1 -0.8
NEW LR LR
comp=Z,303nm,21.0s,MS4.7
MNTX Cornudas Mount 83.88 54 eP P 21 34 04.7 +0.1
comp=Z,45nm,1.4s,mb5.4
MNTX LR LR
comp=Z,280nm,20.0s,MS4.6
BNM Barren Site 83.92 52 eP P 21 34 05.2 +0.4
LPM Los Pinos Moun 83.99 52 eP P 21 34 05.4 +0.3
PV10 Paradox Valley 84.00 47 eP P 21 34 05.0 0.0
PV01 Paradox Valley 84.22 48 eP P 21 34 06.1 0.0
DLBC Dease Lake 84.27 23 P P 21 34 05.9 0.0
DLBC LR LR 22 03 44.5
comp=Z,807nm,20.7s,MS5.1,baz=211,slow=30
TXAR Lajitas Array 84.31 57 P P 21 34 07.5 +0.7
comp=Z,7.3nm,1.0s,mb4.8,baz=225,slow=5.3,SNR=47
TXAR LR LR 22 03 29.2
comp=Z,287nm,20.1s,MS4.7,baz=275,slow=30
COLA College 84.37 12 eP P 21 34 05.9 -0.3
comp=Z,90nm,1.4s,mb5.7
COLA LR LR
comp=Z,802nm,20.0s,MS5.1
ANMO Albuquerque 84.38 51 eP P 21 34 08.2 +1.1
ANMO Albuquerque 84.38 51 eP P 21 34 07.5 +0.4
comp=Z,30nm,1.4s,mb5.2
ANMO LR LR
comp=Z,303nm,22.0s,MS4.6
IMA Indian Mountai 84.41 9 eP P 21 34 07.6 +1.2
comp=Z,7.3nm,1.1s,mb4.7
ILAR Eielson Array 84.47 13 P P 21 34 06.2 -0.6
comp=Z,10nm,1.1s,mb4.9,baz=227,slow=5.6,SNR=36
ILAR LR LR 22 05 18.7
comp=Z,461nm,20.3s,MS4.9,baz=234,slow=31
MCMT McKenzie Canyo 84.53 40 eP P 21 34 08.0 +0.4
AHID Auburn Hatcher 84.64 43 PFAKE 21 34 20.0 +12
AHID LR LR
comp=Z,243nm,19.0s,MS4.6
GDL2 Guadalupe Moun 84.87 54 eP P 21 34 10.0 +0.5
MSO Missoula 84.89 38 eP P 21 34 08.6 -0.6
comp=Z,43nm,1.6s,mb5.3
MSO LR LR
comp=Z,331nm,21.0s,MS4.7
REDW Red Top Meadow 85.08 42 eP P 21 34 10.5 +0.2
WUWY Wally Ulrich 85.23 42 eP P 21 34 11.6 +0.5
CLNB Carlsbad 85.27 54 eP P 21 34 11.5 0.0
CHMT Chamberlain Mo 85.34 38 eP P 21 34 10.6 -0.9
MAW Mawson 85.38 199 P P 21 34 12.8 +1.5
comp=Z,4.9nm,1.1s,mb4.5,baz=162,slow=6.3,SNR=3.9
MAW LR LR 22 08 43.3
comp=Z,665nm,21.7s,MS5.0,baz=97,slow=33
MAW Mawson 85.38 199 P P 21 34 13.8 +2.5
MAW LR LR
comp=Z,1μm,21.0s,MS5.3
BILL Bilibino 85.40 354 c iP P 21 34 12.1 +0.7
BILL e 21 34 22.5
BILL e 21 37 26.2
BILL pmax pmax
comp=Z,35nm,1.5s,mb5.3
BILL MLR MLR
comp=Z,400nm,18.0s,MS4.8
BILL Bilibino 85.40 354 eP P 21 34 11.1 -0.3
comp=Z,52nm,1.5s,mb5.4
QLMT Earthquake Lak 85.42 41 eP P 21 34 13.1 +1.2
GYA Guiyang 85.56 299 P P 21 34 15.6 +2.5
GYA AMB AMB
comp=Z,10.0nm,0.8s,mb5.1
CPRX Cap Rock 85.58 54 eP P 21 34 13.1 0.0
YMR Madison River 85.63 41 eP P 21 34 14.1 +1.0
BW06 Boulder Array 85.64 43 eP P 21 34 12.8 -0.3
comp=Z,10.0nm,1.2s,mb4.9
BW06 LR LR
comp=Z,246nm,19.0s,MS4.6
PDAR Pinedale Array 85.64 43 P P 21 34 13.4 +0.3
comp=Z,2.3nm,0.9s,mb4.4,baz=225,slow=4.2,SNR=22
PDAR LR LR 22 10 08.1
comp=Z,206nm,18.7s,MS4.5,baz=251,slow=34
BOZ Bozeman (W) 85.69 40 eP P 21 34 13.0 -0.3
comp=Z,40nm,1.4s,mb5.5
BOZ epP pP 21 34 19.0 -0.9
BOZ LR LR
comp=Z,214nm,20.0s,MS4.5
HRY Holter Researc 86.08 39 eP P 21 34 15.3 0.0
HRY epP pP 21 34 21.0 -0.9
XAN Xi'an 86.56 307 P P 21 34 21.3 +3.4
XAN AP pP 21 34 30.3 +5.7
ISCO Idaho Springs 87.02 47 PFAKE 21 34 30.0 +10
ISCO LR LR
comp=Z,230nm,19.0s,MS4.6
HHC Hu-ho-hao-te 87.36 314 eP P 21 34 26.8 +5.2
HHC AP pP 21 34 33.3 +5.0
HHC XP sP 21 34 35.5 +5.1
HHC AMB AMB
comp=Z,28nm,1.4s,mb5.3
HHC LR LR
comp=N,111nm,16.7s,MS4.4
HHC LR LR
comp=E,83nm,17.7s,MS4.4
HHC LR LR
comp=Z,84nm,17.8s,MS4.2
CLNS Chul'man 87.72 332 eP P 21 34 26.6 +3.7
CLNS pmax pmax
comp=Z,30nm,1.0s,mb5.5
CLNS pmax pmax
comp=N,30nm,1.5s
CLNS pmax pmax
comp=E,10.0nm,1.1s
JCT Junction City 87.85 57 eP P 21 34 23.7 -0.5
comp=E,12nm,1.1s,mb5.0
JCT LR LR
comp=Z,389nm,19.0s,MS4.8
BTO Baotou 88.33 313 eP P 21 34 30.3 +4.0
BTO AMB AMB
comp=Z,27nm,1.5s,mb5.3
KMI Kunming 88.43 297 eP P 21 34 27.3 +0.2
KMI AMB AMB
comp=Z,11nm,1.1s,mb5.0
KMI LR LR
comp=Z,248nm,19.5s,MS4.6
YAK Yakutsk 88.97 338 PFAKE 21 34 40.0 +11
YAK LR LR
comp=Z,282nm,20.0s,MS4.7
CMAR Chiang Mai Arr 89.69 289 P P 21 34 35.5 +2.3
comp=Z,1.4nm,0.9s,mb4.3,baz=98,slow=2.4,SNR=5.5
CMAR LR LR 22 12 09.7
comp=Z,164nm,21.4s,MS4.4,baz=110,slow=34
CMAR Chiang Mai Arr 89.69 289 P P 21 34 35.5 +2.3
CMAR LR LR 22 12 09.7
RSSD Black Hills 89.85 44 eP P 21 34 32.5 -0.9
comp=Z,10nm,1.1s,mb5.1
WMOK Wichita Mounta 90.14 54 PFAKE 21 34 50.0 +15
WMOK LR LR
comp=Z,340nm,21.0s,MS4.8
INK Inuvik 90.44 15 P P 21 34 35.1 -0.4
comp=Z,1.9nm,0.9s,mb4.4,baz=200,slow=6.5,SNR=7.0
CBKS Cedar Bluff 90.84 50 PFAKE 21 34 50.0 +12
CBKS LR LR
comp=Z,209nm,20.0s,MS4.6
HKT Hockley 90.90 59 eP P 21 34 39.2 +0.6
HKT LR LR
comp=Z,429nm,20.0s,MS4.9
LZH Lanzhou 91.18 307 eP P 21 34 43.5 +3.8
LZH AP pP 21 34 53.3 +6.9
LZH XP sP 21 34 57.1 +8.6
LZH AMB AMB
comp=Z,31nm,1.5s,mb5.4
LZH LR LR
comp=N,446nm,13.2s
LZH LR LR
comp=Z,491nm,17.5s,MS5.0
SNAA Sanae 91.73 178 P P 21 34 44.5 +3.1
VNA3 Neumayer Olymp 91.82 176 ⇑iP P 21 34 49.0 +7.2
VNA2 Neumayer--Watz 92.27 177 P P 21 34 51.9 +8.0
VNA1 Neumayer--Stat 92.49 176 ⇑iP P 21 34 48.6 +3.7
MAIT Maitri 92.50 183 eP P 21 34 44.0 -1.0
YKA Yellowknife Ar 92.75 24 P P 21 34 46.1 -0.2
comp=Z,2.3nm,1.2s,mb4.5,baz=239,slow=4.4,SNR=16
YKA LR LR 22 08 16.9
comp=Z,586nm,21.9s,MS5.0,baz=245,slow=30
ULN Ulaanbaatar 93.09 319 eP P 21 34 51.1 +2.9
ULN Ulaanbaatar 93.09 319 P P 21 34 48.2 0.0
comp=Z,11nm,1.4s,mb5.1
ULN LR LR
comp=Z,214nm,21.0s,MS4.6
BOD Bodaibo 93.28 330 eP P 21 34 47.6 -1.2
SONM Songino Array 93.50 319 P P 21 34 52.4 +2.3
comp=Z,0.9nm,0.8s,mb4.2,baz=153,slow=3.2,SNR=4.4
MIAR Mount Ida 94.14 55 PFAKE 21 35 00.0 +6.6
MIAR LR LR
comp=Z,379nm,20.0s,MS4.8
JTS JuntasAbangare 94.93 81 P P 21 34 59.4 +1.9
comp=Z,8.0nm,0.8s,mb5.2,baz=265,slow=11,SNR=5.9
FFC Flin Flon 95.18 34 PFAKE 21 35 10.0 +12
FFC LR LR
comp=Z,267nm,19.0s,MS4.7
GTA Gaotai 95.27 309 P P 21 35 03.9 +5.5
GTA AP pP 21 35 10.1 +5.0
GTA XP sP 21 35 13.6 +6.4
GTA AMB AMB
comp=Z,4.0nm,1.4s,mb4.7
TIXI Tiksi 95.35 345 eP P 21 34 59.1 +1.0
TIXI e 21 38 46.2
TIXI e 21 47 27.1
TIXI pmax pmax
comp=Z,46nm,1.0s,mb5.9
TIXI Tiksi 95.35 345 eP P 21 34 56.5 -1.6
comp=Z,2.9nm,0.3s,mb5.2
TIXI LR LR
comp=Z,832nm,21.0s,MS5.2
ZAK Zakamensk 96.28 321 eP P 21 35 02.9 +0.1
ZAK e 21 38 52.2
CCM Cathedral Cave 96.94 52 PFAKE 21 35 20.0 +14
CCM LR LR
comp=Z,339nm,19.0s,MS4.8
ULM Lac du Bonnet 97.21 40 LR LR 22 11 50.0
comp=Z,146nm,19.6s,MS4.5,baz=6.0,slow=31
ULM Lac du Bonnet 97.21 40 PFAKE 21 35 20.0 +13
ULM LR LR
comp=Z,263nm,20.0s,MS4.7
OXF Oxford 97.43 56 PFAKE 21 35 20.0 +12
OXF LR LR
comp=Z,350nm,21.0s,MS4.8
PLAL Pickwick Lake 98.61 56 PFAKE 21 35 30.0 +16
PLAL LR LR
comp=Z,253nm,19.0s,MS4.7
JFWS Jewell Farm 98.94 48 PFAKE 21 35 30.0 +15
JFWS LR LR
comp=Z,257nm,21.0s,MS4.7
LRAL Lakeview Retre 99.01 58 PFAKE 21 35 30.0 +15
LRAL LR LR
comp=Z,318nm,20.0s,MS4.8
WVT Waverly 99.09 55 PFAKE 21 35 30.0 +14
WVT LR LR
comp=Z,387nm,21.0s,MS4.9
LVC Limon Verde 99.60 117 PFAKE 21 35 30.0 +12
LVC LR LR
comp=Z,584nm,19.0s,MS5.1
WCI Wyandotte Cave 100.77 53 PFAKE 21 35 30.0 +6.6
WCI LR LR
comp=Z,1μm,21.0s,MS5.5
DWPF Disney 102.57 64 PFAKE 21 35 40.0 +8.3
DWPF LR LR
comp=Z,303nm,22.0s,MS4.8
LPAZ La Paz 102.66 111 PP PP 21 39 47.2 -1.3
comp=Z,7.0nm,1.4s,baz=250,slow=7.9,SNR=5.0
LPAZ La Paz 102.66 111 PFAKE 21 35 50.0 +18
LPAZ LR LR
comp=Z,340nm,20.0s,MS4.9
AAM Ann Arbor 103.56 50 PFAKE 21 35 50.0 +14
AAM LR LR
comp=Z,335nm,21.0s,MS4.8
ACSO Alum Creek Sta 103.69 52 PFAKE 21 35 50.0 +14
ACSO LR LR
comp=Z,482nm,22.0s,MS5.0
BLA Blacksburg 105.14 55 PFAKE 21 40 10.0
BLA LR LR
comp=Z,408nm,19.0s,MS5.0
MCWV Mont Chateau 105.97 53 PFAKE 21 40 10.0
MCWV LR LR
comp=Z,402nm,20.0s,MS5.0
ERPA Erie 106.22 50 PFAKE 21 40 10.0
ERPA LR LR
comp=Z,314nm,19.0s,MS4.9
SSPA Standing Stone 107.59 52 PFAKE 21 40 10.0
SSPA LR LR
comp=Z,1μm,19.0s,MS5.4
CBN Corbin 107.68 55 PFAKE 21 40 10.0
CBN LR LR
comp=Z,639nm,21.0s,MS5.2
MKAR Makanchi Array 109.23 314 PKiKP 21 40 06.4
comp=Z,0.9nm,0.8s,baz=119,slow=1.2,SNR=5.0
NCB Newcomb 110.61 49 PFAKE 21 40 20.0 +10
NCB LR LR
comp=Z,343nm,20.0s,MS4.9
KURK Kurchatov 111.80 318 ePKP PKPdf 21 40 07.3 -4.6
HRV Harvard--Oak R 112.48 50 PFAKE 21 40 20.0 +6.4
HRV LR LR
comp=Z,80nm,20.0s,MS4.3
WES Weston 112.65 51 PFAKE 21 40 20.0 +6.1
WES LR LR
comp=Z,2μm,21.0s,MS5.6
SJG San Juan 114.46 77 PFAKE 21 40 30.0 +12
SJG LR LR
comp=Z,356nm,19.0s,MS5.0
PQI Presque Isle 115.03 46 PFAKE 21 40 30.0 +12
PQI LR LR
comp=Z,2μm,21.0s,MS5.7
SCHQ Schefferville 115.17 37 PKP PKPdf 21 40 16.1 -2.5
comp=Z,3.1nm,1.0s,baz=226,slow=7.2,SNR=2.8
SCHQ Schefferville 115.17 37 PKP PKPdf 21 40 16.1 -2.5
SCHQ LR LR
comp=Z,662nm,20.0s,MS5.2
EMMW East Machias 115.48 48 PFAKE 21 40 30.0 +11
EMMW LR LR
comp=Z,3μm,21.0s,MS5.8
BVAR Borovoye Array 116.73 321 PKP PKPdf 21 40 17.0 -4.6
comp=Z,2.3nm,0.9s,baz=90,slow=1.5,SNR=7.5
BBSR BB Station 117.48 62 PFAKE 21 40 30.0 +6.4
BBSR LR LR
comp=Z,1μm,20.0s,MS5.5
ZRNK Zerenda 117.57 321 ePKP PKPdf 21 40 19.4 -3.9
KBS Kingsbay 117.63 358 PFAKE 21 40 30.0 +7.2
KBS LR LR
comp=Z,539nm,20.0s,MS5.2
SVE Sverdlovsk 121.36 327 ePKIKP PKPdf 21 40 30.5 0.0
ARU Arti 122.57 327 ⇑iPKIKP PKPdf 21 40 34.4 +1.6
ARU e 21 42 09.1
ARU e 21 47 30.8
ARU ePS PS 21 52 03.4 +2.0
ARU eSS SS 21 58 38.1 -10
ARU pmax pmax
comp=Z,12nm,1.2s
ARU MLR MLR
comp=Z,400nm,22.0s,MS5.0
ARU MLR MLR
comp=N,500nm,26.0s,MS5.3
ARU MLR MLR
comp=E,600nm,22.0s,MS5.3
ARU Arti 122.57 327 PFAKE 21 40 40.0 +7.2
ARU LR LR
comp=Z,407nm,21.0s,MS5.0
ARCES ARCESS Array B 125.39 350 PKP PKPdf 21 40 38.8 +0.8
comp=Z,2.2nm,0.7s,baz=45,slow=1.3,SNR=6.3
SUR Sutherland 128.24 199 PFAKE 21 40 50.0 +5.5
SUR LR LR
comp=Z,263nm,19.0s,MS4.9
FINES FINESS Array B 132.40 345 PKP PKPdf 21 40 49.0 -2.6
comp=Z,1.6nm,0.8s,baz=225,slow=2.0,SNR=3.3
LBTB Lobatse 132.98 209 PFAKE 21 41 00.0 +6.3
LBTB LR LR
comp=Z,143nm,20.0s,MS4.7
OBN Obninsk 133.83 334 κ iPKIKP PKPdf 21 40 57.3 +3.0
OBN pmax pmax
comp=Z,19nm,1.3s
OBN MLR MLR
comp=Z,300nm,18.0s,MS5.0
OBN Obninsk 133.83 334 PFAKE 21 41 00.0 +5.7
OBN LR LR
comp=Z,362nm,19.0s,MS5.1
ZEI Tsey 136.57 315 ePKIKP PKPdf 21 41 02.0 +2.3
ZEI MLR MLR
comp=Z,200nm,20.0s,MS4.8
KIV Kislovodsk 136.87 317 PFAKE 21 41 10.0 +10
KIV LR LR
comp=Z,323nm,20.0s,MS5.0
KONO Kongsberg 136.87 355 PFAKE 21 41 10.0 +10
KONO LR LR
comp=Z,260nm,22.0s,MS4.9
AKASG Malin Array Be 140.09 334 PKhKP 21 41 00.2
comp=Z,2.5nm,0.8s,baz=37,slow=3.3,SNR=6.4
ESK Eskdalemuir 141.21 6 PFAKE 21 41 20.0 +12
ESK LR LR
comp=Z,375nm,20.0s,MS5.1
KMBO Kilima Mbogo 141.76 246 PFAKE 21 41 20.0 +10
KMBO LR LR
comp=Z,246nm,21.0s,MS4.9
KWP Kalwaria 143.48 338 ePKP PKPdf 21 41 09.6 -2.2
OJC Ojcow 143.93 342 ePKP PKPdf 21 41 09.8 -2.8
KSP Ksiaz 144.32 345 ePKP PKPdf 21 41 09.2 -4.1
KSP e 21 41 11.3
KSP Ksiaz 144.32 345 ePKP PKPdf 21 41 08.7 -4.6
KSP ePKPdf PKPdf 21 41 11.2 -2.1
KSP LR LR
comp=Z,700nm,26.3s,MS5.3
NIE Niedzica 144.47 340 eP PKPbc 21 41 09.4 +0.3
NIE e 21 41 12.9
RAC Raciborz 144.52 343 ePKP(df) 21 41 12.5
CRVS Cervenica-Dubn 144.53 339 ePKP PKPdf 21 41 13.9 +0.2
CLL Collm 144.58 349 i PKPbc 21 41 10.9 +1.6
CLL i *PPKP 21 41 15.8
CLL i 21 41 23.3
CLL e 21 42 06.0
CLL e 21 43 20.0
CLL Collm 144.58 349 i PKIKP PKPdf 21 41 10.9 -2.8
CLL i 21 41 23.3
CLL pmax pmax
comp=Z,18nm,1.3s
CLL MLR MLR
comp=Z,400nm,20.7s,MS5.2
UPC Upice 144.70 345 ePKP PKPdf 21 41 09.9 -4.1
WTSB Winterswijk 144.72 356 eP PKPbc 21 41 12.5 +2.8
comp=Z,20nm,1.5s
OKC Ostrava-Krasne 144.76 343 ePKP PKPdf 21 41 10.1 -4.0
OKC L 22 43 20.0
comp=Z,0.4nm,21.0s
DPC Dobruska-Polom 144.77 345 ePKP PKPdf 21 41 09.9 -4.2
DPC L 22 43 30.0
comp=Z,0.3nm,20.8s
VRI Vrincioaia 144.81 331 ⇑iP PKPbc 21 41 15.4 +5.2
VRI Vrincioaia 144.81 331 ⇑iP PKPbc 21 41 15.4 +5.3
BRG Berggiesshubel 144.82 348 ePKIKP PKPdf 21 41 12.9 -1.3
BRG pmax pmax
comp=Z,40nm,1.7s
BRTR Keskin Array B 144.83 317 PKP PKPdf 21 41 11.3 -3.2
comp=Z,24nm,1.1s,baz=107,slow=2.3,SNR=3.3
MORC Moravsky Berou 144.98 343 ePKP PKPdf 21 41 10.8 -3.7
PVCC Panska Ves 145.01 347 ePKP PKPdf 21 41 10.8 -3.7
PVCC L 22 36 10.0
comp=Z,0.5nm,26.0s
HARR Harsova 145.08 328 ⇑iP PKPbc 21 41 15.1 +4.2
HARR Harsova 145.08 328 ⇑iP PKPbc 21 41 15.1 +4.1
LIKS Likavka 145.18 341 ePKP PKPdf 21 41 17.1 +2.2
KECS Kecovo 145.23 339 ePKP PKPdf 21 41 14.5 -0.5
ISR Istrita 145.45 330 ⇑iP PKPbc 21 41 13.8 +2.0
ISR Istrita 145.45 330 ⇑iP PKPbc 21 41 13.8 +1.9
MLR Muntele Rosu 145.46 331 PKPbc PKPbc 21 41 13.3 +1.5
comp=Z,32nm,1.1s,baz=94,slow=2.6,SNR=27
MLR Muntele Rosu 145.46 331 ⇑iP PKPbc 21 41 13.5 +1.7
MLR Muntele Rosu 145.46 331 ⇑eP PKPbc 21 41 13.5 +1.7
MOX Moxa 145.46 350 iP PKPbc 21 41 12.0 +0.3
comp=Z,logA/T=1.5
MOX L 21 47 04.0
MOX Moxa 145.46 350 ePKIKP PKPdf 21 41 12.0 -3.3
MOX pmax pmax
comp=Z,60nm,1.8s
MOX MLR MLR
comp=Z,200nm,22.0s,MS4.8
PRU Pruhonice 145.53 347 ePKP PKPdf 21 41 12.7 -2.7
PRU L 22 36 50.0
ASF Jabal al Asfar 145.63 303 PKPbc PKPbc 21 41 15.4 +2.7
comp=Z,16nm,0.9s,baz=206,slow=1.4,SNR=9.9
VYHS Vyhne 145.75 341 ePKP PKPdf 21 41 13.6 -2.3
KOLL Kolacno 145.81 342 ePKP PKPdf 21 41 16.2 +0.2
PSZ Piszkesteto 145.91 339 ePKP PKPdf 21 41 14.4 -1.8
HGN Heimansgroeve 145.97 357 eP PKPbc 21 41 13.8 +0.9
comp=Z,17nm,1.5s
GRA1 Grafenberg Arr 146.45 350 ePKPbc PKPbc 21 41 14.4 +0.3
GRA1 LR LR
comp=Z,200nm,20.7s,MS4.9
GRF Grafenberg Arr 146.45 350 ePKP2 PKPab 21 41 14.4 -2.8
GRF MLR MLR
comp=Z,200nm,20.7s,MS4.9
ZST Bratislava 146.54 343 ePKP PKPdf 21 41 19.8 +2.6
KHC Kasperske Hory 146.54 347 ePKP PKPdf 21 41 16.1 -1.1
KHC L 22 36 30.0
comp=Z,0.3nm,24.7s
WET Wettzell 146.68 348 ePKIKP PKPdf 21 41 15.2 -2.2
GIVF Givet 146.68 358 ePKP1 PKPbc 21 41 16.0 +1.4
comp=Z,81nm,1.3s
BAIF Baives 146.75 358 ePKP1 PKPbc 21 41 16.3 +1.5
comp=Z,101nm,1.3s
GEC2 GERESS Array S 146.79 347 ePKIKP PKPdf 21 41 15.6 -2.0
GERES GERESS Array B 146.79 347 PKPbc PKPbc 21 41 15.7 +0.8
comp=Z,2.7nm,0.7s,baz=315,slow=3.8,SNR=17
TOD Tromm 146.87 353 PKP PKPdf 21 41 17.4 -0.3
RUP Ruppelstein 146.95 355 PKP PKPdf 21 41 17.6 -0.3
WLF Walferdange 147.05 356 ePKP PKPdf 21 41 15.2 -2.9
CSS Prodhromos 147.34 310 PKP PKPdf 21 41 15.7 -3.2
MOA Molln 147.60 346 ⇑iPKP PKPdf 21 41 19.7 +0.7
STU Stuttgart 147.64 352 ePKP PKPdf 21 41 16.7 -2.3
ARSA Arzberg 147.84 344 ⇑iPKP PKPdf 21 41 19.4 0.0
FUR Furstenfeldbru 147.91 349 ePKP2 PKPab 21 41 20.2 -2.8
FLN La Foliniere 147.94 4 ePKP1 PKPdf 21 41 19.2 -0.3
comp=Z,68nm,0.9s
FLN eR
comp=Z,425nm,21.0s
ROSF Rostrenen 148.08 8 ePKP1 PKPdf 21 41 19.5 -0.2
comp=Z,142nm,1.5s
RHK1 Bakonya 148.12 340 eP PKPdf 21 41 20.1 +0.3
LDF La Druitiere 148.13 4 ePKP1 PKPdf 21 41 19.7 -0.1
comp=Z,89nm,1.3s
BFO Black Forest 148.18 353 ePKIKP PKPdf 21 41 19.9 0.0
WLS Welschbruch 148.20 354 PKP PKPdf 21 41 21.1 +1.2
CDF Champ du Feu 148.21 354 ePKP1 PKPdf 21 41 20.3 +0.4
comp=Z,201nm,1.5s
MEZF Maizieres J'vi 148.27 357 ePKP1 PKPdf 21 41 20.9 +0.9
comp=Z,146nm,1.4s
GRR Gorron 148.28 5 ePKP1 PKPdf 21 41 20.4 +0.4
comp=Z,109nm,1.3s
SPAK Spaichingen 148.35 352 PKP PKPdf 21 41 20.2 0.0
ECH Echery 148.41 355 PKP PKPdf 21 41 20.8 +0.6
LIBD Limburg 148.44 354 PKP PKPdf 21 41 23.4 +3.1
THEF They Montfort 148.50 356 PKP PKPdf 21 41 21.1 +0.7
PGB Panagyurishte 148.51 329 eP PKPdf 21 41 24.0 +3.4
QUIF Quistinic 148.51 8 ePKP1 PKPdf 21 41 20.7 +0.3
comp=Z,40nm,0.9s
KBA Koelnbreinsper 148.54 346 ⇓iPKP PKPdf 21 41 20.8 +0.3
FELD Feldberg 148.67 353 PKP PKPdf 21 41 21.9 +1.2
HAU Haudompre 148.69 356 ePKP1 PKPdf 21 41 21.9 +1.2
comp=Z,65nm,1.2s
HAU eR
comp=Z,345nm,21.8s
WTTA Wattenberg 148.72 349 ⇑iPKP PKPdf 21 41 18.8 -2.0
MOTA Moosalm 148.74 349 ⇑iPKP PKPdf 21 41 19.7 -1.1
MOF Molkenrain 148.78 355 PKP PKPdf 21 41 21.9 +1.1
HINF Hinteralfeld 148.84 355 ePKP1 PKPdf 21 41 22.3 +1.4
RZN Rozhen 148.87 327 eP PKPdf 21 41 22.0 +0.8
VTS Vitosha 148.94 330 eP PKPdf 21 41 24.0 +2.7
DAVA Damuels 149.00 351 ⇑iPKP PKPdf 21 41 23.7 +2.5
LEGS Legarje 149.09 343 ePKPbc PKPdf 21 41 22.7 +1.3
LEGS e 21 41 27.6
FVI Forni Avoltri 149.12 347 ePKP PKPdf 21 41 26.0 +4.6
BBS Basel-Blauen 149.12 354 PKP PKPdf 21 41 18.9 -2.5
PTCC Patocco-Chiusa 149.17 346 ePKP PKPdf 21 41 22.9 +1.4
LJU Ljubljana 149.22 344 ePKPbc PKPdf 21 41 24.1 +2.5
LJU e 21 41 28.0
LOMF Lomont 149.30 355 PKP PKPdf 21 41 22.8 +1.1
GMNA Gemona 149.32 346 ePKP PKPdf 21 41 23.7 +1.9
VOY Vojsko 149.39 345 ePKPbc PKPdf 21 41 23.8 +1.9
VOY e 21 41 28.0
MMB Musomiste 149.44 328 P PKPdf 21 41 24.0 +1.9

BOJS	**Bojanci**	**149.51**	**343**	*e*PKPbc	PKPdf	21 41 24.9	+2.7
BOJS				*e*		21 41 29.3	
KKB	**Krupnik**	**149.55**	**329**	*e*P	PKPdf	21 41 25.0	+2.7
HYF	**Humbligny**	**149.56**	**0**	*e*PKP1	PKPdf	21 41 24.2	+2.1
BRMO	**Bormio**	**149.71**	**350**	*e*PKP	PKPdf	21 41 25.1	+2.7
NVSS	**Nova Varos 2**	**149.74**	**335**	⇑*i*PKP	PKPdf	21 41 27.3	+4.7
SSF	**Saint Saulge**	**149.76**	**359**	*e*PKP1	PKPdf	21 41 24.5	+2.1
	comp=Z,146nm,1.5s						
CTI	**Castel Tesino**	**149.88**	**348**	*e*PKP	PKPdf	21 41 27.6	+4.9
AVF	**Avril sur Loir**	**150.03**	**359**	*e*PKP1	PKPdf	21 41 24.8	+1.9
	comp=Z,62nm,1.5s						
CABF	**La Chapelle**	**150.10**	**356**	*e*PKP1	PKPdf	21 41 25.8	+2.8
	comp=Z,179nm,1.4s						
MFF	**Saint Martin d**	**150.11**	**4**	*e*PKP1	PKPdf	21 41 25.1	+2.1
	comp=Z,101nm,1.5s						
SMF	**Signal de Mont**	**150.17**	**359**	*e*PKP1	PKPdf	21 41 25.2	+2.1
	comp=Z,77nm,1.5s						
VAY	**Valandovo**	**150.22**	**329**	⇑*i*P	PKPdf	21 41 30.4	+7.0
VAY				⇓*i*		21 41 37.6	
SKO	**Skopje**	**150.25**	**331**	*e*P	PKPdf	21 41 25.5	+2.1
SKO				*i*		21 41 30.6	
BGF	**Bois d'Agland**	**150.27**	**0**	*e*PKP1	PKPdf	21 41 25.6	+2.4
	comp=Z,83nm,1.4s						
OG01	**Vacheresse**	**150.33**	**355**	PKP	PKPdf	21 41 28.6	+5.2
TCF	**Toulx Ste Croi**	**150.53**	**1**	*e*PKP1	PKPdf	21 41 26.1	+2.4
	comp=Z,132nm,1.5s						
VAI	**Varese**	**150.55**	**352**	⇑*i*PKP	PKPdf	21 41 25.7	+2.0
MCGN	**Macugnaga**	**150.56**	**353**	*e*PKP	PKPdf	21 41 26.8	+3.1
OG05	**Jujurieux**	**150.71**	**356**	PKP	PKPdf	21 41 27.3	+3.4
AGO	**Saint Agoulin**	**150.77**	**360**	PKP	PKPdf	21 41 27.3	+3.3
PLDF	**La Plantade**	**150.85**	**359**	PKP	PKPdf	21 41 27.5	+3.4
ORO	**Oropa**	**150.89**	**353**	*e*PKP	PKPdf	21 41 32.3	+8.1
RSL	**Roselend**	**150.97**	**355**	PKP	PKPdf	21 41 27.8	+3.5
PYM	**Petit Puy Mans**	**151.07**	**360**	PKP	PKPdf	21 41 27.9	+3.4
LPL	**La Plagne**	**151.13**	**354**	*e*PKP1	PKPdf	21 41 28.5	+3.9
	comp=Z,109nm,1.4s						
LPG	**La Plagne**	**151.15**	**354**	*e*PKP1	PKPdf	21 41 28.6	+4.0
	comp=Z,100nm,1.4s						
RJF	**Les Rejaudoux**	**151.50**	**2**	*e*PKP1	PKPdf	21 41 28.4	+3.3
	comp=Z,103nm,1.7s						
RJF				*e*R			
	comp=Z,686nm,20.8s						
BOB	**Bobbio (Coli)**	**151.52**	**350**	*e*PKP	PKPdf	21 41 33.9	+8.7
LBL	**Lubilhac**	**151.59**	**360**	PKP	PKPdf	21 41 29.6	+4.3
BNI	**Bardonecchia**	**151.59**	**354**	*e*PKPbc	PKPdf	21 41 30.0	+4.7
ZCCA	**Zocca**	**151.64**	**348**	*e*PKP	PKPdf	21 41 30.8	+5.4
ERBM	**Eremo**	**151.69**	**349**	*e*PKP	PKPdf	21 41 35.0	+10
RSM	**Repubblica di**	**151.71**	**345**	*e*PKP	PKPdf	21 41 34.8	+9.3
GSCL	**Gusciola**	**151.72**	**348**	*e*PKP	PKPdf	21 41 34.8	+9.3
ORIF	**Oris-en-Rattie**	**151.79**	**356**	*e*PKP1	PKPdf	21 41 29.5	+3.9
	comp=Z,33nm,1.5s						
ORIF				*e*R			
	comp=Z,236nm,21.0s						
LFF	**La Frestale**	**151.83**	**3**	*e*PKP1	PKPdf	21 41 29.3	+3.7
	comp=Z,96nm,1.6s						
SEI	**Scarperia**	**151.85**	**347**	*e*PKP	PKPdf	21 41 32.9	+7.2
FSSB	**Fossombrone**	**151.86**	**345**	*e*PKP	PKPdf	21 41 34.5	+8.8
SFI	**Santa Sofia**	**151.88**	**346**	*e*PKP	PKPdf	21 41 28.6	+2.8
CAF	**Calviac**	**151.89**	**1**	*e*PKP1	PKPdf	21 41 29.5	+3.8
	comp=Z,28nm,1.2s						
MBDF	**Montbardon**	**151.91**	**354**	*e*PKP1	PKPdf	21 41 29.7	+3.9
	comp=Z,24nm,0.9s						
VIVF	**Saint-Julien-l**	**151.93**	**357**	*e*PKP1	PKPdf	21 41 29.8	+4.0
	comp=Z,60nm,1.4s						
PGD	**Poggio Sodo**	**151.94**	**346**	*e*PKP	PKPdf	21 41 30.8	+5.0
ARV	**Arcevia**	**152.00**	**344**	*e*PKP	PKPdf	21 41 30.3	+4.4
SURF	**Saint Ours**	**152.15**	**354**	PKP	PKPdf	21 41 30.3	+4.2
EPON	**Pontenova**	**152.15**	**16**	P	PKPdf	21 41 24.1	-2.0
STS	**Santiago**	**152.16**	**18**	P	PKPdf	21 41 24.8	-1.4
SNTG	**Esanatoglia**	**152.22**	**344**	*e*PKP	PKPdf	21 41 27.6	+1.3
FIN	**Finale Ligure**	**152.25**	**352**	*e*PKP	PKPdf	21 41 34.6	+8.4
CSNT	**Castellina Chi**	**152.42**	**347**	*e*PKP	PKPdf	21 41 34.4	+7.9
SAOF	**Saorge**	**152.56**	**353**	PKP	PKPdf	21 41 30.0	+3.3
TOUF	**Mont Tournerai**	**152.56**	**353**	PKP	PKPdf	21 41 30.3	+3.6
EARI	**Arriondas**	**152.63**	**13**	P	PKPdf	21 41 29.8	+2.9
AURF	**Auriere**	**152.68**	**353**	PKP	PKPdf	21 41 30.2	+3.3
SBF	**Sospel**	**152.69**	**353**	*e*PKP1	PKPdf	21 41 30.8	+3.9
	comp=Z,77nm,1.4s						
EINC	**Incio**	**152.72**	**17**	P	PKPdf	21 41 30.7	+3.7
LASF	**Ste Croix**	**152.74**	**359**	*e*PKP1	PKPdf	21 41 31.7	+4.7
	comp=Z,70nm,1.5s						
SMRF	**Simiane la Rot**	**152.75**	**356**	*e*PKP1	PKPdf	21 41 31.9	+4.9
	comp=Z,88nm,1.5s						
EZAM	**Zamans**	**152.79**	**19**	P	PKPdf	21 41 30.9	+3.8
CALN	**Calern**	**152.86**	**354**	PKP	PKPdf	21 41 29.2	+2.1
AQU	**L'Aquila**	**152.94**	**343**	PKP	PKPdf	21 41 24.7	-2.6
PRAF	**Pradon**	**152.95**	**356**	PKP	PKPdf	21 41 30.9	+3.6
ERUA	**La Rua**	**153.02**	**17**	P	PKPdf	21 41 32.2	+4.8
ELAN	**Lanestosa**	**153.04**	**10**	P	PKPdf	21 41 31.8	+4.4
FRF	**La Foret Royal**	**153.08**	**354**	*e*PKP1	PKPdf	21 41 31.9	+4.5
	comp=Z,59nm,1.4s						
MNS	**Montasola**	**153.10**	**344**	*e*PKP	PKPdf	21 41 34.7	+7.2
ELOB	**Lobios**	**153.24**	**18**	P	PKPdf	21 41 35.7	+8.0
CII	**Carovilli**	**153.24**	**341**	*e*PKPbc	PKPdf	21 41 32.8	+5.0
RNI2	**Rionero Sannit**	**153.31**	**341**	*e*PKP	PKPdf	21 41 39.4	+12
LMR	**La Mourre**	**153.31**	**354**	*e*PKP1	PKPdf	21 41 32.3	+4.5
	comp=Z,50nm,1.4s						
EALK	**Aikurruntz**	**153.34**	**7**	P	PKPdf	21 41 32.9	+5.0
GELF	**Grande-Etoile**	**153.35**	**356**	PKP	PKPdf	21 41 31.7	+3.9
CPI2	**Carpinone**	**153.36**	**341**	*e*PKP	PKPdf	21 41 39.3	+11
SJPF	**Ste Jean**	**153.48**	**7**	*e*PKP1	PKPdf	21 41 33.0	+5.0
	comp=Z,53nm,1.7s						
ECAL	**Calabor**	**153.55**	**16**	P	PKPdf	21 41 36.8	+8.6
PGF	**Pioggiola**	**153.75**	**350**	*e*PKP1	PKPdf	21 41 33.2	+4.8
	comp=Z,76nm,1.4s						
ESAC	**San Caprasio**	**154.93**	**6**	P	PKPdf	21 41 43.7	+14
EPOB	**Poblet**	**155.42**	**3**	P	PKPdf	21 41 46.7	+16
ETOR	**Torete**	**155.62**	**9**	P	PKPdf	21 41 46.7	+16
EVO	**Evora**	**156.27**	**22**	*e*PKIKP	PKPdf	21 41 29.4	-2.5
	comp=Z,37nm,1.4s						
EVO				*e*R			
	comp=Z,580nm,20.8s						
EMOS	**Mosqueruela**	**156.28**	**6**	P	PKPdf	21 41 47.7	+16
ESDC	**Sonseca Array**	**156.38**	**13**	PKPab	PKPab	21 41 58.8	+0.1
	comp=Z,1.0nm,0.9s,baz=270,slow=3.8,SNR=3.4						
ESDC	**Sonseca Array**	**156.38**	**13**	P	PKPdf	21 41 48.6	+17
ESDC				PKPab	PKPab	21 41 58.8	+0.1
EMIN	**Mina Concepcio**	**157.41**	**20**	P	PKPab	21 41 55.6	-7.6
EADA	**Adamuz**	**157.66**	**16**	P	PKPab	21 41 56.0	-8.3
LIC	**Lamto**	**166.98**	**142**	*e*PKIKP	PKPdf	21 41 42.1	-1.7
	comp=Z,46nm,1.3s						
LIC				*e*R			
	comp=Z,724nm,21.2s						
DBIC	**Dimbokro**	**167.44**	**142**	PFAKE		21 41 50.0	+5.9
DBIC				LR	LR		
	comp=Z,197nm,21.0s						

*NEIC **15** 21:32:27.6, 13.64N×93.39W, h30km, mb4.3/2, MD4.3(MEX), After MEX.*
*MEX **15** 21:32:33.6±1.0, 14.15N×93.31W, h13km±599km, MD4.3*
*IDC **15** 21:32:38.7±4.5, 14.46N×92.96W, h68km±41km, mb3.5/6, mb1 3.9/9, mb1mx3.6/23, ML3.8/3, MS4.2/1, Ms1 4.2/1, ms1mx3.0/23, Error ellipse: s-maj=40.1km s-min=22.4km az=54.0*

ISC 15 21:32:36.7±1.4, 14.44N±0.09×92.97W±0.07, h70km±12km, n23, σ0≈92/27, mb3.9/7, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID		ISC	Time	Res
					Op		h m s	ISC
CCIG	**Comitan**	**2.00**	**24**	*i*	P	**P**	**21 33 10.0**	**+1.0**
CCIG				*i*	S	**S**	**21 33 37.3**	**+4.4**
CCIG	**Comitan**	**2.00**	**24**	*i*	P	**P**	**21 33 10.0**	**+1.0**
CCIG				*i*	S	**S**	**21 33 33.0**	**+0.1**
SCX	**San Cristobal**	**2.31**	**8**	*i*	P	**P**	**21 33 14.0**	**+0.6**
SCX				*i*	S	**S**	**21 33 50.0**	**+9.4**
CMIG	**Matias Romero**	**3.22**	**325**	*i*	P	**P**	**21 33 21.5**	**-4.6**
CMIG				*i*	S	**S**	**21 34 02.7**	**-0.7**
CMIG	**Matias Romero**	**3.22**	**325**	*i*	P	**P**	**21 33 21.5**	**-4.6**
CMIG				*i*	S	**S**	**21 33 56.1**	**-7.3**
OXX	**Oaxaca**	**4.47**	**307**	*e*	P	**P**	**21 33 43.0**	**-0.6**
TEIG	**Tepich**	**7.30**	**37**	P		**P**	**21 34 22.2**	**-0.6**
	10nm,0.3s,baz=214,slow=5.3,SNR=7.1							
TEIG				S		**S**	**21 35 44.2**	**-0.7**
	2.1nm,0.3s,baz=128,slow=19,SNR=2.7							
JTS	**JuntasAbangare**	**8.85**	**117**	P		**P**	**21 34 43.0**	**-1.1**
	0.2nm,0.3s,baz=93,slow=22,SNR=2.1							
JTS	**JuntasAbangare**	**8.85**	**117**	P		**P**	**21 34 43.0**	**-1.1**
TXAR	**Lajitas Array**	**17.82**	**328**	P		**P**	**21 36 41.7**	**+0.1**
	0.1nm,0.3s,baz=156,slow=12,SNR=5.5							
MIAR	**Mount Ida**	**20.03**	**359**	*e*	P	**P**	**21 37 05.7**	**-0.7**
	9.0nm,1.0s							
CPRX	**Cap Rock**	**21.00**	**334**	*e*	P	**P**	**21 37 17.4**	**+1.0**
SDV	**Santo Domingo**	**22.55**	**102**	P		**P**	**21 37 34.1**	**+2.1**
	4.7nm,0.8s,mb3.8,baz=337,slow=6.7,SNR=5.4							
ANMO	**Albuquerque**	**23.77**	**332**	*e*	P	**P**	**21 37 43.4**	**-0.2**
PDAR	**Pinedale Array**	**31.64**	**336**	P		**P**	**21 38 55.8**	**+0.5**
	0.2nm,0.3s,mb3.3,baz=149,slow=5.3,SNR=3.5							
NVAR	**Mina Array Bea**	**32.74**	**322**	P		**P**	**21 39 06.1**	**+1.1**
	1.2nm,1.0s,mb3.7,baz=133,slow=8.6,SNR=4.1							
LPAZ	**La Paz**	**39.17**	**140**	*e*	P	**P**	**21 39 47.4**	**-12**
	15nm,1.9s,mb4.5							
LPAZ				*e*			21 40 44.3	
BBB	**Bella Bella**	**46.92**	**331**	LR		LR	22 00 58.1	
	comp=Z,287nm,19.6s,baz=221,slow=36							
YKA	**Yellowknife Ar**	**50.39**	**347**	P		**P**	**21 41 28.3**	**-0.3**
	2.1nm,0.7s,mb4.2,baz=152,slow=7.4,SNR=49							
YKA	**Yellowknife Ar**	**50.39**	**347**	P		**P**	**21 41 28.3**	**-0.3**
INK	**Inuvik**	**59.76**	**344**	P		**P**	**21 42 35.0**	**-1.3**
	1.4nm,0.9s,mb4.0,baz=119,slow=5.8,SNR=8.3							
ILAR	**Eielson Array**	**62.07**	**337**	P		**P**	**21 42 51.6**	**-0.4**
	0.4nm,0.8s,mb3.5,baz=116,slow=4.1,SNR=4.5							
CMAR	**Chiang Mai Arr**	**145.27**	**340**	PKPbc		PKPbc	21 52 08.8	+1.1
	1.0nm,0.8s,baz=315,slow=3.8,SNR=4.8							

*NEIC **15** 21:35:06.0, 16.23N×98.63W, h18km, MD3.9(MEX), After MEX.*
*MEX **15** 21:35:06.0±0.6, 16.23N×98.63W, h18km±39km, MD3.9*
ISC 15 21:35:04.0±1.0, 16.30N±0.08×98.64W±0.03, h30km±9km, n9, σ0≈95/19, 1D, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID		ISC	Time	Res
					Op		h m s	ISC
PNIG	**Pinotepa**	**0.50**	**79**	⇓*i*	P	**Pb**	**21 35 14.7**	**+0.2**
PNIG				*i*	S	**Sb**	**21 35 21.2**	**-0.4**
ACX	**Acapulco**	**1.35**	**295**	*e*	P	**Pn**	**21 35 27.0**	**-0.1**
ACX				*i*	S	**Sn**	**21 35 43.1**	**-0.9**
CAIG	**El Cayaco**	**1.73**	**296**	*e*	P	**Pn**	**21 35 33.3**	**+0.8**
CAIG				*i*	S	**Sn**	**21 35 54.3**	**+0.6**
OXX	**Oaxaca**	**2.00**	**67**	*i*	P	**Pn**	**21 35 36.1**	**-0.3**
OXX				*i*	S	**Sn**	**21 35 59.8**	**-0.9**
YAIG	**Yautepec**	**2.58**	**351**	*i*	P	**Pn**	**21 35 45.8**	**+1.0**
YAIG				*i*	S	**Sn**	**21 36 14.1**	**-1.4**
PPM	**Popocatepetl**	**2.75**	**0**	*e*	P	**Pn**	**21 35 48.1**	**+0.9**
PPM				*i*	P		21 35 51.8	
PPM				*i*	S	**Sn**	**21 36 21.4**	**+1.5**
PPM				*i*	S	**Sn**	**21 36 21.8**	**+1.9**
IISM	**Ciudad Serdan**	**2.94**	**24**	*e*	P	**Pn**	**21 35 48.1**	**-1.7**
IISM				*i*	S	**Sn**	**21 36 24.6**	**+0.1**
ZIIG	**Zihuatanejo**	**3.00**	**296**	*e*	P	**Pn**	**21 35 50.6**	**-0.1**
ZIIG				*i*	S	**Sn**	**21 36 25.4**	**-0.7**
CMIG	**Matias Romero**	**3.69**	**77**	*e*	P	**Pn**	**21 36 03.9**	**+3.4**
CMIG				*i*	S	**Sn**	**21 36 43.9**	**+0.4**

*BJI **15** 21:55:01.3, 9.59S×160.56E, h58km, mB5.1, mb5.2, Ms4.8, Msz4.4*
*NEIC **15** 21:55:02.7±0.4, 10.23S×161.17E, mb4.7/8, Error ellipse: s-maj=11.4km s-min=8.3km az=126.0*
*IDC **15** 21:55:02.8±0.7, 10.26S×161.17E, h88km±44km, mb4.2/18, mb1 4.3/20, mb1mx4.3/23, MS3.7/2, Ms1 3.7/2, ms1mx3.3/20, Error ellipse: s-maj=18.8km s-min=12.1km az=124.0*
*MOS **15** 21:55:10.4±1.2, 10.38S×161.13E, h185km, mb4.7/5, Error ellipse: s-maj=20.3km s-min=18.9km az=161.8*
ISC 15 21:55:00.9±0.3, 10.18S±0.05×161.02E±0.08, h86km, h86km±1.0km: pP-P, n61, σ1≈04/62, mb4.5/31, 2C-3D, Bougainville - Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID		ISC	Time	Res
					Op		h m s	ISC
DZM	**Mont Dzumac**	**12.92**	**157**	*e*	P	**P**	**21 58 03.2**	**+0.6**
DZM				*e*	S	**S**	**22 00 15.3**	**-9.4**
DZM	**Mont Dzumac**	**12.92**	**157**	*e*	P	**P**	**21 58 03.2**	**+0.6**
DZM				*e*	S	**S**	**22 00 15.3**	**-9.4**
PMG	**Port Moresby**	**13.68**	**272**	P		**P**	**21 58 19.7**	**+7.2**
	0.3nm,0.3s,baz=85,slow=8.1,SNR=5.2							
WAU	**Wau**	**14.41**	**280**	*e*	P	**P**	**21 58 27.6**	**+5.6**
CTA	**Charters Tower**	**17.31**	**234**	*e*	P	**P**	**21 59 02.2**	**+3.6**
	15nm,0.6s							
CTA	**Charters Tower**	**17.31**	**234**	P		**P**	**21 59 01.4**	**+2.8**
	2.7nm,0.3s,baz=65,slow=12,SNR=45							
CTAO	**Charters Tower**	**17.31**	**234**	*e*	P	**P**	**21 59 01.6**	**+3.0**
	30nm,0.8s							
ARMA	**Armidale**	**21.96**	**202**	*e*	P	**P**	**21 59 48.8**	**0.0**
WRAB	**Tennant Creek**	**27.48**	**246**	*e*	P	**P**	**22 00 41.4**	**+0.1**
	17nm,0.8s,mb4.6							
WRAB				*e*	pP	pP	22 01 01.1	+0.2
WB2	**Warramunga Arr**	**27.48**	**246**	*e*	P	**P**	**22 00 41.2**	**-0.1**
WRA	**Warramunga Arr**	**27.49**	**246**	P		**P**	**22 00 42.0**	**+0.5**
	5.5nm,0.6s,mb4.3,baz=75,slow=9.2,SNR=92							
WRA				pP		pP	22 01 03.3	+2.3
	3.6nm,0.5s,baz=75,slow=9.3,SNR=6.3							
STKA	**Stephens Creek**	**28.10**	**217**	*e*	P	**P**	**22 00 46.3**	**-0.5**
	4.9nm,0.7s,mb4.2							
STKA	**Stephens Creek**	**28.10**	**217**	P		**P**	**22 00 46.6**	**-0.2**
	6.9nm,0.8s,mb4.2,baz=42,slow=14,SNR=7.3							
STKA				LR		LR	22 11 23.5	
	comp=Z,202nm,19.5s,baz=25,slow=35							
STKA	**Stephens Creek**	**28.10**	**217**	P		**P**	**22 00 46.6**	**-0.2**
STKA				LR		LR	22 11 23.5	
AS12	**Alice Springs**	**29.13**	**239**	*e*	P	**P**	**22 00 55.2**	**-0.9**
	10nm,1.8s,mb4.2							
ASAR	**Alice Springs**	**29.13**	**239**	P		**P**	**22 00 55.4**	**-0.7**
	2.1nm,0.8s,mb3.8,baz=68,slow=9.6,SNR=16							
ASAR				LR		LR	22 10 48.8	
	comp=Z,129nm,21.9s,baz=231,slow=32							
RPZ	**Rata Peaks**	**34.53**	**167**	P		**P**	**22 01 41.4**	**-1.6**
	13nm,0.7s,mb4.8,baz=1.2,slow=14,SNR=7.5							
FITZ	**Fitzroy Crossi**	**35.15**	**253**	*e*	P	**P**	**22 01 48.6**	**+0.1**
	7.3nm,0.8s,mb4.6							
NWAO	**Narrogin (SRO)**	**46.16**	**234**	P		**P**	**22 03 18.9**	**+0.1**
	16nm,1.0s,mb4.7,baz=105,slow=6.9,SNR=3.5							
JHJ	**Hachijo jima 2**	**47.57**	**336**	P		**P**	**22 03 30.4**	**+0.4**
	187nm,1.0s,baz=60,slow=19,SNR=2.8							
JOW	**Kunigami**	**48.62**	**320**	P		**P**	**22 03 39.3**	**+1.2**
	13nm,0.5s,mb5.1,baz=205,slow=26,SNR=7.0							
MAT	**Matsushiro**	**51.19**	**336**	P		**P**	**22 03 56.7**	**-1.0**
MAT	**Matsushiro**	**51.19**	**336**	*e*	P	**P**	**22 03 57.0**	**-0.7**
ASAJ	**Asahikawa**	**56.56**	**344**	P		**P**	**22 04 37.1**	**+0.2**
	9.6nm,0.6s,mb5.0,baz=227,slow=6.9,SNR=6.9							
NJ2	**Nanjing**	**58.20**	**318**	*e*	P	**P**	**22 04 48.3**	**-0.3**
NJ2				XP		sP	22 05 12.3	-7.9
NJ2				PP		PP	22 07 00.1	+0.1
NJ2				S		**S**	**22 12 41.0**	**-0.7**
NJ2				AMB		AMB		
	comp=Z,30nm,0.5s,mb5.6							
NJ2				LR		LR		
	comp=N,200nm,15.0s							
NJ2				LR		LR		
	comp=E,380nm,16.8s							
NJ2				LR		LR		
	comp=Z,170nm,16.8s							
MDJ	**Mudanjiang**	**61.50**	**335**	P		**P**	**22 05 10.3**	**-0.7**
MDJ				AMB		AMB		
	comp=Z,11nm,1.1s,mb4.8							
CN2	**Changchun**	**62.69**	**332**	*e*	P	**P**	**22 05 18.8**	**-0.2**
CN2				AMB		AMB		
	comp=Z,30nm,0.6s,mb5.4							
FX1	**Attu Island--F**	**63.66**	**8**	P		**P**	**22 05 25.1**	**-0.2**
	comp=Z,18nm,0.6s,mb5.1,baz=34,slow=22,SNR=3.9							
CMAR	**Chiang Mai Arr**	**67.52**	**295**	P		**P**	**22 05 51.6**	**+1.1**
	comp=Z,0.5nm,0.6s,mb3.5,baz=128,slow=5.5,SNR=5.4							
CMAR				pP		pP	22 06 14.2	+1.3
	comp=Z,1.5nm,0.6s,baz=127,slow=5.0,SNR=5.7							
MA2	**Magadan**	**70.00**	**354**	*e*	P	**P**	**22 06 04.4**	**-0.7**
MA2				pmax		pmax		
	comp=Z,5.0nm,0.9s,mb4.3							
MA2				MLR		MLR		
	comp=Z,100nm,17.0s							
CLNS	**Chul'man**	**73.12**	**340**	*e*	P	**P**	**22 06 23.9**	**+0.3**
CLNS				pmax		pmax		
	comp=Z,10.0nm,0.7s,mb4.8							
CLNS				pmax		pmax		
	comp=N,5.0nm,0.8s							
CLNS				pmax		pmax		
	comp=E,4.0nm,1.0s							
ULN	**Ulaanbaatar**	**74.92**	**326**	*d*/*i*	P	**P**	**22 06 35.2**	**+1.0**
ULN	**Ulaanbaatar**	**74.92**	**326**	*e*	P	**P**	**22 06 35.3**	**+1.1**
	comp=E,13nm,1.1s,mb4.6							
ULN				*e*pP		pP	22 06 57.2	+0.2
ULN				*e*sP		sP	22 07 08.1	+1.7
SONM	**Songino Array**	**75.27**	**325**	P		**P**	**22 06 37.4**	**+1.2**
	comp=E,6.3nm,0.7s,mb4.4,baz=139,slow=5.2,SNR=18							
SONM				pP		pP	22 07 01.1	+2.1
	comp=E,2.7nm,0.5s,baz=136,slow=5.5,SNR=5.3							
YAK	**Yakutsk**	**76.02**	**345**	*d*e	P	**P**	**22 06 38.8**	**-1.4**
YAK				pmax		pmax		
	comp=Z,20nm,0.6s,mb5.0							
YAK				MLR		MLR		
	comp=Z,100nm,17.0s							
BOD	**Bodaibo**	**77.82**	**336**	*e*	P	**P**	**22 06 47.5**	**-2.8**
BILL	**Bilibino**	**78.10**	**2**	*d*/*i*	P	**P**	**22 06 51.7**	**0.0**
BILL				*e*			22 09 51.4	
BILL				pmax		pmax		
	comp=Z,11nm,1.0s,mb4.5							
BILL	**Bilibino**	**78.10**	**2**	*e*	P	**P**	**22 06 51.9**	**+0.3**
	comp=Z,15nm,1.2s,mb4.6							
BILL				*e*pP		pP	22 07 14.2	-0.4
ZAK	**Zakamensk**	**78.37**	**326**	*e*	P	**P**	**22 06 52.3**	**-1.2**
RSO	**Redoubt South**	**79.34**	**21**	*e*	P	**P**	**22 06 57.5**	**-1.1**
QSPA	**South Pole Qui**	**79.82**	**180**	*e*	P	**P**	**22 07 01.1**	**+0.2**
	comp=Z,8.0nm,0.8s,mb4.6							
MAW	**Mawson**	**83.76**	**202**	P		**P**	**22 07 22.1**	**+0.7**
	comp=Z,2.3nm,1.0s,mb4.0,baz=51,slow=17,SNR=4.0							
COLA	**College**	**83.97**	**20**	*e*	P	**P**	**22 07 22.4**	**-0.1**
ILAR	**Eielson Array**	**84.22**	**20**	P		**P**	**22 07 23.4**	**-0.3**
	comp=Z,1.3nm,0.4s,mb4.1,baz=244,slow=5.0,SNR=20							
ILAR				pP		pP	22 07 46.4	-0.6
	comp=Z,2.0nm,0.8s,baz=255,slow=4.7,SNR=6.0							
TIXI	**Tiksi**	**84.40**	**350**	*e*	P	**P**	**22 07 23.8**	**-0.7**
TIXI				pmax		pmax		
	comp=Z,31nm,1.1s,mb5.0							
YBH	**Yreka Blue Hor**	**86.65**	**47**	P		**P**	**22 07 37.6**	**+1.3**
	comp=Z,0.6nm,0.5s,mb3.8,baz=326,slow=1.7,SNR=4.1							
NVAR	**Mina Array Bea**	**89.05**	**51**	P		**P**	**22 07 49.4**	**+1.6**
	comp=Z,1.0nm,0.7s,mb4.0,baz=236,slow=7.0,SNR=7.3							
NVAR				pP		pP	22 08 12.4	+1.1
	comp=Z,0.6nm,0.6s,baz=220,slow=5.5,SNR=3.6							
NVAR	**Mina Array Bea**	**89.05**	**51**	P		**P**	**22 07 49.4**	**+1.6**
NVAR				pP		pP	22 08 12.4	+1.1
MKAR	**Makanchi Array**	**89.73**	**318**	P		**P**	**22 07 51.4**	**+0.6**
	comp=Z,0.4nm,0.5s,mb3.8,baz=96,slow=5.8,SNR=8.1							
MKAR				pP		pP	22 08 14.5	+0.2
	comp=Z,2.3nm,0.8s,baz=89,slow=5.6,SNR=9.0							
MKAR	**Makanchi Array**	**89.73**	**318**	P		**P**	**22 07 51.4**	**+0.6**
MKAR				pP		pP	22 08 14.5	+0.2
NEW	**Newport**	**92.15**	**41**	P		**P**	**22 08 02.7**	**+0.6**
	comp=Z,2.2nm,0.7s,mb4.5,baz=290,slow=8.5,SNR=3.3							
NEW	**Newport**	**92.15**	**41**	*e*	P	**P**	**22 08 02.0**	**0.0**
	comp=Z,1.8nm,0.6s,mb4.5							
NEW				*e*pP		pP	22 08 25.5	-0.1
HWUT	**Hardware Ranch**	**94.75**	**49**	P		**P**	**22 08 16.8**	**+2.8**
	comp=Z,5.9nm,1.7s,mb4.7							
YKA	**Yellowknife Ar**	**96.35**	**28**	P		**P**	**22 08 20.4**	**-0.4**
	comp=Z,1.1nm,0.6s,mb4.5,baz=258,slow=4.7,SNR=34							
YKA				pP		pP	22 08 44.2	-0.2
	comp=Z,0.6nm,0

ISC 15 23:22:38.6±0.7, 49.52N±0.05×156.01E±0.08, h69km±4km, h45km±4.3km: pP-P, n129, σ1§12/156, mb4.1/44, 1D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**1.17**	**3**	*e*P	**P**	**23 22 59.5**	**0.0**
SKR				*i* S	**S**	**23 23 16.5**	**+1.4**
SKR	**Severo-Kuril's**	**1.17**	**3**	*e*P	**P**	**23 22 57.4**	**-2.1**
SKR				AMB	AMB	23 22 57.9	
	170nm,0.5s						
SKR				AMB	AMB	23 22 57.9	
	230nm,0.5s						
SKR				*i* S	**S**	**23 23 14.4**	**-0.7**
SKR				A		23 23 18.9	
	6μm,0.5s						
SKR				A		23 23 18.9	
	2μm,0.5s						
SKR				A		23 23 18.9	
	820nm,0.5s						
SKR				A		23 23 21.0	
	4μm,1.0s						
SKR				A		23 23 21.0	
	6μm,1.0s						
SKR				A		23 23 21.0	
	5μm,1.0s						
SKR				A		23 23 21.0	
	7μm,1.0s						
SKR	**Severo-Kuril's**	**1.17**	**3**	*e*PN	**P**	**23 22 57.4**	**-2.1**
SKR				*i* S	**S**	**23 23 14.4**	**-0.7**
SKR				pmax	pmax		
	comp=N,170nm,0.5s						
SKR				pmax	pmax		
	comp=Z,230nm,0.5s						
SKR				smax			
	comp=N,6μm,0.5s						
SKR				smax			
	comp=E,2μm,0.5s						
SKR				smax			
	comp=N,5μm,1.0s						
SKR				smax			
	comp=E,7μm,1.0s						
ALID	**Alaid**	**1.38**	**348**	*e*P	**P**	**23 23 03.5**	**+1.0**
ALID				*e*S	**S**	**23 23 25.0**	**+4.8**
PAU	**Pauzhetka**	**2.02**	**14**	*i* P	**P**	**23 23 11.2**	**+0.1**
PAU				*i* S	**S**	**23 23 36.8**	**+1.8**
PAU				Smax			
	comp=E,5μm,0.5s						
MIPR	**Malaya Ipel'ka**	**2.80**	**9**	*e*P	**P**	**23 23 22.5**	**+0.3**
MIPR				*e*S	**S**	**23 23 57.3**	**+2.5**
GRL	**Gorelyy**	**3.30**	**22**	*e*P	**P**	**23 23 29.3**	**+0.1**
GRL				*e*S	**S**	**23 24 07.9**	**+0.4**
RUS	**Russkaya**	**3.32**	**28**	P	**P**	**23 23 28.0**	**-1.4**
RUS				S	**S**	**23 24 05.4**	**-2.4**
RUS	**Russkaya**	**3.32**	**28**	*e*P	**P**	**23 23 27.8**	**-1.6**
RUS				*e*S	**S**	**23 24 06.3**	**-1.5**
APC	**Apacha**	**3.48**	**12**	*e*P	**P**	**23 23 32.7**	**+1.0**
APC				*e*S	**S**	**23 24 12.8**	**+0.8**
APC				Smax			
	comp=E,210nm,1.0s						
KRMR	**Karymshinskiy**	**3.57**	**21**	*e*	**P**	**23 23 43.9**	**+11**
PET	**Petropavlovsk**	**3.88**	**24**	P	**P**	**23 23 37.3**	**0.0**
PET				S	**S**	**23 24 21.5**	**-0.4**
PET	**Petropavlovsk**	**3.88**	**24**	*e*P	**P**	**23 23 36.8**	**-0.5**
PET				*e*S	**S**	**23 24 21.5**	**-0.4**
PET	**Petropavlovsk**	**3.88**	**24**	*e*PN	**P**	**23 23 36.6**	**-0.7**
PET				*e*S	**S**	**23 24 22.1**	**+0.2**
PET				pmax	pmax		
	comp=Z,64nm,0.4s						
PET				smax			
	comp=E,587nm,0.5s						
PET				smax			
	comp=N,612nm,0.5s						
PET				MLR	MLR		
	comp=Z,200nm,22.0s						
PET	**Petropavlovsk**	**3.88**	**24**	*e*P	**P**	**23 23 36.5**	**-0.8**
PET				*e*S	**S**	**23 24 23.3**	**+1.4**
UGLR	**Uglovaya**	**4.09**	**24**	*e*P	**P**	**23 23 40.3**	**+0.1**
KOK	**Koryaka**	**4.12**	**23**	*i* P	**P**	**23 23 41.4**	**+0.8**
AVH	**Avacha**	**4.12**	**23**	*e*P	**P**	**23 23 41.3**	**+0.7**
AVH				*e*S	**S**	**23 24 29.2**	**+1.3**
SMAR	**Somma**	**4.13**	**24**	*e*P	**P**	**23 23 41.0**	**+0.2**
SDLR	**Sedlovina**	**4.17**	**24**	*i* P	**P**	**23 23 40.7**	**-0.6**
SDLR				*e*S	**S**	**23 24 27.8**	**-1.4**
NLC	**Nalytchevo**	**4.21**	**28**	*e*P	**P**	**23 23 39.3**	**-2.6**
NLC				*e*S	**S**	**23 24 28.3**	**-1.9**
GNL	**Ganaly**	**4.35**	**15**	*e*P	**P**	**23 23 44.7**	**+0.9**
GNL				*e*S	**S**	**23 24 34.8**	**+1.1**
SPN	**Mys Shipunski**	**4.38**	**34**	*e*P	**P**	**23 23 42.6**	**-1.6**
SPN				*e*S	**S**	**23 24 31.4**	**-3.0**
KII	**Karymskiy**	**5.00**	**24**	P	**P**	**23 23 53.1**	**+0.2**
KII	**Karymskiy**	**5.00**	**24**	*e*P	**P**	**23 23 52.7**	**-0.2**
MKZ	**Mys Kozlova**	**6.15**	**33**	P	**P**	**23 24 06.1**	**-2.7**
MKZ				S	**S**	**23 25 12.4**	**-6.2**
MKZ	**Mys Kozlova**	**6.15**	**33**	*e*P	**P**	**23 24 06.1**	**-2.7**
MKZ				*e*S	**S**	**23 25 13.8**	**-4.8**
TUMR	**Tumrok**	**6.30**	**22**	*e*P	**P**	**23 24 11.2**	**+0.3**
ESO	**Esso**	**6.62**	**13**	*e*P	**P**	**23 24 15.9**	**+0.6**
KMNR	**Kamenistaya**	**6.75**	**21**	*e*P	**P**	**23 24 18.1**	**+0.9**
KPT	**Kopyto**	**6.94**	**20**	*e*P	**P**	**23 24 19.7**	**-0.2**
KOZ	**Kozyrevsk**	**6.95**	**18**	P	**P**	**23 24 20.3**	**+0.3**
KOZ	**Kozyrevsk**	**6.95**	**18**	*e*P	**P**	**23 24 20.2**	**+0.2**
KUR	**Kuril'sk**	**7.00**	**235**	*e*P	**P**	**23 24 19.8**	**-0.8**
KUR				AMB	AMB	23 24 20.3	
	comp=Z,150nm,1.0s						
KUR				*e*S	**S**	**23 25 40.0**	**+0.7**
KUR				A		23 25 46.0	
	comp=Z,60nm,0.8s						
KUR				A		23 25 46.0	
	comp=Z,30nm,0.8s						
KUR	**Kuril'sk**	**7.00**	**235**	*e*PN	**P**	**23 24 19.8**	**-0.8**
KUR				S	**S**	**23 25 40.0**	**+0.7**
KUR				pmax	pmax		
	comp=Z,150nm,1.0s						
KUR				smax			
	comp=N,60nm,0.8s						
KUR				smax			
	comp=E,30nm,0.8s						
ZLN	**Zelenaya**	**7.13**	**22**	*e*P	**P**	**23 24 22.0**	**-0.4**
LGNR	**Loginova**	**7.16**	**22**	*e*P	**P**	**23 24 22.9**	**+0.1**
SRDR	**Sredinnyy**	**7.17**	**17**	*e*P	**P**	**23 24 24.1**	**+1.2**
CIRR	**Tsirk**	**7.20**	**22**	*e*P	**P**	**23 24 23.6**	**+0.2**
SVLR	**Shiveluch**	**7.73**	**22**	*e*P	**P**	**23 24 31.1**	**+0.4**
KBTR	**Krutoberegovo**	**7.86**	**29**	P	**P**	**23 24 29.8**	**-2.7**
KBTR				S	**S**	**23 25 54.0**	**-6.7**
KBTR	**Krutoberegovo**	**7.86**	**29**	*e*P	**P**	**23 24 29.9**	**-2.6**
KBTR				*e*S	**S**	**23 25 55.5**	**-5.2**
BKI	**Bering**	**8.34**	**43**	*e*P	**P**	**23 24 33.5**	**-5.5**
BKI				*e*S	**S**	**23 26 00.2**	**-12**
TYV	**Tymovskoe**	**8.68**	**284**	*e*P	**P**	**23 24 42.1**	**-1.5**
YSS	**Yuzh-Sakhalins**	**9.21**	**259**	*e*PN	**P**	**23 24 55.2**	**+4.3**
YSS				pmax	pmax		
	comp=Z,27nm,1.4s						
MA2	**Magadan**	**10.52**	**345**	*e*PN	**P**	**23 25 08.0**	**-0.6**
MA2				pmax	pmax		
	comp=Z,14nm,1.7s						
ASAJ	**Asahikawa**	**10.66**	**245**	P	**P**	**23 25 12.2**	**+1.7**
	comp=Z,1.5nm,0.3s,baz=352,slow=14,SNR=4.4						
ASAJ				LR	LR	23 28 48.2	
	comp=Z,75nm,21.3s,baz=337,slow=35						
ASAJ	**Asahikawa**	**10.66**	**245**	PN	**P**	**23 25 12.2**	**+1.7**
ASAJ				pmax	pmax		
	comp=Z,2.0nm,0.3s						
ASAJ				MLR	MLR		
	comp=Z,75nm,21.3s						
FX1	**Attu Island--F**	**11.27**	**66**	P	**P**	**23 25 10.5**	**-8.2**
	comp=Z,2.3nm,0.3s,baz=65,slow=18,SNR=10						
FX1				S	**S**	**23 27 08.7**	**-15**
	comp=Z,12nm,0.3s,baz=110,slow=18,SNR=10						
FX1	**Attu Island--F**	**11.27**	**66**	*e*P	**P**	**23 25 14.3**	**-4.5**
SEY	**Seymchan**	**13.59**	**353**	*e*PN	**P**	**23 25 51.3**	**+2.0**
SEY				*e*S	**S**	**23 28 21.5**	**+2.5**
SEY				pmax	pmax		
	comp=Z,10.0nm,1.2s						
SEY				smax			
	comp=N,70nm,4.6s						
SEY				smax			
	comp=E,30nm,3.6s						
KAMR	**Kamenskoye**	**14.14**	**20**	*e*P	**P**	**23 25 58.2**	**+1.8**
BILL	**Bilibino**	**19.27**	**12**	*e*P	**P**	**23 26 58.5**	**-1.3**
BILL				pmax	pmax		
	comp=Z,4.0nm,0.5s						
BILL				MLR	MLR		
	comp=Z,100nm,17.0s						
TIXI	**Tiksi**	**25.43**	**340**	*e*P	**P**	**23 27 58.7**	**-2.2**
TIXI				pmax	pmax		
	comp=Z,25nm,0.7s,mb4.8						
TIXI	**Tiksi**	**25.43**	**340**	*e*P	**P**	**23 27 58.8**	**-2.0**
BOD	**Bodaibo**	**25.86**	**305**	*e*P	**P**	**23 28 05.5**	**+0.5**
IMA	**Indian Mountai**	**30.43**	**38**	*e*P	**P**	**23 28 45.5**	**-0.6**
	comp=Z,7.1nm,0.8s,mb4.3						
COLA	**College**	**32.77**	**41**	*de*P	**P**	**23 29 06.8**	**+0.2**
ILAR	**Eielson Array**	**33.18**	**41**	P	**P**	**23 29 09.5**	**-0.6**
	comp=Z,1.6nm,0.9s,mb3.9,baz=257,slow=7.2,SNR=19						
ILAR	**Eielson Array**	**33.18**	**41**	P	**P**	**23 29 09.5**	**-0.6**
ILAR				pmax	pmax		
	comp=Z,2.0nm,0.9s						
ZAK	**Zakamensk**	**33.35**	**292**	*e*P	**P**	**23 29 11.5**	**-0.3**
MKAR	**Makanchi Array**	**47.42**	**296**	P	**P**	**23 31 05.8**	**-1.8**
	comp=Z,0.6nm,0.6s,mb3.5,baz=63,slow=8.1,SNR=5.4						
MKAR				LR	LR	23 52 02.2	
	comp=Z,96nm,19.3s,baz=124,slow=37						
MKAR	**Makanchi Array**	**47.42**	**296**	P	**P**	**23 31 05.8**	**-1.7**
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.6s						
MKAR				MLR	MLR		
	comp=Z,96nm,19.3s						
KURK	**Kurchatov**	**47.48**	**303**	*e*P	**P**	**23 31 05.1**	**-2.8**
YKA	**Yellowknife Ar**	**47.55**	**39**	P	**P**	**23 31 08.8**	**+0.5**
	comp=Z,0.5nm,0.8s,mb3.4,baz=297,slow=7.4,SNR=11						
YKA				pP	pP	23 31 22.2	-3.6
	comp=Z,0.6nm,0.6s,baz=298,slow=7.4,SNR=8.8						
YKA	**Yellowknife Ar**	**47.55**	**39**	P	**P**	**23 31 08.8**	**+0.5**
YKA				*PP	pP	23 31 22.2	-3.6
YKA				pmax	pmax		
	comp=Z,1.0nm,0.8s						
YKA				pmax	pmax		
	comp=N,1.0nm,0.6s						
YKA	**Yellowknife Ar**	**47.55**	**39**	P	**P**	**23 31 08.8**	**+0.5**
YKA				pP	pP	23 31 22.2	-3.6
BVAR	**Borovoye Array**	**50.62**	**309**	P	**P**	**23 31 30.5**	**-1.6**
	comp=N,0.8nm,0.3s,mb4.2,baz=52,slow=9.0,SNR=11						
BVAR				PcP	PcP	23 32 48.4	-0.5
	comp=N,0.8nm,0.7s,baz=63,slow=3.3,SNR=4.1						
BRVK	**Borovoye**	**50.65**	**309**	*e*P	**P**	**23 31 30.6**	**-1.7**
ZRNK	**Zerenda**	**51.36**	**309**	*e*P	**P**	**23 31 35.1**	**-2.6**
YBH	**Yreka Blue Hor**	**54.77**	**65**	P	**P**	**23 32 04.2**	**+1.2**
	comp=N,0.5nm,0.3s,mb4.0,baz=279,slow=4.1,SNR=3.3						
YBH	**Yreka Blue Hor**	**54.77**	**65**	P	**P**	**23 32 04.2**	**+1.1**
YBH				pmax	pmax		
	comp=Z,1.0nm,0.3s						
CMAR	**Chiang Mai Arr**	**54.90**	**257**	P	**P**	**23 32 04.0**	**-0.4**
	comp=Z,1.5nm,0.6s,mb4.2,baz=43,slow=7.0,SNR=8.6						
CMAR	**Chiang Mai Arr**	**54.90**	**257**	P	**P**	**23 32 04.0**	**-0.4**
CMAR				pmax	pmax		
	comp=Z,2.0nm,0.6s						
NVAR	**Mina Airay Bea**	**59.47**	**65**	P	**P**	**23 32 37.0**	**+0.7**
	comp=Z,0.8nm,0.7s,mb3.9,baz=299,slow=9.3,SNR=3.5						
JOF	**Joensuu**	**59.70**	**334**	*ep*	**P**	**23 32 36.3**	**-1.3**
PDAR	**Pinedale Array**	**61.57**	**57**	P	**P**	**23 32 50.9**	**+0.3**
	comp=Z,1.2nm,0.9s,mb3.9,baz=333,slow=3.3,SNR=9.4						
PDAR				sP	sP	23 33 08.2	-8.6
	comp=Z,0.9nm,1.0s,baz=333,slow=3.3,SNR=4.1						
KAF	**Kangasniemi**	**61.73**	**336**	*ep*	**P**	**23 32 49.9**	**-1.5**
FINES	**FINESS Array B**	**62.34**	**335**	P	**P**	**23 32 52.9**	**-2.7**
	comp=Z,0.6nm,0.4s,mb4.0,baz=32,slow=6.8,SNR=14						
FINES				LR	LR	00 01 19.9	
	comp=Z,29nm,18.8s,baz=354,slow=37						
FINES	**FINESS Array B**	**62.34**	**335**	P	**P**	**23 32 52.9**	**-2.6**
FINES				pmax	pmax		
	comp=Z,1.0nm,0.4s						
FINES				MLR	MLR		
	comp=Z,29nm,18.8s						
PV10	**Paradox Valley**	**64.87**	**60**	*e*P	**P**	**23 33 13.6**	**+1.3**
NB2	**NORSAR Subarra**	**66.21**	**342**	P	**P**	**23 33 18.8**	**-1.7**
	comp=Z,2.0nm,1.0s,mb3.9,baz=29,slow=6.2						
NOA	**NORSAR Array B**	**66.21**	**342**	P	**P**	**23 33 19.4**	**-1.1**
	comp=Z,0.6nm,0.8s,mb3.5,baz=25,slow=6.4,SNR=3.7						
NOA				LR	LR	00 06 32.5	
	comp=Z,25nm,19.4s,baz=305,slow=40						
NOA	**NORSAR Array B**	**66.21**	**342**	P	**P**	**23 33 19.4**	**-1.1**
NOA				pmax	pmax		
	comp=Z,1.0nm,0.8s						
NOA				MLR	MLR		
	comp=Z,25nm,19.4s						
SCHQ	**Schefferville**	**69.99**	**25**	P	**P**	**23 33 44.2**	**+0.1**
SCHQ	**Schefferville**	**69.99**	**25**	P	**P**	**23 33 44.2**	**+0.1**
AKASG	**Malin Array Be**	**70.30**	**327**	P	**P**	**23 33 43.9**	**-2.1**
	comp=Z,1.1nm,0.4s,mb4.1,baz=32,slow=6.1,SNR=6.7						
WRA	**Warramunga Arr**	**71.78**	**201**	P	**P**	**23 33 57.5**	**+2.1**
	comp=Z,0.6nm,1.1s,mb3.3,baz=16,slow=6.1,SNR=5.4						
WRA				pP	pP	23 34 08.6	-5.6
	comp=Z,1.0nm,0.8s,baz=18,slow=6.7,SNR=6.3						
WRA	**Warramunga Arr**	**71.78**	**201**	P	**P**	**23 33 57.5**	**+2.1**
WRA				*PP	pP	23 34 08.6	-5.6
WRA				pmax	pmax		
	comp=Z,1.0nm,1.1s						
WRA				pmax	pmax		
	comp=N,1.0nm,0.8s						
SOC	**Sochi**	**71.86**	**317**	*e*P	**P**	**23 33 59.5**	**+4.0**
SOC				*e*	pP	23 34 14.1	-0.2
SOC				*e*		23 36 35.5	
SOC				*e*S	S	23 43 11.0	+1.5
SOC				*e*PS	PS	23 43 35.0	-14
SOC				*e*		23 43 51.1	
SOC				*e*SS	SS	23 47 52.3	+3.5
SOC				*e*SSS	SSS	23 51 00.5	+2.6
SOC				pmax	pmax		
	comp=Z,22nm,1.1s,mb4.9						
SOC				pmax	pmax		
	comp=N,18nm,0.8s						
SOC				pmax	pmax		
	comp=E,13nm,0.8s						
FITZ	**Fitzroy Crossi**	**72.51**	**210**	pP	pP	23 34 13.0	-5.5
	comp=E,1.8nm,0.8s,baz=22,slow=5.4,SNR=2.8						
TXAR	**Lajitas Array**	**74.47**	**63**	P	**P**	**23 34 11.8**	**+0.8**
	comp=E,1.1nm,0.8s,mb3.6,baz=302,slow=4.1,SNR=14						
TXAR	**Lajitas Array**	**74.47**	**63**	P	**P**	**23 34 11.8**	**+0.8**
ASAR	**Alice Springs**	**75.47**	**201**	P	**P**	**23 34 18.6**	**+1.8**
	comp=E,0.2nm,0.6s,mb3.0,baz=16,slow=5.6,SNR=4.3						
ASAR				pP	pP	23 34 31.2	-4.4
	comp=E,0.7nm,0.7s,baz=15,slow=5.6,SNR=6.1						
GERES	**GERESS Array B**	**76.78**	**335**	P	**P**	**23 34 22.6**	**-1.1**
	comp=E,0.6nm,0.7s,mb3.4,baz=37,slow=6.7,SNR=6.3						
GERES	**GERESS Array B**	**76.78**	**335**	P	**P**	**23 34 22.6**	**-1.1**
GERES				pmax	pmax		
	comp=Z,1.0nm,0.7s						
BRTR	**Keskin Array B**	**77.66**	**318**	P	**P**	**23 34 28.4**	**-0.3**
	comp=Z,2.8nm,1.2s,mb3.9,baz=90,slow=1.2,SNR=4.6						
BAIF	**Baives**	**77.89**	**342**	*e*P	**P**	**23 34 29.5**	**-0.3**
	comp=Z,11nm,1.1s,mb4.2						
CDF	**Champ du Feu**	**78.79**	**339**	*e*P	**P**	**23 34 34.6**	**-0.2**
	comp=Z,9.4nm,1.0s,mb4.3						
MEZF	**Maizieres J'vi**	**79.20**	**341**	*e*P	**P**	**23 34 37.0**	**0.0**
HAU	**Haudompre**	**79.38**	**340**	*e*P	**P**	**23 34 37.7**	**-0.3**
HINF	**Hinteralfeld**	**79.44**	**339**	*e*P	**P**	**23 34 37.8**	**-0.6**
	comp=Z,2.1nm,0.5s,mb3.9						
FLN	**La Foliniere**	**80.02**	**344**	*e*P	**P**	**23 34 41.2**	**-0.3**
	comp=Z,14nm,0.9s,mb4.5						
LDF	**La Druitiere**	**80.12**	**344**	*e*P	**P**	**23 34 41.7**	**-0.3**
	comp=Z,6.9nm,0.6s,mb4.3						
GRR	**Gorron**	**80.45**	**345**	*e*P	**P**	**23 34 43.8**	**0.0**
	comp=Z,24nm,0.8s,mb4.8						
CABF	**La Chapelle**	**80.76**	**340**	*e*P	**P**	**23 34 45.5**	**+0.1**
	comp=Z,5.2nm,0.8s,mb4.1						
SSF	**Saint Saulge**	**80.89**	**341**	*e*P	**P**	**23 34 46.0**	**-0.1**
	comp=Z,4.7nm,0.9s,mb4.0						
ROSF	**Rostrenen**	**80.90**	**346**	*e*P	**P**	**23 34 46.3**	**+0.2**
	comp=Z,18nm,0.9s,mb4.6						
AVF	**Avril sur Loir**	**81.18**	**341**	*e*P	**P**	**23 34 47.6**	**-0.1**
	comp=Z,6.1nm,0.7s,mb4.2						
SMF	**Signal de Mont**	**81.22**	**341**	*e*P	**P**	**23 34 47.7**	**-0.1**
QUIF	**Quistinic**	**81.29**	**346**	*e*P	**P**	**23 34 48.1**	**-0.1**
BGF	**Bois d'Agland**	**81.51**	**342**	*e*P	**P**	**23 34 49.4**	**0.0**
	comp=Z,3.6nm,0.5s,mb4.2						
LPL	**La Plagne**	**81.64**	**339**	*e*P	**P**	**23 34 51.0**	**+0.9**
	comp=Z,11nm,0.7s,mb4.5						
LPG	**La Plagne**	**81.65**	**339**	*e*P	**P**	**23 34 51.2**	**+1.1**
	comp=Z,12nm,0.7s,mb4.5						
TCF	**Toulx Ste Croi**	**81.90**	**342**	*e*P	**P**	**23 34 51.6**	**+0.2**
	comp=Z,8.2nm,0.9s,mb4.3						
MFF	**Saint Martin d**	**82.05**	**344**	*e*P	**P**	**23 34 52.5**	**+0.4**
	comp=Z,9.0nm,0.8s,mb4.3						
ORIF	**Oris-en-Rattie**	**82.40**	**339**	*e*P	**P**	**23 34 54.8**	**+0.8**
	comp=Z,6.7nm,0.7s,mb4.3						
VIVF	**Saint-Julien-l**	**82.74**	**340**	*e*P	**P**	**23 34 56.4**	**+0.7**
	comp=Z,7.1nm,0.9s,mb4.2						
RJF	**Les Rejaudoux**	**82.98**	**342**	*e*P	**P**	**23 34 57.3**	**+0.4**
	comp=Z,12nm,1.2s,mb4.3						
SBF	**Sospel**	**83.02**	**338**	*e*P	**P**	**23 34 57.1**	**-0.1**
CAF	**Calviac**	**83.23**	**342**	*e*P	**P**	**23 34 59.0**	**+0.8**
	comp=Z,6.8nm,0.7s,mb4.3						
SMRF	**Simiane la Rot**	**83.36**	**339**	*e*P	**P**	**23 35 00.0**	**+1.1**
	comp=Z,8.4nm,0.9s,mb4.3						
LFF	**La Frestale**	**83.48**	**343**	*e*P	**P**	**23 35 00.2**	**+0.7**
FRF	**La Foret Royal**	**83.50**	**338**	*e*P	**P**	**23 34 59.7**	**+0.2**
	comp=Z,5.7nm,0.9s,mb4.1						
LASF	**Ste Croix**	**83.66**	**340**	*e*P	**P**	**23 35 01.3**	**+1.0**
LMR	**La Mourre**	**83.75**	**338**	*e*P	**P**	**23 35 01.1**	**+0.3**
	comp=Z,18nm,1.1s,mb4.5						
PGF	**Pioggiola**	**83.86**	**336**	*e*P	**P**	**23 35 01.4**	**+0.1**
	comp=Z,12nm,0.8s,mb4.4						
MTLF	**Montolieu**	**84.72**	**341**	*e*P	**P**	**23 35 06.3**	**+0.7**
	comp=Z,8.5nm,1.1s,mb4.3						
EPF	**Esparros**	**85.40**	**342**	*e*P	**P**	**23 35 10.2**	**+1.2**
	comp=Z,2.2nm,0.5s,mb4.1						

WEL ***15*** *23:56:16.0±0.1, 41.73S×171.98E, h7km±1km, ML4.1/14, Error ellipse: s-maj=0.8km s-min=0.7km az=90.0*
NEIC ***15*** *23:56:16.0, 41.73S×171.99E, h8km, mb3.8/1, ML4.1(WEL), After WEL.*

ISC 15 23:56:14.9±0.5, 41.73S±0.03×171.82E±0.04, h21km±3km, n82, σ0§82/97, 4D, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DSZ	**Denniston Nort**	**0.02**	**221**	⇑PG	**Pb**	**23 56 19.0**	**+0.4**
DSZ				SG	**Sb**	**23 56 21.3**	**+0.3**
DSZ	**Denniston Nort**	**0.02**	**221**	P	**Pb**	**23 56 19.0**	**+0.5**
DSZ				S	**Sb**	**23 56 21.3**	**+0.3**
THZ	**Tophouse**	**0.81**	**93**	P*	**Pb**	**23 56 28.8**	**-1.4**
THZ				*eS**	**Sb**	**23 56 38.9**	**-1.7**
THZ	**Tophouse**	**0.81**	**93**	P	**Pb**	**23 56 28.9**	**-1.3**
QRZ	**Quartz Range**	**1.05**	**31**	⇑P*	**Pb**	**23 56 34.2**	**0.0**
QRZ				S*	**Sb**	**23 56 47.7**	**+0.2**
QRZ	**Quartz Range**	**1.05**	**31**	P	**Pb**	**23 56 34.2**	**-0.1**
QRZ				S	**Sb**	**23 56 47.6**	**0.0**
LTZ	**Lake Taylor**	**1.10**	**163**	⇑P*	**Pb**	**23 56 36.0**	**+0.8**
LTZ				S*	**Sb**	**23 56 50.0**	**+0.9**
LTZ	**Lake Taylor**	**1.10**	**163**	P	**Pb**	**23 56 36.0**	**+0.8**
LTZ				S	**Sb**	**23 56 50.0**	**+0.9**
NNZ	**Nelson**	**1.28**	**67**	P*	**Pb**	**23 56 37.2**	**-0.9**
NNZ				S*	**Sb**	**23 56 53.3**	**-0.9**
NNZ	**Nelson**	**1.28**	**67**	P	**Pn**	**23 56 37.2**	**-0.6**
KHZ	**Kahutara**	**1.45**	**119**	PN	**Pn**	**23 56 41.3**	**+1.0**
KHZ				*eS**	**Sb**	**23 56 60.0**	**+0.7**
KHZ	**Kahutara**	**1.45**	**119**	P	**Pn**	**23 56 41.3**	**+1.0**
BSWZ	**Blackbirch Sta**	**1.54**	**90**	⇑PN	**Pn**	**23 56 42.4**	**+0.9**
BSWZ				SN	**Sn**	**23 57 01.5**	**+0.5**
WVZ	**Waitaha Valley**	**1.57**	**211**	⇓PN	**Pn**	**23 56 43.1**	**+1.2**
WVZ				SN	**Sn**	**23 57 06.2**	**+4.4**
WVZ	**Waitaha Valley**	**1.57**	**211**	P	**Pn**	**23 56 43.1**	**+1.2**
TUWZ	**Tuamarina**	**1.62**	**80**	PN	**Pn**	**23 56 42.9**	**+0.2**
TUWZ				SN	**Sn**	**23 57 02.8**	**-0.3**
CMWZ	**Cape Campbell**	**1.79**	**91**	PN	**Pn**	**23 56 47.2**	**+2.0**
CRLZ	**Canterbury Las**	**1.94**	**163**	PN	**Pn**	**23 56 47.0**	**-0.2**
CRLZ	**Canterbury Las**	**1.94**	**163**	P	**Pn**	**23 56 47.3**	**+0.1**
MQZ	**McQueen's Vall**	**2.07**	**163**	PN	**Pn**	**23 56 48.7**	**-0.4**
MQZ				SN	**Sn**	**23 57 13.2**	**-1.4**
MQZ	**McQueen's Vall**	**2.07**	**163**	*e*P	**Pn**	**23 56 48.9**	**-0.2**
SNZO	**South Karori**	**2.21**	**80**	PN	**Pn**	**23 56 51.6**	**+0.5**
SNZO				*e*SN	**Sn**	**23 57 18.6**	**+0.5**
SNZO	**South Karori**	**2.21**	**80**	P	**Pn**	**23 56 51.7**	**+0.6**
MRW	**Makara Radio**	**2.22**	**78**	PN	**Pn**	**23 56 52.0**	**+0.7**
MRW				*e*SN	**Sn**	**23 57 18.8**	**+0.4**
MRW	**Makara Radio**	**2.22**	**78**	P	**Pn**	**23 56 52.0**	**+0.7**
WEL	**Wellington**	**2.26**	**80**	*e*PN	**Pn**	**23 56 52.5**	**+0.7**
WEL	**Wellington**	**2.26**	**80**	P	**Pn**	**23 56 53.0**	**+1.2**
BHW	**Baring Head**	**2.31**	**83**	PN	**Pn**	**23 56 52.8**	**+0.2**
BHW	**Baring Head**	**2.31**	**83**	P	**Pn**	**23 56 52.8**	**+0.2**
CAW	**Cannon Point**	**2.52**	**77**	PN	**Pn**	**23 56 55.6**	**0.0**
CAW	**Cannon Point**	**2.52**	**77**	P	**Pn**	**23 56 55.7**	**+0.1**
MSWZ	**Moikau Station**	**2.59**	**84**	PN	**Pn**	**23 56 56.1**	**-0.5**
MTW	**Mount Morrison**	**2.83**	**80**	PN	**Pn**	**23 56 58.7**	**-1.2**
MTW	**Mount Morrison**	**2.83**	**80**	P	**Pn**	**23 56 58.8**	**-1.1**
NRZ	**Ngariki Road**	**2.88**	**35**	*e*PN	**Pn**	**23 57 01.5**	**+0.8**
NRZ	**Ngariki Road**	**2.88**	**35**	P	**Pn**	**23 57 01.4**	**+0.7**
NWEZ	**Newall Road**	**2.91**	**33**	*e*PN	**Pn**	**23 57 01.9**	**+0.8**

MAT	**Matsushiro**	**6.60**	**333**	*eP*	**Pn**	**00 07 53.0**	**-0.1**
	12nm,0.7s						
MAT				S	**Sn**	**00 09 06.0**	**-2.0**
JMK	**Ichinoseki**	**8.27**	**357**	P	**P**	**00 08 13.2**	**-3.3**
JMK				S	**Sn**	**00 09 39.7**	**-10**
JNU	**Nakatsue**	**9.65**	**287**	LR	LR	00 12 19.0	
	comp=Z,50nm,18.2s,baz=337,slow=38						
MKAR	**Makanchi Array**	**48.03**	**307**	P	**P**	**00 14 54.6**	**+0.8**
	2.5nm,1.0s,mb4.2,baz=91,slow=9.6,SNR=11						
KURK	**Kurchatov**	**50.32**	**312**	*eP*	**P**	**00 15 11.7**	**+0.3**
KURK				*e*		00 15 23.6	
WB2	**Warramunga Arr**	**50.84**	**189**	⇓*i*P	**P**	**00 15 15.7**	**0.0**
WRA	**Warramunga Arr**	**50.84**	**189**	P	**P**	**00 15 15.8**	**+0.2**
	0.9nm,0.4s,mb4.0,baz=6.2,slow=7.6,SNR=14						
ASAR	**Alice Springs**	**54.57**	**189**	P	**P**	**00 15 43.2**	**-0.1**
	0.6nm,0.7s,mb3.7,baz=16,slow=13,SNR=7.9						
ILAR	**Eielson Array**	**54.74**	**30**	P	**P**	**00 15 44.9**	**+0.8**
	0.3nm,0.8s,mb3.4,baz=243,slow=6.0,SNR=3.3						
BVAR	**Borovoye Array**	**55.25**	**316**	P	**P**	**00 15 48.6**	**+0.6**
	1.7nm,0.9s,mb4.1,baz=93,slow=7.8,SNR=8.5						
BRVK	**Borovoye**	**55.31**	**316**	P	**P**	**00 15 46.1**	**-2.3**
FINES	**FINESS Array B**	**74.63**	**333**	P	**P**	**00 17 54.1**	**+1.0**
	1.7nm,0.9s,mb4.0,baz=45,slow=5.4,SNR=7.4						
TXAR	**Lajitas Array**	**93.69**	**53**	LR	LR	00 54 32.4	
	comp=Z,83nm,20.0s,MS4.2,baz=120,slow=31						

IDC 16 00:06:24.4±20.0, 5.33N×94.17W, mb3.5/3, mb1 3.9/3, mb1mx3.6/17, MS3.4/2, Ms1 3.4/2, ms1mx2.8/17, Error ellipse: s-maj=632.0km s-min=178.9km az=42.0, Eastcentral Pacific Ocean

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
TXAR	**Lajitas Array**	**25.51**	**340**	P	P	00 11 56.2	-0.1
	0.4nm,0.8s,baz=163,slow=12,SNR=3.6						
TXAR				LR	LR	00 21 41.3	
	comp=Z,93nm,19.1s,baz=300,slow=36						
PDAR	**Pinedale Array**	**39.70**	**342**	P	P	00 13 57.2	-3.0
	0.8nm,0.7s,baz=139,slow=8.3,SNR=8.3						
YKA	**Yellowknife Ar**	**59.00**	**349**	P	P	00 16 25.8	-2.3
	0.5nm,0.8s,baz=159,slow=7.6,SNR=9.3						
YKA				LR	LR	00 41 03.5	
	comp=Z,32nm,19.3s,baz=140,slow=35						
PGP	**Puerto Galera**	**140.43**	**299**	*eP*	PKPdf	00 26 01.5	+3.0

DJA 16 00:23:48.7±1.0, 9.94S×116.30E, h160km, MD4.4/2, ML3.5/2, 5C-2D, Error ellipse: s-maj=29.5km s-min=19.3km az=158.0, Sumbawa region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RATI	**Rata**	**1.43**	**328**	⇓*i*Pn	P	00 24 18.3	-0.3
KEDI	**Kedomdong**	**1.46**	**353**	⇓*i*Pn	P	00 24 18.6	-0.3
	43nm,0.2s						
KEDI	**Kedomdong**	**1.46**	**353**	⇑*i*P	P	00 24 19.4	+0.5
KEDI				⇑*i*Sn	S	00 24 41.1	-1.1
INGI	**Ingas**	**1.59**	**314**	⇑*i*Pn	P	00 24 19.7	-0.6
KELI	**Kelakatan**	**2.47**	**314**	⇑*i*Pn	P	00 24 31.0	+0.5
	20nm,0.2s						
KELI				⇑*i*Sn	S	00 25 00.1	-2.5

IDC 16 00:28:02.2±1.8, 3.25S×140.88E, mb3.7/4, mb1 4.0/6, mb1mx3.9/14, ML3.2/2, Error ellipse: s-maj=43.9km s-min=24.3km az=77.0
NEIC 16 00:28:08.4±1.1, 3.34S×141.00E, h50km, mb3.6/1, Error ellipse: s-maj=19.7km s-min=13.9km az=70.0
ISC 16 00:28:06.2±1.2, 3.3S±0.1×141.1E±0.1, h50km, n10, σ0$71/10, mb3.7/4, 1C, New Guinea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**8.56**	**135**	Pn	**P**	**00 30 10.1**	**0.0**
	0.3nm,0.3s,baz=328,slow=13,SNR=2.5						
WRAB	**Tennant Creek**	**17.75**	**201**	*eP*	**P**	**00 32 11.2**	**-0.2**
WB2	**Warramunga Arr**	**17.76**	**201**	⇑*i*P	**P**	**00 32 12.0**	**+0.5**
WB2				*e*S	x	00 34 40.1	
WRA	**Warramunga Arr**	**17.76**	**201**	P	**P**	**00 32 11.2**	**-0.4**
	0.2nm,0.3s,baz=18,slow=13,SNR=12						
FITZ	**Fitzroy Crossi**	**21.05**	**225**	*eP*	**P**	**00 32 47.5**	**-0.9**
	3.0nm,0.9s,mb3.6						
FITZ	**Fitzroy Crossi**	**21.05**	**225**	P	**P**	**00 32 47.7**	**-0.7**
	3.0nm,1.1s,mb3.5,baz=35,slow=13,SNR=2.8						
AS12	**Alice Springs**	**21.36**	**198**	*eP*	**P**	**00 32 53.6**	**+2.2**
	7.8nm,1.2s,mb3.9						
ASAR	**Alice Springs**	**21.36**	**198**	P	**P**	**00 32 51.1**	**-0.2**
	2.3nm,0.9s,mb3.5,baz=28,slow=10,SNR=8.1						
CMAR	**Chiang Mai Arr**	**46.77**	**299**	P	**P**	**00 36 33.7**	**+0.8**
	0.6nm,0.3s,mb4.0,baz=124,slow=6.5,SNR=4.4						
MKAR	**Makanchi Array**	**71.71**	**322**	P	**P**	**00 39 24.2**	**-0.7**
	0.6nm,0.6s,mb3.7,baz=99,slow=6.8,SNR=6.8						

IDC 16 01:13:03.2±6.2, 32.30S×179.82E, h332km±67km, mb3.3/4, mb1 3.4/5, mb1mx3.4/12, Error ellipse: s-maj=74.9km s-min=36.6km az=7.0
NEIC 16 01:13:05.0±3.7, 32.41S×179.66E, h343km±29km, mb3.8/1, Error ellipse: s-maj=50.6km s-min=28.6km az=222.0
ISC 16 01:13:05.4±1.5, 32.4S±0.1×179.5E±0.2, h351km±16km, n31, σ1$06/37, mb3.4/5, 1C, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PUZ	**Puketiti**	**5.71**	**190**	P	**P**	**01 14 33.7**	**+0.2**
PUZ				S	**S**	**01 15 44.1**	**+1.4**
PUZ	**Puketiti**	**5.71**	**190**	*eP*	**P**	**01 14 33.7**	**+0.2**
PUZ				S	**S**	**01 15 44.1**	**+1.4**
URZ	**Urewera**	**6.12**	**198**	P	**P**	**01 14 37.8**	**-0.4**
	6.2nm,0.3s,baz=280,slow=3.2,SNR=31						
URZ				S	**S**	**01 15 53.2**	**+2.0**
	16nm,0.3s,baz=235,slow=23,SNR=17						
URZ	**Urewera**	**6.12**	**198**	P	**P**	**01 14 38.0**	**-0.2**
TOZ	**Tahuroa Road**	**6.21**	**211**	P	**P**	**01 14 42.3**	**+3.1**
MGZ	**Maungaku**	**7.29**	**205**	P	**P**	**01 14 53.3**	**+1.4**
NGZ	**Ngauruhoe**	**7.42**	**204**	P	**P**	**01 14 54.2**	**+0.7**
FWVZ	**Far West T-bar**	**7.51**	**204**	P	**P**	**01 14 55.0**	**+0.5**
FWVZ	**Far West T-bar**	**7.51**	**204**	*eP*	**P**	**01 14 55.0**	**+0.5**
PWZ	**Pawanui**	**7.86**	**195**	P	**P**	**01 14 58.2**	**-0.5**
TSZ	**Takapari Road**	**8.12**	**200**	P	**P**	**01 15 00.6**	**-1.1**
BFZ	**Birch Farm**	**8.63**	**197**	P	**P**	**01 15 06.9**	**-0.8**
BFZ				S	**S**	**01 16 44.6**	**+0.3**
BFZ	**Birch Farm**	**8.63**	**197**	*eP*	**P**	**01 15 06.9**	**-0.8**
MRZ	**Mangatainoka R**	**8.79**	**200**	P	**P**	**01 15 07.6**	**-2.0**
MRZ				S	**S**	**01 16 45.5**	**-2.2**
MTW	**Mount Morrison**	**9.27**	**199**	*eP*	**P**	**01 15 15.3**	**-0.1**
CAW	**Cannon Point**	**9.35**	**201**	*eP*	**P**	**01 15 16.1**	**-0.2**
CAW				*e*S	**S**	**01 17 00.1**	**+0.3**
SNZO	**South Karori**	**9.64**	**202**	*ePn*	**P**	**01 15 15.1**	**-4.8**
SNZO				*e*S	**S**	**01 17 06.0**	**-0.2**
QRZ	**Quartz Range**	**10.06**	**212**	*eP*	**P**	**01 15 23.9**	**-1.0**
QRZ	**Quartz Range**	**10.06**	**212**	*eP*	**P**	**01 15 25.1**	**+0.2**
THZ	**Tophouse**	**10.68**	**208**	*eP*	**P**	**01 15 30.4**	**-2.0**
THZ	**Tophouse**	**10.68**	**208**	*eP*	**P**	**01 15 30.9**	**-1.5**
KHZ	**Kahutara**	**11.02**	**204**	P	**P**	**01 15 35.6**	**-0.8**
KHZ	**Kahutara**	**11.02**	**204**	*eP*	**P**	**01 15 35.6**	**-0.8**
STKA	**Stephens Creek**	**31.98**	**261**	P	**P**	**01 19 03.0**	**+1.5**
	2.1nm,0.7s,mb3.5,baz=94,slow=13,SNR=2.9						
CTA	**Charters Tower**	**32.11**	**284**	P	**P**	**01 19 03.2**	**+0.4**
	1.1nm,0.6s,mb3.3,baz=107,slow=14,SNR=4.3						
CTA	**Charters Tower**	**32.11**	**284**	P	**P**	**01 19 03.2**	**+0.4**
ASAR	**Alice Springs**	**40.91**	**270**	P	**P**	**01 20 16.0**	**-0.1**
	0.7nm,0.7s,mb3.0,baz=111,slow=7.7,SNR=8.5						
WB2	**Warramunga Arr**	**42.09**	**276**	⇑*i*P	**P**	**01 20 25.2**	**-0.4**
WRA	**Warramunga Arr**	**42.10**	**276**	P	**P**	**01 20 25.3**	**-0.4**
	1.5nm,0.3s,mb3.6,baz=114,slow=7.7,SNR=17						
QSPA	**South Pole Qui**	**57.67**	**180**	*eP*	**P**	**01 22 22.4**	**+1.0**
	3.3nm,0.9s,mb3.7						
FINES	**FINESS Array B**	**146.26**	**337**	PKPbc	PKPbc	01 32 03.3	-0.5
	0.8nm,0.7s,baz=45,slow=2.7,SNR=8.6						

IDC 16 01:22:26.5±4.4, 16.03S×173.92W, mb3.7/3, mb1 4.0/3, mb1mx3.8/13, Error ellipse: s-maj=221.0km s-min=35.4km az=143.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**49.22**	**257**	P	P	01 31 17.3	-1.6
	0.3nm,0.5s,baz=91,slow=7.0,SNR=3.9						
ASAR	**Alice Springs**	**49.44**	**252**	P	P	01 31 18.4	-2.2
	0.8nm,0.6s,baz=89,slow=8.1,SNR=14						
ILAR	**Eielson Array**	**83.16**	**11**	P	P	01 34 54.4	-1.1
	0.4nm,0.6s,baz=212,slow=5.6,SNR=4.2						
ARCES	**ARCESS Array B**	**125.16**	**352**	PKP	PKPdf	01 41 27.9	-2.7
	1.8nm,0.9s,baz=18,slow=2.9,SNR=3.9						

NEIC 16 01:29:39.3, 37.28N×114.84W, ML4.5(REN), After REN.
NEIC Felt [IV] at Alamo. Also felt at Caliente, Henderson and Mesquite.
BJI 16 01:29:39.2, 37.30N×114.80W, h5km, mB4.8, mb4.5, Ms4.3, Msz4.1
IDC 16 01:29:41.0±1.1, 37.32N×114.99W, mb3.4/3, mb1 3.9/9, mb1mx3.7/25, ML3.5/6, MS3.2/6, Ms1 3.3/6, ms1mx3.0/17, Error ellipse: s-maj=15.2km s-min=8.1km az=8.0
ISC 16 01:29:39.1±0.3, 37.32N±0.03×114.97W±0.03, n70, σ0$97/68, mb3.7/4, MS3.5/5, Southern Nevada

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
NEN	**Nelson**	**1.67**	**177**	*ePn*	**Pn**	**01 30 10.1**	**+0.4**
TPH	**Tonopah**	**1.94**	**294**	*ePn*	**Pn**	**01 30 14.1**	**+0.4**
LDFC	**Landfair**	**2.24**	**183**	*ePn*	**Pn**	**01 30 17.5**	**-0.4**
DAC	**Darwin (Calif)**	**2.35**	**245**	*ePn*	**Pn**	**01 30 19.4**	**-0.1**
MVU	**Marysvale**	**2.48**	**61**	*ePn*	**Pn**	**01 30 21.9**	**+0.6**
MSU	**Marysvale**	**2.51**	**61**	*ePn*	**Pn**	**01 30 22.5**	**+0.7**
NVAR	**Mina Array Bea**	**2.86**	**294**	Pn	**Pn**	**01 30 26.8**	**0.0**
	14nm,0.3s,baz=117,slow=14,SNR=163						
NVAR				Pg	**Pg**	**01 30 32.8**	**-3.4**
	40nm,0.3s,baz=112,slow=15,SNR=36						
NVAR				Lg		01 31 11.5	
	50nm,0.3s,baz=101,slow=32,SNR=4.2						
NVAR				LR	LR	01 31 54.6	
	comp=Z,232nm,18.3s,baz=115,slow=47						
MTUM	**Tungsten Hills**	**2.87**	**272**	*ePn*	**Pn**	**01 30 27.4**	**+0.5**
WUAZ	**Wupatki**	**3.41**	**121**	*ePn*	**Pn**	**01 30 34.6**	**0.0**
NLU	**North Lily Min**	**3.47**	**40**	*ePn*	**Pn**	**01 30 36.8**	**+1.3**
BMN	**Battle Mountai**	**3.57**	**331**	*ePn*	**Pn**	**01 30 36.7**	**-0.2**
MPU	**Maple Canyon**	**3.75**	**43**	*ePn*	**Pn**	**01 30 38.4**	**-1.0**
PFO	**Pinyon Flat Ob**	**3.90**	**199**	*ePn*	**Pn**	**01 30 41.2**	**-0.3**
BGU	**Big Grassy Mou**	**3.91**	**22**	*ePn*	**Pn**	**01 30 41.2**	**-0.4**
SRU	**San Rafael**	**3.93**	**62**	*ePn*	**Pn**	**01 30 43.3**	**+1.3**
MWC	**Mount Wilson**	**3.98**	**220**	*ePn*	**Pn**	**01 30 44.3**	**+1.6**
CTU	**Camp Tracy**	**4.20**	**36**	*ePn*	**Pn**	**01 30 44.5**	**-1.3**
PAHR	**Pah Rah Range**	**4.21**	**306**	*ePn*	**Pn**	**01 30 46.4**	**+0.5**
DAU	**Daniels Canyon**	**4.24**	**42**	*ePn*	**Pn**	**01 30 46.9**	**+0.6**
WCN	**Washoe City**	**4.25**	**299**	*ePn*	**Pn**	**01 30 46.0**	**-0.7**
JLU	**Jordanelle**	**4.27**	**39**	*ePn*	**Pn**	**01 30 46.8**	**-0.1**
CMB	**Columbia Colle**	**4.36**	**281**	*ePn*	**Pn**	**01 30 47.7**	**-0.4**
SPUT	**South Promonto**	**4.44**	**25**	*ePn*	**Pn**	**01 30 49.1**	**-0.1**
TCUT	**Toone Canyon**	**4.69**	**35**	*ePn*	**Pn**	**01 30 54.4**	**+1.5**
HVU	**Hansel Valley**	**4.77**	**20**	*ePn*	**Pn**	**01 30 53.1**	**-0.8**
PV10	**Paradox Valley**	**4.81**	**76**	*ePn*	**Pn**	**01 30 54.9**	**+0.4**
BAR	**Barrett**	**4.83**	**197**	*ePn*	**Pn**	**01 30 54.5**	**-0.4**
BEKR	**Beckwourth**	**4.93**	**303**	*ePn*	**Pn**	**01 30 56.5**	**+0.3**
LRV	**Little Rabbit**	**4.93**	**261**	P	**Pn**	**01 30 56.7**	**+0.4**
HWUT	**Hardware Ranch**	**5.03**	**31**	*ePn*	**Pn**	**01 30 58.1**	**+0.6**
PV01	**Paradox Valley**	**5.14**	**79**	*ePn*	**Pn**	**01 30 59.4**	**+0.3**
SAO	**San Andreas Ge**	**5.21**	**266**	Pn	**Pn**	**01 31 00.2**	**0.0**
OHCM	**Honcut**	**5.50**	**293**	*ePn*	**Pn**	**01 31 04.2**	**-0.1**
WVOR	**Wild Horse Val**	**5.84**	**332**	*ePn*	**Pn**	**01 31 09.8**	**+0.8**
TUC	**Tucson**	**6.07**	**144**	*ePn*	**Pn**	**01 31 11.7**	**-0.5**
MOD	**Modoc**	**6.16**	**320**	*ePn*	**Pn**	**01 31 12.9**	**-0.6**
HLID	**Hailey**	**6.25**	**4**	*ePn*	**Pn**	**01 31 13.3**	**-1.5**
REDW	**Red Top Meadow**	**6.81**	**26**	*ePn*	**Pn**	**01 31 22.6**	**-0.1**
PDAR	**Pinedale Array**	**6.84**	**36**	Pn	**Pn**	**01 31 24.5**	**+1.3**
	0.9nm,0.3s,baz=216,slow=12,SNR=72						
PDAR				Pg	**Pg**	**01 31 46.8**	**-8.9**
	1.0nm,0.3s,baz=216,slow=12,SNR=7.7						
PDAR				Lg		01 33 15.2	
	1.1nm,0.3s,baz=202,slow=24,SNR=4.2						
LAZ	**Ladron**	**6.99**	**112**	*ePn*	**Pn**	**01 31 24.2**	**-1.0**
KSWY	**Kelly School**	**7.11**	**26**	*ePn*	**Pn**	**01 31 27.8**	**+0.8**
LENM	**Lemitar**	**7.22**	**113**	P	**Pn**	**01 31 27.6**	**-0.9**
ANMO	**Albuquerque**	**7.28**	**106**	*ePn*	**Pn**	**01 31 27.4**	**-1.9**
YBH	**Yreka Blue Hor**	**7.43**	**309**	Pn	**Pn**	**01 31 32.2**	**+0.8**
	0.1nm,0.3s,baz=126,slow=8.0,SNR=7.4						
YBH				Lg		01 33 35.6	
	0.4nm,0.3s,baz=335,slow=21,SNR=5.7						
BNM	**Barren Site**	**7.48**	**113**	*ePn*	**Pn**	**01 31 31.1**	**-1.1**
SDCO	**Great Sand Dun**	**7.53**	**84**	Pn	**Pn**	**01 31 32.6**	**-0.3**
MCMT	**McKenzie Canyo**	**7.67**	**11**	*ePn*	**Pn**	**01 31 38.0**	**+3.3**
QLMT	**Earthquake Lak**	**7.97**	**18**	*ePn*	**Pn**	**01 31 38.2**	**-0.7**
LKWY	**Lake**	**8.02**	**24**	Pn	**P**	**01 31 39.9**	**+0.2**
HUMO	**Hull Mountain**	**8.09**	**313**	*ePn*	**P**	**01 31 39.9**	**-0.8**
BOZ	**Bozeman (W)**	**8.69**	**16**	*ePn*	**P**	**01 31 46.4**	**-2.6**
LNOR	**Lincton Mounta**	**8.90**	**345**	Pn	**P**	**01 31 47.8**	**-4.1**
CHMT	**Chamberlain Mo**	**9.67**	**7**	*ePn*	**P**	**01 32 03.4**	**+0.9**
MNTX	**Cornudas Mount**	**9.69**	**123**	*ePn*	**P**	**01 32 04.5**	**+1.7**
RSSD	**Black Hills**	**10.72**	**47**	*ePn*	**P**	**01 32 14.0**	**-2.9**
NEW	**Newport**	**11.05**	**352**	Pn	**P**	**01 32 22.2**	**+0.8**
	0.1nm,0.3s,baz=229,slow=4.9,SNR=3.0						
NEW				Lg		01 35 28.4	
	0.2nm,0.3s,baz=118,slow=23,SNR=3.7						
NEW	**Newport**	**11.05**	**352**	*ePn*	**P**	**01 32 19.6**	**-1.8**
TXAR	**Lajitas Array**	**12.35**	**127**	Pn	**P**	**01 32 41.8**	**+2.7**
	0.0nm,0.3s,baz=302,slow=12,SNR=7.5						
TXAR				Lg		01 36 17.9	
	0.1nm,0.3s,baz=324,slow=28,SNR=4.1						
BBB	**Bella Bella**	**17.51**	**332**	LR	LR	01 41 33.3	
	comp=Z,62nm,20.1s,baz=106,slow=41						
ULM	**Lac du Bonnet**	**18.83**	**41**	P	**P**	**01 34 02.2**	**-0.2**
	0.2nm,0.3s,baz=219,slow=6.8,SNR=3.0						
DLBC	**Dease Lake**	**23.32**	**340**	P	**P**	**01 34 50.6**	**+1.3**
	1.2nm,0.8s,mb3.5,baz=178,slow=6.1,SNR=1.9						
DLBC				LR	LR	01 45 49.2	
	comp=Z,57nm,18.9s,MS3.0,baz=333,slow=42						
YKA	**Yellowknife Ar**	**25.20**	**0**	P	**P**	**01 35 07.6**	**+0.1**
	0.5nm,0.6s,mb3.4,baz=179,slow=9.7,SNR=28						
YKA	**Yellowknife Ar**	**25.20**	**0**	P	**P**	**01 35 07.6**	**+0.1**
ILAR	**Eielson Array**	**33.34**	**336**	P	**P**	**01 36 20.9**	**+0.4**
	0.6nm,0.9s,mb3.5,baz=139,slow=7.9,SNR=5.6						
JMIC	**Jan Mayen**	**60.24**	**21**	LR	LR	02 04 52.6	
	comp=Z,25nm,18.6s,MS3.4,baz=225,slow=35						
ARCES	**ARCESS Array B**	**69.59**	**14**	LR	LR	02 12 27.4	
	comp=Z,21nm,19.1s,MS3.4,baz=245,slow=37						
NOA	**NORSAR Array B**	**72.65**	**24**	LR	LR	02 12 00.9	
	comp=Z,28nm,19.2s,MS3.6,baz=310,slow=35						
MDJ	**Mudanjiang**	**79.75**	**319**	P	**P**	**01 41 48.5**	**-1.7**
MDJ				AMB	AMB		
	comp=Z,3.0nm,0.7s,mb4.3						
MDJ				AMB	AMB		
	comp=Z,50nm,4.7s						
CN2	**Changchun**	**82.45**	**321**	*eP*	**P**	**01 42 03.8**	**-0.6**
WMQ	**Urumqi**	**96.66**	**344**	*eP*	**P**	**01 43 12.4**	**+0.3**
WMQ				PCP	PcP	01 43 12.8	+0.3
WMQ				PP	PP	01 47 09.6	+0.5
WMQ				S	S	01 54 31.6	+0.5
WMQ				AMB	AMB		
	comp=Z,16nm,8.2s						
WMQ				LR	LR		
	comp=N,61nm,21.6s,MS4.2						
WMQ				LR	LR		
	comp=E,64nm,21.7s,MS4.2						
WMQ				LR	LR		
	comp=Z,99nm,23.2s,MS4.2						

LDG 16 01:45:43.3±0.0, 44.82N×3.62E, h5km, Md2.1/2, Ml1.7/12, Error ellipse: s-maj=0.8km s-min=0.6km az=72.0
NEIC 16 01:45:43.3, 44.82N×3.62E, h5km, ML2.1(STR), ML1.7(LDG), After LDG.
STR 16 01:45:43.6±0.5, 44.85N×3.63E, h10km±1km, Ml2.1, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0
ISC 16 01:45:41.4±0.4, 44.83N±0.02×3.60E±0.03, h13km±4km, n17, σ1$04/38, France

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
LBL	**Lubilhac**	**0.47**	**328**	Pg	**Pg**	**01 45 52.6**	**+1.5**
LBL				Sg	**Sg**	**01 45 59.4**	**+1.9**
COLF	**Collangettes**	**0.69**	**5**	Pg	**Pg**	**01 45 56.0**	**+0.7**
COLF				Sg	**Sg**	**01 46 06.1**	**+1.5**
VIVF	**Saint-Julien-l**	**0.76**	**88**	*ePg*	**Pg**	**01 45 57.4**	**+0.6**
VIVF				*ePn*	**Pn**	**01 45 58.9**	**+1.2**
VIVF				*eSg*	**Sg**	**01 46 07.3**	**+0.2**
	4.4nm,0.2s						
LASF	**Ste Croix**	**0.78**	**166**	*ePg*	**Pg**	**01 45 57.8**	**+0.7**
LASF				*ePn*	**Pn**	**01 45 59.2**	**+1.3**
LASF				*eSg*	**Sg**	**01 46 07.7**	**+0.1**
	2.5nm,0.1s						
PYM	**Petit Puy Mans**	**1.01**	**336**	Pg	**Pg**	**01 46 03.2**	**+1.5**
PYM				Sg	**Sg**	**01 46 16.6**	**+1.4**
CAF	**Calviac**	**1.10**	**275**	*ePg*	**Pg**	**01 46 04.1**	**+0.7**
CAF				*eSg*	**Sg**	**01 46 18.9**	**+0.8**
	3.7nm,0.2s						
PLDF	**La Plantade**	**1.14**	**1**	Pg	**Pg**	**01 46 04.8**	**+0.6**
PLDF				Sg	**Sg**	**01 46 20.1**	**+0.7**
RJF	**Les Rejaudoux**	**1.55**	**288**	*ePg*	**Pg**	**01 46 12.5**	**+0.1**
RJF				*eSg*	**Sg**	**01 46 32.7**	**-0.5**
	0.8nm,0.1s						
ORIF	**Oris-en-Rattie**	**1.62**	**86**	*eSg*	**Sg**	**01 46 34.3**	**-1.3**
	0.4nm,0.2s						
SMRF	**Simiane la Rot**	**1.65**	**121**	*eSg*	**Sg**	**01 46 35.7**	**-0.9**
	0.9nm,0.4s						
TCF	**Toulx Ste Croi**	**1.75**	**327**	*ePg*	**Pg**	**01 46 16.2**	**-0.3**
TCF				*eSg*	**Sg**	**01 46 39.3**	**-0.6**
	1.0nm,0.2s						
MTLF	**Montolieu**	**1.79**	**214**	*ePn*	**Pn**	**01 46 13.3**	**+0.8**
MTLF				*ePg*	**Pg**	**01 46 16.5**	**-0.8**
MTLF				*eSg*	**Sg**	**01 46 39.5**	**-1.8**
	0.9nm,0.2s						
BGF	**Bois d'Agland**	**1.80**	**343**	*ePg*	**Pg**	**01 46 17.1**	**-0.4**
BGF				*eSn*	**Sn**	**01 46 35.5**	**0.0**
BGF				*eSg*	**Sg**	**01 46 40.7**	**-0.9**
	3.1nm,0.3s						
SMF	**Signal de Mont**	**1.82**	**5**	*ePg*	**Pg**	**01 46 17.4**	**-0.4**
SMF				*eSn*	**Sn**	**01 46 36.0**	**+0.1**
SMF				*eSg*	**Sg**	**01 46 40.4**	**-1.7**
	0.7nm,0.2s						
AVF	**Avril sur Loir**	**1.96**	**355**	*ePg*	**Pg**	**01 46 19.9**	**-0.8**
AVF				*eSn*	**Sn**	**01 46 39.3**	**-0.3**
AVF				*eSg*	**Sg**	**01 46 44.8**	**-2.1**
	0.8nm,0.3s						
LFF	**La Frestale**	**2.04**	**274**	*ePg*	**Pg**	**01 46 21.2**	**-0.9**
LFF				*eSg*	**Sg**	**01 46 48.1**	**-1.2**
	2.1nm,0.3s						
SSF	**Saint Saulge**	**2.23**	**358**	*eSn*	**Sn**	**01 46 45.7**	**-0.6**
SSF				*eSg*	**Sg**	**01 46 52.6**	**-3.1**
	0.5nm,0.2s						

IDC 16 01:49:11.7±9.1, 2.85S×139.58E, mb3.6/2, mb1 3.7/3, mb1mx3.5/12, ML3.4/1, Error ellipse: s-maj=166.0km s-min=99.8km az=134.0, Near north coast of Irian Jaya

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WB2	**Warramunga Arr**	**17.74**	**196**	*eP*	P	01 53 22.7	+0.7
WRA	**Warramunga Arr**	**17.75**	**196**	P	P	01 53 20.7	-1.3
	0.1nm,0.3s,baz=17,slow=12,SNR=3.6						
ASAR	**Alice Springs**	**21.41**	**194**	P	P	01 54 00.6	-3.0
	0.6nm,0.7s,baz=30,slow=9.5,SNR=4.2						
STKA	**Stephens Creek**	**28.94**	**176**	P	P	01 55 13.4	-1.6
	1.6nm,0.7s,baz=335,slow=17,SNR=3.3						

IDC 16 02:03:10.4±1.2, 3.26S×141.56E, mb3.6/4, mb1 4.0/6, mb1mx3.9/15, ML3.6/2, MS3.1/1, Ms1 3.1/1, ms1mx2.4/18, Error ellipse: s-maj=39.1km s-min=24.3km az=100.0
NEIC 16 02:03:15.1±8.5, 3.34S×141.59E, h29km±60km, mb4.0/2, Error ellipse: s-maj=32.0km s-min=16.7km az=156.0
ISC 16 02:03:12.9±1.0, 3.3S±0.1×141.6E±0.1, h29km, n13, σ0$61/13, mb3.6/4, MS2.9/1, 2D, New Guinea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**8.16**	**138**	Pn	**P**	**02 05 12.6**	**+0.2**
	1.1nm,0.3s,baz=318,slow=16,SNR=2.7						
WRAB	**Tennant Creek**	**17.96**	**203**	*eP*	**P**	**02 07 22.2**	**-0.2**
	22nm,0.9s						
WB2	**Warramunga Arr**	**17.97**	**203**	⇓*i*P	**P**	**02 07 22.6**	**+0.1**
WB2				*e*S	**S**	**02 10 43.4**	**+4.2**
WRA	**Warramunga Arr**	**17

JMA ***16*** *02:44:31.8±0.3,30.81N×142.18E, h39km, M4.2*
NEIC ***16*** *02:44:34.5±1.4,30.75N×142.04E, h36km±12km, mb4.2/3, Error ellipse: s-maj=14.9km s-min=7.4km az=88.0*
BJI ***16*** *02:44:34.9,31.38N×142.21E, h12km, mB4.4, mb4.2*

ISC 16 02:44:31.0±2.0, 30.72N±0.04×142.0E±0.1, h27km±15km, n36, σ0°95/43, mb3.9/16, MS4.6/1, 1D, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
JHJ	**Hachijo jima 2**	**3.02**	**323**	Pn		**Pn**	**02 45 17.5**	**-0.8**
	11nm,0.3s,baz=73,slow=19,SNR=4.2							
JHJ				Sn		**Sn**	**02 45 52.4**	**-1.6**
	18nm,0.3s,baz=73,slow=19,SNR=2.9							
CBIJ	**Chichi jima**	**3.62**	**177**	Pn		**Pn**	**02 45 26.9**	**+0.2**
	8.9nm,0.3s,baz=286,slow=19,SNR=10							
CBIJ				Sn		**Sn**	**02 46 07.0**	**-2.2**
	28nm,0.3s,baz=223,slow=22,SNR=6.7							
CBIJ	**Chichi jima**	**3.62**	**177**	P		**Pn**	**02 45 28.8**	**+2.0**
CBIJ				S		**Sn**	**02 46 07.8**	**-1.3**
BSO1	**Boso 1**	**4.01**	**348**	P		**Pn**	**02 45 31.5**	**-0.8**
BSO1				S		**Sn**	**02 46 18.8**	**-0.2**
JHHJ	**Haha-jima-NKT**	**4.08**	**177**	S		**Sn**	**02 46 19.7**	**-1.1**
BSO3	**Boso 3**	**4.25**	**344**	P		**Pn**	**02 45 36.5**	**+0.8**
JOD2	**Odawara 2**	**5.13**	**333**	P		**Pn**	**02 45 49.7**	**+1.5**
JOD2				S		**Sn**	**02 46 47.9**	**+0.6**
JRY	**Ryogami san**	**5.87**	**335**	P		**Pn**	**02 45 59.3**	**+0.7**
JRY				S		**Sn**	**02 47 05.2**	**-0.5**
MAJO	**Matsushiro**	**6.59**	**333**	*e*P		**Pn**	**02 46 09.2**	**+0.4**
	28nm,0.6s							
MAJO				*e*			02 46 21.1	
MAT	**Matsushiro**	**6.59**	**333**	P		**Pn**	**02 46 09.1**	**+0.3**
MAT				*e*S		**Sn**	**02 47 21.8**	**-2.1**
MAT	**Matsushiro**	**6.59**	**333**	P		**Pn**	**02 46 09.2**	**+0.4**
MAT				S		**Sn**	**02 47 24.2**	**+0.3**
MAT	**Matsushiro**	**6.59**	**333**	*e*P		**Pn**	**02 46 09.0**	**+0.2**
	17nm,0.7s							
MAT				S		**Sn**	**02 47 22.0**	**-1.9**
JMK	**Ichinoseki**	**8.23**	**356**	P		**P**	**02 46 29.4**	**-2.4**
JMK				S		**Sn**	**02 47 55.1**	**-10**
JNU	**Nakatsue**	**9.71**	**287**	LR		LR	02 50 44.3	
	comp=Z,67nm,18.1s,baz=139,slow=38							
ASAJ	**Asahikawa**	**13.38**	**2**	LR		LR	02 53 47.3	
	comp=Z,50nm,18.5s,baz=305,slow=42							
HHC	**Hu-ho-hao-te**	**26.52**	**301**	*e*P		**P**	**02 50 13.5**	**+5.3**
HHC				AMB		AMB		
	comp=Z,8.0nm,1.2s,mb4.1							
ULN	**Ulaanbaatar**	**31.64**	**313**	P		**P**	**02 50 53.9**	**0.0**
	comp=Z,3.0nm,1.0s,mb4.1							
ZAL	**Zalesovo**	**46.68**	**317**	P		**P**	**02 53 00.1**	**+1.1**
	comp=Z,1.4nm,0.3s,mb4.3,baz=311,slow=3.7,SNR=3.3							
MKAR	**Makanchi Array**	**48.07**	**307**	P		**P**	**02 53 11.3**	**+1.2**
	comp=Z,2.0nm,0.7s,mb4.2,baz=87,slow=9.8,SNR=16							
KURK	**Kurchatov**	**50.35**	**312**	*e*P		**P**	**02 53 27.8**	**+0.2**
WRAB	**Tennant Creek**	**50.89**	**189**	*e*P		**P**	**02 53 31.7**	**-0.3**
	comp=Z,9.2nm,0.8s,mb4.8							
WB2	**Warramunga Arr**	**50.90**	**189**	↓*i*P		**P**	**02 53 32.3**	**+0.2**
WRA	**Warramunga Arr**	**50.90**	**189**	P		**P**	**02 53 32.0**	**-0.1**
	comp=Z,1.4nm,0.3s,mb4.3,baz=6.0,slow=7.6,SNR=14							
FITZ	**Fitzroy Crossi**	**51.01**	**200**	*e*P		**P**	**02 53 33.1**	**+0.1**
	comp=Z,1.8nm,1.2s,mb3.9							
AS12	**Alice Springs**	**54.62**	**189**	*e*P		**P**	**02 54 00.5**	**+0.7**
	comp=Z,3.6nm,0.8s,mb4.5							
ASAR	**Alice Springs**	**54.62**	**189**	P		**P**	**02 53 59.6**	**-0.1**
	comp=Z,0.5nm,0.4s,mb3.9,baz=354,slow=4.6,SNR=14							
ILAR	**Eielson Array**	**54.66**	**30**	P		**P**	**02 53 59.3**	**-0.2**
	comp=Z,0.3nm,0.8s,mb3.4,baz=256,slow=6.2,SNR=3.9							
ZRNK	**Zerenda**	**56.12**	**316**	*e*P		**P**	**02 54 10.3**	**+0.1**
INK	**Inuvik**	**59.84**	**25**	P		**P**	**02 54 34.5**	**-1.6**
	comp=Z,0.3nm,0.6s,mb3.5,baz=294,slow=6.5,SNR=2.3							
STKA	**Stephens Creek**	**62.25**	**180**	P		**P**	**02 54 54.1**	**+1.0**
	comp=Z,2.9nm,1.0s,mb4.3,baz=21,slow=8.6,SNR=3.3							
YKA	**Yellowknife Ar**	**69.07**	**29**	P		**P**	**02 55 36.0**	**-0.2**
	comp=Z,0.4nm,1.1s,mb3.2,baz=288,slow=5.9,SNR=3.0							
FINES	**FINESS Array B**	**74.62**	**333**	P		**P**	**02 56 10.5**	**+1.3**
	comp=Z,0.8nm,0.5s,mb3.9,baz=62,slow=4.5,SNR=13							
AKASG	**Malin Array Be**	**79.59**	**323**	P		**P**	**02 56 37.0**	**0.0**
	comp=Z,0.3nm,0.4s,mb3.6,baz=44,slow=4.9,SNR=4.6							
NOA	**NORSAR Array B**	**80.18**	**338**	P		**P**	**02 56 39.9**	**-0.1**
	comp=Z,0.8nm,0.9s,mb3.6,baz=46,slow=4.7,SNR=2.6							
ASF	**Jabal al Asfar**	**85.43**	**305**	LR		LR	03 38 17.2	
	comp=Z,252nm,19.8s,MS4.6,baz=24,slow=38							
TXAR	**Lajitas Array**	**93.60**	**53**	P		**P**	**02 57 47.4**	**+1.1**
	comp=Z,0.2nm,0.8s,mb3.6,baz=297,slow=4.0,SNR=2.4							

IDC ***16*** *02:53:56.3±1.0, 6.61N×72.81W, h169km±12km, mb2.4/1, mb1 2.9/3, mb1mx2.7/21, Error ellipse: s-maj=75.0km s-min=7.6km az=132.0*

ISC 16 02:53:56.3±1.0, 6.9N±0.2×73.1W±0.2, h169km, n4, σ1°9°04/5, mb3.0/1, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
ROSC	**El Rosal**	**2.35**	**213**	P		**P**	**02 54 38.0**	**+0.8**
	14nm,0.3s,baz=95,slow=23,SNR=61							
ROSC				S		**S**	**02 55 07.9**	**-0.7**
	112nm,0.3s,baz=148,slow=21,SNR=23							
SDV	**Santo Domingo**	**3.14**	**50**	P		**P**	**02 54 47.8**	**+1.0**
	3.5nm,0.3s,baz=280,slow=8.8,SNR=20							
SDV				S		**S**	**02 55 24.9**	**-0.7**
	5.8nm,0.3s,baz=64,slow=19,SNR=23							
YKA	**Yellowknife Ar**	**63.25**	**340**	P		**P**	**03 04 08.5**	**-0.3**
	0.1nm,0.4s,mb3.0,baz=129,slow=6.7,SNR=4.1							
WRA	**Warramunga Arr**	**150.41**	**241**	PKPbc		PKPdf	03 13 28.3	+5.4
	0.6nm,0.8s,baz=117,slow=2.1,SNR=5.9							

CASC ***16*** *03:09:33.4±2.1, 13.99N×93.92W, MD4.6, ML4.6, mb4.0(NEIC)*
IDC ***16*** *03:09:48.2±5.9, 14.47N×93.27W, h35km±47km, mb3.7/8, mb1 3.9/10, mb1mx3.7/23, ML4.1/3, Error ellipse: s-maj=48.3km s-min=18.7km az=43.0*
NEIC ***16*** *03:09:49.7±1.1, 14.40N×93.22W, h56km±8km, mb4.0/7, MD4.3(MEX), Error ellipse: s-maj=15.0km s-min=8.1km az=206.0*
MEX ***16*** *03:09:52.3±0.6, 14.54N×93.29W, h20km±115km, MD4.4*

ISC 16 03:09:46.1±0.6, 14.34N±0.06×93.22W±0.04, h42km±6km, n56, σ1°35/70, mb4.0/11, 1C-1D, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
JAT	**Jato**	**1.53**	**90**	*e*P		**P**	**03 10 12.3**	**+0.8**
JAT				AML		AML	03 10 38.4	
	comp=E,7μm,0.4s							
CCIG	**Comitan**	**2.20**	**28**	*i* P		**P**	**03 10 23.3**	**+2.3**
CCIG				*i* S		**S**	**03 10 47.0**	**-0.1**
SCX	**San Cristobal**	**2.45**	**13**	*i* P		**P**	**03 10 27.0**	**+2.4**
SCX				*i* S		**S**	**03 11 00.0**	**+6.4**
IXG	**Ixpaco**	**2.68**	**93**	*e*P		**P**	**03 10 25.8**	**-2.1**
IXG				AML		AML	03 11 17.2	
	comp=N,4μm,0.5s							
NBG	**Las Nubes**	**2.79**	**84**	*e*P		**P**	**03 10 30.2**	**+0.8**
CMIG	**Matias Romero**	**3.18**	**330**	*e*P		**P**	**03 10 34.3**	**-0.6**
CMIG				*i* S		**S**	**03 11 10.2**	**-1.8**
CMIG	**Matias Romero**	**3.18**	**330**	*i* P		**P**	**03 10 35.5**	**+0.6**
CMIG				*i* S		**S**	**03 11 14.8**	**+2.8**
CUSS	**Cusmapa**	**3.20**	**97**	*e*P		**P**	**03 10 34.2**	**-1.0**
RBDL	**Robledal**	**3.43**	**93**	*e*P		**P**	**03 10 37.6**	**-0.9**
RTR	**El Retiro**	**3.49**	**97**	*e*P		**P**	**03 10 38.4**	**-0.9**
SBLS	**San Blas**	**3.52**	**98**	*e*P		**P**	**03 10 39.4**	**-0.3**
SNJE	**San Jose**	**3.53**	**97**	↑*e*P		**P**	**03 10 39.4**	**-0.6**
SNJE				*e*S		**S**	**03 11 31.0**	**+10**
TUIG	**Tuzandepetl**	**3.86**	**343**	*e*P		**P**	**03 10 47.4**	**+2.8**
BQQS	**Boqueron**	**3.87**	**98**	*e*P		**P**	**03 10 42.6**	**-2.1**
PICS	**Picacho**	**3.89**	**98**	↓*e*P		**P**	**03 10 44.7**	**-0.3**
LFRS	**El Faro**	**4.09**	**99**	*e*P		**P**	**03 10 46.5**	**-1.4**
LCBS	**La Ceiba**	**4.17**	**99**	*e*P		**P**	**03 10 50.1**	**+1.2**
SNVI	**San Vicente**	**4.31**	**99**	*e*P		**P**	**03 10 53.9**	**+3.0**
SNVI				*e*S		**S**	**03 11 48.7**	**+8.1**
OXX	**Oaxaca**	**4.34**	**309**	*e*P		**P**	**03 10 52.0**	**+0.6**
OXX				*i* S		**S**	**03 11 40.0**	**-1.5**
EVV	**El Vigia**	**4.58**	**334**	*e*P		**P**	**03 10 56.0**	**+1.2**
EVV				*i* S		**S**	**03 11 51.0**	**+3.5**
IISM	**Ciudad Serdan**	**6.11**	**320**	*e*P		**P**	**03 11 19.0**	**+2.8**
IISM				*i* S		**S**	**03 12 26.0**	**+0.3**
POHV	**Veracruz**	**6.11**	**321**	*e*P		**P**	**03 11 15.0**	**-1.2**
PPM	**Popocatepetl**	**7.00**	**313**	*e*P		**P**	**03 11 29.0**	**+0.3**
PPM				*e*P			03 11 30.0	
PPM				*i* S		**S**	**03 12 45.9**	**-2.0**
PPM	**Popocatepetl**	**7.00**	**313**	*e*P		**P**	**03 11 30.0**	**+1.3**
PPM				*i* S		**S**	**03 12 52.8**	**+4.9**
TEIG	**Tepich**	**7.52**	**38**	Pn		**P**	**03 11 34.4**	**-1.5**
	comp=N,24nm,0.3s,baz=184,slow=5.8,SNR=18							
TEIG				Sn		**S**	**03 12 57.7**	**-3.2**
	comp=N,5.5nm,0.3s,baz=1.3,slow=18,SNR=4.3							
TEIG	**Tepich**	**7.52**	**38**	Pn		**P**	**03 11 34.5**	**-1.5**
TEIG				Sn		**S**	**03 12 57.7**	**-3.2**
TEIG				*e*Sn		**S**	**03 12 59.5**	**-1.4**
ZIIG	**Zihuatanejo**	**8.57**	**293**	*i* P		**P**	**03 11 49.5**	**-1.0**
ZIIG	**Zihuatanejo**	**8.57**	**293**	*e*P		**P**	**03 11 49.1**	**-1.4**
JTS	**JuntasAbangare**	**9.02**	**116**	Pn		**P**	**03 11 57.6**	**+0.9**
	comp=N,0.5nm,0.3s,baz=322,slow=19,SNR=3.4							
JTS				Sn		**S**	**03 13 42.5**	**+4.5**
	comp=N,0.2nm,0.3s,baz=328,slow=19,SNR=1.9							
JCT	**Junction City**	**17.18**	**340**	P		**P**	**03 13 44.7**	**+0.1**
	comp=N,11nm,1.0s							
TXAR	**Lajitas Array**	**17.78**	**329**	P		**P**	**03 13 50.2**	**-2.1**
	comp=N,0.1nm,0.3s,baz=153,slow=10,SNR=2.3							
TXAR	**Lajitas Array**	**17.78**	**329**	P		**P**	**03 13 50.2**	**-2.1**
MIAR	**Mount Ida**	**20.13**	**359**	*e*P		**P**	**03 14 19.1**	**-0.2**
	comp=N,13nm,1.0s							
CLNB	**Carlsbad**	**20.33**	**333**	*e*P		**P**	**03 14 21.4**	**0.0**
GDL2	**Guadalupe Moun**	**20.49**	**332**	*e*P		**P**	**03 14 21.1**	**-2.0**
MNTX	**Cornudas Mount**	**20.56**	**329**	*e*P		**P**	**03 14 23.9**	**0.0**
	comp=N,5.7nm,0.9s							
ROSC	**El Rosal**	**20.85**	**115**	P		**P**	**03 14 29.0**	**+2.0**
	comp=N,7.3nm,0.8s,baz=180,slow=11,SNR=4.4							
CPRX	**Cap Rock**	**20.99**	**334**	*e*P		**P**	**03 14 29.4**	**+1.2**
PLAL	**Pickwick Lake**	**21.07**	**12**	*e*P		**P**	**03 14 27.6**	**-1.5**
	comp=N,9.0nm,0.9s,mb4.1							
WVT	**Waverly**	**22.23**	**12**	P		**P**	**03 14 43.2**	**+2.6**
	comp=N,4.7nm,0.8s,mb4.0							
JSC	**Jenkinsville**	**22.61**	**26**	*e*P		**P**	**03 14 42.9**	**-1.6**
SDV	**Santo Domingo**	**22.77**	**101**	P		**P**	**03 14 48.2**	**+2.1**
	comp=N,1.4nm,0.4s,mb3.8,baz=336,slow=9.3,SNR=3.0							
CCM	**Cathedral Cave**	**23.69**	**4**	*e*P		**P**	**03 14 54.8**	**-0.1**
ANMO	**Albuquerque**	**23.75**	**332**	*e*P		**P**	**03 14 54.4**	**-1.1**
ANMO				*e*			03 15 05.0	
TUC	**Tucson**	**24.03**	**321**	*e*P		**P**	**03 14 59.4**	**+1.2**
	comp=N,5.3nm,1.0s,mb3.9							
WCI	**Wyandotte Cave**	**24.58**	**13**	P		**P**	**03 15 04.3**	**+0.8**
	comp=N,14nm,1.4s,mb4.3							
PV01	**Paradox Valley**	**27.33**	**333**	*e*P		**P**	**03 15 28.9**	**-0.4**
PDAR	**Pinedale Array**	**31.64**	**337**	P		**P**	**03 16 06.1**	**-1.4**
	comp=N,0.2nm,0.6s,mb3.1,baz=166,slow=7.4,SNR=3.3							
NVAR	**Mina Array Bea**	**32.68**	**322**	P		**P**	**03 16 16.8**	**+0.2**
	comp=N,3.0nm,1.1s,mb4.2,baz=133,slow=10.0,SNR=8.0							
HLID	**Hailey**	**34.32**	**332**	*e*P		**P**	**03 16 31.7**	**+1.0**
MCMT	**McKenzie Canyo**	**34.67**	**335**	*e*P		**P**	**03 16 35.8**	**+2.1**
YBH	**Yreka Blue Hor**	**37.38**	**323**	P		**P**	**03 16 56.3**	**-0.4**
	comp=N,1.2nm,0.9s,mb3.7,baz=105,slow=12,SNR=2.9							
YKA	**Yellowknife Ar**	**50.44**	**347**	P		**P**	**03 18 41.4**	**0.0**
	comp=N,2.0nm,0.7s,mb4.3,baz=152,slow=7.3,SNR=59							
YKA				PcP		PcP	03 19 59.1	-0.3
	comp=N,0.3nm,0.8s,baz=150,slow=4.6,SNR=5.2							
INK	**Inuvik**	**59.79**	**344**	P		**P**	**03 19 48.4**	**-0.8**
	comp=N,1.4nm,0.7s,mb4.1,baz=126,slow=7.3,SNR=9.5							
ILAR	**Eielson Array**	**62.07**	**337**	P		**P**	**03 20 04.5**	**-0.2**
	comp=N,1.3nm,0.9s,mb4.0,baz=146,slow=5.2,SNR=7.9							
CMAR	**Chiang Mai Arr**	**145.28**	**339**	PKPbc		PKPbc	03 29 20.3	-0.4
	comp=N,1.1nm,0.3s,baz=347,slow=4.0,SNR=6.1							

TAP ***16*** *03:22:17.8,23.95N×121.01E, h10km, ML3.8*
TAP Felt I J at Ryuetan, II J at Mingjian, II J at Hehuanshan, II J at Tachien, I J at Taichung.
JMA ***16*** *03:22:19.4±0.3,23.97N×120.90E, h85km, M3.0*

ISC 16 03:22:19.0±2.2, 23.95N±0.01×121.01E±0.01, h11km±2km, n64, σ0°91/115, 4C-13D, Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
SMLT	**Sun Moon Lake**	**0.12**	**236**	↓*i*P		**Pg**	**03 22 21.5**	**-0.6**
SMLT					S	**Sg**	**03 22 23.9**	**-0.2**
TYC	**Yuchr**	**0.15**	**252**	↓*i*P		**Pg**	**03 22 21.6**	**-0.9**
TYC					S	**Sg**	**03 22 23.8**	**-1.1**
WDT	**Danda**	**0.23**	**149**	↑*i*P		**Pg**	**03 22 24.3**	**+0.4**
WDT					S	**Sg**	**03 22 27.7**	**+0.6**
WHF	**Hehuan Shan**	**0.30**	**50**	↓*i*P		**Pg**	**03 22 25.9**	**+0.5**
WHF					S	**Sg**	**03 22 30.1**	**+0.5**
WNT	**Mingjian**	**0.30**	**256**	↓*i*P		**Pg**	**03 22 25.4**	**-0.1**
WNT					S	**Sg**	**03 22 30.4**	**+0.7**
TWT	**Tachien**	**0.34**	**27**	↓*i*P		**Pg**	**03 22 25.4**	**-0.6**
TWT					S	**Sg**	**03 22 30.2**	**-0.6**
TCU	**Taichung**	**0.36**	**303**	↑*i*P		**Pg**	**03 22 26.7**	**+0.2**
TCU					S	**Sg**	**03 22 32.5**	**+1.0**
ESL	**Shilin**	**0.41**	**109**	↑*i*P		**Pg**	**03 22 27.8**	**+0.3**
ESL					S	**Sg**	**03 22 33.5**	**+0.4**
TWQ1	**Liyutan**	**0.45**	**332**	↓*i*P		**Pg**	**03 22 28.3**	**+0.1**
TWQ1					S	**Sg**	**03 22 35.1**	**+0.7**
YUS	**Yu-Shan**	**0.46**	**186**	↓*i*P		**Pg**	**03 22 27.7**	**-0.7**
YUS					S	**Sg**	**03 22 35.2**	**+0.5**
CHN5	**Tsauling**	**0.46**	**221**	↓*i*P		**Pg**	**03 22 28.3**	**-0.2**
CHN5					S	**Sg**	**03 22 35.4**	**+0.6**
ALS	**Alishan**	**0.48**	**203**	↓*i*P		**Pg**	**03 22 28.4**	**-0.3**
ALS					S	**Sg**	**03 22 35.9**	**+0.7**
WGK	**Gukeng**	**0.49**	**237**	*e*P		**Pg**	**03 22 28.5**	**-0.4**
WGK					S	**Sg**	**03 22 35.5**	**0.0**
NSY	**Sanyi**	**0.52**	**334**	↓*i*P		**Pg**	**03 22 29.9**	**+0.4**
NSY					S	**Sg**	**03 22 38.1**	**+1.6**
EHY	**Hungye**	**0.53**	**147**	*e*P		**Pg**	**03 22 29.1**	**-0.6**
EHY					S	**Sg**	**03 22 36.4**	**-0.5**
HWA	**Hwalien**	**0.55**	**87**	*e*P		**Pg**	**03 22 29.7**	**-0.4**
HWA					S	**Sg**	**03 22 38.8**	**+1.3**
TWD	**Chiawan**	**0.55**	**76**	P		**Pg**	**03 22 30.0**	**-0.3**
TWD					S	**Sg**	**03 22 37.5**	**-0.2**
NNS	**Nan Shan**	**0.59**	**34**	↓*i*P		**Pb**	**03 22 30.0**	**-1.0**
NNS					S	**Sg**	**03 22 38.0**	**-0.9**
CHN2	**Minshiung**	**0.64**	**230**	P		**Pb**	**03 22 31.5**	**-0.3**
CHN2					S	**Sb**	**03 22 41.2**	**+0.7**
TWF1	**Yuli**	**0.65**	**156**	↑*i*P		**Pb**	**03 22 31.5**	**-0.5**
TWF1					S	**Sb**	**03 22 39.4**	**-1.4**
WTCT	**Ta-ch'eng**	**0.67**	**263**		S	**Sb**	**03 22 41.3**	**-0.1**
NSTT	**Nanjuang**	**0.68**	**359**	*e*P		**Pb**	**03 22 32.0**	**-0.4**
NSTT					S	**Sb**	**03 22 42.1**	**+0.6**
CHY	**Chiayi**	**0.70**	**230**	*e*P		**Pb**	**03 22 32.0**	**-0.8**
CHY					S	**Sb**	**03 22 42.5**	**+0.3**
CHN4	**Tsaushan**	**0.71**	**213**	↓*i*P		**Pb**	**03 22 32.5**	**-0.4**
CHN4					S	**Sb**	**03 22 43.2**	**+0.7**
ELDTW	**Lidau**	**0.76**	**179**	*e*P		**Pb**	**03 22 32.6**	**-1.2**
WTP	**Ta-pu**	**0.79**	**207**	*e*P		**Pb**	**03 22 33.7**	**-0.6**
WTP					S	**Sb**	**03 22 45.1**	**+0.3**
NSK	**Sanguang**	**0.79**	**24**	P		**Pb**	**03 22 33.5**	**-0.8**
NSK					S	**Sb**	**03 22 43.3**	**-1.6**
ENA	**Nanau**	**0.82**	**54**	*e*P		**Pb**	**03 22 34.6**	**-0.2**
ENA					S	**Sb**	**03 22 45.1**	**-0.6**
TWK	**Hsinying**	**0.83**	**215**	↓*i*P		**Pb**	**03 22 34.6**	**-0.5**
TWK					S	**Sb**	**03 22 46.0**	**0.0**
HSN	**Hsinchu**	**0.85**	**358**	*e*P		**Pb**	**03 22 36.7**	**+1.3**
HSN					S	**Sb**	**03 22 50.1**	**+3.6**
ENTT	**Nioudou**	**0.85**	**36**	P		**Pb**	**03 22 34.9**	**-0.6**
CHN1	**Nanshi**	**0.88**	**210**	*e*P		**Pb**	**03 22 35.1**	**-0.8**
CHN1					S	**Sb**	**03 22 47.8**	**+0.4**
CHKT	**Chengkung**	**0.91**	**159**	*e*P		**Pb**	**03 22 36.8**	**+0.4**
CHKT					S	**Sb**	**03 22 51.1**	**+2.8**
CHN8	**Yiju**	**0.95**	**231**	*e*P		**Pb**	**03 22 36.1**	**-0.9**
CHN8					S	**Sb**	**03 22 49.2**	**-0.1**
SGST	**Jiashian**	**0.95**	**204**	*e*P		**Pb**	**03 22 36.8**	**-0.2**
SGST					S	**Sb**	**03 22 51.2**	**+1.8**
TWE	**Neicheng**	**0.97**	**38**	*e*P		**Pb**	**03 22 37.0**	**-0.5**
TWE					S	**Sb**	**03 22 51.1**	**+0.9**
TWC	**Suao**	**1.01**	**49**	*e*P		**Pb**	**03 22 37.8**	**-0.3**
TWC					S	**Sb**	**03 22 51.7**	**+0.5**
CHN3	**Shinhua**	**1.05**	**214**	*e*P		**Pb**	**03 22 38.5**	**-0.3**
TWG	**Pinlang**	**1.13**	**177**	*i* P		**Pb**	**03 22 40.5**	**+0.4**
TWG					S	**Sb**	**03 22 57.3**	**+2.8**
TAI1	**Yung-k'ang**	**1.16**	**218**	*e*P		**Pb**	**03 22 40.5**	**-0.1**
TAI1					S	**Sb**	**03 22 56.9**	**+1.5**
TAP	**Taipei**	**1.18**	**23**	*e*P		**Pb**	**03 22 42.3**	**+1.3**
TAP					S	**Sb**	**03 22 59.7**	**+3.7**
TAP1	**Taipei**	**1.18**	**23**	*e*P		**Pb**	**03 22 42.0**	**+0.9**
TTN	**Taitung**	**1.20**	**174**	*e*P		**Pb**	**03 22 42.9**	**+1.5**
TTN					S	**Sb**	**03 23 01.5**	**+4.8**
TWS1	**Kuangyinshan**	**1.21**	**18**	*e*P		**Pb**	**03 22 41.9**	**+0.5**
TWS1					S	**Sb**	**03 23 01.7**	**+4.8**
TWM1	**Shoushan**	**1.24**	**206**	*e*P		**Pb**	**03 22 42.7**	**+0.6**
SSD	**Sandimen**	**1.25**	**196**	*e*P		**Pb**	**03 22 42.3**	**+0.1**
NWF	**Wu-fen Shan**	**1.32**	**32**	*e*P		**Pb**	**03 22 43.9**	**+0.5**
NWF					S	**Sb**	**03 23 03.7**	**+3.5**
ECL	**Taimali**	**1.35**	**182**	*e*P		**Pb**	**03 22 41.2**	**-2.7**
ECL					S	**Sb**	**03 23 03.4**	**+2.3**
TWB1	**Santiao Chiao**	**1.38**	**40**	*e*P		**Pn**	**03 22 44.2**	**-0.2**
TWB1					S	**Sb**	**03 23 04.9**	**+2.9**
PNG	**Penghu**	**1.39**	**254**	*e*P		**Pn**	**03 22 42.3**	**-2.1**
PNG					S	**Sb**	**03 23 00.4**	**-1.7**
WDGT	**Dungji**	**1.42**	**241**	*e*P		**Pn**	**03 22 43.0**	**-1.9**
WDGT					S	**Sb**	**03 23 01.8**	**-1.2**
TWY	**Chenhua**	**1.43**	**22**	*e*P		**Pn**	**03 22 45.8**	**+0.8**
EAST	**Anshuo**	**1.57**	**185**	*e*P		**Pn**	**03 22 47.2**	**+0.2**
SCZT	**Fangliau**	**1.61**	**193**	*e*P		**Pn**	**03 22 47.3**	**-0.4**
SCZT					S	**Sn**	**03 23 08.8**	**+0.2**
YOJ	**Yonaguni jima**	**1.90**	**74**	P		**Pn**	**03 22 51.9**	**+0.1**
YOJ					S	**Sn**	**03 23 16.3**	**+0.4**
PCYT	**Pengchaiyu**	**1.93**	**30**	*e*P		**Pn**	**03 22 51.9**	**-0.4**
HEN	**Hengchun**	**1.95**	**187**	*e*P		**Pn**	**03 22 52.8**	**+0.3**
LAY	**Lan-yu**	**1.97**	**165**	*e*P		**Pn**	**03 22 51.6**	**-1.2**
TWK1	**Hengchun**	**2.01**	**185**	*e*P		**Pn**	**03 22 55.2**	**+1.8**
IRIF	**Iriomote-Funau**	**2.52**	**81**	P		**Pn**	**03 23 02.0**	**-0.4**
IRIF				*e*S		**Sn**	**03 23 31.0**	**-0.6**
HATJ	**Hateruma jima**	**2.56**	**87**	P		**Pn**	**03 23 01.0**	**-0.3**
HATJ				*e*S		**Sn**	**03 23 32.9**	**+0.2**
JKRS	**Kuro-shima**	**2.76**	**83**	P		**Pn**	**03 23 04.1**	**0.0**
JKRS				*e*S		**Sn**	**03 23 37.9**	**+0.2**
JIJ	**Ishigaki jima**	**2.89**	**81**	P		**Pn**	**03 23 05.1**	**-0.9**
JIJ				S		**Sn**	**03 23 39.5**	**-1.7**
JTJ	**Tarama**	**3.44**	**78**	P		**Pn**	**03 23 13.7**	**-0.1**
JTJ				*e*S		**Sn**	**03 23 54.3**	**-0.7**

THE ***16*** *03:30:29.4, 40.86N×31.47E, h21km, ML4.9*
BJI ***16*** *03:30:47.7, 40.63N×29.47E, h5km, mB4.8, mb4.9, Ms4.3, Msz4.1*
NEIC ***16*** *03:30:48.8, 40.70N×29.32E, h11km, mb4.4/15, ML4.3(ISK), After ISK.*
NEIC Felt in the Istanbul area.
ISK ***16*** *03:30:48.8, 40.70N×29.33E, h11km, MD4.3, ML4.3*
MOS ***16*** *03:30:49.9±1.2, 41.06N×29.38E, h10km, mb4.9/8, Error ellipse: s-maj=7.6km s-min=4.4km az=105.4*
IDC ***16*** *03:30:51.9±1.9, 40.74N×29.30E, h32km±15km, mb4.0/17, mb1 4.2/26, mb1mx4.2/32, ML3.9/7, MS3.6/10, Ms1 3.6/10, ms1mx3.3/27, Error ellipse: s-maj=13.1km s-min=9.1km az=35.0*

ISC 16 03:30:48.2±0.1, 40.75N±0.01×29.33E±0.01, h11km, n329, σ1°14/359, mb4.4/43, MS3.7/19, 13C-12D, Turkey

| Code | Station Name | Δ° | AZ° | Phase | ID | ISC

PTL **Penteli** 5.02 239 *e*P Pn 03 32 04.0 -1.3
GRG **Griva** 5.26 274 *e*Pn Pn 03 32 08.9 +0.2
LIT **Litokhoron** 5.26 265 *e*Pn Pn 03 32 08.8 +0.1
SANT **Santorini** 5.32 216 *e*Pn Pn 03 32 04.9 -4.7
MLR **Muntele Rosu** 5.34 334 Pn Pn 03 32 10.8 +0.9
11nm,0.3s,baz=172,slow=0.8,SNR=198
MLR Lg 03 33 41.9
6.4nm,0.3s,baz=308,slow=21,SNR=3.7
MLR **Muntele Rosu** 5.34 334 ⇓*i*P Pn 03 32 11.6 +1.7
MLR **Muntele Rosu** 5.34 334 ⇓*i*P Pn 03 32 11.6 +1.7
VRI **Vrincioaia** 5.45 340 ⇓*i*P Pn 03 32 12.5 +1.1
VRI **Vrincioaia** 5.45 340 ⇓*i*P Pn 03 32 12.5 +1.1
KARP **Karpathos** 5.47 199 *e*P Pn 03 32 10.0 -1.7
SIM **Simferopol'** 5.47 38 *i* P Pn 03 32 12.1 +0.4
SIM *i* S Sn 03 33 10.8 -4.6
SIM pmax pmax
comp=Z,197nm,0.8s
SIM MLR MLR
comp=E,200nm,1.0s
TOKT **Tokat** 5.51 92 *e*PN Pn 03 32 13.0 +0.7
AGG **Agios Georgios** 5.65 254 *e*Pn Pn 03 32 14.2 0.0
AGG *e*Sn Sn 03 33 31.2 +11
IKL **Isikli** 5.66 141 *e*PN Pn 03 32 15.0 +0.7
SVSK **Karacayir** 5.92 96 *e*PN Pn 03 32 19.2 +1.2
FNA **Florina** 6.04 273 *e*Pn Pn 03 32 18.6 -1.1
FNA *e*Sn Sn 03 33 41.2 +12
SKO **Skopje** 6.06 284 *i* Pn Pn 03 32 20.0 0.0
SKO *i* 03 32 25.2
SKO *i* 03 32 31.5
SKO Lg 03 34 25.0
comp=Z,0.2nm,1.0s
SKO **Skopje** 6.06 284 *i* Pn Pn 03 32 20.0 0.0
comp=Z,165nm,1.0s
SKO *i* 03 32 25.2
SKO *i* 03 32 31.5
SKO Lg 03 34 25.0
EVR **Evrytania** 6.07 255 *e*P Pn 03 32 22.0 +1.8
KIS **Kishinev** 6.25 357α *i*P Pn 03 32 22.0 -0.7
KIS *i* S Sn 03 33 33.0 -2.0
KIS pmax pmax
comp=Z,300nm,0.5s
KIS pmax pmax
comp=Z,300nm,0.6s
KIS smax
comp=N,2μm,2.0s
KIS smax
comp=E,900nm,1.0s
KIS smax
comp=N,2μm,2.0s
KIS smax
comp=E,900nm,1.0s
KIS MLR MLR
comp=Z,500nm,12.0s
KIS MLR MLR
comp=Z,400nm,12.0s
BOLS **Boljevac** 6.27 302⇑ *i*Pn Pn 03 32 21.9 -1.1
BOLS Sn Sn 03 33 33.2 -2.2
MEV **Metsovon** 6.27 264 *e*Pn Pn 03 32 22.7 -0.2
LEF **Lefka** 6.29 152 *e*PN Pn 03 32 23.6 +0.4
KRIS **Kristallenia** 6.33 210 *e*P Pn 03 32 22.7 -1.2
comp=Z,49nm,1.3s
VLI **Veliai** 6.42 233 *e*P Pn 03 32 24.0 -1.0
IDI **Anoyia** 6.48 214 Pn Pn 03 32 23.2 -2.7
comp=Z,1.7nm,0.3s,baz=36,slow=11,SNR=14
IDI Sn Sn 03 33 34.8 -5.9
comp=Z,1.4nm,0.3s,baz=275,slow=18,SNR=4.5
XRY **Khrisi** 6.54 207 *e*P Pn 03 32 37.0 +10
CSS **Prodhromos** 6.59 150 *e*P Pn 03 32 24.1 -3.4
ITM **Ithomi** 6.78 241 *e*P Pn 03 32 29.8 -0.4
GRUS **Gruza** 7.11 299⇑ *i*Pn Pn 03 32 33.4 -1.3
ANN **Anapa** 7.20 53 *e*P Pn 03 32 35.3 -0.8
ANN *e*S Sn 03 33 58.5 -0.2
ANN pmax pmax
comp=Z,20nm,0.8s
GZT **Gaziantep** 7.25 115 *i* P Pn 03 32 47.7 +11
BEO **Belgrade** 7.69 305 *e*Pn Pn 03 32 40.5 -2.4
SOC **Sochi** 8.22 66 *e*P P 03 32 49.6 -0.6
SOC *e*S Sn 03 34 21.4 -2.6
SOC pmax pmax
comp=Z,10.0nm,0.9s
SOC pmax pmax
comp=N,10.0nm,1.1s
SOC pmax pmax
comp=E,80nm,1.1s
SOC MLR MLR
comp=Z,230nm,22.0s
SOC MLR MLR
comp=N,140nm,19.0s
SOC MLR MLR
comp=E,220nm,18.0s
STON **Ston** 8.94 288 *i* P P 03 33 00.5 +0.2
UZH **Uzhgorod** 9.33 330 *e*P P 03 33 06.0 +0.3
RHK1 **Bakonya** 9.77 307 ⇓*i*P P 03 33 09.9 -1.8
LVV **L'vov** 9.80 339 *e*P P 03 33 08.0 -4.1
PSZ **Piszkesteto** 9.84 320 *e*P P 03 33 10.9 -1.8
comp=E,733nm,1.8s
AKASG **Malin Array Be** 9.95 360 Pn P 03 33 10.9 -3.3
comp=E,7.6nm,0.3s,baz=185,slow=12,SNR=31
AKASG Sn Sn 03 34 58.1 -8.8
comp=E,7.8nm,0.3s,baz=182,slow=22,SNR=5.1
KWP **Kalwaria** 10.03 334 *e*P P 03 33 14.9 -0.3
KIV **Kislovodsk** 10.39 68 *e*P P 03 33 18.2 -2.0
KIV pmax pmax
comp=Z,9.0nm,1.0s
SLCN **Sala Consilina** 10.43 272 *e*P P 03 33 20.6 -0.1
MRLC **Muro Lucano** 10.50 275 *e*P P 03 33 26.4 +4.6
ASF **Jabal al Asfar** 10.51 142 Pn P 03 33 19.5 -2.4
comp=Z,0.5nm,0.3s,baz=342,slow=3.2,SNR=1.9
MGR **Morigerati** 10.52 271 *e*P P 03 33 22.1 +0.1
SGO **Sicignano** 10.66 274 *e*P P 03 33 24.2 +0.3
NIE **Niedzica** 10.75 327⇑ *e*P P 03 33 24.0 -1.1
VYHS **Vyhne** 10.75 320 *e*PN P 03 33 24.1 -1.1
VYHS *e* 03 37 16.2
VYHS *e* 03 38 13.2
ZEI **Tsey** 11.07 75 *e*P P 03 33 29.0 -0.5
ZEI *e*S S 03 35 33.0 -1.3
ZEI pmax pmax
comp=Z,50nm,2.0s
ZEI MLR MLR
comp=Z,200nm,11.0s
NVLJ **Novalja** 11.31 294 *i* Pn P 03 33 33.2 +0.4
ZST **Bratislava** 11.46 315 *e*PN P 03 33 35.2 +0.3
ZST *e* 03 33 36.2
ZST *e* 03 35 08.8
ZST *e* 03 37 45.2
ZST *e* 03 38 36.8
OJC **Ojcow** 11.58 328 *e*P P 03 33 36.0 -0.4
GNI **Garni** 11.76 88 Pn P 03 33 41.9 +2.9
comp=Z,0.1nm,0.3s,baz=128,slow=17,SNR=3.4
ARSA **Arzberg** 11.87 308⇑ *i*P P 03 33 38.3 -2.0
comp=Z,4.1nm,0.7s
OKC **Ostrava-Krasne** 12.01 323 *e*P P 03 33 41.2 -1.0
OKC *ex* x 03 33 55.0
OKC L 03 39 40.0
comp=Z,0.7nm,12.0s
OKC **Ostrava-Krasne** 12.01 323 *e*P P 03 33 41.2 -1.0
OKC MLR MLR
comp=Z,700nm,12.0s
AQU **L'Aquila** 12.04 283 *e*P P 03 33 38.4 -4.3
MORC **Moravsky Berou** 12.25 321 *e*P P 03 33 43.6 -1.8
comp=Z,17nm,1.5s
CING **Cingoli** 12.28 288 *e*P P 03 33 44.6 -1.2
VRAC **Vranov** 12.41 318 Pn P 03 33 46.4 -1.2
comp=Z,0.3nm,0.3s,baz=122,slow=12,SNR=13
SNTG **Esanatoglia** 12.45 287 *e*P P 03 33 46.7 -1.4
ARV **Arcevia** 12.47 288 *e*P P 03 33 47.8 -0.7
MNS **Montasola** 12.58 283 *e*P P 03 33 51.4 +1.5
FSSB **Fossombrone** 12.62 289 *e*P P 03 33 49.0 -1.4
PTCC **Patocco-Chiusa** 12.88 301 *e*P P 03 33 53.1 -0.8
MOA **Molln** 12.90 308⇑ *i*P P 03 33 53.9 -0.3
comp=Z,4.9nm,0.7s
VOR **Voronezh** 12.92 28 *e*P P 03 33 52.5 -1.9
VOR pmax pmax
comp=N,30nm,1.2s
VOR pmax pmax
comp=E,70nm,1.2s
VOR pmax pmax
comp=Z,60nm,1.2s
CRE **Caprese Michel** 13.20 288 *e*P P 03 34 00.1 +1.9
DPC **Dobruska-Polom** 13.22 321 *e*P P 03 33 57.3 -1.0
DPC *ex* x 03 34 04.8
DPC L 03 40 00.0
comp=Z,0.8nm,11.3s
DPC **Dobruska-Polom** 13.22 321 *e*P P 03 33 57.3 -1.0
DPC MLR MLR
comp=Z,800nm,11.3s
SFI **Santa Sofia** 13.31 289 *e*P P 03 33 59.5 -0.2
PGD **Poggio Sodo** 13.40 289 *e*P P 03 34 00.7 -0.1
UPC **Upice** 13.47 321 *e*P P 03 33 58.7 -3.0
UPC *e* 03 34 10.4
VMG **Vicchio** 13.54 290 *e*P P 03 34 02.9 +0.3
KSP **Ksiaz** 13.56 322 *e*P P 03 34 01.8 -1.0
KSP **Ksiaz** 13.56 322 *e*P P 03 34 01.7 -1.1
KSP *e*pP 03 34 06.0
CSNT **Castellina Chi** 13.67 287 *e*P P 03 34 06.1 +1.9
SEI **Scarperia** 13.69 290 *e*P P 03 34 05.5 +1.0
GEC2 **GERESS Array S** 13.71 311 *e*P P 03 34 04.6 -0.2
GEC2 pmax pmax
comp=Z,9.0nm,1.5s
GEC2 **GERESS Array S** 13.71 311 *e*P P 03 34 04.6 -0.2
comp=Z,9.0nm,1.5s
GERES **GERESS Array B** 13.71 311 Pn P 03 34 04.1 -0.8
comp=Z,0.1nm,0.3s,baz=120,slow=11,SNR=6.9
MNK **Minsk** 13.79 356 *e*P P 03 34 01.0 -4.8
PRU **Pruhonice** 13.88 317 *e*P P 03 34 05.5 -1.5
comp=Z,17nm,1.5s
PRU *ex* x 03 34 15.8
PRU L 03 40 20.0
PRU **Pruhonice** 13.88 317 *e*P P 03 34 05.5 -1.5
PRU pmax pmax
comp=Z,17nm,1.5s
CTI **Castel Tesino** 13.89 298 *e*P P 03 34 16.2 +9.0
SUW **Suwalki** 13.90 345 *e*P P 03 34 02.2 -5.0
KHC **Kasperske Hory** 13.93 312 *e*P P 03 34 07.1 -0.6
KHC *ex* x 03 34 15.0
KHC L 03 42 20.0
comp=Z,0.3nm,15.1s
KHC **Kasperske Hory** 13.93 312 *e*P P 03 34 07.1 -0.6
KHC MLR MLR
comp=Z,300nm,15.1s
ZCCA **Zocca** 14.00 291 *e*P P 03 34 09.5 +0.9
PVCC **Panska Ves** 14.19 318 *e*P P 03 34 10.4 -0.7
PVCC *ex* x 03 34 16.7
PVCC L 03 40 50.0
comp=Z,1.1nm,10.8s
PVCC **Panska Ves** 14.19 318 *e*P P 03 34 10.4 -0.7
PVCC MLR MLR
comp=Z,1μm,10.8s
GSCL **Gusciola** 14.27 291 *e*P P 03 34 15.0 +2.8
WET **Wettzell** 14.33 311 *e*P P 03 34 13.8 +0.8
WET pmax pmax
comp=Z,13nm,1.1s
WET **Wettzell** 14.33 311 *e*P P 03 34 13.8 +0.8
comp=Z,13nm,1.1s
IDID **Didziasalis** 14.67 354 *e*P P 03 34 13.5 -3.8
IDID AMPb AMB 03 34 17.6
comp=Z,22nm,1.2s
BRG **Berggiesshubel** 14.72 319 *e*P P 03 34 17.8 -0.2
BRG pmax pmax
comp=Z,14nm,1.4s
BRG MLR MLR
comp=N,470nm,11.5s
BRG MLR MLR
comp=E,720nm,11.5s
BRG MLR MLR
comp=Z,1μm,11.5s
BRG **Berggiesshubel** 14.72 319 *e*P P 03 34 17.8 -0.2
comp=Z,14nm,1.4s
BRG *e* 03 34 24.7
BRG *e* 03 34 29.9
IIGN **Ignalina** 14.75 353 *e*P P 03 34 14.4 -4.0
IIGN AMPb AMB 03 34 19.2
comp=Z,46nm,1.0s
FUR **Furstenfeldbru** 14.85 306 *e*P P 03 34 18.3 -1.4
BRMO **Bormio** 14.86 299 *e*P P 03 34 28.1 +8.2
ISAL **Salakas** 14.98 353 *e*P P 03 34 16.9 -4.4
ISAL AMPb AMB 03 34 21.5
comp=Z,35nm,1.1s
BOB **Bobbio (Coli)** 15.14 292 *e*P P 03 34 28.9 +5.3
IZAR **Zarasai** 15.14 353 *e*P P 03 34 19.0 -4.5
IZAR AMPb AMB 03 34 24.0
comp=Z,38nm,1.0s
OBN **Obninsk** 15.15 16 *e*P P 03 34 21.1 -2.6
OBN *i* S S 03 37 00.3 -12
OBN pmax pmax
comp=Z,38nm,0.7s
OBN MLR MLR
comp=Z,200nm,17.0s
OBN **Obninsk** 15.15 16 P P 03 34 16.3 -7.3
comp=Z,62nm,0.9s
DAVOX **Davos** 15.27 300 Pn P 03 34 25.8 +0.5
comp=Z,0.1nm,0.3s,baz=90,slow=16,SNR=3.1
PGF **Pioggiola** 15.30 283 *e*P P 03 34 27.0 +1.3
comp=Z,13nm,0.7s
DAVA **Damuels** 15.42 302⇑ *i*P P 03 34 32.8 +5.6
comp=Z,19nm,0.5s
CLL **Collm** 15.46 319 P P 03 34 26.6 -1.0
comp=Z,logA/T=1.0
CLL *i* 03 34 32.6
CLL **Collm** 15.46 319 *i* P P 03 34 26.6 -1.0
CLL pmax pmax
comp=Z,13nm,1.3s
CLL **Collm** 15.46 319 *i* P P 03 34 26.6 -1.0
comp=Z,13nm,1.3s
CLL *i* 03 34 32.6
GRA1 **Grafenberg Arr** 15.54 311 *e*P P 03 34 28.4 -0.4
comp=Z,9.0nm,0.8s
GRF **Grafenberg Arr** 15.54 311 *e*P P 03 34 28.4 -0.4
GRF pmax pmax
comp=Z,9.0nm,0.8s
VAI **Varese** 15.80 296 *e*P P 03 34 37.7 +5.6
MOX **Moxa** 15.80 315 *i* P P 03 34 33.0 +0.9
comp=Z,logA/T=1.0
MOX L 03 41 34.0
MOX **Moxa** 15.80 315 *e*P P 03 34 33.0 +0.9
MOX pmax pmax
comp=Z,12nm,1.1s
MOX MLR MLR
comp=Z,200nm,15.0s
MOX **Moxa** 15.80 315 *e*P P 03 34 33.0 +0.9
comp=Z,12nm,1.1s
RUE **Ruedersdorf** 15.82 323 P P 03 34 31.0 -1.4
MOS **Moscow** 15.96 17 *e*P P 03 34 30.8 -3.3
MOS *e*S S 03 37 16.2 -15
MOS pmax pmax
comp=Z,220nm,1.6s
ORO **Oropa** 16.30 294 *e*P P 03 34 42.7 +4.2
STU **Stuttgart** 16.36 306 *e*P P 03 34 40.5 +1.2
SPAK **Spaichingen** 16.38 303 *e*P P 03 34 38.2 -1.3
SAOF **Saorge** 16.41 289 *e*P P 03 34 40.0 +0.1
SBF **Sospel** 16.48 288 *e*P P 03 34 41.3 +0.4
comp=Z,65nm,1.1s
AURF **Auriere** 16.56 288 *e*P P 03 34 41.6 -0.3
BBS **Basel-Blauen** 17.02 300 *e*P P 03 34 48.0 +0.4
MBDF **Montbardon** 17.03 291 *e*P P 03 34 48.0 +0.3
comp=Z,16nm,0.7s
FRF **La Foret Royal** 17.04 287 *e*P P 03 34 47.6 -0.3
comp=Z,41nm,1.4s
BNI **Bardonecchia** 17.13 292 *e*P P 03 34 45.5 -3.4
LPG **La Plagne** 17.13 294 *e*P P 03 34 51.7 +2.7
comp=Z,25nm,0.9s
LMR **La Mourre** 17.14 286 *e*P P 03 34 50.8 +1.7
LPL **La Plagne** 17.15 294 *e*P P 03 34 51.7 +2.5
comp=Z,23nm,0.9s
BSD **Bornholm Skovb** 17.26 331 ⇓*i*P P 03 34 46.7 -3.9
comp=Z,30nm,1.0s
comp=Z,250nm,18.0s
BSD **Bornholm Skovb** 17.26 331 ⇓*i*P P 03 34 46.7 -3.9
BSD pmax pmax
comp=Z,30nm,1.0s
BSD MLR MLR
comp=Z,260nm,18.0s
LANF **Langenberg** 17.29 306 *e*P P 03 34 53.6 +2.6
WLS **Welschbruch** 17.39 303 *e*P P 03 34 54.2 +2.0
CDF **Champ du Feu** 17.44 303 *e*P P 03 34 51.9 -0.9
comp=Z,75nm,1.3s
ECH **Echery** 17.45 303 *e*P P 03 34 54.7 +1.7
HINF **Hinteralfeld** 17.54 301 *e*P P 03 34 55.1 +1.0
comp=Z,5.8nm,0.6s
ORIF **Oris-en-Rattie** 17.68 291 *e*P P 03 34 57.9 +2.0
comp=Z,35nm,1.1s
ORIF *e*R
comp=Z,225nm,22.8s
CABF **La Chapelle** 17.77 297 *e*P P 03 34 58.6 +1.6
comp=Z,44nm,1.4s
SMRF **Simiane la Rot** 17.83 288 *e*P P 03 34 58.9 +1.1
comp=Z,24nm,1.3s
HAU **Haudompre** 17.92 302 *e*P P 03 34 58.4 -0.4
comp=Z,18nm,0.9s
HAU *e*R
comp=Z,133nm,19.5s
THEF **They Montfort** 18.21 302 *e*P P 03 35 03.3 +0.8
BSEG **Bad Segeberg** 18.36 322 *e*P P 03 35 02.5 -1.8
BSEG pmax pmax
comp=Z,17nm,1.0s
VIVF **Saint-Julien-l** 18.53 291 *e*P P 03 35 05.8 -0.6
comp=Z,7.8nm,0.7s
WLF **Walferdange** 18.54 306 *e*P P 03 35 05.8 -0.8
comp=Z,9.2nm,0.9s
MEZF **Maizieres J'vi** 18.88 302 *e*P P 03 35 10.2 -0.5
comp=Z,47nm,0.8s
PUL **Pulkovo** 19.05 2 *e*P P 03 35 01.8 -11
PUL *e*S S 03 38 34.0 -7.6
PUL pmax pmax
comp=Z,20nm,0.4s
PUL pmax pmax
comp=Z,40nm,0.5s
PUL smax
comp=Z,30nm,0.5s
PUL MLR MLR
comp=Z,210nm,11.0s
LASF **Ste Croix** 19.07 288 *e*P P 03 35 12.0 -1.0
comp=Z,21nm,1.1s
SMF **Signal de Mont** 19.30 296 *e*P P 03 35 15.3 -0.4
comp=Z,36nm,0.8s
PLDF **La Plantade** 19.37 294 *e*P P 03 35 17.4 +1.0
GIVF **Givet** 19.50 307 *e*P P 03 35 18.2 +0.3
WIT **Witteveen** 19.56 316 *e*P P 03 35 18.9 +0.3
LBL **Lubilhac** 19.56 292 *e*P P 03 35 17.4 -1.3
SSF **Saint Saulge** 19.60 297 *e*P P 03 35 18.3 -0.8
comp=Z,25nm,0.8s
AVF **Avril sur Loir** 19.66 297 *e*P P 03 35 18.5 -1.3
comp=Z,29nm,0.8s
AGO **Saint Agoulin** 19.72 294 *e*P P 03 35 20.6 +0.2
PYM **Petit Puy Mans** 19.77 293 *e*P P 03 35 21.5 +0.5
BAIF **Baives** 19.86 306 *e*P P 03 35 21.6 -0.4
comp=Z,17nm,0.9s
BGF **Bois d'Agland** 19.97 296 *e*P P 03 35 22.3 -0.9
comp=Z,30nm,0.8s
MTLF **Montlieu** 20.27 286 *e*P P 03 35 25.6 -0.8
comp=Z,28nm,1.2s
TCF **Toulx Ste Croi** 20.38 295 *e*P P 03 35 27.5 0.0
comp=Z,76nm,1.2s
CAF **Calviac** 20.38 291 *e*P P 03 35 27.0 -0.5
comp=Z,13nm,0.9s
MUD **Monsted U'grnd** 20.48 327 *i* P P 03 35 28.1 -0.4
comp=Z,19nm,0.8s
comp=Z,140nm,16.0s
MUD **Monsted U'grnd** 20.48 327 *i* P P 03 35 28.1 -0.4
MUD pmax pmax
comp=Z,19nm,0.8s
MUD MLR MLR
comp=Z,140nm,16.0s,MS3.4
RJF **Les Rejaudoux** 20.79 292 *e*P P 03 35 31.9 +0.2
comp=Z,17nm,0.9s
RJF *e*R
comp=Z,179nm,18.2s
FINES **FINESS Array B** 20.81 356 P P 03 35 30.7 -1.2
comp=Z,22nm,0.8s,baz=159,slow=12,SNR=85
FINES S S 03 39 11.9 -7.2
comp=Z,5.5nm,0.8s,baz=174,slow=19,SNR=4.5
FINES LR LR 03 43 42.7
comp=Z,109nm,21.2s,MS3.2,baz=172,slow=37
FINES **FINESS Array B** 20.81 356 P P 03 35 30.7 -1.2
FINES S S 03 39 11.9 -7.2
FINES LR LR 03 43 42.7
MLS **Moulis** 21.11 285 *e*P P 03 35 36.5 +1.5
LFF **La Frestale** 21.32 291 *e*P P 03 35 38.0 +0.8
comp=Z,48nm,1.3s,mb4.4
KAF **Kangasniemi** 21.47 356 *e*p P 03 35 38.0 -0.5
baz=170,slow=11
EPF **Esparros** 21.66 286 *e*P P 03 35 40.2 -0.4
comp=Z,13nm,1.1s,mb4.0
RESF **Ens** 21.67 285 *e*P P 03 35 42.5 +1.8
HFS **Hagfors** 21.70 339 P P 03 35 39.9 -0.9
comp=Z,11nm,0.8s,mb4.3,baz=207,slow=6.4,SNR=14
HFS S S 03 39 32.6 -3.3
comp=Z,1.4nm,0.6s,baz=135,slow=26,SNR=2.7
MFF **Saint Martin d** 22.03 295 *e*P P 03 35 45.4 +1.1
comp=Z,45nm,0.7s,mb4.7
JOF **Joensuu** 22.23 2 *e*p P 03 35 45.9 -0.3
comp=Z,93nm,1.6s,mb5.0
JOF **Joensuu** 22.23 2 *e*P P 03 35 45.9 -0.3
JOF pmax pmax
comp=Z,93nm,1.6s,mb5.0
LDF **La Druitiere** 22.26 300 *e*P P 03 35 45.9 -0.7
comp=Z,52nm,0.7s,mb4.7
ETSF **Etsaut** 22.32 285 *e*P P 03 35 49.7 +2.5
comp=Z,17nm,0.9s,mb4.2
FLN **La Foliniere** 22.52 301 *e*P P 03 35 49.2 +0.1
comp=Z,17nm,0.6s,mb4.3
FLN *e*R
comp=Z,246nm,18.8s
KONO **Kongsberg** 22.58 333 *e*S S 03 39 57.9 +5.9
KONO AMS AMS 03 45 42.0
comp=Z,158nm,20.0s,MS3.4
KONO **Kongsberg** 22.58 333 *e*P P 03 35 48.3 -1.3
KONO **Kongsberg** 22.58 333 *e*P P 03 35 48.6 -0.9
comp=Z,38nm,1.1s,mb4.7
GRR **Gorron** 22.71 300 *e*P P 03 35 50.5 -0.5
comp=Z,63nm,0.7s,mb4.8
SJPF **Ste Jean** 22.79 286 *e*P P 03 35 53.6 +1.8
comp=Z,28nm,1.2s,mb4.3
NAO01 **NORSAR Array S** 23.09 337 *e*P P 03 35 54.6 +0.1
comp=Z,27nm,0.9s,mb4.7
NB2 **NORSAR Subarra** 23.15 337 P P 03 35 53.8 -1.3
comp=Z,11nm,1.0s,mb4.2,baz=159,slow=9.3
NOA **NORSAR Array B** 23.15 337 P P 03 35 53.8 -1.3
comp=Z,7.6nm,0.8s,mb4.2,baz=131,slow=9.9,SNR=33
NOA LR LR 03 46 32.2
comp=Z,118nm,19.0s,MS3.4,baz=135,slow=41
QUIF **Quistinic** 24.19 298 *e*P P 03 36 04.9 -0.5
comp=Z,44nm,1.0s,mb4.5
ROSF **Rostrenen** 24.30 299 *e*P P 03 36 05.6 -0.9
comp=Z,31nm,0.8s,mb4.5
ARU **Arti** 24.63 41 ⇓*i*P P 03 36 07.8 -1.8
ARU *i* 03 36 38.9
ARU *e*S S 03 40 27.6 -0.2
ARU *e*SS SS 03 41 12.9 -11
ARU pmax pmax
comp=Z,10.0nm,0.8s,mb4.4
ARU MLR MLR
comp=Z,200nm,21.0s,MS3.6
ARU MLR MLR
comp=N,1μm,25.0s,MS4.3
ARU MLR MLR
comp=E,400nm,20.0s,MS4.3
ARU **Arti** 24.63 41 *e*P P 03 36 09.4 -0.2
comp=E,13nm,0.9s,mb4.5
ESDC **Sonseca Array** 25.37 279 P P 03 36 15.0 -1.7
comp=E,3.3nm,0.8s,mb3.9,baz=70,slow=9.6,SNR=16
SVE **Sverdlovsk** 25.84 41⇑ *e*P P 03 36 21.5 +0.5
SVE *e* 03 37 14.0
SVE pmax pmax
comp=Z,40nm,2.0s,mb4.6
EKA **Eskdalemuir Ar** 25.87 315 P P 03 36 20.6 -0.6
comp=Z,2.0nm,0.5s,mb3.9,baz=120,slow=11,SNR=15
ESK **Eskdalemuir** 25.89 315 *e*P P 03 36 20.6 -0.8
comp=Z,7.4nm,0.9s,mb4.2
APA **Apatity** 26.96 3 ⇓*i*P P 03 36 32.2 +1.0
APA *i* 03 37 11.2
APA pmax pmax
comp=Z,16nm,1.0s,mb4.5
APA MLR MLR
comp=Z,500nm,14.0s,MS4.2
ARCES **ARCESS Array B** 28.92 357 P P 03 36 46.9 -2.0
comp=Z,5.8nm,0.9s,mb4.3,baz=173,slow=9.8,SNR=16
ARCES LR LR 03 48 22.6
comp=Z,131nm,18.0s,MS3.6,baz=168,slow=36
KEV **Kevo** 29.09 358 *e*p P 03 36 49.5 -1.0
ZRNK **Zerenda** 29.36 52 *e*P P 03 36 53.1 0.0
TRO **Tromso** 29.46 353 *e*ScP 03 43 27.1
TRO AMS AMS 03 49 28.2
comp=Z,154nm,17.3s,MS3.7
BRVK **Borovoye** 30.14 52 *e*P P 03 36 59.8 -0.2
BVAR **Borovoye Array** 30.20 52 P P 03 36 59.5 -1.1
comp=Z,1.6nm,1.1s,mb3.7,baz=248,slow=8.0,SNR=5.8
BVAR LR LR 03 50 38.8
comp=Z,54nm,20.3s,MS3.2,baz=140,slow=39
KURK **Kurchatov** 35.22 57 *e*P P 03 37 42.6 -1.6
JMIC **Jan Mayen** 35.81 340 LR LR 03 53 12.7
comp=Z,88nm,19.0s,MS3.5,baz=101,slow=37
JMIC **Jan Mayen** 35.81 340 AMS AMS 03 53 50.6
comp=Z,80nm,22.5s,MS3.4
NVS **Novosibirsk** 37.88 50 *e*P P 03 38 06.3 -0.3
SPITS **Spitsbergen Ar** 37.91 356 P P 03 38 06.5 -0.2

comp=Z,9.8nm,1.1s,mb4.5,baz=162,slow=5.7,SNR=3.1
MKAR Makanchi Array 38.10 63 P **P 03 38 07.9 -0.7**
comp=Z,1.3nm,0.8s,mb3.7,baz=126,slow=10,SNR=3.7
MKAR LR LR 03 59 33.9
comp=Z,53nm,18.3s,MS3.4,baz=93,slow=45
ZAL Zalesovo 38.83 51 P **P 03 38 12.7 -1.9**
comp=Z,1.2nm,0.6s,mb3.8,baz=110,slow=7.8,SNR=4.9
ZAL LR LR 03 57 31.4
comp=Z,54nm,18.5s,MS3.4,baz=284,slow=41
KBS Kingsbay 38.91 355 AMS AMS 03 54 53.1
comp=Z,75nm,22.0s,MS3.5
WMQ Urumqi 42.52 66 *eP* **P 03 38 46.3 +1.3**
WMQ AP pP 03 38 52.3 +4.0
WMQ XP sP 03 38 55.3 +5.6
WMQ PP PP 03 40 28.0 +1.5
WMQ PcP PcP 03 40 39.0 +0.7
WMQ S **S 03 45 07.9 +1.1**
WMQ AMB AMB
comp=Z,8.0nm,1.0s,mb4.4
WMQ AMB AMB
comp=Z,51nm,5.2s
WMQ LR LR
comp=N,121nm,17.2s,MS4.1
WMQ LR LR
comp=E,187nm,17.3s,MS4.1
WMQ LR LR
comp=Z,255nm,18.4s,MS4.2
DBIC Dimbokro 45.63 231 P **P 03 39 08.8 -1.7**
comp=Z,4.6nm,0.9s,mb4.4,baz=26,slow=6.9,SNR=6.0
LIC Lamto 46.09 231 *eP* **P 03 39 12.8 -1.4**
comp=Z,18nm,1.0s,mb4.7
ZAK Zakamensk 50.65 53 *eP* **P 03 39 50.0 +0.8**
ULN Ulaanbaatar 53.88 55 *eP* **P 03 40 13.7 +0.4**
ULN Ulaanbaatar 53.88 55 *eP* **P 03 40 13.3 0.0**
comp=Z,2.5nm,0.8s,mb4.2
TIXI Tiksi 54.77 22 *eP* **P 03 40 19.2 -0.4**
TIXI pmax pmax
comp=Z,44nm,1.2s,mb5.4
TIXI MLR MLR
comp=Z,600nm,17.0s,MS4.7
YAK Yakutsk 59.40 33 *eP* **P 03 40 51.2 -1.3**
YAK pmax pmax
comp=Z,15nm,0.6s,mb5.2
SCHQ Schefferville 61.11 319 P **P 03 41 02.8 -1.5**
comp=Z,6.5nm,0.8s,mb4.8,baz=51,slow=6.5,SNR=8.0
CMAR Chiang Mai Arr 62.88 88 P **P 03 41 14.1 -2.6**
comp=Z,1.1nm,0.4s,mb4.3,baz=300,slow=7.7,SNR=4.8
CMAR LR LR 04 12 45.4
comp=Z,29nm,18.1s,MS3.5,baz=225,slow=40
BILL Bilibino 66.81 16 *eP* **P 03 41 39.7 -1.7**
BILL *e* 03 44 06.1
BILL pmax pmax
comp=Z,6.0nm,1.2s,mb4.5
BILL MLR MLR
comp=Z,100nm,17.0s,MS4.1
CN2 Changchun 67.05 51 *eP* **P 03 41 42.8 -0.5**
SEY Seymchan 67.13 25 *eP* **P 03 41 44.4 +1.0**
SEY 03 42 12.9
SEY pmax pmax
comp=E,8.0nm,0.9s
SEY pmax pmax
comp=Z,20nm,0.9s,mb5.2
MA2 Magadan 69.02 28 *eP* **P 03 41 56.2 +0.9**
MA2 pmax pmax
comp=Z,8.0nm,1.0s,mb4.6
INK Inuvik 70.50 353 P **P 03 42 02.9 -1.4**
comp=Z,0.9nm,0.7s,mb3.8,baz=19,slow=8.8,SNR=3.7
YKA Yellowknife Ar 73.09 343 P **P 03 42 19.2 -0.5**
comp=Z,2.4nm,0.9s,mb4.1,baz=26,slow=6.0,SNR=37
YKA LR LR 04 15 35.0
comp=Z,62nm,18.0s,MS3.9,baz=70,slow=37
YKA Yellowknife Ar 73.09 343 P **P 03 42 19.2 -0.5**
YKA LR LR 04 15 35.0
IMA Indian Mountai 73.49 1 *eP* **P 03 42 22.1 +0.2**
comp=Z,21nm,1.0s,mb5.0
FFC Flin Flon 76.19 333 *eP* **P 03 42 37.4 -0.2**
comp=Z,2.8nm,0.8s,mb4.2
PDAR Pinedale Array 88.94 331 P **P 03 43 43.2 -0.5**
comp=Z,0.5nm,0.9s,mb3.8,slow=5.9,SNR=4.0
PDAR LR LR 04 25 43.7
comp=Z,52nm,19.0s,MS4.0,baz=229,slow=37
BDFB Brasilia 90.79 250 P **P 03 43 53.9 +0.9**
comp=Z,3.0nm,0.8s,mb4.7,baz=24,slow=19,SNR=3.0
DAU Daniels Canyon 91.62 331 *eP* **P 03 43 57.1 +0.9**

*DJA **16** 03:52:29.2±0.9,8.04S×118.61E,h160km,MD4.7/3, ML4.5/3,Error ellipse: s-maj=62.1km s-min=18.7km az=172.0*
ISC 16 03:52:30.5±2.2,8.5S±0.5×118.4E±0.2,h201km±35km**,n6, σ0§88/10,9C-1D,Sumbawa region**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
							h m s	ISC
KEDI	**Kedomdong**	**2.24**	**271**	⇑*e*Pn		**P**	**03 53 11.7**	**-0.4**
	141nm,0.3s							
KEDI				⇑*i*Sn		**S**	**03 53 43.4**	**-0.7**
RATI	**Rata**	**2.82**	**266**	⇑*e*Pn		**P**	**03 53 18.4**	**-0.2**
	120nm,0.2s							
RATI	**Rata**	**2.82**	**266**	⇑*i*P		**P**	**03 53 18.9**	**+0.3**
RATI				⇑*i*Sn		**S**	**03 53 55.8**	**0.0**
INGI	**Ingas**	**3.21**	**264**	⇑*i*Pn		**P**	**03 53 25.1**	**+1.9**
	227nm,0.2s							
INGI				⇑*i*Sn		**S**	**03 54 04.4**	**+0.4**
KELI	**Kelakatan**	**3.86**	**274**	⇑*e*Pn		**P**	**03 53 32.1**	**+0.9**
KELI				⇑*i*Sn		**S**	**03 54 16.8**	**-1.3**
WB2	**Warramunga Arr**	**19.18**	**128**	⇓*i*P		**P**	**03 56 40.3**	**-0.7**

*BJI **16** 04:57:14.2,23.24N×94.43E,h96km,mb4.6*
*NEIC **16** 04:57:18.4±0.3,23.28N×94.22E,mb4.5/2,Error ellipse: s-maj=15.3km s-min=4.8km az=222.0*
*IDC **16** 04:57:18.9±0.8,23.55N×94.70E,h101km±7km, mb3.8/11, mb1 3.9/12,mb1mx3.6/21,Error ellipse: s-maj=36.9km s-min=12.0km az=55.0*
*LDG **16** 04:57:23.9±0.2,23.89N×93.75E,h121km,Mb4.0/17,Error ellipse: s-maj=11.2km s-min=6.1km az=18.0*
ISC 16 04:57:16.3±0.7,23.43N±0.07×94.38E±0.07,h93km±5km**, h99**km±3.7km**;pP-P,n51,σ0§80/53,mb4.1/29,1C, Myanmar-India border region**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
							h m s	ISC
IMP	**Imphal**	**1.41**	**343**	*i*P		**P**	**04 57 43.0**	**+1.5**
IMP				*e*S		**S**	**04 57 59.0**	**-1.1**
SHL	**Shillong**	**3.12**	**314**	*i*P		**P**	**04 58 05.2**	**+0.7**
SHL				*e*S		**S**	**04 58 37.7**	**-3.1**
CM31	**Chiang Mai Arr**	**6.53**	**138**	P		**P**	**04 58 51.9**	**+0.6**
	8.7nm,0.5s							
CMAR	**Chiang Mai Arr**	**6.53**	**138**	P		**P**	**04 58 50.9**	**-0.5**
	0.7nm,0.3s,baz=318,slow=14,SNR=6.5							
LSA	**Lhasa**	**6.88**	**336**	P		**P**	**04 58 57.3**	**+1.0**
KMI	**Kunming**	**7.81**	**76**	⇑*e*P		**P**	**04 59 10.0**	**+1.0**
KMI				AMB	AMB			
	comp=Z,19nm,1.1s							
GUN	**Gumba**	**8.87**	**302**	*e*P		**P**	**04 59 22.7**	**-0.6**
	comp=Z,22nm,0.2s							
PKI	**Pulchoki**	**9.09**	**299**	*e*P		**P**	**04 59 26.3**	**0.0**
	comp=Z,21nm,0.2s							
KKN	**Kakani**	**9.29**	**300**	*e*P		**P**	**04 59 28.8**	**-0.2**
	comp=Z,29nm,0.2s							
DMN	**Daman**	**9.35**	**298**	*e*P		**P**	**04 59 30.0**	**+0.2**
	comp=Z,14nm,0.2s							
GKN	**Gorkha**	**9.89**	**299**	*e*P		**P**	**04 59 37.0**	**-0.2**
	comp=Z,51nm,0.3s							
KOLN	**Koldanda**	**10.65**	**296**	*e*P		**P**	**04 59 46.5**	**-0.8**
	comp=Z,14nm,0.2s							
BJI	**Beijing**	**24.76**	**43**	*e*P		**P**	**05 02 30.4**	**-0.1**
BJI				AMB	AMB			
	comp=Z,10.0nm,0.5s,mb4.5							
MKAR	**Makanchi Array**	**25.27**	**340**	P		**P**	**05 02 36.0**	**+0.8**
	comp=Z,12nm,0.5s,mb4.6,baz=148,slow=10.0,SNR=124							
MKAR				pP		pP	05 02 59.5	+3.8
	comp=Z,2.5nm,0.5s,baz=145,slow=9.8,SNR=3.0							
KURK	**Kurchatov**	**29.87**	**340**	*e*P		**P**	**05 03 16.4**	**-0.6**
BVAR	**Borovoye Array**	**34.72**	**334**	P		**P**	**05 03 59.2**	**+0.1**
	comp=Z,1.8nm,0.4s,mb4.2,baz=136,slow=12,SNR=10							
ZRNK	**Zerenda**	**35.22**	**333**	*e*P		**P**	**05 04 03.4**	**0.0**
BRTR	**Keskin Array B**	**53.28**	**303**	P		**P**	**05 06 28.9**	**+1.0**
	comp=Z,0.6nm,0.4s,mb4.0,baz=144,slow=11,SNR=5.5							
JOF	**Joensuu**	**57.19**	**331**	*e*p		**P**	**05 06 54.5**	**-1.1**
	comp=Z,1.9nm,0.5s,mb4.4							
WRA	**Warramunga Arr**	**58.11**	**135**	P		**P**	**05 07 01.7**	**-1.0**
	comp=Z,0.4nm,0.4s,mb3.8,baz=321,slow=7.4,SNR=7.7							
WRA				pP		pP	05 07 24.1	-1.7
	comp=Z,0.6nm,0.5s,baz=324,slow=7.4,SNR=3.4							
WRAB	**Tennant Creek**	**58.11**	**135**	*e*P		**P**	**05 07 01.4**	**-1.3**
	comp=Z,4.3nm,0.8s,mb4.5							
WRAB				*e*pP		pP	05 07 25.4	-0.4
KAF	**Kangasniemi**	**59.33**	**330**	*e*p		**P**	**05 07 09.5**	**-1.0**
FINES	**FINESS Array B**	**59.34**	**329**	P		**P**	**05 07 10.0**	**-0.6**
	comp=Z,0.6nm,0.5s,mb3.9,baz=109,slow=5.8,SNR=11							
FINES	**FINESS Array B**	**59.34**	**329**	P		**P**	**05 07 10.0**	**-0.6**
ASAR	**Alice Springs**	**60.54**	**138**	P		**P**	**05 07 18.8**	**-0.6**
	comp=Z,0.6nm,0.5s,mb3.9,baz=321,slow=6.8,SNR=14							
ASAR				pP		pP	05 07 42.9	+0.2
	comp=Z,0.9nm,0.6s,baz=319,slow=6.8,SNR=4.6							
KMBO	**Kilima Mbogo**	**60.61**	**255**	P		**P**	**05 07 22.4**	**+2.4**
	comp=Z,0.4nm,0.3s,mb3.9,baz=48,slow=18,SNR=3.8							
ARCES	**ARCESS Array B**	**60.89**	**338**	P		**P**	**05 07 20.5**	**-0.6**
	comp=Z,5.2nm,1.1s,mb4.5,baz=99,slow=7.3,SNR=13							
SPITS	**Spitsbergen Ar**	**64.78**	**347**	P		**P**	**05 07 45.5**	**-1.1**
	comp=Z,6.2nm,1.0s,mb4.4,baz=153,slow=4.5,SNR=3.1							
NB2	**NORSAR Subarra**	**66.51**	**328**	P		**P**	**05 07 56.8**	**-1.1**
	comp=Z,0.8nm,0.6s,mb3.7,baz=84,slow=6.2							
NOA	**NORSAR Array B**	**66.51**	**328**	P		**P**	**05 07 57.1**	**-0.9**
	comp=Z,2.1nm,0.9s,mb3.9,baz=85,slow=6.4,SNR=8.1							
NOA				pP		pP	05 08 23.9	+2.3
	comp=Z,0.7nm,0.8s,baz=87,slow=6.5,SNR=2.8							
NOA	**NORSAR Array B**	**66.51**	**328**	P		**P**	**05 07 57.1**	**-0.9**
NOA				pP		pP	05 08 23.9	+2.3
GERES	**GERESS Array B**	**66.73**	**315**	P		**P**	**05 07 59.7**	**+0.2**
	comp=Z,1.1nm,0.4s,mb4.0,baz=69,slow=7.2,SNR=12							
CDF	**Champ du Feu**	**70.59**	**315**	*e*P		**P**	**05 08 25.6**	**-0.1**
	comp=Z,1.8nm,0.4s,mb4.0							
PGF	**Pioggiola**	**71.28**	**309**	*e*P		**P**	**05 08 27.7**	**+0.2**
	comp=Z,2.4nm,0.5s,mb4.0							
HAU	**Haudompre**	**71.69**	**315**	*e*P		**P**	**05 08 29.8**	**-0.1**
	comp=Z,1.7nm,0.4s,mb3.9							
LPG	**La Plagne**	**72.08**	**312**	*e*P		**P**	**05 08 32.9**	**+0.7**
	comp=Z,3.1nm,0.5s,mb4.1							
LPL	**La Plagne**	**72.08**	**312**	*e*P		**P**	**05 08 32.9**	**+0.6**
	comp=Z,5.3nm,0.4s,mb4.4							
CABF	**La Chapelle**	**72.23**	**314**	*e*P		**P**	**05 08 34.1**	**+1.0**
	comp=Z,2.9nm,0.6s,mb4.0							
MEZF	**Maizieres J'vi**	**72.40**	**316**	*e*P		**P**	**05 08 34.3**	**+0.2**
	comp=Z,4.0nm,0.4s,mb4.3							
VIVF	**Saint-Julien-l**	**73.67**	**312**	*e*P		**P**	**05 08 41.5**	**0.0**
	comp=Z,2.9nm,0.6s,mb3.9							
SMF	**Signal de Mont**	**73.71**	**314**	*e*P		**P**	**05 08 41.6**	**-0.1**
	comp=Z,3.6nm,0.4s,mb4.2							
SSF	**Saint Saulge**	**73.80**	**315**	*e*P		**P**	**05 08 42.2**	**-0.1**
	comp=Z,2.3nm,0.4s,mb3.9							
AVF	**Avril sur Loir**	**73.98**	**314**	*e*P		**P**	**05 08 43.2**	**-0.2**
	comp=Z,1.8nm,0.4s,mb3.8							
LASF	**Ste Croix**	**74.46**	**312**	*e*P		**P**	**05 08 46.5**	**+0.4**
	comp=Z,2.2nm,0.6s,mb3.8							
TCF	**Toulx Ste Croi**	**74.89**	**314**	*e*P		**P**	**05 08 49.1**	**+0.6**
	comp=Z,1.1nm,0.4s,mb3.9							
CAF	**Calviac**	**75.41**	**313**	*e*P		**P**	**05 08 52.2**	**+0.7**
LDF	**La Druitiere**	**75.66**	**317**	*e*P		**P**	**05 08 52.7**	**-0.1**
RJF	**Les Rejaudoux**	**75.66**	**313**	*e*P		**P**	**05 08 53.7**	**+0.8**
MTLF	**Montolieu**	**75.81**	**311**	*e*P		**P**	**05 08 54.3**	**+0.4**
	comp=Z,1.1nm,0.5s,mb3.6							
ETSF	**Etsaut**	**77.88**	**312**	*e*P		**P**	**05 09 06.3**	**+0.9**
	comp=Z,2.3nm,0.4s,mb3.9							
MAW	**Mawson**	**93.73**	**192**	P		**P**	**05 10 22.0**	**-1.2**

*IDC **16** 05:05:48.9±0.9, 12.02S×166.46E, mb4.1/9,mb1 4.2/9, mb1mx4.2/14, MS3.5/8, Ms1 3.5/8, ms1mx3.3/24, Error ellipse: s-maj=35.1km s-min=21.5km az=129.0*
*NEIC **16** 05:05:50.7±0.5, 12.00S×166.44E, h10km, mb4.4/5, Error ellipse: s-maj=15.3km s-min=10.9km az=135.0*
*BJI **16** 05:05:50.7, 12.00S×166.40E, h10km, mb4.7*
ISC 16 05:06:00.7±2.8,12.1S±0.1×166.1E±0.1,h97km±27km**,n34, σ1§28/25,mb4.2/14,Santa Cruz Islands**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
							h m s	ISC
BKM	**Butte a Klehm**	**5.91**	**160**	*i*P		**P**	**05 07 28.0**	**+0.9**
PMG	**Port Moresby**	**18.81**	**276**	LR		LR	05 16 35.7	
	comp=Z,195nm,20.2s,baz=113,slow=34							
PMG	**Port Moresby**	**18.81**	**276**	*e*P		**P**	**05 10 14.0**	**-1.3**
	18nm,1.1s							
CTA	**Charters Tower**	**20.65**	**245**	P		**P**	**05 10 34.9**	**+0.3**
	9.6nm,1.2s,baz=60,slow=14,SNR=5.0							
CTA				LR		LR	05 17 37.6	
	comp=Z,117nm,19.9s,baz=49,slow=34							
CTAO	**Charters Tower**	**20.65**	**245**	*e*P		**P**	**05 10 34.5**	**-0.1**
	22nm,1.3s							
STKA	**Stephens Creek**	**29.93**	**225**	*e*P		**P**	**05 12 08.5**	**+6.6**
	2.3nm,0.6s,mb4.0							
STKA	**Stephens Creek**	**29.93**	**225**	P		**P**	**05 12 01.4**	**-0.6**
	2.1nm,0.7s,mb3.9,baz=68,slow=11,SNR=3.0							
STKA				LR		LR	05 23 11.2	
	comp=Z,127nm,21.4s,baz=24,slow=34							
STKA	**Stephens Creek**	**29.93**	**225**	P		**P**	**05 12 01.4**	**-0.6**
STKA				LR		LR	05 23 11.2	
WB2	**Warramunga Arr**	**31.46**	**252**	*e*P		**P**	**05 12 26.5**	**+11**
WRAB	**Tennant Creek**	**31.46**	**252**	P		**P**	**05 12 15.7**	**+0.3**
	2.1nm,0.5s,mb4.1							
WRA	**Warramunga Arr**	**31.47**	**252**	P		**P**	**05 12 15.3**	**-0.2**
	1.0nm,0.9s,mb3.6,baz=83,slow=9.3,SNR=6.7							
WRA				PcP		PcP	05 15 05.9	-0.5
	1.3nm,0.7s,baz=78,slow=3.1,SNR=9.4							
WRA				LR		LR	05 23 35.3	
	comp=Z,57nm,20.6s,baz=75,slow=34							
RPZ	**Rata Peaks**	**31.79**	**173**	P		**P**	**05 12 16.4**	**-1.7**
	3.8nm,0.5s,mb4.4,baz=43,slow=7.8,SNR=4.3							
RPZ				LR		LR	05 23 35.7	
	comp=Z,115nm,20.9s,baz=193,slow=34							
AS12	**Alice Springs**	**32.65**	**245**	*e*P		**P**	**05 12 30.3**	**+4.6**
	3.5nm,0.7s,mb4.3							
AS12				*i*			05 12 36.1	
ASAR	**Alice Springs**	**32.65**	**245**	P		**P**	**05 12 24.7**	**-1.0**
	3.4nm,0.6s,mb4.3,baz=70,slow=9.3,SNR=11							
ASAR				PcP		PcP	05 15 10.2	+0.6
	1.9nm,0.7s,baz=80,slow=2.0,SNR=14							
ASAR				LR		LR	05 26 12.9	
	comp=Z,51nm,19.9s,baz=28,slow=37							
ASAR	**Alice Springs**	**32.65**	**245**	P		**P**	**05 12 24.7**	**-1.0**
ASAR				PcP		PcP	05 15 10.2	+0.6
ASAR				LR		LR	05 26 12.9	
FITZ	**Fitzroy Crossi**	**39.46**	**256**	LR		LR	05 28 48.8	
	comp=Z,44nm,21.7s,baz=118,slow=35							
BJI	**Beijing**	**69.52**	**321**	*e*P		**P**	**05 17 01.1**	**0.0**
BJI				AMB	AMB			
	comp=Z,8.0nm,0.9s,mb4.5							
CMAR	**Chiang Mai Arr**	**72.86**	**294**	P		**P**	**05 17 22.9**	**+1.5**
	comp=Z,0.7nm,0.4s,mb3.9,baz=124,slow=3.3,SNR=3.7							
HHC	**Hu-ho-hao-te**	**72.86**	**320**	*e*P		**P**	**05 17 18.8**	**-2.2**
QSPA	**South Pole Qui**	**77.91**	**180**	*e*P		**P**	**05 17 50.1**	**+1.1**
	comp=Z,3.6nm,0.8s,mb4.2							
ULN	**Ulaanbaatar**	**79.36**	**324**	*e*P		**P**	**05 17 58.6**	**+1.1**
	comp=Z,8.5nm,1.0s,mb4.5							
ULN				*e*			05 18 04.2	
GTA	**Gaotai**	**80.04**	**314**	*e*P		**P**	**05 18 04.0**	**+2.6**
GTA				AP	pP		05 18 09.1	-18
GTA				AMB	AMB			
	comp=Z,9.0nm,1.0s,mb4.5							
ILAR	**Eielson Array**	**84.40**	**18**	P		**P**	**05 18 22.1**	**-1.1**
	comp=Z,0.4nm,0.8s,mb3.3,baz=231,slow=5.8,SNR=4.1							
NVAR	**Mina Array Bea**	**86.43**	**50**	LR		LR	05 50 04.7	
	comp=Z,62nm,19.0s,baz=255,slow=31							
MKAR	**Makanchi Array**	**94.53**	**317**	P		**P**	**05 19 12.7**	**+1.3**
	comp=Z,7.7nm,0.7s,mb5.3,baz=95,slow=6.4,SNR=73							
ZAL	**Zalesovo**	**94.62**	**324**	P		**P**	**05 19 12.3**	**+0.6**
	comp=Z,0.8nm,0.4s,mb4.5,baz=119,slow=3.5,SNR=3.2							
YKA	**Yellowknife Ar**	**95.74**	**27**	P		**P**	**05 19 14.0**	**-2.6**
	comp=Z,0.1nm,0.5s,mb3.5,baz=256,slow=5.0,SNR=3.3							
YKA	**Yellowknife Ar**	**95.74**	**27**	P		**P**	**05 19 14.0**	**-2.6**
ARCES	**ARCESS Array B**	**117.44**	**345**	PKP		PKPdf	05 24 35.8	+1.2
	comp=Z,1.8nm,1.0s,baz=90,slow=3.6,SNR=4.8							
FINES	**FINESS Array B**	**122.88**	**338**	PKP		PKPdf	05 24 46.9	+1.5
	comp=Z,1.6nm,1.0s,baz=90,slow=1.9,SNR=4.1							
ORIF	**Oris-en-Rattie**	**143.18**	**336**	*e*PKP1		PKPbc	05 25 29.2	+7.5
	comp=Z,5.3nm,0.8s							
FRF	**La Foret Royal**	**143.99**	**334**	*e*PKP1		PKPbc	05 25 29.9	+5.7
	comp=Z,6.3nm,0.8s							
LASF	**Ste Croix**	**144.66**	**338**	*e*PKP1		PKPbc	05 25 32.5	+6.4
	comp=Z,9.4nm,1.1s							
MTLF	**Montolieu**	**145.90**	**339**	*e*PKP1		PKPbc	05 25 36.1	+6.8
	comp=Z,5.4nm,0.8s							

*IDC **16** 05:32:53.0±8.1, 7.86S×129.55E, h85km±66km, mb3.7/1, mb1 4.0/4, mb1mx3.7/14, ML4.0/3, Error ellipse: s-maj=61.6km s-min=53.9km az=8.0*
ISC 16 05:32:49.6±3.7,7.8S±0.2×129.6E±0.2,h72km±48km**,n4, σ1§29/7,mb3.6/1,Banda Sea**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
							h m s	ISC
FITZ	**Fitzroy Crossi**	**10.96**	**200**	P		**P**	**05 35 25.3**	**-0.5**
	0.6nm,0.3s,baz=12,slow=12,SNR=17							
FITZ				S		**S**	**05 37 27.4**	**0.0**
	1.1nm,0.3s,baz=211,slow=19,SNR=5.1							
WRA	**Warramunga Arr**	**12.97**	**160**	P		**P**	**05 35 52.1**	**-0.4**
	1.2nm,0.3s,baz=342,slow=13,SNR=4.8							
WRA				S		**S**	**05 38 14.5**	**-1.0**
	2.1nm,0.3s,baz=332,slow=22,SNR=11							
ASAR	**Alice Springs**	**16.36**	**166**	P		**P**	**05 36 38.1**	**+2.0**
	1.2nm,0.3s,baz=348,slow=9.4,SNR=50							
ASAR				S		**S**	**05 39 35.6**	**+0.8**
	0.3nm,0.3s,baz=346,slow=25,SNR=5.0							
STKA	**Stephens Creek**	**26.49**	**157**	P		**P**	**05 38 21.5**	**-0.7**
	0.9nm,0.3s,mb3.6,baz=324,slow=10,SNR=4.7							

*IDC **16** 05:32:38.7±1.2, 0.04S×123.66E, mb4.1/5, mb1 4.2/5, mb1mx4.0/16, Error ellipse: s-maj=65.2km s-min=19.8km az=71.0*
ISC 16 05:33:07.8±1.2,0.2S±0.2×123.9E±0.5,h300km**,n5, σ0§23/5,mb3.8/5,Minahassa Peninsula, Sulawesi**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
							h m s	ISC
WRA	**Warramunga Arr**	**22.12**	**153**	P		**P**	**05 37 40.2**	**+0.3**
	2.5nm,0.5s,mb3.8,baz=332,slow=10,SNR=7.4							
ASAR	**Alice Springs**	**25.26**	**158**	P		**P**	**05 38 08.9**	**-0.1**
	1.2nm,0.5s,mb3.6,baz=345,slow=16,SNR=6.2							
STKA	**Stephens Creek**	**35.67**	**154**	P		**P**	**05 39 39.5**	**-0.2**
	1.6nm,0.5s,mb3.8,baz=344,slow=11,SNR=3.5							
ASAJ	**Asahikawa**	**47.15**	**18**	P		**P**	**05 41 12.3**	**0.0**
	3.1nm,0.5s,mb3.9,baz=266,slow=14,SNR=4.0							
MKAR	**Makanchi Array**	**59.27**	**328**	P		**P**	**05 42 40.2**	**0.0**
	1.8nm,0.5s,mb3.8,baz=118,slow=8.5,SNR=26							

*IDC **16** 05:35:18.1±7.1, 3.54S×143.26E, h78km±73km, mb3.8/4, mb1 3.9/5, mb1mx3.7/14, ML3.0/1, MS3.1/4, Ms1 3.1/4, ms1mx2.8/20, Error ellipse: s-maj=62.2km s-min=34.2km az=126.0*
ISC 16 05:35:12.4±0.9, 3.4S±0.1×143.2E±0.2,h33km**,n9,σ0§39/5, mb4.0/4,MS3.0/2,Near north coast of New Guinea**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
							h m s	ISC
PMG	**Port Moresby**	**7.14**	**147**	P		**P**	**05 36 57.0**	**-0.2**
	1.6nm,0.3s,baz=300,slow=13,SNR=3.8							
CTA	**Charters Tower**	**16.86**	**170**	LR		LR	05 45 26.8	
	comp=Z,60nm,18.5s,baz=226,slow=36							
WRA	**Warramunga Arr**	**18.60**	**207**	LR		LR	05 46 39.3	
	comp=Z,46nm,21.1s,baz=195,slow=37							
ASAR	**Alice Springs**	**22.08**	**203**	P		**P**	**05 40 06.6**	**+0.2**
	11nm,1.1s,mb4.2,baz=30,slow=11,SNR=13							
ASAR				LR		LR	05 48 56.8	
	comp=Z,86nm,19.4s,MS3.2,baz=30,slow=37							
FITZ	**Fitzroy Crossi**	**22.60**	**228**	LR		LR	05 48 59.9	
	comp=Z,40nm,18.2s,MS2.9,baz=311,slow=36							
MKAR	**Makanchi Array**	**73.11**	**321**	P		**P**	**05 46 41.0**	**-0.4**
	1.3nm,0.8s,mb3.9,baz=117,slow=6.4,SNR=7.7							
BVAR	**Borovoye Array**	**82.47**	**324**	P		**P**	**05 47 32.9**	**0.0**
	1.1nm,0.7s,mb3.9,baz=90,slow=5.9,SNR=6.5							
ILAR	**Eielson Array**	**84.60**	**24**	P		**P**	**05 47 43.9**	**+0.4**
	1.1nm,0.7s,mb4.1,baz=256,slow=5.3,SNR=15							
DBIC	**Dimbokro**	**148.05**	**277**	PKPbc	PKPdf		05 54 54.1	+1.5
	12nm,1.4s,baz=79,slow=3.3,SNR=3.5							

*IDC **16** 05:40:04.2±3.2, 50.86N×178.39E, mb3.6/8, mb1 3.8/9, mb1mx3.7/24, ML3.0/1, Error ellipse: s-maj=77.3km s-min=17.0km az=7.0*
*NEIC **16** 05:40:11.0±2.3, 51.06N×178.27E, h46km±16km, mb4.1/1, Error ellipse: s-maj=28.7km s-min=11.8km az=182.0*
ISC 16 05:40:08.9±3.6,51.0N±0.3×178.2E±0.2,h48km±25km**,n15, σ0§60/16,mb3.7/9,Rat Islands**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
							h m s	ISC
FX1	**Attu Island--F**	**3.64**	**304**	Pn		**P**	**05 41 03.5**	**-0.7**
	3.6nm,0.3s,baz=354,slow=11,SNR=20							
FX1				Sn		**S**	**05 41 59.7**	**+13**
	6.8nm,0.3s,baz=259,slow=16,SNR=2.1							
FX1	**Attu Island--F**	**3.64**	**304**	*e*P		**P**	**05 41 05.0**	**+0.8**
BILL	**Bilibino**	**18.09**	**346**	P		**P**	**05 44 17.6**	**-0.2**
ILAR	**Eielson Array**	**22.76**	**39**	P		**P**	**05 45 08.0**	**+0.6**
	0.4nm,0.6s,mb3.0,baz=234,slow=8.4,SNR=5.0							
DAWY	**Dawson**	**25.71**	**43**	*e*P		**P**	**05 45 35.3**	**-0.5**
YKA	**Yellowknife Ar**	**36.88**	**46**	P		**P**	**05 47 13.9**	**-0.1**
	0.2nm,0.4s,mb3.3,baz=284,slow=7.5,SNR=8.5							
YKA	**Yellowknife Ar**	**36.88**	**46**	P		**P**	**05 47 13.9**	**-0.1**
PDAR	**Pinedale Array**	**48.24**	**70**	P		**P**	**

NEIC **16** *06:04:12.8±0.2,23.10N×121.81E,mb5.3/61,MS5.0/94, MW5.6,Error ellipse: s-maj=5.8km s-min=5.1km az=96.0. Moment Tensor Solution. s18 Moment tensor: Scale 10¹⁷ Nm; Mrr-0.04; Mθθ2.09; Mφφ-2.05; Mrθ0.15; Mθφ-1.52; Mφr0.02; Best double couple: M₀2.6×10¹⁷ NP1:φs153°, δ87°,λ1°. NP2:φs63°,δ89°,λ177°. Principal axes: T 2.59, Plg3°, Azm18°; N -.05, Plg87°, Azm226°; P -2.55, Plg2°, Azm108°.*

NEIC Felt at T'ai-pei. Recorded [4 TAP] in T'ai-tung; [3 TAP] in Hua-lien; [2 TAP] in Chang-hua, Chia-i, I-lan, Miao-li, Nan-t'ou, P'ing-tung, T'ai-chung and T'ai-nan; [1 TAP] in Hsin-chu, Kao-hsiung, T'ai-pei and Yun-lin Counties.

HRVD **16** *06:04:12.8±0.2,23.07N×121.86E,h27km,MW5.5/76, Centroid moment Tensor Solution. LP body waves: s65,c109;Mantle waves: s76,c161; Half duration: 1s5 Moment tensor: Scale 10¹⁷Nm; Mrr0.01±.04; Mθθ1.91±.04; Mφφ-1.92±.05; Mrθ0.14±.09; Mθφ-1.71±.04; Mφr0.52±.09; Best double couple: M₀2.62×10¹⁷ NP1:φs246°,δ81°, λ-173°. NP2:φs155°,δ83°,λ-9°. Principal axes: T 2.56, Plg1°, Azm201°; N .12, Plg79°, Azm297°; P -2.68, Plg11°, Azm111°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

MOS **16** *06:04:13.4±0.8,23.60N×121.76E,h33km,mb5.6/29, MS5.1/24 Error ellipse: s-maj=15.2km s-min=6.9km az=110.4*

ISC 16 06:04:08.8±0.3,23.07N±0.01×121.97E±0.01,h19km,2km, h28km±1.9km:pP-P,n505,σ1§20/519,mb5.2/130,MS5.1/137, 77C-35D,Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHKT	**Chengkung**	**0.55**	**273**	⇑*i*P	**Pb**	**06 04 19.5**	**-0.1**
TWF1	**Yuli**	**0.67**	**294**	⇑*i*P	**Pb**	**06 04 21.6**	**+0.1**
TWF1				S	**Sb**	**06 04 31.1**	**+0.5**
TTN	**Taitung**	**0.82**	**247**	*e*P	**Pb**	**06 04 24.4**	**+0.2**
TTN				S	**Sb**	**06 04 34.8**	**0.0**
TWG	**Pinlang**	**0.86**	**253**	*e*P	**Pb**	**06 04 24.5**	**-0.4**
TWG				S	**Sb**	**06 04 35.8**	**-0.2**
ELDTW	**Lidau**	**0.88**	**278**	⇑*i*P	**Pb**	**06 04 24.6**	**-0.6**
ELDTW				S	**Sb**	**06 04 34.7**	**-1.8**
ESL	**Shilin**	**0.88**	**327**	*e*P	**Pb**	**06 04 24.9**	**-0.4**
HWA	**Hwalien**	**0.96**	**340**	P	**Pb**	**06 04 26.4**	**-0.2**
YUS	**Yu-Shan**	**1.02**	**294**	⇑*i*P	**Pb**	**06 04 27.5**	**-0.1**
WDT	**Danda**	**1.02**	**312**	⇑*i*P	**Pb**	**06 04 27.7**	**0.0**
ECL	**Taimali**	**1.05**	**243**	⇓*i*P	**Pb**	**06 04 27.4**	**-0.6**
ECL				S	**Sb**	**06 04 39.0**	**-2.4**
TWD	**Chiawan**	**1.06**	**341**	*e*P	**Pb**	**06 04 27.6**	**-0.7**
TWD				S	**Sb**	**06 04 40.6**	**-1.0**
LAY	**Lan-yu**	**1.10**	**200**	⇓*i*P	**Pb**	**06 04 28.1**	**-0.8**
ALS	**Alishan**	**1.15**	**292**	⇑*i*P	**Pb**	**06 04 29.9**	**+0.1**
ALS				S	**Sb**	**06 04 44.0**	**-0.4**
TAW	**Tawu**	**1.22**	**234**	*e*P	**Pb**	**06 04 30.2**	**-0.8**
TAW				S	**Sb**	**06 04 44.6**	**-1.6**
EAST	**Anshuo**	**1.24**	**236**	⇓*i*P	**Pn**	**06 04 30.5**	**-0.7**
WHF	**Hehuan Shan**	**1.24**	**329**	⇑*i*P	**Pn**	**06 04 31.0**	**-0.3**
WTP	**Ta-pu**	**1.25**	**278**	⇑*i*P	**Pn**	**06 04 31.9**	**+0.4**
SMLT	**Sun Moon Lake**	**1.27**	**310**	⇑*i*P	**Pn**	**06 04 31.6**	**0.0**
SMLT				S	**Sb**	**06 04 45.9**	**-1.8**
SGST	**Jiashian**	**1.27**	**271**	⇑*i*P	**Pn**	**06 04 32.3**	**+0.5**
SGST				S	**Sb**	**06 04 47.0**	**-0.9**
SSD	**Sandimen**	**1.27**	**255**	*e*P	**Pn**	**06 04 31.1**	**-0.6**
CHN4	**Tsaushan**	**1.29**	**283**	⇑P	**Pn**	**06 04 32.7**	**+0.6**
CHN4				S	**Sb**	**06 04 48.2**	**-0.3**
CHN5	**Tsauling**	**1.29**	**294**	⇑*i*P	**Pn**	**06 04 32.6**	**+0.6**
TYC	**Yuchr**	**1.31**	**309**	⇑*i*P	**Pn**	**06 04 32.4**	**+0.1**
CHN1	**Nanshi**	**1.33**	**275**	⇑*i*P	**Pn**	**06 04 33.5**	**+0.9**
ENA	**Nanau**	**1.36**	**351**	⇓*i*P	**Pn**	**06 04 32.8**	**-0.2**
ENA				S	**Sb**	**06 04 48.9**	**-1.6**
TWK	**Hsinying**	**1.37**	**278**	⇑*i*P	**Pn**	**06 04 34.0**	**+0.8**
TWK				S	**Sb**	**06 04 51.6**	**+0.8**
TWT	**Tachien**	**1.38**	**329**	*e*P	**Pn**	**06 04 33.8**	**+0.5**
SGLT	**Jiouru**	**1.40**	**256**	*e*P	**Pn**	**06 04 35.0**	**+1.4**
SGLT				S	**Sb**	**06 04 53.5**	**+1.9**
WNT	**Mingjian**	**1.42**	**304**	⇑*i*P	**Pn**	**06 04 35.1**	**+1.2**
WNT				S	**Sb**	**06 04 52.4**	**+0.2**
SCZT	**Fangliau**	**1.43**	**241**	*e*P	**Pn**	**06 04 34.1**	**+0.2**
WGK	**Gukeng**	**1.43**	**296**	⇑P	**Pn**	**06 04 35.3**	**+1.3**
WGK				S	**Sb**	**06 04 52.9**	**+0.6**
CHN2	**Minshiung**	**1.44**	**289**	⇑*i*P	**Pn**	**06 04 35.5**	**+1.4**
TWM1	**Shoushan**	**1.44**	**260**	*e*P	**Pn**	**06 04 36.1**	**+1.9**
NNS	**Nan Shan**	**1.46**	**338**	⇓P	**Pn**	**06 04 34.6**	**+0.1**
NNS				S	**Sn**	**06 04 50.5**	**-2.7**
CHN3	**Shinhua**	**1.47**	**270**	*e*P	**Pn**	**06 04 37.0**	**+2.4**
CHN3				S	**Sn**	**06 04 56.5**	**+3.0**
CHY	**Chiayi**	**1.48**	**287**	⇑*i*P	**Pn**	**06 04 35.8**	**+1.1**
TWC	**Suao**	**1.53**	**356**	⇓*i*P	**Pn**	**06 04 36.1**	**+0.6**
HEN	**Hengchun**	**1.56**	**227**	⇓*i*P	**Pn**	**06 04 36.0**	**+0.2**
TWK1	**Hengchun**	**1.56**	**224**	⇓*i*P	**Pn**	**06 04 35.6**	**-0.1**
TCU	**Taichung**	**1.59**	**312**	⇑*i*P	**Pn**	**06 04 37.7**	**+1.4**
TAI1	**Yung-k'ang**	**1.60**	**269**	⇑*i*P	**Pn**	**06 04 38.2**	**+1.8**
TAI1				S	**Sn**	**06 04 59.3**	**+2.6**
ENTT	**Nioudou**	**1.60**	**347**	⇓*i*P	**Pn**	**06 04 36.7**	**+0.3**
KAU	**Kaohsiung**	**1.61**	**252**	*e*P	**Pn**	**06 04 39.5**	**+3.0**
CHN8	**Yiju**	**1.64**	**280**	⇑*i*P	**Pn**	**06 04 37.9**	**+1.0**
CHN8				S	**Sn**	**06 04 58.2**	**+0.6**
TWP	**Hsiaoliuchiu**	**1.65**	**244**	*e*P	**Pn**	**06 04 40.4**	**+3.3**
TWE	**Neicheng**	**1.66**	**351**	*e*P	**Pn**	**06 04 37.5**	**+0.1**
TWE				S	**Sn**	**06 04 56.8**	**-1.5**
TWQ1	**Liyutan**	**1.67**	**319**	⇑*i*P	**Pn**	**06 04 39.3**	**+1.8**
TWQ1				S	**Sn**	**06 04 59.6**	**+1.0**
YOJ	**Yonaguni jima**	**1.68**	**35**	P	**Pn**	**06 04 38.6**	**+1.0**
YOJ				S	**Sn**	**06 04 58.8**	**0.0**
NSK	**Sanguang**	**1.69**	**341**	⇓P	**Pn**	**06 04 38.1**	**+0.4**
NSK				S	**Sn**	**06 04 57.3**	**-1.6**
ILA	**Ilan**	**1.69**	**353**	*e*P	**Pn**	**06 04 38.8**	**+1.0**
ILA				S	**Sn**	**06 04 58.6**	**-0.5**
WSF	**Szhu**	**1.70**	**290**	*e*P	**Pn**	**06 04 38.7**	**+0.9**
WSF				S	**Sn**	**06 04 58.4**	**-0.8**
NSY	**Sanyi**	**1.73**	**321**	⇑P	**Pn**	**06 04 40.3**	**+2.0**
NSY				S	**Sn**	**06 05 01.0**	**+0.9**
WTCT	**Ta-ch'eng**	**1.73**	**297**	*e*P	**Pn**	**06 04 39.1**	**+0.8**
WTCT				S	**Sn**	**06 04 59.8**	**-0.3**
NSTT	**Nanjuang**	**1.78**	**331**	*e*P	**Pn**	**06 04 40.5**	**+1.4**
NSTT				S	**Sn**	**06 04 59.9**	**-1.5**
TWB1	**Santiao Chiao**	**1.93**	**1**	*i* P	**Pn**	**06 04 42.0**	**+0.9**
TWB1				S	**Sn**	**06 05 04.4**	**-0.5**
TATO	**Taipei**	**1.94**	**347**	⇑*i*Pn	**Pn**	**06 04 41.8**	**+0.5**
TATO				*e*S	**Sn**	**06 05 04.9**	**-0.5**
HSN	**Hsinchu**	**1.95**	**332**	*e*P	**Pn**	**06 04 43.4**	**+2.0**
HSN				S	**Sn**	**06 05 06.8**	**+1.3**
HATJ	**Hateruma jima**	**1.95**	**60**	P	**Pn**	**06 04 42.6**	**+1.1**
HATJ				S	**Sn**	**06 05 05.9**	**+0.3**
NWF	**Wu-fen Shan**	**2.00**	**355**	⇓*i*P	**Pn**	**06 04 43.5**	**+1.5**
NWF				S	**Sn**	**06 05 07.1**	**+0.3**
TAP1	**Taipei**	**2.00**	**348**	*e*P	**Pn**	**06 04 41.0**	**-1.1**
TAP1				S	**Sn**	**06 05 06.2**	**-0.6**
TAP	**Taipei**	**2.00**	**348**	*e*P	**Pn**	**06 04 42.9**	**+0.7**
TAP				S	**Sn**	**06 05 06.3**	**-0.6**
IRIF	**Iriomote-Funau**	**2.05**	**52**	P	**Pn**	**06 04 44.1**	**+1.3**
IRIF				*e*S	**Sn**	**06 05 08.7**	**+0.6**
TWS1	**Kuangyinshan**	**2.08**	**346**	⇓*i*P	**Pn**	**06 04 44.1**	**+0.8**
TWS1				S	**Sn**	**06 05 09.1**	**+0.2**
WDGT	**Dungji**	**2.13**	**275**	⇑*i*P	**Pn**	**06 04 44.2**	**+0.2**
WDGT				S	**Sn**	**06 05 07.6**	**-2.6**
JKRS	**Kuro-shima**	**2.20**	**58**	P	**Pn**	**06 04 46.5**	**+1.4**
JKRS				S	**Sn**	**06 05 12.5**	**+0.5**
TWY	**Chenhua**	**2.22**	**351**	*e*P	**Pn**	**06 04 46.4**	**+1.1**
TWY				S	**Sn**	**06 05 12.5**	**+0.1**
PNG	**Penghu**	**2.27**	**283**	⇑*i*P	**Pn**	**06 04 46.1**	**+0.1**
PNG				S	**Sn**	**06 05 11.0**	**-2.7**
JIJ	**Ishigaki jima**	**2.37**	**57**	P	**Pn**	**06 04 48.2**	**+0.7**
JIJ				S	**Sn**	**06 05 15.4**	**-1.0**
PCYT	**Pengchaiyu**	**2.55**	**2**	⇓*i*P	**Pn**	**06 04 50.4**	**+0.5**
BBP	**Basco**	**2.62**	**180**	*i*eP	**Pn**	**06 04 50.1**	**-0.9**
BBP				*e*S	**Sn**	**06 05 19.5**	**-3.2**
JTJ	**Tarama**	**2.95**	**58**	P	**Pn**	**06 04 56.7**	**+0.9**
JTJ				S	**Sn**	**06 05 31.0**	**0.0**
KNM	**Kinmen**	**3.50**	**293**	⇑*i*P	**Pn**	**06 05 03.9**	**+0.3**
JMJ	**Miyako jima 2**	**3.50**	**60**	P	**Pn**	**06 05 04.4**	**+0.8**
JMJ				S	**Sn**	**06 05 44.7**	**-0.3**
JOGS	**Gusukube**	**3.57**	**61**	P	**Pn**	**06 05 05.2**	**+0.7**
JOGS				*e*S	**Sn**	**06 05 46.4**	**-0.2**
QZH	**Quanzhou**	**3.60**	**302**	⇓*i*P	**Pn**	**06 05 03.8**	**-1.2**
QZH				S	**Sn**	**06 05 43.3**	**-4.2**
QZH				S	Sn		
	comp=N,31μm,1.6s						
QZH				S	Sn		
	comp=E,10μm,1.1s						
QZH				LR	LR		
	comp=N,45μm,9.6s						
QZH				LR	LR		
	comp=E,47μm,7.8s						
QZH				LR	LR		
	comp=Z,39μm,8.2s						
SGCP	**Mt. Cagua**	**4.81**	**179**	⇑*e*P	**Pn**	**06 05 20.7**	**-1.4**
SGCP				*e*S	**Sn**	**06 06 12.5**	**-5.5**
APYP	**Conner**	**5.23**	**188**	⇑*e*P	**Pn**	**06 05 28.3**	**+0.3**
APYP				*e*S	**Sn**	**06 06 25.6**	**-3.0**
CVP	**Callao Caves**	**5.35**	**181**	*e*P	**Pn**	**06 05 31.0**	**+1.3**
JKE	**Kume jima 2**	**5.45**	**53**	P	**Pn**	**06 05 29.6**	**-1.6**
JKE				*e*S	**Sn**	**06 06 30.5**	**-3.6**
ABRA	**Dolores**	**5.52**	**193**	⇑*e*P	**Pn**	**06 05 31.9**	**-0.3**
ABRA				*e*S	**Sn**	**06 06 35.4**	**-0.6**
SZP	**Santa**	**5.67**	**195**	⇑*i*P	**Pn**	**06 05 35.4**	**+1.1**
SZP				*i* S	**Sn**	**06 06 45.2**	**+5.5**
JAGN	**Aguni-jima**	**5.94**	**53**	P	**Pn**	**06 05 36.4**	**-1.6**
JAGN				*e*S	**Sn**	**06 06 43.3**	**-3.0**
PALP	**Palanan**	**6.00**	**176**	⇑*e*P	**Pn**	**06 05 38.1**	**-0.8**
NAH1	**Naha**	**6.07**	**58**	*e*S	**Sn**	**06 06 49.2**	**-0.4**
JJT2	**Tamagusuku 2**	**6.08**	**59**	P	**Pn**	**06 05 39.4**	**-0.7**
JJT2				*e*S	**Sn**	**06 06 48.5**	**-1.5**
CAUP	**Cauayan**	**6.10**	**181**	⇑*e*P	**Pn**	**06 05 42.0**	**+1.7**
CAUP				*e*S	**Sn**	**06 06 43.0**	**-7.4**
JIH	**Iheya**	**6.72**	**53**	P	**Pn**	**06 05 46.6**	**-2.5**
JIH				S	**Sn**	**06 07 01.5**	**-4.4**
BCPH	**Baguio City Da**	**6.79**	**191**	*i*P	**Pn**	**06 05 50.0**	**0.0**
BCPH				*i* S	**Sn**	**06 07 05.9**	**-1.6**
JOW	**Kunigami**	**6.84**	**56**	Pn	**Pn**	**06 05 47.6**	**-3.1**
	comp=Z,26nm,0.3s,baz=198,slow=8.0,SNR=42						
JOW				Sn	**Sn**	**06 07 03.1**	**-5.8**
	comp=Z,20nm,0.3s,baz=322,slow=19,SNR=4.4						
JOW	**Kunigami**	**6.84**	**56**	P	**Pn**	**06 05 47.7**	**-3.1**
JOW				*e*S	**Sn**	**06 07 03.0**	**-5.9**
BOLP	**Bolinao**	**6.93**	**197**	⇑*e*P	**Pn**	**06 05 51.5**	**-0.6**
BOLP				*e*S	**Sn**	**06 07 14.8**	**+3.6**
BALP	**Baler**	**7.30**	**183**	⇑*e*P	**Pn**	**06 05 58.6**	**+1.3**
BALP				*e*S	**Sn**	**06 07 19.5**	**-1.0**
SCZP	**Santa Cruz**	**7.51**	**195**	⇑*e*P	**Pn**	**06 06 00.0**	**-0.2**
PCPH	**Palayan**	**7.52**	**186**	⇑*e*P	**Pn**	**06 05 59.6**	**-0.6**
JTK	**Tokunoshima**	**7.87**	**52**	P	**Pn**	**06 06 01.1**	**-4.0**
JTK				S	**Sn**	**06 07 27.6**	**-6.9**
SSE	**Sheshan**	**8.02**	**355**	P	**P**	**06 06 04.8**	**-2.5**
SSE				S	**Sn**	**06 07 31.3**	**-7.1**
SSE				S	Sn		
	comp=N,368nm,1.5s						
SSE				S	Sn		
	comp=E,443nm,1.5s						
SSE				LR	LR		
	comp=N,4μm,17.8s						
SSE				LR	LR		
	comp=E,18μm,17.8s						
SSE				LR	LR		
	comp=Z,10μm,12.5s						
POLP	**Polilio Island**	**8.30**	**180**	⇑*e*P	**P**	**06 06 10.3**	**-0.8**
POLP				*e*S	**Sn**	**06 07 40.1**	**-5.3**
JAM	**Amami Oshima**	**8.70**	**51**	P	**P**	**06 06 12.2**	**-4.5**
JAM				*e*S	**Sn**	**06 07 46.1**	**-9.2**
JMZ	**Minamidaito 2**	**8.87**	**70**	P	**P**	**06 06 13.9**	**-5.1**
JMZ				*e*S	**Sn**	**06 07 47.8**	**-12**
JZK	**Kikaishima**	**8.91**	**52**	P	**P**	**06 06 14.8**	**-4.8**
TGY	**Tagaytay City**	**8.98**	**186**	*e*P	**P**	**06 06 26.5**	**+6.0**
TGY	**Tagaytay City**	**8.98**	**186**	Pn	**P**	**06 06 22.5**	**+2.0**
	comp=Z,7.0nm,0.3s,baz=166,slow=7.8,SNR=20						
TGY				LR	LR	06 10 04.2	
	comp=Z,6μm,18.1s,baz=211,slow=40						
TGY	**Tagaytay City**	**8.98**	**186**	Pn	**P**	**06 06 22.5**	**+2.0**
TGY				LR	LR	06 10 04.2	
GQP	**Guinayangan**	**9.13**	**177**	⇑*e*P	**P**	**06 06 24.0**	**+1.3**
NJ2	**Nanjing**	**9.36**	**344**	*e*P	**P**	**06 06 23.5**	**-2.3**
NJ2				AP		06 06 30.6	
NJ2				XP		06 06 34.9	
NJ2				S	**Sn**	**06 08 04.3**	**-7.3**
NJ2				AMB	AMB		
	comp=Z,70nm,0.6s						
NJ2				AMB	AMB		
	comp=Z,1μm,3.6s						
NJ2				LR	LR		
	comp=Z,24μm,15.6s						
LUBP	**Lubang**	**9.43**	**190**	⇑*e*P	**P**	**06 06 28.4**	**+1.5**
BOAC	**Boac**	**9.56**	**181**	⇑*e*P	**P**	**06 06 36.5**	**+7.8**
WHN	**Wuhan**	**10.08**	**319**	⇓P	**P**	**06 06 32.8**	**-2.9**
WHN				S	**S**	**06 08 18.5**	**-11**
QIZ	**Qiongzhong**	**12.01**	**253**	⇑P	**P**	**06 07 01.0**	**-1.1**
QIZ				S	**S**	**06 09 07.4**	**-9.2**
QIZ				AMB	AMB		
	comp=Z,43nm,1.2s						
QIZ				LR	LR		
	comp=N,20μm,16.5s						
QIZ				LR	LR		
	comp=E,10μm,14.8s						
QIZ				LR	LR		
	comp=Z,15μm,15.9s						
JNU	**Nakatsue**	**12.72**	**36**	Pn	**P**	**06 07 11.2**	**-0.4**
	comp=Z,1.1nm,0.3s,baz=189,slow=13,SNR=7.7						
JTU	**Tsushima**	**13.13**	**28**	P	**P**	**06 07 18.4**	**+1.4**
MSLP	**Maasin**	**13.16**	**167**	⇑*e*P	**P**	**06 07 17.3**	**-0.2**
TIA	**Tai'an**	**13.75**	**343**	⇓P	**P**	**06 07 27.3**	**+2.1**
TIA				AMB	AMB		
	comp=Z,120nm,2.0s						
TIA				LR	LR		
	comp=E,6μm,9.0s						
GYA	**Guiyang**	**14.30**	**287**	⇓*i*P	**P**	**06 07 31.3**	**-1.2**
GYA				AP		06 07 38.0	
GYA				XP		06 07 42.6	
GYA				AMB	AMB		
	comp=Z,120nm,1.3s						
GYA				AMB	AMB		
	comp=Z,230nm,4.6s						
GYA				LR	LR		
	comp=N,6μm,9.3s						
GYA				LR	LR		
	comp=E,8μm,13.2s						
GYA				LR	LR		
	comp=Z,8μm,13.8s						
BATP	**Bataraza**	**14.75**	**196**	⇑*e*P	**P**	**06 07 39.0**	**+0.5**
INCN	**Inchon**	**14.91**	**15**	⇑*e*P	**P**	**06 07 41.5**	**+1.1**
	comp=Z,505nm,1.4s						
KS15	**Wonju Array Si**	**15.20**	**18**	⇑*e*P	**P**	**06 07 45.1**	**+0.9**
DL2	**Dalian**	**15.79**	**359**	P	**P**	**06 07 53.4**	**+1.6**
DL2				S	**S**	**06 10 48.6**	**+2.2**
DL2				AMB	AMB		
	comp=Z,400nm,7.8s						
DL2				LR	LR		
	comp=E,5μm,20.1s						
DL2				LR	LR		
	comp=Z,3μm,16.3s						
XAN	**Xi'an**	**15.81**	**317**	P	**P**	**06 07 50.9**	**-1.3**
XAN				AP		06 07 57.0	
XAN				PP	PP	06 08 07.8	+2.8
XAN				AMB	AMB		
	comp=Z,107nm,1.4s						
XAN				AMB	AMB		
	comp=Z,392nm,4.6s						
XAN				LR	LR		
	comp=Z,11μm,13.4s						
TIY	**Taiyuan**	**16.73**	**333**	⇓P	**P**	**06 08 07.0**	**+3.2**
TIY				S	**S**	**06 11 12.0**	**+3.7**
TIY				LR	LR		
	comp=N,16μm,15.0s						
TIY				LR	LR		
	comp=Z,8μm,12.0s						
BJI	**Beijing**	**17.61**	**345**	P	**P**	**06 08 15.1**	**+0.3**
BJI				S	**S**	**06 11 30.5**	**+2.1**
BJI				AMB	AMB		
	comp=Z,1μm,4.9s						
BJI				LR	LR		
	comp=N,4μm,18.0s						
BJI				LR	LR		
	comp=E,13μm,19.7s						
KMI	**Kunming**	**17.67**	**280**	*e*PR		06 08 14.8	
KMI				AP		06 08 19.1	
KMI				XP		06 08 22.6	
KMI				PP	PP	06 08 31.0	+0.6
KMI				S	**S**	**06 11 34.3**	**+4.5**
KMI				XS		06 11 41.3	
KMI				AMB	AMB		
	comp=Z,117nm,1.8s						
KMI				AMB	AMB		
	comp=Z,512nm,3.8s						
KMI				LR	LR		
	comp=N,10μm,14.9s						
KMI				LR	LR		
	comp=E,4μm,14.1s						
KMI				LR	LR		
	comp=Z,5μm,15.2s						
KKM	**Kota Kinabalu**	**17.82**	**199**	⇑*e*P	**P**	**06 08 18.7**	**+1.2**
	comp=Z,454nm,1.3s						
CD2	**Chengdu**	**17.99**	**300**	⇑*i*P	**P**	**06 08 19.0**	**-0.6**
CD2				S	**S**	**06 11 40.4**	**+3.4**
CD2				AMB	AMB		
	comp=Z,130nm,1.3s						
CD2				AMB	AMB		
	comp=Z,820nm,5.4s						
CD2				LR	LR		
	comp=Z,12μm,9.6s						
JHJ	**Hachijo jima 2**	**18.61**	**54**	P	**P**	**06 08 30.4**	**+3.1**
	comp=Z,9.5nm,0.3s,baz=213,slow=8.4,SNR=8.1						
JHJ				S	**S**	**06 11 50.2**	**-0.8**
	comp=Z,29nm,0.3s,baz=261,slow=23,SNR=6.1						
JHJ				LR	LR	06 15 55.6	
	comp=Z,2μm,19.6s,baz=327,slow=38						
CBIJ	**Chichi jima**	**18.74**	**74**	P	**P**	**06 08 29.4**	**+0.5**
	comp=Z,2.1nm,0.3s,baz=261,slow=6.0,SNR=4.5						
CBIJ				LR	LR	06 14 44.7	
	comp=Z,2μm,18.9s,baz=254,slow=34						
SNY	**Shenyang**	**18.75**	**4**	⇑P	**P**	**06 08 27.9**	**-1.0**
SNY				S	**S**	**06 11 58.3**	**+4.2**
SNY				LR	LR		
	comp=N,8μm,12.7s						
SNY				LR	LR		
	comp=E,2μm,9.2s						
SNY				LR	LR		
	comp=Z,7μm,13.8s						
MAJO	**Matsushiro**	**19.42**	**43**	*e*P	**P**	**06 08 34.8**	**-2.1**
	comp=Z,101nm,1.4s						
MAT	**Matsushiro**	**19.42**	**43**	P	**P**	**06 08 33.9**	**-3.0**
MAT				S	**S**	**06 12 06.0**	**-3.4**
MAT	**Matsushiro**	**19.42**	**43**	*e*P	**P**	**06 08 34.0**	**-2.9**
	comp=Z,23nm,1.1s						
MAT				*e*S	**S**	**06 12 06.0**	**-3.4**
HHC	**Hu-ho-hao-te**	**19.77**	**336**	*e*P	**P**	**06 08 40.6**	**-0.1**
HHC				AP		06 08 49.3	
HHC				XP		06 08 53.1	
HHC				PP	PP	06 09 00.8	+1.5
HHC				SCP		06 16 27.3	
HHC				AMB	AMB		
	comp=Z,88nm,1.5s						
HHC				AMB	AMB		
	comp=Z,869nm,5.8s						
HHC				LR	LR		
	comp=N,4μm,11.8s						
HHC				LR	LR		
	comp=E,2μm,13.9s						
HHC				LR	LR		
	comp=Z,3μm,13.2s						
BTO	**Baotou**	**20.18**	**333**	*e*P	**P**	**06 08 45.1**	**+0.1**
BTO				S	**S**	**06 12 30.8**	**+5.5**
BTO				AMB	AMB		
	comp=Z,174nm,1.3s						
LZH	**Lanzhou**	**20.36**	**314**	⇓P	**P**	**06 08 47.5**	**+0.5**
LZH				AP		06 08 56.3	
LZH				XP		06 09 01.0	
LZH				PP	PP	06 09 07.8	+0.1
LZH				S	**S**	**06 12 28.1**	**-1.1**
LZH				XS		06 12 42.3	
LZH				SS	SS	06 12 56.1	-3.0
LZH				AMB	AMB		
	comp=Z,541nm,1.5s						
LZH				AMB	AMB		
	comp=Z,1μm,4.0s						
LZH				LR	LR		
	comp=E,9μm,11.8s						
LZH				LR	LR		
	comp=Z,13μm,13.3s,MS5.5						
CN2	**Changchun**	**20.87**	**7**	⇑P	**P**	**06 08 50.5**	**-1.7**
CN2				*e*AP		06 08 58.8	
CN2				*e*XP		06 09 04.3	
CN2				*e*S	**S**	**06 12 36.8**	**-2.5**
CN2				LR	LR		
	comp=Z,5μm,13.0s,MS5.1						
VLA	**Vladivostok**	**21.62**	**20**	⇓*i*P	**P**	**06 08 59.0**	**-0.8**
VLA				*i*		06 09 14.0	
VLA				*i*		06 09 30.0	
VLA				*i* S	**S**	**06 13 06.0**	**+13**
VLA				pmax	pmax		
	comp=N,500nm,2.0s						
VLA				pmax	pmax		
	comp=E,500nm,2.0s						
VLA				pmax	pmax		
	comp=Z,600nm,2.0s,mb5.7						
VLA				pmax	pmax		
	comp=Z,1μm,10.0s						
VLA				pmax	pmax		
	comp=N,1μm,4.0s						
VLA				pmax	pmax		
	comp=E,600nm,4.0s						
VLA				MLR	MLR		
	comp=Z,4μm,18.0s,MS4.8						
VLA				MLR	MLR		
	comp=N,6μm,12.0s						
VLA				MLR	MLR		
	comp=E,6μm,15.0s						
CM31	**Chiang Mai Arr**	**22.00**	**262**	P	**P**	**06 09 02.0**	**-1.8**
	comp=E,59nm,1.0s,mb5.0						
CMAR	**Chiang Mai Arr**	**22.00**	**262**	P	**P**	**06 09 05.7**	**+1.9**
	comp=E,21nm,0.8s,mb4.6,baz=65,slow=8.5,SNR=26						
CMAR				LR	LR	06 19 03.7	
	comp=E,3μm,18.2s,MS4.8,baz=80,slow=41						
MDJ	**Mudanjiang**	**22.38**	**14**	P	**P**	**06 09 05.8**	**-1.6**
MDJ				AP		06 09 10.6	
MDJ				S	**S**	**06 13 03.6**	**-3.8**
MDJ				XS		06 13 15.6	
MDJ				SCP		06 16 36.8	
MDJ				PCS		06 16 41.6	
MDJ				SCS	ScS	06 20 20.6	-1.6
MDJ				AMB	AMB		
	comp=Z,246nm,4

LSA LR LR
comp=Z,5μm,16.3s,MS5.2
YSS Yuzh-Sakhalins 29.11 30⇓ *i*P **P 06 10 11.6 +1.1**
YSS *e**SP sP 06 10 24.0 +5.4
YSS *e* 06 11 04.0
YSS *e* 06 13 24.0
YSS *e*S **S 06 14 58.0 -2.0**
YSS *e* 06 15 18.0
YSS pmax pmax
comp=Z,150nm,1.2s,mb5.6
YSS pmax pmax
comp=N,60nm,1.0s
YSS pmax pmax
comp=E,80nm,1.5s
YSS MLR MLR
comp=Z,2μm,14.0s,MS5.0
YSS MLR MLR
comp=N,3μm,15.0s
YSS Yuzh-Sakhalins 29.11 30 *e*P **P 06 10 11.2 +0.7**
comp=N,178nm,1.3s,mb5.6
YSS LR LR
comp=Z,3μm,20.0s,MS4.8
ZAK Zakamensk 30.92 336 *e*P **P 06 10 25.2 -1.3**
TLY Talaya 31.87 338 *e*P **P 06 10 32.1 -2.7**
TLY *e* 06 10 50.9
TLY *e* 06 11 57.3
TLY *e*S **S 06 15 41.1 -2.3**
TLY pmax pmax
comp=Z,112nm,1.0s,mb5.7
TLY MLR MLR
comp=Z,25μm,16.0s,MS6.0
GUN Gumba 32.85 286 *e*P **P 06 10 43.7 +0.1**
comp=Z,91nm,0.9s,mb5.7
PKI Pulchoki 33.27 285 *e*P **P 06 10 46.2 -1.1**
comp=Z,48nm,1.0s,mb5.4
KKN Kakani 33.38 286 *e*P **P 06 10 47.9 -0.4**
comp=Z,60nm,0.9s,mb5.5
DMN Daman 33.54 286 *e*P **P 06 10 48.9 -0.7**
comp=Z,76nm,1.0s,mb5.6
CLNS Chul'man 33.79 3 *e*P **P 06 10 49.5 -2.1**
CLNS *e**PP pP 06 10 54.9 -2.3
CLNS *e* 06 12 02.9
CLNS *e*PPP PPP 06 12 15.2 -7.3
CLNS pmax pmax
comp=Z,10.0nm,1.1s,mb4.7
CLNS pmax pmax
comp=N,9.0nm,1.0s
CLNS pmax pmax
comp=E,5.0nm,1.1s
CLNS pmax pmax
comp=Z,6.0nm,1.0s,mb4.5
CLNS pmax pmax
comp=N,8.0nm,0.9s
CLNS pmax pmax
comp=E,9.0nm,1.0s
CLNS MLR MLR
comp=Z,4μm,13.0s,MS5.3
CLNS MLR MLR
comp=N,3μm,14.0s,MS5.3
CLNS MLR MLR
comp=E,600nm,10.0s,MS5.3
GKN Gorkha 33.95 286 *e*P **P 06 10 52.3 -0.9**
comp=E,85nm,1.1s,mb5.6
KOLN Koldanda 34.87 286 *e*P **P 06 11 00.5 -0.6**
comp=E,84nm,0.9s,mb5.7
WMQ Urumqi 34.94 315 *e*P **P 06 11 02.0 +0.4**
WMQ AP pP 06 11 11.8 +4.6
WMQ XP sP 06 11 15.6 +6.0
WMQ PP PP 06 12 19.4 -0.3
WMQ PCP PcP 06 13 35.8 +1.6
WMQ S **S 06 16 28.8 -2.4**
WMQ XS 06 16 45.0
WMQ SCP 06 17 17.3
WMQ PCS 06 17 21.0
WMQ SS SS 06 18 42.3 -3.6
WMQ SCS ScS 06 21 18.9 -0.7
WMQ AMB AMB
comp=Z,101nm,0.8s,mb5.8
WMQ AMB AMB
comp=Z,905nm,5.6s
YAK Yakutsk 39.29 6*c i*P **P 06 11 36.6 -1.4**
YAK *e**PP pP 06 11 44.1 +0.4
YAK *e* 06 13 05.5
YAK *e*PPP PPP 06 13 27.8 -8.3
YAK *e* 06 13 42.8
YAK *e*S **S 06 17 32.8 -4.7**
YAK *e*SS SS 06 20 17.3 -6.3
YAK *e*SSS SSS 06 20 51.6 -6.6
YAK *e* 06 21 41.1
YAK pmax pmax
comp=Z,20nm,1.0s,mb4.8
YAK pmax pmax
comp=N,19nm,1.2s
YAK pmax pmax
comp=E,4.0nm,1.2s
YAK pmax pmax
comp=Z,7.0nm,1.0s,mb4.3
YAK pmax pmax
comp=N,7.0nm,0.9s
YAK pmax pmax
comp=E,5.0nm,1.2s
YAK smax
comp=N,4.0nm,1.1s
YAK smax
comp=E,4.0nm,1.2s
YAK MLR MLR
comp=Z,2μm,15.0s,MS5.0
YAK MLR MLR
comp=N,1μm,13.0s,MS5.0
YAK MLR MLR
comp=E,1μm,13.0s,MS5.0
YAK Yakutsk 39.29 6 PFAKE 06 11 50.0 +12
YAK LR LR
comp=Z,2μm,19.0s,MS4.8
MKAR Makanchi Array 39.63 317 P **P 06 11 40.5 -0.5**
comp=Z,76nm,1.0s,mb5.4,baz=110,slow=10,SNR=302
MKAR Makanchi Array 39.63 317 *e*P **P 06 11 40.4 -0.6**
MKAR pmax pmax
comp=Z,65nm,1.0s
MKAR Makanchi Array 39.63 317 P **P 06 11 40.5 -0.5**
PMG Port Moresby 40.62 140 P **P 06 11 50.3 +0.8**
comp=Z,32nm,1.0s,mb4.9,baz=342,slow=8.2,SNR=10
PMG LR LR 06 26 18.3
comp=Z,773nm,19.4s,MS4.6,baz=151,slow=33
PMG Port Moresby 40.62 140⇓ *e*P **P 06 11 50.3 +0.8**
comp=Z,101nm,1.4s,mb5.3
PMG *ep*P pP 06 12 02.0 +6.8
PMG LR LR
comp=Z,718nm,21.9s,MS4.5
PET Petropavlovsk 40.83 34 *e*P **P 06 11 48.6 -2.1**
PET *e*S **S 06 18 00.3 -0.3**
PET pmax pmax
comp=Z,256nm,4.6s
PET smax
comp=E,393nm,15.0s
PET Petropavlovsk 40.83 34 PFAKE 06 12 00.0 +9.3
PET LR LR
comp=Z,1μm,19.0s,MS4.8
HYB Hyderabad 41.01 270 *i*P **P 06 11 54.0 +1.5**
HYB *e* 06 17 12.0
HYB *e*S **S 06 18 04.0 +0.4**
HYB Hyderabad 41.01 270 *e*P **P 06 11 54.0 +1.5**
FITZ Fitzroy Crossi 41.08 175⇑ *i*P **P 06 11 50.9 -2.3**
comp=Z,18nm,1.2s,mb4.6
FITZ Fitzroy Crossi 41.08 175 P **P 06 11 50.9 -2.2**
comp=Z,17nm,0.9s,mb4.7,baz=358,slow=6.9,SNR=22
ZAL Zalesovo 41.56 327 P **P 06 11 55.0 -1.7**
comp=Z,7.0nm,0.8s,mb4.4,baz=266,slow=8.4,SNR=26
ZAL LR LR 06 29 17.0
comp=Z,2μm,20.6s,MS5.0,baz=254,slow=36
MA2 Magadan 41.74 22*d i*P **P 06 11 57.6 -0.5**
MA2 pmax pmax
comp=Z,120nm,1.5s,mb5.3
MA2 MLR MLR
comp=Z,2μm,17.0s,MS5.1
MA2 Magadan 41.74 22 *e*P **P 06 11 58.0 -0.1**
comp=Z,89nm,1.3s,mb5.2
MA2 LR LR
comp=Z,1μm,19.0s,MS4.8
KSH Kashi 42.11 304 *e*P **P 06 12 02.8 +1.4**
KSH *e*AP pP 06 12 12.8 +5.7
KSH *e*XP sP 06 12 16.1 +6.6
KSH *e*PP PP 06 13 43.6 +1.5
KSH *e*PCP PcP 06 13 57.6 +1.0
KSH *e*SCP 06 17 44.8
KSH *e*PCS 06 17 48.1
KSH *e*S **S 06 18 19.8 +0.1**
KSH *e*XS 06 18 35.6
KSH *e*SS SS 06 21 21.6 -0.3
KSH *e*SCS ScS 06 22 00.8 0.0
KSH AMB AMB
comp=Z,40nm,0.4s,mb5.4
KSH AMB AMB
comp=Z,520nm,4.0s
AAA Alma-Ata 42.13 310 P **P 06 12 05.0 +3.5**
AAA S **S 06 18 21.0 +1.0**
AAA pmax pmax
comp=Z,250nm,4.0s
AAA MLR MLR
comp=N,2μm,13.0s
AAA MLR MLR
comp=Z,1μm,13.0s,MS5.0
ULHL Ulahol 42.40 308 P **P 06 12 04.6 +0.8**
SNR=53
NVS Novosibirsk 42.82 328 *i*P **P 06 12 05.3 -1.7**
NVS pmax pmax
comp=Z,118nm,2.4s,mb5.2
NVS pmax pmax
comp=N,73nm,2.3s
AJM Ajmer 42.91 285 *e*P **P 06 11 53.0 -15**
TKM2 Tokmak 2 43.01 309 P **P 06 12 09.6 +0.9**
SNR=33
KZA Kyzart 43.09 308 P **P 06 12 11.0 +1.6**
SNR=21
KURK Kurchatov 43.40 321 *i*P **P 06 12 10.7 -1.1**
KURK pmax pmax
comp=Z,37nm,1.3s,mb5.0
KURK Kurchatov 43.40 321 *e*P **P 06 12 10.1 -1.7**
KBK Karagaybulak 43.42 308 P **P 06 12 13.1 +1.0**
SNR=11
CHMS Chumysh 43.63 309 P **P 06 12 14.1 +0.3**
SNR=12
UCH Uchtor 43.66 308 P **P 06 12 15.3 +1.4**
SNR=52
AAK Ala-Archa 43.75 308 P **P 06 12 15.4 +0.7**
SNR=8.0
USP Ospenovka 43.87 309 P **P 06 12 14.3 -1.4**
SNR=7.0
AML Almayashu 44.24 307 P **P 06 12 20.0 +1.3**
SNR=26
EKS2 Erkin-Say 44.27 308 P **P 06 12 19.5 +0.5**
SNR=10
WRAB Tennant Creek 44.42 163 PFAKE 06 12 30.0 +10
WRAB LR LR
comp=Z,884nm,20.0s,MS4.7
WRA Warramunga Arr 44.43 163 P **P 06 12 18.9 -1.6**
comp=Z,19nm,0.8s,mb4.9,baz=345,slow=8.6,SNR=100
WRA S **S 06 18 48.3 -5.5**
comp=Z,2.8nm,1.1s,baz=343,slow=15,SNR=7.8
WB2 Warramunga Arr 44.43 163⇑ *i*P **P 06 12 18.7 -1.9**
WB2 *i*S **S 06 18 48.9 -4.9**
SEY Seymchan 44.78 19 *e*P **P 06 12 24.0 +1.2**
SEY *e* 06 14 05.6
SEY 06 14 10.8
SEY PPP PPP 06 14 52.3 +3.9
SEY *e*S **S 06 18 55.1 -3.2**
SEY PS PS 06 19 11.9 +3.4
SEY SS SS 06 22 18.2 +7.4
SEY SSS SSS 06 22 59.0 -10
SEY pmax pmax
comp=N,60nm,1.6s
SEY pmax pmax
comp=E,30nm,1.6s
SEY pmax pmax
comp=Z,60nm,1.6s,mb5.2
SEY smax
comp=N,1μm,10.8s
SEY smax
comp=E,1μm,10.0s
SEY MLR MLR
comp=N,4μm,17.0s,MS5.6
SEY MLR MLR
comp=Z,9μm,17.0s,MS5.8
SEY MLR MLR
comp=E,5μm,16.0s,MS5.6
KKAR Karatay Array 46.71 308 *e*P **P 06 12 38.0 -0.4**
KKAR pmax pmax
comp=Z,45nm,1.1s,mb5.3
AS12 Alice Springs 47.89 165⇓ *i*P **P 06 12 47.1 -0.8**
comp=Z,24nm,1.0s,mb5.2
ASAR Alice Springs 47.89 165 P **P 06 12 46.9 -1.1**
comp=Z,31nm,1.2s,mb5.2,baz=345,slow=6.6,SNR=69
VOSK Vostochnaya 48.55 321 P **P 06 12 51.2 -1.4**
VOSK pmax pmax
comp=Z,64nm,1.9s,mb5.3
FX1 Attu Island--F 48.72 39 LR LR 06 32 02.1
comp=Z,32nm,20.8s,baz=268,slow=34
FX1 Attu Island--F 48.72 39 *e*P **P 06 12 55.3 +1.3**
FX1 *ep*P pP 06 13 07.0 +7.3
TIXI Tiksi 48.76 3 *e*P **P 06 12 52.7 -1.3**
TIXI *e*S **S 06 19 49.4 -5.4**
TIXI pmax pmax
comp=Z,1μm,1.5s
TIXI MLR MLR
comp=Z,21μm,13.0s
TIXI Tiksi 48.76 3 *e*P **P 06 12 52.5 -1.5**
comp=Z,257nm,1.5s,mb6.0
TIXI LR LR
comp=Z,2μm,19.7s,MS5.1
BVA0 Borovoye Array 48.98 321 *i*P **P 06 12 54.9 -1.0**
BVAR Borovoye Array 48.98 321 LR LR 06 33 17.3
comp=Z,2μm,19.6s,MS5.1,baz=110,slow=36
CTA Charters Tower 49.01 149 *e*P **P 06 12 57.7 +1.1**
comp=Z,28nm,1.0s,mb5.2
CTA Charters Tower 49.01 149 P **P 06 12 58.0 +1.4**
comp=Z,11nm,0.9s,mb4.9,baz=336,slow=7.9,SNR=9.9
CTAO Charters Tower 49.01 149 *e*P **P 06 12 57.2 +0.6**
comp=Z,33nm,1.3s,mb5.2
CTAO *ep*P pP 06 13 08.3 +5.9
CTAO LR LR
comp=Z,2μm,22.0s,MS5.0
BRVK Borovoye 49.05 321 *e*P **P 06 12 55.2 -1.2**
ZRNK Zerenda 49.77 321 P **P 06 13 00.8 -1.2**
ZRNK pmax pmax
comp=Z,97nm,1.5s,mb5.6
ZRNK Zerenda 49.77 321 *e*P **P 06 13 00.8 -1.2**
BILL Bilibino 52.48 19⇑ *i*P **P 06 13 22.1 -0.3**
BILL *e* 06 13 30.2
BILL *i* 06 13 34.3
BILL *e* 06 14 32.8
BILL *e* 06 15 20.9
BILL *i*S **S 06 20 48.9 +2.6**
BILL pmax pmax
comp=Z,259nm,1.5s,mb5.9
BILL MLR MLR
comp=Z,1μm,15.0s,MS5.0
BILL Bilibino 52.48 19⇑ *e*P **P 06 13 21.8 -0.6**
comp=Z,210nm,1.3s,mb5.9
FORT Forrest 53.86 174⇓ *i*P **P 06 13 31.8 -1.3**
comp=Z,64nm,0.7s,mb5.7
MIDW Midway 54.45 71 PFAKE 06 13 50.0 +13
MIDW LR LR
comp=Z,4μm,21.0s,MS5.5
KLBR Kellerberrin 54.50 184⇓ *i*P **P 06 13 35.5 -2.3**
comp=Z,24nm,1.0s,mb5.2
AB31 Akbulak array 54.73 315 P **P 06 13 38.0 -1.2**
AB31 pmax pmax
comp=Z,35nm,1.0s,mb5.3
NWAO Narrogin (SRO) 55.87 185 P **P 06 13 46.1 -1.6**
comp=Z,22nm,1.1s,mb5.1,baz=339,slow=8.6,SNR=4.0
NWAO Narrogin (SRO) 55.87 185 P **P 06 13 46.1 -1.6**
NWAO LR LR
comp=Z,350nm,21.0s,MS4.4
ARU Arti 56.42 323⇑ *i*P **P 06 13 49.3 -2.0**
ARU *e* 06 14 47.1
ARU *i* 06 15 51.1
ARU *e*S **S 06 21 36.6 -2.7**
ARU *e* 06 23 34.5
ARU pmax pmax
comp=Z,21nm,0.8s,mb5.2
ARU MLR MLR
comp=N,900nm,19.0s,MS5.0
ARU MLR MLR
comp=Z,2μm,19.0s,MS5.1
ARU MLR MLR
comp=E,700nm,17.0s,MS5.0
ARU Arti 56.42 323 *e*P **P 06 13 49.0 -2.3**
comp=E,119nm,1.3s,mb5.8
ARU *ep*P pP 06 13 58.7 +1.5
ARU LR LR
comp=Z,2μm,19.0s,MS5.2
STKA Stephens Creek 57.78 160⇓ *i*P **P 06 14 00.7 -0.6**
comp=Z,16nm,0.6s,mb5.2
STKA *e*S **S 06 21 56.2 -1.4**
STKA Stephens Creek 57.78 160 P **P 06 14 00.0 -1.3**
comp=Z,21nm,0.8s,mb5.2,baz=336,slow=6.4,SNR=34
STKA LR LR 06 38 33.1
comp=Z,684nm,19.9s,MS4.8,baz=116,slow=36
UNV Unalaska Valle 60.87 40 PFAKE 06 14 30.0 +7.7
UNV LR LR
comp=Z,1μm,19.0s,MS5.1
TNA Tin City 61.01 27 *e*P **P 06 14 23.1 0.0**
comp=Z,127nm,1.6s,mb5.8
TNA LR LR
comp=Z,861nm,20.0s,MS4.9
THR Tehran 61.77 300 P **P 06 14 28.9 +0.2**
comp=Z,2.4nm,0.6s,mb4.5,baz=102,slow=6.0,SNR=6.6
ANM Nome 61.97 28 *e*P **P 06 14 30.9 +1.3**
TOO Toolangi 64.26 159⇓ *i*P **P 06 14 45.4 +0.3**
comp=Z,9.9nm,0.6s,mb5.0
GNI Garni 66.02 305 LR LR 06 47 13.4
comp=Z,631nm,19.9s,MS4.8,baz=234,slow=39
ZEI Tsey 66.18 308 *e*P **P 06 14 38.0 -19**
ZEI *e* 06 15 26.0
ZEI *e* 06 23 34.0
ZEI *e* 06 24 02.0
ZEI pmax pmax
comp=Z,100nm,4.0s
ZEI MLR MLR
comp=Z,2μm,17.0s,MS5.3
GOF Gofitskoye 66.41 311⇓ *i*P **P 06 14 58.5 -0.3**
GOF pmax pmax
comp=Z,50nm,1.4s,mb5.3
SVW Sparrevohn 66.44 32 *e*P **P 06 14 59.9 +1.2**
comp=Z,17nm,0.9s,mb5.1
KIV Kislovodsk 66.84 309 *i*P **P 06 15 01.4 -0.2**
KIV *e* 06 15 30.2
KIV *e* 06 17 28.3
KIV *e*S S 06 23 49.9 -1.8
KIV pmax pmax
comp=Z,100nm,1.3s,mb5.7
KIV pmax pmax
comp=N,30nm,1.1s
KIV MLR MLR
comp=E,750nm,18.0s
KIV MLR MLR
comp=Z,1μm,18.0s,MS5.1
KIV Kislovodsk 66.84 309 *e*P **P 06 15 01.1 -0.5**
comp=Z,27nm,0.8s,mb5.3
KIV LR LR
comp=Z,916nm,19.0s,MS5.0
IMA Indian Mountai 66.88 26 *e*P **P 06 15 02.6 +1.1**
comp=Z,55nm,1.4s,mb5.4
VOR Voronezh 67.83 318 *e*P **P 06 15 06.5 -1.2**
VOR pmax pmax
comp=Z,60nm,1.4s,mb5.4
LVZ Lovozero 67.85 336 *e*P **P 06 15 10.3 +2.7**
LVZ pmax pmax
comp=Z,30nm,1.5s,mb5.1
LVZ pmax pmax
comp=N,3.0nm,0.8s
LVZ pmax pmax
comp=E,10.0nm,1.6s
LVZ pmax pmax
comp=Z,100nm,1.8s,mb5.5
LVZ pmax pmax
comp=N,40nm,2.1s
LVZ pmax pmax
comp=E,70nm,1.8s
LVZ MLR MLR
comp=Z,1μm,16.0s,MS5.2
LVZ MLR MLR
comp=N,670nm,15.0s
RSO Redoubt South 67.91 32 *e*P **P 06 15 08.6 +0.5**
MOS Moscow 68.11 323 *e*P **P 06 15 08.7 -0.7**
MOS *i* 06 15 18.0
MOS *e*S S 06 24 02.6 -4.1
MOS pmax MLR
comp=Z,2μm,15.0s,MS5.5
MOS MLR MLR
comp=E,2μm,17.0s
APA Apatity 68.36 336⇑ *i*P **P 06 15 07.6 -3.2**
APA *i* 06 15 18.0
APA *i* 06 15 41.2
APA *e*S S 06 24 06.0 -3.5
APA pmax pmax
comp=Z,160nm,1.4s,mb5.9
APA MLR MLR
comp=Z,2μm,13.0s,MS5.6
KDAK Kodiak Island 68.40 35 *e*P **P 06 15 10.9 -0.2**
comp=Z,87nm,1.3s,mb5.6
KDAK LR LR
comp=Z,706nm,21.0s,MS4.9
OBN Obninsk 68.81 322⇑ *e*P **P 06 15 12.7 -1.1**
OBN *i* 06 15 22.3
OBN *e* 06 15 45.7
OBN *e*S S 06 24 15.2 +0.2
OBN pmax pmax
comp=Z,57nm,1.3s,mb5.3
OBN MLR MLR
comp=Z,1μm,17.0s,MS5.2
OBN Obninsk 68.81 322 *e*P **P 06 15 12.2 -1.6**
comp=Z,121nm,1.3s,mb5.7
OBN *e* 06 15 22.4
OBN LR LR
comp=Z,1μm,20.0s,MS5.1
SOC Sochi 69.02 310*d i*P **P 06 15 23.1 +7.8**
SOC *e* 06 15 40.0
SOC *e* 06 17 41.5
SOC *e*PPP PPP 06 19 22.0 -6.2
SOC *e*S S 06 24 15.8 -1.9
SOC *e* 06 25 05.3
SOC *e*SS SS 06 28 37.1 -8.5
SOC *e*SSS SSS 06 31 38.4 -9.3
SOC pmax pmax
comp=Z,20nm,0.8s,mb5.1
SOC pmax pmax
comp=N,10.0nm,1.0s
SOC pmax pmax
comp=E,20nm,0.9s
SOC MLR MLR
comp=Z,1μm,19.0s,MS5.2
SOC MLR MLR
comp=N,2μm,21.0s,MS5.6
SOC MLR MLR
comp=E,3μm,19.0s,MS5.6
FIB Fire Island 69.05 31 PFAKE 06 15 30.0 +15
FIB LR LR
comp=Z,1μm,20.0s,MS5.2
MCK McKinley 69.18 28⇑ *e*P **P 06 15 15.6 -0.3**
comp=Z,32nm,1.3s,mb5.1
MCK LR LR
comp=Z,384nm,19.0s,MS4.7
COLA College 69.44 27 *e*P **P 06 15 17.1 -0.4**
COLA pmax pmax
comp=Z,24nm,1.1s,mb5.0
COLA College 69.44 27 *e*P **P 06 15 17.1 -0.4**
comp=Z,24nm,1.1s,mb5.0
MZLS Mizel 69.47 288 P **P 06 15 22.8 +4.4**
PMR Palmer 69.47 31 *e*P **P 06 15 17.2 -0.5**
comp=Z,52nm,1.3s,mb5.3
SML Sawmill 69.81 30 P **P 06 15 20.2 +0.5**
ILAR Eielson Array 69.87 27 P **P 06 15 19.1 -1.0**
comp=Z,2.1nm,0.5s,mb4.3,baz=264,slow=4.6,SNR=39
ILAR LR LR 06 50 30.9
comp=Z,351nm,19.1s,MS4.6,baz=299,slow=40
JOF Joensuu 70.02 331 *ep* **P 06 15 18.5 -2.5**
comp=Z,54nm,1.2s,mb5.3
JOF Joensuu 70.02 331 *e*P **P 06 15 18.5 -2.5**
JOF pmax pmax
comp=Z,54nm,1.2s,mb5.3
KEV Kevo 70.27 338 *ep* **P 06 15 19.8 -2.6**
comp=Z,11nm,0.8s,mb4.8
KEV Kevo 70.27 338 *e*P **P 06 15 19.8 -2.6**
KEV pmax pmax
comp=Z,11nm,0.8s,mb4.8
ANN Anapa 70.36 311 *e*P **P 06 15 30.3 +6.9**
ANN pmax pmax
comp=Z,60nm,1.1s,mb5.4
ARSS Ar Rass 70.65 291 P **P 06 15 19.1 -6.4**
TOA Tolsona 70.74 30 *e*P **P 06 15 26.6 +1.2**
comp=Z,28nm,0.6s,mb5.4
ARCES ARCESS Array B 70.83 338 P **P 06 15 25.2 -0.6**
comp=Z,4.0nm,0.7s,mb4.5,baz=62,slow=6.6,SNR=19
ARE0 ARCESS Array S 70.83 338 *e*P **P 06 15 23.0 -2.8**
ARE0 *e* 06 15 34.8
PUL Pulkovo 71.17 328 *e*P **P 06 15 32.3 +4.2**

PUL eS S 06 24 29.7 -13
PUL pmax pmax
comp=E,6.0nm,0.4s
PUL pmax pmax
comp=Z,40nm,0.4s,mb5.7
PUL pmax pmax
comp=N,50nm,0.7s
PUL pmax pmax
comp=E,10.0nm,0.3s
PUL smax
comp=N,40nm,0.5s
PUL smax
comp=Z,30nm,0.5s
PUL smax
comp=E,10.0nm,0.3s
PUL MLR MLR
comp=Z,2µm,15.0s,MS5.5
PUL MLR MLR
comp=N,530nm,13.0s
KBS Kingsbay 71.25 349 eP **P 06 15 28.1 -0.3**
KBS eS S 06 24 31.8 -12
KBS AMS AMS 06 51 16.1
comp=Z,2µm,16.0s,MS5.5
KBS Kingsbay 71.25 349 PFAKE 06 15 40.0 +12
KBS LR LR
comp=Z,2µm,20.0s,MS5.3
EYAK Cordova Ski Ar 71.30 31 eP **P 06 15 29.2 +0.4**
AFFS 'Afif 71.43 289 P **P 06 15 35.1 +4.9**
HILS Ha'il 71.45 292 P **P 06 15 28.5 -1.9**
TATS Tathlith 72.37 284 P **P 06 15 35.5 -0.3**
KAF Kangasniemi 72.47 331 ep **P 06 15 35.1 -0.7**
SIM Simferopol' 72.61 312 eP **P 06 15 38.0 +1.1**
SIM eS S 06 24 58.0 -1.3
SIM pmax pmax
comp=Z,50nm,1.1s,mb5.4
SIM MLR MLR
comp=Z,900nm,18.0s,MS5.1
FINES FINESS Array B 72.76 330 P **P 06 15 36.3 -1.1**
comp=Z,3.9nm,0.7s,mb4.5,baz=58,slow=5.5,SNR=36
FINES LR LR 06 49 54.8
comp=Z,2µm,19.0s,MS5.4,baz=76,slow=38
FINES FINESS Array B 72.76 330 eP **P 06 15 36.7 -0.7**
TRO Tromso 73.00 339 eP **P 06 15 35.1 -3.7**
TRO eS S 06 24 53.7 -10
TRO AMS AMS 06 48 43.8
comp=Z,520nm,13.4s,MS5.0
DAWY Dawson 73.19 27⇑ eP **P 06 15 40.4 +0.5**
MNK Minsk 73.87 323 eP **P 06 15 44.0 0.0**
BLJS Baljurashi 73.93 285 P **P 06 15 45.1 0.0**
INK Inuvik 73.98 22 eP **P 06 15 44.1 -0.3**
comp=Z,47nm,1.1s,mb5.3
INK ePP PP 06 18 17.0 -14
KBRS Khaybar 74.09 292 P **P 06 15 47.1 +1.1**
ASF Jabal al Asfar 74.12 299 P **P 06 15 45.9 0.0**
baz=306,slow=6.1
BRTR Keskin Array B 74.41 307 P **P 06 15 47.6 +0.2**
comp=Z,5.9nm,0.8s,mb4.5,baz=106,slow=4.8,SNR=17
BRTR LR LR 06 51 26.6
comp=Z,571nm,21.1s,MS4.8,baz=135,slow=38
FRSS Farasan al Kab 74.51 282 P **P 06 15 53.5 +5.1**
KIS Kishinev 75.55 315 eP **P 06 15 55.0 +1.1**
KIS *i* pP 06 16 03.0 +3.1
KIS *e* 06 18 48.0
KIS eS S 06 25 30.0 -2.2
KIS ePS PS 06 25 53.0 -19
KIS MLR MLR
comp=Z,900nm,18.0s,MS5.1
KIS MLR MLR
comp=N,700nm,16.0s,MS5.3
KIS MLR MLR
comp=E,900nm,17.0s,MS5.3
KIS MLR MLR
comp=Z,900nm,18.0s
YNBS Yanbu' al Bahr 75.64 291 P **P 06 15 58.9 +4.0**
JMQS Jabal Moqyreh 75.97 296 P **P 06 15 58.0 +1.3**
ALWS Ilw as Safayha 76.51 296 P **P 06 15 58.4 -1.3**
JMOS Jabal al Moail 76.52 296 P **P 06 15 59.0 -0.7**
SUW Suwalki 76.61 323 eP **P 06 15 58.7 -1.0**
SUW epP pP 06 16 05.6 -0.1
SUW ePcP PcP 06 16 08.7 -2.9
SUW MLR MLR 06 52 24.0
comp=Z,1µm,19.8s,MS5.2
HAQS Haql 76.70 296 P **P 06 16 01.0 +0.3**
BDAS Al Bad' 76.77 295 P **P 06 16 00.0 -1.1**
VRI Vrincioaia 77.29 314⇑ *i*P **P 06 16 04.7 +1.1**
VRI Vrincioaia 77.29 314⇑ *i*P **P 06 16 04.7 +1.0**
SIT Sitka 77.55 33 eP **P 06 16 04.5 -0.3**
comp=Z,92nm,1.4s,mb5.5
DAG Danmarks Havn 77.57 351⇑ *i*P **P 06 16 03.3 -1.3**
comp=Z,3.8nm,1.3s,mb4.2
DAG Danmarks Havn 77.57 351⇑ eP **P 06 16 03.3 -1.3**
DAG pmax pmax
comp=Z,4.0nm,1.3s,mb4.2
DAG Danmarks Havn 77.57 351⇑ eP **P 06 16 03.3 -1.3**
comp=Z,3.8nm,1.3s,mb4.2
NSS Namsos 77.57 335 AMS AMS 06 50 50.1
comp=Z,1µm,20.5s,MS5.3
ISR Istrita 77.67 314⇑ *i*P **P 06 16 10.9 +5.2**
ISR Istrita 77.67 314⇑ *i*P **P 06 16 10.9 +5.2**
PRD Provadia 77.75 312 eP **P 06 16 15.0 +8.8**
MLR Muntele Rosu 77.93 314⇑ *i*P **P 06 16 07.5 +0.3**
MLR Muntele Rosu 77.93 314⇑ *i*P **P 06 16 07.5 +0.3**
KWP Kalwaria 78.48 319 eP **P 06 16 13.4 +3.3**
KWP epP pP 06 16 19.5 +3.4
KWP MLR MLR 06 52 05.5
comp=Z,1µm,22.5s,MS5.2
KWP Kalwaria 78.48 319 P **P 06 16 09.0 -1.1**
comp=Z,94nm,1.3s,mb5.6
KWP epP pP 06 16 19.5 +3.4
DIM Dimitrovgrad 79.44 311 eP **P 06 16 20.0 +4.5**
DLBC Dease Lake 79.53 31 eP **P 06 16 17.1 +1.4**
NB2 NORSAR Subarra 79.54 332 P **P 06 16 14.2 -1.4**
comp=Z,46nm,1.2s,mb5.3,baz=59,slow=5.6
NB2 NORSAR Subarra 79.54 332 P **P 06 16 14.2 -1.4**
baz=59,slow=5.6
NOA NORSAR Array B 79.54 332 P **P 06 16 14.5 -1.1**
comp=Z,5.9nm,0.8s,mb4.5,baz=59,slow=5.5,SNR=12
NOA PP PP 06 19 16.6 -1.2
comp=Z,1.3nm,0.8s,baz=68,slow=8.2,SNR=4.4
NOA LR LR 06 52 18.9
comp=Z,2µm,18.1s,MS5.4,baz=70,slow=36
RES Resolute Bay 79.64 9 eP **P 06 16 15.4 -0.6**
comp=Z,18nm,1.2s,mb4.9
KDZ Kurdzhali 79.67 311 eP **P 06 16 20.0 +3.2**
NAO01 NORSAR Array S 79.77 332 PFAKE 06 16 30.0 +13
NAO01 LR LR
comp=Z,2µm,19.0s,MS5.4
OJC Ojcow 79.98 320 eP **P 06 16 18.3 +0.1**
OJC ePcP PcP 06 16 24.7 -1.5
OJC eS S 06 26 17.5 -2.2
OJC eSS SS 06 31 31.4 -1.4
OJC MLR MLR 06 52 02.1
comp=Z,1µm,18.9s,MS5.3
NIE Niedzica 80.00 319 eP **P 06 16 18.4 0.0**
NIE *e* 06 16 28.2
JMIC Jan Mayen 80.08 345 eSKSa 06 26 27.5
JMIC AMS AMS 06 52 43.2
comp=Z,588nm,17.3s,MS5.0
RZN Rozhen 80.14 311 eP **P 06 16 20.0 +0.7**
BSD Bornholm Skovb 80.57 326⇓ *i*P **P 06 16 23.8 +2.5**
comp=Z,47nm,1.2s,mb5.3
BSD *i* 06 36 58.8
comp=Z,900nm,19.0s
BSD Bornholm Skovb 80.57 326⇓ *i*P **P 06 16 23.8 +2.5**
BSD pmax pmax
comp=Z,47nm,1.2s,mb5.3
BSD MLR MLR
comp=Z,900nm,19.0s,MS5.1
SNZO South Karori 80.57 143 PFAKE 06 16 30.0 +8.4
SNZO LR LR
comp=Z,637nm,21.0s,MS5.0
VTS Vitosha 80.84 312 eP **P 06 16 23.0 +0.1**
PSZ Piszkesteto 80.86 318 P **P 06 16 20.2 -2.8**
comp=Z,24nm,1.2s,mb5.0
MMB Musomiste 80.87 311 eP **P 06 16 23.0 -0.1**
KONO Kongsberg 80.92 332 *e* P **06 16 27.6 +4.6**
KONO eS S 06 26 20.5 -8.9
KONO AMS AMS 06 55 55.4
comp=Z,2µm,16.0s,MS5.5
KONO Kongsberg 80.92 332 PFAKE 06 16 30.0 +7.0
KONO LR LR
comp=Z,2µm,20.0s,MS5.4
OKC Ostrava-Krasne 81.11 320 eP **P 06 16 23.9 -0.3**
OKC *ex* x 06 16 31.2
OKC L 06 51 30.0
comp=Z,1.2nm,16.5s
KKB Krupnik 81.20 312 eP **P 06 16 25.0 +0.1**
MORC Moravsky Berou 81.49 321 eP **P 06 16 25.6 -0.6**
comp=Z,20nm,1.2s,mb4.9
KOLL Kolacno 81.49 319 *e* **P 06 16 34.3 +8.1**
COP Copenhagen 81.56 327 *i* P **P 06 16 36.3 +10**
comp=Z,24nm,1.0s,mb5.1
COP Copenhagen 81.56 327 *i* S S 06 26 43.8 +7.8
comp=Z,430nm,17.0s
COP Copenhagen 81.56 327 eP **P 06 16 36.3 +10**
COP *i* S S 06 26 43.8 +7.8
COP LR LR
comp=Z,440nm,17.0s,MS4.9
KSP Ksiaz 81.74 322 eP **P 06 16 27.4 -0.1**
KSP ePcP PcP 06 16 30.3 -3.5
KSP epP pP 06 16 34.3 +0.7
KSP MLR MLR 06 54 43.4
comp=Z,2µm,19.5s,MS5.5
KSP Ksiaz 81.74 322 eP **P 06 16 26.8 -0.7**
KSP *e*PP pP 06 16 37.7 +4.1
KSP eS S 06 26 33.0 -5.0
KSP eSS SS 06 31 56.0 -3.2
KSP Ksiaz 81.74 322 eP **P 06 16 26.8 -0.7**
KSP ePcP PcP 06 16 32.6 -1.2
KSP epP pP 06 16 37.7 +4.1
KSP eS S 06 26 33.0 -5.0
KSP eSS SS 06 31 56.0 -3.2
VAY Valandovo 81.77 311⇑ *i*P **P 06 16 26.7 -1.2**
VAY *i* 06 16 37.1
DPC Dobruska-Polom 81.94 321 eP **P 06 16 28.5 0.0**
DPC *ex* x 06 16 34.2
DPC L 06 52 30.0
comp=Z,1.2nm,16.2s
UPC Upice 82.05 322 eP **P 06 16 29.0 -0.1**
UPC *ex* x 06 16 34.2
SKO Skopje 82.29 312 eP **P 06 16 30.0 -0.5**
SKO *i* 06 16 39.7
RUE Ruedersdorf 82.39 324 eP **P 06 16 30.7 -0.1**
RUE *e* 06 16 41.4
IDI Anoyia 82.45 305 P **P 06 16 30.8 -0.8**
comp=Z,3.9nm,0.6s,mb4.5,baz=90,slow=17,SNR=2.6
MUD Monsted U'grnd 82.76 329 *i* P **P 06 16 35.2 +2.6**
comp=Z,42nm,1.3s,mb5.3
comp=Z,1µm,18.0s
MUD Monsted U'grnd 82.76 329 eP **P 06 16 35.2 +2.6**
MUD pmax pmax
comp=Z,42nm,1.3s,mb5.3
MUD MLR MLR
comp=Z,1µm,18.0s,MS5.3
MUD Monsted U'grnd 82.76 329 eP **P 06 16 35.2 +2.6**
comp=Z,42nm,1.3s,mb5.3
PVCC Panska Ves 82.86 322 eP **P 06 16 33.9 +0.6**
PVCC *ex* x 06 16 43.8
PVCC L 06 55 10.0
comp=Z,1.4nm,17.8s
BRG Berggiesshubel 83.05 323 eP **P 06 16 39.6 +5.3**
BRG *e* 06 16 51.4
BRG pmax pmax
comp=Z,30nm,1.5s,mb5.1
BRG MLR MLR
comp=N,1µm,26.1s,MS5.4
BRG MLR MLR
comp=E,2µm,26.1s,MS5.4
BRG MLR MLR
comp=Z,2µm,26.1s,MS5.3
BRG Berggiesshubel 83.05 323 eP **P 06 16 39.6 +5.3**
comp=Z,30nm,1.5s,mb5.1
BRG *i* pP 06 16 44.5 +4.1
BRG *e* 06 16 51.4
BRG LR LR
comp=Z,2µm,26.1s,MS5.3
PRU Pruhonice 83.13 322 eP **P 06 16 34.9 +0.2**
comp=Z,49nm,1.5s,mb5.3
PRU *ex* x 06 16 44.3
PRU L 06 53 10.0
comp=Z,1.2nm,14.0s
PRU Pruhonice 83.13 322 eP **P 06 16 34.9 +0.2**
PRU *e* 06 16 44.3
PRU pmax pmax
comp=Z,49nm,1.5s,mb5.3
PRU MLR MLR
comp=Z,1µm,14.0s,MS5.4
CLL Collm 83.37 323 P **P 06 16 35.3 -0.6**
comp=Z,logA/T=0.8,mb4.6
CLL *e**PP pP 06 16 43.0 +1.0
CLL *i* *SP sP 06 16 45.2 +1.2
CLL ePP PP 06 19 50.0 +0.3
CLL Collm 83.37 323 *i* P **P 06 16 35.3 -0.6**
CLL *i* 06 16 45.2
CLL pmax pmax
comp=Z,8.0nm,1.3s,mb4.6
CLL Collm 83.37 323 *i* P **P 06 16 35.3 -0.6**
comp=Z,8.0nm,1.3s,mb4.6
CLL *i* 06 16 45.2
YKW3 Yellowknife Ar 83.66 23⇑ eP **P 06 16 37.1 0.0**
SUMG Summit 83.67 354 eP **P 06 16 37.6 +0.7**
YKA Yellowknife Ar 83.71 23 P **P 06 16 37.4 +0.1**
comp=Z,7.9nm,0.8s,mb4.9,baz=313,slow=4.7,SNR=168
YKA PKKPbc 06 34 51.7
comp=Z,0.2nm,0.6s,baz=129,slow=2.4,SNR=11
YKA LR LR 06 55 50.2
comp=Z,431nm,21.4s,MS4.8,baz=305,slow=37
YKA Yellowknife Ar 83.71 23 P **P 06 16 37.4 +0.1**
YKA PKKPbc 06 34 51.7
YKA LR LR 06 55 50.2
KHC Kasperske Hory 84.09 321 eP **P 06 16 39.4 -0.2**
KHC *ex* x 06 16 46.4
KHC x x 06 16 49.5
KHC L 06 53 20.0
comp=Z,1.2nm,16.5s
KHC Kasperske Hory 84.09 321 eP **P 06 16 39.4 -0.2**
KHC *e* 06 16 49.5
KHC MLR MLR
comp=Z,1µm,16.5s,MS5.4
KHC Kasperske Hory 84.09 321 eP **P 06 16 39.4 -0.2**
KHC *e* pP 06 16 46.4 +0.7
KHC *e* 06 16 49.5
KHC LR LR
comp=Z,1µm,16.5s,MS5.4
GERES GERESS Array B 84.15 321 P **P 06 16 40.1 +0.2**
comp=Z,2.4nm,0.8s,mb4.4,baz=72,slow=4.2,SNR=15
MOX Moxa 84.46 323 *i* P **P 06 16 40.4 -1.0**
comp=Z,logA/T=1.4,mb5.3
MOX *i* 06 16 52.0
MOX L 06 58 33.0
MOX Moxa 84.46 323 eP **P 06 16 40.4 -1.0**
MOX *e* 06 16 51.5
MOX pmax pmax
comp=Z,37nm,1.5s,mb5.3
MOX MLR MLR
comp=Z,2µm,17.0s,MS5.5
MOX Moxa 84.46 323 eP **P 06 16 40.4 -1.0**
comp=Z,37nm,1.5s,mb5.3
MOX *e* 06 16 51.5
MOX LR LR
comp=Z,2µm,17.0s,MS5.5
GRA1 Grafenberg Arr 85.15 322 eP **P 06 16 45.2 +0.3**
comp=Z,71nm,1.5s,mb5.6
GRA1 LR LR
comp=Z,2µm,18.0s,MS5.5
GRF Grafenberg Arr 85.15 322 eP **P 06 16 45.2 +0.3**
GRF pmax pmax
comp=Z,71nm,1.5s,mb5.6
GRF MLR MLR
comp=Z,2µm,18.0s,MS5.5
KMBO Kilima Mbogo 85.57 267 P **P 06 16 49.0 +1.2**
comp=Z,5.2nm,0.9s,mb4.7,baz=46,slow=8.9,SNR=8.9
KMBO LR LR 06 55 49.0
comp=Z,418nm,18.6s,MS4.9,baz=76,slow=36
KMBO Kilima Mbogo 85.57 267 eP **P 06 16 48.8 +1.0**
comp=Z,10nm,1.1s,mb5.0
KMBO LR LR
comp=Z,322nm,20.0s,MS4.7
WIT Witteveen 85.94 327 eP **P 06 17 00.0 +11**
comp=Z,158nm,2.1s,mb5.9
WTSB Winterswijk 86.34 326 eP **P 06 17 00.4 +10**
comp=Z,16nm,0.7s,mb5.4
SNTG Esanatoglia 87.32 316 eP **P 06 16 56.3 +0.6**
DAVOX Davos 87.41 320 P **P 06 16 57.8 +1.7**
comp=Z,1.2nm,0.5s,mb4.4,baz=190,slow=6.1,SNR=3.6
HGN Heimansgroeve 87.46 325 eP **P 06 17 06.4 +10**
comp=Z,10.0nm,1.4s,mb4.9
HGN ePS x 06 19 10.0
HGN eS S 06 27 48.2 +14
HGN eSS SS 06 33 12.6 -10
AQU L'Aquila 87.46 315 P **P 06 16 58.3 +1.9**
AQU *e* pP 06 17 05.8 +3.3
SFI Santa Sofia 87.69 317 eP **P 06 16 59.0 +1.5**
OCWA Octopus Mounta 87.93 38 eP **P 06 17 00.7 +2.2**
comp=Z,32nm,1.3s,mb5.4
OCWA *e* 06 17 12.6
OCWA LR LR
comp=Z,433nm,21.0s,MS4.8
WLF Walferdange 87.96 324 P **P 06 16 56.1 -2.5**
comp=Z,66nm,1.3s,mb5.7
CDF Champ du Feu 88.03 323 eP **P 06 16 58.2 -0.8**
GIVF Givet 88.42 325 eP **P 06 17 00.1 -0.7**
comp=Z,41nm,1.1s,mb5.3
HINF Hinteralfeld 88.60 322 eP **P 06 17 00.6 -1.1**
CMW Cultus Mountai 88.71 37 P **P 06 17 04.7 +2.5**
BAIF Baives 88.77 325 eP **P 06 17 01.8 -0.7**
comp=Z,30nm,1.3s,mb5.2
HAU Haudompre 88.78 323 eP **P 06 17 01.5 -1.1**
comp=Z,16nm,1.1s,mb5.0
HAU *e* R
comp=Z,2µm,18.2s
GNW Green Mountain 88.79 38⇑ eP **P 06 17 03.8 +1.1**
JCW Jim Creek 88.94 37 P **P 06 17 05.2 +1.8**
RPW Rockport 89.03 37 P **P 06 17 05.6 +1.8**
ESK Eskdalemuir 89.05 332 PFAKE 06 17 20.0 +16
ESK LR LR
comp=Z,2µm,19.0s,MS5.5
BMW Boistfort Moun 89.16 39 eP **P 06 17 06.4 +2.0**
BMW epP pP 06 17 16.8 +6.2
MEZF Maizieres J'vi 89.21 324 eP **P 06 17 04.0 -0.6**
comp=Z,62nm,1.3s,mb5.5
RMW Rattlesnake Mo 89.42 37 P **P 06 17 07.6 +1.9**
LON Longmire 89.82 38 eP **P 06 17 08.5 +0.9**
FL2 Flat Top 2 89.82 39 P **P 06 17 10.0 +2.4**
NLW Nelson Butte 89.88 36 eP **P 06 17 08.9 +1.1**
SHW Mount Saint He 89.89 39 P **P 06 17 10.3 +2.5**
LPG La Plagne 89.94 320 eP **P 06 17 07.9 -0.2**
comp=Z,23nm,1.0s,mb5.2
LPL La Plagne 89.94 321 eP **P 06 17 07.7 -0.4**
comp=Z,16nm,0.8s,mb5.1
COR Corvallis 90.16 40 PFAKE 06 17 20.0 +11
COR LR LR
comp=Z,953nm,19.0s,MS5.2
ETW Entiat 90.16 37 P **P 06 17 11.0 +1.9**
PGF Pioggiola 90.17 317 eP **P 06 17 08.7 -0.6**
comp=Z,39nm,0.9s,mb5.4
BNI Bardonecchia 90.23 320 eP **P 06 17 09.8 +0.3**
BNI *e* 06 17 19.6
WTV Waterville 90.31 37 P **P 06 17 11.6 +1.8**
SBF Sospel 90.43 319 eP **P 06 17 09.3 -1.1**
comp=Z,37nm,1.0s,mb5.3
ORIF Oris-en-Rattie 90.77 320 eP **P 06 17 11.5 -0.5**
comp=Z,27nm,1.2s,mb5.2
SSF Saint Saulge 90.90 323 eP **P 06 17 11.5 -1.0**
comp=Z,29nm,1.1s,mb5.2
SMF Signal de Mont 90.95 323 eP **P 06 17 11.8 -1.0**
comp=Z,62nm,1.1s,mb5.5
MDW Midway 91.06 37 P **P 06 17 15.2 +2.0**
FRF La Foret Royal 91.07 319 eP **P 06 17 12.4 -1.0**
AVF Avril sur Loir 91.14 323 eP **P 06 17 12.7 -0.9**
comp=Z,52nm,1.1s,mb5.5
DPW Davenport 91.17 36 eP **P 06 17 15.6 +1.8**
GBL Gable Mountain 91.23 37 P **P 06 17 16.2 +2.2**
HYF Humbligny 91.25 324 eP **P 06 17 13.8 -0.3**
LMR La Mourre 91.28 319 eP **P 06 17 13.6 -0.8**
comp=Z,42nm,1.3s,mb5.3
HAWA Hanford 91.31 37 eP **P 06 17 16.2 +1.8**
comp=Z,34nm,1.5s,mb5.5
HAWA LR LR
comp=Z,414nm,19.0s,MS4.9
HUMO Hull Mountain 91.45 42 eP **P 06 17 16.9 +1.8**
SMRF Simiane la Rot 91.48 320 eP **P 06 17 14.8 -0.5**
comp=Z,18nm,1.2s,mb5.0
NEW Newport 91.50 35⇑ eP **P 06 17 16.6 +1.3**
comp=Z,26nm,1.4s,mb5.4
NEW LR LR
comp=Z,534nm,21.9s,MS4.9
VIVF Saint-Julien-l 91.51 321 eP **P 06 17 14.4 -1.0**
comp=Z,26nm,1.3s,mb5.1
BGF Bois d'Agland 91.56 323 eP **P 06 17 14.7 -0.9**
LDF La Druitiere 91.91 326 eP **P 06 17 17.2 +0.1**
comp=Z,31nm,1.4s,mb5.1
TCF Toulx Ste Croi 92.07 323 eP **P 06 17 17.4 -0.5**
comp=Z,46nm,1.3s,mb5.3
YBH Yreka Blue Hor 92.09 43 eP **P 06 17 20.1 +1.9**
comp=Z,13nm,1.4s,mb5.1
YBH LR LR
comp=Z,251nm,22.0s,MS4.6
LASF Ste Croix 92.44 320 eP **P 06 17 19.3 -0.4**
WALA Waterton Lakes 92.66 33 eP **P 06 17 21.8 +1.2**
comp=Z,21nm,1.2s,mb5.4
WDC Whiskeytown Da 92.83 43 PFAKE 06 17 30.0 +8.4
WDC LR LR
comp=Z,272nm,21.0s,MS4.7
CAF Calviac 92.97 322 eP **P 06 17 22.1 0.0**
comp=Z,48nm,1.3s,mb5.5
RJF Les Rejaudoux 93.05 322 eP **P 06 17 22.3 -0.2**
comp=Z,90nm,1.3s,mb5.8
RJF *e* R
comp=Z,1µm,21.2s
MFF Saint Martin d 93.17 324 eP **P 06 17 22.6 -0.4**
comp=Z,28nm,1.4s,mb5.2
FCC Fort Churchill 93.18 18 eP **P 06 17 22.0 -0.7**
comp=Z,6.6nm,0.9s,mb5.1
HOPS Hopland 93.36 45 PFAKE 06 17 40.0 +16
HOPS LR LR
comp=Z,346nm,20.0s,MS4.8
MOD Modoc 93.48 41 PFAKE 06 17 40.0 +16
MOD LR LR
comp=Z,330nm,19.0s,MS4.8
ROSF Rostrenen 93.69 327 eP **P 06 17 25.1 -0.2**
comp=Z,41nm,1.5s,mb5.3
LFF La Frestale 93.71 323 eP **P 06 17 25.4 -0.1**
comp=Z,55nm,1.4s,mb5.5
MTLF Montolieu 93.83 321 eP **P 06 17 25.5 -0.6**
comp=Z,5.4nm,0.9s,mb4.7
FFC Flin Flon 93.86 24 eP **P 06 17 25.6 -0.3**
comp=Z,14nm,1.2s,mb5.3
FFC LR LR
comp=Z,681nm,21.0s,MS5.1
MSO Missoula 94.08 35 PFAKE 06 17 40.0 +13
MSO LR LR
comp=Z,579nm,20.0s,MS5.0
WVOR Wild Horse Val 94.17 40 eP **P 06 17 28.9 +1.2**
comp=Z,22nm,1.6s,mb5.3
WVOR LR LR
comp=Z,422nm,21.0s,MS4.9
CHMT Chamberlain Mo 94.39 34 eP **P 06 17 29.3 +0.8**
HRY Holter Researc 95.25 34 eP **P 06 17 33.0 +0.4**
CMB Columbia Colle 95.64 45 PFAKE 06 17 50.0 +15
CMB LR LR
comp=Z,277nm,20.0s,MS4.7
SAO San Andreas Ge 95.67 46 PFAKE 06 17 50.0 +15
SAO LR LR
comp=Z,330nm,22.0s,MS4.8
HLID Hailey 95.92 37 eP **P 06 17 37.1 +1.5**
comp=Z,5.8nm,1.3s,mb4.8
HLID LR LR
comp=Z,449nm,21.0s,MS4.9
BOZ Bozeman (W) 96.07 35 PFAKE 06 17 50.0 +14
BOZ LR LR
comp=Z,429nm,20.0s,MS4.9
BMN Battle Mountai 96.22 41 PFAKE 06 17 50.0 +13
BMN LR LR
comp=Z,254nm,20.0s,MS4.7
NVAR Mina Array Bea 96.75 43 P **P 06 17 41.7 +2.1**
comp=Z,1.1nm,0.9s,mb4.3,baz=261,slow=3.0,SNR=10
NVAR PP PP 06 21 25.0 -12
comp=Z,0.3nm,0.8s,baz=276,slow=8.2,SNR=2.4
NVAR Mina Array Bea 96.75 43 P **P 06 17 41.7 +2.1**
NVAR PP PP 06 21 25.0 -12
TPH Tonopah 97.64 43 eP **P 06 17 45.2 +1.6**
comp=Z,7.8nm,1.3s,mb5.1
TPH LR LR
comp=Z,283nm,20.0s,MS4.8
AHID Auburn Hatcher 98.27 36 PFAKE 06 18 00.0 +14
AHID LR LR
comp=Z,550nm,19.0s,MS5.1
DAC Darwin (Calif) 98.48 45 PFAKE 06 18 00.0 +13
DAC LR LR
comp=Z,286nm,21.0s,MS4.7
HWUT Hardware Ranch 98.79 38 PFAKE 06 18 00.0 +11
HWUT LR LR
comp=Z,461nm,20.0s,MS5.0
BW06 Boulder Array 99.11 36 PFAKE 06 18 00.0 +10
BW06 LR LR

comp=Z,441nm,22.0s,MS4.9
PDAR Pinedale Array 99.11 36 PP PP 06 21 49.5 -5.3
comp=Z,0.3nm,0.6s,baz=315,slow=3.8,SNR=3.1
ULM Lac du Bonnet 99.68 24 PFAKE
ULM LR LR 06 18 00.0 +7.5
comp=Z,824nm,19.0s,MS5.2
ESDC Sonseca Array 99.75 321 LR LR 07 05 34.0
comp=Z,631nm,18.1s,MS5.2,baz=75,slow=37
ESLA Sonseca Array 99.75 321 PFAKE
ESLA LR LR 06 18 00.0 +6.9
comp=Z,5µm,20.0s,MS6.0
MVU Marysvale 100.45 40 PFAKE
MVU LR LR 06 18 10.0 +14
comp=Z,183nm,19.0s,MS4.6
PFO Pinyon Flat Ob 100.83 46 PFAKE
PFO LR LR 06 18 10.0 +12
comp=Z,584nm,20.0s,MS5.1
RSSD Black Hills 100.98 32 PFAKE
RSSD LR LR 06 18 10.0 +11
comp=Z,506nm,19.0s,MS5.0
SCHQ Schefferville 102.05 5 PFAKE
SCHQ LR LR 06 18 10.0 +6.9
comp=Z,1µm,20.0s,MS5.4
SLR Silverton 102.81 247 *e*P Pdif 06 17 12.5 -55
SLR *e*S 06 17 28.4
SLR *e* 06 17 29.6
comp=Z,7.9nm,0.3s
WUAZ Wupatki 102.90 42 PFAKE
WUAZ LR LR 06 18 20.0 +13
comp=Z,272nm,20.0s,MS4.8
ISCO Idaho Springs 103.31 36 PFAKE
ISCO LR LR 06 18 20.0 +11
comp=Z,343nm,20.0s,MS4.9
SDCO Great Sand Dun 104.83 37 PFAKE
SDCO LR LR 06 18 30.0 +14
comp=Z,489nm,21.0s,MS5.0
LBTB Lobatse 104.86 249 PFAKE
LBTB LR LR 06 18 30.0 +14
comp=Z,341nm,20.0s,MS4.9
TUC Tucson 105.35 44 PFAKE 06 22 40.0
TUC LR LR
comp=Z,348nm,20.0s,MS4.9
ANMO Albuquerque 106.25 40 PFAKE 06 22 50.0
ANMO LR LR
comp=Z,396nm,19.0s,MS5.0
CBKS Cedar Bluff 107.09 33 PFAKE 06 22 50.0
CBKS LR LR
comp=Z,480nm,19.0s,MS5.1
JFWS Jewell Farm 107.94 24 PFAKE 06 22 50.0
JFWS LR LR
comp=Z,685nm,22.0s,MS5.2
MNTX Cornudas Mount 109.16 42 PFAKE 06 22 50.0
MNTX LR LR
comp=Z,455nm,19.0s,MS5.1
PQI Presque Isle 110.00 7 PFAKE 06 22 50.0 +7.2
PQI LR LR
comp=Z,3µm,20.0s,MS5.9
WMOK Wichita Mounta 110.71 35 PFAKE 06 22 50.0 +5.5
WMOK LR LR
comp=Z,447nm,21.0s,MS5.0
AAM Ann Arbor 110.78 20 PFAKE 06 22 50.0 +5.5
AAM LR LR
comp=Z,527nm,20.0s,MS5.1
SUR Sutherland 111.00 243 PFAKE 06 22 50.0 +4.8
SUR LR LR
comp=Z,551nm,19.0s,MS5.2
NCB Newcomb 111.65 13 PFAKE 06 23 00.0 +14
NCB LR LR
comp=Z,783nm,20.0s,MS5.3
CCM Cathedral Cave 111.66 28 PFAKE 06 23 00.0 +14
CCM LR LR
comp=Z,585nm,20.0s,MS5.2
WVL Waterville 111.86 9 PFAKE 06 23 00.0 +14
WVL LR LR
comp=Z,4µm,20.0s,MS6.0
EMMW East Machias 112.00 7 PFAKE 06 23 00.0 +13
EMMW LR LR
comp=Z,3µm,19.0s,MS5.8
ERPA Erie 112.03 17 PFAKE 06 23 00.0 +13
ERPA LR LR
comp=Z,715nm,19.0s,MS5.3
ACSO Alum Creek Sta 112.87 21 PFAKE 06 23 00.0 +11
ACSO LR LR
comp=Z,642nm,21.0s,MS5.2
QSPA South Pole Qui 112.87 180 *e*PKP PKPdf 06 22 48.3 +0.6
QSPA LR LR
comp=Z,180nm,21.7s,MS4.6
BINY Binghamton 112.97 14 PFAKE 06 23 00.0 +11
BINY LR LR
comp=Z,1µm,22.0s,MS5.4
JCT Junction City 113.35 39 PFAKE 06 23 00.0 +10
JCT LR LR
comp=Z,352nm,21.0s,MS4.9
MIAR Mount Ida 113.49 32 PFAKE 06 23 00.0 +10
MIAR LR LR
comp=Z,579nm,21.0s,MS5.2
WCI Wyandotte Cave 113.50 24 PFAKE 06 23 00.0 +10
WCI LR LR
comp=Z,2µm,20.0s,MS5.8
HRV Harvard--Oak R 113.56 11 PFAKE 06 23 00.0 +10
HRV LR LR
comp=Z,137nm,19.0s,MS4.6
WES Weston 113.72 11 PFAKE 06 23 00.0 +10
WES LR LR
comp=Z,3µm,22.0s,MS5.9
SSPA Standing Stone 113.98 16 PFAKE 06 23 00.0 +9.2
SSPA LR LR
comp=Z,2µm,19.0s,MS5.8
MCWV Mont Chateau 114.35 18 PFAKE 06 23 00.0 +8.5
MCWV LR LR
comp=Z,920nm,21.0s,MS5.4
WVT Waverly 114.72 26 PFAKE 06 23 00.0 +7.7
WVT LR LR
comp=Z,678nm,20.0s,MS5.2
OXF Oxford 115.44 28 PFAKE 06 23 00.0 +6.2
OXF LR LR
comp=Z,499nm,19.0s,MS5.1
PLAL Pickwick Lake 115.61 27 PFAKE 06 23 00.0 +5.9
PLAL LR LR
comp=Z,567nm,20.0s,MS5.2
HKT Hockley 115.98 36 PFAKE 06 23 00.0 +5.0
HKT LR LR
comp=Z,528nm,19.0s,MS5.2
CBN Corbin 116.40 17 PFAKE 06 23 00.0 +4.4
CBN LR LR
comp=Z,906nm,22.0s,MS5.3
BLA Blacksburg 116.44 20 PFAKE 06 23 00.0 +4.3
BLA LR LR
comp=Z,608nm,19.0s,MS5.2
LRAL Lakeview Retre 117.74 27 PFAKE 06 23 10.0 +12
LRAL LR LR
comp=Z,588nm,20.0s,MS5.2
DBIC Dimbokro 120.22 293 PFAKE 06 23 10.0 +6.5
DBIC LR LR
comp=Z,273nm,20.0s,MS4.9
DWPF Disney 124.33 25 PFAKE 06 23 20.0 +8.8
DWPF LR LR
comp=Z,603nm,21.0s,MS5.2
BBSR BB Station 124.50 7 PFAKE 06 23 20.0 +8.5
BBSR LR LR
comp=Z,2µm,19.0s,MS5.7
SJG San Juan 138.31 12 PFAKE 06 23 50.0 +12
SJG LR LR
comp=Z,369nm,20.0s,MS5.1
SDV Santo Domingo 145.93 23 PKPdf PKPdf 06 23 48.9 -2.5
PCRV Puerto La Cruz 146.33 12 PKPbc PKPbc 06 23 48.7 -0.5
comp=Z,13nm,0.8s,baz=270,slow=1.0,SNR=4.3
ROSC El Rosal 148.00 32 PKPbc PKPdf 06 23 56.8 +2.0
comp=Z,12nm,1.1s,baz=5.2,slow=9.6,SNR=6.8
OTAV Otavalo 149.48 43 *e*PKPdf PKPdf 06 23 54.3 -2.9
OTAV *e*PKPab PKPab 06 24 04.2 -0.6
LPAZ La Paz 168.34 56 PKP PKPdf 06 24 17.9 -0.8
comp=Z,1.3nm,0.9s,baz=14,slow=4.2,SNR=3.1
LPAZ La Paz 168.34 56 *e*PKPdf PKPdf 06 24 17.4 -1.3
LPAZ *ep*PKPdf 06 24 28.6
LPAZ LR LR
comp=Z,171nm,20.0s
LVC Limon Verde 169.96 89 PFAKE 06 24 30.0 +10
LVC LR LR
comp=Z,348nm,19.0s
CPUP Villa Florida 176.69 191 PFAKE 06 24 30.0 +7.8
CPUP LR LR
comp=Z,329nm,19.0s

*IDC **16** 06:09:04.1±3.0,8.02S×108.60E,mb4.2/4,mb1 4.4/4, mb1mx4.0/15,Error ellipse: s-maj=169.0km s-min=26.2km az=51.0*
*DJA **16** 06:09:08.4±1.0, 10.93S×108.77E,h80km,MD4.8/3, ML5.1/2,Error ellipse: s-maj=86.2km s-min=20.3km az=158.0*
*NEIC **16** 06:09:16.5±1.3,7.96S×108.80E,h100km,mb4.5/2,Error ellipse: s-maj=30.2km s-min=17.8km az=206.0*
ISC 16 06:09:16.3±3.5,7.8S±0.2×108.9E±0.2,h115km±31km,n12, σ0§91/17,mb4.1/5,5C-5D,Jawa

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
KELI	**Kelakatan**	**5.52**	**95**	⇓*e*Pn		**P**	**06 10 39.9**	**+2.6**
	94nm,0.2s							
KELI				⇑*i*Sn		**S**	**06 11 47.4**	**+7.3**
RATI	**Rata**	**6.59**	**98**	⇓*e*Pn		**P**	**06 10 52.1**	**+0.1**
	129nm,0.2s							
RATI				⇑*i*Sn		**S**	**06 12 05.3**	**-1.0**
RATI	**Rata**	**6.59**	**98**	⇓*e*Pn		**P**	**06 10 51.2**	**-0.8**
RATI				*i* Sn		**S**	**06 12 05.3**	**-1.0**
KEDI	**Kedomdong**	**7.14**	**96**	⇓*e*Pn		**P**	**06 10 57.9**	**-1.6**
KEDI	**Kedomdong**	**7.14**	**96**	⇑*i*P		**P**	**06 10 58.5**	**-1.0**
KEDI				⇑*i*Sn		**S**	**06 12 20.5**	**+0.9**
KEDI	**Kedomdong**	**7.14**	**96**	⇑*i*P		**P**	**06 10 58.5**	**-1.0**
KEDI				*i* Sn		**S**	**06 12 20.5**	**+0.9**
WRA	**Warramunga Arr**	**27.40**	**119**	P		**P**	**06 14 53.4**	**+0.2**
	1.6nm,0.6s,mb3.8,baz=290,slow=11,SNR=4.3							
WRAB	**Tennant Creek**	**27.41**	**119**	*e*P		**P**	**06 14 53.6**	**+0.3**
	4.6nm,0.5s,mb4.3							
ASAR	**Alice Springs**	**28.66**	**126**	P		**P**	**06 15 04.0**	**-0.5**
	2.5nm,0.8s,mb3.9,baz=303,slow=8.8,SNR=4.8							
STKA	**Stephens Creek**	**38.68**	**133**	⇓*i*P		**P**	**06 16 30.7**	**+0.3**
	5.8nm,0.6s,mb4.6							
STKA	**Stephens Creek**	**38.68**	**133**	P		**P**	**06 16 30.8**	**+0.4**
	9.2nm,0.8s,mb4.7,baz=313,slow=8.2,SNR=5.9							
MKAR	**Makanchi Array**	**59.31**	**339**	P		**P**	**06 19 08.2**	**-0.1**
	0.7nm,0.7s,mb3.8,baz=135,slow=8.6,SNR=5.6							

*TAP **16** 06:18:07.6,23.09N×121.76E,h25km,ML3.5*
*JMA **16** 06:18:08.2±0.1,23.15N×121.93E,h72km,M2.8*
ISC 16 06:18:07.8±2.1,23.1N±0.2×121.9E±0.2,h72km,n6, σ0§25/12,Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**1.66**	**37**	P		**P**	**06 18 35.5**	**0.0**
YOJ				*e*S		**S**	**06 18 55.9**	**-0.1**
HATJ	**Hateruma jima**	**1.96**	**62**	P		**P**	**06 18 39.7**	**+0.1**
HATJ				S		**S**	**06 19 03.1**	**0.0**
IRIF	**Iriomote-Funau**	**2.05**	**54**	P		**P**	**06 18 41.0**	**+0.2**
IRIF				S		**S**	**06 19 05.6**	**+0.4**
JKRS	**Kuro-shima**	**2.21**	**60**	P		**P**	**06 18 43.1**	**0.0**
JKRS				*e*S		**S**	**06 19 09.6**	**+0.3**
JIJ	**Ishigaki jima**	**2.38**	**59**	P		**P**	**06 18 45.2**	**-0.3**
JIJ				*e*S		**S**	**06 19 13.0**	**-0.6**
JTJ	**Tarama**	**2.96**	**59**	P		**P**	**06 18 53.8**	**+0.1**
JTJ				*e*S		**S**	**06 19 28.0**	**-0.1**

*MOS **16** 06:24:04.4±1.4,44.68N×148.40E,h70km,mb4.2/6,Error ellipse: s-maj=21.4km s-min=18.4km az=108.4*
*JMA **16** 06:24:04.8±0.3,44.19N×148.19E,M4.8*
*NEIC **16** 06:24:05.1±0.4,44.59N×148.33E,mb4.4/11,Error ellipse: s-maj=12.0km s-min=7.4km az=150.0*
*SKHL **16** 06:24:05.4±0.1,44.66N×148.45E,h66km,mb5.2/3*
*IDC **16** 06:24:09.8±3.5,44.72N×148.09E,h98km±32km,mb3.6/10, mb1 3.9/11,mb1mx3.7/22,Error ellipse: s-maj=24.0km s-min=17.3km az=111.0*
ISC 16 06:24:04.7±0.8,44.58N±0.06×148.37E±0.08,h70km±6km, n72,σ1§14/89,mb4.2/29,1C-6D,Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
KUR	**Kuril'sk**	**0.74**	**331**	⇓*i*P		**P**	**06 24 19.5**	**-0.7**
KUR				⇓*i*P			06 24 19.5	
KUR				AMB	AMB		06 24 20.1	
	720nm,0.3s							
KUR				AMB	AMB		06 24 20.1	
	1µm,0.3s							
KUR				AMB	AMB		06 24 20.1	
	2µm,0.3s							
KUR				AMB	AMB		06 24 20.6	
	6µm,1.6s							
KUR				AMB	AMB		06 24 20.6	
	2µm,1.6s							
KUR				AMB	AMB		06 24 20.6	
	2µm,1.6s							
KUR				*i* S		**S**	**06 24 30.0**	**-1.8**
KUR				A			06 24 31.0	
	8µm,0.5s							
KUR				A			06 24 31.0	
	5µm,0.5s							
KUR				A			06 24 33.4	
	38µm,1.6s							
KUR				A			06 24 33.4	
	28µm,1.6s							
KUR	**Kuril'sk**	**0.74**	**331**	*i*PN		**P**	**06 24 19.5**	**-0.7**
KUR				*i* S		**S**	**06 24 30.0**	**-1.8**
KUR				pmax	pmax			
	comp=N,720nm,0.3s							
KUR				pmax	pmax			
	comp=E,1µm,0.3s							
KUR				pmax	pmax			
	comp=Z,2µm,0.3s							
KUR				pmax	pmax			
	comp=N,2µm,1.6s							
KUR				pmax	pmax			
	comp=E,2µm,1.6s							
KUR				pmax	pmax			
	comp=Z,6µm,1.6s							
KUR				smax				
	comp=N,8µm,0.5s							
KUR				smax				
	comp=E,5µm,0.5s							
KUR				smax				
	comp=N,38µm,1.6s							
KUR				smax				
	comp=E,28µm,1.6s							
YUK	**Yuzh-Kuril'sk**	**1.88**	**254**	⇑*i*P		**P**	**06 24 35.9**	**+0.6**
YUK				AMB	AMB		06 24 37.5	
	comp=E,190nm,0.2s							
YUK				AMB	AMB		06 24 37.5	
	comp=E,290nm,0.2s							
YUK				AMB	AMB		06 24 37.5	
	comp=E,1µm,0.2s							
YUK				*i* S		**S**	**06 24 58.8**	**+0.9**
YUK				A			06 25 07.0	
	comp=E,5µm,1.0s							
YUK				A			06 25 07.0	
	comp=E,4µm,1.0s							
YUK				A			06 25 07.3	
	comp=E,2µm,0.3s							
YUK				A			06 25 07.3	
	comp=E,3µm,0.3s							
YUK	**Yuzh-Kuril'sk**	**1.88**	**254**	*i* PN		**P**	**06 24 35.9**	**+0.6**
YUK				*i* S		**S**	**06 24 58.8**	**+0.9**
NEM2	**Nemuro 2**	**2.25**	**238**	P		**P**	**06 24 39.8**	**-0.7**
NEM2				*e*S		**S**	**06 25 05.1**	**-2.0**
JRA	**Rausu**	**2.42**	**256**	P		**P**	**06 24 43.8**	**+0.9**
JRA				*e*S		**S**	**06 25 11.5**	**+0.1**
JNK	**Nakash**	**2.81**	**250**	P		**P**	**06 24 48.9**	**+0.5**
JNK				*e*S		**S**	**06 25 21.3**	**+0.1**
JAK	**Akkeshi**	**3.10**	**240**	P		**P**	**06 24 51.8**	**-0.6**
JAK				*e*S		**S**	**06 25 26.2**	**-2.2**
JTKR	**Abashiri--Toko**	**3.26**	**261**	P		**P**	**06 24 55.4**	**+0.7**
JAR	**Ashorobuto**	**3.56**	**250**	P		**P**	**06 25 00.3**	**+1.4**
JAR				*e*S		**S**	**06 25 41.5**	**+1.5**
JKK2	**Kamakawa 2**	**4.10**	**262**	P		**P**	**06 25 08.1**	**+1.7**
JCH	**Churui**	**4.13**	**243**	P		**P**	**06 25 06.7**	**-0.2**
JCH				*e*S		**S**	**06 25 52.5**	**-1.8**
JSE	**Soyaes**	**4.13**	**277**	P		**P**	**06 25 07.6**	**+0.7**
ASAJ	**Asahikawa**	**4.17**	**266**	P		**P**	**06 25 08.8**	**+1.5**
	comp=E,6.7nm,0.3s,baz=63,slow=21,SNR=26							
ASAJ				S		**S**	**06 26 11.2**	**+16**
	comp=E,3.6nm,0.3s,baz=36,slow=14,SNR=3.2							
JFR	**Furan**	**4.41**	**253**	P		**P**	**06 25 13.0**	**+2.3**
JFR				*e*S		**S**	**06 26 03.5**	**+2.3**
YSS	**Yuzh-Sakhalins**	**4.59**	**303**	⇓*e*P		**P**	**06 25 13.0**	**-0.2**
YSS				AMB	AMB		06 25 13.4	
	comp=E,30nm,0.3s							
YSS				*e*sP			06 25 35.0	
YSS				A			06 26 27.6	
	comp=E,40nm,0.5s							
YSS				A			06 26 27.6	
	comp=E,60nm,0.9s							
YSS	**Yuzh-Sakhalins**	**4.59**	**303**	*d i*PN		**P**	**06 25 13.4**	**+0.2**
YSS	**Yuzh-Sakhalins**	**4.59**	**303**	*e*P		**P**	**06 25 13.0**	**-0.2**
JWK2	**Keihoku**	**4.65**	**281**	P		**P**	**06 25 17.5**	**+3.4**
JNBK	**Urakawa-nobuka**	**4.69**	**243**	P		**P**	**06 25 14.6**	**-0.1**
JNBK				*e*S		**S**	**06 26 06.2**	**-2.1**
JEW	**Eniwo**	**5.31**	**253**	P		**P**	**06 25 25.7**	**+2.5**
JEW				*e*S		**S**	**06 26 26.0**	**+2.3**
JKB	**Kayabe**	**6.00**	**246**	P		**P**	**06 25 32.3**	**-0.4**
JKB				*e*S		**S**	**06 26 37.1**	**-3.6**
JOT	**Ohata**	**6.25**	**242**	P		**P**	**06 25 35.0**	**-1.2**
JOT				*e*S		**S**	**06 26 41.5**	**-5.5**
JANG	**Nango**	**6.58**	**233**	P		**P**	**06 25 38.3**	**-2.6**
JANG				*e*S		**S**	**06 26 47.7**	**-7.5**
TYV	**Tymovskoe**	**7.37**	**331**	*e*P		**P**	**06 25 51.0**	**-0.8**
MAJO	**Matsushiro**	**11.14**	**227**	*e*P		**P**	**06 26 40.7**	**-2.3**
ULN	**Ulaanbaatar**	**28.53**	**291**	P		**P**	**06 29 55.0**	**-0.4**
	comp=E,1.0nm,0.7s,mb3.5							
TIXI	**Tiksi**	**28.73**	**347**	*e*P		**P**	**06 29 58.3**	**+1.3**
	comp=E,3.5nm,0.5s,mb4.2							
IMA	**Indian Mountai**	**37.50**	**35**	*e*P		**P**	**06 31 13.8**	**+1.0**
	comp=E,13nm,1.0s,mb4.8							
ILAR	**Eielson Array**	**40.30**	**37**	P		**P**	**06 31 36.6**	**+0.5**
	comp=E,1.9nm,1.2s,mb3.8,baz=262,slow=6.2,SNR=7.5							
ILAR				pP	pP		06 31 50.2	-3.3
	comp=E,1.0nm,0.9s,baz=280,slow=8.9,SNR=7.9							
ILAR	**Eielson Array**	**40.30**	**37**	P		**P**	**06 31 36.6**	**+0.5**
ILAR				*PP	pP		06 31 50.3	-3.2
ILAR				pmax	pmax			
	comp=Z,2.0nm,1.2s							
ILAR				pmax	pmax			
	comp=N,1.0nm,0.9s							
INK	**Inuvik**	**45.24**	**31**	*e*P		**P**	**06 32 15.9**	**-0.2**
	comp=N,3.9nm,1.4s,mb3.9							
GUN	**Gumba**	**51.84**	**273**	*e*P		**P**	**06 33 08.5**	**+0.8**
	comp=N,15nm,0.3s,mb5.5							
KKN	**Kakani**	**52.34**	**274**	*e*P		**P**	**06 33 12.2**	**+0.8**
	comp=N,14nm,0.7s,mb5.1							
PKI	**Pulchoki**	**52.38**	**273**	*e*P		**P**	**06 33 11.8**	**+0.1**
DMN	**Daman**	**52.57**	**274**	*e*P		**P**	**06 33 13.1**	**-0.1**
	comp=N,8.7nm,0.5s,mb5.0							
GKN	**Gorkha**	**52.67**	**274**	*e*P		**P**	**06 33 14.2**	**+0.3**
	comp=N,11nm,0.4s,mb5.2							
KOLN	**Koldanda**	**53.55**	**275**	*e*P		**P**	**06 33 20.8**	**+0.3**
	comp=N,2.6nm,0.3s,mb4.7							
YKA	**Yellowknife Ar**	**54.62**	**34**	P		**P**	**06 33 27.7**	**-0.1**
	comp=N,0.9nm,0.9s,mb3.8,baz=299,slow=6.7,SNR=14							
YKA	**Yellowknife Ar**	**54.62**	**34**	P		**P**	**06 33 27.7**	**-0.1**
YKA				pmax	pmax			
	comp=Z,1.0nm,0.9s							
YKA	**Yellowknife Ar**	**54.62**	**34**	P		**P**	**06 33 27.7**	**-0.1**
ARCES	**ARCESS Array B**	**58.77**	**340**	P		**P**	**06 33 56.8**	**-0.3**
	comp=Z,1.3nm,0.9s,mb4.0,baz=54,slow=7.8,SNR=4.3							
ARCES	**ARCESS Array B**	**58.77**	**340**	P		**P**	**06 33 56.8**	**-0.3**
ARCES				pmax	pmax			
	comp=Z,1.0nm,0.9s							
FINES	**FINESS Array B**	**64.53**	**333**	P		**P**	**06 34 33.2**	**-2.5**
	comp=Z,0.4nm,0.3s,mb3.7,baz=44,slow=6.9,SNR=14							
FINES	**FINESS Array B**	**64.53**	**333**	P		**P**	**06 34 33.2**	**-2.5**
WRA	**Warramunga Arr**	**65.48**	**195**	P		**P**	**06 34 42.5**	**-0.1**
	comp=Z,2.1nm,1.2s,mb3.9,baz=15,slow=6.5,SNR=6.2							
WRA	**Warramunga Arr**	**65.48**	**195**	P		**P**	**06 34 42.5**	**-0.1**
WRA				pmax	pmax			
	comp=Z,2.0nm,1.2s							
BOZ	**Bozeman (W)**	**65.70**	**49**	*e*P		**P**	**06 34 44.5**	**+0.9**
	comp=Z,1.0nm,0.6s,mb3.8							
NVAR	**Mina Array Bea**	**66.40**	**59**	P		**P**	**06 34 49.8**	**+1.6**
	comp=Z,1.6nm,1.0s,mb3.8,baz=296,slow=4.8,SNR=5.9							
BW06	**Boulder Array**	**68.70**	**51**	*e*P		**P**	**06 35 03.1**	**+0.7**
	comp=Z,2.2nm,1.1s,mb3.9							
PDAR	**Pinedale Array**	**68.70**	**51**	P		**P**	**06 35 03.2**	**+0.8**
	comp=Z,1.3nm,1.0s,mb3.7,baz=315,slow=2.1,SNR=6.9							
PDAR				pP	pP		06 35 18.9	-2.5
	comp=Z,0.9nm,0.6s,baz=277,slow=2.3,SNR=6.6							
NB2	**NORSAR Subarra**	**69.14**	**339**	P		**P**	**06 35 03.7**	**-1.1**
	comp=Z,0.8nm,0.4s,mb3.9,baz=30,slow=6.5							
NOA	**NORSAR Array B**	**69.14**	**339**	P		**P**	**06 35 04.0**	**-0.8**
	comp=Z,1.1nm,0.3s,mb4.1,baz=29,slow=6.4,SNR=8.4							
NOA	**NORSAR Array B**	**69.14**	**339**	P		**P**	**06 35 04.0**	**-0.8**
NOA				pmax	pmax			
	comp=Z,1.0nm,0.4s							
NOA	**NORSAR Array B**	**69.14**	**339**	P		**P**	**06 35 04.0**	**-0.9**
ASAR	**Alice Springs**	**69.19**	**194**	P		**P**	**06 35 06.8**	**+1.0**
	comp=Z,0.8nm,0.8s,mb3.6,baz=12,slow=6.3,SNR=7.3							
PV10	**Paradox Valley**	**71.94**	**54**	*e*P		**P**	**06 35 23.4**	**+1.3**
GERES	**GERESS Array B**	**78.85**	**331**	P		**P**	**06 36 01.5**	**+0.3**
	comp=Z,0.5nm,0.3s,mb3.8,baz=41,slow=4.9,SNR=9.6							
GERES	**GERESS Array B**	**78.85**	**331**	P		**P**	**06 36 01.5**	**+0.3**
GERES				pmax	pmax			
	comp=Z,1.0nm,0.4s							
GRR	**Gorron**	**83.56**	**340**	*e*P		**P**	**06 36 24.7**	**-1.1**
SSF	**Saint Saulge**	**83.63**	**337**	*e*P		**P**	**06 36 25.7**	**-0.4**
SMF	**Signal de Mont**	**83.91**	**336**	*e*P		**P**	**06 36 27.2**	**-0.4**
	comp=Z,2.9nm,0.4s,mb4.1							
AVF	**Avril sur Loir**	**83.92**	**337**	*e*P		**P**	**06 36 26.4**	**-1.2**
	comp=Z,3.0nm,0.7s,mb3.9							
LPL	**La Plagne**	**84.06**	**334**	*e*P		**P**	**06 36 27.8**	**-0.6**
	comp=Z,2.1nm,0.5s,mb3.9							
LPG	**La Plagne**	**84.07**	**334**	*e*P		**P**	**06 36 28.0**	**-0.4**
	comp=Z,1.6nm,0.4s,mb3.9							
MBDF	**Montbardon**	**84.75**	**334**	*e*P		**P**	**06 36 31.5**	**-0.3**
	comp=Z,2.2nm,0.3s,mb4.2							
ORIF	**Oris-en-Rattie**	**84.86**	**334**	*e*P		**P**	**06 36 31.6**	**-0.8**
	comp=Z,1.8nm,0.5s,mb4.0							
MFF	**Saint Martin d**	**85.04**	**339**	*e*P		**P**	**06 36 32.5**	**-0.7**
	comp=Z,4.4nm,0.6s,mb4.2							
SBF	**Sospel**	**85.31**	**333**	*e*P		**P**	**06 36 34.1**	**-0.5**
	comp=Z,5.0nm,0.6s,mb4.3							
FRF	**La Foret Royal**	**85.84**	**333**	*e*P		**P**	**06 36 36.8**	**-0.4**
CAF	**Calviac**	**85.99**	**337**	*e*P		**P**	**06 36 37.8**	**-0.1**
LMR	**La Mourre**	**86.09**	**333**	*e*P		**P**	**06 36 37.2**	**-1.2**

*IDC **16** 06:24:23.3±2.4,22.60S×71.32W,mb3.3/1,mb1 3.8/3, mb1mx3.6/13,ML4.2/2,Error ellipse: s-maj=61.9km s-min=17.9km az=10.0*
*NEIC **16** 06:24:27.0±6.9,22.13S×71.00W,h15km±44km,Error ellipse: s-maj=37.7km s-min=13.4km az=66.0*
ISC 16 06:24:24.8±1.3,22.3S±0.1×71.5W±0.1,h15km,n9, σ0§92/12,mb3.3/1,Off coast of northern Chile

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
LVC	**Limon Verde**	**2.43**	**98**	Pn		**Pn**	**06 25 00.5**	**-4.1**
	41nm,0.3s,baz=284,slow=7.4,SNR=34							
LVC				Pg		**Pn**	**06 25 05.3**	**+0.7**
	42nm,0.3s,baz=273,slow=11,SNR=62							
LVC				Lg			06 25 33.8	
	53nm,0.3s,baz=234,slow=22,SNR=21							
LVC	**Limon Verde**	**2.43**	**98**	*e*Pn		**Pn**	**06 25 00.2**	**-4.4**
LVC				*e*Pg		**Pn**	**06 25 05.1**	**+0.5**
LVC				*e*Sg		**Sn**	**06 25 33.7**	**-0.5**
LVC				Lg			06 25 33.8	
ARE	**Arequipa**	**5.79**	**0**	*e*P		**Pn**	**06 25 51.0**	**-1.4**
ARE				*e*S		**Sn**	**06 26 52.0**	**-7.3**
LPAZ	**La Paz**	**6.77**	**29**	Pn		**Pn**	**06 26 07.7**	**+1.6**
	0.6nm,0.3s,baz=210,slow=7.4,SNR=13							
LPAZ	**La Paz**	**6.77**	**29**	*e*P		**Pn**	**06 26 07.4**	**+1.3**
TRQA	**Tornquist**	**17.73**	**155**	*e*P		**P**	**06 28 32.7**	**0.0**
	0.5nm,0.7s							
YKA	**Yellowknife Ar**	**91.14**	**342**	P		**P**	**06 37 30.1**	**+0.3**
	0.1nm,0.7s,mb3.3,baz=141,slow=4.4,SNR=4.3							
YKA	**Yellowknife Ar**	**91.14**	**342**	P		**P**	**06 37 30.1**	**+0.3**
MKAR	**Makanchi Array**	**147.67**	**35**	PKPbc	PKPdf		06 44 10.3	+0.8
	1.0nm,0.6s,baz=333,slow=3.2,SNR=8.8							

*IDC **16** 06:57:14.8±10.0,44.84N×145.25E,mb3.5/4,mb1 3.7/4, mb1mx3.4/20,Error ellipse: s-maj=266.0km s-min=38.4km az=167.0*
*JMA **16** 06:57:17.6±0.1,43.27N×145.87E,h92km±1km,M3.3*
ISC 16 06:57:16.1±0.9,43.26N±0.08×145.91E±0.10,h101km±5km, n13,σ0§61/22,mb3.4/4,Hokkaido region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
NEM2	**Nemuro 2**	**0.16**	**312**	P		**P**	**06 57 30.6**	**+0.3**
NEM2				*e*S		**S**	**06 57 40.3**	**-0.7**
JRA	**Rausu**	**0.89**	**320**	P		**P**	**06 57 35.9**	**+0.3**
JRA				*e*S		**S**	**06 57 50.1**	**-0.1**
JAK	**Akke

JNK	**Nakash**	**0.93**	**291**	P	**P**	**06 57 35.9**	**-0.1**
JNK				S	**S**	**06 57 49.7**	**-1.2**
JOB	**Onbets**	**1.56**	**258**	P	**P**	**06 57 44.1**	**+0.6**
JOB				*e*S	**S**	**06 58 03.8**	**-0.1**
JAR	**Ashorobuto**	**1.56**	**272**	P	**P**	**06 57 44.1**	**+0.6**
JAR				*e*S	**S**	**06 58 04.1**	**+0.1**
JTKR	**Abashiri--Toko**	**1.62**	**297**	P	**P**	**06 57 44.7**	**+0.5**
JTKR				*e*S	**S**	**06 58 05.2**	**0.0**
JCH	**Churui**	**1.98**	**252**	P	**P**	**06 57 49.1**	**+0.3**
JCH				*e*S	**S**	**06 58 12.6**	**-0.5**
JMP	**Maruseppu**	**2.00**	**293**	P	**P**	**06 57 49.7**	**+0.6**
JMP				*e*S	**S**	**06 58 14.3**	**+0.8**
ILAR	**Eielson Array**	**42.42**	**36**	P	**P**	**07 05 02.5**	**+0.9**
	0.3nm,0.6s,mb3.2,baz=274,slow=9.3,SNR=5.8						
MKAR	**Makanchi Array**	**44.01**	**298**	P	**P**	**07 05 14.8**	**-0.1**
	0.3nm,0.6s,mb3.2,baz=76,slow=8.5,SNR=2.9						
FINES	**FINESS Array B**	**64.90**	**333**	P	**P**	**07 07 44.8**	**-1.4**
	0.9nm,0.6s,mb3.8,baz=63,slow=8.5,SNR=9.8						
NOA	**NORSAR Array B**	**69.73**	**338**	P	**P**	**07 08 15.6**	**-0.9**
	0.6nm,0.8s,mb3.5,baz=36,slow=6.0,SNR=3.7						

ISC 16 06:59:56.0±2.1, 37.93N±0.05×26.6E±0.1, h10km, n6, σ0.99/11, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
IZM	**Izmir**	**0.71**	**49**	*i* Pg	**Pg**	**07 00 09.3**	**-1.1**
IZM				*i* Sg	**Sg**	**07 00 20.2**	**+0.3**
KDAG	**Bornova**	**0.72**	**48**	*i* P	**Pb**	**07 00 09.7**	**-0.5**
KDAG				*i* S	**Sb**	**07 00 20.1**	**+0.3**
AYDN	**Tasoluk**	**1.06**	**104**	*i* P	**Pb**	**07 00 16.8**	**+0.8**
AYDN				*i* S	**Sb**	**07 00 29.4**	**-0.3**
BDRM	**Kayabasi**	**1.10**	**141**	*i* P	**Pb**	**07 00 17.6**	**+0.9**
BDRM				*i* S	**Sb**	**07 00 29.8**	**-1.1**
AKS	**Akhisar**	**1.35**	**45**	PG	**Pg**	**07 00 21.7**	**-1.5**
MANT	**Manisa**	**1.65**	**70**	*i* P	**Pn**	**07 00 27.7**	**+2.3**
MANT				*i* S	**Sn**	**07 00 47.2**	**+0.3**

NIED **16** *07:07:00,34.10N×141.60E,h26km,Mw4.7 Best double couple: M0 1.23×10^16 NP1:φs149°,δ71°,λ-65°. NP2: φs274°,δ31°,λ-140°.*

JMA **16** *07:07:35.6±0.3,34.12N×141.59E,h24km±2km,M5.0*

BJI **16** *07:07:37.8,34.30N×141.75E,h64km,mB4.9,mb4.8, Ms4.9,Ms2.4.6*

NEIC **16** *07:07:39.6±0.7,34.14N×141.43E,h41km±6km,mb5.0/71, Error ellipse: s-maj=4.0km s-min=3.5km az=141.0*

IDC **16** *07:07:39.7±1.7,34.11N×141.55E,h44km±14km,mb4.6/19, mb1 4.7/22,mb1mx4.7/24,ML4.3/3,MS4.2/3,Ms1 4.2/3, ms1mx3.5/30,Error ellipse: s-maj=15.4km s-min=9.3km az=113.0*

HRVD **16** *07:07:39.6±1.3,33.92N×141.59E,h29km±3km,MW4.8/30, Centroid moment Tensor Solution. LP body waves: s2,c2; Mantle waves: s30,c43; Half duration: 0 Moment tensor: Scale 10^16Nm; Mrr0.87±.24; Mθθ0.53±.16; Mφφ-1.40±.22; Mrθ0.74±.33; Mθφ-0.28±.12; Mφr0.82±.23; Best double couple: M0 1.66×10^16 NP1:φs156°,δ35°,λ36°. NP2:φs35°, δ70°,λ119°. Principal axes: T 1.55, Plg55°, Azm342°; N .24, Plg27°, Azm205°; P -1.78, Plg20°, Azm104°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

MOS **16** *07:07:40.4±0.8,34.74N×141.49E,h37km,mb5.3/37 Error ellipse: s-maj=14.1km s-min=5.7km az=106.9*

ISC 16 07:07:35.6±0.2, 34.12N±0.03×141.54E±0.02, h24km, (h33km±3.1km:pP-P), n318, σ0.94/339, mb5.0/146, MS4.7/20, 15C-41D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BSO1	**Boso 1**	**0.71**	**319**	P	**Pb**	**07 07 49.6**	**+0.4**
BSO3	**Boso 3**	**1.09**	**309**	P	**Pn**	**07 07 55.7**	**+0.1**
BSO3				S	**Sb**	**07 08 09.9**	**+0.3**
BSO4	**Boso 4**	**1.32**	**312**	P	**Pn**	**07 07 59.9**	**+1.0**
BSO4				S	**Sn**	**07 08 16.3**	**+0.5**
KTR	**Katsuura**	**1.44**	**316**	P	**Pn**	**07 08 02.1**	**+1.5**
KTR				S	**Sn**	**07 08 21.5**	**+2.6**
TATJ	**Tateyama 2**	**1.64**	**304**	⇑P	**Pn**	**07 08 04.3**	**+0.9**
CHOJ	**Chosi**	**1.68**	**341**	⇑P	**Pn**	**07 08 04.1**	**+0.1**
CHOJ				S	**Sn**	**07 08 25.5**	**+0.6**
JMY	**Miyake jima 2**	**1.68**	**269**	P	**Pn**	**07 08 04.9**	**+0.9**
JHJ2	**Mitsune**	**1.75**	**236**	P	**Pn**	**07 08 06.9**	**+1.8**
JHJ2				S	**Sn**	**07 08 28.9**	**+2.0**
JHJ	**Hachijo jima 2**	**1.77**	**236**	P	**Pn**	**07 08 07.2**	**+1.8**
	611nm,0.3s,baz=172,slow=2.2,SNR=63						
JHJ				S	**Sn**	**07 08 28.6**	**+1.3**
	2μm,0.3s,baz=78,slow=20,SNR=23						
JIM2	**Oshima 3**	**1.84**	**289**	P	**Pn**	**07 08 06.6**	**+0.2**
JIM2				S	**Sn**	**07 08 30.2**	**+1.1**
JIZS	**Izushimoda**	**2.28**	**286**	⇓P	**Pn**	**07 08 12.9**	**+0.3**
JOD2	**Odawara 2**	**2.32**	**300**	P	**Pn**	**07 08 14.0**	**+0.8**
MAJO	**Matsushiro**	**3.64**	**313**	*e*P	**Pn**	**07 08 32.5**	**+0.4**
MAT	**Matsushiro**	**3.64**	**313**	P	**Pn**	**07 08 32.0**	**0.0**
MAT				*e*S	**Sn**	**07 09 15.4**	**+0.6**
MAT	**Matsushiro**	**3.64**	**313**	*e*P	**Pn**	**07 08 32.0**	**0.0**
MAT				S	**Sn**	**07 09 15.0**	**+0.2**
CBIJ	**Chichi jima**	**7.03**	**175**	P	**Pn**	**07 09 16.7**	**-3.1**
	43nm,0.3s,baz=9.0,slow=6.0,SNR=42						
CBIJ				S	**Sn**	**07 10 31.4**	**-8.3**
	34nm,0.3s,baz=45,slow=18,SNR=3.2						
CBIJ				LR	LR	07 12 04.5	
	comp=Z,2μm,18.4s,baz=346,slow=38						
JNU	**Nakatsue**	**8.95**	**267**	P	**P**	**07 09 49.8**	**+3.2**
	1.3nm,0.3s,baz=30,slow=8.9,SNR=6.1						
ASAJ	**Asahikawa**	**10.02**	**4**	P	**P**	**07 09 55.9**	**-5.4**
	3.2nm,0.3s,baz=206,slow=5.7,SNR=37						
ASAJ				S	**S**	**07 11 44.0**	**-10**
	2.1nm,0.3s,baz=97,slow=28,SNR=6.3						
ASAJ				LR	LR	07 14 35.6	
	comp=Z,889nm,18.4s,baz=194,slow=42						
ASAJ	**Asahikawa**	**10.02**	**4**	P	**P**	**07 09 55.9**	**-5.4**
ASAJ				S	**S**	**07 11 44.0**	**-10**
ASAJ				pmax	pmax		
	comp=Z,3.0nm,0.3s						
ASAJ				smax			
	comp=N,2.0nm,0.3s						
ASAJ				MLR	MLR		
	comp=Z,889nm,18.4s						
YUK	**Yuzh-Kuril'sk**	**10.45**	**17**	P	**P**	**07 09 59.0**	**-8.2**
YUK				*e*S	**S**	**07 11 48.0**	**-17**
YUK				pmax	pmax		
	comp=Z,130nm,0.5s						
YUK				smax			
	comp=N,570nm,0.6s						
YUK				smax			
	comp=E,280nm,0.6s						
YUK				smax			
	comp=N,2μm,1.2s						
YUK				smax			
	comp=E,1μm,1.2s						
YUK				MLR	MLR		
	comp=Z,3μm,14.0s						
YUK				MLR	MLR		
	comp=E,2μm,15.0s						
KS15	**Wonju Array Si**	**11.58**	**291**	*e*P	**P**	**07 10 19.4**	**-3.2**
KUR	**Kuril'sk**	**12.12**	**22**	P	**P**	**07 10 24.5**	**-5.3**
KUR				*e*S	**S**	**07 12 30.5**	**-15**
KUR				smax			
	comp=N,150nm,1.0s						
KUR				smax			
	comp=E,190nm,1.0s						
INCN	**Inchon**	**12.56**	**290**	P	**P**	**07 10 36.1**	**+0.3**
	comp=E,61nm,1.5s						
YSS	**Yuzh-Sakhalins**	**12.86**	**4**	⇑*i*P	**P**	**07 10 34.0**	**-5.7**
YSS				*e*S	**S**	**07 12 50.0**	**-13**
YSS				MLR	MLR		
	comp=Z,3μm,15.0s						
YSS	**Yuzh-Sakhalins**	**12.86**	**4**	*e*P	**P**	**07 10 34.3**	**-5.4**
	comp=Z,92nm,0.8s						
JOW	**Kunigami**	**13.54**	**241**	LR	LR	07 16 04.6	
	comp=Z,1μm,18.9s,baz=70,slow=37						
MDJ	**Mudanjiang**	**13.96**	**322**	P	**P**	**07 10 52.3**	**-1.9**
MDJ				PP	PP	07 11 02.9	-2.2
MDJ				S	**S**	**07 13 25.8**	**-3.5**
MDJ				PCS		07 19 48.0	
MDJ				AMB	AMB		
	comp=Z,12nm,1.3s						
MDJ				AMB	AMB		
	comp=Z,154nm,12.6s						
MDJ				LR	LR		
	comp=N,2μm,19.4s						
MDJ				LR	LR		
	comp=E,1μm,16.7s						
MDJ				LR	LR		
	comp=Z,3μm,16.7s						
CN2	**Changchun**	**15.79**	**312**	*e*P	**P**	**07 11 18.3**	**+0.2**
CN2				*e*AP		07 11 28.1	
CN2				*e*XP		07 11 34.3	
CN2				*e*S	**S**	**07 14 09.8**	**-2.8**
CN2				AMB	AMB		
	comp=Z,400nm,10.0s						
CN2				LR	LR		
	comp=N,2μm,15.0s						
CN2				LR	LR		
	comp=E,2μm,15.0s						
CN2				LR	LR		
	comp=Z,2μm,15.0s						
SNY	**Shenyang**	**16.10**	**304**	⇑P	**P**	**07 11 25.6**	**+3.5**
SNY				AMB	AMB		
	comp=Z,260nm,12.6s						
SNY				LR	LR		
	comp=N,1μm,14.5s						
SNY				LR	LR		
	comp=E,760nm,14.7s						
SNY				LR	LR		
	comp=Z,1μm,16.2s						
DL2	**Dalian**	**16.70**	**292**	P	**P**	**07 11 30.9**	**+1.2**
DL2				LR	LR		
	comp=N,600nm,12.7s						
DL2				LR	LR		
	comp=Z,700nm,17.8s						
KLR	**Kul'dur**	**16.75**	**337**	*e*P	**P**	**07 11 27.0**	**-3.3**
TYV	**Tymovskoe**	**16.75**	**2**	*e*P	**P**	**07 11 25.1**	**-5.2**
TYV				MLR	MLR		
	comp=Z,2μm,17.0s						
TYV				MLR	MLR		
	comp=N,2μm,16.0s						
SSE	**Sheshan**	**17.41**	**266**	P	**P**	**07 11 41.8**	**+3.1**
SSE				AP		07 11 51.5	
SSE				S	**S**	**07 14 51.0**	**+1.1**
SSE				AMB	AMB		
	comp=Z,31nm,0.7s						
SSE				AMB	AMB		
	comp=Z,257nm,10.0s						
SSE				LR	LR		
	comp=N,715nm,13.4s						
SSE				LR	LR		
	comp=E,2μm,13.6s						
SSE				LR	LR		
	comp=Z,3μm,13.1s						
NJ2	**Nanjing**	**19.12**	**270**	*e*P	**P**	**07 12 00.9**	**+1.3**
NJ2				AP		07 12 08.8	
NJ2				PP	PP	07 12 16.6	+0.2
NJ2				S	**S**	**07 15 28.0**	**-0.6**
NJ2				SS	SS	07 15 54.0	-0.4
NJ2				AMB	AMB		
	comp=Z,40nm,0.7s						
NJ2				AMB	AMB		
	comp=Z,290nm,7.3s						
NJ2				LR	LR		
	comp=N,2μm,16.7s						
NJ2				LR	LR		
	comp=E,2μm,16.5s						
NJ2				LR	LR		
	comp=Z,3μm,16.2s						
GUMO	**Guam**	**20.66**	**171**	P	**P**	**07 12 18.6**	**+2.2**
	comp=Z,232nm,1.0s						
BJI	**Beijing**	**21.05**	**294**	*e*P	**P**	**07 12 19.6**	**-0.6**
BJI				S	**S**	**07 16 13.8**	**+5.3**
BJI				LR	LR		
	comp=N,524nm,16.5s,MS4.2						
BJI				LR	LR		
	comp=E,589nm,16.5s,MS4.2						
BJI				LR	LR		
	comp=Z,338nm,22.6s						
WHN	**Wuhan**	**23.23**	**269**	*e*P	**P**	**07 12 41.3**	**-0.6**
WHN				LR	LR		
	comp=N,2μm,11.7s,MS5.0						
WHN				LR	LR		
	comp=E,3μm,14.8s,MS5.0						
WHN				LR	LR		
	comp=Z,3μm,14.5s,MS4.9						
HHC	**Hu-ho-hao-te**	**24.64**	**295**	*e*P	**P**	**07 12 57.3**	**+1.7**
HHC				AP		07 13 09.1	
HHC				XP		07 13 14.3	
HHC				PP	PP	07 13 31.8	-0.2
HHC				XS		07 17 38.8	
HHC				SCP		07 20 03.6	
HHC				PCS		07 20 10.3	
HHC				SCS	ScS	07 23 50.8	-5.6
HHC				LR	LR		
	comp=N,336nm,13.2s,MS4.2						
HHC				LR	LR		
	comp=E,391nm,13.2s,MS4.2						
HHC				LR	LR		
	comp=Z,464nm,13.9s,MS4.1						
CLNS	**Chul'man**	**25.41**	**338**	*e*P	**P**	**07 13 03.3**	**+0.6**
CLNS				*e**PP	pP	07 13 11.7	+2.0
CLNS				*e*PPP	PPP	07 13 40.2	-13
CLNS				*e*		07 16 35.4	
CLNS				*e*S	**S**	**07 17 26.4**	**+1.1**
CLNS				*e*SS	SS	07 18 23.4	-4.4
CLNS				pmax	pmax		
	comp=N,20nm,0.9s						
CLNS				pmax	pmax		
	comp=E,10.0nm,0.9s						
CLNS				pmax	pmax		
	comp=Z,50nm,0.9s,mb5.0						
CLNS				pmax	pmax		
	comp=Z,50nm,1.0s,mb5.0						
CLNS				pmax	pmax		
	comp=N,30nm,1.1s						
CLNS				pmax	pmax		
	comp=E,10.0nm,0.8s						
CLNS				smax			
	comp=N,340nm,14.2s						
CLNS				smax			
	comp=Z,230nm,13.1s						
CLNS				smax			
	comp=E,100nm,12.4s						
CLNS				MLR	MLR		
	comp=Z,1μm,15.0s,MS4.5						
CLNS				MLR	MLR		
	comp=N,800nm,16.0s,MS4.4						
CLNS				MLR	MLR		
	comp=E,400nm,13.0s,MS4.4						
BTO	**Baotou**	**25.79**	**294**	*e*P	**P**	**07 13 06.1**	**-0.3**
BTO				AMB	AMB		
	comp=Z,32nm,1.1s,mb4.8						
BTO				LR	LR		
	comp=N,2μm,14.2s,MS4.9						
BTO				LR	LR		
	comp=E,2μm,14.2s,MS4.9						
MA2	**Magadan**	**26.18**	**11**	*d i*P	**P**	**07 13 09.5**	**-0.4**
MA2				pmax	pmax		
	comp=Z,41nm,0.8s,mb5.0						
MA2				MLR	MLR		
	comp=Z,600nm,17.0s,MS4.2						
MA2	**Magadan**	**26.18**	**11**	*e*P	**P**	**07 13 09.5**	**-0.4**
	comp=Z,36nm,0.8s,mb5.0						
YAK	**Yakutsk**	**28.94**	**348**	*d i*P	**P**	**07 13 33.7**	**-1.2**
YAK				*e**PP	pP	07 13 51.7	+10
YAK				*e*		07 14 41.6	
YAK				pmax	pmax		
	comp=Z,23nm,0.9s,mb4.9						
YAK				pmax	pmax		
	comp=N,7.0nm,1.0s						
YAK				pmax	pmax		
	comp=E,3.0nm,1.1s						
YAK				pmax	pmax		
	comp=Z,8.0nm,0.9s,mb4.5						
YAK				pmax	pmax		
	comp=N,4.0nm,0.8s						
YAK				pmax	pmax		
	comp=E,9.0nm,0.9s						
YAK	**Yakutsk**	**28.94**	**348**	*e*P	**P**	**07 13 33.4**	**-1.5**
	comp=E,50nm,1.0s,mb5.2						
ULN	**Ulaanbaatar**	**29.16**	**309**	‖*e*P	**P**	**07 13 37.1**	**0.0**
ULN	**Ulaanbaatar**	**29.16**	**309**	*e*P	**P**	**07 13 36.7**	**-0.4**
	comp=E,30nm,1.3s,mb4.9						
SONM	**Songino Array**	**29.59**	**308**	P	**P**	**07 13 39.7**	**-1.1**
	comp=E,7.0nm,0.7s,mb4.5,baz=108,slow=7.8,SNR=21						
SONM				PcP	PcP	07 16 45.7	+0.2
	comp=E,2.5nm,0.8s,baz=90,slow=1.4,SNR=3.5						
SEY	**Seymchan**	**29.63**	**10**	*e*P	**P**	**07 13 40.7**	**-0.4**
SEY						07 14 45.8	
SEY				*e*		07 16 45.9	
SEY				*e*S	**S**	**07 18 33.0**	**-0.8**
SEY				SS	SS	07 20 02.2	-6.0
SEY				*e*		07 24 19.5	
SEY				pmax	pmax		
	comp=E,10.0nm,0.9s						
SEY				pmax	pmax		
	comp=Z,30nm,0.9s,mb5.0						
SEY				pmax	pmax		
	comp=N,20nm,1.4s						
SEY				smax			
	comp=N,900nm,24.9s						
SEY				smax			
	comp=E,200nm,14.5s						
BOD	**Bodaibo**	**30.08**	**330**	*e*P	**P**	**07 13 43.5**	**-1.6**
LZH	**Lanzhou**	**30.78**	**285**	*e*P	**P**	**07 13 50.3**	**-1.3**
LZH				AP	pP	07 14 02.8	+4.2
LZH				PP	PP	07 14 52.4	-0.5
LZH				*e*S	**S**	**07 18 45.0**	**-7.3**
LZH				AMB	AMB		
	comp=Z,41nm,1.5s,mb5.0						
LZH				AMB	AMB		
	comp=Z,115nm,5.4s						
LZH				LR	LR		
	comp=E,800nm,14.7s						
LZH				LR	LR		
	comp=Z,1μm,16.0s,MS4.6						
GYA	**Guiyang**	**30.96**	**265**	P	**P**	**07 13 51.0**	**-2.2**
GYA				AP	pP	07 14 04.3	+4.0
GYA				PP	PP	07 14 53.3	-2.0
GYA				S	**S**	**07 18 49.9**	**-5.2**
GYA				AMB	AMB		
	comp=Z,10.0nm,0.9s,mb4.7						
GYA				LR	LR		
	comp=N,1μm,17.9s,MS4.6						
GYA				LR	LR		
	comp=E,540nm,18.0s,MS4.6						
GYA				LR	LR		
	comp=Z,420nm,19.4s,MS4.1						
CD2	**Chengdu**	**31.90**	**275**	P	**P**	**07 13 59.6**	**-1.9**
CD2				AMB	AMB		
	comp=Z,40nm,0.8s,mb5.3						
ZAK	**Zakamensk**	**32.23**	**312**	⇑*i*P	**P**	**07 14 04.5**	**+0.4**
TLY	**Talaya**	**32.38**	**314**	*e*P	**P**	**07 14 05.7**	**+0.3**
TLY				*e*S	**S**	**07 19 14.7**	**-2.4**
TLY				pmax	pmax		
	comp=Z,382nm,1.7s,mb6.0						
TLY				MLR	MLR		
	comp=Z,12μm,17.0s,MS5.6						
GTA	**Gaotai**	**33.62**	**291**	*e*P	**P**	**07 14 15.4**	**-1.0**
GTA				AMB	AMB		
	comp=Z,10.0nm,0.9s,mb4.8						
GTA				LR	LR		
	comp=N,412nm,16.3s,MS4.3						
GTA				LR	LR		
	comp=E,382nm,18.6s,MS4.3						
GTA				LR	LR		
	comp=Z,389nm,15.2s,MS4.2						
MOY	**Mondy**	**33.96**	**314**	*e*P	**P**	**07 14 19.5**	**+0.4**
KMI	**Kunming**	**34.73**	**266**	*e*P	**P**	**07 14 26.5**	**+0.4**
KMI				AP	pP	07 14 38.4	+5.2
KMI				S	**S**	**07 19 48.3**	**-5.5**
KMI				AMB	AMB		
	comp=Z,9.0nm,0.7s,mb4.8						
KMI				AMB	AMB		
	comp=Z,54nm,3.1s						
KMI				LR	LR		
	comp=N,741nm,15.6s,MS4.8						
KMI				LR	LR		
	comp=E,1μm,14.4s,MS4.8						
KMI				LR	LR		
	comp=Z,1μm,15.6s,MS4.8						
BILL	**Bilibino**	**36.80**	**15**	*d i*P	**P**	**07 14 42.0**	**-1.1**
BILL				*i*	pP	07 14 48.6	-1.7
BILL				*i*		07 15 00.4	
BILL				*e*		07 16 04.3	
BILL				*i*		07 17 05.1	
BILL				*e*S	**S**	**07 20 24.9**	**-0.3**
BILL				pmax	pmax		
	comp=Z,27nm,0.9s,mb5.1						
BILL				MLR	MLR		
	comp=Z,600nm,18.0s,MS4.4						
BILL	**Bilibino**	**36.80**	**15**	‖*e*P	**P**	**07 14 42.0**	**-1.1**
	comp=Z,26nm,1.0s,mb5.0						
TIXI	**Tiksi**	**38.19**	**354**	‖*e*P	**P**	**07 14 53.9**	**-0.9**
TIXI				pmax	pmax		
	comp=Z,19nm,0.9s,mb4.8						
TIXI				MLR	MLR		
	comp=Z,1μm,17.0s,MS4.8						
TIXI	**Tiksi**	**38.19**	**354**	*e*P	**P**	**07 14 53.7**	**-1.1**
	comp=Z,23nm,0.9s,mb4.9						
CMAR	**Chiang Mai Arr**	**40.94**	**259**	P	**P**	**07 15 17.6**	**-0.5**
	comp=Z,4.0nm,0.7s,mb4.2,baz=48,slow=7.6,SNR=21						
CMAR				PcP	PcP	07 17 19.4	+0.6
	comp=Z,1.2nm,0.7s,baz=32,slow=1.1,SNR=4.8						
CMAR	**Chiang Mai Arr**	**40.94**	**259**	P	**P**	**07 15 17.6**	**-0.5**
CMAR						07 17 19.5	
CMAR				pmax	pmax		
	comp=Z,4.0nm,0.7s						
CMAR				pmax	pmax		
	comp=Z,1.0nm,0.7s						
WMQ	**Urumqi**	**42.31**	**300**	*e*P	**P**	**07 15 30.1**	**+1.0**
WMQ				AP	pP	07 15 42.4	+6.1
WMQ				XP	sP	07 15 47.8	+8.6
WMQ				PP	PP	07 17 11.5	+1.5
WMQ				PCP	PcP	07 17 24.3	+1.2
WMQ				S	**S**	**07 21 46.8**	**-1.5**
WMQ				SS	SS	07 24 50.1	-1.3
WMQ				AMB	AMB		
	comp=Z,84nm,1.1s,mb5.3						
WMQ				AMB	AMB		
	comp=Z,243nm,5.5s						
WMQ				LR	LR		
	comp=N,958nm,15.5s,MS4.9						
WMQ				LR	LR		
	comp=E,874nm,16.4s,MS4.9						
WMQ				LR	LR		
	comp=Z,2μm,17.3s,MS4.9						
SHL	**Shillong**	**43.56**	**272**	*e*P	**P**	**07 15 38.7**	**-0.7**
PMG	**Port Moresby**	**43.61**	**172**	P	**P**	**07 15 40.4**	**+0.4**
	comp=Z,12nm,0.8s,mb4.7,baz=334,slow=5.1,SNR=5.7						
PMG	**Port Moresby**	**43.61**	**172**	P	**P**	**07 15 40.4**	**+0.4**
PMG				pmax	pmax		
	comp=Z,12nm,0.8s						
PMG	**Port Moresby**	**43.61**	**172**	*e*P	**P**	**07 15 40.1**	**+0.1**
	comp=Z,24nm,1.2s,mb4.8						
NVS	**Novosibirsk**	**44.96**	**316**	*e*P	**P**	**07 15 49.1**	**-1.3**
NVS				pmax	pmax		
	comp=E,25nm,1.3s						
NVS				pmax	pmax		
	comp=Z,30nm,1.3s,mb5.0						
MKAR	**Makanchi Array**	**45.80**	**305**	P	**P**	**07 15 57.1**	**-0.1**
	comp=Z,8.0nm,0.6s,mb4.8,baz=90,slow=9.7,SNR=31						
MKAR				ScP		07 21 23.4	
	comp=Z,1.8nm,0.8s,baz=90,slow=9.7,SNR=4.9						
MKAR	**Makanchi Array**	**45.80**	**305**	*i* P	**P**	**07 15 57.1**	**-0.1**
MKAR				pmax	pmax		
	comp=Z,3.0nm,0.5s						
MKAR	**Makanchi Array**	**45.80**	**305**	P	**P**	**07 15 57.1**	**-0.1**
MKAR				ScP		07 21 23.4	
GUN	**Gumba**	**47.62**	**278**	*e*P	**P**	**07 16 11.7**	**-0.1**
	comp=Z,59nm,0.9s,mb5.6						
SVW	**Sparrevohn**	**47.78**	**36**	*e*P	**P**	**07 16 14.1**	**+1.5**
	comp=Z,20nm,1.0s,mb5.1						
KURK	**Kurchatov**	**47.85**	**310**	*i* P	**P**	**07 16 12.7**	**-0.6**
KURK				pmax	pmax		
	comp=Z,26nm,0.9s,mb5.3						
KURK	**Kurchatov**	**47.85**	**310**	*e*P	**P**	**07 16 12.6**	**-0.7**
PKI	**Pulchoki**	**48.13**	**278**	*e*P	**P**	**07 16 15.1**	**-0.7**
	comp=Z,43nm,1.0s,mb5.4						
KKN	**Kakani**	**48.15**	**278**	*e*P	**P**	**07 16 15.6**	**-0.3**
	comp=Z,69nm,1.0s,mb5.7						
DMN	**Daman**	**48.36**	**278**	*e*P	**P**	**07 16 16.9**	**-0.7**
GKN	**Gorkha**	**48.60**	**279**	*e*P	**P**	**07 16 18.9**	**-0.5**
	comp=Z,185nm,1.2s,mb6.0						
IMA	**Indian Mountai**	**49.16**	**29**	*e*P	**P**	**07 16 24.2**	**+1.0**
	comp=Z,12nm,1.1s,mb4.9						
KOLN	**Koldanda**	**49.54**	**279**	*e*P	**P**	**07 16 25.9**	**-0.7**
	comp=Z,124nm,1.4s,mb5.8						
ULHL	**Ulahol**	**50.85**	**300**	P	**P**	**07 16 37.1**	**+0.7**
	SNR=7.0						
PMR	**Palmer**	**50.92**	**35**	*e*P	**P**	**07 16 35.5**	**-1.2**
	comp=Z,45nm,1.2s,mb5.3						
MCK	**McKinley**	**51.01**	**32**	*e*P	**P**	**07 16 36.8**	**-0.6**
	comp=Z,7.6nm,0.9s,mb4.6						
TKM2	**Tokmak 2**	**51.15**	**301**	P	**P**	**07 16 39.5**	**+0.8**
	SNR=19						

SML Sawmill 51.30 35 eP P 07 16 39.0 -0.5
COLA College 51.50 31 eP P 07 16 41.2 +0.1
COLA pmax pmax
comp=Z,22nm,0.9s,mb5.1
COLA College 51.50 31 eP P 07 16 41.2 +0.1
comp=Z,22nm,0.9s,mb5.1
KZA Kyzart 51.60 300 P P 07 16 43.6 +1.4
SNR=6.8
KBK Karagaybulak 51.68 300 P P 07 16 34.9 -7.9
SNR=8.2
ILAR Eielson Array 51.91 31 P P 07 16 43.0 -1.1
comp=Z,22nm,0.8s,mb5.1,baz=268,slow=6.2,SNR=218
ILAR Eielson Array 51.91 31 P P 07 16 43.1 -1.1
ILAR pmax pmax
comp=Z,22nm,0.8s
AAK Ala-Archa 52.01 300 P P 07 16 45.6 +0.4
SNR=7.2
UCH Uchtor 52.10 300 P P 07 16 46.8 +0.9
SNR=12
TOA Tolsona 52.31 34 eP P 07 16 47.4 +0.2
comp=Z,33nm,0.8s,mb5.3
VOSK Vostochnaya 52.33 314 P P 07 16 46.8 -0.7
VOSK pmax pmax
comp=Z,42nm,1.3s,mb5.2
BVA0 Borovoye Array 52.64 314 i P P 07 16 49.3 -0.5
BVA0 pmax pmax
comp=Z,1.0nm,1.0s
BRVK Borovoye 52.70 314 eP P 07 16 49.4 -0.8
AML Almayashu 52.71 300 P P 07 16 51.4 +0.9
SNR=20
ZRNK Zerenda 53.48 314 P P 07 16 55.3 -0.7
ZRNK pmax pmax
comp=Z,47nm,1.3s,mb5.3
CTA Charters Tower 54.09 175⇑iP P 07 17 00.3 -0.6
comp=Z,6.2nm,0.8s,mb4.6
CTAO Charters Tower 54.09 175 eP P 07 17 00.0 -0.8
comp=Z,7.3nm,0.9s,mb4.6
FITZ Fitzroy Crossi 54.09 199⇓iP P 07 17 00.2 -0.7
comp=Z,14nm,0.6s,mb5.1
WRAB Tennant Creek 54.18 188⇓eP P 07 16 60.0 -1.6
comp=Z,64nm,0.8s,mb5.6
WB2 Warramunga Arr 54.19 188⇓iP P 07 17 00.1 -1.5
WRA Warramunga Ar 54.20 188 P P 07 17 00.1 -1.5
comp=Z,24nm,0.7s,mb5.2,baz=5.1,slow=7.6,SNR=100
WRA S S 07 24 34.2 -1.5
comp=Z,0.4nm,1.0s,baz=7.0,slow=14,SNR=2.8
NDI New Delhi 54.38 283 e P 07 17 01.0 -1.9
KKAR Karatay Array 54.71 302 i P P 07 17 05.0 -0.2
KKAR pmax pmax
comp=Z,51nm,1.1s,mb5.5
DAWY Dawson 55.21 32 eP P 07 17 08.2 -0.3
INK Inuvik 56.94 26 eP P 07 17 20.1 -0.9
comp=Z,16nm,0.8s,mb5.1
AS12 Alice Springs 57.92 188⇓iP P 07 17 27.0 -1.4
comp=Z,16nm,0.8s,mb5.1
ASAR Alice Springs 57.92 188 P P 07 17 27.1 -1.4
comp=Z,14nm,0.8s,mb5.0,baz=12,slow=7.8,SNR=124
HYB Hyderabad 58.28 270⇓iP P 07 17 30.0 -0.9
comp=Z,40nm,1.0s,mb5.4
HYB ePcP PcP 07 18 20.5 -1.3
HYB Hyderabad 58.28 270⇓eP P 07 17 30.0 -0.9
comp=Z,40nm,1.0s,mb5.4
HYB e 07 18 20.5
ARU Arti 58.63 320⇑iP P 07 17 31.3 -1.6
ARU e 07 19 37.7
ARU eS S 07 25 32.4 -1.6
ARU e 07 27 09.6
ARU eSS SS 07 29 25.2 -3.4
ARU pmax pmax
comp=Z,36nm,0.9s,mb5.4
ARU MLR MLR
comp=Z,800nm,17.0s,MS4.9
ARU MLR MLR
comp=E,800nm,19.0s
ARU Arti 58.63 320 eP P 07 17 31.1 -1.8
comp=E,6.5nm,0.7s,mb4.8
AB31 Akbulak array 59.92 311 P P 07 17 40.5 -1.4
AB31 pmax pmax
comp=Z,2.0nm,0.5s,mb4.4
DLBC Dease Lake 60.87 37 eP P 07 17 48.8 +0.5
POO Poona 61.63 274⇓iP P 07 17 51.0 -3.0
KAD Karad 61.95 273⇓iP P 07 17 54.5 -1.7
APA Apatity 65.39 336⇓iP P 07 18 17.2 -0.7
APA i 07 18 31.8
APA pmax pmax
comp=Z,29nm,1.0s,mb5.3
APA MLR MLR
comp=Z,1μm,18.0s,MS5.2
RES Resolute Bay 65.39 14⇓eP P 07 18 16.9 -0.9
comp=Z,23nm,0.9s,mb5.2
STKA Stephens Creek 65.64 180⇓iP P 07 18 19.3 -0.8
comp=Z,7.0nm,0.8s,mb4.7
STKA Stephens Creek 65.64 180 P P 07 18 19.6 -0.5
comp=Z,7.1nm,0.9s,mb4.7,baz=358,slow=8.2,SNR=8.3
FORT Forrest 65.79 193⇑iP P 07 18 20.6 -0.5
comp=Z,230nm,0.7s
KEV Kevo 66.20 340 ep P 07 18 20.7 -2.4
YKW3 Yellowknife Ar 66.24 29 eP P 07 18 21.1 -2.3
YKA Yellowknife Ar 66.28 29 P P 07 18 22.5 -1.2
comp=Z,4.9nm,0.9s,mb4.5,baz=297,slow=6.4,SNR=91
YKA Yellowknife Ar 66.28 29 P P 07 18 22.5 -1.2
YKA pmax pmax
comp=Z,5.0nm,0.9s
ARCES ARCESS Array B 66.76 340 P P 07 18 26.1 -0.6
comp=Z,5.5nm,0.8s,mb4.6,baz=56,slow=8.7,SNR=13
ARCES ARCESS Array B 66.76 340 P P 07 18 26.1 -0.5
ARCES pmax pmax
comp=Z,6.0nm,0.8s
OCWA Octopus Mounta 68.27 46 eP P 07 18 37.5 +1.0
comp=Z,35nm,1.2s,mb5.3
JOF Joensuu 68.59 333 ep P 07 18 36.4 -1.8
comp=Z,12nm,1.0s,mb4.8
JOF Joensuu 68.59 333 eP P 07 18 36.4 -1.8
JOF pmax pmax
comp=Z,12nm,1.0s,mb4.8
DAG Danmarks Havn 68.68 355⇑iP P 07 18 38.0 -0.6
comp=Z,6.0nm,1.0s,mb4.5
DAG Danmarks Havn 68.68 355⇑eP P 07 18 38.0 -0.6
DAG pmax pmax
comp=Z,6.0nm,1.0s,mb4.5
DAG Danmarks Havn 68.68 355⇑eP P 07 18 38.0 -0.6
comp=Z,6.0nm,1.0s,mb4.5
KLBR Kellerberrin 69.10 202 eP P 07 18 41.0 -0.9
comp=Z,29nm,1.1s,mb5.1
GNW Green Mountain 69.17 46 eP P 07 18 42.9 +0.8
JCW Jim Creek 69.40 45 P P 07 18 44.1 +0.7
BMW Boistfort Moun 69.44 47 eP P 07 18 44.6 +0.9
RPW Rockport 69.53 45 eP P 07 18 44.3 +0.1
MOS Moscow 69.66 324 eP P 07 18 49.7 +4.8
MOS pmax pmax
comp=Z,50nm,0.7s,mb5.5
MOS MLR MLR
comp=Z,1μm,15.0s,MS5.2
RMW Rattlesnake Mo 69.83 46 eP P 07 18 46.7 +0.6
LON Longmire 70.17 47 eP P 07 18 48.1 -0.1
COR Corvallis 70.29 49 eP P 07 18 49.8 +0.9
comp=Z,35nm,1.0s,mb5.2
NLW Nelson Butte 70.39 45 eP P 07 18 50.0 +0.6
KEBM Edson Butte 70.45 51 eP P 07 18 50.6 +0.7
OBN Obninsk 70.50 324d iP P 07 18 49.1 -0.9
OBN pmax pmax
comp=Z,18nm,0.9s,mb5.0
OBN MLR MLR
comp=Z,400nm,17.0s,MS4.7
LTY Liberty 70.60 46 P P 07 18 50.9 +0.1
WTV Waterville 70.81 45 P P 07 18 52.2 +0.2
EBG Ellensburg 70.83 46 P P 07 18 52.8 +0.6
HSO Harness Mounta 70.93 50 eP P 07 18 54.2 +1.3
KAF Kangasniemi 70.95 333 ep P 07 18 51.0 -1.6
baz=50,slow=5.8
THR Tehran 71.27 301 P P 07 18 55.8 +0.7
comp=Z,2.7nm,1.0s,mb4.1,baz=37,slow=2.4,SNR=3.6
THR Tehran 71.27 301 P P 07 18 55.8 +0.8
THR pmax pmax
comp=Z,3.0nm,1.0s
FINES FINESS Array B 71.44 333 P P 07 18 55.1 -0.5
comp=Z,16nm,0.8s,mb5.0,baz=76,slow=7.9,SNR=52
FINES FINESS Array B 71.44 333 P P 07 18 55.1 -0.5
FINES pmax pmax
comp=Z,16nm,0.8s
HUMO Hull Mountain 71.47 51 eP P 07 18 56.9 +0.8
HAWA Hanford 71.71 46 eP P 07 18 57.9 +0.4
DPW Davenport 71.74 44 eP P 07 18 57.8 +0.2
YBH Yreka Blue Hor 72.06 52⇓eP P 07 19 00.5 +0.8
comp=Z,12nm,1.0s,mb4.8
GOF Gofitskoye 72.13 313⇓iP P 07 19 02.0 +2.0
GOF pmax pmax
comp=Z,50nm,1.2s,mb5.3
NEW Newport 72.16 43 eP P 07 18 59.9 -0.3
comp=Z,19nm,0.9s,mb5.0
WDC Whiskeytown Da 72.75 52 eP P 07 19 03.9 +0.2
comp=Z,15nm,1.0s,mb4.9
ZEI Tsey 72.75 310⇓eP P 07 19 03.6 -0.1
ZEI e pP 07 19 12.0 +0.8
ZEI MLR MLR
comp=Z,300nm,18.0s,MS4.6
KIV Kislovodsk 72.91 312 i P P 07 19 04.0 -0.6
KIV e 07 19 22.1
KIV eS S 07 28 28.3 +0.1
KIV pmax pmax
comp=Z,30nm,1.1s,mb5.1
KIV Kislovodsk 72.91 312 eP P 07 19 04.7 +0.1
comp=Z,49nm,1.0s,mb5.4
MOD Modoc 73.52 50 eP P 07 19 08.4 +0.2
comp=Z,14nm,0.9s,mb4.9
WALA Waterton Lakes 73.53 42 eP P 07 19 07.7 -0.4
comp=Z,12nm,0.8s,mb4.9
SUMG Summit 73.59 360 eP P 07 19 08.4 +0.4
WVOR Wild Horse Val 74.30 49 eP P 07 19 13.1 +0.4
comp=Z,33nm,1.5s,mb5.0
BEKR Beckwourth 74.55 52 eP P 07 19 14.2 +0.1
comp=Z,17nm,0.9s,mb5.0
MSO Missoula 74.75 44 eP P 07 19 15.1 0.0
SOC Sochi 74.93 313 eP P 07 19 16.5 +0.2
SOC e 07 19 32.9
SOC e 07 22 05.2
SOC eS S 07 28 43.2 -7.7
SOC e 07 29 18.5
SOC eSS SS 07 33 36.1 -5.5
SOC eSSS SSS 07 36 47.8 -7.7
SOC pmax pmax
comp=Z,10.0nm,0.8s,mb4.8
SOC pmax pmax
comp=N,10.0nm,1.1s
SOC pmax pmax
comp=E,30nm,1.0s
SOC MLR MLR
comp=Z,230nm,21.0s,MS4.5
SOC MLR MLR
comp=N,190nm,22.0s,MS4.6
SOC MLR MLR
comp=E,230nm,19.0s,MS4.6
MNK Minsk 74.99 326 eP P 07 19 16.0 -0.5
CHMT Chamberlain Mo 75.09 43 eP P 07 19 16.9 -0.2
WCN Washoe City 75.24 52 eP P 07 19 18.9 +0.7
comp=E,4.9nm,0.9s,mb4.4
CMB Columbia Colle 75.49 54 eP P 07 19 19.7 +0.1
comp=E,16nm,1.1s,mb4.9
ANN Anapa 75.64 315 eP P 07 19 31.3 +11
ANN pmax pmax
comp=Z,30nm,1.3s,mb5.1
HRY Holter Researc 76.01 43 eP P 07 19 23.0 +0.6
FFC Flin Flon 76.10 32 eP P 07 19 22.2 -0.5
comp=Z,23nm,1.0s,mb5.1
BMN Battle Mountai 76.28 50 eP P 07 19 25.3 +1.3
comp=Z,6.4nm,0.9s,mb4.5
HLID Hailey 76.29 47 eP P 07 19 24.5 +0.5
comp=Z,11nm,1.0s,mb4.7
MCMT McKenzie Canyo 76.50 45 eP P 07 19 25.4 +0.2
FCC Fort Churchill 76.56 26 eP P 07 19 24.4 -0.8
comp=Z,21nm,1.3s,mb4.9
NVAR Mina Array Bea 76.66 53 P P 07 19 27.1 +0.8
comp=Z,5.8nm,0.8s,mb4.5,baz=284,slow=6.1,SNR=39
BOZ Bozeman (W) 76.74 44 eP P 07 19 26.9 +0.4
comp=Z,13nm,0.9s,mb4.9
NB2 NORSAR Subarra 76.91 338 P P 07 19 26.8 -0.4
comp=Z,19nm,0.8s,mb5.1,baz=40,slow=5.6
NB2 NORSAR Subarra 76.91 338 P P 07 19 26.8 -0.4
baz=40,slow=5.9
NOA NORSAR Array B 76.91 338 P P 07 19 26.9 -0.3
comp=Z,15nm,0.8s,mb5.0,baz=39,slow=5.7,SNR=76
NOA NORSAR Array B 76.91 338 P P 07 19 26.9 -0.3
NOA pmax pmax
comp=Z,15nm,0.8s
NAO01 NORSAR Array S 77.17 338 eP P 07 19 26.8 -1.7
comp=Z,18nm,1.0s,mb5.0
QLMT Earthquake Lak 77.33 44 eP P 07 19 30.9 +1.1
SUW Suwalki 77.40 328 eP P 07 19 30.0 0.0
TPH Tonopah 77.57 52 eP P 07 19 32.1 +0.8
comp=Z,14nm,1.3s,mb4.7
LKWY Lake 78.08 44 eP P 07 19 36.7 +2.8
comp=Z,9.3nm,0.9s,mb4.7
KSWY Kelly School 78.50 45 eP P 07 19 37.9 +1.6
REDW Red Top Meadow 78.52 45 eP P 07 19 37.9 +1.5
HWUT Hardware Ranch 79.13 47⇓eP P 07 19 40.8 +1.0
comp=Z,32nm,1.1s,mb5.2
PDAR Pinedale Array 79.64 45 P P 07 19 43.0 +0.5
comp=Z,6.7nm,0.7s,mb4.7,baz=289,slow=2.7,SNR=59
BSD Bornholm Skovb 80.06 332⇓iP P 07 19 43.7 -0.8
comp=Z,24nm,0.9s,mb5.1
BSD Bornholm Skovb 80.06 332⇓iP P 07 19 43.7 -0.8
BSD pmax pmax
comp=Z,24nm,0.9s,mb5.1
NEN Nelson 80.51 53 eP P 07 19 48.1 +0.8
MVU Marysvale 80.56 50⇓eP P 07 19 48.7 +1.3
comp=Z,15nm,1.1s,mb4.8
KWP Kalwaria 80.56 325 eP P 07 19 48.3 +1.1
COP Copenhagen 80.57 334 i P P 07 19 50.5 +3.3
comp=Z,17nm,0.9s,mb5.0
COP Copenhagen 80.57 334 i P P 07 19 50.5 +3.3
COP pmax pmax
comp=Z,17nm,0.9s,mb5.0
PFO Pinyon Flat Ob 80.58 56 eP P 07 19 47.5 -0.2
comp=Z,18nm,0.9s,mb5.0
BRTR Keskin Array B 80.87 312 P P 07 19 49.5 +0.4
comp=Z,8.3nm,0.9s,mb4.7,baz=118,slow=2.7,SNR=21
BRTR PP PP 07 23 00.9 +5.2
comp=Z,3.9nm,1.1s,baz=45,slow=8.7,SNR=3.7
OJC Ojcow 81.52 326⇓eP P 07 19 52.5 +0.2
NIE Niedzica 81.84 326 eP P 07 19 55.0 +1.1
ULM Lac du Bonnet 81.88 33 P P 07 19 53.8 -0.3
comp=Z,7.2nm,1.0s,mb4.6,baz=310,slow=7.5,SNR=5.0
RSSD Black Hills 81.94 41 eP P 07 19 55.2 +0.6
comp=Z,1.8nm,0.6s,mb4.2
OKC Ostrava-Krasne 82.54 327⇓eP P 07 19 58.2 +0.6
OKC ex x 07 20 05.8
PV10 Paradox Valley 82.62 48 eP P 07 19 59.7 +1.4
KSP Ksiaz 82.64 329 eP P 07 19 58.7 +0.7
KSP Ksiaz 82.64 329⇑eP P 07 19 58.8 +0.8
KSP ePcP PcP 07 20 03.6 +0.1
BSEG Bad Segeberg 82.70 333 eP P 07 19 58.5 +0.2
BSEG pmax pmax
comp=Z,15nm,0.9s,mb5.0
MORC Moravsky Berou 82.86 327 eP P 07 19 59.3 +0.1
comp=Z,2.6nm,0.8s,mb4.3
DPC Dobruska-Polom 82.98 328 eP P 07 20 00.3 +0.4
DPC ex x 07 20 11.7
UPC Upice 83.00 328⇓iP P 07 20 00.6 +0.7
PV01 Paradox Valley 83.06 48 eP P 07 20 01.6 +1.1
PSZ Piszkesteto 83.09 325 eP P 07 20 01.5 +1.0
comp=Z,16nm,1.1s,mb5.0
PVCC Panska Ves 83.61 329⇓eP P 07 20 03.6 +0.6
PVCC ex x 07 20 11.1
BRG Berggiesshubel 83.61 330 i P P 07 20 03.5 +0.5
BRG pmax pmax
comp=Z,8.0nm,1.0s,mb4.8
BRG Berggiesshubel 83.61 330 i P P 07 20 03.5 +0.5
comp=Z,8.1nm,0.9s,mb4.8
BRG e 07 23 24.7
CLL Collm 83.67 330 ⇓P P 07 20 03.3 0.0
comp=Z,logA/T=1.3,mb5.2
CLL e*PP pP 07 20 13.0 +2.0
CLL e 07 20 23.0
CLL ePP PP 07 23 26.0 +8.0
CLL e 07 24 06.0
CLL Collm 83.67 330⇓iP P 07 20 03.3 0.0
CLL e 07 20 13.0
CLL pmax pmax
comp=Z,18nm,0.9s,mb5.2
CLL Collm 83.67 330⇓iP P 07 20 03.3 0.0
comp=Z,18nm,0.9s,mb5.2
CLL e 07 20 13.0
ISCO Idaho Springs 83.81 46 eP P 07 20 05.9 +1.6
comp=Z,3.7nm,0.8s,mb4.6
PRU Pruhonice 84.02 329⇓eP P 07 20 05.6 +0.5
comp=Z,17nm,1.0s,mb5.1
PRU ex x 07 20 12.6
PRU Pruhonice 84.02 329 eP P 07 20 05.6 +0.5
PRU e pP 07 20 12.6 -0.2
PRU pmax pmax
comp=Z,17nm,1.0s,mb5.1
ZST Bratislava 84.20 326 eP P 07 20 07.3 +1.2
MOX Moxa 84.75 331 i P P 07 20 09.1 +0.4
comp=Z,logA/T=1.0,mb4.9
MOX Moxa 84.75 331 eP P 07 20 09.1 +0.4
MOX pmax pmax
comp=Z,13nm,1.2s,mb4.9
MOX Moxa 84.75 331 eP P 07 20 09.1 +0.4
comp=Z,13nm,1.2s,mb4.9
KHC Kasperske Hory 85.08 329⇓iP P 07 20 10.7 +0.3
KHC ex x 07 20 20.8
TUC Tucson 85.20 54 eP P 07 20 11.7 +0.2
comp=Z,3.7nm,1.1s,mb4.4
GEC2 GERESS Array S 85.24 328 eP P 07 20 11.3 +0.1
GERES GERESS Array B 85.24 328 P P 07 20 11.6 +0.4
comp=Z,21nm,1.1s,mb5.2,baz=34,slow=4.8,SNR=54
GERES GERESS Array B 85.24 328 P P 07 20 11.6 +0.4
GERES pmax pmax
comp=Z,21nm,1.1s
RHK1 Bakonya 85.26 324⇑iP P 07 20 11.7 +0.3
WET Wettzell 85.37 329 eP P 07 20 12.5 +0.6
WET pmax pmax
comp=Z,6.0nm,0.9s,mb4.7
WET Wettzell 85.37 329 eP P 07 20 12.5 +0.6
comp=Z,6.0nm,0.9s,mb4.7
WTSB Winterswijk 85.57 334 eP P 07 20 12.6 -0.1
comp=Z,8.3nm,1.3s,mb4.8
ARSA Arzberg 85.62 326⇑iP P 07 20 14.1 +0.9
comp=Z,7.5nm,0.9s,mb4.9
GRA1 Grafenberg Arr 85.64 330 eP P 07 20 14.3 +1.1
comp=Z,36nm,0.9s,mb5.6
GRF Grafenberg Arr 85.64 330 eP P 07 20 14.3 +1.1
GRF pmax pmax
comp=Z,36nm,0.9s,mb5.6
MOA Molln 85.74 327⇓iP P 07 20 14.8 +1.0
comp=Z,11nm,1.1s,mb5.0
BBH Bruntsheil 86.02 340 eP P 07 20 15.4 +0.4
BHH Howats Hill 86.14 341⇓eP P 07 20 15.5 -0.1
BHH AMB AMB 07 20 17.1
comp=Z,25nm,1.0s,mb5.4
BTA Talkin 86.16 340⇓eP P 07 20 16.2 +0.6
BTA AMB AMB 07 20 17.7
comp=Z,26nm,0.8s,mb5.5
BWH Wardlaw 86.19 341⇓eP P 07 20 16.0 +0.2
PERS Pernice 86.26 326 iP P 07 20 16.5 +0.1
BDL Dobcross Hall 86.32 340⇓eP P 07 20 17.1 +0.7
BDL AMB AMB 07 20 18.7
comp=Z,47nm,0.9s,mb5.7
ANMO Albuquerque 86.38 50⇓eP P 07 20 18.1 +0.8
ANMO Albuquerque 86.38 50 eP P 07 20 18.2 +1.0
comp=Z,3.2nm,0.9s,mb4.5
BBO1 Bothel 86.46 340 eP P 07 20 17.1 -0.1
BBO1 AMB AMB 07 20 20.0
comp=Z,42nm,1.1s,mb5.6
FUR Furstenfeldbru 86.80 329 eP P 07 20 19.3 +0.3
FUR pmax pmax
comp=Z,19nm,0.8s,mb5.4
FUR Furstenfeldbru 86.80 329 eP P 07 20 19.3 +0.3
comp=Z,19nm,0.8s,mb5.4
HGN Heimansgroeve 86.86 334 eP P 07 20 19.3 +0.1
comp=Z,14nm,1.0s,mb5.2
BOJS Bojanci 87.04 325 i P P 07 20 20.8 +0.6
STU Stuttgart 87.19 331 eP P 07 20 21.1 +0.2
CEY Cerknica 87.25 326 i P P 07 20 20.6 -0.6
WLF Walferdange 87.67 333 eP P 07 20 23.4 +0.2
GIVF Givet 87.81 334 eP P 07 20 23.1 -0.7
BFO Black Forest 87.89 331 eP P 07 20 24.1 -0.1
NVLJ Novalja 87.92 325 i P P 07 20 21.3 -3.1
BAIF Baives 88.07 334 eP P 07 20 24.4 -0.6
comp=Z,13nm,0.8s,mb4.9
DAVA Damuels 88.08 329⇑iP P 07 20 25.6 +0.5
comp=Z,12nm,1.1s,mb5.0
SCHQ Schefferville 88.11 16 P P 07 20 25.7 +0.6
comp=Z,6.7nm,0.8s,mb4.9,baz=342,slow=6.6,SNR=5.7
SCHQ Schefferville 88.11 16 P P 07 20 25.7 +0.6
CDF Champ du Feu 88.25 331 eP P 07 20 25.3 -0.6
comp=Z,14nm,0.9s,mb4.9
HINF Hinteralfeld 88.90 331 eP P 07 20 27.9 -1.1
comp=Z,4.9nm,0.7s,mb4.6
HAU Haudompre 88.94 332 eP P 07 20 28.2 -1.1
comp=Z,5.5nm,0.7s,mb4.7
MEZF Maizieres J'vi 89.04 333 eP P 07 20 29.5 -0.2
GDL2 Guadalupe Moun 89.49 51 eP P 07 20 32.4 +0.1
CABF La Chapelle 90.18 331 eP P 07 20 34.3 -0.8
LPL La Plagne 90.81 330 eP P 07 20 37.7 -0.3
comp=Z,12nm,0.8s,mb5.0
FLN La Foliniere 90.81 336 eP P 07 20 37.2 -0.7
comp=Z,25nm,1.0s,mb5.2
LPG La Plagne 90.81 330 eP P 07 20 37.8 -0.2
comp=Z,16nm,0.8s,mb5.1
SSF Saint Saulge 90.82 333 eP P 07 20 37.4 -0.6
comp=Z,12nm,1.0s,mb4.9
LDF La Druitiere 90.83 336 eP P 07 20 37.3 -0.7
comp=Z,21nm,1.0s,mb5.2
SMF Signal de Mont 91.04 332 eP P 07 20 38.3 -0.7
comp=Z,14nm,1.1s,mb4.9
AVF avril sur Loir 91.10 333 eP P 07 20 38.8 -0.5
comp=Z,26nm,0.9s,mb5.3
BNI Bardonecchia 91.20 330 eP P 07 20 39.3 -0.6
WMOK Wichita Mounta 91.24 46 eP P 07 20 40.1 -0.2
comp=Z,2.6nm,0.8s,mb4.6
GRR Gorron 91.26 336 eP P 07 20 39.6 -0.4
comp=Z,34nm,0.9s,mb5.4
MBDF Montbardon 91.43 330 eP P 07 20 39.8 -1.1
comp=Z,15nm,0.8s,mb5.1
BGF Bois d'Agland 91.49 333 eP P 07 20 40.6 -0.5
comp=Z,10.0nm,1.0s,mb4.8
ORIF Oris-en-Rattie 91.64 330 eP P 07 20 41.3 -0.6
comp=Z,11nm,0.8s,mb5.0
SBF Sospel 91.84 329 eP P 07 20 42.3 -0.5
comp=Z,38nm,0.9s,mb5.4
TCF Toulx Ste Croi 91.95 333 eP P 07 20 42.9 -0.4
comp=Z,14nm,0.8s,mb5.0
ROSF Rostrenen 92.10 337 eP P 07 20 43.6 -0.3
comp=Z,29nm,1.0s,mb5.3
VIVF Saint-Julien-l 92.19 331 eP P 07 20 43.9 -0.5
comp=Z,26nm,0.9s,mb5.2
PGF Pioggiola 92.20 327 eP P 07 20 43.9 -0.6
comp=Z,9.1nm,1.1s,mb4.7
FRF La Foret Royal 92.42 329 eP P 07 20 44.2 -1.3
comp=Z,16nm,0.9s,mb5.1
QUIF Quistinic 92.43 337 eP P 07 20 45.6 +0.2
comp=Z,19nm,1.1s,mb5.0
SMRF Simiane la Rot 92.54 330 eP P 07 20 46.4 +0.4
comp=Z,17nm,1.0s,mb5.1
MFF Saint Martin d 92.55 335 eP P 07 20 45.8 -0.2
comp=Z,31nm,0.9s,mb5.4
LMR La Mourre 92.67 329 eP P 07 20 45.5 -1.1
comp=Z,32nm,1.0s,mb5.4
RJF Les Rejaudoux 93.05 333 eP P 07 20 48.1 -0.2
comp=Z,30nm,1.0s,mb5.4
CAF Calviac 93.16 332 eP P 07 20 49.0 +0.2
comp=Z,18nm,0.9s,mb5.2
LASF Ste Croix 93.16 331 eP P 07 20 48.6 -0.3
comp=Z,20nm,0.9s,mb5.2
LFF La Frestale 93.65 333 eP P 07 20 51.2 +0.1
MIAR Mount Ida 94.39 43 eP P 07 20 54.7 -0.1
MTLF Montolieu 94.43 332 eP P 07 20 54.5 -0.2
comp=Z,15nm,1.0s,mb5.0
ETSF Etsaut 95.88 333 eP P 07 21 01.3 -0.1
comp=Z,9.4nm,1.0s,mb4.9
QSPA South Pole Qui 123.87 180 ePKP PKPdf 07 26 31.5 -4.0
VNA2 Neumayer--Watz 139.54 195 e PKPdf 07 27 06.5 +1.5
VNA3 Neumayer Olymp 139.77 194 e PKPdf 07 27 14.6 +9.2
ARE Arequipa 145.55 68 eP PKPbc 07 27 15.0 +2.0
LPAZ La Paz 147.98 64 PKPbc PKPdf 07 27 19.2 -1.7
comp=Z,14nm,0.8s,baz=330,slow=2.8,SNR=52
LPAZ La Paz 147.98 64 PKIKP PKPdf 07 27 19.2 -1.7
LPAZ pmax pmax
comp=Z,14nm,0.8s
LPAZ La Paz 147.98 64 ePKPdf PKPdf 07 27 19.1 -1.8
LPAZ ePKPbc PKPdf 07 27 22.2 +1.2
LVC Limon Verde 150.96 75 ePKPbc PKPdf 07 27 29.1 +3.7
LVC e 07 27 37.2

JMA ***16*** *07:07:56.8±0.4,23.03N×121.97E,h36km,M2.6*
TAP ***16*** *07:07:57.2,23.11N×121.82E,h19km±1km,MLJ3.0*
ISC 16 07:07:57.2±2.6,23.0N±0.2×122.1E±0.1,h19km,n6,
σ0§33/10,Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
YOJ	Yonaguni jima	1.66	30	P		Pn	07 08 25.2	-0.5
YOJ				S		Sn	07 08 46.9	+0.2
HATJ	Hateruma jima	1.88	56	P		Pn	07 08 29.1	+0.3
HATJ				S		Sn	07 08 52.2	0.0

IRIF	**Iriomote-Funau**	**1.99**	**49**	P	**Pn**	**07 08 30.3**	**-0.1**
IRIF				S	**Sn**	**07 08 55.4**	**+0.4**
JKRS	**Kuro-shima**	**2.13**	**55**	S	**Sn**	**07 08 58.6**	**-0.1**
JIJ	**Ishigaki jima**	**2.30**	**54**	P	**Pn**	**07 08 35.4**	**+0.4**
JIJ				S	**Sn**	**07 09 02.5**	**-0.5**
JTJ	**Tarama**	**2.88**	**56**	S	**Sn**	**07 09 17.6**	**-0.1**

MAN 16 07:14:05.9, 13.21N×120.47E, h6km, mb4.0, ML2.8, MS2.4, 4C, Mindoro

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PGP	**Puerto Galera**	**0.56**	**58**	*i* P	Pg	07 14 17.0	0.0
LUBP	**Lubang**	**0.56**	**338**⇑	*e*P	Pg	07 14 17.4	+0.2
LUBP				*e*S	Sg	07 14 30.1	+5.4
SJMP	**San Jose**	**0.98**	**139**⇑	*e*P	Pb	07 14 24.8	0.0
SJMP				*e*S	Sb	07 14 43.9	+6.1
BUSP	**Coron**	**1.23**	**192**⇑	*e*P	Pb	07 14 29.4	+0.3
ENPP	**El Nido**	**2.24**	**207**‖	*e*P	Pn	07 14 42.9	-1.1

NIED **16** *07:20:00, 34.10N×141.60E, h5km, Mw5.0 Best double couple: M0 3.85×10^16 NP1:φs 346°, δ 85°, λ 40°. NP2:φs 252°, δ 50°, λ 174°.*

BJI **16** *07:20:56.8, 34.17N×142.06E, h45km, mB5.2, mb4.7, Ms5.3, Msz5.1*

IDC **16** *07:20:56.7±0.4, 34.10N×141.56E, mb4.7/21, mb1 4.9/24, mb1mx4.8/27, ML4.4/3, MS4.8/10, Ms1 4.9/10, ms1mx4.6/27, Error ellipse: s-maj=15.1km s-min=11.1km az=105.0*

JMA **16** *07:20:58.6±0.5, 34.14N×141.59E, h25km±2km, M5.0*

MOS **16** *07:21:00.0±1.0, 34.09N×141.54E, h33km, mb5.2/37, MS5.2/21, Error ellipse: s-maj=14.0km s-min=6.4km az=108.0*

NEIC **16** *07:21:03.6±0.8, 34.16N×141.42E, h46km±7km, mb4.9/65, Error ellipse: s-maj=4.7km s-min=4.1km az=139.0*

HRVD **16** *07:21:03.6±0.4, 34.16N×141.53E, h13km, MW5.0/44, Centroid moment Tensor Solution. LP body waves: s27,c32;Mantle waves: s44,c77; Half duration: 0 Moment tensor: Scale 10^16Nm; Mrr 2.61±.13; Mθθ -0.80±.11; Mφφ -1.81±.11; Mrθ 1.12±.33; Mrφ -1.77±.09; Mθφ 3.02±.30; Best double couple: M0 4.33×10^16 NP1:φs 233°, δ 23°, λ 117°. NP2:φs 24°, δ 70°, λ 79°. Principal axes: T 4.15, Plg 64°, Azm 276°; N .37, Plg 10°, Azm 28°; P -4.51, Plg 24°, Azm 122°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 16 07:21:00.4±0.8, 34.18N±0.03×141.49E±0.03, h31km±5km, h30km±1.9km:pP-P, n323, σ0 95/330, mb4.9/134, MS5.1/33, 16C-14D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**0.63**	**318**	⇑P	**Pb**	**07 21 12.3**	**-0.7**
BSO3	**Boso 3**	**1.02**	**308**	P	**Pn**	**07 21 18.6**	**-0.1**
BSO4	**Boso 4**	**1.25**	**311**	P	**Pn**	**07 21 22.4**	**+0.4**
KTR	**Katsuura**	**1.37**	**315**	P	**Pn**	**07 21 25.0**	**+1.3**
CHOJ	**Chosi**	**1.60**	**341**	P	**Pn**	**07 21 27.2**	**+0.1**
JHJ2	**Mitsune**	**1.75**	**233**	P	**Pn**	**07 21 29.7**	**+0.5**
JHJ2				*e*S	**Sn**	**07 21 52.1**	**+1.4**
JHJ	**Hachijo jima 2**	**1.77**	**234**	Pn	**Pn**	**07 21 29.4**	**0.0**
	276nm,0.3s,baz=154,slow=3.3,SNR=54						
JHJ				Sn	**Sn**	**07 21 52.5**	**+1.3**
	1μm,0.3s,baz=66,slow=19,SNR=13						
JHJ				LR	LR	07 22 00.8	
	comp=Z,3μm,20.7s,baz=60,slow=37						
JIM2	**Oshima 3**	**1.78**	**288**	P	**Pn**	**07 21 29.5**	**-0.1**
JIZS	**Izushimoda**	**2.22**	**285**	P	**Pn**	**07 21 35.8**	**-0.1**
JOD2	**Odawara 2**	**2.25**	**299**	P	**Pn**	**07 21 36.1**	**-0.3**
JHO	**Hitachi**	**2.54**	**343**	P	**Pn**	**07 21 39.5**	**-1.0**
JHO				*e*S	**Sn**	**07 22 09.7**	**-1.0**
JYN	**Shimob**	**2.75**	**299**	P	**Pn**	**07 21 43.5**	**0.0**
JAG	**Ashikaga**	**2.79**	**324**	P	**Pn**	**07 21 44.2**	**+0.1**
MAJO	**Matsushiro**	**3.57**	**312**	*e*Pn	**Pn**	**07 21 54.9**	**-0.2**
MAT	**Matsushiro**	**3.57**	**312**	P	**Pn**	**07 21 54.9**	**-0.2**
MAT				*e*S	**Sn**	**07 22 39.0**	**+2.3**
MAT	**Matsushiro**	**3.57**	**312**	*e*P	**Pn**	**07 21 55.0**	**-0.1**
MAT				S	**Sn**	**07 22 39.0**	**+2.3**
JHK	**Hiroka**	**3.66**	**327**	P	**Pn**	**07 21 56.4**	**0.0**
JNS	**Sasagawa**	**4.03**	**335**	P	**Pn**	**07 22 01.9**	**+0.2**
JAW	**Awa shima**	**4.63**	**338**	P	**Pn**	**07 22 09.4**	**-0.8**
JSD	**Sado**	**4.65**	**327**	P	**Pn**	**07 22 09.5**	**-1.0**
JSZ	**Suzu**	**4.68**	**315**	P	**Pn**	**07 22 11.6**	**+0.8**
JWT	**Wachi**	**5.13**	**284**	P	**Pn**	**07 22 17.5**	**+0.3**
CBIJ	**Chichi jima**	**7.09**	**175**	Pn	**Pn**	**07 22 40.2**	**-4.6**
	33nm,0.3s,baz=10,slow=5.3,SNR=34						
CBIJ				Sn	**Sn**	**07 23 55.7**	**-9.5**
	22nm,0.3s,baz=107,slow=19,SNR=3.2						
CBIJ				LR	LR	07 25 28.2	
	comp=Z,8μm,18.4s,baz=349,slow=39						
JNU	**Nakatsue**	**8.91**	**266**	Pn	**P**	**07 23 11.8**	**+1.6**
	1.3nm,0.3s,baz=67,slow=16,SNR=8.3						
ASAJ	**Asahikawa**	**9.96**	**5**	Pn	**P**	**07 23 19.4**	**-5.1**
	5.6nm,0.3s,baz=233,slow=10,SNR=26						
ASAJ				Sn	**Sn**	**07 25 08.8**	**-7.5**
	2.5nm,0.3s,baz=252,slow=19,SNR=3.4						
ASAJ	**Asahikawa**	**9.96**	**5**	P	**P**	**07 23 19.5**	**-5.1**
ASAJ						07 25 08.9	
ASAJ				pmax	pmax		
	comp=Z,6.0nm,0.3s						
ASAJ				smax			
	comp=N,3.0nm,0.3s						
YUK	**Yuzh-Kuril'sk**	**10.41**	**18**	*e*P	**P**	**07 23 22.1**	**-8.6**
YUK				pmax	pmax		
	comp=Z,110nm,0.5s						
YUK				MLR	MLR		
	comp=Z,8μm,14.0s						
YUK				MLR	MLR		
	comp=N,2μm,15.0s						
YUK				MLR	MLR		
	comp=E,6μm,14.0s						
KS15	**Wonju Array Si**	**11.51**	**290**	Pn	**P**	**07 23 44.1**	**-1.7**
KUR	**Kuril'sk**	**12.08**	**22**	*e*P	**P**	**07 23 54.5**	**+1.1**
KUR				MLR	MLR		
	comp=N,3μm,16.0s						
KUR				MLR	MLR		
	comp=E,5μm,16.0s						
KUR				MLR	MLR		
	comp=Z,4μm,16.0s						
YSS	**Yuzh-Sakhalins**	**12.80**	**4**⇑	*i*P	**P**	**07 23 57.3**	**-5.7**
YSS	**Yuzh-Sakhalins**	**12.80**	**4**	*e*P	**P**	**07 23 57.9**	**-5.1**
	comp=Z,50nm,0.8s						
JOW	**Kunigami**	**13.53**	**241**	LR	LR	07 29 27.9	
	comp=Z,3μm,18.8s,baz=294,slow=38						
MDJ	**Mudanjiang**	**13.88**	**322**	P	**P**	**07 24 15.5**	**-1.8**
MDJ				AMB	AMB		
	comp=Z,11nm,1.0s						
MDJ				AMB	AMB		
	comp=Z,547nm,11.3s						
MDJ				LR	LR		
	comp=N,6μm,18.1s						
MDJ				LR	LR		
	comp=E,3μm,15.7s						
MDJ				LR	LR		
	comp=Z,10μm,16.9s						
CN2	**Changchun**	**15.72**	**312**	⇑P	**P**	**07 24 42.0**	**+0.8**
CN2				*e*AP		07 24 49.6	
CN2				*e*XP		07 24 54.4	
CN2				*e*S	**S**	**07 27 34.0**	**-0.5**
CN2				AMB	AMB		
	comp=Z,20nm,1.2s						
CN2				AMB	AMB		
	comp=Z,800nm,11.0s						
CN2				LR	LR		
	comp=N,4μm,14.0s						
CN2				LR	LR		
	comp=E,5μm,14.0s						
CN2				LR	LR		
	comp=Z,5μm,16.0s						
DL2	**Dalian**	**16.64**	**292**	P	**P**	**07 24 55.3**	**+2.4**
DL2				AMB	AMB		
	comp=Z,20nm,1.1s						
KLR	**Kul'dur**	**16.68**	**337**	*e*P	**P**	**07 24 50.6**	**-2.8**
TYV	**Tymovskoe**	**16.70**	**3**	*e*P	**P**	**07 24 43.0**	**-11**
TYV				*e*S	**S**	**07 28 05.0**	**+8.0**
TYV				smax			
	comp=E,1μm,10.0s						
TYV				MLR	MLR		
	comp=Z,7μm,17.0s						
TYV				MLR	MLR		
	comp=N,5μm,16.0s						
SSE	**Sheshan**	**17.37**	**265**	P	**P**	**07 25 03.0**	**+0.8**
SSE				S	**S**	**07 28 12.1**	**-0.5**
SSE				XS		07 28 34.5	
SSE				PCP	PcP	07 29 44.0	+0.1
SSE				LR	LR		
	comp=N,2μm,13.7s						
SSE				LR	LR		
	comp=E,7μm,13.5s						
SSE				LR	LR		
	comp=Z,8μm,13.9s						
NJ2	**Nanjing**	**19.07**	**270**	*e*P	**P**	**07 25 25.1**	**+2.0**
NJ2				AP		07 25 33.3	
NJ2				PP	PP	07 25 41.3	+1.6
NJ2				S	**S**	**07 28 53.0**	**+1.8**
NJ2				SS	SS	07 29 18.0	+1.3
NJ2				AMB	AMB		
	comp=Z,70nm,1.1s						
NJ2				AMB	AMB		
	comp=Z,2μm,12.0s						
NJ2				LR	LR		
	comp=N,8μm,17.6s						
NJ2				LR	LR		
	comp=E,7μm,16.1s						
NJ2				LR	LR		
	comp=Z,9μm,15.6s						
GUMO	**Guam**	**20.73**	**171**	*e*P	**P**	**07 25 42.9**	**+1.9**
	comp=Z,435nm,1.2s						
BJI	**Beijing**	**20.98**	**294**	*e*P	**P**	**07 25 43.9**	**+0.4**
BJI				S	**S**	**07 29 37.0**	**+6.3**
BJI				AMB	AMB		
	comp=Z,14nm,1.0s						
BJI				AMB	AMB		
	comp=Z,99nm,3.3s						
BJI				LR	LR		
	comp=N,3μm,12.3s,MS5.0						
BJI				LR	LR		
	comp=E,3μm,14.2s,MS5.0						
BJI				LR	LR		
	comp=Z,1μm,20.7s						
WHN	**Wuhan**	**23.18**	**269**	⇓P	**P**	**07 26 06.5**	**+1.1**
WHN				AMB	AMB		
	comp=Z,54nm,1.0s,mb4.9						
WHN				LR	LR		
	comp=N,7μm,12.5s,MS5.5						
WHN				LR	LR		
	comp=E,10μm,14.0s,MS5.5						
WHN				LR	LR		
	comp=Z,10μm,14.6s,MS5.4						
HHC	**Hu-ho-hao-te**	**24.57**	**295**	⇓P	**P**	**07 26 20.1**	**+1.3**
HHC				AP		07 26 31.3	
HHC				XP		07 26 37.5	
HHC				PP	PP	07 26 58.5	+3.4
HHC				S	**S**	**07 30 40.9**	**+6.1**
HHC				XS		07 30 59.0	
HHC				SCP		07 33 30.9	
HHC				PCS		07 33 34.3	
HHC				SCS	ScS	07 37 14.3	-4.7
HHC				AMB	AMB		
	comp=Z,28nm,1.6s,mb4.5						
HHC				LR	LR		
	comp=N,1μm,13.3s,MS4.7						
HHC				LR	LR		
	comp=E,1μm,13.5s,MS4.7						
HHC				LR	LR		
	comp=Z,2μm,14.0s,MS4.7						
CLNS	**Chul'man**	**25.33**	**338**	*e*P	**P**	**07 26 27.0**	**+1.2**
CLNS				*e**PP	pP	07 26 33.6	-1.3
CLNS				*e*PPP	PPP	07 27 02.6	-13
CLNS				*e*		07 29 56.8	
CLNS				*e*S	**S**	**07 30 52.9**	**+5.6**
CLNS				pmax	pmax		
	comp=N,10.0nm,0.8s						
CLNS				pmax	pmax		
	comp=Z,30nm,0.8s,mb4.9						
CLNS				pmax	pmax		
	comp=E,8.0nm,0.7s						
CLNS				pmax	pmax		
	comp=N,50nm,1.1s						
CLNS				pmax	pmax		
	comp=Z,50nm,1.1s,mb5.0						
CLNS				pmax	pmax		
	comp=E,40nm,1.2s						
CLNS				smax			
	comp=N,1μm,15.2s						
CLNS				smax			
	comp=Z,740nm,12.9s						
CLNS				smax			
	comp=E,200nm,12.4s						
CLNS				MLR	MLR		
	comp=N,2μm,15.0s,MS4.8						
CLNS				MLR	MLR		
	comp=Z,3μm,15.0s,MS5.0						
CLNS				MLR	MLR		
	comp=E,900nm,14.0s,MS4.8						
MA2	**Magadan**	**26.13**	**11**	*i*P	**P**	**07 26 32.9**	**-0.4**
MA2				pmax	pmax		
	comp=Z,23nm,0.9s,mb4.7						
MA2				MLR	MLR		
	comp=Z,2μm,17.0s,MS4.7						
MA2	**Magadan**	**26.13**	**11**	*e*P	**P**	**07 26 32.8**	**-0.5**
	comp=Z,24nm,1.0s,mb4.7						
XAN	**Xi'an**	**26.91**	**279**	P	**P**	**07 26 38.4**	**-2.2**
XAN				AMB	AMB		
	comp=Z,18nm,1.0s,mb4.6						
TGY	**Tagaytay City**	**27.31**	**228**	LR	LR	07 36 32.5	
	comp=Z,933nm,20.4s,MS4.3,baz=15,slow=34						
YAK	**Yakutsk**	**28.87**	**348**	*e*P	**P**	**07 26 56.9**	**-1.2**
YAK				*e**PP	pP	07 27 03.7	-3.5
YAK				*e*PPP	PPP	07 27 53.1	-11
YAK				*e*		07 30 06.8	
YAK				*e*S	**S**	**07 31 43.3**	**-1.6**
YAK				*e*SS	SS	07 33 12.0	-1.5
YAK				*e*SSS	SSS	07 33 32.2	-1.1
YAK				*e*		07 37 36.8	
YAK				pmax	pmax		
	comp=Z,15nm,0.9s,mb4.7						
YAK				pmax	pmax		
	comp=N,5.0nm,1.0s						
YAK				pmax	pmax		
	comp=E,3.0nm,1.1s						
YAK				pmax	pmax		
	comp=N,12nm,1.1s						
YAK				pmax	pmax		
	comp=Z,13nm,1.1s,mb4.6						
YAK				pmax	pmax		
	comp=E,3.0nm,0.9s						
YAK				smax			
	comp=E,3.0nm,1.0s						
YAK				smax			
	comp=N,3.0nm,0.9s						
YAK				MLR	MLR		
	comp=Z,2μm,15.0s,MS4.8						
YAK				MLR	MLR		
	comp=N,1μm,13.0s,MS4.7						
YAK				MLR	MLR		
	comp=E,800nm,15.0s,MS4.7						
YAK	**Yakutsk**	**28.87**	**348**	*e*P	**P**	**07 26 57.1**	**-1.0**
ULN	**Ulaanbaatar**	**29.09**	**308**	*e*P	**P**	**07 27 00.1**	**-0.2**
ULN	**Ulaanbaatar**	**29.09**	**308**	*e*P	**P**	**07 27 01.0**	**+0.7**
	comp=E,55nm,1.4s,mb5.1						
FX1	**Attu Island--F**	**29.26**	**41**	P	**P**	**07 27 02.3**	**+0.6**
	comp=E,20nm,0.8s,mb4.9,baz=223,slow=8.4,SNR=2.7						
FX1				LR	LR	07 38 04.1	
	comp=E,52nm,18.3s,baz=252,slow=35						
FX1	**Attu Island--F**	**29.26**	**41**	P	**P**	**07 27 02.3**	**+0.5**
FX1				pmax	pmax		
	comp=Z,20nm,0.8s						
FX1				MLR	MLR		
	comp=Z,52nm,18.3s						
SONM	**Songino Array**	**29.51**	**308**	P	**P**	**07 27 04.6**	**+0.5**
	comp=Z,30nm,1.2s,mb4.9,baz=105,slow=8.8,SNR=14						
BOD	**Bodaibo**	**30.00**	**330**	*e*P	**P**	**07 27 06.9**	**-1.4**
LZH	**Lanzhou**	**30.72**	**284**	*e*P	**P**	**07 27 14.5**	**-0.4**
LZH				AP	pP	07 27 24.4	+0.4
LZH				PP	PP	07 28 15.8	-0.2
LZH				*e*S	**S**	**07 32 13.0**	**-1.5**
LZH				AMB	AMB		
	comp=Z,42nm,1.5s,mb5.0						
LZH				AMB	AMB		
	comp=Z,150nm,5.3s						
LZH				LR	LR		
	comp=E,2μm,15.0s						
LZH				LR	LR		
	comp=Z,3μm,16.0s,MS5.0						
GYA	**Guiyang**	**30.92**	**265**	P	**P**	**07 27 15.4**	**-1.3**
GYA				PP	PP	07 28 16.4	-2.3
GYA				S	**S**	**07 32 13.6**	**-4.1**
GYA				AMB	AMB		
	comp=Z,20nm,1.1s,mb4.9						
GYA				LR	LR		
	comp=N,3μm,17.1s,MS5.1						
GYA				LR	LR		
	comp=E,1μm,17.4s,MS5.1						
GYA				LR	LR		
	comp=Z,1μm,21.0s,MS4.5						
CD2	**Chengdu**	**31.85**	**275**	P	**P**	**07 27 21.8**	**-3.1**
CD2				AMB	AMB		
	comp=Z,30nm,0.9s,mb5.1						
ZAK	**Zakamensk**	**32.15**	**312**	*e*P	**P**	**07 27 27.6**	**+0.3**
TLY	**Talaya**	**32.31**	**314**	*e*P	**P**	**07 27 28.2**	**-0.4**
TLY				*e*		07 27 46.2	
TLY				*e*		07 28 38.2	
TLY				pmax	pmax		
	comp=Z,270nm,1.2s,mb6.0						
TLY				MLR	MLR		
	comp=Z,34μm,18.0s,MS6.1						
GTA	**Gaotai**	**33.56**	**291**	P	**P**	**07 27 39.6**	**0.0**
GTA				AMB	AMB		
	comp=Z,10.0nm,1.4s,mb4.5						
GTA				LR	LR		
	comp=N,1μm,17.5s,MS4.9						
GTA				LR	LR		
	comp=E,1μm,14.8s,MS4.9						
GTA				LR	LR		
	comp=Z,1μm,14.1s,MS4.8						
KMI	**Kunming**	**34.69**	**265**	*e*P	**P**	**07 27 50.8**	**+1.3**
KMI				AP	pP	07 28 00.4	+1.7
KMI				S	**S**	**07 33 16.5**	**+0.1**
KMI				AMB	AMB		
	comp=Z,9.0nm,0.6s,mb4.9						
KMI				LR	LR		
	comp=N,2μm,16.7s,MS5.3						
KMI				LR	LR		
	comp=E,3μm,15.0s,MS5.3						
KMI				LR	LR		
	comp=Z,4μm,15.8s,MS5.3						
BILL	**Bilibino**	**36.75**	**15**	*d*iP	**P**	**07 28 05.3**	**-1.2**
BILL				*i*	pP	07 28 13.2	-2.6
BILL				*i*		07 29 27.5	
BILL				*i*		07 30 29.2	
BILL				pmax	pmax		
	comp=Z,18nm,1.1s,mb4.8						
BILL	**Bilibino**	**36.75**	**15**	*e*P	**P**	**07 28 05.6**	**-0.9**
	comp=Z,20nm,1.1s,mb4.9						
TIXI	**Tiksi**	**38.13**	**354**⇑	*e*P	**P**	**07 28 17.6**	**-0.5**
TIXI				pmax	pmax		
	comp=Z,13nm,1.1s,mb4.6						
TIXI				MLR	MLR		
	comp=Z,4μm,17.0s,MS5.3						
TIXI	**Tiksi**	**38.13**	**354**	*e*P	**P**	**07 28 17.6**	**-0.4**
	comp=Z,11nm,0.8s,mb4.6						
CMAR	**Chiang Mai Arr**	**40.91**	**259**	P	**P**	**07 28 40.5**	**-1.1**
	comp=Z,4.8nm,0.8s,mb4.2,baz=48,slow=7.7,SNR=12						
CMAR				LR	LR	07 46 17.0	
	comp=Z,172nm,18.4s,MS4.0,baz=55,slow=37						
CMAR	**Chiang Mai Arr**	**40.91**	**259**	P	**P**	**07 28 40.5**	**-1.1**
CMAR				pmax	pmax		
	comp=Z,5.0nm,0.8s						
CMAR				MLR	MLR		
	comp=Z,172nm,18.4s						
WMQ	**Urumqi**	**42.24**	**300**	*e*P	**P**	**07 28 54.1**	**+1.8**
WMQ				AP	pP	07 29 06.4	+4.8
WMQ				XP	sP	07 29 11.8	+6.3
WMQ				PP	PP	07 30 35.5	+2.5
WMQ				S	**S**	**07 35 10.8**	**+0.4**
WMQ				XS		07 35 31.5	
WMQ				SS	SS	07 38 14.1	+0.7
WMQ				AMB	AMB		
	comp=Z,84nm,1.0s,mb5.3						
WMQ				AMB	AMB		
	comp=Z,150nm,5.4s						
WMQ				LR	LR		
	comp=N,549nm,15.6s,MS4.7						
WMQ				LR	LR		
	comp=E,591nm,16.6s,MS4.7						
WMQ				LR	LR		
	comp=Z,943nm,17.4s,MS4.7						
LSA	**Lhasa**	**42.60**	**278**	P	**P**	**07 28 57.3**	**+1.8**
SHL	**Shillong**	**43.51**	**272**	*e*P	**P**	**07 29 02.2**	**-0.7**
PMG	**Port Moresby**	**43.68**	**172**	P	**P**	**07 29 03.7**	**-0.6**
	comp=Z,12nm,0.8s,mb4.7,baz=221,slow=3.5,SNR=5.8						
PMG	**Port Moresby**	**43.68**	**172**	P	**P**	**07 29 03.7**	**-0.7**
PMG				pmax	pmax		
	comp=Z,12nm,0.8s						
PMG	**Port Moresby**	**43.68**	**172**	*e*P	**P**	**07 29 03.2**	**-1.1**
	comp=Z,19nm,1.1s,mb4.7						
NVS	**Novosibirsk**	**44.89**	**316**	*e*P	**P**	**07 29 12.5**	**-1.1**
NVS				pmax	pmax		
	comp=Z,32nm,1.4s,mb5.0						
MKAR	**Makanchi Array**	**45.73**	**305**	P	**P**	**07 29 20.3**	**-0.1**
	comp=Z,7.1nm,0.8s,mb4.7,baz=90,slow=10,SNR=34						
MKAR				LR	LR	07 50 45.9	
	comp=Z,1μm,18.6s,MS4.8,baz=76,slow=39						
MKAR	**Makanchi Array**	**45.73**	**305**	P	**P**	**07 29 20.3**	**-0.1**
MKAR				pmax	pmax		
	comp=Z,7.0nm,0.8s						
MKAR				MLR	MLR		
	comp=Z,1μm,18.6s						
SVW	**Sparrevohn**	**47.76**	**36**	*e*P	**P**	**07 29 37.7**	**+1.5**
	comp=Z,21nm,1.1s,mb5.1						
KURK	**Kurchatov**	**47.78**	**310**	*e*P	**P**	**07 29 35.8**	**-0.7**
PKI	**Pulchoki**	**48.08**	**278**	*e*P	**P**	**07 29 37.9**	**-1.2**
	comp=Z,90nm,1.2s,mb5.7						
KKN	**Kakani**	**48.10**	**278**	*e*P	**P**	**07 29 38.5**	**-0.8**
	comp=Z,102nm,1.1s,mb5.8						
DMN	**Daman**	**48.31**	**278**	*e*P	**P**	**07 29 40.1**	**-0.8**
	comp=Z,73nm,1.1s,mb5.6						
GKN	**Gorkha**	**48.55**	**279**	*e*P	**P**	**07 29 41.8**	**-1.0**
	comp=Z,286nm,1.2s						
IMA	**Indian Mountai**	**49.13**	**29**	*e*P	**P**	**07 29 47.3**	**+0.6**
	comp=Z,16nm,1.3s,mb4.9						
KOLN	**Koldanda**	**49.48**	**279**	*e*P	**P**	**07 29 49.2**	**-0.8**
	comp=Z,103nm,1.1s,mb5.8						
ULHL	**Ulahol**	**50.78**	**299**	P	**P**	**07 30 00.1**	**+0.5**
	SNR=6.2						
PMR	**Palmer**	**50.90**	**35**	*e*P	**P**	**07 29 59.3**	**-1.0**
	comp=Z,22nm,1.0s,mb5.0						
MCK	**McKinley**	**50.99**	**32**	*e*P	**P**	**07 30 00.6**	**-0.4**
	comp=Z,6.6nm,0.9s,mb4.6						
TKM2	**Tokmak 2**	**51.08**	**300**	P	**P**	**07 30 02.6**	**+0.7**
	SNR=16						
SML	**Sawmill**	**51.27**	**35**⇓	*e*P	**P**	**07 30 02.5**	**-0.7**
COLA	**College**	**51.47**	**31**	*e*P	**P**	**07 30 04.8**	**+0.2**
COLA				pmax	pmax		
	comp=Z,19nm,1.0s,mb5.0						
COLA	**College**	**51.47**	**31**	*e*P	**P**	**07 30 04.8**	**+0.2**
	comp=Z,19nm,1.0s,mb5.0						
KZA	**Kyzart**	**51.53**	**300**	P	**P**	**07 30 07.0**	**+1.6**
	SNR=10.0						
KBK	**Karagaybulak**	**51.61**	**300**	P	**P**	**07 30 06.3**	**+0.3**
	SNR=12						
ILAR	**Eielson Array**	**51.89**	**31**	P	**P**	**07 30 06.3**	**-1.5**
	comp=Z,14nm,0.8s,mb4.9,baz=268,slow=6.0,SNR=141						
ILAR	**Eielson Array**	**51.89**	**31**	P	**P**	**07 30 06.3**	**-1.5**
ILAR				pmax	pmax		
	comp=Z,14nm,0.8s						
UCH	**Uchtor**	**52.03**	**300**	P	**P**	**07 30 10.3**	**+1.1**
	SNR=12						
TOA	**Tolsona**	**52.28**	**35**	*e*P	**P**	**07 30 11.2**	**+0.4**
	comp=Z,107nm,1.6s,mb5.5						
BVA0	**Borovoye Array**	**52.56**	**314**	*i*P	**P**	**07 30 12.3**	**-0.7**
BVA0				pmax	pmax		
	comp=Z,1.0nm,0.9s						
EYAK	**Cordova Ski Ar**	**52.59**	**36**	*e*P	**P**	**07 30 12.1**	**-1.0**
BRVK	**Borovoye**	**52.62**	**314**	*e*P	**P**	**07 30 13.0**	**-0.5**
AML	**Almayashu**	**52.64**	**300**	P	**P**	**07 30 14.5**	**+0.7**
	SNR=33						
FITZ	**Fitzroy Crossi**	**54.14**	**199**⇑	*i*P	**P**	**07 30 23.8**	**-1.2**
	comp=Z,18nm,1.2s,mb4.9						
CTA	**Charters Tower**	**54.16**	**174**	*e*P	**P**	**07 30 23.8**	**-1.3**
	comp=Z,5.5nm,0.8s,mb4.5						
CTA	**Charters Tower**	**54.16**	**174**	P	**P**	**07 30 23.2**	**-1.9**
	comp=Z,7.9nm,0.8s,mb4.7,baz=338,slow=6.8,SNR=7.8						
CTA	**Charters Tower**	**54.16**	**174**	P	**P**	**07 30 23.3**	**-1.8**
CTA				pmax	pmax		
	comp=Z,8.0nm,0.8s						
WRAB	**Tennant Creek**	**54.24**	**188**	*e*P	**P**	**07 30 23.4**	**-2.4**
	comp=Z,48nm,0.8s,mb5.5						
WB2	**

WRA pmax pmax
comp=Z,21nm,0.8s
NDI New Delhi 54.32 283 *e*P **P** **07 30 29.0 +2.7**
KKAR Karatay Array 54.64 302 *i* P **P** **07 30 27.8 -0.7**
KKAR pmax pmax
comp=Z,16nm,0.8s,mb5.1
DAWY Dawson 55.18 32 *e*P **P** **07 30 30.3 -1.8**
INK Inuvik 56.91 26 P **P** **07 30 42.9 -1.6**
comp=Z,9.0nm,0.8s,mb4.8,baz=285,slow=5.9,SNR=44
INK Inuvik 56.91 26 P **P** **07 30 42.9 -1.6**
INK pmax pmax
comp=Z,9.0nm,0.8s
INK Inuvik 56.91 26 *e*P **P** **07 30 43.1 -1.4**
comp=Z,11nm,0.8s,mb5.0
AS12 Alice Springs 57.98 188⇑ *i*P **P** **07 30 50.5 -2.0**
comp=Z,19nm,1.1s,mb5.0
ASAR Alice Springs 57.98 188 P **P** **07 30 50.6 -1.9**
comp=Z,11nm,0.8s,mb4.9,baz=8.3,slow=5.6,SNR=85
HYB Hyderabad 58.23 270 *i* P **P** **07 30 53.0 -1.4**
comp=Z,50nm,1.0s,mb5.5
HYB Hyderabad 58.23 270 *e*P **P** **07 30 53.0 -1.4**
comp=Z,50nm,1.0s,mb5.5
ARU Arti 58.55 320⇓ *i*P **P** **07 30 55.1 -1.0**
ARU *i* pP 07 31 04.4 -1.4
ARU *e* 07 31 41.7
ARU *i* 07 33 04.0
ARU *e*S **S** **07 38 55.7 -0.4**
ARU pmax pmax
comp=Z,24nm,0.9s,mb5.2
ARU MLR MLR
comp=N,500nm,17.0s,MS5.2
ARU MLR MLR
comp=E,2μm,17.0s,MS5.2
ARU MLR MLR
comp=Z,2μm,17.0s,MS5.4
ARU Arti 58.55 320 *e*P **P** **07 30 55.2 -0.9**
comp=Z,26nm,0.9s,mb5.3
AB31 Akbulak array 59.85 311 P **P** **07 31 04.0 -1.2**
AB31 pmax pmax
comp=Z,3.0nm,0.5s,mb4.6
DLBC Dease Lake 60.85 37 *e*P **P** **07 31 12.1 +0.2**
POO Poona 61.58 274⇓ *i*P **P** **07 31 15.0 -2.4**
KAD Karad 61.91 273 *e*P **P** **07 31 19.0 -0.6**
APA Apatity 65.31 336⇑ *i*P **P** **07 31 41.0 -0.2**
APA pmax pmax
comp=Z,32nm,1.2s,mb5.2
APA MLR MLR
comp=Z,4μm,18.0s,MS5.7
RES Resolute Bay 65.35 14⇓ *e*P **P** **07 31 40.2 -1.1**
comp=Z,13nm,0.9s,mb5.0
STKA Stephens Creek 65.70 180⇓ *i*P **P** **07 31 44.4 +0.1**
comp=Z,7.1nm,0.9s,mb4.7
STKA Stephens Creek 65.70 180 P **P** **07 31 40.8 -3.5**
comp=Z,8.6nm,1.0s,mb4.7,baz=351,slow=8.4,SNR=8.1
FORT Forrest 65.84 193⇑ *i*P **P** **07 31 43.9 -1.3**
comp=Z,204nm,0.9s
YKW3 Yellowknife Ar 66.21 29 *e*P **P** **07 31 45.7 -1.3**
YKA Yellowknife Ar 66.25 29 P **P** **07 31 45.5 -1.7**
comp=Z,2.5nm,0.8s,mb4.3,baz=296,slow=6.5,SNR=55
YKA Yellowknife Ar 66.25 29 P **P** **07 31 45.5 -1.7**
YKA pmax pmax
comp=Z,3.0nm,0.8s
YKA Yellowknife Ar 66.25 29 P **P** **07 31 45.5 -1.7**
ARCES ARCESS Array B 66.69 340 P **P** **07 31 50.0 +0.1**
comp=Z,8.7nm,1.1s,mb4.7,baz=51,slow=7.8,SNR=6.7
ARCES LR LR 08 05 13.8
comp=Z,2μm,18.2s,MS5.3,baz=59,slow=40
ARCES ARCESS Array B 66.69 340 P **P** **07 31 50.1 +0.2**
ARCES pmax pmax
comp=Z,9.0nm,1.1s
ARCES MLR MLR
comp=Z,2μm,18.2s
OCWA Octopus Mounta 68.26 46 *e*P **P** **07 32 00.9 +0.7**
comp=Z,29nm,1.3s,mb5.2
JOF Joensuu 68.51 333 *e*p **P** **07 32 00.1 -1.4**
comp=Z,7.7nm,0.8s,mb4.7
JOF Joensuu 68.51 333 *e*P **P** **07 32 00.1 -1.4**
JOF pmax pmax
comp=Z,8.0nm,0.8s,mb4.7
DAG Danmarks Havn 68.62 355⇓ *i*P **P** **07 32 02.2 +0.2**
comp=Z,3.0nm,1.0s,mb4.2
DAG Danmarks Havn 68.62 355⇓ *e*P **P** **07 32 02.2 +0.2**
DAG pmax pmax
comp=Z,3.0nm,1.0s,mb4.2
DAG Danmarks Havn 68.62 355⇓ *e*P **P** **07 32 02.2 +0.2**
comp=Z,3.0nm,1.0s,mb4.2
KLBR Kellerberrin 69.14 202 *e*P **P** **07 32 04.9 -1.0**
comp=Z,28nm,1.0s,mb5.2
GNW Green Mountain 69.16 46 *e*P **P** **07 32 06.3 +0.6**
CMW Cultus Mountai 69.17 45 P **P** **07 32 06.6 +0.8**
RPW Rockport 69.51 45 *e*P **P** **07 32 08.1 +0.2**
MOS Moscow 69.58 324 *e*P **P** **07 32 09.6 +1.4**
MOS *e* 07 32 25.8
MOS *e* 07 34 41.2
MOS *e*S S 07 41 13.9 +1.2
MOS pmax pmax
comp=Z,50nm,0.7s,mb5.5
MOS MLR MLR
comp=N,2μm,15.0s,MS5.5
MOS MLR MLR
comp=E,1μm,15.0s,MS5.5
MOS MLR MLR
comp=Z,3μm,15.0s,MS5.6
HTW Haystack Looko 69.67 46 P **P** **07 32 09.4 +0.6**
RMW Rattlesnake Mo 69.82 46 *e*P **P** **07 32 10.4 +0.7**
LON Longmire 70.16 47 *e*P **P** **07 32 10.9 -0.9**
COR Corvallis 70.28 49 *e*P **P** **07 32 13.3 +0.6**
comp=Z,37nm,1.1s,mb5.2
OBN Obninsk 70.42 324⇑ *e*P **P** **07 32 12.9 -0.4**
OBN *e* 07 32 31.3
OBN *e* 07 34 57.0
OBN pmax pmax
comp=Z,15nm,1.2s,mb4.8
OBN MLR MLR
comp=Z,2μm,16.0s,MS5.3
KEBM Edson Butte 70.45 51 *e*P **P** **07 32 14.2 +0.5**
EBG Ellensburg 70.82 46 P **P** **07 32 16.6 +0.7**
VOR Voronezh 70.84 320 P **P** **07 32 16.0 +0.1**
VOR pmax pmax
comp=Z,50nm,1.4s,mb5.2
KAF Kangasniemi 70.87 333 *e*p **P** **07 32 14.1 -1.8**
baz=50,slow=5.8
THR Tehran 71.20 301 P **P** **07 32 19.3 +0.9**
comp=Z,1.0nm,0.5s,mb4.0,baz=6.1,slow=3.5,SNR=3.7
THR Tehran 71.20 301 P **P** **07 32 19.3 +0.9**
THR pmax pmax
comp=Z,1.0nm,0.5s
FINES FINESS Array B 71.37 333 P **P** **07 32 18.4 -0.5**
comp=Z,9.9nm,0.8s,mb4.8,baz=63,slow=8.5,SNR=31
FINES LR LR 08 06 46.2
comp=Z,996nm,18.2s,MS5.1,baz=171,slow=38
FINES FINESS Array B 71.37 333 P **P** **07 32 18.5 -0.4**
FINES pmax pmax
comp=Z,10.0nm,0.9s
FINES MLR MLR
comp=Z,996nm,18.2s
HUMO Hull Mountain 71.46 51 *e*P **P** **07 32 20.0 +0.2**
HAWA Hanford 71.70 46 *e*P **P** **07 32 19.9 -1.2**
comp=Z,19nm,1.4s,mb4.8
DPW Davenport 71.73 44 *e*P **P** **07 32 21.4 +0.1**
DPW *e* 07 32 27.9
GOF Gofitskoye 72.06 313⇓ *i*P **P** **07 32 23.0 -0.3**
GOF pmax pmax
comp=Z,30nm,1.2s,mb5.1
YBH Yreka Blue Hor 72.06 52 *e*P **P** **07 32 23.6 +0.2**
comp=Z,11nm,1.1s,mb4.7
YBH *e* 07 32 30.6
NEW Newport 72.15 43 *e*P **P** **07 32 23.8 0.0**
comp=Z,16nm,1.0s,mb4.9
NEW *e* 07 32 30.9
ZEI Tsey 72.68 310⇑ *e*P **P** **07 32 25.3 -1.7**
ZEI *e* pP 07 32 35.0 -1.7
ZEI pmax pmax
comp=Z,50nm,3.0s
ZEI MLR MLR
comp=Z,1μm,18.0s,MS5.2
WDC Whiskeytown Da 72.74 52 *e*P **P** **07 32 27.8 +0.3**
comp=Z,12nm,1.0s,mb4.8
KIV Kislovodsk 72.83 312 *i* P **P** **07 32 28.7 +0.8**
KIV *e* 07 35 09.2
KIV *e*S S 07 41 51.1 +0.7
KIV pmax pmax
comp=N,10.0nm,1.2s
KIV pmax pmax
comp=Z,30nm,1.2s,mb5.1
KIV pmax pmax
comp=E,10.0nm,0.9s
KIV Kislovodsk 72.83 312 *e*P **P** **07 32 28.6 +0.7**
comp=E,43nm,1.1s,mb5.3
WALA Waterton Lakes 73.52 42 *e*P **P** **07 32 32.0 +0.2**
comp=E,7.7nm,0.9s,mb4.6
WALA *e* 07 32 38.4
MOD Modoc 73.52 50 *e*P **P** **07 32 32.2 +0.3**
comp=E,8.8nm,0.8s,mb4.7
SUMG Summit 73.53 360 *e*P **P** **07 32 32.3 +0.9**
OHCM Honcut 74.08 53 *e*P **P** **07 32 35.1 -0.1**
WVOR Wild Horse Val 74.30 49 *e*P **P** **07 32 35.9 -0.5**
comp=E,18nm,1.3s,mb4.8
BEKR Beckwourth 74.54 52 *e*P **P** **07 32 37.9 -0.1**
comp=E,15nm,0.9s,mb4.9
MSO Missoula 74.73 44 *e*P **P** **07 32 36.6 -2.3**
comp=E,11nm,1.2s,mb4.7
SOC Sochi 74.86 313 *e*P **P** **07 32 39.1 -0.5**
SOC *e* 07 32 53.3
SOC *e* 07 35 31.5
SOC *e*PPP PPP 07 37 08.6 -5.7
SOC *e*S S 07 42 08.2 -4.9
SOC *e* 07 42 54.6
SOC *e*SSS SSS 07 50 20.8 +3.5
SOC pmax pmax
comp=Z,30nm,1.6s,mb5.0
SOC pmax pmax
comp=N,20nm,1.0s
SOC pmax pmax
comp=E,20nm,1.0s
SOC MLR MLR
comp=Z,710nm,19.0s,MS5.0
SOC MLR MLR
comp=N,450nm,20.0s,MS5.2
SOC MLR MLR
comp=E,960nm,17.0s,MS5.2
MNK Minsk 74.92 326 *e*P **P** **07 32 40.0 +0.2**
CHMT Chamberlain Mo 75.08 43 *e*P **P** **07 32 35.2 -5.6**
WCN Washoe City 75.24 52 *e*P **P** **07 32 42.5 +0.6**
WCN *e* pP 07 32 50.7 -1.0
CMB Columbia Colle 75.49 54 *e*P **P** **07 32 43.2 -0.2**
comp=E,13nm,1.1s,mb4.8
ANN Anapa 75.56 315 *e*P **P** **07 32 55.5 +12**
ANN pmax pmax
comp=Z,20nm,1.1s,mb5.0
HRY Holter Researc 76.00 43 *e*P **P** **07 32 46.5 +0.4**
FFC Flin Flon 76.08 32 *e*P **P** **07 32 45.9 -0.4**
comp=Z,19nm,1.0s,mb5.0
FFC *e* 07 32 53.1
BMN Battle Mountai 76.27 50 *e*P **P** **07 32 48.0 +0.2**
comp=Z,19nm,1.3s,mb4.9
HLID Hailey 76.28 47 *e*P **P** **07 32 48.3 +0.5**
comp=Z,12nm,1.1s,mb4.7
HLID *e* 07 32 54.8
MCMT McKenzie Canyo 76.49 45 *e*P **P** **07 32 49.7 +0.8**
FCC Fort Churchill 76.53 26 *e*P **P** **07 32 48.0 -0.8**
comp=Z,14nm,1.3s,mb4.8
NVAR Mina Array Bea 76.66 53 P **P** **07 32 50.8 +0.8**
comp=Z,3.1nm,0.8s,mb4.3,baz=300,slow=3.4,SNR=22
BOZ Bozeman (W) 76.72 44 *e*P **P** **07 32 50.3 +0.2**
comp=Z,13nm,1.1s,mb4.8
NB2 NORSAR Subarra 76.84 338 P **P** **07 32 50.2 -0.3**
comp=Z,17nm,1.0s,mb4.9,baz=40,slow=5.6
NB2 NORSAR Subarra 76.84 338 P **P** **07 32 50.2 -0.3**
baz=40,slow=5.9
NOA NORSAR Array B 76.84 338 P **P** **07 32 50.0 -0.5**
comp=Z,9.0nm,0.8s,mb4.8,baz=39,slow=5.6,SNR=34
NOA LR LR 08 10 34.6
comp=Z,2μm,18.1s,MS5.4,baz=20,slow=39
NOA NORSAR Array B 76.84 338 P **P** **07 32 50.0 -0.5**
NOA pmax pmax
comp=Z,9.0nm,0.8s
NOA MLR MLR
comp=Z,2μm,18.1s
NAO01 NORSAR Array S 77.09 338 *e*P **P** **07 32 51.6 -0.3**
comp=Z,8.4nm,1.0s,mb4.6
QLMT Earthquake Lak 77.31 44 *e*P **P** **07 32 54.5 +1.0**
SUW Suwalki 77.33 328 *e*P **P** **07 32 54.0 +0.7**
TPH Tonopah 77.57 52 *e*P **P** **07 32 55.3 +0.3**
comp=Z,18nm,1.4s,mb4.8
YMR Madison River 77.68 44 *e*P **P** **07 32 56.6 +1.2**
LKWY Lake 78.06 44 *e*P **P** **07 32 59.6 +2.0**
comp=Z,9.8nm,0.9s,mb4.7
HVU Hansel Valley 78.29 47 *e*P **P** **07 32 59.7 +0.8**
WUWY Wally Ulrich 78.47 45 *e*P **P** **07 33 00.7 +0.9**
WUWY *e*PcP PcP 07 33 08.5 -0.8
KSWY Kelly School 78.49 45 *e*P **P** **07 33 01.3 +1.4**
REDW Red Top Meadow 78.51 45 *e*P **P** **07 33 00.7 +0.6**
BGU Big Grassy Mou 78.63 48 *e*P **P** **07 33 01.5 +0.7**
KIS Kishinev 79.11 320 *e*P **P** **07 33 02.0 -1.3**
KIS MLR MLR
comp=N,2μm,16.0s
KIS MLR MLR
comp=Z,2μm,16.0s,MS5.6
KIS MLR MLR
comp=Z,3μm,16.0s
HWUT Hardware Ranch 79.12 47 *e*P **P** **07 33 04.1 +0.6**
comp=Z,23nm,1.2s,mb5.0
TCUT Toone Canyon 79.51 47 *e*P **P** **07 33 06.0 +0.4**
CTU Camp Tracy 79.55 48 *e*P **P** **07 33 06.8 +1.0**
PDAR Pinedale Array 79.63 45 P **P** **07 33 06.7 +0.5**
comp=Z,4.3nm,0.8s,mb4.4,baz=297,slow=3.0,SNR=40
NLU North Lily Min 79.78 49 *e*P **P** **07 33 07.5 +0.4**
JLU Jordanelle 79.79 48 *e*P **P** **07 33 07.9 +0.8**
BSD Bornholm Skovb 79.99 332⇑ *i*P **P** **07 33 07.6 -0.2**
comp=Z,12nm,0.9s,mb4.8
BSD Bornholm Skovb 79.99 332⇑ *i*P **P** **07 33 07.6 -0.2**
BSD pmax pmax
comp=Z,12nm,0.9s,mb4.8
MPU Maple Canyon 80.02 48 *e*P **P** **07 33 09.1 +0.7**
KWP Kalwaria 80.48 325 *e*P **P** **07 33 11.5 +0.9**
COP Copenhagen 80.50 334 *i* P **P** **07 33 25.7 +15**
comp=Z,10nm,0.6s,mb4.9
NEN Nelson 80.51 53 *e*P **P** **07 33 11.3 +0.2**
MVU Marysvale 80.55 50 *e*P **P** **07 33 12.4 +1.3**
comp=Z,13nm,1.1s,mb4.8
MSU Marysvale 80.57 50 *e*P **P** **07 33 12.5 +1.2**
PFO Pinyon Flat Ob 80.59 56 *e*P **P** **07 33 11.3 -0.1**
comp=Z,29nm,1.3s,mb5.0
BRTR Keskin Array B 80.79 312 P **P** **07 33 13.5 +1.1**
comp=Z,8.1nm,0.9s,mb4.7,baz=90,slow=3.7,SNR=19
BRTR LR LR 08 14 32.1
comp=Z,310nm,18.8s,MS4.7,baz=65,slow=40
BAR Barrett 80.97 57 *e*P **P** **07 33 13.7 +0.3**
SRU San Rafael 81.25 48 *e*P **P** **07 33 15.3 +0.5**
OJC Ojcow 81.44 326 *e*P **P** **07 33 16.0 +0.4**
OJC *e*PcP PcP 07 33 23.4 +1.4
OJC *e*S S 07 43 23.7 +0.3
OJC *i* SKS SKS 07 43 32.8 -4.0
OJC *e*SS SS 07 48 44.0 +0.8
OJC MLR MLR 08 12 46.8
comp=Z,1μm,19.8s,MS5.2
NIE Niedzica 81.77 326 *e*P **P** **07 33 18.1 +0.8**
RSSD Black Hills 81.92 41 *e*P **P** **07 33 17.6 -0.6**
comp=Z,3.5nm,1.0s,mb4.2
RPZ Rata Peaks 82.08 159 P **P** **07 33 18.8 -0.2**
comp=Z,7.7nm,0.9s,mb4.6,baz=23,slow=7.7,SNR=3.0
OKC Ostrava-Krasne 82.47 327 *e*P **P** **07 33 22.9 +2.0**
OKC *ex* x 07 33 32.9
OKC L 08 14 30.0
comp=Z,1.7nm,15.3s
KSP Ksiaz 82.56 328 *e*P **P** **07 33 22.5 +1.1**
KSP Ksiaz 82.56 328⇑ *e*P **P** **07 33 22.2 +0.8**
KSP *e**PP pP 07 33 29.5 -1.8
KSP *e* 07 43 35.0
KSP MLR MLR
comp=Z,2μm,19.1s,MS5.6
PV10 Paradox Valley 82.62 48 *e*P **P** **07 33 23.1 +1.1**
BSEG Bad Segeberg 82.63 333 *e*P **P** **07 33 22.0 +0.3**
BSEG pmax pmax
comp=Z,14nm,1.2s,mb4.9
MORC Moravsky Berou 82.78 327 *e*P **P** **07 33 23.2 +0.6**
comp=Z,22nm,1.8s,mb4.9
WUAZ Wupatki 82.87 52 *e*P **P** **07 33 24.3 +1.0**
DPC Dobruska-Polom 82.91 328 *e*P **P** **07 33 24.2 +1.0**
DPC *ex* x 07 33 35.6
DPC L 08 15 00.0
comp=Z,1.6nm,15.2s
UPC Upice 82.93 328 *e*P **P** **07 33 23.6 +0.3**
PSZ Piszkesteto 83.01 325 P **P** **07 33 22.7 -1.1**
comp=Z,21nm,1.3s,mb5.0
PV01 Paradox Valley 83.06 48 *e*P **P** **07 33 25.0 +0.8**
JMB Yambol 83.23 317 *e*P **P** **07 33 26.0 +1.0**
PVCC Panska Ves 83.53 329 L 08 14 30.0
comp=Z,1.6nm,17.4s
BRG Berggiesshubel 83.54 330 *e*P **P** **07 33 26.7 +0.3**
BRG *e*S S 07 43 50.0 +5.4
BRG pmax pmax
comp=Z,15nm,1.4s,mb4.9
BRG MLR MLR
comp=N,530nm,16.3s,MS5.3
BRG MLR MLR
comp=E,980nm,16.3s,MS5.3
BRG MLR MLR
comp=Z,1μm,16.3s,MS5.4
BRG Berggiesshubel 83.54 330 *e*P **P** **07 33 26.7 +0.3**
comp=Z,15nm,1.4s,mb4.9
BRG *e* 07 33 55.9
BRG *e*S S 07 43 50.0 +5.4
BRG LR LR
comp=Z,1μm,16.3s,MS5.4
CLL Collm 83.60 330 P **P** **07 33 26.3 -0.4**
comp=Z,logA/T=1.1,mb5.0
CLL *i* *PP pP 07 33 38.1 +1.5
CLL *i* 07 33 56.7
CLL *e*PP PP 07 36 50.0 +8.9
CLL Collm 83.60 330 *i* P **P** **07 33 26.3 -0.4**
CLL *i* pP 07 33 38.1 +1.5
CLL pmax pmax
comp=Z,15nm,1.1s,mb5.0
CLL Collm 83.60 330 *i* P **P** **07 33 26.3 -0.4**
comp=Z,15nm,1.1s,mb5.0
CLL *i* pP 07 33 38.1 +1.5
CLL *i* 07 33 56.7
ISCO Idaho Springs 83.80 46 *e*P **P** **07 33 28.5 +0.5**
comp=Z,14nm,1.5s,mb4.9
CSS Prodhromos 83.87 308 *e*P **P** **07 33 26.0 -2.4**
PRU Pruhonice 83.95 329 *e*P **P** **07 33 28.5 +0.1**
comp=Z,16nm,1.2s,mb5.0
PRU *ex* x 07 33 39.5
PRU *e*SKS SKS 07 43 50.2 -3.8
PRU L 08 15 50.0
comp=Z,1.2nm,14.0s
PRU Pruhonice 83.95 329 *e*P **P** **07 33 28.5 +0.1**
PRU *e* pP 07 33 39.5 +1.1
PRU *e* 07 43 50.2
PRU pmax pmax
comp=Z,17nm,1.2s,mb5.0
PRU MLR MLR
comp=Z,1μm,14.0s,MS5.4
KDZ Kurdzhali 84.42 317 *e*P **P** **07 33 33.0 +1.9**
MOX Moxa 84.67 331 *i* P **P** **07 33 32.6 +0.5**
comp=Z,logA/T=1.2,mb5.1
MOX L 08 15 11.0
MOX Moxa 84.67 331 *e*P **P** **07 33 32.6 +0.5**
MOX pmax pmax
comp=Z,25nm,1.6s,mb5.1
MOX MLR MLR
comp=Z,800nm,19.0s,MS5.1
MOX Moxa 84.67 331 *e*P **P** **07 33 32.6 +0.5**
comp=Z,25nm,1.6s,mb5.1
RZN Rozhen 84.79 318 *e*P **P** **07 33 34.0 +1.1**
KHC Kasperske Hory 85.00 329 *e*P **P** **07 33 33.8 0.0**
KHC *ex* x 07 33 43.2
KHC *e*SKS SKS 07 43 59.8 -1.3
KHC L 08 16 30.0
comp=Z,2.3nm,16.0s
VTS Vitosha 85.01 319 *e*P **P** **07 33 35.0 +1.1**
GEC2 GERESS Array S 85.17 328 *e*P **P** **07 33 34.7 +0.1**
GEC2 pmax pmax
comp=Z,9.0nm,1.0s,mb4.8
GEC2 GERESS Array S 85.17 328 *e*P **P** **07 33 34.7 +0.1**
comp=Z,9.0nm,1.0s,mb4.8
GERES GERESS Array B 85.17 328 P **P** **07 33 35.0 +0.4**
comp=Z,4.6nm,0.8s,mb4.7,baz=45,slow=3.8,SNR=24
GERES GERESS Array B 85.17 328 P **P** **07 33 35.0 +0.4**
GERES pmax pmax
comp=Z,5.0nm,0.8s
RHK1 Bakonya 85.19 324⇑ *i*P **P** **07 33 35.1 +0.3**
TUC Tucson 85.20 54 *e*P **P** **07 33 35.9 +0.7**
comp=Z,6.3nm,1.3s,mb4.6
WET Wettzell 85.30 329 *e*P **P** **07 33 35.7 +0.5**
WTSB Winterswijk 85.49 334 *e*P **P** **07 33 37.1 +1.0**
comp=Z,8.6nm,1.2s,mb4.8
ARSA Arzberg 85.55 326⇑ *i*P **P** **07 33 37.1 +0.6**
comp=Z,12nm,1.4s,mb4.9
GRA1 Grafenberg Arr 85.57 330 *e*P **P** **07 33 37.4 +0.8**
comp=Z,35nm,1.1s,mb5.5
GRF Grafenberg Arr 85.57 330 *e*P **P** **07 33 37.4 +0.8**
GRF pmax pmax
comp=Z,35nm,1.1s,mb5.5
ANMO Albuquerque 86.38 50 *e*P **P** **07 33 39.3 -1.7**
ANMO Albuquerque 86.38 50 *e*P **P** **07 33 41.5 +0.6**
comp=Z,2.8nm,0.9s,mb4.5
FUR Furstenfeldbru 86.73 329 *e*P **P** **07 33 44.0 +1.7**
HGN Heimansgroeve 86.79 334⇑ *i*P **P** **07 33 42.7 +0.2**
comp=Z,12nm,1.2s,mb5.0
HGN Heimansgroeve 86.79 334 *e*S S 07 44 09.5 -6.8
STU Stuttgart 87.12 331 *e*P **P** **07 33 44.5 +0.3**
WLF Walferdange 87.60 333 *e*P **P** **07 33 47.0 +0.5**
GIVF Givet 87.73 334 *e*P **P** **07 33 46.6 -0.5**
BFO Black Forest 87.82 331 *e*P **P** **07 33 47.0 -0.6**
BAIF Baives 88.00 334 *e*P **P** **07 33 47.9 -0.5**
comp=Z,21nm,1.2s,mb4.9
SCHQ Schefferville 88.06 16 P **P** **07 33 48.6 0.0**
slow=20
CDF Champ du Feu 88.17 331 *e*P **P** **07 33 48.9 -0.4**
comp=Z,16nm,1.2s,mb4.8
HINF Hinteralfeld 88.82 331 *e*P **P** **07 33 51.4 -1.0**
HAU Haudompre 88.87 332 *e*P **P** **07 33 51.7 -0.9**
MEZF Maizieres J'vi 88.97 333 *e*P **P** **07 33 53.0 -0.1**
GDL2 Guadalupe Moun 89.48 51 P **P** **07 33 56.1 +0.2**
CABF La Chapelle 90.11 331 *e*P **P** **07 33 58.0 -0.5**
comp=Z,14nm,1.2s,mb4.8
LPL La Plagne 90.73 330 *e*P **P** **07 34 01.3 -0.1**
comp=Z,15nm,0.9s,mb5.1
FLN La Foliniere 90.73 336 *e*P **P** **07 34 00.8 -0.5**
comp=Z,6.5nm,0.8s,mb4.7
LPG La Plagne 90.74 330 *e*P **P** **07 34 01.4 0.0**
comp=Z,19nm,1.1s,mb5.0
SSF Saint Saulge 90.74 333 *e*P **P** **07 34 01.1 -0.3**
comp=Z,12nm,1.2s,mb4.8
LDF La Druitiere 90.76 336 *e*P **P** **07 34 00.9 -0.5**
comp=Z,8.4nm,0.9s,mb4.8
SMF Signal de Mont 90.96 332 *e*P **P** **07 34 01.9 -0.5**
comp=Z,14nm,1.2s,mb4.9
AVF Avril sur Loir 91.03 333 *e*P **P** **07 34 02.4 -0.3**
comp=Z,14nm,0.8s,mb5.0
BNI Bardonecchia 91.13 330 *e*P **P** **07 34 02.9 -0.3**
GRR Gorron 91.18 336 *e*P **P** **07 34 03.1 -0.3**
comp=Z,29nm,1.0s,mb5.3
MBDF Montbardon 91.35 330 *e*P **P** **07 34 03.4 -0.8**
comp=Z,16nm,1.1s,mb5.0
BGF Bois d'Agland 91.41 333 *e*P **P** **07 34 04.2 -0.3**
comp=Z,8.4nm,0.9s,mb4.8
ORIF Oris-en-Rattie 91.57 330 *e*P **P** **07 34 04.8 -0.4**
comp=Z,3.6nm,0.7s,mb4.5
SBF Sospel 91.77 329 *e*P **P** **07 34 05.9 -0.3**
comp=Z,34nm,1.1s,mb5.3
TCF Toulx Ste Croi 91.88 333 *e*P **P** **07 34 06.5 -0.1**
comp=Z,19nm,1.1s,mb5.0
ROSF Rostrenen 92.02 337 *e*P **P** **07 34 07.1 -0.1**
comp=Z,16nm,0.9s,mb5.0
VIVF Saint-Julien-l 92.11 331 *e*P **P** **07 34 07.4 -0.3**
comp=Z,26nm,1.0s,mb5.2
PGF Pioggiola 92.12 327 *e*P **P** **07 34 06.8 -1.0**
comp=Z,10nm,0.9s,mb4.8
FRF La Foret Royal 92.35 329 *e*P **P** **07 34 07.9 -1.0**
comp=Z,16nm,1.0s,mb5.0
MFF Saint Martin d 92.47 335 *e*P **P** **07 34 09.4 +0.1**
comp=Z,25nm,1.0s,mb5.2
LMR La Mourre 92.59 329 *e*P **P** **07 34 09.1 -0.9**
comp=Z,22nm,1.0s,mb5.2
RJF Les Rejaudoux 92.97 333 *e*P **P** **07 34 11.7 0.0**
comp=Z,23nm,1.1s,mb5.2
CAF Calviac 93.08 332 *e*P **P** **07 34 12.6 +0.4**
comp=Z,18nm,1.0s,mb5.2
LASF Ste Croix 93.09 331 *e*P **P** **07 34 12.1 -0.1**
comp=Z,22nm,1.2s,mb5.2
LFF La Frestale 93.57 333 *e*P **P** **07 34 14.7 +0.3**
comp=Z,20nm,1.0s,mb5.2
MTLF Montolieu 94.35 331 *e*P **P** **07 34 18.1 0.0**
comp=Z,12nm,1.1s,mb4.9
MIAR Mount Ida 94.38 43 *e*P **P** **07 34 18.0 -0.4**
comp=Z,11nm,1.2s,mb5.2
ESDC Sonseca Array 99.87 334 LR LR 08 25 26.7
comp=Z,576nm,19.6s,MS5.1,baz=10.0,slow=39
QSPA South Pole Qui 123.93 180 *e*PKP PKPdf 07 39 54.6 -5.3
SDV Santo Domingo 127.45 41 PKP PKPdf 07 40 04.9 -3.3
comp=Z,1.9nm,0.2s,baz=97,slow=2.7,SNR=7.4
ARE Arequipa 145.57 67 *e*P PKPbc 07 40 38.0 +1.3
LPAZ La Paz 148.00 64 PKPbc PKPdf 07 40 42.8 -2.4

comp=Z,11nm,0.9s,baz=17,slow=14,SNR=39
LPAZ La Paz 148.00 64 PKP2 PKPab 07 40 42.8 -5.2
LPAZ pmax pmax
comp=Z,11nm,0.9s
LPAZ La Paz 148.00 64 *e*PKPdf PKPdf 07 40 42.6 -2.7
LPAZ *e*PKPbc PKPdf 07 40 45.7 +0.4
LVC Limon Verde 150.99 75 PKPbc PKPdf 07 40 53.2 +3.4
comp=Z,13nm,0.9s,baz=283,slow=3.5,SNR=7.7
LVC Limon Verde 150.99 75 *e*PKPbc PKPdf 07 40 52.8 +2.9

IDC ***16*** *07:30:23.8±0.5, 11.99S×166.32E, mb4.5/15, mb1 4.6/16, mb1mx4.6/18, ML3.5/1, MS4.7/5, Ms1 4.7/5, ms1mx4.4/18, Error ellipse: s-maj=18.0km s-min=11.9km az=165.0*

BJI ***16*** *07:30:24.3, 11.59S×166.52E, h9km, mB5.4, mb5.1, Ms5.4, Msz5.2*

NEIC ***16*** *07:30:25.4±0.3, 11.92S×166.25E, h10km, mb5.2/20, MS5.4/99, Error ellipse: s-maj=9.3km s-min=6.9km az=116.0*

HRVD ***16*** *07:30:25.4±0.2, 12.03S×165.99E, h23km, MW5.3/65, Centroid moment Tensor Solution. LP body waves: s65,c113;Mantle waves: s61,c104; Half duration: 1s1 Moment tensor: Scale 10^{17}Nm; M_{rr}1.13±.03; $M_{\theta\theta}$-0.15±.03; $M_{\phi\phi}$-0.98±.03; $M_{r\theta}$0.43±.04; $M_{\theta\phi}$0.26±.02; $M_{\phi r}$-0.23±.04; Best double couple: $M_0$1.19×10^{17} NP1: ϕ_s357°,δ38°,λ113°. NP2:ϕ_s149°,δ55°,λ73°. Principal axes: T 1.27, Plg73°, Azm13°; N -.16, Plg14°, Azm159°; P -1.11, Plg9°, Azm251°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

SYO ***16*** *07:30:25.3, 11.92S×166.25E, h10km, MB5.2, MS5.4*

MOS ***16*** *07:30:27.4±1.4, 12.04S×166.18E, h33km, mb5.7/5, Error ellipse: s-maj=17.8km s-min=16.0km az=0.9*

ISC 16 07:30:24.8±4.1, 12.04S±0.07×166.24E±0.08, h15km±29km, h20km±3.4km: pP-P, n204, σ0.91/81, mb5.0/42, MS5.3/105, 9C-8D, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**5.92**	**161**	*i*P			**Pn**	**07 31 58.6**	**+4.4**
BKM				S			**Sn**	**07 33 13.3**	**+11**
DZM	**Mont Dzumac**	**9.98**	**179**	*e*P			**P**	**07 32 50.7**	**-0.2**
DZM				*e*S			**Sn**	**07 34 38.0**	**-5.5**
DZM	**Mont Dzumac**	**9.98**	**179**	*e*P			**P**	**07 32 50.7**	**-0.2**
DZM				*e*S			**Sn**	**07 34 38.0**	**-5.5**
NOUC	**Port Laguerre**	**10.01**	**180**	*e*P			**P**	**07 32 51.6**	**+0.4**
NOUC				*e*S			**S**	**07 34 39.9**	**-4.4**
PMG	**Port Moresby**	**18.93**	**276**	P			**P**	**07 34 47.5**	**-0.2**
PMG	0.4nm,0.3s,baz=94,slow=4.8,SNR=5.0			S			**S**	**07 38 23.5**	**+8.5**
PMG	0.1nm,0.3s,baz=253,slow=19,SNR=1.6 **Port Moresby**	**18.93**	**276**	*e*P			**P**	**07 34 47.5**	**-0.2**
WAU	20nm,0.8s **Wau**	**19.80**	**282**	*e*P			**P**	**07 34 59.6**	**+1.9**
CTA	**Charters Tower**	**20.79**	**245**	⇑*i*P			**P**	**07 35 08.4**	**+0.3**
CTA	47nm,1.1s **Charters Tower**	**20.79**	**245**	P			**P**	**07 35 08.0**	**-0.1**
CTA	33nm,1.0s,baz=72,slow=12,SNR=18			LR		LR	LR	07 42 18.6	
CTAO	comp=Z,2μm,19.3s,MS4.6,baz=64,slow=34 **Charters Tower**	**20.79**	**245**	*e*P			**P**	**07 35 07.8**	**-0.3**
CTAO	9.7nm,0.3s			LR		LR			
STKA	comp=Z,2μm,20.0s,MS4.6 **Stephens Creek**	**30.07**	**225**	⇑*i*P			**P**	**07 36 37.1**	**+1.2**
STKA	comp=Z,13nm,0.9s,mb4.7 **Stephens Creek**	**30.07**	**225**	P			**P**	**07 36 37.0**	**+1.1**
STKA	comp=Z,19nm,1.0s,mb4.8,baz=28,slow=8.7,SNR=9.3			LR		LR		07 48 14.7	
SNZO	comp=Z,3μm,20.1s,MS4.9,baz=44,slow=36 **South Karori**	**30.09**	**167**	PFAKE				07 36 50.0	+14
SNZO	comp=Z,4μm,19.0s,MS5.1			LR		LR			
WRAB	**Tennant Creek**	**31.61**	**252**	*e*P			**P**	**07 36 46.3**	**-3.2**
WRAB	comp=Z,28nm,0.9s,mb5.1			LR		LR			
WB2	comp=Z,1μm,19.0s,MS4.7 **Warramunga Arr**	**31.61**	**252**	⇓*i*P			**P**	**07 36 48.7**	**-0.8**
WRA	**Warramunga Arr**	**31.62**	**252**	P			**P**	**07 36 47.6**	**-2.0**
WRA	comp=Z,4.0nm,1.0s,mb4.2,baz=78,slow=6.1,SNR=14			PcP		PcP		07 39 41.2	-0.7
WRA	comp=Z,4.4nm,0.8s,baz=82,slow=3.2,SNR=7.7			ScP				07 43 24.6	
WRA	comp=Z,1.6nm,1.1s,baz=81,slow=3.2,SNR=5.5			LR		LR		07 48 58.0	
RPZ	comp=Z,1μm,19.2s,MS4.6,baz=60,slow=35 **Rata Peaks**	**31.84**	**173**	P			**P**	**07 36 51.7**	**+0.4**
AS12	comp=Z,24nm,0.8s,mb5.1,baz=108,slow=6.6,SNR=20 **Alice Springs**	**32.80**	**245**	*e*P			**P**	**07 36 58.6**	**-1.2**
ASAR	comp=Z,24nm,0.8s,mb5.2 **Alice Springs**	**32.80**	**245**	P			**P**	**07 36 58.0**	**-1.8**
ASAR	comp=Z,7.1nm,0.6s,mb4.8,baz=70,slow=9.2,SNR=39			PcP		PcP		07 39 44.5	-0.5
ASAR	comp=Z,5.5nm,0.7s,baz=77,slow=2.0,SNR=10			LR		LR		07 49 23.2	
GUMO	comp=Z,859nm,18.9s,MS4.5,baz=60,slow=35 **Guam**	**33.13**	**320**	PFAKE				07 37 10.0	+7.2
GUMO	comp=Z,2μm,21.0s,MS4.9			LR		LR			
TAU	**Tasmania Unive**	**34.87**	**205**	PFAKE				07 37 30.0	+12
TAU	comp=Z,2μm,21.0s,MS4.8			LR		LR			
FITZ	**Fitzroy Crossi**	**39.61**	**256**	*e*P			**P**	**07 37 56.8**	**-0.8**
FITZ	comp=Z,12nm,0.9s,mb4.6 **Fitzroy Crossi**	**39.61**	**256**	P			**P**	**07 37 57.3**	**-0.4**
FITZ	comp=Z,12nm,0.9s,mb4.6,baz=107,slow=2.3,SNR=12			LR		LR		07 54 00.8	
FORT	comp=Z,762nm,18.6s,MS4.6,baz=87,slow=36 **Forrest**	**39.89**	**236**	*e*P			**P**	**07 38 05.7**	**+5.9**
MIDW	comp=Z,103nm,0.8s,mb5.6 **Midway**	**43.05**	**21**	PFAKE				07 38 40.0	+14
MIDW	comp=Z,13μm,19.0s,MS5.8			LR		LR			
KLBR	**Kellerberrin**	**48.60**	**238**	*e*P			**P**	**07 39 09.9**	**0.0**
POHA	comp=Z,17nm,0.7s,mb5.2 **Pohakuloa**	**49.14**	**50**	PFAKE				07 39 30.0	+16
POHA	comp=Z,2μm,20.0s,MS5.2			LR		LR			
NWAO	**Narrogin (SRO)**	**49.32**	**237**	P			**P**	**07 39 15.9**	**+0.4**
NWAO	comp=Z,11nm,0.8s,mb4.9,baz=72,slow=7.2,SNR=4.4 **Narrogin (SRO)**	**49.32**	**237**	*e*P			**P**	**07 39 15.4**	**-0.1**
NWAO	comp=Z,5.3nm,0.7s,mb4.7			LR		LR			
KKM	comp=Z,2μm,20.0s,MS5.0 **Kota Kinabalu**	**52.89**	**287**	⇓*e*P			**P**	**07 39 43.6**	**+0.8**
TATO	**Taipei**	**57.08**	**310**	PFAKE				07 40 20.0	+6.9
TATO	comp=Z,884nm,19.0s,MS4.9			LR		LR			
ASAJ	**Asahikawa**	**59.88**	**340**	P			**P**	**07 40 32.0**	**-0.4**
KS15	comp=Z,1.2nm,0.3s,mb4.4,baz=170,slow=6.1,SNR=3.1 **Wonju Array Si**	**60.98**	**326**	*e*P			**P**	**07 40 38.9**	**-1.1**
YSS	**Yuzh-Sakhalins**	**62.37**	**342**	PFAKE				07 41 00.0	+11
YSS	comp=Z,1μm,22.0s,MS5.0			LR		LR			
SMY	**Shemya**	**64.86**	**5**	PFAKE				07 41 20.0	+15
SMY	comp=Z,1μm,19.0s,MS5.0			LR		LR			
PET	**Petropavlovsk**	**65.12**	**355**	PFAKE				07 41 20.0	+13
PET	comp=Z,774nm,19.0s,MS4.9			LR		LR			
MDJ	**Mudanjiang**	**65.45**	**332**	P			**P**	**07 41 09.0**	**-0.4**
DL2	**Dalian**	**65.56**	**323**	P			**P**	**07 41 10.3**	**+0.1**
DL2	comp=Z,30nm,1.3s,mb5.2			AMB		AMB			
SBA	**Scott Base**	**65.81**	**180**	*e*P			**P**	**07 41 12.1**	**+0.9**
CN2	comp=Z,20nm,0.9s,mb5.1 **Changchun**	**66.84**	**329**	⇓P			**P**	**07 41 17.8**	**-0.5**
CN2				*e*AP			pP	07 41 22.6	-0.3
CN2				*e*S			S	07 50 09.3	+0.6
CN2	comp=Z,20nm,1.4s,mb5.0			AMB		AMB			
CN2	comp=N,600nm,20.0s,MS5.1			LR		LR			
CN2	comp=E,1μm,20.0s,MS5.1			LR		LR			
CN2	comp=Z,1μm,22.0s,MS5.0			LR		LR			
IPM	**Ipoh**	**66.90**	**280**	⇑*e*P			**P**	**07 41 19.0**	**-0.2**
KLR	comp=Z,35nm,1.0s,mb5.3 **Kul'dur**	**68.16**	**336**	*e*P			**P**	**07 41 25.0**	**-1.5**
GYA	**Guiyang**	**69.38**	**304**	⇓*i*P			**P**	**07 41 34.8**	**+0.4**
GYA	comp=Z,10.0nm,0.8s,mb4.8			AMB		AMB			
BJI	**Beijing**	**69.55**	**321**	*e*P			**P**	**07 41 34.8**	**-0.5**
BJI	comp=Z,28nm,1.2s,mb5.1			AMB		AMB			
UNV	**Unalaska Valle**	**69.61**	**17**	PFAKE				07 41 50.0	+15
UNV	comp=Z,4μm,19.0s,MS5.6			LR		LR			
XAN	**Xi'an**	**71.14**	**312**	P			**P**	**07 41 44.8**	**-0.2**
XAN				AP		pP		07 41 49.8	+0.1
XAN	comp=Z,14nm,1.7s,mb4.6			AMB		AMB			
KMI	**Kunming**	**72.05**	**301**	*e*P			**P**	**07 41 54.5**	**+3.9**
KMI	comp=Z,17nm,1.2s,mb4.8			AMB		AMB			
MIR	**Mirnyy**	**72.37**	**204**	⇑*e*P			**P**	**07 41 49.7**	**-2.1**
MIR	comp=Z,45nm,1.2s,mb5.3			pmax		pmax			
MA2	**Magadan**	**72.45**	**352**	PFAKE				07 42 00.0	+7.6
MA2	comp=Z,1μm,21.0s,MS5.1			LR		LR			
HHC	**Hu-ho-hao-te**	**72.90**	**320**	⇓P			**P**	**07 41 56.1**	**+0.7**
HHC	comp=Z,24nm,1.4s,mb4.9			AMB		AMB			
HHC	comp=Z,359nm,11.0s			AMB		AMB			
CMAR	**Chiang Mai Arr**	**72.95**	**294**	P			**P**	**07 41 57.0**	**+0.9**
CD2	comp=Z,2.2nm,0.6s,mb4.3,baz=117,slow=3.7,SNR=11 **Chengdu**	**73.59**	**307**	P			**P**	**07 42 00.8**	**+1.2**
CD2	comp=Z,30nm,1.2s,mb5.1			AMB		AMB			
BTO	**Baotou**	**73.75**	**319**	*e*P			**P**	**07 42 01.5**	**+1.1**
BTO	comp=Z,39nm,1.0s,mb5.3			AMB		AMB			
LZH	**Lanzhou**	**75.78**	**312**	*e*P			**P**	**07 42 13.6**	**+1.5**
LZH				AP		pP		07 42 23.5	+6.6
LZH	comp=Z,94nm,1.5s,mb5.5			AMB		AMB			
KDAK	**Kodiak Island**	**77.32**	**21**	PFAKE				07 42 30.0	+10
KDAK	comp=Z,2μm,20.0s,MS5.5			LR		LR			
QSPA	**South Pole Qui**	**77.97**	**180**	*e*P			**P**	**07 42 24.1**	**+0.6**
QSPA	comp=Z,45nm,1.1s,mb5.3			*e*				07 44 30.5	
YAK	**Yakutsk**	**79.18**	**343**	PFAKE				07 42 40.0	+10
YAK	comp=Z,859nm,19.0s,MS5.1			LR		LR			
ULN	**Ulaanbaatar**	**79.39**	**324**	*d*iP			**P**	**07 42 32.7**	**+0.9**
ULN	**Ulaanbaatar**	**79.39**	**324**	*e*P			**P**	**07 42 31.4**	**-0.4**
SONM	comp=Z,32nm,1.0s,mb5.2 **Songino Array**	**79.75**	**324**	P			**P**	**07 42 34.3**	**+0.6**
TNA	comp=Z,10.0nm,1.0s,mb4.7,baz=143,slow=6.2,SNR=20 **Tin City**	**79.75**	**11**	PFAKE				07 42 40.0	+6.6
TNA	comp=Z,407nm,21.0s,MS4.7			LR		LR			
BILL	**Bilibino**	**79.86**	**0**	⇑*i*P			**P**	**07 42 34.9**	**+0.9**
BILL				*e*				07 42 42.6	
BILL				*e*				07 45 42.6	
BILL	comp=Z,5.0nm,1.1s,mb4.4			pmax		pmax			
GTA	**Gaotai**	**80.09**	**314**	*e*P			**P**	**07 42 36.6**	**+0.8**
GTA				AP		pP		07 42 44.9	+4.3
GTA				XP		sP		07 42 49.4	+7.3
GTA	comp=Z,36nm,1.4s,mb5.1			AMB		AMB			
FIB	**Fire Island**	**80.66**	**20**	PFAKE				07 42 50.0	+12
FIB	comp=Z,2μm,19.0s,MS5.5			LR		LR			
PMR	**Palmer**	**81.31**	**20**	PFAKE				07 42 50.0	+8.2
PMR	comp=Z,1μm,20.0s,MS5.2			LR		LR			
BOD	**Bodaibo**	**81.63**	**335**	*e*P			**P**	**07 42 42.4**	**-1.1**
ZAK	**Zakamensk**	**82.79**	**325**	⇓*i*P			**P**	**07 42 50.1**	**+0.5**
MCK	**McKinley**	**82.92**	**18**	PFAKE				07 43 00.0	+10
MCK	comp=Z,1μm,22.0s,MS5.2			LR		LR			
HOPS	**Hopland**	**82.97**	**48**	PFAKE				07 43 00.0	+9.1
HOPS	comp=Z,2μm,20.0s,MS5.5			LR		LR			
TLY	**Talaya**	**83.21**	**326**	*d*iP			**P**	**07 42 51.4**	**-0.4**
TLY	comp=Z,296nm,1.2s			pmax		pmax			
SAO	**San Andreas Ge**	**83.38**	**50**	PFAKE				07 43 00.0	+7.0
SAO	comp=Z,2μm,19.0s,MS5.6			LR		LR			
SIT	**Sitka**	**83.90**	**28**	PFAKE				07 43 10.0	+15
SIT	comp=Z,2μm,22.0s,MS5.4			LR		LR			
WDC	**Whiskeytown Da**	**83.93**	**46**	PFAKE				07 43 10.0	+14
WDC	comp=Z,2μm,20.0s,MS5.5			LR		LR			
MAW	**Mawson**	**83.99**	**202**	*e*P			**P**	**07 42 56.3**	**+0.9**
MAW	comp=Z,10nm,1.1s,mb4.9 **Mawson**	**83.99**	**202**	P			**P**	**07 42 56.0**	**+0.6**
COLA	comp=Z,4.4nm,0.8s,mb4.6,baz=96,slow=7.1,SNR=4.8 **College**	**84.07**	**18**	⇑*e*P			**P**	**07 42 54.3**	**-1.6**
COLA	**College**	**84.07**	**18**	*e*P			**P**	**07 42 55.1**	**-0.7**
COLA	comp=Z,3.4nm,0.8s,mb4.5			LR		LR			
YBH	comp=Z,2μm,22.0s,MS5.4 **Yreka Blue Hor**	**84.24**	**45**	P			**P**	**07 42 57.9**	**+0.6**
YBH	comp=Z,0.6nm,0.7s,mb3.9,baz=212,slow=15,SNR=3.0 **Yreka Blue Hor**	**84.24**	**45**	P			**P**	**07 42 57.9**	**+0.6**
YBH	comp=Z,1μm,21.0s,MS5.3			LR		LR			
ILAR	**Eielson Array**	**84.29**	**18**	P			**P**	**07 42 56.5**	**-0.5**
HUMO	comp=Z,1.1nm,0.6s,mb4.2,baz=242,slow=4.8,SNR=11 **Hull Mountain**	**84.39**	**44**	P			**P**	**07 42 58.3**	**+0.3**
CMB	**Columbia Colle**	**84.61**	**49**	PFAKE				07 43 10.0	+11
CMB	comp=Z,3μm,21.0s,MS5.6			LR		LR			
MOY	**Mondy**	**84.67**	**325**	*e*P			**P**	**07 42 39.9**	**-19**
COR	**Corvallis**	**84.90**	**43**	PFAKE				07 43 10.0	+10
COR	comp=Z,4μm,22.0s,MS5.8			LR		LR			
OCWA	**Octopus Mounta**	**85.56**	**39**	PFAKE				07 43 10.0	+6.3
OCWA	comp=Z,1μm,21.0s,MS5.3			LR		LR			
MOD	**Modoc**	**85.98**	**46**	PFAKE				07 43 20.0	+14
MOD	comp=Z,2μm,21.0s,MS5.4			LR		LR			
DAC	**Darwin (Calif)**	**86.16**	**52**	PFAKE				07 43 20.0	+13
DAC	comp=Z,3μm,21.0s,MS5.6			LR		LR			
PFO	**Pinyon Flat Ob**	**86.26**	**55**	PFAKE				07 43 20.0	+12
PFO	comp=Z,3μm,20.0s,MS5.7			LR		LR			
NVAR	**Mina Array Bea**	**86.29**	**50**	P			**P**	**07 43 07.9**	**+0.3**
TPH	comp=Z,0.7nm,0.8s,mb4.0,baz=230,slow=6.4,SNR=4.5 **Tonopah**	**86.99**	**50**	PFAKE				07 43 20.0	+9.0
TPH	comp=Z,2μm,21.0s,MS5.6			LR		LR			
TIXI	**Tiksi**	**87.15**	**349**	*e*P			**P**	**07 43 09.9**	**-1.1**
TIXI	comp=Z,46nm,1.1s,mb5.6			pmax		pmax			
TIXI	**Tiksi**	**87.15**	**349**	P			**P**	**07 43 09.8**	**-1.2**
TIXI	comp=Z,418nm,21.0s,MS4.8			LR		LR			
WVOR	**Wild Horse Val**	**87.32**	**46**	PFAKE				07 43 20.0	+7.5
WVOR	comp=Z,3μm,20.0s,MS5.6			LR		LR			
PKI	**Pulchoki**	**87.54**	**299**	*e*P			**P**	**07 43 14.1**	**+0.2**
KKN	comp=Z,90nm,1.3s,mb5.8 **Kakani**	**87.70**	**299**	*e*P			**P**	**07 43 15.7**	**+1.0**
BMN	comp=Z,56nm,1.2s,mb5.7 **Battle Mountai**	**87.71**	**48**	PFAKE				07 43 30.0	+16
BMN	comp=Z,1μm,20.0s,MS5.4			LR		LR			
DMN	**Daman**	**87.81**	**299**	*e*P			**P**	**07 43 15.8**	**+0.6**
HAWA	comp=Z,82nm,1.0s,mb5.9 **Hanford**	**88.02**	**42**	PFAKE				07 43 30.0	+14
HAWA	comp=Z,2μm,21.0s,MS5.4			LR		LR			
GKN	**Gorkha**	**88.31**	**299**	*e*P			**P**	**07 43 17.7**	**+0.1**
KOLN	comp=Z,68nm,1.0s,mb5.8 **Koldanda**	**89.14**	**298**	*e*P			**P**	**07 43 21.5**	**-0.1**
WMQ	comp=Z,25nm,1.0s,mb5.5 **Urumqi**	**90.14**	**315**	*e*P			**P**	**07 43 26.5**	**+0.7**
WMQ				AP		pP		07 43 30.5	-0.1
WMQ				XP		sP		07 43 32.8	+0.6
WMQ				PP		PP		07 47 01.9	+0.1
WMQ				SKS		SKS		07 53 54.9	-5.4
WMQ				S		S		07 54 16.8	+0.4
WMQ				XS				07 54 24.8	
WMQ				PS		PS		07 55 27.4	-0.4
WMQ				SS		SS		08 00 18.6	-0.7
WMQ	comp=Z,284nm,6.7s			AMB		AMB			
WMQ	comp=N,1μm,21.5s,MS5.4			LR		LR			
WMQ	comp=E,1μm,21.1s,MS5.4			LR		LR			
WMQ	comp=Z,2μm,22.3s,MS5.5			LR		LR			
NEW	**Newport**	**90.18**	**41**	PFAKE				07 43 40.0	+14
NEW	comp=Z,960nm,21.0s,MS5.2			LR		LR			
TUC	**Tucson**	**90.51**	**57**	PFAKE				07 43 40.0	+12
TUC	comp=Z,2μm,22.0s,MS5.6			LR		LR			
HLID	**Hailey**	**90.62**	**46**	*e*P			**P**	**07 43 28.4**	**+0.3**
HLID	comp=Z,1μm,20.0s,MS5.3			LR		LR			
WUAZ	**Wupatki**	**90.81**	**54**	PFAKE				07 43 40.0	+11
WUAZ	comp=Z,2μm,22.0s,MS5.4			LR		LR			
MVU	**Marysvale**	**90.89**	**51**	PFAKE				07 43 40.0	+11
MVU	comp=Z,2μm,22.0s,MS5.6			LR		LR			
SYO	**Syowa Base**	**90.98**	**197**	⇑P			**P**	**07 43 28.7**	**-0.4**
SYO	**Syowa Base**	**90.98**	**197**	⇑pP			pP	07 43 33.4	-0.5
SYO	**Syowa Base**	**90.98**	**197**	⇑sP			sP	07 43 37.9	+2.4
MSO	**Missoula**	**91.83**	**43**	PFAKE				07 43 40.0	+6.5
MSO	comp=Z,2μm,21.0s,MS5.5			LR		LR			
HWUT	**Hardware Ranch**	**92.14**	**48**	PFAKE				07 43 50.0	+15
HWUT	comp=Z,2μm,22.0s,MS5.6			LR		LR			
AHID	**Auburn Hatcher**	**92.76**	**47**	PFAKE				07 43 50.0	+12
AHID	comp=Z,970nm,20.0s,MS5.2			LR		LR			
BW06	**Boulder Array**	**93.86**	**47**	PFAKE				07 43 50.0	+7.0
BW06	comp=Z,2μm,19.0s,MS5.5			LR		LR			
MKAR	**Makanchi Array**	**94.57**	**317**	P			**P**	**07 43 45.8**	**-0.4**
MKAR	comp=Z,22nm,0.7s,mb5.7,baz=97,slow=6.4,SNR=159 **Makanchi Array**	**94.57**	**317**	*i*P			**P**	**07 43 45.7**	**-0.5**
MKAR	comp=Z,18nm,0.8s			pmax		pmax			
ANMO	**Albuquerque**	**94.60**	**55**	PFAKE				07 44 00.0	+13
ANMO	comp=Z,2μm,21.0s,MS5.5			LR		LR			
MNTX	**Cornudas Mount**	**94.86**	**59**	PFAKE				07 44 00.0	+12
MNTX	comp=Z,1μm,21.0s,MS5.3			LR		LR			
YKA	**Yellowknife Ar**	**95.63**	**27**	P			**P**	**07 43 48.4**	**-2.2**
YKA	comp=Z,0.2nm,0.5s,mb3.9,baz=258,slow=4.9,SNR=8.9 **Yellowknife Ar**	**95.63**	**27**	P			**P**	**07 43 48.4**	**-2.2**
SDCO	**Great Sand Dun**	**95.89**	**53**	PFAKE				07 44 00.0	+7.5
SDCO	comp=Z,1μm,22.0s,MS5.4			LR		LR			
ISCO	**Idaho Springs**	**96.18**	**51**	PFAKE				07 44 10.0	+16
ISCO	comp=Z,1μm,20.0s,MS5.3			LR		LR			
RSSD	**Black Hills**	**98.07**	**47**	PFAKE				07 44 10.0	+7.9
RSSD	comp=Z,1μm,20.0s,MS5.4			LR		LR			
JCT	**Junction City**	**99.37**	**61**	PFAKE				07 44 20.0	+12
JCT	comp=Z,1μm,19.0s,MS5.4			LR		LR			
CBKS	**Cedar Bluff**	**100.54**	**52**	PFAKE				07 44 20.0	+6.5
CBKS	comp=Z,814nm,21.0s,MS5.2			LR		LR			
FFC	**Flin Flon**	**100.74**	**36**	PFAKE				07 44 20.0	+6.0
FFC	comp=Z,1μm,20.0s,MS5.4			LR		LR			
WMOK	**Wichita Mounta**	**100.80**	**57**	PFAKE				07 44 30.0	+15
WMOK	comp=Z,2μm,19.0s,MS5.7			LR		LR			
HKT	**Hockley**	**102.71**	**62**	PFAKE				07 44 30.0	+6.6
HKT	comp=Z,1μm,19.0s,MS5.4			LR		LR			
ULM	**Lac du Bonnet**	**104.18**	**41**	PFAKE				07 44 40.0	+11
ULM	comp=Z,2μm,20.0s,MS5.7			LR		LR			
MIAR	**Mount Ida**	**105.06**	**57**	PFAKE				07 44 40.0	+6.3
MIAR	comp=Z,1μm,20.0s,MS5.5			LR		LR			
EFI	**East Falkland**	**105.89**	**153**	PFAKE				07 49 00.0	
EFI	comp=Z,1μm,19.0s,MS5.6			LR		LR			
CCM	**Cathedral Cave**	**107.13**	**54**	PFAKE				07 49 00.0	
CCM	comp=Z,1μm,22.0s,MS5.4			LR		LR			
JFWS	**Jewell Farm**	**107.97**	**49**	PFAKE				07 49 10.0	
JFWS	comp=Z,2μm,21.0s,MS5.7			LR		LR			
OXF	**Oxford**	**108.48**	**58**	PFAKE				07 49 10.0	
OXF	comp=Z,848nm,20.0s,MS5.3			LR		LR			
PLAL	**Pickwick Lake**	**109.60**	**57**	PFAKE				07 49 10.0	
PLAL	comp=Z,1μm,21.0s,MS5.5			LR		LR			
ARU	**Arti**	**109.72**	**326**	PFAKE				07 49 10.0	
ARU	comp=Z,396nm,19.0s,MS5.0			LR		LR			
WVT	**Waverly**	**109.81**	**56**	PFAKE				07 49 10.0	
WVT	comp=Z,1μm,20.0s,MS5.4			LR		LR			
JTS	**JuntasAbangare**	**110.31**	**83**	PFAKE				07 49 10.0	+9.4
JTS	comp=Z,142nm,21.0s,MS4.5			LR		LR			
LRAL	**Lakeview Retre**	**110.45**	**59**	PFAKE				07 49 10.0	+10
LRAL	comp=Z,965nm,20.0s,MS5.4			LR		LR			
WCI	**Wyandotte Cave**	**111.03**	**54**	PFAKE				07 49 10.0	+8.5
WCI	comp=Z,7μm,20.0s,MS6.2			LR		LR			
KBS	**Kingsbay**	**111.95**	**355**	PFAKE				07 49 10.0	+7.8
KBS	comp=Z,319nm,19.0s,MS4.9			LR		LR			
MYNC	**Murphy**	**112.84**	**57**	PFAKE				07 49 10.0	+5.0
MYNC	comp=Z,1μm,19.0s,MS5.5			LR		LR			
AAM	**Ann Arbor**	**112.85**	**49**	PFAKE				07 49 10.0	+5.1
AAM	comp=Z,1μm,20.0s,MS5.5			LR		LR			
ACSO	**Alum Creek Sta**	**113.51**	**51**	PFAKE				07 49 20.0	+14
ACSO	comp=Z,1μm,21.0s,MS5.5			LR		LR			
DWPF	**Disney**	**115.17**	**65**	PFAKE				07 49 20.0	+10
DWPF	comp=Z,559nm,19.0s,MS5.2			LR		LR			
ERPA	**Erie**	**115.58**	**49**	PFAKE				07 49 20.0	+10
ERPA	comp=Z,1μm,20.0s,MS5.5			LR		LR			
BLA	**Blacksburg**	**115.73**	**54**	PFAKE				07 49 20.0	+9.3
BLA	comp=Z,1μm,20.0s,MS5.4			LR		LR			
LVC	**Limon Verde**	**115.93**	**123**	PFAKE				07 49 20.0	+8.6
LVC	comp=Z,392nm,22.0s,MS5.0			LR		LR			
MCWV	**Mont Chateau**	**115.97**	**52**	PFAKE				07 49 20.0	+8.9
MCWV	comp=Z,2μm,21.0s,MS5.7			LR		LR			
SSPA	**Standing Stone**	**117.34**	**50**	PFAKE				07 49 20.0	+6.3
SSPA	comp=Z,5μm,20.0s,MS6.2			LR		LR			
ARCES	**ARCESS Array B**	**117.41**	**345**	PKP		PKPdf		07 49 09.2	-3.9
CBN	comp=Z,1.1nm,0.5s,baz=67,slow=2.0,SNR=12 **Corbin**	**118.04**	**53**	PFAKE				07 49 20.0	+4.9
CBN	comp=Z,2μm,20.0s,MS5.7			LR		LR			
LPAZ	**La Paz**	**119.31**	**116**	PFAKE				07 49 30.0	+12
LPAZ	comp=Z,183nm,21.0s,MS4.7			LR		LR

comp=Z,297nm,20.0s,MS4.9
WVL Waterville 122.48 45 PFAKE 07 49 30.0 +6.5
WVL LR LR
comp=Z,8μm,22.0s,MS6.3
FINES FINESS Array B 122.87 339 PKP PKPdf 07 49 20.4 -3.4
comp=Z,0.8nm,0.8s,slow=4.2,SNR=3.8
FINES FINESS Array B 122.87 339 PKP PKPdf 07 49 20.4 -3.4
PQI Presque Isle 122.94 42 PFAKE 07 49 30.0 +5.7
PQI LR LR
comp=Z,6μm,21.0s,MS6.2
CPUP Villa Florida 123.00 132 PFAKE 07 49 30.0 +5.1
CPUP LR LR
comp=Z,342nm,20.0s,MS5.0
EMMW East Machias 123.93 44 PFAKE 07 49 40.0 +14
EMMW LR LR
comp=Z,6μm,21.0s,MS6.2
SUR Sutherland 124.83 216 PFAKE 07 49 40.0 +12
SUR LR LR
comp=Z,1μm,19.0s,MS5.5
LBTB Lobatse 126.81 226 PFAKE 07 49 40.0 +7.6
LBTB LR LR
comp=Z,409nm,21.0s,MS5.1
KMBO Kilima Mbogo 127.69 259 PKP PKPdf 07 49 34.1 -0.4
comp=Z,2.0nm,0.7s,baz=52,slow=9.9,SNR=7.0
KMBO Kilima Mbogo 127.69 259 PKP PKPdf 07 49 34.1 -0.4
KMBO LR LR
comp=Z,313nm,21.0s,MS5.0
NOA NORSAR Array B 127.78 345 PKP PKPdf 07 49 31.0 -2.3
comp=Z,0.2nm,0.7s,baz=80,slow=2.6,SNR=2.6
NAO01 NORSAR Array S 128.03 345 PFAKE 07 49 40.0 +6.1
NAO01 LR LR
comp=Z,410nm,20.0s,MS5.1
SJG San Juan 129.18 76 PFAKE 07 49 50.0 +13
SJG LR LR
comp=Z,531nm,20.0s,MS5.2
BBSR BB Station 129.20 58 PFAKE 07 49 50.0 +13
BBSR LR LR
comp=Z,2μm,20.0s,MS5.9
KONO Kongsberg 129.39 345 PFAKE 07 49 50.0 +14
KONO LR LR
comp=Z,474nm,21.0s,MS5.2
BRTR Keskin Array B 129.99 312 PKP PKPdf 07 49 37.5 -0.7
comp=Z,0.7nm,0.6s,baz=63,slow=3.2,SNR=3.5
ESK Eskdalemuir 136.04 351 PFAKE 07 50 00.0 +11
ESK LR LR
comp=Z,885nm,20.0s,MS5.5
KHC Kasperske Hory 136.64 334 *e*PKP PKPdf 07 49 49.5 -0.7
GERES GERESS Array B 136.81 334 PKP PKPdf 07 49 49.4 -1.1
comp=Z,0.7nm,0.8s,baz=90,slow=2.9,SNR=4.7
GERES SKP 07 53 25.1
comp=Z,0.9nm,0.8s,baz=63,slow=3.0,SNR=5.4
BNI Bardonecchia 142.75 336 *e*PKP PKPdf 07 49 56.5 -4.8
MBDF Montbardon 142.98 335 *e*PKP1 PKPdf 07 49 57.1 -4.6
comp=Z,5.8nm,0.7s
PLDF La Plantade 143.10 340 *e*P PKPbc 07 50 00.0 +3.6
ORIF Oris-en-Rattie 143.17 337 *e*PKP1 PKPbc 07 49 58.0 +1.4
comp=Z,12nm,0.8s
AUTN L'Aution 143.30 334 *e*P PKPbc 07 49 56.8 -0.2
SBF Sospel 143.40 334 *e*PKP1 PKPbc 07 49 57.4 0.0
comp=Z,29nm,0.8s
MVIF Mont Vial 143.50 334 *e*P PKPbc 07 50 00.3 +2.7
MFF Saint Martin d 143.68 344 *e*PKP1 PKPbc 07 49 56.2 -1.9
comp=Z,10nm,0.9s
VIVF Saint-Julien-l 143.69 338 *e*PKP1 PKPbc 07 49 57.3 -0.9
comp=Z,25nm,1.3s
PGF Pioggiola 143.73 331 *e*PKP1 PKPbc 07 49 58.6 +0.2
comp=Z,15nm,0.8s
LBL Lubilhac 143.87 339 *e*P PKPbc 07 49 59.9 +1.2
FRF La Foret Royal 143.98 334 *e*PKP1 PKPbc 07 49 57.9 -1.2
comp=Z,18nm,0.8s
SMRF Simiane la Rot 144.08 336 *e*PKP1 PKPbc 07 49 58.8 -0.6
comp=Z,5.5nm,0.6s
VILF Villemus 144.13 336 *e*P PKPbc 07 50 00.5 +1.0
TAVF Tavernes 144.18 335 *e*P PKPbc 07 49 59.9 +0.2
LMR La Mourre 144.23 334 *e*PKP1 PKPbc 07 49 58.9 -0.9
comp=Z,35nm,1.1s
RJF Les Rejaudoux 144.37 341 *e*PKP1 PKPbc 07 50 00.6 +0.5
comp=Z,50nm,1.3s
PRAF Pradon 144.38 336 *e*P PKPbc 07 50 01.4 +1.2
CAF Calviac 144.54 340 *e*PKP1 PKPbc 07 50 00.7 +0.1
comp=Z,52nm,1.4s
GELF Grande-Etoile 144.63 336 *e*P PKPbc 07 50 02.0 +1.1
LASF Ste Croix 144.66 338 *e*PKP1 PKPbc 07 50 01.0 0.0
comp=Z,36nm,1.1s
LFF La Frestale 144.94 342 *e*PKP1 PKPbc 07 50 01.6 -0.1
comp=Z,51nm,1.2s
MTLF Montolieu 145.88 339 *e*PKP1 PKPbc 07 50 00.9 -3.3
comp=Z,36nm,1.0s
ESDC Sonseca Array 151.14 344 PKPbc PKPdf 07 50 18.7 +3.4
comp=Z,2.2nm,0.9s,baz=16,slow=4.4,SNR=7.1
ESLA Sonseca Array 151.14 344 PFAKE 07 50 20.0 +4.6
ESLA LR LR
comp=Z,3μm,22.0s,MS6.1
DBIC Dimbokro 169.73 240 PKPab PKPab 07 51 48.4 -0.2
comp=Z,7.3nm,1.2s,baz=139,slow=11,SNR=2.5
DBIC Dimbokro 169.73 240 PKPab PKPab 07 51 48.4 -0.2
DBIC LR LR
comp=Z,369nm,21.0s

DJA 16 07:39:48.4±1.0, 9.48S×113.46E, h66km±88km, MD5.1/3, ML4.3/3, 5D, Error ellipse: s-maj=84.8km s-min=21.5km az=14.0, South of Jawa

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
KELI	**Kelakatan**	**1.61**	**39**	⇓*e*Pn		P		07 40 14.4	-0.9
	312nm,0.2s								
KELI				⇓*e*Sn		S		07 40 33.7	-1.5
RATI	**Rata**	**2.18**	**70**	⇓*e*Pn		P		07 40 22.2	-0.9
	323nm,0.2s								
RATI				*e*Sn		S		07 40 46.7	-2.2
KEDI	**Kedomdong**	**2.80**	**70**	⇓*e*Pn		P		07 40 30.6	-1.3
	36nm,0.2s								
KEDI				⇓*e*Sn		S		07 41 01.4	-3.2

MOS ***16*** *07:50:29.5±1.1, 15.34S×173.39W, h33km, mb5.8/55, MS5.3/11, Error ellipse: s-maj=11.6km s-min=7.1km az=60.8*

IDC ***16*** *07:50:30.7±4.0, 15.44S×173.34W, h32km±28km, mb5.0/20, mb1 5.1/21, mb1mx5.1/22, ML5.0/1, MS5.1/20, Ms1 5.1/20, ms1mx5.0/22, Error ellipse: s-maj=20.2km s-min=10.7km az=130.0*

CSEM ***16*** *07:50:32.1, 14.80S×173.35W, h33km, mb5.7*

NEIC ***16*** *07:50:33.5±0.1, 15.34S×173.42W, mb5.6/79, MW5.8, Error ellipse: s-maj=8.2km s-min=4.1km az=142.0, Moment Tensor Solution. s14 Moment tensor: Scale 10^17 Nm; Mrr4.59; Mθθ-4.99; Mφφ0.39; Mrθ-2.42; Mθφ1.98; Mφr0.05; Best double couple: Mo5.7×10^17 NP1:φs279°, δ58°, λ79°. NP2:φs119°, δ34°, λ106°. Principal axes: T 5.21, Plg75°, Azm160°; N .94, Plg9°, Azm285°; P -6.15, Plg12°, Azm17°;*

SYO ***16*** *07:50:33.4, 15.34S×173.42W, h55km, MB5.6*

HRVD ***16*** *07:50:33.5±0.1, 15.21S×173.15W, h61km, MW5.7/75, Centroid moment Tensor Solution. LP body waves: s67,c132;Mantle waves: s75,c155; Half duration: 1s7 Moment tensor: Scale 10^17Nm; Mrr3.13±.05; Mθθ-2.59±.05; Mφφ-0.55±.05; Mrθ-1.96±.04; Mθφ1.60±.04; Mφr0.11±.04; Best double couple: Mo3.85×10^17 NP1: φs133°, δ32°, λ113°. NP2:φs286°, δ61°, λ76°. Principal axes: T 3.77, Plg71°, Azm164°; N .15, Plg12°, Azm293°; P -3.92, Plg14°, Azm26°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

BJI ***16*** *07:50:37.1, 14.50S×174.01W, h54km, mB5.8, mb5.4, Ms5.4, Msz5.3*

ISC 16 07:50:31.7±0.1, 15.33S±0.04×173.45W±0.04, h54km, h54km±1.9km: pP-P, n714, σ1§00/269, mb5.4/103, MS5.3/135, 90C-18D, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**14.24**	**116**	Pn		P		**07 53 46.8**	**-5.4**
	7.3nm,0.3s,baz=243,slow=3.7,SNR=17								
RAR				Sn		S		**07 56 11.4**	**-18**
	1.7nm,0.3s,baz=288,slow=20,SNR=2.6								
RAR				LR		LR		07 57 53.7	
	comp=Z,5μm,18.9s,baz=323,slow=31								
RAR	**Rarotonga**	**14.24**	**116**	*e*P		P		**07 53 48.1**	**-4.0**
RAR				pmax		pmax			
	comp=Z,93nm,0.7s								
RAR	**Rarotonga**	**14.24**	**116**	*e*P		P		**07 53 48.1**	**-4.0**
	comp=Z,93nm,0.7s								
RAR				*e*S		S		**07 56 12.3**	**-17**
DZM	**Mont Dzumac**	**20.18**	**248**	*e*P		P		**07 55 04.1**	**-0.4**
DZM	**Mont Dzumac**	**20.18**	**248**	*e*P		P		**07 55 04.1**	**-0.4**
NOUC	**Port Laguerre**	**20.32**	**248**	*e*P		P		**07 55 05.4**	**-0.5**
OUZ	**Omahuta**	**22.97**	**208**	P		P		**07 55 35.1**	**+2.7**
PPT	**Papeete**	**23.00**	**99**	P		P		**07 55 35.3**	**+2.5**
	comp=Z,44nm,0.8s,mb4.9,baz=264,slow=14,SNR=2.5								
WCZ	**Waipu Caves**	**23.25**	**206**	P		P		**07 55 36.9**	**+1.8**
KUZ	**Kuaotunu**	**23.41**	**202**	P		P		**07 55 38.7**	**+2.0**
MTAZ	**Motutapu**	**23.75**	**204**	P		P		**07 55 42.5**	**+2.5**
KAAZ	**Kauri Point**	**23.87**	**204**	P		P		**07 55 43.6**	**+2.6**
OTAZ	**Otara**	**23.89**	**203**	P		P		**07 55 43.9**	**+2.6**
WTAZ	**Waiatarua**	**24.01**	**204**	P		P		**07 55 43.1**	**+0.6**
URZ	**Urewera**	**24.32**	**198**	P		P		**07 55 44.7**	**-0.8**
	comp=Z,62nm,0.7s,mb5.2,baz=6.9,slow=4.2,SNR=30								
URZ				S		S		**08 00 01.2**	**+3.2**
	comp=Z,7.6nm,0.8s,slow=18,SNR=3.3								
URZ				LR		LR		08 04 04.5	
	comp=Z,6μm,21.1s,MS5.1,baz=14,slow=34								
BFZ	**Birch Farm**	**26.81**	**198**	P		P		**07 56 08.8**	**0.0**
SNZO	**South Karori**	**27.85**	**199**	*e*P		P		**07 56 15.6**	**-2.8**
	comp=Z,88nm,1.0s,mb5.3								
SNZO				LR		LR			
	comp=Z,6μm,19.0s,MS5.2								
QRZ	**Quartz Range**	**28.18**	**203**	P		P		**07 56 21.2**	**-0.1**
THZ	**Tophouse**	**28.86**	**201**	P		P		**07 56 26.6**	**-0.8**
LTZ	**Lake Taylor**	**29.98**	**201**	P		P		**07 56 34.8**	**-2.5**
RPZ	**Rata Peaks**	**31.23**	**202**	P		P		**07 56 46.4**	**-1.9**
	comp=Z,24nm,0.7s,mb5.2,baz=275,slow=1.8,SNR=15								
RPZ				PcP		PcP		07 59 41.6	-0.4
	comp=Z,9.4nm,0.8s,baz=6.7,slow=5.5,SNR=3.1								
RPZ				LR		LR		08 09 15.6	
	comp=Z,6μm,18.3s,MS5.3,baz=30,slow=36								
BWZ	**Berwen**	**32.36**	**203**	P		P		**07 56 55.5**	**-2.7**
MSZ	**Milford Sound**	**33.23**	**205**	P		P		**07 57 05.0**	**-0.8**
CTA	**Charters Tower**	**38.61**	**257**	*e*P		P		**07 57 50.1**	**-1.4**
	comp=Z,10nm,0.8s,mb4.6								
CTA	**Charters Tower**	**38.61**	**257**	PcP		PcP		08 00 04.1	+0.5
	comp=Z,10nm,1.0s,baz=92,slow=6.3,SNR=4.0								
CTA				LR		LR		08 12 25.3	
	comp=Z,1μm,18.3s,MS4.8,baz=74,slow=34								
CTAO	**Charters Tower**	**38.61**	**257**	*e*P		P		**07 57 50.0**	**-1.5**
CTAO				*e*		pP		07 58 06.2	+0.7
CTAO				pmax		pmax			
	comp=Z,30nm,1.1s,mb4.9								
CTAO	**Charters Tower**	**38.61**	**257**	*e*P		P		**07 57 50.0**	**-1.5**
	comp=Z,30nm,1.1s,mb4.9								
CTAO				pP		pP		07 58 03.6	-1.9
CTAO				LR		LR			
	comp=Z,2μm,22.0s,MS4.8								
CNB	**Canberra Magne**	**38.76**	**232**	⇑*i*P		P		**07 57 51.8**	**-0.8**
	comp=Z,96nm,1.2s,mb5.4								
PMG	**Port Moresby**	**38.88**	**274**	P		P		**07 57 55.8**	**+2.0**
	comp=Z,24nm,1.0s,mb4.9,baz=88,slow=12,SNR=6.3								
PMG				LR		LR		08 11 57.4	
	comp=Z,1μm,19.3s,MS4.8,baz=344,slow=33								
PMG	**Port Moresby**	**38.88**	**274**	*e*P		P		**07 57 54.2**	**+0.3**
	comp=Z,141nm,1.4s,mb5.5								
PMG				LR		LR			
	comp=Z,2μm,21.0s,MS4.8								
POHA	**Pohakuloa**	**39.06**	**27**	*e*P		P		**07 57 54.2**	**-1.0**
	comp=Z,121nm,1.1s,mb5.5								
POHA				*e*		pP		07 58 07.3	-2.0
POHA				LR		LR			
	comp=Z,3μm,20.0s,MS5.1								
KIP	**Kipapa**	**39.54**	**23**	*e*P		P		**07 57 58.5**	**-0.7**
KIP				*e*		pP		07 58 14.3	+1.1
KIP				pmax		pmax			
	comp=Z,150nm,1.1s,mb5.6								
KIP	**Kipapa**	**39.54**	**23**	*e*P		P		**07 57 58.5**	**-0.7**
	comp=Z,152nm,1.1s,mb5.6								
KIP				*e*pP		pP		07 58 13.8	+0.6
KIP				LR		LR			
	comp=Z,3μm,21.0s,MS5.2								
TAU	**Tasmania Unive**	**43.34**	**223**	*e*P		P		**07 58 28.7**	**-1.6**
	comp=Z,23nm,0.9s,mb4.9								
TAU				LR		LR			
	comp=Z,4μm,20.0s,MS5.3								
MIDW	**Midway**	**43.45**	**355**	PFAKE				07 58 40.0	+8.6
MIDW				LR		LR			
	comp=Z,20μm,20.0s,MS6.0								
STKA	**Stephens Creek**	**44.03**	**240**	⇑*i*P		P		**07 58 35.1**	**-0.9**
	comp=Z,58nm,0.9s,mb5.3								
STKA	**Stephens Creek**	**44.03**	**240**	P		P		**07 58 35.7**	**-0.3**
	comp=Z,88nm,1.0s,mb5.4,baz=88,slow=9.0,SNR=82								
STKA				PcP		PcP		08 00 21.5	+0.2
	comp=Z,11nm,0.8s,baz=107,slow=7.1,SNR=3.3								
STKA				LR		LR		08 14 36.3	
	comp=Z,2μm,20.5s,MS5.1,baz=76,slow=33								
WB2	**Warramunga Arr**	**49.80**	**257**	⇑*i*P		P		**07 59 19.3**	**-2.2**
WRAB	**Tennant Creek**	**49.80**	**257**	*e*P		P		**07 59 18.9**	**-2.7**
	comp=Z,206nm,1.1s,mb6.1								
WRAB				*e*		pP		07 59 35.1	-0.7
WRAB				LR		LR			
	comp=Z,2μm,21.0s,MS5.1								
WRA	**Warramunga Arr**	**49.81**	**257**	P		P		**07 59 19.6**	**-1.9**
	comp=Z,18nm,0.8s,mb5.2,baz=92,slow=7.5,SNR=194								
WRA				S		S		**08 06 23.9**	**-2.0**
	comp=Z,1.1nm,1.0s,baz=100,slow=11,SNR=5.2								
WRA				LR		LR		08 18 02.9	
	comp=Z,2μm,21.3s,MS5.1,baz=105,slow=33								
AS12	**Alice Springs**	**50.09**	**252**	⇑*i*P		P		**07 59 22.1**	**-1.5**
	comp=Z,238nm,1.5s,mb6.0								
ASAR	**Alice Springs**	**50.09**	**252**	P		P		**07 59 22.1**	**-1.5**
	comp=Z,58nm,0.8s,mb5.7,baz=84,slow=7.7,SNR=541								
ASAR				S		S		**08 06 26.5**	**-3.1**
	comp=Z,3.6nm,1.2s,baz=90,slow=13,SNR=5.3								
ASAR				LR		LR		08 19 00.9	
	comp=Z,3μm,21.8s,MS5.2,baz=94,slow=34								
GUMO	**Guam**	**50.25**	**303**	PFAKE				07 59 40.0	+15
GUMO				LR		LR			
	comp=Z,1μm,19.0s,MS5.0								
FORT	**Forrest**	**55.41**	**243**	⇑*i*P		P		**08 00 01.2**	**-1.9**
	comp=Z,172nm,0.6s,mb6.3								
FITZ	**Fitzroy Crossi**	**58.18**	**258**	*e*P		P		**08 00 23.0**	**+0.1**
	comp=Z,5.2nm,0.7s,mb4.7								
FITZ	**Fitzroy Crossi**	**58.18**	**258**	P		P		**08 00 22.6**	**-0.3**
	comp=Z,1.0nm,0.3s,baz=182,slow=1.2,SNR=9.5								
FITZ				LR		LR		08 23 10.5	
	comp=Z,1μm,20.0s,MS5.1,baz=96,slow=34								
SBA	**Scott Base**	**63.32**	**185**	*e*P		P		**08 00 59.3**	**+2.2**
	comp=Z,98nm,1.0s,mb5.9								
SBA				*e*PcP		PcP		08 01 34.4	+0.9
SBA				LR		LR			
	comp=Z,1μm,20.0s,MS5.0								
KLBR	**Kellerberrin**	**64.23**	**242**	⇑*i*P		P		**08 01 02.8**	**-0.8**
	comp=Z,115nm,1.3s,mb5.8								
NWAO	**Narrogin (SRO)**	**64.61**	**241**	LR		LR		08 25 46.4	
	comp=Z,8.3nm,21.0s,baz=82,slow=33								
NWAO	**Narrogin (SRO)**	**64.61**	**241**	*e*P		P		**08 01 05.6**	**-0.5**
	comp=Z,58nm,1.2s,mb5.5								
NWAO				LR		LR			
	comp=Z,1μm,21.0s,MS5.1								
SMY	**Shemya**	**68.62**	**352**	PFAKE				08 01 40.0	+8.9
SMY				LR		LR			
	comp=Z,6μm,22.0s,MS5.8								
MAJO	**Matsushiro**	**68.85**	**320**	*e*P		P		**08 01 33.6**	**+0.8**
MAJO				*e*		pP		08 01 45.8	-2.1
MAJO				pmax		pmax			
	comp=Z,35nm,1.0s,mb5.2								
MAJO	**Matsushiro**	**68.85**	**320**	*e*P		P		**08 01 33.6**	**+0.8**
	comp=Z,36nm,1.1s,mb5.2								
MAJO				LR		LR			
	comp=Z,2μm,22.0s,MS5.2								
MAT	**Matsushiro**	**68.85**	**320**	P		P		**08 01 30.4**	**-2.4**
MAT				*e*S		S		08 10 23.0	-8.3
MAT	**Matsushiro**	**68.85**	**320**	*e*P		P		**08 01 30.0**	**-2.8**
	comp=Z,33nm,1.1s,mb5.2								
MAT				S		S		08 10 23.0	-8.3
UNV	**Unalaska Valle**	**69.15**	**4**	PFAKE				08 01 50.0	+16
UNV				LR		LR			
	comp=Z,4μm,19.0s,MS5.6								
TGY	**Tagaytay City**	**71.16**	**291**	LR		LR		08 28 05.7	
	comp=Z,1μm,20.7s,MS5.2,baz=96,slow=32								
SAO	**San Andreas Ge**	**71.31**	**42**	*e*P		P		**08 01 43.6**	**-4.1**
SAO				pmax		pmax			
	comp=Z,73nm,1.4s,mb5.4								
SAO	**San Andreas Ge**	**71.31**	**42**	*e*P		P		**08 01 45.6**	**-2.2**
	comp=Z,73nm,1.4s,mb5.4								
SAO				LR		LR			
	comp=Z,2μm,19.0s,MS5.4								
HOPS	**Hopland**	**71.64**	**39**	PFAKE				08 02 00.0	+10
HOPS				LR		LR			
	comp=Z,2μm,20.0s,MS5.4								
MWC	**Mount Wilson**	**72.12**	**46**	*e*P		P		**08 01 51.9**	**-0.7**
PET	**Petropavlovsk**	**72.19**	**343**	PFAKE				08 02 00.0	+7.3
PET				LR		LR			
	comp=Z,1μm,21.0s,MS5.1								
BAR	**Barrett**	**72.26**	**48**	*e*P		P		**08 01 51.5**	**-1.9**
CMB	**Columbia Colle**	**72.74**	**41**	P		P		**08 01 55.0**	**-1.2**
CMB				pmax		pmax			
	comp=Z,30nm,1.0s,mb5.2								
CMB	**Columbia Colle**	**72.74**	**41**	*e*P		P		**08 01 55.5**	**-0.8**
	comp=Z,30nm,1.0s,mb5.2								
CMB				LR		LR			
	comp=Z,3μm,21.0s,MS5.5								
OHCM	**Honcut**	**72.83**	**40**	*e*P		P		**08 01 55.6**	**-1.2**
PFO	**Pinyon Flat Ob**	**72.91**	**47**	P		P		**08 01 58.0**	**+0.7**
PFO				pmax		pmax			
	comp=Z,88nm,1.7s,mb5.4								
PFO	**Pinyon Flat Ob**	**72.91**	**47**	*e*P		P		**08 01 57.6**	**+0.3**
	comp=Z,88nm,1.8s,mb5.4								
PFO				LR		LR			
	comp=Z,3μm,20.0s,MS5.5								
WDC	**Whiskeytown Da**	**72.95**	**38**	P		P		**08 01 57.2**	**-0.2**
WDC				pmax		pmax			
	comp=Z,160nm,1.8s,mb5.7								
WDC	**Whiskeytown Da**	**72.95**	**38**	*e*P		P		**08 01 57.0**	**-0.4**
	comp=Z,161nm,1.8s,mb5.7								
WDC				LR		LR			
	comp=Z,2μm,20.0s,MS5.4								
KBO	**Bosley Butte**	**73.00**	**36**	*e*P		P		**08 01 58.0**	**+0.3**
KEBM	**Edson Butte**	**73.37**	**35**	*e*P		P		**08 01 59.9**	**+0.1**
YSS	**Yuzh-Sakhalins**	**73.39**	**330**	*e*P		P		**08 02 00.5**	**+0.7**
	comp=Z,119nm,1.0s,mb5.8								
YSS				LR		LR			
	comp=Z,1μm,22.0s,MS5.1								
MTUM	**Tungsten Hills**	**73.53**	**43**	*e*P		P		**08 02 00.8**	**-0.1**
DAC	**Darwin (Calif)**	**73.57**	**44**	*e*P		P		**08 02 01.9**	**+0.8**
	comp=Z,44nm,1.2s,mb5.3								
DAC				LR		LR			
	comp=Z,3μm,21.0s,MS5.5								
YBH	**Yreka Blue Hor**	**73.57**	**37**	P		P		**08 02 01.3**	**+0.3**
	comp=Z,34nm,0.8s,mb5.3,baz=189,slow=1.8,SNR=69								
YBH	**Yreka Blue Hor**	**73.57**	**37**	*e*P		P		**08 02 01.1**	**0.0**
	comp=Z,64nm,1.1s,mb5.5								
YBH				LR		LR			
	comp=Z,1μm,21.0s,MS5.2								
BEKR	**Beckwourth**	**73.84**	**40**	⇑*e*P		P		**08 02 02.3**	**-0.3**
	comp=Z,67nm,1.3s,mb5.4								
WCN	**Washoe City**	**73.88**	**41**	P		P		**08 02 03.1**	**+0.2**
WCN				pmax		pmax			
	comp=Z,73nm,1.2s,mb5.5								
WCN	**Washoe City**	**73.88**	**41**	*e*P		P		**08 02 02.5**	**-0.4**
	comp=Z,73nm,1.2s,mb5.5								
HUMO	**Hull Mountain**	**73.98**	**36**	*e*P		P		**08 02 03.4**	**0.0**
NVAR	**Mina Array Bea**	**74.31**	**42**	P		P		**08 02 05.2**	**-0.2**
	comp=Z,20nm,0.8s,mb5.1,baz=219,slow=8.0,SNR=59								
NVAR				LR		LR		08 26 37.6	
	comp=Z,2μm,20.9s,MS5.5,baz=300,slow=29								
NVAR	**Mina Array Bea**	**74.31**	**42**	P		P		**08 02 05.2**	**-0.2**
NVAR				LR		LR		08 26 37.6	
PAHR	**Pah Rah Range**	**74.35**	**40**	*e*P		P		**08 02 05.9**	**+0.3**
	comp=Z,18nm,1.0s,mb5.0								
HSO	**Harness Mounta**	**74.48**	**36**	P		P		**08 02 07.0**	**+0.7**
HSO	**Harness Mounta**	**74.48**	**36**	*e*P		P		**08 02 06.2**	**-0.1**
LDFC	**Landfair**	**74.63**	**46**	*e*P		P		**08 02 07.2**	**-0.1**
QSPA	**South Pole Qui**	**74.72**	**180**	*e*P		P		**08 02 08.5**	**+1.5**
	comp=Z,260nm,1.1s,mb6.1								
QSPA				LR		LR			
	comp=Z,570nm,21.5s,MS4.8								
TPH	**Tonopah**	**74.81**	**43**	P		P		**08 02 08.4**	**+0.1**
TPH				pmax		pmax			
	comp=Z,97nm,1.2s,mb5.6								
TPH	**Tonopah**	**74.81**	**43**	*e*P		P		**08 02 07.9**	**-0.4**
	comp=Z,97nm,1.3s,mb5.6								
TPH				LR		LR			
	comp=Z,2μm,21.0s,MS5.5								
KDAK	**Kodiak Island**	**74.86**	**11**	PFAKE				08 02 20.0	+12
KDAK				LR		LR			
	comp=Z,2μm,20.0s,MS5.4								
TATO	**Taipei**	**74.99**	**302**	PFAKE				08 02 20.0	+10
TATO				LR		LR			
	comp=Z,566nm,21.0s,MS4.8								
COR	**Corvallis**	**75.04**	**35**	P		P		**08 02 09.6**	**+0.1**
COR				LR		LR			
	comp=Z,4μm,22.0s,MS5.7								
MOD	**Modoc**	**75.09**	**38**	*e*P		P		**08 02 09.6**	**-0.2**
	comp=Z,91nm,1.1s,mb5.6								
MOD				LR		LR			
	comp=Z,2μm,21.0s,MS5.3								
NEN	**Nelson**	**75.11**	**46**	*e*P		P		**08 02 09.8**	**-0.3**
KS15	**Wonju Array Si**	**76.09**	**316**	P		P		**08 02 17.1**	**+1.5**
BMN	**Battle Mountai**	**76.13**	**41**	P		P		**08 02 15.9**	**+0.1**
BMN				pmax		pmax			
	comp=Z,75nm,1.2s,mb5.5								
BMN	**Battle Mountai**	**76.13**	**41**	⇑*e*P		P		**08 02 15.7**	**-0.1**
	comp=Z,75nm,1.2s,mb5.5								
BMN				LR		LR			
	comp=Z,1μm,20.0s,MS5.3								
BMW	**Boistfort Moun**	**76.30**	**33**	P		P		**08 02 17.3**	**+0.7**
BMW	**Boistfort Moun**	**76.30**	**33**	*e*P		P		**08 02 16.5**	**-0.1**
TUC	**Tucson**	**76.38**	**51**	P		P		**08 02 17.1**	**-0.3**
TUC				pmax		pmax			
	comp=Z,160nm,1.7s,mb5.7								
TUC	**Tucson**	**76.38**	**51**	⇑*e*P		P		**08 02 17.3**	**0.0**
	comp=Z,156nm,1.8s,mb5.6								
TUC				LR		LR			
	comp=Z,2μm,22.0s,MS5.4								
WVOR	**Wild Horse Val**	**76.41**	**38**	P		P		**08 02 16.9**	**-0.4**
WVOR				pmax		pmax			
	comp=Z,93nm,1.3s,mb5.5								
WVOR	**Wild Horse Val**	**76.41**	**38**	*e*P		P		**08 02 17.0**	**-0.3**
	comp=Z,93nm,1.3s,mb5.6								
WVOR				LR		LR			
	comp=Z,3μm,20.0s,MS5.5								
OCWA	**Octopus Mounta**	**76.64**	**32**	*e*P		P		**08 02 18.8**	**+0.3**
	comp=Z,270nm,2.0s,mb5.8								
OCWA				LR		LR			
	comp=Z,1μm,21.0s,MS5.2								
SHW	**Mount Saint He**	**76.65

FIB LR LR
comp=Z,2µm,19.0s,MS5.5
LNOR Lincton Mounta 78.63 36 P **P 08 02 31.2 +1.7**
LNOR Lincton Mounta 78.63 36 *e*P **P 08 02 29.5 0.0**
SIT Sitka 78.77 20 P **P 08 02 30.3 +0.2**
SIT pmax pmax
comp=Z,22nm,1.1s,mb5.0
SIT Sitka 78.77 20 *e*P **P 08 02 29.8 -0.3**
comp=Z,56nm,1.5s,mb5.3
EYAK Cordova Ski Ar 78.82 14⇑ *e*P **P 08 02 29.7 -0.6**
NLW Nelson Butte 78.84 33 *e*P **P 08 02 30.9 +0.3**
MDJ Mudanjiang 78.94 322 P **P 08 02 32.0 +0.7**
MDJ AP pP 08 02 47.1 +0.6
MDJ XP sP 08 02 52.3 -0.2
MDJ PP PP 08 05 31.6 -0.5
MDJ S S 08 12 27.5 +3.3
MDJ AMB AMB
comp=Z,511nm,7.0s
MDJ LR LR
comp=N,605nm,28.9s,MS5.0
MDJ LR LR
comp=E,728nm,31.3s,MS5.0
MDJ LR LR
comp=Z,1µm,26.4s,MS5.2
ZAIG Zacatecas 79.01 63 *i*P **P 08 02 32.8 +0.7**
PMR Palmer 79.06 12 P **P 08 02 30.4 -1.2**
PMR pmax pmax
comp=Z,69nm,1.3s,mb5.4
PMR Palmer 79.06 12 *e*P **P 08 02 31.2 -0.4**
comp=Z,88nm,1.4s,mb5.5
BGU Big Grassy Mou 79.08 42⇑ *e*P **P 08 02 31.4 -0.7**
NLU North Lily Min 79.20 43⇑ *e*P **P 08 02 32.6 -0.2**
SML Sawmill 79.41 12 *e*P **P 08 02 33.2 -0.3**
SML *e* pP 08 02 49.0 +0.2
MPU Maple Canyon 79.53 44 *e*P **P 08 02 34.4 -0.2**
HLID Hailey 79.60 39⇑ *e*P **P 08 02 35.1 +0.3**
comp=Z,49nm,1.0s,mb5.4
HLID LR LR
comp=Z,1µm,20.0s,MS5.2
SPUT South Promonto 79.65 42⇑ *e*P **P 08 02 34.9 -0.3**
HVU Hansel Valley 79.68 42 P **P 08 02 35.5 +0.1**
HVU Hansel Valley 79.68 42⇑ *e*P **P 08 02 35.2 -0.2**
CTU Camp Tracy 79.79 43⇑ *e*P **P 08 02 35.6 -0.4**
SRU San Rafael 79.83 45 *e*P **P 08 02 36.8 +0.6**
SRU San Rafael 79.83 45⇑ *e*P **P 08 02 35.7 -0.5**
DPW Davenport 79.86 34 P **P 08 02 36.3 +0.1**
DPW Davenport 79.86 34 *e*P **P 08 02 36.0 -0.1**
JLU Jordanelle 79.94 43⇑ *e*P **P 08 02 36.5 -0.2**
DAU Daniels Canyon 79.98 43 *e*P **P 08 02 37.5 +0.5**
DAU Daniels Canyon 79.98 43 *e*P **P 08 02 37.2 +0.2**
LENM Lemitar 80.07 51 *e*P **P 08 02 36.8 -0.8**
MA2 Magadan 80.08 342 *c i*P **P 08 02 36.6 -0.5**
MA2 pmax pmax
comp=Z,98nm,2.2s,mb5.3
MA2 Magadan 80.08 342 *e*P **P 08 02 37.2 +0.1**
comp=Z,30nm,1.0s,mb5.2
MA2 LR LR
comp=Z,542nm,20.0s,MS4.9
NJ2 Nanjing 80.08 307 *e*P **P 08 02 38.8 +1.1**
NJ2 PP PP 08 05 42.4 +0.8
NJ2 S S 08 12 41.0 +4.5
NJ2 AMB AMB
comp=Z,20nm,0.5s,mb5.3
NJ2 AMB AMB
comp=Z,3µm,8.8s
NJ2 LR LR
comp=N,3µm,27.1s,MS5.6
NJ2 LR LR
comp=E,3µm,25.0s,MS5.6
NJ2 LR LR
comp=Z,2µm,26.9s,MS5.3
TOA Tolsona 80.12 13 *e*P **P 08 02 38.0 +0.7**
comp=Z,149nm,1.1s,mb5.8
MNTX Cornudas Mount 80.22 53⇑ *e*P **P 08 02 38.0 -0.5**
comp=Z,113nm,1.5s,mb5.6
MNTX LR LR
comp=Z,1µm,21.0s,MS5.2
TCUT Toone Canyon 80.23 43⇑ *e*P **P 08 02 38.6 +0.3**
BNM Barren Site 80.32 51 *e*P **P 08 02 39.3 +0.4**
HWUT Hardware Ranch 80.37 42⇑ *e*P **P 08 02 38.5 -0.6**
comp=Z,28nm,1.1s,mb5.1
HWUT LR LR
comp=Z,2µm,22.0s,MS5.5
KLR Kul'dur 80.43 327 *e*P **P 08 02 39.3 +0.1**
KLR pmax pmax
comp=E,50nm,2.0s
KLR pmax pmax
comp=Z,63nm,2.0s,mb5.2
PV10 Paradox Valley 80.49 46 *e*P **P 08 02 39.8 0.0**
NEW Newport 80.67 34 P **P 08 02 39.3 -1.2**
comp=Z,7.7nm,1.1s,mb4.5,baz=223,slow=5.9,SNR=13
NEW Newport 80.67 34 P **P 08 02 40.2 -0.3**
NEW pmax pmax
comp=Z,75nm,1.9s
NEW Newport 80.67 34 *e*P **P 08 02 39.7 -0.8**
comp=Z,75nm,1.9s,mb5.3
NEW LR LR
comp=Z,960nm,21.0s,MS5.1
PV01 Paradox Valley 80.71 46 *e*P **P 08 02 40.8 -0.1**
TNA Tin City 80.75 2⇑ *e*P **P 08 02 40.9 +0.3**
TNA LR LR
comp=Z,407nm,21.0s,MS4.8
ANMO Albuquerque 80.79 50 P **P 08 02 42.0 +0.6**
ANMO pmax pmax
comp=Z,200nm,1.8s
ANMO Albuquerque 80.79 50⇑ *e*P **P 08 02 41.3 -0.1**
comp=Z,203nm,1.8s,mb5.8
ANMO LR LR
comp=Z,2µm,21.0s,MS5.3
CN2 Changchun 81.00 320 ⇑P **P 08 02 43.3 +1.0**
CN2 *e*S S 08 12 48.0 +2.3
CN2 AMB AMB
comp=Z,50nm,1.6s,mb5.2
CN2 AMB AMB
comp=Z,700nm,6.0s
CN2 LR LR
comp=N,600nm,21.0s,MS5.2
CN2 LR LR
comp=E,1µm,21.0s,MS5.2
CN2 LR LR
comp=Z,1µm,21.0s,MS5.2
MCK McKinley 81.06 11 P **P 08 02 41.9 -0.3**
MCK pmax pmax
comp=Z,32nm,1.0s,mb5.2
MCK McKinley 81.06 11⇑ *e*P **P 08 02 41.3 -0.9**
comp=Z,32nm,1.0s,mb5.2
MCK LR LR
comp=Z,1µm,22.0s,MS5.1
DL2 Dalian 81.09 314 P **P 08 02 44.8 +1.9**
DL2 AMB AMB
comp=Z,50nm,1.9s,mb5.1
DL2 LR LR
comp=N,290nm,24.5s
DL2 LR LR
comp=Z,390nm,23.5s,MS4.7
GDL2 Guadalupe Moun 81.22 53 *e*P **P 08 02 44.2 +0.5**
MCMT McKenzie Canyo 81.23 39 *e*P **P 08 02 43.8 +0.3**
AHID Auburn Hatcher 81.25 41 *e*P **P 08 02 43.6 -0.1**
comp=Z,18nm,0.7s,mb5.1
AHID LR LR
comp=Z,970nm,20.0s,MS5.2
CLNB Carlsbad 81.62 53 *e*P **P 08 02 46.2 +0.4**
DLBC Dease Lake 81.65 21 *e*P **P 08 02 45.4 0.0**
MSO Missoula 81.65 37 *e*P **P 08 02 44.7 -1.0**
comp=Z,120nm,1.5s,mb5.6
MSO LR LR
comp=Z,2µm,21.0s,MS5.4
REDW Red Top Meadow 81.71 41⇑ *e*P **P 08 02 45.9 -0.1**
CPRX Cap Rock 81.94 53 *e*P **P 08 02 47.7 +0.3**
KSWY Kelly School 81.98 41⇑ *e*P **P 08 02 47.4 0.0**
QLMT Earthquake Lak 82.09 39 *e*P **P 08 02 48.9 +0.9**
CHMT Chamberlain Mo 82.09 37 *e*P **P 08 02 47.5 -0.5**
BW06 Boulder Array 82.24 42⇑ *e*P **P 08 02 48.4 -0.4**
comp=Z,148nm,1.7s,mb5.6
BW06 LR LR
comp=Z,2µm,19.0s,MS5.4
PDAR Pinedale Array 82.24 42 P **P 08 02 48.2 -0.5**
comp=Z,17nm,0.9s,mb5.0,baz=218,slow=2.8,SNR=101
PDAR PKKPbc 08 21 18.0
comp=Z,0.8nm,0.9s,baz=90,slow=2.7,SNR=6.8
PDAR LR LR 08 33 26.0
comp=Z,1µm,19.1s,MS5.3,baz=224,slow=31
YMR Madison River 82.30 40⇑ *e*P **P 08 02 49.7 +0.7**
COLA College 82.30 11 *e*P **P 08 02 48.3 -0.3**
COLA pmax pmax
comp=Z,90nm,0.9s,mb5.7
COLA College 82.30 11 *e*P **P 08 02 48.3 -0.3**
comp=Z,90nm,0.9s,mb5.7
ILAR Eielson Array 82.38 11 P **P 08 02 48.3 -0.7**
comp=Z,9.5nm,0.9s,mb4.7,baz=211,slow=5.3,SNR=89
ILAR LR LR 08 32 03.0
comp=Z,784nm,22.0s,MS5.0,baz=38,slow=30
BOZ Bozeman (W) 82.39 39 P **P 08 02 49.3 -0.2**
BOZ pmax pmax
comp=Z,150nm,1.6s,mb5.7
BOZ Bozeman (W) 82.39 39⇑ *e*P **P 08 02 49.1 -0.3**
comp=Z,145nm,1.7s,mb5.6
BOZ LR LR
comp=Z,1µm,19.0s,MS5.4
SEY Seymchan 82.44 345 *i*P **P 08 02 49.5 +0.2**
SEY *e* 08 07 55.4
SEY pmax pmax
comp=N,30nm,1.3s
SEY pmax pmax
comp=Z,100nm,1.3s,mb5.6
IMA Indian Mountai 82.50 8 P **P 08 02 50.2 +0.6**
IMA pmax pmax
comp=Z,380nm,1.7s,mb6.0
IMA Indian Mountai 82.50 8 *e*P **P 08 02 50.3 +0.7**
comp=Z,13nm,1.0s,mb4.8
LKWY Lake 82.59 40 P **P 08 02 52.9 +2.4**
LKWY pmax pmax
comp=Z,28nm,0.9s,mb5.3
LKWY Lake 82.59 40 *e*P **P 08 02 52.4 +1.8**
comp=Z,28nm,0.9s,mb5.3
SDCO Great Sand Dun 82.70 48⇑ *e*P **P 08 02 51.2 0.0**
comp=Z,110nm,1.6s,mb5.6
SDCO LR LR
comp=Z,1µm,22.0s,MS5.3
HRY Holter Researc 82.82 38 *e*P **P 08 02 51.6 0.0**
WALA Waterton Lakes 82.88 35 *e*P **P 08 02 52.1 +0.2**
comp=Z,99nm,1.8s,mb5.5
DAWY Dawson 83.36 14 *e*P **P 08 02 53.6 -0.5**
ISCO Idaho Springs 83.51 46 P **P 08 02 55.6 +0.2**
ISCO pmax pmax
comp=Z,130nm,1.8s,mb5.8
ISCO Idaho Springs 83.51 46⇑ *e*P **P 08 02 55.1 -0.3**
comp=Z,128nm,1.8s,mb5.8
ISCO LR LR
comp=Z,1µm,21.0s,MS5.2
JCT Junction City 84.15 56 P **P 08 02 58.3 -0.5**
JCT pmax pmax
comp=Z,34nm,1.0s,mb5.4
JCT Junction City 84.15 56 *e*P **P 08 02 57.6 -1.2**
comp=Z,34nm,1.0s,mb5.4
JCT LR LR
comp=Z,1µm,19.0s,MS5.2
PMSA Palmer Station 84.26 156 *e*P **P 08 02 59.7 +1.2**
BILL Bilibino 84.43 352 *c i*P **P 08 02 59.1 -0.2**
BILL *i* pP 08 03 13.6 -1.1
BILL pmax pmax
comp=Z,48nm,1.2s,mb5.5
BILL Bilibino 84.43 352 *e*P **P 08 02 58.6 -0.6**
comp=Z,149nm,1.8s,mb5.8
BJI Beijing 85.38 313 *e*P **P 08 03 05.8 +1.1**
BJI AMB AMB
comp=Z,39nm,2.0s,mb5.2
BJI AMB AMB
comp=Z,722nm,3.6s
BJI LR LR
comp=N,331nm,17.5s,MS4.9
BJI LR LR
comp=E,335nm,21.4s,MS4.9
BJI LR LR
comp=Z,764nm,25.6s,MS5.0
USHA Ushuaia 86.01 146 LR LR 08 32 13.0
comp=Z,1µm,20.4s,MS5.4,baz=214,slow=29
RSSD Black Hills 86.44 42 P **P 08 03 09.3 -0.4**
RSSD pmax pmax
comp=Z,80nm,1.5s,mb5.7
RSSD Black Hills 86.44 42 *e*P **P 08 03 08.8 -0.9**
comp=Z,80nm,1.5s,mb5.7
RSSD LR LR
comp=Z,1µm,20.0s,MS5.3
WMOK Wichita Mounta 86.50 53 P **P 08 03 10.2 -0.1**
WMOK pmax pmax
comp=Z,47nm,1.5s,mb5.5
WMOK Wichita Mounta 86.50 53⇑ *e*P **P 08 03 08.8 -1.5**
comp=Z,47nm,1.5s,mb5.5
WMOK LR LR
comp=Z,2µm,19.0s,MS5.5
HKT Hockley 87.18 58 P **P 08 03 13.8 0.0**
HKT Hockley 87.18 58 P **P 08 03 14.3 +0.5**
HKT pmax pmax
comp=Z,130nm,1.6s,mb5.9
HKT Hockley 87.18 58⇑ *e*P **P 08 03 13.6 -0.2**
comp=Z,127nm,1.6s,mb5.9
HKT LR LR
comp=Z,1µm,19.0s,MS5.3
CBKS Cedar Bluff 87.28 49 PFAKE 08 03 30.0 +16
CBKS LR LR
comp=Z,814nm,21.0s,MS5.1
MAW Mawson 87.85 199⇑ *i*P **P 08 03 17.3 +1.3**
comp=Z,46nm,0.9s,mb5.7
MAW Mawson 87.85 199 P **P 08 03 17.0 +1.0**
comp=Z,53nm,0.8s,mb5.8,baz=127,slow=6.1,SNR=70
MAW LR LR 08 40 05.4
comp=Z,2µm,20.4s,MS5.4,baz=114,slow=34
MAW Mawson 87.85 199 P **P 08 03 17.5 +1.5**
MAW pmax pmax
comp=Z,100nm,1.0s
GYA Guiyang 87.97 298 P **P 08 03 17.9 +0.3**
GYA PP PP 08 06 48.4 +1.7
GYA AMB AMB
comp=Z,570nm,11.7s
GYA LR LR
comp=N,340nm,21.2s,MS4.9
GYA LR LR
comp=E,380nm,24.5s,MS4.9
GYA LR LR
comp=Z,470nm,21.5s,MS4.9
CLNS Chul'man 88.15 331 *e*P **P 08 03 18.5 +0.8**
CLNS *e*S S 08 13 47.3 -8.4
CLNS pmax pmax
comp=Z,20nm,0.8s,mb5.4
CLNS pmax pmax
comp=N,8.0nm,0.9s
CLNS pmax pmax
comp=E,10.0nm,0.9s
CLNS pmax pmax
comp=Z,6.0nm,0.8s,mb4.9
CLNS pmax pmax
comp=N,6.0nm,0.9s
CLNS pmax pmax
comp=E,5.0nm,0.8s
CLNS smax
comp=Z,200nm,12.0s
CLNS smax
comp=N,260nm,12.8s
CLNS smax
comp=E,100nm,12.0s
CLNS MLR MLR
comp=Z,400nm,14.0s,MS5.0
CLNS MLR MLR
comp=N,300nm,12.0s,MS4.9
CLNS MLR MLR
comp=E,100nm,13.0s,MS4.9
INK Inuvik 88.21 14 P **P 08 03 17.6 -0.1**
INK pmax pmax
comp=Z,83nm,1.7s
INK Inuvik 88.21 14⇑ *e*P **P 08 03 16.8 -0.9**
comp=Z,83nm,1.8s,mb5.7
XAN Xi'an 88.55 306 P **P 08 03 21.5 +1.3**
XAN AP pP 08 03 37.6 +1.8
HHC Hu-ho-hao-te 88.94 313 ⇑P **P 08 03 23.6 +1.7**
HHC AP pP 08 03 40.3 +2.8
HHC XP sP 08 03 48.3 +5.3
HHC AMB AMB
comp=Z,39nm,2.0s,mb5.4
HHC AMB AMB
comp=Z,215nm,11.2s
YAK Yakutsk 89.03 337 *e*P **P 08 03 20.6 -1.1**
comp=Z,38nm,0.9s,mb5.7
YAK *e* pP 08 03 38.5 +1.1
YAK LR LR
comp=Z,733nm,22.0s,MS5.1
BTO Baotou 89.95 312 *e*P **P 08 03 28.8 +2.2**
BTO AMB AMB
comp=Z,73nm,2.3s,mb5.6
YKA Yellowknife Ar 90.05 23 P **P 08 03 26.4 -0.1**
comp=Z,4.2nm,0.8s,mb4.8,baz=239,slow=4.6,SNR=90
YKA PKiKP 08 08 30.0
comp=Z,0.3nm,0.9s,baz=229,slow=1.4,SNR=4.2
YKA PKKP PKKP 08 20 56.4 +14
comp=Z,0.3nm,0.8s,baz=34,slow=2.0,SNR=6.5
YKA LR LR 08 36 24.5
comp=Z,1µm,20.6s,MS5.3,baz=240,slow=31
YKW3 Yellowknife Ar 90.08 23 *e*P **P 08 03 26.4 -0.3**
MIAR Mount Ida 90.47 54 PFAKE 08 03 40.0 +11
MIAR LR LR
comp=Z,1µm,20.0s,MS5.4
KMI Kunming 90.95 296 *e*P **P 08 03 32.8 +1.1**
KMI PP PP 08 07 08.8 -1.8
KMI S S 08 14 28.3 +6.2
KMI AMB AMB
comp=Z,157nm,3.5s
KMI LR LR
comp=N,173nm,20.5s,MS4.8
KMI LR LR
comp=E,315nm,22.4s,MS4.8
KMI LR LR
comp=Z,695nm,44.5s
JTS JuntasAbangare 91.24 80 P **P 08 03 33.9 +0.6**
comp=Z,54nm,1.0s,mb5.8,baz=269,slow=4.6,SNR=16
JTS JuntasAbangare 91.24 80⇑ *e*P **P 08 03 33.9 +0.7**
comp=Z,6.9nm,1.3s,mb4.8
JTS LR LR
comp=Z,142nm,21.0s,MS4.4
UALR University of 91.51 54 *e*P **P 08 03 34.2 +0.1**
comp=Z,69nm,1.4s,mb5.8
FFC Flin Flon 92.07 33 P **P 08 03 35.4 -0.7**
FFC pmax pmax
comp=Z,28nm,1.5s,mb5.4
FFC Flin Flon 92.07 33 *e*P **P 08 03 35.5 -0.6**
comp=Z,28nm,1.5s,mb5.4
FFC *e*PP PP 08 07 15.6 -3.3
FFC LR LR
comp=Z,1µm,20.0s,MS5.3
CLCH Cerro Calan 92.09 125 *e*P **P 08 03 35.5 -1.3**
FCH Farellones 92.31 125 *e*P **P 08 03 39.9 +2.1**
CM31 Chiang Mai Arr 92.55 288 PFAKE 08 03 50.0 +11
CM31 LR LR
comp=Z,694nm,21.0s,MS5.1
CMAR Chiang Mai Arr 92.55 288 P **P 08 03 40.2 +1.1**
comp=Z,4.2nm,1.0s,mb4.8,baz=78,slow=2.8,SNR=11
CMAR LR LR 08 38 39.8
comp=Z,258nm,22.0s,MS4.6,baz=90,slow=31
SYO Syowa Base 92.66 191 ⇓P **P 08 03 37.8 -0.7**
SYO Syowa Base 92.66 191 ⇓pP pP 08 03 53.4 -0.8
SYO Syowa Base 92.66 191 ⇓*e*P **P 08 03 37.8 -0.7**
SYO ⇓*e*PP pP 08 03 53.4 -0.8
VNA3 Neumayer Olymp 92.93 175 *e* **P 08 03 43.1 +3.4**
VNA3 Neumayer Olymp 92.93 175 ⇑*i*P **P 08 03 39.7 0.0**
VNA3 *e* 08 03 43.1
VNA3 *e* 08 07 20.1
SNAA Sanae 92.98 177 *e*P **P 08 03 38.5 -1.4**
EFI East Falkland 92.98 146 PFAKE 08 03 50.0 +10
EFI LR LR
comp=Z,1µm,19.0s,MS5.5
HBAR Harrisburg 93.06 54 *e*P **P 08 03 41.5 +0.4**
HBAR *e*pP pP 08 03 55.1 -1.7
LZH Lanzhou 93.14 306 *e*P **P 08 03 43.8 +2.3**
LZH PP PP 08 07 29.0 +1.1
LZH *e*S S 08 14 45.0 +4.0
LZH AMB AMB
comp=Z,56nm,1.5s,mb5.8
LZH AMB AMB
comp=Z,211nm,4.3s
LZH LR LR
comp=E,1µm,14.2s
LZH LR LR
comp=Z,1µm,16.1s,MS5.5
CCM Cathedral Cave 93.32 52 *e*P **P 08 03 40.2 -2.1**
comp=Z,32nm,1.4s,mb5.6
CCM LR LR
comp=Z,1µm,22.0s,MS5.3
VNA2 Neumayer--Watz 93.43 175 *e* **P 08 03 45.9 +3.9**
VNA2 Neumayer--Watz 93.43 175 P **P 08 03 42.5 +0.5**
VNA2 *e* 08 03 45.9
VNA2 *e* 08 07 21.8
VNA1 Neumayer--Stat 93.63 175 *e* **P 08 03 47.7 +4.8**
VNA1 Neumayer--Stat 93.63 175 ⇓*i*P **P 08 03 44.2 +1.3**
VNA1 *e* 08 03 47.7
VNA1 *e* 08 07 23.6
BOD Bodaibo 93.84 329 *e*P **P 08 03 43.8 -0.3**
BOD *e* pP 08 03 56.8 -3.0
ULM Lac du Bonnet 93.91 39 P **P 08 03 43.9 -0.7**
comp=Z,15nm,1.2s,mb5.3,baz=254,slow=3.9,SNR=9.5
ULM LR LR 08 39 44.5
comp=Z,2µm,20.1s,MS5.5,baz=224,slow=31
ULM Lac du Bonnet 93.91 39 *e*P **P 08 03 42.6 -1.9**
comp=Z,71nm,1.6s,mb5.8
ULM LR LR
comp=Z,2µm,20.0s,MS5.6
FVM French Village 93.92 52 P **P 08 03 44.3 -0.7**
FVM pmax pmax
comp=Z,51nm,1.4s,mb5.8
FVM French Village 93.92 52 *e*P **P 08 03 44.0 -0.9**
comp=Z,52nm,1.4s,mb5.8
PVMO Portageville 94.04 54 *e*P **P 08 03 46.0 +0.4**
HALT Halls 94.19 54 *e*P **P 08 03 47.2 +1.0**
GLAT Glass 94.32 54 *e*P **P 08 03 48.0 +1.1**
ULN Ulaanbaatar 94.34 318 ⇑*i*P **P 08 03 47.4 +0.8**
ULN Ulaanbaatar 94.34 318 *e*P **P 08 03 47.1 +0.5**
comp=Z,45nm,1.8s,mb5.6
ULN LR LR
comp=Z,719nm,22.0s,MS5.1
UTMT University of 94.67 54 *e*P **P 08 03 48.6 +0.2**
comp=Z,178nm,1.3s,mb6.3
SONM Songino Array 94.76 318 P **P 08 03 49.7 +1.2**
comp=Z,2.5nm,0.8s,mb4.7,baz=153,slow=2.8,SNR=7.9
SIUC Southern Illin 94.77 52 *e*P **P 08 03 47.4 -1.5**
comp=Z,26nm,1.1s,mb5.6
TIXI Tiksi 94.92 344 *e*P **P 08 03 49.1 +0.3**
TIXI *e**PP pP 08 04 07.1 +2.6
TIXI *e*S S 08 14 54.1 -1.3
TIXI pmax pmax
comp=Z,63nm,1.1s,mb6.0
TIXI Tiksi 94.92 344 *e*P **P 08 03 49.0 +0.2**
comp=Z,7.2nm,0.1s,mb6.1
TIXI LR LR
comp=Z,756nm,21.0s,MS5.1
PLAL Pickwick Lake 94.93 55 *e*P **P 08 03 48.6 -1.1**
PLAL *e*pP pP 08 04 02.5 -2.9
PLAL LR LR
comp=Z,1µm,21.0s,MS5.3
LRAL Lakeview Retre 95.30 57 PFAKE 08 04 00.0 +8.6
LRAL LR LR
comp=Z,858nm,19.0s,MS5.2
JFWS Jewell Farm 95.41 47 P **P 08 03 51.0 -0.7**
JFWS pmax pmax
comp=Z,36nm,1.0s,mb5.8
JFWS Jewell Farm 95.41 47 *e*P **P 08 03 50.9 -0.8**
comp=Z,36nm,1.1s,mb5.7
JFWS LR LR
comp=Z,2µm,21.0s,MS5.6
WVT Waverly 95.42 54 *e*P **P 08 03 51.4 -0.5**
comp=Z,42nm,1.6s,mb5.6
WVT LR LR
comp=Z,1µm,20.0s,MS5.3
LVC Limon Verde 97.09 116 PFAKE 08 04 10.0 +10
LVC LR LR
comp=Z,325nm,20.0s,MS4.8
WCI Wyandotte Cave 97.13 52 PFAKE 08 04 10.0 +10
WCI LR LR
comp=Z,7µm,20.0s,MS6.2
ZAK Zakamensk 97.43 320 *e*P **P 08 04 01.9 +1.2**
ZAK *e* 08 07 55.2
TLY Talaya 97.55 321 *e*P **P 08 04 00.9 -0.2**
TLY pmax pmax
comp=Z,41nm,0.9s,mb6.0
TLY MLR MLR
comp=Z,3µm,20.0s,MS5.8
DWPF Disney 98.81 63 PFAKE 08 04 20.0 +13
DWPF LR LR
comp=Z,559nm,19.0s,MS5.1
LPAZ La Paz 99.88 110 P **P 08 04 14.2 +1.7**
comp=Z,3.4nm,1.1s,mb4.7,baz=250,slow=2.5,SNR=6.9
LPAZ PP PP 08 08 20.6 +0.4
comp=Z,2.5nm,1.2s,baz=246,slow=10.0,SNR=3.8
LPAZ LR LR 08 39 44.1
comp=Z,191nm,20.9s,MS4.6,baz=67,slow=30
AAM Ann Arbor 99.99 49 PFAKE 08 04 20.0 +7.5
AAM LR LR
comp=Z,1µm,20.0s,MS5.4
ROSC El Rosal 100.05 88 LR LR 08 39 40.5
comp=Z,567nm,21.4s,MS5.0,baz=239,slow=30

ACSO Alum Creek Sta 100.08 51 PFAKE 08 04 20.0 +7.1
ACSO LR LR
comp=Z,1µm,20.0s,MS5.4
BLA Blacksburg 101.47 54 PFAKE 08 04 30.0 +11
BLA LR LR
comp=Z,1µm,20.0s,MS5.3
RES Resolute Bay 101.67 15 P P 08 04 21.3 +2.0
RES Resolute Bay 101.67 15 *e*Pdif P 08 04 20.3 +1.0
RES *e* 08 04 32.2
MCWV Mont Chateau 102.34 52 PFAKE 08 04 30.0 +6.9
MCWV LR LR
comp=Z,2µm,21.0s,MS5.6
ERPA Erie 102.64 50 PFAKE 08 04 40.0 +16
ERPA LR LR
comp=Z,1µm,20.0s,MS5.4
SSPA Standing Stone 103.98 51 PFAKE 08 04 40.0 +10
SSPA LR LR
comp=Z,5µm,20.0s,MS6.1
CBN Corbin 104.02 54 PFAKE 08 04 40.0 +10
CBN LR LR
comp=Z,1µm,22.0s,MS5.5
CPUP Villa Florida 105.39 123 PFAKE 08 09 00.0
CPUP LR LR
comp=Z,342nm,20.0s,MS4.9
BINY Binghamton 105.60 50 PFAKE 08 09 00.0
BINY LR LR
comp=Z,1µm,21.0s,MS5.5
NCB Newcomb 107.06 48 PFAKE 08 09 10.0
NCB LR LR
comp=Z,2µm,21.0s,MS5.5
HRV Harvard--Oak R 108.89 50 PFAKE 08 09 10.0
HRV LR LR
comp=Z,253nm,20.0s,MS4.8
WES Weston 109.06 50 PFAKE 08 09 10.0
WES LR LR
comp=Z,2µm,19.0s,MS5.8
WVL Waterville 110.37 48 PFAKE 08 09 10.0 +12
WVL LR LR
comp=Z,8µm,22.0s,MS6.2
SJG San Juan 110.73 76 PFAKE 08 09 10.0 +11
SJG LR LR
comp=Z,531nm,20.0s,MS5.1
MKAR Makanchi Array 110.74 315 Pdiff Pdif 08 05 06.6 +6.8
comp=Z,0.6nm,0.8s,baz=90,slow=7.2,SNR=3.8
MKAR PKiKP 08 08 59.6
comp=Z,1.9nm,0.7s,baz=89,slow=1.2,SNR=14
MKAR PKKPbc 08 19 57.9
comp=Z,1.0nm,0.9s,baz=270,slow=2.9,SNR=5.3
MKAR PKKPab 08 20 09.4
comp=Z,1.8nm,0.9s,baz=243,slow=3.2,SNR=7.1
PQI Presque Isle 111.55 46 PFAKE 08 09 10.0 +10
PQI LR LR
comp=Z,6µm,21.0s,MS6.2
EMMW East Machias 111.94 48 PFAKE 08 09 10.0 +9.1
EMMW LR LR
comp=Z,6µm,21.0s,MS6.2
SCHQ Schefferville 111.95 37 PFAKE 08 09 10.0 +9.4
SCHQ LR LR
comp=Z,1µm,20.0s,MS5.5
KURK Kurchatov 113.05 319 PKiKP PKPdf 08 09 04.1 +1.2
KURK Kurchatov 113.05 319 *e*PKiKP 08 09 03.0
BBSR BB Station 113.73 61 PFAKE 08 09 20.0 +15
BBSR LR LR
comp=Z,2µm,20.0s,MS5.8
KBS Kingsbay 116.32 359 PFAKE 08 09 20.0 +11
KBS LR LR
comp=Z,319nm,19.0s,MS5.0
BRVK Borovoye 117.85 322 PKIKP PKPdf 08 09 13.1 +1.0
BRVK Borovoye 117.85 322 PKPdf PKPdf 08 09 11.5 -0.6
BDFB Brasilia 117.94 117 PKP PKPdf 08 09 14.3 +1.2
comp=Z,5.8nm,1.0s,baz=18,slow=3.5,SNR=4.7
ZRNK Zerenda 118.63 322 PKIKP PKPdf 08 09 14.5 +0.8
ZRNK Zerenda 118.63 322 *e*PKPdf PKPdf 08 09 14.2 +0.5
ARU Arti 123.25 328 ⇑*i*PKIKP PKPdf 08 09 23.7 +1.1
ARU *i* 08 11 02.1
ARU *e* 08 16 17.3
ARU pmax pmax
comp=Z,37nm,1.6s
ARU Arti 123.25 328 *e*PKPdf PKPdf 08 09 23.3 +0.7
ARU LR LR
comp=Z,620nm,22.0s,MS5.2
KEV Kevo 124.12 352 *ep* PKPdf 08 09 24.4 +0.4
comp=Z,26nm,0.9s
KEV Kevo 124.12 352 *e*PKIKP PKPdf 08 09 24.4 +0.4
KEV pmax pmax
comp=Z,26nm,0.9s
ARCES ARCESS Array B 124.53 352 PKP PKPdf 08 09 25.7 +1.0
comp=Z,23nm,0.8s,slow=1.2,SNR=43
ARE0 ARCESS Array S 124.53 352 *e*PKPdf PKPdf 08 09 25.5 +0.8
APA Apatity 124.95 348 *i* PKIKP PKPdf 08 09 25.2 -0.3
APA *i* 08 09 40.2
APA pmax pmax
comp=Z,54nm,1.2s
APA MLR MLR
comp=Z,500nm,20.0s,MS5.2
JOF Joensuu 129.39 346 *ep* PKPdf 08 09 33.9 -0.3
comp=Z,58nm,1.2s
JOF Joensuu 129.39 346 *e*PKIKP PKPdf 08 09 33.9 -0.3
JOF pmax pmax
comp=Z,58nm,1.2s
SUR Sutherland 130.64 196 PFAKE 08 09 50.0 +13
SUR LR LR
comp=Z,1µm,19.0s,MS5.6
KAF Kangasniemi 131.21 348 *ep* PKPdf 08 09 37.6 0.0
FINES FINESS Array B 131.86 348 PKP PKPdf 08 09 40.5 +1.6
comp=Z,8.4nm,0.8s,baz=90,slow=5.7,SNR=24
FINES FINESS Array B 131.86 348 PKP PKPdf 08 09 40.5 +1.6
MOS Moscow 133.16 336 *i* PKIKP PKPdf 08 09 43.9 +2.4
MOS *e* 08 09 53.4
MOS pmax pmax
comp=Z,500nm,1.9s
OBN Obninsk 134.03 336 ⇓*i*PKIKP PKPdf 08 09 44.5 +1.4
OBN *i* 08 10 00.8
OBN pmax pmax
comp=Z,45nm,1.2s
OBN MLR MLR
comp=Z,500nm,19.0s,MS5.2
OBN Obninsk 134.03 336 *e*PKPdf PKPdf 08 09 44.4 +1.3
OBN LR LR
comp=Z,508nm,20.0s,MS5.2
NB2 NORSAR Subarra134.23 357 PKP 08 09 45.0
comp=Z,96nm,2.5s,baz=17,slow=2.6
NB2 NORSAR Subarra134.23 357 PKPa 08 09 45.0
baz=17,slow=2.6
NOA NORSAR Array B 134.23 357 PKP PKPdf 08 09 44.8 +1.4
comp=Z,4.2nm,0.9s,baz=13,slow=4.1,SNR=12
NAO01 NORSAR Array S 134.44 357 PFAKE 08 10 00.0 +16
NAO01 LR LR
comp=Z,410nm,20.0s,MS5.2
VOR Voronezh 135.31 332 PKIKP PKPdf 08 09 46.0 +0.4
VOR pmax pmax
comp=Z,130nm,2.3s
THR Tehran 135.34 306 PKP PKPdf 08 09 49.5 +3.3
comp=Z,0.9nm,0.5s,baz=15,slow=3.6,SNR=3.4
KONO Kongsberg 135.69 358 PKIKP PKPdf 08 09 48.8 +2.8
KONO *e* 08 10 02.9
KONO Kongsberg 135.69 358 *e*PKPdf PKPdf 08 09 48.4 +2.4
KONO LR LR
comp=Z,474nm,21.0s,MS5.2
LBTB Lobatse 135.81 205 PFAKE 08 10 00.0 +13
LBTB LR LR
comp=Z,409nm,21.0s,MS5.1
GOF Gofitskoye 137.32 322 ⇑*i*PKIKP PKPdf 08 09 55.0 +5.5
GOF pmax pmax
comp=Z,40nm,1.2s
MNK Minsk 137.54 342 *e*PKIKP PKPdf 08 09 50.0 +0.4
ZEI Tsey 137.95 318 ⇑*e*PKIKP PKPdf 08 09 55.4 +4.7
KIV Kislovodsk 138.11 320 *i* PKIKP PKPdf 08 09 48.5 -2.5
KIV pmax pmax
comp=Z,10.0nm,1.1s
KIV MLR MLR
comp=Z,590nm,21.0s,MS5.3
KIV MLR MLR
comp=N,420nm,22.0s
KIV Kislovodsk 138.11 320 *e*PKP PKPdf 08 09 52.5 +1.5
KIV LR LR
comp=Z,649nm,22.0s,MS5.3
SUW Suwalki 139.26 345 *e*PKP PKPdf 08 09 53.8 +1.1
ESK Eskdalemuir 139.38 9 PFAKE 08 10 10.0 +17
ESK LR LR
comp=Z,885nm,20.0s,MS5.5
BSD Bornholm Skovb 139.77 353 ⇓*i*P PKPdf 08 09 50.7 -2.9
comp=Z,14nm,1.0s
BSD Bornholm Skovb 139.77 353 ⇓*e*PKIKP PKPdf 08 09 50.7 -2.9
BSD pmax pmax
comp=Z,14nm,1.0s
KWP Kalwaria 143.34 342 *e*PKP PKPdf 08 09 58.3 -1.7
KWP Kalwaria 143.34 342 *e*PKIKP PKPdf 08 09 59.4 -0.6
KIS Kishinev 143.39 334 *e*PKIKP PKPdf 08 09 58.0 -2.1
KIS *i* 08 10 03.0
WTSB Winterswijk 143.45 360 *e*PKP PKPdf 08 10 00.1 +0.1
comp=Z,13nm,1.7s
OJC Ojcow 143.57 346 ⇑*e*PKP PKPdf 08 09 58.5 -1.8
KSP Ksiaz 143.71 350 *e*PKP PKPdf 08 10 00.0 -0.6
KSP Ksiaz 143.71 350 *i* PKIKP PKPdf 08 10 01.4 +0.8
KSP *e* 08 10 14.6
KSP MLR MLR
comp=Z,2µm,22.4s,MS5.7
KSP Ksiaz 143.71 350 *e*PKP PKPdf 08 09 59.2 -1.4
KSP *e*PKPdf PKPdf 08 10 01.4 +0.8
KSP *e* 08 10 14.6
KSP LR LR
comp=Z,2µm,22.4s,MS5.7
CLL Collm 143.74 353 *i* PKPbc 08 09 59.7 +0.2
CLL *i* 08 10 06.8
CLL *e* 08 11 11.0
CLL *e* 08 12 09.0
CLL *e*PP PP 08 13 20.0 +2.5
CLL Collm 143.74 353 *i* PKIKP PKPdf 08 09 59.7 -0.9
CLL *i* 08 10 06.8
CLL pmax pmax
comp=Z,23nm,0.9s
MYA Malataya 143.77 315 P PKPbc 08 10 03.0 +3.0
MYA Malataya 143.77 315 P PKPbc 08 10 03.0 +2.9
TOKT Tokat 143.92 320 *e*P PKPbc 08 10 02.7 +2.3
TOKT Tokat 143.92 320 P PKPbc 08 10 02.6 +2.2
BRG Berggiesshubel 144.04 352 *e*PKIKP PKPdf 08 10 00.1 -1.0
BRG pmax pmax
comp=Z,40nm,1.8s
BRG MLR MLR
comp=N,450nm,22.1s,MS5.3
BRG MLR MLR
comp=E,440nm,22.1s,MS5.3
BRG MLR MLR
comp=Z,410nm,22.1s,MS5.2
RAC Raciborz 144.07 347 *e*PKP(df) 08 10 01.1
RAC MLR MLR 09 08 52.6
comp=Z,1µm,23.8s,MS5.5
UPC Upice 144.08 350 *e*PKP PKPdf 08 10 00.9 -0.3
UPC *ex* x 08 10 16.5
DPC Dobruska-Polom 144.18 349 *e*PKP PKPdf 08 10 01.1 -0.3
DPC *ex* x 08 10 14.0
DPC L 09 09 50.0
comp=Z,0.8nm,22.7s
NIE Niedzica 144.19 345 *e*PKP PKPdf 08 10 01.6 +0.1
PVCC Panska Ves 144.29 351 *e*PKP PKPdf 08 10 02.4 +0.8
PVCC L 09 12 30.0
comp=Z,0.8nm,21.4s
OKC Ostrava-Krasne 144.31 347 *e*PKP PKPdf 08 10 01.5 -0.2
OKC *ex* x 08 10 17.1
OKC L 09 08 50.0
comp=Z,0.7nm,23.5s
CRVS Cervenica-Dubn 144.35 343 *e*PKP PKPdf 08 10 02.4 +0.6
MORC Moravsky Berou 144.49 348 *e*PKPdf PKPdf 08 10 02.1 +0.1
MORC *e* 08 10 18.4
MOX Moxa 144.53 354 ⇓*i*P PKPbc 08 10 02.5 +0.7
comp=Z,logA/T=1.9
MOX pP 08 10 16.0
MOX Moxa 144.53 354 *e*PKIKP PKPdf 08 10 02.5 +0.5
MOX pmax pmax
comp=Z,139nm,1.9s
HGN Heimansgroeve 144.65 1 *e*PKP PKPdf 08 10 02.4 +0.2
comp=Z,35nm,1.5s
MENF Mencas 144.68 5 PKP PKPdf 08 10 00.6 -1.7
PRU Pruhonice 144.82 351 *e*PKP PKPdf 08 10 03.1 +0.5
PRU *ex* x 08 10 17.7
PRU L 09 13 00.0
TOS Tosya 145.02 322 *e*P PKPdf 08 10 06.6 +3.4
TOS Tosya 145.02 322 P PKPdf 08 10 06.5 +3.3
YOZ Yozgat 145.08 320 P PKPdf 08 10 05.6 +2.2
YOZ Yozgat 145.08 320 P PKPdf 08 10 05.6 +2.3
CFR Carcaliu 145.11 333 ⇓*i*P PKPdf 08 10 05.0 +1.8
CFR Carcaliu 145.11 333 ⇓*i*P PKPdf 08 10 05.0 +1.8
VRI Vrincioaia 145.16 335 ⇑*i*P PKPdf 08 10 04.7 +1.4
VRI Vrincioaia 145.16 335 ⇓*i*P PKPdf 08 10 05.2 +2.0
GAZ Gaziantep 145.19 314 *i* P PKPdf 08 10 06.5 +2.9
GAZ Gaziantep 145.19 314 P PKPdf 08 10 06.5 +2.8
BNN Bunyan 145.20 318 *i* P PKPdf 08 10 05.9 +2.3
BNN Bunyan 145.20 318 P PKPdf 08 10 05.9 +2.3
GIVF Givet 145.29 2 *e*PKIKP PKPdf 08 10 04.5 +1.1
comp=Z,173nm,1.1s
BAIF Baives 145.31 3 *e*PKIKP PKPdf 08 10 04.8 +1.4
comp=Z,282nm,1.1s
VYHS Vyhne 145.41 346 *e*PKP PKPdf 08 10 05.3 +1.7
VYHS *e* 08 14 52.2
VYHS *e* 08 16 01.5
KOLL Kolacno 145.44 346 *e*PKP PKPdf 08 10 06.2 +2.5
GRA1 Grafenberg Arr 145.51 355 *e*PKPbc PKPbc 08 10 05.5 +1.1
GRA1 *e* 08 10 19.6
GRF Grafenberg Arr 145.51 355 *e*PKP2 PKPab 08 10 05.5 -0.8
KMBO Kilima Mbogo 145.52 244 PKPbc PKPbc 08 10 07.8 +2.3
comp=Z,11nm,0.9s,baz=66,slow=4.5,SNR=31
KMBO Kilima Mbogo 145.52 244 ⇑*e*PKPdf PKPdf 08 10 06.9 +2.0
KMBO LR LR
comp=Z,313nm,21.0s,MS5.1
ABH Alteburg 145.53 359 *e*P PKPdf 08 10 05.6 +1.8
ABH Alteburg 145.53 359 PKP PKPdf 08 10 06.1 +2.3
CANT Cankiri 145.53 322 P PKPdf 08 10 07.7 +3.6
CANT Cankiri 145.53 322 P PKPdf 08 10 07.7 +3.6
HARR Harsova 145.59 333 ⇑*i*P PKPdf 08 10 06.7 +2.6
HARR Harsova 145.59 333 ⇓*i*P PKPdf 08 10 07.0 +2.9
SAFT Safranbolu 145.66 324 *i* P PKPdf 08 10 07.1 +2.8
SAFT Safranbolu 145.66 324 P PKPdf 08 10 07.1 +2.8
PSZ Piszkesteto 145.68 344 *e*PKP2 PKPab 08 10 06.2 -0.8
RUP Ruppelstein 145.71 359 *e*P PKPdf 08 10 06.4 +2.3
RUP Ruppelstein 145.71 359 PKP PKPdf 08 10 06.8 +2.7
WLF Walferdange 145.75 0 *e*PKPdf PKPdf 08 10 06.2 +2.0
WLF *e* 08 10 20.6
TOD Tromm 145.76 357 *e*P PKPdf 08 10 06.3 +2.1
TOD Tromm 145.76 357 PKP PKPdf 08 10 06.8 +2.6
MLR Muntele Rosu 145.78 335 ⇑*i*P PKPdf 08 10 06.8 +2.4
MLR Muntele Rosu 145.78 335 ⇓*e*P PKPdf 08 10 07.2 +2.9
KHC Kasperske Hory 145.80 352 *e*PKP PKPdf 08 10 06.0 +1.7
KHC *ex* x 08 10 20.7
KHC L 09 10 20.0
comp=Z,0.8nm,21.9s
KHC Kasperske Hory 145.80 352 *e*PKP2 PKPab 08 10 06.0 -1.4
KHC MLR MLR
comp=Z,800nm,21.9s,MS5.5
ISR Istrita 145.84 334 ⇑*i*P PKPdf 08 10 07.5 +3.0
ISR Istrita 145.84 334 ⇑*i*P PKPdf 08 10 07.5 +3.1
WET Wettzell 145.88 353 *e*PKP2 PKPab 08 10 07.0 -0.7
SWS Schriesheim 145.89 357 ⇑*e*P PKPdf 08 10 06.5 +2.1
SIND Sindeldorf 145.98 356 *e*P PKPdf 08 10 06.6 +2.0
GEC2 GERESS Array S 146.06 352 *e*PKP2 PKPab 08 10 07.3 -1.1
GERES GERESS Array B 146.06 352 PKPbc PKPbc 08 10 07.2 +1.4
comp=Z,19nm,0.8s,slow=1.3,SNR=112
BRTR Keskin Array B 146.07 321 PKPbc PKPbc 08 10 08.0 +1.9
comp=Z,61nm,0.9s,baz=106,slow=1.8,SNR=70
KTD Kalmit 146.08 358 *e*P PKPdf 08 10 07.5 +2.8
KTD Kalmit 146.08 358 PKP PKPdf 08 10 07.2 +2.5
ZST Bratislava 146.09 347 *i* PKP PKPdf 08 10 09.5 +4.7
ZST *e* 08 13 57.4
ZST *e* 08 16 22.8
ZST *e*SKSDF 08 17 43.1
ROSF Rostrenen 146.10 12 *e*PKIKP PKPdf 08 10 06.7 +1.9
comp=Z,179nm,1.6s
FLN La Foliniere 146.16 8 *e*PKIKP PKPdf 08 10 06.8 +1.9
comp=Z,158nm,1.1s
FLN *e*R
comp=Z,1µm,22.2s
SRO Srobarova 146.17 346 *e*PKP PKPdf 08 10 09.9 +4.9
VKA Vienna 146.18 348 ⇑*i*PKP PKPdf 08 10 07.0 +2.0
KAMT Kaman 146.24 320 *i* P PKPdf 08 10 07.6 +2.2
KAMT Kaman 146.24 320 P PKPdf 08 10 07.6 +2.2
PSN Preselentsi 146.25 331 *e*P PKPdf 08 10 09.0 +3.8
CEYT Ceyhan 146.27 315 P PKPdf 08 10 10.3 +4.8
BUD Budapest 146.31 345 *e*PKP/F 08 10 09.0
LDF La Druitiere 146.37 8 *e*PKIKP PKPdf 08 10 07.5 +2.2
comp=Z,335nm,1.7s
NIG Nigde 146.42 318 *i* P PKPdf 08 10 08.7 +3.0
NIG Nigde 146.42 318 P PKPdf 08 10 08.7 +3.0
LANF Langenberg 146.42 359 PKP PKPdf 08 10 08.9 +3.5
GRR Gorron 146.47 9 *e*PKIKP PKPdf 08 10 07.9 +2.4
comp=Z,112nm,1.1s
ANTO Ankara 146.49 322 *i* P PKPdf 08 10 09.4 +3.6
ANTO Ankara 146.49 322 P PKPdf 08 10 09.4 +3.6
LOD Lodumlu 146.49 322 *i* P PKPdf 08 10 10.1 +4.3
LOD Lodumlu 146.49 322 P PKPdf 08 10 10.1 +4.3
QUIF Quistinic 146.52 12 *e*PKIKP PKPdf 08 10 07.9 +2.3
comp=Z,85nm,1.1s
STU Stuttgart 146.58 357 PKP2 PKPab 08 10 09.5 -0.9
STU Stuttgart 146.58 357 *e*PKPbc PKPbc 08 10 09.0 +2.0
PKSN Nyarlorinc 146.62 343 *e*P PKPdf 08 10 10.1 +4.3
BUC1 Bucharest 146.68 334 ⇑*i*P PKPdf 08 10 09.0 +3.0
BUC1 Bucharest 146.68 334 ⇑*i*P PKPdf 08 10 09.0 +3.0
SOP Sopron 146.69 348 ⇓*e*PKP/F 08 10 09.2
HDH Heidenheim 146.70 356 ⇑*e*P PKPdf 08 10 09.2 +3.4
LBG Lerchenberg 146.70 357 ⇑*e*P PKPdf 08 10 09.3 +3.5
STR Strasbourg 146.82 359 PKP PKPdf 08 10 09.6 +3.6
BUCH Bad Urach 146.89 357 ⇑*e*P PKPdf 08 10 09.8 +3.6
MEZF Maizieres J'vi 146.90 2 *e*PKIKP PKPdf 08 10 09.8 +3.6
comp=Z,348nm,1.5s
MOA Molln 146.95 350 ⇑*i*PKP PKPdf 08 10 08.5 +2.2
PRD Provadia 146.99 331 *e*P PKPdf 08 10 09.0 +2.5
WLS Welschbruch 147.00 359 PKP PKPdf 08 10 08.3 +1.9
CDF Champ du Feu 147.00 359 *e*PKIKP PKPdf 08 10 10.0 +3.6
comp=Z,259nm,1.2s
MDU Mudurnu 147.01 324 P PKPdf 08 10 10.8 +4.2
MDU Mudurnu 147.01 324 P PKPdf 08 10 10.8 +4.2
FUR Furstenfeldbru 147.02 354 *e*PKP2 PKPab 08 10 09.6 -2.6
BFO Black Forest 147.06 358 *e*PKP2 PKPab 08 10 09.6 -2.7
THEF They Montfort 147.19 1 PKP PKPdf 08 10 08.5 +1.8
ESCH Echery 147.20 359 PKP PKPdf 08 10 08.7 +2.0
LIBD Limburg 147.26 359 *e*P PKPdf 08 10 10.4 +3.6
LIBD Limburg 147.26 359 PKP PKPdf 08 10 09.2 +2.4
SPAK Spaichingen 147.27 357 *e*P PKPdf 08 10 10.5 +3.7
SPAK Spaichingen 147.27 357 PKP PKPdf 08 10 08.7 +1.9
GUT Gutenstein 147.28 357 ⇑*e*P PKPdf 08 10 10.2 +3.4
ARSA Arzberg 147.31 349 ⇑*i*PKP PKPdf 08 10 07.5 +0.6
PKS9 Tamasi 147.33 345 *e*P PKPdf 08 10 11.1 +4.2
HAU Haudompre 147.41 0 *e*PKIKP PKPdf 08 10 11.1 +4.1
comp=Z,188nm,1.0s
HAU *e*R
comp=Z,349nm,21.8s
KIZ Kirchzarten 147.44 358 *e*P PKPdf 08 10 10.4 +3.3
FELD Feldberg 147.52 358 *e*P PKPdf 08 10 10.9 +3.7
EYL Eskiyayla 147.53 325 P PKPdf 08 10 13.4 +5.9
EYL Eskiyayla 147.53 325 P PKPdf 08 10 13.4 +5.9
MOF Molkenrain 147.56 359 PKP PKPdf 08 10 10.0 +2.7
SZH Strazhica 147.59 333 *e*P PKPdf 08 10 12.0 +4.5
HINF Hinteralfeld 147.60 360 *e*PKIKP PKPdf 08 10 11.2 +3.9
comp=Z,263nm,1.8s
UBR Uberruh 147.60 356 ⇑*e*P PKPdf 08 10 10.6 +3.3
KIZT Kizilcal 147.66 321 *i* P PKPdf 08 10 10.0 +2.3
WATA Walderalm 147.81 354 ⇑*i*PKP PKPdf 08 10 10.5 +2.8
RHK1 Bakonya 147.84 345 *e*P PKPdf 08 10 11.0 +3.2
KBA Koelnbreinsper 147.84 351 ⇑*i*PKP PKPdf 08 10 09.7 +2.0
MOTA Moosalm 147.85 354 ⇑*i*PKP PKPdf 08 10 09.4 +1.7
ESKT Eskisehir 147.85 323 P PKPdf 08 10 14.4 +6.4
ESKT Eskisehir 147.85 323 P PKPdf 08 10 14.4 +6.4
WTTA Wattenberg 147.88 353 ⇑*i*PKP PKPdf 08 10 09.9 +2.1
PVL Pavlikeni 147.89 334 *e*P PKPdf 08 10 10.0 +2.1
JMB Yambol 147.93 331 *e*P PKPdf 08 10 10.0 +2.0
BBS Basel-Blauen 147.95 359 *e*P PKPdf 08 10 11.6 +3.7
BBS Basel-Blauen 147.95 359 PKP PKPdf 08 10 10.5 +2.6
YLV Yalova 147.96 326 P PKPdf 08 10 11.2 +3.1
YLV Yalova 147.96 326 P PKPdf 08 10 11.2 +3.0
SQTA Sankt Quirin 147.97 354 ⇑*i*PKP PKPdf 08 10 09.7 +1.8
FURI Furi 147.97 262 PKPbc PKPdf 08 10 16.5 +7.5
PERS Pernice 147.97 349 *e*PKPdf PKPdf 08 10 08.9 +0.9
DAVA Damuels 148.01 356 ⇓*i*PKP PKPdf 08 10 10.4 +2.4
CTT Catalca 148.04 328 P PKPdf 08 10 13.5 +5.3
CTT Catalca 148.04 328 P PKPdf 08 10 13.5 +5.3
LOMF Lomont 148.07 360 PKP PKPdf 08 10 10.7 +2.6
OBKA Obir 148.20 349 ⇑*i*PKP PKPdf 08 10 10.3 +2.0
SSF Saint Saulge 148.26 4 *e*PKIKP PKPdf 08 10 10.0 +1.6
comp=Z,61nm,1.3s
MFF Saint Martin d 148.32 9 *e*PKIKP PKPdf 08 10 10.9 +2.4
comp=Z,303nm,1.6s
FVI Forni Avoltri 148.39 352 *e*PKP PKPdf 08 10 11.3 +2.7
PTCC Patocco-Chiusa 148.50 351 *e*PKP PKPdf 08 10 11.2 +2.4
AVF Avril sur Loir 148.52 4 *e*PKP PKPdf 08 10 11.2 +2.4
DAVOX Davos 148.52 356 PKP PKPdf 08 10 10.9 +2.0
comp=Z,37nm,0.8s,baz=334,slow=1.7,SNR=14
DAVOX PKPbc PKPdf 08 10 15.4 +6.5
comp=Z,37nm,0.8s,baz=358,slow=5.2,SNR=30
SVIS Svilajnac 148.55 340 ⇑*i*PKP PKPdf 08 10 10.1 +1.1
ROBS Robic 148.63 351 *e*PKPdf PKPdf 08 10 09.8 +0.8
ROBS *e*PKPbc PKPdf 08 10 13.8 +4.8
GMNA Gemona 148.64 351 *e*PKP PKPdf 08 10 11.5 +2.5
LJU Ljubljana 148.65 349 *e*PKPdf PKPdf 08 10 10.3 +1.2
LJU *e*PKPbc PKPdf 08 10 14.2 +5.2
LJU *e*PKPab PKPab 08 10 19.5 +0.8
LJU *e* 08 10 29.4
SMF Signal de Mont 148.69 4 *e*PKIKP PKPdf 08 10 11.7 +2.6
BOLS Boljevac 148.70 338 ⇑*i*PKP PKPdf 08 10 09.9 +0.7
BGF Bois d'Agland 148.71 5 *e*PKIKP PKPdf 08 10 12.0 +2.9
DIM Dimitrovgrad 148.74 332 *e*P PKPdf 08 10 10.0 +0.7
VOY Vojsko 148.77 350 *e*PKPdf PKPdf 08 10 11.1 +1.8
BRMO Bormio 148.78 355 *e*PKP PKPdf 08 10 12.6 +3.3
CABF La Chapelle 148.81 1 *e*PKIKP PKPdf 08 10 12.1 +2.8
SISC Sisak 148.83 347 *i* PKP PKPdf 08 10 12.4 +3.1
BNT Bandirma 148.88 327 P PKPdf 08 10 14.9 +5.3
BNT Bandirma 148.88 327 P PKPdf 08 10 14.9 +5.3
TCF Toulx Ste Croi 148.92 6 *e*PKIKP PKPdf 08 10 12.1 +2.6
comp=Z,43nm,1.3s
PGB Panagyurishte 148.93 334 *e*P PKPdf 08 10 15.0 +5.4
CEY Cerknica 148.97 349 P PKPdf 08 10 10.3 +0.7
CSS Prodhromos 149.02 314 *e*PKPbc PKPdf 08 10 15.7 +5.7
BOJS Bojanci 149.04 348 *e*PKPdf PKPdf 08 10 11.3 +1.6
BOJS *e*PKPbc PKPdf 08 10 15.8 +6.2
BOJS *e* 08 10 30.8
PLD Plovdiv 149.06 333 *e*P PKPdf 08 10 11.0 +1.1
CTI Castel Tesino 149.07 353 *e*PKP PKPdf 08 10 12.5 +2.7
GRUS Gruza 149.08 340 ⇑*i*PKP PKPdf 08 10 11.9 +2.1
OG01 Vacheresse 149.09 360 PKP PKPdf 08 10 12.9 +3.1
KDZ Kurdzhali 149.11 332 *e*P PKPdf 08 10 10.0 0.0
KGT Karabiga 149.12 328 P PKPdf 08 10 15.8 +5.8
KGT Karabiga 149.12 328 P PKPdf 08 10 15.8 +5.7
DIVS Divcibare 149.13 341 ⇓*i*PKP PKPdf 08 10 13.1 +3.2
MABI Malga Bissina 149.19 355 *e*PKP PKPdf 08 10 15.2 +5.2
AGO Saint Agoulin 149.23 5 PKP PKPdf 08 10 13.2 +3.2
LEF Lefka 149.24 315 P PKPdf 08 10 16.3 +5.9
LEF Lefka 149.24 315 P PKPdf 08 10 16.3 +6.0
VTS Vitosha 149.29 336 *e*P PKPdf 08 10 15.0 +4.8
PLDF La Plantade 149.35 4 PKP PKPdf 08 10 13.0 +2.8
RZN Rozhen 149.40 333 *e*P PKPdf 08 10 16.0 +5.6
ALN Alexandroupoli 149.41 330 *e*P PKPdf 08 10 13.2 +2.8
BALB Balikesir 149.42 326 P PKPdf 08 10 17.3 +6.8
BALB Balikesir 149.42 326 P PKPdf 08 10 17.2 +6.7
MCGN Macugnaga 149.44 358 *e*PKP PKPdf 08 10 14.5 +4.1
RDO Rodhopi 149.45 331 *e*P PKPdf 08 10 13.3 +2.8
VERF Verneugheol 149.48 6 PKP PKPdf 08 10 13.1 +2.7
VAI Varese 149.50 357 *e*PKP PKPdf 08 10 12.2 +1.8
PYM Petit Puy Mans 149.52 5 PKP PKPdf 08 10 14.3 +3.8
SAL Salo 149.63 354 *e*PKP PKPdf 08 10 14.7 +4.0
NVSS Nova Varos 2 149.75 341 ⇑*i*PKP PKPdf 08 10 14.1 +3.1
ORO Oropa 149.77 358 *e*PKP PKPdf 08 10 14.5 +3.6
COLF Collangettes 149.81 4 PKP PKPdf 08 10 13.9 +3.0
RJF Les Rejaudoux 149.82 7 *e*PKIKP PKPdf 08 10 13.8 +2.8
comp=Z,466nm,1.8s
RJF *e*R
comp=Z,1µm,22.0s
LPL La Plagne 149.90 360 *e*PKIKP PKPdf 08 10 14.6 +3.5
comp=Z,84nm,1.8s
MMB Musomiste 149.91 334 *e*P PKPdf 08 10 12.0 +0.8
LPG La Plagne 149.92 360 *e*PKIKP PKPdf 08 10 14.9 +3.8
comp=Z,88nm,1.7s
KKB Krupnik 149.95 335 *e*P PKPdf 08 10 13.0 +1.7
LSD Ceresole Reale 149.96 359 P PKPdf 08 10 14.3 +3.1
AKS Akhisar 150.00 326 *i* P PKPdf 08 10 18.5 +7.0
AKS Akhisar 150.00 326 P PKPdf 08 10 18.5 +7.0
PLE Pljevlja 150.01 341 ⇑*i*PKP PKPdf 08 10 14.4 +3.0
NVLJ Novalja 150.01 348 *i* PKP PKPdf 08 10 11.9 +0.6
LBL Lubilhac 150.06 5 PKP PKPdf 08 10 15.0 +3.7
LFF La Frestale 150.07 8 *e*PKIKP PKPdf 08 10 14.5 +3.1
comp=Z,281nm,1.3s
DENT Denizli 150.09 323 P PKPdf 08 10 20.7 +9.1
DENT Denizli 150.09 323 P PKPdf 08 10 20.7 +9.1
GRN Grenoble 150.17 1 PKP PKPdf 08 10 15.0 +3.5
GDM Grand'Maison 150.22 1 PKP PKPdf 08 10 15.0 +3.4
CAF Calviac 150.25 6 *e*PKIKP PKPdf 08 10 14.6 +2.9
comp=Z,212nm,1.5s
IVA Berane 150.25 340 ⇑*i*PKP PKPdf 08 10 14.2 +2.5
RSP Reno Superiore 150.26 359 P PKPdf 08 10 14.8 +3.1
UPM Unac-Piva 150.27 342 ⇑*i*PKP PKPdf 08 10 14.2 +2.4
SRS Serrai 150.35 333 *e*P PKPdf 08 10 17.9 +5.9

BNI	**Bardonecchia**	**150.37**	**360**	PKIKP	PKPdf	08 10 14.1	+2.3
BNI	**Bardonecchia**	**150.37**	**360**	*e*PKPdf	PKPdf	08 10 13.9	+2.0
BNI				*e*PKPbc	PKPdf	08 10 19.6	+7.8
FENE	**Fenestrelle**	**150.39**	**359**	P	PKPdf	08 10 14.9	+3.0
PVY	**Plav**	**150.48**	**340**	⇑*i*PKP	PKPdf	08 10 14.8	+2.7
ORIF	**Oris-en-Rattie**	**150.50**	**1**	*e*PKIKP	PKPdf	08 10 14.9	+2.9
	comp=Z,63nm,1.5s						
ORIF				*e*R			
	comp=Z,890nm,22.8s						
RRL	**Cesana Torines**	**150.50**	**360**	P	PKPdf	08 10 15.5	+3.4
SKO	**Skopje**	**150.50**	**337**	*e*PKIKP	PKPdf	08 10 14.0	+1.9
SKO				⇑*i*PKHKP		08 10 19.5	
	comp=Z,0.2nm,1.4s						
VIVF	**Saint-Julien-l**	**150.52**	**3**	*e*PKIKP	PKPdf	08 10 15.2	+3.1
	comp=Z,44nm,1.2s						
BOB	**Bobbio (Coli)**	**150.55**	**356**	*e*PKP	PKPdf	08 10 19.1	+7.0
PRK	**Paraskevi**	**150.55**	**328**	*e*P	PKPdf	08 10 19.8	+7.5
BHB	**Bricherasio**	**150.57**	**359**	P	PKPdf	08 10 13.8	+1.6
NKY	**Niksic**	**150.60**	**341**	⇑*i*PKP	PKPdf	08 10 14.6	+2.3
KNT	**Kendrikon**	**150.61**	**334**	*e*P	PKPdf	08 10 18.8	+6.5
VAY	**Valandovo**	**150.61**	**335**	⇑*i*PKIKP	PKPdf	08 10 12.8	+0.5
VAY				⇑*i*PKHKP		08 10 19.1	
IZM	**Izmir**	**150.65**	**325**	*i* P	PKPdf	08 10 19.3	+6.8
IZM	**Izmir**	**150.65**	**325**	P	PKPdf	08 10 19.3	+6.8
BRY	**Bratogost**	**150.65**	**342**	⇑*i*PKP	PKPdf	08 10 14.6	+2.2
MBDF	**Montbardon**	**150.69**	**360**	*e*PKIKP	PKPdf	08 10 15.5	+3.2
	comp=Z,91nm,1.7s						
SOH	**Sokhos**	**150.70**	**333**	*e*P	PKPdf	08 10 19.1	+6.7
GRAM		**150.78**	**355**	P	PKPdf	08 10 15.2	+2.7
OUR	**Ouranopolis**	**150.81**	**332**	*e*P	PKPdf	08 10 16.0	+3.3
OCF	**Saint Nazaire**	**150.82**	**2**	PKP	PKPdf	08 10 15.8	+3.3
OG26	**St.-Nazaire-De**	**150.82**	**2**	PKP	PKPdf	08 10 15.8	+3.3
ZCCA	**Zocca**	**150.83**	**353**	*e*PKP	PKPdf	08 10 16.8	+4.2
PCP	**Pian Castagno**	**150.83**	**357**	P	PKPdf	08 10 14.8	+2.2
TTG	**Podgorica**	**150.86**	**340**	⇑*i*PKP	PKPdf	08 10 15.3	+2.6
GSCL	**Gusciola**	**150.87**	**354**	*e*PKP	PKPdf	08 10 16.3	+3.7
SACV	**Santiago Islan**	**150.90**	**87**	*e*PKPdf	PKPdf	08 10 14.1	+0.7
SACV				*e*PKPbc	PKPdf	08 10 19.7	+6.3
VALM		**150.90**	**355**	P	PKPdf	08 10 12.8	+0.1
DOI	**San Damiano**	**150.91**	**359**	*e*PKP	PKPdf	08 10 19.3	+6.6
PZZ	**Prazzo**	**150.91**	**359**	P	PKPdf	08 10 15.5	+2.8
STON	**Ston**	**150.93**	**343**	*i* PKP	PKPdf	08 10 12.9	+0.1
SURF	**Saint Ours**	**150.94**	**360**	PKP	PKPdf	08 10 16.2	+3.5
GENL	**Genova Univers**	**150.94**	**356**	P	PKPdf	08 10 14.1	+1.3
BACM		**150.99**	**355**	P	PKPdf	08 10 15.7	+3.0
FNVD	**Fontana Vidola**	**150.99**	**353**	*e*PKP	PKPdf	08 10 14.8	+2.0
PLG	**Polygyros**	**151.02**	**333**	*e*P	PKPdf	08 10 19.8	+6.8
SARO	**Sassorosso**	**151.05**	**354**	P	PKPdf	08 10 13.6	+0.8
RSM	**Repubblica di**	**151.05**	**351**	*e*PKP	PKPdf	08 10 17.1	+4.2
SEI	**Scarperia**	**151.07**	**353**	*e*PKP	PKPdf	08 10 20.7	+7.8
VLC	**Villacollemand**	**151.08**	**354**	*e*PKPbc	PKPdf	08 10 20.0	+7.1
HCY	**Herceg Novi**	**151.08**	**342**	⇑*i*PKP	PKPdf	08 10 15.7	+2.7
BUM	**Brajici-Budva**	**151.09**	**341**	⇑*i*PKP	PKPdf	08 10 15.6	+2.6
ROB	**Roburent**	**151.10**	**358**	P	PKPdf	08 10 15.3	+2.4
VINC	**Vinca**	**151.12**	**355**	P	PKPdf	08 10 13.5	+0.5
VMG	**Vicchio**	**151.14**	**353**	*e*PKP	PKPdf	08 10 16.2	+3.2
BDI	**Bagni Di Lucca**	**151.15**	**354**	*e*PKP	PKPdf	08 10 20.2	+7.2
SFI	**Santa Sofia**	**151.15**	**352**	*e*PKP	PKPdf	08 10 16.3	+3.2
STV2	**Anna di Valdie**	**151.17**	**359**	P	PKPdf	08 10 14.8	+1.7
STV	**Sta Anna Valdi**	**151.17**	**359**	P	PKPdf	08 10 14.8	+1.7
FIN	**Finale Ligure**	**151.18**	**358**	*e*PKP	PKPdf	08 10 15.9	+2.8
ENR	**Entracque**	**151.19**	**359**	P	PKPdf	08 10 16.2	+3.1
PGD	**Poggio Sodo**	**151.21**	**352**	*e*PKP	PKPdf	08 10 16.7	+3.5
PBRG	**Braganca**	**151.22**	**21**	*i* PKPbc	PKPdf	08 10 21.7	+8.5
FSSB	**Fossombrone**	**151.23**	**351**	*e*PKP	PKPdf	08 10 16.8	+3.6
LASF	**Ste Croix**	**151.25**	**4**	*e*PKIKP	PKPdf	08 10 15.5	+2.3
	comp=Z,96nm,1.5s						
RORO		**151.28**	**358**	P	PKPdf	08 10 14.9	+1.7
ULC	**Ulcinj**	**151.28**	**340**	⇑*i*PKP	PKPdf	08 10 15.8	+2.5
MAIM		**151.31**	**354**	P	PKPdf	08 10 14.6	+1.3
MONE	**Monesi**	**151.32**	**358**	P	PKPdf	08 10 14.5	+1.2
PVRL	**Vila Real**	**151.34**	**23**	*e*PKPdf	PKPdf	08 10 15.5	+2.1
PVRL				*i* PKPbc	PKPdf	08 10 22.3	+8.9
PVRL				*e*PKPab	PKPab	08 10 30.2	+0.1
OSSF	**Osses**	**151.37**	**12**	PKP	PKPdf	08 10 15.7	+2.3
ARV	**Arcevia**	**151.40**	**350**	*e*PKP	PKPdf	08 10 16.7	+3.3
TOUF	**Mont Tournerai**	**151.40**	**359**	PKP	PKPdf	08 10 19.0	+5.6
AUTN	**L'Aution**	**151.42**	**359**	PKP	PKPdf	08 10 18.1	+4.7
SAOF	**Saorge**	**151.42**	**358**	PKP	PKPdf	08 10 16.4	+3.0
CRE	**Caprese Michel**	**151.43**	**352**	*e*PKP	PKPdf	08 10 16.3	+2.8
SMRF	**Simiane la Rot**	**151.43**	**1**	*e*PKIKP	PKPdf	08 10 17.1	+3.6
	comp=Z,93nm,1.4s						
CING	**Cingoli**	**151.47**	**350**	*e*PKP	PKPdf	08 10 15.1	+1.6
OHR	**Ohrid**	**151.49**	**337**	⇓*i*PKIKP	PKPdf	08 10 16.0	+2.4
OHR				⇑*i*PKHKP		08 10 21.4	
OHR				⇑*i*		08 10 36.6	
PII	**Pisa**	**151.50**	**354**	*e*PKP	PKPdf	08 10 15.6	+2.0
SJPF	**Ste Jean**	**151.52**	**12**	*e*PKIKP	PKPdf	08 10 16.7	+3.1
	comp=Z,132nm,1.5s						
MVIF	**Mont Vial**	**151.52**	**359**	PKP	PKPdf	08 10 16.7	+3.1
AURF	**Auriere**	**151.53**	**359**	PKP	PKPdf	08 10 16.5	+2.9
FNA	**Florina**	**151.55**	**336**	*e*P	PKPdf	08 10 14.1	+0.3
SBF	**Sospel**	**151.55**	**359**	*e*PKIKP	PKPdf	08 10 16.3	+2.7
	comp=Z,73nm,1.4s						
NEGI	**Negi**	**151.56**	**358**	P	PKPdf	08 10 16.0	+2.4
VILF	**Villemus**	**151.56**	**1**	PKP	PKPdf	08 10 16.9	+3.3
PRAF	**Pradon**	**151.59**	**2**	PKP	PKPdf	08 10 16.7	+3.0
SNTG	**Esanatoglia**	**151.63**	**350**	*e*PKP	PKPdf	08 10 16.6	+2.9
LARF	**Larrau**	**151.64**	**12**	PKP	PKPdf	08 10 17.2	+3.4
CSNT	**Castellina Chi**	**151.66**	**353**	*e*PKP	PKPdf	08 10 20.9	+7.1
ARG	**Arkhangelos**	**151.66**	**321**	*e*P	PKPdf	08 10 22.0	+8.0
LIT	**Litokhoron**	**151.66**	**334**	*e*P	PKPdf	08 10 23.6	+10
CALN	**Calern**	**151.67**	**359**	PKP	PKPdf	08 10 17.0	+3.2
REVF	**Revere**	**151.67**	**359**	PKP	PKPdf	08 10 16.7	+2.9
REYF	**Montagne du Re**	**151.72**	**11**	PKP	PKPdf	08 10 17.4	+3.5
PVIS	**Viseu**	**151.75**	**24**	*i* PKPbc	PKPdf	08 10 23.1	+9.1
PVIS				*e*PKPab	PKPab	08 10 32.1	+0.3
TREF	**Trevaresse**	**151.78**	**2**	PKP	PKPdf	08 10 17.6	+3.6
TAVF	**Tavernes**	**151.80**	**1**	PKP	PKPdf	08 10 17.2	+3.2
LABF	**Labassere**	**151.82**	**10**	PKP	PKPdf	08 10 17.2	+3.1
MTLF	**Montolieu**	**151.83**	**7**	*e*PKIKP	PKPdf	08 10 16.1	+2.0
	comp=Z,41nm,1.3s						
ETSF	**Etsaut**	**151.85**	**11**	*e*PKIKP	PKPdf	08 10 17.5	+3.4
	comp=Z,135nm,1.4s						
FRF	**La Foret Royal**	**151.86**	**360**	*e*PKIKP	PKPdf	08 10 16.8	+2.7
	comp=Z,56nm,1.5s						
PUYF	**Puyloubier**	**151.88**	**1**	PKP	PKPdf	08 10 17.4	+3.3
EPF	**Esparros**	**151.88**	**10**	*e*PKIKP	PKPdf	08 10 16.3	+2.1
	comp=Z,46nm,1.4s						
GRFL	**Gerfalco**	**152.01**	**353**	*e*PKP	PKPdf	08 10 17.1	+2.8
GELF	**Grande-Etoile**	**152.02**	**2**	PKP	PKPdf	08 10 17.6	+3.2
MLS	**Moulis**	**152.07**	**9**	PKP	PKPdf	08 10 17.2	+2.8
LMR	**La Mourre**	**152.09**	**0**	*e*PKIKP	PKPdf	08 10 17.2	+2.8
	comp=Z,66nm,1.4s						
BERF	**Bertagne**	**152.10**	**1**	PKP	PKPdf	08 10 18.0	+3.5
MTE	**Manteigas**	**152.16**	**23**	*e*PKPdf	PKPdf	08 10 17.1	+2.4
MTE				*i* PKPbc	PKPdf	08 10 23.5	+8.8
MTE	**Manteigas**	**152.16**	**23**	*e*PKPdf	PKPdf	08 10 16.4	+1.8
MTE				*e*PKPbc	PKPdf	08 10 22.6	+7.9
LPEF	**Le Peyrat**	**152.19**	**7**	PKP	PKPdf	08 10 18.0	+3.4
LRDF	**Laroque-de-Fa**	**152.27**	**6**	PKP	PKPdf	08 10 17.7	+3.0
AQU	**L'Aquila**	**152.43**	**349**	PKIKP	PKPdf	08 10 24.5	+10
AQU	**L'Aquila**	**152.43**	**349**	PKPdf	PKPdf	08 10 16.5	+1.5
AQU				*e*PKPbc	PKPdf	08 10 24.0	+9.1
AQU				*e*PKP	PKPdf	08 10 24.5	+10
MEV	**Metsovon**	**152.46**	**335**	*e*P	PKPdf	08 10 18.1	+3.0
RGNG	**Rignano Grg**	**152.61**	**345**	*e*PKP	PKPdf	08 10 18.1	+2.9
AGG	**Agios Georgios**	**152.62**	**333**	*e*P	PKPdf	08 10 16.6	+1.3
FILF	**Fillols**	**152.64**	**6**	PKP	PKPdf	08 10 18.0	+2.7
INTR	**Introdacqua**	**152.66**	**348**	*e*PKP	PKPdf	08 10 15.6	+0.3
PCBR	**Castelo Branco**	**152.67**	**24**	*e*PKPdf	PKPdf	08 10 18.0	+2.6
PCBR				*i* PKPbc	PKPdf	08 10 24.9	+10
JAN	**Janina**	**152.72**	**335**	*e*P	PKPdf	08 10 24.7	+9.2
VALF	**Valcebollere**	**152.74**	**7**	PKP	PKPdf	08 10 19.0	+3.6
PTQR	**Pietraquaria**	**152.75**	**349**	*e*PKP	PKPdf	08 10 18.8	+3.4
PGF	**Pioggiola**	**152.79**	**356**	*e*PKIKP	PKPdf	08 10 17.0	+1.5
	comp=Z,60nm,1.4s						
CII	**Carovilli**	**152.85**	**347**	*e*PKP	PKPdf	08 10 16.9	+1.3
RNI2	**Rionero Sannit**	**152.91**	**347**	*e*PKP	PKPdf	08 10 19.3	+3.6
EVR	**Evrytania**	**152.94**	**333**	*e*P	PKPdf	08 10 25.3	+10
TOLF	**Tolfa**	**152.94**	**351**	*e*PKP	PKPdf	08 10 16.7	+1.0
SDI	**San Donato**	**152.97**	**348**	*e*PKP	PKPdf	08 10 18.7	+3.0
CPI2	**Carpinone**	**152.98**	**347**	*e*PKP	PKPdf	08 10 16.8	+1.1
MRLC	**Muro Lucano**	**153.50**	**345**	*e*PKP	PKPdf	08 10 19.4	+2.9
CSSN	**Cassano Irpino**	**153.51**	**345**	*e*PKP	PKPdf	08 10 18.8	+2.3
EVO	**Evora**	**153.56**	**26**	*e*PKIKP	PKPdf	08 10 17.4	+0.8
	comp=Z,17nm,1.0s						
EVO				*e*R			
	comp=Z,1µm,21.8s						
SGO	**Sicignano**	**153.73**	**345**	*e*PKP	PKPdf	08 10 19.0	+2.2
SLCN	**Sala Consilina**	**153.80**	**344**	*e*PKP	PKPdf	08 10 18.9	+2.0
KRIS	**Kristallenia**	**153.93**	**323**	*e*PKPdf	PKPdf	08 10 20.3	+3.0
ESDC	**Sonseca Array**	**154.06**	**19**	PKP	PKPdf	08 10 19.5	+2.2
	comp=Z,0.7nm,0.7s,baz=358,slow=2.6,SNR=7.5						
ESDC				PKPbc	PKPdf	08 10 27.7	+10
	comp=Z,1.4nm,0.6s,baz=332,slow=2.1,SNR=8.4						
ESDC				PKPab	PKPab	08 10 41.4	-0.2
	comp=Z,4.6nm,0.8s,baz=329,slow=3.7,SNR=12						
VLI	**Veliai**	**154.18**	**329**	*e*P	PKPdf	08 10 27.3	+10
LIC	**Lamto**	**165.48**	**127**	⇑*i*PKIKP	PKPdf	08 10 31.5	+0.5
	comp=Z,146nm,1.3s						
LIC				*e*R			
	comp=Z,871nm,20.8s						
LIC	**Lamto**	**165.48**	**127**	*e*PKIKP	PKPdf	08 10 31.5	+0.5
	comp=Z,148nm,1.3s						
LIC				*e*PKP1	PKPab	08 11 31.1	-0.4
TIC	**Toumodi**	**165.75**	**126**	*e*PKIKP	PKPdf	08 10 32.0	+0.8
	comp=Z,273nm,1.2s						
TIC				*e*PKP1	PKPab	08 11 32.2	-0.5
KIC	**Kosan Boka**	**165.78**	**128**	*e*PKIKP	PKPdf	08 10 31.9	+0.6
	comp=Z,275nm,1.2s						
KIC				*e*PKP1	PKPab	08 11 32.4	-0.5
DBIC	**Dimbokro**	**165.89**	**126**	PKP	PKPdf	08 10 32.8	+1.4
	comp=Z,20nm,0.9s,baz=163,slow=0.4,SNR=16						

NEIC ***16*** *07:52:45.9, 36.62N×9.74W, MN2.2(MDD), After MDD.*
MDD ***16*** *07:52:46.8±1.8, 36.61N×9.68W, mbLg2.0/8, Error ellipse: s-maj=15.1km s-min=12.0km az=69.0, PRXIMO*
INMG ***16*** *07:52:48.0±0.8, 36.61N×9.66W, h2km±6km, ML1.7, Error ellipse: s-maj=8.1km s-min=3.9km az=90.0*

ISC 16 07:52:45.1±1.4**, 36.57N**±0.06×**9.57W**±0.08**, h2**km**, n25,**
σ1⁰**15**/46**, West of Gibraltar**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PTEO	**Sao Teotonio**	**1.19**	**35**	*e*P	**Pb**	**07 53 09.7**	**+1.7**
PTEO				*e*S	**Sb**	**07 53 26.0**	**+2.4**
	4.3nm,0.3s						
PTEO	**Sao Teotonio**	**1.19**	**35**	P	**Pb**	**07 53 09.7**	**+1.7**
PTEO				S	**Sb**	**07 53 26.0**	**+2.4**
	2.2nm,0.3s						
PALC	**Alcoutim**	**1.90**	**61**	*e*Pn	**Pn**	**07 53 20.4**	**+1.6**
PALC				*e*Sn	**Sn**	**07 53 44.1**	**+0.5**
	4.0nm,0.2s						
PALC	**Alcoutim**	**1.90**	**61**	P	**Pn**	**07 53 20.4**	**+1.6**
PALC				S	**Sn**	**07 53 44.1**	**+0.5**
	2.0nm,0.2s						
EGRO	**El Granado**	**1.93**	**60**	P	**Pn**	**07 53 20.7**	**+1.5**
	1.2nm,0.1s,SNR=7.9						
EGRO				S	**Sn**	**07 53 45.1**	**+0.8**
	1.5nm,0.1s,SNR=7.9						
EGRO	**El Granado**	**1.93**	**60**	P	**Pn**	**07 53 20.5**	**+1.3**
EGRO				S	**Sn**	**07 53 45.3**	**+0.9**
PBEJ	**Beja**	**1.99**	**43**	*e*Pn	**Pn**	**07 53 20.7**	**+0.6**
PBEJ				*e*Sn	**Sn**	**07 53 46.1**	**+0.2**
MOE	**Montemor**	**2.17**	**26**	*e*Pn	**Pn**	**07 53 23.3**	**+0.5**
MOE				*e*Sn	**Sn**	**07 53 49.9**	**-0.7**
EMIN	**Mina Concepcio**	**2.61**	**62**	P	**Pn**	**07 53 29.7**	**+0.8**
	0.8nm,0.1s,SNR=7.9						
EMIN				S	**Sn**	**07 54 01.2**	**-0.3**
	1.0nm,0.1s,SNR=5.0						
EMIN	**Mina Concepcio**	**2.61**	**62**	P	**Pn**	**07 53 29.6**	**+0.7**
EMIN				S	**Sn**	**07 54 01.3**	**-0.3**
EBAD	**Badajoz**	**2.98**	**42**	P	**Pn**	**07 53 33.9**	**-0.4**
	0.7nm,0.1s,SNR=7.9						
EBAD				S	**Sn**	**07 54 09.8**	**-1.2**
	1.0nm,0.1s,SNR=7.9						
EBAD	**Badajoz**	**2.98**	**42**	P	**Pn**	**07 53 34.0**	**-0.3**
EBAD				S	**Sn**	**07 54 10.2**	**-0.8**
ESPR	**Espera**	**3.00**	**83**	P	**Pn**	**07 53 35.5**	**+1.0**
	0.7nm,0.1s,SNR=7.9						
ESPR				S	**Sn**	**07 54 10.9**	**-0.7**
	6.0nm,0.2s,SNR=6.2						
EJIF	**Jimena Fronter**	**3.31**	**91**	P	**Pn**	**07 53 39.4**	**+0.5**
	9.0nm,0.3s,SNR=4.0						
EJIF				S	**Sn**	**07 54 18.6**	**-0.8**
	3.2nm,0.2s,SNR=7.9						
EJIF	**Jimena Fronter**	**3.31**	**91**	P	**Pn**	**07 53 39.6**	**+0.7**
EJIF				S	**Sn**	**07 54 19.2**	**-0.2**
ELIJ	**Sierra de Lija**	**3.38**	**83**	S	**Sn**	**07 54 20.5**	**-0.8**
	0.2nm,0.2s,SNR=7.9						
EADA	**Adamuz**	**4.29**	**67**	P	**Pn**	**07 53 53.2**	**+0.3**
	0.5nm,0.1s,SNR=7.9						
EADA				S	**Sn**	**07 54 40.8**	**-3.4**
	0.9nm,0.1s,SNR=7.9						
EADA	**Adamuz**	**4.29**	**67**	P	**Pn**	**07 53 51.3**	**-1.6**
EADA				S	**Sn**	**07 54 40.8**	**-3.3**
ESDC	**Sonseca Array**	**5.40**	**53**	P	**Pn**	**07 54 08.0**	**-0.6**
	1.4nm,0.1s,baz=240,slow=14,SNR=7.9						
ESDC	**Sonseca Array**	**5.40**	**53**	P	**Pn**	**07 54 06.8**	**-1.8**
ESDC				S	**Sn**	**07 55 05.0**	**-7.1**
ELOB	**Lobios**	**5.42**	**12**	P	**Pn**	**07 54 06.0**	**-2.8**
	0.2nm,0.0s,SNR=4.0						
ELOB				S	**Sn**	**07 55 04.8**	**-7.8**
	0.9nm,0.2s,SNR=4.0						
ELOB	**Lobios**	**5.42**	**12**	P	**Pn**	**07 54 06.0**	**-2.8**
ELOB				S	**Sn**	**07 55 05.4**	**-7.2**
EHUE	**Huescar**	**5.71**	**75**	P	**Pn**	**07 54 12.5**	**-0.4**
ECAL	**Calabor**	**5.79**	**21**	P	**Pn**	**07 54 12.5**	**-1.6**
	0.6nm,0.1s,SNR=7.9						
ECAL				S	**Sn**	**07 55 16.4**	**-5.7**
	0.5nm,0.2s,SNR=4.0						
ECAL	**Calabor**	**5.79**	**21**	P	**Pn**	**07 54 12.6**	**-1.6**

IDC ***16*** *08:22:47.5±2.2, 3.28S×141.76E, mb3.6/3, mb1 4.0/4, mb1mx3.8/14, ML3.9/1, MS3.6/1, Ms1 3.6/1, ms1mx2.8/20, Error ellipse: s-maj=77.0km s-min=27.7km az=97.0*
NEIC ***16*** *08:22:50.0±1.2, 3.37S×141.81E, h15km, mb4.1/1, Error ellipse: s-maj=49.1km s-min=17.9km az=105.0*

ISC 16 08:22:43.9±3.5**, 3.4S**±0.2×**142.5E**±0.7**, h10**km**, n10,**
σ0⁰**22**/6**, mb3.6**/3**, Near north coast of New Guinea**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRAB	**Tennant Creek**	**18.28**	**205**	*e*P	**P**	**08 26 59.4**	**-0.2**
	15nm,0.9s						
WRA	**Warramunga Arr**	**18.29**	**205**	P	**P**	**08 26 59.6**	**-0.1**
	0.4nm,0.3s,baz=20,slow=12,SNR=36						
WRA				LR	LR	08 34 37.8	
	comp=Z,194nm,19.4s,baz=130,slow=39						
WRA	**Warramunga Arr**	**18.29**	**205**	P	**P**	**08 26 59.6**	**-0.1**
WRA				LR	LR	08 34 37.8	
ASAR	**Alice Springs**	**21.82**	**202**	P	**P**	**08 27 38.6**	**+0.2**
	1.7nm,0.8s,mb3.5,baz=29,slow=10,SNR=15						
FITZ	**Fitzroy Crossi**	**22.07**	**227**	P	**P**	**08 27 41.0**	**+0.1**
	1.8nm,0.5s,mb3.8,baz=37,slow=9.6,SNR=3.7						
MKAR	**Makanchi Array**	**72.63**	**321**	P	**P**	**08 34 13.6**	**-0.1**
	0.3nm,0.5s,mb3.5,baz=100,slow=7.5,SNR=4.0						
LPAZ	**La Paz**	**143.98**	**124**	PKP	PKPdf	08 42 29.2	+5.5
	1.6nm,1.1s,baz=241,slow=7.1,SNR=3.9						
LPAZ	**La Paz**	**143.98**	**124**	PKP	PKPdf	08 42 29.2	+5.5
DBIC	**Dimbokro**	**147.31**	**277**	PKPbc	PKPdf	08 42 31.2	+1.6
	1.8nm,0.5s,baz=80,slow=4.8,SNR=7.5						
DBIC	**Dimbokro**	**147.31**	**277**	*e*P	PKPdf	08 42 30.2	+0.6
DBIC				PKPbc	PKPdf	08 42 31.2	+1.7

ATH ***16*** *08:24:02.4, 40.65N×25.51E, h10km, MD3.5/3*
THE ***16*** *08:24:03.1, 40.67N×25.36E, h2km, ML3.5*

ISC 16 08:24:02.0±0.7**, 40.68N**±0.04×**25.35E**±0.03**, h4**km±6km**,**
n28, σ0⁰**95**/36**, 2C, Aegean Sea**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RDO	**Rodhopi**	**0.49**	**17**	⇑*i*PB	**Pb**	**08 24 12.1**	**-0.6**
ALN	**Alexandroupoli**	**0.57**	**67**	*e*Pg	**Pg**	**08 24 13.9**	**+0.5**
ALN				*e*Sg	**Sg**	**08 24 22.1**	**+1.1**
LOS	**Limnos**	**0.77**	**196**	*e*Pg	**Pg**	**08 24 17.6**	**+0.2**
BOZC	**Bozcaada**	**0.99**	**147**	*i* P	**Pb**	**08 24 21.8**	**+0.4**
BOZC				*i* S	**Sb**	**08 24 35.4**	**+0.8**
OUR	**Ouranopolis**	**1.10**	**252**	*e*Pg	**Pg**	**08 24 23.2**	**-0.7**
OUR				*e*Sg	**Sg**	**08 24 39.9**	**+1.3**
LPK	**Lapseki**	**1.12**	**106**	*i* PG	**Pg**	**08 24 24.0**	**-0.3**
SART	**Tekirdag**	**1.39**	**89**	⇑*i*P	**Pb**	**08 24 28.3**	**+0.2**
SART				*i* S	**Sb**	**08 24 48.1**	**+1.9**
SRS	**Serrai**	**1.40**	**289**	*e*Pb	**Pb**	**08 24 28.2**	**-0.2**
PAIG	**Paliouri**	**1.48**	**240**	*e*Pb	**Pb**	**08 24 29.1**	**-0.6**
PAIG				*e*Sb	**Sb**	**08 24 50.8**	**+2.0**
PLG	**Polygyros**	**1.48**	**259**	*e*PB	**Pb**	**08 24 31.9**	**+2.1**
SOH	**Sokhos**	**1.52**	**276**	*e*Pb	**Pb**	**08 24 31.0**	**+0.5**
EDRB	**Edirne**	**1.57**	**42**	PN	**Pn**	**08 24 31.5**	**+0.8**
EDRB				SN	**Sn**	**08 24 52.3**	**+0.6**
PRK	**Paraskevi**	**1.60**	**153**	*e*PB	**Pb**	**08 24 30.9**	**-0.8**
MRMT	**Marmara Adasi**	**1.71**	**92**	PN	**Pn**	**08 24 31.5**	**-1.3**
THE	**Thessaloniki**	**1.82**	**269**	*e*Pb	**Pb**	**08 24 35.2**	**-0.2**
AOS	**Alonnisos**	**1.89**	**217**	*e*Pb	**Pb**	**08 24 34.6**	**-2.1**
KNT	**Kendrikon**	**1.92**	**285**	*e*Pb	**Pb**	**08 24 35.7**	**-1.6**
EDC	**Edincik**	**1.94**	**99**	*e*PN	**Pn**	**08 24 35.3**	**-0.8**
BNT	**Bandirma**	**1.98**	**99**	*e*PN	**Pn**	**08 24 36.4**	**-0.3**
BALB	**Balikesir**	**2.20**	**117**	*e*PN	**Pn**	**08 24 39.5**	**-0.3**
SLVT	**Silivri**	**2.23**	**75**	*e*PN	**Pn**	**08 24 39.9**	**-0.4**
GRG	**Griva**	**2.25**	**278**	*e*Pn	**Pn**	**08 24 41.2**	**+0.6**
LIT	**Litokhoron**	**2.26**	**256**	*e*Pn	**Pn**	**08 24 40.5**	**-0.2**
KCT	**Karacabey**	**2.33**	**99**	*e*PN	**Pn**	**08 24 40.3**	**-1.3**
CTT	**Catalca**	**2.38**	**78**	PN	**Pn**	**08 24 41.9**	**-0.4**
KDAG	**Bornova**	**2.71**	**146**	*i* P	**Pn**	**08 24 47.3**	**+0.2**
KDAG				*i* S	**Sn**	**08 25 29.8**	**+8.9**
ULDT	**Uludag**	**2.94**	**99**	*i* P	**Pn**	**08 24 55.8**	**+5.4**
ULDT				*i* S	**Sn**	**08 25 35.7**	**+9.2**
FNA	**Florina**	**3.02**	**273**	*e*Pn	**Pn**	**08 24 50.7**	**-0.8**

IDC ***16*** *08:24:42.6±0.8, 3.20S×141.20E, mb4.1/8, mb1 4.3/11, mb1mx4.2/17, ML4.2/2, MS3.7/1, Ms1 3.7/1, ms1mx3.0/19, Error ellipse: s-maj=28.1km s-min=17.9km az=71.0*
NEIC ***16*** *08:24:49.4±1.6, 3.40S×141.31E, h57km±16km, mb4.9/11, Error ellipse: s-maj=10.2km s-min=9.9km az=155.0*

ISC 16 08:24:43.4±6.4**, 3.3S**±0.1×**141.2E**±0.1**, h18**km±47km**, n33,**
σ0⁰**75**/26**, mb4.6**/18**, MS3.8**/1**, New Guinea**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**8.46**	**136**	Pn	**P**	**08 26 48.1**	**+0.1**
	0.3nm,0.3s,baz=340,slow=22,SNR=3.8						
PMG	**Port Moresby**	**8.46**	**136**

CBYP	**Canovanas**	**1.53**	**234**⇓	*e*P		Pn	09 00 21.5	-3.4
CBYP				S		Sn	09 00 38.3	-5.8
CPD	**Cerro la Pandu**	**1.72**	**228**⇑	*e*P		Pn	09 00 25.3	-2.3
CPD				S		Sn	09 00 44.1	-4.9
CSB	**Colonia Sabana**	**1.75**	**240**⇑	*e*P		Pn	09 00 23.9	-4.3
CSB				S		Sn	09 00 44.9	-5.0
SJG	**San Juan**	**1.84**	**235**⇑	*e*P		Pn	09 00 26.0	-3.5
SJG				S		Sn	09 00 47.9	-4.3
SJG	**San Juan**	**1.84**	**235**⇑	*e*P		Pn	09 00 25.5	-4.0
SJG	**San Juan**	**1.84**	**235**⇑	*e*P		Pn	09 00 25.5	-4.0
SJG				S		Sn	09 00 48.0	-4.3
CELP	**Cerrillos**	**2.21**	**240**⇑	*e*P		Pn	09 00 31.2	-3.5
CELP				S		Sn	09 00 56.4	-5.1
AOPR	**Arecibo Observ**	**2.23**	**248**⇓	*e*P		Pn	09 00 32.6	-2.5
AOPR	**Arecibo Observ**	**2.23**	**248**	S		Sn	09 00 57.1	-5.1
OBIP	**Obispado Ponce**	**2.25**	**240**⇑	*e*P		Pn	09 00 31.4	-3.8
OBIP	**Obispado Ponce**	**2.25**	**240**	S		Sn	09 00 56.8	-5.6
PORP	**Portuguez**	**2.27**	**240**⇑	*e*P		Pn	09 00 32.4	-3.1
PORP				S		Sn	09 00 56.6	-6.3
LRS	**Lares**	**2.34**	**248**⇑	*e*P		Pn	09 00 34.0	-2.6
LRS				S		Sn	09 00 58.9	-5.8
MGP	**Maguayo**	**2.67**	**244**⇑	*e*P		Pn	09 00 38.2	-3.1

NEIC **16** *09:07:08.7±0.7,22.01S×68.28W,h129km±9km, Error ellipse: s-maj=14.3km s-min=14.2km az=160.0*
IDC **16** *09:07:08.4±0.7,21.96S×68.25W,h121km±11km,mb3.9/3, mb1 3.9/5,mb1mx3.6/13,Error ellipse: s-maj=26.2km s-min=15.7km az=94.0*
GUC **16** *09:07:09.1±0.6,22.41S×68.09W,h125km±8km,ML4.3*
ISC 16 09:07:07.2±0.5,22.03S±0.06×68.4W±0.1,h140km±8km, n17,σ0s75/21,mb4.4/3,1C-1D,Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LVC	**Limon Verde**	**0.77**	**221**	*i*P	**P**	**09 07 30.4**	**+0.9**
LVC				*i* S	**S**	**09 07 46.7**	**0.0**
LVC				AMP		09 07 48.4	
	comp=N,3μm,0.5s						
LVC	**Limon Verde**	**0.77**	**221**	P	**P**	**09 07 31.0**	**+1.4**
	comp=N,239nm,0.3s,baz=36,slow=8.8,SNR=1668						
LVC				S	**S**	**09 07 46.4**	**-0.3**
	comp=N,270nm,0.3s,baz=219,slow=19,SNR=71						
ANCH	**Antofagasta**	**2.51**	**229**⇓	*i*P	**P**	**09 07 49.1**	**+0.5**
ANCH				*i* S	**S**	**09 08 19.6**	**-0.5**
ANCH				AMP		09 08 21.2	
	comp=N,2μm,0.1s						
CPN1	**Cerro Paranal**	**3.20**	**216**	*e*P	**P**	**09 07 58.0**	**+0.5**
CPN1				*i* S	**S**	**09 08 34.9**	**-1.0**
CPN1				AMP		09 08 37.0	
	comp=E,1μm,0.5s						
CPCH	**Copiapo**	**5.61**	**198**	*i* S	**S**	**09 09 27.0**	**-6.3**
LPAZ	**La Paz**	**5.71**	**2**	P	**P**	**09 08 30.8**	**-0.1**
	comp=E,6.8nm,0.3s,baz=196,slow=7.7,SNR=244						
LPAZ				S	**S**	**09 09 35.2**	**-0.7**
	comp=E,0.4nm,0.3s,baz=276,slow=18,SNR=3.1						
LPAZ	**La Paz**	**5.71**	**2**	*e*P	**P**	**09 08 31.7**	**+0.8**
	comp=E,14nm,0.5s						
ARE	**Arequipa**	**6.28**	**331**	*e*P	**P**	**09 08 34.0**	**-4.5**
ARE				*i* S	**S**	**09 09 43.7**	**-5.7**
CPUP	**Villa Florida**	**10.94**	**115**	P	**P**	**09 09 41.1**	**+0.4**
	comp=E,0.1nm,0.3s,baz=291,slow=8.0,SNR=5.6						
BDFB	**Brasilia**	**20.27**	**75**	P	**P**	**09 11 32.7**	**-0.9**
	comp=E,4.9nm,0.5s,baz=248,slow=12,SNR=6.7						
LIC	**Lamto**	**68.05**	**73**	*e*P	**P**	**09 17 53.1**	**-1.0**
	comp=E,25nm,0.9s						
TIC	**Toumodi**	**68.24**	**73**	*e*P	**P**	**09 17 55.2**	**-0.1**
	comp=E,6.9nm,0.2s						
KIC	**Kosan Boka**	**68.36**	**73**	*e*P	**P**	**09 17 56.1**	**+0.1**
	comp=E,26nm,0.5s,mb5.2						
DBIC	**Dimbokro**	**68.40**	**73**	P	**P**	**09 17 56.5**	**+0.2**
	comp=E,6.1nm,0.6s,mb4.5,baz=220,slow=9.4,SNR=12						
YKA	**Yellowknife Ar**	**91.85**	**340**	P	**P**	**09 20 01.5**	**+1.4**
	comp=E,0.2nm,0.5s,mb3.4,baz=135,slow=4.3,SNR=17						
MKAR	**Makanchi Array**	**145.75**	**37**	PKPbc	PKPbc	09 26 33.2	+3.4
	comp=E,0.8nm,0.8s,baz=270,slow=2.4,SNR=4.8						
MKAR	**Makanchi Array**	**145.75**	**37**	PKPbc	PKPbc	09 26 33.2	+3.4

NEIC **16** *09:11:51.2, 19.37N×64.50W,h25km,MD3.6(RSPR), After RSPR.*
RSPR 16 09:11:51.2,19.37N×64.50W,h25km±31km,M3.6,11C-3D, Virgin Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MTP	**Monte Pirata**	**1.62**	**219**⇓	*e*P	P	09 12 16.2	-2.4
MTP				S	Sn	09 12 33.7	-5.1
CBYP	**Canovanas**	**1.69**	**230**⇑	*e*P	Pn	09 12 16.5	-3.1
CBYP				S	Sn	09 12 35.0	-5.6
CPD	**Cerro la Pandu**	**1.89**	**226**⇑	*e*P	Pn	09 12 20.2	-2.3
CPD				S	Sn	09 12 41.0	-4.6
CSB	**Colonia Sabana**	**1.91**	**236**⇑	*e*P	Pn	09 12 18.8	-3.9
CSB				S	Sn	09 12 41.1	-5.0
SJG	**San Juan**	**2.01**	**232**⇑	*e*P	Pn	09 12 20.7	-3.4
SJG				S	Sn	09 12 42.2	-6.5
SJG	**San Juan**	**2.01**	**232**⇑	*e*P	Pn	09 12 20.6	-3.6
SJG	**San Juan**	**2.01**	**232**	S	Sn	09 12 43.2	-5.4
SJG	**San Juan**	**2.01**	**232**⇑	*e*P	Pn	09 12 20.6	-3.6
SJG				S	Sn	09 12 43.2	-5.4
CELP	**Cerrillos**	**2.36**	**237**⇑	*e*P	Pn	09 12 25.7	-3.5
CELP				S	Sn	09 12 51.9	-5.7
AOPR	**Arecibo Observ**	**2.37**	**245**⇑	*e*P	Pn	09 12 26.1	-3.2
AOPR	**Arecibo Observ**	**2.37**	**245**	S	Sn	09 12 52.4	-5.5
OBIP	**Obispado Ponce**	**2.40**	**237**⇓	*e*P	Pn	09 12 26.1	-3.6
OBIP	**Obispado Ponce**	**2.40**	**237**	S	Sn	09 12 52.5	-6.1
PORP	**Portuguez**	**2.42**	**238**⇓	*e*P	Pn	09 12 26.7	-3.3
PORP				S	Sn	09 12 54.2	-4.8
LRS	**Lares**	**2.47**	**245**⇑	*e*P	Pn	09 12 27.9	-2.8
LRS				S	Sn	09 12 55.1	-5.4
LSP	**Las Mesas**	**2.73**	**245**⇑	*e*P	Pn	09 12 31.2	-3.3
LSP				S	Sn	09 13 01.4	-5.5
MGP	**Maguayo**	**2.81**	**242**⇑	*e*P	Pn	09 12 32.6	-3.0

IDC **16** *09:18:21.4±1.3,63.79S×170.11E,mb4.1/5,mb1 4.3/5, mb1mx4.2/10,MS4.0/5,Ms1 4.0/5,ms1mx3.6/16,Error ellipse: s-maj=59.4km s-min=28.8km az=47.0*
NEIC **16** *09:18:23.2±0.7,63.70S×170.05E,h10km,mb4.1/2, MS3.8/1,Error ellipse: s-maj=28.4km s-min=12.4km az=82.0*
ISC 16 09:18:21.7±0.8,63.68S±0.09×169.9E±0.5,h10km,n16, σ0s90/8,mb4.1/6,MS3.9/6,Balleny Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SBA	**Scott Base**	**14.28**	**183**	*e*P	**P**	**09 21 46.6**	**+1.1**
	16nm,0.6s						
RPZ	**Rata Peaks**	**20.02**	**3**	P	**P**	**09 22 56.7**	**-0.5**
	6.1nm,0.4s,baz=174,slow=3.6,SNR=18						
RPZ				LR	LR	09 28 54.4	
	comp=Z,459nm,18.9s,MS3.8,baz=216,slow=32						
URZ	**Urewera**	**25.82**	**13**	LR	LR	09 32 23.5	
	comp=Z,300nm,19.7s,MS3.8,baz=308,slow=32						
QSPA	**South Pole Qui**	**26.41**	**180**	*e*P	**P**	**09 23 59.4**	**-0.1**
	11nm,1.1s,mb4.3						
QSPA				LR	LR		
	comp=Z,280nm,22.0s,MS3.8						
STKA	**Stephens Creek**	**36.45**	**317**	P	**P**	**09 25 29.1**	**+0.8**
	comp=Z,2.2nm,1.0s,mb4.1,baz=229,slow=20,SNR=3.1						
STKA				LR	LR	09 38 43.7	
	comp=Z,112nm,18.3s,MS3.7,baz=201,slow=33						
MAW	**Mawson**	**39.03**	**216**	LR	LR	09 42 05.3	
	comp=Z,215nm,18.0s,MS4.0,baz=320,slow=36						
MAW	**Mawson**	**39.03**	**216**	P	**P**	**09 25 47.5**	**-2.1**
	comp=Z,0.4nm,0.2s,mb3.8						
ASAR	**Alice Springs**	**46.52**	**312**	P	**P**	**09 26 51.6**	**+0.8**
	comp=Z,2.0nm,0.8s,mb4.1,baz=158,slow=7.5,SNR=13						
WRA	**Warramunga Arr**	**49.85**	**314**	P	**P**	**09 27 16.5**	**-0.3**
	comp=Z,1.8nm,1.1s,mb4.0,baz=162,slow=6.4,SNR=6.3						
LPAZ	**La Paz**	**88.70**	**125**	P	**P**	**09 31 16.2**	**-0.1**
	comp=Z,1.6nm,0.9s,mb4.3,baz=224,slow=4.3,SNR=6.2						
TSUM	**Tsumeb**	**94.61**	**206**	LR	LR	10 14 28.2	
	comp=Z,132nm,18.8s,MS4.4,baz=186,slow=36						
VIB	**Van Inlet**	**124.89**	**38**	T		11 53 57.7	
ILAR	**Eielson Array**	**132.03**	**23**	PKP	PKPdf	09 37 35.8	-1.5
	comp=Z,0.5nm,0.9s,baz=256,slow=2.7,SNR=5.8						
YKA	**Yellowknife Ar**	**137.82**	**42**	PKP	PKPdf	09 37 44.5	-3.5
	comp=Z,0.1nm,0.6s,baz=209,slow=2.8,SNR=4.3						
YKA	**Yellowknife Ar**	**137.82**	**42**	PKP	PKPdf	09 37 44.5	-3.5
BRTR	**Keskin Array B**	**144.89**	**248**	PKP	PKPdf	09 37 59.9	-1.1
	comp=Z,1.4nm,1.0s,baz=135,slow=3.5,SNR=4.6						

IDC **16** *09:26:32.3±6.6,4.90S×153.51E,h137km±55km,mb3.2/4, mb1 3.5/5,mb1mx3.3/14,Error ellipse: s-maj=87.1km s-min=36.3km az=123.0*
ISC 16 09:26:28.6±5.8,5.2S±0.4×153.9E±0.4,h118km±52km,n5, σ0s61/6,mb3.3/4,New Ireland region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**7.88**	**237**	P	**P**	**09 28 21.6**	**-0.2**
	3.2nm,0.3s,baz=60,slow=6.0,SNR=11						
PMG				S	**S**	**09 29 50.2**	**+0.3**
	0.7nm,0.3s,baz=17,slow=22,SNR=2.6						
WRA	**Warramunga Arr**	**24.02**	**231**	P	**P**	**09 31 33.7**	**-0.1**
	0.7nm,0.5s,mb3.2,baz=52,slow=9.7,SNR=11						
ASAR	**Alice Springs**	**26.62**	**224**	P	**P**	**09 31 57.5**	**-0.6**
	0.3nm,0.7s,mb2.9,baz=59,slow=8.4,SNR=2.9						
STKA	**Stephens Creek**	**28.96**	**202**	P	**P**	**09 32 19.5**	**+0.4**
	3.4nm,1.2s,mb3.9,baz=349,slow=16,SNR=2.9						
YKA	**Yellowknife Ar**	**95.25**	**28**	P	**P**	**09 39 40.1**	**+0.2**
	0.1nm,0.9s,mb3.2,baz=263,slow=3.2,SNR=3.8						

NNC **16** *09:31:33.0±0.5,40.92N×78.50E,mpv3.0,Error ellipse: s-maj=4.8km s-min=2.2km az=162.0*
BJI **16** *09:31:35.6,40.95N×78.49E,h15km,ML3.1*
ISC 16 09:31:34.5±5.8,41.0N±0.1×78.5E±0.2,h4km±45km,n13, σ0s87/13,3C-2D,Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ULHL	**Ulahol**	**2.15**	**308**	P	**Pn**	**09 32 11.4**	**-0.1**
	SNR=42						
KSH	**Kashi**	**2.42**	**235**	*e*PG	**Pb**	**09 32 18.6**	**+0.2**
KSH				*e*SG	**Sb**	**09 32 48.3**	**-0.4**
KSH				S	Sn		
	comp=N,40nm,0.4s						
KSH				S	Sn		
	comp=E,100nm,0.6s						
KZA	**Kyzart**	**2.70**	**296**	P	**Pb**	**09 32 22.2**	**-0.9**
	SNR=55						
TKM2	**Tokmak 2**	**2.94**	**313**	P	**Pn**	**09 32 24.4**	**+1.5**
	SNR=20						
KBK	**Karagaybulak**	**3.17**	**304**	P	**Pb**	**09 32 31.1**	**-0.1**
	SNR=9.0						
UCH	**Uchtor**	**3.27**	**294**	P	**Pb**	**09 32 32.5**	**-0.3**
	SNR=18						
AAK	**Ala-Archa**	**3.45**	**300**	P	**Pb**	**09 32 35.5**	**-0.4**
	SNR=19						
CHMS	**Chumysh**	**3.48**	**307**	P	**Pb**	**09 32 35.0**	**-1.4**
	SNR=19						
AML	**Almayashu**	**3.81**	**290**	P	**Pb**	**09 32 42.7**	**+0.6**
	SNR=10						
EKS2	**Erkin-Say**	**3.94**	**297**	P	**Pb**	**09 32 44.6**	**+0.4**
	SNR=19						
KK31	**Karatay Array**	**6.34**	**292**	⇓Pg	**Pb**	**09 33 28.5**	**+3.0**
	comp=E,1.4nm,0.5s,baz=106,slow=14,SNR=16						
KK31				⇑Lg		09 34 51.9	
	comp=E,3.2nm,0.8s,baz=108,slow=27,SNR=7.1						
MK31	**Makanchi Array**	**6.44**	**24**	⇓Pn	**Pn**	**09 33 12.2**	**-0.3**
	comp=E,0.2nm,0.3s,baz=206,slow=13,SNR=6.4						
MK31				⇑Lg		09 34 56.3	
	comp=E,5.7nm,1.0s,baz=213,slow=24,SNR=3.6						
KURK	**Kurchatov**	**9.77**	**0**	⇑Lg		09 36 43.6	
	comp=E,3.7nm,1.0s,baz=349,slow=16,SNR=3.7						

IDC **16** *09:48:54.4±1.1,11.98S×166.21E,mb4.0/6,mb1 4.1/6, mb1mx4.0/14,MS3.6/4,Ms1 3.5/4,ms1mx3.3/17,Error ellipse: s-maj=39.9km s-min=24.6km az=133.0*
NEIC **16** *09:48:56.1±0.6,12.02S×166.18E,h10km,mb4.4/4,Error ellipse: s-maj=17.5km s-min=13.2km az=137.0*
BJI **16** *09:49:01.0,11.08S×166.18E,h22km,mb4.7*
ISC 16 09:49:08.5±2.8,12.3S±0.1×165.9E±0.1,h119km±27km, n20,σ1s06/19,mb4.2/12,Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**5.81**	**158**	*i* P	**P**	**09 50 34.0**	**+0.5**
CTA	**Charters Tower**	**20.42**	**245**	P	**P**	**09 53 38.9**	**+0.7**
	5.2nm,0.9s,baz=56,slow=11,SNR=4.3						
CTA				LR	LR	10 00 38.7	
	comp=Z,162nm,19.5s,baz=15,slow=34						
CTA	**Charters Tower**	**20.42**	**245**	P	**P**	**09 53 38.9**	**+0.7**
CTA				LR	LR	10 00 38.8	
CTAO	**Charters Tower**	**20.42**	**245**	P	**P**	**09 53 36.2**	**-2.0**
	9.9nm,1.1s						
STKA	**Stephens Creek**	**29.70**	**225**	LR	LR	10 06 23.3	
	comp=Z,165nm,19.8s,baz=24,slow=35						
WB2	**Warramunga Arr**	**31.25**	**252**	*e*P	**P**	**09 55 18.7**	**-0.5**
WRA	**Warramunga Arr**	**31.26**	**252**	P	**P**	**09 55 18.8**	**-0.6**
	1.1nm,0.9s,mb3.6,baz=84,slow=9.1,SNR=6.5						
WRA				PcP	PcP	09 58 11.7	+0.7
	1.9nm,0.8s,baz=81,slow=3.1,SNR=13						
RPZ	**Rata Peaks**	**31.64**	**173**	P	**P**	**09 55 21.6**	**-0.9**
	6.6nm,0.9s,mb4.4,baz=279,slow=8.5,SNR=3.9						
RPZ				LR	LR	10 05 23.3	
	comp=Z,92nm,20.2s,baz=197,slow=31						
AS12	**Alice Springs**	**32.43**	**245**	*e*P	**P**	**09 55 28.8**	**-0.7**
	2.3nm,0.7s,mb4.0						
ASAR	**Alice Springs**	**32.43**	**245**	P	**P**	**09 55 28.9**	**-0.6**
	1.1nm,0.6s,mb3.7,baz=72,slow=9.5,SNR=21						
ASAR				PcP	PcP	09 58 14.9	+0.8
	1.8nm,0.7s,baz=72,slow=2.5,SNR=19						
ASAR				LR	LR	10 08 04.3	
	comp=Z,57nm,20.3s,baz=201,slow=35						
SBA	**Scott Base**	**65.58**	**180**	P	**P**	**09 59 41.6**	**+0.3**
	1.5nm,0.7s,mb3.9						
BJI	**Beijing**	**69.55**	**321**	*e*P	**P**	**10 00 05.8**	**-0.7**
BJI				AMB	AMB		
	comp=Z,8.0nm,1.2s,mb4.4						
LZH	**Lanzhou**	**75.71**	**312**	*e*P	**P**	**10 00 44.4**	**+1.6**
LZH				AP	pP	10 00 56.3	-17
LZH				AMB	AMB		
	comp=Z,43nm,1.5s,mb5.0						
QSPA	**South Pole Qui**	**77.74**	**180**	*e*P	**P**	**10 00 54.3**	**+1.0**
	comp=Z,5.9nm,1.1s,mb4.2						
ULN	**Ulaanbaatar**	**79.39**	**324**	*e*P	**P**	**10 01 03.2**	**+0.3**
	comp=Z,7.1nm,0.9s,mb4.5						
GTA	**Gaotai**	**80.04**	**314**	*e*P	**P**	**10 01 08.3**	**+1.8**
GTA				AP	pP	10 01 20.0	-17
GTA				AMB	AMB		
	comp=Z,10.0nm,1.2s,mb4.5						
ILAR	**Eielson Array**	**84.61**	**18**	P	**P**	**10 01 26.6**	**-2.7**
	comp=Z,0.4nm,0.5s,mb3.6,baz=259,slow=4.6,SNR=5.1						
MKAR	**Makanchi Array**	**94.54**	**317**	P	**P**	**10 02 17.2**	**+0.6**
	comp=Z,7.2nm,0.6s,mb5.2,baz=92,slow=6.6,SNR=51						
YKA	**Yellowknife Ar**	**95.97**	**27**	P	**P**	**10 02 21.8**	**-0.9**
	comp=Z,0.1nm,0.4s,mb3.6,baz=258,slow=4.9,SNR=9.0						
YKA	**Yellowknife Ar**	**95.97**	**27**	P	**P**	**10 02 21.8**	**-0.9**

BJI **16** *09:53:25.8,51.74N×15.04E,h5km,mB4.5,mb4.8,Ms4.7, Msz4.2*
NAO **16** *09:53:29.9±5.0,51.57N×16.23E,ML3.7*
LDG **16** *09:53:29.9±0.2,51.63N×16.40E,h1km,Ml5.0/41,Error ellipse: s-maj=5.3km s-min=3.4km az=168.0,Suspected Mining induced.*
MOS **16** *09:53:29.4±1.1,51.64N×16.06E,h10km,mb4.6/10,Error ellipse: s-maj=7.1km s-min=4.2km az=87.1*
BGR **16** *09:53:30.3±0.6,51.61N×16.16E,h1km,ML4.7/6,Error ellipse: s-maj=5.6km s-min=4.4km az=108.0*
NEIC **16** *09:53:31.8±0.2,51.54N×15.99E,h5km,mb4.4/22, ML4.7(SZGRF),ML4.5(VIE),ML4.4(STR),ML4.2(CLL), ML4.1(BRG),Error ellipse: s-maj=2.8km s-min=2.2km az=115.0*
IDC **16** *09:53:31.1±0.4,51.50N×16.04E,mb4.2/14,mb1 4.4/25, mb1mx4.3/32,ML4.1/11,MS3.3/1,Ms1 3.3/1,ms1mx2.4/33, Error ellipse: s-maj=10.2km s-min=5.5km az=95.0*
ZUR_RM **16** *09:53:31,51.54N×15.99E,h18km,Mw3.9/18,Moment Tensor Solution. s18 Moment tensor: Scale 10^15^Nm; Mrr-1.03; Mθθ0.48; Mϕϕ0.55; Mrθ-0.05; Mrϕ-0.04; Mθϕ0.16; Best double couple: M0.813×10^15^ NP1:ϕs157°,δ51°,λ-89°. NP2:ϕs336°,δ39°,λ-91°. Principal axes: T.58, Plg6°, Azm247°; N.467, Plg0°, Azm337°; P-1.047, Plg84°, Azm72°;*
WAR **16** *09:53:31.7,51.51N×16.07E,h1km,Location given by Rudna mine, origin time based upon KSP*
CSEM **16** *09:53:33.5,51.41N×15.94E,h25km,mb4.9*
PRU **16** *09:53:34.7,51.36N×16.01E*
STR **16** *09:53:51.2±2.5,50.82N×14.01E,h10km±1km,Ml4.4,Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
ISC 16 09:53:28.9±0.1,51.51N±0.01×15.99E±0.01,n412, σ1s33/541,mb4.6/32,MS4.1/4,37C-15D,Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.70**	**164**	*e*Pg	**Pg**	**09 53 44.1**	**+1.2**
KSP				*e*Sg	**Sg**	**09 53 53.7**	**+1.5**
KSP	**Ksiaz**	**0.70**	**164**	*i* Pg	**Pg**	**09 53 44.1**	**+1.2**
KSP				*i* Sg	**Sg**	**09 53 53.9**	**+1.7**
KSP	**Ksiaz**	**0.70**	**164**	*i* P	**Pg**	**09 53 44.1**	**+1.2**
KSP				*e*		09 53 57.0	
KSP	**Ksiaz**	**0.70**	**164**	*i* Pg	**Pg**	**09 53 44.1**	**+1.2**
KSP				*i*		09 53 44.7	
KSP				*i* Sg	**Sg**	**09 53 53.9**	**+1.7**
KSP				*e*		09 53 57.0	
UPC	**Upice**	**1.01**	**179**	*e*PG	**Pg**	**09 53 50.2**	**+1.1**
DPC	**Dobruska-Polom**	**1.18**	**170**	*e*PG	**Pg**	**09 53 53.2**	**+0.6**
DPC				*e*SG	**Sg**	**09 54 09.0**	**+0.7**
	18μm,2.5s						
DPC	**Dobruska-Polom**	**1.18**	**170**	*e*P	**Pg**	**09 53 53.2**	**+0.6**
DPC				*e*		09 54 09.0	
DPC				smax			
	comp=N,18μm,2.5s						
PVCC	**Panska Ves**	**1.33**	**223**	*e*PG	**Pg**	**09 53 57.0**	**+1.4**
PVCC				*e*SG	**Sg**	**09 54 15.8**	**+2.4**
BRG	**Berggiesshubel**	**1.44**	**244**	*e*Pg	**Pg**	**09 53 58.0**	**+0.3**
BRG				*e*Sg	**Sg**	**09 54 19.4**	**+2.5**
BRG	**Berggiesshubel**	**1.44**	**244**	*e*P	**Pn**	**09 53 57.9**	**+1.6**
BRG				*i*		09 54 19.7	
BRG	**Berggiesshubel**	**1.44**	**244**	*e*Pn	**Pn**	**09 53 57.9**	**+1.6**
BRG				*i* Pg	**Pg**	**09 53 59.8**	**+2.1**
BRG				*i* Sg	**Sg**	**09 54 19.7**	**+2.8**
RUE	**Ruedersdorf**	**1.68**	**306**	*e*Pg	**Pg**	**09 54 00.5**	**-1.9**
RUE				*e*Sg	**Sg**	**09 54 24.7**	**0.0**
RUE	**Ruedersdorf**	**1.68**	**306**	*e*Pg	**Pg**	**09 54 00.5**	**-1.9**
RUE				*e*Sg	**Sg**	**09 54 24.7**	**0.0**
PRA	**Prague**	**1.75**	**215**	PN	**Pn**	**09 54 03.0**	**+2.2**
PRA				SG	**Sg**	**09 54 28.0**	**+0.7**
PRU	**Pruhonice**	**1.78**	**212**	*e*PN	**Pn**	**09 54 02.6**	**+1.4**
PRU				SG	**Sg**	**09 54 29.8**	**+1.5**
	comp=N,2μm,1.0s						
PRU				L		09 54 40.0	
PRU	**Pruhonice**	**1.78**	**212**	*e*P	**Pn**	**09 54 02.6**	**+1.4**
PRU						09 54 29.8	
PRU				smax			
	comp=N,2μm,1.0s						
PRU				MLR	MLR		
	comp=Z,14μm,3.8s						
PRU	**Pruhonice**	**1.78**	**212**	*e*Pn	**Pn**	**09 54 02.6**	**+1.4**
PRU				Sg	**Sg**	**09 54 29.8**	**+1.5**
PRU				*e*		09 59 37.2	
CLL	**Collm**	**1.88**	**265**	*e*Pn	**Pn**	**09 54 03.9**	**+1.2**
CLL				*e*Sg	**Sg**	**09 54 33.5**	**+1.9**
CLL	**Collm**	**1.88**	**265**	*i* PN	**Pn**	**09 54 04.0**	**+1.3**
	comp=Z,logA/T=2.7						
CLL				*i* PG	**Pg**	**09 54 07.5**	**+1.0**
CLL				*i*		09 54 11.0	
CLL				*i*		09 54 30.2	
CLL				*i* SG	**Sg**	**09 54 33.1**	**+1.4**
CLL				*e*L		09 54 42.0	
CLL	**Collm**	**1.88**	**265**	*i* P	**Pn**	**09 54 04.0**	**+1.3**
CLL				*i*		09 54 33.1	
CLL				pmax	pmax		
	comp=Z,328nm,0.6s						
CLL	**Collm**	**1.88**	**265**	*i* Pn	**Pn**	**09 54 04.0**	**+1.3**
CLL				*i* Pg	**Pg**	**09 54 07.5**	**+1.0**
CLL				*i* Sg	**Sg**	**09 54 33.1**	**+1.4**
MORC	**Moravsky Berou**	**2.00**	**150**	*e*Pn	**Pn**	**09 54 04.2**	**-0.1**
MORC				*e*Sn	**Sn**	**09 54 30.6**	**+0.2**
RAC	**Raciborz**	**2.00**	**135**	*e*Pn	**Pn**	**09 54 04.5**	**+0.1**
RAC				*e*Pg	**Pg**	**09 54 08.3**	**-0.6**
RAC				*e*Sn	**Sn**	**09 54 28.3**	**-2.2**
RAC				*e*Sg	**Sg**	**09 54 35.3**	**-0.3**
RAC	**Raciborz**	**2.00**	**135**	*e*P	**Pn**	**09 54 04.5**	**+0.1**
RAC				*e*		09 54 28.3	
OKC	**Ostrava-Krasne**	**2.17**	**140**	*e*PG	**Pg**	**09 54 11.5**	**-0.7**
OKC				*e*SG	**Sg**	**09 54 38.8**	**-2.3**
OKC	**Ostrava-Krasne**	**2.17**	**140**	P	**Pn**	**09 54 07.0**	**+0.3**
OKC				*e*Pg	**Pg**	**09 54 11.5**	**-0.7**
OKC				*e*Sg	**Sg**	**09 54 38.8**	**-2.3**
VRAC	**Vranov**	**2.24**	**170**	Pn	**Pn**	**09 54 09.1**	**+1.3**
	comp=Z,36nm,0.3s,baz=342,slow=16,SNR=159						
VRAC				Lg		09 54 42.0	
	comp=Z,126nm,0.3s,baz=74,slow=21,SNR=14						
VRAC				LR	LR	09 55 11.6	
	comp=Z,557nm,18.8s,baz=301,slow=45						
OJC	**Ojcow**	**2.74**	**117**	*e*Pn	**Pn**	**09 54 12.9**	**-2.0**
OJC				*i* Pg	**Pg**	**09 54 23.0**	**-0.6**
OJC				*e*Sn	**Sn**	**09 54 46.7**	**-2.5**
OJC				*i* Sg	**Sg**	**09 54 57.7**	**-2.4**
OJC	**Ojcow**	**2.74**	**117**	*e*PN	**Pn**	**09 54 13.0**	**-1.9**
OJC				*i* PG	**Pg**	**09 54 23.0**	**-0.6**
OJC				*e*SN	**Sn**	**09 54 47.0**	**-2.2**

BSD Bornholm Skovb 3.67 350 *i* P **Pn** 09 54 27.2 -0.9
BSD *i* S **Sn** 09 55 10.0 -2.7
BSD pmax pmax
comp=Z,26nm,0.4s
BSD MLR MLR
comp=Z,98nm,17.0s
NRDL Niedersach Rie 3.77 287 *e*Pn **Pn** 09 54 31.4 +1.8
MOA Molln 3.83 198⇑ *i*PN **Pn** 09 54 31.4 +0.9
MOA *i* SG **Sg** 09 55 35.5 -1.1
comp=Z,708nm,0.8s
SOP Sopron 3.85 174⇓ *e*Pn **Pn** 09 54 31.0 +0.3
SOP *e*Sn **Sn** 09 55 20.9 +3.5
SRO Srobarova 4.00 157 *e*PB **Pb** 09 54 41.9 +1.8
SRO *e*SG **Sg** 09 55 38.1 -4.0
KECS Kecovo 4.20 135 *i* SB **Sb** 09 55 45.0 +10
BSEG Bad Segeberg 4.22 307 *e*Pn **Pn** 09 54 35.1 -0.8
BSEG Bad Segeberg 4.22 307 *e*Pn **Pn** 09 54 35.1 -0.8
ARSA Arzberg 4.28 184⇑ *i*PN **Pn** 09 54 38.3 +1.5
ARSA *i* SG **Sg** 09 55 46.7 -4.7
comp=Z,866nm,1.0s
PENC Penc 4.30 149⇑ *e*P **Pn** 09 54 37.5 +0.4
CRVS Cervenica-Dubn 4.38 125 *e*PN **Pn** 09 54 38.3 +0.1
CRVS *e*PB **Pb** 09 54 51.0 +4.4
CRVS *e*SG **Sg** 09 55 51.1 -3.6
PSZ Piszkesteto 4.40 143 *e*Pn **Pn** 09 54 38.7 +0.1
PKSG 4.41 158⇑ *e*P **Pn** 09 54 39.0 +0.3
BUD Budapest 4.49 153 *e*Pn **Pn** 09 54 48.4 +8.6
FUR Furstenfeldbru 4.53 224 *e*Pn **Pn** 09 54 41.6 +1.2
FUR *e*Sg **Sg** 09 55 59.7 -0.1
FUR Furstenfeldbru 4.53 224 *e*Pn **Pn** 09 54 41.6 +1.2
FUR *e*Sg **Sg** 09 55 59.7 -0.1
SIND Sindeldorf 4.62 245⇓ *e*P **Pn** 09 54 41.9 +0.2
SIND S **Sn** 09 55 23.7 -13
KWP Kalwaria 4.68 111 *e*Pn **Pn** 09 54 41.3 -1.2
KWP *e*Pg **Pg** 09 54 56.0 -6.3
KWP *e*Sg **Sg** 09 56 01.8 -2.8
KWP Kalwaria 4.68 111 *e*PN **Pn** 09 54 41.0 -1.5
KWP *e*PN **Pg** 09 54 56.0 -6.3
KWP *e*S **Sg** 09 56 02.0 -2.6
COP Copenhagen 4.69 335 *i* P **Pn** 09 54 40.8 -1.8
COP *i* 09 55 07.2
COP *i* S **Sn** 09 55 34.5 -4.0
COP *e*LG 09 56 17.3
comp=Z,60nm,18.0s
COP Copenhagen 4.69 335 *i* P **Pn** 09 54 40.8 -1.8
COP *i* S **Sn** 09 55 34.5 -4.0
COP MLR MLR
comp=Z,68nm,18.0s
HDH Heidenheim 4.74 234 *e*P **Pn** 09 54 43.3 -0.1
KBA Koelnbreinsper 4.76 202⇑ *i*PN **Pn** 09 54 44.7 +1.0
KBA *i* SG **Sg** 09 56 04.7 -2.9
comp=Z,339nm,0.9s
PERS Pernice 4.92 187 *i* Pn **Pn** 09 54 46.9 +1.1
TOD Tromm 4.96 250 P **Pn** 09 54 46.2 -0.3
TOD S **Sb** 09 56 03.9 +6.4
UZH Uzhgorod 4.98 123 *e*P **Pn** 09 54 47.0 +0.3
SUW Suwalki 5.03 57 *e*Pn **Pn** 09 54 46.8 -0.7
SUW *e*Pg **Pg** 09 55 08.2 -1.2
SUW *e*Sn **Sn** 09 55 46.1 -1.1
SUW *e*Sg **Sg** 09 56 16.7 +0.2
SUW Suwalki 5.03 57 *e*PN **Pn** 09 54 47.0 -0.5
SUW *e*PG **Pg** 09 55 08.0 -1.4
SUW *e*SN **Sn** 09 55 46.0 -1.2
SUW *e*SG **Sg** 09 56 17.0 +0.5
SUW Suwalki 5.03 57 *e*P **Pn** 09 54 46.8 -0.7
SUW *e* 09 55 46.1
GROS Grobnik 5.07 184 P **Pn** 09 54 49.0 +1.0
SWS Schriesheim 5.08 249 P **Pn** 09 54 47.6 -0.5
SWS S **Sn** 09 55 57.6 +9.2
WATA Walderalm 5.08 216⇑ *i*PN **Pn** 09 54 49.6 +1.5
WATA *i* SG **Sg** 09 56 16.0 -2.0
comp=Z,184nm,0.8s
WATA Walderalm 5.08 216⇑ *i*Pn **Pn** 09 54 49.6 +1.5
comp=Z,184nm,0.8s
WATA *i* Sg **Sg** 09 56 16.0 -2.0
OBKA Obir 5.10 191⇓ *i*PN **Pn** 09 54 48.3 -0.1
OBKA *i* SG **Sg** 09 56 15.3 -3.4
comp=Z,230nm,1.0s
OBKA Obir 5.10 191⇓ *i*Pn **Pn** 09 54 48.3 -0.1
comp=Z,230nm,1.0s
OBKA *i* Sg **Sg** 09 56 15.3 -3.4
WTTA Wattenberg 5.12 215⇑ *i*PN **Pn** 09 54 49.8 +1.1
WTTA *i* SG **Sg** 09 56 18.1 -1.2
comp=Z,320nm,0.8s
WTTA Wattenberg 5.12 215⇑ *i*Pn **Pn** 09 54 49.8 +1.1
comp=Z,320nm,0.8s
WTTA *i* Sg **Sg** 09 56 18.1 -1.2
PKS9 Tamasi 5.16 162 *e*P **Pn** 09 54 50.7 +1.5
STU Stuttgart 5.16 241 *e*Pn **Pn** 09 54 49.3 0.0
STU Stuttgart 5.16 241 *e*Pn **Pn** 09 54 49.3 0.0
MOTA Moosalm 5.25 219⇑ *i*PN **Pn** 09 54 51.1 +0.5
MOTA *i* SG **Sg** 09 56 23.0 -0.8
comp=Z,480nm,1.0s
MOTA Moosalm 5.25 219⇑ *i*Pn **Pn** 09 54 51.1 +0.5
comp=Z,480nm,1.0s
MOTA *i* Sg **Sg** 09 56 23.0 -0.8
BUCH Bad Urach 5.27 237⇑ *e*P **Pn** 09 54 50.5 -0.3
PKSN Nyarlorinc 5.27 150⇓ *e*P **Pn** 09 54 51.9 +1.0
LSR Lussari 5.30 199⇓ *i*P **Pn** 09 54 52.5 +1.3
PLRO Paularo 5.31 202⇑ *i*P **Pn** 09 54 52.8 +1.4
SQTA Sankt Quirin 5.31 218⇑ *i*PN **Pn** 09 54 52.7 +1.3
SQTA *i* SG **Sg** 09 56 24.8 -1.0
comp=Z,229nm,0.8s
SQTA Sankt Quirin 5.31 218⇑ *i*Pn **Pn** 09 54 52.7 +1.3
comp=Z,229nm,0.8s
SQTA *i* Sg **Sg** 09 56 24.8 -1.0
FVI Forni Avoltri 5.36 204 *e*P **Pn** 09 54 53.1 +1.1
DOBS Dobrina 5.38 184 P **Pn** 09 54 53.9 +1.5
LVV L'vov 5.39 105 *e*P **Pn** 09 54 53.1 +0.6
LVV *e*S **Sn** 09 55 53.2 -3.0
LVV MLR MLR
comp=Z,440nm,5.0s
PTCC Patocco-Chiusa 5.40 200 *e*P **Pn** 09 54 53.5 +0.8
UBR Uberruh 5.42 227 P **Pn** 09 54 52.3 -0.6
LBG Lerchenberg 5.44 241 P **Pn** 09 54 52.0 -1.2
BUG Bochum--Univer 5.45 273 *e*Pn **Pn** 09 54 54.3 +0.8
BUG Bochum--Univer 5.45 273 *e*Pn **Pn** 09 54 54.3 +0.9
KTD Kalmit 5.51 250 *e*P **Pn** 09 54 54.2 -0.1
GOLS Golise 5.51 183 P **Pn** 09 54 54.9 +0.6
ROBS Robic 5.52 198 P **Pn** 09 54 55.5 +1.1
BOO Bordano 5.54 201⇑ *e*P **Pn** 09 54 56.6 +2.0
GMNA Gemona 5.55 200 *e*P **Pn** 09 54 55.8 +1.0
LJU Ljubljana 5.56 191 *i* Pn **Pn** 09 54 56.0 +1.1
DRE Drenchia 5.56 197⇓ *e*P **Pn** 09 54 57.1 +2.1
AFL Alpe Faloria 5.58 208⇑ *e*P **Pn** 09 54 58.1 +2.9
LEGS Legarje 5.59 185 P **Pn** 09 54 56.4 +1.1
HLG Helgoland 5.59 302 *e*Pn **Pn** 09 54 55.3 -0.2
RHK1 Bakonya 5.59 165⇑ *e*P **Pn** 09 54 55.5 +0.1
ABH Alteburg 5.61 256 *e*P **Pn** 09 54 55.7 +0.1
GUT Gutenstein 5.63 235 P **Pn** 09 54 54.8 -1.1
MPRI Monte Prat 5.64 202⇓ *e*P **Pn** 09 54 57.5 +1.5
COLI Coloredo 5.65 199⇑ *e*P **Pn** 09 54 57.8 +1.5
VOY Vojsko 5.66 195 *e*Pn **Pn** 09 54 56.2 -0.1
VOY *e* 09 55 18.5
VOY *e*Sn **Sg** 09 56 38.0 +0.7
CRES Cresnjevec ost 5.70 184 P **Pn** 09 54 58.0 +1.0
WTSB Winterswijk 5.73 278 *e*P **Pn** 09 54 58.2 +0.8
comp=Z,67nm,0.7s
WTSB *e*S **Sg** 09 56 27.8 -12
VISS Visnje 5.77 188 *i* Pn **Pn** 09 54 58.2 +0.4
JAVS Javornik 5.77 194 *i* Pn **Pn** 09 54 58.3 +0.5
SPAK Spaichingen 5.78 237 *e*P **Pn** 09 54 57.7 -0.3
MLNI Malnisio 5.81 204⇑ *i*P **Pn** 09 54 59.8 +1.3
DAVA Damuels 5.81 226⇑ *i*PN **Pn** 09 54 58.3 -0.2
DAVA *i* SG **Sg** 09 56 40.8 -1.7
comp=Z,260nm,0.8s
DAVA Damuels 5.81 226⇑ *i*Pn **Pn** 09 54 58.3 -0.2
comp=Z,260nm,0.8s
DAVA *i* Sg **Sg** 09 56 40.8 -1.7
LANF Langenberg 5.83 247 *e*P **Pn** 09 54 58.1 -0.7
CEY Cerknica 5.87 191 P **Pn** 09 55 00.2 +0.9
FAU Forcella Aurin 5.91 208⇑ *i*P **Pn** 09 55 02.5 +2.6
RUP Ruppelstein 5.97 256⇑ *e*P **Pn** 09 55 00.9 +0.2
BOJS Bojanci 6.03 185 *e*Pn **Pn** 09 55 01.9 +0.3
SLE Schleitheim 6.15 235 ⇓P **Pn** 09 55 02.5 -0.7
CTI Castel Tesino 6.18 209 *e*P **Pn** 09 55 05.3 +1.7
WILA Wila 6.18 231 ⇓P **Pn** 09 55 03.4 -0.2
DAVOX Davos 6.21 223 Pn **Pn** 09 55 04.8 +0.7
comp=Z,4.1nm,0.3s,baz=39,slow=11,SNR=64
DAVOX Lg 09 56 49.4
comp=Z,5.7nm,0.3s,baz=180,slow=22,SNR=5.4
BRMO Bormio 6.25 218 *e*P **Pn** 09 55 06.9 +2.2

KIZ Kirchzarten 6.33 239 P **Pn** 09 55 04.0 -1.8
FELD Feldberg 6.33 238 *e*P **Pn** 09 55 04.2 -1.6
MUD Monsted U'grnd 6.38 324 *i* P Px 09 55 38.5
comp=Z,75nm,0.8s
MUD *i* S Sx 09 57 09.2
MUD *i* 09 57 15.8
MUD *e*LG 09 58 12.8
comp=Z,130nm,19.0s
HGN Heimansgroeve 6.38 267 *e*P **Pn** 09 55 06.2 -0.2
comp=Z,17nm,1.7s
HGN *e*S **Sb** 09 56 37.2 -1.3
WLS Welschbruch 6.38 244 *e*P **Pn** 09 55 05.3 -1.2
CDF Champ du Feu 6.42 245 *e*Pn **Pn** 09 55 06.2 -0.9
SNR=1.0
CDF *e*Pg **Pg** 09 55 32.3 -4.9
SNR=1.0
CDF *e*Sg **Sg** 09 56 59.7 -3.1
comp=Z,2μm,1.1s
WLF Walferdange 6.53 257 *e*Pn **Pn** 09 55 07.9 -0.8
comp=Z,38nm,0.9s
WLF *e*Sg **Sg** 09 57 05.5 -0.9
LLS Linth-Limmern 6.54 227 ⇑P **Pn** 09 55 08.4 -0.3
MABI Malga Bissina 6.55 216 *e*P **Pn** 09 55 10.6 +1.6
ECH Echery 6.59 243 *e*P **Pn** 09 55 07.9 -1.6
VDL Val di Lei 6.61 223 ⇑P **Pn** 09 55 11.4 +1.6
MUO Muotathal 6.62 229 ⇓P **Pn** 09 55 09.8 -0.1
MOF Molkenrain 6.82 241 *e*P **Pn** 09 55 10.5 -2.2
SAL Salo 6.93 214 *e*P **Pn** 09 55 15.4 +1.2
HINF Hinteralfeld 6.99 242 *e*Pn **Pn** 09 55 14.8 -0.3
SNR=1.0
HINF *e*Sg **Sg** 09 57 17.5 -4.1
comp=Z,163nm,0.8s,SNR=1.0
NVLJ Novalja 7.00 187 *i* Pn **Pn** 09 55 15.8 +0.6
NVLJ *i* Sn **Sn** 09 56 32.9 -3.5
HAU Haudompre 7.17 244 *e*Pn **Pn** 09 55 16.8 -0.8
SNR=1.0
HAU *e*Sg **Sg** 09 57 23.6 -3.9
comp=Z,283nm,0.9s,SNR=1.0
GIVF Givet 7.22 263 *e*Pn **Pn** 09 55 19.8 +1.5
SNR=1.0
GIVF *e*Sg **Sg** 09 57 27.3 -2.0
comp=Z,1μm,1.2s
THEF They Montfort 7.25 247 *e*P **Pn** 09 55 17.4 -1.4
LOMF Lomont 7.28 239 *e*P **Pn** 09 55 20.0 +0.8
VAI Varese 7.40 223 *e*P **Pn** 09 55 21.6 +0.8
LKBD Leukerbad 7.52 230 ⇑P **Pn** 09 55 22.4 -0.2
BAIF Baives 7.61 264 *e*Pn **Pn** 09 55 24.8 +1.0
SNR=1.0
BAIF *e*Sg **Sg** 09 57 34.9 -7.5
comp=Z,979nm,1.5s
MMK Mattmark 7.61 227 ⇓P **Pn** 09 55 25.2 +1.4
MEZF Maizieres J'vi 7.67 251 *e*Pn **Pn** 09 55 24.3 -0.3
SNR=1.0
MEZF *e*Sg **Sg** 09 57 40.8 -3.4
comp=Z,614nm,1.1s
MCGN Macugnaga 7.67 227 *e*P **Pn** 09 55 25.5 +0.8
DIX Grande Dixence 7.85 230 ⇓P **Pn** 09 55 26.7 -0.4
ZCCA Zocca 7.92 207 *e*P **Pn** 09 55 29.2 +1.1
ERBM Eremo 8.02 210 *e*P **P** 09 55 31.9 +2.4
GSCL Gusciola 8.03 209 *e*P **P** 09 55 31.7 +2.0
BOB Bobbio (Coli) 8.04 215 *e*P **P** 09 55 30.7 +0.9
GRAM 8.07 212 P **P** 09 55 30.0 -0.2
SFI Santa Sofia 8.11 202 *e*P **P** 09 55 29.9 -0.9
FSSB Fossombrone 8.12 197 *e*P **P** 09 55 30.0 -0.9
VMG Vicchio 8.13 203 *e*P **P** 09 55 30.9 -0.1
VALM 8.14 210 P **P** 09 55 30.3 -0.9
CABF La Chapelle 8.14 237 *e*Pn **P** 09 55 29.4 -1.9
CABF *e*Pg **P** 09 56 06.8 +36
SNR=1.0
CABF *e*Sg **Sg** 09 57 54.1 -6.0
comp=Z,1μm,1.2s
PGD Poggio Sodo 8.17 202 *e*P **P** 09 55 30.3 -1.2
SARO Sassorosso 8.24 209 P **P** 09 55 32.3 -0.3
BACM 8.26 211 P **P** 09 55 32.7 -0.2
VLC Villacollemand 8.27 209 *e*Pn **P** 09 55 33.6 +0.7
ARV Arcevia 8.28 196 *e*P **P** 09 55 32.4 -0.8
BDI Bagni Di Lucca 8.29 208 *e*P **P** 09 55 33.5 +0.2
CRE Caprese Michel 8.36 201 *e*P **P** 09 55 34.0 -0.2
LSD Ceresole Reale 8.43 228 P **P** 09 55 36.0 +0.7
MAIM 8.46 208 P **P** 09 55 33.6 -2.0
SNTG Esanatoglia 8.52 195 *e*P **P** 09 55 35.6 -0.9
GENL Genova Univers 8.53 216 P **P** 09 55 36.5 -0.1
PCP Pian Castagno 8.57 218 P **P** 09 55 37.7 +0.5
LPL La Plagne 8.59 229 *e*Sn **Sn** 09 57 14.8 -1.4
comp=Z,16nm,0.8s,SNR=1.0
LPL *e*Sg **Sg** 09 58 07.7 -7.1
comp=Z,281nm,1.2s
LPL La Plagne 8.59 229 *e*Pn **P** 09 55 38.4 +1.0
LPL *e*Pg **P** 09 56 14.0 +37
LPL *e*Sn **Sn** 09 57 14.8 -1.4
LPL *e*Sg **Sg** 09 58 07.7 -7.1
LPG La Plagne 8.59 229 *e*Pn **P** 09 55 38.4 +0.9
SNR=1.0
LPG La Plagne 8.59 229 *e*Pg Px 09 56 13.0
SNR=1.0
LPG La Plagne 8.59 229 *e*Sn **Sn** 09 57 11.8 -4.5
comp=Z,32nm,0.8s,SNR=1.0
LPG La Plagne 8.59 229 *e*Sg **Sg** 09 58 08.2 -6.8
comp=Z,1μm,1.3s
RSP Reno Superiore 8.62 226 P **P** 09 55 37.4 -0.5
PII Pisa 8.62 207 *e*P **P** 09 55 37.3 -0.6
CSNT Castellina Chi 8.65 203 *e*P **P** 09 55 37.3 -1.0
HFS Hagfors 8.74 352 Pn **P** 09 55 36.3 -3.2
baz=175,slow=16
HFS Sn **Sn** 09 57 12.1 -7.8
baz=177,slow=28
HFS Hagfors 8.74 352 Pn **P** 09 55 36.0 -3.5
comp=Z,0.4nm,0.3s,baz=174,slow=15,SNR=45
HFS Sn **Sn** 09 57 14.0 -5.9
comp=Z,0.3nm,0.3s,baz=169,slow=24,SNR=3.6
HFS Lg 09 58 21.7
comp=Z,0.3nm,0.3s,baz=180,slow=27,SNR=5.0
MENF Mencas 8.78 269 *e*P **P** 09 55 40.2 +0.2
FENE Fenestrelle 8.80 226 P **P** 09 55 39.3 -1.1
BHB Bricherasio 8.86 225 P **P** 09 55 40.3 -0.9
KONO Kongsberg 8.92 339 *e*Pn **P** 09 55 39.4 -2.6
MLR Muntele Rosu 8.94 129 Pn **P** 09 55 40.5 -1.8
comp=Z,0.2nm,0.3s,baz=282,slow=20,SNR=3.0
BNI Bardonecchia 8.96 227 *e*Pn **P** 09 55 42.2 -0.4
BNI *e*Sn **Sn** 09 57 28.4 +3.0
FIN Finale Ligure 8.98 219 *e*P **P** 09 55 43.3 +0.4
RRL Cesana Torines 9.01 227 P **P** 09 55 42.6 -0.7
ROB Roburent 9.05 220 P **P** 09 55 43.1 -0.7
RORO 9.12 219 P **P** 09 55 43.6 -1.2
DOI San Damiano 9.13 223 *e*P **P** 09 55 44.0 -1.0
MBDF Montbardon 9.17 226 *e*Pn **P** 09 55 45.4 -0.1
SNR=1.0
MBDF Montbardon 9.17 226 *e*Pg Px 09 56 25.1
SNR=1.0
MBDF Montbardon 9.17 226 *e*Sn **Sn** 09 57 28.8 -1.8
comp=Z,19nm,0.7s,SNR=1.0
MBDF Montbardon 9.17 226 *e*Sg **Sg** 09 58 26.5 -7.6
comp=Z,589nm,1.4s
PZZ Prazzo 9.20 224 P **P** 09 55 43.9 -2.0
MONE Monesi 9.27 220 P **P** 09 55 45.1 -1.8
ENR Entracque 9.29 222 P **P** 09 55 45.9 -1.2
SSF Saint Saulge 9.29 246 *e*Pn **P** 09 55 45.4 -1.8
SNR=1.0
SSF Saint Saulge 9.29 246 *e*Pg Px 09 56 26.6
SNR=1.0
SSF Saint Saulge 9.29 246 *e*Sg **Sg** 09 58 26.2 -12
comp=Z,248nm,1.1s
VSU Vasula 9.30 37 Pn **P** 09 55 44.3 -3.0
VSU Sn **Sn** 09 57 26.3 -7.5
STV2 Anna di Valdie 9.31 222 P **P** 09 55 45.4 -2.1
STV Sta Anna Valdi 9.31 222 P **P** 09 55 45.4 -2.1
SMF Signal de Mont 9.34 243 *e*Pn **P** 09 55 45.9 -2.0
SNR=1.0
SMF *e*Pg P 09 56 28.1 +40
SNR=1.0
SMF *e*Sg **Sg** 09 58 31.1 -8.8
comp=Z,731nm,1.5s
SURF Saint Ours 9.34 225 *e*P **P** 09 55 47.7 -0.2
MNS Montasola 9.41 195 P **P** 09 55 47.5 -1.3
SAOF Saorge 9.43 220 *e*P **P** 09 55 48.3 -0.8
ORIF Oris-en-Rattie 9.43 230 *e*Pn **P** 09 55 49.4 +0.3
SNR=1.0
ORIF *e*Pg P 09 56 30.0 +41
SNR=1.0
ORIF *e*Sg **Sg** 09 58 32.8 -10
comp=Z,522nm,1.2s
AUTN L'Aution 9.47 221 *e*P **P** 09 55 49.5 -0.2
NEGI Negi 9.48 219 P **P** 09 55 48.4 -1.4
KIS Kishinev 9.52 113 *e*P **P** 09 55 48.0 -2.3

KIS *e*S **Sn** 09 57 33.0 -6.3
KIS pmax pmax
comp=Z,70nm,1.5s
KIS MLR MLR
comp=Z,400nm,12.0s
KIS MLR MLR
comp=Z,300nm,12.0s
AVF Avril sur Loir 9.53 245 *e*Pn **P** 09 55 48.4 -2.0
SNR=1.0
AVF *e*Pg P 09 56 32.6 +42
SNR=1.0
AVF *e*Sg **Sg** 09 58 34.9 -11
comp=Z,410nm,1.1s
TOUF Mont Tournerai 9.53 221 *e*P **P** 09 55 50.3 -0.1
SBF Sospel 9.58 220 *e*Pn **P** 09 55 50.4 -0.7
SNR=1.0
SBF *e*Sg **Sg** 09 58 37.8 -10
comp=Z,188nm,1.1s
AURF Auriere 9.60 221 *e*P **P** 09 55 50.4 -1.0
PTQR Pietraquaria 9.66 192 *e*P **P** 09 55 52.0 -0.2
MVIF Mont Vial 9.67 221 *e*P **P** 09 55 52.4 +0.1
HYF Humbligny 9.69 249 *e*Pn **P** 09 55 51.4 -1.1
HYF *e*Sg **Sg** 09 58 43.0 -8.3
REVF Revere 9.71 220 *e*P **P** 09 55 52.2 -0.6
CERT Certeto 9.79 193 *e*P **P** 09 55 53.8 -0.2
CII Carovilli 9.86 187 *e*Pn **P** 09 55 54.6 -0.3
PLDF La Plantade 9.87 241 *e*P **P** 09 55 52.7 -2.4
CALN Calern 9.89 222 *e*P **P** 09 55 55.2 -0.2
NB2 NORSAR Subarra 9.91 346 Pn **P** 09 55 51.5 -4.0
NB2 NORSAR Subarra 9.91 346 P **P** 09 55 50.9 -4.6
comp=Z,3.0nm,0.8s,baz=157,slow=11
NOA NORSAR Array B 9.91 346 Pn **P** 09 55 51.6 -3.9
comp=Z,1.2nm,0.3s,baz=164,slow=12,SNR=13
NOA Sn **Sn** 09 57 40.2 -8.6
comp=Z,1.0nm,0.3s,baz=136,slow=24,SNR=3.4
NOA Lg 09 58 45.0
comp=Z,1.2nm,0.3s,baz=19,slow=14,SNR=4.1
NOA NORSAR Array B 9.91 346 P **P** 09 55 51.6 -3.9
NOA 09 57 40.2
NOA pmax pmax
comp=Z,1.0nm,0.3s
NOA smax
comp=N,1.0nm,0.3s
BGF Bois d'Agland 9.95 245 *e*Pn **P** 09 55 53.7 -2.5
BGF *e*Pg P 09 56 39.8 +44
SNR=1.0
BGF *e*Sg **Sg** 09 58 48.9 -11
comp=N,384nm,1.1s
VIVF Saint-Julien-l 10.07 233 *e*Sn **S** 09 57 46.4 -6.3
comp=N,16nm,1.0s,SNR=1.0
VIVF *e*Sg S 09 58 53.3 +61
comp=N,393nm,1.4s
VIVF Saint-Julien-l 10.07 233 *e*Pn **P** 09 55 57.9 +0.1
VIVF *e*Sn **S** 09 57 46.4 -6.3
VIVF *e*Sg S 09 58 53.3 +61
AGO Saint Agoulin 10.09 242 *e*P **P** 09 55 56.7 -1.4
FRF La Foret Royal 10.15 222 *e*Sg Sx 09 58 54.9
comp=N,133nm,1.2s
FRF La Foret Royal 10.15 222 *e*Pn **P** 09 55 57.9 -1.1
FRF *e*Sg S 09 58 54.9 +60
PGF Pioggiola 10.15 211 *e*Pn **P** 09 55 57.9 -1.1
SNR=1.0
SMRF Simiane la Rot 10.29 227 *e*Pn **P** 09 55 59.1 -1.8
SMRF *e*Sg S 09 58 58.0 +60
comp=N,286nm,1.5s
VILF Villemus 10.32 226 *e*P **P** 09 56 06.5 +5.2
TAVF Tavernes 10.36 224 *e*P **P** 09 56 00.1 -1.7
LMR La Mourre 10.40 222 *e*Pn **P** 09 56 01.0 -1.3
SNR=1.0
LMR *e*Sn **S** 09 57 54.0 -6.8
SNR=1.0
LMR *e*Sg S 09 59 02.7 +62
comp=N,168nm,1.5s
TCF Toulx Ste Croi 10.47 245 *e*Pn **P** 09 56 01.2 -2.1
TCF *e*Sg S 09 59 04.6 +62
comp=N,315nm,1.2s
CSSN Cassano Irpino 10.68 184 *e*P **P** 09 56 06.5 +0.4
BERF Bertagne 10.76 224 P **P** 09 56 06.8 -0.5
LDF La Druitiere 10.77 261 *e*Pn **P** 09 56 09.0 +1.7
SNR=1.0
LDF *e*Sg S 09 59 15.8 +66
comp=N,230nm,1.2s
FLN La Foliniere 10.93 262 *e*Pn **P** 09 56 11.5 +2.0
SNR=1.0
FLN *e*Sg S 09 59 17.7 +64
comp=N,296nm,1.2s
LASF Ste Croix 11.04 232 *e*Sg Sx 09 59 23.8
comp=N,206nm,1.3s
LASF Ste Croix 11.04 232 *e*Pn **P** 09 56 09.0 -2.0
LASF *e*Sg S 09 59 23.8 +67
GRR Gorron 11.30 261 *e*Pn **P** 09 56 12.8 -1.8
GRR *e*Sg 09 59 33.4
comp=N,228nm,1.3s
CAF Calviac 11.38 240 *e*Pn **P** 09 56 14.8 -1.0
CAF *e*Sg 09 59 38.7
comp=N,218nm,1.4s
FIA0 FINESS Array S 11.39 25 Pn **P** 09 56 10.8 -5.0
baz=210,slow=11
FIA0 Sn **S** 09 58 12.7 -12
baz=207,slow=22
FINES FINESS Array B 11.39 25 Pn **P** 09 56 11.5 -4.3
comp=N,3.0nm,0.3s,baz=208,slow=11,SNR=107
FINES Sn **S** 09 58 14.5 -11
comp=N,2.0nm,0.3s,baz=198,slow=18,SNR=6.1
FINES FINESS Array B 11.39 25 P **P** 09 56 11.5 -4.3
FINES 09 58 14.5
FINES pmax pmax
comp=Z,3.0nm,0.3s
FINES smax
comp=N,2.0nm,0.3s
RJF Les Rejaudoux 11.44 243 *e*Pn **P** 09 56 15.6 -1.0
RJF *e*Sg 09 59 39.3
comp=N,256nm,1.3s
MFF Saint Martin d 11.67 251 *e*Pn **P** 09 56 18.0 -1.6
MFF *e*Sg 09 59 46.0
comp=N,255nm,1.5s
KAF Kangasniemi 12.01 24 *e*p **P** 09 56 19.8 -4.5
EKA Eskdalemuir Ar 12.04 296 Pn **P** 09 56 19.5 -5.1
comp=N,1.3nm,0.3s,baz=104,slow=14,SNR=40
EKA Sn **S** 09 58 34.6 -6.2
comp=N,0.5nm,0.3s,baz=99,slow=24,SNR=6.1
EKA Eskdalemuir Ar 12.04 296 P **P** 09 56 19.5 -5.1
EKA 09 58 34.7
EKA pmax pmax
comp=Z,1.0nm,0.3s
EKA smax
comp=N,1.0nm,0.3s
ESK Eskdalemuir 12.06 296 *e*Pn **P** 09 56 19.9 -5.1
comp=N,5.3nm,0.6s
ESK *e*Sn **S** 09 58 34.5 -7.0
LFF La Frestale 12.10 243 *e*Pn **P** 09 56 24.2 -1.3
LFF *e*Sg 09 59 58.5
comp=N,334nm,1.1s
RDO Rodhopi 12.28 144 P **P** 09 56 28.9 +1.0
MTLF Montolieu 12.39 234 *e*Sg Sx 10 00 07.5
comp=N,101nm,1.1s
OBN Obninsk 12.81 66⇑ *e*P **P** 09 56 29.3 -5.7
OBN pmax pmax
comp=Z,58nm,1.3s
OBN MLR MLR
comp=Z,100nm,11.0s
OBN Obninsk 12.81 66 *e*Pn **P** 09 56 28.9 -6.1
comp=Z,23nm,0.8s
ROSF Rostrenen 12.81 263 *e*Pn **P** 09 56 33.9 -1.1
ROSF *e*Sg 10 00 20.5
comp=Z,178nm,1.3s
QUIF Quistinic 12.90 261 *e*Pn **P** 09 56 34.8 -1.5
QUIF *e*Sg 10 00 21.7
comp=Z,219nm,1.4s
MOS Moscow 13.50 63 *e*P **P** 09 56 36.4 -7.7
MOS pmax pmax
comp=Z,90nm,0.7s
MOS MLR MLR
comp=Z,2μm,7.0s
EPF Esparros 13.58 237 *e*Pn **P** 09 56 44.6 -0.5
SNR=1.0
EPF *e*Sg 10 00 42.0
comp=Z,213nm,1.4s
JOF Joensuu 14.07 30 *e*p **P** 09 56 46.1 -5.4
comp=Z,17nm,1.4s
JOF Joensuu 14.07 30 *e*P **P** 09 56 46.1 -5.4
JOF pmax pmax
comp=Z,17nm,1.4s
ETSF Etsaut 14.14 239 *e*Sg Sx 10 00 59.4
comp=Z,130nm,1.3s
EGRA Graus 14.18 235 P **P** 09 56 52.8 -0.3

comp=E,2.7nm,0.9s
EGRA S 10 01 11.8
SJPF Ste Jean 14.36 241 *e*Sg Sx 10 01 06.4
comp=E,200nm,1.4s
VOR Voronezh 14.41 80 *e*P **P** **09 56 49.0 -7.0**
VOR pmax pmax
comp=E,90nm,1.4s
VOR pmax pmax
comp=N,50nm,1.5s
VOR pmax pmax
comp=E,180nm,1.4s
EPOB Poblet 14.43 231 P **P** **09 56 57.2 +0.9**
comp=E,9.6nm,1.7s
EPOB S 10 01 23.8
EALK Alkurruntz 14.45 242 P **P** **09 56 55.6 -0.9**
comp=E,24nm,1.3s
EALK S 10 01 19.6
ESAC San Caprasio 14.93 235 P **P** **09 57 03.2 +0.4**
comp=E,44nm,1.3s
ESAC S 10 01 32.5
ELAN Lanestosa 15.52 245 P **P** **09 57 09.3 -1.2**
comp=E,22nm,1.3s
ELAN S 10 01 43.4
EMOS Mosqueruela 15.94 232 P **P** **09 57 13.4 -2.7**
comp=E,37nm,1.3s
EMOS S 10 01 57.5
ETOR Torete 16.41 236 P **P** **09 57 23.4 +1.4**
comp=E,47nm,1.4s
ETOR S 10 01 51.2
EARI Arriondas 16.49 248 P **P** **09 57 19.5 -3.6**
BRTR Keskin Array B 17.02 127 Pn **P** **09 57 27.4 -2.2**
comp=E,0.1nm,0.3s,baz=11,slow=6.3,SNR=4.0
EPON Pontenova 17.62 251 P **P** **09 57 34.9 -2.3**
comp=E,26nm,1.3s
GUD Guadarrama 17.64 240 P **P** **09 57 37.1 -0.4**
comp=E,19nm,2.0s
SOC Sochi 17.82 107 *c i*P **P** **09 57 40.4 +0.7**
SOC *e*S **S** **10 00 53.7 -3.2**
SOC pmax pmax
comp=Z,20nm,1.0s
SOC pmax pmax
comp=N,20nm,0.9s
SOC pmax pmax
comp=E,30nm,0.7s
SOC MLR MLR
comp=Z,240nm,22.0s
SOC MLR MLR
comp=N,200nm,24.0s
SOC MLR MLR
comp=E,280nm,22.0s
EINC Incio 18.13 250 P **P** **09 57 41.4 -2.2**
comp=E,18nm,1.1s
ERUA La Rua 18.17 249 P **P** **09 57 42.0 -2.1**
comp=E,6.0nm,0.9s
APA0 Apatity Array 18.18 21 P **P** **09 57 41.0 -3.0**
baz=230,slow=14
ECAL Calabor 18.22 247 P **P** **09 57 40.6 -4.2**
ESDC Sonseca Array 18.24 237 Pn **P** **09 57 47.5 +2.5**
comp=E,0.3nm,0.3s,baz=47,slow=10,SNR=16
ESDC Sonseca Array 18.24 237 P **P** **09 57 47.6 +2.7**
comp=E,2.8nm,1.0s
APA Apatity 18.24 22⇓ *i*P **P** **09 57 39.4 -5.4**
APA *i*S **S** **10 00 52.0 -14**
APA pmax pmax
comp=Z,77nm,1.3s
APA MLR MLR
comp=Z,800nm,5.0s
ARA0 ARCESS Array S 18.63 10 P **P** **09 57 45.2 -4.4**
baz=194,slow=14
ARCES ARCESS Array B 18.63 10 Pn **P** **09 57 45.1 -4.5**
comp=E,1.7nm,0.3s,baz=191,slow=13,SNR=58
ARCES ARCESS Array B 18.63 10 P **P** **09 57 45.2 -4.5**
ARCES pmax pmax
comp=Z,2.0nm,0.3s
LVZ Lovozero 18.79 22 *e*P **P** **09 57 46.0 -5.6**
LVZ *e*S **S** **10 01 06.6 -12**
LVZ pmax pmax
comp=Z,10.0nm,0.9s
LVZ pmax pmax
comp=N,10.0nm,1.3s
LVZ pmax pmax
comp=E,9.0nm,0.9s
LVZ pmax pmax
comp=Z,70nm,1.8s
LVZ pmax pmax
comp=N,30nm,1.4s
LVZ pmax pmax
comp=E,50nm,1.9s
LVZ smax
comp=E,70nm,2.3s
LVZ smax
comp=N,40nm,1.8s
LVZ MLR MLR
comp=Z,140nm,10.0s
LVZ MLR MLR
comp=N,110nm,11.0s
LVZ MLR MLR
comp=E,70nm,11.0s
EHUE Huescar 18.96 231 P **P** **09 57 55.4 +1.6**
comp=E,12nm,1.3s
KEV Kevo 19.02 12 *e*p **P** **09 57 50.0 -4.4**
comp=E,15nm,0.5s
KEV Kevo 19.02 12 *e*P **P** **09 57 50.0 -4.4**
KEV pmax pmax
comp=Z,15nm,0.5s
GOF Gofitskoye 19.05 99⇑ *i*P **P** **09 57 54.0 -0.9**
GOF pmax pmax
comp=Z,70nm,1.3s
EQES Quesada 19.20 232 P **P** **09 57 58.0 +1.3**
comp=Z,21nm,1.3s
KIV Kislovodsk 19.40 102 *e*P **P** **09 57 57.8 -1.2**
KIV *e*S **S** **10 01 32.4 -0.5**
KIV pmax pmax
comp=Z,8.0nm,1.0s
KIV MLR MLR
comp=Z,50nm,16.0s
EADA Adamuz 19.68 235 P **P** **09 58 02.6 +0.4**
comp=Z,17nm,1.2s
ECOG Cogollos-Vega 19.86 232 P **P** **09 58 05.1 +0.9**
ELUQ Luque 19.98 234 P **P** **09 58 06.5 +0.8**
comp=Z,16nm,1.2s
ELOJ Sierra Loja 20.25 233 P **P** **09 58 09.2 +0.8**
comp=Z,19nm,1.4s
ZEI Tsey 20.80 104⇑ *e*P **P** **09 58 13.7 -0.4**
EMIN Mina Concepcio 21.07 238 P **P** **09 58 17.3 +0.4**
comp=Z,18nm,1.2s,mb4.3
EGRO El Granado 21.68 239 P **P** **09 58 22.0 -1.1**
comp=Z,53nm,1.4s,mb4.8
ASF Jabal al Asfar 24.66 134 P **P** **09 58 53.3 +0.9**
comp=Z,2.1nm,0.7s,mb4.0,baz=201,slow=6.5,SNR=3.9
ARU Arti 25.20 62⇓ *i*P **P** **09 58 56.7 -0.6**
ARU *i* 09 59 28.6
ARU *e*S **S** **10 03 19.2 -1.6**
ARU *e*SS SS 10 04 10.8 -10
ARU pmax pmax
comp=Z,18nm,0.9s,mb4.8
ARU Arti 25.20 62 *e*Pn **P** **09 58 56.1 -1.2**
comp=Z,22nm,1.0s,mb4.8
ALWS Ilw as Safayha 26.36 140 P **P** **09 59 09.9 +1.5**
JMOS Jabal al Moall 26.50 140 P **P** **09 59 11.0 +1.4**
HAQS Haql 26.53 140 P **P** **09 59 11.3 +1.3**
SPA0 Spitsbergen Ar 26.77 0 P **P** **09 59 11.0 -0.7**
baz=185,slow=5.9
SPITS Spitsbergen Ar 26.77 0 P **P** **09 59 12.2 +0.5**
comp=Z,3.8nm,0.8s,mb4.2,baz=146,slow=14,SNR=6.6
TAYS Tayyib Ism 26.95 141 P **P** **09 59 15.9 +2.1**
BRVK Borovoye 32.58 66 *e*P **P** **10 00 01.1 -2.7**
BVAR Borovoye Array 32.66 66 P **P** **10 00 04.8 +0.4**
comp=Z,3.3nm,0.7s,mb4.4,baz=292,slow=8.0,SNR=19
ARSS Ar Rass 32.92 131 P **P** **10 00 07.9 +1.0**
AFFS 'Afif 34.48 133 P **P** **10 00 21.9 +1.4**
KURK Kurchatov 38.25 66 *e*P **P** **10 00 51.6 -0.6**
NVS Novosibirsk 39.04 58 *e*P **P** **10 00 58.4 -0.3**
NVS pmax pmax
comp=Z,21nm,1.4s,mb4.6
NVS pmax pmax
comp=E,10.0nm,1.3s
EKS2 Erkin-Say 39.39 80 P **P** **10 01 03.1 +1.4**
SNR=8.4
AML Almayashu 39.63 80 P **P** **10 01 05.5 +1.8**
SNR=8.1
AAK Ala-Archa 39.84 79 P **P** **10 01 08.1 +2.6**
SNR=12
UCH Uchtor 40.08 80 P **P** **10 01 10.0 +2.5**
SNR=6.1
ZAL Zalesovo 40.25 59 P **P** **10 01 09.7 +0.9**
comp=E,2.0nm,0.6s,mb4.0,baz=13,slow=3.7,SNR=12
ZAL Zalesovo 40.25 59 P **P** **10 01 09.7 +1.0**
ZAL pmax pmax
comp=Z,2.0nm,0.6s
KZA Kyzart 40.62 79 P **P** **10 01 14.0 +2.2**
SNR=12
MKAR Makanchi Array 42.28 69 P **P** **10 01 25.6 +0.3**
comp=Z,2.1nm,0.8s,mb3.9,baz=301,slow=7.1,SNR=15
MKAR PP PP 10 03 02.1 -4.3
comp=Z,1.7nm,1.1s,baz=311,slow=7.0,SNR=2.8
MKAR Makanchi Array 42.28 69 P **P** **10 01 25.6 +0.2**
MKAR 10 03 02.1
MKAR pmax pmax
comp=Z,2.0nm,0.8s
MKAR pmax pmax
comp=Z,2.0nm,1.1s
SCHQ Schefferville 47.01 308 P **P** **10 02 02.9 -0.2**
comp=Z,4.8nm,0.7s,mb4.7,baz=61,slow=10,SNR=7.3
SCHQ Schefferville 47.01 308 P **P** **10 02 02.9 -0.3**
WMQ Urumqi 47.10 70 *e*P **P** **10 02 05.8 +1.7**
WMQ AP pP 10 02 08.3 +4.2
WMQ PP PP 10 03 56.3 +1.8
WMQ S **S** **10 08 56.8 +0.3**
WMQ AMB AMB
comp=Z,5.0nm,1.3s,mb4.5
WMQ AMB AMB
comp=Z,31nm,6.3s
WMQ LR LR
comp=N,87nm,20.1s,MS3.8
WMQ LR LR
comp=E,74nm,20.3s,MS3.8
WMQ LR LR
comp=Z,124nm,20.5s,MS3.9
TIXI Tiksi 48.43 23⇑ *e*P **P** **10 02 13.1 -1.0**
TIXI pmax pmax
comp=Z,6.0nm,1.4s,mb4.5
TLY Talaya 51.18 53 *e*P **P** **10 02 35.0 -0.4**
TLY *e* 10 04 28.0
TLY pmax pmax
comp=Z,177nm,1.7s,mb5.7
ZAK Zakamensk 51.78 54 *e*P **P** **10 02 41.7 +1.7**
SONM Songino Array 54.97 55 P **P** **10 03 03.0 -0.8**
comp=Z,7.3nm,1.0s,mb4.7,baz=330,slow=17,SNR=4.0
YAK Yakutsk 55.24 32 *c i*P **P** **10 03 04.1 -1.4**
YAK MLR MLR
comp=Z,100nm,20.0s,MS3.9
ULN Ulaanbaatar 55.29 55 *e*P **P** **10 03 04.0 -2.0**
ULN pmax pmax
comp=Z,16nm,1.6s,mb4.8
ULN MLR MLR
comp=Z,100nm,18.0s,MS3.9
INK Inuvik 58.36 347 P **P** **10 03 27.1 -0.5**
comp=Z,2.1nm,1.1s,mb4.1,baz=9.4,slow=5.4,SNR=4.2
INK Inuvik 58.36 347 P **P** **10 03 27.1 -0.5**
INK pmax pmax
comp=Z,2.0nm,1.1s
BILL Bilibino 58.72 13⇑ *e*P **P** **10 03 29.1 -1.0**
BILL *e* 10 04 19.3
BILL *e* 10 05 36.5
BILL pmax pmax
comp=Z,11nm,1.8s,mb4.6
YKW3 Yellowknife Ar 59.77 336 *e*P **P** **10 03 37.1 -0.3**
YKA Yellowknife Ar 59.83 336 P **P** **10 03 37.6 -0.2**
comp=Z,4.1nm,0.8s,mb4.5,baz=30,slow=6.7,SNR=71
YKA Yellowknife Ar 59.83 336 P **P** **10 03 37.6 -0.2**
YKA pmax pmax
comp=Z,4.0nm,0.8s
DAWY Dawson 63.17 348 *e*P **P** **10 04 00.6 +0.3**
ILAR Eielson Array 63.29 352 P **P** **10 04 00.9 -0.2**
comp=Z,0.7nm,0.8s,mb3.8,baz=17,slow=5.7,SNR=12
ILAR Eielson Array 63.29 352 P **P** **10 04 01.0 -0.1**
ILAR pmax pmax
comp=Z,1.0nm,0.8s
CN2 Changchun 67.19 48 *e*P **P** **10 04 27.3 +0.8**
CN2 *e*S S 10 13 20.3 -0.3
CN2 AMB AMB
comp=Z,20nm,1.3s,mb5.2
CN2 LR LR
comp=N,400nm,21.0s,MS4.7
CN2 LR LR
comp=E,300nm,21.0s,MS4.7
MDJ Mudanjiang 68.42 45 P **P** **10 04 32.5 -1.7**
MDJ AMB AMB
comp=Z,4.0nm,0.7s,mb4.8
MDJ AMB AMB
comp=Z,50nm,6.5s
KMI Kunming 68.79 76 *e*P **P** **10 04 37.4 +0.6**
KMI AMB AMB
comp=Z,9.0nm,0.8s,mb5.0
GYA Guiyang 70.16 72 P **P** **10 04 42.4 -2.8**
GYA PP PP 10 07 17.6 -4.6
GYA PPP PPP 10 08 55.3 -7.1
GYA S S 10 13 47.8 -8.5
GYA SKS SKS 10 14 39.3 -6.9
GYA AMB AMB
comp=Z,10.0nm,1.4s,mb4.8
CMAR Chiang Mai Arr 71.43 84 P **P** **10 04 53.2 +0.2**
comp=Z,6.7nm,1.2s,mb4.7,baz=310,slow=7.0,SNR=13
CMAR Chiang Mai Arr 71.43 84 P **P** **10 04 53.2 +0.2**
CMAR pmax pmax
comp=Z,7.0nm,1.2s
HRY Holter Researc 72.38 325 *e*P **P** **10 04 58.8 +0.7**
CHMT Chamberlain Mo 72.70 326 *e*P **P** **10 05 00.9 +0.9**
NEW Newport 72.81 329 *e*P **P** **10 04 59.4 -1.3**
comp=Z,16nm,1.4s,mb5.0
MSO Missoula 73.01 327 *e*P **P** **10 05 02.3 +0.5**
BOZ Bozeman (W) 73.21 325 *e*P **P** **10 05 03.9 +0.9**
comp=Z,20nm,1.4s,mb5.0
QLMT Earthquake Lak 73.84 324 *e*P **P** **10 05 09.3 +2.6**
MCMT McKenzie Canyo 74.36 325 P **P** **10 05 10.7 +1.1**
KSWY Kelly School 74.57 323 *e*P **P** **10 05 12.0 +1.1**
PDAR Pinedale Array 74.89 322 P **P** **10 05 13.6 +0.8**
comp=Z,1.7nm,0.6s,mb4.2,baz=56,slow=5.9,SNR=18
RMW Rattlesnake Mo 74.97 332 *e*P **P** **10 05 14.0 +0.9**
GNW Green Mountain 75.17 333 *e*P **P** **10 05 15.3 +1.0**
LON Longmire 75.61 332 *e*P **P** **10 05 18.4 +1.5**
HLID Hailey 76.02 325 *e*P **P** **10 05 19.6 +0.4**
comp=Z,10nm,1.2s,mb4.8
HWUT Hardware Ranch 76.66 322 *e*P **P** **10 05 24.6 +1.7**
TCUT Tooele Canyon 77.02 322 *e*P **P** **10 05 27.0 +2.1**
CTU Camp Tracy 77.52 322 *e*P **P** **10 05 29.4 +1.8**
DAU Daniels Canyon 77.56 322 *e*P **P** **10 05 30.2 +2.3**
BGU Big Grassy Mou 77.80 323 *e*P **P** **10 05 29.5 +0.3**
NLU North Lily Min 78.28 322 *e*P **P** **10 05 34.5 +2.7**
SRU San Rafael 78.39 320 *e*P **P** **10 05 33.8 +1.3**
PV10 Paradox Valley 78.42 319 *e*P **P** **10 05 35.0 +2.4**
PV01 Paradox Valley 78.43 318 *e*P **P** **10 05 34.6 +1.9**
MOD Modoc 79.50 328 *e*P **P** **10 05 40.4 +1.9**
comp=Z,21nm,1.3s,mb4.9
MVU Marysvale 79.58 321 *e*P **P** **10 05 41.2 +2.2**
ANMO Albuquerque 80.23 315 *c i*P **P** **10 05 45.5 +3.0**
YBH Yreka Blue Hor 80.43 330 P **P** **10 05 45.2 +1.8**
comp=Z,0.6nm,0.8s,mb3.6,baz=11,slow=1.7,SNR=3.3
YBH Yreka Blue Hor 80.43 330 P **P** **10 05 45.2 +1.8**
YBH pmax pmax
comp=Z,1.0nm,0.8s
WCN Washoe City 81.65 327 *e*P **P** **10 05 52.3 +2.4**
NVAR Mina Array Bea 81.92 325 P **P** **10 05 53.1 +1.8**
comp=Z,5.0nm,1.2s,mb4.5,baz=63,slow=4.5,SNR=12
MTUM Tungsten Hills 82.98 325 *e*P **P** **10 06 00.7 +3.9**
NEN Nelson 83.10 322 *e*P **P** **10 06 00.5 +3.0**
TUC Tucson 84.35 317 *e*P **P** **10 06 06.1 +2.3**
comp=Z,16nm,1.5s,mb5.0
ASAR Alice Springs 125.44 84 PKP PKPdf 10 12 32.6 -1.2
comp=Z,1.1nm,0.9s,baz=354,slow=1.2,SNR=9.6

LDG **16** *09:58:45.5±0.7,51.62N×16.40E,h1km,Ml4.1/11,Error ellipse: s-maj=19.9km s-min=10.0km az=165.0,Suspected Mining induced.*
NEIC **16** *09:58:45.5±0.4,51.59N×16.13E,h5km,ML3.8(SZGRF), ML3.7(VIE),ML3.6(CLL),Error ellipse: s-maj=5.3km s-min=4.6km az=81.0*
MOS **16** *09:58:45.6±0.7,51.58N×16.11E,h14km,mb4.0/1,Error ellipse: s-maj=14.7km s-min=7.2km az=84.5*
BGR **16** *09:58:45.5±0.9,51.58N×16.16E,h1km,ML3.8/6,Error ellipse: s-maj=16.7km s-min=7.8km az=172.0*
WAR **16** *09:58:47.4,51.51N×16.07E,h1km,Location given by Rudna mine, origin time based upon KSP*
IDC **16** *09:58:47.0±0.8,51.50N×15.97E,mb3.6/1,mb1 3.9/8, mb1mx3.7/23,ML3.5/7,Error ellipse: s-maj=17.7km s-min=7.5km az=101.0*

PRU **16** *09:58:48.5,51.45N×16.07E*
ISC 16 09:58:44.0±0.4,51.52N±0.02×16.07E±0.03,n65,
σ1s37/118,mb3.7/1,4C,Poland

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.69**	**168**	*e*Pg	**Pg**		**09 58 59.8**	**+2.0**
KSP				*e*Sg	**Sg**		**09 59 09.5**	**+2.5**
KSP	**Ksiaz**	**0.69**	**168**	*i* Pg	**Pg**		**09 58 59.7**	**+1.9**
KSP				*i* Sg	**Sg**		**09 59 09.2**	**+2.2**
KSP	**Ksiaz**	**0.69**	**168**	*i* P	**Pg**		**09 58 59.7**	**+1.9**
KSP				*e*			09 59 13.5	
UPC	**Upice**	**1.01**	**182**	*e*PG	**Pg**		**09 59 05.8**	**+1.6**
DPC	**Dobruska-Polom**	**1.18**	**172**	*e*PG	**Pg**		**09 59 08.4**	**+0.9**
DPC				*e*SG	**Sg**		**09 59 23.7**	**+0.4**
	172nm,0.3s							
DPC	**Dobruska-Polom**	**1.18**	**172**	*e*P	**Pg**		**09 59 08.4**	**+0.9**
DPC				*e*			09 59 23.7	
DPC				smax				
	comp=N,172nm,0.3s							
PVCC	**Panska Ves**	**1.37**	**224**	*e*PG	**Pg**		**09 59 12.2**	**+0.9**
PVCC				*e*SG	**Sg**		**09 59 30.9**	**+1.3**
BRG	**Berggiesshubel**	**1.48**	**245**	*e*Pg	**Pg**		**09 59 14.4**	**+0.7**
BRG				*e*Sg	**Sg**		**09 59 34.5**	**+1.1**
BRG	**Berggiesshubel**	**1.48**	**245**	*e*P	**Pn**		**09 59 13.2**	**+1.2**
BRG				*i*			09 59 34.6	
BRG	**Berggiesshubel**	**1.48**	**245**	*e*Pn	**Pn**		**09 59 13.2**	**+1.2**
BRG				*i* Pg	**Pg**		**09 59 14.9**	**+1.3**
BRG				*i* Sg	**Sg**		**09 59 34.6**	**+1.2**
PRU	**Pruhonice**	**1.81**	**213**	*e*PN	**Pn**		**09 59 17.9**	**+1.2**
PRU				*e*PG	**Pg**		**09 59 19.5**	**-0.7**
PRU				*e*SG	**Sg**		**09 59 43.4**	**-0.9**
PRU	**Pruhonice**	**1.81**	**213**	*e*P	**Pn**		**09 59 17.9**	**+1.2**
PRU				*e*			09 59 43.4	
PRU	**Pruhonice**	**1.81**	**213**	*e*Pn	**Pn**		**09 59 17.9**	**+1.2**
PRU				*e*Pg	**Pg**		**09 59 19.5**	**-0.7**
PRU				*e*Sg	**Sg**		**09 59 43.4**	**-0.9**
CLL	**Collm**	**1.93**	**265**	*e*Pn	**Pn**		**09 59 19.4**	**+1.0**
CLL				*e*Sg	**Sg**		**09 59 49.0**	**+0.8**
CLL	**Collm**	**1.93**	**265**	*i* PN	**Pn**		**09 59 19.5**	**+1.1**
CLL				*i* PG	**Pg**		**09 59 22.6**	**+0.1**
CLL				*i*			09 59 26.3	
CLL				*i* SG	**Sg**		**09 59 48.2**	**0.0**
CLL	**Collm**	**1.93**	**265**	*i* P	**Pn**		**09 59 19.5**	**+1.1**
CLL				*i*			09 59 48.2	
CLL	**Collm**	**1.93**	**265**	*i* Pn	**Pn**		**09 59 19.5**	**+1.1**
CLL				*i* Pg	**Pg**		**09 59 22.6**	**+0.1**
CLL				*i* Sg	**Sg**		**09 59 48.2**	**0.0**
RAC	**Raciborz**	**1.97**	**136**	*e*Pg	**Pg**		**09 59 22.7**	**-0.6**
RAC				*e*Sg	**Sg**		**09 59 49.6**	**0.0**
RAC	**Raciborz**	**1.97**	**136**	*e*P	**Pn**		**09 59 23.0**	**+4.0**
RAC				*e*S	**Sn**		**09 59 50.1**	**+5.3**
OKC	**Ostrava-Krasne**	**2.14**	**141**	*e*PN	**Pn**		**09 59 22.7**	**+1.3**
OKC				*e*PG	**Pg**		**09 59 26.3**	**-0.4**
OKC				*e*SG	**Sg**		**09 59 53.5**	**-1.7**
OKC	**Ostrava-Krasne**	**2.14**	**141**	*e*P	**Pn**		**09 59 22.7**	**+1.3**
OKC				*e*			09 59 53.5	
VRAC	**Vranov**	**2.24**	**171**	Pn	**Pn**		**09 59 25.0**	**+2.2**
	comp=N,8.6nm,0.3s,baz=352,slow=15,SNR=10							
VRAC				Lg			09 59 56.8	
	comp=N,21nm,0.3s,baz=247,slow=23,SNR=9.9							
OJC	**Ojcow**	**2.70**	**117**	*e*Pn	**Pn**		**09 59 28.8**	**-0.6**
OJC				*i* Pg	**Pg**		**09 59 37.6**	**-0.2**
OJC				*e*Sn	**Sn**		**10 00 01.4**	**-1.8**
OJC				*i* Sg	**Sg**		**10 00 12.9**	**-0.9**
OJC	**Ojcow**	**2.70**	**117**	*e*PN	**Pn**		**09 59 29.0**	**-0.4**
OJC				*i* PG	**Pg**		**09 59 37.6**	**-0.2**
OJC				*e*SN	**Sn**		**10 00 01.6**	**-1.6**
OJC				*e*SG	**Sg**		**10 00 13.6**	**-0.2**
OJC	**Ojcow**	**2.70**	**117**	*e*P	**Pn**		**09 59 28.8**	**-0.6**
OJC				*e*			10 00 01.4	
KHC	**Kasperske Hory**	**2.87**	**215**	*e*PN	**Pn**		**09 59 33.1**	**+1.2**
KHC				*e*PG	**Pg**		**09 59 39.4**	**-1.9**
KHC				*e*SN	**Sn**		**10 00 08.0**	**+0.3**
KHC				*e*SG	**Sg**		**10 00 17.3**	**-2.3**
KHC	**Kasperske Hory**	**2.87**	**215**	*e*P	**Pn**		**09 59 33.1**	**+1.2**
KHC				*e*			10 00 08.0	
MOX	**Moxa**	**2.94**	**254**	*e*Pn	**Pn**		**09 59 34.0**	**+1.1**
MOX				*e*Sg	**Sg**		**10 00 21.9**	**0.0**
MOX	**Moxa**	**2.94**	**254**	*e*Pg	**Pg**		**09 59 42.3**	**-0.4**
MOX				*e*Sg	**Sg**		**10 00 21.6**	**-0.3**
GEC2	**GERESS Array S**	**3.08**	**211**	*e*Pn	**Pn**		**09 59 36.7**	**+1.9**
GEC2	**GERESS Array S**	**3.08**	**211**	*e*Pn	**Pn**		**09 59 36.7**	**+1.9**
GERES	**GERESS Array B**	**3.08**	**211**	Pn	**Pn**		**09 59 36.2**	**+1.4**
	comp=N,5.5nm,0.3s,baz=26,slow=13,SNR=18							
GERES				Pg	**Pg**		**09 59 43.0**	**-2.4**
	comp=N,11nm,0.3s,baz=41,slow=16,SNR=14							
GERES				Lg			10 00 22.7	
	comp=N,17nm,0.3s,baz=32,slow=25,SNR=13							
WET	**Wettzell**	**3.13**	**222**	*e*Pn	**Pn**		**09 59 36.8**	**+1.2**
WET	**Wettzell**	**3.13**	**222**	*e*Pn	**Pn**		**09 59 36.8**	**+1.2**
LIKS	**Likavka**	**3.15**	**141**	*e*SG	**Sg**		**10 00 29.9**	**+1.2**
VKA	**Vienna**	**3.26**	**177**⇑ *i*PN		**Pn**		**09 59 39.2**	**+1.8**
VKA				*i* PG	**Pg**		**09 59 47.5**	**-1.6**
VKA				*i* SG	**Sg**		**10 00 30.7**	**-1.8**
KOLL	**Kolacno**	**3.30**	**152**	*e*PN	**Pn**		**09 59 39.3**	**+1.3**
KOLL				*e*PG	**Pg**		**09 59 49.3**	**-0.7**
KOLL				*e*SN	**Sn**		**10 00 19.8**	**+1.2**
KOLL				*e*SG	**Sg**		**10 00 33.1**	**-0.9**
ZST	**Bratislava**	**3.39**	**168**	*e*SN	**Sn**		**10 00 19.6**	**-1.2**
ZST				*e*SG	**Sg**		**10 00 35.4**	**-1.5**
VYHS	**Vyhne**	**3.51**	**148**	*e*PN	**Pn**		**09 59 41.9**	**+0.9**
VYHS				*e*PG	**Pg**		**09 59 51.5**	**-2.6**
VYHS				*e*SN	**Sn**		**10 00 24.2**	**+0.3**
VYHS				*e*SG	**Sg**		**10 00 42.2**	**+1.2**
VYHS	**Vyhne**	**3.51**	**148**	*e*P	**Pn**		**09 59 41.9**	**+0.9**
VYHS				*e*			10 00 24.2	
GRA1	**Grafenberg Arr**	**3.59**	**241**	*e*Pn	**Pn**		**09 59 43.3**	**+1.3**
GRA1				*e*Sg	**Sg**		**10 00 41.7**	**-1.7**
GRF	**Grafenberg Arr**	**3.59**	**241**	*e*Pn	**Pn**		**09 59 43.3**	**+1.3**
GRF				*e*Sg	**Sg**		**10 00 41.7**	**-1.7**
BSD	**Bornholm Skovb**	**3.67**	**350**	*i* P	**Pn**		**09 59 42.7**	**-0.5**
BSD				*i* S	**Sn**		**10 00 22.8**	**-5.0**
BSD				eLG			10 00 44.5	
MOA	**Molln**	**3.85**	**198**⇑ *i*PN		**Pn**		**09 59 46.7**	**+0.9**
MOA				*i* SG	**Sg**		**10 00 49.8**	**-2.5**
	comp=N,64nm,0.7s							
ARSA	**Arzberg**	**4.29**	**185**⇑ *i*PN		**Pn**		**09 59 54.2**	**+2.2**
ARSA				*i* SG	**Sg**		**10 01 02.2**	**-4.5**
	comp=N,67nm,0.8s							
CRVS	**Cervenica-Dubn**	**4.34**	**125**	*e*PG	**Pg**		**10 00 08.2**	**-2.5**
CRVS				*e*SG	**Sg**		**10 01 09.5**	**+1.0**
KBA	**Koelnbreinsper**	**4.79**	**203**⇑ *i*PN		**Pn**		**10 00 00.1**	**+1.0**
KBA				*i* SG	**Sg**		**10 01 19.6**	**-3.7**
	comp=N,37nm,0.5s							
DAVOX	**Davos**	**6.24**	**223**	Pn	**Pn**		**10 00 20.0**	**+0.4**
	comp=N,0.6nm,0.3s,baz=23,slow=18,SNR=5.2							
DAVOX				Lg			10 02 00.5	
	comp=N,1.4nm,0.3s,baz=179,slow=20,SNR=3.3							
CDF	**Champ du Feu**	**6.47**	**245**	*e*Pn	**Pn**		**10 00 21.1**	**-1.7**
CDF				*e*Sg	**Sg**		**10 02 14.9**	**-4.4**
	comp=N,96nm,0.9s							
HINF	**Hinteralfeld**	**7.03**	**242**	*e*Sg	**Sg**		**10 02 32.1**	**-6.0**
	comp=N,29nm,0.8s							
HAU	**Haudompre**	**7.21**	**245**	*e*Sg	**Sg**		**10 02 38.3**	**-5.7**
	comp=N,82nm,1.1s							
GIVF	**Givet**	**7.26**	**263**	*e*Pn	**Pn**		**10 00 34.6**	**+0.6**
GIVF				*e*Sg	**Sg**		**10 02 42.4**	**-3.5**
	comp=N,127nm,1.3s							
BAIF	**Baives**	**7.66**	**264**	*e*Sg	**Sg**		**10 02 49.7**	**-9.3**
	comp=N,17nm,0.8s							
MEZF	**Maizieres J'vi**	**7.71**	**251**	*e*Pn	**Pn**		**10 00 39.2**	**-1.1**
MEZF				*e*Sg	**Sg**		**10 02 55.6**	**-5.1**
	comp=N,69nm,1.2s							
CABF	**La Chapelle**	**8.19**	**237**	*e*Sg	**Sg**		**10 03 08.9**	**-7.6**
	comp=N,107nm,1.2s							
LPG	**La Plagne**	**8.63**	**229**	*e*Pn	**P**		**10 00 53.5**	**+0.5**
LPG				*e*Sg	**Sg**		**10 03 23.7**	**-7.5**
	comp=N,59nm,1.4s							
HFS	**Hagfors**	**8.74**	**352**	Pn	**P**		**10 00 52.3**	**-2.3**
	comp=N,0.1nm,0.3s,baz=180,slow=14,SNR=2.8							
HFS				Sn	**Sn**		**10 02 23.4**	**-12**
	comp=N,0.1nm,0.3s,baz=170,slow=16,SNR=2.1							
SSF	**Saint Saulge**	**9.34**	**246**	*e*Sg	**Sg**		**10 03 40.7**	**-14**
	comp=N,26nm,1.1s							
SBF	**Sospel**	**9.61**	**221**	*e*Pn	**P**		**10 01 05.4**	**-1.2**
LMR	**La Mourre**	**10.43**	**222**	*e*Pn	**P**		**10 01 16.1**	**-1.7**
FINES	**FINESS Array B**	**11.37**	**25**	Pn	**P**		**10 01 27.1**	**-3.4**
	comp=N,0.4nm,0.3s,baz=207,slow=13,SNR=3.9							
EKA	**Eskdalemuir Ar**	**12.08**	**296**	Pn	**P**		**10 01 36.0**	**-4.2**
	comp=N,0.3nm,0.3s,baz=102,slow=13,SNR=4.7							
ARCES	**ARCESS Array B**	**18.62**	**10**	Pn	**P**		**10 03 00.4**	**-4.1**
	comp=N,0.4nm,0.3s,baz=198,slow=12,SNR=5.1							

YKA	**Yellowknife Ar**	**59.84**	**336**	P	**P**	**10 08 52.9**	**0.0**
	comp=N,0.5nm,0.7s,mb3.7,baz=30,slow=6.7,SNR=16						
YKA	**Yellowknife Ar**	**59.84**	**336**	P	**P**	**10 08 52.9**	**0.0**

NNC ***16*** *10:03:21.8±1.7,39.05N×78.05E,h13km±24km,mpv3.2, Error ellipse: s-maj=30.8km s-min=11.7km az=29.0*

BJI 16 10:03:19.2,38.66N×77.97E,h14km,ML3.7,6C, Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KSH	**Kashi**	**1.77**	**299**	⇑PG	Pg	10 03 51.4	-3.3
KSH				*e*SG	Sg	10 04 16.5	-1.9
KSH				S	Sn		
	comp=N,450nm,0.6s						
KSH				S	Sn		
	comp=E,590nm,0.5s						
KK31	**Karatay Array**	**7.18**	**311**	⇑Lg		10 07 04.4	
	comp=E,3.5nm,0.5s,baz=129,slow=30,SNR=4.0						
MK31	**Makanchi Array**	**8.73**	**20**	⇑Pn	P	10 05 25.1	-2.9
	comp=E,0.3nm,0.2s,baz=201,slow=12,SNR=44						
MK31				⇑Sn	Sn	10 07 02.7	-4.5
	comp=E,2.8nm,0.7s						
KURK	**Kurchatov**	**12.06**	**2**	⇑Lg		10 09 34.5	
	comp=E,3.5nm,1.3s						
VOSK	**Vostochnaya**	**14.88**	**343**	⇑Lg		10 10 59.7	
	comp=E,18nm,1.9s						

NEIC ***16*** *10:09:42.8,34.87N×3.88W,MG3.6(MDD),After MDD.*

MDD 16 10:09:42.1±1.7,34.84N×3.90W,mb3.6/9,Error ellipse: s-maj=16.5km s-min=7.7km az=180.0,AftershocksPLICA PRXIMO,Morocco

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
EMEL	**Melilla**	**0.90**	**59**	P	Pg	10 09 59.3	-0.7
	61nm,0.1s,SNR=5.7						
EMEL				S	Sg	10 10 10.9	-1.1
	414nm,0.2s						
EJIF	**Jimena Fronter**	**2.05**	**322**	P	Pn	10 10 17.5	-0.7
	3.5nm,0.2s,SNR=4.0						
EJIF	**Jimena Fronter**	**2.05**	**322**	P	Pn	10 10 18.5	+0.3
ERON	**Agron**	**2.17**	**2**	P	Pn	10 10 17.3	-2.7
	1.2nm,0.2s,SNR=7.9						
ERON				S	Sn	10 10 45.1	-2.9
	3.9nm,0.2s,SNR=7.9						
ERON	**Agron**	**2.17**	**2**	P	Pn	10 10 17.3	-2.7
ERON				S	Sn	10 10 46.2	-1.9
EBER	**Berja**	**2.21**	**21**	P	Pn	10 10 17.1	-3.4
	0.4nm,0.2s,SNR=5.9						
EBER				S	Sn	10 10 44.5	-4.4
	16nm,0.3s						
EBER	**Berja**	**2.21**	**21**	P	Pn	10 10 18.6	-1.8
EBER				S	Sn	10 10 44.5	-4.4
ELOJ	**Sierra Loja**	**2.31**	**355**	P	Pn	10 10 20.9	-1.0
	1.9nm,0.3s,SNR=6.7						
ELOJ				S	Sn	10 10 50.3	-1.2
	4.3nm,0.4s						
ELOJ	**Sierra Loja**	**2.31**	**355**	P	Pn	10 10 20.6	-1.3
ELOJ				S	Sn	10 10 50.4	-1.1
ELIJ	**Sierra de Lija**	**2.40**	**330**	P	Pn	10 10 22.1	-1.0
	3.5nm,0.2s,SNR=7.2						
ELIJ				S	Sn	10 10 52.1	-1.5
	2.4nm,0.3s						
ELIJ	**Sierra de Lija**	**2.40**	**330**	P	Pn	10 10 22.3	-0.9
ELIJ				S	Sn	10 10 52.1	-1.5
ELUQ	**Luque**	**2.73**	**354**	P	Pn	10 10 26.7	-1.2
	1.5nm,0.2s,SNR=7.9						
ELUQ				S	Sn	10 10 59.9	-2.2
	3.2nm,0.2s,SNR=7.9						
ELUQ	**Luque**	**2.73**	**354**	P	Pn	10 10 26.4	-1.5
ELUQ				S	Sn	10 10 59.6	-2.5
EQES	**Quesada**	**3.03**	**12**	P	Pn	10 10 31.1	-1.1
	1.8nm,0.1s,SNR=7.9						
EQES				S	Sn	10 11 05.5	-4.3
	7.7nm,0.3s,SNR=7.9						
EQES	**Quesada**	**3.03**	**12**	P	Pn	10 10 31.5	-0.7
EQES				S	Sn	10 11 05.9	-3.9
EADA	**Adamuz**	**3.36**	**351**	P	Pn	10 10 33.5	-3.4
	0.7nm,0.2s,SNR=8.8						
EADA				S	Sn	10 11 12.6	-5.6
	1.3nm,0.2s						
EADA	**Adamuz**	**3.36**	**351**	P	Pn	10 10 34.2	-2.8
EADA				S	Sn	10 11 12.6	-5.6
EMIN	**Mina Concepcio**	**3.68**	**323**	P	Pn	10 10 38.0	-3.5
	2.1nm,0.2s,SNR=20						
EMIN	**Mina Concepcio**	**3.68**	**323**	P	Pn	10 10 38.5	-2.9
EMIN				S	Sn	10 11 17.7	-8.5
EGRO	**El Granado**	**3.95**	**314**	P	Pn	10 10 42.7	-2.6
	0.6nm,0.1s,SNR=10						
EGRO	**El Granado**	**3.95**	**314**	P	Pn	10 10 42.6	-2.7
EGRO				S	Sn	10 11 25.2	-7.9
ETOB	**Tobarra**	**4.24**	**26**	P	Pn	10 10 46.9	-2.5
	0.7nm,0.2s,SNR=6.2						
ETOB	**Tobarra**	**4.24**	**26**	P	Pn	10 10 48.3	-1.1
EBAD	**Badajoz**	**4.64**	**328**	P	Pn	10 10 51.3	-3.8
	0.7nm,0.1s,SNR=6.1						
EBAD	**Badajoz**	**4.64**	**328**	P	Pn	10 10 51.5	-3.5
EBAD				S	Sn	10 11 41.5	-8.9
ESDC	**Sonseca Array**	**4.82**	**359**	P	Pn	10 10 54.6	-3.1
	0.2nm,0.1s,baz=181,slow=12,SNR=7.8						
ESDC				S	Sn	10 11 48.4	-6.7
	0.3nm,0.5s,SNR=7.9						
ECAL	**Calabor**	**7.43**	**343**	P	Pn	10 11 30.8	-3.6
	0.4nm,0.2s,SNR=7.9						
ECAL				S	Sn	10 12 49.4	-11
	1.9nm,0.5s,SNR=7.9						
ECAL	**Calabor**	**7.43**	**343**	P	Pn	10 11 30.6	-3.8
ECAL				S	Sn	10 12 49.9	-11
EPOB	**Poblet**	**7.59**	**30**	P	Pn	10 11 31.3	-5.3
	0.5nm,0.2s,SNR=7.9						
ELOB	**Lobios**	**7.74**	**336**	P	Pn	10 11 34.5	-4.3
	1.1nm,0.3s,SNR=7.9						

IDC ***16*** *10:26:59.0±1.9, 11.97S×165.97E,mb3.6/6,mb1 3.8/6, mb1mx3.8/13,Error ellipse: s-maj=90.3km s-min=22.5km az=136.0*

NEIC ***16*** *10:27:00.5±0.8, 12.10S×166.04E,h10km,mb4.1/1,Error ellipse: s-maj=32.4km s-min=14.4km az=135.0*

ISC 16 10:27:03.1±1.1,12.2S±0.2×165.9E±0.2,h33km,n12, σ0§70/10,mb3.9/7,Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CTA	**Charters Tower**	**20.40**	**245**	P	**P**	**10 31 40.0**	**0.0**
	3.8nm,0.9s,baz=68,slow=5.4,SNR=3.4						
CTAO	**Charters Tower**	**20.40**	**245**	*e*P	**P**	**10 31 39.6**	**-0.3**
	12nm,1.3s						
STKA	**Stephens Creek**	**29.72**	**225**	P	**P**	**10 33 08.9**	**+0.4**
	1.0nm,0.8s,mb3.6,baz=224,slow=20,SNR=2.5						
WB2	**Warramunga Arr**	**31.21**	**252**	*e*P	sP	10 33 33.1	-2.7
WRA	**Warramunga Ar**	**31.22**	**252**	P	**P**	**10 33 22.1**	**+0.1**
	0.4nm,0.6s,mb3.4,baz=82,slow=8.4,SNR=3.7						
ASAR	**Alice Springs**	**32.41**	**245**	P	**P**	**10 33 31.7**	**-0.6**
	1.0nm,0.7s,mb3.8,baz=71,slow=9.2,SNR=12						
QSPA	**South Pole Qui**	**77.85**	**180**	*e*P	**P**	**10 38 58.5**	**0.0**
	6.3nm,1.1s,mb4.5						
ULN	**Ulaanbaatar**	**79.27**	**324**	*e*P	**P**	**10 39 07.2**	**+0.4**
ILAR	**Eielson Array**	**84.53**	**18**	P	**P**	**10 39 30.5**	**-3.2**
	0.2nm,0.7s,mb3.4,baz=243,slow=6.0,SNR=4.1						
MKAR	**Makanchi Array**	**94.41**	**317**	P	**P**	**10 40 21.2**	**+0.3**
	2.8nm,0.6s,mb4.9,baz=93,slow=5.9,SNR=27						
YKA	**Yellowknife Ar**	**95.91**	**27**	P	**P**	**10 40 27.7**	**+0.4**
	0.1nm,0.6s,mb3.4,baz=255,slow=4.4,SNR=4.3						
ARCES	**ARCESS Array B**	**117.44**	**345**	PKP	PKPdf	10 45 46.9	+1.9
	0.7nm,0.7s,baz=27,slow=2.0,SNR=4.6						

IDC ***16*** *10:31:50.3±1.1,12.06S×166.01E,mb4.0/7,mb1 4.2/8, mb1mx4.1/15,ML2.9/1,Error ellipse: s-maj=35.4km s-min=23.0km az=137.0*

NEIC ***16*** *10:31:52.4±0.6,12.00S×165.98E,h10km,mb4.3/6, MS5.0/1,Error ellipse: s-maj=15.5km s-min=11.8km az=93.0*

ISC 16 10:32:00.1±3.0,12.0S±0.1×165.7E±0.1,h76km±29km,n25, σ1§03/27,mb4.1/10,Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BKM	**Butte a Klehm**	**6.13**	**156**	*i* P	**P**	**10 33 29.6**	**-0.3**
DZM	**Mont Dzumac**	**10.01**	**176**	*e*P	**P**	**10 34 16.7**	**-6.5**
DZM				*e*S	**S**	**10 36 18.9**	**+4.2**
DZM	**Mont Dzumac**	**10.01**	**176**	*e*P	**P**	**10 34 16.7**	**-6.5**
DZM				*e*S	**S**	**10 36 18.9**	**+4.2**
NOUC	**Port Laguerre**	**10.03**	**177**	*e*P	**P**	**10 34 18.2**	**-5.3**
NOUC				*e*S	**S**	**10 36 21.2**	**+6.1**
NOUC	**Port Laguerre**	**10.03**	**177**	*e*P	**P**	**10 34 18.2**	**-5.3**
NOUC				*e*S	**S**	**10 36 21.2**	**+6.1**
PMG	**Port Moresby**	**18.37**	**276**	P	**P**	**10 36 11.0**	**-0.2**
	0.1nm,0.3s,baz=121,slow=9.0,SNR=3.2						
PMG	**Port Moresby**	**18.37**	**276**	*e*P	**P**	**10 36 10.6**	**-0.6**
	13nm,0.9s						
CTA	**Charters Tower**	**20.29**	**244**	*e*P	**P**	**10 36 32.9**	**+0.8**
	18nm,0.8s						
CTA	**Charters Tower**	**20.29**	**244**	P	**P**	**10 36 32.2**	**+0.2**
	8.1nm,1.0s,baz=49,slow=11,SNR=7.2						
CTAO	**Charters Tower**	**20.29**	**244**	*e*P	**P**	**10 36 32.9**	**+0.9**
	8.9nm,0.9s						
WB2	**Warramunga Arr**	**31.07**	**251**	*e*P	**P**	**10 38 18.8**	**+5.4**
WRA	**Warramunga Arr**	**31.08**	**251**	P	**P**	**10 38 13.0**	**-0.5**
	0.7nm,0.7s,mb3.5,baz=81,slow=8.0,SNR=4.6						
RPZ	**Rata Peaks**	**31.91**	**173**	P	**P**	**10 38 17.1**	**-3.3**
	6.0nm,0.8s,mb4.4,baz=10,slow=6.7,SNR=4.0						
AS12	**Alice Springs**	**32.29**	**245**	*e*P	**P**	**10 38 24.2**	**+0.2**
	3.7nm,0.5s,mb4.4						
ASAR	**Alice Springs**	**32.29**	**245**	P	**P**	**10 38 23.1**	**-0.8**
	1.1nm,0.7s,mb3.7,baz=68,slow=9.5,SNR=7.6						
QSPA	**South Pole Qui**	**77.98**	**180**	*e*P	**P**	**10 43 49.6**	**-1.5**
	10.0nm,1.0s,mb4.5						
QSPA				*e*PcP	PcP	10 44 07.2	+6.2
QSPA				*e*PPP	PPP	10 49 04.7	+25
QSPA				*e*SS	x	10 53 58.3	
QSPA				LR	LR		
	comp=Z,690nm,18.6s						
ULN	**Ulaanbaatar**	**79.05**	**324**	*e*P	**P**	**10 43 58.1**	**+0.5**
	comp=Z,7.1nm,0.8s,mb4.5						
ILAR	**Eielson Array**	**84.47**	**18**	P	**P**	**10 44 24.1**	**-1.2**
	comp=Z,0.2nm,0.5s,mb3.2,baz=268,slow=5.5,SNR=7.5						
INK	**Inuvik**	**90.85**	**19**	*e*P	**P**	**10 44 57.5**	**+1.5**
	comp=Z,0.2nm,0.6s,mb3.4						
MKAR	**Makanchi Array**	**94.18**	**317**	P	**P**	**10 45 12.6**	**+0.9**
	comp=Z,6.0nm,0.7s,mb5.0,baz=96,slow=6.5,SNR=49						
ZAL	**Zalesovo**	**94.31**	**324**	P	**P**	**10 45 12.1**	**+0.1**
	comp=Z,1.1nm,0.5s,mb4.5,baz=191,slow=3.1,SNR=8.3						
YKA	**Yellowknife Ar**	**95.88**	**27**	P	**P**	**10 45 18.9**	**-0.1**
	comp=Z,0.1nm,0.4s,mb3.6,baz=258,slow=4.6,SNR=11						
YKA	**Yellowknife Ar**	**95.88**	**27**	P	**P**	**10 45 18.9**	**-0.1**
ARCES	**ARCESS Array B**	**117.26**	**345**	PKP	PKPdf	10 50 35.4	-0.8
	comp=Z,2.9nm,1.0s,baz=333,slow=5.4,SNR=5.5						
ARCES	**ARCESS Array B**	**117.26**	**345**	PKP	PKPdf	10 50 35.4	-0.8

IDC ***16*** *10:32:07.8±0.5,12.05S×166.12E,mb4.7/18,mb1 4.8/19, mb1mx4.8/20,ML3.7/1,MS5.1/1,Ms1 5.1/1,ms1mx4.0/19, Error ellipse: s-maj=19.4km s-min=14.5km az=128.0*

NEIC ***16*** *10:32:10.6±0.3,11.80S×165.78E,h10km,mb4.8/24, MS5.7/99,MW5.6,Error ellipse: s-maj=17.0km s-min=8.7km az=140.0,Moment Tensor Solution. s38 Moment tensor: Scale 10¹⁷Nm; Mrr1.68; Mθθ0.15; Mθθ-1.83; Mrθ0.60; Mθθ-0.38; Mθr-1.49; Best double couple: Mo2.4×10¹⁷ NP1:φs30°,δ30°,λ127°. NP2:φs170°, δ67°,λ71°. Principal axes: T 2.43, Plg63°, Azm49°; N -.05, Plg17°, Azm177°; P -2.39, Plg20°, Azm274°;*

HRVD ***16*** *10:32:10.6±0.2,12.03S×165.95E,h19km,MW5.6/69, Centroid moment Tensor Solution. LP body waves: s69,c149;Mantle waves: s65,c137; Half duration: 1§5 Moment tensor: Scale 10¹⁷Nm; Mrr2.40±.04; Mθθ-0.17±.03; Mφφ-2.22±.03; Mre1.09±.08; Mφθ0.60±.03; Mθr-1.23±.08; Best double couple: Mo2.9×10¹⁷ NP1: φs357°,δ30°,λ113°. NP2:φs151°,δ62°,λ77°. Principal axes: T 2.98, Plg70°, Azm33°; N -.16, Plg12°, Azm157°; P -2.81, Plg16°, Azm250°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

BJI ***16*** *10:32:10.1,11.67S×166.50E,h25km,mB5.2,mb5.1, Ms5.6,Msz5.5*

SYO ***16*** *10:32:10.6,11.80S×165.78E,h10km,MB4.8,MS5.7*

MOS ***16*** *10:32:12.9±1.6,11.83S×165.76E,h33km,mb5.2/13,Error ellipse: s-maj=14.3km s-min=11.0km az=104.2*

ISC 16 10:32:12.8±0.3,11.98S±0.06×165.84E±0.06,h33km, (h11km±4.5km:pP-P),n251,σ1§46/107,mb4.9/47, MS5.7/112,12C-3D,Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**18.53**	**276**	P	**P**	**10 36 29.6**	**+0.6**
	0.7nm,0.3s,baz=94,slow=6.9,SNR=12						
PMG	**Port Moresby**	**18.53**	**276**	⇓*e*P	**P**	**10 36 30.4**	**+1.4**
PMG				pmax	pmax		
	comp=Z,65nm,1.0s						
PMG	**Port Moresby**	**18.53**	**276**	*e*P	**P**	**10 36 26.8**	**-2.2**
	comp=Z,65nm,1.0s						
WAU	**Wau**	**19.40**	**282**	*e*P	**P**	**10 36 41.6**	**+2.6**
CTA	**Charters Tower**	**20.46**	**244**	P	**P**	**10 36 49.7**	**-0.7**
	comp=Z,44nm,0.9s,baz=70,slow=14,SNR=20						
CTA	**Charters Tower**	**20.46**	**244**	P	**P**	**10 36 49.7**	**-0.7**
CTAO	**Charters Tower**	**20.46**	**244**	*e*P	**P**	**10 36 50.5**	**+0.1**
CTAO				pmax	pmax		
	comp=Z,11nm,1.0s						
CTAO	**Charters Tower**	**20.46**	**244**	*e*P	**P**	**10 36 49.6**	**-0.7**
	comp=Z,11nm,1.0s						
CTAO				LR	LR		
	comp=Z,4μm,19.0s,MS4.8						
RIV	**Riverview**	**25.55**	**209**	*e*P	**P**	**10 37 42.8**	**+2.4**
URZ	**Urewera**	**28.04**	**161**	P	**P**	**10 37 59.1**	**-4.1**
	comp=Z,9.6nm,1.1s,mb4.3,baz=199,slow=19,SNR=3.0						
STKA	**Stephens Creek**	**29.83**	**225**	*e*P	**P**	**10 38 20.0**	**+0.7**
	comp=Z,12nm,0.8s,mb4.7						
STKA	**Stephens Creek**	**29.83**	**225**	P	**P**	**10 38 17.6**	**-1.6**
	comp=Z,5.4nm,0.7s,mb4.4,baz=38,slow=6.5,SNR=6.4						
SNZO	**South Karori**	**30.23**	**167**	PFAKE		10 38 40.0	+17
SNZO				LR	LR		
	comp=Z,8μm,19.0s,MS5.4						
WAKE	**Wake Island**	**31.08**	**1**	PFAKE		10 38 40.0	+10
WAKE				LR	LR		
	comp=Z,2μm,19.0s,MS4.8						
WRAB	**Tennant Creek**	**31.25**	**251**	*e*P	**P**	**10 38 30.4**	**-1.5**
	comp=Z,138nm,1.5s,mb5.6						
WRAB				LR	LR		
	comp=Z,3μm,19.0s,MS5.0						
WRA	**Warramunga Ar**	**31.26**	**251**	P	**P**	**10 38 30.9**	**-1.2**
	comp=Z,7.4nm,1.3s,mb4.4,baz=86,slow=1.9,SNR=16						
WRA				PcP	PcP	10 41 25.0	-1.1
	comp=Z,9.7nm,1.1s,baz=74,slow=2.2,SNR=9.1						
TOO	**Toolangi**	**31.32**	**212**	*e*P	**P**	**10 38 34.7**	**+2.2**
	comp=Z,7.9nm,0.7s,mb4.7						
RPZ	**Rata Peaks**	**31.94**	**173**	P	**P**	**10 38 34.8**	**-2.9**
	comp=Z,16nm,0.6s,mb5.0,baz=174,slow=1.6,SNR=12						
RPZ				LR	LR	10 50 26.5	
	comp=Z,3μm,18.4s,MS5.0,baz=343,slow=34						
ASAR	**Alice Springs**	**32.46**	**245**	P	**P**	**10 38 41.9**	**-0.7**
	comp=Z,5.7nm,0.7s,mb4.5,baz=69,slow=10.0,SNR=29						
ASAR				PcP	PcP	10 41 28.6	-0.6
	comp=Z,7.5nm,0.9s,baz=75,slow=2.7,SNR=8.3						
GUMO	**Guam**	**32.83**	**320**	PFAKE		10 39 00.0	+14
GUMO				LR	LR		
	comp=Z,4μm,22.0s,MS5.1						
TAU	**Tasmania Unive**	**34.75**	**204**	PFAKE		10 39 10.0	+7.9
TAU				LR	LR		
	comp=Z,2μm,21.0s,MS4.9						
FITZ	**Fitzroy Crossi**	**39.23**	**256**	*e*P	**P**	**10 39 39.9**	**-0.1**
	comp=Z,15nm,1.0s,mb4.7						
FITZ	**Fitzroy Crossi**	**39.23**	**256**	P	**P**	**10 39 39.8**	**-0.2**
	comp=Z,13nm,0.9s,mb4.7,baz=128,slow=3.2,SNR=11						
FORT	**Forrest**	**39.59**	**236**	*e*P	**P**	**10 39 43.2**	**+0.4**
	comp=Z,128nm,1.5s,mb5.4						
MIDW	**Midway**	**43.14**	**22**	PFAKE		10 40 20.0	+7.8
MIDW				LR	LR		
	comp=Z,28μm,19.0s,MS6.2						
KIP	**Kipapa**	**48.60**	**47**	PFAKE		10 41 10.0	+14
KIP				LR	LR		
	comp=Z,3μm,19.0s,MS5.3						
NWAO	**Narrogin (SRO)**	**49.02**	**237**	P	**P**	**10 40 58.4**	**-0.2**
	comp=Z,7.6nm,0.7s,mb4.8,baz=38,slow=5.1,SNR=4.3						
NWAO	**Narrogin (SRO)**	**49.02**	**237**	*e*P	**P**	**10 40 58.7**	**+0.1**
	comp=Z,14nm,0.7s,mb5.1						
NWAO				LR	LR		
	comp=Z,4μm,20.0s,MS5.4						
POHA	**Pohakuloa**	**49.41**	**51**	PFAKE		10 41 10.0	+8.2
POHA				LR	LR		
	comp=Z,4μm,19.0s,MS5.5						
KKM	**Kota Kinabalu**	**52.49**	**287**	⇑*e*P	**P**	**10 41 28.5**	**+3.2**
MAJO	**Matsushiro**	**54.84**	**333**	*e*P	**P**	**10 41 40.1**	**-2.2**
	comp=Z,74nm,1.6s,mb5.5						
MAJO				LR	LR		
	comp=Z,2μm,20.0s,MS5.1						
MAT	**Matsushiro**	**54.84**	**333**	P	**P**	**10 41 39.3**	**-3.0**
MAT				S	**S**	**10 49 15.0**	**-4.4**
MAT	**Matsushiro**	**54.84**	**333**	*e*P	**P**	**10 41 39.0**	**-3.3**
	comp=Z,24nm,1.0s,mb5.2						
MAT				*e*S	**S**	**10 49 15.0**	**-4.4**
TATO	**Taipei**	**56.74**	**311**	PFAKE		10 42 10.0	+14
TATO				LR	LR		
	comp=Z,10μm,21.0s,MS5.9						
QZH	**Quanzhou**	**58.90**	**309**	⇑*i*P	**P**	**10 42 10.9**	**-0.4**
QZH				S	**S**	**10 50 17.9**	**+4.7**
QZH				LR	LR		
	comp=N,770nm,13.0s						
QZH				LR	LR		
	comp=E,2μm,19.8s						
ASAJ	**Asahikawa**	**59.70**	**341**	P	**P**	**10 42 15.2**	**-1.4**
	comp=E,8.2nm,0.8s,mb4.8,baz=221,slow=12,SNR=10.0						
SSE	**Sheshan**	**60.58**	**316**	P	**P**	**10 42 25.0**	**+2.2**
SSE				S	**S**	**10 50 43.0**	**+8.2**
INCN	**Inchon**	**61.43**	**325**	*e*P	**P**	**10 42 27.8**	**-0.7**
	comp=E,131nm,1.6s,mb5.8						
INCN				LR	LR		
	comp=Z,7μm,22.0s,MS5.8						
YSS	**Yuzh-Sakhalins**	**62.20**	**342**	PFAKE		10 42 40.0	+6.6
YSS				LR	LR		
	comp=Z,2μm,20.0s,MS5.4						
NJ2	**Nanjing**	**62.75**	**316**	*e*P	**P**	**10 42 39.4**	**+2.1**
NJ2				AP	pP	10 42 46.3	-1.2
NJ2				XP	sP	10 42 51.0	-0.3
NJ2				S	**S**	**10 51 07.0**	**+4.8**
NJ2				LR	LR		
	comp=N,2μm,23.4s,MS5.2						
NJ2				LR	LR		
	comp=E,1μm,26.7s,MS5.2						
VLA	**Vladivostok**	**63.01**	**333**	⇓*i*P	**P**	**10 42 36.0**	**-2.9**
VLA				*i*		10 45 04.0	
VLA				pmax	pmax		
	comp=N,500nm,9.0s						
VLA				pmax	pmax		
	comp=Z,600nm,9.0s						
QIZ	**Qiongzhong**	**63.20**	**299**	⇑P	**P**	**10 42 42.4**	**+1.9**
QIZ				S	**S**	**10 51 12.9**	**+4.9**
QIZ				AMB	AMB		
	comp=Z,236nm,9.1s						
SMY	**Shemya**	**64.84**	**6**	PFAKE		10 43 00.0	+9.3
SMY				LR	LR		
	comp=Z,3μm,19.0s,MS5.5						
PET	**Petropavlovsk**	**65.04**	**355**	*e*P	**P**	**10 42 49.8**	**-2.1**
PET				*e*S	S	10 51 31.9	+1.6
PET				*e*PS	PS	10 51 54.4	-0.4
PET				*e*SS	SS	10 55 40.6	-3.8
PET				pmax	pmax		
	comp=Z,437nm,12.2s						
PET				smax			
	comp=E,544nm,16.1s						
PET	**Petropavlovsk**	**65.04**	**355**	PFAKE		10 43 00.0	+8.1
PET				LR	LR		
	comp=Z,2μm,20.0s,MS5.2						
MDJ	**Mudanjiang**	**65.21**	**332**	P	**P**	**10 42 52.8**	**-0.4**
MDJ				PCP	PcP	10 43 25.3	-0.1
MDJ				AMB	AMB		
	comp=Z,30nm,1.3s,mb5.2						
DL2	**Dalian**	**65.28**	**323**	P	**P**	**10 42 53.3**	**-0.5**
DL2				AMB	AMB		
	comp=Z,50nm,1.3s,mb5.4						
DL2				AMB	AMB		
	comp=Z,200nm,7.0s						
DL2				LR	LR		
	comp=E,3μm,18.2s						
DL2				LR	LR		
	comp=Z,4μm,18.5s,MS5.6						
SBA	**Scott Base**	**65.87**	**180**	*e*P	**P**	**10 42 55.0**	**-1.9**
	comp=Z,148nm,1.5s,mb5.8						
SBA				LR	LR		
	comp=Z,1μm,19.0s,MS5.2						
TIA	**Tai'an**	**66.37**	**318**	*e*P	**P**	**10 43 00.0**	**-0.8**
IPM	**Ipoh**	**66.50**	**280**	⇑*e*P	**P**	**10 43 04.4**	**+2.5**
CN2	**Changchun**	**66.59**	**329**	⇑P	**P**	**10 43 01.4**	**-0.6**
CN2				AMB	AMB		
	comp=Z,200nm,3.0s						
CN2				LR	LR		
	comp=N,1μm,15.0s,MS5.3						
CN2				LR	LR		
	comp=E,700nm,15.0s,MS5.3						
CN2				LR	LR		
	comp=Z,2μm,19.0s,MS5.4						
KLR	**Kul'dur**	**67.95**	**337**	*e*P	**P**	**10 43 09.2**	**-1.2**
KLR				pmax	pmax		
	comp=Z,28nm,1.6s,mb5.0						
GYA	**Guiyang**	**69.02**	**304**	P	**P**	**10 43 20.0**	**+2.5**
GYA				PP	PP	10 45 56.3	+3.9
GYA				AMB	AMB		
	comp=Z,30nm,1.2s,mb5.1						
GYA				LR	LR		
	comp=N,480nm,16.2s,MS5.0						
GYA				LR	LR		
	comp=E,690nm,19.8s,MS5.0						
BJI	**Beijing**	**69.26**	**321**	*e*P	**P**	**10 43 18.5**	**-0.3**
BJI				PCP	PcP	10 43 36.3	-6.2
BJI				PP	PP	10 45 57.9	+3.7
BJI				AMB	AMB		
	comp=Z,55nm,1.6s,mb5.2						
BJI				LR	LR		
	comp=N,1μm,23.2s,MS5.2						
BJI				LR	LR		
	comp=E,1μm,21.1s,MS5.2						
BJI				LR	LR		
	comp=Z,2μm,24.5s,MS5.2						
KMI	**Kunming**	**71.68**	**302**	*e*P	**P**	**10 43 35.0**	**+1.3**
KMI				AP	pP	10 43 46.9	+2.9
KMI				XP	sP	10 43 51.5	+3.8
KMI				PP	PP	10 46 14.9	+0.1
KMI				AMB	AMB		
	comp=Z,19nm,1.3s,mb4.9						
KMI				AMB	AMB		
	comp=Z,286nm,7.4s						
KMI				LR	LR		
	comp=N,5μm,24.4s,MS5.9						

NEW LR LR
comp=Z,2µm,21.0s,MS5.4
INK Inuvik 90.75 19 *e*P **P 10 45 15.9 +2.5**
comp=Z,0.3nm,0.4s,mb4.0
TUC Tucson 90.81 57 PFAKE 10 45 30.0 +15
TUC LR LR
comp=Z,7µm,20.0s,MS6.1
HLID Hailey 90.86 46 *e*P **P 10 45 15.8 +1.3**
comp=Z,1.0nm,0.6s,mb4.3
HLID LR LR
comp=Z,1µm,19.0s,MS5.4
SYO Syowa Base 90.92 197 ⇑P **P 10 45 13.5 -0.7**
SYO Syowa Base 90.92 197 ⇑PcP PcP 10 45 18.4 +3.0
SYO Syowa Base 90.92 197⇑*e*P **P 10 45 13.5 -0.7**
SYO ⇑*e*PcP PcP 10 45 18.4 +3.0
HYB Hyderabad 90.98 287 *i* P **P 10 45 22.5 +6.9**
HYB *e*S S 10 56 12.0 +4.0
WUAZ Wupatki 91.09 54 PFAKE 10 45 30.0 +14
WUAZ LR LR
comp=Z,4µm,21.0s,MS5.8
MVU Marysvale 91.17 51 P **P 10 45 18.1 +2.1**
comp=Z,3.1nm,1.2s,mb4.5
MVU LR LR
comp=Z,4µm,21.0s,MS5.9
MSU Marysvale 91.20 51 *e*P **P 10 45 17.0 +0.8**
HVU Hansel Valley 91.57 48 P **P 10 45 19.5 +1.7**
MSO Missoula 92.06 43 PFAKE 10 45 30.0 +10
MSO LR LR
comp=Z,2µm,22.0s,MS5.5
MCMT McKenzie Canyo 92.28 45 *e*P **P 10 45 21.9 +0.9**
HWUT Hardware Ranch 92.40 48 PFAKE 10 45 30.0 +8.3
HWUT LR LR
comp=Z,2µm,20.0s,MS5.6
CHMT Chamberlain Mo 92.53 43 P **P 10 45 24.4 +2.2**
AHID Auburn Hatcher 93.01 47 PFAKE 10 45 40.0 +16
AHID LR LR
comp=Z,2µm,20.0s,MS5.5
BOZ Bozeman (W) 93.31 44 PFAKE 10 45 40.0 +14
BOZ LR LR
comp=Z,2µm,21.0s,MS5.6
HRY Holter Researc 93.43 43 *e*P **P 10 45 28.2 +2.0**
BW06 Boulder Array 94.12 47 PFAKE 10 45 40.0 +11
BW06 LR LR
comp=Z,2µm,22.0s,MS5.5
PDAR Pinedale Array 94.12 47 P **P 10 45 29.7 +0.3**
comp=Z,0.3nm,0.5s,mb4.0,baz=207,slow=2.0,SNR=3.2
MKAR Makanchi Array 94.26 317 P **P 10 45 30.5 +0.5**
comp=Z,40nm,0.7s,mb6.0,baz=96,slow=6.3,SNR=70
ZAL Zalesovo 94.37 324 P **P 10 45 29.6 -0.7**
comp=Z,8.0nm,1.0s,mb5.1,baz=272,slow=5.4,SNR=23
ANMO Albuquerque 94.90 55 PFAKE 10 45 40.0 +6.8
ANMO LR LR
comp=Z,4µm,20.0s,MS5.9
MNTX Cornudas Mount 95.17 59 PFAKE 10 45 50.0 +15
MNTX LR LR
comp=Z,4µm,20.0s,MS5.9
YKA Yellowknife Ar 95.76 27 P **P 10 45 33.4 -3.0**
comp=Z,1.0nm,0.5s,mb4.5,baz=257,slow=5.0,SNR=10
SDCO Great Sand Dun 96.18 53 PFAKE 10 45 50.0 +11
SDCO LR LR
comp=Z,3µm,22.0s,MS5.7
ISCO Idaho Springs 96.46 51 PFAKE 10 45 50.0 +10
ISCO LR LR
comp=Z,7µm,20.0s,MS6.1
KSH Kashi 97.41 309 *e*P **P 10 45 47.8 +3.3**
KSH *e*AP pP 10 45 52.4 -2.7
KSH *e*XP sP 10 45 55.0 -3.5
KSH *e*PP PP 10 49 50.3 +5.9
KSH *e*SKS SKS 10 56 24.0 +6.0
KSH *e*S S 10 57 13.0 +10
KSH *e*XS 10 57 20.0
KSH *e*PS PS 10 58 43.4 +8.7
KSH LR LR
comp=N,1µm,6.2s
KSH LR LR
comp=E,1µm,7.2s
KURK Kurchatov 97.41 320 *e*P **P 10 45 42.5 -1.7**
RSSD Black Hills 98.32 47 PFAKE 10 46 00.0 +12
RSSD LR LR
comp=Z,2µm,20.0s,MS5.5
JCT Junction City 99.69 61 PFAKE 10 46 10.0 +15
JCT LR LR
comp=Z,4µm,20.0s,MS5.9
CBKS Cedar Bluff 100.82 52 PFAKE 10 46 10.0 +10
CBKS LR LR
comp=Z,2µm,21.0s,MS5.6
FFC Flin Flon 100.93 36 PFAKE 10 46 10.0 +10
FFC LR LR
comp=Z,3µm,20.0s,MS5.8
WMOK Wichita Mounta 101.11 57 PFAKE 10 46 10.0 +8.6
WMOK LR LR
comp=Z,7µm,20.0s,MS6.2
BVA0 Borovoye Array 102.74 322 *i* P Pdif 10 46 06.5 -1.7
BRVK Borovoye 102.80 322 *e*P Pdif 10 46 06.8 -1.6
BRVK *e* 10 46 21.7
HKT Hockley 103.03 62 PFAKE 10 46 20.0 +10
HKT LR LR
comp=Z,2µm,21.0s,MS5.7
MIAR Mount Ida 105.36 57 PFAKE 10 50 50.0
MIAR LR LR
comp=Z,6µm,20.0s,MS6.2
EFI East Falkland 106.12 153 PFAKE 10 50 50.0
EFI LR LR
comp=Z,2µm,20.0s,MS5.5
CCM Cathedral Cave 107.42 54 PFAKE 10 50 50.0
CCM LR LR
comp=Z,4µm,21.0s,MS6.0
JFWS Jewell Farm 108.23 49 PFAKE 10 50 50.0
JFWS LR LR
comp=Z,2µm,21.0s,MS5.7
OXF Oxford 108.79 58 PFAKE 10 50 50.0
OXF LR LR
comp=Z,4µm,20.0s,MS6.0
ARU Arti 109.45 326 PFAKE 10 50 50.0
ARU LR LR
comp=Z,3µm,21.0s,MS5.9
PLAL Pickwick Lake 109.90 57 PFAKE 10 50 50.0
PLAL LR LR
comp=Z,6µm,20.0s,MS6.1
WVT Waverly 110.11 56 PFAKE 10 50 50.0 +8.7
WVT LR LR
comp=Z,5µm,19.0s,MS6.1
JTS JuntasAbangare 110.70 83 PFAKE 10 51 00.0 +17
JTS LR LR
comp=Z,203nm,20.0s,MS4.7
LRAL Lakeview Retre 110.76 59 PFAKE 10 51 00.0 +17
LRAL LR LR
comp=Z,5µm,20.0s,MS6.1
KBS Kingsbay 111.86 355 PFAKE 10 51 00.0 +16
KBS LR LR
comp=Z,3µm,20.0s,MS5.8
AAM Ann Arbor 113.12 49 PFAKE 10 51 00.0 +13
AAM LR LR
comp=Z,5µm,20.0s,MS6.1
MYNC Murphy 113.14 57 PFAKE 10 51 00.0 +13
MYNC LR LR
comp=Z,5µm,20.0s,MS6.1
ACSO Alum Creek Sta 113.79 51 PFAKE 10 51 00.0 +12
ACSO LR LR
comp=Z,5µm,19.0s,MS6.2
DWPF Disney 115.51 65 PFAKE 10 51 10.0 +18
DWPF LR LR
comp=Z,1µm,20.0s,MS5.6
ERPA Erie 115.85 49 PFAKE 10 51 10.0 +18
ERPA LR LR
comp=Z,5µm,21.0s,MS6.1
BLA Blacksburg 116.02 54 PFAKE 10 51 10.0 +17
BLA LR LR
comp=Z,4µm,19.0s,MS6.1
MCWV Mont Chateau 116.24 52 PFAKE 10 51 10.0 +17
MCWV LR LR
comp=Z,6µm,19.0s,MS6.2
LVC Limon Verde 116.30 123 PFAKE 10 51 10.0 +16
LVC LR LR
comp=Z,2µm,22.0s,MS5.6
ARCES ARCESS Array B 117.26 345 PKP PKPdf 10 50 54.4 -0.1
comp=Z,1.0nm,0.4s,baz=81,slow=1.6,SNR=16
CBN Corbin 118.33 53 PFAKE 10 51 10.0 +13
CBN LR LR
comp=Z,9µm,20.0s,MS6.4
BINY Binghamton 118.78 48 PFAKE 10 51 10.0 +12
BINY LR LR
comp=Z,2µm,19.0s,MS5.7
NCB Newcomb 119.69 46 PFAKE 10 51 10.0 +10
NCB LR LR
comp=Z,2µm,21.0s,MS5.7
OBN Obninsk 121.65 328 *i* PKIKP PKPdf 10 51 03.1 -0.2
OBN *e* 10 52 44.7
OBN 11 02 32.4
OBN pmax pmax
comp=Z,7.0nm,0.8s
OBN Obninsk 121.65 328 PFAKE 10 51 20.0 +17
OBN LR LR
comp=Z,3µm,20.0s,MS5.9
HRV Harvard--Oak R 121.92 47 PFAKE 10 51 20.0 +16
HRV LR LR
comp=Z,1µm,21.0s,MS5.6
KIV Kislovodsk 121.94 315 *i* PKIKP PKPdf 10 51 11.1 +7.0
KIV *e* 10 52 35.8
KIV pmax pmax
comp=Z,8.0nm,1.3s
KIV Kislovodsk 121.94 315 PFAKE 10 51 20.0 +16
KIV LR LR
comp=Z,2µm,19.0s,MS5.8
WES Weston 122.12 47 PFAKE 10 51 20.0 +15
WES LR LR
comp=Z,5µm,21.0s,MS6.2
FINES FINESS Array B 122.67 338 PKP PKPdf 10 51 04.3 -0.8
comp=Z,0.9nm,0.5s,slow=1.9,SNR=11
FINES FINESS Array B 122.67 338 PKP PKPdf 10 51 04.3 -0.8
WVL Waterville 122.72 44 PFAKE 10 51 20.0 +14
WVL LR LR
comp=Z,11µm,22.0s,MS6.5
PQI Presque Isle 123.16 42 PFAKE 10 51 20.0 +14
PQI LR LR
comp=Z,12µm,21.0s,MS6.5
EMMW East Machias 124.17 44 PFAKE 10 51 20.0 +12
EMMW LR LR
comp=Z,11µm,22.0s,MS6.5
SUR Sutherland 124.64 216 PFAKE 10 51 20.0 +10
SUR LR LR
comp=Z,2µm,20.0s,MS5.7
BORG Borgarnes 127.07 4 PFAKE 10 51 30.0 +16
BORG LR LR
comp=Z,3µm,20.0s,MS6.0
KMBO Kilima Mbogo 127.31 259 PKP PKPdf 10 51 16.9 +1.5
comp=Z,5.9nm,0.9s,baz=54,slow=4.3,SNR=10
KMBO Kilima Mbogo 127.31 259 *e*PKPdf PKPdf
KMBO LR LR 10 51 17.2 +1.8
comp=Z,777nm,19.0s,MS5.4
NB2 NORSAR Subarra127.62 345 PKPdf PKPdf 10 51 13.2 -1.5
comp=Z,5.4nm,1.2s,baz=31,slow=1.9
NOA NORSAR Array B 127.62 345 PKP PKPdf 10 51 14.2 -0.4
comp=Z,1.6nm,1.0s,baz=31,slow=2.0,SNR=4.0
KONO Kongsberg 129.23 345 PFAKE 10 51 30.0 +12
KONO LR LR
comp=Z,4µm,22.0s,MS6.0
BBSR BB Station 129.51 58 PFAKE 10 51 30.0 +11
BBSR LR LR
comp=Z,6µm,20.0s,MS6.3
SJG San Juan 129.56 76 PFAKE 10 51 30.0 +11
SJG LR LR
comp=Z,2µm,22.0s,MS5.7
BRTR Keskin Array B 129.66 312 PKP PKPdf 10 51 19.7 +0.6
comp=Z,1.5nm,0.8s,baz=143,slow=6.2,SNR=6.9
BRG Berggiesshubel 134.95 335 *e*PKIKP PKPdf 10 51 31.1 +2.3
BRG pmax pmax
comp=Z,18nm,1.9s
BRG Berggiesshubel 134.95 335 *e*P PKPdf 10 51 31.1 +2.3
BRG *e* 11 04 00.5
CLL Collm 134.99 336 *e* PKPdf 10 51 31.0 +2.2
ESK Eskdalemuir 135.92 351 PFAKE 10 51 40.0 +10
ESK LR LR
comp=Z,2µm,20.0s,MS5.9
GERES GERESS Array B 136.58 333 PKP PKPdf 10 51 30.3 -1.5
comp=Z,0.8nm,0.8s,baz=90,slow=2.0,SNR=7.0
CDF Champ du Feu 139.52 338 *e*PKP1 PKPdf 10 51 30.1 -7.1
comp=Z,27nm,1.6s
CABF La Chapelle 141.47 337 *e*PKP1 PKPdf 10 51 33.9 -6.8
comp=Z,31nm,1.4s
SSF Saint Saulge 141.99 340 *e*PKP1 PKPdf 10 51 37.1 -4.5
comp=Z,11nm,1.0s
LPL La Plagne 142.13 336 *e*PKP1 PKPdf 10 51 38.0 -3.9
LPG La Plagne 142.14 336 *e*PKP1 PKPdf 10 51 38.0 -3.9
SMF Signal de Mont 142.25 340 *e*PKP1 PKPdf 10 51 39.4 -2.6
comp=Z,15nm,1.2s
AVF Avril sur Loir 142.28 340 *e*PKP1 PKPdf 10 51 39.2 -2.9
BNI Bardonecchia 142.53 336 *e*PKIKP PKPdf 10 51 39.5 -3.1
BNI *e* 10 51 47.1
MBDF Montbardon 142.76 335 *e*PKP1 PKPdf 10 51 39.6 -3.4
ORIF Oris-en-Rattie 142.96 336 *e*PKP1 PKPdf 10 51 40.5 -2.8
comp=Z,15nm,0.9s
SAOF Saorge 143.03 334 PKP PKPdf 10 51 38.9 -4.6
TCF Toulx Ste Croi 143.10 341 *e*PKP1 PKPbc 10 51 40.7 -0.8
SBF Sospel 143.18 334 *e*PKP1 PKPbc 10 51 39.9 -1.9
comp=Z,53nm,1.1s
MVIF Mont Vial 143.27 334 PKP PKPdf 10 51 38.4 -5.5
PYM Petit Puy Mans 143.31 340 PKP PKPdf 10 51 43.3 -0.6
VIVF Saint-Julien-l 143.48 337 *e*PKP1 PKPbc 10 51 40.8 -1.9
PGF Pioggiola 143.49 331 *e*PKP1 PKPbc 10 51 40.5 -2.3
MFF Saint Martin d 143.51 344 *e*PKP1 PKPbc 10 51 40.2 -2.6
LBL Lubilhac 143.68 339 PKP PKPdf 10 51 43.3 -1.2
FRF La Foret Royal 143.76 334 *e*PKP1 PKPbc 10 51 41.1 -2.5
SMRF Simiane la Rot 143.87 336 *e*PKP1 PKPbc 10 51 42.1 -1.8
VILF Villemus 143.91 335 PKP PKPdf 10 51 43.9 -1.1
TAVF Tavernes 143.97 335 PKP PKPdf 10 51 44.3 -0.8
LMR La Mourre 144.00 334 *e*PKP1 PKPbc 10 51 42.1 -2.2
comp=Z,202nm,1.6s
PRAF Pradon 144.17 336 PKP PKPdf 10 51 43.2 -2.2
PUYF Puyloubier 144.18 335 PKP PKPdf 10 51 44.9 -0.6
RJF Les Rejaudoux 144.19 341 *e*PKP1 PKPbc 10 51 42.9 -1.9
TREF Trevaresse 144.24 335 PKP PKPdf 10 51 45.4 -0.2
CAF Calviac 144.35 340 *e*PKP1 PKPbc 10 51 43.6 -1.7
comp=Z,67nm,1.5s
BERF Bertagne 144.37 335 PKP PKPdf 10 51 45.6 -0.2
GELF Grande-Etoile 144.42 335 PKP PKPdf 10 51 45.4 -0.5
LASF Ste Croix 144.45 337 *e*PKP1 PKPbc 10 51 41.5 -4.1
comp=Z,48nm,1.1s
LFF La Frestale 144.76 342 *e*PKP1 PKPbc 10 51 44.7 -1.7
MTLF Montolieu 145.69 339 *e*PKP1 PKPbc 10 51 46.7 -2.1
comp=Z,61nm,1.1s
LRDF Laroque-de-Fa 145.92 338 PKP PKPdf 10 51 49.2 +0.7
LPEF Le Peyrat 146.14 339 PKP PKPdf 10 51 49.9 +1.0
SJAF Saint Jean de 146.18 337 PKP PKPdf 10 51 49.4 +0.4
FILF Fillols 146.24 338 PKP PKPdf 10 51 50.0 +0.9
MLS Moulis 146.42 340 PKP PKPdf 10 51 50.6 +1.2
VALF Valcebollere 146.58 338 PKP PKPdf 10 51 51.0 +1.3
EPF Esparros 146.60 341 *e*PKP1 PKPbc 10 51 49.3 -1.7
comp=Z,35nm,1.3s
RESF Ens 146.81 340 PKP PKPdf 10 51 52.4 +2.4
SJPF Ste Jean 147.02 342 *e*PKP1 PKPdf 10 51 49.4 -1.0
comp=Z,50nm,1.5s
ESDC Sonseca Array 150.98 344 PKPbc PKPdf 10 52 02.8 +6.1
comp=Z,1.4nm,0.7s,baz=16,slow=2.3,SNR=10.0
MTE Manteigas 151.10 350 *e*PKPbc PKPdf 10 52 03.6 +6.7
KIC Kosan Boka 169.15 240 *e*P PKPdf 10 52 16.5 -0.8
comp=Z,67nm,1.2s
LIC Lamto 169.32 238 *e*PKIKP PKPdf 10 52 13.3 -4.1
comp=Z,81nm,1.6s
LIC Lamto 169.32 238 *e*P PKPdf 10 52 15.1 -2.3
comp=Z,62nm,1.6s
TIC Toumodi 169.53 240 *e*P PKPdf 10 52 18.0 +0.5
comp=Z,119nm,1.5s

IDC ***16*** *10:37:05.3±0.6, 12.03S×166.05E, mb4.6/17, mb1 4.7/18, mb1mx4.6/20, ML3.4/1, Error ellipse: s-maj=23.5km s-min=15.1km az=132.0*
BJI ***16*** *10:37:06.6, 11.53S×166.58E, h18km, mB5.2, mb5.2, Ms5.7, Msz5.2*
NEIC ***16*** *10:37:08.0±0.3, 11.93S×165.71E, h10km, mb4.9/18, Error ellipse: s-maj=12.1km s-min=8.5km az=120.0*
MOS ***16*** *10:37:08.1±0.8, 11.96S×166.09E, h33km, mb5.5/3, Error ellipse: s-maj=18.2km s-min=16.2km az=26.5*
SYO ***16*** *10:37:08.0, 11.93S×165.71E, h10km, MB4.9*
HRVD ***16*** *10:37:08.0±0.5, 12.00S×165.86E, h21km, MW5.3/36, Centroid moment Tensor Solution. LP body waves: s31,c42;Mantle waves: s36,c59; Half duration: 1s1 Moment tensor: Scale 10^{17}Nm; M_{rr}0.89±.05; $M_{\theta\theta}$-0.06±.04; $M_{\phi\phi}$-0.84±.04; $M_{r\theta}$0.39±.08; $M_{\theta\phi}$0.22±.03; $M_{\phi r}$-0.39±.07; Best double couple: $M_0$1.05×10^{17} NP1: ϕ_s358°,δ32°,λ114°. NP2:ϕ_s151°,δ61°,λ76°. Principal axes: T 1.08, Plg71°, Azm29°; N -.06, Plg13°, Azm158°; P -1.02, Plg14°, Azm251°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
ISC 16 10:37:09.5±0.3,**12.11S**±0.05×**165.77E**±0.07,**h33**km,

(h11km±5.6km:pP-P),n105,σ1s25/83,mb4.9/39,MS5.4/8, 4C-4D,Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BKM	**Butte a Klehm**	**6.02**	**157**	*i* P	**P**	**10 38 44.4**	**+5.9**
BKM				S	**S**	**10 39 54.3**	**+7.2**
DZM	**Mont Dzumac**	**9.92**	**176**	*e*P	**P**	**10 39 32.2**	**-0.8**
DZM				*e*S	**S**	**10 41 18.4**	**-6.0**
DZM	**Mont Dzumac**	**9.92**	**176**	*e*P	**P**	**10 39 32.2**	**-0.8**
DZM				*e*S	**S**	**10 41 18.4**	**-6.0**
NOUC	**Port Laguerre**	**9.95**	**177**	*e*P	**P**	**10 39 31.9**	**-1.4**
NOUC				*e*S	**S**	**10 41 20.8**	**-4.1**
PMG	**Port Moresby**	**18.48**	**277**	P	**P**	**10 41 27.7**	**+2.6**
	0.3nm,0.3s,baz=79,slow=6.8,SNR=7.3						
PMG	**Port Moresby**	**18.48**	**277**	P	**P**	**10 41 20.2**	**-4.9**
CTA	**Charters Tower**	**20.35**	**245**	⇓*i*P	**P**	**10 41 48.1**	**+2.2**
	31nm,1.0s						
CTA	**Charters Tower**	**20.35**	**245**	P	**P**	**10 41 48.1**	**+2.3**
	23nm,0.8s,baz=73,slow=14,SNR=7.9						
CTAO	**Charters Tower**	**20.35**	**245**	*e*P	**P**	**10 41 47.2**	**+1.3**
	77nm,1.2s						
STKA	**Stephens Creek**	**29.70**	**225**	*e*P	**P**	**10 43 16.5**	**+1.7**
	6.9nm,0.8s,mb4.4						
STKA	**Stephens Creek**	**29.70**	**225**	P	**P**	**10 43 16.2**	**+1.5**
	9.0nm,1.2s,mb4.4,baz=66,slow=7.4,SNR=4.0						
WB2	**Warramunga Arr**	**31.14**	**251**	*e*P	**P**	**10 43 27.9**	**+0.1**
WRAB	**Tennant Creek**	**31.14**	**252**	P	**P**	**10 43 26.0**	**-1.7**
WRA	**Warramunga Arr**	**31.16**	**251**	P	**P**	**10 43 27.9**	**+0.1**
	3.6nm,0.8s,mb4.2,baz=81,slow=8.5,SNR=6.9						
WRA				PcP	PcP	10 46 22.4	-0.1
	3.7nm,0.9s,baz=58,slow=1.7,SNR=5.5						
RPZ	**Rata Peaks**	**31.82**	**173**	P	**P**	**10 43 32.7**	**-0.7**
	20nm,0.7s,mb5.1,baz=256,slow=2.3,SNR=22						
AS12	**Alice Springs**	**32.35**	**245**	*e*P	**P**	**10 43 37.7**	**-0.6**
	13nm,1.0s,mb4.7						
ASAR	**Alice Springs**	**32.35**	**245**	P	**P**	**10 43 38.0**	**-0.3**
	4.3nm,0.7s,mb4.4,baz=71,slow=9.2,SNR=11						
ASAR				PcP	PcP	10 46 25.1	-0.5
	3.9nm,1.0s,baz=97,slow=2.5,SNR=5.0						
FITZ	**Fitzroy Crossi**	**39.14**	**256**	*e*P	**P**	**10 44 37.6**	**+1.6**
	15nm,1.9s,mb4.4						
FITZ	**Fitzroy Crossi**	**39.14**	**256**	P	**P**	**10 44 37.2**	**+1.2**
	4.3nm,0.7s,mb4.3,baz=173,slow=12,SNR=3.1						
NWAO	**Narrogin (SRO)**	**48.90**	**237**	P	**P**	**10 45 55.4**	**+0.9**
	8.3nm,0.9s,mb4.8,baz=115,slow=15,SNR=2.2						
NWAO	**Narrogin (SRO)**	**48.90**	**237**	P	**P**	**10 45 55.0**	**+0.6**
	2.2nm,0.6s,mb4.4						
MAJO	**Matsushiro**	**54.93**	**333**	*e*P	**P**	**10 46 36.7**	**-3.0**
	36nm,1.3s,mb5.2						
MAT	**Matsushiro**	**54.93**	**333**	P	**P**	**10 46 35.7**	**-3.9**
MAT	**Matsushiro**	**54.93**	**333**	*e*P	**P**	**10 46 36.0**	**-3.6**
	17nm,1.0s,mb5.0						
ASAJ	**Asahikawa**	**59.80**	**341**	P	**P**	**10 47 12.3**	**-1.7**
	6.9nm,0.8s,mb4.7,baz=242,slow=11,SNR=6.4						
YSS	**Yuzh-Sakhalins**	**62.31**	**342**	*e*P	**P**	**10 47 29.0**	**-1.9**
MDJ	**Mudanjiang**	**65.30**	**332**	P	**P**	**10 47 49.8**	**-0.7**
MDJ				AMB	AMB		
	comp=Z,21nm,1.3s,mb5.0						
MDJ				AMB	AMB		
	comp=Z,117nm,5.3s						
MDJ				LR	LR		
	comp=N,191nm,8.5s						
MDJ				LR	LR		
	comp=E,254nm,13.4s						
MDJ				LR	LR		
	comp=Z,214nm,18.2s,MS4.4						
DL2	**Dalian**	**65.34**	**323**	*e*P	**P**	**10 47 50.8**	**-0.1**
DL2				AMB	AMB		
	comp=Z,20nm,1.3s,mb5.0						
SBA	**Scott Base**	**65.74**	**180**	*e*P	**P**	**10 47 52.6**	**-0.2**
	comp=Z,46nm,1.3s,mb5.3						
SBA				*e*		10 47 58.1	
IPM	**Ipoh**	**66.46**	**280**	⇓*e*P	**P**	**10 48 04.5**	**+6.1**
CN2	**Changchun**	**66.67**	**329**	⇑P	**P**	**10 47 58.6**	**-0.6**
CN2				*e*AP	pP	10 48 04.0	-5.5
CN2				AMB	AMB		
	comp=Z,50nm,0.8s,mb5.6						
CN2				AMB	AMB		
	comp=Z,240nm,3.0s						
CN2				LR	LR		
	comp=N,2μm,18.0s,MS5.5						
CN2				LR	LR		
	comp=E,890nm,18.0s,MS5.5						
CN2				LR	LR		
	comp=Z,2μm,18.0s,MS5.4						
KLR	**Kul'dur**	**68.04**	**337**	*e*P	**P**	**10 48 06.7**	**-1.1**
GYA	**Guiyang**	**69.04**	**305**	P	**P**	**10 48 14.9**	**+0.6**
GYA				AMB	AMB		
	comp=Z,10.0nm,1.2s,mb4.6						
BJI	**Beijing**	**69.33**	**321**	*e*P	**P**	**10 48 15.6**	**-0.3**
BJI				AP	pP	10 48 24.9	-1.3
BJI				XP	sP	10 48 29.0	-0.9
BJI				S	S	10 57 23.0	+4.2
BJI				AMB	AMB		
	comp=Z,28nm,1.4s,mb5.0						
BJI				AMB	AMB		
	comp=Z,238nm,3.1s						
BJI				LR	LR		
	comp=N,2μm,25.7s,MS5.5						
BJI				LR	LR		
	comp=E,3μm,28.6s,MS5.5						
BJI				LR	LR		
	comp=Z,2μm,21.6s						
KMI	**Kunming**	**71.70**	**302**	*e*P	**P**	**10 48 29.8**	**-0.7**
KMI				AMB	AMB		
	comp=Z,207nm,9.5s						
KMI				LR	LR		
	comp=N,3μm,13.8s						
KMI				LR	LR		
	comp=E,8μm,21.6s						
KMI				LR	LR		
	comp=Z,9μm,16.7s,MS6.1						
CMAR	**Chiang Mai Arr**	**72.56**	**294**	P	**P**	**10 48 37.0**	**+1.3**
	comp=Z,12nm,1.2s,mb4.7,baz=128,slow=4.6,SNR=6.4						
HHC	**Hu-ho-hao-te**	**72.66**	**320**	⇑P	**P**	**10 48 37.0**	**+1.1**
HHC				AP	pP	10 48 41.9	-4.3
HHC				XP	sP	10 48 44.8	-5.1
HHC				PP	PP	10 51 22.9	+3.2
HHC				AMB	AMB		
	comp=Z,179nm,9.8s						
HHC				LR	LR		
	comp=N,2μm,16.5s,MS5.7						
HHC				LR	LR		
	comp=E,2μm,15.0s,MS5.7						
LZH	**Lanzhou**	**75.49**	**312**	P	**P**	**10 48 55.0**	**+2.5**
LZH				AP	pP	10 48 58.3	-4.5
LZH				XP	sP	10 49 00.0	-6.5
LZH				AMB	AMB		
	comp=Z,100nm,1.5s,mb5.5						
LZH				AMB	AMB		
	comp=Z,260nm,4.0s						
LZH				LR	LR		
	comp=E,3μm,15.8s						
LZH				LR	LR		
	comp=Z,4μm,18.0s,MS5.8						
ULN	**Ulaanbaatar**	**79.18**	**324**	*e*P	**P**	**10 49 13.2**	**+0.4**
	comp=Z,56nm,1.1s,mb5.4						
SONM	**Songino Array**	**79.54**	**324**	P	**P**	**10 49 15.6**	**+0.8**
	comp=Z,14nm,0.9s,mb4.9,baz=135,slow=5.2,SNR=17						
GTA	**Gaotai**	**79.81**	**314**	*e*P	**P**	**10 49 17.4**	**+1.0**
GTA				AP	pP	10 49 29.6	+2.8
GTA				AMB	AMB		
	comp=Z,27nm,1.7s,mb4.9						
GTA				AMB	AMB		
	comp=Z,220nm,4.0s						
GTA				LR	LR		
	comp=N,2μm,17.1s,MS5.6						
GTA				LR	LR		
	comp=E,2μm,16.4s,MS5.6						
GTA				LR	LR		
	comp=Z,2μm,14.8s,MS5.7						
BILL	**Bilibino**	**79.94**	**0**	⇓*i*P	**P**	**10 49 14.1**	**-2.4**
BILL				*e*		10 49 21.2	
BILL				*e*		10 52 17.3	
BILL				pmax	pmax		
	comp=Z,3.0nm,1.0s,mb4.2						
BOD	**Bodaibo**	**81.50**	**335**	*e*P	**P**	**10 49 22.3**	**-2.6**
ZAK	**Zakamensk**	**82.59**	**325**	⇓*e*P	**P**	**10 49 30.3**	**-0.4**
LSA	**Lhasa**	**82.94**	**302**	P	**P**	**10 49 36.5**	**+3.6**
IRK	**Irkutsk**	**82.96**	**327**	*e*P	**P**	**10 49 30.5**	**-2.1**
MAW	**Mawson**	**83.75**	**202**	P	**P**	**10 49 36.9**	**+0.7**
	comp=Z,3.7nm,1.1s,mb4.4,baz=77,slow=9.1,SNR=4.9						
COLA	**College**	**84.29**	**18**	*e*P	**P**	**10 49 40.5**	**+1.5**
	comp=Z,2.1nm,0.6s,mb4.4						
MOY	**Mondy**	**84.47**	**326**	*e*P	**P**	**10 49 40.4**	**+0.2**
ILAR	**Eielson Array**	**84.51**	**18**	P	**P**	**10 49 39.5**	**-0.6**
	comp=Z,1.5nm,0.6s,mb4.3,baz=223,slow=5.8,SNR=8.9						
YBH	**Yreka Blue Hor**	**84.62**	**45**	P	**P**	**10 49 40.0**	**-1.2**
	comp=Z,1.6nm,0.7s,mb4.3,baz=205,slow=7.2,SNR=4.1						
YBH	**Yreka Blue Hor**	**84.62**	**45**	*e*P	**P**	**10 49 42.4**	**+1.2**
	comp=Z,5.4nm,1.2s,mb4.5						
BEKR	**Beckwourth**	**85.64**	**48**	*e*P	**P**	**10 49 47.6**	**+1.3**
	comp=Z,2.1nm,0.6s,mb4.5						
DAWY	**Dawson**	**86.54**	**21**	*e*P	**P**	**10 49 51.9**	**+1.8**
NVAR	**Mina Array Bea**	**86.69**	**50**	P	**P**	**10 49 50.9**	**-0.6**
	comp=Z,1.1nm,0.6s,mb4.2,baz=237,slow=10,SNR=6.1						
NVAR	**Mina Array Bea**	**86.69**	**50**	P	**P**	**10 49 50.9**	**-0.6**
TIXI	**Tiksi**	**87.14**	**349**	*e*P	**P**	**10 49 50.8**	**-2.1**
TIXI				*e*S	S	11 00 28.7	+0.5
TIXI				pmax	pmax		
	comp=Z,89nm,1.6s,mb5.8						
PKI	**Pulchoki**	**87.17**	**299**	*e*P	**P**	**10 49 54.2**	**+0.1**
	comp=Z,46nm,1.1s,mb5.6						
RMW	**Rattlesnake Mo**	**87.29**	**40**	*e*P	**P**	**10 49 55.6**	**+1.4**
KKN	**Kakani**	**87.34**	**299**	*e*P	**P**	**10 49 54.2**	**-0.7**
	comp=Z,95nm,1.5s,mb5.8						
DMN	**Daman**	**87.44**	**299**	*e*P	**P**	**10 49 55.5**	**+0.1**
	comp=Z,81nm,1.1s,mb5.9						
GKN	**Gorkha**	**87.94**	**299**	*e*P	**P**	**10 49 57.6**	**-0.2**
KOLN	**Koldanda**	**88.77**	**299**	*e*P	**P**	**10 50 02.1**	**+0.3**
	comp=Z,44nm,1.2s,mb5.7						
WMQ	**Urumqi**	**89.86**	**315**	*e*P	**P**	**10 50 07.3**	**+0.8**
WMQ				AP	pP	10 50 11.0	-6.1
WMQ				XP	sP	10 50 13.6	-6.9
WMQ				AMB	AMB		
	comp=Z,17nm,2.5s,mb4.9						
WMQ				AMB	AMB		
	comp=Z,49nm,5.9s						
WMQ				LR	LR		
	comp=N,214nm,22.8s,MS4.7						
WMQ				LR	LR		
	comp=E,248nm,20.6s,MS4.7						
WMQ				LR	LR		
	comp=Z,339nm,21.8s,MS4.7						
NEW	**Newport**	**90.53**	**41**	P	**P**	**10 50 09.4**	**-0.1**
	comp=Z,1.1nm,0.6s,mb4.3,baz=270,slow=5.1,SNR=4.2						
SYO	**Syowa Base**	**90.78**	**197**	⇑P	**P**	**10 50 09.3**	**-0.9**
SYO	**Syowa Base**	**90.78**	**197**	⇑*e*P	**P**	**10 50 09.3**	**-0.9**
HYB	**Hyderabad**	**90.96**	**287**	*e*P	**P**	**10 50 23.0**	**+11**
HLID	**Hailey**	**91.00**	**46**	*e*P	**P**	**10 50 13.4**	**+1.5**
	comp=Z,1.1nm,0.6s,mb4.4						
MVU	**Marysvale**	**91.30**	**51**	*e*P	**P**	**10 50 16.0**	**+2.6**
	comp=Z,6.5nm,1.1s,mb4.9						
MSU	**Marysvale**	**91.33**	**51**	*e*P	**P**	**10 50 15.5**	**+2.0**
MKAR	**Makanchi Array**	**94.31**	**317**	P	**P**	**10 50 27.7**	**+0.8**
	comp=Z,18nm,0.7s,mb5.6,baz=98,slow=5.8,SNR=57						
MKAR	**Makanchi Array**	**94.31**	**317**	*i* P	**P**	**10 50 27.2**	**+0.3**
MKAR				pmax	pmax		
	comp=Z,29nm,0.9s						
MKAR	**Makanchi Array**	**94.31**	**317**	P	**P**	**10 50 27.7**	**+0.8**
ZAL	**Zalesovo**	**94.44**	**324**	P	**P**	**10 50 26.8**	**-0.5**
	comp=Z,6.0nm,1.0s,mb5.0,baz=274,slow=4.9,SNR=20						
ZAL	**Zalesovo**	**94.44**	**324**	P	**P**	**10 50 26.8**	**-0.5**
NVS	**Novosibirsk**	**95.54**	**325**	*i* P	**P**	**10 50 30.6**	**-1.7**
YKA	**Yellowknife Ar**	**95.90**	**27**	P	**P**	**10 50 34.1**	**+0.4**
	comp=Z,0.8nm,0.5s,mb4.4,baz=257,slow=4.7,SNR=25						
KURK	**Kurchatov**	**97.47**	**320**	*e*P	**P**	**10 50 39.8**	**-1.5**
ARCES	**ARCESS Array B**	**117.37**	**345**	PKP	PKPdf	10 55 50.5	-0.8
	comp=Z,1.0nm,0.5s,baz=75,slow=2.6,SNR=15						
FINES	**FINESS Array B**	**122.77**	**338**	PKP	PKPdf	10 56 00.6	-1.5
	comp=Z,0.9nm,0.7s,baz=90,slow=3.8,SNR=8.7						
KMBO	**Kilima Mbogo**	**127.22**	**259**	*e*PKPdf	PKPdf	10 56 14.4	+2.5
NB2	**NORSAR Subarra**	**127.73**	**345**	PKPdf	PKPdf	10 56 10.7	-0.9
	comp=Z,4.3nm,1.2s,baz=31,slow=1.9						
NOA	**NORSAR Array B**	**127.73**	**345**	PKP	PKPdf	10 56 10.3	-1.3
	comp=Z,0.5nm,0.8s,baz=38,slow=20,SNR=3.0						
NOA	**NORSAR Array B**	**127.73**	**345**	PKP	PKPdf	10 56 10.3	-1.3
CLL	**Collm**	**135.09**	**336**	*e*	PKPdf	10 56 28.0	+2.3
GERES	**GERESS Array B**	**136.67**	**333**	PKP	PKPdf	10 56 29.2	+0.4
	comp=Z,0.6nm,0.7s,baz=72,slow=4.2,SNR=4.7						
CABF	**La Chapelle**	**141.57**	**337**	*e*PKP1	PKPdf	10 56 34.9	-2.7
	comp=Z,33nm,1.5s						
LPL	**La Plagne**	**142.22**	**336**	*e*PKP1	PKPdf	10 56 38.0	-0.7
AVF	**Avril sur Loir**	**142.38**	**340**	*e*PKP1	PKPdf	10 56 35.9	-3.1
	comp=Z,12nm,1.2s						
MBDF	**Montbardon**	**142.85**	**335**	*e*PKP1	PKPdf	10 56 35.9	-3.9
ORIF	**Oris-en-Rattie**	**143.06**	**336**	*e*PKP1	PKPbc	10 56 37.2	-1.0
	comp=Z,9.1nm,0.8s						
SBF	**Sospel**	**143.27**	**333**	*e*PKP1	PKPbc	10 56 37.3	-1.5
	comp=Z,26nm,0.9s						
PGF	**Pioggiola**	**143.57**	**331**	*e*PKP1	PKPbc	10 56 38.2	-1.6
VIVF	**Saint-Julien-l**	**143.58**	**337**	*e*PKP1	PKPbc	10 56 38.9	-0.8
FRF	**La Foret Royal**	**143.85**	**334**	*e*PKP1	PKPbc	10 56 38.3	-2.3
	comp=Z,59nm,1.3s						
SMRF	**Simiane la Rot**	**143.96**	**335**	*e*PKP1	PKPbc	10 56 38.4	-2.5
LMR	**La Mourre**	**144.09**	**334**	*e*PKP1	PKPbc	10 56 38.5	-2.8
RJF	**Les Rejaudoux**	**144.30**	**341**	*e*PKP1	PKPbc	10 56 40.6	-1.2
CAF	**Calviac**	**144.45**	**340**	*e*PKP1	PKPbc	10 56 39.4	-2.9
LASF	**Ste Croix**	**144.55**	**337**	*e*PKP1	PKPbc	10 56 39.0	-3.6
	comp=Z,42nm,1.3s						
LFF	**La Frestale**	**144.87**	**341**	*e*PKP1	PKPbc	10 56 43.0	-0.4
MTLF	**Montolieu**	**145.79**	**338**	*e*PKP1	PKPbc	10 56 45.6	-0.2
	comp=Z,22nm,0.9s						
EPF	**Esparros**	**146.71**	**340**	*e*PKP1	PKPbc	10 56 46.9	-1.1
ESDC	**Sonseca Array**	**151.08**	**343**	PKPbc	PKPdf	10 56 59.5	+5.9
	comp=Z,1.9nm,0.8s,baz=14,slow=2.6,SNR=7.6						

WEL 16 10:38:40.1±0.1,37.60S×177.13E,h135km±1km,ML3.5/3, 5C,Error ellipse: s-maj=0.7km s-min=0.5km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**0.66**	**181**	⇑PN	P	10 39 00.6	-0.5
URZ				SN	S	10 39 16.3	-1.0
MWZ	**Matawai**	**0.80**	**157**	⇑PN	P	10 39 01.7	-0.4
MWZ				SN	S	10 39 18.4	-0.5
MXZ	**Matakaoa Point**	**0.94**	**88**	⇑PN	P	10 39 02.8	-0.3
MXZ				SN	S	10 39 20.1	-0.7
PUZ	**Puketiti**	**1.01**	**118**	⇑PN	P	10 39 03.4	-0.3
PUZ				SN	S	10 39 21.0	-0.8
KUZ	**Kuaotunu**	**1.41**	**307**	PN	P	10 39 07.4	-0.5
KNZ	**Kokohu**	**1.48**	**163**	PN	P	10 39 08.2	-0.5
KNZ				SN	S	10 39 29.1	-1.5
BKZ	**Black Stump Fm**	**1.64**	**197**	PN	P	10 39 09.9	-0.6
BKZ				SN	S	10 39 33.0	-0.7
MGZ	**Maungaku**	**1.88**	**221**	*e*PN	P	10 39 13.2	0.0
NGZ	**Ngauruhoe**	**1.98**	**217**	PN	P	10 39 14.8	+0.4
CNZ	**Chateau**	**2.02**	**217**	PN	P	10 39 15.5	+0.5
TUVZ	**Tukino**	**2.03**	**214**	PN	P	10 39 15.1	+0.1
FWVZ	**Far West T-bar**	**2.06**	**216**	PN	P	10 39 15.4	0.0
WNVZ	**Wahianoa**	**2.10**	**214**	*e*PN	P	10 39 15.9	-0.1
PWZ	**Pawanui**	**2.43**	**185**	PN	P	10 39 19.1	-1.2
PWZ				SN	S	10 39 49.1	-1.8
TSZ	**Takapari Road**	**2.62**	**200**	⇑PN	P	10 39 20.9	-1.8
TSZ				SN	S	10 39 53.9	-1.2
WAZ	**Wanganui**	**2.73**	**217**	PN	P	10 39 23.1	-1.0
WAZ				SN	S	10 39 58.2	+0.6
BFZ	**Birch Farm**	**3.15**	**192**	PN	P	10 39 27.0	-2.7
BFZ				SN	S	10 40 05.0	-2.4
MRZ	**Mangatainoka R**	**3.29**	**201**	PN	P	10 39 28.5	-3.0
MTW	**Mount Morrison**	**3.77**	**199**	PN	P	10 39 33.9	-3.9
CAW	**Cannon Point**	**3.85**	**204**	PN	P	10 39 35.2	-3.7
SNZO	**South Karori**	**4.15**	**206**	PN	P	10 39 38.8	-4.1
TUWZ	**Tuamarina**	**4.55**	**212**	*e*PN	P	10 39 43.8	-4.4
NNZ	**Nelson**	**4.63**	**218**	PN	P	10 39 45.7	-3.7
NNZ				SN	S	10 40 37.9	-4.8
QRZ	**Quartz Range**	**4.81**	**227**	PN	P	10 39 48.0	-3.6
THZ	**Tophouse**	**5.28**	**217**	PN	P	10 39 53.9	-4.1
KHZ	**Kahutara**	**5.54**	**209**	PN	P	10 39 56.5	-5.0
LTZ	**Lake Taylor**	**6.37**	**214**	*e*PN	P	10 40 07.3	-5.4

BJI ***16*** *10:41:58.0, 11.88S×167.12E, h23km, mB5.2, mb5.1, Ms5.3, Msz5.1*

IDC ***16*** *10:41:58.3±0.6, 11.91S×166.30E, mb4.5/15, mb1 4.6/16, mb1mx4.6/18, ML3.4/1, Error ellipse: s-maj=22.6km s-min=15.7km az=127.0*

NEIC ***16*** *10:41:59.7±0.4, 11.96S×166.31E, h10km, mb5.0/15, Error ellipse: s-maj=12.6km s-min=9.0km az=136.0*

SYO ***16*** *10:41:59.6, 11.96S×166.31E, h10km, MB5.0*

ISC 16 10:42:02.0±0.5,12.03S±0.08×166.25E±0.09,h33km, (h6km±7.9km:pP-P),n69,σ1s07/48,mb5.0/32,MS4.9/3, 3C-4D,Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**18.94**	**276**	P	**P**	**10 46 23.0**	**0.0**
	0.4nm,0.3s,baz=88,slow=12,SNR=4.2						
PMG	**Port Moresby**	**18.94**	**276**	*e*P	**P**	**10 46 22.7**	**-0.3**
	40nm,1.0s						
WAU	**Wau**	**19.80**	**282**	*e*P	**P**	**10 46 33.2**	**+0.5**
CTA	**Charters Tower**	**20.80**	**245**	⇓*i*P	**P**	**10 46 42.3**	**-0.8**
	14nm,0.7s						
CTA	**Charters Tower**	**20.80**	**245**	P	**P**	**10 46 42.6**	**-0.5**
	19nm,1.0s,baz=73,slow=11,SNR=11						
CTAO	**Charters Tower**	**20.80**	**245**	*e*P	**P**	**10 46 42.1**	**-1.0**
STKA	**Stephens Creek**	**30.08**	**225**	*e*P	**P**	**10 48 12.0**	**+1.3**
	6.1nm,0.6s,mb4.5						
STKA	**Stephens Creek**	**30.08**	**225**	P	**P**	**10 48 12.2**	**+1.5**
	7.0nm,0.7s,mb4.5,baz=38,slow=6.8,SNR=14						
TOO	**Toolangi**	**31.50**	**213**	⇓*i*P	**P**	**10 48 28.2**	**+5.0**
	9.4nm,0.9s,mb4.6						
WRAB	**Tennant Creek**	**31.61**	**252**	*e*P	**P**	**10 48 22.6**	**-1.8**
	25nm,0.9s,mb5.0						
WB2	**Warramunga Arr**	**31.61**	**252**	*e*P	**P**	**10 48 27.3**	**+2.9**
WRA	**Warramunga Arr**	**31.62**	**252**	P	**P**	**10 48 22.3**	**-2.2**
	4.2nm,0.8s,mb4.3,baz=82,slow=8.6,SNR=6.3						
WRA				PcP	PcP	10 51 16.2	-0.1
	6.3nm,0.9s,baz=80,slow=2.9,SNR=13						
RPZ	**Rata Peaks**	**31.84**	**173**	P	**P**	**10 48 26.4**	**+0.3**
	19nm,0.8s,mb5.0,baz=170,slow=7.1,SNR=13						
AS12	**Alice Springs**	**32.81**	**245**	*e*P	**P**	**10 48 32.9**	**-1.9**
	16nm,0.8s,mb5.0						
ASAR	**Alice Springs**	**32.81**	**245**	P	**P**	**10 48 32.6**	**-2.2**
	4.0nm,0.7s,mb4.5,baz=71,slow=9.5,SNR=16						
ASAR				PcP	PcP	10 51 18.7	-0.7
	6.9nm,0.8s,baz=86,slow=2.7,SNR=16						
FITZ	**Fitzroy Crossi**	**39.61**	**256**	*e*P	**P**	**10 49 32.0**	**-0.4**
	6.7nm,0.9s,mb4.4						
FITZ	**Fitzroy Crossi**	**39.61**	**256**	P	**P**	**10 49 31.5**	**-0.9**
	6.2nm,0.9s,mb4.3,baz=132,slow=5.5,SNR=4.7						
NWAO	**Narrogin (SRO)**	**49.33**	**237**	P	**P**	**10 50 49.7**	**-0.6**
	3.9nm,0.7s,mb4.5						
JNU	**Nakatsue**	**56.16**	**324**	P	**P**	**10 51 38.9**	**-2.2**
	30nm,0.8s,mb5.4,baz=89,slow=6.1,SNR=9.6						
ASAJ	**Asahikawa**	**59.88**	**340**	P	**P**	**10 52 05.0**	**-2.0**
	5.3nm,0.8s,mb4.6,baz=233,slow=12,SNR=6.2						
MDJ	**Mudanjiang**	**65.44**	**332**	P	**P**	**10 52 43.9**	**0.0**
MDJ				AMB	AMB		
	comp=Z,13nm,1.2s,mb4.8						
MDJ				AMB	AMB		
	comp=Z,260nm,12.6s						
DL2	**Dalian**	**65.56**	**323**	P	**P**	**10 52 44.9**	**+0.1**
DL2				AMB	AMB		
	comp=Z,30nm,0.9s,mb5.3						
SBA	**Scott Base**	**65.82**	**180**	*e*P	**P**	**10 52 46.2**	**+0.4**
	comp=Z,37nm,1.0s,mb5.4						
CN2	**Changchun**	**66.83**	**329**	⇑P	**P**	**10 52 52.4**	**-0.4**
CN2				AMB	AMB		
	comp=Z,40nm,1.0s,mb5.4						
CN2				AMB	AMB		
	comp=Z,40nm,3.0s						
GYA	**Guiyang**	**69.38**	**304**	P	**P**	**10 53 09.4**	**+0.5**
GYA				AMB	AMB		
	comp=Z,10.0nm,0.8s,mb4.8						
HHC	**Hu-ho-hao-te**	**72.90**	**320**	⇑P	**P**	**10 53 30.9**	**+1.0**
HHC				AMB	AMB		
	comp=Z,29nm,1.2s,mb5.1						
HHC				AMB	AMB		
	comp=Z,144nm,12.4s						
CMAR	**Chiang Mai Arr**	**72.96**	**294**	P	**P**	**10 53 31.4**	**+0.8**
	comp=Z,3.0nm,0.7s,mb4.3,baz=125,slow=4.9,SNR=12						
LZH	**Lanzhou**	**75.78**	**312**	P	**P**	**10 53 48.6**	**+2.0**
LZH				AP	pP	10 53 51.9	-5.1
LZH				PP	PP	10 56 41.0	+2.4
LZH				*e*S	S	11 03 29.0	+4.0
LZH				AMB	AMB		
	comp=Z,75nm,1.5s,mb5.4						
LZH				AMB	AMB		
	comp=Z,341nm,5.2s						
LZH				LR	LR		
	comp=N,1μm,14.1s						
LZH				LR	LR		
	comp=Z,2μm,17.0s,MS5.6						
ULN	**Ulaanbaatar**	**79.38**	**324**	*e*P	**P**	**10 54 06.9**	**+0.5**
	comp=Z,42nm,1.0s,mb5.3						
SONM	**Songino Array**	**79.75**	**324**	P	**P**	**10 54 09.4**	**+1.0**
	comp=Z,8.4nm,0.7s,mb4.8,baz=135,slow=5.2,SNR=10						
GTA	**Gaotai**	**80.09**	**314**	⇑*i*P	**P**	**10 54 11.5**	**+1.1**
GTA				AP	pP	10 54 22.0	+1.2
GTA	

comp=Z,27nm,1.0s
EPF Esparros 146.78 341 *e*PKP1 PKPbc 11 01 40.4 -0.2
ETSF Etsaut 147.18 342 *e*PKP1 PKPdf 11 01 44.2 +4.4
comp=Z,14nm,1.0s
SJPF Ste Jean 147.18 343 *e*PKP1 PKPdf 11 01 41.7 +1.9
ESDC Sonseca Array 151.13 344 PKPbc PKPdf 11 01 54.9 +8.8
comp=Z,1.2nm,0.8s,baz=18,slow=4.1,SNR=6.0

NEIC ***16*** *10:42:31.0, 19.21N×64.78W, h34km, MD3.6(RSPR), After RSPR.*

RSPR 16 10:42:31.0,19.21N×64.78W,h34km±31km,M3.6,14C, Virgin Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MTP	**Monte Pirata**	**1.33**	**214**↑	*e*P	P	10 42 51.8	-1.7
MTP				S	S	10 43 07.3	-2.9
CBYP	**Canovanas**	**1.39**	**228**↑	*e*P	P	10 42 52.2	-2.0
CBYP				S	S	10 43 07.8	-3.7
CPD	**Cerro la Pandu**	**1.59**	**223**↑	*e*P	P	10 42 55.6	-1.4
CPD				S	S	10 43 13.6	-3.1
CSB	**Colonia Sabana**	**1.60**	**235**↑	*e*P	P	10 42 54.3	-2.8
CSB				S	S	10 43 13.4	-3.4
SJG	**San Juan**	**1.70**	**230**↑	*e*P	P	10 42 56.2	-2.5
SJG	**San Juan**	**1.70**	**230**↑	*e*P	P	10 42 56.0	-2.7
SJG	**San Juan**	**1.70**	**230**	S	S	10 43 15.2	-4.3
SJG	**San Juan**	**1.70**	**230**↑	*e*P	P	10 42 56.0	-2.7
SJG				S	S	10 43 15.2	-4.3
CELP	**Cerrillos**	**2.05**	**237**↑	*e*P	P	10 43 02.1	-1.5
CELP				S	S	10 43 23.9	-4.3
AOPR	**Arecibo Observ**	**2.06**	**246**↑	*e*P	P	10 43 02.2	-1.6
AOPR	**Arecibo Observ**	**2.06**	**246**	S	S	10 43 25.3	-3.2
OBIP	**Obispado Ponce**	**2.09**	**237**↑	*e*P	P	10 43 01.6	-2.6
OBIP	**Obispado Ponce**	**2.09**	**237**	S	S	10 43 25.0	-4.2
PORP	**Portuguez**	**2.11**	**237**↑	*e*P	P	10 43 02.2	-2.3
LRS	**Lares**	**2.16**	**245**↑	*e*P	P	10 43 03.5	-1.7
LRS				S	S	10 43 27.1	-4.0
LSP	**Las Mesas**	**2.42**	**245**↑	*e*P	P	10 43 06.0	-3.9
LSP				S	S	10 43 33.3	-4.3
MGP	**Maguayo**	**2.50**	**242**↑	*e*P	P	10 43 07.8	-2.2

IDC ***16*** *10:48:43.1±1.5, 7.37S×126.07E, mb4.0/2, mb1 4.2/5, mb1mx4.0/14, ML3.8/3, Error ellipse: s-maj=98.4km s-min=23.6km az=66.0*

ISC 16 10:48:49.0±3.8,7.8S±0.1×125.9E±0.2,h70km±41km,n8, σ0°93/11,mb3.6/2,Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**10.26**	**182**	*e*P	**P**	**10 51 16.4**	**+0.7**
	2.7nm,0.6s						
FITZ				*e*S	**S**	**10 53 09.5**	**-0.4**
FITZ	**Fitzroy Crossi**	**10.26**	**182**	Pn	**P**	**10 51 16.4**	**+0.8**
	0.8nm,0.3s,baz=30,slow=12,SNR=13						
FITZ				Sn	**S**	**10 53 09.3**	**-0.6**
	0.5nm,0.3s,baz=336,slow=3.3,SNR=3.1						
WRA	**Warramunga Arr**	**14.57**	**147**	Pn	**P**	**10 52 12.7**	**-0.3**
	0.3nm,0.3s,baz=324,slow=13,SNR=18						
WB2	**Warramunga Arr**	**14.58**	**147**	*e*P	**P**	**10 52 12.6**	**-0.4**
WB2				*e*S	**S**	**10 54 53.1**	**-0.2**
AS12	**Alice Springs**	**17.54**	**155**	*e*P	**P**	**10 52 55.2**	**+4.7**
	7.0nm,0.7s						
ASAR	**Alice Springs**	**17.54**	**155**	P	**P**	**10 52 54.6**	**+4.1**
	0.6nm,0.3s,baz=336,slow=12,SNR=26						
STKA	**Stephens Creek**	**28.06**	**151**	P	**P**	**10 54 39.3**	**+3.2**
	2.1nm,0.7s,mb3.8,baz=327,slow=13,SNR=4.3						
MKAR	**Makanchi Array**	**66.74**	**329**	P	**P**	**10 59 34.4**	**-0.6**
	0.5nm,0.7s,mb3.5,baz=115,slow=7.3,SNR=3.7						

IDC ***16*** *10:53:43.3±1.6,36.79N×140.31E, h82km±17km, mb3.5/9, mb1 3.9/12, mb1mx3.7/25, Error ellipse: s-maj=24.5km s-min=11.2km az=100.0*

NEIC ***16*** *10:53:45.4±1.2,36.82N×140.34E, h100km±10km, mb3.7/4, Error ellipse: s-maj=18.4km s-min=12.4km az=137.0*

NEIC Recorded [2 JMA] in Ibaraki and [1 JMA] in Fukushima and Tochigi Prefectures.

JMA ***16*** *10:53:46.1±0.1,36.70N×140.31E, h105km±1km, M4.1 Broadband fault plane solution: P waves. NP1:φs63°, δ37°, λ-102°. NP2:φs257°, δ54°, λ-81°. Principal axes: T Plg9°, Azm341°; N Plg7°, Azm72°; P Plg79°, Azm201°;*

JMA Felt II J1.

ISC 16 10:53:44.9±0.4,36.70N±0.03×140.33E±0.05,h112km±3km, n38,σ0°79/56,mb3.7/12,3C-10D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.22**	**115**	⇓P	**P**	**10 54 01.1**	**+0.5**
JHO				S	**S**	**10 54 12.0**	**-0.5**
JAG	**Ashikaga**	**0.76**	**249**	⇓P	**P**	**10 54 04.6**	**+0.6**
JAG				S	**S**	**10 54 18.5**	**0.0**
JFK	**Kawauchi**	**0.79**	**33**	⇓P	**P**	**10 54 05.0**	**+0.6**
JFK				S	**S**	**10 54 19.0**	**-0.1**
JFT	**Otama**	**0.81**	**1**	⇓P	**P**	**10 54 05.2**	**+0.6**
JFT				S	**S**	**10 54 19.3**	**-0.1**
JFY	**Yanaizu**	**0.86**	**325**	⇓P	**P**	**10 54 05.5**	**+0.4**
JFY				S	**S**	**10 54 19.8**	**-0.4**
JKT	**Katashina**	**0.87**	**274**	⇓P	**P**	**10 54 05.8**	**+0.6**
JKT				S	**S**	**10 54 20.9**	**+0.5**
JHK	**Hiroka**	**1.18**	**298**	⇓P	**P**	**10 54 08.9**	**+0.4**
JHK				S	**S**	**10 54 25.8**	**-0.5**
JMM	**Marumori**	**1.22**	**18**	⇓P	**P**	**10 54 09.2**	**+0.3**
JMM				S	**S**	**10 54 25.8**	**-1.2**
JRY	**Ryogami san**	**1.34**	**240**	⇓P	**P**	**10 54 10.9**	**+0.6**
JRY				S	**S**	**10 54 29.3**	**-0.2**
JNS	**Sasagawa**	**1.37**	**324**	⇑P	**P**	**10 54 10.8**	**+0.1**
JNS				S	**S**	**10 54 29.3**	**-0.9**
MAJO	**Matsushiro**	**1.71**	**265**	⇓*i*Pn	**P**	**10 54 15.5**	**+0.7**
MAJO				*e*Sn	**S**	**10 54 36.8**	**-0.4**
MAT	**Matsushiro**	**1.71**	**265**	P	**P**	**10 54 15.3**	**+0.5**
MAT				S	**S**	**10 54 37.1**	**-0.1**
MAT	**Matsushiro**	**1.71**	**265**	P	**P**	**10 54 15.4**	**+0.6**
MAT				S	**S**	**10 54 37.4**	**+0.1**
MAT	**Matsushiro**	**1.71**	**265**	*e*P	**P**	**10 54 15.0**	**+0.2**
MAT				*e*S	**S**	**10 54 37.0**	**-0.2**
JOD2	**Odawara 2**	**1.75**	**215**	⇑P	**P**	**10 54 15.4**	**+0.1**
JOD2				S	**S**	**10 54 37.0**	**-1.1**
JYN	**Shimob**	**1.88**	**231**	⇑P	**P**	**10 54 17.8**	**+0.9**
JYN				S	**S**	**10 54 42.1**	**+1.3**
JHJ	**Hachijo jima 2**	**3.60**	**187**	P	**P**	**10 54 39.5**	**-0.6**
	176nm,0.3s,baz=200,slow=2.2,SNR=37						
JHJ				S	**S**	**10 55 20.7**	**-1.3**
	124nm,0.3s,baz=241,slow=23,SNR=8.7						
ASAJ	**Asahikawa**	**7.60**	**12**	P	**P**	**10 55 30.2**	**-4.2**
	4.4nm,0.3s,baz=230,slow=7.0,SNR=28						
ASAJ				S	**S**	**10 56 51.4**	**-8.2**
	0.6nm,0.3s,baz=20,slow=21,SNR=2.6						
CBIJ	**Chichi jima**	**9.71**	**170**	P	**P**	**10 55 58.4**	**-4.4**
	12nm,0.3s,baz=291,slow=16,SNR=21						
CBIJ				S	**S**	**10 57 40.8**	**-10**
	6.2nm,0.3s,baz=270,slow=23,SNR=4.2						
YSS	**Yuzh-Sakhalins**	**10.40**	**9**	*e*P	**P**	**10 56 08.0**	**-3.9**
ULN	**Ulaanbaatar**	**26.82**	**305**	P	**P**	**10 59 15.4**	**-1.0**
	1.4nm,0.5s,mb3.8						
ZAL	**Zalesovo**	**41.51**	**313**	P	**P**	**11 01 22.1**	**-0.1**
	1.3nm,0.4s,mb4.0,baz=254,slow=5.5,SNR=4.8						
MKAR	**Makanchi Array**	**43.56**	**302**	P	**P**	**11 01 38.5**	**-0.4**
	0.7nm,0.7s,mb3.5,baz=93,slow=9.0,SNR=5.8						
ILAR	**Eielson Array**	**50.24**	**32**	P	**P**	**11 02 30.1**	**-1.0**
	0.7nm,0.8s,mb3.7,baz=264,slow=6.2,SNR=11						
INK	**Inuvik**	**55.08**	**27**	P	**P**	**11 03 06.5**	**-0.4**
	0.5nm,0.6s,mb3.7,baz=308,slow=6.7,SNR=5.1						
INK	**Inuvik**	**55.08**	**27**	*e*P	**P**	**11 03 06.2**	**-0.8**
	0.6nm,0.7s,mb3.7						
WRA	**Warramunga Arr**	**56.62**	**187**	P	**P**	**11 03 16.9**	**-1.7**
	4.2nm,0.6s,mb4.6,slow=6.7,SNR=11						
YKA	**Yellowknife Ar**	**64.53**	**30**	P	**P**	**11 04 10.7**	**-0.8**
	0.3nm,0.7s,mb3.2,baz=302,slow=6.5,SNR=8.7						
YKA	**Yellowknife Ar**	**64.53**	**30**	P	**P**	**11 04 10.7**	**-0.8**
NB2	**NORSAR Subarra**	**74.15**	**337**	P	**P**	**11 05 08.9**	**-1.4**
	0.5nm,0.7s,mb3.4,baz=40,slow=6.2						
NOA	**NORSAR Array B**	**74.15**	**337**	P	**P**	**11 05 09.9**	**-0.3**
	0.6nm,0.7s,mb3.5,baz=39,slow=5.8,SNR=4.1						
HLID	**Hailey**	**75.23**	**46**	P	**P**	**11 05 17.9**	**+1.1**
	1.3nm,1.1s,mb3.6						
BOZ	**Bozeman (W)**	**75.55**	**44**	*e*P	**P**	**11 05 18.5**	**-0.1**
	1.7nm,0.9s,mb3.8						
NVAR	**Mina Array Bea**	**75.88**	**53**	P	**P**	**11 05 21.9**	**+1.3**
	1.2nm,0.9s,mb3.6,baz=286,slow=7.2,SNR=6.8						
PDAR	**Pinedale Array**	**78.52**	**45**	P	**P**	**11 05 35.8**	**+0.7**
	0.4nm,0.8s,mb3.3,baz=270,slow=3.0,SNR=4.0						
PV10	**Paradox Valley**	**81.64**	**48**	*e*P	**P**	**11 05 53.5**	**+1.6**
PV01	**Paradox Valley**	**82.08**	**48**	*e*P	**P**	**11 05 55.2**	**+1.1**
LPAZ	**La Paz**	**147.61**	**59**	PKPbc	PKPdf	11 13 17.6	+4.0
	1.2nm,0.9s,baz=44,slow=12,SNR=4.8						

IDC ***16*** *10:55:35.7±1.6,12.08S×166.10E, mb3.9/6, mb1 4.1/7, mb1mx4.0/14, ML3.4/1, Error ellipse: s-maj=64.9km s-min=21.9km az=138.0*

NEIC ***16*** *10:55:37.1±0.7,12.11S×166.12E, h10km, mb4.5/4, Error ellipse: s-maj=24.1km s-min=14.9km az=129.0*

ISC 16 10:55:39.1±0.8,12.2S±0.1×166.1E±0.1,h33km,n12, σ0°69/12,mb4.2/9,Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**18.76**	**277**	P	**P**	**10 59 58.6**	**+0.6**
	0.4nm,0.3s,baz=335,slow=19,SNR=2.8						
CTA	**Charters Tower**	**20.56**	**245**	P	**P**	**11 00 18.4**	**+0.7**
	4.1nm,0.8s,baz=75,slow=13,SNR=2.8						
STKA	**Stephens Creek**	**29.83**	**225**	P	**P**	**11 01 46.4**	**+0.9**
	2.6nm,1.0s,mb3.9,baz=335,slow=21,SNR=2.2						
STKA	**Stephens Creek**	**29.83**	**225**	P	**P**	**11 01 46.4**	**+0.9**
WRA	**Warramunga Arr**	**31.39**	**252**	P	**P**	**11 01 58.6**	**-0.8**
	1.1nm,0.8s,mb3.8,baz=84,slow=9.1,SNR=5.8						
ASAR	**Alice Springs**	**32.56**	**245**	P	**P**	**11 02 08.5**	**-1.2**
	1.0nm,0.7s,mb3.9,baz=70,slow=9.3,SNR=17						
SBA	**Scott Base**	**65.66**	**180**	P	**P**	**11 06 21.4**	**-0.4**
	1.6nm,0.7s,mb4.2						
QSPA	**South Pole Qui**	**77.82**	**180**	*e*P	**P**	**11 07 34.6**	**+0.3**
	6.8nm,1.0s,mb4.5						
QSPA				*e*PcP	PcP	11 07 48.4	+3.9
ULN	**Ulaanbaatar**	**79.40**	**324**	*e*P	**P**	**11 07 43.3**	**-0.3**
	11nm,1.0s,mb4.8						
ILAR	**Eielson Array**	**84.50**	**18**	P	**P**	**11 08 09.2**	**-0.4**
	0.5nm,0.6s,mb3.8,baz=260,slow=5.1,SNR=9.8						
MKAR	**Makanchi Array**	**94.56**	**317**	P	**P**	**11 08 57.4**	**-0.2**
	7.7nm,0.6s,mb5.3,baz=95,slow=6.4,SNR=65						
YKA	**Yellowknife Ar**	**95.85**	**27**	P	**P**	**11 09 04.0**	**+1.0**
	0.2nm,0.4s,mb3.9,baz=257,slow=4.7,SNR=9.8						

IDC ***16*** *10:55:48.1±0.5, 12.08S×166.46E, mb4.8/22, mb1 4.9/23, mb1mx4.8/25, ML3.8/1, MS5.4/1, Ms1 5.4/1, ms1mx4.6/22, Error ellipse: s-maj=18.2km s-min=13.3km az=123.0*

NEIC ***16*** *10:55:49.8±0.2, 11.91S×166.34E, h10km, mb5.1/34, MS5.7/1, Error ellipse: s-maj=8.6km s-min=6.2km az=136.0*

HRVD ***16*** *10:55:49.8±0.3, 12.03S×165.90E, h29km, MW5.7/60, Centroid moment Tensor Solution. LP body waves: s54,c94;Mantle waves: s60,c121; Half duration: 1s Moment tensor: Scale 10¹⁷Nm; Mrr3.91±.16; Mθθ0.11±.12; Mφφ-4.02±.11; Mrθ1.80±.29; Mrφ0.87±.10; Mθφ-2.39±.21; Best double couple: M₀5.04×10¹⁷ NP1:φs3°, δ30°, λ116°. NP2:φs154°, δ63°, λ76°. Principal axes: T 5.05, Plg68°, Azm36°; N -.01, Plg13°, Azm160°; P -5.04, Plg17°, Azm254°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

SYO ***16*** *10:55:49.7, 11.91S×166.34E, h10km, MB5.1, MS5.7*

BJI ***16*** *10:55:51.3, 11.41S×165.95E, h5km, mB5.4, mb5.4, Ms6.0, Msz5.8*

ISC 16 10:55:51.9±0.2,12.03S±0.05×166.30E±0.05,h33km, (h3km±5.9km:pP-P),n183,σ1°01/126,mb5.1/54,MS5.6/12, 10C-4D,Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BKM	**Butte a Klehm**	**5.91**	**162**↑	*i*P	**P**	**10 57 15.1**	**-4.3**
NOUC	**Port Laguerre**	**10.02**	**180**	*e*P	**P**	**10 58 16.9**	**+0.2**
NOUC				*e*S	**S**	**11 00 04.2**	**-4.8**
NOUC	**Port Laguerre**	**10.02**	**180**	*e*P	**P**	**10 58 16.9**	**+0.2**
NOUC				*e*S	**S**	**11 00 04.2**	**-4.8**
PMG	**Port Moresby**	**18.99**	**276**	P	**P**	**11 00 13.7**	**+0.1**
	0.9nm,0.3s,baz=81,slow=9.3,SNR=10						
PMG	**Port Moresby**	**18.99**	**276**	*e*P	**P**	**11 00 12.9**	**-0.6**
	100nm,1.3s						
WAU	**Wau**	**19.86**	**282**	*e*P	**P**	**11 00 21.8**	**-1.4**
CTA	**Charters Tower**	**20.85**	**245**	*e*P	**P**	**11 00 32.9**	**-0.6**
	43nm,0.9s						
CTA	**Charters Tower**	**20.85**	**245**	P	**P**	**11 00 32.4**	**-1.2**
	68nm,1.0s,baz=68,slow=10,SNR=17						
CTAO	**Charters Tower**	**20.85**	**245**	*e*P	**P**	**11 00 33.0**	**-0.5**
	5.7nm,0.9s						
RIV	**Riverview**	**25.73**	**210**	*e*P	**P**	**11 01 24.0**	**+2.8**
URZ	**Urewera**	**27.85**	**162**	P	**P**	**11 01 39.6**	**-1.0**
	5.2nm,0.5s,mb4.4,baz=11,slow=10,SNR=3.9						
SNZO	**South Karori**	**30.08**	**167**	*e*P	**P**	**11 01 59.5**	**-1.0**
	9.1nm,0.5s,mb4.8						
STKA	**Stephens Creek**	**30.12**	**225**	*e*P	**P**	**11 02 01.0**	**0.0**
	14nm,0.6s,mb4.9						
STKA	**Stephens Creek**	**30.12**	**225**	P	**P**	**11 02 00.9**	**-0.1**
	3.7nm,0.6s,mb4.3,baz=37,slow=7.2,SNR=9.4						
TOO	**Toolangi**	**31.53**	**213**	*e*P	**P**	**11 02 14.5**	**+1.1**
	15nm,0.7s,mb4.9						
WB2	**Warramunga Arr**	**31.66**	**252**	*e*P	**P**	**11 02 13.1**	**-1.6**
WRAB	**Tennant Creek**	**31.66**	**252**	*e*P	**P**	**11 02 12.8**	**-1.9**
	292nm,1.7s,mb5.8						
WRA	**Warramunga Arr**	**31.68**	**252**	P	**P**	**11 02 12.8**	**-2.0**
	7.5nm,1.0s,mb4.5,baz=84,slow=8.6,SNR=18						
RPZ	**Rata Peaks**	**31.84**	**173**	P	**P**	**11 02 12.5**	**-3.5**
	53nm,0.8s,mb5.4,baz=67,slow=0.7,SNR=24						
MSZ	**Milford Sound**	**32.56**	**178**	P	**P**	**11 02 22.9**	**+0.6**
AS12	**Alice Springs**	**32.86**	**245**	*e*P	**P**	**11 02 23.0**	**-2.1**
	21nm,0.7s,mb5.2						
ASAR	**Alice Springs**	**32.86**	**245**	P	**P**	**11 02 23.1**	**-2.0**
	5.9nm,0.7s,mb4.6,baz=71,slow=9.5,SNR=20						
ASAR				PcP	PcP	11 05 09.1	-0.4
	22nm,0.8s,baz=82,slow=3.3,SNR=20						
TUZ	**Tuapeka**	**33.93**	**176**	P	**P**	**11 02 34.0**	**-0.1**
FITZ	**Fitzroy Crossi**	**39.67**	**256**	*e*P	**P**	**11 03 23.7**	**+1.0**
	25nm,0.9s,mb4.9						
FITZ	**Fitzroy Crossi**	**39.67**	**256**	P	**P**	**11 03 23.7**	**+1.0**
	14nm,1.0s,mb4.6,baz=120,slow=4.1,SNR=5.0						
FITZ				LR	LR	11 19 35.1	
	comp=Z,5μm,18.0s,MS5.4,baz=74,slow=36						
FORT	**Forrest**	**39.94**	**236**	*e*P	**P**	**11 03 28.8**	**+3.9**
	190nm,0.9s,mb5.8						
KLBR	**Kellerberrin**	**48.65**	**238**	*e*P	**P**	**11 04 40.5**	**+5.5**
	33nm,0.8s,mb5.4						
NWAO	**Narrogin (SRO)**	**49.38**	**237**	P	**P**	**11 04 42.1**	**+1.6**
	26nm,0.8s,mb5.3,baz=60,slow=11,SNR=8.8						
NWAO	**Narrogin (SRO)**	**49.38**	**237**	*e*P	**P**	**11 04 42.2**	**+1.7**
	26nm,0.8s,mb5.3						
JOW	**Kunigami**	**53.44**	**317**	P	**P**	**11 05 11.8**	**+0.6**
	11nm,0.6s,mb5.0,baz=159,slow=4.5,SNR=5.4						
MAJO	**Matsushiro**	**55.09**	**332**	*e*P	**P**	**11 05 21.7**	**-1.5**
	21nm,1.0s,mb5.1						
MAT	**Matsushiro**	**55.09**	**332**	P	**P**	**11 05 20.8**	**-2.4**
MAT	**Matsushiro**	**55.09**	**332**	*e*P	**P**	**11 05 21.0**	**-2.2**
	21.0s,mb5.1						
JNU	**Nakatsue**	**56.19**	**324**	P	**P**	**11 05 30.8**	**-0.5**
	65nm,0.9s,mb5.7,baz=94,slow=5.7,SNR=15						
ASAJ	**Asahikawa**	**59.90**	**340**	P	**P**	**11 05 56.5**	**-0.5**
	16nm,0.8s,mb5.1,baz=226,slow=11,SNR=16						
SSE	**Sheshan**	**60.94**	**316**	P	**P**	**11 06 04.0**	**-0.3**
SSE				AMB	AMB		
	comp=Z,49nm,0.7s,mb5.8						
INCN	**Inchon**	**61.73**	**325**	*e*P	**P**	**11 06 09.2**	**-0.4**
	comp=Z,119nm,1.4s,mb5.8						
YSS	**Yuzh-Sakhalins**	**62.39**	**342**	*e*P	**P**	**11 06 13.2**	**-0.6**
	comp=Z,23nm,1.0s,mb5.3						
NJ2	**Nanjing**	**63.10**	**315**	*e*P	**P**	**11 06 18.6**	**-0.2**
NJ2				AMB	AMB		
	comp=Z,390nm,8.0s						
NJ2				LR	LR		
	comp=N,3μm,11.0s,MS5.8						
NJ2				LR	LR		
	comp=E,2μm,12.6s,MS5.8						
NJ2				LR	LR		
	comp=Z,4μm,13.0s,MS5.8						
KGM	**Kluang**	**64.09**	**278**↑	*e*P	**P**	**11 06 24.8**	**-0.8**
MDJ	**Mudanjiang**	**65.47**	**332**	P	**P**	**11 06 33.8**	**-0.2**
MDJ				AP	pP	11 06 36.9	-7.4
MDJ				XP	sP	11 06 38.3	-10
MDJ				AMB	AMB		
	comp=Z,29nm,1.2s,mb5.2						
MDJ				AMB	AMB		
	comp=Z,451nm,9.6s						
MDJ				LR	LR		
	comp=N,1μm,26.7s,MS5.0						
MDJ				LR	LR		
	comp=E,861nm,27.4s,MS5.0						
MDJ				LR	LR		
	comp=Z,3μm,21.1s						
DL2	**Dalian**	**65.59**	**323**	P	**P**	**11 06 35.4**	**+0.5**
DL2				LR	LR		
	comp=N,3μm,17.8s						
DL2				LR	LR		
	comp=Z,4μm,18.8s,MS5.6						
SBA	**Scott Base**	**65.82**	**180**↑	*e*P	**P**	**11 06 36.4**	**+0.7**
	comp=Z,75nm,1.0s,mb5.7						
TIA	**Tai'an**	**66.71**	**318**	P	**P**	**11 06 41.5**	**-0.5**
TIA				AMB	AMB		
	comp=Z,39nm,1.2s,mb5.3						
TIA				LR	LR		
	comp=N,2μm,13.0s,MS5.8						
TIA				LR	LR		
	comp=E,3μm,12.0s,MS5.8						
CN2	**Changchun**	**66.86**	**329**	⇑P	**P**	**11 06 42.9**	**+0.1**
CN2				*e*XP	sP	11 06 48.9	-7.9
CN2				AMB	AMB		
	comp=Z,820nm,3.0s						
CN2				LR	LR		
	comp=N,5μm,18.0s,MS5.8						
CN2				LR	LR		
	comp=E,2μm,18.0s,MS5.8						
CN2				LR	LR		
	comp=Z,6μm,19.0s,MS5.8						
IPM	**Ipoh**	**66.96**	**280**↓	*e*P	**P**	**11 06 40.1**	**-3.8**
KKTK	**Khon Kaen**	**68.81**	**293**	P	**P**	**11 07 11.0**	**+16**
BJI	**Beijing**	**69.59**	**321**	*e*P	**P**	**11 06 59.9**	**0.0**
BJI				LR	LR		
	comp=N,6μm,16.7s,MS6.0						
BJI				LR	LR		
	comp=E,3μm,14.9s,MS6.0						
BJI				LR	LR		
	comp=Z,5μm,18.4s,MS5.8						
TIY	**Taiyuan**	**70.65**	**317**	⇑P	**P**	**11 07 06.0**	**-0.4**
TIY				LR	LR		
	comp=N,4μm,16.0s						
TIY				LR	LR		
	comp=Z,5μm,16.0s,MS5.9						
XAN	**Xi'an**	**71.18**	**312**	P	**P**	**11 07 09.8**	**+0.1**
XAN				AMB	AMB		
	comp=Z,46nm,1.7s,mb5.1						
XAN				LR	LR		
	comp=Z,14μm,18.3s,MS6.2						
HHC	**Hu-ho-hao-te**	**72.93**	**320**	*e*P	**P**	**11 07 21.3**	**+1.3**
HHC				AMB	AMB		
	comp=Z,69nm,1.1s,mb5.5						
HHC				AMB	AMB		
	comp=Z,499nm,9.2s						
CD2	**Chengdu**	**73.63**	**307**⇑	*i*P	**P**	**11 07 24.8**	**+0.5**
CD2				AMB	AMB		
	comp=Z,50nm,1.0s,mb5.4						
BTO	**Baotou**	**73.79**	**319**	*e*P	**P**	**11 07 26.0**	**+1.0**
LZH	**Lanzhou**	**75.82**	**312**	⇑P	**P**	**11 07 38.4**	**+1.6**
LZH				AP	pP	11 07 41.6	-5.5
LZH				XP	sP	11 07 43.3	-7.5
LZH				LR	LR		
	comp=N,1μm,14.1s						
LZH				LR	LR		
	comp=Z,2μm,18.1s,MS5.5						
ULN	**Ulaanbaatar**	**79.41**	**324**	*e*P	**P**	**11 07 57.5**	**+1.1**
	comp=Z,120nm,1.0s,mb5.8						
IMP	**Imphal**	**79.45**	**298**	*e*P	**P**	**11 07 59.0**	**+1.8**
SONM	**Songino Array**	**79.78**	**324**	P	**P**	**11 07 59.4**	**+1.0**
	comp=Z,39nm,1.0s,mb5.3,baz=135,slow=5.2,SNR=29						
BILL	**Bilibino**	**79.86**	**360**	*e*P	**P**	**11 07 57.3**	**-1.1**
	comp=Z,7.6nm,0.8s,mb4.7						
GTA	**Gaotai**	**80.13**	**314**⇑	*i*P	**P**	**11 08 02.3**	**+1.8**
GTA				AMB	AMB		
	comp=Z,510nm,8.7s						
GTA				LR	LR		
	comp=N,5μm,24.0s,MS5.9						
GTA				LR	LR		
	comp=E,4μm,24.3s,MS5.9						
GTA				LR	LR		
	comp=Z,2μm,26.2s,MS5.4						
SHL	**Shillong**	**81.46**	**298**	*e*P	**P**	**11 08 09.5**	**+1.7**
AGT	**Agartala**	**81.51**	**297**⇓	*i*P	**P**	**11 08 08.0**	**-0.1**
IMA	**Indian Mountai**	**83.31**	**15**	*e*P	**P**	**11 08 17.9**	**+1.5**
	comp=Z,26nm,1.1s,mb5.2						
LSA	**Lhasa**	**83.34**	**302**	P	**P**	**11 08 20.0**	**+2.6**
CAL	**Calcutta**	**83.71**	**295**	*e*P	**P**	**11 08 24.3**	**+4.8**
CAL				*e*		11 08 50.3	
CAL				*e*		11 11 04.3	
MAW	**Mawson**	**84.02**	**202**⇑	*i*P	**P**	**11 08 20.7**	**+0.7**
	comp=Z,14nm,1.4s,mb4.9						
MAW	**Mawson**	**84.02**	**202**	P	**P**	**11 08 20.9**	**+0.9**
	comp=Z,16nm,1.1s,mb5.1,baz=94,slow=7.0,SNR=11						
COLA	**College**	**84.05**	**18**	*e*P	**P**	**11 08 20.1**	**-0.1**
	comp=Z,12nm,1.2s,mb4.9						
YBH	**Yreka Blue Hor**	**84.19**	**45**	P	**P**	**11 08 19.9**	**-1.6**
	comp=Z,2.8nm,1.0s,mb4.4,baz=123,slow=9.3,SNR=4.6						
ILAR	**Eielson Array**	**84.27**	**18**	P	**P**	**11 08 21.6**	**+0.2**
	comp=Z,4.3nm,0.6s,mb4.8,baz=228,slow=5.4,SNR=18						
HUMO	**Hull Mountain**

PV01	**Paradox Valley**	**93.54**	**52**	*e*P		**P**		**11 09 06.3**	**+0.3**
PDAR	**Pinedale Array**	**93.81**	**47**	P		**P**		**11 09 07.8**	**+0.6**
	comp=E,0.6nm,1.0s,baz=293,slow=6.9,SNR=3.3								
MKAR	**Makanchi Array**	**94.61**	**317**	P		**P**		**11 09 11.7**	**+1.0**
	comp=E,91nm,0.9s,mb6.2,baz=88,slow=6.9,SNR=160								
ZAL	**Zalesovo**	**94.68**	**324**	P		**P**		**11 09 10.9**	**+0.1**
	comp=E,20nm,1.2s,mb5.4,baz=272,slow=5.6,SNR=35								
KAD	**Karad**	**95.50**	**286**	*e*P		**P**		**11 09 15.0**	**-0.4**
YKA	**Yellowknife Ar**	**95.59**	**27**	P		**P**		**11 09 13.3**	**-1.5**
	comp=E,1.5nm,0.4s,mb4.8,baz=258,slow=4.9,SNR=15								
YKA	**Yellowknife Ar**	**95.59**	**27**	P		**P**		**11 09 13.3**	**-1.5**
SNAA	**Sanae**	**96.17**	**183**	*e*P		**P**		**11 09 16.6**	**-0.6**
VNA3	**Neumayer Olymp**	**96.88**	**181**	⇓ *i*P		**P**		**11 09 23.2**	**+2.7**
VNA3	**Neumayer Olymp**	**96.88**	**181**			**P**		**11 09 34.9**	**+14**
VNA3	**Neumayer Olymp**	**96.88**	**181**	⇑ *i*		**P**		**11 09 38.7**	**+18**
VNA2	**Neumayer--Watz**	**97.13**	**182**	P		**P**		**11 09 24.9**	**+3.3**
VNA2	**Neumayer--Watz**	**97.13**	**182**			**P**		**11 09 25.4**	**+3.8**
VNA2	**Neumayer--Watz**	**97.13**	**182**			**P**		**11 09 38.6**	**+17**
KURK	**Kurchatov**	**97.74**	**320**	*e*P		**P**		**11 09 22.6**	**-2.2**
BVAR	**Borovoye Array**	**103.06**	**322**	Pdiff	Pdif			11 09 48.6	-0.1
	comp=E,4.0nm,0.8s,baz=90,slow=4.4,SNR=22								
BRVK	**Borovoye**	**103.12**	**322**	*e*Pdif	Pdif			11 09 48.0	-1.0
ZRNK	**Zerenda**	**103.89**	**322**	*e*Pdif	Pdif			11 09 51.5	-0.9
ARCES	**ARCESS Array B**	**117.42**	**345**	PKP	PKPdf			11 14 35.3	+1.5
	comp=E,6.9nm,0.7s,baz=76,slow=3.7,SNR=3.6								
CLL	**Collm**	**135.22**	**336**	*e*	PKPdf			11 15 11.0	+2.6
CLL				*i* SKP				11 18 42.3	
EKA	**Eskdalemuir Ar**	**136.02**	**351**	PKP	PKPdf			11 15 08.8	-0.9
	comp=E,0.6nm,0.8s,baz=90,slow=0.7,SNR=3.0								
LANF	**Langenberg**	**139.07**	**338**	PKP	PKPdf			11 15 08.1	-7.4
GIVF	**Givet**	**139.10**	**342**	*e*PKP1	PKPdf			11 15 13.7	-1.8
	comp=E,109nm,1.6s								
BAIF	**Baives**	**139.32**	**342**	*e*PKP1	PKPdf			11 15 14.3	-1.6
WLS	**Welschbruch**	**139.71**	**338**	PKP	PKPdf			11 15 11.8	-4.8
CDF	**Champ du Feu**	**139.74**	**338**	*e*PKP1	PKPdf			11 15 11.9	-4.8
	comp=E,88nm,1.8s								
MOF	**Molkenrain**	**140.26**	**338**	PKP	PKPdf			11 15 13.5	-4.1
HINF	**Hinteralfeld**	**140.39**	**338**	*e*PKP1	PKPdf			11 15 14.0	-3.9
HAU	**Haudompre**	**140.41**	**339**	*e*PKP1	PKPdf			11 15 14.8	-3.1
LOMF	**Lomont**	**140.79**	**338**	PKP	PKPdf			11 15 13.9	-4.7
SSF	**Saint Saulge**	**142.19**	**341**	*e*PKP1	PKPdf			11 15 19.6	-1.4
	comp=E,12nm,1.0s								
LPL	**La Plagne**	**142.36**	**336**	*e*PKP1	PKPdf			11 15 19.6	-1.8
	comp=E,38nm,1.4s								
LPG	**La Plagne**	**142.37**	**336**	*e*PKP1	PKPdf			11 15 19.7	-1.7
MBDF	**Montbardon**	**143.00**	**336**	*e*PKP1				11 15 21.2	
	comp=E,14nm,0.9s								
PLDF	**La Plantade**	**143.11**	**340**	PKP	PKPdf			11 15 22.5	-0.1
ORIF	**Oris-en-Rattie**	**143.19**	**337**	*e*PKP1	PKPbc			11 15 22.4	+1.4
	comp=E,29nm,0.9s								
SAOF	**Saorge**	**143.27**	**334**	PKP	PKPdf			11 15 20.6	-2.4
TCF	**Toulx Ste Croi**	**143.29**	**341**	*e*PKP1	PKPbc			11 15 21.8	+0.6
	comp=E,12nm,1.0s								
SBF	**Sospel**	**143.42**	**334**	*e*PKP1	PKPbc			11 15 22.3	+0.6
	comp=E,30nm,0.9s								
AURF	**Auriere**	**143.45**	**334**	PKP	PKPdf			11 15 23.4	+0.1
MFF	**Saint Martin d**	**143.68**	**344**	*e*PKP1	PKPbc			11 15 22.5	+0.1
	comp=E,16nm,0.8s								
VIVF	**Saint-Julien-l**	**143.70**	**338**	*e*PKP1	PKPbc			11 15 22.3	-0.2
	comp=E,28nm,1.2s								
PGF	**Pioggiola**	**143.75**	**331**	*e*PKP1	PKPbc			11 15 23.1	+0.4
	comp=E,34nm,1.0s								
LBL	**Lubilhac**	**143.88**	**340**	PKP	PKPdf			11 15 23.4	-0.6
FRF	**La Foret Royal**	**144.00**	**335**	*e*PKP1	PKPbc			11 15 22.7	-0.7
	comp=E,39nm,0.9s								
SMRF	**Simiane la Rot**	**144.10**	**336**	*e*PKP1	PKPbc			11 15 23.6	-0.1
	comp=E,65nm,1.3s								
VILF	**Villemus**	**144.15**	**336**	PKP	PKPdf			11 15 24.5	0.0
TAVF	**Tavernes**	**144.20**	**335**	PKP	PKPdf			11 15 24.5	-0.1
LMR	**La Mourre**	**144.25**	**334**	*e*PKP1	PKPbc			11 15 23.7	-0.4
	comp=E,98nm,1.4s								
RJF	**Les Rejaudoux**	**144.39**	**341**	*e*PKP1	PKPbc			11 15 24.2	-0.3
	comp=E,60nm,1.3s								
PRAF	**Pradon**	**144.40**	**336**	PKP	PKPdf			11 15 25.4	+0.4
PUYF	**Puyloubier**	**144.42**	**335**	PKP	PKPdf			11 15 25.2	+0.2
TREF	**Trevaresse**	**144.47**	**336**	PKP	PKPdf			11 15 25.8	+0.7
CAF	**Calviac**	**144.55**	**341**	*e*PKP1	PKPbc			11 15 25.1	+0.2
	comp=E,34nm,1.3s								
BERF	**Bertagne**	**144.60**	**335**	PKP	PKPdf			11 15 25.8	+0.5
GELF	**Grande-Etoile**	**144.65**	**336**	PKP	PKPdf			11 15 26.0	+0.6
LASF	**Ste Croix**	**144.67**	**338**	*e*PKP1	PKPbc			11 15 25.5	+0.2
	comp=E,50nm,1.1s								
LFF	**La Frestale**	**144.95**	**342**	*e*PKP1	PKPbc			11 15 26.1	0.0
MTLF	**Montolieu**	**145.90**	**339**	*e*PKP1	PKPbc			11 15 29.3	+0.8
LRDF	**Laroque-de-Fa**	**146.14**	**338**	PKP	PKPdf			11 15 30.4	+2.4
LPEF	**Le Peyrat**	**146.35**	**339**	PKP	PKPdf			11 15 31.1	+2.7
FILF	**Fillols**	**146.46**	**338**	PKP	PKPdf			11 15 31.3	+2.7
MLS	**Moulis**	**146.62**	**340**	PKP	PKPdf			11 15 31.8	+3.0
VALF	**Valcebollere**	**146.79**	**339**	PKP	PKPdf			11 15 32.4	+3.3
EPF	**Esparros**	**146.80**	**341**	*e*PKP1	PKPbc			11 15 30.4	-0.2
RESF	**Ens**	**147.00**	**341**	PKP	PKPdf			11 15 33.6	+4.1
ETSF	**Etsaut**	**147.20**	**342**	*e*PKP1	PKPdf			11 15 34.7	+4.9
	comp=E,31nm,0.9s								
ESDC	**Sonseca Array**	**151.15**	**344**	PKPbc	PKPdf			11 15 44.3	+8.2
	comp=E,7.0nm,1.2s,baz=34,slow=1.8,SNR=12								
KIC	**Kosan Boka**	**169.52**	**238**	*e*P	PKPdf			11 15 55.9	-0.7
	comp=E,155nm,1.7s								
LIC	**Lamto**	**169.68**	**237**	*e*PKIKP	PKPdf			11 15 55.0	-1.7
	comp=E,59nm,1.5s								
LIC	**Lamto**	**169.68**	**237**	*e*P	PKPdf			11 15 57.6	+0.9
	comp=E,48nm,1.5s								
DBIC	**Dimbokro**	**169.78**	**239**	PKP	PKPdf			11 15 59.9	+3.1
	comp=E,5.4nm,1.1s,baz=206,slow=1.4,SNR=4.1								
DBIC				PKPab	PKPab			11 17 13.6	+0.5
	comp=E,8.2nm,0.8s,baz=136,slow=4.1,SNR=8.9								
TIC	**Toumodi**	**169.91**	**239**	*e*P	PKPdf			11 15 57.9	+1.0
	comp=E,178nm,1.7s								

BJI ***16*** *10:58:37.5, 11.66S×166.36E, h4km, mB5.2, mb5.4, Ms6.0, Msz5.8*

IDC ***16*** *10:58:37.2±0.6, 11.97S×166.29E, mb4.8/17, mb1 4.9/18, mb1mx4.9/21, ML3.9/1, MS5.6/8, Ms1 5.6/8, ms1mx5.3/23, Error ellipse: s-maj=21.5km s-min=14.4km az=134.0*

NEIC ***16*** *10:58:38.6±0.3, 11.96S×166.35E, h10km, mb5.0/21, MS5.9/99, MW5.9, Error ellipse: s-maj=13.6km s-min=7.3km az=137.0, Moment Tensor Solution. s13 Moment tensor: Scale 10¹⁷Nm; Mrr5.00; Mθθ2.16; Mφφ-7.14; Mrθ1.87; Mrφ-0.99; Mθφ-0.90; Best double couple: M₀6.7×10¹⁷ NP1:φs31°,δ48°,λ128°. NP2:φs162°, δ54°,λ56°. Principal axes: T 6.05, Plg63°, Azm12°; N 1.24, Plg27°, Azm184°; P -7.29, Plg3°, Azm275°;*

HRVD ***16*** *10:58:38.6±0.2, 11.94S×166.01E, h24km, MW5.8/68, Centroid moment Tensor Solution. LP body waves: s57,c112;Mantle waves: s68,c139; Half duration: 1s9 Moment tensor: Scale 10¹⁷Nm; Mrr5.15±.14; Mθθ-0.22±.11; Mφφ-4.93±.09; Mrθ1.55±.21; Mθφ1.45±.08; Mφr-2.20±.16; Best double couple: M₀5.9×10¹⁷ NP1: φs353°,δ33°,λ105°. NP2:φs155°,δ59°,λ81°. Principal axes: T 5.87, Plg75°, Azm39°; N .06, Plg8°, Azm160°; P -5.93, Plg13°, Azm252°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

MOS ***16*** *10:58:40.3±1.2, 11.95S×166.18E, h33km, mb5.3/6 Error ellipse: s-maj=19.8km s-min=13.9km az=148.4*

ISC 16 10:58:39.4±7.6, 12.03S±0.07×166.27E±0.08, h24km±53km, h12km±.7km:pP-P, n198, σ1s15/75, mb5.0/37, MS5.9/111, 3C-2D, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
PMG	**Port Moresby**	**18.96**	**276**	P		**P**	**11 02 60.0**	**-1.7**
	1.1nm,0.3s,baz=80,slow=1.5,SNR=7.3							
PMG	**Port Moresby**	**18.96**	**276**	*e*P		**P**	**11 03 01.5**	**-0.2**
PMG				pmax	pmax			
	comp=Z,130nm,1.2s							
PMG	**Port Moresby**	**18.96**	**276**	*e*P		**P**	**11 03 01.5**	**-0.1**
	comp=Z,127nm,1.2s							
CTA	**Charters Tower**	**20.82**	**245**	*e*P		**P**	**11 03 21.1**	**-0.8**
	comp=Z,82nm,1.1s							
CTA	**Charters Tower**	**20.82**	**245**	P		**P**	**11 03 20.2**	**-1.7**
	comp=Z,46nm,1.0s,baz=68,slow=13,SNR=5.0							
CTA				LR		LR	11 09 37.5	
	comp=Z,15μm,20.7s,MS5.3,baz=21,slow=32							
CTAO	**Charters Tower**	**20.82**	**245**	*e*P		**P**	**11 03 21.2**	**-0.7**
	comp=Z,171nm,1.4s							
CTAO				LR		LR		
	comp=Z,14μm,19.0s,MS5.3							
RIV	**Riverview**	**25.71**	**210**	*e*P		**P**	**11 04 11.1**	**+1.3**
URZ	**Urewera**	**27.86**	**162**	P		**P**	**11 04 29.1**	**-0.3**
	comp=Z,2.3nm,0.3s,mb4.2,baz=332,slow=15,SNR=2.8							
URZ				LR		LR	11 13 30.1	
	comp=Z,13μm,19.8s,MS5.5,baz=344,slow=32							
SNZO	**South Karori**	**30.09**	**167**	PFAKE			11 05 00.0	+11
SNZO				LR		LR		
	comp=Z,15μm,19.0s,MS5.7							
STKA	**Stephens Creek**	**30.10**	**225**	*e*P		**P**	**11 04 51.2**	**+1.7**
	comp=Z,16nm,0.8s,mb4.8							
STKA	**Stephens Creek**	**30.10**	**225**	P		**P**	**11 04 49.3**	**-0.2**
	comp=Z,7.1nm,0.8s,mb4.5,baz=43,slow=6.1,SNR=3.4							
STKA				LR		LR	11 16 18.8	
	comp=Z,16μm,19.7s,MS5.7,baz=351,slow=35							
WAKE	**Wake Island**	**31.11**	**1**	PFAKE			11 05 10.0	+11
WAKE				LR		LR		
	comp=Z,2μm,20.0s,MS4.8							
TOO	**Toolangi**	**31.51**	**213**	*e*P		**P**	**11 05 01.6**	**-0.3**
	comp=Z,12nm,0.9s,mb4.7							
WB2	**Warramunga Arr**	**31.63**	**252**	*e*P		**P**	**11 05 05.6**	**+2.4**
WRAB	**Tennant Creek**	**31.63**	**252**	*e*P		**P**	**11 05 04.0**	**+0.9**
	comp=Z,213nm,1.3s,mb5.8							
WRAB				LR		LR		
	comp=Z,12μm,19.0s,MS5.6							
WRA	**Warramunga Arr**	**31.64**	**252**	P		**P**	**11 05 02.4**	**-0.9**
	comp=Z,59nm,1.4s,mb5.2,baz=84,slow=9.1,SNR=7.7							
RPZ	**Rata Peaks**	**31.84**	**173**	P		**P**	**11 05 04.8**	**0.0**
	comp=Z,25nm,0.6s,mb5.2,baz=261,slow=3.3,SNR=9.3							
RPZ				LR		LR	11 15 48.4	
	comp=Z,9μm,21.8s,MS5.4,baz=343,slow=32							
AS12	**Alice Springs**	**32.83**	**245**	*e*P		**P**	**11 05 09.3**	**-4.2**
	comp=Z,33nm,0.7s,mb5.4							
ASAR	**Alice Springs**	**32.83**	**245**	P		**P**	**11 05 13.7**	**+0.1**
	comp=Z,33nm,0.7s,mb5.4,baz=66,slow=9.7,SNR=19							
GUMO	**Guam**	**33.14**	**320**	PFAKE			11 05 30.0	+14
GUMO				LR		LR		
	comp=Z,12μm,20.0s,MS5.6							
RAR	**Rarotonga**	**33.73**	**110**	LR		LR	11 16 10.0	
	comp=Z,7μm,20.6s,MS5.3,baz=277,slow=31							
RAR	**Rarotonga**	**33.73**	**110**	PFAKE			11 05 30.0	+8.6
RAR				LR		LR		
	comp=Z,7μm,19.0s,MS5.4							
TAU	**Tasmania Unive**	**34.88**	**205**	PFAKE			11 05 40.0	+8.9
TAU				LR		LR		
	comp=Z,7μm,21.0s,MS5.4							
FITZ	**Fitzroy Crossi**	**39.63**	**256**	P		**P**	**11 06 12.7**	**+1.4**
	comp=Z,33nm,1.1s,mb5.0,baz=120,slow=3.9,SNR=3.6							
FORT	**Forrest**	**39.91**	**236**	*e*P		**P**	**11 06 14.9**	**+1.4**
	comp=Z,139nm,0.7s,mb5.8							
MIDW	**Midway**	**43.03**	**21**	PFAKE			11 06 50.0	+11
MIDW				LR		LR		
	comp=Z,58μm,21.0s,MS6.5							
KIP	**Kipapa**	**48.32**	**47**	PFAKE			11 07 30.0	+8.7
KIP				LR		LR		
	comp=Z,6μm,19.0s,MS5.6							
KLBR	**Kellerberrin**	**48.62**	**238**	*e*P		**P**	**11 07 21.7**	**-1.8**
	comp=Z,30nm,0.8s,mb5.4							
POHA	**Pohakuloa**	**49.11**	**50**	PFAKE			11 07 40.0	+13
POHA				LR		LR		
	comp=Z,8μm,20.0s,MS5.7							
NWAO	**Narrogin (SRO)**	**49.35**	**237**	P		**P**	**11 07 28.8**	**-0.3**
	comp=Z,12nm,0.7s,mb5.0,baz=80,slow=10,SNR=4.7							
NWAO	**Narrogin (SRO)**	**49.35**	**237**	*e*P		**P**	**11 07 28.5**	**-0.6**
	comp=Z,25nm,0.9s,mb5.2							
NWAO				LR		LR		
	comp=Z,10μm,20.0s,MS5.8							
KKM	**Kota Kinabalu**	**52.91**	**287**	⇑ *e*P		**P**	**11 07 56.5**	**+0.1**
JOW	**Kunigami**	**53.42**	**317**	LR		LR	11 27 44.1	
	comp=Z,5μm,18.9s,MS5.6,baz=288,slow=33							
MAJO	**Matsushiro**	**55.08**	**332**	PFAKE			11 08 20.0	+8.0
MAJO				LR		LR		
	comp=Z,7μm,19.0s,MS5.7							
TATO	**Taipei**	**57.09**	**310**	PFAKE			11 08 40.0	+13
TATO				LR		LR		
	comp=Z,6μm,19.0s,MS5.7							
INCN	**Inchon**	**61.71**	**325**	PFAKE			11 09 10.0	+12
INCN				LR		LR		
	comp=Z,2μm,19.0s,MS5.4							
YSS	**Yuzh-Sakhalins**	**62.37**	**342**	⇑ *i*P		**P**	**11 09 03.1**	**+0.5**
YSS				*i*			11 09 12.8	
YSS				*e*			11 11 18.0	
YSS				pmax	pmax			
	comp=Z,60nm,1.0s,mb5.7							
NJ2	**Nanjing**	**63.08**	**315**	*e*P		**P**	**11 09 08.1**	**+0.7**
SMY	**Shemya**	**64.84**	**5**	PFAKE			11 09 30.0	+11
SMY				LR		LR		
	comp=Z,7μm,22.0s,MS5.8							
FX1	**Attu Island--F**	**64.92**	**5**	P		**P**	**11 09 18.5**	**-0.6**
	comp=Z,20nm,0.6s,mb5.4,baz=284,slow=22,SNR=6.0							
PET	**Petropavlovsk**	**65.12**	**355**	PFAKE			11 09 30.0	+10
PET				LR		LR		
	comp=Z,5μm,21.0s,MS5.7							
MDJ	**Mudanjiang**	**65.45**	**332**	P		**P**	**11 09 22.8**	**0.0**
DL2	**Dalian**	**65.57**	**323**	P		**P**	**11 09 22.9**	**-0.7**
DL2				AMB	AMB			
	comp=Z,40nm,0.9s,mb5.5							
SBA	**Scott Base**	**65.82**	**180**	*e*P		**P**	**11 09 24.2**	**-0.4**
	comp=Z,40nm,0.9s,mb5.5							
SBA				LR		LR		
	comp=Z,3μm,20.0s,MS5.4							
CN2	**Changchun**	**66.84**	**329**	*e*P		**P**	**11 09 30.4**	**-1.3**
CN2				*e*XP		sP	11 09 43.8	+1.9
CN2				*e*S		S	11 18 22.4	+1.2
CN2				AMB	AMB			
	comp=Z,30nm,0.9s,mb5.3							
CN2				LR		LR		
	comp=N,5μm,18.0s,MS5.8							
CN2				LR		LR		
	comp=E,2μm,18.0s,MS5.8							
CN2				LR		LR		
	comp=Z,6μm,19.0s,MS5.8							
BJI	**Beijing**	**69.56**	**321**	*e*P		**P**	**11 09 47.8**	**-0.9**
BJI				AMB	AMB			
	comp=Z,28nm,1.1s,mb5.1							
BJI				LR		LR		
	comp=N,4μm,16.9s							
BJI				LR		LR		
	comp=E,1μm,23.5s							
UNV	**Unalaska Valle**	**69.59**	**17**	PFAKE			11 10 00.0	+11
UNV				LR		LR		
	comp=Z,15μm,22.0s,MS6.2							
KMI	**Kunming**	**72.07**	**301**	*e*P		**P**	**11 10 05.8**	**+1.7**
KMI				AP		pP	11 10 09.8	-1.8
KMI				XP		sP	11 10 12.5	-1.8
KMI				AMB	AMB			
	comp=Z,49nm,2.0s,mb5.1							
KMI				LR		LR		
	comp=N,2μm,17.4s,MS5.5							
KMI				LR		LR		
	comp=E,2μm,22.4s,MS5.5							
KMI				LR		LR		
	comp=Z,3μm,21.9s,MS5.5							
MA2	**Magadan**	**72.45**	**352**	PFAKE			11 10 20.0	+14
MA2				LR		LR		
	comp=Z,7μm,21.0s,MS5.9							
HHC	**Hu-ho-hao-te**	**72.91**	**320**	⇑P		**P**	**11 10 08.8**	**0.0**
HHC				XP		sP	11 10 16.1	-2.9
HHC				PCP		PcP	11 10 24.9	-1.0
HHC				S		S	11 19 37.8	+5.4
HHC				SCS		ScS	11 20 15.8	+4.4
HHC				AMB	AMB			
	comp=Z,49nm,1.3s,mb5.3							
HHC				LR		LR		
	comp=N,1μm,22.0s,MS5.3							
HHC				LR		LR		
	comp=E,1μm,22.6s,MS5.3							
CMAR	**Chiang Mai Arr**	**72.97**	**294**	P		**P**	**11 10 09.6**	**0.0**
	comp=E,9.2nm,0.8s,mb4.8,baz=128,slow=5.3,SNR=7.6							
LZH	**Lanzhou**	**75.79**	**312**	*e*P		**P**	**11 10 26.0**	**+0.5**
LZH				AP		pP	11 10 29.3	-3.9
LZH				XP		sP	11 10 30.8	-5.0
LZH				PP		PP	11 13 17.0	-0.5
LZH				*e*S		S	11 20 06.0	+1.3
LZH				XS			11 20 11.0	
LZH				LR		LR		
	comp=E,3μm,17.5s							
LZH				LR		LR		
	comp=Z,3μm,18.6s,MS5.6							
KDAK	**Kodiak Island**	**77.30**	**21**	PFAKE			11 10 40.0	+6.5
KDAK				LR		LR		
	comp=Z,8μm,22.0s,MS6.0							
QSPA	**South Pole Qui**	**77.98**	**180**	*e*P		**P**	**11 10 36.1**	**-0.8**
	comp=Z,160nm,1.6s,mb5.7							
QSPA				*e*PcP		PcP	11 10 57.0	+10
QSPA				LR		LR		
	comp=Z,2μm,20.9s,MS5.3							
ULN	**Ulaanbaatar**	**79.39**	**324**	PFAKE			11 11 00.0	+15
ULN				LR		LR		
	comp=Z,2μm,20.0s,MS5.4							
TNA	**Tin City**	**79.74**	**11**	PFAKE			11 11 00.0	+13
TNA				LR		LR		
	comp=Z,2μm,22.0s,MS5.3							
BILL	**Bilibino**	**79.85**	**0**	*e*P		**P**	**11 10 45.6**	**-1.6**
BILL				pmax	pmax			
	comp=Z,5.0nm,0.6s,mb4.6							
BILL	**Bilibino**	**79.85**	**0**	*e*P		**P**	**11 10 45.6**	**-1.7**
	comp=Z,4.9nm,0.6s,mb4.6							
FIB	**Fire Island**	**80.64**	**20**	PFAKE			11 11 00.0	+8.4
FIB				LR		LR		
	comp=Z,16μm,22.0s,MS6.3							
PMR	**Palmer**	**81.30**	**20**	*e*P		**P**	**11 10 53.7**	**-1.3**
	comp=Z,4.2nm,0.6s,mb4.5							
PMR				LR		LR		
	comp=Z,7μm,20.0s,MS6.0							
DIV	**Divide**	**82.13**	**21**	PFAKE			11 11 10.0	+11
DIV				LR		LR		
	comp=Z,41μm,20.0s,MS6.8							
ZAK	**Zakamensk**	**82.80**	**325**	*e*P		**P**	**11 11 00.6**	**-2.4**
MCK	**McKinley**	**82.91**	**18**	PFAKE			11 11 10.0	+6.7
MCK				LR		LR		
	comp=Z,3μm,20.0s,MS5.6							
HOPS	**Hopland**	**82.95**	**48**	PFAKE			11 11 10.0	+6.0
HOPS				LR		LR		
	comp=Z,6μm,20.0s,MS6.0							
IMA	**Indian Mountai**	**83.31**	**15**	P		**P**	**11 11 06.0**	**+0.6**
	comp=Z,21nm,0.9s,mb5.2							
SAO	**San Andreas Ge**	**83.36**	**50**	PFAKE			11 11 20.0	+14
SAO				LR		LR		
	comp=Z,8μm,19.0s,MS6.1							
SIT	**Sitka**	**83.88**	**28**	PFAKE			11 11 20.0	+12
SIT				LR		LR		
	comp=Z,4μm,21.0s,MS5.7							
WDC	**Whiskeytown Da**	**83.91**	**46**	PFAKE			11 11 20.0	+11
WDC				LR		LR		
	comp=Z,3μm,19.0s,MS5.6							
MAW	**Mawson**	**84.01**	**202**	*e*P		**P**	**11 11 08.4**	**-0.4**
	comp=Z,12nm,1.0s,mb5.0							
MAW	**Mawson**	**84.01**	**202**	P		**P**	**11 11 09.1**	**+0.3**
	comp=Z,7.4nm,0.8s,mb4.9,baz=91,slow=5.2,SNR=5.1							
COLA	**College**	**84.06**	**18**	*e*P		**P**	**11 11 07.8**	**-1.3**
	comp=Z,5.7nm,0.8s,mb4.8							
COLA				LR		LR		
	comp=Z,5μm,20.0s,MS5.9							
YBH	**Yreka Blue Hor**	**84.21**	**45**	*e*P		**P**	**11 11 09.0**	**-1.4**
	comp=Z,2.6nm,0.7s,mb4.5							
YBH				LR		LR		
	comp=Z,2μm,19.0s,MS5.6							
ILAR	**Eielson Array**	**84.28**	**18**	P		**P**	**11 11 09.4**	**-0.8**
	comp=Z,2.4nm,0.4s,mb4.7,baz=261,slow=5.0,SNR=4.2							
ILAR				LR		LR	11 46 50.7	
	comp=Z,2μm,19.4s,MS5.6,baz=246,slow=34							
CMB	**Columbia Colle**	**84.58**	**49**	PFAKE			11 11 20.0	+7.6
CMB				LR		LR		
	comp=Z,9μm,19.0s,MS6.2							
COR	**Corvallis**	**84.87**	**43**	PFAKE			11 11 20.0	+6.3
COR				LR		LR		
	comp=Z,10μm,21.0s,MS6.2							
WCN	**Washoe City**	**85.47**	**48**	*e*P		**P**	**11 11 17.7**	**+0.9**
OCWA	**Octopus Mounta**	**85.53**	**39**	PFAKE			11 11 30.0	+13
OCWA				LR		LR		
	comp=Z,4μm,20.0s,MS5.8							
MTUM	**Tungsten Hills**	**85.73**	**51**	*e*P		**P**	**11 11 18.2**	**+0.1**
MOD	**Modoc**	**85.95**	**46**	PFAKE			11 11 30.0	+11
MOD				LR		LR		
	comp=Z,3μm,19.0s,MS5.7							
DAC	**Darwin (Calif)**	**86.13**	**52**	PFAKE			11 11 30.0	+10
DAC				LR		LR		
	comp=Z,5μm,20.0s,MS5.9							
PFO	**Pinyon Flat Ob**	**86.23**	**55**	PFAKE			11 11 30.0	+9.3
PFO				LR		LR		
	comp=Z,7μm,19.0s,MS6.1							
NVAR	**Mina Array Bea**	**86.26**	**50**	P		**P**	**11 11 20.7**	**-0.1**
	comp=Z,1.6nm,0.7s,mb4.4,baz=223,slow=3.7,SNR=6.4							
NVAR				LR		LR	11 40 52.4	
	comp=Z,8μm,21.1s,MS6.1,baz=290,slow=29							
DAWY	**Dawson**	**86.28**	**21**	*e*P		**P**	**11 11 18.5**	**-1.7**

MKAR Makanchi Array 94.58 317 P **P** 11 11 58.6 -0.9
comp=Z,57nm,0.8s,mb6.1,baz=96,slow=5.9,SNR=3.8
MNTX Cornudas Mount 94.83 59 PFAKE 11 12 10.0 +9.0
MNTX LR LR
comp=Z,4μm,20.0s,MS5.9
YKA Yellowknife Ar 95.61 27 P **P** **11 12 04.0 +0.2**
comp=Z,0.8nm,0.6s,mb4.3,baz=257,slow=4.3,SNR=4.2
SDCO Great Sand Dun 95.87 53 PFAKE 11 12 20.0 +14
SDCO LR LR
comp=Z,3μm,21.0s,MS5.8
ISCO Idaho Springs 96.16 51 PFAKE 11 12 20.0 +13
ISCO LR LR
comp=Z,7μm,20.0s,MS6.1
SNAA Sanae 96.17 183 *e*P **P** **11 12 04.3 -2.0**
KSH Kashi 97.77 309 *e*P **P** **11 12 17.0 +2.8**
KSH *e*AP pP 11 12 21.5 -0.5
KSH *e*XP sP 11 12 24.0 -0.4
KSH *e*SKS SKS 11 22 52.8 -3.6
KSH *e*S S 11 23 42.0 +7.2
KSH *e*XS 11 23 50.1
KSH LR LR
comp=N,2μm,11.4s,MS6.0
KSH LR LR
comp=E,2μm,10.8s,MS6.0
RSSD Black Hills 98.04 47 PFAKE 11 12 30.0 +15
RSSD LR LR
comp=Z,3μm,19.0s,MS5.8
JCT Junction City 99.34 61 PFAKE 11 12 30.0 +8.5
JCT LR LR
comp=Z,4μm,20.0s,MS5.9
CBKS Cedar Bluff 100.51 52 PFAKE 11 12 40.0 +13
CBKS LR LR
comp=Z,3μm,20.0s,MS5.8
WMOK Wichita Mounta 100.78 57 PFAKE 11 12 40.0 +12
WMOK LR LR
comp=Z,7μm,20.0s,MS6.2
HKT Hockley 102.68 62 PFAKE 11 12 50.0 +13
HKT LR LR
comp=Z,2μm,21.0s,MS5.7
MIAR Mount Ida 105.03 57 PFAKE 11 13 00.0 +13
MIAR LR LR
comp=Z,6μm,20.0s,MS6.2
EFI East Falkland 105.89 153 PFAKE 11 17 10.0
EFI LR LR
comp=Z,2μm,20.0s,MS5.5
CCM Cathedral Cave 107.10 54 PFAKE 11 17 20.0
CCM LR LR
comp=Z,4μm,21.0s,MS6.0
JFWS Jewell Farm 107.94 49 PFAKE 11 17 20.0
JFWS LR LR
comp=Z,4μm,19.0s,MS6.0
OXF Oxford 108.46 58 PFAKE 11 17 20.0
OXF LR LR
comp=Z,4μm,20.0s,MS6.0
PLAL Pickwick Lake 109.57 57 PFAKE 11 17 20.0
PLAL LR LR
comp=Z,6μm,20.0s,MS6.1
ARU Arti 109.72 326 PFAKE 11 17 20.0
ARU LR LR
comp=Z,3μm,19.0s,MS5.9
WVT Waverly 109.79 56 PFAKE 11 17 20.0
WVT LR LR
comp=Z,5μm,19.0s,MS6.1
LRAL Lakeview Retre 110.42 59 PFAKE 11 17 20.0 +5.5
LRAL LR LR
comp=Z,5μm,20.0s,MS6.1
WCI Wyandotte Cave 111.01 54 PFAKE 11 17 20.0 +4.4
WCI LR LR
comp=Z,23μm,21.0s,MS6.7
KBS Kingsbay 111.94 355 PFAKE 11 17 20.0 +3.6
KBS LR LR
comp=Z,3μm,20.0s,MS5.8
MYNC Murphy 112.81 57 PFAKE 11 17 30.0 +11
MYNC LR LR
comp=Z,5μm,20.0s,MS6.1
AAM Ann Arbor 112.83 49 PFAKE 11 17 30.0 +11
AAM LR LR
comp=Z,5μm,20.0s,MS6.1
ACSO Alum Creek Sta 113.49 51 PFAKE 11 17 30.0 +10
ACSO LR LR
comp=Z,6μm,19.0s,MS6.2
DWPF Disney 115.15 65 PFAKE 11 17 30.0 +6.1
DWPF LR LR
comp=Z,2μm,20.0s,MS5.7
ERPA Erie 115.56 49 PFAKE 11 17 30.0 +5.6
ERPA LR LR
comp=Z,5μm,21.0s,MS6.1
BLA Blacksburg 115.71 54 PFAKE 11 17 30.0 +5.2
BLA LR LR
comp=Z,4μm,19.0s,MS6.1
LVC Limon Verde 115.91 122 PFAKE 11 17 30.0 +4.5
LVC LR LR
comp=Z,2μm,22.0s,MS5.6
MCWV Mont Chateau 115.94 52 PFAKE 11 17 30.0 +4.8
MCWV LR LR
comp=Z,6μm,19.0s,MS6.2
SSPA Standing Stone 117.31 50 PFAKE 11 17 40.0 +12
SSPA LR LR
comp=Z,23μm,20.0s,MS6.8
ARCES ARCESS Array B 117.41 345 PKP PKPdf 11 17 22.4 -4.8
comp=Z,2.1nm,0.6s,baz=79,slow=1.3,SNR=7.4
ARCES ARCESS Array B 117.41 345 PKP PKPdf 11 17 22.4 -4.9
CBN Corbin 118.02 53 PFAKE 11 17 40.0 +11
CBN LR LR
comp=Z,9μm,20.0s,MS6.4
NCB Newcomb 119.42 46 PFAKE 11 17 40.0 +8.2
NCB LR LR
comp=Z,3μm,19.0s,MS5.9
HRV Harvard--Oak R 121.64 47 PFAKE 11 17 40.0 +3.8
HRV LR LR
comp=Z,1μm,21.0s,MS5.6
WES Weston 121.84 47 PFAKE 11 17 40.0 +3.5
WES LR LR
comp=Z,5μm,21.0s,MS6.2
OBN Obninsk 121.91 329 PFAKE 11 17 40.0 +3.7
OBN LR LR
comp=Z,2μm,20.0s,MS5.7
KIV Kislovodsk 122.28 315 PFAKE 11 17 50.0 +13
KIV LR LR
comp=Z,2μm,19.0s,MS5.8
WVL Waterville 122.45 45 PFAKE 11 17 50.0 +12
WVL LR LR
comp=Z,10μm,20.0s,MS6.5
PQI Presque Isle 122.92 42 PFAKE 11 17 50.0 +12
PQI LR LR
comp=Z,12μm,21.0s,MS6.5
EMMW East Machias 123.91 44 PFAKE 11 17 50.0 +9.5
EMMW LR LR
comp=Z,12μm,19.0s,MS6.6
SDV Santo Domingo 124.03 87 PKP PKPdf 11 17 36.4 -5.1
comp=Z,5.3nm,0.7s,baz=252,slow=2.6,SNR=6.6
SUR Sutherland 124.86 216 PFAKE 11 17 50.0 +7.3
SUR LR LR
comp=Z,2μm,20.0s,MS5.7
BORG Borgarnes 127.09 4 PFAKE 11 17 50.0 +4.0
BORG LR LR
comp=Z,3μm,20.0s,MS6.0
KMBO Kilima Mbogo 127.72 259 *e*PKPdf PKPdf 11 17 45.9 -2.8
KMBO LR LR
comp=Z,777nm,19.0s,MS5.4
SJG San Juan 129.16 76 PFAKE 11 18 00.0 +8.7
SJG LR LR
comp=Z,2μm,22.0s,MS5.7
BBSR BB Station 129.18 58 PFAKE 11 18 00.0 +9.0
BBSR LR LR
comp=Z,8μm,19.0s,MS6.4
KONO Kongsberg 129.39 345 PFAKE 11 18 00.0 +9.4
KONO LR LR
comp=Z,4μm,22.0s,MS6.0
DPC Dobruska-Polom 134.55 333 *e*PKP PKPdf 11 18 13.1 +13
EKA Eskdalemuir Ar 136.01 351 PKP PKPdf 11 17 57.6 -5.5
comp=Z,0.8nm,0.7s,baz=333,slow=1.6,SNR=3.6
ESK Eskdalemuir 136.03 351 PFAKE 11 18 10.0 +6.8
ESK LR LR
comp=Z,2μm,20.0s,MS5.9
KHC Kasperske Hory 136.65 334 *e*PKP PKPdf 11 18 10.3 +5.9
GERES GERESS Array B 136.81 334 PKP PKPdf 11 18 01.1 -3.6
comp=Z,1.5nm,0.9s,baz=45,slow=2.8,SNR=3.8
KRIS Kristallenia 137.69 310 *e*PKPdf PKPdf 11 18 05.6 -1.2
LPL La Plagne 142.34 336 *e*PKP1 PKPdf 11 18 05.9 -8.9
LPG La Plagne 142.35 336 *e*PKP1 PKPdf 11 18 06.2 -8.6
MBDF Montbardon 142.98 336 *e*PKP1 PKPdf 11 18 07.7 -8.2
comp=Z,13nm,0.9s
ORIF Oris-en-Rattie 143.18 337 *e*PKP1 PKPbc 11 18 09.0 -0.8
comp=Z,17nm,0.8s
SBF Sospel 143.41 334 *e*PKP1 PKPbc 11 18 08.8 -1.8
comp=Z,46nm,0.8s
MFF Saint Martin d 143.67 344 *e*PKP1 PKPbc 11 18 10.2 -1.1
comp=Z,17nm,0.9s
VIVF Saint-Julien-l 143.69 338 *e*PKP1 PKPbc 11 18 10.5 -0.9
comp=Z,50nm,1.3s
PGF Pioggiola 143.74 331 *e*PKP1 PKPbc 11 18 10.3 -1.3
comp=Z,47nm,1.1s
FRF La Foret Royal 143.99 334 *e*PKP1 PKPbc 11 18 10.8 -1.5
comp=Z,39nm,0.9s
SMRF Simiane la Rot 144.08 336 *e*PKP1 PKPbc 11 18 13.9 +1.3
comp=Z,20nm,0.9s
LMR La Mourre 144.23 334 *e*PKP1 PKPbc 11 18 11.9 -1.1
comp=Z,75nm,1.0s
VAE Valguarnera 144.27 320 PKP PKPdf 11 18 16.4 -1.9
comp=Z,24nm,0.9s,baz=317,slow=9.7,SNR=4.8
RJF Les Rejaudoux 144.37 341 *e*PKP1 PKPbc 11 18 12.3 -1.0
comp=Z,66nm,1.4s
CAF Calviac 144.54 341 *e*PKP1 PKPbc 11 18 13.4 -0.4
comp=Z,42nm,1.1s
LASF Ste Croix 144.66 338 *e*PKP1 PKPbc 11 18 13.8 -0.4
comp=Z,51nm,0.9s
LFF La Frestale 144.94 342 *e*PKP1 PKPbc 11 18 14.5 -0.4
comp=Z,128nm,1.4s
MTLF Montolieu 145.88 339 *e*PKP1 PKPbc 11 18 17.7 +0.3
comp=Z,60nm,1.2s
EPF Esparros 146.79 341 *e*PKP1 PKPbc 11 18 16.9 -2.6
ETSF Etsaut 147.19 342 *e*PKP1 PKPdf 11 18 21.2 -2.0
comp=Z,30nm,1.1s
ESDC Sonseca Array 151.14 344 PKPbc PKPdf 11 18 31.7 +2.2
comp=Z,1.5nm,0.8s,baz=18,slow=2.6,SNR=4.5
KIC Kosan Boka 169.49 238 *e*PKP1 PKPab 11 19 59.9 -0.9
comp=Z,146nm,1.3s
LIC Lamto 169.65 237 *e*PKP2 PKPab 11 19 58.9 -2.6
comp=Z,53nm,1.0s
LIC Lamto 169.65 237 *e*PKP1 PKPab 11 20 00.4 -1.1
comp=Z,83nm,1.5s
DBIC Dimbokro 169.75 239 PKPab PKPab 11 20 01.9 -0.1
comp=Z,5.6nm,0.8s,baz=116,slow=3.2,SNR=5.7
TIC Toumodi 169.88 239 *e*PKP1 PKPab 11 20 01.5 -1.0
comp=Z,91nm,1.1s

IDC ***16*** *11:01:11.9±0.3, 7.51N×126.07E, mb5.4/34, mb1 5.4/36, mb1mx5.4/37, ML5.2/2, MS5.3/16, Ms1 5.4/16, ms1mx5.3/26, Error ellipse: s-maj=10.7km s-min=5.1km az=76.0*

BJI ***16*** *11:01:12.9, 7.43N×126.39E, h23km, mB5.9, mb5.5, Ms5.7, Msz5.4*

NEIC ***16*** *11:01:14.5±0.1, 7.63N×126.17E, mb5.7/53, MS5.7/100, Error ellipse: s-maj=6.9km s-min=4.1km az=76.0*

NEIC Felt [V PIVS] at Tagum; [III PIVS] at Bislig and Davao; [II PIVS] at Butuan and Kidapawan. Felt at Mati.

SYO ***16*** *11:01:14.5, 7.63N×126.17E, h12km, MB5.7, MS5.7*

HRVD ***16*** *11:01:14.5±0.2, 7.63N×126.19E, h17km, MW5.8/78, Centroid moment Tensor Solution. LP body waves: s61,c110;Mantle waves: s78,c187; Half duration: 2s0 Moment tensor: Scale 10^{17}Nm; M_{rr}-0.60±.10; $M_{\theta\theta}$3.28±.08; $M_{\phi\phi}$-2.69±.10; $M_{r\theta}$-0.45±.23; $M_{\theta\phi}$-5.34±.08; $M_{\phi r}$-1.46±.26; Best double couple: $M_0$6.32×10^{17} NP1: ϕ_s76°, δ77°, λ-171°. NP2:ϕ_s344°, δ82°, λ-13°. Principal axes: T 6.43, Plg3°, Azm31°; N -.22, Plg75°, Azm132°; P -6.22, Plg15°, Azm300°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

MAN ***16*** *11:01:16.7, 7.73N×126.06E, h2km, mb6.0, ML5.1, MS5.7*

MAN F TAGUM CITY V BISLIG DAVAO III KIDAPAWAN BUTUAN II.

MOS ***16*** *11:01:16.8±1.3, 7.68N×126.17E, h33km, mb6.0/40, MS5.6/27, Error ellipse: s-maj=11.7km s-min=5.9km az=110.4*

CSEM ***16*** *11:01:20.8, 8.57N×126.00E, h33km, mb5.7*

ISC 16 11:01:15.8±0.6, 7.58N±0.02×126.28E±0.02, h31km±3km, **h16**km±1.7km**:pP-P, n479,σ1s15**/388**, mb5.5**/106**, MS5.7**/155**, 58C-32D, Mindanao**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
BIPH	**Bislig**	**0.60**	**7**	⇑*i*P			**Pb**	**11 01 27.2**	**-0.7**
BIPH				*i* S			**Sb**	**11 01 36.6**	**+0.4**
DMPH	**Davao City--Mi**	**0.92**	**237**	*e*P			**Pn**	**11 01 32.8**	**+0.2**
DMPH				*i* S			**Sn**	**11 01 48.6**	**+3.8**
KCP	**Kidapawan**	**1.31**	**244**	⇓*i*P			**Pn**	**11 01 39.1**	**+0.7**
KCP				*i* S			**Sn**	**11 01 57.4**	**+2.5**
BUTP	**Butuan**	**1.52**	**335**	⇑*e*P			**Pn**	**11 01 42.5**	**+1.2**
BUTP				*e*S			**Sn**	**11 02 03.6**	**+3.3**
CGP	**Cagayan de Oro**	**1.80**	**299**	⇓*e*P			**Pn**	**11 01 45.5**	**+0.2**
CGP				*i* S			**Sn**	**11 02 09.9**	**+2.7**
GSPH	**General Santos**	**1.99**	**222**	⇑*i*P			**Pn**	**11 01 48.2**	**+0.1**
CTBH	**Cotabato--PC H**	**2.05**	**260**	⇓*e*P			**Pn**	**11 01 49.0**	**0.0**
CTBH				*i* S			**Sn**	**11 02 15.8**	**+2.1**
SCPH	**Surigao**	**2.32**	**340**	⇓*i*P			**Pn**	**11 01 53.3**	**+0.5**
SCPH				*i* S			**Sn**	**11 02 27.2**	**+6.6**
PAGZ	**Pagadian**	**2.89**	**275**	⇑*e*P			**Pn**	**11 02 00.5**	**-0.4**
MSLP	**Maasin**	**2.90**	**331**	⇑*e*P			**Pn**	**11 02 00.6**	**-0.5**
TBP	**Tagbilaran**	**3.18**	**311**	*i* P			**Pn**	**11 02 04.6**	**-0.4**
TBP				*i* S			**Sn**	**11 02 41.0**	**-1.3**
SNPH	**Sibulan**	**3.48**	**300**	⇑*i*P			**Pn**	**11 02 08.9**	**-0.4**
LLP	**Lapu-Lapu**	**3.55**	**320**	⇓*i*P			**Pn**	**11 02 10.4**	**+0.1**
LLP				*e*S			**Sn**	**11 02 45.2**	**-6.5**
PLP	**Palo**	**3.79**	**340**	⇓*i*P			**Pn**	**11 02 14.0**	**+0.4**
OCLP	**Ormoc**	**3.82**	**335**	⇑*e*P			**Pn**	**11 02 14.3**	**+0.2**
BESP	**Borongan**	**4.08**	**348**	⇑*e*P			**Pn**	**11 02 19.6**	**+1.8**
BESP				*e*S			**Sn**	**11 03 11.7**	**+6.6**
AAP	**Anini-y**	**5.13**	**304**	⇓*e*P			**Pn**	**11 02 32.5**	**-0.1**
	4μm,1.0s								
CNP	**Catarman**	**5.15**	**342**	⇑*e*P			**Pn**	**11 02 34.3**	**+1.4**
CNP				*e*S			**Sn**	**11 03 40.3**	**+8.2**
RCP	**Roxas**	**5.27**	**319**	⇓*e*P			**Pn**	**11 02 34.2**	**-0.4**
MMPH	**Masbate**	**5.42**	**331**	⇑*i*P			**Pn**	**11 02 37.0**	**+0.3**
MMPH				*i* S			**Sn**	**11 03 41.1**	**+2.3**
KALP	**Kalibo**	**5.63**	**317**	⇑*i*P			**Pn**	**11 02 39.7**	**0.0**
CUYO	**Cuyo Island**	**6.13**	**302**	⇑*e*P			**Pn**	**11 02 45.6**	**-1.1**
PVCP	**Virac**	**6.33**	**341**	⇑*e*P			**Pn**	**11 02 49.4**	**-0.1**
OTRP	**Odiongan**	**6.34**	**319**	⇑*e*P			**Pn**	**11 02 49.9**	**+0.2**
AUQP	**San Andres**	**6.72**	**328**	⇑*e*P			**Pn**	**11 02 55.0**	**-0.1**
SJMP	**San Jose**	**7.03**	**314**	⇑*e*P			**Pn**	**11 02 59.2**	**-0.1**
BOAC	**Boac**	**7.29**	**324**	⇑*e*P			**Pn**	**11 03 02.9**	**-0.1**
GQP	**Guinayangan**	**7.33**	**329**	⇑*e*P			**Pn**	**11 03 06.5**	**+3.0**
BUSP	**Coron**	**7.43**	**307**	⇑*e*P			**Pn**	**11 03 02.9**	**-2.1**
ENPP	**El Nido**	**7.66**	**299**	⇑*e*P			**Pn**	**11 03 05.0**	**-3.3**
PPR	**Puerto Princes**	**7.78**	**287**	⇓*e*P			**Pn**	**11 03 06.9**	**-3.0**
PGP	**Puerto Galera**	**7.88**	**319**	*e*P			**Pn**	**11 03 12.0**	**+0.8**
POLP	**Polilio Island**	**8.28**	**329**	⇑*e*P			**P**	**11 03 17.6**	**+0.8**
TGY	**Tagaytay City**	**8.34**	**321**	Pn			**P**	**11 03 16.9**	**-0.7**
	25nm,0.3s,baz=167,slow=5.0,SNR=17								
TGY					LR		LR	11 07 14.5	
	comp=Z,29μm,20.4s,baz=140,slow=44								
BATP	**Bataraza**	**8.48**	**279**	⇑*e*P			**P**	**11 03 22.6**	**+3.0**
LUBP	**Lubang**	**8.52**	**316**	⇑*e*P			**P**	**11 03 22.2**	**+2.1**
BALP	**Baler**	**9.32**	**331**	⇑*e*P			**P**	**11 03 32.2**	**+0.9**
PCPH	**Palayan**	**9.42**	**328**	*e*P			**P**	**11 03 32.9**	**+0.3**
KKM	**Kota Kinabalu**	**10.11**	**262**	⇓*e*P			**P**	**11 03 43.8**	**+1.5**
	337nm,1.9s								
PALP	**Palanan**	**10.15**	**339**	⇑*e*P			**P**	**11 03 43.2**	**+0.5**
SCZP	**Santa Cruz**	**10.26**	**323**	⇑*e*P			**P**	**11 03 45.9**	**+1.7**
CAUP	**Cauayan**	**10.27**	**335**	⇑*e*P			**P**	**11 03 42.5**	**-1.9**
BCPH	**Baguio City Da**	**10.37**	**328**	⇓*e*P			**P**	**11 03 44.9**	**-0.9**
BOLP	**Bolinao**	**10.73**	**325**	⇑*e*P			**P**	**11 03 51.4**	**+0.7**
CVP	**Callao Caves**	**10.96**	**337**	*e*P			**P**	**11 03 52.4**	**-1.4**
APYP	**Conner**	**11.34**	**335**	⇑*e*P			**P**	**11 03 57.4**	**-1.5**
ABRA	**Dolores**	**11.38**	**332**	⇑*e*P			**P**	**11 04 05.1**	**+5.5**
BBP	**Basco**	**13.45**	**342**	⇑*e*P			**P**	**11 04 26.9**	**-0.2**
TATO	**Taipei**	**17.89**	**346**	P			**P**	**11 05 23.2**	**-1.1**
	56nm,0.9s								
QZH	**Quanzhou**	**18.76**	**338**	*i* PR				11 05 32.1	
QZH					S		**S**	**11 08 59.0**	**-0.6**
QZH					AMB		AMB		
	comp=Z,6μm,6.8s								
QZH					LR		LR		
	comp=N,20μm,15.8s								
QZH					LR		LR		
	comp=E,32μm,23.4s								
QZH					LR		LR		
	comp=Z,30μm,17.0s								
GUMO	**Guam**	**19.21**	**70**	*e*P			**P**	**11 05 43.2**	**+2.9**
GUMO					pmax		pmax		
	comp=Z,230nm,1.0s								
GUMO	**Guam**	**19.21**	**70**	*e*P			**P**	**11 05 43.2**	**+2.9**
	comp=Z,232nm,1.1s								
JOW	**Kunigami**	**19.24**	**5**	P			**P**	**11 05 40.2**	**-0.3**
	comp=Z,10nm,0.3s,baz=204,slow=7.5,SNR=36								
JOW					S		**S**	**11 09 18.1**	**+7.7**
	comp=Z,0.3nm,0.3s,baz=236,slow=26,SNR=2.0								
JOW					LR		LR	11 12 14.2	
	comp=Z,5μm,20.4s,baz=56,slow=34								
QIZ	**Qiongzhong**	**19.61**	**307**	⇓P			**P**	**11 05 43.8**	**-1.0**
QIZ					XP			11 05 50.4	
QIZ					PPP		PPP	11 06 06.8	-5.0
QIZ					S		**S**	**11 09 19.8**	**+1.2**
QIZ					XS			11 09 28.1	
QIZ					PCP		PcP	11 09 57.8	-5.5
QIZ					AMB		AMB		
	comp=Z,109nm,1.0s								
QIZ					LR		LR		
	comp=N,12μm,15.5s								
QIZ					LR		LR		
	comp=E,9μm,16.9s								
INGI	**Ingas**	**19.71**	**214**	⇓*e*P			**P**	**11 05 44.7**	**-1.3**
GZH	**Guangzhou**	**19.81**	**323**	P			**P**	**11 05 46.6**	**-0.3**
GZH					S		**S**	**11 09 32.5**	**+10**
GZH					AMB		AMB		
	comp=Z,202nm,0.8s								
GZH					LR		LR		
	comp=N,18μm,19.4s								
GZH					LR		LR		
	comp=E,19μm,20.0s								
GZH					LR		LR		
	comp=Z,11μm,23.1s								
UBT	**Ubonrachathani**	**22.18**	**292**	P			**P**	**11 06 13.0**	**+1.9**
SSE	**Sheshan**	**23.87**	**349**	P			**P**	**11 06 29.8**	**+2.1**
SSE					S		**S**	**11 10 44.1**	**+5.5**
SSE					XS			11 10 57.4	
SSE					PCS			11 13 51.8	
SSE					AMB		AMB		
	comp=Z,790nm,3.4s								
SSE					LR		LR		
	comp=N,4μm,16.5s,MS5.1								
SSE					LR		LR		
	comp=E,3μm,16.5s,MS5.1								
SSE					LR		LR		
	comp=Z,7μm,21.2s,MS5.1								
CHAT	**Chantaburi**	**24.24**	**284**	P			**P**	**11 06 32.0**	**+0.6**
CBIJ	**Chichi jima**	**24.58**	**36**	P			**P**	**11 06 35.1**	**+0.5**
	comp=Z,865nm,1.0s,mb6.2,baz=245,slow=3.2,SNR=40								
CBIJ					S		**S**	**11 10 52.0**	**+1.3**
	comp=Z,94nm,0.8s,baz=325,slow=21,SNR=6.1								
CBIJ					LR		LR	11 14 15.8	
	comp=Z,6μm,19.2s,MS5.1,baz=54,slow=32								
NJ2	**Nanjing**	**25.31**	**345**	*e*P			**P**	**11 06 41.1**	**-0.4**
NJ2					AP		pP	11 06 45.5	-5.0
NJ2					XP		sP	11 06 48.5	-6.1
NJ2					PP		PP	11 07 21.3	+1.0
NJ2					AMB		AMB		
	comp=Z,50nm,0.9s,mb5.0								
NJ2					AMB		AMB		
	comp=Z,2μm,5.5s								
NJ2					LR		LR		
	comp=N,14μm,25.6s,MS5.6								
NJ2					LR		LR		
	comp=E,19μm,21.3s,MS5.6								
NJ2					LR		LR		
	comp=Z,14μm,25.0s,MS5.4								
SNG	**Songkhla**	**25.45**	**271**	P			**P**	**11 06 42.0**	**-1.0**
FITZ	**Fitzroy Crossi**	**25.53**	**181**	⇓*i*P			**P**	**11 06 43.4**	**-0.3**
	comp=Z,286nm,0.9s,mb5.8								
FITZ					*e*S		**S**	**11 11 11.2**	**+4.6**
FITZ					*e*SCS		ScS	11 17 42.2	+3.5
FITZ	**Fitzroy Crossi**	**25.53**	**181**	P			**P**	**11 06 43.2**	**-0.4**
	comp=Z,268nm,0.8s,mb5.8,baz=2.2,slow=7.5,SNR=26								
FITZ					S		**S**	**11 11 08.2**	**+1.6**
	comp=Z,15nm,0.9s,baz=40,slow=6.9,SNR=1.4								
JNU	**Nakatsue**	**25.77**	**9**	P			**P**	**11 06 44.1**	**-1.7**
	comp=Z,56nm,0.9s,mb5.1,baz=160,slow=4.4,SNR=7.5								
JNU					S		**S**	**11 11 15.2**	**+4.7**
	comp=Z,7.7nm,0.7s,baz=202,slow=26,SNR=1.9								
JNU					LR		LR	11 16 13.8	
	comp=Z,2μm,18.3s,MS4.7,baz=189,slow=35								
GYA	**Guiyang**	**26.46**	**318**	⇓*i*P			**P**	**11 06 52.5**	**+0.2**
GYA					S		**S**	**11 11 29.0**	**+6.9**
GYA					AMB		AMB		
	comp=Z,2μm,9.0s								
GYA					LR		LR		
	comp=N,9μm,19.7s,MS5.5								
GYA					LR		LR		
	comp=E,10μm,20.0s,MS5.5								
GYA					LR		LR		
	comp=Z,10μm,22.4s,MS5.3								
PMG	**Port Moresby**	**26.78**	**129**	P			**P**	**11 06 55.6**	**+0.3**
	comp=Z,111nm,0.8s,mb5.4,baz=336,slow=6.1,SNR=18								
PMG					ScP			11 13 58.2	
	comp=Z,24nm,0.9s,baz=9.1,slow=1.9,SNR=5.5								
PMG	**Port Moresby**	**26.78**	**129**	*e*P			**P**	**11 06 55.7**	**+0.4**
PMG					pmax		pmax		
	comp=Z,230nm,0.9s								
PMG	**Port Moresby**	**26.78**	**129**	*e*P			**P**	**11 06 55.6**	**+0.3**
JHJ	**Hachijo jima 2**	**28.32**	**24**	P			**P**	**11 07 08.7**	**-0.4**
	comp=Z,159nm,1.0s,mb5.6,baz=250,slow=20,SNR=2.3								
JHJ					LR		LR	11 16 08.4	
	comp=Z,7μm,20.1s,MS5.2,baz=202,slow=32								
KMI	**Kunming**	**28.45**	**311**	*e*P			**P**	**11 07 11.0**	**+0.7**
KMI					AP		pP	11 07 15.0	-4.4
KMI					XP		sP	11 07 17.6	-5.8
KMI					PP		PP	11 08 02.3	+0.1
KMI					AMB		AMB		
	comp=Z,49nm,1.1s,mb5.0								
KMI					AMB		AMB		
	comp=Z,415nm,3.1s								
KMI					LR		LR		
	comp=N,6μm,14.9s,MS5.5								
KMI					LR		LR		
	comp=E,8μm,14.9s,MS5.5								
KMI					LR		LR		
	comp=Z,13μm,24.6s								
WRAB	**Tennant Creek**	**28.47**	**164**	*e*P			**P**	**11 07 09.7**	**-0.9**
	comp=Z,394nm,0.9s,mb6.0								
WRAB					LR		LR		
	comp=Z,12μm,19.0s,MS5.5								
WRA	**Warramunga Arr**	**28.48**	**164**	P			**P**	**11 07 09.5**	**-1.1**
	comp=Z,45nm,1.0s,mb5.0,baz=347,slow=9.5,SNR=19								
WRA					S		**S**	**11 11 54.3**	**-0.4**
	comp=Z,13nm,1.3s,baz=317,slow=27,SNR=2.8								
WB2	**Warramunga Arr**	**28.48**	**164**	⇓*i*P			**P**	**11 07 10.1**	**-0.5**
WB2					*e*S		**S**	**11 11 55.9**	**+1.2**
WB2					*i* SCS		ScS	11 18 02.4	+11
CMAR	**Chiang Mai Arr**	**28.70**	**295**	P			**P**	**11 07 11.1**	**-1.5**
	comp=Z,34nm,1.0s,mb5.0,baz=121,slow=7.6,SNR=36								
CMAR					S		**S**	**11 11 58.3**	**+0.1**
	comp=Z,2.3nm,0.9s,baz=117,slow=2.0,SNR=2.3								
CMAR					ScP			11 14 05.0	
	comp=Z,2.9nm,1.0s,baz=104,slow=2.1,SNR=3.9								
CMAR					LR		LR	11 19 33.0	
	comp=Z,10μm,18.9s,MS5.5,baz=336,slow=39								
INCN	**Inchon**	**29.77**	**1**	PFAKE				11 07 30.0	+8.0
INCN					LR		LR		
	comp=Z,7μm,22.0s,MS5.2								
MAJO	**Matsushiro**	**30.81**	**19**	*e*P			**P**	**11 07 28.9**	**-2.3**
	comp=Z,58nm,1.0s,mb5.4								
MAJO					LR		LR		
	comp=Z,7μm,19.0s,MS5.3								
MAT	**Matsushiro**	**30.81**	**19**	P			**P**	**11 07 29.0**	**-2.2**
MAT					*e*S		**S**	**11 12 23.0**	**-8.5**
MAT	**Matsushiro**	**30.81**	**19**	*e*P			**P**	**11 07 29.0**	**-2.2**
MAT					S		**S**	**11 12 24.0**	**-7.5**
MAT					LR		LR		
	comp=Z,9μm,20.0s,MS5.4								
DL2	**Dalian**	**31.47**	**353**	P			**P**	**11 07 35.8**	**-1.2**
AS12	**Alice Springs**	**31.94**	**167**	⇓*i*P			**P**	**11 07 41.2**	**-0.1**
	comp=Z,78nm,0.7s,mb5.6								
ASAR	**Alice Springs**	**31.94**	**167**	P			**P**	**11 07 40.4**	**-0.9**
	comp=Z,64nm,0.7s,mb5.6,baz=359,slow=7.0,SNR=34								
ASAR					PcP		PcP	11 10 30.2	-0.9
	comp=Z,7.6nm,0.6s,baz=0.9,slow=3.0,SNR=4.0								
ASAR					S		**

comp=Z,31nm,0.7s,mb5.3,baz=321,slow=11,SNR=14
CTA S **S** **11 13 22.0 +3.8**
comp=Z,5.4nm,0.9s,baz=54,slow=21,SNR=3.0
CTA ScP 11 14 21.4
comp=Z,18nm,0.9s,baz=47,slow=3.7,SNR=5.5
CTAO Charters Tower 33.80 145 *e*P **P** **11 07 58.8 +1.3**
comp=Z,42nm,0.8s,mb5.4
CTAO LR LR
comp=E,10μm,22.0s,MS5.5
SNY Shenyang 34.19 356 ⇑P **P** **11 07 59.4 -1.2**
SNY S **S** **11 13 24.4 +0.4**
SNY LR LR
comp=N,6μm,20.4s,MS5.4
SNY LR LR
comp=E,3μm,16.3s,MS5.4
SNY LR LR
comp=Z,6μm,20.7s,MS5.3
LZH Lanzhou 35.01 327 *e*P **P** **11 08 07.8 +0.1**
LZH AMB AMB
comp=Z,122nm,1.5s,mb5.6
LZH AMB AMB
comp=Z,470nm,4.2s
LZH LR LR
comp=N,13μm,16.1s
LZH LR LR
comp=E,16μm,18.4s,MS5.8
HHC Hu-ho-hao-te 35.63 341 ⇑P **P** **11 08 14.8 +1.8**
HHC AP pP 11 08 19.4 -2.8
HHC XP sP 11 08 22.1 -4.0
HHC PP PP 11 09 38.3 +4.5
HHC AMB AMB
comp=Z,465nm,7.1s
HHC LR LR
comp=N,4μm,14.9s,MS5.3
HHC LR LR
comp=E,3μm,19.5s,MS5.3
HHC LR LR
comp=Z,3μm,15.1s,MS5.2
VLA Vladivostok 35.74 7 ⇑*i*P **P** **11 08 14.0 +0.1**
VLA *i* S **S** **11 13 50.0 +1.9**
VLA *i* 11 14 10.0
VLA pmax pmax
comp=N,700nm,4.0s
VLA pmax pmax
comp=Z,1μm,4.0s
VLA pmax pmax
comp=Z,1μm,9.0s
VLA pmax pmax
comp=N,500nm,8.0s
VLA smax
comp=E,500nm,4.0s
VLA smax
comp=N,1μm,8.0s
VLA MLR MLR
comp=Z,7μm,18.0s,MS5.5
VLA MLR MLR
comp=N,4μm,20.0s,MS5.2
VLA MLR MLR
comp=E,2μm,17.0s,MS5.2
CN2 Changchun 36.08 359 *e*P **P** **11 08 17.9 +1.1**
CN2 *e*AP pP 11 08 23.8 -2.2
CN2 AMB AMB
comp=Z,2μm,6.0s
CN2 LR LR
comp=N,5μm,20.0s,MS5.3
CN2 LR LR
comp=E,2μm,20.0s,MS5.3
CN2 LR LR
comp=Z,6μm,21.0s,MS5.3
MDJ Mudanjiang 37.00 4 P **P** **11 08 24.0 -0.5**
MDJ AMB AMB
comp=Z,52nm,0.9s,mb5.4
MDJ AMB AMB
comp=Z,490nm,10.7s
MDJ LR LR
comp=N,4μm,25.9s,MS5.2
MDJ LR LR
comp=E,3μm,28.6s,MS5.2
MDJ LR LR
comp=Z,5μm,25.9s,MS5.2
SHL Shillong 37.34 303 *e*S **S** **11 14 11.5 -1.2**
FORT Forrest 38.18 178 ⇑*i*P **P** **11 08 34.5 0.0**
comp=Z,718nm,0.6s,mb6.6
ASAJ Asahikawa 39.08 19 P **P** **11 08 42.6 +0.7**
comp=Z,141nm,1.0s,mb5.7,baz=238,slow=12,SNR=48
ASAJ S **S** **11 14 42.5 +3.5**
comp=Z,12nm,1.1s,baz=137,slow=27,SNR=5.5
GTA Gaotai 39.61 327 *e*P **P** **11 08 46.5 +0.1**
GTA AP pP 11 08 51.9 -3.7
GTA XP sP 11 08 54.8 -4.7
GTA PP PP 11 10 21.1 -0.1
GTA PCP PcP 11 10 55.0 +1.3
GTA S **S** **11 14 44.6 -2.4**
GTA XS 11 14 57.9
GTA SCS ScS 11 18 52.3 +2.5
GTA AMB AMB
comp=Z,1μm,7.2s
GTA LR LR
comp=N,4μm,20.2s,MS5.5
GTA LR LR
comp=E,5μm,17.1s,MS5.5
GTA LR LR
comp=Z,7μm,17.1s,MS5.5
LSA Lhasa 39.64 308 P **P** **11 08 48.1 +1.4**
LSA AP pP 11 08 56.4 +0.4
LSA XP sP 11 09 00.1 +0.2
LSA PP PP 11 10 17.4 -4.2
LSA PCP PcP 11 10 55.4 +1.5
LSA S **S** **11 14 44.4 -3.2**
LSA XS 11 15 02.5
LSA SS SS 11 17 42.0 +5.4
LSA SCS ScS 11 18 54.3 +4.2
LSA LR LR
comp=N,3μm,24.1s,MS5.2
LSA LR LR
comp=E,2μm,22.2s,MS5.2
LSA LR LR
comp=Z,5μm,18.9s,MS5.4
KLBR Kellerberrin 39.80 191 ⇑*i*P **P** **11 08 47.1 -0.9**
comp=Z,221nm,1.4s,mb5.7
YUK Yuzh-Kuril'sk 40.14 22 *e*P **P** **11 08 50.0 -0.7**
YUK *e* 11 10 26.0
YUK *e*PPP PPP 11 10 51.2 -1.9
YUK *e*S **S** **11 14 56.0 +1.1**
YUK pmax pmax
comp=Z,180nm,0.6s,mb6.0
YUK pmax pmax
comp=Z,3μm,2.5s,mb6.5
YUK pmax pmax
comp=N,5μm,3.5s
YUK pmax pmax
comp=E,2μm,3.5s
YUK pmax pmax
comp=Z,3μm,3.5s
YUK smax
comp=N,2μm,2.0s
YUK smax
comp=E,1μm,2.0s
YUK MLR MLR
comp=N,2μm,20.0s,MS5.5
YUK MLR MLR
comp=Z,8μm,20.0s,MS5.5
YUK MLR MLR
comp=E,6μm,15.0s,MS5.5
WAKE Wake Island 40.85 69 PFAKE 11 09 10.0 +13
WAKE LR LR
comp=Z,1μm,20.0s,MS4.8
NWAO Narrogin (SRO) 41.19 192 P **P** **11 08 58.9 -0.5**
comp=Z,163nm,0.8s,mb5.7,baz=19,slow=9.6,SNR=22
NWAO S **S** **11 15 12.8 +2.1**
comp=Z,17nm,1.2s,baz=334,slow=22,SNR=2.0
NWAO Narrogin (SRO) 41.19 192 *e*P **P** **11 08 58.8 -0.7**
comp=Z,217nm,1.1s,mb5.7
NWAO LR LR
comp=Z,10μm,20.0s,MS5.7
YSS Yuzh-Sakhalins 41.69 17 *e*P **P** **11 09 03.4 0.0**
YSS pmax pmax
comp=Z,110nm,1.0s,mb5.4
YSS Yuzh-Sakhalins 41.69 17 *e*P **P** **11 09 03.4 +0.1**
comp=Z,112nm,1.0s,mb5.5
YSS LR LR
comp=Z,7μm,22.0s,MS5.5
KLR Kul'dur 41.76 5 *e*P **P** **11 09 02.7 -1.2**
KLR pmax pmax
comp=E,75nm,2.4s
KLR pmax pmax
comp=Z,140nm,2.4s,mb5.2
STKA Stephens Creek 41.88 160 ⇓*i*P **P** **11 09 06.2 +1.1**
comp=Z,137nm,0.8s,mb5.6
STKA Stephens Creek 41.88 160 P **P** **11 09 05.4 +0.3**
comp=Z,157nm,0.8s,mb5.7,baz=338,slow=7.5,SNR=77
STKA S **S** **11 15 20.3 -0.5**
comp=Z,5.5nm,0.8s,baz=188,slow=22,SNR=2.0
ULN Ulaanbaatar 43.35 341 *e*P **P** **11 09 15.8 -1.1**
ULN pmax pmax
comp=Z,69nm,1.0s,mb5.3
ULN Ulaanbaatar 43.35 341 *e*P **P** **11 09 15.8 -1.1**
comp=Z,69nm,1.1s,mb5.3
ULN *i* Pr 11 09 19.0
ULN LR LR
comp=Z,5μm,20.0s,MS5.4
SONM Songino Array 43.53 341 P **P** **11 09 16.8 -1.6**
comp=Z,7.9nm,1.0s,mb4.4,baz=166,slow=12,SNR=2.2
BLSP Bilaspur 44.88 294 *i* P **P** **11 09 25.6 -4.0**
KGD Kothagudem 45.52 287 *e*P **P** **11 09 31.7 -3.1**
KGD *e*S **S** **11 16 12.6 -1.3**
ZAK Zakamensk 46.77 340 *e*P **P** **11 09 46.5 +2.3**
CUD Cuddapah 47.07 283 *e*P **P** **11 09 46.5 -0.6**
CUD *e*S **S** **11 16 27.9 -8.2**
CUD *e* 11 44 57.2
HYB Hyderabad 47.50 287 *i* P **P** **11 09 50.5 +0.1**
HYB *e*S **S** **11 16 44.0 +1.9**
HYB *e* 11 17 44.0
HYB *e*ScS ScS 11 19 44.0 +5.0
HYB Hyderabad 47.50 287 ⇓*e*P **P** **11 09 50.5 +0.1**
comp=Z,70nm,1.0s,mb5.5
HYB *e*S **S** **11 16 44.0 +1.9**
TLY Talaya 47.76 341 *e*P **P** **11 09 50.1 -1.9**
TLY *e* 11 11 43.6
TLY *e*S **S** **11 16 46.8 +1.5**
TLY pmax pmax
comp=Z,627nm,1.5s,mb6.4
TLY MLR MLR
comp=Z,29μm,15.0s,MS6.4
CNB Canberra Magne 47.90 154 *e*P **P** **11 09 55.3 +1.9**
comp=Z,56nm,0.9s,mb5.6
IRK Irkutsk 48.05 342 *e*P **P** **11 09 54.3 +0.1**
TOO Toolangi 48.37 160 *e*P **P** **11 09 58.2 +1.2**
comp=Z,29nm,0.9s,mb5.3
MOY Mondy 48.64 339 *e*P **P** **11 10 01.8 +3.0**
NOUC Port Laguerre 49.08 128 *e*P **P** **11 10 03.0 +0.4**
NOUC Port Laguerre 49.08 128 *e*P **P** **11 10 03.0 +0.4**
CLNS Chul'man 49.14 359 *e*P **P** **11 10 05.3 +2.7**
CLNS *e**PP pP 11 10 10.4 -1.6
CLNS *e* 11 11 28.3
CLNS *e* 11 11 55.6
CLNS *e*PPP PPP 11 12 44.9 -5.8
CLNS *e*S **S** **11 17 09.1 +4.4**
CLNS *e*SS SS 11 20 32.2 +0.6
CLNS pmax pmax
comp=N,10.0nm,0.9s
CLNS pmax pmax
comp=Z,40nm,0.9s,mb5.5
CLNS pmax pmax
comp=E,10.0nm,0.8s
CLNS pmax pmax
comp=Z,10.0nm,1.0s,mb4.8
CLNS pmax pmax
comp=N,10.0nm,1.1s
CLNS pmax pmax
comp=E,10.0nm,0.8s
CLNS smax
comp=E,150nm,13.7s
CLNS smax
comp=Z,380nm,12.3s
CLNS smax
comp=N,450nm,11.4s
CLNS MLR MLR
comp=Z,2μm,17.0s,MS5.2
CLNS MLR MLR
comp=N,2μm,16.0s,MS5.3
CLNS MLR MLR
comp=E,700nm,15.0s,MS5.3
DZM Mont Dzumac 49.17 128 *e*P **P** **11 10 04.4 +1.1**
AKL Akola 49.33 291 *i* **P** **11 09 55.4 -9.2**
comp=E,212nm,1.3s,mb6.0
AKL *i* 11 11 29.9
WMQ Urumqi 49.36 323 *e*P **P** **11 10 04.4 -0.1**
WMQ AP pP 11 10 08.9 -5.0
WMQ XP sP 11 10 11.4 -6.2
WMQ PCP PcP 11 11 27.8 +0.8
WMQ AMB AMB
comp=Z,339nm,1.3s,mb6.2
WMQ AMB AMB
comp=Z,2μm,6.3s
WMQ LR LR
comp=N,6μm,20.1s,MS5.7
WMQ LR LR
comp=E,5μm,20.3s,MS5.7
WMQ LR LR
comp=Z,9μm,20.5s,MS5.7
LATR Latur 49.48 288 *e*P **P** **11 10 04.5 -1.2**
comp=Z,95nm,1.5s,mb5.6
SKR Severo-Kuril's 49.59 25 *e*P **P** **11 10 06.5 +0.3**
SKR pmax pmax
comp=N,240nm,1.2s
SKR pmax pmax
comp=Z,320nm,1.2s,mb6.2
NDI New Delhi 50.71 301 *e*P **P** **11 10 16.0 +1.0**
NDI *e* 11 10 28.5
GOA Goa 51.89 284 *e*P **P** **11 10 22.9 -1.2**
POO Poona 52.06 288 *e*P **P** **11 10 19.0 -6.3**
PET Petropavlovsk 52.39 24 *e*P **P** **11 10 28.0 +0.6**
PET *e*S **S** **11 17 54.7 +5.1**
PET pmax pmax
comp=Z,118nm,1.3s,mb5.7
PET smax
comp=N,4μm,22.4s
PET smax
comp=E,2μm,28.1s
PET Petropavlovsk 52.39 24 *e*P **P** **11 10 27.6 +0.2**
comp=E,132nm,1.1s,mb5.8
PET LR LR
comp=Z,5μm,21.0s,MS5.5
AJM Ajmer 52.44 298 ⇓*i*P **P** **11 10 27.0 -1.1**
TAU Tasmania Unive 52.78 161 *e*P **P** **11 10 38.3 +0.5**
comp=Z,89nm,1.2s,mb5.6
TAU LR LR
comp=Z,3μm,19.0s,MS5.4
MKAR Makanchi Array 54.18 324 P **P** **11 10 40.5 -0.2**
comp=Z,248nm,0.9s,mb6.1,baz=122,slow=7.9,SNR=68
MKAR PcP PcP 11 11 44.7 -0.1
comp=Z,65nm,0.9s,baz=118,slow=4.1,SNR=3.1
MKAR S **S** **11 18 16.8 +2.9**
comp=Z,1.6nm,0.9s,baz=135,slow=5.1,SNR=2.5
MKAR LR LR 11 32 52.3
comp=Z,5μm,21.8s,MS5.5,baz=117,slow=35
MKAR PKPPKP 11 40 53.6
comp=Z,1.3nm,1.0s,baz=252,slow=3.8,SNR=5.4
MKAR Makanchi Array 54.18 324 P **P** **11 10 40.1 -0.5**
MKAR pmax pmax
comp=Z,189nm,0.8s
MKAR Makanchi Array 54.18 324 P **P** **11 10 40.5 -0.2**
MKAR PcP PcP 11 11 44.7 -0.1
MKAR S **S** **11 18 16.8 +2.9**
MKAR LR LR 11 32 52.3
MKAR P'P' 11 40 53.6
YAK Yakutsk 54.40 2 *e*P **P** **11 10 40.2 -1.8**
YAK *e**PP pP 11 10 47.7 -3.8
YAK *e* 11 11 45.7
YAK *e* 11 12 40.8
YAK *e*S **S** **11 18 16.3 -0.3**
YAK *e*PS PS 11 18 28.8 -2.6
YAK *e*SS SS 11 22 01.8 +3.3
YAK pmax pmax
comp=N,32nm,1.0s
YAK pmax pmax
comp=E,8.0nm,1.0s
YAK pmax pmax
comp=Z,97nm,1.0s,mb5.7
YAK pmax pmax
comp=Z,28nm,1.0s,mb5.2
YAK pmax pmax
comp=N,15nm,0.8s
YAK pmax pmax
comp=E,6.0nm,0.8s
YAK smax
comp=E,12nm,1.1s
YAK smax
comp=N,14nm,1.0s
YAK Yakutsk 54.40 2 *e*P **P** **11 10 39.0 -3.0**
comp=N,111nm,0.9s,mb5.8
YAK LR LR
comp=Z,4μm,20.0s,MS5.5
KSH Kashi 55.05 313 P **P** **11 10 48.1 +0.9**
KSH *e*AP pP 11 10 52.6 -4.1
KSH *e*XP sP 11 10 55.1 -5.2
KSH *e*PCP PcP 11 11 48.8 +0.5
KSH AMB AMB
comp=Z,270nm,1.4s,mb6.1
KSH AMB AMB
comp=Z,2μm,3.2s
KSH LR LR
comp=N,9μm,14.6s,MS6.0
KSH LR LR
comp=E,6μm,15.4s,MS6.0
MA2 Magadan 55.11 15 *e*P **P** **11 10 47.0 -0.3**
MA2 *e*S **S** **11 18 26.9 +0.7**
MA2 pmax pmax
comp=N,20nm,1.3s
MA2 pmax pmax
comp=Z,30nm,1.3s,mb5.2
MA2 pmax pmax
comp=E,20nm,1.5s
MA2 MLR MLR
comp=Z,14μm,21.0s,MS6.0
MA2 Magadan 55.11 15 *e*P **P** **11 10 46.8 -0.5**
comp=Z,62nm,1.0s,mb5.6
MA2 LR LR
comp=Z,7μm,21.0s,MS5.7
AAA Alma-Ata 55.85 318 *e*P **P** **11 10 55.0 +2.1**
AAA *e*S **S** **11 18 43.0 +6.7**
AAA pmax pmax
comp=Z,900nm,4.0s
AAA smax
comp=N,1μm,10.0s
AAA smax
comp=E,700nm,10.0s
AAA MLR MLR
comp=N,2μm,17.0s,MS5.5
AAA MLR MLR
comp=E,3μm,17.0s,MS5.5
AAA MLR MLR
comp=Z,4μm,17.0s,MS5.5
MIDW Midway 56.88 61 PFAKE 11 11 10.0 +10
MIDW LR LR
comp=Z,23μm,20.0s,MS6.3
ZAL Zalesovo 56.99 332 P **P** **11 10 59.5 -1.4**
comp=Z,33nm,0.8s,mb5.4,baz=257,slow=6.3,SNR=31
ZAL S **S** **11 18 50.9 -0.3**
comp=Z,0.7nm,0.3s,baz=154,slow=23,SNR=3.7
ZAL LR LR 11 38 27.7
comp=Z,6μm,18.0s,MS5.8,baz=251,slow=39
ZAL PKPPKP 11 40 55.0
comp=Z,0.8nm,0.3s,baz=242,slow=12,SNR=3.4
FRU Bishkek 57.24 317 *e*P **P** **11 11 06.0 +3.2**
FRU pmax pmax
comp=Z,450nm,2.8s,mb6.0
FRU pmax pmax
comp=Z,330nm,2.0s,mb6.0
NVS Novosibirsk 58.26 332 *i* P **P** **11 11 06.6 -3.2**
NVS *e*S **S** **11 19 13.6 +5.6**
NVS *i* 11 20 52.6
NVS pmax pmax
comp=Z,272nm,1.6s,mb6.0
NVS pmax pmax
comp=N,288nm,2.0s
NVS pmax pmax
comp=E,149nm,2.0s
NVS smax
comp=N,143nm,2.4s
KURK Kurchatov 58.29 326 *e*P **P** **11 11 08.8 -1.2**
KURK *e* 11 11 14.3
FX1 Attu Island--F 59.01 31 P **P** **11 11 14.9 -0.1**
comp=N,264nm,0.9s,mb6.3,baz=213,slow=2.4,SNR=16
SMY Shemya 59.41 32 PFAKE 11 11 30.0 +12
SMY LR LR
comp=Z,7μm,22.0s,MS5.8
QUE Quetta 59.77 300 *e*P **P** **11 11 19.0 -1.7**
QUE *e*S S 11 20 32.0 +64
KKAR Karatay Array 60.15 316 *i* P **P** **11 11 21.4 -1.7**
KKAR pmax pmax
comp=Z,19nm,0.7s,mb5.2
VOSK Vostochnaya 63.43 326 P **P** **11 11 43.1 -1.8**
VOSK pmax pmax
comp=Z,113nm,1.3s,mb5.8
VOSK Vostochnaya 63.43 326 *i* P **P** **11 11 43.2 -1.7**
BVA0 Borovoye Array 63.88 326 *i* P **P** **11 11 46.8 -1.0**
BVA0 pmax pmax
comp=Z,4.0nm,0.9s,mb4.5
BVAR Borovoye Array 63.88 326 P **P** **11 11 46.8 -1.1**
comp=Z,37nm,0.8s,mb5.5,baz=121,slow=8.6,SNR=100
BVAR S **S** **11 20 18.1 -1.4**
comp=Z,0.2nm,0.3s,baz=195,slow=33,SNR=2.3
BVAR LR LR 11 39 49.8
comp=Z,4μm,21.8s,MS5.5,baz=355,slow=36
BRVK Borovoye 63.95 326 *e*P **P** **11 11 47.2 -1.1**
TIXI Tiksi 64.02 1 *e*P **P** **11 11 46.9 -1.6**
TIXI *e*S **S** **11 20 20.3 -0.7**
TIXI pmax pmax
comp=Z,583nm,1.2s,mb6.5
TIXI Tiksi 64.02 1 *e*P **P** **11 11 46.4 -2.1**
comp=Z,185nm,1.6s,mb5.9
TIXI LR LR
comp=Z,6μm,22.0s,MS5.7
ZRNK Zerenda 64.62 326 P **P** **11 11 51.4 -1.3**
ZRNK pmax pmax
comp=Z,237nm,1.3s,mb6.1
ZRNK Zerenda 64.62 326 ⇓*i*P **P** **11 11 51.4 -1.3**
RPZ Rata Peaks 65.16 146 P **P** **11 11 56.1 -0.2**
comp=Z,32nm,0.8s,mb5.4,baz=339,slow=0.2,SNR=12
RPZ LR LR 11 38 15.7
comp=Z,4μm,19.7s,MS5.6,baz=310,slow=34
URZ Urewera 65.66 138 P **P** **11 11 59.9 +0.2**
comp=Z,23nm,0.9s,mb5.2,baz=278,slow=6.9,SNR=7.2
URZ S S 11 20 46.0 +4.3
comp=Z,8.6nm,1.0s,baz=256,slow=18,SNR=1.9
URZ LR LR 11 36 03.0
comp=Z,4μm,19.6s,MS5.7,baz=131,slow=32
SNZO South Karori 65.83 142 PFAKE 11 12 10.0 +9.3
SNZO LR LR
comp=Z,4μm,20.0s,MS5.6
BILL Bilibino 65.97 15 *d*P **P** **11 12 00.4 -0.7**
BILL *e**PP pP 11 12 17.1 +6.3
BILL *i* 11 12 29.9
BILL *e* 11 14 26.7
BILL *e*S S 11 20 48.9 +3.8
BILL pmax pmax
comp=Z,78nm,1.9s,mb5.4
BILL MLR MLR
comp=Z,4μm,20.0s,MS5.6
BILL Bilibino 65.97 15 *e*P **P** **11 12 00.2 -0.9**
comp=Z,68nm,1.4s,mb5.5
AB31 Akbulak array 68.92 320 P **P** **11 12 18.4 -1.6**
AB31 pmax pmax
comp=Z,157nm,1.5s,mb5.7
UNV Unalaska Valle 70.54 35 *e*P **P** **11 12 29.4 -0.4**
comp=Z,184nm,0.7s,mb6.1
UNV LR LR
comp=Z,15μm,22.0s,MS6.2
ARU Arti 71.47 327 *d*P **P** **11 12 33.7 -1.6**
ARU pmax pmax
comp=Z,181nm,1.9s,mb5.7
ARU MLR MLR
comp=Z,2μm,17.0s,MS5.5
ARU Arti 71.47 327 ⇓*i*P **P** **11 12 33.9 -1.4**
ARU *e* pP 11 12 44.4 -0.6
ARU *i* SP sP 11 12 49.1 +0.6
ARU *e* 11 12 53.7
ARU *e* 11 15 11.2
ARU *e*S S 11 21 51.4 +1.0
ARU *i* 11 22 38.5
ARU pmax pmax
comp=Z,50nm,0.8s,mb5.5
ARU Arti 71.47 327 ⇓*e*P **P** **11 12 33.7 -1.6**
comp=Z,60nm,1.0s,mb5.5
ARU LR LR
comp=Z,3μm,21.0s,MS5.6
TNA Tin City 73.24 23 *e*P **P** **11 12 45.4 -0.3**
comp=Z,8.9nm,0.9s,mb4.7
TNA LR LR
comp=Z,2μm,22.0s,MS5.2
THR Tehran 73.58 305 P **P** **11 12 47.2 -1.0**
comp=Z,6.1nm,0.7s,mb4.6,baz=92,slow=3.9,SNR=17
THR LR LR 11 51 31.7
comp=Z,616nm,20.2s,MS4.9,baz=311,slow=41
HASS Wahat al Ahsa' 74.70 294 P **P** **11 12 54.3 -0.7**

POHA **Pohakuloa** **76.39 72** PFAKE 11 13 20.0 +15
POHA LR LR
comp=Z,3μm,19.0s,MS6.6
MAK **Makhachkala** **76.67 312** *e*P **P** **11 13 06.0 +0.3**
MAK *e*S S 11 22 46.0 -2.8
MAK *i* PS PS 11 23 32.0 +0.7
MAK pmax pmax
comp=Z,800nm,3.0s
MAK smax
comp=N,1μm,9.0s
MAK smax
comp=E,1μm,9.0s
SVW **Sparrevohn** **77.65 29** *e*P **P** **11 13 11.7 +1.0**
comp=E,6.9nm,0.7s,mb4.7
MIR **Mirnyy** **77.78 193**α *i*P **P** **11 13 11.0 -0.4**
MIR pmax pmax
comp=Z,150nm,1.0s,mb5.9
MIR pmax pmax
comp=Z,700nm,5.0s
MIR MLR MLR
comp=Z,2μm,16.0s,MS5.6
RAR **Rarotonga** **77.95 114** P **P** **11 13 13.8 +0.6**
comp=Z,28nm,1.1s,mb5.1,baz=316,slow=9.4,SNR=3.0
RAR LR LR 11 42 39.4
comp=Z,1μm,18.2s,MS5.3,baz=84,slow=32
GNI **Garni** **78.70 309** P **P** **11 13 17.4 +0.5**
comp=Z,4.2nm,0.5s,mb4.6,baz=345,slow=20,SNR=3.8
GNI **Garni** **78.70 309** P **P** **11 13 17.4 +0.5**
KDAK **Kodiak Island** **78.90 33** *e*P **P** **11 13 18.5 +0.8**
comp=Z,123nm,1.2s,mb5.7
KDAK LR LR
comp=Z,8μm,22.0s,MS6.0
RSO **Redoubt South** **78.99 30** *e*P **P** **11 13 20.9 +2.8**
IMA **Indian Mountai** **79.07 24** *e*P **P** **11 13 19.7 +1.3**
comp=Z,30nm,1.1s,mb5.1
ZEI **Tsey** **79.31 312** *e*P **P** **11 13 19.0 -1.3**
ZEI *e* 11 13 26.0
ZEI *e* 11 16 14.0
ZEI *e*S S 11 23 16.0 -1.2
ZEI *e*PS PS 11 24 05.0 -0.1
ZEI *i* SS SS 11 28 20.0 -7.3
ZEI pmax pmax
comp=Z,200nm,2.0s,mb5.7
ZEI MLR MLR
comp=Z,2μm,20.0s,MS5.5
SPU **Mount Spurr** **79.38 29** *e*P **P** **11 13 20.2 0.0**
PYA **Pyatigorsk** **79.91 313** *e*P **P** **11 13 26.0 +2.6**
PYA *i* 11 24 32.0
PYA MLR MLR
comp=N,5μm,21.0s
GOF **Gofitskoye** **79.92 314** *e*P **P** **11 13 25.0 +1.5**
GOF pmax pmax
comp=Z,230nm,3.0s
KIV **Kislovodsk** **80.18 313** *e*P **P** **11 13 25.2 +0.3**
KIV *e* 11 16 31.4
KIV *e*PPP PPP 11 18 16.4 -3.6
KIV *i* S S 11 23 27.2 +1.0
KIV *e*SS SS 11 28 37.5 -2.8
KIV pmax pmax
comp=Z,20nm,0.9s,mb5.0
KIV **Kislovodsk** **80.18 313** *e*P **P** **11 13 23.8 -1.1**
comp=Z,42nm,1.1s,mb5.3
KIV LR LR
comp=Z,2μm,19.0s,MS5.5
SLKM **Skilak Lake** **80.24 30** P **P** **11 13 24.6 -0.3**
SLKM **Skilak Lake** **80.24 30** P **P** **11 13 23.6 -1.2**
FIB **Fire Island** **80.29 29** PFAKE 11 13 40.0 +15
FIB LR LR
comp=Z,16μm,22.0s,MS6.3
ARSS **Ar Rass** **80.50 295** P **P** **11 13 26.2 -0.7**
TATS **Tathlith** **80.75 289** P **P** **11 13 26.7 -1.6**
PMR **Palmer** **80.80 29** *e*P **P** **11 13 27.8 0.0**
comp=Z,55nm,1.1s,mb5.4
DJNS **Zahran al Janu** **80.85 287** P **P** **11 13 29.2 +0.3**
AFFS **'Afif** **80.85 293** P **P** **11 13 28.3 -0.5**
MCK **McKinley** **80.94 27** P **P** **11 13 28.6 +0.1**
MCK pmax pmax
comp=Z,67nm,1.2s,mb5.5
MCK **McKinley** **80.94 27** *e*P **P** **11 13 28.1 -0.4**
comp=Z,67nm,1.2s,mb5.5
MCK LR LR
comp=Z,3μm,20.0s,MS5.6
SML **Sawmill** **81.19 29** P **P** **11 13 30.6 +0.8**
SML **Sawmill** **81.19 29** *e*P **P** **11 13 30.2 +0.4**
COLA **College** **81.43 26** *e*P **P** **11 13 31.4 +0.4**
COLA pmax pmax
comp=Z,24nm,1.0s,mb5.1
COLA **College** **81.43 26** *e*P **P** **11 13 30.6 -0.4**
comp=Z,24nm,1.0s,mb5.1
COLA LR LR
comp=Z,5μm,20.0s,MS5.9
HILS **Ha'il** **81.69 297** P **P** **11 13 33.3 +0.2**
ILAR **Eielson Array** **81.84 26** P **P** **11 13 32.6 -0.5**
comp=Z,11nm,0.9s,mb4.8,baz=245,slow=5.7,SNR=9.8
ILAR PKKPbc 11 32 04.0
comp=Z,1.5nm,0.9s,baz=23,slow=2.0,SNR=13
ILAR PKPPKP 11 40 09.0
comp=Z,0.2nm,0.7s,baz=117,slow=2.0,SNR=4.1
TOA **Tolsona** **82.20 28** *e*P **P** **11 13 36.8 +1.7**
comp=Z,85nm,1.0s,mb5.6
FRSS **Farasan al Kab** **82.30 286** P **P** **11 13 36.6 +0.1**
VOR **Voronezh** **82.30 321** *e*P **P** **11 13 35.0 -0.8**
VOR *e**SP sP 11 13 46.0 -2.9
VOR *e* 11 23 50.0
VOR pmax pmax
comp=Z,170nm,1.8s,mb5.7
VOR pmax pmax
comp=N,50nm,1.6s
VOR pmax pmax
comp=E,90nm,1.7s
SOC **Sochi** **82.34 313***c* *i*P **P** **11 13 38.5 +2.3**
SOC *e* 11 16 46.4
SOC *e*S S 11 23 48.4 -0.2
SOC *e*SSS SSS 11 32 34.5 -1.9
SOC pmax pmax
comp=Z,30nm,0.7s,mb5.3
SOC pmax pmax
comp=N,10.0nm,0.8s
SOC pmax pmax
comp=E,40nm,0.9s
SOC MLR MLR
comp=N,2μm,21.0s,MS5.8
SOC MLR MLR
comp=Z,2μm,21.0s,MS5.5
SOC MLR MLR
comp=E,4μm,24.0s,MS5.8
EYAK **Cordova Ski Ar** **82.45 30** *e*P **P** **11 13 37.6 +1.2**
BLJS **Baljurashi** **82.49 289** P **P** **11 13 37.9 +0.5**
MOS **Moscow** **83.04 325** *e*P **P** **11 13 38.9 -0.6**
MOS *e* 11 16 51.4
MOS *e*S S 11 23 52.6 -2.7
MOS *i* 11 23 58.0
MOS *e*PS PS 11 24 48.2 -3.3
MOS pmax pmax
comp=Z,170nm,0.9s,mb6.1
MOS MLR MLR
comp=Z,4μm,18.0s,MS5.8
MOS MLR MLR
comp=N,2μm,17.0s,MS5.8
MOS MLR MLR
comp=E,4μm,19.0s,MS5.8
LVZ **Lovozero** **83.65 338** *e*P **P** **11 13 45.0 +2.6**
LVZ *e*S S 11 24 02.8 +1.6
LVZ pmax pmax
comp=Z,100nm,1.2s,mb5.8
LVZ pmax pmax
comp=N,9.0nm,0.7s
LVZ pmax pmax
comp=E,4.0nm,1.1s
LVZ pmax pmax
comp=Z,260nm,1.5s,mb6.1
LVZ smax
comp=E,220nm,5.7s
LVZ smax
comp=N,60nm,2.1s
LVZ MLR MLR
comp=N,2μm,20.0s,MS5.7
LVZ MLR MLR
comp=Z,3μm,20.0s,MS5.7
LVZ MLR MLR
comp=E,3μm,24.0s,MS5.7
LVZ **Lovozero** **83.65 338**⇑ *e*P **P** **11 13 42.3 -0.1**
OBN **Obninsk** **83.68 325***c* *i*P **P** **11 13 41.4 -1.4**
OBN *e*S S 11 24 08.3 +6.6
OBN *e*SS SS 11 29 28.3 -3.5
OBN pmax pmax
comp=Z,214nm,1.8s,mb6.0
OBN MLR MLR
comp=Z,3μm,20.0s,MS5.6
OBN **Obninsk** **83.68 325** *e*P **P** **11 13 42.1 -0.8**
comp=Z,172nm,1.3s,mb6.0
OBN LR LR
comp=Z,3μm,20.0s,MS5.6
ANN **Anapa** **83.90 314** *e*P **P** **11 13 41.4 -2.8**
ANN *e**PP pP 11 13 52.5 -1.6
ANN *e*S S 11 23 59.5 -4.7
ANN pmax pmax
comp=Z,40nm,1.5s,mb5.3
KBRS **Khaybar** **84.08 295** P **P** **11 13 46.0 +0.4**
APA **Apatity** **84.15 337**⇓ *i*P **P** **11 13 44.9 0.0**
APA *i* S S 11 24 05.0 -1.2
APA *i* PS PS 11 24 59.0 -5.5
APA pmax pmax
comp=Z,54nm,1.1s,mb5.6
APA pmax pmax
comp=Z,700nm,3.0s
APA MLR MLR
comp=Z,4μm,18.0s,MS5.8
DAWY **Dawson** **85.13 26** *e*P **P** **11 13 51.0 +1.1**
YNBS **Yanbu' al Bahr** **85.37 294** P **P** **11 13 52.0 0.0**
JOF **Joensuu** **85.57 333** *e*p **P** **11 13 51.6 -0.5**
comp=Z,337nm,1.8s,mb6.3
JOF **Joensuu** **85.57 333** *e*P **P** **11 13 51.6 -0.5**
JOF pmax pmax
comp=Z,337nm,1.8s,mb6.3
KEV **Kevo** **86.14 340** *e*p **P** **11 13 53.3 -1.5**
comp=Z,16nm,1.1s,mb5.2
KEV **Kevo** **86.14 340** *e*P **P** **11 13 53.3 -1.5**
KEV pmax pmax
comp=Z,16nm,1.1s,mb5.2
TBKS **Tabuk** **86.23 298** P **P** **11 13 56.7 +0.5**
SIM **Simferopol'** **86.23 315** *e*P **P** **11 13 55.4 -0.5**
SIM *e*S S 11 24 29.0 +2.0
SIM pmax pmax
comp=Z,50nm,0.7s,mb5.8
SIM MLR MLR
comp=Z,2μm,21.0s,MS5.6
SIM **Simferopol'** **86.23 315** *e*P **P** **11 13 56.0 +0.1**
PUL **Pulkovo** **86.51 330**⇑ *e*P **P** **11 13 57.3 +0.5**
SPITS **Spitsbergen Ar** **86.64 349** P **P** **11 13 56.7 -0.5**
comp=Z,8.7nm,0.8s,mb5.0,SNR=9.8
ARCES **ARCESS Array B** **86.70 340** P **P** **11 13 57.1 -0.4**
comp=Z,15nm,1.0s,mb5.2,baz=85,slow=6.2,SNR=22
ARCES PKKPbc 11 31 53.6
comp=Z,2.0nm,1.0s,baz=326,slow=8.7,SNR=2.7
JMQS **Jabal Moqyreh** **86.74 299** P **P** **11 13 58.9 +0.1**
INK **Inuvik** **86.77 22** P **P** **11 13 56.8 -1.1**
comp=Z,25nm,1.2s,mb5.3,baz=293,slow=6.6,SNR=12
INK **Inuvik** **86.77 22** P **P** **11 13 58.4 +0.5**
INK pmax pmax
comp=Z,28nm,1.2s
INK **Inuvik** **86.77 22** *e*P **P** **11 13 56.8 -1.1**
comp=Z,28nm,1.3s,mb5.3
KBS **Kingsbay** **87.16 350** PFAKE 11 14 10.0 +10
KBS LR LR
comp=Z,3μm,20.0s,MS5.7
MAW **Mawson** **87.19 200**⇑ *i*P **P** **11 13 59.7 -0.3**
comp=Z,26nm,0.8s,mb5.5
MAW **Mawson** **87.19 200** P **P** **11 13 59.4 -0.6**
comp=Z,36nm,0.9s,mb5.6,baz=54,slow=5.7,SNR=23
BRTR **Keskin Array B** **87.24 310** P **P** **11 13 59.6 -1.2**
comp=Z,6.0nm,0.8s,mb4.8,baz=119,slow=3.8,SNR=15
BRTR LR LR 11 56 45.8
comp=Z,839nm,21.3s,MS5.1,baz=80,slow=38
AYUS **'Aynunah** **87.36 298** P **P** **11 14 01.4 -0.3**
JMOS **Jabal al Moall** **87.37 299** P **P** **11 14 01.9 +0.1**
ALWS **Ilw as Safayha** **87.39 299** P **P** **11 14 02.0 +0.1**
BDAS **Al Bad'** **87.47 298** P **P** **11 14 02.2 -0.1**
HAQS **Haql** **87.55 299** P **P** **11 14 02.6 0.0**
TAYS **Tayyib Ism** **87.66 298** P **P** **11 14 03.2 0.0**
KAF **Kangasniemi** **88.00 332** *e*p **P** **11 14 03.2 -0.7**
baz=73,slow=4.4
SBA **Scott Base** **88.19 172** P **P** **11 14 06.9 +2.3**
SBA pmax pmax
comp=Z,240nm,1.8s,mb6.1
SBA **Scott Base** **88.19 172** *e*P **P** **11 14 05.8 +1.2**
comp=Z,241nm,1.8s,mb6.1
SBA LR LR
comp=Z,1μm,20.0s,MS5.4
SIT **Sitka** **88.24 33** P **P** **11 14 11.2 +6.0**
SIT pmax pmax
comp=Z,68nm,1.6s,mb5.6
SIT **Sitka** **88.24 33** *e*P **P** **11 14 07.2 +1.9**
comp=Z,68nm,1.6s,mb5.6
SIT LR LR
comp=Z,4μm,21.0s,MS5.8
FINES **FINESS Array B** **88.25 332** P **P** **11 14 04.4 -0.8**
comp=Z,14nm,0.6s,mb5.4,baz=63,slow=4.8,SNR=97
MNK **Minsk** **88.77 325** *e*P **P** **11 14 07.0 -0.8**
TRO **Tromso** **88.90 340** *e*P **P** **11 14 07.8 -0.3**
TRO *e*SKSa 11 24 34.0
TRO AMS AMS 12 02 52.9
comp=Z,2μm,16.4s,MS5.5
KMBO **Kilima Mbogo** **89.19 269** P **P** **11 14 10.5 -0.3**
comp=Z,5.9nm,0.9s,mb4.9,baz=28,slow=8.7,SNR=8.1
KMBO PP PP 11 17 42.7 -0.9
comp=Z,8.0nm,1.1s,baz=54,slow=4.4,SNR=6.8
KMBO LR LR 11 57 10.0
comp=Z,733nm,18.6s,MS5.1,baz=277,slow=38
KMBO **Kilima Mbogo** **89.19 269** *e*P **P** **11 14 08.1 -2.7**
comp=Z,16nm,1.4s,mb5.2
KMBO LR LR
comp=Z,777nm,19.0s,MS5.2
KIS **Kishinev** **89.58 317** *e*P **P** **11 14 14.0 +2.2**
KIS *e* 11 17 49.0
KIS *e*S S 11 24 59.0 +0.7
KIS *e*PS PS 11 26 06.0 -4.6
KIS *e*SS SS 11 30 53.0 -5.1
CFR **Carcaliu** **90.38 316**⇓ *i*P **P** **11 14 15.5 -0.1**
DLBC **Dease Lake** **90.68 31** P **P** **11 14 18.1 +1.4**
comp=Z,4.0nm,1.0s,mb4.7,baz=320,slow=7.9,SNR=3.5
VRI **Vrincioaia** **91.22 316**⇑ *i*P **P** **11 14 19.6 +0.2**
VRI **Vrincioaia** **91.22 316**⇑ *i*P **P** **11 14 19.6 +0.1**
PRD **Provadia** **91.29 314** *e*P **P** **11 14 20.0 +0.1**
SUW **Suwalki** **91.54 325** *e*P **P** **11 14 19.8 -0.9**
SUW *e*pP pP 11 14 23.5 -7.1
SUW *e*SKS SKS 11 24 50.7 -7.1
SUW *e*S S 11 25 19.1 +3.4
SUW MLR MLR 11 56 29.5
comp=Z,3μm,23.5s,MS5.7
SUW **Suwalki** **91.54 325** *e*P **P** **11 14 19.8 -0.9**
SUW *e* 11 24 50.7
SUW *e*S S 11 25 19.1 +3.4
SUW MLR MLR
comp=Z,3μm,23.5s,MS5.7
MLR **Muntele Rosu** **91.83 316**⇑ *i*P **P** **11 14 25.4 +3.1**
MLR **Muntele Rosu** **91.83 316**⇑ *i*P **P** **11 14 25.4 +3.1**
BUC1 **Bucharest** **92.02 315**⇑ *i*P **P** **11 14 27.0 +3.8**
BUC1 **Bucharest** **92.02 315**⇑ *i*P **P** **11 14 27.0 +3.8**
LVV **L'vov** **92.09 321** *e*P **P** **11 14 22.0 -1.3**
KWP **Kalwaria** **92.97 321** *e*P **P** **11 14 28.5 +1.1**
KWP *e*pP pP 11 14 33.5 -3.8
KWP *e*SKS SKS 11 24 58.7 -7.3
KWP *e*S S 11 25 28.8 +0.5
KWP *e*sS 11 25 40.7
KWP MLR MLR 11 57 16.6
comp=Z,3μm,23.7s,MS5.7
KWP **Kalwaria** **92.97 321** *e*P **P** **11 14 28.5 +1.1**
KWP *e* 11 24 58.7
KWP *e*S S 11 25 28.8 +0.5
KWP MLR MLR
comp=Z,3μm,23.7s,MS5.7
KDZ **Kurdzhali** **93.05 313** *e*P **P** **11 14 29.0 +1.0**
WAR **Warsaw** **93.27 324** *e*P **P** **11 14 29.2 +0.5**
WAR *e*pP pP 11 14 32.8 -5.9
WAR *e*S S 11 25 34.7 +3.8
WAR MLR MLR 11 53 17.4
comp=Z,3μm,27.4s,MS5.6
WAR **Warsaw** **93.27 324** *e*P **P** **11 14 29.2 +0.5**
WAR *e*S S 11 25 34.7 +3.8
NSS **Namsos** **93.34 337** *e*P **P** **11 14 27.0 -1.7**
NSS AMS AMS 12 01 29.2
comp=Z,2μm,18.1s,MS5.6
DAG **Danmarks Havn** **93.40 352**⇑ *i*P **P** **11 14 27.8 -1.0**
comp=Z,7.5nm,0.8s,mb5.2
DAG *i* 11 14 44.9
comp=Z,2μm,21.0s
DAG **Danmarks Havn** **93.40 352**⇑ *e*P **P** **11 14 27.8 -1.0**
DAG *i* 11 14 44.9
DAG pmax pmax
comp=Z,8.0nm,0.8s,mb5.2
DAG MLR MLR
comp=Z,2μm,21.0s,MS5.5
DAG MLR MLR
comp=N,2μm,20.0s,MS5.7
DAG MLR MLR
comp=E,2μm,21.0s,MS5.7
UZH **Uzhgorod** **93.49 320** *e*P **P** **11 14 30.0 +0.2**
CRVS **Cervenica-Dubn** **93.95 320** *e*P **P** **11 14 32.8 +0.9**
MMB **Musomiste** **94.30 313** *e*P **P** **11 14 30.0 -3.7**
VTS **Vitosha** **94.43 314** *e*P **P** **11 14 33.0 -1.3**
NIE **Niedzica** **94.52 321** *e*P **P** **11 14 35.5 +0.9**
OJC **Ojcow** **94.60 322**⇓ *e*P **P** **11 14 34.9 0.0**
OJC *e*PP PP 11 18 27.5 +2.1
OJC *e*SKS(ac) 11 25 11.6
OJC *e*S S 11 25 46.3 +3.9
OJC *e*SS SS 11 32 06.6 -3.2
OJC MLR MLR 11 58 04.7
comp=E,2μm,22.4s,MS5.6
KKB **Krupnik** **94.70 313** *e*P **P** **11 14 35.0 -0.6**
BOLS **Boljevac** **94.99 315**⇑ *i*P **P** **11 14 34.9 -2.0**
NB2 **NORSAR Subarra** **95.16 334** P **P** **11 14 35.8 -1.4**
comp=E,49nm,1.4s,mb5.7,baz=64,slow=4.5
NB2 **NORSAR Subarra** **95.16 334** P **P** **11 14 35.8 -1.4**
baz=64,slow=4.6
NOA **NORSAR Array B** **95.16 334** P **P** **11 14 35.9 -1.3**
comp=E,5.9nm,0.8s,mb5.0,baz=66,slow=4.6,SNR=23
NOA PP PP 11 18 22.7 -6.5
comp=E,1.2nm,0.7s,baz=70,slow=8.1,SNR=4.0
NOA LR LR 12 01 58.3
comp=E,3μm,19.2s,MS5.8,baz=65,slow=38
PSZ **Piszkesteto** **95.23 320** P **P** **11 14 39.7 +1.8**
PSZ pmax pmax
comp=Z,38nm,1.6s,mb5.6
PSZ **Piszkesteto** **95.23 320** *e*P **P** **11 14 37.5 -0.3**
comp=Z,38nm,1.6s,mb5.6
RAC **Raciborz** **95.63 322** *e*P **P** **11 14 40.4 +0.8**
RAC *e*PP PP 11 18 32.4 -0.8
RAC *e*S S 11 25 55.6 +4.5
RAC MLR MLR 12 13 11.0
comp=Z,3μm,23.6s,MS5.7
VYHS **Vyhne** **95.73 320** *e* P **11 14 43.1 +3.0**
VYHS *e*PP PP 11 18 34.1 0.0
VYHS *e* 11 20 28.4
VYHS *e*S S 11 25 51.2 -0.8
VYHS **Vyhne** **95.73 320** *e*P **P** **11 14 43.1 +3.0**
VYHS *e* 11 18 34.1
VYHS *e*S S 11 25 51.2 -0.8
OKC **Ostrava-Krasne** **95.73 322** *i* P **P** **11 14 40.5 +0.4**
OKC *e* 11 18 36.8
OKC MLR MLR
comp=Z,2μm,17.6s,MS5.6
OKC **Ostrava-Krasne** **95.73 322** *e*Pdif **P** **11 14 40.5 +0.4**
OKC *e*PP PP 11 18 36.8 +2.7
OKC *e* 11 21 39.0
BSD **Bornholm Skovb** **95.75 327**⇑ *i*P **P** **11 14 39.7 -0.4**
comp=Z,33nm,0.9s,mb5.8
comp=Z,3μm,18.0s
BSD **Bornholm Skovb** **95.75 327**⇑ *i*P **P** **11 14 39.7 -0.4**
BSD pmax pmax
comp=Z,33nm,0.9s,mb5.8
BSD MLR MLR
comp=Z,3μm,18.0s,MS5.8
SYO **Syowa Base** **95.83 201**⇓ P **P** **11 14 39.7 -0.4**
SYO **Syowa Base** **95.83 201**⇑ PcP PcP 11 14 40.6 +0.1
SYO **Syowa Base** **95.83 201**⇓ pP pP 11 14 48.8 -1.3
SKO **Skopje** **95.86 314** *i* P **P** **11 14 41.2 +0.3**
JMIC **Jan Mayen** **96.03 346** *e*SKSa 11 25 15.9
JMIC AMS AMS 11 59 33.8
comp=Z,1μm,24.8s,MS5.3
MORC **Moravsky Berou** **96.12 322** *e*P **P** **11 14 41.4 -0.5**
comp=Z,59nm,1.5s,mb5.8
YKW3 **Yellowknife Ar** **96.15 24** *e*P **P** **11 14 41.8 +0.1**
YKA **Yellowknife Ar** **96.19 24** P **P** **11 14 42.0 +0.1**
comp=Z,5.0nm,0.8s,mb5.0,baz=301,slow=4.8,SNR=45
YKA PKKPbc 11 31 25.7
comp=Z,3.2nm,1.0s,baz=113,slow=2.2,SNR=19
YKA PKPPKP 11 39 45.0
comp=Z,0.2nm,0.9s,baz=90,slow=2.5,SNR=2.8
YKA **Yellowknife Ar** **96.19 24** P **P** **11 14 42.0 +0.1**
YKA PKKPbc 11 31 25.7
YKA P'P' 11 39 45.0
KONO **Kongsberg** **96.50 333** *e*PP Px 11 18 15.5
KONO *e*SKSa 11 25 19.7
KONO AMS AMS 12 07 12.8
comp=Z,2μm,20.0s,MS5.7
KONO **Kongsberg** **96.50 333** P **P** **11 14 47.7 +4.4**
KONO pmax pmax
comp=Z,57nm,1.7s,mb5.7
KONO **Kongsberg** **96.50 333** *e*P **P** **11 14 41.8 -1.6**
comp=Z,57nm,1.7s,mb5.7
KONO LR LR
comp=Z,4μm,22.0s,MS5.8
KSP **Ksiaz** **96.52 323** *e*P **P** **11 14 43.9 +0.3**
KSP *e*pP pP 11 14 47.1 -6.5
KSP *e*PP PP 11 18 42.0 +1.7
KSP *e*SKS SKS 11 25 19.4 -6.0
KSP *e*S S 11 26 01.3 +2.7
KSP *e*sS 11 26 08.7
KSP MLR MLR 11 59 24.3
comp=Z,4μm,27.3s,MS5.8
KSP **Ksiaz** **96.52 323**⇓ *e*P **P** **11 14 43.9 +0.3**
KSP *e* 11 18 34.0
KSP *e* 11 25 20.0
KSP *e*S S 11 26 03.0 +4.4
KSP MLR MLR
comp=Z,5μm,27.3s,MS5.9
KSP **Ksiaz** **96.52 323**⇓ *e*P **P** **11 14 43.9 +0.3**
KSP *e*pP pP 11 14 46.8 -6.8
KSP *e*PP PP 11 18 34.0 -6.3
KSP *e*SKS SKS 11 25 20.0 -5.4
KSP *e*S S 11 26 03.0 +4.4
KSP LR LR
comp=Z,5μm,27.3s,MS5.9
DPC **Dobruska-Polom** **96.67 323** *i* P **P** **11 14 44.6 +0.3**
DPC *e* 11 18 45.2
DPC MLR MLR
comp=Z,2μm,21.5s,MS5.6
DPC **Dobruska-Polom** **96.67 323** *e*Pdif **P** **11 14 44.6 +0.3**
DPC *e*PP PP 11 18 45.2 +3.6
DPC *e* 11 21 31.9
DPC LR LR
comp=Z,2μm,21.5s,MS5.6
UPC **Upice** **96.80 323** *e*Pdif **P** **11 14 45.1 +0.2**
UPC *e*PP PP 11 18 43.2 +0.6
COP **Copenhagen** **96.83 329**⇑ *i*P **P** **11 14 48.8 +3.9**
COP *e* 11 16 49.8
COP *i* 11 20 03.2
COP *e*S Sx 11 25 16.1
comp=Z,680nm,21.0s
COP **Copenhagen** **96.83 329**⇑ *e*P **P** **11 14 48.8 +3.9**
COP *e*S Sx 11 25 16.1
COP MLR MLR
comp=Z,690nm,21.0s,MS5.1
ZST **Bratislava** **96.92 320** *e*P **P** **11 14 49.4 +3.9**
ZST *e* 11 20 34.4
ZST *e*S S 11 25 57.8 -4.3
ZST **Bratislava** **96.92 320** *e*P **P** **11 14 49.4 +3.9**
ZST *e*S S 11 25 57.8 -4.3
OCWA **Octopus Mounta** **97.30 40** PFAKE 11 15 00.0 +13
OCWA LR LR
comp=Z,4μm,20.0s,MS5.9
RUE **Ruedersdorf** **97.38 325** *e*P **P** **11 14 47.7 +0.3**
QSPA **South Pole Qui** **97.46 180** *e*P **P** **11 14 47.6 +0.3**
comp=Z,27nm,1.1s,mb5.6
QSPA LR LR
comp=Z,15μm,20.0s,MS6.5
PVCC **Panska Ves** **97.65 323** *i* P **P** **11 14 52.0 +3.2**
PVCC MLR MLR
comp=Z,2μm,18.9s,MS5.6
PRU **Pruhonice** **97.87 323** *e*P **P** **11 14 49.8 +0.1**
PRU *e* 11 18 51.9
PRU pmax pmax
comp=Z,38nm,1.5s,mb5.7
PRU MLR MLR
comp=Z,2μm,21.0s,MS5.6
PRU **Pruhonice** **97.87 323** *e*Pdif **P** **11 14 49.8 +0.1**
comp=Z,38nm,1.5s,mb5.7
PRU *e*PP PP 11 18 51.9 +0.7
PRU *e* 11 19 16.0
PRU *e* 11 21 29.6
PRU LR LR
comp=Z,2μm,21.0s,MS5.6

BRG Berggiesshubel 97.89 324 *i* P **P 11 14 50.1 +0.3**
BRG *e* 11 18 48.9
BRG pmax pmax
comp=Z,58nm,1.4s,mb5.9
BRG MLR MLR
comp=N,5µm,26.9s,MS5.9
BRG MLR MLR
comp=E,2µm,26.9s,MS5.9
BRG MLR MLR
comp=Z,4µm,26.9s,MS5.7
BRG Berggiesshubel 97.89 324 *i* P **P 11 14 50.1 +0.3**
comp=Z,58nm,1.4s,mb5.9
BRG *i* 11 14 55.5
BRG *i* 11 16 20.4
BRG *e*PP PP 11 18 48.9 -2.5
BRG *e* 11 21 30.6
BRG LR LR
comp=Z,4µm,26.9s,MS5.7
GNW Green Mountain 98.22 40 *e*P **P 11 14 54.3 +2.9**
CLL Collm 98.27 324 P **P 11 14 51.4 -0.1**
comp=Z,logA/T=1.2,mb5.5
CLL *i* *PP pP 11 14 54.9 -6.6
CLL *i* *SP sP 11 14 56.5 -8.1
CLL *e*PP Px 11 18 11.0
CLL *e*PPP Px 11 20 30.0
CLL Collm 98.27 324 *i* P **P 11 14 51.4 -0.1**
CLL pmax pmax
comp=Z,58nm,1.4s,mb5.9
CLL MLR MLR
comp=Z,3µm,19.1s,MS5.8
CLL Collm 98.27 324 *i* P **P 11 14 51.4 -0.1**
comp=Z,58nm,1.4s,mb5.9
CLL LR LR
comp=Z,3µm,19.1s,MS5.8
BSEG Bad Segeberg 98.68 327 *e*P **P 11 14 53.4 +0.1**
BSEG pmax pmax
comp=Z,57nm,1.6s,mb5.8
PERS Pernice 98.72 319 *e*Pdiff **P 11 14 53.4 -0.2**
KHC Kasperske Hory 98.77 322 *i* P **P 11 14 54.3 +0.5**
KHC MLR MLR
comp=Z,2µm,21.3s,MS5.7
KHC Kasperske Hory 98.77 322 *e*Pdif **P 11 14 54.3 +0.5**
KHC *e*PP PP 11 18 48.5 -9.1
KHC *e* 11 21 33.4
KHC LR LR
comp=Z,2µm,21.3s,MS5.7
GEC2 GERESS Array S 98.81 322 *e*P **P 11 14 53.9 -0.1**
GERES GERESS Array B 98.81 322 P **P 11 14 54.1 +0.2**
comp=Z,11nm,0.9s,mb5.4,baz=56,slow=4.8,SNR=47
COR Corvallis 98.94 43 PFAKE 11 15 10.0 +15
COR LR LR
comp=Z,9µm,22.0s,MS6.2
BOJS Bojanci 99.03 318 *e*Pdiff **P 11 14 54.5 -0.6**
WET Wettzell 99.19 322 *e*P **P 11 14 56.3 +0.6**
LJU Ljubljana 99.32 319 *e*Pdiff **P 11 14 59.5 +3.1**
LJU *e* 11 18 04.6
LJU *e*PP PP 11 19 05.2 +3.3
MOX Moxa 99.34 324 *i* P **P 11 14 56.0 -0.4**
comp=Z,logA/T=1.6,mb5.9
MOX PP PP 11 19 03.0 +1.1
MOX Moxa 99.34 324 *e*P **P 11 14 56.0 -0.4**
MOX *e* 11 19 03.4
MOX pmax pmax
comp=Z,84nm,1.9s,mb6.0
MOX Moxa 99.34 324 *e*P **P 11 14 56.0 -0.4**
comp=Z,84nm,1.9s,mb6.0
MOX *e* 11 19 03.4
NVLJ Novalja 99.62 318 *i* P **P 11 14 56.0 -1.8**
ROBS Robic 99.90 319 *e*Pdiff **P 11 15 01.4 +2.4**
GRA1 Grafenberg Arr 99.96 323 *e*P **P 11 14 59.4 +0.1**
comp=Z,68nm,1.6s,mb5.8
GRA1 *e*PP PP 11 19 03.7 -3.2
GRA1 LR LR
comp=Z,3µm,21.5s,MS5.7
GRF Grafenberg Arr 99.96 323 *e*P **P 11 14 59.4 +0.1**
GRF *e* 11 19 03.7
GRF pmax pmax
comp=Z,68nm,1.6s,mb5.8
YBH Yreka Blue Hor 100.32 45 P P 11 15 02.6 +1.5
comp=Z,1.6nm,1.0s,baz=287,slow=11,SNR=1.9
YBH Yreka Blue Hor 100.32 45 P P 11 15 02.5 +1.5
YBH LR LR
comp=Z,2µm,21.0s,MS5.6
FUR Furstenfeldbru 100.56 322 *e*P P 11 15 01.6 -0.4
FUR *e* 11 19 11.4
FUR pmax pmax
comp=Z,114nm,1.9s
FUR Furstenfeldbru 100.56 322 *e*P P 11 15 01.6 -0.4
comp=Z,114nm,1.9s
FUR *e*PP PP 11 19 11.4 -0.3
HAWA Hanford 100.75 40 PFAKE 11 15 10.0 +7.1
HAWA LR LR
comp=Z,3µm,19.0s,MS5.8
WDC Whiskeytown Da 100.83 46 PFAKE 11 15 20.0 +17
WDC LR LR
comp=Z,2µm,19.0s,MS5.7
HOPS Hopland 100.97 48 PFAKE 11 15 20.0 +16
HOPS LR LR
comp=Z,1µm,19.0s,MS5.5
WTSB Winterswijk 101.47 327 *e*P P 11 15 06.3 +0.3
comp=Z,8.2nm,1.7s
NEW Newport 101.48 38 P P 11 15 06.7 +0.6
comp=Z,1.9nm,0.8s,baz=262,slow=4.1,SNR=5.2
NEW Newport 101.48 38 *e*P P 11 15 07.7 +1.6
NEW pmax pmax
comp=Z,9.0nm,1.1s
NEW Newport 101.48 38 *e*Pdif P 11 15 07.3 +1.1
comp=Z,8.7nm,1.1s
NEW LR LR
comp=Z,3µm,20.0s,MS5.8
MOD Modoc 101.94 44 PFAKE 11 15 20.0 +12
MOD LR LR
comp=Z,3µm,19.0s,MS5.8
HGN Heimansgroeve 102.53 326 *e*P Pdif 11 15 10.1 -0.6
comp=Z,5.1nm,1.0s
WVOR Wild Horse Val 102.88 43 PFAKE 11 15 20.0 +7.6
WVOR LR LR
comp=Z,3µm,19.0s,MS5.8
SAO San Andreas Ge 102.92 50 PFAKE 11 15 20.0 +7.3
SAO LR LR
comp=Z,2µm,20.0s,MS5.5
WLF Walferdange 102.93 325 P Pdif 11 15 13.7 +1.3
WLF pmax pmax
comp=Z,53nm,1.4s
WLF Walferdange 102.93 325 *e*P Pdif 11 15 12.9 +0.5
comp=Z,53nm,1.4s
BBS Basel-Blauen 103.15 322 PKP Pdif 11 15 10.5 -3.0
CMB Columbia Colle 103.27 48 PFAKE 11 15 30.0 +16
CMB LR LR
comp=Z,2µm,20.0s,MS5.7
BORG Borgarnes 103.93 346 PFAKE 11 15 30.0 +14
BORG LR LR
comp=Z,3µm,20.0s,MS5.8
MSO Missoula 104.05 38 PFAKE 11 15 30.0 +13
MSO LR LR
comp=Z,2µm,19.0s,MS5.8
EKA Eskdalemuir Ar 104.61 333 PP PP 11 19 38.9 -3.1
comp=Z,1.6nm,1.0s,baz=39,slow=4.5,SNR=2.6
EKA PKKPbc 11 31 08.7
comp=Z,12nm,1.4s,baz=243,slow=1.9,SNR=3.8
ESK Eskdalemuir 104.64 333 PFAKE 11 15 30.0 +10
ESK LR LR
comp=Z,2µm,20.0s,MS5.7
BMN Battle Mountai 104.65 45 PFAKE 11 15 30.0 +10
BMN LR LR
comp=Z,1µm,19.0s,MS5.4
NVAR Mina Array Bea 104.66 47 Pdiff Pdif 11 15 22.0 +1.7
comp=Z,0.3nm,0.6s,baz=288,slow=5.7,SNR=2.5
NVAR PP PP 11 19 38.9 -3.9
comp=Z,1.6nm,0.8s,baz=262,slow=5.2,SNR=5.0
NVAR PKKPbc 11 31 06.9
comp=Z,1.2nm,0.8s,baz=112,slow=3.9,SNR=6.5
BNI Bardonecchia 104.75 320 P Pdif 11 15 22.8 +2.2
BNI Bardonecchia 104.75 320 *e*Pdif Pdif 11 15 20.3 -0.3
HLID Hailey 105.23 41 PFAKE 11 19 50.0
HLID LR LR
comp=Z,2µm,22.0s,MS5.5
TPH Tonopah 105.58 47 PFAKE 11 19 50.0
TPH LR LR
comp=Z,3µm,19.0s,MS5.9
DAC Darwin (Calif) 105.99 49 PFAKE 11 19 50.0
DAC LR LR
comp=Z,4µm,20.0s,MS5.9
BOZ Bozeman (W) 106.02 38 PKPdf 11 19 38.7
BOZ LR LR
comp=Z,2µm,19.0s,MS5.7
FFC Flin Flon 106.03 27 PFAKE 11 19 50.0
FFC LR LR
comp=Z,1µm,19.0s,MS5.4
SUR Sutherland 107.08 239 PFAKE 11 19 50.0
SUR LR LR
comp=Z,2µm,20.0s,MS5.6
AHID Auburn Hatcher 107.75 41 PFAKE 11 19 50.0
AHID LR LR
comp=Z,4µm,21.0s,MS5.9
PFO Pinyon Flat Ob 107.86 51 PFAKE 11 19 50.0
PFO LR LR
comp=Z,3µm,19.0s,MS5.9
HWUT Hardware Ranch 108.00 42 PFAKE 11 19 50.0
HWUT LR LR
comp=Z,3µm,19.0s,MS5.9
NEN Nelson 108.29 49 *e*PKPdf 11 19 41.2
BW06 Boulder Array 108.74 40 PFAKE 11 20 00.0
BW06 LR LR
comp=Z,4µm,20.0s,MS6.0
PDAR Pinedale Array 108.74 40 PKiKP 11 19 46.9
comp=Z,1.9nm,1.1s,baz=270,slow=3.0,SNR=4.4
PDAR PP PP 11 20 05.8 -7.5
comp=Z,1.0nm,0.8s,baz=333,slow=3.3,SNR=3.8
PDAR PKKPbc 11 30 51.0
comp=Z,1.8nm,1.0s,baz=135,slow=6.3,SNR=3.9
MVU Marysvale 108.98 45 PFAKE 11 20 00.0
MVU LR LR
comp=Z,2µm,19.0s,MS5.6
EBR Ebro Roquetas 110.77 319 *e*Ts 11 15 48.0
EBR *e*Ts 11 18 34.0
EBR *e*Ts 11 18 42.5
WUAZ Wupatki 110.91 48 PFAKE 11 20 00.0 +8.6
WUAZ LR LR
comp=Z,3µm,19.0s,MS5.9
PV10 Paradox Valley 111.24 44 *e*PKPdf PKPdf 11 19 47.1 -4.9
RSSD Black Hills 111.41 37 *e*PKPdf PKPdf 11 19 49.1 -3.1
RSSD LR LR
comp=Z,3µm,19.0s,MS5.8
PV01 Paradox Valley 111.68 44 *e*PKPdf PKPdf 11 19 48.5 -4.3
TUC Tucson 112.75 50 PFAKE 11 20 00.0 +4.9
TUC LR LR
comp=Z,593nm,20.0s,MS5.2
ISCO Idaho Springs 112.81 41 PKIKP PKPdf 11 19 54.8 -0.2
ISCO Idaho Springs 112.81 41 *e*PKPdf PKPdf 11 19 53.1 -1.9
ISCO LR LR
comp=Z,4µm,19.0s,MS6.1
SDCO Great Sand Dun 113.97 43 PFAKE 11 20 10.0 +13
SDCO LR LR
comp=Z,2µm,19.0s,MS5.7
ESDC Sonseca Array 114.27 320 PKKPbc 11 30 34.6
comp=Z,0.2nm,0.4s,baz=228,slow=36,SNR=2.4
ANMO Albuquerque 114.72 46 PKIKP PKPdf 11 19 57.5 -1.4
ANMO Albuquerque 114.72 46 *e*PKPdf PKPdf 11 19 57.0 -1.9
ANMO LR LR
comp=Z,768nm,19.0s,MS5.3
LENM Lemitar 114.74 47 PKPdf PKPdf 11 19 55.5 -3.5
BNM Barren Site 115.00 47 *e*PKPdf PKPdf 11 19 58.5 -1.0
SCHQ Schefferville 116.85 8 PKP PKPdf 11 19 58.0 -4.5
comp=Z,4.6nm,0.9s,baz=62,slow=18,SNR=4.0
MNTX Cornudas Mount 117.10 49 *e*PKPdf PKPdf 11 20 00.6 -3.0
MNTX LR LR
comp=Z,2µm,19.0s,MS5.7
CBKS Cedar Bluff 117.13 39 PFAKE 11 20 10.0 +6.5
CBKS LR LR
comp=Z,3µm,20.0s,MS5.9
GDL2 Guadalupe Moun 117.61 48 PKPdf PKPdf 11 20 01.4 -3.1
CLNB Carlsbad 117.93 47 *e*PKPdf PKPdf 11 20 02.5 -2.6
KSU1 Kansas State U 118.87 37 *e*PKPdf PKPdf 11 20 03.2 -3.7
JFWS Jewell Farm 119.76 30 PFAKE 11 20 20.0 +12
JFWS LR LR
comp=Z,4µm,19.0s,MS6.1
WMOK Wichita Mounta 120.15 42 PKIKP PKPdf 11 20 06.6 -2.8
WMOK Wichita Mounta 120.15 42 *e*PKPdf PKPdf 11 20 06.2 -3.3
WMOK LR LR
comp=Z,936nm,20.0s,MS5.4
JCT Junction City 121.83 47 PKIKP PKPdf 11 20 09.8 -3.0
JCT Junction City 121.83 47 *e*PKPdf PKPdf 11 20 09.7 -3.1
JCT *e*PP PP 11 21 41.1 -4.4
JCT LR LR
comp=Z,3µm,19.0s,MS5.9
CCM Cathedral Cave 122.70 35 PKIKP PKPdf 11 20 11.0 -3.3
CCM Cathedral Cave 122.70 35 *e*PKPdf PKPdf 11 20 10.5 -3.7
CCM LR LR
comp=Z,2µm,19.0s,MS5.8
SADO Sadowa 123.08 21 PKP PKPdf 11 20 11.0 -3.9
comp=Z,4.1nm,0.9s,baz=313,slow=4.1,SNR=3.9
FVM French Village 123.21 34 PKIKP PKPdf 11 20 14.1 -1.2
FVM French Village 123.21 34 *e*PKPdf PKPdf 11 20 11.8 -3.4
AAM Ann Arbor 123.33 26 PFAKE 11 20 20.0 +4.6
AAM LR LR
comp=Z,5µm,19.0s,MS6.2
MIAR Mount Ida 123.66 39 PKIKP PKPdf 11 20 13.7 -2.6
MIAR Mount Ida 123.66 39 *e*PKPdf PKPdf 11 20 13.4 -2.9
MIAR *e*PP PP 11 21 44.5 -14
MIAR LR LR
comp=Z,4µm,19.0s,MS6.1
SIUC Southern Illin 124.07 34 *e*PKPdf PKPdf 11 20 15.5 -1.5
UALR University of 124.27 38 *e*PKPdf PKPdf 11 20 16.1 -1.3
BLO Bloomington 124.42 31 PKIKP PKPdf 11 20 13.5 -4.1
BLO Bloomington 124.42 31 *e*PKPdf PKPdf 11 20 12.7 -4.9
PQI Presque Isle 124.51 12 PFAKE 11 20 30.0 +12
PQI LR LR
comp=Z,12µm,21.0s,MS6.5
HKT Hockley 124.97 45 PKIKP PKPdf 11 20 18.3 -0.7
HKT *e* 11 20 32.2
HKT Hockley 124.97 45 *e*PKPdf PKPdf 11 20 14.8 -4.2
HKT LR LR
comp=Z,1µm,19.0s,MS5.7
ERPA Erie 125.02 24 PFAKE 11 20 30.0 +11
ERPA LR LR
comp=Z,5µm,21.0s,MS6.2
WCI Wyandotte Cave 125.25 31 *e*PKPdf PKPdf 11 20 15.7 -3.6
WCI LR LR
comp=Z,22µm,19.0s
ACSO Alum Creek Sta 125.29 27 *e*PKPdf PKPdf 11 20 15.6 -3.7
ACSO LR LR
comp=Z,6µm,19.0s,MS6.3
NCB Newcomb 125.43 18 *e*PKPdf PKPdf 11 20 13.2 -6.2
NCB LR LR
comp=Z,3µm,19.0s,MS5.9
WVT Waverly 125.98 34 PKIKP PKPdf 11 20 15.6 -5.1
WVT Waverly 125.98 34 *e*PKPdf PKPdf 11 20 14.2 -6.5
WVT LR LR
comp=Z,3µm,19.0s,MS6.0
ACCN Adirondack Com 126.14 18 PKPdf PKPdf 11 20 18.8 -2.0
WVL Waterville 126.14 14 PFAKE 11 20 30.0 +9.2
WVL LR LR
comp=Z,10µm,20.0s,MS6.5
OXF Oxford 126.22 37 PFAKE 11 20 30.0 +8.8
OXF LR LR
comp=Z,3µm,19.0s,MS6.0
BINY Binghamton 126.44 20 *e*PKPdf PKPdf 11 20 18.0 -3.4
EMMW East Machias 126.50 12 PFAKE 11 20 30.0 +8.6
EMMW LR LR
comp=Z,12µm,19.0s,MS6.6
PLAL Pickwick Lake 126.67 35 *e*PKPdf PKPdf 11 20 17.1 -5.0
PLAL LR LR
comp=Z,1µm,20.0s,MS5.6
SSPA Standing Stone 127.11 23 *e*PKPdf PKPdf 11 20 19.5 -3.3
SSPA LR LR
comp=Z,23µm,20.0s
MCWV Mont Chateau 127.14 25 PFAKE 11 20 30.0 +7.2
MCWV LR LR
comp=Z,6µm,19.0s,MS6.3
HRV Harvard--Oak R 127.56 17 PFAKE 11 20 30.0 +6.4
HRV LR LR
comp=Z,1µm,21.0s,MS5.6
WES Weston 127.74 16 PFAKE 11 20 30.0 +6.0
WES LR LR
comp=Z,5µm,21.0s,MS6.2
MVL Millersville 128.24 22 *e*PKPdf PKPdf 11 20 20.1 -4.9
LRAL Lakeview Retre 128.69 36 *e*PKPdf PKPdf 11 20 24.8 -1.3
LRAL LR LR
comp=Z,4µm,19.0s,MS6.1
ELN Prospectdale 128.75 28 PKPdf PKPdf 11 20 23.1 -3.0
BLA Blacksburg 128.91 27 PFAKE 11 20 30.0 +3.6
BLA LR LR
comp=Z,4µm,19.0s,MS6.2
KIC Kosan Boka 129.22 285 *e*P Pdif 11 17 13.4 +4.3
comp=Z,118nm,1.3s
DBIC Dimbokro 129.25 285 PKP PKPdf 11 20 24.0 -3.6
comp=Z,6.6nm,0.8s,baz=30,slow=3.2,SNR=4.1
DBIC SKPbc 11 23 43.3
comp=Z,14nm,1.1s,baz=46,slow=5.6,SNR=4.8
DBIC Dimbokro 129.25 285 PKP PKPdf 11 20 24.0 -3.6
DBIC SKPbc 11 23 43.3
CBN Corbin 129.40 24 PFAKE 11 20 40.0 +13
CBN LR LR
comp=Z,9µm,21.0s,MS6.5
TIC Toumodi 129.41 285 *e*P Pdif 11 17 14.3 +4.3
comp=Z,62nm,0.9s
LIC Lamto 129.53 284 *e*P Pdif 11 17 15.5 +5.0
comp=Z,72nm,1.2s
USHA Ushuaia 131.43 169 SKPbc 11 23 52.6
comp=Z,1.1nm,1.0s,baz=163,slow=5.1,SNR=4.1
DWPF Disney 135.55 36 PFAKE 11 20 50.0 +11
DWPF LR LR
comp=Z,2µm,20.0s,MS5.8
EFI East Falkland 135.90 176 PFAKE 11 20 50.0 +11
EFI LR LR
comp=Z,1µm,19.0s,MS5.6
BBSR BB Station 138.91 14 PFAKE 11 20 50.0 +4.9
BBSR LR LR
comp=Z,8µm,19.0s,MS6.5
JTS JuntasAbangare 144.19 61 PKP PKPdf 11 20 50.9 -4.0
comp=Z,19nm,0.9s,baz=241,slow=6.2,SNR=8.0
JTS JuntasAbangare 144.19 61 *e*PKPdf PKPdf 11 20 49.6 -5.2
JTS LR LR
comp=Z,119nm,20.0s,MS4.7
TRQA Tornquist 148.75 167 *e*PKPbc PKPdf 11 21 03.2 +1.3
LMEL Las Melosas 149.75 152 *e*P PKPdf 11 21 07.2 +3.6
CLCH Cerro Calan 149.96 151 *i* P PKPdf 11 21 08.1 +4.1
FCH Farellones 150.14 151 *e*P PKPdf 11 21 08.2 +4.0
SJG San Juan 151.67 26 PKP PKPdf 11 21 02.0 -4.9
comp=Z,17nm,0.9s,baz=116,slow=9.7,SNR=2.4
SJG PKPbc PKPdf 11 21 10.5 +3.6
comp=Z,26nm,0.7s,baz=267,slow=5.4,SNR=5.3
SJG San Juan 151.67 26 PKP PKPdf 11 21 02.0 -4.9
SJG PKPbc PKPdf 11 21 10.5 +3.6
SJG LR LR
comp=Z,1µm,22.0s,MS5.7
TLL Tololo Astrono 152.40 147 *e*P PKPdf 11 21 03.8 -3.9
OTAV Otavalo 154.14 74 *e*PKPdf PKPdf 11 21 06.7 -3.9
ROSC El Rosal 156.01 60 PKPbc PKPdf 11 21 11.1 -1.9
comp=Z,4.3nm,0.3s,baz=107,slow=18,SNR=3.6
SDV Santo Domingo 156.51 46 PKP PKPdf 11 21 11.1 -2.5
comp=Z,10nm,0.8s,baz=333,slow=1.3,SNR=9.7
LVC Limon Verde 159.09 137 PKP PKPdf 11 21 15.3 -1.4
comp=Z,1.3nm,0.5s,baz=244,slow=1.7,SNR=3.5
LVC PKPab PKPab 11 21 51.7 +1.1
comp=Z,7.0nm,0.9s,baz=270,slow=4.3,SNR=4.0
LVC Limon Verde 159.09 137 *e*PKPdf PKPdf 11 21 13.8 -2.9
LVC LR LR
comp=Z,976nm,20.0s,MS5.6
PCRV Puerto La Cruz 159.28 32 PKP PKPdf 11 21 15.3 -1.8
comp=Z,14nm,0.9s,baz=322,slow=9.7,SNR=4.1
PCRV PKPab PKPab 11 21 53.0 +1.4
comp=Z,7.8nm,0.8s,baz=291,slow=4.1,SNR=2.6
CPUP Villa Florida 161.04 170 PKP PKPdf 11 21 16.4 -2.3
comp=Z,3.9nm,0.9s,baz=3.5,slow=5.1,SNR=3.7
CPUP PKPab PKPab 11 21 58.5 -0.4
comp=Z,13nm,0.9s,baz=209,slow=4.2,SNR=9.4
CPUP Villa Florida 161.04 170 PKP PKPdf 11 21 16.4 -2.3
CPUP PKPab PKPab 11 21 58.5 -0.4
LPAZ La Paz 163.47 123 PKP PKPdf 11 21 19.6 -1.7
comp=Z,6.5nm,0.8s,baz=9.5,slow=0.9,SNR=20
LPAZ PKPab PKPab 11 22 11.6 +1.9
comp=Z,14nm,0.8s,baz=255,slow=2.8,SNR=11
BDFB Brasilia 170.24 214 PKP PKPdf 11 21 24.0 -2.4
comp=Z,7.7nm,1.0s,baz=99,slow=4.5,SNR=4.4
BDFB PKPab PKPab 11 22 38.8 -0.5
comp=Z,7.4nm,1.0s,baz=183,slow=4.3,SNR=3.9

NEIC **16** *11:03:00.1±0.9, 32.09S×69.50W, h164km±11km, mb3.5/1, MD3.5(GUC), Error ellipse: s-maj=16.6km s-min=10.5km az=69.0*
GUC **16** *11:03:03.0±0.9, 32.13S×69.71W, h138km±8km, MD3.5, ML3.6*
ISC 16 11:03:02.6±0.9, 32.12S±0.04×69.58W±0.07, h131km±9km, n21,σ0s74/36, 3C-10D, Mendoza Province

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
MDZ	**Mendoza**	**0.98**	**141**	*e*P		**P**	**11 03 23.9**	**-1.7**
MDZ				*e*			11 03 29.9	
MDZ				*e*			11 03 41.0	
MDZ				S		**S**	**11 03 43.0**	**-0.1**
JACH	**Jahuel**	**1.02**	**236**	⇓*i*P		**P**	**11 03 26.3**	**+0.3**
JACH				*i* S		**S**	**11 03 44.1**	**+0.3**
PTCH	**Petorca**	**1.15**	**262**	*e*P		**P**	**11 03 27.3**	**0.0**
PTCH				*i* S		**S**	**11 03 46.0**	**-0.1**
PTCH				AMP			11 03 47.6	
	comp=E,4µm,0.4s							
FCH	**Farellones**	**1.34**	**206**	⇓*i*P		**P**	**11 03 30.1**	**+0.7**
FCH				*i* S		**S**	**11 03 51.0**	**+1.0**
FCH				AMP			11 03 56.3	
	comp=E,403nm,0.3s							
PEL	**Peldehue**	**1.38**	**222**	*i* S		**S**	**11 03 49.9**	**-0.8**
PEL				AMP			11 03 51.0	
	comp=E,1µm,0.5s							
ILCH	**Illapel**	**1.43**	**289**	*e*P		**P**	**11 03 30.3**	**-0.1**
ILCH				*i* S		**S**	**11 03 51.3**	**-0.4**
ILCH				AMP			11 03 53.1	
	comp=E,845nm,0.2s							
ROCH	**El Roble**	**1.48**	**234**	⇓*i*P		**P**	**11 03 31.1**	**+0.2**
ROCH				*i* S		**S**	**11 03 52.2**	**-0.3**
CLCH	**Cerro Calan**	**1.51**	**212**	⇓*i*P		**P**	**11 03 31.6**	**+0.4**
CLCH				*i* S		**S**	**11 03 53.3**	**+0.2**
CLCH				AMP			11 03 57.5	
	comp=N,666nm,0.6s							
CMCH	**Combarbala**	**1.53**	**308**	⇓*i*P		**P**	**11 03 32.0**	**+0.4**
CMCH				*i* S		**S**	**11 03 54.0**	**+0.3**
CMCH				AMP			11 03 56.8	
	comp=E,2µm,0.5s							
FSR	**Penalolen**	**1.57**	**210**	*e*P		**P**	**11 03 32.4**	**+0.4**
FSR				AMP			11 03 57.5	
	comp=N,418nm,0.4s							
PACH	**Papudo**	**1.62**	**255**	⇑*i*P		**P**	**11 03 32.2**	**-0.4**
PACH				*i* S		**S**	**11 03 54.1**	**-1.4**
PCH	**Pirque**	**1.69**	**207**	⇓*i*P		**P**	**11 03 33.9**	**+0.6**
PCH				*e*S		**S**	**11 03 56.8**	**0.0**
RCDM	**Rinconada Maip**	**1.71**	**217**	⇓*i*P		**P**	**11 03 33.8**	**+0.2**
RCDM				*i* S		**S**	**11 03 57.4**	**+0.2**
RCDM				AMP			11 04 00.5	
	comp=N,520nm,0.2s							
LMEL	**Las Melosas**	**1.80**	**197**	⇓*i*P		**P**	**11 03 35.0**	**+0.4**
LMEL				AMP			11 04 11.2	
	comp=N,205nm,0.1s							
TACH	**Talagante**	**1.91**	**216**	⇓*i*P		**P**	**11 03 35.9**	**0.0**
TACH				*i* S		**S**	**11 04 00.8**	**-0.5**
CHCH	**Chadas Angostu**	**2.02**	**206**	⇓*i*P		**P**	**11 03 37.9**	**+0.7**
CHCH				*i* S		**S**	**11 04 04.2**	**+0.5**
LCCH	**Las Cruces**	**2.15**	**231**	*i* S		**S**	**11 04 04.9**	**-1.8**
CACH	**El Canelo**	**2.17**	**203**	*e*P		**P**	**11 03 40.0**	**+0.9**
CACH				*i* S		**S**	**11 04 08.2**	**+1.2**
TLL	**Tololo Astrono**	**2.21**	**331**	⇑*i*P		**P**	**11 03 40.3**	**+0.6**
TLL				*i* S		**S**	**11 04 08.2**	**+0.2**
TLL				AMP			11 04 11.4	
	comp=N,384nm,0.4s							
LNV	**Longovilo**	**2.39**	**219**	⇑*i*P		**P**	**11 03 41.0**	**-1.1**
TRQA	**Tornquist**	**8.60**	**136**	*e*P		**P**	**11 05 02.4**	**-2.7**
	comp=N,1.3nm,0.8s							

NEIC **16** *11:11:06.4, 19.29N×64.55W, h55km, MD3.5(RSPR), After RSPR.*
RSPR 16 11:11:06.4, 19.29N×64.55W, h55km±31km, M3.5, 13C, Virgin Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
MTP	**Monte Pirata**	**1.53**	**219**	⇑*e*P		P	11 11 30.6	-1.3
MTP				S		S	11 11 48.1	-2.7
CBYP	**Canovanas**	**1.60**	**231**	⇑*e*P		P	11 11 31.3	-1.7
CPD	**Cerro la Pandu**	**1.80**	**226**	⇑*e*P		P	11 11 34.3	-1.4
CPD				S		S	11 11 54.0	-3.3
CSB	**Colonia Sabana**	**1.82**	**237**	⇑*e*P		P	11 11 33.8	-2.1
CSB				S		S	11 11 55.1	-2.8
SJG	**San Juan**	**1.92**	**233**	⇑*e*P		P	11 11 35.4	-2.0
SJG				S		S	11 11 57.0	-3.3
SJG	**San Juan**	**1.92**	**233**	⇑*e*P		P	11 11 35.3	-2.1
SJG	**San Juan**	**1.92**	**233**	S		S	11 11 56.9	-3.4
SJG	**San Juan**	**1.92**	**233**	⇑*e*P		P	11 11 35.3	-2.1
SJG				S		S	11 11 56.9	-3.4
CELP	**Cerrillos**	**2.27**	**238**	⇑*e*P		P	11 11 40.2	-2.2
CELP				S		S	11 12 06.3	-3.0

AOPR	**Arecibo Observ**	**2.29 246**	⇑	*e*P	P		11 11 40.5	-2.1
AOPR	**Arecibo Observ**	**2.29 246**		S	S		11 12 06.4	-3.2
OBIP	**Obispado Ponce**	**2.31 238**	⇑	*e*P	P		11 11 40.9	-2.1
OBIP	**Obispado Ponce**	**2.31 238**		S	S		11 12 06.9	-3.3
PORP	**Portuguez**	**2.33 238**	⇑	*e*P	P		11 11 40.9	-2.3
PORP				S	S		11 12 06.9	-3.8
LRS	**Lares**	**2.39 246**	⇑	*e*P	P		11 11 42.7	-1.4
LRS				S	S		11 12 08.7	-3.5
MGP	**Maguayo**	**2.73 242**	⇑	*e*P	P		11 11 47.0	-1.9
MGP				S	S		11 12 17.4	-3.4

IDC ***16*** *11:21:44.7±0.9,2.82S×29.50E,mb4.1/11,mb1 4.3/12, mb1mx4.1/20,ML4.3/1,Error ellipse: s-maj=22.1km s-min=19.8km az=157.0*
NEIC ***16*** *11:21:46.0±0.5,2.88S×29.49E,h10km,mb4.7/1,Error ellipse: s-maj=14.8km s-min=11.5km az=119.0*
ISC 16 11:21:44.0±0.6,2.88S±0.10×29.64E±0.07,h10km,n17, σ1$32/21,mb4.2/11,Lake Tanganyika region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
KMBO	**Kilima Mbogo**	**7.80**	**77**	Pn		**Pn**		**11 23 41.9**	**+1.4**
	4.0nm,0.3s,baz=239,slow=23,SNR=18								
KMBO				Sn		**Sn**		**11 25 07.5**	**-2.2**
	7.2nm,0.3s,baz=210,slow=22,SNR=4.9								
KMBO				Lg				11 25 55.5	
	19nm,0.3s,baz=175,slow=22,SNR=14								
KMBO	**Kilima Mbogo**	**7.80**	**77**	*e*Pn		**Pn**		**11 23 41.6**	**+1.2**
KMBO				Sn		**Sn**		**11 25 07.3**	**-2.5**
KMBO				*e*Sg		**Sg**		**11 25 51.1**	**-13**
KMBO				Lg				11 25 55.5	
TSUM	**Tsumeb**	**20.05**	**215**	P		**P**		**11 26 17.9**	**-2.5**
	2.5nm,0.8s,baz=7.3,slow=12,SNR=3.7								
TSUM				S		**S**		**11 29 45.5**	**-15**
	2.9nm,0.5s,baz=2.0,slow=14,SNR=2.5								
TSUM				Lg				11 32 16.1	
	28nm,1.0s,baz=94,slow=23,SNR=4.0								
DBIC	**Dimbokro**	**35.72**	**286**	P		**P**		**11 28 45.0**	**-0.1**
	10nm,1.3s,mb4.6,baz=134,slow=7.3,SNR=2.5								
BRTR	**Keskin Array B**	**42.55**	**5**	P		**P**		**11 29 41.6**	**-0.2**
	2.0nm,0.9s,mb3.9,baz=180,slow=8.6,SNR=5.1								
MLR	**Muntele Rosu**	**48.27**	**357**	P		**P**		**11 30 27.4**	**+0.1**
	2.5nm,0.7s,mb4.4,baz=150,slow=6.5,SNR=7.1								
GERES	**GERESS Array B**	**53.35**	**347**	P		**P**		**11 31 06.6**	**+0.8**
	1.6nm,0.9s,mb3.9,baz=141,slow=8.5,SNR=6.5								
KHC	**Kasperske Hory**	**53.64**	**347**	*e*P		**P**		**11 31 12.0**	**+4.0**
FINES	**FINESS Array B**	**64.20**	**358**	P		**P**		**11 32 19.4**	**-1.8**
	1.4nm,0.8s,mb4.0,baz=262,slow=11,SNR=3.4								
NOA	**NORSAR Array B**	**65.32**	**350**	P		**P**		**11 32 26.6**	**-1.8**
	0.2nm,0.6s,mb3.4,baz=190,slow=5.1,SNR=2.4								
MKAR	**Makanchi Array**	**67.66**	**36**	P		**P**		**11 32 44.0**	**+0.4**
	1.8nm,0.6s,mb4.3,baz=236,slow=4.4,SNR=10								
MKAR	**Makanchi Array**	**67.66**	**36**	P		**P**		**11 32 44.0**	**+0.4**
MAW	**Mawson**	**68.52**	**167**	P		**P**		**11 32 49.5**	**+1.0**
	3.4nm,0.7s,mb4.4,baz=299,slow=6.1,SNR=4.7								
CMAR	**Chiang Mai Arr**	**71.38**	**70**	P		**P**		**11 33 08.2**	**+1.4**
	1.2nm,0.9s,mb3.8,baz=239,slow=5.3,SNR=3.6								
SNAA	**Sanae**	**71.70**	**190**	*e*P		**P**		**11 33 07.9**	**0.0**
ZAL	**Zalesovo**	**72.72**	**31**	P		**P**		**11 33 16.0**	**+1.9**
	1.2nm,0.3s,mb4.3,baz=108,slow=5.7,SNR=4.6								
QSPA	**South Pole Qui**	**87.17**	**180**	*e*P		**P**		**11 34 31.7**	**+0.6**
	5.0nm,1.0s,mb4.7								

IDC ***16*** *11:21:52.8±3.6,4.59S×135.18E,mb4.2/1,mb1 4.4/6, mb1mx4.1/15,ML3.9/5,Error ellipse: s-maj=50.6km s-min=26.7km az=117.0*
NEIC ***16*** *11:21:58.8±1.3,4.80S×134.97E,h35km,mb3.9/3,Error ellipse: s-maj=28.1km s-min=15.0km az=110.0*
ISC 16 11:21:57.0±1.2,4.9S±0.1×135.0E±0.1,h33km,n13, σ0$84/18,mb3.9/1,1C,Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**12.91**	**111**	Pn		**P**		**11 24 55.7**	**-5.3**
	0.6nm,0.3s,baz=282,slow=14,SNR=3.3								
PMG	**Port Moresby**	**12.91**	**111**	P		**P**		**11 24 54.4**	**-6.6**
WRAB	**Tennant Creek**	**15.00**	**182**	*e*P		**P**		**11 25 28.2**	**-0.2**
	18nm,0.6s								
WRAB				*e*				11 25 35.9	
WB2	**Warramunga Arr**	**15.01**	**182**	*e*P		**P**		**11 25 28.2**	**-0.4**
WB2				*i*				11 25 36.3	
WB2				*e*S		**S**		**11 28 22.9**	**+8.5**
WRA	**Warramunga Arr**	**15.01**	**182**	Pn		**P**		**11 25 28.1**	**-0.5**
	0.3nm,0.3s,baz=1.5,slow=13,SNR=17								
WRA				Sn		**S**		**11 28 22.1**	**+7.7**
	0.3nm,0.3s,baz=7.1,slow=24,SNR=4.9								
FITZ	**Fitzroy Crossi**	**16.02**	**214**	*e*P		**P**		**11 25 42.5**	**+0.9**
	2.6nm,0.3s								
FITZ				*i* S		**S**		**11 28 37.7**	**-0.2**
FITZ	**Fitzroy Crossi**	**16.02**	**214**	Pn		**P**		**11 25 42.2**	**+0.6**
	1.1nm,0.3s,baz=28,slow=14,SNR=21								
FITZ				Sn		**S**		**11 28 36.8**	**-1.0**
	0.4nm,0.3s,baz=193,slow=13,SNR=3.9								
CTA	**Charters Tower**	**18.71**	**145**	P		**P**		**11 26 15.2**	**-0.1**
	0.6nm,0.3s,baz=330,slow=12,SNR=11								
CTAO	**Charters Tower**	**18.71**	**145**	*e*P		**P**		**11 26 15.4**	**+0.1**
	3.0nm,0.5s								
AS12	**Alice Springs**	**18.73**	**183**	⇑ *i*P		**P**		**11 26 18.4**	**+2.8**
	16nm,0.8s								
ASAR	**Alice Springs**	**18.73**	**183**	P		**P**		**11 26 17.9**	**+2.3**
	1.5nm,0.3s,baz=9.2,slow=10,SNR=146								
ASAR				S		**S**		**11 29 51.5**	**+12**
	0.1nm,0.3s,baz=6.6,slow=28,SNR=5.5								
SARN	**Sarigan**	**23.93**	**26**	P		**P**		**11 27 09.0**	**-0.3**
STKA	**Stephens Creek**	**27.59**	**168**	P		**P**		**11 27 43.0**	**-0.4**
	2.1nm,0.7s,mb3.9,baz=331,slow=7.7,SNR=3.5								

IDC ***16*** *11:30:44.7±0.6,12.09S×166.28E,mb4.4/15,mb1 4.5/16, mb1mx4.5/18,ML3.3/1,MS4.5/4,Ms1 4.5/4,ms1mx4.1/25, Error ellipse: s-maj=20.7km s-min=16.5km az=121.0*
NEIC ***16*** *11:30:46.7±0.5,11.98S×166.22E,h10km,mb4.8/10,Error ellipse: s-maj=13.1km s-min=10.9km az=94.0*
BJI ***16*** *11:30:46.6,12.00S×166.20E,h10km,mB5.2,mb4.9, Ms5.3,Msz5.0*
SYO ***16*** *11:30:46.6,11.98S×166.22E,h10km,MB4.8*
ISC 16 11:30:50.9±2.5,12.24S±0.08×166.10E±0.09,h49km±22km, h13km±7.5km:pP-P,n73,σ1$17/60,mb4.7/30,MS4.6/6, 5C-1D,Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**5.79**	**159**	*i* P		**P**		**11 32 19.6**	**+3.3**
DZM	**Mont Dzumac**	**9.79**	**178**	*e*P		**P**		**11 33 11.5**	**-0.3**
DZM				*e*S		**S**		**11 34 55.7**	**-5.7**
DZM	**Mont Dzumac**	**9.79**	**178**	*e*P		**P**		**11 33 11.5**	**-0.3**
DZM				*e*S		**S**		**11 34 55.7**	**-5.7**
NOUC	**Port Laguerre**	**9.81**	**179**	*e*P		**P**		**11 33 13.3**	**+1.1**
NOUC	**Port Laguerre**	**9.81**	**179**	*e*S		**S**		**11 35 00.8**	**-1.2**
NOUC	**Port Laguerre**	**9.81**	**179**	*e*P		**P**		**11 33 13.2**	**+1.0**
NOUC				*e*S		**S**		**11 35 00.8**	**-1.2**
PMG	**Port Moresby**	**18.81**	**277**	P		**P**		**11 35 09.2**	**0.0**
	0.3nm,0.3s,baz=92,slow=6.8,SNR=7.6								
PMG	**Port Moresby**	**18.81**	**277**	*e*P		**P**		**11 35 08.0**	**-1.2**
	37nm,1.1s								
WAU	**Wau**	**19.70**	**282**	*e*P		**P**		**11 35 20.1**	**+1.0**
CTA	**Charters Tower**	**20.58**	**245**	⇑ *i*P		**P**		**11 35 29.4**	**+1.1**
	28nm,1.2s								
CTA	**Charters Tower**	**20.58**	**245**	P		**P**		**11 35 28.3**	**0.0**
	42nm,1.1s,baz=74,slow=13,SNR=11								
CTAO	**Charters Tower**	**20.58**	**245**	*e*P		**P**		**11 35 29.1**	**+0.8**
	83nm,1.4s								
URZ	**Urewera**	**27.72**	**161**	P		**P**		**11 36 35.9**	**-0.9**
	10nm,1.0s,mb4.4,baz=141,slow=16,SNR=2.4								
STKA	**Stephens Creek**	**29.84**	**225**	*e*P		**P**		**11 36 58.9**	**+3.1**
	7.1nm,0.9s,mb4.4								
STKA	**Stephens Creek**	**29.84**	**225**	P		**P**		**11 36 56.9**	**+1.1**
	2.7nm,0.7s,mb4.1,baz=23,slow=10,SNR=5.1								
STKA				LR		LR		11 47 21.3	
	comp=Z,2μm,18.6s,MS4.8,baz=25,slow=33								
WRAB	**Tennant Creek**	**31.41**	**252**	P		**P**		**11 37 08.2**	**-1.6**
	56nm,1.4s,mb5.2								
WB2	**Warramunga Arr**	**31.41**	**252**	*e*P		**P**		**11 37 09.9**	**+0.1**
WB2				*e*S		**S**		**11 42 24.7**	**+12**
WRA	**Warramunga Arr**	**31.42**	**252**	P		**P**		**11 37 08.3**	**-1.6**
	8.1nm,1.3s,mb4.4,baz=85,slow=1.6,SNR=12								
WRA				PcP		PcP		11 40 02.7	+0.2
	2.3nm,1.0s,baz=82,slow=2.2,SNR=5.6								
WRA				LR		LR		11 47 45.6	
	comp=Z,538nm,20.5s,MS4.2,baz=70,slow=32								
RPZ	**Rata Peaks**	**31.66**	**173**	P		**P**		**11 37 11.6**	**-0.1**
	10nm,0.7s,mb4.7,baz=225,slow=2.3,SNR=9.2								
AS12	**Alice Springs**	**32.59**	**245**	⇑ *i*P		**P**		**11 37 19.3**	**-0.8**
	9.4nm,1.2s,mb4.6								
ASAR	**Alice Springs**	**32.59**	**245**	P		**P**		**11 37 18.6**	**-1.5**
	5.2nm,0.8s,mb4.5,baz=68,slow=9.5,SNR=23								
ASAR				PcP		PcP		11 40 05.8	+0.2
	2.1nm,0.8s,baz=82,slow=3.8,SNR=6.3								
ASAR				LR		LR		11 49 05.4	
	comp=Z,709nm,18.8s,MS4.4,baz=18,slow=34								
FITZ	**Fitzroy Crossi**	**39.42**	**256**	*e*P		**P**		**11 38 18.0**	**+0.1**
	6.5nm,1.2s,mb4.2								
FITZ	**Fitzroy Crossi**	**39.42**	**256**	P		**P**		**11 38 17.6**	**-0.3**
	6.7nm,1.0s,mb4.3,baz=104,slow=6.7,SNR=6.7								
FITZ				LR		LR		11 54 37.4	
	comp=Z,396nm,19.1s,MS4.3,baz=94,slow=36								
ASAJ	**Asahikawa**	**60.02**	**341**	P		**P**		**11 40 53.5**	**-1.6**
	1.5nm,0.5s,mb4.3,baz=188,slow=11,SNR=3.7								
MDJ	**Mudanjiang**	**65.56**	**332**	P		**P**		**11 41 30.8**	**-0.9**
MDJ				AMB		AMB			
	comp=Z,14nm,1.8s,mb4.7								
SBA	**Scott Base**	**65.62**	**180**	*e*P		**P**		**11 41 32.9**	**+1.3**
	comp=Z,21nm,1.0s,mb5.1								
CN2	**Changchun**	**66.93**	**329**	*e*P		**P**		**11 41 40.3**	**-0.1**
CN2				*e*AP		pP		11 41 44.5	-10
CN2				*e*S		S		11 50 31.3	+3.0
CN2				AMB		AMB			
	comp=Z,20nm,0.7s,mb5.3								
CN2				LR		LR			
	comp=N,480nm,17.0s,MS5.0								
CN2				LR		LR			
	comp=E,750nm,17.0s,MS5.0								
CN2				LR		LR			
	comp=Z,880nm,18.0s,MS5.0								
GYA	**Guiyang**	**69.37**	**304**	⇑P		**P**		**11 42 01.8**	**+5.9**
GYA				AMB		AMB			
	comp=Z,10.0nm,1.3s,mb4.6								
BJI	**Beijing**	**69.62**	**321**	*e*P		**P**		**11 41 57.3**	**+0.1**
BJI				AMB		AMB			
	comp=Z,13nm,1.0s,mb4.8								
KMI	**Kunming**	**72.03**	**302**	*e*P		**P**		**11 42 15.8**	**+3.9**
KMI				AMB		AMB			
	comp=Z,9.0nm,1.5s,mb4.5								
CMAR	**Chiang Mai Arr**	**72.90**	**294**	P		**P**		**11 42 18.1**	**+0.8**
	comp=Z,1.3nm,0.8s,mb3.9,baz=117,slow=4.0,SNR=3.8								
HHC	**Hu-ho-hao-te**	**72.96**	**320**	⇓P		**P**		**11 42 18.3**	**+1.1**
HHC				AMB		AMB			
	comp=Z,16nm,1.4s,mb4.8								
CD2	**Chengdu**	**73.60**	**307**	P		**P**		**11 42 21.3**	**+0.2**
LZH	**Lanzhou**	**75.81**	**312**	*e*P		**P**		**11 42 36.3**	**+2.5**
LZH				AMB		AMB			
	comp=Z,58nm,1.5s,mb5.3								
QSPA	**South Pole Qui**	**77.78**	**180**	*e*P		**P**		**11 42 45.9**	**+2.0**
	comp=Z,38nm,1.1s,mb5.2								
ULN	**Ulaanbaatar**	**79.46**	**324**	*e*P		**P**		**11 42 54.0**	**+0.2**
	comp=Z,28nm,1.1s,mb5.1								
ULN				*e*				11 43 00.4	
ULN				*e*		pP		11 43 07.4	-0.6
SONM	**Songino Array**	**79.82**	**324**	P		**P**		**11 42 56.0**	**+0.3**
	comp=Z,7.4nm,1.0s,mb4.6,baz=124,slow=4.5,SNR=8.4								
BILL	**Bilibino**	**80.06**	**0**	P		**P**		**11 42 56.7**	**+0.1**
GTA	**Gaotai**	**80.13**	**314**	P		**P**		**11 42 59.3**	**+1.8**
GTA				AP		pP		11 43 08.1	-3.8
GTA				XP		sP		11 43 11.3	-6.0
GTA				AMB		AMB			
	comp=Z,19nm,1.7s,mb4.8								
MAW	**Mawson**	**83.76**	**202**	P		**P**		**11 43 15.9**	**+0.3**
	comp=Z,5.2nm,1.0s,mb4.6,baz=94,slow=6.4,SNR=3.6								
ILAR	**Eielson Array**	**84.53**	**18**	P		**P**		**11 43 17.5**	**-2.1**
	comp=Z,0.5nm,0.7s,mb3.7,baz=219,slow=5.8,SNR=8.4								
NVAR	**Mina Array Bea**	**86.52**	**50**	P		**P**		**11 43 29.4**	**-0.6**
	comp=Z,0.3nm,0.6s,mb3.7,baz=231,slow=13,SNR=2.5								
PKI	**Pulchoki**	**87.51**	**299**	*e*P		**P**		**11 43 34.0**	**-1.1**
KKN	**Kakani**	**87.68**	**299**	*e*P		**P**		**11 43 34.2**	**-1.7**
DMN	**Daman**	**87.78**	**299**	*e*P		**P**		**11 43 34.9**	**-1.5**
	comp=Z,88nm,1.2s,mb5.9								
GKN	**Gorkha**	**88.28**	**299**	*e*P		**P**		**11 43 39.2**	**+0.4**
	comp=Z,46nm,1.1s,mb5.6								
KOLN	**Koldanda**	**89.11**	**299**	*e*P		**P**		**11 43 43.2**	**+0.5**
WMQ	**Urumqi**	**90.17**	**315**	*e*P		**P**		**11 43 48.5**	**+1.2**
WMQ				AP		pP		11 43 52.5	-9.5
WMQ				XP		sP		11 43 54.8	-12
WMQ				PP		PP		11 47 23.9	+0.2
WMQ				SKS		SKS		11 54 16.9	+4.7
WMQ				S		S		11 54 38.8	+4.0
WMQ				XS				11 54 46.8	
WMQ				PS		PS		11 55 49.4	-1.5
WMQ				SS		SS		12 00 40.6	+2.2
WMQ				AMB		AMB			
	comp=Z,57nm,6.7s								
WMQ				LR		LR			
	comp=N,211nm,21.5s,MS4.7								
WMQ				LR		LR			
	comp=E,246nm,21.1s,MS4.7								
WMQ				LR		LR			
	comp=Z,354nm,22.3s,MS4.8								
SYO	**Syowa Base**	**90.75**	**197**	⇑P		**P**		**11 43 54.5**	**+5.0**
SYO	**Syowa Base**	**90.75**	**197**	*e*P		**P**		**11 43 54.5**	**+5.0**
HLID	**Hailey**	**90.86**	**46**	P		**P**		**11 43 52.2**	**+1.6**
	comp=Z,0.4nm,0.6s,mb3.9								
MKAR	**Makanchi Array**	**94.62**	**317**	P		**P**		**11 44 08.1**	**+0.4**
	comp=Z,13nm,0.7s,mb5.5,baz=96,slow=6.5,SNR=83								
MKAR				PP		PP		11 47 59.5	+0.9
	comp=Z,1.4nm,0.8s,baz=117,slow=5.4,SNR=5.1								
MKAR	**Makanchi Array**	**94.62**	**317**	P		**P**		**11 44 08.1**	**+0.5**
MKAR				PP		PP		11 47 59.5	+0.9
ZAL	**Zalesovo**	**94.73**	**324**	P		**P**		**11 44 07.5**	**-0.5**
	comp=Z,3.5nm,1.0s,mb4.8,baz=277,slow=5.1,SNR=13								
YKA	**Yellowknife Ar**	**95.86**	**27**	P		**P**		**11 44 10.2**	**-2.7**
	comp=Z,0.4nm,0.5s,mb4.1,baz=258,slow=4.6,SNR=14								
YKA	**Yellowknife Ar**	**95.86**	**27**	P		**P**		**11 44 10.2**	**-2.7**
ARCES	**ARCESS Array B**	**117.57**	**345**	PKP		PKPdf		11 49 31.9	+0.9
	comp=Z,1.1nm,0.5s,baz=90,slow=2.4,SNR=9.4								
FINES	**FINESS Array B**	**123.00**	**338**	PKP		PKPdf		11 49 41.4	-0.4
	comp=Z,1.5nm,0.9s,baz=164,slow=28,SNR=4.1								
GERES	**GERESS Array B**	**136.92**	**333**	PKP		PKPdf		11 50 08.2	-0.2
	comp=Z,0.2nm,0.5s,baz=158,slow=43,SNR=2.4								
ORIF	**Oris-en-Rattie**	**143.30**	**336**	*e*PKP1		PKPbc		11 50 19.5	+1.3
	comp=Z,12nm,0.8s								
VIVF	**Saint-Julien-l**	**143.81**	**337**	*e*PKP1		PKPbc		11 50 20.4	+0.7
MFF	**Saint Martin d**	**143.82**	**344**	*e*PKP1		PKPbc		11 50 20.3	+0.6
	comp=Z,4.2nm,0.7s								
PGF	**Pioggiola**	**143.84**	**331**	*e*PKP1		PKPbc		11 50 20.9	+1.0
	comp=Z,27nm,1.2s								
FRF	**La Foret Royal**	**144.10**	**334**	*e*PKP1		PKPbc		11 50 20.1	-0.5
	comp=Z,14nm,0.9s								
LMR	**La Mourre**	**144.34**	**334**	*e*PKP1		PKPbc		11 50 21.3	0.0
	comp=Z,23nm,0.9s								
RJF	**Les Rejaudoux**	**144.51**	**341**	*e*PKP1		PKPbc		11 50 22.0	+0.3
CAF	**Calviac**	**144.68**	**340**	*e*PKP1		PKPbc		11 50 22.9	+0.7
LASF	**Ste Croix**	**144.78**	**338**	*e*PKP1		PKPbc		11 50 23.3	+0.8
	comp=Z,28nm,1.1s								
LFF	**La Frestale**	**145.08**	**342**	*e*PKP1		PKPbc		11 50 24.0	+0.7
MTLF	**Montolieu**	**146.02**	**339**	*e*PKP1		PKPbc		11 50 27.3	+1.6
	comp=Z,34nm,1.1s								
EPF	**Esparros**	**146.93**	**341**	*e*PKP1		PKPbc		11 50 27.9	+0.1
ESDC	**Sonseca Array**	**151.29**	**344**	PKPbc		PKPdf		11 50 40.0	+6.9
	comp=Z,0.3nm,0.4s,SNR=4.6								
LIC	**Lamto**	**169.40**	**236**	*e*PKP2		PKPab		11 52 14.7	+6.2
	comp=Z,33nm,1.2s								

MAN ***16*** *11:47:34.3,7.64N×126.43E,h43km,mb4.5,ML3.3,MS3.1*
IDC ***16*** *11:47:35.4±1.9,7.58N×125.87E,mb3.8/5,mb1 3.9/5, mb1mx3.7/19,Error ellipse: s-maj=128.0km s-min=23.3km az=67.0*
ISC 16 11:47:34.1±3.8,7.73N±0.08×126.27E±0.07,h9km±27km, n9,σ0$74/11,mb3.6/5,1C-2D,Mindanao

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
KCP	**Kidapawan**	**1.37**	**238**	⇓ *e*P		**Pn**		**11 47 58.9**	**-0.8**
KCP				*i* S		**Sb**		**11 48 17.2**	**+0.1**
CGP	**Cagayan de Oro**	**1.72**	**295**	⇓ *e*P		**Pn**		**11 48 05.4**	**+0.9**
CTBH	**Cotabato--PC H**	**2.07**	**256**	⇑ *e*P		**Pn**		**11 48 09.8**	**+0.2**
CTBH				*i* S		**Sn**		**11 48 35.8**	**0.0**
SCPH	**Surigao**	**2.18**	**339**	*e*P		**Pn**		**11 48 10.7**	**-0.4**
FITZ	**Fitzroy Crossi**	**25.68**	**181**	P		**P**		**11 53 05.8**	**-0.6**
	3.7nm,0.9s,mb3.9,slow=7.1,SNR=4.8								
WRA	**Warramunga Arr**	**28.63**	**164**	P		**P**		**11 53 35.0**	**+1.7**
	0.3nm,0.6s,mb3.2,baz=344,slow=9.7,SNR=6.3								
ASAR	**Alice Springs**	**32.09**	**167**	P		**P**		**11 54 03.0**	**-1.1**
	0.3nm,0.4s,mb3.4,baz=343,slow=7.1,SNR=11								
STKA	**Stephens Creek**	**42.02**	**160**	P		**P**		**11 55 28.3**	**+0.5**
	1.1nm,0.7s,mb3.6,baz=336,slow=14,SNR=3.3								
MKAR	**Makanchi Array**	**54.05**	**324**	P		**P**		**11 57 00.9**	**-0.3**
	0.9nm,0.7s,mb3.8,baz=130,slow=8.3,SNR=9.5								

MAN 16 11:52:41.5,18.21N×120.58E,h16km,mb3.7,ML2.4, MS1.9,5C,Luzon

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
ABRA	**Dolores**	**0.57**	**167**	⇑ *e*P		Pb		11 52 53.1	+0.4
ABRA				*e*S		Sb		11 53 02.9	+2.5
SZP	**Santa**	**0.67**	**190**	⇑ *i*P		Pb		11 52 54.4	0.0
SZP				*i* S		Sb		11 53 03.2	+0.1
APYP	**Conner**	**0.72**	**119**	⇑ *e*P		Pb		11 52 55.6	+0.3
APYP				*e*S		Sb		11 53 06.7	+2.0
CVP	**Callao Caves**	**1.29**	**113**	*e*P		Pb		11 53 04.7	-0.3
CVP				*e*S		Sb		11 53 21.6	+0.5
SGCP	**Mt. Cagua**	**1.40**	**89**	⇑ *e*P		Pn		11 53 05.9	-0.7
SGCP				*e*S		Sb		11 53 24.8	+0.5
CAUP	**Cauayan**	**1.73**	**136**	⇑ *e*P		Pn		11 53 10.9	-0.5

IDC ***16*** *12:09:40.9±6.1,4.96S×153.79E,h69km±49km,mb3.7/6, mb1 4.0/7,mb1mx3.8/15,ML3.7/1,Error ellipse: s-maj=51.6km s-min=28.9km az=117.0*
NEIC ***16*** *12:09:42.0±2.2,4.99S×153.81E,h79km±15km,mb4.3/3, Error ellipse: s-maj=27.4km s-min=11.3km az=106.0*
ISC 16 12:09:43.5±2.8,5.0S±0.1×153.6E±0.2,h98km±19km,n16, σ0$90/18,mb3.9/8,3C,New Ireland region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
RAB	**Rabaul**	**1.58**	**298**	*e*P		**P**		**12 10 11.6**	**+0.5**
WAU	**Wau**	**7.21**	**250**	*e*P		**P**		**12 11 27.8**	**-0.2**
PMG	**Port Moresby**	**7.74**	**235**	P		**P**		**12 11 34.8**	**-0.4**
	5.6nm,0.3s,baz=50,slow=7.1,SNR=28								
PMG				S		**S**		**12 13 01.5**	**-0.3**
	8.0nm,0.3s,baz=287,slow=22,SNR=8.2								
PMG	**Port Moresby**	**7.74**	**235**	*e*Pn		**P**		**12 11 34.6**	**-0.6**
PMG				*e*Sn		**S**		**12 12 58.2**	**-3.6**
WRAB	**Tennant Creek**	**23.91**	**230**	*e*P		**P**		**12 14 50.2**	**+0.8**
	14nm,0.8s,mb4.3								
WB2	**Warramunga Arr**	**23.91**	**230**	⇑ *i*P		**P**		**12 14 50.5**	**+1.1**
WRA	**Warramunga Arr**	**23.92**	**230**	P		**P**		**12 14 50.3**	**+0.8**
	2.0nm,0.4s,mb3.8,baz=55,slow=10,SNR=50								
AS12	**Alice Springs**	**26.56**	**224**	⇑ *i*P		**P**		**12 15 14.0**	**-0.4**
	6.0nm,1.3s,mb4.0								
ASAR	**Alice Springs**	**26.56**	**224**	P		**P**		**12 15 13.8**	**-0.6**
	1.2nm,0.7s,mb3.5,baz=56,slow=8.9,SNR=36								
ASAR				PcP		PcP		12 18 36.5	-0.3
	0.4nm,0.8s,baz=59,slow=2.9,SNR=4.3								
FITZ	**Fitzroy Crossi**	**30.25**	**242**	⇑ *i*P		**P**		**12 15 47.0**	**-0.6**
	4.1nm,0.6s,mb4.2								
FITZ	**Fitzroy Crossi**	**30.25**	**242**	P		**P**		**12 15 46.5**	**-1.2**
	7.0nm,0.8s,mb4.3,baz=59,slow=4.9,SNR=24								
CMAR	**Chiang Mai Arr**	**58.62**	**295**	P		**P**		**12 19 32.9**	**-0.3**
	1.3nm,0.8s,mb4.0,baz=120,slow=5.6,SNR=4.5								

*IDC **16** 12:52:11.2±2.6, 12.02S×166.09E, mb3.9/4, mb1 4.0/4, mb1mx3.8/13, Error ellipse: s-maj=117.0km s-min=33.0km az=137.0*
*NEIC **16** 12:52:13.5±2.6, 11.94S×165.99E, h10km, mb4.3/1, Error ellipse: s-maj=97.4km s-min=21.4km az=135.0*
ISC 16 12:52:11.8±3.5, 12.0S±0.6×166.0E±0.6, h10km, n5, σ0§19/5, mb3.9/5, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op		ISC	h m s	ISC
WRA	**Warramunga Arr**	**31.37**	**251**	P		**P**	**12 58 35.4**	**+0.2**
	0.7nm,0.7s,mb3.6,baz=84,slow=9.1,SNR=5.6							
ASAR	**Alice Springs**	**32.57**	**245**	P		**P**	**12 58 45.5**	**-0.2**
	1.7nm,1.0s,mb4.0,baz=68,slow=9.6,SNR=11							
ASAR				PcP		PcP	13 01 30.7	-1.6
	0.5nm,0.6s,baz=71,slow=2.5,SNR=9.1							
ULN	**Ulaanbaatar**	**79.22**	**324**	*e*P		**P**	**13 04 18.8**	**0.0**
	4.2nm,1.3s,mb4.2							
ILAR	**Eielson Array**	**84.36**	**18**	P		**P**	**13 04 45.2**	**+0.1**
	0.2nm,0.8s,mb3.3,baz=224,slow=5.2,SNR=4.4							
MKAR	**Makanchi Array**	**94.38**	**317**	P		**P**	**13 05 33.0**	**-0.1**
	0.9nm,0.6s,mb4.4,baz=92,slow=5.4,SNR=7.9							

*NEIC **16** 12:57:49.1±0.5, 11.94S×166.27E, h10km, Error ellipse: s-maj=13.8km s-min=11.8km az=94.0*
*BJI **16** 12:57:49.1, 11.90S×166.30E, h10km, mB5.3, mb5.0, Ms4.8, Msz4.6*
*IDC **16** 12:57:50.5±0.7, 11.92S×165.71E, mb4.5/14, mb1 4.6/15, mb1mx4.5/17, ML3.3/1, MS4.4/11, Ms1 4.5/11, ms1mx4.3/23, Error ellipse: s-maj=24.7km s-min=16.7km az=126.0*
*MOS **16** 12:57:54.7±1.3, 11.76S×165.61E, h33km, mb5.6/4, Error ellipse: s-maj=19.2km s-min=15.8km az=28.6*
ISC 16 12:57:52.7±0.4, 12.15S±0.06×165.95E±0.09, h33km, (h8km±5.5km:pP-P), n95, σ1§16/57, mb4.8/26, MS4.5/16, 5C-6D, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op		ISC	h m s	ISC
BKM	**Butte a Klehm**	**5.91**	**158**	*i* P		**P**	**12 59 20.1**	**-0.1**
BKM				S		**S**	**13 00 42.8**	**+15**
DZM	**Mont Dzumac**	**9.87**	**177**	*e*P		**P**	**13 00 15.0**	**-0.5**
DZM	**Mont Dzumac**	**9.87**	**177**	*e*P		**P**	**13 00 15.0**	**-0.5**
NOUC	**Port Laguerre**	**9.90**	**178**	*e*P		**P**	**13 00 15.8**	**0.0**
NOUC	**Port Laguerre**	**9.90**	**178**	*e*P		**P**	**13 00 15.8**	**0.0**
PMG	**Port Moresby**	**18.66**	**277**	P		**P**	**13 02 09.2**	**-1.3**
	0.3nm,0.3s,baz=148,slow=4.2,SNR=6.2							
PMG	**Port Moresby**	**18.66**	**277**	⇓*e*P		**P**	**13 02 11.8**	**+1.3**
	82nm,1.4s							
WAU	**Wau**	**19.55**	**282**	*e*P		**P**	**13 02 22.6**	**+2.0**
CTA	**Charters Tower**	**20.49**	**245**	⇓*i*P		**P**	**13 02 31.9**	**+1.3**
	26nm,1.2s							
CTA	**Charters Tower**	**20.49**	**245**	P		**P**	**13 02 30.9**	**+0.3**
	74nm,1.4s,baz=61,slow=15,SNR=9.5							
CTAO	**Charters Tower**	**20.49**	**245**	⇓*e*P		**P**	**13 02 31.3**	**+0.7**
	96nm,1.4s							
STKA	**Stephens Creek**	**29.79**	**225**	⇓*i*P		**P**	**13 04 04.1**	**+5.3**
	4.2nm,0.8s,mb4.2							
STKA				*e*S		**S**	**13 08 58.3**	**+6.4**
STKA	**Stephens Creek**	**29.79**	**225**	P		**P**	**13 03 59.5**	**+0.7**
	5.6nm,1.0s,mb4.2,baz=79,slow=10,SNR=2.3							
STKA				LR		LR	13 15 36.1	
	comp=Z,1μm,20.2s,MS4.5,baz=38,slow=36							
STKA	**Stephens Creek**	**29.79**	**225**	P		**P**	**13 03 59.5**	**+0.7**
STKA				*e*S		**S**	**13 08 58.3**	**+6.4**
STKA				LR		LR	13 15 36.1	
WB2	**Warramunga Arr**	**31.30**	**252**	⇑*i*P		**P**	**13 04 12.1**	**-0.2**
WRAB	**Tennant Creek**	**31.30**	**252**	*e*P		**P**	**13 04 11.8**	**-0.5**
	95nm,1.5s,mb5.4							
WRA	**Warramunga Arr**	**31.31**	**252**	P		**P**	**13 04 11.1**	**-1.3**
	4.1nm,0.8s,mb4.3,baz=84,slow=8.8,SNR=19							
WRA				PcP		PcP	13 07 04.7	-1.4
	3.5nm,1.0s,baz=69,slow=2.1,SNR=7.8							
WRA				LR		LR	13 16 10.2	
	comp=Z,522nm,19.2s,MS4.2,baz=120,slow=35							
WRA	**Warramunga Arr**	**31.31**	**252**	P		**P**	**13 04 11.1**	**-1.3**
WRA				PcP		PcP	13 07 04.7	-1.4
WRA				LR		LR	13 16 10.2	
RPZ	**Rata Peaks**	**31.75**	**173**	P		**P**	**13 04 19.5**	**+3.4**
	13nm,0.9s,mb4.8,baz=68,slow=3.0,SNR=7.2							
RPZ				LR		LR	13 16 05.8	
	comp=Z,660nm,18.9s,MS4.3,baz=345,slow=34							
AS12	**Alice Springs**	**32.49**	**245**	⇓*i*P		**P**	**13 04 22.1**	**-0.6**
	10nm,1.0s,mb4.6							
ASAR	**Alice Springs**	**32.49**	**245**	P		**P**	**13 04 21.7**	**-1.0**
	5.6nm,0.9s,mb4.4,baz=70,slow=9.4,SNR=26							
ASAR				PcP		PcP	13 07 07.7	-1.6
	3.1nm,0.9s,baz=76,slow=3.0,SNR=10.0							
ASAR				LR		LR	13 16 45.3	
	comp=Z,456nm,19.3s,MS4.2,baz=108,slow=35							
RAR	**Rarotonga**	**33.98**	**110**	LR		LR	13 15 35.4	
	comp=Z,477nm,19.2s,MS4.2,baz=182,slow=31							
FITZ	**Fitzroy Crossi**	**39.30**	**256**	*e*P		**P**	**13 05 21.6**	**+1.1**
	6.6nm,1.2s,mb4.2							
FITZ	**Fitzroy Crossi**	**39.30**	**256**	P		**P**	**13 05 20.5**	**0.0**
	5.8nm,0.9s,mb4.3,baz=167,slow=6.7,SNR=3.0							
FITZ				LR		LR	13 20 52.0	
	comp=Z,393nm,19.3s,MS4.3,baz=89,slow=35							
JOW	**Kunigami**	**53.30**	**317**	LR		LR	13 25 39.9	
	comp=Z,365nm,20.4s,MS4.4,baz=123,slow=32							
JNU	**Nakatsue**	**56.09**	**324**	LR		LR	13 29 22.9	
	comp=Z,206nm,18.3s,MS4.2,baz=323,slow=34							
ASAJ	**Asahikawa**	**59.90**	**341**	P		**P**	**13 07 57.5**	**-0.3**
	2.4nm,0.8s,mb4.3,baz=256,slow=12,SNR=2.5							
ASAJ				LR		LR	13 29 12.5	
	comp=Z,506nm,21.0s,MS4.6,baz=165,slow=32							
MDJ	**Mudanjiang**	**65.42**	**332**	P		**P**	**13 08 34.0**	**-0.5**
MDJ				AMB		AMB		
	comp=Z,19nm,1.9s,mb4.8							
MDJ				AMB		AMB		
	comp=Z,174nm,12.8s							
SBA	**Scott Base**	**65.70**	**180**	*e*P		**P**	**13 08 35.1**	**-0.7**
	comp=Z,24nm,1.1s,mb5.1							
CN2	**Changchun**	**66.79**	**329**	⇑P		**P**	**13 08 42.3**	**-0.9**
CN2				*e*AP		pP	13 08 47.5	-6.0
CN2				*e*S		S	13 17 33.0	+1.3
CN2				AMB		AMB		
	comp=Z,30nm,1.2s,mb5.2							
CN2				AMB		AMB		
	comp=Z,180nm,3.0s							
CN2				LR		LR		
	comp=N,370nm,20.0s,MS4.7							
CN2				LR		LR		
	comp=E,190nm,20.0s,MS4.7							
CN2				LR		LR		
	comp=Z,340nm,20.0s,MS4.6							
KLR	**Kul'dur**	**68.15**	**337**	*e*P		**P**	**13 08 50.5**	**-1.1**
GYA	**Guiyang**	**69.21**	**304**	P		**P**	**13 09 00.5**	**+1.9**
GYA				AMB		AMB		
	comp=Z,10.0nm,0.8s,mb4.8							
XAN	**Xi'an**	**71.01**	**313**	P		**P**	**13 09 09.8**	**+0.3**
XAN				AP		pP	13 09 14.9	-4.9
XAN				AMB		AMB		
	comp=Z,12nm,1.6s,mb4.6							
CMAR	**Chiang Mai Arr**	**72.74**	**294**	P		**P**	**13 09 19.9**	**-0.1**
	comp=Z,4.3nm,0.8s,mb4.4,baz=116,slow=4.8,SNR=16							
HHC	**Hu-ho-hao-te**	**72.80**	**320**	⇑P		**P**	**13 09 20.5**	**+0.5**
HHC				AMB		AMB		
	comp=Z,22nm,1.4s,mb4.9							
HHC				AMB		AMB		
	comp=Z,115nm,9.2s							
BTO	**Baotou**	**73.65**	**319**	*e*P		**P**	**13 09 25.8**	**+0.8**
BTO				AMB		AMB		
	comp=Z,40nm,1.2s,mb5.2							
LZH	**Lanzhou**	**75.65**	**312**	*e*P		**P**	**13 09 38.1**	**+1.5**
LZH				AP		pP	13 09 41.4	-5.5
LZH				XP		sP	13 09 43.5	-7.1
LZH				AMB		AMB		
	comp=Z,83nm,1.5s,mb5.4							
LZH				AMB		AMB		
	comp=Z,183nm,4.6s							
LZH				LR		LR		
	comp=E,201nm,16.0s							
LZH				LR		LR		
	comp=Z,312nm,19.2s,MS4.6							
QSPA	**South Pole Qui**	**77.86**	**180**	*e*P		**P**	**13 09 47.8**	**-0.4**
	comp=Z,34nm,1.2s,mb5.2							
YAK	**Yakutsk**	**79.21**	**344**	*d i*P		**P**	**13 10 02.4**	**+6.5**
ULN	**Ulaanbaatar**	**79.31**	**324**	*c i*P		**P**	**13 09 56.5**	**-0.2**
SONM	**Songino Array**	**79.67**	**324**	P		**P**	**13 09 58.8**	**+0.1**
	comp=Z,29nm,1.4s,mb5.0,baz=124,slow=4.5,SNR=23							
GTA	**Gaotai**	**79.97**	**314**	*e*P		**P**	**13 10 01.3**	**+0.8**
GTA				AMB		AMB		
	comp=Z,25nm,1.5s,mb4.9							
GTA				AMB		AMB		
	comp=Z,174nm,5.3s							
GTA				LR		LR		
	comp=N,106nm,15.6s,MS4.4							
GTA				LR		LR		
	comp=E,113nm,18.3s,MS4.4							
GTA				LR		LR		
	comp=Z,97nm,20.2s,MS4.1							
BILL	**Bilibino**	**79.98**	**0**	⇑*i*P		**P**	**13 10 17.6**	**+18**
BILL				*i*			13 10 24.6	
BILL				pmax		pmax		
	comp=Z,12nm,1.1s,mb4.7							
BILL				MLR		MLR		
	comp=Z,300nm,19.0s,MS4.7							
BOD	**Bodaibo**	**81.61**	**335**	*e*P		**P**	**13 10 06.7**	**-2.0**
ZAK	**Zakamensk**	**82.72**	**325**	*e*P		**P**	**13 10 13.0**	**-1.6**
TLY	**Talaya**	**83.15**	**326**	*i* P		**P**	**13 10 15.6**	**-1.1**
TLY				pmax		pmax		
	comp=Z,332nm,1.3s							
MAW	**Mawson**	**83.78**	**202**	P		**P**	**13 10 24.0**	**+4.4**
	comp=Z,4.6nm,0.9s,mb4.6,baz=102,slow=8.3,SNR=6.1							
COLA	**College**	**84.27**	**18**	*e*P		**P**	**13 10 32.9**	**+11**
ILAR	**Eielson Array**	**84.49**	**18**	P		**P**	**13 10 26.1**	**+2.8**
	comp=Z,0.5nm,0.4s,mb4.0,baz=236,slow=4.8,SNR=9.7							
MOY	**Mondy**	**84.60**	**325**	*e*P		**P**	**13 10 24.7**	**+0.6**
NVAR	**Mina Array Bea**	**86.58**	**50**	P		**P**	**13 10 37.6**	**+3.5**
	comp=Z,0.3nm,0.6s,baz=240,slow=7.3,SNR=3.1							
NVAR				LR		LR	13 43 00.3	
	comp=Z,802nm,19.2s,MS5.1,baz=60,slow=31							
TIXI	**Tiksi**	**87.21**	**349**	*e*P		**P**	**13 10 34.5**	**-1.9**
TIXI				*e*S		S	13 21 13.0	+0.9
TIXI				pmax		pmax		
	comp=Z,47nm,1.4s,mb5.5							
TIXI				MLR		MLR		
	comp=Z,1μm,18.0s,MS5.4							
WMQ	**Urumqi**	**90.02**	**315**	P		**P**	**13 10 51.0**	**+0.6**
MKAR	**Makanchi Array**	**94.46**	**317**	P		**P**	**13 11 10.6**	**-0.2**
	comp=Z,14nm,0.8s,mb5.4,baz=101,slow=6.2,SNR=60							
ZAL	**Zalesovo**	**94.58**	**324**	P		**P**	**13 11 10.5**	**-0.6**
	comp=Z,3.3nm,0.9s,mb4.7,baz=274,slow=4.6,SNR=19							
NVS	**Novosibirsk**	**95.68**	**325**	*e*P		**P**	**13 11 14.1**	**-2.0**
YKA	**Yellowknife Ar**	**95.86**	**27**	P		**P**	**13 11 17.9**	**+1.1**
	comp=Z,0.2nm,0.4s,mb3.9,baz=259,slow=4.6,SNR=4.1							
YKA				LR		LR	13 51 18.1	
	comp=Z,185nm,18.3s,MS4.6,baz=265,slow=34							
ARCES	**ARCESS Array B**	**117.45**	**345**	PKP		PKPdf	13 16 33.7	-1.0
	comp=Z,1.4nm,0.8s,baz=80,slow=1.9,SNR=14							
KMBO	**Kilima Mbogo**	**127.39**	**259**	PKP		PKPdf	13 16 57.0	+1.5
	comp=Z,2.1nm,0.8s,baz=225,slow=24,SNR=4.7							
NOA	**NORSAR Array B**	**127.82**	**345**	PKP		PKPdf	13 16 56.1	+1.1
	comp=Z,0.4nm,0.9s,baz=101,slow=7.0,SNR=2.1							
BRTR	**Keskin Array B**	**129.86**	**312**	PKP		PKPdf	13 16 59.6	+0.2
	comp=Z,2.0nm,1.1s,baz=90,slow=3.7,SNR=4.2							
BRG	**Berggiesshubel**	**135.15**	**335**	*e*PKIKP		PKPdf	13 17 20.5	+11
BRG				pmax		pmax		
	comp=Z,3.0nm,1.2s							
KHC	**Kasperske Hory**	**136.62**	**334**	*e*PKP		PKPdf	13 17 08.5	-3.3
GERES	**GERESS Array B**	**136.78**	**333**	PKhKP			13 17 08.8	
	comp=Z,0.6nm,0.8s,baz=149,slow=28,SNR=3.1							
BNI	**Bardonecchia**	**142.74**	**336**	*e*PKPpre			13 17 18.2	
MBDF	**Montbardon**	**142.97**	**335**	*e*PKP1		PKPdf	13 17 21.1	-2.1
	comp=Z,7.5nm,0.9s							
ORIF	**Oris-en-Rattie**	**143.17**	**336**	*e*PKP1		PKPbc	13 17 22.1	+0.4
	comp=Z,10nm,0.8s							
ORIF				*e*R				
	comp=Z,198nm,19.2s							
TCF	**Toulx Ste Croi**	**143.29**	**341**	*e*PKP1		PKPbc	13 17 21.2	-0.8
SBF	**Sospel**	**143.38**	**334**	*e*PKP1		PKPbc	13 17 22.0	-0.4
	comp=Z,18nm,0.8s							
VIVF	**Saint-Julien-l**	**143.69**	**337**	*e*PKP1		PKPbc	13 17 22.0	-1.2
MFF	**Saint Martin d**	**143.71**	**344**	*e*PKP1		PKPbc	13 17 22.5	-0.7
	comp=Z,25nm,1.4s							
FRF	**La Foret Royal**	**143.97**	**334**	*e*PKP1		PKPbc	13 17 22.5	-1.6
	comp=Z,32nm,1.1s							
LMR	**La Mourre**	**144.21**	**334**	*e*PKP1		PKPbc	13 17 23.8	-1.0
	comp=Z,70nm,1.4s							
RJF	**Les Rejaudoux**	**144.39**	**341**	*e*PKP1		PKPbc	13 17 24.5	-0.8
	comp=Z,32nm,1.2s							
RJF				*e*R				
	comp=Z,288nm,19.0s							
CAF	**Calviac**	**144.55**	**340**	*e*PKP1		PKPbc	13 17 25.2	-0.5
	comp=Z,26nm,1.1s							
LASF	**Ste Croix**	**144.66**	**337**	*e*PKP1		PKPbc	13 17 26.1	+0.1
	comp=Z,28nm,1.1s							
LFF	**La Frestale**	**144.96**	**342**	*e*PKP1		PKPbc	13 17 26.5	-0.4
	comp=Z,48nm,1.1s							
MTLF	**Montolieu**	**145.89**	**339**	*e*PKP1		PKPbc	13 17 28.9	-0.4
	comp=Z,32nm,1.1s							
EPF	**Esparros**	**146.80**	**341**	*e*PKP1		PKPbc	13 17 30.2	-1.2
EBIE	**Bielsa**	**147.18**	**341**	P		PKPdf	13 17 29.7	-0.9
EALK	**Alkurruntz**	**147.20**	**343**	P		PKPdf	13 17 29.3	-1.2
ETSF	**Etsaut**	**147.21**	**342**	*e*PKP1		PKPdf	13 17 35.2	+4.6
	comp=Z,21nm,1.1s							
EMIR	**Miracle**	**147.38**	**338**	P		PKPdf	13 17 31.5	+0.6
EGRA	**Graus**	**147.56**	**340**	P		PKPdf	13 17 29.4	-1.8
EPOB	**Poblet**	**148.04**	**338**	P		PKPdf	13 17 30.8	-1.1
ESAC	**San Caprasio**	**148.24**	**340**	P		PKPdf	13 17 32.7	+0.4
STS	**Santiago**	**149.01**	**352**	P		PKPdf	13 17 43.3	+10
EMOS	**Mosqueruela**	**149.46**	**339**	P		PKPdf	13 17 37.7	+3.5
ETOR	**Torete**	**149.56**	**342**	P		PKPdf	13 17 39.8	+5.3
GUD	**Guadarrama**	**150.32**	**345**	P		PKPdf	13 17 37.8	+2.2
ESDC	**Sonseca Array**	**151.17**	**344**	PKPbc		PKPdf	13 17 43.5	+6.6
	comp=Z,1.6nm,1.0s,slow=3.8,SNR=6.8							
ESDC	**Sonseca Array**	**151.17**	**344**	P		PKPdf	13 17 43.0	+6.0
ETOB	**Tobarra**	**151.37**	**339**	P		PKPdf	13 17 48.6	+11
EVIA	**Vianos**	**151.69**	**341**	P		PKPdf	13 17 44.8	+7.1
ECOG	**Cogollos-Vega**	**153.28**	**341**	P		PKPdf	13 17 58.3	+18

*IDC **16** 13:08:19.7±0.8, 15.51N×147.87E, mb3.9/11, mb1 4.1/11, mb1mx4.0/19, Error ellipse: s-maj=27.7km s-min=19.1km az=110.0*
*NEIC **16** 13:08:25.2±0.6, 15.48N×147.70E, h35km, mb4.2/4, Error ellipse: s-maj=14.3km s-min=9.0km az=128.0*
ISC 16 13:08:23.2±3.2, 15.46N±0.09×147.7E±0.2, h34km±27km, n21, σ1§01/19, mb4.0/14, 1D, Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op		ISC	h m s	ISC
SARN	**Sarigan**	**2.25**	**304**	⇓*e*P		**P**	**13 09 00.0**	**+1.2**
GUMO	**Guam**	**3.33**	**237**	*e*Sn		**S**	**13 09 51.7**	**-1.5**
MAJO	**Matsushiro**	**22.65**	**340**	P		**P**	**13 13 20.8**	**-1.8**
	3.4nm,0.5s,mb4.0							
WRAB	**Tennant Creek**	**37.55**	**201**	*e*P		**P**	**13 15 37.7**	**+1.4**
	2.0nm,0.6s,mb4.0							
WRA	**Warramunga Arr**	**37.56**	**201**	P		**P**	**13 15 36.4**	**+0.1**
	2.2nm,0.8s,mb3.9,baz=23,slow=9.4,SNR=15							
ASAR	**Alice Springs**	**41.17**	**199**	P		**P**	**13 16 06.3**	**+0.1**
	1.2nm,0.8s,mb3.5,baz=34,slow=5.1,SNR=9.0							
CMAR	**Chiang Mai Arr**	**46.65**	**281**	P		**P**	**13 16 51.6**	**+1.0**
	1.5nm,0.5s,mb4.2,baz=76,slow=6.9,SNR=9.7							
SONM	**Songino Array**	**46.88**	**322**	P		**P**	**13 16 53.4**	**+1.4**
	1.4nm,1.0s,mb3.9,baz=135,slow=8.2,SNR=3.8							
BILL	**Bilibino**	**53.89**	**9**	*e*P		**P**	**13 17 45.1**	**-0.1**
	2.7nm,1.0s,mb4.1							
MKAR	**Makanchi Array**	**62.10**	**315**	P		**P**	**13 18 43.4**	**+0.3**
	2.0nm,0.7s,mb4.3,baz=94,slow=8.4,SNR=13							
KURK	**Kurchatov**	**64.97**	**319**	*e*P		**P**	**13 19 02.1**	**+0.3**
ILAR	**Eielson Array**	**65.70**	**25**	P		**P**	**13 19 04.4**	**-1.9**
	0.4nm,0.7s,mb3.6,baz=248,slow=6.0,SNR=4.7							
INK	**Inuvik**	**71.59**	**23**	P		**P**	**13 19 41.5**	**-1.1**
	0.6nm,1.0s,mb3.5,baz=241,slow=5.6,SNR=4.6							
INK	**Inuvik**	**71.59**	**23**	*e*P		**P**	**13 19 41.9**	**-0.7**
	1.4nm,1.0s,mb3.9							
YKA	**Yellowknife Ar**	**79.93**	**28**	P		**P**	**13 20 30.0**	**0.0**
	1.2nm,1.1s,mb3.7,baz=286,slow=5.6,SNR=8.4							
NVAR	**Mina Array Bea**	**85.60**	**52**	P		**P**	**13 20 50.6**	**+1.0**
	0.3nm,0.5s,mb3.7,baz=263,slow=3.6,SNR=3.8							
ARCES	**ARCESS Array B**	**86.15**	**343**	P		**P**	**13 21 01.6**	**0.0**
	3.3nm,1.1s,mb4.5,baz=79,slow=6.2,SNR=4.8							
FINES	**FINESS Array B**	**90.62**	**336**	P		**P**	**13 21 22.3**	**-0.9**
	0.7nm,0.5s,mb4.2,baz=63,slow=4.3,SNR=8.1							
FINES	**FINESS Array B**	**90.62**	**336**	P		**P**	**13 21 22.3**	**-0.9**
DBIC	**Dimbokro**	**145.06**	**307**	PKPbc		PKPbc	13 27 58.6	+0.3
	4.1nm,1.0s,baz=34,slow=3.0,SNR=3.9							
LPAZ	**La Paz**	**145.53**	**96**	PKPbc		PKPbc	13 28 02.5	+3.1
	0.5nm,0.5s,baz=327,slow=5.1,SNR=4.8							

*IDC **16** 13:24:13.5±1.3, 12.24S×166.45E, mb4.0/9, mb1 4.1/10, mb1mx4.1/14, ML3.3/1, MS4.1/4, Ms1 4.1/4, ms1mx3.6/23, Error ellipse: s-maj=47.6km s-min=21.3km az=135.0*
*NEIC **16** 13:24:15.6±0.6, 12.17S×166.39E, h10km, mb4.4/8, Error ellipse: s-maj=19.0km s-min=12.5km az=135.0*
*BJI **16** 13:24:17.7, 11.50S×166.49E, h18km, mb4.6*
ISC 16 13:24:17.8±0.7, 12.2S±0.1×166.2E±0.1, h33km, n27, σ1§05/25, mb4.2/16, MS4.0/3, 1C, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op		ISC	h m s	ISC
BKM	**Butte a Klehm**	**5.74**	**160**	*i* P		**P**	**13 25 49.0**	**+6.2**
PMG	**Port Moresby**	**18.93**	**277**	P		**P**	**13 28 39.1**	**+0.3**
	0.3nm,0.3s,baz=38,slow=6.2,SNR=4.1							
PMG				LR		LR	13 34 42.1	
	comp=Z,443nm,18.1s,baz=275,slow=33							
PMG	**Port Moresby**	**18.93**	**277**	*e*P		**P**	**13 28 39.3**	**+0.6**
	18nm,1.1s							
PMG				LR		LR	13 34 42.1	
CTA	**Charters Tower**	**20.69**	**245**	⇑*i*P		**P**	**13 28 59.0**	**+1.3**
	9.6nm,1.0s							
CTA	**Charters Tower**	**20.69**	**245**	P		**P**	**13 28 58.9**	**+1.2**
	8.5nm,1.0s,baz=69,slow=15,SNR=5.5							
CTA				LR		LR	13 34 55.9	
	comp=Z,405nm,18.1s,MS3.8,baz=10,slow=31							
CTAO	**Charters Tower**	**20.69**	**245**	*e*P		**P**	**13 28 58.9**	**+1.2**
	23nm,1.3s							
STKA	**Stephens Creek**	**29.92**	**225**	P		**P**	**13 30 24.8**	**-0.1**
	3.5nm,1.1s,mb4.0,baz=98,slow=15,SNR=2.3							
STKA				LR		LR	13 42 16.0	
	comp=Z,449nm,19.9s,MS4.1,baz=196,slow=36							
WRAB	**Tennant Creek**	**31.52**	**252**	*e*P		**P**	**13 30 38.4**	**-0.9**
	8.0nm,0.9s,mb4.5							
WB2	**Warramunga Arr**	**31.52**	**252**	*e*P		**P**	**13 30 36.4**	**-2.9**
WRA	**Warramunga Arr**	**31.53**	**252**	P		**P**	**13 30 38.7**	**-0.7**
	0.6nm,0.7s,mb3.5,baz=84,slow=8.3,SNR=5.6							
WRA				PcP		PcP	13 33 30.7	-1.0
	1.9nm,1.1s,baz=75,slow=3.4,SNR=6.7							
AS12	**Alice Springs**	**32.69**	**245**	*e*P		**P**	**13 30 53.9**	**+4.4**
	3.8nm,0.8s,mb4.4							
ASAR	**Alice Springs**	**32.69**	**245**	P		**P**	**13 30 48.8**	**-0.8**
	0.8nm,0.7s,mb3.8,baz=70,slow=9.4,SNR=11							
ASAR				PcP		PcP	13 33 34.5	-0.4
	1.2nm,0.8s,baz=67,slow=2.4,SNR=7.2							
RAR	**Rarotonga**	**33.70**	**110**	LR		LR	13 40 46.5	
	comp=Z,246nm,18.8s,MS4.0,baz=114,slow=30							
FITZ	**Fitzroy Crossi**	**39.54**	**256**	*e*P		**P**	**13 31 53.5**	**+6.0**
	4.4nm,1.0s,mb4.1							
SBA	**Scott Base**	**65.61**	**180**	*e*P		**P**	**13 34 59.6**	**-0.6**
	0.9nm,0.5s,mb4.1							
CN2	**Changchun**	**67.00**	**329**	*e*P		**P**	**13 35 08.8**	**-0.7**
CN2				AMB		AMB		
	comp=Z,10.0nm,0.8s,mb4.9							
CMAR	**Chiang Mai Arr**	**73.02**	**294**	P		**P**	**13 35 48.1**	**+1.4**
	comp=Z,0.3nm,0.5s,mb3.4,baz=112,slow=4.9,SNR=3.4							
QSPA	**South Pole Qui**	**77.77**	**180**	*e*P		**P**	**13 36 14.3**	**+1.6**
	comp=Z,12nm,1.2s,mb4.7							
ULN	**Ulaanbaatar**	**79.54**	**324**	*e*P		**P**	**13 36 23.5**	**+0.5**
	comp=Z,15nm,1.4s,mb4.7							
ULN				*e*			13 36 36.1	
SONM	**Songino Array**	**79.90**	**324**	P		**P**	**13 36 24.8**	**-0.2**
	comp=Z,2.6nm,0.9s,mb4.2,baz=127,slow=6.2,SNR=10							
GTA	**Gaotai**	**80.22**	**314**	*e*P		**P**	**13 36 28.1**	**+1.3**
GTA				AP		pP	13 36 33.0	-4.2
GTA				AMB		AMB		
	comp=Z,8.0nm,1.2s,mb4.5							
ILAR	**Eielson Array**	**84.49**	**18**	P		**P**	**13 36 46.4**	**-1.9**
	comp=Z,0.4nm,0.8s,mb3.6,baz=262,slow=5.5,SNR=5.6							
MKAR	**Makanchi Array**	**94.71**	**317**	P		**P**	**13 37 37.4**	**+0.4**
	comp=Z,5.1nm,0.8s,mb5.0,baz=93,slow=6.3,SNR=40							
ZAL	**Zalesovo**

mb1mx3.6/25,ML3.3/7,MS3.8/1,Ms1 3.8/1,ms1mx3.1/23, Error ellipse: s-maj=31.9km s-min=14.3km az=57.0

ISC 16 13:38:48.2±1.4,**48.37N**±0.04×**128.74W**±0.06, **h14**km±10km,**n57**,σ1§**08**/63,**mb3.7**/5,**Vancouver Island region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ETB	**Estevan Point**	**1.77**	**54**	Pn	**Pn**	**13 39 21.6**	**+2.8**
EDB	**Eliza Dome**	**1.85**	**35**	Pn	**Pn**	**13 39 19.8**	**-0.1**
BPBC	**Brooks Peninsu**	**1.90**	**19**	Pn	**Pn**	**13 39 19.5**	**-1.1**
BPBC				Trac		13 39 45.8	
	comp=Z,16nm,0.2s						
OZB	**Mount Ozzard**	**2.23**	**73**	Pn	**Pn**	**13 39 25.2**	**-0.2**
OZB				Sn	**Sn**	**13 39 52.9**	**-0.1**
OZB				Trac		13 39 55.3	
	comp=Z,15nm,0.3s						
GDR	**Gold River**	**2.27**	**50**	Pn	**Pn**	**13 39 27.1**	**+1.1**
GDR				Trac		13 39 59.2	
	comp=Z,12nm,0.4s						
MAYB	**Maynard**	**2.28**	**26**	Pn	**Pn**	**13 39 26.0**	**-0.1**
WOSB	**Woss**	**2.29**	**37**	Pn	**Pn**	**13 39 26.6**	**+0.4**
HOLB	**Holberg**	**2.31**	**10**	Pn	**Pn**	**13 39 26.8**	**+0.3**
HOLB				Sn	**Sn**	**13 39 55.0**	**0.0**
	comp=Z,17nm,0.2s						
HOLB				Trac		13 39 56.4	
	comp=Z,17nm,0.2s						
PHC	**Port Hardy**	**2.49**	**19**	Pn	**Pn**	**13 39 25.1**	**-4.0**
NCRB	**Newcastle Ridg**	**2.69**	**40**	Pn	**Pn**	**13 39 32.5**	**+0.5**
MGB	**Mount Grey**	**2.75**	**75**	Pn	**Pn**	**13 39 32.5**	**-0.4**
MGB				Sn	**Sn**	**13 40 06.8**	**+0.6**
	comp=Z,12nm,0.5s						
MGB				Trac		13 40 07.9	
	comp=Z,12nm,0.5s						
CBB	**Campbell River**	**2.77**	**52**	Pn	**Pn**	**13 39 33.9**	**+0.7**
CBB				Trac		13 40 10.2	
	comp=Z,6.0nm,0.3s						
PFB	**Port Renfrew**	**2.87**	**84**	Pn	**Pn**	**13 39 34.1**	**-0.4**
PFB				Sn	**Sn**	**13 40 08.1**	**-1.0**
PFB				Trac		13 40 11.5	
	comp=Z,4.0nm,0.3s						
OCWA	**Octopus Mounta**	**3.12**	**100**	*e*P	**Pn**	**13 39 38.3**	**+0.2**
TXB	**Texada**	**3.13**	**63**	Pn	**Pn**	**13 39 38.7**	**+0.5**
TXB				Trac		13 40 20.2	
	comp=Z,13nm,0.5s						
NLLB	**Nanaimo Lost L**	**3.26**	**73**	Trac		13 40 24.0	
	comp=Z,9.0nm,0.5s						
LZB	**Mount Lazard**	**3.28**	**84**	Pn	**Pn**	**13 39 39.8**	**-0.5**
LZB				Sn	**Sn**	**13 40 19.3**	**-0.2**
LZB				Trac		13 40 29.9	
	comp=Z,2.0nm,0.4s						
SHB	**Sechelt**	**3.43**	**67**	Pn	**Pn**	**13 39 42.6**	**+0.1**
SHB				Trac		13 40 30.0	
	comp=Z,6.0nm,0.4s						
PGC	**Sidney**	**3.53**	**83**	*e*P	**Pn**	**13 39 43.5**	**-0.3**
BIB	**Bowen Island**	**3.73**	**72**	Pn	**Pn**	**13 39 47.0**	**+0.2**
BIB				Trac		13 40 36.6	
	comp=Z,5.0nm,0.4s						
BBB	**Bella Bella**	**3.84**	**6**	Pn	**Pn**	**13 39 47.1**	**-1.2**
	4.5nm,0.3s,baz=196,slow=11,SNR=15						
BBB				Sn	**Sn**	**13 40 29.4**	**-4.5**
	1.3nm,0.3s,baz=119,slow=22,SNR=5.1						
BBB	**Bella Bella**	**3.84**	**6**	Pn	**Pn**	**13 39 47.5**	**-0.9**
BBB				Sn	**Sn**	**13 40 31.1**	**-2.7**
BBB				Trac		13 40 36.6	
	comp=Z,46nm,0.9s						
WPB	**Watts Point**	**3.86**	**68**	Pn	**Pn**	**13 39 49.6**	**+1.0**
WSLR	**Whistler**	**4.20**	**63**	Pn	**Pn**	**13 39 54.5**	**+1.1**
VDB	**Vedder Mountai**	**4.44**	**79**	Pn	**Pn**	**13 39 57.2**	**+0.4**
BNB	**Barry Inlet**	**4.63**	**337**	Pn	**Pn**	**13 39 59.9**	**+0.3**
RPW	**Rockport**	**4.81**	**86**	*e*P	**Pn**	**13 40 02.2**	**+0.1**
LON	**Longmire**	**4.96**	**106**	*e*P	**Pn**	**13 40 02.4**	**-1.8**
LLLB	**Lillooet**	**5.00**	**61**	Pn	**Pn**	**13 40 04.9**	**+0.1**
LLLB				Trac		13 41 10.0	
	comp=Z,4.0nm,0.5s						
BNAB	**Bonilla**	**5.27**	**348**	Pn	**Pn**	**13 40 08.2**	**-0.4**
DPW	**Davenport**	**7.07**	**90**	*e*P	**Pn**	**13 40 32.3**	**-1.6**
NEW	**Newport**	**7.75**	**86**	Pn	**Pn**	**13 40 42.3**	**-1.1**
	0.2nm,0.3s,baz=278,slow=7.1,SNR=3.5						
NEW				LR	LR	13 43 48.5	
	comp=Z,668nm,19.9s,baz=257,slow=38						
NEW	**Newport**	**7.75**	**86**	Pn	**Pn**	**13 40 42.3**	**-1.1**
NEW				LR	LR	13 43 48.5	
YBH	**Yreka Blue Hor**	**7.88**	**145**	Pn	**Pn**	**13 40 45.9**	**+0.5**
	0.1nm,0.3s,baz=187,slow=17,SNR=1.6						
WVOR	**Wild Horse Val**	**9.25**	**126**	*e*P	**P**	**13 41 08.3**	**+4.1**
BEKR	**Beckwourth**	**10.41**	**142**	P	**P**	**13 41 16.3**	**-3.8**
NVAR	**Mina Array Bea**	**12.48**	**139**	Pn	**P**	**13 41 49.7**	**+1.4**
	0.1nm,0.3s,baz=303,slow=15,SNR=6.7						
NVAR	**Mina Array Bea**	**12.48**	**139**	Pn	**P**	**13 41 49.7**	**+1.4**
REDW	**Red Top Meadow**	**13.42**	**105**	P	**P**	**13 42 09.6**	**+8.8**
PDAR	**Pinedale Array**	**14.54**	**106**	Pn	**P**	**13 42 21.7**	**+6.3**
	0.1nm,0.3s,baz=297,slow=9.9,SNR=14						
JLU	**Jordanelle**	**14.56**	**116**	P	**P**	**13 42 17.2**	**+1.6**
NLU	**North Lily Min**	**14.60**	**119**	*e*P	**P**	**13 42 13.6**	**-2.5**
MSU	**Marysvale**	**15.52**	**123**	*e*P	**P**	**13 42 26.1**	**-2.0**
YKA	**Yellowknife Ar**	**16.21**	**24**	Pn	**P**	**13 42 33.8**	**-3.1**
	0.0nm,0.3s,baz=219,slow=11,SNR=5.0						
PV10	**Paradox Valley**	**17.41**	**118**	P	**P**	**13 42 51.2**	**-1.0**
FFC	**Flin Flon**	**17.75**	**59**	*e*P	**P**	**13 42 58.2**	**+1.9**
	28nm,1.4s						
PV01	**Paradox Valley**	**17.85**	**117**	P	**P**	**13 42 57.9**	**+0.2**
ILAR	**Eielson Array**	**19.12**	**336**	P	**P**	**13 43 12.7**	**-0.3**
	0.0nm,0.3s,baz=145,slow=13,SNR=12						
INK	**Inuvik**	**20.14**	**355**	P	**P**	**13 43 23.6**	**-0.9**
	3.2nm,1.2s,baz=161,slow=10,SNR=2.8						
ANMO	**Albuquerque**	**21.27**	**121**	*e*P	**P**	**13 43 38.4**	**+2.0**
	5.9nm,1.4s,mb3.7						
WMOK	**Wichita Mounta**	**26.04**	**110**	P	**P**	**13 44 21.5**	**-1.1**
	0.7nm,0.7s,mb3.3						
TIXI	**Tiksi**	**48.59**	**336**	P	**P**	**13 47 31.8**	**-0.8**
BRG	**Berggiesshubel**	**76.09**	**23**	*e*P	**P**	**13 50 38.5**	**+2.0**
	5.4nm,1.5s,mb4.3						
KHC	**Kasperske Hory**	**77.57**	**24**	*e*P	**P**	**13 50 46.5**	**+1.6**
GERES	**GERESS Array B**	**77.87**	**24**	P	**P**	**13 50 47.5**	**+1.0**
	0.7nm,0.9s,mb3.6,baz=315,slow=1.4,SNR=4.1						
MKAR	**Makanchi Array**	**81.44**	**339**	P	**P**	**13 51 05.3**	**-0.4**
	0.4nm,0.8s,mb3.4,baz=27,slow=3.2,SNR=3.4						
MKAR	**Makanchi Array**	**81.44**	**339**	P	**P**	**13 51 05.3**	**-0.4**

*IDC **16** 13:48:51.8±0.6,12.03S×166.14E,mb4.5/15,mb1 4.6/16, mb1mx4.6/18,ML3.4/1,MS4.5/13,Ms1 4.5/13, ms1mx4.4/22,Error ellipse: s-maj=20.5km s-min=16.0km az=117.0*

*NEIC **16** 13:48:53.3±0.4,12.00S×166.11E,h10km,mb4.8/15, MS4.6/1,Error ellipse: s-maj=10.6km s-min=8.1km az=98.0*

*BJI **16** 13:48:53.3,12.00S×166.10E,h10km,mB4.9,mb4.9, Ms4.9,Msz4.6*

*MOS **16** 13:48:55.7±0.8,12.04S×166.03E,h33km,mb5.5/4,Error ellipse: s-maj=22.4km s-min=17.5km az=8.1*

ISC 16 13:48:53.3±4.0,**12.11S**±0.08×**166.06E**±0.08,**h17**km±28km, **h15**km±2.8km:**pP-P**,**n81**,σ1§**10**/61,**mb4.7**/36,**MS4.6**/18, **5C-2D**,**Santa Cruz Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**5.91**	**159**	⇑*i*P	**Pn**	**13 50 24.1**	**+1.7**
DZM	**Mont Dzumac**	**9.91**	**178**	*e*P	**P**	**13 51 16.4**	**-1.8**
NOUC	**Port Laguerre**	**9.93**	**179**	*e*P	**P**	**13 51 17.8**	**-0.8**
NOUC	**Port Laguerre**	**9.93**	**179**	*e*S	**Sn**	**13 53 05.3**	**-5.4**
NOUC	**Port Laguerre**	**9.93**	**179**	*e*P	**P**	**13 51 17.8**	**-0.8**
NOUC				*e*S	**Sn**	**13 53 05.3**	**-5.4**
PMG	**Port Moresby**	**18.76**	**276**	P	**P**	**13 53 13.8**	**-0.2**
	0.4nm,0.3s,baz=28,slow=4.6,SNR=8.1						
PMG	**Port Moresby**	**18.76**	**276**	*e*P	**P**	**13 53 13.3**	**-0.7**
	38nm,0.9s						
WAU	**Wau**	**19.64**	**282**	*e*P	**P**	**13 53 26.5**	**+2.2**
CTA	**Charters Tower**	**20.59**	**245**	⇓*i*P	**P**	**13 53 35.4**	**+1.0**
	20nm,0.9s						
CTA	**Charters Tower**	**20.59**	**245**	P	**P**	**13 53 35.4**	**+1.0**
	17nm,0.8s,baz=73,slow=11,SNR=18						
CTA				LR	LR	14 00 33.8	
	comp=Z,1μm,20.5s,MS4.3,baz=84,slow=34						
CTAO	**Charters Tower**	**20.59**	**245**	*e*P	**P**	**13 53 35.4**	**+1.0**
	16nm,0.8s						
RIV	**Riverview**	**25.54**	**210**	⇓*i*P	**P**	**13 54 24.7**	**+1.8**
URZ	**Urewera**	**27.84**	**161**	P	**P**	**13 54 44.0**	**-0.1**
	3.8nm,0.6s,mb4.2,baz=343,slow=20,SNR=2.8						
STKA	**Stephens Creek**	**29.89**	**225**	*e*P	**P**	**13 55 03.2**	**+0.6**
	10nm,0.8s,mb4.6						
STKA	**Stephens Creek**	**29.89**	**225**	P	**P**	**13 55 03.1**	**+0.5**
	6.2nm,0.8s,mb4.4,baz=28,slow=9.3,SNR=9.6						
STKA				LR	LR	14 06 59.2	
	comp=Z,2μm,18.2s,MS4.7,baz=48,slow=36						
TOO	**Toolangi**	**31.33**	**212**	*e*P	**P**	**13 55 15.9**	**+0.7**
	7.7nm,0.7s,mb4.6						
WB2	**Warramunga Arr**	**31.41**	**252**	*e*P	**P**	**13 55 14.1**	**-1.9**
WRAB	**Tennant Creek**	**31.41**	**252**	*e*P	**P**	**13 55 12.4**	**-3.6**
	23nm,1.0s,mb5.0						
WRA	**Warramunga Arr**	**31.42**	**252**	P	**P**	**13 55 15.0**	**-1.2**
	3.4nm,0.8s,mb4.2,baz=82,slow=8.7,SNR=29						
WRA				PcP	PcP	13 58 08.8	-0.8
	2.8nm,0.8s,baz=84,slow=2.8,SNR=7.3						
WRA				LR	LR	14 05 24.4	
	comp=Z,465nm,21.9s,MS4.1,baz=90,slow=32						
RPZ	**Rata Peaks**	**31.78**	**173**	P	**P**	**13 55 18.5**	**-0.6**
	41nm,0.8s,mb5.3,baz=171,slow=1.1,SNR=28						
AS12	**Alice Springs**	**32.60**	**245**	*e*P	**P**	**13 55 25.4**	**-1.0**
	13nm,1.1s,mb4.8						
ASAR	**Alice Springs**	**32.60**	**245**	P	**P**	**13 55 24.6**	**-1.9**
	3.8nm,0.7s,mb4.4,baz=70,slow=9.5,SNR=44						
ASAR				PcP	PcP	13 58 11.6	-1.2
	5.1nm,0.7s,baz=82,slow=2.7,SNR=13						
ASAR				LR	LR	14 07 57.8	
	comp=Z,556nm,18.3s,MS4.3,baz=70,slow=35						
FITZ	**Fitzroy Crossi**	**39.41**	**256**	*e*P	**P**	**13 56 25.3**	**+1.0**
	6.6nm,0.7s,mb4.5						
TGY	**Tagaytay City**	**51.75**	**299**	LR	LR	14 18 21.8	
	comp=Z,481nm,19.1s,MS4.5,baz=156,slow=34						
JOW	**Kunigami**	**53.34**	**317**	LR	LR	14 20 36.2	
	comp=Z,478nm,18.9s,MS4.6,baz=233,slow=36						
ASAJ	**Asahikawa**	**59.90**	**341**	P	**P**	**13 58 59.6**	**-1.2**
	3.3nm,0.5s,mb4.6,baz=137,slow=4.9,SNR=3.9						
MDJ	**Mudanjiang**	**65.43**	**332**	P	**P**	**13 59 37.6**	**0.0**
MDJ				AMB	AMB		
	comp=Z,10.0nm,1.7s,mb4.6						
MDJ				AMB	AMB		
	comp=Z,57nm,7.8s						
SBA	**Scott Base**	**65.74**	**180**	*e*P	**P**	**13 59 39.1**	**+0.1**
	comp=Z,28nm,0.8s,mb5.3						
CN2	**Changchun**	**66.81**	**329**	⇑P	**P**	**13 59 46.0**	**-0.4**
CN2				*e*AP	pP	13 59 51.8	+0.2
CN2				*e*S	S	14 08 37.0	+0.5
CN2				AMB	AMB		
	comp=Z,20nm,0.8s,mb5.2						
CN2				AMB	AMB		
	comp=Z,240nm,5.0s						
CN2				LR	LR		
	comp=N,360nm,20.0s,MS4.7						
CN2				LR	LR		
	comp=E,280nm,20.0s,MS4.7						
CN2				LR	LR		
	comp=Z,370nm,22.0s,MS4.5						
GYA	**Guiyang**	**69.27**	**304**	⇑*i*P	**P**	**14 00 08.4**	**+6.4**
GYA				AMB	AMB		
	comp=Z,10.0nm,0.9s,mb4.8						
BJI	**Beijing**	**69.50**	**321**	*e*P	**P**	**14 00 02.3**	**-0.9**
BJI				S	S	14 09 11.3	+2.6
BJI				AMB	AMB		
	comp=Z,9.0nm,1.2s,mb4.6						
BJI				LR	LR		
	comp=N,367nm,22.8s,MS4.7						
BJI				LR	LR		
	comp=E,362nm,20.8s,MS4.7						
BJI				LR	LR		
	comp=Z,575nm,24.1s,MS4.7						
CMAR	**Chiang Mai Arr**	**72.82**	**294**	P	**P**	**14 00 24.1**	**+0.5**
	comp=Z,3.0nm,1.0s,mb4.2,baz=127,slow=5.5,SNR=7.1						
CMAR				LR	LR	14 32 51.7	
	comp=Z,125nm,18.9s,MS4.2,baz=110,slow=36						
HHC	**Hu-ho-hao-te**	**72.84**	**320**	*e*P	**P**	**14 00 23.5**	**+0.2**
HHC				AP	pP	14 00 28.1	-0.4
HHC				XP	sP	14 00 30.9	+0.5
HHC				PCP	PcP	14 00 40.3	-0.4
HHC				PP	PP	14 03 12.4	+4.8
HHC				S	S	14 09 51.9	+4.6
HHC				XS		14 09 55.8	
HHC				SKS	SKS	14 10 25.0	-4.4
HHC				AMB	AMB		
	comp=Z,8.0nm,1.3s,mb4.5						
HHC				AMB	AMB		
	comp=Z,109nm,10.1s						
HHC				LR	LR		
	comp=N,156nm,18.2s,MS4.4						
HHC				LR	LR		
	comp=E,130nm,19.0s,MS4.4						
HHC				LR	LR		
	comp=Z,240nm,20.2s,MS4.5						
LZH	**Lanzhou**	**75.70**	**312**	*e*P	**P**	**14 00 42.5**	**+2.5**
LZH				AP	pP	14 00 45.8	+0.6
LZH				XP	sP	14 00 47.6	+0.6
LZH				AMB	AMB		
	comp=Z,47nm,1.5s,mb5.2						
QSPA	**South Pole Qui**	**77.90**	**180**	*e*P	**P**	**14 00 51.8**	**+0.4**
	comp=Z,39nm,1.0s,mb5.3						
QSPA				LR	LR		
	comp=Z,270nm,19.5s,MS4.6						
ULN	**Ulaanbaatar**	**79.34**	**324**	*e*P	**P**	**14 01 00.4**	**+0.5**
	comp=Z,14nm,0.8s,mb5.0						
SONM	**Songino Array**	**79.70**	**324**	P	**P**	**14 01 01.6**	**-0.2**
	comp=Z,4.9nm,0.7s,mb4.6,baz=149,slow=5.8,SNR=21						
BILL	**Bilibino**	**79.94**	**0**	⇑*i*P	**P**	**14 01 07.1**	**+4.4**
BILL				*e*		14 01 14.7	
BILL				*i*		14 01 22.4	
BILL				pmax	pmax		
	comp=Z,5.0nm,1.1s,mb4.4						
BILL	**Bilibino**	**79.94**	**0**	*e*P	**P**	**14 01 06.7**	**+4.0**
	comp=Z,1.9nm,0.6s,mb4.2						
GTA	**Gaotai**	**80.01**	**314**	*e*P	**P**	**14 01 05.4**	**+1.7**
GTA				AP	pP	14 01 17.1	+8.2
GTA				AMB	AMB		
	comp=Z,7.0nm,1.1s,mb4.5						
BOD	**Bodaibo**	**81.62**	**335**	*e*P	**P**	**14 01 11.5**	**-0.2**
ZAK	**Zakamensk**	**82.75**	**325**	*e*P	**P**	**14 01 18.4**	**+0.7**
TLY	**Talaya**	**83.17**	**326**	*e*P	**P**	**14 01 18.2**	**-1.7**
TLY				*e*		14 01 25.5	
TLY				pmax	pmax		
	comp=Z,67nm,0.7s,mb5.8						
TLY				MLR	MLR		
	comp=Z,2μm,20.0s,MS5.4						
MAW	**Mawson**	**83.85**	**202**	P	**P**	**14 01 23.2**	**+0.2**
	comp=Z,7.5nm,1.2s,mb4.7,baz=62,slow=9.8,SNR=4.8						
MAW				LR	LR	14 32 36.6	
	comp=Z,160nm,21.2s,MS4.4,baz=235,slow=31						
YBH	**Yreka Blue Hor**	**84.42**	**45**	P	**P**	**14 01 26.9**	**+0.5**
	comp=Z,0.5nm,0.4s,mb4.0,baz=250,slow=6.9,SNR=3.7						
ILAR	**Eielson Array**	**84.42**	**18**	P	**P**	**14 01 24.9**	**-1.0**
	comp=Z,2.2nm,0.7s,mb4.4,baz=260,slow=4.9,SNR=10						
ILAR				LR	LR	14 39 60.0	
	comp=Z,270nm,18.1s,MS4.7,baz=250,slow=36						
MOY	**Mondy**	**84.62**	**325**	*e*P	**P**	**14 01 28.2**	**+1.0**
NVAR	**Mina Array Bea**	**86.48**	**50**	P	**P**	**14 01 35.9**	**-0.9**
	comp=Z,0.5nm,0.7s,mb3.9,baz=248,slow=9.7,SNR=3.4						
TIXI	**Tiksi**	**87.19**	**349**	*e*P	**P**	**14 01 44.2**	**+4.7**
TIXI				pmax	pmax		
	comp=Z,20nm,1.3s,mb5.2						
PKI	**Pulchoki**	**87.41**	**299**	*e*P	**P**	**14 01 41.1**	**-0.5**
	comp=Z,21nm,0.9s,mb5.3						
KKN	**Kakani**	**87.58**	**299**	*e*P	**P**	**14 01 42.0**	**-0.4**
DMN	**Daman**	**87.68**	**299**	*e*P	**P**	**14 01 42.5**	**-0.4**
GKN	**Gorkha**	**88.19**	**299**	*e*P	**P**	**14 01 45.0**	**-0.3**
	comp=Z,25nm,0.8s,mb5.5						
KOLN	**Kolanda**	**89.02**	**299**	*e*P	**P**	**14 01 46.7**	**-2.6**
	comp=Z,20nm,1.0s,mb5.4						
WMQ	**Urumqi**	**90.06**	**315**	P	**P**	**14 01 55.0**	**+1.2**
HLID	**Hailey**	**90.80**	**46**	*e*P	**P**	**14 02 00.2**	**+3.0**
	comp=Z,1.2nm,0.8s,mb4.3						
INK	**Inuvik**	**90.81**	**19**	P	**P**	**14 01 57.1**	**+0.5**
	comp=Z,0.2nm,0.5s,mb3.7						
PDAR	**Pinedale Array**	**94.05**	**47**	LR	LR	14 39 55.8	
	comp=Z,350nm,18.4s,MS4.8,baz=95,slow=33						
MKAR	**Makanchi Array**	**94.50**	**317**	P	**P**	**14 02 14.2**	**+0.1**
	comp=Z,13nm,0.6s,mb5.5,baz=94,slow=6.0,SNR=113						
MKAR				LR	LR	14 43 44.7	
	comp=Z,198nm,20.4s,MS4.6,baz=99,slow=35						
MKAR	**Makanchi Array**	**94.50**	**317**	*i*P	**P**	**14 02 14.2**	**+0.1**
MKAR				pmax	pmax		
	comp=Z,8.0nm,0.7s						
ZAL	**Zalesovo**	**94.60**	**324**	P	**P**	**14 02 13.8**	**-0.6**
	comp=Z,2.2nm,0.7s,mb4.7,baz=265,slow=5.1,SNR=13						
ZAL				LR	LR	14 43 47.8	
	comp=Z,325nm,21.6s,MS4.8,baz=279,slow=35						
YKA	**Yellowknife Ar**	**95.78**	**27**	P	**P**	**14 02 19.2**	**-0.4**
	comp=Z,0.4nm,0.6s,mb4.0,baz=251,slow=4.3,SNR=7.4						
YKA				LR	LR	14 44 37.1	
	comp=Z,146nm,19.2s,MS4.5,baz=250,slow=35						
YKA	**Yellowknife Ar**	**95.78**	**27**	P	**P**	**14 02 19.2**	**-0.4**
YKA				LR	LR	14 44 37.1	
ARCES	**ARCESS Array B**	**117.44**	**345**	PKP	PKPdf	14 07 37.3	-4.3
	comp=Z,1.3nm,0.5s,baz=45,slow=1.7,SNR=18						
ZEI	**Tsey**	**121.63**	**313**	⇑*e*PKIKP	PKPdf	14 07 50.2	-0.2
FINES	**FINESS Array B**	**122.87**	**338**	PKP	PKPdf	14 07 49.1	-3.1
	comp=Z,0.4nm,0.4s,SNR=12						
KMBO	**Kilima Mbogo**	**127.49**	**259**	PKP	PKPdf	14 08 01.4	-1.2
	comp=Z,2.4nm,0.9s,baz=48,slow=7.7,SNR=7.2						
NB2	**NORSAR Subarra**	**127.81**	**345**	PKPdf	PKPdf	14 07 57.8	-4.1
	comp=Z,2.8nm,1.2s,baz=31,slow=1.9						
LPG	**La Plagne**	**142.35**	**336**	*e*PKP1	PKPdf	14 08 25.3	-3.8
	comp=Z,9.2nm,1.1s						
MBDF	**Montbardon**	**142.97**	**335**	*e*PKP1	PKPdf	14 08 26.7	-3.5
VIVF	**Saint-Julien-l**	**143.69**	**337**	*e*PKP1	PKPbc	14 08 27.9	+1.4
MFF	**Saint Martin d**	**143.70**	**344**	*e*PKP1	PKPbc	14 08 27.9	+1.5
	comp=Z,11nm,0.9s						
PGF	**Pioggiola**	**143.71**	**331**	*e*PKP1	PKPbc	14 08 28.6	+2.0
	comp=Z,18nm,0.9s						
FRF	**La Foret Royal**	**143.97**	**334**	*e*PKP1	PKPbc	14 08 26.9	-0.5
SMRF	**Simiane la Rot**	**144.08**	**336**	*e*PKP1	PKPbc	14 08 29.1	+1.5
	comp=Z,11nm,0.8s						
RJF	**Les Rejaudoux**	**144.39**	**341**	*e*PKP1	PKPbc	14 08 29.9	+1.4
RJF				*e*R			
	comp=Z,365nm,18.5s						
CAF	**Calviac**	**144.55**	**340**	*e*PKP1	PKPbc	14 08 30.7	+1.8
	comp=Z,27nm,1.1s						
CAF				*e*PKP1	PKPbc	14 08 30.7	+1.8
LASF	**Ste Croix**	**144.66**	**338**	*e*PKP1	PKPbc	14 08 30.1	+0.8
	comp=Z,16nm,0.8s						
MTLF	**Montolieu**	**145.89**	**339**	*e*PKP1	PKPbc	14 08 33.3	+0.8
	comp=Z,17nm,0.9s						
ESDC	**Sonseca Array**	**151.16**	**344**	PKPbc	PKPdf	14 08 46.3	+2.5
	comp=Z,1.8nm,1.1s,baz=66,slow=1.0,SNR=5.5						
LIC	**Lamto**	**169.43**	**237**	*e*PKP2	PKPab	14 10 21.6	+6.0
	comp=Z,22nm,1.1s						
LIC				*e*R			
	comp=Z,556nm,19.8s						

*NEIC **16** 13:49:43.0,48.26N×128.96W,h10km,mb4.2/8, ML3.7(PGC),After PGC.*

*PGC **16** 13:49:43.3,48.26N×128.96W,h10km,MLSn3.7/1, Northern Juan de Fuca ridge.*

*IDC **16** 13:49:44.3±1.6,48.48N×128.49W,mb3.3/1,mb1 3.6/9, mb1mx3.5/26,ML3.4/8,MS3.8/7,Ms1 3.8/7,ms1mx3.6/12, Error ellipse: s-maj=28.9km s-min=10.0km az=63.0*

ISC 16 13:49:45.2±1.5,**48.40N**±0.03×**128.81W**±0.06, **h28**km±14km,**n71**,σ1§**15**/78,**mb4.2**/4,**MS3.5**/2,**Vancouver Island region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ETB	**Estevan Point**	**1.79**	**56**	Pn	**Pn**	**13 50 17.3**	**+2.5**
EDB	**Eliza Dome**	**1.85**	**36**	Pn	**Pn**	**13 50 14.7**	**-0.9**
BPBC	**Brooks Peninsu**	**1.89**	**21**	Pn	**Pn**	**13 50 15.2**	**-1.0**
BPBC				Trac		13 50 45.3	
	comp=Z,29nm,0.3s						
OZB	**Mount Ozzard**	**2.27**	**74**	Pn	**Pn**	**13 50 20.8**	**-0.8**
OZB				Sn	**Sn**	**13 50 48.4**	**-0.7**
OZB				Trac		13 50 51.7	
	comp=Z,21nm,0.3s						
MAYB	**Maynard**	**2.27**	**28**	Pn	**Pn**	**13 50 21.7**	**0.0**
MAYB				Trac		13 50 52.5	
	comp=Z,23nm,0.4s						
HOLB	**Holberg**	**2.29**	**11**	Pn	**Pn**	**13 50 22.6**	**+0.7**
HOLB				Trac		13 50 52.4	
	comp=Z,6.0nm,0.1s						
GDR	**Gold River**	**2.29**	**52**	Pn	**Pn**	**13 50 22.0**	**+0.1**
GDR				Trac		13 50 55.1	
	comp=Z,12nm,0.4s						
WOSB	**Woss**	**2.29**	**39**	Pn	**Pn**	**13 50 22.3**	**+0.3**
PHC	**Port Hardy**	**2.48**	**21**	Pn	**Pn**	**13 50 24.1**	**-0.5**
NCRB	**Newcastle Ridg**	**2.69**	**41**	Pn	**Pn**	**13 50 28.3**	**+0.6**
NCRB				Sn	**Sn**	**13 51 01.3**	**+1.5**
	comp=Z,10.0nm,0.4s						
NCRB				Trac		13 51 02.4	
	comp=Z,10.0nm,0.4s						
CBB	**Campbell River**	**2.79**	**53**	Pn	**Pn**	**13 50 29.4**	**+0.3**
CBB				Trac		13 51 07.2	
	comp=Z,14nm,0.6s						
MGB	**Mount Grey**	**2.79**	**76**	Pn	**Pn**	**13 50 28.3**	**-0.9**
MGB				Sn	**Sn**	**13 51 01.5**	**-0.8**
	comp=Z,11nm,0.4s						
MGB				Trac		13 51 04.4	
	comp=Z,11nm,0.4s						
PFB	**Port Renfrew**	**2.91**	**85**	Pn	**Pn**

15nm,1.6s

MSU	**Marysvale**	**15.58**	**123**	P	**P**	**13 53 23.6**	**-0.9**
YKA	**Yellowknife Ar**	**16.20**	**24**	Pn	**P**	**13 53 26.0**	**-6.3**
	0.0nm,0.3s,baz=216,slow=11,SNR=4.0						
YKA				LR	LR	14 00 11.7	
	comp=Z,231nm,18.1s,baz=240,slow=39						
PV10	**Paradox Valley**	**17.47**	**118**	*e*P	**P**	**13 53 49.2**	**+0.9**
FFC	**Flin Flon**	**17.77**	**59**	*e*P	**P**	**13 53 53.5**	**+1.4**
	43nm,1.3s						
PV01	**Paradox Valley**	**17.91**	**117**	*e*P	**P**	**13 53 52.2**	**-1.6**
WUAZ	**Wupatki**	**18.22**	**129**	P	**P**	**13 53 57.6**	**-0.1**
	23nm,1.5s						
ILAR	**Eielson Array**	**19.07**	**336**	P	**P**	**13 54 09.1**	**+1.4**
	0.2nm,0.3s,baz=150,slow=12,SNR=14						
ILAR				LR	LR	14 00 46.9	
	comp=Z,143nm,18.1s,baz=319,slow=35						
SDCO	**Great Sand Dun**	**20.01**	**114**	P	**P**	**13 54 16.1**	**-2.3**
	8.1nm,1.3s						
INK	**Inuvik**	**20.11**	**355**	P	**P**	**13 54 18.4**	**-0.8**
	1.7nm,0.9s,baz=159,slow=12,SNR=6.8						
INK				LR	LR	14 01 33.4	
	comp=Z,166nm,19.9s,MS3.4,baz=13,slow=35						
TUC	**Tucson**	**21.06**	**133**	*e*P	**P**	**13 54 27.9**	**-1.4**
	11nm,1.6s,mb4.0						
ANMO	**Albuquerque**	**21.33**	**121**	*e*P	**P**	**13 54 31.5**	**-0.6**
	14nm,1.6s,mb4.0						
ULM	**Lac du Bonnet**	**21.45**	**73**	LR	LR	14 03 13.8	
	comp=Z,242nm,19.7s,MS3.6,baz=336,slow=38						
BNM	**Barren Site**	**21.82**	**123**	P	**P**	**13 54 36.8**	**-0.2**
FCC	**Fort Churchill**	**22.81**	**50**	*e*P	**P**	**13 54 47.8**	**+1.3**
	23nm,1.3s,mb4.5						
MNTX	**Cornudas Mount**	**24.35**	**125**	*e*P	**P**	**13 55 01.7**	**-0.1**
WMOK	**Wichita Mounta**	**26.09**	**110**	P	**P**	**13 55 16.7**	**-1.5**
BRG	**Berggiesshubel**	**76.07**	**23**	*e*P	**P**	**14 01 34.4**	**+3.1**
	11nm,1.6s,mb4.5						

*IDC **16** 14:04:18.4±1.4,33.94N×141.81E,mb3.4/3,mb1 3.7/3, mb1mx3.4/20,Error ellipse: s-maj=44.4km s-min=22.3km az=135.0*
*JMA **16** 14:04:19.1±0.3,34.03N×141.65E,h21km±3km,M3.1*
*NEIC **16** 14:04:24.6±1.0,34.06N×141.44E,h50km,Error ellipse: s-maj=28.3km s-min=14.3km az=62.0*
ISC 16 14:04:20.0±1.7,34.13N±0.06×141.72E±0.10,h27km±11km, n13,σ0°90/18,mb3.4/3,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BSO1	**Boso 1**	**0.81**	**310**	P	**Pb**	**14 04 34.7**	**-0.6**
BSO1				S	**Sb**	**14 04 45.8**	**0.0**
BSO3	**Boso 3**	**1.20**	**304**	P	**Pn**	**14 04 41.4**	**+0.1**
BSO3				S	**Sn**	**14 04 57.7**	**+0.9**
BSO4	**Boso 4**	**1.43**	**307**	P	**Pn**	**14 04 44.8**	**+0.3**
JHJ2	**Mitsune**	**1.89**	**238**	P	**Pn**	**14 04 52.0**	**+0.9**
JHJ	**Hachijo jima 2**	**1.91**	**239**	Pn	**Pn**	**14 04 52.1**	**+0.8**
	27nm,0.3s,baz=119,slow=15,SNR=16						
JHJ				Sn	**Sn**	**14 05 14.8**	**0.0**
	86nm,0.3s,baz=120,slow=23,SNR=10						
KTJJ	**Kamata 2**	**2.33**	**291**	P	**Pn**	**14 04 56.4**	**-1.0**
JOD2	**Odawara 2**	**2.44**	**298**	P	**Pn**	**14 04 58.3**	**-0.7**
MAJO	**Matsushiro**	**3.75**	**311**	*e*Pn	**Pn**	**14 05 18.4**	**+0.9**
MAT	**Matsushiro**	**3.75**	**311**	P	**Pn**	**14 05 18.1**	**+0.6**
MAT				*e*S	**Sn**	**14 05 59.9**	**-1.4**
MAT	**Matsushiro**	**3.75**	**311**	P	**Pn**	**14 05 18.0**	**+0.5**
MAT				S	**Sn**	**14 06 00.0**	**-1.3**
ILAR	**Eielson Array**	**51.82**	**31**	P	**P**	**14 13 28.6**	**+1.1**
	0.3nm,0.7s,mb3.3,baz=240,slow=7.3,SNR=8.5						
WRA	**Warramunga Arr**	**54.23**	**189**	P	**P**	**14 13 45.5**	**-0.3**
	0.7nm,0.8s,mb3.6,baz=5.4,slow=7.5,SNR=9.1						
ASAR	**Alice Springs**	**57.86**	**188**	P	**P**	**14 14 10.2**	**-2.3**
	0.1nm,0.4s,mb3.2,baz=9.8,slow=7.0,SNR=6.1						

*IDC **16** 14:16:07.4±1.4,1.52N×128.89E,mb3.7/6,mb1 3.8/6, mb1mx3.7/15,Error ellipse: s-maj=89.4km s-min=18.6km az=66.0*
ISC 16 14:16:10.1±1.3,1.5N±0.2×128.9E±0.5,h33km,n6,σ1°45/6, mb3.7/6,Halmahera

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**21.98**	**166**	P	**P**	**14 21 02.3**	**-0.8**
	1.6nm,1.1s,mb3.4,baz=343,slow=11,SNR=4.6						
ASAR	**Alice Springs**	**25.50**	**169**	P	**P**	**14 21 39.2**	**+1.8**
	0.4nm,0.8s,mb3.0,baz=353,slow=14,SNR=4.5						
CMAR	**Chiang Mai Arr**	**33.87**	**302**	P	**P**	**14 22 52.1**	**+0.1**
	1.1nm,0.9s,mb3.8,baz=115,slow=7.4,SNR=5.0						
STKA	**Stephens Creek**	**35.32**	**161**	P	**P**	**14 23 03.7**	**-0.8**
	2.8nm,0.9s,mb4.2,baz=328,slow=13,SNR=3.3						
SONM	**Songino Array**	**50.09**	**340**	P	**P**	**14 25 05.0**	**+0.9**
	0.7nm,0.6s,mb3.8,baz=194,slow=5.9,SNR=2.9						
MKAR	**Makanchi Array**	**60.60**	**325**	P	**P**	**14 26 19.0**	**-1.1**
	0.8nm,0.7s,mb4.0,baz=128,slow=8.5,SNR=8.4						

DJA 16 14:23:47.5±1.2,9.08S×117.98E,h240km,MD4.4/2, ML4.0/4,2D,Error ellipse: s-maj=86.5km s-min=37.1km az=10.0,Sumbawa region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KEDI	**Kedomdong**	**1.93**	**288**	*e*Pn	P	14 24 29.5	+0.7
	50nm,0.2s						
KEDI				*e*Sn	S	14 24 59.3	-1.5
RATI	**Rata**	**2.44**	**278**	*e*Pn	P	14 24 34.0	+0.2
	82nm,0.2s						
RATI				*e*Sn	S	14 25 08.8	-0.9
INGI	**Ingas**	**2.81**	**275**	*e*Pn	P	14 24 38.1	+0.4
	327nm,0.3s						
KELI	**Kelakatan**	**3.55**	**284**	*e*Pn	P	14 24 47.0	+0.9
	11nm,0.3s						

IDC 16 14:25:14.4±8.5,11.23S×164.57E,mb3.3/2,mb1 3.5/2, mb1mx3.4/12,Error ellipse: s-maj=259.0km s-min=49.0km az=124.0,Santa Cruz Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**30.34**	**250**	P	P	14 31 27.8	-2.5
	0.1nm,0.6s,baz=80,slow=9.5,SNR=3.1						
ASAR	**Alice Springs**	**31.68**	**243**	P	P	14 31 40.2	-1.8
	0.4nm,0.7s,baz=71,slow=9.1,SNR=8.6						
MKAR	**Makanchi Array**	**92.86**	**317**	P	P	14 38 29.3	-1.2
	2.5nm,0.7s,baz=92,slow=6.4,SNR=26						

*NEIC **16** 14:42:17.6±2.4,4.07S×152.39E,h92km±19km,mb4.2/3, Error ellipse: s-maj=46.3km s-min=15.9km az=127.0*
*IDC **16** 14:42:17.3±5.4,4.26S×152.62E,h95km±46km,mb3.5/5, mb1 3.7/6,mb1mx3.5/16,MS2.9/1,Ms1 2.9/1,ms1mx2.7/17, Error ellipse: s-maj=113.0km s-min=27.5km az=129.0*
ISC 16 14:42:15.3±4.1,4.0S±0.3×152.3E±0.4,h82km±34km,n12, σ0°71/14,mb3.7/7,1D,New Ireland region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**7.43**	**223**	P	**P**	**14 44 03.0**	**-0.1**
	0.5nm,0.3s,slow=8.1,SNR=4.2						
PMG				S	**S**	**14 45 27.9**	**+1.4**
	1.1nm,0.3s,baz=136,slow=16,SNR=2.9						
PMG				LR	LR	14 47 04.0	
	comp=Z,80nm,19.6s,baz=284,slow=38						
PMG	**Port Moresby**	**7.43**	**223**	*e*Pn	**P**	**14 44 03.2**	**+0.1**
PMG				*e*Sn	**S**	**14 45 25.0**	**-1.5**
PMG				LR	LR	14 47 04.0	
WRAB	**Tennant Creek**	**23.62**	**226**	*e*P	**P**	**14 47 20.3**	**+0.4**
	7.2nm,0.6s,mb4.2						
WB2	**Warramunga Arr**	**23.63**	**226**	*i*P	**P**	**14 47 20.6**	**+0.6**
WRA	**Warramunga Arr**	**23.64**	**226**	P	**P**	**14 47 20.5**	**+0.5**
	2.2nm,0.5s,mb3.8,baz=53,slow=9.9,SNR=39						
ASAR	**Alice Springs**	**26.44**	**221**	P	**P**	**14 47 45.4**	**-1.2**
	0.4nm,0.4s,mb3.2,baz=52,slow=8.9,SNR=7.3						
FITZ	**Fitzroy Crossi**	**29.63**	**240**	*e*P	**P**	**14 48 15.0**	**-0.4**
	1.3nm,0.8s,mb3.6						
FITZ	**Fitzroy Crossi**	**29.63**	**240**	P	**P**	**14 48 15.1**	**-0.4**
	1.5nm,0.7s,mb3.7,baz=51,slow=7.1,SNR=7.1						
ILAR	**Eielson Array**	**81.58**	**22**	P	**P**	**14 54 24.9**	**-0.5**
	0.4nm,0.8s,mb3.3,baz=259,slow=4.8,SNR=5.2						
QSPA	**South Pole Qui**	**85.99**	**180**	*e*P	**P**	**14 54 47.3**	**+0.1**
	1.6nm,0.5s,mb4.2						
INK	**Inuvik**	**87.86**	**21**	P	**P**	**14 54 56.9**	**+0.4**
	1.2nm,1.0s,mb3.9,baz=203,slow=5.4,SNR=3.4						
INK	**Inuvik**	**87.86**	**21**	P	**P**	**14 54 57.1**	**+0.6**

IDC 16 14:43:17.8±2.9,48.66N×129.21W,mb1 3.3/5, mb1mx3.2/22,ML3.0/4,Error ellipse: s-maj=50.0km s-min=17.3km az=69.0,Vancouver Island region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BBB	**Bella Bella**	**3.60**	**11**	Pn	Pn	14 44 13.2	-2.8
	1.2nm,0.3s,baz=197,slow=12,SNR=22						
BBB				Sn	Sn	14 44 56.9	-3.0
	0.3nm,0.3s,baz=279,slow=19,SNR=2.7						
NVAR	**Mina Array Bea**	**12.91**	**138**	Pn	P	14 46 25.5	+0.2
	0.1nm,0.3s,baz=304,slow=6.5,SNR=3.2						
PDAR	**Pinedale Array**	**14.92**	**106**	Pn	P	14 46 53.1	+1.5
	0.0nm,0.3s,baz=300,slow=12,SNR=5.4						
YKA	**Yellowknife Ar**	**16.08**	**25**	Pn	P	14 47 03.0	-3.5
	0.0nm,0.3s,baz=214,slow=11,SNR=4.3						
ILAR	**Eielson Array**	**18.72**	**336**	P	P	14 47 38.3	-1.4
	baz=142,slow=11,SNR=3.1						

*NSSC **16** 15:00:05.0,33.83N×36.68E,h12km±1km*
*GII **16** 15:00:05.5±0.8,33.86N×36.65E,h5km±6km,ML3.0/6, Mw3.1/3*
*GRAL **16** 15:00:05.5±0.5,33.81N×36.70E,MD3.2*
ISC 16 15:00:04.2±0.8,33.85N±0.02×36.71E±0.05,h5km±4km, n22,σ0°84/36,8D,Jordan - Syria region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MARH	**Ras Al Marh**	**0.26**	**314**	⇓P	**Pg**	**15 00 10.9**	**+1.5**
MARH				⇓S	**Sg**	**15 00 14.7**	**+1.8**
QASN	**Qassioun**	**0.48**	**229**	⇑P	**Pg**	**15 00 14.4**	**+0.7**
QASN				⇑S	**Sg**	**15 00 20.6**	**+0.6**
TOTH	**TOTAH**	**0.54**	**206**	⇓P	**Pg**	**15 00 15.4**	**+0.4**
TOTH				⇓S	**Sg**	**15 00 21.9**	**-0.2**
HWQ	**Hawqa**	**0.76**	**304**	*i* PG	**Pg**	**15 00 19.4**	**0.0**
HWQ				*i* SG	**Sg**	**15 00 30.0**	**+0.4**
BRBR	**Barbar**	**0.77**	**236**	⇑P	**Pg**	**15 00 19.0**	**-0.5**
BRBR				⇑S	**Sg**	**15 00 28.9**	**-0.7**
BHL	**Bhannes**	**0.88**	**274**	*i* PG	**Pg**	**15 00 21.1**	**-0.6**
BHL				*i* SG	**Sg**	**15 00 32.8**	**-0.6**
HRI	**Mount Hermon**	**1.00**	**235**	Pg	**Pg**	**15 00 23.1**	**-0.9**
ZALF	**Zalf**	**1.06**	**150**	⇓P	**Pb**	**15 00 24.9**	**+0.2**
ZALF				⇓S	**Sb**	**15 00 38.8**	**+0.1**
KSDI	**Kefar Szold**	**1.09**	**233**	Pg	**Pg**	**15 00 24.7**	**-1.2**
SALA	**Sala**	**1.13**	**179**	⇓P	**Pb**	**15 00 25.8**	**0.0**
SALA				⇓S	**Sb**	**15 00 40.5**	**-0.2**
KSHT	**Keshet**	**1.14**	**221**	Pg	**Pg**	**15 00 26.0**	**-1.0**
MATL	**Matirih**	**1.20**	**253**	*i* PG	**Pg**	**15 00 27.0**	**-1.2**
BIDA	**Albida**	**1.21**	**345**	⇑P	**Pb**	**15 00 27.5**	**+0.4**
BIDA				⇑S	**Sb**	**15 00 44.0**	**+1.2**
TCHB	**Talchebab**	**1.33**	**208**	⇑P	**Pb**	**15 00 28.5**	**-0.7**
TCHB				⇑S	**Sb**	**15 00 46.8**	**+0.4**
HNTI	**Hanita**	**1.49**	**240**	Pn	**Pn**	**15 00 31.7**	**0.0**
HNTI				Sn	**Sn**	**15 00 51.4**	**-0.4**
WRDH	**Warideh**	**1.67**	**352**	⇑P	**Pn**	**15 00 33.6**	**-0.8**
WRDH				⇑S	**Sn**	**15 00 55.4**	**-1.0**
HAF	**Haifa**	**1.77**	**233**	Pn	**Pn**	**15 00 35.8**	**+0.1**
SLNF	**Slenfeh**	**1.79**	**347**	⇑P	**Pn**	**15 00 35.8**	**-0.2**
SLNF				⇑S	**Sn**	**15 00 57.5**	**-1.8**
HMDT	**Nahal Hemdat**	**1.87**	**212**	Pn	**Pn**	**15 00 37.6**	**+0.4**
SLTI	**Sal'it**	**2.13**	**222**	Pn	**Pn**	**15 00 41.4**	**+0.5**
SLTI				Sn	**Sn**	**15 01 09.7**	**+1.7**
MKRJ	**Makawir**	**2.46**	**202**	Pn	**Pn**	**15 00 46.7**	**+1.1**
PRNI	**Paran**	**3.77**	**203**	Pn	**Pn**	**15 01 05.1**	**+0.8**

*JMA **16** 15:03:38.5±0.2,39.23N×144.59E,h54km*
ISC 16 15:03:37.1±1.5,39.29N±0.07×144.7E±0.1,h54km,n11, σ1°01/16,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyako 2**	**2.25**	**278**	P	**P**	**15 04 13.3**	**+0.5**
MIYJ				*e*S	**S**	**15 04 38.8**	**-0.6**
JTH	**Tanohata**	**2.29**	**287**	P	**P**	**15 04 14.1**	**+0.8**
OFUJ	**Ofunato**	**2.37**	**266**	P	**P**	**15 04 14.5**	**0.0**
JOM	**Ohasama**	**2.65**	**275**	P	**P**	**15 04 19.0**	**+0.5**
JOM				*e*S	**S**	**15 04 48.2**	**-1.3**
JMK	**Ichinoseki**	**2.73**	**264**	P	**P**	**15 04 19.8**	**+0.2**
JCH	**Churui**	**3.47**	**343**	P	**P**	**15 04 31.1**	**+1.0**
JCH				*e*S	**S**	**15 05 11.3**	**+1.0**
JKB	**Kayabe**	**3.81**	**314**	P	**P**	**15 04 35.8**	**+0.9**
NEM2	**Nemuro 2**	**4.15**	**11**	P	**P**	**15 04 39.0**	**-0.6**
NEM2				*e*S	**S**	**15 05 25.4**	**-1.9**
JTKR	**Abashiri--Toko**	**4.71**	**353**	P	**P**	**15 04 48.7**	**+1.1**
JTKR				*e*S	**S**	**15 05 40.2**	**-1.4**
JOSM	**Okushiri--Mats**	**4.86**	**307**	P	**P**	**15 04 50.5**	**+1.0**
JRY	**Ryogami san**	**5.65**	**236**	P	**P**	**15 04 58.8**	**-1.7**

*NIED **16** 15:03:00,39.20N×144.60E,h5km,Mw3.6 Best double couple: Mo3.12×10^14 NP1:φs191°,δ67°,λ-87°. NP2:φs4°, δ23°,λ-96°.*
*IDC **16** 15:03:43.6±1.1,40.12N×145.20E,mb3.2/5,mb1 3.4/6, mb1mx3.3/23,ML2.7/1,MS3.5/1,Ms1 3.5/1,ms1mx2.9/12, Error ellipse: s-maj=34.9km s-min=24.1km az=112.0*
*JMA **16** 15:03:44.3±0.2,39.23N×144.56E,h47km,M3.5*
ISC 16 15:03:43.9±1.8,39.30N±0.07×144.6E±0.2,h76km±21km, n18,σ0°81/22,mb3.3/5,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyako 2**	**2.17**	**278**	P	**P**	**15 04 19.0**	**+0.3**
MIYJ				*e*S	**S**	**15 04 44.8**	**+0.3**
JTH	**Tanohata**	**2.21**	**288**	P	**P**	**15 04 19.8**	**+0.5**
OFUJ	**Ofunato**	**2.29**	**265**	P	**P**	**15 04 20.1**	**-0.3**
JOM	**Ohasama**	**2.57**	**275**	P	**P**	**15 04 24.6**	**+0.2**
JOM				*e*S	**S**	**15 04 55.0**	**+0.4**
JMK	**Ichinoseki**	**2.66**	**263**	P	**P**	**15 04 25.4**	**-0.1**
JMK				*e*S	**S**	**15 04 55.7**	**-0.9**
JCH	**Churui**	**3.44**	**345**	P	**P**	**15 04 36.7**	**+0.3**
JCH				*e*S	**S**	**15 05 16.7**	**+0.5**
JTKR	**Abashiri--Toko**	**4.69**	**354**	*e*S	**S**	**15 05 46.8**	**-0.7**
JOSM	**Okushiri--Mats**	**4.79**	**307**	P	**P**	**15 04 57.5**	**+2.3**
ASAJ	**Asahikawa**	**5.04**	**343**	Pn	**P**	**15 04 53.5**	**-5.1**
	0.3nm,0.3s,baz=192,slow=9.3,SNR=3.4						
ASAJ				Sn	**S**	**15 05 54.5**	**-1.5**
	1.2nm,0.3s,baz=2.6,slow=28,SNR=7.7						
JRY	**Ryogami san**	**5.59**	**236**	P	**P**	**15 05 04.7**	**-1.5**
MAT	**Matsushiro**	**5.76**	**243**	P	**P**	**15 05 03.0**	**-5.5**
MAT	**Matsushiro**	**5.76**	**243**	P	**P**	**15 05 08.8**	**+0.3**
JHJ	**Hachijo jima 2**	**7.30**	**214**	LR	LR	15 09 11.9	
	comp=Z,291nm,19.2s,baz=111,slow=40						
MKAR	**Makanchi Array**	**45.09**	**301**	P	**P**	**15 12 00.5**	**+6.6**
	0.8nm,1.1s,mb3.4,baz=77,slow=8.3,SNR=2.7						
ILAR	**Eielson Array**	**46.23**	**34**	P	**P**	**15 12 02.8**	**+0.1**
	0.3nm,0.6s,mb3.2,baz=266,slow=6.8,SNR=7.5						
INK	**Inuvik**	**51.21**	**28**	P	**P**	**15 12 41.7**	**+0.5**
	0.7nm,0.9s,mb3.7,baz=300,slow=3.2,SNR=2.8						
WRA	**Warramunga Arr**	**59.71**	**191**	P	**P**	**15 13 56.4**	**+13**
	0.2nm,0.9s,mb3.1,baz=9.9,slow=7.1,SNR=8.9						
YKA	**Yellowknife Ar**	**60.57**	**32**	P	**P**	**15 13 48.1**	**-0.2**
	0.1nm,0.6s,mb3.0,baz=297,slow=6.7,SNR=3.0						

WEL 16 15:05:53.8±0.4,45.23S×167.10E,h115km±9km,ML3.5/5, 1C-1D,Error ellipse: s-maj=15.6km s-min=1.9km az=90.0,South Island

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MLZ	**Mavora Lakes**	**0.76**	**100**	⇓PN	P	15 06 13.0	-0.3
MLZ				SN	S	15 06 27.3	-0.8
MLZ				SN	S	15 06 27.8	-0.4
MSZ	**Milford Sound**	**0.80**	**47**	PN	P	15 06 13.3	-0.5
MSZ				SN	S	15 06 28.0	-0.8
MSZ				SN	S	15 06 28.7	-0.1
WHZ	**Wether Hill Ro**	**0.89**	**139**	⇑PN	P	15 06 14.3	-0.3
WHZ				SN	S	15 06 28.8	-1.5
AXZ	**Alexandra**	**1.57**	**92**	PN	P	15 06 27.4	+5.1
AXZ				SN	S	15 06 51.4	+7.7
TUZ	**Tuapeka**	**1.92**	**113**	PN	P	15 06 30.7	+4.2
TUZ				SN	S	15 06 58.7	+7.7
BWZ	**Berwen**	**2.10**	**72**	PN	P	15 06 34.1	+5.3
ODZ	**Otahua Downs**	**2.51**	**87**	PN	P	15 06 38.9	+4.6
LTZ	**Lake Taylor**	**4.45**	**59**	*e*PN	P	15 07 05.5	+4.9

*JMA **16** 15:20:10.6±0.1,24.87N×122.27E,h20km,M2.0*
*TAP **16** 15:20:12.8,24.66N×122.32E,h8km±1km,ML2.5*

ISC 16 15:20:10.8±2.9,24.8N±0.4×122.3E±0.3,h21km±16km,n5, σ0°22/9,Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
YOJ	**Yonaguni jima**	**0.78**	**119**	P	**Pb**	**15 20 25.3**	**-0.2**
YOJ				S	**Sb**	**15 20 35.8**	**+0.2**
IRIF	**Iriomote-Funau**	**1.43**	**110**	P	**Pn**	**15 20 35.8**	**-0.1**
IRIF				S	**Sn**	**15 20 54.3**	**+0.1**
HATJ	**Hateruma jima**	**1.61**	**119**	*e*S	**Sn**	**15 20 58.5**	**-0.2**
JKRS	**Kuro-shima**	**1.70**	**110**	P	**Pn**	**15 20 40.1**	**+0.3**
JKRS				S	**Sn**	**15 21 01.3**	**+0.2**
JIJ	**Ishigaki jima**	**1.78**	**105**	P	**Pn**	**15 20 40.8**	**0.0**
JIJ				S	**Sn**	**15 21 02.7**	**-0.3**

*NSSC **16** 15:23:56.7,33.82N×36.68E,h10km±1km*
*GRAL **16** 15:23:56.6±0.5,33.80N×36.72E,MD3.0*
*GII **16** 15:23:57.0±0.6,33.84N×36.64E,h5km±5km,ML2.7/5*
ISC 16 15:23:56.0±0.8,33.84N±0.02×36.68E±0.05,h6km±5km, n22,σ0°77/34,7D,Jordan - Syria region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MARH	**Ras Al Marh**	**0.25**	**318**	⇑P	**Pg**	**15 24 02.2**	**+1.0**
MARH				⇑S	**Sg**	**15 24 06.7**	**+2.1**
QASN	**Qassioun**	**0.46**	**228**	⇑P	**Pg**	**15 24 05.7**	**+0.5**
QASN				⇑S	**Sg**	**15 24 12.2**	**+0.9**
TOTH	**TOTAH**	**0.52**	**204**	⇓P	**Pg**	**15 24 06.7**	**+0.2**
TOTH				⇓S	**Sg**	**15 24 13.6**	**+0.1**
BRBR	**Barbar**	**0.74**	**235**	⇑P	**Pb**	**15 24 10.9**	**0.0**
BRBR				⇑S	**Sg**	**15 24 20.7**	**-0.1**
HWQ	**Hawqa**	**0.75**	**306**	*i* PG	**Pg**	**15 24 10.8**	**-0.3**
HWQ				*i* SG	**Sg**	**15 24 21.6**	**+0.5**
BHL	**Bhannes**	**0.86**	**275**	*i* PG	**Pg**	**15 24 12.5**	**-0.7**
BHL				*i* SG	**Sg**	**15 24 24.3**	**-0.4**
HRI	**Mount Hermon**	**0.98**	**234**	Pg	**Pg**	**15 24 14.4**	**-1.2**
ZALF	**Zalf**	**1.06**	**149**	⇓P	**Pb**	**15 24 16.2**	**-0.2**
ZALF				⇓S	**Sb**	**15 24 30.4**	**0.0**
KSDI	**Kefar Szold**	**1.07**	**233**	Pg	**Pg**	**15 24 16.1**	**-1.4**
KSHT	**Keshet**	**1.12**	**221**	Pg	**Pg**	**15 24 17.2**	**-1.3**
SALA	**Sala**	**1.12**	**178**	⇓P	**Pb**	**15 24 17.1**	**-0.3**
SALA				⇓S	**Sb**	**15 24 32.4**	**+0.3**
MATL	**Matirih**	**1.18**	**253**	*i* PG	**Pg**	**15 24 18.2**	**-1.4**
TCHB	**Talchebab**	**1.31**	**207**	⇑P	**Pb**	**15 24 20.4**	**-0.2**
TCHB				⇑S	**Sb**	**15 24 37.9**	**+0.4**
HNTI	**Hanita**	**1.47**	**240**	Pn	**Pn**	**15 24 22.9**	**-0.2**
HNTI				Sn	**Sn**	**15 24 42.2**	**-0.6**
HAF	**Haifa**	**1.75**	**233**	Pn	**Pn**	**15 24 26.4**	**-0.6**
SLNF	**Slenfeh**	**1.79**	**348**	⇑P	**Pn**	**15 24 27.9**	**+0.2**
SLNF				⇑S	**Sn**	**15 24 49.7**	**-1.3**
HMDT	**Nahal Hemdat**	**1.85**	**212**	Pn	**Pn**	**15 24 28.9**	**+0.2**
SLTI	**Sal'it**	**2.11**	**221**	Pn	**Pn**	**15 24 32.6**	**+0.4**
SLTI				Sn	**Sn**	**15 25 00.1**	**+1.1**
BTCH	**Batrach**	**2.20**	**355**	⇓P	**Pn**	**15 24 33.6**	**0.0**
MKRJ	**Makawir**	**2.44**	**201**	Pn	**Pn**	**15 24 38.5**	**+1.4**
DRGI	**Dragot**	**2.49**	**206**	Pn	**Pn**	**15 24 38.2**	**+0.5**
PRNI	**Paran**	**3.76**	**203**	Pn	**Pn**	**15 24 56.3**	**+0.6**

*NSSC **16** 15:24:44.3,33.83N×36.68E,h19km±1km*
*GII **16** 15:24:45.2±0.5,33.82N×36.64E,h5km±4km,ML2.6/6*
*GRAL **16** 15:24:45.3±0.3,33.79N×36.69E,MD3.1*
ISC 16 15:24:43.2±0.9,33.84N±0.02×36.73E±0.06,h8km±4km, n17,σ0°83/27,2D,Jordan - Syria region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MARH	**Ras Al Marh**	**0.28**	**313**	⇓P	**Pg**	**15 24 50.5**	**+1.5**
MARH				⇓S	**Sg**	**15 24 54.0**	**+1.0**
QASN	**Qassioun**	**0.48**	**232**	⇑P	**Pg**	**15 24 53.7**	**+0.7**
QASN				⇑S	**Sg**	**15 24 59.9**	**+0.3**
TOTH	**TOTAH**	**0.54**	**208**	⇑P	**Pg**	**15 24 54.7**	**+0.7**
TOTH				⇑S	**Sg**	**15 25 01.7**	**+0.4**
BRBR	**Barbar**	**0.78**	**237**	⇑P	**Pb**	**15 24 58.6**	**+0.1**
BRBR				⇑S	**Sb**	**15 25 08.8**	**-0.2**
HWQ	**Hawqa**	**0.79**	**304**	*i* PG	**Pg**	**15 24 59.5**	**+0.4**
HWQ				*i* SG	**Sg**	**15 25 09.9**	**+0.3**
BHL	**Bhannes**	**0.90**	**275**	*i* PG	**Pg**	**15 25 00.9**	**-0.4**
BHL				*i* SG	**Sg**	**15 25 12.5**	**-0.8**
HRI	**Mount Hermon**	**1.01**	**236**	Pg	**Pg**	**15 25 02.6**	**-0.8**
KSDI	**Kefar Szold**	**1.10**	**235**	Pg	**Pg**	**15 25 04.5**	**-0.8**
SALA	**Sala**	**1.12**	**180**	⇑P

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**12.52**	**194**	P	**P**	**15 34 54.0**	**0.0**
URZ	2.2nm,0.3s,baz=176,slow=13,SNR=14			S	**S**	**15 37 06.5**	**-0.1**
	0.6nm,0.3s,baz=167,slow=9.1,SNR=4.6						
CTA	**Charters Tower**	**32.27**	**273**	P	**P**	**15 37 57.3**	**+0.1**
	2.9nm,0.5s,mb4.0,baz=90,slow=13,SNR=4.0						
STKA	**Stephens Creek**	**34.64**	**251**	P	**P**	**15 38 17.4**	**+0.5**
	1.4nm,0.5s,mb3.7,baz=101,slow=9.9,SNR=8.6						
AS12	**Alice Springs**	**42.44**	**263**	*eP*	**P**	**15 39 20.9**	**+0.3**
	4.7nm,1.2s,mb3.8						
ASAR	**Alice Springs**	**42.44**	**263**	P	**P**	**15 39 20.8**	**+0.1**
	2.0nm,0.5s,mb3.8,baz=95,slow=7.9,SNR=44						
WB2	**Warramunga Arr**	**43.01**	**268**	⇓*i*P	**P**	**15 39 24.6**	**-0.6**
WRA	**Warramunga Arr**	**43.02**	**268**	P	**P**	**15 39 25.1**	**-0.2**
	2.5nm,0.7s,mb3.8,baz=103,slow=7.9,SNR=28						
FITZ	**Fitzroy Crossi**	**51.41**	**267**	P	**P**	**15 40 29.3**	**+0.2**
	1.8nm,0.8s,mb3.4,baz=150,slow=8.1,SNR=4.2						

*IDC **16** 15:42:03.2±3.0,9.70S×161.95E,mb3.9/4,mb1 4.0/4, mb1mx3.7/13,MS4.2/1,Ms1 4.2/1,ms1mx3.0/18,Error ellipse: s-maj=111.0km s-min=35.4km az=131.0*

ISC 16 15:42:06.2±3.1,9.9S±0.5×162.0E±0.6,h33km,n5,σ1§05/4, mb3.8/4,MS4.2/1,Bougainville - Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**30.12**	**239**	P	**P**	**15 48 15.3**	**+0.1**
	0.4nm,0.9s,mb3.3,baz=67,slow=9.6,SNR=8.1						
RPZ	**Rata Peaks**	**34.59**	**168**	LR	LR	16 00 26.9	
	comp=Z,389nm,19.0s,MS4.2,baz=26,slow=32						
SONM	**Songino Array**	**75.61**	**325**	P	**P**	**15 53 50.2**	**+0.6**
	0.5nm,0.6s,mb3.6,baz=117,slow=3.2,SNR=3.6						
ILAR	**Eielson Array**	**83.64**	**20**	P	**P**	**15 54 32.5**	**+0.1**
	0.4nm,0.9s,mb3.5,baz=231,slow=5.8,SNR=3.2						
MKAR	**Makanchi Array**	**90.20**	**317**	P	**P**	**15 55 03.8**	**-0.8**
	2.3nm,0.6s,mb4.7,baz=97,slow=6.4,SNR=23						

*NSSC **16** 15:42:38.5,33.84N×36.64E,h21km±1km*
*GRAL **16** 15:42:38.5±0.4,33.80N×36.71E,h8km±693km,MD3.1*
*GII **16** 15:42:39.0±0.9,33.84N×36.63E,h5km±7km,ML2.9/6, Mw3.0/4*

ISC 16 15:42:38.0±0.8,33.81N±0.03×36.68E±0.05,h4km±5km, n19,σ0§86/30,8D,Jordan - Syria region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MARH	**Ras Al Marh**	**0.27**	**323**	⇓P	**Pg**	**15 42 44.2**	**+0.8**
MARH				⇓S	**Sg**	**15 42 48.3**	**+1.3**
QASN	**Qassioun**	**0.43**	**230**	⇓P	**Pg**	**15 42 47.7**	**+0.9**
QASN				⇓S	**Sg**	**15 42 54.0**	**+1.4**
TOTH	**TOTAH**	**0.49**	**205**	⇓P	**Pg**	**15 42 48.5**	**+0.6**
TOTH				⇓S	**Sg**	**15 42 56.0**	**+1.5**
BRBR	**Barbar**	**0.73**	**237**	⇑P	**Pg**	**15 42 52.0**	**-0.5**
BRBR				⇑S	**Sg**	**15 43 02.1**	**-0.1**
HWQ	**Hawqa**	**0.76**	**308**	*i* PG	**Pg**	**15 42 52.7**	**-0.6**
HWQ				*i* SG	**Sg**	**15 43 03.6**	**+0.1**
BHL	**Bhannes**	**0.86**	**276**	*i* PG	**Pg**	**15 42 54.5**	**-0.6**
BHL				*i* SG	**Sg**	**15 43 06.1**	**-0.4**
HRI	**Mount Hermon**	**0.96**	**236**	Pg	**Pg**	**15 42 56.2**	**-1.0**
ZALF	**Zalf**	**1.04**	**148**	⇓P	**Pb**	**15 42 58.1**	**-0.1**
ZALF				⇓S	**Sb**	**15 43 12.2**	**+0.1**
KSDI	**Kefar Szold**	**1.05**	**234**	Pg	**Pg**	**15 42 57.7**	**-1.3**
SALA	**Sala**	**1.10**	**178**	⇑P	**Pb**	**15 42 58.6**	**-0.6**
SALA				⇑S	**Sb**	**15 43 13.5**	**-0.1**
KSHT	**Keshet**	**1.10**	**221**	Pg	**Pg**	**15 42 58.9**	**-1.1**
MATL	**Matirih**	**1.17**	**254**	*i* PG	**Pg**	**15 43 00.1**	**-1.3**
TCHB	**Talchebab**	**1.28**	**208**	⇑P	**Pb**	**15 43 01.2**	**-1.2**
TCHB				⇑S	**Sb**	**15 43 17.9**	**-1.2**
HNTI	**Hanita**	**1.45**	**240**	Pn	**Pn**	**15 43 05.0**	**-0.1**
HNTI				Sn	**Sn**	**15 43 24.4**	**-0.3**
HAF	**Haifa**	**1.73**	**234**	Pn	**Pn**	**15 43 08.9**	**-0.1**
HMDT	**Nahal Hemdat**	**1.83**	**212**	Pn	**Pn**	**15 43 11.1**	**+0.6**
SLTI	**Sal'it**	**2.08**	**222**	Pn	**Pn**	**15 43 13.8**	**-0.3**
SLTI				Sn	**Sn**	**15 43 42.4**	**+1.6**
MKRJ	**Makawir**	**2.42**	**201**	Pn	**Pn**	**15 43 20.1**	**+1.2**
DRGI	**Dragot**	**2.46**	**206**	Pn	**Pn**	**15 43 20.4**	**+0.9**

*MDD **16** 15:46:17.6±1.2,35.21N×4.16W,mb3.6/9,Error ellipse: s-maj=12.7km s-min=5.7km az=11.0,PRXIMO AftershockPLICA*
*NEIC **16** 15:46:18.2,35.18N×4.13W,h7km,MG3.4(MDD),After MDD.*

ISC 16 15:46:16.5±0.8,35.24N±0.05×4.26W±0.04,h10km,n42, σ1§29/75,Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EMEL	**Melilla**	**1.07**	**86**	P	**Pb**	**15 46 35.9**	**-0.7**
EMEL	45nm,0.1s,SNR=6.5			S	**Sb**	**15 46 49.5**	**-0.9**
	241nm,0.2s						
ERON	**Agron**	**1.81**	**12**	P	**Pn**	**15 46 47.9**	**-0.2**
	0.6nm,0.2s,SNR=4.0						
ERON				S	**Sn**	**15 47 12.5**	**+1.1**
	5.6nm,0.2s,SNR=4.0						
ERON	**Agron**	**1.81**	**12**	P	**Pn**	**15 46 47.9**	**-0.2**
ERON				S	**Sn**	**15 47 12.2**	**+0.9**
ELIJ	**Sierra de Lija**	**1.91**	**332**	P	**Pn**	**15 46 51.3**	**+1.9**
	0.9nm,0.2s,SNR=10						
ELIJ	**Sierra de Lija**	**1.91**	**332**	P	**Pn**	**15 46 51.9**	**+2.4**
ELIJ				S	**Sn**	**15 47 17.5**	**+3.8**
ELOJ	**Sierra Loja**	**1.91**	**3**	P	**Pn**	**15 46 48.9**	**-0.6**
	1.2nm,0.2s,SNR=4.0						
ELOJ	**Sierra Loja**	**1.91**	**3**	P	**Pn**	**15 46 48.9**	**-0.6**
ELOJ				S	**Sn**	**15 47 15.2**	**+1.5**
EBER	**Berja**	**1.99**	**33**	P	**Pn**	**15 46 49.9**	**-0.8**
	2.8nm,0.3s,SNR=9.5						
EBER				S	**Sn**	**15 47 14.9**	**-1.0**
	14nm,0.3s,SNR=5.0						
EBER	**Berja**	**1.99**	**33**	P	**Pn**	**15 46 50.9**	**+0.2**
EBER				S	**Sn**	**15 47 14.3**	**-1.6**
ESPR	**Espera**	**2.08**	**322**	P	**Pn**	**15 46 54.0**	**+2.1**
	0.8nm,0.2s,SNR=7.3						
ESPR				S	**Sn**	**15 47 22.1**	**+4.0**
	8.4nm,0.3s,SNR=4.7						
ESPR	**Espera**	**2.08**	**322**	P	**Pn**	**15 46 54.7**	**+2.8**
ESPR				S	**Sn**	**15 47 21.9**	**+3.8**
ECOG	**Cogollos-Vega**	**2.11**	**15**	P	**Pn**	**15 46 54.2**	**+1.9**
	1.8nm,0.1s,SNR=4.0						
ECOG	**Cogollos-Vega**	**2.11**	**15**	P	**Pn**	**15 46 54.6**	**+2.2**
ECOG				S	**Sn**	**15 47 19.4**	**+0.5**
ELUQ	**Luque**	**2.32**	**360**	P	**Pn**	**15 46 57.5**	**+2.2**
	2.4nm,0.2s,SNR=6.7						
ELUQ				S	**Sn**	**15 47 26.8**	**+2.7**
	2.9nm,0.2s						
ELUQ	**Luque**	**2.32**	**360**	P	**Pn**	**15 46 57.5**	**+2.2**
ELUQ				S	**Sn**	**15 47 26.7**	**+2.6**
EQES	**Quesada**	**2.73**	**20**	P	**Pn**	**15 47 02.5**	**+1.2**
	7.9nm,0.3s,SNR=7.9						
EQES				S	**Sn**	**15 47 35.7**	**+1.1**
	25nm,0.5s,SNR=7.9						
EADA	**Adamuz**	**2.93**	**355**	P	**Pn**	**15 47 05.2**	**+1.1**
	0.6nm,0.1s,SNR=10						
EADA				S	**Sn**	**15 47 39.4**	**-0.4**
	3.7nm,0.3s						
EADA	**Adamuz**	**2.93**	**355**	P	**Pn**	**15 47 05.3**	**+1.2**
EADA				S	**Sn**	**15 47 40.1**	**+0.3**
ECAB	**El Cabril**	**2.98**	**342**	P	**Pn**	**15 47 05.5**	**+0.6**
	0.4nm,0.1s,SNR=5.3						
ECAB				S	**Sn**	**15 47 40.5**	**-0.5**
	1.9nm,0.2s,SNR=6.5						
EMIN	**Mina Concepcio**	**3.19**	**323**	P	**Pn**	**15 47 07.9**	**+0.1**
	0.3nm,0.1s,SNR=15						
EMIN				S	**Sn**	**15 47 45.2**	**-1.0**
	0.8nm,0.1s,SNR=5.0						
EMIN	**Mina Concepcio**	**3.19**	**323**	P	**Pn**	**15 47 08.1**	**+0.3**
EMIN				S	**Sn**	**15 47 44.8**	**-1.4**
PALC	**Alcoutim**	**3.42**	**311**	*e*Pn	**Pn**	**15 47 10.6**	**-0.4**
PALC				*e*Sn	**Sn**	**15 47 51.6**	**-0.4**
	7.4nm,0.5s						
PALC	**Alcoutim**	**3.42**	**311**	Pn	**Pn**	**15 47 10.6**	**-0.4**
PALC				Sn	**Sn**	**15 47 51.6**	**-0.4**
	3.7nm,0.5s						
EGRO	**El Granado**	**3.47**	**312**	P	**Pn**	**15 47 11.9**	**+0.2**
	2.2nm,0.3s,SNR=6.8						
EGRO				S	**Sn**	**15 47 53.3**	**+0.1**
	2.7nm,0.2s						
EGRO	**El Granado**	**3.47**	**312**	P	**Pn**	**15 47 12.2**	**+0.5**
EGRO				S	**Sn**	**15 47 53.1**	**-0.1**
EMUR	**La Murta**	**3.56**	**42**	S	**Sn**	**15 47 51.4**	**-4.1**
	5.0nm,0.4s,SNR=4.9						
ETOB	**Tobarra**	**4.03**	**32**	P	**Pn**	**15 47 21.0**	**+1.3**
	1.2nm,0.2s,SNR=9.7						
ETOB				S	**Sn**	**15 48 03.1**	**-4.5**
	1.0nm,0.2s,SNR=4.0						
ETOB	**Tobarra**	**4.03**	**32**	P	**Pn**	**15 47 20.8**	**+1.0**
ETOB				S	**Sn**	**15 48 05.4**	**-2.2**
EBAD	**Badajoz**	**4.14**	**329**	P	**Pn**	**15 47 21.8**	**+0.4**
	0.6nm,0.1s,SNR=7.6						
EBAD				S	**Sn**	**15 48 09.1**	**-1.4**
	5.4nm,0.2s,SNR=7.6						
EBAD	**Badajoz**	**4.14**	**329**	P	**Pn**	**15 47 21.6**	**+0.2**
EBAD				S	**Sn**	**15 48 09.0**	**-1.5**
PTEO	**Sao Teotonio**	**4.28**	**304**	*e*Pn	**Pn**	**15 47 24.5**	**+1.3**
PTEO				*e*Sn	**Sn**	**15 48 12.2**	**-1.6**
	5.8nm,0.6s						
PTEO	**Sao Teotonio**	**4.28**	**304**	Pn	**Pn**	**15 47 24.5**	**+1.3**
PTEO				Sn	**Sn**	**15 48 12.2**	**-1.6**
	2.9nm,0.6s						
ESDC	**Sonseca Array**	**4.43**	**3**	P	**Pn**	**15 47 25.4**	**-0.1**
	1.8nm,0.2s,baz=174,slow=11,SNR=18						
ESDC				S	**Sn**	**15 48 14.4**	**-3.4**
	0.4nm,0.1s,baz=184,slow=22,SNR=3.5						
MOE	**Montemor**	**4.64**	**316**	*e*Sn	**Sn**	**15 48 21.6**	**-1.3**
PCBR	**Castelo Branco**	**5.26**	**332**	*e*Pn	**Pn**	**15 47 37.5**	**+0.4**
ETOR	**Torete**	**5.84**	**17**	P	**Pn**	**15 47 44.7**	**-0.6**
	0.4nm,0.2s,SNR=7.9						
ETOR	**Torete**	**5.84**	**17**	P	**Pn**	**15 47 43.2**	**-2.1**
EIBI	**Ibiza**	**5.86**	**48**	P	**Pn**	**15 47 43.0**	**-2.5**
	0.4nm,0.1s,SNR=4.0						
EIBI				S	**Sn**	**15 48 46.7**	**-6.8**
	1.5nm,0.2s,SNR=7.9						
PVRL	**Vila Real**	**6.61**	**337**	*e*Pn	**Pn**	**15 47 55.6**	**-0.6**
PVRL				*e*Sn	**Sn**	**15 49 09.7**	**-2.7**
	3.4nm,0.1s						
PBRG	**Braganca**	**6.84**	**344**	*e*Pn	**Pn**	**15 47 59.5**	**+0.1**
ECAL	**Calabor**	**6.97**	**345**	P	**Pn**	**15 47 59.4**	**-1.8**
	0.5nm,0.2s,SNR=4.0						
ECAL				S	**Sn**	**15 49 15.4**	**-6.0**
	2.0nm,0.4s,SNR=5.0						
ECAL	**Calabor**	**6.97**	**345**	P	**Pn**	**15 48 00.6**	**-0.6**
ECAL				S	**Sn**	**15 49 17.0**	**-4.3**

*IDC **16** 15:46:06.2±19.0,29.36N×74.49E,mb3.7/4,mb1 3.8/5, mb1mx3.4/20,ML3.0/1,Error ellipse: s-maj=369.0km s-min=43.0km az=156.0*
*NNC **16** 15:47:18.3±1.2,36.08N±0.07×70.8E±0.1,h121km±21km, n19,σ1§09/22,mb3.5/2,2C-2D,Hindu Kush region*

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THN	**Thein Dam**	**5.43**	**131**	*e*P	**P**	**15 48 31.0**	**+0.8**
THN				*e*S	**S**	**15 49 32.8**	**+0.7**
AML	**Almayashu**	**6.44**	**19**	P	**P**	**15 48 43.7**	**-0.2**
	SNR=27						
KZA	**Kyzart**	**6.90**	**28**	P	**P**	**15 48 51.7**	**+1.5**
	SNR=6.3						
EKS2	**Erkin-Say**	**6.95**	**18**	P	**P**	**15 48 51.0**	**+0.1**
	SNR=7.8						
KK31	**Karatay Array**	**7.02**	**358**	⇓Pn	**P**	**15 48 49.8**	**-2.0**
	2.6nm,0.3s,baz=184,slow=13,SNR=96						
KK31				⇑Sn	**S**	**15 50 02.3**	**-8.3**
	4.2nm,0.5s,baz=190,slow=24,SNR=4.2						
AAK	**Ala-Archa**	**7.13**	**22**	P	**P**	**15 48 53.1**	**-0.2**
	SNR=8.9						
USP	**Ospenovka**	**7.71**	**20**	P	**P**	**15 49 01.4**	**+0.2**
	SNR=6.7						
KOLN	**Koldanda**	**13.63**	**124**	*e*P	**P**	**15 50 18.8**	**-0.7**
	5.5nm,0.3s						
MKAR	**Makanchi Array**	**13.71**	**35**	P	**P**	**15 50 23.4**	**+3.0**
	0.1nm,0.3s,baz=204,slow=12,SNR=5.0						
GKN	**Gorkha**	**14.20**	**121**	*e*P	**P**	**15 50 25.8**	**-1.0**
	11nm,0.3s						
DMN	**Daman**	**14.76**	**121**	*e*P	**P**	**15 50 33.9**	**-0.2**
	10nm,0.5s						
KKN	**Kakani**	**14.77**	**120**	*e*P	**P**	**15 50 33.7**	**-0.5**
	8.1nm,0.4s						
PKI	**Pulchoki**	**15.00**	**120**	*e*P	**P**	**15 50 36.4**	**-0.6**
	15nm,0.6s						
AB31	**Akbulak array**	**15.39**	**332**	⇑Pn	**P**	**15 50 40.2**	**-1.6**
	1.4nm,0.3s						
AB31				⇓Sn	**S**	**15 53 18.4**	**-11**
	2.4nm,0.9s,baz=162,slow=24,SNR=2.9						
THR	**Tehran**	**15.96**	**275**	P	**P**	**15 50 50.3**	**+1.3**
	0.8nm,0.6s,baz=117,slow=11,SNR=2.9						
ZAL	**Zalesovo**	**20.33**	**24**	P	**P**	**15 51 39.2**	**+0.6**
	1.5nm,0.3s,baz=147,slow=10,SNR=3.4						
ARCES	**ARCESS Array B**	**41.48**	**338**	P	**P**	**15 54 51.0**	**+4.6**
	1.5nm,0.9s,mb3.8,baz=111,slow=7.7,SNR=3.8						
NB2	**NORSAR Subarra**	**44.64**	**323**	P	**P**	**15 55 15.2**	**+3.2**
	0.3nm,0.5s,mb3.3,baz=95,slow=7.9						
NOA	**NORSAR Array B**	**44.64**	**323**	P	**P**	**15 55 15.7**	**+3.7**
	0.4nm,0.7s,mb3.3,baz=90,slow=7.2,SNR=4.0						

*CASC **16** 16:16:20.8±2.3,14.21N×93.28W,h9km±528km,MD4.6, ML4.4,mb4.0(NEIC)*
*MEX **16** 16:16:22.3±1.1,14.22N×93.44W,h20km±242km,MD4.5*
*NEIC **16** 16:16:26.3±0.7,14.55N×93.19W,h50km,mb4.0/15, MD4.5(MEX),Error ellipse: s-maj=16.0km s-min=7.8km az=215.0*
*IDC **16** 16:16:31.8±3.7,14.80N×92.87W,h99km±29km,mb3.7/10, mb1 3.9/12,mb1mx3.8/21,MS3.8/8,Ms1 3.7/8, ms1mx3.4/21,Error ellipse: s-maj=48.9km s-min=16.7km az=41.0*

ISC 16 16:16:20.3±1.5,14.29N±0.05×93.37W±0.03,h26km±11km, n70,σ1§32/81,mb4.1/20,MS3.8/8,3C-2D,Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAT	**Jato**	**1.68**	**89**	*e*P	**Pn**	**16 16 49.0**	**+0.5**
JAT				*e*S	**Sn**	**16 17 10.7**	**+1.4**
JAT				AML	AML	16 17 16.2	
	comp=N,11μm,0.7s						
CCIG	**Comitan**	**2.31**	**31**	*i* P	**Pn**	**16 16 59.0**	**+1.4**
CCIG				*i* S	**Sn**	**16 17 25.3**	**-0.1**
TP2	**Tecpan 2**	**2.32**	**77**	*e*P	**Pn**	**16 16 59.8**	**+2.1**
TP2				*e*S	**Sn**	**16 17 28.9**	**+3.2**
TP2				AML	AML	16 17 38.8	
	comp=N,2μm,0.7s						
SCX	**San Cristobal**	**2.54**	**16**	*i* P	**Pn**	**16 17 03.0**	**+2.3**
SCX				*i* S	**Sn**	**16 17 36.0**	**+4.9**
IXG	**Ixpaco**	**2.82**	**92**	*e*P	**Pn**	**16 17 03.9**	**-0.9**
IXG				*e*S	**Sn**	**16 17 38.7**	**+0.3**
IXG				AML	AML	16 17 53.9	
	comp=E,6μm,0.5s						
NBG	**Las Nubes**	**2.94**	**84**	*e*P	**Pn**	**16 17 05.5**	**-1.0**
NBG				*e*S	**Sn**	**16 17 40.3**	**-1.0**
NBG				AML	AML	16 17 51.5	
	comp=E,2μm,0.4s						
HUIG	**Huatulco**	**3.03**	**299**	*i* S	**Sn**	**16 17 40.1**	**-3.6**
CMIG	**Matias Romero**	**3.15**	**333**	*i* P	**Pn**	**16 17 07.8**	**-1.6**
CMIG				*i* S	**Sn**	**16 17 46.5**	**-0.1**
CUSS	**Cusmapa**	**3.34**	**96**	*e*P	**Pn**	**16 17 10.9**	**-1.2**
CUSS				*e*S	**Sn**	**16 17 49.5**	**-1.8**
RBDL	**Robledal**	**3.57**	**92**	*e*P	**Pn**	**16 17 15.4**	**-0.1**
RBDL				*e*S	**Sn**	**16 18 01.0**	**+3.7**
RTR	**El Retiro**	**3.63**	**96**	⇑*e*P	**Pn**	**16 17 15.9**	**-0.3**
RTR				*e*S	**Sn**	**16 18 00.6**	**+1.8**
SBLS	**San Blas**	**3.66**	**97**	⇓*e*P	**Pn**	**16 17 16.3**	**-0.4**
SNJE	**San Jose**	**3.67**	**96**	*e*P	**Pn**	**16 17 16.2**	**-0.6**
SNJE				*e*S	**Sn**	**16 17 59.4**	**-0.4**
TUIG	**Tuzandepetl**	**3.86**	**345**	*i* P	**Pn**	**16 17 19.3**	**-0.3**
TUIG				*i* S	**Sn**	**16 18 03.8**	**-0.9**
BOQS	**Boqueron**	**4.00**	**97**	*e*P	**Pn**	**16 17 21.4**	**-0.2**
PICS	**Picacho**	**4.03**	**97**	⇓*e*P	**Pn**	**16 17 21.3**	**-0.6**
LFRS	**El Faro**	**4.23**	**98**	⇑*e*P	**Pn**	**16 17 24.4**	**-0.4**
OXX	**Oaxaca**	**4.26**	**311**	*e*P	**Pn**	**16 17 23.0**	**-2.3**
LCBS	**La Ceiba**	**4.30**	**98**	⇑*e*P	**Pn**	**16 17 26.3**	**+0.4**
SNVI	**San Vicente**	**4.45**	**98**	*e*P	**Pn**	**16 17 27.8**	**-0.1**
CNCH	**Conchagua**	**5.47**	**100**	*e*P	**Pn**	**16 17 43.0**	**+0.8**
IISM	**Ciudad Serdan**	**6.05**	**321**	*e*P	**Pn**	**16 17 54.0**	**+3.4**
PPM	**Popocatepetl**	**6.93**	**314**	*e*P	**Pn**	**16 18 00.0**	**-2.9**
PPM				*e*P		16 18 02.8	
PPM				*i* S	**Sn**	**16 19 23.0**	**+1.3**
PPM	**Popocatepetl**	**6.93**	**314**	*e*P	**Pn**	**16 18 02.8**	**-0.1**
PPM				*i* S	**Sn**	**16 19 23.0**	**+1.3**
TEIG	**Tepich**	**7.65**	**39**	P	**Pn**	**16 18 10.6**	**-2.3**
	comp=E,3.0nm,0.3s,baz=175,slow=13,SNR=6.0						
TEIG				S	**Sn**	**16 19 35.0**	**-4.7**
	comp=E,4.0nm,0.3s,baz=180,slow=20,SNR=2.7						
TEIG	**Tepich**	**7.65**	**39**	*e*Pn	**Pn**	**16 18 10.2**	**-2.8**
TEIG				S	**Sn**	**16 19 35.0**	**-4.7**
JTS	**JuntasAbangare**	**9.13**	**115**	P	**P**	**16 18 37.6**	**+4.0**
	comp=E,0.8nm,0.3s,baz=332,slow=11,SNR=3.8						
JCT	**Junction City**	**17.17**	**341**	*e*P	**P**	**16 20 22.2**	**+2.0**
	comp=E,5.8nm,0.6s						
MIAR	**Mount Ida**	**20.17**	**360**	*e*P	**P**	**16 20 57.8**	**+2.0**
	comp=E,11nm,0.9s						
CLNB	**Carlsbad**	**20.31**	**334**	*e*P	**P**	**16 20 57.2**	**0.0**
GDL2	**Guadalupe Moun**	**20.47**	**332**	*e*P	**P**	**16 20 59.0**	**+0.1**
MNTX	**Cornudas Mount**	**20.53**	**330**	*e*P	**P**	**16 20 59.7**	**+0.2**
	comp=E,5.0nm,0.8s						
WMOK	**Wichita Mounta**	**20.94**	**347**	*e*P	**P**	**16 21 01.8**	**-1.9**
	comp=E,4.4nm,1.1s						
ROSC	**El Rosal**	**20.96**	**115**	P	**P**	**16 21 05.9**	**+1.9**
	comp=E,23nm,1.1s,baz=319,slow=19,SNR=4.3						
CPRX	**Cap Rock**	**20.97**	**335**	*e*P	**P**	**16 21 02.4**	**-1.6**
SDV	**Santo Domingo**	**22.90**	**101**	P	**P**	**16 21 24.6**	**+1.1**
	comp=E,10nm,0.9s,mb4.2,baz=312,slow=8.5,SNR=13						
BNM	**Barren Site**	**23.14**	**331**	*e*P	**P**	**16 21 27.9**	**+2.2**
LPM	**Los Pinos Moun**	**23.27**	**331**	*e*P	**P**	**16 21 28.2**	**+1.3**
LAZ	**Ladron**	**23.58**	**331**	*e*P	**P**	**16 21 32.0**	**+2.0**
ANMO	**Albuquerque**	**23.72**	**332**	P	**P**	**16 21 30.9**	**-0.4**
	comp=E,1.7nm,0.8s,mb3.5						
CCM	**Cathedral Cave**	**23.75**	**4**	*e*P	**P**	**16 21 28.3**	**-3.2**
	comp=E,10nm,0.9s,mb4.2						
TUC	**Tucson**	**23.98**	**321**	*e*P	**P**	**16 21 35.7**	**+1.9**
	comp=E,8.3nm,1.3s,mb4.0						
WCI	**Wyandotte Cave**	**24.66**	**13**	*e*P	**P**	**16 21 38.0**	**-2.3**
SDCO	**Great Sand Dun**	**25.73**	**337**	P	**P**	**16 21 51.2**	**+0.7**
	comp=E,6.5nm,1.4s,mb4.0						
WUAZ	**Wupatki**	**26.63**	**326**	*e*P	**P**	**16 22 00.0**	**+1.3**
	comp=E,2.9nm,0.8s,mb3.9						
PV01	**Paradox Valley**	**27.31**	**333**	P	**P**	**16 22 06.3**	**+1.3**
ISCO	**Idaho Springs**	**27.60**	**339**	*e*P	**P**	**16 22 07.9**	**+0.3**
	comp=E,3.4nm,1.2s,mb3.9						
PDAR	**Pinedale Array**	**31.62**	**337**	P	**P**	**16 22 42.9**	**-0.6**
	comp=E,1.0nm,1.0s,mb3.6,baz=135,slow=7.7,SNR=6.0						
BW06	**Boulder Array**	**31.63**	**337**	*e*P	**P**	**16 22 42.7**	**-0.8**
	comp=E,3.0nm,1.3s,mb4.0						
AHID	**Auburn Hatcher**	**32.23**	**335**	P	**P**	**16 22 49.1**	**+0.4**
	comp=E,20nm,1.8s,mb4.6						
NVAR	**Mina Array Bea**	**32.62**	**322**	P	**P**	**16 22 53.7**	**+1.5**
	comp=E,1.8nm,0.8s,mb4.1,baz=134,slow=10,SNR=13						
HLID	**Hailey**	**34.30**	**332**	*e*P	**P**	**16 23 06.7**	**0.0**
	comp=E,5.0nm,1.3s,mb4.3						
MCMT	**McKenzie Canyo**	**34.65**	**335**	*e*P	**P**	**16 23 11.0**	**+1.3**
ULM	**Lac du Bonnet**	**35.92**	**357**	LR	LR	16 39 48.3	
	comp=E,83nm,21.2s,MS3.5,baz=172,slow=39						
CHMT	**Chamberlain Mo**	**36.53**	**337**	*e*P	**P**	**16 23 25.9**	**+0.2**
SCHQ	**Schefferville**	**45.42**	**21**	LR	LR	16 44 48.8	
	comp=E,240nm,19.2s,MS4.2,baz=274,slow=38						
YKA	**Yellowknife Ar**	**50.45**	**347**	P	**P**	**16 25 16.4**	**-1.3**
	comp=E,4.2nm,0.7s,mb4.6,baz=152,slow=7.4,SNR=95						
YKA				PcP	PcP	16 26 34.0	-1.9
	comp=E,0.2nm,0.7s,baz=150,slow=4.3,SNR=4.3						
YKA				LR	LR	16 49 01.5	
	comp=E,38nm,18.8s,MS3.4,baz=170,slow=39						
YKA	**Yellowknife Ar**	**50.45**	**347**	P	**P**	**16 25 16.4**	**-1.3**
YKA				PcP	PcP	16 26 34.0	-1.9
YKA				LR	LR	16 49 01.5	
YKW3	**Yellowknife Ar**	**50.51**	**347**	*e*P	**P**	**16 25 16.6**	**-1.6**
DLBC	**Dease Lake**	**51.86**	**336**	P	**P**	**16 25 29.5**	**+1.1**
	comp=E,1.2nm,0.7s,mb3.9,baz=144,slow=9.0,SNR=4.0						
DLBC	**Dease Lake**	**51.86**	**336**	P	**P**	**16 25 29.5**	**+1.1**
BDFB	**Brasilia**	**53.79**	**122**	LR	LR	16 49 04.3	
	comp=E,82nm,19.9s,MS3.8,baz=312,slow=36						
INK	**Inuvik**	**59.79**	**344**	P	**P**	**16 26 23.8**	**-1.6**
	comp=E,2.1nm,0.6s,mb4.3						
ILAR	**Eielson Array**	**62.06**	**337**	P	**P**	**16 26 39.3**	**-1.6**
	comp=E,1.6nm,0.9s,mb4.2,baz=140,slow=3.5,SNR=18						
ILAR				LR	LR	16 56

MOS ***16*** *16:45:40.8±0.9,49.60N×150.55E,h287km,mb3.5/7,Error ellipse: s-maj=37.9km s-min=18.7km az=68.8*
BJI ***16*** *16:45:41.4,49.15N×151.18E,h346km,mB4.1,mb4.3*
NEIC ***16*** *16:45:42.6±0.7,49.13N×150.87E,h316km±8km,mb4.0/9, Error ellipse: s-maj=12.4km s-min=6.5km az=137.0*
IDC ***16*** *16:45:43.4±2.6,49.05N×150.81E,h328km±27km, mb3.2/11,mb1 3.5/12,mb1mx3.3/22,Error ellipse: s-maj=18.3km s-min=12.3km az=122.0*

ISC 16 16:45:41.3±0.5,49.06N±0.08×151.05E±0.10,h317km±6km, n43,σ1°13/44,mb3.6/16,Northwest of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SKR	**Severo-Kuril's**	**3.66**	**62**	*e*PN	**P**	**16 46 43.6**	**-1.7**
SKR				*e*S	**S**	**16 47 34.4**	**-0.9**
YSS	**Yuzh-Sakhalins**	**5.95**	**252**	*e*PN	**P**	**16 47 11.7**	**+0.6**
YSS	**Yuzh-Sakhalins**	**5.95**	**252**	*e*P	**P**	**16 47 11.4**	**+0.3**
	13nm,1.0s						
YUK	**Yuzh-Kuril'sk**	**6.17**	**217**	PN	**P**	**16 47 16.0**	**+2.4**
PET	**Petropavlovsk**	**6.22**	**47**	*e*Pn	**P**	**16 47 13.8**	**-0.6**
ASAJ	**Asahikawa**	**7.63**	**233**	P	**P**	**16 47 31.3**	**0.0**
	2.7nm,0.3s,baz=68,slow=10,SNR=33						
ASAJ	**Asahikawa**	**7.63**	**233**	PN	**P**	**16 47 31.3**	**0.0**
ASAJ				pmax	pmax		
	comp=Z,3.0nm,0.3s						
MA2	**Magadan**	**10.54**	**359**	*e*P	**P**	**16 48 07.0**	**+0.4**
	comp=Z,5.5nm,0.7s						
KLR	**Kul'dur**	**12.64**	**278**	*e*PN	**P**	**16 48 33.8**	**+1.5**
SEY	**Seymchan**	**13.93**	**3**	*e*PN	**P**	**16 48 49.4**	**+1.9**
SEY				pmax	pmax		
	comp=Z,10.0nm,0.8s						
MDJ	**Mudanjiang**	**15.33**	**261**	P	**P**	**16 49 05.1**	**+1.8**
MDJ				AMB	AMB		
	comp=Z,20nm,1.0s						
MDJ				AMB	AMB		
	comp=Z,50nm,9.0s						
MAJO	**Matsushiro**	**15.63**	**222**	*e*P	**P**	**16 49 06.0**	**-0.7**
	comp=Z,7.8nm,0.4s						
MAT	**Matsushiro**	**15.63**	**222**	P	**P**	**16 49 05.8**	**-0.9**
MAT	**Matsushiro**	**15.63**	**222**	*e*P	**P**	**16 49 06.0**	**-0.7**
	comp=Z,9.9nm,0.5s						
BILL	**Bilibino**	**20.51**	**16**	*e*P	**P**	**16 49 55.8**	**-0.2**
ULN	**Ulaanbaatar**	**28.90**	**285**	*e*P	**P**	**16 51 11.4**	**-1.8**
	comp=Z,1.0nm,0.7s,mb3.4						
IMA	**Indian Mountai**	**32.80**	**38**	*e*P	**P**	**16 51 47.3**	**+0.5**
	comp=Z,26nm,0.9s,mb4.8						
COLA	**College**	**35.23**	**40**	*e*P	**P**	**16 52 07.6**	**+0.3**
ILAR	**Eielson Array**	**35.65**	**41**	P	**P**	**16 52 11.2**	**+0.4**
	comp=Z,3.0nm,0.9s,mb3.8,baz=271,slow=8.9,SNR=32						
ILAR	**Eielson Array**	**35.65**	**41**	P	**P**	**16 52 11.3**	**+0.4**
ILAR				pmax	pmax		
	comp=Z,3.0nm,0.9s						
INK	**Inuvik**	**40.47**	**34**	*e*P	**P**	**16 52 51.1**	**+0.5**
	comp=Z,1.7nm,0.3s,mb3.9						
MKAR	**Makanchi Array**	**44.69**	**294**	P	**P**	**16 53 23.3**	**-1.4**
	comp=Z,0.7nm,0.8s,mb2.9,baz=72,slow=8.4,SNR=5.4						
MKAR	**Makanchi Array**	**44.69**	**294**	P	**P**	**16 53 23.3**	**-1.3**
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.8s						
MKAR	**Makanchi Array**	**44.69**	**294**	P	**P**	**16 53 23.3**	**-1.4**
KURK	**Kurchatov**	**44.96**	**301**	*e*P	**P**	**16 53 25.7**	**-1.0**
YKA	**Yellowknife Ar**	**49.91**	**37**	P	**P**	**16 54 04.8**	**+0.2**
	comp=Z,1.6nm,0.4s,mb3.7,baz=301,slow=7.1,SNR=44						
YKA	**Yellowknife Ar**	**49.91**	**37**	P	**P**	**16 54 04.8**	**+0.2**
YKA				pmax	pmax		
	comp=Z,2.0nm,0.4s						
ARCES	**ARCESS Array B**	**55.21**	**340**	P	**P**	**16 54 42.0**	**-1.2**
	comp=Z,0.7nm,0.7s,mb3.2,baz=45,slow=7.7,SNR=3.7						
ARCES	**ARCESS Array B**	**55.21**	**340**	P	**P**	**16 54 42.0**	**-1.1**
ARCES				pmax	pmax		
	comp=Z,1.0nm,0.7s						
FFC	**Flin Flon**	**59.86**	**40**	*e*P	**P**	**16 55 15.8**	**+0.2**
	comp=Z,4.3nm,0.6s,mb4.2						
FCC	**Fort Churchill**	**60.09**	**33**	*e*P	**P**	**16 55 15.9**	**-1.0**
	comp=Z,1.2nm,0.4s,mb3.8						
FINES	**FINESS Array B**	**61.36**	**333**	P	**P**	**16 55 24.6**	**-0.8**
	comp=Z,1.2nm,0.4s,mb3.8,baz=38,slow=7.4,SNR=27						
FINES	**FINESS Array B**	**61.36**	**333**	P	**P**	**16 55 24.6**	**-0.8**
FINES				pmax	pmax		
	comp=Z,1.0nm,0.4s						
NVAR	**Mina Array Bea**	**62.59**	**62**	P	**P**	**16 55 34.8**	**+1.0**
	comp=Z,0.8nm,0.5s,mb3.6,baz=287,slow=8.8,SNR=6.8						
PDAR	**Pinedale Array**	**64.50**	**54**	P	**P**	**16 55 47.0**	**+1.1**
	comp=Z,0.6nm,0.6s,mb3.4,baz=351,slow=2.0,SNR=7.4						
NOA	**NORSAR Array B**	**65.59**	**340**	P	**P**	**16 55 51.7**	**-0.9**
	comp=Z,0.6nm,0.7s,mb3.4,baz=30,slow=6.4,SNR=3.1						
NOA	**NORSAR Array B**	**65.59**	**340**	P	**P**	**16 55 51.7**	**-0.8**
NOA				pmax	pmax		
	comp=Z,1.0nm,0.7s						
PV10	**Paradox Valley**	**67.87**	**57**	*e*P	**P**	**16 56 09.1**	**+1.9**
PV01	**Paradox Valley**	**68.30**	**57**	*e*P	**P**	**16 56 12.6**	**+2.8**
WRA	**Warramunga Arr**	**70.28**	**197**	P	**P**	**16 56 20.5**	**-1.6**
	comp=Z,0.5nm,0.8s,mb3.3,baz=16,slow=6.1,SNR=8.7						
WRA	**Warramunga Arr**	**70.28**	**197**	P	**P**	**16 56 20.5**	**-1.7**
WRA				pmax	pmax		
	comp=Z,1.0nm,0.8s						
SCHQ	**Schefferville**	**71.71**	**22**	P	**P**	**16 56 29.7**	**-0.3**
	comp=Z,3.4nm,1.0s,mb3.9,baz=243,slow=16,SNR=3.2						
ASAR	**Alice Springs**	**73.99**	**196**	P	**P**	**16 56 43.8**	**-0.3**
	comp=Z,0.5nm,0.4s,mb3.5,baz=9.4,slow=5.4,SNR=39						

IDC ***16*** *17:01:25.9±3.3,9.19S×113.03E,h53km±31km,mb4.1/11, mb1 4.1/12,mb1mx4.1/16,ML3.9/1,Error ellipse: s-maj=39.4km s-min=11.2km az=49.0*
NEIC ***16*** *17:01:26.8±2.4,9.25S×113.02E,h63km±21km,mb4.0/2, Error ellipse: s-maj=28.8km s-min=8.5km az=60.0*
NEIC Felt [II] at Karangkates.
DJA ***16*** *17:01:28.9±0.9,8.92S×113.02E,h47km±92km,MD4.7/3, ML5.5/3,Error ellipse: s-maj=32.5km s-min=7.4km az=22.0*

ISC 16 17:01:27.9±1.2,9.08S±0.10×113.12E±0.07,h87km±10km, n29,σ0°69/41,mb4.4/17,4C-8D,South of Jawa

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
TRT	**Tretes**	**1.45**	**341**	*e*Pn	**P**	**17 01 54.5**	**+1.2**
TRT				*e*Sn	**S**	**17 02 11.5**	**-0.6**
INGI	**Ingas**	**2.02**	**83**	↓*e*Pn	**P**	**17 02 00.9**	**+0.1**
	3μm,0.2s						
INGI				↓*i*Sn	**S**	**17 02 25.0**	**-0.1**
INGI	**Ingas**	**2.02**	**83**	↓*e*Pn	**P**	**17 02 00.8**	**0.0**
INGI				*e*Sn	**S**	**17 02 23.4**	**-1.7**
RATI	**Rata**	**2.41**	**82**	↓*e*Pn	**P**	**17 02 06.8**	**+0.5**
	3μm,0.2s						
RATI				↑*i*Sn	**S**	**17 02 35.0**	**+0.2**
RATI	**Rata**	**2.41**	**82**	↓*e*Pn	**P**	**17 02 06.8**	**+0.5**
RATI				*e*Sn	**S**	**17 02 34.5**	**-0.3**
KEDI	**Kedomdong**	**3.02**	**79**	↓*e*Pn	**P**	**17 02 14.8**	**+0.1**
	1μm,0.2s						
KEDI				↓*e*Sn	**S**	**17 02 49.2**	**-0.7**
KEDI				↑*e*S	**S**	**17 02 51.7**	**+1.8**
KEDI	**Kedomdong**	**3.02**	**79**	↓*e*Pn	**P**	**17 02 14.8**	**+0.1**
KEDI				*e*Sn	**S**	**17 02 49.5**	**-0.4**
FITZ	**Fitzroy Crossi**	**15.11**	**128**	*e*P	**P**	**17 04 54.5**	**-3.4**
	5.8nm,1.6s						
FITZ				*e*S	**S**	**17 07 27.8**	**-15**
FITZ	**Fitzroy Crossi**	**15.11**	**128**	P	**P**	**17 04 54.4**	**-3.5**
	0.4nm,0.3s,baz=315,slow=5.4,SNR=10						
FITZ				S	**S**	**17 07 31.1**	**-12**
	0.6nm,0.3s,baz=179,slow=16,SNR=4.4						
WRA	**Warramunga Arr**	**23.18**	**120**	P	**P**	**17 06 27.8**	**+0.2**
	4.1nm,0.7s,mb3.9,baz=295,slow=12,SNR=37						
WRA				S	**S**	**17 10 37.2**	**+8.1**
	0.3nm,0.7s,baz=275,slow=23,SNR=2.9						
WRAB	**Tennant Creek**	**23.18**	**120**	*e*P	**P**	**17 06 27.9**	**+0.1**
	14nm,0.8s,mb4.3						
WB2	**Warramunga Arr**	**23.19**	**120**	↑*i*P	**P**	**17 06 28.3**	**+0.5**
WB2				*e*S	**S**	**17 10 44.2**	**+15**
NWAO	**Narrogin (SRO)**	**24.04**	**171**	P	**P**	**17 06 34.9**	**-0.9**
	8.3nm,0.8s,mb4.1,baz=242,slow=17,SNR=3.0						
AS12	**Alice Springs**	**24.61**	**129**	↑*i*P	**P**	**17 06 42.2**	**+0.7**
	29nm,1.6s,mb4.5						
ASAR	**Alice Springs**	**24.61**	**129**	P	**P**	**17 06 42.0**	**+0.5**
	12nm,1.1s,mb4.2,baz=303,slow=8.7,SNR=64						
ASAR				S	S	17 11 14.8	+21
	0.8nm,0.8s,baz=306,slow=24,SNR=6.5						
CMAR	**Chiang Mai Arr**	**30.73**	**333**	P	**P**	**17 07 37.5**	**+0.4**
	1.6nm,0.7s,mb3.9,baz=168,slow=9.0,SNR=8.7						
STKA	**Stephens Creek**	**34.82**	**135**	P	**P**	**17 08 12.5**	**+0.1**
	2.7nm,0.8s,mb4.1,baz=326,slow=9.0,SNR=5.6						
PKI	**Pulchoki**	**45.25**	**324**	*e*P	**P**	**17 09 38.4**	**-0.2**
	20nm,1.2s,mb4.7						
DMN	**Daman**	**45.45**	**324**	*e*P	**P**	**17 09 39.7**	**-0.5**
	56nm,1.4s,mb5.1						
KKN	**Kakani**	**45.49**	**325**	*e*P	**P**	**17 09 40.0**	**-0.5**
	9.2nm,0.8s,mb4.5						
GKN	**Gorkha**	**46.02**	**324**	*e*P	**P**	**17 09 44.2**	**-0.5**
	6.0nm,0.3s,mb4.9						
KOLN	**Koldanda**	**46.45**	**323**	*e*P	**P**	**17 09 47.8**	**-0.3**
	6.4nm,0.5s,mb4.6						
SONM	**Songino Array**	**56.97**	**355**	P	**P**	**17 11 07.0**	**+0.3**
	5.1nm,0.7s,mb4.7,baz=175,slow=8.3,SNR=15						
MKAR	**Makanchi Array**	**62.04**	**337**	P	**P**	**17 11 41.0**	**-0.5**
	2.3nm,0.4s,mb4.5,baz=150,slow=7.5,SNR=38						
KURK	**Kurchatov**	**66.64**	**337**	P	**P**	**17 12 10.6**	**-0.7**
ZAL	**Zalesovo**	**67.19**	**342**	P	**P**	**17 12 14.4**	**-0.2**
	2.4nm,0.9s,mb4.0,baz=221,slow=6.2,SNR=12						
THR	**Tehran**	**73.44**	**312**	P	**P**	**17 12 52.8**	**0.0**
	0.7nm,0.6s,mb3.7,baz=78,slow=5.9,SNR=4.6						
BRTR	**Keskin Array B**	**87.75**	**311**	P	**P**	**17 14 10.0**	**+1.4**
	2.6nm,0.8s,mb4.3,baz=127,slow=6.2,SNR=13						
FINES	**FINESS Array B**	**96.49**	**331**	P	**P**	**17 14 49.0**	**+0.7**
	2.1nm,1.1s,mb4.5,baz=90,slow=3.8,SNR=5.2						

JMA ***16*** *17:04:12.8±0.3,24.13N×121.73E,h70km,M2.7*
TAP ***16*** *17:04:13.5,24.12N×121.67E,h40km,ML3.4*

ISC 16 17:04:13.2±2.4,24.0N±0.3×121.8E±0.1,h40km,n6, σ0°65/11,Taiwan

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
YOJ	**Yonaguni jima**	**1.22**	**69**	P	**P**	**17 04 34.2**	**+0.2**
YOJ				S	**S**	**17 04 50.5**	**+0.9**
IRIF	**Iriomote-Funau**	**1.82**	**80**	P	**P**	**17 04 42.6**	**-0.1**
IRIF				S	**S**	**17 05 04.9**	**+0.2**
HATJ	**Hateruma jima**	**1.87**	**89**	*e*S	**S**	**17 05 06.4**	**+0.5**
JKRS	**Kuro-shima**	**2.06**	**84**	P	**P**	**17 04 46.6**	**+0.5**
JKRS				S	**S**	**17 05 11.5**	**+0.7**
JIJ	**Ishigaki jima**	**2.20**	**81**	P	**P**	**17 04 47.7**	**-0.4**
JIJ				S	**S**	**17 05 13.0**	**-1.3**
JTJ	**Tarama**	**2.75**	**77**	P	**P**	**17 04 55.7**	**-0.2**
JTJ				S	**S**	**17 05 27.2**	**-1.0**

NSSC ***16*** *17:05:55.8,33.83N×36.69E,h8km±2km*
GII ***16*** *17:05:56.0±0.4,33.85N×36.66E,h5km±7km,ML3.5/6, Mw3.2/1*
GRAL ***16*** *17:05:56.1±0.6,33.81N×36.71E,MD3.3*

ISC 16 17:05:55.2±0.7,33.84N±0.02×36.68E±0.05,h6km±4km, n30,σ0°976/46,1C-17D,Jordan - Syria region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MARH	**Ras Al Marh**	**0.25**	**318**	↓↑P	**Pg**	**17 06 01.6**	**+1.3**
QASN	**Qassioun**	**0.46**	**228**	↓↑P	**Pg**	**17 06 05.0**	**+0.6**
QASN				↑S	**Sg**	**17 06 11.3**	**+0.8**
TOTH	**TOTAH**	**0.52**	**204**	↓↑P	**Pg**	**17 06 05.9**	**+0.2**
TOTH				↓S	**Sg**	**17 06 13.2**	**+0.6**
HAWK	**Haweek**	**0.72**	**342**	↓↑P	**Pg**	**17 06 09.7**	**+0.1**
HAWK				↓S	**Sg**	**17 06 19.5**	**+0.3**
BRBR	**Barbar**	**0.74**	**235**	↓↑P	**Pg**	**17 06 10.2**	**0.0**
BRBR				↓S	**Sg**	**17 06 20.0**	**-0.1**
HWQ	**Hawqa**	**0.75**	**306**	*i* PG	**Pg**	**17 06 10.1**	**-0.2**
HWQ				↑*i* SG	**Sg**	**17 06 21.0**	**+0.7**
BHL	**Bhannes**	**0.86**	**275**	*i* PG	**Pg**	**17 06 11.8**	**-0.6**
BHL				*i* SG	**Sg**	**17 06 23.6**	**-0.3**
HRI	**Mount Hermon**	**0.97**	**234**	Pg	**Pg**	**17 06 13.6**	**-1.1**
ZALF	**Zalf**	**1.07**	**149**	↓↓P	**Pb**	**17 06 15.4**	**-0.2**
ZALF				↓↓S	**Sb**	**17 06 29.8**	**+0.1**
KSDI	**Kefar Szold**	**1.07**	**233**	Pg	**Pg**	**17 06 15.2**	**-1.4**
KSHT	**Keshet**	**1.12**	**221**	Pg	**Pg**	**17 06 16.4**	**-1.3**
SALA	**Sala**	**1.13**	**178**	↓↓P	**Pb**	**17 06 16.4**	**-0.3**
SALA				↓↓S	**Sb**	**17 06 31.5**	**0.0**
MATL	**Matirih**	**1.18**	**253**	*i* PG	**Pg**	**17 06 17.8**	**-1.0**
BIDA	**Albida**	**1.21**	**346**	↓↑P	**Pb**	**17 06 18.2**	**+0.1**
BIDA				↑S	**Sb**	**17 06 34.7**	**+0.9**
TCHB	**Talchebab**	**1.31**	**207**	↓↑P	**Pb**	**17 06 19.5**	**-0.3**
TCHB				↓S	**Sb**	**17 06 37.3**	**+0.6**
HNTI	**Hanita**	**1.47**	**239**	Pn	**Pn**	**17 06 22.0**	**-0.3**
HNTI				Sn	**Sn**	**17 06 41.5**	**-0.5**
WRDH	**Warideh**	**1.68**	**353**	↓↓P	**Pn**	**17 06 25.9**	**+0.6**
WRDH				↓↓S	**Sn**	**17 06 46.6**	**-0.8**
HAF	**Haifa**	**1.74**	**233**	Pn	**Pn**	**17 06 26.5**	**+0.2**
SLNF	**Slenfeh**	**1.79**	**348**	↑↑P	**Pn**	**17 06 26.9**	**-0.1**
SLNF				↑↑S	**Sn**	**17 06 50.5**	**+0.3**
HMDT	**Nahal Hemdat**	**1.86**	**212**	Pn	**Pn**	**17 06 28.0**	**+0.2**
ARNB	**Al Arnab**	**2.10**	**344**	↓↓P	**Pn**	**17 06 31.3**	**-0.1**
ARNB				↓↓S	**Sn**	**17 06 58.0**	**-0.1**
SLTI	**Sal'it**	**2.11**	**221**	Pn	**Pn**	**17 06 31.7**	**+0.2**
SLTI				Sn	**Sn**	**17 06 60.0**	**+1.7**
BTCH	**Batrach**	**2.20**	**355**	↓↓P	**Pn**	**17 06 33.1**	**+0.3**
BTCH				↓↓S	**Sn**	**17 06 58.7**	**-1.9**
HTY	**Hatay**	**2.32**	**349**	P	**Pn**	**17 06 35.1**	**+0.6**
MKRJ	**Makawir**	**2.44**	**201**	Pn	**Pn**	**17 06 36.4**	**+0.1**
DRGI	**Dragot**	**2.49**	**206**	Pn	**Pn**	**17 06 37.0**	**0.0**
GAZ	**Gaziantep**	**3.35**	**7**	*e*P	**Pn**	**17 06 51.2**	**+2.0**
IKL	**Isikli**	**3.43**	**315**	P	**Pn**	**17 06 46.4**	**-3.9**
PRNI	**Paran**	**3.76**	**203**	Pn	**Pn**	**17 06 54.7**	**-0.3**
NIG	**Nigde**	**4.58**	**339**	P	**Pn**	**17 07 05.0**	**-1.7**

BJI ***16*** *17:13:29.6,3.29S×130.19E,h32km,mB5.0,mb4.8,Ms4.4, Msz4.1*
NEIC ***16*** *17:13:32.0±0.3,3.01S×129.78E,h10km,mb4.7/19,Error ellipse: s-maj=12.6km s-min=5.6km az=65.0*
SYO ***16*** *17:13:31.9,3.01S×129.78E,h10km,MB4.7*
MOS ***16*** *17:13:33.3±1.3,3.03S×129.63E,h32km,mb5.4/8,Error ellipse: s-maj=20.2km s-min=9.1km az=113.4*
IDC ***16*** *17:13:37.4±3.3,3.05S×129.78E,h46km±30km,mb4.3/16, mb1 4.4/19,mb1mx4.4/21,ML4.4/2,MS3.8/9,Ms1 3.8/9, ms1mx3.5/23,Error ellipse: s-maj=24.5km s-min=9.0km az=68.0*

ISC 16 17:13:33.9±0.3,2.86S±0.04×129.90E±0.07,h33km, (h14km±6.2km:pP-P),n107,σ1°07/106,mb4.8/51,MS4.0/17, 9C-3D,Seram

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**15.71**	**195**	*e*P	**P**	**17 17 10.9**	**-3.7**
	19nm,0.7s						
FITZ	**Fitzroy Crossi**	**15.71**	**195**	P	**P**	**17 17 12.3**	**-2.2**
	2.1nm,0.3s,baz=19,slow=12,SNR=16						
FITZ				S	**S**	**17 20 08.0**	**+0.3**
	0.4nm,0.3s,baz=177,slow=15,SNR=2.3						
FITZ				LR	LR	17 23 28.9	
	comp=Z,105nm,20.5s,baz=53,slow=38						
WRAB	**Tennant Creek**	**17.52**	**166**	*e*Pn	**P**	**17 17 33.7**	**-3.6**
	61nm,0.9s						
WRAB				S	**S**	**17 20 53.1**	**+3.9**
WRA	**Warramunga Arr**	**17.52**	**166**	P	**P**	**17 17 33.0**	**-4.4**
	1.0nm,0.3s,baz=339,slow=13,SNR=40						
WRA				S	**S**	**17 20 50.0**	**+0.7**
	0.6nm,0.3s,baz=338,slow=20,SNR=7.6						
WB2	**Warramunga Arr**	**17.52**	**166**	↑*i*P	**P**	**17 17 33.0**	**-4.4**
WB2				*i* S	**S**	**17 20 53.3**	**+3.9**
PMG	**Port Moresby**	**18.34**	**112**	P	**P**	**17 17 51.4**	**+3.6**
	0.3nm,0.3s,baz=327,slow=12,SNR=4.5						
PMG	**Port Moresby**	**18.34**	**112**	P	**P**	**17 17 49.8**	**+2.0**
	30nm,1.1s						
TGY	**Tagaytay City**	**19.05**	**332**	P	**P**	**17 17 57.4**	**+1.1**
	27nm,0.3s,baz=162,slow=19,SNR=2.8						
AS12	**Alice Springs**	**21.04**	**170**	↑*i*P	**P**	**17 18 15.6**	**-1.9**
	158nm,0.8s,mb5.4						
AS12				*i* S	**S**	**17 22 07.5**	**+2.6**
ASAR	**Alice Springs**	**21.04**	**170**	P	**P**	**17 18 15.6**	**-1.9**
	145nm,0.8s,mb5.3,baz=348,slow=11,SNR=681						
ASAR				S	**S**	**17 22 04.1**	**-0.8**
	7.6nm,0.9s,baz=348,slow=18,SNR=6.0						
CTA	**Charters Tower**	**23.41**	**138**	*e*P	**P**	**17 18 41.7**	**+0.7**
	16nm,1.1s,mb4.4						
CTA	**Charters Tower**	**23.41**	**138**	P	**P**	**17 18 41.8**	**+0.7**
	11nm,0.9s,mb4.3,baz=322,slow=8.0,SNR=9.2						
CTAO	**Charters Tower**	**23.41**	**138**	*e*P	**P**	**17 18 40.9**	**-0.1**
	52nm,1.4s,mb4.8						
JOW	**Kunigami**	**29.56**	**357**	LR	LR	17 30 26.5	
	comp=Z,171nm,20.6s,MS3.7,baz=281,slow=34						
IPM	**Ipoh**	**29.79**	**284**	↓*e*P	**P**	**17 19 40.7**	**+0.6**
STKA	**Stephens Creek**	**30.89**	**160**	↑*i*P	**P**	**17 19 48.3**	**-1.5**
	3.1nm,0.4s,mb4.5						
STKA	**Stephens Creek**	**30.89**	**160**	P	**P**	**17 19 48.6**	**-1.2**
	4.6nm,0.6s,mb4.5,baz=328,slow=7.4,SNR=17						
STKA				LR	LR	17 32 05.3	
	comp=Z,286nm,21.0s,MS3.9,baz=351,slow=36						
NWAO	**Narrogin (SRO)**	**32.18**	**200**	P	**P**	**17 19 58.6**	**-2.5**
	12nm,0.8s,mb4.7,baz=4.8,slow=12,SNR=6.0						
NWAO	**Narrogin (SRO)**	**32.18**	**200**	*e*P	**P**	**17 19 58.3**	**-2.8**
SSE	**Sheshan**	**34.77**	**347**	P	**P**	**17 20 22.5**	**-1.0**
SSE				PCS		17 26 40.1	
SSE				AMB	AMB		
	comp=Z,28nm,0.7s,mb5.3						
SSE				AMB	AMB		
	comp=Z,13nm,3.5s						
SSE				LR	LR		
	comp=N,31nm,24.6s,MS3.4						
SSE				LR	LR		
	comp=E,70nm,24.2s,MS3.4						
SSE				LR	LR		
	comp=Z,59nm,19.2s,MS3.4						
NJ2	**Nanjing**	**36.27**	**344**	*e*P	**P**	**17 20 35.1**	**-1.1**
NJ2				PP	PP	17 21 59.3	-0.4
NJ2				XS		17 26 38.0	
NJ2				AMB	AMB		
	comp=Z,30nm,0.7s,mb5.3						
NJ2				AMB	AMB		
	comp=Z,88nm,3.8s						
NJ2				LR	LR		
	comp=N,110nm,12.0s,MS4.1						
NJ2				LR	LR		
	comp=E,200nm,16.8s,MS4.1						
NJ2				LR	LR		
	comp=Z,180nm,17.7s,MS3.9						
CMAR	**Chiang Mai Arr**	**37.12**	**306**	P	**P**	**17 20 44.4**	**+0.9**
	comp=Z,11nm,0.9s,mb4.7,baz=132,slow=6.9,SNR=36						
CMAR				PcP	PcP	17 23 05.0	+1.1
	comp=Z,0.8nm,0.9s,baz=159,slow=2.5,SNR=4.1						
KMI	**Kunming**	**38.32**	**318**	*e*P	**P**	**17 20 55.3**	**+1.9**
KMI				AP	pP	17 20 59.4	-3.8
KMI				AMB	AMB		
	comp=Z,11nm,1.5s,mb4.4						
KMI				LR	LR		
	comp=Z,66nm,26.6s,MS3.3						
MAJO	**Matsushiro**	**39.96**	**10**	*e*P	**P**	**17 21 05.8**	**-1.2**
	comp=Z,8.3nm,0.8s,mb4.5						
MAT	**Matsushiro**	**39.96**	**10**	P	**P**	**17 21 05.2**	**-1.8**
MAT	**Matsushiro**	**39.96**	**10**	P	**P**	**17 21 05.0**	**-2.0**
XAN	**Xi'an**	**41.69**	**333**	P	**P**	**17 21 20.5**	**-0.9**
XAN				AP	pP	17 21 26.3	-4.9
XAN				AMB	AMB		
	comp=Z,4.0nm,1.3s,mb3.9						
BJI	**Beijing**	**44.51**	**345**	*e*P	**P**	**17 21 44.0**	**-0.2**
BJI				S	**S**	**17 28 27.5**	**+11**
BJI				AMB	AMB		
	comp=Z,9.0nm,0.9s,mb4.6						
BJI				LR	LR		
	comp=N,57nm,16.5s						
BJI				LR	LR		
	comp=E,76nm,22.2s						
BJI				LR	LR		
	comp=Z,73nm,38.1s						
LZH	**Lanzhou**	**45.76**	**330**	*e*P	**P**	**17 21 55.5**	**+1.2**
LZH				AMB	AMB		
	comp=Z,39nm,1.5s,mb5.1						
HHC	**Hu-ho-hao-te**	**46.61**	**341**	*e*P	**P**	**17 22 01.6**	**+0.7**
HHC				AMB	AMB		
	comp=Z,15nm,1.1s,mb4.8						
CN2	**Changchun**	**46.62**	**356**	*e*P	**P**	**17 22 00.8**	**-0.1**
CN2				*e*S	**S**	**17 28 50.0**	**+3.1**
CN2				AMB	AMB		
	comp=Z,10.0nm,0.8s,mb4.8						
CN2				LR	LR		
	comp=N,170nm,18.0s,MS4.1						
CN2				LR	LR		
	comp=E,120nm,18.0s,MS4.1						
CN2				LR	LR		
	comp=Z,180nm,18.0s,MS4.1						
GTA	**Gaotai**	**50.34**	**330**	*e*P	**P**	**17 22 28.5**	**-1.4**
GTA				AP	pP	17 22 36.0	-3.8
GTA				XP	sP	17 22 39.5	-4.4
GTA				AMB	AMB		
	comp=Z,8.0nm,1.0s,mb4.7						
PKI	**Pulchoki**	**52.44**	**308**	*e*P	**P**	**17 22 44.5**	**-1.3**
	comp=Z,27nm,1.2s,mb5.1						
KKN	**Kakani**	**52.64**	**308**	*e*P	**P**	**17 22 46.2**	**-1.1**
	comp=Z,25nm,1.1s,mb5.0						
DMN	**Daman**	**52.69**	**308**	*e*P	**P**	**17 22 46.0**	**-1.7**
	comp=Z,30nm,1.1s,mb5.2						
GKN	**Gorkha**	**53.24**	**308**	*e*P	**P**	**17 22 50.8**	**-1.0**
	comp=Z,26nm,0.9s,mb5.2						
KOLN	**Koldanda**	**53.95**	**308**

	comp=N,100nm,6.0s					
SEY				smax		
	comp=E,40nm,3.9s					
SEY				MLR	MLR	
	comp=N,110nm,19.0s,MS4.1					
SEY				MLR	MLR	
	comp=E,50nm,19.0s,MS4.1					
SEY				MLR	MLR	
	comp=Z,180nm,19.0s,MS4.3					
EKS2	**Erkin-Say**	**67.84 319**	P	**P**	**17 24 31.5**	**+0.5**
	SNR=9.5					
ZAL	**Zalesovo**	**67.86 333**	P	**P**	**17 24 30.6**	**-0.4**
	comp=Z,13nm,1.1s,mb4.9,baz=261,slow=6.3,SNR=34					
KURK	**Kurchatov**	**68.97 328**	*i* P	**P**	**17 24 37.6**	**-0.3**
KURK				pmax	pmax	
	comp=Z,10.0nm,0.8s,mb4.8					
KURK	**Kurchatov**	**68.97 328**	⇑ *e*P	**P**	**17 24 37.1**	**-0.8**
NVS	**Novosibirsk**	**69.14 333**	*i* P	**P**	**17 24 37.1**	**-1.8**
NVS				pmax	pmax	
	comp=N,14nm,1.0s					
NVS				pmax	pmax	
	comp=E,6.0nm,1.0s					
NVS				pmax	pmax	
	comp=Z,13nm,1.0s,mb4.8					
KKAR	**Karatay Array**	**70.20 318**	*i* P	**P**	**17 24 45.1**	**-0.4**
VOSK	**Vostochnaya**	**74.08 327**	P	**P**	**17 25 08.1**	**-0.3**
VOSK				pmax	pmax	
	comp=Z,3.0nm,0.6s,mb4.4					
TIXI	**Tiksi**	**74.38 360**	*e*P	**P**	**17 25 09.1**	**-0.7**
TIXI				pmax	pmax	
	comp=Z,24nm,0.9s,mb5.1					
TIXI				MLR	MLR	
	comp=Z,700nm,17.0s,MS5.0					
TIXI	**Tiksi**	**74.38 360**	*e*P	**P**	**17 25 09.7**	**-0.1**
	comp=Z,4.4nm,1.0s,mb4.3					
BVA0	**Borovoye Array**	**74.54 327**	*i* P	**P**	**17 25 11.2**	**+0.1**
BVA0				pmax	pmax	
	comp=Z,1.0nm,1.0s,mb3.7					
BVAR	**Borovoye Array**	**74.54 327**	P	**P**	**17 25 11.2**	**+0.1**
	comp=Z,5.5nm,0.8s,mb4.5,baz=135,slow=6.3,SNR=26					
BRVK	**Borovoye**	**74.61 327**	⇑ *i*P	**P**	**17 25 11.5**	**0.0**
BILL	**Bilibino**	**75.13 13**	⇓ *i*P	**P**	**17 25 14.9**	**+0.7**
BILL			*e*		17 25 27.6	
BILL			*e*		17 28 04.2	
BILL				pmax	pmax	
	comp=Z,4.0nm,1.5s,mb4.1					
BILL				MLR	MLR	
	comp=Z,100nm,19.0s,MS4.1					
ZRNK	**Zerenda**	**75.26 327**	P	**P**	**17 25 15.1**	**-0.1**
ZRNK				pmax	pmax	
	comp=Z,11nm,1.1s,mb4.7					
ZRNK	**Zerenda**	**75.26 327**	*e*P	**P**	**17 25 14.7**	**-0.5**
SBA	**Scott Base**	**77.42 173**	*e*P	**P**	**17 25 26.9**	**-0.2**
	comp=Z,5.6nm,1.1s,mb4.4					
MAW	**Mawson**	**78.75 201**	P	**P**	**17 25 34.3**	**-0.2**
	comp=Z,1.8nm,0.6s,mb4.2,baz=51,slow=4.0,SNR=2.7					
MAW				LR	LR	17 57 39.3
	comp=Z,95nm,20.0s,MS4.1,baz=242,slow=34					
AB31	**Akbulak array**	**79.23 321**	P	**P**	**17 25 37.4**	**-0.1**
AB31				pmax	pmax	
	comp=Z,4.0nm,0.6s,mb4.5					
ARU	**Arti**	**82.17 328**	⇓ *i*P	**P**	**17 25 53.2**	**+0.4**
ARU			*i*		17 25 58.4	
ARU			*e*		17 29 01.6	
ARU			*e*S	S	17 36 02.4	-1.7
ARU			*e*SS	SS	17 41 20.2	-7.1
ARU				pmax	pmax	
	comp=Z,19nm,1.1s,mb4.9					
ARU	**Arti**	**82.17 328**	*e*P	**P**	**17 25 52.9**	**+0.1**
	comp=Z,19nm,1.0s,mb5.0					
HASS	**Wahat al Ahsa'**	**82.36 296**	P	**P**	**17 25 55.1**	**+0.6**
THR	**Tehran**	**82.59 307**	P	**P**	**17 25 55.6**	**+0.1**
	comp=Z,1.0nm,0.6s,mb4.0,baz=75,slow=7.0,SNR=3.2					
MZLS	**Mizel**	**86.31 294**	P	**P**	**17 26 15.6**	**+1.2**
KAMS	**Al Khamasin**	**86.60 290**	P	**P**	**17 26 16.4**	**+0.5**
QSPA	**South Pole Qui**	**87.09 180**	*e*P	**P**	**17 26 17.2**	**+0.3**
	comp=Z,3.9nm,0.9s,mb4.6					
DJNS	**Zahran al Janu**	**87.39 288**	P	**P**	**17 26 21.3**	**+1.6**
SYO	**Syowa Base**	**87.46 201**	⇑ pP	pP	17 26 26.7	-2.8
TATS	**Tathlith**	**87.58 290**	P	**P**	**17 26 22.4**	**+1.7**
GNI	**Garni**	**88.12 310**	P	**P**	**17 26 25.6**	**+2.9**
	comp=Z,1.1nm,0.3s,mb4.5,baz=138,slow=14,SNR=2.9					
ARSS	**Ar Rass**	**88.23 296**	P	**P**	**17 26 24.7**	**+1.1**
ZEI	**Tsey**	**88.98 313**	*e*P	**P**	**17 26 40.0**	**+13**
HILS	**Ha'il**	**89.62 297**	P	**P**	**17 26 31.5**	**+1.3**
ILAR	**Eielson Array**	**89.67 25**	P	**P**	**17 26 29.4**	**-0.1**
	comp=Z,0.4nm,0.8s,mb3.8,baz=245,slow=4.9,SNR=9.1					
ILAR				PKKPbc		17 44 03.8
	comp=Z,0.2nm,0.7s,baz=20,slow=2.0,SNR=4.3					
ILAR				LR	LR	18 07 23.7
	comp=Z,30nm,18.9s,MS3.8,baz=42,slow=36					
KMBO	**Kilima Mbogo**	**92.59 269**	P	**P**	**17 26 45.7**	**+1.4**
	comp=Z,3.5nm,0.9s,mb4.8,baz=49,slow=7.5,SNR=9.5					
KMBO	**Kilima Mbogo**	**92.59 269**	*e*P	**P**	**17 26 45.5**	**+1.2**
	comp=Z,3.7nm,1.1s,mb4.7					
DAWY	**Dawson**	**92.86 26**	*e*P	**P**	**17 26 46.2**	**+1.9**
OBN	**Obninsk**	**94.24 325**	*e*P	**P**	**17 26 50.4**	**-0.4**
OBN				pmax	pmax	
	comp=Z,5.0nm,0.6s,mb5.1					
BRTR	**Keskin Array B**	**96.64 309**	P	**P**	**17 27 02.0**	**-0.1**
	comp=Z,2.7nm,1.2s,mb4.5,baz=90,slow=1.2,SNR=3.6					
ARCES	**ARCESS Array B**	**97.69 340**	P	**P**	**17 27 06.1**	**-0.1**
	comp=Z,17nm,1.4s,mb5.4,baz=63,slow=5.4,SNR=7.4					
ARCES				LR	LR	18 18 33.8
	comp=Z,48nm,19.4s,MS4.0,baz=69,slow=40					
FINES	**FINESS Array B**	**99.10 332**	LR	LR		18 17 36.6
	comp=Z,33nm,18.5s,MS3.9,baz=68,slow=39					
YKA	**Yellowknife Ar**	**104.09 26**	PKiKP			17 31 52.4
	comp=Z,0.1nm,0.7s,baz=306,slow=1.8,SNR=4.3					
YKA				PKKPbc		17 43 23.7
	comp=Z,0.4nm,0.8s,baz=107,slow=2.4,SNR=6.5					
PDAR	**Pinedale Array**	**114.03 44**	PKP	PKPdf		17 32 12.8 +2.8
	comp=Z,0.2nm,0.6s,baz=214,slow=3.3,SNR=2.5					
PDAR				PKKPbc		17 42 53.4
	comp=Z,0.6nm,0.9s,baz=135,slow=6.3,SNR=3.7					
TXAR	**Lajitas Array**	**122.82 57**	PKP	PKPdf		17 32 29.8 +2.4
	comp=Z,0.4nm,0.9s,baz=288,slow=2.9,SNR=3.9					
LVC	**Limon Verde**	**148.72 145**	*e*PKPbc	PKPdf		17 33 21.9 +7.1
CPUP	**Villa Florida**	**150.15 167**	PKP	PKPdf		17 33 18.6 +1.5
	comp=Z,2.3nm,0.9s,baz=243,slow=2.3,SNR=3.0					
CPUP				PKPbc	PKPdf	17 33 24.5 +7.5
	comp=Z,4.1nm,1.0s,baz=214,slow=3.0,SNR=5.3					
LPAZ	**La Paz**	**153.93 137**	PKP	PKPdf		17 33 26.5 +3.8
	comp=Z,0.5nm,0.7s,baz=180,slow=4.0,SNR=2.3					
LPAZ				PKPbc	PKPdf	17 33 34.7 +12
	comp=Z,1.2nm,0.9s,baz=186,slow=0.5,SNR=4.8					
LPAZ				PKPab	PKPab	17 33 48.0 +1.6
	comp=Z,0.7nm,0.5s,baz=135,slow=1.4,SNR=3.2					
LPAZ	**La Paz**	**153.93 137**	PKP	PKPdf		17 33 26.5 +3.8
LPAZ				PKPbc	PKPdf	17 33 34.7 +12
LPAZ				PKPab	PKPab	17 33 48.0 +1.6

*GII **16** 17:14:41.7±0.7,33.86N×36.67E,h5km±7km,ML3.2/6, Mw3.3/3*
*GRAL **16** 17:14:41.4±0.5,33.78N×36.76E,h15km±999km,MD3.2*
*NSSC **16** 17:14:42.1,33.80N×36.68E,h10km±1km*
ISC 16 17:14:41.0±0.8,33.84N±0.02×36.69E±0.05,h5km±5km, n21,σ0°79/33,11D,Jordan - Syria region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
MARH	**Ras Al Marh**	**0.26**	**318**	⇓	P	**Pg**		**17 14 47.5**	**+1.4**
QASN	**Qassioun**	**0.46**	**229**	⇑	P	**Pg**		**17 14 50.9**	**+0.8**
QASN				⇑	S	**Sg**		**17 14 57.3**	**+1.1**
TOTH	**TOTAH**	**0.52**	**204**	⇓	P	**Pg**		**17 14 51.9**	**+0.5**
TOTH				⇓	S	**Sg**		**17 14 59.0**	**+0.6**
BRBR	**Barbar**	**0.74**	**236**	⇑	P	**Pg**		**17 14 56.2**	**+0.3**
BRBR				⇑	S	**Sg**		**17 15 05.5**	**-0.4**
HWQ	**Hawqa**	**0.76**	**306**	*i*	PG	**Pg**		**17 14 56.0**	**-0.1**
HWQ				*i*	SG	**Sg**		**17 15 06.9**	**+0.7**
BHL	**Bhannes**	**0.86**	**275**	*i*	PG	**Pg**		**17 14 57.8**	**-0.4**
BHL				*i*	SG	**Sg**		**17 15 09.5**	**-0.2**
HRI	**Mount Hermon**	**0.98**	**235**		Pg	**Pg**		**17 14 59.6**	**-0.9**
ZALF	**Zalf**	**1.06**	**149**	⇓	P	**Pb**		**17 15 01.4**	**-0.1**
ZALF				⇓	S	**Sb**		**17 15 15.4**	**-0.1**
KSDI	**Kefar Szold**	**1.07**	**233**		Pg	**Pg**		**17 15 01.1**	**-1.3**
KSHT	**Keshet**	**1.12**	**221**		Pg	**Pg**		**17 15 02.2**	**-1.2**
SALA	**Sala**	**1.12**	**178**	⇓	P	**Pb**		**17 15 02.4**	**-0.1**
SALA				⇓	S	**Sb**		**17 15 17.0**	**-0.3**
MATL	**Matirih**	**1.18**	**253**	*i*	PG	**Pg**		**17 15 02.2**	**-2.4**
TCHB	**Talchebab**	**1.31**	**208**	⇓	P	**Pb**		**17 15 05.5**	**-0.2**
TCHB				⇓	S	**Sb**		**17 15 22.1**	**-0.6**
HNTI	**Hanita**	**1.47**	**240**		Pn	**Pn**		**17 15 07.9**	**-0.3**
HNTI					Sn	**Sn**		**17 15 27.7**	**-0.4**
HAF	**Haifa**	**1.75**	**233**		Pn	**Pn**		**17 15 12.4**	**+0.2**
SLNF	**Slenfeh**	**1.80**	**348**	⇓	P	**Pn**		**17 15 13.4**	**+0.5**
SLNF				⇓	S	**Sn**		**17 15 36.5**	**+0.1**
HMDT	**Nahal Hemdat**	**1.85**	**212**		Pn	**Pn**		**17 15 14.2**	**+0.4**
ARNB	**Al Arnab**	**2.10**	**344**	⇑	P	**Pn**		**17 15 17.7**	**+0.3**
SLTI	**Sal'it**	**2.11**	**221**		Pn	**Pn**		**17 15 17.2**	**-0.2**
SLTI					Sn	**Sn**		**17 15 46.1**	**+1.8**
BTCH	**Batrach**	**2.21**	**355**	⇑	P	**Pn**		**17 15 19.2**	**+0.4**
BTCH				⇑	S	**Sn**		**17 15 45.4**	**-1.4**
MKRJ	**Makawir**	**2.44**	**201**		Pn	**Pn**		**17 15 23.1**	**+0.9**

*ATH **16** 17:18:04.9,36.20N×27.37E,h32km,MD3.3/4*
*NEIC **16** 17:18:05.2,36.03N×27.57E,h61km,MD3.3(ISK),After ATH.*
*ISK **16** 17:18:05.0,36.20N×27.39E,h8km,MD3.3*
*SNSN **16** 17:19:46.8,30.30N×33.88E,h115km,Ml1.8*
ISC 16 17:18:03.3±0.6,35.95N±0.06×27.74E±0.08,h89km±14km, n20,σ0°77/22,1D,Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ARG	**Arkhangelos**	**0.41**	**49**	⇓ *i*	PN	**P**		**17 18 17.7**	**+0.4**
KARP	**Karpathos**	**0.62**	**230**	*e*	PN	**P**		**17 18 18.7**	**-0.4**
YER	**Yerkesik**	**1.26**	**20**	*i*	PN	**P**		**17 18 27.6**	**+1.2**
MLSB	**Milas**	**1.34**	**1**		PN	**P**		**17 18 27.4**	**-0.1**
MLSB					SN	**S**		**17 18 43.7**	**-1.7**
MLSB	**Milas**	**1.34**	**1**		Pn	**P**		**17 18 27.4**	**-0.1**
MLSB					Sg	**S**		**17 18 43.4**	**-2.0**
NPS	**Neapolis**	**1.86**	**249**	*e*	PN	**P**		**17 18 34.2**	**+0.1**
KRIS	**Kristallenia**	**1.98**	**248**	*e*	Pn	**P**		**17 18 35.2**	**-0.5**
XRY	**Khrisi**	**1.98**	**238**	*e*	PN	**P**		**17 18 37.0**	**+1.3**
DENT	**Denizli**	**2.08**	**30**		PN	**P**		**17 18 40.8**	**+3.7**
APE	**Apeiranthos**	**2.10**	**303**		PN	**P**		**17 18 36.3**	**-1.1**
APE	**Apeiranthos**	**2.10**	**303**	*e*	P	**P**		**17 18 37.4**	**0.0**
IZM	**Izmir**	**2.48**	**351**	*e*	PN	**P**		**17 18 42.8**	**+0.2**
ANTB	**Antalya**	**2.54**	**67**	*e*	PN	**P**		**17 18 50.9**	**+7.5**
AKS	**Akhisar**	**2.93**	**1**		PN	**P**		**17 18 49.6**	**+0.8**
ALWS	**Ilw as Safayha**	**9.05**	**135**		P	**P**		**17 20 12.9**	**+0.1**
HAQS	**Haql**	**9.17**	**137**		P	**P**		**17 20 14.8**	**+0.4**
JMOS	**Jabal al Moall**	**9.18**	**135**		P	**P**		**17 20 14.6**	**-0.1**
BDAS	**Al Bad'**	**9.75**	**138**		P	**P**		**17 20 21.8**	**-0.5**
JMQS	**Jabal Moqyreh**	**9.84**	**133**		P	**P**		**17 20 23.1**	**-0.5**
AYUS	**'Aynunah**	**10.03**	**138**		P	**P**		**17 20 25.6**	**-0.5**

IDC 16 17:26:14.2±17.0,23.16S×178.81W,h587km±182km, mb3.3/5,mb1 3.4/5,mb1mx3.1/14,1D,Error ellipse: s-maj=233.0km s-min=47.2km az=57.0,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RPZ	**Rata Peaks**	**22.15**	**200**		P	P		17 30 27.5	-1.7
	3.6nm,0.7s,baz=24,slow=12,SNR=3.9								
CTA	**Charters Tower**	**32.58**	**269**		P	P		17 31 59.1	-0.9
	4.1nm,0.3s,baz=93,slow=12,SNR=12								
STKA	**Stephens Creek**	**36.02**	**247**		P	P		17 32 26.4	-2.0
	1.9nm,0.6s,baz=81,slow=9.8,SNR=5.4								
AS12	**Alice Springs**	**43.24**	**260**	*e*	P	P		17 33 25.1	-1.4
ASAR	**Alice Springs**	**43.24**	**260**		P	P		17 33 25.2	-1.3
	1.6nm,0.5s,baz=96,slow=7.5,SNR=32								
WB2	**Warramunga Arr**	**43.55**	**265**	⇓ *i*	P	P		17 33 27.4	-1.5
WRA	**Warramunga Arr**	**43.56**	**265**		P	P		17 33 27.5	-1.5
	2.4nm,0.3s,baz=96,slow=8.4,SNR=248								

*JMA **16** 17:32:45.3±0.1,25.03N×122.42E,h7km,M2.2*
*TAP **16** 17:32:48.5,24.69N×122.18E,h6km,ML2.5*
ISC 16 17:32:45.5±2.6,25.0N±0.2×122.5E±0.2,h6km,n4,σ0°44/8, Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**0.76**	**137**		P	**Pg**		**17 33 00.3**	**-0.4**
YOJ					S	**Sg**		**17 33 10.9**	**+0.1**
IRIF	**Iriomote-Funau**	**1.35**	**120**		P	**Pb**		**17 33 10.8**	**-0.1**
IRIF					S	**Sb**		**17 33 29.2**	**+0.9**
JKRS	**Kuro-shima**	**1.62**	**119**		P	**Pn**		**17 33 15.1**	**+0.3**
JKRS					S	**Sb**		**17 33 35.5**	**-0.6**
JIJ	**Ishigaki jima**	**1.68**	**113**		P	**Pn**		**17 33 15.8**	**+0.2**
JIJ					S	**Sn**		**17 33 37.3**	**-0.3**

IDC 16 17:39:27.3±12.0,2.64S×143.39E,mb3.8/3,mb1 4.0/4, mb1mx3.7/14,ML3.7/1,Error ellipse: s-maj=180.0km s-min=75.8km az=16.0,Ninigo Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
WB2	**Warramunga Arr**	**19.33**	**207**	*e*	P			17 43 53.3	-3.7
WRA	**Warramunga Arr**	**19.34**	**207**		P			17 43 53.0	-4.1
	0.2nm,0.3s,baz=25,slow=12,SNR=24								
ASAR	**Alice Springs**	**22.83**	**203**		P	P		17 44 33.6	+0.2
	1.7nm,0.7s,baz=30,slow=9.8,SNR=30								
FITZ	**Fitzroy Crossi**	**23.22**	**227**		P	P		17 44 36.6	-0.7
	0.9nm,0.6s,baz=195,slow=12,SNR=3.0								
STKA	**Stephens Creek**	**29.13**	**183**		P	P		17 45 29.3	-3.0
	5.3nm,1.1s,baz=7.1,slow=8.1,SNR=2.9								

*TAP **16** 17:41:33.3,24.62N×122.35E,h4km,ML3.1*
*JMA **16** 17:41:34.2±0.2,24.75N×122.26E,h24km,M2.5*
ISC 16 17:41:34.4±2.9,24.9N±0.4×122.3E±0.3,h21km±18km,n5, σ0°31/9,Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**0.73**	**122**		P	**Pb**		**17 41 48.1**	**-0.2**
YOJ					S	**Sb**		**17 41 58.0**	**+0.1**
IRIF	**Iriomote-Funau**	**1.37**	**112**		P	**Pn**		**17 41 58.5**	**-0.2**
IRIF					S	**Sn**		**17 42 17.0**	**+0.6**
HATJ	**Hateruma jima**	**1.56**	**120**		S	**Sn**		**17 42 20.8**	**-0.3**
JKRS	**Kuro-shima**	**1.65**	**111**		P	**Pn**		**17 42 02.9**	**+0.3**
JKRS					S	**Sn**		**17 42 23.3**	**0.0**
JIJ	**Ishigaki jima**	**1.72**	**106**		P	**Pn**		**17 42 03.7**	**+0.1**
JIJ					S	**Sn**		**17 42 24.7**	**-0.5**

*IDC **16** 17:46:25.7±1.6,60.57N×147.36W,mb3.8/3,mb1 3.7/7, mb1mx3.5/24,ML3.2/4,MS3.3/2,Ms1 3.3/2,ms1mx2.5/26, Error ellipse: s-maj=22.3km s-min=15.2km az=54.0*
*NEIC **16** 17:46:33.0,60.89N×147.21W,h10km,ML3.6(PMR), ML3.2(AEIC),After AEIC.*
NEIC Felt [III] at Valdez and [II] at Eagle River.
ISC 16 17:46:32.7±0.2,60.87N±0.02×147.20W±0.03,h58km±5km, n68,σ0°82/86,mb3.8/3,MS3.7/1,Southern Alaska

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
HIN	**Hinchinbrook I**	**0.59**	**144**		P	**P**		**17 46 44.9**	**-0.7**
HIN					S	**S**		**17 46 53.6**	**-1.4**
EYAK	**Cordova Ski Ar**	**0.79**	**114**		P	**P**		**17 46 47.6**	**-0.4**
EYAK					S	**S**		**17 46 59.0**	**-0.4**
CVA	**Cordova**	**0.79**	**114**		P	**P**		**17 46 47.6**	**-0.4**
KNK	**Knik Glacier**	**0.81**	**312**		P	**P**		**17 46 47.6**	**-0.8**
KNK					S	**S**		**17 46 59.3**	**-0.8**
KLU	**Klutina**	**0.88**	**44**		P	**P**		**17 46 48.2**	**-1.0**
SCM	**Sheep Creek Mo**	**0.97**	**357**		P	**P**		**17 46 49.9**	**-0.5**
SCM					S	**S**		**17 47 02.7**	**-1.0**
SML	**Sawmill**	**1.09**	**330**		P	**P**		**17 46 51.6**	**-0.5**
SML					S	**S**		**17 47 06.3**	**-0.2**
MPA	**Moose Pass**	**1.13**	**251**		P	**P**		**17 46 52.7**	**+0.1**
MPA					S	**S**		**17 47 07.8**	**+0.4**
PMR	**Palmer**	**1.18**	**309**		P	**P**		**17 46 53.1**	**-0.2**
PMR					S	**S**		**17 47 08.7**	**0.0**
PMS	**Palmer South**	**1.21**	**289**		P	**P**		**17 46 53.9**	**+0.2**
GHO	**Glory Hole Cre**	**1.23**	**318**		P	**P**		**17 46 54.1**	**+0.1**
GHO					S	**S**		**17 47 10.8**	**+0.9**
BMRM	**Bremner River**	**1.27**	**84**		P	**P**		**17 46 54.5**	**-0.2**
BMRM					S	**S**		**17 47 11.2**	**+0.2**
GOU	**Gould Hall**	**1.30**	**285**		P	**P**		**17 46 55.9**	**+0.6**
TOA	**Tolsona**	**1.33**	**21**		P	**P**		**17 46 55.9**	**+0.3**
SEW	**Seward**	**1.35**	**236**		P	**P**		**17 46 55.8**	**-0.1**
SEW					S	**S**		**17 47 13.4**	**+0.4**
TZL	**Tazlina**	**1.46**	**35**		P	**P**		**17 46 58.1**	**+0.8**
MID	**Middleton Isla**	**1.51**	**163**	*e*	P	**P**		**17 47 00.5**	**+2.5**
PWA	**Palmer West**	**1.51**	**302**		P	**P**		**17 46 58.6**	**+0.6**
PWA					S	**S**		**17 47 18.7**	**+1.9**
SLKM	**Skilak Lake**	**1.53**	**258**		P	**P**		**17 46 58.8**	**+0.5**
KAIM	**Kayak Island**	**1.68**	**123**		P	**P**		**17 47 01.5**	**+1.2**
GLB	**Gilahina Butte**	**1.74**	**69**		P	**P**		**17 47 01.5**	**+0.3**
GLB					S	**S**		**17 47 23.6**	**+1.3**
WANC	**Wrangell North**	**1.89**	**52**		P	**P**		**17 47 04.8**	**+1.6**
CUT	**Chulitna**	**2.12**	**318**		P	**P**		**17 47 07.7**	**+1.2**
CUT					S	**S**		**17 47 34.3**	**+2.6**
TGL	**Tana Glacier**	**2.15**	**91**		P	**P**		**17 47 06.8**	**-0.1**
TGL					S	**S**		**17 47 34.8**	**+2.5**
DHY	**Denali Highway**	**2.22**	**358**		P	**P**		**17 47 08.8**	**+0.9**
PAX	**Paxson**	**2.26**	**21**		P	**P**		**17 47 09.5**	**+1.0**
BALM	**Baldy**	**2.38**	**84**		P	**P**		**17 47 10.0**	**-0.1**
BALM					S	**S**		**17 47 38.8**	**+0.6**
SPU	**Mount Spurr**	**2.38**	**280**	*e*	P	**P**		**17 47 09.8**	**-0.4**
CNPM	**China Poot**	**2.42**	**238**		P	**P**		**17 47 11.0**	**+0.2**
CNPM					S	**S**		**17 47 39.1**	**-0.2**
BKG	**Blockade Glaci**	**2.48**	**277**		P	**P**		**17 47 11.3**	**-0.3**
BKG					S	**S**		**17 47 41.7**	**+1.1**
CKL	**Chakachamna La**	**2.52**	**280**		P	**P**		**17 47 12.0**	**-0.2**
RDT	**Redoubt**	**2.57**	**266**		P	**P**		**17 47 12.9**	**0.0**
WRG	**White River Gl**	**2.69**	**106**		P	**P**		**17 47 15.1**	**+0.4**
REF	**Redoubt East F**	**2.73**	**264**		P	**P**		**17 47 14.8**	**-0.4**
REF					S	**S**		**17 47 48.5**	**+1.4**
YAH	**Yahtse**	**2.74**	**98**		P	**P**		**17 47 14.9**	**-0.4**
RSO	**Redoubt South**	**2.76**	**264**	*e*	P	**P**		**17 47 15.1**	**-0.6**
CTGM	**Chitina Glacie**	**2.87**	**86**		P	**P**		**17 47 17.0**	**-0.1**
ILIM	**Iliamna**	**2.96**	**257**		P	**P**		**17 47 17.7**	**-0.7**
MCK	**McKinley**	**2.98**	**345**		P	**P**		**17 47 19.8**	**+1.0**
ILW	**Iliamna West**	**3.05**	**257**		P	**P**		**17 47 19.1**	**-0.6**
CHX	**Chaix Hills**	**3.12**	**102**		P	**P**		**17 47 20.2**	**-0.5**
DOT	**Dot Lake**	**3.15**	**26**		P	**P**		**17 47 22.1**	**+1.0**
BCA3	**Beaver Creek A**	**3.38**	**47**		P	**P**		**17 47 24.6**	**+0.3**
PCA	**Pinnacle**	**3.52**	**100**		P	**P**		**17 47 26.0**	**-0.3**
CCB	**Clear Creek Bu**	**3.80**	**356**		P	**P**		**17 47 30.0**	**-0.2**
NEA	**Nenana**	**3.82**	**348**		P	**P**		**17 47 30.0**	**-0.5**
IL1	**Eielson Array**	**3.92**	**2**		P	**P**		**17 47 31.1**	**-0.7**
ILAR	**Eielson Array**	**3.92**	**2**		Pn	**P**		**17 47 30.8**	**-1.1**
	2.7nm,0.3s,baz=185,slow=13,SNR=76								
ILAR					Sn	**S**		**17 48 15.4**	**-1.6**
	3.0nm,0.3s,baz=182,slow=24,SNR=8.2								
ILAR					Lg			17 48 36.9	
	5.3nm,0.3s,baz=184,slow=30,SNR=10								
COLA	**College**	**4.03**	**356**		P	**P**		**17 47 33.1**	**-0.4**
PNL	**Peninsula**	**4.07**	**104**		P	**P**		**17 47 33.9**	**-0.1**
SVW	**Sparrevohn**	**4.11**	**277**		P	**P**		**17 47 33.0**	**-1.5**
KDAK	**Kodiak Island**	**4.14**	**224**		P	**P**		**17 47 34.2**	**-0.9**
MLY	**Manley**	**4.48**	**340**		P	**P**		**17 47 39.6**	**-0.1**
TT01	**Tatalina**	**4.64**	**300**		P	**P**		**17 47 40.1**	**-1.9**
KABR	**Katmai Barrier**	**4.82**	**239**		P	**P**		**17 47 44.5**	**+0.1**
DAWY	**Dawson**	**4.84**	**45**	*e*	P	**P**		**17 47 44.7**	**-0.1**
MGLS	**Mageik LS**	**4.92**	**241**		P	**P**		**17 47 46.1**	**+0.2**
IM3	**Indian Mountai**	**5.91**	**333**		P	**P**		**17 47 59.0**	**-0.6**
IMA	**Indian Mountai**	**5.97**	**334**	*e*	P	**P**		**17 48 00.5**	**+0.1**
BM3	**Burnt Mountain**	**6.67**	**9**		P	**P**		**17 48 09.7**	**-0.6**
DLBC	**Dease Lake**	**9.03**	**98**		Pn	**P**		**17 48 37.4**	**-5.4**
	0.2nm,0.3s,baz=230,slow=17,SNR=2.3								
DLBC					LR	LR		17 52 35.5	
	comp=Z,74nm,18.2s,baz=51,slow=41								
INK	**Inuvik**	**9.48**	**32**		Pn	**P**		**17 48 48.2**	**-0.8**
	0.1nm,0.3s,baz=226,slow=14,SNR=2.4								
YKA	**Yellowknife Ar**	**15.46**	**70**		Pn	**P**		**17 50 07.1**	**-1.0**
	0.0nm,0.3s,baz=278,slow=13,SNR=8.3								
YKA	**Yellowknife Ar**	**15.46**	**70**		Pn	**P**		**17 50 07.1**	**-1.0**
FINES	**FINESS Array B**	**57.90**	**4**		P	**P**		**17 56 20.6**	**+0.3**
	4.1nm,1.2s,mb4.3,baz=18,slow=8.8,SNR=7.7								
BVAR	**Borovoye Array**	**62.56**	**335**		P	**P**		**17 56 51.9**	**-0.

SCX	**San Cristobal**	**1.05**	**93**	*i* P		**P**	**18 46 31.5**	**+1.5**
SCX				*i* S		**S**	**18 46 50.6**	**+1.2**
CMIG	**Matias Romero**	**1.14**	**285**⇑	*i*P		**P**	**18 46 30.8**	**0.0**
CMIG				*i* S		**S**	**18 46 49.3**	**-1.6**
TUIG	**Tuzandepetl**	**1.40**	**332**	*i* P		**P**	**18 46 34.8**	**+1.4**
TUIG				*i* S		**S**	**18 46 55.7**	**+0.1**
CCIG	**Comitan**	**1.61**	**108**⇓	*i*P		**P**	**18 46 37.0**	**+1.3**
CCIG				*e*S		**S**	**18 46 59.5**	**0.0**
EVV	**El Vigia**	**2.26**	**317**	*i* P		**P**	**18 46 43.5**	**+0.1**
EVV				*i* S		**S**	**18 47 10.4**	**-2.5**
EVV	**El Vigia**	**2.26**	**317**	*i* P		**P**	**18 46 44.0**	**+0.7**
EVV				*i* S		**S**	**18 47 10.4**	**-2.5**
HUIG	**Huatulco**	**2.50**	**246**	*i* P		**P**	**18 46 42.8**	**-3.5**
HUIG				*i* S		**S**	**18 47 13.5**	**-4.8**
OXX	**Oaxaca**	**2.88**	**276**	*i* P		**P**	**18 46 51.6**	**+0.4**
OXX				*i* S		**S**	**18 47 21.9**	**-4.7**
OXX	**Oaxaca**	**2.88**	**276**	*i* P		**P**	**18 46 56.0**	**+4.8**
OXX				*i* S		**S**	**18 47 21.9**	**-4.7**
LVIG	**Laguna Verde**	**3.87**	**319**	*i* P		**P**	**18 47 03.2**	**-0.9**
LVIG				*i* S		**S**	**18 47 46.9**	**-2.9**
POHV	**Veracruz**	**4.07**	**304**	*i* P		**P**	**18 47 06.3**	**-0.4**
POHV				*i* S		**S**	**18 47 54.9**	**+0.7**
IISM	**Ciudad Serdan**	**4.10**	**303**	*i* P		**P**	**18 47 07.0**	**-0.1**
IISM				*i* S		**S**	**18 47 50.1**	**-5.0**
PNIG	**Pinotepa**	**4.23**	**265**	*i* P		**P**	**18 47 06.0**	**-2.9**
PNIG				*i* S		**S**	**18 47 53.5**	**-4.7**
CUSS	**Cusmapa**	**4.64**	**128**	*e*P		**P**	**18 47 14.1**	**-0.2**
CUSS				*e*S			18 47 44.8	
RBDL	**Robledal**	**4.72**	**124**	*e*P		**P**	**18 47 14.8**	**-0.6**
RBDL				*e*S			18 47 44.8	
MTO2	**Montecristo 2**	**4.84**	**119**	*e*P		**P**	**18 47 16.1**	**-0.8**
MTO2				*e*S			18 47 47.1	
RTR	**El Retiro**	**4.88**	**126**	*e*P		**P**	**18 47 18.1**	**+0.6**
RTR				*e*S			18 47 47.7	
IIB	**San Bernardino**	**4.89**	**297**	*i* P		**P**	**18 47 25.0**	**+7.4**
SNJE	**San Jose**	**4.93**	**126**⇑	*e*P		**P**	**18 47 18.2**	**+0.1**
SNJE				*e*S			18 47 49.3	
SBLS	**San Blas**	**4.93**	**126**⇑	*e*P		**P**	**18 47 18.6**	**+0.4**
SBLS				*e*S			18 47 48.8	
PPM	**Popocatepetl**	**5.18**	**297**	*i* P		**P**	**18 47 23.8**	**+2.4**
PPM				*i* P			18 47 24.0	
PPM				*i* P			18 47 24.2	
PPM				*i* P			18 47 24.8	
PPM				*i* S		**S**	**18 48 17.1**	**-3.5**
PPM	**Popocatepetl**	**5.18**	**297**	*i* P		**P**	**18 47 24.0**	**+2.6**
PPM				*i* S		**S**	**18 48 17.1**	**-3.5**
BOQS	**Boqueron**	**5.26**	**125**⇓	*e*P		**P**	**18 47 23.3**	**+0.8**
BOQS				*e*S			18 48 00.4	
PICS	**Picacho**	**5.28**	**124**⇓	*e*P		**P**	**18 47 23.3**	**+0.6**
PICS				*e*S			18 47 57.5	
LBRS	**Las Brisas**	**5.45**	**123**⇓	*i*P		**P**	**18 47 25.1**	**+0.7**
LBRS				*e*S			18 48 03.5	
YAIG	**Yautepec**	**5.48**	**293**	*i* P		**P**	**18 47 25.5**	**+0.1**
YAIG				*i* S		**S**	**18 48 23.7**	**-4.2**
IIO	**Organos**	**5.50**	**301**	*i* P		**P**	**18 47 34.8**	**+9.1**
LFRS	**El Faro**	**5.50**	**124**⇑	*e*P		**P**	**18 47 25.9**	**+0.2**
LFRS				*e*S			18 48 01.8	
LCBS	**La Ceiba**	**5.55**	**124**⇑	*e*P		**P**	**18 47 26.7**	**+0.4**
LCBS				*e*S			18 48 01.8	
CHVM	**Chichinautzin**	**5.64**	**295**	*i* P		**P**	**18 47 29.1**	**+1.7**
SNVI	**San Vicente**	**5.68**	**123**⇑	*e*P		**P**	**18 47 28.9**	**+0.8**
SNVI				*e*S			18 48 08.9	
IIZ	**Mezontepec**	**5.76**	**295**	*i* P		**P**	**18 47 29.5**	**+0.4**
UNM	**Universidad Na**	**5.76**	**297**	*i* P		**P**	**18 47 29.8**	**+0.7**
UNM				*i* P			18 47 32.0	
UNM				*i* S		**S**	**18 48 31.9**	**-2.7**
UNM	**Universidad Na**	**5.76**	**297**	*i* P		**P**	**18 47 32.2**	**+2.9**
UNM				*i* S		**S**	**18 48 31.9**	**-2.7**
PTVM	**Pico Tres Padr**	**5.82**	**299**	*i* P		**P**	**18 47 30.1**	**+0.2**
MDVM	**Presa Madin**	**5.91**	**298**	*i* P		**P**	**18 47 32.2**	**+1.1**
ACX	**Acapulco**	**5.92**	**272**	*i* P		**P**	**18 47 28.0**	**-3.3**
ACX	**Acapulco**	**5.92**	**272**	*i* P		**P**	**18 47 28.1**	**-3.2**
IIC	**Rita Coyotepec**	**6.03**	**300**	*i* P		**P**	**18 47 41.5**	**+8.8**
TEIG	**Tepich**	**6.20**	**56**	P		**P**	**18 47 34.9**	**-0.1**
	17nm,0.3s,baz=182,slow=13,SNR=17							
TEIG				S		**S**	**18 48 51.8**	**+6.6**
	17nm,0.3s,baz=204,slow=23,SNR=4.7							
TEIG	**Tepich**	**6.20**	**56**⇓	*e*Pn		**P**	**18 47 35.0**	**0.0**
CAIG	**El Cayaco**	**6.26**	**273**	*i* P		**P**	**18 47 34.2**	**-1.7**
ZIIG	**Zihuatanejo**	**7.43**	**277**	*i* P		**P**	**18 47 51.4**	**-0.3**
MOIG	**Morelia**	**7.64**	**293**	*i* P		**P**	**18 47 54.6**	**+0.2**
MOIG				*i* S		**S**	**18 49 15.0**	**-4.9**
JTS	**JuntasAbangare**	**10.71**	**126**	P		**P**	**18 48 33.9**	**-1.1**
	2.7nm,0.3s,baz=330,slow=12,SNR=14							
JTS				S		**S**	**18 50 30.5**	**-2.2**
	2.0nm,0.3s,baz=305,slow=18,SNR=4.5							
JTS	**JuntasAbangare**	**10.71**	**126**	*e*Pn		**P**	**18 48 34.6**	**-0.4**
	1.1nm,0.5s							
HKT	**Hockley**	**13.24**	**352**	*e*P		**P**	**18 49 12.5**	**+4.6**
	69nm,1.6s							
JCT	**Junction City**	**14.71**	**339**	*e*P		**P**	**18 49 31.6**	**+4.9**
	19nm,0.4s							
TXAR	**Lajitas Array**	**15.46**	**326**	P		**P**	**18 49 38.5**	**+2.4**
	baz=148,slow=12,SNR=7.8							
TXAR				sP			18 50 16.7	
	0.2nm,0.3s,baz=156,slow=15,SNR=4.6							
TXAR	**Lajitas Array**	**15.46**	**326**	P		**P**	**18 49 38.5**	**+2.4**
TXAR				sP			18 50 16.7	
DWPF	**Disney**	**15.99**	**43**	*e*P		**P**	**18 49 42.7**	**0.0**
LRAL	**Lakeview Retre**	**17.28**	**19**	*e*P		**P**	**18 49 58.5**	**0.0**
	14nm,0.8s							
MIAR	**Mount Ida**	**17.68**	**0**	*e*P		**P**	**18 49 59.9**	**-3.3**
	29nm,1.2s							
CLNB	**Carlsbad**	**17.94**	**331**	*e*P		**P**	**18 50 06.6**	**+0.5**
UALR	**University of**	**17.95**	**4**	*e*P		**P**	**18 50 05.3**	**-1.0**
	20nm,1.0s							
OXF	**Oxford**	**18.07**	**12**	*e*P		**P**	**18 50 06.2**	**-1.3**
	56nm,1.1s							
MNTX	**Cornudas Mount**	**18.23**	**327**	*e*P		**P**	**18 50 10.0**	**+0.8**
WMOK	**Wichita Mounta**	**18.43**	**347**	*e*P		**P**	**18 50 11.7**	**+0.3**
	6.2nm,0.8s							
CPRX	**Cap Rock**	**18.58**	**332**	*e*P		**P**	**18 50 12.8**	**-0.2**
PLAL	**Pickwick Lake**	**18.81**	**15**	*e*P		**P**	**18 50 13.8**	**-1.6**
	53nm,1.6s							
SWET	**Sewanee**	**19.63**	**19**	*e*P		**P**	**18 50 22.8**	**-1.1**
WVT	**Waverly**	**19.96**	**14**	*e*P		**P**	**18 50 25.9**	**-1.5**
	30nm,1.4s							
MYNC	**Murphy**	**20.13**	**23**	*e*P		**P**	**18 50 29.0**	**0.0**
	19nm,0.8s							
COW	**Cow Castle Cre**	**20.27**	**33**	*e*P		**P**	**18 50 30.4**	**-0.1**
CPCT	**Cooper Cave**	**20.32**	**22**	*e*P		**P**	**18 50 31.3**	**+0.4**
JSC	**Jenkinsville**	**20.70**	**30**	*e*P		**P**	**18 50 34.8**	**+0.1**
BNM	**Barren Site**	**20.80**	**329**	*e*P		**P**	**18 50 38.5**	**+2.7**
LPM	**Los Pinos Moun**	**20.93**	**329**	*e*P		**P**	**18 50 39.9**	**+2.7**
SIUC	**Southern Illin**	**21.22**	**10**	*e*P		**P**	**18 50 39.7**	**-0.2**
	10nm,0.8s,mb4.2							
LAZ	**Ladron**	**21.26**	**328**	*e*P		**P**	**18 50 43.3**	**+3.0**
LAZ				*e*			18 51 01.3	
LAZ				*e*			18 51 11.0	
CCM	**Cathedral Cave**	**21.29**	**5**	*e*P		**P**	**18 50 39.7**	**-1.0**
	6.8nm,0.8s,mb4.0							
ANMO	**Albuquerque**	**21.36**	**330**	*e*P		**P**	**18 50 43.1**	**+1.8**
	6.1nm,1.0s,mb3.9							
USIN	**University of**	**21.76**	**13**	*e*P		**P**	**18 50 44.3**	**-0.9**
	19nm,0.7s,mb4.6							
OTAV	**Otavalo**	**22.30**	**136**	*e*P		**P**	**18 50 52.0**	**+1.3**
	69nm,1.6s,mb4.8							
WCI	**Wyandotte Cave**	**22.33**	**16**	P		**P**	**18 50 47.1**	**-3.7**
	7.3nm,0.6s,mb4.3							
ELN	**Prospectdale**	**23.36**	**27**	P		**P**	**18 50 58.1**	**-2.7**
SDV	**Santo Domingo**	**23.83**	**106**	P		**P**	**18 51 03.5**	**-2.1**
	15nm,0.6s,mb4.7,baz=310,slow=4.6,SNR=27							
ISCO	**Idaho Springs**	**25.15**	**338**	*e*P		**P**	**18 51 18.9**	**+1.2**
	8.0nm,1.2s,mb4.1							
PV10	**Paradox Valley**	**25.35**	**331**	*e*P		**P**	**18 51 21.2**	**+1.6**
JFWS	**Jewell Farm**	**26.20**	**6**	P		**P**	**18 51 26.0**	**-1.5**
	6.7nm,0.6s,mb4.5							
PCRV	**Puerto La Cruz**	**29.02**	**99**	P		**P**	**18 51 49.8**	**-3.4**
	6.8nm,0.5s,mb4.6,baz=348,slow=9.9,SNR=5.9							
HWUT	**Hardware Ranch**	**29.10**	**332**	*e*P		**P**	**18 51 54.3**	**+0.6**
	4.6nm,0.9s,mb4.2							
BW06	**Boulder Array**	**29.20**	**336**	P		**P**	**18 51 54.2**	**-0.3**
PDAR	**Pinedale Array**	**29.20**	**336**	P		**P**	**18 51 54.1**	**-0.4**
	0.6nm,0.7s,mb3.5,baz=135,slow=8.4,SNR=5.7							
REDW	**Red Top Meadow**	**30.22**	**335**	*e*P		**P**	**18 52 04.6**	**+1.1**
NVAR	**Mina Array Bea**	**30.46**	**320**	P		**P**	**18 52 07.6**	**+1.8**
	2.9nm,0.7s,mb4.1,baz=125,slow=9.6,SNR=27							
NVAR				pP		pP	18 52 37.0	-0.3
	1.7nm,0.8s,baz=126,slow=9.8,SNR=3.2							
NVAR				sP		sP	18 52 55.0	+0.7
	6.2nm,0.9s,baz=119,slow=9.8,SNR=6.3							
NVAR	**Mina Array Bea**	**30.46**	**320**	P		**P**	**18 52 07.6**	**+1.8**
NVAR				pP		pP	18 52 37.0	-0.3
NVAR				sP		sP	18 52 55.0	+0.7
QLMT	**Earthquake Lak**	**31.67**	**336**	*e*P		**P**	**18 52 16.7**	**+0.5**
HLID	**Hailey**	**31.94**	**331**	*e*P		**P**	**18 52 19.2**	**+0.6**
	10nm,1.1s,mb4.5							
MCMT	**McKenzie Canyo**	**32.24**	**334**	*e*P		**P**	**18 52 23.1**	**+1.9**
BOZ	**Bozeman (W)**	**32.43**	**336**	*e*P		**P**	**18 52 22.8**	**0.0**
LCCM	**Lewis and Clar**	**32.68**	**336**	P		**P**	**18 52 26.4**	**+1.4**
ULM	**Lac du Bonnet**	**33.42**	**358**	P		**P**	**18 52 28.5**	**-2.7**
	9.1nm,0.8s,mb4.6,baz=184,slow=7.9,SNR=9.5							
ULM	**Lac du Bonnet**	**33.42**	**358**	*e*P		**P**	**18 52 28.6**	**-2.7**
	20nm,1.0s,mb4.8							
CHMT	**Chamberlain Mo**	**34.11**	**336**	*e*P		**P**	**18 52 37.6**	**+0.5**
MSO	**Missoula**	**34.31**	**335**	*e*P		**P**	**18 52 39.0**	**+0.1**
	13nm,1.1s,mb4.6							
NEW	**Newport**	**36.76**	**334**	P		**P**	**18 52 59.6**	**+0.1**
	2.2nm,0.8s,mb3.9,baz=115,slow=10.0,SNR=3.5							
EBG	**Ellensburg**	**37.34**	**329**	P		**P**	**18 53 06.4**	**+2.0**
WTV	**Waterville**	**37.61**	**331**	P		**P**	**18 53 08.9**	**+2.3**
LON	**Longmire**	**37.85**	**328**	*e*P		**P**	**18 53 09.4**	**+0.8**
FFC	**Flin Flon**	**38.39**	**352**	*e*P		**P**	**18 53 12.3**	**-0.8**
	4.6nm,0.6s,mb4.3							
LPAZ	**La Paz**	**41.45**	**141**	P		**P**	**18 53 37.8**	**-0.8**
	15nm,0.8s,mb4.7,baz=330,slow=7.4,SNR=75							
LPAZ				sP		sP	18 54 26.1	-2.8
	4.5nm,0.7s,baz=335,slow=5.2,SNR=3.8							
LPAZ	**La Paz**	**41.45**	**141**⇑	*e*P		**P**	**18 53 37.7**	**-0.9**
	8.3nm,0.8s,mb4.4							
SCHQ	**Schefferville**	**43.24**	**22**	LR		LR	19 13 33.9	
	comp=Z,42nm,18.1s,baz=279,slow=38							
YKA	**Yellowknife Ar**	**47.94**	**347**	P		**P**	**18 54 28.9**	**-0.9**
	4.7nm,0.5s,mb4.4,baz=152,slow=7.3,SNR=153							
YKA				pP		pP	18 55 02.4	-1.1
	1.9nm,0.7s,baz=152,slow=7.5,SNR=3.9							
YKA				sP		sP	18 55 17.9	-2.1
	9.1nm,0.8s,baz=150,slow=7.6,SNR=16							
YKA				PcP		PcP	18 55 54.7	-1.5
	0.7nm,0.8s,baz=154,slow=6.8,SNR=4.2							
YKA				LR		LR	19 19 52.6	
	comp=Z,30nm,18.1s,baz=265,slow=42							
YKA	**Yellowknife Ar**	**47.94**	**347**	P		**P**	**18 54 28.9**	**-0.9**
YKA				pP		pP	18 55 02.4	-1.1
YKA				sP		sP	18 55 17.9	-2.1
YKA				PcP		PcP	18 55 54.7	-1.5
YKA				LR		LR	19 19 52.6	
DLBC	**Dease Lake**	**49.44**	**336**	P		**P**	**18 54 43.3**	**+2.0**
	9.8nm,0.8s,mb4.5,baz=142,slow=6.7,SNR=29							
DLBC	**Dease Lake**	**49.44**	**336**	*e*P		**P**	**18 54 42.9**	**+1.5**
FRB	**Frobisher Bay**	**50.01**	**14**	P		**P**	**18 54 41.9**	**-3.7**
	3.7nm,0.6s,mb4.2,baz=208,slow=7.4,SNR=4.3							
FRB	**Frobisher Bay**	**50.01**	**14**	P		**P**	**18 54 41.9**	**-3.7**
BDFB	**Brasilia**	**55.43**	**123**	P		**P**	**18 55 22.3**	**-4.1**
	3.4nm,0.7s,mb4.2,baz=263,slow=7.9,SNR=4.7							
BDFB				PcP		PcP	18 56 23.0	-1.7
	2.9nm,0.6s,baz=327,slow=4.5,SNR=3.4							
CPUP	**Villa Florida**	**55.58**	**140**	P		**P**	**18 55 24.0**	**-3.5**
	9.6nm,0.7s,mb4.7,baz=351,slow=7.6,SNR=21							
INK	**Inuvik**	**57.30**	**344**	P		**P**	**18 55 38.4**	**-0.6**
	12nm,0.8s,mb4.8,baz=129,slow=7.6,SNR=60							
INK	**Inuvik**	**57.30**	**344**⇑	*e*P		**P**	**18 55 37.9**	**-1.1**
	14nm,0.8s,mb4.8							
ILAR	**Eielson Array**	**59.63**	**337**	P		**P**	**18 55 54.4**	**-0.8**
	3.0nm,0.8s,mb4.2,baz=130,slow=4.5,SNR=42							
ILAR				sP		sP	18 56 44.5	-1.9
	0.8nm,0.8s,baz=155,slow=4.3,SNR=2.4							
PPT	**Papeete**	**64.73**	**241**	P		**P**	**18 56 31.1**	**+1.2**
	34nm,1.0s,mb5.1,baz=191,slow=16,SNR=2.5							
EKA	**Eskdalemuir Ar**	**76.69**	**36**	P		**P**	**18 57 39.1**	**-1.8**
	1.0nm,0.8s,mb3.5,baz=264,slow=7.6,SNR=3.5							
EKA				pP		pP	18 58 16.1	-1.5
	1.3nm,0.8s,baz=276,slow=7.6,SNR=3.1							
EKA				sP		sP	18 58 31.6	-2.0
	2.8nm,1.0s,baz=278,slow=5.9,SNR=4.0							
ESDC	**Sonseca Array**	**79.31**	**52**	pP		pP	18 58 31.5	-0.9
	1.2nm,0.9s,baz=291,slow=5.4,SNR=3.6							
NB2	**NORSAR Subarra**	**82.50**	**28**	P		**P**	**18 58 12.0**	**+0.2**
	4.0nm,1.1s,mb4.0,baz=288,slow=5.0							
NOA	**NORSAR Array B**	**82.50**	**28**	P		**P**	**18 58 11.2**	**-0.6**
	2.0nm,0.9s,mb3.7,baz=292,slow=5.1,SNR=8.2							
NOA				pP		pP	18 58 48.5	-0.4
	0.6nm,1.1s,baz=323,slow=15,SNR=1.8							
ARCES	**ARCESS Array B**	**84.02**	**18**	P		**P**	**18 58 19.4**	**+0.2**
	11nm,0.7s,mb4.7,baz=301,slow=5.0,SNR=65							
ARCES	**ARCESS Array B**	**84.02**	**18**	P		**P**	**18 58 19.4**	**+0.2**
ARE0	**ARCESS Array S**	**84.02**	**18**	*e*P		**P**	**18 58 18.9**	**-0.3**
GERES	**GERESS Array B**	**88.51**	**39**	P		**P**	**18 58 40.7**	**-0.9**
	0.4nm,0.7s,mb3.4,baz=281,slow=6.8,SNR=3.8							
FINES	**FINESS Array B**	**88.68**	**25**	P		**P**	**18 58 41.4**	**-0.7**
	1.2nm,0.8s,mb3.9,baz=288,slow=4.4,SNR=5.4							
WRA	**Warramunga Arr**	**134.39**	**258**	PKP	PKPdf		19 05 07.3	+1.3
	0.5nm,0.5s,baz=85,slow=2.5,SNR=17							
WRA				pPKP			19 05 45.6	
	0.6nm,0.7s,baz=79,slow=1.9,SNR=3.2							
ASAR	**Alice Springs**	**134.94**	**253**	PKP	PKPdf		19 05 08.2	+1.2
	0.2nm,0.4s,baz=309,slow=34,SNR=5.7							
ASAR				pPKP			19 05 48.4	
	0.7nm,0.8s,baz=89,slow=1.1,SNR=3.8							
CMAR	**Chiang Mai Arr**	**142.82**	**340**	PKhKP			19 05 16.9	
	1.0nm,0.8s,baz=349,slow=6.0,SNR=4.7							
HYB	**Hyderabad**	**145.17**	**13**	*i* P	PKPdf		19 05 25.0	-0.5
HYB	**Hyderabad**	**145.17**	**13**	*e*P	PKPdf		19 05 25.0	-0.5

*BJI **16** 18:59:16.1,36.65N×98.91E,h19km,mB4.7,mb4.2,ML4.2, Ms3.9,Ms2.3,9*
*IDC **16** 18:59:21.3±4.0,36.87N×99.03E,h47km±38km,mb3.5/10, mb1 3.8/13,mb1mx3.7/22,ML4.2/3,MS3.2/3,Ms1 3.3/3, ms1mx2.8/23,Error ellipse: s-maj=28.3km s-min=17.3km az=44.0*
*NEIC **16** 18:59:23.1±1.8,36.86N×98.99E,h65km±15km,Error ellipse: s-maj=16.5km s-min=8.9km az=209.0*

ISC 16 18:59:15.3±0.5,36.76N±0.05×98.80E±0.05,h15km,n26, σ0s81/32,mb3.7/10,MS3.3/2,1C,Qinghai

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
GTA	**Gaotai**	**2.76**	**17**	P		**Pb**	**19 00 04.9**	**+1.0**
GTA				PG		**Pg**	**19 00 09.8**	**-0.7**
GTA				S		**Sb**	**19 00 42.3**	**+4.6**
GTA				SG		**Sg**	**19 00 47.1**	**-0.2**
GTA				S		Sn		
	comp=N,111nm,0.7s							
GTA				S		Sn		
	comp=E,151nm,0.8s							
LZH	**Lanzhou**	**4.12**	**98**	⇑P		**Pn**	**19 00 18.8**	**-0.5**
LZH				PG		**Pb**	**19 00 28.8**	**+1.6**
LZH				S		**Sn**	**19 01 07.6**	**-0.1**
LZH				S		Sn		
	comp=N,930nm,0.6s							
LZH				S		Sn		
	comp=E,910nm,0.7s							
LZH				LR		LR		
	comp=N,1μm,5.0s							
LZH				LR		LR		
	comp=Z,2μm,6.6s							
BTO	**Baotou**	**9.58**	**63**	*e*P		**P**	**19 01 34.4**	**-1.2**
BTO				AMB		AMB		
	comp=Z,20nm,0.6s							
HHC	**Hu-ho-hao-te**	**10.76**	**64**	*e*P		**P**	**19 01 52.8**	**+0.9**
HHC				AMB		AMB		
	comp=Z,24nm,1.2s							
WMQ	**Urumqi**	**11.02**	**313**	*e*P		**P**	**19 01 55.8**	**+0.4**
SONM	**Songino Array**	**12.40**	**25**	P		**P**	**19 02 14.2**	**+0.1**
	comp=Z,1.1nm,0.3s,baz=208,slow=15,SNR=20							
SONM				S		**S**	**19 04 24.1**	**-8.9**
	comp=Z,0.2nm,0.3s,baz=235,slow=23,SNR=2.7							
ULN	**Ulaanbaatar**	**12.65**	**26**	*e*P		**P**	**19 02 18.1**	**+0.6**
	comp=Z,3.0nm,0.6s							
ULN				*e*			19 02 27.8	
MKAR	**Makanchi Array**	**15.85**	**314**	P		**P**	**19 03 02.9**	**+3.6**
	comp=Z,0.5nm,0.3s,baz=118,slow=13,SNR=27							
MKAR				S		**S**	**19 05 53.7**	**-1.1**
	comp=Z,0.2nm,0.3s,baz=129,slow=23,SNR=3.8							
MKAR	**Makanchi Array**	**15.85**	**314**	P		**P**	**19 03 02.9**	**+3.6**
MKAR				S		**S**	**19 05 53.7**	**-1.1**
CMAR	**Chiang Mai Arr**	**18.24**	**180**	LR		LR	19 10 39.8	
	comp=Z,57nm,19.4s,baz=320,slow=37							
ZAL	**Zalesovo**	**19.73**	**335**	P		**P**	**19 03 46.8**	**-0.3**
	comp=Z,1.4nm,0.3s,baz=230,slow=10.0,SNR=19							
KURK	**Kurchatov**	**20.09**	**320**	*e*P		**P**	**19 03 51.0**	**+0.1**
BVAR	**Borovoye Array**	**25.63**	**318**	P		**P**	**19 04 46.4**	**+0.8**
	comp=Z,0.8nm,0.4s,mb3.6,baz=117,slow=9.9,SNR=9.1							
BRVK	**Borovoye**	**25.71**	**318**	*e*P		**P**	**19 04 46.8**	**+0.5**
CBIJ	**Chichi jima**	**37.79**	**92**	LR		LR	19 22 38.5	
	comp=Z,36nm,20.9s,MS3.2,baz=156,slow=37							
BRTR	**Keskin Array B**	**50.24**	**294**	P		**P**	**19 08 13.4**	**+0.7**
	comp=Z,1.0nm,0.9s,mb3.9,baz=108,slow=7.8,SNR=4.4							
ARCES	**ARCESS Array B**	**50.28**	**334**	P		**P**	**19 08 13.1**	**+0.5**
	comp=Z,0.8nm,0.4s,mb4.1,baz=86,slow=8.0,SNR=23							
FINES	**FINESS Array B**	**50.41**	**323**	P		**P**	**19 08 13.9**	**+0.2**
	comp=Z,0.6nm,0.4s,mb4.0,baz=95,slow=9.7,SNR=12							
NB2	**NORSAR Subarra**	**57.52**	**325**	P		**P**	**19 09 05.5**	**-0.4**
	comp=Z,0.4nm,0.6s,mb3.6,baz=72,slow=7.0							
NOA	**NORSAR Array B**	**57.52**	**325**	P		**P**	**19 09 04.6**	**-1.3**
	comp=Z,0.4nm,0.5s,mb3.7,baz=72,slow=7.1,SNR=3.4							
WRA	**Warramunga Arr**	**65.63**	**143**	P		**P**	**19 10 00.4**	**-0.6**
	comp=Z,1.0nm,0.9s,mb3.9,baz=341,slow=6.8,SNR=8.7							
ILAR	**Eielson Array**	**66.63**	**25**	P		**P**	**19 10 05.3**	**-1.4**
	comp=Z,0.6nm,0.7s,mb3.7,baz=288,slow=5.2,SNR=12							
ASAR	**Alice Springs**	**68.62**	**146**	P		**P**	**19 10 19.1**	**-0.9**
	comp=Z,0.2nm,0.6s,mb3.2,baz=334,slow=6.5,SNR=6.2							
ESDC	**Sonseca Array**	**75.99**	**309**	P		**P**	**19 11 04.0**	**+0.6**
	comp=Z,1.1nm,0.7s,mb3.9,baz=44,slow=5.9,SNR=7.0							
YKA	**Yellowknife Ar**	**77.50**	**15**	P		**P**	**19 11 10.7**	**-0.5**
	comp=Z,0.3nm,0.8s,mb3.3,baz=327,slow=4.9,SNR=6.5							
YKA				LR		LR	19 47 41.2	
	comp=Z,17nm,18.3s,MS3.4,baz=315,slow=38							
YKA	**Yellowknife Ar**	**77.50**	**15**	P		**P**	**19 11 10.7**	**-0.5**
YKA				LR		LR	19 47 41.2	

*IDC **16** 19:01:23.2±7.2,14.29N×93.00W,mb3.8/2,mb1 4.2/4, mb1mx3.7/19,ML3.9/2,Error ellipse: s-maj=122.0km s-min=40.1km az=159.0*

ISC 16 19:01:26.7±4.1,14.4N±0.4×93.0W±0.2,h33km,n4,σ0s84/5, mb3.8/2,Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
TEIG	**Tepich**	**7.35**	**37**	Pn		**Pn**	**19 03 15.0**	**+0.4**
	7.1nm,0.3s,baz=178,slow=12,SNR=6.5							
TEIG				Sn		**Sn**	**19 04 37.7**	**-0.1**
	1.9nm,0.3s,baz=151,slow=19,SNR=2.5							
TXAR	**Lajitas Array**	**17.86**	**328**	P		**P**	**19 05 34.3**	**0.0**
	0.0nm,0.3s,baz=152,slow=13,SNR=3.5							
NVAR	**Mina Array Bea**	**32.78**	**322**	P		**P**	**19 07 59.7**	**+0.7**
	0.7nm,0.8s,mb3.6,baz=137,slow=10,SNR=4.6							
YKA	**Yellowknife Ar**	**50.44**	**347**	P		**P**	**19 10 21.9**	**-1.0**
	1.1nm,0.6s,mb4.1,baz=152,slow=7.4,SNR=35							

WEL 16 19:02:29.8±0.5,45.24S×166.88E,h5km,ML3.5/5,Error ellipse: s-maj=4.5km s-min=1.3km az=90.0,Off west coast of South Island

| Code | Station Name | Δ° |

*IDC **16** 20:00:17.7±1.3,3.20S×141.61E,mb3.6/6,mb1 4.0/7, mb1mx3.9/15,ML3.9/1,MS3.0/1,Ms1 3.0/1,ms1mx2.5/18, Error ellipse: s-maj=46.3km s-min=22.9km az=102.0*
*NEIC **16** 20:00:19.9±0.8,3.26S×141.66E,h15km,mb4.1/2,Error ellipse: s-maj=28.6km s-min=10.3km az=100.0*
ISC 16 20:00:18.2±1.2,3.26S±0.10×141.6E±0.3,h15km,n15, σ0§60/11,mb3.7/6,MS2.8/1,New Guinea

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
WRAB	**Tennant Creek**	**18.03**	**203**	*eP*		**P**	**P**	**20 04 29.6**	**-0.5**
	41nm,1.3s								
WB2	**Warramunga Arr**	**18.04**	**203**	*eP*		**P**	**P**	**20 04 29.8**	**-0.3**
WRA	**Warramunga Arr**	**18.04**	**203**	P		**P**	**P**	**20 04 30.4**	**+0.2**
	0.4nm,0.3s,baz=21,slow=13,SNR=19								
FITZ	**Fitzroy Crossi**	**21.51**	**226**	*eP*		**P**	**P**	**20 05 10.8**	**+2.0**
	3.0nm,0.8s,mb3.8								
FITZ	**Fitzroy Crossi**	**21.51**	**226**	P		**P**	**P**	**20 05 09.4**	**+0.6**
	1.9nm,0.7s,mb3.6,baz=31,slow=13,SNR=4.9								
FITZ				LR		LR	LR	20 13 14.3	
	comp=Z,38nm,18.9s,MS2.8,baz=172,slow=36								
AS12	**Alice Springs**	**21.61**	**200**	*eP*		**P**	**P**	**20 05 10.0**	**+0.1**
	25nm,1.8s,mb4.3								
ASAR	**Alice Springs**	**21.61**	**200**	P		**P**	**P**	**20 05 09.2**	**-0.7**
	1.7nm,0.6s,mb3.7,baz=30,slow=10.0,SNR=19								
CMAR	**Chiang Mai Arr**	**47.23**	**299**	P		**P**	**P**	**20 08 52.1**	**-0.8**
	0.8nm,0.8s,mb3.7,baz=114,slow=5.7,SNR=5.1								
MKAR	**Makanchi Array**	**72.00**	**322**	P		**P**	**P**	**20 11 43.8**	**+0.4**
	0.3nm,0.6s,mb3.4,baz=90,slow=8.5,SNR=3.7								
BVAR	**Borovoye Array**	**81.43**	**325**	P		**P**	**P**	**20 12 35.9**	**-0.1**
	0.4nm,0.6s,mb3.6,baz=79,slow=7.3,SNR=3.5								
ILAR	**Eielson Array**	**85.14**	**24**	P		**P**	**P**	**20 12 54.8**	**+0.2**
	0.9nm,1.1s,mb3.8,baz=258,slow=5.4,SNR=5.9								
LPAZ	**La Paz**	**144.76**	**124**	PKP		PKPdf		20 19 59.1	0.0
	1.0nm,0.8s,baz=136,slow=5.6,SNR=4.3								
LPAZ	**La Paz**	**144.76**	**124**	PKPdf		PKPdf		20 19 59.0	-0.1
LPAZ				PKP		PKPdf		20 19 59.1	0.0
DBIC	**Dimbokro**	**146.43**	**277**	PKPbc		PKPbc		20 20 01.6	+1.8
	2.7nm,0.7s,baz=345,slow=5.9,SNR=7.4								
DBIC	**Dimbokro**	**146.43**	**277**	PKPbc		PKPbc		20 20 01.6	+1.8
DBIC				*e*PKPbc		PKPbc		20 20 02.0	+2.2

*MOS **16** 20:00:58.5±1.7,55.17N×113.25E,h15km,mb4.4/1,Error ellipse: s-maj=21.1km s-min=11.1km az=79.7*
BYKL 16 20:00:58.5±0.3,55.16N×113.26E,9C-14D,East of Lake Baykal

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
UKT	**Uakit**	**0.39**	**32**	⇓*i*	Pg	Pg		20 01 05.5	-0.8
	129nm,0.3s								
UKT				⇓*i*	Pg	Pg		20 01 05.5	-0.8
	120nm,0.3s								
UKT				⇓*i*	Pg	Pg		20 01 05.5	-0.8
	89nm,0.3s								
UKT				*i*	Sg	Sg		20 01 10.7	-0.8
UKT					Pmax				
	163nm,0.2s								
UKT					Smax				
	2μm,0.4s								
SVKR	**Severomuysk**	**0.97**	**10**	⇑*i*	Pg	Pg		20 01 17.2	-0.7
SVKR				*e*	Pb	Pb		20 01 20.1	+2.2
SVKR				*e*	Sg	Sg		20 01 31.1	+0.2
SVKR				*e*	Sb	Sb		20 01 35.8	+4.6
SVKR					max				
	567nm,0.1s								
SVKR					max				
	3μm,0.2s								
SVKR	**Severomuysk**	**0.97**	**10**	*e*	PG	Pg		20 01 17.7	-0.2
SVKR				*e*				20 01 31.8	
SVKR					pmax	pmax			
	comp=Z,589nm,0.1s								
SVKR					smax				
	comp=E,3μm,0.2s								
YLYR	**Ulyunkhan**	**1.24**	**258**	⇑*i*	Pg	Pg		20 01 20.8	-2.5
	comp=E,17nm,0.5s								
YLYR				⇑*i*	Pg	Pg		20 01 20.8	-2.5
	comp=E,32nm,0.5s								
YLYR				⇓*i*	Pg	Pg		20 01 20.8	-2.5
	comp=E,38nm,0.5s								
YLYR				*e*				20 01 23.2	
YLYR				*e*	Sg	Sg		20 01 37.7	-2.1
YLYR				*e*	Sb	Sb		20 01 41.3	+2.4
YLYR					max				
	comp=E,213nm,0.5s								
YLYR					max				
	comp=E,1μm,0.3s								
YLYR	**Ulyunkhan**	**1.24**	**258**	*e*	PG	Pg		20 01 20.8	-2.5
YLYR				*e*				20 01 37.4	
YLYR					pmax	pmax			
	comp=Z,213nm,0.2s								
YLYR					smax				
	comp=N,1μm,0.4s								
YOA	**Uoyan**	**1.31**	**319**	⇑*i*	Pg	Pg		20 01 22.3	-2.3
YOA				*e*				20 01 24.5	
YOA				*i*	Sg	Sg		20 01 40.2	-1.8
YOA					max				
	comp=N,2μm,0.4s								
YOA					Smax				
	comp=N,2μm,0.4s								
YOA	**Uoyan**	**1.31**	**319**	⇑*i*	PG	Pg		20 01 22.1	-2.5
YOA				*i*				20 01 40.2	
YOA					pmax	pmax			
	comp=Z,378nm,0.4s								
YOA					smax				
	comp=E,2μm,0.4s								
KMO	**Kumora**	**1.38**	**303**	⇑*i*	Pg	Pg		20 01 23.0	-3.0
	comp=E,9.0nm,0.7s								
KMO				⇓*i*	Pg	Pg		20 01 23.0	-3.0
	comp=E,15nm,0.7s								
KMO				⇑*i*	Pg	Pg		20 01 23.0	-3.0
	comp=E,46nm,0.7s								
KMO				*e*	Sg	Sg		20 01 41.0	-3.4
KMO				*e*				20 01 45.3	
KMO					Pmax				
	comp=E,195nm,0.4s								
KMO					max				
	comp=E,2μm,0.8s								
NLYR	**Nelyaty**	**1.92**	**45**	*e*	Pg	Pg		20 01 32.7	-4.1
NLYR				*e*	Sg	Sg		20 01 57.8	-4.6
NLYR					Pmax				
	comp=E,149nm,0.3s								
NLYR					Smax				
	comp=E,994nm,0.8s								
NIZ	**Nizh Angarsk**	**2.21**	**288**	⇑*i*	Pg	Pg		20 01 36.6	-5.9
NIZ				*e*	Sn	Sn		20 02 01.0	-4.2
NIZ				*e*	Sg	Sg		20 02 06.1	-5.8
NIZ					Pmax				
	comp=E,45nm,0.4s								
NIZ					Smax				
	comp=E,492nm,0.3s								
NIZ	**Nizh Angarsk**	**2.21**	**288**	*e*	PN	Pn		20 01 37.5	+0.7
NIZ				*e*	S	Sn		20 02 02.1	-3.1
NIZ				*e*				20 02 05.9	
NIZ					pmax	pmax			
	comp=Z,38nm,0.3s								
NIZ					smax				
	comp=E,450nm,0.3s								
SYVR	**Suvo**	**2.43**	**233**	⇓*i*	Pn	Pn		20 01 39.3	-0.7
SYVR				⇓*i*	Pg	Pg		20 01 41.7	-5.3
SYVR				*e*	Sn	Sn		20 02 09.3	-1.6
SYVR				*i*	Sg	Sg		20 02 14.8	-4.6
SYVR					Pmax				
	comp=E,56nm,0.4s								
SYVR					Smax				
	comp=E,577nm,0.6s								
SYVR	**Suvo**	**2.43**	**233**	*e*	PN	Pn		20 01 41.9	+1.9
SYVR				*e*				20 02 14.6	
SYVR					pmax	pmax			
	comp=Z,58nm,0.2s								
SYVR					smax				
	comp=E,500nm,0.2s								
BOD	**Bodaibo**	**2.70**	**8**	⇓*i*	Pn	Pn		20 01 42.2	-1.7
BOD				⇓*i*	Pg	Pg		20 01 45.8	-6.6
BOD				*e*	Sn	Sn		20 02 14.5	-3.2
BOD				*e*	Sg	Sg		20 02 20.7	-7.6
BOD					Pmax				
	comp=E,57nm,0.6s								
BOD					Smax				
	comp=E,444nm,0.3s								
BOD	**Bodaibo**	**2.70**	**8**	*e*	PN	Pn		20 01 45.8	+1.9
BOD				*e*				20 02 20.4	
BOD					pmax	pmax			
	comp=Z,256nm,0.5s								
BOD					smax				
	comp=N,448nm,0.4s								
CIT	**Chita**	**3.15**	**177**	⇓*i*	Pn	Pn		20 01 48.8	-1.5
CIT				*e*	Pg	Pg		20 01 54.8	-6.6
CIT				*e*	Sg	Sg		20 02 36.1	-7.3
CIT					Pmax				
	comp=N,49nm,1.2s								
CIT					Smax				
	comp=N,388nm,0.5s								
CIT	**Chita**	**3.15**	**177**	*e*	PN	Pn		20 01 48.8	-1.5
CIT				*e*				20 01 55.2	
CIT				*e*				20 02 37.5	
CIT					pmax	pmax			
	comp=Z,30nm,0.7s								
CIT					smax				
	comp=E,387nm,0.4s								
MXMB	**Maximikha**	**3.26**	**236**	⇓*i*	Pn	Pn		20 01 51.4	-0.5
MXMB				*e*	Pg	Pg		20 01 56.8	-6.8
MXMB				*e*				20 02 30.6	
MXMB				*i*	Sg	Sg		20 02 41.2	-5.9
MXMB					Pmax				
	comp=E,53nm,1.0s								
MXMB					Smax				
	comp=E,428nm,0.7s								
OGRR	**Ongureny**	**3.64**	**248**	⇑*i*	Pn	Pn		20 01 55.9	-1.4
OGRR				*e*	Pg	Pg		20 02 03.0	-8.2
OGRR				*e*	Sn	Sn		20 02 38.3	-3.4
OGRR				*e*	Sg	Sg		20 02 51.6	-8.2
OGRR				*e*				20 02 57.5	
OGRR					Pmax				
	comp=E,22nm,0.6s								
OGRR					max				
	comp=E,98nm,1.0s								
TUP	**Tupik**	**3.94**	**98**	*e*	Pn	Pn		20 02 00.2	-1.4
TUP				*e*	Pg	Pg		20 02 09.0	-8.2
TUP				*e*				20 02 45.8	
TUP				*e*	Sg	Sg		20 03 00.9	-8.9
TUP					Pmax				
	comp=E,13nm,0.6s								
TUP					Smax				
	comp=E,134nm,0.8s								
TRTB	**Turuntaevo**	**4.45**	**231**	⇓*i*	Pn	Pn		20 02 06.9	-1.9
TRTB				⇓*i*	Pg	Pg		20 02 18.8	-8.5
TRTB				*e*	Sn	Sn		20 02 57.8	-4.3
TRTB				*e*	Sg	Sg		20 03 16.4	-10
TRTB					Pmax				
	comp=E,19nm,0.7s								
TRTB					Smax				
	comp=E,160nm,1.1s								
ZRHB	**Zarechye**	**4.46**	**237**	*e*	Pg	Pg		20 02 19.2	-8.3
ZRHB				*e*	Sg	Sg		20 03 15.9	-11
ZRHB					Pmax				
	comp=E,69nm,0.8s								
ZRHB					Smax				
	comp=E,355nm,1.0s								
TRG	**Tyrgan**	**4.74**	**242**	⇓*i*	Pn	Pn		20 02 11.1	-1.8
TRG				*e*	Pg	Pg		20 02 22.1	-11
TRG				*e*	Sn	Sn		20 03 03.3	-6.1
TRG				*e*	Sg	Sg		20 03 23.7	-12
TRG					Pmax				
	comp=E,5.0nm,0.3s								
TRG					Smax				
	comp=E,50nm,0.4s								
FFNB	**Fofonovo**	**4.97**	**234**	*e*	Pn	Pn		20 02 24.9	+8.8
FFNB				*e*	Pg	Pg		20 02 29.1	-8.6
FFNB				*e*	Sg	Sg		20 03 31.6	-12
FFNB					Pmax				
	comp=E,28nm,0.2s								
FFNB					Smax				
	comp=E,222nm,1.3s								
KAB	**Kabansk**	**5.02**	**234**	*e*	Sg	Sg		20 03 33.8	-12
KAB					Smax				
	comp=E,473nm,1.4s								
STDB	**Stepnoy Dvoret**	**5.08**	**237**	*e*	Sg	Sg		20 03 36.0	-12
STDB					Smax				
	comp=E,322nm,1.4s								
HRMR	**Khuramsha**	**5.17**	**229**	*e*	Pn	Pn		20 02 16.8	-2.2
HRMR				*e*	Pg	Pg		20 02 30.8	-11
HRMR				*e*	Sn	Sn		20 03 14.4	-5.9
HRMR				*e*	Sg	Sg		20 03 40.0	-11
HRMR					Pmax				
	comp=E,38nm,0.7s								
HRMR					Smax				
	comp=E,468nm,1.0s								
KPC	**Khapcheranga**	**5.49**	**186**	*e*	Pn	Pn		20 02 20.4	-3.1
KPC				*e*	Pg	Pg		20 02 38.4	-10
KPC				*e*				20 03 32.4	
KPC				*e*	Sg	Sg		20 03 48.6	-13
KPC					Pmax				
	comp=E,6.0nm,0.6s								
KPC					Smax				
	comp=E,127nm,1.2s								
KPC	**Khapcheranga**	**5.49**	**186**	*e*	PN	Pn		20 02 20.6	-2.9
KPC				*e*				20 02 38.5	
KPC				*e*				20 03 50.0	
KPC					pmax	pmax			
	comp=Z,3.0nm,0.5s								
KPC					smax				
	comp=E,94nm,0.9s								
LSTR	**Listvyanka**	**6.01**	**240**	*e*	Pn	Pn		20 02 28.6	-2.3
LSTR				*e*				20 02 36.8	
LSTR				*e*	Sg	Sg		20 04 04.2	-14
LSTR					max				
	comp=E,4.0nm,0.7s								
LSTR					Smax				
	comp=E,32nm,1.6s								
IRK	**Irkutsk**	**6.08**	**245**	*e*	Sg	Sg		20 04 05.7	-15
IRK					Smax				
	comp=E,77nm,0.5s								
TNDR	**Tynda**	**6.57**	**85**	*e*	Sg	Sg		20 04 22.1	-15
TLY	**Talaya**	**6.72**	**243**	*e*		Pn		20 02 33.0	-7.9
TLY				*e*	Sg	Sg		20 04 26.0	-16
TLY					Smax				
	comp=E,28nm,1.2s								
CLNS	**Chul'man**	**6.74**	**71**	*e*	Sg	Sg		20 04 26.0	-17
ARS	**Arshan**	**7.23**	**248**	*e*	Pg	Pg		20 03 08.4	-14
ARS				*e*	Sg	Sg		20 04 40.5	-19
ARS					Pmax				
	comp=E,5.0nm,0.4s								
ARS					Smax				
	comp=E,78nm,0.8s								
ZAK	**Zakamensk**	**7.71**	**236**	*e*	Pn	Pn		20 02 50.2	-4.6
ZAK				*e*				20 03 01.5	
ZAK				*e*	Pg	Pg		20 03 17.1	-15
ZAK				*e*				20 04 20.2	
ZAK				*e*	Sg	Sg		20 04 58.5	-17
ZAK					Pmax				
	comp=E,1.0nm,0.9s								
ZAK					Smax				
	comp=E,16nm,1.1s								
MOY	**Mondy**	**8.12**	**250**	*e*	Pn	P		20 02 55.8	-4.7
MOY				*e*	Pg	P		20 03 24.6	+24
MOY				*e*	Sg	Sg		20 05 07.6	-21
MOY					Pmax				
	comp=E,3.0nm,0.7s								
MOY					Smax				
	comp=E,38nm,1.6s								
MOY	**Mondy**	**8.12**	**250**	*e*	PG	P		20 03 23.8	+23
MOY				*e*				20 05 09.5	
MOY					pmax	pmax			
	comp=Z,1.0nm,0.1s								
MOY					smax				
	comp=E,37nm,1.5s								
ORL	**Orlik**	**8.38**	**257**	*e*	Pn	P		20 03 01.2	-2.8
ORL				*e*				20 04 34.1	
ORL				*e*	Sg	Sg		20 05 16.4	-21
ORL					max				
	comp=E,1.0nm,0.6s								
ORL					Smax				
	comp=E,19nm,1.3s								
ORL	**Orlik**	**8.38**	**257**	*e*	PG	P		20 03 26.4	+22
ORL				*e*				20 05 16.7	
ORL					pmax	pmax			
	comp=Z,4.0nm,1.0s								
ORL					smax				
	comp=N,20nm,1.6s								
TDJR	**Todzha**	**10.52**	**262**	*e*	Sg	Sx		20 06 23.3	

*IDC **16** 20:05:50.9±0.8,36.43N×142.20E,mb3.6/12,mb1 3.7/15, mb1mx3.7/25,ML3.5/3,MS3.0/1,Ms1 3.0/1,ms1mx2.4/32, Error ellipse: s-maj=24.1km s-min=14.7km az=90.0*

*NEIC **16** 20:05:56.0±0.7,36.44N×142.20E,h35km,mb4.2/2,Error ellipse: s-maj=16.1km s-min=14.3km az=182.0*
*BJI **16** 20:05:57.5,36.40N×142.20E,h35km,mb3.9*
ISC 16 20:05:51.2±3.2,36.37N±0.07×142.24E±0.08,h15km±21km, n24,σ1§09/28,mb3.6/14,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
MAJO	**Matsushiro**	**3.26**	**274**	*e*	Pn	**Pn**	**Pn**	**20 06 42.8**	**0.0**
MAT	**Matsushiro**	**3.26**	**274**	P		**Pn**	**Pn**	**20 06 43.1**	**+0.2**
MAT				*e*	S	**Sn**	**Sn**	**20 07 19.6**	**-2.1**
MAT	**Matsushiro**	**3.26**	**274**	P		**Pn**	**Pn**	**20 06 43.0**	**+0.1**
MAT					S	**Sn**	**Sn**	**20 07 20.0**	**-1.7**
JHJ	**Hachijo jima 2**	**3.82**	**213**	Pn		**Pn**	**Pn**	**20 06 50.9**	**+0.1**
	32nm,0.3s,baz=91,slow=6.5,SNR=9.8								
JHJ						Sn	**Sn**	**20 07 30.4**	**-5.5**
	48nm,0.3s,baz=100,slow=23,SNR=7.9								
ASAJ	**Asahikawa**	**7.75**	**2**	Pn		**Pn**	**Pn**	**20 07 45.3**	**-0.9**
	0.2nm,0.3s,baz=166,slow=25,SNR=2.2								
ASAJ						LR	LR	20 11 32.2	
	comp=Z,116nm,20.0s,baz=167,slow=44								
CBIJ	**Chichi jima**	**9.24**	**180**	Pn		**P**	**P**	**20 08 04.1**	**-2.9**
	2.5nm,0.3s,baz=307,slow=20,SNR=4.1								
CBIJ						Sn	**Sn**	**20 09 39.4**	**-12**
	2.6nm,0.3s,baz=83,slow=22,SNR=2.0								
BJI	**Beijing**	**20.79**	**288**	*e*	P	**P**	**P**	**20 10 41.5**	**+7.3**
BJI					AMB	AMB			
	comp=Z,6.0nm,0.8s								
ULN	**Ulaanbaatar**	**28.28**	**305**	*e*	P	**P**	**P**	**20 11 46.4**	**+0.6**
	comp=Z,5.7nm,1.1s,mb4.1								
SONM	**Songino Array**	**28.71**	**305**	P		**P**	**P**	**20 11 50.5**	**+0.8**
	comp=Z,2.1nm,1.1s,mb3.8,baz=111,slow=11,SNR=4.2								
CMAR	**Chiang Mai Arr**	**41.98**	**257**	P		**P**	**P**	**20 13 42.0**	**-1.5**
	comp=Z,0.6nm,0.8s,mb3.2,baz=45,slow=7.7,SNR=3.4								
ZAL	**Zalesovo**	**42.87**	**313**	P		**P**	**P**	**20 13 48.7**	**-1.5**
	comp=Z,0.6nm,0.2s,mb3.9,baz=63,slow=18,SNR=1.7								
MKAR	**Makanchi Array**	**45.04**	**303**	P		**P**	**P**	**20 14 08.9**	**+1.1**
	comp=Z,1.4nm,0.9s,mb3.8,baz=90,slow=8.5,SNR=7.2								
KURK	**Kurchatov**	**46.87**	**309**	*e*	P	**P**	**P**	**20 14 22.8**	**+0.6**
ILAR	**Eielson Array**	**49.70**	**32**	P		**P**	**P**	**20 14 44.0**	**-0.1**
	comp=Z,0.1nm,0.6s,mb3.1,baz=270,slow=5.4,SNR=2.3								
BVAR	**Borovoye Array**	**51.52**	**313**	P		**P**	**P**	**20 14 57.1**	**-0.9**
	comp=Z,0.2nm,0.3s,mb3.5,baz=72,slow=4.6,SNR=2.4								
ZRNK	**Zerenda**	**52.35**	**313**	*e*	P	**P**	**P**	**20 15 04.8**	**+0.4**
WRA	**Warramunga Arr**	**56.50**	**189**	P		**P**	**P**	**20 15 35.7**	**+0.5**
	comp=Z,0.4nm,0.8s,mb3.5,baz=4.6,slow=7.3,SNR=4.6								
ASAR	**Alice Springs**	**60.22**	**189**	P		**P**	**P**	**20 16 02.4**	**+1.2**
	comp=Z,0.2nm,0.7s,mb3.2,baz=14,slow=7.4,SNR=3.6								
YKA	**Yellowknife Ar**	**64.05**	**30**	P		**P**	**P**	**20 16 24.8**	**-1.3**
	comp=Z,0.1nm,0.5s,mb3.1,baz=304,slow=6.5,SNR=3.2								
STKA	**Stephens Creek**	**67.89**	**181**	P		**P**	**P**	**20 16 51.6**	**+0.4**
	comp=Z,2.6nm,1.0s,mb4.2,baz=326,slow=3.6,SNR=2.0								
FINES	**FINESS Array B**	**69.72**	**333**	P		**P**	**P**	**20 17 02.8**	**+0.8**
	comp=Z,1.4nm,1.0s,mb3.9,baz=146,slow=10.0,SNR=3.0								
NB2	**NORSAR Subarra**	**75.06**	**338**	P		**P**	**P**	**20 17 42.7**	**+9.2**
	comp=Z,0.8nm,0.7s,mb3.8,baz=40,slow=5.8								
NOA	**NORSAR Array B**	**75.06**	**338**	P		**P**	**P**	**20 17 33.1**	**-0.4**
	comp=Z,0.5nm,0.8s,mb3.5,baz=100,slow=6.2,SNR=2.5								
BW06	**Boulder Array**	**77.66**	**46**	*e*	P	**P**	**P**	**20 17 46.3**	**-2.1**
	comp=Z,1.4nm,0.5s,mb4.2								

*IDC **16** 20:07:58.7±2.1,43.53N×105.32W,mb1 3.4/3, mb1mx3.2/21,ML3.2/3,Error ellipse: s-maj=47.6km s-min=9.0km az=151.0*
*NEIC **16** 20:08:00.7±0.7,43.78N×105.25W,ML2.9,Error ellipse: s-maj=12.8km s-min=7.4km az=158.0,Suspected Mining explosion.*
NEIC 60 km [40 miles] SSE of Gillette.
ISC 16 20:07:59.1±0.8,43.85N±0.09×105.27W±0.08,n10, σ1§08/15,Wyoming

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RSSD	**Black Hills**	**0.93**	**73**	*e*	Pg	**Pg**	**Pg**	**20 08 19.0**	**+1.2**
BW06	**Boulder Array**	**3.31**	**252**	*e*	Pn	**Pn**	**Pn**	**20 08 52.4**	**-0.9**
BW06				*e*	Sg	**Sg**	**Sg**	**20 09 40.4**	**-9.0**
PDAR	**Pinedale Array**	**3.31**	**252**	Pn		**Pn**	**Pn**	**20 08 53.5**	**+0.3**
	1.7nm,0.3s,baz=79,slow=17,SNR=22								
PDAR					Pg		**Pg**	**20 08 59.1**	**-6.1**
	2.1nm,0.3s,baz=75,slow=18,SNR=27								
PDAR					Lg			20 09 39.2	
	6.6nm,0.3s,baz=75,slow=29,SNR=17								
ISCO	**Idaho Springs**	**4.06**	**184**	*e*	Pn	**Pn**	**Pn**	**20 09 03.8**	**-0.1**
ISCO				*e*	Sg	**Sg**	**Sg**	**20 09 57.4**	**-17**
REDW	**Red Top Meadow**	**4.08**	**265**	*e*	Pn	**Pn**	**Pn**	**20 09 05.2**	**+1.0**
REDW				*e*	Pg	**Pg**	**Pg**	**20 09 19.3**	**-1.3**
QLMT	**Earthquake Lak**	**4.52**	**285**	P		**Pn**	**Pn**	**20 09 10.7**	**+0.2**
QLMT				*e*				20 09 22.3	
BOZ	**Bozeman (W)**	**4.87**	**294**	*e*	Pn	**Pn**	**Pn**	**20 09 17.1**	**+1.7**
BOZ				*e*	Sg	**Sg**	**Sg**	**20 10 30.9**	**-10**
ULM	**Lac du Bonnet**	**9.06**	**42**	Pn		**P**	**P**	**20 10 12.1**	**-2.0**
	1.0nm,0.3s,baz=231,slow=9.5,SNR=5.3								
ULM					Lg			20 12 47.5	
	0.1nm,0.3s,baz=39,slow=6.5,SNR=2.3								
ULM	**Lac du Bonnet**	**9.06**	**42**	Pn		**P**	**P**	**20 10 12.1**	**-2.0**
ULM					Lg			20 12 47.5	
YKA	**Yellowknife Ar**	**19.45**	**347**	P		**P**	**P**	**20 12 29.5**	**-0.2**
	0.0nm,0.3s,baz=152,slow=8.8,SNR=2.9								

*NEIC **16** 20:14:54.1±0.8,85.21N×13.26E,h10km,mb3.9/1,Error ellipse: s-maj=20.9km s-min=9.9km az=68.0*
*IDC **16** 20:14:57.1±1.4,85.05N×19.92E,mb3.5/6,mb1 3.7/8, mb1mx3.4/23,ML3.6/2,MS3.1/8,Ms1 3.1/8,ms1mx2.8/32, Error ellipse: s-maj=35.6km s-min=19.6km az=90.0*
*NAO **16** 20:15:06.5±13.0,84.22N×27.33E,h12km±65km,ML2.2*
ISC 16 20:14:56.4±4.2,84.92N±0.08×1 6E± ,h16km±34km,n22, σ0§88/21,mb3.4/7,MS3.0/7,North of Svalbard

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
KBS	**Kingsbay**	**6.06**	**187**			Pn	**Pn**	**20 16 27.5**	**-0.2**
KBS						Sn	**Sn**	**20 17 36.7**	**-0.6**
SPB4	**Spitsbergen Ar**	**6.78**	**179**	*e*	P	**Pn**	**Pn**	**20 16 37.9**	**0.0**
SPA0	**Spitsbergen Ar**	**6.79**	**179**	Pn		**Pn**	**Pn**	**20 16 37.9**	**0.0**
	baz=6.2,slow=14								
SPITS	**Spitsbergen Ar**	**6.79**	**179**	Pn		**Pn**	**Pn**	**20 16 38.5**	**+0.6**
	1.5nm,0.3s,SNR=220								
ARA0	**ARCESS Array S**	**15.57**	**167**	P		**P**	**P**	**20 18 36.4**	**0.0**
	baz=0.7,slow=12								
ARCES	**ARCESS Array B**	**15.57**	**167**	Pn		**P**	**P**	**20 18 35.6

IDC ***16*** *20:24:33.8±1.5,5.39S×68.63E,mb3.9/9,mb1 4.1/9, mb1mx3.9/19,MS3.7/14,Ms1 3.8/14,ms1mx3.6/31,Error ellipse: s-maj=46.0km s-min=21.6km az=50.0*
NEIC ***16*** *20:24:35.0±0.9,5.45S×68.67E,h10km,mb4.3/1,Error ellipse: s-maj=28.6km s-min=9.7km az=48.0*
ISC 16 20:24:33.2±1.3,5.4S±0.2×68.7E±0.2,h10km,n27, σ0$70/17,mb4.1/11,MS3.8/14,Chagos Archipelago region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
DGAR	**Diego Garcia**	**4.25**	**118**	*e*Pn		**Pn**		**20 25 38.7**	**-0.7**
DGAR				*e*Sn		**Sn**		**20 26 22.2**	**-7.5**
KMBO	**Kilima Mbogo**	**31.66**	**277**	LR		LR		20 41 07.9	
	comp=Z,228nm,21.9s,MS3.8,baz=97,slow=32								
CMAR	**Chiang Mai Arr**	**38.10**	**51**	P		**P**		**20 31 55.5**	**+1.2**
	2.4nm,0.8s,mb4.0,baz=241,slow=9.7,SNR=15								
CMAR				LR		LR		20 45 32.0	
	comp=Z,77nm,19.8s,MS3.5,baz=215,slow=33								
GNI	**Garni**	**50.39**	**336**	LR		LR		20 53 03.1	
	comp=Z,58nm,21.9s,MS3.5,baz=333,slow=34								
TSUM	**Tsumeb**	**51.59**	**250**	LR		LR		20 53 47.9	
	comp=Z,76nm,18.1s,MS3.8,baz=225,slow=34								
MKAR	**Makanchi Array**	**53.34**	**12**	P		**P**		**20 33 54.5**	**-0.5**
	0.5nm,0.6s,mb3.6,baz=198,slow=7.7,SNR=7.9								
MKAR	**Makanchi Array**	**53.34**	**12**	P		**P**		**20 33 54.5**	**-0.5**
BRTR	**Keskin Array B**	**55.30**	**327**	P		**P**		**20 34 09.3**	**-0.2**
	1.1nm,1.1s,mb3.8,baz=157,slow=11,SNR=4.1								
KURK	**Kurchatov**	**56.54**	**8**	*e*P		**P**		**20 34 17.7**	**-0.5**
ZRNK	**Zerenda**	**58.12**	**0**	*e*P		**P**		**20 34 29.2**	**-0.1**
BVAR	**Borovoye Array**	**58.21**	**1**	P		**P**		**20 34 28.7**	**-1.2**
	0.2nm,0.6s,mb3.4,baz=180,slow=4.3,SNR=2.4								
BVAR				LR		LR		20 59 56.8	
	comp=Z,54nm,20.3s,MS3.6,baz=310,slow=36								
ZAL	**Zalesovo**	**60.64**	**11**	P		**P**		**20 34 45.9**	**-0.8**
	1.3nm,0.9s,mb4.0,baz=129,slow=7.2,SNR=5.5								
ZAL				LR		LR		20 59 00.8	
	comp=Z,50nm,20.4s,MS3.6,baz=168,slow=34								
ZAL	**Zalesovo**	**60.64**	**11**	P		**P**		**20 34 45.9**	**-0.8**
ZAL				LR		LR		20 59 00.8	
MAW	**Mawson**	**62.24**	**183**	LR		LR		20 54 35.6	
	comp=Z,116nm,20.9s,MS4.0,baz=245,slow=29								
SONM	**Songino Array**	**62.50**	**28**	P		**P**		**20 35 00.1**	**+0.8**
	0.9nm,0.7s,mb4.0,baz=225,slow=7.0,SNR=5.8								
ASAR	**Alice Springs**	**65.17**	**113**	P		**P**		**20 35 17.6**	**+0.4**
	1.3nm,0.6s,mb4.1,baz=278,slow=5.9,SNR=16								
ASAR				LR		LR		20 58 18.1	
	comp=Z,98nm,21.1s,MS4.0,baz=110,slow=31								
WRA	**Warramunga Arr**	**65.30**	**109**	P		**P**		**20 35 18.6**	**+0.4**
	3.7nm,0.7s,mb4.5,baz=282,slow=6.3,SNR=36								
WRAB	**Tennant Creek**	**65.31**	**109**	*e*P		**P**		**20 35 17.9**	**-0.3**
	24nm,1.2s,mb5.1								
STKA	**Stephens Creek**	**72.66**	**122**	LR		LR		21 04 32.8	
	comp=Z,99nm,20.1s,MS4.1,baz=204,slow=33								
FINES	**FINESS Array B**	**74.32**	**340**	LR		LR		21 11 04.1	
	comp=Z,30nm,18.4s,MS3.6,baz=346,slow=38								
DBIC	**Dimbokro**	**74.37**	**278**	LR		LR		21 06 21.5	
	comp=Z,62nm,21.7s,MS3.9,baz=49,slow=34								
CTA	**Charters Tower**	**76.50**	**109**	LR		LR		21 04 19.7	
	comp=Z,106nm,20.6s,MS4.1,baz=133,slow=31								
HFS	**Hagfors**	**78.17**	**335**	P		**P**		**20 36 35.3**	**+1.1**
	3.1nm,1.0s,mb4.2,baz=1,slow=3.0,SNR=5.0								
NOA	**NORSAR Array B**	**79.69**	**335**	LR		LR		21 11 07.0	
	comp=Z,24nm,18.2s,MS3.6,baz=270,slow=35								
ARCES	**ARCESS Array B**	**80.33**	**346**	LR		LR		21 11 58.4	
	comp=Z,48nm,20.8s,MS3.8,baz=246,slow=35								
TIXI	**Tiksi**	**86.08**	**16**	*e*P		**P**		**20 37 15.5**	**+0.4**
	2.6nm,1.1s,mb4.4								
NVAR	**Mina Array Bea**	**146.51**	**10**	PKPbc		PKPbc		20 44 17.2	+2.1
	0.8nm,0.8s,baz=23,slow=3.2,SNR=6.2								

IDC ***16*** *20:34:02.6±1.5,5.61S×131.00E,mb3.6/2,mb1 4.0/6, mb1mx3.8/15,ML3.8/4,Error ellipse: s-maj=47.5km s-min=24.1km az=65.0*
NEIC ***16*** *20:34:05.2±0.9,5.62S×131.13E,h20km,Error ellipse: s-maj=19.1km s-min=12.0km az=69.0*
ISC 16 20:34:12.7±2.4,6.02S±0.07×131.2E±0.1,h126km±30km, n10,σ1$14/16,mb3.6/2,Tanimbar Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**13.19**	**204**	*e*P		**P**		**20 37 15.1**	**-1.0**
	2.0nm,0.3s								
FITZ				*e*S		**S**		**20 39 33.0**	**-7.1**
FITZ	**Fitzroy Crossi**	**13.19**	**204**	Pn		**P**		**20 37 14.8**	**-1.2**
	1.0nm,0.3s,baz=29,slow=10.0,SNR=29								
FITZ				Sn		**S**		**20 39 32.6**	**-7.5**
	0.4nm,0.3s,baz=10,slow=22,SNR=4.0								
WRAB	**Tennant Creek**	**14.17**	**168**	*e*Pn		**P**		**20 37 29.7**	**+1.0**
	3.2nm,0.4s								
WRAB				*e*Sn		**S**		**20 40 02.5**	**-0.5**
WRA	**Warramunga Arr**	**14.17**	**168**	Pn		**P**		**20 37 29.7**	**+0.8**
	0.5nm,0.3s,baz=347,slow=13,SNR=31								
WRA				Sn		**S**		**20 40 01.1**	**-2.1**
	0.9nm,0.3s,baz=344,slow=23,SNR=6.6								
WB2	**Warramunga Arr**	**14.18**	**168**	*e*P		**P**		**20 37 29.9**	**+1.1**
WB2				*e*S		**S**		**20 40 02.9**	**-0.3**
PMG	**Port Moresby**	**16.16**	**103**	Pn		**P**		**20 37 53.1**	**-0.7**
	0.5nm,0.3s,baz=306,slow=19,SNR=3.4								
AS12	**Alice Springs**	**17.74**	**172**	*e*P		**P**		**20 38 18.0**	**+4.8**
	2.1nm,0.5s								
ASAR	**Alice Springs**	**17.74**	**172**	P		**P**		**20 38 17.7**	**+4.5**
	0.4nm,0.3s,baz=344,slow=9.9,SNR=20								
ASAR				S		**S**		**20 41 26.6**	**+2.5**
	0.2nm,0.3s,baz=357,slow=28,SNR=7.3								
CMAR	**Chiang Mai Arr**	**40.05**	**308**	P		**P**		**20 41 36.5**	**-0.7**
	0.3nm,0.6s,mb3.3,baz=138,slow=6.8,SNR=4.5								
MKAR	**Makanchi Array**	**68.08**	**326**	P		**P**		**20 45 01.4**	**+0.5**
	0.7nm,0.4s,mb3.8,baz=119,slow=7.3,SNR=18								

IDC ***16*** *20:41:56.7±0.9,14.03N×56.63E,mb3.8/13,mb1 4.0/13, mb1mx3.9/20,MS3.5/2,Ms1 3.5/2,ms1mx2.8/29,Error ellipse: s-maj=22.8km s-min=20.0km az=41.0*
NEIC ***16*** *20:41:58.2±0.6,14.07N×56.54E,h10km,mb4.1/4,Error ellipse: s-maj=14.6km s-min=11.7km az=201.0*
ISC 16 20:41:56.7±0.7,14.1N±0.1×56.55E±0.1,h10km,n25, σ1$02/24,mb3.8/16,MS3.4/2,Owen Fracture Zone region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
HYB	**Hyderabad**	**21.43**	**78**	*i* P		**P**		**20 46 49.0**	**+1.8**
HYB	**Hyderabad**	**21.43**	**78**	*e*P		**P**		**20 46 49.0**	**+1.8**
THR	**Tehran**	**22.24**	**348**	P		**P**		**20 46 58.0**	**+2.8**
	1.0nm,0.9s,mb3.2,baz=120,slow=7.8,SNR=4.0								
KMBO	**Kilima Mbogo**	**24.38**	**233**	P		**P**		**20 47 18.0**	**+1.6**
	0.9nm,0.4s,mb3.6,baz=39,slow=16,SNR=4.4								
KMBO				LR		LR		20 57 41.5	
	comp=Z,152nm,18.2s,MS3.5,baz=94,slow=39								
KMBO	**Kilima Mbogo**	**24.38**	**233**	P		**P**		**20 47 17.5**	**+1.1**
	3.5nm,1.0s,mb3.7								
KMBO				LR		LR		20 57 41.5	
BRTR	**Keskin Array B**	**32.49**	**326**	P		**P**		**20 48 31.0**	**+1.3**
	0.3nm,0.7s,mb3.2,baz=140,slow=11,SNR=2.7								
MKAR	**Makanchi Array**	**39.06**	**28**	P		**P**		**20 49 25.7**	**+0.3**
	1.2nm,0.8s,mb3.7,baz=214,slow=8.7,SNR=9.1								
BVAR	**Borovoye Array**	**40.35**	**13**	P		**P**		**20 49 36.1**	**+0.1**
	0.3nm,0.8s,mb3.1,baz=169,slow=7.3,SNR=3.3								
BVAR				PcP		PcP		20 51 39.7	-0.4
	0.2nm,0.5s,baz=207,slow=3.3,SNR=3.9								
KURK	**Kurchatov**	**40.66**	**22**	*e*P		**P**		**20 49 39.8**	**+1.1**
CM31	**Chiang Mai Arr**	**40.86**	**78**	P		**P**		**20 49 40.3**	**-0.2**
	1.5nm,0.6s,mb3.8								
CMAR	**Chiang Mai Arr**	**40.86**	**78**	P		**P**		**20 49 40.8**	**+0.2**
	0.9nm,0.9s,mb3.4,baz=269,slow=9.2,SNR=4.7								
CMAR				LR		LR		21 05 03.8	
	comp=Z,34nm,19.7s,MS3.2,baz=88,slow=34								
ZAL	**Zalesovo**	**45.52**	**23**	P		**P**		**20 50 17.3**	**-0.8**
	1.3nm,0.5s,mb4.1,baz=169,slow=9.3,SNR=7.7								
ZAL	**Zalesovo**	**45.52**	**23**	P		**P**		**20 50 17.3**	**-0.8**
JOF	**Joensuu**	**51.90**	**346**	*e*p		**P**		**20 51 05.3**	**-2.0**
FINES	**FINESS Array B**	**52.10**	**342**	P		**P**		**20 51 09.2**	**+0.3**
	4.8nm,0.8s,mb4.5,baz=127,slow=9.5,SNR=18								
KAF	**Kangasniemi**	**52.56**	**343**	*e*p		**P**		**20 51 12.1**	**-0.2**
SONM	**Songino Array**	**53.09**	**40**	P		**P**		**20 51 16.3**	**-0.2**
	0.9nm,0.9s,mb3.7,baz=233,slow=7.2,SNR=3.4								
NB2	**NORSAR Subarra**	**57.07**	**336**	P		**P**		**20 51 44.5**	**-0.7**
	0.4nm,0.7s,mb3.6,baz=123,slow=7.0								
NOA	**NORSAR Array B**	**57.07**	**336**	P		**P**		**20 51 43.8**	**-1.5**
	1.0nm,0.8s,mb3.9,baz=120,slow=7.5,SNR=4.2								
ESDC	**Sonseca Array**	**58.49**	**308**	P		**P**		**20 51 54.6**	**-0.9**
	1.4nm,1.0s,mb3.9,baz=107,slow=4.7,SNR=5.3								
TIXI	**Tiksi**	**71.15**	**19**	*e*P		**P**		**20 53 16.3**	**-0.8**
	7.3nm,1.7s,mb4.3								
WRA	**Warramunga Arr**	**83.64**	**112**	P		**P**		**20 54 26.5**	**-0.9**
	1.6nm,1.0s,mb4.1,baz=296,slow=4.3,SNR=7.6								
WRAB	**Tennant Creek**	**83.64**	**112**	*e*P		**P**		**20 54 27.1**	**-0.4**
	1.4nm,0.6s,mb4.3								
ASAR	**Alice Springs**	**84.38**	**116**	P		**P**		**20 54 30.6**	**-0.5**
	1.5nm,0.8s,mb4.2,baz=291,slow=4.5,SNR=10								
NVAR	**Mina Array Bea**	**127.52**	**355**	PKP		PKPdf		21 01 05.9	+0.3
	0.6nm,0.7s,baz=74,slow=2.2,SNR=4.7								

IDC ***16*** *20:45:51.4±9.2,6.35S×154.61E,h60km±78km,mb3.2/3, mb1 3.6/4,mb1mx3.4/14,ML3.3/1,Error ellipse: s-maj=107.0km s-min=36.3km az=128.0*
NEIC ***16*** *20:45:53.2±4.9,6.38S×154.54E,h72km±42km,mb4.1/1, Error ellipse: s-maj=62.2km s-min=18.2km az=113.0*
ISC 16 20:45:51.6±4.6,6.4S±0.2×154.5E±0.3,h71km±43km,n7, σ0$77/9,mb3.4/4,Bougainville - Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
RAB	**Rabaul**	**3.24**	**313**	*e*P		**P**		**20 46 42.0**	**+0.6**
PMG	**Port Moresby**	**7.89**	**247**	P		**P**		**20 47 45.1**	**-0.7**
	2.2nm,0.3s,baz=48,slow=14,SNR=6.9								
PMG				S		**S**		**20 49 14.2**	**-0.2**
	1.6nm,0.3s,baz=119,slow=16,SNR=4.2								
PMG	**Port Moresby**	**7.89**	**247**	*e*Pn		**P**		**20 47 44.8**	**-1.1**
PMG				S		**S**		**20 49 14.2**	**-0.2**
WRA	**Warramunga Arr**	**23.78**	**234**	P		**P**		**20 51 00.1**	**+1.3**
	1.4nm,1.2s,mb3.2,baz=60,slow=9.6,SNR=6.9								
ASAR	**Alice Springs**	**26.22**	**227**	P		**P**		**20 51 21.8**	**-0.2**
	0.3nm,0.5s,mb3.0,baz=57,slow=8.9,SNR=4.0								
SBA	**Scott Base**	**71.68**	**177**	P		**P**		**20 57 07.8**	**+0.4**
	1.4nm,0.5s,mb4.0								
ILAR	**Eielson Array**	**83.01**	**22**	P		**P**		**20 58 09.3**	**-1.0**
	0.5nm,0.8s,mb3.4,baz=245,slow=5.0,SNR=4.7								

IDC ***16*** *20:47:39.6±1.4,24.62S×179.71E,h518km±14km, mb3.6/10,mb1 3.8/11,mb1mx3.8/13,Error ellipse: s-maj=19.7km s-min=12.4km az=161.0*
NEIC ***16*** *20:47:41.5±1.2,24.71S×179.72E,h544km±13km, mb4.6/14,Error ellipse: s-maj=11.1km s-min=10.1km az=154.0*
SYO ***16*** *20:47:41.5,24.71S×179.72E,h544km,MB4.6*
ISC 16 20:47:41.8±1.3,24.69S±0.08×179.63E±0.08, h556km±16km,n60,σ0$86/40,mb4.3/18,2C-10D,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**12.39**	**279**	*e*P		**P**		**20 50 24.7**	**0.0**
NOUC	**Port Laguerre**	**12.51**	**279**	*e*P		**P**		**20 50 26.8**	**+1.0**
URZ	**Urewera**	**13.69**	**188**	P		**P**		**20 50 36.8**	**-1.0**
	1.0nm,0.3s,baz=108,slow=3.2,SNR=3.4								
URZ				S		**S**		**20 53 00.5**	**+1.2**
	1.2nm,0.3s,baz=54,slow=23,SNR=16								
RPZ	**Rata Peaks**	**20.23**	**198**	P		**P**		**20 51 39.6**	**-1.0**
	5.3nm,0.5s,baz=185,slow=1.4,SNR=7.2								
CTA	**Charters Tower**	**31.15**	**272**	*i*P		**P**		**20 53 17.8**	**+0.7**
	34nm,0.3s,mb5.3								
CTA	**Charters Tower**	**31.15**	**272**	P		**P**		**20 53 17.8**	**+0.7**
	0.3nm,0.3s,mb5.4,baz=96,slow=11,SNR=96								
CTAO	**Charters Tower**	**31.15**	**272**	*i*P		**P**		**20 53 17.7**	**+0.5**
	46nm,0.4s,mb5.4								
TAU	**Tasmania Unive**	**32.15**	**228**	*e*P		**P**		**20 53 26.0**	**+0.6**
	6.0nm,0.6s,mb4.3								
STKA	**Stephens Creek**	**34.12**	**249**	*i*P		**P**		**20 53 42.7**	**+0.7**
	7.1nm,0.3s,mb4.7								
STKA	**Stephens Creek**	**34.12**	**249**	P		**P**		**20 53 42.7**	**+0.7**
	11nm,0.5s,mb4.7,baz=94,slow=9.7,SNR=48								
PMG	**Port Moresby**	**34.44**	**291**	P		**P**		**20 53 44.8**	**0.0**
	9.0nm,0.8s,mb4.3,baz=97,slow=4.3,SNR=5.9								
PMG	**Port Moresby**	**34.44**	**291**	*e*P		**P**		**20 53 44.9**	**0.0**
	17nm,0.8s,mb4.6								
AS12	**Alice Springs**	**41.58**	**262**	*i*P		**P**		**20 54 42.9**	**0.0**
	12nm,1.2s,mb4.3								
ASAR	**Alice Springs**	**41.58**	**262**	P		**P**		**20 54 42.6**	**-0.3**
	6.2nm,0.4s,mb4.5,baz=92,slow=7.4,SNR=139								
ASAR				S		**S**		**21 00 21.4**	**+1.4**
	0.6nm,0.8s,baz=94,slow=11,SNR=4.6								
WB2	**Warramunga Arr**	**42.01**	**267**	*i*P		**P**		**20 54 45.9**	**-0.4**
WB2				*i* SCP				20 59 33.0	
WRAB	**Tennant Creek**	**42.01**	**267**	*e*P		**P**		**20 54 45.8**	**-0.6**
	20nm,0.3s,mb5.1								
WRA	**Warramunga Arr**	**42.02**	**267**	P		**P**		**20 54 45.6**	**-0.9**
	16nm,0.4s,mb4.9,baz=99,slow=7.1,SNR=386								
WRA				ScP				20 59 31.9	
	5.0nm,0.8s,baz=102,slow=4.1,SNR=21								
WRA				S		**S**		**21 00 25.3**	**-1.1**
	1.4nm,0.9s,baz=98,slow=14,SNR=4.3								
FORT	**Forrest**	**45.72**	**250**	*i*P		**P**		**20 55 14.2**	**-0.9**
	92nm,0.5s								
FITZ	**Fitzroy Crossi**	**50.43**	**266**	*i*P		**P**		**20 55 50.4**	**-0.2**
	12nm,0.7s,mb4.4								
SBA	**Scott Base**	**53.57**	**183**	*e*P		**P**		**20 56 09.1**	**-3.3**
KLBR	**Kellerberrin**	**54.37**	**248**	*i*P		**P**		**20 56 17.8**	**-0.8**
	26nm,1.1s,mb4.5								
QSPA	**South Pole Qui**	**65.39**	**180**	*e*P		**P**		**20 57 31.6**	**+0.8**
	6.8nm,0.7s,mb4.2								
MAW	**Mawson**	**76.89**	**201**	P		**P**		**20 58 38.4**	**+0.7**
	2.2nm,0.6s,mb3.7,baz=141,slow=13,SNR=4.4								
MAW	**Mawson**	**76.89**	**201**	*e*P		**P**		**20 58 38.6**	**+1.0**
	3.2nm,0.7s,mb3.9								
SYO	**Syowa Base**	**82.17**	**194**	*i*P		**P**		**20 59 04.3**	**-0.8**
CMB	**Columbia Colle**	**84.01**	**43**	*e*P		**P**		**20 59 14.8**	**-0.1**
HUMO	**Hull Mountain**	**85.33**	**39**	P		**P**		**20 59 21.8**	**+0.5**
NVAR	**Mina Array Bea**	**85.56**	**44**	P		**P**		**20 59 22.2**	**-0.2**
	1.4nm,0.6s,mb3.8,baz=210,slow=7.0,SNR=15								
TUC	**Tucson**	**87.27**	**53**	*e*P		**P**		**20 59 31.9**	**+1.2**
	9.8nm,1.3s,mb4.3								
WVOR	**Wild Horse Val**	**87.73**	**41**	*e*P		**P**		**20 59 33.4**	**+0.7**
VGB	**Gordon Butte**	**88.38**	**37**	P		**P**		**20 59 35.7**	**+0.1**
CMAR	**Chiang Mai Arr**	**89.48**	**290**	P		**P**		**20 59 43.5**	**+2.2**
	1.4nm,1.0s,mb3.7,baz=144,slow=4.1,SNR=4.2								
HLID	**Hailey**	**90.91**	**42**	*e*P		**P**		**20 59 47.1**	**-0.3**
	0.7nm,0.6s,mb3.8								
SRU	**San Rafael**	**90.99**	**47**	*e*P		**P**		**20 59 48.1**	**+0.2**
HWUT	**Hardware Ranch**	**91.62**	**44**	*e*P		**P**		**20 59 50.6**	**-0.1**
	2.5nm,0.6s,mb4.4								
ILAR	**Eielson Array**	**92.88**	**14**	P		**P**		**20 59 54.1**	**-1.7**
	0.4nm,0.6s,mb3.6,baz=221,slow=5.3,SNR=7.5								
PDAR	**Pinedale Array**	**93.49**	**44**	P		**P**		**20 59 58.8**	**-0.4**
	0.4nm,0.5s,mb3.7,baz=198,slow=4.7,SNR=6.3								
MKAR	**Makanchi Array**	**112.44**	**313**	PKiKP				21 05 15.1	
	0.3nm,0.5s,baz=55,slow=0.4,SNR=6.3								
KURK	**Kurchatov**	**115.54**	**316**	P		PKPdf		21 05 20.4	0.0
ARCES	**ARCESS Array B**	**132.59**	**348**	PKhKP				21 05 46.7	
	1.0nm,0.9s,baz=100,slow=7.4,SNR=3.7								
ARCES				PKP		PKPdf		21 05 52.9	+0.2
	1.4nm,0.7s,baz=78,slow=2.2,SNR=15								
ARCES				SKPbc				21 08 33.1	
	4.9nm,1.1s,baz=34,slow=4.4,SNR=7.1								
ARCES	**ARCESS Array B**	**132.59**	**348**	PKP		PKPdf		21 05 46.7	-6.0
ARCES				PKP		PKPdf		21 05 52.9	+0.2
ARCES				SKPbc				21 08 33.1	
FINES	**FINESS Array B**	**139.08**	**341**	PKhKP				21 05 57.1	
	0.3nm,0.4s,baz=40,slow=3.1,SNR=9.2								
FINES				PKP		PKPdf		21 06 05.1	+0.3
	0.5nm,0.4s,baz=72,slow=4.4,SNR=7.1								
FINES				SKPbc				21 08 52.9	
	1.5nm,0.6s,baz=45,slow=5.4,SNR=9.0								
NB2	**NORSAR Subarra**	**142.81**	**351**	PKP				21 06 09.4	
	0.7nm,0.5s,baz=15,slow=2.9								
NOA	**NORSAR Array B**	**142.81**	**351**	PKhKP				21 06 08.9	
	2.0nm,0.8s,baz=15,slow=2.4,SNR=11								
BRTR	**Keskin Array B**	**147.78**	**306**	PKPbc		PKPdf		21 06 26.1	+5.8
	1.7nm,1.0s,baz=138,slow=3.7,SNR=6.3								
KWP	**Kalwaria**	**149.29**	**330**	*e*PKP		PKPdf		21 06 29.5	+7.2
OJC	**Ojcow**	**150.10**	**334**	*e*PKP		PKPdf		21 06 31.1	+7.5
NIE	**Niedzica**	**150.50**	**332**	*e*PKP		PKPdf		21 06 33.5	+9.3
KSP	**Ksiaz**	**150.90**	**338**	*e*PKP		PKPdf		21 06 33.4	+8.6
KSP	**Ksiaz**	**150.90**	**338**	*e*P		PKPdf		21 06 33.1	+8.3
CLL	**Collm**	**151.51**	**342**	*i*PKP1		PKPdf		21 06 34.4	+8.8
BRG	**Berggiesshubel**	**151.62**	**341**	*i* P		PKPdf		21 06 34.7	+8.9
GERES	**GERESS Array B**	**153.48**	**339**	PKPbc		PKPdf		21 06 37.6	+9.2
	0.4nm,0.7s,baz=72,slow=4.2,SNR=3.9								
HAU	**Haudompre**	**156.13**	**349**	*e*PKP2		PKPab		21 07 04.6	-1.0
	2.9nm,0.5s								
LDF	**La Druitiere**	**156.15**	**360**	*e*PKP2		PKPab		21 07 03.7	-1.9
HINF	**Hinteralfeld**	**156.22**	**348**	*e*PKP2		PKPab		21 07 04.8	-1.2
	1.4nm,0.4s								
SSF	**Saint Saulge**	**157.47**	**353**	*e*PKP2		PKPab		21 07 10.4	-1.0
	4.3nm,0.7s								
AVF	**Avril sur Loir**	**157.75**	**353**	*e*PKP2		PKPab		21 07 12.0	-0.6
SMF	**Signal de Mont**	**157.84**	**352**	*e*PKP2		PKPab		21 07 12.0	-1.0
	2.3nm,0.5s								
ESDC	**Sonseca Array**	**164.76**	**11**	PKPab		PKPab		21 07 42.0	-1.2
	0.1nm,0.4s,baz=337,slow=4.7,SNR=4.3								

IDC ***16*** *20:55:45.9±2.0,15.27S×173.36W,mb3.9/7,mb1 4.3/7, mb1mx4.1/14,MS3.6/1,Ms1 3.6/1,ms1mx2.9/27,Error ellipse: s-maj=121.0km s-min=20.3km az=144.0*
NEIC ***16*** *20:55:48.2±1.1,15.07S×173.52W,h10km,mb4.3/4,Error ellipse: s-maj=62.6km s-min=9.9km az=145.0*
ISC 16 20:55:46.3±1.4,15.1S±0.5×173.5W±0.4,h10km,n20, σ0$40/16,mb4.1/12,MS3.6/1,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**44.09**	**240**	P		**P**		**21 03 56.5**	**0.0**
	5.5nm,1.1s,mb4.2,baz=259,slow=15,SNR=6.3								
WB2	**Warramunga Arr**	**49.78**	**257**	*e*P		**P**		**21 04 42.2**	**+0.7**
WRAB	**Tennant Creek**	**49.78**	**257**	*e*P		**P**		**21 04 41.8**	**+0.3**
	1.8nm,0.5s,mb4.4								
WRA	**Warramunga Arr**	**49.79**	**257**	P		**P**		**21 04 41.0**	**-0.6**
	0.6nm,0.5s,mb3.9,baz=93,slow=7.1,SNR=21								
AS12	**Alice Springs**	**50.09**	**252**	*e*P		**P**		**21 04 43.6**	**-0.2**
	23nm,1.8s,mb4.9								
ASAR	**Alice Springs**	**50.09**	**252**	P		**P**		**21 04 43.5**	**-0.4**
	2.4nm,0.6s,mb4.4,baz=87,slow=8.4,SNR=32								
FITZ	**Fitzroy Crossi**	**58.15**	**258**	*e*P		**P**		**21 05 56.5**	**+13**
	4.4nm,1.0s,mb4.4								
FITZ	**Fitzroy Crossi**	**58.15**	**258**	LR		LR		21 28 45.9	
	comp=Z,51nm,19.3s,MS3.6,baz=28,slow=34								
NVAR	**Mina Array Bea**	**74.18**	**42**	P		**P**		**21 07 25.3**	**+0.1**
	0.7nm,0.7s,mb3.7,baz=217,slow=7.6,SNR=5.1								
NVAR	**Mina Array Bea**	**74.18**	**42**	P		**P**		**21 07 25.3**	**+0.1**
HLID	**Hailey**	**79.46**	**39**	*e*P		**P**		**21 07 55.0**	**+0.4**
	2.5nm,0.8s,mb4.2								
COLA	**College**	**82.07**	**11**	*e*P		**P**		**21 08 08.2**	**+0.2**
	3.7nm,0.8s,mb4.4								
PDAR	**Pinedale Array**	**82.11**	**42**	P		**P**		**21 08 08.2**	**-0.5**
	0.8nm,0.7s,mb3.8,baz=243,slow=3.3,SNR=5.1								
ILAR	**Eielson Array**	**82.16**	**11**	P		**P**		**21 08 07.8**	**-0.6**
	0.7nm,0.8s,mb3.6,baz=212,slow=6.6,SNR=7.2								
BOZ	**Bozeman (W)**	**82.25**	**39**	*e*P		**P**		**21 08 09.4**	**+0.1**

CN2 AMB AMB
comp=Z,10.0nm,0.6s,mb4.5
CN2 LR LR
comp=N,280nm,17.0s,MS3.9
CN2 LR LR
comp=E,160nm,17.0s,MS3.9
CN2 LR LR
comp=Z,170nm,19.0s,MS3.6
KLR Kul'dur 27.30 344 *eP* **P 21 10 09.6 -0.2**
CLNS Chul'man 35.95 343 *eP* **P 21 11 23.4 -2.0**
CLNS pmax pmax
comp=N,10.0nm,0.9s
CLNS pmax pmax
comp=E,6.0nm,0.9s
CLNS pmax pmax
comp=Z,20nm,0.9s,mb5.0
ULN Ulaanbaatar 37.60 320*c i P* **P 21 11 37.8 -1.6**
ULN Ulaanbaatar 37.60 320 *eP* **P 21 11 37.3 -2.1**
comp=Z,8.1nm,1.6s,mb4.2
SONM Songino Array 37.98 319 P **P 21 11 41.2 -1.4**
comp=Z,2.3nm,0.6s,mb4.1,baz=118,slow=7.9,SNR=7.8
SONM PcP PcP 21 13 55.7 -2.1
comp=Z,0.7nm,0.7s,baz=162,slow=4.6,SNR=3.0
YAK Yakutsk 39.70 350⇑*eP* **P 21 11 56.3 -0.3**
YAK pmax pmax
comp=Z,15nm,0.6s,mb4.9
YAK MLR MLR
comp=Z,100nm,20.0s,MS3.6
YAK Yakutsk 39.70 350 P **P 21 11 54.9 -1.7**
comp=Z,19nm,0.6s,mb5.0
ZAK Zakamensk 40.95 321⇑*eP* **P 21 12 06.1 -1.0**
CM31 Chiang Mai Arr 41.38 272 *eP* **P 21 12 12.3 +1.4**
comp=Z,12nm,0.5s,mb4.8
CMAR Chiang Mai Arr 41.38 272 P **P 21 12 12.1 +1.2**
comp=Z,9.5nm,0.5s,mb4.7,baz=61,slow=7.7,SNR=43
CMAR LR LR 21 28 10.0
comp=Z,89nm,18.4s,MS3.7,baz=80,slow=34
CMAR Chiang Mai Arr 41.38 272 P **P 21 12 12.1 +1.2**
CMAR LR LR 21 28 10.0
CTA Charters Tower 43.32 176⇑*iP* **P 21 12 27.1 +0.2**
comp=Z,4.9nm,0.6s,mb4.4
CTA Charters Tower 43.32 176 P **P 21 12 26.9 0.0**
comp=Z,7.1nm,0.7s,mb4.5,baz=342,slow=6.3,SNR=7.3
CTA pP pP 21 12 41.5 -0.2
comp=Z,4.3nm,0.6s,baz=14,slow=9.5,SNR=2.9
CTAO Charters Tower 43.32 176 *eP* **P 21 12 26.5 -0.4**
comp=Z,9.2nm,0.9s,mb4.5
WRAB Tennant Creek 43.88 192 *eP* **P 21 12 30.7 -0.8**
comp=Z,25nm,0.7s,mb5.0
WRAB *e* pP 21 12 47.2 +1.0
WB2 Warramunga Arr 43.89 192⇓*iP* **P 21 12 31.1 -0.4**
WB2 *i* pP 21 12 47.9 +1.6
WRA Warramunga Arr 43.89 192 P **P 21 12 30.8 -0.8**
comp=Z,4.2nm,0.4s,mb4.6,baz=17,slow=9.2,SNR=106
WRA pP pP 21 12 46.0 -0.3
comp=Z,12nm,0.8s,baz=7.6,slow=8.1,SNR=12
WRA PcP PcP 21 14 17.2 -0.2
comp=Z,2.1nm,0.5s,baz=6.8,slow=3.5,SNR=7.2
WRA ScP 21 18 06.0
comp=Z,1.0nm,0.8s,baz=4.0,slow=4.3,SNR=6.2
WRA Warramunga Arr 43.89 192 P **P 21 12 30.8 -0.8**
WRA PP pP 21 12 46.0 -0.3
WRA PP PP 21 14 17.2 +1.2
WRA PP PP 21 14 46.1 +30
FITZ Fitzroy Crossi 44.60 204⇓*iP* **P 21 12 37.1 -0.2**
comp=Z,9.6nm,0.9s,mb4.6
FITZ Fitzroy Crossi 44.60 204 P **P 21 12 37.1 -0.1**
comp=Z,7.0nm,0.4s,mb4.8,baz=17,slow=8.6,SNR=35
BILL Bilibino 46.90 12*c iP* **P 21 12 55.1 +0.3**
BILL *e* 21 13 01.9
BILL *e* pP 21 13 10.2 +0.5
BILL *e* 21 14 26.9
BILL *e* 21 14 45.7
BILL pmax pmax
comp=Z,4.0nm,0.6s,mb4.5
BILL Bilibino 46.90 12 *eP* **P 21 12 55.1 +0.3**
comp=Z,4.3nm,0.6s,mb4.6
BILL *e* 21 13 01.1
AS12 Alice Springs 47.60 191⇓*iP* **P 21 12 59.7 -1.3**
comp=Z,3.2nm,0.5s,mb4.6
ASAR Alice Springs 47.60 191 P **P 21 12 59.9 -1.1**
comp=Z,1.6nm,0.5s,mb4.3,baz=15,slow=10,SNR=27
ASAR pP pP 21 13 16.2 +0.4
comp=Z,0.9nm,0.5s,baz=13,slow=8.6,SNR=5.7
ASAR PcP PcP 21 14 30.6 +0.3
comp=Z,0.4nm,0.5s,baz=12,slow=3.4,SNR=2.7
ASAR LR LR 21 31 11.5
comp=Z,82nm,19.4s,MS3.7,baz=109,slow=34
TIXI Tiksi 48.97 354⇓*eP* **P 21 13 10.8 -0.1**
TIXI pmax pmax
comp=Z,5.0nm,0.7s,mb4.7
TIXI Tiksi 48.97 354 *eP* **P 21 13 10.9 0.0**
comp=Z,5.3nm,0.8s,mb4.6
WMQ Urumqi 49.44 308 *eP* **P 21 13 14.6 -0.3**
WMQ PCP PcP 21 14 37.5 +0.8
WMQ PP PP 21 15 08.9 -0.9
WMQ S **S 21 20 18.3 +1.7**
WMQ AMB AMB
comp=Z,9.0nm,1.2s,mb4.7
WMQ AMB AMB
comp=Z,72nm,5.1s
WMQ LR LR
comp=N,368nm,20.2s,MS4.5
WMQ LR LR
comp=E,241nm,20.0s,MS4.5
WMQ LR LR
comp=Z,476nm,20.3s,MS4.5
PKI Pulchoki 51.82 287 *eP* **P 21 13 33.3 +0.1**
comp=Z,11nm,0.6s,mb4.9
KKN Kakani 51.90 288 *eP* **P 21 13 34.0 +0.2**
comp=Z,18nm,0.7s,mb5.1
DMN Daman 52.08 288 *eP* **P 21 13 35.3 +0.2**
GKN Gorkha 52.43 288 *eP* **P 21 13 36.8 -0.9**
ZAL Zalesovo 52.84 321 P **P 21 13 39.6 -0.8**
comp=Z,1.6nm,0.5s,mb4.2,baz=275,slow=8.8,SNR=8.1
ZAL LR LR 21 38 49.4
comp=Z,68nm,18.9s,MS3.7,baz=101,slow=39
DANN Dangsing 53.14 289 *eP* **P 21 13 43.8 +0.8**
KOLN Koldanda 53.37 288 *eP* **P 21 13 45.0 +0.2**
comp=Z,31nm,0.9s,mb5.2
MKAR Makanchi Array 53.49 312 P **P 21 13 45.2 -0.2**
comp=Z,9.9nm,0.5s,mb5.0,baz=89,slow=9.4,SNR=189
MKAR LR LR 21 37 13.6
comp=Z,42nm,21.4s,MS3.5,baz=226,slow=37
MKAR Makanchi Array 53.49 312 P **P 21 13 44.5 -0.9**
MKAR pmax pmax
comp=Z,3.0nm,0.5s
STKA Stephens Creek 54.96 182⇓*iP* **P 21 13 54.8 -1.5**
comp=Z,3.5nm,0.5s,mb4.7
STKA Stephens Creek 54.96 182 P **P 21 13 55.1 -1.2**
comp=Z,4.1nm,0.5s,mb4.8,baz=349,slow=11,SNR=13
FORT Forrest 55.74 196⇓*iP* **P 21 14 00.8 -1.2**
comp=Z,42nm,0.6s,mb5.7
KURK Kurchatov 56.18 316 P **P 21 14 03.6 -1.2**
KURK pmax pmax
comp=Z,10.0nm,1.5s,mb4.6
KURK Kurchatov 56.18 316 *eP* **P 21 14 03.5 -1.4**
ULHL Ulahol 57.80 306 P **P 21 14 17.6 +1.2**
SNR=17
IMA Indian Mountai 58.07 25 *eP* **P 21 14 18.3 +0.3**
comp=Z,8.8nm,0.8s,mb4.8
TKM2 Tokmak 2 58.23 307 P **P 21 14 20.7 +1.2**
SNR=15
KZA Kyzart 58.55 306 P **P 21 14 23.7 +2.1**
SNR=23
KBK Karagaybulak 58.73 307 P **P 21 14 23.6 +0.8**
SNR=20
CHMS Chumysh 58.85 307 P **P 21 14 24.3 +0.6**
SNR=7.6
USP Ospenovka 59.01 308 P **P 21 14 25.1 +0.2**
SNR=13
AAK Ala-Archa 59.06 307 P **P 21 14 25.8 +0.6**
SNR=8.1
UCH Uchtor 59.08 306 P **P 21 14 27.1 +1.8**
SNR=31
MCK McKinley 59.57 29 *eP* **P 21 14 27.9 -0.5**
comp=Z,2.1nm,0.6s,mb4.3
EKS2 Erkin-Say 59.59 307 P **P 21 14 29.7 +0.9**
SNR=11
AML Almayashu 59.70 306 P **P 21 14 31.4 +1.8**
SNR=21
COLA College 60.21 27 *eP* **P 21 14 36.1 +3.3**
ILAR Eielson Array 60.60 28 P **P 21 14 34.4 -1.1**
comp=Z,4.1nm,0.7s,mb4.7,baz=256,slow=5.3,SNR=74
ILAR pP pP 21 14 49.1 -1.8
comp=Z,9.4nm,1.1s,baz=261,slow=5.5,SNR=9.5
VOSK Vostochnaya 60.98 319 P **P 21 14 36.8 -1.4**
VOSK pmax pmax
comp=Z,16nm,1.3s,mb5.0
NWAO Narrogin (SRO) 61.17 205 P **P 21 14 38.6 -1.2**
comp=Z,9.5nm,0.8s,mb5.0,baz=16,slow=7.4,SNR=3.5
BVA0 Borovoye Array 61.33 319 P **P 21 14 39.7 -0.8**
BRVK Borovoye 61.39 319⇑*iP* **P 21 14 40.2 -0.7**
KKAR Karatay Array 61.93 308 *i P* **P 21 14 44.7 0.0**
KKAR pmax pmax
comp=Z,7.0nm,0.5s,mb5.0
ZRNK Zerenda 62.17 319 P **P 21 14 45.4 -0.7**
ZRNK pmax pmax
comp=Z,21nm,1.0s,mb5.2
ZRNK Zerenda 62.17 319⇑*eP* **P 21 14 45.2 -1.0**
DAWY Dawson 63.80 29 *eP* **P 21 14 57.1 +0.4**
INK Inuvik 66.08 24 P **P 21 15 11.6 +0.2**
comp=Z,3.2nm,0.6s,mb4.5,baz=293,slow=5.2,SNR=22
INK Inuvik 66.08 24⇑*eP* **P 21 15 11.1 -0.3**
comp=Z,2.6nm,0.6s,mb4.4
ARU Arti 67.85 323⇑*iP* **P 21 15 22.1 -0.6**
ARU *e* 21 15 48.5
ARU *eS* S 21 24 17.1 +1.9
ARU pmax pmax
comp=Z,21nm,0.7s,mb5.3
ARU Arti 67.85 323 *eP* **P 21 15 22.0 -0.7**
comp=Z,8.2nm,0.4s,mb5.1
AB31 Akbulak array 68.27 316 *i P* **P 21 15 24.9 -0.5**
AB31 pmax pmax
comp=Z,1.0nm,0.4s,mb4.2
DLBC Dease Lake 68.80 34 LR LR 21 49 30.9
comp=Z,55nm,18.1s,MS3.8,baz=322,slow=39
URZ Urewera 69.15 152 P **P 21 15 31.4 +0.3**
comp=Z,7.4nm,0.6s,mb4.8,baz=343,slow=6.3,SNR=3.7
YKW3 Yellowknife Ar 75.00 28 *eP* **P 21 16 05.4 +0.2**
YKW3 *e* pP 21 16 19.8 -1.4
YKA Yellowknife Ar 75.03 28 P **P 21 16 05.7 +0.3**
comp=Z,3.1nm,0.5s,mb4.5,baz=292,slow=5.8,SNR=77
YKA pP pP 21 16 20.8 -0.5
comp=Z,2.7nm,0.8s,baz=293,slow=5.6,SNR=12
YKA Yellowknife Ar 75.03 28 P **P 21 16 05.7 +0.3**
YKA pP pP 21 16 20.8 -0.5
RES Resolute Bay 75.47 13 *eP* **P 21 16 08.4 +0.6**
comp=Z,5.2nm,0.8s,mb4.5
KEV Kevo 76.73 341 *ep* **P 21 16 14.5 -0.5**
comp=Z,5.4nm,0.8s,mb4.5
KEV Kevo 76.73 341 *eP* **P 21 16 14.5 -0.5**
KEV pmax pmax
comp=Z,5.0nm,0.8s,mb4.5
ARCES ARCESS Array B 77.30 341 P **P 21 16 18.7 +0.5**
comp=Z,2.9nm,0.6s,mb4.4,baz=79,slow=8.6,SNR=25
ARCES ARCESS Array B 77.30 341 P **P 21 16 18.7 +0.5**
THR Tehran 78.16 304 P **P 21 16 25.3 +1.7**
comp=Z,2.1nm,0.6s,mb4.2,baz=76,slow=4.8,SNR=11
JOF Joensuu 78.75 334 *ep* **P 21 16 25.0 -1.3**
comp=Z,8.8nm,0.4s,mb5.0
JOF Joensuu 78.75 334 *eP* **P 21 16 25.0 -1.3**
JOF pmax pmax
comp=Z,9.0nm,0.4s,mb5.0
DAG Danmarks Havn 79.45 356 *i P* **P 21 16 25.0 -4.9**
DAG Danmarks Havn 79.45 356 *eP* **P 21 16 25.0 -4.9**
ZEI Tsey 80.84 313⇑*eP* **P 21 16 38.7 +0.8**
KAF Kangasniemi 81.15 335 *ep* **P 21 16 36.6 -2.6**
baz=55,slow=4.9
KIV Kislovodsk 81.17 314 *eP* **P 21 16 41.9 +2.3**
FINES FINESS Array B 81.62 334 P **P 21 16 41.2 -0.4**
comp=Z,1.7nm,0.4s,mb4.4,baz=68,slow=5.6,SNR=36
FINES LR LR 21 52 03.6
comp=Z,41nm,18.4s,MS3.8,baz=348,slow=35
FINES FINESS Array B 81.62 334 *eP* **P 21 16 41.2 -0.4**
FINES FINESS Array B 81.62 334 P **P 21 16 41.2 -0.4**
FINES LR LR 21 52 03.6
NVAR Mina Array Bea 82.19 52 P **P 21 16 46.6 +1.6**
comp=Z,1.1nm,0.6s,mb4.0,baz=273,slow=3.7,SNR=12
FFC Flin Flon 84.46 32 *eP* **P 21 16 57.1 +1.0**
comp=Z,6.0nm,0.7s,mb4.8
FFC *e* pP 21 17 11.1 -1.2
FFC *e* 21 17 19.9
PDAR Pinedale Array 86.28 45 P **P 21 17 06.7 +1.2**
comp=Z,0.3nm,0.5s,mb3.8,baz=290,slow=2.1,SNR=4.6
MSU Marysvale 86.50 49 *eP* **P 21 17 07.0 +0.4**
NB2 NORSAR Subarra 87.34 339 P **P 21 17 09.2 -0.9**
comp=Z,0.7nm,0.6s,mb4.1,baz=43,slow=4.8
NOA NORSAR Array B 87.34 339 P **P 21 17 09.5 -0.7**
comp=Z,2.0nm,1.0s,mb4.3,baz=45,slow=4.4,SNR=6.4
NOA PP PP 21 20 34.1 -3.2
comp=Z,1.0nm,0.9s,baz=36,slow=7.6,SNR=3.4
NOA LR LR 22 01 00.8
comp=Z,29nm,19.5s,MS3.7,baz=30,slow=39
SRU San Rafael 87.37 48 *eP* **P 21 17 12.2 +1.4**
BRTR Keskin Array B 89.11 313 P **P 21 17 18.9 -0.2**
comp=Z,0.7nm,0.7s,mb4.1,baz=93,slow=2.4,SNR=3.8
GERES GERESS Array B 95.09 329 P **P 21 17 47.2 +0.8**
comp=Z,0.5nm,0.9s,mb3.9,baz=76,slow=8.1,SNR=2.8
LPAZ La Paz 149.87 82 PKP PKPdf 21 24 11.5 +3.3
comp=Z,3.4nm,0.6s,baz=244,slow=0.5,SNR=8.1
LPAZ PKPbc PKPdf 21 24 16.5 +8.3
comp=Z,3.9nm,0.7s,baz=278,slow=2.8,SNR=23
LPAZ La Paz 149.87 82 *e*PKPdf PKPdf 21 24 11.1 +2.9
LPAZ *e*PKPbc PKPdf 21 24 15.9 +7.7
LVC Limon Verde 150.59 95 *e*PKPbc PKPdf 21 24 17.6 +8.5

IDC **16** *21:18:27.5±1.1,5.70N×127.44E,mb4.0/9,mb1 4.2/9, mb1mx3.9/18,Error ellipse: s-maj=106.0km s-min=15.2km az=72.0*
NEIC **16** *21:18:29.4±0.6,5.61N×127.23E,h10km,mb4.4/2,Error ellipse: s-maj=62.9km s-min=7.9km az=71.0*
MAN **16** *21:18:33.4,5.70N×127.07E,h3km,mb4.3,ML3.1,MS2.8*
ISC 16 21:18:34.4±1.4,5.55N±0.08×127.2E±0.1,h66km±13km, n22,σ0ᵗ79/25,mb3.9/11,4C-1D,Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
GSPH	**General Santos**	**2.26**	**284**	*eP*		**P**	**21 19 06.7**	**-3.6**
KCP	**Kidapawan**	**2.51**	**305**⇑	*eP*		**P**	**21 19 13.0**	**-0.9**
KCP				*i*	S	**S**	**21 19 43.6**	**+0.2**
BIPH	**Bislig**	**2.73**	**343**⇓	*eP*		**P**	**21 19 16.9**	**-0.2**
BIPH				*i*	S	**S**	**21 19 55.0**	**+6.0**
BUTP	**Butuan**	**3.72**	**336**⇑	*eP*		**P**	**21 19 22.1**	**-8.7**
BUTP				*eS*		**S**	**21 20 26.6**	**+13**
PAGZ	**Pagadian**	**4.39**	**302**⇑	*eP*		**P**	**21 19 41.5**	**+1.3**
SCPH	**Surigao**	**4.52**	**339**	*eP*		**P**	**21 19 42.5**	**+0.5**
FITZ	**Fitzroy Crossi**	**23.55**	**184**	P		**P**	**21 23 40.9**	**+1.2**
	3.9nm,1.0s,mb3.7,baz=351,slow=9.5,SNR=6.7							
WRAB	**Tennant Creek**	**26.29**	**165**	*eP*		**P**	**21 24 05.1**	**-0.8**
	10.0nm,0.6s,mb4.4							
WRA	**Warramunga Arr**	**26.30**	**165**	P		**P**	**21 24 05.9**	**0.0**
	4.0nm,0.4s,mb4.0,baz=344,slow=10,SNR=38							
WB2	**Warramunga Arr**	**26.30**	**165**⇑	*iP*		**P**	**21 24 06.2**	**+0.2**
ASAR	**Alice Springs**	**29.77**	**167**	P		**P**	**21 24 36.5**	**-0.8**
	0.3nm,0.4s,mb3.3,slow=9.0,SNR=6.2							
STKA	**Stephens Creek**	**39.68**	**161**	P		**P**	**21 26 02.5**	**+0.7**
	4.1nm,0.8s,mb4.3,baz=328,slow=8.0,SNR=8.3							
ULN	**Ulaanbaatar**	**45.54**	**341**	*eP*		**P**	**21 26 50.5**	**+1.2**
	2.5nm,1.2s,mb3.8							
SONM	**Songino Array**	**45.73**	**341**	P		**P**	**21 26 50.1**	**-0.7**
	0.3nm,0.3s,mb3.5,baz=143,slow=7.2,SNR=2.6							
MKAR	**Makanchi Array**	**56.32**	**324**	P		**P**	**21 28 10.8**	**-0.1**
	1.3nm,0.5s,mb4.2,baz=120,slow=7.8,SNR=27							
MKAR	**Makanchi Array**	**56.32**	**324**	P		**P**	**21 28 10.8**	**-0.1**
ZAL	**Zalesovo**	**59.18**	**332**	P		**P**	**21 28 31.0**	**+0.2**
	0.8nm,0.4s,mb4.1,baz=291,slow=5.3,SNR=6.2							
KURK	**Kurchatov**	**60.45**	**327**	P		**P**	**21 28 39.7**	**+0.1**
BRVK	**Borovoye**	**66.11**	**326**	*eP*		**P**	**21 29 16.5**	**-0.3**
ZRNK	**Zerenda**	**66.78**	**326**	*eP*		**P**	**21 29 19.8**	**-1.3**
ARCES	**ARCESS Array B**	**88.90**	**340**	P		**P**	**21 31 22.0**	**-0.4**
	1.2nm,0.7s,mb4.0,baz=63,slow=8.1,SNR=6.7							
FINES	**FINESS Array B**	**90.44**	**332**	P		**P**	**21 31 30.4**	**+0.6**
	0.5nm,0.7s,mb3.8,baz=90,slow=3.8,SNR=4.1							

MEX 16 21:19:00.5±0.3,16.81N×92.23W,h11km±2km,MD4.2, Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
SCX	**San Cristobal**	**0.40**	**259**	*iP*		Pg	21 19 08.0	-0.6
SCX				*i*	S	Sg	21 19 14.0	0.0
CCIG	**Comitan**	**0.54**	**170**	*iP*		Pg	21 19 10.2	-1.1
CCIG				*i*	S	Sg	21 19 17.7	-1.0
CMIG	**Matias Romero**	**2.56**	**277**	*iP*		Pn	21 19 39.4	-3.3
CMIG				*i*	S	Sn	21 20 08.9	-5.1

BJI **16** *21:32:24.8,44.00N×128.20W,h10km,mB4.4,mb4.1, Ms4.5*
IDC **16** *21:32:27.1±2.6,43.99N×128.19W,mb3.4/3,mb1 3.7/8, mb1mx3.5/23,ML3.5/5,MS3.3/4,Ms1 3.3/4,ms1mx3.0/14, Error ellipse: s-maj=40.9km s-min=15.8km az=52.0*
NEIC **16** *21:32:28.9±0.9,44.01N×128.22W,h10km,mb4.0/8,Error ellipse: s-maj=11.9km s-min=5.8km az=69.0*
ISC 16 21:32:25.7±2.9,43.99N±0.05×128.27W±0.10,h1km±18km, n57,σ1ᵗ10/58,mb3.9/7,MS3.1/2,Off coast of Oregon

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
KEBM	**Edson Butte**	**3.08**	**110**	*eP*		**Pn**	**21 33 14.2**	**-2.2**
COR	**Corvallis**	**3.62**	**79**	*eP*		**Pn**	**21 33 23.5**	**-0.5**
KMOR	**Kings Mountain**	**3.78**	**63**	P		**Pn**	**21 33 25.9**	**-0.4**
HSO	**Harness Mounta**	**3.78**	**95**	*eP*		**Pn**	**21 33 26.0**	**-0.4**
HUMO	**Hull Mountain**	**4.12**	**108**	*eP*		**Pn**	**21 33 29.4**	**-1.8**
BBOR	**Butler Butte**	**4.22**	**103**	P		**Pn**	**21 33 32.0**	**-0.6**
SSOR	**Sweet Springs**	**4.25**	**76**	P		**Pn**	**21 33 33.5**	**+0.5**
BMW	**Boistfort Moun**	**4.34**	**53**	*eP*		**Pn**	**21 33 33.5**	**-0.8**
GT2	**Goat Mountain**	**4.44**	**73**	P		**Pn**	**21 33 36.1**	**+0.4**
HUOR	**Husband**	**4.63**	**86**	P		**Pn**	**21 33 38.5**	**+0.1**
YBH	**Yreka Blue Hor**	**4.67**	**117**	Pn		**Pn**	**21 33 37.6**	**-1.3**
	0.2nm,0.3s,baz=300,slow=9.4,SNR=6.5							
YBH				Sn		**Sn**	**21 34 33.3**	**-1.3**
	0.1nm,0.3s,baz=51,slow=14,SNR=1.9							
YBH	**Yreka Blue Hor**	**4.67**	**117**	*eP*		**Pn**	**21 33 37.4**	**-1.6**
VLMM	**Larch Mountain**	**4.70**	**69**	P		**Pn**	**21 33 40.0**	**+0.6**
OCWA	**Octopus Mounta**	**4.72**	**36**	*eP*		**Pn**	**21 33 39.5**	**-0.2**
FL2	**Flat Top 2**	**4.74**	**60**	P		**Pn**	**21 33 40.3**	**+0.4**
TDH	**Tom, Dick, Har**	**4.80**	**72**	P		**Pn**	**21 33 41.4**	**+0.5**
SHW	**Mount Saint He**	**4.80**	**61**	*eP*		**Pn**	**21 33 40.9**	**0.0**
VLL	**Laurance Lake**	**4.92**	**70**	P		**Pn**	**21 33 43.4**	**+0.8**
VFP	**Flag Point**	**5.03**	**72**	P		**Pn**	**21 33 44.4**	**+0.3**
ASR	**Mount Adams--S**	**5.20**	**63**	P		**Pn**	**21 33 47.0**	**+0.6**
GNW	**Green Mountain**	**5.22**	**45**	*eP*		**Pn**	**21 33 46.4**	**-0.4**
LON	**Longmire**	**5.32**	**57**	P		**Pn**	**21 33 47.8**	**-0.4**
WDC	**Whiskeytown Da**	**5.45**	**127**	*eP*		**Pn**	**21 33 49.1**	**-0.8**
RMW	**Rattlesnake Mo**	**5.70**	**50**	P		**Pn**	**21 33 56.0**	**+2.5**
PGC	**Sidney**	**5.73**	**34**	P		**Pn**	**21 33 51.6**	**-2.3**
MXC	**Moxie City**	**6.19**	**63**	P		**Pn**	**21 34 08.0**	**+7.5**
MOD	**Modoc**	**6.21**	**107**	*eP*		**Pn**	**21 34 02.7**	**+2.0**
RPW	**Rockport**	**6.47**	**44**	*eP*		**Pn**	**21 34 04.5**	**+0.2**
HAWA	**Hanford**	**6.62**	**66**	*eP*		**Pn**	**21 34 05.5**	**-1.0**
WVOR	**Wild Horse Val**	**7.21**	**99**	*eP*		**Pn**	**21 34 13.5**	**-1.3**
BBB	**Bella Bella**	**8.20**	**1**	Pn		**P**	**21 34 28.1**	**-0.5**
	0.3nm,0.3s,baz=151,slow=13,SNR=2.4							
CMB	**Columbia Colle**	**8.42**	**132**	*eP*		**P**	**21 34 30.6**	**-1.1**
NEW	**Newport**	**8.84**	**57**	Pn		**P**	**21 34 36.3**	**-1.3**
	0.2nm,0.3s,baz=249,slow=14,SNR=2.7							
NEW				LR		LR	21 38 03.0	
	comp=Z,185nm,21.4s,baz=331,slow=38							
NEW	**Newport**	**8.84**	**57**	P		**P**	**21 34 35.4**	**-2.2**
NVAR	**Mina Array Bea**	**9.34**	**123**	Pn		**P**	**21 34 45.2**	**+0.8**
	0.1nm,0.3s,baz=294,slow=12,SNR=6.8							
NVAR				LR		LR	21 38 19.1	
	comp=Z,190nm,18.3s,baz=325,slow=38							
HLID	**Hailey**	**10.03**	**88**	*eP*		**P**	**21 34 56.5**	**+2.5**
HWUT	**Hardware Ranch**	**12.50**	**95**	*eP*		**P**	**21 35 28.2**	**+0.7**
MSU	**Marysvale**	**13.28**	**109**	*eP*		**P**	**21 35 39.1**	**+1.2**
PDAR	**Pinedale Array**	**13.67**	**89**	Pn		**P**	**21 35 45.6**	**+2.7**
	0.1nm,0.3s,baz=294,slow=11,SNR=6.4							
SRU	**San Rafael**	**14.15**	**104**	P		**P**	**21 35 51.1**	**+1.7**
WUAZ	**Wupatki**	**15.49**	**117**	*eP*		**P**	**21 36 08.3**	**+1.5**
	33nm,1.6s							
ISCO	**Idaho Springs**	**17.37**	**96**	*eP*		**P**	**21 36 30.1**	**-0.7**
	25nm,1.8s							
SDCO	**Great Sand Dun**	**18.29**	**102**	*eP*		**P**	**21 36 42.6**	**+0.3**
LAZ	**Ladron**	**18.93**	**113**	*eP*		**P**	**21 36 50.8**	**+0.7**
ANMO	**Albuquerque**	**19.06**	**111**	*eP*		**P**	**21 36 52.0**	**+0.3**
	15nm,1.6s							
BNM	**Barren Site**	**19.42**	**113**	*eP*		**P**	**21 36 55.8**	**-0.1**
FFC	**Flin Flon**	**20.09**	**48**	*eP*		**P**	**21 37 02.6**	**-0.6**
	9.6nm,1.2s							
YKA	**Yellowknife Ar**	**20.18**	**19**	P		**P**	**21 37 02.6**	**-1.6**
	1.8nm,0.9s,baz=206,slow=11,SNR=21							
MNTX	**Cornudas Mount**	**21.77**	**117**	*eP*		**P**	**21 37 20.1**	**-0.6**
	8.2nm,1.5s,mb3.9							
ULM	**Lac du Bonnet**	**22.79**	**63**	P		**P**	**21 37 31.8**	**+1.2**
	1.6nm,0.5s,mb3.8,baz=268,slow=11,SNR=4.0							
ULM				LR		LR	21 46 47.0	
	comp=Z,113nm,18.2s,MS3.4,baz=192,slow=38							
ILAR	**Eielson Array**	**23.29**	**340**	P		**P**	**21 37 35.8**	**+0.4**
	0.4nm,0.8s,mb3.0,baz=153,slow=10,SNR=7.0							
ILAR				LR		LR	21 45 08.3	
	comp=Z,42nm,20.3s,MS2.9,baz=359,slow=33							
WMOK	**Wichita Mounta**	**24.49**	**102**	*eP*		**P**	**21 37 48.5**	**+1.1**
	24nm,1.2s,mb4.6							
INK	**Inuvik**	**24.53**	**355**	*eP*		**P**	**21 37 48.3**	**+0.9**
	1.6nm,0.8s,mb3.8							
CCM	**Cathedral Cave**	**28.39**	**89**	*eP*		**P**	**21 38 22.7**	**-0.7**
	1.9nm,0.7s,mb4.0							
MDJ	**Mudanjiang**	**67.91**	**311**	P		**P**	**21 43 26.4**	**-1.3**
MDJ				AMB		AMB		
	comp=Z,3.0nm,2.0s,mb4.2							
MDJ				AMB		AMB		
	comp=Z,25nm,5.4s							
CN2	**Changchun**	**70.68**	**313**	*eP*		**P**	**21 43 44.5**	**-0.3**
WMQ	**Urumqi**	**86.86**	**335**	*eP*		**P**	**21 45 15.3**	**+2.5**

NEIC **16** *22:05:27.1±0.1,10.87S×165.45E,mb5.2/40,MS4.9/93, Error ellipse: s-maj=5.1km s-min=3.5km az=119.0*
HRVD **16** *22:05:27.1±0.2,10.94S×165.26E,h18km,MW5.2/63, Centroid moment Tensor Solution. LP body waves: s51,c75;Mantle waves: s63,c100; Half duration: 1s0 Moment tensor: Scale 10¹⁷Nm; Mrr0.55±.02; Mθθ-0.13±.02; Mφφ-0.42±.01; Mrθ0.30±.04; Mθφ0.24±.01; Mφr-0.67±.03; Best double couple: M₀.92×10¹⁷ NP1: φs326°,δ19°,λ82°. NP2:φs155°,δ71°,λ93°. Principal axes: T.92, Plg63°, Azm70°; N 0, Plg3°, Azm334°; P -.92, Plg26°, Azm243°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
BJI **16** *22:05:27.1, 10.90S×165.40E,h21km,mB5.2,mb5.0, Ms4.9,Msz4.6*
SYO **16** *22:05:27.1, 10.87S×165.45E,h21km,MB5.2,MS4.9*
IDC **16** *22:05:27.8±0.7,10.93S×165.44E,h26km±4km,mb4.7/15, mb1 4.8/16,mb1mx4.8/19,ML3.2/1,MS4.7/7,Ms1 4.7/7, ms1mx4.4/14,Error ellipse: s-maj=18.0km s-min=10.7km az=144.0*
ISC 16 22:05:25.5±0.2,10.93S±0.04×165.43E±0.05,h20km, h20km±.9km:pP-P,n222,σ0ᵗ74/137,mb5.1/56,MS4.9/109, 17C-1D,Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
BKM	**Butte a Klehm**	**7.23**	**158**	*iP*		**Pn**	**22 06 58.2**	**-15**
DZM	**Mont Dzumac**	**11.12**	**175**	*eP*		**P**	**22 08 04.4**	**-2.3**
NOUC	**Port Laguerre**	**11.14**	**176**	*eP*		**P**	**22 08 06.4**	**-0.5**
NOUC				*eS*		**S**	**22 10 04.8**	**-7.1**
NOUC	**Port Laguerre**	**11.14**	**176**	*eP*		**P**	**22 08 06.4**	**-0.6**
NOUC				*eS*		**S**	**22 10 04.8**	**-7.1**
PMG	**Port Moresby**	**18.05**	**273**	P		**P**	**22 09 37.5**	**+0.4**
	0.2nm,0.3s,baz=130,slow=18,SNR=2.5							
PMG				S		**S**	**22 13 05.8**	**+11**
	0.6nm,0.3s,baz=132,slow=16,SNR=2.1							

comp=Z,12nm,1.1s,mb4.5
STKA eS S 22 16 37.6 +1.9
STKA Stephens Creek 30.31 223 P **P** **22 11 38.0 0.0**
comp=Z,5.0nm,0.8s,mb4.3,baz=39,slow=9.5,SNR=6.2
STKA LR LR 22 23 14.4
comp=Z,3µm,18.7s,MS4.9,baz=38,slow=35
BFZ Birch Farm 31.13 164 P **P** **22 11 43.7 -1.4**
BFZ Birch Farm 31.13 164 eP **P** **22 11 43.7 -1.4**
WRAB Tennant Creek 31.22 250 eP **P** **22 11 45.0 -1.1**
comp=Z,220nm,1.5s,mb5.8
WRAB LR LR
comp=Z,1µm,19.0s,MS4.6
WB2 Warramunga Arr 31.22 250 eP **P** **22 11 45.5 -0.6**
WRA Warramunga Ar 31.23 250 P **P** **22 11 44.5 -1.7**
comp=Z,11nm,1.0s,mb4.6,baz=82,slow=9.0,SNR=38
WRA PcP PcP 22 14 40.1 -0.6
comp=Z,4.5nm,1.0s,baz=72,slow=2.7,SNR=6.4
WRA S **S** **22 16 45.9 -4.4**
comp=Z,2.3nm,1.3s,baz=78,slow=15,SNR=3.1
WRA LR LR 22 23 03.0
comp=Z,1µm,20.1s,MS4.5,baz=90,slow=34
SNZO South Karori 31.34 166 PFAKE 22 12 00.0 +13
SNZO LR LR
comp=Z,1µm,19.0s,MS4.7
THZ Tophouse 31.40 169 P **P** **22 11 47.7 +0.2**
THZ Tophouse 31.40 169 eP **P** **22 11 47.7 +0.2**
GUMO Guam 31.77 320 PFAKE 22 12 00.0 +9.0
GUMO LR LR
comp=Z,1µm,20.0s,MS4.6
LTZ Lake Taylor 32.28 171 P **P** **22 11 55.5 +0.3**
LTZ Lake Taylor 32.28 171 eP **P** **22 11 55.5 +0.3**
WVZ Waitaha Valley 32.35 173 P **P** **22 11 57.9 +2.1**
AS12 Alice Springs 32.57 243 eP **P** **22 11 56.5 -1.3**
comp=Z,29nm,0.9s,mb5.2
ASAR Alice Springs 32.57 243 P **P** **22 11 55.9 -1.9**
comp=Z,15nm,0.8s,mb4.9,baz=74,slow=9.5,SNR=65
ASAR pP pP 22 12 04.7 +0.8
comp=Z,22nm,0.8s,baz=62,slow=10,SNR=18
ASAR PcP PcP 22 14 43.8 -0.5
comp=Z,4.9nm,0.8s,baz=84,slow=3.0,SNR=10
ASAR LR LR 22 24 11.2
comp=Z,1µm,19.4s,MS4.5,baz=69,slow=34
RPZ Rata Peaks 33.02 173 P **P** **22 12 00.7 -1.0**
comp=Z,13nm,0.6s,mb5.0,baz=358,slow=2.4,SNR=8.9
RAR Rarotonga 34.89 111 LR LR 22 23 12.6
comp=Z,2µm,19.9s,MS4.8,baz=281,slow=30
RAR Rarotonga 34.89 111 PFAKE 22 12 30.0 +12
RAR LR LR
comp=Z,2µm,19.0s,MS4.9
FITZ Fitzroy Crossi 39.11 255 eP **P** **22 12 53.3 -0.2**
comp=Z,8.5nm,0.9s,mb4.5
FITZ Fitzroy Crossi 39.11 255 P **P** **22 12 53.9 +0.3**
comp=Z,5.1nm,0.8s,mb4.3,baz=105,slow=5.8,SNR=9.2
NWAO Narrogin (SRO) 49.27 236 PFAKE 22 14 30.0 +15
NWAO LR LR
comp=Z,2µm,20.0s,MS5.1
TGY Tagaytay City 50.65 298 LR LR 22 33 28.9
comp=Z,733nm,18.8s,MS4.7,baz=128,slow=33
MAJO Matsushiro 53.73 333 eP **P** **22 14 46.9 -1.7**
comp=Z,15nm,1.0s,mb4.9
MAJO LR LR
comp=Z,345nm,20.0s,MS4.4
MAT Matsushiro 53.73 333 P **P** **22 14 46.8 -1.9**
MAT eS **S** **22 22 15.6 -4.5**
MAT Matsushiro 53.73 333 eP **P** **22 14 47.0 -1.7**
comp=Z,11nm,1.0s,mb4.7
MAT S **S** **22 22 16.0 -4.1**
ASAJ Asahikawa 58.59 341 P **P** **22 15 23.2 -0.1**
comp=Z,15nm,0.9s,mb5.0,baz=220,slow=14,SNR=11
INCN Inchon 60.35 325 PFAKE 22 15 50.0 +14
INCN LR LR
comp=Z,263nm,19.0s,MS4.4
YSS Yuzh-Sakhalins 61.09 342 eP **P** **22 15 40.4 -0.1**
comp=Z,13nm,0.7s,mb5.2
YSS LR LR
comp=Z,360nm,19.0s,MS4.5
QIZ Qiongzhong 62.35 298 P **P** **22 15 53.3 +3.8**
QIZ S **S** **22 24 16.4 +3.3**
QIZ LR LR
comp=N,207nm,22.4s,MS4.5
QIZ LR LR
comp=E,378nm,24.7s,MS4.5
QIZ LR LR
comp=Z,526nm,22.0s,MS4.7
PET Petropavlovsk 63.96 355 PFAKE 22 16 10.0 +10
PET LR LR
comp=Z,397nm,19.0s,MS4.6
MDJ Mudanjiang 64.11 332 P **P** **22 16 01.1 +0.4**
MDJ PP PP 22 18 23.8 +0.3
MDJ S **S** **22 24 36.1 +1.4**
MDJ XS 22 24 44.8
MDJ SCS ScS 22 25 55.3 +5.6
MDJ AMB AMB
comp=Z,13nm,1.2s,mb4.8
MDJ AMB AMB
comp=Z,73nm,8.0s
MDJ LR LR
comp=N,182nm,16.9s,MS4.5
MDJ LR LR
comp=E,185nm,15.4s,MS4.5
MDJ LR LR
comp=Z,201nm,16.4s,MS4.4
CN2 Changchun 65.49 329 eP **P** **22 16 09.1 -0.5**
CN2 eAP pP 22 16 14.8 -1.2
CN2 eXP sP 22 16 17.5 -0.8
CN2 eS S 22 24 51.1 -0.6
CN2 SS SS 22 29 07.1 +0.1
CN2 AMB AMB
comp=Z,200nm,4.0s
CN2 LR LR
comp=N,300nm,13.0s,MS4.8
CN2 LR LR
comp=E,300nm,13.0s,MS4.8
CN2 LR LR
comp=Z,400nm,15.0s,MS4.7
SBA Scott Base 66.91 180 eP **P** **22 16 18.6 +0.4**
comp=Z,15nm,0.9s,mb5.0
SBA LR LR
comp=Z,394nm,19.0s,MS4.7
GYA Guiyang 68.10 304⇑ *iP* **P** **22 16 32.0 +5.5**
GYA AP pP 22 16 38.3 +5.4
GYA XP sP 22 16 41.6 +6.5
GYA PP PP 22 19 04.8 +6.0
GYA S S 22 25 30.4 +6.8
GYA XS 22 25 41.6
GYA AMB AMB
comp=Z,40nm,1.2s,mb5.3
GYA AMB AMB
comp=Z,680nm,8.6s
GYA LR LR
comp=N,210nm,18.9s,MS4.6
GYA LR LR
comp=E,210nm,15.5s,MS4.6
GYA LR LR
comp=Z,470nm,17.5s,MS4.8
BJI Beijing 68.20 321 eP **P** **22 16 26.8 -0.1**
BJI AMB AMB
comp=Z,15nm,1.4s,mb4.8
BJI LR LR
comp=N,305nm,16.4s,MS4.8
BJI LR LR
comp=E,365nm,21.1s,MS4.8
BJI LR LR
comp=Z,358nm,27.4s
KMI Kunming 70.80 301 eP **P** **22 16 43.3 +0.2**
KMI PP PP 22 19 23.6 +1.5
KMI S S 22 25 58.3 +2.9
KMI SS SS 22 30 28.0 -1.8
KMI AMB AMB
comp=Z,14nm,1.6s,mb4.6
KMI AMB AMB
comp=Z,130nm,5.9s
KMI LR LR
comp=N,218nm,17.1s,MS4.7
KMI LR LR
comp=E,327nm,18.7s,MS4.7
KMI LR LR
comp=Z,300nm,19.5s,MS4.6
MA2 Magadan 71.25 352 PFAKE 22 17 00.0 +15
MA2 LR LR
comp=Z,280nm,20.0s,MS4.5
HHC Hu-ho-hao-te 71.55 320 eP **P** **22 16 48.4 +1.1**
HHC AP pP 22 16 53.4 -0.3
HHC S S 22 26 09.9 +6.1
HHC XS 22 26 24.8
HHC SKS SKS 22 26 46.8 -5.0
HHC SCS ScS 22 26 50.3 +2.7
HHC AMB AMB
comp=Z,9.0nm,1.2s,mb4.6
HHC AMB AMB
comp=Z,99nm,4.9s
HHC LR LR
comp=N,159nm,16.1s
HHC LR LR
comp=E,146nm,21.4s
HHC LR LR
comp=Z,179nm,17.8s,MS4.4
CMAR Chiang Mai Arr 71.78 294 P **P** **22 16 49.5 +0.4**
comp=Z,3.4nm,1.0s,mb4.2,baz=117,slow=5.3,SNR=6.1
CMAR pP pP 22 16 57.0 +1.5
comp=Z,3.5nm,0.9s,baz=120,slow=5.1,SNR=8.2
CD2 Chengdu 72.29 307 P **P** **22 16 52.1 +0.2**
CD2 S S 22 26 06.6 -5.9
CD2 SS SS 22 30 47.3 -5.3
CD2 AMB AMB
comp=Z,30nm,1.2s,mb5.1
CD2 AMB AMB
comp=Z,240nm,12.0s
CD2 LR LR
comp=N,360nm,15.6s
CD2 LR LR
comp=Z,320nm,18.0s,MS4.6
LZH Lanzhou 74.45 312 eP **P** **22 17 05.5 +1.0**
LZH AP pP 22 17 11.8 +0.9
LZH XP sP 22 17 14.1 +1.0
LZH AMB AMB
comp=Z,39nm,1.5s,mb5.1
LZH AMB AMB
comp=Z,171nm,4.1s
LZH LR LR
comp=E,233nm,18.0s
LZH LR LR
comp=Z,306nm,20.0s,MS4.6
KDAK Kodiak Island 76.59 22 PFAKE 22 17 30.0 +14
KDAK LR LR
comp=Z,490nm,20.0s,MS4.8
YAK Yakutsk 77.90 344 PFAKE 22 17 30.0 +6.7
YAK LR LR
comp=Z,302nm,19.0s,MS4.6
ULN Ulaanbaatar 78.03 324 eP **P** **22 17 25.0 +0.6**
comp=Z,5.2nm,0.9s,mb4.5
ULN LR LR
comp=Z,210nm,19.0s,MS4.5
SVW Sparrevohn 78.10 18 eP **P** **22 17 24.8 +0.4**
comp=Z,21nm,0.9s,mb5.1
SONM Songino Array 78.39 324 P **P** **22 17 27.0 +0.6**
comp=Z,3.1nm,0.9s,mb4.2,baz=164,slow=9.0,SNR=4.1
RSO Redoubt South 78.52 20 eP **P** **22 17 24.4 -2.3**
BILL Bilibino 78.77 0 eP **P** **22 17 27.8 -0.2**
QSPA South Pole Qui 79.07 180 eP **P** **22 17 29.9 +0.4**
comp=Z,26nm,1.0s,mb5.1
QSPA LR LR
comp=Z,450nm,18.3s,MS4.8
FIB Fire Island 79.90 20 PFAKE 22 17 50.0 +16
FIB LR LR
comp=Z,2µm,19.0s,MS5.4
PMR Palmer 80.56 20 eP **P** **22 17 37.7 0.0**
comp=Z,29nm,1.4s,mb5.0
MCK McKinley 82.14 19 PFAKE 22 18 00.0 +14
MCK LR LR
comp=Z,179nm,21.0s,MS4.4
IMA Indian Mountai 82.48 16 eP **P** **22 17 48.3 +0.6**
comp=Z,16nm,1.0s,mb4.9
HOPS Hopland 82.83 48 PFAKE 22 18 00.0 +10
HOPS LR LR
comp=Z,566nm,19.0s,MS5.0
COLA College 83.28 18 eP **P** **22 17 51.1 -0.7**
comp=Z,24nm,1.1s,mb5.1
COLA LR LR
comp=Z,289nm,22.0s,MS4.6
SAO San Andreas Ge 83.30 51 PFAKE 22 18 00.0 +7.5
SAO LR LR
comp=Z,890nm,19.0s,MS5.2
SIT Sitka 83.30 28 eP **P** **22 17 52.1 0.0**
comp=Z,32nm,1.3s,mb5.2
SIT LR LR
comp=Z,766nm,20.0s,MS5.1
ILAR Eielson Array 83.50 19 P **P** **22 17 52.0 -0.9**
comp=Z,5.1nm,0.8s,mb4.7,baz=237,slow=5.0,SNR=56
ILAR pP pP 22 18 01.6 +2.1
comp=Z,7.1nm,0.7s,baz=236,slow=4.8,SNR=18
WDC Whiskeytown Da 83.76 47 PFAKE 22 18 10.0 +15
WDC LR LR
comp=Z,451nm,19.0s,MS4.9
YBH Yreka Blue Hor 84.04 46 P **P** **22 17 56.8 +0.6**
comp=Z,26nm,0.9s,mb5.4,baz=238,slow=0.9,SNR=67
YBH Yreka Blue Hor 84.04 46 P **P** **22 17 56.8 +0.6**
YBH LR LR
comp=Z,261nm,21.0s,MS4.6
HUMO Hull Mountain 84.17 45 P **P** **22 17 57.3 +0.5**
CMB Columbia Colle 84.50 50 PFAKE 22 18 10.0 +11
CMB LR LR
comp=Z,735nm,20.0s,MS5.1
COR Corvallis 84.63 43 P **P** **22 17 58.5 -0.6**
comp=Z,34nm,1.4s,mb5.3
COR LR LR
comp=Z,2µm,20.0s,MS5.4
MAW Mawson 84.71 202 P **P** **22 17 60.0 +1.0**
comp=Z,3.2nm,0.8s,mb4.5,baz=139,slow=4.0,SNR=5.2
MAW LR LR 22 52 54.4
comp=Z,211nm,18.5s,MS4.6,baz=323,slow=34
MAW Mawson 84.71 202 eP **P** **22 17 59.9 +1.0**
comp=Z,26nm,1.2s,mb5.2
BEKR Beckwourth 85.10 48⇑ *iP* **P** **22 18 01.6 0.0**
comp=Z,21nm,1.0s,mb5.2
MWC Mount Wilson 85.16 54 eP **P** **22 18 01.7 -0.4**
OCWA Octopus Mounta 85.22 40⇑ eP **P** **22 18 02.7 +0.7**
comp=Z,24nm,0.8s,mb5.4
OCWA LR LR
comp=Z,471nm,20.0s,MS4.9
BMW Boistfort Moun 85.36 41 eP **P** **22 18 02.4 -0.3**
WCN Washoe City 85.37 49⇑ *iP* **P** **22 18 03.3 +0.3**
comp=Z,22nm,1.2s,mb5.2
DAWY Dawson 85.56 21 eP **P** **22 18 03.1 -0.1**
MTUM Tungsten Hills 85.67 51 eP **P** **22 18 04.7 +0.2**
MOD Modoc 85.79 46 eP **P** **22 18 04.8 -0.2**
comp=Z,20nm,1.0s,mb5.3
MOD LR LR
comp=Z,300nm,19.0s,MS4.7
PGC Sidney 86.00 39 eP **P** **22 18 05.6 -0.2**
comp=Z,119nm,1.4s,mb5.9
PGC epP pP 22 18 12.1 -0.3
GNW Green Mountain 86.00 40⇑ eP **P** **22 18 05.6 -0.3**
GNW epP pP 22 18 12.1 -0.3
DAC Darwin (Calif) 86.11 52 PFAKE 22 18 20.0 +13
DAC LR LR
comp=Z,574nm,22.0s,MS4.9
NVAR Mina Array Bea 86.19 50 P **P** **22 18 07.2 +0.2**
comp=Z,20nm,0.9s,mb5.3,baz=222,slow=5.7,SNR=96
PFO Pinyon Flat Ob 86.27 55 eP **P** **22 18 07.0 -0.6**
comp=Z,28nm,1.3s,mb5.3
PFO LR LR
comp=Z,1µm,19.0s,MS5.3
LON Longmire 86.37 41 eP **P** **22 18 07.2 -0.5**
DLBC Dease Lake 86.46 28 eP **P** **22 18 07.4 -0.4**
FMW Mount Fremont 86.52 41 P **P** **22 18 08.7 +0.2**
RMW Rattlesnake Mo 86.61 40 P **P** **22 18 09.3 +0.4**
TPH Tonopah 86.90 50 eP **P** **22 18 10.6 0.0**
comp=Z,11nm,1.0s,mb5.0
TPH LR LR
comp=Z,701nm,19.0s,MS5.1
WVOR Wild Horse Val 87.13 46 eP **P** **22 18 11.6 +0.1**
comp=Z,31nm,1.1s,mb5.4
WVOR LR LR
comp=Z,480nm,20.0s,MS4.9
RPW Rockport 87.14 40 eP **P** **22 18 10.9 -0.5**
EBG Ellensburg 87.23 41 P **P** **22 18 12.2 +0.3**
BMN Battle Mountai 87.57 48 eP **P** **22 18 13.8 +0.2**
comp=Z,7.7nm,1.0s,mb4.9
BMN LR LR
comp=Z,239nm,20.0s,MS4.6
LDFC Landfair 87.73 54 eP **P** **22 18 14.8 +0.2**
HAWA Hanford 87.74 42⇑ eP **P** **22 18 14.2 -0.1**
comp=Z,31nm,1.3s,mb5.4
HAWA LR LR
comp=Z,408nm,19.0s,MS4.9
NLW Nelson Butte 87.75 40 eP **P** **22 18 13.4 -1.0**
WAH2 Wahluke Slope 87.83 42 P **P** **22 18 15.1 +0.3**
WTV Waterville 87.88 41 P **P** **22 18 15.1 +0.1**
NEN Nelson 88.09 53 eP **P** **22 18 16.1 -0.3**
LNOR Lincton Mounta 88.40 43 eP **P** **22 18 16.9 -0.7**
WMQ Urumqi 88.80 315 eP **P** **22 18 19.8 +0.3**
WMQ AP pP 22 18 26.3 +0.3
WMQ XP sP 22 18 28.9 +0.8
WMQ PP PP 22 21 51.3 +0.3
WMQ SKS SKS 22 28 45.9 -6.5
WMQ S S 22 29 04.1 +0.6
WMQ XS 22 29 14.8
WMQ PS PS 22 30 13.1 +0.3
WMQ SS SS 22 34 59.3 +0.3
WMQ AMB AMB
comp=Z,45nm,1.5s,mb5.6
WMQ AMB AMB
comp=Z,297nm,7.6s
WMQ LR LR
comp=N,425nm,17.2s,MS5.1
WMQ LR LR
comp=E,555nm,18.7s,MS5.1
WMQ LR LR
comp=Z,639nm,18.0s,MS5.1
NEW Newport 89.86 41 eP **P** **22 18 23.6 -0.8**
comp=Z,23nm,1.6s,mb5.2
NEW LR LR
comp=Z,284nm,20.0s,MS4.7
HLID Hailey 90.42 46⇑ eP **P** **22 18 27.4 +0.2**
comp=Z,17nm,1.0s,mb5.3
HLID LR LR
comp=Z,278nm,19.0s,MS4.7
TUC Tucson 90.58 57⇑ *iP* **P** **22 18 28.6 +0.5**
comp=Z,16nm,1.2s,mb5.2
TUC epP pP 22 18 34.5 -0.2
TUC LR LR
comp=Z,576nm,19.0s,MS5.0
BGU Big Grassy Mou 90.77 49 eP **P** **22 18 28.8 0.0**
BGU epP pP 22 18 34.3 -1.0
WUAZ Wupatki 90.81 54 eP **P** **22 18 29.7 +0.6**
comp=Z,23nm,1.0s,mb5.5
WUAZ epP pP 22 18 35.5 -0.1
WUAZ LR LR
comp=Z,674nm,19.0s,MS5.1
MVU Marysvale 90.82 51 eP **P** **22 18 30.0 +0.9**
comp=Z,29nm,1.0s,mb5.6
MVU LR LR
comp=Z,585nm,22.0s,MS5.0
MSU Marysvale 90.85 51 eP **P** **22 18 30.1 +0.9**
MSU epP pP 22 18 36.8 +1.1
HVU Hansel Valley 91.16 48 eP **P** **22 18 30.9 +0.3**
HVU epP pP 22 18 36.7 -0.4
NLU North Lily Min 91.26 50 eP **P** **22 18 31.3 +0.3**
SPUT South Promonto 91.29 48 eP **P** **22 18 31.4 +0.3**
MSO Missoula 91.56 43 eP **P** **22 18 31.8 -0.5**
comp=Z,11nm,1.3s,mb5.0
MSO LR LR
comp=Z,511nm,19.0s,MS5.0
MPU Maple Canyon 91.60 50 eP **P** **22 18 33.0 +0.3**
MPU epP pP 22 18 39.0 -0.2
CTU Camp Tracy 91.66 49 eP **P** **22 18 33.4 +0.5**
SYO Syowa Base 91.80 197⇑ P **P** **22 18 32.6 -0.2**
SYO Syowa Base 91.80 197⇑ PcP PcP 22 18 38.3 +4.3
SYO Syowa Base 91.80 197⇑ eP **P** **22 18 32.6 -0.2**
SYO ⇑ ePcP PcP 22 18 38.3 +4.3
MCMT McKenzie Canyo 91.82 45 eP **P** **22 18 33.9 +0.4**
JLU Jordanelle 91.87 49⇑ eP **P** **22 18 34.1 +0.3**
JLU epP pP 22 18 40.6 +0.2
DAU Daniels Canyon 91.97 49 eP **P** **22 18 35.1 +0.8**
HWUT Hardware Ranch 92.00 48⇑ eP **P** **22 18 34.3 -0.1**
comp=Z,8.6nm,1.0s,mb5.0
HWUT LR LR
comp=Z,392nm,22.0s,MS4.8
CHMT Chamberlain Mo 92.04 43 eP **P** **22 18 33.9 -0.5**
WALA Waterton Lakes 92.12 41⇑ eP **P** **22 18 34.8 0.0**
comp=Z,27nm,1.2s,mb5.5
AHID Auburn Hatcher 92.59 47 PFAKE 22 18 50.0 +13
AHID LR LR
comp=Z,281nm,19.0s,MS4.7
LCCM Lewis and Clar 92.72 44 P **P** **22 18 37.9 +0.3**
QLMT Earthquake Lak 92.81 45 eP **P** **22 18 38.9 +0.9**
BOZ Bozeman (W) 92.84 44⇑ eP **P** **22 18 38.2 0.0**
comp=Z,19nm,1.1s,mb5.4
BOZ LR LR
comp=Z,493nm,20.0s,MS5.0
HRY Holter Researc 92.94 43 eP **P** **22 18 38.5 -0.1**
MKAR Makanchi Array 93.23 317 PKKPbc 22 35 47.7
comp=Z,1.4nm,0.7s,baz=274,slow=4.3,SNR=12
BW06 Boulder Array 93.70 47 PFAKE 22 18 50.0 +7.8
BW06 LR LR
comp=Z,236nm,19.0s,MS4.7
PDAR Pinedale Array 93.70 47 P **P** **22 18 42.2 0.0**
comp=Z,5.0nm,0.9s,mb5.0,baz=270,slow=3.0,SNR=34
BNM Barren Site 94.36 56 eP **P** **22 18 45.4 -0.1**
ANMO Albuquerque 94.64 55 eP **P** **22 18 45.6 -1.1**
comp=Z,4.5nm,0.9s,mb4.9
ANMO LR LR
comp=Z,303nm,19.0s,MS4.8
MNTX Cornudas Mount 94.97 59 eP **P** **22 18 47.6 -0.7**
comp=Z,4.6nm,0.9s,mb4.9
MNTX 22 20 10.0
MNTX LR LR
comp=Z,601nm,20.0s,MS5.1
YKW3 Yellowknife Ar 95.03 27 eP **P** **22 18 40.9 -6.9**
SDCO Great Sand Dun 95.87 53 PFAKE 22 19 00.0 +7.7
SDCO LR LR
comp=Z,387nm,20.0s,MS4.9
GDL2 Guadalupe Moun 95.91 58 eP **P** **22 18 52.5 -0.1**
ISCO Idaho Springs 96.11 51 PFAKE 22 19 00.0 +6.7
ISCO LR LR
comp=Z,873nm,20.0s,MS5.2
CPRX Cap Rock 96.45 58 eP **P** **22 18 54.8 -0.3**
RSSD Black Hills 97.89 47 PFAKE 22 19 10.0 +8.7
RSSD LR LR
comp=Z,477nm,19.0s,MS5.0
JCT Junction City 99.53 61 PFAKE 22 19 20.0 +11
JCT LR LR
comp=Z,806nm,20.0s,MS5.2
FFC Flin Flon 100.33 36 ePdif P 22 19 11.1 -1.0
comp=Z,4.6nm,1.1s
FFC epP 22 19 20.1
FFC LR LR
comp=Z,652nm,19.0s,MS5.2
CBKS Cedar Bluff 100.50 52 PFAKE 22 19 20.0 +6.8
CBKS LR LR
comp=Z,499nm,19.0s,MS5.0
WMOK Wichita Mounta 100.86 57 PFAKE 22 19 30.0 +15
WMOK LR LR
comp=Z,683nm,19.0s,MS5.2
HKT Hockley 102.89 62 PFAKE 22 19 40.0 +16
HKT LR LR
comp=Z,636nm,19.0s,MS5.2
ULM Lac du Bonnet 103.87 41 PFAKE 22 19 40.0 +12
ULM LR LR
comp=Z,465nm,19.0s,MS5.0
MIAR Mount Ida 105.13 57 PFAKE 22 24 00.0
MIAR LR LR
comp=Z,876nm,19.0s,MS5.3
CCM Cathedral Cave 107.12 53 PFAKE 22 24 00.0
CCM LR LR
comp=Z,339nm,19.0s,MS4.9
JFWS Jewell Farm 107.84 48 PFAKE 22 24 00.0
JFWS LR LR
comp=Z,408nm,21.0s,MS5.0
ARU Arti 108.36 326 PFAKE 22 24 10.0
ARU LR LR
comp=Z,239nm,20.0s,MS4.8
OXF Oxford 108.56 57 PFAKE 22 24 10.0
OXF LR LR
comp=Z,398nm,19.0s,MS5.0
PLAL Pickwick Lake 109.66 57 PFAKE 22 24 10.0
PLAL LR LR
comp=Z,529nm,22.0s,MS5.1
WVT Waverly 109.85 56 PFAKE 22 24 10.0
WVT LR LR
comp=Z,584nm,19.0s,MS5.2
LRAL Lakeview Retre 110.57 59 PFAKE 22 24 10.0 +8.9
LRAL LR LR
comp=Z,931nm,19.0s,MS5.4
KBS Kingsbay 110.78 355 PFAKE 22 24 10.0 +9.4
KBS LR LR
comp=Z,134nm,21.0s,MS4.5
JTS JuntasAbangare 110.97 83 PFAKE 22 24 10.0 +7.7
JTS LR LR
comp=Z,39nm,19.0s,MS4.0
WCI Wyandotte Cave 111.02 53 PFAKE 22 24 10.0 +8.1
WCI LR LR
comp=Z,3µm,20.0s,MS5.8
AAM Ann Arbor 112.73 49 PFAKE 22 24 10.0 +4.9
AAM LR LR
comp=Z,760nm,20.0s,MS5.3

MYNC	**Murphy**	**112.90**	**57**	PFAKE			22 24 10.0	+4.4		
MYNC				LR	LR					
	comp=Z,629nm,19.0s,MS5.2									
ACSO	**Alum Creek Sta**	**113.44**	**51**	PFAKE			22 24 20.0	+13		
ACSO				LR	LR					
	comp=Z,568nm,20.0s,MS5.2									
DWPF	**Disney**	**115.42**	**64**	PFAKE			22 24 20.0	+9.3		
DWPF				LR	LR					
	comp=Z,361nm,19.0s,MS5.0									
ERPA	**Erie**	**115.46**	**49**	PFAKE			22 24 20.0	+10		
ERPA				LR	LR					
	comp=Z,700nm,19.0s,MS5.3									
BLA	**Blacksburg**	**115.74**	**54**	PFAKE			22 24 20.0	+8.8		
BLA				LR	LR					
	comp=Z,515nm,22.0s,MS5.1									
MCWV	**Mont Chateau**	**115.91**	**51**	PFAKE			22 24 20.0	+8.6		
MCWV				LR	LR					
	comp=Z,763nm,19.0s,MS5.3									
ARCES	**ARCESS Array B**	**116.15**	**345**	PKP	PKPdf		22 24 07.9	-3.3		
	comp=Z,0.7nm,0.4s,baz=82,slow=2.1,SNR=9.6									
LVC	**Limon Verde**	**117.19**	**122**	PFAKE			22 24 20.0	+5.7		
LVC				LR	LR					
	comp=Z,219nm,21.0s,MS4.8									
SSPA	**Standing Stone**	**117.25**	**50**	PFAKE			22 24 20.0	+6.0		
SSPA				LR	LR					
	comp=Z,2μm,21.0s,MS5.6									
CBN	**Corbin**	**118.01**	**53**	PFAKE			22 24 20.0	+4.5		
CBN				LR	LR					
	comp=Z,992nm,20.0s,MS5.4									
BINY	**Binghamton**	**118.38**	**48**	PFAKE			22 24 20.0	+3.9		
BINY				LR	LR					
	comp=Z,4μm,19.0s,MS6.0									
NCB	**Newcomb**	**119.25**	**46**	PFAKE			22 24 30.0	+12		
NCB				LR	LR					
	comp=Z,526nm,20.0s,MS5.2									
SCHQ	**Schefferville**	**120.10**	**32**	PFAKE			22 24 30.0	+11		
SCHQ				LR	LR					
	comp=Z,796nm,20.0s,MS5.3									
LPAZ	**La Paz**	**120.51**	**116**	PKP	PKPdf		22 24 18.6	-2.3		
	comp=Z,1.9nm,0.8s,baz=328,slow=1.2,SNR=10									
LPAZ	**La Paz**	**120.51**	**116**	PKP	PKPdf		22 24 18.6	-2.2		
LPAZ				LR	LR					
	comp=Z,158nm,19.0s,MS4.7									
OBN	**Obninsk**	**120.55**	**329**	PFAKE			22 24 30.0	+10		
OBN				LR	LR					
	comp=Z,166nm,20.0s,MS4.7									
KIV	**Kislovodsk**	**120.93**	**315**	PFAKE			22 24 30.0	+8.9		
KIV				LR	LR					
	comp=Z,118nm,19.0s,MS4.5									
HRV	**Harvard--Oak R**	**121.50**	**47**	PFAKE			22 24 30.0	+7.8		
HRV				LR	LR					
	comp=Z,126nm,19.0s,MS4.6									
FINES	**FINESS Array B**	**121.55**	**338**	PKP	PKPdf		22 24 18.0	-3.9		
	comp=Z,2.8nm,0.9s,baz=122,slow=18,SNR=3.6									
WES	**Weston**	**121.70**	**47**	PFAKE			22 24 30.0	+7.4		
WES				LR	LR					
	comp=Z,2μm,21.0s,MS5.8									
WVL	**Waterville**	**122.25**	**44**	PFAKE			22 24 30.0	+6.5		
WVL				LR	LR					
	comp=Z,3μm,20.0s,MS6.0									
PQI	**Presque Isle**	**122.64**	**41**	PFAKE			22 24 30.0	+5.8		
PQI				LR	LR					
	comp=Z,3μm,20.0s,MS5.9									
EMMW	**East Machias**	**123.69**	**43**	PFAKE			22 24 30.0	+3.6		
EMMW				LR	LR					
	comp=Z,2μm,20.0s,MS5.8									
CPUP	**Villa Florida**	**124.33**	**132**	PKP	PKPdf		22 24 24.4	-3.6		
	comp=Z,4.0nm,1.0s,baz=144,slow=3.3,SNR=5.3									
CPUP	**Villa Florida**	**124.33**	**132**	*e*PKPdf	PKPdf		22 24 25.2	-2.9		
NOA	**NORSAR Array B**	**126.51**	**345**	PKP	PKPdf		22 24 28.0	-3.3		
	comp=Z,1.6nm,0.9s,baz=26,slow=1.8,SNR=4.3									
LBTB	**Lobatse**	**126.99**	**227**	PFAKE			22 24 40.0	+6.8		
LBTB				LR	LR					
	comp=Z,271nm,19.0s,MS5.0									
KMBO	**Kilima Mbogo**	**127.10**	**260**	PFAKE			22 24 40.0	+6.3		
KMBO				LR	LR					
	comp=Z,148nm,19.0s,MS4.7									
KONO	**Kongsberg**	**128.12**	**345**	PFAKE			22 24 40.0	+5.5		
KONO				LR	LR					
	comp=Z,199nm,20.0s,MS4.8									
BRTR	**Keskin Array B**	**128.66**	**313**	PKhKP			22 24 26.8			
BRTR				PKP	PKPdf		22 24 32.9	-3.3		
	comp=Z,1.8nm,1.1s,baz=117,slow=2.8,SNR=6.3									
BBSR	**BB Station**	**129.29**	**57**	PFAKE			22 24 50.0	+12		
BBSR				LR	LR					
	comp=Z,1μm,20.0s,MS5.6									
SJG	**San Juan**	**129.69**	**76**	PFAKE			22 24 50.0	+11		
SJG				LR	LR					
	comp=Z,256nm,20.0s,MS4.9									
MLR	**Muntele Rosu**	**131.23**	**323**	PKP	PKPdf		22 24 36.8	-4.1		
CLL	**Collm**	**133.88**	**336**	*e*	PKPdf		22 24 41.0	-4.6		
CLL				*e*			22 24 53.0			
CLL				*e*SKP			22 28 09.0			
KHC	**Kasperske Hory**	**135.31**	**334**	*e*PKP	PKPdf		22 24 45.5	-2.8		
GERES	**GERESS Array B**	**135.47**	**334**	PKP	PKPdf		22 24 45.3	-3.3		
	comp=Z,1.8nm,0.9s,baz=63,slow=3.0,SNR=11									
DAVOX	**Davos**	**138.70**	**334**	PKP	PKPdf		22 24 50.8	-3.8		
	comp=Z,2.9nm,0.9s,baz=193,slow=18,SNR=2.9									
ORIF	**Oris-en-Rattie**	**141.85**	**336**	*e*PKP1	PKPdf		22 24 54.7	-5.6		
	comp=Z,11nm,0.9s									
VIVF	**Saint-Julien-l**	**142.37**	**337**	*e*PKP1	PKPdf		22 24 55.4	-5.8		
MFF	**Saint Martin d**	**142.40**	**344**	*e*PKP1	PKPdf		22 24 55.6	-5.6		
	comp=Z,20nm,1.2s									
FRF	**La Foret Royal**	**142.65**	**334**	*e*PKP1	PKPdf		22 24 53.9	-7.8		
	comp=Z,25nm,1.2s									
LMR	**La Mourre**	**142.89**	**334**	*e*PKP1	PKPdf		22 24 55.0	-7.1		
	comp=Z,39nm,1.4s									
CAF	**Calviac**	**143.24**	**340**	*e*PKP1	PKPbc		22 24 57.0	+0.3		
LFF	**La Frestale**	**143.65**	**342**	*e*PKP1	PKPbc		22 24 58.0	0.0		
	comp=Z,22nm,1.1s									
MTLF	**Montolieu**	**144.57**	**339**	*e*PKP1	PKPbc		22 25 01.5	+0.8		
	comp=Z,97nm,1.2s									
EPF	**Esparros**	**145.49**	**341**	*e*PKP1	PKPbc		22 25 02.6	-0.5		
ETSF	**Etsaut**	**145.90**	**342**	*e*PKP1	PKPbc		22 25 06.0	+1.9		
	comp=Z,26nm,1.1s									
ESDC	**Sonseca Array**	**149.86**	**344**	PKPbc	PKPdf		22 25 15.6	+1.7		
	comp=Z,3.9nm,1.0s,baz=23,slow=2.7,SNR=16									
ESLA	**Sonseca Array**	**149.86**	**344**	PFAKE			22 25 20.0	+6.1		
ESLA				LR	LR					
	comp=Z,1μm,20.0s,MS5.7									
DBIC	**Dimbokro**	**169.51**	**247**	PKP	PKPdf		22 25 32.8	-3.6		
	comp=Z,7.3nm,1.0s,baz=335,slow=3.5,SNR=5.2									
DBIC	**Dimbokro**	**169.51**	**247**	PKP	PKPdf		22 25 32.8	-3.6		
DBIC				LR	LR					
	comp=Z,216nm,20.0s									

MOS **16** *22:06:36.1±0.9,36.44N×71.51E,h102km,mb5.3/30,Error ellipse: s-maj=8.0km s-min=4.7km az=116.2*

NEIC **16** *22:06:37.4±0.2,36.17N×71.53E,mb5.0/86,Error ellipse: s-maj=7.8km s-min=4.2km az=208.0*

HRVD **16** *22:06:37.3±0.3,36.47N×71.18E,h121km±2km,MW5.1/64, Centroid moment Tensor Solution. LP body waves: s43,c62;Mantle waves: s64,c132; Half duration: 0 Moment tensor: Scale 10^16Nm; Mrr3.25±.15; Mθθ-4.33±.18; Mφφ 1.08±.15; Mrθ-3.08±.13; Mθφ-2.48±.16; Mφr1.80±.10; Best double couple: Mo5.84×10^16 NP1:φs37°, δ42°,λ34°. NP2:φs280°,δ68°,λ127°. Principal axes: T 5.78, Plg52°, Azm234°; N .11, Plg34°, Azm85°; P -5.9, Plg15°, Azm344°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

BJI **16** *22:06:37.0,36.60N×71.41E,h108km,mB4.9,mb4.9*

IDC **16** *22:06:39.4±0.6,36.32N×71.47E,h128km±5km,mb4.6/28, mb1 4.7/31,mb1mx4.7/31,MS4.0/9,Ms1 4.1/9, ms1mx3.7/28,Error ellipse: s-maj=11.6km s-min=7.3km az=27.0,Putative timing error at EIL*

NNC **16** *22:06:48.5±5.2,37.17N×70.85E,h178km±38km,mpv6.5, Error ellipse: s-maj=55.2km s-min=28.7km az=33.0*

ISC 16 22:06:35.0±0.3,**36.30N**±0.02×**71.45E**±0.03,**h104**km±3km, **h119**km±1.4km;**pP-P,n516,**σ**1924**/575,**mb5.0**/175,**74C-35D, Afghanistan-Tajikistan border region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CEP	**Cherat**	**2.50**	**171**	⇓P	**P**	**22 07 19.4**	**+4.4**
CHCP	**Chirah Chowk**	**3.02**	**150**	⇓P	**P**	**22 07 26.6**	**+4.4**
THW	**Thamme Wali**	**3.50**	**176**	⇓P	**P**	**22 07 31.9**	**+3.2**
SBDP	**Sheikh Budin**	**4.02**	**188**	⇑P	**P**	**22 07 38.5**	**+2.7**
SARP	**Sargodha**	**4.48**	**167**	P	**P**	**22 07 44.2**	**+2.1**
DRP	**Derazinda**	**4.66**	**193**	P	**P**	**22 07 47.6**	**+3.1**
KSH	**Kashi**	**4.81**	**47**	⇑*i*P	**P**	**22 07 49.5**	**+3.0**
KSH				S	**S**	**22 08 42.0**	**+0.6**
KSH				S	S		
	comp=N,5μm,0.4s						
KSH				S	S		
	comp=E,7μm,0.5s						
THN	**Thein Dam**	**5.22**	**136**	*e*P	**P**	**22 07 52.5**	**+0.4**
THN				*e*		22 08 53.9	
TAS	**Tashkent**	**5.29**	**342**	⇓*e*PN	**P**	**22 07 50.5**	**-2.6**
TAS				pmax	pmax		
	comp=Z,2700μm,1.0s						
AML	**Almayashu**	**6.08**	**16**	P	**P**	**22 08 04.7**	**+0.9**
	SNR=4024						
UCH	**Uchtor**	**6.38**	**21**	P	**P**	**22 08 08.9**	**+0.9**
	SNR=660						
KZA	**Kyzart**	**6.48**	**26**	P	**P**	**22 08 09.8**	**+0.4**
	SNR=339						
EKS2	**Erkin-Say**	**6.60**	**15**	P	**P**	**22 08 11.8**	**+0.7**
	SNR=298						
AAK	**Ala-Archa**	**6.75**	**19**	P	**P**	**22 08 14.1**	**+1.0**
	SNR=190						
KK31	**Karatay Array**	**6.84**	**354**	⇓P	**P**	**22 08 14.0**	**-0.2**
	comp=Z,2μm,0.3s,baz=180,slow=13						
KK31				⇑S	**S**	**22 09 24.2**	**-6.9**
	comp=Z,315nm,0.4s,baz=171,slow=21,SNR=7.4						
KKAR	**Karatay Array**	**6.84**	**354**	PN	**P**	**22 08 13.8**	**-0.5**
KKAR				pmax	pmax		
	comp=Z,696nm,0.3s						
KBK	**Karagaybulak**	**6.90**	**22**	P	**P**	**22 08 16.1**	**+0.9**
	SNR=561						
FRU	**Bishkek**	**6.97**	**20**	*d*iPN	**P**	**22 08 17.0**	**+0.9**
FRU				*i* S	**S**	**22 09 33.0**	**-1.3**
FRU				pmax	pmax		
	comp=Z,2μm,2.0s						
FRU				pmax	pmax		
	comp=Z,2μm,2.0s						
FRU				smax			
	comp=N,10μm,3.0s						
ULHL	**Ulahol**	**7.00**	**31**	P	**P**	**22 08 16.9**	**+0.3**
	SNR=128						
SMLA	**Simla**	**7.02**	**136**	*e*	**P**	**22 08 23.6**	**+6.8**
SMLA				*e*		22 09 40.1	
CHMS	**Chumysh**	**7.16**	**20**	P	**P**	**22 08 19.1**	**+0.4**
	SNR=212						
USP	**Ospenovka**	**7.34**	**18**	P	**P**	**22 08 20.9**	**-0.3**
	SNR=1244						
TKM2	**Tokmak 2**	**7.35**	**25**	P	**P**	**22 08 21.7**	**+0.5**
	SNR=1406						
KKR	**Kurukshetra**	**7.76**	**143**	*e*P	**P**	**22 08 26.7**	**-0.1**
AAA	**Alma-Ata**	**8.15**	**30**	*d*iPN	**P**	**22 08 31.0**	**-1.1**
AAA				pmax	pmax		
	comp=Z,800nm,3.0s						
AAA				MLR	MLR		
	comp=N,900nm,7.0s						
AAA				MLR	MLR		
	comp=E,3μm,7.0s						
AAA				MLR	MLR		
	comp=Z,2μm,7.0s						
RTK	**Rohtak**	**8.36**	**149**	*e*P	**P**	**22 08 34.0**	**-0.9**
KHET	**Khetri**	**8.99**	**155**	*e*P	**P**	**22 08 42.5**	**-0.9**
KHET				*e*		22 10 17.4	
NDI	**New Delhi**	**9.02**	**146**	*e*P	**P**	**22 08 42.0**	**-1.8**
NDI				*e*S	**S**	**22 10 18.4**	**-5.9**
KALG	**Kalgarh**	**9.14**	**136**	*e*	**S**	**22 10 29.9**	**+2.7**
	comp=E,937nm,0.4s						
AYAN	**Aya Nagar**	**9.15**	**147**	*e*P	**P**	**22 08 44.5**	**-1.1**
AYAN				*e*		22 10 22.7	
AYAN				*e*		22 10 26.7	
	comp=Z,202nm,0.4s						
KUDL	**Kundal**	**9.18**	**151**	*e*P	**P**	**22 08 45.2**	**-0.7**
KUDL				*e*S	**S**	**22 10 17.6**	**-11**
KUDL				*e*		22 10 28.4	
	comp=Z,247nm,0.6s						
ASOR	**Ausora**	**9.22**	**143**	*e*P	**P**	**22 08 45.0**	**-1.5**
SONA	**Sohna**	**9.33**	**148**	*e*P	**P**	**22 08 47.2**	**-0.8**
SONA				*e*		22 10 39.3	
	comp=E,342nm,0.6s						
SONA				*e*		22 10 39.4	
	comp=N,192nm,0.8s						
JASL	**Jaisalmer**	**9.36**	**183**	*e*P	**P**	**22 08 47.9**	**-0.4**
LGTI	**Lohaghat**	**10.06**	**130**	*e*P	**P**	**22 08 56.0**	**-1.8**
LGTI				*e*		22 10 45.0	
AGRA	**Agra**	**10.59**	**147**	*e*P	**P**	**22 09 03.2**	**-1.8**
VAN	**Vannovskaya**	**10.78**	**283**	P	**P**	**22 09 04.8**	**-2.7**
DANN	**Dangsing**	**13.07**	**124**	*e*P	**P**	**22 09 35.9**	**-1.9**
MK31	**Makanchi Array**	**13.24**	**34**	⇑P	**P**	**22 09 40.1**	**+0.1**
	comp=N,30nm,0.8s,baz=224,slow=13,SNR=192						
MKAR	**Makanchi Array**	**13.24**	**34**	P	**P**	**22 09 39.0**	**-1.0**
	comp=N,3.1nm,0.3s,baz=223,slow=16,SNR=138						
MKAR				S	**S**	**22 12 00.9**	**-4.1**
	baz=255,slow=19,SNR=1.8						
MKAR	**Makanchi Array**	**13.24**	**34**	P	**P**	**22 09 39.0**	**-0.9**
MKAR				S	**S**	**22 12 01.0**	**-4.1**
MKAR				pmax	pmax		
	comp=Z,3.0nm,0.3s						
KOLN	**Koldanda**	**13.35**	**126**	*e*P	**P**	**22 09 39.6**	**-1.7**
	comp=Z,136nm,0.5s						
GKN	**Gorkha**	**13.89**	**123**	*e*P	**P**	**22 09 46.5**	**-1.8**
	comp=Z,809nm,0.7s						
BHPL	**Bhopal**	**14.00**	**157**	*e*P	**P**	**22 09 48.9**	**-0.9**
BHPL				*e*		22 12 18.2	
BHPL				*e*		22 12 40.9	
	comp=E,97nm,0.6s						
BHPL				*e*		22 12 41.2	
	comp=N,77nm,0.4s						
DMN	**Daman**	**14.46**	**123**	*e*P	**P**	**22 09 53.9**	**-1.8**
	comp=N,635nm,0.9s						
DMN				*e*S	**S**	**22 12 25.7**	**-7.9**
KKN	**Kakani**	**14.46**	**122**	*e*P	**P**	**22 09 53.7**	**-2.0**
	comp=N,458nm,0.6s						
KKN				*e*S	**S**	**22 12 25.7**	**-8.0**
WMQ	**Urumqi**	**14.52**	**54**	*e*P	**P**	**22 09 57.4**	**+1.1**
WMQ				XP		22 10 28.4	
WMQ				S	**S**	**22 12 36.8**	**+1.9**
WMQ				PCP	PcP	22 15 04.5	-0.4
WMQ				AMB	AMB		
	comp=Z,64nm,1.4s						
PKI	**Pulchoki**	**14.69**	**122**	*e*P	**P**	**22 09 56.4**	**-2.2**
	comp=Z,521nm,0.6s						
JBP	**Jabalpur**	**15.03**	**148**	⇑*e*P	**P**	**22 10 04.5**	**+1.6**
JBP				*e*		22 12 40.4	
KURK	**Kurchatov**	**15.31**	**17**	⇓P	**P**	**22 10 08.4**	**+2.0**
	comp=Z,65nm,0.9s,baz=200,slow=9.8,SNR=327						
KURK	**Kurchatov**	**15.31**	**17**	*i* P	**P**	**22 10 02.4**	**-3.9**
KURK				pmax	pmax		
	comp=Z,58nm,0.9s						
KURK	**Kurchatov**	**15.31**	**17**	*e*Pn	**P**	**22 10 02.5**	**-3.8**
KURK				*e*P		22 10 08.2	
KURK				*e*Sn	**S**	**22 12 43.7**	**-9.4**
AB31	**Akbulak array**	**15.44**	**331**	⇑P	**P**	**22 10 05.7**	**-2.3**
	comp=Z,98nm,0.3s,baz=140,slow=11,SNR=5529						
AB31				S	**S**	**22 12 43.7**	**-12**
	comp=Z,169nm,0.7s,baz=150,slow=22,SNR=7.8						
AB31	**Akbulak array**	**15.44**	**331**	P	**P**	**22 10 05.1**	**-2.9**
AB31				pmax	pmax		
	comp=Z,40nm,0.3s						
VOSK	**Vostochnaya**	**16.43**	**359**	⇓P	**P**	**22 10 17.9**	**-2.4**
	comp=Z,180nm,1.1s						
VOSK	**Vostochnaya**	**16.43**	**359**	P	**P**	**22 10 17.9**	**-2.4**
VOSK				pmax	pmax		
	comp=Z,207nm,1.2s						
THR	**Tehran**	**16.44**	**275**	P	**P**	**22 10 23.2**	**+2.6**
	comp=Z,1.3nm,0.3s,baz=84,slow=7.9,SNR=63						
THR				S	**S**	**22 13 25.1**	**+6.2**
	comp=Z,0.2nm,0.3s,baz=326,slow=13,SNR=2.0						
THR				LR	LR	22 17 15.1	
	comp=Z,126nm,21.8s,baz=162,slow=39						
THR	**Tehran**	**16.44**	**275**	P	**P**	**22 10 23.2**	**+2.6**
THR				S	**S**	**22 13 25.1**	**+6.2**
THR				pmax	pmax		
	comp=Z,1.0nm,0.3s						
THR				MLR	MLR		
	comp=Z,126nm,21.8s						
ZRNK	**Zerenda**	**16.74**	**355**	⇓P	**P**	**22 10 22.1**	**-2.1**
	comp=Z,144nm,1.1s						
ZRNK	**Zerenda**	**16.74**	**355**	P	**P**	**22 10 21.7**	**-2.5**
ZRNK				pmax	pmax		
	comp=Z,158nm,1.1s						
ZRNK	**Zerenda**	**16.74**	**355**	⇓*e*Pn	**P**	**22 10 21.8**	**-2.4**
BVA0	**Borovoye Array**	**16.74**	**358**	⇓P	**P**	**22 10 22.0**	**-2.2**
	comp=Z,20nm,0.8s,baz=174,slow=14,SNR=654						
BVA0	**Borovoye Array**	**16.74**	**358**	*i* P	**P**	**22 10 22.0**	**-2.2**
BVA0				pmax	pmax		
	comp=Z,4.0nm,0.8s						
BVAR	**Borovoye Array**	**16.74**	**358**	P	**P**	**22 10 22.0**	**-2.2**
	comp=Z,12nm,0.3s,baz=166,slow=12,SNR=216						
BVAR				S	**S**	**22 13 17.8**	**-7.9**
	comp=Z,3.5nm,0.3s,baz=171,slow=19,SNR=5.4						
BVAR				LR	LR	22 16 55.8	
	comp=Z,830nm,20.0s,baz=155,slow=37						
BRVK	**Borovoye**	**16.78**	**358**	⇓P	**P**	**22 10 22.7**	**-2.0**
	comp=Z,75nm,0.7s						
BRVK	**Borovoye**	**16.78**	**358**	*e*Pn	**P**	**22 10 22.4**	**-2.3**
BRVK				*e*Sn	**S**	**22 13 13.8**	**-13**
BLSP	**Bilaspur**	**16.90**	**144**	*e*P	**P**	**22 10 25.6**	**-0.8**
BLSP				*e*		22 13 19.9	
LSA	**Lhasa**	**17.77**	**106**	P	**P**	**22 10 39.0**	**+1.9**
LSA				AMB	AMB		
	comp=Z,60nm,1.2s						
LSA				LR	LR		
	comp=N,290nm,12.6s						
LSA				LR	LR		
	comp=E,460nm,11.7s						
POO	**Poona**	**17.83**	**173**	*e*	**P**	**22 10 42.2**	**+4.4**
LATR	**Latur**	**18.37**	**164**	*e*	**P**	**22 10 49.2**	**+5.1**
	comp=E,51nm,0.7s						
LATR				*e*S	**S**	**22 14 02.4**	**+0.1**
KAD	**Karad**	**19.07**	**172**	*e*	**P**	**22 10 59.8**	**+8.0**
MAK	**Makhachkala**	**19.57**	**297**	*e*P	**P**	**22 10 57.0**	**0.0**
MAK				*i* S	**S**	**22 14 34.0**	**+6.9**
MAK				pmax	pmax		
	comp=Z,500nm,4.0s						
MAK				smax			
	comp=E,3μm,6.0s						
MAK				smax			
	comp=N,4μm,8.0s						
MAK				MLR	MLR		
	comp=N,1μm,14.0s						
MAK				MLR	MLR		
	comp=E,2μm,14.0s						
MAK				MLR	MLR		
	comp=Z,1μm,14.0s						
HYB	**Hyderabad**	**19.83**	**160**	⇓*i*P	**P**	**22 11 01.0**	**+1.1**
	comp=Z,120nm,1.0s						
HYB				*e*SP		22 11 36.0	
HYB				*e*S	**S**	**22 14 36.0**	**+3.6**
HYB	**Hyderabad**	**19.83**	**160**	⇓*e*P	**P**	**22 11 01.0**	**+1.1**
	comp=Z,120nm,1.0s						
HYB				*e*		22 11 36.0	
HYB				*e*S	**S**	**22 14 36.0**	**+3.6**
ZAL	**Zalesovo**	**19.93**	**24**	P	**P**	**22 10 60.0**	**-0.7**
	comp=Z,142nm,0.3s,baz=168,slow=6.5,SNR=884						
ZAL				S	**S**	**22 14 31.0**	**-3.2**
	comp=Z,0.7nm,0.3s,baz=269,slow=24,SNR=4.4						
ZAL				ScS	ScS	22 22 14.8	-5.1
	comp=Z,0.2nm,0.3s,baz=162,slow=24,SNR=5.0						
ZAL	**Zalesovo**	**19.93**	**24**	P	**P**	**22 11 00.0**	**-0.7**
ZAL				S	**S**	**22 14 31.0**	**-3.1**
ZAL				pmax	pmax		
	comp=Z,143nm,0.3s						
ZAL				smax			
	comp=N,1.0nm,0.3s						
KGD	**Kothagudem**	**20.35**	**154**	*e*P	**P**	**22 11 07.7**	**+2.5**
KGD				*e*		22 11 18.4	
KGD				*e*S	**S**	**22 14 40.8**	**-1.6**
SHL	**Shillong**	**20.49**	**116**	⇑*i*P	**P**	**22 11 08.0**	**+1.4**
SHL				*e*		22 14 42.0	
GOA	**Goa**	**20.83**	**174**	*e*P	**P**	**22 11 10.6**	**+0.6**
GOA				*e*		22 15 02.8	
AGT	**Agartala**	**21.08**	**120**	⇑*i*	**P**	**22 10 53.0**	**-20**
AGT				⇑*i*		22 11 04.0	
VIS	**Vishakhapatnam**	**21.28**	**147**	*e*	**P**	**22 11 19.3**	**+4.8**
VIS				*e*		22 11 22.9	
	comp=Z,91nm,0.7s						
GNI	**Garni**	**21.30**	**288**	P	**P**	**22 11 17.9**	**+3.2**
	comp=Z,84nm,0.6s,mb5.2,baz=33,slow=1.1,SNR=85						
GNI				S	**S**	**22 15 10.7**	**+11**
	comp=Z,5.6nm,0.5s,baz=332,slow=8.9,SNR=2.1						
GNI	**Garni**	**21.30**	**288**	P	**P**	**22 11 17.9**	**+3.2**
GNI				S	**S**	**22 15 10.7**	**+11**
GNI				pmax	pmax		
	comp=Z,84nm,0.6s						
GNI				smax			
	comp=N,6.0nm,0.5s						
TI2	**Plekhanov**	**21.41**	**293**	⇓*i*P	**P**	**22 11 13.7**	**-2.0**
ARU	**Arti**	**21.94**	**341**	⇓*i*P	**P**	**22 11 21.3**	**+0.4**
ARU				*e*S	**S**	**22 15 21.1**	**+10**
ARU				*i* SS	SS	22 15 49.2	-8.7
ARU				pmax	pmax		
	comp=Z,146nm,1.4s,mb5.1						
ARU	**Arti**	**21.94**	**341**	⇓*i*P	**P**	**22 11 21.3**	**+0.4**
	comp=Z,51nm,0.5s,mb5.1						
ARU				*e*S	**S**	**22 15 18.1**	**+6.6**
ZEI	**Tsey**	**22.16**	**295**	*c* *i*P	**P**	**22 11 24.0**	**+1.0**
ZEI				*e*PP		22 11 43.0	
ZEI				*e*		22 15 16.0	
ZEI				*e*		22 15 21.0	
ZEI				pmax	pmax		
	comp=Z,200nm,5.0s						
ZEI				MLR	MLR		
	comp=Z,200nm,14.0s						
IMP	**Imphal**	**22.45**	**114**	*e*P	**P**	**22 11 29.0**	**+3.0**
GTA	**Gaotai**	**22.57**	**73**	*e*P	**P**	**22 11 31.4**	**+4.3**
GTA				AMB	AMB		
	comp=Z,23nm,1.0s,mb4.5						
GTA				LR	LR		
	comp=N,227nm,7.6s						
GTA				LR	LR		
	comp=E,148nm,5.3s						
GTA				LR	LR		
	comp=Z,134nm,6.8s						
CUD	**Cuddapah**	**22.70**	**161**	*e*P	**P**	**22 11 32.8**	**+4.3**
CUD				*e*pP		22 11 52.8	
CUD				*e*sP		22 12 09.0	
CUD				*e*S	**S**	**22 15 33.7**	**+8.7**
PYA	**Pyatigorsk**	**22.95**	**298**	*c* *i*P	**P**	**22 11 31.0**	**+0.3**
PYA				*e*		22 15 20.0	
PYA				*i* S	**S**	**22 15 36.0**	**+6.8**
PYA				MLR	MLR		
	comp=E,900nm,16.0s						
PYA				MLR	MLR		

TLY MLR MLR
comp=Z,1μm,17.0s
VOR Voronezh 27.57 314 *e*P **P** **22 12 14.0 -0.1**
VOR *e**SP sP 22 12 37.0 -12
VOR *e* 22 12 45.5
VOR pmax pmax
comp=N,100nm,1.4s
VOR pmax pmax
comp=E,160nm,1.4s
VOR pmax pmax
comp=Z,140nm,1.4s,mb5.3
SONM Songino Array 28.15 55 P **P** **22 12 20.7 +1.4**
comp=Z,4.3nm,0.7s,mb4.1,baz=262,slow=8.7,SNR=6.4
SONM pP pP 22 12 46.9 +4.7
comp=Z,3.3nm,0.7s,baz=256,slow=10,SNR=2.4
KAMS Al Khamasin 28.39 243 P **P** **22 12 21.1 -0.7**
ULN Ulaanbaatar 28.59 55⇑ *e*P **P** **22 12 23.3 +0.1**
ULN Ulaanbaatar 28.59 55 *e*P **P** **22 12 23.0 -0.2**
comp=Z,2.7nm,0.8s
QURS Qurayyt al Mil 28.68 270 P **P** **22 12 26.2 +2.0**
ASF Jabal al Asfar 28.77 272 P **P** **22 12 26.6 +1.6**
comp=Z,4.4nm,0.9s,mb4.1,baz=308,slow=6.4,SNR=5.0
ASF ScP 22 19 00.6
comp=Z,4.0nm,0.9s,baz=220,slow=3.0,SNR=3.5
ASF LR LR 22 26 09.4
comp=Z,146nm,19.2s,baz=178,slow=41
KMI Kunming 28.99 104 *e*P **P** **22 12 29.1 +2.0**
KMI AMB AMB
comp=Z,80nm,6.2s
KMI LR LR
comp=Z,158nm,45.4s
KBRS Khaybar 29.38 258 P **P** **22 12 29.9 -0.6**
SIM Simferopol' 29.41 299 *e*P **P** **22 12 30.4 -0.2**
SIM *e*S **S** **22 17 16.8 +1.3**
SIM pmax pmax
comp=Z,46nm,2.1s,mb4.7
TATS Tathlith 29.68 243 P **P** **22 12 33.0 -0.3**
BRTR Keskin Array B 29.84 288 P **P** **22 12 34.9 +0.3**
comp=Z,5.4nm,0.8s,mb4.2,baz=100,slow=8.3,SNR=33
BRTR PcP PcP 22 15 33.6 -1.7
comp=Z,1.7nm,0.6s,baz=108,slow=4.6,SNR=4.5
BRTR S **S** **22 17 22.1 -0.3**
comp=Z,0.3nm,0.4s,baz=299,slow=26,SNR=2.5
BRTR ScP 22 19 03.9
comp=Z,3.2nm,1.1s,baz=90,slow=3.7,SNR=5.7
CM31 Chiang Mai Arr 30.04 119 *e*P **P** **22 12 37.6 +1.2**
comp=Z,10nm,0.9s,mb4.5
CMAR Chiang Mai Arr 30.04 119 P **P** **22 12 38.0 +1.6**
comp=Z,4.0nm,0.8s,mb4.1,baz=299,slow=7.9,SNR=16
CMAR ScP 22 19 04.5
comp=Z,3.6nm,0.9s,baz=292,slow=4.0,SNR=6.6
CMAR Chiang Mai Arr 30.04 119 P **P** **22 12 38.0 +1.6**
CMAR pmax pmax
comp=Z,4.0nm,0.8s
CMAR pmax pmax
comp=N,4.0nm,0.9s
MOS Moscow 30.05 321 *e*P **P** **22 12 36.6 +0.5**
MOS *e* 22 13 11.2
MOS *i* 22 13 43.6
MOS *i* S **S** **22 17 27.0 +1.6**
MOS *i* SS SS 22 19 03.2 -7.2
MOS pmax pmax
comp=Z,200nm,0.8s,mb5.8
MOS MLR MLR
comp=Z,800nm,17.0s
OBN Obninsk 30.33 319*c i*P **P** **22 12 38.8 +0.2**
OBN *i* *PP pP 22 13 11.6 +10
OBN *e* 22 15 37.0
OBN *i* S **S** **22 17 31.0 +1.2**
OBN *i* SS SS 22 19 19.4 +2.7
OBN pmax pmax
comp=Z,93nm,0.7s,mb5.5
OBN MLR MLR
comp=Z,200nm,18.0s
OBN Obninsk 30.33 319⇑ *i*P **P** **22 12 38.7 +0.1**
comp=Z,112nm,0.8s,mb5.5
OBN *e*S **S** **22 17 30.9 +1.1**
TBKS Tabuk 30.47 265 P **P** **22 12 41.6 +1.4**
XAN Xi'an 30.59 83 P **P** **22 12 44.8 +3.6**
JMQS Jabal Moqyreh 30.74 266 P **P** **22 12 43.6 +1.1**
DJNS Zahran al Janu 30.83 241 P **P** **22 12 43.9 +0.4**
BLJS Baljurashi 30.84 246 P **P** **22 12 44.1 +0.7**
YNBS Yanbu' al Bahr 31.09 257 P **P** **22 12 46.7 +1.0**
EIL Elat 31.19 268 P Px 22 14 11.5
comp=Z,30nm,1.0s,baz=69,slow=7.9,SNR=16
HAQS Haql 31.44 267 P **P** **22 12 49.2 +0.6**
GYA Guiyang 31.47 98 ⇑P **P** **22 12 55.3 +6.4**
GYA AMB AMB
comp=Z,10.0nm,0.9s,mb4.5
AYUS 'Aynunah 31.51 266 P **P** **22 12 50.0 +0.8**
BDAS Al Bad' 31.55 266 P **P** **22 12 50.1 +0.6**
KIS Kishinev 33.23 302 *e*P **P** **22 13 04.0 0.0**
KIS *e**PP pP 22 13 31.0 +3.4
KIS *e* 22 13 43.0
KIS *e*PPP PPP 22 14 16.0 -20
KIS *e*S **S** **22 18 16.0 +0.8**
KIS pmax pmax
comp=Z,180nm,1.4s,mb5.7
CFR Carcaliu 33.66 299⇑ *i*P **P** **22 13 08.5 +0.8**
CFR Carcaliu 33.66 299⇑ *i*P **P** **22 13 09.7 +2.0**
PRD Provadia 34.25 295 *i*P **P** **22 13 15.0 +2.3**
VRI Vrincioaia 34.65 300⇑ *i*P **P** **22 13 18.4 +2.3**
VRI Vrincioaia 34.65 300⇑ *i*P **P** **22 13 18.4 +2.3**
ISR Istrita 34.78 299⇑ *i*P **P** **22 13 21.5 +4.2**
ISR Istrita 34.78 299⇑ *i*P **P** **22 13 21.5 +4.2**
JMB Yambol 34.91 294 *i*P **P** **22 13 21.0 +2.7**
MNK Minsk 34.93 315⇓ *e*P **P** **22 13 18.0 -0.4**
MNK pmax pmax
comp=Z,230nm,1.2s,mb5.9
MNK pmax pmax
comp=E,370nm,1.4s
BJI Beijing 35.08 70 *e*P **P** **22 13 22.1 +2.3**
BJI AMB AMB
comp=Z,12nm,0.6s,mb4.9
BUC1 Bucharest 35.18 297⇓ *i*P **P** **22 13 23.2 +2.6**
BUC1 Bucharest 35.18 297⇓ *i*P **P** **22 13 23.2 +2.6**
MLR Muntele Rosu 35.20 299 P **P** **22 13 22.2 +1.4**
MLR S **S** **22 18 45.1 -0.5**
comp=Z,4.6nm,1.2s,baz=253,slow=7.2,SNR=2.0
MLR ScS ScS 22 23 25.7 -1.9
comp=Z,3.0nm,1.1s,baz=273,slow=21,SNR=2.9
MLR LR LR 22 30 00.3
comp=Z,132nm,18.7s,baz=276,slow=40
MLR Muntele Rosu 35.20 299⇑ *i*P **P** **22 13 22.7 +1.9**
MLR Muntele Rosu 35.20 299 P **P** **22 13 22.2 +1.4**
MLR S **S** **22 18 45.1 -0.5**
MLR 22 23 25.7
MLR smax
comp=N,5.0nm,1.2s
MLR pmax pmax
comp=N,3.0nm,1.1s
MLR MLR MLR
comp=Z,132nm,18.7s
MLR Muntele Rosu 35.20 299⇑ *i*P **P** **22 13 22.7 +2.0**
BOD Bodaibo 35.28 39 *e*P **P** **22 13 21.2 -0.1**
WHN Wuhan 36.04 86 *e*P **P** **22 13 32.5 +4.4**
WHN LR LR
comp=N,500nm,16.0s
WHN LR LR
comp=Z,740nm,20.4s
JOF Joensuu 36.23 330 *e*p **P** **22 13 30.1 +0.8**
comp=Z,46nm,0.3s,mb5.9
JOF Joensuu 36.23 330 *e*P **P** **22 13 30.1 +0.8**
JOF pmax pmax
comp=Z,46nm,0.3s,mb5.9
RZN Rozhen 36.37 293 *i*P **P** **22 13 32.0 +1.3**
KRIS Kristallenia 37.05 282 *e*P **P** **22 13 36.9 +0.5**
comp=Z,15nm,0.6s,mb5.1
KRIS *e*PcP PcP 22 15 54.7 -0.8
MMB Musomiste 37.12 293 *i*P **P** **22 13 37.0 0.0**
VTS Vitosha 37.37 295 *i*P **P** **22 13 40.0 +0.9**
KWP Kalwaria 37.42 306⇑ *e*P **P** **22 13 40.5 +1.0**
comp=Z,200nm,1.1s,mb6.0
KWP Kalwaria 37.42 306⇑ *e*P **P** **22 13 40.5 +1.0**
KWP *e* 22 15 09.4
KWP *e*S **S** **22 19 21.7 +2.2**
KWP MLR MLR
comp=Z,200nm,17.4s
IDI Anoyia 37.50 283 P **P** **22 13 39.2 -1.1**
comp=Z,6.0nm,0.3s,mb4.8,baz=47,slow=8.6,SNR=19
SUW Suwalki 37.52 314⇑ *e*P **P** **22 13 40.5 +0.3**
comp=Z,100nm,1.1s,mb5.6
SUW Suwalki 37.52 314⇑ *e*P **P** **22 13 40.5 +0.3**
SUW *e* 22 15 05.7
SUW *e*S **S** **22 19 21.9 +1.0**
SUW MLR MLR
comp=Z,300nm,21.0s
KKB Krupnik 37.56 294 *i*P **P** **22 13 40.0 -0.7**
LVZ Lovozero 37.78 338 *e*P **P** **22 13 43.0 +0.7**
LVZ *e*S **S** **22 19 23.5 -1.3**
LVZ pmax pmax
comp=Z,30nm,1.0s,mb5.1
LVZ pmax pmax
comp=N,1.0nm,0.4s
LVZ pmax pmax
comp=E,6.0nm,0.6s
LVZ pmax pmax
comp=Z,30nm,1.1s,mb5.0
LVZ pmax pmax
comp=N,20nm,1.6s
LVZ pmax pmax
comp=E,10.0nm,0.9s
LVZ smax
comp=N,70nm,2.1s
LVZ smax
comp=Z,110nm,2.5s
LVZ smax
comp=E,220nm,2.8s
LVZ MLR MLR
comp=Z,800nm,18.0s
LVZ MLR MLR
comp=N,300nm,16.0s
LVZ MLR MLR
comp=E,500nm,19.0s
FINES FINESS Array B 37.85 326 P **P** **22 13 43.7 +0.8**
comp=E,20nm,0.4s,mb5.3,baz=121,slow=9.2,SNR=359
FINES PP PP 22 14 51.7 -22
comp=E,8.8nm,0.5s,baz=117,slow=12,SNR=5.1
FINES S **S** **22 19 23.9 -2.1**
comp=E,3.2nm,0.8s,baz=132,slow=23,SNR=2.3
FINES LR LR 22 30 24.3
comp=E,225nm,20.7s,baz=120,slow=38
FINES FINESS Array B 37.85 326 P **P** **22 13 43.7 +0.8**
FINES S **S** **22 19 23.9 -2.1**
FINES pmax pmax
comp=Z,20nm,0.4s
FINES pmax pmax
comp=Z,9.0nm,0.5s
FINES smax
comp=N,3.0nm,0.8s
FINES MLR MLR
comp=Z,225nm,20.7s
APA Apatity 37.96 337⇑ *i*P **P** **22 13 44.7 +0.9**
APA *i* 22 15 15.0
APA *i* S **S** **22 19 30.0 +2.5**
APA *i* SS SS 22 22 12.0 +1.9
APA *i* 22 22 38.0
APA pmax pmax
comp=Z,47nm,1.3s,mb5.2
APA MLR MLR
comp=Z,1μm,18.0s
KAF Kangasniemi 37.99 327 *e*p **P** **22 13 44.1 0.0**
baz=111,slow=8.5
CRVS Cervenica-Dubn 38.23 305 *i*P **P** **22 13 48.1 +2.0**
CRVS *e*PP PP 22 15 18.1 +0.1
CRVS *e* 22 15 38.8
CRVS *e* 22 16 15.4
WAR Warsaw 38.63 311 *e*P **P** **22 13 50.6 +1.2**
comp=Z,300nm,1.2s,mb6.0
WAR *e*S **S** **22 19 35.5 -2.2**
NIE Niedzica 38.98 306 *e*P **P** **22 13 53.5 +1.1**
NIE *e*PP PP 22 15 20.5 -6.5
NJ2 Nanjing 39.14 82 *e*P **P** **22 13 53.8 -0.1**
NJ2 S **S** **22 19 51.0 +5.3**
NJ2 SS SS 22 22 34.0 -1.7
NJ2 AMB AMB
comp=Z,40nm,1.0s,mb5.2
NJ2 AMB AMB
comp=Z,180nm,6.3s
NJ2 LR LR
comp=N,700nm,15.1s
NJ2 LR LR
comp=E,790nm,18.3s
NJ2 LR LR
comp=Z,690nm,14.8s
PSZ Piszkesteto 39.29 304 *i*Pc 22 13 58.0
PSZ *e* 22 15 29.0
PSZ Piszkesteto 39.29 304 *e*P **P** **22 13 55.5 +0.6**
comp=Z,18nm,0.9s,mb4.9
OJC Ojcow 39.32 307 *e*P **P** **22 13 55.6 +0.4**
OJC *e*PP PP 22 15 20.6 -10
OJC *e*S **S** **22 19 51.3 +3.2**
OJC MLR MLR 22 33 22.5
comp=Z,100nm,19.6s
OJC Ojcow 39.32 307 *e*P **P** **22 13 55.6 +0.4**
OJC *e*S **S** **22 19 51.3 +3.2**
OJC MLR MLR
comp=Z,100nm,19.6s
VYHS Vyhne 39.97 305 *i*P **P** **22 14 03.1 +2.5**
VYHS *e*PP PP 22 15 32.1 -5.8
VYHS *e* 22 15 52.4
VYHS *e* 22 16 11.9
VYHS *e*S **S** **22 20 00.9 +2.9**
VYHS *e*SS SS 22 22 58.1 +4.8
VYHS Vyhne 39.97 305 *i*P **P** **22 14 03.1 +2.5**
VYHS *e* 22 15 32.1
VYHS *e* 22 16 11.9
VYHS *e*S **S** **22 20 00.9 +2.9**
VYHS *e*SS SS 22 22 58.1 +4.8
RAC Raciborz 40.35 307 *e*P **P** **22 14 05.7 +2.0**
SRO Srobarova 40.36 304 *e*P **P** **22 14 07.0 +3.2**
SRO *e* 22 15 53.3
OKC Ostrava-Krasne 40.38 307 *e*P **P** **22 14 05.0 +1.0**
OKC *e*PP PP 22 15 38.0 -4.0
OKC *e*S **S** **22 20 12.0 +8.0**
OKC *e*SS SS 22 23 00.5 -1.3
RHK1 Bakonya 40.66 301 *e*P **P** **22 14 07.1 +0.8**
MORC Moravsky Berou 40.78 307 *e*P **P** **22 14 08.4 +1.2**
comp=Z,42nm,1.0s,mb5.2
MORC *e*PP PP 22 15 38.3 -7.6
KEV Kevo 41.12 338 *e*p **P** **22 14 10.7 +0.8**
comp=Z,8.6nm,0.4s,mb4.9
KEV Kevo 41.12 338 *e*P **P** **22 14 10.7 +0.8**
KEV pmax pmax
comp=Z,9.0nm,0.4s,mb5.0
ZST Bratislava 41.15 304 *e*P **P** **22 14 12.2 +2.0**
ZST *e*PP PP 22 15 50.4 +0.6
ZST *e* 22 15 59.0
ZST *e* 22 16 07.4
ZST Bratislava 41.15 304 *e*P **P** **22 14 12.2 +2.0**
ZST *e* 22 15 50.4
ZST *e* 22 16 07.4
SSE Sheshan 41.34 82 P **P** **22 14 09.9 -2.1**
SSE S **S** **22 20 19.8 +1.4**
SSE SS SS 22 23 28.3 +7.5
SSE AMB AMB
comp=Z,19nm,0.7s,mb5.0
SSE AMB AMB
comp=Z,50nm,3.4s
SSE LR LR
comp=N,268nm,26.3s
SSE LR LR
comp=E,221nm,25.7s
SSE LR LR
comp=Z,275nm,23.6s
CN2 Changchun 41.38 62 *e*P **P** **22 14 11.3 -0.9**
VRAC Vranov 41.41 306 P **P** **22 14 13.3 +0.8**
comp=Z,32nm,0.8s,mb5.2,baz=91,slow=8.3,SNR=43
ARCES ARCESS Array B 41.47 338 P **P** **22 14 13.8 +1.0**
comp=Z,24nm,0.5s,mb5.3,baz=114,slow=7.9,SNR=206
ARCES LR LR 22 32 29.7
comp=Z,827nm,18.7s,baz=99,slow=37
ARCES ARCESS Array B 41.47 338 P **P** **22 14 13.8 +1.1**
ARCES pmax pmax
comp=Z,25nm,0.5s
ARCES MLR MLR
comp=Z,827nm,18.7s
ARE0 ARCESS Array S 41.47 338⇑ *i*P **P** **22 14 13.7 +1.0**
DPC Dobruska-Polom 41.55 308 *e*P **P** **22 14 14.7 +1.3**
DPC *e*PP PP 22 15 56.9 +2.8
DPC *e*S **S** **22 20 25.8 +4.7**
DPC *e*SS SS 22 23 35.7 +11
KSP Ksiaz 41.55 308⇑ *e*P **P** **22 14 14.3 +0.8**
comp=Z,100nm,2.0s,mb5.2
KSP Ksiaz 41.55 308⇑ *e*P **P** **22 14 14.3 +0.8**
KSP *e* 22 15 52.0
KSP *e*S **S** **22 20 22.0 +0.8**
KSP *e*SS SS 22 23 26.0 +1.7
KSP Ksiaz 41.55 308⇑ *e*P **P** **22 14 14.3 +0.8**
KSP *e* 22 14 16.0
KSP *e*PP PP 22 15 52.0 -2.1
KSP *e*S **S** **22 20 22.0 +0.8**
KSP *e*SS SS 22 23 26.0 +1.7
SOP Sopron 41.55 304 *e*Pc 22 14 14.9
SOP Sopron 41.55 304⇑ *e*P **P** **22 14 14.9 +1.4**
IPM Ipoh 41.66 132⇓ *e*P **P** **22 14 18.0 +3.2**
UPC Úpice 41.74 308 *e*P **P** **22 14 16.4 +1.4**
UPC *e*PP PP 22 15 59.3 +3.1
KTK1 Kautokeino 41.95 336⇑ *i*P **P** **22 14 17.2 +0.7**
KTK1 AMb AMB 22 14 17.8
comp=Z,50nm,0.5s,mb5.5
KTK1 Kautokeino 41.95 336⇑ *i*P **P** **22 14 17.2 +0.7**
comp=Z,50nm,0.5s,mb5.5
ARSA Arzberg 42.29 303⇑ *i*P **P** **22 14 20.3 +0.7**
comp=Z,13nm,1.2s,mb4.5
BSD Bornholm Skovb 42.41 315⇑ *i*P **P** **22 14 20.1 -0.4**
comp=Z,31nm,0.6s,mb5.2
BSD Bornholm Skovb 42.41 315⇑ *i*P **P** **22 14 20.1 -0.4**
BSD pmax pmax
comp=Z,31nm,0.6s,mb5.2
PRU Pruhonice 42.71 307 *e*P **P** **22 14 24.0 +1.0**
comp=Z,41nm,1.0s,mb5.1
PRU *e*PP PP 22 16 05.0 -1.2
PRU *e*S **S** **22 20 43.7 +5.5**
PRU *e*SS SS 22 24 07.7 +23
PRU Pruhonice 42.71 307 *e*P **P** **22 14 24.0 +1.0**
PRU *e* 22 16 05.0
PRU *e*S **S** **22 20 43.7 +5.5**
PRU *e*SS SS 22 24 07.7 +23
PRU pmax pmax
comp=Z,41nm,1.0s,mb5.1
BRG Berggiesshubel 43.04 308 *i*P **P** **22 14 26.6 +1.0**
BRG *i* 22 16 07.5
BRG pmax pmax
comp=Z,52nm,1.0s,mb5.2
BRG Berggiesshubel 43.04 308 *i*P **P** **22 14 26.6 +1.0**
comp=Z,52nm,1.0s,mb5.2
BRG *i* 22 16 07.5
RUE Ruedersdorf 43.07 311 *e*P **P** **22 14 27.0 +1.1**
MOA Molln 43.07 304⇑ *i*P **P** **22 14 26.4 +0.4**
comp=Z,26nm,0.9s,mb5.0
RGN Rugen 43.32 314 *e*P **P** **22 14 29.1 +1.2**
GEC2 GERESS Array S 43.34 306 *e*P **P** **22 14 28.4 +0.2**
GERES GERESS Array B 43.34 306 P **P** **22 14 28.8 +0.6**
comp=Z,3.1nm,0.6s,mb4.2,baz=90,slow=6.7,SNR=30
GERES PP PP 22 16 09.9 -2.6
comp=Z,12nm,1.1s,baz=72,slow=9.3,SNR=7.5
GERES ScP 22 19 53.5
comp=Z,1.3nm,0.9s,baz=90,slow=4.0,SNR=4.9
GERES GERESS Array B 43.34 306 P **P** **22 14 28.8 +0.6**
GERES 22 16 09.9
GERES pmax pmax
comp=Z,3.0nm,0.6s
GERES pmax pmax
comp=Z,12nm,1.1s
GERES pmax pmax
comp=N,1.0nm,0.9s
MRLC Muro Lucano 43.38 294 *e*P **P** **22 14 29.9 +1.3**
KHC Kasperske Hory 43.40 306 *e*P **P** **22 14 28.7 +0.1**
KHC *ex* x 22 15 45.2
KHC *e*PP PP 22 16 13.6 +0.5
KHC *e*S **S** **22 20 51.6 +3.3**
KHC *e*SS SS 22 24 13.7 +16
KHC Kasperske Hory 43.40 306 *e*P **P** **22 14 28.7 +0.1**
KHC *e* 22 16 13.6
KHC *e*S **S** **22 20 51.6 +3.3**
KHC *e*SS SS 22 24 13.7 +16
HFS Hagfors 43.45 322 P **P** **22 14 29.4 +0.5**
comp=N,59nm,0.4s,mb5.6,baz=100,slow=9.0,SNR=546
HFS PP PP 22 16 09.6 -3.8
comp=N,9.3nm,0.6s,baz=106,slow=10,SNR=3.5
HFS S **S** **22 20 48.3 -0.6**
comp=N,2.2nm,0.7s,baz=90,slow=22,SNR=1.8
HFS Hagfors 43.45 322 P **P** **22 14 29.4 +0.5**
HFS 22 16 09.6
HFS S **S** **22 20 48.3 -0.6**
HFS pmax pmax
comp=Z,59nm,0.4s
HFS pmax pmax
comp=Z,9.0nm,0.6s
HFS smax
comp=N,2.0nm,0.7s
MGR Morigerati 43.48 293 *e*P **P** **22 14 30.3 +1.0**
VOY Vojsko 43.55 301 *e*P **P** **22 14 30.7 +0.8**
TRO Tromso 43.60 336 *e*P **P** **22 14 30.5 +0.6**
TRO AMb AMB 22 14 33.0
comp=Z,47nm,1.6s,mb5.0
TRO *e*PP PP 22 16 15.3 +0.4
TRO *e*S **S** **22 20 46.0 -4.9**
TRO *e*SS SS 22 24 01.8 +0.9
TRO Tromso 43.60 336 *e*P **P** **22 14 30.5 +0.6**
comp=Z,47nm,1.6s,mb5.0
CLL Collm 43.60 309⇓ P **P** **22 14 31.2 +1.0**
comp=Z,logA/T=1.6,mb5.1
CLL *i* PP PP 22 16 13.5 -1.6
CLL *i* 22 16 21.8
CLL Collm 43.60 309⇓ *i*P **P** **22 14 31.2 +1.0**
CLL *i* 22 16 13.5
CLL pmax pmax
comp=Z,40nm,1.0s,mb5.1
CLL Collm 43.60 309⇓ *i*P **P** **22 14 31.2 +1.0**
comp=Z,40nm,1.0s,mb5.1
CLL *i* PcP PcP 22 16 13.5 -3.0
CSSN Cassano Irpino 43.70 294 *e*P **P** **22 14 33.3 +2.1**
KBA Koelnbreinsper 43.78 303⇓ *i*P **P** **22 14 31.9 +0.1**
comp=Z,16nm,0.9s,mb4.8
COP Copenhagen 43.84 315⇑ *i*P **P** **22 14 32.9 +0.8**
comp=Z,44nm,1.0s,mb5.2
COP *i* S **S** **22 20 53.0 -1.6**
COP *i* 22 24 11.4
COP *i* 22 24 26.3
COP Copenhagen 43.84 315⇑ *i*P **P** **22 14 32.9 +0.8**
COP *i* S **S** **22 20 53.0 -1.6**
COP *i* 22 24 11.4
COP *i* 22 24 26.3
COP pmax pmax
comp=Z,44nm,1.0s,mb5.1
PTCC Patocco-Chiusa 43.87 302 *e*P **P** **22 14 33.2 +0.7**
YAK Yakutsk 43.92 35 *e*P **P** **22 14 32.7 +0.1**
YAK *e*S **S** **22 20 51.9 -3.7**
YAK pmax pmax
comp=Z,6.0nm,0.7s,mb4.4
YAK pmax pmax
comp=E,2.0nm,1.0s
YAK smax
comp=E,6.0nm,0.8s
YAK smax
comp=N,5.0nm,1.0s
MOR8 Moi Rana 44.17 331⇑ *i*P **P** **22 14 34.5 -0.1**
MOR8 AMb AMB 22 14 35.5
comp=Z,145nm,0.8s,mb5.8
MOR8 *e*pP pP 22 15 02.1 +3.2
MOR8 Moi Rana 44.17 331⇑ *i*P **P** **22 14 34.5 -0.1**
comp=Z,145nm,0.8s,mb5.8
FVI Forni Avoltri 44.24 302 *e*P **P** **22 14 36.7 +1.3**
CING Cingoli 44.50 298 *e*P **P** **22 14 38.5 +1.0**
MOX Moxa 44.53 308 *i*P **P** **22 14 38.3 +0.6**
comp=Z,logA/T=1.6,mb5.1
MOX PP PP 22 16 24.0 -0.4
MOX SS SS 22 24 31.0 +13
MOX Moxa 44.53 308 *e*P **P** **22 14 38.3 +0.6**
MOX *e* 22 16 24.4
MOX pmax pmax
comp=Z,80nm,1.8s,mb5.2
MOX Moxa 44.53 308 *e*P **P** **22 14 38.3 +0.6**
comp=Z,80nm,1.8s,mb5.2
MOX *e* 22 16 24.4
ARV Arcevia 44.66 298 *e*P **P** **22 14 39.5 +0.6**
SNTG Esanatoglia 44.71 298 *e*P **P** **22 14 40.6 +1.4**
FSSB Fossombrone 44.74 298 *e*P **P** **22 14 40.1 +0.7**
NB2 NORSAR Subarra 44.76 323 P **P** **22 14 39.3 -0.1**
comp=Z,33nm,0.4s,mb5.4,baz=97,slow=7.9
NB2 NORSAR Subarra 44.76 323 P **P** **22 14 39.3 -0.1**
baz=97,slow=7.9
NOA NORSAR Array B 44.76 323 P **P** **22 14 39.4 0.0**
comp=Z,34nm,0.5s,mb5.4,baz=96,slow=7.7,SNR=358
NOA PP PP 22 16 22.7 -3.9
comp=Z,6.6nm,0.7s,baz=96,slow=10,SNR=3.4
NOA S **S** **22 21 05.7 -2.1**
comp=Z,0.9nm,0.7s,baz=103,slow=9.3,SNR=2.4
NOA LR LR 22 34 06.7
comp=Z,144nm,20.3s,baz=80,slow=37

NOA NORSAR Array B 44.76 323 P **P** **22 14 39.4 0.0**
NOA 22 16 22.7
NOA S **S** **22 21 05.7 -2.1**
NOA pmax pmax
comp=Z,34nm,0.5s
NOA pmax pmax
comp=Z,7.0nm,0.7s
NOA smax
comp=N,1.0nm,0.7s
NOA MLR MLR
comp=Z,144nm,20.3s
NOA NORSAR Array B 44.76 323 P **P** **22 14 39.4 0.0**
NOA PP PP 22 16 22.7 -3.9
NOA S **S** **22 21 05.7 -2.1**
NOA LR LR 22 34 06.7
NSS Namsos 44.86 328 *e*P **P** **22 14 38.9 -1.3**
NSS AMb AMB 22 14 40.2
comp=Z,39nm,1.2s,mb5.0
NSS Namsos 44.86 328 *e*P **P** **22 14 38.9 -1.3**
comp=Z,39nm,1.2s,mb5.0
GRA1 Grafenberg Arr 44.87 307 *e*P **P** **22 14 41.6 +1.2**
comp=Z,120nm,1.7s,mb5.3
GRA1 *e*PP PP 22 16 26.3 -1.5
GRF Grafenberg Arr 44.87 307 *e*P **P** **22 14 41.6 +1.2**
GRF *e* 22 16 26.3
GRF pmax pmax
comp=Z,120nm,1.7s,mb5.3
NAO01 NORSAR Array S 44.91 323 *e*P **P** **22 14 40.4 -0.2**
comp=Z,11nm,0.4s,mb5.0
NAO01 *e*PP PP 22 16 26.8 -1.2
WTTA Wattenberg 44.91 304⇓ *i*P **P** **22 14 40.8 0.0**
comp=Z,37nm,1.3s,mb5.0
WATA Walderalm 44.94 304⇑ *i*P **P** **22 14 40.4 -0.6**
comp=Z,12nm,0.9s,mb4.6
KLR Kul'dur 44.97 54 *e*P **P** **22 14 41.6 +0.4**
KLR *e* pP 22 15 09.0 +3.4
KLR *e* 22 16 17.8
LOF Lofoten 44.99 333 *e*P **P** **22 14 42.8 +1.7**
LOF AMb AMB 22 14 44.3
comp=Z,75nm,1.4s,mb5.2
LOF Lofoten 44.99 333 *e*P **P** **22 14 42.8 +1.7**
comp=Z,75nm,1.4s,mb5.2
MURB Monte Urbino 45.00 298 *e*P **P** **22 14 42.6 +1.0**
FUR Furstenfeldbru 45.03 305 *e*P **P** **22 14 42.5 +0.8**
MNS Montasola 45.08 297 *e*P **P** **22 14 43.6 +1.4**
CTI Castel Tesino 45.10 302 *e*P **P** **22 14 42.6 +0.3**
BSEG Bad Segeberg 45.10 313 *e*P **P** **22 14 43.1 +0.9**
BSEG pmax pmax
comp=Z,58nm,0.9s,mb5.3
SQTA Sankt Quirin 45.21 304⇑ *i*P **P** **22 14 42.5 -0.6**
comp=Z,28nm,1.4s,mb4.8
MOTA Moosalm 45.26 304⇑ *i*P **P** **22 14 42.9 -0.6**
comp=Z,8.8nm,0.8s,mb4.5
SFI Santa Sofia 45.35 299 *e*P **P** **22 14 45.6 +1.3**
PGD Poggio Sodo 45.45 299 *e*P **P** **22 14 46.9 +1.8**
KONO Kongsberg 45.47 321 *e*P **P** **22 14 45.1 0.0**
KONO AMb AMB 22 14 47.1
comp=Z,54nm,1.5s,mb5.1
KONO *e*S **S** **22 21 11.9 -6.0**
KONO *e*SS SS 22 24 39.4 +4.2
KONO AMS AMS 22 37 10.9
comp=Z,125nm,16.0s
KONO Kongsberg 45.47 321 *c i*P **P** **22 14 45.2 +0.2**
KONO Kongsberg 45.47 321 *e*P **P** **22 14 45.1 0.0**
comp=Z,2µm,1.5s
KONO LR LR
comp=Z,3µm,16.0s
VMG Vicchio 45.56 299 *e*P **P** **22 14 47.7 +1.8**
MUD Monsted U'grnd 45.67 317⇑ *i*P **P** **22 14 47.5 +0.9**
MUD *i* S PP 22 16 35.5 0.0
MUD pmax pmax
comp=Z,34nm,0.9s,mb5.1
SEI Scarperia 45.67 299 *e*P **P** **22 14 48.6 +1.7**
TIXI Tiksi 45.83 22 *e*P **P** **22 14 47.2 -0.5**
TIXI *e*S **S** **22 21 19.8 -3.1**
TIXI *e* 22 22 05.2
TIXI pmax pmax
comp=Z,92nm,0.9s,mb5.5
TIXI MLR MLR
comp=Z,1µm,15.0s
TIXI Tiksi 45.83 22 *e*P **P** **22 14 47.5 -0.2**
comp=Z,18nm,0.3s,mb5.3
TIXI *e*pP pP 22 15 15.3 +3.1
TIXI *e*ScP 22 20 03.2
CSNT Castellina Chi 45.84 298 *e*P **P** **22 14 48.4 +0.2**
DOMB Dombas 45.87 324 *e*P **P** **22 14 48.3 +0.2**
DOMB AMb AMB 22 14 51.1
comp=Z,76nm,1.7s,mb5.2
DOMB *e*PP PP 22 16 36.5 -1.0
DOMB Dombas 45.87 324 *e*P **P** **22 14 48.3 +0.2**
comp=Z,76nm,1.7s,mb5.2
ZCCA Zocca 45.88 300 *e*P **P** **22 14 53.5 +5.0**
BRMO Bormio 45.90 303 *e*P **P** **22 14 48.8 +0.2**
DAVA Damuels 46.09 304⇑ *i*P **P** **22 14 50.0 -0.1**
comp=Z,52nm,0.8s,mb5.3
GSCL Gusciola 46.15 300 *e*P **P** **22 14 52.7 +2.0**
DAVOX Davos 46.18 303 P **P** **22 14 50.5 -0.3**
DAVOX PcP PcP 22 16 24.5 -0.9
comp=Z,12nm,0.8s,baz=132,slow=5.8,SNR=3.4
DAVOX ScP 22 20 05.2
comp=Z,2.1nm,0.7s,baz=109,slow=1.5,SNR=3.6
DAVOX S **S** **22 21 29.4 +1.1**
ERBM Eremo 46.26 300 *e*P **P** **22 14 53.8 +2.3**
STU Stuttgart 46.31 306 *e*P **P** **22 14 53.3 +1.5**
SARO Sassorosso 46.32 299 P **P** **22 14 53.3 +1.3**
TOD Tromm 46.44 307 *e*P **P** **22 14 54.0 +1.1**
MOL Molde 46.61 325 *e*P **P** **22 14 56.3 +2.3**
MOL AMb AMB 22 14 59.0
comp=Z,50nm,1.2s,mb5.1
MOL Molde 46.61 325 *e*P **P** **22 14 56.3 +2.3**
comp=Z,50nm,1.2s,mb5.1
SPAK Spaichingen 46.69 305 *e*P **P** **22 14 56.4 +1.6**
BOB Bobbio (Coli) 46.86 300 *e*P **P** **22 14 57.3 +1.1**
BFO Black Forest 46.95 305 *e*P **P** **22 14 57.8 +0.9**
BLS5 Blasjo 47.07 321 *e*P **P** **22 14 59.5 +1.8**
BLS5 AMb AMB 22 15 01.4
comp=Z,42nm,1.0s,mb5.1
BLS5 Blasjo 47.07 321 *e*P **P** **22 14 59.5 +1.8**
comp=Z,42nm,1.0s,mb5.1
VAI Varese 47.10 302 *e*P **P** **22 14 57.2 -0.9**
LANF Langenberg 47.18 306 *e*P **P** **22 15 00.1 +1.4**
WIT Witteveen 47.37 312 *e*P **P** **22 15 01.9 +1.8**
comp=Z,67nm,0.6s,mb5.5
WTSB Winterswijk 47.39 311 *e*P **P** **22 15 01.2 +1.0**
comp=Z,28nm,1.5s,mb4.8
PCP Pian Castagno 47.54 300 P **P** **22 15 00.7 -0.8**
RUP Ruppelstein 47.55 307 *e*P **P** **22 15 02.9 +1.4**
WLS Welschbruch 47.58 306 *e*P **P** **22 15 02.2 +0.4**
RUND Rundenannen 47.61 322 *e*P **P** **22 15 02.5 +0.7**
RUND AMb AMB 22 15 03.2
comp=Z,102nm,0.8s,mb5.7
BER Bergen 47.62 322 *e*P **P** **22 15 02.4 +0.4**
BER AMb AMB 22 15 04.4
comp=Z,36nm,1.1s,mb5.1
BER Bergen 47.62 322 *e*P **P** **22 15 02.4 +0.4**
comp=Z,36nm,1.1s,mb5.1
CDF Champ du Feu 47.63 306 *e*P **P** **22 15 01.8 -0.4**
comp=Z,26nm,0.8s,mb4.8
BBS Basel-Blauen 47.65 304 *e*P **P** **22 15 02.2 -0.1**
EGD Espegrend 47.68 322 *e*P **P** **22 15 02.6 +0.2**
EGD AMb AMB 22 15 05.0
comp=Z,33nm,1.3s,mb5.0
EGD Espegrend 47.68 322 *e*P **P** **22 15 02.6 +0.2**
comp=Z,33nm,1.3s,mb5.0
ASK Askoy 47.69 322 *e*P **P** **22 15 02.9 +0.4**
ASK AMb AMB 22 15 04.4
comp=Z,52nm,1.1s,mb5.3
ASK Askoy 47.69 322 *e*P **P** **22 15 02.9 +0.4**
comp=Z,52nm,1.1s,mb5.3
ECH Echery 47.74 305 *e*P **P** **22 15 03.7 +0.7**
FOO Floro 47.76 324 *e*P **P** **22 15 03.2 +0.2**
FOO AMb AMB 22 15 05.3
comp=Z,43nm,1.1s,mb5.2
FOO *e*pP pP 22 15 30.1 +2.4
FOO Floro 47.76 324 *e*P **P** **22 15 03.2 +0.2**
comp=Z,43nm,1.1s,mb5.2
SPITS Spitsbergen Ar 47.77 347 P **P** **22 15 04.3 +1.3**
comp=Z,14nm,0.6s,mb5.0,baz=124,slow=4.9,SNR=52
SPITS PcP PcP 22 16 30.2 -0.6
comp=Z,4.9nm,0.6s,baz=124,slow=7.2,SNR=2.9
SPITS LR LR 22 36 14.4
comp=Z,6.2nm,20.7s,baz=352,slow=37
SPB4 Spitsbergen Ar 47.78 347 *e*P **P** **22 15 04.4 +1.4**
MOF Molkenrain 47.82 305 *e*P **P** **22 15 04.2 +0.5**

FIN Finale Ligure 47.85 300 P **P** **22 15 02.8 -1.2**
RORO 47.97 300 P **P** **22 15 04.0 -0.9**
HINF Hinteralfeld 48.01 305 *e*P **P** **22 15 04.3 -0.9**
comp=Z,55nm,0.9s,mb5.1
ROB Roburent 48.07 300 P **P** **22 15 05.6 -0.1**
HGN Heimansgroeve 48.10 309 *e*P **P** **22 15 06.2 +0.4**
comp=Z,7.7nm,0.6s,mb4.7
HGN *i* S **S** **22 21 57.2 +2.0**
LOMF Lomont 48.12 304 *e*P **P** **22 15 06.1 +0.1**
WLF Walferdange 48.14 308 *e*P **P** **22 15 07.2 +1.1**
comp=Z,49nm,0.9s,mb5.3
MONE Monesi 48.20 300 P **P** **22 15 06.4 -0.2**
RSP Reno Superiore 48.30 301 P **P** **22 15 06.1 -1.2**
LSD Ceresole Reale 48.30 302 P **P** **22 15 07.9 +0.5**
HAU Haudompre 48.31 305 *e*P **P** **22 15 06.7 -0.8**
comp=Z,38nm,0.8s,mb5.0
HAU *e*R
comp=Z,78nm,19.0s
BHB Bricherasio 48.36 301 P **P** **22 15 06.0 -1.9**
ENR Entracque 48.40 300 P **P** **22 15 08.2 0.0**
FENE Fenestrelle 48.46 301 P **P** **22 15 07.6 -1.0**
SBF Sospel 48.47 300 *e*P **P** **22 15 08.4 -0.4**
comp=Z,39nm,0.9s,mb5.0
THEF They Montfort 48.51 306 *e*P **P** **22 15 09.8 +0.8**
PZZ Prazzo 48.55 301 P **P** **22 15 07.9 -1.5**
LPG La Plagne 48.56 302 *e*P **P** **22 15 09.3 -0.2**
comp=Z,50nm,0.8s,mb5.2
LPL La Plagne 48.57 302 *e*P **P** **22 15 09.4 -0.1**
comp=Z,15nm,0.6s,mb4.8
RSL Roselend 48.61 302 *e*P **P** **22 15 10.4 +0.6**
RRL Cesana Torines 48.67 301 P **P** **22 15 09.9 -0.4**
BNI Bardonecchia 48.72 301 *e*P **P** **22 15 09.8 -0.8**
MBDF Montbardon 48.73 301 *e*P **P** **22 15 10.8 +0.1**
comp=Z,33nm,0.7s,mb5.1
CABF La Chapelle 48.77 304 *e*P **P** **22 15 10.7 -0.3**
comp=Z,40nm,0.8s,mb5.1
KBS Kingsbay 48.89 347 *e*PP PP 22 17 03.1 -2.8
KBS *e*S **S** **22 22 06.3 +0.3**
KBS *e*SS SS 22 25 35.7 +2.0
KBS AMS AMS 22 38 29.8
comp=Z,132nm,18.0s
KBS Kingsbay 48.89 347 *e*P **P** **22 15 12.5 +0.9**
comp=Z,27nm,0.7s,mb5.3
GIVF Givet 48.91 308 *e*P **P** **22 15 11.8 -0.2**
KMBO Kilima Mbogo 48.97 228 P **P** **22 15 14.8 +1.8**
comp=Z,16nm,0.6s,mb5.1,baz=35,slow=12,SNR=51
KMBO Kilima Mbogo 48.97 228 *e*P **P** **22 15 14.5 +1.5**
comp=Z,12nm,0.7s,mb4.9
MEZF Maizieres J'vi 49.06 306 *e*P **P** **22 15 12.9 -0.4**
comp=Z,121nm,1.2s,mb5.4
FRF La Foret Royal 49.10 300 *e*P **P** **22 15 12.6 -1.0**
comp=Z,37nm,1.0s,mb5.0
LMR La Mourre 49.26 299 *e*P **P** **22 15 13.6 -1.2**
comp=Z,13nm,0.9s,mb4.5
ORIF Oris-en-Rattie 49.30 301 *e*P **P** **22 15 14.6 -0.5**
comp=Z,6.8nm,0.5s,mb4.5
ORIF *e*R
comp=Z,140nm,22.0s
BAIF Baives 49.31 308 *e*P **P** **22 15 15.0 -0.1**
comp=Z,98nm,1.0s,mb5.4
GRN Grenoble 49.31 302 *e*P **P** **22 15 15.9 +0.7**
OG05 Jujurieux 49.32 303 *e*P **P** **22 15 16.9 +1.6**
SMRF Simiane la Rot 49.75 300 *e*P **P** **22 15 18.0 -0.6**
comp=Z,17nm,1.0s,mb4.6
VIVF Saint-Julien-l 50.15 302 *e*P **P** **22 15 21.1 -0.5**
comp=Z,18nm,0.5s,mb5.0
SMF Signal de Mont 50.27 304 *e*P **P** **22 15 21.5 -1.0**
comp=Z,72nm,0.9s,mb5.3
SSF Saint Saulge 50.40 305 *e*P **P** **22 15 22.4 -1.1**
comp=Z,50nm,1.1s,mb5.1
AVF Avril sur Loir 50.56 304 *e*P **P** **22 15 23.6 -1.1**
comp=Z,73nm,0.9s,mb5.4
PLDF La Plantade 50.58 303 *e*P **P** **22 15 24.8 -0.1**
CMAH Djebel Manchou 50.61 291 P **P** **22 15 26.0 +0.8**
YEL1 Yell 50.79 323⇑ *e*P **P** **22 15 26.0 -0.3**
LRW Lerwick 50.88 322 *e*P **P** **22 15 26.5 -0.5**
AGO Saint Agoulin 50.89 303 *e*P **P** **22 15 26.6 -0.7**
LASF Ste Croix 50.91 301 *e*P **P** **22 15 27.0 -0.5**
comp=Z,74nm,1.1s,mb5.3
HYF Humbligny 50.92 305 *e*P **P** **22 15 26.8 -0.7**
SAN1 Sandwick 50.92 322⇑ *e*P **P** **22 15 26.7 -0.6**
BGF Bois d'Agland 50.96 304 *e*P **P** **22 15 26.5 -1.2**
LBL Lubilhac 51.02 302 *e*P **P** **22 15 27.6 -0.7**
CASM Ain Smara 51.44 291 P **P** **22 15 31.5 0.0**
TCF Toulx Ste Croi 51.45 304 *e*P **P** **22 15 30.8 -0.7**
comp=Z,81nm,1.1s,mb5.4
CAF Calviac 51.91 302 *e*P **P** **22 15 34.3 -0.7**
comp=Z,19nm,0.8s,mb4.9
RJF Les Rejaudoux 52.18 303 *e*P **P** **22 15 36.3 -0.7**
comp=Z,13nm,0.7s,mb4.8
RJF *e*R
comp=Z,95nm,19.2s
CKHR Kef el Ahmar 52.26 291 P **P** **22 15 38.0 +0.3**
MTLF Montolieu 52.26 300 *e*P **P** **22 15 36.7 -0.9**
comp=Z,6.7nm,0.6s,mb4.6
MCD Coleburn Disti 52.31 319⇑ *e*P **P** **22 15 37.5 -0.3**
MCD AMB AMB 22 15 40.2
comp=Z,106nm,1.1s,mb5.8
LDF La Druitiere 52.39 307 *e*P **P** **22 15 37.1 -1.4**
comp=Z,32nm,0.8s,mb5.1
BTA Talkin 52.51 316⇑ *e*P **P** **22 15 38.6 -0.7**
BTA ⇑ *e*P 22 15 39.5
BTA AMB AMB 22 15 42.2
comp=Z,80nm,1.5s,mb5.5
BTA Talkin 52.51 316 P **P** **22 15 39.5 +0.2**
BTA AMB AMB 22 15 42.2
comp=Z,80nm,1.5s,mb5.5
FLN La Foliniere 52.58 308 *e*P **P** **22 15 38.2 -1.7**
comp=Z,61nm,1.0s,mb5.3
FLN *e*R
comp=Z,111nm,17.8s
BBH Bruntsheil 52.60 316⇑ *e*P **P** **22 15 39.2 -0.8**
YSS Yuzh-Sakhalins 52.64 55*c i*P **P** **22 15 40.5 +0.1**
YSS pmax pmax
comp=Z,39nm,1.2s,mb5.3
YSS MLR MLR
comp=Z,300nm,18.0s
BDL Dobcross Hall 52.67 315⇑ *e*P **P** **22 15 40.1 -0.4**
EKA Eskdalemuir Ar 52.69 316 P **P** **22 15 39.9 -0.7**
comp=Z,33nm,1.1s,mb5.3,baz=91,slow=7.1,SNR=43
EKA PP PP 22 17 37.5 -4.3
comp=Z,3.3nm,0.8s,baz=99,slow=9.3,SNR=3.1
EKA Eskdalemuir Ar 52.69 316 P **P** **22 15 39.9 -0.7**
EKA 22 17 37.6
EKA pmax pmax
comp=Z,33nm,1.1s
EKA pmax pmax
comp=Z,3.0nm,0.8s
ESK Eskdalemuir 52.72 316 *e*P **P** **22 15 39.6 -1.2**
comp=Z,42nm,1.2s,mb5.3
MVH1 Achvaich 52.74 319⇑ *e*P **P** **22 15 40.3 -0.6**
BHH Howats Hill 52.77 316⇑ *e*P **P** **22 15 40.3 -0.9**
BHH AMB AMB 22 15 43.9
comp=Z,60nm,1.2s,mb5.5
LFF La Frestale 52.81 303 *e*P **P** **22 15 40.1 -1.6**
comp=Z,15nm,0.5s,mb5.0
BBO1 Bothel 52.86 315⇑ *e*P **P** **22 15 41.9 0.0**
GRR Gorron 52.92 307 *e*P **P** **22 15 40.8 -1.6**
comp=Z,56nm,0.9s,mb5.3
JMIC Jan Mayen 52.92 336 LR LR 22 38 32.2
comp=Z,184nm,19.5s,baz=72,slow=36
MDO Dochfour 52.93 319⇑ *e*P **P** **22 15 41.6 -0.7**
MDO AMB AMB 22 15 44.5
comp=Z,50nm,1.3s,mb5.4
MFF Saint Martin d 52.94 305 *e*P **P** **22 15 41.0 -1.6**
comp=Z,44nm,1.1s,mb5.1
BWH Wardlaw 53.00 316⇑ *e*P **P** **22 15 42.4 -0.6**
PCOU Corrie 53.08 317⇑ *e*P **P** **22 15 43.0 -0.5**
MLS Moulis 53.16 300 *e*P **P** **22 15 42.4 -1.9**
EMIR Miracle 53.19 299 P **P** **22 15 42.2 -2.3**
comp=Z,4.8nm,0.5s,mb4.8
PCA1 Carrot 53.22 317⇑ *e*P **P** **22 15 44.1 -0.5**
KSB Sheil Bridge 53.54 319⇑ *e*P **P** **22 15 46.3 -0.6**
KSB AMB AMB 22 15 48.9
comp=Z,91nm,1.1s,mb5.7
KPL Plockton 53.63 319⇑ *e*P **P** **22 15 46.8 -0.8**
KPL AMB AMB 22 15 50.2
comp=Z,55nm,1.1s,mb5.5
EPF Esparros 53.67 301 *e*P **P** **22 15 46.7 -1.3**
comp=Z,4.2nm,0.5s,mb4.4
EPOB Poblet 53.69 298 P **P** **22 15 45.8 -2.4**
comp=Z,10nm,1.0s,mb4.8
KAR1 Arisaig 53.82 318⇑ *e*P **P** **22 15 48.5 -0.4**
EIBI Ibiza 54.29 296 P **P** **22 15 51.2 -1.4**
comp=Z,10nm,0.9s,mb4.8

ETSF Etsaut 54.33 301 *e*P **P** **22 15 51.6 -1.3**
comp=Z,18nm,0.5s,mb5.0
SEY Seymchan 54.38 34 *e*P **P** **22 15 53.7 +0.8**
SEY 22 16 57.6
SEY 22 17 55.6
SEY *e*PPP PPP 22 19 08.8 -1.7
SEY *e*S **S** **22 23 26.4 +5.1**
SEY pmax pmax
comp=Z,8.0nm,0.7s,mb4.9
ROSF Rostrenen 54.48 308 *e*P **P** **22 15 52.4 -1.4**
comp=Z,55nm,0.9s,mb5.3
QUIF Quistinic 54.53 307 *e*P **P** **22 15 52.6 -1.6**
comp=Z,25nm,0.8s,mb5.0
ESAC San Caprasio 54.66 299 P **P** **22 15 54.3 -0.9**
comp=Z,14nm,0.8s,mb5.0
SJPF Ste Jean 54.73 301 *e*P **P** **22 15 54.4 -1.3**
EALK Alkurruntz 54.88 301 P **P** **22 15 54.9 -2.0**
comp=Z,6.4nm,0.8s,mb4.7
DAG Danmarks Havn 55.03 344⇓ *i*P **P** **22 15 57.5 0.0**
comp=Z,32nm,0.8s,mb5.4
DAG Danmarks Havn 55.03 344⇓ *i*P **P** **22 15 57.5 0.0**
DAG pmax pmax
comp=Z,32nm,0.8s,mb5.4
DLF Lyons Farm 55.09 314 *e*P **P** **22 15 57.5 -0.7**
EMOS Mosqueruela 55.13 298 P **P** **22 15 57.1 -1.6**
comp=Z,6.9nm,0.8s,mb4.7
CMA1 Manaccan 55.14 310 *e*P **P** **22 15 57.6 -1.0**
CRQ2 Rosemanowes 2 55.14 310 *e*P **P** **22 15 57.5 -1.1**
CCA1 Carnmenellis 55.17 310⇑ *e*P **P** **22 15 57.6 -1.2**
CGH1 Goonhilly 55.17 310 *e*P **P** **22 15 58.1 -0.8**
CGW Gweek 55.19 310 *e*P **P** **22 15 58.1 -0.9**
CPZ Penzance 55.40 310 *e*P **P** **22 15 59.2 -1.3**
CPZ AMB AMB 22 16 03.1
comp=Z,27nm,1.6s,mb5.0
DCN Croghan 55.50 314 *e*P **P** **22 16 00.8 -0.4**
EBEN Beniarda 55.55 296 P **P** **22 15 59.6 -2.1**
ETOR Torete 56.09 299 P **P** **22 16 03.9 -1.8**
comp=Z,1.8nm,0.4s,mb4.5
ELAN Lanestosa 56.21 302 P **P** **22 16 04.9 -1.5**
comp=Z,9.1nm,0.7s,mb4.9
ETOB Tobarra 56.53 296 P **P** **22 16 06.5 -2.2**
comp=Z,9.4nm,0.8s,mb4.9
EMUR La Murta 56.61 295 P **P** **22 16 06.9 -2.4**
EVIA Vianos 57.22 296 P **P** **22 16 11.4 -2.2**
EHUE Huescar 57.61 296 P **P** **22 16 13.9 -2.4**
comp=Z,4.3nm,0.5s,mb4.7
GUD Guadarrama 57.64 299 P **P** **22 16 14.6 -1.9**
comp=Z,4.6nm,0.4s,mb4.9
ESDC Sonseca Array 57.88 298 P **P** **22 16 17.1 -1.1**
comp=Z,5.3nm,0.6s,mb4.8,baz=60,slow=7.1,SNR=47
ESDC Sonseca Array 57.88 298 P **P** **22 16 16.0 -2.2**
comp=Z,5.2nm,0.6s,mb4.7
ESLA Sonseca Array 57.88 298⇓ *e*P **P** **22 16 17.3 -0.8**
comp=Z,1.9nm,0.8s,mb4.2
EQES Quesada 57.96 296 P **P** **22 16 16.4 -2.4**
comp=Z,27nm,0.9s,mb5.3
EBER Berja 58.19 295 P **P** **22 16 17.9 -2.5**
EBAN Banos Encina 58.34 296 P **P** **22 16 18.9 -2.5**
ECOG Cogollos-Vega 58.53 295 P **P** **22 16 20.2 -2.5**
comp=Z,9.8nm,1.0s,mb4.8
BILL Bilibino 58.63 26 *e*P **P** **22 16 23.0 0.0**
BILL *e* 22 17 12.1
BILL pmax pmax
comp=Z,5.0nm,0.7s,mb4.7
BILL Bilibino 58.63 26 *e*P **P** **22 16 22.9 -0.1**
comp=Z,5.6nm,0.6s,mb4.8
EPON Pontenova 58.70 303 P **P** **22 16 22.1 -1.8**
comp=Z,5.1nm,0.4s,mb4.9
ERON Agron 58.81 295 P **P** **22 16 22.1 -2.6**
EADA Adamuz 58.91 297 P **P** **22 16 22.9 -2.5**
comp=Z,9.3nm,0.8s,mb4.9
ELUQ Luque 58.93 296 P **P** **22 16 22.9 -2.6**
comp=Z,5.8nm,0.4s,mb5.0
ECAL Calabor 59.05 302 P **P** **22 16 23.7 -1.9**
ELOJ Sierra Loja 59.01 295 P **P** **22 16 23.5 -2.6**
ERUA La Rua 59.05 302 P **P** **22 16 24.4 -1.9**
EINC Incio 59.09 303 P **P** **22 16 24.7 -1.8**
comp=Z,14nm,0.6s,mb5.2
PVRL Vila Real 59.88 301 *e*P **P** **22 16 31.6 -0.4**
ELOB Lobios 59.89 302 P **P** **22 16 30.1 -2.0**
comp=Z,8.5nm,0.6s,mb5.0
ELIJ Sierra de Lija 60.00 296 P **P** **22 16 30.1 -2.8**
EMAZ Mazaricos 60.08 303 P **P** **22 16 31.4 -2.0**
comp=Z,4.7nm,0.4s,mb4.9
MTE Manteigas 60.12 300 *e*P **P** **22 16 33.4 -0.2**
comp=Z,18nm,0.9s,mb5.1
PVIS Viseu 60.23 301 *e*P **P** **22 16 34.2 -0.2**
comp=Z,17nm,0.7s,mb5.2
PCBR Castelo Branco 60.30 300 *e*P **P** **22 16 35.5 +0.6**
ESPR Espera 60.37 296 P **P** **22 16 32.5 -2.9**
comp=Z,4.6nm,0.4s,mb4.9
EBAD Badajoz 60.41 298 P **P** **22 16 33.1 -2.6**
comp=Z,20nm,0.7s,mb5.2
EMIN Mina Concepcio 60.58 297 P **P** **22 16 34.1 -2.8**
comp=Z,8.8nm,1.0s,mb4.7
EVO Evora 61.22 298 *e*P **P** **22 16 40.3 -0.9**
comp=Z,37nm,1.3s,mb4.9
PALC Alcoutim 61.29 297 *e*P **P** **22 16 40.2 -1.4**
PBEJ Beja 61.33 298 *e*P **P** **22 16 41.3 -0.6**
SUMG Summit 61.37 341⇑ *e*P **P** **22 16 42.5 +0.8**
MOE Montemor 61.46 299 *e*P **P** **22 16 42.5 -0.3**
PLOU Loures 61.88 299 *e*P **P** **22 16 44.8 -0.7**
PTEO Sao Teotonio 62.15 298 *e*P **P** **22 16 46.9 -0.5**
RES Resolute Bay 68.93 356 *e*P **P** **22 17 29.7 -0.4**
comp=Z,5.3nm,1.0s,mb4.3
IMA Indian Mountai 72.20 18 *e*P **P** **22 17 48.0 -1.9**
comp=Z,56nm,0.8s,mb5.4
INK Inuvik 74.05 9 P **P** **22 18 00.9 +0.3**
comp=Z,10nm,0.5s,mb4.8,baz=356,slow=6.4,SNR=81
INK Inuvik 74.05 9 P **P** **22 18 00.9 +0.3**
INK pmax pmax
comp=Z,10.0nm,0.5s
INK Inuvik 74.05 9⇑ *i*P **P** **22 18 00.8 +0.2**
comp=Z,12nm,0.6s,mb4.8
INK *e*pP pP 22 18 30.2 +2.9
FITZ Fitzroy Crossi 74.48 127⇓ *i*P **P** **22 18 04.9 +0.9**
comp=Z,4.5nm,0.8s,mb4.2
FITZ *i* pP 22 18 36.0 +5.2
FITZ Fitzroy Crossi 74.48 127 P **P** **22 18 04.7 +0.7**
comp=Z,5.7nm,0.8s,mb4.3,baz=354,slow=4.6,SNR=6.2
FITZ pP pP 22 18 36.0 +5.2
comp=Z,14nm,1.0s,baz=347,slow=4.2,SNR=6.7
LBTB Lobatse 74.77 222⇑ *i*P **P** **22 18 06.7 +1.1**
comp=Z,53nm,1.0s,mb5.2
ILAR Eielson Array 74.87 16 P **P** **22 18 05.2 -0.1**
comp=Z,7.4nm,0.8s,mb4.4,baz=314,slow=4.5,SNR=27
ILAR Eielson Array 74.87 16 P **P** **22 18 05.2 -0.1**
ILAR pmax pmax
comp=Z,7.0nm,0.9s
DBIC Dimbokro 75.05 267 P **P** **22 18 05.8 -1.6**
comp=Z,5.2nm,0.5s,mb4.5,baz=33,slow=7.4,SNR=20
DBIC Dimbokro 75.05 267 P **P** **22 18 05.8 -1.6**
DBIC pmax pmax
comp=Z,5.0nm,0.5s
DBIC Dimbokro 75.05 267 P **P** **22 18 05.8 -1.6**
KIC Kosan Boka 75.14 267 *e*P **P** **22 18 05.9 -2.0**
comp=Z,43nm,0.4s,mb5.5
TIC Toumodi 75.20 267 *e*P **P** **22 18 06.4 -1.8**
comp=Z,27nm,0.3s,mb5.4
MCK McKinley 75.28 17 *e*P **P** **22 18 07.4 -0.3**
comp=Z,4.8nm,0.5s,mb4.5
LIC Lamto 75.45 267 *e*P **P** **22 18 07.9 -1.7**
comp=Z,28nm,0.5s,mb5.2
YKA Yellowknife Ar 81.43 3 P **P** **22 18 41.6 +0.3**
comp=Z,10.0nm,0.5s,mb4.9,baz=348,slow=5.3,SNR=403
YKA pP pP 22 19 12.5 +4.1
comp=Z,3.7nm,0.6s,baz=349,slow=5.4,SNR=2.3
YKA S S 22 28 42.4 -0.1
comp=Z,0.1nm,0.9s,baz=349,slow=9.4,SNR=2.8
YKA PKKPbc 22 37 12.3
comp=Z,0.6nm,0.9s,baz=169,slow=2.4,SNR=12
YKA Yellowknife Ar 81.43 3 P **P** **22 18 41.6 +0.3**
YKA *PP pP 22 19 12.5 +4.1
YKA S S 22 28 42.4 0.0
YKA pmax pmax
comp=Z,10.0nm,0.5s
YKA pmax pmax
comp=N,4.0nm,0.6s
YKA pmax pmax
comp=Z,1.0nm,0.9s
YKA Yellowknife Ar 81.43 3 P **P** **22 18 41.6 +0.3**
YKA pP pP 22 19 12.5 +4.1
YKA S S 22 28 42.4 -0.1
YKA PKKPbc 22 37 12.3
WRA Warramunga Arr 81.57 122 P **P** **22 18 42.8 -0.1**
comp=Z,6.3nm,0.7s,mb4.6,baz=324,slow=4.9,SNR=67

WRA					pP	pP	22 19 14.3	+4.3	
	comp=Z,4.3nm,0.9s,baz=322,slow=5.2,SNR=3.5								
WRA					PKKPbc		22 37 14.8		
	comp=Z,0.4nm,0.4s,baz=122,slow=2.1,SNR=22								
WRA	**Warramunga Arr**	**81.57**	**122**		P	**P**	**22 18 42.8**	**-0.1**	
WRA					*PP	pP	22 19 14.3	+4.3	
WRA					pmax	pmax			
	comp=Z,6.0nm,0.7s								
WRA					pmax	pmax			
	comp=N,4.0nm,0.9s								
WRAB	**Tennant Creek**	**81.57**	**122**	*e*P		**P**	**22 18 42.9**	**-0.1**	
	comp=N,10nm,0.6s,mb4.8								
WRAB					*e*pP	pP	22 19 13.3	+3.3	
WB2	**Warramunga Arr**	**81.58**	**122**	⇑*i*P		**P**	**22 18 43.0**	**0.0**	
SCHQ	**Schefferville**	**82.43**	**337**	P		**P**	**22 18 47.1**	**+0.5**	
	comp=N,7.1nm,0.7s,mb4.6,baz=49,slow=6.8,SNR=13								
SCHQ	**Schefferville**	**82.43**	**337**	*e*P		**P**	**22 18 47.0**	**+0.4**	
	comp=N,9.4nm,0.7s,mb4.7								
SUR	**Sutherland**	**83.14**	**221**	*e*P		**P**	**22 18 52.2**	**+1.5**	
	comp=N,16nm,0.8s,mb4.9								
SUR					*e*pP	pP	22 19 20.7	+2.8	
AS12	**Alice Springs**	**83.84**	**125**	⇓*i*P		**P**	**22 18 54.7**	**+0.3**	
	comp=N,4.6nm,0.6s,mb4.5								
ASAR	**Alice Springs**	**83.84**	**125**	P		**P**	**22 18 54.5**	**+0.1**	
	comp=N,8.0nm,0.9s,mb4.6,baz=309,slow=5.1,SNR=50								
DLBC	**Dease Lake**	**83.92**	**11**	*e*P		**P**	**22 18 54.8**	**+0.9**	
FCC	**Fort Churchill**	**84.53**	**352**	*e*P		**P**	**22 18 57.6**	**+0.7**	
	comp=N,18nm,1.1s,mb4.9								
FCC					*e*pP	pP	22 19 27.5	+3.2	
CTA	**Charters Tower**	**90.12**	**115**	⇑*i*P		**P**	**22 19 25.1**	**+0.3**	
	comp=N,6.8nm,0.6s,mb5.0								
CTA	**Charters Tower**	**90.12**	**115**	P		**P**	**22 19 25.1**	**+0.3**	
	comp=N,9.2nm,0.6s,mb5.1,baz=306,slow=5.1,SNR=12								
CTA	**Charters Tower**	**90.12**	**115**	P		**P**	**22 19 25.2**	**+0.4**	
CTA					pmax	pmax			
	comp=Z,9.0nm,0.6s								
CTAO	**Charters Tower**	**90.12**	**115**	*e*P		**P**	**22 19 24.9**	**+0.1**	
	comp=Z,7.6nm,0.5s,mb5.1								
ULM	**Lac du Bonnet**	**93.10**	**352**	P		**P**	**22 19 38.1**	**+0.2**	
	comp=Z,6.4nm,1.0s,mb4.9,baz=334,slow=3.9,SNR=4.8								
ULM					LR	LR	23 03 13.2		
	comp=Z,256nm,19.4s,baz=304,slow=36								
STKA	**Stephens Creek**	**94.37**	**127**	P		**P**	**22 19 44.3**	**+0.2**	
	comp=Z,1.7nm,0.6s,mb4.5,baz=195,slow=6.9,SNR=5.0								
WALA	**Waterton Lakes**	**94.89**	**4**	*e*P		**P**	**22 19 47.1**	**+1.0**	
NVAR	**Mina Array Bea**	**105.10**	**8**	PKiKP		PP	22 24 46.9	-10	
	comp=Z,0.6nm,0.8s,baz=315,slow=2.6,SNR=4.8								
CAUB	**Caruaru**	**108.86**	**274**	⇓*i*P			22 25 20.3		
CAUB				*i*			22 25 29.2		
CAUB				*i*			22 25 40.7		
VNA2	**Neumayer--Watz**	**120.35**	**202**	P		Pdif	22 21 39.0	+0.6	
VNA3	**Neumayer Olymp**	**121.16**	**202**	⇑*i*P		Pdif	22 21 37.0	-5.0	
BDFB	**Brasilia**	**122.74**	**274**	PKP		PKPdf	22 25 19.8	+0.7	
	comp=Z,1.5nm,0.5s,baz=177,slow=13,SNR=3.5								
BDFB	**Brasilia**	**122.74**	**274**	PKIKP		PKPdf	22 25 19.8	+0.7	
BDFB				pmax		pmax			
	comp=Z,2.0nm,0.5s								
QSPA	**South Pole Qui**	**126.09**	**180**	*e*PKP		PKPdf	22 25 24.3	+0.3	
ROSC	**El Rosal**	**128.03**	**315**	PKP		PKPdf	22 25 31.0	+1.5	
	comp=Z,6.5nm,0.5s,baz=87,slow=18,SNR=4.5								
CPUP	**Villa Florida**	**135.57**	**268**	PKP		PKPdf	22 25 43.2	-0.1	
	comp=Z,3.4nm,0.5s,baz=84,slow=4.4,SNR=10.0								
CPUP	**Villa Florida**	**135.57**	**268**	PKIKP		PKPdf	22 25 43.3	0.0	
CPUP				pmax		pmax			
	comp=Z,3.0nm,0.5s								
LPAZ	**La Paz**	**139.02**	**288**	PKP		PKPdf	22 25 51.1	+1.2	
	comp=Z,0.7nm,0.6s,baz=31,slow=8.9,SNR=3.7								
LPAZ	**La Paz**	**139.02**	**288**	PKIKP		PKPdf	22 25 51.1	+1.2	
LPAZ				pmax		pmax			
	comp=Z,1.0nm,0.6s								
LVC	**Limon Verde**	**143.15**	**281**	*e*PKPpre			22 25 54.6		
TRQA	**Tornquist**	**143.15**	**253**	*e*PKPpre			22 25 54.6		

IDC 16 22:07:36.4±4.5, 16.89S×177.40W, mb4.3/3, mb1 4.5/3, mb1mx4.1/12, MS4.3/1, Ms1 4.3/1, ms1mx3.6/14, Error ellipse: s-maj=234.0km s-min=32.3km az=137.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CTA	**Charters Tower**	**34.57**	**259**	LR	LR	22 26 58.0	
	comp=Z,468nm,19.2s,baz=45,slow=34						
STKA	**Stephens Creek**	**39.96**	**240**	P	P	22 15 13.5	-0.8
	5.5nm,0.8s,baz=58,slow=8.3,SNR=3.5						
ASAR	**Alice Springs**	**46.00**	**253**	P	P	22 16 01.2	-2.3
	2.5nm,0.7s,baz=88,slow=8.1,SNR=8.0						
ILAR	**Eielson Array**	**84.69**	**13**	P	P	22 20 11.8	-1.1
	2.4nm,1.1s,baz=214,slow=6.5,SNR=4.0						
BRTR	**Keskin Array B**	**144.73**	**316**	PKP	PKPdf	22 27 13.4	-3.8
	4.1nm,0.9s,baz=45,slow=3.5,SNR=14						
MLR	**Mumtele Rosu**	**145.44**	**331**	PKPbc	PKPbc	22 27 15.7	-1.2
	baz=90,slow=3.0						
VRAC	**Vranov**	**145.72**	**344**	PKPbc	PKPbc	22 27 16.4	-1.1
	0.7nm,0.4s,baz=89,slow=4.8,SNR=3.4						
GERES	**GERESS Array B**	**146.87**	**347**	PKPbc	PKPbc	22 27 20.9	+0.7
	1.2nm,1.1s,baz=27,slow=4.4,SNR=3.9						

IDC 16 22:08:21.7±1.7, 10.60S×165.11E, mb4.2/4, mb1 4.5/4, mb1mx4.1/13, MS4.5/1, Ms1 4.5/1, ms1mx3.7/16, Error ellipse: s-maj=145.0km s-min=31.1km az=142.0

ISC 16 22:08:24.5±1.8, 11.0S±0.9×165.2E±0.6, h33km, n6, σ0§23/4, mb4.2/4, MS4.4/1, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**31.01**	**250**	PcP	PcP	22 17 38.6	+1.5
	0.4nm,0.8s,baz=67,slow=2.9,SNR=5.8						
ASAR	**Alice Springs**	**32.35**	**243**	P	**P**	**22 14 53.2**	**0.0**
	2.2nm,0.8s,mb4.1,baz=62,slow=10,SNR=3.8						
ASAR				PcP	PcP	22 17 41.9	+1.2
	0.7nm,0.8s,baz=59,slow=2.5,SNR=4.0						
FITZ	**Fitzroy Crossi**	**38.88**	**255**	LR	LR	22 28 33.8	
	comp=Z,621nm,19.4s,MS4.4,baz=85,slow=31						
ILAR	**Eielson Array**	**83.62**	**19**	P	**P**	**22 20 50.6**	**0.0**
	1.0nm,0.7s,mb4.0,baz=241,slow=5.2,SNR=8.7						
YBH	**Yreka Blue Hor**	**84.22**	**46**	P	**P**	**22 20 54.1**	**-0.2**
	1.2nm,0.5s,mb4.2,baz=244,slow=3.8,SNR=5.7						
NVAR	**Mina Array Bea**	**86.39**	**50**	P	**P**	**22 21 05.1**	**+0.1**
	2.1nm,0.9s,mb4.4,baz=222,slow=5.2,SNR=5.7						

IDC 16 22:15:13.1±5.2, 15.85S×178.13W, mb4.0/3, mb1 4.2/3, mb1mx3.8/12, Error ellipse: s-maj=263.0km s-min=35.1km az=136.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**39.88**	**239**	P	P	22 22 49.2	-1.2
	2.8nm,0.9s,baz=103,slow=9.9,SNR=3.4						
ASAR	**Alice Springs**	**45.63**	**252**	P	P	22 23 35.4	-2.0
	1.6nm,0.8s,baz=84,slow=7.9,SNR=9.8						
ILAR	**Eielson Array**	**83.83**	**13**	P	P	22 27 44.5	-1.0
	1.0nm,1.0s,baz=214,slow=5.0,SNR=5.7						
BRTR	**Keskin Array B**	**143.50**	**317**	PKP	PKPdf	22 34 48.0	-3.8
	2.2nm,0.8s,baz=45,slow=3.5,SNR=6.8						

NEIC 16 22:15:57.3, 35.72N×27.21E, h12km, MD3.3(ATH), After ATH.
ATH 16 22:15:57.3, 35.72N×27.21E, h12km, MD3.3/4
ISK 16 22:15:58.6, 35.77N×27.24E, h9km, MD3.4

ISC 16 22:15:57.6±0.8, 35.62N±0.05×27.22E±0.07, h12km, n14, σ1§01/20, 1C, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KARP	**Karpathos**	**0.08**	**213**	*e*PG	**Pg**	**22 16 01.3**	**+1.0**
ARG	**Arkhangelos**	**0.95**	**51**	*e*PB	**Pb**	**22 16 14.4**	**-1.1**
NPS	**Neapolis**	**1.36**	**255**	*e*PG	**Pg**	**22 16 23.0**	**-1.8**
XRY	**Khrísi**	**1.45**	**240**	*e*PG	**Pg**	**22 16 25.0**	**-1.6**
BDRM	**Kayabasi**	**1.46**	**7**	⇑*i*P	**Pn**	**22 16 22.8**	**-1.0**
BDRM				*i* S	**Sb**	**22 16 43.1**	**+0.6**
KRIS	**Kristallenia**	**1.47**	**253**	*e*P	**Pn**	**22 16 25.2**	**+1.2**
SANT	**Santorini**	**1.61**	**298**	*e*P	**Pn**	**22 16 27.0**	**+0.9**
MLSB	**Milas**	**1.73**	**15**	PN	**Pn**	**22 16 27.9**	**+0.1**
YER	**Yerkesik**	**1.74**	**29**	PN	**Pn**	**22 16 28.1**	**+0.2**
YER				SN	**Sn**	**22 16 48.8**	**-1.4**
APE	**Apeiranthos**	**1.99**	**317**	PN	**Pn**	**22 16 31.1**	**-0.4**
APE				SN	**Sn**	**22 16 56.9**	**+0.5**
AYDN	**Tasoluk**	**2.11**	**14**	*i* P	**Pn**	**22 16 34.1**	**+0.9**
AYDN				*i* S	**Sn**	**22 16 59.2**	**-0.3**
DNZL	**Cakiroluk**	**2.54**	**35**	*i* P	**Pn**	**22 16 41.4**	**+2.1**
DNZL				*i* S	**Sn**	**22 17 21.4**	**+11**
DENT	**Denizli**	**2.58**	**34**	*e*PN	**Pn**	**22 16 40.7**	**+0.7**
MANT	**Manisa**	**3.06**	**20**	*i* P	**Pn**	**22 16 47.1**	**+0.3**
MANT				*i* S	**Sn**	**22 17 22.8**	**-0.9**

LDG 16 22:36:57.3±0.4, 46.03N×7.51E, h2km, Md2.3/3, Ml2.1/5, Error ellipse: s-maj=7.5km s-min=2.8km az=91.0
NEIC 16 22:36:57.3, 46.03N×7.51E, h2km, ML2.3(GEN), ML2.1(LDG), ML2.0(STR), ML1.6(ZUR), After LDG.
ZUR 16 22:36:57.0, 46.07N×7.48E, h6km, ML1.6/10
STR 16 22:36:59.0±0.9, 46.02N×7.40E, h5km±1km, Ml2.0, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0

ISC 16 22:36:57.0±0.4, 46.02N±0.02×7.45E±0.04, h6km, n25, σ0§87/38, 6C-2D, Switzerland

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DIX	**Grande Dixence**	**0.07**	**337**	⇑*i*Pg	**Pg**	**22 36 59.1**	**+0.4**
	35nm,0.1s						
DIX				*i* Sg	**Sg**	**22 37 00.0**	**+0.2**
	35nm,0.1s						
GRYON	**Gryon**	**0.33**	**315**	⇑*i*Pg	**Pg**	**22 37 03.7**	**0.0**
	2.2nm,0.4s						
GRYON				*e*Sg	**Sg**	**22 37 07.5**	**-0.6**
	2.2nm,0.4s						
SALAN	**Lac Salanfe**	**0.35**	**291**	⇓*i*Pg	**Pg**	**22 37 04.5**	**+0.4**
	1.2nm,0.6s						
MMK	**Mattmark**	**0.36**	**84**	⇑*i*Pg	**Pg**	**22 37 04.0**	**-0.2**
	8.1nm,2.0s						
SENIN	**Lac Senin**	**0.36**	**343**	⇑*i*Pg	**Pg**	**22 37 03.7**	**-0.5**
	9.1nm,2.0s						
SENIN				*i* Sg	**Sg**	**22 37 08.1**	**-1.0**
	1.5nm,0.3s						
EMV	**Vieux Emosson**	**0.39**	**277**	⇓*i*Pg	**Pg**	**22 37 05.3**	**+0.6**
	13nm,0.1s						
LKBD	**Leukerbad**	**0.39**	**18**	*e*Pg	**Pg**	**22 37 04.1**	**-0.7**
	1.1nm,0.3s						
LKBD				*e*Sg	**Sg**	**22 37 08.5**	**-1.5**
	1.1nm,0.3s						
AIGLE	**Aigle**	**0.47**	**313**	⇑*e*Pg	**Pg**	**22 37 06.3**	**-0.2**
	6.6nm,2.0s						
LSD	**Ceresole Reale**	**0.60**	**200**	P	**Pg**	**22 37 09.4**	**+0.5**
LSD				S	**Sg**	**22 37 17.8**	**+0.9**
LPL	**La Plagne**	**0.71**	**225**	*e*Pg	**Pg**	**22 37 11.6**	**+0.4**
LPL				*e*Sg	**Sg**	**22 37 20.5**	**-0.1**
	7.9nm,0.3s						
LPG	**La Plagne**	**0.71**	**223**	*e*Pg	**Pg**	**22 37 11.7**	**+0.5**
LPG				*e*Sg	**Sg**	**22 37 21.2**	**+0.4**
	10nm,0.2s						
RSP	**Reno Superiore**	**0.88**	**189**	P	**Pb**	**22 37 14.7**	**+0.5**
RSP				S	**Sb**	**22 37 26.4**	**+0.5**
FENE	**Fenestrelle**	**1.02**	**196**	P	**Pb**	**22 37 17.3**	**+0.5**
MUGIO	**Muggio**	**1.11**	**94**	⇑*e*Pg	**Pg**	**22 37 18.1**	**-1.1**
	2.5nm,0.1s						
CABF	**La Chapelle**	**1.11**	**303**	*e*Pg	**Pg**	**22 37 19.2**	**-0.1**
CABF				*e*Sg	**Sg**	**22 37 33.8**	**-0.3**
	2.5nm,0.2s						
BHB	**Bricherasio**	**1.18**	**186**	P	**Pb**	**22 37 19.9**	**+0.4**
BHB				S	**Sb**	**22 37 34.8**	**-0.1**
RRL	**Cesana Torines**	**1.19**	**203**	P	**Pb**	**22 37 20.3**	**+0.7**
MBDF	**Montbardon**	**1.38**	**201**	*e*Pg	**Pg**	**22 37 23.9**	**-0.6**
LOMF	**Lomont**	**1.40**	**342**	P	**Pn**	**22 37 23.5**	**+0.3**
LOMF				S	**Sb**	**22 37 43.1**	**+1.9**
BBS	**Basel-Blauen**	**1.45**	**2**	P	**Pn**	**22 37 25.1**	**+1.3**
BBS				S	**Sb**	**22 37 44.5**	**+1.9**
PZZ	**Prazzo**	**1.53**	**189**	P	**Pn**	**22 37 24.7**	**-0.4**
PZZ				S	**Sb**	**22 37 43.2**	**-1.8**
ORIF	**Oris-en-Rattie**	**1.56**	**226**	*e*Sg	**Sg**	**22 37 48.2**	**-0.7**
	5.2nm,0.5s						
HINF	**Hinteralfeld**	**1.85**	**347**	*e*Sg	**Sg**	**22 37 54.4**	**-4.0**
	3.0nm,0.3s						
HAU	**Haudompre**	**2.13**	**340**	*e*Sg	**Sg**	**22 38 03.7**	**-4.1**
	2.9nm,0.3s						
VIVF	**Saint-Julien-l**	**2.27**	**240**	*e*Sg	**Sg**	**22 38 10.4**	**-2.3**
	2.5nm,0.3s						

IDC 16 23:05:20.8±3.5, 13.94N×89.71W, mb3.6/3, mb1 3.8/3, mb1mx3.5/16, Error ellipse: s-maj=82.7km s-min=58.7km az=175.0, El Salvador

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
NVAR	**Mina Array Bea**	**35.14**	**319**	P	P	23 12 16.1	-2.2
	0.9nm,0.7s,baz=124,slow=9.6,SNR=7.1						
SCHQ	**Schefferville**	**44.54**	**19**	P	P	23 13 33.8	-2.2
	1.7nm,0.8s,baz=185,slow=7.1,SNR=2.7						
YKA	**Yellowknife Ar**	**51.62**	**346**	P	P	23 14 29.3	-1.6
	0.1nm,0.5s,baz=149,slow=7.6,SNR=5.4						
YKA				PcP	PcP	23 15 42.2	-2.7
	0.4nm,0.9s,baz=145,slow=3.6,SNR=5.9						
CMAR	**Chiang Mai Arr**	**146.70**	**345**	PKPbc	PKPbc	23 25 04.9	-0.3
	1.1nm,0.5s,baz=337,slow=3.4,SNR=5.5						

IDC 16 23:05:36.4±1.3, 13.88N×90.00W, mb3.7/3, mb1 4.2/5, mb1mx3.7/18, ML4.1/2, Error ellipse: s-maj=32.5km s-min=18.4km az=53.0

ISC 16 23:05:39.3±1.1, 13.93N±0.08×90.1W±0.1, h33km, n6, σ1§31/7, mb3.7/3, Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JTS	**JuntasAbangare**	**6.17**	**125**	Pn	**Pn**	**23 07 08.5**	**-2.1**
	1.1nm,0.3s,baz=295,slow=19,SNR=7.7						
JTS				Sn	**Sn**	**23 08 22.1**	**+1.3**
	0.5nm,0.3s,baz=270,slow=21,SNR=1.8						
JTS				Lg		23 08 47.9	
	1.3nm,0.3s,baz=131,slow=15,SNR=8.3						
TEIG	**Tepich**	**6.49**	**15**	Pn	**Pn**	**23 07 12.4**	**-2.7**
	16nm,0.3s,baz=183,slow=15,SNR=13						
TEIG				Sn	**Sn**	**23 08 29.5**	**+0.8**
	baz=209,slow=22,SNR=3.4						
TEIG				Lg		23 09 05.3	
	1.0nm,0.3s,baz=135,slow=19,SNR=2.1						
NVAR	**Mina Array Bea**	**34.92**	**320**	P	**P**	**23 12 30.9**	**+0.8**
	1.8nm,0.6s,mb4.2,baz=125,slow=9.8,SNR=11						
YKA	**Yellowknife Ar**	**51.54**	**346**	P	**P**	**23 14 44.0**	**+0.1**
	0.5nm,0.7s,mb3.6,baz=150,slow=7.6,SNR=12						
YKA				PcP	PcP	23 15 58.2	+0.4
	0.1nm,0.5s,baz=150,slow=3.3,SNR=2.8						
ILAR	**Eielson Array**	**63.65**	**336**	P	**P**	**23 16 09.6**	**+0.4**
	0.3nm,0.8s,mb3.4,baz=173,slow=4.8,SNR=3.3						
CMAR	**Chiang Mai Arr**	**146.62**	**344**	PKPbc	PKPbc	23 25 20.5	+2.3
	1.0nm,0.6s,baz=333,slow=2.0,SNR=2.6						

LDG 16 23:09:57.0±0.2, 46.27N×7.30E, h2km, Md2.1/2, Ml2.0/7, Error ellipse: s-maj=4.5km s-min=1.5km az=96.0
NEIC 16 23:09:57.0, 46.27N×7.30E, h2km, ML2.0(LDG), ML1.9(STR), ML1.6(ZUR), After LDG.
ZUR 16 23:09:57.3, 46.28N×7.20E, h8km, ML1.3/8
STR 16 23:09:59.4±0.8, 46.34N×7.22E, h5km±1km, Ml1.9, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0

ISC 16 23:09:57.0±0.3, 46.30N±0.02×7.17E±0.03, h8km, n20, σ1§01/33, 4C-4D, Switzerland

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GRYON	**Gryon**	**0.06**	**221**	⇓*i*Pg	**Pg**	**23 09 59.6**	**+0.7**
	7.4nm,0.1s						
GRYON				*i* Sg	**Sg**	**23 10 01.0**	**+0.8**
	7.4nm,0.1s						
SENIN	**Lac Senin**	**0.11**	**54**	⇑*i*Pg	**Pg**	**23 10 00.3**	**+0.7**
	7.3nm,0.2s						
SENIN				*i* Sg	**Sg**	**23 10 02.2**	**+0.8**
	7.3nm,0.2s						
AIGLE	**Aigle**	**0.16**	**286**	⇓*i*Pg	**Pg**	**23 10 01.2**	**+0.8**
	6.6nm,1.1s						
AIGLE				*e*Sg	**Sg**	**23 10 03.9**	**+1.2**
	6.6nm,1.1s						
SALAN	**Lac Salanfe**	**0.21**	**222**	⇑*i*Pg	**Pg**	**23 10 01.9**	**+0.5**
	3.3nm,0.2s						
SALAN				*e*Sg	**Sg**	**23 10 04.8**	**+0.5**
	3.3nm,0.2s						
DIX	**Grande Dixence**	**0.28**	**142**	⇓*i*Pg	**Pg**	**23 10 03.1**	**+0.4**
	1.8nm,0.4s						
DIX				*i* Sg	**Sg**	**23 10 06.6**	**+0.1**
	1.8nm,0.4s						
EMV	**Vieux Emosson**	**0.30**	**219**	⇑*i*Pg	**Pg**	**23 10 03.5**	**+0.3**
	0.7nm,0.1s						
EMV				*e*Sg	**Sg**	**23 10 07.6**	**+0.3**
	0.7nm,0.1s						
LKBD	**Leukerbad**	**0.33**	**74**	⇓*i*Pg	**Pg**	**23 10 03.9**	**+0.2**
	4.3nm,0.5s						
LKBD				*i* Sg	**Sg**	**23 10 08.4**	**+0.2**
	4.3nm,0.5s						
WIMIS	**Wimmis**	**0.48**	**40**	⇑*i*Pg	**Pg**	**23 10 06.9**	**+0.2**
	0.8nm,0.5s						
MMK	**Mattmark**	**0.60**	**114**	*e*Pg	**Pg**	**23 10 09.0**	**-0.2**
	0.2nm,0.2s						
CABF	**La Chapelle**	**0.81**	**293**	*e*Pg	**Pg**	**23 10 14.0**	**+0.7**
CABF				*e*Sg	**Sg**	**23 10 26.8**	**+2.7**
	3.2nm,0.2s						
LPL	**La Plagne**	**0.84**	**202**	*e*Pg	**Pg**	**23 10 13.4**	**-0.4**
LPL				*e*Sg	**Sg**	**23 10 24.1**	**-1.0**
	1.1nm,0.2s						
LPG	**La Plagne**	**0.85**	**200**	*e*Pg	**Pg**	**23 10 13.7**	**-0.4**
LPG				*e*Sg	**Sg**	**23 10 25.0**	**-0.5**
	3.0nm,0.4s						
LOMF	**Lomont**	**1.08**	**348**	Pg	**Pg**	**23 10 19.5**	**+0.9**
LOMF				Sg	**Sg**	**23 10 33.5**	**+0.5**
BBS	**Basel-Blauen**	**1.19**	**11**	Pg	**Pg**	**23 10 20.9**	**+0.1**
BBS				Sg	**Sg**	**23 10 36.9**	**+0.2**
HINF	**Hinteralfeld**	**1.53**	**352**	*e*Pg	**Pg**	**23 10 26.7**	**-1.0**
HINF				*e*Sg	**Sg**	**23 10 46.3**	**-1.8**
	4.7nm,0.2s						
MOF	**Molkenrain**	**1.55**	**359**	Pg	**Pg**	**23 10 27.3**	**-0.8**
ORIF	**Oris-en-Rattie**	**1.65**	**214**	*e*Sg	**Sg**	**23 10 50.2**	**-1.8**
	0.8nm,0.2s						
HAU	**Haudompre**	**1.80**	**342**	*e*Sg	**Sg**	**23 10 54.8**	**-2.1**
	4.8nm,0.3s						
CDF	**Champ du Feu**	**2.12**	**2**	*e*Sg	**Sg**	**23 11 04.7**	**-2.8**
	1.2nm,0.3s						
VIVF	**Saint-Julien-l**	**2.27**	**231**	*e*Sg	**Sg**	**23 11 09.8**	**-2.8**
	1.1nm,0.2s						

HEL 16 23:14:56.4±0.1, 67.80N×20.20E, ML1.7, ML2.0(UPP), ML1.5(BER), Explosion
BER 16 23:14:58.0±3.2, 67.81N×20.24E, ML1.5, Suspected explosion

ISC 16 23:14:54.8±0.8, 67.76N±0.05×20.2E±0.1, n10, σ0§95/16, Sweden

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KIF	**Kilpisjarvi**	**1.27**	**10**	*e*P	**Pb**	**23 15 19.3**	**-0.1**
KIF				*e*S	**Sb**	**23 15 35.5**	**-0.7**
KTK1	**Kautokeino**	**1.69**	**40**	*e*P	**Pn**	**23 15 26.3**	**+0.6**
KTK1				*e*SN	**Sn**	**23 15 49.7**	**+1.3**
KTK1				AML	AML	23 15 51.2	
	comp=Z,7.3nm,0.3s						
TRO	**Tromso**	**1.94**	**347**	*e*P	**Pn**	**23 15 29.8**	**+0.4**
TRO				*e*SG	**Sg**	**23 15 55.0**	**-4.4**
TRO				AML	AML	23 15 57.2	
	comp=Z,9.3nm,0.4s						
SGF	**Sodankyl**	**2.44**	**95**	*e*P	**Pn**	**23 15 37.6**	**+1.1**
SGF				*e*S	**Sn**	**23 16 07.6**	**+0.1**
SGF				MSG		23 16 14.6	
	comp=Z,1.5nm,0.2s						
LOF	**Lofoten**	**2.55**	**282**	*e*	**Sg**	**23 16 19.2**	**-0.4**
LOF				AML	AML	23 16 20.2	
	comp=Z,3.9nm,0.3s						
LOF	**Lofoten**	**2.55**	**282**	*e*Sg	**Sg**	**23 16 19.2**	**-0.4**
LOF				AML	AML	23 16 20.2	
	comp=Z,3.9nm,0.3s						
MOR8	**Moi Rana**	**2.77**	**238**	*e*SG	**Sg**	**23 16 20.2**	**-7.0**
MOR8				AML	AML	23 16 20.8	
	comp=Z,5.0nm,0.3s						
KEV	**Kevo**	**3.18**	**48**	*e*P	**Pn**	**23 15 47.4**	**+0.3**
KEV				*e*S	**Sn**	**23 16 24.6**	**-1.7**
KEV				MSG		23 16 35.8	
	comp=Z,2.2nm,0.3s						
MSF	**Maaselka**	**3.95**	**114**	*e*P	**Pn**	**23 15 58.6**	**+0.6**
MSF				*e*S	**Sn**	**23 16 44.1**	**-1.7**
MSF				MSG		23 17 04.3	
	comp=Z,1.7nm,0.4s						
NSS	**Namsos**	**4.66**	**230**	*e*SG	**Sg**	**23 17 23.3**	**-6.6**
NSS				AML	AML	23 17 24.4	
	comp=Z,2.2nm,0.4s						

HEL 16 23:17:24.5±0.0, 67.83N×20.23E, ML1.5, ML1.8(UPP), ML1.5(BER), Explosion
BER 16 23:17:24.9±3.4, 67.80N×20.18E, ML1.5, Suspected explosion

ISC 16 23:17:22.4±0.8, 67.78N±0.05×20.2E±0.1, n9, σ0§94/15, Sweden

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KIF	**Kilpisjarvi**	**1.25**	**11**	*e*P	**Pb**	**23 17 46.7**	**+0.2**
KIF				*e*S	**Sb**	**23 18 02.5**	**-0.6**
KTK1	**Kautokeino**	**1.68**	**41**	*e*P	**Pn**	**23 17 54.0**	**+0.7**
KTK1				*e*SN	**Sn**	**23 18 16.8**	**+1.0**
KTK1				AML	AML	23 18 19.3	
	comp=Z,6.2nm,0.4s						
TRO	**Tromso**	**1.

	1.5nm,0.5s,mb3.9							
MKAR	**Makanchi Array**	**117.16**	**310**	PKP	PKPdf	00 11 45.5	-1.0	
	0.5nm,0.5s,baz=96,slow=1.7,SNR=4.8							
ARCES	**ARCESS Array B**	**139.06**	**347**	PKhKP		00 12 18.4		
	2.4nm,1.0s,baz=45,slow=3.8,SNR=4.7							
ARCES				PKP	PKPdf	00 12 25.1	-2.3	
	1.4nm,0.7s,slow=2.4,SNR=8.3							
ARCES	**ARCESS Array B**	**139.06**	**347**	PKP	PKPdf	00 12 18.4	-8.9	
ARCES				PKP	PKPdf	00 12 25.1	-2.3	
KAF	**Kangasniemi**	**144.80**	**339**	*e*pkp	PKPdf	00 12 35.9	-1.5	
	baz=50,slow=3.6							
FINES	**FINESS Array B**	**145.38**	**338**	PKPbc	PKPbc	00 12 38.8	-0.5	
	6.6nm,0.5s,baz=55,slow=4.2,SNR=139							
NB2	**NORSAR Subarra**	**149.31**	**350**	PKP		00 12 49.2		
	2.6nm,0.5s,baz=16,slow=2.6							
NOA	**NORSAR Array B**	**149.31**	**350**	PKPbc	PKPdf	00 12 49.5	+4.6	
	3.1nm,0.7s,baz=17,slow=4.2,SNR=18							
NOA				PKPab	PKPab	00 12 55.6	-1.7	
	0.8nm,0.7s,baz=17,slow=4.4,SNR=3.3							
BRTR	**Keskin Array B**	**151.66**	**297**	PKPbc	PKPdf	00 12 55.9	+6.7	
	1.2nm,0.8s,baz=136,slow=5.1,SNR=9.5							
HAU	**Haudompre**	**162.60**	**346**	*e*PKP2	PKPab	00 13 51.8	-2.6	
	2.3nm,0.5s							
SSF	**Saint Saulge**	**163.98**	**352**	*e*PKP2	PKPab	00 13 58.0	-2.4	
	4.5nm,0.8s							
AVF	**Avril sur Loir**	**164.27**	**352**	*e*PKP2	PKPab	00 13 59.0	-2.6	
	3.7nm,0.8s							
SMF	**Signal de Mont**	**164.35**	**351**	*e*PKP2	PKPab	00 13 59.6	-2.4	
	5.0nm,0.7s							

IDC ***16*** *23:53:37.8±0.8,34.15N×141.63E,mb3.8/10,mb1 4.0/11, mb1mx3.8/23,ML3.7/1,Error ellipse: s-maj=22.9km s-min=16.1km az=113.0*

NEIC ***16*** *23:53:41.7±5.4,34.13N×141.62E,h26km±37km,mb4.3/1, Error ellipse: s-maj=19.0km s-min=14.9km az=91.0*

JMA ***16*** *23:53:41.0±0.5,34.12N×141.56E,h24km±3km,M3.5*

ISC 16 23:53:40.1±1.5,34.12N±0.05×141.65E±0.07,h28km±11km, n23,σ0§86/29,mb3.8/10,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**0.77**	**314**	P	**Pb**	**23 53 54.7**	**-0.2**
BSO3	**Boso 3**	**1.16**	**306**	P	**Pn**	**23 54 00.9**	**+0.1**
BSO4	**Boso 4**	**1.39**	**309**	P	**Pn**	**23 54 04.9**	**+0.9**
BSO4				*e*S	**Sn**	**23 54 22.2**	**+0.6**
JHJ2	**Mitsune**	**1.83**	**237**	P	**Pn**	**23 54 12.0**	**+1.6**
JHJ	**Hachijo jima 2**	**1.85**	**238**	Pn	**Pn**	**23 54 11.7**	**+1.0**
	43nm,0.3s,baz=45,slow=19,SNR=18						
JHJ				Sn	**Sn**	**23 54 33.5**	**+0.2**
	148nm,0.3s,baz=92,slow=23,SNR=9.6						
KTJJ	**Kamata 2**	**2.28**	**291**	P	**Pn**	**23 54 16.2**	**-0.6**
KTJJ				*e*S	**Sn**	**23 54 41.6**	**-2.7**
MAJO	**Matsushiro**	**3.71**	**312**	*e*Pn	**Pn**	**23 54 35.6**	**-1.6**
MAT	**Matsushiro**	**3.71**	**312**	P	**Pn**	**23 54 37.8**	**+0.7**
MAT				*e*S	**Sn**	**23 55 20.7**	**+0.2**
MAT	**Matsushiro**	**3.71**	**312**	*e*P	**Pn**	**23 54 38.0**	**+0.8**
MAT				S	**Sn**	**23 55 21.0**	**+0.5**
CBIJ	**Chichi jima**	**7.02**	**176**	Pn	**Pn**	**23 55 22.6**	**-1.2**
	4.1nm,0.3s,baz=267,slow=20,SNR=5.5						
CBIJ				Sn	**Sn**	**23 56 36.4**	**-7.2**
	3.4nm,0.3s,baz=99,slow=21,SNR=2.6						
SONM	**Songino Array**	**29.66**	**308**	P	**P**	**23 59 44.5**	**-1.0**
	1.4nm,0.8s,mb3.7,baz=112,slow=7.8,SNR=4.8						
ZAL	**Zalesovo**	**44.07**	**315**	P	**P**	**00 01 47.5**	**+0.2**
	0.6nm,0.3s,mb3.8,baz=248,slow=24,SNR=4.4						
MKAR	**Makanchi Array**	**45.88**	**305**	P	**P**	**00 02 02.2**	**+0.4**
	0.9nm,0.7s,mb3.8,baz=90,slow=11,SNR=7.7						
ILAR	**Eielson Array**	**51.87**	**31**	P	**P**	**00 02 47.9**	**+0.1**
	0.8nm,0.8s,mb3.7,baz=268,slow=6.1,SNR=11						
BRVK	**Borovoye**	**52.76**	**314**	P	**P**	**00 02 54.3**	**-0.4**
WRA	**Warramunga Arr**	**54.21**	**188**	P	**P**	**00 03 04.6**	**-1.1**
	1.0nm,0.7s,mb3.9,baz=6.4,slow=7.5,SNR=8.7						
INK	**Inuvik**	**56.90**	**26**	P	**P**	**00 03 24.8**	**+0.1**
	2.3nm,1.2s,mb4.1,baz=298,slow=6.6,SNR=5.5						
INK	**Inuvik**	**56.90**	**26**	*e*P	**P**	**00 03 24.2**	**-0.4**
	4.4nm,1.4s,mb4.3						
ASAR	**Alice Springs**	**57.94**	**188**	P	**P**	**00 03 32.6**	**+0.2**
	1.0nm,1.1s,mb3.8,baz=10,slow=9.3,SNR=5.4						
NOA	**NORSAR Array B**	**76.95**	**338**	P	**P**	**00 05 31.9**	**+0.5**
	0.6nm,0.7s,mb3.6,baz=41,slow=5.6,SNR=3.8						
PDAR	**Pinedale Array**	**79.57**	**45**	P	**P**	**00 05 46.6**	**+0.5**
	0.2nm,0.4s,mb3.4,baz=288,slow=2.9,SNR=2.0						
PV10	**Paradox Valley**	**82.55**	**48**	*e*P	**P**	**00 06 02.8**	**+1.0**
GERES	**GERESS Array B**	**85.29**	**328**	P	**P**	**00 06 14.6**	**-0.8**
	0.2nm,0.4s,mb3.6,baz=27,slow=6.6,SNR=3.3						

IDC ***16*** *23:58:28.1±11.0,22.20S×179.19W,h522km±116km, mb3.4/5,mb1 3.6/5,mb1mx3.4/11,Error ellipse: s-maj=110.0km s-min=55.2km az=139.0*

NEIC ***16*** *23:58:33.0±5.9,21.96S×179.51W,h569km±62km,mb4.1/6, Error ellipse: s-maj=39.1km s-min=19.2km az=58.0*

ISC 16 23:58:32.3±1.1,22.0S±0.2×179.6W±0.2,h569km,n20, σ0§77/13,mb3.9/10,1C-3D,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**31.91**	**267**	⇑*i*P	**P**	**00 04 14.3**	**+1.0**
	3.0nm,0.4s,mb4.2						
CTAO	**Charters Tower**	**31.91**	**267**	*e*P	**P**	**00 04 13.9**	**+0.6**
	4.5nm,0.6s,mb4.2						
STKA	**Stephens Creek**	**35.81**	**246**	P	**P**	**00 04 46.4**	**+0.6**
	2.0nm,0.5s,mb3.9,baz=91,slow=7.7,SNR=3.8						
AS12	**Alice Springs**	**42.76**	**259**	*e*P	**P**	**00 05 41.8**	**-0.1**
	8.1nm,1.2s,mb4.1						
ASAR	**Alice Springs**	**42.76**	**259**	P	**P**	**00 05 42.0**	**+0.1**
	4.4nm,0.7s,mb4.1,baz=92,slow=8.2,SNR=34						
WB2	**Warramunga Arr**	**42.95**	**264**	⇓*i*P	**P**	**00 05 42.8**	**-0.6**
WRAB	**Tennant Creek**	**42.95**	**264**	*e*P	**P**	**00 05 42.4**	**-1.0**
	6.0nm,0.6s,mb4.3						
WRA	**Warramunga Arr**	**42.96**	**264**	P	**P**	**00 05 42.9**	**-0.5**
	1.7nm,0.3s,mb4.0,baz=94,slow=7.9,SNR=40						
FITZ	**Fitzroy Crossi**	**51.39**	**264**	⇓*i*P	**P**	**00 06 46.7**	**-0.4**
	3.4nm,1.2s,mb3.5						
SBA	**Scott Base**	**56.25**	**183**	P	**P**	**00 07 20.6**	**0.0**
	2.1nm,0.9s,mb3.4						
QSPA	**South Pole Qui**	**68.04**	**180**	*e*P	**P**	**00 08 36.4**	**0.0**
	5.3nm,0.9s,mb4.1						
CMAR	**Chiang Mai Arr**	**89.25**	**290**	P	**P**	**00 10 31.6**	**+1.9**
	3.4nm,1.1s,mb4.1,baz=128,slow=3.0,SNR=7.2						
ILAR	**Eielson Array**	**90.13**	**13**	P	**P**	**00 10 32.1**	**-0.6**
	0.4nm,0.8s,mb3.3,baz=221,slow=5.0,SNR=4.1						
ARCES	**ARCESS Array B**	**130.15**	**349**	PKP	PKPdf	00 16 37.7	+0.3
	2.2nm,1.0s,baz=31,slow=7.1,SNR=5.9						
ARCES	**ARCESS Array B**	**130.15**	**349**	PKP	PKPdf	00 16 37.7	+0.3
FINES	**FINESS Array B**	**136.80**	**342**	PKP	PKPdf	00 16 50.3	+0.4
	0.5nm,0.5s,baz=90,slow=4.2,SNR=3.4						
BRTR	**Keskin Array B**	**146.73**	**310**	PKPbc	PKPbc	00 17 11.9	+1.9
	0.9nm,0.6s,baz=153,slow=3.9,SNR=7.1						
CLL	**Collm**	**149.18**	**345**	⇓*i*PKP1	PKPdf	00 17 17.9	+6.6
CLL				*e*PKP2	PKPab	00 17 25.0	-0.6
BRG	**Berggiesshubel**	**149.34**	**343**	*i* P	PKPdf	00 17 18.7	+7.1
GERES	**GERESS Array B**	**151.23**	**342**	PKPbc	PKPdf	00 17 22.1	+7.6
	0.6nm,0.6s,baz=27,slow=3.0,SNR=7.1						
GERES				PKPab	PKPab	00 17 33.9	-0.3
	0.4nm,0.7s,baz=31,slow=5.7,SNR=3.4						

WEL 17 00:00:57.3±0.5,35.07S×178.39E,h241km±18km,ML3.9/2, Error ellipse: s-maj=22.2km s-min=19.0km az=90.0,Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MXZ	**Matakaoa Point**	**2.50**	**182**	SN	S	00 02 20.3	-0.4
MXZ				*e*SN	S	00 02 20.7	0.0
MWZ	**Matawai**	**3.34**	**192**	PN	P	00 01 53.2	-0.3
MWZ				SN	S	00 02 36.8	-0.3
URZ	**Urewera**	**3.35**	**198**	PN	P	00 01 52.8	-0.9
URZ				SN	S	00 02 37.2	-0.2
URZ				SN	S	00 02 37.4	-0.1
BKZ	**Black Stump Fm**	**4.37**	**200**	PN	P	00 02 04.4	-1.2
NGZ	**Ngauruhoe**	**4.67**	**208**	PN	P	00 02 09.3	-0.1
TUVZ	**Tukino**	**4.73**	**207**	PN	P	00 02 09.9	-0.2
FWVZ	**Far West T-bar**	**4.76**	**208**	PN	P	00 02 10.2	-0.2
WNVZ	**Wahianoa**	**4.80**	**207**	PN	P	00 02 09.5	-1.5
BFZ	**Birch Farm**	**5.86**	**196**	PN	P	00 02 21.6	-2.5
BFZ				*e*SN	S	00 03 30.7	-1.2
MRZ	**Mangatainoka R**	**6.01**	**201**	PN	P	00 02 23.2	-2.9
MTW	**Mount Morrison**	**6.50**	**200**	PN	P	00 02 28.2	-4.0
SNZO	**South Karori**	**6.88**	**204**	PN	P	00 02 32.9	-4.1
SNZO				SN	S	00 03 51.4	-3.7
TUWZ	**Tuamarina**	**7.26**	**208**	PN	P	00 02 37.2	-4.7
NNZ	**Nelson**	**7.30**	**211**	SN	S	00 04 03.4	-1.4
THZ	**Tophouse**	**7.95**	**211**	PN	P	00 02 47.5	-3.3
KHZ	**Kahutara**	**8.26**	**206**	PN	P	00 02 49.8	-4.9
LTZ	**Lake Taylor**	**9.06**	**210**	PN	P	00 03 00.2	-4.6
MQZ	**McQueen's Vall**	**9.71**	**205**	SN	S	00 04 53.7	-5.8

MEX 17 00:04:18.8±0.8,15.07N×94.24W,h16km±999km,MD4.2, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMIG	**Matias Romero**	**2.10**	**343**	*i* P	Pn	00 04 50.0	-3.9
CMIG				*i* S	Sn	00 05 14.7	-5.1
SCX	**San Cristobal**	**2.26**	**43**	*i* P	Pn	00 04 54.0	-2.2
CCIG	**Comitan**	**2.36**	**59**	*i* P	Pn	00 04 53.6	-3.9
CCIG				*i* S	Sn	00 05 21.2	-5.1

IDC 17 00:15:10.7±6.2,17.95S×174.37W,mb3.8/3,mb1 4.1/3, mb1mx3.8/13,Error ellipse: s-maj=302.0km s-min=35.0km az=143.0,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**48.41**	**259**	P	P	00 23 55.5	-1.3
	0.7nm,1.1s,baz=97,slow=6.6,SNR=5.5						
ASAR	**Alice Springs**	**48.48**	**254**	P	P	00 23 54.6	-2.7
	2.1nm,0.7s,baz=87,slow=8.2,SNR=12						
ILAR	**Eielson Array**	**85.11**	**11**	P	P	00 27 47.3	-2.0
	0.4nm,0.7s,baz=219,slow=5.8,SNR=4.4						
BRTR	**Keskin Array B**	**147.47**	**318**	PKPbc	PKPdf	00 34 56.9	+0.8
	0.7nm,0.8s,baz=56,slow=5.2,SNR=5.4						
GERES	**GERESS Array B**	**148.49**	**350**	PKPbc	PKPdf	00 34 59.5	+2.1
	0.5nm,0.7s,baz=27,slow=2.2,SNR=5.4						

NIED ***17*** *00:21:00,22.20N×123.00E,h56km,Mw4.1 Best double couple: M0 1.4×10^15 NP1:φ±202°,δ89°,λ105°. NP2:φ±295°, δ15°,λ2°.*

JMA ***17*** *00:21:52.2±0.3,22.20N×122.97E,h58km,M3.5*

TAP ***17*** *00:21:52.0,22.26N×122.54E,h3km±1km,ML3.6*

ISC 17 00:21:51.8±2.4,22.4N±0.1×123.0E±0.2,h3km,n6, σ0§35/11,Southeast of Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HATJ	**Hateruma jima**	**1.82**	**23**	P	**Pn**	**00 22 24.3**	**0.0**
HATJ				S	**Sn**	**00 22 48.5**	**+0.4**
IRIF	**Iriomote-Funau**	**2.06**	**18**	P	**Pn**	**00 22 27.8**	**+0.1**
IRIF				*e*S	**Sn**	**00 22 54.3**	**+0.2**
JKRS	**Kuro-shima**	**2.06**	**26**	P	**Pn**	**00 22 28.1**	**+0.3**
JKRS				S	**Sn**	**00 22 54.8**	**+0.5**
YOJ	**Yonaguni jima**	**2.08**	**360**	P	**Pn**	**00 22 27.9**	**-0.1**
YOJ				*e*S	**Sn**	**00 22 54.5**	**-0.2**
JIJ	**Ishigaki jima**	**2.23**	**27**	P	**Pn**	**00 22 29.8**	**-0.3**
JIJ				S	**Sn**	**00 22 57.8**	**-0.7**
JTJ	**Tarama**	**2.73**	**34**	S	**Sn**	**00 23 11.0**	**-0.2**

IDC ***17*** *00:30:54.8±1.5,16.87S×172.67W,mb4.3/5,mb1 4.4/5, mb1mx4.1/16,Error ellipse: s-maj=53.1km s-min=26.9km az=116.0*

NEIC ***17*** *00:30:55.7±1.0,16.91S×172.62W,h10km,mb4.7/2,Error ellipse: s-maj=31.0km s-min=19.6km az=107.0*

ISC 17 00:30:54.1±1.3,16.9S±0.2×172.7W±0.3,h10km,n9, σ0§95/8,mb4.4/7,Samoa Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**12.94**	**111**	*e*P	**P**	**00 33 47.8**	**-13**
URZ	**Urewera**	**23.11**	**201**	P	**P**	**00 36 02.6**	**+1.3**
	16nm,1.1s,mb4.4,baz=41,slow=9.3,SNR=3.8						
RPZ	**Rata Peaks**	**30.10**	**204**	P	**P**	**00 37 06.2**	**+0.2**
	3.4nm,0.3s,mb4.5,baz=39,slow=16,SNR=6.2						
WRAB	**Tennant Creek**	**50.19**	**258**	*e*P	**P**	**00 39 51.2**	**-1.2**
	21nm,1.2s,mb5.0						
WRA	**Warramunga Arr**	**50.20**	**258**	P	**P**	**00 39 52.6**	**+0.1**
	1.1nm,0.6s,mb4.1,baz=97,slow=7.1,SNR=12						
ASAR	**Alice Springs**	**50.33**	**253**	P	**P**	**00 39 54.0**	**+0.5**
	4.0nm,0.7s,mb4.6,baz=88,slow=8.3,SNR=22						
QSPA	**South Pole Qui**	**73.17**	**180**	*e*P	**P**	**00 42 24.8**	**-1.6**
	3.1nm,0.8s,mb4.3						
ILAR	**Eielson Array**	**83.75**	**11**	P	**P**	**00 43 25.1**	**+0.7**
	0.4nm,0.6s,mb3.7,baz=224,slow=6.5,SNR=6.5						
GERES	**GERESS Array B**	**147.70**	**352**	PKPbc	PKPdf	00 50 41.3	+2.1
	0.2nm,0.4s,baz=11,slow=5.0,SNR=4.5						

IDC ***17*** *00:33:05.0±2.2,9.20S×119.78E,mb3.7/2,mb1 3.8/5, mb1mx3.7/15,ML3.5/3,Error ellipse: s-maj=152.0km s-min=23.1km az=57.0*

ISC 17 00:33:07.1±1.6,9.4S±0.4×119.7E±0.6,h33km,n5,σ0§48/7, mb3.8/2,Sumba region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**10.44**	**147**	Pn	**P**	**00 35 37.3**	**-0.4**
	0.4nm,0.3s,baz=346,slow=9.5,SNR=10						
FITZ				Sn	**S**	**00 37 26.2**	**-8.4**
	1.3nm,0.3s,baz=181,slow=21,SNR=14						
WRA	**Warramunga Arr**	**17.64**	**128**	P	**P**	**00 37 11.6**	**-0.4**
	0.2nm,0.3s,baz=298,slow=13,SNR=8.6						
WRA				S	**S**	**00 40 15.0**	**-10**
	0.2nm,0.3s,baz=299,slow=26,SNR=5.5						
ASAR	**Alice Springs**	**19.68**	**138**	P	**P**	**00 37 37.2**	**+0.9**
	0.2nm,0.3s,baz=326,slow=13,SNR=6.7						
SONM	**Songino Array**	**58.14**	**349**	P	**P**	**00 43 00.0**	**+0.1**
	0.7nm,0.5s,mb4.0,baz=169,slow=7.3,SNR=4.0						
MKAR	**Makanchi Array**	**65.08**	**333**	P	**P**	**00 43 46.4**	**-0.2**
	0.3nm,0.5s,mb3.6,baz=152,slow=8.0,SNR=4.1						

LDG ***17*** *00:37:42.4±0.2,45.69N×6.97E,h2km,Md2.4/2,Ml2.1/5, Error ellipse: s-maj=4.0km s-min=1.6km az=93.0*

NEIC ***17*** *00:37:42.4,45.69N×6.97E,h2km,ML2.2(GEN), ML2.1(LDG),After LDG.*

ZUR ***17*** *00:37:43.0,45.77N×6.98E,h4km,ML1.6/5*

ISC 17 00:37:41.7±0.4,45.70N±0.02×6.91E±0.04,h9km±5km,n20, σ0§66/34,3C-1D,France

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LPL	**La Plagne**	**0.23**	**214**	*e*Pg	**Pg**	**00 37 47.4**	**+0.9**
LPL				*e*Sg	**Sg**	**00 37 50.4**	**+0.7**
	29nm,0.4s						
LPG	**La Plagne**	**0.23**	**209**	*e*Pg	**Pg**	**00 37 47.6**	**+1.0**
LPG				*e*Sg	**Sg**	**00 37 50.7**	**+0.7**
	63nm,0.2s						
LSD	**Ceresole Reale**	**0.30**	**145**	P	**Pg**	**00 37 48.5**	**+0.6**
LSD				S	**Sg**	**00 37 51.9**	**-0.1**
EMV	**Vieux Emosson**	**0.36**	**359**	⇑*i*Pg	**Pg**	**00 37 49.4**	**+0.4**
	2.1nm,0.4s						
EMV				*i* Sg	**Sg**	**00 37 53.9**	**0.0**
	2.1nm,0.4s						
SALAN	**Lac Salanfe**	**0.44**	**6**	⇑*i*Pg	**Pg**	**00 37 50.9**	**+0.2**
	1.3nm,0.3s						
SALAN				*i* Sg	**Sg**	**00 37 56.3**	**-0.3**
	1.3nm,0.3s						
DIX	**Grande Dixence**	**0.51**	**43**	⇓*i*Pg	**Pg**	**00 37 52.0**	**-0.1**
	0.7nm,0.2s						
GRYON	**Gryon**	**0.56**	**14**	*e*Pg	**Pg**	**00 37 53.6**	**+0.5**
	1.0nm,0.3s						
GRYON				*e*Sg	**Sg**	**00 38 00.1**	**-0.6**
	1.0nm,0.3s						
RSP	**Reno Superiore**	**0.60**	**156**	P	**Pg**	**00 37 54.1**	**+0.2**
RSP				S	**Sg**	**00 38 01.5**	**-0.5**
AIGLE	**Aigle**	**0.64**	**3**	⇑*i*Pg	**Pg**	**00 37 54.5**	**0.0**
	1.2nm,0.7s						
FENE	**Fenestrelle**	**0.68**	**171**	P	**Pb**	**00 37 55.6**	**+0.3**
FENE				S	**Sg**	**00 38 03.7**	**-0.8**
SENIN	**Lac Senin**	**0.71**	**22**	*e*Pg	**Pg**	**00 37 55.9**	**-0.1**
	0.4nm,0.2s						
RRL	**Cesana Torines**	**0.79**	**187**	P	**Pb**	**00 37 57.9**	**+0.8**
RRL				S	**Sb**	**00 38 07.2**	**-0.5**
MMK	**Mattmark**	**0.81**	**64**	*e*Pg	**Pg**	**00 37 57.0**	**-1.0**
	0.2nm,0.1s						
BHB	**Bricherasio**	**0.90**	**164**	P	**Pb**	**00 37 59.8**	**+0.8**
BHB				S	**Sb**	**00 38 10.7**	**-0.2**
MBDF	**Montbardon**	**0.98**	**186**	*e*Pg	**Pg**	**00 38 01.0**	**-0.4**
MBDF				*e*Sg	**Sg**	**00 38 13.8**	**-0.7**
	6.1nm,0.3s						
ORIF	**Oris-en-Rattie**	**1.07**	**223**	*e*Pg	**Pg**	**00 38 03.1**	**0.0**
ORIF				*e*Sg	**Sg**	**00 38 16.8**	**-0.6**
	5.0nm,0.2s						
CABF	**La Chapelle**	**1.07**	**328**	*e*Pg	**Pg**	**00 38 03.3**	**+0.1**
CABF				*e*Sg	**Sg**	**00 38 18.2**	**+0.7**
	3.8nm,0.3s						
PZZ	**Prazzo**	**1.21**	**174**	P	**Pb**	**00 38 05.1**	**+0.8**
VIVF	**Saint-Julien-l**	**1.79**	**243**	*e*Pg	**Pg**	**00 38 16.5**	**-1.0**
VIVF				*e*Sg	**Sg**	**00 38 40.0**	**-1.5**
	1.9nm,0.3s						
HINF	**Hinteralfeld**	**2.11**	**359**	*e*Sg	**Sg**	**00 38 48.5**	**-3.6**
	2.1nm,0.3s						

IDC 17 00:38:15.6±27.0,16.48S×173.47W,mb4.3/4,mb1 4.4/4, mb1mx4.0/14,Error ellipse: s-maj=543.0km s-min=161.3km az=86.0,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**43.45**	**241**	P	P	00 46 21.4	-0.8
	2.8nm,0.7s,baz=110,slow=13,SNR=4.0						
WRA	**Warramunga Arr**	**49.54**	**258**	P	P	00 47 07.5	-3.0
	0.7nm,0.4s,baz=97,slow=6.9,SNR=25						
ASAR	**Alice Springs**	**49.72**	**253**	P	P	00 47 09.7	-2.1
	9.5nm,0.5s,baz=89,slow=8.1,SNR=137						
FITZ	**Fitzroy Crossi**	**57.93**	**259**	P	P	00 48 10.7	-1.7
	1.6nm,1.0s,baz=80,slow=17,SNR=4.5						

LDG ***17*** *00:47:43.6±0.2,45.69N×6.97E,h2km,Md2.0/2,Ml1.8/5, Error ellipse: s-maj=4.1km s-min=1.7km az=93.0*

NEIC ***17*** *00:47:43.6,45.69N×6.97E,h2km,ML2.1(GEN), ML1.8(LDG),After LDG.*

ZUR ***17*** *00:47:44.1,45.77N×6.98E,h3km,ML1.2/4*

ISC 17 00:47:43.0±0.4,45.71N±0.02×6.91E±0.04,h2km,n18, σ0§69/29,4C-1D,France

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LPL	**La Plagne**	**0.23**	**213**	*e*Pg	**Pg**	**00 47 48.5**	**+1.0**
LPL				*e*Sg	**Sg**	**00 47 51.6**	**+1.1**
	6.7nm,0.2s						
LPG	**La Plagne**	**0.23**	**207**	*e*Pg	**Pg**	**00 47 48.7**	**+1.0**
LPG				*e*Sg	**Sg**	**00 47 51.8**	**+1.0**
	30nm,0.2s						
LSD	**Ceresole Reale**	**0.30**	**145**	P	**Pg**	**00 47 49.6**	**+0.5**
LSD				S	**Sg**	**00 47 53.2**	**+0.1**
EMV	**Vieux Emosson**	**0.36**	**359**	⇑*i*Pg	**Pg**	**00 47 50.5**	**+0.4**
	0.9nm,0.4s						
EMV				*i* Sg	**Sg**	**00 47 55.0**	**+0.1**
	0.9nm,0.4s						
SALAN	**Lac Salanfe**	**0.44**	**6**	⇑*i*Pg	**Pg**	**00 47 52.0**	**+0.2**
	0.7nm,0.3s						
SALAN				*i* Sg	**Sg**	**00 47 57.4**	**-0.2**
	0.7nm,0.3s						
DIX	**Grande Dixence**	**0.51**	**43**	⇑*e*Pg	**Pg**	**00 47 53.1**	**-0.1**
	0.3nm,0.2s						
RSP	**Reno Superiore**	**0.61**	**156**	P	**Pg**	**00 47 55.3**	**+0.2**
RSP				S	**Sg**	**00 48 02.8**	**-0.4**
AIGLE	**Aigle**	**0.64**	**3**	⇑*i*Pg	**Pg**	**00 47 55.6**	**-0.1**
SENIN	**Lac Senin**	**0.71**	**23**	*e*Pg	**Pg**	**00 47 57.3**	**+0.1**
	0.2nm,0.2s						
RRL	**Cesana Torines**	**0.79**	**186**	P	**Pg**	**00 47 59.6**	**+0.8**
RRL				S	**Sg**	**00 48 09.2**	**-0.1**
MMK	**Mattmark**	**0.82**	**65**	⇓*e*Pg	**Pg**	**00 47 58.6**	**-0.7**
BHB	**Bricherasio**	**0.90**	**164**	P	**Pg**	**00 48 00.6**	**-0.4**
MBDF	**Montbardon**	**0.98**	**186**	*e*Pg	**Pg**	**00 48 02.2**	**-0.4**
MBDF				*e*Sg	**Sg**	**00 48 15.0**	**-0.7**
	2.0nm,0.2s						
CABF	**La Chapelle**	**1.07**	**328**	*e*Pg	**Pg**	**00 48 04.4**	**+0.1**
CABF				*e*Sg	**Sg**	**00 48 19.3**	**+0.8**
	1.3nm,0.2s						
ORIF	**Oris-en-Rattie**	**1.07**	**223**	*e*Pg	**Pg**	**00 48 04.3**	**0.0**
ORIF				*e*Sg	**Sg**	**00 48 17.9**	**-0.7**
	2.3nm,0.2s						
PZZ	**Prazzo**	**1.21**	**173**	P	**Pb**	**00 48 05.8**	**-0.4**
VIVF	**Saint-Julien-l**	**1.79**	**242**	*e*Pg	**Pg**	**00 48 17.7**	**-1.0**
VIVF				*e*Sg	**Sg**	**00 48 41.0**	**-1.6**
	1.3nm,0.3s						
HINF	**Hinteralfeld**	**2.11**	**359**	*e*Sg	**Sg**	**00 48 49.7**	**-3.6**
	0.9nm,0.3s						

NEIC ***17*** *00:54:25.2±1.7,49.95N×8.62E,h2km±14km,ML2.1(LDG), ML1.6(SZGRF),Error ellipse: s-maj=18.3km s-min=8.0km az=154.0*

BGR ***17*** *00:54:26.9±0.5,49.91N×8.73E,h10km,ML1.7/7,Error ellipse: s-maj=5.6km s-min=3.3km az=150.0*

LDG ***17*** *00:54:28.4±0.2,49.89N×8.62E,h10km,Ml2.1/8,Error ellipse: s-maj=3.2km s-min=2.

comp=Z,202nm,21.0s,baz=56,slow=38
WRAB Tennant Creek 20.39 166 *e*P **P** 01 34 16.4 -2.0
31nm,0.7s
WRA Warramunga Arr 20.40 166 P **P** 01 34 17.4 -1.1
19nm,1.1s,baz=338,slow=12,SNR=31
WB2 Warramunga Arr 20.41 166⇑*i*P **P** 01 34 17.2 -1.3
AS12 Alice Springs 23.91 169⇑*i*P **P** 01 34 55.5 +2.0
43nm,0.8s,mb4.9
ASAR Alice Springs 23.91 169 P **P** 01 34 55.6 +2.1
30nm,0.8s,mb4.8,baz=345,slow=8.4,SNR=89
CTA Charters Tower 26.05 141 P **P** 01 35 15.5 +1.4
7.7nm,0.8s,mb4.3,baz=331,slow=7.1,SNR=4.9
CTAO Charters Tower 26.05 141 *e*P **P** 01 35 14.8 +0.8
JOW Kunigami 26.77 358 LR LR 01 44 15.0
comp=Z,276nm,20.8s,MS3.8,baz=312,slow=33
JNU Nakatsue 33.08 3 LR LR 01 49 11.9
comp=Z,256nm,19.6s,MS3.9,baz=156,slow=36
WHN Wuhan 33.52 337 *e*P **P** 01 36 21.8 +1.3
STKA Stephens Creek 33.77 161 P **P** 01 36 24.2 +1.5
15nm,0.8s,mb5.0,baz=338,slow=7.7,SNR=21
STKA LR LR 01 52 04.1
comp=Z,344nm,18.2s,MS4.1,baz=259,slow=40
CMAR Chiang Mai Arr 34.85 304 P **P** 01 36 31.4 -0.8
2.0nm,1.1s,mb4.0,baz=135,slow=6.1,SNR=4.4
CMAR LR LR 01 51 17.5
comp=Z,74nm,19.3s,MS3.4,baz=343,slow=37
XAN Xi'an 38.85 333 P **P** 01 37 05.1 -0.6
XAN AP pP 01 37 11.3 +2.6
XAN AMB AMB
comp=Z,5.0nm,1.2s,mb4.1
CD2 Chengdu 39.08 324 P **P** 01 37 08.0 +0.4
CD2 AMB AMB
comp=Z,20nm,1.0s,mb4.8
BJI Beijing 41.63 345 P **P** 01 37 28.3 -0.3
BJI AMB AMB
comp=Z,8.0nm,1.1s,mb4.3
BJI LR LR
comp=N,103nm,12.9s,MS4.0
BJI LR LR
comp=E,90nm,11.8s,MS4.0
BJI LR LR
comp=Z,107nm,25.1s
LZH Lanzhou 42.95 330 *e*P **P** 01 37 41.0 +1.5
LZH AP pP 01 37 55.0 +13
LZH AMB AMB
comp=Z,33nm,1.5s,mb4.8
LZH AMB AMB
comp=Z,130nm,5.3s
LZH LR LR
comp=E,530nm,16.1s
LZH LR LR
comp=Z,790nm,18.7s,MS4.6
LSA Lhasa 46.70 313 P **P** 01 38 12.5 +2.9
GTA Gaotai 47.54 329 *e*P **P** 01 38 20.4 +4.3
GTA AP pP 01 38 26.6 +7.4
GTA AMB AMB
comp=Z,4.0nm,1.2s,mb4.3
GUN Gumba 49.86 308 *e*P **P** 01 38 34.7 +0.5
PKI Pulchoki 50.08 307 *e*P **P** 01 38 37.0 +1.1
comp=Z,19nm,1.0s,mb5.1
KKN Kakani 50.28 307 *e*P **P** 01 38 37.4 0.0
DMN Daman 50.34 307 *e*P **P** 01 38 38.2 +0.3
comp=Z,77nm,1.6s,mb5.5
ULN Ulaanbaatar 51.45 341 *e*P **P** 01 38 45.5 -0.5
comp=Z,7.7nm,1.1s,mb4.5
KOLN Koldanda 51.62 306 *e*P **P** 01 38 47.8 +0.2
comp=Z,40nm,0.9s,mb5.4
SONM Songino Array 51.64 341 P **P** 01 38 47.0 -0.5
comp=Z,1.1nm,0.5s,mb4.0,baz=158,slow=6.7,SNR=6.3
HYB Hyderabad 52.64 292 *i* P **P** 01 38 55.5 +0.1
HYB Hyderabad 52.64 292 *e*P **P** 01 38 55.5 +0.1
WMQ Urumqi 57.16 325 *e*P **P** 01 39 24.5 -3.5
MKAR Makanchi Array 61.99 325 P **P** 01 40 00.6 -0.7
comp=Z,2.7nm,0.7s,mb4.5,baz=119,slow=8.5,SNR=18
MKAR LR LR 02 07 24.4
comp=Z,61nm,19.0s,MS3.8,baz=117,slow=37
ZAL Zalesovo 65.02 333 P **P** 01 40 20.1 -0.9
comp=Z,0.7nm,0.5s,mb4.0,baz=291,slow=8.0,SNR=5.0
ZAL LR LR 02 10 44.9
comp=Z,70nm,18.2s,MS3.9,baz=253,slow=38
KURK Kurchatov 66.18 328 *e*P **P** 01 40 27.1 -1.4
BVAR Borovoye Array 71.76 327 P **P** 01 41 02.4 -0.6
comp=Z,1.0nm,0.7s,mb3.8,baz=127,slow=7.4,SNR=5.7
BRVK Borovoye 71.83 327 *e*P **P** 01 41 02.7 -0.7
ZRNK Zerenda 72.49 327 *e*P **P** 01 41 06.7 -0.6
SBA Scott Base 80.27 172 *e*P **P** 01 41 50.8 +0.2
MAW Mawson 81.02 201 LR LR 02 12 29.5
comp=Z,119nm,18.5s,MS4.3,baz=246,slow=32
QSPA South Pole Qui 89.84 180 *e*P **P** 01 42 40.3 +2.0
comp=Z,5.4nm,0.8s,mb4.9
QSPA *e* 01 45 39.3
BRTR Keskin Array B 94.23 310 LR LR 02 27 43.0
comp=Z,23nm,21.6s,MS3.6,baz=105,slow=37
ARCES ARCESS Array B 94.81 340 LR LR 02 28 15.9
comp=Z,46nm,20.5s,MS3.9,baz=252,slow=37
FINES FINESS Array B 96.27 332 LR LR 02 30 25.5
comp=Z,60nm,18.4s,MS4.1,slow=38
CPUP Villa Florida 153.03 167 PKPbc PKPdf 01 49 39.6 +7.0
comp=Z,3.8nm,0.8s,baz=125,slow=1.6,SNR=8.3
CPUP PKPab PKPab 01 49 51.9 +1.2
comp=Z,3.4nm,0.8s,baz=217,slow=3.5,SNR=5.1
CPUP Villa Florida 153.03 167 *e*PKPbc PKPdf 01 49 39.3 +6.7
CPUP PKPab PKPab 01 49 51.9 +1.2

IDC ***17*** *01:33:04.8±1.4,5.40S×147.86E,mb4.2/8,mb1 4.4/9, mb1mx4.3/15,ML4.0/1,Error ellipse: s-maj=48.5km s-min=21.5km az=120.0*
NEIC ***17*** *01:33:12.6±2.8,5.33S×147.63E,h52km±27km,mb4.6/5, Error ellipse: s-maj=29.0km s-min=17.9km az=119.0*
ISC 17 01:33:13.1±2.7,5.4S±0.2×147.6E±0.2,h73km±26km,n23, σ0°72/22,mb4.3/12,1C,Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WAU	**Wau**	**2.11**	**205**⇑	*i*P	**P**	**01 33 47.0**	**0.0**
WRAB	**Tennant Creek**	**19.36**	**221**	*e*S	**P**	**01 37 35.2**	**-0.2**
WB2	**Warramunga Arr**	**19.36**	**221**	*e*P	**P**	**01 37 36.1**	**+0.6**
WRA	**Warramunga Arr**	**19.37**	**221**	P	**P**	**01 37 34.3**	**-1.4**
0.5nm,0.3s,baz=43,slow=11,SNR=7.8							
AS12	**Alice Springs**	**22.44**	**215**	*e*P	**P**	**01 38 08.0**	**+1.2**
258nm,3.2s							
ASAR	**Alice Springs**	**22.44**	**215**	P	**P**	**01 38 07.2**	**+0.3**
3.2nm,0.5s,mb4.0,baz=53,slow=9.1,SNR=13							
FITZ	**Fitzroy Crossi**	**24.89**	**238**	*e*P	**P**	**01 38 31.1**	**+0.3**
5.4nm,0.4s,mb4.3							
FITZ	**Fitzroy Crossi**	**24.89**	**238**	P	**P**	**01 38 31.2**	**+0.4**
6.8nm,0.8s,mb4.1,baz=57,slow=6.6,SNR=9.6							
CMAR	**Chiang Mai Arr**	**53.52**	**298**	P	**P**	**01 42 29.9**	**+1.1**
1.3nm,0.5s,mb4.2,baz=126,slow=5.8,SNR=6.6							
GUN	**Gumba**	**68.07**	**303**	*e*P	**P**	**01 44 07.0**	**-0.3**
17nm,0.9s,mb4.9							
PKI	**Pulchoki**	**68.36**	**302**	*e*P	**P**	**01 44 07.7**	**-1.4**
6.5nm,0.6s,mb4.6							
KKN	**Kakani**	**68.53**	**303**	*e*P	**P**	**01 44 10.5**	**+0.3**
DMN	**Daman**	**68.62**	**302**	*e*P	**P**	**01 44 10.3**	**-0.5**
38nm,1.3s,mb5.1							
KOLN	**Koldanda**	**69.94**	**302**	*e*P	**P**	**01 44 18.4**	**-0.5**
14nm,1.0s,mb4.7							
MKAR	**Makanchi Array**	**77.45**	**320**	P	**P**	**01 45 03.2**	**+1.1**
1.9nm,0.8s,mb3.9,baz=112,slow=6.5,SNR=12							
MKAR	**Makanchi Array**	**77.45**	**320**	P	**P**	**01 45 03.2**	**+1.1**
ZAL	**Zalesovo**	**78.86**	**328**	P	**P**	**01 45 10.1**	**+0.3**
0.8nm,0.6s,mb3.7,baz=246,slow=14,SNR=3.4							
KURK	**Kurchatov**	**81.12**	**323**	*e*P	**P**	**01 45 22.5**	**+0.5**
ILAR	**Eielson Array**	**84.71**	**23**	P	**P**	**01 45 39.2**	**-0.7**
0.6nm,0.7s,mb3.6,baz=256,slow=4.5,SNR=12							
BVAR	**Borovoye Array**	**86.67**	**324**	P	**P**	**01 45 49.2**	**-0.6**
0.9nm,0.8s,mb3.8,baz=124,slow=5.3,SNR=4.0							
YKA	**Yellowknife Ar**	**98.38**	**28**	P	**P**	**01 46 44.2**	**+0.5**
2.6nm,1.4s,mb4.6,baz=280,slow=5.0,SNR=6.3							
YKA	**Yellowknife Ar**	**98.38**	**28**	P	**P**	**01 46 44.2**	**+0.5**
NOA	**NORSAR Array B**	**115.65**	**338**	PKP	PKPdf	01 51 51.2	+4.5
0.7nm,0.8s,baz=5.7,slow=4.5,SNR=3.4							

CASC ***17*** *01:46:32.3±1.8,13.26N×90.01W,h35km±13km,MD3.4, ML3.5*
ISC 17 01:46:31.2±1.3,13.18N±0.06×90.03W±0.03,h32km±7km, n18,σ0°59/32,10C-2D,Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CUSS	**Cusmapa**	**0.73**	**7**⇑	*e*P	**Pn**	**01 46 44.9**	**-0.4**
CUSS				*e*S	**Sb**	**01 46 54.5**	**-0.7**
SBLS	**San Blas**	**0.77**	**31**⇑	*e*P	**Pn**	**01 46 45.7**	**-0.1**
SBLS				*e*S	**Sb**	**01 46 56.8**	**+0.5**
SNJE	**San Jose**	**0.80**	**31**⇑	*e*P	**Pn**	**01 46 46.1**	**-0.2**
SNJE				*e*S	**Sn**	**01 46 57.1**	**0.0**
RTR	**El Retiro**	**0.81**	**28**⇑	*e*P	**Pn**	**01 46 46.4**	**0.0**
RTR				*e*S	**Sb**	**01 46 57.6**	**+0.3**
BOQS	**Boqueron**	**0.92**	**53**⇑	*e*P	**Pn**	**01 46 47.9**	**-0.1**
BOQS				*e*S	**Sn**	**01 46 58.9**	**-1.2**
SNET	**Serv Nac Est T**	**0.93**	**57**	*i*	x	01 47 17.6	
comp=Z,698nm,0.8s							
PICS	**Picacho**	**0.94**	**54**⇑	*e*P	**Pn**	**01 46 49.3**	**+0.9**
PICS				*e*S	**Sn**	**01 47 02.4**	**+1.7**
RBDL	**Robledal**	**0.98**	**20**⇑	*e*P	**Pn**	**01 46 49.1**	**+0.1**
RBDL				*e*S	**Sn**	**01 47 02.9**	**+1.0**
LFRS	**El Faro**	**1.04**	**65**⇓	*e*P	**Pn**	**01 46 49.3**	**-0.5**
LFRS				*e*S	**Sn**	**01 47 03.2**	**-0.1**
LFU	**La Fuente**	**1.06**	**58**	*e*P	**Pn**	**01 46 49.9**	**-0.1**
IXG	**Ixpaco**	**1.07**	**338**	*e*P	**Pn**	**01 46 49.4**	**-0.8**
IXG				*e*S	**Sn**	**01 47 03.3**	**-0.7**
IXG				AML	AML	01 47 06.4	
comp=N,4μm,0.4s							
LBRS	**Las Brisas**	**1.11**	**60**⇑	*e*P	**Pn**	**01 46 51.2**	**+0.5**
LBRS				*e*S	**Sn**	**01 47 05.1**	**0.0**
LCBS	**La Ceiba**	**1.13**	**65**⇑	*e*P	**Pn**	**01 46 50.5**	**-0.5**
LCBS				*e*S	**Sn**	**01 47 04.7**	**-0.9**
SNVI	**San Vicente**	**1.24**	**70**⇑	*e*P	**Pn**	**01 46 52.7**	**+0.1**
SNVI				*e*S	**Sn**	**01 47 08.3**	**0.0**
MTO2	**Montecristo 2**	**1.38**	**28**⇓	*e*P	**Pn**	**01 46 54.2**	**-0.4**
NBG	**Las Nubes**	**1.43**	**348**	*e*P	**Pn**	**01 46 55.7**	**+0.4**
NBG				*e*S	**Sn**	**01 47 13.2**	**0.0**
NBG				AML	AML	01 47 16.0	
comp=E,879nm,0.2s							
BLLM	**Bellamira**	**1.77**	**81**	*e*P	**Pn**	**01 47 00.9**	**+0.7**
BLLM				*e*S	**Sn**	**01 47 21.6**	**-0.1**
JAT	**Jato**	**1.92**	**306**	*e*P	**Pn**	**01 47 02.5**	**0.0**
JAT				*e*S	**Sn**	**01 47 26.5**	**+0.8**
JAT				AML	AML	01 47 29.8	
comp=N,294nm,0.2s							

IDC ***17*** *01:52:52.1±1.9,8.53S×157.58E,mb3.8/4,mb1 4.1/4, mb1mx3.8/13,Error ellipse: s-maj=91.5km s-min=34.3km az=143.0*
ISC 17 01:52:55.6±2.0,8.7S±0.6×157.6E±0.4,h33km,n4,σ0°70/4, mb3.7/4,Bougainville - Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**25.14**	**241**	P	**P**	**01 58 19.4**	**-0.1**
0.9nm,0.8s,mb3.4,baz=66,slow=9.0,SNR=4.8							
ILAR	**Eielson Array**	**84.01**	**21**	P	**P**	**02 05 23.1**	**-0.5**
0.4nm,1.0s,mb3.5,baz=252,slow=5.7,SNR=4.3							
MKAR	**Makanchi Array**	**86.39**	**318**	P	**P**	**02 05 36.2**	**+0.3**
0.6nm,0.7s,mb3.9,baz=117,slow=6.4,SNR=5.7							
NVAR	**Mina Array Bea**	**90.73**	**51**	P	**P**	**02 05 57.1**	**+0.3**
0.9nm,0.8s,mb4.1,baz=248,slow=4.9,SNR=4.7							

MOS 17 01:59:03.0±2.1,42.94N×46.92E,h12km,mb3.5/1,1C, Error ellipse: s-maj=26.0km s-min=15.9km az=109.7, Eastern Caucasus

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DBC	**Dubki**	**0.10**	**320**	*e*PG	Pg	01 59 05.8	-0.2
DBC				pmax	pmax		
comp=Z,250nm,0.1s							
KRNR	**Karanay**	**0.11**	**185**⇑	*i*PG	Pg	01 59 06.0	-0.1
KRNR				*i* S	Sg	01 59 10.0	+1.8
KRNR				pmax	pmax		
comp=Z,32nm,0.2s							
BUJR	**Buynaksk**	**0.18**	**130**	*e*PG	Pg	01 59 05.5	-1.7
BUJR				pmax	pmax		
comp=Z,120nm,0.2s							
UNCR	**Uncukul**	**0.24**	**202**	*e*PG	Pg	01 59 08.5	+0.2
UNCR				*e*S	Sg	01 59 15.0	+3.1
DLMR	**Dylym**	**0.25**	**302**	*e*PG	Pg	01 59 07.0	-1.4
DLMR				*i* S	Sg	01 59 13.0	+1.0
DLMR				pmax	pmax		
comp=Z,255nm,0.2s							
MAK	**Makhachkala**	**0.43**	**87**	*e*PG	Pg	01 59 12.8	+0.9

LDG ***17*** *02:05:05.4±0.3,45.69N×6.95E,h2km,Md2.2/2,Ml2.1/6, Error ellipse: s-maj=5.5km s-min=2.4km az=89.0*
NEIC ***17*** *02:05:05.4,45.69N×6.95E,h2km,ML2.1(GEN), ML2.1(LDG),After LDG.*
ZUR ***17*** *02:05:05.7,45.77N×6.98E,h4km,ML1.5/7*
ISC 17 02:05:04.4±0.4,45.71N±0.02×6.92E±0.04,h7km±11km, n21,σ0°71/34,4C-3D,France

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
LPL	**La Plagne**	**0.23**	**215**	*e*Pg	**Pg**	**02 05 09.9**	**+0.6**
LPL				*e*Sg	**Sg**	**02 05 13.3**	**+0.8**
25nm,0.4s							
LPG	**La Plagne**	**0.24**	**210**	*e*Pg	**Pg**	**02 05 10.1**	**+0.7**
LPG				*e*Sg	**Sg**	**02 05 13.5**	**+0.7**
57nm,0.2s							
LSD	**Ceresole Reale**	**0.30**	**146**	P	**Pg**	**02 05 11.1**	**+0.5**
LSD				S	**Sg**	**02 05 14.4**	**-0.2**
EMV	**Vieux Emosson**	**0.36**	**358**⇑	*i*Pg	**Pg**	**02 05 12.1**	**+0.4**
1.6nm,0.4s							
EMV				*i* Sg	**Sg**	**02 05 16.5**	**0.0**
1.6nm,0.4s							
SALAN	**Lac Salanfe**	**0.44**	**5**⇑	*i*Pg	**Pg**	**02 05 13.5**	**+0.2**
1.3nm,0.3s							
SALAN				*e*Sg	**Sg**	**02 05 19.0**	**-0.2**
1.3nm,0.3s							
DIX	**Grande Dixence**	**0.51**	**42**⇓	*i*Pg	**Pg**	**02 05 14.6**	**0.0**
0.7nm,0.2s							
GRYON	**Gryon**	**0.56**	**14**⇓	*i*Pg	**Pg**	**02 05 15.8**	**+0.1**
1.4nm,0.5s							
GRYON				*i* Sg	**Sg**	**02 05 22.8**	**-0.4**
1.4nm,0.5s							
RSP	**Reno Superiore**	**0.60**	**157**	P	**Pg**	**02 05 16.8**	**+0.2**
RSP				S	**Sg**	**02 05 23.5**	**-1.2**
AIGLE	**Aigle**	**0.64**	**2**⇑	*i*Pg	**Pg**	**02 05 17.1**	**-0.1**
0.6nm,0.5s							
FENE	**Fenestrelle**	**0.69**	**172**	P	**Pg**	**02 05 19.0**	**+0.8**
FENE				S	**Sg**	**02 05 26.2**	**-1.1**
SENIN	**Lac Senin**	**0.71**	**22**⇑	*e*Pg	**Pg**	**02 05 18.8**	**+0.2**
0.3nm,0.2s							
RRL	**Cesana Torines**	**0.79**	**187**	P	**Pg**	**02 05 21.4**	**+1.1**
RRL				S	**Sg**	**02 05 31.0**	**0.0**
MMK	**Mattmark**	**0.81**	**64**⇓	*e*Pg	**Pg**	**02 05 20.0**	**-0.6**
0.2nm,0.2s							
BHB	**Bricherasio**	**0.90**	**164**	P	**Pb**	**02 05 22.2**	**+0.3**
MBDF	**Montbardon**	**0.99**	**186**	*e*Pg	**Pg**	**02 05 24.0**	**-0.2**
MBDF				*e*Sg	**Sg**	**02 05 36.6**	**-0.8**
3.7nm,0.3s							
CABF	**La Chapelle**	**1.07**	**328**	*e*Pg	**Pg**	**02 05 26.3**	**+0.4**
CABF				*e*Sg	**Sg**	**02 05 40.8**	**+0.5**
3.4nm,0.3s							
ORIF	**Oris-en-Rattie**	**1.08**	**223**	*e*Pg	**Pg**	**02 05 26.1**	**+0.1**
ORIF				*e*Sg	**Sg**	**02 05 39.9**	**-0.5**
4.4nm,0.2s							
PZZ	**Prazzo**	**1.21**	**174**	P	**Pb**	**02 05 27.8**	**+0.5**
VIVF	**Saint-Julien-l**	**1.80**	**243**	*e*Pg	**Pg**	**02 05 39.4**	**-1.0**
VIVF				*e*Sg	**Sg**	**02 06 03.1**	**-1.3**
3.2nm,0.4s							
HINF	**Hinteralfeld**	**2.11**	**359**	*e*Sg	**Sg**	**02 06 11.4**	**-3.3**
1.8nm,0.3s							
SMF	**Signal de Mont**	**2.34**	**295**	*e*Sg	**Sg**	**02 06 18.6**	**-3.7**
1.9nm,0.2s							

ROM ***17*** *02:16:52.9±0.1,44.45N×9.83E,h5km,MD2.4/6,ML1.6/5, Error ellipse: s-maj=1.9km s-min=1.4km az=0.0*
NEIC ***17*** *02:16:53.4,44.49N×9.84E,h14km,MD2.4(ROM), ML2.6(GEN),ML2.2(LDG),After GEN.*
LDG ***17*** *02:16:55.7±0.5,43.97N×9.94E,h10km,Ml2.2/7,Error ellipse: s-maj=9.7km s-min=7.0km az=117.0*
ISC 17 02:16:53.2±0.3,44.42N±0.04×9.79E±0.04,h14km±4km, n38,σ0°92/59,Northern Italy

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GRAM		**0.21**	**69**	P	**Pg**	**02 16 57.2**	**-0.8**
GRAM				S	**Sg**	**02 17 00.2**	**-1.1**
BACM		**0.24**	**124**	P	**Pg**	**02 16 58.7**	**+0.1**
BACM				S	**Sg**	**02 17 02.7**	**+0.5**
VALM		**0.33**	**101**	P	**Pg**	**02 16 60.0**	**-0.3**
VALM				S	**Sg**	**02 17 04.4**	**-0.6**
VINC	**Vinca**	**0.38**	**137**	P	**Pg**	**02 17 01.2**	**+0.1**
VINC				S	**Sg**	**02 17 07.0**	**+0.6**
BOB	**Bobbio (Coli)**	**0.43**	**325**	*e*PG	**Pg**	**02 17 02.1**	**0.0**
BOB				SG	**Sg**	**02 17 09.0**	**+0.9**
BOB	**Bobbio (Coli)**	**0.43**	**325**	*e*Pg	**Pg**	**02 17 02.1**	**-0.1**
BOB				*e*Sg	**Sg**	**02 17 09.0**	**+0.9**
ERBM	**Eremo**	**0.44**	**89**	*e*PG	**Pg**	**02 17 02.5**	**+0.1**
ERBM				SG	**Sg**	**02 17 08.5**	**0.0**
ERBM	**Eremo**	**0.44**	**89**	*e*Pg	**Pg**	**02 17 02.5**	**+0.1**
ERBM				*e*Sg	**Sg**	**02 17 08.5**	**0.0**
SARO	**Sassorosso**	**0.49**	**118**	P	**Pb**	**02 17 03.1**	**-0.1**
SARO				S	**Sb**	**02 17 09.7**	**-0.2**
GSCL	**Gusciola**	**0.57**	**96**	*e*PG	**Pg**	**02 17 04.9**	**0.0**
34nm,0.4s							
GSCL	**Gusciola**	**0.57**	**96**	*e*Pg	**Pg**	**02 17 05.0**	**0.0**
GENL	**Genova Univers**	**0.59**	**269**	P	**Pb**	**02 17 05.2**	**+0.4**
GENL				S	**Sb**	**02 17 13.4**	**+0.7**
BDI	**Bagni Di Lucca**	**0.68**	**121**	*e*PG	**Pg**	**02 17 06.4**	**-0.5**
28nm,0.2s							
BDI	**Bagni Di Lucca**	**0.68**	**121**	*e*Pg	**Pg**	**02 17 06.4**	**-0.5**
MAIM		**0.71**	**135**	P	**Pb**	**02 17 07.1**	**+0.3**
MAIM				S	**Sb**	**02 17 16.4**	**+0.2**
PII	**Pisa**	**0.87**	**143**	*e*PG	**Pg**	**02 17 10.3**	**-0.5**
PII				SG	**Sg**	**02 17 23.6**	**+1.1**
42nm,0.2s							
PII	**Pisa**	**0.87**	**143**	*e*Pg	**Pg**	**02 17 10.3**	**-0.5**
PII				*e*Sg	**Sg**	**02 17 23.6**	**+1.1**
PCP	**Pian Castagno**	**0.90**	**278**	P	**Pb**	**02 17 10.5**	**+0.3**
FIN	**Finale Ligure**	**1.16**	**260**	*e*PN	**Pn**	**02 17 16.8**	**+1.8**
5.0nm,0.2s							
FIN	**Finale Ligure**	**1.16**	**260**	P	**Pb**	**02 17 13.7**	**-0.8**
FIN				*e*Pg	**Pg**	**02 17 16.8**	**+0.3**
SEI	**Scarperia**	**1.18**	**107**	*e*PN	**Pn**	**02 17 16.7**	**+1.4**
44nm,0.4s							
SEI	**Scarperia**	**1.18**	**107**	*e*Pg	**Pg**	**02 17 16.7**	**-0.2**
RORO		**1.28**	**257**	P	**Pb**	**02 17 15.6**	**-1.0**
ROB	**Roburent**	**1.39**	**266**	P	**Pn**	**02 17 17.5**	**-0.8**
CSNT	**Castellina Chi**	**1.44**	**131**	*e*PN	**Pn**	**02 17 19.9**	**+0.9**
6.0nm,0.4s							
CSNT	**Castellina Chi**	**1.44**	**131**	*e*Pg	**Pg**	**02 17 19.9**	**-2.1**
ENR	**Entracque**	**1.71**	**265**	P	**Pn**	**02 17 22.4**	**-0.6**
SBF	**Sospel**	**1.79**	**253**	*e*Pn	**Pn**	**02 17 25.4**	**+1.4**
SBF				*e*Sn	**Sn**	**02 17 46.4**	**-0.2**
5.1nm,0.2s							
BHB	**Bricherasio**	**1.86**	**284**	P	**Pn**	**02 17 23.9**	**-1.1**
MBDF	**Montbardon**	**2.18**	**279**	*e*Pn	**Pn**	**02 17 33.7**	**+4.0**
MBDF				*e*Sn	**Sn**	**02 18 01.4**	**+4.7**
2.2nm,0.3s							
LPG	**La Plagne**	**2.42**	**298**	*e*Pn	**Pn**	**02 17 37.9**	**+4.9**
LPG				*e*Sn	**Sn**	**02 18 09.3**	**+6.7**
1.5nm,0.3s							
FRF	**La Foret Royal**	**2.43**	**250**	*e*Pn	**Pn**	**02 17 33.5**	**+0.3**
FRF				*e*Sn	**Sn**	**02 18 02.0**	**-0.9**
3.3nm,0.2s							
LPL	**La Plagne**	**2.44**	**298**	*e*Pn	**Pn**	**02 17 38.7**	**+5.4**
LMR	**La Mourre**	**2.61**	**247**	*e*Pn	**Pn**	**02 17 35.5**	**-0.3**
LMR				*e*Sn	**Sn**	**02 18 05.8**	**-1.7**
2.3nm,0.2s							
ORIF	**Oris-en-Rattie**	**2.84**	**282**	*e*Pn	**Pn**	**02 17 42.8**	**+3.8**
SMRF	**Simiane la Rot**	**3.07**	**263**	*e*Pn	**Pn**	**02 17 43.5**	**+1.2**
SMRF				*e*Sn	**Sn**	**02 18 17.9**	**-1.2**
1.5nm,0.3s							
VIVF	**Saint-Julien-l**	**3.68**	**279**	*e*Pn	**Pn**	**02 17 52.9**	**+1.9**
LASF	**Ste Croix**	**4.28**	**268**	*e*Pn	**Pn**	**02 17 59.9**	**+0.4**
LASF				*e*Sn	**Sn**	**02 18 46.8**	**-3.0**
0.4nm,0.3s							

BJI ***17*** *02:19:52.6,52.13N×179.04E,h68km,mB4.8,mb4.9, Ms4.2,Msz3.8*
NEIC ***17*** *02:19:54.9±0.3,51.79N×179.51E,mb4.4/27,Error ellipse: s-maj=8.2km s-min=3.2km az=181.0*
MOS ***17*** *02:19:54.0±1.4,51.74N×179.59E,h101km,mb4.7/4,Error ellipse: s-maj=20.3km s-min=14.0km az=96.0*
IDC ***17*** *02:19:55.6±0.7,51.91N×179.50E,h97km±5km,mb4.0/20, mb1 4.1/21,mb1mx4.0/28,Error ellipse: s-maj=15.6km s-min=8.7km az=173.0*
ISC 17 02:19:53.7±0.5,51.85N±0.07×179.51E±0.04,h93km±4km, h93km±2.0km:pP-P,n141,σ0°83/148,mb4.4/65,1C-1D,Rat Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KIMD	**Kanaga Island**	**2.02**	**91**	P	**P**	**02 20 27.2**	**+0.5**
KIMD				S	**S**	**02 20 51.6**	**+0.4**
KIKV	**Kanaga Island**	**2.06**	**88**	P	**P**	**02 20 27.7**	**+0.4**
KIWB	**Kanaga Island**	**2.07**	**89**	P	**P**	**02 20 27.8**	**+0.3**
KIWB				S	**S**	**02 20 52.1**	**-0.3**
KINC	**Kanaga Island**	**2.08**	**86**	P	**P**	**02 20 28.1**	**+0.5**
KIRH	**Kanaga Island**	**2.10**	**87**	P	**P**	**02 20 28.7**	**+0.8**
KIRH				S	**S**	**02 20 53.3**	**+0.1**
ADAG	**Mount Adagdak**	**2.41**	**85**	P	**P**	**02 20 32.2**	**0.0**
ETKA	**Kagalaska Isla**	**2.53**	**88**	P	**P**	**02 20 33.7**	**-0.1**
ETKA				S	**S**	**02 21 02.9**	**-0.9**
GSSP	**Great Sitkin S**	**2.68**	**83**	P	**P**	**02 20 35.8**	**-0.1**
GSTD	**Great Sitkin T**	**2.70**	**84**	P	**P**	**02 20 35.7**	**-0.4**
GSTD				S	**S**	**02 21 07.2**	**-0.7**
GSMY	**Great Sitkin M**	**2.75**	**84**	P	**P**	**02 20 36.5**	**-0.4**
GSMY				S	**S**	**02 21 09.2**	**+0.1**
GSTR	**Great Sitkin T**	**2.75**	**83**	P	**P**	**02 20 36.8**	**-0.1**
GSTR				S	**S**	**02 21 09.7**	**+0.4**
GSIG	**Igitkin Island**	**2.83**	**85**	P	**P**	**02 20 37.5**	**-0.4**
GSIG				S	**S**	**02 21 10.0**	**-1.1**
SMY	**Shemya**	**3.44**	**287**	*e*P	**P**	**02 20 45.0**	**-1.3**
ATKA	**Atka Island**	**3.90**	**82**	P	**P**	**02 20 52.3**	**-0.5**
FX1	**Attu Island--F**	**4.03**	**287**	P	**P**	**02 20 54.7**	**+0.3**
20nm,0.3s,baz=301,slow=22,SNR=61							
FX1				S	**S**	**02 21 40.1**	**-0.6**
25nm,0.3s,baz=14,slow=21,SNR=6.2							
FX1	**Attu Island--F

TIXI pmax pmax
comp=Z,14nm,0.5s,mb4.8
KLR Kul'dur 30.04 284 *eP* **P 02 25 55.0 -0.6**
YKW3 Yellowknife Ar 35.65 46 *eP* **P 02 26 43.4 -0.6**
YKA Yellowknife Ar 35.67 47 P **P 02 26 44.1 0.0**
comp=Z,1.8nm,0.5s,mb4.3,baz=281,slow=8.2,SNR=50
YKA pP pP 02 27 06.0 +0.1
comp=Z,0.5nm,0.4s,baz=282,slow=8.1,SNR=3.6
YKA PcP PcP 02 29 09.7 -1.2
comp=Z,0.3nm,0.5s,baz=285,slow=3.1,SNR=4.9
YKA ScP 02 32 44.5
comp=Z,0.3nm,0.7s,baz=292,slow=3.2,SNR=9.3
YKA Yellowknife Ar 35.67 47 P **P 02 26 44.1 0.0**
YKA pP pP 02 27 06.0 +0.1
YKA PcP PcP 02 29 09.7 -1.2
YKA ScP 02 32 44.5
CN2 Changchun 36.43 279 *eP* **P 02 26 50.1 -0.7**
CN2 *eS* **S 02 32 23.4 -1.5**
CN2 AMB AMB
comp=Z,10.0nm,0.6s,mb4.9
BOD Bodaibo 36.85 306 *eP* **P 02 26 53.3 -0.9**
HIA Hailar 37.13 290 *eP* **P 02 26 55.6 -1.0**
comp=Z,8.4nm,0.6s,mb4.8
NEW Newport 39.71 69 *eP* **P 02 27 17.1 -0.9**
comp=Z,5.1nm,1.0s,mb4.3
RES Resolute Bay 39.75 24 *eP* **P 02 27 18.4 +0.2**
YBH Yreka Blue Hor 39.85 81 *eP* **P 02 27 20.7 +1.4**
comp=Z,1.9nm,0.6s,mb4.1
WVOR Wild Horse Val 41.93 78 *eP* **P 02 27 36.8 +0.6**
comp=Z,5.6nm,0.9s,mb4.3
CMB Columbia Colle 43.50 84 *eP* **P 02 27 49.6 +0.5**
comp=Z,1.8nm,0.4s,mb4.2
HLID Hailey 43.82 74 *eP* **P 02 27 51.3 -0.4**
comp=Z,14nm,1.9s,mb4.4
MCMT McKenzie Canyo 44.03 71 *eP* **P 02 27 52.5 -0.8**
BOZ Bozeman (W) 44.28 70 *eP* **P 02 27 54.4 -0.9**
comp=Z,1.3nm,0.3s,mb4.1
NVAR Mina Array Bea 44.53 82 P **P 02 27 58.3 +0.9**
comp=Z,5.2nm,0.7s,mb4.4,baz=304,slow=6.3,SNR=32
NVAR pP pP 02 28 20.3 +0.7
comp=Z,1.5nm,0.6s,baz=298,slow=6.6,SNR=3.0
NVAR ScP 02 33 21.6
comp=Z,1.0nm,0.6s,baz=289,slow=6.0,SNR=7.3
NVAR Mina Array Bea 44.53 82 P **P 02 27 58.3 +0.9**
NVAR pP pP 02 28 20.3 +0.7
NVAR ScP 02 33 21.6
ULN Ulaanbaatar 45.11 295 *eP* **P 02 28 01.8 -0.1**
comp=Z,4.4nm,0.6s,mb4.4
TPH Tonopah 45.42 82 *eP* **P 02 28 04.9 +0.4**
comp=Z,5.3nm,0.6s,mb4.5
TPH *epP* pP 02 28 26.0 -0.6
SONM Songino Array 45.49 295 P **P 02 28 06.0 +1.1**
comp=Z,4.3nm,0.5s,mb4.4,baz=64,slow=7.4,SNR=13
SONM PcP PcP 02 29 42.3 -0.4
comp=Z,1.2nm,0.8s,baz=333,slow=0.8,SNR=4.6
ZAK Zakamensk 45.81 300 *eP* **P 02 28 07.6 +0.2**
ZAK *e* 02 28 42.2
HWUT Hardware Ranch 46.67 74 *eP* **P 02 28 14.3 0.0**
SSE Sheshan 46.96 267 P **P 02 28 15.8 -0.9**
SSE AMB AMB
comp=Z,22nm,0.7s,mb5.0
SSE AMB AMB
comp=Z,44nm,3.9s
BW06 Boulder Array 47.16 72 *eP* **P 02 28 17.3 -0.9**
comp=Z,2.4nm,0.4s,mb4.3
BW06 *epP* pP 02 28 40.5 0.0
PDAR Pinedale Array 47.16 72 P **P 02 28 17.6 -0.5**
comp=Z,2.6nm,0.4s,mb4.3,baz=328,slow=3.5,SNR=40
PDAR pP pP 02 28 41.2 +0.7
comp=Z,3.9nm,0.7s,baz=309,slow=3.8,SNR=11
NLU North Lily Min 47.38 76 *eP* **P 02 28 19.7 -0.2**
DAU Daniels Canyon 47.59 75 *eP* **P 02 28 21.9 +0.3**
MVU Marysvale 48.21 78 *eP* **P 02 28 26.0 -0.3**
comp=Z,1.9nm,0.6s,mb4.1
MVU *epP* pP 02 28 49.0 +0.3
SRU San Rafael 48.84 76 *eP* **P 02 28 31.2 0.0**
PV10 Paradox Valley 50.21 76 *eP* **P 02 28 41.6 -0.1**
PV10 *epP* pP 02 29 03.0 -1.3
ULM Lac du Bonnet 50.30 56 P **P 02 28 42.0 -0.3**
comp=Z,1.4nm,0.6s,mb4.1,baz=317,slow=9.4,SNR=2.9
PV01 Paradox Valley 50.64 76 *eP* **P 02 28 44.5 -0.6**
RW3 Ridgway 51.10 75 *eP* **P 02 28 50.1 +1.6**
LZH Lanzhou 54.24 285 *eP* **P 02 29 11.5 -0.4**
LZH AP pP 02 29 35.0 +0.2
LZH PP PP 02 31 15.8 -0.2
LZH AMB AMB
comp=Z,23nm,1.2s,mb5.1
GTA Gaotai 54.41 290 *eP* **P 02 29 12.4 -0.7**
GTA AMB AMB
comp=Z,4.0nm,0.6s,mb4.6
MNTX Cornudas Mount 56.91 80 *eP* **P 02 29 30.3 -0.8**
comp=Z,2.6nm,0.8s,mb4.3
ARCES ARCESS Array B 57.44 349 P **P 02 29 32.8 -1.6**
comp=Z,2.0nm,0.7s,mb4.3,baz=18,slow=8.0,SNR=21
ARCES PcP PcP 02 30 24.6 -2.3
comp=Z,1.1nm,0.6s,baz=37,slow=6.1,SNR=4.2
KURK Kurchatov 57.93 313 *eP* **P 02 29 37.0 -1.0**
WMQ Urumqi 58.20 302 *eP* **P 02 29 40.9 +0.9**
WMOK Wichita Mounta 58.76 72 *eP* **P 02 29 42.9 -1.1**
WMOK *epP* pP 02 30 04.4 -2.8
MKAR Makanchi Array 58.91 307 P **P 02 29 44.0 -0.8**
comp=Z,7.6nm,0.5s,mb5.0,baz=50,slow=6.5,SNR=88
MKAR Makanchi Array 58.91 307 *i* P **P 02 29 44.0 -0.9**
MKAR pmax pmax
comp=Z,1.0nm,0.4s
BVAR Borovoye Array 59.85 319 P **P 02 29 50.3 -0.9**
comp=Z,1.3nm,0.3s,mb4.4,baz=49,slow=7.3,SNR=14
SCHQ Schefferville 60.28 38 P **P 02 29 53.0 -1.2**
comp=Z,0.8nm,0.4s,mb4.1,baz=63,slow=19,SNR=7.0
SCHQ Schefferville 60.28 38 P **P 02 29 53.0 -1.2**
ZRNK Zerenda 60.46 319 *eP* **P 02 29 53.3 -2.1**
KMI Kunming 62.62 276 *eP* **P 02 30 10.5 +0.2**
KMI AMB AMB
comp=Z,10.0nm,0.6s,mb4.9
JOF Joensuu 62.87 344 *ep* **P 02 30 09.4 -2.0**
KAF Kangasniemi 64.41 346 *ep* **P 02 30 19.4 -2.0**
baz=15,slow=5.8
TKM2 Tokmak 2 65.00 308 P **P 02 30 26.3 +0.8**
SNR=6.9
FINES FINESS Array B 65.09 346 P **P 02 30 24.2 -1.5**
comp=Z,2.0nm,0.8s,mb4.0,baz=45,slow=11,SNR=8.5
FINES FINESS Array B 65.09 346 P **P 02 30 24.2 -1.5**
ULHL Ulahol 65.19 307 P **P 02 30 27.3 +0.6**
SNR=11
USP Ospenovka 65.27 309 P **P 02 30 28.2 +0.9**
SNR=8.2
AAK Ala-Archa 65.75 309 P **P 02 30 31.4 +1.0**
SNR=6.1
KZA Kyzart 65.80 308 P **P 02 30 31.8 +1.1**
SNR=6.6
EKS2 Erkin-Say 66.08 309 P **P 02 30 33.6 +1.1**
SNR=8.7
LSA Lhasa 66.29 288 *eP* **P 02 30 35.2 +1.2**
comp=Z,5.9nm,0.7s,mb4.5
AML Almayashu 66.52 309 P **P 02 30 36.5 +1.3**
SNR=7.5
NB2 NORSAR Subarra 67.07 354 P **P 02 30 37.6 -0.8**
comp=Z,4.3nm,0.6s,mb4.5,baz=6.0,slow=5.8
NOA NORSAR Array B 67.07 354 P **P 02 30 37.7 -0.7**
comp=Z,4.5nm,0.6s,mb4.5,baz=7.9,slow=6.3,SNR=28
CMAR Chiang Mai Arr 69.92 274 P **P 02 30 56.7 +0.1**
comp=Z,2.4nm,0.5s,mb4.3,baz=233,slow=27,SNR=8.5
KKN Kakani 71.14 291 *eP* **P 02 31 04.7 +0.8**
comp=Z,17nm,0.5s,mb5.1
PKI Pulchoki 71.23 291 *eP* **P 02 31 05.1 +0.7**
comp=Z,13nm,0.5s,mb5.0
GKN Gorkha 71.35 292 *eP* **P 02 31 05.4 +0.3**
comp=Z,40nm,0.9s,mb5.2
DMN Daman 71.38 291 *eP* **P 02 31 06.1 +0.8**
comp=Z,16nm,0.8s,mb4.9
DANN Dangsing 71.60 292 *eP* **P 02 31 07.6 +1.0**
comp=Z,3.1nm,0.0s,mb5.6
KOLN Koldanda 72.13 292 *eP* **P 02 31 09.5 -0.2**
comp=Z,11nm,0.8s,mb4.7
BAIF Baives 78.39 357 *eP* **P 02 31 44.5 -0.4**
comp=Z,7.7nm,0.8s,mb4.2
GERES GERESS Array B 78.96 351 P **P 02 31 47.7 -0.3**
comp=Z,0.6nm,0.6s,mb3.6,baz=27,slow=6.0,SNR=8.0
FLN La Foliniere 79.77 360 *eP* **P 02 31 51.6 -0.8**
comp=Z,7.7nm,0.9s,mb4.2
CDF Champ du Feu 79.90 355 *eP* **P 02 31 53.0 -0.1**
LDF La Druitiere 79.94 360 *eP* **P 02 31 52.4 -0.9**
comp=Z,6.1nm,0.5s,mb4.3
GRR Gorron 80.14 0 *eP* **P 02 31 53.8 -0.6**
comp=Z,12nm,0.7s,mb4.5
ROSF Rostrenen 80.17 2 *eP* **P 02 31 53.5 -1.0**
comp=Z,3.9nm,0.7s,mb4.1
QUIF Quistinic 80.59 2 *eP* **P 02 31 56.1 -0.7**
SSF Saint Saulge 81.41 357 *eP* **P 02 32 00.5 -0.6**
comp=Z,2.3nm,0.6s,mb3.9
WRA Warramunga Arr 81.64 222 P **P 02 32 02.5 -0.4**
comp=Z,0.9nm,0.7s,mb3.7,baz=37,slow=6.2,SNR=7.1
AVF Avril sur Loir 81.69 357 *eP* **P 02 32 01.9 -0.7**
comp=Z,4.5nm,0.8s,mb4.0
CABF La Chapelle 81.76 355 *eP* **P 02 32 02.6 -0.3**
comp=Z,6.0nm,0.8s,mb4.2
SMF Signal de Mont 81.82 357 *eP* **P 02 32 02.6 -0.6**
comp=Z,5.7nm,0.8s,mb4.2
MFF Saint Martin d 81.93 360 *eP* **P 02 32 03.4 -0.4**
comp=Z,9.0nm,0.9s,mb4.3
BGF Bois d'Agland 81.93 358 *eP* **P 02 32 03.3 -0.5**
TCF Toulx Ste Croi 82.22 358 *eP* **P 02 32 04.7 -0.6**
LPG La Plagne 82.83 355 *eP* **P 02 32 09.1 +0.6**
comp=Z,4.2nm,0.8s,mb4.0
ORIF Oris-en-Rattie 83.46 355 *eP* **P 02 32 11.2 -0.4**
comp=Z,2.4nm,0.6s,mb3.9
CAF Calviac 83.58 358 *eP* **P 02 32 12.9 +0.8**
comp=Z,2.8nm,0.6s,mb4.0
LFF La Frestale 83.59 359 *eP* **P 02 32 12.1 -0.1**
MBDF Montbardon 83.60 355 *eP* **P 02 32 12.6 +0.4**
comp=Z,4.4nm,0.7s,mb4.1
FITZ Fitzroy Crossi 83.94 231 P **P 02 32 15.1 +0.6**
comp=Z,2.4nm,0.5s,mb4.3,baz=346,slow=3.3,SNR=10
SMRF Simiane la Rot 84.41 356 *eP* **P 02 32 17.1 +0.8**
comp=Z,10nm,0.9s,mb4.4
SBF Sospel 84.42 354 *eP* **P 02 32 17.0 +0.6**
comp=Z,21nm,0.8s,mb4.7
FRF La Foret Royal 84.77 355 *eP* **P 02 32 18.6 +0.5**
ASAR Alice Springs 85.13 221 P **P 02 32 20.6 +0.3**
comp=Z,1.0nm,0.8s,mb3.8,baz=35,slow=5.1,SNR=5.0
MTLF Montolieu 85.16 358 *eP* **P 02 32 20.1 0.0**
SJPF Ste Jean 85.42 1 *eP* **P 02 32 21.9 +0.6**
EPF Esparros 85.50 359 *eP* **P 02 32 22.4 +0.7**
ETSF Etsaut 85.63 0 *eP* **P 02 32 22.9 +0.5**
comp=Z,3.5nm,0.6s,mb4.2
ESDC Sonseca Array 88.81 3 P **P 02 32 37.2 -0.5**
comp=Z,0.4nm,0.6s,mb3.6,baz=351,slow=3.9,SNR=5.7
DBIC Dimbokro 121.59 5 PKP PKPdf 02 38 36.8 +0.2
comp=Z,0.5nm,0.3s,baz=1.3,slow=10,SNR=4.2
CPUP Villa Florida 130.58 82 SKPbc 02 42 07.3
comp=Z,2.3nm,0.7s,baz=324,slow=3.5,SNR=7.9
MAW Mawson 146.21 218 PKPbc PKPbc 02 39 22.9 +1.2
comp=Z,2.3nm,0.5s,baz=39,slow=2.6,SNR=5.2
MAW pPKPbc 02 39 47.8
comp=Z,1.4nm,0.6s,baz=59,slow=5.9,SNR=1.7

KRSC 17 02:25:05.4±0.7, 49.34N×155.93E, h46km±23km, ML3.8, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SKR	**Severo-Kuril's**	**1.35**	**5**	*eP*	P	02 25 27.2	-1.1
SKR				*eS*	S	02 25 42.9	-2.4
ALID	**Alaid**	**1.55**	**351**	*eP*	P	02 25 31.8	+0.7
ALID				*eS*	S	02 25 51.0	+0.8
PAU	**Pauzhetka**	**2.20**	**14**	*eP*	P	02 25 40.4	+0.1
PAU				*eS*	S	02 26 05.5	-0.9
PAU				Smax			
	260nm,0.4s						
MIPR	**Malaya Ipel'ka**	**2.99**	**10**	*eP*	P	02 25 52.1	+0.6
MIPR				*eS*	S	02 26 26.2	-0.1
GRL	**Gorelyy**	**3.49**	**22**	*eP*	P	02 25 59.5	+0.9
GRL				*eS*	S	02 26 38.5	-0.6
RUS	**Russkaya**	**3.50**	**27**	*eP*	P	02 25 58.6	-0.2
RUS				*eS*	S	02 26 37.8	-1.6
UGLR	**Uglovaya**	**4.28**	**24**	*eP*	P	02 26 11.6	+1.9
KOK	**Koryaka**	**4.31**	**22**	*eP*	P	02 26 11.9	+1.8
AVH	**Avacha**	**4.31**	**23**	*eP*	P	02 26 11.8	+1.7
AVH				*eS*	S	02 26 59.9	+0.2
SMAR	**Somma**	**4.32**	**24**	*eP*	P	02 26 12.4	+2.0
SDLR	**Sedlovina**	**4.36**	**24**	*eP*	P	02 26 11.7	+0.8
NLC	**Nalytchevo**	**4.39**	**28**	*eP*	P	02 26 10.2	-1.2
NLC				*eS*	S	02 26 58.6	-3.3
GNL	**Ganaly**	**4.54**	**15**	*eP*	P	02 26 14.9	+1.5
SPN	**Mys Shipunski**	**4.56**	**33**	*eP*	P	02 26 14.0	+0.3
SPN				*eS*	S	02 27 04.5	-1.5
MKZ	**Mys Kozlova**	**6.33**	**32**	*eP*	P	02 26 36.9	-1.7
KMNR	**Kamenistaya**	**6.94**	**21**	*eP*	P	02 26 45.9	-1.2
ZLN	**Zelenaya**	**7.31**	**22**	*eP*	P	02 26 53.5	+1.3
KBTR	**Krutoberegovo**	**8.04**	**29**	*eP*	P	02 27 01.2	-1.2

NSSC 17 02:34:40.7, 33.82N×36.70E, h10km±1km
GII 17 02:34:40.4±0.8, 33.86N×36.70E, h5km±7km, ML3.0/7
GRAL 17 02:34:40.7±0.4, 33.80N×36.77E, h15km±999km, MD3.2
ISC 17 02:34:39.9±0.8, 33.83N±0.02×36.71E±0.05, h6km±4km, n23, σ0°82/37, 4D, Jordan - Syria region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MARH	**Ras Al Marh**	**0.27**	**316**	⇓P	**Pg**	**02 34 46.7**	**+1.3**
MARH				⇓S	**Sg**	**02 34 51.0**	**+2.0**
QASN	**Qassioun**	**0.47**	**230**	⇑P	**Pg**	**02 34 50.0**	**+0.7**
QASN				⇑S	**Sg**	**02 34 56.5**	**+0.9**
TOTH	**TOTAH**	**0.53**	**206**	⇑P	**Pg**	**02 34 51.2**	**+0.7**
TOTH				⇑S	**Sg**	**02 34 58.0**	**+0.5**
BRBR	**Barbar**	**0.76**	**237**	⇑P	**Pb**	**02 34 55.2**	**0.0**
BRBR				⇑S	**Sg**	**02 35 04.7**	**-0.6**
HWQ	**Hawqa**	**0.77**	**305**	*i* PG	**Pg**	**02 34 55.2**	**-0.2**
HWQ				*i* SG	**Sg**	**02 35 06.0**	**+0.3**
BHL	**Bhannes**	**0.88**	**275**	*i* PG	**Pg**	**02 34 56.7**	**-0.8**
BHL				*i* SG	**Sg**	**02 35 08.8**	**-0.5**
HRI	**Mount Hermon**	**0.99**	**235**	Pg	**Pg**	**02 34 58.7**	**-1.1**
ZALF	**Zalf**	**1.05**	**150**	⇓P	**Pb**	**02 34 60.0**	**-0.2**
ZALF				⇓S	**Sb**	**02 35 14.4**	**+0.4**
KSDI	**Kefar Szold**	**1.08**	**234**	Pg	**Pg**	**02 35 00.2**	**-1.4**
SALA	**Sala**	**1.12**	**179**	⇑P	**Pb**	**02 35 00.9**	**-0.4**
SALA				⇑S	**Sb**	**02 35 16.3**	**+0.3**
KSHT	**Keshet**	**1.13**	**222**	Pg	**Pg**	**02 35 01.3**	**-1.3**
MATL	**Matirih**	**1.20**	**254**	*i* PG	**Pg**	**02 35 01.9**	**-2.0**
BIDA	**Albida**	**1.22**	**345**	⇑P	**Pb**	**02 35 03.3**	**+0.2**
BIDA				⇑S	**Sb**	**02 35 19.9**	**+0.9**
TCHB	**Talchebab**	**1.32**	**208**	⇑P	**Pb**	**02 35 04.6**	**-0.1**
TCHB				⇑S	**Sb**	**02 35 21.8**	**+0.1**
HNTI	**Hanita**	**1.48**	**240**	Pn	**Pn**	**02 35 07.2**	**-0.2**
HNTI				Sn	**Sn**	**02 35 27.0**	**-0.2**
HAF	**Haifa**	**1.76**	**234**	Pn	**Pn**	**02 35 11.6**	**+0.4**
SLNF	**Slenfeh**	**1.80**	**347**	⇑P	**Pn**	**02 35 11.0**	**-0.8**
SLNF				⇑S	**Sn**	**02 35 34.7**	**-0.6**
HMDT	**Nahal Hemdat**	**1.86**	**213**	Pn	**Pn**	**02 35 12.9**	**+0.1**
ARNB	**Al Arnab**	**2.11**	**344**	⇑P	**Pn**	**02 35 16.5**	**+0.3**
ARNB				⇑S	**Sn**	**02 35 42.2**	**-0.9**
SLTI	**Sal'it**	**2.12**	**222**	Pn	**Pn**	**02 35 15.8**	**-0.6**
SLTI				Sn	**Sn**	**02 35 45.5**	**+2.1**
BTCH	**Batrach**	**2.21**	**355**	⇑P	**Pn**	**02 35 17.4**	**-0.2**
MKRJ	**Makawir**	**2.45**	**202**	Pn	**Pn**	**02 35 21.8**	**+0.7**
DRGI	**Dragot**	**2.50**	**207**	Pn	**Pn**	**02 35 21.9**	**+0.1**

GII 17 02:42:25.7±0.9, 33.86N×36.70E, h5km±7km, ML2.4/6
GRAL 17 02:42:26.8±0.3, 33.80N×36.69E, h0km±549km, MD3.1
ISC 17 02:42:25.0±1.9, 33.83N±0.06×36.7E±0.1, h5km, n9, σ0°75/13, Jordan - Syria region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HWQ	**Hawqa**	**0.77**	**306**	*i* PG	**Pg**	**02 42 40.8**	**+0.4**
HWQ				*i* SG	**Sg**	**02 42 51.3**	**+0.6**
BHL	**Bhannes**	**0.88**	**275**	*i* PG	**Pg**	**02 42 42.4**	**-0.2**
BHL				*i* SG	**Sg**	**02 42 53.9**	**-0.4**
HRI	**Mount Hermon**	**0.98**	**235**	Pg	**Pg**	**02 42 44.1**	**-0.6**
KSDI	**Kefar Szold**	**1.08**	**234**	Pg	**Pg**	**02 42 45.6**	**-0.9**
KSHT	**Keshet**	**1.13**	**222**	Pg	**Pg**	**02 42 46.8**	**-0.8**
MATL	**Matirih**	**1.19**	**254**	*i* PG	**Pg**	**02 42 48.0**	**-0.9**
HNTI	**Hanita**	**1.48**	**240**	Pn	**Pn**	**02 42 52.1**	**-0.3**
HNTI				Sn	**Sn**	**02 43 12.6**	**+0.3**
HMDT	**Nahal Hemdat**	**1.86**	**212**	Pn	**Pn**	**02 42 58.4**	**+0.6**
SLTI	**Sal'it**	**2.11**	**222**	Pn	**Pn**	**02 43 01.9**	**+0.4**
SLTI				Sn	**Sn**	**02 43 30.3**	**+1.9**

ISC 17 02:44:01.1±2.8, 36.7N±0.1×70.9E±0.4, h200km, n13, σ0°75/14, 2D, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AML	**Almayashu**	**5.82**	**21**	P	**P**	**02 45 27.3**	**+0.6**
	SNR=25						
UCH	**Uchtor**	**6.17**	**26**	P	**P**	**02 45 31.8**	**+0.5**
	SNR=28						
KZA	**Kyzart**	**6.32**	**31**	P	**P**	**02 45 33.1**	**-0.2**
	SNR=8.9						
EKS2	**Erkin-Say**	**6.33**	**20**	P	**P**	**02 45 34.4**	**+0.9**
	SNR=5.5						
KK31	**Karatay Array**	**6.38**	**357**	⇓P	**P**	**02 45 34.3**	**+0.2**
	0.6nm,0.2s,baz=174,slow=12,SNR=15						
KK31				⇓S	**S**	**02 46 43.3**	**-3.2**
	5.1nm,0.5s,baz=176,slow=22,SNR=7.3						
AAK	**Ala-Archa**	**6.52**	**24**	P	**P**	**02 45 35.9**	**0.0**
	SNR=7.0						
ULHL	**Ulahol**	**6.89**	**35**	P	**P**	**02 45 40.3**	**-0.4**
	SNR=10						
TKM2	**Tokmak 2**	**7.17**	**29**	P	**P**	**02 45 44.4**	**+0.1**
	SNR=12						
KOLN	**Koldanda**	**13.96**	**126**	*eP*	**P**	**02 47 11.3**	**-0.2**
GKN	**Gorkha**	**14.49**	**123**	*eP*	**P**	**02 47 19.4**	**+1.3**
	12nm,0.3s						
DMN	**Daman**	**15.06**	**123**	*eP*	**P**	**02 47 24.3**	**-0.9**
	5.7nm,0.4s						
KKN	**Kakani**	**15.07**	**122**	*eP*	**P**	**02 47 24.8**	**-0.4**
	14nm,0.7s						
PKI	**Pulchoki**	**15.29**	**122**	*eP*	**P**	**02 47 27.7**	**-0.3**
	5.4nm,0.4s						

IDC 17 02:58:32.4±1.8, 6.96S×157.78E, mb3.7/3, mb1 4.1/3, mb1mx3.7/12, Error ellipse: s-maj=204.0km s-min=33.3km az=144.0, Bougainville - Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**26.15**	**238**	P	P	03 04 09.7	-0.6
	0.8nm,1.0s,baz=64,slow=9.0,SNR=5.5						
ASAR	**Alice Springs**	**28.31**	**231**	P	P	03 04 27.0	-3.1
	0.8nm,0.9s,baz=56,slow=9.8,SNR=4.9						
NVAR	**Mina Array Bea**	**89.53**	**51**	P	P	03 11 32.3	-1.1
	0.8nm,0.9s,baz=231,slow=4.5,SNR=4.6						

IDC 17 03:04:51.6±0.8, 37.41N×96.72E, mb3.7/11, mb1 3.9/13, mb1mx3.9/21, ML3.9/2, Error ellipse: s-maj=31.5km s-min=18.3km az=47.0
NEIC 17 03:04:53.4±0.6, 37.42N×96.54E, h10km, mb4.5/2, Error ellipse: s-maj=15.8km s-min=11.0km az=34.0
BJI 17 03:04:55.1, 37.55N×96.63E, h10km, mB4.8, mb4.6, ML3.6, Ms3.3, Msz3.4
ISC 17 03:04:51.3±0.6, 37.50N±0.07×96.82E±0.05, h10km, n24, σ1°08/27, mb3.9/13, Qinghai

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GTA	**Gaotai**	**3.02**	**50**	P	**Pn**	**03 05 46.9**	**+6.8**
GTA				PG	**Pg**	**03 05 52.8**	**+1.2**
GTA				SG	**Sg**	**03 06 30.8**	**-1.1**
GTA				S	Sn		
	comp=N,92nm,0.8s						
GTA				S	Sn		
	comp=E,53nm,0.7s						
GTA				LR	LR		
	comp=N,339nm,7.6s						
GTA				LR	LR		
	comp=E,232nm,6.1s						
GTA				LR	LR		
	comp=Z,293nm,8.0s						
LZH	**Lanzhou**	**5.81**	**102**	PG	**Pg**	**03 06 44.3**	**-2.9**
LZH				SG	**Sg**	**03 08 04.4**	**-0.3**
LZH				S	Sn		
	comp=N,60nm,0.6s						
LZH				S	Sn		
	comp=E,70nm,0.7s						
LZH				LR	LR		
	comp=N,240nm,7.0s						
LZH				LR	LR		
	comp=Z,390nm,8.0s						
WMQ	**Urumqi**	**9.37**	**315**	*eP*	**P**	**03 07 08.0**	**-1.4**
SONM	**Songino Array**	**12.49**	**31**	Pn	**P**	**03 07 54.4**	**+2.5**
	comp=Z,0.6nm,0.3s,baz=215,slow=14,SNR=4.7						
MKAR	**Makanchi Array**	**14.21**	**315**	Pn	**P**	**03 08 11.6**	**-2.9**
	comp=Z,0.2nm,0.3s,baz=123,slow=14,SNR=6.5						
KURK	**Kurchatov**	**18.52**	**321**	*eP*	**P**	**03 09 07.7**	**-1.8**
BVAR	**Borovoye Array**	**24.04**	**319**	P	**P**	**03 10 07.7**	**+0.7**
	comp=Z,2.9nm,0.7s,mb3.8,baz=236,slow=37,SNR=7.0						
BRVK	**Borovoye**	**24.11**	**319**	P	**P**	**03 10 06.8**	**-0.9**
ZRNK	**Zerenda**	**24.73**	**318**	*eP*	**P**	**03 10 14.6**	**+0.8**
BRTR	**Keskin Array B**	**48.50**	**293**	P	**P**	**03 13 36.5**	**+0.4**
	comp=Z,1.2nm,0.8s,mb4.0,baz=98,slow=6.5,SNR=6.5						
FINES	**FINESS Array B**	**48.88**	**323**	P	**P**	**03 13 38.8**	**+0.2**
	comp=Z,1.1nm,0.8s,mb3.9,baz=90,slow=11,SNR=5.3						
ARCES	**ARCESS Array B**	**48.92**	**334**	P	**P**	**03 13 39.4**	**+0.5**
	comp=Z,1.1nm,0.7s,mb4.0,baz=80,slow=7.4,SNR=5.6						
ARCES				PcP	PcP	03 15 02.7	-0.9
	comp=Z,7.4nm,1.3s,baz=90,slow=3.6,SNR=6.0						
ARCES	**ARCESS Array B**	**48.92**	**334**	P	**P**	**03 13 39.4**	**+0.5**
ARCES				PcP	PcP	03 15 02.7	-0.9
KWP	**Kalwaria**	**52.98**	**308**	*eP*	**P**	**03 14 10.4**	**+0.4**
	comp=Z,7.4nm,0.8s,mb4.7						
NB2	**NORSAR Subarra**	**56.00**	**324**	P	**P**	**03 14 31.4**	**-0.5**
	comp=Z,0.6nm,0.6s,mb3.8,baz=72,slow=7.4						
NOA	**NORSAR Array B**	**56.00**	**324**	P	**P**	**03 14 31.6**	**-0.3**
	comp=Z,0.6nm,0.6s,mb3.8,baz=72,slow=7.2,SNR=4.2						
GERES	**GERESS Array B**	**58.80**	**310**	P	**P**	**03 14 51.8**	**-0.1**
	comp=Z,0.1nm,0.3s,mb3.3,baz=72,slow=4.2,SNR=4.1						
ILAR	**Eielson Array**	**66.62**	**25**	P	**P**	**03 15 44.0**	**+0.6**
	comp=Z,0.8nm,0.8s,mb3.8,baz=293,slow=5.3,SNR=9.4						
WRA	**Warramunga Arr**	**67.17**	**142**	P	**P**	**03 15 48.1**	**+0.3**
	comp=Z,0.7nm,0.8s,mb3.8,baz=345,slow=5.8,SNR=6.2						
INK	**Inuvik**	**68.03**	**18**	*eP*	**P**	**03 15 53.3**	**+1.0**
	comp=Z,2.4nm,1.0s,mb4.2						
ASAR	**Alice Springs**	**70.14**	**144**	P	**P**	**03 16 05.5**	**-0.5**
	comp=Z,1.3nm,1.1s,mb3.8,baz=326,slow=6.2,SNR=5.8						
ESDC	**Sonseca Array**	**74.30**	**308**	P	**P**	**03 16 30.6**	**+0.2**
	comp=Z,0.6nm,0.6s,mb3.7,baz=62,slow=5.8,SNR=5.4						
YKA	**Yellowknife Ar**	**77.18**	**14**	P	**P**	**03 16 47.2**	**+0.9**
	comp=Z,0.3nm,0.5s,mb3.5,baz=334,slow=5.2,SNR=12						
YKA	**Yellowknife Ar**	**77.18**	**14**	P	**P**	**03 16 47.2**	**+0.9**

CASC 17 03:08:29.6±1.4, 11.74N×87.55W, h19km±5km, MD3.6, ML3.3, Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PYN	**Poneloya**	**0.82**	**39**	*eP*	Pb	03 08 44.7	-0.4
PYN				*eS*	Sb	03 08 55.4	-0.3
LEON	**Leon**	**0.93**	**44**	*eP*	Pb	03 08 46.2	-0.8
COPN	**Copaltepe**	**1.04**	**65**	*eP*	Pb	03 08 48.2	-0.5
COPN				*eS*	Sb	03 09 03.0	+1.1
CRIN	**San Cristobal**	**1.07**	**27**	*eP*	Pb	03 08 49.4	+0.1
CRIN				*eS*	Sb	03 09 04.4	+1.5

KMTI				Sg	Sg	03 10 10.1	+0.6		
PRNI	**Paran**	**0.51**	**356**	Pg	Pg	03 10 07.2	+0.6		
PRNI				Sg	Sg	03 10 14.6	+1.0		
ALWS	**Ilw as Safayha**	**0.53**	**178**	P	Pb	03 10 07.4	+0.6		
JMOS	**Jabal al Moall**	**0.67**	**175**	P	Pb	03 10 09.9	+0.7		
HBST	**Basata**	**0.68**	**204**⇑	*e*P	Pb	03 10 10.2	+0.8		
ZFRI	**Zfri**	**0.72**	**9**	Pg	Pg	03 10 10.7	0.0		
HAQS	**Haql**	**0.79**	**188**	P	Pb	03 10 11.8	+0.5		
NUB		**0.88**	**203**⇓	*e*P	Pb	03 10 13.6	+0.7		
HNKL	**Nakhl**	**0.93**	**276**⇑	*e*P	Pb	03 10 14.0	+0.3		
HNKL				S	Sb	03 10 26.6	+0.8		
SVTA	**Shivta**	**1.15**	**341**	Pg	Pg	03 10 18.3	-0.9		
HDHB	**Dhahab**	**1.17**	**199**⇑	*e*P	Pb	03 10 18.6	+0.7		
JMQS	**Jabal Moqyreh**	**1.19**	**142**	P	Pb	03 10 18.5	+0.2		
KZIT	**Kziot**	**1.20**	**332**	Pg	Pg	03 10 19.0	-1.2		
KZIT				Sg	Sg	03 10 34.9	-1.5		
RTMM	**Retamin**	**1.25**	**346**	Pg	Pg	03 10 19.8	-1.3		
BDAS	**Al Bad'**	**1.40**	**178**	P	Pn	03 10 20.5	-1.2		
MZDA	**Masada**	**1.49**	**10**	Pn	Pn	03 10 23.7	+0.8		
MZDA				Sn	Sn	03 10 42.3	-0.1		
HKAT	**Jabal Katrina**	**1.60**	**215**⇑	*e*P	Pn	03 10 24.0	-0.5		
HKAT				S	Sn	03 10 44.5	-0.7		
AYUS	**'Aynunah**	**1.66**	**173**	P	Pn	03 10 23.9	-1.4		
DRGI	**Dragot**	**1.77**	**10**	Pn	Pn	03 10 26.7	-0.2		
MKRJ	**Makawir**	**1.78**	**16**	Pn	Pn	03 10 28.4	+1.3		
TR2		**1.85**	**219**	P	Pn	03 10 27.4	-0.7		
HRDS	**Abu Rudays**	**1.90**	**234**⇑	*e*P	Pn	03 10 28.9	+0.2		
SUZ		**1.93**	**271**	P	Pn	03 10 29.4	+0.3		
ZNM		**1.95**	**257**⇓	*e*P	Pn	03 10 29.3	-0.1		
TR1		**2.06**	**208**	P	Pn	03 10 30.1	-1.0		
TBKS	**Tabuk**	**2.08**	**140**	P	Pn	03 10 31.1	-0.2		

MAN ***17*** *03:11:27.2, 13.71N×120.56E, h120km, mb3.7, ML2.5, MS2.0*

ISC 17 03:11:27.3±1.2, 13.72N±0.05×120.6E±0.1, h126km±10km, n11, σ0°56/16, 10C-1D, Mindoro

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LUBP	**Lubang**	**0.38**	**273**⇑	*e*P	**P**	**03 11 45.6**	**+0.2**
LUBP				*e*S	**S**	**03 11 58.9**	**-0.3**
ARP	**Angono**	**0.96**	**32**⇑	*e*P	**P**	**03 11 49.2**	**-0.5**
QVPH	**Quezon City--P**	**1.02**	**24**⇓	*e*P	**P**	**03 11 50.5**	**+0.2**
QVPH				*i* S	**S**	**03 12 08.5**	**+0.8**
NBP	**Mount Natib**	**1.04**	**348**⇑	*e*P	**P**	**03 11 50.1**	**-0.4**
SJMP	**San Jose**	**1.34**	**159**⇑	*e*P	**P**	**03 11 53.9**	**+0.1**
SJMP				*e*S	**S**	**03 12 13.7**	**-0.2**
BUSP	**Coron**	**1.76**	**194**⇑	*e*P	**P**	**03 11 58.2**	**-0.3**
BUSP				*e*S	**S**	**03 12 21.3**	**-1.0**
OTRP	**Odiongan**	**1.91**	**135**⇑	*e*P	**P**	**03 12 00.9**	**+0.5**
BALP	**Baler**	**2.21**	**24**⇑	*e*P	**P**	**03 12 04.0**	**-0.2**
BOLP	**Bolinao**	**2.74**	**345**⇑	*e*P	**P**	**03 12 03.2**	**-8.0**
ENPP	**El Nido**	**2.76**	**205**⇑	*e*P	**P**	**03 12 11.5**	**0.0**
ENPP				*e*S	**S**	**03 12 46.4**	**+1.4**
CUYO	**Cuyo Island**	**2.88**	**172**⇑	*e*P	**P**	**03 12 12.7**	**-0.3**

IDC ***17*** *03:16:47.8±3.0, 1.30N×97.68E, mb3.7/3, mb1 3.8/3, mb1mx3.5/16, Error ellipse: s-maj=175.0km s-min=28.3km az=50.0*

DJA 17 03:17:20.8, 2.65N×98.67E, h53km, MB3.1, 2C-1D, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PSI	**Prapat**	**0.26**	**80**⇓	*e*Pn	P	03 17 29.6	-0.3
PSI	**Prapat**	**0.26**	**80**	*e*Sn	S	03 17 38.5	+2.1
TSI	**Tuntungan**	**0.85**	**353**	*e*Pn	P	03 17 36.0	-0.7
GSI	**Gunungsitoli**	**1.73**	**219**⇑	*e*Pn	P	03 17 42.0	-7.0
IPM	**Ipoh**	**3.03**	**51**⇑	*e*P	P	03 17 56.2	-11
WRA	**Warramunga Arr**	**41.59**	**124**	P	P	03 24 38.3	-27
	0.4nm,0.4s,baz=296,slow=8.0,SNR=10.0						
MKAR	**Makanchi Array**	**46.22**	**344**	P	P	03 25 21.9	-21
	0.3nm,0.3s,baz=161,slow=8.3,SNR=8.9						
FINES	**FINESS Array B**	**79.41**	**332**	P	P	03 29 00.3	-22
	0.5nm,0.5s,baz=108,slow=4.4,SNR=7.3						

JMA ***17*** *03:19:55.4±0.3,23.98N×122.48E, h14km, M2.2*
TAP ***17*** *03:19:57.4,24.09N×122.37E, h15km, ML2.8*

ISC 17 03:19:54.5±2.9, 24.0N±0.2×122.4E±0.1, h19km±14km, n5, σ0°32/10, Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
YOJ	**Yonaguni jima**	**0.72**	**51**	P	**Pb**	**03 20 08.5**	**+0.3**
YOJ				S	**Sb**	**03 20 17.4**	**-0.2**
IRIF	**Iriomote-Funau**	**1.26**	**75**	P	**Pn**	**03 20 17.1**	**-0.2**
IRIF				S	**Sb**	**03 20 33.5**	**+0.2**
HATJ	**Hateruma jima**	**1.29**	**88**	P	**Pn**	**03 20 17.6**	**-0.1**
HATJ				*e*S	**Sb**	**03 20 33.9**	**-0.2**
JKRS	**Kuro-shima**	**1.49**	**81**	P	**Pn**	**03 20 21.2**	**+0.6**
JKRS				*e*S	**Sn**	**03 20 40.1**	**+0.4**
JIJ	**Ishigaki jima**	**1.64**	**77**	P	**Pn**	**03 20 22.2**	**-0.5**
JIJ				*e*S	**Sn**	**03 20 43.2**	**-0.2**

IDC 17 03:33:34.3±26.0, 20.49S×173.00W, mb4.2/4, mb1 4.4/4, mb1mx3.8/16, Error ellipse: s-maj=494.0km s-min=161.8km az=75.0, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CTA	**Charters Tower**	**38.15**	**263**	P	P	03 40 56.1	-1.1
	3.4nm,0.5s,baz=101,slow=16,SNR=4.6						
STKA	**Stephens Creek**	**42.02**	**245**	P	P	03 41 27.2	-2.0
	2.1nm,0.6s,baz=68,slow=5.4,SNR=3.8						
ASAR	**Alice Springs**	**49.08**	**256**	P	P	03 42 23.4	-2.1
	1.7nm,0.7s,baz=96,slow=7.7,SNR=17						
WRA	**Warramunga Arr**	**49.24**	**261**	P	P	03 42 24.9	-1.9
	1.0nm,0.3s,baz=97,slow=8.1,SNR=56						

NEIC ***17*** *03:40:24.3±1.6,51.79N×7.84E, h5km, ML2.8(LDG), Error ellipse: s-maj=26.3km s-min=9.6km az=160.0*
BUG ***17*** *03:40:26.9,51.67N×7.75E, h1km, ML2.3*
LDG ***17*** *03:40:27.3±0.2,51.69N×7.77E, h1km, Ml2.8/9, Error ellipse: s-maj=3.5km s-min=3.0km az=115.0, Suspected Mining induced.*
BNS ***17*** *03:40:27.7±1.0,51.72N×7.75E, h1km, ML2.4*
BGR ***17*** *03:40:29.2±0.3,51.63N×7.70E, h1km, ML2.4/5, Error ellipse: s-maj=3.3km s-min=2.2km az=22.0*

ISC 17 03:40:26.1±0.4, 51.54N±0.02×7.73E±0.03, n28, σ1°19/58, 1C, Germany

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BAHL	**Ahlen**	**0.20**	**17**	Pg	**Pg**	**03 40 30.2**	**0.0**
BAHL				Sg	**Sg**	**03 40 32.3**	**-0.6**
BUG	**Bochum--Univer**	**0.30**	**251**⇑	*i*Pg	**Pg**	**03 40 35.0**	**+2.8**
BUG				Sg	**Sg**	**03 40 40.9**	**+4.7**
BNS	**Bensberg**	**0.67**	**211**	*e*Sg	**Sg**	**03 40 55.6**	**+7.0**
	230nm,0.3s						
WTSB	**Winterswijk**	**0.72**	**307**	*e*Pg	**Pg**	**03 40 41.7**	**+1.3**
	SNR=9.4						
WTSB				*e*Sg	**Sg**	**03 40 50.6**	**+0.6**
	SNR=4.5						
WTSB	**Winterswijk**	**0.72**	**307**	*e*Pg	**Pg**	**03 40 41.3**	**+0.8**
	18nm,0.4s						
WTSB				*i* x	x	03 40 43.4	
	38nm,0.4s						
WTSB				*e*Sg	**Sg**	**03 40 47.6**	**-2.4**
WTSB				*ex*	x	03 40 50.2	
IBBN	**Ibbenburen**	**0.77**	**1**	*e*Pg	**Pg**	**03 40 41.6**	**+0.1**
	SNR=7.1						
IBBN				*e*Sg	**Sg**	**03 40 50.6**	**-1.0**
	SNR=3.1						
STB	**Steinbach**	**1.10**	**211**	*e*Pg	**Pg**	**03 40 50.8**	**+2.7**
STB				*e*Sg	**Sg**	**03 41 06.8**	**+4.0**
	48nm,0.4s						
KLL	**Kalltalsperre**	**1.27**	**225**	*e*Pg	**Pg**	**03 40 52.7**	**+1.4**
KLL				*e*Sg	**Sg**	**03 41 11.0**	**+2.7**
	49nm,0.8s						
BGG	**Burgeitz**	**1.36**	**191**	*e*Pg	**Pg**	**03 40 55.3**	**+2.0**
BGG				*e*Sg	**Sg**	**03 41 14.2**	**+2.8**
	29nm,0.8s						
HGN	**Heimansgroeve**	**1.37**	**236**	*e*Pg	**Pg**	**03 40 54.0**	**+0.5**
	SNR=18						
HGN				*e*Sg	**Sg**	**03 41 13.2**	**+1.4**
	SNR=2.8						
HGN	**Heimansgroeve**	**1.37**	**236**	*e*Pg	**Pg**	**03 40 53.7**	**+0.2**
	1.5nm,0.3s						
HGN				*i* x	x	03 40 54.1	
	5.3nm,0.2s						
HGN				*ex*	x	03 40 56.1	
	13nm,0.4s						
HGN				*i* Sg	**Sg**	**03 41 13.3**	**+1.5**
NRDL	**Niedersach Rie**	**1.75**	**56**	*e*Pn	**Pn**	**03 40 59.7**	**+1.7**
	SNR=4.1						
WLF	**Walferdange**	**2.13**	**209**	*e*Sg	**Sg**	**03 41 36.1**	**-0.9**
	SNR=2.8						
GIVF	**Givet**	**2.34**	**233**	*e*Pn	**Pn**	**03 41 05.8**	**-0.6**
GIVF				*e*Sn	**Sn**	**03 41 35.1**	**-1.1**
GIVF				*e*Sg	**Sg**	**03 41 44.2**	**+0.2**
	13nm,0.3s						
MOX	**Moxa**	**2.61**	**109**	*e*Pn	**Pn**	**03 41 11.9**	**+1.6**
	SNR=3.9						
MOX				*e*Pg	**Pg**	**03 41 18.8**	**+0.6**
MOX				*e*Sg	**Sg**	**03 41 53.3**	**+0.2**
	SNR=2.5						
MOX	**Moxa**	**2.61**	**109**	*i* P	**Pn**	**03 41 11.6**	**+1.3**
MOX				Pg	**Pg**	**03 41 19.0**	**+0.8**
MOX				Sg	**Sg**	**03 41 53.0**	**0.0**
MOX	**Moxa**	**2.61**	**109**	*e*Pn	**Pn**	**03 41 11.6**	**+1.3**
MOX				*e*Pg	**Pg**	**03 41 18.8**	**+0.6**
MOX				*e*Sg	**Sg**	**03 41 52.7**	**-0.3**
BAIF	**Baives**	**2.68**	**238**	*e*Pn	**Pn**	**03 41 10.8**	**-0.5**
BAIF				*e*Sn	**Sn**	**03 41 43.4**	**-1.5**
BAIF				*e*Sg	**Sg**	**03 41 54.2**	**-1.2**
	5.8nm,0.2s						
GRFO	**Grafenberg**	**2.90**	**128**	*e*Sg	**Sg**	**03 42 03.6**	**+1.1**
	SNR=2.0						
CDF	**Champ du Feu**	**3.15**	**185**	*e*Pn	**Pn**	**03 41 17.6**	**-0.3**
CDF				*e*Sn	**Sn**	**03 41 55.7**	**-1.0**
CDF				*e*Sg	**Sg**	**03 42 11.2**	**+0.3**
	7.2nm,0.5s						
BFO	**Black Forest**	**3.24**	**173**	*e*Pn	**Pn**	**03 41 20.3**	**+1.1**
	SNR=2.3						
BFO				*e*Sn	**Sn**	**03 41 58.7**	**-0.3**
RFYF	**Reffroy**	**3.26**	**207**	*e*Pn	**Pn**	**03 41 19.6**	**+0.1**
RFYF				*e*Sn	**Sn**	**03 41 57.9**	**-1.6**
RFYF				*e*Sg	**Sg**	**03 42 14.2**	**-0.3**
	8.3nm,0.2s						
CLL	**Collm**	**3.31**	**92**	*e*Pn	**Pn**	**03 41 16.0**	**-4.2**
CLL				*e*Pg	**Pg**	**03 41 30.0**	**-2.2**
CLL				*e*Sg	**Sg**	**03 42 16.0**	**-0.3**
MEZF	**Maizieres J'vi**	**3.50**	**211**	*e*Pn	**Pn**	**03 41 22.8**	**-0.1**
MEZF				*e*Sg	**Sg**	**03 42 21.8**	**-0.8**
	5.4nm,0.4s						
HAU	**Haudompre**	**3.65**	**195**	*e*Pn	**Pn**	**03 41 25.0**	**-0.1**
HAU				*e*Sg	**Sg**	**03 42 26.9**	**-0.8**
	5.9nm,0.4s						
HINF	**Hinteralfeld**	**3.77**	**189**	*e*Sn	**Sn**	**03 42 10.8**	**-1.7**
HINF				*e*Sg	**Sg**	**03 42 30.9**	**-0.8**
	2.1nm,0.3s						
WET	**Wettzell**	**4.08**	**124**	*e*Sg	**Sg**	**03 42 41.0**	**-0.9**
	SNR=2.5						
SSF	**Saint Saulge**	**5.26**	**213**	*e*Pn	**Pn**	**03 41 47.3**	**-0.7**

NEIC ***17*** *03:45:07.3±0.5,2.82N×128.76E, h200km, mb4.2/5, Error ellipse: s-maj=24.9km s-min=6.1km az=65.0*
IDC ***17*** *03:45:09.8±3.5,2.66N×128.61E, h222km±32km, mb3.8/9, mb1 4.0/9, mb1mx3.7/19, Error ellipse: s-maj=49.1km s-min=11.4km az=66.0*

ISC 17 03:45:08.1±0.7, 2.8N±0.1×128.7E±0.2, h222km, n21, σ0°54/21, mb4.2/12, 1D, Halmahera

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**20.95**	**188**	*e*P	**P**	**03 49 35.3**	**+0.5**
	2.2nm,0.5s						
FITZ	**Fitzroy Crossi**	**20.95**	**188**	P	**P**	**03 49 33.7**	**-1.2**
	2.2nm,0.5s,baz=15,slow=7.2,SNR=15						
WRAB	**Tennant Creek**	**23.24**	**166**	*e*P	**P**	**03 49 57.7**	**+0.6**
	31nm,1.1s,mb4.8						
WRA	**Warramunga Arr**	**23.25**	**166**	P	**P**	**03 49 56.6**	**-0.6**
	1.9nm,0.4s,mb4.0,baz=344,slow=11,SNR=39						
WB2	**Warramunga Arr**	**23.25**	**166**	*e*P	**P**	**03 49 57.7**	**+0.6**
AS12	**Alice Springs**	**26.77**	**169**⇓	*i*P	**P**	**03 50 29.3**	**-0.3**
	4.6nm,0.6s,mb4.3						
ASAR	**Alice Springs**	**26.77**	**169**	P	**P**	**03 50 28.7**	**-1.0**
	3.8nm,0.4s,mb4.3,baz=354,slow=8.1,SNR=75						
ASAR				ScP		03 57 04.8	
	0.8nm,0.9s,baz=340,slow=3.3,SNR=4.7						
CMAR	**Chiang Mai Arr**	**33.03**	**300**	P	**P**	**03 51 25.5**	**+0.7**
	2.7nm,0.8s,mb3.8,baz=119,slow=7.7,SNR=7.1						
STKA	**Stephens Creek**	**36.58**	**161**	P	**P**	**03 51 55.0**	**+0.4**
	2.5nm,0.3s,mb4.2,baz=349,slow=9.2,SNR=14						
PKI	**Pulchoki**	**48.11**	**305**	*e*P	**P**	**03 53 28.1**	**+0.4**
	5.0nm,0.4s,mb4.2						
KKN	**Kakani**	**48.30**	**305**	*e*P	**P**	**03 53 29.5**	**+0.4**
	4.3nm,0.3s,mb4.2						
DMN	**Daman**	**48.37**	**305**	*e*P	**P**	**03 53 28.2**	**-1.4**
GKN	**Gorkha**	**48.90**	**305**	*e*P	**P**	**03 53 33.9**	**+0.2**
KOLN	**Koldanda**	**49.66**	**305**	*e*P	**P**	**03 53 39.6**	**+0.1**
	61nm,1.2s,mb4.8						
MKAR	**Makanchi Array**	**59.45**	**325**	P	**P**	**03 54 50.0**	**+0.2**
	2.6nm,0.5s,mb4.1,baz=116,slow=7.9,SNR=37						
MKAR				PcP	PcP	03 55 34.8	-0.1
	1.0nm,0.9s,baz=146,slow=4.4,SNR=4.3						
KURK	**Kurchatov**	**63.59**	**327**	*e*P	**P**	**03 55 17.1**	**-0.3**
BVAR	**Borovoye Array**	**69.18**	**327**	P	**P**	**03 55 52.4**	**0.0**
	1.3nm,0.5s,mb3.8,baz=127,slow=7.4,SNR=11						
BRVK	**Borovoye**	**69.25**	**327**	*e*P	**P**	**03 55 52.6**	**-0.2**
ZRNK	**Zerenda**	**69.92**	**326**	*e*P	**P**	**03 55 56.6**	**-0.3**
SPITS	**Spitsbergen Ar**	**91.79**	**349**	P	**P**	**03 57 51.5**	**+0.1**
	7.9nm,1.1s,mb4.6,baz=80,slow=12,SNR=3.0						
ARCES	**ARCESS Array B**	**92.01**	**340**	P	**P**	**03 57 52.5**	**0.0**
	3.1nm,1.0s,mb4.2,baz=78,slow=5.3,SNR=22						

ATH ***17*** *04:09:52.6,39.57N×20.95E, h10km, MD3.4/3*
THE ***17*** *04:09:53.4,39.57N×20.99E, h10km, ML3.1*

ISC 17 04:09:52.5±1.0, 39.58N±0.10×21.00E±0.08, h12km±13km, n6, σ0°97/7, Greece

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JAN	**Janina**	**0.14**	**304**	*e*PG	**Pg**	**04 09 55.3**	**-0.7**
MEV	**Metsovon**	**0.27**	**40**	*e*Pg	**Pg**	**04 09 58.7**	**+0.5**
IGT	**Igoumenitsa**	**0.52**	**265**	*e*Pg	**Pg**	**04 10 02.8**	**-0.3**
IGT				*e*Sg	**Sg**	**04 10 11.4**	**+1.2**
EVR	**Evrytania**	**0.91**	**136**	*e*PB	**Pb**	**04 10 10.3**	**+0.6**
LKD	**Levkas**	**0.91**	**198**	*e*Pg	**Pg**	**04 10 10.2**	**-0.6**
KEK	**Kerkira**	**0.94**	**279**	*e*PB	**Pb**	**04 10 09.7**	**-0.6**

IDC ***17*** *04:12:39.0±8.4, 17.13S×176.87W, h327km±83km, mb3.4/7, mb1 3.8/7, mb1mx3.6/13, Error ellipse: s-maj=94.5km s-min=21.3km az=155.0*
NEIC ***17*** *04:12:41.4±4.1, 17.18S×176.90W, h354km±40km, mb4.0/7, Error ellipse: s-maj=21.1km s-min=11.4km az=147.0*

ISC 17 04:12:40.3±0.7, 17.2S±0.2×177.0W±0.2, h354km, n22, σ0°37/15, mb3.8/14, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**46.11**	**259**	P	**P**	**04 20 32.4**	**+0.1**
	0.6nm,0.5s,mb3.0,baz=92,slow=7.1,SNR=9.8						
AS12	**Alice Springs**	**46.31**	**253**	*e*P	**P**	**04 20 34.2**	**+0.4**
	3.9nm,0.6s,mb3.7						
ASAR	**Alice Springs**	**46.31**	**253**	P	**P**	**04 20 34.0**	**+0.3**
	6.6nm,0.6s,mb3.9,baz=88,slow=8.3,SNR=65						
QSPA	**South Pole Qui**	**72.89**	**180**	*e*P	**P**	**04 23 31.9**	**-0.5**
	3.5nm,0.6s,mb4.3						
NVAR	**Mina Array Bea**	**77.94**	**43**	P	**P**	**04 24 01.6**	**+0.1**
	1.3nm,0.9s,mb3.7,baz=216,slow=7.5,SNR=8.2						
HLID	**Hailey**	**83.17**	**41**	*e*P	**P**	**04 24 29.3**	**+0.7**
	1.2nm,0.7s,mb3.8						
MCK	**McKinley**	**83.52**	**12**	*e*P	**P**	**04 24 29.5**	**-0.3**
	1.9nm,0.8s,mb4.0						
MNTX	**Cornudas Mount**	**84.03**	**54**	*e*P	**P**	**04 24 33.3**	**0.0**
	1.9nm,1.0s,mb3.9						
TXAR	**Lajitas Array**	**84.44**	**57**	P	**P**	**04 24 35.5**	**+0.2**
	1.1nm,0.9s,mb3.7,baz=211,slow=6.3,SNR=12						
COLA	**College**	**84.75**	**12**	*e*P	**P**	**04 24 35.7**	**-0.3**
	2.6nm,0.7s,mb4.5						
ILAR	**Eielson Array**	**84.86**	**12**	P	**P**	**04 24 36.1**	**-0.4**
	1.4nm,0.4s,mb4.1,baz=235,slow=5.3,SNR=55						
PDAR	**Pinedale Array**	**85.87**	**43**	P	**P**	**04 24 42.3**	**+0.4**
	0.1nm,0.6s,mb2.8,baz=214,slow=3.3,SNR=4.5						
BOZ	**Bozeman (W)**	**85.94**	**40**	*e*P	**P**	**04 24 42.4**	**+0.2**
	2.9nm,1.1s,mb4.0						
INK	**Inuvik**	**90.81**	**15**	*e*P	**P**	**04 25 04.0**	**-0.6**
	0.3nm,0.5s,mb3.5						
YKA	**Yellowknife Ar**	**93.09**	**24**	P	**P**	**04 25 15.0**	**-0.2**
	0.6nm,0.9s,mb3.6,baz=246,slow=4.5,SNR=12						
BVAR	**Borovoye Array**	**117.12**	**321**	PKP	PKPdf	04 30 44.0	+0.5
	1.0nm,0.4s,baz=90,slow=1.4,SNR=6.0						
ARCES	**ARCESS Array B**	**125.81**	**350**	PKP	PKPdf	04 31 00.3	+0.4
	13nm,1.3s,slow=1.2,SNR=7.0						
KSP	**Ksiaz**	**144.75**	**345**	*e*P	PKPdf	04 31 37.1	+2.1
CLL	**Collm**	**145.01**	**349**	*i* PKP1	PKPbc	04 31 37.5	+1.5
BRTR	**Keskin Array B**	**145.20**	**317**	PKPbc	PKPbc	04 31 38.8	+1.9
	1.8nm,0.6s,baz=130,slow=3.4,SNR=10						
GERES	**GERESS Array B**	**147.22**	**347**	PKPbc	PKPdf	04 31 43.8	+4.6
	0.6nm,0.6s,baz=45,slow=1.9,SNR=7.5						
DAVOX	**Davos**	**149.92**	**351**	PKPbc	PKPdf	04 31 51.2	+7.6
	3.8nm,0.5s,baz=330,slow=5.9,SNR=7.7						

IDC ***17*** *04:27:47.7±4.0, 35.43N×135.72E, h309km±43km, mb3.2/5, mb1 3.3/6, mb1mx2.9/25, Error ellipse: s-maj=33.4km s-min=16.7km az=79.0*
NEIC ***17*** *04:27:51.4±2.2, 35.45N×135.65E, h352km±24km, mb3.4/2, Error ellipse: s-maj=31.0km s-min=14.9km az=78.0*
JMA ***17*** *04:27:51.9±0.1, 35.53N×135.68E, h352km±2km, M3.2*

ISC 17 04:27:50.5±0.5, 35.46N±0.09×135.8E±0.1, h361km±4km, n17, σ0°63/21, mb3.4/6, Western Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JWT	**Wachi**	**0.34**	**239**	P	**P**	**04 28 36.2**	**+0.3**
JWT				*e*S	**S**	**04 29 10.6**	**-0.9**
JKG	**Kaga**	**0.94**	**30**	P	**P**	**04 28 37.7**	**+0.3**
JIE	**Ise**	**1.32**	**143**	P	**P**	**04 28 40.1**	**+1.0**
JIE				*e*S	**S**	**04 29 17.2**	**0.0**
JWZ	**Kozaga**	**1.92**	**181**	P	**P**	**04 28 43.1**	**+0.5**
JHS	**Saijyo**	**2.21**	**259**	P	**P**	**04 28 44.6**	**0.0**
JHT	**Toyohira**	**2.85**	**255**	P	**P**	**04 28 49.9**	**+0.2**
JAG	**Ashikaga**	**3.15**	**71**	P	**P**	**04 28 52.3**	**-0.1**
JAG				*e*S	**S**	**04 29 40.8**	**-0.2**
CBIJ	**Chichi jima**	**9.98**	**145**	P	**P**	**04 30 05.2**	**-4.0**
	3.1nm,0.3s,baz=324,slow=22,SNR=6.5						
CBIJ				S	**S**	**04 31 52.2**	**-6.7**
	5.9nm,0.3s,baz=278,slow=22,SNR=6.7						
MDJ	**Mudanjiang**	**10.29**	**335**	*e*P	**P**	**04 30 12.4**	**-0.5**
MKAR	**Makanchi Array**	**41.10**	**303**	P	**P**	**04 35 02.1**	**+0.5**
	1.7nm,1.0s,mb3.2,baz=93,slow=11,SNR=7.4						
KURK	**Kurchatov**	**43.33**	**309**	*e*P	**P**	**04 35 18.7**	**-0.6**
WRAB	**Tennant Creek**	**55.10**	**182**	*e*P	**P**	**04 36 47.8**	**-0.7**
	1.7nm,0.4s,mb3.7						
WRA	**Warramunga Arr**	**55.11**	**182**	P	**P**	**04 36 47.8**	**-0.7**
	0.7nm,0.4s,mb3.3,baz=359,slow=7.6,SNR=12						
INK	**Inuvik**	**57.84**	**26**	P	**P**	**04 37 07.5**	**+0.7**
	0.7nm,1.0s,mb2.9,baz=304,slow=3.6,SNR=5.0						
INK	**Inuvik**	**57.84**	**26**	*e*P	**P**	**04 37 07.3**	**+0.4**
	0.2nm,0.3s,mb2.9						
ASAR	**Alice Springs**	**58.83**	**182**	P	**P**	**04 37 15.0**	**+0.8**
	0.5nm,0.7s,mb3.0,baz=15,slow=14,SNR=4.3						
ARCES	**ARCESS Array B**	**63.82**	**338**	P	**P**	**04 37 46.4**	**+0.1**
	5.2nm,1.2s,mb4.0,baz=63,slow=5.4,SNR=4.7						

NEIC ***17*** *04:38:22.7, 70.60N×12.26E, h0km, ML2.6(BER), After BER.*
IDC ***17*** *04:38:22.3±1.1, 70.53N×12.61E, mb3.8/1, mb1 3.4/6, mb1mx3.2/25, ML3.0/5, Error ellipse: s-maj=15.2km s-min=10.2km az=86.0*
BER ***17*** *04:38:24.7±6.2, 70.65N×12.75E, h3km±38km, MD3.1, ML2.4, ML2.6(NAO)*
HEL ***17*** *04:38:26.3±0.5, 70.46N×13.05E, h10km, ML3.0, ML2.4(UPP), ML2.4(BER)*
NAO ***17*** *04:38:26.5±10.0, 70.72N×12.76E, h31km±126km, ML2.6*

ISC 17 04:38:19.8±0.7, 70.53N±0.04×12.5E±0.1, h10km, n41, σ1°70/61, mb3.7/1, Norwegian Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TRO	**Tromso**	**2.37**	**109**	*e*P	**Pn**	**04 39 02.0**	**+2.7**
TRO				*e*S	**Sn**	**04 39 28.5**	**-0.2**
LOF	**Lofoten**	**2.44**	**171**	*e*P	**Pn**	**04 39 04.9**	**+4.6**
LOF				*e*S	**Sn**	**04 39 34.0**	**+3.5**
LOF				AML	AML	04 39 34.8	
	comp=Z,56nm,0.7s						
KIF	**Kilpisjarvi**	**3.25**	**114**	*e*P	**Pn**	**04 39 15.3**	**+3.3**
KIF				*e*S	**Sn**	**04 39 51.8**	**+0.6**
KTK1	**Kautok

HFS	Hagfors	10.45	177	Pn	P	04 40 53.3	+0.7
	baz=2.6,slow=11							
HFS	Hagfors	10.45	177	*eP*	P	04 40 53.3	+0.7
HFS	Hagfors	10.45	177	Pn	P	04 40 53.1	+0.5
	comp=Z,0.0nm,0.3s,baz=8.1,slow=10,SNR=5.5							
JOF	Joensuu	10.60	127	*eS*	S	04 42 43.7	-11
JOF				MSN		04 42 50.1		
	comp=Z,1.4nm,0.3s							
FIA0	FINESS Array S	10.62	142	Pn	P	04 40 56.0	+1.0
	baz=342,slow=12							
FIA0	FINESS Array S	10.62	142	*eS*	S	04 42 46.7	-8.3
FIA0				MSN		04 42 51.4		
	comp=Z,1.4nm,0.2s							
FINES	FINESS Array B	10.62	142	Pn	P	04 40 55.8	+0.9
	comp=Z,0.2nm,0.3s,baz=336,slow=11,SNR=8.0							
FINES				Sn	S	04 42 48.9	-6.1
	comp=Z,0.6nm,0.3s,baz=334,slow=23,SNR=8.0							
BVAR	Borovoye Array	30.84	94	P	P	04 44 41.2	+3.6
	comp=Z,0.7nm,0.6s,mb3.7,baz=309,slow=9.2,SNR=6.0							

IDC ***17*** *04:58:10.0±2.2,24.17S×179.85E,h491km±24km,mb3.5/6, mb1 3.7/7,mb1mx3.6/12,Error ellipse: s-maj=40.7km s-min=17.8km az=159.0*

NEIC ***17*** *04:58:10.7±2.5,24.19S×179.87E,h502km±30km,mb4.2/7, Error ellipse: s-maj=24.0km s-min=11.3km az=182.0*

ISC 17 04:58:08.7±4.4,24.1S±0.1×179.8E±0.1,h486km±52km, n19,σ0$53/18,mb4.0/13,3D,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
URZ	Urewera	14.29	189	P	P	05 01 12.0	-0.4
	0.5nm,0.3s,baz=255,slow=17,SNR=3.1						
URZ				S	S	05 03 40.9	+0.4
	0.3nm,0.3s,baz=64,slow=21,SNR=3.3						
CTAO	Charters Tower	31.32	271	*eP*	P	05 03 50.6	+1.0
	20nm,0.4s,mb4.9						
STKA	Stephens Creek	34.50	248	P	P	05 04 17.0	+0.7
	2.0nm,0.5s,mb3.8,baz=103,slow=9.1,SNR=5.9						
STKA	Stephens Creek	34.50	248	P	P	05 04 17.0	+0.7
AS12	Alice Springs	41.84	261	⇓*iP*	P	05 05 17.1	+0.5
	8.4nm,1.1s,mb4.1						
ASAR	Alice Springs	41.84	261	P	P	05 05 16.4	-0.1
	4.5nm,0.7s,mb4.0,baz=94,slow=8.4,SNR=42						
ASAR				ScP		05 10 03.7	
	1.8nm,1.0s,baz=108,slow=3.2,SNR=7.2						
WB2	Warramunga Arr	42.22	266	⇓*iP*	P	05 05 19.0	-0.6
WRAB	Tennant Creek	42.23	266	*eP*	P	05 05 19.0	-0.6
	35nm,1.1s,mb4.7						
WRA	Warramunga Arr	42.23	266	P	P	05 05 19.1	-0.6
	9.4nm,0.6s,mb4.4,baz=104,slow=8.2,SNR=60						
WRA				ScP		05 10 06.1	
	2.1nm,1.0s,baz=96,slow=4.7,SNR=7.2						
FITZ	Fitzroy Crossi	50.65	266	⇓*iP*	P	05 06 24.4	+0.1
	6.2nm,0.6s,mb4.1						
QSPA	South Pole Qui	65.97	180	*eP*	P	05 08 06.5	-0.5
	5.7nm,0.9s,mb4.2						
NVAR	Mina Array Bea	85.01	44	P	P	05 09 53.5	+0.4
	0.7nm,0.8s,mb3.4,baz=224,slow=12,SNR=4.5						
TPH	Tonopah	85.50	45	*eP*	P	05 09 55.9	+0.4
	2.6nm,1.1s,mb3.8						
MNTX	Cornudas Mount	90.46	55	*eP*	P	05 10 18.7	-0.2
	1.2nm,0.8s,mb3.8						
TXAR	Lajitas Array	90.68	58	P	P	05 10 20.6	+0.6
	1.3nm,0.8s,mb3.9,baz=208,slow=6.7,SNR=19						
HWUT	Hardware Ranch	91.08	44	P	P	05 10 20.8	-0.6
	1.6nm,0.8s,mb4.0						
PDAR	Pinedale Array	92.95	44	P	P	05 10 29.9	-0.2
	0.4nm,0.7s,mb3.6,baz=194,slow=3.7,SNR=4.9						
ARCES	ARCESS Array B	132.06	348	PKP	PKPdf	05 16 25.2	-0.5
	1.0nm,0.7s,baz=342,slow=3.8,SNR=4.8						
BRTR	Keskin Array B	147.58	307	PKPbc	PKPdf	05 16 58.2	+4.3
	0.7nm,0.5s,baz=45,slow=2.0,SNR=1.8						

NEIC ***17*** *05:01:09.2,37.90S×73.70W,h32km,ML3.9(GUC),After GUC.*

GUC 17 05:01:09.2±0.9,37.90S×73.70W,h32km±5km,MD4.1, ML3.9,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
TMCH	Temuco	1.20	135	*eP*	Pn	05 01 29.3	-0.7
TMCH				*i* S	Sn	05 01 44.4	-0.9
TMCH				AMP		05 01 49.6	
	comp=N,3μm,0.8s						
CCHI	Chillan	1.84	45	*eP*	Pn	05 01 39.4	+0.3
CCHI				*i* S	Sn	05 02 03.2	+1.7
CCHI				AMP		05 02 07.3	
	comp=E,2μm,0.4s						
COCH	Cobquecura	1.92	23	*eP*	Pn	05 01 40.8	+0.5
VLCH	Valdivia	1.93	170	*eP*	Pn	05 01 41.6	+1.1
VLCH				*i* S	Sn	05 02 05.0	+1.1
VLCH				AMP		05 02 16.4	
	comp=N,3μm,0.4s						
SFDO	San Fernando	3.94	34	*i* P	Pn	05 02 06.4	-2.6
SFDO				*i* S	Sn	05 02 51.5	-3.1
LMEL	Las Melosas	4.95	36	*eP*	Pn	05 02 21.9	-1.4
LMEL				*i* S	Sn	05 03 18.3	-1.8
PCH	Pirque	5.00	32	*i* P	Pn	05 02 21.7	-2.4
FCH	Farellones	5.34	32	*eP*	Pn	05 02 26.8	-2.2
FCH				*i* S	Sn	05 03 27.2	-3.0

IDC ***17*** *05:18:27.6±1.9,2.53S×128.14E,mb3.7/2,mb1 4.1/4, mb1mx3.8/16,ML3.6/2,MS3.0/1,Ms1 3.0/1,ms1mx2.2/28, Error ellipse: s-maj=110.0km s-min=24.6km az=70.0*

ISC 17 05:18:30.6±1.7,2.7S±0.2×128.0E±0.5,h33km,n4,σ0$72/4, mb3.7/2,Ceram Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FITZ	Fitzroy Crossi	15.51	188	Pn	P	05 22 08.6	-0.1
	0.1nm,0.3s,baz=32,slow=11,SNR=3.7						
WRA	Warramunga Arr	18.27	161	P	P	05 22 43.0	-0.4
	0.3nm,0.3s,baz=340,slow=11,SNR=13						
WRA				LR	LR	05 30 04.0	
	comp=Z,49nm,19.4s,baz=170,slow=38						
ASAR	Alice Springs	21.66	165	P	P	05 23 20.9	+0.6
	2.8nm,1.0s,mb3.6,baz=344,slow=9.6,SNR=12						
MKAR	Makanchi Array	63.51	327	P	P	05 28 59.9	-0.1
	0.8nm,0.8s,mb3.8,baz=126,slow=8.4,SNR=7.4						

IDC 17 05:34:47.6±4.1,22.19S×148.02E,mb1 3.8/4, mb1mx3.7/11,ML3.3/4,Error ellipse: s-maj=40.9km s-min=21.4km az=82.0,Queensland

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CTA	Charters Tower	2.66	321	Pn	Pn	05 35 32.5	+0.1
	4.9nm,0.3s,baz=130,slow=16,SNR=46						
CTA				Pg	Pg	05 35 37.0	-3.7
	13nm,0.3s,baz=138,slow=18,SNR=40						
CTA				Lg		05 36 12.1	
	12nm,0.3s,baz=223,slow=22,SNR=12						
CTA				Rg		05 36 26.9	
	39nm,0.3s,baz=40,slow=21,SNR=3.1						
STKA	Stephens Creek	11.22	209	Pn	P	05 37 28.4	-4.0
	0.1nm,0.3s,baz=12,slow=14,SNR=2.0						
WRA	Warramunga Arr	12.96	277	Pn	P	05 37 51.4	-4.6
	0.2nm,0.3s,baz=96,slow=13,SNR=15						
WRA				Sn	S	05 40 12.2	-10
	0.1nm,0.3s,baz=102,slow=23,SNR=3.8						
WRA				Lg		05 41 40.3	
	0.2nm,0.3s,baz=108,slow=29,SNR=6.7						
ASAR	Alice Springs	13.09	261	Pn	P	05 37 55.7	-1.9
	0.1nm,0.3s,baz=87,slow=13,SNR=6.4						
ASAR				Sn	S	05 40 20.4	-4.7
	0.1nm,0.3s,baz=84,slow=24,SNR=4.3						
ASAR				Lg		05 41 43.8	
	0.1nm,0.3s,baz=87,slow=31,SNR=5.1						

NEIC ***17*** *05:34:47.1±0.8,11.96S×166.76E,h10km,Error ellipse: s-maj=28.3km s-min=16.3km az=94.0*

IDC ***17*** *05:35:12.5±17.0,12.21S×166.43E,h226km±167km, mb3.6/6,mb1 3.8/6,mb1mx3.6/13,MS3.7/10,Ms1 3.7/10, ms1mx3.5/22,Error ellipse: s-maj=84.7km s-min=53.9km az=151.0*

ISC 17 05:34:47.1±0.8,11.69S±0.07×166.4E±0.2,h10km,n19, σ1$30/12,mb4.2/9,MS3.7/10,Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BKM	Butte a Klehm	6.20	164	*i* P	Pn	05 36 25.6	+4.6
BKM				S	Sn	05 37 50.3	+18
DZM	Mont Dzumac	10.33	180	*eP*	P	05 37 12.0	-6.6
DZM				*eS*	S	05 39 16.0	+0.5
CTA	Charters Tower	21.11	244	LR	LR	05 45 51.7	
	comp=Z,156nm,21.3s,MS3.4,baz=46,slow=31						
STKA	Stephens Creek	30.45	225	LR	LR	05 52 09.6	
	comp=Z,164nm,18.3s,MS3.7,baz=27,slow=34						
WRA	Warramunga Arr	31.90	251	P	P	05 41 17.3	+2.1
	3.0nm,1.0s,mb4.1,baz=83,slow=8.7,SNR=6.5						
WRA				LR	LR	05 53 43.1	
	comp=Z,70nm,18.5s,MS3.4,baz=170,slow=35						
ASAR	Alice Springs	33.11	244	P	P	05 41 24.3	-1.5
	2.6nm,0.8s,mb4.2,baz=77,slow=12,SNR=9.2						
ASAR				LR	LR	05 55 09.9	
	comp=Z,86nm,18.8s,MS3.5,baz=34,slow=36						
RAR	Rarotonga	33.71	111	LR	LR	05 51 44.8	
	comp=Z,159nm,18.5s,MS3.8,baz=60,slow=30						
FITZ	Fitzroy Crossi	39.87	256	LR	LR	05 57 47.7	
	comp=Z,72nm,18.3s,MS3.5,baz=356,slow=34						
SBA	Scott Base	66.16	180	*eP*	P	05 45 32.7	-3.9
	6.3nm,1.1s,mb4.6						
QSPA	South Pole Qui	78.32	180	*eP*	P	05 46 45.5	-3.1
	6.9nm,1.1s,mb4.5						
SONM	Songino Array	79.58	324	P	P	05 46 57.1	+1.1
	2.6nm,0.7s,mb4.3,baz=158,slow=7.8,SNR=4.4						
ILAR	Eielson Array	83.91	18	P	P	05 47 18.4	+0.2
	0.3nm,0.8s,mb3.5,baz=266,slow=5.5,SNR=5.1						
MAW	Mawson	84.38	202	LR	LR	06 23 03.5	
	comp=Z,75nm,19.1s,MS4.1,baz=311,slow=34						
NVAR	Mina Array Bea	85.92	50	LR	LR	06 19 49.5	
	comp=Z,82nm,19.7s,MS4.1,baz=20,slow=31						
PDAR	Pinedale Array	93.49	47	LR	LR	06 26 29.2	
	comp=Z,30nm,19.0s,MS3.8,baz=78,slow=33						
MKAR	Makanchi Array	94.44	317	P	P	05 48 08.4	-0.4
	6.3nm,0.7s,mb5.2,baz=101,slow=6.2,SNR=23						
ZAL	Zalesovo	94.47	324	P	P	05 48 07.8	-0.9
	1.7nm,0.8s,mb4.5,baz=236,slow=4.5,SNR=6.7						
YKA	Yellowknife Ar	95.23	27	P	P	05 48 12.8	+0.8
	0.1nm,0.5s,mb3.5,baz=255,slow=4.4,SNR=4.5						
YKA				LR	LR	06 30 22.6	
	comp=Z,25nm,18.4s,MS3.7,baz=260,slow=35						
ARCES	ARCESS Array B	117.12	346	PKP	PKPdf	05 53 31.4	-3.8
	7.0nm,1.3s,baz=90,slow=2.7,SNR=6.2						

IDC ***17*** *05:37:02.4±2.8,0.06N×123.31E,h161km±26km,mb4.1/8, mb1 4.3/9,mb1mx3.9/16,MS3.0/1,Ms1 3.2/1,ms1mx2.5/20, Error ellipse: s-maj=31.1km s-min=11.7km az=66.0*

NEIC ***17*** *05:37:07.8±5.3,0.13S×123.17E,h217km±55km,mb4.5/9, Error ellipse: s-maj=42.8km s-min=8.6km az=53.0*

ISC 17 05:37:08.2±5.5,0.0S±0.1×123.4E±0.2,h243km±60km,n26, σ0$78/25,mb4.5/18,1D,Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FITZ	Fitzroy Crossi	18.12	173	⇓*iP*	P	05 41 02.3	-2.5
	15nm,0.4s						
FITZ	Fitzroy Crossi	18.12	173	P	P	05 41 02.4	-2.5
	5.2nm,0.3s,baz=7.3,slow=9.2,SNR=81						
WRAB	Tennant Creek	22.54	152	*eP*	P	05 41 47.9	-1.0
	48nm,0.6s,mb5.2						
WRA	Warramunga Arr	22.54	152	P	P	05 41 49.2	+0.3
	17nm,0.4s,mb4.9,baz=330,slow=10,SNR=85						
WRA				ScP		05 48 59.9	
	0.8nm,1.2s,baz=323,slow=2.8,SNR=5.0						
WB2	Warramunga Arr	22.55	152	*eP*	P	05 41 49.7	+0.8
WB2				*i*		05 45 43.2	
ASAR	Alice Springs	25.65	157	P	P	05 42 18.7	+0.9
	5.0nm,0.6s,mb4.3,baz=346,slow=15,SNR=9.1						
ASAR				PcP	PcP	05 45 44.0	+2.0
	0.8nm,0.3s,baz=344,slow=1.8,SNR=7.3						
CM31	Chiang Mai Arr	30.20	309	P	P	05 42 59.1	+0.6
	11nm,0.9s,mb4.5						
CMAR	Chiang Mai Arr	30.20	309	P	P	05 42 58.3	-0.2
	3.4nm,0.7s,mb4.1,baz=135,slow=7.3,SNR=11						
CMAR				LR	LR	05 54 33.0	
	comp=Z,26nm,18.5s,baz=300,slow=35						
CBIJ	Chichi jima	32.47	32	P	P	05 43 17.4	-0.7
	53nm,0.6s,mb5.3,baz=270,slow=17,SNR=8.3						
ENH	Enshi	32.88	338	*eP*	P	05 43 22.6	+0.9
	10nm,0.8s,mb4.4						
STKA	Stephens Creek	36.09	153	P	P	05 43 49.7	+0.9
	4.7nm,0.6s,mb4.2,baz=12,slow=5.3,SNR=9.6						
STKA	Stephens Creek	36.09	153	P	P	05 43 49.7	+0.9
LSA	Lhasa	42.60	317	*eP*	P	05 44 43.7	+1.3
GUN	Gumba	45.39	311	*eP*	P	05 45 04.0	-0.7
	22nm,0.5s,mb4.8						
PKI	Pulchoki	45.57	310	*eP*	P	05 45 05.9	-0.2
	6.7nm,0.5s,mb4.2						
KKN	Kakani	45.78	310	*eP*	P	05 45 07.8	0.0
	14nm,0.8s,mb4.4						
DMN	Daman	45.83	310	*eP*	P	05 45 08.0	-0.1
	27nm,0.9s,mb4.6						
GKN	Gorkha	46.38	310	*eP*	P	05 45 12.3	-0.1
	16nm,0.5s,mb4.6						
KOLN	Koldanda	47.06	309	*eP*	P	05 45 17.9	+0.2
	44nm,0.9s,mb4.8						
SONM	Songino Array	49.88	345	P	P	05 45 39.3	+0.4
	3.1nm,0.5s,mb3.8,baz=158,slow=6.7,SNR=6.2						
MKAR	Makanchi Array	58.81	328	P	P	05 46 42.7	-0.6
	1.2nm,0.3s,mb3.9,baz=120,slow=8.0,SNR=22						
MKAR				PcP	PcP	05 47 30.4	+0.3
	1.6nm,0.5s,baz=122,slow=5.3,SNR=9.1						
MKAR	Makanchi Array	58.81	328	P	P	05 46 42.7	-0.6
MKAR				PcP	PcP	05 47 30.4	+0.3
ZAL	Zalesovo	62.47	335	P	P	05 47 07.7	-0.1
	1.0nm,0.2s,mb4.0,baz=234,slow=11,SNR=4.3						
KURK	Kurchatov	63.16	330	*eP*	P	05 47 11.2	-1.2
ARCES	ARCESS Array B	92.76	340	P	P	05 49 53.8	0.0
	3.1nm,0.9s,mb4.3,baz=80,slow=7.4,SNR=4.9						
TXAR	Lajitas Array	126.54	53	PKP	PKPdf	05 55 48.3	+5.1
	0.2nm,0.7s,slow=1.3,SNR=4.0						

NEIC ***17*** *05:40:31.3±0.5,47.64N×13.74E,h10km,ML2.1(VIE), ML1.7(SZGRF),Error ellipse: s-maj=6.3km s-min=5.1km az=86.0*

BGR ***17*** *05:40:31.9±1.7,47.66N×13.87E,h10km,ML2.3/4,Error ellipse: s-maj=14.5km s-min=6.7km az=144.0*

PRU ***17*** *05:40:34.3,47.73N×13.77E*

ISC 17 05:40:30.1±0.5,47.68N±0.02×13.73E±0.04,h10km,n17, σ1$22/27,4C-1D,Austria

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MOA	Molln	0.40	65	⇓*iPG*	Pg	05 40 39.3	+1.0
MOA				*i* SG	Sg	05 40 45.1	+1.4
	14nm,0.2s						
KBA	Koelnbreinsper	0.66	204	⇑*iPG*	Pg	05 40 43.6	+0.2
KBA				*i* SG	Sg	05 40 52.2	-0.1
	22nm,0.4s						
GEC2	GERESS Array S	1.17	359	*ePg*	Pg	05 40 54.7	+1.2
	SNR=19						
GEC2				*eSg*	Sg	05 41 10.6	+1.6
GEC2	GERESS Array S	1.17	359	*ePg*	Pg	05 40 55.1	+1.6
GEC2				*eSg*	Sg	05 41 11.9	+2.9
ARSA	Arzberg	1.29	109	⇑*iPG*	Pg	05 40 55.6	-0.4
ARSA				*i* SG	Sg	05 41 13.5	+0.3
	7.0nm,0.3s						
OBKA	Obir	1.30	154	⇑*iPG*	Pg	05 40 55.6	-0.5
OBKA				*i* SG	Sg	05 41 13.0	-0.5
	4.8nm,0.4s						
KHC	Kasperske Hory	1.45	356	*ePG*	Pg	05 40 59.9	+0.7
KHC				*eSG*	Sg	05 41 20.2	+1.6
	12nm,0.2s						
WTTA	Wattenberg	1.48	254	⇑*iPG*	Pg	05 40 59.4	-0.4
WTTA				*i* SG	Sg	05 41 19.8	+0.2
	4.0nm,0.2s						
WET	Wettzell	1.57	339	*ePg*	Pg	05 41 02.1	+0.6
	SNR=2.8						
WET				*eSg*	Sg	05 41 23.7	+1.2
WET	Wettzell	1.57	339	*ePg*	Pg	05 41 02.1	+0.6
WET				*eSg*	Sg	05 41 24.1	+1.6
PRU	Pruhonice	2.37	13	*eSG*	Sg	05 41 47.0	-2.1
	5.8nm,0.4s						
GRFO	Grafenberg	2.61	321	*eSg*	Sg	05 41 57.0	-0.1
DPC	Dobruska-Polom	3.17	32	*eSG*	Sg	05 42 13.2	-2.5
BRG	Berggiesshubel	3.20	2	*eSg*	Sg	05 42 13.8	-2.9
UPC	Upice	3.20	27	*eSG*	Sg	05 42 14.8	-1.9
MOX	Moxa	3.27	336	*eSg*	Sg	05 42 17.5	-1.7
BFO	Black Forest	3.68	282	*eSg*	Sg	05 42 32.2	-0.7

WEL 17 06:05:13.0±0.2,38.52S×176.89E,h62km±2km,ML3.7/1, 1C-1D,Error ellipse: s-maj=1.5km s-min=1.4km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
URZ	Urewera	0.31	34	⇓P*	P	06 05 23.1	-0.4
URZ				S*	S	06 05 30.6	-0.5
TAZ	Tarawera	0.41	314	P*	P	06 05 24.4	+0.1
EDRZ	Edgecumbe	0.43	344	P*	P	06 05 24.1	-0.4
PATZ	Paeroa	0.51	285	P*	P	06 05 24.3	-1.0
MWZ	Matawai	0.54	70	P*	P	06 05 25.6	0.0
MWZ				*S**	S	06 05 35.0	+0.2
BKZ	Black Stump Fm	0.72	205	⇑P*	P	06 05 27.7	0.0
BKZ				S*	S	06 05 38.7	+0.1
KNZ	Kokohu	0.79	130	PN	P	06 05 28.4	-0.2
WIZ	White Island	1.02	14	P*	P	06 05 30.7	-0.8
KATZ	Kakaramea	1.04	243	P*	P	06 05 31.4	-0.4
KAVZ	Karewarewa	1.13	239	P*	P	06 05 32.8	-0.2
PUZ	Puketiti	1.17	68	PN	P	06 05 33.3	-0.2
WTVZ	West Tongariro	1.18	239	P*	P	06 05 33.4	-0.3
NGZ	Ngauruhoe	1.20	236	P*	P	06 05 34.0	-0.1
TUVZ	Tukino	1.22	232	P*	P	06 05 34.1	-0.2
CNZ	Chateau	1.25	236	P*	P	06 05 34.6	-0.1
WPVZ	Whakapapa	1.25	236	P*	P	06 05 34.5	-0.3
FWVZ	Far West T-bar	1.28	234	P*	P	06 05 34.8	-0.3
FWVZ				S*	S	06 05 51.1	-0.5
DRZ	Dome Shelter	1.28	233	P*	P	06 05 33.8	-1.4
WNVZ	Wahianoa	1.29	231	P*	P	06 05 35.0	-0.3
WNVZ				S*	S	06 05 51.1	-0.8
MXZ	Matakaoa Point	1.47	50	P*	P	06 05 38.2	+0.4
PWZ	Pawanui	1.51	181	PN	P	06 05 36.1	-2.3
HIZ	Hauiti	1.59	269	PN	P	06 05 39.4	-0.2
TSZ	Takapari Road	1.70	205	PN	P	06 05 39.4	-1.6
VRZ	Vera Road	1.77	249	P*	P	06 05 41.8	-0.2
WAZ	Wanganui	1.93	230	PN	P	06 05 43.4	-0.7
RAEZ	Rainy Point	2.09	248	PN	P	06 05 46.8	+0.3
BFZ	Birch Farm	2.22	193	PN	P	06 05 48.4	-1.8
NEZ	North Egmont	2.31	250	PN	P	06 05 50.0	+0.6
MRZ	Mangatainoka R	2.37	205	PN	P	06 05 47.3	-3.0
KIW	Kapiti Island	2.79	212	PN	P	06 05 52.2	-4.2
CAW	Cannon Point	2.94	208	PN	P	06 05 54.0	-4.4
QRZ	Quartz Range	4.08	234	PN	P	06 06 10.9	-3.5
THZ	Tophouse	4.45	222	PN	P	06 06 15.3	-4.4
LTZ	Lake Taylor	5.52	218	PN	P	06 06 28.2	-6.2
MQZ	McQueen's Vall	6.09	210	SN	S	06 07 39.5	-12

ROM ***17*** *06:09:15.9±0.3,45.11N×7.37E,h10km,MD2.8/4,ML2.5/2, Error ellipse: s-maj=4.8km s-min=1.9km az=90.0*

LDG ***17*** *06:09:17.5±0.2,45.04N×7.51E,h2km,Md3.2/2,Ml3.2/22, Error ellipse: s-maj=4.1km s-min=2.4km az=98.0*

NEIC ***17*** *06:09:17.5,45.05N×7.40E,h5km,MD2.8(ROM), ML3.2(GEN),ML3.2(LDG),ML2.9(STR),After STR.*

STR ***17*** *06:09:17.5±0.3,45.05N×7.40E,h5km±1km,Ml2.9,Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*

ISC 17 06:09:16.2±0.2,45.10N±0.01×7.39E±0.02,h10km,n71, σ1$20/128,3C,Northern Italy

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RSP	Reno Superiore	0.11	300	P	Pg	06 09 19.6	+0.6
RSP				S	Sg	06 09 21.5	+0.6
FENE	Fenestrelle	0.24	255	P	Pg	06 09 21.9	+0.6
FENE				S	Sg	06 09 24.8	0.0
BHB	Bricherasio	0.27	200	P	Pg	06 09 23.1	+1.2
BHB				S	Sg	06 09 26.8	+1.1
LSD	Ceresole Reale	0.40	335	P	Pg	06 09 24.8	+0.5
LSD				S	Sg	06 09 29.8	0.0
RRL	Cesana Torines	0.47	248	P	Pg	06 09 26.0	+0.4
RRL				S	Sg	06 09 32.1	+0.1
MBDF	Montbardon	0.58	230	*ePg*	Pg	06 09 28.3	+0.5
	SNR=1.0						
MBDF				*eSg*	Sg	06 09 35.8	+0.2
	491nm,0.3s,SNR=1.0						
DOI	San Damiano	0.60	190	⇑*iPG*	Pg	06 09 28.1	-0.2
DOI				SG	Sg	06 09 37.1	+0.7
	191nm,0.3s						
DOI	San Damiano	0.60	190	⇑*iPg*	Pg	06 09 28.1	-0.1
DOI				*eSg*	Sg	06 09 37.1	+0.7
LPG	La Plagne	0.61	312	*ePg*	Pg	06 09 28.3	-0.1
	SNR=1.0						
LPG				*eSg*	Sg	06 09 35.6	-1.0
	487nm,0.3s						
PZZ	Prazzo	0.63	200	P	Pb	06 09 28.5	-0.2
PZZ				S	Sg	06 09 36.9	-0.3
LPL	La Plagne	0.63	312	*ePg*	Pg	06 09 28.8	0.0
	SNR=1.0						
LPL				*eSg*	Sg	06 09 36.2	-1.1
	462nm,0.3s,SNR=1.0						
ORO	Oropa	0.68	38	*ePG*	Pg	06 09 29.6	-0.1
ORO				SG	Sg	06 09 38.7	-0.1
	392nm,0.2s						
ORO	Oropa	0.68	38	*ePg*	Pg	06 09 29.6	-0.2
ORO				*eSg*	Sg	06 09 38.7	-0.1
SURF	Saint Ours	0.74	214	Pg	Pg	06 09 31.3	+0.2
SURF				Sg	Sg	06 09 41.0	0.0
STV2	Anna di Valdie	0.85	183	P	Pb	06 09 32.0	-0.6
STV	Sta Anna Valdi	0.85	183	P	Pb	06 09 32.1	-0.5
ENR	Entracque	0.87	179	P	Pb	06 09 32.5	-0.3
ROB	Roburent	0.87	157	P	Pb	06 09 34.1	+1.3
GDM	Grand'Maison	0.91	277	Pg	Pg	06 09 33.8	-0.6
GDM				Sg	Sg	06 09 46.2	-0.4
MCGN	Macugnaga	0.96	26	*ePG*	Pg	06 09 35.0	-0.4
MCGN				SG	Sg	06 09 47.5	-0.7
	107nm,0

VIVF				*e*Sn	**Sn**	**06 10 15.6**	**+1.2**
	40nm,0.4s,SNR=1.0								
VIVF				*e*Sg	**Sg**	**06 10 21.6**	**+0.6**
LOMF	**Lomont**	**2.29**	**350**	Pn	**Pn**	**06 09 57.1**	**+2.5**
LOMF				Pg	**Pg**	**06 10 00.8**	**-1.1**
BBS	**Basel-Blauen**	**2.37**	**2**	Pn	**Pn**	**06 09 57.0**	**+1.2**
BBS				Pg	**Pg**	**06 10 02.5**	**-1.0**
BBS				Sg	**Sg**	**06 10 33.7**	**-1.5**
LASF	**Ste Croix**	**2.73**	**249**	*e*Pn	**Pn**	**06 10 01.6**	**+0.8**
	SNR=1.0								
LASF				*e*Sn	**Sn**	**06 10 34.0**	**-0.1**
	9.2nm,0.2s,SNR=1.0								
HINF	**Hinteralfeld**	**2.75**	**352**	*e*Pn	**Pn**	**06 10 01.4**	**+0.3**
	SNR=1.0								
HINF				*e*Pg	**Pg**	**06 10 08.8**	**-2.2**
	SNR=1.0								
HINF				*e*Sn	**Sn**	**06 10 34.1**	**-0.6**
	SNR=1.0								
HINF				*e*Sg	**Sg**	**06 10 43.1**	**-4.6**
	20nm,0.3s,SNR=1.0								
MOF	**Molkenrain**	**2.76**	**356**	Pn	**Pn**	**06 10 03.1**	**+1.7**
MOF				Pg	**Pg**	**06 10 10.2**	**-1.2**
DAVA	**Damuels**	**2.79**	**37⇑***i*PN		**Pn**	**06 10 03.1**	**+1.4**
DAVA				*i* SN	**Sn**	**06 10 38.3**	**+2.5**
PLDF	**La Plantade**	**2.79**	**290**	Pn	**Pn**	**06 10 03.6**	**+1.8**
SMF	**Signal de Mont**	**2.93**	**303**	*e*Pn	**Pn**	**06 10 05.5**	**+1.8**
	SNR=1.0								
SMF				*e*Sg	**Sg**	**06 10 49.2**	**-4.4**
	22nm,0.4s,SNR=1.0								
LBL	**Lubilhac**	**2.94**	**274**	Pn	**Pn**	**06 10 05.2**	**+1.4**
HAU	**Haudompre**	**3.00**	**346**	*e*Pn	**Pn**	**06 10 05.4**	**+0.7**
	SNR=1.0								
HAU				*e*Pg	**Pg**	**06 10 13.5**	**-2.6**
	SNR=1.0								
HAU				*e*Sg	**Sg**	**06 10 53.4**	**-2.7**
	15nm,0.3s,SNR=1.0								
THEF	**They Montfort**	**3.28**	**343**	Pn	**Pn**	**06 10 10.3**	**+1.6**
THEF				Pg	**Pg**	**06 10 20.0**	**-1.7**
AVF	**Avril sur Loir**	**3.29**	**302**	*e*Pn	**Pn**	**06 10 09.7**	**+0.9**
AVF				*e*Sn	**Sn**	**06 10 47.7**	**-0.8**
	12nm,0.4s,SNR=1.0								
AVF				*e*Sg	**Sg**	**06 11 00.8**	**-4.9**
	13nm,0.4s								
CDF	**Champ du Feu**	**3.32**	**359**	*e*Pn	**Pn**	**06 10 09.6**	**+0.3**
	SNR=1.0								
CDF				*e*Sg	**Sg**	**06 11 02.2**	**-4.5**
	10nm,0.4s,SNR=1.0								
WLS	**Welschbruch**	**3.32**	**360**	Pn	**Pn**	**06 10 09.5**	**+0.2**
SSF	**Saint Saulge**	**3.34**	**307**	*e*Pn	**Pn**	**06 10 11.1**	**+1.5**
	SNR=1.0								
SSF				*e*Pg	**Pg**	**06 10 21.4**	**-1.6**
	SNR=1.0								
SSF				*e*Sg	**Sg**	**06 11 05.1**	**-2.5**
	9.8nm,0.4s,SNR=1.0								
BGF	**Bois d'Agland**	**3.50**	**296**	*e*Pn	**Pn**	**06 10 13.1**	**+1.3**
	SNR=1.0								
BGF				*e*Sg	**Sg**	**06 11 06.8**	**-5.9**
	36nm,0.5s								
MEZF	**Maizieres J'vi**	**3.77**	**336**	*e*Sg	**Sg**	**06 11 18.1**	**-3.6**
	13nm,0.3s								
CAF	**Calviac**	**3.78**	**269**	*e*Pn	**Pn**	**06 10 17.2**	**+1.3**
	SNR=1.0								
CAF				*e*Sn	**Sn**	**06 11 00.0**	**-0.9**
	SNR=1.0								
TCF	**Toulx Ste Croi**	**3.82**	**290**	*e*Pn	**Pn**	**06 10 17.6**	**+1.2**
	SNR=1.0								
TCF				*e*Sn	**Sn**	**06 11 00.7**	**-1.2**
	18nm,0.5s,SNR=1.0								
TCF				*e*Sg	**Sg**	**06 11 20.2**	**-3.3**
	22nm,0.6s								
HYF	**Humbligny**	**3.95**	**305**	*e*Pn	**Pn**	**06 10 19.5**	**+1.2**
MTLF	**Montolieu**	**4.11**	**247**	*e*Pn	**Pn**	**06 10 21.0**	**+0.5**
MTLF				*e*Sn	**Sn**	**06 11 06.8**	**-2.5**
	3.6nm,0.3s,SNR=1.0								
RJF	**Les Rejaudoux**	**4.16**	**275**	*e*Pn	**Pn**	**06 10 22.8**	**+1.6**
	SNR=1.0								
GIVF	**Givet**	**5.30**	**342**	*e*Pn	**Pn**	**06 10 37.5**	**+0.1**
MFF	**Saint Martin d**	**5.48**	**289**	*e*Pn	**Pn**	**06 10 40.7**	**+0.8**
EPF	**Esparros**	**5.49**	**250**	*e*Sn	**Sn**	**06 11 39.9**	**-4.0**
	1.9nm,0.3s,SNR=1.0								
GRR	**Gorron**	**6.56**	**303**	*e*Pn	**Pn**	**06 10 55.1**	**0.0**

IDC ***17*** *06:13:48.9±2.0,29.28N×130.54E,mb3.5/3,mb1 3.5/5, mb1mx3.4/24,ML2.9/2,MS3.1/1,Ms1 3.3/1,ms1mx2.5/25, Error ellipse: s-maj=54.3km s-min=24.6km az=123.0*
NEIC ***17*** *06:13:54.1±1.6,29.27N×130.41E,h37km±13km,Error ellipse: s-maj=34.7km s-min=12.5km az=113.0*
JMA ***17*** *06:13:54.2±0.1,29.30N×130.37E,h59km±5km,M3.3*
ISC 17 06:13:54.1±0.7,29.28N±0.05×130.4E±0.1,h54km±7km, n21,σ0°81/25,mb3.4/3,MS3.0/1,Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JNN	**Nakanoshima**	**0.73**	**320**	P	**P**	**06 14 08.0**	**-0.5**
JNN				S	**S**	**06 14 19.4**	**+0.3**
JZK	**Kikaishima**	**1.04**	**202**	P	**P**	**06 14 13.0**	**+0.3**
JAM	**Amami Oshima**	**1.12**	**220**	P	**P**	**06 14 13.9**	**+0.1**
JAM				*e*S	**S**	**06 14 28.8**	**+0.3**
JKC	**Kuchinoerabu**	**1.19**	**351**	P	**P**	**06 14 14.8**	**+0.1**
JTN	**Tanegashima 3**	**1.45**	**19**	P	**P**	**06 14 18.3**	**-0.2**
JTSR	**Tashiro 2**	**1.93**	**13**	P	**P**	**06 14 25.2**	**+0.1**
JTSR				*e*S	**S**	**06 14 48.8**	**+0.6**
JTK	**Tokunoshima**	**1.97**	**221**	P	**P**	**06 14 26.0**	**+0.3**
JSU	**Suzuyama**	**2.22**	**1**	P	**P**	**06 14 29.0**	**-0.2**
JSU				S	**S**	**06 14 56.1**	**+0.6**
JNAR	**Kushima--Naru**	**2.36**	**18**	P	**P**	**06 14 31.8**	**+0.6**
JSJ	**Shimokoshiki**	**2.47**	**346**	P	**P**	**06 14 32.6**	**-0.2**
JOW	**Kunigami**	**3.09**	**218**	Pn	**P**	**06 14 40.2**	**-1.4**
	1.8nm,0.3s,baz=100,slow=27,SNR=10								
JOW				Sn	**S**	**06 15 20.4**	**+2.9**
	3.8nm,0.3s,baz=19,slow=18,SNR=5.0								
JNU	**Nakatsue**	**3.85**	**6**	Pn	**P**	**06 14 51.0**	**-1.3**
	1.9nm,0.3s,baz=180,slow=12,SNR=4.7								
JKE	**Kume jima 2**	**4.36**	**228**	P	**P**	**06 14 58.1**	**-1.4**
HIA	**Hailar**	**21.56**	**341**	P	**P**	**06 18 40.6**	**0.0**
CMAR	**Chiang Mai Arr**	**30.64**	**257**	LR	LR	06 33 08.6	
	comp=Z,30nm,19.2s,MS3.0,baz=42,slow=38								
MKAR	**Makanchi Array**	**41.05**	**309**	P	**P**	**06 21 34.3**	**+0.6**
	0.6nm,0.6s,mb3.4,baz=101,slow=7.3,SNR=2.3								
BRVK	**Borovoye**	**49.42**	**316**	*e*P	**P**	**06 22 39.0**	**-1.3**
ZRNK	**Zerenda**	**50.19**	**316**	*e*P	**P**	**06 22 45.6**	**-0.6**
YKA	**Yellowknife Ar**	**74.95**	**26**	P	**P**	**06 25 31.1**	**+0.4**
	0.1nm,0.5s,mb3.0,baz=306,slow=5.3,SNR=3.3								
YKA	**Yellowknife Ar**	**74.95**	**26**	P	**P**	**06 25 31.1**	**+0.4**
BRTR	**Keskin Array B**	**76.69**	**308**	P	**P**	**06 25 42.4**	**+1.2**
	1.0nm,0.7s,mb3.8,baz=56,slow=5.2,SNR=4.3								

IDC 17 06:16:15.9±2.2,6.77S×129.20E,mb3.5/1,mb1 3.8/4, mb1mx3.7/13,ML3.2/3,Error ellipse: s-maj=89.9km s-min=28.9km az=76.0,Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**11.79**	**197**	Pn	P	**06 19 05.4**	**-3.0**
	0.1nm,0.3s,baz=45,slow=16,SNR=3.2								
FITZ				Sn	S	06 21 11.9	-10
	0.4nm,0.3s,baz=177,slow=19,SNR=5.0								
WRA	**Warramunga Arr**	**14.01**	**160**	Pn	P	06 19 35.2	-3.0
	0.2nm,0.3s,baz=342,slow=13,SNR=9.8								
WRA				Sn	S	06 21 58.1	-17
	0.5nm,0.3s,baz=334,slow=26,SNR=8.4								
ASAR	**Alice Springs**	**17.40**	**165**	P	P	06 20 20.7	-1.1
	0.2nm,0.3s,baz=338,slow=8.6,SNR=8.9								
ASAR				S	S	06 23 18.6	-16
	0.1nm,0.3s,baz=312,slow=38,SNR=3.2								
MKAR	**Makanchi Array**	**67.60**	**327**	P	P	06 27 14.5	-2.1
	0.2nm,0.4s,baz=116,slow=8.0,SNR=4.3								

IDC 17 06:38:14.5±19.0,22.68S×178.70W,h505km±181km, mb3.3/4,mb1 3.4/5,mb1mx3.1/14,Error ellipse: s-maj=255.0km s-min=61.8km az=56.0,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**15.94**	**192**	P	P	06 41 34.5	+0.4
	0.4nm,0.3s,baz=325,slow=12,SNR=3.7								
RPZ	**Rata Peaks**	**22.63**	**200**	P	P	06 42 36.3	-1.4
	3.5nm,0.6s,baz=50,slow=10,SNR=3.5								
STKA	**Stephens Creek**	**36.30**	**247**	P	P	06 44 34.1	-1.7
	2.1nm,0.6s,baz=70,slow=9.0,SNR=4.7								
ASAR	**Alice Springs**	**43.43**	**259**	P	P	06 45 32.4	-1.1
	1.6nm,0.5s,baz=99,slow=7.0,SNR=22								
WRA	**Warramunga Arr**	**43.70**	**264**	P	P	06 45 34.5	-1.1
	1.2nm,0.3s,baz=90,slow=5.9,SNR=115								

NEIC ***17*** *06:47:07.9±0.2,21.39S×179.35W,mb4.7/35,Error ellipse: s-maj=8.6km s-min=4.2km az=154.0*
BJI ***17*** *06:47:07.8,21.40S×179.30W,h624km,mB4.6,mb5.0*
IDC ***17*** *06:47:07.7±0.6,21.41S×179.37W,h619km±6km,mb4.3/21, mb1 4.3/23,mb1mx4.3/24,Error ellipse: s-maj=12.6km s-min=7.4km az=156.0*
SYO ***17*** *06:47:07.8,21.39S×179.35W,h624km,MB4.7*
ISC 17 06:47:05.6±1.0,21.47S±0.08×179.31W±0.05, h608km±14km,h619km±3.6km:pP-P,n182,σ0°90/112, mb4.8/60,5C-20D,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**13.25**	**265**	*e*P	**P**	**06 49 58.7**	**+2.1**
DZM	**Mont Dzumac**	**13.25**	**265**	*e*P	**P**	**06 49 58.7**	**+2.1**
NOUC	**Port Laguerre**	**13.38**	**265**	*e*P	**P**	**06 49 59.6**	**+1.7**
URZ	**Urewera**	**17.02**	**190**	P	**P**	**06 50 30.7**	**-2.0**
	8.2nm,0.3s,baz=276,slow=2.9,SNR=48								
URZ				S	**S**	**06 53 13.0**	**-6.2**
	3.8nm,0.3s,baz=190,slow=20,SNR=10.0								
RAR	**Rarotonga**	**18.20**	**93**	P	**P**	**06 50 44.0**	**+0.1**
	1.6nm,0.3s,baz=218,slow=6.0,SNR=12								
RAR	**Rarotonga**	**18.20**	**93**	*e*P	**P**	**06 50 43.8**	**-0.1**
	109nm,1.7s								
RPZ	**Rata Peaks**	**23.59**	**198**	P	**P**	**06 51 33.1**	**+0.5**
	7.4nm,0.4s,mb4.6,baz=33,slow=4.6,SNR=14								
TBI	**Tubuai**	**27.64**	**100**	*e*P	**P**	**06 52 07.9**	**-0.3**
	48nm,0.7s,mb5.2								
TBI				*e*pP		06 53 41.4			
PAE	**Paea**	**28.25**	**88**	*e*P	**P**	**06 52 12.3**	**-1.2**
	105nm,1.1s,mb5.4								
PPT	**Papeete**	**28.27**	**87**	*e*P	**P**	**06 52 12.8**	**-0.9**
	59nm,1.2s,mb5.1								
PPT	**Papeete**	**28.27**	**87**	P	**P**	**06 52 13.0**	**-0.7**
	13nm,0.4s,mb4.9,baz=229,slow=14,SNR=5.9								
TVO	**Taravao**	**28.53**	**88**	*e*P	**P**	**06 52 14.9**	**-1.0**
	72nm,0.7s,mb5.4								
PMOR	**Pomariorio Ree**	**30.49**	**83**	*e*P	**P**	**06 52 31.7**	**-0.9**
	167nm,1.1s,mb5.6								
CNB	**Canberra Magne**	**30.67**	**236**	⇓*i*P	**P**	**06 52 35.4**	**+1.4**
	78nm,0.6s,mb5.5								
CTA	**Charters Tower**	**32.19**	**266**	⇓*i*P	**P**	**06 52 47.5**	**+0.6**
	59nm,0.4s,mb5.6								
CTA	**Charters Tower**	**32.19**	**266**	P	**P**	**06 52 47.6**	**+0.6**
	98nm,0.5s,mb5.7,baz=94,slow=10,SNR=166								
CTA				S	**S**	**06 57 17.7**	**-2.2**
	5.3nm,0.9s,baz=223,slow=16,SNR=3.4								
CTA				ScP		06 58 04.0			
	11nm,0.9s,baz=76,slow=2.6,SNR=5.7								
CTAO	**Charters Tower**	**32.19**	**266**	*e*P	**P**	**06 52 47.6**	**+0.7**
	151nm,0.8s,mb5.7								
TOO	**Toolangi**	**34.34**	**234**	⇓*i*P	**P**	**06 53 05.7**	**+1.0**
	31nm,0.7s,mb5.0								
PMG	**Port Moresby**	**34.39**	**285**	*e*P	**P**	**06 53 05.6**	**+0.3**
TAU	**Tasmania Unive**	**35.08**	**225**	*e*P	**P**	**06 53 11.7**	**+1.0**
	27nm,0.7s,mb5.0								
STKA	**Stephens Creek**	**36.27**	**245**	P	**P**	**06 53 21.7**	**+1.1**
	53nm,0.5s,mb5.3,baz=90,slow=9.5,SNR=153								
STKA				ScP		06 58 18.9			
	4.7nm,1.1s,baz=139,slow=11,SNR=3.5								
AS12	**Alice Springs**	**43.11**	**258**	⇓*i*P	**P**	**06 54 15.5**	**-0.1**
	160nm,1.1s,mb5.5								
AS12				*i* PCP	PcP	06 55 50.8	-0.8
AS12				*i* SCP		06 58 46.4			
AS12				*e*S	**S**	**06 59 56.1**	**-3.6**
ASAR	**Alice Springs**	**43.11**	**258**	P	**P**	**06 54 15.5**	**-0.1**
	106nm,0.5s,mb5.6,baz=98,slow=7.6,SNR=1386								
ASAR				PcP	PcP	06 55 50.9	-0.7
	13nm,0.6s,baz=107,slow=3.3,SNR=8.2								
ASAR				ScP		06 58 46.1			
	10nm,0.8s,baz=110,slow=4.2,SNR=14								
ASAR				S	**S**	**06 59 56.9**	**-2.8**
	4.5nm,0.8s,baz=96,slow=15,SNR=6.8								
WB2	**Warramunga Arr**	**43.25**	**263**	⇓*i*P	**P**	**06 54 16.0**	**-0.8**
WB2				*e*SCP		06 58 46.8			
WB2				*e*S	**S**	**06 59 56.8**	**-4.9**
WRAB	**Tennant Creek**	**43.26**	**263**	*e*P	**P**	**06 54 16.1**	**-0.7**
	332nm,0.9s,mb5.9								
WRA	**Warramunga Arr**	**43.26**	**263**	P	**P**	**06 54 15.8**	**-1.1**
	102nm,0.7s,mb5.5,baz=95,slow=5.5,SNR=498								
WRA				PcP	PcP	06 55 51.3	-0.8
	5.1nm,0.7s,baz=99,slow=3.7,SNR=5.0								
WRA				ScP		06 58 46.9			
	5.1nm,0.8s,baz=92,slow=4.4,SNR=8.7								
WRA				S	**S**	**06 59 57.3**	**-4.6**
	7.0nm,1.1s,baz=97,slow=12,SNR=6.7								
KAKA	**Kakadu**	**46.82**	**273**	⇓*i*P	**P**	**06 54 42.9**	**-1.3**
	108nm,0.5s,mb5.6								
FORT	**Forrest**	**47.79**	**247**	⇓*i*P	**P**	**06 54 50.3**	**-1.0**
	483nm,0.6s								
FITZ	**Fitzroy Crossi**	**51.69**	**263**	⇓*i*P	**P**	**06 55 19.4**	**-0.6**
	22nm,0.3s,mb5.0								
FITZ	**Fitzroy Crossi**	**51.69**	**263**	P	**P**	**06 55 19.4**	**-0.6**
	28nm,0.4s,mb5.0,baz=157,slow=3.3,SNR=190								
KLBR	**Kellerberrin**	**56.54**	**246**	⇓*i*P	**P**	**06 55 52.8**	**-0.9**
	93nm,0.9s,mb5.0								
NWAO	**Narrogin (SRO)**	**56.84**	**244**	P	**P**	**06 55 55.2**	**-0.5**
	48nm,0.9s,mb4.7,baz=102,slow=5.1,SNR=16								
NWAO	**Narrogin (SRO)**	**56.84**	**244**	*e*P	**P**	**06 55 55.3**	**-0.4**
	26nm,0.8s,mb4.5								
MUN	**Mundaring**	**57.81**	**245**	⇓*i*P	**P**	**06 56 01.8**	**-0.5**
	22nm,0.4s,mb4.6								
CBIJ	**Chichi jima**	**60.99**	**321**	P	**P**	**06 56 22.1**	**-1.3**
	67nm,0.5s,mb5.1,baz=270,slow=17,SNR=8.2								
KEDI	**Kedomdong**	**63.33**	**271**	⇓*e*P	**P**	**06 56 37.4**	**-1.2**
	214nm,0.6s,mb5.7								
RATI	**Rata**	**63.79**	**271**	⇓*e*P	**P**	**06 56 40.7**	**-0.9**
INGI	**Ingas**	**64.12**	**270**	*e*P	**P**	**06 56 42.7**	**-0.9**
KELI	**Kelakatan**	**64.93**	**271**	⇓*e*P	**P**	**06 56 47.6**	**-1.1**
QSPA	**South Pole Qui**	**68.61**	**180**	*e*P	**P**	**06 57 11.0**	**+0.9**
	9.2nm,0.8s,mb4.3								
JOW	**Kunigami**	**69.86**	**311**	P	**P**	**06 57 18.2**	**-0.1**
	36nm,0.7s,mb4.9,baz=136,slow=8.3,SNR=6.7								
MAJO	**Matsushiro**	**70.28**	**325**	*e*P	**P**	**06 57 19.9**	**-0.7**
	18nm,0.6s,mb4.7								
MAT	**Matsushiro**	**70.28**	**325**	P	**P**	**06 57 19.4**	**-1.2**
MAT	**Matsushiro**	**70.28**	**325**	*e*P	**P**	**06 57 19.0**	**-1.6**
	13nm,0.8s,mb4.4								
JNU	**Nakatsue**	**72.15**	**318**	P	**P**	**06 57 31.2**	**-0.3**
	16nm,0.8s,mb4.6,baz=106,slow=11,SNR=5.2								
ASAJ	**Asahiwara**	**74.00**	**332**	P	**P**	**06 57 42.6**	**+0.8**
	15nm,0.6s,mb4.7,baz=196,slow=9.4,SNR=10								
FX1	**Attu Island--F**	**74.32**	**355**	P	**P**	**06 57 41.7**	**-1.7**
	24nm,0.6s,mb4.9,baz=270,slow=3.0,SNR=10.0								
FX1	**Attu Island--F**	**74.32**	**355**	*e*P	**P**	**06 57 41.5**	**-1.8**
UNV	**Unalaska Valle**	**75.81**	**8**	P	**P**	**06 57 49.5**	**-2.1**
YSS	**Yuzh-Sakhalins**	**76.22**	**334**	*e*P	**P**	**06 57 54.2**	**+0.2**
	30nm,0.9s,mb4.7								
SSE	**Sheshan**	**77.38**	**311**	P	**P**	**06 58 01.8**	**+1.2**
SSE				AMB	AMB				
	comp=Z,38nm,0.6s,mb5.0								
SSE				AMB	AMB				
	comp=Z,73nm,6.7s								
NJ2	**Nanjing**	**79.56**	**310**	*e*P	**P**	**06 58 12.0**	**-0.1**
MAW	**Mawson**	**80.24**	**200**	⇑*i*P	**P**	**06 58 15.3**	**+0.5**
	comp=Z,3.6nm,0.7s,mb3.8								
MAW	**Mawson**	**80.24**	**200**	P	**P**	**06 58 14.3**	**-0.6**
	comp=Z,4.5nm,0.7s,mb3.9,baz=146,slow=5.9,SNR=12								
MDJ	**Mudanjiang**	**80.61**	**326**	P	**P**	**06 58 17.3**	**+0.1**
MDJ				AMB	AMB				
	comp=Z,19nm,0.9s,mb4.5								
MDJ				AMB	AMB				
	comp=Z,27nm,3.5s								
MDJ	**Mudanjiang**	**80.61**	**326**	*e*P	**P**	**06 58 17.7**	**+0.5**
	comp=Z,18nm,0.9s,mb4.5								
CMB	**Columbia Colle**	**81.00**	**43**	*e*P	**P**	**06 58 19.4**	**+0.1**
	comp=Z,11nm,1.1s,mb4.2								
WDC	**Whiskeytown Da**	**81.20**	**40**	*e*P	**P**	**06 58 21.0**	**+0.7**
	comp=Z,20nm,1.3s,mb4.4								
MTUM	**Tungsten Hills**	**81.78**	**45**	*e*P	**P**	**06 58 23.9**	**+0.5**
YBH	**Yreka Blue Hor**	**81.81**	**39**	P	**P**	**06 58 24.2**	**+0.8**
	comp=Z,6.6nm,0.6s,mb4.3,baz=212,slow=1.9,SNR=19								
YBH	**Yreka Blue Hor**	**81.81**	**39**	*e*P	**P**	**06 58 24.0**	**+0.7**
	comp=Z,9.7nm,0.9s,mb4.3								
WHN	**Wuhan**	**82.04**	**307**	⇑P	**P**	**06 58 25.3**	**+0.5**
WCN	**Washoe City**	**82.14**	**42**	*e*P	**P**	**06 58 25.9**	**+0.8**
	comp=Z,14nm,0.9s,mb4.5								
HUMO	**Hull Mountain**	**82.21**	**38**	*e*P	**P**	**06 58 26.1**	**+0.8**
CN2	**Changchun**	**82.33**	**323**	⇓P	**P**	**06 58 26.0**	**+0.1**
CN2				*e*AP	pP	07 00 35.8	+0.9
CN2				*e*S	S	07 07 51.5	-0.7
CN2				AMB	AMB				
	comp=Z,300nm,1.2s,mb4.7								
CN2				AMB	AMB				
	comp=Z,200nm,3.0s								
NVAR	**Mina Array Bea**	**82.57**	**44**	P	**P**	**06 58 27.6**	**+0.3**
	comp=Z,8.2nm,0.8s,mb4.3,baz=214,slow=6.3,SNR=47								
NVAR				pP	pP	07 00 38.4	+2.1
	comp=Z,3.7nm,1.2s,baz=216,slow=6.6,SNR=5.2								
NVAR	**Mina Array Bea**	**82.57**	**44**	P	**P**	**06 58 27.6**	**+0.3**
NVAR				pP	pP	07 00 38.4	+2.1
TPH	**Tonopah**	**83.07**	**45**	*e*P	**P**	**06 58 29.9**	**+0.2**
	comp=Z,13nm,1.0s,mb4.4								
MOD	**Modoc**	**83.34**	**40**	*e*P	**P**	**06 58 31.2**	**+0.2**
	comp=Z,14nm,1.2s,mb4.4								
NEN	**Nelson**	**83.34**	**48**	*e*P	**P**	**06 58 31.7**	**+0.5**
USHA	**Ushuaia**	**83.99**	**147**	P	**P**	**06 58 35.2**	**+1.3**
	comp=Z,6.0nm,0.8s,mb4.2,baz=249,slow=6.4,SNR=4.1								
WVOR	**Wild Horse Val**	**84.66**	**40**	*e*P	**P**	**06 58 37.6**	**+0.2**
	comp=Z,8.0nm,1.1s,mb4.3								
SYO	**Syowa Base**	**85.52**	**193**	⇓P	**P**	**06 58 40.3**	**-0.7**
SYO	**Syowa Base**	**85.52**	**193**	⇓pP	pP	07 00 56.8	+5.8
ENH	**Enshi**	**85.58**	**305**	*e*P	**P**	**06 58 42.5**	**+0.3**
	comp=Z,59nm,1.0s,mb5.2								
BJT	**Baijiatuau**	**85.72**	**316**	*e*P	**P**	**06 58 42.9**	**+0.2**
	comp=Z,21nm,0.8s,mb4.8								
RMW	**Rattlesnake Mo**	**85.85**	**35**	*e*P	**P**	**06 58 43.3**	**+0.2**
MSU	**Marysvale**	**86.66**	**46**	*e*P	**P**	**06 58 48.0**	**+0.9**
XAN	**Xi'an**	**87.75**	**308**	P	**P**	**06 58 52.8**	**+0.5**
XAN				AMB	AMB				
	comp=Z,27nm,1.0s,mb4.9								
HLID	**Hailey**	**87.86**	**41**	*e*P	**P**	**06 58 53.1**	**+0.5**
	comp=Z,9.2nm,1.0s,mb4.5								
DPW	**Davenport**	**88.05**	**36**	*e*P	**P**	**06 58 53.6**	**+0.1**
SRU	**San Rafael**	**88.07**	**47**	*e*P	**P**	**06 58 53.9**	**+0.1**
MCK	**McKinley**	**88.18**	**13**	*e*P	**P**	**06 58 52.4**	**-1.2**
	comp=Z,3.4nm,1.0s,mb4.0								
JLU	**Jordanelle**	**88.20**	**45**	*e*P	**P**	**06 58 54.8**	**+0.5**
MNTX	**Cornudas Mount**	**88.31**	**55**	*e*P	**P**	**06 58 55.0**	**0.0**
	comp=Z,12nm,0.9s,mb4.6								
BNM	**Barren Site**	**88.47**	**52**	*e*P	**P**	**06 58 56.2**	**+0.4**
TCUT	**Toone Canyon**	**88.49**	**44**	*e*P	**P**	**06 58 55.8**	**+0.2**
TXAR	**Lajitas Array**	**88.61**	**58**	P	**P**	**06 58 57.0**	**+0.6**
	comp=Z,11nm,1.0s,mb4.7,baz=214,slow=6.0,SNR=91								
TXAR				pP	pP	07 01 11.1	+3.5
	comp=Z,1.7nm,1.0s,baz=214,slow=4.5,SNR=9.1								
TXAR				PKKPbc		07 16 34.3			
	comp=Z,0.5nm,0.5s,baz=105,slow=2.1,SNR=10.0								
HWUT	**Hardware Ranch**	**88.63**	**44**	*e*P	**P**	**06 58 56.1**	**-0.2**
	comp=Z,8.9nm,0.9s,mb4.6								
KMI	**Kunming**	**88.70**	**298**	*e*P	**P**	**06 58 58.6**	**+1.6**
KMI				AMB	AMB				
	comp=Z,15nm,1.0s,mb4.8								
PV10	**Paradox Valley**	**88.73**	**48**	*e*P	**P**	**06 58 56.6**	**-0.2**
PV01	**Paradox Valley**	**88.94**	**48**	*e*P	**P**	**06 58 57.5**	**-0.3**
ANMO	**Albuquerque**	**88.96**	**52**	*e*P	**P**	**06 58 57.8**	**-0.2**
	comp=Z,10nm,1.2s,mb4.5								
HHC	**Hu-ho-hao-te**	**89.16**	**315**	*e*P	**P**	**06 58 59.4**	**+0.6**
HHC				AMB	AMB				
	comp=Z,17nm,1.3s,mb4.7								
CM31	**Chiang Mai Arr**	**89.29**	**290**	*e*P	**P**	**06 59 01.6**	**+1.7**
	comp=Z,26nm,0.8s,mb5.1								

JMOS	**Jabal al Moall**	**148.04**	**291**	P	PKPdf	07 05 44.8 +4.9
NIE	**Niedzica**	**148.05**	**336**	*e*PKP	PKPdf	07 05 44.3 +5.1
ALWS	**Ilw as Safayha**	**148.06**	**291**	P	PKPdf	07 05 45.2 +5.3
BDAS	**Al Bad'**	**148.12**	**290**	P	PKPdf	07 05 38.1 -1.9
HAQS	**Haql**	**148.21**	**291**	P	PKPdf	07 05 43.0 +2.9
KSP	**Ksiaz**	**148.23**	**341**	*e*PKP	PKPdf	07 05 44.9 +5.5
KSP	**Ksiaz**	**148.23**	**341**	*e*PKP	PKPdf	07 05 44.7 +5.2
KSP				*e*		07 05 50.4
OKC	**Ostrava-Krasne**	**148.50**	**338**	*i* PKP	PKPdf	07 05 45.2 +5.3
OKC				*e*		07 05 51.2
DPC	**Dobruska-Polom**	**148.65**	**341**	*i* PKP	PKPdf	07 05 45.9 +5.8
DPC				*e*		07 05 52.4
CLL	**Collm**	**148.70**	**345**	⇓*i* PKP1	PKPdf	07 05 45.5 +5.4
CLL				*i* PKP2	PKPab	07 05 51.7 -1.9
CLL				*e**PPKP		07 08 11.0
CLL				*e*		07 08 27.0
MORC	**Moravsky Berou**	**148.75**	**339**	*e*PKPbc	PKPdf	07 05 46.0 +5.7
MORC				*e*PKPab	PKPab	07 05 52.5 -1.4
BRG	**Berggiesshubel**	**148.86**	**344**	*i* P	PKPdf	07 05 46.3 +5.9
BRG				*i*		07 05 52.7
PVCC	**Panska Ves**	**149.01**	**343**	*i* PKP	PKPdf	07 05 46.6 +6.0
PVCC				*e*		07 05 53.6
WTSB	**Winterswijk**	**149.19**	**353**	*e*P	PKPdf	07 05 46.8 +5.9
	comp=Z,28nm,1.0s					
PSZ	**Piszkesteto**	**149.42**	**334**	*e*PKPbc	PKPdf	07 05 47.4 +6.0
PRU	**Pruhonice**	**149.50**	**342**	*i* PKP	PKPdf	07 05 47.5 +6.0
PRU				*e*		07 05 55.3
MOX	**Moxa**	**149.64**	**346**	*e*PKP	PKPdf	07 05 47.3 +5.6
MOX				*e*		07 05 55.6
HGN	**Heimansgroeve**	**150.47**	**353**	*e*P	PKPdf	07 05 49.9 +6.9
	comp=Z,8.8nm,0.8s					
HGN				*ex*	x	07 05 58.9
KHC	**Kasperske Hory**	**150.55**	**343**	*i* PKP	PKPdf	07 05 50.1 +7.0
KHC				*e*		07 05 59.9
GRA1	**Grafenberg Arr**	**150.62**	**346**	*e*PKPbc	PKPdf	07 05 50.4 +7.2
GRA1				*e*PKPab	PKPab	07 06 00.1 -1.5
WET	**Wettzell**	**150.72**	**344**	*e*PKPbc	PKPdf	07 05 50.5 +7.1
WET				*e*PKPab	PKPab	07 06 00.9 -1.2
GEC2	**GERESS Array S**	**150.77**	**342**	*e*PKPbc	PKPdf	07 05 50.6 +7.2
GEC2				*e*PKPab	PKPab	07 06 01.0 -1.3
GERES	**GERESS Array B**	**150.77**	**342**	PKPbc	PKPdf	07 05 50.5 +7.1
	comp=Z,5.1nm,0.5s,baz=45,slow=1.9,SNR=46					
GERES				PKPab	PKPab	07 06 00.7 -1.6
	comp=Z,2.8nm,0.8s,baz=18,slow=4.2,SNR=7.5					
GERES				SKPbc		07 08 26.8
	comp=Z,1.1nm,0.9s,baz=90,slow=4.0,SNR=4.1					
GIVF	**Givet**	**151.24**	**354**	*e*PKIKP	PKPdf	07 05 50.9 +6.8
	comp=Z,41nm,0.8s					
BAIF	**Baives**	**151.33**	**355**	*e*PKIKP	PKPdf	07 05 51.1 +6.9
MOA	**Molln**	**151.50**	**341**	⇓*i* PKP	PKPdf	07 05 51.6 +7.1
MOA				*i*		07 06 04.4
KBA	**Koelnbreinsper**	**152.47**	**341**	⇑*i* PKP	PKPdf	07 05 53.4 +7.5
KBA				*i*		07 06 08.9
BFO	**Black Forest**	**152.50**	**349**	*e*PKPbc	PKPdf	07 05 54.2 +8.3
BFO				*e*PKPab	PKPab	07 06 07.8 -1.8
CDF	**Champ du Feu**	**152.60**	**350**	*e*PKIKP	PKPdf	07 05 53.8 +7.8
	comp=Z,12nm,0.8s					
FLN	**La Foliniere**	**152.75**	**2**	*e*PKIKP	PKPdf	07 05 53.8 +7.6
	comp=Z,8.6nm,0.4s					
WTTA	**Wattenberg**	**152.78**	**344**	⇓*i* PKP	PKPdf	07 05 55.0 +8.7
WTTA				*i*		07 06 09.8
PDKS	**Podkum**	**152.81**	**338**	*i* PKPbc	PKPdf	07 05 54.7 +8.3
PDKS				*i* PKPab	PKPab	07 06 09.1 -1.8
LDF	**La Druitiere**	**152.93**	**1**	*e*PKIKP	PKPdf	07 05 54.0 +7.5
	comp=Z,4.7nm,0.6s					
LJU	**Ljubljana**	**153.00**	**338**	*e*PKPbc	PKPdf	07 05 55.5 +8.8
GRR	**Gorron**	**153.11**	**2**	*e*PKIKP	PKPdf	07 05 54.7 +8.0
	comp=Z,6.9nm,0.5s					
HAU	**Haudompre**	**153.13**	**352**	*e*PKIKP	PKPdf	07 05 54.7 +7.9
BOJS	**Bojanci**	**153.21**	**337**	*i* PKPbc	PKPdf	07 05 56.0 +9.0
BOJS				*i* PKPab	PKPab	07 06 10.9 -1.8
HINF	**Hinteralfeld**	**153.25**	**351**	*e*PKIKP	PKPdf	07 05 54.8 +7.9
DAVOX	**Davos**	**153.67**	**346**	PKPbc	PKPdf	07 05 57.4 +10
	comp=Z,2.5nm,0.4s,baz=256,slow=6.3,SNR=5.1					
DAVOX				PKPab	PKPab	07 06 13.6 -1.0
	comp=Z,12nm,1.0s,baz=29,slow=5.8,SNR=6.5					
LIC	**Lamto**	**163.87**	**159**	*e*P	PKPab	07 06 58.4 -1.0
	comp=Z,16nm,0.7s					
KIC	**Kosan Boka**	**164.09**	**160**	*e*P	PKPab	07 06 59.9 -0.5
	comp=Z,24nm,0.6s					
TIC	**Toumodi**	**164.26**	**159**	*e*P	PKPab	07 07 00.6 -0.5
	comp=Z,102nm,1.3s					
DBIC	**Dimbokro**	**164.34**	**159**	PKPab	PKPab	07 07 01.1 -0.4
	comp=Z,2.5nm,0.6s,baz=170,slow=3.7,SNR=6.4					

NEIC ***17*** *06:50:42.5, 30.53S×71.28W, h81km, MD3.5(GUC), After GUC.*

GUC 17 06:50:42.5±0.8, 30.53S×71.28W, h81km±4km, MD3.5, ML3.4, 2C-6D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OVCH	**Ovalle**	**0.10**	**137**	⇓*i* P	P	06 50 54.3	+0.2
OVCH				*i* S	S	06 51 03.0	+0.3
OVCH				AMP		06 51 03.6	
	comp=N,2μm,0.1s						
TLL	**Tololo Astrono**	**0.55**	**49**	⇓*i* P	P	06 50 57.9	+1.0
TLL				*i* S	S	06 51 08.9	+1.3
TLL				AMP		06 51 09.7	
	comp=N,1μm,0.4s						
LSCH	**La Serena**	**0.62**	**3**	⇓*i* P	P	06 50 57.4	-0.2
LSCH				*i* S	S	06 51 08.7	-0.1
CMCH	**Combarbala**	**0.68**	**159**	⇓*i* P	P	06 50 58.7	+0.5
CMCH				*i* S	S	06 51 10.7	+0.8
CMCH				AMP		06 51 11.0	
	comp=N,16μm,0.2s						
ILCH	**Illapel**	**1.10**	**175**	⇓*i* P	P	06 51 03.4	+0.3
ILCH				*i* S	S	06 51 18.6	+0.1
ILCH				AMP		06 51 19.4	
	comp=E,398nm,0.2s						
PTCH	**Petorca**	**1.75**	**170**	⇑*i* P	P	06 51 11.6	0.0
PTCH				*i* S	S	06 51 32.9	-0.2
PTCH				AMP		06 51 34.9	
	comp=E,522nm,0.4s						
VACH	**Vallenar**	**2.00**	**13**	*e*P	P	06 51 14.8	-0.3
FCH	**Farellones**	**2.91**	**163**	AMP		06 52 05.8	
	comp=E,70nm,0.3s						
CLCH	**Cerro Calan**	**2.92**	**168**	⇑*i* P	P	06 51 27.5	-0.4
CLCH				*i* S	S	06 52 01.4	-0.6
CLCH				AMP		06 52 04.6	
	comp=E,65nm,0.4s						
RCDM	**Rinconada Maip**	**2.98**	**172**	AMP		06 52 03.8	
	comp=E,168nm,0.0s						
ANTU	**Antumapu**	**3.08**	**170**	AMP		06 52 07.3	
	comp=N,67nm,0.3s						
LMEL	**Las Melosas**	**3.43**	**165**	⇓*i* P	P	06 51 35.6	+0.7
LMEL				*i* S	S	06 52 15.3	+0.7
LMEL				AMP		06 52 17.9	
	comp=N,126nm,0.1s						

BJI ***17*** *07:01:18.4, 39.98N×77.16E, h13km, ML3.8*
NNC ***17*** *07:01:19.9±2.4, 40.21N×77.03E, mpv3.3, Error ellipse: s-maj=21.0km s-min=11.1km az=156.0*

ISC 17 07:01:16.5±0.9, 39.70N±0.07×77.35E±0.07, h10km, n19, σ0$67/18, 11C-1D, Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KSH	**Kashi**	**1.08**	**261**	⇑*i* PG	**Pg**	**07 01 37.4**	**-0.6**
KSH				SG	**Sg**	**07 01 52.8**	**+0.4**
KSH				S	Sb		
	comp=N,1μm,0.4s						
KSH				S	Sb		
	comp=E,1μm,0.7s						
ULHL	**Ulahoi**	**2.68**	**342**	P	**Pn**	**07 02 01.0**	**+0.6**
	SNR=144						
KZA	**Kyzart**	**2.86**	**327**	P	**Pn**	**07 02 03.3**	**+0.3**
	SNR=420						
UCH	**Uchtor**	**3.31**	**321**	P	**Pn**	**07 02 10.1**	**+0.6**
	SNR=95						
KBK	**Karagaybulak**	**3.46**	**329**	P	**Pn**	**07 02 11.7**	**+0.1**
	SNR=42						
TKM2	**Tokmak 2**	**3.48**	**338**	P	**Pn**	**07 02 12.2**	**+0.5**
	SNR=66						
AAK	**Ala-Archa**	**3.64**	**325**	P	**Pn**	**07 02 14.2**	**+0.2**
	SNR=23						
AML	**Almayashu**	**3.68**	**312**	P	**Pn**	**07 02 14.8**	**+0.1**
	SNR=161						
CHMS	**Chumysh**	**3.83**	**330**	P	**Pn**	**07 02 17.0**	**+0.2**
	SNR=33						
EKS2	**Erkin-Say**	**4.00**	**319**	P	**Pn**	**07 02 19.8**	**+0.5**
	SNR=8.4						

USP	**Ospenovka**	**4.16**	**330**	P	**Pn**	**07 02 21.1 -0.3**
	SNR=22					
KK31	**Karatay Array**	**6.16**	**306**	⇑Pn	**Pn**	**07 02 46.7 -3.1**
	comp=E,0.5nm,0.3s,baz=124,slow=14,SNR=18					
KK31				⇑Pg	**Pb**	**07 03 03.5 -0.2**
	comp=E,10nm,0.7s,baz=129,slow=16,SNR=24					
KK31				⇑Lg		07 04 20.7
	comp=E,14nm,0.7s,baz=115,slow=28,SNR=6.3					
MK31	**Makanchi Array**	**7.95**	**25**	⇑Pn	**Pn**	**07 03 14.4 -0.5**
	comp=E,0.5nm,0.6s,baz=199,slow=15,SNR=11					
MK31				⇑Lg		07 05 21.3
	comp=E,5.7nm,0.8s,baz=212,slow=29,SNR=3.6					
KURK	**Kurchatov**	**11.05**	**4**	⇑Lg		07 06 53.8
	comp=E,10nm,1.1s,baz=101,slow=11,SNR=8.3					
GKN	**Gorkha**	**13.14**	**150**	*e*P	**P**	**07 04 26.1 +0.3**
VOSK	**Vostochnaya**	**13.74**	**344**	⇑Lg		07 08 16.9
	comp=E,5.7nm,0.9s					
BVA0	**Borovoye Array**	**14.16**	**343**	⇑Lg		07 08 29.3
	comp=E,1.1nm,1.1s,baz=155,slow=27,SNR=7.2					
ZRNK	**Zerenda**	**14.44**	**339**	⇑Pn	**P**	**07 04 42.1 -0.6**
	comp=E,3.4nm,0.5s					
ZRNK				⇓Lg		07 08 42.3
	comp=E,16nm,1.4s					
AB31	**Akbulak array**	**15.64**	**313**	⇑Pn	**P**	**07 04 54.5 -3.9**
	comp=E,1.4nm,0.6s,baz=120,slow=9.2,SNR=14					

NEIC ***17*** *07:07:20.7, 36.77S×72.40W, h64km, MD4.0(GUC), After GUC.*
GUC ***17*** *07:07:20.7±0.8, 36.77S×72.40W, h64km±3km, MD4.0, ML4.1*

ISC 17 07:07:20.3±0.7, 36.74S±0.04×72.4W±0.1, h70km±8km, n21, σ0$75/30, 2C-3D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CCHI	**Chillan**	**0.32**	**64**	*e*P	**P**	**07 07 31.8**	**+0.1**
CCHI				*i* S	**S**	**07 07 39.1**	**-1.0**
CCHI				AMP		07 07 40.9	
	comp=N,5μm,0.6s						
CCHI				AMP		07 07 41.5	
	comp=N,9μm,0.8s						
COCH	**Cobquecura**	**0.67**	**335**	*e*P	**P**	**07 07 35.5**	**+0.6**
COCH				*i* S	**S**	**07 07 46.5**	**+0.5**
COCH				AMP		07 07 47.9	
	comp=N,4μm,0.6s						
TALC	**Talca**	**1.49**	**26**	*e*P	**P**	**07 07 45.8**	**+0.2**
TALC				*i* S	**S**	**07 08 04.8**	**+0.4**
TALC				AMP		07 08 08.2	
	comp=N,8μm,0.1s						
TMCH	**Temuco**	**2.01**	**184**	*e*P	**P**	**07 07 52.7**	**0.0**
TMCH				*i* S	**S**	**07 08 17.2**	**+0.6**
TMCH				AMP		07 08 26.0	
	comp=E,1μm,0.5s						
SFDO	**San Fernando**	**2.42**	**29**	⇑*i* P	**P**	**07 07 59.1**	**+0.6**
LNV	**Longovilo**	**2.90**	**17**	⇓*i* P	**P**	**07 08 05.1**	**-0.2**
CICH	**Cipreses**	**2.92**	**35**	*e*P	**P**	**07 08 07.1**	**+1.5**
CACH	**El Canelo**	**3.02**	**30**	*e*P	**P**	**07 08 06.8**	**-0.1**
CHCH	**Chadas Angostu**	**3.16**	**28**	*i* P	**P**	**07 08 08.7**	**-0.2**
TACH	**Talagante**	**3.32**	**22**	*e*P	**P**	**07 08 10.8**	**-0.3**
LMEL	**Las Melosas**	**3.42**	**33**	*e*P	**P**	**07 08 13.8**	**+1.3**
LMEL				*i* S	**S**	**07 08 53.6**	**+1.7**
LMEL				AMP		07 09 13.8	
	comp=N,394nm,0.6s						
PCH	**Pirque**	**3.49**	**27**	*e*P	**P**	**07 08 13.5**	**0.0**
ANTU	**Antumapu**	**3.49**	**26**	*e*P	**P**	**07 08 13.5**	**0.0**
ANTU				*i* S	**S**	**07 08 53.5**	**-0.3**
ANTU				AMP		07 09 07.1	
	comp=E,607nm,0.5s						
RCDM	**Rinconada Maip**	**3.51**	**23**	⇑*i* P	**P**	**07 08 13.2**	**-0.5**
RCDM				*i* S	**S**	**07 08 53.5**	**-0.8**
RCDM				AMP		07 09 06.7	
	comp=E,495nm,0.1s						
FSR	**Penalolen**	**3.61**	**26**	*e*P	**P**	**07 08 15.0**	**-0.2**
CLCH	**Cerro Calan**	**3.68**	**26**	⇓*i* P	**P**	**07 08 16.2**	**0.0**
CLCH				*i* S	**S**	**07 08 58.0**	**-0.7**
CLCH				AMP		07 09 17.6	
	comp=E,734nm,0.5s						
FCH	**Farellones**	**3.83**	**28**	⇓*i* P	**P**	**07 08 18.5**	**+0.3**
FCH				*i* S	**S**	**07 09 02.4**	**-0.1**
OSCH	**Osorno**	**3.87**	**188**	*i* S	**S**	**07 08 59.8**	**-3.4**
PEL	**Peldehue**	**3.87**	**22**	*e*P	**P**	**07 08 18.6**	**-0.1**
PACH	**Papudo**	**4.28**	**11**	*e*P	**P**	**07 08 22.8**	**-1.7**
JACH	**Jahuel**	**4.33**	**21**	*e*P	**P**	**07 08 24.2**	**-0.9**

NEIC ***17*** *07:09:08.1±1.0, 22.32S×68.25W, h124km±12km, Error ellipse: s-maj=30.3km s-min=18.1km az=100.0*
IDC ***17*** *07:09:08.5±1.0, 22.27S×68.30W, h117km±14km, mb3.2/2, mb1 3.4/3, mb1mx3.2/13, Error ellipse: s-maj=41.5km s-min=33.7km az=136.0*

ISC 17 07:09:06.9±0.9, 22.4S±0.1×68.2W±0.2, h133km±12km, n8, σ0$88/10, mb4.0/2, Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
LVC	**Limon Verde**	**0.65**	**251**	P	**P**	**07 09 28.7**	**+1.2**
	65nm,0.3s,baz=53,slow=3.6,SNR=764						
LVC				S	**S**	**07 09 43.0**	**-0.1**
	baz=280,slow=19						
LVC	**Limon Verde**	**0.65**	**251**	*e*Pn	**P**	**07 09 28.7**	**+1.2**
LVC				*e*Sn	**S**	**07 09 41.6**	**-1.5**
LVC				S	**S**	**07 09 43.0**	**-0.1**
LPAZ	**La Paz**	**6.08**	**1**	P	**P**	**07 10 35.2**	**-0.4**
	0.6nm,0.3s,baz=194,slow=8.3,SNR=26						
LPAZ	**La Paz**	**6.08**	**1**	*e*P	**P**	**07 10 34.3**	**-1.3**
BDFB	**Brasilia**	**20.26**	**74**	P	**P**	**07 13 34.3**	**+0.5**
	1.1nm,0.4s,baz=255,slow=8.3,SNR=5.2						
EFI	**East Falkland**	**30.27**	**167**	*e*P	**P**	**07 15 06.5**	**-0.9**
	5.5nm,0.4s,mb4.6						
YKA	**Yellowknife Ar**	**92.24**	**340**	P	**P**	**07 22 03.0**	**+0.6**
	0.2nm,0.6s,mb3.3,baz=135,slow=4.4,SNR=6.8						
MKAR	**Makanchi Array**	**145.99**	**37**	PKPbc	PKPbc	07 28 34.2	+3.3
	0.2nm,0.5s,baz=301,slow=4.8,SNR=5.3						

NEIC ***17*** *07:10:39.4±1.9, 59.55S×25.83W, h39km±17km, mb4.4/2, Error ellipse: s-maj=25.9km s-min=10.0km az=217.0*
IDC ***17*** *07:10:46.5±17.0, 59.65S×26.34W, h96km±144km, mb3.9/5, mb1 4.1/5, mb1mx3.8/13, Error ellipse: s-maj=67.6km s-min=36.8km az=69.0*

ISC 17 07:10:33.3±9.3, 59.4S±0.2×25.6W±0.5, h9km±61km, n23, σ0$43/15, mb4.1/7, 2D, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
VNA1	**Neumayer--Stat**	**13.35**	**155**	⇓*i*	**P**	**07 13 45.8**	**+0.4**
VNA3	**Neumayer Olymp**	**13.52**	**158**	⇓*i*	**P**	**07 13 47.8**	**+0.4**
VNA2	**Neumayer--Watz**	**13.75**	**154**		**P**	**07 13 50.8**	**+0.4**
SNAA	**Sanae**	**15.32**	**152**	*e*P	**P**	**07 14 09.8**	**-1.2**
SNAA				*e*S	**S**	**07 16 45.8**	**-16**
USHA	**Ushuaia**	**23.39**	**262**	P	**P**	**07 15 42.8**	**0.0**
	8.8nm,0.7s,mb4.3,baz=91,slow=4.5,SNR=7.2						
QSPA	**South Pole Qui**	**30.82**	**180**	*e*P	**P**	**07 16 50.9**	**-0.1**
	2.7nm,0.5s,mb4.3						
QSPA				*e*		07 17 39.0	
TRQA	**Tornquist**	**31.53**	**296**	*e*P	**P**	**07 16 57.3**	**-0.4**
	0.4nm,0.6s,mb3.4						
CPUP	**Villa Florida**	**39.71**	**312**	P	**P**	**07 18 07.5**	**0.0**
	1.8nm,0.8s,mb3.9,baz=166,slow=10.0,SNR=7.3						
CPUP	**Villa Florida**	**39.71**	**312**	*e*P	**P**	**07 18 07.8**	**+0.3**
LVC	**Limon Verde**	**47.77**	**301**	P	**P**	**07 19 12.8**	**+0.2**
	1.7nm,0.3s,mb4.5,baz=153,slow=1.8,SNR=7.8						
LVC	**Limon Verde**	**47.77**	**301**	*e*P	**P**	**07 19 12.4**	**-0.1**
	2.5nm,0.6s,mb4.4						
LPAZ	**La Paz**	**53.04**	**306**	P	**P**	**07 19 53.0**	**+0.2**
	0.9nm,0.3s,mb4.1,baz=82,slow=7.4,SNR=13						
LPAZ	**La Paz**	**53.04**	**306**	P	**P**	**07 19 53.0**	**+0.2**
ASAR	**Alice Springs**	**95.51**	**161**	P	**P**	**07 23 59.6**	**+0.1**
	0.7nm,0.6s,mb4.3,baz=185,slow=4.0,SNR=10						
FINES	**FINESS Array B**	**126.96**	**28**	PKP	PKPdf	07 29 38.0	-1.2
	0.7nm,0.6s,baz=225,slow=5.4,SNR=5.3						
ARCES	**ARCESS Array B**	**133.75**	**22**	PKP	PKPdf	07 29 50.7	-1.3
	2.8nm,1.1s,baz=192,slow=1.6,SNR=12						
ARCES	**ARCESS Array B**	**133.75**	**22**	PKP	PKPdf	07 29 50.7	-1.3
MKAR	**Makanchi Array**	**137.07**	**74**	PKP	PKPdf	07 29 56.5	-2.2
	0.5nm,0.8s,baz=243,slow=3.2,SNR=4.2						
YKA	**Yellowknife Ar**	**139.21**	**315**	PKP	PKPdf	07 30 00.0	-2.3
	0.3nm,0.4s,baz=130,slow=2.2,SNR=14						
INK	**Inuvik**	**148.91**	**317**	PKPbc	PKPdf	07 30 20.2	+1.7
	2.0nm,0.9s,baz=80,slow=1.9,SNR=15						
INK	**Inuvik**	**148.91**	**317**	*e*PKPbc	PKPdf	07 30 20.1	+1.5
SONM	**Songino Array**	**149.93**	**91**	PKPbc	PKPdf	07 30 25.8	+5.0
	3.5nm,0.6s,baz=225,slow=1.7,SNR=6.3						

ILAR	**Eielson Array**	**152.92**	**306**	PKPbc	PKPdf	07 30 30.1 +5.5
	0.7nm,0.8s,baz=323,slow=1.2,SNR=11					

KRSC 17 07:15:49.7±0.5, 49.31N×156.47E, h40km±67km, ML3.9, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SKR	**Severo-Kuril's**	**1.39**	**351**	*e*P	P	07 16 12.6	-0.5
SKR				*e*S	S	07 16 29.5	-1.0
ALID	**Alaid**	**1.67**	**340**	*e*P	P	07 16 17.2	+0.2
ALID				*e*S	S	07 16 37.4	0.0
PAU	**Pauzhetka**	**2.17**	**6**	*e*P	P	07 16 25.1	+1.0
PAU				*e*S	S	07 16 50.1	+0.1
PAU				Smax			
	240nm,0.2s						
MIPR	**Malaya Ipel'ka**	**2.98**	**3**	*e*P	P	07 16 35.8	+0.2
MIPR				*e*S	S	07 17 09.2	-1.2
RUS	**Russkaya**	**3.38**	**22**	*i* P	P	07 16 40.9	-0.5
RUS				*e*S	S	07 17 18.3	-2.5
GRL	**Gorelyy**	**3.40**	**17**	*e*P	P	07 16 42.4	+0.7
GRL				*e*S	S	07 17 20.9	-0.4
APC	**Apacha**	**3.65**	**7**	*e*P	P	07 16 45.8	+0.7
UGLR	**Uglovaya**	**4.17**	**20**	*e*P	P	07 16 53.0	+0.4
AVH	**Avacha**	**4.21**	**19**	*e*P	P	07 16 54.1	+1.0
AVH				*e*S	S	07 17 41.0	-0.7
KOK	**Koryaka**	**4.21**	**18**	*e*P	P	07 16 54.1	+0.9
SMAR	**Somma**	**4.22**	**19**	*e*P	P	07 16 54.7	+1.4
SDLR	**Sedlovina**	**4.25**	**20**	*e*P	P	07 16 53.4	-0.3
NLC	**Nalytchevo**	**4.27**	**24**	*e*P	P	07 16 55.3	+1.4
SPN	**Mys Shipunski**	**4.40**	**29**	*e*P	P	07 16 55.2	-0.6
SPN				*e*S	S	07 17 43.4	-3.1
GNL	**Ganaly**	**4.49**	**11**	*e*P	P	07 16 57.6	+0.6
MKZ	**Mys Kozlova**	**6.18**	**30**	*e*P	P	07 17 18.4	-2.4
MKZ				*e*S	S	07 18 23.4	-7.7
KBTR	**Krutoberegovo**	**7.91**	**27**	*e*P	P	07 17 42.5	-2.4

CASC 17 07:20:14.4±2.0, 5.64N×82.70W, h34km±64km, MD4.2, 6C-2D, South of Panama

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PTP1	**Petroterminal**	**2.56**	**6**	⇑*e*P	P	07 20 51.7	-2.8
PTP1				*e*S	S	07 21 25.1	+0.3
DVD	**David**	**2.79**	**5**	⇑*e*P	P	07 20 56.7	-1.0
DVD				*e*S	S	07 21 27.0	-3.6
ACR	**Cerro Adams**	**3.03**	**351**	*e*P	P	07 20 59.4	-1.8
ACR				*e*S	S	07 21 34.2	-2.4
BRU2	**Volcan**	**3.13**	**0**	*e*P	P	07 21 01.2	-1.4
BRU2				*e*S	S	07 21 39.3	0.0
AZU	**Azuero**	**3.22**	**48**	⇑*e*P	P	07 21 02.2	-1.7
AZU				*e*S	S	07 21 35.2	-6.4
URSC	**Urasca**	**4.30**	**346**	⇓*e*P	P	07 21 19.0	-0.2
URSC				*e*S	S	07 22 07.7	-1.2
LAJ	**Bijagual**	**4.43**	**342**	⇑*i* P	P	07 21 20.1	-0.9
ICR	**Volcan Irazu**	**4.46**	**346**	*e*P	P	07 21 21.2	-0.2
ICR				*e*S	S	07 22 13.1	+0.3
SJS	**Escuela Geolog**	**4.48**	**343**	⇓*e*P	P	07 21 21.4	-0.3
SJS				*e*S	S	07 22 12.4	-1.0
PRS1	**Puriscal**	**4.60**	**340**	⇑*e*P	P	07 21 21.4	-2.0
PRS1				*e*S	S	07 22 12.5	-4.0
CGA2	**Cerro Gallo 2**	**4.69**	**338**	*e*P	P	07 22 24.0	-0.6
CGA2				*e*S	S	07 22 17.6	-1.0
VPS2	**Volcan Poas 2**	**4.77**	**342**	*e*P	P	07 21 24.6	-1.3
JCR	**Jicaral**	**4.82**	**330**	*e*P	P	07 21 25.0	-1.5
JCR				*e*S	S	07 22 20.7	-1.2
JEF	**Cerro Jefe**	**4.85**	**43**	*e*P	P	07 21 26.3	-0.7
TRTC	**Tortuguero**	**5.01**	**349**	*e*P	P	07 21 26.3	-2.8
FORC	**Fortuna**	**5.18**	**338**	⇑*e*P	P	07 21 31.5	-0.1
FORC				*e*S	S	07 22 28.4	-2.7

IDC ***17*** *07:23:04.6±2.6, 14.90S×175.16W, mb3.8/5, mb1 4.2/5, mb1mx3.9/13, Error ellipse: s-maj=159.0km s-min=23.5km az=148.0*

ISC 17 07:23:16.0±2.5, 14.9S±0.9×175.3W±0.6, h100km, n7, σ0$18/6, mb3.6/5, Samoa Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**48.16**	**256**	P	**P**	**07 31 48.3**	**0.0**
	0.7nm,0.8s,mb3.6,baz=96,slow=7.8,SNR=17						
AS12	**Alice Springs**	**48.51**	**252**	*e*P	**P**	**07 31 50.8**	**-0.1**
	3.0nm,0.6s,mb4.4						
ASAR	**Alice Springs**	**48.51**	**252**	P	**P**	**07 31 51.0**	**+0.1**
	3.8nm,0.5s,mb4.6,baz=87,slow=8.1,SNR=59						
NVAR	**Mina Array Bea**	**75.22**	**43**	P	**P**	**07 34 49.8**	**+0.2**
	0

s-maj=113.9km s-min=14.3km az=99.0

IDC 17 08:00:46.1±4.7,34.42N×70.45E,mb3.6/2,mb1 3.6/4, mb1mx3.4/21,ML3.5/2,2C,Error ellipse: s-maj=96.9km s-min=65.8km az=145.0,Southeastern Afghanistan

Code	Station Name	Δ°	AZ°	Phase	ID		Time			Res
				Op		ISC	h	m	s	ISC
KK31	**Karatay Array**	**8.67**	**0**	⇑P		P	08	02	59.2	+3.5
	3.7nm,0.5s,baz=171,slow=12,SNR=44									
KK31				⇑S		Sn	08	04	09.7	-26
	2.5nm,0.5s,baz=191,slow=22,SNR=8.3									
MKAR	**Makanchi Array**	**15.26**	**32**	Pn		P	08	04	23.5	-0.8
	0.1nm,0.3s,baz=225,slow=12,SNR=3.0									
AB31	**Akbulak array**	**16.73**	**335**	P		P	08	04	46.3	+3.0
	0.4nm,0.3s,baz=150,slow=14,SNR=9.8									
BVAR	**Borovoye Array**	**18.59**	**360**	P		P	08	05	03.8	-2.8
	0.5nm,0.3s,baz=162,slow=10,SNR=7.9									
ARCES	**ARCESS Array B**	**42.90**	**339**	P		P	08	08	46.1	-1.4
	1.4nm,0.9s,baz=122,slow=8.5,SNR=4.0									
YKA	**Yellowknife Ar**	**83.33**	**2**	P		P	08	13	14.4	-1.2
	0.1nm,0.4s,baz=350,slow=5.4,SNR=10.0									

*NEIC **17** 08:03:27.6,32.69S×68.72W,h150km, After GUC.*

GUC 17 08:03:27.6±0.7,32.69S×68.72W,h150km,ML4.0,6C-7D, Mendoza Province

Code	Station Name	Δ°	AZ°	Phase	ID		Time			Res
				Op		ISC	h	m	s	ISC
MDZ	**Mendoza**	**0.23**	**209**	⇑*i*P		P	08	03	46.9	-1.4
MDZ				*i* S		S	08	04	02.0	-2.2
FCH	**Farellones**	**1.47**	**244**	⇓*i*P		P	08	03	57.6	+0.5
FCH				*i* S		S	08	04	21.1	+1.2
JACH	**Jahuel**	**1.58**	**270**	⇓*i*P		P	08	03	58.8	+0.5
JACH				*i* S		S	08	04	21.9	-0.1
CLCH	**Cerro Calan**	**1.68**	**245**	*i* P		P	08	03	59.6	+0.2
CLCH				*i* S		S	08	04	24.2	+0.2
LMEL	**Las Melosas**	**1.70**	**227**	⇓*i*P		P	08	04	00.1	+0.5
PEL	**Peldehue**	**1.71**	**254**	*i* P		P	08	03	59.8	-0.1
PEL				*i* S		S	08	04	24.6	0.0
PEL				AMP			08	04	26.3	
	comp=E,594nm,0.3s									
PCH	**Pirque**	**1.77**	**238**	*i* P		P	08	04	00.7	+0.3
PCH				*i* S		S	08	04	26.0	+0.3
ANTU	**Antumapu**	**1.83**	**241**	⇑*i*P		P	08	04	01.2	+0.1
ANTU				*i* S		S	08	04	27.2	+0.3
PTCH	**Petorca**	**1.91**	**282**	⇓*i*P		P	08	04	02.1	+0.1
PTCH				*i* S		S	08	04	28.3	-0.2
PTCH				AMP			08	04	31.2	
	comp=E,1μm,0.5s									
RCDM	**Rinconada Maip**	**1.93**	**245**	⇓*i*P		P	08	04	01.9	-0.2
RCDM				*i* S		S	08	04	28.4	-0.3
RCDM				AMP			08	04	28.8	
	comp=E,383nm,0.2s									
ROCH	**El Roble**	**1.95**	**261**	⇑*i*P		P	08	04	02.5	+0.1
ROCH				*i* S		S	08	04	29.5	+0.2
CHCH	**Chadas Angostu**	**2.04**	**232**	⇓*i*P		P	08	04	03.7	+0.1
CHCH				*i* S		S	08	04	31.1	-0.1
TACH	**Talagante**	**2.10**	**242**	⇑*i*P		P	08	04	03.9	-0.3
CACH	**El Canelo**	**2.12**	**227**	*i* P		P	08	04	05.0	+0.4
CICH	**Cipreses**	**2.16**	**221**	⇑*i*P		P	08	04	05.0	-0.1
ILCH	**Illapel**	**2.33**	**296**	⇑*i*P		P	08	04	07.1	0.0
ILCH				*i* S		S	08	04	37.1	-0.2
ILCH				AMP			08	04	37.4	
	comp=E,525nm,0.3s									
CMCH	**Combarbala**	**2.46**	**307**	⇓*i*P		P	08	04	09.2	+0.4
CMCH				*i* S		S	08	04	39.9	-0.3
CMCH				AMP			08	04	41.6	
	comp=E,2μm,0.6s									
TLL	**Tololo Astrono**	**3.08**	**324**	*i* P		P	08	04	17.3	+0.7
TLL				AMP			08	04	57.2	
	comp=E,249nm,0.2s									
LSCH	**La Serena**	**3.51**	**321**	AMP			08	05	06.1	
	comp=N,190nm,0.3s									
LVC	**Limon Verde**	**10.04**	**359**	*e*P		P	08	05	47.2	-1.7

*TAP **17** 08:05:29.9,23.08N×121.25E,h4km,ML3.5*
TAP Felt II J at Chenggung.
*JMA **17** 08:05:31.4±0.7,23.01N×121.40E,h62km*

ISC 17 08:05:29.8±0.4,23.03N±0.02×121.35E±0.02,h12km±2km, n52,σ1º15/91,2C-4D,Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID		Time			Res
				Op		ISC	h	m	s	ISC
CHKT	**Chengkung**	**0.07**	**9**	⇓*i*P		**Pg**	**08**	**05**	**33.3**	**+0.9**
CHKT				S		**Sg**	**08**	**05**	**35.8**	**+1.7**
TWF1	**Yuli**	**0.32**	**351**	⇓*i*P		**Pg**	**08**	**05**	**36.3**	**-0.4**
TWF1				S		**Sg**	**08**	**05**	**41.1**	**-0.1**
TWG	**Pinlang**	**0.33**	**231**	⇓*i*P		**Pg**	**08**	**05**	**36.6**	**-0.3**
TWG				S		**Sg**	**08**	**05**	**42.2**	**+0.6**
TTN	**Taitung**	**0.34**	**215**	P		**Pg**	**08**	**05**	**38.2**	**+1.4**
TTN				S		**Sg**	**08**	**05**	**44.0**	**+2.4**
ELDTW	**Lidau**	**0.35**	**297**	⇑*i*P		**Pg**	**08**	**05**	**35.9**	**-1.2**
ELDTW				S		**Sg**	**08**	**05**	**40.0**	**-1.9**
EHY	**Hungye**	**0.47**	**357**	P		**Pg**	**08**	**05**	**38.6**	**-1.0**
EHY				S		**Sg**	**08**	**05**	**46.4**	**+0.3**
STYT	**Tauyuan**	**0.56**	**284**	*i* P		**Pb**	**08**	**05**	**39.9**	**-1.2**
STYT				S		**Sg**	**08**	**05**	**47.0**	**-1.9**
ECL	**Taimali**	**0.57**	**221**	*e*P		**Pb**	**08**	**05**	**39.9**	**-1.3**
ECL				S		**Sg**	**08**	**05**	**50.5**	**+1.4**
YUS	**Yu-Shan**	**0.59**	**321**	⇑*i*P		**Pb**	**08**	**05**	**40.8**	**-0.7**
YUS				S		**Sg**	**08**	**05**	**48.2**	**-1.5**
ALS	**Alishan**	**0.69**	**314**	*i* P		**Pb**	**08**	**05**	**42.9**	**-0.5**
ALS				S		**Sb**	**08**	**05**	**51.6**	**-1.0**
SGST	**Jiashian**	**0.71**	**274**	*i* P		**Pb**	**08**	**05**	**43.4**	**-0.3**
SGST				S		**Sb**	**08**	**05**	**53.0**	**-0.1**
WTP	**Ta-pu**	**0.71**	**288**	*i* P		**Pb**	**08**	**05**	**43.1**	**-0.6**
WTP				S		**Sb**	**08**	**05**	**53.1**	**-0.1**
SSD	**Sandimen**	**0.72**	**247**	*i* P		**Pb**	**08**	**05**	**42.4**	**-1.4**
SSD				S		**Sb**	**08**	**05**	**54.5**	**+1.1**
WDT	**Danda**	**0.75**	**344**	*i* P		**Pb**	**08**	**05**	**43.5**	**-0.8**
WDT				S		**Sb**	**08**	**05**	**55.2**	**+1.0**
CHN4	**Tsaushan**	**0.77**	**295**	⇓*i*P		**Pb**	**08**	**05**	**44.3**	**-0.4**
CHN4				S		**Sb**	**08**	**05**	**54.9**	**+0.2**
CHN1	**Nanshi**	**0.78**	**282**	*i* P		**Pb**	**08**	**05**	**44.6**	**-0.1**
CHN1				S		**Sb**	**08**	**05**	**55.0**	**+0.1**
ESL	**Shilin**	**0.78**	**5**	*e*P		**Pb**	**08**	**05**	**45.6**	**+0.7**
ESL				S		**Sb**	**08**	**05**	**57.2**	**+2.0**
EAST	**Anshuo**	**0.80**	**216**	*e*P		**Pb**	**08**	**05**	**44.0**	**-1.1**
EAST				S		**Sb**	**08**	**05**	**58.3**	**+2.7**
TWK	**Hsinying**	**0.83**	**287**	*i* P		**Pb**	**08**	**05**	**45.4**	**-0.3**
TWK				S		**Sb**	**08**	**05**	**56.4**	**-0.2**
CHN5	**Tsauling**	**0.84**	**312**	*i* P		**Pb**	**08**	**05**	**45.6**	**-0.2**
CHN5				S		**Sb**	**08**	**05**	**56.6**	**-0.2**
TWM1	**Shoushan**	**0.88**	**257**	*e*P		**Pb**	**08**	**05**	**47.7**	**+1.1**
CHN3	**Shinhua**	**0.91**	**273**	*e*P		**Pb**	**08**	**05**	**47.2**	**+0.1**
SCZT	**Fangliau**	**0.94**	**226**	*e*P		**Pb**	**08**	**05**	**46.8**	**-0.8**
SCZT				S		**Sb**	**08**	**06**	**02.4**	**+2.6**
SMLT	**Sun Moon Lake**	**0.94**	**334**	*i* P		**Pb**	**08**	**05**	**47.1**	**-0.5**
SMLT				S		**Sb**	**08**	**05**	**59.6**	**-0.2**
CHN2	**Minshiung**	**0.95**	**302**	*e*P		**Pb**	**08**	**05**	**47.7**	**0.0**
HWA	**Hwalien**	**0.97**	**14**	*e*P		**Pb**	**08**	**05**	**48.3**	**+0.2**
CHY	**Chiayi**	**0.97**	**299**	*e*P		**Pb**	**08**	**05**	**47.6**	**-0.5**
CHY				S		**Sb**	**08**	**06**	**01.2**	**+0.5**
WGK	**Gukeng**	**0.98**	**312**	*e*P		**Pb**	**08**	**05**	**47.6**	**-0.5**
TYC	**Yuchr**	**0.98**	**332**	*i* P		**Pb**	**08**	**05**	**47.9**	**-0.4**
TYC				S		**Sb**	**08**	**06**	**01.8**	**+0.8**
WNT	**Mingjian**	**1.04**	**324**	*e*P		**Pb**	**08**	**05**	**49.6**	**+0.2**
TWD	**Chiawan**	**1.07**	**12**	*e*P		**Pb**	**08**	**05**	**49.9**	**+0.1**
TWD				S		**Sb**	**08**	**06**	**06.1**	**+2.7**
CHN8	**Yiju**	**1.10**	**287**	*e*P		**Pb**	**08**	**05**	**49.5**	**-0.7**
CHN8				S		**Sb**	**08**	**06**	**04.3**	**0.0**
WHF	**Hehuan Shan**	**1.11**	**356**	*e*P		**Pb**	**08**	**05**	**49.5**	**-1.0**
TWK1	**Hengchun**	**1.20**	**205**	*e*P		**Pb**	**08**	**05**	**53.7**	**+1.8**
TWT	**Tachien**	**1.23**	**352**	*e*P		**Pb**	**08**	**05**	**52.1**	**-0.4**
TWT				S		**Sb**	**08**	**06**	**10.0**	**+1.9**
TCU	**Taichung**	**1.27**	**331**	*e*P		**Pb**	**08**	**05**	**53.6**	**+0.4**
TCU				S		**Sb**	**08**	**06**	**11.1**	**+1.7**
NNS	**Nan Shan**	**1.40**	**1**	*e*P		**Pn**	**08**	**05**	**56.8**	**+1.5**
NNS				S		**Sb**	**08**	**06**	**14.9**	**+1.7**
TWQ1	**Liyutan**	**1.42**	**338**	*i* P		**Pn**	**08**	**05**	**56.2**	**+0.7**
TWQ1				S		**Sb**	**08**	**06**	**13.3**	**-0.2**
ENA	**Nanau**	**1.44**	**14**	*e*P		**Pn**	**08**	**05**	**56.2**	**+0.5**
NSY	**Sanyi**	**1.48**	**339**	P		**Pn**	**08**	**05**	**57.4**	**+0.9**
NSY				S		**Sb**	**08**	**06**	**16.4**	**+1.0**
WDGT	**Dungji**	**1.57**	**279**	P		**Pn**	**08**	**05**	**56.7**	**-1.1**
WDGT				S		**Sb**	**08**	**06**	**16.0**	**-2.2**
ENTT	**Nioudou**	**1.61**	**7**	*e*P		**Pn**	**08**	**05**	**58.0**	**-0.3**
TWC	**Suao**	**1.64**	**16**	*e*P		**Pn**	**08**	**06**	**00.2**	**+1.5**
TWC				S		**Sn**	**08**	**06**	**21.5**	**+1.8**
NSK	**Sanguang**	**1.64**	**0**	*e*P		**Pn**	**08**	**05**	**58.0**	**-0.7**
NSK				S		**Sn**	**08**	**06**	**21.6**	**+1.9**
TWE	**Neicheng**	**1.71**	**10**	*e*P		**Pn**	**08**	**06**	**01.1**	**+1.4**
PNG	**Penghu**	**1.74**	**288**	*e*P		**Pn**	**08**	**05**	**58.6**	**-1.5**
PNG				S		**Sn**	**08**	**06**	**22.5**	**+0.2**
YOJ	**Yonaguni jima**	**2.08**	**47**	P		**Pn**	**08**	**06**	**04.7**	**-0.3**
YOJ				*e*S		**Sn**	**08**	**06**	**28.2**	**-2.9**
HATJ	**Hateruma jima**	**2.47**	**65**	*e*S		**Sn**	**08**	**06**	**38.7**	**-2.2**
IRIF	**Iriomote-Funau**	**2.54**	**59**	P		**Pn**	**08**	**06**	**11.3**	**-0.2**
IRIF				*e*S		**Sn**	**08**	**06**	**41.1**	**-1.5**
JKRS	**Kuro-shima**	**2.72**	**63**	P		**Pn**	**08**	**06**	**12.7**	**-1.4**
JKRS				*e*S		**Sn**	**08**	**06**	**45.2**	**-2.0**
JIJ	**Ishigaki jima**	**2.88**	**62**	P		**Pn**	**08**	**06**	**15.3**	**-1.2**
JIJ				*e*S		**Sn**	**08**	**06**	**47.5**	**-3.8**
JTJ	**Tarama**	**3.46**	**62**	*e*S		**Sn**	**08**	**07**	**03.8**	**-2.2**

*BJI **17** 08:11:44.0,7.80N×126.46E,h9km,mB5.2,mb4.8,Ms4.6, Msz4.4*
*NEIC **17** 08:11:45.6±0.2,7.69N×126.30E,h10km,mb5.1/38, MS4.3/3,Error ellipse: s-maj=8.6km s-min=4.7km az=73.0*
NEIC Felt [III PIVS] in Compostela and [II PIVS] at Bislig.
*SYO **17** 08:11:45.5,7.69N×126.30E,h10km, MB5.1,MS4.3*
*HRVD **17** 08:11:45.6±0.2,7.67N×126.23E,h12km,MW5.0/68, Centroid moment Tensor Solution. LP body waves: s42,c60;Mantle waves: s68,c126; Half duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-4.33±.10; $M_{\theta\theta}$3.07±.08; $M_{\phi\phi}$1.27±.11; $M_{r\theta}$0.10±.24; $M_{\theta\phi}$-2.47±.07; $M_{\phi r}$-0.63±.30; Best double couple: $M_0$4.61×10^{16} NP1: ϕs118°,δ43°,λ-100°. NP2:ϕs311°,δ48°,λ-81°. Principal axes: T 4.82, Plg3°, Azm35°; N -.41, Plg7°, Azm126°; P -4.4, Plg83°, Azm282°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*MAN **17** 08:11:47.6, 7.71N×126.07E,h1km,mb5.7,ML4.7, MS5.0*
MAN F COMPOSTELA VALLEY III BISLIG II.
*IDC **17** 08:11:49.3±3.0, 7.66N×126.29E,h36km±23km, mb4.7/27, mb1 4.7/29,mb1mx4.7/31,ML4.8/2,MS4.3/22,Ms1 4.3/22, ms1mx4.1/31,Error ellipse: s-maj=19.3km s-min=8.9km az=73.0*
*MOS **17** 08:11:52.2±0.9, 8.22N×126.05E,h50km,mb5.5/24,Error ellipse: s-maj=21.4km s-min=8.8km az=113.9*

ISC 17 08:11:46.2±0.7,7.63N±0.03×126.37E±0.03,h27km±4km, h27km±1.8km:pP-P,n210,σ1º22/228,mb5.0/88,MS4.4/45, 22C-17D,Mindanao

Code	Station Name	Δ°	AZ°	Phase	ID		Time			Res
				Op		ISC	h	m	s	ISC
BIPH	**Bislig**	**0.55**	**359**	⇑*e*P		**Pb**	**08**	**11**	**57.6**	**+0.3**
BIPH				*i* S		**Sb**	**08**	**12**	**05.9**	**+1.1**
DMPH	**Davao City--Mi**	**1.01**	**238**	*e*P		**Pn**	**08**	**12**	**03.8**	**-1.0**
DMPH				*e*S		**Sb**	**08**	**12**	**20.9**	**+3.0**
KCP	**Kidapawan**	**1.41**	**244**	⇑*e*P		**Pn**	**08**	**12**	**10.2**	**-0.2**
KCP				*i* S		**Sn**	**08**	**12**	**28.6**	**+0.3**
BUTP	**Butuan**	**1.52**	**331**	⇑*e*P		**Pn**	**08**	**12**	**14.0**	**+1.9**
CGP	**Cagayan de Oro**	**1.85**	**296**	⇓*e*P		**Pn**	**08**	**12**	**17.5**	**+0.7**
GSPH	**General Santos**	**2.08**	**223**	⇓*i*P		**Pn**	**08**	**12**	**19.8**	**-0.3**
CTBH	**Cotabato--PC H**	**2.14**	**259**	⇑*i*P		**Pn**	**08**	**12**	**20.7**	**-0.2**
CTBH				*i* S		**Sn**	**08**	**12**	**46.5**	**-0.4**
SCPH	**Surigao**	**2.31**	**338**	*e*P		**Pn**	**08**	**12**	**22.0**	**-1.3**
SCPH				*e*S		**Sn**	**08**	**12**	**57.3**	**+6.2**
MSLP	**Maasin**	**2.90**	**329**	⇑*e*P		**Pn**	**08**	**12**	**33.0**	**+1.2**
MSLP				*e*S		**Sn**	**08**	**13**	**17.9**	**+12**
PAGZ	**Pagadian**	**2.97**	**274**	⇑*e*P		**Pn**	**08**	**12**	**32.1**	**-0.6**
PAGZ				*e*S		**Sn**	**08**	**13**	**11.8**	**+4.0**
TBP	**Tagbilaran**	**3.21**	**310**	*e*P		**Pn**	**08**	**12**	**36.2**	**0.0**
TBP				*e*S		**Sn**	**08**	**13**	**04.6**	**-9.5**
SNPH	**Sibulan**	**3.53**	**299**	⇓*i*P		**Pn**	**08**	**12**	**41.5**	**+0.7**
LLP	**Lapu-Lapu**	**3.57**	**319**	⇓*e*P		**Pn**	**08**	**12**	**41.8**	**+0.5**
LLP				*e*S		**Sn**	**08**	**13**	**19.0**	**-4.1**
PLP	**Palo**	**3.77**	**339**	*e*P		**Pn**	**08**	**12**	**46.3**	**+2.2**
PLP				*e*S		**Sn**	**08**	**13**	**33.5**	**+5.3**
OCLP	**Ormoc**	**3.82**	**333**	⇑*e*P		**Pn**	**08**	**12**	**46.6**	**+1.8**
OCLP				*e*S		**Sn**	**08**	**13**	**40.2**	**+11**
BESP	**Borongan**	**4.05**	**347**	⇑*e*P		**Pn**	**08**	**12**	**51.1**	**+3.0**
BESP				*e*S		**Sn**	**08**	**13**	**46.1**	**+11**
ZMPH	**Zamboanga City**	**4.32**	**261**	⇑*i*P		**Pn**	**08**	**12**	**51.0**	**-1.0**
	12μm,1.0s									
CNP	**Catarman**	**5.13**	**341**	⇑*e*P		**Pn**	**08**	**13**	**06.1**	**+2.7**
RCP	**Roxas**	**5.29**	**318**	⇑*e*P		**Pn**	**08**	**13**	**06.2**	**+0.5**
KALP	**Kalibo**	**5.65**	**316**	⇑*e*P		**Pn**	**08**	**13**	**14.3**	**+3.5**
TGY	**Tagaytay City**	**8.35**	**321**	Pn		**P**	**08**	**13**	**53.4**	**+4.8**
	53nm,0.3s,baz=143,slow=5.1,SNR=3.1									
TGY				LR		LR	08	17	46.4	
	comp=Z,3μm,20.6s,baz=267,slow=43									
QZH	**Quanzhou**	**18.75**	**338**	P		**P**	**08**	**16**	**02.9**	**-2.8**
QZH				S		**S**	**08**	**19**	**37.4**	**+6.9**
QZH				LR		LR				
	comp=N,2μm,14.5s									
QZH				LR		LR				
	comp=E,2μm,19.5s									
QZH				LR		LR				
	comp=Z,2μm,21.5s									
JOW	**Kunigami**	**19.18**	**5**	P		**P**	**08**	**16**	**10.8**	**+0.1**
	comp=Z,2.7nm,0.3s,baz=189,slow=8.5,SNR=11									
JOW				LR		LR	08	22	56.6	
	comp=Z,795nm,19.4s,baz=327,slow=35									
QIZ	**Qiongzhong**	**19.65**	**307**	*e*P		**P**	**08**	**16**	**15.6**	**-0.5**
QIZ				AP			08	16	24.5	
QIZ				PP		PP	08	16	37.8	+3.5
QIZ				S		**S**	**08**	**19**	**54.1**	**+3.6**
QIZ				XS			08	20	00.1	
QIZ				SS		SS	08	20	20.3	+2.5
QIZ				AMB		AMB				
	comp=Z,406nm,4.2s									
QIZ				LR		LR				
	comp=N,1μm,14.5s									
QIZ				LR		LR				
	comp=E,1μm,17.5s									
QIZ				LR		LR				
	comp=Z,2μm,17.2s									
QIZ	**Qiongzhong**	**19.65**	**307**	*e*P		**P**	**08**	**16**	**15.0**	**-1.1**
	comp=Z,147nm,1.6s									
GZH	**Guangzhou**	**19.82**	**322**	P		**P**	**08**	**16**	**20.3**	**+2.3**
GZH				LR		LR				
	comp=N,1μm,16.3s									
GZH				LR		LR				
	comp=E,1μm,22.0s									
GZH				LR		LR				
	comp=Z,2μm,18.5s									
KAKA	**Kakadu**	**21.07**	**163**	*e*P		**P**	**08**	**16**	**31.9**	**+1.0**
	comp=Z,115nm,0.8s,mb5.3									
KAKA				*e*S		**S**	**08**	**20**	**26.7**	**+7.5**
SSE	**Sheshan**	**23.84**	**349**	P		**P**	**08**	**16**	**57.8**	**-0.5**
SSE				XP			08	17	09.4	
SSE				S		**S**	**08**	**21**	**05.3**	**-4.0**
SSE				XS			08	21	18.3	
SSE				AMB		AMB				
	comp=Z,41nm,0.8s,mb4.9									
SSE				LR		LR				
	comp=N,282nm,19.9s,MS4.0									
SSE				LR		LR				
	comp=E,485nm,19.9s,MS4.0									
SSE				LR		LR				
	comp=Z,483nm,21.3s,MS3.9									
CBIJ	**Chichi jima**	**24.49**	**36**	P		**P**	**08**	**17**	**04.8**	**+0.1**
	comp=Z,218nm,0.9s,mb5.6,baz=306,slow=6.8,SNR=7.8									
CBIJ				LR		LR	08	24	36.2	
	comp=Z,942nm,21.7s,MS4.2,baz=286,slow=31									
NJ2	**Nanjing**	**25.29**	**345**	*e*P		**P**	**08**	**17**	**10.9**	**-1.3**
NJ2				AP		pP	08	17	19.8	-0.2
NJ2				XP		sP	08	17	24.8	+1.3
NJ2				PP		PP	08	17	49.9	-1.0
NJ2				PPP		PPP	08	18	01.3	-0.9
NJ2				S		**S**	**08**	**21**	**30.0**	**-3.8**
NJ2				XS			08	21	44.0	
NJ2				SS		SS	08	22	32.0	-3.5
NJ2				AMB		AMB				
	comp=Z,634nm,6.0s									
NJ2				LR		LR				
	comp=N,440nm,23.4s,MS4.3									
NJ2				LR		LR				
	comp=E,1μm,28.4s,MS4.3									
NJ2				LR		LR				
	comp=Z,7μm,23.2s									
IPM	**Ipoh**	**25.38**	**265**	⇓*e*P		**P**	**08**	**17**	**16.2**	**+2.9**
FITZ	**Fitzroy Crossi**	**25.58**	**182**	⇑*i*P		**P**	**08**	**17**	**15.0**	**-0.1**
	comp=Z,36nm,0.8s,mb5.0									
FITZ	**Fitzroy Crossi**	**25.58**	**182**	P		**P**	**08**	**17**	**14.7**	**-0.4**
	comp=Z,50nm,0.8s,mb5.1,baz=5.1,slow=9.2,SNR=46									
JNU	**Nakatsue**	**25.71**	**9**	P		**P**	**08**	**17**	**13.3**	**-2.8**
	comp=Z,13nm,0.5s,mb4.7,baz=95,slow=4.3,SNR=5.3									
JNU				LR		LR	08	26	27.6	
	comp=Z,597nm,20.8s,MS4.1,baz=173,slow=34									
GYA	**Guiyang**	**26.49**	**317**	P		**P**	**08**	**17**	**23.3**	**-0.1**
GYA				AP		pP	08	17	32.8	+1.6
GYA				PP		PP	08	18	08.3	+1.2
GYA				S		**S**	**08**	**21**	**55.8**	**+2.0**
GYA				XS			08	22	09.6	
GYA				SS		SS	08	23	06.3	+2.0
GYA				AMB		AMB				
	comp=Z,20nm,1.1s,mb4.6									
GYA				AMB		AMB				
	comp=Z,190nm,4.2s									
GYA				LR		LR				
	comp=N,810nm,17.7s,MS4.5									
GYA				LR		LR				
	comp=E,820nm,16.2s,MS4.5									
GYA				LR		LR				
	comp=Z,1μm,18.3s,MS4.5									
ENH	**Enshi**	**27.53**	**327**	*e*P		**P**	**08**	**17**	**32.9**	**0.0**
	comp=Z,14nm,0.9s,mb4.6									
JHJ	**Hachijo jima 2**	**28.25**	**24**	LR		LR	08	26	38.2	
	comp=Z,1μm,20.4s,MS4.5,baz=87,slow=31									
KMI	**Kunming**	**28.48**	**310**	*e*P		**P**	**08**	**17**	**42.8**	**+1.2**
KMI				PP		PP	08	18	38.0	+4.4
KMI				PPP		PPP	08	18	50.4	+4.3
KMI				PCP		PcP	08	20	54.9	+1.6
KMI				S		**S**	**08**	**22**	**29.9**	**+3.8**
KMI				SS		SS	08	23	54.8	+3.0
KMI				AMB		AMB				
	comp=Z,19nm,1.3s,mb4.6									
KMI				AMB		AMB				
	comp=Z,270nm,4.2s									
KMI				LR		LR				
	comp=N,473nm,21.1s,MS4.2									
KMI				LR		LR				
	comp=E,431nm,19.7s,MS4.2									
KMI				LR		LR				
	comp=Z,538nm,21.8s,MS4.1									
WRAB	**Tennant Creek**	**28.49**	**164**	*e*P		**P**	**08**	**17**	**40.9**	**-0.8**
	comp=Z,7nm,1.1s,mb5.2									
WRA	**Warramunga Arr**	**28.50**	**164**	P		**P**	**08**	**17**	**40.5**	**-1.3**
	comp=Z,9.8nm,0.9s,mb4.5,baz=343,slow=9.4,SNR=25									
WRA				S		**S**	**08**	**22**	**28.6**	**+2.2**
	comp=Z,1.3nm,0.9s,baz=327,slow=14,SNR=3.4									
WB2	**Warramunga Arr**	**28.50**	**164**	⇑*i*P		**P**	**08**	**17**	**41.0**	**-0.8**
WB2				*e*S		**S**	**08**	**22**	**34.8**	**+8.4**
CMAR	**Chiang Mai Arr**	**28.76**	**295**	P		**P**	**08**	**17**	**44.2**	**+0.1**
	comp=Z,7.2nm,1.0s,mb4.4,baz=123,slow=7.1,SNR=17									
CMAR				PcP		PcP	08	20	54.6	+0.5
	comp=Z,2.8nm,0.9s,baz=72,slow=1.7,SNR=6.2									
CMAR				LR		LR	08	29	14.7	
	comp=Z,446nm,21.3s,MS4.0,baz=105,slow=36									
MAJO	**Matsushiro**	**30.74**	**19**	*e*P		**P**	**08**	**17**	**59.7**	**-1.9**
	comp=Z,12nm,0.9s,mb4.7									
MAT	**Matsushiro**	**30.74**	**19**	P		**P**	**08**	**17**	**59.3**	**-2.3**
MAT				S		**S**	**08**	**22**	**52.0**	**-10**
MAT	**Matsushiro**	**30.74**	**19**	*e*P		**P**	**08**	**17**	**59.0**	**-2.6**
MAT				*e*S		**S**	**08**	**22**	**52.0**	**-10**
MAT				LR		LR				
	comp=

comp=Z,15nm,1.1s,mb4.8,baz=336,slow=8.3,SNR=5.3
SNY Shenyang 34.15 356 ⇓P **P** **08 18 29.3 -2.0**
SNY S **S** **08 23 55.8 +1.1**
SNY LR LR
comp=N,410nm,19.6s
SNY LR LR
comp=Z,470nm,18.2s,MS4.3
LZH Lanzhou 35.01 327 ⇓P **P** **08 18 39.1 +0.4**
LZH AP pP 08 18 48.8 +2.2
LZH PP PP 08 19 58.0 +0.7
LZH *e*S **S** **08 24 08.1 -0.1**
LZH XS 08 24 23.0
LZH SS SS 08 26 25.3 +1.5
LZH AMB AMB
comp=Z,57nm,1.6s,mb5.2
LZH AMB AMB
comp=Z,190nm,4.7s
LZH LR LR
comp=N,1μm,16.3s
LZH LR LR
comp=Z,2μm,17.8s,MS4.8
HHC Hu-ho-hao-te 35.61 341 ⇓P **P** **08 18 43.1 -0.7**
HHC AP pP 08 18 47.9 -3.8
HHC XP sP 08 18 50.3 -4.8
HHC PP PP 08 20 05.9 +1.4
HHC S **S** **08 24 21.4 +3.9**
HHC XS 08 24 32.5
HHC AMB AMB
comp=Z,15nm,1.3s,mb4.8
HHC AMB AMB
comp=Z,114nm,7.0s
HHC LR LR
comp=N,305nm,14.7s,MS4.2
HHC LR LR
comp=E,175nm,14.7s,MS4.2
HHC LR LR
comp=Z,321nm,15.1s,MS4.2
CN2 Changchun 36.04 359 *e*P **P** **08 18 51.5 +4.1**
CN2 *e*S **S** **08 24 30.5 +6.5**
CN2 AMB AMB
comp=Z,10.0nm,0.6s,mb4.9
CN2 AMB AMB
comp=Z,300nm,5.0s
CN2 LR LR
comp=N,500nm,18.0s,MS4.4
CN2 LR LR
comp=E,400nm,18.0s,MS4.4
CN2 LR LR
comp=Z,500nm,17.0s,MS4.3
MDJ Mudanjiang 36.95 4 P **P** **08 18 54.3 -0.7**
MDJ AP pP 08 19 02.9 0.0
MDJ XP sP 08 19 06.6 +0.3
MDJ PP PP 08 20 19.8 -1.6
MDJ PCP PcP 08 21 15.3 -1.1
MDJ S **S** **08 24 40.4 +2.4**
MDJ XS 08 24 52.6
MDJ AMB AMB
comp=Z,19nm,1.2s,mb4.8
MDJ AMB AMB
comp=Z,56nm,4.2s
MDJ LR LR
comp=N,452nm,25.5s
MDJ LR LR
comp=E,146nm,20.1s
MDJ LR LR
comp=Z,607nm,23.9s,MS4.3
MDJ Mudanjiang 36.95 4 *e*P **P** **08 18 55.2 +0.2**
comp=Z,17nm,1.0s,mb4.8
SHL Shillong 37.38 303 *e* **P** **08 18 50.0 -8.8**
SHL *e*S **S** **08 24 47.5 +2.7**
FORT Forrest 38.22 178⇑*i*P **P** **08 19 06.4 +0.5**
comp=Z,168nm,0.5s,mb6.0
ASAJ Asahikawa 39.01 19 P **P** **08 19 13.7 +1.3**
comp=Z,28nm,0.8s,mb5.0,baz=240,slow=12,SNR=21
ASAJ LR LR 08 32 57.7
comp=Z,801nm,22.0s,MS4.5,baz=192,slow=32
GTA Gaotai 39.62 327 *e*P **P** **08 19 17.5 +0.1**
GTA AP pP 08 19 26.1 +0.7
GTA XP sP 08 19 29.9 +1.2
GTA PP PP 08 20 52.4 +0.1
GTA PCP PcP 08 21 25.3 +0.5
GTA S **S** **08 25 12.8 -5.7**
GTA AMB AMB
comp=Z,186nm,6.1s
GTA LR LR
comp=N,309nm,17.1s,MS4.4
GTA LR LR
comp=E,349nm,17.9s,MS4.4
GTA LR LR
comp=Z,552nm,17.9s,MS4.4
LSA Lhasa 39.68 308 P **P** **08 19 18.9 +0.9**
LSA AP pP 08 19 27.0 +1.0
LSA XP sP 08 19 30.4 +1.1
LSA PP PP 08 20 50.5 -2.5
LSA PCP PcP 08 21 21.3 -3.8
LSA SCP 08 25 07.9
LSA PCS 08 25 13.0
LSA S **S** **08 25 21.5 +2.0**
LSA SCS ScS 08 29 21.9 0.0
LSA AMB AMB
comp=Z,220nm,6.4s
LSA LR LR
comp=N,240nm,21.3s
LSA LR LR
comp=Z,450nm,19.5s,MS4.3
LSA Lhasa 39.68 308 *e*P **P** **08 19 20.0 +1.9**
comp=Z,67nm,1.6s,mb5.1
KLBR Kellerberrin 39.86 192⇑*i*P **P** **08 19 18.5 -1.0**
comp=Z,48nm,1.0s,mb5.2
MUN Mundaring 40.56 193 *e*P **P** **08 19 24.9 -0.4**
comp=Z,17nm,0.8s,mb4.7
NWAO Narrogin (SRO) 41.26 192 P **P** **08 19 31.2 +0.3**
comp=Z,58nm,1.1s,mb5.1,baz=15,slow=11,SNR=12
NWAO Narrogin (SRO) 41.26 192 *e*P **P** **08 19 33.2 +2.3**
comp=Z,79nm,1.2s,mb5.2
YSS Yuzh-Sakhalins 41.62 17⇓*i*P **P** **08 19 33.8 0.0**
YSS *e* 08 21 14.5
YSS pmax pmax
comp=Z,20nm,1.0s,mb4.7
YSS MLR MLR
comp=N,500nm,18.0s,MS4.5
YSS MLR MLR
comp=E,300nm,18.0s,MS4.5
YSS MLR MLR
comp=Z,500nm,18.0s,MS4.4
KLR Kul'dur 41.71 5 *e*P **P** **08 19 33.8 -0.7**
STKA Stephens Creek 41.89 160 P **P** **08 19 37.3 +1.1**
comp=Z,30nm,0.6s,mb5.1,baz=341,slow=7.5,SNR=55
STKA LR LR 08 38 56.7
comp=Z,299nm,20.2s,MS4.2,baz=245,slow=39
ULN Ulaanbaatar 43.33 341*d*/*i*P **P** **08 19 46.7 -1.0**
ULN Ulaanbaatar 43.33 341 *e*P **P** **08 19 47.2 -0.6**
comp=Z,4.5nm,0.8s,mb4.2
PKI Pulchoki 43.51 302 *e*P **P** **08 19 48.9 -0.6**
comp=Z,76nm,1.3s,mb5.3
SONM Songino Array 43.52 340 P **P** **08 19 48.3 -1.0**
comp=Z,1.5nm,0.6s,mb3.9,baz=149,slow=7.2,SNR=5.7
SONM PcP PcP 08 21 36.8 -0.7
comp=Z,2.0nm,0.8s,baz=135,slow=2.0,SNR=3.0
KKN Kakani 43.69 303 *e*P **P** **08 19 50.7 -0.3**
comp=Z,49nm,1.1s,mb5.2
DMN Daman 43.78 302 *e*P **P** **08 19 51.0 -0.7**
comp=Z,65nm,1.1s,mb5.3
GKN Gorkha 44.30 303 *e*P **P** **08 19 54.8 -1.1**
comp=Z,29nm,0.8s,mb5.1
KOLN Koldanda 45.09 302 *e*P **P** **08 20 01.0 -1.3**
comp=Z,30nm,0.7s,mb5.2
ZAK Zakamensk 46.75 340 *e*P **P** **08 20 13.7 -1.4**
HYB Hyderabad 47.56 287 *i*P **P** **08 20 21.0 -0.9**
HYB Hyderabad 47.56 287 *e*P **P** **08 20 21.0 -0.9**
TOO Toolangi 48.39 160⇑*i*P **P** **08 20 29.9 +1.8**
comp=Z,9.0nm,1.1s,mb4.7
WMQ Urumqi 49.37 323 *e*P **P** **08 20 35.8 +0.3**
WMQ AP pP 08 20 38.8 -4.9
WMQ XP sP 08 20 40.8 -6.0
WMQ PCP PcP 08 21 58.8 +0.7
WMQ PP PP 08 22 30.0 0.0
WMQ SCP 08 25 52.1
WMQ PCS 08 25 53.8
WMQ S **S** **08 27 40.4 +1.0**
WMQ XS 08 27 47.9
WMQ SCS ScS 08 30 24.5 +1.9
WMQ SS SS 08 31 08.5 +1.3
WMQ AMB AMB
comp=Z,68nm,1.3s,mb5.5
WMQ AMB AMB
comp=Z,413nm,6.3s
WMQ LR LR
comp=N,872nm,20.1s,MS4.9
WMQ LR LR
comp=E,748nm,20.3s,MS4.9
WMQ LR LR
comp=Z,1μm,20.5s,MS4.9
BHPL Bhopal 49.41 294 *e*P **P** **08 20 36.0 -0.1**
BHPL *e* pP 08 20 45.7 +1.4
comp=Z,31nm,1.2s
NDI New Delhi 50.75 301 *e* **P** **08 20 43.0 -3.3**
NDI *e*P 08 20 43.0
SONA Sohna 50.76 300 *e*P **P** **08 20 44.5 -1.9**
SONA *e* pP 08 20 51.3 -3.3
comp=Z,22nm,0.9s
AYAN Aya Nagar 50.78 301 *e*P **P** **08 20 44.4 -2.2**
AYAN *e* 08 20 54.7
comp=Z,23nm,1.5s
KUDL Kundal 51.24 300 *e*P **P** **08 20 48.4 -1.7**
RTK Rohtak 51.52 301 *e*P **P** **08 20 51.6 -0.6**
KHET Khetri 51.82 300 *e*P **P** **08 20 53.4 -1.0**
PET Petropavlovsk 52.31 24 *e*P **P** **08 20 58.5 +0.7**
PET *e*S **S** **08 28 27.1 +7.2**
PET pmax pmax
comp=Z,340nm,2.9s,mb5.8
PET pmax pmax
comp=Z,145nm,4.6s
PET smax
comp=N,306nm,23.5s
PET MLR MLR
comp=Z,302nm,18.0s,MS4.4
MKAR Makanchi Array 54.19 324 P **P** **08 21 10.7 -1.0**
comp=Z,39nm,0.7s,mb5.5,baz=124,slow=8.1,SNR=378
MKAR PcP PcP 08 22 15.2 -0.8
comp=Z,17nm,0.7s,baz=115,slow=3.7,SNR=7.0
MKAR LR LR 08 45 44.0
comp=Z,446nm,21.2s,MS4.5,baz=118,slow=38
MKAR Makanchi Array 54.19 324 *i*P **P** **08 21 11.5 -0.2**
MKAR pmax pmax
comp=Z,377nm,1.7s
YAK Yakutsk 54.35 2*d*/*i*P **P** **08 21 11.1 -1.6**
YAK pmax pmax
comp=Z,45nm,1.5s,mb5.2
KSH Kashi 55.08 313 *e*P **P** **08 21 20.3 +1.9**
KSH *e*PCP PcP 08 22 21.0 +1.5
KSH *e*PP PP 08 23 24.6 +1.5
KSH *e*SCP 08 26 15.8
KSH *e*PCS 08 26 19.8
KSH *e*S **S** **08 28 58.1 +0.6**
KSH *e*PS PS 08 29 14.4 +2.3
KSH *e*XS 08 29 15.0
KSH *e*SCS ScS 08 31 06.4 +4.2
KSH *e*SS SS 08 32 41.8 +0.5
KSH AMB AMB
comp=Z,520nm,3.0s
KSH LR LR
comp=N,380nm,4.5s
KSH LR LR
comp=E,280nm,5.8s
ZAL Zalesovo 56.98 332 P **P** **08 21 30.3 -1.6**
comp=E,5.9nm,0.8s,mb4.7,baz=270,slow=8.6,SNR=25
ZAL LR LR 08 48 40.5
comp=E,339nm,18.4s,MS4.5,baz=247,slow=39
ZAL Zalesovo 56.98 332 *i*P **P** **08 21 30.6 -1.3**
ZAL pmax pmax
comp=Z,6.0nm,0.8s
FRU Bishkek 57.26 317 *e*P **P** **08 21 34.0 0.0**
FRU *e* 08 21 57.0
FRU pmax pmax
comp=Z,60nm,2.0s,mb5.3
KURK Kurchatov 58.30 326 P **P** **08 21 40.2 -0.9**
KURK pmax pmax
comp=Z,68nm,1.2s,mb5.5
KURK Kurchatov 58.30 326 *e*P **P** **08 21 40.3 -0.8**
SEY Seymchan 58.34 14 *e*P **P** **08 21 42.3 +1.0**
SEY 08 22 35.9
SEY 08 23 52.7
SEY *e*S **S** **08 29 42.9 +2.6**
SEY pmax pmax
comp=Z,30nm,1.1s,mb5.2
SEY smax
comp=N,360nm,7.9s
SEY smax
comp=E,70nm,5.8s
FX1 Attu Island--F 58.92 31 *e*P **P** **08 21 46.6 +1.1**
KKAR Karatay Array 60.18 316 *i*P **P** **08 21 53.7 -0.5**
KKAR pmax pmax
comp=Z,7.0nm,0.9s,mb4.7
VOSK Vostochnaya 63.44 326 P **P** **08 22 14.4 -1.5**
VOSK pmax pmax
comp=Z,24nm,1.4s,mb5.1
BVA0 Borovoye Array 63.89 326 *i*P **P** **08 22 17.7 -1.2**
BVA0 pmax pmax
comp=Z,1.0nm,0.9s,mb3.9
BVAR Borovoye Array 63.89 326 P **P** **08 22 17.8 -1.1**
comp=Z,11nm,0.7s,mb5.0,baz=127,slow=7.4,SNR=57
BVAR PcP PcP 08 22 53.3 -1.0
comp=Z,5.3nm,0.7s,baz=115,slow=4.9,SNR=5.5
BRVK Borovoye 63.96 326 *e*P **P** **08 22 18.5 -0.9**
TIXI Tiksi 63.97 1 *e*P **P** **08 22 17.1 -2.1**
TIXI *e* 08 22 32.6
TIXI *e*S **S** **08 30 45.0 -6.9**
TIXI pmax pmax
comp=Z,89nm,1.2s,mb5.7
TIXI Tiksi 63.97 1 *e*P **P** **08 22 17.6 -1.6**
comp=Z,34nm,1.8s,mb5.1
ZRNK Zerenda 64.63 326 P **P** **08 22 22.7 -1.0**
ZRNK pmax pmax
comp=Z,37nm,1.1s,mb5.3
ZRNK Zerenda 64.63 326 *e*P **P** **08 22 22.6 -1.1**
BILL Bilibino 65.91 15*d*/*i*P **P** **08 22 30.5 -1.2**
BILL pmax pmax
comp=Z,10.0nm,1.1s,mb4.8
BILL MLR MLR
comp=Z,200nm,19.0s,MS4.3
BILL Bilibino 65.91 15 P **P** **08 22 32.9 +1.2**
comp=Z,3.7nm,0.6s,mb4.6
AB31 Akbulak array 68.94 320 *i*P **P** **08 22 49.6 -1.5**
AB31 pmax pmax
comp=Z,49nm,1.7s,mb5.2
ARU Arti 71.48 327⇓*i*P **P** **08 23 05.2 -1.2**
ARU *e* 08 23 24.4
ARU *e* 08 25 42.2
ARU *e*S S 08 32 21.5 -0.4
ARU pmax pmax
comp=Z,31nm,1.1s,mb5.2
ARU MLR MLR
comp=Z,200nm,19.0s,MS4.4
ARU MLR MLR
comp=N,200nm,18.0s,MS4.5
ARU MLR MLR
comp=E,100nm,19.0s,MS4.5
ARU Arti 71.48 327 *e*P **P** **08 23 05.4 -1.0**
comp=E,22nm,0.5s,mb5.3
THR Tehran 73.62 305 P **P** **08 23 19.0 -0.5**
comp=E,2.5nm,0.8s,mb4.2,baz=113,slow=9.1,SNR=3.1
THR LR LR 09 03 02.5
comp=E,50nm,19.3s,MS3.8,baz=184,slow=42
HASS Wahat al Ahsa' 74.76 294 P **P** **08 23 25.2 -1.1**
RAR Rarotonga 77.90 114 P **P** **08 23 43.2 -0.8**
comp=E,14nm,1.0s,mb4.8,baz=324,slow=9.4,SNR=3.4
MZLS Mizel 78.89 293 P **P** **08 23 49.8 +0.4**
IMA Indian Mountai 78.99 24 *e*P **P** **08 23 50.5 +1.4**
comp=E,39nm,1.2s,mb5.2
SPU Mount Spurr 79.30 29 *e*P **P** **08 23 51.7 +0.9**
ZEI Tsey 79.34 312 *e*P **P** **08 23 51.0 -0.5**
ZEI pmax pmax
comp=Z,100nm,3.0s
ZEI MLR MLR
comp=Z,200nm,18.0s,MS4.5
GOF Gofitskoye 79.94 314 *e*P **P** **08 23 54.0 -0.6**
GOF pmax pmax
comp=Z,38nm,1.8s,mb5.0
KIV Kislovodsk 80.21 313 *e*P **P** **08 23 54.0 -2.1**
KIV pmax pmax
comp=Z,10.0nm,1.0s,mb4.7
KIV pmax pmax
comp=N,3.0nm,0.6s
PMR Palmer 80.72 29 *e*P **P** **08 23 58.6 +0.2**
comp=N,23nm,1.3s,mb5.0
TATS Tathlith 80.82 289 P **P** **08 24 01.0 +1.3**
MCK McKinley 80.86 27 *e*P **P** **08 23 59.6 +0.5**
comp=N,11nm,1.0s,mb4.7
DJNS Zahran al Janu 80.91 287 P **P** **08 24 02.3 +2.0**
SML Sawmill 81.10 29 *e*P **P** **08 24 01.3 +0.9**
COLA College 81.35 26 *e*P **P** **08 24 02.2 +0.6**
COLA College 81.35 26 *e*P **P** **08 24 01.9 +0.2**
comp=N,6.2nm,1.0s,mb4.5
HILS Ha'il 81.74 297 P **P** **08 24 05.3 +0.9**
ILAR Eielson Array 81.76 26 P **P** **08 24 03.0 -0.7**
comp=N,3.3nm,0.9s,mb4.3,baz=250,slow=5.0,SNR=27
ILAR LR LR 08 58 20.3
comp=N,112nm,21.6s,MS4.2,baz=248,slow=34
SOC Sochi 82.37 313 *e*P **P** **08 24 05.8 -1.6**
SOC *e*S S 08 34 17.0 -3.3
SOC *e*SS SS 08 39 36.5 -8.1
SOC *e*SSS SSS 08 42 59.1 -9.2
SOC pmax pmax
comp=Z,51nm,0.8s,mb5.5
SOC pmax pmax
comp=N,71nm,1.2s
SOC pmax pmax
comp=E,65nm,0.8s
SOC MLR MLR
comp=Z,258nm,23.0s,MS4.5
SOC MLR MLR
comp=N,145nm,18.0s,MS4.4
SOC MLR MLR
comp=E,49nm,19.0s,MS4.4
BLJS Baljurashi 82.55 289 P **P** **08 24 10.8 +2.0**
MOS Moscow 83.05 325 *e*P **P** **08 24 10.6 0.0**
MOS *e* 08 27 23.1
MOS pmax pmax
comp=Z,160nm,1.3s,mb5.9
OBN Obninsk 83.69 325*d*/*i*P **P** **08 24 13.3 -0.6**
OBN *e* 08 27 34.3
OBN pmax pmax
comp=Z,120nm,2.5s,mb5.6
OBN MLR MLR
comp=Z,200nm,18.0s,MS4.5
ANN Anapa 83.93 314 *e*P **P** **08 24 01.2 -14**
ANN pmax pmax
comp=Z,10.0nm,1.1s,mb4.9
KBRS Khaybar 84.13 295 P **P** **08 24 18.5 +1.6**
APA Apatity 84.14 337⇑*i*P **P** **08 24 15.9 0.0**
APA *i* 08 24 31.4
APA pmax pmax
comp=Z,40nm,1.2s,mb5.4
DAWY Dawson 85.05 26 *e*P **P** **08 24 22.2 +1.7**
ASF Jabal al Asfar 85.55 302 P **P** **08 24 24.7 +0.9**
comp=Z,2.8nm,0.5s,mb4.8,baz=328,slow=5.8,SNR=5.1
JOF Joensuu 85.57 333 *e*p **P** **08 24 22.1 -1.0**
comp=Z,9.8nm,0.6s,mb5.2
JOF Joensuu 85.57 333 *e*P **P** **08 24 22.1 -1.0**
JOF pmax pmax
comp=Z,10.0nm,0.6s,mb5.2
KEV Kevo 86.13 340 *e*p **P** **08 24 33.6 +7.8**
SIM Simferopol' 86.26 315 *e*P **P** **08 24 27.5 +0.5**
SIM pmax pmax
comp=Z,22nm,0.6s,mb5.6
ARCES ARCESS Array B 86.69 340 P **P** **08 24 29.0 +0.5**
comp=Z,9.5nm,1.2s,mb4.9,baz=90,slow=5.4,SNR=10
ARCES LR LR 09 11 20.4
comp=Z,124nm,18.7s,MS4.3,baz=280,slow=41
ARCES ARCESS Array B 86.69 340 P **P** **08 24 29.0 +0.5**
ARCES LR LR 09 11 20.4
INK Inuvik 86.69 22 PKKP PKKP 08 42 22.6 +13
comp=Z,1.0nm,0.9s,baz=61,slow=3.0,SNR=4.9
INK LR LR 09 02 17.1
comp=Z,122nm,21.8s,MS4.3,baz=98,slow=35
INK Inuvik 86.69 22 *e*P **P** **08 24 29.0 +0.4**
comp=Z,12nm,1.5s,mb4.9
JMQS Jabal Moqyreh 86.79 299 P **P** **08 24 31.5 +1.5**
MAW Mawson 87.27 200⇑*i*P **P** **08 24 31.4 0.0**
comp=Z,5.5nm,0.8s,mb4.8
MAW Mawson 87.27 200 P **P** **08 24 31.6 +0.2**
comp=Z,7.1nm,0.8s,mb5.0,baz=74,slow=6.1,SNR=18
MAW LR LR 08 59 23.0
comp=Z,160nm,20.7s,MS4.4,baz=213,slow=33
BRTR Keskin Array B 87.27 310 P **P** **08 24 31.4 -0.7**
comp=Z,2.0nm,0.6s,mb4.5,baz=129,slow=4.7,SNR=9.8
JMOS Jabal al Moall 87.42 299 P **P** **08 24 34.5 +1.4**
HAQS Haql 87.59 299 P **P** **08 24 35.3 +1.4**
KAF Kangasniemi 88.00 332 *e*p **P** **08 24 34.0 -1.0**
baz=74,slow=4.4
SBA Scott Base 88.22 172 *e*P **P** **08 24 37.9 +2.1**
comp=Z,46nm,1.5s,mb5.5
FINES FINESS Array B 88.25 332 P **P** **08 24 35.6 -0.6**
comp=Z,7.3nm,0.9s,mb4.9,baz=72,slow=4.6,SNR=17
FINES LR LR 09 06 37.8
comp=Z,157nm,20.3s,MS4.4,baz=306,slow=37
AKASG Malin Array Be 88.66 321 P **P** **08 24 37.1 -1.3**
comp=Z,3.7nm,0.6s,mb4.9,baz=71,slow=3.8,SNR=23
AKASG LR LR 09 12 22.7
comp=Z,120nm,19.0s,MS4.3,baz=65,slow=41
KMBO Kilima Mbogo 89.27 269 LR LR 09 05 38.5
comp=Z,84nm,18.9s,MS4.2,baz=89,slow=36
KIS Kishinev 89.60 317 *e*P **P** **08 24 41.0 -2.0**
KIS MLR MLR
comp=Z,400nm,20.0s,MS4.8
KIS MLR MLR
comp=Z,400nm,20.0s
DLBC Dease Lake 90.60 31 LR LR 09 00 56.8
comp=Z,192nm,20.9s,MS4.5,baz=286,slow=32
MLR Muntele Rosu 91.86 316 P **P** **08 24 54.2 +0.8**
comp=Z,1.8nm,0.6s,mb4.6,baz=99,slow=4.2,SNR=11
KWP Kalwaria 92.98 321 *e*P **P** **08 24 59.2 +0.7**
comp=Z,48nm,1.3s,mb5.8
DAG Danmarks Havn 93.36 352 *i*P **P** **08 24 57.0 -2.7**
comp=Z,2.1nm,0.7s,mb4.7
DAG Danmarks Havn 93.36 352 *e*P **P** **08 24 57.0 -2.7**
DAG pmax pmax
comp=Z,2.0nm,0.7s,mb4.7
DAG Danmarks Havn 93.36 352 *e*P **P** **08 24 57.0 -2.7**
comp=Z,2.0nm,0.7s,mb4.7
BBB Bella Bella 93.40 36 LR LR 09 00 11.4
comp=Z,142nm,22.0s,MS4.4,baz=59,slow=31
NB2 NORSAR Subarra 95.15 334 P **P** **08 25 07.3 -0.9**
comp=Z,3.2nm,0.7s,mb4.9,baz=66,slow=4.6
NOA NORSAR Array B 95.15 334 P **P** **08 25 07.2 -1.0**
comp=Z,2.3nm,0.7s,mb4.7,baz=66,slow=4.6,SNR=9.9
NOA PKKPbc 08 42 09.1
comp=Z,0.8nm,0.8s,baz=90,slow=9.3,SNR=3.3
NOA LR LR 09 12 48.3
comp=Z,231nm,19.9s,MS4.7,baz=40,slow=38
NOA NORSAR Array B 95.15 334 P **P** **08 25 07.2 -1.0**
NOA PKKPbc 08 42 09.1
NOA LR LR 09 12 48.3
SYO Syowa Base 95.91 201⇑P **P** **08 25 12.0 +0.5**
SYO Syowa Base 95.91 201⇑pP pP 08 25 19.3 -0.8
YKA Yellowknife Ar 96.11 24 P **P** **08 25 12.8 +0.2**
comp=Z,1.4nm,0.8s,mb4.4,baz=300,slow=4.6,SNR=35
YKA PKiKP 08 29 51.5
comp=Z,0.2nm,0.8s,baz=303,slow=1.5,SNR=4.7
YKA PKKP PKKP 08 41 59.4 +5.6
comp=Z,0.5nm,0.7s,baz=122,slow=2.7,SNR=12
YKA LR LR 09 05 46.2
comp=Z,120nm,21.7s,MS4.3,baz=280,slow=34
MORC Moravsky Berou 96.14 322 *e*P **P** **08 25 13.7 +0.7**
comp=Z,37nm,1.8s,mb5.5
KSP Ksiaz 96.53 323 *e*P **P** **08 25 15.0 +0.3**
QSPA South Pole Qui 97.51 180 *e*P **P** **08 25 19.7 +1.2**
comp=Z,12nm,1.0s,mb5.4
QSPA LR LR
comp=Z,110nm,21.8s,MS4.3
BRG Berggiesshubel 97.91 324 *e*P **P** **08 25 21.2 +0.3**
BRG MLR MLR
comp=N,140nm,17.8s,MS4.7
BRG MLR MLR
comp=E,160nm,17.8s,MS4.7
BRG MLR MLR
comp=Z,270nm,17.8s,MS4.8
CLL Collm 98.28 324⇓P **P** **08 25 24.2 +1.6**
comp=Z,logA/T=1.2,mb5.5
CLL *e*PP PP 08 29 00.0 -25
CLL Collm 98.28 324⇓*i*P **P** **08 25 24.2 +1.6**
CLL pmax pmax
comp=Z,18nm,1.2s,mb5.5
CLL Collm 98.28 324⇓*i*P **P** **08 25 24.2 +1.6**
comp=Z,18nm,1.2s,mb5.5
BSEG Bad Segeberg 98.69 327 *e*P **P** **08 25 26.4 +2.0**
BSEG pmax pmax
comp=Z,7.0nm,0.4s,mb5.5
GEC2 GERESS Array S 98.82 322 *e*P **P** **08 25 25.3 +0.2**
GEC2 pmax pmax
comp=Z,18nm,1.4s,mb5.4
GEC2 GERESS Array S 98.82 322 *e*P **P** **08 25 25.3 +0.2**
comp=Z,18nm,1.4s,mb5.4
GERES GERESS Array B 98.82 322 P **P** **08 25 25.0 -0.1**
comp=Z,1.3nm,0.7s,mb4.6,baz=72,slow=4.2,SNR=10

GERES	**GERESS Array B**	**98.82**	**322**	P		**P**	**08 25 25.0**	**-0.1**
WET	**Wettzell**	**99.20**	**322**	*e*P		**P**	**08 25 27.3**	**+0.5**
WET				pmax	pmax			
	comp=Z,14nm,1.5s,mb5.3							
WET	**Wettzell**	**99.20**	**322**	*e*P		**P**	**08 25 27.3**	**+0.5**
	comp=Z,14nm,1.5s,mb5.3							
MOX	**Moxa**	**99.35**	**324**	*i* P		**P**	**08 25 27.9**	**+0.4**
MOX				L			09 15 08.0	
MOX	**Moxa**	**99.35**	**324**	*e*P		**P**	**08 25 27.9**	**+0.4**
MOX				LR	LR			
	comp=Z,100nm,21.0s,MS4.3							
GRA1	**Grafenberg Arr**	**99.98**	**323**	*e*P		**P**	**08 25 30.9**	**+0.5**
	comp=Z,7.0nm,0.7s,mb5.2							
GRF	**Grafenberg Arr**	**99.98**	**323**	*e*P		**P**	**08 25 30.9**	**+0.5**
GRF				pmax	pmax			
	comp=Z,7.0nm,0.7s,mb5.2							
NVAR	**Mina Array Bea**	**104.56**	**47**	PKKPbc			08 41 38.1	
	comp=Z,0.4nm,0.9s,baz=124,slow=3.3,SNR=3.5							
PDAR	**Pinedale Array**	**108.65**	**40**	PP	PP		08 30 37.7	-5.9
	comp=Z,0.7nm,0.9s,baz=344,slow=6.6,SNR=4.1							
PDAR				PKKPbc			08 41 23.6	
	comp=Z,0.4nm,0.8s,baz=127,slow=4.5,SNR=4.2							
PV10	**Paradox Valley**	**111.15**	**44**	*e*PKP	PKPdf		08 30 21.5	-1.0
ANMO	**Albuquerque**	**114.63**	**46**	*e*PKP	PKPdf		08 30 28.2	-1.2
MNTX	**Cornudas Mount**	**117.01**	**49**	*e*PKP	PKPdf		08 30 32.3	-1.8
TXAR	**Lajitas Array**	**119.45**	**50**	PKP	PKPdf		08 30 36.8	-2.1
	comp=Z,1.5nm,0.8s,baz=220,slow=1.3,SNR=14							
TXAR				PKKPbc			08 40 47.0	
	comp=Z,0.9nm,1.1s,baz=80,slow=5.5,SNR=4.0							
TXAR	**Lajitas Array**	**119.45**	**50**	PKP	PKPdf		08 30 36.8	-2.1
TXAR				PKKPbc			08 40 47.0	
JCT	**Junction City**	**121.74**	**47**	*e*PKP	PKPdf		08 30 41.0	-2.3
MIAR	**Mount Ida**	**123.57**	**39**	*e*PKP	PKPdf		08 30 44.9	-1.8
WVT	**Waverly**	**125.90**	**34**	*e*PKP	PKPdf		08 30 47.8	-3.4
TRQA	**Tornquist**	**148.78**	**167**	*e*PKPdf	PKPdf		08 31 29.4	-3.2
TRQA				*e*PKPbc	PKPdf		08 31 36.4	+3.8
OTAV	**Otavalo**	**154.05**	**74**	PKPdf	PKPdf		08 31 41.0	-0.2
OTAV				PKPbc	PKPdf		08 31 48.4	+7.2
OTAV				*e*			08 31 55.0	
CPUP	**Villa Florida**	**161.07**	**170**	PKPab	PKPab		08 32 30.6	+0.4
	comp=Z,6.8nm,1.0s,baz=207,slow=4.5,SNR=7.8							
LPAZ	**La Paz**	**163.42**	**123**	PKP	PKPdf		08 31 51.5	-0.4
	comp=Z,3.9nm,1.0s,baz=315,slow=2.9,SNR=13							
LPAZ				PKPab	PKPab		08 32 42.5	+1.9
	comp=Z,5.1nm,0.9s,baz=270,slow=1.0,SNR=8.9							
LPAZ	**La Paz**	**163.42**	**123**	*e*PKPdf	PKPdf		08 31 51.4	-0.5

JMA ***17*** *08:22:55.5±0.2, 22.91N×121.67E, h2km, M3.2*
TAP ***17*** *08:22:56.6, 23.05N×121.28E, h11km, ML3.8*
TAP Felt III J at Chenggung, I J at Yuli, I J at Tauyuan.
ISC 17 08:22:55.4±0.4, 23.01N±0.02×121.39E±0.02, h19km±4km, n62, σ1§08/108, 1C-7D, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
CHKT	**Chengkung**	**0.09**	**344**	⇓*i*P		**Pb**	**08 22 59.2**	**0.0**
CHKT				S		**Sb**	**08 23 01.9**	**+0.1**
TTN	**Taitung**	**0.34**	**222**	P		**Pb**	**08 23 03.3**	**+0.5**
TTN				S		**Sb**	**08 23 09.4**	**+1.7**
TWF1	**Yuli**	**0.35**	**345**	⇓*i*P		**Pb**	**08 23 02.3**	**-0.6**
TWF1				S		**Sb**	**08 23 07.0**	**-0.9**
TWG	**Pinlang**	**0.35**	**237**	⇓*i*P		**Pb**	**08 23 02.4**	**-0.5**
TWG				S		**Sb**	**08 23 07.5**	**-0.5**
ELDTW	**Lidau**	**0.39**	**297**	⇑*i*P		**Pb**	**08 23 01.7**	**-1.8**
ELDTW				S		**Sb**	**08 23 05.9**	**-3.1**
EHY	**Hungye**	**0.50**	**352**	*e*P		**Pb**	**08 23 05.0**	**-0.3**
EHY				S		**Sb**	**08 23 11.9**	**-0.2**
ECL	**Taimali**	**0.58**	**225**	⇓*i*P		**Pb**	**08 23 05.8**	**-0.9**
STYT	**Tauyuan**	**0.60**	**285**	⇓*i*P		**Pb**	**08 23 05.8**	**-1.4**
STYT				S		**Sb**	**08 23 12.8**	**-2.5**
YUS	**Yu-Shan**	**0.62**	**320**	*i* P		**Pb**	**08 23 06.6**	**-0.9**
YUS				S		**Sb**	**08 23 13.5**	**-2.3**
ALS	**Alishan**	**0.73**	**313**	*e*P		**Pb**	**08 23 08.7**	**-0.7**
ALS				S		**Sb**	**08 23 17.4**	**-1.6**
SGST	**Jiashian**	**0.75**	**276**	*e*P		**Pb**	**08 23 08.9**	**-0.7**
SGST				S		**Sb**	**08 23 18.6**	**-0.8**
SSD	**Sandimen**	**0.75**	**250**	*e*P		**Pb**	**08 23 08.3**	**-1.3**
SSD				S		**Sb**	**08 23 17.1**	**-2.3**
WTP	**Ta-pu**	**0.75**	**288**	*e*P		**Pb**	**08 23 08.9**	**-0.8**
WTP				S		**Sb**	**08 23 18.6**	**-0.9**
WDT	**Danda**	**0.78**	**342**	*i* P		**Pb**	**08 23 09.3**	**-0.8**
WDT				S		**Sb**	**08 23 19.4**	**-0.9**
TAW	**Tawu**	**0.80**	**215**	*e*P		**Pb**	**08 23 09.6**	**-0.9**
ESL	**Shilin**	**0.80**	**3**	*e*P		**Pb**	**08 23 10.0**	**-0.5**
EAST	**Anshuo**	**0.80**	**219**	*e*P		**Pb**	**08 23 09.8**	**-0.7**
CHN4	**Tsaushan**	**0.81**	**295**	⇓*i*P		**Pb**	**08 23 10.1**	**-0.6**
CHN4				S		**Sb**	**08 23 20.7**	**-0.5**
CHN1	**Nanshi**	**0.81**	**282**	⇓*i*P		**Pb**	**08 23 10.4**	**-0.3**
CHN1				S		**Sb**	**08 23 20.9**	**-0.4**
TWK	**Hsinying**	**0.87**	**287**	*e*P		**Pb**	**08 23 10.9**	**-0.8**
TWK				S		**Sb**	**08 23 22.8**	**-0.2**
CHN5	**Tsauling**	**0.88**	**312**	*e*P		**Pb**	**08 23 11.3**	**-0.5**
CHN5				S		**Sb**	**08 23 22.5**	**-0.6**
SGLT	**Jiouru**	**0.88**	**251**	*e*P		**Pb**	**08 23 12.1**	**+0.3**
SGLT				S		**Sb**	**08 23 24.1**	**+1.0**
TWM1	**Shoushan**	**0.91**	**258**	*e*P		**Pb**	**08 23 13.3**	**+0.9**
CHN3	**Shinhua**	**0.95**	**274**	*e*P		**Pb**	**08 23 13.5**	**+0.5**
CHN3				S		**Sb**	**08 23 27.2**	**+2.1**
SCZT	**Fangliau**	**0.96**	**228**	*e*P		**Pb**	**08 23 12.6**	**-0.6**
SCZT				S		**Sb**	**08 23 26.4**	**+1.1**
SMLT	**Sun Moon Lake**	**0.98**	**333**	*e*P		**Pb**	**08 23 13.0**	**-0.5**
SMLT				S		**Sb**	**08 23 25.2**	**-0.8**
LAY	**Lan-yu**	**0.98**	**171**	*e*P		**Pb**	**08 23 13.2**	**-0.4**
HWA	**Hwalien**	**0.98**	**11**	*e*P		**Pb**	**08 23 15.4**	**+1.8**
CHN2	**Minshiung**	**0.99**	**302**	*e*P		**Pb**	**08 23 13.3**	**-0.5**
CHN2				S		**Sb**	**08 23 27.9**	**+1.5**
CHY	**Chiayi**	**1.01**	**299**	*e*P		**Pb**	**08 23 13.9**	**-0.2**
CHY				S		**Sb**	**08 23 27.3**	**+0.3**
TYC	**Yuchr**	**1.01**	**331**	*e*P		**Pb**	**08 23 13.7**	**-0.5**
TYC				S		**Sb**	**08 23 27.4**	**+0.2**
WGK	**Gukeng**	**1.02**	**311**	*e*P		**Pb**	**08 23 14.4**	**+0.2**
WGK				S		**Sb**	**08 23 27.9**	**+0.8**
TAI1	**Yung-k'ang**	**1.07**	**272**	*e*P		**Pb**	**08 23 14.6**	**-0.6**
TAI1				S		**Sb**	**08 23 30.1**	**+1.3**
TWD	**Chiawan**	**1.08**	**10**	P		**Pb**	**08 23 16.4**	**+1.1**
TWD				S		**Sb**	**08 23 31.9**	**+2.9**
WNT	**Mingjian**	**1.08**	**323**	*e*P		**Pb**	**08 23 15.6**	**+0.3**
WNT				S		**Sb**	**08 23 30.0**	**+1.0**
SCLT	**Jiali**	**1.12**	**279**	*e*P		**Pb**	**08 23 16.6**	**+0.7**
SCLT				S		**Sb**	**08 23 32.4**	**+2.5**
WHF	**Hehuan Shan**	**1.13**	**354**	*e*P		**Pb**	**08 23 15.2**	**-1.0**
CHN8	**Yiju**	**1.14**	**287**	*e*P		**Pb**	**08 23 15.8**	**-0.5**
CHN8				S		**Sb**	**08 23 32.3**	**+1.7**
TWP	**Hsiaoliuchiu**	**1.16**	**235**	*e*P		**Pb**	**08 23 18.4**	**+1.8**
HEN	**Hengchun**	**1.17**	**211**	*e*P		**Pb**	**08 23 19.2**	**+2.4**
HEN				S		**Sb**	**08 23 34.6**	**+3.1**
TWK1	**Hengchun**	**1.19**	**207**	*e*P		**Pb**	**08 23 19.3**	**+1.1**
WSF	**Szhu**	**1.24**	**300**	*e*P		**Pb**	**08 23 18.1**	**0.0**
WSF				S		**Sb**	**08 23 34.0**	**+0.4**
TWT	**Tachien**	**1.25**	**351**	*e*P		**Pb**	**08 23 18.0**	**-0.2**
TCU	**Taichung**	**1.31**	**330**	*e*P		**Pb**	**08 23 19.9**	**+0.7**
TCU				S		**Sb**	**08 23 37.0**	**+1.5**
WTCT	**Ta-ch'eng**	**1.33**	**310**	*e*P		**Pb**	**08 23 18.8**	**-0.7**
WTCT				S		**Sb**	**08 23 36.5**	**+0.3**
NNS	**Nan Shan**	**1.42**	**359**	*e*P		**Pn**	**08 23 21.8**	**+1.3**
TWQ1	**Liyutan**	**1.45**	**337**	*e*P		**Pn**	**08 23 22.1**	**+1.3**
TWQ1				S		**Sb**	**08 23 41.2**	**+1.7**
NSY	**Sanyi**	**1.51**	**338**	*e*P		**Pn**	**08 23 23.1**	**+1.3**
NSY				S		**Sb**	**08 23 43.1**	**+1.6**
WDGT	**Dungji**	**1.61**	**279**	*e*P		**Pn**	**08 23 22.3**	**-1.0**
WDGT				S		**Sn**	**08 23 41.6**	**-2.1**
ENTT	**Nioudou**	**1.63**	**6**	*e*P		**Pn**	**08 23 22.6**	**-0.9**
TWC	**Suao**	**1.64**	**15**	P		**Pn**	**08 23 25.2**	**+1.5**
NSTT	**Nanjuang**	**1.65**	**348**	*e*P		**Pn**	**08 23 24.5**	**+0.7**
NSTT				S		**Sn**	**08 23 45.7**	**+1.1**
NSK	**Sanguang**	**1.66**	**359**	*e*P		**Pn**	**08 23 23.6**	**-0.2**
TWE	**Neicheng**	**1.72**	**8**	*e*P		**Pn**	**08 23 25.7**	**+0.9**
PNG	**Penghu**	**1.78**	**288**	*e*P		**Pn**	**08 23 24.6**	**-1.0**
PNG				S		**Sn**	**08 23 47.5**	**-0.4**
YOJ	**Yonaguni jima**	**2.07**	**45**	P		**Pn**	**08 23 30.7**	**+0.9**
YOJ				*e*S		**Sn**	**08 23 55.8**	**+0.6**
NWF	**Wu-fen Shan**	**2.08**	**10**	*e*P		**Pn**	**08 23 29.6**	**-0.3**
NWF				S		**Sn**	**08 23 58.7**	**+3.2**
HATJ	**Hateruma jima**	**2.45**	**64**	P		**Pn**	**08 23 34.8**	**-0.4**
HATJ				*e*S		**Sn**	**08 24 04.4**	**-0.4**
IRIF	**Iriomote-Funau**	**2.52**	**58**	P		**Pn**	**08 23 36.3**	**+0.1**
IRIF				*e*S		**Sn**	**08 24 06.4**	**-0.2**
JKRS	**Kuro-shima**	**2.69**	**63**	P		**Pn**	**08 23 38.5**	**-0.2**
JKRS				*e*S		**Sn**	**08 24 10.1**	**-0.9**
JJJ	**Ishigaki jima**	**2.86**	**61**	P		**Pn**	**08 23 40.8**	**-0.2**
JJJ				*e*S		**Sn**	**08 24 13.4**	**-1.8**
JTJ	**Tarama**	**3.44**	**61**	P		**Pn**	**08 23 49.4**	**+0.1**
JTJ				*e*S		**Sn**	**08 24 28.9**	**-1.0**

LDG ***17*** *08:35:06.7±0.1, 45.71N×6.90E, h2km, Md3.0/3, Ml3.0/20, Error ellipse: s-maj=1.3km s-min=0.8km az=104.0*
ROM ***17*** *08:35:06.5±0.4, 45.68N×7.03E, h7km±2km, MD2.5/3, ML2.2/3, Error ellipse: s-maj=2.5km s-min=2.3km az=0.0*
NEIC ***17*** *08:35:06.7, 45.71N×6.90E, h2km, MD2.5(ROM), ML3.0(LDG), ML2.9(STR), ML2.8(GEN), ML2.6(ZUR), After LDG.*
ZUR ***17*** *08:35:06.6, 45.74N×6.97E, h8km, ML2.6/16*
STR ***17*** *08:35:07.9±1.1, 45.77N×6.91E, h10km±1km, Ml2.9, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
ISC 17 08:35:04.8±0.2, 45.716N±0.009×6.85E±0.02, h7km±2km, n69, σ1§20/134, 13C-5D, France

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
LPL	**La Plagne**	**0.22**	**203**	*e*Pg		**Pg**	**08 35 11.6**	**+2.2**
	SNR=1.0							
LPL				*e*Sg		**Sg**	**08 35 14.7**	**+2.3**
	304nm,0.3s							
LPG	**La Plagne**	**0.23**	**198**	*e*Pg		**Pg**	**08 35 11.8**	**+2.2**
	SNR=1.0							
LPG				*e*Sg		**Sg**	**08 35 14.9**	**+2.1**
	793nm,0.2s							
LSD	**Ceresole Reale**	**0.33**	**140**	⇑P		**Pg**	**08 35 12.6**	**+0.9**
LSD				S		**Sg**	**08 35 16.2**	**0.0**
EMV	**Vieux Emosson**	**0.35**	**5**	⇑*i*Pg		**Pg**	**08 35 13.6**	**+1.7**
	112nm,2.0s							
EMV				*i* Sg		**Sg**	**08 35 18.0**	**+1.3**
	24nm,0.4s							
SALAN	**Lac Salanfe**	**0.44**	**11**	⇑*i*Pg		**Pg**	**08 35 15.1**	**+1.4**
	18nm,0.3s							
SALAN				*i* Sg		**Sg**	**08 35 20.5**	**+1.0**
	18nm,0.3s							
DIX	**Grande Dixence**	**0.53**	**47**	⇓*i*Pg		**Pg**	**08 35 16.2**	**+0.6**
	58nm,2.0s							
DIX				*i* Sg		**Sg**	**08 35 22.8**	**+0.1**
	9.1nm,0.3s							
GRYON	**Gryon**	**0.56**	**19**	⇑*i*Pg		**Pg**	**08 35 17.3**	**+1.1**
	22nm,0.5s							
GRYON				*i* Sg		**Sg**	**08 35 24.2**	**+0.4**
	22nm,0.5s							
AIGLE	**Aigle**	**0.63**	**6**	⇑*i*Pg		**Pg**	**08 35 18.7**	**+1.2**
	40nm,0.2s							
AIGLE				*e*Sg		**Sg**	**08 35 26.9**	**+1.0**
	12nm,0.7s							
RSP	**Reno Superiore**	**0.63**	**153**	P		**Pg**	**08 35 18.2**	**+0.6**
RSP				S		**Sg**	**08 35 25.8**	**-0.2**
BNI	**Bardonecchia**	**0.68**	**191**	*e*P		**Pg**	**08 35 20.5**	**+2.1**
BNI				*e*S		**Sg**	**08 35 28.7**	**+1.3**
FENE	**Fenestrelle**	**0.70**	**168**	P		**Pg**	**08 35 19.4**	**+0.5**
FENE				S		**Sg**	**08 35 27.8**	**-0.5**
SENIN	**Lac Senin**	**0.72**	**25**	⇓*i*Pg		**Pg**	**08 35 20.0**	**+0.8**
	50nm,2.0s							
SENIN				*i* Sg		**Sg**	**08 35 29.1**	**+0.2**
	5.9nm,0.2s							
ORO	**Oropa**	**0.80**	**96**	*e*PG		**Pg**	**08 35 20.5**	**-0.3**
ORO				SG		**Sg**	**08 35 30.4**	**-1.0**
	119nm,0.2s							
ORO	**Oropa**	**0.80**	**96**	*e*Pg		**Pg**	**08 35 20.5**	**-0.3**
ORO				*e*Sg		**Sg**	**08 35 30.4**	**-1.0**
RRL	**Cesana Torines**	**0.80**	**183**	⇓P		**Pb**	**08 35 21.7**	**+1.1**
RRL				S		**Sb**	**08 35 31.3**	**0.0**
MCGN	**Macugnaga**	**0.83**	**73**	*e*PG		**Pg**	**08 35 20.9**	**-0.6**
MCGN				SG		**Sg**	**08 35 31.8**	**-0.7**
MCGN	**Macugnaga**	**0.83**	**73**	*e*Pg		**Pg**	**08 35 20.9**	**-0.6**
MCGN				*e*Sg		**Sg**	**08 35 31.8**	**-0.7**
MMK	**Mattmark**	**0.85**	**66**	⇑*e*Pg		**Pg**	**08 35 21.1**	**-0.7**
	24nm,2.0s							
LKBD	**Leukerbad**	**0.86**	**38**	⇓*i*Pg		**Pg**	**08 35 22.2**	**+0.1**
	6.5nm,0.4s							
GIMEL	**Gimel**	**0.91**	**334**	⇑*i*Pg		**Pg**	**08 35 24.8**	**+1.7**
	14nm,0.2s							
BHB	**Bricherasio**	**0.92**	**162**	P		**Pb**	**08 35 23.7**	**+1.0**
BHB				S		**Sb**	**08 35 34.6**	**-0.4**
MBDF	**Montbardon**	**0.99**	**183**	*e*Pg		**Pg**	**08 35 25.4**	**+0.7**
	SNR=1.0							
MBDF				*e*Pn		**Pn**	**08 35 26.3**	**+1.3**
MBDF				*e*Sg		**Sg**	**08 35 38.1**	**+0.2**
	61nm,0.3s,SNR=1.0							
CABF	**La Chapelle**	**1.04**	**330**	*e*Pg		**Pg**	**08 35 26.8**	**+1.1**
	SNR=1.0							
CABF				*e*Pn		**Pn**	**08 35 27.2**	**+1.5**
CABF				*e*Sg		**Sg**	**08 35 40.4**	**+0.8**
CABF				*e*Sn		**Sn**	**08 35 41.7**	**+1.1**
	35nm,0.3s,SNR=1.0							
ORIF	**Oris-en-Rattie**	**1.05**	**221**	*e*Pg		**Pg**	**08 35 26.8**	**+0.9**
	SNR=1.0							
ORIF				*e*Pn		**Pn**	**08 35 27.5**	**+1.6**
ORIF				*e*Sg		**Sg**	**08 35 40.6**	**+0.7**
	58nm,0.2s,SNR=1.0							
ORIF				*e*Sn		**Sn**	**08 35 41.9**	**+1.0**
	SNR=1.0							
WIMIS	**Wimmis**	**1.09**	**29**	⇑*i*Pg		**Pg**	**08 35 27.0**	**+0.3**
	44nm,2.0s							
PZZ	**Prazzo**	**1.22**	**172**	P		**Pb**	**08 35 29.2**	**+1.3**
PZZ				S		**Sb**	**08 35 43.6**	**-0.1**
DOI	**San Damiano**	**1.24**	**167**	*e*PN		**Pn**	**08 35 29.2**	**+0.6**
DOI				SN		**Sn**	**08 35 46.1**	**+0.4**
	27nm,0.3s							
DOI	**San Damiano**	**1.24**	**167**	*e*Pg		**Pg**	**08 35 29.2**	**-0.5**
DOI				*e*Sg		**Sg**	**08 35 46.1**	**-0.2**
BRANT	**Les Verrieres**	**1.25**	**348**	⇑*e*P*		**Pb**	**08 35 30.9**	**+2.5**
	20nm,2.0s							
VAI	**Varese**	**1.35**	**83**	*e*PN		**Pn**	**08 35 30.7**	**+0.6**
VAI				SN		**Sn**	**08 35 47.0**	**-1.4**
	39nm,0.4s							
VAI	**Varese**	**1.35**	**83**	*e*Pg		**Pg**	**08 35 30.7**	**-1.1**
VAI				*e*Sg		**Sg**	**08 35 47.0**	**-2.8**
HASLI	**Hasliberg**	**1.38**	**40**	⇓*e*Pg		**Pg**	**08 35 32.4**	**0.0**
	36nm,2.0s							
FUSIO	**Fusio**	**1.46**	**59**	⇑*e*Pg		**Pg**	**08 35 32.8**	**-1.2**
	11nm,2.0s							
STV2	**Anna di Valdie**	**1.51**	**167**	P		**Pn**	**08 35 33.0**	**+0.6**
STV	**Sta Anna Valdi**	**1.51**	**167**	P		**Pn**	**08 35 32.8**	**+0.4**
STV				S		**Sb**	**08 35 50.5**	**-1.6**
ENR	**Entracque**	**1.54**	**165**	P		**Pn**	**08 35 33.5**	**+0.6**
ENR				S		**Sb**	**08 35 51.2**	**-1.8**
MUGIO	**Muggio**	**1.54**	**82**	⇑*i*P*		**Pb**	**08 35 34.0**	**+0.6**
	12nm,2.0s							
APL	**Alpnach**	**1.56**	**37**	⇑*i*Pn		**Pn**	**08 35 36.6**	**+3.4**
	32nm,0.2s							
BNALP	**Bannalp**	**1.59**	**43**	⇑*eP*		**Pb**	**08 35 35.6**	**+1.5**
	14nm,0.2s							
ROB	**Roburent**	**1.59**	**153**	P		**Pn**	**08 35 34.6**	**+1.0**
ROB				S		**Sb**	**08 35 52.9**	**-1.5**
LOMF	**Lomont**	**1.64**	**359**	Pg		**Pg**	**08 35 38.4**	**+0.9**
LOMF				Sg		**Sg**	**08 36 00.3**	**+1.0**
PCP	**Pian Castagno**	**1.68**	**134**	P		**Pn**	**08 35 38.4**	**+0.6**
PCP				S		**Sn**	**08 35 54.9**	**-1.8**
MONE	**Monesi**	**1.76**	**158**	P		**Pn**	**08 35 36.7**	**+0.8**
VIVF	**Saint-Julien-l**	**1.76**	**242**	*e*Pn		**Pn**	**08 35 36.9**	**+0.8**
VIVF				*e*Pg		**Pg**	**08 35 40.3**	**+0.2**
	SNR=1.0							
VIVF				*e*Sn		**Sn**	**08 35 58.8**	**-0.1**
	SNR=1.0							
VIVF				*e*Sg		**Sg**	**08 36 03.3**	**-0.3**
	25nm,0.3s							
FIN	**Finale Ligure**	**1.79**	**147**	P		**Pn**	**08 35 36.4**	**0.0**
BBS	**Basel-Blauen**	**1.81**	**14**	Pg		**Pg**	**08 35 40.8**	**-0.1**
BBS				Sg		**Sg**	**08 36 04.5**	**-0.5**
SBF	**Sospel**	**1.90**	**167**	*e*Pn		**Pn**	**08 35 38.4**	**+0.4**
SBF				*e*Pg		**Pg**	**08 35 41.8**	**-1.0**
	SNR=1.0							
SBF				*e*Sg		**Sg**	**08 36 06.0**	**-2.1**
	43nm,0.5s,SNR=1.0							
SMRF	**Simiane la Rot**	**1.96**	**208**	*e*Pn		**Pn**	**08 35 39.3**	**+0.4**
SMRF				*e*Pg		**Pg**	**08 35 43.0**	**-1.1**
	SNR=1.0							
SMRF				*e*Sg		**Sg**	**08 36 08.3**	**-1.9**
	14nm,0.3s							
NEGI	**Negi**	**1.96**	**162**	P		**Pn**	**08 35 38.8**	**-0.2**
HINF	**Hinteralfeld**	**2.10**	**0**	*e*Pn		**Pn**	**08 35 41.3**	**+0.4**
HINF				*e*Pg		**Pg**	**08 35 45.9**	**-0.9**
HINF				*e*Sn		**Sn**	**08 36 06.4**	**-1.2**
HINF				*e*Sg		**Sg**	**08 36 13.1**	**-1.8**
	20nm,0.2s,SNR=1.0							
MOF	**Molkenrain**	**2.15**	**5**	Pg		**Pg**	**08 35 46.4**	**-1.3**
FRF	**La Foret Royal**	**2.16**	**184**	*e*Pn		**Pn**	**08 35 41.9**	**+0.2**
	SNR=1.0							
FRF				*e*Pg		**Pg**	**08 35 46.7**	**-1.3**
	SNR=1.0							
FRF				*e*Sg		**Sg**	**08 36 15.0**	**-1.8**
	22nm,0.4s,SNR=1.0							
PLDF	**La Plantade**	**2.27**	**278**	Pn		**Pn**	**08 35 42.8**	**-0.6**
SMF	**Signal de Mont**	**2.29**	**295**	*e*Pn		**Pn**	**08 35 44.2**	**+0.6**
SMF				*e*Pg		**Pg**	**08 35 50.0**	**-0.6**
	SNR=1.0							
SMF				*e*Sn		**Sn**	**08 36 11.5**	**-0.8**
	SNR=1.0							
SMF				*e*Sg		**Sg**	**08 36 19.6**	**-1.5**
	25nm,0.2s,SNR=1.0							
FELD	**Feldberg**	**2.30**	**20**	Pg		**Pg**	**08 35 49.7**	**-1.1**
HAU	**Haudompre**	**2.32**	**352**	*e*Pn		**Pn**	**08 35 44.2**	**+0.2**
HAU				*e*Pg		**Pg**	**08 35 49.7**	**-1.4**
	SNR=1.0							
HAU				*e*Sn		**Sn**	**08 36 11.4**	**-1.6**
HAU				*e*Sg		**Sg**	**08 36 19.7**	**-2.3**
	19nm,0.3s,SNR=1.0							
LMR	**La Mourre**	**2.39**	**186**	*e*Pg		**Pg**	**08 35 51.1**	**-1.6**
LMR				*e*Sg		**Sg**	**08 36 21.4**	**-3.2**
	16nm,0.6s							
ECH	**Echery**	**2.51**	**5**	Pg		**Pg**	**08 35 55.6**	**+0.6**
THEF	**They Montfort**	**2.58**	**347**	Pg		**Pg**	**08 35 55.6**	**-0.8**
LBL	**Lubilhac**	**2.58**	**260**	Pn		**Pn**	**08 35 50.7**	**+2.9**
LBL				Pg		**Pg**	**08 35 56.7**	**+0.3**
AVF	**Avril sur Loir**	**2.66**	**295**	*e*Pn		**Pn**	**08 35 49.3**	**+0.5**
	SNR=1.0							
AVF				*e*Sn		**Sn**	**08 36 19.7**	**-1.9**
	SNR=1.0							
AVF				*e*Sg		**Sg**	**08 36 30.8**	**-2.5**
	17nm,0.4s,SNR=1.0							
SSF	**Saint Saulge**	**2.68**	**301**	*e*Pg		**Pg**	**08 35 57.2**	**-1.1**
	SNR=1.0							
SSF				*e*Sg		**Sg**	**08 36 31.1**	**-3.0**
	10nm,0.3s,SNR=1.0							
LASF	**Ste Croix**	**2.69**	**233**	*e*Pg		**Pg**	**08 35 57.0**	**-1.5**
LASF				*e*Sg		**Sg**	**08 36 31.8**	**-2.5**
	12nm,0.6s							
PYM	**Petit Puy Mans**	**2.69**	**272**	Pn		**Pn**	**08 35 50.9**	**+1.5**
CDF	**Champ du Feu**	**2.71**	**6**	*e*Pn		**Pn**	**08 35 49.9**	**+0.2**
	SNR=1.0							
CDF				*e*Pg		**Pg**	**08 35 57.4**	**-1.6**
	SNR=1.0							
CDF				*e*Sg		**Sg**	**08 36 32.1**	**-3.1**
	12nm,0.3s,SNR=1.0							
BGF	**Bois d'Agland**	**2.91**	**288**	*e*Pn		**Pn**	**08 35 53.3**	**+0.8**
	SNR=1.0							
BGF				*e*Sg		**Sg**	**08 36 38.7**	**-3.1**
	30nm,0.3s,SNR=1.0							
TCF	**Toulx Ste Croi**	**3.29**	**282**	*e*Sg		**Sg**	**08 36 51.0**	**-3.3**
	21nm,0.4s,SNR=1.0							
HYF	**Humbligny**	**3.30**	**300**	*e*Pn		**Pn**	**08 35 57.2**	**-0.8**
CAF	**Calviac**	**3.47**	**259**	*e*Pn		**Pn**	**08 36 00.5**	**+0.1**
	SNR=1.0							
CAF				*e*Sg		**Sg**	**08 36 56.3**	**-

mb1mx3.5/13,ML3.6/2,Error ellipse: s-maj=144.0km s-min=32.1km az=69.0
NEIC 17 09:23:52.6±1.3, 7.73S×129.27E, h145km, Error ellipse: s-maj=31.9km s-min=15.8km az=64.0
ISC 17 09:23:54.8±2.0, 8.0S±0.1×129.2E±0.1, h190km±23km, n7, σ0§62/13, mb3.1/1, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KAKA	**Kakadu**	**5.68**	**146**	*e*P	**P**	**09 25 17.8**	**-0.7**
	3.1nm,0.1s						
KAKA				*e*S	**S**	**09 26 23.4**	**-0.1**
FITZ	**Fitzroy Crossi**	**10.66**	**199**	*e*P	**P**	**09 26 24.9**	**+1.2**
	6.6nm,1.5s						
FITZ				*e*S	**S**	**09 28 19.6**	**-0.8**
WRA	**Warramunga Arr**	**12.92**	**158**	Pn	**P**	**09 26 52.5**	**0.0**
	0.4nm,0.3s,baz=345,slow=13,SNR=20						
WRA				Sn	**S**	**09 29 12.5**	**-0.2**
	1.3nm,0.3s,baz=332,slow=22,SNR=16						
WB2	**Warramunga Arr**	**12.93**	**158**	*e*P	**P**	**09 26 53.2**	**+0.6**
WB2				*e*S	**S**	**09 29 13.1**	**+0.4**
AS12	**Alice Springs**	**16.27**	**164**	*e*P	**P**	**09 27 40.7**	**+6.4**
	7.8nm,1.3s						
AS12				*e*S	**S**	**09 30 37.2**	**+8.9**
ASAR	**Alice Springs**	**16.27**	**164**	P	**P**	**09 27 38.3**	**+4.0**
	0.2nm,0.3s,baz=342,slow=11,SNR=12						
ASAR				S	**S**	**09 30 35.2**	**+6.9**
	0.3nm,0.3s,baz=343,slow=26,SNR=6.9						
MKAR	**Makanchi Array**	**68.58**	**327**	P	**P**	**09 34 38.7**	**-0.4**
	0.2nm,0.5s,mb3.1,baz=117,slow=6.4,SNR=5.2						

IDC 17 09:38:48.2±2.8, 2.65S×141.02E, mb3.7/4, mb1 3.9/5, mb1mx3.7/14, ML3.8/1, MS2.9/1, Ms1 2.9/1, ms1mx2.6/17, Error ellipse: s-maj=93.0km s-min=25.0km az=94.0
ISC 17 09:38:47.2±3.0, 2.7S±0.1×141.3E±0.7, h10km, n5, σ0§32/5, mb3.7/4, MS2.7/1, Near north coast of New Guinea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**18.39**	**201**	P	**P**	**09 43 04.2**	**0.0**
	0.3nm,0.3s,baz=20,slow=12,SNR=28						
FITZ	**Fitzroy Crossi**	**21.62**	**224**	P	**P**	**09 43 39.7**	**0.0**
	2.9nm,0.8s,mb3.8,baz=45,slow=8.6,SNR=4.3						
ASAR	**Alice Springs**	**21.99**	**198**	P	**P**	**09 43 43.2**	**-0.1**
	1.1nm,0.6s,mb3.5,baz=30,slow=11,SNR=16						
ASAR				LR	LR	09 51 31.2	
	comp=Z,32nm,20.3s,MS2.7,baz=207,slow=35						
MKAR	**Makanchi Array**	**71.37**	**322**	P	**P**	**09 50 09.1**	**-0.3**
	0.9nm,0.9s,mb3.7,baz=121,slow=8.4,SNR=5.4						
BVAR	**Borovoye Array**	**80.79**	**325**	P	**P**	**09 51 02.8**	**+0.4**
	0.8nm,0.6s,mb3.8,baz=108,slow=4.7,SNR=4.0						

ISC 17 09:40:05.0±0.7, 39.66N±0.04×29.32E±0.07, h10km, n6, σ0§92/9, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ULDT	**Uludag**	**0.50**	**344**	*i* P	**Pg**	**09 40 14.7**	**-0.4**
ULDT				*i* S	**Sg**	**09 40 22.5**	**+0.6**
YLV	**Yalova**	**0.91**	**3**	*e*PG	**Pg**	**09 40 22.8**	**-0.3**
KCT	**Karacabey**	**0.95**	**310**	*e*PG	**Pg**	**09 40 24.4**	**+0.3**
ESKT	**Eskisehir**	**1.19**	**96**	*e*PN	**Pn**	**09 40 26.5**	**-1.2**
ESKT	**Eskisehir**	**1.19**	**96**	*i* P	**Pb**	**09 40 26.2**	**-1.1**
ESKT				*i* S	**Sb**	**09 40 45.0**	**+2.4**
MANT	**Manisa**	**1.31**	**207**	*i* P	**Pb**	**09 40 29.5**	**+0.3**
MANT				*i* S	**Sb**	**09 40 46.1**	**+0.1**

BJI 17 09:51:44.7, 42.37N×88.19E, h14km, ML3.3
IDC 17 09:51:45.0±6.4, 42.90N×88.67E, mb3.6/3, mb1 3.8/4, mb1mx3.5/21, ML3.4/1, Error ellipse: s-maj=151.0km s-min=33.1km az=20.0
ISC 17 09:51:46.0±3.2, 42.3N±0.2×87.9E±0.2, h49km±22km, n6, σ0§70/9, mb3.5/3, 1C-3D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WMQ	**Urumqi**	**1.55**	**355**	⇓*i* PG	**P**	**09 52 11.5**	**-0.3**
WMQ				SG	**S**	**09 52 31.3**	**+0.4**
MK31	**Makanchi Array**	**6.03**	**320**	⇓Pn	**P**	**09 53 15.2**	**+0.4**
	0.6nm,0.3s,baz=135,slow=15,SNR=76						
MK31				⇓Sn	**S**	**09 54 23.8**	**+0.3**
	1.2nm,0.3s,baz=137,slow=26,SNR=3.9						
MK31				⇑Lg		09 54 49.3	
	2.8nm,0.4s,baz=134,slow=29,SNR=5.4						
MKAR	**Makanchi Array**	**6.03**	**320**	Pn	**P**	**09 53 14.7**	**-0.1**
	0.9nm,0.3s,baz=126,slow=12,SNR=52						
MKAR				Sn	**S**	**09 54 22.5**	**-1.0**
	1.5nm,0.3s,baz=127,slow=22,SNR=5.5						
MKAR				Lg		09 54 49.7	
	1.4nm,0.3s,baz=133,slow=28,SNR=5.0						
ARCES	**ARCESS Array B**	**41.55**	**332**	P	**P**	**09 59 31.0**	**+1.3**
	2.0nm,0.8s,mb3.8,baz=96,slow=8.2,SNR=7.8						
ILAR	**Eielson Array**	**65.04**	**23**	P	**P**	**10 02 21.6**	**-1.2**
	0.2nm,0.5s,mb3.4,baz=313,slow=4.8,SNR=5.9						
YKA	**Yellowknife Ar**	**74.03**	**11**	P	**P**	**10 03 17.8**	**+0.2**
	0.2nm,0.4s,mb3.4,baz=339,slow=5.8,SNR=9.9						

JMA 17 09:52:02.1±0.2, 24.80N×122.14E, h109km, M2.5
TAP 17 09:52:02.0, 24.88N×122.13E, h105km±1km, ML3.5
ISC 17 09:52:01.6±2.6, 24.9N±0.4×122.1E±0.2, h105km±32km, n6, σ0§18/10, Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
YOJ	**Yonaguni jima**	**0.91**	**116**	P	**P**	**09 52 22.0**	**+0.2**
YOJ				*e*S	**S**	**09 52 36.8**	**-0.1**
IRIF	**Iriomote-Funau**	**1.56**	**109**	P	**P**	**09 52 29.1**	**-0.3**
IRIF				*e*S	**S**	**09 52 50.1**	**0.0**
HATJ	**Hateruma jima**	**1.74**	**117**	*e*S	**S**	**09 52 53.8**	**-0.1**
JKRS	**Kuro-shima**	**1.84**	**109**	P	**P**	**09 52 33.0**	**+0.2**
JKRS				*e*S	**S**	**09 52 56.3**	**+0.3**
JIJ	**Ishigaki jima**	**1.92**	**105**	P	**P**	**09 52 33.6**	**-0.2**
JIJ				*e*S	**S**	**09 52 57.6**	**-0.1**
JTJ	**Tarama**	**2.37**	**95**	*e*S	**S**	**09 53 08.5**	**0.0**

DJA 17 10:08:44.4±0.8, 8.28S×116.07E, h5km±6km, MD4.7/2, ML4.1/1, 2D, Error ellipse: s-maj=15.9km s-min=13.3km az=27.0, Sumbawa region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KEDI	**Kedomdong**	**0.21**	**168**	⇓*i* Pg	Pg	10 08 48.7	-0.1
	476nm,0.2s						
KEDI				*e*Sg	Sg	10 08 51.2	-0.5
RATI	**Rata**	**0.69**	**230**	⇓*e*Pg	Pg	10 08 56.1	-2.1
	246nm,0.2s						
RATI				*e*Sg	Sg	10 09 07.1	-0.3
INGI	**Ingas**	**1.06**	**239**	*e*Pn	Pn	10 09 02.8	-2.9
	293nm,0.3s						
INGI				*e*Sn	Sn	10 09 16.0	-4.9
KELI	**Kelakatan**	**1.56**	**272**	*e*Pn	Pn	10 09 10.4	-2.5

MEX 17 10:12:15.1±0.7, 16.13N×94.09W, h88km±25km, MD3.9, Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CMIG	**Matias Romero**	**1.22**	**322**	*i* P	P	10 12 36.0	-1.6
CMIG				*i* S	S	10 12 52.2	-2.3
CCIG	**Comitan**	**1.88**	**85**	*i* P	P	10 12 46.0	-0.2
CCIG				*i* S	S	10 13 07.6	-1.5
HUIG	**Huatulco**	**1.97**	**260**	*i* P	P	10 12 45.2	-2.2
HUIG				*i* S	S	10 13 10.0	-1.2
OXX	**Oaxaca**	**2.69**	**291**	*i* P	P	10 12 57.0	-0.4

IDC 17 10:17:34.5±24.0, 45.90N×150.84E, mb3.3/3, mb1 3.7/3, mb1mx3.4/23, Error ellipse: s-maj=671.0km s-min=152.0km az=81.0, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
YKA	**Yellowknife Ar**	**52.54**	**36**	P	P	10 26 49.0	-2.2
	0.1nm,0.5s,baz=299,slow=6.7,SNR=3.9						
PDAR	**Pinedale Array**	**66.52**	**52**	P	P	10 28 26.0	-1.9
	0.3nm,0.6s,baz=270,slow=1.5,SNR=4.4						
TXAR	**Lajitas Array**	**79.28**	**59**	P	P	10 29 42.2	-1.0
	0.3nm,0.6s,baz=305,slow=3.1,SNR=4.4						

IDC 17 10:46:33.2±4.6, 35.44N×70.87E, mb3.8/3, mb1 3.8/5, mb1mx3.5/21, ML3.3/2, Error ellipse: s-maj=93.3km s-min=51.0km az=150.0
NEIC 17 10:46:47.5±2.7, 36.08N×70.96E, h82km±26km, Error ellipse: s-maj=32.3km s-min=7.0km az=67.0
NNC 17 10:46:55.4±10.0, 36.95N×69.73E, mpv3.9, Error ellipse: s-maj=115.4km s-min=93.1km az=139.0
ISC 17 10:46:45.6±2.3, 36.03N±0.1×70.8E±0.2, h84km±21km, n24, σ0§56/26, mb3.5/2, 1C-2D, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AML	**Almayashu**	**6.49**	**19**	P	**P**	**10 48 20.7**	**+0.3**
	SNR=23						
UCH	**Uchtor**	**6.83**	**24**	P	**P**	**10 48 25.4**	**+0.4**
	SNR=9.6						
KZA	**Kyzart**	**6.96**	**28**	P	**P**	**10 48 27.4**	**+0.5**
	SNR=13						
EKS2	**Erkin-Say**	**7.01**	**18**	P	**P**	**10 48 27.8**	**+0.2**
	SNR=7.5						
KK31	**Karatay Array**	**7.07**	**358**	⇓P	**P**	**10 48 27.7**	**-0.6**
	4.2nm,0.3s,baz=184,slow=14,SNR=75						
KK31				⇓S	**S**	**10 49 41.1**	**-6.6**
	2.0nm,0.3s,baz=220,slow=77,SNR=4.6						
AAK	**Ala-Archa**	**7.19**	**22**	P	**P**	**10 48 30.4**	**+0.4**
	SNR=11						
CHMS	**Chumysh**	**7.60**	**22**	P	**P**	**10 48 36.2**	**+0.6**
	SNR=6.2						
USP	**Ospenovka**	**7.77**	**20**	P	**P**	**10 48 37.8**	**-0.1**
	SNR=7.8						
TKM2	**Tokmak 2**	**7.81**	**27**	P	**P**	**10 48 38.3**	**-0.2**
	SNR=9.8						
KOLN	**Koldanda**	**13.63**	**124**	*e*P	**P**	**10 49 57.1**	**+0.6**
	3.1nm,0.3s						
MKAR	**Makanchi Array**	**13.77**	**35**	Pn	**P**	**10 49 57.4**	**-0.7**
	0.1nm,0.3s,baz=225,slow=12,SNR=2.7						
GKN	**Gorkha**	**14.20**	**120**	*e*P	**P**	**10 50 04.1**	**+0.3**
	8.5nm,0.3s						
DMN	**Daman**	**14.77**	**121**	*e*P	**P**	**10 50 11.3**	**+0.1**
	4.5nm,0.3s						
KKN	**Kakani**	**14.78**	**120**	*e*P	**P**	**10 50 11.0**	**-0.4**
	2.8nm,0.2s						
PKI	**Pulchoki**	**15.00**	**120**	*e*P	**P**	**10 50 13.4**	**-0.8**
	3.1nm,0.3s						
AB31	**Akbulak array**	**15.42**	**332**	P	**P**	**10 50 18.5**	**-0.9**
	3.2nm,0.4s,baz=153,slow=12,SNR=41						
AB31				⇑S	**S**	**10 52 55.0**	**-13**
	0.9nm,0.4s,baz=156,slow=22,SNR=7.0						
KURK	**Kurchatov**	**15.72**	**19**	P	**P**	**10 50 22.9**	**-0.3**
ZRNK	**Zerenda**	**16.96**	**356**	*e*P	**P**	**10 50 39.1**	**+0.4**
BVAR	**Borovoye Array**	**16.99**	**359**	P	**P**	**10 50 38.7**	**-0.4**
	0.3nm,0.3s,baz=191,slow=7.3,SNR=3.7						
ZAL	**Zalesovo**	**20.39**	**24**	P	**P**	**10 51 16.7**	**-1.0**
	2.7nm,0.4s,baz=142,slow=4.4,SNR=5.1						
ZAL	**Zalesovo**	**20.39**	**24**	P	**P**	**10 51 16.7**	**-1.0**
ARCES	**ARCESS Array B**	**41.52**	**338**	P	**P**	**10 54 26.6**	**+1.1**
	1.7nm,0.9s,mb3.8,baz=114,slow=8.9,SNR=5.2						
YKA	**Yellowknife Ar**	**81.72**	**3**	P	**P**	**10 58 56.2**	**+0.5**
	0.2nm,0.4s,mb3.3,baz=349,slow=5.4,SNR=9.4						
YKA	**Yellowknife Ar**	**81.72**	**3**	P	**P**	**10 58 56.2**	**+0.5**

IDC 17 10:47:28.4±4.6, 5.57S×131.39E, h244km±63km, mb3.1/1, mb1 3.3/3, mb1mx3.1/13, 1D, Error ellipse: s-maj=278.0km s-min=15.0km az=76.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KAKA	**Kakadu**	**7.15**	**172**	⇓*i* P	P	10 49 07.0	-4.5
	15nm,0.5s						
KAKA				*e*S	S	10 50 23.5	-8.8
WRA	**Warramunga Arr**	**14.57**	**169**	P	P	10 50 41.6	-3.4
	0.3nm,0.3s,baz=352,slow=13,SNR=13						
WRA				S	S	10 53 17.7	-2.7
	0.5nm,0.3s,baz=351,slow=23,SNR=6.5						
WB2	**Warramunga Arr**	**14.57**	**169**	*e*P	P	10 50 41.7	-3.3
WB2				*e*S	S	10 53 19.3	-1.2
AS12	**Alice Springs**	**18.15**	**173**	*e*P	P	10 51 26.0	+0.8
	2.9nm,0.5s						
ASAR	**Alice Springs**	**18.15**	**173**	P	P	10 51 23.9	-1.2
	0.4nm,0.3s,baz=343,slow=9.4,SNR=36						
ASAR				S	S	10 54 38.8	+3.1
	0.2nm,0.3s,baz=348,slow=16,SNR=12						
MKAR	**Makanchi Array**	**67.81**	**326**	P	P	10 58 00.1	-1.8
	0.3nm,0.5s,baz=122,slow=8.0,SNR=5.5						

KRSC 17 10:52:31.0±1.0, 49.70N×156.69E, h59km±29km, ML4.0
ISC 17 10:52:32.0±1.3, 49.75N±0.08×156.7E±0.2, h54km±37km, n22, σ0§98/32, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SKR	**Severo-Kuril's**	**1.02**	**337**	*e*P	**P**	**10 52 49.4**	**-0.9**
SKR				*i* S	**S**	**10 53 02.9**	**-1.0**
ALID	**Alaid**	**1.36**	**326**	*e*P	**P**	**10 52 54.5**	**-0.7**
ALID				*i* S	**S**	**10 53 11.9**	**-0.5**
PAU	**Pauzhetka**	**1.72**	**1**	*e*P	**P**	**10 53 01.2**	**+1.0**
PAU				*i* S	**S**	**10 53 22.1**	**+1.0**
PAU				Smax			
	860nm,0.2s						
MIPR	**Malaya Ipel'ka**	**2.53**	**0**	*e*P	**P**	**10 53 11.8**	**+0.1**
MIPR				*e*S	**S**	**10 53 41.4**	**0.0**
RUS	**Russkaya**	**2.91**	**22**	*i* P	**P**	**10 53 17.0**	**0.0**
RUS				*i* S	**S**	**10 53 50.0**	**-1.0**
GRL	**Gorelyy**	**2.93**	**16**	*i* P	**P**	**10 53 18.3**	**+1.0**
GRL				*i* S	**S**	**10 53 52.8**	**+1.3**
APC	**Apacha**	**3.19**	**5**	*e*P	**P**	**10 53 22.2**	**+1.2**
KRMR	**Karymshinskiy**	**3.21**	**15**	*e*	Px	10 53 38.0	
PET	**Petropavlovsk**	**3.49**	**19**	*i* P	**P**	**10 53 25.7**	**+0.5**
PET				*e*S	**S**	**10 54 05.8**	**+0.1**
UGLR	**Uglovaya**	**3.70**	**20**	*i* P	**P**	**10 53 28.9**	**+0.7**
AVH	**Avacha**	**3.74**	**19**	*i* P	**P**	**10 53 29.9**	**+1.2**
AVH				*e*S	**S**	**10 54 12.9**	**+1.1**
KOK	**Koryaka**	**3.74**	**18**	*i* P	**P**	**10 53 30.1**	**+1.4**
SMAR	**Somma**	**3.75**	**19**	*e*P	**P**	**10 53 29.6**	**+0.8**
SDLR	**Sedlovina**	**3.78**	**20**	*i* P	**P**	**10 53 29.5**	**+0.2**
NLC	**Nalytchevo**	**3.80**	**24**	*e*P	**P**	**10 53 28.3**	**-1.2**
SPN	**Mys Shipunski**	**3.93**	**30**	*i* P	**P**	**10 53 31.3**	**-0.1**
SPN				*e*S	**S**	**10 54 15.5**	**-1.3**
GNL	**Ganaly**	**4.02**	**10**	*i* P	**P**	**10 53 33.3**	**+0.6**
KII	**Karymskiy**	**4.61**	**20**	*e*P	**P**	**10 53 40.4**	**-0.6**
KII				*e*S	**S**	**10 54 32.2**	**-1.6**
MKZ	**Mys Kozlova**	**5.71**	**31**	*e*P	**P**	**10 53 54.3**	**-1.9**
MKZ				*e*S	**S**	**10 54 56.0**	**-5.3**
TUMR	**Tumrok**	**5.92**	**19**	*e*P	**P**	**10 53 59.2**	**0.0**
KMNR	**Kamenistaya**	**6.38**	**18**	*e*P	**P**	**10 54 05.4**	**-0.3**
KBTR	**Krutoberegovo**	**7.44**	**27**	*e*P	**P**	**10 54 18.1**	**-2.3**

IDC 17 10:59:26.4±1.8, 19.50S×179.31E, mb3.4/3, mb1 3.8/4, mb1mx3.6/13, ML4.3/1, Error ellipse: s-maj=50.3km s-min=34.8km az=129.0
ISC 17 10:59:29.8±1.8, 19.6S±0.2×179.3E±0.3, h33km, n4, σ0§44/4, mb3.2/3, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**18.66**	**185**	P	**P**	**11 03 47.4**	**0.0**
	0.9nm,0.3s,baz=340,slow=12,SNR=6.5						
WRA	**Warramunga Arr**	**42.20**	**262**	P	**P**	**11 07 21.3**	**-0.3**
	0.2nm,0.3s,mb3.2,baz=98,slow=6.3,SNR=16						
ASAR	**Alice Springs**	**42.24**	**256**	P	**P**	**11 07 22.2**	**+0.3**
	0.2nm,0.5s,mb3.0,baz=88,slow=7.5,SNR=6.8						
ILAR	**Eielson Array**	**88.06**	**14**	P	**P**	**11 12 17.6**	**0.0**
	0.2nm,0.7s,mb3.4,baz=194,slow=3.7,SNR=3.1						

IDC 17 11:10:20.3±47.0, 15.49S×172.68W, mb3.9/3, mb1 4.1/3, mb1mx3.6/15, Error ellipse: s-maj=913.0km s-min=177.1km az=79.0, Samoa Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**44.59**	**240**	P	P	11 18 34.6	-1.6
	2.7nm,1.0s,baz=83,slow=17,SNR=3.4						
WRA	**Warramunga Arr**	**50.50**	**257**	P	P	11 19 20.6	-2.0
	0.3nm,0.5s,baz=94,slow=7.0,SNR=12						
ASAR	**Alice Springs**	**50.74**	**252**	P	P	11 19 22.1	-2.2
	3.2nm,0.6s,baz=88,slow=8.2,SNR=56						

IDC 17 11:16:31.0±58.0, 18.86S×178.11E, mb4.1/3, mb1 4.3/3, mb1mx3.9/12, Error ellipse: s-maj=1041.0km s-min=149.5km az=79.0, Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**35.27**	**241**	P	P	11 23 27.6	-1.9
	14nm,1.3s,baz=82,slow=7.1,SNR=2.9						
WRA	**Warramunga Arr**	**41.21**	**261**	P	P	11 24 18.2	-1.1
	0.5nm,0.3s,baz=96,slow=7.8,SNR=29						
ASAR	**Alice Springs**	**41.35**	**255**	P	P	11 24 18.6	-1.7
	0.7nm,0.4s,baz=85,slow=7.9,SNR=19						

NEIC 17 11:17:48.0, 35.29N×4.23W, MG3.5(MDD), After MDD.
MDD 17 11:17:48.3±1.3, 35.32N×4.23W, mb3.3/6, Error ellipse: s-maj=13.7km s-min=6.5km az=19.0, PRXIMO AftershockPLICA, Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
EMEL	**Melilla**	**1.04**	**91**	P	Pb	11 18 07.6	-1.3
	73nm,0.1s,SNR=4.7						
EMEL				S	Sb	11 18 20.4	-2.5
	192nm,0.2s						
EJIF	**Jimena Fronter**	**1.52**	**319**	P	Pn	11 18 15.7	-1.1
	1.8nm,0.2s,SNR=7.9						
EJIF				S	Sb	11 18 33.7	-3.0
	7.2nm,0.2s,SNR=4.0						
EJIF	**Jimena Fronter**	**1.52**	**319**	P	Pn	11 18 15.5	-1.3
EJIF				S	Sb	11 18 36.3	-0.4
ERON	**Agron**	**1.73**	**11**	P	Pn	11 18 18.1	-1.8
	2.3nm,0.2s,SNR=7.9						
ERON				S	Sb	11 18 40.3	-2.7
	4.6nm,0.2s,SNR=7.9						
ERON	**Agron**	**1.73**	**11**	P	Pn	11 18 18.7	-1.2
ERON				S	Sb	11 18 40.3	-2.7
ELOJ	**Sierra Loja**	**1.83**	**2**	P	Pn	11 18 19.8	-1.4
	1.2nm,0.2s,SNR=4.0						
ELOJ				S	Sn	11 18 44.3	-1.2
	5.8nm,0.4s,SNR=7.9						
ELOJ	**Sierra Loja**	**1.83**	**2**	P	Pn	11 18 19.2	-2.0
ELOJ				S	Sn	11 18 44.0	-1.4
ELIJ	**Sierra de Lija**	**1.85**	**330**	P	Pn	11 18 20.6	-0.9
	0.8nm,0.2s,SNR=8.1						
ELIJ	**Sierra de Lija**	**1.85**	**330**	P	Pn	11 18 20.8	-0.8
ELIJ				S	Sn	11 18 44.1	-1.8
EBER	**Berja**	**1.91**	**34**	S	Sn	11 18 43.5	-4.1
	12nm,0.3s						
EBER	**Berja**	**1.91**	**34**	P	Pn	11 18 20.3	-2.1
EBER				S	Sn	11 18 46.4	-1.3
ECOG	**Cogollos-Vega**	**2.03**	**15**	P	Pn	11 18 22.2	-1.9
	1.7nm,0.3s,SNR=4.0						
ECOG	**Cogollos-Vega**	**2.03**	**15**	P	Pn	11 18 21.9	-2.2
ECOG				S	Sn	11 18 49.3	-1.2
EQES	**Quesada**	**2.65**	**20**	P	Pn	11 18 32.1	-0.9
	2.8nm,0.1s,SNR=7.9						
EQES				S	Sn	11 19 03.3	-3.0
	9.0nm,0.2s,SNR=7.9						
EQES	**Quesada**	**2.65**	**20**	P	Pn	11 18 31.9	-1.1
EQES				S	Sn	11 19 03.0	-3.3
EHUE	**Huescar**	**2.82**	**27**	P	Pn	11 18 34.7	-0.8
	0.8nm,0.1s,SNR=4.0						
EHUE	**Huescar**	**2.82**	**27**	P	Pn	11 18 34.2	-1.2
EHUE				S	Sn	11 19 06.8	-3.9
EADA	**Adamuz**	**2.86**	**354**	P	Pn	11 18 34.7	-1.3
	1.3nm,0.1s,SNR=5.8						
EADA				S	Sn	11 19 08.0	-3.6
	2.0nm,0.2s						
EADA	**Adamuz**	**2.86**	**354**	P	Pn	11 18 34.5	-1.4
EADA				S	Sn	11 19 08.4	-3.2
ECAB	**El Cabril**	**2.91**	**341**	P	Pn	11 18 34.2	-2.6
	0.3nm,0.1s,SNR=7.9						
ECAB				S	Sn	11 19 08.7	-4.3
	6.1nm,0.3s,SNR=7.6						
EMIN	**Mina Concepcio**	**3.14**	**322**	P	Pn	11 18 37.0	-3.0
	0.7nm,0.1s,SNR=8.5						
EMIN				S	Sn	11 19 13.0	-5.7
	0.7nm,0.2s						
EMIN	**Mina Concepcio**	**3.14**	**322**	P	Pn	11 18 37.9	-2.1
EMIN				S	Sn	11 19 13.7	-5.0
EGRO	**El Granado**	**3.43**	**311**	P	Pn	11 18 40.7	-3.4
	1.5nm,0.1s,SNR=7.9						
EGRO				S	Sn	11 19 21.4	-4.7
	2.5nm,0.2s,SNR=7.9						
EGRO	**El Granado**	**3.43**	**311**	P	Pn	11 18 40.6	-3.5
EGRO				S	Sn	11 19 21.0	-5.1
EBAD	**Badajoz**	**4.09**	**328**	P	Pn	11 18 51.0	-2.5
	0.5nm,0.1s,SNR=7.9						
EBAD				S	Sn	11 19 36.2	-6.6
	8.2nm,0.3s,SNR=7.9						
EBAD	**Badajoz**	**4.09**	**328**	P	Pn	11 18 50.4	-3.1
EBAD				S	Sn	11 19 36.2	-6.6
ECAL	**Calabor**	**6.90**	**344**	P	Pn	11 19 30.2	-3.0
	0.5nm,0.2s,SNR=7.9						
ECAL				S	Sn	11 20 45.4	-8.0
	0.8nm,0.2s,SNR=7.9						
ECAL	**Calabor**	**6.90**	**344**	P	Pn	11 19 29.6	-3.5
ECAL				S	Sn	11 20 43.8	-10

ISC 17 11:19:11.4±0.7, 39.71N±0.04×29.41E±0.06, h10km, n6, σ0§95/9, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ULDT	**Uludag**	**0.48**	**334**	*i* P	**Pg**	**11 19 20.1**	**-0.9**
ULDT				*i* S	**Sg**	**11 19 28.8**	**+1.3**
YLV	**Yalova**	**0.85**	**358**	PG	**Pg**	**11 19 27.8**	**-0.7**
KCT	**Karacabey**	**0.98**	**305**	*e*PG	**Pg**	**11 19 30.8**	**-0.2**
ESKT	**Eskisehir**	**1.13**	**99**	*e*PN	**Pn**	**11 19 33.0**	**+0.3**
ESKT	**Eskisehir**	**1.13**	**99**	*i* P	**Pb**	**11 19 31.5**	**-1.1**
ESKT				*i* S	**Sb**	**11 19 48.3**	**+1.1**
MANT	**Manisa**	**1.39**	**209**	*e*P	**Pn**	**11 19 38.5**	**+1.6**
MANT				*i* S	**Sb**	**11 19 54.1**	**-0.5**

**IDC 17 11:36:54.8±50.0, 16.39S×176.35W, mb4.0/3, mb1 4.2/3, mb1mx3.7/13, Error ellipse: s-maj=927.0km s-min=170.3km az=78

SLNF			⇓S	**Sn**	**11 59 19.9**	**+0.3**
HMDT	**Nahal Hemdat**	**1.86 212**	Pn	**Pn**	**11 58 57.4**	**+0.2**
ARNB	**Al Arnab**	**2.10 344**	⇑P	**Pn**	**11 59 01.1**	**+0.5**
ARNB			⇑S	**Sn**	**11 59 26.5**	**-1.0**
SLTI	**Sal'it**	**2.12 221**	Pn	**Pn**	**11 59 01.0**	**+0.2**
SLTI			Sn	**Sn**	**11 59 29.5**	**+1.7**
DRGI	**Dragot**	**2.50 206**	Pn	**Pn**	**11 59 06.7**	**+0.4**

ISC 17 12:07:29.2±0.8,**39.75N**±0.05×**29.42E**±0.07,**h10**km,**n6,** σ1⁰**42**/9,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ULDT	**Uludag**	**0.45**	**331**	*i* P	**Pg**	**12 07 38.1**	**-0.2**
ULDT				*i* S	**Sg**	**12 07 46.3**	**+1.9**
YLV	**Yalova**	**0.82**	**358**	*e*PG	**Pg**	**12 07 45.0**	**-0.6**
KCT	**Karacabey**	**0.96**	**303**	*i* PG	**Pg**	**12 07 47.5**	**-1.0**
ESKT	**Eskisehir**	**1.13**	**101**	*e*PN	**Pn**	**12 07 49.3**	**-1.7**
ESKT	**Eskisehir**	**1.13**	**101**	*i* P	**Pb**	**12 07 50.5**	**+0.2**
ESKT				*i* S	**Sb**	**12 08 08.5**	**+3.6**
MANT	**Manisa**	**1.42**	**208**	*i* P	**Pn**	**12 07 53.8**	**-1.4**
MANT				*i* S	**Sb**	**12 08 15.0**	**+1.6**

*NSSC **17** 12:12:07.2, 33.82N×36.63E, h14km±2km*
*GRAL **17** 12:12:07.1±15.0, 33.81N×36.72E, h15km±999km, MD2.7*
ISC 17 12:12:07.1±1.3,**33.82N**±0.03×**36.63E**±0.09,**h14**km,**n7,** σ0⁰**48**/14,**6D,Jordan - Syria region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MARH	**Ras Al Marh**	**0.23**	**330**	⇓P	**Pg**	**12 12 12.5**	**+0.1**
MARH				⇓S	**Sg**	**12 12 16.8**	**+0.9**
QASN	**Qassioun**	**0.41**	**225**	⇓P	**Pb**	**12 12 15.6**	**-0.1**
QASN				⇓S	**Sg**	**12 12 21.4**	**0.0**
TOTH	**TOTAH**	**0.49**	**200**	⇓P	**Pb**	**12 12 16.3**	**-0.6**
TOTH				⇓S	**Sb**	**12 12 24.2**	**+0.5**
BRBR	**Barbar**	**0.70**	**234**	⇑P	**Pb**	**12 12 20.9**	**+0.4**
BRBR				⇑S	**Sb**	**12 12 30.1**	**+0.4**
HWQ	**Hawqa**	**0.72**	**309**	*i* PG	**Pg**	**12 12 21.0**	**-0.8**
HWQ				*i* SG	**Sg**	**12 12 31.7**	**+0.2**
BHL	**Bhannes** baz=25,slow=7.9	**0.81**	**276**	*i* PG	**Pg**	**12 12 22.6**	**-0.9**
BHL				*i* SG	**Sg**	**12 12 34.1**	**-0.3**
TCHB	**Talchebab**	**1.28**	**206**	⇑P	**Pb**	**12 12 30.5**	**+0.1**
TCHB				⇑S	**Sb**	**12 12 46.6**	**0.0**

KRSC 17 12:24:24.3±0.4,**53.00N**×**154.82E,h499**km±8km,**ML3.8, Sea of Okhotsk**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIPR	**Malaya Ipel'ka**	**1.39**	**121**	*e*P	P	12 25 26.5	-0.6
APC	**Apacha**	**1.42**	**92**	*i* P	P	12 25 26.5	-0.7
GNL	**Ganaly**	**2.00**	**68**	*i* P	P	12 25 29.3	-0.5
GNL				*e*S	S	12 26 16.7	-4.9
GRL	**Gorelyy**	**2.03**	**101**	*e*P	P	12 25 30.0	+0.1
PET	**Petropavlovsk**	**2.32**	**88**	*e*P	P	12 25 31.6	+0.1
PET				*e*S	S	12 26 21.1	-3.6
RUS	**Russkaya**	**2.32**	**103**	*e*P	P	12 25 31.1	-0.4
RUS				*e*S	S	12 26 19.9	-4.8
AVH	**Avacha**	**2.38**	**82**	*e*P	P	12 25 32.1	+0.2
AVH				*e*S	S	12 26 21.3	-4.0
SMAR	**Somma**	**2.41**	**82**	*e*P	P	12 25 32.8	+0.7
UGLR	**Uglovaya**	**2.42**	**83**	*e*P	P	12 25 32.8	+0.6
SDLR	**Sedlovina**	**2.46**	**82**	*e*P	P	12 25 32.5	+0.1
SPN	**Mys Shipunski**	**3.14**	**86**	*e*P	P	12 25 36.2	-0.6
SPN				*e*S	S	12 26 29.0	-5.1
ESO	**Esso**	**3.70**	**36**	*i* P	P	12 25 40.8	-0.1
KMNR	**Kamenistaya**	**4.20**	**47**	*e*P	P	12 25 45.1	+0.2
KMNR				*e*S	S	12 26 43.8	-5.0
MKZ	**Mys Kozlova**	**4.38**	**66**	*e*P	P	12 25 45.9	-0.6
MKZ				*e*S	S	12 26 45.3	-6.3

*IDC **17** 12:31:23.7±1.1, 7.26N×125.28E, mb3.8/6, mb1 4.0/6, mb1mx3.7/20, MS3.1/1, Ms1 3.1/1, ms1mx2.6/23, Error ellipse: s-maj=66.9km s-min=20.3km az=75.0*
*MAN **17** 12:31:25.4, 7.67N×126.12E, h1km, mb4.7, ML3.5, MS3.4*
*NEIC **17** 12:31:33.0±0.8, 7.25N×125.40E, h70km, mb4.0/2, Error ellipse: s-maj=48.8km s-min=13.8km az=78.0*
ISC 17 12:31:22.8±0.6,**7.51N**±0.03×**126.35E**±0.05,**h1**km,**n19,** σ0⁰**95**/23,**mb3.8**/7,**MS3.0**/1,**5C-2D,Mindanao**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BIPH	**Bislig**	**0.67**	**1**	⇓*i*P	**Pg**	**12 31 36.0**	**-0.2**
BIPH				*i* S	**Sg**	**12 31 45.4**	**+0.2**
DMPH	**Davao City--Mi**	**0.94**	**243**	*e*P	**Pg**	**12 31 42.4**	**+0.9**
DMPH				*e*S	**Sg**	**12 31 57.8**	**+3.8**
KCP	**Kidapawan**	**1.34**	**248**	⇑*i*P	**Pb**	**12 31 48.5**	**0.0**
KCP				*i* S	**Sb**	**12 32 06.8**	**+0.7**
BUTP	**Butuan**	**1.62**	**334**	⇑*e*P	**Pn**	**12 31 52.6**	**-0.1**
BUTP				*e*S	**Sb**	**12 32 14.8**	**+0.6**
GSPH	**General Santos**	**1.98**	**225**	⇑*i*P	**Pn**	**12 31 57.1**	**-0.7**
CTBH	**Cotabato--PC H**	**2.10**	**262**	⇓*i*P	**Pn**	**12 31 59.2**	**-0.4**
CTBH				*i* S	**Sn**	**12 32 27.0**	**+0.2**
PAGZ	**Pagadian**	**2.96**	**277**	⇑*e*P	**Pn**	**12 32 10.8**	**-1.0**
TBP	**Tagbilaran**	**3.28**	**312**	*e*P	**Pn**	**12 32 14.3**	**-2.1**
SNPH	**Sibulan**	**3.58**	**301**	*e*P	**Pn**	**12 32 20.0**	**-0.6**
BESP	**Borongan**	**4.17**	**348**	⇑*e*P	**Pn**	**12 32 29.5**	**+0.5**
KAKA	**Kakadu** 7.2nm,0.6s	**20.96**	**163**	*e*P	**P**	**12 36 10.7**	**+0.8**
FITZ	**Fitzroy Crossi** 3.9nm,1.0s,mb4.1	**25.46**	**182**	*e*P	**P**	**12 36 53.9**	**-0.3**
WRA	**Warramunga Arr** 0.6nm,0.8s,mb3.5,baz=342,slow=8.8,SNR=9.0	**28.39**	**164**	P	**P**	**12 37 20.3**	**-0.8**
ASAR	**Alice Springs** 0.5nm,0.4s,mb3.8,baz=342,slow=7.4,SNR=14	**31.85**	**167**	P	**P**	**12 37 51.3**	**-0.5**
ASAJ	**Asahikawa** comp=Z,22nm,19.3s,MS3.0,baz=160,slow=33	**39.13**	**19**	LR	LR	12 53 08.5	
STKA	**Stephens Creek** 2.7nm,0.6s,mb4.2,baz=331,slow=5.7,SNR=6.4	**41.78**	**160**	P	**P**	**12 39 15.9**	**+0.2**
MKAR	**Makanchi Array** 1.2nm,0.6s,mb4.1,baz=124,slow=8.5,SNR=8.3	**54.27**	**324**	P	**P**	**12 40 48.5**	**-4.3**
ILAR	**Eielson Array** 0.1nm,0.6s,mb3.2,baz=238,slow=5.6,SNR=5.1	**81.88**	**26**	P	**P**	**12 43 48.0**	**+3.0**
INK	**Inuvik** 0.4nm,0.5s,mb3.9,baz=329,slow=4.5,SNR=4.5	**86.81**	**22**	P	**P**	**12 44 13.1**	**+3.3**

*NNC **17** 12:33:06.3±15.0, 37.95N×70.53E, h41km±999km, mpv4.5, Error ellipse: s-maj=367.5km s-min=96.1km az=110.0*
ISC 17 12:32:49.3±1.3,**37.08N**±0.07×**71.8E**±0.2,**h33**km,**n16,** σ1⁰**02**/18,**1C-2D,Afghanistan-Tajikistan border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AML	**Almayashu** SNR=43	**5.26**	**16**	P	**P**	**12 34 07.8**	**+0.2**
UCH	**Uchtor** SNR=26	**5.56**	**21**	P	**P**	**12 34 12.0**	**+0.2**
KZA	**Kyzart** SNR=20	**5.67**	**27**	P	**P**	**12 34 12.8**	**-0.5**
EKS2	**Erkin-Say** SNR=38	**5.78**	**15**	P	**P**	**12 34 15.0**	**+0.1**
AAK	**Ala-Archa** SNR=37	**5.93**	**20**	P	**P**	**12 34 17.3**	**+0.3**
KBK	**Karagaybulak** SNR=7.2	**6.08**	**23**	P	**P**	**12 34 19.9**	**+0.8**
KK31	**Karatay Array** 35nm,0.6s,baz=164,slow=12,SNR=232	**6.09**	**351**	P	**P**	**12 34 20.4**	**+1.0**
KK31				⇓S	**S**	**12 35 19.5**	**-9.3**
	5.0nm,0.4s,baz=176,slow=24,SNR=5.4						
CHMS	**Chumysh** SNR=20	**6.34**	**20**	P	**P**	**12 34 22.1**	**-0.7**
USP	**Ospenovka** SNR=16	**6.52**	**18**	P	**P**	**12 34 24.3**	**-1.1**
TKM2	**Tokmak 2** SNR=5.0	**6.53**	**25**	P	**P**	**12 34 25.6**	**+0.1**
KOLN	**Koldanda** 46nm,1.7s	**13.62**	**130**	*e*P	**P**	**12 36 05.7**	**+3.2**
GKN	**Gorkha**	**14.11**	**126**	*e*P	**P**	**12 36 10.9**	**+2.0**
KKN	**Kakani**	**14.68**	**125**	*e*P	**P**	**12 36 15.4**	**-0.9**
DMN	**Daman**	**14.69**	**126**	*e*P	**P**	**12 36 15.6**	**-0.8**
AB31	**Akbulak array** 1.3nm,0.5s,baz=131,slow=13,SNR=24	**14.90**	**328**	⇓P	**P**	**12 36 18.4**	**-0.6**
AB31				⇑S	**S**	**12 38 45.8**	**-18**
	1.5nm,0.5s						
PKI	**Pulchoki**	**14.91**	**126**	*e*P	**P**	**12 36 17.8**	**-1.5**

*TAP **17** 12:34:48.7,23.63N×121.78E,h16km±1km,ML3.1*
*JMA **17** 12:34:50.4±0.3,24.08N×121.91E,h118km,M2.2*
ISC 17 12:34:49.4±4.0,**23.5N**±0.4×**122.0E**±0.3,**h19**km±36km,**n4,** σ0⁰**79**/8,**Taiwan**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**1.34**	**46**	P	**Pn**	**12 35 13.2**	**0.0**
YOJ				*e*S	**Sb**	**12 35 30.3**	**0.0**
IRIF	**Iriomote-Funau**	**1.81**	**63**	P	**Pn**	**12 35 20.0**	**0.0**
IRIF				*e*S	**Sn**	**12 35 43.1**	**+0.5**
JKRS	**Kuro-shima**	**2.01**	**69**	P	**Pn**	**12 35 23.4**	**+0.6**
JKRS				*e*S	**Sn**	**12 35 48.1**	**+0.5**
JIJ	**Ishigaki jima**	**2.17**	**67**	P	**Pn**	**12 35 24.5**	**-0.6**
JIJ				*e*S	**Sn**	**12 35 50.5**	**-1.1**

*JMA **17** 12:38:27.6±0.2,30.33N×139.18E, h464km, M4.1*
*BJI **17** 12:38:28.5, 30.27N×138.31E, h391km, mB4.2, mb4.5*
*IDC **17** 12:38:29.6±0.8,30.28N×138.63E, h413km±9km, mb3.3/14, mb1 3.4/17, mb1mx3.3/26, Error ellipse: s-maj=17.1km s-min=11.0km az=84.0*
*NEIC **17** 12:38:30.2±0.8, 30.29N×138.61E, h420km±7km, mb4.2/4, Error ellipse: s-maj=9.6km s-min=8.1km az=123.0*
ISC 17 12:38:28.6±0.4,**30.23N**±0.05×**138.7E**±0.1,**h423**km±5km, **n43,** σ0⁰**96**/51,**mb3.8**/20,**Southeast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHJ	**Hachijo jima 2** 20nm,0.3s,baz=62,slow=19,SNR=11	**3.01**	**17**	P	**P**	**12 39 35.7**	**+1.6**
JHJ				S	**S**	**12 40 25.8**	**+0.1**
	63nm,0.3s,baz=67,slow=19,SNR=7.2						
JHJ2	**Mitsune**	**3.01**	**17**	P	**P**	**12 39 35.7**	**+1.6**
JHJ2				S	**S**	**12 40 26.5**	**+0.8**
CBIJ	**Chichi jima** 31nm,0.3s,baz=319,slow=4.1,SNR=99	**4.35**	**135**	P	**P**	**12 39 45.2**	**-0.8**
CBIJ				S	**S**	**12 40 44.6**	**-2.2**
	89nm,0.3s,baz=285,slow=21,SNR=16						
CBIJ	**Chichi jima**	**4.35**	**135**	P	**P**	**12 39 45.3**	**-0.7**
JIE	**Ise**	**4.49**	**338**	P	**P**	**12 39 49.3**	**+2.0**
JIM2	**Oshima 3**	**4.51**	**7**	S	**S**	**12 40 52.3**	**+2.8**
JHHJ	**Haha-jima-NKT**	**4.70**	**139**	P	**P**	**12 39 48.9**	**-0.5**
JHHJ				S	**S**	**12 40 53.4**	**+0.6**
BSO1	**Boso 1**	**4.80**	**23**	S	**S**	**12 40 53.1**	**-1.4**
JOD2	**Odawara 2**	**5.02**	**3**	P	**P**	**12 39 51.4**	**-1.2**
JOD2				S	**S**	**12 40 58.3**	**-0.3**
JNY	**Yasuok**	**5.16**	**352**	P	**P**	**12 39 55.5**	**+1.5**
JYN	**Shimob**	**5.25**	**358**	P	**P**	**12 39 55.5**	**+0.6**
JRY	**Ryogami san**	**5.77**	**1**	P	**P**	**12 40 00.1**	**-0.1**
JRY				S	**S**	**12 41 10.7**	**-1.6**
MAJO	**Matsushiro**	**6.31**	**356**	*e*P	**P**	**12 40 05.9**	**-0.2**
MAT	**Matsushiro**	**6.31**	**356**	P	**P**	**12 40 05.7**	**-0.3**
MAT				S	**S**	**12 41 20.1**	**-2.7**
MAT	**Matsushiro** 8.2nm,0.7s	**6.31**	**356**	*e*P	**P**	**12 40 06.0**	**0.0**
MAT				*e*S	**S**	**12 41 20.0**	**-2.8**
ASAJ	**Asahikawa** 0.7nm,0.3s,baz=240,slow=32,SNR=7.6	**14.19**	**11**	P	**P**	**12 41 33.4**	**-0.2**
SONM	**Songino Array** 1.6nm,0.4s,mb3.7,baz=124,slow=8.3,SNR=24	**30.36**	**315**	P	**P**	**12 44 05.1**	**0.0**
GTA	**Gaotai**	**33.03**	**297**	*e*P	**P**	**12 44 27.8**	**-0.2**
GTA				AMB	AMB		
	comp=Z,10.0nm,0.6s,mb4.3						
CMAR	**Chiang Mai Arr** comp=Z,0.7nm,0.7s,mb3.1,baz=27,slow=6.4,SNR=4.6	**37.92**	**261**	P	**P**	**12 45 09.1**	**0.0**
ZAL	**Zalesovo** comp=Z,1.2nm,0.3s,mb3.6,baz=256,slow=9.2,SNR=4.4	**45.15**	**318**	P	**P**	**12 46 05.9**	**-0.8**
MKAR	**Makanchi Array** comp=Z,2.2nm,0.6s,mb3.7,baz=91,slow=9.7,SNR=21	**46.16**	**307**	P	**P**	**12 46 14.2**	**-0.4**
PKI	**Pulchoki**	**46.41**	**281**	*e*P	**P**	**12 46 16.6**	**-0.3**
KKN	**Kakani** comp=Z,8.5nm,0.4s,mb4.5	**46.46**	**281**	*e*P	**P**	**12 46 17.1**	**-0.1**
DMN	**Daman** comp=Z,9.6nm,0.4s,mb4.5	**46.66**	**281**	*e*P	**P**	**12 46 18.8**	**0.0**
GKN	**Gorkha** comp=Z,9.3nm,0.4s,mb4.5	**46.95**	**281**	*e*P	**P**	**12 46 20.9**	**-0.1**
KOLN	**Koldanda** comp=Z,27nm,0.8s,mb4.6	**47.89**	**281**	*e*P	**P**	**12 46 28.1**	**-0.1**
WRA	**Warramunga Arr** comp=Z,1.0nm,0.8s,mb3.2,baz=4.9,slow=8.1,SNR=11	**50.06**	**185**	P	**P**	**12 46 44.9**	**+0.3**
ASAR	**Alice Springs** comp=Z,0.3nm,0.3s,mb2.9,baz=355,slow=5.6,SNR=11	**53.79**	**185**	P	**P**	**12 47 12.2**	**+0.3**
ZRNK	**Zerenda**	**54.53**	**316**	*e*P	**P**	**12 47 16.0**	**-0.8**
ARU	**Arti** comp=Z,12nm,0.9s,mb4.3	**60.09**	**321**	*e*P	**P**	**12 47 53.9**	**-0.8**
INK	**Inuvik** comp=Z,0.4nm,0.5s,mb3.1,baz=310,slow=6.2,SNR=6.3	**61.46**	**25**	P	**P**	**12 48 03.7**	**+0.1**
INK	**Inuvik**	**61.46**	**25**	P	**P**	**12 48 03.7**	**+0.1**
ARCES	**ARCESS Array B** comp=Z,2.0nm,0.4s,mb4.0,baz=66,slow=8.6,SNR=28	**69.58**	**340**	P	**P**	**12 48 55.0**	**+0.5**
YKA	**Yellowknife Ar** comp=Z,0.5nm,0.8s,mb3.1,baz=296,slow=6.1,SNR=9.7	**70.82**	**28**	P	**P**	**12 49 02.5**	**+0.5**
YKA	**Yellowknife Ar**	**70.82**	**28**	P	**P**	**12 49 02.5**	**+0.5**
JOF	**Joensuu**	**70.92**	**332**	*e*p	**P**	**12 49 02.3**	**-0.3**
KAF	**Kangasniemi** baz=53,slow=5.3	**73.33**	**333**	*e*p	**P**	**12 49 16.1**	**-0.4**
FINES	**FINESS Array B** comp=Z,1.9nm,0.4s,mb4.1,baz=71,slow=5.6,SNR=23	**73.79**	**332**	P	**P**	**12 49 19.1**	**-0.1**
AKASG	**Malin Array Be** comp=Z,1.2nm,0.3s,mb4.0,baz=51,slow=5.5,SNR=6.8	**78.30**	**322**	P	**P**	**12 49 44.1**	**-0.1**
NB2	**NORSAR Subarra** comp=Z,1.2nm,0.5s,mb3.8,baz=44,slow=5.0	**79.57**	**337**	P	**P**	**12 49 50.7**	**0.0**
NOA	**NORSAR Array B** comp=Z,1.2nm,0.5s,mb3.8,baz=45,slow=5.2,SNR=5.8	**79.57**	**337**	P	**P**	**12 49 50.8**	**+0.1**
NVAR	**Mina Array Bea** comp=Z,0.3nm,0.5s,mb3.2,baz=302,slow=5.3,SNR=4.8	**80.93**	**51**	P	**P**	**12 50 00.8**	**+2.5**
BRTR	**Keskin Array B** comp=Z,3.2nm,0.9s,mb4.0,baz=90,slow=4.9,SNR=13	**81.66**	**311**	P	**P**	**12 50 03.1**	**+1.0**

*JMA **17** 12:47:44.3±0.4,22.85N×121.60E, h1km*
*TAP **17** 12:47:44.3,22.84N×121.36E, h19km±1km, ML3.5*
ISC 17 12:47:45.1±3.0,**22.8N**±0.2×**121.5E**±0.2,**h19**km,**n5,** σ0⁰**49**/8,**Taiwan region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**2.16**	**39**	*e*S	**Sn**	**12 48 47.1**	**-0.2**
IRIF	**Iriomote-Funau**	**2.56**	**52**	P	**Pn**	**12 48 26.3**	**-0.1**
IRIF				*e*S	**Sn**	**12 48 58.1**	**+0.9**
JKRS	**Kuro-shima**	**2.71**	**57**	P	**Pn**	**12 48 28.6**	**0.0**
JKRS				*e*S	**Sn**	**12 49 00.3**	**-0.9**
JIJ	**Ishigaki jima**	**2.88**	**56**	P	**Pn**	**12 48 31.1**	**+0.1**
JIJ				S	**Sn**	**12 49 05.2**	**-0.3**
JTJ	**Tarama**	**3.46**	**57**	*e*S	**Sn**	**12 49 20.6**	**+0.5**

*MOS **17** 13:08:49.7±1.0, 3.26N×128.16E, h33km, mb5.3/26, Error ellipse: s-maj=18.9km s-min=8.0km az=108.7*
*BJI **17** 13:08:50.7, 2.78N×128.60E, h76km, mB5.5, mb5.3, Ms4.7, Msz4.4*
*IDC **17** 13:08:51.1±2.1, 3.13N×128.30E, h34km±15km, mb4.8/21, mb1 4.8/22, mb1mx4.8/23, ML5.6/1, MS4.3/27, Ms1 4.3/27, ms1mx4.3/30, Error ellipse: s-maj=21.6km s-min=10.7km az=78.0*
*NEIC **17** 13:08:53.2±0.2, 3.10N×128.35E, mb5.3/43, MS4.6/10, Error ellipse: s-maj=6.8km s-min=4.4km az=88.0*
*SYO **17** 13:08:53.2, 3.10N×128.35E, h53km, MB5.3, MS4.6*
*HRVD **17** 13:08:53.2±0.3, 3.16N×128.20E, h40km, MW5.0/57, Centroid moment Tensor Solution. LP body waves: s57,c79;Mantle waves: s53,c77; Half duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}4.65±.16; $M_{\theta\theta}$-1.76±.10; $M_{\phi\phi}$-2.89±.12; $M_{r\theta}$1.73±.09; $M_{r\phi}$0.50±.08; $M_{\theta\phi}$-1.44±.11; Best double couple: M_o4.44×10^{16} NP1:ϕs341°, δ31°, λ103°. NP2:ϕs145°, δ60°, λ82°. Principal axes: T 5.29, Plg74°, Azm35°; N -1.7, Plg7°, Azm149°; P -3.59, Plg14°, Azm241°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
ISC 17 13:08:51.7±0.6,**3.09N**±0.03×**128.36E**±0.04,**h53**km±4km, **h56**km±2.0km:**pP-P,n235,**σ1⁰**12**/223,**mb5.2**/86,**MS4.4**/63, **21C-14D,North of Halmahera**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GSPH	**General Santos**	**4.52**	**311**	⇑*e*P	**P**	**13 09 59.6**	**+0.2**
DMPH	**Davao City--Mi**	**4.88**	**324**	*e*P	**P**	**13 10 05.8**	**+1.4**
DMPH				*e*S	**S**	**13 11 11.2**	**+11**
KCP	**Kidapawan**	**5.07**	**320**	⇓*e*P	**P**	**13 10 08.4**	**+1.3**
BIPH	**Bislig**	**5.43**	**339**	⇓*e*P	**P**	**13 10 10.9**	**-1.2**
BIPH				*e*S	**S**	**13 11 15.7**	**+1.6**
CTBH	**Cotabato--PC H**	**5.80**	**315**	⇑*i*P	**P**	**13 10 17.2**	**+0.1**
BUTP	**Butuan**	**6.44**	**335**	⇑*e*P	**P**	**13 10 27.6**	**+1.4**
BUTP				*e*S	**S**	**13 11 38.4**	**-0.8**
CGP	**Cagayan de Oro**	**6.46**	**326**	⇓*e*P	**P**	**13 10 29.0**	**+2.6**
PAGZ	**Pagadian**	**6.84**	**314**	⇑*e*P	**P**	**13 10 31.3**	**-0.6**
ZMPH	**Zamboanga City**	**7.35**	**302**	*e*P	**P**	**13 10 37.0**	**-1.9**
MSLP	**Maasin**	**7.81**	**334**	⇑*e*P	**P**	**13 10 49.8**	**+4.6**
TBP	**Tagbilaran**	**7.93**	**326**	*e*P	**P**	**13 10 48.2**	**+1.3**
SNPH	**Sibulan**	**8.03**	**321**	*e*P	**P**	**13 10 50.0**	**+1.7**
LLP	**Lapu-Lapu**	**8.40**	**329**	*e*P	**P**	**13 10 54.4**	**+1.1**
BESP	**Borongan**	**8.94**	**341**	⇑*e*P	**P**	**13 10 58.7**	**-2.0**
CUYO	**Cuyo Island**	**10.60**	**317**	⇑*e*P	**P**	**13 11 22.6**	**-1.1**
TGY	**Tagaytay City** 30nm,0.3s,baz=137,slow=12,SNR=2.8	**13.17**	**327**	Pn	**P**	**13 11 53.4**	**-4.6**
TGY				LR	LR	13 17 45.5	
	comp=Z,3μm,21.1s,baz=122,slow=41						
TGY	**Tagaytay City**	**13.17**	**327**	P	**P**	**13 11 53.4**	**-4.6**
TGY				pmax	pmax		
	comp=Z,30nm,0.3s						
TGY				MLR	MLR		
	comp=Z,3μm,21.1s						
KAKA	**Kakadu** comp=Z,51nm,0.7s	**16.20**	**166**	*e*P	**P**	**13 12 35.7**	**-1.6**
KEDI	**Kedomdong** comp=Z,178nm,0.7s	**16.78**	**227**	⇑*e*P	**P**	**13 12 44.9**	**+0.3**
RATI	**Rata** comp=Z,502nm,0.7s	**17.36**	**227**	*e*P	**P**	**13 12 52.1**	**+0.1**
INGI	**Ingas**	**17.71**	**228**	*e*P	**P**	**13 12 57.0**	**+0.7**
KELI	**Kelakatan**	**17.82**	**231**	⇑*e*P	**P**	**13 12 58.2**	**+0.5**
FITZ	**Fitzroy Crossi** comp=Z,18nm,0.9s,mb4.4	**21.23**	**187**	*e*P	**P**	**13 13 32.7**	**-2.6**
FITZ				*e*S	**S**	**13 17 31.7**	**+8.5**
FITZ	**Fitzroy Crossi** comp=Z,14nm,0.7s,mb4.4,baz=6.5,slow=8.7,SNR=40	**21.23**	**187**	P	**P**	**13 13 33.6**	**-1.7**
FITZ				LR	LR	13 22 43.2	
	comp=Z,343nm,20.1s,MS3.7,baz=64,slow=39						
JOW	**Kunigami** comp=Z,104nm,0.8s,mb5.3,baz=190,slow=7.1,SNR=18	**23.60**	**360**	P	**P**	**13 13 59.6**	**+1.0**
JOW				LR	LR	13 22 17.3	
	comp=Z,2μm,20.3s,MS4.6,baz=317,slow=34						
WRAB	**Tennant Creek** comp=Z,378nm,1.0s,mb5.8	**23.63**	**166**	*e*P	**P**	**13 13 59.7**	**+0.8**
WRA	**Warramunga Arr** comp=Z,56nm,0.5s,mb5.3,baz=344,slow=10,SNR=467	**23.63**	**166**	P	**P**	**13 13 59.5**	**+0.4**
WRA				ScP		13 21 18.8	
	comp=Z,2.0nm,1.0s,baz=340,slow=3.0,SNR=5.7						
WRA	**Warramunga Arr**	**23.63**	**166**	P	**P**	**13 13 59.5**	**+0.5**
WRA				pmax	pmax		
	comp=Z,56nm,0.5s						
WRA				pmax	pmax		
	comp=N,2.0nm,1.0s						
WB2	**Warramunga Arr**	**23.64**	**166**	⇑*i*P	**P**	**13 13 59.7**	**+0.7**
WB2				*e*S	**S**	**13 18 08.6**	**+2.0**
QZH	**Quanzhou**	**23.68**	**337**	⇓*i*P	**P**	**13 14 00.5**	**+1.1**
QZH				S	**S**	**13 18 09.0**	**+1.8**
QZH				AMB	AMB		
	comp=Z,290nm,0.9s,mb5.7						
QZH				AMB	AMB		
	comp=Z,1μm,4.9s						
QZH				LR	LR		
	comp=N,3μm,21.5s						
QZH				LR	LR		
	comp=E,500nm,13.4s						
QZH				LR	LR		
	comp=Z,1μm,18.8s,MS4.4						
QIZ	**Qiongzhong**	**24.06**	**313**	⇑P	**P**	**13 14 03.8**	**+0.6**
QIZ				AP		13 14 16.6	
QIZ				S	**S**	**13 18 16.1**	**+2.3**
QIZ				LR	LR		
	comp=N,467nm,17.9s,MS4.2						
QIZ				LR	LR		
	comp=E,484nm,19.0s,MS4.2						
QIZ				LR	LR		
	comp=Z,904nm,18.4s,MS4.3						
QIZ	**Qiongzhong** comp=Z,105nm,1.4s,mb5.1	**24.06**	**313**	*e*P	**P**	**13 14 04.6**	**+1.4**
GZH	**Guangzhou**	**24.63**	**325**	P	**P**	**13 14 10.8**	**+2.1**
GZH				S	**S**	**13 18 27.9**	**+4.4**
GZH				LR	LR		
	comp=N,904nm,22.3s,MS4.3						
GZH				LR	LR		
	comp=E,621nm,22.7s,MS4.3						
GZH				LR	LR		
	comp=Z,2μm,22.2s,MS4.5						
KGM	**Kluang**	**25.04**	**268**	⇓*e*P	**P**	**13 14 14.0**	**+1.3**
AS12	**Alice Springs** comp=Z,23nm,0.8s,mb4.8	**27.14**	**169**	*e*P	**P**	**13 14 31.1**	**-1.0**
ASAR	**Alice Springs** comp=Z,7.9nm,0.5s,mb4.5,baz=354,slow=7.8,SNR=253	**27.14**	**169**	P	**P**	**13 14 31.2**	**-0.9**
ASAR				PcP	PcP	13 17 51.8	-0.2
	comp=Z,8.1nm,0.7s,baz=351,slow=2.3,SNR=7.9						
ASAR				ScP		13 21 28.1	
	comp=Z,1.6nm,0.6s,baz=338,slow=3.2,SNR=6.6						
ASAR				PKIKP		13 25 28.5	
	comp=Z,0.4nm,0.9s,baz=356,slow=0.9,SNR=4.4						
ASAR				LR	LR	13 26 32.8	
	comp=Z,568nm,19.8s,MS4.1,baz=348,slow=39						
CBIJ	**Chichi

CMAR pmax pmax
comp=Z,10.0nm,0.7s
CMAR pmax pmax
comp=Z,3.0nm,0.9s
CMAR pmax pmax
comp=N,2.0nm,1.0s
CMAR MLR MLR
comp=Z,463nm,18.5s
KMI Kunming 32.98 314⇓ *e*P **P** **13 15 26.1 +2.2**
KMI PP PP 13 16 37.9 +2.4
KMI S **S** **13 20 40.8 +3.5**
KMI AMB AMB
comp=Z,57nm,1.3s,mb5.3
KMI AMB AMB
comp=Z,114nm,3.1s
KMI LR LR
comp=N,391nm,17.3s,MS4.3
KMI LR LR
comp=E,372nm,19.8s,MS4.3
KMI LR LR
comp=Z,596nm,20.2s,MS4.3
FORT Forrest 33.68 180 *e*P **P** **13 15 28.3 -1.6**
comp=Z,109nm,0.8s,mb5.8
KS15 Wonju Array Si 34.19 359 *e*P **P** **13 15 33.9 -0.3**
MAJO Matsushiro 34.50 14 *e*P **P** **13 15 35.1 -1.8**
comp=Z,46nm,0.8s,mb5.5
MAJO LR LR
comp=Z,2μm,21.0s,MS4.7
MAT Matsushiro 34.50 14 P **P** **13 15 34.7 -2.2**
MAT S **S** **13 21 17.0 +16**
MAT Matsushiro 34.50 14 *e*P **P** **13 15 35.0 -1.9**
comp=Z,47nm,1.0s,mb5.4
MAT *e*S **S** **13 21 18.0 +17**
MAT LR LR
comp=Z,1μm,20.0s,MS4.7
XAN Xi'an 35.73 332 P **P** **13 15 46.4 -0.9**
XAN AMB AMB
comp=Z,71nm,1.1s,mb5.5
KLBR Kellerberrin 35.94 196 *e*P **P** **13 15 47.6 -1.6**
comp=Z,46nm,1.0s,mb5.4
CD2 Chengdu 36.12 323 P **P** **13 15 50.0 -0.7**
CD2 S **S** **13 21 24.8 -1.0**
CD2 AMB AMB
comp=Z,30nm,0.8s,mb5.3
CD2 AMB AMB
comp=Z,190nm,5.9s
CD2 LR LR
comp=N,730nm,19.2s
CD2 LR LR
comp=Z,860nm,21.6s,MS4.5
DL2 Dalian 36.17 351 P **P** **13 15 52.1 +1.1**
DL2 *e*S **S** **13 21 21.9 -4.5**
DL2 LR LR
comp=N,290nm,21.6s,MS4.3
DL2 LR LR
comp=E,410nm,19.8s,MS4.3
DL2 LR LR
comp=Z,280nm,16.7s,MS4.1
MUN Mundaring 36.74 197⇑ *i*P **P** **13 15 54.5 -1.4**
comp=Z,9.8nm,0.5s,mb4.9
STKA Stephens Creek 36.98 161 P **P** **13 15 57.5 -0.4**
comp=Z,56nm,0.8s,mb5.5,baz=337,slow=8.5,SNR=82
STKA ScP 13 22 02.3
comp=Z,1.6nm,0.8s,baz=318,slow=7.3,SNR=3.0
STKA LR LR 13 33 18.3
comp=Z,889nm,19.7s,MS4.6,baz=340,slow=40
STKA Stephens Creek 36.98 161 P **P** **13 15 57.5 -0.5**
STKA ScP 13 22 02.3
STKA LR LR 13 33 18.3
BJT Baijiatuau 38.38 345 *e*P **P** **13 16 09.1 -0.4**
comp=Z,107nm,1.2s,mb5.5
BJT LR LR
comp=Z,371nm,20.0s,MS4.2
BJI Beijing 38.40 345 P **P** **13 16 08.9 -0.8**
BJI S **S** **13 22 00.9 +0.5**
BJI AMB AMB
comp=Z,38nm,0.8s,mb5.2
BJI AMB AMB
comp=Z,169nm,4.8s
BJI LR LR
comp=N,299nm,19.8s
BJI LR LR
comp=E,316nm,24.9s
BJI LR LR
comp=Z,276nm,27.6s
SNY Shenyang 38.80 354⇑ P **P** **13 16 12.8 -0.2**
SNY S **S** **13 22 03.8 -2.7**
SNY AMB AMB
comp=Z,20nm,0.9s,mb4.8
SNY LR LR
comp=N,400nm,18.2s
SNY LR LR
comp=Z,460nm,18.8s,MS4.3
LZH Lanzhou 39.88 328⇓ P **P** **13 16 23.3 +1.3**
LZH AP pP 13 16 38.8 +2.8
LZH XP sP 13 16 46.0 +3.6
LZH PP PP 13 18 00.0 +1.9
LZH S **S** **13 22 22.1 -0.7**
LZH SS SS 13 25 17.1 +2.3
LZH AMB AMB
comp=Z,140nm,1.0s,mb5.7
LZH AMB AMB
comp=Z,720nm,4.7s
LZH LR LR
comp=E,1μm,15.8s
LZH LR LR
comp=Z,2μm,18.2s,MS4.9
ARMA Armidale 40.05 148⇑ *i*P **P** **13 16 23.9 +0.4**
HHC Hu-ho-hao-te 40.52 340⇑ P **P** **13 16 27.8 +0.5**
HHC AP pP 13 16 44.5 +3.2
HHC PP PP 13 18 06.4 +1.9
HHC PCS 13 22 18.8
HHC S **S** **13 22 34.0 +1.7**
HHC SS SS 13 25 31.0 +2.5
HHC SCS ScS 13 26 18.3 -7.7
HHC AMB AMB
comp=Z,23nm,1.2s,mb4.7
HHC AMB AMB
comp=Z,162nm,5.6s
HHC LR LR
comp=N,225nm,17.8s,MS4.2
HHC LR LR
comp=E,187nm,18.4s,MS4.2
HHC LR LR
comp=Z,219nm,16.1s,MS4.1
CN2 Changchun 40.62 357 *e*P **P** **13 16 27.8 -0.2**
CN2 *e*AP pP 13 16 45.3 +3.3
CN2 PCP PcP 13 18 29.8 -0.1
CN2 *e*S **S** **13 22 34.5 +0.9**
CN2 SS SS 13 25 29.5 -0.9
CN2 AMB AMB
comp=Z,200nm,4.0s
CN2 LR LR
comp=N,500nm,18.0s,MS4.5
CN2 LR LR
comp=E,400nm,18.0s,MS4.5
CN2 LR LR
comp=Z,500nm,21.0s,MS4.3
MDJ Mudanjiang 41.37 1 P **P** **13 16 34.8 +0.7**
MDJ AP pP 13 16 47.9 -0.3
MDJ PP PP 13 18 10.8 -2.4
MDJ S **S** **13 22 46.3 +1.6**
MDJ SS SS 13 25 52.6 +7.3
MDJ AMB AMB
comp=Z,101nm,1.1s,mb5.4
MDJ AMB AMB
comp=Z,99nm,3.7s
MDJ LR LR
comp=N,460nm,20.1s,MS4.3
MDJ LR LR
comp=E,151nm,21.5s,MS4.3
MDJ LR LR
comp=Z,616nm,20.1s,MS4.5
MDJ Mudanjiang 41.37 1 *e*P **P** **13 16 34.4 +0.3**
comp=Z,126nm,1.1s,mb5.5
SHL Shillong 41.56 306⇑ *i*P **P** **13 16 36.0 -0.1**
SHL *e*S **S** **13 22 51.5 +3.5**
ASAJ Asahikawa 42.75 15 P **P** **13 16 46.4 +0.8**
comp=Z,44nm,0.6s,mb5.4,baz=237,slow=11,SNR=67
ASAJ LR LR 13 32 59.1
comp=Z,768nm,21.0s,MS4.6,baz=204,slow=34
TOO Toolangi 43.47 160 *e*P **P** **13 16 53.6 +2.0**
comp=Z,9.9nm,0.8s,mb4.6
LSA Lhasa 44.08 311 P **P** **13 16 58.3 +1.7**
LSA Lhasa 44.08 311 *e*P **P** **13 16 58.2 +1.6**
comp=Z,17nm,0.7s,mb4.9
LSA LR LR
comp=Z,275nm,22.0s,MS4.1
GTA Gaotai 44.48 328 *e*P **P** **13 16 59.9 +0.2**
GTA AP pP 13 17 14.8 +1.1
GTA PCP PcP 13 18 43.3 +0.5
GTA PP PP 13 18 46.6 +1.4
GTA S **S** **13 23 31.3 +0.9**
GTA AMB AMB
comp=Z,43nm,0.9s,mb5.2
GTA AMB AMB
comp=Z,176nm,6.1s
GTA LR LR
comp=N,219nm,21.7s,MS4.2
GTA LR LR
comp=E,238nm,20.5s,MS4.2
GTA LR LR
comp=Z,412nm,21.7s,MS4.3
YSS Yuzh-Sakhalins 45.44 14α *i*P **P** **13 17 06.7 -0.5**
YSS *e* pP 13 17 25.2 +3.9
YSS *e* 13 18 46.0
YSS pmax pmax
comp=N,40nm,0.9s
YSS pmax pmax
comp=Z,60nm,0.9s,mb5.4
YSS MLR MLR
comp=Z,400nm,20.0s,MS4.3
YSS MLR MLR
comp=N,400nm,18.0s
YSS Yuzh-Sakhalins 45.44 14 *e*P **P** **13 17 07.2 0.0**
comp=N,61nm,0.9s,mb5.4
KLR Kul'dur 46.06 3 *i*P **P** **13 17 12.1 +0.1**
KLR pmax pmax
comp=E,20nm,1.2s
KLR pmax pmax
comp=Z,43nm,1.2s,mb5.2
HIA Hailar 46.59 352 *e*P **P** **13 17 15.6 -0.6**
comp=Z,10nm,1.0s,mb4.7
HIA LR LR
comp=Z,727nm,20.0s,MS4.6
PKI Pulchoki 47.66 305 *e*P **P** **13 17 25.1 +0.1**
comp=Z,37nm,1.0s,mb5.4
KKN Kakani 47.85 305 *e*P **P** **13 17 26.0 -0.5**
comp=Z,49nm,0.9s,mb5.5
DMN Daman 47.93 305 *e*P **P** **13 17 27.1 +0.1**
comp=Z,81nm,1.1s,mb5.7
ULN Ulaanbaatar 48.24 341 *d i*P **P** **13 17 28.4 -0.7**
ULN Ulaanbaatar 48.24 341 *e*P **P** **13 17 28.6 -0.6**
comp=Z,17nm,0.8s,mb5.1
ULN LR LR
comp=Z,448nm,22.0s,MS4.4
SONM Songino Array 48.43 340 P **P** **13 17 30.2 -0.4**
comp=Z,7.9nm,0.8s,mb4.8,baz=151,slow=7.6,SNR=47
GKN Gorkha 48.46 305 *e*P **P** **13 17 30.7 -0.5**
comp=Z,26nm,0.7s,mb5.4
KOLN Koldanda 49.22 305 *e*P **P** **13 17 37.1 +0.1**
comp=Z,80nm,0.8s,mb5.8
DANN Dangsing 49.31 305 *e*P **P** **13 17 37.8 +0.1**
CUD Cuddapah 50.19 286 *e*P **P** **13 17 44.6 0.0**
CUD *e* pP 13 17 58.7 -0.2
HYB Hyderabad 50.86 290⇓ *i*P **P** **13 17 50.0 +0.3**
comp=Z,50nm,1.0s,mb5.4
HYB *e*pP pP 13 18 06.0 +2.0
HYB Hyderabad 50.86 290⇓ *e*P **P** **13 17 50.0 +0.3**
comp=Z,50nm,1.0s,mb5.4
HYB *e* pP 13 18 06.0 +2.0
ZAK Zakamensk 51.67 340 *e*P **P** **13 17 53.9 -1.4**
ZAK *e* 13 19 07.9
BHPL Bhopal 53.14 297 *e*P **P** **13 18 06.6 -0.1**
BHPL *e* 13 18 07.9
comp=Z,37nm,1.5s
WMQ Urumqi 54.18 324 *e*P **P** **13 18 14.1 0.0**
WMQ AP pP 13 18 29.9 +1.4
WMQ XP sP 13 18 37.0 +2.3
WMQ PCP PcP 13 19 18.5 +0.6
WMQ PP PP 13 20 17.6 0.0
WMQ SCP 13 23 09.8
WMQ PCS 13 23 16.3
WMQ S **S** **13 25 43.8 -1.6**
WMQ PS PS 13 26 03.6 -0.5
WMQ SCS ScS 13 27 54.3 -0.7
WMQ SS SS 13 29 25.3 -1.9
WMQ AMB AMB
comp=Z,121nm,1.6s,mb5.6
WMQ AMB AMB
comp=Z,855nm,8.3s
WMQ LR LR
comp=N,2μm,22.0s,MS5.2
WMQ LR LR
comp=E,2μm,21.2s,MS5.2
WMQ LR LR
comp=Z,2μm,21.3s,MS5.2
NDI New Delhi 54.83 303 *e*P **P** **13 18 16.5 -2.5**
comp=Z,40nm,0.6s,mb5.6
KAD Karad 54.96 289 *e*P **P** **13 18 19.1 -1.0**
KAD *e* 13 18 20.5
comp=Z,37nm,1.3s
POO Poona 55.46 290 *e*P **P** **13 18 22.2 -1.5**
POO *e* 13 18 25.1
comp=Z,66nm,1.3s
PET Petropavlovsk 55.70 22 *e*P **P** **13 18 23.3 -1.7**
PET *e*S S 13 26 31.6 +26
PET pmax pmax
comp=Z,104nm,15.7s
PET pmax pmax
comp=Z,32nm,20.0s
PET smax
comp=N,235nm,28.2s
PET MLR MLR
comp=Z,365nm,19.0s,MS4.5
PET Petropavlovsk 55.70 22 *e*P **P** **13 18 23.7 -1.3**
comp=Z,56nm,1.1s,mb5.5
PET LR LR
comp=Z,412nm,19.0s,MS4.5
BOD Bodaibo 55.74 351 *e*P **P** **13 18 25.3 +0.1**
YAK Yakutsk 58.81 1 *e*P **P** **13 18 45.5 -1.3**
YAK *e* pP 13 18 59.9 -1.5
YAK pmax pmax
comp=N,6.0nm,0.9s
YAK pmax pmax
comp=Z,14nm,0.9s,mb5.0
YAK pmax pmax
comp=N,8.0nm,0.9s
YAK Yakutsk 58.81 1 *e*P **P** **13 18 46.0 -0.7**
comp=N,62nm,1.0s,mb5.6
YAK LR LR
comp=Z,566nm,21.0s,MS4.7
MA2 Magadan 58.94 13 *e*P **P** **13 18 47.7 0.0**
MA2 *e*S **S** **13 26 50.2 +2.1**
MA2 *e*SS SS 13 30 45.1 +1.0
MA2 *e*SSS SSS 13 33 15.0 +4.6
MA2 pmax pmax
comp=Z,20nm,0.8s,mb5.2
MA2 MLR MLR
comp=Z,340nm,20.0s,MS4.5
MKAR Makanchi Array 59.01 325 P **P** **13 18 47.1 -1.3**
comp=Z,16nm,0.5s,mb5.3,baz=120,slow=8.3,SNR=201
MKAR LR LR 13 45 40.6
comp=Z,478nm,20.3s,MS4.6,baz=123,slow=38
MKAR Makanchi Array 59.01 325 *i*P **P** **13 18 47.1 -1.3**
MKAR pmax pmax
comp=Z,6.0nm,0.5s
KSH Kashi 59.64 315 P **P** **13 18 52.9 0.0**
KSH *e*AP pP 13 19 09.1 +1.6
KSH *e*XP sP 13 19 16.3 +2.6
KSH *e*PCP PcP 13 19 40.6 +1.3
KSH *e*PP PP 13 21 05.9 -0.9
KSH *e*SCP 13 23 34.3
KSH *e*PCS 13 23 41.3
KSH *e*S **S** **13 26 54.8 -2.7**
KSH *e*PS PS 13 27 18.0 -2.3
KSH *e*SCS ScS 13 28 33.3 -1.3
KSH *e*SS SS 13 30 51.0 -4.0
KSH AMB AMB
comp=Z,110nm,0.9s,mb5.9
KSH AMB AMB
comp=Z,380nm,4.4s
KSH LR LR
comp=N,310nm,3.9s
KSH LR LR
comp=E,410nm,3.9s
KZA Kyzart 61.18 317 P **P** **13 19 03.5 +0.2**
SNR=25
TKM2 Tokmak 2 61.30 318 P **P** **13 19 03.4 -0.8**
SNR=19
KBK Karagaybulak 61.62 318 P **P** **13 19 06.5 +0.2**
SNR=8.7
UCH Uchtor 61.74 317 P **P** **13 19 07.5 +0.4**
SNR=28
FX1 Attu Island--F 61.83 29 *e*P **P** **13 19 07.8 +0.2**
ZAL Zalesovo 61.90 332 P **P** **13 19 05.8 -2.2**
comp=E,3.9nm,0.5s,mb4.8,baz=272,slow=6.4,SNR=19
ZAL LR LR 13 47 48.0
comp=E,382nm,21.9s,MS4.5,baz=249,slow=38
ZAL Zalesovo 61.90 332 P **P** **13 19 05.8 -2.2**
ZAL pmax pmax
comp=Z,4.0nm,0.5s
ZAL MLR MLR
comp=Z,382nm,21.9s
USP Ospenovka 62.17 318 P **P** **13 19 09.2 -0.8**
SNR=14
AML Almayashu 62.26 317 P **P** **13 19 10.5 -0.1**
SNR=18
SEY Seymchan 62.30 12 *i*P **P** **13 19 11.1 +0.6**
SEY 13 19 49.1
SEY 13 21 29.6
SEY PPP PPP 13 22 57.0 -2.9
SEY *e*S **S** **13 27 37.7 +6.7**
SEY PS PS 13 28 08.5 +13
SEY 13 29 02.3
SEY pmax pmax
comp=N,40nm,1.0s
SEY pmax pmax
comp=Z,40nm,1.0s,mb5.5
SEY pmax pmax
comp=E,5.0nm,0.9s
EKS2 Erkin-Say 62.42 317 P **P** **13 19 11.4 -0.2**
SNR=14
KURK Kurchatov 63.15 327 *i*P **P** **13 19 14.6 -1.8**
KURK pmax pmax
comp=Z,12nm,0.7s,mb5.1
KURK Kurchatov 63.15 327 *e*P **P** **13 19 14.7 -1.8**
NVS Novosibirsk 63.17 333 *i*P **P** **13 19 13.6 -2.9**
NVS *e*S **S** **13 27 42.1 0.0**
NVS pmax pmax
comp=Z,25nm,1.6s,mb5.1
NVS pmax pmax
comp=N,21nm,1.3s
NVS smax
comp=N,13nm,1.5s
KKAR Karatay Array 64.81 317 *i*P **P** **13 19 26.4 -0.9**
KKAR pmax pmax
comp=Z,15nm,1.0s,mb5.0
VOSK Vostochnaya 68.29 327 P **P** **13 19 47.0 -2.1**
VOSK pmax pmax
comp=Z,13nm,0.9s,mb5.0
TIXI Tiksi 68.46 0 *e*P **P** **13 19 48.4 -1.5**
TIXI *e* pP 13 20 01.5 -3.4
TIXI *e*S S 13 28 41.7 -4.5
TIXI pmax pmax
comp=Z,76nm,0.6s,mb5.9
TIXI MLR MLR
comp=Z,3μm,20.0s
TIXI Tiksi 68.46 0 *e*P **P** **13 19 49.0 -1.0**
comp=Z,12nm,0.5s,mb5.2
BVA0 Borovoye Array 68.74 327 *i*P **P** **13 19 50.8 -1.1**
BVA0 pmax pmax
comp=Z,1.0nm,0.9s
BVAR Borovoye Array 68.74 327 LR LR 13 51 35.1
comp=Z,301nm,21.1s,MS4.5,baz=20,slow=37
BRVK Borovoye 68.81 327 *e*P **P** **13 19 51.0 -1.3**
ZRNK Zerenda 69.47 326 P **P** **13 19 54.6 -1.8**
ZRNK pmax pmax
comp=Z,26nm,1.0s,mb5.1
ZRNK Zerenda 69.47 326 *e*P **P** **13 19 54.9 -1.6**
BILL Bilibino 69.76 14 *e*P **P** **13 19 57.4 -0.5**
BILL pmax pmax
comp=Z,23nm,2.5s,mb4.7
BILL MLR MLR
comp=Z,300nm,19.0s,MS4.6
BILL Bilibino 69.76 14 *e*P **P** **13 19 57.5 -0.4**
comp=Z,5.2nm,0.8s,mb4.5
AB31 Akbulak array 73.67 321 *i*P **P** **13 20 20.5 -1.1**
AB31 pmax pmax
comp=Z,13nm,0.9s,mb4.9
RAR Rarotonga 74.29 113 LR LR 13 49 08.2
comp=Z,242nm,18.6s,MS4.5,baz=280,slow=32
ARU Arti 76.34 328⇑ *i*P **P** **13 20 35.2 -1.5**
ARU *i* pP 13 20 46.7 -5.2
ARU *e* 13 23 26.9
ARU *e*S S 13 30 18.8 +2.7
ARU pmax pmax
comp=Z,13nm,1.0s,mb4.8
ARU Arti 76.34 328 *e*P **P** **13 20 34.6 -2.1**
comp=Z,9.2nm,0.7s,mb4.8
ARU LR LR
comp=Z,241nm,19.0s,MS4.5
SDN Sand Point 76.80 34 *e*P **P** **13 20 40.4 +1.0**
comp=Z,62nm,0.6s,mb5.7
THR Tehran 77.85 306 P **P** **13 20 46.0 +0.4**
comp=Z,3.4nm,0.9s,mb4.3,baz=95,slow=5.1,SNR=10.0
THR LR LR 14 01 56.5
comp=Z,65nm,21.1s,MS3.9,baz=234,slow=41
SOKR Solikamsk 78.06 330⇑ *i*P **P** **13 21 02.4 +16**
SOKR MLR MLR
comp=Z,370nm,25.0s,MS4.6
HASS Wahat al Ahsa' 78.44 295 P **P** **13 20 47.6 -1.4**
KDAK Kodiak Island 81.56 32 *e*P **P** **13 21 06.2 +1.2**
comp=Z,113nm,1.3s,mb5.6
KDAK LR LR
comp=Z,536nm,19.0s,MS4.9
RSO Redoubt South 81.84 29 *e*P **P** **13 21 06.8 +0.3**
SPU Mount Spurr 82.28 29 *e*P **P** **13 21 09.8 +1.0**
IMA Indian Mountai 82.31 24 *e*P **P** **13 21 10.7 +1.9**
comp=Z,22nm,0.8s,mb5.2
MZLS Mizel 82.50 294 P **P** **13 21 10.5 -0.1**
GNI Garni 83.14 310 LR LR 14 04 35.8
comp=Z,108nm,21.4s,MS4.2,baz=254,slow=40
SBA Scott Base 83.49 172 *e*P **P** **13 21 16.1 +1.5**
comp=Z,12nm,1.0s,mb4.9
PMR Palmer 83.72 28 *e*P **P** **13 21 16.4 +0.4**
comp=Z,34nm,0.8s,mb5.5
MAW Mawson 83.73 201 *e*P **P** **13 21 16.9 +1.0**
comp=Z,7.3nm,0.6s,mb5.0
MAW Mawson 83.73 201 P **P** **13 21 16.9 +0.9**
comp=Z,9.9nm,0.7s,mb5.1,baz=60,slow=5.4,SNR=28
MAW LR LR 13 52 41.5
comp=Z,145nm,21.8s,MS4.3,baz=252,slow=31
ZEI Tsey 83.84 313 *e*P **P** **13 21 16.0 -1.1**
ZEI *e*S S 13 31 36.0 +1.2
MCK McKinley 84.01 26 *e*P **P** **13 21 17.9 +0.6**
comp=Z,25nm,1.0s,mb5.3
MCK pP pP 13 21 33.7 +1.0
MCK LR LR
comp=Z,157nm,20.0s,MS4.4
SML Sawmill 84.12 28 *e*P **P** **13 21 19.1 +1.1**
SML *e*pP pP 13 21 33.2 -0.1
TATS Tathlith 84.16 289 P **P** **13 21 20.2 +1.0**
ARSS Ar Rass 84.28 296 P **P** **13 21 19.9 +0.3**
AFFS 'Afif 84.52 294 P **P** **13 21 21.4 +0.5**
GOF Gofitskoye 84.52 315 *e*P **P** **13 21 14.0 -6.4**
COLA College 84.57 25 *e*P **P** **13 21 20.6 +0.4**
comp=Z,4.9nm,0.7s,mb4.8
COLA *e*pP pP 13 21 35.6 +0.1
COLA LR LR
comp=Z,184nm,19.0s,MS4.5
KIV Kislovodsk 84.75 314 *e*P **P** **13 21 21.0 -0.6**
KIV *e* 13 24 38.1
KIV *e*S S 13 31 41.6 -2.1
KIV *e*SS SS 13 37 20.3 +0.9
KIV pmax pmax
comp=Z,6.0nm,0.6s,mb4.9
KIV MLR MLR
comp=Z,180nm,23.0s,MS4.4
KIV MLR MLR
comp=N,90nm,22.0s,MS4.4
KIV MLR MLR
comp=E,160nm,23.0s,MS4.4
ILAR Eielson Array 84.98 25 P **P** **13 21 21.9 -0.4**
comp=E,3.8nm,0.6s,mb4.7,baz=246,slow=5.1,SNR=94
ILAR PP PP 13 24 37.7 -3.3
comp=E,0.4nm,0.8s,baz=236,slow=6.1,SNR=3.0
ILAR PKKPbc 13 39 31.2
comp=E,0.9nm,1.2s,baz=69,slow=1.3,SNR=5.1
ILAR LR LR 13 58 00.0
comp=E,148nm,20.3s,MS4.4,baz=267,slow=35
ILAR Eielson Array 84.98 25 P **P** **13 21 21.9 -0.3**
ILAR 13 24 37.7
ILAR pmax pmax
comp=Z,4.0nm,0.6s
ILAR pmax pmax
comp=Z,1.0nm,1.2s

ILAR					MLR	MLR		
	comp=Z,148nm,20.3s							
TOA	**Tolsona**	**85.16**	**28**	*eP*	**P**		**13 21 24.7 +1.5**	
	comp=Z,82nm,0.6s,mb6.0							
EYAK	**Cordova Ski Ar**	**85.30**	**30**	*eP*	**P**		**13 21 24.7 +0.8**	
FRSS	**Farasan al Kab**	**85.53**	**286**	P	**P**		**13 21 27.7 +1.7**	
HILS	**Ha'il**	**85.55**	**297**	P	**P**		**13 21 26.2 +0.3**	
BLJS	**Baljurashi**	**85.92**	**290**	P	**P**		**13 21 29.4 +1.5**	
SOC	**Sochi**	**86.91**	**313**	*eP*	**P**		**13 21 24.5 -7.7**	
SOC				*e*	pP		13 21 42.3 -5.4	
SOC				*e*			13 24 50.7	
SOC				*e*PPP	PPP		13 26 47.2 -8.0	
SOC				*e*S	S		13 31 56.0 -8.6	
SOC				*e*SS	SS		13 37 46.6 -4.2	
SOC				*e*SSS	SSS		13 41 17.3 -4.6	
SOC				pmax	pmax			
	comp=Z,49nm,1.4s,mb5.5							
SOC				pmax	pmax			
	comp=N,11nm,0.9s							
SOC				pmax	pmax			
	comp=E,44nm,1.0s							
SOC				smax				
	comp=N,75nm,1.7s							
SOC				smax				
	comp=E,110nm,1.3s							
SOC				MLR	MLR			
	comp=Z,297nm,21.0s,MS4.7							
SOC				MLR	MLR			
	comp=N,176nm,22.0s,MS4.7							
SOC				MLR	MLR			
	comp=E,271nm,22.0s,MS4.7							
KBRS	**Khaybar**	**87.86**	**296**	P	**P**		**13 21 38.2 +1.0**	
MOS	**Moscow**	**87.88**	**326**	*eP*	**P**		**13 21 39.2 +2.6**	
MOS				pmax	pmax			
	comp=Z,80nm,0.7s,mb6.1							
DAWY	**Dawson**	**88.23**	**26**	*eP*	**P**		**13 21 39.0 +1.0**	
OBN	**Obninsk**	**88.51**	**325**	*eP*	**P**		**13 21 39.6 0.0**	
OBN				*e*S	S		13 32 02.4 -17	
OBN				pmax	pmax			
	comp=Z,47nm,1.7s,mb5.5							
OBN				MLR	MLR			
	comp=Z,400nm,21.0s,MS4.8							
INK	**Inuvik**	**90.15**	**22**	LR	LR		14 02 24.6	
	comp=Z,148nm,20.6s,MS4.4,baz=60,slow=36							
INK	**Inuvik**	**90.15**	**22**	*eP*	**P**		**13 21 47.0 -0.1**	
	comp=Z,16nm,1.3s,mb5.2							
JOF	**Joensuu**	**90.48**	**333**	*ep*	**P**		**13 21 46.5 -2.2**	
JMQS	**Jabal Moqyreh**	**90.70**	**299**	P	**P**		**13 21 51.3 +0.7**	
KEV	**Kevo**	**91.04**	**340**	*ep*	**P**		**13 21 51.0 -0.2**	
KMBO	**Kilima Mbogo**	**91.17**	**269**	P	**P**		**13 21 53.5 +0.4**	
	comp=Z,4.2nm,1.1s,mb4.7,baz=56,slow=23,SNR=4.8							
KMBO				LR	LR		13 57 10.6	
	comp=Z,83nm,21.3s,MS4.1,baz=92,slow=32							
KMBO	**Kilima Mbogo**	**91.17**	**269**	*eP*	**P**		**13 21 53.9 +0.8**	
JMOS	**Jabal al Moall**	**91.35**	**299**	P	**P**		**13 21 53.9 +0.3**	
ALWS	**Ilw as Safayha**	**91.38**	**299**	P	**P**		**13 21 54.1 +0.4**	
BDAS	**Al Bad'**	**91.41**	**298**	P	**P**		**13 21 54.0 +0.1**	
SPITS	**Spitsbergen Ar**	**91.41**	**349**	LR	LR		14 07 23.7	
	comp=Z,16nm,18.8s,MS3.5,baz=14,slow=38							
HAQS	**Haql**	**91.51**	**299**	P	**P**		**13 21 54.6 +0.3**	
ARCES	**ARCESS Array B**	**91.60**	**340**	P	**P**		**13 21 52.9 -1.0**	
	comp=Z,3.0nm,0.7s,mb4.8,baz=82,slow=6.2,SNR=20							
ARCES				PKiKP			13 26 46.0	
	comp=Z,0.7nm,0.7s,baz=90,slow=0.9,SNR=3.6							
ARCES				LR	LR		14 09 07.5	
	comp=Z,188nm,18.8s,MS4.5,baz=218,slow=40							
ARE0	**ARCESS Array S**	**91.60**	**340**	*eP*	**P**		**13 21 55.4 +1.6**	
TAYS	**Tayyib Ism**	**91.60**	**299**	P	**P**		**13 21 54.9 +0.1**	
BRTR	**Keskin Array B**	**91.68**	**310**	P	**P**		**13 21 53.9 -1.0**	
	comp=Z,2.1nm,0.9s,mb4.5,baz=117,slow=5.5,SNR=7.7							
BRTR				LR	LR		14 10 02.7	
	comp=Z,79nm,21.9s,MS4.1,baz=20,slow=40							
SYO	**Syowa Base**	**92.42**	**201**	⇓P	**P**		**13 22 02.1 +4.5**	
SYO	**Syowa Base**	**92.42**	**201**	⇓PcP	PcP		13 22 02.8 +4.3	
SYO	**Syowa Base**	**92.42**	**201**	⇓*e*P	**P**		**13 22 02.1 +4.5**	
SYO				⇓*e*PcP	PcP		13 22 02.8 +4.3	
SYO				⇓*e*PP	PP		13 25 45.7 +4.2	
KAF	**Kangasniemi**	**92.91**	**333**	*ep*	**P**		**13 21 59.0 -0.9**	
QSPA	**South Pole Qui**	**93.00**	**180**	*eP*	**P**		**13 22 01.9 +1.9**	
	comp=Z,9.6nm,0.7s,mb5.3							
QSPA				*e*	pP		13 22 16.0 +0.3	
QSPA				LR	LR			
	comp=Z,200nm,22.0s,MS4.5							
FINES	**FINESS Array B**	**93.16**	**332**	P	**P**		**13 21 59.9 -1.2**	
	comp=Z,0.7nm,0.5s,mb4.4,baz=45,slow=2.7,SNR=9.0							
FINES				LR	LR		14 07 24.9	
	comp=Z,264nm,21.5s,MS4.7,baz=172,slow=38							
FINES	**FINESS Array B**	**93.16**	**332**	P	**P**		**13 21 59.9 -1.2**	
FINES				pmax	pmax			
	comp=Z,1.0nm,0.5s							
FINES				MLR	MLR			
	comp=Z,264nm,21.5s							
FINES	**FINESS Array B**	**93.16**	**332**	P	**P**		**13 21 59.9 -1.2**	
FINES				LR	LR		14 07 24.9	
AKASG	**Malin Array Be**	**93.41**	**321**	P	**P**		**13 22 00.8 -1.7**	
	comp=Z,1.0nm,0.5s,mb4.5,baz=71,slow=4.4,SNR=10							
DLBC	**Dease Lake**	**93.45**	**31**	LR	LR		13 58 50.6	
	comp=Z,276nm,21.4s,MS4.7,baz=296,slow=32							
DLBC	**Dease Lake**	**93.45**	**31**	*eP*	**P**		**13 22 03.7 +1.2**	
DLBC				pP	pP		13 22 19.6 +1.5	
KIS	**Kishinev**	**94.26**	**317**	*eP*	**P**		**13 22 10.0 +3.6**	
BBB	**Bella Bella**	**95.83**	**37**	LR	LR		13 57 36.9	
	comp=Z,282nm,21.4s,MS4.7,baz=56,slow=30							
RES	**Resolute Bay**	**98.14**	**11**	*eP*	**P**		**13 22 23.9 +0.5**	
	comp=Z,9.1nm,1.0s,mb5.3							
YKA	**Yellowknife Ar**	**99.40**	**25**	P	**P**		**13 22 29.5 +0.1**	
	comp=Z,2.3nm,0.7s,mb4.8,baz=299,slow=4.6,SNR=66							
YKA				PKiKP			13 27 00.1	
	comp=Z,0.3nm,0.4s,baz=296,slow=1.6,SNR=15							
YKA				PKKPbc			13 38 52.9	
	comp=Z,0.3nm,0.6s,baz=114,slow=2.6,SNR=8.9							
YKA				LR	LR		14 07 13.1	
	comp=Z,130nm,19.2s,MS4.5,baz=280,slow=35							
NOA	**NORSAR Array B**	**100.07**	**334**	P	P		13 22 33.6 +1.1	
	comp=Z,0.9nm,0.8s,baz=112,slow=7.5,SNR=3.1							
NOA	**NORSAR Array B**	**100.07**	**334**	P	P		13 22 33.6 +1.1	
NOA				pmax	pmax			
	comp=Z,1.0nm,0.8s							
BMW	**Boistfort Moun**	**100.33**	**42**	*e*Pdif	P		13 22 32.5 -1.5	
NLW	**Nelson Butte**	**101.74**	**40**	*e*Pdif	P		13 22 42.1 +1.8	
GERES	**GERESS Array B**	**103.59**	**322**	PKiKP			13 27 07.6	
	comp=Z,0.9nm,0.7s,baz=90,slow=2.0,SNR=6.2							
NVAR	**Mina Array Bea**	**106.11**	**49**	Pdiff	Pdif		13 23 02.2 +2.4	
	comp=Z,0.7nm,0.7s,baz=278,slow=4.2,SNR=8.0							
PDAR	**Pinedale Array**	**110.75**	**42**	PKiKP			13 27 22.1	
	comp=Z,0.3nm,0.6s,baz=63,slow=2.0,SNR=3.2							
PDAR				PKKPbc			13 38 19.2	
	comp=Z,0.6nm,1.0s,baz=117,slow=3.3,SNR=3.7							
PDAR				PKiPab			13 38 29.8	
	comp=Z,0.9nm,0.8s,baz=117,slow=3.3,SNR=5.5							
MNTX	**Cornudas Mount**	**118.38**	**51**	*e*PKP	PKPdf		13 27 36.9 +3.0	
TXAR	**Lajitas Array**	**120.69**	**53**	PKP	PKPdf		13 27 39.7 +1.2	
	comp=Z,1.2nm,0.2s,baz=333,slow=2.8,SNR=4.4							
TXAR	**Lajitas Array**	**120.69**	**53**	PKP	PKPdf		13 27 39.7 +1.2	
SCHQ	**Schefferville**	**120.92**	**10**	PKP	PKPdf		13 27 39.2 +0.9	
	comp=Z,1.1nm,0.7s,baz=144,slow=19,SNR=3.4							
SCHQ	**Schefferville**	**120.92**	**10**	PKP	PKPdf		13 27 39.2 +0.9	
JCT	**Junction City**	**123.23**	**50**	*e*PKP	PKPdf		13 27 45.8 +2.5	
MIAR	**Mount Ida**	**125.66**	**43**	*e*PKP	PKPdf		13 27 51.1 +3.1	
MIAR				*ep*PKP			13 28 05.9	
USHA	**Ushuaia**	**126.64**	**168**	PKP	PKPdf		13 27 52.0 +2.7	
	comp=Z,7.6nm,1.1s,baz=235,slow=6.4,SNR=3.9							
KIC	**Kosan Boka**	**132.24**	**281**	*eP*	PKPdf		13 28 01.9 +0.8	
	comp=Z,35nm,0.7s							
DBIC	**Dimbokro**	**132.30**	**282**	PKP	PKPdf		13 28 03.2 +2.0	
	comp=Z,4.0nm,0.6s,baz=20,slow=1.0,SNR=9.0							
DBIC	**Dimbokro**	**132.30**	**282**	PKIKP	PKPdf		13 28 03.2 +2.0	
DBIC				pmax	pmax			
	comp=Z,4.0nm,0.6s							
DBIC	**Dimbokro**	**132.30**	**282**	PKP	PKPdf		13 28 03.2 +2.0	
TIC	**Toumodi**	**132.47**	**282**	*eP*	PKPdf		13 28 02.5 +1.0	
	comp=Z,22nm,0.7s							
LIC	**Lamto**	**132.55**	**281**	*eP*	PKPdf		13 28 03.4 +1.7	
	comp=Z,54nm,1.3s							
FCH	**Farellones**	**145.23**	**152**	*eP*	PKPdf		13 28 27.1 +3.1	
MDZ	**Mendoza**	**146.26**	**153**	*eP*	PKPdf		13 28 33.9 +8.1	
TLL	**Tololo Astrono**	**147.53**	**148**	*eP*	PKPdf		13 28 29.7 +1.7	
LVC	**Limon Verde**	**154.37**	**141**	PKPbc	PKPdf		13 28 50.5 +12	
	comp=Z,3.9nm,0.8s,baz=239,slow=3.1,SNR=6.3							
LVC	**Limon Verde**	**154.37**	**141**	*e*PKPdf	PKPdf		13 28 42.4 +4.0	
LVC				PKPbc	PKPdf		13 28 50.5 +12	
LVC				*e*PKPbc	PKPdf		13 28 51.5 +13	
CPUP	**Villa Florida**	**156.26**	**167**	PKPbc	PKPdf		13 28 53.7 +13	
	comp=Z,2.4nm,0.9s,baz=201,slow=2.2,SNR=3.8							
CPUP	**Villa Florida**	**156.26**	**167**	PKIKP	PKPdf		13 28 53.7 +13	
CPUP				pmax	pmax			
	comp=Z,2.0nm,0.9s							
CPUP	**Villa Florida**	**156.26**	**167**	PKPbc	PKPdf		13 28 53.7 +13	
LPAZ	**La Paz**	**159.14**	**130**	PKP	PKPdf		13 28 48.2 +3.5	
	comp=Z,1.6nm,0.8s,baz=349,slow=2.5,SNR=7.7							
LPAZ				PKPab	PKPab		13 29 24.9 +0.8	
	comp=Z,2.8nm,0.7s,baz=228,slow=7.0,SNR=9.0							
LPAZ	**La Paz**	**159.14**	**130**	PKIKP	PKPdf		13 28 48.2 +3.5	
LPAZ							13 29 25.0	
LPAZ				pmax	pmax			
	comp=Z,2.0nm,0.9s							
LPAZ				pmax	pmax			
	comp=Z,3.0nm,0.7s							
LPAZ	**La Paz**	**159.14**	**130**	PKP	PKPdf		13 28 48.2 +3.5	
LPAZ				PKPab	PKPab		13 29 24.9 +0.8	

*IDC **17** 13:38:23.3±1.0, 22.78S×63.81W, h520km±9km, mb3.5/3, mb1 3.8/7, mb1mx3.5/17, Error ellipse: s-maj=24.4km s-min=16.3km az=180.0*
*NEIC **17** 13:38:24.0±0.5, 22.78S×63.72W, h526km±6km, Error ellipse: s-maj=13.3km s-min=10.4km az=188.0*
ISC 17 13:38:22.9±0.6, **22.85S**±0.10×**63.8W**±0.1, **h537**km±12km, **n21**, σ0**98**/21, **mb4.3**/6, **2C-1D, Salta Province**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
LVC	**Limon Verde**	**4.75**	**272**	P		**P**		**13 39 50.4**	**-0.1**
	13nm,0.3s,baz=84,slow=6.0,SNR=357								
LVC				S		**S**		**13 40 58.1**	**-1.9**
	11nm,0.3s,baz=246,slow=20,SNR=20								
ANCH	**Antofagasta**	**6.16**	**261**	⇑*i*P		**P**		**13 40 03.2**	**0.0**
ANCH				*i* S		**S**		**13 41 22.7**	**-0.1**
CPUP	**Villa Florida**	**6.81**	**122**	P		**P**		**13 40 10.1**	**+0.8**
	5.3nm,0.3s,baz=329,slow=9.4,SNR=85								
LPAZ	**La Paz**	**7.72**	**327**	P		**P**		**13 40 19.1**	**+0.8**
	15nm,0.3s,baz=113,slow=5.5,SNR=380								
LPAZ				S		**S**		**13 41 50.2**	**0.0**
	1.0nm,0.3s,baz=243,slow=25,SNR=7.7								
LPAZ	**La Paz**	**7.72**	**327**	P		**P**		**13 40 19.1**	**+0.8**
LPAZ				S		**S**		**13 41 50.2**	**0.0**
TLL	**Tololo Astrono**	**9.63**	**219**	⇓*i*P		**P**		**13 40 38.9**	**+1.1**
ARE	**Arequipa**	**9.66**	**310**	⇑*i*P		**P**		**13 40 39.0**	**+0.9**
ARE				*e*S		**S**		**13 42 31.0**	**+5.0**
BDFB	**Brasilia**	**16.51**	**67**	P		**P**		**13 41 47.7**	**+0.5**
	2.8nm,0.3s,baz=250,slow=9.8,SNR=21								
LIC	**Lamto**	**64.26**	**71**	*eP*		**P**		**13 48 06.1**	**-1.3**
	49nm,1.6s,mb4.7								
TIC	**Toumodi**	**64.47**	**70**	*eP*		**P**		**13 48 06.4**	**-2.3**
	8.4nm,0.2s,mb4.8								
KIC	**Kosan Boka**	**64.58**	**71**	*eP*		**P**		**13 48 08.7**	**-0.7**
	40nm,0.6s,mb5.0								
DBIC	**Dimbokro**	**64.63**	**70**	P		**P**		**13 48 09.3**	**-0.4**
	5.2nm,0.5s,mb4.2,baz=224,slow=6.6,SNR=15								
DBIC	**Dimbokro**	**64.63**	**70**	P		**P**		**13 48 09.3**	**-0.4**
ESDC	**Sonseca Array**	**83.54**	**42**	P		**P**		**13 49 56.7**	**+1.3**
	1.5nm,0.6s,mb3.6,baz=239,slow=5.0,SNR=6.5								
YKA	**Yellowknife Ar**	**94.10**	**339**	P		**P**		**13 50 45.0**	**+0.6**
	0.2nm,0.5s,mb3.5,baz=124,slow=4.5,SNR=7.6								
YKA	**Yellowknife Ar**	**94.10**	**339**	P		**P**		**13 50 45.0**	**+0.6**
ASAR	**Alice Springs**	**130.67**	**202**	PKP	PKPdf			13 56 35.6	+2.2
	0.4nm,0.5s,baz=130,slow=1.7,SNR=8.8								
ASAR				SKPbc				13 59 10.2	
	1.8nm,0.9s,baz=152,slow=3.4,SNR=15								
WRA	**Warramunga Arr**	**133.94**	**204**	PKP	PKPdf			13 56 42.2	+2.7
	0.5nm,0.5s,baz=163,slow=1.7,SNR=14								
WRA				SKPbc				13 59 21.5	
	1.0nm,0.9s,baz=148,slow=3.3,SNR=5.4								
ZAL	**Zalesovo**	**140.97**	**29**	PKP	PKPdf			13 56 54.4	+3.1
	0.6nm,0.3s,baz=238,slow=3.9,SNR=3.6								
MKAR	**Makanchi Array**	**143.74**	**40**	PKP	PKPdf			13 56 57.6	+1.4
	3.9nm,0.6s,baz=304,slow=3.9,SNR=52								
SONM	**Songino Array**	**153.86**	**15**	PKPbc	PKPdf			13 57 23.9	+12
	0.4nm,0.5s,baz=297,slow=2.8,SNR=3.7								
SONM				PKPab	PKPab			13 57 39.2	+0.4
	0.7nm,0.6s,baz=307,slow=3.6,SNR=5.8								

*IDC **17** 13:44:18.8±6.9, 6.71S×127.00E, h385km±84km, mb3.3/5, mb1 3.4/8, mb1mx3.3/15, Error ellipse: s-maj=95.7km s-min=25.3km az=56.0*
*NEIC **17** 13:44:21.0±1.9, 6.87S×126.87E, h414km±27km, Error ellipse: s-maj=28.7km s-min=17.0km az=65.0*
ISC 17 13:44:21.3±1.6, **7.0S**±0.1×**127.0E**±0.2, **h441**km±21km, **n16**, σ0**83**/18, **mb3.6**/5,**1C-1D, Banda Sea**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
KAKA	**Kakadu**	**7.83**	**137**	⇑*i*P		**P**		**13 46 16.1**	**+0.2**
	3.6nm,0.4s								
KAKA				*e*S		**S**		**13 47 46.3**	**-0.2**
FITZ	**Fitzroy Crossi**	**11.14**	**186**	*e*P		**P**		**13 46 52.0**	**-0.8**
	3.3nm,1.3s								
FITZ	**Fitzroy Crossi**	**11.14**	**186**	P		**P**		**13 46 52.1**	**-0.7**
	0.3nm,0.3s,baz=20,slow=10,SNR=18								
WRAB	**Tennant Creek**	**14.75**	**152**	*e*P		**P**		**13 47 31.5**	**-0.1**
	34nm,1.2s								
WRA	**Warramunga Arr**	**14.76**	**152**	P		**P**		**13 47 31.5**	**-0.1**
	1.1nm,0.3s,baz=332,slow=10,SNR=71								
WB2	**Warramunga Arr**	**14.76**	**152**	*e*P		**P**		**13 47 31.5**	**-0.2**
WB2				*e*S		**S**		**13 50 03.8**	**-1.2**
AS12	**Alice Springs**	**17.89**	**159**	⇓*i*P		**P**		**13 48 05.3**	**+2.0**
	9.0nm,0.4s								
ASAR	**Alice Springs**	**17.89**	**159**	P		**P**		**13 48 05.0**	**+1.8**
	2.4nm,0.3s,baz=331,slow=10,SNR=80								
STKA	**Stephens Creek**	**28.30**	**153**	P		**P**		**13 49 40.6**	**+1.6**
	2.6nm,0.4s,mb3.9,baz=305,slow=24,SNR=12								
SONM	**Songino Array**	**57.51**	**344**	P		**P**		**13 53 28.1**	**-0.8**
	1.1nm,0.8s,mb3.2,baz=164,slow=9.0,SNR=5.4								
MKAR	**Makanchi Array**	**66.57**	**328**	P		**P**		**13 54 28.1**	**+0.2**
	1.5nm,0.8s,mb3.7,baz=126,slow=8.2,SNR=8.2								
ZAL	**Zalesovo**	**70.25**	**335**	P		**P**		**13 54 48.6**	**-1.4**
	1.3nm,0.6s,mb3.6,baz=250,slow=6.9,SNR=5.1								
KURK	**Kurchatov**	**70.94**	**330**	*e*P		**P**		**13 54 54.5**	**+0.3**
BVAR	**Borovoye Array**	**76.45**	**329**	P		**P**		**13 55 26.2**	**+0.7**
	0.9nm,0.7s,mb3.5,baz=146,slow=5.2,SNR=6.8								
BRVK	**Borovoye**	**76.52**	**329**	*e*P		**P**		**13 55 26.0**	**+0.1**
ZRNK	**Zerenda**	**77.12**	**328**	*e*P		**P**		**13 55 29.2**	**0.0**
ZRNK				*e*				13 56 40.6	

*IDC **17** 13:44:15.2±1.2, 6.10N×124.67E, mb3.9/5, mb1 4.1/5, mb1mx3.8/19, Error ellipse: s-maj=80.8km s-min=23.1km az=74.0*
*MAN **17** 13:44:19.4, 6.06N×124.22E, h1km, mb4.7, ML3.6, MS3.5*
ISC 17 13:44:22.5±0.9, **6.03N**±0.08×**124.28E**±0.08, **h78**km±10km, **n12**, σ0**86**/17, **mb3.7**/5,**4C-2D, Mindanao**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
GSPH	**General Santos**	**0.67**	**85**	⇑*i*P		**P**		**13 44 38.5**	**+0.6**
GSPH				*i* S		**S**		**13 44 50.5**	**+1.1**
CTBH	**Cotabato--PC H**	**1.18**	**359**	⇓*e*P		**P**		**13 44 43.9**	**-0.1**
CTBH				*i* S		**S**		**13 44 60.0**	**-0.1**
KCP	**Kidapawan**	**1.26**	**40**	⇓*i*P		**P**		**13 44 44.3**	**-0.8**
KCP				*i* S		**S**		**13 45 00.2**	**-1.7**
DMPH	**Davao City--Mi**	**1.61**	**49**	*e*P		**P**		**13 44 49.4**	**-0.3**
DMPH				*e*S		**S**		**13 45 10.8**	**+1.0**
PAGZ	**Pagadian**	**2.01**	**334**	⇑*e*P		**P**		**13 44 54.7**	**-0.4**
PAGZ				*e*S		**S**		**13 45 19.1**	**0.0**
CUYO	**Cuyo Island**	**5.77**	**326**	⇑*e*P		**P**		**13 45 47.5**	**+0.3**
ENPP	**El Nido**	**7.03**	**317**	⇑*e*P		**P**		**13 46 04.8**	**0.0**
WRA	**Warramunga Arr**	**27.64**	**159**	P		**P**		**13 50 03.8**	**-1.4**
	1.8nm,0.7s,mb3.7,baz=334,slow=10,SNR=6.8								
ASAR	**Alice Springs**	**30.98**	**163**	P		**P**		**13 50 33.9**	**-1.0**
	0.5nm,0.5s,mb3.5,baz=346,slow=8.2,SNR=4.6								
STKA	**Stephens Creek**	**41.16**	**157**	P		**P**		**13 52 01.3**	**+0.5**
	5.2nm,0.9s,mb4.4,baz=335,slow=11,SNR=5.4								
MKAR	**Makanchi Array**	**54.28**	**326**	P		**P**		**13 53 44.8**	**+1.9**
	0.8nm,0.9s,mb3.7,baz=126,slow=7.4,SNR=3.6								
ILAR	**Eielson Array**	**84.09**	**26**	P		**P**		**13 56 46.1**	**+0.4**
	0.3nm,0.6s,mb3.3,baz=248,slow=5.4,SNR=9.0								

*IDC **17** 13:49:08.0±4.1, 16.84S×177.99W, mb3.9/5, mb1 4.1/5, mb1mx3.9/14, Error ellipse: s-maj=171.0km s-min=34.5km az=139.0*
ISC 17 13:49:13.2±3.9, **16.5S**±0.9×**178.4W**±0.8, **h33**km, **n5**, σ0**44**/5, **mb3.9**/5, **Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**39.33**	**240**	P		**P**		**13 56 41.0**	**0.0**
	2.1nm,0.8s,mb4.0,baz=94,slow=13,SNR=5.4								
WRA	**Warramunga Arr**	**44.90**	**258**	P		**P**		**13 57 27.3**	**+0.4**
	1.1nm,0.8s,mb3.8,baz=96,slow=7.4,SNR=24								
ASAR	**Alice Springs**	**45.19**	**253**	P		**P**		**13 57 29.2**	**+0.1**
	6.0nm,0.6s,mb4.6,baz=88,slow=8.0,SNR=144								
FITZ	**Fitzroy Crossi**	**53.27**	**259**	P		**P**		**13 58 30.8**	**-0.5**
	1.3nm,0.8s,mb3.9,baz=100,slow=11,SNR=3.6								
ILAR	**Eielson Array**	**84.50**	**13**	P		**P**		**14 01 43.8**	**0.0**
	0.1nm,0.5s,mb3.2,baz=211,slow=5.3,SNR=4.5								

MAN 17 13:51:15.3, 9.10N×126.42E, h28km, mb4.6, ML3.5, MS3.4, 5C-1D, Mindanao

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
BUTP	**Butuan**	**0.80**	**260**	⇑*e*P		**P**		**13 51 30.5**	**+0.1**
BUTP				*e*S		Sb		**13 51 42.1**	**+1.2**
BIPH	**Bislig**	**0.92**	**183**	⇓*e*P		**P**		**13 51 32.2**	**-0.2**
BIPH				*i* S		Sb		**13 51 44.4**	**0.0**
SCPH	**Surigao**	**1.14**	**306**	*i* P		Pn		**13 51 34.2**	**-1.3**
SCPH				*i* S		Sn		**13 51 49.0**	**-1.3**
MSLP	**Maasin**	**1.84**	**304**	⇑*e*P		Pn		**13 51 47.8**	**+2.1**
MSLP				*e*S		Sn		**13 52 10.6**	**+2.3**
PLP	**Palo**	**2.49**	**326**	*e*P		Pn		**13 51 54.6**	**-0.3**
PLP				*e*S		Sn		**13 52 25.3**	**+0.6**
BESP	**Borongan**	**2.66**	**339**	⇑*e*P		Pn		**13 51 56.5**	**-0.9**
BESP				*e*S		Sn		**13 52 29.3**	**+0.3**
LLP	**Lapu-Lapu**	**2.70**	**297**	*e*P		Pn		**13 51 58.4**	**+0.5**
PAGZ	**Pagadian**	**3.25**	**248**	⇑*e*P		Pn		**13 52 07.6**	**+1.9**
CNP	**Catarman**	**3.80**	**333**	⇑*e*P		Pn		**13 52 11.9**	**-1.6**
CNP				*e*S		Sn		**13 52 55.3**	**-2.5**

IDC 17 14:09:49.5±2.3, **6.51S**×**130.28E, mb4.0**/1, **mb1 4.1**/4, **mb1mx3.8**/14, **ML3.8**/3, **Error ellipse: s-maj=105.0km s-min=27.1km az=77.0, Banda Sea**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**12.38**	**201**	Pn		P		14 12 47.6	-2.4
	0.5nm,0.3s,baz=24,slow=12,SNR=17								
FITZ				Sn		S		14 14 53.8	-16
	2.1nm,0.3s,baz=184,slow=12,SNR=14								
WRA	**Warramunga Arr**	**13.92**	**164**	Pn		P		14 13 07.2	-3.4
	0.6nm,0.3s,baz=340,slow=14,SNR=36								
WRA				Sn		S		14 15 33.5	-14
	1.3nm,0.3s,baz=330,slow=23,SNR=8.7								
ASAR	**Alice Springs**	**17.41**	**169**	P		P		14 13 54.5	-1.1
	0.3nm,0.3s,baz=344,slow=8.8,SNR=27								
ASAR				S		S		14 16 58.6	-10
	0.3nm,0.3s,baz=326,slow=17,SNR=8.5								
MKAR	**Makanchi Array**	**67.97**	**327**	P		P		14 20 50.5	-2.1
	0.6nm,0.4s,baz=115,slow=8.2,SNR=14								

*BJI **17** 15:10:24.6, 9.17S×67.31E, h10km, mB5.0, mb4.9, Ms4.9, Msz4.3*
*MOS **17** 15:10:34.7±1.2, 7.89S×68.41E, h10km, mb5.0/4, Error ellipse: s-maj=35.1km s-min=17.5km az=95.2*
*IDC **17** 15:10:34.4±0.9, 8.09S×68.15E, mb4.0/12, mb1 4.2/12, mb1mx4.1/19, MS3.7/11, Ms1 3.7/11, ms1mx3.5/32, Error ellipse: s-maj=30.4km s-min=19.1km az=34.0*
*NEIC **17** 15:10:35.7

SSE					AMB	AMB			
	comp=Z,38nm,0.7s,mb5.5								
SSE					AMB	AMB			
	comp=Z,73nm,4.9s								
SSE					LR	LR			
	comp=Z,53nm,22.2s,MS3.7								
NVS	**Novosibirsk**	**63.89**	**10**	*e*P	**P**		**15 21 00.0**	**-9.4**	
ASAR	**Alice Springs**	**64.58**	**112**	P	**P**		**15 21 14.1**	**-0.5**	
	comp=Z,1.3nm,0.7s,mb4.1,baz=272,slow=6.0,SNR=14								
ARU	**Arti**	**64.72**	**354**⇑	*i*P	**P**		**15 21 14.7**	**-0.2**	
ARU				*e*			15 21 48.1		
ARU				*e*			15 23 36.0		
ARU				*e*S	**S**		**15 29 51.1**	**-2.5**	
ARU				*e*SS	SS		15 34 12.2	+5.8	
ARU				pmax	pmax				
	comp=Z,11nm,1.1s,mb4.8								
ARU				MLR	MLR				
	comp=Z,50nm,20.0s,MS3.7								
ARU				MLR	MLR				
	comp=N,100nm,24.0s								
ARU	**Arti**	**64.72**	**354**	*e*P	**P**		**15 21 14.2**	**-0.7**	
	comp=N,18nm,1.2s,mb5.0								
WRA	**Warramunga Arr**	**64.90**	**108**	P	**P**		**15 21 16.1**	**-0.6**	
	comp=N,2.4nm,0.8s,mb4.3,baz=280,slow=6.9,SNR=16								
WB2	**Warramunga Arr**	**64.91**	**108**	*e*P	**P**		**15 21 16.8**	**+0.1**	
SONM	**Songino Array**	**65.04**	**27**	P	**P**		**15 21 17.7**	**+0.7**	
	comp=N,3.4nm,0.9s,mb4.4,baz=217,slow=6.2,SNR=17								
ULN	**Ulaanbaatar**	**65.36**	**28**	*e*P	**P**		**15 21 17.7**	**-1.4**	
ZAK	**Zakamensk**	**65.64**	**24**	*e*P	**P**		**15 21 17.8**	**-3.1**	
AKASG	**Malin Array Be**	**67.52**	**334**	P	**P**		**15 21 31.2**	**-1.6**	
	comp=N,0.4nm,0.4s,mb3.8,baz=129,slow=5.4,SNR=7.8								
DBIC	**Dimbokro**	**74.31**	**279**	LR	LR		15 53 47.5		
	comp=N,52nm,19.3s,MS3.8,baz=116,slow=35								
CLL	**Collm**	**75.72**	**328**	P	**P**		**15 22 22.0**	**+0.1**	
GRA1	**Grafenberg Arr**	**75.83**	**326**	*e*P	**P**		**15 22 22.8**	**+0.3**	
	comp=N,7.0nm,1.3s,mb4.4								
GRA1				*e*pP	pP		15 22 29.5	+3.8	
GRA1				*e*			15 22 35.9		
GRF	**Grafenberg Arr**	**75.83**	**326**	*e*P	**P**		**15 22 22.8**	**+0.3**	
GRF				*e**PP	pP		15 22 29.5	+3.8	
GRF				*e*			15 22 35.9		
GRF				pmax	pmax				
	comp=Z,7.0nm,1.3s,mb4.4								
FINES	**FINESS Array B**	**76.63**	**341**	LR	LR		15 57 15.9		
	comp=Z,40nm,19.0s,MS3.8,baz=165,slow=36								
ESDC	**Sonseca Array**	**81.62**	**312**	P	**P**		**15 22 54.2**	**-0.1**	
	comp=Z,0.4nm,0.3s,mb3.8,baz=90,slow=1.5,SNR=4.2								
ARCES	**ARCESS Array B**	**82.76**	**346**	P	**P**		**15 23 00.4**	**+0.9**	
	comp=Z,4.0nm,0.8s,mb4.5,baz=135,slow=1.7,SNR=8.1								
ARCES				LR	LR		16 01 47.7		
	comp=Z,54nm,18.5s,MS4.0,baz=138,slow=37								
YAK	**Yakutsk**	**84.22**	**25**	*i* P	**P**		**15 23 07.1**	**0.0**	
YAK				pmax	pmax				
	comp=Z,5.0nm,0.9s,mb4.6								
YAK				MLR	MLR				
	comp=Z,100nm,19.0s,MS4.2								
ASAJ	**Asahikawa**	**84.50**	**44**	LR	LR		15 57 05.9		
	comp=Z,64nm,20.7s,MS4.0,baz=344,slow=33								
TIXI	**Tiksi**	**88.73**	**16**	*e*P	**P**		**15 23 29.6**	**+0.6**	
TIXI				pmax	pmax				
	comp=Z,41nm,1.1s,mb5.7								
TIXI				MLR	MLR				
	comp=Z,900nm,16.0s,MS5.3								
TIXI	**Tiksi**	**88.73**	**16**	*e*P	**P**		**15 23 29.6**	**+0.6**	
	comp=Z,12nm,1.8s,mb4.9								
ILAR	**Eielson Array**	**118.20**	**16**	PKP	PKPdf		15 29 22.4	-2.2	
	comp=Z,0.5nm,0.9s,baz=275,slow=2.7,SNR=5.7								
YKA	**Yellowknife Ar**	**125.60**	**2**	PKP	PKPdf		15 29 36.8	-2.1	
	comp=Z,0.6nm,0.7s,baz=348,slow=2.3,SNR=18								
YKA				PP	PP		15 31 29.9	-1.8	
	comp=Z,0.8nm,1.1s,baz=354,slow=6.0,SNR=7.1								
YKA	**Yellowknife Ar**	**125.60**	**2**	PKP	PKPdf		15 29 36.9	-2.1	
YKA				PP	PP		15 31 29.9	-1.8	
YBH	**Yreka Blue Hor**	**145.06**	**14**	PKPbc	PKPbc		15 30 14.0	+1.5	
	comp=Z,2.0nm,0.8s,baz=22,slow=4.8,SNR=4.9								
YBH	**Yreka Blue Hor**	**145.06**	**14**	*e*PKPdf	PKPdf		15 30 13.4	-2.0	
WVOR	**Wild Horse Val**	**145.20**	**9**	*e*PKPdf	PKPdf		15 30 14.6	-1.0	
PDAR	**Pinedale Array**	**145.34**	**357**	PKPbc	PKPbc		15 30 14.8	+1.6	
	comp=Z,0.9nm,0.6s,slow=1.5,SNR=9.1								
HWUT	**Hardware Ranch**	**146.56**	**360**	*e*PKPdf	PKPdf		15 30 19.1	+1.2	
BEKR	**Beckwourth**	**147.38**	**12**	*e*PKP	PKPdf		15 30 22.0	+2.7	
NVAR	**Mina Array Bea**	**149.16**	**10**	PKPbc	PKPdf		15 30 26.3	+4.1	
	comp=Z,1.9nm,0.8s,baz=54,slow=0.8,SNR=13								
MSU	**Marysvale**	**149.65**	**1**	*e*PKPdf	PKPdf		15 30 24.4	+1.4	
MSU				*e*PKPbc	PKPdf		15 30 28.3	+5.3	
TPH	**Tonopah**	**149.68**	**9**	*e*PKPdf	PKPdf		15 30 24.1	+1.0	

BJI **17** *15:44:07.3,2.19N×128.87E,h49km,mB5.0,mb4.7*
MOS **17** *15:44:13.4±1.2,3.17N×128.21E,h33km,mb5.1/4, Error ellipse: s-maj=31.2km s-min=13.7km az=101.8*
NEIC **17** *15:44:16.7±0.2,3.08N×128.29E,mb4.6/8, Error ellipse: s-maj=14.7km s-min=4.7km az=74.0*
IDC **17** *15:44:16.6±0.9,3.12N×128.34E,h47km±9km, mb4.0/12, mb1 4.2/12,mb1mx4.0/19,MS3.4/8,Ms1 3.4/8, ms1mx3.2/25, Error ellipse: s-maj=31.5km s-min=11.7km az=70.0*
ISC 17 15:44:15.2±0.3,3.10N±0.06×128.3E±0.1,h50km, h50km±1.3km:pP-P,n53,σ1§03/47,mb4.5/24,MS3.7/9, 3C-3D,North of Halmahera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KCP	**Kidapawan**	**5.02**	**321**⇓	*e*P	**P**	**15 45 33.7**	**+3.8**
PAGZ	**Pagadian**	**6.79**	**314**⇑	*e*P	**P**	**15 45 55.9**	**+1.2**
KAKA	**Kakadu**	**16.22**	**165**	*e*P	**P**	**15 48 00.2**	**-1.1**
	18nm,0.6s						
FITZ	**Fitzroy Crossi**	**21.23**	**187**	*e*P	**P**	**15 48 58.2**	**-0.9**
	9.2nm,1.4s,mb3.9						
FITZ	**Fitzroy Crossi**	**21.23**	**187**	P	**P**	**15 48 59.1**	**0.0**
	15nm,1.2s,mb4.2,baz=12,slow=9.6,SNR=12						
FITZ				LR	LR	15 57 55.1	
	comp=Z,77nm,18.4s,MS3.1,baz=56,slow=38						
WRAB	**Tennant Creek**	**23.65**	**166**	*e*P	**P**	**15 49 23.9**	**+0.9**
	114nm,1.0s,mb5.3						
WRA	**Warramunga Arr**	**23.66**	**166**	P	**P**	**15 49 23.9**	**+0.8**
	6.8nm,0.3s,mb4.5,baz=345,slow=11,SNR=210						
WRA				pP		15 49 36.4	
	42nm,0.7s,baz=343,slow=10,SNR=24						
WB2	**Warramunga Arr**	**23.66**	**166**	*e*P	**P**	**15 49 23.7**	**+0.6**
WB2				*i*		15 49 37.4	
AS12	**Alice Springs**	**27.16**	**169**	*e*P	**P**	**15 49 55.4**	**-0.8**
	8.9nm,1.0s,mb4.2						
ASAR	**Alice Springs**	**27.16**	**169**	P	**P**	**15 49 55.6**	**-0.6**
	1.8nm,0.5s,mb3.8,baz=347,slow=7.3,SNR=62						
ASAR				pP	pP	15 50 07.3	-1.5
	4.1nm,0.8s,baz=349,slow=12,SNR=14						
ASAR				PcP	PcP	15 53 16.0	0.0
	2.1nm,0.8s,baz=354,slow=1.9,SNR=7.9						
ASAR				pPcP		15 53 30.1	
	1.4nm,0.5s,baz=354,slow=2.4,SNR=7.1						
ASAR				ScP		15 56 52.0	
	0.5nm,0.7s,baz=1.8,slow=2.4,SNR=5.2						
ASAR				LR	LR	15 59 57.4	
	comp=Z,85nm,19.4s,MS3.3,baz=325,slow=35						
CBIJ	**Chichi jima**	**27.31**	**28**	LR	LR	15 58 20.8	
	comp=Z,148nm,19.6s,MS3.6,baz=146,slow=31						
SSE	**Sheshan**	**28.64**	**347**	P	**P**	**15 50 11.8**	**+2.4**
SSE				AMB	AMB		
	comp=Z,25nm,0.7s,mb5.0						
SSE				AMB	AMB		
	comp=Z,60nm,4.3s						
JNU	**Nakatsue**	**29.96**	**4**	LR	LR	16 01 23.3	
	comp=Z,153nm,21.5s,MS3.6,baz=7.2,slow=34						
ENH	**Enshi**	**32.36**	**329**	*e*P	**P**	**15 50 41.7**	**-0.6**
	comp=Z,5.1nm,0.8s,mb4.4						
CMAR	**Chiang Mai Arr**	**32.53**	**300**	P	**P**	**15 50 44.1**	**+0.2**
	comp=Z,0.9nm,0.7s,mb3.8,baz=119,slow=6.9,SNR=6.4						
CMAR				pP	pP	15 50 56.5	-0.4
	comp=Z,3.6nm,1.1s,baz=113,slow=6.8,SNR=6.6						
CMAR				LR	LR	16 02 24.7	
	comp=Z,39nm,21.7s,MS3.1,baz=332,slow=33						
XAN	**Xi'an**	**35.69**	**332**	P	**P**	**15 51 09.9**	**-0.9**
XAN				AMB	AMB		
	comp=Z,10.0nm,1.2s,mb4.6						
STKA	**Stephens Creek**	**37.01**	**161**	P	**P**	**15 51 21.6**	**-0.5**
	comp=Z,16nm,0.8s,mb4.9,baz=339,slow=9.0,SNR=26						
STKA				LR	LR	16 08 31.2	
	comp=Z,135nm,18.7s,MS3.8,baz=26,slow=39						
LZH	**Lanzhou**	**39.84**	**328**	⇓P	**P**	**15 51 47.0**	**+1.5**
LZH				AMB	AMB		
	comp=Z,36nm,1.0s,mb5.1						
MDJ	**Mudanjiang**	**41.36**	**1**	P	**P**	**15 51 58.5**	**+0.5**
MDJ				AMB	AMB		
	comp=Z,12nm,1.1s,mb4.4						
MDJ				AMB	AMB		
	comp=Z,79nm,5.2s						
MDJ	**Mudanjiang**	**41.36**	**1**	*e*P	**P**	**15 51 58.6**	**+0.6**
	comp=Z,13nm,1.0s,mb4.5						
ASAJ	**Asahikawa**	**42.76**	**15**	P	**P**	**15 52 09.9**	**+0.4**
	comp=Z,6.5nm,0.6s,mb4.6,baz=238,slow=7.8,SNR=10.0						
LSA	**Lhasa**	**44.02**	**311**	P	**P**	**15 52 21.2**	**+1.2**
GTA	**Gaotai**	**44.44**	**328**	*e*P	**P**	**15 52 24.1**	**+0.9**
GTA				AP	pP	15 52 36.9	+0.4
GTA				AMB	AMB		
	comp=Z,5.0nm,1.0s,mb4.2						
YSS	**Yuzh-Sakhalins**	**45.45**	**14**	*e*P	**P**	**15 52 30.6**	**-0.6**
KLR	**Kul'dur**	**46.05**	**3**	*e*P	**P**	**15 52 35.8**	**-0.1**
ULN	**Ulaanbaatar**	**48.20**	**341**	*e*P	**P**	**15 52 52.1**	**-0.7**
ULN	**Ulaanbaatar**	**48.20**	**341**	*e*P	**P**	**15 52 52.5**	**-0.2**
	comp=Z,3.9nm,1.0s,mb4.4						
ULN				*e*sP	sP	15 53 11.4	-0.6
SONM	**Songino Array**	**48.40**	**340**	P	**P**	**15 52 53.9**	**-0.4**
	comp=Z,0.8nm,0.8s,mb3.8,baz=158,slow=8.0,SNR=4.3						
WMQ	**Urumqi**	**54.13**	**324**	*e*P	**P**	**15 53 38.0**	**+0.4**
YAK	**Yakutsk**	**58.80**	**1**	*e*P	**P**	**15 54 10.5**	**-0.1**
YAK				pmax	pmax		
	comp=Z,8.0nm,1.1s,mb4.7						
YAK	**Yakutsk**	**58.80**	**1**	*e*P	**P**	**15 54 10.2**	**-0.4**
	comp=Z,7.4nm,0.7s,mb4.8						
YAK				*e*pP	pP	15 54 23.5	-1.0
MKAR	**Makanchi Array**	**58.96**	**325**	P	**P**	**15 54 11.5**	**-0.4**
	comp=Z,2.2nm,0.5s,mb4.5,baz=112,slow=8.3,SNR=47						
MKAR	**Makanchi Array**	**58.96**	**325**	*i* P	**P**	**15 54 11.5**	**-0.4**
MKAR				pmax	pmax		
	comp=Z,2.0nm,0.5s						
ZAL	**Zalesovo**	**61.86**	**333**	P	**P**	**15 54 30.1**	**-1.5**
	baz=211,slow=5.9						
ZAL				LR	LR	16 23 45.0	
	comp=Z,41nm,18.1s,MS3.6,baz=37,slow=38						
FX1	**Attu Island--F**	**61.87**	**29**	LR	LR	16 15 51.6	
	comp=Z,4.1nm,20.8s,baz=326,slow=31						
KURK	**Kurchatov**	**63.10**	**327**	*e*P	**P**	**15 54 38.7**	**-1.3**
KURK				*e*pP	pP	15 54 53.7	-0.3
NVS	**Novosibirsk**	**63.13**	**333**	*e*P	**P**	**15 54 37.2**	**-2.9**
TIXI	**Tiksi**	**68.45**	**0**	*e*P	**P**	**15 55 12.2**	**-1.6**
TIXI				*e*	pP	15 55 27.5	-0.4
TIXI				pmax	pmax		
	comp=Z,12nm,0.8s,mb5.0						
TIXI				MLR	MLR		
	comp=Z,500nm,16.0s,MS4.8						
TIXI	**Tiksi**	**68.45**	**0**	*e*P	**P**	**15 55 12.6**	**-1.2**
BVAR	**Borovoye Array**	**68.69**	**327**	P	**P**	**15 55 14.2**	**-1.4**
	comp=Z,1.9nm,0.9s,mb4.0,baz=112,slow=7.8,SNR=9.3						
BRVK	**Borovoye**	**68.76**	**327**	*e*P	**P**	**15 55 15.1**	**-0.9**
BRVK				*e*pP	pP	15 55 29.9	-0.3
ZRNK	**Zerenda**	**69.43**	**326**	*e*P	**P**	**15 55 18.9**	**-1.1**
ZRNK				*e*pP	pP	15 55 32.8	-1.4
IMA	**Indian Mountai**	**82.33**	**24**	*e*P	**P**	**15 56 34.5**	**+1.7**
SBA	**Scott Base**	**83.51**	**172**	*e*P	**P**	**15 56 38.9**	**+0.4**
ILAR	**Eielson Array**	**85.00**	**25**	P	**P**	**15 56 46.0**	**-0.2**
	comp=Z,0.7nm,0.7s,mb3.9,baz=243,slow=4.8,SNR=8.7						
SOC	**Sochi**	**86.84**	**313**	*e*P	**P**	**15 56 54.7**	**-1.1**
SOC				*e*S	S	16 07 29.2	+1.0
SOC				*e*SS	SS	16 13 06.7	-7.4
SOC				pmax	pmax		
	comp=Z,34nm,1.3s,mb5.4						
SOC				pmax	pmax		
	comp=N,8.0nm,0.7s						
SOC				pmax	pmax		
	comp=E,36nm,0.9s						
SOC				MLR	MLR		
	comp=Z,424nm,30.0s,MS4.7						
SOC				MLR	MLR		
	comp=N,103nm,22.0s						
SOC				MLR	MLR		
	comp=E,340nm,28.0s						
DAWY	**Dawson**	**88.25**	**26**	*e*P	**P**	**15 57 03.0**	**+0.9**
QSPA	**South Pole Qui**	**93.01**	**180**	*e*P	**P**	**15 57 25.5**	**+1.5**
	comp=E,3.1nm,0.8s,mb4.8						
AKASG	**Malin Array Be**	**93.36**	**321**	P	**P**	**15 57 27.4**	**+1.3**
	comp=E,0.4nm,0.3s,mb4.3,baz=62,slow=4.5,SNR=10						
YKA	**Yellowknife Ar**	**99.42**	**25**	P	**P**	**15 57 53.6**	**+0.2**
	comp=E,0.3nm,0.6s,mb4.0,baz=301,slow=4.7,SNR=12						
VNA2	**Neumayer--Watz**	**106.59**	**194**⇑	*i*	Pdif	15 58 27.8	+2.7
VNA2	**Neumayer--Watz**	**106.59**	**194**⇑	*i*	Pdif	15 58 30.4	+5.3
VNA1	**Neumayer--Stat**	**106.99**	**194**⇓	*i*	Pdif	15 58 30.4	+3.5

NEIC **17** *15:49:30.4±0.4,51.56N×16.15E,h5km,ML3.2(VIE), ML3.0(SZGRF),ML2.7(BRG),ML2.5(CLL), Error ellipse: s-maj=6.3km s-min=4.4km az=93.0*
WAR **17** *15:49:32.5,51.46N×16.09E,h1km,Location given by Polkowice mine, origin time based upon KSP*
IDC **17** *15:49:32.0±0.8,51.46N×15.95E,mb1 3.3/7, mb1mx3.2/24,ML3.1/7, Error ellipse: s-maj=14.7km s-min=7.6km az=104.0*
PRU **17** *15:49:34.1,51.37N×16.14E*
ISC 17 15:49:28.4±0.4,51.55N±0.03×16.14E±0.03,n34,σ1§32/74, 2C-1D,Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.72**	**172**	*e*Pg	**Pg**	**15 49 44.0**	**+1.3**
KSP				*e*Sg	**Sg**	**15 49 52.7**	**+0.5**
KSP	**Ksiaz**	**0.72**	**172**	*i* Pg	**Pg**	**15 49 43.9**	**+1.2**
KSP				*i* SG	**Sg**	**15 49 52.4**	**+0.2**
KSP	**Ksiaz**	**0.72**	**172**	*i* Pg	**Pg**	**15 49 43.9**	**+1.2**
KSP				*e*Sg	**Sg**	**15 49 52.4**	**+0.2**
UPC	**Upice**	**1.05**	**184**	*e*PG	**Pg**	**15 49 49.9**	**+0.6**
DPC	**Dobruska-Polom**	**1.21**	**174**	*e*PG	**Pg**	**15 49 52.7**	**+0.2**
DPC				*e*SG	**Sg**	**15 50 07.4**	**-1.2**
	35nm,0.2s						
PVCC	**Panska Ves**	**1.42**	**225**	*e*Pg	**Pg**	**15 49 57.0**	**+0.2**
PVCC				*e*Sg	**Sg**	**15 50 16.3**	**+0.5**
BRG	**Berggiesshubel**	**1.54**	**245**	*e*Pn	**Pn**	**15 49 58.4**	**+1.2**
BRG				*i* Pg	**Pg**	**15 49 59.9**	**+0.8**
BRG				*i* Sg	**Sg**	**15 50 19.7**	**+0.2**
PRU	**Pruhonice**	**1.86**	**213**	PN	**Pn**	**15 50 02.5**	**+0.7**
PRU				*i* PG	**Pg**	**15 50 04.4**	**-1.2**
PRU				*i* x	x	15 50 08.7	
PRU				*i* x	x	15 50 21.4	
PRU				SG	**Sg**	**15 50 28.8**	**-1.6**
	34nm,0.3s						
PRU	**Pruhonice**	**1.86**	**213**	Pn	**Pn**	**15 50 02.5**	**+0.7**
PRU				*i* Pg	**Pg**	**15 50 04.4**	**-1.2**
PRU				*i*		15 50 21.4	
PRU				Sg	**Sg**	**15 50 28.8**	**-1.6**
RAC	**Raciborz**	**1.97**	**138**	*e*Pg	**Pg**	**15 50 07.6**	**0.0**
RAC				*e*Sg	**Sg**	**15 50 32.4**	**-1.4**
RAC	**Raciborz**	**1.97**	**138**	*e*P	**Pn**	**15 50 08.0**	**+4.7**
RAC				*e*S	**Sn**	**15 50 32.0**	**+3.0**
CLL	**Collm**	**1.98**	**264**	*e*PN	**Pn**	**15 50 05.0**	**+1.6**
CLL				*e*Pg	**Pg**	**15 50 08.0**	**+0.2**
CLL				*e*		15 50 12.0	
CLL				*e*SG	**Sg**	**15 50 34.0**	**-0.2**
CLL	**Collm**	**1.98**	**264**	*e*Pn	**Pn**	**15 50 05.0**	**+1.6**
CLL				*e*Pg	**Pg**	**15 50 08.0**	**+0.2**
CLL				*e*Sg	**Sg**	**15 50 34.0**	**-0.2**
MORC	**Moravsky Berou**	**1.99**	**153**	*e*P	**Pn**	**15 50 04.6**	**+1.0**
MORC				*e*S	**Sn**	**15 50 32.2**	**+2.6**
OKC	**Ostrava-Krasne**	**2.14**	**143**	*e*PN	**Pn**	**15 50 06.9**	**+1.1**
OKC				*e*PG	**Pg**	**15 50 10.2**	**-0.9**
OKC				*e*SG	**Sg**	**15 50 36.6**	**-3.0**
VRAC	**Vranov**	**2.27**	**172**	Pn	**Pn**	**15 50 08.7**	**+1.1**
	3.0nm,0.3s,baz=346,slow=13,SNR=14						
VRAC				Lg		15 50 41.2	
	6.8nm,0.3s,baz=256,slow=22,SNR=9.1						
OJC	**Ojcow**	**2.68**	**118**	*e*Pn	**Pn**	**15 50 14.7**	**+1.2**
OJC				*e*Pg	**Pg**	**15 50 23.0**	**+1.2**
OJC				*e*Sg	**Sg**	**15 50 57.8**	**+0.3**
OJC	**Ojcow**	**2.68**	**118**	*e*PN	**Pn**	**15 50 15.0**	**+1.6**
OJC				*e*PG	**Pg**	**15 50 23.0**	**+1.2**
OJC				*e*SG	**Sg**	**15 50 58.0**	**+0.5**
KHC	**Kasperske Hory**	**2.92**	**215**	*e*Pn	**Pn**	**15 50 18.2**	**+1.2**
KHC				*e*Pg	**Pg**	**15 50 24.1**	**-2.7**
KHC				*e*Sn	**Sn**	**15 50 53.3**	**-0.1**
KHC				*e*Sg	**Sg**	**15 51 02.5**	**-3.2**
MOX	**Moxa**	**2.99**	**254**	*i* P	**Pn**	**15 50 18.7**	**+0.8**
MOX				Pg	**Pg**	**15 50 28.0**	**-0.1**
MOX				Sg	**Sg**	**15 51 06.0**	**-1.9**
MOX	**Moxa**	**2.99**	**254**	*e*Pn	**Pn**	**15 50 18.7**	**+0.8**
MOX				*e*Pg	**Pg**	**15 50 27.5**	**-0.6**
MOX				*e*Sg	**Sg**	**15 51 06.5**	**-1.4**
GEC2	**GERESS Array S**	**3.13**	**211**	*e*Pn	**Pn**	**15 50 21.0**	**+1.1**
GEC2				*e*Sg	**Sg**	**15 51 08.1**	**-4.4**
GERES	**GERESS Array B**	**3.13**	**211**	Pn	**Pn**	**15 50 20.7**	**+0.8**
	0.9nm,0.3s,baz=25,slow=13,SNR=19						
GERES				Pg	**Pg**	**15 50 27.0**	**-3.8**
	4.4nm,0.3s,baz=31,slow=17,SNR=37						
GERES				Lg		15 51 07.6	
	4.9nm,0.3s,baz=39,slow=31,SNR=11						
WET	**Wettzell**	**3.19**	**222**	*e*Pn	**Pn**	**15 50 21.9**	**+1.2**
WET				*e*Sg	**Sg**	**15 51 10.6**	**-3.9**
NIE	**Niedzica**	**3.42**	**127**	*e*P	**Pg**	**15 50 34.6**	**-2.0**
NIE				*e*S	**Sg**	**15 51 19.6**	**-2.5**
ZST	**Bratislava**	**3.42**	**169**	*e*PN	**Pn**	**15 50 26.2**	**+2.2**
ZST				*e*PG	**Pg**	**15 50 35.5**	**-1.1**
ZST				*e*SB	**Sb**	**15 51 16.7**	**+4.7**
MOA	**Molln**	**3.90**	**199**⇑	*i*PN	**Pn**	**15 50 31.4**	**+0.6**
MOA				*i* SG	**Sg**	**15 51 33.7**	**-4.5**
	6.7nm,0.3s						
ARSA	**Arzberg**	**4.32**	**186**⇓	*i*PN	**Pn**	**15 50 37.1**	**+0.2**
ARSA				*i* SG	**Sg**	**15 51 46.0**	**-6.3**
	14nm,0.7s						
KBA	**Koelnbreinsper**	**4.83**	**203**⇑	*i*PN	**Pn**	**15 50 44.7**	**+0.6**
KBA				*i* SG	**Sg**	**15 52 04.4**	**-4.9**
	3.8nm,0.3s						
AKASG	**Malin Array Be**	**8.28**	**91**	Pn	P	**15 51 31.8**	**-0.7**
	0.7nm,0.3s,baz=278,slow=12,SNR=3.6						
HFS	**Hagfors**	**8.71**	**352**	Pn	**P**	**15 51 37.6**	**-0.9**
	0.0nm,0.3s,baz=165,slow=16,SNR=3.2						
NOA	**NORSAR Array B**	**9.89**	**346**	Pn	**P**	**15 51 53.4**	**-1.4**
	0.1nm,0.3s,baz=162,slow=13,SNR=2.6						
FINES	**FINESS Array B**	**11.32**	**25**	Pn	**P**	**15 52 12.7**	**-1.6**
	0.1nm,0.3s,baz=214,slow=14,SNR=4.4						
ARCES	**ARCESS Array B**	**18.58**	**10**	Pn	**P**	**15 53 45.8**	**-2.6**
	0.1nm,0.3s,baz=195,slow=14,SNR=5.8						

IDC **17** *16:00:31.2±1.4,31.00S×177.60W,mb4.3/5,mb1 4.4/6, mb1mx4.2/14,ML3.5/1, Error ellipse: s-maj=46.3km s-min=24.9km az=145.0*
NEIC **17** *16:00:32.3±0.6,30.99S×177.56W,h10km,mb4.7/2, Error ellipse: s-maj=15.1km s-min=14.0km az=111.0*
ISC 17 16:00:41.9±2.3,31.44S±0.08×178.0W±0.2,h88km±21km, n28,σ1§12/25,mb4.2/6,1C-1D,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**7.31**	**204**	P	**P**	**16 02 28.2**	**+0.4**
PUZ				S	**S**	**16 03 53.0**	**+3.1**
URZ	**Urewera**	**7.91**	**209**	Pn	**P**	**16 02 35.6**	**-0.5**
	0.6nm,0.3s,baz=312,slow=13,SNR=8.0						
URZ				Sn	**S**	**16 04 10.1**	**+5.3**
	5.0nm,0.3s,baz=201,slow=21,SNR=17						
URZ	**Urewera**	**7.91**	**209**	P	**P**	**16 02 36.0**	**-0.1**
BFZ	**Birch Farm**	**10.34**	**205**	P	**P**	**16 03 08.4**	**-0.5**
MRZ	**Mangatainoka R**	**10.58**	**208**	S	**S**	**16 05 09.3**	**-0.1**
MTW	**Mount Morrison**	**11.03**	**207**	S	**S**	**16 05 19.2**	**-1.1**
THZ	**Tophouse**	**12.64**	**213**	S	**S**	**16 05 59.3**	**+0.7**
KHZ	**Kahutara**	**12.88**	**209**	S	**S**	**16 06 02.9**	**-1.6**
MQZ	**McQueen's Vall**	**14.31**	**209**	S	**S**	**16 06 34.1**	**-4.1**
CTA	**Charters Tower**	**34.01**	**281**	*e*P	**P**	**16 07 19.9**	**+0.6**
	7.9nm,1.8s,mb4.2						
CTA	**Charters Tower**	**34.01**	**281**	P	**P**	**16 07 19.4**	**+0.1**
	4.2nm,0.6s,mb4.5,baz=114,slow=9.1,SNR=12						
CTAO	**Charters Tower**	**34.01**	**281**	*e*P	**P**	**16 07 19.6**	**+0.3**
	14nm,1.1s,mb4.7						
STKA	**Stephens Creek**	**34.28**	**258**	P	**P**	**16 07 23.8**	**+2.2**
	7.2nm,0.7s,mb4.6,baz=115,slow=9.2,SNR=18						
ASAR	**Alice Springs**	**43.09**	**268**	P	**P**	**16 08 35.4**	**+0.4**
	2.7nm,0.9s,mb4.0,baz=104,slow=7.8,SNR=21						
WB2	**Warramunga Arr**	**44.16**	**273**	*e*P	**P**	**16 08 43.1**	**-0.6**
WRAB	**Tennant Creek**	**44.17**	**273**	*e*P	**P**	**16 08 43.1**	**-0.6**
WRA	**Warramunga Arr**	**44.17**	**273**	P	**P**	**16 08 43.4**	**-0.4**
	2.0nm,0.4s,m

OCLP				*e*S		**Sn**	**16 17 01.9**	**-1.7**
LLP	**Lapu-Lapu**	**2.56**	**285**⇓	*e*P		**Pn**	**16 16 39.6**	**+1.0**
LLP				*e*S		**Sn**	**16 17 05.9**	**-4.3**
TBP	**Tagbilaran**	**2.58**	**271**	*e*P		**Pn**	**16 16 41.3**	**+2.3**
TBP				*e*S		**Sn**	**16 17 08.3**	**-2.5**
CNP	**Catarman**	**3.35**	**328**⇑	*e*P		**Pn**	**16 16 51.6**	**+1.8**
CNP				*e*S		**Sn**	**16 17 30.3**	**+0.3**
PAGZ	**Pagadian**	**3.56**	**240**⇑	*e*P		**Pn**	**16 16 53.9**	**+1.1**
RCP	**Roxas**	**4.13**	**297**⇑	*e*P		**Pn**	**16 17 00.8**	**-0.1**
JOW	**Kunigami**	**17.16**	**5**	LR	LR		16 25 47.4	
	comp=Z,88nm,21.7s,baz=80,slow=34							
FITZ	**Fitzroy Crossi**	**27.60**	**182**	P		**P**	**16 21 44.6**	**-1.4**
	1.5nm,0.4s,mb4.0,baz=200,slow=7.9,SNR=11							
WRA	**Warramunga Arr**	**30.42**	**165**	P		**P**	**16 22 09.6**	**-1.7**
	0.2nm,0.4s,mb3.2,baz=346,slow=9.3,SNR=4.6							
ASAR	**Alice Springs**	**33.91**	**168**	P		**P**	**16 22 40.2**	**-1.6**
	0.4nm,0.5s,mb3.6,baz=344,slow=7.5,SNR=15							
STKA	**Stephens Creek**	**43.76**	**161**	P		**P**	**16 24 04.4**	**+0.4**
	8.3nm,1.2s,mb4.3,baz=308,slow=15,SNR=4.6							
MKAR	**Makanchi Array**	**52.63**	**323**	P		**P**	**16 25 08.8**	**-4.0**
	0.6nm,0.7s,mb3.7,baz=112,slow=8.1,SNR=6.3							
TIXI	**Tiksi**	**61.95**	**1**	*e*P		**P**	**16 26 18.6**	**+0.2**
ZRNK	**Zerenda**	**63.03**	**325**	*e*P		**P**	**16 26 22.5**	**-3.3**
ARCES	**ARCESS Array B**	**84.83**	**340**	P		**P**	**16 28 30.0**	**-2.0**
	7.2nm,1.2s,mb4.7,baz=82,slow=5.9,SNR=7.7							
FINES	**FINESS Array B**	**86.52**	**332**	P		**P**	**16 28 37.7**	**-2.8**
	0.8nm,0.6s,mb4.1,baz=117,slow=3.1,SNR=6.8							
YKA	**Yellowknife Ar**	**94.22**	**24**	P		**P**	**16 29 16.4**	**-0.1**
	0.4nm,0.9s,mb3.8,baz=304,slow=4.9,SNR=7.5							
YKA	**Yellowknife Ar**	**94.22**	**24**	P		**P**	**16 29 16.4**	**-0.1**

WAR ***17*** *16:20:13.0,50.21N×19.10E,h1km,Location given by Central Institute of Mining, origin time based upon OJC*
PRU ***17*** *16:20:12.9,50.27N×19.01E*
NEIC ***17*** *16:20:13.3±0.8,50.18N×19.11E,h5km,MG2.2(WAR), Error ellipse: s-maj=15.1km s-min=7.7km az=173.0*

ISC 17 16:20:12.0±0.5**,50.24N**±0.04×**18.99E**±0.03**,n19**,σ1$ **35**/35**, Poland**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
OJC	**Ojcow**	**0.52**	**92**			*e*Pg	**Pg**	**16 20 22.0**	**-0.3**
OJC						*i* Sg	**Sg**	**16 20 28.5**	**-0.7**
OKC	**Ostrava-Krasne**	**0.68**	**234**			*e*PG	**Pg**	**16 20 27.4**	**+1.9**
OKC						*e*SG	**Sg**	**16 20 36.3**	**+1.8**
MORC	**Moravsky Berou**	**1.04**	**244**			*e*Pg	**Pg**	**16 20 34.0**	**+1.2**
MORC						*e*Sg	**Sg**	**16 20 47.7**	**+1.0**
NIE	**Niedzica**	**1.18**	**133**			*e*Pg	**Pg**	**16 20 34.9**	**-0.7**
NIE						*e*Sg	**Sg**	**16 20 50.1**	**-1.3**
NIE	**Niedzica**	**1.18**	**133**			*e*PG	**Pg**	**16 20 35.0**	**-0.6**
NIE						*e*SG	**Sg**	**16 20 50.0**	**-1.4**
KOLL	**Kolacno**	**1.70**	**193**			*e*SN	**Sn**	**16 21 06.7**	**+0.7**
DPC	**Dobruska-Polom**	**1.72**	**275**			*e*PG	**Pg**	**16 20 44.1**	**-2.2**
DPC						*e*SG	**Sg**	**16 21 07.8**	**-1.3**
	17nm,0.2s								
VYHS	**Vyhne**	**1.75**	**183**			*e*PN	**Pn**	**16 20 43.3**	**-0.5**
VYHS						*e*SN	**Sn**	**16 21 07.0**	**-0.1**
VYHS						*e*SG	**Sg**	**16 21 09.0**	**-1.1**
KSP	**Ksiaz**	**1.83**	**290**			*e*PN	**Pn**	**16 20 47.0**	**+2.1**
KSP						*e*PG	**Pg**	**16 20 49.0**	**+0.5**
KSP						*e*(SG)	**Sg**	**16 21 13.0**	**+0.2**
KSP	**Ksiaz**	**1.83**	**290**			*e*Pn	**Pn**	**16 20 47.0**	**+2.1**
KSP						*e*Pg	**Pg**	**16 20 49.4**	**+0.9**
KSP						*e*Sg	**Sg**	**16 21 13.3**	**+0.5**
UPC	**Upice**	**1.93**	**279**			*e*SG	**Sg**	**16 21 14.2**	**-2.0**
CRVS	**Cervenica-Dubn**	**2.09**	**129**			*e*PB	**Pb**	**16 20 52.2**	**+1.7**
CRVS						*e*PG	**Pg**	**16 20 54.1**	**+0.4**
CRVS						*e*SN	**Sn**	**16 21 15.1**	**-0.7**
CRVS						*e*SB	**Sb**	**16 21 18.5**	**+1.4**
PSZ	**Piszkesteto**	**2.39**	**165**			*e*Pn	**Pn**	**16 20 57.7**	**+4.7**
PSZ						*e*		16 21 29.5	
PVCC	**Panska Ves**	**2.85**	**278**			*e*SG	**Sg**	**16 21 44.8**	**-2.0**
PRU	**Pruhonice**	**2.88**	**267**			*e*PG	**Pg**	**16 21 05.6**	**-3.8**
PRU						*e*SG	**Sg**	**16 21 43.2**	**-4.5**
	6.8nm,0.4s								
KHC	**Kasperske Hory**	**3.69**	**255**			*e*SG	**Sg**	**16 22 07.7**	**-7.0**
MOA	**Molln**	**3.92**	**234**			*i*	**Pn**	**16 21 21.8**	**+7.0**
MOA	**Molln**	**3.92**	**234**			*i* SG	**Sg**	**16 22 20.0**	**-2.5**
	3.3nm,0.4s								
CLL	**Collm**	**3.95**	**288**			*e*SG	**Sg**	**16 22 25.0**	**+1.5**

IDC ***17*** *16:28:50.3±1.5,5.17N×127.25E,mb4.0/6,mb1 4.1/6, mb1mx3.8/20,Error ellipse: s-maj=101.0km s-min=18.1km az=69.0*

ISC 17 16:28:58.1±5.9**,5.3N**±0.3×**127.6E**±0.7**,h85**km±48km**,n8,** σ1$ **05**/8**,mb3.9**/6**,1D,Philippine Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
KCP	**Kidapawan**	**3.04**	**304**⇓	*e*P			**P**	**16 29 45.1**	**0.0**
FITZ	**Fitzroy Crossi**	**23.36**	**185**	P			**P**	**16 33 59.9**	**+0.1**
	3.4nm,0.8s,mb3.8,baz=9.5,slow=11,SNR=9.4								
WRA	**Warramunga Arr**	**25.95**	**165**	P			**P**	**16 34 25.1**	**+0.5**
	2.2nm,0.3s,mb4.0,baz=341,slow=10,SNR=24								
WB2	**Warramunga Arr**	**25.96**	**165**	*e*P			**P**	**16 34 26.0**	**+1.3**
ASAR	**Alice Springs**	**29.45**	**168**	P			**P**	**16 34 54.8**	**-1.4**
	0.6nm,0.8s,mb3.3,baz=345,slow=6.6,SNR=6.0								
STKA	**Stephens Creek**	**39.31**	**161**	P			**P**	**16 36 19.9**	**-0.6**
	3.6nm,1.0s,mb4.2,baz=336,slow=12,SNR=3.0								
MKAR	**Makanchi Array**	**56.79**	**324**	P			**P**	**16 38 35.9**	**0.0**
	1.3nm,0.6s,mb4.2,baz=116,slow=8.3,SNR=21								
BVAR	**Borovoye Array**	**66.50**	**326**	P			**P**	**16 39 40.9**	**+0.1**
	0.7nm,0.6s,mb3.7,baz=127,slow=7.2,SNR=5.1								

BJI ***17*** *16:29:31.8,33.95N×89.30E,h10km,mB4.4,mb3.9,Ms4.2, Msz3.8*
IDC ***17*** *16:29:31.0±0.9,33.83N×89.17E,mb3.7/10,mb1 3.9/13, mb1mx3.8/22,ML3.7/3,MS3.5/7,Ms1 3.5/7,ms1mx3.2/32, Error ellipse: s-maj=31.8km s-min=18.1km az=51.0*
NEIC ***17*** *16:29:33.6±0.5,34.01N×89.20E,h10km,Error ellipse: s-maj=12.2km s-min=6.9km az=100.0*
DMN ***17*** *16:30:38.4±1.4,29.80N×85.95E,h10km,Error ellipse: s-maj=35.9km s-min=30.8km az=5.0*

ISC 17 16:29:34.9±1.4**,33.91N**±0.06×**89.2E**±0.1**,h34**km±16km**, n30,**σ1$ **05**/28**,mb3.7**/10**,MS3.4**/8**,Xizang**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
KKN	**Kakani**	**6.98**	**210**			*e*Pn	**P**	**16 31 17.5**	**+0.1**
	28nm,0.7s								
GKN	**Gorkha**	**7.09**	**215**			*e*Pn	**P**	**16 31 18.3**	**-0.6**
GKN						*e*Sn	x	16 31 48.4	
PKI	**Pulchoki**	**7.12**	**209**			*e*Pn	**P**	**16 31 19.9**	**+0.5**
	31nm,0.6s								
DMN	**Daman**	**7.21**	**211**			*e*Pn	**P**	**16 31 21.5**	**+0.8**
	41nm,0.7s								
KOLN	**Koldanda**	**7.80**	**220**			*e*Pn	**P**	**16 31 28.0**	**-0.8**
	15nm,0.9s								
WMQ	**Urumqi**	**9.97**	**354**			*e*P	**P**	**16 31 57.0**	**-1.9**
MKAR	**Makanchi Array**	**13.91**	**340**	Pn			**P**	**16 32 46.5**	**-5.2**
	0.1nm,0.3s,baz=147,slow=13,SNR=6.1								
CMAR	**Chiang Mai Arr**	**17.66**	**148**	P			**P**	**16 33 41.0**	**+1.0**
	0.2nm,0.3s,baz=333,slow=13,SNR=6.6								
CMAR					LR	LR	LR	16 41 07.1	
	comp=Z,92nm,20.6s,baz=325,slow=40								
KURK	**Kurchatov**	**18.51**	**338**			*e*P	**P**	**16 33 52.2**	**+1.8**
SONM	**Songino Array**	**18.96**	**38**	P			**P**	**16 33 55.5**	**-0.3**
	0.1nm,0.3s,baz=226,slow=12,SNR=12								
HHC	**Hu-ho-hao-te**	**19.02**	**62**			*e*P	**P**	**16 34 01.0**	**+4.4**
HHC						AMB	AMB		
	comp=Z,6.0nm,1.1s								
ULN	**Ulaanbaatar**	**19.32**	**39**			*e*P	**P**	**16 33 59.9**	**0.0**
	comp=Z,2.3nm,0.7s								
ZAL	**Zalesovo**	**20.27**	**352**	P			**P**	**16 34 06.7**	**-3.4**
	comp=Z,4.7nm,0.7s,baz=211,slow=11,SNR=16								
ZAL					LR	LR	LR	16 42 52.4	
	comp=Z,246nm,18.4s,MS3.6,baz=206,slow=39								
BJI	**Beijing**	**22.33**	**66**	P			**P**	**16 34 35.9**	**+4.9**
BJI				S			**S**	**16 38 39.6**	**+10**
BJI					AMB	AMB			
	comp=Z,3.0nm,0.8s,mb3.8								
BJI					AMB	AMB			
	comp=Z,80nm,4.6s								
BJI					LR	LR			
	comp=E,274nm,13.3s								
BJI					LR	LR			
	comp=Z,127nm,14.6s,MS3.5								
BVAR	**Borovoye Array**	**23.37**	**331**	P			**P**	**16 34 42.5**	**+1.4**
	comp=Z,1.5nm,0.6s,mb3.6,baz=146,slow=9.0,SNR=11								
BVAR					LR	LR		16 45 07.9	
	comp=Z,74nm,19.8s,MS3.1,baz=315,slow=40								
BRVK	**Borovoye**	**23.44**	**330**	*e*P			**P**	**16 34 42.6**	**+0.9**
ZRNK	**Zerenda**	**23.90**	**329**	*e*P			**P**	**16 34 47.0**	**+0.8**
THR	**Tehran**	**31.19**	**285**	LR		LR		16 50 49.8	
	comp=Z,76nm,21.0s,MS3.3,baz=31,slow=41								
BRTR	**Keskin Array B**	**44.29**	**294**	P			**P**	**16 37 42.0**	**-1.0**
	comp=Z,0.7nm,0.5s,mb3.6,baz=101,slow=6.3,SNR=6.6								
FINES	**FINESS Array B**	**48.13**	**325**	P			**P**	**16 38 13.6**	**+0.4**
	comp=Z,2.4nm,1.1s,mb4.1,baz=99,slow=8.8,SNR=2.5								
NB2	**NORSAR Subarra**	**55.32**	**325**	P			**P**	**16 39 06.1**	**-1.1**
	comp=Z,1.8nm,0.7s,mb4.2,baz=82,slow=7.0								
NOA	**NORSAR Array B**	**55.32**	**325**	P			**P**	**16 39 06.3**	**-0.8**
	comp=Z,0.4nm,0.8s,mb3.5,baz=69,slow=7.9,SNR=3.3								
NOA					LR	LR		17 03 25.4	
	comp=Z,32nm,18.0s,MS3.4,baz=340,slow=37								
GERES	**GERESS Array B**	**56.35**	**310**	P			**P**	**16 39 13.5**	**-1.3**
	comp=Z,1.5nm,0.8s,mb4.1,baz=76,slow=5.5,SNR=11								
FX1	**Attu Island--F**	**60.33**	**44**	LR		LR		17 07 30.2	
	comp=Z,2.6nm,20.7s,MS2.4,baz=154,slow=38								
WRA	**Warramunga Arr**	**68.65**	**134**	P			**P**	**16 40 36.0**	**-1.1**
	comp=Z,0.6nm,0.8s,mb3.6,baz=325,slow=6.6,SNR=8.4								
ASAR	**Alice Springs**	**71.29**	**137**	P			**P**	**16 40 52.6**	**-0.4**
	comp=Z,0.3nm,0.7s,mb3.3,baz=328,slow=6.4,SNR=5.4								
ILAR	**Eielson Array**	**72.36**	**22**	P			**P**	**16 40 58.5**	**-0.2**
	comp=Z,0.8nm,0.9s,mb3.6,baz=297,slow=4.0,SNR=8.0								
YKA	**Yellowknife Ar**	**82.03**	**11**	P			**P**	**16 41 54.0**	**+1.5**
	comp=Z,0.3nm,0.8s,mb3.3,baz=328,slow=4.9,SNR=5.4								
YKA					LR	LR		17 26 13.4	
	comp=Z,39nm,18.4s,MS3.8,baz=80,slow=41								
YKA	**Yellowknife Ar**	**82.03**	**11**	P			**P**	**16 41 54.0**	**+1.5**
YKA					LR	LR		17 26 13.4	
TSUM	**Tsumeb**	**86.22**	**244**	LR		LR		17 19 31.5	
	comp=Z,34nm,19.8s,MS3.8,baz=242,slow=35								

IDC ***17*** *17:00:09.1±2.7,46.15N×146.90E,mb3.8/6,mb1 3.9/6, mb1mx3.6/24,ML3.0/1,Error ellipse: s-maj=68.4km s-min=26.3km az=152.0*
JMA ***17*** *17:00:10.9±0.3,44.00N×147.82E,h92km,M3.4*
MOS ***17*** *17:00:11.9±0.6,46.20N×146.79E,h33km,mb4.1/5,Error ellipse: s-maj=42.7km s-min=25.8km az=73.3*

ISC 17 17:00:10.1±1.4**,44.0N**±0.2×**147.7E**±0.2**,h131**km±12km**, n15,**σ0$ **94**/23**,mb3.6**/6**,Kuril Islands**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
NEM2	**Nemuro 2**	**1.53**	**246**	P			**P**	**17 00 38.7**	**-0.3**
NEM2						*e*S	**S**	**17 00 59.6**	**-1.5**
JRA	**Rausu**	**1.84**	**269**	P			**P**	**17 00 42.6**	**0.0**
JRA						*e*S	**S**	**17 01 07.0**	**-0.3**
JNK	**Nakash**	**2.17**	**260**	P			**P**	**17 00 47.2**	**+0.4**
JNK						*e*S	**S**	**17 01 14.3**	**-0.4**
JAK	**Akkeshi**	**2.38**	**246**	P			**P**	**17 00 49.7**	**+0.2**
JAK						*e*S	**S**	**17 01 18.9**	**-0.5**
JTKR	**Abashiri--Toko**	**2.71**	**271**	P			**P**	**17 00 53.9**	**+0.1**
JAR	**Ashorobuto**	**2.92**	**257**	P			**P**	**17 00 57.8**	**+1.4**
JAR						*e*S	**S**	**17 01 33.2**	**+1.5**
JCH	**Churui**	**3.43**	**248**	P			**P**	**17 01 03.8**	**+0.5**
JCH						*e*S	**S**	**17 01 44.2**	**+0.3**
ASAJ	**Asahikawa**	**3.66**	**274**	Pn			**P**	**17 01 07.0**	**+0.8**
	0.9nm,0.3s,baz=85,slow=11,SNR=5.6								
ASAJ						Sn		**S**	**17 02 02.8**	**+14**
	0.6nm,0.3s,baz=360,slow=30,SNR=2.3								
JNBK	**Urakawa-nobuka**	**3.99**	**246**	P			**P**	**17 01 11.0**	**+0.3**
JNBK						*e*S	**S**	**17 01 56.0**	**-1.1**
MKAR	**Makanchi Array**	**44.80**	**298**	P			**P**	**17 08 12.9**	**+0.8**
	0.7nm,0.5s,mb3.5,baz=75,slow=8.7,SNR=10								
INK	**Inuvik**	**46.00**	**30**	P			**P**	**17 08 21.3**	**0.0**
	0.6nm,0.3s,mb3.7,baz=270,slow=4.0,SNR=9.0								
YKA	**Yellowknife Ar**	**55.39**	**34**	P			**P**	**17 09 33.3**	**+1.0**
	0.1nm,0.4s,mb2.9,baz=304,slow=7.2,SNR=5.4								
ARCES	**ARCESS Array B**	**59.15**	**340**	P			**P**	**17 09 55.9**	**-2.7**
	1.8nm,0.9s,mb3.9,baz=51,slow=7.8,SNR=5.5								
FINES	**FINESS Array B**	**64.83**	**333**	P			**P**	**17 10 34.0**	**-2.5**
	0.9nm,0.7s,mb3.7,baz=45,slow=7.9,SNR=5.3								
NOA	**NORSAR Array B**	**69.51**	**339**	P			**P**	**17 11 05.5**	**-0.3**
	1.9nm,1.1s,mb3.7,baz=40,slow=3.5,SNR=3.5								

ISK ***17*** *17:06:31.6,34.53N×33.10E,h5km,MD3.9*
NEIC ***17*** *17:06:33.1,34.56N×33.36E,h5km,ML3.7(NIC),After NIC.*
NIC ***17*** *17:06:33.1±0.3,34.56N×33.36E,h5km,ML3.7,MW3.5*
IDC ***17*** *17:06:37.5±1.5,34.43N×33.01E,h45km±19km,mb3.4/4, mb1 3.6/8,mb1mx3.4/21,ML3.3/4,Error ellipse: s-maj=19.9km s-min=11.9km az=36.0*

ISC 17 17:06:34.6±0.8**,34.44N**±0.05×**33.05E**±0.04**,h26**km±5km**, n32,**σ1$ **29**/50**,mb3.5**/3**,7C-2D,Cyprus region**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
SZAC	**Souni-Zanaja**	**0.34**	**336**	⇑P			**Pb**	**17 06 42.3**	**-0.1**
SZAC						S	**Sb**	**17 06 46.5**	**-1.1**
SZAC	**Souni-Zanaja**	**0.34**	**336**	⇑*i*P			**Pb**	**17 06 42.3**	**-0.1**
SZAC						S	**Sb**	**17 06 46.5**	**-1.1**
CSS	**Prodhromos**	**0.57**	**24**	⇓P			**Pb**	**17 06 41.7**	**-4.2**
	34nm,0.3s								
CSS						S	**Sb**	**17 06 48.0**	**-5.7**
CSS	**Prodhromos**	**0.57**	**24**	PG			**Pb**	**17 06 41.6**	**-4.3**
CSS						SG	**Sb**	**17 06 49.6**	**-4.1**
CSS	**Prodhromos**	**0.57**	**24**	*i* P			**Pb**	**17 06 41.6**	**-4.3**
CSS						*i* S	**Sb**	**17 06 47.1**	**-6.6**
CSS	**Prodhromos**	**0.57**	**24**	⇓*i*P			**Pb**	**17 06 41.7**	**-4.2**
CSS						S	**Sb**	**17 06 48.0**	**-5.7**
PPCY	**Paphos**	**0.73**	**307**	⇑P			**Pb**	**17 06 50.5**	**+1.9**
PPCY	**Paphos**	**0.73**	**307**	⇑*i*P			**Pb**	**17 06 50.5**	**+1.9**
MAMC	**Mammari**	**0.74**	**11**	P			**Pb**	**17 06 44.9**	**-3.9**
ALFC	**Alevga**	**0.80**	**333**	⇑P			**Pb**	**17 06 49.4**	**-0.5**
	55nm,0.3s								
ALFC						S	**Sb**	**17 07 02.1**	**+1.8**
ALFC	**Alevga**	**0.80**	**333**	⇑*e*P			**Pb**	**17 06 49.4**	**-0.5**
ALFC						S	**Sb**	**17 07 02.1**	**+1.8**
AKMC	**Akamas**	**0.83**	**315**	P			**Pb**	**17 06 51.8**	**+1.5**
PHNC	**Paralimni**	**0.98**	**55**	⇑P			**Pb**	**17 06 51.0**	**-1.9**
PHNC						S	**Sb**	**17 07 04.8**	**-0.7**
IKL	**Isikli**	**1.86**	**16**	PN			**Pn**	**17 07 04.4**	**-1.0**
HDMB	**Hadim**	**2.56**	**350**	*e*PN			**Pn**	**17 07 15.6**	**+0.3**
COBT	**Iskenderun**	**3.34**	**51**	*i* P			**Pn**	**17 07 26.5**	**+0.1**
COBT						*i* S	**Sn**	**17 08 07.5**	**+1.8**
NIG	**Nigde**	**3.87**	**19**	*e*PN			**Pn**	**17 07 33.8**	**-0.2**
ASF	**Jabal al Asfar**	**3.94**	**124**	P			**Pn**	**17 07 34.9**	**0.0**
	0.6nm,0.3s,baz=155,slow=14,SNR=3.9								
ASF						S	**Sn**	**17 08 21.6**	**+0.8**
	0.3nm,0.3s,baz=17,slow=20,SNR=2.6								
AVNT	**Avonos**	**4.56**	**18**	*i* P			**Pn**	**17 07 43.4**	**-0.5**
AVNT						*i* S	**Sn**	**17 08 35.3**	**-1.4**
DNZL	**Cakiroluk**	**4.58**	**316**	*e*P			**Pn**	**17 07 45.6**	**+1.5**
DNZL						*i* S	**Sn**	**17 08 40.2**	**+3.0**
GZT	**Gaziantep**	**4.68**	**50**	*e*P			**Pn**	**17 07 47.8**	**+2.4**
GZT						*i* S	**Sn**	**17 08 59.4**	**+20**
YER	**Yerkesik**	**4.71**	**306**	*e*PN			**Pn**	**17 07 45.9**	**-0.1**
BDRM	**Kayabasi**	**5.26**	**301**	*i* P			**Pn**	**17 07 53.2**	**-0.4**
BDRM						*i* S	**Sn**	**17 08 51.1**	**-3.0**
BRTR	**Keskin Array B**	**5.29**	**5**	P			**Pn**	**17 07 54.5**	**+0.4**
	0.8nm,0.3s,baz=183,slow=15,SNR=20								
BRTR						S	**Sn**	**17 08 55.2**	**+0.1**
	0.1nm,0.3s,baz=188,slow=21,SNR=2.5								
BRTR	**Keskin Array B**	**5.29**	**5**	P			**Pn**	**17 07 54.5**	**+0.4**
BRTR						S	**Sn**	**17 08 55.2**	**+0.1**
IDI	**Anoyia**	**6.76**	**279**	P			**Pn**	**17 08 13.9**	**-0.9**
	0.8nm,0.3s,baz=90,slow=13,SNR=7.0								
IDI						S	**Sn**	**17 09 29.8**	**-1.9**
	6.0nm,0.3s,baz=347,slow=17,SNR=14								
AKASG	**Malin Array Be**	**16.49**	**351**	P			**P**	**17 10 26.2**	**+0.6**
	0.5nm,0.3s,baz=172,slow=11,SNR=7.3								
GERES	**GERESS Array B**	**20.32**	**321**	P			**P**	**17 11 13.6**	**+2.3**
	0.8nm,0.4s,baz=126,slow=8.4,SNR=16								
FINES	**FINESS Array B**	**27.39**	**353**	P			**P**	**17 12 17.4**	**-2.2**
	1.7nm,0.7s,mb3.7,baz=149,slow=11,SNR=6.7								
MKAR	**Makanchi Array**	**38.76**	**56**	P			**P**	**17 13 57.9**	**-0.5**
	0.6nm,0.7s,mb3.5,baz=265,slow=6.8,SNR=7.3								
YKA	**Yellowknife Ar**	**79.95**	**345**	P			**P**	**17 18 42.0**	**-0.3**
	0.2nm,0.5s,mb3.3,baz=25,slow=5.6,SNR=4.4								
YKA	**Yellowknife Ar**	**79.95**	**345**	P			**P**	**17 18 42.0**	**-0.3**

MOS ***17*** *17:11:58.9±2.5,42.40N×46.23E,h3km,mb3.8/1,Error ellipse: s-maj=19.4km s-min=11.2km az=135.7*

ISC 17 17:12:02.5±1.8**,42.57N**±0.07×**46.7E**±0.1**,h68**km±12km**,n9,** σ0$ **93**/15**,Eastern Caucasus**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
XNZR	**Khunzakh**	**0.03**	**181**	*e*PG			**P**	**17 12 12.5**	**+0.1**
UNCR	**Uncukul**	**0.16**	**25**	*e*PG			**P**	**17 12 12.5**	**-0.1**
UNCR				*e*S			**S**	**17 12 21.0**	**+0.9**
ARKR	**Arakani**	**0.21**	**82**	*e*PG			**P**	**17 12 12.3**	**-0.6**
ARKR				*i* S			**S**	**17 12 20.6**	**0.0**
GNBR	**Gunib**	**0.26**	**134**	*e*PG			**P**	**17 12 12.0**	**-1.3**
GNBR				*i* S			**S**	**17 12 20.0**	**-1.2**
KRNR	**Karanay**	**0.29**	**30**	*e*PG			**P**	**17 12 12.2**	**-1.3**
KRNR				*i* S			**S**	**17 12 20.4**	**-1.2**
KRNR					pmax	pmax			
	comp=Z,27nm,0.2s								
BTLR	**Botlikh**	**0.37**	**285**	*e*PG			**P**	**17 12 14.2**	**+0.2**
DBC	**Dubki**	**0.46**	**11**	*e*PG			**P**	**17 12 15.5**	**+0.7**
DBC				*i* S			**S**	**17 12 25.0**	**+1.2**
KMKR	**Kumukh**	**0.53**	**146**	*i* PG			**P**	**17 12 16.0**	**+0.5**
KMKR				*e*S			**S**	**17 12 27.0**	**+2.0**
KMKR					pmax	pmax			
	comp=Z,64nm,0.2s								
MAK	**Makhachkala**	**0.70**	**56**	*e*PG			**S**	**17 12 29.0**	**+0.4**

MDD ***17*** *17:13:16.1±1.8,36.71N×9.66W,mbLg2.4/8,Error ellipse: s-maj=14.6km s-min=12.6km az=50.0,PRXIMO*
INMG ***17*** *17:13:17.9±0.9,36.67N×9.73W,h19km±25km,ML2.1, Error ellipse: s-maj=24.0km s-min=4.4km az=54.0*

ISC 17 17:13:16.5±1.5**,36.76N**±0.07×**9.54W**±0.08**,h10**km**,n16,** σ1$ **10**/29**,West of Gibraltar**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
PTEO	**Sao Teotonio**	**1.02**	**39**	*e*P			**Pb**	**17 13 37.8**	**+2.1**
PTEO				*e*S			**Sb**	**17 13 53.3**	**+4.4**
	24nm,0.2s								
PTEO	**Sao Teotonio**	**1.02**	**39**	P			**Pb**	**17 13 37.8**	**+2.1**
PTEO				S			**Sb**	**17 13 53.3**	**+4.4**
	12nm,0.2s								
PALC	**Alcoutim**	**1.79**	**66**	*e*Pn			**Pn**	**17 13 49.1**	**+1.4**
PALC				*e*Sn			**Sn**	**17 14 11.3**	**+0.6**
	8.1nm,0.2s								
PALC	**Alcoutim**	**1.79**	**66**	P			**Pn**	**17 13 49.1**	**+1.4**
PALC				S			**Sn**	**17 14 11.3**	**+0.6**
	4.1nm,0.2s								
EGRO	**El Granado**	**1.81**	**64**	P			**Pn**	**17 13 49.2**	**+1.2**
	0.6nm,0.1s,SNR=5.9								
EGRO				S			**Sn**	**17 14 13.1**	**+1.8**
	3.5nm,0.1s,SNR=7.4								
PBEJ	**Beja**	**1.83**	**46**	*e*Sn			**Sn**	**17 14 12.6**	**+0.8**
MOE	**Montemor**	**1.99**	**28**	*e*Pn			**Pn**	**17 13 51.4**	**+0.8**
MOE				*e*Sn			**Sn**	**17 14 16.5**	**+0.6**
PLOU	**Loures**	**2.14**	**8**	*e*Pn			**Pn**	**17 13 52.1**	**-0.7**
PLOU				*e*Sn			**Sn**	**17 14 18.5**	**-1.1**
	12nm,0.2s								
PLOU	**

SFJM *i* S Sn 17 36 56.0 -5.0

IDC **17** *17:37:03.4±2.6, 11.65N×84.93W, mb3.4/3, mb1 3.9/3, mb1mx3.6/18, Error ellipse: s-maj=101.0km s-min=13.3km az=82.0*

ISC 17 17:37:06.1±2.4, 11.6N±0.2×85.0W±0.7, h33km, n4, σ1§33/4, mb3.4/3, Nicaragua

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
JTS	**JuntasAbangare**	**1.25**	**179**	Pg		**P**	**17 37 27.2**	**0.0**
	14nm,0.3s,baz=315,slow=19,SNR=34							
JTS				Lg			17 37 47.7	
	23nm,0.3s,baz=357,slow=18,SNR=9.9							
TXAR	**Lajitas Array**	**24.83**	**318**	P		**P**	**17 42 26.1**	**-0.8**
	0.4nm,0.2s,mb3.5,baz=135,slow=10,SNR=4.6							
NVAR	**Mina Array Bea**	**39.98**	**318**	P		**P**	**17 44 40.3**	**+1.0**
	0.9nm,0.7s,mb3.6,baz=140,slow=7.0,SNR=7.2							
YKA	**Yellowknife Ar**	**55.13**	**344**	P		**P**	**17 46 37.2**	**-0.1**
	0.1nm,0.4s,mb3.2,baz=141,slow=6.8,SNR=5.4							

NIED **17** *17:41:00.44.10N×148.10E,h80km,Mw4.4 Best double couple: M0 4.46×10^15 NP1:φs246°,δ53°,λ-115°. NP2: φs103°,δ43°,λ-61°.*

NEIC **17** *17:41:15.4±1.5,44.41N×147.93E,h74km±12km,mb4.7/35, Error ellipse: s-maj=8.1km s-min=5.9km az=157.0*

BJI **17** *17:41:15.4,44.46N×148.20E,h101km,mB4.7,mb4.8*

JMA **17** *17:41:16.8±0.3,44.06N×148.05E,h74km,M4.9*

SKHL **17** *17:41:16.7±0.4,44.42N×148.09E,h90km±10km,mb6.0/1, msh5.4/2*

MOS **17** *17:41:17.1±1.4,44.57N×147.84E,h97km,mb4.6/22,Error ellipse: s-maj=11.1km s-min=6.8km az=102.0*

IDC **17** *17:41:18.2±1.6,44.42N×147.93E,h102km±13km, mb4.2/26,mb1 4.3/28,mb1mx4.3/30,MS3.1/4,Ms1 3.1/4, ms1mx2.7/32,Error ellipse: s-maj=12.8km s-min=9.8km az=158.0*

ISC 17 17:41:15.2±0.5, 44.30N±0.03×148.03E±0.05, h86km±3km, n226, σ1§16/242, mb4.5/91, 10C-14D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
KUR	**Kuril'sk**	**0.94**	**353**	⇓*i*P		**P**	**17 41 35.0**	**+0.8**
KUR				AMB		AMB	17 41 35.5	
	1μm,0.5s							
KUR				AMB		AMB	17 41 35.5	
	2μm,0.5s							
KUR				AMB		AMB	17 41 35.5	
	2μm,0.5s							
KUR				AMB		AMB	17 41 36.0	
	2μm,1.4s							
KUR				AMB		AMB	17 41 36.0	
	1μm,1.4s							
KUR				AMB		AMB	17 41 36.0	
	2μm,1.4s							
KUR				*i* S		**S**	**17 41 49.0**	**+0.5**
KUR				A			17 41 50.0	
	59μm,1.0s							
KUR				A			17 41 50.0	
	30μm,1.0s							
YUK	**Yuzh-Kuril'sk**	**1.58**	**261**	⇓*i*P		**P**	**17 41 42.5**	**+0.2**
YUK				⇓*i*P			17 41 42.5	
YUK				AMB		AMB	17 41 43.5	
	1μm,0.2s							
YUK				AMB		AMB	17 41 43.5	
	3μm,0.2s							
YUK				AMB		AMB	17 41 43.5	
	710nm,0.4s							
YUK				AMB		AMB	17 41 48.4	
	3μm,0.7s							
YUK				AMB		AMB	17 41 48.4	
	4μm,0.7s							
YUK				AMB		AMB	17 41 48.4	
	4μm,0.9s							
YUK				*i* S		**S**	**17 42 01.6**	**-0.7**
YUK				A			17 42 04.0	
	12μm,0.4s							
YUK				A			17 42 04.0	
	16μm,0.4s							
YUK				A			17 42 04.0	
	13μm,1.0s							
YUK				A			17 42 04.0	
	20μm,1.0s							
YUK				AMS		AMS	17 42 15.0	
	24μm,20.0s							
YUK	**Yuzh-Kuril'sk**	**1.58**	**261**	⇓*i*PN		**P**	**17 41 42.5**	**+0.2**
YUK				*i* S		**S**	**17 42 01.6**	**-0.7**
YUK				pmax	pmax			
	comp=Z,3μm,0.3s							
YUK				pmax	pmax			
	comp=N,710nm,0.4s							
YUK				pmax	pmax			
	comp=E,1μm,0.3s							
YUK				pmax	pmax			
	comp=Z,4μm,0.9s							
YUK				pmax	pmax			
	comp=N,3μm,0.7s							
YUK				pmax	pmax			
	comp=E,4μm,0.7s							
YUK				smax				
	comp=N,12μm,0.4s							
YUK				smax				
	comp=E,16μm,0.4s							
YUK				smax				
	comp=N,13μm,1.0s							
YUK				smax				
	comp=E,20μm,1.0s							
NEM2	**Nemuro 2**	**1.90**	**241**	P		**P**	**17 41 46.5**	**0.0**
NEM2				*e*S		**S**	**17 42 08.5**	**-1.0**
JRA	**Rausu**	**2.13**	**261**	P		**P**	**17 41 51.0**	**+1.4**
JRA				*e*S		**S**	**17 42 16.8**	**+1.8**
JNK	**Nakash**	**2.50**	**255**	P		**P**	**17 41 55.4**	**+0.7**
JNK				*e*S		**S**	**17 42 24.3**	**+0.1**
JAK	**Akkeshi**	**2.75**	**243**	P		**P**	**17 41 57.8**	**-0.4**
JAK				*e*S		**S**	**17 42 28.6**	**-1.8**
JTKR	**Abashiri--Toko**	**2.99**	**265**	P		**P**	**17 42 02.5**	**+0.9**
JAR	**Ashorobuto**	**3.25**	**254**	P		**P**	**17 42 06.0**	**+0.9**
JAR				*e*S		**S**	**17 42 42.9**	**+0.1**
JCH	**Churui**	**3.79**	**245**	P		**P**	**17 42 12.4**	**-0.3**
JCH				*e*S		**S**	**17 42 53.3**	**-3.1**
JKK2	**Kamakawa 2**	**3.83**	**266**	P		**P**	**17 42 14.5**	**+1.3**
ASAJ	**Asahikawa**	**3.91**	**269**	P		**P**	**17 42 15.9**	**+1.6**
	comp=E,14nm,0.3s,baz=86,slow=14,SNR=89							
ASAJ				S		**S**	**17 43 00.6**	**+1.3**
	comp=E,6.6nm,0.3s,baz=98,slow=33,SNR=5.8							
ASAJ				LR		LR	17 43 33.2	
	comp=E,143nm,22.0s,baz=342,slow=35							
ASAJ	**Asahikawa**	**3.91**	**269**	PN		**P**	**17 42 15.9**	**+1.6**
ASAJ				S		**S**	**17 43 00.6**	**+1.3**
ASAJ				pmax	pmax			
	comp=Z,14nm,0.3s							
ASAJ				smax				
	comp=N,7.0nm,0.3s							
ASAJ				MLR		MLR		
	comp=Z,143nm,22.0s							
JSE	**Soyaes**	**3.95**	**282**	P		**P**	**17 42 15.8**	**+1.0**
JFR	**Furan**	**4.10**	**256**	P		**P**	**17 42 18.2**	**+1.3**
JFR				*e*S		**S**	**17 43 04.4**	**+0.4**
JNBK	**Urakawa-nobuka**	**4.35**	**244**	P		**P**	**17 42 19.7**	**-0.7**
JWK2	**Keihoku**	**4.48**	**285**	P		**P**	**17 42 24.4**	**+2.2**
YSS	**Yuzh-Sakhalins**	**4.56**	**308**	⇑*i*P		**P**	**17 42 23.2**	**0.0**
YSS				⇑*i*P			17 42 23.2	
YSS				AMB		AMB	17 42 24.0	
	comp=Z,140nm,0.5s							
YSS				AMB		AMB	17 42 24.0	
	comp=Z,90nm,0.5s							
YSS				AMB		AMB	17 42 24.0	
	comp=Z,110nm,0.6s							
YSS				AMB		AMB	17 42 24.5	
	comp=Z,150nm,0.5s							
YSS				AMB		AMB	17 42 24.5	
	comp=Z,90nm,0.5s							
YSS				AMB		AMB	17 42 24.5	
	comp=Z,100nm,0.6s							
YSS				*i* S		**S**	**17 43 12.5**	**-2.9**
YSS				A			17 43 14.0	
	comp=Z,170nm,0.9s							
YSS				A			17 43 14.0	
	comp=Z,360nm,0.9s							
YSS				A			17 43 15.0	
	comp=Z,150nm,0.9s							
YSS				A			17 43 15.0	
	comp=Z,310nm,0.7s							
YSS				A			17 43 18.7	
	comp=Z,500nm,2.0s							
YSS				A			17 43 19.1	
	comp=Z,500nm,2.1s							
YSS				A			17 43 19.1	
	comp=Z,400nm,1.8s							
YSS	**Yuzh-Sakhalins**	**4.56**	**308**	⇑*i*PN		**P**	**17 42 23.2**	**0.0**
YSS				*i* S		**S**	**17 43 12.5**	**-2.9**
YSS				pmax	pmax			
	comp=N,90nm,0.5s							
YSS				pmax	pmax			
	comp=Z,140nm,0.5s							
YSS				pmax	pmax			
	comp=E,110nm,0.6s							
YSS				smax				
	comp=N,170nm,0.9s							
YSS				smax				
	comp=E,360nm,0.9s							
YSS				smax				
	comp=E,500nm,2.0s							
YSS	**Yuzh-Sakhalins**	**4.56**	**308**	*e*P		**P**	**17 42 21.8**	**-1.4**
JEW	**Eniwo**	**5.00**	**255**	P		**P**	**17 42 30.3**	**+1.0**
JKB	**Kayabe**	**5.66**	**247**	P		**P**	**17 42 37.9**	**-0.4**
JKB				*e*S		**S**	**17 43 37.0**	**-5.7**
JOT	**Ohata**	**5.90**	**243**	P		**P**	**17 42 40.2**	**-1.4**
JOT				*e*S		**S**	**17 43 42.5**	**-6.1**
JANG	**Nango**	**6.22**	**233**	P		**P**	**17 42 44.1**	**-2.0**
JANG				*e*S		**S**	**17 43 48.2**	**-8.2**
UGL	**Uglegorsk**	**6.30**	**321**	*e*P		**P**	**17 42 47.0**	**-0.2**
UGL				AMB		AMB	17 42 48.5	
	comp=E,48nm,0.8s							
UGL				AMB		AMB	17 42 48.5	
	comp=E,72nm,0.8s							
UGL				AMB		AMB	17 42 48.5	
	comp=E,156nm,0.8s							
UGL				*e*S		**S**	**17 43 57.0**	**-1.4**
UGL				A			17 43 58.0	
	comp=E,90nm,1.0s							
UGL				A			17 43 58.0	
	comp=E,67nm,1.0s							
TYV	**Tymovskoe**	**7.51**	**333**	*e*P		**P**	**17 43 03.0**	**-0.9**
TYV				AMB		AMB	17 43 05.9	
	comp=E,35nm,0.9s							
TEY	**Ternei**	**8.18**	**279**	*e*P		**P**	**17 43 14.5**	**+1.4**
TEY				AMB		AMB	17 43 15.0	
	comp=E,40nm,1.0s							
TEY				AMB		AMB	17 43 15.0	
	comp=E,30nm,1.0s							
SKR	**Severo-Kuril's**	**8.41**	**38**	*e*P		**P**	**17 43 13.5**	**-2.6**
SKR				AMB		AMB	17 43 16.2	
	comp=E,20nm,0.5s							
SKR				AMB		AMB	17 43 16.2	
	comp=E,30nm,0.5s							
SKR				*e*S		**S**	**17 44 44.5**	**-5.8**
SKR				A			17 44 53.9	
	comp=E,20nm,0.5s							
SKR				A			17 44 53.9	
	comp=E,30nm,0.5s							
NKL	**Nikolayevsk**	**10.10**	**334**	*e*P		**P**	**17 43 35.2**	**-3.7**
NKL				AMB		AMB	17 43 39.2	
	comp=E,10.0nm,1.0s							
PET	**Petropavlovsk**	**11.20**	**35**	*e*PN		**P**	**17 43 54.8**	**+1.1**
PET				MLR		MLR		
	comp=Z,33nm,18.0s							
MA2	**Magadan**	**15.39**	**5**	*e*P		**P**	**17 44 49.1**	**+0.7**
MA2				*e*S		**S**	**17 47 37.7**	**+1.1**
MA2				pmax	pmax			
	comp=Z,10.0nm,0.7s							
MA2				MLR		MLR		
	comp=Z,360nm,14.0s							
CN2	**Changchun**	**16.24**	**276**	*e*P		**P**	**17 44 57.3**	**-1.8**
CN2				AMB		AMB		
	comp=Z,10.0nm,1.2s							
ZEA	**Zeya**	**16.53**	**312**	*e*P		**P**	**17 45 02.2**	**-0.5**
ZEA				AMB		AMB	17 45 07.3	
	comp=Z,16nm,0.9s							
FX1	**Attu Island--F**	**18.63**	**54**	P		**P**	**17 45 28.1**	**-0.1**
	comp=Z,1.9nm,0.3s,baz=270,slow=20,SNR=5.8							
FX1	**Attu Island--F**	**18.63**	**54**	P		**P**	**17 45 28.1**	**-0.1**
FX1				pmax	pmax			
	comp=Z,2.0nm,0.3s							
SEY	**Seymchan**	**18.84**	**6**	*e*P		**P**	**17 45 28.5**	**-2.0**
SEY				pmax	pmax			
	comp=N,20nm,1.0s							
SEY				pmax	pmax			
	comp=E,3.0nm,1.0s							
SEY				pmax	pmax			
	comp=Z,10.0nm,1.0s							
SEY				pmax	pmax			
	comp=N,70nm,14.9s							
SEY				pmax	pmax			
	comp=E,20nm,13.9s							
HIA	**Hailar**	**19.94**	**294**	*e*P		**P**	**17 45 37.8**	**-4.5**
	comp=E,4.5nm,0.6s							
YAK	**Yakutsk**	**20.76**	**335**	*e*P		**P**	**17 45 46.1**	**-4.6**
YAK				*e*S		**S**	**17 49 26.9**	**-5.6**
YAK				*e**SS			17 49 58.7	
YAK				*e*			17 57 03.6	
YAK				pmax	pmax			
	comp=N,5.0nm,0.8s							
YAK				pmax	pmax			
	comp=Z,36nm,0.8s							
YAK				pmax	pmax			
	comp=E,7.0nm,0.9s							
YAK				smax				
	comp=E,6.0nm,0.9s							
YAK				smax				
	comp=N,4.0nm,1.2s							
YAK	**Yakutsk**	**20.76**	**335**	*e*P		**P**	**17 45 46.0**	**-4.7**
	comp=N,127nm,0.6s							
BJI	**Beijing**	**23.91**	**271**	P		**P**	**17 46 21.5**	**-0.1**
BJI				AMB		AMB		
	comp=Z,17nm,0.8s,mb4.4							
BJI				AMB		AMB		
	comp=Z,91nm,3.5s							
BJI				LR		LR		
	comp=Z,56nm,26.4s							
BJT	**Baijiatuan**	**23.92**	**271**	*e*P		**P**	**17 46 21.8**	**0.0**
	comp=Z,10nm,0.6s,mb4.3							
SSE	**Sheshan**	**24.87**	**247**	P		**P**	**17 46 29.3**	**-1.8**
SSE				AMB		AMB		
	comp=Z,12nm,0.8s,mb4.4							
SSE				AMB		AMB		
	comp=Z,62nm,5.3s							
BOD	**Bodaibo**	**24.99**	**315**	*e*P		**P**	**17 46 25.5**	**-6.4**
BILL	**Bilibino**	**25.66**	**16**	*e*P		**P**	**17 46 36.6**	**-1.5**
BILL				S		**S**	**17 51 01.3**	**+3.5**
BILL				pmax	pmax			
	comp=Z,5.0nm,0.7s,mb4.0							
BILL	**Bilibino**	**25.66**	**16**	*e*P		**P**	**17 46 37.1**	**-1.0**
	comp=Z,5.1nm,0.6s,mb4.1							
NJ2	**Nanjing**	**25.85**	**252**	*e*P		**P**	**17 46 40.8**	**+0.6**
NJ2				PP		PP	17 47 27.3	+3.6
NJ2				S		**S**	**17 50 57.0**	**-4.3**
NJ2				XS			17 51 43.0	
NJ2				AMB		AMB		
	comp=Z,30nm,0.6s,mb4.9							
NJ2				LR		LR		
	comp=N,360nm,10.1s							
NJ2				LR		LR		
	comp=E,1μm,17.1s							
NJ2				LR		LR		
	comp=Z,7μm,18.0s							
HHC	**Hu-ho-hao-te**	**26.94**	**275**	⇑P		**P**	**17 46 52.1**	**+2.0**
HHC				AMB		AMB		
	comp=Z,33nm,1.1s,mb4.8							
HHC				AMB		AMB		
	comp=Z,100nm,7.8s							
BTO	**Baotou**	**28.12**	**276**	*e*P		**P**	**17 47 03.8**	**+2.9**
BTO				AMB		AMB		
	comp=Z,70nm,0.7s,mb5.3							
ULN	**Ulaanbaatar**	**28.41**	**292**	*e*P		**P**	**17 47 02.4**	**-1.0**
	comp=Z,3.6nm,0.5s,mb4.2							
SONM	**Songino Array**	**28.85**	**292**	P		**P**	**17 47 05.7**	**-1.6**
	comp=Z,4.3nm,0.5s,mb4.3,baz=85,slow=8.1,SNR=18							
SONM				ScP			17 53 44.4	
	comp=Z,0.6nm,0.8s,baz=80,slow=4.7,SNR=2.6							
TIXI	**Tiksi**	**28.96**	**348**	*e*P		**P**	**17 47 02.6**	**-5.5**
TIXI				*e*			17 47 40.2	
TIXI				pmax	pmax			
	comp=Z,31nm,0.8s,mb5.0							
TIXI	**Tiksi**	**28.96**	**348**	*e*P		**P**	**17 47 02.9**	**-5.2**
	comp=Z,4.6nm,0.9s,mb4.1							
ZAK	**Zakamensk**	**30.56**	**298**	*e*P		**P**	**17 47 21.0**	**-1.5**
GTA	**Gaotai**	**35.83**	**279**	*e*P		**P**	**17 48 08.3**	**+0.2**
GTA				AMB		AMB		
	comp=Z,11nm,0.6s,mb5.0							
IMA	**Indian Mountai**	**37.87**	**34**	*e*P		**P**	**17 48 25.8**	**+1.0**
	comp=Z,0.2nm,0.8s							
MCK	**McKinley**	**39.81**	**38**	*e*P		**P**	**17 48 41.2**	**+0.2**
	comp=Z,5.2nm,0.9s,mb4.4							
SML	**Sawmill**	**40.19**	**41**	*e*P		**P**	**17 48 44.2**	**+0.1**
COLA	**College**	**40.26**	**36**	*e*P		**P**	**17 48 45.2**	**+0.6**
COLA				*i* *PP		pP	17 49 21.9	+17
ILAR	**Eielson Array**	**40.67**	**37**	P		**P**	**17 48 47.4**	**-0.6**
	comp=Z,3.4nm,0.8s,mb4.2,baz=254,slow=7.4,SNR=39							
ILAR				PcP		PcP	17 50 46.1	-2.8
	comp=Z,0.7nm,0.6s,baz=289,slow=3.0,SNR=4.1							
ILAR	**Eielson Array**	**40.67**	**37**	P		**P**	**17 48 47.4**	**-0.6**
ILAR							17 50 46.2	
ILAR				pmax	pmax			
	comp=Z,3.0nm,0.8s							
ILAR				pmax	pmax			
	comp=Z,1.0nm,0.6s							
ZAL	**Zalesovo**	**41.20**	**307**	P		**P**	**17 48 50.2**	**-2.2**
	comp=Z,1.7nm,0.5s,mb4.1,baz=350,slow=7.2,SNR=6.2							
ZAL				PcP		PcP	17 50 49.7	-1.0
	comp=Z,1.9nm,0.8s,baz=18,slow=2.4,SNR=3.9							
ZAL	**Zalesovo**	**41.20**	**307**	P		**P**	**17 48 50.2**	**-2.2**
ZAL							17 50 49.7	
ZAL				pmax	pmax			
	comp=Z,2.0nm,0.5s							
ZAL				pmax	pmax			
	comp=Z,2.0nm,0.8s							
NVS	**Novosibirsk**	**41.88**	**308**	*e*P		**P**	**17 48 55.2**	**-2.7**
NVS				pmax	pmax			
	comp=Z,4.0nm,0.9s,mb4.2							
WMQ	**Urumqi**	**42.49**	**291**	*e*P		**P**	**17 49 03.4**	**+0.3**
WMQ				AP		pP	17 49 21.8	-2.0
WMQ				PP		PP	17 50 45.3	-0.3
WMQ				PCP		PcP	17 50 57.0	+1.9
WMQ				S		**S**	**17 55 17.8**	**-0.6**
WMQ				AMB		AMB		
	comp=Z,84nm,1.1s,mb5.4							
WMQ				AMB		AMB		
	comp=Z,61nm,5.5s							
WMQ				LR		LR		
	comp=N,257nm,15.5s							
WMQ				LR		LR		
	comp=E,129nm,16.4s							
WMQ				LR		LR		
	comp=Z,338nm,17.3s							
MKAR	**Makanchi Array**	**44.90**	**297**	P		**P**	**17 49 21.8**	**-0.8**
	comp=Z,14nm,0.5s,mb4.9,baz=77,slow=8.6,SNR=181							
MKAR				PcP		PcP	17 51 02.2	-1.0
	comp=Z,1.5nm,0.7s,baz=68,slow=4.6,SNR=3.3							
MKAR				ScP			17 54 45.5	
	comp=Z,0.6nm,0.8s,baz=45,slow=5.1,SNR=3.6							
MKAR				LR		LR	18 07 36.8	
	comp=Z,22nm,20.6s,baz=255,slow=35							
MKAR	**Makanchi Array**	**44.90**	**297**	*i* P		**P**	**17 49 21.8**	**-0.8**
MKAR				pmax	pmax			
	comp=Z,7.0nm,0.5s							
MKAR	**Makanchi Array**	**44.90**	**297**	P		**P**	**17 49 21.8**	**-0.8**
MKAR				PcP		PcP	17 51 02.2	-1.0
MKAR				ScP			17 54 45.5	
MKAR				LR		LR	18 07 36.8	
INK	**Inuvik**	**45.61**	**31**	P		**P**	**17 49 27.6**	**-0.3**
	comp=Z,2.7nm,0.3s,mb4.4,baz=299,slow=6.5,SNR=19							
INK	**Inuvik**	**45.61**	**31**	P		**P**	**17 49 27.6**	**-0.3**
INK				pmax	pmax			
	comp=Z,3.0nm,0.3s							
INK	**Inuvik**	**45.61**	**31**	*e*P		**P**	**17 49 27.6**	**-0.3**
	comp=Z,3.2nm,0.4s,mb4.4							
KURK	**Kurchatov**	**45.76**	**304**	*i* P		**P**	**17 49 26.6**	**-2.7**
KURK				pmax	pmax			
	comp=Z,2.0nm,0.5s,mb4.1							
KURK	**Kurchatov**	**45.76**	**304**	*e*P		**P**	**17 49 26.8**	**-2.5**
CMAR	**Chiang Mai Arr**	**48.29**	**254**	P		**P**	**17 49 49.2**	**-0.4**
	comp=Z,0.6nm,0.6s,mb3.6,baz=42,slow=9.5,SNR=3.7							
CMAR	**Chiang Mai Arr**	**48.29**	**254**	P		**P**	**17 49 49.2**	**-0.4**
CMAR				pmax	pmax			
	comp=Z,1.0nm,0.6s							
VOSK	**Vostochnaya**	**49.44**	**309**	P		**P**	**17 49 55.5**	**-2.5**
VOSK				pmax	pmax			
	comp=Z,1.0nm,0.5s,mb4.0							
BVAR	**Borovoye Array**	**49.65**	**309**	P		**P**	**17 49 57.3**	**-2.3**
	comp=Z,1.5nm,0.3s,mb4.3,baz=96,slow=13,SNR=15							
BVAR				ScP			17 55 05.3	
	comp=Z,1.3nm,1.1s,baz=90,slow=2.9,SNR=3.1							
BRVK	**Borovoye**	**49.70**	**309**	*e*P		**P**	**17 49 59.0**	**-1.0**
ZRNK	**Zerenda**	**50.45**	**310**	P		**P**	**17 50 02.9**	**-2.8**
ZRNK				pmax	pmax			
	comp=Z,5.0nm,1.2s,mb4.3							
ZRNK	**Zerenda**	**50.45**	**310**	*e*P		**P**	**17 50 03.0**	**-2.7**
ULHL	**Ulahol**	**50.74**	**294**	P		**P**	**17 50 08.0**	**-0.2**
	SNR=6.0							
TKM2	**Tokmak 2**	**50.85**	**295**	P		**P**	**17 50 08.7**	**-0.2**
	SNR=30							
KBK	**Karagaybulak**	**51.39**	**295**	P		**P**	**17 50 12.7**	**-0.3**
	SNR=28							
USP	**Ospenovka**	**51.39**	**296**	P		**P**	**17 50 12.4**	**-0.6**
	SNR=24							
KZA	**Kyzart**	**51.47**	**295**	P		**P**	**17 50 14.2**	**+0.6**
	SNR=37							
AAK	**Ala-Archa**	**51.70**	**296**	P		**P**	**17 50 15.0**	**-0.3**
	SNR=8.4							
KKN	**Kakani**	**52.12**	**274**	*e*P		**P**	**17 50 18.1**	**-0.5**
	comp=Z,6.7nm,0.4s,mb5.0							
EKS2	**Erkin-Say**	**52.15**	**296**	P		**P**	**17 50 18.1**	**-0.6**
	SNR=23							
PKI	**Pulchoki**	**52.16**	**273**	*e*P		**P**	**17 50 18.2**	**-0.7**
	comp=Z,8.4nm,0.5s,mb5.0							
DMN	**Daman**	**52.35**	**274**	*e*P		**P**	**17 50 19.9**	**-0.5**
	comp=Z,12nm,0.4s,mb5.2							
GKN	**Gorkha**	**52.45**	**274**	*e*P		**P**	**17 50 20.4**	**-0.8**
	comp=Z,13nm,0.4s,mb5.3							
AML	**Almayashu**	**52.46**	**295**	P		**P**	**17 50 21.2**	**+0.2**
	SNR=14							
KOLN	**Koldanda**	**53.33**	**275**	*e*P		**P**	**17 50 27.2**	**-0.5**
	comp=Z,5.7nm,0.3s,mb5.1							
KKAR	**Karatay Array**	**54.02**	**298**	*i* P		**P**	**17 50 31.2**	**-1.3**
KKAR				pmax	pmax			
	comp=Z,6.0nm,0.6s,mb4.8							
RES	**Resolute Bay**	**54.26**	**17**	*e*P		**P**	**17 50 31.5**	**-2.4**
	comp=Z,19nm,0.8s,mb5.2							
YKW3	**Yellowknife Ar**	**54.96**	**34**	*e*P		**P**	**17 50 38.2**	**-0.9**
YKA	**Yellowknife Ar**	**54.99**	**34**	P		**P**	**17 50 38.4**	**-0.9**
	comp=Z,3.2nm,0.6s,mb4.5,baz=298,slow=6.9,SNR=52							
YKA				PcP		PcP	17 51 38.2	-1.6
	comp=Z,0.5nm,0.5s,baz=299,slow=3.5,SNR=4.6							
YKA	**Yellowknife Ar**	**54.99**	**34**	P		**P**	**17 50 38.4**	**-0.9**
YKA							17 51 38.2	
YKA				pmax	pmax			
	comp=Z,3.0nm,0.6s							
YKA				pmax	pmax			
	comp=Z,1.0nm,0.5s							
YKA	**Yellowknife Ar**	**54.99**	**34**	P		**P**	**17 50 38.4**	**-0.9**
YKA				PcP		PcP	17 51 38.2	-1.6
AB31	**Akbulak array**	**57.22**	**309**	*e*P		**P**	**17 50 53.0**	**-2.4**
AB31				pmax	pmax			
	comp=Z,4.0nm,0.4s,mb4.8							
KEV	**Kevo**	**58.43**	**340**	*e*p		**P**	**17 50 59.4**	**-4.2**
KAKA	**Kakadu**	**58.48**	**198**	*e*P		**P**	**17 51 03.7**	**-0.9**
	comp=Z,4.5nm,0.9s,mb4.5							
ARCES	**ARCESS Array B**	**58.96**	**340**	P		**P**	**17 51 04.0**	**-3.2**
	comp=Z,2.6nm,0.4s,mb4.6,baz=45,slow=7.9,SNR=29							
ARCES	**ARCESS Array B**	**58.96**	**340**	P		**P**	**17 51 04.0**	**-3.2**
ARCES				pmax	pmax			
	comp=Z,3.0nm,0.4s							
NLW	**Nelson Butte**	**59.83**	**51**	*e*P		**P**	**17 51 13.0**	**-0.5**
JOF	**Joensuu**	**61.90**	**332**	*e*p		**P**	**17 51 23.6**	**-3.7**
	comp=Z,3.6nm,0.3s,mb4.9							
JOF	**Joensuu**	**61.90**	**332**	*e*P		**P**	**17 51 23.6**	**-3.7**
JO

FCC	**Fort Churchill**	**65.23**	**30**	*eP*		**P**	**17 51 47.8**	**-1.3**
	comp=Z,6.1nm,0.7s,mb4.5								
OBN	**Obninsk**	**65.25**	**324**	*eP*		**P**	**17 51 50.2**	**+0.9**
OBN				*e*			17 54 17.0		
OBN					S	S	18 00 20.3	-4.0	
OBN					pmax	pmax			
	comp=Z,5.0nm,0.6s,mb4.5								
BOZ	**Bozeman (W)**	**66.07**	**49**	*eP*		**P**	**17 51 54.7**	**-0.1**
	comp=Z,6.4nm,0.9s,mb4.5								
NVAR	**Mina Array Bea**	**66.75**	**59**	P		**P**	**17 51 59.1**	**0.0**
	comp=Z,3.3nm,0.6s,mb4.4,baz=303,slow=5.2,SNR=32								
NVAR					PcP	PcP	17 52 26.9	-0.5	
	comp=Z,1.2nm,0.6s,baz=322,slow=4.4,SNR=4.2								
TPH	**Tonopah**	**67.63**	**58**	*eP*		**P**	**17 52 04.5**	**-0.1**
	comp=Z,6.1nm,0.7s,mb4.5								
ASAR	**Alice Springs**	**68.86**	**194**	P		**P**	**17 52 12.2**	**-0.3**
	comp=Z,2.3nm,0.8s,mb4.0,baz=12,slow=6.3,SNR=29								
ASAR					PcP	PcP	17 52 34.8	-1.6	
	comp=Z,1.0nm,0.7s,baz=6.9,slow=4.7,SNR=3.8								
GOF	**Gofitskoye**	**68.95**	**313**	*i*P		**P**	**17 52 12.5**	**-0.2**
GOF					pmax	pmax			
	comp=Z,76nm,1.0s,mb5.5								
PDAR	**Pinedale Array**	**69.07**	**50**	P		**P**	**17 52 12.9**	**-0.5**
	comp=Z,2.4nm,0.8s,mb4.1,baz=300,slow=2.2,SNR=16								
PDAR					PcP	PcP	17 52 35.6	-1.4	
	comp=Z,0.7nm,0.7s,baz=315,slow=1.3,SNR=2.8								
NB2	**NORSAR Subarra**	**69.32**	**339**	P		**P**	**17 52 12.5**	**-2.2**
	comp=Z,6.9nm,0.6s,mb4.7,baz=30,slow=6.5								
NOA	**NORSAR Array B**	**69.32**	**339**	P		**P**	**17 52 12.7**	**-2.0**
	comp=Z,6.8nm,0.5s,mb4.7,baz=31,slow=6.5,SNR=23								
NOA					LR	LR	18 28 49.0		
	comp=Z,12nm,18.7s,baz=275,slow=41								
NOA	**NORSAR Array B**	**69.32**	**339**	P		**P**	**17 52 12.7**	**-2.0**
NOA					pmax	pmax			
	comp=Z,7.0nm,0.5s								
NOA					MLR	MLR			
	comp=Z,12nm,18.7s								
ZEI	**Tsey**	**70.02**	**311**	*eP*		**P**	**17 52 18.0**	**-1.3**
THR	**Tehran**	**70.35**	**301**	P		**P**	**17 52 22.5**	**+1.1**
	comp=Z,1.7nm,0.8s,mb3.9,baz=355,slow=3.8,SNR=5.3								
THR	**Tehran**	**70.35**	**301**	P		**P**	**17 52 22.5**	**+1.1**
THR					pmax	pmax			
	comp=Z,2.0nm,0.8s								
ULM	**Lac du Bonnet**	**70.68**	**38**	P		**P**	**17 52 21.6**	**-1.6**
	comp=Z,1.9nm,0.5s,mb4.2,baz=303,slow=4.0,SNR=4.4								
SRU	**San Rafael**	**70.95**	**54**	*eP*		**P**	**17 52 24.8**	**-0.1**
RSSD	**Black Hills**	**71.12**	**46**	*eP*		**P**	**17 52 25.5**	**-0.4**
	comp=Z,2.0nm,0.7s,mb4.1								
GNI	**Garni**	**71.31**	**308**	P		**P**	**17 52 28.8**	**+1.7**
	comp=Z,3.7nm,0.5s,mb4.5,baz=27,slow=4.5,SNR=3.5								
GNI	**Garni**	**71.31**	**308**	P		**P**	**17 52 28.8**	**+1.7**
GNI					pmax	pmax			
	comp=Z,4.0nm,0.5s								
AKASG	**Malin Array Be**	**71.52**	**324**	P		**P**	**17 52 26.4**	**-1.7**
	comp=Z,12nm,0.7s,mb4.9,baz=36,slow=5.9,SNR=60								
SOC	**Sochi**	**71.69**	**313**	*eP*		**P**	**17 52 26.3**	**-3.0**
SOC				*e**PP		pP	17 52 58.8	+6.9	
SOC				*eS*		S	18 01 36.8	-4.0	
SOC				*e*			18 02 18.7		
SOC					pmax	pmax			
	comp=Z,20nm,0.7s,mb5.1								
SOC					pmax	pmax			
	comp=N,22nm,0.9s								
SOC					pmax	pmax			
	comp=E,54nm,1.3s								
ARMA	**Armidale**	**74.43**	**177**	*eP*		**P**	**17 52 46.7**	**+1.2**
KWP	**Kalwaria**	**75.00**	**327**	*eP*		**P**	**17 52 48.3**	**-0.1**
OJC	**Ojcow**	**75.65**	**329**	*eP*		**P**	**17 52 52.1**	**0.0**
BSEG	**Bad Segeberg**	**75.69**	**336**	*eP*		**P**	**17 52 51.7**	**-0.5**
BSEG					pmax	pmax			
	comp=Z,10.0nm,1.0s,mb4.5								
STKA	**Stephens Creek**	**76.03**	**186**	P		**P**	**17 52 54.9**	**+0.2**
	comp=Z,2.2nm,0.6s,mb4.1,baz=338,slow=11,SNR=5.3								
CRVS	**Cervenica-Dubn**	**76.08**	**327**	*eP*		**P**	**17 52 54.5**	**0.0**
NIE	**Niedzica**	**76.11**	**328**	*eP*		**P**	**17 52 55.5**	**+0.8**
KSP	**Ksiaz**	**76.40**	**331**	*eP*		**P**	**17 52 56.4**	**+0.1**
KSP	**Ksiaz**	**76.40**	**331**	*eP*		**P**	**17 52 56.0**	**-0.3**
OKC	**Ostrava-Krasne**	**76.57**	**329**	*eP*		**P**	**17 53 07.5**	**+10**
HARR	**Harsova**	**76.65**	**321**	*i*P		**P**	**17 52 58.1**	**+0.3**
DPC	**Dobruska-Polom**	**76.81**	**331**	*eP*		**P**	**17 52 58.7**	**+0.1**
SCHQ	**Schefferville**	**76.89**	**20**	P		**P**	**17 52 58.2**	**-0.8**
	comp=Z,2.0nm,0.6s,mb4.0,baz=333,slow=6.8,SNR=4.2								
MLR	**Muntele Rosu**	**76.92**	**322**	P		**P**	**17 52 59.7**	**+0.4**
	comp=Z,7.5nm,0.4s,mb4.7,baz=188,slow=7.1,SNR=24								
MLR	**Muntele Rosu**	**76.92**	**322**	*i*P		**P**	**17 52 59.7**	**+0.4**
MLR	**Muntele Rosu**	**76.92**	**322**	P		**P**	**17 52 59.7**	**+0.4**
MLR					pmax	pmax			
	comp=Z,8.0nm,0.4s								
ISR	**Istrita**	**76.94**	**322**	*i*P		**P**	**17 52 59.9**	**+0.4**
CLL	**Collm**	**77.12**	**333**	*i*P		**P**	**17 52 59.8**	**-0.5**
	comp=Z,logA/T=1.2,mb4.7								
CLL				*i*			17 53 07.5		
CLL				*e**PP		pP	17 53 16.0	-7.1	
CLL	**Collm**	**77.12**	**333**	*i*P		**P**	**17 52 59.8**	**-0.5**
CLL				*i*			17 53 07.5		
BRG	**Berggiesshubel**	**77.18**	**332**	*eP*		**P**	**17 53 00.1**	**-0.6**
BRG					pmax	pmax			
	comp=Z,7.0nm,1.2s,mb4.3								
BRG	**Berggiesshubel**	**77.18**	**332**	*eP*		**P**	**17 53 00.1**	**-0.6**
	comp=Z,6.8nm,1.2s,mb4.2								
VYHS	**Vyhne**	**77.42**	**328**	*i* P		**P**	**17 53 02.3**	**+0.3**
VYHS				*e*			17 53 08.0		
VYHS				*e*			17 53 18.0		
CLZ	**Clausthal**	**77.50**	**335**	*eP*		**P**	**17 53 02.5**	**+0.1**
	comp=Z,15nm,1.1s,mb4.6								
BRTR	**Keskin Array B**	**77.63**	**314**	P		**P**	**17 53 03.1**	**-0.2**
	comp=Z,3.4nm,0.8s,mb4.1,baz=64,slow=4.3,SNR=17								
BRTR					LR	LR	18 32 03.5		
	comp=Z,14nm,18.5s,baz=125,slow=39								
MOX	**Moxa**	**78.14**	**333**	*i* P		**P**	**17 53 05.8**	**-0.1**
	comp=Z,logA/T=0.8,mb4.3								
MOX	**Moxa**	**78.14**	**333**	*eP*		**P**	**17 53 05.8**	**-0.1**
MOX					pmax	pmax			
	comp=Z,7.0nm,1.0s,mb4.3								
MOX	**Moxa**	**78.14**	**333**	*eP*		**P**	**17 53 05.8**	**-0.1**
	comp=Z,7.0nm,1.0s,mb4.3								
KHC	**Kasperske Hory**	**78.79**	**331**	*eP*		**P**	**17 53 09.4**	**-0.1**
GEC2	**GERESS Array S**	**78.99**	**331**	*eP*		**P**	**17 53 10.5**	**-0.2**
GEC2					pmax	pmax			
	comp=Z,4.0nm,0.7s,mb4.4								
GEC2	**GERESS Array S**	**78.99**	**331**	*eP*		**P**	**17 53 10.5**	**-0.2**
	comp=Z,4.0nm,0.7s,mb4.4								
GERES	**GERESS Array B**	**78.99**	**331**	P		**P**	**17 53 09.9**	**-0.7**
	comp=Z,3.3nm,0.5s,mb4.4,baz=40,slow=4.9,SNR=30								
GERES	**GERESS Array B**	**78.99**	**331**	P		**P**	**17 53 09.9**	**-0.8**
GERES					pmax	pmax			
	comp=Z,3.0nm,0.5s								
WET	**Wettzell**	**79.02**	**332**	*eP*		**P**	**17 53 11.3**	**+0.5**
WET					pmax	pmax			
	comp=Z,13nm,1.0s,mb4.7								
WET	**Wettzell**	**79.02**	**332**	*eP*		**P**	**17 53 11.3**	**+0.5**
	comp=Z,13nm,1.0s,mb4.7								
GRA1	**Grafenberg Arr**	**79.09**	**333**	*eP*		**P**	**17 53 11.5**	**+0.3**
	comp=Z,21nm,0.9s,mb5.0								
GRF	**Grafenberg Arr**	**79.09**	**333**	*eP*		**P**	**17 53 11.5**	**+0.3**
GRF					pmax	pmax			
	comp=Z,21nm,0.9s,mb5.0								
MOA	**Molln**	**79.64**	**330**	*i*P		**P**	**17 53 14.4**	**+0.2**
	comp=Z,7.1nm,1.1s,mb4.4								
KBA	**Koelnbreinsper**	**80.63**	**330**	*i*P		**P**	**17 53 20.6**	**+1.1**
	comp=Z,21nm,1.2s,mb4.8								
GOLS	**Golise**	**80.70**	**329**	*i* P		**P**	**17 53 20.1**	**+0.2**
BAIF	**Baives**	**80.88**	**337**	*eP*		**P**	**17 53 20.6**	**-0.2**
	comp=Z,3.3nm,0.5s,mb4.1								
WATA	**Walderalm**	**81.02**	**332**	*i*P		**P**	**17 53 22.4**	**+0.9**
	comp=Z,9.2nm,1.0s,mb4.6								
WTTA	**Wattenberg**	**81.06**	**332**	*i*P		**P**	**17 53 22.4**	**+0.6**
	comp=Z,9.4nm,0.6s,mb4.8								
MOTA	**Moosalm**	**81.17**	**332**	*i*P		**P**	**17 53 22.4**	**+0.1**
	comp=Z,13nm,1.1s,mb4.7								
VISS	**Visnje**	**81.17**	**329**	*eP*		**P**	**17 53 22.5**	**+0.1**
BFO	**Black Forest**	**81.21**	**334**	*eP*		**P**	**17 53 22.5**	**0.0**
BFO					pmax	pmax			
	comp=Z,8.0nm,0.9s,mb4.5								
BFO	**Black Forest**	**81.21**	**334**	*eP*		**P**	**17 53 22.5**	**0.0**
	comp=Z,8.0nm,0.9s,mb4.5								
SQTA	**Sankt Quirin**	**81.24**	**332**	*i*P		**P**	**17 53 23.4**	**+0.7**
	comp=Z,7.1nm,0.9s,mb4.5								
BOJS	**Bojanci**	**81.27**	**329**	*eP*		**P**	**17 53 22.9**	**0.0**
CDF	**Champ du Feu**	**81.46**	**335**	*eP*		**P**	**17 53 23.8**	**0.0**
	comp=Z,16nm,0.9s,mb4.5								
DAVA	**Damuels**	**81.63**	**333**	*i*P		**P**	**17 53 25.0**	**+0.3**
	comp=Z,13nm,1.5s,mb4.5								
TXAR	**Lajitas Array**	**81.82**	**57**	P		**P**	**17 53 26.4**	**+0.3**
	comp=Z,5.5nm,0.4s,mb4.7,baz=299,slow=4.1,SNR=38								
HILS	**Ha'il**	**81.96**	**300**	P		**P**	**17 53 27.7**	**+0.8**
DAVOX	**Davos**	**82.07**	**332**	P		**P**	**17 53 27.2**	**+0.2**
	comp=Z,4.4nm,0.5s,mb4.5,baz=346,slow=5.6,SNR=7.2								
HAU	**Haudompre**	**82.11**	**335**	*eP*		**P**	**17 53 27.0**	**-0.2**
HINF	**Hinteralfeld**	**82.12**	**335**	*eP*		**P**	**17 53 26.9**	**-0.4**
ARSS	**Ar Rass**	**82.13**	**298**	P		**P**	**17 53 29.5**	**+1.7**
MZLS	**Mizel**	**82.18**	**296**	P		**P**	**17 53 30.2**	**+2.1**
MIAR	**Mount Ida**	**83.63**	**47**	*eP*		**P**	**17 53 35.2**	**0.0**
	comp=Z,8.8nm,0.9s,mb4.6								
AFFS	**'Afif**	**83.67**	**297**	P		**P**	**17 53 37.4**	**+1.8**
GRR	**Gorron**	**83.75**	**340**	*eP*		**P**	**17 53 35.9**	**+0.5**
	comp=Z,24nm,1.1s,mb4.7								
SSF	**Saint Saulge**	**83.80**	**336**	*eP*		**P**	**17 53 35.9**	**+0.2**
	comp=Z,11nm,1.1s,mb4.3								
SMF	**Signal de Mont**	**84.08**	**336**	*eP*		**P**	**17 53 37.6**	**+0.5**
	comp=Z,23nm,1.0s,mb4.7								
AVF	**Avril sur Loir**	**84.09**	**336**	*eP*		**P**	**17 53 37.6**	**+0.5**
	comp=Z,18nm,1.0s,mb4.6								
ALLY	**Alegheny Colle**	**84.15**	**34**	*eP*		**P**	**17 53 37.8**	**+0.2**
LPL	**La Plagne**	**84.21**	**334**	*eP*		**P**	**17 53 39.0**	**+1.2**
	comp=Z,16nm,0.9s,mb4.5								
JMQS	**Jabal Moqyreh**	**84.44**	**305**	P		**P**	**17 53 41.8**	**+2.5**
TBKS	**Tabuk**	**84.53**	**304**	P		**P**	**17 53 42.3**	**+2.5**
ALWS	**Ilw as Safayha**	**84.59**	**306**	P		**P**	**17 53 41.8**	**+1.7**
BNI	**Bardonecchia**	**84.64**	**334**	*eP*		**P**	**17 53 41.4**	**+1.5**
JMOS	**Jabal al Moall**	**84.67**	**306**	P		**P**	**17 53 42.9**	**+2.4**
KBRS	**Khaybar**	**84.67**	**301**	P		**P**	**17 53 43.6**	**+3.0**
QUIF	**Quistinic**	**84.74**	**341**	*eP*		**P**	**17 53 41.0**	**+0.6**
HAQS	**Haql**	**84.86**	**306**	P		**P**	**17 53 43.9**	**+2.5**
MBDF	**Montbardon**	**84.91**	**333**	*eP*		**P**	**17 53 41.9**	**+0.6**
	comp=Z,6.4nm,0.5s,mb4.5								
ORIF	**Oris-en-Rattie**	**85.02**	**334**	*eP*		**P**	**17 53 43.0**	**+1.2**
	comp=Z,9.7nm,0.7s,mb4.5								
MFF	**Saint Martin d**	**85.22**	**339**	*eP*		**P**	**17 53 43.9**	**+1.1**
	comp=Z,10nm,0.7s,mb4.6								
BDAS	**Al Bad'**	**85.23**	**306**	P		**P**	**17 53 46.1**	**+2.8**
AYUS	**'Aynunah**	**85.31**	**305**	P		**P**	**17 53 45.9**	**+2.2**
VIVF	**Saint-Julien-l**	**85.45**	**335**	*eP*		**P**	**17 53 45.1**	**+1.2**
	comp=Z,9.8nm,0.9s,mb4.4								
CAF	**Calviac**	**86.16**	**337**	*eP*		**P**	**17 53 49.2**	**+1.8**
	comp=Z,16nm,1.0s,mb4.6								
LFF	**La Frestale**	**86.52**	**337**	*eP*		**P**	**17 53 50.8**	**+1.6**
	comp=Z,17nm,0.6s,mb4.8								
MTLF	**Montolieu**	**87.56**	**336**	*eP*		**P**	**17 53 56.0**	**+1.7**
	comp=Z,9.3nm,0.9s,mb4.5								
ETSF	**Etsaut**	**88.76**	**337**	*eP*		**P**	**17 54 02.3**	**+2.3**
	comp=Z,9.7nm,0.6s,mb4.7								
BDFB	**Brasilia**	**148.36**	**31**	PKPbc	PKPdf		18 00 53.0	+4.9	
	comp=Z,6.8nm,0.6s,baz=196,slow=0.5,SNR=10								
BDFB	**Brasilia**	**148.36**	**31**	PKP2	PKPab		18 00 53.0	-4.2	
BDFB				pmax	pmax				
	comp=Z,7.0nm,0.6s								
VNA2	**Neumayer--Watz**	**150.69**	**196**		PKPdf		18 01 00.3	+10	
VNA3	**Neumayer Olymp**	**150.86**	**195**	*i*	PKPdf		18 00 59.9	+9.5	
VNA1	**Neumayer--Stat**	**151.08**	**196**	*i*	PKPdf		18 01 01.8	+11	
CPUP	**Villa Florida**	**152.79**	**57**	PKPbc	PKPdf		18 01 03.2	+8.6	
	comp=Z,0.9nm,0.4s,baz=56,slow=3.6,SNR=2.5								
CPUP				PKPab	PKPab		18 01 13.9	-1.5	
	comp=Z,1.7nm,0.8s,baz=306,slow=4.8,SNR=3.9								
CPUP	**Villa Florida**	**152.79**	**57**	PKIKP	PKPdf		18 01 03.2	+8.6	
CPUP							18 01 13.9		
CPUP				pmax	pmax				
	comp=Z,1.0nm,0.4s								
CPUP				pmax	pmax				
	comp=Z,2.0nm,0.8s								
CPUP	**Villa Florida**	**152.79**	**57**	PKPbc	PKPdf		18 01 03.2	+8.6	
CPUP				PKPab	PKPab		18 01 13.9	-1.5	

*CASC **17** 17:57:42.9±2.1, 10.87N×86.51W, h18km±7km, MD4.1, ML3.7, mb4.2(NEIC)*
*IDC **17** 17:57:45.6±3.4, 11.63N×85.59W, h40km±39km, mb3.8/7, mb1 4.1/7, mb1mx3.8/19, Error ellipse: s-maj=71.5km s-min=28.9km az=64.0*
*NEIC **17** 17:57:46.9±2.1, 11.38N×85.79W, h56km±26km, mb4.2/4, Error ellipse: s-maj=51.5km s-min=19.1km az=70.0*
ISC 17 17:57:43.4±0.8, 10.85N±0.05×86.56W±0.07, h51km±8km, n53, σ1s21/61, mb4.0/12, 12C-6D, Off coast of Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRZC	**La Cruz**	**0.95**	**84**	*e*P	**P**	**17 57 59.2**	**-1.4**
CRZC				*e*S	**S**	**17 58 12.7**	**-0.7**
CRUN	**El Crucero**	**1.16**	**12**	*e*P	**P**	**17 58 04.0**	**+0.5**
CONN	**Concepcion**	**1.16**	**52**	*e*P	**P**	**17 58 02.2**	**-1.3**
VCR	**Vista de Mar**	**1.17**	**128**	*e*P	**P**	**17 58 02.8**	**-0.7**
APON	**Apoyo**	**1.17**	**24**	*e*P	**P**	**17 58 03.0**	**-0.6**
MASN	**Masaya**	**1.20**	**19**	*e*P	**P**	**17 58 03.7**	**-0.4**
MASN				*e*P		17 58 03.9	
TICN	**Ticuantepe**	**1.22**	**15**	*e*P	**P**	**17 58 04.5**	**+0.1**
TICN				*e*S	**S**	**17 58 20.0**	**-0.1**
XAVN	**Gruta Xavier**	**1.31**	**10**	*e*P	**P**	**17 58 05.1**	**-0.8**
XAVN				*e*S	**S**	**17 58 23.4**	**+0.8**
COPN	**Copaltepe**	**1.32**	**358**	*e*P	**P**	**17 58 05.6**	**-0.4**
COPN				*e*S	**S**	**17 58 24.8**	**+1.9**
MGAN	**Managua**	**1.32**	**13**	*e*P	**P**	**17 58 05.4**	**-0.6**
MGAN				*e*S	**S**	**17 58 22.8**	**-0.1**
MGAN				*i*		17 58 25.1	
	comp=N,2μm,0.3s						
WILN	**Americas 2**	**1.35**	**15**	*e*P	**P**	**17 58 05.7**	**-0.7**
WILN				*e*S	**S**	**17 58 27.2**	**+3.7**
COFN	**Cofrada**	**1.36**	**19**	*e*P	**P**	**17 58 05.8**	**-0.6**
APYN	**Apoyeque**	**1.39**	**8**	*e*P	**P**	**17 58 07.6**	**+0.7**
MOMJ	**Momotombo**	**1.55**	**1**	*e*P	**P**	**17 58 08.3**	**-0.9**
MIRN	**Miramar**	**1.59**	**354**	*e*P	**P**	**17 58 09.4**	**-0.3**
MIRN				*e*S	**S**	**17 58 32.4**	**+3.2**
PYN	**Poneloya**	**1.59**	**343**	*e*P	**P**	**17 58 09.7**	**-0.1**
LEON	**Leon**	**1.59**	**348**	*i*P	**P**	**17 58 09.5**	**-0.2**
CNGN	**Cerro Negro**	**1.65**	**355**	*e*P	**P**	**17 58 10.0**	**-0.5**
JTS	**JuntasAbangare**	**1.67**	**109**	Pn	**P**	**17 58 09.5**	**-1.3**
	comp=N,64nm,0.3s,baz=310,slow=17,SNR=75						
JTS				Lg		17 58 35.1	
	comp=N,106nm,0.3s,baz=270,slow=21,SNR=13						
JTS	**JuntasAbangare**	**1.67**	**109**	Pn	**P**	**17 58 09.5**	**-1.3**
JTS				Lg		17 58 35.1	
JCR	**Jicaral**	**1.73**	**125**	*e*P	**P**	**17 58 11.0**	**-0.7**
TEL3	**Telica 3**	**1.74**	**351**	*e*P	**P**	**17 58 11.7**	**-0.1**
PYTN	**Playitas**	**1.75**	**16**	*e*P	**P**	**17 58 11.0**	**-0.9**
PYTN				*e*S	**S**	**17 58 33.4**	**+0.3**
TELN	**Telica**	**1.77**	**351**	*e*P	**P**	**17 58 11.7**	**-0.4**
FORC	**Fortuna**	**1.89**	**101**	*e*P	**P**	**17 58 15.8**	**+1.8**
CRIN	**San Cristobal**	**1.90**	**345**	*e*P	**P**	**17 58 13.9**	**-0.1**
CRIN				*e*S	**S**	**17 58 38.2**	**+1.3**
CGA2	**Cerro Gallo 2**	**2.21**	**112**	*e*P	**P**	**17 58 18.8**	**+0.3**
CGA2				*e*S	**S**	**17 58 45.3**	**+0.6**
PRS1	**Puriscal**	**2.37**	**111**	*e*P	**P**	**17 58 23.5**	**+2.8**
VPS2	**Volcan Poas 2**	**2.37**	**106**	*e*P	**P**	**17 58 18.5**	**-2.3**
LAJ	**Bijagual**	**2.59**	**112**	*e*P	**P**	**17 58 19.9**	**-4.0**
SJS	**Escuela Geolog**	**2.62**	**110**	*e*P	**P**	**17 58 25.6**	**+1.3**
LCR2	**La Lucha 2**	**2.74**	**113**	*e*P	**P**	**17 58 27.5**	**+1.5**
TRTC	**Tortuguero**	**2.81**	**95**	*e*P	**P**	**17 58 25.8**	**-1.2**
ICR	**Volcan Irazu**	**2.81**	**108**	*e*P	**P**	**17 58 29.7**	**+2.6**
URSC	**Urasca**	**2.91**	**110**	*e*P	**P**	**17 58 30.8**	**+2.3**
BUS	**Buena Vista**	**3.04**	**115**	*e*P	**P**	**17 58 31.3**	**+1.1**
LRAL	**Lakeview Retre**	**22.09**	**359**	*e*P	**P**	**18 02 37.2**	**+1.6**
	comp=N,6.3nm,0.5s,mb4.3						
PLAL	**Pickwick Lake**	**24.06**	**357**	*e*P	**P**	**18 02 54.6**	**-0.4**
	comp=N,4.3nm,0.6s,mb4.1						
TXAR	**Lajitas Array**	**24.36**	**321**	P	**P**	**18 02 59.4**	**+1.4**
	comp=N,0.9nm,0.2s,mb3.8,baz=140,slow=10,SNR=15						
MIAR	**Mount Ida**	**24.44**	**346**	*e*P	**P**	**18 02 57.6**	**-1.1**
	comp=N,4.7nm,0.7s,mb4.0						
WMOK	**Wichita Mounta**	**26.27**	**337**	*e*P	**P**	**18 03 17.2**	**+1.4**
	comp=N,9.1nm,1.0s,mb4.3						
PDAR	**Pinedale Array**	**37.59**	**332**	P	**P**	**18 04 55.0**	**+0.2**
	comp=N,0.9nm,0.8s,mb3.5,baz=126,slow=8.3,SNR=7.6						
PDAR				PcP	PcP	18 07 12.3	0.0
	comp=N,0.3nm,0.4s,baz=108,slow=5.7,SNR=3.5						
HWUT	**Hardware Ranch**	**37.69**	**329**	*e*P	**P**	**18 04 55.6**	**0.0**
	comp=N,1.7nm,0.7s,mb3.9						
BGU	**Big Grassy Mou**	**37.97**	**327**	*e*P	**P**	**18 05 01.4**	**+3.5**
NVAR	**Mina Array Bea**	**39.48**	**319**	P	**P**	**18 05 13.6**	**+3.0**
	comp=N,0.9nm,0.7s,mb3.6,baz=132,slow=7.8,SNR=7.6						
NVAR				PcP	PcP	18 07 20.4	+2.2
	comp=N,1.4nm,0.7s,baz=122,slow=5.3,SNR=12						
ULM	**Lac du Bonnet**	**40.03**	**351**	P	**P**	**18 05 11.8**	**-3.2**
	comp=N,3.1nm,0.4s,mb4.4,baz=173,slow=7.8,SNR=6.3						
ULM	**Lac du Bonnet**	**40.03**	**351**	P	**P**	**18 05 11.8**	**-3.2**
YKA	**Yellowknife Ar**	**55.38**	**345**	P	**P**	**18 07 11.7**	**-2.7**
	comp=N,2.4nm,1.0s,mb4.2,baz=140,slow=7.2,SNR=24						
YKA	**Yellowknife Ar**	**55.38**	**345**	P	**P**	**18 07 11.7**	**-2.7**
INK	**Inuvik**	**64.99**	**343**	P	**P**	**18 08 18.5**	**-1.4**
	comp=N,1.5nm,0.8s,mb4.1,baz=111,slow=5.9,SNR=5.9						
ILAR	**Eielson Array**	**67.83**	**336**	P	**P**	**18 08 36.6**	**-1.4**
	comp=N,2.5nm,1.1s,mb4.2,baz=130,slow=4.9,SNR=13						
ASAR	**Alice Springs**	**139.46**	**246**	PKP	PKPdf	18 17 10.9	+4.9
	comp=N,0.3nm,0.8s,baz=118,slow=3.3,SNR=4.0						
WRA	**Warramunga Arr**	**139.64**	**252**	PKP	PKPdf	18 17 11.6	+5.2
	comp=N,0.6nm,1.0s,baz=92,slow=2.6,SNR=6.2						

*IDC **17** 18:02:05.5±0.9, 23.04N×121.49E, mb3.5/8, mb1 3.8/9, mb1mx3.6/23, ML3.4/1, MS3.4/1, Ms1 3.6/1, ms1mx2.6/20, Error ellipse: s-maj=25.7km s-min=19.5km az=66.0*
*TAP **17** 18:02:08.8, 23.06N×121.26E, h11km, ML4.2*
TAP Felt III J at Chenggung, I J at Yuli, I J at Taitung, I J at Tauyuan.
*NEIC **17** 18:02:10.6±0.6, 23.05N×121.58E, h35km, mb4.0/3, Error ellipse: s-maj=11.9km s-min=10.4km az=115.0*
*JMA **17** 18:02:10.0±0.2, 23.06N×121.42E, h98km, M3.4*
*BJI **17** 18:02:16.3, 23.44N×120.70E, h15km, mB4.1, mb3.8, ML3.9*
ISC 17 18:02:07.7±0.3, 22.99N±0.02×121.41E±0.02, h18km±3km, n88, σ1s09/124, mb3.6/11, MS3.2/1, 10C-8D, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHKT	**Chengkung**	**0.12**	**339**	*i*P	**Pb**	**18 02 12.2**	**+0.6**
CHKT				S	**Sb**	**18 02 15.0**	**+0.7**
TTN	**Taitung**	**0.34**	**226**	*e*P	**Pb**	**18 02 16.1**	**+1.2**
TWG	**Pinlang**	**0.35**	**242**	*i*P	**Pb**	**18 02 15.2**	**0.0**
TWG				S	**Sb**	**18 02 20.5**	**+0.2**
TWF1	**Yuli**	**0.38**	**344**	*i*P	**Pb**	**18 02 15.2**	**-0.4**
TWF1				S	**Sb**	**18 02 19.8**	**-1.1**
ELDTW	**Lidau**	**0.41**	**299**	*i*P	**Pb**	**18 02 14.6**	**-1.6**
ELDTW				S	**Sb**	**18 02 19.0**	**-3.0**
EHY	**Hungye**	**0.52**	**351**	*i*P	**Pb**	**18 02 17.5**	**-0.6**
EHY				S	**Sb**	**18 02 23.9**	**-1.2**
ECL	**Taimali**	**0.57**	**227**	*i*P	**Pb**	**18 02 18.6**	**-0.4**
ECL				S	**Sb**	**18 02 25.4**	**-1.2**
STYT	**Tauyuan**	**0.63**	**286**	*i*P	**Pb**	**18 02 18.6**	**-1.2**
STYT				S	**Sb**	**18 02 25.0**	**-2.5**
YUS	**Yu-Shan**	**0.65**	**320**	*i*P	**Pb**	**18 02 19.5**	**-0.8**
YUS				S	**Sb**	**18 02 26.8**	**-2.1**
SSD	**Sandimen**	**0.76**	**252**	*i*P	**Pb**	**18 02 21.1**	**-1.0**
SSD				S	**Sb**	**18 02 29.7**	**-2.2**
ALS	**Alishan**	**0.76**	**313**	*i*P	**Pb**	**18 02 21.6**	**-0.5**
ALS				S	**Sb**	**18 02 30.7**	**-1.3**
SGST	**Jiashian**	**0.77**	**277**	*i*P	**Pb**	**18 02 21.9**	**-0.4**
SGST				S	**Sb**	**18 02 31.9**	**-0.3**
WTP	**Ta-pu**	**0.78**	**289**	*i*P	**Pb**	**18 02 21.8**	**-0.6**
WTP	

ASAR	**Alice Springs**	**47.94**	**165**	P		**P**	**18 10 46.2**	**-1.1**
	comp=Z,0.2nm,0.4s,mb3.5,baz=342,slow=6.6,SNR=6.1							
BRVK	**Borovoye**	**48.80**	**321**	P		**P**	**18 10 56.5**	**+2.9**
ZRNK	**Zerenda**	**49.51**	**321**	*e*P		**P**	**18 10 57.8**	**-1.2**
INK	**Inuvik**	**74.25**	**22**	*e*P		**P**	**18 13 43.5**	**-1.5**
	comp=Z,0.6nm,0.7s,mb3.6							
GERES	**GERESS Array B**	**83.89**	**321**	P		**P**	**18 14 36.5**	**-1.2**
	comp=Z,0.9nm,0.8s,mb4.0,baz=63,slow=6.6,SNR=6.5							
YKA	**Yellowknife Ar**	**83.99**	**23**	P		**P**	**18 14 37.5**	**-0.3**
	comp=Z,0.1nm,0.6s,mb3.1,baz=319,slow=5.1,SNR=3.5							
YKA	**Yellowknife Ar**	**83.99**	**23**	P		**P**	**18 14 37.5**	**-0.3**

TAP ***17*** *18:08:53.0,23.06N×121.28E,h15km±1km,ML3.4*
TAP Felt II J at Chenggung.
JMA ***17*** *18:08:54.5±0.5,23.07N×121.40E,h105km*
ISC 17 18:08:52.8±0.3,23.01N±0.02×121.37E±0.02,h17km±4km, n56,σ0°90/84,6C-3D,Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHKT	**Chengkung**	**0.09**	**358**	*i* P	**Pb**	**18 08 56.8**	**+0.5**
CHKT				S	**Sb**	**18 08 59.2**	**+0.6**
TWG	**Pinlang**	**0.33**	**235**	⇓*i*P	**Pb**	**18 08 59.9**	**0.0**
TWG				S	**Sb**	**18 09 05.4**	**+0.7**
TWF1	**Yuli**	**0.34**	**349**	⇓*i*P	**Pb**	**18 08 59.8**	**-0.3**
TWF1				S	**Sb**	**18 09 04.5**	**-0.5**
ELDTW	**Lidau**	**0.37**	**299**	⇑*i*P	**Pb**	**18 08 59.3**	**-1.2**
ELDTW				S	**Sb**	**18 09 03.4**	**-2.3**
EHY	**Hungye**	**0.49**	**355**	*e*P	**Pb**	**18 09 02.0**	**-0.7**
EHY				S	**Sb**	**18 09 07.8**	**-1.5**
ECL	**Taimali**	**0.56**	**223**	⇓P	**Pb**	**18 09 03.3**	**-0.5**
STYT	**Tauyuan**	**0.58**	**285**	⇑*i*P	**Pb**	**18 09 03.3**	**-0.8**
STYT				S	**Sb**	**18 09 10.3**	**-1.5**
YUS	**Yu-Shan**	**0.61**	**321**	⇑*i*P	**Pb**	**18 09 04.1**	**-0.5**
YUS				S	**Sb**	**18 09 11.1**	**-1.6**
ALS	**Alishan**	**0.72**	**314**	⇑P	**Pb**	**18 09 06.3**	**-0.2**
ALS				S	**Sb**	**18 09 15.0**	**-0.8**
SGST	**Jiashian**	**0.73**	**276**	⇑P	**Pb**	**18 09 06.7**	**0.0**
SGST				S	**Sb**	**18 09 15.9**	**-0.2**
SSD	**Sandimen**	**0.73**	**249**	*e*P	**Pb**	**18 09 05.8**	**-0.9**
SSD				S	**Sb**	**18 09 14.0**	**-2.2**
WTP	**Ta-pu**	**0.73**	**289**	*i* P	**Pb**	**18 09 06.4**	**-0.3**
WTP				S	**Sb**	**18 09 15.9**	**-0.4**
WDT	**Danda**	**0.77**	**344**	P	**Pb**	**18 09 06.9**	**-0.5**
WDT				S	**Sb**	**18 09 16.2**	**-1.1**
TAW	**Tawu**	**0.78**	**214**	*e*P	**Pb**	**18 09 07.0**	**-0.6**
CHN4	**Tsaushan**	**0.79**	**295**	*i* P	**Pb**	**18 09 07.7**	**0.0**
CHN4				S	**Sb**	**18 09 18.0**	**+0.1**
EAST	**Anshuo**	**0.79**	**218**	*e*P	**Pb**	**18 09 07.3**	**-0.4**
CHN1	**Nanshi**	**0.79**	**283**	*e*P	**Pb**	**18 09 07.8**	**+0.1**
CHN1				S	**Sb**	**18 09 18.4**	**+0.5**
ESL	**Shilin**	**0.80**	**4**	*e*P	**Pb**	**18 09 07.9**	**+0.1**
TWK	**Hsinying**	**0.85**	**288**	*e*P	**Pb**	**18 09 08.7**	**0.0**
TWK				S	**Sb**	**18 09 20.0**	**+0.4**
SGLT	**Jiouru**	**0.86**	**251**	*e*P	**Pb**	**18 09 08.6**	**-0.3**
CHN5	**Tsauling**	**0.86**	**313**	⇑P	**Pb**	**18 09 09.1**	**+0.2**
CHN5				S	**Sb**	**18 09 19.8**	**-0.2**
TWM1	**Shoushan**	**0.89**	**258**	*e*P	**Pb**	**18 09 10.3**	**+0.9**
CHN3	**Shinhua**	**0.93**	**274**	*e*P	**Pb**	**18 09 11.1**	**+1.1**
SCZT	**Fangliau**	**0.94**	**227**	*e*P	**Pb**	**18 09 09.9**	**-0.3**
SMLT	**Sun Moon Lake**	**0.97**	**334**	*e*P	**Pb**	**18 09 10.6**	**-0.1**
CHN2	**Minshiung**	**0.97**	**302**	*e*P	**Pb**	**18 09 10.9**	**+0.2**
LAY	**Lan-yu**	**0.98**	**170**	*e*P	**Pb**	**18 09 11.5**	**+0.5**
LAY				S	**Sb**	**18 09 25.3**	**+1.8**
CHY	**Chiayi**	**0.99**	**299**	*e*P	**Pb**	**18 09 10.9**	**-0.3**
WGK	**Gukeng**	**1.00**	**312**	*e*P	**Pb**	**18 09 12.0**	**+0.7**
WGK				S	**Sb**	**18 09 25.5**	**+1.6**
TYC	**Yuchr**	**1.00**	**332**	*e*P	**Pb**	**18 09 11.7**	**+0.4**
TYC				S	**Sb**	**18 09 25.6**	**+1.4**
WNT	**Mingjian**	**1.07**	**324**	*e*P	**Pb**	**18 09 12.9**	**+0.5**
WNT				S	**Sb**	**18 09 27.3**	**+1.4**
TWD	**Chiawan**	**1.08**	**11**	*e*P	**Pb**	**18 09 11.7**	**-1.0**
TWD				S	**Sb**	**18 09 28.4**	**+2.0**
SCLT	**Jiali**	**1.09**	**279**	*e*P	**Pb**	**18 09 13.0**	**+0.1**
CHN8	**Yiju**	**1.12**	**288**	*e*P	**Pb**	**18 09 12.9**	**-0.3**
CHN8				S	**Sb**	**18 09 29.2**	**+1.9**
WHF	**Hehuan Shan**	**1.13**	**355**	*e*P	**Pb**	**18 09 12.8**	**-0.7**
HEN	**Hengchun**	**1.16**	**210**	*e*P	**Pb**	**18 09 15.5**	**+1.5**
TWK1	**Hengchun**	**1.19**	**206**	*e*P	**Pb**	**18 09 14.6**	**+0.2**
TWT	**Tachien**	**1.25**	**352**	*e*P	**Pn**	**18 09 15.6**	**+0.1**
TCU	**Taichung**	**1.30**	**331**	*e*P	**Pn**	**18 09 16.7**	**+0.5**
NNS	**Nan Shan**	**1.42**	**0**	*e*P	**Pn**	**18 09 18.9**	**+0.8**
TWQ1	**Liyutan**	**1.44**	**338**	*e*P	**Pn**	**18 09 19.2**	**+1.0**
TWQ1				S	**Sb**	**18 09 38.7**	**+2.1**
ENA	**Nanau**	**1.45**	**14**	*e*P	**Pn**	**18 09 17.7**	**-0.8**
NSY	**Sanyi**	**1.50**	**338**	*e*P	**Pn**	**18 09 19.8**	**+0.5**
WDGT	**Dungji**	**1.59**	**279**	*e*P	**Pn**	**18 09 19.7**	**-0.7**
ENTT	**Nioudou**	**1.63**	**6**	*e*P	**Pn**	**18 09 20.0**	**-1.0**
NSTT	**Nanjuang**	**1.65**	**348**	*e*P	**Pn**	**18 09 21.8**	**+0.6**
NSTT				S	**Sn**	**18 09 39.1**	**+1.8**
TWC	**Suao**	**1.65**	**15**	*e*P	**Pn**	**18 09 22.2**	**+0.9**
NSK	**Sanguang**	**1.66**	**360**	*e*P	**Pn**	**18 09 21.3**	**-0.1**
TWE	**Neicheng**	**1.72**	**9**	*e*P	**Pn**	**18 09 23.4**	**+1.1**
PNG	**Penghu**	**1.76**	**289**	*e*P	**Pn**	**18 09 22.2**	**-0.6**
NWF	**Wu-fen Shan**	**2.08**	**10**	*e*P	**Pn**	**18 09 27.3**	**-0.2**
YOJ	**Yonaguni jima**	**2.08**	**46**	P	**Pn**	**18 09 28.0**	**+0.5**
YOJ				*e*S	**Sn**	**18 09 52.6**	**-0.7**
HATJ	**Hateruma jima**	**2.47**	**65**	*e*S	**Sn**	**18 10 02.2**	**-0.7**
IRIF	**Iriomote-Funau**	**2.53**	**58**	P	**Pn**	**18 09 33.8**	**-0.2**
IRIF				*e*S	**Sn**	**18 10 04.2**	**-0.5**
JKRS	**Kuro-shima**	**2.71**	**63**	P	**Pn**	**18 09 36.3**	**-0.2**
JKRS				*e*S	**Sn**	**18 10 10.0**	**+0.8**
JIJ	**Ishigaki jima**	**2.88**	**62**	P	**Pn**	**18 09 38.4**	**-0.4**
JIJ				*e*S	**Sn**	**18 10 11.2**	**-2.2**

NEIC ***17*** *18:49:40.4,37.82S×176.36E,h279km,After WEL.*
WEL ***17*** *18:49:41.4±0.5,37.86S×176.38E,h270km±4km,ML4.3/7, Error ellipse: s-maj=4.4km s-min=4.1km az=0.0*
ISC 17 18:49:37.1±0.7,37.94S±0.07×176.3E±0.1,h311km±5km, n99,σ0°95/115,mb3.1/1,7C-2D,North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TOZ	**Tahuroa Road**	**0.68**	**288**	PN	**P**	**18 50 17.1**	**-0.5**
TOZ	**Tahuroa Road**	**0.68**	**288**	P	**P**	**18 50 17.2**	**-0.4**
URZ	**Urewera**	**0.70**	**117**	⇑PN	**P**	**18 50 17.1**	**-0.7**
URZ				SN	**S**	**18 50 45.8**	**-3.7**
URZ	**Urewera**	**0.70**	**117**	P	**P**	**18 50 17.1**	**-0.6**
RATZ	**Rangitukua**	**1.02**	**205**	⇑PN	**P**	**18 50 19.2**	**+0.3**
RATZ	**Rangitukua**	**1.02**	**205**	P	**P**	**18 50 19.2**	**+0.3**
MWZ	**Matawai**	**1.03**	**113**	⇑PN	**P**	**18 50 19.0**	**0.0**
MWZ				SN	**S**	**18 50 46.0**	**-5.8**
RITZ	**Rihia Road**	**1.09**	**199**	PN	**P**	**18 50 20.1**	**+0.8**
RITZ	**Rihia Road**	**1.09**	**199**	P	**P**	**18 50 20.1**	**+0.8**
KATZ	**Kakaramea**	**1.14**	**205**	PN	**P**	**18 50 19.9**	**+0.4**
KATZ	**Kakaramea**	**1.14**	**205**	P	**P**	**18 50 20.0**	**+0.5**
KATZ				S	S	18 50 23.1	-30
MGZ	**Maungaku**	**1.22**	**210**	PN	**P**	**18 50 20.4**	**+0.4**
MGZ	**Maungaku**	**1.22**	**210**	P	**P**	**18 50 20.4**	**+0.4**
BKZ	**Black Stump Fm**	**1.23**	**174**	⇑PN	**P**	**18 50 20.6**	**+0.6**
BKZ				SN	**S**	**18 50 48.8**	**-4.9**
KAVZ	**Karewarewa**	**1.27**	**204**	PN	**P**	**18 50 20.2**	**-0.1**
KAVZ	**Karewarewa**	**1.27**	**204**	P	**P**	**18 50 20.7**	**+0.5**
HIZ	**Hauiti**	**1.28**	**243**	⇑PN	**P**	**18 50 20.4**	**+0.1**
WTVZ	**West Tongariro**	**1.30**	**206**	PN	**P**	**18 50 20.6**	**+0.1**
WTVZ				SN	**S**	**18 50 53.8**	**-0.6**
NGZ	**Ngauruhoe**	**1.35**	**204**	PN	**P**	**18 50 21.3**	**+0.6**
NGZ				SN	**S**	**18 50 53.2**	**-1.7**
NGZ	**Ngauruhoe**	**1.35**	**204**	P	**P**	**18 50 21.3**	**+0.8**
NGZ				S	**S**	**18 50 55.7**	**+0.8**
CNZ	**Chateau**	**1.39**	**205**	PN	**P**	**18 50 21.3**	**+0.4**
CNZ	**Chateau**	**1.39**	**205**	P	**P**	**18 50 21.5**	**+0.5**
WPVZ	**Whakapapa**	**1.40**	**205**	PN	**P**	**18 50 21.5**	**+0.5**
WPVZ				SN	**S**	**18 50 55.8**	**+0.4**
TUVZ	**Tukino**	**1.42**	**201**	⇓PN	**P**	**18 50 21.8**	**+0.6**
TUVZ	**Tukino**	**1.42**	**201**	P	**P**	**18 50 21.8**	**+0.6**
FWVZ	**Far West T-bar**	**1.44**	**204**	PN	**P**	**18 50 21.5**	**+0.3**
FWVZ	**Far West T-bar**	**1.44**	**204**	P	**P**	**18 50 21.9**	**+0.6**
DRZ	**Dome Shelter**	**1.46**	**204**	PN	**P**	**18 50 23.0**	**+1.7**
DRZ	**Dome Shelter**	**1.46**	**204**	P	**P**	**18 50 22.7**	**+1.3**
WNVZ	**Wahianoa**	**1.49**	**202**	PN	**P**	**18 50 22.2**	**+0.6**
KNZ	**Kokohu**	**1.51**	**136**	PN	**P**	**18 50 22.3**	**+0.5**
KNZ	**Kokohu**	**1.51**	**136**	*e*P	**P**	**18 50 22.5**	**+0.8**
PUZ	**Puketiti**	**1.54**	**95**	PN	**P**	**18 50 21.7**	**-0.2**
PUZ				SN	**S**	**18 50 51.4**	**-5.5**
PUZ	**Puketiti**	**1.54**	**95**	*e*P	**P**	**18 50 21.9**	**0.0**
PUZ				*e*S	**S**	**18 50 51.9**	**-5.0**
MXZ	**Matakaoa Point**	**1.62**	**77**	PN	**P**	**18 50 21.7**	**-0.8**
MXZ				SN	**S**	**18 50 54.9**	**-3.0**
VRZ	**Vera Road**	**1.70**	**226**	PN	**P**	**18 50 23.2**	**+0.3**
VRZ	**Vera Road**	**1.70**	**226**	P	**P**	**18 50 23.3**	**+0.4**
RAEZ	**Rainy Point**	**2.02**	**228**	PN	**P**	**18 50 25.7**	**+0.4**
RAEZ	**Rainy Point**	**2.02**	**228**	P	**P**	**18 50 25.8**	**+0.5**
WAZ	**Wanganui**	**2.09**	**209**	⇑PN	**P**	**18 50 26.4**	**+0.6**
WAZ	**Wanganui**	**2.09**	**209**	P	**P**	**18 50 26.4**	**+0.6**
PWZ	**Pawanui**	**2.13**	**169**	⇓PN	**P**	**18 50 27.5**	**+1.4**
PWZ	**Pawanui**	**2.13**	**169**	P	**P**	**18 50 27.6**	**+1.5**
TSZ	**Takapari Road**	**2.13**	**187**	⇑PN	**P**	**18 50 26.9**	**+0.8**
TSZ				SN	**S**	**18 51 04.5**	**0.0**
TSZ	**Takapari Road**	**2.13**	**187**	P	**P**	**18 50 27.0**	**+0.8**
TSZ				*e*S	**S**	**18 51 04.8**	**+0.3**
NEZ	**North Egmont**	**2.19**	**232**	PN	**P**	**18 50 27.1**	**+0.5**
NEZ	**North Egmont**	**2.19**	**232**	P	**P**	**18 50 27.5**	**+0.8**
PKE	**Pukeiti**	**2.21**	**235**	PN	**P**	**18 50 27.4**	**+0.5**
PKE	**Pukeiti**	**2.21**	**235**	P	**P**	**18 50 27.6**	**+0.7**
DFE	**Dawson Falls**	**2.22**	**231**	PN	**P**	**18 50 27.4**	**+0.5**
DFE	**Dawson Falls**	**2.22**	**231**	P	**P**	**18 50 27.3**	**+0.4**
NRZ	**Ngariki Road**	**2.33**	**233**	PN	**P**	**18 50 28.2**	**+0.3**
NRZ	**Ngariki Road**	**2.33**	**233**	P	**P**	**18 50 28.4**	**+0.5**
NWEZ	**Newall Road**	**2.33**	**235**	PN	**P**	**18 50 28.6**	**+0.7**
NWEZ	**Newall Road**	**2.33**	**235**	P	**P**	**18 50 28.7**	**+0.8**
BFZ	**Birch Farm**	**2.73**	**181**	PN	**P**	**18 50 32.5**	**+1.1**
BFZ				SN	**S**	**18 51 13.3**	**-0.7**
BFZ	**Birch Farm**	**2.73**	**181**	P	**P**	**18 50 32.6**	**+1.1**
MRZ	**Mangatainoka R**	**2.77**	**192**	PN	**P**	**18 50 32.1**	**+0.3**
KIW	**Kapiti Island**	**3.11**	**200**	PN	**P**	**18 50 35.3**	**+0.2**
KIW	**Kapiti Island**	**3.11**	**200**	P	**P**	**18 50 35.5**	**+0.4**
MTW	**Mount Morrison**	**3.27**	**191**	PN	**P**	**18 50 37.0**	**+0.2**
MTW				SN	**S**	**18 51 23.5**	**+0.2**
MTW	**Mount Morrison**	**3.27**	**191**	P	**P**	**18 50 37.0**	**+0.3**
MRW	**Makara Radio**	**3.51**	**200**	PN	**P**	**18 50 39.1**	**0.0**
MRW				SN	**S**	**18 51 27.3**	**-0.4**
MRW	**Makara Radio**	**3.51**	**200**	P	**P**	**18 50 39.2**	**0.0**
WEL	**Wellington**	**3.54**	**199**	PN	**P**	**18 50 39.8**	**+0.2**
WEL	**Wellington**	**3.54**	**199**	P	**P**	**18 50 39.9**	**+0.4**
SNZO	**South Karori**	**3.58**	**200**	PN	**P**	**18 50 39.7**	**-0.2**
SNZO	**South Karori**	**3.58**	**200**	P	**P**	**18 50 40.0**	**+0.1**
SNZO				S	**S**	**18 51 30.2**	**+1.1**
BHW	**Baring Head**	**3.64**	**197**	PN	**P**	**18 50 40.2**	**-0.3**
BHW	**Baring Head**	**3.64**	**197**	P	**P**	**18 50 40.6**	**+0.1**
TUWZ	**Tuamarina**	**3.94**	**207**	PN	**P**	**18 50 43.3**	**-0.3**
NNZ	**Nelson**	**3.98**	**214**	PN	**P**	**18 50 43.2**	**-0.9**
NNZ	**Nelson**	**3.98**	**214**	P	**P**	**18 50 43.3**	**-0.8**
QRZ	**Quartz Range**	**4.11**	**224**	PN	**P**	**18 50 43.7**	**-1.9**
BSWZ	**Blackbirch Sta**	**4.21**	**206**	PN	**P**	**18 50 46.8**	**+0.2**
THZ	**Tophouse**	**4.63**	**213**	PN	**P**	**18 50 50.2**	**-1.1**
THZ	**Tophouse**	**4.63**	**213**	*e*P	**P**	**18 50 50.4**	**-0.9**
KHZ	**Kahutara**	**4.95**	**205**	PN	**P**	**18 50 54.8**	**-0.2**
KHZ	**Kahutara**	**4.95**	**205**	*e*P	**P**	**18 50 55.1**	**+0.2**
DSZ	**Denniston Nort**	**5.15**	**221**	PN	**P**	**18 50 55.4**	**-1.8**
DSZ	**Denniston Nort**	**5.15**	**221**	P	**P**	**18 50 55.2**	**-2.0**
LTZ	**Lake Taylor**	**5.74**	**211**	PN	**P**	**18 51 03.1**	**-1.1**
LTZ	**Lake Taylor**	**5.74**	**211**	P	**P**	**18 51 03.3**	**-0.8**
CRLZ	**Canterbury Las**	**6.29**	**205**	PN	**P**	**18 51 09.6**	**-1.1**
CRLZ	**Canterbury Las**	**6.29**	**205**	P	**P**	**18 51 10.0**	**-0.7**
MQZ	**McQueen's Vall**	**6.39**	**205**	PN	**P**	**18 51 10.6**	**-1.4**
MQZ	**McQueen's Vall**	**6.39**	**205**	P	**P**	**18 51 10.9**	**-1.1**
WVZ	**Waitaha Valley**	**6.66**	**218**	PN	**P**	**18 51 13.4**	**-1.9**
WVZ	**Waitaha Valley**	**6.66**	**218**	P	**P**	**18 51 13.7**	**-1.5**
RPZ	**Rata Peaks**	**7.01**	**213**	PN	**P**	**18 51 17.4**	**-2.1**
RPZ	**Rata Peaks**	**7.01**	**213**	*e*P	**P**	**18 51 18.4**	**-1.1**
BWZ	**Berwen**	**8.17**	**214**	PN	**P**	**18 51 31.7**	**-1.9**
ODZ	**Otahua Downs**	**8.27**	**209**	PN	**P**	**18 51 34.5**	**-0.3**
ODZ	**Otahua Downs**	**8.27**	**209**	*e*P	**P**	**18 51 35.1**	**+0.3**
TUZ	**Tuapeka**	**9.42**	**210**	PN	**P**	**18 51 49.1**	**+0.2**
TUZ	**Tuapeka**	**9.42**	**210**	*e*P	**P**	**18 51 49.3**	**+0.4**
MLZ	**Mavora Lakes**	**9.58**	**217**	PN	**P**	**18 51 50.0**	**-0.7**
MLZ	**Mavora Lakes**	**9.58**	**217**	*e*P	**P**	**18 51 50.2**	**-0.6**
QSPA	**South Pole Qui**	**52.18**	**180**	*e*P	**P**	**18 58 20.5**	**+2.8**
	0.6nm,0.6s,mb3.1							

MOS ***17*** *18:51:07.5±1.8,42.67N×45.30E,h14km,mb3.7/1,Error ellipse: s-maj=94.4km s-min=22.5km az=4.6*
ISC 17 18:51:11.4±3.3,42.7N±0.2×45.6E±0.2,h14km,n5,σ0°74/8, Eastern Caucasus

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTLR	**Botlikh**	**0.47**	**90**	*i* PG	**Pg**	**18 51 22.0**	**+0.9**
BTLR				*i* S	**Sb**	**18 51 26.5**	**-0.9**
BTLR				pmax	pmax		
	comp=Z,297nm,0.1s						
XNZR	**Khunzakh**	**0.84**	**98**	*e*PG	**Pg**	**18 51 27.0**	**-1.2**
UNCR	**Uncukul**	**0.89**	**86**	*e*PG	**Pg**	**18 51 29.0**	**-0.4**
UNCR				*i* S	**Sb**	**18 51 40.0**	**+0.4**
UNCR				pmax	pmax		
	comp=Z,17nm,0.2s						
KRNR	**Karanay**	**0.99**	**80**	*e*PG	**Pg**	**18 51 31.0**	**-0.2**
KRNR				*e*S	**Sb**	**18 51 43.0**	**+0.6**
KMKR	**Kumukh**	**1.24**	**115**	PG	**Pg**	**18 51 37.0**	**+0.7**

NEIC ***17*** *18:54:09.2,35.60S×71.60W,h95km,MD3.7(GUC),After GUC.*
GUC ***17*** *18:54:09.0±0.5,35.64S×71.52W,h98km±2km,MD3.8, ML3.8*
ISC 17 18:54:08.7±0.8,35.60S±0.06×71.7W±0.1,h101km±7km, n30,σ0°41/52,10C-9D,Central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TALC	**Talca**	**0.21**	**9**	*e*P	**P**	**18 54 23.2**	**0.0**
TALC				*i* S	**S**	**18 54 34.3**	**+0.3**
TALC				AMP		18 54 36.2	
	comp=E,6μm,0.1s						
TALC	**Talca**	**0.21**	**9**	*e*P	**P**	**18 54 23.4**	**+0.3**
TALC				*i* S	**S**	**18 54 32.6**	**-1.4**
COCH	**Cobquecura**	**1.05**	**239**	AMP		18 54 55.1	
	comp=E,907nm,0.5s						
CCHI	**Chillan**	**1.05**	**198**	⇓*i*P	**P**	**18 54 30.1**	**+0.1**
CCHI				*i* S	**S**	**18 54 46.0**	**-0.1**
CCHI				AMP		18 54 47.7	
	comp=N,1μm,0.3s						
CCHI				AMP		18 54 48.1	
	comp=N,2μm,0.3s						
CCHI	**Chillan**	**1.05**	**198**	⇓*i*P	**P**	**18 54 30.1**	**+0.1**
CCHI				*i* S	**S**	**18 54 46.0**	**0.0**
SFDO	**San Fernando**	**1.12**	**29**	⇑*i*P	**P**	**18 54 30.7**	**-0.2**
SFDO				*i* S	**S**	**18 54 47.2**	**-0.4**
SFDO	**San Fernando**	**1.12**	**29**	⇑*i*P	**P**	**18 54 30.7**	**-0.2**
SFDO				*i* S	**S**	**18 54 47.8**	**+0.1**
LNV	**Longovilo**	**1.66**	**8**	*e*P	**P**	**18 54 38.6**	**+1.2**
LNV	**Longovilo**	**1.66**	**8**	P	**P**	**18 54 38.6**	**+1.2**
LNV				*i* S	**S**	**18 54 58.8**	**+0.1**
CACH	**El Canelo**	**1.73**	**31**	⇓*i*P	**P**	**18 54 38.4**	**+0.1**
CACH				*i* S	**S**	**18 55 00.7**	**+0.4**
CHCH	**Chadas Angostu**	**1.87**	**27**	*i* P	**P**	**18 54 39.9**	**-0.1**
TACH	**Talagante**	**2.04**	**18**	⇑*i*P	**P**	**18 54 42.5**	**+0.1**
TACH				*i* S	**S**	**18 55 07.7**	**+0.4**
TACH	**Talagante**	**2.04**	**18**	⇑*i*P	**P**	**18 54 42.5**	**+0.1**
TACH				*i* S	**S**	**18 55 07.0**	**-0.3**
LCCH	**Las Cruces**	**2.12**	**2**	*e*P	**P**	**18 54 43.2**	**+0.7**
LMEL	**Las Melosas**	**2.13**	**35**	⇓*i*P	**P**	**18 54 43.4**	**+0.2**
LMEL				*i* S	**S**	**18 55 09.9**	**+0.4**
LMEL				AMP		18 55 15.3	
	comp=N,484nm,0.2s						
PCH	**Pirque**	**2.20**	**26**	⇓*i*P	**P**	**18 54 44.5**	**0.0**
PCH				*i* S	**S**	**18 55 10.9**	**-0.3**
ANTU	**Antumapu**	**2.20**	**23**	*e*P	**P**	**18 54 44.8**	**+0.2**
ANTU				*i* S	**S**	**18 55 11.2**	**-0.1**
ANTU				AMP		18 55 14.0	
	comp=N,734nm,0.5s						
RCDM	**Rinconada Maip**	**2.23**	**19**	*e*P	**P**	**18 54 44.9**	**0.0**
RCDM				*i* S	**S**	**18 55 11.8**	**-0.1**
RCDM				AMP		18 55 13.4	
	comp=E,773nm,0.2s						
FSR	**Penalolen**	**2.32**	**24**	⇑*i*P	**P**	**18 54 45.9**	**-0.3**
FSR				AMP		18 55 16.3	
	comp=E,552nm,0.2s						
CLCH	**Cerro Calan**	**2.39**	**23**	⇓*i*P	**P**	**18 54 47.0**	**-0.2**
CLCH				*i* S	**S**	**18 55 16.1**	**+0.1**
CLCH				AMP		18 55 20.4	
	comp=E,549nm,0.3s						
FCH	**Farellones**	**2.54**	**27**	⇓*i*P	**P**	**18 54 48.8**	**-0.4**
FCH				*i* S	**S**	**18 55 20.2**	**+0.7**
FCH				AMP		18 55 21.9	
	comp=N,533nm,0.2s						
PEL	**Peldehue**	**2.59**	**19**	⇑*i*P	**P**	**18 54 49.9**	**0.0**
PEL				⇑*i*P		18 54 50.0	
PEL				*i* S	**S**	**18 55 20.0**	**-0.6**
PEL				*i* S	**S**	**18 55 20.7**	**+0.1**
PEL				AMP		18 55 25.7	
	comp=E,1μm,0.3s						
PEL	**Peldehue**	**2.59**	**19**	⇑*i*P	**P**	**18 54 49.9**	**0.0**
PEL				*i* S	**S**	**18 55 20.7**	**+0.1**
ROCH	**El Roble**	**2.68**	**12**	*e*P	**P**	**18 54 51.6**	**+0.4**
ROCH				*e*S	**S**	**18 55 22.8**	**-0.1**
JACH	**Jahuel**	**3.05**	**17**	⇑*i*P	**P**	**18 54 55.6**	**-0.6**
JACH				*i* S	**S**	**18 55 31.6**	**-0.4**
JACH	**Jahuel**	**3.05**	**17**	⇑*i*P	**P**	**18 54 55.6**	**-0.6**
JACH				*i* S	**S**	**18 55 31.0**	**-1.0**
PACH	**Papudo**	**3.06**	**4**	⇓*i*P	**P**	**18 54 56.7**	**+0.3**
PTCH	**Petorca**	**3.39**	**11**	⇓*i*P	**P**	**18 55 00.7**	**-0.1**
PTCH				*i* S	**S**	**18 55 40.1**	**-0.2**
PTCH				AMP		18 55 41.9	
	comp=N,784nm,0.3s						
TLL	**Tololo Astrono**	**5.47**	**8**	*e*P	**P**	**18 55 28.5**	**-0.7**
TLL	**Tololo Astrono**	**5.47**	**8**	*e*P	**P**	**18 55 28.6**	**-0.5**

IDC ***17*** *18:57:22.6±0.8,4.61S×153.04E,mb4.4/10,mb1 4.5/10, mb1mx4.4/15,MS3.6/11,Ms1 3.6/11,ms1mx3.4/21,Error ellipse: s-maj=30.3km s-min=19.7km az=122.0*
BJI ***17*** *18:57:30.0,4.70S×152.90E,h59km,mB5.0,mb4.4*
NEIC ***17*** *18:57:31.0±1.6,4.70S×152.91E,h59km±12km,mb4.6/11, Error ellipse: s-maj=15.3km s-min=9.2km az=104.0*
ISC 17 18:57:30.5±2.1,4.67S±0.09×152.9E±0.2,h69km±14km, n43,σ0°78/31,mb4.3/22,New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAB	**Rabaul**	**0.89**	**302**	*e*P	**P**	**18 57 48.0**	**+0.2**
CTA	**Charters Tower**	**16.64**	**202**	LR	LR	19 06 48.6	
	comp=Z,221nm,19.6s,baz=29,slow=34						
KAKA	**Kakadu**	**21.78**	**247**	*e*P	**P**	**19 02 17.3**	**-0.9**
	19nm,0.6s,mb4.6						
WRAB	**Tennant Creek**	**23.61**	**228**	*e*P	**P**	**19 02 36.3**	**+0.3**
	30nm,0.8s,mb4.7						
WRAB				*e*		19 02 50.1	
WB2	**Warramunga Arr**	**23.61**	**228**	*e*P	**P**	**19 02 36.1**	**0.0**
WRA	**Warramunga Arr**	**23.62**	**228**	P	**P**	**19 02 36.8**	**+0.6**
	8.2nm,0.5s,mb4.3,baz=52,slow=9.9,SNR=108						
WRA				ScP		19 10 01.6	
	0.7nm,1.2s,baz=56,slow=2.2,SNR=4.9						
ASAR	**Alice Springs**	**26.32**	**222**	P	**P**	**19 03 01.2**	**-0.7**
	1.5nm,0.6s,mb3.6,baz=54,slow=8.9,SNR=11						
ASAR				PcP	PcP	19 06 27.1	+0.2
	0.8nm,0.8s,baz=55,slow=2.9,SNR=4.2						
ASAR				LR	L

BUS	**Buena Vista**	**2.63**	**110**	*e*P		Pn		18 59 40.7	+2.0

IDC ***17*** *19:13:52.6±1.3,11.80N×125.34E,mb3.8/6,mb1 4.0/6, mb1mx3.7/19,MS3.2/1,Ms1 3.2/1,ms1mx2.6/25,Error ellipse: s-maj=66.4km s-min=20.1km az=63.0*
MAN ***17*** *19:14:07.1,11.61N×124.95E,h2km,mb4.5,ML3.4,MS3.2*
ISC 17 19:14:04.8±0.5,11.64N±0.04×125.02E±0.07,h105km±4km, n19,σ1§17/26,mb3.7/6,9C,Samar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BESP	**Borongan**	**0.41**	**95⇑**	*e*P	**P**	**19 14 19.8**	**-0.8**
BESP				*e*S	**S**	**19 14 31.9**	**-0.6**
PLP	**Palo**	**0.47**	**185**	*e*P	**P**	**19 14 20.1**	**-1.0**
PLP				*e*S	**S**	**19 14 30.5**	**-2.8**
OCLP	**Ormoc**	**0.71**	**215⇑**	*e*P	**P**	**19 14 23.0**	**+0.1**
CNP	**Catarman**	**0.94**	**338⇑**	*e*P	**P**	**19 14 25.0**	**-0.1**
CNP				*e*S	**S**	**19 14 40.3**	**-0.2**
MSLP	**Maasin**	**1.50**	**186⇑**	*e*P	**P**	**19 14 32.6**	**+0.8**
MSLP				*e*S	**S**	**19 14 53.5**	**+1.6**
MMPH	**Masbate**	**1.55**	**298⇑**	*e*P	**P**	**19 14 32.2**	**0.0**
MMPH				*i* S	**S**	**19 14 52.6**	**-0.2**
LLP	**Lapu-Lapu**	**1.67**	**218⇑**	*e*P	**P**	**19 14 33.5**	**-0.4**
LLP				*e*S	**S**	**19 14 53.4**	**-2.2**
SCPH	**Surigao**	**1.90**	**166**	*e*P	**P**	**19 14 38.9**	**+2.2**
PVCP	**Virac**	**2.12**	**337⇑**	*e*P	**P**	**19 14 40.1**	**+0.4**
PVCP				*e*S	**S**	**19 15 07.7**	**+2.0**
TBP	**Tagbilaran**	**2.25**	**211**	*e*P	**P**	**19 14 42.8**	**+1.4**
TBP				*e*S	**S**	**19 15 08.3**	**-0.4**
BUTP	**Butuan**	**2.72**	**167⇑**	*e*P	**P**	**19 14 49.9**	**+2.1**
PAGZ	**Pagadian**	**4.10**	**203⇑**	*e*P	**P**	**19 15 08.0**	**+1.4**
TGY	**Tagaytay City** comp=Z,250nm,21.3s,baz=100,slow=42	**4.68**	**302**	LR	LR	19 17 15.2	
CMAR	**Chiang Mai Arr** 0.8nm,0.8s,mb3.2,baz=85,slow=8.2,SNR=6.0	**26.06**	**288**	P	**P**	**19 19 30.1**	**-0.3**
WRA	**Warramunga Arr** 0.6nm,1.0s,mb3.4,baz=344,slow=8.9,SNR=7.7	**32.69**	**164**	P	**P**	**19 20 27.0**	**-2.4**
ASAR	**Alice Springs** 0.3nm,0.3s,mb3.7,baz=347,slow=7.6,SNR=16	**36.15**	**166**	P	**P**	**19 20 58.0**	**-0.8**
MKAR	**Makanchi Array** 1.3nm,0.7s,mb4.0,baz=119,slow=8.5,SNR=14	**50.20**	**323**	P	**P**	**19 22 51.4**	**-0.5**
ARCES	**ARCESS Array B** 2.0nm,0.9s,mb4.0,baz=74,slow=6.6,SNR=5.3	**82.49**	**340**	P	**P**	**19 26 16.5**	**-0.1**
FINES	**FINESS Array B** 1.7nm,0.9s,mb3.9,baz=34,slow=5.0,SNR=3.6	**84.11**	**331**	P	**P**	**19 26 24.8**	**-0.1**

LDG ***17*** *19:19:01.6±0.4,42.86N×1.97W,h5km,Md2.8/2,Ml2.4/7, Error ellipse: s-maj=7.0km s-min=5.8km az=11.0*
STR ***17*** *19:19:02.9±0.5,42.89N×1.87W,h5km±1km,Ml2.6,Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
MDD ***17*** *19:19:02.8±0.9,42.88N×1.90W,h5km±10km,mbLg2.1/8, Error ellipse: s-maj=6.0km s-min=5.1km az=150.0, PRXIMO*
NEIC ***17*** *19:19:04.0,42.87N×1.81W,ML2.6(STR),ML2.4(LDG), MN2.1(MDD),After MDD.*
ISC 17 19:19:01.7±0.4,42.86N±0.03×1.84W±0.03,h14km±3km, n38,σ1§24/64,Pyrenees

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EALK	**Alkurruntz** 17nm,0.2s,SNR=56	**0.43**	**34**	Pg	**Pg**	**19 19 11.4**	**+0.6**
EALK				Lg		19 19 16.4	
EALK	**Alkurruntz** 76nm,0.2s,SNR=5.0	**0.43**	**34**	Pg	**Pg**	**19 19 11.6**	**+0.8**
EALK				Lg		19 19 16.4	
SJPF	**Ste Jean** 57nm,0.3s	**0.52**	**61**	*e*Pg	**Pg**	**19 19 13.1**	**+0.7**
SJPF				*e*Sg	**Sg**	**19 19 20.3**	**+0.8**
OSSF	**Osses**	**0.58**	**47**	Pg	**Pg**	**19 19 14.0**	**+0.4**
OSSF				Sg	**Sg**	**19 19 22.0**	**+0.5**
LARF	**Larrau**	**0.65**	**74**	Pg	**Pg**	**19 19 15.1**	**+0.1**
LARF				Sg	**Sg**	**19 19 24.1**	**+0.2**
ORDF	**Ordiarp**	**0.75**	**62**	Pg	**Pg**	**19 19 17.4**	**+0.4**
ORDF				Sg	**Sg**	**19 19 27.5**	**+0.4**
ETSF	**Etsaut** 21nm,0.3s	**0.94**	**87**	*e*Pg	**Pg**	**19 19 20.8**	**0.0**
ETSF				*e*Sg	**Sg**	**19 19 34.8**	**+1.3**
REYF	**Montagne du Re**	**1.08**	**78**	Pg	**Pg**	**19 19 23.5**	**0.0**
ELAN	**Lanestosa** 4.9nm,0.1s,SNR=33	**1.22**	**288**	Pg	**Pg**	**19 19 26.2**	**-0.1**
ELAN	**Lanestosa**	**1.22**	**288**	Pg	**Pg**	**19 19 26.4**	**+0.1**
ELAN				Lg		19 19 44.4	
VIEF	**Viey**	**1.37**	**88**	Pg	**Pg**	**19 19 28.6**	**-0.7**
VIEF				Sg	**Sg**	**19 19 48.5**	**+0.9**
LABF	**Labassere**	**1.42**	**82**	Pg	**Pg**	**19 19 30.3**	**+0.1**
LABF				Sg	**Sg**	**19 19 50.8**	**+1.6**
ESAC	**San Caprasio** 18nm,0.4s,SNR=7.9	**1.53**	**138**	Pg	**Pg**	**19 19 31.6**	**-0.8**
ESAC				Lg		19 19 51.1	
ESAC	**San Caprasio** 89nm,0.2s,SNR=7.9	**1.53**	**138**	Pg	**Pg**	**19 19 31.7**	**-0.7**
ESAC				Lg		19 19 51.7	
EPF	**Esparros** 21nm,0.4s	**1.61**	**83**	*e*Pg	**Pg**	**19 19 32.9**	**-1.1**
EPF				*e*Sg	**Sg**	**19 19 56.5**	**+0.9**
ETOR	**Torete** 0.4nm,0.2s,SNR=7.9	**2.05**	**185**	Pn	**Pn**	**19 19 37.8**	**+1.6**
ETOR				Pg	**Pg**	**19 19 41.2**	**-1.5**
ETOR	1.6nm,0.2s,SNR=18			Lg		19 20 08.3	
ETOR	**Torete** 10nm,0.3s,SNR=5.0	**2.05**	**185**	Pn	**Pn**	**19 19 37.9**	**+1.6**
ETOR				Pg	**Pg**	**19 19 41.8**	**-0.9**
ETOR				Lg		19 20 08.2	
EARI	**Arriondas** 0.3nm,0.2s,SNR=4.0	**2.50**	**281**	Pn	**Pn**	**19 19 44.1**	**+1.3**
EARI				Sn	**Sn**	**19 20 16.0**	**+2.6**
EARI	**Arriondas** 0.6nm,0.1s,SNR=7.9	**2.50**	**281**	Pn	**Pn**	**19 19 45.1**	**+2.3**
EARI				Pg	**Pg**	**19 19 49.9**	**-1.9**
EARI				Sn	**Sn**	**19 20 15.7**	**+2.4**
EARI				Lg		19 20 24.7	
EPOB	**Poblet** 0.4nm,0.2s,SNR=7.9	**2.65**	**124**	Pn	**Pn**	**19 19 45.9**	**+1.1**
EPOB				Pg	**Pg**	**19 19 51.7**	**-2.9**
EPOB	0.7nm,0.2s,SNR=7.9			Sn	**Sn**	**19 20 19.7**	**+2.8**
EPOB	**Poblet** 1.5nm,0.2s,SNR=4.0	**2.65**	**124**	Pn	**Pn**	**19 19 46.0**	**+1.2**
EPOB				Pg	**Pg**	**19 19 52.0**	**-2.6**
EPOB				Lg		19 20 26.4	
EMIR	**Miracle** 1.1nm,0.1s,SNR=7.9	**2.67**	**110**	Pg	**Pg**	**19 19 53.0**	**-2.0**
EMIR				Lg		19 20 28.7	
EMIR	**Miracle** 2.2nm,0.2s,SNR=7.9	**2.67**	**110**	Pn	**Pn**	**19 19 47.9**	**+2.7**
EMIR				Pg	**Pg**	**19 19 53.2**	**-1.9**
EMIR				Lg		19 20 27.6	
EMOS	**Mosqueruela** 0.6nm,0.1s,SNR=7.9	**2.70**	**157**	Pg	**Pg**	**19 19 53.2**	**-2.5**
EMOS	**Mosqueruela**	**2.70**	**157**	Pg	**Pg**	**19 19 53.2**	**-2.5**
EMOS				Lg		19 20 27.0	
LFF	**La Frestale** 2.2nm,0.3s	**2.79**	**41**	*e*Pn	**Pn**	**19 19 45.7**	**-1.2**
LFF				*e*Sn	**Sn**	**19 20 19.1**	**-1.6**
GUD	**Guadarrama**	**2.81**	**219**	Pg	**Pg**	**19 19 56.5**	**-1.4**
GUD				Sn	**Sn**	**19 20 24.8**	**+3.7**
GUD				Lg		19 20 34.8	
MTLF	**Montolieu** 1.9nm,0.3s	**3.01**	**79**	*e*Pn	**Pn**	**19 19 49.8**	**-0.2**
MTLF				*e*Sn	**Sn**	**19 20 26.0**	**-0.2**
RJF	**Les Rejaudoux** 1.6nm,0.2s	**3.44**	**44**	*e*Pn	**Pn**	**19 19 56.2**	**+0.1**
RJF				*e*Sn	**Sn**	**19 20 35.1**	**-1.9**
CAF	**Calviac** 1.5nm,0.2s	**3.50**	**53**	*e*Pn	**Pn**	**19 19 57.5**	**+0.6**
CAF				*e*Sn	**Sn**	**19 20 36.7**	**-1.8**
EJON	**La Jonquera** 1.1nm,0.2s,SNR=7.9	**3.52**	**95**	Lg		19 20 56.5	
ECAL	**Calabor** 0.8nm,0.2s,SNR=7.9	**3.74**	**257**	Pn	**Pn**	**19 20 00.3**	**-0.1**
ECAL				Sn	**Sn**	**19 20 44.7**	**+0.1**
ECAL	1.6nm,0.3s,SNR=7.9			Lg		19 20 59.9	
ECAL	**Calabor** 1.9nm,0.2s,SNR=7.9	**3.74**	**257**	Pn	**Pn**	**19 20 00.9**	**+0.5**
ECAL				Sn	**Sn**	**19 20 44.8**	**+0.2**
ECAL				Lg		19 21 03.8	
EPON	**Pontenova** 0.4nm,0.2s,SNR=7.9	**3.91**	**279**	Sn	**Sn**	**19 20 49.3**	**+0.3**
EPON				Lg		19 21 07.4	
EINC	**Incio** 1.0nm,0.3s,SNR=7.9	**4.06**	**269**	Pn	**Pn**	**19 20 06.5**	**+1.6**
EINC	0.5nm,0.1s,SNR=4.0			Sn	**Sn**	**19 20 52.5**	**-0.2**
EINC	**Incio** 0.4nm,0.1s,SNR=7.9	**4.06**	**269**	Pn	**Pn**	**19 20 06.1**	**+1.2**
EINC				Sn	**Sn**	**19 20 53.0**	**+0.3**
LASF	**Ste Croix**	**4.32**	**72**	*e*Pn	**Pn**	**19 20 07.9**	**-0.7**
LASF	1.0nm,0.3s			*e*Sn	**Sn**	**19 20 55.9**	**-3.5**
VIVF	**Saint-Julien-l**	**5.12**	**65**	*e*Pn	**Pn**	**19 20 17.9**	**-2.0**

IDC 17 19:28:42.9±4.7,5.95S×132.35E,mb3.3/1,mb1 3.4/3, mb1mx3.3/12,ML3.2/2,Error ellipse: s-maj=302.0km s-min=31.5km az=75.0,Aru Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr** 0.2nm,0.3s,baz=351,slow=14,SNR=9.2	**14.05**	**172**	Pn	P	19 32 03.3	-2.4
WRA				Sn	S	19 34 29.4	-14
ASAR	**Alice Springs** 0.1nm,0.3s,baz=351,slow=23,SNR=3.3	**17.68**	**175**	P	P	19 32 51.0	-1.4
MKAR	**Makanchi Array** 0.2nm,0.5s,baz=115,slow=8.1,SNR=2.6	**68.65**	**326**	P	P	19 39 48.2	-2.0

NEIC ***17*** *19:40:02.8,31.51S×69.63W,h152km,mb3.5/2, MD3.9(GUC),After GUC.*
GUC ***17*** *19:40:02.8±0.9,31.51S×69.63W,h152km±7km,MD3.9, ML4.0*
ISC 17 19:40:02.4±0.5,31.48S±0.03×69.46W±0.08,h139km±7km, n27,σ0§76/46,mb4.9/1,6C-7D,San Juan Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMCH	**Combarbala**	**1.35**	**283**	*i* P	**P**	**19 40 30.6**	**+0.7**
CMCH				*i* S	**S**	**19 40 51.1**	**+0.1**
CMCH	comp=E,5μm,0.4s			AMP		19 40 52.8	
ILCH	**Illapel**	**1.46**	**263**	*i* P	**P**	**19 40 31.5**	**+0.3**
ILCH				*i* S	**S**	**19 40 52.4**	**-0.8**
ILCH	comp=N,1μm,0.2s			AMP		19 40 54.9	
PTCH	**Petorca**	**1.47**	**238**	*i* P	**P**	**19 40 31.2**	**0.0**
PTCH				*i* S	**S**	**19 40 52.9**	**-0.4**
PTCH	comp=E,2μm,0.4s			AMP		19 40 54.7	
MDZ	**Mendoza**	**1.49**	**160⇓**	*i* P	**P**	**19 40 31.0**	**-0.4**
MDZ				*i*		19 40 49.1	
MDZ				*i* S	**S**	**19 40 52.9**	**-0.8**
JACH	**Jahuel**	**1.53**	**218⇓**	*i* P	**P**	**19 40 32.4**	**+0.5**
JACH				*i* S	**S**	**19 40 55.0**	**+0.5**
OVCH	**Ovalle**	**1.73**	**300**	*i* P	**P**	**19 40 34.3**	**+0.3**
OVCH				*i* S	**S**	**19 40 57.6**	**-0.6**
OVCH	comp=E,2μm,0.3s			AMP		19 40 59.6	
TLL	**Tololo Astrono**	**1.74**	**318⇓**	*i* P	**P**	**19 40 35.3**	**+1.1**
TLL				*i* S	**S**	**19 40 59.4**	**+0.7**
TLL	comp=N,1μm,0.5s			AMP		19 40 59.9	
PEL	**Peldehue**	**1.96**	**212⇑**	*i* P	**P**	**19 40 37.0**	**+0.4**
PEL				*i* S	**S**	**19 41 02.4**	**-0.5**
PEL	comp=E,1μm,0.3s			AMP		19 41 03.8	
FCH	**Farellones**	**1.97**	**201⇓**	*i* P	**P**	**19 40 37.9**	**+1.1**
FCH				*i* S	**S**	**19 41 04.8**	**+1.5**
FCH	comp=N,439nm,0.4s			AMP		19 41 09.1	
PACH	**Papudo**	**1.98**	**237**	*i* P	**P**	**19 40 36.6**	**-0.4**
PACH				*i* S	**S**	**19 41 03.0**	**-0.5**
ROCH	**El Roble**	**1.98**	**221⇑**	*i* P	**P**	**19 40 37.1**	**+0.1**
ROCH				*i* S	**S**	**19 41 03.7**	**+0.2**
CLCH	**Cerro Calan**	**2.12**	**205**	*i* P	**P**	**19 40 39.1**	**+0.4**
CLCH				*i* S	**S**	**19 41 06.4**	**0.0**
CLCH	comp=N,658nm,0.6s			AMP		19 41 09.6	
LSCH	**La Serena**	**2.19**	**315⇓**	*i* P	**P**	**19 40 40.0**	**+0.3**
LSCH				*i* S	**S**	**19 41 07.3**	**-0.8**
LSCH	comp=E,2μm,0.4s			AMP		19 41 08.0	
RCDM	**Rinconada Maip**	**2.30**	**209⇑**	*i* P	**P**	**19 40 41.0**	**0.0**
RCDM				*i* S	**S**	**19 41 10.3**	**-0.2**
RCDM	comp=E,827nm,0.1s			AMP		19 41 11.6	
PCH	**Pirque**	**2.31**	**202⇑**	*i* P	**P**	**19 40 41.7**	**+0.5**
PCH				*i* S	**S**	**19 41 11.0**	**+0.2**
LMEL	**Las Melosas**	**2.44**	**195⇓**	*i* P	**P**	**19 40 43.2**	**+0.4**
LMEL				*i* S	**S**	**19 41 14.8**	**+1.1**
LMEL	comp=N,280nm,0.2s			AMP		19 41 25.2	
TACH	**Talagante**	**2.50**	**209⇑**	*i* P	**P**	**19 40 43.1**	**-0.5**
TACH				*i* S	**S**	**19 41 13.9**	**-1.1**
CHCH	**Chadas Angostu**	**2.64**	**202⇓**	*i* P	**P**	**19 40 45.6**	**+0.2**
CHCH				*i* S	**S**	**19 41 18.1**	**-0.2**
LCCH	**Las Cruces**	**2.67**	**221⇑**	*i* P	**P**	**19 40 45.4**	**-0.4**
LCCH				*i* S	**S**	**19 41 17.1**	**-1.8**
CACH	**El Canelo**	**2.80**	**200**	*i* P	**P**	**19 40 48.1**	**+0.7**
CACH				*i* S	**S**	**19 41 22.4**	**+0.5**
VACH	**Vallenar** comp=N,1μm,0.1s	**3.10**	**338**	AMP		19 41 30.6	
LVC	**Limon Verde**	**8.85**	**3**	*e*Pn	**P**	**19 42 05.5**	**-2.6**
TRQA	**Tornquist** comp=N,1.2nm,0.9s	**8.99**	**139**	*e*P	**P**	**19 42 07.9**	**-2.2**
LPAZ	**La Paz** comp=N,2.5nm,1.3s	**15.17**	**5**	P	**P**	**19 43 31.3**	**+0.8**
TEIG	**Tepich**	**54.49**	**338**	P	**P**	**19 49 12.3**	**-5.6**
SWET	**Sewanee**	**68.13**	**346**	*e*P	**P**	**19 50 49.2**	**-0.2**
BINY	**Binghamton** comp=N,21nm,0.9s,mb4.9	**73.56**	**355**	*e*P	**P**	**19 51 22.1**	**+0.4**

IDC ***17*** *19:45:43.4±17.0,20.12S×177.97W,h627km±181km, mb3.2/5,mb1 3.3/5,mb1mx3.1/14,Error ellipse: s-maj=125.0km s-min=97.7km az=102.0*
NEIC 17 19:45:30.3±1.9,20.06S×177.32W,h500km,mb4.4/2, Error ellipse: s-maj=83.1km s-min=26.4km az=151.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower** 2.1nm,0.4s,baz=97,slow=14,SNR=7.8	**34.17**	**264**	P	P	19 51 34.1	-0.4
CTAO	**Charters Tower** 4.9nm,0.6s	**34.17**	**264**	*e*P	P	19 51 33.9	-0.5
STKA	**Stephens Creek** 4.9nm,1.1s,baz=100,slow=13,SNR=4.4	**38.55**	**244**	P	P	19 52 09.8	-0.7
STKA	**Stephens Creek** 2.8nm,0.6s	**38.55**	**244**	P	P	19 52 09.8	-0.7
AS12	**Alice Springs** 5.7nm,0.9s,baz=92,slow=7.3,SNR=92	**45.24**	**256**	*e*P	P	19 53 02.7	-1.2
ASAR	**Alice Springs** 5.7nm,0.9s,baz=92,slow=7.3,SNR=92	**45.24**	**256**	P	P	19 53 02.7	-1.2
WB2	**Warramunga Arr**	**45.29**	**261**	*e*	P	19 53 02.7	-1.6
WB2	**Warramunga Arr**	**45.29**	**261**	*e*P	P	19 53 02.7	-1.6
WRAB	**Tennant Creek** 23nm,1.1s	**45.29**	**261**	P	P	19 53 02.5	-1.8
WRA	**Warramunga Arr** 2.1nm,0.6s,baz=98,slow=7.8,SNR=33	**45.30**	**261**	P	P	19 53 02.7	-1.6
FITZ	**Fitzroy Crossi** 2.6nm,0.9s,baz=183,slow=8.8,SNR=12	**53.72**	**262**	P	P	19 54 05.1	-1.9
AKASG	**Malin Array Be** 0.1nm,0.3s,baz=42,slow=4.5,SNR=6.6	**142.94**	**332**	PKP	PKPdf	20 04 05.8	-0.1
GERES	**GERESS Array B** 0.1nm,0.3s,baz=31,slow=5.7,SNR=2.7	**149.95**	**345**	PKPbc	PKPdf	20 04 24.0	+6.3

IDC ***17*** *19:45:49.0±3.5,22.97N×121.00E,mb3.7/4,mb1 3.9/4, mb1mx3.5/22,MS2.5/1,Ms1 2.7/1,ms1mx2.4/27,Error ellipse: s-maj=276.0km s-min=24.7km az=59.0*
TAP ***17*** *19:45:52.5,22.95N×120.66E,h16km,ML4.2*
TAP Felt I J at Jiashian, II J at Sandimen, I J at Tauyuan, I J at Nanshi, II J at Dapu, II J at Shinhua, I J at Lidau, I J at Tsaushan, I J at Taimali, I J at Jiali, I J at Alishan, I J at Chiayi, I J at Mingjian.
JMA ***17*** *19:45:53.8±0.5,22.59N×120.85E,h91km,M3.3*
ISC 17 19:45:53.9±0.2,22.94N±0.01×120.66E±0.02,h16km,n66, σ1§11/114,mb3.7/4,MS2.3/1,10C-16D,Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SGST	**Jiashian**	**0.15**	**334⇓**	*i*P	**Pb**	**19 45 57.3**	**-0.7**
SGST				S	**Sb**	**19 46 01.1**	**+0.4**
SSD	**Sandimen**	**0.20**	**187⇓**	*i*P	**Pb**	**19 45 57.9**	**-0.7**
SSD				S	**Sb**	**19 46 01.5**	**-0.4**
STYT	**Tauyuan**	**0.24**	**23⇑**	*i*P	**Pb**	**19 45 58.6**	**-0.7**
STYT				S	**Sb**	**19 46 03.0**	**+0.1**
TWM1	**Shoushan**	**0.25**	**241⇑**	*i*P	**Pb**	**19 45 59.2**	**-0.2**
SGLT	**Jiouru**	**0.27**	**215⇑**	*i*P	**Pb**	**19 45 59.8**	**0.0**
SGLT				S	**Sb**	**19 46 05.7**	**+1.9**
CHN1	**Nanshi**	**0.27**	**334⇓**	*i*P	**Pb**	**19 45 59.0**	**-0.8**
CHN1				S	**Sb**	**19 46 04.6**	**+0.8**
CHN3	**Shinhua**	**0.30**	**296⇓**	*i*P	**Pb**	**19 46 00.6**	**+0.2**
CHN3				S	**Sb**	**19 46 07.5**	**+2.8**
WTP	**Ta-pu**	**0.30**	**352⇓**	*i*P	**Pb**	**19 45 59.6**	**-0.8**
TWK	**Hsinying**	**0.36**	**334⇓**	*i*P	**Pb**	**19 46 00.3**	**-1.0**
TWK				S	**Sb**	**19 46 06.9**	**+0.5**
TWG	**Pinlang**	**0.40**	**108⇑**	*i*P	**Pb**	**19 46 01.9**	**-0.2**
TWG				S	**Sb**	**19 46 08.7**	**+1.0**
TAI1	**Yung-k'ang**	**0.41**	**284**	P	**Pb**	**19 46 02.0**	**-0.2**
TAI1				S	**Sb**	**19 46 09.4**	**+1.6**
CHN4	**Tsaushan**	**0.41**	**352⇓**	*i*P	**Pb**	**19 46 01.2**	**-1.0**
CHN4				S	**Sb**	**19 46 08.3**	**+0.4**
ELDTW	**Lidau**	**0.41**	**53⇑**	*i*P	**Pb**	**19 46 01.7**	**-0.6**
ELDTW				S	**Sb**	**19 46 08.3**	**+0.3**
ECL	**Taimali**	**0.44**	**142⇓**	*i*P	**Pb**	**19 46 02.3**	**-0.4**
ECL				S	**Sb**	**19 46 09.1**	**+0.3**
SCLT	**Jiali**	**0.48**	**298**	*i* P	**Pb**	**19 46 03.2**	**-0.4**
SCLT				S	**Sb**	**19 46 12.1**	**+2.0**
TTN	**Taitung**	**0.49**	**113**	*e*P	**Pb**	**19 46 04.1**	**+0.5**
TTN				S	**Sb**	**19 46 13.0**	**+2.8**
KAU	**Kaohsiung**	**0.49**	**221**	*e*P	**Pb**	**19 46 04.1**	**+0.4**
SCZT	**Fangliau**	**0.57**	**184⇓**	*i*P	**Pb**	**19 46 04.1**	**-0.8**
SCZT				S	**Sb**	**19 46 14.8**	**+2.2**
CHN8	**Yiju**	**0.57**	**314⇓**	*i*P	**Pb**	**19 46 04.2**	**-0.8**
CHN8				S	**Sb**	**19 46 14.0**	**+1.3**
ALS	**Alishan**	**0.58**	**13**	*i* P	**Pb**	**19 46 04.5**	**-0.7**
ALS				S	**Sb**	**19 46 13.6**	**+0.7**
EAST	**Anshuo**	**0.58**	**162⇓**	*i*P	**Pb**	**19 46 04.8**	**-0.4**
EAST				S	**Sb**	**19 46 14.4**	**+1.4**
CHY	**Chiayi**	**0.59**	**339⇓**	*i*P	**Pb**	**19 46 04.6**	**-0.8**
CHY				S	**Sb**	**19 46 14.4**	**+1.2**
YUS	**Yu-Shan**	**0.61**	**26⇑**	*i*P	**Pb**	**19 46 05.2**	**-0.5**
YUS				S	**Sb**	**19 46 14.1**	**+0.4**
CHN2	**Minshiung**	**0.61**	**344⇓**	*i*P	**Pb**	**19 46 05.2**	**-0.5**
CHN2				S	**Sb**	**19 46 15.2**	**+1.4**
TAW	**Tawu**	**0.62**	**159⇓**	*i*P	**Pb**	**19 46 05.5**	**-0.4**
TAW				S	**Sb**	**19 46 14.4**	**+0.3**
CHN5	**Tsauling**	**0.65**	**2⇓**	*i*P	**Pb**	**19 46 05.4**	**-1.0**
CHN5				S	**Sb**	**19 46 15.7**	**+0.8**
TWP	**Hsiaoliuchiu**	**0.65**	**205**	*e*P	**Pb**	**19 46 07.4**	**+1.0**
TWP				S	**Sb**	**19 46 19.9**	**+4.9**
CHKT	**Chengkung**	**0.67**	**76⇑**	*i*P	**Pb**	**19 46 06.5**	**-0.2**
CHKT				S	**Sb**	**19 46 17.4**	**+1.9**
TWF1	**Yuli**	**0.71**	**55⇑**	*i*P	**Pb**	**19 46 06.8**	**-0.6**
TWF1				S	**Sb**	**19 46 16.9**	**+0.1**
WGK	**Gukeng**	**0.74**	**353**	⇓P	**Pb**	**19 46 07.4**	**-0.5**
WGK				S	**Sb**	**19 46 19.2**	**+1.5**
EHY	**Hungye**	**0.83**	**47⇑**	*i*P	**Pb**	**19 46 08.7**	**-0.7**
EHY				S	**Sb**	**19 46 19.9**	**-0.2**
WDT	**Danda**	**0.92**	**28**	⇑P	**Pb**	**19 46 10.1**	**-0.8**
WNT	**Mingjian**	**0.93**	**1**	*e*P	**Pb**	**19 46 10.4**	**-0.7**
WNT				S	**Sb**	**19 46 24.1**	**+1.0**
HEN	**Hengchun**	**0.94**	**175**	*e*P	**Pb**	**19 46 11.2**	**0.0**
HEN				S	**Sb**	**19 46 25.6**	**+2.4**
SMLT	**Sun Moon Lake**	**0.96**	**13**	*e*P	**Pb**	**19 46 11.1**	**-0.6**
SMLT				S	**Sb**	**19 46 25.4**	**+1.5**
WDGT	**Dungji**	**0.97**	**289**	*e*P	**Pb**	**19 46 09.7**	**-2.1**
WDGT				S	**Sb**	**19 46 22.6**	**-1.6**
TYC	**Yuchr**	**0.97**	**11**	*e*P	**Pb**	**19 46 11.2**	**-0.7**
TYC				S	**Sb**	**19 46 26.1**	**+1.9**
WTCT	**Ta-ch'eng**	**0.98**	**339**	*e*P	**Pb**	**19 46 10.6**	**-1.4**
TWK1	**Hengchun**	**1.00**	**172**	*e*P	**Pb**	**19 46 12.2**	**-0.2**
TWK1				S	**Sb**	**19 46 27.4**	**+2.3**
ESL	**Shilin**	**1.12**	**39**	*e*P	**Pb**	**19 46 13.8**	**-0.6**
ESL				S	**Sb**	**19 46 29.0**	**+0.5**
PNG	**Penghu**	**1.19**	**302**	*e*P	**Pb**	**19 46 12.9**	**-2.7**
PNG				S	**Sb**	**19 46 27.9**	**-2.6**
TCU	**Taichung**	**1.20**	**1**	*e*P	**Pb**	**19 46 14.7**	**-1.0**
TCU				S	**Sb**	**19 46 31.2**	**+0.4**
LAY	**Lan-yu**	**1.22**	**137**	*e*P	**Pb**	**19 46 14.4**	**-1.7**
WHF	**Hehuan Shan**	**1.32**	**25**	*e*P	**Pb**	**19 46 17.3**	**-0.5**
WHF				S	**Sb**	**19 46 35.9**	**+1.6**
TWT	**Tachien**	**1.39**	**20**	*e*P	**Pn**	**19 46 18.1**	**-0.7**
TWT				S	**Sb**	**19 46 36.5**	**+0.3**
TWQ1	**Liyutan**	**1.40**	**4**	*e*P	**Pn**	**19 46 17.4**	**-0.8**
TWQ1				S	**Sb**	**19 46 37.4**	**+0.8**
TWD	**Chiawan**	**1.42**	**37**	*e*P	**Pn**	**19 46 18.4**	**-0.8**
TWD				S	**Sb**	**19 46 38.0**	**+0.8**
NSY	**Sanyi**	**1.47**	**4**	*e*P	**Pn**	**19 46 18.9**	**-1.0**
NSY				S	**Sb**	**19 46 39.4**	**+0.8**
NNS	**Nan Shan**	**1.63**	**24**	*e*P	**Pn**	**19 46 22.0**	**-0.2**
NNS				S	**Sn**	**19 46 43.8**	**+0.8**
NSTT	**Nanjuang**	**1.71**	**11**	*e*P	**Pn**	**19 46 22.2**	**-1.2**
NSTT				S	**Sn**	**19 46 44.3**	**-0.7**
ENA	**Nanau**	**1.78**	**34**	*e*P	**Pn**	**19 46 23.5**	**-0.9**
ENA				S	**Sn**	**19 46 47.8**	**+1.0**
NSK	**Sanguang**	**1.84**	**20**	*e*P	**Pn**	**19 46 25.5**	**+0.2**
NSK				S	**Sn**	**19 46 49.9**	**+1.6**
ENTT	**Nioudou**	**1.88**	**26**	*e*P	**P

0.8nm,0.3s,baz=338,slow=10,SNR=43
ASAR S **S** **20 52 27.0 +0.3**
0.2nm,0.3s,baz=354,slow=18,SNR=4.3
STKA Stephens Creek 27.50 158 P **P** **20 50 58.0 +0.4**
2.1nm,0.9s,mb3.9,baz=351,slow=13,SNR=2.9
CM31 Chiang Mai Arr 39.33 310 P **P** **20 52 31.9 -7.5**
3.1nm,0.7s,mb4.0
MKAR Makanchi Array 67.76 327 P **P** **20 56 06.2 -0.6**
0.1nm,0.3s,mb3.0,baz=112,slow=6.5,SNR=4.2

KRSC ***17*** *20:57:47.1±0.8,56.00N×164.28E,h24km±4km,ML3.8*
ISC 17 20:57:46.3±0.7**,55.94N**±0.04×**164.30E**±0.07**,h15**km±9km**,**
n28,σ0°96/46,Komandorsky Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KBTR	**Krutoberegovo**	**0.87**	**288**	*i* P	**Pb**	**20 58 01.9**	**-0.7**
KBTR				*i* S	**Sb**	**20 58 13.6**	**-0.2**
KBG	**Krutoberegovo**	**0.95**	**290**	*i* P	**Pb**	**20 58 03.4**	**-0.5**
KBG				*e*S	**Sb**	**20 58 14.9**	**-1.1**
KBG				Smax			
	1μm,0.7s						
BKI	**Bering**	**1.20**	**127**	*i* P	**Pb**	**20 58 08.3**	**0.0**
BKI				*i* S	**Sb**	**20 58 23.6**	**+0.2**
BKI				Smax			
	440nm,0.4s						
SVLR	**Shiveluch**	**1.83**	**292**	*e*P	**Pn**	**20 58 18.3**	**+0.7**
SVLR				*e*S	**Sn**	**20 58 40.9**	**+0.3**
ZLN	**Zelenaya**	**1.97**	**274**	*i* P	**Pn**	**20 58 20.4**	**+0.9**
ZLN				*e*S	**Sn**	**20 58 45.0**	**+1.0**
CIRR	**Tsirk**	**2.00**	**276**	*i* P	**Pn**	**20 58 20.9**	**+0.9**
CIRR				*e*S	**Sn**	**20 58 45.4**	**+0.5**
MKZ	**Mys Kozlova**	**2.02**	**228**	*i* P	**Pn**	**20 58 20.2**	**-0.2**
MKZ				*e*S	**Sn**	**20 58 44.0**	**-1.5**
LGNR	**Loginova**	**2.03**	**275**	*e*P	**Pn**	**20 58 21.5**	**+1.0**
LGNR				*e*S	**Sn**	**20 58 46.5**	**+0.8**
KLY	**Klyuchi**	**2.08**	**282**	*e*P	**Pn**	**20 58 20.0**	**-1.1**
KLY				*i* S	**Sn**	**20 58 44.0**	**-2.8**
KRSR	**Krestovskiy**	**2.11**	**279**	*e*S	**Sn**	**20 58 47.6**	**-0.1**
KPT	**Kopyto**	**2.29**	**272**	*e*P	**Pn**	**20 58 25.1**	**+0.9**
KPT				*e*S	**Sn**	**20 58 52.8**	**+0.4**
KMNR	**Kamenistaya**	**2.30**	**267**	*e*P	**Pn**	**20 58 25.5**	**+1.2**
KMNR				*e*S	**Sn**	**20 58 53.7**	**+1.2**
TUMR	**Tumrok**	**2.45**	**256**	*e*P	**Pn**	**20 58 27.7**	**+1.3**
TUMR				*e*S	**Sn**	**20 58 57.4**	**+1.1**
KOZ	**Kozyrevsk**	**2.49**	**274**	*e*P	**Pn**	**20 58 27.7**	**+0.7**
KOZ				*e*S	**Sn**	**20 58 57.3**	**0.0**
SRDR	**Sredinnyy**	**2.59**	**280**	*e*P	**Pn**	**20 58 29.0**	**+0.5**
SRDR				*e*S	**Sn**	**20 58 59.8**	**-0.2**
ESO	**Esso**	**3.15**	**272**	*e*P	**Pn**	**20 58 37.5**	**+1.1**
OSSR	**Ossora**	**3.38**	**349**	*i* P	**Pn**	**20 58 36.6**	**-3.1**
SPN	**Mys Shipunski**	**3.79**	**223**	*e*P	**Pn**	**20 58 45.2**	**-0.3**
SPN				*e*S	**Sn**	**20 59 26.8**	**-3.4**
NLC	**Nalytchevo**	**4.00**	**228**	*e*P	**Pn**	**20 58 48.8**	**+0.2**
NLC				*e*S	**Sn**	**20 59 33.6**	**-2.1**
SDLR	**Sedlovina**	**4.13**	**232**	*e*P	**Pn**	**20 58 50.7**	**+0.4**
SMAR	**Somma**	**4.18**	**232**	*e*P	**Pn**	**20 58 51.4**	**+0.4**
AVH	**Avacha**	**4.20**	**233**	*e*P	**Pn**	**20 58 52.0**	**+0.6**
AVH				*e*S	**Sn**	**20 59 39.7**	**-1.0**
UGLR	**Uglovaya**	**4.20**	**232**	*e*P	**Pn**	**20 58 51.6**	**+0.2**
KOK	**Koryaka**	**4.23**	**233**	*e*P	**Pn**	**20 58 52.7**	**+0.9**
GNL	**Ganaly**	**4.31**	**241**	*e*P	**Pn**	**20 58 53.6**	**+0.7**
RUS	**Russkaya**	**4.89**	**226**	*e*P	**Pn**	**20 59 00.6**	**-0.5**
RUS				*e*S	**Sn**	**20 59 54.6**	**-3.5**
MIPR	**Malaya Ipel'ka**	**5.76**	**233**	*e*P	**Pn**	**20 59 14.5**	**+1.1**
KAMR	**Kamenskoye**	**6.61**	**8**	*i* P	**Pn**	**20 59 23.6**	**-1.7**

NEIC ***17*** *21:04:57.0,39.43S×174.38E,h220km, After WEL.*
WEL 17 21:04:57.3±0.4**,39.47S**×**174.41E,h217**km±3km**,ML3.7/5,**
5C-3D,Error ellipse: s-maj=4.4km s-min=1.7km az=90.0,
North Island

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
VRZ	**Vera Road**	**0.44**	**38**	PN	P	21 05 26.6	-0.8
VRZ				SN	S	21 05 48.2	-0.8
VRZ	**Vera Road**	**0.44**	**38**	*e*P	P	21 05 25.2	-1.3
VRZ				S	S	21 05 48.2	-0.8
WAZ	**Wanganui**	**0.53**	**123**	PN	P	21 05 27.0	+0.2
WAZ				SN	S	21 05 49.0	-0.6
WAZ	**Wanganui**	**0.53**	**123**	P	P	21 05 27.3	+0.5
WAZ				S	S	21 05 49.6	0.0
FWVZ	**Far West T-bar**	**0.91**	**77**	PN	P	21 05 28.5	+0.1
FWVZ				SN	S	21 05 51.3	-1.4
FWVZ	**Far West T-bar**	**0.91**	**77**	P	P	21 05 28.6	+0.1
FWVZ				S	S	21 05 51.3	-1.4
WPVZ	**Whakapapa**	**0.92**	**74**	*e*PN	P	21 05 28.3	-0.2
CNZ	**Chateau**	**0.93**	**73**	PN	P	21 05 28.4	-0.2
CNZ	**Chateau**	**0.93**	**73**	P	P	21 05 28.0	-0.5
WNVZ	**Wahianoa**	**0.94**	**82**	PN	P	21 05 28.7	+0.1
WNVZ				SN	S	21 05 51.6	-1.2
NGZ	**Ngauruhoe**	**0.97**	**73**	PN	P	21 05 28.7	-0.1
NGZ	**Ngauruhoe**	**0.97**	**73**	P	P	21 05 28.7	-0.1
WTVZ	**West Tongariro**	**0.98**	**69**	⇓PN	P	21 05 28.7	-0.1
WTVZ				SN	S	21 05 51.8	-1.5
TUVZ	**Tukino**	**0.99**	**79**	*e*PN	P	21 05 28.8	-0.1
TUVZ	**Tukino**	**0.99**	**79**	P	P	21 05 29.1	+0.2
MGZ	**Maungaku**	**1.00**	**62**	PN	P	21 05 28.6	-0.3
MGZ	**Maungaku**	**1.00**	**62**	P	P	21 05 28.3	-0.6
HIZ	**Hauiti**	**1.02**	**20**	⇓PN	P	21 05 28.2	-0.9
HIZ				SN	S	21 05 52.6	-1.2
TSZ	**Takapari Road**	**1.33**	**117**	PN	P	21 05 31.5	0.0
TSZ	**Takapari Road**	**1.33**	**117**	P	P	21 05 31.5	0.0
KIW	**Kapiti Island**	**1.44**	**165**	PN	P	21 05 32.1	-0.3
KIW	**Kapiti Island**	**1.44**	**165**	P	P	21 05 32.3	-0.1
MRZ	**Mangatainoka R**	**1.49**	**143**	⇑PN	P	21 05 32.4	-0.4
MRZ				SN	S	21 05 58.3	-1.9
BKZ	**Black Stump Fm**	**1.65**	**80**	⇓PN	P	21 05 33.3	-0.9
BKZ				SN	S	21 05 59.3	-3.3
CAW	**Cannon Point**	**1.71**	**163**	PN	P	21 05 34.6	-0.5
CAW				SN	S	21 06 02.3	-1.3
CAW	**Cannon Point**	**1.71**	**163**	P	P	21 05 34.3	-0.4
MRW	**Makara Radio**	**1.77**	**173**	PN	P	21 05 34.8	-0.5
MRW	**Makara Radio**	**1.77**	**173**	P	P	21 05 34.8	-0.5
SNZO	**South Karori**	**1.85**	**173**	⇑PN	P	21 05 35.4	-0.6
SNZO				SN	S	21 06 04.6	-1.3
SNZO	**South Karori**	**1.85**	**173**	P	P	21 05 35.4	-0.6
BFZ	**Birch Farm**	**1.86**	**131**	PN	P	21 05 35.5	-0.6
BFZ				SN	S	21 06 03.3	-2.6
BFZ	**Birch Farm**	**1.86**	**131**	*e*P	P	21 05 35.6	-0.5
MTW	**Mount Morrison**	**1.88**	**154**	⇑PN	P	21 05 35.7	-0.6
MTW				SN	S	21 06 04.8	-1.6
MTW	**Mount Morrison**	**1.88**	**154**	P	P	21 05 35.7	-0.6
NNZ	**Nelson**	**1.91**	**204**	⇑PN	P	21 05 36.1	-0.5
NNZ	**Nelson**	**1.91**	**204**	P	P	21 05 36.1	-0.5
BHW	**Baring Head**	**1.97**	**170**	PN	P	21 05 36.4	-0.7
BHW	**Baring Head**	**1.97**	**170**	P	P	21 05 36.4	-0.7
PWZ	**Pawanui**	**1.97**	**107**	PN	P	21 05 36.9	-0.3
PWZ	**Pawanui**	**1.97**	**107**	P	P	21 05 37.0	-0.2
QRZ	**Quartz Range**	**1.98**	**226**	PN	P	21 05 35.8	-1.4
QRZ	**Quartz Range**	**1.98**	**226**	P	P	21 05 35.9	-1.3
TUWZ	**Tuamarina**	**1.99**	**190**	PN	P	21 05 36.6	-0.7
MSWZ	**Moikau Station**	**2.05**	**162**	⇑PN	P	21 05 37.2	-0.7
BSWZ	**Blackbirch Sta**	**2.28**	**190**	PN	P	21 05 39.6	-0.7
URZ	**Urewera**	**2.43**	**61**	PN	P	21 05 39.7	-2.3
URZ	**Urewera**	**2.43**	**61**	*e*P	P	21 05 39.7	-2.3
THZ	**Tophouse**	**2.56**	**206**	PN	P	21 05 42.4	-1.0
THZ	**Tophouse**	**2.56**	**206**	P	P	21 05 42.4	-1.0
DSZ	**Denniston Nort**	**3.02**	**220**	PN	P	21 05 47.0	-1.5
KHZ	**Kahutara**	**3.02**	**192**	PN	P	21 05 47.2	-1.3
LTZ	**Lake Taylor**	**3.68**	**205**	PN	P	21 05 54.7	-1.7
LTZ	**Lake Taylor**	**3.68**	**205**	*e*P	P	21 05 54.8	-1.6
MQZ	**McQueen's Vall**	**4.43**	**197**	PN	P	21 06 02.5	-3.2
MQZ	**McQueen's Vall**	**4.43**	**197**	*e*P	P	21 06 02.7	-3.0
WVZ	**Waitaha Valley**	**4.54**	**216**	PN	P	21 06 04.8	-2.2
ODZ	**Otahua Downs**	**6.23**	**205**	SN	S	21 07 33.9	-5.6

IDC ***17*** *21:21:34.3±0.8,6.79N×72.97W,h159km±16km,mb3.1/1,*
mb1 3.4/3,mb1mx3.1/21,Error ellipse: s-maj=64.6km
s-min=8.0km az=132.0
ISC 17 21:21:33.8±1.1**,7.0N**±0.2×**73.2W**±0.2**,h159**km**,n4,**σ0**52**/5**,**
mb3.3/1,Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ROSC	**El Rosal**	**2.41**	**209**	P	**P**	**21 22 15.3**	**+0.5**
	8.9nm,0.3s,baz=9.0,slow=19,SNR=12						
ROSC				S	**S**	**21 22 45.8**	**-0.4**
	29nm,0.3s,baz=358,slow=22,SNR=9.7						
SDV	**Santo Domingo**	**3.14**	**53**	P	**P**	**21 22 24.2**	**+0.3**
	9.1nm,0.3s,baz=248,slow=3.2,SNR=49						
SDV				S	**S**	**21 23 02.0**	**-0.3**
	3.5nm,0.3s,baz=274,slow=21,SNR=9.5						
YKA	**Yellowknife Ar**	**63.10**	**340**	P	**P**	**21 31 46.2**	**-0.2**
	0.3nm,0.6s,mb3.3,baz=130,slow=6.9,SNR=9.9						
WRA	**Warramunga Arr**	**150.38**	**241**	PKPbc	PKPdf	21 41 07.4	+5.8
	0.2nm,0.4s,baz=105,slow=2.6,SNR=6.1						

NEIC ***17*** *21:21:46.5, 17.73N×94.57W,h152km,MD3.8(MEX),After*
MEX.
MEX 17 21:21:45.0±1.4**,17.54N×94.58W,h170**km±15km**,MD3.9,**
1C-1D,Chiapas

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CMIG	**Matias Romero**	**0.53**	**213**	⇑*i*P	S	21 22 08.2	-1.0
CMIG				*i* S	S	21 22 24.4	-3.4
CMIG	**Matias Romero**	**0.53**	**213**	⇓*i*P	S	21 22 08.2	-1.0
CMIG				*i* S	S	21 22 24.4	-3.4
EVV	**El Vigia**	**1.17**	**321**	*e*P	P	21 22 10.0	-3.3
EVV				*i* S	S	21 22 29.0	-6.2
OXX	**Oaxaca**	**2.10**	**258**	*i* P	P	21 22 22.0	-0.8
OXX				*i* S	S	21 22 50.0	-2.0
HUIG	**Huatulco**	**2.29**	**220**	*i* P	P	21 22 22.3	-2.9
HUIG				*i* S	S	21 22 53.4	-2.6
CCIG	**Comitan**	**2.66**	**118**	*i* P	P	21 22 29.8	+0.2
CCIG				*i* S	S	21 23 01.1	-2.7
IISM	**Ciudad Serdan**	**3.02**	**299**	*e*P	P	21 22 32.5	-1.5
IISM				*i* S	S	21 23 08.0	-3.7
PPM	**Popocatepetl**	**4.13**	**292**	*e*P	P	21 22 48.5	+0.3
PPM				*e*P		21 22 49.2	
PPM				*i* S	S	21 23 32.0	-5.0
PPM	**Popocatepetl**	**4.13**	**292**	*e*P	P	21 22 48.5	+0.3
PPM				*i* S	S	21 23 32.0	-5.0

MOS ***17*** *21:23:35.5±2.9,38.50N×70.53E,h33km,mb4.0/1,Error*
ellipse: s-maj=90.5km s-min=22.5km az=70.6
NNC ***17*** *21:23:41.1±12.0,38.82N×70.47E,h113km±83km,mpv3.7,*
Error ellipse: s-maj=144.7km s-min=28.7km az=23.0
IDC ***17*** *21:23:54.5±25.0,39.75N×71.26E,h119km±149km,*
mb3.0/1,mb1 3.4/4,mb1mx3.0/22,ML3.3/3,Error ellipse:
s-maj=242.0km s-min=79.4km az=23.0
ISC 17 21:23:37.9±1.7**,38.63N**±0.09×**70.5E**±0.1**,h114**km±22km**,**
n22,σ0°93/25,mb3.2/1,3C,Afghanistan-Tajikistan
border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
AML	**Almayashu**	**4.28**	**34**	P	**P**	**21 24 41.4**	**-0.9**
	SNR=44						
KK31	**Karatay Array**	**4.47**	**1**	⇑P	**P**	**21 24 44.7**	**-0.1**
	5.7nm,0.3s,baz=171,slow=12,SNR=303						
KK31				⇑S	**S**	**21 25 38.0**	**+1.9**
	4.6nm,0.3s,baz=181,slow=29,SNR=5.9						
KKAR	**Karatay Array**	**4.47**	**1**	*e*PN	**P**	**21 24 44.9**	**+0.1**
KKAR				S	**S**	**21 25 52.2**	**+16**
KKAR				pmax	pmax		
	comp=Z,2.0nm,0.3s						
KKAR				smax			
	comp=Z,5.0nm,0.3s						
UCH	**Uchtor**	**4.74**	**39**	P	**P**	**21 24 47.3**	**-1.2**
	SNR=37						
EKS2	**Erkin-Say**	**4.75**	**31**	P	**P**	**21 24 49.5**	**+0.8**
	SNR=24						
AAK	**Ala-Archa**	**5.04**	**36**	P	**P**	**21 24 52.0**	**-0.5**
	SNR=24						
FRU	**Bishkek**	**5.25**	**36**	*e*PN	**P**	**21 24 58.0**	**+2.6**
FRU				*e*		21 26 19.0	
FRU				*e*		21 26 34.0	
KBK	**Karagaybulak**	**5.28**	**39**	P	**P**	**21 24 55.2**	**-0.4**
	SNR=79						
CHMS	**Chumysh**	**5.45**	**35**	P	**P**	**21 24 57.2**	**-0.7**
	SNR=16						
USP	**Ospenovka**	**5.55**	**32**	P	**P**	**21 24 59.6**	**+0.2**
	SNR=20						
TKM2	**Tokmak 2**	**5.79**	**41**	P	**P**	**21 25 01.5**	**-1.2**
	SNR=36						
MK31	**Makanchi Array**	**11.92**	**43**	P	**P**	**21 26 24.6**	**-0.4**
	comp=Z,3.7nm,0.9s,baz=229,slow=12,SNR=19						
MKAR	**Makanchi Array**	**11.92**	**43**	P	**P**	**21 26 24.1**	**-0.8**
	comp=Z,0.1nm,0.3s,baz=231,slow=13,SNR=19						
AB31	**Akbulak array**	**13.03**	**328**	P	**P**	**21 26 39.2**	**-0.3**
	comp=Z,1.1nm,0.4s,baz=142,slow=12,SNR=55						
AB31				⇑S	**S**	**21 29 00.8**	**-1.4**
	comp=Z,2.4nm,0.7s,baz=146,slow=23,SNR=6.3						
BVA0	**Borovoye Array**	**14.40**	**360**	P	**P**	**21 26 58.4**	**+1.3**
	comp=Z,0.4nm,1.1s,baz=164,slow=13,SNR=7.7						
BVAR	**Borovoye Array**	**14.40**	**360**	P	**P**	**21 26 57.9**	**+0.8**
	comp=Z,0.3nm,0.3s,baz=163,slow=12,SNR=8.1						
KOLN	**Koldanda**	**15.42**	**131**	*e*P	**P**	**21 27 10.2**	**0.0**
	comp=Z,4.2nm,0.4s						
GKN	**Gorkha**	**15.88**	**128**	*e*P	**P**	**21 27 15.6**	**-0.4**
	comp=Z,13nm,0.5s						
KKN	**Kakani**	**16.43**	**127**	*e*P	**P**	**21 27 23.4**	**+0.5**
	comp=Z,6.6nm,0.5s						
DMN	**Daman**	**16.45**	**128**	*e*P	**P**	**21 27 23.9**	**+0.8**
ZAL	**Zalesovo**	**18.18**	**28**	P	**P**	**21 27 44.2**	**+0.4**
	comp=Z,0.3nm,0.3s,baz=164,slow=8.4,SNR=5.1						
YKA	**Yellowknife Ar**	**79.14**	**2**	P	**P**	**21 35 39.2**	**+8.5**
	comp=Z,0.2nm,0.5s,mb3.2,baz=349,slow=5.7,SNR=5.5						

BJI ***17*** *21:44:00.1,4.75S×129.57E,h118km,mB4.9,mb5.0*
NEIC ***17*** *21:44:07.0±1.6,4.15S×129.26E,h118km±16km,mb4.7/18,*
Error ellipse: s-maj=14.6km s-min=7.1km az=61.0
IDC ***17*** *21:44:11.8±2.6,4.23S×129.22E,h163km±24km,mb4.2/12,*
mb1 4.4/15,mb1mx4.2/21,MS2.9/2,Ms1 2.9/2,
ms1mx2.6/16,Error ellipse: s-maj=27.3km s-min=8.7km
az=66.0
ISC 17 21:44:05.2±1.6**,4.14S**±0.06×**129.3E**±0.1**,h118**km±16km**,**
n44,σ0°88/49,mb4.7/27,2C,Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KAKA	**Kakadu**	**9.05**	**160**	*e*P	**P**	**21 46 15.0**	**+0.9**
	29nm,0.5s						
KAKA				*e*S	**S**	**21 47 50.3**	**-4.4**
FITZ	**Fitzroy Crossi**	**14.33**	**194**	⇑*i*P	**P**	**21 47 23.7**	**0.0**
	5.8nm,0.4s						
FITZ				*i*		21 47 29.0	
FITZ	**Fitzroy Crossi**	**14.33**	**194**	P	**P**	**21 47 24.1**	**+0.4**
	3.8nm,0.3s,baz=20,slow=9.3,SNR=34						
FITZ				LR	LR	21 53 35.2	
	comp=Z,33nm,19.9s,baz=8.9,slow=40						
WRAB	**Tennant Creek**	**16.46**	**163**	*e*P	**P**	**21 47 49.7**	**-0.8**
	194nm,0.7s						
WRAB				*e*S	**S**	**21 50 37.9**	**-11**
WRA	**Warramunga Arr**	**16.46**	**163**	P	**P**	**21 47 49.9**	**-0.7**
	5.0nm,0.3s,baz=342,slow=12,SNR=76						
WRA				S	**S**	**21 50 42.7**	**-6.0**
	2.0nm,0.3s,baz=351,slow=23,SNR=8.3						
WB2	**Warramunga Arr**	**16.47**	**163**	*e*P	**P**	**21 47 49.7**	**-1.0**
WB2				*e*S	**S**	**21 50 40.7**	**-8.1**
AS12	**Alice Springs**	**19.92**	**167**	⇑*i*P	**P**	**21 48 30.8**	**+0.9**
	82nm,0.8s						
AS12				*e*		21 48 34.9	
ASAR	**Alice Springs**	**19.92**	**167**	P	**P**	**21 48 30.9**	**+0.9**
	8.4nm,0.3s,baz=350,slow=12,SNR=542						
ASAR				S	**S**	**21 52 03.5**	**+1.0**
	0.5nm,0.3s,baz=343,slow=19,SNR=4.7						
ASAR				LR	LR	21 55 58.7	
	comp=Z,46nm,20.6s,baz=23,slow=36						
CTA	**Charters Tower**	**22.91**	**135**	*e*P	**P**	**21 49 02.2**	**+2.5**
	12nm,0.7s,mb4.3						
CTA	**Charters Tower**	**22.91**	**135**	P	**P**	**21 49 01.8**	**+2.1**
	16nm,0.8s,mb4.4,baz=327,slow=11,SNR=10						
CTAO	**Charters Tower**	**22.91**	**135**	*e*P	**P**	**21 49 02.0**	**+2.3**
	24nm,0.9s,mb4.5						
STKA	**Stephens Creek**	**29.92**	**159**	P	**P**	**21 50 04.7**	**+0.4**
	9.8nm,0.8s,mb4.5,baz=339,slow=10.0,SNR=16						
NWAO	**Narrogin (SRO)**	**30.77**	**200**	*e*P	**P**	**21 50 09.6**	**-2.3**
	36nm,1.3s,mb4.9						
NWAO				*e*		21 50 21.3	
JNU	**Nakatsue**	**37.09**	**2**	P	**P**	**21 51 06.2**	**+0.4**
	20nm,1.1s,mb4.9,baz=65,slow=1.0,SNR=4.8						
WHN	**Wuhan**	**37.32**	**338**	*e*P	**P**	**21 51 09.0**	**+1.1**
CM31	**Chiang Mai Arr**	**37.38**	**308**	*e*P	**P**	**21 51 09.7**	**+1.2**
	6.4nm,0.6s,mb4.7						
CMAR	**Chiang Mai Arr**	**37.38**	**308**	P	**P**	**21 51 10.0**	**+1.5**
	6.1nm,0.7s,mb4.6,baz=134,slow=7.0,SNR=54						
CMAR				PcP	PcP	21 53 25.4	0.0
	0.6nm,0.6s,baz=170,slow=3.1,SNR=4.4						
CMAR				ScP		21 56 58.5	
	0.4nm,0.8s,baz=141,slow=3.7,SNR=4.8						
ENH	**Enshi**	**39.11**	**332**	*e*P	**P**	**21 51 22.4**	**-0.3**
	8.7nm,0.7s,mb4.7						
MAJO	**Matsushiro**	**41.32**	**11**	*e*P	**P**	**21 51 40.0**	**-0.9**
	15nm,0.9s,mb4.8						
KS15	**Wonju Array Si**	**41.39**	**358**	*e*P	**P**	**21 51 42.6**	**+1.2**
BJT	**Baijiatuan**	**45.56**	**346**	*e*P	**P**	**21 52 15.0**	**-0.1**
	12nm,0.7s,mb4.7						
BJI	**Beijing**	**45.56**	**346**	P	**P**	**21 52 15.1**	**-0.2**
BJI				AMB	AMB		
	comp=Z,16nm,0.7s,mb4.9						
LSA	**Lhasa**	**49.66**	**315**	*e*P	**P**	**21 52 48.3**	**+1.2**
	comp=Z,5.8nm,0.7s,mb4.6						
GTA	**Gaotai**	**51.14**	**331**	*e*P	**P**	**21 52 58.6**	**+0.4**
GTA				AMB	AMB		
	comp=Z,9.0nm,0.8s,mb4.8						
PKI	**Pulchoki**	**52.75**	**309**	*e*P	**P**	**21 53 09.5**	**-1.0**
KKN	**Kakani**	**52.95**	**310**	*e*P	**P**	**21 53 11.6**	**-0.4**
	comp=Z,14nm,0.7s,mb5.1						
DMN	**Daman**	**53.00**	**309**	*e*P	**P**	**21 53 12.1**	**-0.2**
GKN	**Gorkha**	**53.55**	**309**	*e*P	**P**	**21 53 16.0**	**-0.4**
	comp=Z,22nm,0.7s,mb5.3						
RPZ	**Rata Peaks**	**53.93**	**143**	P	**P**	**21 53 19.0**	**+0.1**
	comp=Z,9.6nm,0.7s,mb5.0,baz=358,slow=17,SNR=4.4						
KOLN	**Koldanda**	**54.25**	**309**	*e*P	**P**	**21 53 21.3**	**-0.1**
	comp=Z,7nm,0.7s,mb5.4						
URZ	**Urewera**	**55.16**	**135**	P	**P**	**21 53 28.1**	**+0.2**
	comp=Z,8.5nm,0.4s,mb5.1,baz=5.6,slow=1.3,SNR=9.6						
ULN	**Ulaanbaatar**	**55.34**	**342**	*e*P	**P**	**21 53 29.4**	**+0.3**
	comp=Z,9.5nm,0.7s,mb4.9						
SONM	**Songino Array**	**55.52**	**341**	P	**P**	**21 53 30.7**	**+0.3**
	comp=Z,11nm,1.2s,mb4.8,baz=158,slow=6.7,SNR=18						
MKAR	**Makanchi Array**	**65.46**	**326**	P	**P**	**21 54 37.2**	**-0.6**
	comp=Z,6.8nm,0.7s,mb4.6,baz=122,slow=8.2,SNR=59						
ZAL	**Zalesovo**	**68.72**	**334**	P	**P**	**21 54 57.6**	**-0.6**
	comp=Z,2.5nm,0.9s,mb4.0,baz=260,slow=4.6,SNR=15						
KURK	**Kurchatov**	**69.72**	**328**	*e*P	**P**	**21 55 03.6**	**-0.8**
BRVK	**Borovoye**	**75.35**	**328**	*e*P	**P**	**21 55 37.1**	**-0.2**
TIXI	**Tiksi**	**75.65**	**360**	*e*P	**P**	**21 55 38.1**	**-0.6**
	comp=Z,4.2nm,0.4s,mb4.5						
ZRNK	**Zerenda**	**75.98**	**327**	*e*P	**P**	**21 55 40.7**	**-0.2**
THR	**Tehran**	**82.85**	**307**	P	**P**	**21 56 18.8**	**+0.6**
	comp=Z,1.8nm,0.8s,mb3.9,baz=132,slow=3.2,SNR=7.9						
QSPA	**South Pole Qui**	**85.82**	**180**	*e*P	**P**	**21 56 32.7**	**+0.7**
	comp=Z,0.9nm,0.5s,mb4.0						
ILAR	**Eielson Array**	**91.08**	**25**	P	**P**	**21 56 56.0**	**-1.3**
	comp=Z,0.3nm,0.5s,mb3.7,baz=282,slow=3.9,SNR=4.5						
INK	**Inuvik**	**96.49**	**22**	*e*P	**P**	**21 57 21.4**	**-0.6**
	comp=Z,0.7nm,0.5s,mb4.3						
ARCES	**ARCESS Array B**	**98.66**	**340**	P	**P**	**21 57 31.2**	**-0.6**
	comp=Z,1.3nm,0.7s,mb4.6,baz=76,slow=5.0,SNR=5.2						

NEIC ***17*** *22:18:21.7±0.7,23.44S×66.68W,h198km±6km,mb4.3/12,*
Error ellipse: s-maj=11.9km s-min=7.1km az=56.0
IDC ***17*** *22:18:21.5±1.1,23.43S×66.69W,h193km±9km,mb3.7/6,*
mb1 3.9/10,mb1mx3.8/15,Error ellipse: s-maj=19.4km
s-min=14.7km az=20.0
ISC 17 22:18:20.8±0.7**,23.46S**±0.07×**66.66W**±0.09**,h201**km±7km**,**
n36,σ1°95/37,mb4.2/18,Jujuy Province

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
LVC	**Limon Verde**	**2.24**	**292**	P	**P**	**22 19 02.5**	**+0.3**
	44nm,0.3s,baz=156,slow=8.2,SNR=78						
LVC				S	**S**	**22 19 33.4**	**-0.8**
	98nm,0.3s,baz=272,slow=22,SNR=19						
LVC	**Limon Verde**	**2.24**	**292**	*e*Pn	**P**	**22 19 02.8**	**+0.6**
LVC				*e*Sn	**S**	**22 19 33.3**	**-1.0**
LPAZ	**La Paz**	**7.27**	**349**	P	**P**	**22 20 06.4**	**+1.1**
	2.1nm,0.3s,baz=139,slow=6.3,SNR=12						
LPAZ				S	**S**	**22 21 27.0**	**+0.2**
	0.4nm,0.3s,baz=234,slow=14,SNR=2.8						
LPAZ	**La Paz**	**7.27**	**349**

163nm,0.3s,baz=73,slow=13,SNR=42
JHJ Sn **S** 23 07 08.3 +0.8
195nm,0.3s,baz=79,slow=23,SNR=12
JIM2 Oshima 3 1.92 288 P **P** 23 06 45.7 -0.4
JOD2 Odawara 2 2.39 299 P **P** 23 06 53.1 +0.3
JOD2 *eS* **S** 23 07 21.2 +0.1
MAJO Matsushiro 3.70 312 *eP* **P** 23 07 11.2 -0.2
MAT Matsushiro 3.70 312 P **P** 23 07 11.0 -0.4
MAT S **S** 23 07 56.3 +1.9
MAT Matsushiro 3.70 312 *eP* **P** 23 07 11.0 -0.4
MAT *eS* **S** 23 07 56.0 +1.6
CBIJ Chichi jima 7.03 176 Pn **P** 23 07 56.1 -2.2
8.8nm,0.3s,baz=271,slow=19,SNR=12
CBIJ Sn **S** 23 09 09.7 -8.1
12nm,0.3s,baz=281,slow=21,SNR=5.0
JOW Kunigami 13.63 241 LR LR 23 14 24.2
comp=Z,168nm,21.1s,baz=38,slow=36
HIA Hailar 22.16 320 *eP* **P** 23 11 08.6 -0.3
8.3nm,1.2s,mb4.0
ULN Ulaanbaatar 29.23 308 P **P** 23 12 14.4 -0.8
2.2nm,0.8s,mb3.9
SONM Songino Array 29.64 308 P **P** 23 12 20.0 +1.0
2.1nm,0.7s,mb4.0,baz=104,slow=8.4,SNR=8.8
ZAL Zalesovo 44.06 315 P **P** 23 14 21.4 +0.7
0.9nm,0.9s,mb3.5,baz=2.4,slow=3.7,SNR=4.7
MKAR Makanchi Array 45.87 305 P **P** 23 14 35.4 +0.2
1.1nm,0.6s,mb4.0,baz=81,slow=8.9,SNR=16
MKAR Makanchi Array 45.87 305 P **P** 23 14 35.4 +0.2
KURK Kurchatov 47.91 310 *eP* **P** 23 14 51.0 -0.2
KURK *e* 23 14 55.3
KURK *e* 23 15 08.4
PKI Pulchoki 48.21 278 *eP* **P** 23 14 52.6 -1.3
KKN Kakani 48.24 279 *eP* **P** 23 14 54.0 -0.1
36nm,1.5s,mb5.2
DMN Daman 48.45 278 *eP* **P** 23 14 55.3 -0.4
GKN Gorkha 48.68 279 *eP* **P** 23 14 57.5 0.0
KOLN Koldanda 49.62 279 *eP* **P** 23 15 03.7 -1.1
29nm,1.5s,mb5.1
ILAR Eielson Array 51.86 31 P **P** 23 15 21.9 +0.7
1.0nm,0.7s,mb3.9,baz=261,slow=5.7,SNR=11
BVAR Borovoye Array 52.69 314 LR LR 23 39 54.2
comp=Z,23nm,18.4s,MS3.2,baz=195,slow=38
BRVK Borovoye 52.75 314 *eP* **P** 23 15 25.6 -2.4
ZRNK Zerenda 53.53 314 *eP* **P** 23 15 33.7 -0.1
FITZ Fitzroy Crossi 54.13 199 P **P** 23 15 39.1 +0.3
1.8nm,0.7s,mb4.1,baz=22,slow=5.1,SNR=3.2
WRAB Tennant Creek 54.21 188 *eP* **P** 23 15 33.5 -5.8
19nm,1.2s,mb4.9
WRA Warramunga Arr 54.22 188 P **P** 23 15 39.0 -0.3
1.0nm,0.3s,mb4.2,baz=4.5,slow=7.5,SNR=24
ASAR Alice Springs 57.95 188 P **P** 23 16 05.8 -0.2
0.4nm,0.5s,mb3.7,baz=5.1,slow=6.6,SNR=6.3
YKA Yellowknife Ar 66.22 30 P **P** 23 17 01.7 +1.0
0.3nm,0.9s,mb3.3,baz=295,slow=5.9,SNR=2.8
FINES FINESS Array B 71.47 333 P **P** 23 17 33.6 +0.5
2.3nm,0.9s,mb4.1,baz=18,slow=8.8,SNR=3.8
KIV Kislovodsk 72.96 312 *eP* **P** 23 17 39.1 -3.1
2.3nm,0.7s,mb4.2
GNI Garni 73.61 308 LR LR 23 50 32.4
comp=Z,18nm,18.7s,MS3.4,baz=165,slow=36
AKASG Malin Array Be 76.71 323 P **P** 23 18 03.7 0.0
0.6nm,0.5s,mb3.8,baz=46,slow=5.6,SNR=7.9
PDAR Pinedale Array 79.57 45 P **P** 23 18 21.1 +1.6
0.4nm,0.9s,mb3.4,baz=169,slow=4.6,SNR=2.3
GERES GERESS Array B 85.28 328 P **P** 23 18 50.1 +1.4
0.3nm,0.5s,mb3.7,slow=2.7,SNR=4.5

NEIC ***17*** *23:08:05.5, 44.06N×7.33E, h5km, ML2.3(GEN), ML1.9(STR), ML1.8(LDG), After STR.*
STR ***17*** *23:08:05.5±0.3, 44.06N×7.33E, h5km±1km, Ml1.9, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
LDG ***17*** *23:08:06.0±0.1, 44.05N×7.34E, h2km, Md2.0/1, Ml1.8/3, Error ellipse: s-maj=1.7km s-min=1.4km az=21.0*
ISC 17 23:08:05.1±0.5, 44.06N±0.02×7.30E±0.03, h13km±4km, n21, σ0s38/36, Northern Italy

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TOUF	**Mont Tournerai**	**0.06**	**218**	Pg	**Pg**	**23 08 07.6**	**-0.1**
TOUF				Sg	**Sg**	**23 08 09.1**	**-0.3**
AURF	**Auriere**	**0.18**	**174**	Pg	**Pg**	**23 08 09.4**	**+0.1**
AURF				Sg	**Sg**	**23 08 12.2**	**+0.1**
STV	**Sta Anna Valdi**	**0.18**	**5**	P	**Pg**	**23 08 09.6**	**+0.3**
STV				S	**Sg**	**23 08 12.2**	**0.0**
STV2	**Anna di Valdie**	**0.18**	**5**	P	**Pg**	**23 08 09.6**	**+0.3**
STV2				S	**Sg**	**23 08 12.2**	**-0.1**
ENR	**Entracque**	**0.18**	**28**	P	**Pg**	**23 08 09.8**	**+0.4**
ENR				S	**Sg**	**23 08 12.4**	**+0.2**
SAOF	**Saorge**	**0.20**	**113**	Pg	**Pg**	**23 08 09.3**	**-0.3**
SAOF				Sg	**Sg**	**23 08 12.4**	**-0.3**
MVIF	**Mont Vial**	**0.20**	**213**	Pg	**Pg**	**23 08 09.9**	**+0.2**
MVIF				Sg	**Sg**	**23 08 13.1**	**+0.4**
SBF	**Sospel**	**0.22**	**154**	*e*Pg	**Pg**	**23 08 10.1**	**0.0**
SBF				*e*Sg	**Sg**	**23 08 12.6**	**-0.8**
4.0nm,0.1s							
MONE	**Monesi**	**0.33**	**87**	P	**Pg**	**23 08 12.1**	**+0.1**
MONE				S	**Sg**	**23 08 16.6**	**+0.1**
NEGI	**Negi**	**0.36**	**127**	P	**Pg**	**23 08 12.8**	**+0.2**
NEGI				S	**Sg**	**23 08 17.8**	**+0.1**
CALN	**Calern**	**0.43**	**224**	Pg	**Pg**	**23 08 14.4**	**+0.4**
CALN				Sg	**Sg**	**23 08 21.1**	**+1.2**
PZZ	**Prazzo**	**0.46**	**342**	P	**Pg**	**23 08 14.6**	**0.0**
PZZ				S	**Sg**	**23 08 20.8**	**-0.2**
ROB	**Roburent**	**0.47**	**60**	P	**Pg**	**23 08 14.8**	**+0.1**
ROB				S	**Sg**	**23 08 21.1**	**-0.1**
RORO		**0.55**	**85**	P	**Pb**	**23 08 16.1**	**-0.1**
FIN	**Finale Ligure**	**0.67**	**77**	P	**Pb**	**23 08 18.2**	**+0.1**
FRF	**La Foret Royal**	**0.69**	**224**	*e*Pg	**Pg**	**23 08 19.0**	**-0.1**
MBDF	**Montbardon**	**0.77**	**330**	*e*Sg	**Sg**	**23 08 31.2**	**+0.4**
1.0nm,0.2s							
LMR	**La Mourre**	**0.93**	**219**	*e*Pg	**Pg**	**23 08 23.4**	**-0.4**
LMR				*e*Sg	**Sg**	**23 08 35.4**	**-0.8**
5.0nm,0.2s							
PCP	**Pian Castagno**	**1.01**	**61**	P	**Pb**	**23 08 24.3**	**+0.2**
SMRF	**Simiane la Rot**	**1.25**	**267**	*e*Pg	**Pg**	**23 08 30.1**	**0.0**
SMRF				*e*Sg	**Sg**	**23 08 46.4**	**-0.4**
2.4nm,0.3s							
LPL	**La Plagne**	**1.51**	**345**	*e*Sg	**Sg**	**23 08 54.5**	**-0.9**
0.6nm,0.2s							

NEIC ***18*** *00:02:08.6, 38.62S×175.89E, h136km, After WEL.*
WEL 18 00:02:09.0±0.2, 38.63S×175.90E, h132km±1km, ML4.1/8, 22C-9D, Error ellipse: s-maj=1.0km s-min=0.8km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WATZ	**Wairara**	**0.15**	**238**	⇑P	N	00 02 27.0	0.0
WATZ				SN	S	00 02 41.0	+0.2
WATZ	**Wairara**	**0.15**	**238**	P	P	00 02 27.0	-0.1
WATZ				S	S	00 02 41.0	+0.2
RATZ	**Rangitukua**	**0.26**	**203**	⇑PN	P	00 02 27.2	-0.1
RATZ				*e*SN	S	00 02 41.1	-0.2
RATZ	**Rangitukua**	**0.26**	**203**	P	P	00 02 27.2	0.0
RITZ	**Rihia Road**	**0.35**	**185**	PN	P	00 02 27.7	+0.1
RITZ	**Rihia Road**	**0.35**	**185**	P	P	00 02 27.8	+0.2
PATZ	**Paeroa**	**0.37**	**49**	PN	P	00 02 27.9	+0.2
PATZ	**Paeroa**	**0.37**	**49**	P	P	00 02 28.0	+0.3
KATZ	**Kakaramea**	**0.38**	**205**	PN	P	00 02 27.7	0.0
KATZ	**Kakaramea**	**0.38**	**205**	P	P	00 02 27.7	-0.1
MGZ	**Maungaku**	**0.47**	**217**	PN	P	00 02 28.2	0.0
MGZ	**Maungaku**	**0.47**	**217**	P	P	00 02 28.1	-0.1
UTU	**Utuhina**	**0.51**	**27**	PN	P	00 02 28.5	+0.1
KAVZ	**Karewarewa**	**0.51**	**203**	PN	P	00 02 28.3	-0.1
KAVZ	**Karewarewa**	**0.51**	**203**	P	P	00 02 28.4	0.0
WTVZ	**West Tongariro**	**0.55**	**206**	⇑PN	P	00 02 28.5	-0.2
WTVZ				SN	S	00 02 43.7	+0.1
NGZ	**Ngauruhoe**	**0.60**	**203**	⇓PN	P	00 02 28.7	-0.2
NGZ	**Ngauruhoe**	**0.60**	**203**	P	P	00 02 28.8	-0.2
NGZ				S	S	00 02 46.0	+1.8
TAZ	**Tarawera**	**0.62**	**51**	⇑PN	P	00 02 29.2	+0.1
TAZ	**Tarawera**	**0.62**	**51**	P	P	00 02 29.3	+0.2
CNZ	**Chateau**	**0.63**	**206**	⇓PN	P	00 02 29.2	0.0
CNZ	**Chateau**	**0.63**	**206**	P	P	00 02 28.8	-0.4
WPVZ	**Whakapapa**	**0.64**	**206**	⇑PN	P	00 02 29.3	0.0
TUVZ	**Tukino**	**0.67**	**197**	PN	P	00 02 29.3	-0.1
FWVZ	**Far West T-bar**	**0.68**	**203**	PN	P	00 02 29.4	-0.2
FWVZ				SN	S	00 02 44.6	-0.7
FWVZ	**Far West T-bar**	**0.68**	**203**	P	P	00 02 29.4	-0.2
DRZ	**Dome Shelter**	**0.70**	**202**	PN	P	00 02 29.9	+0.2
DRZ	**Dome Shelter**	**0.70**	**202**	P	P	00 02 30.0	+0.3
BKZ	**Black Stump Fm**	**0.71**	**140**	⇑PN	P	00 02 29.9	+0.2
BKZ				SN	S	00 02 45.2	-0.4
LIRZ	**Lichensteins R**	**0.73**	**32**	⇓PN	P	00 02 29.8	-0.1
LIRZ	**Lichensteins R**	**0.73**	**32**	P	P	00 02 29.9	0.0
WNVZ	**Wahianoa**	**0.74**	**199**	⇑PN	P	00 02 30.0	+0.1
WNVZ				SN	S	00 02 45.7	-0.2
HIZ	**Hauiti**	**0.83**	**278**	⇑PN	P	00 02 30.1	-0.5
HIZ				SN	S	00 02 46.1	-1.1
EDRZ	**Edgecumbe**	**0.84**	**52**	⇑PN	P	00 02 30.5	-0.2
EDRZ	**Edgecumbe**	**0.84**	**52**	P	P	00 02 30.5	-0.2
MARZ	**Manawahe**	**0.88**	**44**	PN	P	00 02 31.0	-0.1
URZ	**Urewera**	**1.02**	**69**	⇓PN	P	00 02 31.8	-0.7
URZ				SN	S	00 02 49.0	-1.3
URZ	**Urewera**	**1.02**	**69**	P	P	00 02 31.8	-0.6
VRZ	**Vera Road**	**1.02**	**240**	⇑PN	P	00 02 32.1	-0.4
VRZ	**Vera Road**	**1.02**	**240**	P	P	00 02 32.1	-0.4
MWZ	**Matawai**	**1.31**	**78**	PN	P	00 02 35.0	-0.5
MWZ				SN	S	00 02 54.4	-1.4
WAZ	**Wanganui**	**1.33**	**212**	⇑PN	P	00 02 35.2	-0.6
WAZ				SN	S	00 02 54.9	-1.3
WAZ	**Wanganui**	**1.33**	**212**	P	P	00 02 35.2	-0.6
WAZ				S	S	00 02 53.0	-3.2
RAEZ	**Rainy Point**	**1.35**	**240**	PN	P	00 02 35.5	-0.4
RAEZ	**Rainy Point**	**1.35**	**240**	P	P	00 02 35.8	-0.1
TSZ	**Takapari Road**	**1.43**	**178**	PN	P	00 02 36.3	-0.6
TSZ				SN	S	00 02 55.6	-2.5
TSZ	**Takapari Road**	**1.43**	**178**	P	P	00 02 36.3	-0.5
KNZ	**Kokohu**	**1.44**	**106**	⇓PN	P	00 02 36.9	-0.1
KNZ				SN	S	00 02 57.2	-1.1
KNZ	**Kokohu**	**1.44**	**106**	P	P	00 02 36.9	0.0
KNZ				S	S	00 02 57.2	-1.1
NEZ	**North Egmont**	**1.55**	**245**	⇓PN	P	00 02 37.8	-0.3
NEZ	**North Egmont**	**1.55**	**245**	P	P	00 02 37.8	-0.3
DFE	**Dawson Falls**	**1.56**	**243**	⇑PN	P	00 02 37.8	-0.5
DFE	**Dawson Falls**	**1.56**	**243**	P	P	00 02 37.8	-0.5
PWZ	**Pawanui**	**1.59**	**152**	⇓PN	P	00 02 38.2	-0.3
PWZ				SN	S	00 02 59.5	-1.6
PWZ	**Pawanui**	**1.59**	**152**	P	P	00 02 38.2	-0.4
PWZ				S	S	00 02 59.5	-1.7
PKE	**Pukeiti**	**1.60**	**249**	⇑PN	P	00 02 37.9	-0.8
PKE	**Pukeiti**	**1.60**	**249**	P	P	00 02 37.9	-0.8
NRZ	**Ngariki Road**	**1.69**	**245**	PN	P	00 02 38.8	-0.9
NRZ	**Ngariki Road**	**1.69**	**245**	P	P	00 02 38.9	-0.9
NWEZ	**Newall Road**	**1.71**	**247**	PN	P	00 02 39.3	-0.7
NWEZ	**Newall Road**	**1.71**	**247**	P	P	00 02 39.3	-0.7
PUZ	**Puketiti**	**1.93**	**74**	⇓PN	P	00 02 41.9	-0.7
PUZ				SN	S	00 03 06.0	-2.3
PUZ	**Puketiti**	**1.93**	**74**	P	P	00 02 41.9	-0.7
PUZ				S	S	00 03 07.1	-1.2
MRZ	**Mangatainoka R**	**2.05**	**187**	⇑PN	P	00 02 42.3	-1.7
MRZ				SN	S	00 03 07.0	-3.7
BFZ	**Birch Farm**	**2.07**	**173**	⇑PN	P	00 02 42.9	-1.4
BFZ				SN	S	00 03 07.3	-3.9
MXZ	**Matakaoa Point**	**2.17**	**62**	PN	P	00 02 45.1	-0.6
MXZ				SN	S	00 03 12.1	-1.6
KIW	**Kapiti Island**	**2.36**	**199**	⇑PN	P	00 02 45.7	-2.4
KIW	**Kapiti Island**	**2.36**	**199**	P	P	00 02 45.7	-2.4
MTW	**Mount Morrison**	**2.55**	**187**	PN	P	00 02 47.7	-2.9
MTW	**Mount Morrison**	**2.55**	**187**	P	P	00 02 47.7	-2.8
CAW	**Cannon Point**	**2.56**	**194**	⇑PN	P	00 02 47.8	-2.9
CAW				SN	S	00 03 16.4	-6.0
CAW	**Cannon Point**	**2.56**	**194**	P	P	00 02 47.9	-2.8
MRW	**Makara Radio**	**2.76**	**199**	⇑PN	P	00 02 50.0	-3.3
MRW				SN	S	00 03 21.3	-5.7
MRW	**Makara Radio**	**2.76**	**199**	P	P	00 02 50.0	-3.3
WEL	**Wellington**	**2.79**	**198**	*e*PN	P	00 02 50.3	-3.4
WEL	**Wellington**	**2.79**	**198**	P	P	00 02 50.4	-3.4
MSWZ	**Moikau Station**	**2.83**	**190**	⇑PN	P	00 02 50.9	-3.4
MSWZ				SN	S	00 03 22.1	-6.5
SNZO	**South Karori**	**2.83**	**199**	⇑PN	P	00 02 50.8	-3.5
SNZO	**South Karori**	**2.83**	**199**	P	P	00 02 50.8	-3.5
BHW	**Baring Head**	**2.89**	**196**	⇑PN	P	00 02 51.5	-3.5
BHW				SN	S	00 03 23.5	-6.5
BHW	**Baring Head**	**2.89**	**196**	P	P	00 02 51.5	-3.5
BHW				S	S	00 03 23.7	-6.3
TUWZ	**Tuamarina**	**3.18**	**208**	PN	P	00 02 55.0	-3.8
TUWZ				SN	S	00 03 31.0	-5.8
NNZ	**Nelson**	**3.23**	**216**	⇑PN	P	00 02 55.7	-3.9
NNZ				SN	S	00 03 33.5	-4.6
NNZ	**Nelson**	**3.23**	**216**	P	P	00 02 55.7	-3.9
QRZ	**Quartz Range**	**3.40**	**229**	⇓PN	P	00 02 57.7	-4.1
QRZ				SN	S	00 03 36.2	-5.9
QRZ	**Quartz Range**	**3.40**	**229**	P	P	00 02 57.7	-4.1
BSWZ	**Blackbirch Sta**	**3.45**	**206**	PN	P	00 02 58.3	-4.1
BSWZ				SN	S	00 03 37.7	-5.7
THZ	**Tophouse**	**3.88**	**215**	PN	P	00 03 03.9	-4.3
THZ	**Tophouse**	**3.88**	**215**	P	P	00 03 03.9	-4.3
THZ				S	S	00 03 47.2	-6.4
KHZ	**Kahutara**	**4.19**	**205**	PN	P	00 03 07.7	-4.6
KHZ	**Kahutara**	**4.19**	**205**	P	P	00 03 07.7	-4.6
LTZ	**Lake Taylor**	**4.98**	**212**	PN	P	00 03 17.1	-5.8
LTZ	**Lake Taylor**	**4.98**	**212**	*e*P	P	00 03 17.2	-5.7
MQZ	**McQueen's Vall**	**5.63**	**205**	PN	P	00 03 25.0	-6.6
MQZ				SN	S	00 04 23.3	-12
MQZ	**McQueen's Vall**	**5.63**	**205**	P	P	00 03 25.0	-6.6
ODZ	**Otahua Downs**	**7.52**	**210**	PN	P	00 03 50.6	-6.5
ODZ	**Otahua Downs**	**7.52**	**210**	*e*P	P	00 03 50.6	-6.5

NEIC ***18*** *00:21:33.4, 16.94N×100.44W, h12km, mb4.6/2, MD3.9(MEX), After MEX.*
MEX ***18*** *00:21:33.4±0.6, 16.94N×100.44W, h12km±5km, MD3.9*
ISC 18 00:21:31.7±1.2, 17.0N±0.1×100.47W±0.05, h22km±8km, n9, σ0s79/15, mb5.0/1, 1D, Guerrero

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CAIG	**El Cayaco**	**0.20**	**77**	⇓*i*P	**Pb**	**00 21 37.1**	**0.0**
CAIG				*i* S	**Sb**	**00 21 40.9**	**+0.2**
ACX	**Acapulco**	**0.55**	**104**	*i* P	**Pb**	**00 21 42.0**	**-0.5**
ACX				*i* S	**Sb**	**00 21 50.0**	**+0.1**
ZIIG	**Zihuatanejo**	**1.12**	**302**	*i* P	**Pb**	**00 21 52.1**	**-0.2**
ZIIG				*i* S	**Sb**	**00 22 06.7**	**+0.2**
PPM	**Popocatepetl**	**2.70**	**40**	*e*P	**Pn**	**00 22 14.5**	**-0.3**
PPM				*e*P		00 22 14.6	
PPM				*i* S	**Sn**	**00 22 46.6**	**-0.5**
PPM	**Popocatepetl**	**2.70**	**40**	*e*P	**Pn**	**00 22 14.6**	**-0.2**
PPM				*i* S	**Sn**	**00 22 46.6**	**-0.5**
MOIG	**Morelia**	**2.75**	**346**	*e*P	**Pn**	**00 22 21.8**	**+6.4**
MOIG				*i* S	**Sn**	**00 22 48.7**	**+0.3**
ANMO	**Albuquerque**	**18.66**	**344**	P	**P**	**00 25 48.9**	**-1.5**
0.7nm,0.6s							
OXF	**Oxford**	**20.05**	**28**	*e*P	**P**	**00 26 08.2**	**+1.8**
8.4nm,0.8s							
SJG	**San Juan**	**32.71**	**83**	P	**P**	**00 28 09.4**	**+4.4**
17nm,0.8s,mb5.0							

IDC ***18*** *00:49:43.4±5.0, 16.57N×100.17W, mb3.8/3, mb1 4.0/3, mb1mx3.7/17, MS3.5/3, Ms1 3.4/3, ms1mx2.9/28, Error ellipse: s-maj=104.0km s-min=80.4km az=21.0*
NEIC ***18*** *00:49:48.7, 16.85N×100.48W, h7km, MD4.2(MEX), After MEX.*
MEX ***18*** *00:49:48.7±0.8, 16.85N×100.48W, h7km±8km, MD4.3*
ISC 18 00:49:47.4±0.9, 16.86N±0.05×100.48W±0.04, h27km±5km, n24, σ1s15/38, mb3.7/3, MS3.7/2, 1C, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CAIG	**El Cayaco**	**0.27**	**48**	*e*P	**Pb**	**00 49 53.8**	**-0.5**
CAIG				*e*S	**Sb**	**00 49 58.1**	**-0.8**
ACX	**Acapulco**	**0.54**	**90**	⇑*i*P	**Pb**	**00 49 58.5**	**+0.2**
ACX				*i* S	**Sb**	**00 50 06.9**	**+1.2**
ZIIG	**Zihuatanejo**	**1.20**	**308**	*e*P	**Pn**	**00 50 08.8**	**+0.1**
ZIIG				*i* S	**Sn**	**00 50 24.1**	**-0.1**
PLIG	**Platanillo**	**1.78**	**31**	*e*P	**Pn**	**00 50 16.9**	**-0.2**
PLIG				*e*S	**Sn**	**00 50 40.2**	**+1.2**
PNIG	**Pinotepa**	**2.30**	**101**	*e*P	**Pn**	**00 50 24.7**	**+0.2**
PNIG				*e*S	**Sn**	**00 50 50.2**	**-2.1**
YAIG	**Yautepec**	**2.40**	**34**	*i* P	**Pn**	**00 50 26.9**	**+1.0**
YAIG				*e*S	**Sn**	**00 50 55.4**	**+0.7**
IIZ	**Mezontepec**	**2.59**	**27**	*e*P	**Pn**	**00 50 29.5**	**+0.8**
UNM	**Universidad Na**	**2.75**	**27**	*e*P	**Pn**	**00 50 28.1**	**-2.7**
UNM				*e*P		00 50 31.0	
UNM				*i* S	**Sn**	**00 51 04.0**	**+0.5**
UNM	**Universidad Na**	**2.75**	**27**	*e*P	**Pn**	**00 50 31.0**	**+0.2**
UNM				*i* S	**Sn**	**00 51 04.0**	**+0.5**
PPM	**Popocatepetl**	**2.81**	**39**	*e*P	**Pn**	**00 50 32.1**	**+0.4**
PPM				*e*P		00 50 34.3	
PPM				*i* S	**Sn**	**00 51 07.5**	**+2.3**
PPM	**Popocatepetl**	**2.81**	**39**	*e*P	**Pn**	**00 50 32.1**	**+0.4**
PPM				*i* S	**Sn**	**00 51 07.5**	**+2.3**
MOIG	**Morelia**	**2.88**	**347**	*i* P	**Pn**	**00 50 37.6**	**+4.9**
MOIG				*i* S	**Sn**	**00 51 04.6**	**-2.3**
PBVM	**Pinon**	**2.89**	**27**	*e*P	**Pn**	**00 50 33.8**	**+1.0**
PBVM				*i* S	**Sn**	**00 51 05.7**	**-1.4**
OXX	**Oaxaca**	**3.60**	**86**	*e*P	**Pn**	**00 50 41.7**	**-1.2**
OXX				*i* S	**Sn**	**00 51 25.9**	**+0.8**
IISM	**Ciudad Serdan**	**3.63**	**54**	*e*P	**Pn**	**00 50 40.7**	**-2.7**
IISM				*i* S	**Sn**	**00 51 23.7**	**-2.2**
POHV	**Veracruz**	**3.75**	**54**	*e*P	**Pn**	**00 50 45.1**	**0.0**
POHV				*i* S	**Sn**	**00 51 28.5**	**-0.4**
SFJM	**Santa Fe**	**4.34**	**326**	*e*P	**Pn**	**00 50 53.8**	**+0.3**
SFJM				*i* S	**Sn**	**00 51 40.0**	**-3.9**
TEIG	**Tepich**	**12.05**	**72**	*e*P	**P**	**00 52 41.8**	**+1.3**
TXAR	**Lajitas Array**	**12.75**	**347**	Lg		00 56 35.6	
0.0nm,0.3s,baz=172,slow=28,SNR=3.4							
TXAR				LR	LR	00 58 15.2	
comp=Z,76nm,18.4s,baz=135,slow=39							
PDAR	**Pinedale Array**	**26.95**	**345**	P	**P**	**00 55 30.4**	**+1.6**
0.7nm,1.0s,mb3.1,baz=150,slow=7.3,SNR=4.9							
SCHQ	**Schefferville**	**45.87**	**27**	P	**P**	**00 58 08.5**	**-0.6**
1.8nm,0.6s,mb4.2,baz=236,slow=14,SNR=4.4							
SCHQ	**Schefferville**	**45.87**	**27**	P	**P**	**00 58 08.5**	**-0.6**
YKA	**Yellowknife Ar**	**46.65**	**351**	P	**P**	**00 58 15.3**	**+0.1**
0.9nm,0.7s,mb3.8,baz=159,slow=7.3,SNR=19							
YKA				PcP	PcP	00 59 48.1	-1.2
0.1nm,0.6s,baz=153,slow=4.1,SNR=3.7							
YKA				LR	LR	01 19 55.0	
comp=Z,32nm,19.0s,MS3.3,baz=180,slow=39							
RAR	**Rarotonga**	**69.36**	**239**	LR	LR	01 21 56.5	
comp=Z,106nm,21.2s,MS4.1,baz=142,slow=28							

NIED ***18*** *00:54:00, 35.70N×140.80E, h65km, Mw4.1 Best double couple: M0 1.64×10^15 NP1:φs24°, δ81°, λ94°. NP2:φs183°, δ10°, λ69°.*
IDC ***18*** *00:54:33.2±0.9, 35.69N×140.67E, mb3.8/11, mb1 3.9/14, mb1mx3.8/27, ML3.8/3, MS3.3/4, Ms1 3.3/4, ms1mx2.7/31, Error ellipse: s-maj=26.0km s-min=16.4km az=93.0*
JMA ***18*** *00:54:39.2±0.1, 35.74N×140.68E, h50km±1km, M3.9 Broadband fault plane solution: P waves. NP1:φs212°, δ6°, λ116°. NP2:φs6°, δ85°, λ88°. Principal axes: T Plg50°, Azm273°; N Plg2°, Azm6°; P Plg40°, Azm98°;*
JMA Felt I J1.
NEIC ***18*** *00:54:41.5±1.7, 35.68N×140.61E, h64km±12km, mb4.7/3 Error ellipse: s-maj=17.5km s-min=12.2km az=147.0*
ISC 18 00:54:38.9±0.5, 35.70N±0.03×140.68E±0.07, h58km±4km, n41, σ0s97/49, mb4.0/14, MS3.3/4, 1C-4D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.14**	**91**	⇑P	**P**	**00 54 47.1**	**-0.6**
JCN	**Nagara**	**0.48**	**234**	⇓P	**P**	**00 54 51.1**	**+0.5**
JCN				S	**S**	**00 55 00.0**	**+0.9**
JYT	**Yasato**	**0.66**	**323**	⇓P	**P**	**00 54 52.2**	**-0.3**
JYT				S	**S**	**00 55 01.3**	**-1.3**
BSO4	**Boso 4**	**0.77**	**202**	P	**P**	**00 54 54.2**	**+0.3**
BSO4				*e*S	**S**	**00 55 05.1**	**+0.1**
JHO	**Hitachi**	**0.91**	**354**	⇓P	**P**	**00 54 55.9**	**+0.1**
BSO3	**Boso 3**	**0.91**	**189**	P	**P**	**00 54 56.1**	**+0.3**
BSO3				S	**S**	**00 55 09.4**	**+0.9**
BSO1	**Boso 1**	**1.08**	**167**	P	**P**	**00 54 58.0**	**-0.1**
BSO1				*e*S	**S**	**00 55 14.2**	**+1.8**
JAG	**Ashikaga**	**1.23**	**306**	P	**P**	**00 54 59.8**	**-0.4**
JOD2	**Odawara 2**	**1.37**	**252**	P	**P**	**00 55 03.0**	**+0.7**
JIM2	**Oshima 3**	**1.42**	**226**	P	**P**	**00 55 02.4**	**-0.6**
JIM2				S	**S**	**00 55 19.2**	**-1.6**
JRY	**Ryogami san**	**1.48**	**283**	P	**P**	**00 55 04.1**	**+0.3**
MAJO	**Matsushiro**	**2.17**	**293**	⇓*i*P	**P**	**00 55 14.7**	**+1.2**
MAT	**Matsushiro**	**2.17**	**293**	P	**P**	**00 55 14.6**	**+1.2**
MAT				S	**S**	**00 55 43.4**	**+4.3**
MAT	**Matsushiro**	**2.17**	**293**	*e*P	**P**	**00 55 15.0**	**+1.6**
MAT				*e*S	**S**	**00 55 43.0**	**+3.9**
JHJ	**Hachijo jima 2**	**2.68**	**196**	Pn	**P**	**00 55 18.6**	**-2.1**
54nm,0.3s,baz=309,slow=18,SNR=15							
JHJ				Sn	**S**	**00 55 49.8**	**-2.3**
59nm,0.3s,baz=75,slow=20,SNR=5.0							
ASAJ	**Asahikaw

TEIG	**Tepich**	**12.08**	**72**	*eP*		**P**		**00 59 30.0**	**+1.5**
JTS	**JuntasAbangare**	**16.52**	**112**	*eP*		**P**		**01 00 27.5**	**+0.7**

*STR **18** 00:56:52.8±2.7, 46.30N×2.38E, h2km±1km, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
*LDG **18** 00:56:55.2±0.1, 46.33N×2.73E, h4km, Md2.0/2, Ml1.7/3, Error ellipse: s-maj=3.6km s-min=1.1km az=114.0*
*NEIC **18** 00:56:55.2, 46.33N×2.73E, h4km, ML1.7(LDG), After LDG.*

ISC 18 00:56:53.4±0.9, **46.37N**±0.05×**2.58E**±0.09, **h4**km, **n7,** σ1§**09**/**11**, **France**

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
BGF	**Bois d'Agland**	**0.26**	**44**	*eP*g		**Pg**	**00 57 00.2**	**+1.5**
BGF				*eS*g		**Sg**	**00 57 03.6**	**+1.3**
	3.5nm,0.2s							
AGO	**Saint Agoulin**	**0.49**	**129**	Pg		**Pg**	**00 57 02.9**	**-0.4**
AGO				Sg		**Sg**	**00 57 12.2**	**+2.3**
AVF	**Avril sur Loir**	**0.68**	**51**	*eP*g		**Pg**	**00 57 07.1**	**+0.1**
AVF				*eS*g		**Sg**	**00 57 15.5**	**-0.5**
	0.7nm,0.2s							
SMF	**Signal de Mont**	**0.91**	**72**	*eS*g		**Sg**	**00 57 21.8**	**-2.0**
	1.2nm,0.2s							
SSF	**Saint Saulge**	**0.94**	**42**	*eS*g		**Sg**	**00 57 24.0**	**-0.8**
	1.3nm,0.2s							
RJF	**Les Rejaudoux**	**1.30**	**215**	*eS*g		**Sg**	**00 57 36.6**	**-0.1**
	1.6nm,0.2s							
CAF	**Calviac**	**1.49**	**194**	*eP*g		**Pg**	**00 57 22.9**	**-0.2**
CAF				*eS*g		**Sg**	**00 57 42.4**	**-0.6**
	1.2nm,0.2s							

*NEIC **18** 00:57:25.0±1.1, 2.71N×128.60E, h200km, mb4.2/2, Error ellipse: s-maj=58.7km s-min=15.5km az=70.0*
*IDC **18** 00:57:28.4±22.0, 2.62N×128.46E, h235km±230km, mb3.4/5, mb1 3.6/5, mb1mx3.3/18, Error ellipse: s-maj=139.0km s-min=24.2km az=54.0*

ISC 18 00:57:22.8±1.6, **2.8N**±0.3×**128.7E**±0.6, **h200**km, **n8,** σ0§**44**/**8**, **mb3.9**/6, **1D, Halmahera**

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**21.01**	**188**	*eP*		**P**	**01 01 51.8**	**0.0**
	6.4nm,2.0s,mb3.8							
FITZ	**Fitzroy Crossi**	**21.01**	**188**	P		**P**	**01 01 51.8**	**0.0**
	2.6nm,0.5s,mb4.0,baz=14,slow=8.9,SNR=15							
WRAB	**Tennant Creek**	**23.29**	**166**	*eP*		**P**	**01 02 13.9**	**-0.1**
	13nm,0.9s,mb4.5							
WRA	**Warramunga Arr**	**23.29**	**166**	P		**P**	**01 02 14.2**	**+0.1**
	1.1nm,0.3s,mb3.9,baz=345,slow=10,SNR=39							
WB2	**Warramunga Arr**	**23.30**	**166**	*i*/*iP*		**P**	**01 02 15.0**	**+0.9**
ASAR	**Alice Springs**	**26.82**	**169**	P		**P**	**01 02 46.1**	**-0.6**
	1.0nm,0.4s,mb3.8,baz=356,slow=7.8,SNR=21							
STKA	**Stephens Creek**	**36.62**	**161**	P		**P**	**01 04 11.4**	**-0.4**
	2.9nm,0.6s,mb4.0,baz=317,slow=9.7,SNR=7.1							
MKAR	**Makanchi Array**	**59.42**	**325**	P		**P**	**01 07 06.6**	**0.0**
	0.4nm,0.3s,mb3.5,baz=114,slow=8.5,SNR=7.1							
MKAR				pP		pP	01 07 57.9	+5.4
	0.3nm,0.5s,baz=108,slow=7.7,SNR=4.4							

*IDC **18** 01:04:45.8±1.1, 12.39N×86.33W, mb3.8/6, mb1 4.1/7, mb1mx3.9/19, ML3.0/1, MS3.0/2, Ms1 3.0/2, ms1mx2.5/24, Error ellipse: s-maj=97.0km s-min=11.9km az=59.0*
*CASC **18** 01:04:51.4±2.2, 11.77N×87.05W, h63km±23km, MD4.1, ML4.2, mb4.0(NEIC)*
*NEIC **18** 01:04:54.2±2.2, 11.82N×86.33W, h105km±43km, mb4.0/6, Error ellipse: s-maj=52.6km s-min=42.1km az=214.0*

ISC 18 01:04:50.9±0.4, **11.75N**±0.04×**87.04W**±0.04, **h71**km±4km, **n52,** σ1§**02**/**70**, **mb3.8**/12, **8C-9D, Near coast of Nicaragua**

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
COPN	**Copaltepe**	**0.61**	**45**	*i*/*iP*		**P**	**01 05 04.2**	**-0.8**
COPN				*eS*		**S**	**01 05 15.5**	**0.0**
PYN	**Poneloya**	**0.63**	**1**	*i*/*iP*		**P**	**01 05 04.7**	**-0.6**
PYN				*eP*			01 05 04.7	
LEON	**Leon**	**0.68**	**12**	*i*/*iP*		**P**	**01 05 05.4**	**-0.4**
MIRN	**Miramar**	**0.75**	**25**	*eP*		**P**	**01 05 06.4**	**-0.3**
XAVN	**Gruta Xavier**	**0.80**	**60**	*eP*		**P**	**01 05 06.3**	**-0.9**
XAVN				*eS*		**S**	**01 05 20.6**	**+1.3**
MOMJ	**Momotombo**	**0.81**	**36**	*i*/*eP*		**P**	**01 05 07.1**	**-0.3**
MOMJ				*eS*		**S**	**01 05 19.0**	**-0.5**
CNGN	**Cerro Negro**	**0.81**	**24**	*i*/*eP*		**P**	**01 05 07.2**	**-0.2**
CNGN				*eS*		**S**	**01 05 20.2**	**+0.6**
APYN	**Apoyeque**	**0.82**	**54**	*eP*		**P**	**01 05 07.1**	**-0.4**
APYN				*eS*		**S**	**01 05 21.4**	**+1.6**
TICN	**Ticuantepe**	**0.83**	**70**	*i*/*eP*		**P**	**01 05 06.6**	**-1.0**
TICN				*eS*		**S**	**01 05 21.8**	**+1.8**
TEL3	**Telica 3**	**0.84**	**13**	*i*/*eP*		**P**	**01 05 07.7**	**0.0**
MGAN	**Managua**	**0.86**	**63**	*i*/*eP*		**P**	**01 05 07.2**	**-0.7**
MGAN				*eS*		**S**	**01 05 21.2**	**+0.5**
	comp=N,7μm,0.2s							
MASN	**Masaya**	**0.90**	**75**	*i*/*eP*		**P**	**01 05 07.9**	**-0.5**
MASN				*eS*		**S**	**01 05 21.2**	**-0.1**
WILN	**Americas 2**	**0.92**	**64**	*i*/*eP*		**P**	**01 05 08.7**	**0.0**
WILN				*eS*		**S**	**01 05 22.5**	**+0.5**
CRIN	**San Cristobal**	**0.94**	**359**	*i*/*eP*		**P**	**01 05 09.0**	**+0.1**
CRIN				*eS*		**S**	**01 05 20.6**	**-1.8**
APON	**Apoyo**	**0.96**	**80**	*i*/*eP*		**P**	**01 05 07.9**	**-1.3**
COFN	**Cofrada**	**0.99**	**66**	*i*/*eP*		**P**	**01 05 08.4**	**-1.1**
COFN				*eS*		**S**	**01 05 23.0**	**-0.5**
PYTN	**Playitas**	**1.23**	**51**	*i*/*eP*		**P**	**01 05 12.6**	**-0.2**
PYTN				*eS*		**S**	**01 05 30.9**	**+1.8**
CONN	**Concepcion**	**1.39**	**98**	*i*/*eP*		**P**	**01 05 12.8**	**-2.2**
CRZC	**La Cruz**	**1.62**	**119**	*eP*		**P**	**01 05 16.8**	**-1.3**
CNCH	**Conchagua**	**1.71**	**333**	*eP*		**P**	**01 05 19.1**	**-0.1**
CNCH				*eS*		**S**	**01 05 39.9**	**-0.1**
BLLM	**Bellamira**	**2.05**	**325**	*eP*		**P**	**01 05 24.6**	**+0.7**
BLLM				*eS*		**S**	**01 05 48.1**	**-0.2**
VCR	**Vista de Mar**	**2.12**	**139**	*eP*		**P**	**01 05 26.7**	**+1.8**
CAHU	**Cacacuatique**	**2.31**	**330**	*eP*		**P**	**01 05 28.2**	**+0.6**
JTS	**JuntasAbangare**	**2.51**	**125**	Pn		**P**	**01 05 27.5**	**-2.9**
	comp=N,3.4nm,0.3s,baz=292,slow=5.3,SNR=20							
JTS				Pg		**P**	**01 05 32.1**	**+1.8**
	comp=N,9.0nm,0.3s,baz=313,slow=19,SNR=26							
JTS				Sn		**S**	**01 06 01.4**	**+1.6**
	comp=N,13nm,0.3s,baz=306,slow=20,SNR=11							
JTS				Lg			01 06 04.3	
	comp=N,12nm,0.3s,baz=319,slow=19,SNR=9.1							
JTS				LR		LR	01 06 43.3	
	comp=N,256nm,21.1s,baz=338,slow=47							
SNVI	**San Vicente**	**2.55**	**317**	*eP*		**P**	**01 05 32.2**	**+1.2**
SNVI				*eS*		**S**	**01 06 01.3**	**+0.3**
JCR	**Jicaral**	**2.67**	**135**	*eP*		**P**	**01 05 31.6**	**-1.0**
LCBS	**La Ceiba**	**2.68**	**315**	*eP*		**P**	**01 05 32.5**	**-0.3**
LCBS				*eS*		**S**	**01 06 04.5**	**+0.4**
LFRS	**El Faro**	**2.72**	**313**	*eP*		**P**	**01 05 32.9**	**-0.4**
LFRS				*eS*		**S**	**01 06 04.8**	**-0.3**
CGA2	**Cerro Gallo 2**	**3.06**	**124**	*eP*		**P**	**01 05 37.9**	**-0.2**
PRS1	**Puriscal**	**3.20**	**123**	*eP*		**P**	**01 05 41.6**	**+1.6**
SBLS	**San Blas**	**3.27**	**310**	*eP*		**P**	**01 05 42.1**	**+1.1**
LAJ	**Bijagual**	**3.42**	**123**	*eP*		**P**	**01 05 40.8**	**-2.4**
TRTC	**Tortuguero**	**3.46**	**109**	*eP*		**P**	**01 05 43.0**	**-0.7**
LCR2	**La Lucha 2**	**3.59**	**124**	*i*/*eP*		**P**	**01 05 45.5**	**0.0**
ICR	**Volcan Irazu**	**3.61**	**119**	*eP*		**P**	**01 05 47.4**	**+1.7**
URSC	**Urasca**	**3.72**	**120**	*eP*		**P**	**01 05 47.8**	**+0.5**
ROSC	**El Rosal**	**14.31**	**118**	LR		LR	01 13 06.5	
	comp=N,77nm,19.5s,baz=144,slow=36							
TXAR	**Lajitas Array**	**23.37**	**321**	P		**P**	**01 09 56.1**	**+2.2**
	comp=N,1.7nm,0.6s,mb3.5,baz=142,slow=10,SNR=25							
MIAR	**Mount Ida**	**23.46**	**346**	*eP*		**P**	**01 09 54.6**	**-0.1**
	comp=N,4.1nm,0.8s,mb3.8							
WVT	**Waverly**	**24.28**	**358**	P		**P**	**01 10 02.8**	**+0.1**
	comp=N,1.4nm,0.7s,mb3.4							
WMOK	**Wichita Mounta**	**25.26**	**337**	*eP*		**P**	**01 10 12.6**	**+0.5**
	comp=N,14nm,1.0s,mb4.4							
KSU1	**Kansas State U**	**28.54**	**344**	*eP*		**P**	**01 10 41.2**	**-0.8**
ANMO	**Albuquerque**	**29.07**	**326**	*eP*		**P**	**01 10 53.4**	**+6.7**
	comp=N,1.0nm,0.7s,mb3.5							
PDAR	**Pinedale Array**	**36.58**	**332**	P		**P**	**01 11 52.6**	**+0.9**
	comp=N,0.7nm,0.8s,mb3.7,baz=124,slow=11,SNR=6.9							
HWUT	**Hardware Ranch**	**36.68**	**329**	*eP*		**P**	**01 11 54.4**	**+1.8**
	comp=N,4.5nm,0.9s,mb4.4							
ULM	**Lac du Bonnet**	**39.07**	**351**	P		**P**	**01 12 11.1**	**-1.3**
	comp=N,2.2nm,0.6s,mb4.1,baz=174,slow=6.5,SNR=4.5							
MCMT	**McKenzie Canyo**	**39.69**	**331**	*eP*		**P**	**01 12 19.0**	**+1.3**
FCC	**Fort Churchill**	**47.22**	**355**	*eP*		**P**	**01 13 13.4**	**-5.0**
	comp=N,4.2nm,1.2s,mb4.0							
YKA	**Yellowknife Ar**	**54.39**	**345**	P		**P**	**01 14 11.2**	**-1.4**
	comp=N,1.3nm,0.8s,mb4.0,baz=140,slow=7.5,SNR=33							
YKA				PcP		PcP	01 15 15.2	-0.2
	comp=N,0.2nm,0.6s,baz=143,slow=4.2,SNR=5.6							
YKA	**Yellowknife Ar**	**54.39**	**345**	P		**P**	**01 14 11.2**	**-1.4**
YKA				PcP		PcP	01 15 15.2	-0.2
INK	**Inuvik**	**63.99**	**343**	P		**P**	**01 15 17.9**	**-0.8**
	comp=N,0.9nm,0.9s,mb3.6,baz=107,slow=7.1,SNR=5.2							
ILAR	**Eielson Array**	**66.82**	**336**	P		**P**	**01 15 35.8**	**-1.2**
	comp=N,0.6nm,0.9s,mb3.4,baz=114,slow=4.6,SNR=6.3							

*IDC **18** 01:17:34.2±4.1, 16.38S×178.77W, mb4.1/5, mb1 4.3/5, mb1mx4.1/13, Error ellipse: s-maj=175.0km s-min=33.3km az=139.0*

ISC 18 01:17:39.0±3.5, **16.2S**±0.8×**179.1W**±0.7, **h33**km, **n7,** σ0§**41**/**7**, **mb4.0**/5, **Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**38.95**	**239**	P		**P**	**01 25 03.7**	**0.0**
	2.9nm,0.6s,mb4.2,baz=84,slow=12,SNR=5.2							
WB2	**Warramunga Arr**	**44.34**	**258**	*eP*		**P**	**01 25 48.5**	**+0.4**
WRA	**Warramunga Arr**	**44.35**	**258**	P		**P**	**01 25 48.6**	**+0.4**
	0.4nm,0.3s,mb3.6,baz=90,slow=7.9,SNR=19							
AS12	**Alice Springs**	**44.68**	**253**	*eP*		**P**	**01 25 50.7**	**-0.1**
	5.0nm,0.5s,mb4.6							
ASAR	**Alice Springs**	**44.68**	**253**	P		**P**	**01 25 50.8**	**0.0**
	7.6nm,0.5s,mb4.8,baz=89,slow=8.1,SNR=71							
FITZ	**Fitzroy Crossi**	**52.71**	**259**	P		**P**	**01 26 52.1**	**-0.8**
	0.7nm,0.3s,mb4.1,baz=90,slow=4.0,SNR=5.5							
ILAR	**Eielson Array**	**84.33**	**13**	P		**P**	**01 30 08.7**	**0.0**
	0.2nm,0.4s,mb3.6,baz=232,slow=5.0,SNR=5.5							

*SOF **18** 01:28:44.1, 40.27N×24.05E, MD2.9*
*NEIC **18** 01:28:47.0, 40.33N×24.00E, h29km, MD3.2(ATH), After ATH.*
*ATH **18** 01:28:47.0, 40.33N×24.00E, h29km±2km, MD3.2/4*
*THE **18** 01:28:48.3, 40.31N×23.95E, h1km, ML3.0*

ISC 18 01:28:46.9±0.3, **40.31N**±0.02×**23.99E**±0.03, **h10**km, **n32,** σ0§**97**/**42**, **1D, Greece**

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
OUR	**Ouranopolis**	**0.03**	**342**	*eP*g		**Pg**	**01 28 50.1**	**+1.2**
PLG	**Polygyros**	**0.42**	**280**	*i*/*iP*B		**Pb**	**01 28 56.3**	**+0.2**
PLG				*eS*B		**Sb**	**01 29 02.0**	**-0.2**
PAIG	**Paliouri**	**0.45**	**213**	*eP*g		**Pg**	**01 28 56.7**	**+0.6**
PAIG				*eS*g		**Sg**	**01 29 03.2**	**+1.1**
SOH	**Sokhos**	**0.71**	**317**	*eP*g		**Pg**	**01 29 01.4**	**+0.1**
SOH				*eS*g		**Sg**	**01 29 10.3**	**-0.4**
THE	**Thessaloniki**	**0.85**	**293**	*eP*g		**Pg**	**01 29 03.5**	**-0.5**
SRS	**Serrai**	**0.87**	**339**	*eP*g		**Pg**	**01 29 04.2**	**-0.1**
SRS				*eS*g		**Sg**	**01 29 16.2**	**+0.3**
LOS	**Limnos**	**0.91**	**114**	*eP*g		**Pg**	**01 29 04.9**	**-0.3**
LIA	**Limnos Island**	**1.00**	**114**	*eP*N		**Pn**	**01 29 06.5**	**-0.4**
NVR	**Nevrokopi**	**1.05**	**355**	*eP*N		**Pn**	**01 29 07.2**	**-0.4**
NVR				*eS*N		**Sn**	**01 29 20.5**	**-1.8**
XOR	**Xorichti**	**1.12**	**214**	*eP*g		**Pg**	**01 29 08.8**	**-0.6**
AOS	**Alonnisos**	**1.14**	**184**	*eP*g		**Pg**	**01 29 08.8**	**-0.9**
NEO	**Neokhori**	**1.16**	**211**	*eP*N		**Pn**	**01 29 08.8**	**-0.4**
LIT	**Litokhoron**	**1.17**	**260**	*eP*g		**Pg**	**01 29 09.2**	**-1.1**
LIT				*eS*g		**Sg**	**01 29 25.5**	**-0.5**
KNT	**Kendrikon**	**1.20**	**316**	*eP*g		**Pg**	**01 29 09.9**	**-1.0**
KNT				*eS*g		**Sg**	**01 29 25.9**	**-0.9**
MMB	**Musomiste**	**1.30**	**351**	*i P*		**Pb**	**01 29 10.0**	**-1.0**
GRG	**Griva**	**1.38**	**299**	*eP*b		**Pb**	**01 29 13.2**	**+0.9**
GRG				*eS*b		**Sb**	**01 29 31.6**	**+1.7**
RDO	**Rodhopi**	**1.44**	**54**	*eP*B		**Pb**	**01 29 12.4**	**-1.1**
RZN	**Rozhen**	**1.49**	**21**	*i P*		**Pn**	**01 29 14.0**	**+0.1**
ALN	**Alexandroupoli**	**1.67**	**69**	*eP*b		**Pb**	**01 29 18.6**	**+1.2**
ALN				*eS*b		**Sb**	**01 29 40.7**	**+2.3**
KZN	**Kozani**	**1.70**	**271**	*eP*N		**Pn**	**01 29 18.0**	**+1.1**
KKB	**Krupnik**	**1.71**	**336**	*i P*		**Pn**	**01 29 17.0**	**0.0**
KDZ	**Kurdzhali**	**1.72**	**38**	*i P*		**Pn**	**01 29 16.0**	**-1.2**
AGG	**Agios Georgios**	**1.81**	**226**	*eP*b		**Pb**	**01 29 18.6**	**-1.2**
LKR	**Lokris**	**1.82**	**205**	*eP*N		**Pn**	**01 29 18.1**	**-0.6**
PLD	**Plovdiv**	**1.88**	**16**	*i P*		**Pn**	**01 29 20.0**	**+0.6**
PRK	**Paraskevi**	**2.05**	**120**	*eP*B		**Pb**	**01 29 22.1**	**-1.7**
FNA	**Florina**	**2.05**	**284**	*eP*n		**Pn**	**01 29 48.3**	**+0.4**
FNA				*eS*n		**Sn**	**01 29 48.3**	**+0.4**
DIM	**Dimitrovgrad**	**2.10**	**33**	*i P*		**Pn**	**01 29 25.0**	**+2.4**
EVR	**Evrytania**	**2.18**	**231**	*eP*N		**Pn**	**01 29 24.0**	**+0.1**
PGB	**Panagyurishte**	**2.25**	**3**	*i P*		**Pn**	**01 29 25.0**	**+0.2**
VTS	**Vitosha**	**2.36**	**346**	*i P*		**Pn**	**01 29 26.5**	**+0.1**
LKD	**Levkas**	**3.04**	**239**	*eP*n		**Pn**	**01 29 37.7**	**+1.7**

*NEIC **18** 01:44:39.7, 40.33N×23.85E, h38km, MD2.8(ATH), After ATH.*
*ATH **18** 01:44:39.7, 40.33N×23.85E, h38km, MD2.8/3*
*THE **18** 01:44:40.3, 40.30N×23.92E, h5km, ML2.4*

ISC 18 01:44:39.2±0.5, **40.31N**±0.03×**23.94E**±0.04, **h12**km±3km, **n17,** σ0§**54**/**24**, **1D, Greece**

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
OUR	**Ouranopolis**	**0.04**	**54**	*eP*g		**Pg**	**01 44 41.7**	**+0.2**
OUR				*eS*g		**Sg**	**01 44 42.8**	**-0.2**
PLG	**Polygyros**	**0.38**	**280**	*i*/*iP*B		**Pb**	**01 44 47.9**	**+0.5**
PLG				*eS*B		**Sb**	**01 44 53.8**	**+0.9**
PAIG	**Paliouri**	**0.43**	**207**	*eP*g		**Pg**	**01 44 48.3**	**+0.3**
PAIG				*eS*g		**Sg**	**01 44 54.1**	**+0.2**
SOH	**Sokhos**	**0.68**	**319**	*eP*g		**Pg**	**01 44 53.3**	**+0.4**
SOH				*eS*g		**Sg**	**01 45 02.4**	**+0.4**
THE	**Thessaloniki**	**0.81**	**294**	*eP*g		**Pg**	**01 44 55.6**	**+0.1**
SRS	**Serrai**	**0.85**	**342**	*eP*g		**Pg**	**01 44 56.0**	**-0.3**
SRS				*eS*g		**Sg**	**01 45 07.7**	**0.0**
NVR	**Nevrokopi**	**1.04**	**357**	*eP*N		**Pn**	**01 44 59.0**	**-0.6**
NEO	**Neokhori**	**1.14**	**209**	*eP*N		**Pn**	**01 45 00.5**	**-0.5**
KNT	**Kendrikon**	**1.16**	**318**	*eP*g		**Pg**	**01 45 01.9**	**-0.6**
KNT				*eS*g		**Sg**	**01 45 17.9**	**-0.1**
MMB	**Musomiste**	**1.29**	**353**	*i P*		**Pb**	**01 45 02.0**	**-1.0**
GRG	**Griva**	**1.33**	**300**	*eP*b		**Pb**	**01 45 04.6**	**+0.8**
RDO	**Rodhopi**	**1.48**	**55**	*eP*B		**Pb**	**01 45 06.2**	**0.0**
RZN	**Rozhen**	**1.50**	**23**	*eP*		**Pn**	**01 45 06.0**	**-0.1**
KKB	**Krupnik**	**1.69**	**338**	*i P*		**Pn**	**01 45 08.0**	**-0.8**
ALN	**Alexandroupoli**	**1.71**	**69**	*eP*b		**Pb**	**01 45 10.6**	**+0.5**
ALN				*eS*b		**Sb**	**01 45 32.4**	**+0.8**
KDZ	**Kurdzhali**	**1.75**	**39**	*i P*		**Pn**	**01 45 10.0**	**+0.3**
AGG	**Agios Georgios**	**1.78**	**224**	*eP*b		**Pb**	**01 45 10.3**	**-1.2**

BUC 18 01:49:02.8±1.5, **46.95N**×**27.75E**, **h8**km±16km, **MD3.6**/2, **5C-5D, Error ellipse: s-maj=14.1km s-min=10.3km az=68.0, Romania**

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
VRI	**Vrincioaia**	**1.29**	**214**	*i*/*eP*		**Pb**	**01 49 27.5**	**+0.6**
VRI	**Vrincioaia**	**1.29**	**214**	*i*/*iP*		**Pb**	**01 49 27.4**	**+0.5**
VRI				*i S*		**Sb**	**01 49 43.8**	**+0.3**
VRI	**Vrincioaia**	**1.29**	**214**	*i*/*iP*		**Pb**	**01 49 27.4**	**+0.5**
VRI				*i S*		**Sb**	**01 49 43.8**	**+0.3**
CFR	**Carcaliu**	**1.79**	**171**	*i*/*eP*		**Pn**	**01 49 34.9**	**+0.6**
CFR	**Carcaliu**	**1.79**	**171**	*i*/*iP*		**Pn**	**01 49 34.9**	**+0.6**
CFR				*i S*		**Sn**	**01 49 57.7**	**+0.3**
CFR	**Carcaliu**	**1.79**	**171**	*i*/*iP*		**Pn**	**01 49 34.9**	**+0.6**
CFR				*i S*		**Sn**	**01 49 57.7**	**+0.3**
BURAR	**Bucovina Array**	**1.85**	**292**	*i*/*iP*		**Pn**	**01 49 34.6**	**-0.6**
BURAR				*i S*		**Sn**	**01 50 00.4**	**+1.5**
BURAR	**Bucovina Array**	**1.85**	**292**	*i*/*iP*		**Pn**	**01 49 34.6**	**-0.6**
BURAR				*i S*		**Sn**	**01 50 00.4**	**+1.5**
MLR	**Muntele Rosu**	**1.92**	**221**	*i*/*iP*		**Pn**	**01 49 37.9**	**+1.7**
MLR				*i S*		**Sn**	**01 50 03.6**	**+2.8**
HARR	**Harsova**	**2.26**	**177**	*i*/*iP*		**Pn**	**01 49 44.7**	**+3.6**

*IDC **18** 02:00:44.4±0.6, 6.79N×77.78W, mb4.2/18, mb1 4.4/23, mb1mx4.4/25, ML4.1/3, MS3.8/5, Ms1 3.8/5, ms1mx3.4/19, Error ellipse: s-maj=19.6km s-min=14.3km az=51.0*
*NEIC **18** 02:00:50.5±0.8, 6.94N×77.83W, h39km±7km, mb4.4/15, Error ellipse: s-maj=8.5km s-min=6.2km az=55.0*
*BJI **18** 02:00:52.5, 6.90N×77.80W, h39km*
*CASC **18** 02:00:53.5±1.9, 7.16N×78.02W, h27km±247km, MD4.8, MW4.4, mb4.4(NEIC)*

ISC 18 02:00:48.6±0.6, **6.97N**±0.05×**77.82W**±0.04, **h34**km±6km, **n109,** σ0§**88**/**109**, **mb4.4**/61, **MS3.8**/3, **3C-4D, Near west coast of Colombia**

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
AZU	**Azuero**	**2.57**	**289**	*i*/*iP*		**P**	**02 01 29.6**	**+0.9**
AZU				*eS*		**S**	**02 01 57.8**	**-1.3**
UPA	**Univ. de Panam**	**2.62**	**320**	*i*/*iP*		**P**	**02 01 29.6**	**+0.1**
UPA				*eS*		**S**	**02 02 00.6**	**+0.2**
ACH	**Altos**	**2.68**	**309**	*i*/*iP*		**P**	**02 01 31.1**	**+0.7**
ACH				*eS*		**S**	**02 02 00.6**	**-1.4**
JEF	**Cerro Jefe**	**2.71**	**326**	*i*/*iP*		**P**	**02 01 31.1**	**+0.3**
ROSC	**El Rosal**	**4.06**	**121**	Pn		**P**	**02 01 50.9**	**+1.0**
	12nm,0.3s,baz=134,slow=21,SNR=12							
ROSC				Lg			02 02 56.7	
	9.8nm,0.3s,baz=69,slow=21,SNR=5.1							
PTP1	**Petroterminal**	**4.73**	**285**	*i*/*eP*		**P**	**02 02 06.8**	**+7.4**
DVD	**David**	**4.81**	**288**	*i*/*eP*		**P**	**02 02 01.2**	**+0.5**
DVD				*eS*		**S**	**02 02 52.8**	**-3.2**
BUS	**Buena Vista**	**6.41**	**294**	*eP*		**P**	**02 02 24.2**	**+1.0**
URSC	**Urasca**	**6.54**	**296**	*eP*		**P**	**02 02 24.3**	**-0.7**
ICR	**Volcan Irazu**	**6.65**	**297**	*eP*		**P**	**02 02 27.5**	**+1.0**
LCR2	**La Lucha 2**	**6.71**	**295**	*i*/*eP*		**P**	**02 02 27.8**	**+0.5**
OTAV	**Otavalo**	**6.72**	**185**	*eP*n		**P**	**02 02 26.4**	**-1.1**
	6.2nm,0.6s							
OTAV				*eS*n		**S**	**02 03 38.7**	**-5.0**
TRTC	**Tortuguero**	**6.84**	**302**	*eP*		**P**	**02 02 24.6**	**-4.5**
LAJ	**Bijagual**	**6.86**	**295**	*eP*		**P**	**02 02 36.6**	**+7.1**
PRS1	**Puriscal**	**7.08**	**295**	*eP*		**P**	**02 02 33.4**	**+0.8**
VPS2	**Volcan Poas 2**	**7.10**	**297**	*eP*		**P**	**02 02 33.1**	**+0.3**
CGA2	**Cerro Gallo 2**	**7.23**	**295**	*eP*		**P**	**02 02 35.1**	**+0.5**
SDV	**Santo Domingo**	**7.37**	**75**	Pn		**P**	**02 02 35.5**	**-1.0**
	3.8nm,0.3s,baz=264,slow=10,SNR=18							
SDV				Sn		**S**	**02 03 59.6**	**-0.3**
	5.3nm,0.3s,baz=252,slow=20,SNR=2.9							
SDV				LR		LR	02 05 38.7	
	comp=Z,839nm,18.6s,baz=12,slow=40							
JCR	**Jicaral**	**7.76**	**292**	*eP*		**P**	**02 02 46.1**	**+4.1**
JTS	**JuntasAbangare**	**7.78**	**296**	Pn		**P**	**02 02 42.4**	**+0.1**
	1.6nm,0.3s,baz=121,slow=3.8,SNR=14							
JTS				LR		LR	02 05 44.8	
	comp=Z,591nm,20.9s,baz=83,slow=38							
JTS	**JuntasAbangare**	**7.78**	**296**	*eP*		**P**	**02 02 42.1**	**-0.2**
	0.7nm,0.6s							
PCRV	**Puerto La Cruz**	**13.42**	**75**	Pn		**P**	**02 03 59.0**	**-0.2**
	1.3nm,0.3s,baz=192,slow=9.3,SNR=5.6							
SJG	**San Juan**	**15.87**	**45**	Pn		**P**	**02 04 28.5**	**-2.7**
	1.5nm,0.3s,baz=249,slow=18,SNR=3.2							
SJG	**San Juan**	**15.87**	**45**	*eP*		**P**	**02 04 26.6**	**-4.7**
	27nm,9s							
ARE	**Arequipa**	**24.11**	**165**	*eP*		**P**	**02 06 05.0**	**+2.5**
LPAZ	**La Paz**	**25.02**	**158**	P		**P**	**02 06 09.7**	**-1.7**
	1.8nm,0.8s,mb3.6,baz=335,slow=11,SNR=10							
OXF	**Oxford**	**29.42**	**340**	P		**P**	**02 06 50.2**	**-1.0**
	12nm,0.8s,mb4.7							
WVT	**Waverly**	**30.43**	**344**	*eP

VIVF	**Saint-Julien-l**	**79.80**	**46**	*e*P		**P**	**02 12 56.2**	**+0.9**
	20nm,1.2s,mb4.6							
MEZF	**Maizieres J'vi**	**80.10**	**42**	*e*P		**P**	**02 12 56.2**	**-0.6**
SMRF	**Simiane la Rot**	**80.45**	**47**	*e*P		**P**	**02 12 58.6**	**-0.2**
	8.5nm,1.0s,mb4.3							
ORIF	**Oris-en-Rattie**	**80.66**	**46**	*e*P		**P**	**02 13 00.1**	**+0.3**
	18nm,0.9s,mb4.7							
CABF	**La Chapelle**	**80.79**	**44**	*e*P		**P**	**02 13 00.3**	**-0.2**
	6.5nm,0.8s,mb4.3							
HAU	**Haudompre**	**80.96**	**43**	*e*P		**P**	**02 13 01.3**	**-0.1**
LMR	**La Mourre**	**81.14**	**47**	*e*P		**P**	**02 13 02.6**	**+0.2**
	4.8nm,0.7s,mb4.2							
FRF	**La Foret Royal**	**81.23**	**47**	*e*P		**P**	**02 13 03.1**	**+0.2**
	11nm,1.0s,mb4.4							
LPL	**La Plagne**	**81.26**	**45**	*e*P		**P**	**02 13 04.1**	**+1.1**
	5.0nm,0.8s,mb4.2							
LPG	**La Plagne**	**81.27**	**45**	*e*P		**P**	**02 13 04.3**	**+1.3**
	4.3nm,0.8s,mb4.1							
HINF	**Hinteralfeld**	**81.30**	**43**	*e*P		**P**	**02 13 02.9**	**-0.2**
CDF	**Champ du Feu**	**81.58**	**42**	*e*P		**P**	**02 13 04.8**	**+0.2**
SBF	**Sospel**	**81.80**	**47**	*e*P		**P**	**02 13 06.2**	**+0.4**
	21nm,1.0s,mb4.7							
NB2	**NORSAR Subarra**	**83.48**	**29**	P		**P**	**02 13 15.0**	**+1.0**
	1.2nm,0.7s,mb4.0,baz=270,slow=5.0							
NOA	**NORSAR Array B**	**83.48**	**29**	P		**P**	**02 13 15.3**	**+1.3**
	2.9nm,0.9s,mb4.3,baz=273,slow=5.4,SNR=5.4							
HFS	**Hagfors**	**84.76**	**30**	P		**P**	**02 13 20.8**	**+0.3**
	9.1nm,1.2s,mb4.8,baz=202,slow=8.0,SNR=3.6							
BRG	**Berggiesshubel**	**85.76**	**39**	*e*P		**P**	**02 13 27.4**	**+1.8**
	3.0nm,0.9s,mb4.5							
BRG				*e*			02 13 32.5	
GERES	**GERESS Array B**	**85.81**	**41**	P		**P**	**02 13 26.7**	**+0.8**
	1.1nm,0.8s,mb4.2,baz=270,slow=2.7,SNR=9.5							
ARCES	**ARCESS Array B**	**88.14**	**20**	P		**P**	**02 13 37.4**	**+0.6**
	1.0nm,0.5s,mb4.3,baz=304,slow=4.4,SNR=8.5							
FINES	**FINESS Array B**	**90.50**	**28**	P		**P**	**02 13 48.4**	**+0.3**
	1.9nm,1.0s,mb4.4,baz=270,slow=9.5,SNR=3.9							
WMQ	**Urumqi**	**127.77**	**13**	*e*PKP	PKPdf		02 19 52.5	+1.3
AS12	**Alice Springs**	**145.32**	**238**	*e*P	PKPdf		02 20 24.8	+1.0
	2.5nm,0.5s							
AS12				*i*			02 20 30.1	
ASAR	**Alice Springs**	**145.32**	**238**	PKPbc	PKPbc		02 20 24.2	-0.1
	3.8nm,0.6s,baz=116,slow=3.5,SNR=16							
WB2	**Warramunga Arr**	**146.24**	**244**	*e*P	PKPdf		02 20 27.0	+1.5
WRA	**Warramunga Arr**	**146.25**	**244**	PKPbc	PKPbc		02 20 26.9	+0.3
	2.8nm,0.7s,baz=102,slow=2.7,SNR=14							
CMAR	**Chiang Mai Arr**	**154.53**	**7**	PKPbc	PKPdf		02 20 48.5	+10
	1.0nm,0.3s,baz=328,slow=2.4,SNR=4.6							

MOS ***18*** *02:09:12.7±0.8,80.78N×121.40E,h10km,mb4.0/8,Error ellipse: s-maj=85.8km s-min=21.0km az=87.8*
IDC ***18*** *02:09:13.3±0.9,80.95N×121.21E,mb3.9/13,mb1 4.1/14, mb1mx4.0/25,ML3.3/1,MS3.5/9,Ms1 3.5/9,ms1mx3.2/24, Error ellipse: s-maj=33.7km s-min=13.0km az=162.0*
NEIC ***18*** *02:09:15.1±0.4,81.00N×120.89E,h10km,mb4.3/17,Error ellipse: s-maj=13.0km s-min=5.8km az=162.0*

ISC 18 02:09:13.0±0.4,80.91N±0.08×121.1E±0.3,h10km,n56, σ0§90/53,mb4.1/28,MS3.5/10,East of Severnaya Zemlya

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBS	**Kingsbay**	**16.56**	**320**	P	**P**	**02 13 10.4**	**+4.2**
	16nm,1.1s						
SPITS	**Spitsbergen Ar**	**16.72**	**316**	Pn	**P**	**02 13 07.3**	**-1.1**
	0.1nm,0.3s,baz=51,slow=12,SNR=5.0						
SPITS	**Spitsbergen Ar**	**16.72**	**316**	Pn	**P**	**02 13 07.3**	**-1.1**
ARCES	**ARCESS Array B**	**23.26**	**298**	P	**P**	**02 14 20.4**	**-0.2**
	2.2nm,0.8s,mb3.6,baz=24,slow=11,SNR=3.0						
ARCES	**ARCESS Array B**	**23.26**	**298**	P	**P**	**02 14 20.5**	**-0.2**
ARCES				pmax	pmax		
	comp=Z,2.0nm,0.8s						
BOD	**Bodaibo**	**23.30**	**190**	*e*P	**P**	**02 14 20.5**	**-0.7**
RES	**Resolute Bay**	**23.43**	**23**	*e*P	**P**	**02 14 21.8**	**-0.4**
RES				*e*		02 14 30.3	
RES				*e*PcP	PcP	02 18 06.3	-4.0
IMA	**Indian Mountai**	**24.93**	**75**	*e*P	**P**	**02 14 37.8**	**+0.8**
	comp=Z,27nm,1.1s,mb4.7						
IMA				*e*		02 14 46.6	
INK	**Inuvik**	**25.73**	**56**	P	**P**	**02 14 43.8**	**-0.6**
	comp=Z,1.6nm,0.7s,mb3.7,baz=360,slow=8.2,SNR=5.5						
INK				PP	PP	02 15 18.2	-6.3
	comp=Z,2.1nm,0.6s,baz=344,slow=12,SNR=4.3						
INK	**Inuvik**	**25.73**	**56**	P	**P**	**02 14 43.8**	**-0.6**
INK						02 15 18.2	
INK				pmax	pmax		
	comp=Z,2.0nm,0.7s						
INK				pmax	pmax		
	comp=Z,2.0nm,0.6s						
INK	**Inuvik**	**25.73**	**56**	*e*P	**P**	**02 14 45.4**	**+0.9**
	comp=Z,8.5nm,1.3s,mb4.1						
INK				*e*		02 14 54.2	
INK				PP	PP	02 15 18.2	-6.3
SUMG	**Summit**	**26.30**	**346**	P	**P**	**02 14 49.6**	**-0.1**
SUMG				*e*		02 14 58.9	
COLA	**College**	**26.93**	**70**	P	**P**	**02 14 57.5**	**+1.9**
	comp=Z,3.1nm,0.8s,mb3.9						
ILAR	**Eielson Array**	**27.17**	**70**	P	**P**	**02 14 58.6**	**+0.8**
	comp=Z,1.7nm,0.8s,mb3.6,baz=339,slow=9.4,SNR=26						
ILAR				LR	LR	02 25 36.2	
	comp=Z,59nm,20.5s,MS3.1,baz=359,slow=36						
ILAR	**Eielson Array**	**27.17**	**70**	P	**P**	**02 14 58.6**	**+0.8**
ILAR				pmax	pmax		
	comp=Z,2.0nm,0.8s						
ILAR				MLR	MLR		
	comp=Z,59nm,20.5s						
FINES	**FINESS Array B**	**30.78**	**291**	LR	LR	02 31 28.0	
	comp=Z,31nm,20.5s,MS3.0,baz=8.2,slow=43						
BRVK	**Borovoye**	**32.03**	**242**	*e*P	**P**	**02 15 40.4**	**-0.9**
BVAR	**Borovoye Array**	**32.05**	**242**	P	**P**	**02 15 41.8**	**+0.5**
	comp=Z,1.1nm,0.7s,mb3.8,baz=22,slow=7.8,SNR=6.4						
BVAR				LR	LR	02 30 56.7	
	comp=Z,82nm,19.0s,MS3.4,baz=320,slow=41						
BVAR	**Borovoye Array**	**32.05**	**242**	P	**P**	**02 15 41.8**	**+0.5**
BVAR				LR	LR	02 30 56.6	
ZRNK	**Zerenda**	**32.31**	**243**	*e*P	**P**	**02 15 43.2**	**-0.5**
YKA	**Yellowknife Ar**	**33.61**	**44**	P	**P**	**02 15 53.7**	**-1.2**
	comp=Z,0.6nm,0.7s,mb3.6,baz=347,slow=8.6,SNR=15						
YKA				LR	LR	02 29 42.3	
	comp=Z,31nm,18.2s,MS3.1,slow=37						
YKA	**Yellowknife Ar**	**33.61**	**44**	P	**P**	**02 15 53.7**	**-1.2**
YKA				pmax	pmax		
	comp=Z,1.0nm,0.7s						
YKA				MLR	MLR		
	comp=Z,31nm,18.3s						
YKA	**Yellowknife Ar**	**33.61**	**44**	P	**P**	**02 15 53.7**	**-1.2**
YKA				LR	LR	02 29 42.3	
DLBC	**Dease Lake**	**35.65**	**59**	*e*P	**P**	**02 16 09.1**	**-3.4**
MKAR	**Makanchi Array**	**36.63**	**226**	P	**P**	**02 16 19.9**	**-0.9**
	comp=Z,0.7nm,0.8s,mb3.6,baz=344,slow=8.8,SNR=5.9						
MKAR				LR	LR	02 32 28.2	
	comp=Z,38nm,18.8s,MS3.2,baz=239,slow=38						
MKAR	**Makanchi Array**	**36.63**	**226**	P	**P**	**02 16 19.9**	**-0.9**
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.8s						
MKAR				MLR	MLR		
	comp=Z,39nm,18.8s						
MKAR	**Makanchi Array**	**36.63**	**226**	P	**P**	**02 16 19.9**	**-0.9**
MKAR				LR	LR	02 32 28.2	
FCC	**Fort Churchill**	**39.21**	**28**	*e*P	**P**	**02 16 41.8**	**-0.5**
	comp=Z,5.3nm,0.9s,mb4.3						
FCC				*e*		02 16 49.6	
AKASG	**Malin Array Be**	**40.66**	**283**	P	**P**	**02 16 53.9**	**-0.5**
	comp=Z,1.4nm,0.5s,mb3.9,baz=14,slow=8.8,SNR=13						
KWP	**Kalwaria**	**42.70**	**288**	*e*P	**P**	**02 17 11.6**	**+0.7**
	comp=Z,9.3nm,0.8s,mb4.6						
DPC	**Dobruska-Polom**	**42.94**	**295**	*e*P	**P**	**02 17 13.5**	**+0.6**
MORC	**Moravsky Berou**	**43.32**	**293**	*e*P	**P**	**02 17 16.2**	**+0.2**
	comp=Z,2.3nm,0.9s,mb3.9						
KHC	**Kasperske Hory**	**44.53**	**297**	*e*P	**P**	**02 17 19.9**	**-5.9**
GERES	**GERESS Array B**	**44.79**	**297**	P	**P**	**02 17 28.8**	**+0.9**
	comp=Z,0.8nm,0.5s,mb3.8,baz=18,slow=8.4,SNR=9.7						
GERES	**GERESS Array B**	**44.79**	**297**	P	**P**	**02 17 28.8**	**+0.9**
GERES				pmax	pmax		
	comp=Z,1.0nm,0.5s						
PSZ	**Piszkesteto**	**44.79**	**291**	*e*P	**P**	**02 17 27.8**	**-0.2**
	comp=Z,3.0nm,0.6s,mb4.3						
KIV	**Kislovodsk**	**45.10**	**267**	*e*P	**P**	**02 17 31.1**	**+0.7**
KIV				pmax	pmax		
	comp=Z,4.0nm,0.7s,mb4.4						
KIV				MLR	MLR		
	comp=Z,100nm,20.0s,MS3.7						
KIV				MLR	MLR		
	comp=N,30nm,17.0s,MS3.8						
KIV				MLR	MLR		
	comp=E,100nm,20.0s,MS3.8						
KIV	**Kislovodsk**	**45.10**	**267**	*e*P	**P**	**02 17 31.6**	**+1.1**
	comp=E,5.3nm,0.6s,mb4.5						
MLR	**Muntele Rosu**	**46.24**	**284**	P	**P**	**02 17 41.0**	**+1.6**
	comp=E,1.8nm,0.8s,mb4.1,baz=165,slow=12,SNR=6.0						
MLR				LR	LR	02 40 06.2	
	comp=E,210nm,19.3s,MS4.1,baz=299,slow=40						
MLR	**Muntele Rosu**	**46.24**	**284**	P	**P**	**02 17 41.0**	**+1.6**
MLR				pmax	pmax		
	comp=Z,2.0nm,0.8s						
MLR				MLR	MLR		
	comp=Z,210nm,19.3s						
WALA	**Waterton Lakes**	**46.87**	**48**	*e*P	**P**	**02 17 44.9**	**+0.6**
	comp=Z,3.2nm,0.7s,mb4.4						
WALA				*e*		02 17 53.8	
NEW	**Newport**	**47.27**	**51**	P	**P**	**02 17 48.3**	**+0.7**
	comp=Z,3.6nm,1.0s,mb4.2,baz=337,slow=13,SNR=5.1						
NEW	**Newport**	**47.27**	**51**	P	**P**	**02 17 48.3**	**+0.8**
NEW				pmax	pmax		
	comp=Z,4.0nm,1.0s						
GNI	**Garni**	**48.49**	**264**	LR	LR	02 38 59.3	
	comp=Z,100nm,21.5s,MS3.8,baz=348,slow=37						
BOZ	**Bozeman (W)**	**50.50**	**46**	*e*P	**P**	**02 18 13.4**	**+0.9**
	comp=Z,3.4nm,1.0s,mb4.3						
BOZ				*e*		02 18 21.9	
BRTR	**Keskin Array B**	**50.67**	**275**	P	**P**	**02 18 14.2**	**+0.4**
	comp=Z,1.6nm,0.7s,mb4.1,baz=8.9,slow=5.3,SNR=10						
BRTR				PP		02 20 12.3	+1.5
	comp=Z,1.1nm,0.9s,slow=6.2,SNR=4.8						
THR	**Tehran**	**51.64**	**257**	LR	LR	02 42 18.6	
	comp=Z,40nm,18.4s,MS3.5,baz=248,slow=38						
HLID	**Hailey**	**52.23**	**49**	P	**P**	**02 18 26.6**	**+1.0**
	comp=Z,0.7nm,0.7s,mb3.7						
HLID				*e*		02 18 35.7	
RSSD	**Black Hills**	**52.83**	**40**	*e*P	**P**	**02 18 29.8**	**-0.4**
	comp=Z,1.9nm,0.7s,mb4.1						
PDAR	**Pinedale Array**	**53.58**	**45**	P	**P**	**02 18 34.9**	**-0.8**
	comp=Z,0.7nm,0.7s,mb3.7,baz=27,slow=3.3,SNR=7.8						
HWUT	**Hardware Ranch**	**54.49**	**47**	*e*P	**P**	**02 18 42.1**	**-0.3**
	comp=Z,3.7nm,1.0s,mb4.3						
PV01	**Paradox Valley**	**58.27**	**45**	*e*P	**P**	**02 19 09.8**	**+0.3**
PV01				*e*		02 19 18.4	
ANMO	**Albuquerque**	**61.65**	**44**	*e*P	**P**	**02 19 31.8**	**-0.9**
	comp=Z,1.6nm,0.7s,mb4.3						
ANMO				*e*		02 19 40.9	
WMOK	**Wichita Mounta**	**62.64**	**36**	P	**P**	**02 19 31.3**	**-8.1**
	comp=Z,1.5nm,0.6s,mb4.3						
MNTX	**Cornudas Mount**	**64.98**	**43**	*e*P	**P**	**02 19 51.7**	**-2.9**
	comp=Z,2.0nm,0.7s,mb4.3						
MNTX				*e*		02 20 02.4	
TXAR	**Lajitas Array**	**67.50**	**42**	P	**P**	**02 20 10.1**	**-0.7**
	comp=Z,2.0nm,0.8s,mb4.2,baz=15,slow=5.3,SNR=25						
TXAR				LR	LR	02 51 10.0	
	comp=Z,41nm,18.4s,MS3.7,baz=250,slow=37						

MOS ***18*** *02:10:18.8±1.0,5.07S×102.86E,h33km,mb4.5/5,Error ellipse: s-maj=39.1km s-min=13.2km az=114.0*
IDC ***18*** *02:10:19.8±0.6,5.29S×102.54E,h28km±2km,mb4.2/16, mb1 4.3/16,mb1mx4.2/20,MS3.5/3,Ms1 3.5/3, ms1mx3.0/17,Error ellipse: s-maj=28.9km s-min=8.7km az=47.0*
NEIC ***18*** *02:10:25.6±3.3,5.15S×102.75E,h77km±28km,mb4.7/9, Error ellipse: s-maj=27.2km s-min=6.7km az=51.0*

ISC 18 02:10:18.2±0.5,5.2S±0.1×102.7E±0.1,h28km,n56, σ1§09/49,mb4.5/28,MS3.8/4,Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BDT	**Bhumibol Dam**	**22.58**	**351**	P	**P**	**02 15 23.5**	**+5.5**
CMAR	**Chiang Mai Arr**	**23.78**	**351**	P	**P**	**02 15 30.7**	**+1.1**
	4.8nm,0.7s,mb4.0,baz=180,slow=8.9,SNR=16						
CMAR				sP		02 15 43.0	
	7.0nm,0.8s,baz=182,slow=8.8,SNR=5.5						
CMAR				LR	LR	02 25 27.9	
	comp=Z,64nm,18.2s,MS3.1,baz=190,slow=38						
NANT	**Nan**	**23.91**	**355**	P	**P**	**02 15 32.0**	**+1.1**
FITZ	**Fitzroy Crossi**	**25.82**	**122**	*e*P	**P**	**02 15 50.0**	**+0.8**
	3.9nm,0.6s,mb4.1						
FITZ	**Fitzroy Crossi**	**25.82**	**122**	P	**P**	**02 15 49.4**	**+0.2**
	2.0nm,0.6s,mb3.8,baz=340,slow=16,SNR=4.5						
WRA	**Warramunga Arr**	**34.08**	**118**	P	**P**	**02 17 02.3**	**-0.4**
	1.4nm,0.4s,mb4.3,baz=304,slow=9.2,SNR=29						
WRA				PcP	PcP	02 19 39.2	-0.8
	0.4nm,0.5s,baz=306,slow=2.8,SNR=3.2						
WRA				S	**S**	**02 22 28.6**	**+2.9**
	1.1nm,1.1s,baz=294,slow=16,SNR=4.4						
WRAB	**Tennant Creek**	**34.09**	**118**	*e*P	**P**	**02 17 01.4**	**-1.4**
	24nm,0.8s,mb5.2						
WB2	**Warramunga Arr**	**34.09**	**118**	*e*P	**P**	**02 17 02.2**	**-0.6**
AS12	**Alice Springs**	**35.22**	**125**	*e*P	**P**	**02 17 14.9**	**+2.5**
	4.1nm,0.4s,mb4.7						
ASAR	**Alice Springs**	**35.22**	**125**	P	**P**	**02 17 12.2**	**-0.3**
	0.8nm,0.4s,mb4.0,baz=297,slow=7.8,SNR=8.7						
ASAR				pP	pP	02 17 21.9	+1.1
	4.8nm,0.6s,baz=299,slow=7.9,SNR=16						
ASAR				PcP	PcP	02 19 42.1	-1.2
	0.8nm,0.8s,baz=338,slow=0.8,SNR=4.1						
ASAR				pPcP		02 19 56.2	
	0.9nm,0.6s,baz=319,slow=3.4,SNR=5.2						
ASAR				S	**S**	**02 22 47.3**	**+4.0**
	0.7nm,0.8s,baz=292,slow=15,SNR=2.9						
ASAR				LR	LR	02 30 43.1	
	comp=Z,57nm,18.5s,MS3.4,baz=116,slow=35						
LSA	**Lhasa**	**36.41**	**343**	*e*P	**P**	**02 17 23.5**	**+1.0**
	5.3nm,0.8s,mb4.5						
PKI	**Pulchoki**	**36.60**	**334**	*e*P	**P**	**02 17 24.5**	**+0.4**
	6.2nm,0.6s,mb4.6						
DMN	**Daman**	**36.77**	**333**	*e*P	**P**	**02 17 26.2**	**+0.7**
KKN	**Kakani**	**36.84**	**334**	*e*P	**P**	**02 17 26.7**	**+0.6**
	20nm,0.7s,mb5.0						
GKN	**Gorkha**	**37.31**	**333**	*e*P	**P**	**02 17 30.7**	**+0.6**
	20nm,0.7s,mb5.1						
KOLN	**Koldanda**	**37.59**	**332**	*e*P	**P**	**02 17 33.4**	**+1.0**
	25nm,0.9s,mb4.9						
CTA	**Charters Tower**	**44.83**	**113**	P	**P**	**02 18 33.0**	**+0.9**
	5.9nm,1.1s,mb4.3,baz=299,slow=10,SNR=2.6						
CTA				pP	pP	02 18 39.8	-0.6
	12nm,1.0s,baz=293,slow=14,SNR=3.1						
CTA				sP	sP	02 18 45.4	+1.5
	7.3nm,0.8s,baz=307,slow=6.5,SNR=5.4						
CTA	**Charters Tower**	**44.83**	**113**	P	**P**	**02 18 33.0**	**+0.9**
CTA				pP	pP	02 18 39.8	-0.6
CTA				sP	sP	02 18 45.4	+1.5
CTAO	**Charters Tower**	**44.83**	**113**	*e*P	**P**	**02 18 32.7**	**+0.6**
	9.4nm,0.8s,mb4.7						
STKA	**Stephens Creek**	**45.03**	**131**	P	**P**	**02 18 33.9**	**+0.4**
	4.8nm,0.5s,mb4.6,baz=313,slow=8.3,SNR=21						
STKA				sP	sP	02 18 45.8	+0.4
	13nm,0.6s,baz=299,slow=6.9,SNR=11						
STKA				LR	LR	02 39 28.2	
	comp=Z,73nm,18.2s,MS3.6,baz=17,slow=39						
SONM	**Songino Array**	**52.88**	**3**	P	**P**	**02 19 34.9**	**+0.9**
	8.9nm,0.8s,mb4.8,baz=188,slow=8.7,SNR=10						
SONM				sP	sP	02 19 47.3	+1.5
	4.0nm,0.5s,baz=186,slow=9.5,SNR=4.9						
SONM				PcP	PcP	02 20 41.7	-1.1
	2.0nm,0.5s,baz=194,slow=5.9,SNR=3.1						
ULN	**Ulaanbaatar**	**52.95**	**4**	*e*P	**P**	**02 19 34.9**	**+0.4**
	3.9nm,0.7s,mb4.5						
MKAR	**Makanchi Array**	**54.82**	**343**	P	**P**	**02 19 47.4**	**-0.8**
	6.0nm,0.5s,mb4.8,baz=144,slow=7.6,SNR=40						
MKAR				sP	sP	02 20 00.2	+0.2
	9.2nm,0.6s,baz=145,slow=8.2,SNR=17						
MKAR	**Makanchi Array**	**54.82**	**343**	*i* P	**P**	**02 19 47.2**	**-1.0**
MKAR				pmax	pmax		
	comp=Z,3.0nm,0.6s						
HIA	**Hailar**	**56.21**	**13**	P	**P**	**02 19 54.9**	**-3.3**
KURK	**Kurchatov**	**59.42**	**342**	P	**P**	**02 20 20.3**	**-0.4**
KURK				pmax	pmax		
	comp=Z,2.0nm,0.8s,mb4.2						
KURK	**Kurchatov**	**59.42**	**342**	*e*P	**P**	**02 20 20.0**	**-0.7**
BOD	**Bodaibo**	**63.45**	**7**	*e*P	**P**	**02 20 46.2**	**-1.6**
BOD				*e*		02 20 58.8	
VOSK	**Vostochnaya**	**63.64**	**339**	P	**P**	**02 20 47.4**	**-1.7**
VOSK				pmax	pmax		
	comp=Z,1.0nm,0.5s,mb4.1						
BVA0	**Borovoye Array**	**64.09**	**339**	*i* P	**P**	**02 20 50.7**	**-1.4**
BVAR	**Borovoye Array**	**64.09**	**339**	P	**P**	**02 20 50.6**	**-1.4**
	comp=Z,2.7nm,0.5s,mb4.6,baz=145,slow=9.1,SNR=28						
BVAR				sP	sP	02 21 03.2	-0.7
	comp=Z,2.7nm,0.6s,baz=144,slow=9.2,SNR=7.8						
BRVK	**Borovoye**	**64.16**	**339**	*e*P	**P**	**02 20 50.8**	**-1.7**
ZRNK	**Zerenda**	**64.54**	**338**	P	**P**	**02 20 53.4**	**-1.5**
ZRNK				pmax	pmax		
	comp=Z,2.0nm,0.7s,mb4.3						
ZRNK	**Zerenda**	**64.54**	**338**	*e*P	**P**	**02 20 52.9**	**-2.0**
AB31	**Akbulak array**	**65.71**	**331**	*i* P	**P**	**02 21 01.5**	**-1.1**
AB31				pmax	pmax		
	comp=Z,4.0nm,0.7s,mb4.6						
ZEI	**Tsey**	**71.39**	**318**	*e*P	**P**	**02 21 39.0**	**+1.0**
BRTR	**Keskin Array B**	**77.45**	**312**	P	**P**	**02 22 12.3**	**-0.6**
	comp=Z,2.6nm,0.9s,mb4.2,baz=128,slow=7.3,SNR=16						
BRTR				sP	sP	02 22 25.6	+0.8
	comp=Z,1.2nm,0.7s,baz=112,slow=6.7,SNR=5.2						
VNDA	**Vanda**	**78.54**	**169**	P	**P**	**02 22 17.8**	**-0.5**
VNDA	**Vanda**	**78.54**	**169**	P	**P**	**02 22 17.8**	**-0.5**
TIXI	**Tiksi**	**78.57**	**8**	*e*P	**P**	**02 22 17.0**	**-1.5**
TIXI				pmax	pmax		
	comp=Z,14nm,1.0s,mb4.8						
TIXI				MLR	MLR		
	comp=Z,600nm,18.0s,MS5.0						
AKASG	**Malin Array Be**	**83.64**	**322**	P	**P**	**02 22 45.7**	**+0.2**
	comp=Z,0.8nm,0.5s,mb4.1,baz=90,slow=4.7,SNR=7.8						
AKASG				sP	sP	02 22 58.3	+0.9
	comp=Z,0.5nm,0.5s,baz=90,slow=4.4,SNR=3.1						
MLR	**Muntele Rosu**	**84.45**	**317**	P	**P**	**02 22 50.8**	**+0.9**
	comp=Z,5.1nm,1.0s,mb4.6,baz=124,slow=3.7,SNR=8.6						
MLR				sP	sP	02 23 03.7	+2.0
	comp=Z,2.8nm,0.8s,baz=17,slow=11,SNR=3.5						
FINES	**FINESS Array B**	**88.17**	**332**	P	**P**	**02 23 08.3**	**+0.7**
	comp=Z,1.3nm,0.8s,mb4.2,slow=3.8,SNR=3.6						
ARCES	**ARCESS Array B**	**90.36**	**340**	P	**P**	**02 23 18.9**	**+1.1**
	comp=Z,2.8nm,1.0s,mb4.5,baz=100,slow=5.5,SNR=4.1						
ARCES	**ARCESS Array B**	**90.36**	**340**	P	**P**	**02 23 18.9**	**+1.1**
GERES	**GERESS Array B**	**93.21**	**319**	P	**P**	**02 23 31.9**	**+0.5**
	comp=Z,0.1nm,0.3s,mb3.7,baz=98,slow=9.4,SNR=4.5						
GERES				sP	sP	02 23 44.1	+0.9
	comp=Z,0.4nm,0.7s,baz=72,slow=8.4,SNR=3.0						
SPITS	**Spitsbergen Ar**	**94.28**	**348**	P	**P**	**02 23 37.2**	**+1.5**
	comp=Z,6.7nm,1.1s,mb5.0,baz=117,slow=8.1,SNR=4.4						
YKA	**Yellowknife Ar**	**116.56**	**18**	PKP	PKPdf	02 29 00.2	-4.1
	comp=Z,0.0nm,0.3s,baz=328,slow=2.1,SNR=4.5						
WMOK	**Wichita Mounta**	**144.49**	**31**	*e*PKP	PKPdf	02 29 51.5	-6.0
CCM	**Cathedral Cave**	**144.89**	**19**	*e*PKP	PKPdf	02 29 53.0	-5.1
CCM				*e*		02 29 60.0	
TXAR	**Lajitas Array**	**145.37**	**43**	PKPbc	PKPbc	02 29 56.4	+1.7
	comp=Z,5.3nm,0.5s,baz=279,slow=1.0,SNR=100						
TXAR				pPKPbc		02 30 03.5	
	comp=Z,3.5nm,0.6s,baz=293,slow=1.2,SNR=13						
TXAR	**Lajitas Array**	**145.37**	**43**	PKPbc	PKPbc	02 29 56.4	+1.7
TXAR				pPKPbc		02 30 03.5	
WCI	**Wyandotte Cave**	**146.09**	**13**	*e*PKP	PKPdf	02 29 56.9	-3.3
JCT	**Junction City**	**147.09**	**37**	*e*PKPbc	PKPdf	02 30 00.6	-1.4
WVT	**Waverly**	**147.71**	**16**	*e*PKPbc	PKPdf	02 30 01.6	-1.3
CPCT	**Cooper Cave**	**149.15**	**12**	*e*PKPbc	PKPdf	02 30 05.2	+0.1

MOS ***18*** *02:31:29.5±1.1,34.31N×33.00E,h12km,mb4.4/8,Error ellipse: s-maj=13.2km s-min=5.8km az=101.2*
ISK ***18*** *02:31:31.6,34.41N×33.22E,h14km,MD4.2,ML4.3*
BJI ***18*** *02:31:32.0,34.60N×33.30E,h10km,mB4.4,mb4.4,Ms4.1, Msz4.0*
NEIC ***18*** *02:31:34.1,34.63N×33.31E,h10km,mb4.2/11, ML4.0(NIC),After NIC.*
NEIC Felt [III] at Amathounta and Limassol.
NIC ***18*** *02:31:34.1±0.2,34.63N×33.31E,h10km,ML4.0,MW3.6*
NIC Felt earthquake; Maximum Intensity 3; Felt I=III MM at Amathounta, Limassol.
GRAL ***18*** *02:31:34.5±1.5,34.79N×33.91E,h218km±76km,MD4.0*
NSSC ***18*** *02:31:37.2,34.64N×33.27E,h40km*
IDC ***18*** *02:31:37.7±1.2,34.50N×33.05E,h47km±13km,mb4.0/13, mb1 4.2/19,mb1mx4.1/25,ML4.1/6,MS3.4/3,Ms1 3.4/3, ms1mx2.9/26,Error ellipse: s-maj=16.9km s-min=9.9km az=33.0*

ANTB	**Antalya**	**3.16**	**320**	*e*PN		**Pn**	**02 32 23.6**	**+0.7**
CEYT	**Ceyhan**	**3.23**	**39**	*e*PN		**Pn**	**02 32 23.9**	**0.0**
CEYT	**Ceyhan**	**3.23**	**39**	Pn		**Pn**	**02 32 24.0**	**+0.1**
DRGI	**Dragot**	**3.45**	**147**	Pn		**Pn**	**02 32 28.1**	**+1.1**
SALA	**Sala**	**3.45**	**121**	⇓P		**Pn**	**02 32 29.1**	**+2.1**
SALA				⇓S		**Sn**	**02 33 06.8**	**-1.6**
DRWC	**Darouich**	**3.51**	**52**	⇓P		**Pn**	**02 32 28.3**	**+0.4**
DRWC				⇓S		**Sn**	**02 33 04.8**	**-5.2**
MKRJ	**Makawir**	**3.59**	**145**	Pn		**Pn**	**02 32 30.4**	**+1.3**
RTMM	**Retamin**	**3.67**	**160**	Pn		**Pn**	**02 32 31.4**	**+1.2**
MZDA	**Masada**	**3.68**	**150**	Pn		**Pn**	**02 32 31.6**	**+1.3**
MZDA				Sn		**Sn**	**02 33 13.1**	**-1.0**
MZDA	**Masada**	**3.68**	**150**	Pn		**Pn**	**02 32 31.6**	**+1.4**
KZIT	**Kziot**	**3.74**	**164**	Pn		**Pn**	**02 32 31.7**	**+0.6**
KZIT				Sn		**Sn**	**02 33 14.1**	**-1.6**
KZIT	**Kziot**	**3.74**	**164**	Pn		**Pn**	**02 32 31.7**	**+0.6**
NIG	**Nigde**	**3.76**	**17**	*e*PN		**Pn**	**02 32 32.5**	**+1.1**
NIG	**Nigde**	**3.76**	**17**	Pn		**Pn**	**02 32 33.5**	**+2.1**
SVTA	**Shivta**	**3.77**	**161**	Pn		**Pn**	**02 32 32.9**	**+1.3**
SVTA	**Shivta**	**3.77**	**161**	Pn		**Pn**	**02 32 32.9**	**+1.3**
ASF	**Jabal al Asfar**	**3.87**	**126**	P		**Pn**	**02 32 34.6**	**+1.5**
	4.8nm,0.3s,baz=180,slow=6.7,SNR=35							
ASF				S		**Sn**	**02 33 22.4**	**+3.3**
	6.5nm,0.3s,baz=351,slow=22,SNR=7.3							
ISP	**Isparta**	**3.97**	**327**	*e*PN		**Pn**	**02 32 35.3**	**+0.9**
GAZ	**Gaziantep**	**4.19**	**50**	*e*PN		**Pn**	**02 32 37.3**	**-0.3**
PRNI	**Paran**	**4.42**	**159**	Pn		**Pn**	**02 32 41.9**	**+1.1**
PRNI				Sn		**Sn**	**02 33 18.8**	**-1.3**
PRNI	**Paran**	**4.42**	**159**	Pn		**Pn**	**02 32 41.9**	**+1.0**
PRNI				S		**Sn**	**02 33 31.8**	**-1.3**
KIZT	**Kizilcal**	**4.48**	**347**	*e*PN		**Pn**	**02 32 43.0**	**+1.3**
KMTI	**Karmit**	**4.58**	**163**	Pn		**Pn**	**02 32 43.8**	**+0.7**
KMTI	**Karmit**	**4.58**	**163**	Pn		**Pn**	**02 32 43.8**	**+0.7**
HNKL	**Nakhl**	**4.62**	**172**	P		**Pn**	**02 32 44.1**	**+0.4**
HHAG	**Hagoal**	**4.65**	**192**	P		**Pn**	**02 32 45.0**	**+1.0**
QURS	**Qurayyt al Mil**	**4.66**	**131**	P		**Pn**	**02 32 46.2**	**+2.0**
DENT	**Denizli**	**4.67**	**315**	*e*PN		**Pn**	**02 32 44.8**	**+0.4**
KOT	**Kottamia**	**4.72**	**195**	P		**Pn**	**02 32 45.4**	**+0.3**
HRFI	**Mount Harif**	**4.73**	**160**	Pn		**Pn**	**02 32 46.7**	**+1.5**
HRFI				Sn		**Sn**	**02 33 40.1**	**-0.7**
HRFI	**Mount Harif**	**4.73**	**160**	Pn		**Pn**	**02 32 46.7**	**+1.5**
YER	**Yerkesik**	**4.78**	**305**	*e*PN		**Pn**	**02 32 46.3**	**+0.4**
BNN	**Bunyan**	**4.82**	**25**	*e*PN		**Pn**	**02 32 48.0**	**+1.6**
HBRG	**Burj al 'Arab**	**4.85**	**217**	P		**Pn**	**02 32 48.7**	**+1.7**
KAMT	**Kaman**	**4.86**	**5**	*e*PN		**Pn**	**02 32 48.5**	**+1.5**
MBH	**Mount Berech**	**4.93**	**162**	Pn		**Pn**	**02 32 48.7**	**+0.7**
MBH	**Mount Berech**	**4.93**	**162**	Pn		**Pn**	**02 32 48.7**	**+0.7**
AQBJ	**Aqaba**	**5.03**	**161**	Pn		**Pn**	**02 32 50.0**	**+0.6**
EIL	**Elat**	**5.05**	**163**	Pn		**Pn**	**02 32 50.4**	**+0.6**
EIL	**Elat**	**5.05**	**163**	Pn		**Pn**	**02 32 50.4**	**+0.6**
AYT	**Al 'Ayyat**	**5.11**	**201**	P		**Pn**	**02 32 51.3**	**+0.8**
ALT	**Altintas**	**5.17**	**332**	*e*PN		**Pn**	**02 32 52.1**	**+0.8**
MLSB	**Milas**	**5.21**	**304**	*e*PN		**Pn**	**02 32 51.9**	**0.0**
BRTR	**Keskin Array B**	**5.21**	**4**	P		**Pn**	**02 32 53.2**	**+1.2**
	4.1nm,0.3s,baz=183,slow=15,SNR=148							
BRTR				S		**Sn**	**02 33 55.1**	**+2.3**
	0.4nm,0.3s,baz=184,slow=23,SNR=2.5							
BRTR				LR		LR	02 35 12.5	
	comp=Z,538nm,19.1s,baz=170,slow=41							
ESKT	**Eskisehir**	**5.34**	**340**	*e*PN		**Pn**	**02 32 54.9**	**+1.1**
ESKT	**Eskisehir**	**5.34**	**340**	Pn		**Pn**	**02 32 55.8**	**+2.0**
HNAT	**Natroun**	**5.34**	**205**	P		**Pn**	**02 32 54.6**	**+0.7**
ANTO	**Ankara**	**5.35**	**357**	*e*PN		**Pn**	**02 32 55.7**	**+1.7**
YOZ	**Yozgat**	**5.38**	**18**	*e*PN		**Pn**	**02 32 56.3**	**+1.9**
ALWS	**Ilw as Safayha**	**5.43**	**163**	P		**Pn**	**02 32 56.2**	**+1.2**
ALWS				S		**Sn**	**02 33 57.4**	**-0.9**
HBST	**Basata**	**5.44**	**166**	P		**Pn**	**02 32 55.6**	**+0.3**
JMOS	**Jabal al Moall**	**5.57**	**163**	P		**Pn**	**02 32 57.7**	**+0.6**
HAQS	**Haql**	**5.64**	**164**	P		**Pn**	**02 32 58.3**	**+0.3**
MYA	**Malataya**	**5.67**	**46**	*e*PN		**Pn**	**02 32 59.0**	**+0.6**
HDHB	**Dhahab**	**5.90**	**168**	P		**Pn**	**02 33 02.0**	**+0.3**
JMQS	**Jabal Moqyreh**	**6.06**	**157**	P		**Pn**	**02 33 04.7**	**+0.8**
AKS	**Akhisar**	**6.14**	**317**	*e*PN		**Pn**	**02 33 05.3**	**+0.2**
MDU	**Mudurnu**	**6.14**	**346**	*e*PN		**Pn**	**02 33 05.7**	**+0.5**
IZM	**Izmir**	**6.16**	**311**	*e*PN		**Pn**	**02 33 04.2**	**-1.2**
IZM	**Izmir**	**6.16**	**311**	Pn		**Pn**	**02 33 04.8**	**-0.6**
SVSK	**Karacayir**	**6.18**	**28**	*e*PN		**Pn**	**02 33 07.5**	**+1.9**
DST	**Dursunbey**	**6.26**	**326**	*e*PN		**Pn**	**02 33 07.0**	**+0.2**
DST	**Dursunbey**	**6.26**	**326**	Pn		**Pn**	**02 33 06.9**	**+0.1**
BDAS	**Al Bad'**	**6.28**	**165**	P		**Pn**	**02 33 06.5**	**-0.6**
KRIS	**Kristallenia**	**6.37**	**278**	*e*P		**Pn**	**02 33 07.7**	**-0.7**
	6.6nm,0.5s							
TOS	**Tosya**	**6.54**	**5**	*e*PN		**Pn**	**02 33 12.0**	**+1.3**
AYUS	**'Aynunah**	**6.55**	**164**	P		**Pn**	**02 33 10.3**	**-0.6**
IDI	**Anoyia**	**6.88**	**279**	P		**Pn**	**02 33 14.3**	**-1.2**
	2.8nm,0.3s,baz=89,slow=13,SNR=40							
IDI				S		**Sn**	**02 34 30.4**	**-4.3**
	16nm,0.3s,baz=350,slow=17,SNR=13							
BYBT	**Boyabat**	**7.05**	**10**	*e*PN		**Pn**	**02 33 19.1**	**+1.2**
SWA1		**8.25**	**233**	P		**P**	**02 33 34.1**	**-0.6**
SWA2		**8.43**	**234**	P		**P**	**02 33 35.5**	**-1.7**
ZEI	**Tsey**	**11.73**	**42**	*e*P		**P**	**02 34 28.8**	**+6.3**
KIV	**Kislovodsk**	**11.94**	**35**	*e*P		**P**	**02 34 27.0**	**+1.7**
KIV				pmax	pmax			
	comp=Z,10.0nm,1.3s							
KIV				pmax	pmax			
	comp=E,3.0nm,0.8s							
KIV	**Kislovodsk**	**11.94**	**35**	*e*P		**P**	**02 34 28.5**	**+3.1**
	comp=E,7.6nm,0.9s							
MLR	**Muntele Rosu**	**12.29**	**335**	P		**P**	**02 34 30.7**	**+0.7**
	comp=E,0.1nm,0.3s,baz=222,slow=9.9,SNR=4.0							
AKASG	**Malin Array Be**	**16.43**	**351**	P		**P**	**02 35 23.3**	**-0.9**
	comp=E,2.2nm,0.3s,baz=172,slow=11,SNR=18							
PSZ	**Piszkesteto**	**16.68**	**327**	P		**P**	**02 35 29.8**	**+2.4**
CRVS	**Cervenica-Dubn**	**16.81**	**332**	*e*		**P**	**02 35 34.1**	**+5.2**
CRVS				*e*			02 35 49.0	
CRVS	**Cervenica-Dubn**	**16.81**	**332**	*e*P		**P**	**02 35 26.7**	**-2.2**
CRVS	**Cervenica-Dubn**	**16.81**	**332**	*e*P		**P**	**02 35 26.7**	**-2.2**
CRVS				*e*			02 35 34.1	
CRVS				*e*			02 35 49.0	
KWP	**Kalwaria**	**16.97**	**336**	*e*P		**P**	**02 35 33.8**	**+2.8**
VYHS	**Vyhne**	**17.59**	**327**	*e*P		**P**	**02 35 38.9**	**+0.1**
VYHS				*e*			02 35 53.8	
CRES	**Cresnjevec ost**	**17.61**	**315**	*i*P		**P**	**02 35 39.9**	**+0.9**
GOLS	**Golise**	**17.62**	**316**	*i*P		**P**	**02 35 40.2**	**+1.1**
VISS	**Visnje**	**17.96**	**314**	*i*P		**P**	**02 35 44.1**	**+0.7**
ZST	**Bratislava**	**18.19**	**324**	*e*P		**P**	**02 35 37.2**	**-9.1**
ZST				*e*			02 35 40.9	
ZST				*e*			02 40 29.3	
ZST				*e*			02 40 31.7	
ZST	**Bratislava**	**18.19**	**324**	*e*P		**P**	**02 35 37.2**	**-9.1**
ZST				*e*			02 40 29.3	
ZST				*e*			02 40 31.7	
PERS	**Pernice**	**18.26**	**317**	*i*P		**P**	**02 35 47.6**	**+0.4**
LJU	**Ljubljana**	**18.27**	**315**	*i*P		**P**	**02 35 47.5**	**+0.1**
OKC	**Ostrava-Krasne**	**18.89**	**329**	*e*P		**P**	**02 35 53.5**	**-1.3**
ROBS	**Robic**	**18.98**	**314**	*i*P		**P**	**02 35 54.5**	**-1.4**
VRAC	**Vranov**	**19.20**	**325**	P		**P**	**02 35 56.0**	**-2.6**
	comp=E,0.6nm,0.3s,baz=148,slow=15,SNR=4.4							
MOA	**Molln**	**19.44**	**319**	⇑*i*P		**P**	**02 35 58.2**	**-3.1**
	comp=E,3.1nm,0.8s							
KBA	**Koelnbreinsper**	**19.52**	**316**	⇑*i*P		**P**	**02 36 02.5**	**+0.3**
	comp=E,10nm,0.9s							
DPC	**Dobruska-Polom**	**20.07**	**327**	*e*P		**P**	**02 36 05.3**	**-2.9**
UPC	**Upice**	**20.32**	**327**	*e*P		**P**	**02 36 08.3**	**-2.6**
GERES	**GERESS Array B**	**20.34**	**321**	P		**P**	**02 36 09.0**	**-2.1**
	comp=E,6.5nm,0.4s,baz=111,slow=11,SNR=29							
KHC	**Kasperske Hory**	**20.58**	**321**	*e*P		**P**	**02 36 11.0**	**-2.6**
KHC				*e*P			02 36 11.2	
WTTA	**Wattenberg**	**20.61**	**315**	⇑*i*P		**P**	**02 36 16.2**	**+2.3**
	comp=E,21nm,1.2s							
PRU	**Pruhonice**	**20.64**	**324**	*e*P		**P**	**02 36 10.3**	**-4.0**
WATA	**Walderalm**	**20.68**	**315**	⇑*i*P		**P**	**02 36 16.5**	**+1.9**
	comp=E,7.6nm,0.8s							
OBN	**Obninsk**	**20.73**	**5**	*e*P		**P**	**02 36 13.1**	**-2.0**
OBN				pmax	pmax			
	comp=Z,41nm,1.6s							
OBN				MLR	MLR			
	comp=Z,100nm,19.0s,MS3.2							
SUW	**Suwalki**	**20.73**	**343**	*e*P		**P**	**02 36 12.3**	**-2.8**
SQTA	**Sankt Quirin**	**20.84**	**314**	⇓*i*P		**P**	**02 36 17.9**	**+1.6**
	comp=E,5.3nm,0.9s							
WET	**Wettzell**	**20.95**	**320**	P		**P**	**02 36 15.5**	**-2.0**
MOTA	**Moosalm**	**20.96**	**314**	⇑*i*P		**P**	**02 36 17.2**	**-0.3**
	comp=E,6.7nm,0.9s							
PVCC	**Panska Ves**	**20.99**	**325**	*e*P		**P**	**02 36 16.6**	**-1.3**
DAVOX	**Davos**	**21.43**	**312**	P		**P**	**02 36 21.6**	**-0.7**
	comp=Z,10nm,0.7s,mb4.3,baz=112,slow=10,SNR=13							
DAVOS	**Davos**	**21.51**	**312**	P		**P**	**02 36 21.6**	**-1.5**
BRG	**Berggiesshubel**	**21.52**	**325**	*e*P		**P**	**02 36 21.2**	**-2.0**
BRG				pmax	pmax			
	comp=E,10.0nm,1.0s,mb4.2							

BRG	**Berggiesshubel**	**21.52**	**325**	*e*P		**P**	**02 36 21.2**	**-2.0**
	comp=Z,10nm,1.0s,mb4.2								
DAVA	**Damuels**	**21.66**	**313**	⇓*i*P		**P**	**02 36 22.9**	**-1.8**
	comp=Z,18nm,0.8s,mb4.5								
SBF	**Sospel**	**21.97**	**303**	*e*P		**P**	**02 36 26.1**	**-1.7**
	comp=Z,18nm,0.8s,mb4.2								
LLS	**Linth-Limmern**	**22.00**	**311**	⇓P		**P**	**02 36 28.6**	**+0.6**
GRA1	**Grafenberg Arr**	**22.15**	**320**	*e*P		**P**	**02 36 28.8**	**-0.7**
	comp=Z,9.0nm,0.9s,mb4.2								
GRF	**Grafenberg Arr**	**22.15**	**320**	*e*P		**P**	**02 36 28.8**	**-0.7**
GRF				pmax	pmax				
	comp=Z,9.0nm,0.9s,mb4.2								
CLL	**Collm**	**22.25**	**325**	P		**P**	**02 36 28.0**	**-2.5**
CLL				*e*			02 36 45.0		
CLL	**Collm**	**22.25**	**325**	*e*P		**P**	**02 36 28.0**	**-2.5**
CLL				*e*			02 36 45.0		
MUO	**Muotathal**	**22.28**	**311**	⇓P		**P**	**02 36 29.7**	**-1.1**
WILA	**Wila**	**22.31**	**313**	⇑P		**P**	**02 36 31.1**	**0.0**
FRF	**La Foret Royal**	**22.44**	**302**	*e*P		**P**	**02 36 31.1**	**-1.4**
	comp=Z,17nm,0.9s,mb4.2								
FRF	**La Foret Royal**	**22.44**	**302**	*e*P		**P**	**02 36 31.0**	**-1.5**
LMR	**La Mourre**	**22.48**	**301**	*e*P		**P**	**02 36 33.8**	**+0.9**
	comp=Z,18nm,0.8s,mb4.2								
LMR	**La Mourre**	**22.48**	**301**	*e*P		**P**	**02 36 31.8**	**-1.1**
MOX	**Moxa**	**22.51**	**322**	*i*P		**P**	**02 36 32.1**	**-0.9**
	comp=Z,logA/T=1.3,mb4.5								
MOX	**Moxa**	**22.51**	**322**	*e*P		**P**	**02 36 32.1**	**-0.9**
MOX				pmax	pmax				
	comp=Z,24nm,1.3s,mb4.5								
MOX	**Moxa**	**22.51**	**322**	*e*P		**P**	**02 36 32.1**	**-0.9**
	comp=Z,24nm,1.3s,mb4.5								
MBDF	**Montbardon**	**22.68**	**305**	*e*P		**P**	**02 36 36.0**	**+1.2**
	comp=Z,17nm,0.7s,mb4.3								
MBDF	**Montbardon**	**22.68**	**305**	*e*P		**P**	**02 36 35.0**	**+0.2**
LKBD	**Leukerbad**	**22.68**	**309**	⇑P		**P**	**02 36 35.4**	**+0.6**
DIX	**Grande Dixence**	**22.71**	**308**	⇑P		**P**	**02 36 35.1**	**+0.1**
SLE	**Schleitheim**	**22.72**	**313**	⇑P		**P**	**02 36 33.3**	**-1.8**
BNI	**Bardonecchia**	**22.84**	**305**	*e*P		**P**	**02 36 36.8**	**+0.4**
LPG	**La Plagne**	**22.94**	**306**	*e*P		**P**	**02 36 38.0**	**+0.7**
	comp=Z,20nm,0.8s,mb4.3								
LPG	**La Plagne**	**22.94**	**306**	*e*P		**P**	**02 36 38.6**	**+1.3**
LPL	**La Plagne**	**22.96**	**307**	*e*P		**P**	**02 36 38.1**	**+0.6**
	comp=Z,8.9nm,0.6s,mb4.1								
LPL	**La Plagne**	**22.96**	**307**	*e*P		**P**	**02 36 37.8**	**+0.3**
EMV	**Vieux Emosson**	**23.04**	**308**	⇑P		**P**	**02 36 38.9**	**+0.7**
SMRF	**Simiane la Rot**	**23.30**	**302**	*e*P		**P**	**02 36 42.0**	**+1.2**
	comp=Z,30nm,1.2s,mb4.3								
SMRF	**Simiane la Rot**	**23.30**	**302**	*e*P		**P**	**02 36 41.2**	**+0.4**
ORIF	**Oris-en-Rattie**	**23.34**	**305**	*e*P		**P**	**02 36 41.0**	**-0.2**
	comp=Z,14nm,1.0s,mb4.0								
ORIF	**Oris-en-Rattie**	**23.34**	**305**	*e*P		**P**	**02 36 40.8**	**-0.4**
CDF	**Champ du Feu**	**23.74**	**314**	*e*P		**P**	**02 36 44.5**	**-0.5**
	comp=Z,42nm,1.2s,mb4.5								
CDF	**Champ du Feu**	**23.74**	**314**	*e*P		**P**	**02 36 43.8**	**-1.2**
HINF	**Hinteralfeld**	**23.74**	**312**	*e*P		**P**	**02 36 43.7**	**-1.3**
	comp=Z,17nm,0.6s,mb4.0								
HINF	**Hinteralfeld**	**23.74**	**312**	*e*P		**P**	**02 36 43.3**	**-1.7**
CABF	**La Chapelle**	**23.74**	**309**	*e*P		**P**	**02 36 44.9**	**-0.3**
	comp=Z,28nm,0.8s,mb4.4								
CABF	**La Chapelle**	**23.76**	**309**	*e*P		**P**	**02 36 44.6**	**-0.6**
HAU	**Haudompre**	**24.13**	**312**	*e*P		**P**	**02 36 47.6**	**-1.2**
	comp=Z,16nm,0.8s,mb4.2								
HAU				*e*R					
	comp=Z,103nm,22.2s								
HAU	**Haudompre**	**24.13**	**312**	*e*P		**P**	**02 36 47.0**	**-1.8**
VIVF	**Saint-Julien-l**	**24.15**	**304**	*e*P		**P**	**02 36 49.0**	**-0.1**
	comp=Z,4.6nm,0.6s,mb3.8								
VIVF	**Saint-Julien-l**	**24.15**	**304**	*e*P		**P**	**02 36 48.1**	**-1.0**
LASF	**Ste Croix**	**24.53**	**302**	*e*P		**P**	**02 36 52.7**	**-0.1**
	comp=Z,5.5nm,0.5s,mb4.0								
LASF	**Ste Croix**	**24.53**	**302**	*e*P		**P**	**02 36 51.8**	**-1.0**
AB31	**Akbulak array**	**24.59**	**45**	*i*P		**P**	**02 36 53.0**	**-0.3**
MEZF	**Maizieres J'vi**	**25.12**	**312**	*e*P		**P**	**02 36 57.3**	**-1.1**
	comp=Z,37nm,0.6s,mb4.8								
MEZF	**Maizieres J'vi**	**25.12**	**312**	*e*P		**P**	**02 36 57.0**	**-1.4**
SMF	**Signal de Mont**	**25.23**	**308**	*e*P		**P**	**02 36 59.1**	**-0.3**
	comp=Z,11nm,0.8s,mb4.4								
SMF	**Signal de Mont**	**25.23**	**308**	*e*P		**P**	**02 36 58.8**	**-0.6**
MTLF	**Montolieu**	**25.55**	**299**	*e*P		**P**	**02 37 02.2**	**-0.3**
	comp=Z,39nm,1.0s,mb4.6								
SSF	**Saint Saulge**	**25.58**	**308**	*e*P		**P**	**02 37 00.8**	**-1.9**
	comp=Z,8.3nm,0.6s,mb4.1								
SSF	**Saint Saulge**	**25.58**	**308**	*e*P		**P**	**02 36 59.8**	**-2.9**
AVF	**Avril sur Loir**	**25.59**	**308**	*e*P		**P**	**02 37 01.8**	**-1.0**
	comp=Z,3.0nm,0.6s,mb3.7								
AVF	**Avril sur Loir**	**25.59**	**308**	*e*P		**P**	**02 37 01.3**	**-1.5**
GIVF	**Givet**	**25.93**	**316**	*e*P		**P**	**02 37 05.4**	**-0.5**
	comp=Z,17nm,0.6s,mb4.5								
GIVF	**Givet**	**25.93**	**316**	*e*P		**P**	**02 37 05.0**	**-0.9**
CAF	**Calviac**	**25.97**	**303**	*e*P		**P**	**02 37 07.4**	**+1.0**
BAIF	**Baives**	**26.27**	**315**	*e*P		**P**	**02 37 07.1**	**-2.0**
	comp=Z,15nm,0.7s,mb4.3								
BAIF	**Baives**	**26.27**	**315**	*e*P		**P**	**02 37 06.1**	**-3.0**
RJF	**Les Rejaudoux**	**26.43**	**304**	*e*P		**P**	**02 37 09.8**	**-0.8**
	comp=Z,6.5nm,0.6s,mb4.1								
RJF	**Les Rejaudoux**	**26.43**	**304**	*e*P		**P**	**02 37 09.4**	**-1.2**
EPF	**Esparros**	**26.86**	**298**	*e*P		**P**	**02 37 13.8**	**-0.8**
	comp=Z,3.0nm,0.6s,mb3.7								
EPF	**Esros**	**26.86**	**298**	*e*P		**P**	**02 37 13.4**	**-1.2**
LFF	**La Frestale**	**26.89**	**303**	*e*P		**P**	**02 37 15.5**	**+0.6**
FINES	**FINESS Array B**	**27.33**	**353**	P		**P**	**02 37 17.1**	**-1.6**
	comp=Z,5.1nm,0.5s,mb4.3,baz=155,slow=10,SNR=36								
ETSF	**Etsaut**	**27.50**	**298**	*e*P		**P**	**02 37 20.3**	**-0.2**
ETSF	**Etsaut**	**27.50**	**298**	*e*P		**P**	**02 37 21.9**	**+1.4**
MFF	**Saint Martin d**	**27.86**	**306**	*e*P		**P**	**02 37 21.1**	**-2.6**
	comp=Z,3.1nm,0.5s,mb3.9								
MFF	**Saint Martin d**	**27.86**	**306**	*e*P		**P**	**02 37 21.5**	**-2.2**
KAF	**Kangasniemi**	**27.96**	**353**	*e*p		**P**	**02 37 23.2**	**-1.2**
	baz=165,slow=8.9								
SJPF	**Ste Jean**	**28.01**	**298**	*e*P		**P**	**02 37 25.5**	**+0.4**
SJPF	**Ste Jean**	**28.01**	**298**	*e*P		**P**	**02 37 28.8**	**+3.7**
LDF	**La Druitiere**	**28.38**	**310**	*e*P		**P**	**02 37 25.1**	**-3.2**
	comp=Z,2.1nm,0.3s,mb3.9								
LDF	**La Druitiere**	**28.38**	**310**	*e*P		**P**	**02 37 24.7**	**-3.6**
JOF	**Joensuu**	**28.45**	**358**	*e*p		**P**	**02 37 27.0**	**-1.8**
HFS	**Hagfors**	**28.61**	**340**	P		**P**	**02 37 28.3**	**-2.0**
	comp=Z,2.6nm,0.7s,mb4.1,baz=120,slow=12,SNR=3.6								
FLN	**La Foliniere**	**28.65**	**310**	*e*P		**P**	**02 37 27.6**	**-3.2**
	comp=Z,2.8nm,0.4s,mb4.0								
GRR	**Gorron**	**28.79**	**309**	*e*P		**P**	**02 37 28.3**	**-3.7**
	comp=Z,4.0nm,0.5s,mb4.1								
GRR	**Gorron**	**28.79**	**309**	*e*P		**P**	**02 37 28.4**	**-3.6**
ESDC	**Sonseca Array**	**29.95**	**291**	P		**P**	**02 37 41.6**	**-1.0**
	comp=Z,0.8nm,0.6s,mb3.7,baz=81,slow=9.0,SNR=4.5								
NOA	**NORSAR Array B**	**30.07**	**339**	P		**P**	**02 37 42.0**	**-1.4**
	comp=Z,1.3nm,0.7s,mb3.8,baz=141,slow=9.4,SNR=3.4								
NOA				LR	LR		02 51 46.3		
	comp=Z,61nm,20.7s,MS3.2,baz=95,slow=40								
QUIF	**Quistinic**	**30.16**	**307**	*e*P		**P**	**02 37 40.8**	**-3.5**
	comp=Z,2.1nm,0.5s,mb3.9								
QUIF	**Quistinic**	**30.16**	**307**	*e*P		**P**	**02 37 41.1**	**-3.2**
ROSF	**Rostrenen**	**30.33**	**308**	*e*P		**P**	**02 37 42.2**	**-3.6**
	comp=Z,4.6nm,0.4s,mb4.2								
ROSF	**Rostrenen**	**30.33**	**308**	*e*P		**P**	**02 37 42.1**	**-3.7**
ZRNK	**Zerenda**	**31.31**	**43**	P		**P**	**02 37 53.7**	**-0.7**
ZRNK				pmax	pmax				
	comp=Z,4.0nm,1.0s,mb4.2								
ZRNK	**Zerenda**	**31.31**	**43**	*e*P		**P**	**02 37 54.0**	**-0.4**
BRVK	**Borovoye**	**32.07**	**43**	*e*P		**P**	**02 38 00.7**	**-0.4**
BVA0	**Borovoye Array**	**32.12**	**43**	*i*P		**P**	**02 38 00.8**	**-0.7**
BVAR	**Borovoye Array**	**32.12**	**43**	P		**P**	**02 38 00.8**	**-0.7**
	comp=Z,2.8nm,0.8s,mb4.2,baz=243,slow=6.6,SNR=17								
VOSK	**Vostochnaya**	**32.36**	**44**	P		**P**	**02 38 03.0**	**-0.6**
VOSK				pmax	pmax				
	comp=Z,3.0nm,1.2s,mb4.0								
ARCES	**ARCESS Array B**	**35.33**	**355**	P		**P**	**02 38 27.1**	**-2.0**
	comp=Z,2.3nm,0.6s,mb4.3,baz=168,slow=4.9,SNR=19								
ARCES				LR	LR		02 55 49.1		
	comp=Z,52nm,19.0s,MS3.3,baz=342,slow=41								
KURK	**Kurchatov**	**36.49**	**50**	P		**P**	**02 38 39.0**	**-0.1**
KURK				pmax	pmax				
	comp=Z,4.0nm,1.0s,mb4.3								
MKAR	**Makanchi Array**	**38.61**	**56**	P		**P**	**02 38 57.5**	**+0.6**
	comp=Z,9.0nm,0.9s,mb4.2,baz=271,slow=6.3,SNR=58								
MKAR	**Makanchi Array**	**38.61**	**56**	*i*P		**P**	**02 38 57.1**	**+0.2**
MKAR				pmax	pmax				
	comp=Z,4.0nm,0.7s								
WMQ	**Urumqi**	**42.58**	**61**	*e*P		**P**	**02 39 32.4**	**+2.8**
WMQ				AP	pP		02 39 36.9	+4.3	
WMQ				XP	sP		02 39 39.4	+5.5	
WMQ				PP	PP		02 41 13.9	+2.7	
WMQ				S	**S**		**02 45 53.8**	**+1.9**	
WMQ				AMB	AMB				
	comp=Z,4.0nm,0.8s,mb4.2								
WMQ				AMB	AMB				
	comp=Z,32nm,5.1s								
WMQ				LR	LR				
	comp=N,121nm,17.2s,MS4.0								
WMQ				LR	LR				
	comp=E,98nm,17.3s,MS4.0								
WMQ				LR	LR				
	comp=Z,178nm,18.4s,MS4.0								
BOD	**Bodaibo**	**56.83**	**39**	*e*P		**P**	**02 41 16.4**	**-2.3**
SCHQ	**Schefferville**	**67.87**	**322**	P		**P**	**02 42 30.6**	**-1.8**
	comp=Z,1.0nm,0.5s,mb4.2,baz=57,slow=14,SNR=6.3								
NJ2	**Nanjing**	**69.44**	**65**	*e*P		**P**	**02 42 40.8**	**-1.7**
IMA	**Indian Mountai**	**79.59**	**3**	*e*P		**P**	**02 43 41.3**	**+1.0**
YKA	**Yellowknife Ar**	**79.91**	**345**	P		**P**	**02 43 41.7**	**-0.4**
	comp=Z,1.4nm,0.5s,mb4.1,baz=27,slow=5.6,SNR=43								
YKA	**Yellowknife Ar**	**79.91**	**345**	P		**P**	**02 43 41.7**	**-0.4**
ILAR	**Eielson Array**	**81.04**	**0**	P		**P**	**02 43 47.8**	**-0.3**
	comp=Z,1.3nm,0.9s,mb3.9,baz

GYA SS SS 03 08 05.3 +7.0
GYA AMB AMB
comp=Z,20nm,0.8s,mb4.5
GYA AMB AMB
comp=Z,250nm,3.6s
GYA LR LR
comp=N,400nm,16.4s
GYA LR LR
comp=E,410nm,15.3s
DANN Dangsing 22.93 337 *e*P **P 03 03 14.6 +0.8**
AGRA Agra 24.80 325 *e*P **P 03 03 32.3 +0.3**
AGRA *e* 03 03 33.1
comp=Z,67nm,0.7s
CD2 Chengdu 25.32 21 P **P 03 03 36.8 -0.1**
CD2 AMB AMB
comp=Z,140nm,6.1s
CD2 LR LR
comp=N,330nm,6.3s
CD2 LR LR
comp=Z,220nm,9.0s
SONA Sohna 26.07 325 *e*P **P 03 03 43.8 -0.1**
SONA *e* 03 03 48.6
comp=Z,82nm,0.8s
ASOR Ausora 26.08 327 *e*P **P 03 03 44.2 +0.3**
ASOR *e* 03 03 45.4
comp=Z,164nm,0.2s
KALG Kalgarh 26.16 329 *e* **P 03 03 38.9 -5.9**
AYAN Aya Nagar 26.22 325 *e*P **P 03 03 44.8 -0.5**
AYAN *e* 03 03 50.0
comp=Z,58nm,1.0s
NDI New Delhi 26.32 326 *e*P **P 03 03 45.0 -1.3**
NDI *e* 03 04 13.0
NDI *e* 03 08 43.5
KUDL Kundal 26.33 324 *e*P **P 03 03 45.8 -0.6**
KUDL *e* 03 03 50.9
comp=Z,35nm,0.9s
KHET Khetri 26.68 323 *e*P **P 03 03 50.1 +0.6**
KHET *e* 03 03 55.1
comp=Z,57nm,1.1s
RTK Rohtak 27.04 325 *e*P **P 03 03 53.5 +0.7**
RTK *e* 03 03 56.0
comp=Z,82nm,0.2s
ENH Enshi 27.26 31 *e*P **P 03 03 53.8 -1.0**
comp=Z,11nm,0.4s,mb4.7
ENH *e*S **S 03 08 20.8 -6.7**
KALP Kalibo 28.62 79 *e* **P 03 03 55.8 -11**
comp=Z,22nm,0.5s,mb5.0
XAN Xi'an 30.12 26 P **P 03 04 18.8 -1.5**
XAN AMB AMB
comp=Z,30nm,0.6s,mb5.1
LZH Lanzhou 30.13 17 *e*P **P 03 04 19.8 -0.6**
LZH AP pP 03 04 35.3 -1.0
LZH XP sP 03 04 42.9 -1.2
LZH PP PP 03 05 20.5 -0.3
LZH *e*S **S 03 09 13.1 -0.2**
LZH XS 03 09 38.6
LZH SS SS 03 10 58.3 +3.2
LZH AMB AMB
comp=Z,42nm,1.3s,mb4.9
LZH AMB AMB
comp=Z,121nm,4.2s
LZH LR LR
comp=E,180nm,13.4s
LZH LR LR
comp=Z,420nm,16.0s
WHN Wuhan 30.18 37 P **P 03 04 21.0 0.0**
GTA Gaotai 32.45 9 *e*P **P 03 04 40.1 -0.6**
GTA SCP 03 11 04.8
GTA AMB AMB
comp=Z,9.0nm,0.9s,mb4.5
NJ2 Nanjing 34.02 40 *e*P **P 03 04 55.1 +0.7**
NJ2 AP pP 03 05 17.3 +6.8
NJ2 S **S 03 10 12.0 -2.0**
NJ2 LR LR
comp=N,1μm,22.0s
NJ2 LR LR
comp=E,460nm,17.2s
NJ2 LR LR
comp=Z,430nm,17.0s
SSE Sheshan 34.97 44 P **P 03 05 04.0 +1.5**
SSE AP pP 03 05 19.3 +0.6
SSE S **S 03 10 31.5 +2.8**
SSE XS 03 10 58.9
SSE AMB AMB
comp=Z,40nm,0.7s,mb5.4
SSE AMB AMB
comp=Z,119nm,5.9s
KSH Kashi 35.79 336 P **P 03 05 08.0 -1.4**
KSH *e*AP pP 03 05 23.3 -2.4
KSH *e*XP sP 03 05 30.4 -3.2
KSH *e*PP PP 03 06 29.0 -3.2
KSH *e*PCP PcP 03 07 37.1 +0.9
KSH *e*S **S 03 10 38.8 -2.5**
KSH *e*SCP 03 11 16.3
KSH *e*PCS 03 11 23.1
KSH *e*SCS ScS 03 15 19.3 +0.2
KSH AMB AMB
comp=Z,40nm,0.6s,mb5.5
KSH AMB AMB
comp=Z,170nm,4.2s
KSH LR LR
comp=N,200nm,4.5s
KSH LR LR
comp=E,220nm,3.1s
WMQ Urumqi 36.75 353 *e*P **P 03 05 17.8 +0.4**
WMQ AP pP 03 05 32.9 -0.8
WMQ XP sP 03 05 40.1 -1.5
WMQ PP PP 03 06 44.1 +0.2
WMQ S **S 03 10 56.3 +0.4**
WMQ AMB AMB
comp=Z,14nm,0.9s,mb4.9
WMQ AMB AMB
comp=Z,114nm,5.6s
WMQ LR LR
comp=N,421nm,16.0s
WMQ LR LR
comp=E,577nm,17.1s
WMQ LR LR
comp=Z,821nm,17.9s
ULHL Ulahol 38.05 339 P **P 03 05 28.4 +0.1**
SNR=28
JOW Kunigami 38.18 55 P **P 03 05 31.2 +1.7**
comp=Z,25nm,0.4s,mb5.4,baz=266,slow=8.3,SNR=22
KZA Kyzart 38.27 338 P **P 03 05 30.7 +0.5**
SNR=7.6
BJT Baijiatuau 38.31 28 *e*P **P 03 05 32.4 +1.8**
comp=Z,15nm,0.6s,mb5.0
BJI Beijing 38.34 28 P **P 03 05 33.0 +2.3**
BJI AP pP 03 05 48.5 +1.5
BJI XP sP 03 05 55.3 +0.5
BJI S **S 03 11 24.0 +3.9**
BJI AMB AMB
comp=Z,21nm,0.6s,mb5.1
UCH Uchtor 38.68 337 P **P 03 05 34.3 +0.8**
SNR=48
TKM2 Tokmak 2 38.88 339 P **P 03 05 35.4 +0.2**
SNR=32
KBK Karagaybulak 38.88 338 P **P 03 05 36.2 +1.0**
SNR=77
AML Almayashu 38.92 336 P **P 03 05 36.6 +1.0**
SNR=22
AAK Ala-Archa 39.04 337 P **P 03 05 37.3 +0.8**
SNR=20
FRU Bishkek 39.16 338 *e*P **P 03 05 38.5 +1.0**
FRU *e* 03 07 11.0
CHMS Chumysh 39.25 338 P **P 03 05 38.6 +0.3**
SNR=12
EKS2 Erkin-Say 39.34 337 P **P 03 05 39.9 +0.9**
SNR=29
USP Ospenovka 39.58 338 P **P 03 05 41.2 +0.2**
SNR=50
FITZ Fitzroy Crossi 40.43 129⇑ *i*P **P 03 05 47.3 -0.9**
comp=Z,18nm,0.4s,mb5.2
FITZ Fitzroy Crossi 40.43 129 P **P 03 05 47.4 -0.9**
comp=Z,21nm,0.5s,mb5.2,baz=352,slow=5.0,SNR=66
FITZ ScP 03 11 32.4
comp=Z,12nm,1.0s,baz=337,slow=2.2,SNR=5.1
FITZ LR LR 03 25 41.2
comp=Z,72nm,18.6s,baz=289,slow=41
MKAR Makanchi Array 40.54 348 P **P 03 05 48.3 -0.6**
comp=Z,26nm,0.7s,mb5.2,baz=168,slow=7.8,SNR=227
MKAR PP PP 03 07 17.6 -8.9
comp=Z,4.6nm,0.7s,baz=165,slow=11,SNR=2.8
MKAR ScP 03 11 33.3
comp=Z,1.6nm,0.8s,baz=146,slow=4.4,SNR=4.7
MKAR LR LR 03 25 10.4
comp=Z,86nm,20.2s,baz=162,slow=40
MKAR Makanchi Array 40.54 348 *e*P **P 03 05 48.3 -0.6**
MKAR pmax pmax
comp=Z,7.0nm,0.5s
KKAR Karatay Array 41.05 334 P **P 03 05 53.4 +0.2**
KKAR pmax pmax
comp=Z,12nm,0.6s,mb4.9
SONM Songino Array 41.82 13 P **P 03 05 59.4 -0.1**
comp=Z,5.7nm,0.6s,mb4.5,baz=186,slow=11,SNR=6.5
ULN Ulaanbaatar 42.00 13 *e*P **P 03 06 00.4 -0.5**
ULN Ulaanbaatar 42.00 13 *e*P **P 03 05 57.5 -3.4**
comp=Z,9.1nm,0.8s,mb4.6
JNU Nakatsue 42.99 48 P **P 03 06 09.9 +0.7**
comp=Z,36nm,0.9s,mb5.1,baz=309,slow=3.3,SNR=16
MUN Mundaring 44.60 152 *e*P **P 03 06 23.2 +0.9**
comp=Z,12nm,0.5s,mb4.9
KLBR Kellerberrin 45.02 150 *e*P **P 03 06 25.8 +0.2**
comp=Z,19nm,0.4s,mb5.2
KURK Kurchatov 45.05 347 *e*P **P 03 06 25.1 -0.5**
CN2 Changchun 45.77 32 *e*P **P 03 06 31.6 +0.2**
CN2 *e*AP pP 03 06 46.8 -1.1
CN2 PCP PcP 03 08 08.0 -0.6
CN2 SCP 03 11 53.6
CN2 *e*S **S 03 13 10.8 +1.5**
CN2 AMB AMB
comp=Z,10.0nm,0.6s,mb4.7
NWAO Narrogin (SRO) 45.87 152 P **P 03 06 33.1 +0.7**
comp=Z,16nm,0.8s,mb4.8,baz=315,slow=9.9,SNR=14
HIA Hailar 47.23 23 *e*P **P 03 06 42.7 -0.1**
comp=Z,11nm,0.6s,mb4.8
NVS Novosibirsk 48.14 352 *i* P **P 03 06 48.0 -1.8**
NVS pmax pmax
comp=Z,31nm,1.1s,mb5.0
NVS pmax pmax
comp=E,11nm,0.8s
NVS pmax pmax
comp=N,1.0nm,1.1s
THR Tehran 48.15 313 P **P 03 06 50.2 +0.1**
comp=N,3.4nm,0.7s,mb4.3,baz=111,slow=6.6,SNR=11
THR LR LR 03 27 37.4
comp=N,31nm,21.7s,baz=305,slow=37
WRA Warramunga Arr 48.33 125 P **P 03 06 50.8 -1.0**
comp=N,22nm,0.4s,mb5.3,baz=305,slow=8.5,SNR=170
WRA ScP 03 12 04.8
comp=N,2.9nm,0.8s,baz=312,slow=3.8,SNR=7.3
WRA S **S 03 13 41.8 -4.0**
comp=N,3.2nm,0.7s,baz=296,slow=15,SNR=9.5
WRA LR LR 03 30 11.7
comp=N,75nm,18.5s,baz=230,slow=40
WRA Warramunga Arr 48.33 125 P **P 03 06 50.8 -1.0**
WRA S **S 03 13 41.8 -4.1**
WRAB Tennant Creek 48.34 125 *e*P **P 03 06 50.6 -1.3**
WRAB *e*S **S 03 13 39.5 -6.5**
WB2 Warramunga Arr 48.34 125⇑ *i*P **P 03 06 50.9 -1.0**
WB2 *i* S **S 03 13 40.1 -5.9**
MDJ Mudanjiang 48.55 34 P **P 03 06 54.8 +1.6**
MDJ AP pP 03 07 11.0 +1.2
MDJ XP sP 03 07 17.4 +0.2
MDJ PCP PcP 03 08 17.8 -0.7
MDJ PP PP 03 08 49.8 +3.5
MDJ SCP 03 12 08.8
MDJ PCS 03 12 14.6
MDJ S **S 03 13 53.8 +5.2**
MDJ XS 03 14 20.1
MDJ SCS ScS 03 16 38.4 +1.8
MDJ AMB AMB
comp=Z,11nm,1.6s,mb4.5
MDJ AMB AMB
comp=Z,52nm,6.5s
KAMS Al Khamasin 49.19 290 P **P 03 06 58.8 +0.4**
MZLS Mizel 49.24 295 P **P 03 07 00.3 +1.5**
BVA0 Borovoye Array 49.37 342 P **P 03 06 58.2 -1.2**
BVAR Borovoye Array 49.37 342 P **P 03 06 58.3 -1.1**
comp=Z,7.4nm,0.5s,mb4.9,baz=143,slow=7.4,SNR=58
BVAR S **S 03 13 58.5 -1.5**
comp=Z,0.3nm,0.4s,baz=162,slow=9.1,SNR=3.7
BVAR LR LR 03 30 37.7
comp=Z,44nm,18.4s,baz=65,slow=39
BRVK Borovoye 49.43 342 *e*P **P 03 06 58.3 -1.6**
ZRNK Zerenda 49.75 341 *e*P **P 03 07 00.7 -1.6**
ZRNK *e* 03 07 25.2
MAJO Matsushiro 49.90 48 *e*P **P 03 07 04.0 +0.3**
comp=Z,8.8nm,0.6s,mb4.9
MAT Matsushiro 49.90 48 P **P 03 07 04.0 +0.3**
MAT Matsushiro 49.90 48 *e*P **P 03 07 04.0 +0.3**
AS12 Alice Springs 49.93 129⇑ *i*P **P 03 07 03.0 -1.1**
comp=Z,23nm,0.3s,mb5.6
ASAR Alice Springs 49.93 129 P **P 03 07 03.1 -0.9**
comp=Z,25nm,0.4s,mb5.5,baz=302,slow=7.9,SNR=130
ASAR PcP PcP 03 08 23.6 -0.2
comp=Z,4.4nm,0.5s,baz=310,slow=3.8,SNR=5.0
ASAR ScP 03 12 11.9
comp=Z,2.3nm,0.8s,baz=299,slow=4.1,SNR=8.3
ASAR S **S 03 14 06.1 -2.0**
comp=Z,3.5nm,0.7s,baz=296,slow=14,SNR=10
ASAR LR LR 03 31 47.6
comp=Z,63nm,19.4s,baz=297,slow=40
TATS Tathlith 50.12 289 P **P 03 07 06.4 +0.8**
FORT Forrest 50.20 141⇑ *i*P **P 03 07 06.7 +0.6**
comp=Z,131nm,0.8s,mb5.9
AB31 Akbulak array 50.50 332 P **P 03 07 07.5 -0.6**
AB31 pmax pmax
comp=Z,20nm,0.7s,mb5.2
FRSS Farasan al Kab 51.14 286 P **P 03 07 13.5 +0.2**
AFFS 'Afif 51.21 295 P **P 03 07 15.4 +1.6**
BLJS Baljurashi 51.92 289 P **P 03 07 21.3 +2.1**
KLR Kul'dur 52.62 31 *e*P **P 03 07 24.8 +0.8**
BOD Bodaibo 52.81 14 *e*P **P 03 07 23.8 -1.6**
BOD *e* pP 03 07 40.6 -1.6
BOD *e* 03 07 53.6
HILS Ha'il 52.95 299 P **P 03 07 28.4 +1.6**
GNI Garni 54.49 315 LR LR 03 33 48.3
comp=Z,31nm,21.0s,baz=331,slow=39
KBRS Khaybar 54.87 296 P **P 03 07 42.2 +1.3**
ZEI Tsey 56.12 317 *e*P **P 03 07 49.6 -0.1**
ASAJ Asahikawa 56.16 41 P **P 03 07 50.2 +0.3**
comp=Z,8.0nm,0.6s,mb4.9,baz=229,slow=12,SNR=6.5
ASAJ LR LR 03 30 38.0
comp=Z,55nm,21.1s,baz=102,slow=35
ARU Arti 56.23 337⇓ *i*P **P 03 07 49.0 -1.2**
ARU *e* 03 09 54.3
ARU *e*S **S 03 15 33.4 +0.3**
ARU pmax pmax
comp=Z,25nm,0.8s,mb5.3
ARU Arti 56.23 337 *e*P **P 03 07 48.9 -1.4**
comp=Z,19nm,0.5s,mb5.4
ARU *e* pP 03 08 04.7 -2.7
KMBO Kilima Mbogo 56.88 264 P **P 03 07 57.4 +1.9**
comp=Z,0.5nm,0.4s,mb3.9,baz=44,slow=19,SNR=3.6
KMBO LR LR 03 28 10.4
comp=Z,68nm,19.1s,baz=93,slow=32
KMBO Kilima Mbogo 56.88 264 *e*P **P 03 07 56.1 +0.6**
comp=Z,4.1nm,0.9s,mb4.5
KIV Kislovodsk 57.41 318 *e*P **P 03 07 57.0 -1.9**
KIV pmax pmax
comp=Z,10.0nm,0.9s,mb4.8
KIV pmax pmax
comp=E,4.0nm,0.7s
KIV MLR MLR
comp=N,10.0nm,20.0s
KIV MLR MLR
comp=Z,30nm,20.0s
KIV Kislovodsk 57.41 318 *e*P **P 03 07 57.2 -1.7**
comp=Z,26nm,1.0s,mb5.2
QURS Qurayyt al Mil 57.60 303 P **P 03 08 01.2 +0.8**
TBKS Tabuk 57.67 299 P **P 03 08 02.4 +1.6**
JMQS Jabal Moqyreh 58.36 299 P **P 03 08 06.9 +1.3**
CTA Charters Tower 58.46 119 *e*P **P 03 08 05.3 -1.1**
comp=Z,4.8nm,0.8s,mb4.6
CTA Charters Tower 58.46 119 P **P 03 08 05.5 -1.0**
comp=Z,7.1nm,0.8s,mb4.8,baz=303,slow=8.7,SNR=5.2
AYUS 'Aynunah 58.77 298 P **P 03 08 09.4 +0.9**
BDAS Al Bad' 58.96 299 P **P 03 08 10.5 +0.7**
JMOS Jabal al Moall 59.07 300 P **P 03 08 12.3 +1.7**
ALWS Ilw as Safayha 59.13 300 P **P 03 08 11.6 +0.6**
SOKR Solikamsk 59.16 339⇓ *e*P **P 03 08 09.9 -0.8**
SOKR pmax pmax
comp=Z,20nm,0.7s,mb5.3
HAQS Haql 59.21 299 P **P 03 08 12.3 +0.7**
SOC Sochi 59.26 317 *i* P **P 03 08 09.6 -2.1**
SOC *e* 03 10 26.8
SOC *e*PPP PPP 03 11 51.1 +0.9
SOC *e*S **S 03 16 10.8 -2.2**
SOC *e*SSS SSS 03 22 31.9 -7.0
SOC pmax pmax
comp=Z,17nm,1.0s,mb5.0
SOC pmax pmax
comp=N,8.0nm,0.6s
SOC pmax pmax
comp=E,10.0nm,0.5s
SOC MLR MLR
comp=Z,155nm,26.0s
SOC MLR MLR
comp=N,101nm,23.0s
SOC MLR MLR
comp=E,139nm,21.0s
STKA Stephens Creek 60.07 133 P **P 03 08 16.9 -0.6**
comp=E,28nm,0.7s,mb5.4,baz=304,slow=5.8,SNR=36
STKA LR LR 03 38 30.8
comp=E,80nm,19.4s,baz=210,slow=40
BRTR Keskin Array B 62.43 311 P **P 03 08 31.3 -2.0**
comp=E,6.6nm,0.6s,mb4.8,baz=128,slow=7.6,SNR=48
BRTR pP pP 03 08 48.9 -1.8
comp=E,4.1nm,0.8s,baz=121,slow=7.1,SNR=5.3
TOO Toolangi 65.77 137⇑ *i*P **P 03 08 56.1 +1.0**
comp=E,17nm,0.8s,mb4.9
CNB Canberra Magne 67.40 133⇓ *i*P **P 03 09 05.7 +0.3**
comp=E,20nm,0.6s,mb5.1
TIXI Tiksi 67.89 11 *e*P **P 03 09 06.1 -1.7**
TIXI *e* pP 03 09 23.2 -2.2
TIXI pmax pmax
comp=Z,84nm,0.5s,mb5.8
TIXI MLR MLR
comp=Z,400nm,15.0s
TIXI Tiksi 67.89 11 *e*P **P 03 09 06.2 -1.6**
comp=Z,20nm,0.4s,mb5.3
TIXI *e* pP 03 09 21.9 -3.5
KRIS Kristallenia 67.98 305 *e*P **P 03 09 08.3 -0.8**
comp=Z,13nm,0.6s,mb4.9
KRIS *e* pP 03 09 26.4 -0.3
AKASG Malin Array Be 68.30 322 P **P 03 09 08.4 -2.3**
comp=Z,24nm,0.4s,mb4.3,baz=89,slow=5.1,SNR=12
AKASG pP pP 03 09 25.4 -2.9
comp=Z,2.4nm,0.6s,baz=94,slow=4.6,SNR=5.9
JOF Joensuu 71.15 335 *e*p **P 03 09 24.4 -3.5**
KWP Kalwaria 72.15 320 *e*P **P 03 09 51.0 +17**
KWP Kalwaria 72.15 320 *e*P **P 03 09 33.0 -1.1**
comp=Z,12nm,0.6s,mb4.9
KWP *e* pP 03 09 48.8 -3.0
APA Apatity 72.21 340⇓ *i*P **P 03 09 34.0 -0.1**
APA pmax pmax
comp=Z,39nm,1.0s,mb5.2
SUW Suwalki 72.68 324 *e*P **P 03 09 35.3 -1.8**
CRVS Cervenica-Dubn 72.84 319 *e*P **P 03 09 37.9 -0.2**
CRVS *e* 03 09 40.5
CRVS *e* 03 09 41.7
CRVS *e* 03 09 49.2
CRVS *e* pP 03 09 58.2 +2.3
CRVS Cervenica-Dubn 72.84 319 *e*P **P 03 09 37.9 -0.2**
CRVS *e* pP 03 09 58.2 +2.3
FINES FINESS Array B 72.99 332 P **P 03 09 37.9 -0.8**
comp=Z,9.1nm,0.6s,mb4.8,baz=98,slow=6.4,SNR=46
FINES pP pP 03 09 55.5 -1.1
comp=Z,6.3nm,0.7s,baz=90,slow=5.7,SNR=5.5
FINES LR LR 03 45 49.5
comp=Z,49nm,18.8s,baz=60,slow=39
KAF Kangasniemi 73.08 333 *e*p **P 03 09 37.9 -1.4**
baz=104,slow=5.6
NIE Niedzica 73.66 319 *e*P **P 03 09 43.0 +0.1**
PSZ Piszkesteto 73.73 318 *e*P **P 03 09 42.3 -1.1**
comp=Z,5.4nm,0.7s,mb4.4
PSZ *e*PcP PcP 03 09 59.6 +0.6
OJC Ojcow 74.10 320⇓ *e*P **P 03 09 44.9 -0.6**
VYHS Vyhne 74.51 318 *e*P **P 03 09 47.1 -0.8**
VYHS *e* 03 09 49.5
VYHS *e* 03 09 51.0
VYHS *e*pP pP 03 10 04.7 -1.0
VYHS *e* 03 10 18.2
VYHS Vyhne 74.51 318 *e*P **P 03 09 47.1 -0.8**
VYHS *e* pP 03 10 04.7 -1.0
OKC Ostrava-Krasne 75.11 320 *e*P **P 03 09 49.9 -1.4**
OKC *e*pP pP 03 10 08.5 -0.7
KEV Kevo 75.21 341 *e*p **P 03 09 49.9 -1.6**
MORC Moravsky Berou 75.49 319 *e*P **P 03 09 52.8 -0.7**
comp=Z,10nm,1.1s,mb4.5
MORC *e*pP pP 03 10 09.3 -2.1
ZST Bratislava 75.63 318 *e*P **P 03 09 54.4 +0.1**
ZST *e*pP pP 03 10 12.0 -0.2
ARCES ARCESS Array B 75.64 340 P **P 03 09 53.5 -0.5**
comp=Z,11nm,0.8s,mb4.6,baz=97,slow=5.5,SNR=52
ARCES pP pP 03 10 11.5 -0.3
comp=Z,4.4nm,0.6s,baz=104,slow=5.0,SNR=3.8
ARCES LR LR 03 45 02.0
comp=Z,88nm,21.7s,baz=111,slow=37
ARCES ARCESS Array B 75.64 340 P **P 03 09 53.5 -0.5**
ARCES pP pP 03 10 11.5 -0.3
DPC Dobruska-Polom 76.33 320 *e*P **P 03 09 58.5 +0.3**
DPC *e*pP pP 03 10 15.4 -0.7
KSP Ksiaz 76.39 320 *e*P **P 03 09 58.9 +0.3**
KSP Ksiaz 76.39 320 *e*P **P 03 09 58.1 -0.5**
UPC Upice 76.54 320 *e*P **P 03 09 59.6 +0.2**
UPC *e*pP pP 03 10 16.4 -0.9
ARSA Arzberg 76.62 317⇓ *i*P **P 03 09 59.9 0.0**
comp=Z,7.8nm,1.3s,mb4.3
ARSA *i* pP 03 10 20.6 +2.8
BOJS Bojanci 76.70 315 *i* P **P 03 09 59.8 -0.6**
PERS Pernice 76.86 316 *e*P **P 03 10 01.0 -0.3**
VISS Visnje 77.00 315 *i* P **P 03 10 01.6 -0.5**
PRU Pruhonice 77.44 320 *e*P **P 03 10 04.6 +0.1**
PRU *e*pP pP 03 10 21.5 -0.9
MOA Molln 77.50 317⇑ *i*P **P 03 10 00.9 -3.9**
MOA *i* pP 03 10 20.1 -2.7
VOY Vojsko 77.67 315 *e* **P 03 10 05.2 -0.6**
MAW Mawson 77.88 192 LR LR 03 37 45.3
comp=Z,52nm,18.5s,baz=232,slow=30
GERES GERESS Array B 77.93 318 P **P 03 10 07.3 +0.1**
comp=Z,10nm,0.8s,mb4.6,baz=90,slow=5.3,SNR=60
GERES pP pP 03 10 24.3 -0.8
comp=Z,6.1nm,0.7s,baz=90,slow=5.3,SNR=10
KHC Kasperske Hory 78.02 319 *e*P **P 03 10 07.4 -0.3**
KHC *e*P 03 10 08.0
KHC *e*pP pP 03 10 24.8 -0.8
KHC Kasperske Hory 78.02 319 *e*P **P 03 10 07.4 -0.3**
KHC *e*pP pP 03 10 24.8 -0.8
KBA Koelnbreinsper 78.09 316⇑ *i*P **P 03 10 07.8 -0.3**
comp=Z,7.0nm,1.0s,mb4.3
KBA *i* pP 03 10 21.6 -4.4
comp=Z,11nm,1.0s
CLL Collm 78.49 321 P **P 03 10 10.0 -0.2**
CLL *e*PP pP 03 10 27.0 -1.2
CLL Collm 78.49 321 *e*P **P 03 10 10.0 -0.2**
CLL *e* pP 03 10 27.0 -1.2
HFS Hagfors 78.70 330 P **P 03 10 10.7 -0.5**
comp=Z,6.1nm,0.4s,mb4.8,baz=108,slow=4.7,SNR=44
HFS pP pP 03 10 27.3 -1.9
comp=Z,5.8nm,0.7s,baz=117,slow=6.6,SNR=4.0
SFI Santa Sofia 79.08 313 *e*P **P 03 10 14.5 +0.9**
PGD Poggio Sodo 79.17 313 *e*P **P 03 10 15.3 +1.2**
WTTA Wattenberg 79.26 317⇓ *i*P **P 03 10 13.8 -0.7**
comp=Z,12nm,0.6s,mb4.9
WTTA *i* pP 03 10 31.5 -1.0
WATA Walderalm 79.30 317⇑ *i*P **P 03 10 14.0 -0.7**
comp=Z,3.3nm,0.8s,mb4.2
WATA *i* pP 03 10 30.8 -1.9
comp=Z,7.1nm,1.1s
MOX Moxa 79.34 320 *i* P **P 03 10 14.8 -0.1**
MOX Moxa 79.34 320 *e*P **P 03 10 14.8 -0.1**
SQTA Sankt Quirin 79.55 317⇓ *i*P **P 03 10 15.5 -0.6**
comp=Z,5.3nm,0.8s,mb4.4
SQTA *i* pP 03 10 33.0 -1.1
comp=Z,4.8nm,0.8s
GRA1 Grafenberg Arr 79.58 319 *e*P **P 03 10 16.2 0.0**
comp=Z,11nm,0.9s,mb4.7
GRA1 *e* pP 03 10 34.0 -0.2
GRF Grafenberg Arr 79.58 319 *e*P **P 03 10 16.2 0.0**
GRF *e* pP 03 10 34.0 -0.2
GRF pmax pmax
comp=Z,11nm,0.9s,mb4.7
MOTA Moosalm 79.62 317⇓ *i*P **P 03 10 15.6 -0.9**
comp=Z,8.0nm,1.1s,mb4.5
MOTA *i* pP 03 10 33.3 -1.2
comp=Z,9.0nm,0.9s
ZCCA Zocca 79.70 314 *e*P **P 03 10 18.3 +1.4**
NB2 NORSAR Subarra 79.99 331 P **P 03 10 16.7 -1.4**
comp=Z,3.0nm,0.5s,mb4.4,baz=94,slow=5.6
NOA NORSAR Array B 79.99 331 P **P 03 10 17.4 -0.7**
comp=Z,2.3nm,0.5s,mb4.3,baz=94,slow=5.5,SNR=9.3
NOA pP pP 03 10 34.7 -1.4
comp=Z,2.3nm,0.7s,baz=94,slow=5.6,SNR=4.6

NOA					LR	LR	03 49 11.1		
	comp=Z,41nm,20.7s,baz=100,slow=38								
NOA	**NORSAR Array B**	**79.99**	**331**		P	**P**	**03 10 17.4**	**-0.7**	
NOA					pP	pP	03 10 34.7	-1.4	
DAVA	**Damuels**	**80.46**	**317**	⇓*i*	P	**P**	**03 10 21.1**	**+0.2**	
	comp=Z,6.3nm,0.5s,mb4.7								
DAVA					*i*	pP	03 10 38.8	-0.2	
	comp=Z,11nm,0.7s								
DAVOX	**Davos**	**80.46**	**316**		P	**P**	**03 10 21.2**	**+0.2**	
	comp=Z,12nm,0.7s,mb4.9,baz=109,slow=5.7,SNR=27								
DAVOX					pP	pP	03 10 39.1	+0.1	
	comp=Z,11nm,0.6s,baz=137,slow=6.4,SNR=6.3								
FIN	**Finale Ligure**	**81.70**	**314**		*e*P	**P**	**03 10 27.4**	**-0.1**	
CDF	**Champ du Feu**	**82.19**	**318**		*e*P	**P**	**03 10 29.2**	**-0.7**	
	comp=Z,2.8nm,0.5s,mb4.1								
CDF					*e*pP	pP	03 10 47.6	-0.4	
SBF	**Sospel**	**82.27**	**313**		*e*P	**P**	**03 10 30.8**	**+0.4**	
	comp=Z,18nm,0.8s,mb4.7								
SBF					*e*pP	pP	03 10 48.5	0.0	
LPG	**La Plagne**	**82.67**	**315**		*e*P	**P**	**03 10 32.6**	**+0.1**	
	comp=Z,10.0nm,0.6s,mb4.5								
LPL	**La Plagne**	**82.69**	**315**		*e*P	**P**	**03 10 32.7**	**+0.2**	
	comp=Z,12nm,0.6s,mb4.6								
LPL					*e*pP	pP	03 10 51.0	+0.3	
MBDF	**Montbardon**	**82.70**	**314**		*e*P	**P**	**03 10 31.8**	**-0.8**	
	comp=Z,5.0nm,0.7s,mb4.2								
BNI	**Bardonecchia**	**82.75**	**314**		*e*P	**P**	**03 10 32.5**	**-0.4**	
HAU	**Haudompre**	**82.82**	**317**		*e*P	**P**	**03 10 32.6**	**-0.6**	
	comp=Z,22nm,0.8s,mb4.7								
HAU					*e*pP	pP	03 10 51.0	-0.3	
HAU					*e*R				
	comp=Z,58nm,19.0s								
FRF	**La Foret Royal**	**82.85**	**313**		*e*P	**P**	**03 10 33.4**	**0.0**	
	comp=Z,6.5nm,0.6s,mb4.3								
FRF					*e*pP	pP	03 10 51.8	+0.3	
LMR	**La Mourre**	**82.97**	**313**		*e*P	**P**	**03 10 33.8**	**-0.2**	
CABF	**La Chapelle**	**83.08**	**316**		*e*P	**P**	**03 10 34.5**	**0.0**	
	comp=Z,9.2nm,0.7s,mb4.5								
ORIF	**Oris-en-Rattie**	**83.32**	**314**		*e*P	**P**	**03 10 36.0**	**+0.2**	
	comp=Z,4.0nm,0.6s,mb4.2								
ORIF					*e*R				
	comp=Z,51nm,20.8s								
SMRF	**Simiane la Rot**	**83.60**	**313**		*e*P	**P**	**03 10 37.6**	**+0.4**	
BAIF	**Baives**	**84.10**	**320**		*e*P	**P**	**03 10 38.8**	**-0.8**	
VIVF	**Saint-Julien-l**	**84.18**	**314**		*e*P	**P**	**03 10 40.0**	**-0.1**	
	comp=Z,7.1nm,0.8s,mb4.2								
SMF	**Signal de Mont**	**84.62**	**316**		*e*P	**P**	**03 10 41.8**	**-0.5**	
	comp=Z,7.1nm,0.6s,mb4.5								
SMF					*e*pP	pP	03 11 00.3	-0.2	
SYO	**Syowa Base**	**84.72**	**197**	⇑P		**P**	**03 10 45.4**	**+3.1**	
SYO	**Syowa Base**	**84.72**	**197**	⇓PcP		PcP	03 10 46.9	+0.9	
SYO	**Syowa Base**	**84.72**	**197**	⇓sP		sP	03 11 09.9	+2.5	
SYO	**Syowa Base**	**84.72**	**197**	⇑*e*P		**P**	**03 10 45.4**	**+3.1**	
SYO				⇓*e*PcP		PcP	03 10 46.9	+0.9	
SYO				⇓*e*SP		sP	03 11 09.9	+2.5	
SSF	**Saint Saulge**	**84.81**	**317**		*e*P	**P**	**03 10 42.9**	**-0.3**	
SSF					*e*pP	pP	03 11 01.3	-0.1	
LASF	**Ste Croix**	**84.83**	**314**		*e*P	**P**	**03 10 43.6**	**+0.2**	
AVF	**Avril sur Loir**	**84.94**	**316**		*e*P	**P**	**03 10 43.6**	**-0.3**	
BGF	**Bois d'Agland**	**85.31**	**316**		*e*P	**P**	**03 10 45.7**	**0.0**	
	comp=Z,3.6nm,0.5s,mb4.3								
BGF					*e*pP	pP	03 11 04.3	+0.4	
RPZ	**Rata Peaks**	**85.99**	**135**		P	**P**	**03 10 50.0**	**+0.9**	
	comp=Z,3.0nm,0.4s,mb4.5,baz=316,slow=16,SNR=2.5								
CAF	**Calviac**	**86.02**	**315**		*e*P	**P**	**03 10 49.5**	**+0.3**	
MTLF	**Montolieu**	**86.09**	**313**		*e*P	**P**	**03 10 49.8**	**+0.2**	
	comp=Z,7.1nm,0.8s,mb4.3								
MTLF					*e*pP	pP	03 11 08.3	+0.5	
RJF	**Les Rejaudoux**	**86.37**	**315**		*e*P	**P**	**03 10 51.3**	**+0.4**	
	comp=Z,6.6nm,0.7s,mb4.4								
RJF					*e*R				
	comp=Z,53nm,20.9s								
LFF	**La Frestale**	**86.95**	**315**		*e*P	**P**	**03 10 54.2**	**+0.4**	
	comp=Z,4.4nm,0.6s,mb4.3								
LDF	**La Druitiere**	**87.07**	**318**		*e*P	**P**	**03 10 54.2**	**-0.1**	
	comp=Z,7.6nm,0.8s,mb4.4								
LDF					*e*pP	pP	03 11 12.7	+0.1	
FLN	**La Foliniere**	**87.28**	**319**		*e*P	**P**	**03 10 55.2**	**-0.1**	
	comp=Z,2.9nm,0.4s,mb4.2								
FLN					*e*R				
	comp=Z,45nm,18.0s								
MFF	**Saint Martin d**	**87.35**	**316**		*e*P	**P**	**03 10 55.5**	**-0.2**	
	comp=Z,6.8nm,0.7s,mb4.4								
MFF					*e*pP	pP	03 11 14.1	+0.1	
GRR	**Gorron**	**87.58**	**318**		*e*P	**P**	**03 10 56.8**	**0.0**	
EKA	**Eskdalemuir Ar**	**87.91**	**325**		P	**P**	**03 10 58.8**	**+0.7**	
	comp=Z,2.3nm,0.5s,mb4.5,baz=92,slow=5.3,SNR=12								
EKA					pP	pP	03 11 16.5	0.0	
	comp=Z,3.1nm,0.8s,baz=90,slow=5.8,SNR=4.8								
ETSF	**Etsaut**	**88.16**	**313**		*e*P	**P**	**03 11 02.8**	**+3.2**	
SJPF	**Ste Jean**	**88.61**	**313**		*e*P	**P**	**03 11 02.4**	**+0.6**	
ROSF	**Rostrenen**	**89.18**	**319**		*e*P	**P**	**03 11 04.4**	**+0.1**	
	comp=Z,4.9nm,0.7s,mb4.3								
QUIF	**Quistinic**	**89.19**	**318**		*e*P	**P**	**03 11 04.1**	**-0.3**	
	comp=Z,7.0nm,0.7s,mb4.5								
ESDC	**Sonseca Array**	**91.21**	**310**		P	**P**	**03 11 15.0**	**+0.9**	
	comp=Z,1.5nm,0.6s,mb4.3,baz=62,slow=3.8,SNR=6.3								
ESDC					pP	pP	03 11 33.6	+1.1	
	comp=Z,1.4nm,0.5s,baz=66,slow=4.0,SNR=5.1								
IMA	**Indian Mountai**	**92.33**	**22**		*e*P	**P**	**03 11 20.1**	**+1.5**	
	comp=Z,17nm,0.7s,mb5.4								
MCK	**McKinley**	**95.17**	**23**		P	**P**	**03 11 33.5**	**+1.9**	
ILAR	**Eielson Array**	**95.45**	**22**		P	**P**	**03 11 32.4**	**-0.5**	
	comp=Z,0.5nm,0.5s,mb4.2,baz=299,slow=4.4,SNR=13								
INK	**Inuvik**	**97.67**	**16**		*e*P	**P**	**03 11 43.2**	**+0.3**	
	comp=Z,2.3nm,0.9s,mb4.7								
INK					*e*pP	pP	03 12 01.4	+0.1	
DAWY	**Dawson**	**98.56**	**21**		P	**P**	**03 11 47.5**	**+0.6**	
YKA	**Yellowknife Ar**	**107.09**	**13**		PP	PP	03 16 44.0	-11	
	comp=Z,0.1nm,0.5s,baz=334,slow=5.0,SNR=3.5								
YKA					PKKP	PKKP	03 28 06.8	+13	
	comp=Z,0.2nm,0.9s,baz=146,slow=4.2,SNR=3.7								
FRB	**Frobisher Bay**	**107.88**	**352**		PP	PP	03 16 58.6	-2.2	
	comp=Z,0.7nm,0.6s,baz=322,slow=4.3,SNR=3.1								
SCHQ	**Schefferville**	**115.97**	**348**		PP	PP	03 17 56.5	-3.3	
	comp=Z,5.2nm,1.2s,baz=2.2,slow=4.8,SNR=4.8								
ULM	**Lac du Bonnet**	**122.09**		7	PKP	PKPdf	03 17 03.1	+1.2	
	comp=Z,2.7nm,0.6s,baz=16,slow=3.2,SNR=4.8								
PDAR	**Pinedale Array**	**125.87**	**21**		PKP	PKPdf	03 17 10.8	+1.4	
	comp=Z,3.6nm,1.2s,baz=19,slow=1.3,SNR=10								
TXAR	**Lajitas Array**	**139.94**	**24**		PKhKP		03 17 30.1		
	comp=Z,0.2nm,0.5s,baz=87,slow=0.4,SNR=6.5								
TXAR					PKP	PKPdf	03 17 38.3	+2.2	
	comp=Z,0.4nm,0.4s,baz=286,slow=0.4,SNR=11								
TXAR					SKPbc		03 21 07.3		
	comp=Z,1.9nm,0.7s,baz=270,slow=0.9,SNR=17								
BDFB	**Brasilia**	**141.58**	**254**		PKhKP		03 17 31.4		
	comp=Z,2.0nm,1.1s,baz=76,slow=4.2,SNR=1.7								
CPUP	**Villa Florida**	**146.53**	**232**		PKPbc	PKPbc	03 17 51.2	+2.1	
	comp=Z,1.8nm,0.6s,baz=120,slow=2.2,SNR=7.7								
CPUP					pPKPbc		03 18 08.5		
	comp=Z,2.6nm,0.5s,baz=81,slow=4.3,SNR=4.0								
LPAZ	**La Paz**	**160.07**	**242**		PKP	PKPdf	03 18 10.3	+3.4	
	comp=Z,1.1nm,0.8s,baz=45,slow=5.7,SNR=3.7								
LPAZ	**La Paz**	**160.07**	**242**		PKP	PKPdf	03 18 10.3	+3.4	

*NEIC **18** 03:10:56.9±0.5,36.75N×71.45E,h160km,mb4.5/8, Error ellipse: s-maj=14.5km s-min=6.8km az=218.0*
*NNC **18** 03:11:02.8±3.6,37.31N×69.67E,mpv3.8, Error ellipse: s-maj=49.2km s-min=32.5km az=79.0*
*IDC **18** 03:11:03.4±6.0,37.07N×71.36E,h208km±45km, mb3.4/7, mb1 3.3/10,mb1mx3.1/23, Error ellipse: s-maj=76.1km s-min=23.8km az=153.0*
*MOS **18** 03:11:08.0±1.8,37.74N×70.81E,h218km, mb3.8/4, Error ellipse: s-maj=22.0km s-min=14.5km az=113.1*
ISC 18 03:10:57.8±0.5,36.71N±0.04×71.46E±0.07,h195km±8km, n44,σ0°88/49,mb3.6/8,2C-3D,Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CHCP	**Chirah Chowk**	**3.38**	**154**	P		**P**	**03 11 53.3**	**+0.8**
THW	**Thamme Wali**	**3.92**	**177**	⇓P		**P**	**03 11 58.9**	**-0.1**
SBDP	**Sheikh Budin**	**4.43**	**187**	P		**P**	**03 12 05.5**	**-0.1**
SARP	**Sargodha**	**4.88**	**168**	P		**P**	**03 12 10.3**	**-1.0**
AML	**Almayashu**	**5.68**	**17**	P		**P**	**03 12 21.4**	**-0.3**
	SNR=47							
UCH	**Uchtor**	**5.99**	**22**	P		**P**	**03 12 25.9**	**+0.2**
	SNR=21							
KZA	**Kyzart**	**6.11**	**28**	P		**P**	**03 12 27.9**	**+0.7**
	SNR=11							
EKS2	**Erkin-Say**	**6.21**	**16**	P		**P**	**03 12 28.8**	**+0.3**
	SNR=12							
AAK	**Ala-Archa**	**6.36**	**21**	P		**P**	**03 12 31.0**	**+0.6**
	SNR=19							
KK31	**Karatay Array**	**6.43**	**354**	⇓P		**P**	**03 12 30.5**	**-0.9**
	2.7nm,0.2s,baz=184,slow=14,SNR=38							
KK31				⇑S		**S**	**03 13 39.0**	**-5.1**
	20nm,0.5s,baz=184,slow=19,SNR=26							
KKAR	**Karatay Array**	**6.43**	**354**	*e*PN		**P**	**03 12 30.2**	**-1.1**
KKAR				*e*S		**S**	**03 13 39.1**	**-5.0**
KKAR				pmax		pmax		
	comp=Z,2.0nm,0.2s							
KKAR				smax				
	comp=Z,7.0nm,0.3s							
KBK	**Karagaybulak**	**6.52**	**23**	P		**P**	**03 12 33.6**	**+1.1**
	SNR=6.8							
CHMS	**Chumysh**	**6.77**	**21**	P		**P**	**03 12 35.9**	**+0.1**
	SNR=9.1							
USP	**Ospenovka**	**6.95**	**19**	P		**P**	**03 12 37.6**	**-0.6**
	SNR=13							
TKM2	**Tokmak 2**	**6.97**	**26**	P		**P**	**03 12 39.0**	**+0.6**
	SNR=14							
MKAR	**Makanchi Array**	**12.90**	**35**	P		**P**	**03 13 56.1**	**+1.1**
	comp=Z,0.6nm,0.3s,baz=208,slow=8.8,SNR=19							
MKAR	**Makanchi Array**	**12.90**	**35**	P		**P**	**03 13 55.8**	**+0.8**
DANN	**Dangsing**	**13.30**	**125**	*e*P		**P**	**03 13 59.9**	**-0.2**
KOLN	**Koldanda**	**13.59**	**128**	*e*P		**P**	**03 14 03.2**	**-0.6**
	comp=Z,9.9nm,0.3s							
KOLN				*e*S		**S**	**03 16 29.4**	**-1.1**
GKN	**Gorkha**	**14.11**	**124**	*e*P		**P**	**03 14 10.3**	**+0.1**
	comp=Z,31nm,0.3s							
KKN	**Kakani**	**14.68**	**123**	*e*P		**P**	**03 14 17.3**	**0.0**
	comp=Z,30nm,0.5s							
DMN	**Daman**	**14.68**	**124**	*e*P		**P**	**03 14 18.2**	**+0.9**
	comp=Z,25nm,0.5s							
PKI	**Pulchoki**	**14.91**	**124**	*e*P		**P**	**03 14 20.5**	**+0.4**
	comp=Z,38nm,0.6s							
GUN	**Gumba**	**15.01**	**122**	*e*P		**P**	**03 14 21.6**	**+0.2**
	comp=Z,16nm,0.3s							
AB31	**Akbulak array**	**15.08**	**330**	⇑P		**P**	**03 14 14.3**	**-7.9**
	comp=Z,3.0nm,0.8s,baz=126,slow=15,SNR=5.5							
AB31				⇓S		**S**	**03 16 56.9**	**-7.1**
	comp=Z,2.1nm,0.5s							
AB31	**Akbulak array**	**15.08**	**330**	*i* P		**P**	**03 14 14.2**	**-8.0**
AB31				S		**S**	**03 16 56.9**	**-7.1**
AB31				smax				
	comp=Z,1.0nm,0.4s							
BVAR	**Borovoye Array**	**16.33**	**358**	P		**P**	**03 14 35.8**	**-1.7**
	comp=Z,0.3nm,0.3s,baz=163,slow=9.7,SNR=4.1							
BRVK	**Borovoye**	**16.37**	**357**	*e*P		**P**	**03 14 36.4**	**-1.5**
THR	**Tehran**	**16.41**	**273**	P		**P**	**03 14 40.3**	**+1.7**
	comp=Z,0.2nm,0.3s,baz=63,slow=11,SNR=4.1							
LSA	**Lhasa**	**17.88**	**107**	*e*P		**P**	**03 14 55.1**	**-0.1**
	comp=Z,3.1nm,0.4s							
GNI	**Garni**	**21.18**	**287**	P		**P**	**03 15 31.5**	**+2.9**
	comp=Z,4.0nm,0.4s,mb4.3,baz=131,slow=16,SNR=2.3							
GNI	**Garni**	**21.18**	**287**	P		**P**	**03 15 31.5**	**+2.9**
GNI				pmax		pmax		
	comp=Z,4.0nm,0.4s							
MALT	**Malatya**	**26.18**	**284**	*e*P		**P**	**03 16 14.0**	**-2.0**
	comp=Z,1.9nm,0.5s,mb4.0							
BRTR	**Keskin Array B**	**29.72**	**287**	P		**P**	**03 16 48.5**	**+0.7**
	comp=Z,0.6nm,0.6s,mb3.4,baz=96,slow=8.7,SNR=4.9							
AKASG	**Malin Array Be**	**33.10**	**308**	P		**P**	**03 17 16.5**	**-0.5**
	comp=Z,0.6nm,0.3s,mb3.5,baz=83,slow=7.8,SNR=6.4							
ARCES	**ARCESS Array B**	**41.09**	**337**	P		**P**	**03 18 24.0**	**+0.4**
	comp=Z,2.0nm,0.8s,mb3.6,baz=90,slow=4.9,SNR=4.6							
ARCES	**ARCESS Array B**	**41.09**	**337**	P		**P**	**03 18 24.0**	**+0.4**
ARCES				pmax		pmax		
	comp=Z,2.0nm,0.8s							
HFS	**Hagfors**	**43.13**	**322**	P		**P**	**03 18 40.1**	**+0.1**
	comp=Z,2.2nm,0.6s,mb3.8,baz=98,slow=10,SNR=12							
HFS	**Hagfors**	**43.13**	**322**	P		**P**	**03 18 40.1**	**0.0**
HFS				pmax		pmax		
	comp=Z,2.0nm,0.6s							
NB2	**NORSAR Subarra**	**44.44**	**323**	P		**P**	**03 18 49.5**	**-1.0**
	comp=Z,0.9nm,0.5s,mb3.4,baz=96,slow=7.9							
NOA	**NORSAR Array B**	**44.44**	**323**	P		**P**	**03 18 50.2**	**-0.2**
	comp=Z,0.8nm,0.5s,mb3.3,baz=98,slow=7.8,SNR=4.7							
NOA	**NORSAR Array B**	**44.44**	**323**	P		**P**	**03 18 50.3**	**-0.2**
NOA				pmax		pmax		
	comp=Z,1.0nm,0.5s							
YKA	**Yellowknife Ar**	**81.02**	**3**	P		**P**	**03 22 52.7**	**+1.1**
	comp=Z,0.2nm,0.7s,mb2.8,baz=349,slow=5.3,SNR=4.3							
YKA	**Yellowknife Ar**	**81.02**	**3**	P		**P**	**03 22 52.7**	**+1.1**

*NEIC **18** 03:19:17.2, 15.63N×97.44W,h20km,MD4.0(MEX), After MEX.*
*MEX **18** 03:19:17.4±1.2, 15.65N×97.45W,h27km±68km,MD3.9*
ISC 18 03:19:14.5±2.3,15.6N±0.1×97.32W±0.07,h20km,n6, σ0°87/11,Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
PNIG	**Pinotepa**	**1.10**	**315**	*e*P		**Pb**	**03 19 34.2**	**-0.4**
PNIG				*i* S		**Sb**	**03 19 44.0**	**-4.5**
OXX	**Oaxaca**	**1.57**	**21**	*i* P		**Pn**	**03 19 41.0**	**-0.6**
OXX				*i* S		**Sn**	**03 20 01.0**	**-0.5**
CMIG	**Matias Romero**	**2.76**	**58**	*i* P		**Pn**	**03 19 58.6**	**0.0**
CMIG				*i* S		**Sn**	**03 20 31.9**	**+0.1**
POHV	**Veracruz**	**3.44**	**1**	*e*P		**Pn**	**03 20 10.0**	**+1.7**
PPM	**Popocatepetl**	**3.66**	**340**	*e*P		**Pn**	**03 20 11.0**	**-0.3**
PPM				*i* S		**Sn**	**03 20 54.4**	**0.0**
PPM	**Popocatepetl**	**3.66**	**340**	*e*P		**Pn**	**03 20 11.0**	**-0.3**
PPM				*e*P			03 20 16.0	
PPM				*i* S		**Sn**	**03 20 57.3**	**+2.9**

*CASC **18** 03:31:31.8±1.7, 12.81N×89.87W,h36km±705km, MD3.9, ML4.0,mb3.5(NEIC)*
*NEIC **18** 03:31:35.6±1.9, 13.24N×89.32W,h61km±19km,mb3.5/2, Error ellipse: s-maj=28.6km s-min=10.4km az=55.0*
*IDC **18** 03:31:36.2±5.0, 13.35N×89.19W,h55km±91km,mb3.3/4, mb1 3.7/7,mb1mx3.5/19,ML3.5/3,Error ellipse: s-maj=121.0km s-min=25.6km az=29.0*
ISC 18 03:31:30.4±0.8,12.76N±0.03×89.88W±0.03,h27km±6km, n47,σ0°70/68,mb3.5/5,6C-9D,Off coast of central America

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
SBLS	**San Blas**	**1.10**	**13**	⇓*e*P		**Pn**	**03 31 50.3**	**0.0**
SBLS				*e*S		**Sb**	**03 32 05.6**	**+0.9**
SNET	**Serv Nac Est T**	**1.12**	**34**	*e*P		**Pn**	**03 31 50.3**	**-0.2**
SNET				*e*S		**Sb**	**03 32 04.5**	**-0.8**
SNET				*i*			03 32 10.1	
	comp=Z,1μm,0.3s							
BOQS	**Boqueron**	**1.13**	**31**	⇑*e*P		**Pn**	**03 31 50.6**	**-0.1**
BOQS				*e*S		**Sb**	**03 32 06.3**	**+0.7**
SNJE	**San Jose**	**1.13**	**14**	*e*P		**Pn**	**03 31 50.6**	**-0.1**
SNJE				*e*S		**Sb**	**03 32 06.0**	**+0.3**
CUSS	**Cusmapa**	**1.15**	**357**	⇓*e*P		**Pn**	**03 31 50.7**	**-0.2**
CUSS				*e*S		**Sb**	**03 32 05.5**	**-0.5**
PICS	**Picacho**	**1.15**	**32**	⇑*e*P		**Pn**	**03 31 51.1**	**+0.1**
PICS				*e*S		**Sn**	**03 32 06.2**	**+0.3**
RTR	**El Retiro**	**1.15**	**11**	⇓*e*P		**Pn**	**03 31 51.0**	**0.0**
RTR				*e*S		**Sn**	**03 32 07.2**	**+1.2**
LFRS	**El Faro**	**1.17**	**43**	⇓*e*P		**Pn**	**03 31 50.7**	**-0.6**
LFRS				*e*S		**Sn**	**03 32 05.9**	**-0.5**
LFU	**La Fuente**	**1.23**	**37**	⇓*e*P		**Pn**	**03 31 52.1**	**-0.1**
LFU				*e*S		**Sn**	**03 32 08.4**	**+0.3**
LCBS	**La Ceiba**	**1.25**	**45**	*e*P		**Pn**	**03 31 52.3**	**-0.1**
LCBS				*e*S		**Sn**	**03 32 07.9**	**-0.5**
LBRS	**Las Brisas**	**1.27**	**40**	⇓*e*P		**Pn**	**03 31 52.8**	**+0.1**
LBRS				*e*S		**Sn**	**03 32 08.7**	**-0.3**
SNVI	**San Vicente**	**1.32**	**50**	*e*P		**Pn**	**03 31 53.2**	**-0.2**
SNVI				*e*S		**Sn**	**03 32 10.1**	**-0.2**
RBDL	**Robledal**	**1.36**	**8**	⇓*e*P		**Pn**	**03 31 54.5**	**+0.5**
RBDL				*e*S		**Sn**	**03 32 10.9**	**-0.3**
IXG	**Ixpaco**	**1.51**	**338**	*e*P		**Pn**	**03 31 55.5**	**-0.7**
IXG				*e*S		**Sn**	**03 32 13.8**	**-1.3**
IXG				AML		AML	03 32 25.1	
	comp=N,10μm,0.4s							
VSM	**San Miguel**	**1.70**	**67**	*e*P		**Pn**	**03 31 59.4**	**+0.5**
VSM				*e*S		**Sn**	**03 32 20.7**	**+0.7**
MTO2	**Montecristo 2**	**1.71**	**17**	*e*P		**Pn**	**03 31 59.5**	**+0.5**
MTO2				*e*S		**Sn**	**03 32 19.8**	**-0.3**
BLLM	**Bellamira**	**1.74**	**67**	⇓*e*P		**Pn**	**03 31 59.8**	**+0.4**
BLLM				*e*S		**Sn**	**03 32 20.7**	**-0.2**
NBG	**Las Nubes**	**1.87**	**346**	*e*P		**Pn**	**03 32 02.0**	**+0.7**
NBG				*e*S		**Sn**	**03 32 25.3**	**+1.0**
NBG				AML		AML	03 32 27.9	
	comp=E,5μm,0.5s							
CNCH	**Conchagua**	**2.06**	**75**	⇓*e*P		**Pn**	**03 32 02.6**	**-1.4**
CNCH				*e*S		**Sn**	**03 32 29.0**	**-0.1**
JAT	**Jato**	**2.31**	**312**	*e*P		**Pn**	**03 32 06.6**	**-0.9**
JAT				*e*S		**Sn**	**03 32 35.0**	**-0.3**
JAT				AML		AML	03 32 47.4	
	comp=E,721nm,0.6s							
TEL3	**Telica 3**	**2.97**	**93**	*e*S		**Sn**	**03 32 51.7**	**-0.4**
CRZC	**La Cruz**	**4.56**	**113**	*e*P		**Pn**	**03 32 38.9**	**-0.7**
VCR	**Vista de Mar**	**4.92**	**122**	⇑*e*P		**Pn**	**03 32 44.2**	**-0.5**
JTS	**JuntasAbangare**	**5.42**	**116**	P		**Pn**	**03 32 50.4**	**-1.3**
	comp=E,8.8nm,0.3s,baz=324,slow=11,SNR=44							
JTS				S		**Sn**	**03 33 49.1**	**-4.7**
	comp=E,0.4nm,0.3s,baz=287,slow=19,SNR=2.7							
JCR	**Jicaral**	**5.50**	**121**	⇓*e*P		**Pn**	**03 32 52.4**	**-0.4**
CGA2	**Cerro Gallo 2**	**5.97**	**117**	*e*P		**Pn**	**03 32 59.8**	**+0.3**
VPS2	**Volcan Poas 2**	**6.09**	**114**	*e*P		**Pn**	**03 33 01.9**	**+0.7**
PRS1	**Puriscal**	**6.12**	**116**	*e*P		**Pn**	**03 33 00.5**	**-1.0**
LAJ	**Bijagual**	**6.34**	**116**	⇑*e*P		**Pn**	**03 33 00.0**	**-4.7**
SJS	**Escuela Geolog**	**6.36**	**116**	*e*P		**Pn**	**03 33 07.9**	**+2.9**
LCR2	**La Lucha 2**	**6.50**	**117**	*e*P		**Pn**	**03 33 06.8**	**-0.1**
ICR	**Volcan Irazu**	**6.54**	**114**	*e*P		**Pn**	**03 33 08.1**	**+0.6**
URSC	**Urasca**	**6.65**	**115**	*e*P		**Pn**	**03 33 09.3**	**+0.2**
BUS	**Buena Vista**	**6.80**	**117**	⇓*e*P		**Pn**	**03 33 12.2**	**+1.0**
TEIG	**Tepich**	**7.58**	**11**	*e*P		**Pn**	**03 33 15.8**	**-6.3**
ROSC	**El Rosal**	**17.25**	**116**	P		**P**	**03 35 35.3**	**+4.0**
	comp=E,0.5nm,0.3s,baz=128,slow=19,SNR=3.4							
SDV	**Santo Domingo**	**19.29**	**100**	P		**P**	**03 35 51.9**	**-4.3**
	comp=E,0.4nm,0.3s,baz=337,slow=12,SNR=4.5							
TXAR	**Lajitas Array**	**20.88**	**324**	P		**P**	**03 36 12.9**	**-0.2**
	comp=E,2.9nm,0.8s,baz=149,slow=11,SNR=39							
MIAR	**Mount Ida**	**21.95**	**352**	*e*P		**P**	**03 36 19.3**	**-4.6**
	comp=E,1.7nm,0.9s,mb3.5							
MNTX	**Cornudas Mount**	**23.63**	**325**	*e*P		**P**	**03 36 39.7**	**-0.8**
	comp=E,0.9nm,0.5s,mb3.5							
HWUT	**Hardware Ranch**	**34.41**	**331**	P		**P**	**03 38 06.1**	**-12**
PDAR	**Pinedale Array**	**34.41**	**334**	P		**P**	**03 38 18.4**	**+0.7**
	comp=E,0.3nm,0.8s,mb3.3,baz=107,slow=12,SNR=3.0							
MTUM	**Tungsten Hills**	**35.45**	**319**	*e*P		**P**	**03 38 28.0**	**+1.4**
LVC	**Limon Verde**	**40.72**	**150**	*e*P		**P**	**03 39 11.6**	**+0.8**
SCHQ	**Schefferville**	**45.70**	**18**	P		**P**	**03 39 45.6**	**-5.2**
	comp=E,1.8nm,0.8s,mb4.0,baz=209,slow=13,SNR=3.1							
YKA	**Yellowknife Ar**	**52.71**	**346**	P		**P**	**03 40 40.2**	**-4.6**
	comp=E,0.1nm,0.4s,mb3.1,baz=144,slow=7.8,SNR=7.0							
YKA	**Yellowknife Ar**	**52.71**	**346**	P		**P**	**03 40 40.2**	**-4.6**

*IDC **18** 03:52:17.2±3.0,36.77N×70.94E,mb3.8/4,mb1 3.8/5, mb1mx3.5/20,ML2.7/1, Error ellipse: s-maj=609.0km s-min=41.6km az=161.0*
*NEIC **18** 03:52:22.0±1.1,36.81N×70.88E,h30km,mb4.0/1, Error ellipse: s-maj=24.8km s-min=13.4km az=202.0*
*NNC **18** 03:

CGLM	**Capps Glacier**	**0.92**	**343**	P	**P**	04 06 32.4	**+0.6**
CGLM				S	**S**	04 06 45.6	**+0.1**
ILW	**Iliamna West**	**0.92**	**247**	P	**P**	04 06 31.9	**+0.1**
CP2	**Crater Peak Tw**	**0.92**	**335**	P	**P**	04 06 32.6	**+0.7**
ILS	**Iliamna Low So**	**0.94**	**240**	P	**P**	04 06 32.1	**+0.1**
ILS				S	**S**	04 06 45.1	**-0.8**
BGL	**Barrier Glacie**	**0.96**	**331**	P	**P**	04 06 32.8	**+0.6**
FIB	**Fire Island**	**0.96**	**40**	P	**P**	04 06 33.6	**+1.3**
XLV	**Seldovia**	**0.99**	**188**	P	**P**	04 06 32.4	**-0.3**
MPA	**Moose Pass**	**1.03**	**86**	P	**P**	04 06 33.6	**+0.4**
SEW	**Seward**	**1.05**	**107**	P	**P**	04 06 33.4	**0.0**
RC01	**Rabbit Creek A**	**1.07**	**51**	P	**P**	04 06 34.1	**+0.5**
RC01				S	**S**	04 06 48.9	**+0.4**
GOU	**Gould Hall**	**1.11**	**46**	*e*P	**P**	04 06 34.9	**+0.8**
OPT	**Oil Point**	**1.19**	**230**	P	**P**	04 06 35.7	**+0.5**
PMS	**Palmer South**	**1.23**	**48**	P	**P**	04 06 36.5	**+0.8**
PWA	**Palmer West**	**1.44**	**31**	P	**P**	04 06 39.7	**+1.0**
AUE	**Augustine Isla**	**1.45**	**223**	P	**P**	04 06 39.2	**+0.4**
AUL	**Augustine Lava**	**1.45**	**225**	P	**P**	04 06 39.4	**+0.6**
AGU	**Augustine-Summ**	**1.47**	**224**	P	**P**	04 06 39.7	**+0.7**
AUW	**Augustine West**	**1.48**	**225**	P	**P**	04 06 39.6	**+0.5**
AUI	**Augustine Isla**	**1.49**	**223**	P	**P**	04 06 39.7	**+0.5**
PMR	**Palmer**	**1.62**	**43**	P	**P**	04 06 41.3	**+0.3**
PMR				S	**S**	04 07 00.7	**-0.4**
KNK	**Knik Glacier**	**1.76**	**55**	P	**P**	04 06 43.5	**+0.6**
GHO	**Glory Hole Cre**	**1.82**	**41**	P	**P**	04 06 44.1	**+0.5**
MCNL	**McNeil River**	**1.92**	**231**	P	**P**	04 06 45.2	**+0.1**
SML	**Sawmill**	**2.05**	**46**	P	**P**	04 06 47.2	**+0.5**
SML				S	**S**	04 07 11.8	**+0.7**
CUT	**Chulitna**	**2.06**	**15**	P	**P**	04 06 48.1	**+1.1**
SVW	**Sparrevohn**	**2.16**	**290**	P	**P**	04 06 47.7	**-0.6**
SVW				S	**S**	04 07 13.8	**-0.2**
KAPH	**Katmai Pasha**	**2.36**	**220**	P	**P**	04 06 51.9	**+0.7**
SCM	**Sheep Creek Mo**	**2.44**	**53**	P	**P**	04 06 52.4	**+0.1**
HIN	**Hinchinbrook I**	**2.45**	**89**	P	**P**	04 06 51.3	**-1.1**
JPK	**Jack Peak**	**2.46**	**73**	P	**P**	04 06 51.9	**-0.7**
JPK				S	**S**	04 07 21.0	**-0.5**
KAHG	**Katmai Hook Gl**	**2.51**	**221**	P	**P**	04 06 54.0	**+0.8**
KARR	**Katmai Rainbow**	**2.56**	**222**	P	**P**	04 06 53.1	**-0.8**
VLZ	**Valdez**	**2.60**	**72**	P	**P**	04 06 53.8	**-0.7**
KDAK	**Kodiak Island**	**2.72**	**193**	P	**P**	04 06 55.2	**-1.0**
MID	**Middleton Isla**	**2.76**	**109**	*e*P	**P**	04 06 58.0	**+1.2**
EYAK	**Cordova Ski Ar**	**2.82**	**85**	P	**P**	04 06 56.0	**-1.6**
KLU	**Klutina**	**2.90**	**66**	P	**P**	04 06 58.4	**-0.3**
KABR	**Katmai Barrier**	**2.93**	**220**	P	**P**	04 06 59.6	**+0.4**
TOA	**Tolsona**	**3.05**	**54**	*e*P	**P**	04 07 01.9	**+1.1**
TRF	**Thorofare Moun**	**3.08**	**10**	P	**P**	04 07 01.6	**+0.4**
CAHL	**Cahill**	**3.10**	**221**	P	**P**	04 07 02.2	**+0.6**
KTH	**Kantishna Hill**	**3.14**	**4**	P	**P**	04 07 02.4	**+0.3**
DHY	**Denali Highway**	**3.29**	**34**	P	**P**	04 07 04.6	**+0.5**
TT01	**Tatalina**	**3.31**	**321**	P	**P**	04 07 04.2	**-0.1**
BMRM	**Bremner River**	**3.41**	**78**	P	**P**	04 07 04.2	**-1.5**
MCK	**McKinley**	**3.52**	**18**	*e*P	**P**	04 07 08.1	**+0.8**
WACK	**Wrangell Chich**	**3.78**	**63**	P	**P**	04 07 10.9	**-0.1**
GLB	**Gilahina Butte**	**3.86**	**71**	P	**P**	04 07 11.2	**-0.9**
BWN	**Browne**	**3.87**	**13**	P	**P**	04 07 12.6	**+0.4**
SNH	**Sunshine Point**	**4.29**	**90**	P	**P**	04 07 17.8	**-0.3**
NEA	**Nenana**	**4.30**	**14**	P	**P**	04 07 18.7	**+0.5**
BALM	**Baldy**	**4.51**	**78**	P	**P**	04 07 19.6	**-1.5**
CCB	**Clear Creek Bu**	**4.55**	**20**	P	**P**	04 07 21.9	**+0.2**
MLY	**Manley**	**4.63**	**4**	P	**P**	04 07 23.0	**+0.3**
DOT	**Dot Lake**	**4.74**	**44**	P	**P**	04 07 24.1	**-0.2**
COLA	**College**	**4.76**	**19**	P	**P**	04 07 24.6	**+0.1**
MDM	**Murphy Dome**	**4.78**	**17**	P	**P**	04 07 24.9	**+0.1**
YAH	**Yahtse**	**4.81**	**87**	P	**P**	04 07 24.3	**-1.0**
IL1	**Eielson Array**	**4.84**	**24**	P	**P**	04 07 25.6	**0.0**
ILAR	**Eielson Array**	**4.84**	**24**	P	**P**	04 07 25.6	**0.0**
	12nm,0.3s,baz=205,slow=14,SNR=692						
ILAR				S	**S**	04 08 17.6	**-3.3**
	2.7nm,0.3s,baz=199,slow=16,SNR=5.2						
GLM	**Gilmore Dome**	**4.94**	**20**	P	**P**	04 07 27.2	**+0.2**
CTGM	**Chitina Glacie**	**5.00**	**79**	P	**P**	04 07 28.1	**+0.2**
BCA3	**Beaver Creek A**	**5.29**	**56**	P	**P**	04 07 31.5	**-0.4**
IM3	**Indian Mountai**	**5.67**	**350**	P	**P**	04 07 36.0	**-1.1**
IMA	**Indian Mountai**	**5.75**	**351**	*e*P	**P**	04 07 38.8	**+0.7**
PRP	**Porcupine Dome**	**5.77**	**25**	P	**P**	04 07 39.1	**+0.7**
PNL	**Peninsula**	**6.08**	**92**	P	**P**	04 07 41.7	**-1.1**
DAWY	**Dawson**	**6.70**	**52**	P	**P**	04 07 50.7	**-0.8**
BM3	**Burnt Mountain**	**7.63**	**20**	P	**P**	04 08 03.1	**-1.1**
SIT	**Sitka**	**9.03**	**105**	P	**P**	04 08 21.2	**-2.1**
INK	**Inuvik**	**11.03**	**37**	P	**P**	04 08 48.9	**-1.3**
	0.3nm,0.3s,baz=244,slow=18,SNR=23						
INK				S	**S**	04 10 52.1	**-0.3**
	0.1nm,0.3s,baz=199,slow=20,SNR=2.0						
YKA	**Yellowknife Ar**	**17.57**	**67**	P	**P**	04 10 14.7	**+0.2**
	0.3nm,0.3s,baz=278,slow=12,SNR=47						
YKA				PcP	PcP	04 14 50.3	-0.8
	0.0nm,0.3s,baz=283,slow=1.6,SNR=7.5						
FX1	**Attu Island--F**	**20.65**	**264**	P	**P**	04 10 48.9	**+0.1**
	6.2nm,0.5s,baz=158,slow=19,SNR=5.1						
NEW	**Newport**	**23.11**	**106**	P	**P**	04 11 15.2	**+2.2**
	1.7nm,0.7s,mb3.5,baz=304,slow=12,SNR=4.7						
PDAR	**Pinedale Array**	**30.75**	**106**	P	**P**	04 12 25.0	**+1.6**
	0.5nm,1.1s,mb3.1,baz=342,slow=4.7,SNR=3.5						
SCHQ	**Schefferville**	**42.68**	**58**	P	**P**	04 14 04.2	**+0.5**
	1.5nm,0.8s,mb3.8,baz=324,slow=8.7,SNR=3.7						
TXAR	**Lajitas Array**	**44.42**	**112**	P	**P**	04 14 20.7	**+2.5**
	0.5nm,0.5s,mb3.5,baz=315,slow=5.9,SNR=12						
ARCES	**ARCESS Array B**	**50.31**	**1**	P	**P**	04 15 01.3	**-2.3**
	1.3nm,0.8s,mb3.9,baz=5.7,slow=9.1,SNR=4.4						
FINES	**FINESS Array B**	**58.44**	**1**	P	**P**	04 16 01.3	**-1.7**
	2.0nm,0.8s,mb4.2,baz=349,slow=9.7,SNR=5.1						
AKASG	**Malin Array Be**	**69.22**	**360**	P	**P**	04 17 12.1	**-1.4**
	0.6nm,0.4s,mb3.8,baz=3.2,slow=6.2,SNR=9.5						

*THE **18** 04:10:47.2, 40.23N×25.97E, h21km*
*ATH **18** 04:10:47.6, 40.33N×25.66E, h37km, MD3.0/3*
*ISK **18** 04:10:49.0, 40.49N×25.93E, h6km, MD3.1*
ISC 18 04:10:46.9±0.6, 40.34N±0.03×25.76E±0.03, h9km±5km, n18, σ0°91/28, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BOZC	**Bozcaada**	**0.54**	**155**	*i* P	**Pg**	**04 10 58.0**	**+0.1**
BOZC				*i* S	**Sg**	**04 11 05.2**	**0.0**
ALN	**Alexandroupoli**	**0.60**	**21**	*e*Pg	**Pg**	**04 10 59.5**	**+0.5**
ALN				*e*Sg	**Sg**	**04 11 08.2**	**+1.1**
LOS	**Limnos**	**0.66**	**233**	*e*Pg	**Pg**	**04 11 00.7**	**+0.6**
LOS				*e*Sg	**Sg**	**04 11 10.2**	**+1.3**
LPK	**Lapseki**	**0.77**	**87**	*i* PG	**Pg**	**04 11 02.2**	**-0.1**
LPK				*i* SG	**Sg**	**04 11 11.3**	**-1.3**
RDO	**Rodhopi**	**0.83**	**348**	*e*Pn	**Pn**	**04 11 03.7**	**-0.9**
SART	**Tekirdag**	**1.14**	**71**	*i* P	**Pb**	**04 11 08.7**	**+0.3**
SART				*i* S	**Sb**	**04 11 24.6**	**+1.5**
PRK	**Paraskevi**	**1.16**	**160**	*e*Pn	**Pn**	**04 11 09.5**	**+0.2**
PRK				*e*Sn	**Sn**	**04 11 25.0**	**-0.3**
KGT	**Karabiga**	**1.19**	**84**	PG	**Pg**	**04 11 09.3**	**-1.3**
KGT				SG	**Sg**	**04 11 24.6**	**-1.9**
OUR	**Ouranopolis**	**1.36**	**271**	*e*Pb	**Pb**	**04 11 11.9**	**-0.3**
BNT	**Bandirma**	**1.65**	**89**	PN	**Pn**	**04 11 17.0**	**+0.6**
EDRB	**Edirne**	**1.68**	**26**	*e*PN	**Pn**	**04 11 17.1**	**+0.3**
PLG	**Polygyros**	**1.77**	**272**	*e*PN	**Pn**	**04 11 16.0**	**-2.0**
SRS	**Serrai**	**1.82**	**296**	*e*Pn	**Pn**	**04 11 18.6**	**-0.2**
SRS				*e*Sn	**Sn**	**04 11 42.2**	**0.0**
SOH	**Sokhos**	**1.90**	**286**	*e*Pn	**Pn**	**04 11 19.7**	**-0.1**
KCT	**Karacabey**	**1.99**	**91**	*e*PN	**Pn**	**04 11 22.8**	**+1.6**
CTT	**Catalca**	**2.19**	**67**	*e*PN	**Pn**	**04 11 24.7**	**+0.7**
KDAG	**Bornova**	**2.26**	**148**	*i* P	**Pn**	**04 11 43.5**	**+18**
KDAG				*i* S	**Sn**	**04 12 01.3**	**+8.1**
KNT	**Kendrikon**	**2.33**	**292**	*e*Pn	**Pn**	**04 11 26.2**	**+0.2**
KNT				*e*Sn	**Sn**	**04 11 53.9**	**-1.1**

*IDC **18** 04:13:32.8±2.8, 60.99N×149.59W, mb3.6/4, mb1 4.0/8, mb1mx3.7/24, ML3.7/4, Error ellipse: s-maj=44.6km s-min=13.4km az=79.0*
*NEIC **18** 04:13:34.8, 61.29N×150.89W, h52km, ML3.9(PMR), ML3.7(AEIC), After AEIC.*
NEIC Felt [II] at Anchorage.
ISC 18 04:13:32.9±0.2, 61.30N±0.02×150.83W±0.04, h71km±4km, n93, σ0°77/107, mb3.4/4, Southern Alaska

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FIB	**Fire Island**	**0.34**	**112**	P	**P**	**04 13 45.2**	**+0.7**
GOU	**Gould Hall**	**0.51**	**102**	*e*P	**P**	**04 13 46.5**	**+0.5**
RC01	**Rabbit Creek A**	**0.57**	**111**	P	**P**	**04 13 46.8**	**+0.1**
RC01				S	**S**	**04 13 57.3**	**+0.6**
CGLM	**Capps Glacier**	**0.57**	**272**	P	**P**	**04 13 46.1**	**-0.5**
CGLM				S	**S**	**04 13 55.9**	**-0.8**
PWA	**Palmer West**	**0.58**	**52**	P	**P**	**04 13 47.1**	**+0.4**
SPU	**Mount Spurr**	**0.60**	**260**	P	**P**	**04 13 46.4**	**-0.7**
PMS	**Palmer South**	**0.61**	**94**	P	**P**	**04 13 47.6**	**+0.5**
CRP	**Crater Peak**	**0.64**	**268**	P	**P**	**04 13 47.1**	**-0.3**
CRP				S	**S**	**04 13 57.5**	**-0.7**
CKN	**Chakachatna No**	**0.66**	**264**	P	**P**	**04 13 47.2**	**-0.4**
CKT	**Bend**	**0.67**	**262**	P	**P**	**04 13 47.1**	**-0.6**
CKT				S	**S**	**04 13 57.7**	**-1.0**
CP2	**Crater Peak Tw**	**0.68**	**268**	P	**P**	**04 13 47.7**	**-0.1**
BKG	**Blockade Glaci**	**0.73**	**253**	P	**P**	**04 13 48.0**	**-0.3**
CKL	**Chakachamna La**	**0.74**	**263**	P	**P**	**04 13 48.0**	**-0.4**
BGL	**Barrier Glacie**	**0.76**	**268**	P	**P**	**04 13 48.3**	**-0.3**
SLKM	**Skilak Lake**	**0.84**	**159**	P	**P**	**04 13 49.8**	**+0.1**
PMR	**Palmer**	**0.87**	**69**	P	**P**	**04 13 50.3**	**+0.3**
PMR				S	**S**	**04 13 04.3**	**+0.7**
GHO	**Glory Hole Cre**	**1.03**	**62**	P	**P**	**04 13 52.8**	**+0.7**
RDT	**Redoubt**	**1.06**	**227**	P	**P**	**04 13 52.2**	**-0.2**
RDT				S	**S**	**04 14 06.8**	**-0.1**
MPA	**Moose Pass**	**1.08**	**138**	P	**P**	**04 13 53.2**	**+0.5**
CUT	**Chulitna**	**1.14**	**13**	P	**P**	**04 13 53.9**	**+0.3**
KNK	**Knik Glacier**	**1.15**	**83**	P	**P**	**04 13 54.3**	**+0.7**
KNK				S	**S**	**04 14 10.4**	**+1.3**
REF	**Redoubt East F**	**1.22**	**229**	P	**P**	**04 13 54.5**	**0.0**
REF				S	**S**	**04 14 10.8**	**+0.1**
RSO	**Redoubt South**	**1.26**	**229**	P	**P**	**04 13 55.2**	**+0.1**
NCT	**North Crescent**	**1.26**	**235**	P	**P**	**04 13 55.2**	**0.0**
NNL	**Ninilchik**	**1.28**	**191**	P	**P**	**04 13 56.8**	**+1.5**
RED	**Redoubt Volcan**	**1.30**	**228**	P	**P**	**04 13 55.5**	**-0.1**
RED				S	**S**	**04 14 12.5**	**0.0**
SML	**Sawmill**	**1.30**	**66**	P	**P**	**04 13 56.0**	**+0.3**
SEW	**Seward**	**1.38**	**150**	P	**P**	**04 13 56.5**	**-0.3**
SEW				S	**S**	**04 14 13.9**	**-0.5**
BRLK	**Bradley Lake**	**1.54**	**181**	P	**P**	**04 13 58.9**	**0.0**
BRLK				S	**S**	**04 14 18.1**	**0.0**
ILIM	**Iliamna**	**1.61**	**222**	P	**P**	**04 13 59.9**	**+0.1**
INE	**Iliamna NE**	**1.66**	**223**	P	**P**	**04 14 00.8**	**+0.3**
INE				S	**S**	**04 14 21.4**	**+0.5**
IVE	**Iliamna Volcan**	**1.68**	**221**	P	**P**	**04 14 00.9**	**+0.2**
ILW	**Iliamna West**	**1.68**	**223**	P	**P**	**04 14 01.2**	**+0.4**
IVS	**Iliamna South**	**1.70**	**222**	P	**P**	**04 14 01.6**	**+0.5**
ILS	**Iliamna Low So**	**1.74**	**220**	P	**P**	**04 14 02.1**	**+0.5**
SCM	**Sheep Creek Mo**	**1.76**	**71**	P	**P**	**04 14 02.2**	**+0.3**
HUR	**Hurricane**	**1.78**	**18**	P	**P**	**04 14 03.1**	**+1.0**
CNPM	**China Poot**	**1.79**	**187**	P	**P**	**04 14 02.5**	**+0.2**
OPT	**Oil Point**	**2.03**	**217**	P	**P**	**04 14 06.7**	**+1.1**
JPK	**Jack Peak**	**2.06**	**95**	P	**P**	**04 14 05.8**	**-0.2**
TRF	**Thorofare Moun**	**2.18**	**6**	P	**P**	**04 14 08.8**	**+1.2**
VLZ	**Valdez**	**2.18**	**92**	P	**P**	**04 14 07.3**	**-0.4**
KTH	**Kantishna Hill**	**2.27**	**359**	P	**P**	**04 14 10.1**	**+1.2**
HIN	**Hinchinbrook I**	**2.30**	**111**	P	**P**	**04 14 08.4**	**-1.1**
SVW	**Sparrevohn**	**2.33**	**267**	P	**P**	**04 14 09.2**	**-0.6**
AGU	**Augustine-Summ**	**2.33**	**215**	P	**P**	**04 14 10.8**	**+1.0**
AUW	**Augustine West**	**2.34**	**215**	P	**P**	**04 14 10.8**	**+0.9**
AUI	**Augustine Isla**	**2.35**	**214**	P	**P**	**04 14 11.2**	**+1.0**
TOA	**Tolsona**	**2.36**	**68**	P	**P**	**04 14 11.1**	**+0.8**
KLU	**Klutina**	**2.37**	**83**	P	**P**	**04 14 10.0**	**-0.4**
DHY	**Denali Highway**	**2.41**	**41**	P	**P**	**04 14 11.7**	**+0.7**
EYAK	**Cordova Ski Ar**	**2.59**	**105**	P	**P**	**04 14 12.2**	**-1.3**
MCK	**McKinley**	**2.60**	**19**	P	**P**	**04 14 14.6**	**+1.0**
TZL	**Tazlina**	**2.69**	**71**	P	**P**	**04 14 15.3**	**+0.5**
MCNL	**McNeil River**	**2.75**	**221**	P	**P**	**04 14 15.5**	**-0.2**
TT01	**Tatalina**	**2.93**	**306**	P	**P**	**04 14 17.5**	**-0.7**
BWN	**Browne**	**2.95**	**12**	P	**P**	**04 14 19.7**	**+1.1**
BMRM	**Bremner River**	**3.04**	**93**	P	**P**	**04 14 18.3**	**-1.5**
WACK	**Wrangell Chich**	**3.18**	**75**	P	**P**	**04 14 21.8**	**+0.1**
KAPH	**Katmai Pasha**	**3.23**	**215**	P	**P**	**04 14 23.0**	**+0.5**
GLB	**Gilahina Butte**	**3.38**	**84**	P	**P**	**04 14 24.1**	**-0.9**
NEA	**Nenana**	**3.39**	**13**	P	**P**	**04 14 25.1**	**+0.4**
CCB	**Clear Creek Bu**	**3.64**	**21**	P	**P**	**04 14 28.6**	**+0.5**
KDAK	**Kodiak Island**	**3.64**	**195**	P	**P**	**04 14 26.6**	**-1.5**
MLY	**Manley**	**3.75**	**1**	P	**P**	**04 14 29.9**	**+0.2**
KABR	**Katmai Barrier**	**3.80**	**215**	P	**P**	**04 14 30.2**	**-0.3**
COLA	**College**	**3.84**	**19**	P	**P**	**04 14 31.1**	**+0.1**
MDM	**Murphy Dome**	**3.86**	**17**	P	**P**	**04 14 31.9**	**+0.7**
ILAR	**Eielson Array**	**3.92**	**26**	Pn	**P**	**04 14 31.9**	**-0.3**
	3.2nm,0.3s,baz=207,slow=13,SNR=52						
ILAR				Sn	**S**	**04 15 17.9**	**+0.6**
	6.6nm,0.3s,baz=215,slow=21,SNR=9.7						
ILAR				Lg		04 15 33.8	
	5.9nm,0.3s,baz=207,slow=22,SNR=8.4						
IL1	**Eielson Array**	**3.92**	**26**	P	**P**	**04 14 32.1**	**0.0**
DOT	**Dot Lake**	**3.93**	**50**	P	**P**	**04 14 32.1**	**-0.1**
CAHL	**Cahill**	**3.96**	**217**	P	**P**	**04 14 32.8**	**+0.1**
KJL	**Kejulik**	**4.04**	**219**	P	**P**	**04 14 34.4**	**+0.6**
BALM	**Baldy**	**4.12**	**90**	P	**P**	**04 14 33.4**	**-1.4**
YAH	**Yahtse**	**4.54**	**98**	P	**P**	**04 14 39.2**	**-1.6**
BCA3	**Beaver Creek A**	**4.59**	**63**	P	**P**	**04 14 41.1**	**-0.3**
CTGM	**Chitina Glacie**	**4.62**	**90**	P	**P**	**04 14 41.1**	**-0.7**
IM3	**Indian Mountai**	**4.88**	**346**	P	**P**	**04 14 44.6**	**-0.8**
CHX	**Chaix Hills**	**4.93**	**100**	P	**P**	**04 14 45.2**	**-1.0**
IMA	**Indian Mountai**	**4.96**	**346**	*e*P	**P**	**04 14 44.7**	**-1.8**
PNL	**Peninsula**	**5.88**	**101**	P	**P**	**04 14 57.8**	**-1.4**
DAWY	**Dawson**	**5.95**	**57**	P	**P**	**04 14 59.6**	**-0.5**
BM3	**Burnt Mountain**	**6.71**	**21**	P	**P**	**04 15 10.4**	**-0.4**
WHY	**Whitehorse**	**7.78**	**88**	P	**P**	**04 15 23.4**	**-2.2**
INK	**Inuvik**	**10.16**	**39**	Pn	**P**	**04 15 55.7**	**-2.1**
	0.4nm,0.3s,baz=232,slow=17,SNR=17						
INK				Sn	**S**	**04 17 46.6**	**-4.2**
	0.1nm,0.3s,baz=190,slow=18,SNR=2.2						
INK				Lg		04 18 52.7	
	0.1nm,0.3s,baz=351,slow=20,SNR=4.6						
INK	**Inuvik**	**10.16**	**39**	Pn	**P**	**04 15 55.7**	**-2.1**
INK				Sn	**S**	**04 17 46.6**	**-4.2**
INK				Lg		04 18 52.7	
DLBC	**Dease Lake**	**10.83**	**96**	Pn	**P**	**04 16 01.6**	**-5.2**
	0.2nm,0.3s,baz=252,slow=11,SNR=3.1						
YKA	**Yellowknife Ar**	**16.97**	**70**	Pn	**P**	**04 17 24.9**	**-1.6**
	0.2nm,0.3s,baz=275,slow=11,SNR=50						
NEW	**Newport**	**23.09**	**109**	P	**P**	**04 18 33.0**	**+0.5**
	2.1nm,0.6s,mb3.6,baz=282,slow=9.3,SNR=2.3						
YBH	**Yreka Blue Hor**	**25.91**	**126**	P	**P**	**04 19 00.6**	**+1.0**
	0.5nm,0.3s,mb3.4,baz=5.0,slow=3.0,SNR=5.0						
PDAR	**Pinedale Array**	**30.72**	**108**	P	**P**	**04 19 43.4**	**+0.6**
	0.3nm,0.6s,mb3.2,baz=351,slow=5.4,SNR=4.1						
TXAR	**Lajitas Array**	**44.48**	**114**	P	**P**	**04 21 40.4**	**+1.9**
	0.6nm,0.6s,mb3.5,baz=317,slow=6.2,SNR=11						
QSPA	**South Pole Qui**	**151.10**	**180**	*e*P	PKPdf	04 33 12.6	+3.1

*IDC **18** 04:20:57.6±1.8, 10.69S×165.35E, mb4.0/8, mb1 4.2/8, mb1mx4.1/14, MS3.5/3, Ms1 3.4/3, ms1mx3.0/19, Error ellipse: s-maj=110.0km s-min=20.6km az=144.0*
*NEIC **18** 04:21:06.9±0.5, 11.16S×165.58E, h80km, mb4.4/1, Error ellipse: s-maj=17.2km s-min=10.5km az=134.0*
ISC 18 04:21:16.7±5.1, 11.9S±0.2×165.7E±0.1, h195km±52km, n13, σ0°81/14, mb3.7/8, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**10.19**	**176**	*e*P	**P**	**04 23 39.5**	**0.0**
DZM				*e*S	**S**	**04 25 30.8**	**-0.4**
DZM	**Mont Dzumac**	**10.19**	**176**	*e*P	**P**	**04 23 39.5**	**0.0**
DZM				*e*S	**S**	**04 25 30.8**	**-0.4**
CTA	**Charters Tower**	**20.36**	**244**	P	**P**	**04 25 40.5**	**+0.8**
	14nm,0.9s,baz=66,slow=12,SNR=8.3						
CTA				LR	LR	04 32 28.5	
	comp=Z,105nm,19.4s,baz=51,slow=34						
CTAO	**Charters Tower**	**20.36**	**244**	*e*P	**P**	**04 25 40.7**	**+1.0**
	25nm,1.1s						
STKA	**Stephens Creek**	**29.81**	**224**	LR	LR	04 38 46.0	
	comp=Z,124nm,18.5s,baz=23,slow=35						
WRAB	**Tennant Creek**	**31.13**	**251**	P	**P**	**04 27 19.4**	**0.0**
	54nm,2.0s,mb4.8						
WRA	**Warramunga Arr**	**31.14**	**251**	P	**P**	**04 27 19.3**	**-0.2**
	0.8nm,0.7s,mb3.5,baz=79,slow=8.7,SNR=6.9						
ASAR	**Alice Springs**	**32.37**	**244**	P	**P**	**04 27 30.3**	**+0.1**
	3.9nm,0.8s,mb4.0,baz=70,slow=10.0,SNR=29						
ASAR				LR	LR	04 39 32.8	
	comp=Z,52nm,20.9s,baz=78,slow=34						
ILAR	**Eielson Array**	**84.29**	**18**	P	**P**	**04 33 26.2**	**-1.3**
	0.5nm,0.7s,mb3.4,baz=235,slow=5.1,SNR=16						
YBH	**Yreka Blue Hor**	**84.51**	**46**	P	**P**	**04 33 29.9**	**+0.8**
	1.7nm,0.9s,mb3.8,baz=216,slow=5.8,SNR=4.4						
MKAR	**Makanchi Array**	**94.05**	**317**	P	**P**	**04 34 12.9**	**-1.0**
	0.3nm,0.8s,mb3.4,baz=104,slow=5.9,SNR=2.5						
PDAR	**Pinedale Array**	**94.15**	**47**	P	**P**	**04 34 16.2**	**+1.7**
	0.4nm,0.8s,mb3.5,baz=252,slow=4.7,SNR=3.9						
YKA	**Yellowknife Ar**	**95.72**	**27**	P	**P**	**04 34 20.6**	**-0.5**
	0.2nm,0.9s,mb3.4,baz=258,slow=4.8,SNR=5.6						

*NIED **18** 04:51:00, 26.20N×128.40E, h29km, Mw3.9 Best double couple: M0 9.33×10^14 NP1:φs34°, δ78°, λ80°. NP2:φs254°, δ16°, λ129°.*
*IDC **18** 04:51:11.9±1.1, 26.28N×128.22E, mb3.8/4, mb1 3.9/4, mb1mx3.6/20, MS3.1/3, Ms1 3.1/3, ms1mx2.7/32, Error ellipse: s-maj=44.5km s-min=13.7km az=92.0*
*JMA **18** 04:51:15.2±0.3, 26.19N×128.44E, h33km, M3.5*
ISC 18 04:51:13.9±0.8, 26.17N±0.05×128.50E±0.04, h30km±6km, n16, σ0°80/21, mb3.8/4, MS3.2/2, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JJT2	**Tamagusuku 2**	**0.68**	**268**	P	**Pb**	**04 51 27.5**	**+0.3**
JJT2				S	**Sb**	**04 51 36.1**	**-0.2**
JOW	**Kunigami**	**0.69**	**343**	Pn	**Pn**	**04 51 27.8**	**+0.1**
	436nm,0.3s,baz=139,slow=18,SNR=2285						
JOW				Sn	**Sn**	**04 51 36.4**	**-1.0**
	414nm,0.3s,baz=128,slow=18,SNR=39						
JOW	**Kunigami**	**0.69**	**343**	P	**Pb**	**04 51 27.8**	**+0.3**
JOW				S	**Sb**	**04 51 36.6**	**-0.2**
NAH1	**Naha**	**0.73**	**273**	P	**Pb**	**04 51 28.0**	**0.0**
NAH1				S	**Sb**	**04 51 37.2**	**-0.6**
JIH	**Iheya**	**0.99**	**331**	P	**Pn**	**04 51 32.7**	**+0.9**
JIH				S	**Sn**	**04 51 45.8**	**+1.0**
JAGN	**Aguni-jima**	**1.21**	**291**	P	**Pn**	**04 51 35.3**	**+0.4**
JAGN				S	**Sn**	**04 51 50.6**	**+0.3**
JKE	**Kume jima 2**	**1.55**	**276**	P	**Pn**	**04 51 39.3**	**-0.5**
JKE				S	**Sn**	**04 51 58.4**	**-0.7**
JTK	**Tokunoshima**	**1.66**	**14**	P	**Pn**	**04 51 42.3**	**+0.8**
JMZ	**Minamidaito 2**	**2.47**	**97**	P	**Pn**	**04 51 53.1**	**0.0**
JMZ				S	**Sn**	**04 52 21.2**	**-1.3**
JNU	**Nakatsue**	**7.23**	**16**	LR	LR	04 56 12.2	
	comp=Z,62nm,18.0s,baz=70,slow=42						
CMAR	**Chiang Mai Arr**	**28.35**	**260**	LR	LR	05 09 33.0	
	comp=Z,29nm,18.5s,MS2.9,baz=308,slow=39						
MKAR	**Makanchi Array**	**41.76**	**312**	P	**P**	**04 59 00.7**	**-1.3**
	1.3nm,0.6s,mb3.7,baz=98,slow=10.0,SNR=17						
WRA	**Warramunga Arr**	**46.18**	**172**	P	**P**	**04 59 38.5**	**+0.5**
	0.6nm,0

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JJT2	**Tamagusuku 2**	**0.65**	**268**	P	**P**	**04 58 10.7**	**+0.2**
JJT2				S	**S**	**04 58 19.4**	**-0.3**
JOW	**Kunigami**	**0.69**	**345**	Pn	**P**	**04 58 11.4**	**+0.4**
	1μm,0.3s,baz=136,slow=18,SNR=212						
JOW				Sn	**S**	**04 58 19.9**	**-0.8**
	892nm,0.3s,baz=122,slow=19,SNR=31						
JOW	**Kunigami**	**0.69**	**345**	P	**P**	**04 58 11.4**	**+0.3**
JOW				S	**S**	**04 58 19.6**	**-1.0**
NAH1	**Naha**	**0.70**	**273**	P	**P**	**04 58 11.3**	**0.0**
NAH1				S	**S**	**04 58 20.4**	**-0.6**
JIH	**Iheya**	**0.98**	**333**	P	**P**	**04 58 16.1**	**+0.9**
JIH				S	**S**	**04 58 28.0**	**-0.1**
JAGN	**Aguni-jima**	**1.18**	**291**	P	**P**	**04 58 18.8**	**+0.7**
JAGN				S	**S**	**04 58 33.6**	**+0.4**
JKE	**Kume jima 2**	**1.52**	**276**	P	**P**	**04 58 22.8**	**-0.2**
JTK	**Tokunoshima**	**1.67**	**15**	P	**P**	**04 58 25.8**	**+0.6**
JTK				S	**S**	**04 58 46.4**	**+0.8**
JAM	**Amami Oshima**	**2.46**	**24**	P	**P**	**04 58 36.9**	**+0.5**
JAM				*e*S	**S**	**04 59 05.2**	**-0.3**
JMZ	**Minamidaito 2**	**2.50**	**97**	P	**P**	**04 58 36.6**	**-0.4**
JMZ				S	**S**	**04 59 05.1**	**-1.6**
PKI	**Pulchoki**	**38.30**	**282**	*e*P	**P**	**05 05 16.2**	**-0.9**
KKN	**Kakani**	**38.38**	**282**	*e*P	**P**	**05 05 18.0**	**+0.2**
GKN	**Gorkha**	**38.91**	**283**	*e*P	**P**	**05 05 22.0**	**-0.2**
	7.2nm,0.4s,mb4.7						
KOLN	**Koldanda**	**39.86**	**283**	*e*P	**P**	**05 05 28.8**	**-1.2**
	57nm,1.6s,mb5.0						
MKAR	**Makanchi Array**	**41.74**	**312**	P	**P**	**05 05 44.4**	**-0.9**
	1.3nm,0.6s,mb3.8,baz=102,slow=10,SNR=22						
WRAB	**Tennant Creek**	**46.18**	**172**	*e*P	**P**	**05 06 22.2**	**+0.7**
	7.6nm,0.8s,mb4.7						
WRA	**Warramunga Arr**	**46.19**	**172**	P	**P**	**05 06 21.9**	**+0.3**
	0.7nm,0.7s,mb3.7,baz=353,slow=8.3,SNR=6.4						
ASAR	**Alice Springs**	**49.82**	**173**	P	**P**	**05 06 52.0**	**+2.2**
	0.6nm,0.6s,mb3.8,baz=3.2,slow=14,SNR=7.0						
BVAR	**Borovoye Array**	**50.47**	**318**	P	**P**	**05 06 53.6**	**-0.8**
	0.9nm,0.4s,mb4.1,baz=69,slow=9.4,SNR=6.7						
FINES	**FINESS Array B**	**73.03**	**331**	P	**P**	**05 09 25.4**	**-0.4**
	9.9nm,1.2s,mb4.6,baz=45,slow=5.4,SNR=6.1						
YKA	**Yellowknife Ar**	**78.49**	**25**	P	**P**	**05 09 58.1**	**+1.3**
	0.1nm,0.4s,mb3.1,baz=302,slow=5.7,SNR=6.1						

*BER **18** 05:15:02.5±6.8, 78.57N×6.31E, h22km±906km, MD2.7, ML2.2, ML2.0(NAO)*

NAO 18 05:15:01.9±4.5, 78.51N×7.35E, h2km±31km**, ML2.0, Svalbard region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBS	**Kingsbay**	**1.00**	**63**	Pn	Pn	05 15 22.2	-0.5
KBS				Lg		05 15 34.4	
KBS	**Kingsbay**	**1.00**	**63**	*e*P	Pb	05 15 22.3	+0.8
KBS				*e*S	Sb	05 15 34.1	-0.8
KBS				AML	AML	05 15 37.3	
	comp=Z,76nm,0.6s						
SPA0	**Spitsbergen Ar**	**1.86**	**96**	Pn	Pn	05 15 34.9	-0.2
	baz=285,slow=9.3						
SPA0				Sn	Sn	05 15 58.9	-0.7
	baz=257,slow=28						

GUC 18 05:15:31.4±0.7, 32.51S×71.98W, h36km±4km, MD3.5, ML2.4, 1D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PTCH	**Petorca**	**0.92**	**75**	*e*P	P	05 15 48.1	+0.2
PTCH				*i* S	S	05 16 00.8	+0.7
PTCH				AMP		05 16 02.3	
	comp=N,114nm,0.2s						
PEL	**Peldehue**	**1.25**	**120**	*e*P	P	05 15 53.8	+1.1
PEL				*i* S	S	05 16 10.6	+1.9
PEL				AMP		05 16 11.6	
	comp=E,320nm,0.4s						
CMCH	**Combarbala**	**1.57**	**32**	*e*P	P	05 15 58.3	+1.0
CMCH				*i* S	S	05 16 19.2	+2.5
CMCH				AMP		05 16 26.9	
	comp=E,73nm,0.7s						
FCH	**Farellones**	**1.63**	**120**	⇓*i* P	P	05 15 59.7	+1.6
FCH				*i* S	S	05 16 21.2	+3.0
FCH				AMP		05 16 22.1	
	comp=E,93nm,0.2s						

*IDC **18** 05:18:00.8±0.8, 8.31S×147.41E, mb4.4/7, mb1 4.6/9, mb1mx4.5/12, ML4.2/2, MS3.5/7, Ms1 3.5/7, ms1mx3.2/18, Error ellipse: s-maj=30.8km s-min=19.7km az=105.0*
*BJI **18** 05:18:01.4, 8.35S×147.68E, h24km, mB4.8, mb4.8*
*NEIC **18** 05:18:02.7±0.4, 8.32S×147.33E, h10km, mb4.6/4, Error ellipse: s-maj=12.2km s-min=5.4km az=89.0*
*MOS **18** 05:18:03.7±0.8, 8.38S×147.33E, h33km, mb4.7/4, Error ellipse: s-maj=23.2km s-min=14.6km az=92.3*

ISC 18 05:18:00.3±0.6, 8.30S±0.05×147.54E±0.10, h10km, n51, σ1§02/47, mb4.7/20, MS3.5/6, 4C, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**1.16**	**199**	⇑*i* P	**Pb**	**05 18 23.0**	**+1.0**
WAU	**Wau**	**1.25**	**319**	⇑*i* P	**Pb**	**05 18 24.8**	**+1.3**
CTA	**Charters Tower**	**11.79**	**186**	Pn	**P**	**05 20 50.8**	**-0.8**
	1.0nm,0.3s,baz=8.7,slow=13,SNR=11						
CTA				LR	LR	05 24 36.7	
	comp=Z,98nm,20.2s,baz=42,slow=34						
CTAO	**Charters Tower**	**11.79**	**186**	*e*P	**P**	**05 20 51.8**	**+0.2**
	15nm,0.8s						
WRAB	**Tennant Creek**	**17.23**	**226**	*e*P	**P**	**05 22 00.8**	**-2.0**
	31nm,0.8s						
WRAB				*e*S	**S**	**05 25 14.8**	**+1.7**
WB2	**Warramunga Arr**	**17.23**	**226**	⇑*i* P	**P**	**05 22 00.8**	**-2.1**
WRA	**Warramunga Arr**	**17.24**	**226**	P	**P**	**05 22 00.2**	**-2.8**
	0.8nm,0.3s,baz=54,slow=12,SNR=62						
WRA				S	**S**	**05 25 17.1**	**+3.8**
	0.1nm,0.3s,baz=49,slow=19,SNR=3.0						
WRA				LR	LR	05 29 03.7	
	comp=Z,187nm,18.6s,baz=50,slow=39						
AS12	**Alice Springs**	**20.11**	**219**	⇑*i* P	**P**	**05 22 36.9**	**-0.3**
	17nm,0.8s						
ASAR	**Alice Springs**	**20.11**	**219**	P	**P**	**05 22 36.5**	**-0.6**
	16nm,1.0s,baz=40,slow=11,SNR=48						
ASAR				S	**S**	**05 26 19.3**	**+1.8**
	1.6nm,0.8s,baz=30,slow=24,SNR=3.5						
ASAR				LR	LR	05 30 24.3	
	comp=Z,169nm,18.7s,MS3.4,baz=30,slow=37						
ASAR	**Alice Springs**	**20.11**	**219**	P	**P**	**05 22 36.5**	**-0.6**
ASAR				S	**S**	**05 26 19.3**	**+1.8**
ASAR				LR	LR	05 30 24.3	
FITZ	**Fitzroy Crossi**	**23.42**	**243**	*e*P	**P**	**05 23 09.5**	**-1.1**
	6.6nm,0.7s,mb4.2						
FITZ	**Fitzroy Crossi**	**23.42**	**243**	P	**P**	**05 23 09.1**	**-1.4**
	7.5nm,0.7s,mb4.2,baz=56,slow=3.5,SNR=13						
FITZ				LR	LR	05 32 45.4	
	comp=Z,67nm,19.3s,MS3.1,baz=80,slow=38						
STKA	**Stephens Creek**	**24.11**	**192**	P	**P**	**05 23 18.2**	**+1.0**
	5.0nm,0.7s,mb4.1,baz=6.0,slow=5.4,SNR=8.5						
STKA				LR	LR	05 32 51.5	
	comp=Z,163nm,19.7s,MS3.5,baz=24,slow=37						
ASAJ	**Asahikawa**	**52.36**	**356**	LR	LR	05 47 00.9	
	comp=Z,24nm,19.8s,MS3.2,baz=146,slow=33						
ENH	**Enshi**	**52.97**	**318**	*e*P	**P**	**05 27 19.3**	**-0.1**
	12nm,0.9s,mb4.8						
ENH				LR	LR		
	comp=Z,133nm,21.0s,MS4.0						
CMAR	**Chiang Mai Arr**	**54.82**	**299**	P	**P**	**05 27 33.0**	**-0.2**
	comp=Z,9.1nm,1.0s,mb4.7,baz=123,slow=5.9,SNR=23						
HHC	**Hu-ho-hao-te**	**59.06**	**329**	*e*P	**P**	**05 28 03.6**	**+0.5**
HHC				AMB	AMB		
	comp=Z,10.0nm,1.3s,mb4.7						
LZH	**Lanzhou**	**60.29**	**320**	*e*P	**P**	**05 28 12.5**	**+0.9**
LZH				AMB	AMB		
	comp=Z,33nm,1.5s,mb5.1						
GTA	**Gaotai**	**64.84**	**321**	*e*P	**P**	**05 28 42.8**	**+0.9**
GTA				AP	pP	05 28 47.3	+2.3
GTA				AMB	AMB		
	comp=Z,5.0nm,0.6s,mb4.7						
LSA	**Lhasa**	**66.05**	**308**	*e*P	**P**	**05 28 49.4**	**-0.4**
	comp=Z,2.9nm,0.4s,mb4.7						
ULN	**Ulaanbaatar**	**66.37**	**331**	*e*P	**P**	**05 28 52.6**	**+1.1**
ULN				*e*PcP	PcP	05 29 21.9	+0.6
ULN				*e*PP	PP	05 31 18.1	-1.7
PKI	**Pulchoki**	**69.84**	**303**	*e*P	**P**	**05 29 12.7**	**-0.8**
ZAK	**Zakamensk**	**69.90**	**332**	*e*P	**P**	**05 29 14.0**	**+0.5**
KKN	**Kakani**	**70.02**	**303**	*e*P	**P**	**05 29 14.6**	**0.0**
	comp=Z,26nm,0.9s,mb5.1						
DMN	**Daman**	**70.10**	**303**	*e*P	**P**	**05 29 15.3**	**+0.2**
	comp=Z,29nm,0.8s,mb5.3						
GKN	**Gorkha**	**70.63**	**303**	*e*P	**P**	**05 29 18.3**	**0.0**
	comp=Z,21nm,0.6s,mb5.2						
BOD	**Bodaibo**	**71.31**	**342**	*e*P	**P**	**05 29 20.1**	**-1.9**
BOD				*e*		05 29 26.5	
KOLN	**Koldanda**	**71.41**	**303**	*e*P	**P**	**05 29 23.1**	**0.0**
	comp=Z,23nm,0.7s,mb5.2						
WMQ	**Urumqi**	**74.87**	**320**	*e*P	**P**	**05 29 43.0**	**-0.1**
MKAR	**Makanchi Array**	**79.60**	**321**	P	**P**	**05 30 10.1**	**+0.7**
	comp=Z,4.3nm,0.7s,mb4.5,baz=102,slow=7.0,SNR=43						
MKAR	**Makanchi Array**	**79.60**	**321**	*i* P	**P**	**05 30 10.0**	**+0.7**
MKAR				pmax	pmax		
	comp=Z,3.0nm,0.7s						
MAW	**Mawson**	**80.35**	**203**	P	**P**	**05 30 13.3**	**+0.4**
	comp=Z,2.3nm,0.9s,mb4.1,baz=97,slow=8.4,SNR=4.6						
MAW				LR	LR	06 05 24.5	
	comp=Z,53nm,18.5s,MS3.9,baz=140,slow=35						
TIXI	**Tiksi**	**80.73**	**354**	*e*P	**P**	**05 30 14.9**	**0.0**
TIXI				pmax	pmax		
	comp=Z,14nm,1.0s,mb4.8						
QSPA	**South Pole Qui**	**81.69**	**180**	*e*P	**P**	**05 30 21.2**	**+1.5**
	comp=Z,10.0nm,0.9s,mb4.8						
NVS	**Novosibirsk**	**82.46**	**328**	*i* P	**P**	**05 30 23.5**	**-0.7**
KURK	**Kurchatov**	**83.36**	**323**	*i* P	**P**	**05 30 29.6**	**+0.7**
KURK				pmax	pmax		
	comp=Z,11nm,1.7s,mb4.6						
KURK	**Kurchatov**	**83.36**	**323**	*e*P	**P**	**05 30 29.8**	**+0.9**
KKAR	**Karatay Array**	**86.27**	**314**	*i* P	**P**	**05 30 43.8**	**+0.1**
ILAR	**Eielson Array**	**87.37**	**23**	P	**P**	**05 30 49.1**	**+0.6**
	comp=Z,1.4nm,0.8s,mb4.3,baz=268,slow=4.6,SNR=19						
VOSK	**Vostochnaya**	**88.50**	**324**	P	**P**	**05 31 01.3**	**+7.1**
VOSK				pmax	pmax		
	comp=Z,5.0nm,1.5s,mb4.6						
BVAO	**Borovoye Array**	**88.93**	**324**	*i* P	**P**	**05 30 54.7**	**-1.6**
ZRNK	**Zerenda**	**89.72**	**324**	P	**P**	**05 30 59.5**	**-0.5**
ZRNK				pmax	pmax		
	comp=Z,1.0nm,0.9s,mb4.2						
ZRNK	**Zerenda**	**89.72**	**324**	*e*P	**P**	**05 30 59.7**	**-0.3**
AB31	**Akbulak array**	**94.65**	**319**	*i* P	**P**	**05 31 22.0**	**-0.8**
YKA	**Yellowknife Ar**	**100.94**	**28**	P	P	05 31 51.8	+0.7
	comp=Z,0.1nm,0.7s,baz=264,slow=3.7,SNR=4.8						
YKA				PKKPbc		05 48 02.1	
	comp=Z,0.2nm,0.6s,baz=96,slow=2.7,SNR=8.6						
PDAR	**Pinedale Array**	**105.05**	**48**	Pdiff	Pdif	05 32 12.1	+2.4
	comp=Z,0.5nm,0.7s,baz=252,slow=4.7,SNR=5.0						
GERES	**GERESS Array B**	**124.09**	**325**	PKP	PKPdf	05 37 00.6	-1.7
	comp=Z,0.2nm,0.3s,baz=270,slow=1.3,SNR=4.1						
LPAZ	**La Paz**	**137.07**	**125**	PKP	PKPdf	05 37 28.1	+0.5
	comp=Z,1.1nm,1.0s,baz=102,slow=3.6,SNR=4.2						
BDFB	**Brasilia**	**151.66**	**147**	PKPbc	PKPdf	05 37 58.5	+5.9
	comp=Z,4.2nm,0.6s,baz=168,slow=1.8,SNR=12						
DBIC	**Dimbokro**	**152.59**	**269**	PKPbc	PKPdf	05 37 59.7	+5.6
	comp=Z,14nm,1.2s,baz=238,slow=0.7,SNR=4.1						
DBIC	**Dimbokro**	**152.59**	**269**	PKPbc	PKPdf	05 37 59.7	+5.6

*NNC **18** 05:52:40.2±9.2, 37.41N×70.15E, mpv3.6, Error ellipse: s-maj=110.7km s-min=65.7km az=107.0*

ISC 18 05:52:24.5±1.5, 36.23N±0.09×71.0E±0.2, h33km**, n14, σ0§54/16, 2C-2D, Afghanistan-Tajikistan border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AML	**Almayashu**	**6.25**	**19**	P	**P**	**05 53 57.3**	**+0.5**
	SNR=29						
UCH	**Uchtor**	**6.58**	**23**	P	**P**	**05 54 01.1**	**-0.3**
	SNR=26						
KZA	**Kyzart**	**6.70**	**28**	P	**P**	**05 54 02.5**	**-0.7**
	SNR=10						
EKS2	**Erkin-Say**	**6.77**	**18**	P	**P**	**05 54 05.3**	**+1.1**
	SNR=13						
KK31	**Karatay Array**	**6.88**	**357**	⇓P	**P**	**05 54 05.9**	**+0.2**
	1.9nm,0.2s,baz=166,slow=13,SNR=40						
KK31				⇓S	**S**	**05 55 13.4**	**-10**
	3.1nm,0.3s,baz=178,slow=23,SNR=11						
AAK	**Ala-Archa**	**6.94**	**22**	P	**P**	**05 54 06.7**	**+0.1**
	SNR=6.2						
USP	**Uspenovka**	**7.53**	**20**	P	**P**	**05 54 13.8**	**-0.8**
	SNR=6.7						
KOLN	**Koldanda**	**13.59**	**125**	*e*P	**P**	**05 55 37.7**	**+0.4**
	16nm,0.6s						
GKN	**Gorkha**	**14.14**	**122**	*e*P	**P**	**05 55 45.0**	**+0.4**
	15nm,0.3s						
DMN	**Daman**	**14.71**	**122**	*e*P	**P**	**05 55 52.4**	**+0.4**
	9.1nm,0.4s						
KKN	**Kakani**	**14.72**	**121**	*e*P	**P**	**05 55 51.9**	**-0.2**
	18nm,0.5s						
PKI	**Pulchoki**	**14.95**	**121**	*e*P	**P**	**05 55 54.9**	**-0.2**
	9.6nm,0.4s						
GUN	**Gumba**	**15.07**	**119**	*e*P	**P**	**05 55 55.9**	**-0.7**
	34nm,1.0s						
AB31	**Akbulak array**	**15.33**	**332**	⇑P	**P**	**05 55 59.6**	**-0.3**
	0.5nm,0.3s,baz=136,slow=14,SNR=36						
AB31				⇑S	**S**	**05 58 33.6**	**-15**
	1.1nm,0.6s,baz=268,slow=61,SNR=5.7						

MEX 18 05:56:55.8±0.6, 16.09N×96.94W, h13km**±18**km**, MD3.9, Oaxaca**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HUIG	**Huatulco**	**0.86**	**112**	*i* P	Pb	05 57 09.2	-2.9
HUIG				*i* S	Sb	05 57 20.2	-3.0
OXX	**Oaxaca**	**1.01**	**12**	*i* P	Pb	05 57 12.0	-2.6
OXX				*i* S	Sb	05 57 24.0	-3.6
CMIG	**Matias Romero**	**2.21**	**63**	*i* P	Pn	05 57 30.6	-2.1
CMIG				*i* S	Sn	05 57 55.4	-4.7
IISM	**Ciudad Serdan**	**2.91**	**352**	*e*P	Pn	05 57 38.0	-4.8
IISM				*i* S	Sn	05 58 15.0	-3.0
POHV	**Veracruz**	**2.98**	**354**	*e*P	Pn	05 57 42.0	-1.8
PPM	**Popocatepetl**	**3.37**	**332**	*e*P	Pn	05 57 46.0	-3.3

*NEIC **18** 06:05:50.1, 30.92S×71.71W, h19km, ML3.1(GUC), After GUC.*

GUC 18 06:05:50.1±0.8, 30.92S×71.71W, h19km**±5**km**, MD4.0, ML3.1, 1C-1D, Near coast of central Chile**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OVCH	**Ovalle**	**0.53**	**55**	*e*P	Pb	06 06 00.8	+0.1
OVCH				*i* S	Sb	06 06 08.3	+0.4
OVCH				AMP		06 06 08.6	
	comp=E,2μm,0.1s						
CMCH	**Combarbala**	**0.66**	**113**	⇑*i* P	Pb	06 06 03.1	+0.3
CMCH				*i* S	Sb	06 06 11.9	+0.4
CMCH				AMP		06 06 12.3	
	comp=N,4μm,0.4s						
ILCH	**Illapel**	**0.85**	**147**	*e*P	Pb	06 06 05.4	-0.7
ILCH				*i* S	Sb	06 06 16.3	-0.8
ILCH				AMP		06 06 17.2	
	comp=N,416nm,0.2s						
TLL	**Tololo Astrono**	**1.08**	**47**	⇓*i* P	Pb	06 06 09.6	-0.4
TLL				*i* S	Sb	06 06 24.2	+0.6
TLL				AMP		06 06 27.9	
	comp=E,912nm,0.4s						
LSCH	**La Serena**	**1.08**	**22**	*i* P	Pb	06 06 09.1	-0.8
LSCH				*i* S	Sb	06 06 22.9	-0.7
LSCH				AMP		06 06 26.7	
	comp=N,552nm,0.5s						
PTCH	**Petorca**	**1.50**	**154**	*e*P	Pn	06 06 15.4	-0.9
PTCH				*i* S	Sn	06 06 34.8	-0.7
PTCH				AMP		06 06 41.4	
	comp=E,558nm,0.4s						
PEL	**Peldehue**	**2.39**	**159**	*e*P	Pn	06 06 29.6	+0.6
PEL				*i* S	Sn	06 06 59.6	+1.6
PEL				AMP		06 07 11.6	
	comp=E,267nm,0.3s						
CLCH	**Cerro Calan**	**2.67**	**158**	*e*P	Pn	06 06 33.2	+0.2
CLCH				*i* S	Sn	06 07 05.9	+0.8
CLCH				AMP		06 07 18.8	
	comp=N,142nm,0.6s						
FCH	**Farellones**	**2.69**	**154**	*e*P	Pn	06 06 34.0	+0.6
FCH				*i* S	Sn	06 07 07.6	+1.9
FCH				AMP		06 07 14.5	
	comp=E,55nm,0.2s						

GUC 18 06:08:03.0±0.7, 24.70S×69.17W, h80km**, MD4.0, ML3.9, 2D, Northern Chile**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CPN1	**Cerro Paranal**	**1.12**	**274**	*e*P	P	06 08 24.8	+1.0
CPN1				*i* S	S	06 08 41.1	+1.7
ANCH	**Antofagasta**	**1.52**	**312**	*e*P	P	06 08 29.4	+0.3
ANCH				*i* S	S	06 08 48.6	+0.2
ANCH				AMP		06 08 50.5	
	comp=N,4μm,0.5s						
LVC	**Limon Verde**	**2.10**	**7**	⇓*i* P	P	06 08 38.0	+1.2
LVC				*i* S	S	06 09 03.5	+1.7
LVC				AMP		06 09 04.7	
	comp=N,738nm,0.5s						
CPCH	**Copiapo**	**2.85**	**202**	⇓*i* P	P	06 08 47.4	0.0
CPCH				*i* S	S	06 09 17.8	-2.8
CMCH	**Combarbala**	**6.64**	**194**	*i* S	S	06 10 55.2	+0.3

*CASC **18** 06:15:58.9±2.0, 14.13N×93.33W, MD4.6, ML4.4, mb4.2(NEIC)*
*IDC **18** 06:15:59.3±1.4, 14.31N×93.40W, mb4.0/5, mb1 4.2/7, mb1mx4.0/19, ML4.0/3, MS3.4/5, Ms1 3.4/5, ms1mx3.1/23, Error ellipse: s-maj=33.9km s-min=19.6km az=37.0*
*BJI **18** 06:16:02.6, 14.40N×93.30W, h21km, Ms4.9, Msz4.5*
*NEIC **18** 06:16:06.6, 14.42N×93.33W, h21km, mb4.2/13, MD4.6(MEX), After MEX.*
*MEX **18** 06:16:07.4±1.3, 14.57N×93.45W, h20km±293km, MD4.6*

ISC 18 06:15:59.6±1.2, 14.32N±0.05×93.34W±0.03, h8km**±9**km**, n76, σ1§36/85, mb4.1/12, MS3.5/4, 4C-1D, Near coast of Chiapas**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAT	**Jato**	**1.65**	**90**	*e*P	**Pn**	**06 16 28.8**	**-0.3**
JAT				*e*S	**Sb**	**06 16 52.1**	**+1.4**
JAT				AML	AML	06 16 58.2	
	comp=N,10μm,0.4s						
CCIG	**Comitan**	**2.27**	**31**	*i* P	**Pn**	**06 16 39.8**	**+1.8**
CCIG				*i* S	**Sn**	**06 17 03.0**	**-3.4**
SCX	**San Cristobal**	**2.49**	**16**	*i* P	**Pn**	**06 16 43.0**	**+1.8**
SCX				*i* S	**Sn**	**06 17 11.0**	**-1.1**
GCG	**Guatemala City**	**2.73**	**84**	*e*P	**Pn**	**06 16 45.2**	**+0.7**
GCG				AML	AML	06 17 41.2	
	comp=N,945nm,0.7s						
IXG	**Ixpaco**	**2.80**	**93**	*e*P	**Pn**	**06 16 43.6**	**-2.0**
IXG				*e*S	**Sn**	**06 17 20.0**	**+0.1**
IXG				AML	AML	06 17 33.0	
	comp=N,10μm,0.4s						
NBG	**Las Nubes**	**2.91**	**84**	*e*P	**Pn**	**06 16 47.3**	**+0.1**
HUIG	**Huatulco**	**3.04**	**299**	*i* P	**Pn**	**06 16 47.5**	**-1.4**
HUIG				*i* S	**Sn**	**06 17 23.1**	**-2.7**
CMIG	**Matias Romero**	**3.13**	**332**	⇑*e*P	**Pn**	**06 16 50.2**	**0.0**
CMIG				*i* S	**Sn**	**06 17 22.5**	**-5.7**
CMIG	**Matias Romero**	**3.13**	**332**	⇑*e*P	**Pn**	**06 16 50.2**	**0.0**
CMIG				*e*S	**Sn**	**06 17 26.9**	**-1.3**
CUSS	**Cusmapa**	**3.32**	**97**	*e*P	**Pn**	**06 16 52.9**	**0.0**
CUSS				*e*S	**Sn**	**06 17 34.7**	**+1.7**
RBDL	**Robledal**	**3.55**	**93**	*e*P	**Pn**	**06 16 55.2**	**-1.0**
RBDL				*e*S	**Sn**	**06 17 39.3**	**+0.5**
RTR	**El Retiro**	**3.61**	**96**	⇑*e*P	**Pn**	**06 16 55.8**	**-1.3**
SBLS	**San Blas**	**3.64**	**97**	*e*P	**Pn**	**06 16 55.8**	**-1.7**
SBLS				*e*S	**Sn**	**06 17 42.2**	**+1.1**
SNJE	**San Jose**	**3.65**	**97**	⇑*e*P	**Pn**	**06 16 56.3**	**-1.3**
TUIG	**Tuzandepetl**	**3.83**	**344**	*i* P	**Pn**	**06 16 59.4**	**-0.8**
TUIG				*i* S	**Sn**	**06 17 44.2**	**-1.9**
TUIG	**Tuzandepetl**	**3.83**	**344**	*i* P	**Pn**	**06 17 01.0**	**+0.8**
TUIG				*i* S	**Sn**	**06 17 44.2**	**-1.9**
BQQS	**Boqueron**	**3.98**	**98**	*e*P	**Pn**	**06 17 03.0**	**+0.6**
PICS	**Picacho**	**4.01**	**98**	*e*P	**Pn**	**06 17 06.2**	**+3.5**
PICS				*e*S	**Sn**	**06 17 50.9**	**+0.4**
LFRS	**El Faro**	**4.21**	**99**	⇓*e*P	**Pn**	**06 17 04.1**	**-1.5**
LFRS				*e*S	**Sn**	**06 17 54.6**	**-1.0**
OXX	**Oaxaca**	**4.26**	**311**	*e*P	**Pn**	**06 17 08.0**	**+1.7**
LCBS	**La Ceiba**	**4.29**	**98**	*e*P	**Pn**	**06 17 05.3**	**-1.3**
SNVI	**San Vicente**	**4.43**	**99**	*e*P	**Pn**	**06 17 06.5**	**-2.2**
EVV	**El Vigia**	**4.54**	**335**	*e*P	**Pn**	**06 17 10.0**	**-0.3**
IISM	**Ciudad Serdan**	**6.04**	**321**	*e*P	**Pn**	**06 17 30.0**	**-1.5**
POHV	**Veracruz**	**6.04**	**322**	*e*P	**Pn**	**06 17 30.0**	**-1.5**
PPM	**Popocatepetl**	**6.92**	**314**	*e*P	**Pn**	**06 17 43.2**	**-0.7**
PPM				*e*P		06 17 45.0	
PPM				*i* S	**Sn**	**06 19 02.5**	**-1.2**
PPM	**Popocatepetl**	**6.92**	**314**	*e*P	**Pn**	**06 17 45.9**	**+2.0**
PPM				*i* S	**Sn**	**06 19 02.1**	**-1.6**
TEIG	**Tepich**	**7.61**	**39**	Pn	**Pn**	**06 17 51.9**	**-1.5**
	comp=N,10nm,0.3s,baz=188,slow=8.8,SNR=23						
TEIG				Sn	**Sn**	**06 19 14.2**	**-6.6**
	comp=N,4.0nm,0.3s,baz=307,slow=20,SNR=4.7						
TEIG				Lg		06 20 02.6	
	baz=342,slow=20,SNR=1.7						
TEIG	**Tepich**	**7.61**	**39**	*e*P	**Pn**	**06 17 51.8**	**-1.7**
ZIIG	**Zihuatanejo**	**8.47**	**294**	*e*P	**P**	**06 18 05.9**	**+0.4**
JTS	**JuntasAbangare**	**9.12**	**115**	Pn	**P**	**06 18 13.1**	**-1.4**
	comp=N,0.4nm,0.3s,baz=324,slow=19,SNR=6.1						
JTS	**JuntasAbangare**	**9.12**	**115**	Pn	**P**	**06 18 14.5**	**-0.1**
	comp=N,1.0nm,1.1s						
HKT	**Hockley**	**15.72**	**352**	*e*P	**P**	**06 19 44.4**	**+1.2**
JCT	**Junction City**	**17.14**	**341**	*e*P	**P**	**06 20 04.8**	**+3.6**
	comp=N,29nm,1.4s						
TXAR	**Laj

CN2	**Changchun**	**112.18**	**331**	*e*PKP	PKPdf	06 34 33.4	-5.2
WMQ	**Urumqi**	**122.13**	**359**	*e*PKP	PKPdf	06 34 55.0	-3.0
NJ2	**Nanjing**	**124.52**	**327**	*e*PKP	PKPdf	06 34 59.1	-4.0
LZH	**Lanzhou**	**127.30**	**342**	*e*PKP	PKPdf	06 35 06.1	-2.1
CMAR	**Chiang Mai Arr**	**145.25**	**339**	PKPbc	PKPbc	06 35 38.8	-0.4
	comp=N,1.2nm,0.4s,baz=345,slow=3.4,SNR=4.6						

IDC ***18*** *06:28:41.7±0.7,20.33S×173.94W,mb4.2/11,mb1 4.5/13, mb1mx4.4/18,ML4.3/2,MS3.8/3,Ms1 3.8/3,ms1mx3.1/23, Error ellipse: s-maj=35.0km s-min=16.2km az=138.0*
NEIC ***18*** *06:28:43.3±0.2,20.31S×173.97W,h10km,mb4.5/10, Error ellipse: s-maj=12.6km s-min=5.9km az=142.0*

ISC 18 06:28:41.7±0.4,20.3S±0.1×174.0W±0.1,h10km,n39, σ0s63/33,mb4.3/20,MS3.9/3,3C-1D,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**13.36**	**96**	Pn		**P**	**06 31 41.3**	**-13**
	2.5nm,0.3s,baz=247,slow=7.8,SNR=9.4							
RAR				Sn		S	06 33 53.6	-30
	1.2nm,0.3s,baz=27,slow=16,SNR=2.8							
RAR	**Rarotonga**	**13.36**	**96**	Pn		**P**	**06 31 41.3**	**-13**
RAR				Sn		S	06 33 53.6	-30
URZ	**Urewera**	**19.45**	**201**	P		**P**	**06 33 11.3**	**+0.1**
	0.5nm,0.3s,baz=330,slow=8.2,SNR=4.5							
RPZ	**Rata Peaks**	**26.44**	**205**	P		**P**	**06 34 19.5**	**-1.0**
	5.8nm,0.7s,mb4.2,baz=108,slow=3.2,SNR=3.2							
RPZ	**Rata Peaks**	**26.44**	**205**	P		**P**	**06 34 19.5**	**-1.0**
JOHN	**Johnston Islan**	**37.10**	**7**	*e*P		**P**	**06 35 46.3**	**-8.1**
CTA	**Charters Tower**	**37.22**	**263**	P		**P**	**06 35 56.2**	**+0.8**
	3.6nm,0.5s,mb4.5,baz=88,slow=9.1,SNR=6.3							
CTA	**Charters Tower**	**37.22**	**263**	P		**P**	**06 35 56.2**	**+0.8**
CTAO	**Charters Tower**	**37.22**	**263**	*e*P		**P**	**06 35 56.7**	**+1.4**
	3.9nm,0.5s,mb4.5							
STKA	**Stephens Creek**	**41.23**	**245**	P		**P**	**06 36 28.4**	**-0.1**
	4.9nm,0.9s,mb4.2,baz=55,slow=16,SNR=4.1							
AS12	**Alice Springs**	**48.19**	**256**	*e*P		**P**	**06 37 24.7**	**+0.2**
	9.5nm,1.2s,mb4.7							
ASAR	**Alice Springs**	**48.19**	**256**	P		**P**	**06 37 24.8**	**+0.2**
	5.0nm,0.7s,mb4.6,baz=92,slow=7.8,SNR=47							
WB2	**Warramunga Arr**	**48.31**	**261**	⇓*i*P		**P**	**06 37 25.2**	**-0.3**
WRAB	**Tennant Creek**	**48.31**	**261**	*e*P		**P**	**06 37 24.8**	**-0.7**
	9.7nm,0.8s,mb4.9							
WRA	**Warramunga Arr**	**48.32**	**261**	P		**P**	**06 37 25.4**	**-0.2**
	4.4nm,0.5s,mb4.5,baz=98,slow=6.6,SNR=18							
QSPA	**South Pole Qui**	**69.74**	**180**	*e*P		**P**	**06 39 53.6**	**+0.2**
	6.0nm,1.1s,mb4.4							
ASAJ	**Asahikawa**	**75.43**	**329**	LR		LR	07 08 15.2	
	comp=Z,33nm,21.0s,MS3.6,baz=326,slow=32							
YBH	**Yreka Blue Hor**	**77.88**	**37**	P		**P**	**06 40 42.0**	**+0.6**
	1.1nm,0.9s,mb3.8,baz=204,slow=9.1,SNR=2.6							
TPH	**Tonopah**	**78.85**	**42**	*e*P		**P**	**06 40 46.8**	**0.0**
	3.3nm,0.8s,mb4.3							
WVOR	**Wild Horse Val**	**80.65**	**38**	P		**P**	**06 40 57.2**	**+0.8**
	6.6nm,1.3s,mb4.4							
MAW	**Mawson**	**82.95**	**199**	P		**P**	**06 41 09.0**	**+1.1**
	1.9nm,0.8s,mb4.2,baz=156,slow=9.7,SNR=4.4							
MNTX	**Cornudas Mount**	**83.64**	**53**	⇑*i*P		**P**	**06 41 11.9**	**-0.2**
	1.4nm,0.8s,mb4.1							
MNTX				*e*			06 41 23.4	
HLID	**Hailey**	**83.80**	**39**	*e*P		**P**	**06 41 13.2**	**+0.5**
	3.0nm,1.0s,mb4.4							
TXAR	**Lajitas Array**	**83.85**	**56**	P		**P**	**06 41 13.2**	**-0.1**
	1.1nm,0.8s,mb4.0,baz=215,slow=8.4,SNR=12							
PV10	**Paradox Valley**	**84.36**	**46**	*e*P		**P**	**06 41 15.5**	**-0.1**
ANMO	**Albuquerque**	**84.42**	**50**	*e*P		**P**	**06 41 16.5**	**+0.5**
	5.7nm,1.3s,mb4.5							
HWUT	**Hardware Ranch**	**84.44**	**42**	*e*P		**P**	**06 41 12.7**	**-3.2**
	2.6nm,0.8s,mb4.4							
PV01	**Paradox Valley**	**84.55**	**46**	*e*P		**P**	**06 41 16.3**	**-0.2**
PV01				*e*			06 41 27.3	
GDL2	**Guadalupe Moun**	**84.64**	**53**	*e*P		**P**	**06 41 17.4**	**+0.1**
PDAR	**Pinedale Array**	**86.32**	**42**	P		**P**	**06 41 24.9**	**-0.4**
	0.8nm,0.8s,mb4.0,baz=180,slow=1.5,SNR=7.4							
PDAR				LR		LR	07 16 11.4	
	comp=Z,52nm,18.2s,MS4.0,baz=62,slow=33							
COLA	**College**	**87.29**	**11**	P		**P**	**06 41 29.1**	**-0.4**
	8.7nm,1.4s,mb4.8							
ILAR	**Eielson Array**	**87.37**	**11**	P		**P**	**06 41 29.1**	**-0.7**
	0.7nm,0.8s,mb3.9,baz=218,slow=5.7,SNR=9.8							
ENH	**Enshi**	**89.06**	**303**	*e*P		**P**	**06 41 39.4**	**+0.6**
YKA	**Yellowknife Ar**	**94.83**	**24**	P		**P**	**06 42 04.7**	**0.0**
	0.4nm,0.8s,mb3.9,baz=234,slow=4.5,SNR=15							
LPAZ	**La Paz**	**98.65**	**111**	LR		LR	07 19 42.6	
	comp=Z,44nm,18.4s,MS4.0,baz=14,slow=31							
ARCES	**ARCESS Array B**	**129.38**	**351**	PKP		PKPdf	06 47 51.8	-1.5
	2.0nm,0.8s,baz=18,slow=2.9,SNR=4.7							
AKASG	**Malin Array Be**	**144.58**	**334**	PKP		PKPdf	06 48 19.1	-2.3
	1.4nm,0.4s,baz=37,slow=4.2,SNR=12							
CLL	**Collm**	**148.60**	**352**	*e**PPKP			06 48 39.0	
BRTR	**Keskin Array B**	**149.42**	**315**	PKPbc		PKPdf	06 48 34.0	+4.2
	0.7nm,0.8s,baz=90,slow=4.3,SNR=2.9							

IDC ***18*** *06:43:44.1±4.0,8.29S×119.81E,h76km±41km,mb3.8/3, mb1 3.9/5,mb1mx3.6/16,ML4.0/2,Error ellipse: s-maj=167.0km s-min=15.0km az=54.0*

ISC 18 06:43:46.4±5.5,8.3S±0.5×120.0E±0.5,h120km±60km,n5, σ0s50/8,mb3.9/2,Flores region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**11.17**	**151**	P		**P**	**06 46 23.4**	**-0.2**
	0.6nm,0.3s,baz=350,slow=11,SNR=23							
FITZ				S		S	06 48 18.3	-8.3
	1.4nm,0.3s,baz=180,slow=19,SNR=9.0							
WRA	**Warramunga Arr**	**18.05**	**131**	P		**P**	**06 47 51.0**	**+0.1**
	0.5nm,0.3s,baz=310,slow=12,SNR=24							
WRA				S		S	06 51 05.0	-0.1
	0.3nm,0.3s,baz=314,slow=23,SNR=3.7							
ASAR	**Alice Springs**	**20.25**	**141**	P		**P**	**06 48 15.1**	**+0.7**
	3.1nm,0.3s,baz=315,slow=8.9,SNR=70							
ASAR				S		S	06 52 00.9	+11
	0.7nm,0.5s,baz=316,slow=24,SNR=4.7							
STKA	**Stephens Creek**	**30.86**	**142**	P		**P**	**06 49 53.2**	**-0.4**
	2.4nm,0.9s,mb3.9,baz=321,slow=8.9,SNR=3.6							
MKAR	**Makanchi Array**	**64.30**	**332**	P		**P**	**06 54 11.2**	**-0.1**
	1.0nm,0.5s,mb3.9,baz=155,slow=6.2,SNR=14							

JMA ***18*** *06:44:32.4±0.1,27.79N×140.75E,h494km,M3.7*
IDC ***18*** *06:44:32.2±2.0,27.62N×140.05E,h468km±25km,mb3.0/4, mb1 3.1/4,mb1mx2.8/21,Error ellipse: s-maj=106.0km s-min=31.7km az=2.0*

ISC 18 06:44:31.7±1.0,27.6N±0.2×140.2E±0.3,h486km±10km, n13,σ0s98/16,mb3.3/4,Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**1.82**	**104**	P		**P**	**06 45 34.8**	**-0.3**
	14nm,0.3s,baz=291,slow=16,SNR=25							
CBIJ				S		S	06 46 24.6	-0.7
	16nm,0.3s,baz=294,slow=23,SNR=7.9							
CBIJ	**Chichi jima**	**1.82**	**104**	P		**P**	**06 45 34.9**	**-0.2**
CBIJ				*e*S		S	**06 46 24.4**	**-0.9**
JHHJ	**Haha-jima-NKT**	**1.99**	**117**	P		**P**	**06 45 36.3**	**+0.4**
JHHJ				*e*S		S	**06 46 27.2**	**+0.5**
BSO3	**Boso 3**	**7.22**	**2**	P		**P**	**06 46 20.1**	**-0.7**
JIE	**Ise**	**7.44**	**337**	P		**P**	**06 46 24.2**	**+1.1**
JKN	**Kiinagashima**	**7.48**	**334**	P		**P**	**06 46 24.4**	**+0.9**
JRY	**Ryogami san**	**8.51**	**353**	P		**P**	**06 46 33.8**	**-0.6**
JAG	**Ashikaga**	**8.86**	**356**	P		**P**	**06 46 35.8**	**-2.4**
MAT	**Matsushiro**	**9.12**	**350**	P		**P**	**06 46 42.4**	**+1.5**
MKAR	**Makanchi Array**	**48.82**	**309**	P		**P**	**06 52 32.5**	**-0.7**
	0.2nm,0.3s,mb2.9,baz=90,slow=10,SNR=6.4							
MKAR				PcP		PcP	06 53 48.9	-0.3
	0.4nm,0.7s,baz=90,slow=4.3,SNR=3.0							
BVAR	**Borovoye Array**	**56.51**	**317**	P		**P**	**06 53 27.8**	**-0.7**
	2.4nm,0.4s,mb3.9,baz=93,slow=7.3,SNR=18							
YKA	**Yellowknife Ar**	**72.57**	**28**	P		**P**	**06 55 10.9**	**+1.3**
	0.2nm,0.7s,mb2.8,baz=295,slow=5.8,SNR=7.0							
FINES	**FINESS Array B**	**76.75**	**333**	P		**P**	**06 55 32.7**	**-0.2**
	0.7nm,0.3s,mb3.6,baz=72,slow=6.0,SNR=6.9							

IDC 18 06:57:04.7±1.4,4.89N×127.00E,mb4.0/5,mb1 4.1/5, mb1mx3.8/18,Error ellipse: s-maj=137.0km s-min=20.9km az=68.0,Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**25.71**	**164**	P		P	07 02 35.6	-2.9
	1.4nm,0.5s,baz=343,slow=10,SNR=15							
ASAR	**Alice Springs**	**29.17**	**167**	P		P	07 03 09.8	-0.3
	0.2nm,0.3s,baz=350,slow=7.1,SNR=4.6							
MKAR	**Makanchi Array**	**56.77**	**325**	P		P	07 06 50.8	-2.1
	0.6nm,0.4s,baz=121,slow=7.6,SNR=14							
BVAR	**Borovoye Array**	**66.50**	**327**	P		P	07 07 56.0	-2.3
	0.5nm,0.4s,baz=124,slow=5.2,SNR=5.0							
ARCES	**ARCESS Array B**	**89.46**	**340**	P		P	07 10 03.1	-1.4
	2.9nm,0.9s,baz=90,slow=5.4,SNR=5.8							

NEIC ***18*** *07:16:32.7,18.05N×100.44W,h20km,MD3.7(MEX),After MEX.*
MEX ***18*** *07:16:32.6±1.0,18.05N×100.45W,h35km±87km,MD3.7*

ISC 18 07:16:30.6±1.0,18.06N±0.07×100.44W±0.06,h33km,n6, σ0s81/11,Guerrero

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
CAIG	**El Cayaco**	**1.02**	**171**	*i* P		**P**	**07 16 48.6**	**0.0**
CAIG				*i* S		**S**	**07 17 03.0**	**+1.1**
ZIIG	**Zihuatanejo**	**1.08**	**245**	*e*P		**P**	**07 16 48.7**	**-0.7**
ZIIG				*i* S		**S**	**07 17 03.5**	**+0.2**
ACX	**Acapulco**	**1.29**	**157**	*i* P		**P**	**07 16 53.0**	**+0.7**
ACX				*i* S		**S**	**07 17 07.0**	**-1.6**
PPM	**Popocatepetl**	**1.99**	**59**	*e*P		**P**	**07 17 02.0**	**-0.4**
PPM				*i* P			07 17 02.4	
PPM				*i* S		**S**	**07 17 30.9**	**+4.5**
PPM	**Popocatepetl**	**1.99**	**59**	*e*P		**P**	**07 17 02.0**	**-0.4**
PPM				*i* P			07 17 02.4	
PPM				*i* S		**S**	**07 17 31.9**	**+5.6**
IISM	**Ciudad Serdan**	**3.05**	**72**	*e*P		**P**	**07 17 18.0**	**+0.5**

NEIC ***18*** *07:29:35.8±1.1,50.18N×19.15E,h5km,MG2.2(WAR), Error ellipse: s-maj=17.5km s-min=8.3km az=174.0*
WAR ***18*** *07:29:35.9,50.10N×19.23E,h1km,Location given by Central Institute of Mining, origin time based upon OJC*
PRU ***18*** *07:29:35.9,50.24N×19.13E*

ISC 18 07:29:34.7±0.6,50.18N±0.04×19.10E±0.04,n17,σ1s29/28, Poland

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
OJC	**Ojcow**	**0.45**	**85**	*e*Pg		**Pg**	**07 29 43.6**	**-0.1**
OJC				*i* Sg		**Sg**	**07 29 49.4**	**-0.3**
OJC	**Ojcow**	**0.45**	**85**	*e*PG		**Pg**	**07 29 44.0**	**+0.3**
OJC				*i* SG		**Sg**	**07 29 49.4**	**-0.3**
OKC	**Ostrava-Krasne**	**0.70**	**241**	*e*PG		**Pg**	**07 29 49.9**	**+1.1**
OKC				*e*SG		**Sg**	**07 30 00.1**	**+1.9**
MORC	**Moravsky Berou**	**1.08**	**249**	*e*P		**Pb**	**07 29 56.6**	**+0.6**
MORC				*e*S		**Sb**	**07 30 11.7**	**+1.1**
NIE	**Niedzica**	**1.10**	**134**	*e*Pg		**Pg**	**07 29 54.9**	**-1.7**
NIE				*e*Sg		**Sg**	**07 30 11.1**	**-0.1**
NIE	**Niedzica**	**1.10**	**134**	*e*PG		**Pg**	**07 29 55.0**	**-1.6**
LIKS	**Likavka**	**1.13**	**180**	*e*PN		**Pn**	**07 29 57.1**	**-0.6**
LIKS				*e*SN		**Sn**	**07 30 09.8**	**-4.4**
KOLL	**Kolacno**	**1.67**	**196**	*e*PN		**Pn**	**07 30 06.0**	**+0.6**
KOLL				*i* SN		**Sn**	**07 30 27.2**	**-0.6**
VYHS	**Vyhne**	**1.70**	**186**	*i* PN		**Pn**	**07 30 05.0**	**-0.8**
VYHS				*i* SN		**Sn**	**07 30 26.5**	**-2.0**
DPC	**Dobruska-Polom**	**1.79**	**276**	*e*PG		**Pg**	**07 30 08.2**	**-2.3**
DPC				*e*SG		**Sg**	**07 30 32.8**	**-1.5**
	28nm,0.4s							
KSP	**Ksiaz**	**1.91**	**291**	*e*PN		**Pn**	**07 30 12.0**	**+3.2**
KSP				*e*SG		**Sg**	**07 30 40.0**	**+1.7**
CRVS	**Cervenica-Dubn**	**2.00**	**129**	*e*PB		**Pb**	**07 30 13.8**	**+2.1**
CRVS				*e*SN		**Sn**	**07 30 36.9**	**+0.7**
UPC	**Upice**	**2.00**	**281**	*e*SG		**Sg**	**07 30 40.8**	**-0.7**
PSZ	**Piszkesteto**	**2.33**	**167**	P		**Pn**	**07 30 15.8**	**+1.0**
PRU	**Pruhonice**	**2.94**	**268**	*e*SG		**Sg**	**07 31 08.6**	**-4.1**
KHC	**Kasperske Hory**	**3.74**	**256**	*e*SG		**Sg**	**07 31 35.0**	**-4.2**
CLL	**Collm**	**4.03**	**289**	*e*SG		**Sg**	**07 31 48.0**	**-1.0**

IDC ***18*** *07:34:41.9±5.6,24.76S×179.76E,h494km±66km,mb3.4/7, mb1 3.6/8,mb1mx3.6/12,Error ellipse: s-maj=35.5km s-min=22.7km az=24.0*
NEIC ***18*** *07:34:46.2±0.8,24.94S×179.65E,h545km,mb4.5/6,Error ellipse: s-maj=20.4km s-min=17.5km az=193.0*

ISC 18 07:34:39.8±4.0,24.7S±0.1×179.7E±0.2,h481km±44km, n17,σ0s83/18,mb4.2/12,1C-3D,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**13.75**	**189**	P		**P**	**07 37 37.1**	**-1.0**
	1.0nm,0.3s,baz=325,slow=4.1,SNR=6.8							
URZ				S		**S**	**07 40 02.5**	**+0.9**
	1.0nm,0.3s,baz=61,slow=21,SNR=15							
RPZ	**Rata Peaks**	**20.30**	**198**	P		**P**	**07 38 42.8**	**+0.1**
	4.3nm,0.5s,baz=55,slow=3.7,SNR=7.9							
CTA	**Charters Tower**	**31.21**	**272**	⇓*i*P		**P**	**07 40 21.6**	**+1.4**
	10nm,0.4s,mb4.6							
STKA	**Stephens Creek**	**34.19**	**249**	⇑*i*P		**P**	**07 40 46.3**	**+1.1**
	4.5nm,0.8s,mb4.0							
STKA	**Stephens Creek**	**34.19**	**249**	P		**P**	**07 40 46.2**	**+1.0**
	4.9nm,0.7s,mb4.1,baz=116,slow=9.5,SNR=11							
AS12	**Alice Springs**	**41.64**	**262**	*e*P		**P**	**07 41 46.6**	**+0.1**
	6.3nm,1.2s,mb3.9							
ASAR	**Alice Springs**	**41.64**	**262**	P		**P**	**07 41 46.6**	**+0.2**
	2.2nm,0.4s,mb3.9,baz=93,slow=7.2,SNR=71							
WB2	**Warramunga Arr**	**42.07**	**267**	⇓*i*P		**P**	**07 41 49.7**	**-0.2**
WRAB	**Tennant Creek**	**42.07**	**267**	*e*P		**P**	**07 41 49.0**	**-0.9**
	20nm,0.6s,mb4.7							
WRA	**Warramunga Arr**	**42.08**	**267**	P		**P**	**07 41 49.8**	**-0.2**
	5.8nm,0.3s,mb4.4,baz=100,slow=7.0,SNR=238							
FORT	**Forrest**	**45.79**	**250**	⇓*i*P		**P**	**07 42 17.7**	**-1.2**
	35nm,0.5s,mb5.0							
FITZ	**Fitzroy Crossi**	**50.49**	**266**	*e*P		**P**	**07 42 54.1**	**-0.5**
	4.0nm,0.6s,mb3.9							
NWAO	**Narrogin (SRO)**	**54.67**	**246**	P		**P**	**07 43 25.3**	**+0.7**
	67nm,1.3s,mb4.8							
QSPA	**South Pole Qui**	**65.44**	**180**	*e*P		**P**	**07 44 34.9**	**-0.4**
	1.5nm,0.6s,mb3.8							
MAW	**Mawson**	**76.96**	**201**	P		**P**	**07 45 41.9**	**-0.8**
	3.8nm,1.2s,mb3.8,baz=112,slow=11,SNR=4.2							
TXAR	**Lajitas Array**	**91.06**	**58**	P		**P**	**07 46 52.8**	**-0.5**
	0.4nm,0.7s,mb3.4,baz=219,slow=7.2,SNR=6.3							
PDAR	**Pinedale Array**	**93.42**	**44**	P		**P**	**07 47 05.3**	**+1.5**
	0.2nm,0.5s,mb3.4,baz=243,slow=6.0,SNR=2.2							

GUC 18 07:37:12.4±0.8,31.30S×68.82W,h145km,MD3.6,ML3.2, 2D,San Juan Province

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
CMCH	**Corbarbala**	**1.87**	**273**	⇓*i*P		P	07 37 46.4	+0.4
CMCH				*i* S		S	07 38 12.2	+0.3
CMCH				AMP			07 38 15.5	
	comp=E,410nm,0.4s							
PTCH	**Petorca**	**2.04**	**241**	⇓*i*P		P	07 37 47.5	-0.5
PTCH				*i* S		S	07 38 14.8	-0.5
PTCH				AMP			07 38 15.8	
	comp=N,301nm,0.4s							
FCH	**Farellones**	**2.37**	**211**	*e*P		P	07 37 53.0	+0.7
FCH				*i* S		S	07 38 23.7	+1.0
FCH				AMP			07 38 31.0	
	comp=E,29nm,0.2s							
CLCH	**Cerro Calan**	**2.54**	**214**	*i* S		S	07 38 26.8	+0.2
CLCH				AMP			07 38 29.5	
	comp=E,87nm,0.6s							
RCDM	**Rinconada Maip**	**2.75**	**217**	*e*P		P	07 37 56.6	-0.5
RCDM				*i* S		S	07 38 30.6	-0.7
RCDM				AMP			07 38 30.9	
	comp=N,51nm,0.3s							

IDC ***18*** *08:04:44.3±1.9,16.78S×178.28W,mb3.7/5,mb1 4.0/5, mb1mx3.8/12,Error ellipse: s-maj=111.0km s-min=26.6km az=148.0*

ISC 18 08:04:48.4±1.6,16.6S±0.5×178.5W±0.3,h33km,n7, σ0s14/7,mb3.6/5,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**39.21**	**240**	P		**P**	**08 12 15.4**	**+0.2**
	1.8nm,0.9s,mb3.8,baz=106,slow=11,SNR=2.3							
WRA	**Warramunga Arr**	**44.81**	**258**	P		**P**	**08 13 01.2**	**-0.1**
	0.4nm,0.5s,mb3.5,baz=95,slow=7.0,SNR=9.8							
AS12	**Alice Springs**	**45.09**	**253**	*e*P		**P**	**08 13 03.3**	**-0.2**
	2.9nm,0.6s,mb4.3							
ASAR	**Alice Springs**	**45.09**	**253**	P		**P**	**08 13 03.5**	**+0.1**
	4.7nm,0.7s,mb4.5,baz=89,slow=8.1,SNR=52							
ILAR	**Eielson Array**	**84.64**	**13**	P		**P**	**08 17 19.8**	**+0.2**
	0.1nm,0.4s,mb3.3,baz=225,slow=5.1,SNR=5.6							
TXAR	**Lajitas Array**	**85.36**	**58**	P		**P**	**08 17 23.9**	**-0.1**
	0.1nm,0.7s,mb3.1,baz=207,slow=4.0,SNR=3.5							
NANT	**Nan**	**86.91**	**291**	P		**P**	**08 17 31.7**	**-0.1**

IDC ***18*** *08:06:57.4±2.3,22.50S×169.85E,h43km±8km,mb3.8/6, mb1 4.0/6,mb1mx3.8/12,MS3.4/5,Ms1 3.4/5,ms1mx3.2/15, Error ellipse: s-maj=91.1km s-min=26.2km az=152.0*
NEIC ***18*** *08:07:03.3±3.0,21.52S×169.09E,h62km±21km,mb4.4/2, Error ellipse: s-maj=36.0km s-min=28.8km az=156.0*

ISC 18 08:06:56.6±2.8,22.2S±0.2×169.6E±0.1,h43km±22km,n19, σ0s91/18,mb4.0/7,MS3.3/5,2D,Southeast of Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.96**	**271**	*e*P		**P**	**08 07 42.1**	**-0.2**
DZM				*e*S		**S**	**08 08 16.9**	**0.0**
DZM	**Mont Dzumac**	**2.96**	**271**	*e*P		**P**	**08 07 42.1**	**-0.2**
DZM				*e*S		**S**	**08 08 16.9**	**0.0**
NOUC	**Port Laguerre**	**3.09**	**271**	*e*P		**P**	**08 07 43.8**	**-0.3**
NOUC				*e*S		**S**	**08 08 21.0**	**+0.9**
RPZ	**Rata Peaks**	**21.52**	**177**	LR		LR	08 17 37.4	
	comp=Z,80nm,18.2s,MS3.2,baz=175,slow=30							
CTA	**Charters Tower**	**21.90**	**271**	P		**P**	**08 11 50.9**	**+3.1**
	4.1nm,0.7s,mb4.0,baz=112,slow=12,SNR=6.4							
CTA				LR		LR	08 19 55.4	
	comp=Z,71nm,19.0s,MS3.1,baz=216,slow=35							
STKA	**Stephens Creek**	**26.72**	**243**	P		**P**	**08 12 32.9**	**-1.1**
	1.5nm,0.5s,mb3.8,baz=92,slow=13,SNR=5.3							
STKA				LR		LR	08 21 41.7	
	comp=Z,77nm,18.9s,MS3.3,baz=210,slow=33							
AS12	**Alice Springs**	**32.89**	**260**	*e*P		**P**	**08 13 28.5**	**-0.5**
	4.6nm,0.7s,mb4.5							
ASAR	**Alice Springs**	**32.89**	**260**	P		**P**	**08 13 28.4**	**-0.6**
	4.1nm,0.7s,mb4.5,baz=88,slow=9.0,SNR=18							
ASAR				pP		pP	08 13 39.8	-0.9
	4.3nm,1.1s,baz=92,slow=9.3,SNR=5.7							
ASAR				LR		LR	08 26 06.2	
	comp=Z,44nm,19.0s,MS3.2,baz=208,slow=35							
WB2	**Warramunga Arr**	**32.96**	**267**	*e*P		**P**	**08 13 28.6**	**-1.0**
WRA	**Warramunga Arr**	**32.97**	**267**	P		**P**	**08 13 28.5**	**-1.2**
	0.9nm,0.5s,mb4.0,baz=96,slow=8.4,SNR=14							
FITZ	**Fitzroy Crossi**	**41.40**	**267**	*e*P		**P**	**08 14 41.6**	**+1.0**
	6.5nm,0.9s,mb4.3							
FITZ	**Fitzroy Crossi**	**41.40**	**267**	P		**P**	**08 14 41.2**	**+0.6**
	2.1nm,0.7s,mb3.9,baz=143,slow=6.1,SNR=6.5							
FITZ				pP		pP	08 14 54.6	+2.2
	7.9nm,0.8s,baz=146,slow=4.9,SNR=3.5							
QSPA	**South Pole Qui**	**67.90**	**180**	*e*P		**P**	**08 18 00.3**	**+8.0**
	3.1nm,0.8s,mb4.4							
VNA3	**Neumayer Olymp**	**86.84**	**180**	⇓*i*		**P**	**08 19 37.8**	**+0.6**
VNA2	**Neumayer--Watz**	**87.14**	**181**	⇓*i*		**P**	**08 19 39.5**	**+0.8**
ILAR	**Eielson Array**	**92.90**	**17**	P		**P**	**08 20 06.0**	**+0.1**
	0.1nm,0.5s,mb3.5,baz=231,slow=5.8,SNR=4.1							
TXAR	**Lajitas Array**	**97.83**	**62**	LR		LR	08 58 56.0	
	comp=Z,36nm,20.3s,MS3.9,baz=115,slow=32							
CLL	**Collm**	**145.71**	**334**	*i*		PKPdf	08 26 37.3	+7.1
CLL				*i* *PKKP			08 26 49.1	
GERES	**GERESS Array B**	**147.22**	**330**	PKPbc		PKPdf	08 26 37.3	+4.5
	0.3nm,0.3s,baz=34,slow=3.5,SNR=3.2							
GERES				pPKPbc			08 26 49.3	
	2.1nm,0.8s,baz=18,slow=4.2,SNR=3.1							

IDC ***18*** *08:14:06.7±8.6,24.97S×179.74E,h536km±107km, mb3.1/5,mb1 3.3/6,mb1mx3.2/12,Error ellipse: s-maj=99.6km s-min=28.7km az=5.0*

ISC 18 08:14:07.1±1.3,25.1S±0.2×179.7E±0.2,h550km,n8, σ0s70/6,mb3.6/5,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**13.31**	**189**	P		**P**	**08 16 59.1**	**-0.2**
	2.1nm,0.3s,baz=65,slow

	30nm,0.5s							
YASR					AMB	AMB	09 35 07.1	
	35nm,0.5s							
YASR					AMB	AMB	09 35 07.1	
	45nm,0.5s							
YASR				*e*Sn	Sn		09 35 37.1	-1.4
YASR				*e*Sg	Sn		09 35 53.1	+15
YASR				A			09 35 58.6	
	70nm,0.5s							
YASR				A			09 35 58.6	
	130nm,0.5s							
TUP	**Tupik**	**4.01**	**330**	*e*Pn	Pn		09 35 00.8	+0.8
TUP				*e*Pg	Pn		09 35 11.9	+12
TUP				AMB	AMB		09 35 14.4	
	40nm,0.4s							
TUP				*e*Sg	Sn		09 36 04.5	+18
TUP				A			09 36 14.3	
	132nm,0.5s							
KROS	**Kirovskiy**	**4.10**	**31**	*e*Pn	Pn		09 35 03.3	+2.0
KROS				pPn			09 35 09.7	
KROS				*e*Pg	Pn		09 35 13.1	+12
KROS				AMB	AMB		09 35 18.0	
	13nm,0.4s							
KROS				AMB	AMB		09 35 18.0	
	16nm,0.4s							
KROS				*e*Sn	Sn		09 35 47.4	-1.8
KROS				*e*Sg	Sn		09 36 06.5	+17
KROS				A			09 36 11.7	
	37nm,0.5s							
KROS				A			09 36 11.7	
	86nm,0.5s							
BMKR	**Bomnak**	**5.00**	**40**	*e*Pn	Pn		09 35 13.4	-0.7
BMKR				pPn			09 35 21.0	
BMKR				*e*Pg	Pn		09 35 29.1	+15
BMKR				AMB	AMB		09 35 36.9	
	6.0nm,0.5s							
BMKR				*e*Sn	Sn		09 36 09.9	-2.1
BMKR				*i* Sg	Sn		09 36 35.0	+23
BMKR				A			09 36 38.6	
	30nm,0.5s							
BMKR				A			09 36 38.6	
	34nm,0.5s							
KLR	**Kul'dur**	**5.70**	**105**	*e*rx	rx		09 35 29.5	
KLR				*e*Sg	Sn		09 36 56.2	+27
GRNR	**Gornyy**	**8.29**	**86**	*e*rx	rx		09 38 22.5	

*NEIC **18** 10:07:03.1±0.8,38.66N×44.51E,h10km, Error ellipse: s-maj=14.2km s-min=8.2km az=163.0*
*IDC **18** 10:07:05.7±2.7,38.84N×44.87E,h19km±15km, mb3.3/4, mb1 3.4/8,mb1mx3.4/20,ML3.2/4, Error ellipse: s-maj=25.9km s-min=16.3km az=29.0*
ISC 18 10:07:00.8±1.0,**38.5N**±0.1×**44.69E**±0.08,**h10**km,**n34**, σ1§**44**/34,**mb3.2**/4,**Turkey-Iran border region**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
TVAN	**Van**	**1.00**	**273**	*i*	P		**Pb**	**10 07 18.2**	**-1.7**
TVAN				*i*	S		Sx	10 07 49.8	
VANT	**Van**	**1.02**	**268**		P		**Pb**	**10 07 21.7**	**+1.6**
VANT	**Van**	**1.02**	**268**		P		**Pb**	**10 07 21.7**	**+1.6**
VANB	**Van**	**1.02**	**276**	*e*	P		**Pb**	**10 07 18.0**	**-2.2**
VANB	**Van**	**1.02**	**276**		P		**Pb**	**10 07 18.0**	**-2.2**
GNI	**Garni**	**1.66**	**2**		Pg		**Pg**	**10 07 31.3**	**-2.6**
	22nm,0.3s,baz=184,slow=1.9,SNR=131								
GNI					Lg			10 07 58.8	
	35nm,0.3s,baz=296,slow=20,SNR=9.0								
GNI	**Garni**	**1.66**	**2**		Pg		**Pg**	**10 07 31.3**	**-2.6**
GNI				*i*	P			10 07 58.8	
					Lg			10 07 58.8	
AGRT	**Agri**	**1.73**	**311**	*e*	P		**Pn**	**10 07 33.7**	**+2.4**
AGRT	**Agri**	**1.73**	**311**		P		**Pn**	**10 07 33.7**	**+2.5**
KARS	**Kars**	**2.45**	**330**		P		**Pn**	**10 07 43.8**	**+2.2**
KARS	**Kars**	**2.45**	**330**		P		**Pn**	**10 07 43.8**	**+2.2**
BTMT	**Batman**	**2.53**	**264**	*e*	P		**Pn**	**10 07 41.2**	**-1.5**
BEST	**Besiri**	**2.76**	**259**	*i*	P		**Pn**	**10 07 46.3**	**+0.4**
BEST				*i*	S		**Sn**	**10 08 32.6**	**+13**
ERZM	**Erzurum**	**2.94**	**300**	*i*	P		**Pn**	**10 07 55.2**	**+6.6**
ERZM				*i*	S		**Sn**	**10 08 40.6**	**+16**
EZM	**Erzurum**	**3.03**	**299**	*e*	P		**Pn**	**10 07 49.6**	**-0.3**
DIY	**Diyarbakir**	**3.56**	**262**	*e*	P		**Pn**	**10 07 52.6**	**-4.8**
DIY	**Diyarbakir**	**3.56**	**262**		P		**Pn**	**10 07 52.6**	**-4.8**
EZC	**Erzincan**	**3.99**	**290**	*e*	P		**Pn**	**10 08 09.0**	**+5.5**
EZC	**Erzincan**	**3.99**	**290**		P		**Pn**	**10 08 09.0**	**+5.5**
KELT	**Kelkit**	**4.53**	**293**	*i*	P		**Pn**	**10 08 20.3**	**+9.2**
MALT	**Malatya**	**4.92**	**270**	*e*	P		**Pn**	**10 08 16.1**	**-0.6**
KIV	**Kislovodsk**	**5.66**	**345**	*e*	P		**Pn**	**10 08 25.7**	**-1.4**
GZT	**Gaziantep**	**5.74**	**261**	*i*	P		Px	10 08 43.8	
GZT				*i*	S		Sx	10 10 09.1	
THR	**Tehran**	**5.75**	**115**		Pn		**Pn**	**10 08 32.5**	**+4.2**
	0.1nm,0.3s,baz=190,slow=11,SNR=2.1								
THR					Lg			10 10 07.0	
	0.1nm,0.3s,baz=10.0,slow=14,SNR=7.6								
THR	**Tehran**	**5.75**	**115**		Pn		**Pn**	**10 08 32.5**	**+4.2**
THR					Lg			10 10 07.0	
COBT	**Iskenderun**	**6.98**	**256**	*i*	P		Px	10 09 13.7	
COBT				*i*	S		Sx	10 10 52.0	
BRTR	**Keskin Array B**	**8.68**	**282**		Pn		**P**	**10 09 10.9**	**+1.5**
	0.1nm,0.3s,baz=102,slow=11,SNR=4.1								
ASF	**Jabal al Asfar**	**8.95**	**228**		Pn		**P**	**10 09 20.9**	**+7.7**
	0.5nm,0.3s,baz=258,slow=16,SNR=3.0								
ASF					Lg			10 11 48.4	
	0.5nm,0.3s,baz=102,slow=21,SNR=5.8								
AKASG	**Malin Array Be**	**16.40**	**323**		Pn		**P**	**10 10 52.9**	**+0.4**
	0.4nm,0.3s,baz=133,slow=12,SNR=7.7								
BRVK	**Borovoye**	**22.88**	**42**		P		**P**	**10 12 06.8**	**+1.5**
BVAR	**Borovoye Array**	**22.91**	**42**		P		**P**	**10 12 06.1**	**+0.4**
	0.4nm,0.6s,mb3.0,baz=243,slow=6.6,SNR=3.2								
GERES	**GERESS Array B**	**24.53**	**305**		P		**P**	**10 12 21.4**	**0.0**
	1.3nm,0.8s,mb3.5,baz=104,slow=11,SNR=4.1								
MKAR	**Makanchi Array**	**28.66**	**61**		P		**P**	**10 12 58.6**	**-1.0**
	0.8nm,0.7s,mb3.6,baz=248,slow=6.5,SNR=9.0								
YKA	**Yellowknife Ar**	**77.99**	**350**		P		**P**	**10 18 59.6**	**-0.7**
	0.1nm,0.7s,mb2.8,baz=20,slow=5.9,SNR=3.5								

*NEIC **18** 10:08:11.1,35.83N×23.42E,h5km,MD3.4(ATH), After ATH.*
*ATH **18** 10:08:11.1,35.83N×23.42E,h5km±4km,MD3.4/12*
*IDC **18** 10:08:14.0±3.3,35.57N×23.29E,h60km±25km, mb3.3/5, mb1 3.4/7,mb1mx3.3/24,ML3.2/2, Error ellipse: s-maj=51.5km s-min=21.0km az=30.0*
ISC 18 10:08:09.8±0.9,**35.82N**±0.07×**23.37E**±0.09,**h5**km,**n23**, σ1§**48**/25,**mb3.5**/5,**Crete**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
KYTH	**Kithira**	**0.53**	**330**	*e*	P		**Pb**	**10 08 21.0**	**-0.2**
KYTH				*e*	SB		**Sb**	**10 08 30.0**	**+1.1**
VAM	**Vamos**	**0.80**	**121**	*e*	PG		**Pg**	**10 08 25.5**	**-0.2**
VLI	**Veliai**	**0.96**	**339**	*e*	PN		**Pn**	**10 08 30.0**	**+0.2**
GVD	**Gavdhos**	**1.14**	**149**	*e*	PN		**Pn**	**10 08 32.3**	**-0.1**
IDI	**Anoyia**	**1.35**	**113**		P		**Pb**	**10 08 35.2**	**0.0**
	8.2nm,0.3s,baz=299,slow=14,SNR=54								
IDI					S		**Sb**	**10 08 53.5**	**+0.8**
	58nm,0.3s,baz=58,slow=20,SNR=16								
SANT	**Santorini**	**1.78**	**71**	*e*	P		**Pn**	**10 08 42.7**	**+1.1**
ITM	**Ithomi**	**1.78**	**320**	*e*	PN		**Pn**	**10 08 45.0**	**+3.4**
KRIS	**Kristallenia**	**1.86**	**110**	*e*	P		**Pn**	**10 08 44.6**	**+1.9**
NPS	**Neapolis**	**1.92**	**106**	*e*	PN		**Pn**	**10 08 45.5**	**+2.0**
NAIG	**Nisos Aigina**	**1.94**	**3**	*e*	PN		**Pn**	**10 08 45.5**	**+1.7**
NSAL	**Nisos Salamina**	**2.08**	**2**	*e*	PB		**Pb**	**10 08 47.0**	**-0.8**
XRY	**Khrisi**	**2.12**	**116**	*e*	PG		**Pg**	**10 08 51.0**	**-1.3**
APE	**Apeiranthos**	**2.14**	**54**	*e*	PG		**Pg**	**10 08 50.5**	**-2.1**
PTL	**Penteli**	**2.26**	**10**	*e*	PN		**Pn**	**10 08 50.0**	**+1.6**
MPAR	**Parnis Oros**	**2.34**	**7**	*e*	PB		**Pb**	**10 08 51.0**	**-1.3**
BRTR	**Keskin Array B**	**9.02**	**61**		P		**P**	**10 10 23.2**	**-0.5**
	0.1nm,0.3s,baz=118,slow=29,SNR=2.9								
MLR	**Muntele Rosu**	**9.86**	**11**		P		**P**	**10 10 37.4**	**+2.2**
	0.1nm,0.3s,baz=113,slow=15,SNR=2.5								
HFS	**Hagfors**	**25.12**	**349**		P		**P**	**10 13 34.0**	**-2.8**
	1.2nm,0.5s,mb3.7,baz=156,slow=14,SNR=3.2								
EKA	**Eskdalemuir Ar**	**26.66**	**325**		P		**P**	**10 13 49.9**	**-1.3**
	0.9nm,0.6s,mb3.5,baz=117,slow=9.3,SNR=3.4								
BVAR	**Borovoye Array**	**36.96**	**47**		P		**P**	**10 15 19.2**	**-2.4**
	0.5nm,0.7s,mb3.5,baz=280,slow=8.8,SNR=3.6								
MKAR	**Makanchi Array**	**44.64**	**57**		P		**P**	**10 16 21.6**	**-3.3**
	0.4nm,0.5s,mb3.5,baz=268,slow=7.5,SNR=8.4								
YKA	**Yellowknife Ar**	**76.36**	**341**		P		**P**	**10 19 57.5**	**-3.6**
	0.1nm,0.5s,mb3.0,baz=32,slow=5.5,SNR=5.3								
YKA	**Yellowknife Ar**	**76.36**	**341**		P		**P**	**10 19 57.5**	**-3.6**

DJA 18 10:12:26.4±0.8,**9.83S**×**117.11E**,**h33**km,**MD5.0**/3,
ML4.8/4,**4C-6D**,**Error ellipse: s-maj=24.1km s-min=16.5km az=38.0**,**Sumbawa region**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
KEDI	**Kedomdong**	**1.66**	**323**	⇓	*i*	Pn		10 12 52.8	-0.9
	322nm,0.2s								
KEDI				⇑	*e*	Sn		10 13 11.9	-2.2
RATI	**Rata**	**1.91**	**305**	⇓	*i*	Pn		10 12 56.2	-1.1
	614nm,0.2s								
RATI	**Rata**	**1.91**	**305**	⇓	*i*	P		10 12 56.4	-0.7
RATI				⇑	*i*	Sn		10 13 16.7	-3.7
INGI	**Ingas**	**2.19**	**297**	⇓	*i*	Pn		10 13 00.0	-1.3
	2μm,0.2s								
INGI	**Ingas**	**2.19**	**297**	⇑	*i*	P		10 13 00.6	-0.5
INGI				⇓	*i*	Sn		10 13 23.9	-3.5
KELI	**Kelakatan**	**3.04**	**302**	⇓	*i*	Pn		10 13 12.9	-0.6
	273nm,0.2s								
KELI				⇑	*i*	Sn		10 13 46.3	-2.9

*ISK **18** 10:14:22.9,37.07N×28.56E,h13km, MD3.2*
*ATH **18** 10:14:25.7,36.79N×28.48E,h14km,MD3.2/4*
ISC 18 10:14:22.7±0.9,**37.03N**±0.04×**28.59E**±0.04,**h8**km±7km, **n16**,σ0§**79**/21,**Turkey**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.26**	**293**	*i*	PG		**Pg**	**10 14 27.7**	**-0.5**
YER				*i*	SG		**Sg**	**10 14 32.6**	**+0.8**
MLSB	**Milas**	**0.70**	**292**		PG		**Pg**	**10 14 36.4**	**-0.3**
MLSB					SG		**Sg**	**10 14 46.3**	**+0.3**
DNZL	**Cakiroluk**	**0.75**	**29**	*i*	P		**Pb**	**10 14 37.7**	**+0.1**
DNZL				*i*	S		**Sb**	**10 14 52.2**	**+4.5**
DENT	**Denizli**	**0.80**	**26**	*i*	PG		**Pg**	**10 14 38.6**	**-0.2**
AYDN	**Tasoluk**	**0.84**	**318**	*i*	P		**Pb**	**10 14 39.0**	**-0.1**
AYDN				*i*	S		**Sb**	**10 14 50.1**	**-0.2**
ARG	**Arkhangelos**	**0.90**	**204**	*e*	PB		**Pb**	**10 14 38.2**	**-1.9**
BDRM	**Kayabasi**	**0.91**	**272**	*i*	P		**Pb**	**10 14 40.1**	**-0.3**
BDRM				*i*	S		**Sb**	**10 14 53.7**	**+1.2**
ELL	**Elmali**	**1.10**	**105**	*e*	PN		**Pn**	**10 14 45.2**	**+0.9**
KSL	**Kastellorizon**	**1.19**	**137**	*e*	PB		**Pb**	**10 14 46.5**	**+1.4**
NISR	**Nisiros**	**1.24**	**251**	*e*	PB		**Pb**	**10 14 46.5**	**+0.5**
MANT	**Manisa**	**1.45**	**359**	*i*	P		**Pn**	**10 14 50.0**	**+0.7**
KHL	**Karahalli**	**1.49**	**30**	*e*	PN		**Pn**	**10 14 49.0**	**-0.8**
IZM	**Izmir**	**1.72**	**323**		PN		**Pn**	**10 14 52.9**	**-0.3**
ISP	**Isparta**	**1.73**	**62**	*e*	PN		**Pn**	**10 14 53.7**	**+0.4**
KAP	**Karpathos**	**1.87**	**218**	*e*	PB		**Pb**	**10 14 56.0**	**-0.7**
AKS	**Akhisar**	**1.94**	**342**	*e*	PN		**Pn**	**10 14 55.1**	**-1.2**

*IDC **18** 10:21:47.7±0.7,13.90N×144.76E,mb3.8/8,mb1 4.0/8, mb1mx3.9/20,Error ellipse: s-maj=40.2km s-min=17.0km az=104.0*
*NEIC **18** 10:22:01.8±0.7,13.72N×144.68E,h114km±6km,mb4.1/2, Error ellipse: s-maj=28.5km s-min=9.7km az=107.0*
NEIC Felt at Santa Rita and Tumon.
ISC 18 10:22:00.7±0.9,**13.7N**±0.1×**144.6E**±0.2,**h120**km±8km,**n18**, σ0§**82**/15,**mb3.8**/10,**1C**,**Mariana Islands**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**0.26**	**118**	*e*	P		**P**	**10 22 16.7**	**-0.8**
SAPN	**Saipan**	**1.84**	**36**	*e*	P		**P**	**10 22 32.6**	**0.0**
SARN	**Sarigan**	**3.17**	**20**	*e*	P		**P**	**10 22 51.5**	**+1.4**
CTA	**Charters Tower**	**33.63**	**177**		P		**P**	**10 28 32.5**	**+0.6**
	2.0nm,0.7s,mb4.0,baz=263,slow=21,SNR=2.9								
WRA	**Warramunga Arr**	**34.95**	**197**		P		**P**	**10 28 42.9**	**-0.2**
	0.5nm,0.4s,mb3.7,baz=19,slow=8.9,SNR=9.1								
FITZ	**Fitzroy Crossi**	**36.75**	**211**		P		**P**	**10 28 59.2**	**+0.9**
	0.8nm,0.5s,mb3.9,baz=177,slow=18,SNR=5.1								
ASAR	**Alice Springs**	**38.60**	**196**		P		**P**	**10 29 14.1**	**+0.3**
	0.7nm,0.7s,mb3.6,baz=21,slow=12,SNR=5.8								
STKA	**Stephens Creek**	**45.42**	**184**		P		**P**	**10 30 08.8**	**-0.5**
	2.1nm,0.7s,mb4.0,baz=110,slow=22,SNR=4.0								
MKAR	**Makanchi Array**	**61.24**	**316**		P		**P**	**10 32 04.8**	**-0.5**
	0.2nm,0.3s,mb3.6,baz=94,slow=7.8,SNR=5.5								
MKAR					tx		tx	10 32 36.1	
	0.7nm,0.7s,baz=98,slow=8.6,SNR=6.4								
MKAR	**Makanchi Array**	**61.24**	**316**		P		**P**	**10 32 04.8**	**-0.5**
ILAR	**Eielson Array**	**68.55**	**25**		P		**P**	**10 32 50.1**	**-1.9**
	0.6nm,0.4s,mb3.8,baz=253,slow=5.9,SNR=16								
YKA	**Yellowknife Ar**	**82.86**	**27**		P		**P**	**10 34 12.7**	**-0.1**
	0.3nm,0.4s,mb3.5,baz=285,slow=5.0,SNR=14								
YKA	**Yellowknife Ar**	**82.86**	**27**		P		**P**	**10 34 12.7**	**-0.1**
NEW	**Newport**	**85.29**	**42**	*e*	P		**P**	**10 34 26.2**	**+1.0**
	2.3nm,1.0s,mb4.1								
HLID	**Hailey**	**88.42**	**46**	*e*	P		**P**	**10 34 40.1**	**-0.4**
	2.1nm,1.0s,mb4.1								
DBIC	**Dimbokro**	**143.56**	**302**		PKP		PKPdf	10 41 23.8	+1.6
	1.2nm,0.6s,baz=259,slow=11,SNR=2.7								
LVC	**Limon Verde**	**146.99**	**110**		PKPbc		PKPbc	10 41 33.1	+3.6
	4.8nm,0.6s,baz=252,slow=2.8,SNR=10								
LPAZ	**La Paz**	**148.27**	**99**		PKP		PKPdf	10 41 33.8	+3.8
	4.4nm,0.5s,baz=331,slow=1.9,SNR=28								
LPAZ					PKPbc		PKPdf	10 41 36.9	+6.9
	4.4nm,0.5s,baz=293,slow=2.4,SNR=32								

*IDC **18** 10:39:45.6±9.9,4.58N×125.67E,h113km±102km,mb3.3/5, mb1 3.4/5,mb1mx3.2/19,Error ellipse: s-maj=77.3km s-min=17.9km az=80.0*
ISC 18 10:39:52.2±1.0,**4.6N**±0.1×**125.8E**±0.5,**h200**km,**n5**, σ1§**18**/5,**mb3.5**/5,**Talaud Islands**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JOW	**Kunigami**	**22.26**	**6**		P		**P**	**10 44 33.4**	**0.0**
	15nm,0.9s,mb4.5,baz=133,slow=5.5,SNR=4.6								
FITZ	**Fitzroy Crossi**	**22.53**	**180**		P		**P**	**10 44 36.0**	**-0.2**
	1.0nm,0.4s,mb3.7,baz=356,slow=16,SNR=7.4								
WRA	**Warramunga Arr**	**25.78**	**161**		P		**P**	**10 45 05.5**	**-1.2**
	0.4nm,0.4s,mb3.4,baz=340,slow=10,SNR=13								
ASAR	**Alice Springs**	**29.17**	**165**		P		**P**	**10 45 38.6**	**+1.4**
	0.1nm,0.3s,mb2.9,baz=340,slow=7.2,SNR=3.7								
MKAR	**Makanchi Array**	**56.32**	**325**		P		**P**	**10 49 14.3**	**-0.1**
	0.3nm,0.4s,mb3.2,baz=117,slow=7.4,SNR=5.9								
MKAR					PcP		PcP	10 50 09.9	+0.7
	0.2nm,0.4s,baz=122,slow=4.3,SNR=3.7								

*NEIC **18** 10:48:13.4±4.1,2.80N×125.09E,h103km±39km,mb4.2/5, Error ellipse: s-maj=34.6km s-min=11.9km az=61.0*
*IDC **18** 10:48:21.6±7.1,2.55N×124.76E,h183km±71km,mb3.8/9, mb1 3.9/9,mb1mx3.6/19,Error ellipse: s-maj=35.6km s-min=15.7km az=66.0*
ISC 18 10:48:13.9±5.4,**2.7N**±0.1×**124.8E**±0.2,**h124**km±53km,**n18**, σ0§**87**/18,**mb4.2**/10,**1C**,**Celebes Sea**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
KAKA	**Kakadu**	**17.02**	**154**	*e*	P		**P**	**10 52 05.4**	**-0.5**
	7.4nm,0.6s								
FITZ	**Fitzroy Crossi**	**20.65**	**178**	*e*	P		**P**	**10 52 46.7**	**+1.1**
	1.1nm,0.4s								
FITZ				*i*				10 52 49.4	
FITZ	**Fitzroy Crossi**	**20.65**	**178**		P		**P**	**10 52 46.3**	**+0.7**
	4.0nm,0.4s,baz=16,slow=7.7,SNR=28								
WRAB	**Tennant Creek**	**24.33**	**158**	*e*	P		**P**	**10 53 21.8**	**+0.2**
	14nm,0.6s,mb4.5								
WRA	**Warramunga Arr**	**24.34**	**158**		P		**P**	**10 53 21.7**	**+0.2**
	5.8nm,0.4s,mb4.3,baz=337,slow=10,SNR=41								
WB2	**Warramunga Arr**	**24.34**	**158**	⇑	*i*	P	**P**	**10 53 21.7**	**+0.1**
ASAR	**Alice Springs**	**27.63**	**162**		P		**P**	**10 53 51.2**	**-0.9**
	0.6nm,0.3s,mb3.6,baz=337,slow=6.8,SNR=24								
STKA	**Stephens Creek**	**37.87**	**156**	*e*	P		**P**	**10 55 21.0**	**+0.5**
	4.8nm,1.8s,mb4.0								
STKA	**Stephens Creek**	**37.87**	**156**		P		**P**	**10 55 20.6**	**+0.1**
	1.9nm,0.4s,mb4.3,baz=161,slow=17,SNR=13								
ASAJ	**Asahikawa**	**44.17**	**18**		P		**P**	**10 56 13.4**	**+1.4**
	2.9nm,0.4s,mb4.4,baz=61,slow=27,SNR=3.3								
MKAR	**Makanchi Array**	**57.36**	**327**		P		**P**	**10 57 50.9**	**-0.6**
	0.9nm,0.4s,mb4.2,baz=122,slow=8.0,SNR=25								
MKAR					PcP		PcP	10 58 42.2	-1.6
	0.8nm,0.8s,baz=127,slow=4.1,SNR=5.0								
MKAR	**Makanchi Array**	**57.36**	**327**		P		**P**	**10 57 50.9**	**-0.6**
MKAR					PcP		PcP	10 58 42.2	-1.6
BVAR	**Borovoye Array**	**67.18**	**328**		P		**P**	**10 58 56.0**	**-0.7**
	0.3nm,0.6s,mb3.3,baz=135,slow=2.0,SNR=2.8								
ZRNK	**Zerenda**	**67.89**	**327**	*e*	P		**P**	**10 59 00.8**	**-0.2**
TIXI	**Tiksi**	**68.93**	**1**	*e*	P		**P**	**10 59 05.8**	**-1.3**
	3.5nm,0.6s,mb4.4								
RAR	**Rarotonga**	**77.40**	**112**		P		**P**	**10 59 56.6**	**-0.8**
	7.2nm,0.5s,mb4.7,baz=159,slow=7.6,SNR=3.9								
ARCES	**ARCESS Array B**	**90.78**	**340**		P		**P**	**11 01 05.7**	**+1.9**
	2.4nm,1.0s,mb4.3,baz=90,slow=3.6,SNR=5.9								
ARCES	**ARCESS Array B**	**90.78**	**340**		P		**P**	**11 01 05.7**	**+1.9**

*BER **18** 10:53:26.8±2.8,76.40N×24.33E,h17km±20km, ML2.1(NAO)*
*NAO **18** 10:53:26.8±4.7,76.28N×23.04E,h18km±25km,ML2.1*
ISC 18 10:53:24.8±1.0,**75.8N**±0.3×**1 9E**±,**h10**km,**n3**,σ1§**55**/6, **Svalbard region**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
SPA0	**Spitsbergen Ar**	**2.46**	**349**		Pn		**Pn**	**10 54 05.6**	**-0.1**
	baz=142,slow=18								
SPA0					Pg		**Pg**	**10 54 09.4**	**-4.6**
	baz=134,slow=14								
SPA0					Lg			10 54 44.2	
	baz=120,slow=37								
KBS	**Kingsbay**	**3.48**	**338**		Pn		**Pn**	**10 54 21.0**	**+0.8**
KBS					Sn		**Sn**	**10 55 01.1**	**-0.9**
KBS					Lg			10 55 19.5	
ARA0	**ARCESS Array S**	**6.60**	**158**		Pn		**Pn**	**10 55 05.9**	**+1.6**
	baz=359,slow=10								
ARA0					Sn		**Sn**	**10 56 19.1**	**-1.4**
	baz=7.5,slow=22								

*IDC **18** 10:54:49.5±1.2,7.01S×31.05E,mb4.3/4,mb1 4.3/6, mb1mx3.9/21,ML2.5/1,MS3.5/4,Ms1 3.5/4,ms1mx3.0/24, Error ellipse: s-maj=42.1km s-min=22.9km az=131.0*
*NEIC **18** 10:54:50.9±0.9,7.02S×31.12E,h10km, Error ellipse: s-maj=32.1km s-min=15.4km az=132.0*
ISC 18 10:54:48.8±0.8,**7.1S**±0.2×**31.2E**±0.2,**h10**km,**n10**,σ1§**22**/9, **mb4.3**/5,**MS3.4**/2,**Lake Tanganyika region**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
KMBO	**Kilima Mbogo**	**8.44**	**46**		Pn		**P**	**10 56 53.8**	**-0.2**
	6.4nm,0.3s,baz=222,slow=18,SNR=84								
KMBO					Sn		**Sn**	**10 58 21.2**	**-9.2**
	3.0nm,0.3s,baz=231,slow=23,SNR=3.3								
KMBO					Lg			10 59 10.5	
	7.8nm,0.3s,baz=143,slow=20,SNR=17								
KMBO					LR		LR	11 00 26.5	
	comp=Z,238nm,18.6s,baz=282,slow=40								
TSUM	**Tsumeb**	**17.90**	**226**		P		**P**	**10 58 59.3**	**-0.4**
	0.9nm,0.3s,baz=14,slow=12,SNR=11								
TSUM					LR		LR	11 06 24.1	
	comp=Z,309nm,19.9s,baz=321,slow=39								
SUR	**Sutherland**	**26.98**	**200**		P		**P**	**11 00 33.1**	**+0.4**
	4.2nm,1.0s,mb3.9,baz=238,slow=18,SNR=2.3								
SUR	**Sutherland**	**26.98**	**200**		P		**P**	**11 00 35.3**	**+2.6**
	18nm,1.4s,mb4.4								
DBIC	**Dimbokro**	**38.47**	**290**		P		**P**	**11 02 11.9**	**-1.1**
	23nm,1.4s,mb4.7,baz=101,slow=12,SNR=2.8								
ESDC	**Sonseca Array**	**56.73**	**328**		LR		LR	11 29 04.7	
	comp=Z,32nm,20.2s,MS3.4,baz=135,slow=36								
MAW	**Mawson**	**64.11**	**167**	*e*	P		**P**	**11 05 23.3**	**-1.9**
	5.2nm,1.0s,mb4.5								
MKAR	**Makanchi Array**	**70.16**	**35**		P		**P**	**11 06 04.4**	**+0.8**
	0.5nm,0.6s,mb3.6,baz=232,slow=5.8,SNR=6.8								
ZAL	**Zalesovo**	**75.54**	**29**		LR		LR	11 41 33.7	
	comp=Z,21nm,21.3s,MS3.4,baz=334,slow=37								
CPUP	**Villa Florida**	**85.59**	**244**		P		**P**	**11 07 30.9**	**+1.6**
	1.4nm,0.6s,mb4.3,baz=93,slow=15,SNR=3.2								

*NEIC **18** 11:24:29.5,31.35S×67.85W,h150km,MD4.0(GUC),After GUC.*
NEIC Felt [III] at San Juan.
GUC 18 11:24:29.5±0.8,**31.35S×67.85W**,**h150**km,**MD4.0**,**ML4.2**, **6C-3D**,**San Juan Province**

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

36nm,1.6s,mb4.9,baz=246,slow=9.2,SNR=3.4
DBIC LR LR 12 18 55.9
comp=Z,118nm,20.1s,MS3.8,baz=238,slow=32
ULM Lac du Bonnet 45.63 316 P **P** **12 04 35.0 -0.3**
2.4nm,0.7s,mb4.3,baz=99,slow=6.0,SNR=3.4
ULM LR LR 12 21 22.9
comp=Z,107nm,18.6s,MS3.8,baz=57,slow=33
WMOK Wichita Mounta 46.70 294 *eP* **P** **12 04 45.1 +1.0**
4.4nm,1.0s,mb4.3
LPAZ La Paz 47.66 211 P **P** **12 04 52.3 +0.5**
2.5nm,0.6s,mb4.4,baz=8.8,slow=10.0,SNR=10
DAVOX Davos 47.77 49 P **P** **12 04 54.1 +1.8**
2.5nm,0.7s,mb4.4,baz=353,slow=23,SNR=2.3
GERES GERESS Array B 50.53 47 P **P** **12 05 13.8 +0.3**
0.5nm,0.6s,mb3.6,baz=259,slow=14,SNR=2.1
NOA NORSAR Array B 51.38 31 P **P** **12 05 20.7 +0.9**
2.1nm,1.1s,mb4.0,baz=255,slow=10,SNR=2.9
TXAR Lajitas Array 51.56 288 P **P** **12 05 20.9 -0.6**
0.2nm,0.3s,mb3.5,baz=108,slow=5.7,SNR=2.2
TXAR LR LR 12 28 07.1
comp=Z,26nm,20.0s,MS3.3,baz=350,slow=37
CPUP Villa Florida 53.36 194 P **P** **12 05 34.5 -0.6**
0.8nm,0.4s,mb4.0,baz=104,slow=6.8,SNR=2.9
CPUP Villa Florida 53.36 194 P **P** **12 05 34.5 -0.6**
LVC Limon Verde 53.57 208 P **P** **12 05 36.3 -0.4**
2.7nm,0.8s,mb4.2,baz=38,slow=7.3,SNR=3.7
LVC Limon Verde 53.57 208 *eP* **P** **12 05 36.6 -0.1**
4.7nm,1.0s,mb4.4
PDAR Pinedale Array 54.54 305 P **P** **12 05 43.5 0.0**
2.2nm,1.1s,mb4.1,baz=68,slow=8.0,SNR=7.8
PDAR LR LR 12 26 36.4
comp=Z,84nm,18.2s,MS3.8,baz=293,slow=33
YKA Yellowknife Ar 57.85 329 P **P** **12 06 05.5 -1.5**
0.9nm,0.9s,mb3.8,baz=94,slow=7.4,SNR=16
YKA LR LR 12 29 25.5
comp=Z,129nm,20.1s,MS4.0,baz=85,slow=34
YKA Yellowknife Ar 57.85 329 P **P** **12 06 05.5 -1.5**
YKA LR LR 12 29 25.5
HLID Hailey 58.00 307 *eP* **P** **12 06 08.3 +0.1**
2.6nm,1.2s,mb4.1
ARCES ARCESS Array B 59.10 23 P **P** **12 06 14.8 -0.8**
2.6nm,0.8s,mb4.3,baz=233,slow=6.1,SNR=5.4
NEW Newport 59.37 312 P **P** **12 06 18.1 +0.3**
2.6nm,0.7s,mb4.4,baz=121,slow=5.6,SNR=5.2
NEW LR LR 12 30 15.8
comp=Z,164nm,18.9s,MS4.2,baz=14,slow=34
AKASG Malin Array Be 60.55 45 P **P** **12 06 23.9 -2.0**
2.6nm,0.9s,mb4.4,baz=272,slow=6.7,SNR=7.6
BRTR Keskin Array B 65.56 56 P **P** **12 06 58.7 -0.5**
1.6nm,0.9s,mb4.0,baz=297,slow=5.5,SNR=6.1
INK Inuvik 65.56 336 *eP* **P** **12 06 57.5 -1.1**
2.6nm,0.9s,mb4.3
DAWY Dawson 68.80 332 *eP* **P** **12 07 19.0 -0.2**
ILAR Eielson Array 71.65 334 P **P** **12 07 36.9 +0.3**
2.1nm,0.8s,mb4.1,baz=68,slow=4.7,SNR=35
ILAR LR LR 12 38 37.6
comp=Z,50nm,20.5s,MS3.8,baz=262,slow=36
KMBO Kilima Mbogo 83.57 94 LR LR 12 45 22.8
comp=Z,90nm,18.9s,MS4.2,baz=100,slow=35
ZAL Zalesovo 89.39 27 P **P** **12 09 10.9 -0.1**
0.9nm,0.6s,mb4.2,baz=285,slow=23,SNR=4.6
MKAR Makanchi Array 93.34 33 P **P** **12 09 29.3 -0.1**
0.1nm,0.6s,mb3.5,baz=304,slow=5.2,SNR=2.3
MKAR LR LR 12 52 27.3
comp=Z,12nm,19.6s,MS3.4,baz=170,slow=36

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*IDC **18** 11:56:17.9±16.0, 18.38S×177.58W, h410km±180km, mb3.7/8, mb1 3.9/8, mb1mx3.7/15, Error ellipse: s-maj=50.6km s-min=38.1km az=79.0*
*NEIC **18** 11:56:28.8±0.6, 18.38S×177.90W, h535km, mb4.3/8, Error ellipse: s-maj=25.7km s-min=11.1km az=156.0*
ISC 18 11:56:27.9±0.8, 18.4S±0.2×178.0W±0.2, h535km, n19, σ0§49/19, mb4.2/12, 1D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
ARMA	**Armidale**	**30.09**	**241**	*eP*	**P**	**P**	**12 01 55.0**	**-0.3**
CTA	**Charters Tower**	**33.80**	**261**	*eP*	**P**	**P**	**12 02 26.8**	**0.0**
	6.2nm,0.8s,mb4.2							
CTA	**Charters Tower**	**33.80**	**261**	P	**P**	**P**	**12 02 26.9**	**+0.1**
	7.8nm,0.7s,mb4.3,baz=96,slow=10,SNR=12							
CTAO	**Charters Tower**	**33.80**	**261**	*eP*	**P**	**P**	**12 02 26.3**	**-0.5**
	9.4nm,0.8s,mb4.4							
STKA	**Stephens Creek**	**38.79**	**242**	*eP*	**P**	**P**	**12 03 08.2**	**+0.5**
	5.6nm,0.4s,mb4.5							
STKA	**Stephens Creek**	**38.79**	**242**	P	**P**	**P**	**12 03 08.1**	**+0.4**
	6.3nm,0.4s,mb4.5,baz=95,slow=10,SNR=40							
WB2	**Warramunga Arr**	**44.97**	**260**	*eP*	**P**	**P**	**12 03 56.5**	**-0.4**
WRAB	**Tennant Creek**	**44.97**	**260**	*eP*	**P**	**P**	**12 03 56.5**	**-0.4**
	5.9nm,0.6s,mb4.3							
WRA	**Warramunga Array**	**44.98**	**260**	P	**P**	**P**	**12 03 56.6**	**-0.4**
	2.1nm,0.6s,mb3.9,baz=97,slow=6.7,SNR=21							
AS12	**Alice Springs**	**45.09**	**255**	⇓*iP*	**P**	**P**	**12 03 58.2**	**+0.4**
	12nm,0.6s,mb4.6							
ASAR	**Alice Springs**	**45.09**	**255**	P	**P**	**P**	**12 03 58.2**	**+0.4**
	16nm,0.5s,mb4.8,baz=91,slow=8.5,SNR=479							
KAKA	**Kakadu**	**48.05**	**269**	*eP*	**P**	**P**	**12 04 20.5**	**0.0**
	5.5nm,0.5s,mb4.3							
FORT	**Forrest**	**50.20**	**245**	*eP*	**P**	**P**	**12 04 36.1**	**-0.3**
	60nm,0.6s,mb5.2							
FITZ	**Fitzroy Crossi**	**53.38**	**261**	*eP*	**P**	**P**	**12 05 00.9**	**+1.4**
	4.0nm,0.5s,mb4.0							
FITZ	**Fitzroy Crossi**	**53.38**	**261**	P	**P**	**P**	**12 05 00.6**	**+1.1**
	4.9nm,0.6s,mb4.0,baz=180,slow=3.2,SNR=22							
USHA	**Ushuaia**	**85.88**	**147**	P	**P**	**P**	**12 08 11.4**	**-0.1**
	2.5nm,0.7s,mb4.0,baz=107,slow=22,SNR=2.7							
TXAR	**Lajitas Array**	**85.88**	**57**	P	**P**	**P**	**12 08 12.4**	**+0.2**
	0.4nm,0.3s,mb3.5,baz=217,slow=6.3,SNR=4.5							
ILAR	**Eielson Array**	**86.24**	**13**	P	**P**	**P**	**12 08 13.4**	**+0.4**
	0.9nm,1.1s,mb3.3,baz=235,slow=5.3,SNR=11							
INK	**Inuvik**	**92.22**	**15**	*eP*	**P**	**P**	**12 08 40.1**	**-0.6**
	5.4nm,1.5s,mb4.4							

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*NEIC **18** 12:21:29.0, 30.91S×70.26W, h156km, MD3.6(GUC), After GUC.*
GUC 18 12:21:29.0±1.1, 30.91S×70.26W, h156km±6km, MD3.6, ML3.8, 5C-5D, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
TLL	**Tololo Astrono**	**0.88**	**327**	⇑*iP*	P	P	12 21 54.5	+1.0
TLL				*i* S	S	S	12 22 12.7	+0.2
TLL				AMP			12 22 13.5	
	comp=E,1μm,0.3s							
ILCH	**Illapel**	**1.06**	**227**	⇑*iP*	P		12 21 56.6	+1.5
ILCH				*i* S	S		12 22 16.5	+1.4
ILCH				AMP			12 22 18.6	
	comp=E,936nm,0.2s							
LSCH	**La Serena**	**1.31**	**319**	⇑*iP*	P		12 21 59.0	+1.6
LSCH				*i* S	S		12 22 20.6	+1.3
LSCH				AMP			12 22 21.6	
	comp=N,1μm,0.3s							
PTCH	**Petorca**	**1.47**	**203**	⇓*iP*	P		12 21 59.9	+0.9
PTCH				*i* S	S		12 22 22.9	+0.8
PTCH				AMP			12 22 25.0	
	comp=E,1μm,0.1s							
JACH	**Jahuel**	**1.79**	**189**	⇓*iP*	P		12 22 03.3	+0.9
JACH				*i* S	S		12 22 28.5	+0.3
ROCH	**El Roble**	**2.15**	**197**	*iP*	P		12 22 07.4	+0.8
ROCH				*i* S	S		12 22 36.1	+0.5
PEL	**Peldehue**	**2.26**	**189**	⇑*iP*	P		12 22 08.3	+0.3
PEL				*i* S	S		12 22 37.8	0.0
PEL				AMP			12 22 40.3	
	comp=N,447nm,0.3s							
FCH	**Farellones**	**2.41**	**181**	⇓*iP*	P		12 22 10.5	+0.7
FCH				*i* S	S		12 22 41.6	+0.4
FCH				AMP			12 22 46.4	
	comp=E,351nm,0.2s							
CLCH	**Cerro Calan**	**2.49**	**185**	*iP*	P		12 22 11.5	+0.6
CLCH				*i* S	S		12 22 42.8	-0.1
CLCH				AMP			12 22 53.0	
	comp=E,385nm,0.7s							
RCDM	**Rinconada Maip**	**2.61**	**190**	*iP*	P		12 22 12.4	+0.1
RCDM				*i* S	S		12 22 45.5	-0.1
RCDM				AMP			12 22 47.1	
	comp=E,590nm,0.2s							
PCH	**Pirque**	**2.71**	**185**	⇓*iP*	P		12 22 13.9	+0.3
PCH				*i* S	S		12 22 48.2	+0.4
LCCH	**Las Cruces**	**2.79**	**203**	⇓*iP*	P		12 22 15.0	+0.4
LCCH				*i* S	S		12 22 49.2	-0.3
TACH	**Talagante**	**2.80**	**192**	*iP*	P		12 22 14.5	-0.2
TACH				*i* S	S		12 22 49.2	-0.5
LMEL	**Las Melosas**	**2.93**	**179**	*iP*	P		12 22 16.8	+0.4
LMEL				*i* S	S		12 22 53.0	+0.4
LMEL				AMP			12 22 57.7	
	comp=N,301nm,0.2s							
CHCH	**Chadas Angostu**	**3.03**	**186**	*iP*	P		12 22 17.3	-0.4
CHCH				*i* S	S		12 22 54.5	-0.4
LNV	**Longovilo**	**3.19**	**197**	⇑*iP*	P		12 22 19.3	-0.4
LNV				*i* S	S		12 22 57.7	-0.8
CACH	**El Canelo**	**3.21**	**185**	*iP*	P		12 22 20.2	+0.2
CACH				*i* S	S		12 23 00.1	+1.1
CICH	**Cipreses**	**3.40**	**182**	*iP*	P		12 22 23.0	+0.5
CICH				*i* S	S		12 23 03.3	-0.2
SFDO	**San Fernando**	**3.75**	**190**	*iP*	P		12 22 26.5	-0.4
SFDO				*i* S	S		12 23 10.6	-0.9

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*IDC **18** 12:44:47.7±2.4, 10.10S×113.32E, mb3.5/4, mb1 3.8/5, mb1mx3.6/16, ML2.9/1, Error ellipse: s-maj=128.0km s-min=25.8km az=47.0*
*DJA **18** 12:44:53.1±0.8, 10.07S×113.46E, h80km, MD5.2/4, ML4.7/4, Error ellipse: s-maj=19.8km s-min=15.8km az=175.0*
ISC 18 12:44:53.8±2.2, 10.07S±0.1×113.6E±0.1, h53km±22km, n11, σ1§12/16, mb3.5/4, 4C-6D, South of Jawa

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
INGI	**Ingas**	**1.99**	**51**	⇑*iP*n	P	**P**	**12 45 26.1**	**+0.4**
	432nm,0.2s							
INGI	**Ingas**	**1.99**	**51**	⇓*iP*	P	**P**	**12 45 27.1**	**+1.4**
INGI				⇓*i*Sn	S	**S**	**12 45 49.6**	**+0.3**
KELI	**Kelakatan**	**2.05**	**26**	⇑*e*Pn	P	**P**	**12 45 26.4**	**-0.2**
	417nm,0.3s							
KELI	**Kelakatan**	**2.05**	**26**	⇑*e*P	P	**P**	**12 45 26.9**	**+0.3**
KELI				⇑*i*Sn	S	**S**	**12 45 51.6**	**+0.6**
RATI	**Rata**	**2.35**	**55**	⇓*i*Pn	P	**P**	**12 45 30.6**	**-0.2**
	800nm,0.2s							
RATI				⇓*e*Sn		**S**	**12 45 58.9**	**+0.3**
KEDI	**Kedomdong**	**2.96**	**58**	⇓*e*Pn	P	**P**	**12 45 39.6**	**+0.1**
	128nm,0.2s							
KEDI				⇓*i*Sn		**S**	**12 46 12.2**	**-1.8**
FITZ	**Fitzroy Crossi**	**14.16**	**126**	Pn		**P**	**12 48 10.7**	**-2.5**
	0.0nm,0.3s,baz=286,slow=20,SNR=2.8							
FITZ				Sn		**S**	**12 50 37.8**	**-12**
	0.1nm,0.3s,baz=180,slow=21,SNR=1.9							
WRA	**Warramunga Arr**	**22.31**	**118**	P		**P**	**12 49 49.6**	**+1.5**
	0.4nm,0.5s,mb3.1,baz=292,slow=12,SNR=6.3							
ASAR	**Alice Springs**	**23.65**	**127**	P		**P**	**12 50 02.0**	**+0.9**
	0.9nm,0.6s,mb3.4,baz=301,slow=9.4,SNR=24							
STKA	**Stephens Creek**	**33.81**	**134**	P		**P**	**12 51 33.7**	**+0.7**
	1.7nm,0.5s,mb4.2,baz=310,slow=12,SNR=6.3							
MKAR	**Makanchi Array**	**63.12**	**336**	P		**P**	**12 55 16.6**	**-1.7**
	0.1nm,0.3s,mb3.4,baz=135,slow=6.1,SNR=2.3							

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*NEIC **18** 12:48:11.9, 35.44N×3.77W, MG3.4(MDD), After MDD.*
*MDD **18** 12:48:11.7±0.8, 35.45N×3.79W, mb3.5/10, Error ellipse: s-maj=11.2km s-min=3.7km az=31.0, AftershockPLICA PRXIMO*
ISC 18 12:48:10.7±1.2, 35.27N±0.07×3.80W±0.06, h54km±24km, n29, σ1§16/52, Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
EMEL	**Melilla**	**0.69**	**87**	P	**P**	**P**	**12 48 24.4**	**-0.1**
	94nm,0.1s,SNR=12							
EMEL				S		**S**	**12 48 33.2**	**-1.6**
	135nm,0.1s,SNR=7.9							
MELI	**Melilla**	**0.71**	**88**	P		**P**	**12 48 25.9**	**+1.2**
MELI				S		**S**	**12 48 34.8**	**-0.4**
ERON	**Agron**	**1.74**	**360**	P		**P**	**12 48 38.9**	**-0.3**
	3.5nm,0.2s,SNR=7.6							
ERON	**Agron**	**1.74**	**360**	P		**P**	**12 48 39.2**	**0.0**
ERON				S		**S**	**12 49 01.5**	**+1.3**
EBER	**Berja**	**1.78**	**24**	P		**P**	**12 48 39.2**	**-0.5**
	4.4nm,0.3s,SNR=8.4							
EBER				S		**S**	**12 49 00.9**	**-0.3**
	19nm,0.3s							
EBER	**Berja**	**1.78**	**24**	P		**P**	**12 48 39.0**	**-0.7**
EBER				S		**S**	**12 49 01.5**	**+0.3**
EJIF	**Jimena Fronter**	**1.80**	**311**	P		**P**	**12 48 40.6**	**+0.7**
	4.0nm,0.2s,SNR=4.0							
EJIF	**Jimena Fronter**	**1.80**	**311**	P		**P**	**12 48 40.7**	**+0.8**
ELOJ	**Sierra Loja**	**1.89**	**351**	P		**P**	**12 48 43.3**	**+2.0**
	3.8nm,0.3s,SNR=5.6							
ELOJ				S		**S**	**12 49 04.3**	**+0.4**
	5.1nm,0.6s							
ELOJ	**Sierra Loja**	**1.89**	**351**	P		**P**	**12 48 43.3**	**+2.0**
ELOJ				S		**S**	**12 49 03.4**	**-0.6**
ELIJ	**Sierra de Lija**	**2.08**	**322**	P		**P**	**12 48 45.0**	**+1.0**
	4.9nm,0.3s,SNR=12							
ELIJ				S		**S**	**12 49 10.1**	**+1.4**
	9.9nm,0.4s							
ELIJ	**Sierra de Lija**	**2.08**	**322**	P		**P**	**12 48 45.0**	**+1.0**
ELIJ				S		**S**	**12 49 09.9**	**+1.3**
ESPR	**Espera**	**2.31**	**314**	P		**P**	**12 48 48.6**	**+1.5**
	0.7nm,0.1s,SNR=4.9							
ESPR				S		**S**	**12 49 15.4**	**+1.0**
	15nm,0.4s							
ESPR	**Espera**	**2.31**	**314**	P		**P**	**12 48 49.5**	**+2.4**
ESPR				S		**S**	**12 49 13.6**	**-0.7**
ELUQ	**Luque**	**2.31**	**351**	S		**S**	**12 49 13.8**	**-0.8**
	9.5nm,0.3s,SNR=7.9							
ELUQ	**Luque**	**2.31**	**351**	P		**P**	**12 48 49.9**	**+2.6**
ELUQ				S		**S**	**12 49 13.8**	**-0.8**
EQES	**Quesada**	**2.59**	**13**	P		**P**	**12 48 51.7**	**+0.5**
	1.7nm,0.1s,SNR=13							
EQES				S		**S**	**12 49 22.3**	**+0.7**
	16nm,0.3s							
EQES	**Quesada**	**2.59**	**13**	P		**P**	**12 48 51.9**	**+0.7**
EQES				S		**S**	**12 49 21.8**	**+0.1**
EADA	**Adamuz**	**2.96**	**348**	P		**P**	**12 48 55.4**	**-1.0**
	0.5nm,0.2s,SNR=9.6							
EADA				S		**S**	**12 49 31.2**	**+0.4**
	7.1nm,0.3s							
EADA	**Adamuz**	**2.96**	**348**	P		**P**	**12 48 57.1**	**+0.8**
EADA				S		**S**	**12 49 31.4**	**+0.6**
ECAB	**El Cabril**	**3.09**	**336**	P		**P**	**12 48 58.7**	**+0.5**
	0.5nm,0.2s,SNR=7.9							
ECAB				S		**S**	**12 49 31.8**	**-2.3**
	8.4nm,0.4s,SNR=7.9							
EMIN	**Mina Concepcio**	**3.40**	**318**	P		**P**	**12 49 00.9**	**-1.7**
EMIN				S		**S**	**12 49 38.7**	**-3.3**
PALC	**Alcoutim**	**3.69**	**307**	*e*Pn		**P**	**12 49 06.5**	**-0.2**
PALC				*e*Sn		**S**	**12 49 47.6**	**-1.7**
	9.7nm,0.7s							
PALC	**Alcoutim**	**3.69**	**307**	Pn		**P**	**12 49 06.5**	**-0.2**
PALC				Sn		**S**	**12 49 47.6**	**-1.7**
	4.8nm,0.7s							
EGRO	**El Granado**	**3.73**	**308**	P		**P**	**12 49 05.9**	**-1.4**
EGRO				S		**S**	**12 49 45.7**	**-4.7**
ETOB	**Tobarra**	**3.82**	**28**	P		**P**	**12 49 08.9**	**+0.4**
	2.3nm,0.3s,SNR=15							
ETOB				S		**S**	**12 49 51.6**	**-1.0**
	3.9nm,0.6s							
EBAD	**Badajoz**	**4.33**	**324**	P		**P**	**12 49 14.5**	**-1.1**
	1.6nm,0.2s,SNR=4.0							
EBAD	**Badajoz**	**4.33**	**324**	P		**P**	**12 49 16.5**	**+0.9**
EBAD				S		**S**	**12 49 59.9**	**-5.4**
ESDC	**Sonseca Array**	**4.40**	**358**	P		**P**	**12 49 15.8**	**-0.9**
	2.6nm,0.2s,baz=174,slow=12,SNR=5.0							

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*IDC **18** 12:48:36.7±2.9, 2.56S×134.92E, mb3.7/2, mb1 3.8/4, mb1mx3.6/14, ML3.2/2, Error ellipse: s-maj=106.0km s-min=27.7km az=83.0*
ISC 18 12:48:40.8±2.2, 2.7S±0.2×134.5E±0.5, h33km, n5, σ0§53/5, mb3.6/1, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**17.17**	**181**	P		**P**	**12 52 40.4**	**+0.5**
	0.1nm,0.3s,baz=2.8,slow=12,SNR=5.6							
FITZ	**Fitzroy Crossi**	**17.65**	**209**	P		**P**	**12 52 45.8**	**0.0**
	0.1nm,0.3s,baz=103,slow=23,SNR=2.7							
AS12	**Alice Springs**	**20.89**	**182**	*eP*		**P**	**12 53 22.0**	**-0.7**
	2.6nm,0.5s							
ASAR	**Alice Springs**	**20.89**	**182**	P		**P**	**12 53 22.4**	**-0.4**
	3.1nm,0.6s,baz=7.3,slow=11,SNR=61							
MKAR	**Makanchi Array**	**67.25**	**324**	P		**P**	**12 59 34.2**	**+0.1**
	0.2nm,0.3s,mb3.6,baz=99,slow=7.9,SNR=5.4							

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*NIED **18** 12:59:00, 42.00N×144.50E, h8km, Mw4.2 Best double couple: M0 2.58×10^15 NP1:φs303°, δ64°, λ41°. NP2:φs192°, δ54°, λ147°.*
*MOS **18** 12:59:57.8±2.1, 41.94N×144.77E, h33km, mb4.6/6, Error ellipse: s-maj=23.1km s-min=11.4km az=96.2*
*JMA **18** 12:59:57.9, 42.02N×144.51E, h25km±1km, M4.5*
JMA Felt I /1.
*NEIC **18** 12:59:58.6±0.4, 41.96N×144.36E, mb4.5/6, Error ellipse: s-maj=12.0km s-min=7.8km az=123.0*
NEIC Recorded [1 JMA] in the Hiroo area.
*IDC **18** 12:59:58.3±0.6, 41.93N×144.40E, h22km±2km, mb3.9/20, mb1 4.1/22, mb1mx4.0/28, ML3.9/2, MS3.4/5, Ms1 3.4/5, ms1mx3.0/27, Error ellipse: s-maj=14.6km s-min=11.9km az=148.0*
*BJI **18** 12:59:58.2, 41.95N×144.73E, h44km, mB4.6, mb4.8, Ms4.3, Msz4.1*
ISC 18 12:59:56.6±0.4, 41.90N±0.04×144.52E±0.06, h25km, h25km±1.2km: pP-P, n58, σ1§19/64, mb4.2/31, MS4.0/6, 3D, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
JEM	**Erimo**	**1.02**	**277**	⇓P		**Pn**	**13 00 15.8**	**+0.2**
JAK	**Akkeshi**	**1.10**	**7**	⇓P		**Pn**	**13 00 15.8**	**-0.9**
JAK				*e*S		**Sb**	**13 00 29.6**	**-1.3**
JCH	**Churui**	**1.12**	**310**	P		**Pn**	**13 00 17.0**	**+0.1**
JCH				*e*S		**Sb**	**13 00 31.3**	**0.0**
JOB	**Onbets**	**1.12**	**333**	P		**Pn**	**13 00 16.8**	**-0.2**
YUK	**Yuzh-Kuril'sk**	**2.35**	**24**	*e*P		**Pn**	**13 00 33.3**	**-1.2**
YUK				*e*S		**Sn**	**13 00 53.8**	**-9.0**
YUK				pmax	pmax			
	comp=Z,310nm,0.4s							
YUK				pmax	pmax			
	comp=N,190nm,0.5s							
YUK				pmax	pmax			
	comp=E,150nm,0.4s							
YUK				pmax	pmax			
	comp=Z,2μm,1.0s							
YUK				pmax	pmax			
	comp=E,1.0nm,1.0s							
YUK				smax				
	comp=N,2μm,1.0s							
YUK				smax				
	comp=E,5μm,2.0s							
YUK				smax				
	comp=N,960nm,0.5s							
YUK				smax				
	comp=E,2μm,0.6s							
ASAJ	**Asahikawa**	**2.63**	**328**	Pn		**Pn**	**13 00 40.0**	**+1.5**
	comp=E,8.5nm,0.3s,baz=210,slow=12,SNR=30							
ASAJ				Sn		**Sn**	**13 01 13.7**	**+3.8**
	comp=E,28nm,0.3s,baz=354,slow=19,SNR=5.0							
ASAJ				LR		LR	13 01 49.1	
	comp=E,360nm,18.8s,baz=136,slow=43							
YSS	**Yuzh-Sakhalins**	**5.21**	**347**	P		**Pn**	**13 01 16.3**	**+1.2**
YSS				MLR		MLR		
	comp=Z,300nm,14.0s							
YSS				MLR		MLR		
	comp=N,300nm,13.0s							
YSS				MLR		MLR		
	comp=E,400nm,15.0s							
YSS	**Yuzh-Sakhalins**	**5.21**	**347**	*e*P		**Pn**	**13 01 15.7**	**+0.6**
MAJO	**Matsushiro**	**7.26**	**225**	*e*P		**Pn**	**13 01 42.5**	**-1.5**
MAT	**Matsushiro**	**7.26**	**225**	P		**Pn**	**13 01 42.9**	**-1.0**
MAT				S		**Sn**	**13 03 09.2**	**+2.8**
MAT	**Matsushiro**	**7.26**	**225**	*e*P		**Pn**	**13 01 43.0**	**-0.9**
	comp=E,7.3nm,0.6s							
MAT				*e*S		**Sn**	**13 03 09.0**	**+2.6**
JHJ	**Hachijo jima 2**	**9.54**	**205**	Pn		**P**	**13 02 11.9**	**-3.7**
	comp=E,12nm,0.3s,baz=223,slow=13,SNR=4.8							
JHJ				Sn		**Sn**	**13 03 55.0**	**-8.1**
	comp=E,9.8nm,0.3s,baz=249,slow=21,SNR=4.3							
JHJ				LR		LR	13 06 40.8	
	comp=E,272nm,18.4s,baz=308,slow=42							
JNU	**Nakatsue**	**13.92**	**235**	LR		LR	13 09 04.1	
	comp=E,71nm,19.0s,baz=73,slow=39							
SEY	**Seymchan**	**21.57**	**10**	*e*P		**P**	**13 04 41.8**	**-4.4**
SEY				pmax	pmax			
	comp=N,10.0nm,1.0s							
SEY				pmax	pmax			
	comp=Z,10.0nm,1.0s,mb4.2							
SSE	**Sheshan**	**21.57**	**248**	P		**P**	**13 04 46.1**	**-0.4**
SSE				AMB	AMB			
	comp=Z,27nm,0.7s,mb4.8							
SSE				AMB	AMB			
	comp=Z,193nm,6.3s							
YAK	**Yakutsk**	**22.03**	**341**	*d*P		**P**	**13 04 46.9**	**-3.9**
YAK				*e**PP			13 05 01.6	
YAK				*e*S		**S**	**13 08 40.6**	**-6.9**
YAK				*e*SS		SS	13 09 23.8	-2.9
YAK				pmax	pmax			
	comp=Z,3.0nm,0.8s,mb3.8							
YAK				pmax	pmax			
	comp=N,1.0nm,0.9s							
YAK				pmax	pmax			
	comp=E,1.0nm,1.0s							
YAK				smax				
	comp=N,10.0nm,1.1s							
YAK				smax				
	comp=Z,4.0nm,0.8s							
YAK				smax				
	comp=E,10.0nm,1.0s							
YAK	**Yakutsk**	**22.03**	**341**	*e*P		**P**	**13 04 47.2**	**-3.6**
	comp=E,18nm,0.7s,mb4.6							
FX1	**Attu Island--F**	**22.13**	**50**	P		**P**	**13 04 52.5**	**+0.6**
	comp=E,11nm,0.7s,mb4.4,baz=327,slow=10,SNR=5.3							
NJ2	**Nanjing**	**22.67**	**253**	*e*P		**P**	**13 04 59.1**	**+1.8**
NJ2				AMB	AMB			
	comp=Z,10.0nm,0.6s,mb4.4							
NJ2				LR	LR			
	comp=N,350nm,14.6s,MS4.0							
NJ2				LR	LR			
	comp=E,340nm,16.9s,MS4.0							
NJ2				LR	LR			
	comp=Z,390nm,19.3s,MS3.9							
ULN	**Ulaanbaatar**	**27.02**	**296**	*e*P		**P**	**13 05 41.0**	**+2.5**
SONM	**Songino Array**	**27.46**	**296**	P		**P**	**13 05 41.1**	**-1.4**
	comp=Z,2.9nm,1.0s,mb3.8,baz=84,slow=7.6,SNR=12							
SONM				sP		sP	13 05 51.9	-1.0
	comp=Z,1.9nm,0.5s,baz=80,slow=8.8,SNR=11							
ZAK	**Zakamensk**	**29.48**	**301**	*e*P		**P**	**13 06 04.5**	**+3.8**
TIXI	**Tiksi**	**30.82**	**350**	*e*P		**P**	**13 06 14.2**	**+1.8**
TIXI				pmax	pmax			
	comp=Z,19nm,0.8s,mb5.0							
TIXI				MLR	MLR

CMAR	**Chiang Mai Arr**	**45.14**	**253**	P	**P**	**13 08 14.3**	**+1.2**
	comp=Z,0.8nm,0.5s,mb3.8,baz=47,slow=6.1,SNR=5.7						
CMAR				LR	LR	13 27 48.6	
	comp=Z,38nm,18.1s,MS3.4,baz=116,slow=37						
INK	**Inuvik**	**48.97**	**29**	P	**P**	**13 08 42.7**	**+0.2**
	comp=Z,0.9nm,0.5s,mb4.1,baz=264,slow=7.3,SNR=10						
INK				pP	pP	13 08 49.8	-0.2
	comp=Z,1.1nm,0.4s,baz=307,slow=4.6,SNR=6.4						
INK	**Inuvik**	**48.97**	**29**	*e*P	**P**	**13 08 43.3**	**+0.8**
	comp=Z,1.5nm,0.6s,mb4.2						
ZRNK	**Zerenda**	**50.01**	**310**	*e*P	**P**	**13 08 49.6**	**-1.0**
KAKA	**Kakadu**	**55.47**	**194**	*e*P	**P**	**13 09 30.8**	**-1.0**
	comp=Z,7.5nm,0.6s,mb4.9						
RES	**Resolute Bay**	**57.28**	**16**	*e*P	**P**	**13 09 44.3**	**+0.2**
	comp=Z,3.6nm,0.8s,mb4.5						
YKA	**Yellowknife Ar**	**58.41**	**32**	P	**P**	**13 09 51.8**	**-0.2**
	comp=Z,0.6nm,0.8s,mb3.7,baz=301,slow=6.8,SNR=13						
YKA				pP	pP	13 09 58.2	-1.4
	comp=Z,1.0nm,0.8s,baz=306,slow=7.0,SNR=13						
YKA	**Yellowknife Ar**	**58.41**	**32**	P	**P**	**13 09 51.9**	**-0.2**
YKA				pP	pP	13 09 58.2	-1.4
ARCES	**ARCESS Array B**	**60.30**	**339**	P	**P**	**13 10 03.5**	**-1.5**
	comp=Z,4.4nm,1.0s,mb4.4,baz=27,slow=5.4,SNR=4.1						
ARCES				pP	pP	13 10 11.2	-1.5
	comp=Z,1.5nm,0.9s,baz=45,slow=5.1,SNR=0.9						
CTA	**Charters Tower**	**61.69**	**178**	LR	LR	13 35 08.0	
	comp=Z,67nm,19.0s,MS3.8,baz=129,slow=34						
WRA	**Warramunga Arr**	**62.25**	**191**	P	**P**	**13 10 17.9**	**-1.0**
	comp=Z,1.6nm,0.8s,mb4.2,baz=10,slow=7.1,SNR=9.2						
WRA				pP	pP	13 10 25.5	-1.0
	comp=Z,0.8nm,0.7s,baz=9.9,slow=7.0,SNR=2.9						
YBH	**Yreka Blue Hor**	**65.53**	**55**	P	**P**	**13 10 41.9**	**+1.9**
	comp=Z,0.8nm,0.7s,mb3.9,baz=276,slow=6.4,SNR=3.0						
FINES	**FINESS Array B**	**65.63**	**332**	P	**P**	**13 10 38.7**	**-1.6**
	comp=Z,1.3nm,0.5s,mb4.2,baz=58,slow=7.1,SNR=12						
FINES				pP	pP	13 10 46.5	-1.5
	comp=Z,2.5nm,0.5s,baz=52,slow=8.6,SNR=4.1						
FINES	**FINESS Array B**	**65.63**	**332**	P	**P**	**13 10 38.7**	**-1.6**
FINES				pP	pP	13 10 46.5	-1.5
ASAR	**Alice Springs**	**65.97**	**191**	P	**P**	**13 10 42.8**	**-0.3**
	comp=Z,1.1nm,0.8s,mb3.9,baz=10,slow=6.4,SNR=13						
THR	**Tehran**	**69.36**	**300**	P	**P**	**13 11 05.4**	**+1.2**
	comp=Z,0.5nm,0.4s,mb3.8,baz=45,slow=4.3,SNR=1.8						
NB2	**NORSAR Subarra**	**70.61**	**338**	P	**P**	**13 11 15.1**	**+3.7**
	comp=Z,3.2nm,0.8s,mb4.3,baz=35,slow=6.2						
NOA	**NORSAR Array B**	**70.61**	**338**	P	**P**	**13 11 10.4**	**-1.0**
	comp=Z,0.9nm,0.9s,mb3.7,baz=82,slow=12,SNR=2.8						
NOA				pP	pP	13 11 17.8	-1.3
	comp=Z,1.6nm,0.7s,baz=35,slow=6.1,SNR=3.1						
HFS	**Hagfors**	**70.63**	**336**	P	**P**	**13 11 10.1**	**-1.4**
	comp=Z,2.1nm,0.7s,mb4.2,baz=58,slow=14,SNR=3.7						
HFS				pP	pP	13 11 17.7	-1.5
	comp=Z,2.4nm,0.6s,baz=63,slow=6.6,SNR=2.8						
SOC	**Sochi**	**71.43**	**312**	*e*P	**P**	**13 11 08.6**	**-8.0**
SOC				*e*		13 11 22.3	
SOC				*e*S	S	13 20 30.9	-1.2
SOC				*e*PS	PS	13 21 09.6	+5.2
SOC				pmax	pmax		
	comp=Z,10.0nm,0.7s,mb4.8						
SOC				pmax	pmax		
	comp=N,15nm,0.8s						
SOC				pmax	pmax		
	comp=E,32nm,0.9s						
SOC				MLR	MLR		
	comp=Z,195nm,22.0s,MS4.3						
SOC				MLR	MLR		
	comp=N,99nm,19.0s,MS4.2						
SOC				MLR	MLR		
	comp=E,121nm,24.0s,MS4.2						
AKASG	**Malin Array Be**	**71.90**	**323**	P	**P**	**13 11 19.1**	**-0.2**
	comp=E,0.6nm,0.5s,mb3.8,baz=39,slow=6.4,SNR=4.2						
AKASG				sP	sP	13 11 28.2	-1.5
	comp=E,1.1nm,0.6s,baz=42,slow=5.7,SNR=2.9						
PDAR	**Pinedale Array**	**72.58**	**48**	P	**P**	**13 11 23.9**	**+0.5**
	comp=E,0.4nm,0.4s,mb3.7,baz=333,slow=6.0,SNR=4.2						
PDAR				pP	pP	13 11 31.8	+0.6
	comp=E,0.5nm,0.4s,baz=270,slow=1.5,SNR=2.8						
GERES	**GERESS Array B**	**79.80**	**329**	pP	pP	13 12 11.3	-0.4
	comp=E,1.0nm,0.8s,baz=36,slow=8.4,SNR=2.2						
TXAR	**Lajitas Array**	**85.29**	**54**	P	**P**	**13 12 33.8**	**+1.2**
	comp=E,0.6nm,0.3s,mb4.2,baz=285,slow=3.3,SNR=4.3						
IDI	**Anoyia**	**85.37**	**314**	P	**P**	**13 12 32.6**	**-0.4**
	comp=E,4.1nm,0.7s,mb4.7,baz=53,slow=10,SNR=2.8						

*IDC **18** 13:16:23.3±5.4,2.77S×129.08E,h57km±50km,mb3.5/4, mb1 3.9/6,mb1mx3.6/18,ML4.0/2,Error ellipse: s-maj=101.0km s-min=14.5km az=75.0*

ISC 18 13:16:17.0±3.4,2.6S±0.1×128.7E±0.3,h11km±21km,n10, σ1§61/12,mb3.8/4,Ceram Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
KAKA	**Kakadu**	**10.67**	**160**	*e*P		**P**		**13 18 53.1**	**0.0**
	9.4nm,0.6s								
FITZ	**Fitzroy Crossi**	**15.65**	**191**	*e*P		**P**		**13 20 02.1**	**+2.7**
	4.3nm,1.0s								
FITZ	**Fitzroy Crossi**	**15.65**	**191**	P		**P**		**13 20 01.1**	**+1.6**
	0.4nm,0.3s,baz=18,slow=14,SNR=9.8								
WRA	**Warramunga Arr**	**18.08**	**163**	P		**P**		**13 20 26.3**	**-3.8**
	0.5nm,0.3s,baz=346,slow=12,SNR=10								
WRA				S		**S**		**13 23 50.2**	**+1.2**
	0.1nm,0.3s,baz=337,slow=22,SNR=2.6								
WB2	**Warramunga Arr**	**18.08**	**162**	*e*P		**P**		**13 20 26.6**	**-3.5**
AS12	**Alice Springs**	**21.52**	**167**	*e*P		**P**		**13 21 05.7**	**-2.6**
	12nm,0.8s,mb4.4								
ASAR	**Alice Springs**	**21.52**	**167**	P		**P**		**13 21 05.3**	**-3.0**
	12nm,1.0s,mb4.3,baz=349,slow=12,SNR=80								
ASAR				S		**S**		**13 25 00.0**	**-1.8**
	0.6nm,0.7s,baz=348,slow=20,SNR=3.4								
CTA	**Charters Tower**	**24.42**	**137**	P		**P**		**13 21 38.1**	**+1.1**
	2.7nm,0.9s,mb3.7,baz=314,slow=14,SNR=2.1								
SONM	**Songino Array**	**53.90**	**342**	P		**P**		**13 25 43.7**	**+1.0**
	0.2nm,0.4s,mb3.4,baz=135,slow=6.1,SNR=3.1								
MKAR	**Makanchi Array**	**63.86**	**326**	P		**P**		**13 26 51.2**	**-0.8**
	0.5nm,0.8s,mb3.6,baz=125,slow=8.1,SNR=4.0								

*NEIC **18** 13:17:41.5,30.62S×71.61W,h33km,ML4.2(GUC),After GUC.*

*GUC **18** 13:17:41.5±0.8,30.62S×71.61W,h33km±4km,MD4.3, ML4.2*

ISC 18 13:17:39.9±1.5,30.61S±0.04×71.8W±0.1,h20km±12km, n21,σ0§48/28,2C-3D,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
LSCH	**La Serena**	**0.84**	**33**	*i* P		**Pb**		**13 17 55.9**	**+0.3**
LSCH				*i* S		**Sb**		**13 18 06.9**	**+0.6**
TLL	**Tololo Astrono**	**0.95**	**62**	⇓*i*P		**Pb**		**13 17 57.3**	**-0.2**
TLL				*i* S		**Sb**		**13 18 08.7**	**-0.8**
TLL				AMP				13 18 10.1	
	comp=E,15μm,0.3s								
PACH	**Papudo**	**1.94**	**172**	⇓*i*P		**Pn**		**13 18 12.3**	**0.0**
PACH				*i* S		**Sn**		**13 18 36.3**	**-0.1**
VACH	**Vallenar**	**2.21**	**24**	*e*P		**Pn**		**13 18 16.2**	**0.0**
VACH				*i* S		**Sn**		**13 18 43.4**	**+0.2**
VACH				AMP				13 18 47.4	
	comp=N,2μm,0.5s								
JACH	**Jahuel**	**2.30**	**154**	*e*P		**Pn**		**13 18 18.1**	**+0.6**
ROCH	**El Roble**	**2.44**	**165**	*e*P		**Pn**		**13 18 20.2**	**+0.7**
PEL	**Peldehue**	**2.69**	**160**	*e*P		**Pn**		**13 18 23.0**	**0.0**
PEL				*i* S		**Sn**		**13 18 55.2**	**-0.2**
PEL				AMP				13 19 10.0	
	comp=N,1μm,0.4s								
LCCH	**Las Cruces**	**2.86**	**177**	*i* P		**Pn**		**13 18 24.8**	**-0.7**
CLCH	**Cerro Calan**	**2.97**	**160**	*e*P		**Pn**		**13 18 27.1**	**+0.1**
CLCH				AMP				13 19 16.1	
	comp=N,1μm,0.5s								
FCH	**Farellones**	**2.99**	**155**	*e*P		**Pn**		**13 18 28.1**	**+0.8**
FCH				*i* S		**Sn**		**13 19 03.3**	**+0.4**
FCH				AMP				13 19 16.2	
	comp=N,461nm,0.3s								
TACH	**Talagante**	**3.12**	**167**	*i* P		**Pn**		**13 18 29.0**	**-0.1**
PCH	**Pirque**	**3.19**	**161**	*e*P		**Pn**		**13 18 30.5**	**+0.5**
LNV	**Longovilo**	**3.35**	**175**	*i* P		**Pn**		**13 18 31.7**	**-0.7**
MDZ	**Mendoza**	**3.37**	**133**	*e*P		**Pn**		**13 18 37.4**	**+4.8**
MDZ				*e*				13 18 58.0	
MDZ				S		**Sn**		**13 19 24.4**	**+12**
CHCH	**Chadas Angostu**	**3.45**	**164**	*i* P		**Pn**		**13 18 33.7**	**-0.1**
LMEL	**Las Melosas**	**3.49**	**158**	*e*P		**Pn**		**13 18 34.7**	**+0.3**
LMEL				AMP				13 19 29.8	
	comp=N,461nm,0.3s								
CACH	**El Canelo**	**3.63**	**164**	*i* P		**Pn**		**13 18 36.3**	**-0.1**
CICH	**Cipreses**	**3.87**	**163**	⇓*i*P		**Pn**		**13 18 39.6**	**-0.2**
SFDO	**San Fernando**	**4.04**	**171**	⇑*i*P		**Pn**		**13 18 41.9**	**-0.3**
LVC	**Limon Verde**	**8.37**	**18**	*e*P		**P**		**13 19 39.1**	**-4.0**
	comp=N,5.6nm,0.5s								
LVC				*e*				13 19 54.9	
VNA2	**Neumayer--Watz**	**53.05**	**158**	⇑*i*		**P**		**13 26 56.9**	**-0.6**

*IDC **18** 13:29:49.3±4.1,7.23S×128.94E,h128km±32km,mb3.5/2, mb1 3.6/5,mb1mx3.4/14,Error ellipse: s-maj=61.7km s-min=24.1km az=71.0*

ISC 18 13:29:53.9±4.3,7.4S±0.1×128.9E±0.2,h196km±43km,n5, σ1§20/8,mb3.6/2,Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**11.08**	**197**	P		**P**		**13 32 28.6**	**+0.6**
	0.4nm,0.3s,baz=37,slow=15,SNR=31								
FITZ				S		**S**		**13 34 28.8**	**-0.2**
	2.8nm,0.3s,baz=170,slow=18,SNR=12								
WRA	**Warramunga Arr**	**13.50**	**158**	P		**P**		**13 32 53.5**	**-5.2**
	0.6nm,0.3s,baz=343,slow=13,SNR=12								
WRA				S		**S**		**13 35 18.0**	**-6.4**
	0.8nm,0.3s,baz=331,slow=22,SNR=8.7								
ASAR	**Alice Springs**	**16.83**	**164**	P		**P**		**13 33 39.0**	**-0.7**
	0.4nm,0.3s,baz=339,slow=9.1,SNR=26								
ASAR				S		**S**		**13 36 39.1**	**-0.2**
	0.2nm,0.3s,baz=333,slow=20,SNR=4.7								
ASAR				ScP				13 41 41.0	
	0.0nm,0.3s,baz=1.8,slow=2.0,SNR=5.2								
STKA	**Stephens Creek**	**27.03**	**156**	P		**P**		**13 35 21.1**	**+1.1**
	2.1nm,0.8s,mb3.8,baz=327,slow=15,SNR=2.6								
MKAR	**Makanchi Array**	**68.01**	**327**	P		**P**		**13 40 33.5**	**-0.4**
	0.6nm,0.7s,mb3.4,baz=132,slow=4.3,SNR=5.6								

*BJI **18** 13:47:59.9,52.61N×175.71E,h59km,mB4.9,mb4.9, Ms4.4,Msz4.1*

*NEIC **18** 13:48:01.9±0.2,52.15N×176.35E,mb4.7/29,Error ellipse: s-maj=5.8km s-min=3.0km az=178.0*

*IDC **18** 13:48:02.3±0.5,52.30N×176.30E,h90km±3km,mb4.3/23, mb1 4.5/23,mb1mx4.4/26,MS3.6/11,Ms1 3.6/11, ms1mx3.3/33,Error ellipse: s-maj=12.6km s-min=7.0km az=179.0*

*MOS **18** 13:48:04.2±1.0,52.15N×176.10E,h124km,mb5.0/13, Error ellipse: s-maj=18.1km s-min=7.4km az=113.5*

ISC 18 13:48:00.6±0.4,52.15N±0.05×176.37E±0.03,h93km±3km, h90km±1.4km:pP-P,n242,σ0§97/239,mb4.7/88,11C-14D, Rat Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
SMY	**Shemya**	**1.51**	**294**	P		**P**		**13 48 26.5**	**-0.5**
SMY				S		**S**		**13 48 46.2**	**-0.3**
FX1	**Attu Island--F**	**2.09**	**292**	P		**P**		**13 48 33.7**	**-0.9**
	828nm,0.3s,baz=159,slow=5.4,SNR=5257								
FX1				S		**S**		**13 48 58.7**	**-1.1**
FX1	**Attu Island--F**	**2.09**	**292**	P		**P**		**13 48 33.8**	**-0.8**
KIMD	**Kanaga Island**	**3.98**	**93**	P		**P**		**13 49 00.1**	**-0.5**
KIKV	**Kanaga Island**	**4.00**	**91**	P		**P**		**13 49 00.8**	**-0.1**
KIWB	**Kanaga Island**	**4.01**	**92**	P		**P**		**13 49 01.0**	**-0.2**
KINC	**Kanaga Island**	**4.02**	**91**	P		**P**		**13 49 01.0**	**-0.3**
KIRH	**Kanaga Island**	**4.04**	**91**	P		**P**		**13 49 01.6**	**0.0**
ADK	**Adak**	**4.30**	**91**	P		**P**		**13 49 04.7**	**-0.3**
ADAG	**Mount Adagdak**	**4.34**	**89**	P		**P**		**13 49 05.3**	**-0.3**
GSTD	**Great Sitkin T**	**4.62**	**88**	P		**P**		**13 49 08.7**	**-0.7**
GSTR	**Great Sitkin T**	**4.67**	**88**	P		**P**		**13 49 09.6**	**-0.5**
GSMY	**Great Sitkin M**	**4.67**	**88**	P		**P**		**13 49 09.6**	**-0.6**
GSIG	**Igitkin Island**	**4.76**	**89**	P		**P**		**13 49 10.8**	**-0.5**
ATKA	**Atka Island**	**5.81**	**86**	P		**P**		**13 49 25.4**	**-0.2**
NIKO	**Nikolski**	**9.04**	**79**	P		**P**		**13 50 09.8**	**-0.1**
SPIA	**Saint Paul Isl**	**9.24**	**52**	P		**P**		**13 50 13.6**	**+0.9**
MNAT	**Makushin Natee**	**10.36**	**74**	P		**P**		**13 50 28.6**	**+1.1**
MTBL	**Makushin Table**	**10.37**	**73**	P		**P**		**13 50 28.7**	**+1.0**
UNV	**Unalaska Valle**	**10.46**	**74**	P		**P**		**13 50 29.9**	**+0.9**
PET	**Petropavlovsk**	**10.82**	**282**	*e*P		**P**		**13 50 34.3**	**+0.6**
PET				*e*S		**S**		**13 52 28.6**	**-4.9**
PET				pmax	pmax				
	comp=Z,38nm,0.7s								
PET				pmax	pmax				
	comp=Z,144nm,3.3s								
PET				smax					
	comp=N,238nm,4.1s								
PET				smax					
	comp=E,59nm,0.6s								
PET				smax					
	comp=N,88nm,0.7s								
PET				MLR	MLR				
	comp=Z,145nm,18.0s								
PET	**Petropavlovsk**	**10.82**	**282**	*e*P		**P**		**13 50 34.0**	**+0.3**
AHB	**Akutan Harbor**	**10.88**	**73**	P		**P**		**13 50 36.2**	**+1.6**
WTUG	**Tugumak**	**11.77**	**69**	P		**P**		**13 50 48.0**	**+1.6**
FALS	**False Pass**	**12.33**	**69**	P		**P**		**13 50 55.5**	**+1.6**
SKR	**Severo-Kuril's**	**12.73**	**271**	*e*P		**P**		**13 50 58.5**	**-0.6**
SKR				*e*S		**S**		**13 53 07.4**	**-12**
SKR				pmax	pmax				
	comp=Z,50nm,0.5s								
SKR				pmax	pmax				
	comp=N,50nm,0.2s								
SKR				pmax	pmax				
	comp=E,30nm,0.5s								
SKR				smax					
	comp=N,220nm,0.7s								
SKR				smax					
	comp=E,100nm,0.5s								
SDN	**Sand Point**	**14.04**	**68**	*e*P		**P**		**13 51 18.3**	**+2.4**
SDPT	**Sand Point**	**14.05**	**68**	*e*P		**P**		**13 51 19.0**	**+2.9**
TNA	**Tin City**	**15.64**	**25**	*e*P		**P**		**13 51 38.0**	**+1.6**
MA2	**Magadan**	**16.10**	**308**	*e*P		**P**		**13 51 44.9**	**+2.7**
MA2				*e*S		**S**		**13 54 42.2**	**+4.7**
MA2				pmax	pmax				
	comp=Z,10.0nm,0.7s								
MA2	**Magadan**	**16.10**	**308**	*e*P		**P**		**13 51 44.3**	**+2.1**
	comp=Z,12nm,0.7s								
BILL	**Bilibino**	**16.67**	**347**	*d i*P		**P**		**13 51 50.6**	**+1.3**
BILL				*e*S		**S**		**13 54 57.8**	**+7.3**
BILL				pmax	pmax				
	comp=Z,122nm,1.9s								
BILL				MLR	MLR				
	comp=Z,300nm,21.0s								
BILL	**Bilibino**	**16.67**	**347**	*e*P		**P**		**13 51 50.4**	**+1.1**
	comp=Z,135nm,1.5s								
SEY	**Seymchan**	**16.68**	**320**	*e*P		**P**		**13 51 51.1**	**+1.6**
SEY				*e*S		**S**		**13 54 55.2**	**+4.4**
SEY				pmax	pmax				
	comp=N,20nm,1.0s								
SEY				pmax	pmax				
	comp=Z,40nm,1.0s								
SEY				pmax	pmax				
	comp=E,30nm,1.3s								
SEY				smax					
	comp=N,500nm,10.9s								
SEY				smax					
	comp=E,600nm,13.2s								
SVW	**Sparrevohn**	**17.69**	**49**	*e*P		**P**		**13 52 03.3**	**+1.3**
KDAK	**Kodiak Island**	**18.58**	**60**	*e*P		**P**		**13 52 10.6**	**-1.8**
RSO	**Redoubt South**	**18.88**	**52**	*e*P		**P**		**13 52 16.2**	**+0.4**
SPU	**Mount Spurr**	**19.38**	**50**	*e*P		**P**		**13 52 21.5**	**+0.4**
SLKM	**Skilak Lake**	**20.12**	**52**	*e*P		**P**		**13 52 28.2**	**-0.8**
FIB	**Fire Island**	**20.27**	**50**	P		**P**		**13 52 30.0**	**-0.4**
IMA	**Indian Mountai**	**20.46**	**36**	*e*P		**P**		**13 52 32.6**	**+0.2**
PMS	**Palmer South**	**20.57**	**50**	*e*P		**P**		**13 52 33.7**	**+0.1**
PMR	**Palmer**	**20.84**	**50**	*e*P		**P**		**13 52 36.8**	**+0.5**
SML	**Sawmill**	**21.26**	**49**	*e*P		**P**		**13 52 38.9**	**-1.5**
MCK	**McKinley**	**21.45**	**44**	*e*P		**P**		**13 52 41.7**	**-0.6**
	comp=E,16nm,1.1s,mb4.3								
MID	**Middleton Isla**	**21.95**	**56**	*e*P		**P**		**13 52 48.2**	**+0.9**
COLA	**College**	**22.23**	**41**	*e*P		**P**		**13 52 51.5**	**+1.5**
YSS	**Yuzh-Sakhalins**	**22.29**	**270**	⇓*e*P		**P**		**13 52 50.3**	**-0.4**
YSS				pmax	pmax				
	comp=Z,17nm,0.8s,mb4.4								
TOA	**Tolsona**	**22.32**	**49**	*e*P		**P**		**13 52 54.7**	**+3.8**
EYAK	**Cordova Ski Ar**	**22.32**	**53**	*e*P		**P**		**13 52 50.7**	**-0.3**
ILAR	**Eielson Array**	**22.60**	**42**	P		**P**		**13 52 52.6**	**-0.8**
	comp=Z,12nm,0.8s,mb4.3,baz=242,slow=9.7,SNR=110								
ILAR				sP				13 53 21.1	
	comp=Z,23nm,0.8s,baz=260,slow=12,SNR=17								
ILAR				ScP				14 00 12.0	
	comp=Z,0.6nm,0.7s,baz=289,slow=3.6,SNR=7.1								
ILAR				LR	LR			14 02 25.5	
	comp=Z,78nm,18.2s,baz=271,slow=38								
ASAJ	**Asahikawa**	**23.75**	**264**	P		**P**		**13 53 07.2**	**+2.4**
	comp=Z,23nm,1.0s,mb4.5,baz=60,slow=7.3,SNR=7.9								
DAWY	**Dawson**	**25.64**	**45**	*e*P		**P**		**13 53 22.1**	**-0.5**
YAK	**Yakutsk**	**26.64**	**310**	*d i*P		**P**		**13 53 30.2**	**-1.6**
YAK				*i* *PP		pP		13 53 52.6	+0.1
YAK				*i*				13 54 07.0	
YAK				*i*				13 56 50.6	
YAK				*e*S		**S**		**13 57 56.9**	**-1.1**
YAK				*i* SS		SS		13 59 23.2	+6.9
YAK				*i*				14 04 11.9	
YAK				pmax	pmax				
	comp=Z,27nm,0.9s,mb4.8								
YAK				pmax	pmax				
	comp=N,3.0nm,1.0s								
YAK				pmax	pmax				
	comp=E,10.0nm,1.2s								
YAK				pmax	pmax				
	comp=Z,7.0nm,0.9s,mb4.2								
YAK				smax					
	comp=E,8.0nm,1.1s								
YAK				smax					
	comp=Z,3.0nm,1.0s								
YAK				smax					
	comp=N,7.0nm,1.1s								
YAK	**Yakutsk**	**26.64**	**310**	*e*P		**P**		**13 53 29.8**	**-2.0**
	comp=N,49nm,0.7s,mb5.2								
KLR	**Kul'dur**	**28.08**	**282**	*e*P		**P**		**13 53 44.0**	**-1.1**
TIXI	**Tiksi**	**28.49**	**331**	*e*P		**P**		**13 53 47.0**	**-1.5**
TIXI				*e*				13 54 16.3	
TIXI				pmax	pmax				
	comp=Z,25nm,0.6s,mb4.9								
TIXI				MLR	MLR				
	comp=Z,600nm,17.0s								
TIXI	**Tiksi**	**28.49**	**331**	*e*P		**P**		**13 53 46.6**	**-1.9**
	comp=Z,6.3nm,0.3s,mb4.6								
INK	**Inuvik**	**28.59**	**37**	P		**P**		**13 53 48.5**	**-0.9**
	comp=Z,3.8nm,0.9s,mb4.0,baz=254,slow=7.7,SNR=22								
INK				ScP				14 00 29.5	
	comp=Z,1.8nm,0.9s,baz=147,slow=3.0,SNR=5.4								
INK	**Inuvik**	**28.59**	**37**	*e*P		**P**		**13 53 48.4**	**-1.0**
	comp=Z,1.8nm,0.6s,mb3.9								
INK				*e*pP		pP		13 54 10.4	0.0
DLBC	**Dease Lake**	**30.44**	**57**	P		**P**		**13 54 07.2**	**+1.2**
	comp=Z,9.5nm,0.8s,mb4.5,baz=291,slow=11,SNR=24								
DLBC	**Dease Lake**	**30.44**	**57**	*e*P		**P**		**13 54 06.1**	**+0.2**
MAJO	**Matsushiro**	**31.01**	**255**	*e*P		**P**		**13 54 10.7**	**-0.6**
	comp=Z,8.5nm,0.8s,mb4.5								
MDJ	**Mudanjiang**	**31.50**	**275**	P		**P**		**13 54 13.8**	**-1.6**
MDJ				AP		pP		13 54 34.1	-2.6
MDJ				PCP		PcP		13 57 04.8	-1.5
MDJ				S		**S**		**13 59 14.6**	**-1.0**
MDJ				PCS				14 00 48.1	
MDJ				SCS		ScS		14 04 35.3	-0.8
MDJ				AMB		AMB			
	comp=Z,9.0nm,1.8s,mb4.2								
MDJ				LR		LR			
	comp=N,99nm,12.6s								
MDJ				LR		LR			
	comp=E,64nm,12.1s								
MDJ				LR		LR			
	comp=Z,102nm,10.2s								
CN2	**Changchun**	**34.47**	**277**	*e*P		**P**		**13 54 41.0**	**0.0**
CN2				*e*S		**S**		**14 00 01.0**	**-0.6**
CN2				AMB		AMB			
	comp=Z,10.0nm,0.6s,mb4.8								
CN2				LR		LR			
	comp=Z,300nm,18.0s								
BOD	**Bodaibo**	**35.09**	**304**	*e*P		**P**		**13 54 44.6**	**-1.6**
YKW3	**Yellowknife Ar**	**36.85**	**46**	*e*P		**P**		**13 55 00.0**	**-1.0**
YKA	**Yellowknife Ar**	**36.87**	**46**	P		**P**		**13 55 01.1**	**-0.1**
	comp=Z,5.0nm,0.9s,mb4.5,baz=285,slow=8.1,SNR=56								
YKA				pP		pP		13 55 23.1	+0.1
	comp=Z,2.0nm,0.6s,baz=286,slow=8.2,SNR=5.2								
YKA				PcP		PcP		13 57 20.8	-0.6
	comp=Z,2.5nm,1.0s,baz=294,slow=3.3,SNR=6.5								
YKA				ScP				14 00 59.5	
	comp=Z,0.5nm,0.5s,baz=286,slow=3.0,SNR=13								
YKA				LR		LR		14 10 26.5	
	comp=Z,67nm,20.1s,baz=295,slow=36								
YKA	**Yellowknife Ar**	**36.87**	**46**	P		**P**		**13 55 01.1**	**-0.1**
YKA				pP		pP		13 55 23.1	+0.1
YKA				PcP		PcP		13 57 20.8	-0.6
YKA				ScP				14 00 59.5	
YKA				LR		LR		14 10 26.5	
RES	**Resolute Bay**	**40.28**	**24**	*e*P		**P**		**13 55 28.2**	**-1.2**
	comp=Z,24nm,1.3s,mb4.9								
NEW	**Newport**	**41.40**	**68**	*s*P		*s*P		13 56 09.7	-1.9
	comp=Z,2.6nm,0.5s,baz=282

ULM	**Lac du Bonnet**	**51.73**	**55**	P	**P**	**13 56 58.4**	**-1.6**
	comp=Z,4.0nm,0.8s,mb4.5,baz=317,slow=8.0,SNR=6.1						
ULM				pP	pP	13 57 21.6	-1.1
	comp=Z,3.8nm,0.8s,baz=303,slow=6.2,SNR=2.7						
ULM				LR	LR	14 18 38.4	
	comp=Z,53nm,18.2s,baz=94,slow=36						
LZH	**Lanzhou**	**52.28**	**282**	*eP*	**P**	**13 57 04.6**	**+0.3**
LZH				AMB	AMB		
	comp=Z,38nm,1.0s,mb5.4						
GTA	**Gaotai**	**52.48**	**288**	⇓*iP*	**P**	**13 57 06.3**	**+0.5**
GTA				AP	pP	13 57 25.9	-2.6
GTA				AMB	AMB		
	comp=Z,36nm,0.6s,mb5.6						
SUMG	**Summit**	**53.23**	**12**	*eP*	**P**	**13 57 10.2**	**-0.7**
SUMG				*e*pP	pP	13 57 31.6	-2.0
SDCO	**Great Sand Dun**	**54.51**	**72**	P	**P**	**13 57 20.2**	**-0.5**
ANMO	**Albuquerque**	**55.84**	**75**	P	**P**	**13 57 29.4**	**-0.9**
KURK	**Kurchatov**	**56.28**	**311**	*i* P	**P**	**13 57 32.7**	**-0.6**
KURK				pmax	pmax		
	comp=Z,23nm,0.9s,mb5.2						
KURK	**Kurchatov**	**56.28**	**311**	*eP*	**P**	**13 57 32.1**	**-1.2**
KEV	**Kevo**	**56.37**	**348**	*ep*	**P**	**13 57 30.8**	**-2.9**
WMQ	**Urumqi**	**56.38**	**300**	*eP*	**P**	**13 57 34.6**	**+0.5**
WMQ				PCP	PcP	13 58 30.3	+0.4
WMQ				PP	PP	13 59 42.9	+1.0
WMQ				SCP		14 02 19.3	
WMQ				S	**S**	**14 05 15.8**	**+0.3**
WMQ				SCS	ScS	14 07 10.6	+0.2
WMQ				SS	SS	14 09 04.8	+0.6
WMQ				AMB	AMB		
	comp=Z,14nm,1.8s,mb4.7						
WMQ				AMB	AMB		
	comp=Z,78nm,7.6s						
WMQ				LR	LR		
	comp=N,166nm,22.1s						
WMQ				LR	LR		
	comp=E,168nm,21.3s						
WMQ				LR	LR		
	comp=Z,251nm,21.5s						
ARCES	**ARCESS Array B**	**56.77**	**348**	P	**P**	**13 57 35.0**	**-1.5**
	comp=Z,4.7nm,0.5s,mb4.8,baz=34,slow=8.4,SNR=38						
ARCES				LR	LR	14 21 34.7	
	comp=Z,41nm,20.6s,baz=52,slow=36						
LVZ	**Lovozero**	**56.91**	**344**	*eP*	**P**	**13 57 35.6**	**-1.9**
LVZ				pmax	pmax		
	comp=Z,20nm,0.7s,mb5.3						
LVZ				pmax	pmax		
	comp=N,8.0nm,0.6s						
MKAR	**Makanchi Array**	**57.17**	**305**	P	**P**	**13 57 38.3**	**-1.4**
	comp=N,17nm,0.5s,mb5.3,baz=48,slow=6.4,SNR=240						
MKAR				pP	pP	13 58 01.4	-1.3
	comp=N,3.2nm,0.6s,baz=50,slow=11,SNR=3.1						
MKAR				LR	LR	14 23 03.8	
	comp=N,41nm,19.6s,baz=29,slow=37						
MKAR	**Makanchi Array**	**57.17**	**305**	*i* P	**P**	**13 57 38.3**	**-1.4**
MKAR				pmax	pmax		
	comp=Z,7.0nm,0.5s						
VOSK	**Vostochnaya**	**58.28**	**316**	P	**P**	**13 57 46.4**	**-0.9**
VOSK				pmax	pmax		
	comp=Z,9.0nm,0.6s,mb5.0						
BVA0	**Borovoye Array**	**58.32**	**317**	*i* P	**P**	**13 57 46.8**	**-0.8**
BVA0				pmax	pmax		
	comp=Z,1.0nm,0.3s,mb4.3						
BRVK	**Borovoye**	**58.34**	**317**	*eP*	**P**	**13 57 46.9**	**-0.8**
SOKR	**Solikamsk**	**58.46**	**329**	⇑*iP*	**P**	**13 57 47.0**	**-1.5**
MNTX	**Cornudas Mount**	**58.75**	**77**	*eP*	**P**	**13 57 49.2**	**-1.7**
	comp=Z,2.6nm,0.9s,mb4.3						
ZRNK	**Zerenda**	**58.95**	**318**	P	**P**	**13 57 51.0**	**-0.9**
ZRNK				pmax	pmax		
	comp=Z,18nm,0.6s,mb5.3						
ZRNK	**Zerenda**	**58.95**	**318**	*eP*	**P**	**13 57 51.2**	**-0.7**
ARU	**Arti**	**60.32**	**326**	*i* P	**P**	**13 58 01.0**	**-0.3**
ARU				*e*		13 58 43.8	
ARU				*e*		14 00 13.8	
ARU				*e*S	**S**	**14 06 08.0**	**+1.4**
ARU	**Arti**	**60.32**	**326**	*eP*	**P**	**13 58 00.1**	**-1.2**
	comp=Z,9.6nm,0.4s,mb5.2						
WMOK	**Wichita Mounta**	**60.51**	**70**	*eP*	**P**	**13 58 01.2**	**-1.7**
	comp=Z,1.9nm,0.5s,mb4.4						
KMI	**Kunming**	**60.66**	**274**	*eP*	**P**	**13 58 03.3**	**-0.8**
KMI				AMB	AMB		
	comp=Z,5.0nm,1.0s,mb4.5						
SCHQ	**Schefferville**	**61.20**	**36**	P	**P**	**13 58 06.2**	**-1.1**
	comp=Z,10nm,0.8s,mb4.9,baz=349,slow=6.3,SNR=10.0						
SCHQ				pP	pP	13 58 29.5	-1.2
	comp=Z,5.2nm,0.7s,baz=5.5,slow=5.9,SNR=3.3						
SCHQ				LR	LR	14 28 05.3	
	comp=Z,54nm,18.0s,baz=303,slow=39						
SCHQ	**Schefferville**	**61.20**	**36**	*eP*	**P**	**13 58 05.7**	**-1.6**
SCHQ				*e*pP	pP	13 58 29.5	-1.2
TXAR	**Lajitas Array**	**61.47**	**78**	P	**P**	**13 58 09.2**	**-0.3**
	comp=Z,1.4nm,0.4s,mb4.4,baz=300,slow=5.2,SNR=8.0						
TXAR				pP	pP	13 58 32.0	-0.9
	comp=Z,1.5nm,0.7s,baz=304,slow=4.5,SNR=1.5						
JOF	**Joensuu**	**62.02**	**343**	*ep*	**P**	**13 58 10.8**	**-1.9**
BORG	**Borgarnes**	**62.63**	**8**	P	**P**	**13 58 14.8**	**-2.0**
TKM2	**Tokmak 2**	**63.27**	**306**	P	**P**	**13 58 21.3**	**0.0**
	SNR=18						
ULHL	**Ulahol**	**63.44**	**305**	P	**P**	**13 58 22.7**	**+0.2**
	SNR=6.0						
USP	**Ospenovka**	**63.56**	**307**	P	**P**	**13 58 23.2**	**+0.1**
	SNR=27						
CHMS	**Chumysh**	**63.63**	**307**	P	**P**	**13 58 23.9**	**+0.3**
	SNR=6.0						
KAF	**Kangasniemi**	**63.64**	**345**	*ep*	**P**	**13 58 21.6**	**-1.7**
	baz=16,slow=5.8						
KBK	**Karagaybulak**	**63.79**	**306**	P	**P**	**13 58 24.9**	**+0.4**
	SNR=5.9						
AAK	**Ala-Archa**	**64.03**	**307**	P	**P**	**13 58 26.4**	**+0.3**
	SNR=13						
KZA	**Kyzart**	**64.06**	**306**	P	**P**	**13 58 27.1**	**+0.7**
	SNR=13						
FINES	**FINESS Array B**	**64.31**	**345**	P	**P**	**13 58 26.4**	**-1.2**
	comp=Z,10nm,0.7s,mb4.8,baz=34,slow=8.3,SNR=29						
FINES				LR	LR	14 32 00.1	
	comp=Z,34nm,21.0s,baz=351,slow=41						
UCH	**Uchtor**	**64.32**	**306**	P	**P**	**13 58 28.8**	**+0.7**
	SNR=5.2						
EKS2	**Erkin-Say**	**64.36**	**307**	P	**P**	**13 58 28.6**	**+0.4**
	SNR=23						
AML	**Almayashu**	**64.80**	**307**	P	**P**	**13 58 32.1**	**+0.9**
	SNR=15						
AB31	**Akbulak array**	**65.46**	**320**	P	**P**	**13 58 35.2**	**-0.1**
AB31				pmax	pmax		
	comp=Z,2.0nm,0.5s,mb4.2						
KKAR	**Karatay Array**	**65.61**	**309**	*i* P	**P**	**13 58 35.9**	**-0.5**
KKAR				pmax	pmax		
	comp=Z,7.0nm,0.6s,mb4.7						
PLAL	**Pickwick Lake**	**66.39**	**63**	*eP*	**P**	**13 58 39.5**	**-1.9**
	comp=Z,6.2nm,0.5s,mb4.7						
NB2	**NORSAR Subarra**	**66.54**	**352**	P	**P**	**13 58 40.9**	**-1.0**
	comp=Z,13nm,0.7s,mb4.9,baz=9.0,slow=6.2						
NB2	**NORSAR Subarra**	**66.54**	**352**	P	**P**	**13 58 40.9**	**-1.0**
	baz=9.4,slow=6.5						
NOA	**NORSAR Array B**	**66.54**	**352**	P	**P**	**13 58 41.0**	**-0.9**
	comp=Z,8.0nm,0.8s,mb4.6,baz=11,slow=5.7,SNR=25						
NOA				pP	pP	13 59 03.1	-2.5
	comp=Z,2.9nm,0.8s,baz=11,slow=6.5,SNR=2.6						
NOA				LR	LR	14 30 11.3	
	comp=Z,34nm,18.7s,baz=235,slow=38						
SSPA	**Standing Stone**	**67.44**	**52**	*eP*	**P**	**13 58 46.7**	**-1.2**
	comp=Z,5.6nm,0.6s,mb4.6						
CMAR	**Chiang Mai Arr**	**67.97**	**272**	P	**P**	**13 58 52.4**	**+0.9**
	comp=Z,3.3nm,0.7s,mb4.3,baz=27,slow=7.3,SNR=16						
CMAR				pP	pP	13 59 14.4	-0.9
	comp=Z,1.4nm,0.6s,baz=26,slow=8.1,SNR=3.6						
CPCT	**Cooper Cave**	**67.97**	**60**	*eP*	**P**	**13 58 49.8**	**-1.5**
OBN	**Obninsk**	**68.02**	**336**	*d iP*	**P**	**13 58 50.9**	**-0.4**
OBN				pmax	pmax		
	comp=Z,35nm,1.1s,mb5.1						
KKN	**Kakani**	**69.21**	**289**	*eP*	**P**	**13 58 59.9**	**+0.8**
	comp=Z,34nm,0.5s,mb5.5						
PKI	**Pulchoki**	**69.30**	**288**	*eP*	**P**	**13 59 00.3**	**+0.6**
	comp=Z,38nm,0.5s,mb5.5						
GKN	**Gorkha**	**69.43**	**289**	*eP*	**P**	**13 59 00.9**	**+0.5**
	comp=Z,33nm,0.6s,mb5.3						
DMN	**Daman**	**69.45**	**289**	*eP*	**P**	**13 59 01.4**	**+0.8**
	comp=Z,22nm,0.5s,mb5.2						
KOLN	**Koldanda**	**70.21**	**290**	*eP*	**P**	**13 59 05.7**	**+0.6**
	comp=Z,20nm,0.5s,mb5.2						
AKASG	**Malin Array Be**	**73.82**	**339**	P	**P**	**13 59 25.9**	**-0.2**
	comp=Z,14nm,0.5s,mb5.0,baz=20,slow=5.9,SNR=66						
AKASG				pP	pP	13 59 49.0	-1.2
	comp=Z,1.4nm,0.4s,baz=21,slow=6.0,SNR=1.5						
KAKA	**Kakadu**	**74.89**	**225**	⇑*iP*	**P**	**13 59 32.8**	**-0.1**
	comp=Z,29nm,0.6s,mb5.2						
GOF	**Gofitskoye**	**75.17**	**328**	⇑*iP*	**P**	**13 59 35.0**	**+1.1**
GOF				pmax	pmax		
	comp=Z,50nm,1.3s,mb5.1						
CLL	**Collm**	**75.96**	**349**	P	**P**	**13 59 37.0**	**-1.3**
CLL	**Collm**	**75.96**	**349**	*eP*	**P**	**13 59 37.0**	**-1.3**
RAR	**Rarotonga**	**75.97**	**157**	LR	LR	14 28 44.3	
	comp=Z,149nm,20.4s,baz=314,slow=32						
KSP	**Ksiaz**	**76.01**	**347**	*eP*	**P**	**13 59 38.3**	**-0.2**
OJC	**Ojcow**	**76.09**	**345**	*eP*	**P**	**13 59 39.5**	**+0.5**
KWP	**Kalwaria**	**76.15**	**343**	*eP*	**P**	**13 59 40.6**	**+1.2**
KIV	**Kislovodsk**	**76.27**	**327**	*eP*	**P**	**13 59 40.0**	**-0.1**
KIV				*e*S	S	14 09 18.6	+3.0
KIV				pmax	pmax		
	comp=Z,10.0nm,1.2s,mb4.4						
BRG	**Berggiesshubel**	**76.28**	**349**	*eP*	**P**	**13 59 39.8**	**-0.3**
BRG				pmax	pmax		
	comp=Z,23nm,1.7s,mb4.6						
BRG	**Berggiesshubel**	**76.28**	**349**	*eP*	**P**	**13 59 39.8**	**-0.3**
	comp=Z,23nm,1.7s,mb4.6						
UPC	**Upice**	**76.37**	**347**	*eP*	**P**	**13 59 40.9**	**+0.3**
DPC	**Dobruska-Polom**	**76.48**	**347**	*eP*	**P**	**13 59 41.5**	**+0.3**
CTA	**Charters Tower**	**76.58**	**209**	⇑*iP*	**P**	**13 59 42.7**	**+0.3**
	comp=Z,8.0nm,0.6s,mb4.6						
CTAO	**Charters Tower**	**76.58**	**209**	*eP*	**P**	**13 59 42.0**	**-0.3**
OKC	**Ostrava-Krasne**	**76.72**	**346**	*eP*	**P**	**13 59 43.3**	**+0.8**
MOX	**Moxa**	**76.77**	**350**	*i* P	**P**	**13 59 43.1**	**+0.3**
MOX	**Moxa**	**76.77**	**350**	*eP*	**P**	**13 59 43.1**	**+0.3**
NIE	**Niedzica**	**76.78**	**344**	*eP*	**P**	**13 59 44.3**	**+1.4**
ZEI	**Tsey**	**76.91**	**326**	*eP*	**P**	**13 59 45.2**	**+1.4**
ZEI				*e*		14 09 20.0	
PRU	**Pruhonice**	**77.08**	**348**	*eP*	**P**	**13 59 44.5**	**0.0**
CRVS	**Cervenica-Dubn**	**77.08**	**343**	*eP*	**P**	**13 59 45.0**	**+0.4**
CRVS				*e*		13 59 48.5	
KIS	**Kishinev**	**77.39**	**338**	*eP*	**P**	**13 59 46.0**	**-0.3**
KIS				*e*		14 00 20.0	
GIVF	**Givet**	**77.87**	**354**	*eP*	**P**	**13 59 48.7**	**-0.2**
KOLL	**Kolacno**	**77.91**	**345**	*eP*	**P**	**13 59 49.1**	**0.0**
VYHS	**Vyhne**	**77.92**	**345**	*eP*	**P**	**13 59 49.8**	**+0.6**
BAIF	**Baives**	**77.95**	**345**	*eP*	**P**	**13 59 49.6**	**+0.3**
KHC	**Kasperske Hory**	**78.04**	**349**	*eP*	**P**	**13 59 50.5**	**+0.7**
GERES	**GERESS Array B**	**78.30**	**348**	P	**P**	**13 59 51.6**	**+0.3**
	comp=Z,0.7nm,0.4s,mb3.7,baz=37,slow=6.7,SNR=8.4						
ZST	**Bratislava**	**78.48**	**346**	*eP*	**P**	**13 59 51.6**	**-0.7**
CDF	**Champ du Feu**	**79.39**	**353**	*eP*	**P**	**13 59 57.0**	**-0.2**
	comp=Z,7.3nm,0.6s,mb4.4						
FLN	**La Foliniere**	**79.43**	**358**	*eP*	**P**	**13 59 56.8**	**-0.7**
	comp=Z,14nm,0.6s,mb4.7						
FLN				*e*R			
	comp=Z,41nm,18.8s						
LDF	**La Druitiere**	**79.59**	**358**	*eP*	**P**	**13 59 57.7**	**-0.6**
	comp=Z,12nm,0.5s,mb4.7						
GRR	**Gorron**	**79.81**	**358**	*eP*	**P**	**13 59 59.6**	**+0.1**
	comp=Z,16nm,0.5s,mb4.8						
HAU	**Haudompre**	**79.86**	**353**	*eP*	**P**	**13 59 59.4**	**-0.4**
HAU				*e*R			
	comp=Z,55nm,20.5s						
ROSF	**Rostrenen**	**79.89**	**360**	*eP*	**P**	**13 59 59.6**	**-0.4**
	comp=Z,7.9nm,0.6s,mb4.4						
SGMF	**Saint Gilles**	**79.97**	**359**	*eP*	**P**	**14 00 00.2**	**-0.2**
	comp=Z,15nm,0.5s,mb4.8						
HINF	**Hinteralfeld**	**80.01**	**353**	*eP*	**P**	**14 00 00.1**	**-0.5**
THR	**Tehran**	**80.14**	**318**	P	**P**	**14 00 03.0**	**+1.4**
	comp=Z,2.0nm,0.9s,mb3.9,baz=38,slow=7.6,SNR=4.3						
THR				LR	LR	14 41 23.9	
	comp=Z,18nm,18.6s,baz=22,slow=40						
PERS	**Pernice**	**80.29**	**347**	*i* P	**P**	**14 00 03.0**	**+0.9**
QUIF	**Quistinic**	**80.31**	**360**	*eP*	**P**	**14 00 02.2**	**0.0**
WRAB	**Tennant Creek**	**80.58**	**220**	*eP*	**P**	**14 00 03.7**	**-0.5**
WB2	**Warramunga Arr**	**80.58**	**220**	⇑*iP*	**P**	**14 00 04.2**	**0.0**
WRA	**Warramunga Arr**	**80.59**	**220**	P	**P**	**14 00 04.4**	**+0.1**
	comp=Z,15nm,0.7s,mb5.0,baz=33,slow=6.3,SNR=65						
WRA				pP	pP	14 00 28.6	-0.1
	comp=Z,2.5nm,0.8s,baz=30,slow=6.2,SNR=2.1						
GOLS	**Golise**	**80.83**	**347**	*i* P	**P**	**14 00 05.6**	**+0.6**
ROBS	**Robic**	**80.89**	**348**	*i* P	**P**	**14 00 05.2**	**-0.1**
SSF	**Saint Saulge**	**80.98**	**355**	*eP*	**P**	**14 00 06.0**	**+0.2**
	comp=Z,7.8nm,0.5s,mb4.5						
VISS	**Visnje**	**81.14**	**347**	*i* P	**P**	**14 00 07.0**	**+0.4**
AVF	**Avril sur Loir**	**81.26**	**355**	*eP*	**P**	**14 00 07.3**	**+0.1**
	comp=Z,9.1nm,0.5s,mb4.5						
CEY	**Cerknica**	**81.26**	**347**	*i* P	**P**	**14 00 07.6**	**+0.3**
CABF	**La Chapelle**	**81.27**	**353**	*eP*	**P**	**14 00 07.7**	**+0.4**
	comp=Z,3.0nm,0.5s,mb4.1						
SMF	**Signal de Mont**	**81.38**	**355**	*eP*	**P**	**14 00 08.0**	**+0.2**
	comp=Z,12nm,0.6s,mb4.6						
BOJS	**Bojanci**	**81.38**	**347**	*i* P	**P**	**14 00 08.4**	**+0.6**
BGF	**Bois d'Agland**	**81.52**	**355**	*eP*	**P**	**14 00 09.8**	**+1.2**
	comp=Z,9.3nm,0.5s,mb4.6						
MFF	**Saint Martin d**	**81.58**	**358**	*eP*	**P**	**14 00 09.1**	**+0.2**
TCF	**Toulx Ste Croi**	**81.81**	**356**	*eP*	**P**	**14 00 10.4**	**+0.3**
	comp=Z,4.5nm,0.4s,mb4.3						
LPL	**La Plagne**	**82.31**	**353**	*eP*	**P**	**14 00 14.1**	**+1.4**
LPG	**La Plagne**	**82.32**	**353**	*eP*	**P**	**14 00 14.3**	**+1.5**
	comp=Z,7.3nm,0.6s,mb4.4						
FITZ	**Fitzroy Crossi**	**82.66**	**228**	*eP*	**P**	**14 00 15.7**	**+0.7**
	comp=Z,7.2nm,0.9s,mb4.5						
BNI	**Bardonecchia**	**82.77**	**353**	*eP*	**P**	**14 00 16.4**	**+1.4**
RJF	**Les Rejaudoux**	**82.83**	**356**	*eP*	**P**	**14 00 15.9**	**+0.6**
RJF				*e*R			
	comp=Z,40nm,22.3s						
BRTR	**Keskin Array B**	**82.92**	**332**	P	**P**	**14 00 16.9**	**+0.9**
	comp=Z,3.4nm,0.5s,mb4.4,baz=49,slow=3.1,SNR=30						
ORIF	**Oris-en-Rattie**	**82.97**	**353**	*eP*	**P**	**14 00 17.0**	**+1.0**
	comp=Z,7.9nm,0.6s,mb4.4						
ORIF				*e*R			
	comp=Z,45nm,20.8s						
MBDF	**Montbardon**	**83.09**	**353**	*eP*	**P**	**14 00 17.6**	**+0.9**
	comp=Z,11nm,0.7s,mb4.5						
VIVF	**Saint-Julien-l**	**83.11**	**354**	*eP*	**P**	**14 00 17.1**	**+0.3**
CAF	**Calviac**	**83.18**	**356**	*eP*	**P**	**14 00 17.7**	**+0.6**
SBF	**Sospel**	**83.89**	**352**	*eP*	**P**	**14 00 21.4**	**+0.8**
	comp=Z,22nm,0.8s,mb4.7						
SMRF	**Simiane la Rot**	**83.92**	**353**	*eP*	**P**	**14 00 22.3**	**+1.5**
LASF	**Ste Croix**	**83.94**	**355**	*eP*	**P**	**14 00 21.9**	**+1.1**
AS12	**Alice Springs**	**84.12**	**218**	⇑*iP*	**P**	**14 00 23.1**	**+0.8**
	comp=Z,5.4nm,0.7s,mb4.5						
ASAR	**Alice Springs**	**84.12**	**218**	P	**P**	**14 00 23.1**	**+0.9**
	comp=Z,6.6nm,0.8s,mb4.5,baz=21,slow=5.7,SNR=86						
ASAR				pP	pP	14 00 48.2	+1.3
	comp=Z,1.1nm,0.7s,baz=27,slow=5.3,SNR=2.2						
FRF	**La Foret Royal**	**84.26**	**353**	*eP*	**P**	**14 00 24.2**	**+1.8**
	comp=Z,9.8nm,0.8s,mb4.4						
LMR	**La Mourre**	**84.49**	**353**	*eP*	**P**	**14 00 24.5**	**+0.9**
MTLF	**Montolieu**	**84.75**	**356**	*eP*	**P**	**14 00 25.7**	**+0.8**
	comp=Z,8.3nm,0.6s,mb4.5						
ARMA	**Armidale**	**85.03**	**201**	*eP*	**P**	**14 00 28.8**	**+2.2**
EPF	**Esparros**	**85.14**	**357**	*eP*	**P**	**14 00 26.7**	**-0.2**
ETSF	**Etsaut**	**85.29**	**358**	*eP*	**P**	**14 00 29.0**	**+1.4**
	comp=Z,9.1nm,0.6s,mb4.6						
STKA	**Stephens Creek**	**89.04**	**209**	⇑*iP*	**P**	**14 00 47.3**	**+1.3**
	comp=Z,7.1nm,0.9s,mb4.7						
STKA	**Stephens Creek**	**89.04**	**209**	P	**P**	**14 00 46.9**	**+0.9**
	comp=Z,8.7nm,0.8s,mb4.8,baz=358,slow=6.1,SNR=10						
DBIC	**Dimbokro**	**121.40**	**1**	PKP	PKPdf	14 06 44.2	+1.1
	comp=Z,2.1nm,0.6s,baz=321,slow=3.2,SNR=8.7						
DBIC				pPKP		14 07 10.3	
	comp=Z,1.8nm,0.6s,baz=250,slow=5.8,SNR=2.0						
DBIC	**Dimbokro**	**121.40**	**1**	PKP	PKPdf	14 06 44.2	+1.1
DBIC				pPKP		14 07 10.3	
BDFB	**Brasilia**	**129.44**	**61**	PKP	PKPdf	14 07 00.2	+1.7
	comp=Z,2.0nm,0.5s,baz=190,slow=11,SNR=3.0						
QSPA	**South Pole Qui**	**141.90**	**180**	*e*PKP	PKPdf	14 07 19.5	-0.1
MAW	**Mawson**	**145.25**	**218**	PKPbc	PKPbc	14 07 27.6	+1.4
	comp=Z,7.5nm,0.5s,baz=106,slow=5.0,SNR=29						
MAW				pPKPbc		14 07 51.1	
	comp=Z,3.5nm,0.5s,baz=113,slow=4.8,SNR=3.4						
MAW	**Mawson**	**145.25**	**218**	*e*PKP	PKPdf	14 07 27.0	+1.3
VNA3	**Neumayer Olymp**	**160.65**	**174**	⇓*i*	PKPab	14 08 35.1	+3.1
VNA3	**Neumayer Olymp**	**160.65**	**174**	⇓*i*	PKPab	14 08 35.1	+3.1
VNA2	**Neumayer--Watz**	**161.08**	**176**	⇓*i*	PKPdf	14 07 48.0	+0.2
VNA2	**Neumayer--Watz**	**161.08**	**176**	⇓*i*	PKPdf	14 07 50.1	+2.3
VNA2	**Neumayer--Watz**	**161.08**	**176**	⇑*i*	PKPab	14 08 36.6	+2.8
VNA2	**Neumayer--Watz**	**161.08**	**176**	⇑*i*	PKPab	14 08 36.6	+2.8
VNA2	**Neumayer--Watz**	**161.08**	**176**	⇓*i*P	PKPdf	14 07 48.0	+0.2
VNA2				⇓*i*P		14 07 50.1	
VNA1	**Neumayer--Stat**	**161.31**	**175**	⇑*i*	PKPab	14 08 37.8	+2.9
VNA1	**Neumayer--Stat**	**161.31**	**175**	⇑*i*	PKPab	14 08 37.8	+2.9

MAN 18 13:49:27.3,16.44N×120.60E,h47km,mb4.3,ML3.2, MS2.9,9C-1D,Luzon

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BCPH	**Baguio City Da**	**0.06**	**199**	⇑*iP*	P	13 49 34.4	-0.2
BCPH				*i* S	S	13 49 39.2	-0.7
BOLP	**Bolinao**	**0.66**	**265**	⇑*eP*	P	13 49 45.8	+5.3
SCZP	**Santa Cruz**	**0.93**	**225**	⇑*eP*	P	13 49 50.1	+6.0
PCPH	**Palayan**	**0.99**	**151**	⇓*eP*	P	13 49 46.6	+1.6
PCPH				*e*S	S	13 49 59.5	+1.4
BALP	**Baler**	**1.17**	**126**	⇑*eP*	P	13 49 47.2	-0.2
BALP				*e*S	S	13 49 58.8	-3.7
ABRA	**Dolores**	**1.21**	**5**	⇑*eP*	P	13 49 49.0	+0.9
ABRA				*e*S	S	13 50 05.3	+1.6
CAUP	**Cauayan**	**1.28**	**66**	⇑*eP*	P	13 49 48.6	-0.5
APYP	**Conner**	**1.55**	**23**	⇑*eP*	P	13 49 54.1	+1.2
APYP				*e*S	S	13 50 13.7	+1.7
CVP	**Callao Caves**	**1.72**	**43**	*eP*	P	13 49 55.1	-0.2
PALP	**Palanan**	**1.86**	**70**	⇑*eP*	P	13 49 57.8	+0.5
LUBP	**Lubang**	**2.71**	**187**	⇑*eP*	P	13 50 17.9	+8.5

BJI ***18*** *14:23:00.5,14.33N×145.93E,h119km,mB5.0,mb5.0*
NEIC ***18*** *14:23:02.0±0.2,14.32N×145.59E,mb4.9/35,Error ellipse: s-maj=7.1km s-min=5.1km az=107.0*
HRVD ***18*** *14:23:02.0±0.7,14.06N×145.38E,h116km±10km, MW4.7/39,Centroid moment Tensor Solution. LP body waves: s6,c6;Mantle waves: s39,c53; Half duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr 0.15±.10; Mθθ -0.21±.19; Mφφ 0.06±.18; Mrθ 1.00±.08; Mθφ -0.31±.17; Mφr 0.67±.08; Best double couple: M₀1.23×10¹⁶ NP1: φs239°,δ7°,λ93°. NP2:φs56°,δ83°,λ90°. Principal axes: T 1.1, Plg52°, Azm325°; N .26, Plg0°, Azm56°; P -1.37, Plg38°, Azm146°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
IDC ***18*** *14:23:02.4±0.6,14.33N×145.66E,h106km±4km,mb4.5/26, mb1 4.6/28,mb1mx4.5/30,MS3.5/10,Ms1 3.5/10, ms1mx3.2/34 Error ellipse: s-maj=13.5km s-min=9.0km az=93.0*
SYO ***18*** *14:23:02.0,14.32N×145.59E,h104km,MB4.9*
MOS ***18*** *14:23:06.8±0.9, 14.38N×145.82E,h172km,mb4.8/10, Error ellipse: s-maj=18.7km s-min=8.9km az=111.3*

ISC 18 14:23:01.1±0.5,14.26N±0.03×145.65E±0.04,h112km±3km, h100km±1.7km;pP-P,n162,σ1ᵖ08/160,mb4.9/83,11C-8D, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SAPN	**Saipan**	**0.96**	**6**	⇓*iP*	**P**	**14 23 22.1**	**-0.2**
GUMO	**Guam**	**1.00**	**229**	*eP*	**P**	**14 23 22.1**	**-0.7**
GUMO				*e*S	**S**	**14 23 36.4**	**-2.7**
ANA2	**Anatahan**	**2.07**	**2**	*eP*	**P**	**14 23 36.8**	**+1.2**
ANAT	**Anatahan**	**2.08**	**0**	*eP*	**P**	**14 23 36.7**	**+0.9**
SARN	**Sarigan**	**2.43**	**3**	⇓*iP*	**P**	**14 23 41.3**	**+0.8**
SARN				*e*S	**S**	**14 24 11.4**	**+1.3**
CBIJ	**Chichi jima**	**13.18**	**346**	P	**P**	**14 26 07.2**	**+2.3**
	6.4nm,0.3s,baz=272,slow=20,SNR=2.8						
CBIJ				S	**S**	**14 28 31.2**	**+2.2**
	5.8nm,0.3s,baz=277,slow=22,SNR=3.2						
CBIJ				LR	LR	14 30 54.7	
	comp=Z,184nm,19.6s,baz=140,slow=36						
RAB	**Rabaul**	**19.43**	**160**	*eP*	**P**	**14 27 23.6**	**+2.3**
JHJ	**Hachijo jima 2**	**19.52**	**345**	P	**P**	**14 27 20.4**	**-1.6**
	7.9nm,0.3s,baz=62,slow=22,

AS12 **Alice Springs** 39.40 197 *eP* **P** **14 30 22.9 +1.3**
comp=Z,12nm,1.7s,mb4.4
ASAR **Alice Springs** 39.40 197 P **P** **14 30 22.0 +0.4**
comp=Z,0.5nm,0.5s,baz=40,slow=7.6,SNR=17
ASAR pP pP 14 30 47.4 +0.1
comp=Z,2.0nm,0.6s,baz=18,slow=9.2,SNR=6.4
ASAR ScP 14 36 07.7
comp=Z,1.1nm,0.8s,baz=26,slow=3.2,SNR=5.9
ASAR LR LR 14 45 20.6
comp=Z,58nm,20.0s,baz=25,slow=34
HHC **Hu-ho-hao-te** 39.77 318 *eP* **P** **14 30 25.3 +0.8**
HHC AMB AMB
comp=Z,33nm,1.3s,mb5.0
HHC AMB AMB
comp=Z,74nm,5.6s
PET **Petropavlovsk** 40.03 12 *c iP* **P** **14 30 26.3 -0.2**
PET pmax pmax
comp=Z,44nm,1.5s,mb5.1
BTO **Baotou** 40.65 317 *eP* **P** **14 30 32.3 +0.6**
BTO AMB AMB
comp=Z,83nm,1.0s,mb5.5
HIA **Hailar** 40.87 334 *eP* **P** **14 30 33.2 -0.2**
comp=Z,43nm,1.1s,mb5.2
KMI **Kunming** 41.66 292⇑ *iP* **P** **14 30 41.6 +1.4**
KMI S **S** **14 36 49.6 +1.6**
KMI AMB AMB
comp=Z,18nm,1.0s,mb4.8
KMI AMB AMB
comp=Z,125nm,4.3s
CD2 **Chengdu** 41.80 301 P **P** **14 30 41.4 +0.1**
CD2 AMB AMB
comp=Z,30nm,0.8s,mb5.1
LZH **Lanzhou** 43.20 308 *eP* **P** **14 30 53.4 +0.7**
LZH PP PP 14 32 37.3 +0.4
LZH *eS* **S** **14 37 13.0 +2.6**
LZH SS SS 14 40 23.1 +3.6
LZH AMB AMB
comp=Z,72nm,1.1s,mb5.3
LZH AMB AMB
comp=Z,208nm,4.0s
NANT **Nan** 43.24 282 ⇓P **P** **14 30 54.0 +0.8**
BDT **Bhumibol Dam** 44.91 280 P **P** **14 31 06.0 -0.6**
CMAR **Chiang Mai Arr** 44.91 282 P **P** **14 31 07.3 +0.7**
comp=Z,17nm,0.6s,mb5.0,baz=84,slow=6.3,SNR=88
CMAR pP pP 14 31 31.2 -1.5
comp=Z,5.7nm,1.1s,baz=84,slow=6.5,SNR=1.9
CMAR LR LR 14 46 37.4
comp=Z,36nm,22.0s,baz=285,slow=32
CMAR **Chiang Mai Arr** 44.91 282 P **P** **14 31 07.3 +0.7**
CMAR pP pP 14 31 31.2 -1.5
CMAR LR LR 14 46 37.4
MA2 **Magadan** 45.40 4 *eP* **P** **14 31 09.1 -0.9**
MA2 pmax pmax
comp=Z,20nm,0.7s,mb5.0
STKA **Stephens Creek** 46.03 185 P **P** **14 31 15.3 -0.1**
comp=Z,1.8nm,0.6s,mb4.0,baz=328,slow=13,SNR=5.2
STKA pP pP 14 31 40.8 -0.8
comp=Z,3.7nm,0.7s,baz=306,slow=7.2,SNR=3.6
STKA LR LR 14 50 50.8
comp=Z,61nm,19.1s,baz=205,slow=36
ULN **Ulaanbaatar** 46.27 324 *c iP* **P** **14 31 17.5 +0.5**
ULN **Ulaanbaatar** 46.27 324 *eP* **P** **14 31 17.4 +0.4**
comp=Z,26nm,0.8s,mb5.0
SONM **Songino Array** 46.63 324 P **P** **14 31 20.3 +0.5**
comp=Z,14nm,0.6s,mb4.8,baz=139,slow=8.9,SNR=77
SONM pP pP 14 31 45.6 -0.4
comp=Z,3.5nm,0.9s,baz=124,slow=4.5,SNR=1.4
SONM PcP PcP 14 32 52.2 -0.2
comp=Z,1.4nm,0.5s,baz=148,slow=3.4,SNR=4.3
GTA **Gaotai** 47.30 311 *eP* **P** **14 31 25.9 +0.7**
GTA AMB AMB
comp=Z,18nm,1.1s,mb4.7
SEY **Seymchan** 48.84 4 *eP* **P** **14 31 36.1 -0.8**
SEY pmax pmax
comp=Z,40nm,0.8s,mb5.4
YAK **Yakutsk** 49.06 350 *ceP* **P** **14 31 36.1 -2.4**
YAK pmax pmax
comp=Z,42nm,1.4s,mb5.2
YAK **Yakutsk** 49.06 350 *eP* **P** **14 31 35.7 -2.8**
comp=Z,17nm,0.6s,mb5.2
BOD **Bodaibo** 49.57 338 *eP* **P** **14 31 41.1 -1.4**
ZAK **Zakamensk** 49.71 326⇑ *iP* **P** **14 31 43.7 0.0**
TLY **Talaya** 50.20 327 *α iP* **P** **14 31 47.6 +0.2**
TLY pmax pmax
comp=Z,291nm,0.7s
MOY **Mondy** 51.61 326 *eP* **P** **14 31 57.7 -0.4**
LSA **Lhasa** 52.37 297 *eP* **P** **14 32 05.3 +1.2**
comp=Z,13nm,0.6s,mb5.2
UNV **Unalaska Valle** 54.36 33 *eP* **P** **14 32 17.1 -1.3**
comp=Z,49nm,0.6s,mb5.7
BILL **Bilibino** 55.38 9 *eP* **P** **14 32 23.7 -1.9**
comp=Z,28nm,0.8s,mb5.3
WMQ **Urumqi** 57.23 313 *eP* **P** **14 32 39.4 +0.3**
WMQ AP pP 14 33 03.3 -2.9
WMQ PCP PcP 14 33 32.9 +0.9
WMQ PP PP 14 34 49.0 +0.2
WMQ SCP 14 37 22.3
WMQ S **S** **14 40 24.9 +0.8**
WMQ SCS ScS 14 42 15.4 +1.9
WMQ SS SS 14 44 16.6 +0.3
WMQ AMB AMB
comp=Z,68nm,1.8s,mb5.4
WMQ AMB AMB
comp=Z,393nm,7.6s
WMQ LR LR
comp=N,948nm,22.1s
WMQ LR LR
comp=E,985nm,21.3s
WMQ LR LR
comp=Z,1μm,21.5s
PKI **Pulchoki** 57.32 294 *eP* **P** **14 32 38.7 -1.2**
comp=Z,17nm,0.5s,mb5.3
KKN **Kakani** 57.44 294 *eP* **P** **14 32 39.7 -1.0**
comp=Z,9.2nm,0.5s,mb5.0
DMN **Daman** 57.59 294 *eP* **P** **14 32 41.0 -0.8**
comp=Z,15nm,0.6s,mb5.2
GKN **Gorkha** 58.01 294 *eP* **P** **14 32 43.5 -1.2**
comp=Z,28nm,0.5s,mb5.5
SDN **Sand Point** 58.16 33 *eP* **P** **14 32 44.9 -0.5**
comp=Z,71nm,0.6s,mb5.9
SDPT **Sand Point** 58.17 33 *eP* **P** **14 32 45.4 -0.1**
TIXI **Tiksi** 58.25 354⇓ *eP* **P** **14 32 43.4 -2.5**
TIXI pmax pmax
comp=Z,9.0nm,0.6s,mb5.0
TIXI **Tiksi** 58.25 354 *eP* **P** **14 32 43.0 -2.9**
comp=Z,12nm,0.7s,mb5.0
KOLN **Koldanda** 58.92 294 *eP* **P** **14 32 50.2 -0.9**
comp=Z,28nm,0.9s,mb5.3
TNA **Tin City** 59.96 20 P **P** **14 32 57.4 -0.3**
ZAL **Zalesovo** 61.53 324 P **P** **14 33 07.8 -0.7**
comp=Z,14nm,0.6s,mb5.2,baz=271,slow=5.9,SNR=46
MKAR **Makanchi Array** 61.54 316 P **P** **14 33 08.4 -0.3**
comp=Z,28nm,0.4s,mb5.6,baz=92,slow=8.6,SNR=94
MKAR pP pP 14 33 33.1 -3.1
comp=Z,5.1nm,0.6s,baz=97,slow=9.8,SNR=2.6
MKAR **Makanchi Array** 61.54 316 *eP* **P** **14 33 08.0 -0.6**
MKAR pmax pmax
comp=Z,6.0nm,0.4s
NVS **Novosibirsk** 62.65 325 *i* P **P** **14 33 14.6 -1.4**
NVS pmax pmax
comp=N,13nm,0.6s
NVS pmax pmax
comp=E,32nm,0.6s
NVS pmax pmax
comp=Z,62nm,0.6s,mb5.7
SVW **Sparrevohn** 62.72 28 *eP* **P** **14 33 16.8 +0.5**
KDAK **Kodiak Island** 63.11 32 *eP* **P** **14 33 18.5 -0.4**
comp=Z,14nm,0.8s,mb4.9
RSO **Redoubt South** 63.83 29 *eP* **P** **14 33 22.6 -0.9**
RAR **Rarotonga** 64.13 122 LR LR 14 57 22.5
comp=Z,152nm,21.1s,baz=233,slow=32
SPU **Mount Spurr** 64.38 28 *eP* **P** **14 33 27.1 -0.1**
KURK **Kurchatov** 64.56 320 P **P** **14 33 27.5 -1.0**
KURK pmax pmax
comp=Z,40nm,1.0s,mb5.2
KURK **Kurchatov** 64.56 320 *eP* **P** **14 33 27.2 -1.3**
SLKM **Skilak Lake** 65.04 29 *eP* **P** **14 33 31.0 -0.4**
ULHL **Ulahol** 65.34 310 P **P** **14 33 34.2 +0.5**
SNR=5.5
IMA **Indian Mountai** 65.35 23 *eP* **P** **14 33 33.2 -0.1**
comp=Z,38nm,0.9s,mb5.2
PWA **Palmer West** 65.52 28 *eP* **P** **14 33 33.2 -1.3**
PMS **Palmer South** 65.55 29 *eP* **P** **14 33 34.2 -0.5**
PMR **Palmer** 65.84 28 *eP* **P** **14 33 35.8 -0.8**
TKM2 **Tokmak 2** 65.85 311 P **P** **14 33 37.0 +0.1**
SNR=17

KZA **Kyzart** 66.07 310 P **P** **14 33 39.5 +1.1**
SNR=16
SML **Sawmill** 66.27 28 *eP* **P** **14 33 38.8 -0.4**
MCK **McKinley** 66.51 26 *eP* **P** **14 33 39.2 -1.5**
comp=Z,4.5nm,0.7s,mb4.4
UCH **Uchtor** 66.62 310 P **P** **14 33 43.1 +1.2**
SNR=14
USP **Ospenovka** 66.67 311 P **P** **14 33 42.2 +0.1**
SNR=10
EKS2 **Erkin-Say** 67.18 310 P **P** **14 33 45.5 +0.2**
SNR=5.2
EYAK **Cordova Ski Ar** 67.20 30 *eP* **P** **14 33 45.1 0.0**
AML **Almayashu** 67.23 310 P **P** **14 33 46.4 +0.8**
SNR=9.5
COLA **College** 67.27 25 *eP* **P** **14 33 44.7 -0.8**
COLA **College** 67.27 25 *eP* **P** **14 33 44.4 -1.1**
comp=Z,11nm,0.8s,mb4.7
ILAR **Eielson Array** 67.65 25 P **P** **14 33 46.2 -1.6**
comp=Z,14nm,0.6s,mb5.0,baz=251,slow=5.6,SNR=226
ILAR PcP PcP 14 34 12.4 -1.5
comp=Z,2.2nm,0.7s,baz=260,slow=5.8,SNR=4.3
ILAR LR LR 14 59 49.7
comp=Z,22nm,19.5s,baz=63,slow=33
VOSK **Vostochnaya** 69.50 321 P **P** **14 33 58.1 -1.3**
VOSK pmax pmax
comp=Z,3.0nm,0.5s,mb4.4
KKAR **Karatay Array** 69.58 311 *i* P **P** **14 34 00.1 0.0**
KKAR pmax pmax
comp=Z,2.0nm,0.6s,mb4.1
BVA0 **Borovoye Array** 69.88 322 *i* P **P** **14 34 01.0 -0.7**
BVA0 pmax pmax
comp=Z,1.0nm,0.7s,mb3.8
BVAR **Borovoye Array** 69.88 322 P **P** **14 34 01.0 -0.7**
comp=Z,32nm,0.5s,mb5.4,baz=103,slow=7.6,SNR=218
BVAR LR LR 15 08 08.6
comp=Z,35nm,18.5s,baz=330,slow=39
BRVK **Borovoye** 69.94 322 *eP* **P** **14 34 01.2 -0.9**
DAWY **Dawson** 70.71 27 *eP* **P** **14 34 06.8 +0.3**
ZRNK **Zerenda** 70.71 321 P **P** **14 34 05.7 -1.0**
ZRNK pmax pmax
comp=Z,6.0nm,0.6s,mb4.6
ZRNK **Zerenda** 70.71 321 *eP* **P** **14 34 05.4 -1.3**
INK **Inuvik** 73.47 23 P **P** **14 34 22.4 -0.2**
comp=Z,21nm,0.9s,mb5.0,baz=259,slow=8.5,SNR=74
INK **Inuvik** 73.47 23 *eP* **P** **14 34 21.6 -1.1**
comp=Z,23nm,0.9s,mb5.0
DLBC **Dease Lake** 75.02 33 P **P** **14 34 33.5 +1.6**
comp=Z,17nm,0.8s,mb4.8,baz=274,slow=4.7,SNR=26
DLBC **Dease Lake** 75.02 33 *eP* **P** **14 34 32.9 +1.1**
AB31 **Akbulak array** 76.56 318 *i* P **P** **14 34 39.7 -1.0**
AB31 pmax pmax
comp=Z,8.0nm,0.8s,mb4.5
ARU **Arti** 76.65 325 ⇓*iP* **P** **14 34 40.6 -0.5**
ARU *e* 14 34 51.6
ARU *i* 14 37 34.6
ARU pmax pmax
comp=Z,18nm,0.7s,mb4.9
ARU **Arti** 76.65 325 *eP* **P** **14 34 40.3 -0.8**
comp=Z,23nm,0.9s,mb4.9
RPW **Rockport** 81.34 42 *eP* **P** **14 35 07.8 +1.2**
YKW3 **Yellowknife Ar** 81.90 27 *eP* **P** **14 35 09.3 +0.1**
YKA **Yellowknife Ar** 81.92 28 P **P** **14 35 09.8 +0.4**
comp=Z,10nm,0.6s,mb4.8,baz=286,slow=5.3,SNR=212
YKA LR LR 15 11 52.1
comp=Z,22nm,18.0s,baz=210,slow=36
SPITS **Spitsbergen Ar** 83.52 351 P **P** **14 35 17.4 +0.2**
comp=Z,5.8nm,0.9s,mb4.4,baz=94,slow=12,SNR=9.4
RES **Resolute Bay** 83.73 13 *eP* **P** **14 35 18.3 0.0**
comp=Z,8.0nm,0.6s,mb4.7
NEW **Newport** 84.23 42 P **P** **14 35 23.4 +2.1**
comp=Z,4.2nm,0.6s,mb4.5,baz=259,slow=4.4,SNR=6.2
NEW pP pP 14 35 49.8 -0.7
comp=Z,2.9nm,0.6s,baz=314,slow=5.2,SNR=2.1
NEW **Newport** 84.23 42 *eP* **P** **14 35 23.0 +1.7**
comp=Z,3.6nm,0.5s,mb4.5
CMB **Columbia Colle** 84.42 52 *eP* **P** **14 35 23.5 +1.0**
comp=Z,3.8nm,0.9s,mb4.2
THR **Tehran** 85.36 306 P **P** **14 35 30.1 +2.8**
comp=Z,1.1nm,0.9s,mb3.8,baz=311,slow=14,SNR=3.5
WALA **Waterton Lakes** 86.06 40 *eP* **P** **14 35 31.4 +1.1**
comp=Z,34nm,1.3s,mb5.1
ARCES **ARCESS Array B** 86.68 342 P **P** **14 35 33.9 +0.9**
comp=Z,2.5nm,0.4s,mb4.5,baz=72,slow=7.7,SNR=3.8
TPH **Tonopah** 86.83 52 *eP* **P** **14 35 36.6 +2.2**
CHMT **Chamberlain Mo** 87.13 42 *eP* **P** **14 35 36.5 +0.9**
HLID **Hailey** 87.34 46 *eP* **P** **14 35 38.2 +1.5**
comp=Z,3.7nm,0.9s,mb4.3
JOF **Joensuu** 88.01 335 *epkp* **P** **14 35 37.4 -2.0**
MCMT **McKenzie Canyo** 88.03 44 *eP* **P** **14 35 41.9 +1.9**
HRY **Holter Researc** 88.12 42 *eP* **P** **14 35 42.3 +2.0**
BOZ **Bozeman (W)** 88.59 43 *eP* **P** **14 35 43.7 +1.0**
comp=Z,2.9nm,0.8s,mb4.4
ZEI **Tsey** 88.84 314 *eP* **P** **14 35 43.6 -0.3**
HWUT **Hardware Ranch** 89.95 47 *eP* **P** **14 35 49.9 +0.8**
comp=Z,5.0nm,0.6s,mb4.8
KAF **Kangasniemi** 90.42 336 *epkp* **P** **14 35 49.4 -1.4**
baz=52,slow=3.7
FINES **FINESS Array B** 90.88 335 P **P** **14 35 51.6 -1.4**
comp=Z,8.8nm,0.5s,mb5.2,baz=69,slow=4.8,SNR=76
BW06 **Boulder Array** 90.96 45 *eP* **P** **14 35 54.8 +1.0**
comp=Z,2.7nm,1.1s,mb4.3
PDAR **Pinedale Array** 90.96 45 P **P** **14 35 55.5 +1.7**
comp=Z,1.3nm,0.7s,mb4.2,baz=242,slow=2.8,SNR=11
PDAR pP pP 14 36 21.9 -1.5
comp=Z,0.9nm,0.6s,baz=244,slow=2.7,SNR=3.9
ULM **Lac du Bonnet** 96.27 35 P **P** **14 36 18.4 +0.6**
comp=Z,3.7nm,0.8s,mb4.9,baz=312,slow=4.9,SNR=5.8
HFS **Hagfors** 96.46 338 P **P** **14 36 17.2 -1.3**
comp=Z,4.2nm,0.8s,mb4.9,baz=72,slow=4.7,SNR=14
NOA **NORSAR Array B** 96.70 340 P **P** **14 36 18.6 -0.9**
comp=Z,1.7nm,0.9s,mb4.5,baz=56,slow=4.0,SNR=3.4
NOA LR LR 15 25 42.5
comp=Z,28nm,18.1s,baz=310,slow=39
NOA **NORSAR Array B** 96.70 340 P **P** **14 36 18.6 -0.9**
NOA LR LR 15 25 42.5
BRTR **Keskin Array B** 97.15 314 P **P** **14 36 21.1 -1.1**
comp=Z,0.7nm,0.5s,mb4.3,baz=108,slow=3.9,SNR=3.8
SYO **Syowa Base** 108.96 201 ⇓Pdiff Pdif 14 37 13.3 -0.6
SYO **Syowa Base** 108.96 201 ⇓*e*Pdif Pdif 14 37 13.3 -0.6
ESDC **Sonseca Array** 119.33 333 PP PP 14 42 59.4 -5.3
comp=Z,0.4nm,0.4s,baz=33,slow=6.9,SNR=5.4
VNA2 **Neumayer--Watz** 121.01 190 ⇑*i* PKPdf 14 41 46.1 +6.0
VNA3 **Neumayer Olymp** 121.10 189 ⇑*i* PKPdf 14 41 47.3 +7.1
VNA1 **Neumayer--Stat** 121.40 190 ⇑*i* PKPdf 14 41 46.1 +5.3
DBIC **Dimbokro** 144.10 303 PKP PKPdf 14 42 24.4 -0.2
comp=Z,3.2nm,0.6s,baz=14,slow=4.9,SNR=6.9
KIC **Kosan Boka** 144.18 303 *e*PKP1 PKPbc 14 42 23.9 -0.3
comp=Z,386nm,2.2s
TIC **Toumodi** 144.25 304 *e*PKP1 PKPbc 14 42 24.7 +0.4
comp=Z,7.0nm,0.2s
LIC **Lamto** 144.49 303 *e*PKP1 PKPbc 14 42 24.6 -0.4
comp=Z,19nm,0.4s
LPAZ **La Paz** 147.38 98 PKPbc PKPdf 14 42 34.3 +4.3
comp=Z,1.8nm,0.6s,baz=317,slow=2.2,SNR=6.6
CPUP **Villa Florida** 155.38 123 PKPbc PKPdf 14 42 52.9 +11
comp=Z,1.9nm,0.9s,baz=40,slow=5.0,SNR=2.3
CPUP PKPab PKPab 14 43 11.6 +1.6
comp=Z,2.8nm,1.1s,baz=101,slow=2.5,SNR=2.9

*TAP **18** 14:30:14.0,22.96N×120.92E,h6km,ML3.8*
TAP Felt I J at Tauyuan, I J at Taitung, I J at Sandimen, I J at Mingjian.

ISC 18 14:30:14.7±0.3,22.94N±0.01×120.97E±0.02,h1km±3km, n59,σ1$11/112,3C-11D,Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TWG	**Pinlang**	0.15	141	⇑*iP*	**Pg**	**14 30 18.7**	**+1.1**
TWG				S	**Sg**	**14 30 21.5**	**+2.0**
TTN	**Taitung**	0.24	138	*i* P	**Pg**	**14 30 21.0**	**+1.5**
TTN				S	**Sg**	**14 30 26.1**	**+3.4**
ELDTW	**Lidau**	0.26	9	⇓*iP*	**Pg**	**14 30 19.3**	**-0.5**
ELDTW				S	**Sg**	**14 30 22.7**	**-0.5**
STYT	**Tauyuan**	0.30	319	⇑*iP*	**Pg**	**14 30 19.7**	**-1.0**
STYT				S	**Sg**	**14 30 23.4**	**-1.3**
ECL	**Taimali**	0.34	183	⇓*iP*	**Pg**	**14 30 21.3**	**-0.1**
ECL				S	**Sg**	**14 30 25.7**	**-0.1**
SSD	**Sandimen**	0.36	239	⇓*iP*	**Pg**	**14 30 20.8**	**-1.2**
SSD				S	**Sg**	**14 30 24.9**	**-1.9**
SGST	**Jiashian**	0.39	292	⇓*iP*	**Pg**	**14 30 21.9**	**-0.5**
SGST				S	**Sg**	**14 30 27.1**	**-0.4**
CHKT	**Chengkung**	0.40	66	⇓*iP*	**Pg**	**14 30 23.7**	**+1.1**
CHKT				S	**Sg**	**14 30 30.5**	**+2.6**
WTP	**Ta-pu**	0.45	313	⇑*iP*	**Pg**	**14 30 23.2**	**-0.5**
WTP				S	**Sg**	**14 30 29.9**	**+0.2**
CHN1	**Nanshi**	0.48	301	P	**Pg**	**14 30 24.0**	**-0.2**
CHN1				S	**Sg**	**14 30 31.5**	**+0.9**
SGLT	**Jiouru**	0.49	245	P	**Pg**	**14 30 24.2**	**-0.2**
SGLT				S	**Sg**	**14 30 33.1**	**+2.1**
TWF1	**Yuli**	0.51	36	⇓*iP*	**Pg**	**14 30 24.3**	**-0.6**
TWF1				S	**Sg**	**14 30 30.9**	**-0.9**
TWM1	**Shoushan**	0.52	258	⇓*iP*	**Pg**	**14 30 25.3**	**+0.3**
TWM1				S	**Sg**	**14 30 33.2**	**+1.3**
CHN4	**Tsaushan**	0.54	320	*i* P	**Pg**	**14 30 25.2**	**-0.3**
YUS	**Yu-Shan**	0.55	358	⇓*iP*	**Pg**	**14 30 24.6**	**-1.1**
YUS				S	**Sg**	**14 30 30.6**	**-2.4**
TWK	**Hsinying**	0.55	307	*i* P	**Pg**	**14 30 25.7**	**0.0**
TWK				S	**Sg**	**14 30 33.9**	**+0.8**
EAST	**Anshuo**	0.56	192	⇓*iP*	**Pg**	**14 30 25.5**	**-0.3**
EAST				S	**Sg**	**14 30 33.0**	**-0.3**
CHN3	**Shinhua**	0.58	284	*eP*	**Pg**	**14 30 27.1**	**+1.0**
CHN3				S	**Sg**	**14 30 37.1**	**+3.3**
TAW	**Tawu**	0.58	187	*eP*	**Pg**	**14 30 25.6**	**-0.6**
TAW				S	**Sg**	**14 30 33.5**	**-0.5**
SCZT	**Fangliau**	0.65	210	⇓*iP*	**Pg**	**14 30 26.6**	**-1.0**
SCZT				S	**Sg**	**14 30 35.4**	**-0.9**
EHY	**Hungye**	0.65	29	*eP*	**Pg**	**14 30 26.6**	**-1.2**
EHY				S	**Sg**	**14 30 35.1**	**-1.3**
TAI1	**Yung-k'ang**	0.69	279	*eP*	**Pg**	**14 30 29.4**	**+0.9**
CHN5	**Tsauling**	0.71	338	P	**Pg**	**14 30 28.0**	**-0.9**
CHN5				S	**Pg**	**14 30 40.1**	**+1.7**
KAU	**Kaohsiung**	0.71	239	*eP*	**Pg**	**14 30 29.5**	**+0.6**
CHN2	**Minshiung**	0.75	323	*eP*	**Pg**	**14 30 29.6**	**0.0**
CHN2				S	**Sg**	**14 30 40.6**	**+1.0**
CHY	**Chiayi**	0.75	318	*eP*	**Pg**	**14 30 28.8**	**-0.9**
CHY				S	**Sg**	**14 30 40.5**	**+0.8**
SCLT	**Jiali**	0.76	289	*eP*	**Pg**	**14 30 28.3**	**-1.4**
SCLT				S	**Sg**	**14 30 42.5**	**+2.6**
CHN8	**Yiju**	0.81	300	*eP*	**Pg**	**14 30 30.3**	**-0.6**
CHN8				S	**Sg**	**14 30 43.4**	**+1.7**
TWP	**Hsiaoliuchiu**	0.81	224	*eP*	**Pg**	**14 30 32.5**	**+1.6**
WGK	**Gukeng**	0.84	333	*eP*	**Pg**	**14 30 31.0**	**-0.4**
WGK				S	**Sg**	**14 30 43.2**	**+0.7**
SMLT	**Sun Moon Lake**	0.95	356	*eP*	**Pb**	**14 30 32.1**	**-1.4**
SMLT				S	**Sg**	**14 30 47.9**	**+1.7**
HEN	**Hengchun**	0.95	193	*eP*	**Pb**	**14 30 33.3**	**-0.3**
HEN				S	**Sg**	**14 30 47.6**	**+1.3**
TYC	**Yuchr**	0.97	354	*eP*	**Pb**	**14 30 32.5**	**-1.4**
TYC				S	**Sg**	**14 30 47.8**	**+0.9**
ESL	**Shilin**	0.97	26	*eP*	**Pb**	**14 30 32.1**	**-1.9**
ESL				S	**Sg**	**14 30 45.3**	**-1.8**
WNT	**Mingjian**	0.97	344	*eP*	**Pb**	**14 30 33.4**	**-0.7**
WNT				S	**Sg**	**14 30 47.7**	**+0.6**
TWK1	**Hengchun**	1.00	189	*eP*	**Pb**	**14 30 34.3**	**-0.1**
TWK1				S	**Sg**	**14 30 49.2**	**+1.3**
LAY	**Lan-yu**	1.04	149	*eP*	**Pb**	**14 30 33.5**	**-1.7**
WTCT	**Ta-ch'eng**	1.12	326	*eP*	**Pb**	**14 30 36.0**	**-0.6**
WTCT				S	**Sb**	**14 30 51.2**	**-0.3**
WHF	**Hehuan Shan**	1.23	13	*eP*	**Pb**	**14 30 36.3**	**-2.2**
WHF				S	**Sb**	**14 30 55.6**	**+0.8**
TCU	**Taichung**	1.24	347	*eP*	**Pb**	**14 30 38.4**	**-0.1**
TCU				S	**Sb**	**14 30 55.4**	**+0.6**
WDGT	**Dungji**	1.25	285	⇓*iP*	**Pb**	**14 30 36.9**	**-1.8**
WDGT				S	**Sb**	**14 30 53.8**	**-1.4**
TWD	**Chiawan**	1.28	27	*eP*	**Pb**	**14 30 37.9**	**-1.2**
TWD				S	**Sb**	**14 30 56.7**	**+0.8**
TWT	**Tachien**	1.33	8	*eP*	**Pb**	**14 30 39.5**	**-0.6**
TWT				S	**Sb**	**14 30 57.9**	**+0.5**
TWQ1	**Liyutan**	1.42	353	*eP*	**Pb**	**14 30 41.5**	**-0.1**
TWQ1				S	**Sb**	**14 31 01.2**	**+1.1**
PNG	**Penghu**	1.45	296	*eP*	**Pn**	**14 30 39.8**	**-2.2**
PNG				S	**Sb**	**14 30 57.4**	**-3.5**
NSY	**Sanyi**	1.49	353	*eP*	**Pn**	**14 30 42.5**	**-0.1**
NSY				S	**Sb**	**14 31 04.2**	**+2.1**
NNS	**Nan Shan**	1.54	14	*eP*	**Pn**	**14 30 42.8**	**-0.7**
NNS				S	**Sb**	**14 31 03.9**	**+0.1**
ENA	**Nanau**	1.65	25	*eP*	**Pn**	**14 30 44.4**	**-0.5**
ENA				S	**Sb**	**14 31 07.4**	**+0.7**
NSTT	**Nanjuang**	1.69	1	*eP*	**Pn**	**14 30 45.7**	**+0.2**
NSTT				S	**Sb**	**14 31 08.3**	**+0.3**
NSK	**Sanguang**	1.77	11	*eP*	**Pn**	**14 30 47.0**	**+0.3**
NSK				S	**Sn**	**14 31 09.9**	**-0.2**
ENTT	**Nioudou**	1.78	18	P	**Pn**	**14 30 47.0**	**+0.1**
ENTT				S	**Sn**	**14 31 10.3**	**-0.2**
TWC	**Suao**	1.85	26	*eP*	**Pn**	**14 30 48.0**	**+0.1**
TWC				S	**Sn**	**14 31 12.0**	**-0.2**
TWE	**Neicheng**	1.89	20	*eP*	**Pn**	**14 30 49.1**	**+0.7**
TWE				S	**Sn**	**14 31 14.6**	**+1.4**
TAP	**Taipei**	2.15	13	*eP*	**Pn**	**14 30 51.2**	**-1.0**
TAP				S	**Sn**	**14 31 19.9**	**0.0**
TAP1	**Taipei**	2.15	13	*eP*	**Pn**	**14 30 53.6**	**+1.5**
TAP1				S	**Sn**	**14 31 21.0**	**+1.1**
TWS1	**Kuangyinshan**	2.19	11	*eP*	**Pn**	**14 30 53.8**	**+1.0**
TWS1				S	**Sn**	**14 31 22.6**	**+1.7**
NWF	**Wu-fen Shan**	2.25	19	*eP*	**Pn**	**14 30 54.7**	**+1.2**
NWF				S	**Sn**	**14 31 25.3**	**+2.9**
TWB1	**Santiao Chiao**	2.26	24	*eP*	**Pn**	**14 30 53.0**	**-0.8**
TWY	**Chenhua**	2.40	14	*eP*	**Pn**	**14 30 54.6**	**-1.1**
TWY				S	**Sn**	**14 31 24.7**	**-1.5**

NEIC 18 14:33:04.4,44.13N×17.98E,h8km,MD2.6(PDG),2C, After PDG.,Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
UPM	**Unac-Piva**	1.14	144	*eP*	**Pg**	**14 33 25.6**	**-1.7**
UPM				*e*	**Sg**	**14 33 43.4**	**+0.8**
STON	**Ston**	1.27	189	*i* Pn	Pn	**14 33 28.2**	**-0.3**
STON				*i* Sg	**Sg**	**14 33 48.2**	**+1.4**
STON				*i* Sn	Sn	**14 33 48.6**	**+2.8**
BRY	**Bratogost**	1.29	161	*eP*	**Pg**	**14 33 28.4**	**-1.9**
BRY				*e*	**Sg**	**14 33 48.0**	**+0.5**
PLE	**Pljevlja**	1.30	127	*eP*	**Pg**	**14 33 28.1**	**-2.3**
PLE				*e*	**Sg**	**14 33 48.7**	**+1.1**
NKY	**Niksic**	1.51	150	*eP*	**Pg**	**14 33 32.1**	**-2.4**
NKY				*e*	**Sg**	**14 33 55.3**	**+0.7**
HCY	**Herceg Novi**	1.72	167	*eP*	Pn	**14 33 35.5**	**+0.6**
HCY				*e*	Sn	**14 34 00.5**	**+3.3**
IVA	**Berane**	1.88	131	*eP*	Pn	**14 33 38.0**	**+0.9**
IVA				*e*	Sn	**14 34 04.1**	**+3.0**
TTG	**Podgorica**	1.94	151	*eP*	Pn	**14 33 38.2**	**+0.2**
TTG				*e*	Sn	**14 34 05.7**	**+3.0**
BUM	**Brajici-Budva**	1.94	160	*eP*	Pn	**14 33 38.5**	**+0.5**
BUM				*e*	Sn	**14 34 06.0**	**+3.1**
PVY	**Plav**	2.11	136	*eP*	Pn	**14 33 41.4**	**+0.9**
PVY				*e*	Sn	**14 34 09.6**	**+2.5**
ULC	**Ulcinj**	2.35	156	*eP*	Pn	**14 33 44.9**	**+1.0**
ULC				*e*	Sn	**14 34 15.5**	**+2.2**
VBY	**Vinica-Bojanci**	2.38	306	*eP*	Pn	**14 33 41.0**	**-3.3**
VBY				*e*	Pg	**14 33 47.2**	**-4.7**
VBY				*e*	Sn	**14 34 16.8**	**+2.8**
VOY	**Vojsko**	3.47	305	*eP*	Pn	**14 33 55.5**	**-4.2**
VOY				*e*	Sg	**14 34 48.7**	**-11**
ARSA	**Arzberg**	3.57	332	⇑*iPN*	Pn	**14 33 55.6**	**-5.7**
ARSA				*i* SN	Sn	**14 34 36.8**	**-7.3**
MOA	**Molln**	4.54	326	⇑*iPN*

ISC 18 15:01:28.3±3.1, 42.97N±0.05×109.66E±0.09, h27km±25km, n17, σ0°95/25, mb3.6/4, 1C, Mongolia

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BTO	**Baotou**	**2.38**	**173**	*e*P	**Pn**	**15 02 05.6**	**-0.8**
BTO				*e*PG	**Pn**	**15 02 08.1**	**+1.7**
BTO				S	**Sn**	**15 02 35.0**	**0.0**
BTO				SG	**Sn**	**15 02 38.8**	**+3.8**
BTO				S	Sn		
	comp=N,2μm,0.2s						
BTO				S	Sn		
	comp=E,3μm,0.3s						
HHC	**Hu-ho-hao-te**	**2.55**	**146**	*e*P	**Pn**	**15 02 05.6**	**-3.3**
HHC				PG	**Pn**	**15 02 08.3**	**-0.6**
HHC				SG	**Sn**	**15 02 39.3**	**-0.1**
HHC				S	Sn		
	comp=N,3μm,0.4s						
HHC				S	Sn		
	comp=E,2μm,0.3s						
ULN	**Ulaanbaatar**	**5.23**	**340**	*e*P	**Pn**	**15 02 46.2**	**-0.7**
SONM	**Songino Array**	**5.38**	**336**	Pn	**Pn**	**15 02 49.0**	**0.0**
	comp=E,3.3nm,0.3s,baz=154,slow=13,SNR=41						
SONM				Pg	**Pn**	**15 03 07.9**	**+19**
	comp=E,15nm,0.3s,baz=154,slow=17,SNR=30						
SONM				Lg		15 04 21.2	
	comp=E,19nm,0.3s,baz=148,slow=28,SNR=10						
TIY	**Taiyuan**	**5.66**	**157**	⇑PG	**Pn**	**15 03 04.0**	**+11**
TIY				S	Sn		
	comp=N,118nm,0.6s						
TIY				S	Sn		
	comp=E,101nm,0.8s						
BJI	**Beijing**	**5.70**	**119**	PG	**Pn**	**15 03 03.1**	**+10**
BJI				SG	**Sn**	**15 04 11.8**	**+13**
BJI				S	Sn		
	comp=N,445nm,0.8s						
BJI				S	Sn		
	comp=E,87nm,0.9s						
BJT	**Baijiatuan**	**5.71**	**119**	P	**Pn**	**15 02 47.8**	**-5.7**
GTA	**Gaotai**	**8.23**	**248**	*e*P	**P**	**15 03 29.6**	**+0.6**
GTA				S	**Sn**	**15 05 01.5**	**-0.6**
GTA				LG2		15 05 52.3	
GTA				AMB	AMB		
	comp=Z,4.0nm,0.4s						
GTA				LR	LR		
	comp=N,113nm,7.6s						
GTA				LR	LR		
	comp=E,149nm,5.7s						
GTA				LR	LR		
	comp=Z,96nm,4.9s						
HIA	**Hailar**	**9.41**	**45**	*e*P	**P**	**15 03 37.4**	**-7.9**
ENH	**Enshi**	**12.67**	**181**	P	**P**	**15 04 21.7**	**-7.9**
MKAR	**Makanchi Array**	**19.73**	**291**	P	**P**	**15 05 59.9**	**+1.3**
	comp=Z,0.1nm,0.3s,baz=81,slow=19,SNR=3.2						
ARU	**Arti**	**34.84**	**311**	P	**P**	**15 08 18.0**	**-0.9**
INK	**Inuvik**	**59.51**	**23**	P	**P**	**15 11 31.4**	**+0.4**
	comp=Z,0.7nm,0.6s,mb3.9,baz=329,slow=7.0,SNR=5.7						
WRA	**Warramunga Arr**	**66.60**	**155**	P	**P**	**15 12 13.5**	**-5.0**
	comp=Z,0.4nm,0.8s,mb3.5,baz=346,slow=7.6,SNR=2.5						
YKA	**Yellowknife Ar**	**69.06**	**20**	P	**P**	**15 12 33.7**	**+0.6**
	comp=Z,0.3nm,0.5s,mb3.5,baz=326,slow=6.5,SNR=7.2						
YKA	**Yellowknife Ar**	**69.06**	**20**	P	**P**	**15 12 33.7**	**+0.6**
ASAR	**Alice Springs**	**69.97**	**156**	P	**P**	**15 12 35.9**	**-3.5**
	comp=Z,0.3nm,0.6s,mb3.4,baz=340,slow=5.8,SNR=5.1						

*NEIC **18** 15:08:30.9±1.7, 2.58N×122.21E, h532km±24km, mb4.5/12, Error ellipse: s-maj=17.6km s-min=5.5km az=53.0*
*MOS **18** 15:08:30.2±0.8, 2.67N×122.25E, h549km, mb4.0/5, Error ellipse: s-maj=37.4km s-min=13.7km az=117.9*
*IDC **18** 15:08:32.6±1.2, 2.55N×122.18E, h554km±14km, mb3.6/16, mb1 3.6/16, mb1mx3.5/23, Error ellipse: s-maj=21.8km s-min=7.2km az=63.0*

ISC 18 15:08:30.7±1.9, 2.64N±0.09×122.3E±0.1, h549km±27km, n50, σ0°92/52, mb4.3/29, 2C, Celebes Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KAKA	**Kakadu**	**18.23**	**147**	⇑*i*P	**P**	**15 12 12.0**	**+0.8**
	36nm,0.8s						
FITZ	**Fitzroy Crossi**	**20.86**	**171**	*e*P	**P**	**15 12 35.5**	**-0.3**
	6.6nm,0.8s						
FITZ	**Fitzroy Crossi**	**20.86**	**171**	P	**P**	**15 12 35.8**	**0.0**
	9.6nm,0.8s,baz=12,slow=6.3,SNR=8.0						
FITZ				ScP		15 19 05.7	
	2.9nm,0.8s,baz=234,slow=2.9,SNR=5.1						
WRAB	**Tennant Creek**	**25.35**	**153**	*e*P	**P**	**15 13 14.8**	**-1.4**
	18nm,0.6s,mb4.9						
WRA	**Warramunga Arr**	**25.35**	**153**	P	**P**	**15 13 15.0**	**-1.2**
	7.7nm,0.6s,mb4.5,baz=335,slow=9.5,SNR=38						
WRA				S	**S**	**15 17 04.0**	**-0.6**
	0.8nm,0.8s,baz=326,slow=15,SNR=3.6						
WRA				ScP		15 19 16.6	
	0.7nm,0.5s,baz=333,slow=3.4,SNR=9.4						
WB2	**Warramunga Arr**	**25.35**	**153**	⇑*i*P	**P**	**15 13 15.0**	**-1.3**
CMAR	**Chiang Mai Arr**	**27.79**	**306**	P	**P**	**15 13 37.0**	**-0.6**
	2.2nm,0.6s,mb4.0,baz=136,slow=7.7,SNR=11						
AS12	**Alice Springs**	**28.47**	**157**	*e*P	**P**	**15 13 43.0**	**-0.5**
	3.4nm,0.6s,mb4.2						
ASAR	**Alice Springs**	**28.47**	**157**	P	**P**	**15 13 43.1**	**-0.4**
	4.4nm,0.7s,mb4.2,baz=335,slow=7.4,SNR=52						
ASAR				S	**S**	**15 17 50.1**	**-3.2**
	0.6nm,0.9s,baz=325,slow=12,SNR=3.8						
ASAR				ScP		15 19 26.4	
	1.4nm,0.7s,baz=337,slow=2.5,SNR=12						
CTA	**Charters Tower**	**32.58**	**135**	*e*P	**P**	**15 14 19.6**	**+1.1**
	5.8nm,1.5s,mb3.9						
CTA	**Charters Tower**	**32.58**	**135**	P	**P**	**15 14 19.7**	**+1.2**
	2.9nm,0.6s,mb4.0,baz=289,slow=7.3,SNR=4.9						
CTAO	**Charters Tower**	**32.58**	**135**	*e*P	**P**	**15 14 19.2**	**+0.7**
FORT	**Forrest**	**33.68**	**171**	*e*P	**P**	**15 14 27.5**	**-0.2**
	49nm,0.6s,mb5.2						
NWAO	**Narrogin (SRO)**	**35.70**	**187**	P	**P**	**15 14 44.5**	**0.0**
	10nm,0.8s,mb4.4,baz=8.3,slow=8.9,SNR=8.4						
STKA	**Stephens Creek**	**38.90**	**153**	*e*P	**P**	**15 15 11.4**	**+0.9**
	9.5nm,0.8s,mb4.4						
STKA				*e*		15 15 19.8	
STKA	**Stephens Creek**	**38.90**	**153**	P	**P**	**15 15 11.6**	**+1.0**
	11nm,0.7s,mb4.5,baz=329,slow=7.9,SNR=25						
STKA				ScP		15 20 02.5	
	2.1nm,0.8s,baz=297,slow=2.3,SNR=3.8						
LSA	**Lhasa**	**39.99**	**316**	*e*P	**P**	**15 15 21.0**	**+1.6**
	7.8nm,0.6s,mb4.4						
PKI	**Pulchoki**	**43.11**	**309**	*e*P	**P**	**15 15 44.3**	**-0.1**
	16nm,0.5s,mb4.8						
ARMA	**Armidale**	**43.15**	**142**	*e*P	**P**	**15 15 45.5**	**+0.9**
KKN	**Kakani**	**43.32**	**309**	*e*P	**P**	**15 15 46.1**	**+0.1**
	22nm,0.5s,mb5.0						
DMN	**Daman**	**43.37**	**309**	*e*P	**P**	**15 15 46.7**	**+0.4**
	18nm,0.6s,mb4.7						
GKN	**Gorkha**	**43.92**	**309**	*e*P	**P**	**15 15 50.6**	**0.0**
	35nm,0.7s,mb5.0						
KOLN	**Koldanda**	**44.62**	**308**	*e*P	**P**	**15 15 56.5**	**+0.4**
	61nm,0.7s,mb5.2						
ASAJ	**Asahikawa**	**45.03**	**21**	P	**P**	**15 15 59.4**	**+0.3**
	7.8nm,1.0s,mb4.2,baz=229,slow=11,SNR=3.3						
HYB	**Hyderabad**	**45.39**	**292**	*i* P	**P**	**15 16 02.0**	**-0.2**
HYB	**Hyderabad**	**45.39**	**292**	*e*P	**P**	**15 16 02.0**	**-0.2**
ULN	**Ulaanbaatar**	**46.95**	**346**	*e*P	**P**	**15 16 13.6**	**-0.1**
	9.2nm,0.8s,mb4.4						
SONM	**Songino Array**	**47.08**	**345**	P	**P**	**15 16 15.1**	**+0.4**
	7.3nm,0.6s,mb4.4,baz=163,slow=9.0,SNR=48						
ZAK	**Zakamensk**	**50.23**	**344**	*e*P	**P**	**15 16 36.8**	**-1.4**
MKAR	**Makanchi Array**	**56.03**	**328**	P	**P**	**15 17 19.3**	**-0.1**
	12nm,0.5s,mb4.4,baz=122,slow=8.8,SNR=99						
MKAR	**Makanchi Array**	**56.03**	**328**	*e*P	**P**	**15 17 19.3**	**-0.1**
MKAR				pmax	pmax		
	comp=Z,3.0nm,0.4s						
KZA	**Kyzart**	**57.52**	**320**	P	**P**	**15 17 30.7**	**+1.0**
	SNR=8.7						
TKM2	**Tokmak 2**	**57.73**	**321**	P	**P**	**15 17 31.5**	**+0.4**
	SNR=19						
UCH	**Uchtor**	**58.07**	**320**	P	**P**	**15 17 34.8**	**+1.4**
	SNR=7.8						
AML	**Almayashu**	**58.56**	**319**	P	**P**	**15 17 37.8**	**+1.1**
	SNR=9.5						
EKS2	**Erkin-Say**	**58.76**	**320**	P	**P**	**15 17 38.8**	**+0.8**
	SNR=8.0						
KURK	**Kurchatov**	**60.37**	**330**	*i* P	**P**	**15 17 48.0**	**-0.6**
KURK				pmax	pmax		
	comp=Z,8.0nm,0.6s,mb4.2						
KURK	**Kurchatov**	**60.37**	**330**	*e*P	**P**	**15 17 47.4**	**-1.1**
NVS	**Novosibirsk**	**60.94**	**335**	*i* P	**P**	**15 17 49.8**	**-2.4**
NVS				pmax	pmax		
	comp=N,5.0nm,0.5s						
NVS				pmax	pmax		
	comp=E,6.0nm,0.5s						
NVS				pmax	pmax		
	comp=Z,9.0nm,0.5s,mb4.4						
RPZ	**Rata Peaks**	**63.49**	**142**	P	**P**	**15 18 09.7**	**+0.9**
	comp=Z,5.3nm,0.7s,mb4.1,baz=352,slow=19,SNR=3.6						
URZ	**Urewera**	**64.83**	**135**	P	**P**	**15 18 19.6**	**+2.1**
	comp=Z,24nm,1.4s,mb4.5,baz=138,slow=17,SNR=5.7						
VOSK	**Vostochnaya**	**65.43**	**329**	P	**P**	**15 18 19.7**	**-1.3**
VOSK				pmax	pmax		
	comp=Z,3.0nm,0.6s,mb3.9						
BVA0	**Borovoye Array**	**65.89**	**329**	*i* P	**P**	**15 18 23.0**	**-0.8**
BVAR	**Borovoye Array**	**65.89**	**329**	P	**P**	**15 18 23.2**	**-0.6**
	comp=Z,2.7nm,0.4s,mb4.1,baz=135,slow=8.4,SNR=31						
ZRNK	**Zerenda**	**66.58**	**328**	P	**P**	**15 18 27.4**	**-0.7**
ZRNK				pmax	pmax		
	comp=Z,5.0nm,0.6s,mb4.2						
ZRNK	**Zerenda**	**66.58**	**328**	*e*P	**P**	**15 18 27.2**	**-0.9**
AB31	**Akbulak array**	**70.25**	**322**	*i* P	**P**	**15 18 49.5**	**-0.7**
AB31				pmax	pmax		
	comp=Z,1.0nm,0.4s,mb3.7						
THR	**Tehran**	**73.26**	**307**	P	**P**	**15 19 07.7**	**-0.2**
	comp=Z,1.8nm,0.7s,mb3.6,baz=69,slow=6.0,SNR=6.7						
KMBO	**Kilima Mbogo**	**85.14**	**269**	P	**P**	**15 20 11.7**	**+1.0**
	comp=Z,3.4nm,1.2s,mb3.8,baz=49,slow=15,SNR=3.4						
BRTR	**Keskin Array B**	**87.32**	**309**	P	**P**	**15 20 20.4**	**-0.1**
	comp=Z,1.0nm,0.8s,mb3.5,baz=124,slow=4.5,SNR=4.6						

*IDC **18** 15:35:05.6±2.1, 20.71S×178.03W, h542km±23km, mb4.1/19, mb1 4.2/20, mb1mx4.2/21, Error ellipse: s-maj=18.8km s-min=9.5km az=148.0*
*NEIC **18** 15:35:06.5±1.9, 20.67S×178.11W, h556km±22km, mb4.6/23, Error ellipse: s-maj=8.6km s-min=7.9km az=165.0*
*BJI **18** 15:35:06.4, 20.70S×178.10W, h555km, mB4.8, mb4.9*
*SYO **18** 15:35:06.4, 20.67S×178.11W, h556km, MB4.6*

ISC 18 15:35:04.6±0.2, 20.76S±0.05×178.06W±0.06, h545km, h545km±2.9km; pP-P, n158, σ0°96/96, mb4.6/51, 5C-21D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PUZ	**Puketiti**	**17.55**	**190**	*e*P	**P**	**15 38 37.5**	**-1.1**
PUZ				S	**S**	**15 41 50.4**	**+19**
URZ	**Urewera**	**17.93**	**192**	P	**P**	**15 38 37.8**	**-4.5**
	1.4nm,0.3s,baz=348,slow=5.8,SNR=9.8						
URZ				S	**S**	**15 41 39.1**	**+1.4**
	0.6nm,0.3s,baz=223,slow=19,SNR=3.3						
URZ	**Urewera**	**17.93**	**192**	*e*P	**P**	**15 38 40.3**	**-2.0**
SNZO	**South Karori**	**21.39**	**195**	P	**P**	**15 39 12.2**	**-2.3**
LTZ	**Lake Taylor**	**23.41**	**198**	*e*P	**P**	**15 39 31.6**	**-1.3**
RPZ	**Rata Peaks**	**24.63**	**199**	P	**P**	**15 39 43.5**	**-0.2**
	9.7nm,1.0s,mb4.4,baz=194,slow=4.2,SNR=4.8						
ARMA	**Armidale**	**28.91**	**244**	*e*P	**P**	**15 40 21.6**	**+0.2**
CNB	**Canberra Magne**	**32.04**	**236**	⇓*i*P	**P**	**15 40 48.6**	**+0.6**
	59nm,0.5s,mb5.4						
CTA	**Charters Tower**	**33.41**	**265**	⇓*i*P	**P**	**15 40 59.5**	**-0.2**
	12nm,0.4s,mb4.8						
CTAO	**Charters Tower**	**33.41**	**265**	*e*P	**P**	**15 40 59.2**	**-0.5**
	14nm,0.4s,mb4.8						
TOO	**Toolangi**	**35.70**	**234**	*e*P	**P**	**15 41 18.9**	**+0.3**
	26nm,0.6s,mb4.9						
STKA	**Stephens Creek**	**37.63**	**244**	⇓*i*P	**P**	**15 41 34.9**	**+0.5**
	17nm,0.4s,mb4.9						
STKA	**Stephens Creek**	**37.63**	**244**	P	**P**	**15 41 35.0**	**+0.6**
	26nm,0.6s,mb5.0,baz=91,slow=9.9,SNR=96						
AS12	**Alice Springs**	**44.41**	**257**	⇓*i*P	**P**	**15 42 28.3**	**-0.3**
	23nm,0.5s,mb5.0						
AS12				*e*S	**S**	**15 48 24.4**	**+0.2**
ASAR	**Alice Springs**	**44.41**	**257**	P	**P**	**15 42 28.4**	**-0.2**
	37nm,0.5s,mb5.2,baz=90,slow=8.3,SNR=1221						
ASAR				PcP	PcP	15 44 01.0	+0.1
	5.0nm,0.5s,baz=103,slow=3.8,SNR=8.1						
ASAR				S	**S**	**15 48 25.2**	**+1.1**
	4.7nm,0.8s,baz=91,slow=15,SNR=22						
ASAR				PKiKP		15 50 57.2	
	0.4nm,1.0s,baz=125,slow=1.4,SNR=3.9						
WB2	**Warramunga Arr**	**44.50**	**262**	⇓*i*P	**P**	**15 42 28.4**	**-1.0**
WB2				*e*S	**S**	**15 48 25.5**	**0.0**
WB2				*e*SCS	ScS	15 51 33.0	+7.7
WRAB	**Tennant Creek**	**44.50**	**262**	*e*P	**P**	**15 42 28.2**	**-1.2**
	92nm,1.0s,mb5.3						
WRA	**Warramunga Arr**	**44.51**	**262**	P	**P**	**15 42 28.5**	**-1.0**
	11nm,0.3s,mb4.9,baz=97,slow=7.3,SNR=52						
WRA				S	**S**	**15 48 25.2**	**-0.5**
	1.9nm,0.8s,baz=96,slow=14,SNR=6.6						
KAKA	**Kakadu**	**47.97**	**271**	⇓*i*P	**P**	**15 42 54.5**	**-1.5**
	12nm,0.2s,mb5.1						
FORT	**Forrest**	**49.14**	**247**	⇓*i*P	**P**	**15 43 03.6**	**-1.0**
	144nm,0.6s,mb5.7						
FITZ	**Fitzroy Crossi**	**52.94**	**263**	*e*P	**P**	**15 43 31.6**	**-0.7**
	8.6nm,0.5s,mb4.3						
FITZ	**Fitzroy Crossi**	**52.94**	**263**	P	**P**	**15 43 31.9**	**-0.4**
	7.7nm,0.4s,mb4.4,baz=151,slow=3.0,SNR=75						
SBA	**Scott Base**	**57.61**	**184**	P	**P**	**15 44 04.1**	**0.0**
KLBR	**Kellerberrin**	**57.90**	**245**	⇓*i*P	**P**	**15 44 06.0**	**-0.6**
	39nm,0.5s,mb4.9						
MUN	**Mundaring**	**59.16**	**244**	⇓*i*P	**P**	**15 44 15.0**	**-0.1**
	33nm,0.5s,mb4.8						
JHJ	**Hachijo jima 2**	**67.01**	**322**	P	**P**	**15 45 05.0**	**-0.3**
	119nm,0.9s,mb5.4,baz=54,slow=22,SNR=3.7						
QSPA	**South Pole Qui**	**69.31**	**180**	*e*P	**P**	**15 45 19.7**	**+1.3**
	5.6nm,0.7s,mb4.2						
JOW	**Kunigami**	**70.29**	**310**	P	**P**	**15 45 25.4**	**+0.3**
	17nm,0.9s,mb4.5,baz=88,slow=25,SNR=3.2						
MAJO	**Matsushiro**	**70.39**	**324**	*e*P	**P**	**15 45 24.4**	**-1.0**
JNU	**Nakatsue**	**72.43**	**317**	P	**P**	**15 45 37.3**	**0.0**
	15nm,1.0s,mb4.4,baz=85,slow=12,SNR=7.3						
FX1	**Attu Island--F**	**73.72**	**354**	P	**P**	**15 45 42.3**	**-1.9**
	29nm,0.6s,mb4.9,baz=159,slow=1.4,SNR=28						
ASAJ	**Asahikawa**	**73.93**	**332**	P	**P**	**15 45 46.3**	**+0.7**
	28nm,0.7s,mb4.8,baz=225,slow=5.7,SNR=8.4						
YSS	**Yuzh-Sakhalins**	**76.10**	**334**	*e*P	**P**	**15 45 57.5**	**-0.1**
	27nm,0.8s,mb4.7						
PET	**Petropavlovsk**	**76.20**	**346**	*e*P	**P**	**15 45 56.3**	**-1.7**
	6.5nm,0.6s,mb4.2						
WDC	**Whiskeytown Da**	**79.91**	**40**	*e*P	**P**	**15 46 17.7**	**-0.3**
	2.4nm,0.6s,mb3.7						
NJ2	**Nanjing**	**80.00**	**310**	*e*P	**P**	**15 46 20.1**	**+1.4**
NJ2				AP	pP	15 48 17.0	+0.8
NJ2				XP	sP	15 49 10.8	-0.1
NJ2				PP	PP	15 49 35.3	+4.6
NJ2				AMB	AMB		
	comp=Z,10.0nm,0.5s,mb4.4						
MTUM	**Tungsten Hills**	**80.46**	**44**	*e*P	**P**	**15 46 21.5**	**+0.5**
YBH	**Yreka Blue Hor**	**80.52**	**39**	P	**P**	**15 46 21.8**	**+0.6**
	comp=Z,8.2nm,0.6s,mb4.3,baz=191,slow=2.4,SNR=26						
YBH	**Yreka Blue Hor**	**80.52**	**39**	*e*P	**P**	**15 46 21.4**	**+0.2**
	comp=Z,6.9nm,0.8s,mb4.1						
MDJ	**Mudanjiang**	**80.70**	**325**	P	**P**	**15 46 22.8**	**+0.8**
MDJ				AP	pP	15 48 22.3	+2.5
MDJ				XP	sP	15 49 19.0	+4.5
MDJ				PP	PP	15 49 37.5	+0.9
MDJ				S	S	15 55 47.5	+2.9
MDJ				XS		15 59 18.0	
MDJ				SS	SS	16 01 13.4	-3.2
MDJ				AMB	AMB		
	comp=Z,21nm,0.9s,mb4.6						
MDJ				AMB	AMB		
	comp=Z,31nm,4.2s						
MAW	**Mawson**	**81.30**	**200**	P	**P**	**15 46 25.9**	**+1.3**
	comp=Z,1.7nm,0.4s,mb3.8,baz=84,slow=8.0,SNR=3.9						
MAW	**Mawson**	**81.30**	**200**	*e*P	**P**	**15 46 25.2**	**+0.5**
TPH	**Tonopah**	**81.75**	**44**	*e*P	**P**	**15 46 27.6**	**+0.1**
	comp=Z,9.9nm,1.0s,mb4.2						
CN2	**Changchun**	**82.47**	**322**	*e*P	**P**	**15 46 31.8**	**+0.8**
CN2				*e*AP	pP	15 48 30.0	+0.6
CN2				*e*S	S	15 56 04.0	+1.8
CN2				AMB	AMB		
	comp=Z,10.0nm,1.0s,mb4.2						
WHN	**Wuhan**	**82.55**	**306**	*e*P	**P**	**15 46 33.0**	**+1.3**
TUC	**Tucson**	**83.18**	**52**	*e*P	**P**	**15 46 35.5**	**+0.7**
WVOR	**Wild Horse Val**	**83.36**	**40**	*e*P	**P**	**15 46 35.2**	**-0.3**
	comp=Z,7.7nm,1.2s,mb4.1						
SPU	**Mount Spurr**	**84.30**	**12**	*e*P	**P**	**15 46 36.9**	**-2.7**
BJT	**Baijiatuau**	**86.03**	**315**	*e*P	**P**	**15 46 49.2**	**+0.6**
	comp=Z,11nm,0.6s,mb4.7						
BJI	**Beijing**	**86.04**	**315**	P	**P**	**15 46 49.6**	**+1.0**
BJI				AMB	AMB		
	comp=Z,22nm,0.6s,mb5.0						
ENH	**Enshi**	**86.14**	**304**	*e*P	**P**	**15 46 49.9**	**+0.6**
	comp=Z,18nm,0.8s,mb4.7						
SYO	**Syowa Base**	**86.46**	**193**	⇓P	**P**	**15 46 53.8**	**+3.9**
SYO	**Syowa Base**	**86.46**	**193**	⇓pP	pP	15 48 53.4	+3.9
HLID	**Hailey**	**86.56**	**41**	*e*P	**P**	**15 46 51.5**	**+0.6**
	comp=Z,1.9nm,0.8s,mb3.8						
GYA	**Guiyang**	**86.73**	**300**	⇑*i*P	**P**	**15 46 54.0**	**+1.8**
GYA				AMB	AMB		
	comp=Z,10.0nm,0.8s,mb4.5						
LAZ	**Ladron**	**86.86**	**52**	*e*P	**P**	**15 46 52.7**	**+0.1**
MNTX	**Cornudas Mount**	**86.94**	**55**	*e*P	**P**	**15 46 52.9**	**-0.2**
	comp=Z,15nm,1.4s,mb4.4						
MCK	**McKinley**	**87.23**	**13**	*e*P	**P**	**15 46 52.2**	**-1.4**
	comp=Z,5.6nm,0.8s,mb4.2						
TXAR	**Lajitas Array**	**87.24**	**57**	P	**P**	**15 46 55.6**	**+1.1**
	comp=Z,2.0nm,0.6s,mb3.9,baz=217,slow=6.3,SNR=16						
ANMO	**Albuquerque**	**87.61**	**51**	*e*P	**P**	**15 46 56.4**	**+0.3**
SNAA	**Sanae**	**87.75**	**178**	*e*P	**P**	**15 46 56.0**	**+0.1**
VNA3	**Neumayer Olymp**	**87.89**	**176**	⇓*i*	**P**	**15 47 00.7**	**+4.1**
VNA3	**Neumayer Olymp**	**87.89**	**176**	⇑*i*	**P**	**15 47 01.6**	**+5.0**
GDL2	**Guadalupe Moun**	**87.94**	**55**	*e*P	**P**	**15 46 58.2**	**+0.5**
MCMT	**McKenzie Canyo**	**88.18**	**40**	*e*P	**P**	**15 46 59.1**	**+0.6**
XAN	**Xi'an**	**88.25**	**307**	P	**P**	**15 47 00.4**	**+1.3**
XAN				AMB	AMB		
	comp=Z,32nm,0.9s,mb5.0						
DLBC	**Dease Lake**	**88.31**	**23**	P	**P**	**15 46 58.5**	**-0.3**
	comp=Z,0.8nm,0.3s,mb3.9,baz=175,slow=23,SNR=2.8						
VNA2	**Neumayer--Watz**	**88.33**	**177**	⇓*i*	**P**	**15 47 03.0**	**+4.4**
VNA2	**Neumayer--Watz**	**88.33**	**177**	⇓*i*	**P**	**15 47 04.8**	**+6.2**
COLA	**College**	**88.47**	**12**	*e*P	**P**	**15 46 57.8**	**-1.6**
IMA	**Indian Mountai**	**88.51**	**10**	*e*P	**P**	**15 46 59.5**	**-0.1**
	comp=Z,48nm,1.3s,mb5.2						
VNA1	**Neumayer--Stat**	**88.56**	**177**	⇑*i*	**P**	**15 47 04.5**	**+4.8**
VNA1	**Neumayer--Stat**	**88.56**	**177**	⇑*i*	**P**	**15 47 05.2**	**+5.5**
ILAR	**Eielson Array**	**88.58**	**13**	P	**P**	**15 46 58.6**	**-1.3**
	comp=Z,2.7nm,0.4s,mb4.4,baz=215,slow=5.3,SNR=45						
ILAR				pP	pP	15 48 52.5	-7.7
	comp=Z,0.2nm,0.9s,baz=322,slow=33,SNR=5.5						
CPRX	**Cap Rock**	**88.68**	**54**	*e*P	**P**	**15 47 01.5**	**+0.3**
HIA	**Hailar**	**88.87**	**325**	*e*P	**P**	**15 47 01.7**	**+0.1**
	comp=Z,3.0nm,0.6s,mb4.3						
QLMT	**Earthquake Lak**	**89.05**	**41**	*e*P	**P**	**15 47 03.0**	**+0.4**
BW06	**Boulder Array**	**89.19**	**43**	*e*P	**P**	**15 47 02.9**	**-0.4**
PDAR	**Pinedale Array**	**89.19**	**43**	P	**P**	**15 47 03.4**	**0.0**
	comp=Z,3.7nm,0.7s,mb4.3,baz=246,slow=2.6,SNR=9.0						
BILL	**Bilibino**	**89.29**	**354**	*e*P	**P**	**15 47 02.4**	**-0.8**
	comp=Z,2.9nm,0.6s,mb4.3						
BOZ	**Bozeman (W)**	**89.35**	**40**	*e*P	**P**	**15 47 03.9**	**-0.1**
KMI	**Kunming**	**89.42**	**297**	⇑*e*P	**P**	**15 47 06.3**	**+1.5**
KMI				AP	pP	15 49 06.8	+1.6
KMI				XP	sP	15 50 01.8	+2.7
KMI				S	S	15 57 07.8	+0.4
KMI				SP	SP	15 58 19.0	-3.2
KMI				XS		16 00 43.8	
KMI				SS	SS	16 03 22.6	-0.4
KMI				AMB	AMB		
	comp=Z,21nm,0.9s,mb5.0						
KMI				AMB	AMB		
	comp=Z,155nm,7.0s						
BDT	**Bhumibol Dam**	**89.65**	**288**	P	**P**	**15 47 08.0**	**+2.0**
DAWY	**Dawson**	**89.72**	**16**	*e*P	**P**	**15 47 04.5**	**-0.7**
CMAR	**Chiang Mai Arr**	**90.15**	**290**	P	**P**	**15 47 10.3**	**+2.1**
	comp=Z,15nm,0.8s,mb4.9,baz=117,slow=2.9,SNR=62						
YAK	**Yakutsk**	**92.33**	**338**	*e*P	**P**	**15 47 16.4**	**-0.9**
LZH	**Lanzhou**	**92.88**	**307**	*e*P	**P**	**15 47 20.5**	**0.0**
LZH				AP	pP	15 49 21.0	-0.4
LZH				XP	sP	15 50 15.1	+0.1
LZH				AMB	AMB		
	comp=Z,23nm,1.0s,mb5.2						
ULN	**Ulaanbaatar**	**95.52**	**319**	*e*P	**P**	**15 47 31.3**	**-0.8**
	comp=Z,2.0nm,0.6s,mb4.5						
SONM	**Songino Array**	**95.91**	**319**	P	**P**	**15 47 34.1**	**+0.2**
	comp=Z,0.9nm,0.4s,mb4.3,baz=128,slow=4.1,SNR=8.4						
YKA	**Yellowknife Ar**	**96.77**	**25**	P	**P**	**15 47 36.6**	**-0.8**
	comp=Z,0.3nm

comp=Z,35nm,1.0s
BAIF Baives 150.71 357 *e*PKP1 PKPdf 15 53 56.3 +7.8
comp=Z,11nm,0.7s
MANT Manisa 151.04 313 *e*P PKPdf 15 53 58.0 +8.6
DNZL Cakiroluk 151.09 312 P PKPdf 15 53 58.3 +8.8
FLN La Foliniere 151.99 3 *e*PKP1 PKPdf 15 53 58.7 +8.3
comp=Z,9.8nm,0.4s
CDF Champ du Feu 152.08 352 *e*PKP1 PKPdf 15 53 59.3 +8.8
comp=Z,4.7nm,0.5s
ROSF Rostrenen 152.17 7 *e*PKP1 PKPdf 15 53 58.8 +8.1
comp=Z,5.9nm,0.6s
LDF La Druitiere 152.18 3 *e*PKP1 PKPdf 15 53 59.0 +8.3
comp=Z,6.6nm,0.5s
SGMF Saint Gilles 152.33 6 *e*PKP1 PKPdf 15 53 59.3 +8.4
comp=Z,6.4nm,0.5s
GRR Gorron 152.34 4 *e*PKP1 PKPdf 15 53 59.6 +8.7
comp=Z,7.1nm,0.3s
HAU Haudompre 152.59 354 *e*PKP1 PKPdf 15 54 00.2 +8.9
comp=Z,4.2nm,0.4s
HINF Hinteralfeld 152.72 353 *e*PKP1 PKPdf 15 54 00.3 +8.9
DAVOX Davos 153.25 348 PKPbc PKPdf 15 54 01.7 +9.5
comp=Z,2.3nm,0.4s,baz=270,slow=11,SNR=5.6
MFF Saint Martin d 154.17 3 *e*PKP1 PKPdf 15 54 03.2 +10

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*BJI **18** 15:47:36.7, 53.01N×160.05E, h49km, mB4.4, mb4.7, Ms4.5, Msz4.4*
*MOS **18** 15:47:38.8±1.4, 52.96N×159.93E, h57km, mb4.6/17, Error ellipse: s-maj=11.5km s-min=5.8km az=92.2*
*NEIC **18** 15:47:39.7±0.3, 53.11N×159.77E, mb4.7/14, Error ellipse: s-maj=8.0km s-min=5.4km az=146.0*
*KRSC **18** 15:47:39.3±0.6, 52.86N×160.11E, h39km±3km, ML5.0*
*IDC **18** 15:47:39.7±0.6, 53.10N×159.81E, h38km±5km, mb4.1/26, mb1 4.3/28, mb1mx4.3/30, ML4.4/2, MS3.3/10, Ms1 3.3/10, ms1mx3.0/38, Error ellipse: s-maj=11.6km s-min=9.0km az=151.0*

ISC 18 15:47:37.5±0.2, 52.80N±0.02×160.24E±0.04, h40km, h40km±3.1km:pP-P, n206, σ1§27/236, mb4.6/86, MS3.6/13, 7C-2D, Off east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SPN	**Mys Shipunski**	**0.33**	**337**	*i* P	**P**	**15 47 47.5**	**+1.4**
NLC	**Nalytchevo**	**0.66**	**305**	*i* P	**P**	**15 47 51.0**	**+0.7**
NLC	**Nalytchevo**	**0.66**	**305**	*i* P	**P**	**15 47 50.9**	**+0.6**
SDLR	**Sedlovina**	**0.95**	**301**	*i* P	**P**	**15 47 55.3**	**+0.8**
UGLR	**Uglovaya**	**0.95**	**296**	*i* P	**P**	**15 47 55.4**	**+1.0**
PET	**Petropavlovsk**	**0.98**	**284**	P	**P**	**15 47 56.0**	**+1.0**
PET				S	**S**	**15 48 07.5**	**-0.4**
PET	**Petropavlovsk**	**0.98**	**284**	*i* P	**P**	**15 47 55.9**	**+0.9**
PET				*i* S	**S**	**15 48 07.6**	**-0.3**
PET	**Petropavlovsk**	**0.98**	**284**	⇓*i* PN	**P**	**15 47 55.2**	**+0.2**
PET				*i* S	**S**	**15 48 07.7**	**-0.2**
PET				pmax	pmax		
	comp=Z,6μm,0.5s						
PET				pmax	pmax		
	comp=N,5μm,0.5s						
PET				pmax	pmax		
	comp=E,3μm,0.5s						
PET				smax			
	comp=N,7μm,0.5s						
PET				smax			
	comp=E,8μm,0.6s						
PET	**Petropavlovsk**	**0.98**	**284**	*e*P	**P**	**15 47 55.3**	**+0.4**
SMAR	**Somma**	**0.98**	**299**	*i* P	**P**	**15 47 55.6**	**+0.6**
AVH	**Avacha**	**1.02**	**298**	*i* P	**P**	**15 47 56.5**	**+1.0**
AVH				*i* S	**S**	**15 48 08.8**	**0.0**
KOK	**Koryaka**	**1.09**	**298**	*i* P	**P**	**15 47 57.3**	**+0.9**
RUS	**Russkaya**	**1.11**	**252**	*i* P	**P**	**15 47 58.5**	**+1.8**
RUS				*e*S	**S**	**15 48 12.3**	**+1.2**
KII	**Karymskiy**	**1.33**	**340**	P	**P**	**15 48 00.5**	**+0.5**
KII				S	**S**	**15 48 15.4**	**-1.3**
KII	**Karymskiy**	**1.33**	**340**	*e*P	**P**	**15 48 00.5**	**+0.5**
KII				*e*S	**S**	**15 48 15.6**	**-1.1**
GRL	**Gorelyy**	**1.34**	**260**	*i* P	**P**	**15 48 02.2**	**+2.1**
GRL				*i* S	**S**	**15 48 18.6**	**+1.7**
GNL	**Ganaly**	**1.65**	**304**	*i* P	**P**	**15 48 05.8**	**+1.4**
GNL				*i* S	**S**	**15 48 25.0**	**+0.4**
MKZ	**Mys Kozlova**	**1.98**	**26**	P	**P**	**15 48 09.2**	**+0.1**
MKZ				S	**S**	**15 48 30.9**	**-1.9**
MKZ	**Mys Kozlova**	**1.98**	**26**	*e*P	**P**	**15 48 09.4**	**+0.3**
MKZ				*e*S	**S**	**15 48 31.5**	**-1.3**
MIPR	**Malaya Ipel'ka**	**2.19**	**258**	*e*P	**P**	**15 48 14.7**	**+2.6**
MIPR				*e*S	**S**	**15 48 40.9**	**+2.8**
TUMR	**Tumrok**	**2.49**	**359**	*i* P	**P**	**15 48 18.1**	**+1.6**
TUMR				*i* S	**S**	**15 48 46.8**	**+0.8**
PAU	**Pauzhetka**	**2.50**	**239**	*i* P	**P**	**15 48 19.6**	**+3.1**
PAU				*e*S	**S**	**15 48 48.3**	**+2.3**
PAU				Smax			
	comp=E,2μm,0.9s						
KMNR	**Kamenistaya**	**2.97**	**0**	*i* P	**P**	**15 48 24.8**	**+1.5**
KMNR				*e*S	**S**	**15 48 58.1**	**+0.1**
KPT	**Kopyto**	**3.18**	**360**	*i* P	**P**	**15 48 27.5**	**+1.2**
KPT				*e*S	**S**	**15 49 02.9**	**-0.4**
ZLN	**Zelenaya**	**3.25**	**6**	*i* P	**P**	**15 48 29.3**	**+2.1**
ZLN				*e*S	**S**	**15 49 05.9**	**+0.8**
ESO	**Esso**	**3.26**	**345**	*i* P	**P**	**15 48 28.1**	**+0.6**
ESO				*e*S	**S**	**15 49 02.6**	**-2.9**
ESO				Smax			
	comp=E,330nm,1.0s						
KOZ	**Kozyrevsk**	**3.28**	**356**	P	**P**	**15 48 29.0**	**+1.3**
KOZ	**Kozyrevsk**	**3.28**	**356**	*i* P	**P**	**15 48 28.8**	**+1.1**
LGNR	**Loginova**	**3.31**	**4**	*i* P	**P**	**15 48 30.5**	**+2.4**
LGNR				*e*S	**S**	**15 49 07.9**	**+1.3**
SKR	**Severo-Kuril's**	**3.32**	**232**	*e*P	**P**	**15 48 29.0**	**+0.7**
SKR				*i* S	**S**	**15 49 06.0**	**-1.0**
SKR	**Severo-Kuril's**	**3.32**	**232**	*e*PN	**P**	**15 48 29.0**	**+0.7**
SKR				*e*S	**S**	**15 49 06.0**	**-1.0**
SKR				pmax	pmax		
	comp=N,30nm,0.5s						
SKR				pmax	pmax		
	comp=E,50nm,0.5s						
SKR				pmax	pmax		
	comp=Z,70nm,0.5s						
SKR				smax			
	comp=N,1μm,2.0s						
SKR				smax			
	comp=E,1μm,2.0s						
SKR				smax			
	comp=N,350nm,0.5s						
SKR				smax			
	comp=E,850nm,0.5s						
CIRR	**Tsirk**	**3.34**	**5**	*e*P	**P**	**15 48 30.4**	**+1.8**
CIRR				*e*S	**S**	**15 49 08.1**	**+0.9**
KRSR	**Krestovskiy**	**3.44**	**3**	*e*P	**P**	**15 48 31.2**	**+1.3**
KRSR				*e*S	**S**	**15 49 09.3**	**-0.6**
ALID	**Alaid**	**3.49**	**238**	*e*P	**P**	**15 48 32.7**	**+2.0**
KLY	**Klyuchi**	**3.53**	**4**	P	**P**	**15 48 32.9**	**+1.6**
KLY				S	**S**	**15 49 11.9**	**-0.5**
KLY	**Klyuchi**	**3.53**	**4**	*e*P	**P**	**15 48 32.8**	**+1.5**
KLY				*e*S	**S**	**15 49 12.3**	**-0.1**
SRDR	**Sredinnyy**	**3.54**	**355**	*e*P	**P**	**15 48 31.8**	**+0.4**
KBTR	**Krutoberegovo**	**3.74**	**23**	P	**P**	**15 48 36.2**	**+2.0**
KBTR				S	**S**	**15 49 17.9**	**+0.4**
KBTR	**Krutoberegovo**	**3.74**	**23**	*e*P	**P**	**15 48 36.3**	**+2.1**
KBTR				*e*S	**S**	**15 49 18.2**	**+0.7**
KBG	**Krutoberegovo**	**3.75**	**22**	*e*P	**P**	**15 48 36.8**	**+2.4**
KBG				*e*S	**S**	**15 49 19.1**	**+1.2**
KBG				Smax			
	comp=E,2μm,0.8s						
SVLR	**Shiveluch**	**3.83**	**8**	*e*P	**P**	**15 48 37.3**	**+1.8**
SVLR				*e*S	**S**	**15 49 19.8**	**-0.1**
BKI	**Bering**	**4.16**	**52**	*e*P	**P**	**15 48 39.0**	**-1.1**
BKI				*e*S	**S**	**15 49 23.5**	**-4.6**
BKI				Smax			
	comp=E,120nm,0.4s						
OSSR	**Ossora**	**6.66**	**13**	*e*P	**P**	**15 49 18.3**	**+3.0**
FX1	**Attu Island--F**	**7.83**	**84**	Pn	**P**	**15 49 32.4**	**+0.7**
	comp=E,18nm,0.3s,baz=303,slow=4.1,SNR=331						
FX1				Sn	**S**	**15 50 55.2**	**-4.8**
	comp=E,9.1nm,0.3s,baz=293,slow=21,SNR=8.8						
MA2	**Magadan**	**8.60**	**326**	*e*PN	**P**	**15 49 41.3**	**-0.9**
MA2				pmax	pmax		
	comp=Z,10.0nm,1.1s						
ASAJ	**Asahikawa**	**14.54**	**240**	Pn	**P**	**15 51 03.5**	**+1.5**
	comp=Z,2.2nm,0.3s,baz=78,slow=10,SNR=16						
ASAJ				LR	LR	15 57 31.4	
	comp=Z,50nm,19.5s,baz=174,slow=41						
ASAJ	**Asahikawa**	**14.54**	**240**	P	**P**	**15 51 03.6**	**+1.5**
ASAJ				pmax	pmax		
	comp=Z,2.0nm,0.3s						
ASAJ				MLR	MLR		
	comp=Z,50nm,19.5s						
BILL	**Bilibino**	**15.57**	**8**	*e*P	**P**	**15 51 13.5**	**-1.8**
BILL				pmax	pmax		
	comp=Z,4.0nm,1.2s						
BILL				MLR	MLR		
	comp=Z,100nm,20.0s						
KLR	**Kul'dur**	**18.22**	**270**	*e*P	**P**	**15 51 48.2**	**-0.5**
YAK	**Yakutsk**	**18.70**	**312**	*e*P	**P**	**15 51 49.0**	**-5.5**
YAK				pmax	pmax		
	comp=Z,13nm,0.8s						
YAK				pmax	pmax		
	comp=N,2.0nm,1.0s						
YAK				pmax	pmax		
	comp=E,4.0nm,0.9s						
YAK				pmax	pmax		
	comp=Z,13nm,0.9s						
YAK				pmax	pmax		
	comp=N,3.0nm,1.1s						
YAK				pmax	pmax		
	comp=E,16nm,1.5s						
YAK	**Yakutsk**	**18.70**	**312**	*e*P	**P**	**15 51 50.3**	**-4.2**
	comp=E,56nm,1.0s						
MAJO	**Matsushiro**	**22.43**	**232**	*e*P	**P**	**15 52 35.0**	**+1.2**
	comp=E,42nm,0.9s,mb4.9						
MAT	**Matsushiro**	**22.43**	**232**	P	**P**	**15 52 34.8**	**+1.0**
MAT	**Matsushiro**	**22.43**	**232**	*e*P	**P**	**15 52 35.0**	**+1.2**
HIA	**Hailar**	**25.47**	**278**	*e*P	**P**	**15 53 00.3**	**-2.7**
	comp=E,21nm,0.8s,mb4.7						
IMA	**Indian Mountai**	**26.21**	**42**	*e*P	**P**	**15 53 11.0**	**+1.3**
	comp=E,21nm,1.0s,mb4.6						
BOD	**Bodaibo**	**26.37**	**300**	*e*P	**P**	**15 53 06.7**	**-4.6**
BOD				*e*	pP	15 53 18.4	-3.7
BOD				*e*		15 53 28.7	
JNU	**Nakatsue**	**28.81**	**239**	P	**P**	**15 53 33.6**	**0.0**
	comp=E,4.9nm,0.6s,mb4.4,baz=45,slow=9.1,SNR=4.7						
JNU				LR	LR	16 05 13.6	
	comp=E,42nm,18.2s,MS3.1,baz=143,slow=37						
JNU	**Nakatsue**	**28.81**	**239**	P	**P**	**15 53 33.6**	**0.0**
JNU				LR	LR	16 05 13.6	
ILAR	**Eielson Array**	**28.97**	**45**	P	**P**	**15 53 33.5**	**-1.2**
	comp=E,0.7nm,0.6s,mb3.5,baz=265,slow=8.6,SNR=11						
ILAR				LR	LR	16 05 32.7	
	comp=E,28nm,18.2s,MS2.9,baz=28,slow=37						
ILAR	**Eielson Array**	**28.97**	**45**	P	**P**	**15 53 33.5**	**-1.2**
ILAR				pmax	pmax		
	comp=Z,1.0nm,0.6s						
ILAR				MLR	MLR		
	comp=Z,29nm,18.2s						
ULN	**Ulaanbaatar**	**33.65**	**283**	*e*P	**P**	**15 54 12.1**	**-4.0**
ULN	**Ulaanbaatar**	**33.65**	**283**	*e*P	**P**	**15 54 13.7**	**-2.3**
	comp=Z,2.0nm,0.8s,mb4.1						
TLY	**Talaya**	**33.91**	**291**	*α i*P	**P**	**15 54 23.8**	**+5.5**
TLY				pmax	pmax		
	comp=Z,60nm,1.0s,mb5.5						
TLY				MLR	MLR		
	comp=Z,300nm,15.0s,MS4.1						
SONM	**Songino Array**	**34.05**	**284**	P	**P**	**15 54 17.2**	**-2.4**
	comp=Z,1.5nm,0.6s,mb4.1,baz=65,slow=8.3,SNR=9.9						
SONM				PcP	PcP	15 56 55.7	-1.1
	comp=Z,2.8nm,0.7s,baz=56,slow=1.6,SNR=14						
INK	**Inuvik**	**34.05**	**37**	P	**P**	**15 54 19.6**	**+0.3**
	comp=Z,2.2nm,0.6s,mb4.3,baz=296,slow=7.4,SNR=17						
INK	**Inuvik**	**34.05**	**37**	P	**P**	**15 54 19.6**	**+0.2**
INK				pmax	pmax		
	comp=Z,2.0nm,0.6s						
INK	**Inuvik**	**34.05**	**37**	*e*P	**P**	**15 54 19.6**	**+0.3**
	comp=Z,4.1nm,0.8s,mb4.4						
JOW	**Kunigami**	**35.21**	**235**	P	**P**	**15 54 31.4**	**+1.8**
	comp=Z,24nm,0.4s,mb5.5,baz=22,slow=7.5,SNR=32						
JOW				LR	LR	16 10 55.0	
	comp=Z,114nm,18.6s,MS3.6,baz=132,slow=40						
SSE	**Sheshan**	**35.62**	**248**	P	**P**	**15 54 30.0**	**-3.2**
SSE				AMB	AMB		
	comp=Z,28nm,0.7s,mb5.3						
SSE				AMB	AMB		
	comp=Z,91nm,7.4s						
NJ2	**Nanjing**	**36.24**	**252**	*e*P	**P**	**15 54 36.8**	**-1.6**
NJ2				AP	pP	15 54 53.0	+3.4
NJ2				XP	sP	15 54 58.0	+3.2
NJ2				AMB	AMB		
	comp=Z,10.0nm,0.5s,mb5.0						
NJ2				LR	LR		
	comp=N,370nm,17.9s,MS4.3						
NJ2				LR	LR		
	comp=E,260nm,19.0s,MS4.3						
NJ2				LR	LR		
	comp=Z,420nm,12.8s						
DLBC	**Dease Lake**	**38.16**	**53**	P	**P**	**15 54 57.2**	**+3.1**
	comp=Z,1.1nm,0.3s,mb4.0,baz=216,slow=22,SNR=2.8						
BBB	**Bella Bella**	**41.95**	**61**	LR	LR	16 10 04.4	
	comp=Z,55nm,19.9s,MS3.4,baz=25,slow=32						
GTA	**Gaotai**	**42.73**	**277**	*e*P	**P**	**15 55 31.0**	**-1.0**
GTA				AMB	AMB		
	comp=Z,5.0nm,0.8s,mb4.3						
ZAL	**Zalesovo**	**43.03**	**303**	P	**P**	**15 55 31.2**	**-3.1**
	comp=Z,1.0nm,0.3s,mb4.0,baz=344,slow=4.7,SNR=3.0						
ZAL				PcP	PcP	15 57 23.1	-1.4
	comp=Z,0.9nm,0.7s,baz=3.4,slow=1.1,SNR=3.0						
ZAL	**Zalesovo**	**43.03**	**303**	P	**P**	**15 55 31.2**	**-3.1**
ZAL						15 57 23.1	
ZAL				pmax	pmax		
	comp=Z,1.0nm,0.3s						
ZAL				pmax	pmax		
	comp=Z,1.0nm,0.7s						
ZAL	**Zalesovo**	**43.03**	**303**	P	**P**	**15 55 31.2**	**-3.1**
ZAL				PcP	PcP	15 57 23.1	-1.4
YKA	**Yellowknife Ar**	**43.33**	**42**	P	**P**	**15 55 37.5**	**+0.9**
	comp=Z,1.5nm,0.9s,mb3.7,baz=298,slow=8.3,SNR=20						
YKA				PcP	PcP	15 57 24.8	-0.6
	comp=Z,0.1nm,0.4s,baz=298,slow=3.3,SNR=3.8						
YKA	**Yellowknife Ar**	**43.33**	**42**	P	**P**	**15 55 37.5**	**+0.9**
YKA						15 57 24.8	
YKA				pmax	pmax		
	comp=Z,2.0nm,0.9s						
YKA	**Yellowknife Ar**	**43.33**	**42**	P	**P**	**15 55 37.5**	**+0.9**
YKA				PcP	PcP	15 57 24.8	-0.6
NVS	**Novosibirsk**	**43.35**	**305**	*i* P	**P**	**15 55 32.7**	**-4.2**
NVS				pmax	pmax		
	comp=N,1.0nm,0.5s						
NVS				pmax	pmax		
	comp=E,3.0nm,0.5s						
NVS				pmax	pmax		
	comp=Z,7.0nm,0.5s,mb4.7						
WMQ	**Urumqi**	**47.15**	**290**	*e*P	**P**	**15 56 06.9**	**-0.4**
WMQ				AP	pP	15 56 22.4	+3.7
WMQ				PCP	PcP	15 57 39.6	+0.7
WMQ				PP	PP	15 57 57.4	-0.4
WMQ				SCP		16 01 26.8	
WMQ				S	**S**	**16 02 51.8**	**-4.2**
WMQ				AMB	AMB		
	comp=Z,3.0nm,1.2s,mb4.1						
WMQ				AMB	AMB		
	comp=Z,24nm,7.4s						
WMQ				LR	LR		
	comp=N,311nm,19.2s,MS4.5						
WMQ				LR	LR		
	comp=E,325nm,18.3s,MS4.5						
WMQ				LR	LR		
	comp=Z,515nm,20.1s,MS4.5						
KURK	**Kurchatov**	**47.97**	**302**	*e*P	**P**	**15 56 09.9**	**-3.7**
KURK				pmax	pmax		
	comp=Z,2.0nm,0.7s,mb4.3						
KURK	**Kurchatov**	**47.97**	**302**	*e*P	**P**	**15 56 10.0**	**-3.6**
MKAR	**Makanchi Array**	**48.36**	**296**	P	**P**	**15 56 13.2**	**-3.5**
	comp=Z,2.7nm,0.4s,mb4.6,baz=57,slow=6.5,SNR=60						
MKAR				PcP	PcP	15 57 42.3	-0.9
	comp=Z,0.4nm,0.5s,baz=68,slow=6.7,SNR=1.9						
MKAR				LR	LR	16 17 34.0	
	comp=Z,39nm,19.4s,MS3.4,baz=274,slow=37						
MKAR	**Makanchi Array**	**48.36**	**296**	P	**P**	**15 56 13.2**	**-3.5**
MKAR						15 57 42.3	
MKAR				pmax	pmax		
	comp=Z,3.0nm,0.4s						
MKAR				MLR	MLR		
	comp=Z,39nm,19.4s						
TGY	**Tagaytay City**	**49.59**	**234**	P	**P**	**15 56 28.3**	**+1.7**
	comp=Z,115nm,0.3s,baz=167,slow=11,SNR=4.7						
TGY	**Tagaytay City**	**49.59**	**234**	P	**P**	**15 56 28.3**	**+1.7**
TGY				pmax	pmax		
	comp=Z,115nm,0.3s						
VOSK	**Vostochnaya**	**50.55**	**308**	P	**P**	**15 56 29.4**	**-4.0**
VOSK				pmax	pmax		
	comp=Z,2.0nm,0.9s,mb4.0						
BVA0	**Borovoye Array**	**50.64**	**309**	P	**P**	**15 56 30.5**	**-3.7**
BVAR	**Borovoye Array**	**50.64**	**309**	P	**P**	**15 56 30.1**	**-4.0**
	comp=Z,2.5nm,0.4s,mb4.5,baz=62,slow=7.7,SNR=16						
BVAR				PcP	PcP	15 57 49.2	-2.2
	comp=Z,1.8nm,0.9s,baz=45,slow=2.1,SNR=4.0						
BVAR				LR	LR	16 19 38.0	
	comp=Z,59nm,18.9s,MS3.6,baz=305,slow=38						
DAG	**Danmarks Havn**	**50.70**	**360**	⇑*i* P	**P**	**15 56 32.3**	**-2.1**
	comp=Z,6.7nm,0.6s,mb4.8						
DAG	**Danmarks Havn**	**50.70**	**360**	⇑*i* P	**P**	**15 56 32.3**	**-2.1**
DAG				pmax	pmax		
	comp=Z,7.0nm,0.6s,mb4.8						
ZRNK	**Zerenda**	**51.34**	**309**	P	**P**	**15 56 35.8**	**-3.6**
ZRNK				pmax	pmax		
	comp=Z,1.0nm,0.6s,mb3.9						
ARCES	**ARCESS Array B**	**53.60**	**342**	P	**P**	**15 56 52.4**	**-3.7**
	comp=Z,3.3nm,0.9s,mb4.3,baz=30,slow=8.8,SNR=9.6						
ARCES				PcP	PcP	15 58 00.4	-1.8
	comp=Z,1.1nm,0.5s,baz=34,slow=4.4,SNR=6.8						
ARCES	**ARCESS Array B**	**53.60**	**342**	P	**P**	**15 56 52.4**	**-3.7**
ARCES						15 58 00.4	
ARCES				pmax	pmax		
	comp=Z,3.0nm,0.9s						
ARCES				pmax	pmax		
	comp=Z,1.0nm,0.5s						
ARU	**Arti**	**53.67**	**318**	⇓*i* P	**P**	**15 56 52.8**	**-4.0**
ARU				*e*S	**S**	**16 04 25.5**	**-0.6**
ARU				*e*SS	SS	16 07 56.6	-10
ARU				pmax	pmax		
	comp=Z,3.0nm,0.7s,mb4.3						
SUMG	**Summit**	**54.25**	**7**	*e*P	**P**	**15 56 59.5**	**-1.3**
SUMG				*e*pP	pP	15 57 10.5	-2.0
HLID	**Hailey**	**54.45**	**63**	P	**P**	**15 57 04.1**	**+1.4**
BW06	**Boulder Array**	**57.59**	**61**	*e*P	**P**	**15 57 26.4**	**+1.2**
	comp=Z,1.5nm,0.6s,mb4.2						
BW06				*e*pP	pP	15 57 37.1	+0.1
PDAR	**Pinedale Array**	**57.59**	**61**	P	**P**	**15 57 26.9**	**+1.6**
	comp=Z,1.5nm,0.6s,mb4.2,baz=331,slow=4.0,SNR=16						
PDAR				pP	pP	15 57 38.1	+1.1
	comp=Z,1.3nm,0.7s,baz=322,slow=4.5,SNR=8.5						
JOF	**Joensuu**	**57.87**	**335**	*e*p	**P**	**15 57 23.4**	**-3.5**
AB31	**Akbulak array**	**58.05**	**311**	P	**P**	**15 57 24.1**	**-4.3**
CMAR	**Chiang Mai Arr**	**58.20**	**258**	P	**P**	**15 57 29.3**	**-0.5**
	comp=Z,1.1nm,0.6s,mb4.0,baz=27,slow=6.7,SNR=5.5						
CMAR				pP	pP	15 57 39.9	-1.7
	comp=Z,0.2nm,0.5s,baz=89,slow=17,SNR=3.0						
CMAR				PcP	PcP	15 58 20.2	-0.4
	comp=Z,1.4nm,0.9s,baz=1.1,slow=3.0,SNR=6.1						
CMAR				LR	LR	16 24 04.0	
	comp=Z,26nm,21.6s,MS3.3,baz=45,slow=38						
CMAR	**Chiang Mai Arr**	**58.20**	**258**	P	**P**	**15 57 29.3**	**-0.5**
CMAR				*PP	pP	15 57 39.9	-1.7
CMAR						15 58 20.3	
CMAR				pmax	pmax		
	comp=Z,1.0nm,0.6s						
CMAR				pmax	pmax		
	comp=Z,1.0nm,0.9s						
CMAR				MLR	MLR		
	comp=Z,26nm,21.7s						
ULM	**Lac du Bonnet**	**58.96**	**47**	P	**P**	**15 57 34.8**	**+0.1**
	comp=Z,3.1nm,0.7s,mb4.2,baz=316,slow=5.3,SNR=5.0						
KKN	**Kakani**	**59.46**	**277**	*e*P	**P**	**15 57 36.0**	**-2.5**
	comp=Z,13nm,0.4s,mb5.3						
RSSD	**Black Hills**	**59.50**	**56**	*e*P	**P**	**15 57 39.8**	**+1.3**
	comp=Z,8.8nm,0.8s,mb4.8						
PKI	**Pulchoki**	**59.54**	**276**	*e*P	**P**	**15 57 36.5**	**-2.5**
	comp=Z,11nm,0.6s,mb5.0						
GKN	**Gorkha**	**59.69**	**277**	*e*P	**P**	**15 57 37.4**	**-2.7**
	comp=Z,8.5nm,0.4s,mb5.1						
DMN	**Daman**	**59.70**	**277**	*e*P	**P**	**15 57 37.8**	**-2.3**
	comp=Z,10nm,0.5s,mb5.1						
KAF	**Kangasniemi**	**59.79**	**337**	*e*p	**P**	**15 57 36.8**	**-3.5**
	baz=28,slow=7.0						
FINES	**FINESS Array B**	**60.43**	**337**	P	**P**	**15 57 42.0**	**-2.7**
	comp=Z,3.2nm,0.5s,mb4.6,baz=43,slow=7.6,SNR=22						
FINES				LR	LR	16 24 01.8	
	comp=Z,19nm,21.1s,MS3.2,baz=155,slow=36						
FINES	**FINESS Array B**	**60.43**	**337**	P	**P**	**15 57 42.0**	**-2.6**
FINES				pmax	pmax		
	comp=Z,3.0nm,0.5s						
FINES				MLR	MLR		
	comp=Z,19nm,21.1s						
FINES	**FINESS Array B**	**60.43**	**337**	P	**P**	**15 57 42.0**	**-2.7**
FINES				LR	LR	16 24 01.8	
KOLN	**Koldanda**	**60.49**	**278**	*e*P	**P**	**15 57 42.6**	**-2.9**
	comp=Z,5.0nm,0.4s,mb4.9						
OBN	**Obninsk**	**62.81**	**327**	*e*P	**P**	**15 57 56.6**	**-4.2**
OBN				pmax	pmax		
	comp=Z,5.0nm,1.3s,mb4.5						
NB2	**NORSAR Subarra**	**63.85**	**344**	P	**P**	**15 58 04.8**	**-2.5**
	comp=Z,3.5nm,0.5s,mb4.7,baz=21,slow=6.5						
NOA	**NORSAR Array B**	**63.85**	**344**	P	**P**	**15 58 05.5**	**-1.9**
	comp=Z,3.3nm,0.4s,mb4.7,baz=21,slow=6.7,SNR=13						
NOA	**NORSAR Array B**	**63.85**	**344**	P	**P**	**15 58 05.5**	**-1.8**
NOA				pmax	pmax		
	comp=Z,3.0nm,0.4s						
HFS	**Hagfors**	**64.26**	**342**	P	**P**	**15 58 07.4**	**-2.6**
	comp=Z,6.3nm,0.5s,mb4.9,baz=45,slow=4.2,SNR=42						
HFS	**Hagfors**	**64.26**	**342**	P	**P**	**15 58 07.4**	**-2.6**
HFS				pmax	pmax		
	comp=Z,6.0nm,0.5s						
SCHQ	**Schefferville**	**65.88**	**28**	P	**P**	**15 58 19.6**	**-0.9**
	comp=Z,2.2nm,0.7s,mb4.3,baz=15,slow=11,SNR=6.3						
MNTX	**Cornudas Mount**	**67.92**	**67**	*e*P	**P**	**15 58 34.8**	**+1.0**
	comp=Z,0.7nm,0.7s,mb3.8						
MNTX				*e*pP	pP	15 58 45.6	-0.2
AKASG	**Malin Array Be**	**68.91**	**329**	P	**P**	**15 58 37.3**	**-2.3**
	comp=Z,1.2nm,0.3s,mb4.3,baz=26,slow=5.6,SNR=6.7						
ZEI	**Tsey**	**70.17**	**315**	*e*P	**P**	**15 58 42.0**	**-5.4**
ZEI				*e*		16 07 48.0	
ZEI				pmax	pmax		
	comp=Z,50nm,6.0s						
TXAR	**Lajitas Array**	**70.68**	**67**	P	**P**	**15 58 52.4**	**+1.6**
	comp=Z,1.5nm,0.5s,mb4.2,baz=300,slow=4.0,SNR=12						
TXAR	

BAIF	**Baives**	**75.53**	**344**	*e*P		**P**	**15 59 18.1**	**-0.6**
	comp=Z,16nm,0.6s,mb4.8							
WRA	**Warramunga Arr**	**75.84**	**205**	P		**P**	**15 59 21.4**	**+0.2**
	comp=Z,2.8nm,1.1s,mb4.1,baz=19,slow=5.9,SNR=8.8							
WRA	**Warramunga Arr**	**75.84**	**205**	P		**P**	**15 59 21.4**	**+0.3**
WRA				pmax	pmax			
	comp=Z,3.0nm,1.1s							
CDF	**Champ du Feu**	**76.58**	**342**	*e*P		**P**	**15 59 24.2**	**-0.5**
	comp=Z,13nm,0.7s,mb4.7							
FITZ	**Fitzroy Crossi**	**76.70**	**214**	P		**P**	**15 59 26.9**	**+0.9**
BRTR	**Keskin Array B**	**76.91**	**321**	P		**P**	**15 59 25.6**	**-1.2**
	comp=Z,1.9nm,0.7s,mb4.1,baz=45,slow=3.5,SNR=9.3							
BRTR				LR		LR	16 34 00.3	
	comp=Z,21nm,19.1s,MS3.5,baz=350,slow=36							
HAU	**Haudompre**	**77.14**	**342**	*e*P		**P**	**15 59 27.2**	**-0.7**
	comp=Z,10nm,0.5s,mb4.7							
HINF	**Hinteralfeld**	**77.23**	**342**	*e*P		**P**	**15 59 27.5**	**-0.9**
	comp=Z,6.3nm,0.6s,mb4.4							
FLN	**La Foliniere**	**77.50**	**347**	*e*P		**P**	**15 59 28.9**	**-1.0**
	comp=Z,19nm,0.7s,mb4.8							
DAVOX	**Davos**	**77.62**	**340**	P		**P**	**15 59 30.8**	**+0.2**
LDF	**La Druitiere**	**77.62**	**347**	*e*P		**P**	**15 59 29.4**	**-1.1**
	comp=Z,4.2nm,0.4s,mb4.4							
GRR	**Gorron**	**77.92**	**347**	*e*P		**P**	**15 59 31.5**	**-0.7**
	comp=Z,19nm,0.6s,mb4.9							
SGMF	**Saint Gilles**	**78.27**	**348**	*e*P		**P**	**15 59 33.6**	**-0.5**
	comp=Z,33nm,0.6s,mb5.1							
ROSF	**Rostrenen**	**78.27**	**349**	*e*P		**P**	**15 59 33.6**	**-0.5**
	comp=Z,16nm,0.6s,mb4.8							
HYF	**Humbligny**	**78.50**	**345**	*e*P		**P**	**15 59 35.2**	**-0.2**
CABF	**La Chapelle**	**78.53**	**342**	*e*P		**P**	**15 59 35.3**	**-0.3**
	comp=Z,17nm,0.9s,mb4.7							
SSF	**Saint Saulge**	**78.55**	**344**	*e*P		**P**	**15 59 35.1**	**-0.6**
	comp=Z,13nm,0.7s,mb4.6							
QUIF	**Quistinic**	**78.67**	**349**	*e*P		**P**	**15 59 35.6**	**-0.7**
	comp=Z,10nm,0.6s,mb4.7							
AVF	**Avril sur Loir**	**78.84**	**344**	*e*P		**P**	**15 59 36.8**	**-0.5**
	comp=Z,26nm,0.8s,mb4.4							
SMF	**Signal de Mont**	**78.90**	**344**	*e*P		**P**	**15 59 37.1**	**-0.5**
	comp=Z,14nm,0.7s,mb4.7							
BGF	**Bois d'Agland**	**79.15**	**344**	*e*P		**P**	**15 59 39.4**	**+0.4**
LPL	**La Plagne**	**79.46**	**341**	*e*P		**P**	**15 59 41.4**	**+0.7**
	comp=Z,40nm,0.8s,mb5.1							
LPG	**La Plagne**	**79.48**	**341**	*e*P		**P**	**15 59 41.6**	**+0.8**
	comp=Z,42nm,0.8s,mb5.1							
TCF	**Toulx Ste Croi**	**79.52**	**345**	*e*P		**P**	**15 59 40.6**	**-0.4**
	comp=Z,12nm,0.6s,mb4.7							
ASAR	**Alice Springs**	**79.52**	**204**	P		**P**	**15 59 42.5**	**+1.1**
	comp=Z,3.1nm,1.0s,mb4.2,baz=16,slow=5.4,SNR=36							
MFF	**Saint Martin d**	**79.57**	**346**	*e*P		**P**	**15 59 40.5**	**-0.7**
	comp=Z,12nm,0.6s,mb4.7							
ORIF	**Oris-en-Rattie**	**80.20**	**342**	*e*P		**P**	**15 59 45.3**	**+0.6**
	comp=Z,30nm,0.8s,mb5.0							
MBDF	**Montbardon**	**80.22**	**341**	*e*P		**P**	**15 59 44.8**	**0.0**
	comp=Z,11nm,0.7s,mb4.6							
VIVF	**Saint-Julien-l**	**80.49**	**343**	*e*P		**P**	**15 59 46.5**	**+0.3**
	comp=Z,24nm,0.8s,mb4.9							
RJF	**Les Rejaudoux**	**80.59**	**345**	*e*P		**P**	**15 59 46.5**	**-0.2**
	comp=Z,5.7nm,0.5s,mb4.5							
CAF	**Calviac**	**80.87**	**344**	*e*P		**P**	**15 59 48.7**	**+0.5**
	comp=Z,11nm,0.6s,mb4.7							
SBF	**Sospel**	**80.91**	**340**	*e*P		**P**	**15 59 48.9**	**+0.4**
	comp=Z,12nm,0.5s,mb4.8							
LFF	**La Frestale**	**81.06**	**345**	*e*P		**P**	**15 59 49.4**	**+0.2**
	comp=Z,16nm,0.7s,mb4.8							
SMRF	**Simiane la Rot**	**81.17**	**342**	*e*P		**P**	**15 59 50.6**	**+0.8**
	comp=Z,5.6nm,0.6s,mb4.4							
FRF	**La Foret Royal**	**81.36**	**341**	*e*P		**P**	**15 59 50.7**	**-0.1**
	comp=Z,6.1nm,0.7s,mb4.4							
LASF	**Ste Croix**	**81.39**	**343**	*e*P		**P**	**15 59 51.6**	**+0.6**
	comp=Z,8.4nm,0.6s,mb4.5							
RAR	**Rarotonga**	**81.47**	**143**	P		**P**	**15 59 56.2**	**+4.3**
LMR	**La Mourre**	**81.61**	**341**	*e*P		**P**	**15 59 51.9**	**-0.2**
	comp=Z,10nm,0.6s,mb4.6							
HASS	**Wahat al Ahsa'**	**81.76**	**301**	P		**P**	**15 59 51.1**	**-2.2**
MTLF	**Montolieu**	**82.39**	**344**	*e*P		**P**	**15 59 56.7**	**+0.6**
	comp=Z,20nm,0.9s,mb4.7							
EPF	**Esparros**	**82.99**	**345**	*e*P		**P**	**15 59 59.2**	**0.0**
	comp=Z,16nm,1.0s,mb4.7							
ETSF	**Etsaut**	**83.25**	**346**	*e*P		**P**	**16 00 01.5**	**+1.0**
	comp=Z,22nm,0.7s,mb5.0							
HILS	**Ha'il**	**83.90**	**308**	P		**P**	**16 00 03.7**	**-0.4**
IDI	**Anoyia**	**84.06**	**325**	P		**P**	**16 00 02.1**	**-2.6**
	baz=22,slow=11							
MZLS	**Mizel**	**85.02**	**304**	P		**P**	**16 00 08.9**	**-0.9**
JMQS	**Jabal Moqyreh**	**85.34**	**313**	P		**P**	**16 00 11.0**	**-0.2**
JMOS	**Jabal al Moail**	**85.43**	**314**	P		**P**	**16 00 11.5**	**-0.2**
HAQS	**Haql**	**85.61**	**314**	P		**P**	**16 00 12.1**	**-0.5**
TBKS	**Tabuk**	**85.61**	**313**	P		**P**	**16 00 12.6**	**0.0**
STKA	**Stephens Creek**	**85.87**	**196**	P		**P**	**16 00 15.3**	**+1.5**
	comp=Z,1.7nm,0.6s,mb4.5,baz=18,slow=7.1,SNR=3.4							
STKA	**Stephens Creek**	**85.87**	**196**	P		**P**	**16 00 15.3**	**+1.5**
AYUS	**'Aynunah**	**86.21**	**314**	P		**P**	**16 00 15.3**	**-0.3**
AFFS	**'Afif**	**86.21**	**305**	P		**P**	**16 00 14.7**	**-0.9**
ESDC	**Sonseca Array**	**86.89**	**348**	P		**P**	**16 00 18.4**	**-0.2**
	comp=Z,1.5nm,0.5s,mb4.5,baz=2.8,slow=4.1,SNR=7.5							
ESDC				sP		sP	16 00 34.0	-1.2
	comp=Z,0.6nm,0.3s,baz=273,slow=20,SNR=2.1							
QSPA	**South Pole Qui**	**142.54**	**180**	*e*P		PKPdf	16 07 01.4	-2.8
SUR	**Sutherland**	**144.46**	**289**	PKP		PKPdf	16 07 10.6	+1.7
	comp=Z,12nm,1.2s,baz=297,slow=5.7,SNR=4.5							

WEL 18 15:57:23.9±0.6, 35.77S×177.90E, h276km±11km, ML3.8/1, Error ellipse: s-maj=16.1km s-min=15.7km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
PUZ	**Puketiti**	**2.31**	**173**	PN		P	15 58 11.0	-0.7
PUZ				SN		S	15 58 48.0	-0.8
URZ	**Urewera**	**2.56**	**194**	PN		P	15 58 14.1	+0.1
URZ				SN		S	15 58 52.4	-0.6
MWZ	**Matawai**	**2.58**	**187**	PN		P	15 58 14.4	+0.3
MWZ				SN		S	15 58 52.8	-0.5
BKZ	**Black Stump Fm**	**3.57**	**198**	PN		P	15 58 25.1	+0.6
BFZ	**Birch Farm**	**5.07**	**194**	*e*PN		P	15 58 41.9	+0.1
BFZ				*e*SN		S	15 59 43.9	+1.0
MRZ	**Mangatainoka R**	**5.21**	**200**	PN		P	15 58 43.0	-0.5

MOS 18 15:59:20.0±1.4, 59.40N×50.70E, h10km, mb4.3/1, Error ellipse: s-maj=41.3km s-min=29.0km az=104.8, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
SYKR	**Syktyvkar**	**2.28**	**1**	*e*P		Pn	15 59 56.5	-1.8
SYKR				*e*S		Sn	16 00 25.1	-1.6
SYKR				*e*S		Sn	16 00 32.0	+5.3
PR1R	**Pomanovo**	**3.11**	**91**	*e*P		Pn	16 00 11.7	+1.6
PR1R				*e*			16 00 49.1	
PR1R				pmax	pmax			
	comp=Z,31nm,0.5s							
PR1R				smax				
	comp=N,172nm,0.4s							
SOKR	**Solikamsk**	**3.11**	**84**	*e*P		Pn	16 00 12.4	+2.2
SOKR				*e*			16 00 46.0	
PRGR	**Permogore**	**3.37**	**314**	*e*P		Pn	16 00 14.0	+0.3
PRGR				*e*			16 00 54.4	
PRGR				pmax	pmax			
	comp=Z,14nm,0.5s							
PRGR				smax				
	comp=N,274nm,1.0s							
ARU	**Arti**	**5.14**	**122**	*e*P		Pn	16 00 31.7	-7.2
ARU				*e*			16 01 48.9	
ARU				pmax	pmax			
	comp=Z,4.0nm,0.5s							
ARU				pmax	pmax			
	comp=Z,10.0nm,0.5s							
ARU				smax				
	comp=N,84nm,0.6s							
OBN	**Obninsk**	**8.78**	**247**	P		P	16 01 29.4	-0.5
OBN				*e*			16 03 01.6	
OBN				pmax	pmax			
	comp=Z,4.0nm,0.5s							
OBN				smax				
	comp=E,16nm,0.6s							
OBN				smax				
	comp=N,67nm,0.8s							

IDC 18 16:06:35.3±4.5,30.19S×177.63W,h90km±42km, mb4.2/4, mb1 4.2/7, mb1mx4.0/15, MS3.5/3, Ms1 3.4/3, ms1mx3.1/15, Error ellipse: s-maj=43.0km s-min=21.3km az=164.0

NEIC 18 16:06:36.1±0.5,30.26S×177.67W, mb4.4/5, Error ellipse: s-maj=14.7km s-min=10.4km az=140.0

ISC 18 16:06:34.9±2.1, 30.50S±0.08×177.7W±0.2, h106km±24km, h100km±2.5km; pP-P, n40, σ1§30/33, mb4.4/6, 2C, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
PUZ	**Puketiti**	**8.28**	**203**	*e*P		**P**	**16 08 34.1**	**+0.4**
PUZ				*e*S		**S**	**16 10 13.3**	**+7.1**
URZ	**Urewera**	**8.87**	**208**	P		**P**	**16 08 42.5**	**+0.9**
	0.4nm,0.3s,baz=61,slow=10,SNR=7.9							
URZ				S		**S**	**16 10 27.2**	**+6.7**
	5.6nm,0.3s,baz=114,slow=22,SNR=17							
URZ	**Urewera**	**8.87**	**208**	*e*P		**P**	**16 08 41.9**	**+0.3**
KNZ	**Kokohu**	**9.33**	**203**	*e*S		**S**	**16 10 36.2**	**+4.6**
BFZ	**Birch Farm**	**11.30**	**204**	*e*S		**S**	**16 11 20.2**	**+1.3**
MRZ	**Mangatainoka R**	**11.54**	**207**	*e*P		**P**	**16 09 12.3**	**-5.0**
MRZ				*e*S		**S**	**16 11 22.8**	**-1.6**
MTW	**Mount Morrison**	**11.99**	**206**	*e*S		**S**	**16 11 33.5**	**-1.8**
CAW	**Cannon Point**	**12.12**	**207**	*e*S		**S**	**16 11 38.6**	**+0.3**
MRW	**Makara Radio**	**12.37**	**208**	S		**S**	**16 11 45.7**	**+1.5**
KHZ	**Kahutara**	**13.84**	**208**	*e*P		**P**	**16 09 47.2**	**-0.2**
KHZ				*e*S		**S**	**16 12 15.8**	**-2.9**
DSZ	**Denniston Nort**	**14.08**	**214**	*e*S		**S**	**16 12 23.7**	**-0.7**
RPZ	**Rata Peaks**	**15.95**	**211**	P		**P**	**16 10 18.6**	**+4.3**
	0.5nm,0.3s,baz=48,slow=12,SNR=3.9							
RPZ				S		**S**	**16 13 04.3**	**-3.3**
	0.4nm,0.3s,baz=193,slow=15,SNR=5.8							
RAR	**Rarotonga**	**18.54**	**64**	P		**P**	**16 10 44.1**	**-1.7**
	1.3nm,0.3s,baz=15,slow=15,SNR=3.5							
RAR				LR		LR	16 15 50.8	
	comp=Z,125nm,19.2s,baz=218,slow=30							
RAR	**Rarotonga**	**18.54**	**64**	P		**P**	**16 10 44.1**	**-1.7**
RAR				LR		LR	16 15 50.8	
CTA	**Charters Tower**	**34.11**	**279**	*e*P		**P**	**16 13 11.6**	**+0.1**
	2.7nm,0.4s,mb4.4							
CTA	**Charters Tower**	**34.11**	**279**	P		**P**	**16 13 11.8**	**+0.3**
	3.1nm,0.4s,mb4.5,baz=96,slow=10,SNR=19							
CTA				LR		LR	16 25 34.3	
	comp=Z,56nm,20.1s,baz=191,slow=33							
CTAO	**Charters Tower**	**34.11**	**279**	*e*P		**P**	**16 13 11.5**	**0.0**
	3.0nm,0.4s,mb4.5							
STKA	**Stephens Creek**	**34.74**	**257**	*e*P		**P**	**16 13 19.2**	**+2.4**
	4.0nm,0.8s,mb4.3							
STKA	**Stephens Creek**	**34.74**	**257**	P		**P**	**16 13 19.4**	**+2.5**
	4.8nm,0.7s,mb4.5,baz=82,slow=8.3,SNR=10							
STKA				LR		LR	16 24 33.4	
	comp=Z,85nm,19.8s,baz=201,slow=31							
AS12	**Alice Springs**	**43.40**	**267**	*e*P		**P**	**16 14 28.9**	**+0.2**
	3.2nm,0.8s,mb4.1							
ASAR	**Alice Springs**	**43.40**	**267**	P		**P**	**16 14 28.7**	**0.0**
	1.8nm,0.5s,mb4.1,baz=104,slow=7.6,SNR=45							
ASAR				pP		pP	16 14 51.8	-1.6
	1.3nm,0.8s,baz=105,slow=8.0,SNR=4.0							
WB2	**Warramunga Arr**	**44.39**	**272**	*e*P		**P**	**16 14 36.0**	**-0.7**
WRAB	**Tennant Creek**	**44.39**	**272**	*e*P		**P**	**16 14 35.9**	**-0.8**
	9.4nm,0.4s,mb4.9							
WRAB				pP		pP	16 14 58.6	-2.9
WRA	**Warramunga Arr**	**44.40**	**272**	P		**P**	**16 14 36.6**	**-0.2**
	5.4nm,0.5s,mb4.5,baz=110,slow=7.6,SNR=35							
WRA				pP		pP	16 15 01.2	-0.4
	2.8nm,0.7s,baz=110,slow=7.9,SNR=4.9							
SBA	**Scott Base**	**47.96**	**184**	P		**P**	**16 15 06.2**	**+2.0**
	2.2nm,0.7s,mb4.1							
QSPA	**South Pole Qui**	**59.61**	**180**	*e*P		**P**	**16 16 42.5**	**+13**
QSPA				LR		LR		
	comp=Z,190nm,21.0s							
VNA3	**Neumayer Olymp**	**78.19**	**176**	*i*		**P**	**16 18 32.2**	**+8.6**
VNA2	**Neumayer--Watz**	**78.63**	**177**	*i*		**P**	**16 18 34.0**	**+8.0**
MKAR	**Makanchi Array**	**118.06**	**310**	PKP		PKPdf	16 25 09.9	+0.9
	comp=Z,0.5nm,0.9s,baz=207,slow=2.7,SNR=3.7							
BVAR	**Boroye Array**	**126.68**	**316**	PKP		PKPdf	16 25 27.2	+1.7
	comp=Z,0.4nm,0.5s,baz=270,slow=1.5,SNR=4.6							
ARCES	**ARCESS Array B**	**138.75**	**348**	PKP		PKPdf	16 25 50.6	+2.8
	comp=Z,1.7nm,0.9s,baz=27,slow=2.0,SNR=2.7							
KAF	**Kangasniemi**	**144.74**	**341**	*e*pkp		PKPdf	16 25 57.3	-1.1
	baz=30,slow=2.8							
FINES	**FINESS Array B**	**145.34**	**340**	PKPbc		PKPbc	16 25 59.9	-0.1
	comp=Z,7.1nm,0.4s,baz=61,slow=3.8,SNR=67							
NB2	**NORSAR Subarra**	**148.89**	**352**	PKP			16 26 09.2	
	comp=Z,3.6nm,1.1s,baz=16,slow=3.1							
NOA	**NORSAR Array B**	**148.89**	**352**	PKPbc		PKPdf	16 26 10.9	+5.6
	comp=Z,2.3nm,0.8s,baz=17,slow=2.8,SNR=4.4							
HFS	**Hagfors**	**149.40**	**349**	PKPbc		PKPdf	16 26 11.8	+5.6
	comp=Z,2.6nm,0.6s,baz=124,slow=5.3,SNR=4.0							
ASF	**Jabal al Asfar**	**150.51**	**282**	PKPbc		PKPdf	16 26 16.5	+7.7
	comp=Z,1.1nm,0.3s,baz=220,slow=6.5,SNR=3.3							
AKASG	**Malin Array Be**	**151.56**	**323**	PKPbc		PKPdf	16 26 17.8	+8.1
	comp=Z,1.7nm,0.7s,baz=45,slow=2.6,SNR=7.3							
BRTR	**Keskin Array B**	**152.91**	**299**	PKPbc		PKPdf	16 26 21.4	+9.4
	comp=Z,0.6nm,0.5s,baz=104,slow=5.1,SNR=4.4							
BRTR				PKPab		PKPab	16 26 34.0	+0.7
	comp=Z,0.6nm,0.6s,baz=108,slow=3.9,SNR=3.6							
CLL	**Collm**	**157.75**	**342**	*e*PKP2		PKPab	16 26 51.0	-2.6

NEIC 18 16:25:07.3±6.5,23.77S×179.65W, h540km±51km, mb4.5/4, Error ellipse: s-maj=122.5km s-min=30.9km az=59.0

IDC 18 16:25:07.7±9.3,23.93S×179.97E, h495km±141km, mb3.4/6, mb1 3.5/7, mb1mx3.3/14, Error ellipse: s-maj=136.0km s-min=25.0km az=57.0

ISC 18 16:25:08.7±4.1, 23.9S±0.2×180.E±0.6, h540km, n13, σ0§56/14, mb4.2/9, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
URZ	**Urewera**	**14.51**	**189**	P		**P**	**16 28 13.5**	**+0.3**
	0.9nm,0.3s,baz=6.3,slow=9.2,SNR=5.5							
URZ				S		**S**	**16 30 41.6**	**-0.2**
	0.4nm,0.3s,baz=130,slow=19,SNR=2.7							
RPZ	**Rata Peaks**	**21.08**	**198**	P		**P**	**16 29 16.0**	**0.0**
	7.2nm,1.1s,mb4.2,baz=39,slow=20,SNR=2.5							
CTA	**Charters Tower**	**31.48**	**270**	*e*P		**P**	**16 30 48.6**	**+0.8**
	4.4nm,0.4s,mb4.3							
CTA	**Charters Tower**	**31.48**	**270**	P		**P**	**16 30 48.9**	**+1.1**
	7.2nm,0.5s,mb4.4,baz=98,slow=11,SNR=27							
STKA	**Stephens Creek**	**34.72**	**248**	P		**P**	**16 31 15.7**	**+0.8**
	1.9nm,0.9s,mb3.6,baz=102,slow=9.3,SNR=4.1							
AS12	**Alice Springs**	**42.03**	**261**	*e*P		**P**	**16 32 14.7**	**+0.3**
	1.1nm,0.3s,mb3.9							
ASAR	**Alice Springs**	**42.03**	**261**	P		**P**	**16 32 14.8**	**+0.4**
	1.2nm,0.4s,mb3.8,baz=98,slow=7.4,SNR=27							
ASAR				ScP			16 37 02.2	
	0.6nm,0.8s,baz=114,slow=4.3,SNR=5.1							
WB2	**Warramunga Arr**	**42.39**	**266**	*e*P		**P**	**16 32 16.9**	**-0.4**
WRAB	**Tennant Creek**	**42.40**	**266**	*e*P		**P**	**16 32 16.8**	**-0.5**
	5.8nm,0.3s,mb4.6							
WRA	**Warramunga Arr**	**42.41**	**266**	P		**P**	**16 32 17.4**	**0.0**
	2.6nm,0.4s,mb4.2,baz=96,slow=8.3,SNR=28							
FORT	**Forrest**	**46.31**	**250**	*e*P		**P**	**16 32 46.6**	**-1.0**
	22nm,0.6s,mb4.9							
KAKA	**Kakadu**	**46.35**	**275**	*e*P		**P**	**16 32 47.5**	**-0.6**
	19nm,1.4s,mb4.4							
FITZ	**Fitzroy Crossi**	**50.83**	**266**	P		**P**	**16 33 21.8**	**+0.2**
	1.5nm,0.6s,mb3.5,baz=149,slow=3.6,SNR=14							

MAN 18 17:03:44.4, 12.13N×123.89E, h8km, mb4.8, ML3.7, MS3.7
MAN F DIMASALANG MASBATE INTENSITY III.

IDC 18 17:03:44.9±1.1, 11.76N×123.72E, mb3.6/5, mb1 4.0/7, mb1mx3.7/21, ML4.0/2, MS3.2/2, Ms1 3.2/2, ms1mx2.7/28, Error ellipse: s-maj=40.4km s-min=15.7km az=52.0

NEIC 18 17:03:48.6±4.0, 11.72N×123.68E, h27km±29km, mb4.5/1, Error ellipse: s-maj=17.7km s-min=9.6km az=66.0

NEIC Felt [III PIVS] at Dimasalang, Masbate.

ISC 18 17:03:44.5±0.3, 12.08N±0.03×123.87E±0.02, h8km, n33, σ1§17/49, mb3.8/6, MS3.0/2, 15C-2D, Luzon

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
MMPH	**Masbate**	**0.36**	**319**	↓*i*	P	**Pg**	**17 03 51.7**	**-0.2**
MMPH				*i*	S	**Sg**	**17 03 57.3**	**+0.5**
CNP	**Catarman**	**0.89**	**61**	↑*e*	P	**Pb**	**17 04 00.6**	**-1.2**
CNP				*e*	S	**Sb**	**17 04 13.3**	**-0.2**
RCP	**Roxas**	**1.21**	**245**	↓*e*	P	**Pb**	**17 04 07.7**	**+0.4**
RCP				*e*	S	**Sb**	**17 04 24.7**	**+1.7**
OCLP	**Ormoc**	**1.25**	**144**	↑*e*	P	**Pb**	**17 04 08.5**	**+0.5**
PLP	**Palo**	**1.42**	**130**	*e*	P	**Pn**	**17 04 09.9**	**-0.8**
PLP				*i*	S	**Sb**	**17 04 31.2**	**+2.3**
PVCP	**Virac**	**1.53**	**11**	↑*e*	P	**Pn**	**17 04 10.8**	**-1.6**
PVCP				*e*	S	**Sb**	**17 04 32.0**	**-0.2**
KALP	**Kalibo**	**1.55**	**255**	*e*	P	**Pn**	**17 04 13.5**	**+0.9**
KALP				*e*	S	**Sb**	**17 04 31.0**	**-1.7**
BESP	**Borongan**	**1.61**	**107**	↑*e*	P	**Pn**	**17 04 12.0**	**-1.4**
AUQP	**San Andres**	**1.70**	**317**	↑*e*	P	**Pn**	**17 04 15.4**	**+0.8**
LLP	**Lapu-Lapu**	**1.75**	**177**	↑*e*	P	**Pn**	**17 04 15.3**	**-0.2**
LLP				*i*	S	**Sn**	**17 04 37.7**	**-0.5**
OTRP	**Odiongan**	**1.83**	**279**	↑*e*	P	**Pn**	**17 04 15.9**	**-0.6**
OTRP				*e*	S	**Sn**	**17 04 39.5**	**-0.6**
MSLP	**Maasin**	**2.17**	**153**	↑*e*	P	**Pn**	**17 04 22.4**	**+1.0**
MSLP				*e*	S	**Sn**	**17 04 40.0**	**-8.7**
TBP	**Tagbilaran**	**2.37**	**180**	*e*	P	**Pn**	**17 04 23.9**	**-0.4**
TBP				*e*	S	**Sn**	**17 04 57.9**	**+3.9**
BOAC	**Boac**	**2.40**	**305**	↑*e*	P	**Pn**	**17 04 23.7**	**-1.0**
BOAC				*e*	S	**Sn**	**17 04 49.1**	**-5.5**
SJMP	**San Jose**	**2.71**	**278**	↑*e*	P	**Pn**	**17 04 29.5**	**+0.3**
SJMP				*e*	S	**Sn**	**17 05 04.9**	**+2.4**
SNPH	**Sibulan**	**2.79**	**193**	*e*	P	**Pn**	**17 04 31.0**	**+0.7**
CUYO	**Cuyo Island**	**3.05**	**247**	↑*e*	P	**Pn**	**17 04 34.5**	**+0.5**
CUYO				*e*	S	**Sn**	**17 05 10.8**	**-0.3**
TGY	**Tagaytay City**	**3.49**	**305**	Pn		**Pn**	**17 04 42.5**	**+2.3**
	21nm,0.3s,baz=164,slow=12,SNR=5.1							
TGY				Sn		**Sn**	**17 05 26.0**	**+3.7**
	66nm,0.3s,baz=88,slow=17,SNR=3.5							
TGY				Lg			17 05 38.8	
	71nm,0.3s,baz=77,slow=8.6,SNR=4.1							
BUSP	**Coron**	**3.59**	**269**	↑*e*	P	**Pn**	**17 04 41.4**	**-0.2**
BUSP				*e*	S	**Sn**	**17 05 22.3**	**-2.4**
LUBP	**Lubang**	**3.89**	**295**	↑*e*	P	**Pn**	**17 04 46.2**	**+0.2**
LUBP				*e*	S	Sn	17 05 56.8	+24
PAGZ	**Pagadian**	**4.23**	**187**	↑*e*	P	**Pn**	**17 04 51.0**	**+0.2**
ENPP	**El Nido**	**4.44**	**259**	↑*e*	P	**Pn**	**17 04 53.4**	**-0.3**
ENPP				*e*	S	**Sn**	**17 05 44.0**	**-2.2**
JOW	**Kunigami**	**15.25**	**15**	Pn		**P**	**17 07 27.1**	**+5.2**
	0.8nm,0.3s,baz=156,slow=20,SNR=3.0							
CMAR	**Chiang Mai Arr**	**24.85**	**288**	P		**P**	**17 09 08.3**	**-0.7**
	2.3nm,1.1s,mb3.6,baz=98,slow=8.4,SNR=5.3							
CMAR				LR		LR	17 18 37.6	
	comp=Z,24nm,18.2s,MS2.7,baz=120,slow=36							
CMAR	**Chiang Mai Arr**	**24.85**	**288**	P		**P**	**17 09 08.3**	**-0.7**
CMAR				LR		LR	17 18 37.6	
WRAB	**Tennant Creek**	**33.44**	**162**	P		**P**	**17 10 22.1**	**-4.2**
	5.0nm,0.8s,mb4.5							
WRA	**Warramunga Arr**	**33.45**	**162**	P		**P**	**17 10 22.8**	**-3.6**
	0.2nm,0.5s,mb3.3,baz=344,slow=9.1,SNR=3.6							
WRA				LR		LR	17 25 06.8	
	comp=Z,72nm,21.1s,MS3.4,baz=120,slow=39							
ASAR	**Alice Springs**	**36.86**	**165**	P		**P**	**17 10 53.5**	**-1.9**
	0.6nm,0.5s,mb3.7,baz=355,slow=7.9,SNR=13							
ULN	**Ulaanbaatar**	**38.35**	**342**	P		**P**	**17 11 09.2**	**+1.6**
MKAR	**Makanchi Array**	**49.17**	**323**	P		**P**	**17 12 35.3**	**+0.4**
	0.6nm,0.6s,mb3.8,baz=117,slow=9.7,SNR=4.9							
KURK	**Kurchatov**	**53.25**	**326**	*e*P		**P**	**17 13 06.4**	**+0.6**
BRVK	**Borovoye**	**58.92**	**325**	P		**P**	**17 13 46.1**	**-0.4**
YKA	**Yellowknife Ar**	**93.06**	**23**	P		**P**	**17 17 02.1**	**+2.4**
	0.4nm,0.9s,mb3.9,baz=300,slow=5.0,SNR=5.0							

NEIC 18 17:37:35.2, 17.18N×94.76W, h132km, MD3.9(MEX), After MEX.

MEX 18 17:37:35.2±0.8, 17.17N×94.76W, h132km±7km, MD3.9

ISC 18 17:37:33.0±0.9, 17.12N±0.05×94.78W±0.04, h129km±8km, n11, σ1§16/23, 1D, Chiapas

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
CMIG	**Matias Romero**	**0.11**	**254**	↓*i*	P	**P**	**17 37 51.9**	**+1.1**
CMIG				*i*	S	**S**	**17 38 04.9**	**+0.7**
TUIG	**Tuzandepetl**	**0.97**	**20**	*i*	P	**P**	**17 37 56.4**	**+0.6**
TUIG				*i*	S	**S**	**17 38 13.6**	**+

PTCH	**Petorca**	**1.44**	**32**	*i* S	S	18 04 37.1	-0.6
CICH	**Cipreses**	**1.45**	**125**	⇓*i* P	P	18 04 21.2	+1.4
CICH				*i* S	S	18 04 39.7	+2.0

IDC ***18*** *18:04:26.3±2.3,43.30N×105.21W,mb3.6/3,mb1 3.9/5, mb1mx3.6/22,ML3.7/2,MS2.7/1,Ms1 2.7/1,ms1mx2.2/32, Error ellipse: s-maj=53.6km s-min=7.5km az=155.0*

NEIC ***18*** *18:04:28.0±0.5,43.68N×105.23W,ML3.3,Error ellipse: s-maj=9.9km s-min=5.6km az=159.0,Suspected Mining explosion.*

NEIC 70 km [45 miles] SSE of Gillette. ML 3.3 [GS].

ISC 18 18:04:27.1±0.6,43.69N±0.08×105.21W±0.07,n18, σ1§21/22,mb3.9/2,Wyoming

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
RSSD	**Black Hills**	**0.95**	**63**	*eP*		**Pg**	**18 04 47.7**	**+1.7**
BW06	**Boulder Array**	**3.31**	**255**	*eP*		**Pn**	**18 05 21.4**	**+0.3**
PDAR	**Pinedale Array**	**3.31**	**255**	Pn		**Pn**	**18 05 22.1**	**+0.9**
	4.0nm,0.3s,baz=70,slow=12,SNR=50							
PDAR				Pg		**Pg**	**18 05 28.0**	**-5.1**
	9.8nm,0.3s,baz=66,slow=20,SNR=52							
PDAR				Sn		**Sn**	**18 06 00.3**	**-1.5**
	1.8nm,0.3s,baz=67,slow=19,SNR=2.6							
PDAR				Lg			18 06 08.0	
	13nm,0.3s,baz=60,slow=29,SNR=13							
PDAR	**Pinedale Array**	**3.31**	**255**	Pn		**Pn**	**18 05 22.1**	**+0.9**
PDAR				Pg		**Pg**	**18 05 28.0**	**-5.1**
PDAR				Sn		**Sn**	**18 06 00.3**	**-1.5**
PDAR				Lg			18 06 08.0	
LKWY	**Lake**	**3.84**	**285**	*eP*		**Pn**	**18 05 30.6**	**+1.9**
ISCO	**Idaho Springs**	**3.90**	**185**	*eP*		**Pn**	**18 05 30.3**	**+0.8**
WUWY	**Wally Ulrich**	**4.02**	**270**	P		**Pn**	**18 05 31.7**	**+0.4**
YMR	**Madison River**	**4.26**	**285**	P		**Pn**	**18 05 36.7**	**+2.1**
AHID	**Auburn Hatcher**	**4.40**	**260**	P		**Pn**	**18 05 32.7**	**-4.0**
BOZ	**Bozeman (W)**	**4.98**	**295**	*eP*		**Pn**	**18 05 43.5**	**-1.4**
HWUT	**Hardware Ranch**	**5.13**	**248**	P		**Pn**	**18 05 42.6**	**-4.4**
	3.7nm,0.5s							
SRU	**San Rafael**	**6.07**	**223**	*eP*		**Pn**	**18 05 59.6**	**-0.6**
HLID	**Hailey**	**6.68**	**272**	P		**Pn**	**18 06 08.1**	**-0.8**
	1.6nm,0.7s							
ULM	**Lac du Bonnet**	**9.15**	**41**	Pn		**P**	**18 06 41.4**	**-1.9**
	2.5nm,0.3s,baz=228,slow=11,SNR=11							
ULM				Lg			18 09 16.3	
	0.2nm,0.3s,baz=279,slow=16,SNR=2.9							
JFWS	**Jewell Farm**	**10.93**	**89**	P		**P**	**18 07 07.0**	**-0.8**
	29nm,0.7s							
YKA	**Yellowknife Ar**	**19.63**	**347**	P		**P**	**18 09 00.1**	**+0.5**
	0.1nm,0.3s,baz=156,slow=8.5,SNR=5.5							
YKA				LR		LR	18 17 31.8	
	comp=Z,24nm,19.9s,baz=205,slow=39							
ARCES	**ARCESS Array B**	**61.45**	**18**	P		**P**	**18 14 46.1**	**-1.0**
	1.8nm,0.8s,mb4.3,baz=324,slow=7.8,SNR=8.0							
MKAR	**Makanchi Array**	**89.66**	**355**	P		**P**	**18 17 27.9**	**+0.2**
	0.2nm,0.7s,mb3.5,baz=14,slow=5.8,SNR=3.1							

MOS ***18*** *18:12:22.8±1.0,15.56S×173.82W,h34km,mb5.3/5,Error ellipse: s-maj=19.3km s-min=12.5km az=113.0*

BJI ***18*** *18:12:28.9,15.18S×173.70W,h79km,mB5.3,mb5.0, Ms4.1,Msz4.1*

IDC ***18*** *18:12:29.1±3.4,15.68S×173.71W,h79km±29km,mb4.7/19, mb1 4.9/20,mb1mx4.8/21,MS3.9/7,Ms1 3.9/7, ms1mx3.7/14,Error ellipse: s-maj=18.7km s-min=10.6km az=115.0*

NEIC ***18*** *18:12:30.7±0.1,15.67S×173.75W,mb5.0/47,Error ellipse: s-maj=7.6km s-min=3.4km az=142.0*

SYO ***18*** *18:12:30.6,15.67S×173.75W,h96km,MB5.0*

HRVD ***18*** *18:12:30.7±0.2,15.64S×173.31W,h112km±1km, MW5.2/62,Centroid moment Tensor Solution. LP body waves: s46,c66;Mantle waves: s62,c102; Half duration: 0 Moment tensor: Scale 10^16Nm; Mrr0.81±.17; Mθθ-2.96±.20; Mφφ2.15±.20; Mrθ-0.82±.12; Mθφ2.75±.20; Mφr5.33±.11; Best double cuple: M◎6.54×10^16 NP1:φs76°, δ36°,λ8°. NP2:φs340°,δ86°,λ126°. Principal axes: T 7.1, Plg39°, Azm282°; N -1.12, Plg36°, Azm156°; P -5.98, Plg31°, Azm41°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 18 18:12:28.9±0.2,15.71S±0.04×173.72W±0.04,h93km, h93km±1.9km:pP-P,n317,σ0§79/165,mb5.0/85,27C-18D, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**14.31**	**115**	P		**P**	**18 15 46.9**	**-1.5**
	9.7nm,0.3s,baz=251,slow=12,SNR=11							
RAR				S		**S**	**18 18 12.6**	**-12**
	2.5nm,0.3s,baz=265,slow=8.7,SNR=2.7							
RAR	**Rarotonga**	**14.31**	**115**	*eP*		**P**	**18 15 46.3**	**-2.0**
	95nm,0.8s							
BKM	**Butte a Klehm**	**17.39**	**261**	*i* P		**P**	**18 16 33.6**	**+6.4**
DZM	**Mont Dzumac**	**19.80**	**248**	*eP*		**P**	**18 16 53.9**	**-0.5**
DZM	**Mont Dzumac**	**19.80**	**248**	*eP*		**P**	**18 16 53.9**	**-0.5**
NOUC	**Port Laguerre**	**19.93**	**248**	*eP*		**P**	**18 16 55.6**	**-0.1**
WCZ	**Waipu Caves**	**22.79**	**206**	*eP*		**P**	**18 17 25.0**	**+0.7**
PPT	**Papeete**	**23.20**	**98**	*eL*			18 21 38.4	
PPT				*eR*			18 22 32.9	
	1μm,31.5s,baz=262							
TVO	**Taravao**	**23.52**	**99**	*eP*		**P**	**18 17 31.7**	**+0.4**
	82nm,0.7s,mb5.1							
TVO				*epP*			18 17 49.7	
URZ	**Urewera**	**23.88**	**198**	P		**P**	**18 17 35.1**	**+0.5**
	86nm,0.8s,mb5.2,baz=353,slow=5.4,SNR=42							
URZ				S		**S**	**18 21 46.2**	**+5.3**
	3.7nm,0.4s,baz=162,slow=22,SNR=5.6							
URZ	**Urewera**	**23.88**	**198**	*eP*		**P**	**18 17 33.1**	**-1.5**
TBI	**Tubuai**	**24.07**	**112**	*eP*		**P**	**18 17 37.2**	**+0.6**
	287nm,1.1s,mb5.5							
TBI				*eL*			18 22 15.8	
TBI				*eR*			18 23 05.3	
	984nm,33.5s							
PMOR	**Pomariorio Ree**	**24.91**	**92**	*eP*		**P**	**18 17 44.1**	**-0.8**
	127nm,0.9s,mb5.3							
MGZ	**Maungaku**	**25.05**	**200**	*eP*		**P**	**18 17 47.2**	**+1.2**
VAH	**Vaihoa**	**25.15**	**92**	*eP*		**P**	**18 17 46.9**	**-0.2**
	141nm,1.0s,mb5.3							
NGZ	**Ngauruhoe**	**25.19**	**200**	*eP*		**P**	**18 17 47.8**	**+0.5**
TUVZ	**Tukino**	**25.25**	**200**	*eP*		**P**	**18 17 47.2**	**-0.7**
BFZ	**Birch Farm**	**26.37**	**197**	*eP*		**P**	**18 17 56.2**	**-2.0**
RPZ	**Rata Peaks**	**30.78**	**202**	P		**P**	**18 18 37.1**	**-0.6**
	9.4nm,0.5s,mb4.8,baz=334,slow=3.2,SNR=13							
CTA	**Charters Tower**	**38.28**	**257**	⇓*i* P		**P**	**18 19 41.5**	**-0.4**
	7.5nm,0.6s,mb4.7							
CTAO	**Charters Tower**	**38.28**	**257**	*eP*		**P**	**18 19 40.9**	**-1.0**
	17nm,1.1s,mb4.8							
CNB	**Canberra Magne**	**38.32**	**232**	⇑*i* P		**P**	**18 19 42.2**	**+0.1**
	42nm,1.0s,mb5.2							
WAU	**Wau**	**39.59**	**278**	*eP*		**P**	**18 19 54.7**	**+1.8**
TOO	**Toolangi**	**42.03**	**231**	⇑*i* P		**P**	**18 20 12.6**	**-0.2**
	24nm,0.9s,mb4.9							
STKA	**Stephens Creek**	**43.62**	**240**	⇑*i* P		**P**	**18 20 25.7**	**-0.1**
	51nm,0.9s,mb5.2							
STKA	**Stephens Creek**	**43.62**	**240**	P		**P**	**18 20 25.9**	**+0.1**
	61nm,0.7s,mb5.4,baz=87,slow=8.9,SNR=93							
STKA				PcP		PcP	18 22 12.7	+0.5
	10nm,0.8s,baz=66,slow=5.8,SNR=2.8							
STKA				LR		LR	18 37 04.7	
	comp=Z,142nm,19.8s,baz=33,slow=34							
WB2	**Warramunga Arr**	**49.46**	**257**	⇑*i* P		**P**	**18 21 10.8**	**-1.1**
WRAB	**Tennant Creek**	**49.47**	**257**	*eP*		**P**	**18 21 10.3**	**-1.6**
	292nm,1.3s,mb6.0							
WRA	**Warramunga Arr**	**49.48**	**257**	P		**P**	**18 21 10.9**	**-1.1**
	27nm,0.6s,mb5.3,baz=91,slow=7.0,SNR=181							
WRA				LR		LR	18 40 52.2	
	comp=Z,78nm,18.6s,baz=95,slow=34							
AS12	**Alice Springs**	**49.72**	**252**	⇑*i* P		**P**	**18 21 12.5**	**-1.4**
	178nm,0.7s,mb6.1							
ASAR	**Alice Springs**	**49.72**	**252**	P		**P**	**18 21 13.1**	**-0.8**
	221nm,0.7s,mb6.2,baz=86,slow=8.0,SNR=328							
ASAR				LR		LR	18 41 11.9	
	comp=Z,56nm,19.1s,baz=93,slow=35							
KAKA	**Kakadu**	**52.21**	**266**	⇓*i* P		**P**	**18 21 32.0**	**-0.8**
	42nm,0.7s,mb5.6							
FORT	**Forrest**	**55.00**	**243**	⇑*i* P		**P**	**18 21 51.6**	**-1.5**
	106nm,0.6s,mb6.0							
FITZ	**Fitzroy Crossi**	**57.85**	**258**	*eP*		**P**	**18 22 12.7**	**-0.8**
	8.0nm,0.7s,mb4.9							
FITZ	**Fitzroy Crossi**	**57.85**	**258**	LR		LR	18 44 27.8	
	comp=Z,124nm,20.4s,baz=100,slow=33							
SBA	**Scott Base**	**62.92**	**185**	*eP*		**P**	**18 22 48.9**	**+1.6**
	20nm,0.8s,mb5.1							
VNDA	**Vanda**	**63.04**	**186**	P		**P**	**18 22 49.5**	**+1.4**
	14nm,0.8s,mb4.9,baz=7.4,slow=8.1,SNR=7.9							
VNDA				LR		LR	18 43 21.4	
	comp=Z,131nm,19.9s,baz=168,slow=29							
KLBR	**Kellerberrin**	**63.82**	**242**	*eP*		**P**	**18 22 52.6**	**-1.3**
	83nm,0.7s,mb5.7							
NWAO	**Narrogin (SRO)**	**64.20**	**241**	*eP*		**P**	**18 22 55.1**	**-1.2**
MUN	**Mundaring**	**65.12**	**242**	⇓*i* P		**P**	**18 23 02.1**	**-0.1**
	44nm,0.7s,mb5.4							
MAJO	**Matsushiro**	**68.98**	**320**	*eP*		**P**	**18 23 25.4**	**-0.9**
	3.9nm,0.5s,mb4.5							
MAT	**Matsushiro**	**68.98**	**320**	P		**P**	**18 23 25.4**	**-1.0**
MAT	**Matsushiro**	**68.98**	**320**	*eP*		**P**	**18 23 25.0**	**-1.4**
FX1	**Attu Island--F**	**69.24**	**352**	P		**P**	**18 23 26.8**	**-0.9**
	6.5nm,0.6s,mb4.7,baz=174,slow=5.1,SNR=7.7							
ASAJ	**Asahikawa**	**71.64**	**328**	P		**P**	**18 23 43.1**	**+0.8**
	29nm,0.9s,mb5.1,baz=211,slow=7.7,SNR=13							
SAO	**San Andreas Ge**	**71.76**	**42**	*eP*		**P**	**18 23 42.8**	**-0.4**
	37nm,1.1s,mb5.1							
JNU	**Nakatsue**	**71.79**	**313**	P		**P**	**18 23 42.5**	**-0.9**
	14nm,0.7s,mb4.9,baz=74,slow=6.4,SNR=11							
LRV	**Little Rabbit**	**71.84**	**42**	*eP*		**P**	**18 23 43.9**	**+0.2**
HOPS	**Hopland**	**72.10**	**39**	*eP*		**P**	**18 23 45.1**	**-0.1**
	46nm,1.1s,mb5.2							
MWC	**Mount Wilson**	**72.57**	**46**	*eP*		**P**	**18 23 48.0**	**-0.1**
CMB	**Columbia Colle**	**73.20**	**41**	*eP*		**P**	**18 23 51.5**	**-0.1**
	26nm,1.0s,mb5.0							
CMB				LR		LR		
	comp=Z,154nm,20.0s							
PFO	**Pinyon Flat Ob**	**73.36**	**47**	*eP*		**P**	**18 23 51.8**	**-0.8**
WDC	**Whiskeytown Da**	**73.41**	**38**	*eP*		**P**	**18 23 52.4**	**-0.4**
	comp=Z,41nm,1.4s,mb5.1							
YSS	**Yuzh-Sakhalins**	**73.60**	**331**	⇑*i* P		**P**	**18 23 53.6**	**-0.2**
YSS				pmax		pmax		
	comp=Z,40nm,1.0s,mb5.1							
YSS	**Yuzh-Sakhalins**	**73.60**	**331**	*eP*		**P**	**18 23 53.6**	**-0.1**
	comp=Z,54nm,0.9s,mb5.3							
YBH	**Yreka Blue Hor**	**74.03**	**37**	*eP*		**P**	**18 23 56.4**	**-0.1**
	comp=Z,35nm,0.9s,mb5.1							
BEKR	**Beckwourth**	**74.30**	**40**	*eP*		**P**	**18 23 57.6**	**-0.4**
	comp=Z,21nm,0.9s,mb4.9							
QSPA	**South Pole Qui**	**74.34**	**180**	⇑*eP*		**P**	**18 23 59.0**	**+1.5**
	comp=Z,34nm,0.9s,mb5.1							
QSPA				*e*			18 47 50.0	
QSPA				LR		LR		
	comp=Z,90nm,21.8s							
WCN	**Washoe City**	**74.34**	**41**	*eP*		**P**	**18 23 58.1**	**-0.2**
	comp=Z,36nm,1.0s,mb5.1							
HUMO	**Hull Mountain**	**74.44**	**36**	*eP*		**P**	**18 23 57.9**	**-0.9**
BUOR	**Burton Butte**	**74.64**	**37**	P		**P**	**18 24 00.8**	**+0.9**
TPH	**Tonopah**	**75.27**	**43**	*eP*		**P**	**18 24 03.3**	**-0.2**
	comp=Z,53nm,1.3s,mb5.1							
KDAK	**Kodiak Island**	**75.28**	**12**	*eP*		**P**	**18 24 03.0**	**-0.3**
	comp=Z,22nm,1.1s,mb4.8							
NEN	**Nelson**	**75.56**	**46**	*eP*		**P**	**18 24 05.3**	**0.0**
BMN	**Battle Mountai**	**76.59**	**41**	*eP*		**P**	**18 24 11.2**	**+0.2**
	comp=Z,17nm,0.9s,mb4.8							
BMW	**Boistfort Moun**	**76.76**	**33**	*eP*		**P**	**18 24 11.8**	**-0.1**
TUC	**Tucson**	**76.82**	**51**	*eP*		**P**	**18 24 12.4**	**-0.1**
	comp=Z,48nm,1.4s,mb5.0							
WVOR	**Wild Horse Val**	**76.86**	**39**	*eP*		**P**	**18 24 12.2**	**-0.3**
	comp=Z,26nm,1.0s,mb4.9							
MIR	**Mirnyy**	**77.02**	**204**	⇑*eP*		**P**	**18 24 13.3**	**+0.5**
MIR				pmax		pmax		
	comp=Z,40nm,1.2s,mb5.0							
LON	**Longmire**	**77.69**	**34**	*eP*		**P**	**18 24 16.0**	**-0.9**
FMW	**Mount Fremont**	**77.88**	**34**	P		**P**	**18 24 18.7**	**+0.7**
SSE	**Sheshan**	**77.90**	**307**	P		**P**	**18 24 18.3**	**-0.1**
SSE				AP		pP	18 24 40.0	-3.0
SSE				S		S	18 34 01.9	-0.5
SSE				XS			18 34 42.1	
SSE				AMB		AMB		
	comp=Z,38nm,0.7s,mb5.2							
SSE				AMB		AMB		
	comp=Z,121nm,9.9s							
SSE				LR		LR		
	comp=N,59nm,24.5s							
SSE				LR		LR		
	comp=E,42nm,24.5s							
SSE				LR		LR		
	comp=Z,54nm,29.4s							
SVW	**Sparrewohn**	**77.91**	**9**	*eP*		**P**	**18 24 17.7**	**-0.2**
WUAZ	**Wupatki**	**77.93**	**48**	*eP*		**P**	**18 24 18.4**	**-0.1**
RMW	**Rattlesnake Mo**	**78.14**	**33**	*eP*		**P**	**18 24 19.1**	**-0.3**
SLKM	**Skilak Lake**	**78.27**	**12**	*eP*		**P**	**18 24 19.6**	**-0.2**
SPU	**Mount Spurr**	**78.56**	**11**	*eP*		**P**	**18 24 20.6**	**-0.8**
HAWA	**Hanford**	**78.70**	**35**	*eP*		**P**	**18 24 22.2**	**-0.3**
	comp=Z,20nm,1.1s,mb4.8							
MSU	**Marysvale**	**78.86**	**45**	*eP*		**P**	**18 24 24.6**	**+1.0**
PMS	**Palmer South**	**79.08**	**12**	*eP*		**P**	**18 24 24.2**	**-0.1**
MDJ	**Mudanjiang**	**79.08**	**323**	P		**P**	**18 24 25.3**	**+0.7**
MDJ				PCP		PcP	18 24 32.8	-0.3
MDJ				AP		pP	18 24 49.4	+0.2
MDJ				XP		sP	18 24 57.8	-1.8
MDJ				PP		PP	18 27 25.4	-0.7
MDJ				S		S	18 34 18.4	+3.7
MDJ				SCS		ScS	18 34 39.4	+4.3
MDJ				AMB		AMB		
	comp=Z,19nm,1.4s,mb4.7							
MDJ				LR		LR		
	comp=Z,91nm,21.5s							
MDJ	**Mudanjiang**	**79.08**	**323**	*eP*		**P**	**18 24 25.1**	**+0.4**
	comp=Z,8.5nm,0.8s,mb4.6							
WTV	**Waterville**	**79.27**	**34**	P		**P**	**18 24 25.4**	**-0.2**
NLW	**Nelson Butte**	**79.30**	**33**	*eP*		**P**	**18 24 25.2**	**-0.5**
PMR	**Palmer**	**79.48**	**12**	*eP*		**P**	**18 24 25.9**	**-0.6**
SML	**Sawmill**	**79.84**	**12**	*eP*		**P**	**18 24 28.0**	**-0.3**
HLID	**Hailey**	**80.06**	**39**	*eP*		**P**	**18 24 30.2**	**+0.3**
	comp=Z,21nm,0.9s,mb5.0							
NJ2	**Nanjing**	**80.11**	**307**	*eP*		**P**	**18 24 30.8**	**+0.4**
NJ2				AP		pP	18 24 56.0	+0.9
NJ2				PP		PP	18 27 36.3	+1.7
NJ2				S		S	18 34 26.0	+0.3
NJ2				AMB		AMB		
	comp=Z,10.0nm,0.5s,mb4.9							
HVU	**Hansel Valley**	**80.14**	**42**	*eP*		**P**	**18 24 30.1**	**-0.3**
SRU	**San Rafael**	**80.28**	**45**	*eP*		**P**	**18 24 31.7**	**+0.5**
DPW	**Davenport**	**80.32**	**34**	*eP*		**P**	**18 24 30.8**	**-0.4**
MA2	**Magadan**	**80.36**	**343**	*eP*		**P**	**18 24 31.1**	**-0.1**
MA2				*eS*		S	18 34 25.8	-2.0
MA2				*ePS*		PS	18 35 18.2	-8.5
MA2				pmax		pmax		
	comp=Z,8.0nm,1.1s,mb4.5							
LAZ	**Ladron**	**80.49**	**50**	*eP*		**P**	**18 24 33.0**	**+0.5**
LAZ				*epP*		pP	18 24 58.4	+1.4
TOA	**Tolsona**	**80.55**	**13**	*eP*		**P**	**18 24 33.0**	**+0.8**
KLR	**Kul'dur**	**80.61**	**327**	*eP*		**P**	**18 24 31.2**	**-1.5**
MNTX	**Cornudas Mount**	**80.66**	**53**	*eP*		**P**	**18 24 32.7**	**-0.7**
	comp=Z,27nm,1.1s,mb5.0							
MNTX				*epP*		pP	18 24 59.9	+1.9
BNM	**Barren Site**	**80.76**	**51**	*eP*		**P**	**18 24 34.5**	**+0.7**
LPM	**Los Pinos Moun**	**80.83**	**51**	*eP*		**P**	**18 24 34.3**	**+0.1**
LPM				*epP*		pP	18 24 58.1	-0.7
TXAR	**Lajitas Array**	**81.04**	**56**	P		**P**	**18 24 36.0**	**+0.6**
	comp=Z,19nm,1.0s,mb4.9,baz=217,slow=6.3,SNR=72							
CN2	**Changchun**	**81.13**	**320**	*eP*		**P**	**18 24 36.3**	**+0.7**
CN2				*eAP*		pP	18 25 00.3	0.0
CN2				*eS*		S	18 34 36.8	+0.7
CN2				AMB		AMB		
	comp=Z,20nm,0.9s,mb5.0							
CN2				AMB		AMB		
	comp=Z,200nm,3.0s							
ANMO	**Albuquerque**	**81.23**	**50**	*d i* P		**P**	**18 24 36.9**	**+0.6**
ANMO	**Albuquerque**	**81.23**	**50**	*eP*		**P**	**18 24 36.0**	**-0.3**
	comp=Z,17nm,1.1s,mb4.8							
ANMO				*epP*		pP	18 25 00.3	-0.8
ANMO				LR		LR		
	comp=Z,323nm,22.0s							
MCK	**McKinley**	**81.48**	**11**	*eP*		**P**	**18 24 36.9**	**-0.2**
	comp=Z,18nm,0.9s,mb4.9							
GDL2	**Guadalupe Moun**	**81.65**	**53**	*eP*		**P**	**18 24 38.6**	**+0.1**
MCMT	**McKenzie Canyo**	**81.69**	**39**	*eP*		**P**	**18 24 38.4**	**-0.1**
AHID	**Auburn Hatcher**	**81.71**	**41**	*eP*		**P**	**18 24 38.4**	**-0.3**
DLBC	**Dease Lake**	**82.10**	**22**	P		**P**	**18 24 40.8**	**+0.5**
	comp=Z,3.6nm,0.8s,mb4.3,baz=221,slow=11,SNR=7.8							
DLBC	**Dease Lake**	**82.10**	**22**	*eP*		**P**	**18 24 40.1**	**-0.1**
MSO	**Missoula**	**82.11**	**37**	*eP*		**P**	**18 24 39.7**	**-0.9**
	comp=Z,33nm,1.3s,mb5.0							
WUWY	**Wally Ulrich**	**82.33**	**41**	*eP*		**P**	**18 24 42.2**	**+0.4**
CPRX	**Cap Rock**	**82.37**	**53**	*eP*		**P**	**18 24 42.7**	**+0.4**
QLMT	**Earthquake Lak**	**82.55**	**39**	*eP*		**P**	**18 24 44.0**	**+1.1**
CHMT	**Chamberlain Mo**	**82.56**	**37**	*eP*		**P**	**18 24 42.4**	**-0.5**
BW06	**Boulder Array**	**82.70**	**42**	*eP*		**P**	**18 24 43.0**	**-0.7**
	comp=Z,17nm,1.0s,mb4.8							
PDAR	**Pinedale Array**	**82.70**	**42**	P		**P**	**18 24 43.9**	**+0.1**
	comp=Z,11nm,0.9s,mb4.7,baz=207,slow=3.3,SNR=66							
COLA	**College**	**82.72**	**11**	*eP*		**P**	**18 24 43.4**	**0.0**
SEY	**Seymchan**	**82.74**	**345**	*eP*		**P**	**18 24 43.8**	**+0.3**
SEY							18 27 50.3	
SEY				PPP		PPP	18 29 52.1	+2.5
SEY				*eS*		S	18 34 52.3	+0.3
SEY				*ePS*		PS	18 35 48.7	-7.7
SEY				*e*SSS		SSS	18 43 41.1	-3.6
SEY				pmax		pmax		
	comp=N,20nm,1.0s							
SEY				pmax		pmax		
	comp=E,60nm,1.0s							
SEY				pmax		pmax		
	comp=Z,50nm,1.0s,mb5.3							
YMR	**Madison River**	**82.75**	**40**	*eP*		**P**	**18 24 45.1**	**+1.2**
ILAR	**Eielson Array**	**82.81**	**11**	P		**P**	**18 24 43.5**	**-0.2**
	comp=Z,6.1nm,0.8s,mb4.5,baz=219,slow=6.2,SNR=45							
BOZ	**Bozeman (W)**	**82.85**	**39**	*eP*		**P**	**18 24 44.1**	**-0.3**
	comp=Z,32nm,1.4s,mb5.0							
IMA	**Indian Mountai**	**82.91**	**8**	*eP*		**P**	**18 24 45.6**	**+1.3**
	comp=Z,39nm,1.2s,mb5.1							
SDCO	**Great Sand Dun**	**83.15**	**48**	*eP*		**P**	**18 24 46.5**	**+0.5**
	comp=Z,12nm,1.2s,mb4.6							
HRY	**Holter Researc**	**83.28**	**38**	*eP*		**P**	**18 24 46.4**	**-0.2**
WALA	**Waterton Lakes**	**83.34**	**35**	*eP*		**P**	**18 24 46.5**	**-0.3**
	comp=Z,6.0nm,0.9s,mb4.4							
DAWY	**Dawson**	**83.80**	**14**	*eP*		**P**	**18 24 48.9**	**+0.2**
ISCO	**Idaho Springs**	**83.96**	**46**	*eP*		**P**	**18 24 50.7**	**+0.5**
	comp=Z,4.3nm,1.0s,mb4.2							
JCT	**Junction City**	**84.57**	**56**	*eP*		**P**	**18 24 53.0**	**-0.4**
	comp=Z,4.5nm,0.4s,mb4.8							
BILL	**Bilibino**	**84.77**	**353**	*de*P		**P**	**18 24 54.1**	**+0.6**
BILL				pmax		pmax		
	comp=Z,7.0nm,1.0s,mb4.5							
BILL	**Bilibino**	**84.77**	**353**	*eP*		**P**	**18 24 53.3**	**-0.3**
	comp=Z,3.8nm,0.8s,mb4.4							
BJI	**Beijing**	**85.46**	**314**	P		**P**	**18 24 58.6**	**+1.0**
BJI				AMB		AMB		
	comp=Z,33nm,1.2s,mb5.1							
BJI				AMB		AMB		
	comp=Z,145nm,3.9s							
BJI				LR		LR		
	comp=Z,41nm,22.1s							
ENH	**Enshi**	**86.83**	**302**	*eP*		**P**	**18 25 05.1**	**+0.6**
	comp=Z,21nm,0.9s,mb5.1							
RSSD	**Black Hills**	**86.89**	**43**	*eP*		**P**	**18 25 04.2**	**-0.4**
	comp=Z,4.1nm,0.7s,mb4.5							
HIA	**Hailar**	**87.26**	**323**	*eP*		**P**	**18 25 06.2**	**+0.1**
	comp=Z,18nm,1.1s,mb4.9							
MAW	**Mawson**	**87.40**	**199**	P		**P**	**18 25 08.1**	**+1.6**
	comp=Z,23nm,0.7s,mb5.2,baz=135,slow=5.9,SNR=61							
MAW				LR		LR	18 59 28.9	
	comp=Z,116nm,19.0s,baz=74,slow=32							
MAW	**Mawson**	**87.40**	**199**	*eP*		**P**	**18 25 07.4**	**+1.0**
	comp=Z,46nm,1.1s,mb5.3							
GYA	**Guiyang**	**87.92**	**298**	⇑*i* P		**P**	**18 25 11.3**	**+1.4**
GYA				AP		pP	18 25 36.8	+1.8
GYA				PP		PP	18 28 35.0	-4.2
GYA				S		S	18 35 36.9	-6.3
GYA				AMB		AMB		
	comp=Z,20nm,1.2s,mb5.0							
KKTK	**Khon Kaen**	**88.27**	**287**	P		**P**	**18 25 14.0**	**+2.3**
XAN	**Xi'an**	**88.56**	**306**	P		**P**	**18 25 13.8**	**+1.1**
XAN				AMB		AMB		
	comp=Z,19nm,1.3s,mb5.0							
INK	**Inuvik**	**88.64**	**14**	P		**P**	**18 25 12.9**	**+0.7**
	comp=Z,2.4nm,0.9s,mb4.2,baz=204,slow=6.5,SNR=11							
INK	**Inuvik**	**88.64**	**14**	*eP*		**P**	**18 25 11.8**	**-0.5

AKASG			PKP	PKPdf	18 31 47.4	+0.1	
	comp=E,2.4nm,0.9s,baz=36,slow=2.7,SNR=5.8						
ELZG	**Elazig**	**143.39 315**	P	PKPbc	18 31 53.0	+1.8	
OJC	**Ojcow**	**143.88 345**	*e*PKP	PKPdf	18 31 52.8	-0.3	
KSP	**Ksiaz**	**144.04 349**	*e*PKIKP	PKPdf	18 31 53.0	-0.3	
KSP			*e*		18 31 58.5		
CLL	**Collm**	**144.08 353**	*e*	PKPbc	18 31 53.0	+0.2	
CLL			*e*		18 31 59.0		
CLL			*e*		18 32 29.0		
CLL	**Collm**	**144.08 353**	*e*PKIKP	PKPdf	18 31 53.0	-0.4	
CLL			*e*		18 31 59.0		
CLL			pmax	pmax			
	comp=Z,6.0nm,1.0s						
SVST	**Sivas**	**144.09 318**	*e*P	PKPbc	18 31 58.1	+4.9	
BRG	**Berggiesshubel**	**144.39 352**	*e*PKIKP	PKPdf	18 31 57.0	+3.0	
BRG			pmax	pmax			
	comp=Z,4.0nm,1.2s						
BRG	**Berggiesshubel**	**144.39 352**	*e*PKP	PKPdf	18 31 57.0	+3.0	
BRG			*e*		18 32 29.4		
UPC	**Upice**	**144.41 349**	*e*PKP	PKPdf	18 31 54.4	+0.4	
UPC			*ex*	x	18 32 00.8		
NIE	**Niedzica**	**144.49 344**	*e*PKP	PKPdf	18 31 55.5	+1.3	
DPC	**Dobruska-Polom**	**144.51 349**	*e*PKP	PKPdf	18 31 55.3	+1.1	
DPC			*ex*	x	18 32 00.3		
DPC			*ex*	x	18 32 25.8		
OKC	**Ostrava-Krasne**	**144.62 347**	*e*PKP	PKPdf	18 31 55.0	+0.6	
OKC			*ex*	x	18 31 59.9		
OKC			*ex*	x	18 32 25.4		
CRVS	**Cervenica-Dubn**	**144.64 343**	*i* PKP	PKPdf	18 31 55.3	+0.8	
MORC	**Moravsky Berou**	**144.81 347**	*e*PKP	PKPdf	18 31 55.6	+0.8	
MOX	**Moxa**	**144.89 354**	*i* P	PKPdf	18 31 56.1	+1.2	
	comp=Z,logA/T=1.0						
MOX	**Moxa**	**144.89 354**	*e*PKIKP	PKPdf	18 31 56.1	+1.2	
MOX			pmax	pmax			
	comp=Z,12nm,1.1s						
GZT	**Gaziantep**	**144.93 314**	*i* P	PKPdf	18 31 57.6	+2.2	
CTKT	**Corum**	**144.96 321**	*i* P	PKPdf	18 31 57.5	+2.2	
MENF	**Mencas**	**145.08 5**	PKP	PKPdf	18 31 58.2	+3.0	
KMBO	**Kilima Mbogo**	**145.12 244**	PKPbc	PKPbc	18 31 59.3	+2.4	
	comp=Z,22nm,1.0s,baz=59,slow=3.8,SNR=32						
KMBO	**Kilima Mbogo**	**145.12 244**	*e*PKP	PKPdf	18 31 58.8	+2.3	
PRU	**Pruhonice**	**145.16 351**	*e*PKP	PKPdf	18 31 57.0	+1.6	
PRU			*ex*	x	18 32 03.6		
PRU			*ex*	x	18 32 29.0		
NKC	**Novy Kostel**	**145.21 353**	*e*PKP	PKPdf	18 31 57.5	+2.1	
BALT	**Daday**	**145.23 323**	P	PKPdf	18 31 58.4	+2.6	
KECS	**Kecovo**	**145.29 343**	*e*PKP	PKPdf	18 31 57.6	+1.9	
CFR	**Carcaliu**	**145.33 332** ⇓	*i* P	PKPdf	18 31 57.9	+2.1	
CFR	**Carcaliu**	**145.33 332** ⇓	P	PKPdf	18 31 58.0	+2.1	
VRI	**Vrincioaia**	**145.39 335** ⇑	*i* P	PKPdf	18 31 57.9	+2.0	
FRSS	**Farasan al Kab**	**145.61 277**	P	PKPdf	18 32 01.0	+3.9	
GIVF	**Givet**	**145.68 2**	*e*PKP1	PKPbc	18 31 57.8	+0.7	
	comp=Z,52nm,1.3s						
BAIF	**Baives**	**145.70 2**	*e*PKP1	PKPbc	18 31 58.3	+1.2	
	comp=Z,84nm,1.3s						
VYHS	**Vyhne**	**145.72 345**	*i* PKP	PKPdf	18 31 59.0	+2.6	
VYHS			*e*		18 32 17.1		
VYHS			*e*		18 32 28.2		
HARR	**Harsova**	**145.80 332** ⇓	*i*P	PKPdf	18 31 59.9	+3.3	
HARR	**Harsova**	**145.80 332** ⇓	*i*P	PKPdf	18 31 59.9	+3.2	
GRA1	**Grafenberg Arr**	**145.87 354**	*e*PKPbc	PKPbc	18 31 59.8	+2.2	
GRF	**Grafenberg Arr**	**145.87 354**	*e*PKP2	PKPab	18 31 59.8	-0.3	
ABH	**Alteburg**	**145.90 359**	PKP	PKPdf	18 32 01.2	+4.6	
PSZ	**Piszkesteto**	**145.97 344**	*e*PKP/p		18 31 59.5		
PSZ	**Piszkesteto**	**145.97 344**	*e*PKP	PKPdf	18 31 59.0	+2.2	
AVNT	**Avonos**	**145.99 318**	P	PKPdf	18 32 00.2	+3.0	
MLR	**Muntele Rosu**	**146.02 335** ⇓	*i* P	PKPdf	18 32 00.1	+3.1	
MLR	**Muntele Rosu**	**146.02 335** ⇓	P	PKPdf	18 32 00.1	+3.1	
ISR	**Istrita**	**146.07 334** ⇓	*i* P	PKPdf	18 32 00.6	+3.5	
ISR	**Istrita**	**146.07 334** ⇓	P	PKPdf	18 32 00.7	+3.6	
RUP	**Ruppelstein**	**146.09 359**	PKP	PKPdf	18 32 00.5	+3.5	
TOD	**Tromm**	**146.13 357**	PKP	PKPdf	18 32 00.1	+3.1	
WLF	**Walferdange**	**146.14 0**	PKPdf	PKPdf	18 31 58.4	+1.3	
KHC	**Kasperske Hory**	**146.14 351**	*e*PKP	PKPdf	18 31 59.1	+2.0	
KHC			*ex*	x	18 32 06.3		
KHC			*ex*	x	18 32 29.3		
KHC			*ex*	x	18 32 41.6		
BLJS	**Baljurashi**	**146.16 282**	P	PKPdf	18 32 02.3	+4.3	
BRTR	**Keskin Array B**	**146.20 320**	PKPbc	PKPbc	18 32 00.7	+1.9	
	comp=Z,21nm,0.8s,baz=90,slow=2.5,SNR=107						
COBT	**Iskenderun**	**146.25 314**	P	PKPdf	18 32 01.8	+4.1	
GERES	**GERESS Array B**	**146.40 351**	PKPbc	PKPbc	18 32 01.1	+2.2	
	comp=Z,2.7nm,0.7s,baz=27,slow=3.0,SNR=27						
ZST	**Bratislava**	**146.40 347**	*e*PKP	PKPdf	18 32 00.8	+3.2	
ZST			*e*		18 39 13.8		
ZST			*e*		18 43 06.2		
ZST			*e*		18 46 04.0		
ZST			*e*		18 47 52.0		
PSN	**Preselentsi**	**146.46 331**	*e*P	PKPdf	18 32 02.0	+4.2	
ROSF	**Rostrenen**	**146.53 12**	*e*PKP1	PKPbc	18 32 00.5	+1.3	
	comp=Z,19nm,0.9s						
FLN	**La Foliniere**	**146.57 8**	*e*PKP1	PKPbc	18 32 00.7	+1.4	
	comp=Z,16nm,0.6s						
SGMF	**Saint Gilles**	**146.74 11**	*e*PKP1	PKPbc	18 32 01.2	+1.5	
	comp=Z,27nm,0.9s						
LDF	**La Druitiere**	**146.79 8**	*e*PKP1	PKPbc	18 32 01.2	+1.4	
	comp=Z,17nm,0.7s						
GRR	**Gorron**	**146.89 9**	*e*PKP1	PKPbc	18 32 01.9	+1.9	
	comp=Z,26nm,0.6s						
QUIF	**Quistinic**	**146.95 12**	*e*PKP1	PKPbc	18 32 00.9	+0.7	
	comp=Z,51nm,1.4s						
PRD	**Provadia**	**147.20 331**	*e*P	PKPdf	18 32 04.0	+5.0	
MOA	**Molln**	**147.28 350** ⇑	*i*PKP	PKPdf	18 32 03.6	+4.6	
MEZF	**Maizieres J'vi**	**147.28 2**	*e*PKP1	PKPdf	18 32 03.2	+4.2	
	comp=Z,16nm,0.7s						
WLS	**Welschbruch**	**147.38 359**	PKP	PKPdf	18 32 04.0	+4.8	
CDF	**Champ du Feu**	**147.38 359**	*e*PKP1	PKPdf	18 32 03.2	+4.0	
	comp=Z,30nm,0.8s						
THEF	**They Montfort**	**147.57 0**	PKP	PKPdf	18 32 04.6	+5.1	
ECH	**Echery**	**147.58 359**	PKP	PKPdf	18 32 05.7	+6.2	
ARSA	**Arzberg**	**147.63 348** ⇑	*i*PKP	PKPdf	18 32 04.1	+4.5	
ARSA			*i*		18 32 23.9		
KBRS	**Khaybar**	**147.65 293**	P	PKPdf	18 32 06.1	+5.8	
HAU	**Haudompre**	**147.80 360**	*e*PKP1	PKPdf	18 32 04.4	+4.6	
	comp=Z,12nm,0.6s						
HINF	**Hinteralfeld**	**147.98 359**	*e*PKP1	PKPdf	18 32 05.4	+5.3	
	comp=Z,26nm,1.2s						
ESKT	**Eskisehir**	**148.00 323**	P	PKPdf	18 32 05.5	+5.1	
HRI	**Mount Hermon**	**148.16 309**	P	PKPdf	18 32 07.0	+6.1	
WATA	**Walderalm**	**148.16 353** ⇑	*i*PKP	PKPdf	18 32 07.0	+6.5	
WATA			*i*		18 32 16.6		
KBA	**Koelnbreinsper**	**148.18 351** ⇑	*i*PKP	PKPdf	18 32 06.1	+5.6	
MOTA	**Moosalm**	**148.20 354** ⇑	*i*PKP	PKPdf	18 32 05.7	+5.2	
WTTA	**Wattenberg**	**148.23 353** ⇓	*i*PKP	PKPdf	18 32 06.1	+5.5	
KSHT	**Keshet**	**148.23 308**	P	PKPdf	18 32 06.6	+5.6	
PERS	**Pernice**	**148.30 348**	*i* PKPbc	PKPdf	18 32 05.9	+5.2	
SQTA	**Sankt Quirin**	**148.32 354** ⇑	*i*PKP	PKPdf	18 32 06.2	+5.5	
DAVA	**Damuels**	**148.37 355** ⇑	*i*PKP	PKPdf	18 32 06.7	+5.9	
ULDT	**Uludag**	**148.56 325**	P	PKPdf	18 32 06.2	+4.9	
SSF	**Saint Saulge**	**148.66 4**	*e*PKP1	PKPdf	18 32 06.9	+5.7	
	comp=Z,26nm,0.9s						
MFF	**Saint Martin d**	**148.74 9**	*e*PKP1	PKPdf	18 32 06.6	+5.2	
	comp=Z,31nm,1.1s						
HMDT	**Nahal Hemdat**	**148.76 307**	P	PKPdf	18 32 08.4	+6.5	
AVF	**Avril sur Loir**	**148.92 4**	*e*PKP1	PKPdf	18 32 07.0	+5.3	
	comp=Z,30nm,1.1s						
MKRJ	**Makawir**	**148.95 306**	P	PKPdf	18 32 09.0	+6.8	
LJU	**Ljubljana**	**148.98 349**	*e*PKPbc	PKPdf	18 32 07.5	+5.7	
YNBS	**Yanbu' al Bahr**	**149.05 291**	P	PKPdf	18 32 08.4	+5.8	
SMF	**Signal de Mont**	**149.09 3**	*e*PKP1	PKPdf	18 32 07.7	+5.7	
	comp=Z,34nm,1.2s						
CSS	**Prodhromos**	**149.09 313**	*e*PKPbc	PKPdf	18 32 08.0	+5.6	
BGF	**Bois d'Agland**	**149.11 5**	*e*PKP1	PKPdf	18 32 07.9	+5.9	
	comp=Z,17nm,0.7s						
SLTI	**Sal'it**	**149.13 307**	P	PKPdf	18 32 09.1	+6.6	
VISS	**Visnje**	**149.15 348**	*i* PKPbc	PKPdf	18 32 08.3	+6.2	
CABF	**La Chapelle**	**149.19 0**	*e*PKP1	PKPdf	18 32 08.7	+6.6	
	comp=Z,36nm,0.8s						
CEY	**Cerknica**	**149.29 349**	*i* PKPbc	PKPdf	18 32 08.7	+6.3	
KDZ	**Kurdzhali**	**149.32 331**	*e*P	PKPdf	18 32 09.0	+6.5	
TCF	**Toulx Ste Croi**	**149.32 6**	*e*PKP1	PKPdf	18 32 08.1	+5.7	
	comp=Z,10.0nm,0.7s						
BOJS	**Bojanci**	**149.35 348**	*i* PKPbc	PKPdf	18 32 08.7	+6.3	
TBKS	**Tabuk**	**149.39 299**	P	PKPdf	18 32 09.9	+6.9	
VTS	**Vitosha**	**149.53 335**	*e*P	PKPdf	18 32 10.0	+7.2	
ZFRI	**Zfri**	**149.71 304**	P	PKPdf	18 32 10.4	+6.9	
JMQS	**Jabal Moqyreh**	**149.74 301**	P	PKPdf	18 32 10.9	+7.3	
PLDF	**La Plantade**	**149.75 4**	PKP	PKPdf	18 32 11.8	+8.8	
PYM	**Petit Puy Mans**	**149.93 5**	PKP	PKPdf	18 32 10.9	+7.6	
PRNI	**Paran**	**149.93 304**	P	PKPdf	18 32 11.3	+7.5	
MMB	**Musomiste**	**150.13 333**	*i* P	PKPdf	18 32 11.0	+7.2	
KKB	**Krupnik**	**150.18 334**	*i* P	PKPdf	18 32 12.0	+8.1	
KZIT	**Kziot**	**150.19 305**	P	PKPdf	18 32 11.7	+7.5	
MBH	**Mount Berech**	**150.21 303**	P	PKPdf	18 32 11.9	+7.6	
EIL	**Elat**	**150.22 303**	P	PKPdf	18 32 11.8	+7.5	
KMTI	**Karmit**	**150.25 304**	P	PKPdf	18 32 11.6	+7.3	
ALWS	**Ilw as Safayha**	**150.26 302**	P	PKPdf	18 32 12.0	+7.6	
JMOS	**Jabal al Moall**	**150.28 302**	P	PKPdf	18 32 12.0	+7.6	
LPL	**La Plagne**	**150.28 359**	*e*PKP1	PKPdf	18 32 11.8	+7.9	
	comp=Z,21nm,0.9s						
LPG	**La Plagne**	**150.30 359**	*e*PKP1	PKPdf	18 32 12.0	+8.1	
	comp=Z,15nm,0.7s						
NVLJ	**Novalja**	**150.33 348**	*i* PKP	PKPdf	18 32 04.8	+0.8	
LBL	**Lubilhac**	**150.46 4**	PKP	PKPdf	18 32 13.9	+10	
HAQS	**Haql**	**150.46 302**	P	PKPdf	18 32 12.3	+7.6	
AYUS	**'Aynunah**	**150.47 300**	P	PKPdf	18 32 12.4	+7.6	
LFF	**La Frestale**	**150.49 8**	*e*PKP1	PKPdf	18 32 11.3	+7.1	
	comp=Z,34nm,0.9s						
BDAS	**Al Bad'**	**150.53 300**	P	PKPdf	18 32 12.5	+7.7	
CAF	**Calviac**	**150.66 6**	*e*PKP1	PKPdf	18 32 11.8	+7.3	
TAYS	**Tayyib Ism**	**150.68 301**	P	PKPdf	18 32 12.6	+7.5	
BNI	**Bardonecchia**	**150.75 359**	*e*PKPbc	PKPdf	18 32 12.4	+7.8	
SKO	**Skopje**	**150.75 336**	*i* PKP	PKPdf	18 32 12.0	+7.3	
KDAG	**Bornova**	**150.81 325**	*e*P	PKPdf	18 32 11.7	+6.8	
ORIF	**Oris-en-Rattie**	**150.88 1**	*e*PKP1	PKPdf	18 32 12.7	+7.9	
	comp=Z,14nm,0.8s						
VIVF	**Saint-Julien-l**	**150.91 2**	*e*PKP1	PKPdf	18 32 12.7	+7.8	
	comp=Z,21nm,1.0s						
MBDF	**Montbardon**	**151.07 359**	*e*PKP1	PKPdf	18 32 13.1	+8.0	
	comp=Z,9.9nm,0.7s						
LASF	**Ste Croix**	**151.65 4**	*e*PKP1	PKPdf	18 32 14.5	+8.5	
	comp=Z,20nm,0.9s						
SMRF	**Simiane la Rot**	**151.82 1**	*e*PKP1	PKPdf	18 32 15.1	+8.9	
	comp=Z,12nm,0.9s						
FRF	**La Foret Royal**	**152.24 359**	*e*PKP1	PKPdf	18 32 15.4	+8.5	
MTLF	**Montolieu**	**152.24 6**	*e*PKP1	PKPdf	18 32 15.3	+8.4	
	comp=Z,3.5nm,0.6s						
ETSF	**Etsaut**	**152.28 11**	*e*PKP1	PKPdf	18 32 15.9	+9.0	
	comp=Z,14nm,0.6s						
EPF	**Esparros**	**152.30 9**	*e*PKP1	PKPdf	18 32 15.7	+8.7	
ESDC	**Sonseca Array**	**154.50 19**	PKPab	PKPab	18 32 35.8	0.0	
	comp=Z,2.1nm,0.8s,baz=333,slow=2.9,SNR=5.6						

*MEX **18** 18:19:50.9±1.3, 17.36N×94.68W, h144km±15km, MD4.0*
*NEIC **18** 18:19:51.5, 17.52N×94.61W, h134km, MD3.9(MEX), After MEX.*

ISC 18 18:19:48.8±0.8, 17.33N±0.08×94.70W±0.06, h144km, n6, σ1§09/11, Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CMIG	**Matias Romero**	**0.29**	**217**	*i* P	**P**	**18 20 09.8**	**+0.7**
CMIG				*i* S	**S**	**18 20 23.9**	**-0.6**
EVV	**El Vigia**	**1.28**	**331**	*e*P	**P**	**18 20 15.0**	**-0.9**
EVV				*i* S	**S**	**18 20 32.0**	**-4.8**
OXX	**Oaxaca**	**1.95**	**263**	*i* P	**P**	**18 20 25.0**	**+1.8**
HUIG	**Huatulco**	**2.05**	**221**	*i* P	**P**	**18 20 23.7**	**-0.8**
HUIG				*i* S	**S**	**18 20 51.6**	**-0.3**
CCIG	**Comitan**	**2.67**	**113**	*e*P	**P**	**18 20 33.3**	**+0.9**
CCIG				*i* S	**S**	**18 21 04.9**	**-0.7**
IISM	**Ciudad Serdan**	**3.03**	**303**	*i* P	**P**	**18 20 40.0**	**+2.9**
IISM				*i* S	**S**	**18 21 13.0**	**-0.9**

*IDC **18** 18:34:10.2±0.9, 8.31N×103.90W, mb4.2/11, mb1 4.4/11, mb1mx4.3/17, MS4.1/9, Ms1 4.1/9, ms1mx3.8/25, Error ellipse: s-maj=38.2km s-min=16.5km az=62.0*
*NEIC **18** 18:34:12.0±0.5, 8.21N×104.01W, h10km, mb4.8/13, Error ellipse: s-maj=16.6km s-min=7.8km az=62.0*

ISC 18 18:34:10.5±0.8, 8.2N±0.1×104.0W±0.1, h10km, n56, σ1§14/45, mb4.5/23, MS4.1/9, Northern East Pacific Rise

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TEIG	**Tepich**	**19.37**	**50**	*e*P	**P**	**18 38 36.6**	**-2.6**
TXAR	**Lajitas Array**	**21.02**	**1**	P	**P**	**18 38 56.4**	**-0.4**
	1.1nm,0.5s,mb3.4,baz=185,slow=12,SNR=13						
TXAR				LR	LR	18 46 28.1	
	comp=Z,1μm,18.4s,MS4.3,baz=200,slow=35						
JCT	**Junction City**	**22.51**	**10**	*e*P	**P**	**18 39 12.4**	**+0.5**
	61nm,1.3s,mb4.9						
HKT	**Hockley**	**22.96**	**18**	*e*P	**P**	**18 39 17.2**	**+0.9**
	79nm,1.8s,mb4.8						
MNTX	**Cornudas Mount**	**23.41**	**357**	*e*P	**P**	**18 39 21.2**	**+0.6**
	60nm,1.8s,mb4.7						
GDL2	**Guadalupe Moun**	**23.88**	**359**	*e*P	**P**	**18 39 26.4**	**+1.2**
CPRX	**Cap Rock**	**24.71**	**0**	*e*P	**P**	**18 39 33.4**	**+0.1**
TUC	**Tucson**	**24.80**	**346**	*e*P	**P**	**18 39 34.8**	**+0.7**
	47nm,1.7s,mb4.7						
BNM	**Barren Site**	**25.93**	**355**	*e*P	**P**	**18 39 46.0**	**+1.2**
LENM	**Lemitar**	**25.98**	**354**	*e*P	**P**	**18 39 46.4**	**+1.1**
LPM	**Los Pinos Moun**	**26.09**	**355**	*e*P	**P**	**18 39 46.5**	**+0.2**
LAZ	**Ladron**	**26.23**	**354**	*e*P	**P**	**18 39 48.2**	**+0.7**
OTAV	**Otavalo**	**26.69**	**106**	*e*P	**P**	**18 39 53.9**	**+1.9**
	12nm,1.4s,mb4.2						
ANMO	**Albuquerque**	**26.71**	**356**	*e*P	**P**	**18 39 52.2**	**+0.3**
	2.9nm,1.0s,mb3.8						
HWUT	**Hardware Ranch**	**33.93**	**350**	*e*P	**P**	**18 40 56.1**	**+0.1**
	33nm,1.5s,mb5.0						
PDAR	**Pinedale Array**	**34.77**	**353**	P	**P**	**18 41 03.1**	**-0.1**
	4.1nm,0.9s,mb4.4,baz=170,slow=9.0,SNR=26						
RSSD	**Black Hills**	**35.78**	**360**	P	**P**	**18 41 09.7**	**-2.1**
HLID	**Hailey**	**36.38**	**347**	*e*P	**P**	**18 41 17.7**	**+0.9**
	12nm,1.3s,mb4.7						
QLMT	**Earthquake Lak**	**37.05**	**351**	*e*P	**P**	**18 41 24.1**	**+1.6**
YBH	**Yreka Blue Hor**	**37.26**	**337**	P	**P**	**18 41 23.7**	**-0.5**
	2.8nm,0.7s,mb4.2,baz=127,slow=5.5,SNR=8.3						
MCMT	**McKenzie Canyo**	**37.28**	**350**	*e*P	**P**	**18 41 25.2**	**+0.8**
BOZ	**Bozeman (W)**	**37.88**	**351**	*e*P	**P**	**18 41 29.8**	**+0.4**
	21nm,1.6s,mb4.6						
CHMT	**Chamberlain Mo**	**39.37**	**350**	*e*P	**P**	**18 41 41.7**	**-0.2**
LON	**Longmire**	**41.32**	**341**	*e*P	**P**	**18 41 58.5**	**+0.6**
DPW	**Davenport**	**41.32**	**346**	*e*P	**P**	**18 41 58.5**	**+0.5**
NEW	**Newport**	**41.44**	**347**	*e*P	**P**	**18 41 58.9**	**0.0**
	9.6nm,0.8s,mb4.5						
NLW	**Nelson Butte**	**42.08**	**344**	*e*P	**P**	**18 42 04.8**	**+0.6**
ULM	**Lac du Bonnet**	**42.46**	**8**	P	**P**	**18 42 05.5**	**-1.7**
	2.2nm,0.8s,mb3.8,baz=175,slow=11,SNR=3.0						
ULM	**Lac du Bonnet**	**42.46**	**8**	*e*P	**P**	**18 42 06.8**	**-0.5**
	13nm,1.1s,mb4.5						
RPW	**Rockport**	**42.75**	**343**	*e*P	**P**	**18 42 09.5**	**-0.2**
LPAZ	**La Paz**	**43.06**	**124**	P	**P**	**18 42 13.5**	**+0.9**
	3.6nm,0.9s,mb4.1,baz=312,slow=9.7,SNR=12						
LPAZ	**La Paz**	**43.06**	**124**	P	**P**	**18 42 13.5**	**+0.9**
LVC	**Limon Verde**	**46.05**	**132**	P	**P**	**18 42 39.0**	**+2.5**
	2.9nm,1.1s,mb4.1,baz=280,slow=4.8,SNR=3.3						
LVC	**Limon Verde**	**46.05**	**132**	P	**P**	**18 42 39.0**	**+2.5**
FFC	**Flin Flon**	**46.42**	**2**	*e*P	**P**	**18 42 38.5**	**-0.6**
	31nm,1.7s,mb5.0						
DLBC	**Dease Lake**	**53.95**	**343**	*e*P	**P**	**18 43 36.5**	**0.0**
YKA	**Yellowknife Ar**	**54.74**	**354**	P	**P**	**18 43 40.1**	**-2.1**
	1.1nm,0.6s,mb4.0,baz=164,slow=6.9,SNR=22						
YKA				PcP	PcP	18 44 42.9	-1.9
	0.7nm,0.7s,baz=160,slow=3.6,SNR=7.4						
YKA				LR	LR	19 05 15.7	
	comp=Z,172nm,21.6s,MS4.1,baz=180,slow=34						
YKW3	**Yellowknife Ar**	**54.80**	**354**	*e*P	**P**	**18 43 39.9**	**-2.8**
SCHQ	**Schefferville**	**55.12**	**25**	P	**P**	**18 43 41.5**	**-3.7**
	2.7nm,1.0s,mb4.2,baz=207,slow=7.8,SNR=3.2						
SCHQ				LR	LR	19 09 04.0	
	comp=Z,179nm,18.4s,MS4.2,baz=256,slow=38						
CPUP	**Villa Florida**	**56.85**	**129**	P	**P**	**18 43 56.9**	**-1.1**
	2.7nm,0.8s,mb4.3,baz=338,slow=9.6,SNR=5.5						
CPUP	**Villa Florida**	**56.85**	**129**	P	**P**	**18 43 56.9**	**-1.1**
BDFB	**Brasilia**	**60.32**	**113**	P	**P**	**18 44 20.7**	**-1.6**
	2.2nm,0.6s,mb4.4,baz=339,slow=6.4,SNR=3.7						
FRB	**Frobisher Bay**	**60.96**	**17**	LR	LR	19 13 04.9	
	comp=Z,109nm,20.6s,MS4.0,baz=66,slow=38						
RAR	**Rarotonga**	**62.04**	**241**	LR	LR	19 03 16.1	
	comp=Z,183nm,22.0s,MS4.2,baz=310,slow=28						
INK	**Inuvik**	**63.13**	**348**	LR	LR	19 12 38.4	
	comp=Z,120nm,18.9s,MS4.1,baz=136,slow=37						
INK	**Inuvik**	**63.13**	**348**	*e*P	**P**	**18 44 38.8**	**-1.7**
	26nm,1.2s,mb5.2						
SPU	**Mount Spurr**	**63.59**	**336**	*e*P	**P**	**18 44 42.6**	**-1.0**
ILAR	**Eielson Array**	**63.96**	**341**	P	**P**	**18 44 44.0**	**-1.9**
	7.0nm,0.7s,mb4.8,baz=152,slow=4.8,SNR=80						
RPZ	**Rata Peaks**	**91.95**	**226**	LR	LR	19 23 14.2	
	comp=Z,80nm,18.6s,MS4.2,baz=67,slow=32						
NOA	**NORSAR Array B**	**94.68**	**26**	LR	LR	19 28 57.4	
	comp=Z,46nm,20.9s,MS3.9,baz=290,slow=35						
ARCES	**ARCESS Array B**	**95.10**	**16**	LR	LR	19 29 51.0	
	comp=Z,85nm,19.9s,MS4.2,baz=314,slow=35						
WRA	**Warramunga Arr**	**122.44**	**252**	PKP	PKPdf	18 53 08.0	-1.9
	0.3nm,0.8s,baz=87,slow=1.5,SNR=3.4						
ASAR	**Alice Springs**	**122.58**	**247**	PKP	PKPdf	18 53 08.9	-1.2
	0.6nm,1.1s,baz=90,slow=1.8,SNR=3.5						
MKAR	**Makanchi Array**	**124.96**	**355**	PKP	PKPdf	18 53 11.4	-2.9
	0.3nm,0.7s,baz=286,slow=1.2,SNR=4.1						
KMBO	**Kilima Mbogo**	**140.80**	**82**	PKP	PKPdf	18 53 42.4	-2.6
	0.5nm,0.3s,baz=246,slow=23,SNR=2.4						
CMAR	**Chiang Mai Arr**	**145.14**	**320**	PKPbc	PKPbc	18 53 50.4	+0.8
	0.8nm,0.8s,baz=9.0,slow=2.9,SNR=4.7						

*MOS **18** 18:38:33.7±0.7, 0.22S×122.36E, h33km, mb4.5/5, Error ellipse: s-maj=99.8km s-min=16.4km az=121.9*
*BJI **18** 18:38:37.3, 0.97S×122.02E, h87km, mb4.5*
*IDC **18** 18:38:37.2±6.9, 0.44S×122.15E, h42km±69km, mb3.8/8, mb1 3.9/9, mb1mx3.7/18, ML3.5/1, MS3.6/3, Ms1 3.6/3, ms1mx3.1/22, Error ellipse: s-maj=83.1km s-min=16.6km az=60.0*
*NEIC **18** 18:38:38.6±3.9, 0.49S×122.03E, h57km±41km, mb4.3/4, Error ellipse: s-maj=37.7km s-min=12.8km az=60.0*

ISC 18 18:38:40.1±4.5, 0.5S±0.2×122.1E±0.2, h92km±46km, n27, σ0§91/25, mb4.1/16, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KAKA	**Kakadu**	**15.89**	**140**	*e*P	**P**	**18 42 19.8**	**+0.1**
	7.8nm,0.6s						
FITZ	**Fitzroy Crossi**	**17.85**	**169**	P	**P**	**18 42 41.7**	**-2.3**
	0.1nm,0.3s,baz=124,slow=2.5,SNR=3.6						
WRA	**Warramunga Arr**	**22.77**	**149**	P	**P**	**18 43 35.4**	**-0.1**
	1.1nm,0.5s,mb3.4,baz=331,slow=10,SNR=10.0						
WB2	**Warramunga Arr**	**22.77**	**149**	*e*P	**P**	**18 43 36.3**	**+0.7**
AS12	**Alice Springs**	**25.75**	**154**	*e*P	**P**	**18 44 06.6**	**+2.6**
	8.4nm,1.5s,mb4.0						
ASAR	**Alice Springs**	**25.75**	**154**	P	**P**	**18 44 05.0**	**+1.1**
	0.6nm,0.6s,mb3.2,baz=344,slow=14,SNR=13						
ASAR				PcP	PcP	18 47 33.2	+0.9
	0.8nm,0.9s,baz=348,slow=1.9,SNR=7.5						
ASAR				LR	LR	18 54 31.9	
	comp=Z,56nm,18.1s,baz=256,sl

8.4nm,0.6s,mb4.4,baz=60,slow=5.3,SNR=44
STKA Stephens Creek 26.76 193 *e*P **P 19 28 27.6 +1.5**
4.9nm,1.8s,mb3.7
STKA Stephens Creek 26.76 193 P **P 19 28 26.1 +0.1**
1.0nm,0.6s,mb3.6,baz=348,slow=8.8,SNR=2.7
MKAR Makanchi Array 78.35 320 P **P 19 34 45.5 -0.3**
0.3nm,0.5s,mb3.5,baz=104,slow=7.0,SNR=5.2
MKAR Makanchi Array 78.35 320 P **P 19 34 45.5 -0.3**
ILAR Eielson Array 84.67 23 P **P 19 35 19.2 +0.8**
1.2nm,0.7s,mb4.2,baz=253,slow=4.9,SNR=17

GUC ***18*** *19:32:31.1±0.9,32.68S×68.94W,h6km±5km,MD3.9, ML3.8*
NEIC ***18*** *19:32:32.7±0.7,32.74S×69.04W,h10km,ML3.8(GUC), Error ellipse: s-maj=8.6km s-min=6.6km az=54.0*
NEIC Felt [IV] at Mendoza.
ISC 18 19:32:31.2±0.8,32.72S±0.04×68.69W±0.05,h33km,n21, σ0≧95/40,10C-6D,Mendoza Province

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
MDZ	**Mendoza**	**0.21**	**219**	⇓*iP*		**P**	**19 32 37.1**	**-0.8**
MDZ				*i*S		**S**	**19 32 42.0**	**-0.6**
MDZ				*i*			19 32 46.2	
MDZ				*i*S		**S**	**19 32 48.4**	**+5.8**
FCH	**Farellones**	**1.47**	**245**	⇓*iP*		**P**	**19 32 54.5**	**-1.2**
FCH				AMP			19 33 12.6	
	comp=N,1μm,0.4s							
FCH				*i*S		**S**	**19 33 13.0**	**-1.0**
JACH	**Jahuel**	**1.60**	**271**	⇑*iP*		**P**	**19 32 56.0**	**-1.5**
JACH				*i*S		**S**	**19 33 15.3**	**-1.9**
CLCH	**Cerro Calan**	**1.69**	**246**	⇓*iP*		**P**	**19 32 58.2**	**-0.6**
CLCH				*i*S		**S**	**19 33 18.6**	**-0.8**
CLCH				AMP			19 33 22.1	
	comp=E,2μm,0.3s							
CLCH				AMP			19 33 22.7	
	comp=E,2μm,0.3s							
LMEL	**Las Melosas**	**1.69**	**228**	⇓*iP*		**P**	**19 32 59.1**	**+0.2**
LMEL				*i*S		**S**	**19 33 20.9**	**+1.3**
LMEL				AMP			19 33 22.9	
	comp=N,2μm,0.2s							
FSR	**Penalolen**	**1.72**	**243**	⇑*iP*		**P**	**19 32 58.9**	**-0.2**
FSR				*i*S		**S**	**19 33 19.9**	**-0.2**
FSR				AMP			19 33 20.7	
	comp=N,2μm,0.6s							
PEL	**Peldehue**	**1.73**	**255**	⇑*iP*		**P**	**19 32 58.3**	**-1.0**
PEL				*i*S		**S**	**19 33 18.9**	**-1.6**
PEL				AMP			19 33 24.1	
	comp=N,2μm,0.4s							
PCH	**Pirque**	**1.77**	**239**	⇑*iP*		**P**	**19 33 00.1**	**+0.2**
PCH				*i*S		**S**	**19 33 21.9**	**+0.4**
SAN	**Santiago**	**1.81**	**246**	AMP			19 33 29.9	
	comp=E,835nm,0.4s							
ANTU	**Antumapu**	**1.84**	**242**	⇑*iP*		**P**	**19 33 01.1**	**+0.2**
ANTU				*i*S		**S**	**19 33 23.1**	**0.0**
ANTU				AMP			19 33 24.5	
	comp=N,2μm,0.5s							
RCDM	**Rinconada Maip**	**1.93**	**246**	⇑*iP*		**P**	**19 33 02.1**	**-0.1**
RCDM				*i*S		**S**	**19 33 26.2**	**+0.6**
RCDM				AMP			19 33 28.1	
	comp=E,701nm,0.1s							
PTCH	**Petorca**	**1.94**	**283**	⇓*iP*		**P**	**19 33 02.1**	**-0.3**
PTCH				*i*S		**S**	**19 33 25.3**	**-0.6**
PTCH				AMP			19 33 28.7	
	comp=N,5μm,0.3s							
ROCH	**El Roble**	**1.97**	**262**	⇑*iP*		**P**	**19 33 02.3**	**-0.5**
ROCH				*i*S		**S**	**19 33 26.0**	**-0.5**
CHCH	**Chadas Angostu**	**2.04**	**233**	⇓*iP*		**P**	**19 33 04.0**	**+0.2**
CHCH				*i*S		**S**	**19 33 29.5**	**+1.2**
TACH	**Talagante**	**2.10**	**243**	⇑*iP*		**P**	**19 33 04.1**	**-0.5**
TACH				*i*S		**S**	**19 33 29.6**	**-0.3**
CACH	**El Canelo**	**2.12**	**228**	*iP*		**P**	**19 33 05.9**	**+1.0**
CACH				*i*S		**S**	**19 33 32.3**	**+1.9**
CICH	**Cipreses**	**2.15**	**222**	*iP*		**P**	**19 33 06.3**	**+0.9**
CICH				*i*S		**S**	**19 33 33.1**	**+1.9**
CMCH	**Combarbala**	**2.49**	**308**	*iP*		**P**	**19 33 10.9**	**+0.6**
CMCH				*i*S		**S**	**19 33 40.7**	**+0.8**
CMCH				AMP			19 33 48.0	
	comp=E,3μm,0.8s							
LCCH	**Las Cruces**	**2.53**	**252**	⇑*iP*		**P**	**19 33 11.2**	**+0.4**
LCCH				*i*S		**S**	**19 33 41.1**	**+0.4**
TLL	**Tololo Astrono**	**3.12**	**324**	⇑*iP*		**P**	**19 33 20.4**	**+1.2**
TLL				*i*S		**S**	**19 33 57.8**	**+2.1**
TLL				AMP			19 34 07.3	
	comp=E,597nm,0.7s							
TRQA	**Tornquist**	**7.64**	**136**	*eP*		**P**	**19 34 21.7**	**-1.3**

MAN 18 19:32:58.1,12.11N×123.89E,h3km,mb4.5,ML3.4,MS3.2, 6C-1D,Luzon

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
MMPH	**Masbate**	**0.36**	**314**	⇓*iP*		Pg	19 33 05.7	+0.5
MMPH				*i*S		Sg	19 33 11.7	+1.6
CNP	**Catarman**	**0.86**	**62**	⇑*eP*		Pg	19 33 14.3	-0.9
CNP				*e*S		Sg	19 33 26.9	+0.3
RCP	**Roxas**	**1.25**	**244**	⇑*eP*		Pb	19 33 21.5	-0.4
RCP				*e*S		Sb	19 33 39.3	+1.1
OCLP	**Ormoc**	**1.27**	**146**	⇑*eP*		Pb	19 33 23.4	+1.1
PLP	**Palo**	**1.42**	**131**	*iP*		Pn	19 33 23.3	-1.5
PLP				*i*S		Sb	19 33 44.8	+1.5
PVCP	**Virac**	**1.50**	**10**	⇑*eP*		Pn	19 33 24.9	-1.2
AUQP	**San Andres**	**1.69**	**316**	⇑*eP*		Pn	19 33 29.6	+0.8
LLP	**Lapu-Lapu**	**1.78**	**178**	*eP*		Pn	19 33 28.8	-1.2
LLP				*e*S		Sn	19 33 50.9	-2.5
MSLP	**Maasin**	**2.18**	**154**	⇑*eP*		Pn	19 33 37.3	+1.6

IDC 18 20:05:23.5±2.1,5.13S×136.65E,mb3.4/1,mb1 4.1/5, mb1mx3.8/14,ML3.8/4,1C,Error ellipse: s-maj=50.4km s-min=28.4km az=83.0,Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
KAKA	**Kakadu**	**8.61**	**209**	*eP*		P	20 07 33.1	+0.8
	15nm,0.5s							
KAKA				*e*S		Sn	20 09 19.7	+8.4
WB2	**Warramunga Arr**	**14.89**	**188**	⇑*iP*		P	20 08 55.2	-2.1
WB2				*e*S		S	20 11 49.3	+5.2
WRA	**Warramunga Arr**	**14.89**	**188**	Pn		P	20 08 54.8	-2.5
	0.4nm,0.3s,baz=9.2,slow=13,SNR=9.7							
WRA				Sn		S	20 11 47.5	+3.3
	0.4nm,0.3s,baz=6.9,slow=24,SNR=5.9							
FITZ	**Fitzroy Crossi**	**16.79**	**219**	*eP*		P	20 09 23.5	+1.7
	4.2nm,0.9s							
FITZ				*e*S		S	20 12 30.5	+2.0
FITZ	**Fitzroy Crossi**	**16.79**	**219**	Pn		P	20 09 19.9	-1.9
	0.3nm,0.3s,baz=30,slow=14,SNR=12							
FITZ				Sn		S	20 12 29.8	+1.3
	1.7nm,0.3s,baz=190,slow=14,SNR=13							
CTA	**Charters Tower**	**17.56**	**149**	P		P	20 09 28.8	-2.7
	0.2nm,0.3s,baz=328,slow=10,SNR=3.5							
AS12	**Alice Springs**	**18.62**	**188**	*eP*		P	20 09 43.5	-1.1
	15nm,0.6s							
ASAR	**Alice Springs**	**18.62**	**188**	P		P	20 09 43.3	-1.3
	1.0nm,0.3s,baz=14,slow=10,SNR=145							
ASAR				S		S	20 13 17.1	+7.1
	0.1nm,0.3s,baz=8.7,slow=28,SNR=4.1							
MKAR	**Makanchi Array**	**70.47**	**324**	P		P	20 16 40.1	-1.8
	0.3nm,0.8s,baz=104,slow=8.9,SNR=3.7							

IDC 18 20:36:36.2±5.6,2.75S×101.55E,mb3.7/4,mb1 3.9/4, mb1mx3.5/16,Error ellipse: s-maj=292.0km s-min=23.2km az=53.0,Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**36.28**	**121**	P		P	20 43 41.5	-2.0
	0.7nm,0.4s,baz=300,slow=9.0,SNR=13							
ASAR	**Alice Springs**	**37.56**	**126**	P		P	20 43 52.7	-1.5
	0.4nm,0.5s,baz=298,slow=7.7,SNR=9.8							
MKAR	**Makanchi Array**	**52.18**	**343**	P		P	20 45 48.0	-2.9
	0.7nm,0.8s,baz=156,slow=7.8,SNR=5.7							
ZAL	**Zalesovo**	**58.19**	**348**	P		P	20 46 32.9	-1.5
	0.6nm,0.3s,baz=209,slow=10,SNR=3.5							
TXAR	**Lajitas Array**	**144.32**	**40**	PKP		PKPdf	20 56 13.7	-3.1
	0.6nm,0.3s,baz=304,slow=3.3,SNR=2.1							

MAN 18 20:49:13.4,12.12N×123.89E,h7km,mb3.5,ML2.2,MS1.7, 5C-1D,Luzon

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
MMPH	**Masbate**	**0.35**	**312**	⇓*iP*		Pg	20 49 21.0	+0.5
MMPH				*i*S		Sg	20 49 27.0	+1.7
CNP	**Catarman**	**0.84**	**63**	⇑*eP*		Pb	20 49 29.4	-0.6
CNP				*e*S		Sb	20 49 42.4	+1.0
RCP	**Roxas**	**1.25**	**244**	⇑*iP*		Pb	20 49 36.8	-0.2
RCP				*e*S		Sb	20 49 54.4	+1.2
OCLP	**Ormoc**	**1.28**	**147**	⇑*eP*		Pb	20 49 38.2	+0.8
PLP	**Palo**	**1.43**	**132**	*eP*		Pn	20 49 39.0	-0.8
PLP				*e*S		Sb	20 49 59.5	+1.3
PVCP	**Virac**	**1.49**	**10**	⇑*eP*		Pn	20 49 40.2	-0.5
BESP	**Borongan**	**1.60**	**109**	⇑*eP*		Pn	20 49 41.1	-1.2

THE ***18*** *21:21:29.9,39.26N×20.99E,h20km, ML2.9*
NEIC ***18*** *21:21:30.3,39.22N×21.03E,h36km, MD3.0(ATH), After ATH.*
ATH ***18*** *21:21:30.3,39.22N×21.03E,h36km±2km, MD3.0/4*
ISC 18 21:21:31.5±0.6,39.25N±0.04×21.06E±0.06,h31km±7km, n8,σ0≧48/13,Greece

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
JAN	**Janina**	**0.44**	**338**	*e*PB		**Pb**	**21 21 40.5**	**-0.6**
JAN				*e*SB		**Sb**	**21 21 48.0**	**+0.4**
MEV	**Metsovon**	**0.55**	**13**	*e*Pg		**Pb**	**21 21 42.9**	**+0.1**
LKD	**Levkas**	**0.63**	**211**	*e*Pg		**Pb**	**21 21 43.5**	**-0.6**
LKD				*e*Sg		**Sb**	**21 21 53.4**	**+0.7**
EVR	**Evrytania**	**0.67**	**120**	*e*PN		**Pn**	**21 21 44.0**	**-0.8**
EVR				*e*SN		**Sn**	**21 21 54.5**	**+0.3**
AGG	**Agios Georgios**	**1.01**	**103**	*e*Pg		**Pn**	**21 21 49.4**	**-0.3**
AGG				*e*Sg		**Sn**	**21 22 03.7**	**+0.8**
KEK	**Kerkira**	**1.08**	**296**	*e*PN		**Pn**	**21 21 50.5**	**-0.2**
KEK				*e*SN		**Sn**	**21 22 05.0**	**+0.3**
VLS	**Valsamata**	**1.13**	**199**	*e*PN		**Pn**	**21 21 51.5**	**+0.1**
RLS	**Riolos of Patr**	**1.23**	**165**	*e*PN		**Pn**	**21 21 52.5**	**-0.3**

TAP 18 21:28:51.2,24.89N×121.75E,h105km,ML3.5,Taiwan

NEIC ***18*** *21:33:21.4±0.2,45.70N×18.18E,h10km,MD3.1(PDG), Error ellipse: s-maj=5.5km s-min=2.6km az=79.0*
IDC ***18*** *21:33:24.0±1.9,45.94N×18.24E,mb1 3.6/6, mb1mx3.4/24,ML3.1/6,Error ellipse: s-maj=26.6km s-min=11.5km az=27.0*
ISC 18 21:33:22.0±0.4,45.71N±0.01×18.22E±0.03,h25km±4km, n65,σ1≧22/110,10C-3D,Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
RHK3	**Tenkes**	**0.18**	**8**	⇑*eP*		**Pb**	**21 33 05.5**	**-0.5**
RHK3				*e*S		**Sb**	**21 33 30.6**	**-0.5**
RHK1	**Bakonya**	**0.40**	**345**	⇓*iP*		**Pb**	**21 33 30.5**	**0.0**
RHK1				*e*S		**Sb**	**21 33 36.8**	**+0.6**
PKS9	**Tamasi**	**0.88**	**3**	*eP*		**Pb**	**21 33 40.1**	**+1.6**
PKS9				*e*S		**Sb**	**21 33 53.9**	**+4.2**
SISC	**Sisak**	**1.32**	**260**	*i* Pg		**Pn**	**21 33 44.8**	**-0.4**
SISC				*i* Sg		**Sn**	**21 34 03.5**	**+1.5**
PKS7	**Kunszentmiklos**	**1.49**	**26**	⇑*iP*		**Pn**	**21 33 48.3**	**+0.8**
PKS7				*e*S		**Sn**	**21 34 12.8**	**+6.5**
PKSN	**Nyarlorinc**	**1.65**	**43**	⇑*iP*		**Pn**	**21 33 55.1**	**+5.3**
PKSN				*e*S		**Sn**	**21 34 19.0**	**+8.6**
PKSG		**1.68**	**4**	⇓*iP*		**Pn**	**21 33 51.5**	**+1.1**
PKSG				*e*S		**Sn**	**21 34 18.9**	**+7.6**
BEO	**Belgrade**	**1.81**	**119**	*e*Pn		**Pn**	**21 33 52.9**	**+0.7**
BEO				Sn		**Sn**	**21 34 16.4**	**+1.7**
BUD	**Budapest**	**1.86**	**17**	⇑*e*PB		**Pb**	**21 33 53.2**	**-1.9**
BUD				*e*SB		**Sb**	**21 34 20.1**	**+2.0**
DIVS	**Divcibare**	**2.05**	**141**	*e*Pn		**Pn**	**21 33 57.0**	**+1.4**
DIVS				Sn		**Sn**	**21 34 22.0**	**+1.3**
VBY	**Vinica-Bojanci**	**2.09**	**265**	*e*Pn		**Pn**	**21 33 58.0**	**+1.8**
VBY				*e*(Sn)		**Sn**	**21 34 28.0**	**+6.4**
SRO	**Srobarova**	**2.10**	**2**	*e*PN		**Pn**	**21 33 58.3**	**+1.9**
SRO				*e*SN		**Sn**	**21 34 25.2**	**+3.3**
ARSA	**Arzberg**	**2.41**	**311**	⇑*i*PN		**Pn**	**21 34 00.4**	**-0.4**
ARSA				*i* SN		**Sn**	**21 34 32.5**	**+2.6**
NVSS	**Nova Varos 2**	**2.45**	**154**	⇑*i*Pn		**Pn**	**21 34 07.0**	**+5.8**
NVSS				Sn		**Sn**	**21 34 39.7**	**+9.0**
PSZ	**Piszkesteto**	**2.49**	**27**	⇑*i*PB		**Pb**	**21 34 01.6**	**-4.3**
PSZ				*e*			21 34 44.6	
PSZ	**Piszkesteto**	**2.49**	**27**	*e*Pn		**Pn**	**21 34 01.6**	**-0.3**
PLE	**Pljevlja**	**2.53**	**160**	*e*Pn		**Pn**	**21 34 02.7**	**+0.2**
PLE				*e*Sn		**Sn**	**21 34 33.4**	**+0.7**
GRUS	**Gruza**	**2.55**	**135**	*e*Pn		**Pn**	**21 34 06.5**	**+3.8**
GRUS				Sn		**Sn**	**21 34 38.9**	**+5.6**
UPM	**Unac-Piva**	**2.56**	**169**	*e*Pn		**Pn**	**21 34 02.4**	**-0.5**
UPM				*e*Sn		**Sn**	**21 34 34.2**	**+0.7**
SVIS	**Svilajnac**	**2.56**	**123**	*e*Pn		**Pn**	**21 34 02.2**	**-0.7**
SVIS				Sn		**Sn**	**21 34 31.5**	**-2.1**
ZST	**Bratislava**	**2.60**	**343**	*i* PN		**Pn**	**21 34 03.9**	**+0.5**
ZST				*i* SN		**Sn**	**21 34 33.3**	**-1.2**
NVLJ	**Novalja**	**2.63**	**245**	*i* Pn		**Pn**	**21 34 02.9**	**-1.0**
NVLJ				*i* Sn		**Sn**	**21 34 33.0**	**-2.4**
OBKA	**Obir**	**2.67**	**289**	⇑*i*PN		**Pn**	**21 34 03.5**	**-1.0**
OBKA				*i* SN		**Sn**	**21 34 38.2**	**+1.8**
VYHS	**Vyhne**	**2.81**	**8**	*i* PN		**Pn**	**21 34 07.0**	**+0.5**
VYHS				*e*SN		**Sn**	**21 34 40.2**	**+0.2**
BRY	**Bratogost**	**2.82**	**175**	*e*Pn		**Pn**	**21 34 06.6**	**-0.1**
BRY				*e*Sn		**Sn**	**21 34 40.3**	**+0.1**
VKA	**Vienna**	**2.86**	**334**	⇓*i*PN		**Pn**	**21 34 07.5**	**+0.3**
VKA				*i*			21 34 41.4	
VKA				*i*			21 34 46.4	
STON	**Ston**	**2.87**	**188**	*i* Pn		**Pn**	**21 34 06.6**	**-0.6**
STON				*i* Sn		**Sn**	**21 34 42.2**	**+0.9**
KOLL	**Kolacno**	**2.87**	**2**	*i* PN		**Pn**	**21 34 08.0**	**+0.7**
KOLL				*i* SN		**Sn**	**21 34 41.6**	**+0.2**
NKY	**Niksic**	**2.95**	**169**	*e*Pn		**Pn**	**21 34 08.1**	**-0.4**
NKY				*e*Sn		**Sn**	**21 34 43.5**	**-0.1**
VOY	**Vojsko**	**3.04**	**278**	*e*Pn		**Pn**	**21 34 10.9**	**+1.2**
VOY				*e*			21 34 19.7	
VOY				*e*Sn		**Sn**	**21 34 57.0**	**+11**
IVA	**Berane**	**3.09**	**156**	*e*Pn		**Pn**	**21 34 10.0**	**-0.4**
IVA				*e*Sn		**Sn**	**21 34 47.2**	**+0.3**
HCY	**Herceg Novi**	**3.27**	**176**	*e*Pn		**Pn**	**21 34 12.6**	**-0.4**
HCY				*e*Sn		**Sn**	**21 34 51.0**	**-0.5**
PVY	**Plav**	**3.36**	**157**	*e*Pn		**Pn**	**21 34 13.9**	**-0.4**
PVY				*e*Sn		**Sn**	**21 34 53.5**	**-0.4**
TTG	**Podgorica**	**3.37**	**167**	*e*Pn		**Pn**	**21 34 14.2**	**-0.2**
TTG				*e*Sn		**Sn**	**21 34 53.8**	**-0.3**
BUM	**Brajici-Budva**	**3.45**	**172**	*e*Pn		**Pn**	**21 34 15.2**	**-0.3**
BUM				*e*Sn		**Sn**	**21 34 55.8**	**-0.2**
MOLN	**Molln**	**3.45**	**310**	⇑*i*PN		**Pn**	**21 34 15.2**	**-0.4**
MOLN				*i* SN		**Sn**	**21 34 57.8**	**+1.6**
KBA	**Koelnbreinsper**	**3.64**	**294**	⇑*i*PN		**Pn**	**21 34 16.9**	**-1.3**
KBA				*i* SN		**Sn**	**21 35 03.0**	**+2.2**
VRAC	**Vranov**	**3.76**	**344**	Pn		**Pn**	**21 34 19.9**	**-0.1**
	0.9nm,0.3s,baz=174,slow=14,SNR=10							
VRAC				Sn		**Sn**	**21 35 03.3**	**-0.7**
	0.6nm,0.3s,baz=125,slow=11,SNR=3.1							
ULC	**Ulcinj**	**3.82**	**168**	*e*Pn		**Pn**	**21 34 20.6**	**-0.2**
ULC				*e*Sn		**Sn**	**21 35 04.8**	**-0.7**
CRVS	**Cervenica-Dubn**	**3.88**	**34**	*e*PN		**Pn**	**21 34 21.7**	**+0.1**
MORC	**Moravsky Berou**	**4.09**	**354**	*e*Pn		**Pn**	**21 34 24.3**	**-0.3**
OKC	**Ostrava-Krasne**	**4.13**	**359**	*e*PN		**Pn**	**21 34 24.0**	**-1.2**
OKC				*e*SN		**Sn**	**21 35 11.7**	**-1.6**
GERES	**GERESS Array B**	**4.39**	**317**	Pn		**Pn**	**21 34 31.1**	**+2.2**
	0.6nm,0.3s,baz=131,slow=14,SNR=9.5							
GERES				Sn		**Sn**	**21 35 20.9**	**+1.0**
	0.7nm,0.3s,baz=129,slow=26,SNR=3.6							
GERES				Lg			21 35 34.9	
	1.3nm,0.3s,baz=139,slow=28,SNR=5.6							
KHC	**Kasperske Hory**	**4.65**	**319**	*e*PN		**Pn**	**21 34 32.1**	**-0.4**
KHC				x		x	21 34 40.5	
KHC				*e*SN		**Sn**	**21 35 24.7**	**-1.7**
KHC				*ex*		x	21 36 00.0	
KHC	**Kasperske Hory**	**4.65**	**319**	*e*Pn		**Pn**	**21 34 32.1**	**-0.4**
KHC				*e*			21 34 40.5	
KHC				*e*Sn		**Sn**	**21 35 24.7**	**-1.7**
KHC				*e*			21 36 00.0	
VTS	**Vitosha**	**4.76**	**129**	*e*P		**Pn**	**21 34 32.0**	**-2.1**
DPC	**Dobruska-Polom**	**4.81**	**345**	*e*PN		**Pn**	**21 34 33.9**	**-1.0**
DPC				*e*SN		**Sn**	**21 35 27.4**	**-3.1**
CII	**Carovilli**	**4.89**	**217**	P		**Pn**	**21 34 33.8**	**-2.2**
PRU	**Pruhonice**	**4.94**	**331**	*e*PN		**Pn**	**21 34 34.2**	**-2.5**
PRU				*e*SN		**Sn**	**21 35 32.2**	**-1.6**
PRU				*ex*		x	21 35 43.7	
	12nm,0.7s							
CPI2	**Carpinone**	**5.00**	**216**	*e*Pn		**Pn**	**21 34 39.4**	**+1.9**
UPC	**Upice**	**5.02**	**344**	*e*PN		**Pn**	**21 34 34.9**	**-2.9**
UPC				*e*SN		**Sn**	**21 35 31.9**	**-3.8**
SDI	**San Donato**	**5.12**	**220**	*e*Pg		**Pn**	**21 34 40.0**	**+0.8**
SGG	**Gregorio Mates**	**5.14**	**214**	*e*Pn		**Pn**	**21 34 41.0**	**+1.4**
KKB	**Krupnik**	**5.21**	**136**	*e*P		**Pn**	**21 34 34.0**	**-6.5**
PGB	**Panagyurishte**	**5.32**	**124**	*e*P		**Pn**	**21 34 38.0**	**-4.1**
MRLC	**Muro Lucano**	**5.34**	**203**	*e*Pn		**Pn**	**21 34 42.2**	**-0.1**
CSSN	**Cassano Irpino**	**5.38**	**207**	*e*Pn		**Pn**	**21 34 42.0**	**-0.8**
MLR	**Muntele Rosu**	**5.43**	**90**	Pn		**Pn**	**21 34 46.7**	**+3.2**
	0.1nm,0.3s,baz=312,slow=14,SNR=3.1							
MLR				Lg			21 36 16.9	
	0.1nm,0.3s,baz=261,slow=22,SNR=1.7							
MMB	**Musomiste**	**5.74**	**134**	*e*P		**Pn**	**21 34 36.0**	**-12**
DAVOX	**Davos**	**5.88**	**283**	Pn		**Pn**	**21 34 52.9**	**+3.0**
	0.5nm,0.3s,baz=100,slow=17,SNR=5.2							
DAVOX				Sn		**Sn**	**21 35 55.3**	**-2.0**
	0.6nm,0.3s,baz=252,slow=20,SNR=3.1							
DAVOX				Lg			21 36 23.9	
	baz=151,slow=23,SNR=2.6							
NKC	**Novy Kostel**	**5.95**	**322**	*ex*		x	21 34 57.6	
NKC				*e*SN		**Sn**	**21 35 55.5**	**-3.7**
MOX	**Moxa**	**6.62**	**321**	*i* P		**Pn**	**21 34 58.9**	**-1.4**
MOX				S		**Sn**	**21 36 16.0**	**+0.2**
MOX				Sg		Sn	21 36 58.0	+42
MOX	**Moxa**	**6.62**	**321**	*e*Pn		**Pn**	**21 34 58.9**	**-1.4**
NOA	**NORSAR Array B**	**15.90**	**347**	Pn		**P**	**21 37 05.5**	**0.0**
	0.1nm,0.3s,baz=57,slow=6.9,SNR=3.1							
FINES	**FINESS Array B**	**16.41**	**13**	Pn		**P**	**21 37 06.6**	**-5.5**
	0.1nm,0.3s,baz=203,slow=11,SNR=2.8							

INMG ***18*** *21:42:31.6±1.1,38.77N×9.49W,h6km±2km,ML2.4, Error ellipse: s-maj=4.5km s-min=1.9km az=80.0*
MDD ***18*** *21:42:31.7±0.7,38.79N×9.48W,h10km,mbLg2.5/13, Error ellipse: s-maj=5.7km s-min=3.8km az=84.0,PRXIMO*
MDD EMS: III (MM) CASCAIS SINTRA.
NEIC ***18*** *21:42:32.1,38.83N×9.38W,h9km,MN2.5(MDD),After MDD.*
NEIC Felt at Cascais.
IGIL ***18*** *21:42:33.7,38.80N×9.40W,h0km,ML2.7*
ISC 18 21:42:31.1±0.9,38.82N±0.03×9.45W±0.07,h26km±4km, n49,σ1≧19/94,1C-1D,Portugal

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
PLOU	**Loures**	**0.24**	**75**	*i* Pg		**Pb**	**21 42 36.5**	**-0.9**
PLOU				*e*Sg		**Sb**	**21 42 40.8**	**-0.9**
	262nm,0.1s							
PLOU	**Loures**	**0.24**	**75**	⇑Pg		**Pb**	**21 42 36.5**	**-0.9**
PLOU				Lg			21 42 40.8	
	131nm,0.1s							
INMG	**Instituto de M**	**0.26**	**101**	*e*Pg		**Pb**	**21 42 37.2**	**-0.4**
INMG	**Instituto de M**	**0.26**	**101**	⇓Pg		**Pb**	**21 42 37.2**	**-0.4**
LIS	**Lisbon**	**0.26**	**114**	*e*P		**Pb**	**21 42 36.8**	**-0.8**
LIS				*e*S		**Sb**	**21 42 40.4**	**-1.6**
LIS				*e*S		**Sb**	**21 42 40.4**	**-1.6**
LIS				AML		AML	21 42 42.0	
	comp=E,2μm,0.3s							
ALMR	**Almeirim**	**0.76**	**64**	*e*P		**Pb**	**21 42 46.6**	**+1.0**
ALMR				*e*S		**Sb**	**21 42 57.5**	**+1.9**
ALMR				*e*S		**Sb**	**21 42 57.5**	**+1.9**
ALMR				AML		AML	21 42 59.8	
	comp=E,230nm,0.1s							
MOE	**Montemor**	**0.91**	**109**	*e*P		**Pb**	**21 42 48.5**	**+0.3**
MOE				*e*S		**Sb**	**21 43 00.7**	**+0.7**
PTOM	**Tomar**	**1.13**	**45**	*e*P		**Pn**	**21 42 53.3**	**+1.8**
PTOM				*e*S		**Sb**	**21 43 08.9**	**+2.6**
	comp=E,77nm,0.1s							
PTOM	**Tomar**	**1.13**	**45**	P		**Pn**	**21 42 53.3**	**+1.8**
PTOM				S		**Sb**	**21 43 08.9**	**+2.6**
	comp=E,39nm,0.1s							
PTEO	**Sao Teotonio**	**1.40**	**156**	*e*P		**Pn**	**21 42 55.1**	**-0.2**
PTEO				*e*S		**Sn**	**21 43 13.4**	**+0.3**
	comp=E,38nm,0.2s							
PTEO	**Sao Teotonio**	**1.40**	**156**	P		**Pn**	**21 42 55.1**	**-0.2**
PTEO				S		**Sn**	**21 43 13.4**	**+0.3**
	comp=E,19nm,0.2s							
PBEJ	**Beja**	**1.48**	**122**	*e*P		**Pn**	**21 42 57.4**	**+0.9**
PBEJ				*e*S		**Sn**	**21 43 16.2**	**+1.1**
	comp=E,31nm,0.2s							
PBEJ	**Beja**

ELIJ	**Sierra de Lija**	**3.74**	**119**	Pn		**Pn**	**21 43 28.5**	**-0.2**
	comp=E,0.4nm,0.2s,SNR=7.9								
ELIJ				Sn		**Sn**	**21 44 12.9**	**+0.4**
	comp=E,1.4nm,0.2s,SNR=4.0								
ELIJ				Lg			21 44 32.0		
	comp=E,1.4nm,0.2s,SNR=4.0								
ELIJ	**Sierra de Lija**	**3.74**	**119**	Pn		**Pn**	**21 43 28.9**	**+0.2**
ELIJ				Sn		**Sn**	**21 44 10.0**	**-2.5**
ELIJ				Lg			21 44 30.7		
EADA	**Adamuz**	**3.88**	**98**	Pn		**Pn**	**21 43 29.9**	**-0.8**
	comp=E,0.3nm,0.2s,SNR=7.9								
EADA				Lg			21 44 34.3		
	comp=E,1.3nm,0.1s,SNR=5.0								
EADA	**Adamuz**	**3.88**	**98**	Pn		**Pn**	**21 43 29.4**	**-1.3**
EADA				Sn		**Sn**	**21 44 13.8**	**-2.2**
EADA				Lg			21 44 34.1		
EMAZ	**Mazaricos**	**4.14**	**5**	Pn		**Pn**	**21 43 33.7**	**-0.7**
	comp=E,0.5nm,0.1s,SNR=4.0								
EMAZ	**Mazaricos**	**4.14**	**5**	Pn		**Pn**	**21 43 33.5**	**-0.8**
EMAZ				Sn		**Sn**	**21 44 18.6**	**-4.0**
EMAZ				Lg			21 44 45.0		
EINC	**Incio**	**4.15**	**22**	Pn		**Pn**	**21 43 35.4**	**+0.8**
	comp=E,0.6nm,0.1s,SNR=6.5								
EINC				Lg			21 44 43.5		
	comp=E,1.3nm,0.2s,SNR=4.0								
EINC	**Incio**	**4.15**	**22**	Pn		**Pn**	**21 43 35.3**	**+0.7**
EINC				Sn		**Sn**	**21 44 19.9**	**-3.0**
EINC				Lg			21 44 44.1		
ESDC	**Sonseca Array**	**4.35**	**77**	Pn		**Pn**	**21 43 36.5**	**-0.8**
	comp=E,3.9nm,0.2s,baz=259,slow=12,SNR=21								
ESDC	**Sonseca Array**	**4.35**	**77**	Pn		**Pn**	**21 43 36.5**	**-0.8**
ESDC				Sn		**Sn**	**21 44 25.6**	**-2.2**
ESDC				Lg			21 44 46.5		
EPON	**Pontenova**	**4.82**	**20**	Pn		**Pn**	**21 43 43.8**	**-0.3**
	comp=E,0.3nm,0.1s,SNR=5.0								
EPON				Lg			21 45 06.2		
	comp=E,2.6nm,0.3s,SNR=4.0								
EPON	**Pontenova**	**4.82**	**20**	Pn		**Pn**	**21 43 43.9**	**-0.2**
EPON				Sn		**Sn**	**21 44 36.8**	**-3.1**
EPON				Lg			21 45 08.2		
EQES	**Quesada**	**5.12**	**99**	Pn		**Pn**	**21 43 49.2**	**+0.9**
	comp=E,0.1nm,0.1s,SNR=4.0								
EQES				Lg			21 45 13.9		
	comp=E,0.9nm,0.2s,SNR=7.9								
EQES	**Quesada**	**5.12**	**99**	Pn		**Pn**	**21 43 49.1**	**+0.8**
EARI	**Arriondas**	**5.50**	**34**	Pn		**Pn**	**21 43 56.3**	**+2.6**

NEIC ***18*** *21:46:04.2±1.0,31.76S×69.06W,h128km±20km, MD3.9(GUC),Error ellipse: s-maj=12.1km s-min=6.8km az=69.0*
GUC ***18*** *21:46:04.9±0.8,31.81S×69.40W,h154km±10km,MD3.5, ML3.9*

ISC 18 21:46:04.2±0.8,31.77S±0.04×69.12W±0.08, h127km±11km,n21,σ0≥82/34,7C-1D,San Juan Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MDZ	**Mendoza**	**1.13**	**168**	*i* P	**P**	**21 46 28.0**	**-0.5**
MDZ				*i*		21 46 35.3	
MDZ				*i* S	**S**	**21 46 46.0**	**-0.8**
JACH	**Jahuel**	**1.54**	**234**	⇑*i* P	**P**	**21 46 33.5**	**+0.4**
JACH				*i* S	**S**	**21 46 55.3**	**+0.4**
PTCH	**Petorca**	**1.61**	**252**	*i* P	**P**	**21 46 33.9**	**0.0**
PTCH				*i* S	**S**	**21 46 55.7**	**-0.7**
PTCH				AMP		21 46 57.9	
	comp=N,6μm,0.3s						
CMCH	**Combarbala**	**1.71**	**290**	⇓*i* P	**P**	**21 46 35.6**	**+0.6**
CMCH				*i* S	**S**	**21 46 58.9**	**+0.5**
CMCH				AMP		21 47 01.9	
	comp=E,6μm,0.8s						
ILCH	**Illapel**	**1.75**	**274**	⇑*i* P	**P**	**21 46 35.5**	**+0.1**
ILCH				*i* S	**S**	**21 46 58.5**	**-0.7**
ILCH				AMP		21 47 00.8	
	comp=N,1μm,0.2s						
FCH	**Farellones**	**1.84**	**212**	*e*P	**P**	**21 46 37.7**	**+1.2**
FCH				*i* S	**S**	**21 47 02.9**	**+1.9**
FCH				AMP		21 47 15.2	
	comp=E,410nm,0.2s						
PEL	**Peldehue**	**1.90**	**224**	*i* P	**P**	**21 46 37.0**	**-0.2**
PEL				*i* S	**S**	**21 47 02.2**	**-0.1**
PEL				AMP		21 47 04.6	
	comp=N,536nm,0.3s						
ROCH	**El Roble**	**2.00**	**233**	*e*P	**P**	**21 46 38.7**	**+0.3**
ROCH				*i* S	**S**	**21 47 03.9**	**-0.5**
CLCH	**Cerro Calan**	**2.01**	**216**	*i* P	**P**	**21 46 39.0**	**+0.4**
CLCH				*i* S	**S**	**21 47 05.3**	**+0.5**
CLCH				AMP		21 47 14.5	
	comp=N,470nm,0.6s						
PACH	**Papudo**	**2.11**	**248**	⇑*i* P	**P**	**21 46 39.0**	**-0.8**
PACH				*i* S	**S**	**21 47 04.8**	**-2.1**
TLL	**Tololo Astrono**	**2.15**	**317**	⇑*i* P	**P**	**21 46 41.3**	**+0.9**
TLL				*i* S	**S**	**21 47 09.1**	**+1.1**
TLL				AMP		21 47 17.0	
	comp=N,634nm,0.4s						
RCDM	**Rinconada Maip**	**2.23**	**219**	*i* P	**P**	**21 46 41.6**	**+0.2**
RCDM				*i* S	**S**	**21 47 09.2**	**-0.4**
RCDM				AMP		21 47 12.5	
	comp=E,618nm,0.1s						
LMEL	**Las Melosas**	**2.26**	**203**	*e*P	**P**	**21 46 42.6**	**+0.8**
LMEL				AMP		21 47 23.4	
	comp=N,209nm,0.1s						
TACH	**Talagante**	**2.42**	**219**	*e*P	**P**	**21 46 43.9**	**-0.1**
CHCH	**Chadas Angostu**	**2.51**	**210**	*i* P	**P**	**21 46 45.6**	**+0.5**
LSCH	**La Serena**	**2.60**	**315**	⇑*i* P	**P**	**21 46 46.1**	**-0.3**
LSCH				*i* S	**S**	**21 47 17.1**	**-1.2**
LSCH				AMP		21 47 18.1	
	comp=E,750nm,0.4s						
CACH	**El Canelo**	**2.65**	**208**	*i* P	**P**	**21 46 48.1**	**+1.1**
LCCH	**Las Cruces**	**2.68**	**230**	*e*P	**P**	**21 46 46.7**	**-0.6**
CICH	**Cipreses**	**2.77**	**203**	⇑*i* P	**P**	**21 46 48.6**	**+0.2**
SFDO	**San Fernando**	**3.25**	**209**	*e*P	**P**	**21 46 54.4**	**-0.4**
TRQA	**Tornquist**	**8.58**	**139**	*e*P	**P**	**21 48 04.7**	**-2.0**

WEL 18 22:02:36.1±0.8,46.22S×166.03E,h12km,ML3.5/4,Error ellipse: s-maj=6.9km s-min=6.4km az=0.0,Off west coast of South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WHZ	**Wether Hill Ro**	**1.37**	**77**	PN	Pn	22 03 00.2	-1.0
WHZ				SN	Sn	22 03 18.0	-1.3
MLZ	**Mavora Lakes**	**1.73**	**61**	PN	Pn	22 03 05.8	-0.5
MLZ				SN	Sn	22 03 27.1	-1.4
MSZ	**Milford Sound**	**2.04**	**42**	PN	Pn	22 03 09.3	-1.4
AXZ	**Alexandra**	**2.50**	**69**	PN	Pn	22 03 17.0	-0.3
AXZ				*e*SN	Sn	22 03 48.5	+0.6
TUZ	**Tuapeka**	**2.52**	**85**	SN	Sn	22 03 46.5	-1.9
ODZ	**Otahua Downs**	**3.44**	**72**	PN	Pn	22 03 28.1	-2.6

INMG ***18*** *22:03:35.9±0.9,37.19N×7.36W,h8km±6km,ML0.9,Error ellipse: s-maj=3.0km s-min=2.5km az=19.0*
MDD ***18*** *22:03:35.9±1.2,37.21N×7.34W,h7km±9km,mbLg1.1/5, Error ellipse: s-maj=9.2km s-min=5.2km az=179.0, PRXIMO*
NEIC ***18*** *22:03:36.3,37.20N×7.35W,MN1.1(MDD),After MDD.*

ISC 18 22:03:34.9±1.2,37.23N±0.08×7.29W±0.08,h12km±9km, n15,σ0≥88/18,Portugal

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PALC	**Alcoutim**	**0.28**	**327**	*e*Pg	**Pg**	**22 03 41.2**	**+0.4**
PALC				*e*Sg	**Sg**	**22 03 45.5**	**+0.7**
	8.1nm,0.2s						
PALC	**Alcoutim**	**0.28**	**327**	Pg	**Pg**	**22 03 41.2**	**+0.4**
PALC				Lg		22 03 45.5	
	4.1nm,0.2s						
EGRO	**El Granado**	**0.34**	**333**	Pg	**Pg**	**22 03 42.6**	**+0.7**
	0.3nm,0.0s,SNR=24						
EGRO				Lg		22 03 47.4	
	5.6nm,0.1s,SNR=5.0						
EGRO	**El Granado**	**0.34**	**333**	Pg	**Pg**	**22 03 42.7**	**+0.7**
EGRO				Lg		22 03 47.3	
EMIN	**Mina Concepcio**	**0.73**	**42**	Pg	**Pg**	**22 03 50.4**	**+0.9**
	1.0nm,0.1s,SNR=11						
EMIN				Lg		22 04 01.2	
	1.0nm,0.1s,SNR=5.0						
EMIN	**Mina Concepcio**	**0.73**	**42**	Pg	**Pg**	**22 03 50.5**	**+0.9**
EMIN				Lg		22 04 01.7	
PBEJ	**Beja**	**0.92**	**330**	*e*S	**Sb**	**22 04 04.9**	**+0.8**
	1.9nm,0.2s						
PBEJ	**Beja**	**0.92**	**330**	S	**Sb**	**22 04 04.9**	**+0.8**
	0.9nm,0.2s						
PTEO	**Sao Teotonio**	**1.19**	**286**	*e*P	**Pb**	**22 03 56.5**	**-0.3**
PTEO				*e*S	**Sb**	**22 04 12.1**	**+0.2**
	1.0nm,0.1s						
PTEO	**Sao Teotonio**	**1.19**	**286**	P	**Pb**	**22 03 56.5**	**-0.3**
PTEO				S	**Sb**	**22 04 12.1**	**+0.2**
	0.5nm,0.1s						
ESPR	**Espera**	**1.20**	**107**	Pg	**Pg**	**22 03 58.7**	**-0.3**
	0.3nm,0.1s,SNR=7.9						
ESPR				Lg		22 04 17.0	
	0.7nm,0.1s,SNR=7.9						
ESPR	**Espera**	**1.20**	**107**	Pg	**Pg**	**22 03 58.4**	**-0.5**
ESPR				Lg		22 04 16.7	
EBAD	**Badajoz**	**1.54**	**8**	Pg	**Pg**	**22 04 04.1**	**-1.6**
	0.2nm,0.1s,SNR=5.0						
EBAD				Lg		22 04 26.0	
	1.1nm,0.1s,SNR=7.9						
EBAD	**Badajoz**	**1.54**	**8**	Pg	**Pg**	**22 04 04.6**	**-1.0**
EBAD				Lg		22 04 25.7	
MOE	**Montemor**	**1.54**	**327**	*e*Sg	**Sg**	**22 04 24.4**	**-1.9**

NEIC 18 22:38:32.0,51.40N×174.02W,h27km,ML3.7(AEIC), After AEIC.,Andreanof Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ATKA	**Atka Island**	**0.81**	**352**	P	Pb	22 38 45.8	-1.5
ATKA				S	Sb	22 38 56.9	-1.0
GSIG	**Igitkin Island**	**1.32**	**297**	P	Pn	22 38 53.1	-1.9
GSIG				S	Sn	22 39 09.2	-2.7
GSMY	**Great Sitkin M**	**1.42**	**298**	P	Pn	22 38 54.6	-1.8
GSTR	**Great Sitkin T**	**1.45**	**299**	P	Pn	22 38 55.2	-1.5
GSCK	**Great Sitkin C**	**1.47**	**295**	P	Pn	22 38 55.4	-1.6
GSTD	**Great Sitkin T**	**1.48**	**297**	P	Pn	22 38 55.5	-1.6
GSTD				S	Sn	22 39 13.1	-2.6
GSSP	**Great Sitkin S**	**1.51**	**298**	P	Pn	22 38 56.2	-1.4
ETKA	**Kagalaska Isla**	**1.56**	**288**	P	Pn	22 38 56.3	-2.0
ETKA				S	Sn	22 39 14.4	-3.3
ADK	**Adak**	**1.73**	**287**	P	Pn	22 38 58.7	-2.1
ADK				S	Sn	22 39 19.4	-2.8
KIRH	**Kanaga Island**	**1.98**	**286**	P	Pn	22 39 02.8	-1.6
KIRH				S	Sn	22 39 27.1	-1.4
KIWB	**Kanaga Island**	**2.00**	**284**	P	Pn	22 39 02.8	-1.9
KINC	**Kanaga Island**	**2.01**	**287**	P	Pn	22 39 03.2	-1.5
KIKV	**Kanaga Island**	**2.02**	**285**	P	Pn	22 39 03.2	-1.7
KIKV				S	Sn	22 39 27.6	-2.0
KIMD	**Kanaga Island**	**2.04**	**281**	P	Pn	22 39 03.3	-1.9
NIKO	**Nikolski**	**3.55**	**62**	P	Pn	22 39 23.2	-3.5
OKER	**East Rim**	**4.19**	**58**	P	Pn	22 39 33.4	-2.4
MCIR	**Makushin Cirqu**	**5.03**	**57**	P	Pn	22 39 44.6	-3.1
MSW	**Makushin Switc**	**5.07**	**57**	P	Pn	22 39 45.3	-3.0
MTBL	**Makushin Table**	**5.15**	**57**	P	Pn	22 39 46.3	-3.1
UNV	**Unalaska Valle**	**5.19**	**59**	P	Pn	22 39 46.7	-3.3
WESE	**West Dahl East**	**6.48**	**58**	P	Pn	22 40 04.5	-3.6
FALS	**False Pass**	**7.26**	**57**	P	Pn	22 40 15.4	-3.7
DRIA	**Deer Island**	**7.91**	**59**	P	Pn	22 40 23.1	-5.1
DT1	**Dutton Round H**	**7.96**	**58**	P	Pn	22 40 24.1	-4.7
DTNA	**Dutton South F**	**7.99**	**57**	P	Pn	22 40 24.6	-4.6
FX1	**Attu Island--F**	**8.03**	**286**	P	P	22 40 24.8	-5.0
DOL	**Dolgoi Island**	**8.19**	**58**	P	P	22 40 27.2	-4.9
SDPT	**Sand Point**	**9.01**	**59**	P	P	22 40 37.5	-5.9

NEIC ***18*** *22:54:07.2±0.5,5.33S×153.64E,mb4.4/5,Error ellipse: s-maj=10.2km s-min=9.4km az=131.0*
IDC ***18*** *22:54:07.1±0.8,5.39S×153.69E,h68km±6km,mb4.0/11, mb1 4.1/12,mb1mx4.0/17,MS3.1/3,Ms1 3.1/3, ms1mx2.9/22,Error ellipse: s-maj=20.8km s-min=16.7km az=106.0*

ISC 18 22:54:05.5±0.6,5.33S±0.09×153.65E±0.08,h70km, h70km±2.9km:pP-P,n26,σ0≥88/24,mb4.2/15,New Ireland region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WAU	**Wau**	**7.18**	**253**	*e*P	**P**	**22 55 49.6**	**-0.3**
CTA	**Charters Tower**	**16.34**	**205**	P	**P**	**22 57 53.6**	**+1.8**
	0.2nm,0.3s,baz=16,slow=9.0,SNR=4.4						
CTA				LR	LR	23 02 42.1	
	comp=Z,78nm,18.6s,baz=222,slow=32						
CTAO	**Charters Tower**	**16.34**	**205**	P	**P**	**22 57 52.6**	**+0.8**
	2.7nm,0.6s						
DZM	**Mont Dzumac**	**20.74**	**145**	*e*P	**P**	**22 58 41.6**	**-1.1**
DZM	**Mont Dzumac**	**20.74**	**145**	*e*P	**P**	**22 58 41.5**	**-1.1**
KAKA	**Kakadu**	**22.21**	**249**	*e*P	**P**	**22 58 56.7**	**-0.6**
	9.8nm,0.6s,mb4.3						
KAKA				*e*		22 59 02.6	
WRAB	**Tennant Creek**	**23.73**	**231**	*e*P	**P**	**22 59 12.5**	**+0.3**
	5.8nm,0.5s,mb4.2						
WB2	**Warramunga Arr**	**23.74**	**231**	*e*P	**P**	**22 59 12.6**	**+0.4**
WRA	**Warramunga Arr**	**23.75**	**231**	P	**P**	**22 59 13.2**	**+0.9**
	4.1nm,0.7s,mb3.9,baz=54,slow=9.4,SNR=24						
WRA				pP		22 59 29.9	
	1.6nm,0.4s,baz=48,slow=9.8,SNR=4.7						
WRA				PcP	PcP	23 02 55.8	-0.3
	0.8nm,0.4s,baz=54,slow=2.7,SNR=7.0						
ASAR	**Alice Springs**	**26.34**	**224**	P	**P**	**22 59 36.4**	**-0.6**
	1.9nm,0.5s,mb3.8,baz=57,slow=9.1,SNR=18						
ASAR				pP	pP	22 59 52.7	-0.7
	1.7nm,0.8s,baz=54,slow=9.0,SNR=4.1						
ASAR				PcP	PcP	23 03 01.8	0.0
	1.3nm,0.7s,baz=60,slow=2.6,SNR=8.0						
ASAR				LR	LR	23 10 16.2	
	comp=Z,31nm,18.2s,baz=27,slow=37						
STKA	**Stephens Creek**	**28.72**	**202**	P	**P**	**22 59 56.7**	**-1.7**
	2.7nm,0.8s,mb3.9,baz=40,slow=15,SNR=5.1						
FITZ	**Fitzroy Crossi**	**30.16**	**243**	*e*P	**P**	**23 00 10.1**	**-1.2**
	7.9nm,0.6s,mb4.5						
FITZ	**Fitzroy Crossi**	**30.16**	**243**	LR	LR	23 11 56.3	
	comp=Z,26nm,18.3s,baz=358,slow=35						
URZ	**Urewera**	**39.10**	**150**	P	**P**	**23 01 27.2**	**-0.4**
	3.4nm,0.3s,mb4.7,baz=60,slow=2.7,SNR=6.1						
RAR	**Rarotonga**	**47.79**	**114**	P	**P**	**23 02 38.6**	**+0.6**
	25nm,0.8s,mb5.1,baz=107,slow=9.4,SNR=4.1						
CMAR	**Chiang Mai Arr**	**58.87**	**295**	P	**P**	**23 04 00.8**	**+1.2**
	7.1nm,1.1s,mb4.6,baz=118,slow=5.2,SNR=12						
CMAR				pP	pP	23 04 17.0	-1.0
	1.6nm,0.7s,baz=122,slow=5.6,SNR=3.2						
ULN	**Ulaanbaatar**	**66.89**	**328**	P	**P**	**23 04 52.4**	**0.0**
SBA	**Scott Base**	**72.80**	**177**	P	**P**	**23 05 28.1**	**+0.3**
MKAR	**Makanchi Array**	**81.28**	**319**	P	**P**	**23 06 16.2**	**+0.6**
	0.7nm,0.5s,mb3.8,baz=104,slow=6.5,SNR=15						
MKAR				pP	pP	23 06 35.5	+0.5
	1.2nm,0.8s,baz=106,slow=6.3,SNR=5.0						
ZAL	**Zalesovo**	**82.07**	**326**	P	**P**	**23 06 17.8**	**-1.8**
	0.7nm,0.4s,mb3.9,baz=270,slow=7.3,SNR=3.0						
ZAL				pP	pP	23 06 39.2	+0.4
	0.6nm,0.3s,baz=74,slow=22,SNR=2.1						
ILAR	**Eielson Array**	**82.33**	**22**	pP	pP	23 06 40.9	+0.8
	0.6nm,0.8s,baz=252,slow=5.3,SNR=5.9						
QSPA	**South Pole Qui**	**84.63**	**180**	*e*P	**P**	**23 06 33.0**	**+1.0**
	7.6nm,0.7s,mb4.7						
MAW	**Mawson**	**85.41**	**203**	P	**P**	**23 06 36.7**	**+0.7**
	1.2nm,0.6s,mb4.0,baz=124,slow=3.6,SNR=3.0						
INK	**Inuvik**	**88.65**	**21**	P	**P**	**23 06 52.1**	**+0.4**
	0.5nm,0.3s,mb4.0,baz=248,slow=2.8,SNR=3.9						
YKA	**Yellowknife Ar**	**95.50**	**28**	P	**P**	**23 07 23.2**	**-0.3**
	0.1nm,0.5s,mb3.5,baz=270,slow=5.6,SNR=3.2						
YKA				pP	pP	23 07 43.0	-0.2
	0.3nm,0.8s,baz=268,slow=4.7,SNR=3.0						
YKA	**Yellowknife Ar**	**95.50**	**28**	P	**P**	**23 07 23.2**	**-0.3**
YKA				pP	pP	23 07 43.0	-0.2

BJI ***18*** *23:04:51.0,20.85S×68.88W,h115km,mB4.8*
NEIC ***18*** *23:04:52.7±0.8,19.87S×69.04W,h96km±9km,mb4.3/6, Error ellipse: s-maj=14.9km s-min=7.8km az=57.0*
NEIC Felt [III] at Iquique and Pisagua; [II] at Huara, Mamina and Pica.
SYO ***18*** *23:04:52.7,19.87S×69.04W,h96km,MB4.3*
IDC ***18*** *23:04:53.7±0.6,19.86S×69.00W,h107km±6km,mb4.2/13, mb1 4.3/16,mb1mx4.2/19,MS3.3/1,Ms1 3.3/1, ms1mx2.8/20,Error ellipse: s-maj=19.8km s-min=9.3km az=87.0*

ISC 18 23:04:51.8±0.8,19.79S±0.07×69.03W±0.09,h102km±9km, n49,σ1≥10/44,mb4.3/17,2C-1D,Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LVC	**Limon Verde**	**2.81**	**178**	P	**P**	**23 05 35.4**	**-0.6**
	221nm,0.3s,baz=16,slow=9.2,SNR=507						
LVC				S	**S**	**23 06 10.4**	**+1.1**
	175nm,0.3s,baz=93,slow=24,SNR=12						
LVC	**Limon Verde**	**2.81**	**178**	*e*P	**P**	**23 05 35.2**	**-0.8**
LPAZ	**La Paz**	**3.58**	**14**	P	**P**	**23 05 52.8**	**+6.3**
	107nm,0.3s,baz=196,slow=8.9,SNR=3.8						
LPAZ				S	**S**	**23 06 38.2**	**+10**
	slow=25,SNR=2.7						
ARE	**Arequipa**	**4.05**	**324**	⇓P	**P**	**23 05 53.2**	**+0.2**
ARE				*i*		23 06 13.5	
ARE				*e*S	**S**	**23 06 39.0**	**-0.6**
CPUP	**Villa Florida**	**12.58**	**123**	P	**P**	**23 07 47.5**	**-0.6**
	1.3nm,0.3s,baz=322,slow=12,SNR=40						
TRQA	**Tornquist**	**19.21**	**163**	*e*P	**P**	**23 09 08.1**	**-2.0**
BDFB	**Brasilia**	**20.43**	**82**	P	**P**	**23 09 23.8**	**+0.8**
	12nm,0.4s,baz=261,slow=12,SNR=18						
OTAV	**Otavalo**	**21.94**	**334**	*e*P	**P**	**23 09 40.9**	**+2.7**
	5.9nm,0.6s,mb4.1						
CAM4	**Nova Friburgo**	**24.81**	**101**	*e*P	**P**	**23 10 07.2**	**+1.2**
CAM4				*i*		23 10 08.0	
CAM4				*i*		23 10 13.6	
CAM4				*i*		23 10 18.7	
CAM4				*i*		23 10 34.5	
ROSC	**El Rosal**	**25.04**	**347**	P	**P**	**23 10 10.9**	**+2.7**
	5.8nm,0.3s,mb4.5,baz=184,slow=23,SNR=2.8						
CAM3	**Guarapari**	**26.75**	**97**	⇑*e*P	**P**	**23 10 24.4**	**+0.5**
CAM3				*i*		23 10 27.7	
CAM3				*i*		23 10 31.8	
SDV	**Santo Domingo**	**28.54**	**357**	P	**P**	**23 10 40.2**	**+0.1**
	4.7nm,0.4s,mb4.4,baz=279,slow=3.5,SNR=3.9						
PCRV	**Puerto La Cruz**	**30.09**	**9**	P	**P**	**23 10 54.4**	**+0.4**
	18nm,1.0s,mb4.6,baz=214,slow=3.2,SNR=2.8						
PCRV				LR	LR	23 24 32.1	
	comp=Z,65nm,21.2s,baz=200,slow=39						
JTS	**JuntasAbangare**	**33.76**	**331**	P	**P**	**23 11 27.0**	**+1.2**
	2.9nm,0.6s,mb4.3,baz=264,slow=14,SNR=3.1						
JTS	**JuntasAbangare**	**33.76**	**331**	P	**P**	**23 11 27.0**	**+1.2**
SJG	**San Juan**	**37.77**	**4**	P	**P**	**23 11 58.9**	**-0.8**
	28nm,1.1s,mb5.0,baz=347,slow=19,SNR=4.7						
SJG	**San Juan**	**37.77**	**4**	P	**P**	**23 11 58.9**	**-0.8**
SWET	**Sewanee**	**57.01**	**344**	*e*P	**P**	**23 14 28.1**	**-1.2**
PLAL	**Pickwick Lake**	**57.40**	**341**	*e*P	**P**	**23 14 30.2**	**-1.8**
	3.8nm,0.8s,mb4.5						
PWV	**Princeton**	**57.94**	**349**	*e*P	**P**	**23 14 35.2**	**-0.6**
TXAR	**Lajitas Array**	**59.17**	**325**	P	**P**	**23 14 43.8**	**-0.7**
	0.4nm,0.4s,mb3.8,baz=146,slow=9.0,SNR=6.0						
MCWV	**Mont Chateau**	**59.99**	**350**	*e*P	**P**	**23 14 50.0**	**+0.1**
	12nm,0.6s,mb5.1						
FVM	**French Village**	**60.89**	**341**	*e*P	**P**	**23 14 55.1**	**-1.0**
WMOK	**Wichita Mounta**	**61.16**	**332**	P	**P**	**23 14 56.9**	**-1.0**
CCM	**Cathedral Cave**	**61.21**	**340**	*e*P	**P**	**23 14 57.2**	**-1.1**
GDL2	**Guadalupe Moun**	**61.78**	**326**	*e*P	**P**	**23 15 02.2**	**0.0**
MNTX	**Cornudas Mount**	**61.94**	**325**	*e*P	**P**	**23 15 02.0**	**-1.2**
SADO	**Sadowa**	**64.90**	**352**	P	**P**	**23 15 21.1**	**-1.4**
	4.0nm,0.5s,mb4.5,baz=162,slow=5.1,SNR=3.1						
ANMO	**Albuquerque**	**65.02**	**327**	P	**P**	**23 15 23.9**	**+0.5**
	0.9nm,0.7s,mb3.7						
SDCO	**Great Sand Dun**	**66.73**	**329**	P	**P**	**23 15 35.1**	**+0.9**
DBIC	**Dimbokro**	**68.36**	**74**	P	**P**	**23 15 43.3**	**-1.5**
	5.9nm,0.8s,mb4.5,baz=233,slow=9.3,SNR=10						
DBIC				pP	pP	23 16 11.6	+0.9
	2.2nm,0.4s,baz=231,slow=8.8,SNR=1.8						
DBIC				sP	sP	23 16 22.8	+1.1
	3.7nm,0.5s,baz=245,slow=7.3,SNR=2.6						
MSU	**Marysvale**	**70.71**	**325**	*e*P	**P**	**23 16 00.3**	**+1.5**
BW06	**Boulder Array**	**72.58**	**330**	P	**P**	**23 16 10.4**	**+0.7**
PDAR	**Pinedale Array**	**72.58**	**330**	P	**P**	**23 16 08.7**	**-1.0**
	0.6nm,0.9s,mb3.4,baz=135,slow=2.1,SNR=4.8						
ULM	**Lac du Bonnet**	**73.66**	**342**	P	**P**	**23 16 15.4**	**-0.4**
	3.9nm,0.6s,mb4.3,baz=172,slow=5.0,SNR=7.9						
ULM	**Lac du Bonnet**	**73.66**	**342**	*e*P	**P**	**23 16 15.3**	**-0.6**
	4.2nm,0.6s,mb4.3						
SCHQ	**Schefferville**	**74.34**	**1**	P	**P**	**23 16 20.3**	**+0.6**
	2.8nm,1.0s,mb4.0,baz=95,slow=7.5,SNR=3.4						
HLID	**Hailey**	**75.54**	**328**	*e*P	**P**	**23 16 28.4**	**+1.6**
	3.8nm,1.1s,mb4.0						
MCMT	**McKenzie Canyo**	**75.70**	**329**	*e*P	**P**	**23 16 29.2**	**+1.5**
SYO	**Syowa Base**	**78.14**	**160**	⇑PcP	PcP	23 16 46.8	-3.5
YKA	**Yellowknife Ar**	**89.54**	**341**	P	**P**	**23 17 39.4**	**+1.0**
	5.5nm,0.7s,mb4.8,baz=134,slow=4.6,SNR=138						
YKA				pP	pP	23 18 05.9	+0.3
	1.2nm,0.8s,baz=133,slow=4.8,SNR=3.4						
YKW3	**Yellowknife Ar**	**89.60**	**341**	*e*P	**P**	**23 17 39.2**	**+0.5**
ASAR	**Alice Springs**	**131.37**	**208**	PKP	PKPdf	23 23 54.4	+1.4
	0.3nm,0.7s,baz=146,slow=2.5,SNR=2

baz=197,slow=14
KBS Kingsbay 4.38 359 Pn Pn 00 47 56.7 -4.3
KIF Kilpisjarvi 6.19 150 P Pn 00 48 19.3 -7.3
KIF S Sn 00 49 25.5 -14
KIF SG Sg 00 49 28.7 -49
ARA0 ARCESS Array S 6.49 135 Pn Pn 00 48 27.0 -3.9
baz=327,slow=14
ARA0 Sn Sn 00 49 38.2 -8.4
baz=322,slow=22
ARA0 ARCESS Array S 6.49 135 SG Sn 00 49 41.3 -5.3
KEV Kevo 6.61 130 P Pn 00 48 29.6 -2.9
KEV S Sn 00 49 38.7 -11
KEV SG Sg 00 49 42.9 -49

*MOS **19** 00:47:14.7±1.4,40.18N×53.29E,h33km,mb4.1/3,Error ellipse: s-maj=16.1km s-min=13.2km az=57.0*
*NEIC **19** 00:47:17.8±1.1,40.10N×53.31E,h51km±15km,mb4.0/2,Error ellipse: s-maj=13.9km s-min=8.4km az=153.0*
*IDC **19** 00:47:17.7±2.6,40.05N×53.29E,h57km±31km,mb3.5/5,mb1 3.6/10,mb1mx3.5/23,ML3.4/3,Error ellipse: s-maj=18.8km s-min=18.1km az=105.0*
*NNC **19** 00:47:26.3±4.7,40.92N×54.25E,Error ellipse: s-maj=42.2km s-min=28.2km az=64.0*
ISC 19 00:47:15.3±1.0,**40.09N**±0.06×**53.31E**±0.06,**h50**km±16km, **n29,**σ1§**10**/40,**mb3.7**/5,**4C-1D,Turkmenistan**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
THR	**Tehran**	**4.52**	**203**	P	**P**	**00 48 24.2**	**+1.3**
	1.0nm,0.3s,baz=6.9,slow=8.1,SNR=17						
THR				S	**S**	**00 49 14.2**	**-0.6**
	4.2nm,0.3s,baz=166,slow=14,SNR=20						
THR	**Tehran**	**4.52**	**203**	P	**P**	**00 48 24.3**	**+1.3**
THR				S	**S**	**00 49 14.3**	**-0.5**
THR				pmax	pmax		
	comp=Z,1.0nm,0.3s						
THR				smax			
	comp=N,4.0nm,0.3s						
GNI	**Garni**	**6.57**	**273**	P	**P**	**00 48 53.0**	**+1.3**
	comp=N,1.7nm,0.3s,baz=333,slow=2.0,SNR=9.9						
GNI				S	**S**	**00 50 05.5**	**-0.6**
	comp=N,0.5nm,0.3s,baz=255,slow=19,SNR=2.0						
GNI	**Garni**	**6.57**	**273**	P	**P**	**00 48 53.0**	**+1.3**
GNI				S	**S**	**00 50 05.5**	**-0.6**
GNI				pmax	pmax		
	comp=Z,2.0nm,0.3s						
GNI				smax			
	comp=N,1.0nm,0.3s						
KIV	**Kislovodsk**	**8.80**	**299**	*e*Pn	**P**	**00 49 20.3**	**-2.3**
	comp=N,7.0nm,0.8s						
KIV				*e*Sn	**S**	**00 50 47.4**	**-14**
AB31	**Akbulak array**	**10.31**	**25**	⇓P	**P**	**00 49 41.8**	**-1.4**
	comp=N,0.7nm,0.3s,baz=3.9,slow=27,SNR=36						
AB31				S	**S**	**00 51 27.1**	**-11**
	comp=N,2.4nm,0.3s,baz=173,slow=12,SNR=12						
AB31	**Akbulak array**	**10.31**	**25**	P	**P**	**00 49 41.8**	**-1.4**
AB31				S	**S**	**00 51 27.0**	**-11**
AB31				smax			
	comp=Z,1.0nm,0.3s						
KK31	**Karatay Array**	**13.22**	**71**	P	**P**	**00 50 21.2**	**-1.2**
	comp=Z,0.5nm,0.3s,baz=264,slow=16,SNR=16						
KK31				⇑S	**S**	**00 52 42.8**	**-5.9**
	comp=Z,2.0nm,0.5s,baz=268,slow=23,SNR=7.2						
KKAR	**Karatay Array**	**13.22**	**71**	*i* P	**P**	**00 50 21.1**	**-1.3**
KKAR				*e*S	**S**	**00 52 39.9**	**-8.8**
KKAR				smax			
	comp=Z,1.0nm,0.4s						
BRTR	**Keskin Array B**	**15.11**	**275**	P	**P**	**00 50 48.2**	**+1.3**
	comp=Z,0.1nm,0.3s,baz=84,slow=11,SNR=5.1						
ARU	**Arti**	**16.71**	**10**	*e*P	**P**	**00 51 09.0**	**+1.8**
	comp=Z,3.6nm,0.9s						
ZRNK	**Zerenda**	**16.75**	**35**	*e*P	**P**	**00 51 07.1**	**-0.6**
BRVK	**Borovoye**	**17.39**	**36**	P	**P**	**00 51 17.0**	**+1.3**
BVA0	**Borovoye Array**	**17.41**	**36**	⇑P	**P**	**00 51 15.9**	**-0.1**
	comp=Z,0.6nm,1.0s,baz=227,slow=13,SNR=8.4						
BVA0				⇑S	**S**	**00 54 18.6**	**-7.6**
	comp=Z,0.1nm,0.3s,baz=218,slow=25,SNR=3.6						
BVAR	**Borovoye Array**	**17.41**	**36**	P	**P**	**00 51 16.5**	**+0.5**
	comp=Z,0.4nm,0.3s,baz=222,slow=12,SNR=8.7						
BVAR				S	**S**	**00 54 19.1**	**-7.0**
	comp=Z,0.4nm,0.3s,baz=223,slow=26,SNR=5.1						
VOSK	**Vostochnaya**	**17.49**	**38**	⇑P	**P**	**00 51 18.1**	**+1.0**
	comp=Z,1.6nm,0.6s						
VOSK	**Vostochnaya**	**17.49**	**38**	P	**P**	**00 51 17.6**	**+0.6**
VOSK				pmax	pmax		
	comp=Z,1.0nm,0.6s						
OBN	**Obninsk**	**18.72**	**329**	P	**P**	**00 51 33.4**	**+1.3**
	comp=Z,12nm,0.4s						
AKASG	**Malin Array Be**	**19.88**	**310**	P	**P**	**00 51 42.8**	**-2.1**
	comp=Z,2.2nm,0.3s,baz=116,slow=11,SNR=7.6						
KURK	**Kurchatov**	**20.61**	**51**	*e*P	**P**	**00 51 52.5**	**0.0**
MKAR	**Makanchi Array**	**22.00**	**63**	P	**P**	**00 52 07.3**	**+0.7**
	comp=Z,0.7nm,0.7s,mb3.2,baz=260,slow=8.8,SNR=5.3						
MKAR	**Makanchi Array**	**22.00**	**63**	P	**P**	**00 52 07.3**	**+0.7**
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.7s						
FINES	**FINESS Array B**	**27.09**	**331**	P	**P**	**00 52 55.1**	**+0.2**
	comp=Z,2.0nm,0.9s,mb3.7,baz=135,slow=9.8,SNR=8.5						
FINES	**FINESS Array B**	**27.09**	**331**	P	**P**	**00 52 55.1**	**+0.1**
FINES				pmax	pmax		
	comp=Z,2.0nm,0.9s						
GERES	**GERESS Array B**	**29.31**	**301**	P	**P**	**00 53 14.4**	**-0.6**
	comp=Z,0.3nm,0.3s,mb3.4,baz=90,slow=8.0,SNR=5.0						
NOA	**NORSAR Array B**	**33.13**	**323**	P	**P**	**00 53 48.6**	**0.0**
	comp=Z,1.2nm,1.0s,mb3.8,baz=114,slow=8.5,SNR=2.4						
NOA	**NORSAR Array B**	**33.13**	**323**	P	**P**	**00 53 48.6**	**+0.1**
NOA				pmax	pmax		
	comp=Z,1.0nm,1.0s						
DBIC	**Dimbokro**	**61.58**	**254**	P	**P**	**00 57 29.8**	**-0.3**
	comp=Z,2.1nm,0.8s,mb4.3,baz=72,slow=6.4,SNR=3.3						
DBIC	**Dimbokro**	**61.58**	**254**	P	**P**	**00 57 29.8**	**-0.2**
DBIC				pmax	pmax		
	comp=Z,2.0nm,0.8s						

*IDC **19** 01:06:47.2±3.4,2.93S×140.06E,mb3.4/2,mb1 3.8/3,mb1mx3.7/11,ML3.6/1,MS3.1/1,Ms1 3.1/1,ms1mx2.1/6,Error ellipse: s-maj=116.0km s-min=17.7km az=96.0*
ISC 19 01:06:44.1±3.0,**3.0S**±0.2×**141.7E**±0.8,**h33**km,**n5,**σ0§**63**/5, **mb3.4**/2,**New Guinea**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CTA	**Charters Tower**	**17.53**	**166**	LR	LR	01 17 25.9	
	comp=Z,51nm,18.5s,baz=229,slow=35						
WB2	**Warramunga Arr**	**18.30**	**203**	*e*P	**P**	**01 10 57.6**	**+0.1**
WRA	**Warramunga Ar**	**18.31**	**203**	P	**P**	**01 10 56.7**	**-0.9**
	0.2nm,0.3s,baz=17,slow=13,SNR=8.9						
WRA				S	**S**	**01 14 17.6**	**+0.2**
	0.1nm,0.3s,baz=16,slow=23,SNR=5.4						
ASAR	**Alice Springs**	**21.88**	**200**	P	**P**	**01 11 36.5**	**+0.5**
	0.6nm,0.7s,mb3.2,baz=28,slow=10,SNR=4.3						
MKAR	**Makanchi Array**	**71.89**	**322**	P	**P**	**01 18 05.9**	**0.0**
	0.8nm,0.8s,mb3.7,baz=121,slow=7.1,SNR=7.8						

SKHL 19 01:09:16.2±0.8,**53.97N**×**132.36E,h7**km±1km,**mb3.9**/6, **2C-1D,Southeastern Siberia**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
EKMR	**Ekimchan**	**0.97**	**158**	⇑*i*Pg	Pg	01 09 34.0	-1.6
EKMR				AMB	AMB	01 09 34.3	
	28nm,0.2s						
EKMR				AMB	AMB	01 09 34.3	
	8.0nm,0.4s						
EKMR				pPg		01 09 35.5	
EKMR				*i* Sg	Sg	01 09 46.9	-1.6
EKMR				A		01 09 47.5	
	264nm,0.2s						
EKMR				A		01 09 47.5	
	198nm,0.2s						
BMKR	**Bomnak**	**2.19**	**291**	⇑*i*Pn	Pn	01 09 55.0	+1.5
BMKR				*e*Pg	Pg	01 09 56.5	-3.4
BMKR				AMB	AMB	01 09 57.0	
	45nm,0.5s						
BMKR				AMB	AMB	01 09 57.0	
	65nm,0.5s						
BMKR				AMB	AMB	01 09 57.0	
	82nm,0.5s						
BMKR				*i* Sg	Sg	01 10 25.0	-4.1
BMKR				A		01 10 26.5	
	455nm,0.4s						
BMKR				A		01 10 26.5	
	386nm,0.4s						
YASR	**Yasnyy**	**2.70**	**257**	*e*Pn	Pn	01 09 59.6	-1.2
YASR				⇓*i*Pg	Pg	01 10 04.8	-5.2
YASR				AMB	AMB	01 10 06.6	
	9.0nm,0.4s						
YASR				AMB	AMB	01 10 06.6	
	42nm,0.4s						
YASR				AMB	AMB	01 10 06.6	
	30nm,0.4s						
YASR				pPg		01 10 07.6	
YASR				*e*rx	rx	01 10 08.9	
YASR				*e*Sg	Sg	01 10 39.6	-6.4
YASR				A		01 10 46.8	
	56nm,0.5s						
YASR				A		01 10 46.8	
	60nm,0.5s						
ZEA	**Zeya**	**3.04**	**268**	*e*Pg	Pg	01 10 10.1	-6.7
ZEA				AMB	AMB	01 10 11.1	
	34nm,0.4s						
ZEA				*e*Sg	Sg	01 10 50.5	-6.8
ZEA				A		01 10 52.2	
	78nm,0.4s						
KROS	**Kirovskiy**	**3.20**	**281**	*e*Pn	Pn	01 10 07.9	0.0
KROS				*e*Pg	Pg	01 10 15.0	-5.1
KROS				AMB	AMB	01 10 15.5	
	6.0nm,0.5s						
KROS				AMB	AMB	01 10 15.5	
	5.0nm,0.5s						
KROS				pPg		01 10 17.2	
KROS				*e*Sn	Sn	01 10 47.0	+0.2
KROS				*e*Sg	Sg	01 10 56.2	-6.5
KROS				A		01 10 59.0	
	35nm,0.5s						
KROS				A		01 10 59.0	
	22nm,0.5s						
GRNR	**Gornyy**	**4.06**	**141**	*e*Sg	Sg	01 11 24.0	-7.3
KLR	**Kul'dur**	**4.76**	**185**	*e*Sn	Sn	01 11 26.5	+0.2
KLR				*e*Sg	Sg	01 11 43.8	-11
NKL	**Nikolayevsk**	**5.03**	**96**	*e*Sg	Sg	01 11 53.0	-11
TUP	**Tupik**	**7.29**	**279**	*e*Pn	Pn	01 11 01.3	-4.5
TUP				*e*Pg	Pg	01 11 26.3	-16
TUP				AMB	AMB	01 11 37.7	
	3.0nm,0.3s						
TUP				*e*Sg	Sg	01 13 04.2	-15
TUP				A		01 13 22.3	
	23nm,1.0s						

*NEIC **19** 01:37:41.9,44.23N×7.42E,h3km,ML2.0(GEN),ML1.9(LDG),ML1.6(STR),After GEN.*
*LDG **19** 01:37:41.8±0.5,44.26N×7.53E,h2km,Md2.0/1,Ml1.9/3,Error ellipse: s-maj=9.1km s-min=4.0km az=74.0*
*STR **19** 01:37:42.0±0.1,44.27N×7.31E,h5km±1km,Ml1.6,Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
ISC 19 01:37:41.7±0.4,**44.25N**±0.02×**7.43E**±0.03,**h6**km±4km,**n22,** σ0§**49**/36,**Northern Italy**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ENR	**Entracque**	**0.03**	**189**	P	**Pg**	**01 37 42.7**	**-0.3**
ENR				S	**Sg**	**01 37 43.2**	**-0.6**
STV2	**Anna di Valdie**	**0.07**	**265**	P	**Pg**	**01 37 43.4**	**-0.1**
STV2				S	**Sg**	**01 37 44.6**	**-0.1**
STV	**Sta Anna Valdi**	**0.07**	**264**	P	**Pg**	**01 37 43.4**	**-0.1**
STV				S	**Sg**	**01 37 44.5**	**-0.2**
TOUF	**Mont Tournerai**	**0.27**	**208**	Pg	**Pg**	**01 37 47.4**	**+0.2**
SAOF	**Saorge**	**0.28**	**161**	Pg	**Pg**	**01 37 48.7**	**+1.3**
MONE	**Monesi**	**0.29**	**126**	P	**Pg**	**01 37 47.7**	**0.0**
MONE				S	**Sg**	**01 37 51.7**	**+0.1**
ROB	**Roburent**	**0.32**	**82**	P	**Pg**	**01 37 48.8**	**+0.6**
ROB				S	**Sg**	**01 37 53.4**	**+0.8**
PZZ	**Prazzo**	**0.34**	**318**	P	**Pg**	**01 37 48.9**	**+0.3**
PZZ				S	**Sg**	**01 37 53.6**	**+0.3**
AURF	**Auriere**	**0.37**	**191**	Pg	**Pg**	**01 37 49.5**	**+0.3**
AURF				Sg	**Sg**	**01 37 55.1**	**+0.9**
SBF	**Sospel**	**0.39**	**179**	*e*Pg	**Pg**	**01 37 50.1**	**+0.6**
SBF				*e*Sg	**Sg**	**01 37 54.6**	**-0.2**
	4.5nm,0.3s						
NEGI	**Negi**	**0.45**	**153**	P	**Pg**	**01 37 50.1**	**-0.6**
IMI	**Imperia**	**0.48**	**135**	P	**Pg**	**01 37 51.1**	**-0.2**
IMI				S	**Sg**	**01 37 57.5**	**-0.2**
RORO		**0.48**	**107**	P	**Pg**	**01 37 51.3**	**-0.1**
RORO				S	**Sg**	**01 37 57.7**	**-0.2**
FIN	**Finale Ligure**	**0.56**	**94**	P	**Pg**	**01 37 52.9**	**-0.2**
BHB	**Bricheracio**	**0.60**	**349**	P	**Pg**	**01 37 53.5**	**-0.3**
MBDF	**Montbardon**	**0.67**	**316**	*e*Pg	**Pg**	**01 37 55.2**	**+0.1**
MBDF				*e*Sg	**Sg**	**01 38 04.2**	**+0.2**
	2.7nm,0.2s						
RRL	**Cesana Torines**	**0.81**	**326**	P	**Pb**	**01 37 57.4**	**-0.3**
PCP	**Pian Castagno**	**0.85**	**70**	P	**Pb**	**01 37 58.0**	**-0.5**
FRF	**La Foret Royal**	**0.89**	**219**	*e*Pg	**Pg**	**01 37 59.4**	**-0.1**
FRF				*e*Sg	**Sg**	**01 38 11.4**	**0.0**
	2.0nm,0.2s						
RSP	**Reno Superiore**	**0.91**	**352**	P	**Pb**	**01 37 58.8**	**-0.6**
LMR	**La Mourre**	**1.13**	**216**	*e*Pg	**Pg**	**01 38 03.5**	**-0.8**
LMR				*e*Sg	**Sg**	**01 38 18.5**	**-1.0**
	3.1nm,0.2s						
SMRF	**Simiane la Rot**	**1.36**	**259**	*e*Pg	**Pg**	**01 38 09.1**	**+0.2**
SMRF				*e*Sg	**Sg**	**01 38 28.1**	**+1.0**
	2.2nm,0.3s						

*IDC **19** 02:12:56.6±1.2,12.28N×86.20W,mb3.3/4,mb1 3.7/5,mb1mx3.6/18,ML3.4/1,Error ellipse: s-maj=134.0km s-min=13.5km az=59.0*
*CASC **19** 02:12:59.5±2.2,11.43N×86.90W,h1km±5km,MD4.0,mb4.1(NEIC)*
*NEIC **19** 02:13:01.0±3.4,10.05N×86.78W,h168km±37km,mb4.1/2,Error ellipse: s-maj=85.6km s-min=16.4km az=64.0*
ISC 19 02:13:00.2±0.8,**11.41N**±0.05×**86.97W**±0.08,**h66**km±9km, **n35,**σ1§**05**/47,**mb3.4**/5,**8C-6D,Near coast of Nicaragua**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
COPN	**Copaltepe**	**0.85**	**26**	⇑*i*P	**P**	**02 13 16.3**	**-0.4**
CRUN	**El Crucero**	**0.87**	**49**	*e*P	**P**	**02 13 16.1**	**-0.9**
XAVN	**Gruta Xavier**	**0.97**	**40**	⇑*e*P	**P**	**02 13 17.8**	**-0.5**
PYN	**Poneloya**	**0.97**	**357**	⇑*e*P	**P**	**02 13 18.1**	**-0.3**
PYN				*e*S	**S**	**02 13 33.2**	**+1.4**
MASN	**Masaya**	**0.98**	**54**	*e*P	**P**	**02 13 17.3**	**-1.2**
MASN				*e*P		02 13 17.6	
MASN				*e*S	**S**	**02 13 33.1**	**+0.9**
LEON	**Leon**	**1.00**	**4**	⇓*e*P	**P**	**02 13 18.3**	**-0.5**
LEON				*e*S	**S**	**02 13 33.9**	**+1.3**
APON	**Apoyo**	**1.02**	**60**	⇓*e*P	**P**	**02 13 18.2**	**-0.8**
MGAN	**Managua**	**1.02**	**44**	*e*P	**P**	**02 13 18.5**	**-0.5**
MGAN				⇑*e*P		02 13 18.5	
MGAN				*e*S	**S**	**02 13 32.7**	**-0.2**
MGAN				*e*S	**S**	**02 13 32.8**	**-0.1**
APYN	**Apoyeque**	**1.02**	**36**	⇑*e*P	**P**	**02 13 18.9**	**-0.1**
WILN	**Americas 2**	**1.07**	**45**	⇓*e*P	**P**	**02 13 19.2**	**-0.5**
WILN				*e*S	**S**	**02 13 33.7**	**-0.3**
MOMJ	**Momotombo**	**1.08**	**23**	⇓*e*P	**P**	**02 13 19.4**	**-0.4**
MOMJ				*e*S	**S**	**02 13 34.7**	**+0.4**
CNGN	**Cerro Negro**	**1.12**	**14**	*e*P	**P**	**02 13 20.0**	**-0.3**
CNGN				*e*S	**S**	**02 13 36.0**	**+0.8**
COFN	**Cofrada**	**1.12**	**49**	⇑*e*P	**P**	**02 13 19.7**	**-0.6**
TEL3	**Telica 3**	**1.16**	**6**	⇑*e*P	**P**	**02 13 21.1**	**+0.2**
TELN	**Telica**	**1.20**	**6**	*e*P	**P**	**02 13 20.5**	**-0.9**
CRIN	**San Cristobal**	**1.29**	**356**	⇓*e*P	**P**	**02 13 23.0**	**+0.3**
CONN	**Concepcion**	**1.32**	**83**	⇓*e*P	**P**	**02 13 22.2**	**-1.0**
CRZC	**La Cruz**	**1.42**	**108**	*e*P	**P**	**02 13 22.9**	**-1.6**
CRZC				*e*S	**S**	**02 13 43.9**	**+1.5**
PYTN	**Playitas**	**1.43**	**38**	*e*P	**P**	**02 13 24.1**	**-0.6**
PYTN				*e*S	**S**	**02 13 42.9**	**+0.2**
QUIN	**Quiabu**	**1.79**	**17**	⇑*e*P	**P**	**02 13 29.7**	**+0.2**
VCR	**Vista de Mar**	**1.83**	**134**	*e*P	**P**	**02 13 33.1**	**+3.1**
JTS	**JuntasAbangare**	**2.27**	**119**	Pn	**P**	**02 13 37.2**	**+0.9**
	9.0nm,0.3s,baz=309,slow=18,SNR=10.0						
JTS				Sn	**S**	**02 14 05.9**	**+2.9**
	19nm,0.3s,baz=281,slow=21,SNR=3.9						
JTS				Lg		02 14 09.9	
	16nm,0.3s,baz=146,slow=19,SNR=9.0						
JTS	**JuntasAbangare**	**2.27**	**119**	*e*Pn	**P**	**02 13 35.4**	**-0.8**
JTS				Sn	**S**	**02 14 05.9**	**+2.9**
JTS				Lg		02 14 09.9	
JCR	**Jicaral**	**2.39**	**130**	*e*P	**P**	**02 13 36.8**	**-1.1**
CGA2	**Cerro Gallo 2**	**2.82**	**119**	*e*P	**P**	**02 13 46.4**	**+2.4**
LAJ	**Bijagual**	**3.19**	**118**	*e*P	**P**	**02 13 45.9**	**-3.3**
TRTC	**Tortuguero**	**3.30**	**104**	*e*P	**P**	**02 13 52.0**	**+1.3**
LCR2	**La Lucha 2**	**3.35**	**119**	*e*P	**P**	**02 13 52.5**	**+1.1**
OTAV	**Otavalo**	**13.95**	**142**	*e*Pn	**P**	**02 15 57.5**	**-19**
	3.9nm,0.6s						
OTAV				*e*		02 16 16.4	
TXAR	**Lajitas Array**	**23.68**	**321**	P	**P**	**02 18 08.3**	**+1.7**
	1.0nm,0.9s,mb3.1,baz=141,slow=9.2,SNR=8.7						
TXAR	**Lajitas Array**	**23.68**	**321**	P	**P**	**02 18 08.3**	**+1.6**
WMOK	**Wichita Mounta**	**25.59**	**337**	*e*P	**P**	**02 18 26.1**	**+1.1**
	5.3nm,1.0s,mb3.9						
PDAR	**Pinedale Array**	**36.91**	**332**	P	**P**	**02 20 04.7**	**+0.3**
	0.2nm,0.4s,mb3.4,baz=143,slow=9.0,SNR=3.4						
YKA	**Yellowknife Ar**	**54.73**	**345**	P	**P**	**02 22 22.6**	**-2.4**
	0.3nm,0.8s,mb3.4,baz=146,slow=7.0,SNR=7.6						
ILAR	**Eielson Array**	**67.16**	**336**	P	**P**	**02 23 48.6**	**-0.3**
	0.2nm,0.6s,mb3.1,baz=146,slow=4.9,SNR=4.9						

*IDC **19** 02:19:28.1±1.2,19.54N×145.52E,mb3.6/4,mb1 3.9/4,mb1mx3.6/19,MS3.4/2,Ms1 3.4/2,ms1mx2.8/24,Error ellipse: s-maj=93.2km s-min=25.2km az=103.0*
ISC 19 02:19:31.5±1.2,**19.4N**±0.2×**145.8E**±0.7,**h33**km,**n6,** σ0§**05**/4,**mb3.5**/4,**MS3.4**/2,**Mariana Islands**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ASAJ	**Asahikawa**	**24.78**	**354**	LR	LR	02 34 21.2	
	comp=Z,17nm,18.5s,MS2.6,baz=328,slow=36						
WRA	**Warramunga Ar**	**40.69**	**197**	P	**P**	**02 27 10.7**	**0.0**
	1.2nm,0.7s,mb3.6,baz=15,slow=8.8,SNR=6.1						
ASAR	**Alice Springs**	**44.36**	**196**	P	**P**	**02 27 40.7**	**0.0**
	0.2nm,0.5s,mb3.1,baz=21,slow=8.2,SNR=3.3						
YKA	**Yellowknife Ar**	**77.32**	**28**	P	**P**	**02 31 24.1**	**0.0**
	0.3nm,0.8s,mb3.3,baz=294,slow=5.7,SNR=3.5						
FINES	**FINESS Array B**	**86.29**	**335**	P	**P**	**02 32 10.8**	**0.0**
	0.6nm,0.5s,mb4.1,baz=63,slow=4.3,SNR=8.9						
BORG	**Borgarnes**	**95.53**	**354**	LR	LR	03 17 52.7	
	comp=Z,67nm,19.1s,MS4.1,baz=249,slow=37						

*IDC **19** 02:59:44.6±6.1,15.93N×96.12W,mb3.6/5,mb1 3.9/7,mb1mx3.8/19,ML3.8/2,Error ellipse: s-maj=114.0km s-min=34.1km az=178.0*
*NEIC **19** 02:59:46.2±5.7,15.57N×96.32W,h35km,mb3.9/4,MD4.1(MEX),After MEX.*
*MEX **19** 02:59:46.2±0.9,15.59N×96.29W,h20km±20km,MD4.1*
ISC 19 02:59:44.7±0.9,**15.65N**±0.06×**96.26W**±0.04,**h31**km±5km, **n32,**σ1§**13**/48,**mb3.7**/8,**Near coast of Oaxaca**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HUIG	**Huatulco**	**0.19**	**51**	*i* P	**Pb**	**02 59 51.4**	**+0.5**
HUIG				*i* S	**Sb**	**02 59 54.6**	**-0.4**
OXX	**Oaxaca**	**1.49**	**343**	*e*P	**Pn**	**03 00 10.2**	**+0.4**
OXX				*i* S	**Sn**	**03 00 27.9**	**-0.4**
PNIG	**Pinotepa**	**1.94**	**293**	*e*P	**Pn**	**03 00 16.4**	**+0.2**
PNIG				*i* S	**Sn**	**03 00 36.5**	**-3.3**
CMIG	**Matias Romero**	**1.95**	**42**	*e*P	**Pn**	**03 00 16.0**	**-0.3**
CMIG				*e*S	**Sn**	**03 00 40.6**	**+0.6**
EVV	**El Vigia**	**2.92**	**17**	*e*P	**Pn**	**03 00 30.4**	**+0.1**
EVV				*i* S	**Sn**	**03 01 04.1**	**-0.7**
TUIG	**Tuzandepetl**	**2.95**	**36**	*i* P	**Pn**	**03 00 30.9**	**+0.2**
IISM	**Ciudad Serdan**	**3.49**	**342**	*e*P	**Pn**	**03 00 38.2**	**0.0**
IISM				*i* S	**Sn**	**03 01 15.9**	**-3.1**
POHV	**Veracruz**	**3.54**	**344**	*e*P	**Pn**	**03 00 41.6**	**+2.7**
POHV				*i* S	**Sn**	**03 01 21.5**	**+1.2**
SCX	**San Cristobal**	**3.65**	**72**	*i* P	**Pn**	**03 00 41.0**	**+0.5**
ACX	**Acapulco**	**3.71**	**290**	*e*P	**Pn**	**03 00 40.0**	**-1.5**
CCIG	**Comitan**	**4.02**	**80**	*i* P	**Pn**	**03 00 44.5**	**-1.2**
CCIG				*i* S	**Sn**	**03 01 31.8**	**-0.6**
CCIG	**Comitan**	**4.02**	**80**	*i* P	**Pn**	**03 00 44.5**	**-1.2**
CCIG				*i* S	**Sn**	**03 01 37.9**	**+5.6**
PPM	**Popocatepetl**	**4.08**	**327**	*e*P	**Pn**	**03 00 48.0**	**+1.3**
PPM				*e*P		03 00 49.8	
PPM				*e*S	**Sn**	**03 01 33.2**	**-0.8**
PPM				*i* S	**Sn**	**03 01 38.2**	**+4.2**
PPM	**Popocatepetl**	**4.08**	**327**	*e*P	**Pn**	**03 00 48.0**	**+1.3**
PPM				*i* S	**Sn**	**03 01 38.2**	**+4.2**
YAIG	**Yautepec**	**4.17**	**320**	*i* P	**Pn**	**03 00 53.0**	**+5.0**
YAIG				*i* S	**Sn**	**03 01 35.1**	**-1.2**
IIZ	**Mezontepec**	**4.53**	**321**	*e*P	**Pn**	**03 01 05.0**	**+12**
UNM	**Universidad Na**	**4.60**	**323**	*e*P	**Pn**	**03 00 50.0**	**-4.0**
TEIG	**Tepich**	**8.86**	**58**	Pn	**P**	**03 01 51.0**	**-2.7**
	2.7nm,0.3s,baz=177,slow=15,SNR=3.6						
TEIG				Sn	**Sn**	**03 03 29.1**	**-4.4**
	1.8nm,0.3s,baz=167,slow=17,SNR=3.7						
TEIG	**Tepich**	**8.86**	**58**	*e*P	**P**	**03 01 49.8**	**-3.9**
TEIG				Pn	**P**	**03 01 51.0**	**-2.7**
TEIG				Sn	**Sn**	**03 03 29.1**	**-4.4**
TXAR	**Lajitas Array**	**15.23**	**335**	Pn	**P**	**03 03 23.1**	**+3.6**
	0.0nm,0.3s,baz=150,slow=13,SNR=6.8						
LAZ	**Ladron**	**21.09**	**334**	*e*P	**P**	**03 04 28.9**	**0.0**
ANMO	**Albuquerque**	**21.29**	**336**	*e*P	**P**	**03 04 32.2**	**+1.2**
	4.0nm,1.1s,mb3.7						
WVT	**Waverly**	**21.74**	**19**	*e*P	**P**	**03 04 31.8**	**-3.8**
	2.0nm,0.5s,mb3.8						
PDAR	**Pinedale Array**	**29.33**	**340**	P	**P**	**03 05 48.0**	**+1.0**
	0.3nm,0.7s,mb3.1,baz=141,slow=5.8,SNR=3.2						
ULM	**Lac du Bonnet**	**34.51**	**0**	P	**P**	**03 06 30.8**	**-1.4**
	1.1nm,0.4s,mb4.1,baz=184,slow=8.5,SNR=2.8						
ULM	**Lac du Bonnet**	**34.51**	**0**	P	**P**	**03 06 30.3**

SNR=8.8
SMLA Simla 7.63 143 *e*P **P** **03 05 52.4 +1.6**
SMLA *e*S **S** **03 07 12.2 -4.0**
NDI New Delhi 9.77 151 *e*P **P** **03 06 14.0 -5.6**
NDI *e*S **S** **03 07 55.0 -13**
MK31 Makanchi Array 12.19 36 ⇑P **P** **03 06 51.5 -0.2**
comp=Z,1.0nm,0.5s,baz=226,slow=16,SNR=9.5
MKAR Makanchi Array 12.19 36 P **P** **03 06 50.8 -0.9**
comp=Z,0.2nm,0.3s,baz=223,slow=14,SNR=9.2
MKAR Makanchi Array 12.19 36 *e*P **P** **03 06 51.4 -0.3**
KOLN Koldanda 13.77 131 *e*P **P** **03 07 07.5 -4.9**
comp=Z,16nm,0.4s
GKN Gorkha 14.25 127 *e*P **P** **03 07 13.2 -5.3**
comp=Z,30nm,0.5s
AB31 Akbulak array 14.67 328 ⇓P **P** **03 07 20.7 -3.1**
comp=Z,2.3nm,0.5s,baz=136,slow=12,SNR=62
AB31 ⇑S **S** **03 09 51.4 -12**
comp=Z,2.1nm,0.6s
AB31 Akbulak array 14.67 328 *e*P **P** **03 07 20.6 -3.2**
AB31 S **S** **03 09 51.3 -13**
AB31 pmax pmax
comp=Z,1.0nm,0.3s
AB31 smax
comp=Z,2.0nm,0.6s
KKN Kakani 14.81 126 *e*P **P** **03 07 19.3 -6.3**
comp=Z,15nm,0.4s
DMN Daman 14.82 127 *e*P **P** **03 07 20.2 -5.6**
comp=Z,23nm,0.4s
PKI Pulchoki 15.04 127 *e*P **P** **03 07 22.9 -5.7**
comp=Z,8.7nm,0.3s
BVA0 Borovoye Array 15.69 357 ⇑P **P** **03 07 34.9 -1.7**
comp=Z,0.4nm,0.7s,baz=185,slow=16,SNR=14
BVAR Borovoye Array 15.69 357 P **P** **03 07 34.3 -2.2**
comp=Z,0.6nm,0.3s,baz=170,slow=14,SNR=13
ZRNK Zerenda 15.70 354 ⇑P **P** **03 07 35.1 -1.7**
comp=Z,3.6nm,0.6s
ZRNK Zerenda 15.70 354 *e*P **P** **03 07 33.5 -3.2**
BRVK Borovoye 15.72 357 *e*P **P** **03 07 34.4 -2.6**
THR Tehran 16.69 271 P **P** **03 07 54.0 +4.8**
comp=Z,0.2nm,0.3s,baz=345,slow=6.1,SNR=3.3
ZAL Zalesovo 18.83 24 P **P** **03 08 12.4 -1.9**
comp=Z,0.9nm,0.3s,baz=174,slow=5.0,SNR=4.7
ZAL Zalesovo 18.83 24 P **P** **03 08 12.4 -1.9**
ZAL pmax pmax
comp=Z,1.0nm,0.3s
GNI Garni 21.28 286 P **P** **03 08 44.7 +5.0**
comp=Z,4.5nm,0.4s,mb4.1,baz=89,slow=8.2,SNR=3.0
GNI Garni 21.28 286 P **P** **03 08 44.7 +5.0**
GNI pmax pmax
comp=Z,5.0nm,0.4s
BRTR Keskin Array B 29.82 286 P **P** **03 10 02.6 +3.1**
comp=Z,0.9nm,0.9s,mb3.4,baz=117,slow=8.3,SNR=3.5
AKASG Malin Array Be 32.93 308 P **P** **03 10 26.4 -0.2**
comp=Z,0.6nm,0.4s,mb3.8,baz=81,slow=6.8,SNR=5.1
AKASG Malin Array Be 32.93 308 P **P** **03 10 27.4 +0.8**
JOF Joensuu 35.46 329 *e*p **P** **03 10 48.0 0.0**
FINES FINESS Array B 37.14 325 P **P** **03 11 02.7 +0.5**
comp=Z,1.8nm,0.8s,mb4.1,baz=117,slow=9.5,SNR=8.0
FINES FINESS Array B 37.14 325 P **P** **03 11 02.7 +0.5**
FINES pmax pmax
comp=Z,2.0nm,0.8s
FINES FINESS Array B 37.14 325 P **P** **03 11 02.7 +0.5**
ARCES ARCESS Array B 40.60 337 P **P** **03 11 31.6 +0.9**
comp=Z,1.7nm,0.7s,mb4.0,baz=109,slow=7.9,SNR=6.8
ARCES ARCESS Array B 40.60 337 P **P** **03 11 31.6 +0.9**
ARCES pmax pmax
comp=Z,2.0nm,0.7s
HFS Hagfors 42.80 321 P **P** **03 11 49.3 +0.6**
comp=Z,2.6nm,0.4s,mb4.3,baz=106,slow=10,SNR=20
HFS Hagfors 42.80 321 P **P** **03 11 49.3 +0.5**
HFS pmax pmax
comp=Z,3.0nm,0.4s
NB2 NORSAR Subarra 44.09 322 P **P** **03 11 59.5 +0.3**
comp=Z,0.6nm,0.5s,mb3.6,baz=94,slow=7.4
NOA NORSAR Array B 44.09 322 P **P** **03 11 59.5 +0.4**
comp=Z,1.3nm,0.7s,mb3.8,baz=95,slow=7.8,SNR=4.4
NOA NORSAR Array B 44.09 322 P **P** **03 11 59.6 +0.4**
NOA pmax pmax
comp=Z,1.0nm,0.7s
TIXI Tiksi 44.71 22 *e*P **P** **03 12 03.9 -0.1**
TIXI pmax pmax
comp=Z,27nm,1.2s,mb4.8
INK Inuvik 72.94 10 P **P** **03 15 19.9 +0.7**
comp=Z,2.7nm,0.6s,mb4.3,baz=1.2,slow=7.0,SNR=39
INK Inuvik 72.94 10 P **P** **03 15 19.9 +0.8**
INK pmax pmax
comp=Z,3.0nm,0.6s
INK Inuvik 72.94 10 *e*P **P** **03 15 19.6 +0.5**
comp=Z,2.5nm,0.5s,mb4.3
ILAR Eielson Array 73.76 16 P **P** **03 15 23.6 -0.3**
comp=Z,1.2nm,1.0s,mb3.6,baz=311,slow=4.7,SNR=13
ILAR Eielson Array 73.76 16 P **P** **03 15 23.7 -0.3**
ILAR pmax pmax
comp=Z,1.0nm,1.0s
YKA Yellowknife Ar 80.34 3 P **P** **03 16 01.2 +0.6**
comp=Z,2.3nm,0.6s,mb4.2,baz=350,slow=5.5,SNR=70
YKA Yellowknife Ar 80.34 3 P **P** **03 16 01.2 +0.5**
YKA pmax pmax
comp=Z,2.0nm,0.6s
WRA Warramunga Ar 81.89 123 P **P** **03 16 21.1 +11**
comp=Z,0.6nm,0.6s,mb3.6,baz=311,slow=5.5,SNR=4.5
WRA Warramunga Arr 81.89 123 P **P** **03 16 21.1 +11**
WRA pmax pmax
comp=Z,1.0nm,0.6s

*NEIC **19** 03:11:49.7,34.46N×33.32E,h5km,ML2.6(NIC),After NIC.*
*NIC **19** 03:11:49.7±0.3,34.46N×33.32E,h5km,ML2.6,MW2.6*
ISC 19 03:11:48.9±2.4,**34.4N**±0.1×**33.34E**±0.09,**h9**km±11km,**n5,** σ0**s50**/8,**Cyprus region**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
SZAC	**Souni-Zanaja**	**0.52**	**314**	P		**Pg**	**03 11 59.3**	**-0.1**
	5.4nm,0.3s							
SZAC				S		**Sg**	**03 12 06.6**	**+0.3**
CSS	**Prodhromos**	**0.56**	**360**	P		**Pg**	**03 12 00.0**	**-0.3**
	1.1nm,0.2s							
CSS				S		**Sg**	**03 12 07.9**	**0.0**
PHNC	**Paralimni**	**0.83**	**43**	P		**Pb**	**03 12 05.5**	**+0.4**
PPCY	**Paphos**	**0.95**	**301**	P		**Pb**	**03 12 07.5**	**+0.4**
ALFC	**Alevga**	**0.97**	**322**	P		**Pb**	**03 12 06.7**	**-0.8**
	2.6nm,0.2s							
ALFC				S		**Sb**	**03 12 20.2**	**0.0**

*IDC **19** 03:25:43.4±1.3,37.51N×96.69E,mb3.7/7,mb1 3.8/9, mb1mx3.7/21,ML3.9/2,Error ellipse: s-maj=39.5km s-min=24.6km az=44.0*
*NEIC **19** 03:25:45.6±1.1,37.66N×96.70E,h10km,mb4.3/1,Error ellipse: s-maj=24.1km s-min=17.3km az=203.0*
*BJI **19** 03:25:49.9,37.73N×96.63E,h21km,mB4.7,mb4.5,ML3.6, Ms3.3,Msz3.5*
ISC 19 03:25:44.2±1.0,**37.2N**±0.1×**96.2E**±0.1,**h21**km,**n14,** σ1**s42**/17,**mb3.7**/8,**Qinghai**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
GTA	**Gaotai**	**3.59**	**52**	P		**Pn**	**03 26 40.5**	**+0.5**
GTA				Pg		**Pn**	**03 26 44.8**	**+4.8**
GTA				S		**Sn**	**03 27 21.8**	**-0.5**
GTA				SG		**Sn**	**03 27 24.3**	**+2.0**
GTA				S		Sn		
	comp=N,41nm,0.9s							
GTA				S		Sn		
	comp=E,41nm,0.7s							
GTA				LR		LR		
	comp=N,259nm,7.2s							
GTA				LR		LR		
	comp=E,265nm,10.3s							
GTA				LR		LR		
	comp=Z,344nm,6.8s							
LZH	**Lanzhou**	**6.26**	**98**	*e*PG		**Pn**	**03 27 39.3**	**+21**
LZH				SG		Sn	03 28 55.3	+26
LZH				S		Sn		
	comp=N,52nm,0.7s							
LZH				S		Sn		
	comp=E,61nm,0.5s							
LZH				LR		LR		
	comp=N,260nm,5.0s							
LZH				LR		LR		
	comp=Z,382nm,5.8s							
SONM	**Songino Array**	**12.99**	**32**	Pn		**P**	**03 28 40.9**	**-9.3**
	comp=Z,0.7nm,0.3s,baz=180,slow=10,SNR=2.6							
MKAR	**Makanchi Array**	**14.05**	**317**	Pn		**P**	**03 29 01.9**	**-2.4**
	comp=Z,0.1nm,0.3s,baz=124,slow=14,SNR=4.2							
BVAR	**Borovoye Array**	**23.91**	**320**	P		**P**	**03 30 59.3**	**+2.0**
	comp=Z,1.2nm,0.8s,mb3.4,baz=117,slow=9.9,SNR=6.8							
BRVK	**Borovoye**	**23.98**	**320**	*e*P		**P**	**03 31 00.7**	**+2.7**
AKASG	**Malin Array Be**	**48.43**	**309**	P		**P**	**03 34 26.5**	**-0.1**
	comp=Z,0.5nm,0.4s,mb3.9,baz=70,slow=8.6,SNR=5.7							
FINES	**FINESS Array B**	**48.79**	**323**	P		**P**	**03 34 30.4**	**+1.1**
	comp=Z,2.1nm,0.8s,mb4.2,baz=124,slow=6.9,SNR=5.3							
ARCES	**ARCESS Array B**	**48.95**	**334**	P		**P**	**03 34 30.8**	**+0.4**
	comp=Z,0.9nm,0.7s,mb3.9,baz=83,slow=9.8,SNR=3.7							
ILAR	**Eielson Array**	**67.09**	**25**	P		**P**	**03 36 36.0**	**-1.7**
	comp=Z,0.3nm,0.7s,mb3.4,baz=298,slow=5.0,SNR=6.6							
INK	**Inuvik**	**68.45**	**18**	*e*P		**P**	**03 36 44.9**	**-1.3**
	comp=Z,1.4nm,0.6s,mb4.2							
ASAR	**Alice Springs**	**70.22**	**143**	P		**P**	**03 36 58.3**	**+0.5**
	comp=Z,0.3nm,0.4s,mb3.6,baz=328,slow=6.4,SNR=5.1							
YKA	**Yellowknife Ar**	**77.58**	**14**	P		**P**	**03 37 38.5**	**-1.2**
	comp=Z,0.2nm,0.5s,mb3.3,baz=338,slow=5.5,SNR=6.3							
YKA	**Yellowknife Ar**	**77.58**	**14**	P		**P**	**03 37 38.5**	**-1.2**

*IDC **19** 03:41:53.8±1.4,28.31N×142.69E,mb3.7/4,mb1 3.9/4, mb1mx3.6/20,MS3.3/2,Ms1 3.3/2,ms1mx2.8/28,Error ellipse: s-maj=47.1km s-min=18.4km az=97.0*
ISC 19 03:41:57.0±1.2,**28.34N**±0.09×**142.7E**±0.3,**h33**km,**n7,** σ1**s47**/6,**mb3.8**/4,**MS3.4**/1,**Bonin Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**1.33**	**201**	Pn		**Pn**	**03 42 19.7**	**+0.1**
	37nm,0.3s,baz=124,slow=24,SNR=9.8							
CBIJ				Sn		**Sn**	**03 42 36.5**	**+0.2**
	36nm,0.3s,baz=288,slow=23,SNR=6.6							
JOW	**Kunigami**	**12.89**	**267**	LR		LR	03 49 31.9	
	comp=Z,129nm,19.0s,baz=222,slow=36							
WRA	**Warramunga Arr**	**48.68**	**191**	P		**P**	**03 50 39.5**	**-0.7**
	1.6nm,0.7s,mb4.2,baz=12,slow=8.3,SNR=9.6							
ZAL	**Zalesovo**	**48.87**	**318**	P		**P**	**03 50 39.4**	**-1.8**
	2.1nm,0.5s,mb4.4,baz=186,slow=15,SNR=7.3							
MKAR	**Makanchi Array**	**50.05**	**309**	P		**P**	**03 50 52.0**	**+1.7**
	0.3nm,0.5s,mb3.6,baz=90,slow=6.5,SNR=3.9							
BVAR	**Borovoye Array**	**57.45**	**317**	LR		LR	04 17 20.9	
	comp=Z,31nm,19.9s,MS3.4,baz=40,slow=37							
YKA	**Yellowknife Ar**	**70.83**	**29**	P		**P**	**03 53 12.4**	**+0.6**
	0.1nm,0.5s,mb3.0,baz=293,slow=5.3,SNR=3.7							

*STR **19** 03:57:03.9±0.6,42.81N×1.45W,h2km±1km,Ml2.4,Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
*MDD **19** 03:57:05.8±0.7,42.86N×1.45W,h7km±5km,mbLg1.9/7, Error ellipse: s-maj=4.5km s-min=3.2km az=26.0,PRXIMO*
*NEIC **19** 03:57:06.1,42.85N×1.37W,ML2.4(STR),ML2.3(LDG), MN1.8(MDD),After MDD.*
*LDG **19** 03:57:08.8±0.8,42.90N×1.26W,h5km,Md2.7/1,Ml2.3/4, Error ellipse: s-maj=14.8km s-min=9.6km az=44.0*
ISC 19 03:57:04.6±0.5,**42.84N**±0.03×**1.44W**±0.03,**h7**km,**n32,** σ1**s00**/46,**4D,Pyrenees**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
EALK	**Alkurruntz**	**0.38**	**353**	⇓Pg		**Pg**	**03 57 12.6**	**+0.3**
	3.0nm,0.1s,SNR=18							
EALK				Lg			03 57 18.9	
	122nm,0.4s,SNR=33							
EALK	**Alkurruntz**	**0.38**	**353**	⇓Pg		**Pg**	**03 57 12.7**	**+0.5**
EALK				Lg			03 57 18.9	
LARF	**Larrau**	**0.39**	**60**	P		**Pg**	**03 57 12.3**	**-0.1**
LARF				S		**Sg**	**03 57 17.6**	**0.0**
OSSF	**Osses**	**0.43**	**18**	Pg		**Pg**	**03 57 12.9**	**-0.4**
OSSF				S		**Sg**	**03 57 19.0**	**-0.1**
OSSF	**Osses**	**0.43**	**18**	P		**Pg**	**03 57 13.2**	**-0.1**
OSSF				S		**Sg**	**03 57 19.1**	**-0.1**
ORDF	**Ordiarp**	**0.53**	**45**	Pg		**Pg**	**03 57 14.1**	**-1.0**
ORDF				Sg		**Sg**	**03 57 22.0**	**-0.2**
ORDF	**Ordiarp**	**0.53**	**45**	P		**Pg**	**03 57 15.1**	**0.0**
ORDF				S		**Sg**	**03 57 22.9**	**+0.8**
ATE	**Arette**	**0.60**	**66**	P		**Pg**	**03 57 16.2**	**-0.3**
ATE				S		**Sg**	**03 57 24.3**	**-0.2**
ETSF	**Etsaut**	**0.65**	**85**	*e*Pg		**Pg**	**03 57 16.8**	**-0.9**
ETSF				*e*Sg		**Sg**	**03 57 25.5**	**-0.9**
	40nm,0.5s							
REYF	**Montagne du Re**	**0.80**	**73**	S		**Sb**	**03 57 32.1**	**+0.8**
VIEF	**Viey**	**1.08**	**87**	S		**Sb**	**03 57 40.3**	**+1.0**
LABF	**Labassere**	**1.13**	**79**	P		**Pb**	**03 57 25.8**	**-0.2**
LABF				S		**Sb**	**03 57 40.8**	**0.0**
RESF	**Ens**	**1.31**	**91**	S		**Sb**	**03 57 48.1**	**+2.0**
EPF	**Esparros**	**1.32**	**81**	*e*Pn		**Pn**	**03 57 29.4**	**-0.1**
EPF				*e*Pg		**Pg**	**03 57 30.8**	**-0.2**
EPF				*e*Sg		**Sg**	**03 57 48.9**	**+0.2**
	14nm,0.3s							
ESAC	**San Caprasio**	**1.33**	**147**	⇓Pg		**Pg**	**03 57 30.8**	**-0.5**
	29nm,0.3s,SNR=18							
ESAC				Lg			03 57 50.6	
	47nm,0.4s,SNR=7.9							
ESAC	**San Caprasio**	**1.33**	**147**	⇓Pg		**Pg**	**03 57 31.4**	**+0.2**
ESAC				Lg			03 57 50.8	
ELAN	**Lanestosa**	**1.51**	**286**	Pg		**Pg**	**03 57 34.4**	**-0.3**
	2.7nm,0.2s,SNR=23							
ELAN				Lg			03 57 54.9	
	3.7nm,0.3s,SNR=7.9							
ELAN	**Lanestosa**	**1.51**	**286**	Pn		**Pn**	**03 57 34.4**	**+2.2**
ELAN				Lg			03 57 57.9	
MELF	**Melles**	**1.62**	**88**	S		**Sb**	**03 57 56.0**	**+1.0**
ETOR	**Torete**	**2.07**	**193**	Pg		**Pg**	**03 57 44.0**	**-2.0**
	1.9nm,0.4s,SNR=4.0							
ETOR				Lg			03 58 12.0	
	SNR=7.9							
EMIR	**Miracle**	**2.39**	**112**	Pg		**Pg**	**03 57 49.2**	**-3.0**
	SNR=7.9							
EMIR				Lg			03 58 21.4	
	4.8nm,0.3s,SNR=5.0							
EPOB	**Poblet**	**2.40**	**128**	Pn		**Pn**	**03 57 45.3**	**+0.4**
	0.5nm,0.1s,SNR=7.9							
EPOB				Lg			03 58 21.4	
	1.5nm,0.3s,SNR=7.9							
EPOB	**Poblet**	**2.40**	**128**	Pn		**Pn**	**03 57 45.4**	**+0.5**
EPOB				Lg			03 58 21.4	
EMOS	**Mosqueruela**	**2.58**	**163**	Pg		**Pg**	**03 57 52.6**	**-3.5**
	0.7nm,0.4s,SNR=4.0							
EMOS				Lg			03 58 29.4	
	0.8nm,0.2s,SNR=4.0							
EMOS	**Mosqueruela**	**2.58**	**163**	Pn		**Pn**	**03 57 48.3**	**+0.8**
LFF	**La Frestale**	**2.62**	**36**	*e*Pn		**Pn**	**03 57 48.3**	**+0.2**
LFF				*e*Sg		**Sg**	**03 58 25.5**	**-6.4**
	2.1nm,0.2s							
MTLF	**Montolieu**	**2.73**	**78**	*e*Pn		**Pn**	**03 57 49.7**	**+0.1**
MTLF				*e*Sg		**Sg**	**03 58 27.5**	**-7.9**
	3.0nm,0.5s							
RJF	**Les Rejaudoux**	**3.26**	**40**	*e*Pn		**Pn**	**03 57 57.7**	**+0.6**
RJF				*e*Sn		**Sn**	**03 58 34.3**	**-2.3**
CAF	**Calviac**	**3.28**	**49**	*e*Pn		**Pn**	**03 57 58.8**	**+1.3**
CAF				*e*Sn		**Sn**	**03 58 34.2**	**-3.0**
	1.3nm,0.2s							
MFF	**Saint Martin d**	**3.87**	**13**	*e*Pn		**Pn**	**03 58 05.8**	**0.0**
ECAL	**Calabor**	**4.02**	**259**	Pn		**Pn**	**03 58 08.3**	**+0.3**
	0.6nm,0.2s,SNR=6.0							
ECAL				Lg			03 59 14.1	
	1.7nm,0.4s,SNR=7.9							
ECAL	**Calabor**	**4.02**	**259**	Pn		**Pn**	**03 58 08.4**	**+0.4**
ECAL				Lg			03 59 16.3	

CASC 19 03:58:30.1±1.4,**12.15N**×**86.78W,h102**km±7km,**MD3.8, ML3.1,2C-1D,Nicaragua**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
COPN	**Copaltepe**	**0.19**	**81**	*e*P		P	03 58 44.6	0.0
COPN				*e*S		S	03 58 56.5	+0.9
LEON	**Leon**	**0.29**	**338**	⇑*i*P		P	03 58 44.7	-0.3
PYN	**Poneloya**	**0.33**	**315**	⇑*i*P		P	03 58 45.0	-0.2
MOMJ	**Momotombo**	**0.35**	**43**	*i* P		P	03 58 45.0	-0.4
CNGN	**Cerro Negro**	**0.36**	**13**	*i* P		P	03 58 45.0	-0.4
TEL3	**Telica 3**	**0.42**	**352**	*e*P		P	03 58 45.5	-0.2
XAVN	**Gruta Xavier**	**0.45**	**90**	*e*P		P	03 58 46.2	+0.3
MGAN	**Managua**	**0.52**	**90**	*e*P		P	03 58 46.1	-0.3
MGAN				*e*S		S	03 58 59.2	+0.6
MGAN				*i*			03 58 59.9	
	comp=N,404nm,0.4s							
WILN	**Americas 2**	**0.58**	**89**	*e*P		P	03 58 46.6	-0.3
WILN				*e*S		S	03 59 00.3	+0.8
CRIN	**San Cristobal**	**0.61**	**334**	*e*P		P	03 58 46.7	-0.4
COFN	**Cofrada**	**0.66**	**90**	*e*P		P	03 58 47.3	-0.2
PYTN	**Playitas**	**0.81**	**61**	*e*P		P	03 58 48.6	-0.4
PYTN				*e*S		S	03 59 03.2	+0.2
CONN	**Concepcion**	**1.27**	**117**	*e*P		P	03 58 53.8	-0.4
CRZC	**La Cruz**	**1.66**	**136**	*e*P		P	03 58 58.9	0.0
CRZC				*e*S		S	03 59 20.3	0.0
VCR	**Vista de Mar**	**2.31**	**151**	⇓*e*P		S	03 59 07.6	+0.2
VCR				*e*S		S	03 59 35.0	-0.2
JCR	**Jicaral**	**2.81**	**144**	*e*P		S	03 59 14.6	+0.3
JCR				*e*S		S	03 59 44.3	-3.2
CGA2	**Cerro Gallo 2**	**3.11**	**133**	*e*P		P	03 59 18.5	+0.1
CGA2				*e*S		S	03 59 55.2	+0.4
LAJ	**Bijagual**	**3.46**	**131**	*e*P		P	03 59 21.0	-2.2
LAJ				*e*S		S	03 59 54.8	-8.6
LCR2	**La Lucha 2**	**3.63**	**131**	*e*P		P	03 59 25.5	0.0
LCR2				*e*S		S	04 00 07.4	-0.1

*NEIC **19** 04:07:01.2±1.1,36.51N×71.30E,h146km±12km,mb4.5/9, Error ellipse: s-maj=10.4km s-min=5.7km az=50.0*
*BJI **19** 04:07:01.9,36.50N×71.19E,h165km*
*IDC **19** 04:07:01.8±4.2,36.44N×71.24E,h151km±38km,mb3.8/10, mb1 3.9/14,mb1mx3.7/23,Error ellipse: s-maj=21.8km s-min=16.2km az=16.0*
*MOS **19** 04:07:02.8±1.0,36.56N×71.24E,h171km,mb4.0/9,Error ellipse: s-maj=17.2km s-min=11.8km az=95.8*
*NNC **19** 04:07:06.1±6.5,36.88N×71.07E,h166km±56km,mpv5.0, Error ellipse: s-maj=59.4km s-min=54.3km az=98.0*
ISC 19 04:07:01.0±0.4,**36.49N**±0.03×**71.25E**±0.06,**h161**km±6km, **n78,**σ0**s90**/91,**mb4.0**/13,**7C-5D,Afghanistan-Tajikistan border region**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
CEP	**Cherat**	**2.71**	**168**	⇓P		**P**	**04 07 47.0**	**+1.1**
CEP				S		**S**	**04 08 23.0**	**+2.7**
CHCP	**Chirah Chowk**	**3.27**	**149**	⇑P		**P**	**04 07 54.5**	**+1.6**
THW	**Thamme Wali**	**3.71**	**174**	⇓P		**P**	**04 07 59.0**	**+0.4**
SBDP	**Sheikh Budin**	**4.19**	**185**	⇑P		**P**	**04 08 04.2**	**-0.7**
SARP	**Sargodha**	**4.70**	**165**	P		**P**	**04 08 11.5**	**-0.1**
SARP				S		**S**	**04 09 04.0**	**-2.0**
KSH	**Kashi**	**4.80**	**50**	⇑*i*P		**P**	**04 08 16.9**	**+4.1**
KSH				S		**S**	**04 09 12.8**	**+4.5**
KSH				S		S		
	comp=N,420nm,0.6s							
KSH				S		S		
	comp=E,310nm,0.4s							
DRP	**Derazinda**	**4.81**	**191**	P		**P**	**04 08 12.4**	**-0.6**
AML	**Almayashu**	**5.95**	**18**	P		**P**	**04 08 28.3**	**+0.4**
	SNR=134							
UCH	**Uchtor**	**6.26**	**23**	P		**P**	**04 08 32.6**	**+0.4**
	SNR=196							
KZA	**Kyzart**	**6.38**	**28**	P		**P**	**04 08 34.0**	**+0.2**
	SNR=38							
EKS2	**Erkin-Say**	**6.47**	**17**	P		**P**	**04 08 35.2**	**+0.3**
	SNR=72							
AAK	**Ala-Archa**	**6.63**	**21**	P		**P**	**04 08 37.6**	**+0.6**
	SNR=46							
BHK	**Bhakra**	**6.63**	**138**	*e*		**P**	**04 08 52.0**	**+15**
BHK				*e*			04 09 44.0	
KK31	**Karatay Array**	**6.63**	**355**	⇓P		**P**	**04 08 36.3**	**-0.8**
	comp=E,62nm,0.4s,baz=175,slow=12,SNR=712							
KK31				⇑S		**S**	**04 09 47.0**	**-4.8**
	comp=E,11nm,0.3s,baz=186,slow=24,SNR=7.0							
KBK	**Karagaybulak**	**6.79**	**24**	P		**P**	**04 08 39.8**	**+0.6**
	SNR=35							
FRU	**Bishkek**	**6.85**	**21**	*e*PN		**P**	**04 08 40.0**	**0.0**
FRU				*e*S		**S**	**04 09 57.0**	**0.0**
FRU				pmax	pmax			
	comp=Z,70nm,0.8s							
FRU				smax				
	comp=E,260nm,1.9s							
ULHL	**Ulahol**	**6.93**	**32**	P		**P**	**04 08 41.3**	**+0.3**
	SNR=16							
CHMS	**Chumysh**	**7.04**	**21**	P		**P**	**04 08 42.5**	**0.0**
	SNR=32							
USP	**Ospenovka**	**7.22**	**19**	P		**P**	**04 08 44.5**	**-0.4**
	SNR=20							
TKM2	**Tokmak 2**	**7.24**	**26**	P		**P**	**04 08 45.6**	**+0.3**
	SNR=103							
KHET	**Khetri**	**9.23**	**154**	*e*P		**P**	**04 09 10.7**	**-0.9**
KHET				*e*S		**S**	**04 10 46.7**	**-6.9**
KHET				*e*S		**S**	**04 10 49.9**	**-3.7**
NDI	**New Delhi**	**9.26**	**145**	*e*P		**P**	**04 09 12.0**	**0.0**
NDI				*e*S		**S**	**04 10 47.5**	**-6.9**
AYAN	**Aya Nagar**	**9.40**	**146**	*e*P		**P**	**04 09 14.8**	**+1.1**
AYAN				AMb		AMB	04 09 16.0	
	comp=Z,9.2nm,0.1s							
AYAN				*e*S		**S**	**04 10 53.6**	**-3.9**
KUDL	**Kundal**	**9.42**	**151**	*e*P		**P**	**04 09 13.7**	**-0.4**
KUDL				AMb		AMB	04 09 14.6	
	comp=Z,31nm,0.4s							
KUDL				*e*S		**S**	**04 10 52.6**	**-5.6**
JASL	**Jaisalmer**	**9.54**	**182**	*e*P		**P**	**04 09 12.2**	**-3.4**
SONA	**Sohna**	**9.58**	**147**	*e*P		**P**	**04 09 15.8**	**-0.3**
SONA				*e*S		**S**	**04 10 56.1**	**-5.7**
AGRA	**Agra**	**10.84**	**147**	*e*		**P**	**04 09 40.8**	**+8.2**
AGRA				*e*S		**S**	**04 11 23.8**	**-7.7**
MKAR	**Makanchi Array**	**13.18**	**35**	P		**P**	**04 10 03.5**	**+0.6**
	comp=Z,0.2nm,0.3s,baz=225,slow=12,SNR=28							
MKAR	**Makanchi Array**	**13.18**	**35**	P		**P**	**04 10 03.5**	**+0.6**
KOLN	**Koldanda**	**13.59**	**126**	*e*P		**P**	**04 10 07.4**	**-0.7**
	comp=Z,26nm,0.5s							
GKN	**Gorkha**	**14.13**	**123**	*e*P		**P**	**04 10 15.6**	**+0.7**
	comp=Z,33nm,0.4s							
DMN	**Daman**	**14.70**	**123**	*e*P		**P**	**04 10 21.8**	**-0.3**
	comp=Z,14nm,0.3s							
KKN	**Kakani**	**14.70**	**122**	*e*P		**P**	**04 10 21.8**	**-0.3**
	comp=Z,31nm,0.5s							
PKI	**Pulchoki**	**14.93**	**123**	*e*P		**P**	**04 10 24.8**	**-0.2**
	comp=Z,27nm,0.6s							
GUN	**Gumba**	**15.04**	**121**	*e*P		**P**	**04 10 26.4**	**+0.1**
	comp=Z,30nm,0.5s							
KURK	**Kurchatov**	**15.18**	**18**	P		**P**	**04 10 26.5**	**-1.5**
	comp=Z,20nm,1.1s,baz=208,slow=9.8,SNR=3.5							
KURK	**Kurchatov**	**15.18**	**18**	*e*P		**P**	**04 10 26.2**	**-1.8**
AB31	**Akbulak array**	**15.19**	**331**	⇑P		**P**	**04 10 25.2**	**-2.9**
	comp=Z,6.4nm,0.6s,baz=145,slow=12,SNR=181							
AB31				⇑S		**S**	**04 13 05.5**	**-6.5**
	comp=Z,3.9nm,0.5s,baz=156,slow=22,SNR=6.7							
VOSK	**Vostochn

ARCES	**ARCESS Array B**	**41.23**	**338**	P		**P**	**04 14 31.7**	**+0.5**
BRG	**Berggiesshubel**	**42.79**	**308**	*e*P		**P**	**04 14 44.5**	**+0.6**
BRG				pmax	pmax			
	comp=Z,2.0nm,0.8s,mb3.8							
BRG	**Berggiesshubel**	**42.79**	**308**	*e*P		**P**	**04 14 44.5**	**+0.6**
	comp=Z,2.3nm,0.8s,mb3.9							
CLL	**Collm**	**43.36**	**309**	P		**P**	**04 14 49.0**	**+0.5**
CLL	**Collm**	**43.36**	**309**	*e*P		**P**	**04 14 49.0**	**+0.5**
NB2	**NORSAR Subarra**	**44.51**	**323**	P		**P**	**04 14 57.1**	**-0.5**
	comp=Z,1.9nm,0.5s,mb4.0,baz=99,slow=7.9							
NOA	**NORSAR Array B**	**44.51**	**323**	P		**P**	**04 14 57.2**	**-0.4**
	comp=Z,1.7nm,0.5s,mb4.0,baz=100,slow=7.7,SNR=8.7							
NOA	**NORSAR Array B**	**44.51**	**323**	P		**P**	**04 14 57.2**	**-0.4**
NOA				pmax	pmax			
	comp=Z,2.0nm,0.5s							
NOA	**NORSAR Array B**	**44.51**	**323**	P		**P**	**04 14 57.2**	**-0.4**
INK	**Inuvik**	**73.89**	**9**	P		**P**	**04 18 20.6**	**+1.4**
	comp=Z,2.1nm,0.6s,mb4.0,baz=6.5,slow=7.4,SNR=32							
INK	**Inuvik**	**73.89**	**9**	P		**P**	**04 18 20.6**	**+1.4**
INK				pmax	pmax			
	comp=Z,2.0nm,0.6s							
INK	**Inuvik**	**73.89**	**9**	*e*P		**P**	**04 18 20.4**	**+1.2**
	comp=Z,2.3nm,1.0s,mb3.9							
YKA	**Yellowknife Ar**	**81.25**	**3**	P		**P**	**04 19 00.9**	**+1.2**
	comp=Z,0.6nm,0.4s,mb3.6,baz=351,slow=5.4,SNR=35							
YKA	**Yellowknife Ar**	**81.25**	**3**	P		**P**	**04 19 00.9**	**+1.1**
YKA				pmax	pmax			
	comp=Z,1.0nm,0.4s							
YKA	**Yellowknife Ar**	**81.25**	**3**	P		**P**	**04 19 00.9**	**+1.2**
WRA	**Warramunga Arr**	**81.81**	**122**	P		**P**	**04 19 03.7**	**+0.2**
	comp=Z,2.4nm,1.0s,mb3.8,baz=321,slow=5.3,SNR=15							
WRA	**Warramunga Arr**	**81.81**	**122**	P		**P**	**04 19 03.7**	**+0.2**
WRA				pmax	pmax			
	comp=Z,2.0nm,1.0s							
WRAB	**Tennant Creek**	**81.81**	**122**	*e*P		**P**	**04 19 03.6**	**+0.1**
	comp=Z,13nm,0.8s,mb4.6							
ASAR	**Alice Springs**	**84.08**	**125**	P		**P**	**04 19 15.5**	**+0.5**
	comp=Z,2.3nm,0.6s,mb4.1,baz=309,slow=5.1,SNR=26							

*NEIC **19** 04:27:34.3, 34.51N×33.35E, h10km, ML3.7(NIC), After NIC.*
*NIC **19** 04:27:34.3±0.4, 34.51N×33.35E, h10km, ML3.7, MW3.4*
*GII **19** 04:27:40.1±0.4, 34.29N×33.41E, h5km±21km, ML3.0/8, Mw3.2/11*

ISC 19 04:27:36.8±0.5,**34.52N**±0.04×**33.16E**±0.06,**h29**km±8km, **n27**,σ0§**96**/40,**4C-6D**,**Cyprus region**

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
SZAC	**Souni-Zanaja**	**0.33**	**316**	⇓P		**Pb**	**04 27 43.9**	**-0.7**
	31nm,0.3s							
SZAC				S		**Sb**	**04 27 50.1**	**+0.3**
SZAC	**Souni-Zanaja**	**0.33**	**316**	⇓*i*P		**Pb**	**04 27 43.9**	**-0.7**
SZAC				S		**Sb**	**04 27 50.1**	**+0.3**
CSS	**Prodhromos**	**0.47**	**18**	⇓P		**Pb**	**04 27 43.5**	**-3.1**
CSS				S		**Sb**	**04 27 50.9**	**-2.4**
CSS	**Prodhromos**	**0.47**	**18**	⇓*i*P		**Pb**	**04 27 43.5**	**-3.1**
CSS				S		**Sb**	**04 27 50.9**	**-2.4**
LEF	**Lefka**	**0.64**	**340**	*i* PG		**Pb**	**04 27 49.1**	**-0.3**
LEF				*i* SG		**Sb**	**04 28 03.1**	**+5.0**
PPCY	**Paphos**	**0.76**	**299**	⇑P		**Pb**	**04 27 52.1**	**+0.6**
PPCY	**Paphos**	**0.76**	**299**	⇑*i*P		**Pb**	**04 27 52.1**	**+0.6**
ALFC	**Alevga**	**0.79**	**324**	⇑P		**Pb**	**04 27 50.8**	**-1.0**
	46nm,0.4s							
ALFC				S		**Sb**	**04 28 04.0**	**+1.8**
ALFC	**Alevga**	**0.79**	**324**	⇑*i*P		**Pb**	**04 27 50.8**	**-1.0**
ALFC				S		**Sb**	**04 28 04.0**	**+1.8**
PHNC	**Paralimni**	**0.87**	**56**	⇓P		**Pn**	**04 27 53.1**	**0.0**
	14nm,0.6s							
PHNC				S		**Sb**	**04 28 07.2**	**+2.7**
PHNC	**Paralimni**	**0.87**	**56**	⇓*i*P		**Pn**	**04 27 53.1**	**0.0**
PHNC				S		**Sb**	**04 28 07.2**	**+2.7**
IKL	**Isikli**	**1.77**	**14**	*i* PN		**Pn**	**04 28 05.6**	**-0.4**
HNTI	**Hanita**	**2.21**	**130**	Pn		**Pn**	**04 28 12.4**	**+0.2**
HNTI				Sn		**Sn**	**04 28 38.0**	**-0.8**
KSDI	**Kefar Szold**	**2.46**	**122**	Pn		**Pn**	**04 28 16.7**	**+0.7**
HDMB	**Hadim**	**2.50**	**348**	*e*PN		**Pn**	**04 28 16.8**	**+0.3**
KSHT	**Keshet**	**2.69**	**124**	Pn		**Pn**	**04 28 20.0**	**+0.8**
SLTI	**Sal'it**	**2.76**	**145**	Sn		**Sn**	**04 28 52.0**	**-1.0**
HMDT	**Nahal Hemdat**	**3.00**	**138**	Pn		**Pn**	**04 28 23.5**	**-0.2**
DRGI	**Dragot**	**3.47**	**147**	Pn		**Pn**	**04 28 30.7**	**+0.5**
MKRJ	**Makawir**	**3.62**	**144**	Pn		**Pn**	**04 28 33.4**	**+1.0**
KZIT	**Kziot**	**3.75**	**164**	Pn		**Pn**	**04 28 35.2**	**+0.9**
KZIT				Sn		**Sn**	**04 29 17.4**	**-0.5**
SVTA	**Shivta**	**3.78**	**161**	Sn		**Sn**	**04 29 19.0**	**+0.2**
PRNI	**Paran**	**4.44**	**159**	Pn		**Pn**	**04 28 44.6**	**+0.6**
PRNI				Sn		**Sn**	**04 29 34.5**	**-0.9**
KMTI	**Karmit**	**4.60**	**163**	Pn		**Pn**	**04 28 46.8**	**+0.5**
KMTI				Sn		**Sn**	**04 29 38.5**	**-0.8**
YER	**Yerkesik**	**4.75**	**305**	*e*P		**Pn**	**04 28 47.4**	**-1.0**
MBH	**Mount Berech**	**4.94**	**162**	Pn		**Pn**	**04 28 51.9**	**+0.7**
EIL	**Elat**	**5.07**	**162**	Pn		**Pn**	**04 28 52.6**	**-0.3**

*NEIC **19** 04:45:31.4, 37.93S×176.04E, h210km, After WEL.*
WEL 19 04:45:31.3±0.2,**37.94S**×**176.05E**,**h212**km±2km,**ML3.9**/4, **2C**,**Error ellipse: s-maj=2.9km s-min=2.5km az=0.0, North Island**

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**0.89**	**111**	⇑PN		P	04 46 01.4	-0.4
URZ				SN		S	04 46 24.9	-0.6
URZ	**Urewera**	**0.89**	**111**	P		P	04 46 01.5	-0.3
MGZ	**Maungaku**	**1.13**	**201**	PN		P	04 46 03.5	+0.1
MGZ	**Maungaku**	**1.13**	**201**	P		P	04 46 03.6	+0.2
MWZ	**Matawai**	**1.23**	**109**	PN		P	04 46 04.1	0.0
MWZ				SN		S	04 46 29.1	-0.4
BKZ	**Black Stump Fm**	**1.27**	**164**	⇑PN		P	04 46 04.1	-0.4
BKZ				SN		S	04 46 29.2	-1.0
NGZ	**Ngauruhoe**	**1.28**	**196**	PN		P	04 46 04.4	-0.2
NGZ	**Ngauruhoe**	**1.28**	**196**	P		P	04 46 04.4	-0.2
CNZ	**Chateau**	**1.31**	**197**	PN		P	04 46 03.7	-1.2
CNZ	**Chateau**	**1.31**	**197**	P		P	04 46 03.7	-1.2
TUVZ	**Tukino**	**1.36**	**193**	PN		P	04 46 04.9	-0.3
TUVZ	**Tukino**	**1.36**	**193**	P		P	04 46 04.9	-0.4
FWVZ	**Far West T-bar**	**1.37**	**197**	PN		P	04 46 04.9	-0.4
FWVZ	**Far West T-bar**	**1.37**	**197**	*e*P		P	04 46 05.0	-0.3
WNVZ	**Wahianoa**	**1.43**	**194**	PN		P	04 46 05.3	-0.5
KNZ	**Kokohu**	**1.67**	**131**	PN		P	04 46 07.7	-0.2
KNZ				SN		S	04 46 35.3	-0.8
KNZ	**Kokohu**	**1.67**	**131**	P		P	04 46 07.8	-0.1
PUZ	**Puketiti**	**1.75**	**95**	PN		P	04 46 08.0	-0.6
PUZ				SN		S	04 46 36.5	-0.9
PUZ	**Puketiti**	**1.75**	**95**	*e*P		P	04 46 08.0	-0.6
MXZ	**Matakaoa Point**	**1.83**	**79**	PN		P	04 46 08.8	-0.6
MXZ				SN		S	04 46 39.3	+0.6
WAZ	**Wanganui**	**1.99**	**204**	PN		P	04 46 09.5	-1.5
WAZ				SN		S	04 46 41.6	+0.1
TSZ	**Takapari Road**	**2.12**	**182**	PN		P	04 46 11.0	-1.2
BFZ	**Birch Farm**	**2.74**	**177**	PN		P	04 46 16.9	-2.2
BFZ				SN		S	04 46 52.5	-3.4
BFZ	**Birch Farm**	**2.74**	**177**	*e*P		P	04 46 16.9	-2.1
MRZ	**Mangatainoka R**	**2.74**	**188**	PN		P	04 46 16.6	-2.5
MRZ				SN		S	04 46 52.3	-3.7
KIW	**Kapiti Island**	**3.05**	**197**	PN		P	04 46 19.6	-3.0
KIW	**Kapiti Island**	**3.05**	**197**	P		P	04 46 19.6	-3.0
CAW	**Cannon Point**	**3.25**	**193**	PN		P	04 46 21.9	-3.1
CAW				SN		S	04 47 02.1	-4.5
SNZO	**South Karori**	**3.52**	**197**	PN		P	04 46 24.6	-3.6
SNZO				SN		S	04 47 06.5	-5.8
SNZO	**South Karori**	**3.52**	**197**	P		P	04 46 24.6	-3.6
SNZO				S		S	04 47 05.9	-6.4
BHW	**Baring Head**	**3.58**	**194**	PN		P	04 46 25.2	-3.7
BHW	**Baring Head**	**3.58**	**194**	P		P	04 46 25.2	-3.8
TUWZ	**Tuamarina**	**3.84**	**204**	PN		P	04 46 28.4	-3.7
TUWZ				SN		S	04 47 13.8	-5.6
NNZ	**Nelson**	**3.87**	**211**	SN		S	04 47 14.6	-5.2
QRZ	**Quartz Range**	**3.97**	**222**	PN		P	04 46 29.2	-4.5
QRZ	**Quartz Range**	**3.97**	**222**	*e*P		P	04 46 29.2	-4.5
THZ	**Tophouse**	**4.52**	**211**	PN		P	04 46 36.8	-3.7
THZ				SN		S	04 47 28.9	-5.5
THZ	**Tophouse**	**4.52**	**211**	*e*P		P	04 46 36.8	-3.8
KHZ	**Kahutara**	**4.87**	**203**	PN		P	04 46 40.9	-4.0
KHZ	**Kahutara**	**4.87**	**203**	*e*P		P	04 46 40.9	-4.0
DSZ	**Denniston Nort**	**5.01**	**219**	PN		P	04 46 41.9	-4.9
DSZ				SN		S	04 47 36.8	-8.6
DSZ	**Denniston Nort**	**5.01**	**219**	P		P	04 46 41.9	-4.9
LTZ	**Lake Taylor**	**5.63**	**210**	PN		P	04 46 49.8	-5.0
LTZ	**Lake Taylor**	**5.63**	**210**	*e*P		P	04 46 49.8	-4.9

*NEIC **19** 05:13:48.2, 33.77S×72.03W, h10km, ML3.3(GUC), After GUC.*
*GUC **19** 05:13:48.2±0.7, 33.77S×72.03W, h10km±1km, MD3.8, ML3.3*

ISC 19 05:13:46.6±1.0,**33.77S**±0.03×**72.12W**±0.05,**h9**km±6km, **n24**,σ0§**69**/41,**7C-6D**,**Off coast of central Chile**

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
LCCH	**Las Cruces**	**0.54**	**57**	⇑*i*P		**Pg**	**05 13 58.3**	**+0.7**
LCCH				*i* S		**Sg**	**05 14 05.6**	**+0.6**
LNV	**Longovilo**	**0.62**	**108**	⇓*i*P		**Pb**	**05 13 59.8**	**+0.7**
IHA	**Instituto Hidr**	**0.84**	**28**	⇓*i*P		**Pb**	**05 14 03.5**	**+0.5**
IHA				*i* S		**Sb**	**05 14 15.1**	**+0.9**
TACH	**Talagante**	**0.99**	**83**	⇑*i*P		**Pb**	**05 14 05.0**	**-0.4**
RCDM	**Rinconada Maip**	**1.13**	**76**	*e*P		**Pb**	**05 14 07.1**	**-0.8**
RCDM				*i* S		**Sb**	**05 14 21.4**	**-1.1**
RCDM				AMP			05 14 23.2	
	comp=N,2μm,0.1s							
PUEX	**Pudahuel**	**1.18**	**74**	*i* P		**Pb**	**05 14 09.8**	**+1.0**
PUEX				*i* S		**Sb**	**05 14 24.8**	**+0.8**
PUEX				AMP			05 14 32.1	
	comp=N,2μm,0.4s							
ROCH	**El Roble**	**1.22**	**50**	⇑*i*P		**Pb**	**05 14 09.4**	**-0.1**
ROCH				*i* S		**Sb**	**05 14 25.3**	**+0.2**
CHCH	**Chadas Angostu**	**1.23**	**98**	⇑*i*P		**Pb**	**05 14 09.2**	**-0.4**
CHCH				*i* S		**Sb**	**05 14 25.1**	**-0.2**
SFDO	**San Fernando**	**1.24**	**133**	⇑*i*P		**Pb**	**05 14 09.3**	**-0.5**
ANTU	**Antumapu**	**1.25**	**81**	⇓*i*P		**Pb**	**05 14 09.5**	**-0.5**
ANTU				*i* S		**Sb**	**05 14 25.9**	**-0.2**
ANTU				AMP			05 14 26.5	
	comp=N,966nm,0.2s							
LLCH	**Llolleo**	**1.26**	**83**	*e*P		**Pb**	**05 13 55.8**	**-14**
LLCH				*i* S		Sb	05 14 02.0	-24
CACH	**El Canelo**	**1.31**	**106**	*e*P		**Pb**	**05 14 11.3**	**+0.4**
CACH				*i* S		**Sb**	**05 14 29.7**	**+2.1**
PCH	**Pirque**	**1.35**	**84**	⇑*i*P		**Pb**	**05 14 10.9**	**-0.6**
PCH				*i* S		**Sb**	**05 14 28.4**	**-0.3**
PEL	**Peldehue**	**1.35**	**63**	⇑*i*P		**Pb**	**05 14 11.5**	**-0.1**
PEL				*i* S		**Sb**	**05 14 28.6**	**-0.3**
PEL				AMP			05 14 34.3	
	comp=E,1μm,0.6s							
PACH	**Papudo**	**1.36**	**25**	*i* P		**Pb**	**05 14 11.8**	**+0.1**
PACH				*i* S		**Sb**	**05 14 29.6**	**+0.6**
FSR	**Penalolen**	**1.36**	**78**	*e*P		**Pb**	**05 14 11.4**	**-0.4**
FSR				*i* S		**Sb**	**05 14 28.7**	**-0.4**
FSR				AMP			05 14 38.6	
	comp=N,573nm,0.3s							
CLCH	**Cerro Calan**	**1.37**	**75**	⇓*i*P		**Pn**	**05 14 11.3**	**-0.7**
CLCH				*i* S		**Sb**	**05 14 29.1**	**-0.3**
CLCH				AMP			05 14 40.8	
	comp=E,597nm,0.7s							
CICH	**Cipreses**	**1.51**	**112**	*e*P		**Pn**	**05 14 13.7**	**-0.3**
FCH	**Farellones**	**1.59**	**74**	⇓*i*P		**Pn**	**05 14 14.9**	**-0.2**
FCH				*i* S		**Sb**	**05 14 35.5**	**-0.2**
FCH				AMP			05 14 40.0	
	comp=N,904nm,0.3s							
LMEL	**Las Melosas**	**1.60**	**93**	*e*P		**Pn**	**05 14 14.9**	**-0.3**
TALC	**Talca**	**1.67**	**166**	*i* P		**Pn**	**05 14 17.4**	**+1.1**
TALC				*i* S		**Sn**	**05 14 38.5**	**+0.5**
JACH	**Jahuel**	**1.68**	**50**	⇓*i*P		**Pn**	**05 14 16.5**	**+0.2**
JACH				*i* S		**Sn**	**05 14 38.4**	**+0.3**
PTCH	**Petorca**	**1.81**	**34**	*e*P		**Pn**	**05 14 16.8**	**-1.4**
PTCH				*i* S		**Sn**	**05 14 42.3**	**+1.0**
PTCH				AMP			05 14 47.9	
	comp=E,981nm,0.3s							
CMCH	**Combarbala**	**2.76**	**20**	*e*P		**Pn**	**05 14 30.4**	**-1.4**

*DJA **19** 05:21:54.6±0.8, 7.61S×118.49E, h33km, MD4.9/4, ML5.5/3, Error ellipse: s-maj=40.9km s-min=16.2km az=160.0*
*BJI **19** 05:21:57.6, 7.84S×118.56E, h41km, mB4.9, mb4.8, Ms4.3, Msz4.1*
*NEIC **19** 05:21:59.8±0.3, 7.86S×118.22E, mb4.6/14, Error ellipse: s-maj=8.1km s-min=4.8km az=223.0*
*SYO **19** 05:21:59.7, 7.86S×118.22E, h42km, MB4.6*
*IDC **19** 05:22:00.1±0.8, 7.78S×118.29E, h42km±6km, mb4.2/8, mb1 4.3/10, mb1mx4.1/19, ML4.5/2, MS3.3/6, Ms1 3.3/6, ms1mx3.0/23, Error ellipse: s-maj=39.7km s-min=10.1km az=55.0*

ISC 19 05:21:57.5±0.3,**7.84S**±0.05×**118.30E**±0.03,**h40**km, **h40**km±1.8km:**pP-P**,**n52**,σ0§**93**/62,**mb4.7**/23,**MS3.4**/4, **11C-5D**,**Flores Sea**

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
KEDI	**Kedomdong**	**2.26**	**253**	⇑*e*Pn		**P**	**05 22 32.7**	**-0.5**
	605nm,0.2s							
KEDI				⇑*i*Sn		**S**	**05 23 01.4**	**+1.4**
KEDI	**Kedomdong**	**2.26**	**253**	⇓*i*Pn		**P**	**05 22 33.1**	**-0.1**
KEDI				*i* Sn		**S**	**05 23 01.0**	**+1.0**
RATI	**Rata**	**2.88**	**252**	⇑*e*Pn		**P**	**05 22 41.4**	**-0.6**
	4μm,0.2s							
RATI	**Rata**	**2.88**	**252**	⇑*i*P		**P**	**05 22 42.9**	**+0.9**
RATI				⇓*i*Sn		**S**	**05 23 15.8**	**+0.1**
RATI	**Rata**	**2.88**	**252**	⇑*e*Pn		**P**	**05 22 41.4**	**-0.6**
RATI				*e*Sn		**S**	**05 23 15.8**	**+0.1**
INGI	**Ingas**	**3.27**	**252**	⇓*i*Pn		**P**	**05 22 47.4**	**-0.2**
INGI				⇓*i*Sn		**S**	**05 23 25.0**	**-0.7**
INGI	**Ingas**	**3.27**	**252**	⇑*i*Pn		**P**	**05 22 47.4**	**-0.2**
INGI				*i* Sn		**S**	**05 23 24.5**	**-1.2**
KELI	**Kelakatan**	**3.79**	**264**	⇑*e*Pn		**P**	**05 22 54.0**	**-1.0**
	1μm,0.3s							
KELI	**Kelakatan**	**3.79**	**264**	⇑*i*P		**P**	**05 22 55.2**	**+0.2**
KELI				⇑*i*Sn		**S**	**05 23 37.4**	**-1.5**
KELI	**Kelakatan**	**3.79**	**264**	⇑*e*Pn		**P**	**05 22 54.0**	**-1.0**
KELI				*e*Sn		**S**	**05 23 37.9**	**-1.0**
FITZ	**Fitzroy Crossi**	**12.46**	**146**	*e*P		**P**	**05 24 52.7**	**-2.4**
	20nm,0.9s							
FITZ				*e*S		**S**	**05 27 06.4**	**-7.1**
FITZ	**Fitzroy Crossi**	**12.46**	**146**	P		**P**	**05 24 53.6**	**-1.5**
	1.5nm,0.3s,baz=352,slow=12,SNR=35							
FITZ				S		**S**	**05 27 06.3**	**-7.2**
	2.1nm,0.3s,baz=178,slow=20,SNR=9.2							
FITZ				LR		LR	05 29 52.9	
	comp=Z,53nm,20.6s,baz=312,slow=38							
KAKA	**Kakadu**	**14.69**	**110**	*e*P		**P**	**05 25 21.9**	**-2.7**
	20nm,0.6s							
WRA	**Warramunga Arr**	**19.66**	**129**	P		**P**	**05 26 25.3**	**-0.7**
	1.5nm,0.3s,baz=302,slow=13,SNR=40							
WRA				S		**S**	**05 29 53.5**	**-6.7**
	0.3nm,0.3s,baz=306,slow=23,SNR=3.6							
WRA				LR		LR	05 34 45.6	
	comp=Z,121nm,21.7s,baz=285,slow=39							
WRAB	**Tennant Creek**	**19.66**	**129**	*e*P		**P**	**05 26 25.3**	**-0.7**
	21nm,0.6s							
WB2	**Warramunga Arr**	**19.67**	**129**	⇑P		**P**	**05 26 25.3**	**-0.8**
WB2				*e*S		**S**	**05 29 53.4**	**-7.0**
AS12	**Alice Springs**	**21.72**	**138**	*e*P		**P**	**05 26 47.6**	**+0.4**
	17nm,0.8s,mb4.5							
ASAR	**Alice Springs**	**21.72**	**138**	P		**P**	**05 26 48.4**	**+1.1**
	7.4nm,0.5s,mb4.4,baz=314,slow=9.5,SNR=46							
ASAR				S		**S**	**05 30 47.2**	**+7.0**
	1.9nm,0.8s,baz=320,slow=25,SNR=6.0							
ASAR				LR		LR	05 35 49.0	
	comp=Z,88nm,20.6s,MS3.1,baz=2.3,slow=38							
KLBR	**Kellerberrin**	**23.64**	**181**	*e*P		**P**	**05 27 06.8**	**+0.7**
	7.5nm,0.6s,mb4.3							
FORT	**Forrest**	**24.59**	**159**	*e*P		**P**	**05 27 16.4**	**+1.0**
	157nm,0.7s,mb5.7							
NWAO	**Narrogin (SRO)**	**24.99**	**182**	P		**P**	**05 27 20.2**	**+1.0**
	9.0nm,0.9s,mb4.3,baz=8.9,slow=12,SNR=3.1							
NWAO	**Narrogin (SRO)**	**24.99**	**182**	*e*P		**P**	**05 27 20.2**	**+1.0**
NWAO				*e*			05 27 40.5	
CTA	**Charters Tower**	**29.68**	**117**	P		**P**	**05 28 03.2**	**+1.2**
	0.7nm,0.3s,mb3.9,baz=326,slow=7.9,SNR=4.9							
CTA				pP		pP	05 28 14.4	+1.4
	4.1nm,0.7s,baz=283,slow=8.9,SNR=3.9							
CTA				LR		LR	05 42 16.8	
	comp=Z,106nm,18.1s,MS3.5,baz=229,slow=41							
CTAO	**Charters Tower**	**29.68**	**117**	*e*P		**P**	**05 28 03.0**	**+0.9**
	4.8nm,0.8s,mb4.3							
STKA	**Stephens Creek**	**32.29**	**141**	*e*P		**P**	**05 28 25.6**	**+0.6**
	4.7nm,1.0s,mb4.3							
STKA	**Stephens Creek**	**32.29**	**141**	P		**P**	**05 28 25.9**	**+0.9**
	2.2nm,0.5s,mb4.2,baz=316,slow=11,SNR=5.6							
STKA				pP		pP	05 28 37.2	+1.3
	3.0nm,0.5s,baz=326,slow=5.4,SNR=4.4							
STKA				LR		LR	05 42 16.9	
	comp=Z,98nm,19.6s,MS3.5,baz=23,slow=38							

LSA	**Lhasa**	**45.55**	**326**	P		**P**	**05 30 18.5**	**+2.9**
LZH	**Lanzhou**	**45.76**	**344**	*e*P		**P**	**05 30 18.5**	**+1.4**
LZH				XP	sP		05 30 29.0	-4.2
LZH				AMB	AMB			
	comp=Z,25nm,1.0s,mb5.1							
GUN	**Gumba**	**47.38**	**320**	*e*P		**P**	**05 30 30.3**	**+0.3**
	comp=Z,32nm,0.7s,mb5.4							
PKI	**Pulchoki**	**47.45**	**319**	*e*P		**P**	**05 30 30.6**	**0.0**
	comp=Z,12nm,0.7s,mb5.0							
DMN	**Daman**	**47.67**	**319**	*e*P		**P**	**05 30 32.4**	**+0.1**
	comp=Z,27nm,0.9s,mb5.3							
KKN	**Kakani**	**47.68**	**319**	*e*P		**P**	**05 30 32.4**	**0.0**
	comp=Z,18nm,0.8s,mb5.2							
GKN	**Gorkha**	**48.24**	**319**	*e*P		**P**	**05 30 36.5**	**-0.3**
	comp=Z,14nm,0.6s,mb5.2							
KOLN	**Koldanda**	**48.77**	**318**	*e*P		**P**	**05 30 40.2**	**-0.6**
	comp=Z,17nm,0.7s,mb5.2							
GTA	**Gaotai**	**50.03**	**341**	*e*P		**P**	**05 30 51.9**	**+1.5**
GTA				AP	pP		05 31 01.6	-0.1
GTA				AMB	AMB			
	comp=Z,16nm,0.7s,mb5.2							
MDJ	**Mudanjiang**	**53.19**	**10**	P		**P**	**05 31 13.8**	**-0.3**
MDJ				AMB	AMB			
	comp=Z,11nm,0.7s,mb4.9							
MDJ				AMB	AMB			
	comp=Z,68nm,4.1s							
ULN	**Ulaanbaatar**	**56.34**	**351**	*e*P		**P**	**05 31 36.8**	**-0.2**
	comp=Z,2.8nm,0.7s,mb4.4							
SONM	**Songino Array**	**56.42**	**350**	P		**P**	**05 31 37.5**	**0.0**
	comp=Z,2.9nm,0.6s,mb4.5,baz=162,slow=7.8,SNR=3.6							
MKAR	**Makanchi Array**	**63.11**	**333**	P		**P**	**05 32 23.1**	**-0.4**
	comp=Z,3.0nm,0.5s,mb4.7,baz=144,slow=7.8,SNR=44							
MKAR				pP	pP		05 32 35.6	+0.4
	comp=Z,3.7nm,0.7s,baz=138,slow=8.2,SNR=11							
KURK	**Kurchatov**	**67.65**	**334**	*e*P		**P**	**05 32 52.0**	**-0.5**
ZAL	**Zalesovo**	**67.71**	**339**	P		**P**	**05 32 52.2**	**-0.6**
	comp=Z,3.2nm,0.8s,mb4.4,baz=284,slow=3.3,SNR=13							
ZAL				pP	pP		05 33 04.2	-0.5
	comp=Z,2.3nm,0.8s,baz=223,slow=4.5,SNR=3.1							
ZAL	**Zalesovo**	**67.71**	**339**	P		**P**	**05 32 52.2**	**-0.6**
ZAL				pP	pP		05 33 04.2	-0.5
MAW	**Mawson**	**70.09**	**200**	P		**P**	**05 33 08.9**	**+1.6**
	comp=Z,3.6nm,0.9s,mb4.3							
BVAR	**Borovoye Array**	**72.95**	**332**	P		**P**	**05 33 24.1**	**-0.5**
	comp=Z,3.5nm,0.8s,mb4.3,baz=135,slow=8.4,SNR=15							
BRVK	**Borovoye**	**73.02**	**332**	*e*P		**P**	**05 33 25.4**	**+0.4**
ZRNK	**Zerenda**	**73.55**	**331**	*e*P		**P**	**05 33 27.6**	**-0.6**
SBA	**Scott Base**	**74.24**	**171**	*e*P		**P**	**05 33 32.5**	**+0.7**
	comp=Z,3.0nm,1.0s,mb4.2							
THR	**Tehran**	**76.53**	**310**	LR	LR		06 09 17.0	
	comp=Z,16nm,20.4s,MS3.3,baz=27,slow=37							
SYO	**Syowa Base**	**78.68**	**201**	⇓PcP	PcP		05 34 09.4	+3.3
TIXI	**Tiksi**	**79.63**	**3**	*e*P		**P**	**05 34 01.3**	**-0.7**
	comp=Z,3.7nm,0.3s,mb4.8							
QSPA	**South Pole Qui**	**82.15**	**180**	*e*P		**P**	**05 34 30.1**	**+15**
CPUP	**Villa Florida**	**145.78**	**187**	PKPbc	PKPbc		05 41 36.0	+2.5
	comp=Z,1.7nm,1.0s,baz=88,slow=5.3,SNR=4.1							

ISC 19 05:33:00.8±0.8,**38.62N**±0.04×**26.65E**±0.08,**h10**km,**n15**, σ1§**09**/23,**Aegean Sea**

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

KDAK				S		S	05 52 23.1	-1.7	
ACHA	**Angle Creek He**	**2.27**	**217**	P		P	05 51 57.2	+0.1	
ACHA				S		S	05 52 25.1	+0.3	
MGLS	**Mageik LS**	**2.27**	**217**	P		P	05 51 58.4	+1.3	
PWL	**Port Wells**	**2.33**	**68**	P		P	05 51 57.3	-0.6	
ANCK	**Angle Creek**	**2.33**	**219**	P		P	05 51 58.1	+0.1	
PMR	**Palmer**	**2.35**	**47**	P		P	05 51 58.2	+0.1	
PMR				S		S	05 52 25.7	-1.1	
CAHL	**Cahill**	**2.40**	**215**	P		P	05 51 59.2	+0.4	
KJL	**Kejulik**	**2.48**	**217**	P		P	05 52 00.3	+0.5	
GHO	**Glory Hole Cre**	**2.54**	**45**	P		P	05 52 00.7	-0.1	
GHO				S		S	05 52 30.3	-1.1	
CUT	**Chulitna**	**2.65**	**26**	P		P	05 52 03.2	+0.9	
CFI	**College Fiord**	**2.70**	**63**	P		P	05 52 01.8	-1.1	
SML	**Sawmill**	**2.78**	**49**	P		P	05 52 03.9	-0.1	
HIN	**Hinchinbrook I**	**3.13**	**81**	P		P	05 52 07.5	-1.3	
SCM	**Sheep Creek Mo**	**3.19**	**53**	P		P	05 52 09.1	-0.5	
TT01	**Tatalina**	**3.27**	**333**	P		P	05 52 10.3	-0.4	
MID	**Middleton Isla**	**3.30**	**98**	P		P	05 52 11.2	+0.2	
CVA	**Cordova**	**3.52**	**79**	P		P	05 52 12.6	-1.3	
EYAK	**Cordova Ski Ar**	**3.52**	**79**	P		P	05 52 13.7	-0.3	
EYAK				S		S	05 52 52.3	-2.6	
KTH	**Kantishna Hill**	**3.62**	**13**	P		P	05 52 15.5	+0.1	
KLU	**Klutina**	**3.65**	**64**	P		P	05 52 14.7	-1.0	
TOA	**Tolsona**	**3.80**	**54**	P		P	05 52 17.8	0.0	
DHY	**Denali Highway**	**3.98**	**38**	P		P	05 52 20.3	0.0	
TZL	**Tazlina**	**4.08**	**57**	P		P	05 52 21.0	-0.6	
MCK	**McKinley**	**4.11**	**24**	P		P	05 52 22.7	+0.6	
BMRM	**Bremner River**	**4.13**	**74**	P		P	05 52 21.7	-0.6	
BWN	**Browne**	**4.42**	**19**	P		P	05 52 26.6	+0.4	
PAX	**Paxson**	**4.55**	**47**	P		P	05 52 28.3	+0.3	
GLB	**Gilahina Butte**	**4.60**	**68**	P		P	05 52 27.4	-1.3	
WANC	**Wrangell North**	**4.65**	**61**	P		P	05 52 29.5	+0.1	
SNH	**Sunshine Point**	**4.96**	**84**	P		P	05 52 33.7	+0.2	
MLY	**Manley**	**5.09**	**10**	P		P	05 52 35.1	-0.2	
HDA	**Harding Lake**	**5.14**	**29**	P		P	05 52 35.9	-0.2	
CCB	**Clear Creek Bu**	**5.16**	**24**	P		P	05 52 35.6	-0.6	
BALM	**Baldy**	**5.23**	**75**	P		P	05 52 36.8	-0.4	
COLA	**College**	**5.35**	**23**	P		P	05 52 38.9	0.0	
WRG	**White River Gl**	**5.37**	**85**	P		P	05 52 39.4	+0.3	
ILAR	**Eielson Array**	**5.46**	**27**	P		P	05 52 39.9	-0.6	
	5.8nm,0.3s,baz=215,slow=13,SNR=184								
ILAR				S		S	05 53 36.1	-6.5	
	9.3nm,0.3s,baz=194,slow=26,SNR=9.7								
IL1	**Eielson Array**	**5.47**	**27**	P		P	05 52 40.0	-0.4	
DOT	**Dot Lake**	**5.47**	**45**	P		P	05 52 40.7	+0.2	
YAH	**Yahtse**	**5.49**	**82**	P		P	05 52 41.1	+0.3	
CTGM	**Chitina Glacie**	**5.71**	**76**	P		P	05 52 44.4	+0.6	
CHX	**Chaix Hills**	**5.82**	**85**	P		P	05 52 45.9	+0.6	
IM3	**Indian Mountai**	**5.98**	**356**	P		P	05 52 48.0	+0.7	
BCA3	**Beaver Creek A**	**6.05**	**55**	P		P	05 52 47.9	-0.5	
IMA	**Indian Mountai**	**6.06**	**356**	*eP*		P	05 52 48.8	+0.3	
PCA	**Pinnacle**	**6.25**	**84**	P		P	05 52 51.6	+0.4	
SDPT	**Sand Point**	**6.27**	**225**	P		P	05 52 50.5	-1.0	
PRP	**Porcupine Dome**	**6.41**	**28**	P		P	05 52 53.4	0.0	
PNL	**Peninsula**	**6.73**	**87**	P		P	05 52 57.2	-0.6	
DRIA	**Deer Island**	**7.22**	**229**	P		P	05 53 03.9	-0.6	
DAWY	**Dawson**	**7.45**	**52**	*eP*		P	05 53 06.6	-1.0	
BM3	**Burnt Mountain**	**8.22**	**22**	P		P	05 53 16.4	-1.7	
WHY	**Whitehorse**	**8.87**	**78**	P		P	05 53 26.1	-0.7	
BESE	**Bessie Mountai**	**9.26**	**91**	P		P	05 53 32.4	+0.4	
SIT	**Sitka**	**9.58**	**101**	P		P	05 53 35.1	-1.0	
NIKO	**Nikolski**	**11.36**	**238**	P		P	05 54 00.6	+0.7	
DLBC	**Dease Lake**	**11.72**	**88**	P		P	05 54 06.3	+1.6	
	3.2nm,0.3s,baz=268,slow=10,SNR=30								
DLBC				S		S	05 56 11.8	-2.0	
	0.2nm,0.3s,baz=236,slow=11,SNR=3.0								
INK	**Inuvik**	**11.72**	**37**	P		P	05 54 04.1	-0.6	
	0.3nm,0.3s,baz=256,slow=18,SNR=26								
INK				S		S	05 56 08.5	-5.2	
	0.1nm,0.3s,baz=324,slow=14,SNR=2.8								
INK	**Inuvik**	**11.72**	**37**	*eP*		P	05 54 03.9	-0.8	
BBB	**Bella Bella**	**15.75**	**109**	P		P	05 54 57.7	+1.1	
	0.1nm,0.3s,baz=280,slow=17,SNR=4.0								
BBB				S		S	05 57 49.0	+1.3	
	0.3nm,0.3s,baz=176,slow=13,SNR=3.0								
YKA	**Yellowknife Ar**	**18.31**	**66**	P		P	05 55 27.7	0.0	
	0.3nm,0.3s,baz=276,slow=9.8,SNR=38								
YKA				ScP			06 03 19.8		
	0.0nm,0.3s,baz=292,slow=2.1,SNR=5.8								
YKA	**Yellowknife Ar**	**18.31**	**66**	P		P	05 55 27.8	0.0	
YKA				ScP			06 03 19.8		
WMOK	**Wichita Mounta**	**42.79**	**101**	P		P	05 59 10.3	+2.1	
	0.4nm,0.4s,mb3.5								
TXAR	**Lajitas Array**	**44.88**	**111**	P		P	05 59 27.0	+2.0	
	1.1nm,1.2s,mb3.5,baz=310,slow=7.0,SNR=3.5								
TXAR	**Lajitas Array**	**44.88**	**111**	P		P	05 59 27.0	+2.0	
ZAL	**Zalesovo**	**57.43**	**324**	P		P	06 00 58.7	-0.5	
	1.4nm,0.4s,mb4.3,baz=27,slow=9.0,SNR=2.9								
BVAR	**Borovoye Array**	**62.09**	**332**	P		P	06 01 30.1	-0.9	
	1.5nm,0.4s,mb4.3,baz=23,slow=5.4,SNR=11								
MKAR	**Makanchi Array**	**64.48**	**321**	P		P	06 01 45.4	-1.3	
	0.3nm,0.5s,mb3.4,baz=38,slow=6.9,SNR=7.1								

*IDC **19** 06:02:36.8±2.3,5.90S×130.45E,mb4.0/1,mb1 4.2/4, mb1mx3.9/12,ML4.1/3,Error ellipse: s-maj=108.0km s-min=27.2km az=77.0*
*NEIC **19** 06:02:55.5±4.0,6.69S×130.13E,h195km±48km,mb4.2/3, Error ellipse: s-maj=42.9km s-min=31.9km az=51.0*
ISC 19 06:02:54.9±1.9,6.77S±0.09×130.0E±0.1,h198km±21km, n11,σ1°§14/19,mb3.7/2,1C-1D,Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
KAKA	**Kakadu**		**6.37**	**158**	**⇓*iP***		**P**	**06 04 27.8**	**+0.2**
	73nm,0.2s								
KAKA				*i*	S		**S**	**06 05 38.9**	**-1.0**
FITZ	**Fitzroy Crossi**		**12.02**	**200**	***eP***		**P**	**06 05 42.9**	**+2.0**
	2.1nm,0.3s								
FITZ					*e*S		**S**	**06 07 50.5**	**-1.1**
FITZ	**Fitzroy Crossi**		**12.02**	**200**	Pn		**P**	**06 05 42.1**	**+1.1**
	0.8nm,0.3s,baz=18,slow=11,SNR=14								
FITZ					Sn		**S**	**06 07 51.2**	**-0.3**
	2.5nm,0.3s,baz=172,slow=14,SNR=7.1								
WRAB	**Tennant Creek**		**13.77**	**162**	***eP***		**P**	**06 06 03.0**	**-0.1**
	17nm,0.4s								
WRAB					*e*S		**S**	**06 08 29.4**	**-2.0**
WRA	**Warramunga Arr**		**13.77**	**162**	Pn		**P**	**06 06 03.2**	**+0.2**
	1.1nm,0.3s,baz=349,slow=11,SNR=23								
WRA					Sn		**S**	**06 08 31.7**	**+0.2**
	1.4nm,0.3s,baz=342,slow=21,SNR=6.5								
WB2	**Warramunga Arr**		**13.77**	**162**	***eP***		**P**	**06 06 02.8**	**-0.3**
WB2					*e*S		**S**	**06 08 33.4**	**+1.7**
AS12	**Alice Springs**		**17.23**	**168**	**⇑*iP***		**P**	**06 06 48.6**	**+3.6**
	3.7nm,0.3s								
AS12					*e*S		**S**	**06 09 58.5**	**+10**
ASAR	**Alice Springs**		**17.23**	**168**	P		**P**	**06 06 48.6**	**+3.7**
	1.0nm,0.3s,baz=348,slow=11,SNR=32								
ASAR					S		**S**	**06 09 56.1**	**+7.6**
	0.2nm,0.3s,baz=356,slow=24,SNR=4.3								
LSA	**Lhasa**		**52.00**	**316**	P		**P**	**06 11 44.5**	**-1.5**
	2.2nm,0.6s,mb3.8								
MKAR	**Makanchi Array**		**68.00**	**327**	P		**P**	**06 13 35.2**	**+0.6**
	0.6nm,0.4s,mb3.6,baz=122,slow=8.1,SNR=11								
MKAR	**Makanchi Array**		**68.00**	**327**	P		**P**	**06 13 35.2**	**+0.6**

CASC 19 06:04:39.7±2.4,10.43N×86.19W,h1km±7km,MD3.7, ML3.4,4C-2D,Off coast of Costa Rica

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
VCR	**Vista de Mar**		**0.63**	**119**	**⇓*eP***		**Pg**	**06 04 53.1**	**+0.8**
VCR					*e*S		Sg	06 05 03.2	+2.6
CRZC	**La Cruz**		**0.78**	**48**	**⇓*eP***		**Pg**	**06 04 55.7**	**+0.3**
CRZC					*e*S		Sg	06 05 07.9	+2.1
JCR	**Jicaral**		**1.21**	**118**	**⇑*eP***		**Pb**	**06 05 01.5**	**-1.6**
JCR					*e*S		Sb	06 05 16.8	-2.4
CONN	**Concepcion**		**1.26**	**26**	**⇑*eP***		**Pb**	**06 05 03.1**	**-0.8**
CONN					*i*			06 05 33.1	
	comp=Z,258nm,0.4s								
APON	**Apoyo**		**1.48**	**5**	**⇑*eP***		**Pn**	**06 05 06.6**	**-1.0**
FORC	**Fortuna**		**1.50**	**88**	***eP***		**Pn**	**06 05 07.9**	**0.0**
MGAN	**Managua**		**1.71**	**358**	***eP***		**Pn**	**06 05 07.7**	**-3.1**
MGAN					*e*S		Sb	06 05 34.7	+1.1
CGA2	**Cerro Gallo 2**		**1.75**	**103**	**⇑*eP***		**Pn**	**06 05 10.1**	**-1.3**
COPN	**Copaltepe**		**1.78**	**347**	***eP***		**Pn**	**06 05 10.3**	**-1.6**
VPS2	**Volcan Poas 2**		**1.94**	**97**	***eP***		**Pn**	**06 05 13.3**	**-0.9**
LEON	**Leon**		**2.09**	**341**	***eP***		**Pn**	**06 05 14.5**	**-1.8**
PYTN	**Playitas**		**2.10**	**4**	***eP***		**Pn**	**06 05 16.4**	**0.0**
LAJ	**Bijagual**		**2.12**	**105**	***eP***		**Pn**	**06 05 12.2**	**-4.5**
TEL3	**Telica 3**		**2.22**	**343**	***eP***		**Pn**	**06 05 18.1**	**-0.2**
LCR2	**La Lucha 2**		**2.26**	**107**	***eP***		**Pn**	**06 05 19.4**	**+0.6**
ICR	**Volcan Irazu**		**2.37**	**101**	***eP***		**Pn**	**06 05 21.6**	**+1.3**
TRTC	**Tortuguero**		**2.44**	**86**	***eP***		**Pn**	**06 05 20.9**	**-0.5**
BUS	**Buena Vista**		**2.55**	**110**	***eP***		**Pn**	**06 05 26.4**	**+3.5**

*IDC **19** 06:09:46.6±2.5,17.66S×178.72W,h619km±31km, mb3.3/11,mb1 3.6/11,mb1mx3.5/15,Error ellipse: s-maj=59.9km s-min=11.1km az=154.0*
ISC 19 06:09:44.9±3.0,17.6S±0.5×178.8W±0.3,h612km±42km, n20,σ0°§68/13,mb3.8/11,1C,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**		**33.17**	**260**	P		**P**	**06 15 34.9**	**+0.6**
	1.2nm,0.4s,mb3.9,baz=72,slow=13,SNR=2.8								
STKA	**Stephens Creek**		**38.48**	**241**	P		**P**	**06 16 17.6**	**-0.3**
	1.8nm,0.5s,mb3.9,baz=153,slow=14,SNR=3.4								
WRA	**Warramunga Arr**		**44.36**	**259**	P		**P**	**06 17 04.3**	**-0.2**
	1.5nm,0.8s,mb3.6,baz=96,slow=7.2,SNR=18								
WRA					PcP		PcP	06 18 34.2	-0.8
	0.6nm,0.6s,baz=80,slow=3.9,SNR=5.3								
WRA					S		**S**	**06 22 55.8**	**-0.4**
	0.2nm,0.3s,baz=94,slow=13,SNR=4.6								
ASAR	**Alice Springs**		**44.55**	**254**	P		**P**	**06 17 05.5**	**-0.5**
	7.0nm,0.6s,mb4.4,baz=88,slow=8.2,SNR=74								
ASAR					PcP		PcP	06 18 34.5	-1.2
	1.3nm,0.6s,baz=101,slow=4.1,SNR=7.0								
ASAR					S		**S**	**06 22 58.6**	**-0.2**
	0.4nm,0.5s,baz=90,slow=14,SNR=5.2								
YBH	**Yreka Blue Hor**		**78.51**	**39**	P		**P**	**06 20 46.0**	**+0.6**
	1.6nm,0.6s,mb3.6,baz=170,slow=6.1,SNR=6.5								
ILAR	**Eielson Array**		**85.68**	**13**	P		**P**	**06 21 20.1**	**-0.8**
	1.1nm,0.5s,mb3.7,baz=220,slow=5.0,SNR=31								
TXAR	**Lajitas Array**		**86.12**	**58**	P		**P**	**06 21 24.3**	**+0.4**
	3.5nm,1.0s,mb3.9,baz=218,slow=6.1,SNR=27								
PDAR	**Pinedale Array**		**87.37**	**44**	P		**P**	**06 21 29.2**	**-0.1**
	1.3nm,0.6s,mb3.8,baz=227,slow=2.9,SNR=14								
CMAR	**Chiang Mai Arr**		**88.47**	**290**	P		**P**	**06 21 36.9**	**+1.8**
	0.9nm,0.7s,mb3.6,baz=135,slow=4.0,SNR=4.6								
INK	**Inuvik**		**91.69**	**15**	P		**P**	**06 21 48.5**	**-0.3**
	1.3nm,0.6s,mb4.1,baz=222,slow=4.7,SNR=6.3								
YKA	**Yellowknife Ar**		**94.20**	**25**	P		**P**	**06 21 59.6**	**-0.7**
	0.3nm,0.5s,mb3.6,baz=241,slow=4.4,SNR=9.9								
MKAR	**Makanchi Array**		**108.69**	**314**	PKiKP			06 27 05.2	
	0.4nm,0.5s,baz=90,slow=1.4,SNR=6.4								
BVAR	**Borovoye Array**		**116.41**	**321**	PKP		PKPdf	06 27 19.9	0.0
	1.0nm,0.5s,baz=135,slow=2.0,SNR=7.5								
ARCES	**ARCESS Array B**		**125.97**	**350**	PKP		PKPdf	06 27 38.5	+0.6
	2.2nm,0.7s,baz=45,slow=2.6,SNR=4.0								
KTK1	**Kautokeino**		**126.81**	**350**	*eP*		PKPdf	06 27 44.5	+4.9
FINES	**FINESS Array B**		**132.82**	**344**	PKP		PKPdf	06 27 52.0	+0.9
	0.9nm,0.8s,baz=45,slow=5.4,SNR=3.7								
BRTR	**Keskin Array B**		**144.34**	**315**	PKP		PKPdf	06 28 14.2	+1.7
	2.9nm,0.9s,baz=135,slow=3.5,SNR=8.5								
CLL	**Collm**		**145.10**	**347**	**⇑**P		PKPdf	06 28 16.1	+2.8
	logA/T=1.1								
GERES	**GERESS Array B**		**147.24**	**345**	PKPbc		PKPdf	06 28 22.0	+5.0
	2.4nm,0.5s,baz=27,slow=3.0,SNR=16								
DAVOX	**Davos**		**150.05**	**348**	PKPbc		PKPdf	06 28 29.3	+7.9
	5.4nm,0.5s,baz=272,slow=0.9,SNR=6.3								

*BJI **19** 06:19:00.7,18.69S×171.92W,h20km,mB5.0,mb4.6, Ms5.3,Msz5.1*
*NEIC **19** 06:19:05.3±0.2,18.19S×172.46W,h20km,mb4.7/12, Error ellipse: s-maj=12.6km s-min=6.9km az=137.0*
*SYO **19** 06:19:05.2,18.19S×172.46W,h20km,MB4.7*
*IDC **19** 06:19:08.4±0.7,18.13S×172.51W,h37km±4km,mb4.3/13, mb1 4.5/14,mb1mx4.5/19,ML5.1/1,MS4.0/6,Ms1 4.0/6, ms1mx3.7/24,Error ellipse: s-maj=33.3km s-min=13.3km az=144.0*
ISC 19 06:19:06.4±0.3,18.21S±0.08×172.49W±0.09,h38km, h38km±.6km:pP-P,n85,σ0°§79/55,mb4.6/23,MS4.2/6,7C-3D, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**		**12.34**	**106**	Pn		**P**	**06 21 51.4**	**-11**
	11nm,0.3s,baz=255,slow=8.7,SNR=40								
RAR					Sn		S	06 23 56.1	-23
	1.9nm,0.3s,baz=144,slow=19,SNR=3.1								
RAR					LR		LR	06 25 30.6	
	comp=Z,840nm,21.3s,baz=314,slow=31								
RAR	**Rarotonga**		**12.34**	**106**	***eP***		**P**	**06 21 51.5**	**-11**
	81nm,0.8s								
URZ	**Urewera**		**21.94**	**202**	P		**P**	**06 23 58.7**	**+0.4**
	22nm,0.8s,mb4.7,baz=71,slow=3.8,SNR=12								
URZ					S		**S**	**06 27 47.6**	**-5.7**
	3.1nm,0.5s,baz=52,slow=19,SNR=3.1								
RPZ	**Rata Peaks**		**28.97**	**205**	P		**P**	**06 25 12.3**	**+7.9**
	17nm,0.6s,mb5.0,baz=25,slow=5.8,SNR=21								
RPZ					LR		LR	06 35 49.7	
	comp=Z,207nm,21.4s,MS3.7,baz=1.0,slow=34								
CTA	**Charters Tower**		**38.95**	**260**	**⇑*iP***		**P**	**06 26 30.1**	**-0.5**
	18nm,0.8s,mb4.9								
CTA	**Charters Tower**		**38.95**	**260**	P		**P**	**06 26 30.2**	**-0.4**
	27nm,0.9s,mb5.0,baz=94,slow=10,SNR=35								
CTAO	**Charters Tower**		**38.95**	**260**	***eP***		**P**	**06 26 29.6**	**-1.1**
	2.0nm,0.8s,mb5.0								
STKA	**Stephens Creek**		**43.46**	**243**	**⇑*iP***		**P**	**06 27 08.1**	**+0.4**
	8.3nm,0.9s,mb4.5								
STKA	**Stephens Creek**		**43.46**	**243**	P		**P**	**06 27 07.8**	**+0.1**
	9.9nm,0.9s,mb4.5,baz=85,slow=8.1,SNR=12								
STKA					LR		LR	06 42 22.8	
	comp=Z,318nm,19.0s,MS4.2,baz=29,slow=32								
WB2	**Warramunga Arr**		**50.10**	**259**	**⇑*iP***		**P**	**06 27 59.4**	**-0.7**
WRAB	**Tennant Creek**		**50.10**	**259**	***eP***		**P**	**06 27 59.0**	**-1.1**
	143nm,1.3s,mb5.8								
WRA	**Warramunga Arr**		**50.11**	**259**	P		**P**	**06 27 59.7**	**-0.5**
	22nm,0.9s,mb5.2,baz=96,slow=8.5,SNR=110								
WRA					LR		LR	06 48 54.0	
	comp=Z,222nm,18.8s,MS4.2,baz=95,slow=36								
AS12	**Alice Springs**		**50.13**	**254**	**⇑*iP***		**P**	**06 28 00.0**	**-0.3**
	40nm,1.2s,mb5.3								
ASAR	**Alice Springs**		**50.13**	**254**	P		**P**	**06 28 00.2**	**-0.1**
	24nm,0.8s,mb5.3,baz=94,slow=7.8,SNR=188								
ASAR					S		**S**	**06 35 11.3**	**+3.5**
	1.0nm,1.1s,baz=98,slow=14,SNR=4.7								
ASAR					LR		LR	06 48 14.8	
	comp=Z,156nm,20.6s,MS4.0,baz=307,slow=35								
KAKA	**Kakadu**		**53.25**	**268**	**⇓*iP***		**P**	**06 28 23.5**	**-0.3**
	9.2nm,0.4s,mb5.1								
FITZ	**Fitzroy Crossi**		**58.53**	**260**	LR		LR	06 53 06.2	
	comp=Z,104nm,18.7s,MS4.0,baz=95,slow=35								
SBA	**Scott Base**		**60.53**	**185**	***eP***		**P**	**06 29 15.1**	**+0.3**
	3.0nm,0.9s,mb4.4								
QSPA	**South Pole Qui**		**71.85**	**180**	***eP***		**P**	**06 30 26.8**	**+0.2**
	4.8nm,0.8s,mb4.5								
YBH	**Yreka Blue Hor**		**75.32**	**36**	P		**P**	**06 30 48.1**	**+0.6**
	1.6nm,0.9s,mb3.9,baz=128,slow=3.5,SNR=4.4								
MSU	**Marysvale**		**79.82**	**44**	***eP***		**P**	**06 31 13.3**	**+0.7**
SSE	**Sheshan**		**80.34**	**307**	**⇑**P		**P**	**06 31 16.1**	**+0.5**
SSE					AMB		AMB		
	comp=Z,108nm,5.2s								
MNTX	**Cornudas Mount**		**81.21**	**53**	***eP***		**P**	**06 31 19.4**	**-0.8**
	comp=Z,2.5nm,1.1s,mb4.1								
MNTX					*ep*P		pP	06 31 31.6	-0.2
HLID	**Hailey**		**81.25**	**39**	***eP***		**P**	**06 31 18.5**	**-1.6**
	comp=Z,8.3nm,1.6s,mb4.4								
TXAR	**Lajitas Array**		**81.46**	**55**	P		**P**	**06 31 22.1**	**+0.6**
	comp=Z,1.2nm,0.8s,mb3.9,baz=225,slow=8.8,SNR=10								
TXAR					pP		pP	06 31 33.9	+0.6
MDJ	**Mudanjiang**		**81.78**	**322**	P		**P**	**06 31 23.6**	**+0.8**
MDJ					AMB		AMB		
	comp=Z,4.0nm,0.7s,mb4.5								
MDJ					AMB		AMB		
	comp=Z,56nm,4.7s								
ANMO	**Albuquerque**		**81.95**	**49**	P		**P**	**06 31 23.2**	**-0.6**
GDL2	**Guadalupe Moun**		**82.21**	**53**	***eP***		**P**	**06 31 25.9**	**+0.6**
NJ2	**Nanjing**		**82.55**	**307**	***eP***		**P**	**06 31 28.1**	**+1.0**
NJ2					AP		pP	06 31 38.6	-0.2
NJ2					XP		sP	06 31 42.8	-0.2
NJ2					PP		PP	06 34 42.8	+4.2
NJ2					LR		LR		
	comp=N,490nm,17.7s,MS5.1								
NJ2					LR		LR		
	comp=E,600nm,22.6s,MS5.1								
NJ2					LR		LR		
	comp=Z,710nm,16.2s								
MCMT	**McKenzie Canyo**		**82.90**	**38**	***eP***		**P**	**06 31 28.9**	**+0.3**
BW06	**Boulder Array**		**83.78**	**41**	***eP***		**P**	**06 31 32.6**	**-0.5**
	comp=Z,1.1nm,0.7s,mb4.1								
BW06					*ep*P		pP	06 31 44.0	-0.8

PDAR	**Pinedale Array**		**83.78**	**41**	P		**P**	**06 31 33.4**	**+0.3**
	comp=Z,1.3nm,0.8s,mb4.1,baz=237,slow=2.2,SNR=13								
PDAR					pP		pP	06 31 44.8	-0.1
	comp=Z,2.6nm,1.1s,baz=207,slow=3.3,SNR=6.0								
CN2	**Changchun**		**83.79**	**320**	***eP***		**P**	**06 31 34.0**	**+0.9**
BOZ	**Bozeman (W)**		**84.07**	**38**	***eP***		**P**	**06 31 34.3**	**-0.2**
BOZ					*ep*P		pP	06 31 46.1	-0.2
COLA	**College**		**84.95**	**10**	***eP***		**P**	**06 31 37.8**	**-0.7**
	comp=Z,18nm,1.5s,mb5.0								
COLA					*ep*P		pP	06 31 50.1	-0.2
ILAR	**Eielson Array**		**85.03**	**11**	P		**P**	**06 31 38.7**	**-0.1**
	comp=Z,0.7nm,0.7s,mb3.9,baz=227,slow=5.9,SNR=12								
ILAR					pP		pP	06 31 51.0	+0.4
	comp=Z,2.3nm,0.8s,baz=206,slow=5.1,SNR=11								
IMA	**Indian Mountai**		**85.22**	**8**	***eP***		**P**	**06 31 39.5**	**-0.2**
	comp=Z,29nm,1.4s,mb5.2								
MAW	**Mawson**		**85.42**	**198**	P		**P**	**06 31 42.0**	**+1.3**
	comp=Z,4.5nm,1.0s,mb4.5,baz=95,slow=2.8,SNR=4.5								
MAW	**Mawson**		**85.42**	**198**	P		**P**	**06 31 41.3**	**+0.6**
DAWY	**Dawson**		**85.92**	**14**	***eP***		**P**	**06 31 43.2**	**0.0**
DAWY					*ep*P		pP	06 31 55.4	+0.3
WMOK	**Wichita Mounta**		**87.51**	**52**	P		**P**	**06 31 51.1**	**-0.6**
VNA3	**Neumayer Olymp**		**89.99**	**175**	*e*		**P**	**06 32 06.1**	**+3.5**
VNA3	**Neumayer Olymp**		**89.99**	**175**	***eP***		**P**	**06 32 03.3**	**+0.7**
VNA3					*e*			06 32 06.1	
VNA3					*e*			06 35 44.4	
SYO	**Syowa Base**		**90.02**	**191**	**⇑**P		**P**	**06 32 00.4**	**-2.4**
SYO	**Syowa Base**		**90.02**	**191**	**⇓**PcP		PcP	06 32 05.4	+1.1
SYO	**Syowa Base**		**90.02**	**191**	**⇑*eP***		**P**	**06 32 00.4**	**-2.4**
SYO					**⇓*e***PcP		PcP	06 32 05.4	+1.1
SNAA	**Sanae**		**90.06**	**177**	***eP***		**P**	**06 32 02.3**	**-0.7**
VNA2	**Neumayer--Watz**		**90.49**	**175**	*e*		**P**	**06 32 07.5**	**+2.5**
VNA2	**Neumayer--Watz**		**90.49**	**175**	*eS*		S	06 42 58.3	+3.4
VNA2	**Neumayer--Watz**		**90.49**	**175**	***eP***		**P**	**06 32 04.2**	**-0.8**
VNA2					*e*			06 32 07.5	
VNA2					*e*			06 35 43.4	
VNA2					*eS*		S	06 42 58.3	+3.4
VNA1	**Neumayer--Stat**		**90.69**	**175**	*e*		**P**	**06 32 09.6**	**+3.7**
VNA1	**Neumayer--Stat**		**90.69**	**175**	***eP***		**P**	**06 32 06.8**	**+0.9**
VNA1					*e*			06 32 09.6	
VNA1					*e*			06

KSP				*e*SN	**Sn**	**06 25 11.0 +0.9**		
KSP				*e*SG	**Sg**	**06 25 13.0 +0.3**		
VYHS	**Vyhne**	**1.76**	**178**	*e*PN	**Pn**	**06 24 48.7 -0.1**		
VYHS				*e*SN	**Sn**	**06 25 12.6 +0.3**		
UPC	**Upice**	**1.77**	**279**	*e*SG	**Sg**	**06 25 15.9 0.0**		
CRVS	**Cervenica-Dubn**	**2.22**	**126**	*e*PB	**Pb**	**06 24 58.3 +0.7**		
CRVS				*e*SN	**Sn**	**06 25 26.2 +2.3**		
PRU	**Pruhonice**	**2.73**	**266**	*e*SG	**Sg**	**06 25 43.9 -3.6**		
	6.7nm,0.6s							
KHC	**Kasperske Hory**	**3.54**	**253**	*e*SG	**Sg**	**06 26 11.6 -3.2**		

NIED ***19*** *06:34:00,24.20N×122.20E,h29km,Mw4.0 Best double couple: M₀1.13×10¹⁵ NP1:φs73°,δ84°,λ-11°. NP2:φs164°, δ79°,λ-174°.*
IDC ***19*** *06:34:00.2±0.7,24.13N×122.34E,mb4.1/13,mb1 4.2/14, mb1mx4.1/23,ML3.6/1,MS3.2/2,Ms1 3.2/2,ms1mx2.9/35, Error ellipse: s-maj=23.4km s-min=15.8km az=64.0*
BJI ***19*** *06:34:01.2,23.89N×122.49E,h32km,mB4.3,mb4.4, ML4.2,Ms4.0,Msz3.7*
TAP ***19*** *06:34:03.6,23.98N×122.30E,h8km±1km,ML4.4*
JMA ***19*** *06:34:04.8±0.1,24.17N×122.23E,h33km±4km,M4.0*
NEIC ***19*** *06:34:05.9±1.2,24.16N×122.41E,h39km±11km,mb4.5/3, Error ellipse: s-maj=13.0km s-min=7.4km az=61.0*

ISC 19 06:34:04.0±0.3,24.08N±0.04×122.19E±0.03,h33km,n42, σ1§01/52,mb4.1/18,MS3.6/3,2C-1D,Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
YOJ	**Yonaguni jima**	**0.84**	**63**	P	**P**	**06 34 19.2**	**-0.1**
YOJ				S	**S**	**06 34 29.4**	**-1.2**
TATO	**Taipei**	**1.10**	**324**	*e*Pg	**P**	**06 34 26.3**	**+3.3**
IRIF	**Iriomote-Funau**	**1.43**	**80**	P	**P**	**06 34 28.5**	**+0.7**
IRIF				S	**S**	**06 34 46.3**	**+0.8**
HATJ	**Hateruma jima**	**1.47**	**91**	P	**P**	**06 34 29.3**	**+0.9**
HATJ				*e*S	**S**	**06 34 47.0**	**+0.3**
JKRS	**Kuro-shima**	**1.67**	**84**	P	**P**	**06 34 32.2**	**+1.0**
JKRS				*e*S	**S**	**06 34 51.8**	**+0.2**
JIJ	**Ishigaki jima**	**1.80**	**81**	P	**P**	**06 34 33.8**	**+0.7**
JIJ				S	**S**	**06 34 55.5**	**+0.4**
JTJ	**Tarama**	**2.36**	**76**	*e*S	**S**	**06 35 08.8**	**-0.3**
JMJ	**Miyako jima 2**	**2.92**	**75**	*e*S	**S**	**06 35 24.5**	**+1.1**
QZH	**Quanzhou**	**3.39**	**285**	⇑*i*P	**P**	**06 34 56.8**	**+1.0**
QZH				S	S		
	comp=N,430nm,1.0s						
QZH				S	S		
	comp=E,200nm,0.7s						
JOW	**Kunigami**	**6.14**	**62**	Pn	**Pn**	**06 35 30.6**	**-4.2**
	comp=E,3.1nm,0.3s,baz=324,slow=22,SNR=17						
JOW				Sn	**Sn**	**06 36 39.0**	**-5.8**
	baz=232,slow=11,SNR=2.1						
SSE	**Sheshan**	**7.04**	**353**	⇑P	**P**	**06 35 49.6**	**+2.2**
NJ2	**Nanjing**	**8.47**	**340**	*e*P	**P**	**06 36 08.3**	**+1.1**
NJ2				S	**S**	**06 37 42.8**	**+0.1**
NJ2				AMB	AMB		
	comp=Z,10.0nm,0.6s						
NJ2				S	S		
	comp=N,110nm,1.1s						
NJ2				S	S		
	comp=E,60nm,0.8s						
NJ2				LR	LR		
	comp=N,640nm,9.4s						
NJ2				LR	LR		
	comp=E,750nm,8.4s						
NJ2				LR	LR		
	comp=Z,390nm,8.0s						
JNU	**Nakatsue**	**11.80**	**38**	LR	LR	06 40 56.9	
	comp=Z,83nm,21.8s,baz=231,slow=36						
GYA	**Guiyang**	**14.25**	**283**	P	**P**	**06 37 25.6**	**+0.1**
GYA				AP		06 37 35.3	
GYA				XP		06 37 43.6	
GYA				AMB	AMB		
	comp=Z,10.0nm,0.8s						
GYA				LR	LR		
	comp=N,150nm,7.8s						
GYA				LR	LR		
	comp=E,240nm,8.6s						
GYA				LR	LR		
	comp=Z,180nm,9.2s						
CD2	**Chengdu**	**17.70**	**297**	*e*P	**P**	**06 38 11.3**	**+1.7**
CD2				AMB	AMB		
	comp=Z,10.0nm,0.4s						
KMI	**Kunming**	**17.72**	**277**	*e*P	**P**	**06 38 10.3**	**+0.5**
KMI				AP		06 38 22.9	
KMI				PP	PP	06 38 28.4	+3.9
KMI				S	**S**	**06 41 24.8**	**+1.0**
KMI				XS		06 41 42.5	
KMI				SS	SS	06 41 49.0	+2.6
KMI				AMB	AMB		
	comp=Z,5.0nm,0.6s						
KMI				AMB	AMB		
	comp=Z,71nm,5.8s						
KMI				LR	LR		
	comp=N,344nm,12.9s						
KMI				LR	LR		
	comp=E,197nm,11.9s						
KMI				LR	LR		
	comp=Z,185nm,13.8s						
LZH	**Lanzhou**	**19.84**	**311**	*e*P	**P**	**06 38 38.0**	**+3.2**
LZH				AMB	AMB		
	comp=Z,31nm,1.6s						
CN2	**Changchun**	**19.85**	**7**	*e*P	**P**	**06 38 35.0**	**+0.1**
CN2				*e*S	**S**	**06 42 09.5**	**-2.0**
CN2				AMB	AMB		
	comp=Z,10.0nm,0.6s						
CN2				LR	LR		
	comp=Z,300nm,18.0s						
MDJ	**Mudanjiang**	**21.36**	**15**	P	**P**	**06 38 49.0**	**-1.4**
MDJ				AP		06 39 00.9	
MDJ				S	**S**	**06 42 41.1**	**+0.4**
MDJ				PCP	PcP	06 42 54.8	+0.6
MDJ				PCS		06 46 32.3	
MDJ				SCS	ScS	06 50 11.5	+1.7
MDJ				AMB	AMB		
	comp=Z,11nm,1.6s,mb3.9						
MDJ				AMB	AMB		
	comp=Z,36nm,4.4s						
MDJ				LR	LR		
	comp=N,40nm,19.1s						
MDJ				LR	LR		
	comp=E,29nm,14.0s						
MDJ				LR	LR		
	comp=Z,63nm,15.3s,MS3.1						
HIA	**Hailar**	**25.21**	**356**	P	**P**	**06 39 27.6**	**-0.5**
ULN	**Ulaanbaatar**	**26.61**	**337**	*e*P	**P**	**06 39 40.0**	**-1.1**
	comp=Z,9.3nm,0.7s,mb4.4						
SONM	**Songino Array**	**26.83**	**336**	P	**P**	**06 39 43.1**	**0.0**
	comp=Z,25nm,1.1s,mb4.7,baz=146,slow=8.9,SNR=9.0						
WMQ	**Urumqi**	**34.39**	**313**	*e*P	**P**	**06 40 50.4**	**+0.3**
WMQ				AP	pP	06 41 05.5	+5.8
WMQ				PP	PP	06 42 07.5	+1.4
WMQ				PCP	PcP	06 43 25.1	-0.4
WMQ				S	**S**	**06 46 13.1**	**-1.7**
WMQ				AMB	AMB		
	comp=Z,7.0nm,1.2s,mb4.5						
WMQ				AMB	AMB		
	comp=Z,33nm,4.3s						
WMQ				LR	LR		
	comp=N,266nm,18.2s,MS4.2						
WMQ				LR	LR		
	comp=E,258nm,17.3s,MS4.2						
WMQ				LR	LR		
	comp=Z,396nm,18.1s,MS4.2						
MKAR	**Makanchi Array**	**39.05**	**316**	P	**P**	**06 41 29.8**	**+0.5**
	comp=Z,3.8nm,0.9s,mb4.1,baz=104,slow=10,SNR=30						
MKAR				PcP	PcP	06 43 38.8	-0.7
	comp=Z,0.4nm,0.6s,baz=117,slow=3.2,SNR=3.6						
MKAR				LR	LR	06 59 00.8	
	comp=Z,56nm,18.0s,MS3.4,baz=307,slow=38						
KURK	**Kurchatov**	**42.76**	**320**	*e*P	**P**	**06 41 58.0**	**-1.9**
MBWA	**Marble Bar**	**45.03**	**183**	P	**P**	**06 42 20.1**	**+1.5**
	comp=Z,0.1nm,0.5s,mb2.9						
WRAB	**Tennant Creek**	**45.32**	**164**	*e*P	**P**	**06 42 19.8**	**-1.1**
	comp=Z,24nm,1.1s,mb5.0						
WRA	**Warramunga Arr**	**45.33**	**164**	P	**P**	**06 42 19.9**	**-1.1**
	comp=Z,2.6nm,0.7s,mb4.2,baz=345,slow=8.9,SNR=15						
WB2	**Warramunga Arr**	**45.33**	**164**	⇓*i*P	**P**	**06 42 20.0**	**-1.0**
BVAR	**Borovoye Array**	**48.34**	**321**	P	**P**	**06 42 43.9**	**-0.3**
	comp=Z,1.5nm,0.6s,mb4.2,baz=107,slow=8.1,SNR=12						
BVAR				PcP	PcP	06 44 09.3	-1.6
	comp=Z,1.0nm,0.7s,baz=27,slow=3.3,SNR=4.6						
BRVK	**Borovoye**	**48.41**	**321**	*e*P	**P**	**06 42 43.5**	**-1.1**
ASAR	**Alice Springs**	**48.80**	**166**	P	**P**	**06 42 47.8**	**-0.4**
	comp=Z,0.7nm,0.5s,mb4.0,baz=353,slow=13,SNR=12						
ZRNK	**Zerenda**	**49.12**	**320**	*e*P	**P**	**06 42 49.5**	**-0.7**
STKA	**Stephens Creek**	**58.65**	**161**	P	**P**	**06 43 59.5**	**-1.0**
	comp=Z,1.7nm,0.8s,mb4.2,baz=89,slow=16,SNR=3.0						
ILAR	**Eielson Array**	**68.88**	**27**	P	**P**	**06 45 07.0**	**0.0**
	comp=Z,0.3nm,0.8s,mb3.3,baz=281,slow=8.4,SNR=5.2						
FINES	**FINESS Array B**	**72.00**	**330**	P	**P**	**06 45 25.5**	**-0.4**
	comp=Z,0.7nm,0.7s,mb3.7,baz=68,slow=10,SNR=5.4						
INK	**Inuvik**	**72.97**	**22**	P	**P**	**06 45 30.5**	**-1.0**
	comp=Z,1.0nm,0.7s,mb3.8,baz=288,slow=8.2,SNR=14						
INK	**Inuvik**	**72.97**	**22**	*e*P	**P**	**06 45 29.9**	**-1.7**
	comp=Z,1.1nm,0.7s,mb3.9						
AKASG	**Malin Array Be**	**73.56**	**319**	P	**P**	**06 45 34.2**	**-1.0**
	comp=Z,3.2nm,0.7s,mb4.3,baz=60,slow=5.5,SNR=7.6						
BRTR	**Keskin Array B**	**73.97**	**307**	P	**P**	**06 45 38.5**	**+0.5**
	comp=Z,2.0nm,0.6s,mb4.2,baz=117,slow=5.5,SNR=12						
YKA	**Yellowknife Ar**	**82.70**	**23**	P	**P**	**06 46 24.6**	**-0.7**
	comp=Z,1.1nm,0.8s,mb3.9,baz=313,slow=4.9,SNR=28						
GERES	**GERESS Array B**	**83.50**	**321**	P	**P**	**06 46 30.3**	**+0.6**
	comp=Z,0.3nm,0.3s,mb3.9,baz=56,slow=4.8,SNR=5.8						

NIED ***19*** *07:04:00,22.80N×121.50E,h62km,Mw6.5 Best double couple: M₀6.82×10¹⁸ NP1:φs55°,δ84°,λ99°. NP2:φs179°, δ11°,λ35°.*
BJI ***19*** *07:04:10.3,22.83N×121.37E,h9km,mB6.3,mb5.7,ML6.0, Ms6.5,Msz6.5*
NEIC ***19*** *07:04:11.7±0.1,22.66N×121.51E,h20km,mb5.8/141, ME6.4,MS6.1/103,MW6.1,ML6.5(TAP),Error ellipse: s-maj=3.4km s-min=2.8km az=206.0 Broadband fault plane solution: P waves. NP1:φs182°,δ72°,λ148°. NP2: φs283°,δ60°,λ21°. Principal axes: T Plg35°, Azm139°; N Plg0°, Azm0°; P Plg8°, Azm235°; Moment Tensor Solution. s48 Moment tensor: Scale 10¹⁸ Nm; Mrr1.14; Mθθ-0.90; Mφφ-0.24; Mrθ-0.92; Mθφ-0.76; Mφr-0.41; Best double couple: M₀1.6×10¹⁸ NP1:φs48°,δ26°,λ76°. NP2: φs243°,δ64°,λ97°. Principal axes: T 1.5, Plg70°, Azm167°; N .24, Plg6°, Azm60°; P -1.74, Plg19°, Azm328°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism.*
NEIC Felt throughout Taiwan. Recorded [5 TAP] in T'ai-tung; [3 TAP] in Chang-hua, Chia-i, Hua-lien, Kao-hsiung, Nan-t'ou, P'ing-tung, T'ai-nan and Yun-lin; [2 TAP] in Miao-li and T'ai-chung; [1 TAP] in Hsin-chu and T'ao-yuan Counties.
HRVD ***19*** *07:04:11.7±0.1,22.75N×121.46E,h25km,MW6.2/75, Centroid moment Tensor Solution. LP body waves: s75,c188;Mantle waves: s65,c119; Half duration: 3§1 Moment tensor: Scale 10¹⁸Nm; Mrr1.92±.02; Mθθ0.10±.02; Mφφ-2.02±.02; Mrθ-1.17±.09; Mθφ-1.16±.02; Mφr-0.04±.09; Best double couple: M₀2.57×10¹⁸ NP1:φs358°,δ45°,λ49°. NP2:φs229°,δ58°,λ124°. Principal axes: T 2.55, Plg61°, Azm193°; N .05, Plg28°, Azm30°; P -2.59, Plg7°, Azm296°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to mantle waves, cutoff=125s.*
TAP ***19*** *07:04:12.9,22.71N×121.37E,h27km,ML6.0*
TAP Felt V J at Taitung, V J at Pinlang, V J at Chenggung, IV J at Taimali, II J at Tawa, III J at Lidau, III J at Anshuo, III J at Yuli, III J at Sandimen, IV J at Lanyu, III J at Tauyuan, II J at Fangliau, III J at Hungye, III J at Jiouru, III J at Jiashian, III J at Dapu, II J at Nanshi, III J at Hengchun, II J at Hengchun, III J at Alishan, III J at Tsaushan, III J at Dungshan, III J at Kaohsiung, III J at Shinhua, II J at Shialiouchiou, III J at Tsauling, II J at Shilin, III J at Chiayi, III J at Jiali, III J at Ryuetan, III J at Hualien, II J at Yuchr, III J at Mingjian, I J at Chiawan, III J at Szhu, II J at Hehuanshan, III J at Dacheng, II J at Tachien, II J at Taichung, II J at Nanshan, II J at Liyutan, II J at Nanau, II J at Sanyi, I J at Penghu, I J at Nioudou, I J at Suao, I J at Nanjuang, I J at Sanguang, I J at Neicheng, II J at Ilan, I J at Hsinchu, I J at Taipai, II J, III J at Yungkang, III J at Tainan.
MOS ***19*** *07:04:13.2±0.9,22.78N×121.35E,h33km,mb6.1/56, MS6.6/38,Error ellipse: s-maj=8.2km s-min=4.9km az=112.5*
DUSS ***19*** *07:04:13.2±0.6,22.64N×121.38E,h15km,MS7.4*
JMA ***19*** *07:04:14.4±0.2,22.78N×121.48E,h87km,M6.1*
IDC ***19*** *07:04:15.6±1.0,22.71N×121.49E,h48km±8km,mb5.2/31, mb1 5.3/36,mb1mx5.3/37,MS6.0/28,Ms1 6.0/28, ms1mx5.9/34,Error ellipse: s-maj=11.2km s-min=7.1km az=66.0*

ISC 19 07:04:11.7±0.1,22.69N±0.01×121.47E±0.01,h26km, h26km±.7km:pP-P,n1135,σ1§05/1080,mb5.7/192, MS6.2/161,263C-50D,Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TTN	**Taitung**	**0.30**	**283**	⇓*i*P	**Pb**	**07 04 18.7**	**-0.1**
TWG	**Pinlang**	**0.39**	**290**	⇓P	**Pb**	**07 04 19.6**	**-0.5**
TWG				S	**Sb**	**07 04 24.9**	**-0.9**
CHKT	**Chengkung**	**0.42**	**347**	⇓*i*P	**Pb**	**07 04 21.1**	**+0.5**
ECL	**Taimali**	**0.48**	**259**	⇑*i*P	**Pb**	**07 04 20.8**	**-0.8**
TAW	**Tawu**	**0.62**	**238**	⇓*i*P	**Pb**	**07 04 23.5**	**-0.4**
TAW				S	**Sb**	**07 04 32.4**	**+0.2**
EAST	**Anshuo**	**0.65**	**242**	⇓*i*P	**Pb**	**07 04 23.9**	**-0.4**
ELDTW	**Lidau**	**0.65**	**321**	⇑*i*P	**Pb**	**07 04 23.6**	**-0.7**
ELDTW				S	**Sb**	**07 04 32.8**	**-0.2**
LAY	**Lan-yu**	**0.65**	**173**	⇑*i*P	**Pb**	**07 04 25.6**	**+1.3**
TWF1	**Yuli**	**0.68**	**347**	⇑*i*P	**Pb**	**07 04 24.6**	**-0.2**
TWF1				S	**Sb**	**07 04 34.9**	**+1.0**
SSD	**Sandimen**	**0.77**	**275**	P	**Pb**	**07 04 25.5**	**-0.9**
SSD				S	**Sb**	**07 04 36.2**	**-0.3**
STYT	**Tauyuan**	**0.81**	**306**	⇑*i*P	**Pb**	**07 04 26.1**	**-0.9**
EHY	**Hungye**	**0.82**	**351**	⇑*i*P	**Pb**	**07 04 26.8**	**-0.5**
SCZT	**Fangliau**	**0.84**	**248**	⇑*i*P	**Pb**	**07 04 27.1**	**-0.5**
SCZT				S	**Sb**	**07 04 39.9**	**+1.4**
SGLT	**Jiouru**	**0.90**	**273**	⇑*i*P	**Pb**	**07 04 28.7**	**+0.1**
SGST	**Jiashian**	**0.90**	**296**	⇑*i*P	**Pb**	**07 04 28.5**	**-0.1**
YUS	**Yu-Shan**	**0.93**	**330**	⇑*i*P	**Pb**	**07 04 28.7**	**-0.3**
HEN	**Hengchun**	**0.95**	**225**	⇓*i*P	**Pb**	**07 04 29.4**	**-0.1**
TWK1	**Hengchun**	**0.96**	**220**	⇓*i*P	**Pn**	**07 04 29.4**	**-0.2**
WTP	**Ta-pu**	**0.96**	**306**	⇑*i*P	**Pb**	**07 04 29.4**	**-0.2**
CHN1	**Nanshi**	**0.99**	**300**	⇑*i*P	**Pn**	**07 04 30.4**	**+0.3**
ALS	**Alishan**	**1.02**	**324**	⇑*i*P	**Pn**	**07 04 30.4**	**0.0**
ALS				S	**Sb**	**07 04 44.9**	**+1.3**
CHN4	**Tsaushan**	**1.04**	**310**	⇑*i*P	**Pn**	**07 04 31.0**	**+0.3**
TWK	**Hsinying**	**1.07**	**303**	⇑*i*P	**Pn**	**07 04 31.4**	**+0.3**
TWK				S	**Sb**	**07 04 46.1**	**+1.1**
TWP	**Hsiaoliuchiu**	**1.07**	**252**	*e*P	**Pn**	**07 04 34.1**	**+2.9**
KAU	**Kaohsiung**	**1.07**	**264**	*e*P	**Pn**	**07 04 31.7**	**+0.5**
CHN3	**Shinhua**	**1.08**	**291**	⇑*i*P	**Pn**	**07 04 33.0**	**+1.6**
WDT	**Danda**	**1.11**	**344**	⇑*i*P	**Pn**	**07 04 31.6**	**0.0**
ESL	**Shilin**	**1.12**	**359**	⇑*i*P	**Pn**	**07 04 31.2**	**-0.7**
CHN5	**Tsauling**	**1.16**	**322**	⇑*i*P	**Pn**	**07 04 33.0**	**+0.5**
CHN2	**Minshiung**	**1.24**	**313**	⇑*i*P	**Pn**	**07 04 34.9**	**+1.3**
CHY	**Chiayi**	**1.25**	**310**	⇑*i*P	**Pn**	**07 04 34.7**	**+1.0**
SCLT	**Jiali**	**1.27**	**293**	⇑*i*P	**Pn**	**07 04 35.0**	**+1.0**
HWA	**Hwalien**	**1.29**	**6**	⇑*i*P	**Pn**	**07 04 34.9**	**+0.6**
WGK	**Gukeng**	**1.29**	**320**	⇑*i*P	**Pn**	**07 04 35.9**	**+1.5**
SMLT	**Sun Moon Lake**	**1.30**	**337**	P	**Pn**	**07 04 35.2**	**+0.8**
SMLT				S	**Sn**	**07 04 53.0**	**+2.0**
CHN8	**Yiju**	**1.33**	**300**	⇑*i*P	**Pn**	**07 04 35.5**	**+0.7**
TYC	**Yuchr**	**1.33**	**335**	⇑*i*P	**Pn**	**07 04 36.0**	**+1.1**
WNT	**Mingjian**	**1.39**	**329**	⇑*i*P	**Pn**	**07 04 38.1**	**+2.5**
TWD	**Chiawan**	**1.39**	**5**	P	**Pn**	**07 04 36.0**	**+0.3**
WHF	**Hehuan Shan**	**1.46**	**353**	⇑*i*P	**Pn**	**07 04 36.9**	**+0.2**
WSF	**Szhu**	**1.48**	**310**	⇑*i*P	**Pn**	**07 04 37.9**	**+0.9**
WSF				S	**Sn**	**07 04 56.8**	**+1.1**
TWT	**Tachien**	**1.58**	**350**	⇑*i*P	**Pn**	**07 04 39.4**	**+0.9**
WTCT	**Ta-ch'eng**	**1.60**	**317**	P	**Pn**	**07 04 39.2**	**+0.5**
TCU	**Taichung**	**1.62**	**334**	⇑*i*P	**Pn**	**07 04 40.9**	**+1.9**
NNS	**Nan Shan**	**1.75**	**357**	*e*P	**Pn**	**07 04 41.2**	**+0.4**
ENA	**Nanau**	**1.75**	**8**	P	**Pn**	**07 04 41.3**	**+0.4**
WDGT	**Dungji**	**1.76**	**289**	⇑*i*P	**Pn**	**07 04 40.6**	**-0.3**
TWQ1	**Liyutan**	**1.77**	**339**	⇑*i*P	**Pn**	**07 04 43.3**	**+2.2**
TWQ1				S	**Sn**	**07 05 05.0**	**+2.0**
NSY	**Sanyi**	**1.84**	**340**	⇑*i*P	**Pn**	**07 04 44.1**	**+2.0**
TWC	**Suao**	**1.94**	**10**	*i*P	**Pn**	**07 04 44.6**	**+0.9**
ENTT	**Nioudou**	**1.95**	**3**	⇑P	**Pn**	**07 04 43.8**	**+0.1**
PNG	**Penghu**	**1.96**	**297**	⇑*i*P	**Pn**	**07 04 43.5**	**-0.5**
NSTT	**Nanjuang**	**1.98**	**348**	P	**Pn**	**07 04 45.7**	**+1.5**
NSTT				S	**Sn**	**07 05 08.6**	**+0.2**
NSK	**Sanguang**	**1.98**	**357**	⇑*i*P	**Pn**	**07 04 45.0**	**+0.8**
TWE	**Neicheng**	**2.03**	**5**	P	**Pn**	**07 04 45.3**	**+0.4**
ILA	**Ilan**	**2.08**	**7**	*e*P	**Pn**	**07 04 46.5**	**+0.9**
HSN	**Hsinchu**	**2.15**	**348**	*e*P	**Pn**	**07 04 47.9**	**+1.3**
YOJ	**Yonaguni jima**	**2.27**	**38**	P	**Pn**	**07 04 49.6**	**+1.3**
YOJ				*e*S	**Sn**	**07 05 16.1**	**+0.5**
TATO	**Taipei**	**2.28**	**1**	*e*Pn	**Pn**	**07 04 48.6**	**+0.1**
BBP	**Basco**	**2.28**	**168**	⇑*e*P	**Pn**	**07 04 49.4**	**+0.9**
BBP				*e*S	**Sn**	**07 05 17.2**	**+1.2**
TAP	**Taipei**	**2.34**	**1**	*e*P	**Pn**	**07 04 51.9**	**+2.6**
TAP				S	**Sn**	**07 05 18.2**	**+0.6**
TAP1	**Taipei**	**2.34**	**1**	*e*P	**Pn**	**07 04 49.8**	**+0.5**
TWB1	**Santiao Chiao**	**2.36**	**12**	P	**Pn**	**07 04 51.5**	**+1.8**
NWF	**Wu-fen Shan**	**2.39**	**7**	*i*P	**Pn**	**07 04 51.3**	**+1.2**
TWS1	**Kuangyinshan**	**2.40**	**359**	*e*P	**Pn**	**07 04 51.9**	**+1.6**
TWS1				S	**Sn**	**07 05 21.4**	**+2.3**
HATJ	**Hateruma jima**	**2.55**	**57**	P	**Pn**	**07 04 53.6**	**+1.3**
HATJ				*e*S	**Sn**	**07 05 23.4**	**+0.7**
TWY	**Chenhua**	**2.58**	**3**	*e*P	**Pn**	**07 04 54.9**	**+2.1**
TWY				S	**Sn**	**07 05 25.6**	**+2.0**
IRIF	**Iriomote-Funau**	**2.65**	**51**	⇓P	**Pn**	**07 04 55.1**	**+1.4**
IRIF				*e*S	**Sn**	**07 05 26.0**	**+0.7**
JKRS	**Kuro-shima**	**2.80**	**56**	P	**Pn**	**07 04 57.3**	**+1.4**
JKRS				*e*S	**Sn**	**07 05 29.8**	**+0.6**
JIJ	**Ishigaki jima**	**2.97**	**55**	⇓P	**Pn**	**07 04 59.0**	**+0.7**
JIJ				*e*S	**Sn**	**07 05 33.0**	**-0.5**
PCYT	**Pengchaiyu**	**2.98**	**11**	P	**Pn**	**07 04 59.8**	**+1.3**
PCYT				S	**Sn**	**07 05 36.3**	**+2.5**
KNM	**Kinmen**	**3.27**	**302**	⇑*i*P	**Pn**	**07 05 03.1**	**+0.6**
KNM				S	**Sn**	**07 05 40.5**	**-0.6**
QZH	**Quanzhou**	**3.46**	**311**	⇓*i*P	**Pn**	**07 05 04.0**	**-1.2**
QZH				S	**Sn**	**07 05 42.3**	**-3.5**
QZH				S	Sn		
	comp=N,44μm,0.8s						
QZH				S	Sn		
	comp=E,45μm,0.7s						
QZH				LR	LR		
	comp=N,1279μm,15.9s						
QZH				LR	LR		
	comp=E,1114μm,12.0s						
QZH				LR	LR		
	comp=Z,1745μm,16.9s						
JTJ	**Tarama**	**3.55**	**56**	P	**Pn**	**07 05 08.0**	**+1.5**
JTJ				*e*S	**Sn**	**07 05 47.8**	**-0.3**
JMJ	**Miyako jima 2**	**4.10**	**58**	P	**Pn**	**07 05 15.2**	**+0.9**
JMJ				*e*S	**Sn**	**07 06 01.5**	**-0.5**
JOGS	**Gusukube**	**4.16**	**59**	P	**Pn**	**07 05 16.0**	**+0.8**
JOGS				*e*S	**Sn**	**07 06 03.6**	**0.0**
SGCP	**Mt. Cagua**	**4.46**	**173**	⇑*e*P	**Pn**	**07 05 20.2**	**+0.8**
SGCP				*e*S	**Sn**	**07 06 10.5**	**-0.6**
APYP	**Conner**	**4.80**	**183**	⇑*e*P	**Pn**	**07 05 26.8**	**+2.5**
APYP				*e*S	**Sn**	**07 06 20.9**	**+1.1**
CVP	**Callao Caves**	**4.97**	**176**	⇑*e*P	**Pn**	**07 05 29.0**	**+2.3**
ABRA	**Dolores**	**5.06**	**188**	⇑*e*P	**Pn**	**07 05 29.3**	**+1.3**
SZP	**Santa**	**5.20**	**191**	⇑*i*P	**Pn**	**07 05 31.8**	**+2.0**
SZP				*i* S	**Sn**	**07 06 35.5**	**+5.8**
PALP	**Palanan**	**5.67**	**171**	⇑*e*P	**Pn**	**07 05 39.5**	**+3.0**
CAUP	**Cauayan**	**5.72**	**177**	⇑*e*P	**Pn**	**07 05 40.3**	**+3.0**
JKE	**Kume jima 2**	**6.05**	**52**	⇓P	**Pn**	**07 05 40.3**	**-1.6**
JKE				*e*S	**Sn**	**07 06 47.7**	**-3.4**
BCPH	**Baguio City Da**	**6.33**	**188**	⇑*i*P	**Pn**	**07 05 46.6**	**+0.8**
BCPH				*i* S	**Sn**	**07 06 50.9**	**-7.1**
BOLP	**Bolinao**	**6.44**	**193**	⇑*e*P	**Pn**	**07 05 50.8**	**+3.3**
JAGN	**Aguni-jima**	**6.54**	**52**	P	**Pn**	**07 05 46.8**	**-1.9**
JAGN				*e*S	**Sn**	**07 07 01.3**	**-1.9**
NAH1	**Naha**	**6.67**	**57**	P	**Pn**	**07 05 49.1**	**-1.5**
JJT2	**Tamagusuku 2**	**6.68**	**58**	P	**Pn**	**07 05 49.5**	**-1.3**
BALP	**Baler**	**6.91**	**179**	⇑*e*P	**Pn**	**07 05 54.6**	**+0.6**
SCZP	**Santa Cruz**	**7.03**	**192**	⇑*e*P	**Pn**	**07 05 57.6**	**+2.0**
PCPH	**Palayan**	**7.10**	**183**	*e*P	**Pn**	**07 05 58.1**	**+1.5**
JIH	**Iheya**	**7.32**	**52**	P	**Pn**	**07 05 57.3**	**-2.5**
JIH				*e*S	**Sn**	**07 07 18.4**	**-4.5**
JOW	**Kunigami**	**7.44**	**55**	P	**Pn**	**07 05 58.8**	**-2.7**
	comp=Z,60nm,0.3s,baz=232,slow=9.0,SNR=141						
JOW				S	**Sn**	**07 07 20.2**	**-5.5**
	comp=Z,28nm,0.3s,baz=313,slow=29,SNR=8.9						
JOW	**Kunigami**	**7.44**	**55**	P	**Pn**	**07 05 58.6**	**-2.8**
JOW				*e*S	**Sn**	**07 07 20.9**	**-4.9**
GZH	**Guangzhou**	**7.50**	**275**	P	**Pn**	**07 05 57.3**	**-4.9**
GZH				AMB	AMB		
	comp=Z,1μm,0.7s						
GZH				S	Sn		
	comp=N,10μm,1.2s						
GZH				S	Sn		
	comp=E,7μm,1.5s						
GZH				LR	LR		
	comp=N,239μm,15.7s						
GZH				LR	LR		
	comp=E,424μm,17.6s						
POLP	**Polilio Island**	**7.93**	**177**	⇑*e*P	**Pn**	**07 06 00.7**	**-7.6**
NBP	**Mount Natib**	**7.96**

JTZ	**Takazaki**	**12.54**	**41**	P	**P**	**07 07 10.5**	**-0.9**
JUR	**Ureshino**	**12.79**	**34**	P	**P**	**07 07 17.5**	**+2.8**
MSLP	**Maasin**	**12.90**	**165**⇑	*e*P	**P**	**07 07 18.1**	**+1.8**
PPR	**Puerto Princes**	**13.10**	**192**⇑	*e*P	**P**	**07 07 21.9**	**+3.0**
ENH	**Enshi**	**13.11**	**308**	Pn	**P**	**07 07 17.1**	**-1.9**
ENH				ScS	ScS	07 19 53.3	-2.1
ENH	**Enshi**	**13.11**	**308**⇓	*e*P	**P**	**07 07 17.0**	**-2.0**
	comp=Z,0.6nm,0.4s						
TBP	**Tagbilaran**	**13.13**	**170**	*e*P	**P**	**07 07 19.0**	**-0.3**
JNU	**Nakatsue**	**13.31**	**37**	P	**P**	**07 07 22.4**	**+0.8**
	comp=Z,1.6nm,0.3s,baz=189,slow=9.5,SNR=14						
JNU				S	**S**	**07 10 03.4**	**+14**
	comp=Z,0.4nm,0.3s,baz=343,slow=19,SNR=1.4						
JNU	**Nakatsue**	**13.31**	**37**	P	**P**	**07 07 23.0**	**+1.4**
SNPH	**Sibulan**	**13.38**	**172**	*e*P	**P**	**07 07 33.5**	**+11**
JTU	**Tsushima**	**13.69**	**29**	P	**P**	**07 07 28.5**	**+1.9**
GYA	**Guiyang**	**13.98**	**289**⇓	*i*P	**P**	**07 07 28.9**	**-1.6**
GYA				AP		07 07 36.8	
GYA				PP	PP	07 07 39.4	-2.0
GYA				S	**S**	**07 09 54.9**	**-11**
GYA				AMB	AMB		
	comp=Z,380nm,1.3s						
TIA	**Tai'an**	**13.99**	**345**	⇓P	**P**	**07 07 32.5**	**+1.9**
TIA				LR	LR		
	comp=N,159µm,13.0s						
TIA				LR	LR		
	comp=E,119µm,13.0s						
BUTP	**Butuan**	**14.21**	**163**⇑	*e*P	**P**	**07 07 38.2**	**+4.6**
CGP	**Cagayan de Oro**	**14.49**	**167**⇓	*e*P	**P**	**07 07 41.1**	**+3.9**
PAGZ	**Pagadian**	**14.87**	**173**⇑	*e*P	**P**	**07 07 47.2**	**+5.0**
INCN	**Inchon**	**15.40**	**16**⇓	*i*P	**P**	**07 07 50.2**	**+1.2**
	comp=E,1µm,1.3s						
JMN	**Monobe**	**15.50**	**42**	P	**P**	**07 07 43.8**	**-6.5**
ZMPH	**Zamboanga City**	**15.65**	**178**	*e*P	**P**	**07 07 53.0**	**+0.6**
KS15	**Wonju Array Si**	**15.71**	**19**	*e*P	**P**	**07 07 53.7**	**+0.7**
XAN	**Xi'an**	**15.79**	**318**	P	**P**	**07 07 52.6**	**-1.4**
XAN				AP		07 07 59.6	
XAN				S	**S**	**07 10 50.6**	**+2.3**
XAN				SS	SS	07 11 09.1	+2.0
XAN				AMB	AMB		
	comp=Z,514nm,2.2s						
XAN				AMB	AMB		
	comp=Z,7µm,5.5s						
JHS	**Saijyo**	**15.94**	**37**	P	**P**	**07 07 56.7**	**+0.7**
DL2	**Dalian**	**16.17**	**0**	P	**P**	**07 08 00.6**	**+1.8**
DL2				XP		07 08 08.3	
DL2				S	**S**	**07 11 01.3**	**+4.3**
DL2				AMB	AMB		
	comp=Z,400nm,1.5s						
DL2				AMB	AMB		
	comp=Z,7µm,7.6s						
DL2				LR	LR		
	comp=N,76µm,13.5s						
DL2				LR	LR		
	comp=Z,89µm,14.7s						
JAD	**Aida**	**16.50**	**39**	P	**P**	**07 08 02.8**	**-0.3**
JWZ	**Kozaga**	**16.56**	**46**	P	**P**	**07 08 07.2**	**+3.4**
TIY	**Taiyuan**	**16.87**	**335**	⇓P	**P**	**07 08 08.6**	**+0.8**
JKSM	**Kasumi**	**17.24**	**39**	P	**P**	**07 08 18.3**	**+5.9**
KMI	**Kunming**	**17.29**	**282**	*e*P	**P**	**07 08 13.5**	**+0.4**
KMI				S	**S**	**07 11 22.4**	**-0.6**
KMI				AMB	AMB		
	comp=Z,430nm,1.8s						
KMI				LR	LR		
	comp=Z,245µm,15.6s						
KKM	**Kota Kinabalu**	**17.30**	**198**⇓	*e*P	**P**	**07 08 15.4**	**+2.1**
	comp=Z,299nm,1.1s						
JWT	**Wachi**	**17.47**	**41**	P	**P**	**07 08 21.0**	**+5.7**
JKY	**Yasaka**	**17.53**	**40**	P	**P**	**07 08 21.5**	**+5.5**
JIE	**Ise**	**17.73**	**46**	P	**P**	**07 08 23.5**	**+5.0**
CD2	**Chengdu**	**17.79**	**301**	⇓*i*P	**P**	**07 08 16.9**	**-2.3**
CD2				AP		07 08 25.9	
CD2				XP		07 08 31.6	
CD2				S	**S**	**07 11 35.5**	**+1.3**
CD2				AMB	AMB		
	comp=Z,660nm,2.1s						
BJT	**Baijiatuau**	**17.85**	**347**	⇓*i*P	**P**	**07 08 20.4**	**+0.5**
	comp=Z,2µm,1.6s						
BJI	**Beijing**	**17.87**	**347**	P	**P**	**07 08 20.8**	**+0.6**
BJI				S	**S**	**07 11 40.1**	**+4.1**
BJI				AMB	AMB		
	comp=Z,222nm,1.0s						
BJI				AMB	AMB		
	comp=Z,7µm,4.8s						
BJI				LR	LR		
	comp=Z,129µm,16.3s						
KKTK	**Khon Kaen**	**18.66**	**254**	P	**P**	**07 08 31.0**	**+0.8**
	comp=Z,1µm,0.5s						
HMMJ	**Hamamatsu 2**	**18.68**	**46**	P	**P**	**07 08 33.4**	**+3.2**
JSG	**Sagara**	**18.89**	**47**	P	**P**	**07 08 36.8**	**+4.1**
JGF	**Kuroka**	**18.89**	**44**	P	**P**	**07 08 34.7**	**+1.9**
SNY	**Shenyang**	**19.17**	**5**	⇓P	**P**	**07 08 34.0**	**-2.0**
SNY				S	**S**	**07 12 10.0**	**+4.6**
SNY				LR	LR		
	comp=N,87µm,13.0s						
SNY				LR	LR		
	comp=E,86µm,12.0s						
JHJ	**Hachijo jima 2**	**19.21**	**53**	P	**P**	**07 08 39.5**	**+3.0**
	comp=E,37nm,0.3s,baz=206,slow=6.2,SNR=40						
JHJ				S	**S**	**07 12 24.1**	**+18**
	comp=E,5.6nm,0.3s,baz=90,slow=19,SNR=2.6						
JHJ				LR	LR	07 16 35.7	
	comp=E,21µm,18.1s,baz=252,slow=38						
JHJ2	**Mitsune**	**19.23**	**53**	P	**P**	**07 08 41.0**	**+4.2**
CBIJ	**Chichi jima**	**19.29**	**73**	P	**P**	**07 08 38.2**	**+0.6**
	comp=E,10nm,0.3s,baz=258,slow=2.3,SNR=12						
CBIJ				S	**S**	**07 12 24.2**	**+16**
	comp=E,5.5nm,0.3s,baz=180,slow=20,SNR=2.6						
CBIJ				LR	LR	07 14 20.4	
	comp=E,20µm,21.9s,baz=82,slow=31						
CBIJ	**Chichi jima**	**19.29**	**73**	P	**P**	**07 08 41.0**	**+3.5**
JJH	**Hakui**	**19.40**	**40**	P	**P**	**07 08 41.5**	**+2.8**
JOD2	**Odawara 2**	**19.83**	**47**	P	**P**	**07 08 45.9**	**+2.4**
JNG	**Nsakai**	**19.87**	**43**	P	**P**	**07 08 44.9**	**+1.0**
HHC	**Hu-ho-hao-te**	**19.94**	**338**	⇓P	**P**	**07 08 45.0**	**+0.3**
HHC				AP		07 08 50.5	
HHC				XP		07 08 54.8	
HHC				PCP	PcP	07 13 04.8	+4.5
HHC				AMB	AMB		
	comp=Z,531nm,1.7s						
HHC				LR	LR		
	comp=N,137µm,16.3s						
HHC				LR	LR		
	comp=E,95µm,14.9s						
HHC				LR	LR		
	comp=Z,134µm,15.4s						
MAJO	**Matsushiro**	**20.02**	**43**	*e*P	**P**	**07 08 46.2**	**+0.7**
MAJO				pmax	pmax		
	comp=Z,2µm,1.6s						
MAJO	**Matsushiro**	**20.02**	**43**⇓	*e*P	**P**	**07 08 43.2**	**-2.3**
	comp=Z,2µm,1.4s						
MAJO				LR	LR		
	comp=Z,34µm,20.0s,MS5.7						
MAT	**Matsushiro**	**20.02**	**43**	P	**P**	**07 08 44.8**	**-0.7**
MAT				S	**S**	**07 12 31.0**	**+7.2**
MAT	**Matsushiro**	**20.02**	**43**	P	**P**	**07 08 45.8**	**+0.3**
MAT	**Matsushiro**	**20.02**	**43**	*e*P	**P**	**07 08 47.0**	**+1.5**
	comp=Z,280nm,1.0s						
MAT				*e*S	**S**	**07 12 36.0**	**+12**
MAT				LR	LR		
	comp=Z,34µm,20.0s,MS5.7						
JRY	**Ryogami san**	**20.14**	**45**	P	**P**	**07 08 46.8**	**0.0**
LZH	**Lanzhou**	**20.30**	**315**	⇓P	**P**	**07 08 49.3**	**+0.9**
LZH				AP		07 08 55.0	
LZH				XP		07 08 58.4	
LZH				PP	PP	07 09 09.6	+0.8
LZH				S	**S**	**07 12 32.0**	**+2.4**
LZH				XS		07 12 41.5	
LZH				SS	SS	07 12 55.3	-4.0
LZH				PCP	PcP	07 13 01.1	0.0
LZH				SCS	ScS	07 20 16.3	+0.5
BTO	**Baotou**	**20.31**	**334**	*e*P	**P**	**07 08 48.3**	**-0.2**
BTO				AMB	AMB		
	comp=Z,1µm,1.7s						
JJN	**Nakama**	**20.35**	**41**	P	**P**	**07 08 50.6**	**+1.7**
CHRT	**Chiangrai**	**20.40**	**266**	⇑P	**P**	**07 08 50.0**	**+0.5**
	comp=Z,1µm,1.0s						
JSD	**Sado**	**21.02**	**40**	P	**P**	**07 08 55.6**	**-0.2**
JYT	**Yasato**	**21.12**	**46**	P	**P**	**07 08 55.4**	**-1.4**
CN2	**Changchun**	**21.31**	**8**	*e*P	**P**	**07 08 56.6**	**-2.1**
CN2				*e*XP		07 09 04.6	
CN2				*e*S	**S**	**07 12 48.5**	**-0.6**
CN2				AMB	AMB		
	comp=Z,12µm,10.0s						
CN2				LR	LR		
	comp=Z,164µm,14.0s,MS6.6						
CHTO	**Chiang Mai**	**21.41**	**264**	P	**P**	**07 09 00.5**	**+0.7**
CHTO				S	**S**	**07 12 58.5**	**+7.5**
CMAR	**Chiang Mai Arr**	**21.50**	**263**	P	**P**	**07 09 01.8**	**+1.0**
	comp=Z,136nm,1.0s,mb5.2,baz=69,slow=9.1,SNR=191						
CMAR				PcP	PcP	07 13 02.9	-0.6
	comp=Z,45nm,0.9s,baz=46,slow=0.8,SNR=27						
CMAR				ScP		07 16 35.5	
	comp=Z,9.3nm,0.8s,baz=70,slow=0.9,SNR=7.6						
CMAR				LR	LR	07 18 53.0	
	comp=Z,169µm,18.0s,MS6.5,baz=80,slow=41						
CMAR				PKiKP		07 20 47.7	
	comp=Z,2.0nm,0.7s,baz=261,slow=0.9,SNR=5.4						
BDT	**Bhumibol Dam**	**21.79**	**260**	⇑P	**P**	**07 09 05.0**	**+1.4**
	comp=Z,62nm,1.1s,mb5.0						
VLA	**Vladivostok**	**22.14**	**21**⇑	*i*P	**P**	**07 09 10.0**	**+3.0**
VLA				*i*		07 09 44.0	
VLA				*i* S	**S**	**07 13 04.0**	**-0.5**
VLA				*i* SS	SS	07 13 48.0	+3.6
VLA				pmax	pmax		
	comp=Z,7µm,12.0s						
VLA				pmax	pmax		
	comp=N,4µm,10.0s						
VLA				pmax	pmax		
	comp=E,2µm,8.0s						
VLA				smax			
	comp=E,31µm,16.0s						
VLA				smax			
	comp=Z,21µm,15.0s						
VLA				smax			
	comp=N,4µm,13.0s						
VLA				MLR	MLR		
	comp=Z,60µm,15.0s,MS6.1						
VLA				MLR	MLR		
	comp=N,65µm,10.0s						
VLA				MLR	MLR		
	comp=E,14µm,19.0s						
JYA	**Atsumi**	**22.25**	**40**	P	**P**	**07 09 07.9**	**-0.2**
JMM	**Marumori**	**22.46**	**43**	P	**P**	**07 09 08.5**	**-1.7**
MDJ	**Mudanjiang**	**22.87**	**15**	P	**P**	**07 09 13.9**	**-0.3**
MDJ				AP		07 09 19.9	
MDJ				XP		07 09 22.4	
MDJ				PCP	PcP	07 13 05.0	-1.0
MDJ				S	**S**	**07 13 22.8**	**+5.1**
MDJ				XS		07 13 31.6	
MDJ				SCP		07 16 42.3	
MDJ				PCS		07 16 44.8	
MDJ				SCS	ScS	07 20 27.8	+2.8
MDJ				AMB	AMB		
	comp=Z,3µm,7.1s						
MDJ				LR	LR		
	comp=N,96µm,15.3s,MS6.4						
MDJ				LR	LR		
	comp=E,45µm,16.7s,MS6.4						
MDJ				LR	LR		
	comp=Z,121µm,14.6s,MS6.5						
MDJ	**Mudanjiang**	**22.87**	**15**⇓	*e*P	**P**	**07 09 13.4**	**-0.8**
	comp=Z,498nm,1.3s,mb5.8						
NNT	**Nongplab**	**22.98**	**248**	P	**P**	**07 09 18.0**	**+2.4**
SARN	**Sarigan**	**23.63**	**100**	P	**P**	**07 09 23.0**	**+1.2**
JOM	**Ohasama**	**23.75**	**41**	P	**P**	**07 09 22.3**	**-0.6**
JAH	**Hinai**	**23.83**	**39**	P	**P**	**07 09 24.4**	**+0.8**
GUMO	**Guam**	**23.98**	**108**	P	**P**	**07 09 27.2**	**+1.9**
GUMO	**Guam**	**23.98**	**108**	*e*P	**P**	**07 09 27.4**	**+2.1**
GUMO				pmax	pmax		
	comp=Z,1µm,1.1s,mb6.3						
GUMO	**Guam**	**23.98**	**108**⇑	*e*P	**P**	**07 09 27.0**	**+1.8**
	comp=Z,2µm,1.2s,mb6.3						
GUMO				LR	LR		
	comp=Z,28µm,20.0s,MS5.7						
SAPN	**Saipan**	**24.12**	**104**	*e*P	**P**	**07 09 29.0**	**+2.3**
JTM	**Tenmabayashi**	**24.47**	**38**	P	**P**	**07 09 30.3**	**+0.5**
GTA	**Gaotai**	**24.84**	**317**	P	**P**	**07 09 34.3**	**+0.9**
GTA				XP		07 09 42.8	
GTA				PP	PP	07 10 10.9	+0.4
GTA				PPP	PPP	07 10 20.0	-1.3
GTA				PCP	PcP	07 13 10.3	+0.1
GTA				S	**S**	**07 13 51.1**	**-0.6**
GTA				XS		07 13 58.3	
GTA				SCP		07 16 45.5	
GTA				PCS		07 16 49.8	
GTA				SCS	ScS	07 20 35.0	+2.2
GTA				AMB	AMB		
	comp=Z,225nm,1.9s,mb5.4						
GTA				AMB	AMB		
	comp=Z,14µm,3.0s						
GTA				LR	LR		
	comp=N,60µm,13.7s,MS6.4						
GTA				LR	LR		
	comp=E,67µm,16.7s,MS6.4						
GTA				LR	LR		
	comp=Z,96µm,14.8s,MS6.4						
JOT	**Ohata**	**24.86**	**37**	P	**P**	**07 09 33.7**	**+0.2**
JSH	**Shimam**	**25.21**	**34**	P	**P**	**07 09 37.3**	**+0.5**
IMP	**Imphal**	**25.27**	**280**	*e*P	**P**	**07 09 37.0**	**-0.6**
IMP				*e*pP	pP	07 09 47.0	+1.8
IMP				*e*		07 10 09.0	
IMP				*e*		07 10 39.0	
IMP				*e*		07 13 10.0	
JEW	**Eniwo**	**26.08**	**35**	P	**P**	**07 09 45.4**	**+0.5**
JEM	**Erimo**	**26.46**	**38**	P	**P**	**07 09 48.6**	**+0.1**
HIA	**Hailar**	**26.56**	**357**⇓	*e*P	**P**	**07 09 46.3**	**-3.0**
	comp=Z,357nm,1.4s,mb5.7						
IPM	**Ipoh**	**26.74**	**231**⇑	*e*P	**P**	**07 09 51.0**	**-0.3**
	comp=Z,41nm,0.6s,mb5.1						
KGM	**Kluang**	**27.07**	**223**⇑	*e*P	**P**	**07 09 53.9**	**-0.4**
	comp=Z,668nm,1.3s,mb6.0						
SHL	**Shillong**	**27.12**	**282**	*e*P	**P**	**07 09 55.0**	**+0.3**
SHL				*e*S	**S**	**07 14 32.0**	**+2.4**
ASAJ	**Asahikawa**	**27.56**	**34**	P	**P**	**07 09 59.2**	**+0.7**
	comp=Z,171nm,0.9s,mb5.7,baz=244,slow=12,SNR=21						
ASAJ				S	**S**	**07 14 37.7**	**+1.2**
	comp=Z,2.7nm,0.3s,baz=131,slow=19,SNR=2.1						
ASAJ				LR	LR	07 20 32.2	
	comp=Z,39µm,21.8s,MS5.9,baz=244,slow=36						
ASAJ	**Asahikawa**	**27.56**	**34**	P	**P**	**07 10 01.3**	**+2.8**
ULN	**Ulaanbaatar**	**27.65**	**339**	P	**P**	**07 09 58.8**	**-0.5**
ULN				ScP		07 16 52.4	
KLR	**Kul'dur**	**27.71**	**15**	*e*P	**P**	**07 09 59.0**	**-0.8**
KLR				*e*PPP	PPP	07 11 08.0	+7.3
KLR				*e*S	**S**	**07 14 37.0**	**-1.8**
KLR				pmax	pmax		
	comp=E,130nm,2.6s						
KLR				pmax	pmax		
	comp=Z,240nm,2.6s,mb5.4						
KLR				smax			
	comp=N,10µm,15.0s						
KLR				smax			
	comp=E,10µm,15.0s						
SONM	**Songino Array**	**27.84**	**338**	P	**P**	**07 10 00.4**	**-0.6**
	comp=E,120nm,1.0s,mb5.5,baz=155,slow=9.8,SNR=39						
SONM				ScP		07 16 52.9	
	comp=E,14nm,1.0s,baz=90,slow=1.2,SNR=5.2						
JMP	**Maruseppu**	**27.89**	**35**	P	**P**	**07 10 02.3**	**+0.8**
LSA	**Lhasa**	**28.03**	**291**	P	**P**	**07 10 04.5**	**+1.6**
LSA				AP	pP	07 10 13.0	+2.5
LSA				XP	sP	07 10 16.8	+2.8
LSA				PCP	PcP	07 13 13.1	-4.5
LSA				S	**S**	**07 14 47.9**	**+3.7**
LSA				PCS		07 16 55.9	
LSA				SCS	ScS	07 20 45.8	-0.7
LSA				AMB	AMB		
	comp=Z,200nm,1.3s,mb5.6						
LSA				LR	LR		
	comp=N,58µm,15.8s,MS6.3						
LSA				LR	LR		
	comp=E,44µm,19.4s,MS6.3						
LSA				LR	LR		
	comp=Z,100µm,18.5s,MS6.4						
LSA	**Lhasa**	**28.03**	**291**⇑	*i*P	**P**	**07 10 04.4**	**+1.5**
	comp=Z,272nm,0.9s,mb5.9						
JWK2	**Keihoku**	**28.07**	**32**	P	**P**	**07 10 04.0**	**+0.9**
YUK	**Yuzh-Kuril'sk**	**29.28**	**38**	*e*P	**P**	**07 10 14.0**	**0.0**
YUK				*i* SP		07 10 28.0	
YUK				*e*		07 11 07.0	
YUK				*e*PPP	PPP	07 11 28.0	+5.6
YUK				*i* S	**S**	**07 15 05.0**	**+1.0**
YUK				*e*SS	SS	07 16 39.0	+3.4
YUK				pmax	pmax		
	comp=Z,5µm,7.0s						
YUK				pmax	pmax		
	comp=N,2µm,6.0s						
YUK				pmax	pmax		
	comp=E,2µm,6.0s						
YUK				pmax	pmax		
	comp=Z,370nm,0.8s,mb6.2						
YUK				smax			
	comp=E,20µm,11.0s						
YUK				smax			
	comp=N,3µm,9.0s						
YUK				MLR	MLR		
	comp=N,3µm,15.0s,MS5.9						
YUK				MLR	MLR		
	comp=E,22µm,15.0s,MS5.9						
YUK				MLR	MLR		
	comp=Z,20µm,15.0s,MS5.9						
YSS	**Yuzh-Sakhalins**	**29.67**	**30**⇑	*i*P	**P**	**07 10 16.5**	**-1.0**
YSS				*e**SP	sP	07 10 27.5	-1.1
YSS				*e*		07 11 11.0	
YSS				*e*PPP	PPP	07 11 28.0	+0.1
YSS				*e*S	**S**	**07 15 06.0**	**-4.3**
YSS				*e*		07 15 19.0	
YSS				pmax	pmax		
	comp=N,90nm,0.9s						
YSS				pmax	pmax		
	comp=Z,160nm,0.9s,mb5.8						
YSS				pmax	pmax		
	comp=Z,530nm,1.0s,mb6.2						
YSS				MLR	MLR		
	comp=N,16µm,16.0s,MS5.8						
YSS				MLR	MLR		
	comp=Z,18µm,16.0s,MS5.8						
YSS				MLR	MLR		
	comp=E,12µm,18.0s,MS5.8						
YSS	**Yuzh-Sakhalins**	**29.67**	**30**⇑	*i*P	**P**	**07 10 17.6**	**+0.1**
	comp=E,873nm,1.2s,mb6.4						
YSS				LR	LR		
	comp=Z,21µm,22.0s,MS5.7						
ZAK	**Zakamensk**	**31.09**	**337**⇑	*i*P	**P**	**07 10 28.0**	**-2.0**
TLY	**Talaya**	**32.06**	**339**⇓	*i*P	**P**	**07 10 37.3**	**-1.2**
TLY				*e*		07 11 44.2	
TLY				*e*		07 13 27.2	
TLY				*e*S	**S**	**07 15 45.8**	**-1.9**
TLY				pmax	pmax		
	comp=Z,1µm,1.2s,mb6.6						
IRK	**Irkutsk**	**32.34**	**340**	*e*P	**P**	**07 10 39.1**	**-1.8**
IRK				*e*		07 11 53.4	
IRK				*e*		07 13 27.1	
GUN	**Gumba**	**32.52**	**287**	*e*P	**P**	**07 10 43.2**	**+0.5**
	comp=Z,8µm,2.2s						
PKI	**Pulchoki**	**32.93**	**286**	*e*P	**P**	**07 10 45.9**	**-0.4**
	comp=Z,1µm,1.6s,mb6.6						
PKI	**Pulchoki**	**32.93**	**286**	*e*P		07 17 09.6	
	comp=Z,297nm,1.1s						
MOY	**Mondy**	**32.98**	**336**	*e*P	**P**	**07 10 45.6**	**-0.8**
KKN	**Kakani**	**33.04**	**286**	*e*P	**P**	**07 10 46.8**	**-0.5**
	comp=Z,2µm,1.6s,mb6.7						
KKN	**Kakani**	**33.04**	**286**	*e*P		07 17 09.6	
	comp=Z,226nm,1.2s						
DMN	**Daman**	**33.20**	**286**	*e*P	**P**	**07 10 48.7**	**+0.1**
	comp=Z,2µm,1.7s,mb6.8						
DMN	**Daman**	**33.20**	**286**	*e*P		07 17 10.4	
	comp=Z,229nm,1.1s						
GKN	**Gorkha**	**33.62**	**287**	*e*P	**P**	**07 10 51.8**	**-0.5**
	comp=Z,2µm,1.6s,mb6.7						
GKN	**Gorkha**	**33.62**	**287**	*e*P		07 17 10.7	
	comp=Z,165nm,1.0s						
CLNS	**Chul'man**	**34.20**	**3**	*e*P	**P**	**07 11 05.8**	**+8.8**
CLNS				*e**PP	pP	07 11 12.2	+7.4
CLNS				*e*		07 12 15.3	
CLNS				*e*PPP	PPP	07 12 35.1	+5.1
CLNS				*e*		07 13 31.9	
CLNS				*e*S	**S**	**07 16 13.8**	**-7.1**
CLNS				*e*SS	SS	07 18 25.2	-5.3
CLNS				pmax	pmax		
	comp=Z,30nm,1.9s,mb4.9						
CLNS				pmax	pmax		
	comp=N,20nm,1.4s						
CLNS				pmax	pmax		
	comp=E,10.0nm,0.9s						
CLNS				smax			
	comp=E,900nm,13.6s						
CLNS				smax			
	comp=Z,850nm,12.8s						
CLNS				smax			
	comp=N,1µm,15.0s						
CLNS				MLR	MLR		
	comp=N,50µm,12.0s,MS6.5						
CLNS				MLR	MLR		
	comp=E,8µm,13.0s,MS6.5						
CLNS				MLR	MLR		
	comp=Z,58µm,13.0s,MS6.5						
KOLN	**Koldanda**	**34.53**	**286**	*e*P	**P**	**07 11 00.2**	**0.0**
	comp=Z,2µm,1.6s,mb6.8						
KOLN	**Koldanda**	**34.53**	**286**	*e*P		07 17 14.0	
	comp=Z,118nm,1.0s						
WMQ	**Urumqi**	**34.88**	**315**	*e*P	**P**	**07 11 03.5**	**+0.5**
WMQ				AP	pP	07 11 09.4	-1.4
WMQ				XP	sP	07 11 12.3	-1.8
WMQ				PP	PP	07 12 21.4	+0.4
WMQ				PCP	PcP	07 13 36.3	+0.5
WMQ				S	**S**	**07 16 33.0**	**+1.3**
WMQ				XS		07 16 42.8	
WMQ				SCP		07 17 19.4	
WMQ				PCS		07 17 21.8	
WMQ				SS	SS	07 18 47.3	+1.0
WMQ				SCS	ScS	07 21 21.6	+1.3
WMQ				LR	LR		
	comp=N,33µm,16.0s,MS6.3						
WMQ				LR	LR		
	comp=E,30µm,17.1s,MS6.3						
WMQ				LR	LR		
	comp=Z,51µm,17.9s,MS6.3						
VIS	**Vishakhapatnam**	**36.06**	**269**	*i* P	**P**	**07 11 13.5**	**+0.2**
BLSP	**Bilaspur**	**36.30**	**277**	*i* P	**P**	**07 11 15.2**	**0.0**
BLSP				*e*		07 12 40.7	
KAKA	**Kakadu**	**36.76**	**162**⇑	*i*P	**P**	**07 11 15.9**	**-3.3**
	comp=Z,45nm,0.6s,mb5.5						
JBP	**Jabalpur**	**38.12**	**279**⇑	*i*	**P**	**07 11 34.0**	**+3.5**
JBP				*i* S	**S**	**07 17 25.6**	**+4.1**
KGD	**Kothagudem**	**38.56**	**270**	*e*P	**P**	**07 11 34.7**	**+0.4**
KGD				*e*	pP	07 11 44.0	+1.9
KGD				*e*		07 12 09.6	
KGD				*e*PnPn		07 13 07.7	
KGD				*e*S	**S**	**07 17 27.0**	**-1.3**
KGD				*e*SS	SS	07 20 21.8	+12
WAU	**Wau**	**38.76**	**137**	*e*P	**P**	**07 11 37.0**	**+1.0**
KALG	**Kalgarh**	**38.79**	**289**	*i*	**P**	**07 11 31.1**	**-5.0**
KALG				*e*		07 11 47.5	
	comp=Z,1µm,1.6s						
SKR	**Severo-Kuril's**	**38.81**	**35**	*e*P	**P**	**07 11 36.0**	**-0.1**
SKR				*e*		07 13 04.0	
SKR				*e*PPP	PPP	07 13 29.0	-3.0
SKR				*e*		07 13 48.0	
SKR				*e*S	**S**	**07 17 30.0**	**-1.7**
SKR				*e*		07 21 40.0	
SKR				pmax	pmax		
	comp=N,110nm,1.0s						
SKR				pmax	pmax		
	comp=E,110nm,1.0s						
SKR				pmax	pmax		
	comp=Z,290nm,1.0s,mb6.0						
SKR				pmax	pmax		
	comp=N,2µm,14.0s						
SKR				pmax	pmax		
	comp=E,3µm,14.0s						
SKR				pmax	pmax		
	comp=Z,4µm,14.0s						
SKR				smax			
	comp=N,9µm,10.0s						
SKR				smax			
	comp=E,13µm,16.0s						
SKR				MLR	MLR		
	comp=N,6µm,18.0s						
SKR				MLR	MLR		
	comp=Z,11µm,18.0s,MS5.7						
SKR				MLR	MLR		
	comp=E,5µm,12.0s						
MKAR	**

comp=E,0.5nm,0.6s,baz=305,slow=4.0,SNR=2.9
MKAR PKPPKP 07 43 55.8
comp=E,1.1nm,1.1s,slow=1.4,SNR=3.9
MKAR Makanchi Array 39.60 317 *i* P **P 07 11 43.0 +0.4**
MKAR pmax pmax
comp=Z,341nm,1.1s
ASOR Ausora 39.66 288⇓ *eP* **P 07 11 43.1 -0.3**
YAK Yakutsk 39.72 6 *eP* **P 07 11 42.1 -1.4**
YAK *e* 07 13 48.9
YAK *eS* **S 07 17 37.7 -7.6**
YAK *eSS* SS 07 20 38.4 +3.7
YAK pmax pmax
comp=Z,42nm,1.0s,mb5.1
YAK pmax pmax
comp=N,38nm,1.4s
YAK pmax pmax
comp=E,16nm,1.2s
YAK smax
comp=N,60nm,1.2s
YAK smax
comp=Z,10.0nm,1.5s
YAK smax
comp=E,12nm,1.3s
YAK MLR MLR
comp=Z,36μm,14.0s,MS6.4
YAK MLR MLR
comp=N,25μm,13.0s,MS6.2
YAK MLR MLR
comp=E,10μm,15.0s,MS6.2
YAK Yakutsk 39.72 6⇓ *eP* **P 07 11 40.8 -2.7**
comp=E,136nm,1.0s,mb5.6
YAK LR LR
comp=Z,37μm,22.0s,MS6.2
NDI New Delhi 40.15 288 *eP* **P 07 11 46.0 -1.3**
NDI *e* 07 17 44.0
NDI *e* 07 20 10.0
AYAN Aya Nagar 40.23 288⇑ *iP* **P 07 11 47.2 -0.9**
AYAN *e* 07 11 59.5
comp=Z,256nm,1.8s
MDRS Chennai 40.26 263 *i* P **P 07 11 48.0 -0.4**
MDRS *e* 07 13 25.0
MDRS *i* 07 17 56.0
SONA Sohna 40.28 287⇑ *iP* **P 07 11 47.9 -0.6**
SONA *e* 07 11 59.3
comp=Z,205nm,1.3s
BHPL Bhopal 40.44 280 *eP* **P 07 11 50.1 +0.3**
BHPL ⇓ *i* 07 11 50.4
BHPL *i* 07 13 34.9
BHPL *e* 07 17 07.8
HYB Hyderabad 40.55 271⇑ *iP* **P 07 11 51.0 +0.3**
comp=Z,350nm,1.4s,mb5.8
HYB *eP* PP 07 13 32.0 +4.5
HYB *eP* PcP 07 13 53.0 -0.4
HYB *eP* cS 07 17 48.0
HYB *eS* **S 07 18 00.0 +1.9**
HYB *e* 07 18 48.0
HYB *eSS* SS 07 21 00.0 +6.9
HYB *e* 07 21 48.0
HYB LR LR 07 34 22.0
comp=Z,32nm,16.0s
HYB Hyderabad 40.55 271⇑ *eP* **P 07 11 51.0 +0.3**
comp=Z,350nm,1.4s,mb5.8
HYB *eP* PP 07 13 32.0 +4.5
HYB *eP* PcP 07 13 53.0 -0.4
HYB *eS* **S 07 18 00.0 +1.9**
PMG Port Moresby 40.63 139 P **P 07 11 51.2 -0.2**
comp=Z,54nm,0.9s,mb5.2,baz=329,slow=9.5,SNR=3.2
PMG LR LR 07 26 26.3
comp=Z,16μm,21.7s,MS5.8,baz=174,slow=33
PMG Port Moresby 40.63 139 *eP* **P 07 11 51.8 +0.4**
PMG pmax pmax
comp=Z,170nm,1.1s
PMG Port Moresby 40.63 139⇑ *iP* **P 07 11 51.0 -0.4**
comp=Z,175nm,1.1s,mb5.6
PMG LR LR
comp=Z,15μm,21.0s,MS5.8
FITZ Fitzroy Crossi 40.74 174⇑ *iP* **P 07 11 49.8 -2.5**
comp=Z,110nm,1.1s,mb5.4
KUDL Kundal 40.81 287 *eP* **P 07 11 51.6 -1.2**
KUDL *e* 07 12 03.4
comp=Z,131nm,1.7s
BHK Bhakra 40.82 292 *eP* **P 07 11 53.0 +0.2**
BHK *e* 07 17 59.0
RTK Rohtak 40.84 289⇑ *iP* **P 07 11 53.3 +0.3**
RTK *e* 07 12 05.6
comp=Z,1μm,1.1s
CUD Cuddapah 41.17 266 *eP* **P 07 11 56.8 +0.9**
CUD *esP* sP 07 12 05.6 -1.3
CUD *ePP* PP 07 13 38.0 +4.0
CUD *eS* **S 07 18 08.1 +0.7**
CUD *eSS* SS 07 21 31.6 +26
AKL Akola 41.23 276 *eP* **P 07 11 57.1 +0.8**
comp=Z,360nm,1.6s,mb5.8
AKL *epP* pP 07 12 04.8 +0.6
PET Petropavlovsk 41.41 34*c* *iP* **P 07 11 57.5 +0.1**
PET *e**PP pP 07 12 05.8 +0.6
PET *i* S **S 07 18 09.6 -0.9**
PET *e**SS 07 18 24.4
PET pmax pmax
comp=N,110nm,1.0s
PET pmax pmax
comp=Z,205nm,1.0s,mb5.7
PET pmax pmax
comp=E,110nm,0.8s
PET pmax pmax
comp=N,947nm,5.1s
PET pmax pmax
comp=Z,3μm,5.2s
PET pmax pmax
comp=E,1μm,4.9s
PET pmax pmax
comp=Z,2μm,6.7s
PET pmax pmax
comp=E,835nm,7.1s
PET pmax pmax
comp=N,635nm,6.5s
PET smax
comp=E,3μm,21.0s
PET smax
comp=E,8μm,19.5s
PET MLR MLR
comp=Z,10μm,17.0s,MS5.7
PET MLR MLR
comp=N,11μm,21.0s,MS5.9
PET MLR MLR
comp=Z,9μm,18.0s
PET MLR MLR
comp=N,8μm,18.0s
PET MLR MLR
comp=E,7μm,15.0s,MS5.9
PET MLR MLR
comp=E,6μm,18.0s
PET Petropavlovsk 41.41 34⇑ *eP* **P 07 11 57.0 -0.4**
comp=E,2μm,1.3s,mb6.5
PET LR LR
comp=Z,10μm,22.0s,MS5.7
KHET Khetri 41.42 287 *i* P **P 07 11 57.4 -0.4**
KHET *e* 07 12 08.9
comp=Z,119nm,1.5s
ZAL Zalesovo 41.64 328 P **P 07 11 58.7 -0.6**
comp=Z,110nm,0.9s,mb5.5,baz=261,slow=9.7,SNR=352
ZAL PcP PcP 07 13 54.7 -1.9
comp=Z,28nm,1.1s,baz=277,slow=9.8,SNR=3.3
ZAL S **S 07 18 11.2 -2.7**
comp=Z,7.8nm,1.0s,baz=185,slow=24,SNR=7.4
ZAL LR LR 07 31 35.5
comp=Z,54μm,18.6s,MS6.5,baz=253,slow=39
ZAL Zalesovo 41.64 328 P **P 07 11 58.7 -0.6**
ZAL PcP PcP 07 13 54.7 -1.9
ZAL S **S 07 18 11.2 -2.7**
ZAL LR LR 07 31 35.5
KSH Kashi 41.94 304 *eP* **P 07 12 04.0 +2.0**
KSH *eAP* pP 07 12 10.0 +0.2
KSH *eXP* sP 07 12 13.0 -0.1
KSH *ePP* PP 07 13 44.9 +2.7
KSH *ePCP* PcP 07 13 58.6 +0.8
KSH *eSCP* 07 17 46.4
KSH *ePCS* 07 17 49.1
KSH *eS* **S 07 18 22.8 +4.3**
KSH *eXS* 07 18 32.9
KSH *eSS* SS 07 21 24.8 +4.5
KSH *eSCS* ScS 07 22 03.1 +2.4
KSH AMB AMB
comp=Z,430nm,1.2s,mb6.0
AAA Alma-Ata 42.02 310 *eP* **P 07 12 06.0 +3.4**
AAA *i* S **S 07 18 16.0 -3.7**
LATR Latur 42.14 273 *eP* **P 07 12 04.9 +1.0**
COCO West Island 42.24 217 PFAKE 07 12 20.0 +15
COCO LR LR
comp=Z,14μm,19.0s,MS5.9
MA2 Magadan 42.27 22 *eP* **P 07 12 05.5 +1.1**
MA2 pmax pmax
comp=Z,280nm,1.2s,mb5.8
MA2 Magadan 42.27 22⇑ *eP* **P 07 12 04.8 +0.4**
comp=Z,239nm,1.1s,mb5.7
MA2 *ePcP* PcP 07 13 57.5 -1.1
MA2 LR LR
comp=Z,21μm,20.0s,MS6.0
ULHL Ulahol 42.28 308 P **P 07 12 06.1 +1.4**
SNR=68
AJM Ajmer 42.57 285⇑ *iP* **P 07 12 07.0 -0.3**
TKM2 Tokmak 2 42.90 309 P **P 07 12 11.2 +1.4**
SNR=120
NVS Novosibirsk 42.91 328 *iP* **P 07 12 08.5 -1.2**
NVS *i* 07 13 54.5
NVS *iS* **S 07 18 24.8 -7.7**
NVS pmax pmax
comp=N,601nm,1.9s
NVS pmax pmax
comp=E,783nm,1.9s
NVS pmax pmax
comp=Z,901nm,1.9s,mb6.2
NVS smax
comp=N,201nm,2.1s
NVS smax
comp=E,455nm,2.1s
KZA Kyzart 42.96 308 P **P 07 12 12.5 +2.2**
SNR=51
KBK Karagaybulak 43.30 309 P **P 07 12 14.8 +1.7**
SNR=19
KURK Kurchatov 43.41 321 *eP* **P 07 12 13.9 +0.1**
KURK Kurchatov 43.41 321 *eP* **P 07 12 13.5 -0.3**
CHMS Chumysh 43.52 309 P **P 07 12 15.6 +0.8**
SNR=42
UCH Uchtor 43.53 308 P **P 07 12 17.1 +2.2**
SNR=160
FRU Bishkek 43.58 309⇑ *iP* **P 07 12 16.5 +1.2**
FRU *e* 07 14 10.0
FRU *eS* **S 07 18 41.0 -1.4**
FRU *e* 07 21 54.0
FRU pmax pmax
comp=Z,550nm,2.0s,mb5.9
FRU pmax pmax
comp=Z,6μm,8.0s
FRU smax
comp=N,6μm,8.0s
FRU MLR MLR
comp=E,95μm,17.0s
FRU MLR MLR
comp=Z,93μm,17.0s,MS6.8
MBWA Marble Bar 43.61 182 P **P 07 12 13.6 -2.2**
AAK Ala-Archa 43.62 309 P **P 07 12 17.0 +1.4**
SNR=23
USP Ospenovka 43.76 309 P **P 07 12 17.6 +0.9**
SNR=29
AML Almayashu 44.11 308 P **P 07 12 21.5 +1.9**
SNR=117
EKS2 Erkin-Say 44.15 308 P **P 07 12 21.6 +1.7**
SNR=15
WRAB Tennant Creek 44.19 162⇑ *iP* **P 07 12 18.1 -2.5**
comp=Z,541nm,1.1s,mb6.2
WRAB LR LR
comp=Z,8μm,22.0s,MS5.6
WRA Warramunga Arr 44.19 162 P **P 07 12 18.3 -2.3**
comp=Z,94nm,1.0s,mb5.5,baz=344,slow=9.0,SNR=201
WRA PcP PcP 07 14 03.4 -2.2
comp=Z,28nm,1.0s,baz=346,slow=3.9,SNR=5.1
WRA S **S 07 18 45.5 -6.2**
comp=Z,4.0nm,1.0s,baz=354,slow=22,SNR=3.1
WRA PKPPKP 07 43 53.2
comp=Z,2.1nm,1.0s,baz=112,slow=2.0,SNR=4.9
WB2 Warramunga Arr 44.20 162⇑ *iP* **P 07 12 18.2 -2.4**
WB2 *eS* **S 07 18 49.0 -2.7**
KAD Karad 44.61 272 *iP* **P 07 12 23.0 -1.0**
POO Poona 44.62 274 *iP* **P 07 12 22.0 -2.0**
POO *iS* **S 07 18 59.0 +1.2**
GOA Goa 45.43 270 *eP* **P 07 12 31.4 +0.9**
GOA *e* 07 19 02.1
BOM Bombay 45.48 275 *iP* **P 07 12 28.3 -2.6**
BOM *i* 07 19 18.4
KWAJ Kwajalein Atol 46.32 100⇑ *eP* **P 07 12 38.8 +1.3**
comp=Z,734nm,1.3s,mb6.5
KKAR Karatay Array 46.59 308 *iP* **P 07 12 39.4 +0.1**
KKAR pmax pmax
comp=Z,295nm,1.2s,mb6.1
TAS Tashkent 47.24 306 *eP* **P 07 12 43.0 -1.5**
AS12 Alice Springs 47.64 164⇑ *iP* **P 07 12 46.1 -1.8**
comp=Z,69nm,0.9s,mb5.7
ASAR Alice Springs 47.64 164 P **P 07 12 46.0 -1.9**
comp=Z,59nm,1.1s,mb5.5,baz=343,slow=6.5,SNR=179
ASAR PcP PcP 07 14 15.4 -2.2
comp=Z,49nm,1.2s,baz=342,slow=2.9,SNR=2.9
ASAR ScP 07 18 06.5
comp=Z,9.5nm,1.0s,baz=346,slow=4.6,SNR=4.6
ASAR S **S 07 19 39.8 -1.0**
comp=Z,5.9nm,1.2s,baz=340,slow=11,SNR=4.2
ASAR LR LR 07 32 48.0
comp=Z,4μm,21.1s,MS5.4,baz=341,slow=36
ASAR PKPPKP 07 43 52.0
comp=Z,3.4nm,1.0s,baz=184,slow=2.0,SNR=7.0
ASAR P4KPbc 07 50 28.1
comp=Z,0.7nm,0.7s,baz=341,slow=4.3,SNR=5.7
VOSK Vostochnaya 48.56 321 P **P 07 12 54.0 -0.6**
VOSK pmax pmax
comp=Z,699nm,2.3s,mb6.3
VOSK Vostochnaya 48.56 321 *iP* **P 07 12 54.1 -0.5**
MNCY Minicoy 48.60 261⇓ *i* **P 07 12 44.0 -11**
MNCY ⇑ *i* 07 13 08.0
CTA Charters Tower 48.92 148 *iP* **P 07 12 57.4 -0.4**
comp=Z,78nm,1.2s,mb5.6
CTA Charters Tower 48.92 148 P **P 07 12 56.9 -0.9**
comp=Z,91nm,0.9s,mb5.8,baz=330,slow=9.2,SNR=70
CTA PcP PcP 07 14 21.2 -1.0
comp=Z,31nm,0.8s,baz=326,slow=9.3,SNR=2.0
CTA S **S 07 19 59.3 +0.3**
comp=Z,5.6nm,1.2s,baz=92,slow=18,SNR=1.9
CTA LR LR 07 32 04.4
comp=Z,20μm,20.8s,MS6.1,baz=331,slow=34
CTAO Charters Tower 48.92 148 *eP* **P 07 12 57.4 -0.4**
CTAO pmax pmax
comp=Z,210nm,1.2s,mb6.0
CTAO Charters Tower 48.92 148⇑ *eP* **P 07 12 56.3 -1.5**
comp=Z,191nm,1.1s,mb6.0
CTAO LR LR
comp=Z,23μm,22.0s,MS6.1
BVA0 Borovoye Array 48.99 321 *iP* **P 07 12 57.5 -0.5**
BVAR Borovoye Array 48.99 321 S **S 07 19 57.4 -2.2**
comp=Z,0.5nm,0.4s,baz=154,slow=40,SNR=2.7
BVAR LR LR 07 35 14.9
comp=Z,24μm,18.7s,MS6.2,baz=65,slow=38
BVAR PKPPKP 07 43 57.4
comp=Z,3.3nm,1.1s,baz=270,slow=1.4,SNR=6.8
BVAR P4KPbc 07 50 33.3
comp=Z,0.8nm,0.8s,baz=135,slow=4.1,SNR=4.6
QUE Quetta 49.00 291 *eP* **P 07 12 59.0 +0.7**
QUE *eS* **S 07 20 00.0 0.0**
BRVK Borovoye 49.07 322⇑ *eP* **P 07 12 58.4 -0.1**
BRVK *ePcP* PcP 07 14 20.5 -1.8
BRVK *eScP* 07 18 10.1
TIXI Tiksi 49.17 3 *eP* **P 07 12 56.1 -3.0**
TIXI *e* 07 14 53.0
TIXI pmax pmax
comp=Z,748nm,1.3s,mb6.6
TIXI Tiksi 49.17 3⇑ *eP* **P 07 12 56.7 -2.4**
comp=Z,282nm,1.4s,mb6.1
TIXI LR LR
comp=Z,37μm,20.0s,MS6.4
FX1 Attu Island--F 49.31 39 P **P 07 13 00.6 +0.2**
comp=Z,89nm,1.0s,mb5.8,baz=214,slow=5.8,SNR=29
FX1 LR LR 07 32 25.1
comp=Z,328nm,21.7s,baz=261,slow=34
ZRNK Zerenda 49.77 321⇑ *eP* **P 07 13 03.8 -0.2**
ZRNK *ePcP* PcP 07 14 22.8 -2.1
SMY Shemya 49.81 39 *eP* **P 07 13 04.7 +0.4**
SMY pmax pmax
comp=Z,750nm,1.3s,mb6.6
SMY Shemya 49.81 39 *eP* **P 07 13 05.0 +0.7**
BILL Bilibino 53.00 19 *eP* **P 07 13 26.5 -1.7**
BILL pmax pmax
comp=Z,48nm,1.0s,mb5.4
BILL Bilibino 53.00 19⇑ *eP* **P 07 13 26.6 -1.6**
comp=Z,153nm,1.1s,mb5.8
BILL *ePcP* PcP 07 14 35.2 -1.4
FORT Forrest 53.53 173⇑ *iP* **P 07 13 30.8 -1.8**
comp=Z,552nm,0.8s,mb6.5
KLBR Kellerberrin 54.09 184⇑ *iP* **P 07 13 34.2 -2.4**
comp=Z,177nm,1.0s,mb6.0
MUN Mundaring 54.59 185⇑ *iP* **P 07 13 38.0 -2.3**
comp=Z,58nm,1.2s,mb5.5
AB31 Akbulak array 54.67 315 P **P 07 13 40.0 -0.7**
AB31 pmax pmax
comp=Z,371nm,1.3s,mb6.3
MIDW Midway 55.01 71 *eP* **P 07 13 41.6 -1.9**
comp=Z,4μm,0.9s
MIDW LR LR
comp=Z,30μm,20.0s,MS6.4
ADK Adak 55.18 42 P **P 07 13 47.1 +2.7**
ADK pmax pmax
comp=Z,270nm,1.3s,mb6.1
ADK Adak 55.18 42 *eP* **P 07 13 42.3 -2.1**
comp=Z,221nm,1.2s,mb6.1
ADK LR LR
comp=Z,980nm,22.0s
NWAO Narrogin (SRO) 55.45 184 P **P 07 13 44.7 -1.9**
NWAO Narrogin (SRO) 55.45 184⇑ *iP* **P 07 13 44.5 -2.1**
comp=Z,357nm,1.3s,mb6.2
NWAO *e* pP 07 13 53.9 -0.7
NWAO LR LR
comp=Z,4μm,22.0s,MS5.5
VAN Vannovskaya 55.79 301 P **P 07 13 49.4 +0.5**
VAN *eS* **S 07 21 32.3 -0.1**
ARU Arti 56.46 324⇑ *iP* **P 07 13 52.4 -1.1**
ARU *i* pP 07 14 02.3 +0.8
ARU *i* SP sP 07 14 06.3 +1.7
ARU *i* 07 14 44.3
ARU *i* 07 15 54.7
ARU *ePPP* PPP 07 17 14.0 -4.3
ARU *i* S **S 07 21 40.3 -0.7**
ARU *e* 07 23 38.7
ARU *eSS* SS 07 25 30.1 +1.2
ARU *eSSS* SSS 07 27 40.3 +1.0
ARU pmax pmax
comp=Z,341nm,1.6s,mb6.1
ARU MLR MLR
comp=N,14μm,17.0s,MS6.4
ARU MLR MLR
comp=Z,23μm,17.0s,MS6.3
ARU MLR MLR
comp=E,19μm,16.0s,MS6.4
ARU Arti 56.46 324⇑ *iP* **P 07 13 52.2 -1.2**
comp=E,171nm,0.8s,mb6.1
ARU LR LR
comp=Z,36μm,19.0s,MS6.5
DGAR Diego Garcia 56.52 244 *eP* **P 07 13 48.6 -5.9**
STKA Stephens Creek 57.58 160⇑ *iP* **P 07 13 59.9 -1.9**
comp=Z,25nm,0.6s,mb5.4
STKA Stephens Creek 57.58 160 P **P 07 13 59.9 -1.9**
comp=Z,35nm,0.6s,mb5.5,baz=334,slow=7.0,SNR=66
STKA S **S 07 21 57.5 +1.3**
comp=Z,4.4nm,1.0s,baz=125,slow=17,SNR=2.3
STKA LR LR 07 40 15.6
comp=Z,7μm,20.8s,MS5.8,baz=332,slow=38
SOKR Solikamsk 57.91 327⇑ *eP* **P 07 14 02.3 -1.4**
SOKR *eS* **S 07 21 54.4 -5.8**
NIKO Nikolski 60.04 41 *eP* **P 07 14 17.5 -1.1**
UNV Unalaska Valle 61.46 40 *eP* **P 07 14 25.4 -2.8**
comp=Z,148nm,0.8s,mb6.2
UNV LR LR
comp=Z,10μm,22.0s,MS5.9
TNA Tin City 61.56 27 *eP* **P 07 14 28.5 -0.2**
comp=Z,120nm,1.3s,mb5.9
TNA LR LR
comp=Z,5μm,20.0s,MS5.6
THR Tehran 61.56 300 P **P 07 14 29.6 +0.4**
comp=Z,9.1nm,0.8s,mb5.0,baz=100,slow=3.8,SNR=39
THR PKP2bc 07 43 44.5
comp=Z,1.4nm,0.9s,baz=261,slow=3.1,SNR=6.4
THR LR LR 07 44 49.6
comp=Z,9μm,19.4s,MS5.9,baz=218,slow=40
THR Tehran 61.56 300 P **P 07 14 29.6 +0.4**
THR ⇑ *e* 07 43 44.5
THR LR LR 07 44 49.6
NOUC Port Laguerre 62.36 132 *eP* **P 07 14 34.2 -0.5**
MAK Makhachkala 63.40 308*d* *iP* **P 07 14 39.5 -1.8**
MAK *iS* **S 07 23 02.0 -8.6**
MAK *i* 07 24 30.0
MAK pmax pmax
comp=Z,8μm,10.0s
MAK pmax pmax
comp=N,2μm,7.0s
MAK pmax pmax
comp=E,2μm,7.0s
MAK smax
comp=N,2μm,7.0s
MAK smax
comp=E,2μm,7.0s
MAK smax
comp=Z,1μm,7.0s
MAK MLR MLR
comp=Z,36μm,13.0s,MS6.7
MAK MLR MLR
comp=N,18μm,15.0s,MS7.0
MAK MLR MLR
comp=E,68μm,15.0s,MS7.0
CNB Canberra Magne 63.46 155⇑ *iP* **P 07 14 40.8 -1.0**
comp=E,121nm,1.0s,mb6.0
TOO Toolangi 64.06 159⇑ *iP* **P 07 14 45.1 -0.6**
comp=E,49nm,0.7s,mb5.7
SDN Sand Point 64.91 38 P **P 07 14 49.3 -1.6**
SDN pmax pmax
comp=Z,86nm,1.2s,mb5.7
SDN Sand Point 64.91 38 *eP* **P 07 14 49.2 -1.7**
HASS Wahat al Ahsa' 64.91 288 P **P 07 14 51.2 -0.2**
SDPT Sand Point 64.92 38 *eP* **P 07 14 49.9 -1.1**
ZEI Tsey 66.05 308⇑ *iP* **P 07 14 58.0 -0.5**
ZEI *i* 07 17 30.0
ZEI *iS* S 07 23 45.0 +1.7
ZEI pmax pmax
comp=Z,2μm,8.0s
ZEI pmax pmax
comp=Z,2μm,10.0s
ZEI smax
comp=N,4μm,16.0s
ZEI smax
comp=E,4μm,16.0s
ZEI MLR MLR
comp=Z,30μm,17.0s,MS6.6
GOF Gofitskoye 66.31 311⇑ *iP* **P 07 15 00.0 -0.1**
GOF *i* *SP sP 07 15 14.0 +2.8
GOF *i* 07 17 33.0
GOF *ePPP* PPP 07 18 59.0 -4.8
GOF *iS* S 07 23 48.0 +1.6
GOF pmax pmax
comp=Z,160nm,1.4s,mb5.9
GOF pmax pmax
comp=Z,240nm,1.5s,mb6.0
GOF pmax pmax
comp=Z,7μm,9.0s
GOF pmax pmax
comp=Z,4μm,9.0s
GOF smax
comp=N,10μm,10.0s
GOF smax
comp=E,11μm,10.0s
GOF MLR MLR
comp=N,34μm,17.0s,MS6.8
GOF MLR MLR
comp=E,38μm,17.0s,MS6.8
GOF MLR MLR
comp=Z,40μm,17.0s,MS6.7
PYA Pyatigorsk 66.45 310 P **P 07 14 56.0 -5.0**
PYA *e* 07 17 30.0
PYA *ePPP* PPP 07 19 10.0 +4.7
PYA *iS* S 07 23 49.0 +0.8
PYA *i* 07 24 28.0
PYA pmax pmax
comp=E,3μm,8.0s
PYA pmax pmax
comp=Z,5μm,8.0s
PYA pmax pmax
comp=E,3μm,6.0s
PYA pmax pmax
comp=Z,3μm,6.0s
PYA smax
comp=E,7μm,16.0s
PYA MLR MLR
comp=N,29μm,20.0s

PYA MLR MLR
comp=Z,27µm,15.0s,MS6.6
KIV Kislovodsk 66.73 310 *i* P **P** **07 15 02.8 0.0**
KIV *e* 07 15 32.3
KIV *e* 07 17 30.4
KIV *i* S S 07 23 54.6 +3.1
KIV *e*SS SS 07 28 11.4 +0.3
KIV pmax pmax
comp=Z,330nm,1.1s,mb6.3
KIV smax
comp=N,1µm,5.3s
KIV smax
comp=E,730nm,2.7s
KIV MLR MLR
comp=Z,17µm,18.0s,MS6.3
KIV Kislovodsk 66.73 310⇑ *e*P **P** **07 15 02.4 -0.3**
comp=Z,729nm,1.3s,mb6.5
KIV *e*PP PP 07 17 38.0 +6.4
SVW Sparrevohn 67.01 32 *e*P **P** **07 15 04.1 -0.2**
VANB Van 67.18 304 *e*P **P** **07 15 05.7 -0.1**
VANB Van 67.18 304 P **P** **07 15 05.7 -0.1**
IMA Indian Mountai 67.42 26 P **P** **07 15 06.0 -0.8**
IMA pmax pmax
comp=Z,430nm,1.4s,mb6.3
IMA Indian Mountai 67.42 26 *e*P **P** **07 15 05.3 -1.5**
VOR Voronezh 67.81 318 *e*P **P** **07 15 08.0 -1.5**
VOR *e* 07 15 20.5
VOR *e*S S 07 24 02.0 -2.4
VOR pmax pmax
comp=E,200nm,1.3s
VOR pmax pmax
comp=Z,270nm,1.3s,mb6.1
VOR smax
comp=N,300nm,1.6s
VOR smax
comp=E,190nm,1.6s
BCA Borcka 67.96 307 *e*P **P** **07 15 10.7 +0.1**
LVZ Lovozero 68.01 336 *e*P **P** **07 15 08.9 -1.6**
LVZ *e* 07 17 38.0
LVZ *e*S S 07 24 00.7 -5.8
LVZ pmax pmax
comp=Z,1µm,4.6s
LVZ pmax pmax
comp=N,40nm,2.0s
LVZ pmax pmax
comp=E,470nm,3.8s
LVZ pmax pmax
comp=Z,100nm,1.4s,mb5.7
LVZ pmax pmax
comp=N,40nm,2.5s
LVZ pmax pmax
comp=E,10.0nm,1.5s
LVZ smax
comp=N,5µm,8.8s
LVZ smax
comp=Z,2µm,10.2s
LVZ smax
comp=E,4µm,12.0s
LVZ MLR MLR
comp=N,8µm,13.0s,MS6.7
LVZ MLR MLR
comp=E,26µm,14.0s,MS6.7
LVZ MLR MLR
comp=Z,35µm,14.0s,MS6.7
LVZ Lovozero 68.01 336 *e*P **P** **07 15 09.4 -1.1**
MOS Moscow 68.14 323α *i*P **P** **07 15 10.1 -1.4**
MOS *e* 07 15 23.8
MOS *e* 07 17 38.3
MOS *e*S S 07 24 02.4 -5.8
MOS *e* 07 25 01.8
MOS *e*SSS SSS 07 31 29.9 -2.8
MOS pmax pmax
comp=Z,2µm,1.8s,mb6.8
MOS pmax pmax
comp=Z,1µm,2.0s,mb6.6
MOS MLR MLR
comp=Z,37µm,16.2s,MS6.7
MOS MLR MLR
comp=E,27µm,17.0s
ERZM Erzurum 68.46 305 *i* P **P** **07 15 14.7 +0.9**
RSO Redoubt South 68.48 32 *e*P **P** **07 15 13.2 -0.3**
APA Apatity 68.52 336⇓ *i*P **P** **07 15 13.4 -0.2**
APA *i* 07 15 29.6
APA *i* 07 15 35.2
APA *e* 07 17 43.0
APA *i* PPP PPP 07 19 30.0 +5.4
APA *i* S S 07 24 12.0 -0.6
APA *e* 07 25 12.0
APA pmax pmax
comp=Z,420nm,1.4s,mb6.2
APA pmax pmax
comp=Z,4µm,12.0s
APA MLR MLR
comp=Z,50µm,16.0s,MS6.8
APA MLR MLR
comp=N,14µm,15.0s,MS6.8
APA MLR MLR
comp=E,40µm,15.0s,MS6.8
EZM Erzurum 68.56 305 *e*P **P** **07 15 15.2 +0.8**
SPU Mount Spurr 68.72 31 *e*P **P** **07 15 13.8 -1.1**
SPU *e*PP PP 07 17 52.9 +4.0
BTMT Batman 68.73 304 *e*P **P** **07 15 17.7 +2.3**
OBN Obninsk 68.83 322c *i*P **P** **07 15 14.5 -1.3**
OBN *i* 07 15 29.0
OBN *e* 07 15 38.1
OBN *i* 07 17 45.9
OBN *i* S S 07 24 15.8 -0.7
OBN pmax pmax
comp=Z,275nm,1.1s,mb6.1
OBN pmax pmax
comp=Z,1µm,6.8s
OBN MLR MLR
comp=Z,17µm,13.0s,MS6.5
OBN MLR MLR
comp=Z,18µm,17.0s
OBN Obninsk 68.83 322⇑ *i*P **P** **07 15 14.1 -1.7**
comp=Z,543nm,1.5s,mb6.3
OBN LR LR
comp=Z,25µm,19.0s,MS6.5
SOC Sochi 68.91 310 *i* P **P** **07 15 15.4 -1.1**
SOC *e* 07 15 38.9
SOC *e* 07 17 56.0
SOC *i* S S 07 24 17.1 -0.5
SOC *e* 07 25 08.5
SOC *e*SS SS 07 28 43.4 -1.6
SOC *e*SSS SSS 07 31 41.7 -5.1
SOC pmax pmax
comp=Z,270nm,1.8s,mb5.9
SOC pmax pmax
comp=N,48nm,0.8s
SOC pmax pmax
comp=E,320nm,1.4s
SOC smax
comp=N,3µm,6.7s
SOC smax
comp=E,7µm,8.6s
SOC MLR MLR
comp=E,26µm,15.0s,MS6.7
SOC MLR MLR
comp=Z,22µm,15.0s,MS6.5
SOC MLR MLR
comp=N,21µm,17.0s,MS6.7
BEST Besiri 68.96 303 *i* P **P** **07 15 17.4 +0.5**
KDAK Kodiak Island 68.98 35⇑ *i*P **P** **07 15 15.3 -1.3**
comp=N,120nm,0.8s,mb5.9
KDAK *e*PP PP 07 17 45.8 -5.5
KDAK LR LR
comp=Z,5µm,21.0s,MS5.8
MZLS Mizel 69.15 288 P **P** **07 15 17.8 -0.4**
BINT Bingol 69.34 305 *e*P **P** **07 15 20.8 +1.6**
TAU Tasmania Unive 69.48 160 P **P** **07 15 19.7 -0.3**
TAU pmax pmax
comp=Z,220nm,1.3s,mb5.9
TAU Tasmania Unive 69.48 160 *e*P **P** **07 15 18.6 -1.3**
comp=Z,235nm,1.3s,mb6.0
TAU LR LR
comp=Z,7µm,21.0s,MS5.9
FIB Fire Island 69.62 31 *e*P **P** **07 15 19.5 -0.9**
FIB LR LR
comp=Z,11µm,21.0s,MS6.1
EZC Erzincan 69.66 306 *e*P **P** **07 15 24.7 +3.6**
EZC Erzincan 69.66 306 P **P** **07 15 24.7 +3.6**
PWA Palmer West 69.68 31 *e*P **P** **07 15 19.5 -1.3**
SLKM Skilak Lake 69.72 32 P **P** **07 15 22.0 +0.9**
SLKM Skilak Lake 69.72 32 *e*P **P** **07 15 21.4 +0.4**

MCK McKinley 69.74 28 P **P** **07 15 20.3 -0.8**
MCK McKinley 69.74 28⇑ *i*P **P** **07 15 19.3 -1.8**
comp=Z,104nm,1.3s,mb5.6
MCK *e*PP PP 07 17 56.6 -0.7
MCK LR LR
comp=Z,4µm,19.0s,MS5.6
GOU Gould Hall 69.80 31 P **P** **07 15 22.1 +0.5**
PMS Palmer South 69.90 31 *e*P **P** **07 15 21.1 -1.1**
COLA College 70.00 27 *e*P **P** **07 15 22.4 -0.3**
PMR Palmer 70.04 31 P **P** **07 15 21.4 -1.6**
PMR pmax pmax
comp=Z,39nm,1.1s,mb5.2
PMR Palmer 70.04 31 *e*P **P** **07 15 21.3 -1.7**
JOF Joensuu 70.13 331 *e*p **P** **07 15 21.9 -1.7**
comp=Z,35nm,0.7s,mb5.4
JOF Joensuu 70.13 331 *e*P **P** **07 15 21.9 -1.7**
JOF pmax pmax
comp=Z,35nm,0.7s,mb5.4
ANN Anapa 70.27 311c *i*P **P** **07 15 24.2 -0.5**
ANN *e*S S 07 24 33.3 -0.2
ANN *e*SS SS 07 29 08.8 +3.2
ANN pmax pmax
comp=Z,230nm,1.3s,mb6.0
ANN smax
comp=N,2µm,12.3s
ANN smax
comp=E,2µm,11.2s
ANN MLR MLR
comp=Z,11µm,16.0s,MS6.2
ANN MLR MLR
comp=N,9µm,18.0s,MS6.3
ANN MLR MLR
comp=E,13µm,19.0s,MS6.3
ANN Anapa 70.27 311⇑ *i*P **P** **07 15 23.8 -0.9**
ARSS Ar Rass 70.35 291 P **P** **07 15 25.1 -0.5**
SML Sawmill 70.37 30 P **P** **07 15 20.2 -4.8**
SML Sawmill 70.37 30⇑ *e*P **P** **07 15 23.4 -1.6**
ILAR Eielson Array 70.42 27 P **P** **07 15 23.3 -2.0**
comp=E,4.6nm,0.8s,baz=272,slow=4.5,SNR=42
ILAR PKiKP 07 21 34.0
comp=E,0.8nm,0.9s,baz=301,slow=4.6,SNR=3.9
ILAR LR LR 07 50 31.1
comp=E,4µm,19.1s,MS5.7,baz=98,slow=39
KEV Kevo 70.46 338 *e*p **P** **07 15 23.7 -1.7**
comp=E,35nm,0.7s,mb5.4
KEV Kevo 70.46 338 *e*P **P** **07 15 23.7 -1.7**
KEV pmax pmax
comp=Z,35nm,0.7s,mb5.4
ELZG Elazig 70.58 304 *i* P **P** **07 15 27.7 +1.0**
KAMS Al Khamasin 70.79 285 P **P** **07 15 27.9 -0.3**
ARCES ARCESS Array B 71.02 338 P **P** **07 15 28.1 -0.8**
comp=Z,22nm,0.6s,mb5.3,baz=69,slow=8.5,SNR=47
ARCES LR LR 07 51 04.7
comp=Z,30µm,18.3s,MS6.6,baz=70,slow=40
MYA Malataya 71.04 304 *i* P **P** **07 15 31.2 +1.7**
AFFS 'Afif 71.11 289 P **P** **07 15 30.0 -0.2**
HILS Ha'il 71.18 292 P **P** **07 15 30.7 +0.2**
PUL Pulkovo 71.25 328 *e*P **P** **07 15 29.6 -0.8**
PUL *e*S S 07 24 41.0 -3.8
PUL pmax pmax
comp=Z,290nm,0.9s,mb6.2
PUL pmax pmax
comp=N,60nm,0.7s
PUL smax
comp=N,130nm,0.5s
PUL smax
comp=Z,70nm,0.6s
PUL smax
comp=E,50nm,0.7s
PUL MLR MLR
comp=N,17µm,15.0s,MS7.0
PUL MLR MLR
comp=E,66µm,16.0s,MS7.0
PUL MLR MLR
comp=Z,82µm,16.0s,MS7.1
PUL Pulkovo 71.25 328 *e*P **P** **07 15 29.8 -0.6**
KBS Kingsbay 71.54 349 AMS AMS 07 51 18.3
comp=Z,81µm,18.0s,MS7.0
KBS Kingsbay 71.54 349 PFAKE
KBS LR LR 07 15 40.0 +8.1
comp=Z,41µm,20.0s,MS6.7
BJO Bjornoya 71.54 344 *e*P **P** **07 15 35.5 +3.5**
BJO *e*S S 07 24 49.6 +1.7
BJO *e*SS SS 07 29 25.0 -0.1
BJO AMS AMS 07 53 07.8
comp=Z,21µm,18.6s,MS6.4
DIV Divide 71.72 31 PFAKE
DIV LR LR 07 15 40.0 +6.8
comp=Z,32µm,19.0s,MS6.6
SVSK Karacayir 71.72 306 *e*P **P** **07 15 34.3 +0.7**
EYAK Cordova Ski Ar 71.87 31⇑ *e*P **P** **07 15 32.3 -1.8**
EYAK *e*PP PP 07 18 06.4 -9.0
KTK1 Kautokeino 71.93 338 *e*P **P** **07 15 34.3 -0.1**
KTK1 AMb AMB 07 15 45.0
comp=Z,268nm,1.5s,mb6.0
KTK1 Kautokeino 71.93 338 *e*P **P** **07 15 34.3 -0.1**
comp=Z,268nm,1.5s,mb6.0
GZT Gaziantep 71.95 304 *i* P **P** **07 15 35.8 +0.8**
TOKT Tokat 71.96 307 *e*P **P** **07 15 36.0 +1.0**
TOKT Tokat 71.96 307 P **P** **07 15 36.0 +1.0**
TATS Tathlith 72.01 284 P **P** **07 15 35.2 -0.5**
LBOS 72.24 278 *e*P **P** **07 15 38.0 +0.9**
GAZ Gaziantep 72.27 303 P **P** **07 15 37.9 +1.0**
GAZ Gaziantep 72.27 303 *i* P **P** **07 15 37.9 +1.0**
SIM Simferopol' 72.52 312c *i*P **P** **07 15 37.3 -0.9**
SIM *e* 07 18 22.0
SIM *i* S S 07 24 58.8 -0.7
SIM pmax pmax
comp=Z,1µm,10.1s
SIM MLR MLR
comp=Z,16µm,17.5s,MS6.4
DJNS Zahran al Janu 72.53 282 P **P** **07 15 39.2 +0.3**
KAF Kangasniemi 72.58 331 *e*p **P** **07 15 36.7 -1.5**
comp=Z,135nm,1.3s,mb5.7,baz=72,slow=5.6
KAF Kangasniemi 72.58 331 *e*P **P** **07 15 36.7 -1.5**
KAF pmax pmax
comp=Z,135nm,1.3s,mb5.7
FINES FINESS Array B 72.86 330 P **P** **07 15 38.9 -1.0**
comp=Z,109nm,1.1s,mb5.7,baz=60,slow=5.0,SNR=106
FINES S S 07 24 59.9 -3.1
comp=Z,1.2nm,0.8s,baz=339,slow=2.4,SNR=2.3
FINES LR LR 07 50 29.4
comp=Z,22µm,18.2s,MS6.5,baz=75,slow=38
BYBT Boyabat 72.96 308 *e*P **P** **07 15 42.6 +1.7**
BYBT Boyabat 72.96 308 P **P** **07 15 42.5 +1.6**
YOZ Yozgat 73.05 306 *e*P **P** **07 15 41.4 0.0**
YOZ Yozgat 73.05 306 P **P** **07 15 41.4 0.0**
CTKT Corum 73.17 307 *i* P **P** **07 15 42.0 -0.1**
COBT Iskenderun 73.18 303 *i* P **P** **07 15 42.6 +0.3**
TRO Tromso 73.20 339 *e*P **P** **07 15 40.6 -1.1**
TRO *e*P 07 15 40.8
TRO *e*S S 07 25 03.6 -3.1
TRO AMS AMS 07 53 00.9
comp=Z,23µm,18.7s,MS6.5
VSU Vasula 73.37 327⇑ *i*P **P** **07 15 42.4 -0.5**
HTY Hatay 73.38 303 *e*P **P** **07 15 44.1 +0.6**
BZK Bozkurt 73.38 309 *e*P **P** **07 15 44.5 +1.2**
BZK Bozkurt 73.38 309 P **P** **07 15 44.5 +1.1**
CEYT Ceyhan 73.44 304 *e*P **P** **07 15 46.8 +3.0**
CEYT Ceyhan 73.44 304 P **P** **07 15 46.8 +3.1**
BLJS Baljurashi 73.59 285 P **P** **07 15 45.4 +0.4**
TOS Tosya 73.62 308 *e*P **P** **07 15 45.3 +0.6**
TOS Tosya 73.62 308 P **P** **07 15 45.3 +0.5**
AVNT Avonos 73.63 306 *i* P **P** **07 15 44.6 -0.3**
KIP Kipapa 73.68 73 *e*P **P** **07 15 46.0 +0.5**
comp=Z,160nm,1.2s,mb5.8
KIP *e* pP 07 15 54.5 +0.8
KIP LR LR
comp=Z,6µm,22.0s,MS5.8
DAWY Dawson 73.75 27⇑ *i*P **P** **07 15 43.9 -1.1**
KBRS Khaybar 73.81 292 P **P** **07 15 47.0 +0.9**
MNK Minsk 73.90 323 *e*P **P** **07 15 45.0 -1.0**
MNK *e* 07 25 12.0
ASF Jabal al Asfar 73.90 299 P **P** **07 15 47.1 +0.6**
comp=Z,67nm,1.1s,mb5.5,baz=325,slow=1.7,SNR=84
ASF LR LR 07 52 40.8
comp=Z,11µm,18.6s,MS6.2,baz=132,slow=39
BALT Daday 73.94 309 *i* P **P** **07 15 47.1 +0.5**
NIG Nigde 74.00 305 *i* P **P** **07 15 47.9 +0.9**
NIG Nigde 74.00 305 P **P** **07 15 47.9 +0.9**
DUSS Damascus Unive 74.00 300 *i* P **P** **07 15 48.3 +1.2**
DUSS *i* P 07 15 48.4
DUSS *i* P 07 15 48.5
DUSS *e* 07 15 49.5
baz=75,slow=3.7
DUSS *e*S S 07 25 20.9 +4.4
DUSS AMS AMS 07 55 08.3
comp=N,140µm,18.3s
DUSS AMS AMS 07 55 12.7
comp=Z,282µm,18.3s
DUSS AMS AMS 07 55 16.2
comp=E,194µm,18.3s
CANT Cankiri 74.03 308 *e*P **P** **07 15 47.6 +0.5**
FRSS Farasan al Kab 74.14 282 P **P** **07 15 48.6 +0.5**
AKASG Malin Array Be 74.16 319 P **P** **07 15 46.3 -1.3**
comp=E,42nm,0.8s,mb5.4,baz=60,slow=5.3,SNR=66
AKASG S S 07 25 13.4 -4.4
comp=E,0.1nm,0.3s,baz=66,slow=10,SNR=8.0
AKASG LR LR 07 50 30.6
comp=E,15µm,20.5s,MS6.3,baz=75,slow=37
BRTR Keskin Array B 74.27 307 P **P** **07 15 48.2 -0.3**
comp=E,31nm,1.0s,mb5.2,baz=104,slow=5.1,SNR=101
BRTR PP PP 07 18 32.1 -4.2
comp=E,7.7nm,1.1s,baz=91,slow=4.8,SNR=3.2
BRTR S S 07 25 18.6 -0.7
comp=E,0.3nm,0.5s,baz=13,slow=12,SNR=2.0
BRTR LR LR 07 51 43.4
comp=E,6µm,20.8s,MS5.9,baz=70,slow=38
KAMT Kaman 74.31 306 *e*P **P** **07 15 49.1 +0.3**
INK Inuvik 74.51 22 P **P** **07 15 47.7 -1.7**
comp=E,38nm,1.0s,mb5.3,baz=298,slow=5.8,SNR=94
INK PKiKP 07 21 40.4
comp=E,2.7nm,0.7s,baz=329,slow=4.0,SNR=5.8
INK S S 07 25 19.7 -1.8
comp=E,1.1nm,0.9s,baz=99,slow=27,SNR=5.3
INK LR LR 07 54 40.1
comp=E,7µm,18.5s,MS6.0,baz=284,slow=41
INK Inuvik 74.51 22 P **P** **07 15 48.3 -1.0**
INK Inuvik 74.51 22⇑ *i*P **P** **07 15 47.3 -2.0**
comp=E,85nm,1.2s,mb5.5
HRI Mount Hermon 74.52 300 P **P** **07 15 50.4 +0.3**
KSHT Keshet 74.54 300 P **P** **07 15 50.8 +0.6**
ANTO Ankara 74.85 307 P **P** **07 15 51.3 -0.6**
HMDT Nahal Hemdat 74.98 299 P **P** **07 15 53.2 +0.4**
HMDT Nahal Hemdat 74.98 299⇑ P **P** **07 15 53.2 +0.4**
HNTI Hanita 75.02 300 P **P** **07 15 53.3 +0.3**
HNTI Hanita 75.02 300⇑ P **P** **07 15 53.3 +0.3**
MKRJ Makawir 75.10 298 P **P** **07 15 54.0 +0.5**
HAF Haifa 75.23 300 P **P** **07 15 54.4 +0.2**
IKL Isikli 75.25 303 *i* P **P** **07 15 54.4 +0.1**
IKL Isikli 75.25 303 P **P** **07 15 54.4 +0.1**
DRGI Dragot 75.29 298 P **P** **07 15 55.0 +0.4**
OFRI 'Ofer 75.31 299 P **P** **07 15 54.9 +0.2**
OFRI 'Ofer 75.31 299⇑ P **P** **07 15 54.9 +0.2**
YNBS Yanbu' al Bahr 75.35 290 P **P** **07 15 55.8 +0.8**
TBKS Tabuk 75.37 295 P **P** **07 15 55.8 +0.7**
SLTI Sal'it 75.38 299 P **P** **07 15 55.5 +0.4**
KIS Kishinev 75.50 315 *e*P **P** **07 15 53.0 -2.4**
KIS *e* 07 16 07.0
KIS *e*S S 07 25 30.0 -2.8
KIS *e*PS PS 07 25 58.0 -15
KIS *e*SS SS 07 30 20.0 -6.3
KIS *e*SSS SSS 07 33 45.0 +4.2
KIS pmax pmax
comp=Z,2µm,9.0s
KIS pmax pmax
comp=Z,2µm,10.0s
KIS MLR MLR
comp=E,17µm,16.0s,MS6.6
KIS MLR MLR
comp=Z,24µm,16.0s,MS6.6
KIS MLR MLR
comp=N,16µm,17.0s,MS6.6
KIS MLR MLR
comp=Z,24µm,16.0s
LOF Lofoten 75.58 338⇑ *i*P **P** **07 15 54.5 -0.9**
LOF AMb AMB 07 16 07.4
comp=Z,196nm,1.2s,mb5.9
LOF Lofoten 75.58 338 *e*P **P** **07 15 53.9 -1.5**
comp=Z,196nm,1.2s,mb5.9
JMQS Jabal Moqyreh 75.72 296 P **P** **07 15 57.5 +0.4**
ZFRI Zfri 75.78 297 P **P** **07 15 57.7 +0.3**
KIZT Kizilcal 75.82 306 *e*P **P** **07 15 57.2 -0.3**
KIZT Kizilcal 75.82 306 P **P** **07 15 57.2 -0.2**
MDU Mudurnu 75.83 308 P **P** **07 15 57.7 +0.2**
OUZ Omahuta 75.88 138 P **P** **07 15 58.2 +0.3**
CSS Prodhromos 75.91 302⇑ P **P** **07 15 57.9 -0.1**
comp=Z,2.3nm,1.1s
CSS Prodhromos 75.91 302⇑ *e*P **P** **07 15 57.9 -0.1**
HENT Hendek 75.95 309 *i* P **P** **07 15 57.3 -0.8**
HDMB Hadim 75.95 304 *e*P **P** **07 15 56.9 -1.3**
HDMB Hadim 75.95 304 P **P** **07 15 56.9 -1.3**
PRNI Paran 75.99 297 P **P** **07 15 58.9 +0.3**
PRNI Paran 75.99 297⇑ P **P** **07 15 58.9 +0.3**
MOR8 Moi Rana 76.08 336 *e*P **P** **07 15 56.1 -2.2**
MOR8 AMb AMB 07 16 06.8
comp=Z,192nm,1.3s,mb5.9
MOR8 Moi Rana 76.08 336 *e*P **P** **07 15 56.1 -2.2**
comp=Z,192nm,1.3s,mb5.9
AQBJ Aqaba 76.15 297 P **P** **07 15 59.6 +0.1**
LEF Lefka 76.20 302 *i* P **P** **07 16 00.1 +0.4**
LEF Lefka 76.20 302 P **P** **07 16 00.1 +0.4**
MBH Mount Berech 76.24 297 P **P** **07 16 00.2 +0.2**
MBH Mount Berech 76.24 297⇑ P **P** **07 16 00.2 +0.2**
EIL Elat 76.25 297 P **P** **07 16 00.3 +0.3**
EIL Elat 76.25 297⇑ P **P** **07 16 00.3 +0.3**
ALWS Ilw as Safayha 76.27 296 P **P** **07 16 00.3 +0.2**
JMOS Jabal al Moall 76.27 296 P **P** **07 16 00.6 +0.4**
KMTI Karmit 76.30 297 P **P** **07 16 00.3 0.0**
KMTI Karmit 76.30 297⇑ P **P** **07 16 00.3 0.0**
KZIT Kziot 76.31 298 P **P** **07 16 00.3 -0.1**
KZIT Kziot 76.31 298⇑ P **P** **07 16 00.3 -0.1**
SZAC Souni-Zanaja 76.32 302⇑ P **P** **07 16 00.1 -0.3**
SZAC Souni-Zanaja 76.32 302⇑ *e*P **P** **07 16 00.1 -0.3**
ESKT Eskisehir 76.39 307 *e*P **P** **07 15 59.6 -1.0**
ESKT Eskisehir 76.39 307 *i* P **P** **07 15 59.9 -0.7**
ESKT Eskisehir 76.39 307 P **P** **07 15 59.6 -1.0**
POHA Pohakuloa 76.42 74⇑ *e*P **P** **07 16 01.5 +0.3**
comp=Z,133nm,1.0s,mb5.8
POHA LR LR
comp=Z,4µm,20.0s,MS5.8
ALFC Alevga 76.42 303⇑ P **P** **07 15 59.9 -1.0**
comp=Z,1.6nm,0.8s
ALFC Alevga 76.42 303⇑⇑ *e*P **P** **07 15 59.9 -1.0**
HAQS Haql 76.46 296 P **P** **07 16 01.5 +0.3**
BDAS Al Bad' 76.51 295 P **P** **07 16 01.5 0.0**
CFR Carcaliu 76.52 313⇓ *i*P **P** **07 16 00.7 -0.5**
CFR Carcaliu 76.52 313 ⇓⇓P **P** **07 16 00.7 -0.6**
EYL Eskiyayla 76.56 308 *e*P **P** **07 16 02.0 +0.4**
EYL Eskiyayla 76.56 308 P **P** **07 16 02.0 +0.4**
SUW Suwalki 76.64 323 *e*P **P** **07 16 00.8 -0.9**
comp=Z,600nm,1.2s,mb6.4
SUW Suwalki 76.64 323 *e*P **P** **07 16 00.8 -0.9**
SUW *e**PP pP 07 16 08.0 -2.0
SUW *e* 07 18 55.0
SUW *e*S S 07 25 42.3 -2.8
SUW *e* 07 26 01.7
SUW MLR MLR
comp=Z,52µm,17.0s,MS6.9
SUW MLR MLR
comp=E,34µm,17.1s,MS6.8
SUW MLR MLR
comp=N,27µm,16.6s,MS6.8
SUW Suwalki 76.64 323 *e*P **P** **07 16 00.8 -0.9**
SUW *e*pP pP 07 16 08.0 -2.0
SUW *e*PP PP 07 18 55.0 -0.7
SUW *e*S S 07 25 42.3 -2.8
SUW *e*SS 07 25 55.8
SUW *e*SKS SKS 07 26 01.7 -13
PPCY Paphos 76.70 302⇑ P **P** **07 16 02.0 -0.5**
PPCY Paphos 76.70 302⇑ *e*P **P** **07 16 02.0 -0.5**
HARR Harsova 76.81 313⇑ *i*P **P** **07 16 02.8 -0.1**
HARR Harsova 76.81 313⇑ *i*P **P** **07 16 02.7 -0.1**
HRT Hereke 76.84 309 *e*P **P** **07 16 03.1 0.0**
HRT Hereke 76.84 309 *e*P **P** **07 16 05.9 +2.8**
HRT Hereke 76.84 309 P **P** **07 16 03.1 0.0**
PSN Preselentsi 76.96 312 *i* P **P** **07 16 04.5 +0.8**
ALT Altintas 77.08 307 *e*P **P** **07 16 04.3 -0.2**
YLV Yalova 77.13 309 *e*P **P** **07 16 03.5 -1.2**
ISP Isparta 77.17 306 *e*P **P** **07 16 04.0 -1.0**
ISP Isparta 77.17 306 P **P** **07 16 04.0 -1.1**
ISK Istanbul-Kandi 77.19 309 *e*P **P** **07 16 06.3 +1.2**
VRI Vrincioaia 77.23 314⇓ *i*P **P** **07 16 05.8 +0.6**
VRI Vrincioaia 77.23 314⇓⇓ *e*P **P** **07 16 05.7 +0.5**
ULDT Uludag 77.44 308 *i* P **P** **07 16 06.0 -0.5**
LVV L'vov 77.60 319 *i* P **P** **07 16 07.1 0.0**
LVV *e*S S 07 25 53.1 -2.5

ISR	**Istrita**	**77.60 314**	⇓	*i*	P	**P**	**07 16 08.4**	**+1.2**
ISR	**Istrita**	**77.60 314**	⇑	*e*	P	**P**	**07 16 08.2**	**+0.9**
CTT	**Catalca**	**77.62 309**		*e*	P	**P**	**07 16 08.2**	**+0.8**
CTT	**Catalca**	**77.62 309**			P	**P**	**07 16 08.2**	**+0.8**
PRD	**Provadia**	**77.66 312**		*i*	P	**P**	**07 16 08.0**	**+0.4**
NSS	**Namsos**	**77.73 335**		*e*	P	**P**	**07 16 06.5**	**-1.1**
NSS				*e*	PP	PP	07 19 08.5	+3.6
NSS				*e*	S	S	07 25 56.0	-0.7
NSS					AMS	AMS	07 54 43.5	
	comp=Z,42µm,17.2s,MS6.8							
MLR	**Muntele Rosu**	**77.87 314**	⇑	*i*	P	**P**	**07 16 08.8**	**+0.1**
MLR	**Muntele Rosu**	**77.87 314**	⇓	*e*	P	**P**	**07 16 08.8**	**+0.1**
DAG	**Danmarks Havn**	**77.88 351**	*b*	*i*	P	**P**	**07 16 07.0**	**-1.2**
	comp=Z,52nm,1.2s,mb5.3							
DAG				*i*			07 19 20.2	
	comp=Z,14µm,18.0s							
DAG	**Danmarks Havn**	**77.88 351**	*b*	*i*	P	**P**	**07 16 07.0**	**-1.2**
DAG					pmax	pmax		
	comp=Z,52nm,1.2s,mb5.3							
DAG					MLR	MLR		
	comp=N,8µm,18.0s,MS6.3							
DAG					MLR	MLR		
	comp=Z,14µm,18.0s,MS6.3							
DAG					MLR	MLR		
	comp=E,12µm,19.0s,MS6.3							
DAG	**Danmarks Havn**	**77.88 351**		*i*	Pcr		07 16 07.0	
	comp=E,52nm,1.2s							
DAG				*i*			07 19 20.2	
DAG					LR	LR		
	comp=Z,14µm,18.0s,MS6.3							
ELL	**Elmali**	**77.98 305**		*i*	P	**P**	**07 16 09.9**	**+0.4**
ELL	**Elmali**	**77.98 305**			P	**P**	**07 16 09.9**	**+0.5**
SIT	**Sitka**	**78.12 33**			P	**P**	**07 16 11.7**	**+1.9**
SIT					pmax	pmax		
	comp=Z,73nm,0.9s,mb5.6							
SIT	**Sitka**	**78.12 33**		*e*	P	**P**	**07 16 11.6**	**+1.8**
BUC1	**Bucharest**	**78.21 313**	⇑	*i*	P	**P**	**07 16 11.1**	**+0.5**
BUC1	**Bucharest**	**78.21 313**	⇑		P	**P**	**07 16 11.1**	**+0.5**
BNT	**Bandirma**	**78.25 309**		*e*	P	**P**	**07 16 09.3**	**-1.6**
BNT	**Bandirma**	**78.25 309**			P	**P**	**07 16 09.3**	**-1.5**
DENT	**Denizli**	**78.30 306**		*e*	P	**P**	**07 16 10.9**	**-0.3**
DENT	**Denizli**	**78.30 306**			P	**P**	**07 16 10.9**	**-0.3**
DNZL	**Cakiroluk**	**78.31 306**		*i*	P	**P**	**07 16 11.2**	**-0.1**
KWP	**Kalwaria**	**78.47 319**	⇑	*e*	P	**P**	**07 16 11.9**	**0.0**
	comp=Z,200nm,0.0s							
KWP	**Kalwaria**	**78.47 319**	⇑	*e*	P	**P**	**07 16 11.9**	**0.0**
KWP				*e*	pP	pP	07 16 15.4	-4.8
KWP				*e*	PP	PP	07 19 17.3	+5.9
KWP				*e*	S	S	07 26 04.0	-0.9
KWP				*e*	SS		07 26 16.6	
KWP				*e*	SKS	SKS	07 26 22.6	-5.0
KWP				*e*	SS	SS	07 31 10.0	-1.3
WAR	**Warsaw**	**78.49 322**		*e*	P	**P**	**07 16 12.0**	**0.0**
WAR				*e*	PcP	PcP	07 16 14.1	-7.4
WAR				*e*	pP	pP	07 16 18.6	-1.7
WAR				*e*	S	S	07 26 03.6	-1.5
WAR				*e*	sS		07 26 18.4	
WAR				*e*	SKS	SKS	07 26 23.6	-4.1
WAR					LME		07 55 25.8	
	comp=Z,30µm,18.6s							
WAR	**Warsaw**	**78.49 322**		*e*	P	**P**	**07 16 12.0**	**0.0**
WAR				*e*	*PP	pP	07 16 18.6	-1.7
WAR				*e*	S	S	07 26 03.6	-1.5
WAR				*e*	*SS		07 26 18.4	
WAR				*e*			07 26 23.6	
WAR					MLR	MLR		
	comp=E,30µm,18.6s,MS6.8							
WAR					MLR	MLR		
	comp=Z,27µm,17.3s,MS6.6							
WAR					MLR	MLR		
	comp=N,26µm,17.0s,MS6.8							
BALB	**Balikesir**	**78.52 308**		*e*	P	**P**	**07 16 09.7**	**-2.7**
BALB	**Balikesir**	**78.52 308**			P	**P**	**07 16 09.7**	**-2.6**
EDRB	**Edirne**	**78.57 311**		*e*	P	**P**	**07 16 12.8**	**+0.2**
EDRB	**Edirne**	**78.57 311**			P	**P**	**07 16 12.8**	**+0.1**
KGT	**Karabiga**	**78.66 309**		*e*	P	**P**	**07 16 12.5**	**-0.6**
KGT	**Karabiga**	**78.66 309**			P	**P**	**07 16 12.5**	**-0.7**
AKS	**Akhisar**	**78.83 307**		*e*	P	**P**	**07 16 11.7**	**-2.4**
AKS	**Akhisar**	**78.83 307**			P	**P**	**07 16 11.7**	**-2.4**
QRZ	**Quartz Range**	**79.01 143**			P	**P**	**07 16 14.5**	**-0.5**
YER	**Yerkesik**	**79.07 306**		*i*	P	**P**	**07 16 15.2**	**-0.3**
YER	**Yerkesik**	**79.07 306**			P	**P**	**07 16 15.2**	**-0.3**
PVL	**Pavlikeni**	**79.07 312**			P	**P**	**07 16 17.5**	**+2.1**
UZH	**Uzhgorod**	**79.09 318**		*i*	P	**P**	**07 16 15.0**	**-0.3**
UZH				*e*	S	S	07 26 13.0	+1.4
MSZ	**Milford Sound**	**79.33 148**			P	**P**	**07 16 16.8**	**+0.1**
DIM	**Dimitrovgrad**	**79.35 311**		*i*	P	**P**	**07 16 17.0**	**+0.1**
IZM	**Izmir**	**79.39 307**		*e*	P	**P**	**07 16 17.7**	**+0.5**
ALN	**Alexandroupoli**	**79.40 310**		*e*	P	**P**	**07 16 16.4**	**-0.8**
CRVS	**Cervenica-Dubn**	**79.50 319**		*e*	P	**P**	**07 16 17.8**	**+0.3**
CRVS				*e*			07 16 31.7	
CRVS				*e*	PP	PP	07 19 07.7	-12
CRVS				*e*	S	S	07 26 19.1	+3.2
CRVS	**Cervenica-Dubn**	**79.50 319**		*e*	P	**P**	**07 16 17.8**	**+0.3**
CRVS				*e*			07 16 31.7	
CRVS				*e*	S	S	07 26 19.1	+3.2
MGZ	**Maungaku**	**79.52 140**			P	**P**	**07 16 18.0**	**+0.1**
KDZ	**Kurdzhali**	**79.57 311**			P	**P**	**07 16 18.5**	**+0.4**
WVZ	**Waitaha Valley**	**79.60 146**			P	**P**	**07 16 17.0**	**-1.2**
CNZ	**Chateau**	**79.66 140**			P	**P**	**07 16 19.0**	**+0.4**
NB2	**NORSAR Subarra**	**79.66 332**			P	**P**	**07 16 16.7**	**-1.5**
	comp=N,104nm,1.1s,mb5.7,baz=62,slow=5.3							
NB2	**NORSAR Subarra**	**79.66 332**			P	**P**	**07 16 16.7**	**-1.5**
	baz=62,slow=5.6							
NOA	**NORSAR Array B**	**79.66 332**			P	**P**	**07 16 16.9**	**-1.3**
	comp=N,60nm,1.0s,mb5.5,baz=60,slow=5.5,SNR=61							
NOA					LR	LR	07 55 41.2	
	comp=N,37µm,18.5s,MS6.8,baz=60,slow=39							
NGZ	**Ngauruhoe**	**79.67 140**			P	**P**	**07 16 19.0**	**+0.3**
FWVZ	**Far West T-bar**	**79.69 140**			P	**P**	**07 16 18.8**	**0.0**
FWVZ	**Far West T-bar**	**79.69 140**		*e*	P	**P**	**07 16 18.8**	**0.0**
THZ	**Tophouse**	**79.85 144**			P	**P**	**07 16 17.7**	**-1.9**
MLZ	**Mavora Lakes**	**79.94 149**			P	**P**	**07 16 19.0**	**-1.0**
MLZ	**Mavora Lakes**	**79.94 149**		*e*	P	**P**	**07 16 19.0**	**-1.0**
OJC	**Ojcow**	**79.98 320**		*e*	P	**P**	**07 16 19.2**	**-0.9**
OJC				*e*	PcP	PcP	07 16 28.5	+0.6
OJC				*e*	PP	PP	07 19 20.7	-2.8
OJC				*e*	S	S	07 26 17.2	-3.7
OJC				*e*	SS	SS	07 31 26.8	-7.2
OJC					MLR	MLR	07 52 15.5	
	comp=N,23µm,22.3s,MS6.5							
URZ	**Urewera**	**79.99 139**			P	**P**	**07 16 18.9**	**-1.5**
	comp=N,31nm,0.8s,mb5.3,baz=317,slow=3.7,SNR=11							
URZ					LR	LR	07 47 31.6	
	comp=N,7µm,21.6s,MS6.0,baz=135,slow=32							
NIE	**Niedzica**	**79.99 319**		*e*	P	**P**	**07 16 20.7**	**+0.5**
RZN	**Rozhen**	**80.05 311**		*i*	P	**P**	**07 16 20.0**	**-0.6**
DOMB	**Dombas**	**80.08 334**		*e*	P	**P**	**07 16 19.4**	**-0.9**
DOMB					AMb	AMB	07 16 29.4	
	comp=Z,184nm,1.5s,mb5.8							
DOMB	**Dombas**	**80.08 334**		*e*	P	**P**	**07 16 19.4**	**-0.9**
	comp=Z,184nm,1.5s,mb5.8							
RES	**Resolute Bay**	**80.09 9**			P	**P**	**07 16 19.8**	**-0.4**
RES					pmax	pmax		
	comp=Z,52nm,1.1s,mb5.4							
RES	**Resolute Bay**	**80.09 9**	⇑	*e*	P	**P**	**07 16 18.1**	**-2.1**
	comp=Z,160nm,1.4s,mb5.8							
DLBC	**Dease Lake**	**80.10 30**			P	**P**	**07 16 20.6**	**+0.1**
	comp=Z,8.4nm,0.8s,mb4.7,baz=297,slow=6.0,SNR=11							
DLBC	**Dease Lake**	**80.10 30**	⇑	*e*	P	**P**	**07 16 20.5**	**-0.1**
PGB	**Panagyurishte**	**80.11 312**		*i*	P	**P**	**07 16 21.2**	**+0.2**
PGB	**Panagyurishte**	**80.11 312**	⇑	*i*	P	**P**	**07 16 21.2**	**+0.2**
BWZ	**Berwen**	**80.19 147**			P	**P**	**07 16 21.0**	**-0.4**
RPZ	**Rata Peaks**	**80.21 146**			P	**P**	**07 16 20.4**	**-1.0**
	comp=Z,130nm,1.0s,mb5.8,baz=317,slow=1.5,SNR=22							
RPZ	**Rata Peaks**	**80.21 146**			P	**P**	**07 16 20.6**	**-0.9**
RPZ	**Rata Peaks**	**80.21 146**		*e*	P	**P**	**07 16 20.6**	**-0.9**
JMIC	**Jan Mayen**	**80.34 345**		*e*	P	**P**	**07 16 27.5**	**+5.9**
JMIC				*e*	S	S	07 26 29.1	+4.9
JMIC					AMS	AMS	07 56 23.7	
	comp=Z,19µm,16.4s,MS6.5							
OSL	**Oslo**	**80.41 331**		*e*	P	**P**	**07 16 21.2**	**-0.9**
OSL					AMb	AMB	07 16 31.8	
	comp=Z,24nm,1.1s,mb5.0							
OSL	**Oslo**	**80.41 331**		*e*	P	**P**	**07 16 21.2**	**-0.9**
	comp=Z,24nm,1.1s,mb5.0							
MOL	**Molde**	**80.42 335**	⇓	*i*	P	**P**	**07 16 23.9**	**+1.7**
MOL					AMb	AMB	07 16 34.3	
	comp=Z,262nm,1.7s,mb5.9							
MOL	**Molde**	**80.42 335**		*e*	P	**P**	**07 16 23.7**	**+1.5**
	comp=Z,262nm,1.7s,mb5.9							
AXZ	**Alexandra**	**80.44 148**			P	**P**	**07 16 22.3**	**-0.4**
SNZO	**South Karori**	**80.55 142**		*e*	P	**P**	**07 16 19.4**	**-3.9**
	comp=Z,238nm,1.2s,mb6.0							
SNZO					LR	LR		
	comp=Z,6µm,21.0s,MS6.0							
MRZ	**Mangatainoka R**	**80.62 141**			P	**P**	**07 16 22.3**	**-1.4**
BSD	**Bornholm Skovb**	**80.64 326**	⇑	*i*	P	**P**	**07 16 22.6**	**-0.9**
	comp=Z,29nm,1.1s,mb5.1							
BSD				*i*		pP	07 16 30.9	-0.9
BSD				*i*			07 19 32.3	
BSD				*i*	S	S	07 26 37.2	+10
	comp=Z,35µm,18.0s							
BSD	**Bornholm Skovb**	**80.64 326**	⇑	*i*	P	**P**	**07 16 22.6**	**-0.9**
BSD				*i*		pP	07 16 30.9	-0.9
BSD				*i*			07 19 32.3	
BSD				*i*	S	S	07 26 37.2	+10
BSD					pmax	pmax		
	comp=Z,29nm,1.1s,mb5.1							
BSD					MLR	MLR		
	comp=Z,35µm,18.0s,MS6.8							
KHZ	**Kahutara**	**80.64 144**			P	**P**	**07 16 21.7**	**-2.1**
KHZ	**Kahutara**	**80.64 144**		*e*	P	**P**	**07 16 21.7**	**-2.1**
VTS	**Vitosha**	**80.76 312**		*i*	P	**P**	**07 16 25.0**	**+0.6**
VTS	**Vitosha**	**80.76 312**	⇑	*i*	P	**P**	**07 16 25.0**	**+0.6**
MMB	**Musomiste**	**80.77 311**		*i*	P	**P**	**07 16 24.0**	**-0.5**
PSZ	**Piszkesteto**	**80.84 318**		*e*	Pc		07 16 24.8	
PSZ	**Piszkesteto**	**80.84 318**			P	**P**	**07 16 24.6**	**-0.1**
PSZ					pmax	pmax		
	comp=Z,53nm,1.2s,mb5.3							
PSZ	**Piszkesteto**	**80.84 318**	⇑	*i*	P	**P**	**07 16 24.5**	**-0.2**
	comp=Z,84nm,1.2s,mb5.5							
PSZ				*e*	PP	PP	07 19 20.7	-11
RAC	**Raciborz**	**80.98 321**		*e*	P	**P**	**07 16 25.9**	**+0.5**
RAC				*e*	PcP	PcP	07 16 32.7	+0.5
RAC				*e*	S	S	07 26 29.3	-2.0
RAC				*e*	SKS(ac)		07 26 38.5	
RAC					LMN		07 48 00.1	
	comp=Z,25µm,23.2s							
RAC					MLR	MLR	07 52 40.9	
	comp=Z,23µm,21.7s,MS6.5							
RAC					LME		07 52 48.0	
	comp=Z,29µm,21.9s							
BFZ	**Birch Farm**	**81.02 141**			P	**P**	**07 16 24.9**	**-0.9**
BFZ	**Birch Farm**	**81.02 141**		*e*	P	**P**	**07 16 24.9**	**-0.9**
KONO	**Kongsberg**	**81.04 332**			AMS	AMS	07 56 16.9	
	comp=Z,77µm,16.0s,MS7.2							
KONO	**Kongsberg**	**81.04 332**		*e*	P	**P**	**07 16 26.2**	**+0.7**
KONO	**Kongsberg**	**81.04 332**		*e*	P	**P**	**07 16 26.3**	**+0.8**
KONO					LR	LR		
	comp=Z,67µm,21.0s,MS7.0							
SRS	**Serrai**	**81.05 311**		*e*	P	**P**	**07 16 24.8**	**-1.1**
OKC	**Ostrava-Krasne**	**81.11 320**	⇑	*i*	P	**P**	**07 16 26.0**	**-0.1**
OKC				*ex*		x	07 16 32.5	
OKC				*e*	PP	PP	07 19 38.6	+5.1
OKC				*e*	SKS	SKS	07 26 31.0	-15
OKC					L		07 58 20.0	
	comp=Z,18nm,15.5s							
KKB	**Krupnik**	**81.12 312**		*i*	P	**P**	**07 16 26.3**	**0.0**
KKB	**Krupnik**	**81.12 312**	⇑	*i*	P	**P**	**07 16 26.3**	**0.0**
BOLS	**Boljevac**	**81.13 314**	⇑	*i*	P	**P**	**07 16 25.7**	**-0.6**
VYHS	**Vyhne**	**81.26 319**		*i*	P	**P**	**07 16 27.3**	**+0.4**
VYHS				*e*	pP	pP	07 16 33.8	-1.4
VYHS				*e*			07 16 51.2	
VYHS				*e*	PP	PP	07 19 30.3	-4.4
VYHS				*e*	S	S	07 26 30.6	-3.6
VYHS	**Vyhne**	**81.26 319**		*i*	P	**P**	**07 16 27.3**	**+0.4**
VYHS				*e*	pP	pP	07 16 33.8	-1.4
VYHS				*e*			07 16 51.2	
VYHS				*e*	S	S	07 26 30.6	-3.6
VYHS	**Vyhne**	**81.26 319**		*i*	P	**P**	**07 16 27.3**	**+0.4**
VYHS				*e*	pP	pP	07 16 33.8	-1.4
VYHS				*e*			07 16 51.2	
VYHS				*e*	S	S	07 26 30.6	-3.6
SOH	**Sokhos**	**81.33 311**		*e*	P	**P**	**07 16 26.6**	**-0.8**
SVIS	**Svilajnac**	**81.43 314**		*e*	P	**P**	**07 16 28.1**	**+0.2**
PAIG	**Paliouri**	**81.43 310**		*e*	P	**P**	**07 16 27.7**	**-0.3**
SANT	**Santorini**	**81.46 306**		*e*	P	**P**	**07 16 26.7**	**-1.5**
KOLL	**Kolacno**	**81.48 319**		*i*	P	**P**	**07 16 28.6**	**+0.6**
KOLL				*e*	pP	pP	07 16 35.7	-0.7
KOLL				*e*			07 16 41.9	
MORC	**Moravsky Berou**	**81.49 320**		*e*	P	**P**	**07 16 27.5**	**-0.6**
	comp=Z,144nm,1.5s,mb5.7							
KNT	**Kendrikon**	**81.51 311**		*e*	P	**P**	**07 16 27.6**	**-0.8**
AOS	**Alonnisos**	**81.58 309**		*e*	P	**P**	**07 16 28.0**	**-0.8**
COP	**Copenhagen**	**81.63 327**		*i*	P	**P**	**07 16 28.7**	**0.0**
	comp=Z,48nm,1.0s,mb5.4							
COP				*i*			07 19 42.3	
COP				*i*	S	S	07 26 46.1	+8.2
	comp=Z,18µm,18.0s							
COP	**Copenhagen**	**81.63 327**		*e*	P	**P**	**07 16 28.7**	**0.0**
COP				*i*			07 19 42.3	
COP				*i*	S	S	07 26 46.1	+8.2
COP					pmax	pmax		
	comp=Z,48nm,1.0s,mb5.4							
COP					MLR	MLR		
	comp=Z,18µm,18.0s,MS6.5							
COP	**Copenhagen**	**81.63 327**		*e*	P	**P**	**07 16 28.7**	**0.0**
	comp=Z,48nm,1.0s,mb5.4							
COP				*i*			07 19 42.3	
COP				*i*	S	S	07 26 46.1	+8.2
COP					LR	LR		
	comp=Z,18µm,18.0s,MS6.5							
VAY	**Valandovo**	**81.68 311**	⇑	*i*	P	**P**	**07 16 28.7**	**-0.5**
VAY					⇑ *i*	pP	07 16 37.3	-0.3
KSP	**Ksiaz**	**81.76 322**	⇑	*e*	P	**P**	**07 16 29.7**	**+0.3**
	comp=Z,200nm,0.0s							
KSP	**Ksiaz**	**81.76 322**	⇑	*e*	P	**P**	**07 16 29.6**	**+0.2**
KSP				*e*	PP	pP	07 16 38.2	+0.4
KSP				*e*	PP	PP	07 19 34.0	-4.7
KSP				*e*	S	S	07 26 35.0	-4.3
KSP				*e*	SS	SS	07 31 52.0	-8.6
KSP					LR	LR		
	comp=Z,68µm,17.5s,MS7.1							
KRIS	**Kristallenia**	**81.87 305**	⇑	*i*	P	**P**	**07 16 30.1**	**-0.2**
	comp=Z,579nm,1.4s,mb6.3							
KRIS				*e*	PP	PP	07 19 42.3	+2.3
GRUS	**Gruza**	**81.93 314**	⇓	*i*	P	**P**	**07 16 30.1**	**-0.4**
GRG	**Griva**	**81.94 311**		*e*	P	**P**	**07 16 29.6**	**-0.9**
DPC	**Dobruska-Polom**	**81.96 321**	⇑	*i*	P	**P**	**07 16 30.9**	**+0.4**
DPC				*ex*		x	07 16 39.1	
DPC				*e*	PP	PP	07 19 37.2	-3.1
DPC				*e*	SKS	SKS	07 26 41.1	-11
DPC					L		07 57 00.0	
	comp=Z,32nm,16.6s							
UPC	**Upice**	**82.07 322**	⇑	*i*	P	**P**	**07 16 31.1**	**+0.1**
SKO	**Skopje**	**82.20 312**	⇑	*i*	P	**P**	**07 16 32.0**	**+0.1**
SKO				*i*			07 16 34.2	
	comp=Z,0.1nm,0.8s							
SKO	**Skopje**	**82.20 312**	⇑	*i*	P	**P**	**07 16 32.0**	**+0.1**
	comp=Z,85nm,0.8s,mb5.7							
SKO				*i*			07 16 34.2	
LIT	**Litokhoron**	**82.21 310**		*e*	P	**P**	**07 16 30.8**	**-1.2**
DIVS	**Divcibare**	**82.32 315**	⇓	*i*	P	**P**	**07 16 32.1**	**-0.4**
RUE	**Ruedersdorf**	**82.43 324**	⇓	*e*	P	**P**	**07 16 32.8**	**0.0**
ZST	**Bratislava**	**82.43 319**		*e*	P	**P**	**07 16 32.5**	**-0.5**
ZST				*e*			07 19 30.6	
ZST				*e*	S	S	07 26 46.7	+0.5
ZST				*e*	ScS	ScS	07 27 00.4	+0.5
ZST	**Bratislava**	**82.43 319**		*e*	P	**P**	**07 16 32.5**	**-0.5**
ZST				*e*	S	S	07 26 46.7	+0.5
FNA	**Florina**	**82.72 311**		*e*	P	**P**	**07 16 33.2**	**-1.4**
RHK1	**Bakonya**	**82.73 317**	⇑	*e*	P	**P**	**07 16 34.5**	**-0.1**
AGG	**Agios Georgios**	**82.75 309**		*e*	P	**P**	**07 16 33.1**	**-1.7**
MUD	**Monsted U'grnd**	**82.85 329**	⇑	*i*	P	**P**	**07 16 35.6**	**+0.6**
	comp=Z,120nm,1.1s,mb5.8							
MUD				*i*			07 16 51.0	
MUD				*i*	S	S	07 26 51.5	+1.2
	comp=Z,44µm,18.0s							
MUD	**Monsted U'grnd**	**82.85 329**	⇑	*i*	P	**P**	**07 16 35.6**	**+0.6**
MUD				*i*			07 16 51.0	
MUD				*i*	S	S	07 26 51.5	+1.2
MUD					pmax	pmax		
	comp=Z,120nm,1.1s,mb5.8							
MUD					MLR	MLR		
	comp=Z,44µm,18.0s,MS6.9							
VKA	**Vienna**	**82.87 319**	⇑	*i*	P	**P**	**07 16 35.8**	**+0.5**
	comp=Z,2µm,3.5s							
VKA					LR	LR		
	comp=Z,13µm,17.0s,MS6.4							
PVCC	**Panska Ves**	**82.88 322**	⇑	*i*	P	**P**	**07 16 35.6**	**+0.3**
PVCC				*ex*		x	07 16 43.7	
PVCC				*e*	PP	PP	07 19 48.2	+0.5
PVCC				*e*	SKS	SKS	07 26 50.8	-8.0
PVCC					L		07 58 20.0	
	comp=Z,38nm,15.8s							
OHR	**Ohrid**	**82.99 312**	⇑	*i*	P	**P**	**07 16 34.5**	**-1.5**
OHR				*i*		pP	07 16 44.1	-0.3
BRG	**Berggiesshubel**	**83.08 323**		*i*	P	**P**	**07 16 36.5**	**+0.2**
BRG				*i*		pP	07 16 45.3	+0.7
BRG				*e*			07 19 47.0	
BRG				*i*	S	S	07 26 55.0	+2.3
BRG				*i*	PS	PS	07 27 42.0	-6.3
BRG					pmax	pmax		
	comp=Z,129nm,1.6s,mb5.7							
BRG					MLR	MLR		
	comp=N,19µm,15.5s,MS6.8							
BRG					MLR	MLR		
	comp=E,31µm,15.5s,MS6.8							
BRG					MLR	MLR		
	comp=Z,53µm,15.5s,MS7.0							
BRG	**Berggiesshubel**	**83.08 323**		*i*	P	**P**	**07 16 36.5**	**+0.2**
	comp=Z,129nm,1.6s,mb5.7							
BRG				*i*		pP	07 16 45.3	+0.7
BRG				*i*			07 17 02.8	
BRG				*e*	PP	PP	07 19 47.0	-2.2
BRG				*i*	S	S	07 26 55.0	+2.3
BRG				*i*	PS	PS	07 27 42.0	-6.3
BRG				*i*	SS	SS	07 32 10.0	-10
BRG				*e*	PKKP	PKKP	07 34 57.4	+16
BRG				*e*	P'P'		07 43 00.3	
BRG					LR	LR		
	comp=Z,53µm,15.5s,MS7.0							
PRU	**Pruhonice**	**83.14 322**	⇑	*i*	P	**P**	**07 16 36.6**	**0.0**
	comp=Z,120nm,1.4s,mb5.7							
PRU				*ex*		x	07 16 44.7	
PRU				*e*	PP	PP	07 19 54.5	+4.7
PRU				*e*	SKS	SKS	07 26 52.4	-8.2
PRU					L		07 57 30.0	
	comp=Z,26nm,15.0s							
PRU	**Pruhonice**	**83.14 322**	⇑	*i*	P	**P**	**07 16 36.6**	**0.0**
PRU				*e*	pP	pP	07 16 44.7	-0.3
PRU				*e*			07 19 54.5	
PRU				*e*			07 26 52.4	
PRU					pmax	pmax		
	comp=Z,120nm,1.4s,mb5.7							
PRU					MLR	MLR		
	comp=Z,26µm,15.0s,MS6.7							
PRA	**Prague**	**83.17 322**	⇑		P	**P**	**07 16 38.0**	**+1.3**
PRA					L		07 59 00.0	
MEV	**Metsovon**	**83.23 310**		*e*	P	**P**	**07 16 38.4**	**+1.1**
CLL	**Collm**	**83.40 323**	⇑		P	**P**	**07 16 37.6**	**-0.3**
	comp=Z,logA/T=2.0,mb5.8							
CLL				*i*	*SP	sP	07 16 44.2	-4.8
CLL				*i*			07 16 54.5	
CLL				*e*			07 17 59.0	
CLL				*e*	PP	PP	07 19 48.0	-3.8
CLL				*i*			07 20 06.2	
CLL				*e*			07 20 20.0	
CLL				*e*	S	S	07 26 55.0	-0.9
CLL				*e*	PS	PS	07 27 39.0	-13
CLL				*e*	SS	SS	07 33 10.0	+45
CLL				*i*	PKKP	PKKP	07 34 56.8	+16
CLL				*e*			07 35 06.0	
CLL				*e*	PKPPKP		07 43 12.0	
CLL	**Collm**	**83.40 323**	⇑	*i*	P	**P**	**07 16 37.6**	**-0.3**
CLL				*i*		pP	07 16 44.2	-2.1
CLL				*e*	S	S	07 26 55.0	-0.9
CLL					pmax	pmax		
	comp=Z,105nm,1.1s,mb5.8							
CLL					MLR	MLR		
	comp=Z,70µm,16.2s,MS7.1							
CLL	**Collm**	**83.40 323**	⇑	*i*	P	**P**	**07 16 37.6**	**-0.3**
	comp=Z,105nm,1.1s,mb5.8							
CLL				*i*		pP	07 16 44.2	-2.1
CLL				*e*	S	S	07 26 55.0	-0.9
CLL				*i*	PKKP	PKKP	07 34 56.8	+16
CLL					LR	LR		
	comp=Z,70µm,16.2s,MS7.1							
BSEG	**Bad Segeberg**	**83.56 326**		*e*	P	**P**	**07 16 38.7**	**+0.1**
BSEG					pmax	pmax		
	comp=Z,112nm,1.2s,mb5.9							
SCO	**Scoresbysund**	**83.57 348**		*i*	P	**P**	**07 16 38.9**	**+0.6**
	comp=Z,18nm,0.9s,mb5.2							
ARSA	**Arzberg**	**83.80 319**	⇑	*i*	P	**P**	**07 16 40.2**	**+0.2**
	comp=Z,656nm,2.8s,mb6.3							
SUMG	**Summit**	**84.01 354**	⇑	*e*	P	**P**	**07 16 40.4**	**-0.2**
BBB	**Bella Bella**	**84.04 35**			LR	LR	07 51 51.4	
	comp=Z,2µm,20.9s,MS5.5,baz=298,slow=34							
LKD	**Levkas**	**84.07 309**		*e*	P

LJU Ljubljana 84.97 318 *e*P P **07 16 45.7 -0.2**
LJU *e* 07 20 04.3
LJU *e*SKSac 07 27 03.7
LJU *e* 07 27 23.5
LJU *e* 07 28 20.5
LJU *e* 07 39 18.6
KMBO Kilima Mbogo 85.09 267 P **P** **07 16 49.0 +1.7**
comp=Z,39nm,1.0s,mb5.5,baz=50,slow=6.7,SNR=59
KMBO S S 07 27 12.9 -0.7
comp=Z,0.4nm,0.4s,baz=41,slow=19,SNR=2.2
KMBO LR LR 07 55 44.2
comp=Z,10µm,19.0s,MS6.2,baz=56,slow=36
KMBO Kilima Mbogo 85.09 267⇑ *i*P **P** **07 16 48.5 +1.3**
comp=Z,196nm,1.4s,mb6.0
KMBO LR LR
comp=Z,6µm,19.0s,MS6.0
GRA1 Grafenberg Arr 85.18 322 *e*P **P** **07 16 47.4 +0.6**
comp=Z,200nm,1.5s,mb6.0
GRA1 *e*PP PP 07 20 10.9 +4.9
GRA1 *e*S S 07 27 04.2 -9.4
GRA1 LR LR
comp=Z,29µm,18.7s,MS6.7
GRF Grafenberg Arr 85.18 322 *e*P **P** **07 16 47.4 +0.6**
GRF *e* 07 20 10.9
GRF *e*S S 07 27 04.2 -9.4
GRF pmax pmax
comp=Z,200nm,1.5s,mb6.0
KBA Koelnbreinsper 85.20 319⇑ *i*P **P** **07 16 46.8 -0.2**
comp=Z,1µm,5.5s
VOY Vojsko 85.36 318 *e*P **P** **07 16 47.2 -0.7**
NVLJ Novalja 85.43 317⇑ *i*P **P** **07 16 47.5 -0.7**
PTCC Patocco-Chiusa 85.52 319 *e*P **P** **07 16 47.4 -1.2**
GMNA Gemona 85.65 319 *e*P **P** **07 16 48.7 -0.6**
FVI Forni Avoltri 85.77 319 *e*P **P** **07 16 49.2 -0.7**
FUR Furstenfeldbru 85.90 321 *e*P **P** **07 16 50.9 +0.4**
FUR pmax pmax
comp=Z,577nm,2.4s,mb6.4
FUR Furstenfeldbru 85.90 321 *e*P **P** **07 16 50.9 +0.4**
comp=Z,577nm,2.4s,mb6.4
WIT Witteveen 86.01 326 *e*P **P** **07 16 52.2 +1.3**
comp=Z,292nm,0.6s,mb6.7
WATA Walderalm 86.13 320⇑ *i*P **P** **07 16 51.2 -0.5**
comp=Z,90nm,1.5s,mb5.8
WTTA Wattenberg 86.13 320⇑ *i*P **P** **07 16 51.3 -0.4**
comp=Z,523nm,2.5s,mb6.3
RGNG Rignano Grg 86.29 314 *e*P **P** **07 16 52.5 -0.1**
WTSB Winterswijk 86.40 326 *e*P **P** **07 16 52.7 -0.1**
comp=Z,26nm,0.9s,mb5.5
MOTA Moosalm 86.41 320⇓ *i*P **P** **07 16 52.6 -0.4**
comp=Z,95nm,1.8s,mb5.7
SQTA Sankt Quirin 86.41 320⇑ *i*P **P** **07 16 52.8 -0.2**
comp=Z,133nm,1.7s,mb5.9
ORI Oriolo Calabro 86.43 312 *e*P **P** **07 16 54.1 +0.7**
FG2 Serracapriola 86.51 314 *e*P **P** **07 17 02.6 +8.9**
TOD Tromm 86.58 323 *e*P **P** **07 16 53.6 -0.2**
FG5 Orsara di Pugl 86.68 314 *e*P **P** **07 16 54.6 +0.1**
TDS Terranova Siba 86.69 312 *e*P **P** **07 16 55.2 +0.6**
CTI Castel Tesino 86.72 319 *e*P **P** **07 16 54.2 -0.4**
MRLC Muro Lucano 86.77 313 *e*P **P** **07 16 50.9 -4.0**
SLCN Sala Consilina 86.84 313 *e*P **P** **07 16 55.5 +0.1**
SGO Sicignano 86.98 313 *e*P **P** **07 16 54.0 -2.0**
GRI Girifalco 87.01 311 *e*P **P** **07 16 56.8 +0.6**
MGR Morigerati 87.01 312 *e*P **P** **07 16 55.1 -1.1**
CSSN Cassano Irpino 87.04 313 *e*P **P** **07 16 56.0 -0.2**
CING Cingoli 87.06 316 *e*P **P** **07 16 56.4 +0.1**
CII Carovilli 87.12 314 *e*P **P** **07 16 57.6 +0.9**
ABH Alteburg 87.12 324 *e*P **P** **07 16 56.4 0.0**
TERO Teramo 87.15 315 *e*P **P** **07 16 56.0 -0.8**
DAVA Damuels 87.16 321⇑ *i*P **P** **07 16 56.4 -0.3**
comp=Z,1µm,5.8s
ARV Arcevia 87.16 316 *e*P **P** **07 16 57.1 +0.4**
FSSB Fossombrone 87.17 317 *e*P **P** **07 16 56.1 -0.7**
CPI2 Carpinone 87.17 314 *e*P **P** **07 16 57.4 +0.5**
RNI2 Rionero Sannit 87.23 314 *e*P **P** **07 16 58.2 +1.1**
INTR Introdacqua 87.25 315 *e*P **P** **07 16 55.5 -1.7**
RSM Repubblica di 87.27 317 *e*P **P** **07 16 58.3 +1.0**
BRMO Bormio 87.28 320 *e*P **P** **07 16 57.4 +0.2**
SNTG Esanatoglia 87.28 316 *e*P **P** **07 16 58.0 +0.6**
MABI Malga Bissina 87.41 319 *e*P **P** **07 16 57.6 -0.3**
AQU L'Aquila 87.41 315 P **P** **07 16 58.2 +0.2**
AQU L'Aquila 87.41 315 *e*P **P** **07 16 58.7 +0.7**
DAVOX Davos 87.42 320 PP PP 07 20 29.3 +4.2
comp=Z,4.5nm,0.7s,baz=45,slow=17,SNR=2.8
DAVOX S S 07 27 18.1 -17
comp=Z,1.3nm,0.3s,baz=341,slow=18,SNR=5.8
SDI San Donato 87.45 314 *e*P **P** **07 16 57.7 -0.5**
LANF Langenberg 87.46 323 *e*P **P** **07 16 57.7 -0.4**
RUP Ruppelstein 87.48 324 *e*P **P** **07 16 58.3 +0.1**
BFO Black Forest 87.51 322 *e*P **P** **07 16 57.7 -0.6**
HGN Heimansgroeve 87.51 325⇑ *e*P **P** **07 16 57.5 -0.8**
comp=Z,14nm,0.8s,mb5.2
HGN *e*x x 07 17 01.9
HGN *e*PP PP 07 20 29.1 +3.4
HGN *e*SKS SKS 07 26 55.0 -35
HGN *e*S S 07 27 41.2 +5.3
HGN *e*x x 07 28 30.5
HGN *e*SS SS 07 33 29.2 +4.3
PTQR Pietraquaria 87.57 315 *e*P **P** **07 16 59.1 +0.3**
SOI Samo 87.60 310 *e*P **P** **07 16 59.5 +0.4**
CRE Caprese Michel 87.73 317 *e*P **P** **07 17 00.5 +0.9**
PGD Poggio Sodo 87.75 317 *e*P **P** **07 17 00.8 +1.1**
SCLL Scilla 87.76 311 *e*P **P** **07 16 59.9 +0.1**
VMG Vicchio 87.82 317 *e*P **P** **07 17 01.5 +1.5**
MNS Montasola 87.87 315 *e*P **P** **07 16 59.6 -0.6**
CERT Cerreto 87.88 315 *e*P **P** **07 16 59.2 -1.1**
MTTG Motta San Giov 87.89 310 *e*P **P** **07 17 00.8 +0.4**
SEI Scarperia 87.89 317 *e*P **P** **07 17 02.2 +1.9**
FELD Feldberg 87.94 322 *e*P **P** **07 16 59.6 -0.8**
ZCCA Zocca 87.98 318 *e*P **P** **07 17 02.3 +1.6**
FNVD Fontana Vidola 87.98 318 *e*P **P** **07 17 03.4 +2.7**
WLF Walferdange 88.00 324 P **P** **07 17 00.9 +0.3**
WLF pmax pmax
comp=Z,120nm,1.3s,mb6.0
WLF Walferdange 88.00 324⇑ *i*P **P** **07 17 00.5 -0.1**
comp=Z,136nm,1.2s,mb6.1
WLF *e*PP PP 07 20 29.0 -0.6
WLS Welschbruch 88.02 323 *e*P **P** **07 17 00.3 -0.5**
LIBD Limburg 88.02 322 *e*P **P** **07 17 00.8 0.0**
CDF Champ du Feu 88.06 323⇑ *i*P **P** **07 17 00.6 -0.4**
comp=Z,161nm,1.5s,mb5.7
CSNT Castellina Chi 88.22 317 *e*P **P** **07 17 01.0 -0.9**
GSCL Gusciola 88.22 318 *e*P **P** **07 17 02.7 +0.8**
BORG Borgarnes 88.23 345 PFAKE 07 17 10.0 +8.6
BORG LR LR
comp=Z,36µm,19.0s,MS6.8
ECH Echery 88.23 322 *e*P **P** **07 17 01.2 -0.6**
RAR Rarotonga 88.28 114 P **P** **07 17 04.4 +1.7**
comp=Z,16nm,0.9s,mb5.3,baz=343,slow=19,SNR=3.2
RAR LR LR 07 50 16.4
comp=Z,3µm,21.5s,MS5.7,baz=281,slow=31
ERBM Eremo 88.30 318 *e*P **P** **07 17 03.4 +1.2**
BDI Bagni Di Lucca 88.36 318 *e*P **P** **07 17 02.9 +0.4**
SARO Sassorosso 88.42 318 P **P** **07 17 02.3 -0.5**
VALM 88.43 318 P **P** **07 17 02.1 -0.8**
BBS Basel-Blauen 88.44 322 *e*P **P** **07 17 02.2 -0.6**
MOF Molkenrain 88.44 322 *e*P **P** **07 17 02.2 -0.6**
VLC Villacollemand 88.44 318⇓ *e*P **P** **07 17 02.0 -0.9**
TOLF Tolfa 88.46 315 *e*P **P** **07 17 03.5 +0.4**
GIVF Givet 88.47 325⇑ *i*P **P** **07 17 02.5 -0.4**
comp=Z,108nm,1.3s,mb5.6
GRAM 88.47 318 P **P** **07 17 02.7 -0.3**
MAIM 88.50 318 P **P** **07 17 01.9 -1.3**
OCWA Octopus Mounta 88.51 38 *e*P **P** **07 17 01.8 -1.4**
comp=Z,148nm,1.2s,mb6.2
OCWA LR LR
comp=Z,4µm,19.0s,MS5.9
VAI Varese 88.55 320 *e*P **P** **07 17 02.3 -1.1**
BACM 88.58 318 P **P** **07 17 02.8 -0.7**
PII Pisa 88.58 317 *e*P **P** **07 17 02.8 -0.8**
GRFL Gerfalco 88.58 317 *e*P **P** **07 17 03.0 -0.6**
HINF Hinteralfeld 88.62 322⇑ *i*P **P** **07 17 02.8 -0.9**
comp=Z,68nm,1.3s,mb5.5
MNO Monte Soro 88.62 311 *e*P **P** **07 17 04.4 +0.5**
CODM 88.66 318 P **P** **07 17 03.1 -0.8**
BOB Bobbio (Coli) 88.71 319 *e*P **P** **07 17 04.2 0.0**
EDI Edinburgh 88.77 332 *e*P **P** **07 17 02.2 -2.0**
HAU Haudompre 88.80 323⇑ *i*P **P** **07 17 03.8 -0.7**
comp=Z,48nm,1.1s,mb5.5
HAU *e*R
comp=Z,22µm,20.2s
BAIF Baives 88.82 325⇑ *i*P **P** **07 17 04.1 -0.5**
comp=Z,70nm,1.2s,mb5.6
MAON Monte Argentar 88.84 316 *e*P **P** **07 17 01.9 -3.0**

LOMF Lomont 88.89 322 *e*P **P** **07 17 04.3 -0.7**
EAU Auchinoon 88.94 332 *e*P **P** **07 17 04.5 -0.5**
EAU AMB AMB 07 17 27.9
comp=Z,145nm,1.9s,mb6.0
MCGN Macugnaga 88.96 320 *e*P **P** **07 17 05.4 +0.1**
VAE Valguarnera 89.03 310 PP PP 07 20 47.6 +9.4
comp=Z,7.5nm,0.3s,baz=6.3,slow=2.4,SNR=3.8
VAE S S 07 27 36.3 -14
comp=Z,6.1nm,0.4s,baz=253,slow=22,SNR=3.1
VAE LR LR 08 00 14.0
comp=Z,10µm,20.9s,MS6.2,baz=58,slow=38
EAB Aberfoyle 89.09 333 *e*P **P** **07 17 04.2 -1.5**
EAB AMB AMB 07 17 19.8
comp=Z,78nm,1.4s,mb5.8
ESK Eskdalemuir 89.18 332 *e*P **P** **07 17 04.9 -1.2**
ESK AMB AMB 07 17 29.1
comp=Z,92nm,2.1s,mb5.8
ESK Eskdalemuir 89.18 332 P **P** **07 17 07.3 +1.2**
ESK Eskdalemuir 89.18 332 *e*P **P** **07 17 05.4 -0.7**
comp=Z,79nm,1.2s,mb5.9
ESK LR LR
comp=Z,43µm,19.0s,MS6.9
MEZF Maizieres J'vi 89.25 323 *e*P **P** **07 17 06.4 -0.2**
PCP Pian Castagno 89.38 319 P **P** **07 17 06.1 -1.3**
GNW Green Mountain 89.38 38⇑ *i*P **P** **07 17 07.8 +0.5**
GNW *e* pP 07 17 16.6 +0.9
JCW Jim Creek 89.53 37 P **P** **07 17 08.8 +0.8**
RPW Rockport 89.61 36 P **P** **07 17 09.3 +0.9**
LHO Holmfirth 89.72 330 *i* P **P** **07 17 09.7 +1.0**
LHO Holmfirth 89.72 330 *e*P **P** **07 17 07.6 -1.1**
CABF La Chapelle 89.72 321⇑ *i*P **P** **07 17 08.4 -0.5**
LSD Ceresole Reale 89.72 320 P **P** **07 17 09.2 +0.2**
BMW Boistfort Moun 89.75 39 P **P** **07 17 10.5 +1.4**
BMW Boistfort Moun 89.75 39 *e*P **P** **07 17 09.9 +0.9**
BMW *e* pP 07 17 18.4 +0.9
FIN Finale Ligure 89.76 319 *e*P **P** **07 17 08.3 -0.9**
RSP Reno Superiore 89.83 320 P **P** **07 17 08.5 -0.9**
HTW Haystack Looko 89.84 37 P **P** **07 17 10.5 +1.0**
RORO 89.90 319 P **P** **07 17 08.5 -1.3**
ROB Roburent 89.92 319 P **P** **07 17 08.8 -1.1**
LPG La Plagne 89.94 320⇑ *i*P **P** **07 17 10.1 +0.1**
comp=Z,104nm,1.0s,mb5.8
LPL La Plagne 89.94 320⇑ *i*P **P** **07 17 10.0 0.0**
comp=Z,48nm,0.6s,mb5.7
TTW Tolt Reservoir 89.94 37 P **P** **07 17 10.6 +0.6**
BHB Bricherasio 89.99 320 P **P** **07 17 09.5 -0.7**
FENE Fenestrelle 90.01 320 P **P** **07 17 09.0 -1.3**
RMW Rattlesnake Mo 90.01 37 P **P** **07 17 11.9 +1.6**
RMW Rattlesnake Mo 90.01 37 *e*P **P** **07 17 11.4 +1.2**
RMW *e* pP 07 17 19.7 +1.0
MONE Monesi 90.10 319 P **P** **07 17 09.8 -1.0**
IMI Imperia 90.11 319 P **P** **07 17 09.5 -1.3**
BNI Bardonecchia 90.23 320 P **P** **07 17 11.1 -0.2**
BNI Bardonecchia 90.23 320⇑ *i*P **P** **07 17 10.5 -0.8**
BNI *e*PP PP 07 20 43.6 -4.0
ENR Entracque 90.23 319 P **P** **07 17 10.0 -1.3**
RRL Cesana Torines 90.23 320 P **P** **07 17 11.3 -0.1**
PZZ Prazzo 90.27 319 P **P** **07 17 09.8 -1.7**
SAOF Saorge 90.27 319 *e*P **P** **07 17 11.2 -0.4**
AUTN L'Aution 90.35 319 *e*P **P** **07 17 11.8 -0.1**
MBDF Montbardon 90.35 320⇑ *i*P **P** **07 17 11.1 -0.8**
comp=Z,26nm,0.8s,mb5.3
LON Longmire 90.41 38 P **P** **07 17 13.0 +0.9**
LON Longmire 90.41 38⇓ *e*P **P** **07 17 12.0 -0.1**
SBF Sospel 90.41 319⇑ *i*P **P** **07 17 11.6 -0.6**
comp=Z,54nm,0.7s,mb5.7
TOUF Mont Tournerai 90.45 319 *e*P **P** **07 17 12.1 -0.3**
SURF Saint Ours 90.46 319 *e*P **P** **07 17 11.9 -0.5**
AURF Auriere 90.47 319 *e*P **P** **07 17 11.8 -0.6**
NLW Nelson Butte 90.47 36 *e*P **P** **07 17 12.7 +0.3**
GDM Grand'Maison 90.48 320 *e*P **P** **07 17 12.5 0.0**
SHW Mount Saint He 90.48 39 P **P** **07 17 14.9 +2.5**
SHW Mount Saint He 90.48 39 *e*P **P** **07 17 13.3 +0.8**
SHW *e* pP 07 17 22.4 +1.5
MVIF Mont Vial 90.57 319 *e*P **P** **07 17 12.6 -0.3**
COR Corvallis 90.75 40 P **P** **07 17 15.3 +1.6**
COR pmax pmax
comp=Z,160nm,1.4s,mb6.2
COR Corvallis 90.75 40 *e*P **P** **07 17 14.5 +0.8**
comp=Z,147nm,1.3s,mb6.2
COR LR LR
comp=Z,3µm,20.0s,MS5.7
LTY Liberty 90.76 37 P **P** **07 17 14.0 +0.3**
ORIF Oris-en-Rattie 90.77 320⇑ *i*P **P** **07 17 13.7 -0.1**
comp=Z,72nm,1.0s,mb5.7
ORIF *e*R
comp=Z,28µm,19.5s
CALN Calern 90.81 319 *e*P **P** **07 17 13.8 -0.2**
WTV Waterville 90.90 36 P **P** **07 17 15.1 +0.8**
SSF Saint Saulge 90.93 323⇑ *i*P **P** **07 17 13.8 -0.7**
comp=Z,79nm,1.1s,mb5.7
SMF Signal de Mont 90.98 322⇑ *i*P **P** **07 17 14.1 -0.6**
comp=Z,183nm,1.2s,mb6.0
KEBM Edson Butte 91.05 42 *e*P **P** **07 17 15.8 +0.7**
KEBM *e* pP 07 17 24.7 +1.1
FRF La Foret Royal 91.06 319⇑ *i*P **P** **07 17 14.6 -0.6**
comp=Z,28nm,0.8s,mb5.4
AVF Avril sur Loir 91.17 323⇑ *i*P **P** **07 17 15.0 -0.6**
comp=Z,189nm,1.2s,mb6.0
LMR La Mourre 91.27 319⇑ *i*P **P** **07 17 15.9 -0.2**
comp=Z,316nm,1.7s,mb6.1
HYF Humbligny 91.28 323 *e*P **P** **07 17 16.1 0.0**
TAVF Tavernes 91.39 319 *e*P **P** **07 17 16.7 0.0**
HSO Harness Mounta 91.46 41 P **P** **07 17 19.1 +2.1**
HSO Harness Mounta 91.46 41 *e*P **P** **07 17 17.5 +0.5**
VILF Villemus 91.46 319 *e*P **P** **07 17 17.2 +0.2**
SMRF Simiane la Rot 91.48 319⇑ *i*P **P** **07 17 17.1 0.0**
comp=Z,88nm,1.3s,mb5.6
MIR Mirnyy 91.52 191α *i*P **P** **07 17 15.8 -0.9**
MIR *e* 07 20 56.0
MIR *e*S S 07 27 44.0 -28
MIR *e*PPS PPS 07 29 34.0 -27
MIR pmax pmax
comp=Z,180nm,2.0s,mb6.0
MIR pmax pmax
comp=Z,2µm,10.0s
BGF Bois d'Agland 91.59 323⇑ *i*P **P** **07 17 16.9 -0.6**
comp=Z,54nm,1.1s,mb5.5
PUYF Puyloubier 91.65 319 *e*P **P** **07 17 17.9 0.0**
VGB Gordon Butte 91.70 38 P **P** **07 17 19.4 +1.3**
VGB Gordon Butte 91.70 38 *e*P **P** **07 17 18.5 +0.5**
VGB *e* pP 07 17 26.9 +0.4
AGO Saint Agoulin 91.72 322 *e*P **P** **07 17 18.0 -0.2**
DPW Davenport 91.75 36 P **P** **07 17 19.2 +1.0**
DPW Davenport 91.75 36 *e*P **P** **07 17 18.4 +0.2**
DPW *e* pP 07 17 27.2 +0.5
BERF Bertagne 91.78 319 *e*P **P** **07 17 18.6 +0.1**
PRAF Pradon 91.82 320 *e*P **P** **07 17 18.6 -0.1**
GBL Gable Mountain 91.82 37 P **P** **07 17 19.7 +1.1**
GELF Grande-Etoile 91.90 319 *e*P **P** **07 17 18.6 -0.4**
HAWA Hanford 91.90 37⇑ *i*P **P** **07 17 19.5 +0.5**
comp=Z,95nm,1.4s,mb5.9
HAWA LR LR
comp=Z,3µm,20.0s,MS5.8
PYM Petit Puy Mans 91.97 322 *e*P **P** **07 17 19.2 -0.1**
LDF La Druitiere 91.97 326⇑ *i*P **P** **07 17 18.2 -1.0**
comp=Z,64nm,1.2s,mb5.5
HUMO Huli Mountain 92.05 42⇓ *e*P **P** **07 17 20.1 +0.4**
FLN La Foliniere 92.05 326⇑ *i*P **P** **07 17 18.5 -1.1**
FLN *e*R
comp=Z,37µm,17.2s
NEW Newport 92.08 35 P **P** **07 17 20.3 +0.6**
comp=Z,15nm,1.0s,mb5.3,baz=311,slow=3.4,SNR=17
NEW PP PP 07 21 00.9 -1.4
comp=Z,3.0nm,0.8s,baz=318,slow=10,SNR=3.0
NEW Newport 92.08 35 P **P** **07 17 20.4 +0.6**
NEW pmax pmax
comp=Z,47nm,1.1s
NEW Newport 92.08 35⇑ *i*P **P** **07 17 19.8 0.0**
comp=Z,67nm,1.3s,mb5.8
NEW LR LR
comp=Z,4µm,21.0s,MS5.9
TCF Toulx Ste Croi 92.10 323⇑ *i*P **P** **07 17 19.7 -0.2**
comp=Z,242nm,1.5s,mb6.0
LBL Lubilhac 92.13 321 *e*P **P** **07 17 20.3 +0.2**
LASF Ste Croix 92.44 320⇑ *i*P **P** **07 17 21.5 0.0**
comp=Z,121nm,1.6s,mb5.7
GRR Gorron 92.48 326⇑ *i*P **P** **07 17 20.8 -0.8**
comp=Z,68nm,1.4s,mb5.5
YBH Yreka Blue Hor 92.68 42 P **P** **07 17 23.3 +0.6**
comp=Z,12nm,1.1s,mb5.2,baz=49,slow=1.7,SNR=16
YBH PP PP 07 21 05.2 -2.1
comp=Z,5.5nm,1.0s,baz=315,slow=4.3,SNR=3.0
YBH Yreka Blue Hor 92.68 42 P **P** **07 17 23.7 +1.0**

YBH Yreka Blue Hor 92.68 42⇑ *i*P **P** **07 17 23.1 +0.4**
comp=Z,44nm,1.4s,mb5.7
YBH LR LR
comp=Z,3µm,20.0s,MS5.7
LNOR Lincton Mounta 92.91 37 P **P** **07 17 24.8 +1.2**
LNOR Lincton Mounta 92.91 37 *e*P **P** **07 17 22.4 -1.2**
CAF Calviac 92.99 322⇑ *i*P **P** **07 17 24.3 +0.3**
comp=Z,183nm,1.6s,mb6.0
RJF Les Rejaudoux 93.08 322⇑ *i*P **P** **07 17 24.6 +0.2**
comp=Z,182nm,1.1s,mb6.1
RJF *e*R
comp=Z,27µm,18.5s
MFF Saint Martin d 93.21 324⇑ *i*P **P** **07 17 24.8 -0.2**
comp=Z,108nm,1.4s,mb5.8
WALA Waterton Lakes 93.23 33⇑ *i*P **P** **07 17 25.4 +0.4**
comp=Z,87nm,1.3s,mb6.0
WDC Whiskeytown Da 93.43 43 P **P** **07 17 26.1 0.0**
WDC pmax pmax
comp=Z,11nm,1.0s,mb5.2
WDC Whiskeytown Da 93.43 43⇑ *e*P **P** **07 17 25.9 -0.3**
comp=Z,20nm,1.1s,mb5.5
WDC LR LR
comp=Z,3µm,21.0s,MS5.7
SGMF Saint Gilles 93.44 326 *e*P **P** **07 17 24.9 -1.1**
comp=Z,30nm,0.9s,mb5.4
BSMT Bassoo Peak 93.56 34 P **P** **07 17 27.4 +0.9**
FCC Fort Churchill 93.69 18⇑ *e*P **P** **07 17 25.2 -1.7**
comp=Z,25nm,1.0s,mb5.6
LFF La Frestale 93.74 322⇑ *i*P **P** **07 17 27.7 +0.3**
ROSF Rostrenen 93.76 327 *e*P **P** **07 17 26.4 -1.1**
MTLF Montolieu 93.84 320⇑ *i*P **P** **07 17 27.8 -0.2**
comp=Z,19nm,1.0s,mb5.2
EJON La Jonquera 93.96 319 P **P** **07 17 28.2 -0.3**
comp=Z,1.4nm,0.4s,mb4.7
HOPS Hopland 93.96 45 PFAKE 07 17 40.0 +11
HOPS LR LR
comp=Z,4µm,22.0s,MS5.8
CMAH Djebel Manchou 94.30 313 P **P** **07 17 29.0 -1.2**
FFC Flin Flon 94.39 24 P **P** **07 17 29.3 -0.9**
FFC pmax pmax
comp=Z,34nm,1.1s,mb5.7
FFC Flin Flon 94.39 24⇑ *i*P **P** **07 17 28.9 -1.3**
comp=Z,50nm,1.3s,mb5.8
FFC *e*PP PP 07 21 07.2 -13
FFC LR LR
comp=Z,4µm,19.0s,MS5.9
VALF Valcebollere 94.51 320 *e*P **P** **07 17 31.3 +0.2**
CAEH 'Ain El Ouahch 94.60 313 P **P** **07 17 31.0 -0.6**
MSO Missoula 94.66 35⇑ *e*P **P** **07 17 31.2 -0.5**
comp=Z,46nm,1.3s,mb5.8
MSO *e*PP PP 07 21 25.1 +2.8
MSO LR LR
comp=Z,5µm,19.0s,MS6.0
MLS Moulis 94.73 321 *e*P **P** **07 17 31.5 -0.6**
WVOR Wild Horse Val 94.76 40 P **P** **07 17 33.3 +1.1**
WVOR pmax pmax
comp=Z,49nm,1.4s,mb5.7
WVOR Wild Horse Val 94.76 40⇑ *e*P **P** **07 17 32.0 -0.2**
comp=Z,62nm,1.5s,mb5.8
WVOR *e* pP 07 17 41.0 +0.4
WVOR LR LR
comp=Z,4µm,19.0s,MS6.0
OHCM Honcut 94.80 44 *e*P **P** **07 17 32.1 -0.4**
OHCM *e* pP 07 17 41.0 +0.1
CHMT Chamberlain Mo 94.96 34 *e*P **P** **07 17 33.0 0.0**
CHMT *e*PP PP 07 21 29.8 +5.4
EMIR Miracle 95.09 320 P **P** **07 17 32.9 -0.9**
comp=Z,7.2nm,0.9s,mb5.1
EPF Esparros 95.12 321 *e*P **P** **07 17 33.1 -0.8**
CASM Ain Smara 95.13 313 P **P** **07 17 34.0 -0.1**
BEKR Beckwourth 95.21 43⇑ *e*P **P** **07 17 33.8 -0.6**
comp=Z,25nm,1.0s,mb5.6
BEKR *e* pP 07 17 43.0 +0.2
CTEI Djebel Teioual 95.29 313 P **P** **07 17 35.0 +0.2**
DFRA Djebel Bou Aff 95.39 313 P **P** **07 17 36.0 +0.7**
EGRA Graus 95.65 320 P **P** **07 17 36.4 +0.1**
comp=Z,4.1nm,0.5s,mb5.1
EPOB Poblet 95.70 319 P **P** **07 17 36.2 -0.4**
comp=Z,13nm,1.1s,mb5.3
ETSF Etsaut 95.73 321 *e*P **P** **07 17 36.9 +0.2**
HRY Holter Researc 95.83 34 *e*P **P** **07 17 37.0 0.0**
PAHR Pah Rah Range 95.91 43 *e*P **P** **07 17 36.9 -0.7**
comp=Z,18nm,1.1s,mb5.4
WCN Washoe City 95.92 43 P **P** **07 17 38.3 +0.7**
WCN Washoe City 95.92 43 *e*P **P** **07 17 37.7 +0.1**
comp=Z,12nm,1.0s,mb5.3
CKHR Kef el Ahmar 95.92 313 P **P** **07 17 37.0 -0.7**
EALK Alkurruntz 96.07 322 P **P** **07 17 37.7 -0.6**
comp=Z,7.7nm,1.0s,mb5.1
CMB Columbia Colle 96.24 44 P **P** **07 17 38.6 -0.5**
CMB pmax pmax
comp=Z,30nm,1.2s,mb5.6
CMB Columbia Colle 96.24 44⇑ *e*P **P** **07 17 38.6 -0.5**
comp=Z,26nm,1.1s,mb5.6
CMB *e*PP PP 07 21 33.0 -1.9
CMB LR LR
comp=Z,2µm,19.0s,MS5.7
ESAC San Caprasio 96.40 320 P **P** **07 17 40.5 +0.7**
HLID Hailey 96.50 37⇑ *e*P **P** **07 17 40.6 +0.5**
comp=Z,16nm,1.0s,mb5.4
HLID *e* pP 07 17 49.5 +1.0
HLID *e*PP PP 07 21 34.9 -1.9
HLID LR LR
comp=Z,6µm,19.0s,MS6.1
MCMT McKenzie Canyo 96.54 36 *e*P **P** **07 17 40.3 0.0**
MCMT *e* pP 07 17 48.9 +0.2
BOZ Bozeman (W) 96.65 34 *e*P **P** **07 17 41.3 +0.5**
BOZ pmax pmax
comp=Z,15nm,1.3s,mb5.3
BOZ Bozeman (W) 96.65 34⇑ *e*P **P** **07 17 40.5 -0.3**
comp=Z,18nm,1.4s,mb5.3
BOZ *e* pP 07 17 49.2 0.0
BOZ LR LR
comp=Z,5µm,19.0s,MS6.0
BMN Battle Mountai 96.81 41 P **P** **07 17 42.8 +1.2**
BMN pmax pmax
comp=Z,21nm,1.3s,mb5.4
BMN Battle Mountai 96.81 41⇑ *e*P **P** **07 17 42.1 +0.4**
comp=Z,17nm,1.1s,mb5.4
BMN LR LR
comp=Z,2µm,20.0s,MS5.7
EIBI Ibiza 96.92 317 P **P** **07 17 43.7 +1.6**
ABA Alger-Bouzarea 97.13 315 P **P** **07 17 35.0 -8.2**
ELAN Lanestosa 97.15 323 P **P** **07 17 42.4 -0.7**
comp=Z,31nm,1.5s,mb5.5
EMOS Mosqueruela 97.23 319 P **P** **07 17 44.8 +1.3**
QLMT Earthquake Lak 97.30 35 *e*P **P** **07 17 44.1 +0.4**
QLMT *e* pP 07 17 52.2 +0.1
YMR Madison River 97.65 35 *e*P **P** **07 17 45.8 +0.5**
YMR *e* pP 07 17 54.3 +0.6
MTUM Tungsten Hills 97.81 44 *e*P **P** **07 17 46.2 0.0**
ETOR Torete 97.89 320 P **P** **07 17 46.1 -0.4**
comp=Z,14nm,1.2s,mb5.4
EARI Arriondas 98.08 324 P **P** **07 17 45.6 -1.7**
comp=Z,13nm,1.3s,mb5.3
TPH Tonopah 98.24 43 *e*P **P** **07 17 48.9 +0.8**
TPH pmax pmax
comp=Z,9.0nm,0.9s,mb5.3
TPH Tonopah 98.24 43 *e*P **P** **07 17 48.4 +0.3**
comp=Z,8.7nm,0.9s,mb5.3
TPH LR LR
comp=Z,2µm,19.0s,MS5.7
AHID Auburn Hatcher 98.86 36 PFAKE 07 18 00.0 +9.2
AHID LR LR
comp=Z,5µm,19.0s,MS6.1
ETOB Tobarra 98.95 318 P **P** **07 17 52.7 +1.5**
GUD Guadarrama 99.23 321 P **P** **07 17 52.8 +0.3**
comp=Z,3.4nm,0.8s,mb4.9
HWUT Hardware Ranch 99.37 37 *e*P **P** **07 17 52.1 -1.0**
comp=Z,13nm,1.2s,mb5.3
HWUT LR LR
comp=Z,4µm,21.0s,MS5.9
EINC Incio 99.68 324 P **P** **07 17 54.3 -0.2**
BW06 Boulder Array 99.69 36 PFAKE 07 18 10.0 +15
BW06 LR LR
comp=Z,4µm,19.0s,MS6.0
PDAR Pinedale Array 99.69 36 P **P** **07 17 54.8 +0.2**
comp=Z,1.3nm,1.1s,baz=225,slow=2.1,SNR=6.1
PDAR PP PP 07 21 59.9 -1.4
comp=Z,3.9nm,1.2s,baz=315,slow=2.6,SNR=4.2
PDAR PKKPbc 07 34 14.5
comp=Z,1.6nm,1.1s,baz=124,slow=3.3,SNR=8.4
ESDC Sonseca Array 99.75 320 PP PP 07 21 54.1 -7.7
comp=Z,5.3nm,1.0s,baz=48,slow=8.6,SNR=5.4
ESDC LR LR 08 08 28.7

comp=Z,10μm,18.9s,MS6.4,baz=20,slow=39
MAW Mawson 99.78 199 P **P 07 17 53.1 -1.3**
comp=Z,10nm,1.2s,mb5.1,baz=59,slow=13,SNR=4.2
MAW PP PP 07 21 59.7 -1.7
comp=Z,4.9nm,1.1s,baz=38,slow=12,SNR=3.4
MAW PKKPbc 07 34 14.4
comp=Z,9.7nm,1.3s,baz=275,slow=4.9,SNR=3.7
MAW LR LR 08 03 05.2
comp=Z,3μm,18.7s,MS5.8,baz=57,slow=35
ECAL Calabor 99.83 323 P **P 07 17 53.7 -1.5**
comp=Z,7.2nm,1.1s,mb5.0
PBRG Braganca 99.93 323 *e-* 07 22 09.2
ULM Lac du Bonnet 100.22 23 PP PP 07 22 03.6 -1.8
comp=Z,2.3nm,0.7s,baz=346,slow=4.2,SNR=2.1
ULM Lac du Bonnet 100.22 23 *e*Pdif P 07 17 54.8 -2.0
ULM LR LR
comp=Z,8μm,20.0s,MS6.2
PVRL Vila Real 100.82 323 *e-* 07 22 17.6
MVU Marysvale 101.04 40 *e*Pdif P 07 18 01.4 +0.6
comp=Z,14nm,1.7s
MVU LR LR
comp=Z,2μm,20.0s,MS5.7
MSU Marysvale 101.05 40 P P 07 18 02.9 +2.0
MSU Marysvale 101.05 40 *e*Pdif P 07 18 01.7 +0.8
NEN Nelson 101.23 44 *e*Pdif P 07 18 00.1 -1.6
PVIS Viseu 101.30 323 *e-* 07 22 19.1
MTE Manteigas 101.33 323 *e*Pdif P 07 18 04.7 +2.7
MTE *e*PP PP 07 22 12.0 -2.1
MTE *e*SKS SKS 07 28 38.2 -7.8
MTE *e*LQ 07 56 00.1
MTE *e*LR LR 08 00 21.3
comp=Z,15μm,18.7s
PFO Pinyon Flat Ob 101.42 46 PFAKE 07 18 10.0 +7.3
PFO LR LR
comp=Z,5μm,20.0s,MS6.0
RSSD Black Hills 101.55 32 P P 07 18 08.0 +5.1
RSSD pmax pmax
comp=Z,6.0nm,1.1s
RSSD Black Hills 101.55 32 *e*Pdif P 07 18 03.0 +0.1
comp=Z,5.6nm,1.1s
RSSD LR LR
comp=Z,1μm,21.0s,MS5.4
PCBR Castelo Branco 101.67 322 *e-* 07 22 16.2
PTOM Tomar 102.34 323 *e-* 07 22 27.7
SCHQ Schefferville 102.47 5 PP PP 07 22 14.1 -8.2
comp=Z,5.2nm,0.9s,baz=2.9,slow=9.7,SNR=2.8
SCHQ Schefferville 102.47 5 PFAKE 07 18 20.0 +13
SCHQ LR LR
comp=Z,16μm,21.0s,MS6.5
PV10 Paradox Valley 102.98 38 *e*Pdif Pdif 07 18 08.5 -0.9
PV01 Paradox Valley 103.41 38 *e*Pdif Pdif 07 18 11.4 +0.1
WUAZ Wupatki 103.49 42 PFAKE 07 18 20.0 +8.3
WUAZ LR LR
comp=Z,3μm,20.0s,MS5.9
SBA Scott Base 103.72 171 PFAKE 07 18 20.0 +8.2
SBA LR LR
comp=Z,3μm,20.0s,MS5.8
ISCO Idaho Springs 103.89 36 PFAKE 07 18 20.0 +6.6
ISCO LR LR
comp=Z,4μm,19.0s,MS6.0
SDCO Great Sand Dun 105.42 37 PFAKE 07 22 50.0
SDCO LR LR
comp=Z,5μm,20.0s,MS6.0
TUC Tucson 105.95 44 *e*PKPdf 07 22 35.7
TUC LR LR
comp=Z,3μm,19.0s,MS5.8
ANMO Albuquerque 106.84 40 *e*PKPdf 07 22 36.0
ANMO LR LR
comp=Z,5μm,22.0s,MS6.0
BNM Barren Site 107.30 40 *e*PKPdf 07 22 37.2
BNM *e*PP PP 07 22 55.8 -3.3
CBKS Cedar Bluff 107.67 33 PFAKE 07 22 50.0
CBKS LR LR
comp=Z,7μm,20.0s,MS6.2
JFWS Jewell Farm 108.48 24 PFAKE 07 22 50.0
JFWS LR LR
comp=Z,6μm,20.0s,MS6.2
KSU1 Kansas State U 108.95 30 *e*PKPdf 07 22 38.7
TSUM Tsumeb 109.56 257 PKiKP 07 22 42.2
comp=Z,1.8nm,0.4s,baz=127,slow=5.1,SNR=4.8
MNTX Cornudas Mount 109.75 41 *e*PKPdf 07 22 41.8
MNTX *e*PP PP 07 23 13.4 -3.9
MNTX LR LR
comp=Z,4μm,19.0s,MS6.0
GDL2 Guadalupe Moun 110.01 40 *e*PKPdf PKPdf 07 22 42.0 -3.6
SUR Sutherland 110.42 243 PFAKE 07 22 50.0 +3.5
SUR LR LR
comp=Z,5μm,20.0s,MS6.1
PQI Presque Isle 110.44 7 PFAKE 07 22 50.0 +3.8
PQI LR LR
comp=Z,33μm,19.0s,MS6.9
WMOK Wichita Mounta 111.29 35 PKIKP PKPdf 07 22 44.0 -4.1
WMOK Wichita Mounta 111.29 35 *e*PKPdf PKPdf 07 22 43.6 -4.6
WMOK *e*PP PP 07 23 21.5 -6.5
WMOK LR LR
comp=Z,6μm,19.0s,MS6.2
AAM Ann Arbor 111.30 20 PFAKE 07 23 00.0 +12
AAM LR LR
comp=Z,12μm,22.0s,MS6.4
NCB Newcomb 112.13 12 PFAKE 07 23 00.0 +10
NCB LR LR
comp=Z,7μm,22.0s,MS6.2
CCM Cathedral Cave 112.21 27 PKIKP PKPdf 07 22 45.4 -4.4
CCM Cathedral Cave 112.21 27 *e*PKPdf PKPdf 07 22 44.9 -4.9
CCM LR LR
comp=Z,1μm,20.0s,MS5.5
ADH Angra Heroismo 112.29 334 *e-* 07 33 22.5
ADH *e-* 07 40 28.5
ADH *e-* 07 58 46.0
WVL Waterville 112.31 9 PFAKE 07 23 00.0 +10
WVL LR LR
comp=Z,34μm,20.0s,MS6.9
PDA Ponta Delgada 112.40 332 *e-* 07 59 00.0
EMMW East Machias 112.44 7 PFAKE 07 23 00.0 +10
EMMW LR LR
comp=Z,27μm,20.0s,MS6.8
TXAR Lajitas Array 112.46 42 Pdiff Pdif 07 18 53.9 +2.6
comp=Z,0.2nm,0.7s,baz=260,slow=5.5,SNR=2.8
TXAR PKiKP 07 22 47.1
comp=Z,11nm,1.0s,baz=270,slow=1.8,SNR=30
TXAR SKP 07 26 21.1
comp=Z,0.7nm,0.7s,baz=284,slow=3.7,SNR=4.2
TXAR PKKPbc 07 33 40.0
comp=Z,2.6nm,1.1s,baz=162,slow=5.7,SNR=6.6
QSPA South Pole Qui 112.48 180 *e*PKPdf PKPdf 07 22 44.1 -5.3
QSPA *e*PP PP 07 23 26.5 -9.4
QSPA LR LR
comp=Z,29μm,20.0s,MS6.9
ERPA Erie 112.54 17 PFAKE 07 23 00.0 +10
ERPA LR LR
comp=Z,5μm,20.0s,MS6.1
FVM French Village 112.62 27 PKIKP PKPdf 07 22 46.6 -4.1
FVM French Village 112.62 27 *e*PKPdf PKPdf 07 22 46.3 -4.4
BLO Bloomington 113.12 23 PKIKP PKPdf 07 22 47.2 -4.4
BLO Bloomington 113.12 23 *e*PKPdf PKPdf 07 22 47.5 -4.1
SIUC Southern Illin 113.35 26 *e*PKPdf PKPdf 07 22 48.3 -3.9
ACSO Alum Creek Sta 113.39 20 *e*PKPdf PKPdf 07 22 47.8 -4.4
ACSO LR LR
comp=Z,10μm,22.0s,MS6.4
BINY Binghamton 113.45 14 PFAKE 07 23 00.0 +7.8
BINY LR LR
comp=Z,10μm,20.0s,MS6.4
JCT Junction City 113.94 39 PKIKP PKPdf 07 22 49.7 -3.8
JCT Junction City 113.94 39 *e*PKPdf PKPdf 07 22 49.3 -4.2
JCT LR LR
comp=Z,7μm,19.0s,MS6.3
HRV Harvard--Oak R 114.03 11 PFAKE 07 23 00.0 +6.6
HRV LR LR
comp=Z,2μm,19.0s,MS5.7
WCI Wyandotte Cave 114.04 24 PKIKP PKPdf 07 22 48.6 -4.9
WCI Wyandotte Cave 114.04 24 *e*PKPdf PKPdf 07 22 49.1 -4.3
WCI LR LR
comp=Z,6μm,22.0s,MS6.2
MIAR Mount Ida 114.06 31 *e*PKIKP PKPdf 07 22 50.1 -3.5
MIAR Mount Ida 114.06 31 *e*PKPdf PKPdf 07 22 49.7 -3.9
MIAR LR LR
comp=Z,6μm,19.0s,MS6.2
WES Weston 114.19 10 PFAKE 07 23 00.0 +6.3
WES LR LR
comp=Z,10μm,21.0s,MS6.4
UALR University of 114.45 30 *e*PKPdf PKPdf 07 22 49.9 -4.5
SSPA Standing Stone 114.48 16 PFAKE 07 23 00.0 +5.8
SSPA LR LR
comp=Z,7μm,22.0s,MS6.2
HBAR Harrisburg 114.57 28 *e*PKPdf PKPdf 07 22 50.7 -3.9

UTMT University of 114.67 27 *e*PKPdf PKPdf 07 22 50.5 -4.2
MCWV Mont Chateau 114.86 18 PFAKE 07 23 00.0 +5.0
MCWV LR LR
comp=Z,5μm,20.0s,MS6.2
WVT Waverly 115.27 26 PKIKP PKPdf 07 22 51.4 -4.5
WVT Waverly 115.27 26 *e*PKPdf PKPdf 07 22 51.2 -4.7
WVT LR LR
comp=Z,10μm,20.0s,MS6.4
OXF Oxford 116.00 28 PFAKE 07 23 10.0 +13
OXF LR LR
comp=Z,5μm,20.0s,MS6.2
PLAL Pickwick Lake 116.16 27 PFAKE 07 23 10.0 +12
PLAL LR LR
comp=Z,5μm,19.0s,MS6.2
FWV Forest Hill 116.49 20 *e*PKPdf PKPdf 07 22 52.7 -5.5
HKT Hockley 116.56 36 PKPdf PKPdf 07 22 54.5 -4.1
HKT Hockley 116.56 36 PKIKP PKPdf 07 22 55.2 -3.4
HKT Hockley 116.56 36 *e*PKPdf PKPdf 07 22 54.7 -3.9
HKT LR LR
comp=Z,2μm,19.0s,MS5.6
PWV Princeton 116.64 20 *e*PKPdf PKPdf 07 22 54.0 -4.6
SWET Sewanee 116.82 25 *e*PKPdf PKPdf 07 22 53.4 -5.6
ELN Prospectdale 116.83 20 *e*PKPdf PKPdf 07 22 53.5 -5.4
BLA Blacksburg 116.95 20 PFAKE 07 23 10.0 +11
BLA LR LR
comp=Z,5μm,19.0s,MS6.2
CPCT Cooper Cave 117.15 24 *e*PKPdf PKPdf 07 22 54.7 -4.9
MYNC Murphy 117.63 24 PKIKP PKPdf 07 22 56.3 -4.2
MYNC Murphy 117.63 24 *e*PKPdf PKPdf 07 22 56.1 -4.4
MYNC LR LR
comp=Z,8μm,19.0s,MS6.3
MAIT Maitri 117.72 201 *e*P PKPdf 07 22 55.7 -4.1
ZAIG Zacatecas 117.73 46 *i* P PKPdf 07 22 58.6 -2.4
LRAL Lakeview Retre 118.29 27 *e*PKPdf PKPdf 07 22 56.9 -5.0
LRAL LR LR
comp=Z,6μm,20.0s,MS6.2
SFJM Santa Fe 118.95 49 *e*P PKPdf 07 23 00.0 -3.4
DBIC Dimbokro 119.94 293 PKP PKPdf 07 23 01.3 -4.2
comp=Z,32nm,0.8s,baz=36,slow=1.6,SNR=23
DBIC PKKPbc 07 33 10.7
comp=Z,8.0nm,0.9s,baz=210,slow=10,SNR=4.6
DBIC Dimbokro 119.94 293 PKP PKPdf 07 23 01.3 -4.2
DBIC PKKPbc 07 33 10.7
KIC Kosan Boka 120.00 292 *e*PKIKP PKPdf 07 23 01.2 -4.4
comp=Z,351nm,1.0s
TIC Toumodi 120.09 293 *e*PKIKP PKPdf 07 23 01.5 -4.2
comp=Z,213nm,1.0s
LIC Lamto 120.31 292 *e*PKIKP PKPdf 07 23 02.0 -4.2
comp=Z,176nm,1.0s
LIC *e*R
comp=Z,11μm,20.5s
LIC Lamto 120.31 292 *e*PKIKP PKPdf 07 23 01.7 -4.5
comp=Z,232nm,1.0s
LIC Lamto 120.31 292 *e*PKPdf PKPdf 07 23 02.0 -4.2
LIC LR LR
comp=Z,6μm,20.5s,MS6.2
COW Cow Castle Cre 120.37 21 *e*PKPdf PKPdf 07 23 02.1 -3.8
SNAA Sanae 121.90 198 *e*PKPdf PKPdf 07 23 02.5 -5.5
PPM Popocatepetl 122.94 47 *e*P PKPdf 07 23 07.0 -4.1
VNA2 Neumayer--Watz 123.55 198 *e* PP 07 24 48.1 -4.9
VNA2 Neumayer--Watz 123.55 198 ⇓*i*P PKPdf 07 23 08.5 -2.7
VNA2 *e* 07 24 48.1
VNA1 Neumayer--Stat 123.94 198 *e* PP 07 24 49.3 -6.4
VNA1 Neumayer--Stat 123.94 198 ⇓*i*P PKPdf 07 23 09.8 -2.1
VNA1 *e* 07 24 49.3
VNA3 Neumayer Olymp 124.02 197 *e* PP 07 24 48.4 -7.8
VNA3 Neumayer Olymp 124.02 197 ⇓*i*P PKPdf 07 23 08.7 -3.4
VNA3 *e* 07 24 48.4
DWPF Disney 124.88 25 PFAKE 07 23 20.0 +5.2
DWPF LR LR
comp=Z,2μm,20.0s,MS5.7
BBSR BB Station 124.94 6 PFAKE 07 23 20.0 +5.2
BBSR LR LR
comp=Z,20μm,22.0s,MS6.7
RPN Rapa Nui 133.96 106 PFAKE 07 23 40.0 +7.9
RPN LR LR
comp=Z,21μm,21.0s,MS6.8
JTS JuntasAbangare 138.24 41 PKP PKPdf 07 23 35.6 -4.7
comp=Z,14nm,0.8s,baz=334,slow=3.5,SNR=4.1
JTS JuntasAbangare 138.24 41 *e*PKPdf PKPdf 07 23 34.8 -5.5
JTS LR LR
comp=Z,590nm,22.0s,MS5.3
SJG San Juan 138.77 11 PFAKE 07 23 50.0 +8.9
SJG LR LR
comp=Z,4μm,20.0s,MS6.2
TPR Prospect 146.27 4 *e*P PKPbc 07 23 52.8 +1.9
SDV Santo Domingo 146.46 22 PKPdf PKPdf 07 23 50.8 -4.0
SDV SKPbc 07 27 28.1
SDV Santo Domingo 146.46 22 PKPbc PKPbc 07 23 50.8 -0.4
comp=Z,230nm,0.7s,baz=330,slow=1.6,SNR=89
SDV SKPbc 07 27 28.0
comp=Z,62nm,1.0s,baz=314,slow=3.7,SNR=6.1
TRN Trinidad (W) 146.75 5 *e*P PKPbc 07 23 52.0 0.0
PCRV Puerto La Cruz 146.80 11 PKPbc PKPbc 07 23 49.8 -2.2
comp=Z,48nm,0.6s,baz=21,slow=1.3,SNR=35
PCRV SKPbc 07 27 27.3
comp=Z,14nm,0.7s,baz=2.5,slow=4.2,SNR=5.5
USHA Ushuaia 147.05 169 PKPbc PKPdf 07 23 50.8 -3.7
comp=Z,132nm,1.0s,baz=183,slow=2.7,SNR=38
TPP Pointe-a-Pierr 147.08 5 *e*P PKPdf 07 23 54.9 -0.9
ROSC El Rosal 148.57 31 PKPbc PKPdf 07 23 55.1 -3.2
comp=Z,82nm,0.9s,baz=144,slow=2.8,SNR=50
OTAV Otavalo 150.08 43 *e*PKPdf PKPdf 07 23 57.4 -3.2
EFI East Falkland 151.06 181 *e*PKPdf PKPdf 07 23 56.9 -4.0
EFI *e*PKPbc PKPdf 07 24 03.1 +2.1
EFI *e*PKPab PKPab 07 24 11.7 -0.3
EFI LR LR
comp=Z,3μm,19.0s,MS6.1
CAUB Caruaru 153.99 300 *c i*P PKPdf 07 24 03.0 -3.3
CAUB *i* 07 24 11.2
CAUB *i* 07 24 40.9
TRSB Teresina 156.59 317 *c i*P PKPdf 07 24 06.1 -3.6
TRSB *i* 07 24 21.3
TRSB *e* 07 24 34.4
TRSB *i* 07 28 13.6
TRQA Tornquist 164.40 170 PKPdf PKPdf 07 24 13.8 -3.7
TRQA PKPab PKPab 07 25 07.8 -1.8
TRQA Tornquist 164.40 170 *e*PKPdf PKPdf 07 24 13.8 -3.8
TRQA *e*PKPab PKPab 07 25 07.7 -1.9
FCH Farellones 165.18 138 ⇑*i*P PKPdf 07 24 14.7 -3.8
ARE Arequipa 166.31 65 ⇑*i*P PKPdf 07 24 17.9 -2.0
MDZ Mendoza 166.35 140 *e*P PKPdf 07 24 17.1 -2.4
MDZ *e* 07 24 20.1
LPA La Plata 167.81 182 *ce*PKP PKPdf 07 24 19.0 -1.4
BDFB Brasilia 167.84 303 PKP PKPdf 07 24 17.2 -3.6
comp=Z,46nm,0.9s,baz=44,slow=1.5,SNR=49
BDFB PKPab PKPab 07 25 24.8 -0.3
comp=Z,34nm,0.8s,baz=69,slow=3.1,SNR=16
BDFB PP PP 07 29 15.7 +0.9
comp=Z,8.0nm,1.1s,baz=68,slow=4.4,SNR=3.5
LPAZ La Paz 168.94 57 PKP PKPdf 07 24 19.6 -2.0
comp=Z,217nm,1.4s,baz=12,slow=2.4,SNR=140
LVC Limon Verde 170.42 92 PKPdf PKPdf 07 24 20.5 -1.8
LVC Limon Verde 170.42 92 PKP PKPdf 07 24 20.4 -1.8
comp=Z,37nm,1.1s,baz=275,slow=0.8,SNR=40
LVC PKPab PKPab 07 25 38.5 +2.1
comp=Z,14nm,0.9s,baz=271,slow=3.1,SNR=4.5
LVC Limon Verde 170.42 92 *e*PKPdf PKPdf 07 24 20.4 -1.9
LVC *e*PKPab PKPab 07 25 38.1 +1.7
LVC LR LR
comp=Z,3μm,21.0s
CPUP Villa Florida 176.21 197 PKP PKPdf 07 24 20.6 -3.9
comp=Z,31nm,1.0s,baz=125,slow=0.5,SNR=35
CPUP PKPab PKPab 07 25 59.9 -2.1
comp=Z,6.6nm,0.8s,baz=185,slow=4.1,SNR=5.6

*NEIC **19** 07:08:17.0, 34.95S×171.24E, h12km, ML3.8(WEL), After WEL.*
WEL 19 07:08:16.4±0.4, 34.82S×171.05E, h33km, ML4.3/16, 5C-1D, Error ellipse: s-maj=4.2km s-min=2.8km az=0.0, Northwest of New Zealand

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OUZ	**Omahuta**	**2.13**	**102**	PN	Pn	07 08 49.0	-1.5
OUZ				SN	Sn	07 09 14.0	-2.1
OUZ				SN	Sn	07 09 14.1	-2.0
OUZ	**Omahuta**	**2.13**	**102**	*e*P	P	07 08 49.0	-1.3
OUZ				S	S	07 09 14.2	-1.6
WCZ	**Waipu Caves**	**2.92**	**114**	PN	Pn	07 08 59.6	-2.1
WCZ				SN	Sn	07 09 31.9	-4.2
WCZ	**Waipu Caves**	**2.92**	**114**	P	P	07 08 59.6	-1.9
WCZ				S	S	07 09 32.4	-3.5
WTAZ	**Waiatarua**	**3.56**	**127**	⇑PN	Pn	07 09 08.6	-2.2
KAAZ	**Kauri Point**	**3.59**	**125**	⇑PN	Pn	07 09 09.0	-2.2
KAAZ	**Kauri Point**	**3.59**	**125**	P	P	07 09 09.1	-1.9
MTAZ	**Motutapu**	**3.71**	**123**	⇑PN	Pn	07 09 10.7	-2.1
MTAZ	**Motutapu**	**3.71**	**123**	P	P	07 09 10.7	-2.0
OTAZ	**Otara**	**3.80**	**125**	PN	Pn	07 09 11.9	-2.3
OTAZ	**Otara**	**3.80**	**125**	P	P	07 09 12.0	-2.1
KUZ	**Kuaotunu**	**4.26**	**118**	PN	Pn	07 09 18.2	-2.5
KUZ				SN	Sn	07 10 04.3	-5.7
KUZ	**Kuaotunu**	**4.26**	**118**	P	P	07 09 18.3	-2.3
KUZ				S	S	07 10 02.6	-7.3
TOZ	**Tahuroa Road**	**4.63**	**130**	PN	Pn	07 09 23.1	-2.8
TOZ	**Tahuroa Road**	**4.63**	**130**	P	P	07 09 23.1	-2.7
HIZ	**Hauiti**	**4.80**	**141**	⇑PN	Pn	07 09 25.2	-3.2
HIZ				SN	Sn	07 10 16.5	-7.0
PKE	**Pukeiti**	**4.97**	**153**	PN	Pn	07 09 27.5	-3.2
PKE	**Pukeiti**	**4.97**	**153**	P	P	07 09 28.9	-1.7
NWEZ	**Newall Road**	**4.99**	**154**	PN	Pn	07 09 28.1	-3.0
NWEZ	**Newall Road**	**4.99**	**154**	P	P	07 09 28.2	-2.7
NRZ	**Ngariki Road**	**5.07**	**154**	PN	Pn	07 09 29.2	-2.9
NRZ	**Ngariki Road**	**5.07**	**154**	P	P	07 09 29.2	-2.8
NEZ	**North Egmont**	**5.07**	**152**	PN	Pn	07 09 29.9	-2.3
NEZ	**North Egmont**	**5.07**	**152**	P	P	07 09 29.9	-2.2
TGRZ	**Tauranga**	**5.12**	**126**	*e*PN	Pn	07 09 29.8	-3.0
TGRZ	**Tauranga**	**5.12**	**126**	P	P	07 09 30.0	-2.7
DFE	**Dawson Falls**	**5.12**	**152**	*e*PN	Pn	07 09 30.8	-2.1
DFE	**Dawson Falls**	**5.12**	**152**	P	P	07 09 30.8	-2.0
RAEZ	**Rainy Point**	**5.21**	**150**	*e*PN	Pn	07 09 31.5	-2.6
RAEZ	**Rainy Point**	**5.21**	**150**	P	P	07 09 32.1	-1.8
VRZ	**Vera Road**	**5.23**	**146**	PN	Pn	07 09 31.2	-3.2
VRZ	**Vera Road**	**5.23**	**146**	P	P	07 09 31.2	-3.1
MGZ	**Maungaku**	**5.52**	**141**	PN	Pn	07 09 36.0	-2.4
MGZ	**Maungaku**	**5.52**	**141**	P	P	07 09 36.0	-2.3
KATZ	**Kakaramea**	**5.58**	**139**	PN	Pn	07 09 36.8	-2.5
KATZ	**Kakaramea**	**5.58**	**139**	P	P	07 09 36.8	-2.4
WTVZ	**West Tongariro**	**5.63**	**141**	⇓PN	Pn	07 09 37.6	-2.4
KAVZ	**Karewarewa**	**5.64**	**141**	*e*PN	Pn	07 09 37.7	-2.5
KAVZ	**Karewarewa**	**5.64**	**141**	P	P	07 09 37.7	-2.4
CNZ	**Chateau**	**5.67**	**142**	PN	Pn	07 09 38.2	-2.4
CNZ	**Chateau**	**5.67**	**142**	P	P	07 09 38.2	-2.2
WPVZ	**Whakapapa**	**5.67**	**142**	PN	Pn	07 09 38.2	-2.4
NGZ	**Ngauruhoe**	**5.68**	**141**	PN	Pn	07 09 38.3	-2.4
NGZ	**Ngauruhoe**	**5.68**	**141**	P	P	07 09 38.4	-2.1
FWVZ	**Far West T-bar**	**5.71**	**142**	⇑PN	Pn	07 09 38.9	-2.4
FWVZ	**Far West T-bar**	**5.71**	**142**	P	P	07 09 38.9	-2.1
DRZ	**Dome Shelter**	**5.74**	**142**	PN	Pn	07 09 39.3	-2.2
DRZ	**Dome Shelter**	**5.74**	**142**	P	P	07 09 39.5	-1.8
TUVZ	**Tukino**	**5.78**	**142**	PN	Pn	07 09 39.8	-2.3
TUVZ	**Tukino**	**5.78**	**142**	P	P	07 09 40.0	-1.9
WNVZ	**Wahianoa**	**5.79**	**142**	PN	Pn	07 09 40.0	-2.3
WAZ	**Wanganui**	**5.85**	**149**	PN	Pn	07 09 41.0	-2.1
WAZ	**Wanganui**	**5.85**	**149**	P	P	07 09 41.1	-1.8
QRZ	**Quartz Range**	**6.12**	**169**	PN	Pn	07 09 42.5	-4.4
QRZ				SN	Sn	07 10 43.5	-13
QRZ	**Quartz Range**	**6.12**	**169**	*e*P	P	07 09 42.5	-4.2
QRZ				S	S	07 10 43.2	-13
BKZ	**Black Stump Fm**	**6.15**	**136**	*e*PN	Pn	07 09 44.8	-2.7
MWZ	**Matawai**	**6.29**	**126**	PN	Pn	07 09 47.3	-2.0
NNZ	**Nelson**	**6.65**	**165**	PN	Pn	07 09 50.4	-4.0
NNZ				SN	Sn	07 10 59.0	-11
NNZ	**Nelson**	**6.65**	**165**	P	P	07 09 50.4	-3.9
KIW	**Kapiti Island**	**6.77**	**154**	PN	Pn	07 09 54.0	-2.1
KIW	**Kapiti Island**	**6.77**	**154**	P	P	07 09 54.0	-1.9
MRZ	**Mangatainoka R**	**6.85**	**150**	PN	Pn	07 09 56.1	-1.2
DSZ	**Denniston Nort**	**6.95**	**175**	PN	Pn	07 09 54.7	-3.9
DSZ	**Denniston Nort**	**6.95**	**175**	P	P	07 09 54.7	-3.7
TUWZ	**Tuamarina**	**6.99**	**162**	PN	Pn	07 09 56.2	-2.9
CAW	**Cannon Point**	**7.04**	**154**	PN	Pn	07 09 57.9	-2.1
CAW	**Cannon Point**	**7.04**	**154**	P	P	07 09 57.9	-1.8
THZ	**Tophouse**	**7.09**	**169**	PN	Pn	07 09 57.1	-3.6
THZ	**Tophouse**	**7.09**	**169**	*e*P	P	07 09 57.1	-3.3
SNZO	**South Karori**	**7.10**	**157**	PN	Pn	07 09 57.9	-2.8
SNZO	**South Karori**	**7.10**	**157**	P	P	07 09 57.9	-2.6
KHZ	**Kahutara**	**7.84**	**166**	PN	Pn	07 10 08.5	-2.5
KHZ	**Kahutara**	**7.84**	**166**	*e*P	P	07 10 08.5	-2.3
LTZ	**Lake Taylor**	**8.01**	**174**	PN	P	07 10 09.9	-3.4
LTZ	**Lake Taylor**	**8.01**	**174**	*e*P	P	07 10 09.9	-3.3
WVZ	**Waitaha Valley**	**8.25**	**182**	PN	P	07 10 12.2	-4.4
WVZ	**Waitaha Valley**	**8.25**	**182**	*e*P	P	07 10 12.2	-4.4

TAP 19 07:09:56.2, 22.70N×121.35E, h21km±1km, ML3.9, Taiwan region

*NEIC **19** 07:38:38.0, 63.36N×144.95W, h1km, ML3.9(PMR), ML3.7(AEIC), After AEIC.*
NEIC Felt [III] at Mile 78 of Tok Cutoff.
*PGC **19** 07:38:39.6, 63.40N×144.96W, h10km, ML3.7/1, Eastern Alaska.*
*IDC **19** 07:38:40.4±1.9, 63.44N×144.89W, h14km±13km, mb3.4/3, mb1 3.7/6, mb1mx3.6/22, ML3.5/3, Error ellipse: s-maj=15.1km s-min=8.6km az=36.0*
ISC 19 07:38:37.1±0.2, 63.39N±0.02×144.82W±0.04, h1km, n80, σ0.98/99, mb3.4/3, Central Alaska

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DOT	**Dot Lake**	**0.43**	**52**	P	**Pg**	**07 38 48.5**	**+2.9**
PAX	**Paxson**	**0.52**	**215**	P	**Pg**	**07 38 46.8**	**-0.5**
PAX				S	**Sg**	**07 38 52.7**	**-1.5**
DHY	**Denali Highway**	**1.20**	**256**	P	**Pb**	**07 38 59.1**	**-1.2**
TZL	**Tazlina**	**1.38**	**192**	P	**Pb**	**07 39 03.0**	**-0.4**
TZL				S	**Sb**	**07 39 21.4**	**0.0**
HDA	**Harding Lake**	**1.39**	**318**	P	**Pb**	**07 39 03.7**	**+0.1**
BCA3	**Beaver Creek A**	**1.41**	**102**	P	**Pb**	**07 39 04.7**	**+0.8**
BCA3				S	**Sb**	**07 39 25.9**	**+3.6**
TOA	**Tolsona**	**1.43**	**206**	P	**Pn**	**07 39 03.8**	**-0.5**
WANC	**Wrangell North**	**1.44**	**166**	P	**Pn**	**07 39 03.7**	**-0.6**
IL1	**Eielson Array**	**1.66**	**328**	P	**Pn**	**07 39 07.5**	**-0.1**
ILAR	**Eielson Array**	**1.66**	**328**	Pn	**Pn**	**07 39 07.2**	**-0.3**
	101nm,0.3s,baz=156,slow=13,SNR=2184						
ILAR				Pg	**Pg**	**07 39 10.0**	**-0.2**
	101nm,0.3s,baz=148,slow=16,SNR=653						
ILAR				Sn	**Sn**	**07 39 27.8**	**-2.0**
	131nm,0.3s,baz=144,slow=21,SNR=18						
ILAR				Lg		07 39 31.9	
	341nm,0.3s,baz=145,slow=27,SNR=42						
RND	**Reindeer**	**1.82**	**272**	P	**Pn**	**07 39 10.9**	**+1.1**
CCB	**Clear Creek Bu**	**1.82**	**315**	P	**Pn**	**07 39 09.4**	**-0.4**
CCB				S	**Sn**	**07 39 34.2**	**+0.3**
SCM	**Sheep Creek Mo**	**1.95**	**218**	P	**Pn**	**07 39 11.4**	**-0.3**
GLM	**Gilmore Dome**	**1.96**	**326**	P	**Pn**	**07 39 11.6**	**-0.2**
GLM				S	**Sn**	**07 39 39.2**	**+1.8**
COLA	**College**	**2.00**	**320**	P	**Pn**	**07 39 12.2**	**-0.2**
GLB	**Gilahina Butte**	**2.01**	**166**	P	**Pn**	**07 39 12.6**	**0.0**
GLB				S	**Sn**	**07 39 38.1**	**-0.6**
PRP	**Porcupine Dome**	**2.16**	**352**	P	**Pn**	**07 39 16.0**	**+1.4**
PRP				S	**Sn**	**07 39 43.0**	**+0.5**
MDM	**Murphy Dome**	**2.17**	**318**	P	**Pn**	**07 39 14.3**	**-0.5**
BWN	**Browne**	**2.21**	**293**	P	**Pn**	**07 39 14.6**	**-0.8**
BWN				S	**Sn**	**07 39 43.2**	**-0.5**
HUR	**Hurricane**	**2.23**	**261**	P	**Pn**	**07 39 16.5**	**+0.9**
NEA	**Nenana**	**2.23**	**304**	P	**Pn**	**07 39 15.7**	**+0.1**
SML	**Sawmill**	**2.27**	**227**	P	**Pn**	**07 39 16.3**	**0.0**
SML				S	**Sn**	**07 39 43.1**	**-2.3**
BMRM	**Bremner River**	**2.43**	**178**	P	**Pn**	**07 39 18.7**	**+0.1**
TRF	**Thorofare Moun**	**2.46**	**274**	P	**Pn**	**07 39 20.3**	**+1.3**
GHO	**Glory Hole Cre**	**2.50**	**231**	P	**Pn**	**07 39 20.2**	**+0.6**
GHO				S	**Sn**	**07 39 50.3**	**-0.9**
DAWY	**Dawson**	**2.51**	**72**	Pn	**Pn**	**07 39 20.9**	**+1.2**
DAWY				Pg	**Pg**	**07 39 26.0**	**-1.1**
DAWY				Sg	**Sg**	**07 40 00.2**	**-0.3**
DAWY				Trac		07 40 04.6	
	comp=Z,181nm,0.1s						
DAWY	**Dawson**	**2.51**	**72**	P	**Pn**	**07 39 21.2**	**+1.6**
CFI	**College Fiord**	**2.61**	**213**	P	**Pn**	**07 39 21.6**	**+0.4**
KNK	**Knik Glacier**	**2.61**	**222**	P	**Pn**	**07 39 21.9**	**+0.7**
BALM	**Baldy**	**2.63**	**153**	P	**Pn**	**07 39 22.7**	**+1.3**
CUT	**Chulitna**	**2.69**	**251**	P	**Pn**	**07 39 22.3**	**+0.1**
CUT				S	**Sn**	**07 39 56.4**	**+0.5**
PMR	**Palmer**	**2.70

FYU	**Fort Yukon**	**3.19**	**357**	P	**Pn**	**07 39 30.6**	**+1.2**
GOU	**Gould Hall**	**3.21**	**229**	P	**Pn**	**07 39 29.5**	**-0.2**
FIB	**Fire Island**	**3.35**	**231**	*eP*	**Pn**	**07 39 34.3**	**+2.6**
SLKM	**Skilak Lake**	**3.86**	**224**	*eP*	**Pn**	**07 39 38.6**	**-0.3**
SEW	**Seward**	**3.97**	**216**	P	**Pn**	**07 39 40.3**	**-0.1**
SPU	**Mount Spurr**	**4.04**	**240**	*eP*	**Pn**	**07 39 41.9**	**+0.4**
MID	**Middleton Isla**	**4.04**	**191**	P	**Pn**	**07 39 42.3**	**+0.7**
BM3	**Burnt Mountain**	**4.05**	**1**	P	**Pn**	**07 39 42.2**	**+0.6**
CKL	**Chakachamna La**	**4.14**	**241**	P	**Pn**	**07 39 43.8**	**+0.9**
BKG	**Blockade Glaci**	**4.19**	**240**	P	**Pn**	**07 39 44.6**	**+0.9**
PNL	**Peninsula**	**4.55**	**143**	P	**Pn**	**07 39 49.7**	**+1.0**
IM3	**Indian Mountai**	**4.63**	**308**	P	**Pn**	**07 39 49.1**	**-0.8**
IMA	**Indian Mountai**	**4.65**	**309**	*eP*	**Pn**	**07 39 49.8**	**-0.4**
REF	**Redoubt East F**	**4.72**	**236**	P	**Pn**	**07 39 51.5**	**+0.2**
RSO	**Redoubt South**	**4.76**	**235**	*eP*	**Pn**	**07 39 52.3**	**+0.5**
CNPM	**China Poot**	**4.95**	**221**	P	**Pn**	**07 39 53.5**	**-1.0**
ILIM	**Iliamna**	**5.10**	**233**	P	**Pn**	**07 39 56.6**	**+0.1**
TT01	**Tatalina**	**5.11**	**270**	P	**Pn**	**07 39 56.5**	**-0.1**
ILW	**Iliamna West**	**5.18**	**234**	P	**Pn**	**07 39 57.7**	**+0.1**
WHY	**Whitehorse**	**5.42**	**116**	Pn	**Pn**	**07 40 00.1**	**-0.9**
WHY				Sg	**Sg**	**07 41 29.7**	**-7.8**
WHY				Trac		07 41 38.7	
	comp=Z,48nm,0.6s						
WHY	**Whitehorse**	**5.42**	**116**	P	**Pn**	**07 39 59.5**	**-1.5**
OPT	**Oil Point**	**5.50**	**231**	P	**Pn**	**07 40 02.2**	**+0.1**
SVW	**Sparrevohn**	**5.54**	**250**	P	**Pn**	**07 40 02.7**	**-0.1**
AUL	**Augustine Lava**	**5.77**	**230**	P	**Pn**	**07 40 05.9**	**0.0**
AGU	**Augustine-Summ**	**5.79**	**230**	P	**Pn**	**07 40 05.3**	**-0.8**
AUW	**Augustine West**	**5.79**	**230**	P	**Pn**	**07 40 05.9**	**-0.3**
MCNL	**McNeil River**	**6.23**	**232**	P	**Pn**	**07 40 11.6**	**-0.9**
INK	**Inuvik**	**6.76**	**38**	Pn	**Pn**	**07 40 17.7**	**-2.3**
	0.7nm,0.3s,baz=249,slow=18,SNR=51						
INK				Sn	**Sn**	**07 41 35.5**	**-3.1**
	1.6nm,0.3s,baz=190,slow=28,SNR=4.5						
INK				Lg		07 42 16.5	
	1.8nm,0.3s,baz=130,slow=11,SNR=7.7						
INK	**Inuvik**	**6.76**	**38**	Pn	**Pn**	**07 40 18.1**	**-1.8**
INK				Sn	**Sn**	**07 41 34.6**	**-4.0**
INK				Sg	**Sg**	**07 42 10.2**	**-12**
INK				Trac		07 42 33.5	
	comp=Z,39nm,1.1s						
INK	**Inuvik**	**6.76**	**38**	Pn	**Pn**	**07 40 17.7**	**-2.3**
INK				Sn	**Sn**	**07 41 35.5**	**-3.1**
INK				Lg		07 42 16.5	
DLBC	**Dease Lake**	**8.74**	**118**	Pn	**P**	**07 40 47.2**	**-0.4**
	0.3nm,0.3s,baz=329,slow=12,SNR=7.0						
DLBC				Lg		07 43 13.9	
	1.0nm,0.3s,baz=49,slow=23,SNR=6.8						
DLBC	**Dease Lake**	**8.74**	**118**	Pn	**P**	**07 40 46.7**	**-0.9**
DLBC				Sg	**Sg**	**07 43 12.3**	**-16**
DLBC				Trac		07 43 26.0	
	comp=Z,13nm,0.6s						
FNBB	**Fort Nelson**	**11.43**	**103**	P	**P**	**07 41 22.6**	**-1.8**
YKW3	**Yellowknife Ar**	**13.69**	**80**	P	**P**	**07 41 52.6**	**-1.9**
YKA	**Yellowknife Ar**	**13.72**	**80**	Pn	**P**	**07 41 53.0**	**-1.8**
	0.1nm,0.3s,baz=285,slow=13,SNR=10						
YKA	**Yellowknife Ar**	**13.72**	**80**	Pn	**P**	**07 41 53.0**	**-1.8**
RES	**Resolute Bay**	**20.31**	**36**	Trac		07 43 24.0	
	comp=Z,2.0nm,1.1s						
PDAR	**Pinedale Array**	**28.97**	**119**	P	**P**	**07 44 41.3**	**+1.4**
	0.4nm,0.7s,mb3.4,baz=338,slow=8.0,SNR=5.3						
TXAR	**Lajitas Array**	**43.01**	**123**	P	**P**	**07 46 41.0**	**+1.5**
	0.2nm,0.6s,mb3.1,baz=337,slow=6.9,SNR=4.5						
HGN	**Heimansgroeve**	**63.88**	**20**	ex	x	07 48 31.3	
MKAR	**Makanchi Array**	**64.01**	**326**	P	**P**	**07 49 11.2**	**-2.7**
	0.3nm,0.5s,mb3.8,baz=41,slow=7.3,SNR=4.5						

*IDC **19** 07:49:14.1±6.2,32.13S×179.92W,h356km±63km,mb3.4/3, mb1 3.5/4,mb1mx3.4/11,Error ellipse: s-maj=74.2km s-min=30.4km az=17.0*

ISC 19 07:49:12.9±2.2,31.98S±0.08×179.9E±0.3,h350km,n12, σ1§08/11,mb3.5/3,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**6.24**	**192**	*eP*	**P**	**07 50 47.1**	**0.0**
PUZ				S	**S**	**07 52 03.5**	**+2.5**
URZ	**Urewera**	**6.69**	**200**	P	**P**	**07 50 51.4**	**-0.9**
	2.7nm,0.3s,baz=329,slow=2.6,SNR=28						
URZ				S	**S**	**07 52 11.5**	**+1.1**
	5.1nm,0.3s,baz=59,slow=19,SNR=6.1						
URZ	**Urewera**	**6.69**	**200**	*eP*	**P**	**07 50 51.3**	**-1.0**
BFZ	**Birch Farm**	**9.18**	**198**	*eP*	**P**	**07 51 20.5**	**-1.4**
THZ	**Tophouse**	**11.27**	**208**	*eS*	**S**	**07 53 47.5**	**-1.5**
CTA	**Charters Tower**	**32.37**	**283**	P	**P**	**07 55 13.6**	**+1.0**
	2.3nm,0.3s,mb3.8,baz=113,slow=11,SNR=7.1						
ASAR	**Alice Springs**	**41.30**	**270**	P	**P**	**07 56 27.1**	**+0.4**
	1.4nm,0.8s,mb3.2,baz=105,slow=7.3,SNR=8.6						
WB2	**Warramunga Arr**	**42.42**	**275**	*eP*	**P**	**07 56 35.7**	**-0.2**
WRA	**Warramunga Arr**	**42.44**	**275**	P	**P**	**07 56 35.8**	**-0.2**
	1.2nm,0.3s,mb3.5,baz=113,slow=7.8,SNR=20						
FINES	**FINESS Array B**	**145.97**	**338**	PKPbc	PKPbc	08 08 11.8	+1.0
	2.2nm,0.4s,baz=55,slow=4.2,SNR=23						
AKASG	**Malin Array Be**	**151.41**	**319**	PKPbc	PKPdf	08 08 25.7	+7.3
	0.4nm,0.3s,baz=50,slow=2.1,SNR=4.4						
BRTR	**Keskin Array B**	**151.74**	**295**	PKPbc	PKPdf	08 08 26.3	+7.1
	0.7nm,0.6s,baz=102,slow=1.4,SNR=3.8						

*NEIC **19** 07:49:43.0±3.5,30.70S×179.00W,h80km±27km,mb4.5/4, Error ellipse: s-maj=28.7km s-min=13.5km az=225.0*
*IDC **19** 07:49:47.2±8.8,31.12S×178.88W,h128km±80km,mb4.3/4, mb1 4.3/5,mb1mx4.0/11,Error ellipse: s-maj=68.2km s-min=34.0km az=9.0*

ISC 19 07:49:49.3±2.4,31.17S±0.08×179.5W±0.1,h126km±19km, n31,σ1§20/32,mb4.5/7,3C-1D,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**7.13**	**194**	S	**S**	**07 52 56.3**	**+4.1**
URZ	**Urewera**	**7.60**	**201**	P	**P**	**07 51 38.8**	**+0.2**
	2.3nm,0.3s,baz=58,slow=9.5,SNR=3.2						
URZ				S	**S**	**07 53 05.8**	**+2.2**
	1.2nm,0.3s,baz=302,slow=19,SNR=1.9						
URZ	**Urewera**	**7.60**	**201**	P	**P**	**07 51 32.7**	**-5.9**
KNZ	**Kokohu**	**8.16**	**196**	P	**P**	**07 51 39.7**	**-6.5**
BFZ	**Birch Farm**	**10.09**	**199**	*eP*	**P**	**07 52 11.8**	**-0.1**
BFZ				*eS*	**S**	**07 54 02.8**	**-0.7**
MRZ	**Mangatainoka R**	**10.27**	**201**	*eP*	**P**	**07 52 12.0**	**-2.3**
MRZ				S	**S**	**07 54 07.5**	**-0.2**
QRZ	**Quartz Range**	**11.59**	**212**	P	**P**	**07 52 35.7**	**+4.0**
THZ	**Tophouse**	**12.20**	**208**	P	**P**	**07 52 40.9**	**+1.2**
THZ				S	**S**	**07 54 54.2**	**+0.8**
KHZ	**Kahutara**	**12.53**	**204**	P	**P**	**07 52 43.9**	**-0.1**
KHZ				S	**S**	**07 54 58.4**	**-2.7**
LTZ	**Lake Taylor**	**13.31**	**207**	P	**P**	**07 52 53.9**	**-0.3**
LTZ				S	**S**	**07 55 15.7**	**-3.8**
MQZ	**McQueen's Vall**	**13.97**	**204**	S	**S**	**07 55 28.9**	**-5.8**
CTA	**Charters Tower**	**32.66**	**281**	P	**P**	**07 56 12.2**	**+0.7**
	5.0nm,0.7s,mb4.4,baz=106,slow=9.4,SNR=8.4						
CTAO	**Charters Tower**	**32.66**	**281**	*eP*	**P**	**07 56 11.6**	**+0.1**
	4.7nm,0.7s,mb4.4						
STKA	**Stephens Creek**	**33.05**	**258**	P	**P**	**07 56 16.6**	**+1.9**
	10nm,1.0s,mb4.6,baz=91,slow=9.1,SNR=11						
AS12	**Alice Springs**	**41.78**	**268**	*eP*	**P**	**07 57 27.7**	**-0.2**
	3.9nm,0.5s,mb4.4						
ASAR	**Alice Springs**	**41.78**	**268**	P	**P**	**07 57 27.9**	**0.0**
	4.7nm,0.5s,mb4.5,baz=104,slow=7.3,SNR=46						
WB2	**Warramunga Arr**	**42.83**	**274**	*i*P	**P**	**07 57 36.0**	**-0.5**
WRAB	**Tennant Creek**	**42.84**	**274**	*eP*	**P**	**07 57 36.0**	**-0.6**
	20nm,0.7s,mb5.0						
WRA	**Warramunga Arr**	**42.84**	**274**	P	**P**	**07 57 36.1**	**-0.4**
	8.6nm,0.6s,mb4.7,baz=112,slow=7.9,SNR=34						
SBA	**Scott Base**	**47.18**	**184**	*eP*	**P**	**07 58 11.8**	**+1.5**
	3.2nm,1.0s,mb4.0						
QSPA	**South Pole Qui**	**58.94**	**180**	*eP*	**P**	**07 59 36.6**	**-0.5**
QSPA				*eP*		07 59 36.9	
SNAA	**Sanae**	**77.42**	**179**	*eP*	**P**	**08 01 29.4**	**-2.0**
VNA3	**Neumayer Olymp**	**77.62**	**177**	*i*	**P**	**08 01 33.1**	**+0.6**
VNA2	**Neumayer--Watz**	**78.04**	**177**	*i*	**P**	**08 01 35.2**	**+0.4**
VNA1	**Neumayer--Stat**	**78.28**	**177**	*i*	**P**	**08 01 37.2**	**+1.1**
PMR	**Palmer**	**95.66**	**14**	P	**P**	**08 02 57.6**	**-3.5**
	2.2nm,0.9s,mb4.6						
FINES	**FINESS Array B**	**145.40**	**339**	PKPbc	PKPbc	08 09 08.8	-3.2
	2.4nm,0.5s,baz=56,slow=4.4,SNR=15						
NB2	**NORSAR Subarra**	**149.30**	**350**	PKP		08 09 20.2	
	0.9nm,0.5s,baz=13,slow=2.6						
NOA	**NORSAR Array B**	**149.30**	**350**	PKPbc	PKPdf	08 09 20.2	+2.4
	1.2nm,0.6s,baz=17,slow=4.2,SNR=3.6						
NOA	**NORSAR Array B**	**149.30**	**350**	PKPbc	PKPdf	08 09 20.2	+2.4
AKASG	**Malin Array Be**	**151.10**	**321**	PKPbc	PKPdf	08 09 25.0	+4.2
	0.3nm,0.3s,baz=62,slow=1.8,SNR=5.2						

*NEIC **19** 07:50:38.4±1.7,6.30N×72.47W,h198km±14km,mb3.4/1, Error ellipse: s-maj=47.8km s-min=17.3km az=144.0*
*IDC **19** 07:50:39.1±1.4,6.71N×72.90W,h163km±25km,mb3.0/4, mb1 3.5/6,mb1mx3.3/21,MS3.2/2,Ms1 3.2/2,ms1mx3.2/10, Error ellipse: s-maj=80.7km s-min=7.9km az=134.0*

ISC 19 07:50:37.0±1.3,6.4N±0.2×72.5W±0.2,h194km±10km,n10, σ1§19/13,mb3.1/5,Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ROSC	**El Rosal**	**2.34**	**231**	P	**P**	**07 51 20.6**	**+1.4**
	36nm,0.3s,baz=93,slow=23,SNR=216						
ROSC				S	**S**	**07 51 50.4**	**-1.4**
	39nm,0.3s,baz=68,slow=20,SNR=9.1						
ROSC				LR	LR	07 52 23.8	
	comp=Z,500nm,19.7s,baz=68,slow=45						
SDV	**Santo Domingo**	**3.13**	**36**	P	**P**	**07 51 30.0**	**+1.5**
	24nm,0.3s,baz=241,slow=2.0,SNR=42						
SDV				S	**S**	**07 52 07.1**	**-1.2**
	22nm,0.3s,baz=113,slow=23,SNR=14						
SDV				LR	LR	07 52 16.2	
	comp=Z,323nm,18.2s,baz=258,slow=31						
OTAV	**Otavalo**	**8.48**	**225**	*eP*	**P**	**07 52 31.5**	**-6.0**
OTAV				*eSn*	**S**	**07 54 11.4**	**-0.2**
JTS	**JuntasAbangare**	**12.91**	**288**	P	**P**	**07 53 37.0**	**+2.4**
	0.2nm,0.6s						
WMOK	**Wichita Mounta**	**37.22**	**323**	P	**P**	**07 57 29.6**	**-1.8**
	0.7nm,0.7s,mb3.3						
TXAR	**Lajitas Array**	**37.22**	**312**	P	**P**	**07 57 30.9**	**-0.7**
	0.3nm,0.5s,mb3.1,baz=123,slow=9.1,SNR=7.2						
PDAR	**Pinedale Array**	**48.81**	**324**	P	**P**	**07 59 04.2**	**-0.2**
	0.2nm,0.4s,mb2.8,baz=122,slow=8.5,SNR=2.9						
YKA	**Yellowknife Ar**	**63.91**	**340**	P	**P**	**08 00 51.2**	**+0.2**
	0.6nm,0.6s,mb3.4,baz=133,slow=6.7,SNR=25						
YKA	**Yellowknife Ar**	**63.91**	**340**	P	**P**	**08 00 51.2**	**+0.2**
INK	**Inuvik**	**73.67**	**340**	P	**P**	**08 01 51.4**	**+0.6**
	0.3nm,0.7s,mb3.1,baz=112,slow=6.9,SNR=4.8						

*IDC **19** 07:51:13.6±4.2,36.99N×70.64E,mb3.9/6,mb1 4.1/8, mb1mx3.9/21,ML3.8/2,Error ellipse: s-maj=91.3km s-min=26.7km az=160.0*
*NEIC **19** 07:51:19.3±4.5,37.28N×70.50E,h25km±35km,mb4.1/6, Error ellipse: s-maj=19.2km s-min=8.8km az=63.0*
*NNC **19** 07:51:19.9±5.8,37.68N×68.89E,mpv3.4, Error ellipse: s-maj=60.1km s-min=38.4km az=179.0*
*MOS **19** 07:51:20.1±2.4,37.58N×70.24E,h33km,mb4.1/5, Error ellipse: s-maj=31.2km s-min=13.3km az=88.3*

ISC 19 07:51:21.9±1.0,37.36N±0.05×70.7E±0.1,h67km±11km, n40,σ1§22/41,mb3.8/7,3C-1D,Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CEP	**Cherat**	**3.68**	**163**	P	**P**	**07 52 19.8**	**+2.1**
CEP				S	**S**	**07 53 14.0**	**+14**
CHCP	**Chirah Chowk**	**4.27**	**149**	P	**P**	**07 52 31.0**	**+5.0**
THW	**Thamme Wali**	**4.64**	**169**	⇑P	**P**	**07 52 31.6**	**+0.3**
AML	**Almayashu**	**5.31**	**25**	P	**P**	**07 52 40.9**	**+0.5**
	SNR=46						
UCH	**Uchtor**	**5.70**	**30**	P	**P**	**07 52 47.0**	**+1.2**
	SNR=23						
KK31	**Karatay Array**	**5.74**	**359**	⇑Pn	**P**	**07 52 43.6**	**-2.7**
	2.6nm,0.5s,baz=194,slow=15,SNR=31						
KK31				⇓Lg		07 54 17.0	
	36nm,0.8s,baz=194,slow=24,SNR=7.1						
KKAR	**Karatay Array**	**5.74**	**359**	*i* PN	**P**	**07 52 43.9**	**-2.4**
EKS2	**Erkin-Say**	**5.81**	**23**	P	**P**	**07 52 48.9**	**+1.6**
	SNR=14						
AAK	**Ala-Archa**	**6.03**	**28**	P	**P**	**07 52 51.2**	**+0.7**
	SNR=12						
CHMS	**Chumysh**	**6.44**	**28**	P	**P**	**07 52 56.7**	**+0.4**
	SNR=16						
USP	**Ospenovka**	**6.59**	**25**	P	**P**	**07 52 58.2**	**0.0**
	SNR=6.6						
TKM2	**Tokmak 2**	**6.72**	**33**	P	**P**	**07 53 00.8**	**+0.8**
	SNR=30						
MKAR	**Makanchi Array**	**12.78**	**39**	Pn	**P**	**07 54 22.2**	**-0.1**
	0.2nm,0.3s,baz=230,slow=13,SNR=40						
AB31	**Akbulak array**	**14.20**	**330**	⇑P	**P**	**07 54 30.1**	**-11**
	1.1nm,0.6s,baz=153,slow=11,SNR=24						
AB31	**Akbulak array**	**14.20**	**330**	*eP*	**P**	**07 54 32.3**	**-8.5**
KOLN	**Koldanda**	**14.50**	**128**	*eP*	**P**	**07 54 45.0**	**+0.1**
	7.5nm,0.4s						
GKN	**Gorkha**	**15.01**	**124**	*eP*	**P**	**07 54 50.3**	**-1.2**
	16nm,0.6s						
KKN	**Kakani**	**15.58**	**124**	*eP*	**P**	**07 54 57.7**	**-1.0**
	14nm,0.6s						
DMN	**Daman**	**15.58**	**124**	*eP*	**P**	**07 54 57.7**	**-1.1**
	16nm,0.8s						
ZRNK	**Zerenda**	**15.63**	**356**	*e*Pn	**P**	**07 54 57.8**	**-1.4**
BRVK	**Borovoye**	**15.70**	**359**	*eP*	**P**	**07 54 52.9**	**-7.2**
PKI	**Pulchoki**	**15.81**	**124**	*eP*	**P**	**07 55 00.8**	**-0.8**
	9.3nm,0.5s						
ZAL	**Zalesovo**	**19.24**	**26**	P	**P**	**07 55 42.1**	**-1.1**
ZAL				pmax	pmax		
	comp=Z,1.0nm,0.3s						
ARU	**Arti**	**20.73**	**341**	*eP*	**P**	**07 55 57.6**	**-1.3**
BRTR	**Keskin Array B**	**28.92**	**286**	P	**P**	**07 57 15.9**	**-0.7**
	comp=Z,0.3nm,0.4s,mb3.3,baz=112,slow=7.8,SNR=4.0						
BOD	**Bodaibo**	**34.86**	**40**	*eP*	**P**	**07 58 07.4**	**-0.9**
FINES	**FINESS Array B**	**36.62**	**326**	P	**P**	**07 58 23.8**	**+0.7**
	comp=Z,1.1nm,0.8s,mb3.8,baz=140,slow=8.5,SNR=3.4						
FINES	**FINESS Array B**	**36.62**	**326**	P	**P**	**07 58 23.8**	**+0.7**
FINES				pmax	pmax		
	comp=Z,1.0nm,0.8s						
ARCES	**ARCESS Array B**	**40.24**	**337**	P	**P**	**07 58 55.5**	**+2.3**
	comp=Z,3.4nm,1.1s,mb4.1,baz=97,slow=7.3,SNR=3.6						
ARCES	**ARCESS Array B**	**40.24**	**337**	P	**P**	**07 58 55.5**	**+2.3**
ARCES				pmax	pmax		
	comp=Z,3.0nm,1.1s						
NOA	**NORSAR Array B**	**43.53**	**323**	P	**P**	**07 59 19.4**	**-0.7**
	comp=Z,1.2nm,0.9s,mb3.6,baz=96,slow=8.2,SNR=3.5						
NOA	**NORSAR Array B**	**43.53**	**323**	P	**P**	**07 59 19.4**	**-0.7**
NOA				pmax	pmax		
	comp=Z,1.0nm,0.9s						
NOA	**NORSAR Array B**	**43.53**	**323**	P	**P**	**07 59 19.4**	**-0.7**
INK	**Inuvik**	**73.10**	**9**	P	**P**	**08 02 47.7**	**+1.7**
	comp=Z,1.0nm,0.7s,mb3.7,baz=347,slow=6.3,SNR=8.0						
INK	**Inuvik**	**73.10**	**9**	P	**P**	**08 02 47.7**	**+1.7**
INK				pmax	pmax		
	comp=Z,1.0nm,0.7s						
INK	**Inuvik**	**73.10**	**9**	*eP*	**P**	**08 02 47.3**	**+1.3**
	comp=Z,1.3nm,0.7s,mb3.9						
COLA	**College**	**73.73**	**16**	*eP*	**P**	**08 02 51.3**	**+1.5**
	comp=Z,2.1nm,0.7s,mb4.0						
YKA	**Yellowknife Ar**	**80.40**	**2**	P	**P**	**08 03 28.2**	**+1.2**
	comp=Z,0.5nm,0.5s,mb3.6,baz=351,slow=5.4,SNR=19						
YKA	**Yellowknife Ar**	**80.40**	**2**	P	**P**	**08 03 28.2**	**+1.2**
YKA				pmax	pmax		
	comp=Z,1.0nm,0.5s						

*TAP **19** 07:53:52.7,22.89N×121.21E,h3km,ML4.2*
*JMA **19** 07:53:53.6±0.5,22.73N×121.56E,h104km,M3.8*

ISC 19 07:53:52.5±2.6,22.7N±0.2×121.7E±0.2,h3km,n6, σ0§58/10,Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**2.10**	**35**	P	**Pn**	**07 54 29.2**	**+0.2**
YOJ				S	**Sn**	**07 54 55.6**	**-0.4**
HATJ	**Hateruma jima**	**2.34**	**56**	S	**Sn**	**07 55 01.8**	**-0.4**
IRIF	**Iriomote-Funau**	**2.46**	**49**	P	**Pn**	**07 54 34.5**	**+0.4**
IRIF				S	**Sn**	**07 55 05.8**	**+0.8**
JKRS	**Kuro-shima**	**2.60**	**55**	P	**Pn**	**07 54 35.9**	**-0.3**
JKRS				S	**Sn**	**07 55 09.7**	**+1.0**
JIJ	**Ishigaki jima**	**2.77**	**54**	P	**Pn**	**07 54 38.3**	**-0.3**
JIJ				S	**Sn**	**07 55 12.0**	**-1.1**
JTJ	**Tarama**	**3.35**	**55**	S	**Sn**	**07 55 27.8**	**+0.1**

IDC 19 07:56:35.0±1.7,8.85S×124.05E,mb3.6/1,mb1 4.0/4, mb1mx3.8/14,ML3.7/3,Error ellipse: s-maj=128.0km s-min=26.6km az=64.0,Timor region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**9.33**	**171**	*eP*	P	07 58 50.8	-3.0
	2.1nm,0.2s						
FITZ				*eS*	Sn	08 00 23.3	-17

FITZ	**Fitzroy Crossi**	**9.33**	**171**	Pn	P	07 58 50.8	-3.0
	1.4nm,0.3s,baz=8.6,slow=8.7,SNR=41						
FITZ				Sn	Sn	08 00 23.4	-17
	4.0nm,0.3s,baz=173,slow=8.7,SNR=18						
WRA	**Warramunga Arr**	**14.86**	**139**	Pn	P	08 00 05.8	-2.6
	0.3nm,0.3s,baz=320,slow=13,SNR=5.3						
WRA				Sn	S	08 02 37.3	-17
	1.1nm,0.3s,baz=288,slow=26,SNR=8.7						
WB2	**Warramunga Arr**	**14.87**	**139**	*eP*	P	08 00 07.5	-1.0
WB2				*e*		08 02 36.5	
ASAR	**Alice Springs**	**17.50**	**149**	P	P	08 00 41.1	-1.1
	0.2nm,0.3s,baz=321,slow=11,SNR=22						
ASAR				S	S	08 03 42.3	-14
	0.4nm,0.3s,baz=315,slow=21,SNR=15						
MKAR	**Makanchi Array**	**66.70**	**330**	P	P	08 07 27.9	-2.1
	0.4nm,0.5s,baz=136,slow=5.3,SNR=6.2						

*IDC **19** 08:05:16.8±1.6,3.06S×130.21E,mb3.8/4,mb1 4.0/6, mb1mx3.8/18,ML3.6/2,Error ellipse: s-maj=65.9km s-min=24.1km az=65.0*
*NEIC **19** 08:05:23.7±1.1,3.12S×130.39E,h50km,mb4.0/2,Error ellipse: s-maj=27.1km s-min=15.9km az=67.0*

ISC 19 08:05:21.7±1.3,3.1S±0.1×130.3E±0.2,h50km,n11, σ0§89/11,mb3.7/4,1D,Seram

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**15.60**	**197**	Pn	**P**	**08 09 00.1**	**+0.2**
	0.2nm,0.3s,baz=21,slow=7.0,SNR=5.4						
WRAB	**Tennant Creek**	**17.18**	**167**	*eP*	**P**	**08 09 19.8**	**-0.1**
	17nm,1.1s						
WRA	**Warramunga Arr**	**17.18**	**167**	P	**P**	**08 09 18.1**	**-1.8**
	0.3nm,0.3s,baz=345,slow=13,SNR=6.4						
WB2	**Warramunga Arr**	**17.19**	**167**	*eP*	**P**	**08 09 19.7**	**-0.2**
AS12	**Alice Springs**	**20.73**	**171**	*i*P	**P**	**08 10 01.6**	**+1.1**
	6.5nm,0.6s						
ASAR	**Alice Springs**	**20.73**	**171**	P	**P**	**08 10 01.4**	**+0.9**
	4.4nm,0.5s,baz=346,slow=9.7,SNR=58						
CTA	**Charters Tower**	**22.94**	**139**	P	**P**	**08 10 23.4**	**+0.9**
	1.4nm,0.7s,mb3.5,baz=239,slow=5.9,SNR=2.5						
CTAO	**Charters Tower**	**22.94**	**139**	P	**P**	**08 10 23.5**	**+0.9**
CTAO				*e*		08 10 33.9	
STKA	**Stephens Creek**	**30.52**	**161**	P	**P**	**08 11 32.0**	**-0.5**
	1.0nm,0.4s,mb4.0,baz=345,slow=7.1,SNR=4.6						
MKAR	**Makanchi Array**	**65.19**	**326**	P	**P**	**08 15 59.4**	**-0.7**
	0.2nm,0.4s,mb3.5,baz=114,slow=7.7,SNR=4.6						
MAW	**Mawson**	**78.68**	**201**	P	**P**	**08 17 21.1**	**+1.2**
	1.0nm,0.7s,mb3.9						

*NEIC **19** 08:13:56.5±0.4, 12.32S×166.66E,h10km,mb5.0/18, MS5.0/15,Error ellipse: s-maj=13.5km s-min=9.5km az=106.0*
*SYO **19** 08:13:56.4, 12.32S×166.66E,h10km,MB5.0,MS5.0*
*BJI **19** 08:13:57.8, 11.86S×166.41E,h5km,mB5.4,mb5.0,Ms4.8, Msz5.2*
*IDC **19** 08:14:06.9±9.2, 12.50S×166.38E,h86km±80km,mb4.1/12, mb1 4.2/12,mb1mx4.2/15,MS4.4/1,Ms1 4.4/1, ms1mx3.8/23,Error ellipse: s-maj=28.4km s-min=25.4km az=63.0*

ISC 19 08:14:04.8±2.1,12.58S±0.08×166.32E±0.10,h75km±19km, n85,σ1§00/56,mb4.8/36,4C-3D,Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**5.39**	**160**	*i* P	**P**	**08 15 25.4**	**+1.1**
BKM				S	**S**	**08 16 34.6**	**+9.0**
NOUC	**Port Laguerre**	**9.47**	**180**	*eP*	**P**	**08 16 19.5**	**-0.9**
NOUC	**Port Laguerre**	**9.47**	**180**	*eS*	**S**	**08 18 01.6**	**-4.5**
NOUC	**Port Laguerre**	**9.47**	**180**	*eP*	**P**	**08 16 19.5**	**-0.9**
NOUC				*eS*	**S**	**08 18 01.6**	**-4.5**
CTA	**Charters Tower**	**20.64**	**246**	*eP*	**P**	**08 18 42.1**	**+1.6**
	11nm,1.0s						
CTA	**Charters Tower**	**20.64**	**246**	P	**P**	**08 18 40.6**	**+0.1**
	8.4nm,1.1s,baz=73,slow=13,SNR=7.3						
CTAO	**Charters Tower**	**20.64**	**246**	*eP*	**P**	**08 18 41.9**	**+1.4**
	23nm,1.1s						
CTAO				LR	LR		
	comp=Z,861nm,21.0s						
STKA	**Stephens Creek**	**29.75**	**226**

	comp=Z,2.7nm,0.6s,mb4.2,baz=180,slow=2.5,SNR=3.9								
GTA	**Gaotai**	**80.52**	**314**	*e*P		**P**		**08 26 12.3**	**+1.8**
GTA				AP		pP		08 26 19.9	-11
GTA				XP		sP		08 26 23.9	-15
GTA				AMB		AMB			
	comp=Z,18nm,1.0s,mb4.9								
PMR	**Palmer**	**81.80**	**20**	PFAKE				08 26 20.0	+3.3
PMR				LR		LR			
	comp=Z,568nm,19.0s								
MAW	**Mawson**	**83.52**	**202**	P		**P**		**08 26 25.7**	**+0.4**
	comp=Z,4.4nm,0.7s,mb4.4,baz=51,slow=1.4,SNR=14								
MAW	**Mawson**	**83.52**	**202**	*e*P		**P**		**08 26 26.0**	**+0.7**
	comp=Z,6.7nm,0.8s,mb4.5								
LSA	**Lhasa**	**83.64**	**302**	*e*P		**P**		**08 26 28.7**	**+1.9**
	comp=Z,3.3nm,0.5s,mb4.4								
YBH	**Yreka Blue Hor**	**84.56**	**45**	P		**P**		**08 26 31.9**	**+0.8**
	comp=Z,1.0nm,0.9s,mb3.7,baz=94,slow=12,SNR=2.3								
ILAR	**Eielson Array**	**84.78**	**18**	P		**P**		**08 26 29.1**	**-2.6**
	comp=Z,0.7nm,0.7s,mb3.7,baz=239,slow=4.9,SNR=15								
PKI	**Pulchoki**	**87.86**	**299**	*e*P		**P**		**08 26 48.0**	**+0.4**
	comp=Z,38nm,1.0s,mb5.4								
KKN	**Kakani**	**88.03**	**299**	*e*P		**P**		**08 26 49.0**	**+0.6**
	comp=Z,28nm,0.9s,mb5.3								
DMN	**Daman**	**88.14**	**299**	*e*P		**P**		**08 26 49.5**	**+0.6**
	comp=Z,54nm,0.9s,mb5.6								
GKN	**Gorkha**	**88.64**	**299**	*e*P		**P**		**08 26 51.3**	**0.0**
	comp=Z,43nm,0.9s,mb5.5								
KOLN	**Koldanda**	**89.47**	**298**	*e*P		**P**		**08 26 55.1**	**-0.1**
	comp=Z,33nm,1.0s,mb5.3								
SYO	**Syowa Base**	**90.49**	**197**	⇑P		**P**		**08 26 56.6**	**-2.4**
SYO	**Syowa Base**	**90.49**	**197**	⇑PcP		PcP		08 27 00.9	+0.6
SYO	**Syowa Base**	**90.49**	**197**	⇑pP		pP		08 27 25.2	+5.3
WMQ	**Urumqi**	**90.57**	**315**	*e*P		**P**		**08 27 00.6**	**+0.6**
WMQ				PP		PP		08 30 38.8	+0.9
WMQ				AMB		AMB			
	comp=Z,52nm,8.2s								
WMQ				LR		LR			
	comp=N,85nm,21.6s								
WMQ				LR		LR			
	comp=E,97nm,21.7s								
HLID	**Hailey**	**90.94**	**46**	PFAKE				08 27 10.0	+8.3
HLID				LR		LR			
	comp=Z,978nm,20.0s								
HWUT	**Hardware Ranch**	**92.45**	**48**	PFAKE				08 27 20.0	+11
HWUT				LR		LR			
	comp=Z,935nm,20.0s								
ANMO	**Albuquerque**	**94.85**	**55**	PFAKE				08 27 30.0	+10
ANMO				LR		LR			
	comp=Z,1μm,20.0s								
MKAR	**Makanchi Array**	**95.02**	**317**	P		**P**		**08 27 20.6**	**+0.3**
	comp=Z,11nm,0.7s,mb5.4,baz=100,slow=6.3,SNR=98								
ZAL	**Zalesovo**	**95.13**	**324**	P		**P**		**08 27 20.3**	**-0.3**
	comp=Z,7.1nm,0.3s,mb5.6,baz=314,slow=8.3,SNR=4.2								
SNAA	**Sanae**	**95.63**	**183**	*e*P		**P**		**08 27 21.6**	**-0.9**
YKA	**Yellowknife Ar**	**96.07**	**27**	P		**P**		**08 27 25.5**	**+0.8**
	comp=Z,0.1nm,0.4s,mb3.6,baz=252,slow=2.0,SNR=3.7								
WMOK	**Wichita Mounta**	**101.03**	**57**	PFAKE				08 28 00.0	+12
WMOK				LR		LR			
	comp=Z,1μm,20.0s								
BVAR	**Borovoye Array**	**103.50**	**322**	Pdiff		Pdif		08 27 56.7	-1.7
	comp=Z,2.5nm,1.1s,baz=150,slow=21,SNR=4.1								
ARU	**Arti**	**110.20**	**326**	PFAKE				08 32 40.0	+12
ARU				LR		LR			
	comp=Z,369nm,20.0s								
LVC	**Limon Verde**	**115.58**	**123**	PFAKE				08 32 50.0	+11
LVC				LR		LR			
	comp=Z,2μm,19.0s								
ARCES	**ARCESS Array B**	**117.95**	**345**	PKP		PKPdf		08 32 41.7	-0.7
	comp=Z,7nm,0.8s,baz=72,slow=3.8,SNR=6.5								
ARCES	**ARCESS Array B**	**117.95**	**345**	PKP		PKPdf		08 32 41.7	-0.7
KIV	**Kislovodsk**	**122.70**	**314**	PFAKE				08 33 00.0	+7.8
KIV				LR		LR			
	comp=Z,389nm,19.0s								
FINES	**FINESS Array B**	**123.40**	**338**	PKP		PKPdf		08 32 52.4	-0.7
	comp=Z,0.9nm,0.8s,baz=148,slow=3.8,SNR=3.8								
AKASG	**Malin Array Be**	**128.45**	**326**	PKP		PKPdf		08 33 02.4	-0.7
	comp=Z,0.3nm,0.3s,baz=48,slow=3.8,SNR=4.3								
GRR	**Gorron**	**142.74**	**346**	*e*PKP1		PKPdf		08 33 29.9	+0.5
MBDF	**Montbardon**	**143.50**	**335**	*e*PKP1		PKPbc		08 33 30.7	+1.2
ORIF	**Oris-en-Rattie**	**143.70**	**336**	*e*PKP1		PKPbc		08 33 30.3	+0.3
	comp=Z,6.5nm,0.7s								
TCF	**Toulx Ste Croi**	**143.81**	**341**	*e*PKP1		PKPbc		08 33 31.7	+1.4
SBF	**Sospel**	**143.92**	**334**	*e*PKP1		PKPbc		08 33 30.3	-0.5
	comp=Z,19nm,0.7s								
VIVF	**Saint-Julien-l**	**144.21**	**337**	*e*PKP1		PKPbc		08 33 31.1	-0.5
MFF	**Saint Martin d**	**144.22**	**344**	*e*PKP1		PKPbc		08 33 32.2	+0.7
	comp=Z,6.6nm,0.5s								
FRF	**La Foret Royal**	**144.50**	**334**	*e*PKP1		PKPbc		08 33 32.4	0.0
	comp=Z,9.5nm,0.5s								
SMRF	**Simiane la Rot**	**144.60**	**336**	*e*PKP1		PKPbc		08 33 33.4	+0.7
	comp=Z,9.5nm,0.8s								
LMR	**La Mourre**	**144.75**	**334**	*e*PKP1		PKPbc		08 33 33.3	+0.2
RJF	**Les Rejaudoux**	**144.91**	**341**	*e*PKP1		PKPbc		08 33 33.9	+0.4
CAF	**Calviac**	**145.07**	**340**	*e*PKP1		PKPbc		08 33 34.8	+0.9
LASF	**Ste Croix**	**145.18**	**338**	*e*PKP1		PKPbc		08 33 35.2	+1.0
	comp=Z,12nm,0.7s								

*NEIC **19** 08:14:53.1±4.0,20.05S×177.78W,h568km±49km,mb4.3/2, Error ellipse: s-maj=26.0km s-min=16.8km az=204.0*
*IDC **19** 08:14:53.6±2.9,20.10S×177.74W,h576km±35km,mb3.2/9, mb1 3.4/10,mb1mx3.3/15,Error ellipse: s-maj=31.4km s-min=13.7km az=157.0*

ISC 19 08:14:51.2±3.1,20.1S±0.2×177.8W±0.1,h557km±41km, n17,σ0°67/15,mb3.8/10,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**18.67**	**193**	P		**P**		**08 18 35.1**	**-0.3**
	2.8nm,0.3s,baz=20,slow=3.7,SNR=19								
RPZ	**Rata Peaks**	**25.37**	**199**	P		**P**		**08 19 35.6**	**-0.7**
	9.0nm,0.9s,mb4.4,baz=42,slow=9.8,SNR=2.8								
CTA	**Charters Tower**	**33.73**	**264**	P		**P**		**08 20 48.8**	**+0.6**
	1.9nm,0.4s,mb4.0,baz=92,slow=12,SNR=6.6								
CTAO	**Charters Tower**	**33.73**	**264**	*e*P		**P**		**08 20 48.6**	**+0.4**
	2.3nm,0.4s,mb4.1								
STKA	**Stephens Creek**	**38.16**	**244**	P		**P**		**08 21 25.9**	**+1.4**
	5.7nm,1.0s,mb4.1,baz=74,slow=10,SNR=2.5								
ASAR	**Alice Springs**	**44.81**	**256**	P		**P**		**08 22 17.6**	**0.0**
	1.5nm,0.8s,mb3.6,baz=86,slow=8.3,SNR=5.4								
ASAR				S		**S**		**08 28 14.6**	**-0.3**
	0.6nm,0.8s,baz=99,slow=15,SNR=3.2								
WRAB	**Tennant Creek**	**44.85**	**262**	*e*P		**P**		**08 22 17.3**	**-0.6**
	14nm,1.1s,mb4.4								
WRA	**Warramunga Arr**	**44.85**	**262**	P		**P**		**08 22 17.6**	**-0.4**
	0.4nm,0.3s,mb3.4,baz=97,slow=7.6,SNR=6.7								
SBA	**Scott Base**	**58.33**	**184**	P		**P**		**08 23 54.9**	**+0.4**
YBH	**Yreka Blue Hor**	**79.82**	**39**	P		**P**		**08 26 03.4**	**+0.3**
	0.4nm,0.4s,mb3.1,baz=157,slow=6.0,SNR=4.3								
TXAR	**Lajitas Array**	**86.65**	**57**	P		**P**		**08 26 38.2**	**+0.9**
	0.7nm,0.6s,mb3.5,baz=212,slow=6.5,SNR=13								
TXAR	**Lajitas Array**	**86.65**	**57**	P		**P**		**08 26 38.2**	**+0.9**
ILAR	**Eielson Array**	**87.84**	**13**	P		**P**		**08 26 40.9**	**-1.1**
	1.2nm,0.8s,mb3.7,baz=228,slow=5.0,SNR=11								
PDAR	**Pinedale Array**	**88.51**	**43**	P		**P**		**08 26 45.4**	**-0.3**
	0.7nm,0.7s,mb3.6,baz=196,slow=3.0,SNR=7.0								
ARCES	**ARCESS Array B**	**128.52**	**350**	PKP		PKPdf		08 32 54.8	+0.4
	1.8nm,0.9s,baz=77,slow=1.2,SNR=6.0								
BRTR	**Keskin Array B**	**146.68**	**313**	PKPbc		PKPbc		08 33 31.2	+1.2
	0.8nm,0.5s,baz=108,slow=2.6,SNR=3.6								
GERES	**GERESS Array B**	**149.83**	**345**	PKP		PKPdf		08 33 33.7	+1.1
	1.0nm,0.6s,baz=90,slow=1.3,SNR=3.8								
GERES				PKPbc		PKPdf		08 33 38.7	+6.1
	0.9nm,0.6s,baz=20,slow=2.3,SNR=4.6								

TAP 19 08:22:21.1,22.65N×121.40E,h13km,ML4.0,12C-2D, Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
TTN	**Taitung**	**0.26**	**294**	P		P	Pg	08 22 27.1	+0.3
TTN				S		S	Sg	08 22 30.5	0.0
TWG	**Pinlang**	**0.35**	**299**	*i* P		P	Pg	08 22 28.2	-0.3
TWG				S		S	Sg	08 22 33.0	-0.3
ECL	**Taimali**	**0.41**	**263**	⇓*i* P		P	Pg	08 22 29.3	-0.5
ECL				S		S	Sg	08 22 34.3	-1.2
CHKT	**Chengkung**	**0.45**	**356**	*i* P		P	Pb	08 22 30.2	-0.1
CHKT				S		S	Sb	08 22 36.2	-0.4
TAW	**Tawu**	**0.55**	**238**	*e*P		P	Pb	08 22 31.5	-0.5
TAW				S		S	Sb	08 22 38.7	-0.8
EAST	**Anshuo**	**0.57**	**243**	⇓*i* P		P	Pb	08 22 32.2	-0.3
LAY	**Lan-yu**	**0.62**	**167**	P		P	Pb	08 22 33.9	+0.6
ELDTW	**Lidau**	**0.64**	**327**	⇑*i* P		P	Pb	08 22 32.2	-1.4
ELDTW				S		S	Sb	08 22 39.8	-2.4
TWF1	**Yuli**	**0.70**	**352**	*e*P		P	Pb	08 22 33.5	-1.2
SCZT	**Fangliau**	**0.77**	**249**	*e*P		P	Pb	08 22 35.1	-0.7
STYT	**Tauyuan**	**0.78**	**311**	⇑*i* P		P	Pb	08 22 35.0	-1.0
STYT				S		S	Sb	08 22 44.0	-2.2
SGLT	**Jiouru**	**0.84**	**275**	*e*P		P	Pb	08 22 38.8	+1.8
EHY	**Hungye**	**0.85**	**355**	*e*P		P	Pb	08 22 36.6	-0.6
SGST	**Jiashian**	**0.87**	**300**	⇑*i* P		P	Pb	08 22 37.1	-0.3
SGST				S		S	Sb	08 22 48.9	+0.1
HEN	**Hengchun**	**0.89**	**224**	*e*P		P	Pb	08 22 37.0	-0.8
TWK1	**Hengchun**	**0.89**	**218**	*e*P		P	Pb	08 22 37.0	-0.9
YUS	**Yu-Shan**	**0.93**	**334**	⇑*i* P		P	Pb	08 22 37.3	-1.2
WTP	**Ta-pu**	**0.94**	**309**	⇑*i* P		P	Pb	08 22 38.2	-0.5
WTP				S		S	Sb	08 22 50.4	-0.3
CHN1	**Nanshi**	**0.96**	**304**	⇑*i* P		P	Pb	08 22 39.1	-0.1
CHN1				S		S	Sb	08 22 51.9	+0.4
TWP	**Hsiaoliuchiu**	**1.01**	**253**	*e*P		P	Pb	08 22 42.4	+2.5
KAU	**Kaohsiung**	**1.01**	**266**	*e*P		P	Pb	08 22 41.7	+1.7
ALS	**Alishan**	**1.02**	**328**	⇑*i* P		P	Pb	08 22 39.4	-0.6
ALS				S		S	Sb	08 22 56.8	+3.7
CHN4	**Tsaushan**	**1.02**	**313**	⇑*i* P		P	Pb	08 22 39.8	-0.3
CHN4				S		S	Sb	08 22 53.3	+0.2
TWK	**Hsinying**	**1.04**	**306**	⇑*i* P		P	Pb	08 22 40.1	-0.3
TWK				S		S	Sb	08 22 54.3	+0.5
CHN3	**Shinhua**	**1.04**	**294**	*e*P		P	Pb	08 22 42.0	+1.4
CHN3				S		S	Sb	08 22 57.0	+3.1
WDT	**Danda**	**1.13**	**347**	⇑*i* P		P	Pb	08 22 40.5	-1.4
CHN5	**Tsauling**	**1.15**	**325**	⇑*i* P		P	Pb	08 22 41.8	-0.6
ESL	**Shilin**	**1.16**	**1**	*e*P		P	Pb	08 22 42.2	-0.3
ESL				S		S	Sb	08 22 58.5	+1.3
CHN2	**Minshiung**	**1.22**	**316**	*e*P		P	Pb	08 22 43.4	-0.2
CHN2				S		S	Sb	08 22 60.0	+0.9
SCLT	**Jiali**	**1.23**	**295**	*e*P		P	Pb	08 22 45.6	+1.9
SCLT				S		S	Sb	08 23 00.3	+1.1
CHY	**Chiayi**	**1.23**	**313**	⇑*i* P		P	Pb	08 22 43.6	-0.2
CHY				S		S	Sb	08 22 59.8	+0.5
WGK	**Gukeng**	**1.29**	**323**	*e*P		P	Pb	08 22 43.1	-1.5
CHN8	**Yiju**	**1.30**	**303**	*e*P		P	Pb	08 22 45.6	+0.8
SMLT	**Sun Moon Lake**	**1.31**	**340**	P		P	Pb	08 22 44.2	-0.9
SMLT				S		S	Sb	08 23 01.9	+0.3
TYC	**Yuchr**	**1.34**	**338**	P		P	Pn	08 22 45.2	-0.4
TYC				S		S	Sb	08 23 03.2	+0.7
WNT	**Mingjian**	**1.39**	**332**	*e*P		P	Pn	08 22 45.9	-0.3
TWD	**Chiawan**	**1.44**	**7**	*e*P		P	Pn	08 22 46.0	-1.0
WHF	**Hehuan Shan**	**1.49**	**355**	*e*P		P	Pn	08 22 46.2	-1.6
TWT	**Tachien**	**1.61**	**353**	*e*P		P	Pn	08 22 48.3	-1.1
TCU	**Taichung**	**1.63**	**336**	*e*P		P	Pn	08 22 49.7	0.0
WDGT	**Dungji**	**1.71**	**291**	*e*P		P	Pn	08 22 49.7	-1.2
WDGT				S		S	Sn	08 23 08.4	-4.3
NNS	**Nan Shan**	**1.78**	**359**	*e*P		P	Pn	08 22 53.8	+1.9
TWQ1	**Liyutan**	**1.79**	**341**	*e*P		P	Pn	08 22 52.0	0.0
TWQ1				S		S	Sn	08 23 15.2	+0.7
ENA	**Nanau**	**1.80**	**10**	*e*P		P	Pn	08 22 50.2	-1.9
NSY	**Sanyi**	**1.85**	**342**	*e*P		P	Pn	08 22 52.8	-0.1
NSY				S		S	Sn	08 23 17.6	+1.3
PNG	**Penghu**	**1.93**	**299**	*e*P		P	Pn	08 22 52.1	-1.9
ENTT	**Nioudou**	**1.99**	**4**	*e*P		P	Pn	08 22 52.8	-2.0
TWC	**Suao**	**1.99**	**12**	*e*P		P	Pn	08 22 54.8	-0.1
NSTT	**Nanjuang**	**2.01**	**350**	*e*P		P	Pn	08 22 55.4	+0.3
NSK	**Sanguang**	**2.02**	**359**	*e*P		P	Pn	08 22 54.5	-0.7
TWE	**Neicheng**	**2.08**	**7**	*e*P		P	Pn	08 22 54.1	-2.0
NWF	**Wu-fen Shan**	**2.44**	**8**	*e*P		P	Pn	08 23 00.3	-0.9
NWF				S		S	Sn	08 23 31.5	+0.4

*IDC **19** 08:26:20.6±1.1,2.52S×139.28E,mb3.9/6,mb1 4.1/8, mb1mx4.0/15,ML4.1/2,Error ellipse: s-maj=46.3km s-min=20.5km az=91.0*
*NEIC **19** 08:26:25.8±0.8,2.51S×139.05E,h35km,mb4.3/5,Error ellipse: s-maj=27.0km s-min=13.6km az=95.0*

ISC 19 08:26:26.0±2.8,2.6S±0.1×138.9E±0.2,h51km±25km,n14, σ1s03/18,mb4.1/8,Irian Jaya

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
WRAB	**Tennant Creek**	**17.79**	**194**	*e*P		**P**		**08 30 31.0**	**-0.7**
	10nm,0.6s								
WRAB				*e*S		**S**		**08 33 38.1**	**-7.4**
WRA	**Warramunga Arr**	**17.80**	**194**	P		**P**		**08 30 31.3**	**-0.5**
	0.4nm,0.3s,baz=15,slow=12,SNR=20								
WRA				S		**S**		**08 33 38.5**	**-7.3**
	0.3nm,0.3s,baz=4.7,slow=23,SNR=5.2								
CTA	**Charters Tower**	**18.79**	**158**	P		**P**		**08 30 43.0**	**-0.9**
	0.5nm,0.3s,baz=348,slow=10.0,SNR=6.3								
CTAO	**Charters Tower**	**18.79**	**158**	*e*P		**P**		**08 30 45.0**	**+1.2**
	2.6nm,0.6s								
FITZ	**Fitzroy Crossi**	**20.17**	**219**	P		**P**		**08 30 59.8**	**+0.8**
	5.4nm,1.0s,baz=26,slow=15,SNR=3.7								
FITZ				S		**S**		**08 34 34.9**	**-2.7**
	7.9nm,0.9s,baz=172,slow=13,SNR=4.1								
ASAR	**Alice Springs**	**21.49**	**193**	P		**P**		**08 31 13.1**	**+0.7**
	0.9nm,0.6s,mb3.3,baz=15,slow=10,SNR=8.2								
ASAR				S		**S**		**08 35 03.6**	**+1.0**
	1.1nm,0.7s,baz=11,slow=24,SNR=3.8								
STKA	**Stephens Creek**	**29.22**	**175**	P		**P**		**08 32 24.9**	**-0.3**
	0.8nm,0.4s,mb3.8,baz=60,slow=12,SNR=4.2								
MKAR	**Makanchi Array**	**69.84**	**322**	P		**P**		**08 37 34.7**	**+1.4**
	0.5nm,0.5s,mb3.7,baz=113,slow=7.7,SNR=6.0								
VNDA	**Vanda**	**75.86**	**175**	P		**P**		**08 38 08.1**	**-0.1**
	2.1nm,0.9s,mb4.1,baz=326,slow=6.8,SNR=8.2								
SBA	**Scott Base**	**76.62**	**174**	P		**P**		**08 38 13.4**	**+0.9**
	3.1nm,1.0s,mb4.2								
MAW	**Mawson**	**82.30**	**202**	*e*P		**P**		**08 38 35.0**	**-8.2**
	9.4nm,1.3s,mb4.6								
COLA	**College**	**85.28**	**24**	P		**P**		**08 38 56.3**	**-1.9**
ILAR	**Eielson Array**	**85.65**	**24**	P		**P**		**08 38 59.5**	**-0.6**
	1.5nm,1.0s,mb4.2,baz=266,slow=4.5,SNR=22								
QSPA	**South Pole Qui**	**87.34**	**180**	P		**P**		**08 39 08.5**	**+0.5**
	10nm,0.6s,mb5.2								

IDC 19 08:56:28.8±51.0,17.99S×173.27W,mb4.0/3,mb1 4.2/3, mb1mx3.8/14,Error ellipse: s-maj=975.0km s-min=185.2km az=81.0,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**42.90**	**242**	P		P		09 04 29.4	-1.5
	1.9nm,0.8s,baz=117,slow=9.0,SNR=2.9								
WRA	**Warramunga Arr**	**49.42**	**259**	P		P		09 05 20.4	-2.4
	0.9nm,0.4s,baz=97,slow=7.0,SNR=31								
ASAR	**Alice Springs**	**49.47**	**254**	P		P		09 05 21.5	-1.6
	0.8nm,0.4s,baz=92,slow=7.6,SNR=21								

*NEIC **19** 10:03:55.0±0.4,31.99S×69.55W,h101km±4km,mb4.0/11, MD3.9(GUC),Error ellipse: s-maj=8.0km s-min=4.9km az=82.0*
*BJI **19** 10:03:54.9,32.00S×69.60W,h100km,mB4.2*
*IDC **19** 10:03:54.1±3.6,32.11S×69.41W,h98km±30km,mb3.6/4, mb1 3.8/7,mb1mx3.7/14,Error ellipse: s-maj=33.0km s-min=23.5km az=74.0*
*SYO **19** 10:03:54.9,31.99S×69.55W,h101km,MB4.0*
*GUC **19** 10:03:55.6±0.8,32.05S×69.99W,h133km±5km,MD3.9, ML4.4*

ISC 19 10:03:55.6±0.4,32.03S±0.03×69.80W±0.06,h117km±3km, n64,σ0°95/78,mb4.1/16,13C-12D,Mendoza Province

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JACH	**Jahuel**	**0.94**	**226**	⇑*i* P		**P**		**10 04 17.3**	**+0.2**
PTCH	**Petorca**	**0.99**	**256**	⇑*i* P		**P**		**10 04 17.4**	**-0.2**
PTCH				*i* S		**S**		**10 04 34.0**	**0.0**
PTCH				AMP				10 04 35.6	
	comp=E,30μm,0.3s								
MDZ	**Mendoza**	**1.17**	**137**	⇓*i* P		**P**		**10 04 18.3**	**-1.2**
MDZ				*i*				10 04 19.5	
MDZ				*i* S		**S**		**10 04 36.3**	**-1.0**
ILCH	**Illapel**	**1.23**	**288**	⇓*i* P		**P**		**10 04 19.9**	**-0.3**
ILCH				*i* S		**S**		**10 04 38.4**	**-0.2**
ILCH				AMP				10 04 39.8	
	comp=E,7μm,0.2s								
CMCH	**Combarbala**	**1.33**	**309**	⇓*i* P		**P**		**10 04 21.5**	**+0.2**
CMCH				*i* S		**S**		**10 04 41.5**	**+0.7**
CMCH				AMP				10 04 42.5	
	comp=E,8μm,0.7s								
PEL	**Peldehue**	**1.34**	**214**	*i* P		**P**		**10 04 21.3**	**-0.2**
PEL				*i* S		**S**		**10 04 40.8**	**-0.2**
PEL				AMP				10 04 42.7	
	comp=E,14μm,0.5s								
FCH	**Farellones**	**1.36**	**198**	⇓*i* P		**P**		**10 04 22.4**	**+0.7**
FCH				*i* S		**S**		**10 04 43.0**	**+1.6**
FCH				AMP				10 04 45.1	
	comp=N,4μm,0.3s								
ROCH	**El Roble**	**1.40**	**227**	⇓*i* P		**P**		**10 04 21.9**	**-0.1**
ROCH				*i* S		**S**		**10 04 41.9**	**-0.1**
PACH	**Papudo**	**1.48**	**249**	⇑*i* P		**P**		**10 04 22.3**	**-0.7**
PACH				*i* S		**S**		**10 04 42.5**	**-1.2**
CLCH	**Cerro Calan**	**1.50**	**204**	⇓*i* P		**P**		**10 04 23.5**	**+0.2**
CLCH				*i* S		**S**		**10 04 44.4**	**+0.2**
CLCH				AMP				10 04 46.6	
	comp=E,9μm,0.5s								
FSR	**Penalolen**	**1.58**	**203**	⇑*i* P		**P**		**10 04 24.6**	**+0.4**
FSR				*i* S		**S**		**10 04 46.3**	**+0.6**
FSR				AMP				10 04 48.1	
	comp=E,5μm,0.3s								
STL	**Santa Lucia**	**1.58**	**207**	⇑*i* P		**P**		**10 04 24.2**	**0.0**
STL				*i* S		**S**		**10 04 45.7**	**0.0**
STL				AMP				10 04 47.9	
	comp=N,3μm,0.3s								
RCDM	**Rinconada Maip**	**1.69**	**210**	⇑*i* P		**P**		**10 04 25.5**	**-0.1**
RCDM				*i* S		**S**		**10 04 48.2**	**+0.1**
RCDM				AMP				10 04 48.9	
	comp=E,5μm,0.2s								
ANTU	**Antumapu**	**1.69**	**204**	*i* P		**P**		**10 04 25.6**	**+0.1**
ANTU				*i* S		**S**		**10 04 48.2**	**0.0**
ANTU				AMP				10 04 50.6	
	comp=E,5μm,0.3s								
PCH	**Pirque**	**1.70**	**201**	⇑*i* P		**P**		**10 04 26.1**	**+0.5**
PCH				*i* S		**S**		**10 04 49.4**	**+1.1**
LMEL	**Las Melosas**	**1.85**	**191**	⇓*i* P		**P**		**10 04 27.8**	**+0.3**
LMEL				*i* S		**S**		**10 04 53.2**	**+1.7**
LMEL				AMP				10 05 03.6	
	comp=N,2μm,0.2s								
IHA	**Instituto Hidr**	**1.85**	**237**	*e*P		**P**		**10 04 26.5**	**-0.9**
IHA				*i* S		**S**		**10 04 49.7**	**-1.8**
OVCH	**Ovalle**	**1.86**	**319**	*e*P		**P**		**10 04 27.2**	**-0.3**
OVCH				*i* S		**S**		**10 04 52.0**	**+0.4**
OVCH				AMP				10 05 06.4	
	comp=E,912nm,0.5s								
TACH	**Talagante**	**1.89**	**210**	*e*P		**P**		**10 04 27.6**	**-0.3**
TACH				*i* S		**S**		**10 04 52.0**	**-0.3**
CHCH	**Chadas Angostu**	**2.04**	**201**	⇑*i* P		**P**		**10 04 30.0**	**+0.2**
CHCH				*i* S		**S**		**10 04 55.9**	**+0.4**
TLL	**Tololo Astrono**	**2.04**	**335**	⇑*i* P		**P**		**10 04 30.3**	**+0.4**
TLL				*i* S		**S**		**10 04 57.5**	**+1.8**
TLL				AMP				10 04 59.8	
	comp=E,2μm,0.5s								
LCCH	**Las Cruces**	**2.08**	**225**	*e*P		**P**		**10 04 29.9**	**-0.5**
LCCH				*i* S		**S**		**10 04 54.5**	**-2.1**
CACH	**El Canelo**	**2.19**	**198**	*i* P		**P**		**10 04 32.6**	**+0.7**
CACH				*i* S		**S**		**10 05 00.6**	**+1.4**
CICH	**Cipreses**	**2.35**	**193**	*e*P		**P**		**10 04 34.4**	**+0.5**
LNV	**Longovilo**	**2.36**	**215**	⇑*i* P		**P**		**10 04 32.7**	**-1.4**
LSCH	**La Serena**	**2.45**	**329**	*e*P		**P**		**10 04 34.5**	**-0.9**
SFDO	**San Fernando**	**2.78**	**201**	*i* P		**P**		**10 04 38.9**	**-0.8**
TRQA	**Tornquist**	**8.79**	**135**	*e*Pn		**P**		**10 05 57.2**	**-3.8**
LVC	**Limon Verde**	**

	1.1nm,0.7s,mb3.4,baz=156,slow=20,SNR=2.3							
INK	**Inuvik**	**22.94**	**32**	P	**P**	**10 10 40.7**	**-1.3**
	5.2nm,0.5s,mb4.2,baz=253,slow=9.0,SNR=53							
INK	**Inuvik**	**22.94**	**32**	*eP*	**P**	**10 10 41.0**	**-1.0**
	7.2nm,0.6s,mb4.3							
YKA	**Yellowknife Ar**	**29.49**	**49**	P	**P**	**10 11 43.0**	**-0.1**
	1.9nm,1.0s,mb3.8,baz=269,slow=7.8,SNR=27							
YKA	**Yellowknife Ar**	**29.49**	**49**	P	**P**	**10 11 43.0**	**-0.1**
YBH	**Yreka Blue Hor**	**31.66**	**91**	P	**P**	**10 12 01.5**	**-0.9**
	0.8nm,0.8s,mb3.6,baz=243,slow=2.3,SNR=3.6							
NEW	**Newport**	**31.82**	**77**	P	**P**	**10 12 04.5**	**+0.7**
	1.6nm,0.7s,mb4.0,baz=314,slow=2.4,SNR=4.4							
WVOR	**Wild Horse Val**	**33.79**	**87**	*eP*	**P**	**10 12 21.9**	**+1.0**
	3.0nm,0.8s,mb4.3							
HLID	**Hailey**	**35.77**	**82**	*eP*	**P**	**10 12 37.8**	**-0.1**
MCMT	**McKenzie Canyo**	**36.06**	**79**	*eP*	**P**	**10 12 41.0**	**+0.7**
RES	**Resolute Bay**	**36.13**	**25**	P	**P**	**10 12 41.2**	**+0.6**
BW06	**Boulder Array**	**39.18**	**80**	*eP*	**P**	**10 13 07.4**	**+0.9**
	3.1nm,1.0s,mb4.0							
PDAR	**Pinedale Array**	**39.18**	**80**	P	**P**	**10 13 07.5**	**+0.9**
	1.6nm,0.5s,mb4.0,baz=310,slow=3.3,SNR=19							
ULM	**Lac du Bonnet**	**43.15**	**63**	P	**P**	**10 13 39.0**	**0.0**
	1.2nm,0.6s,mb3.8,baz=320,slow=3.5,SNR=4.7							
CN2	**Changchun**	**44.37**	**287**	*eP*	**P**	**10 13 50.6**	**+1.6**
MNTX	**Cornudas Mount**	**48.73**	**89**	*eP*	**P**	**10 14 24.0**	**+0.5**
	0.6nm,0.7s,mb3.7							
SPITS	**Spitsbergen Ar**	**50.06**	**359**	P	**P**	**10 14 31.8**	**-1.3**
	21nm,1.3s,mb5.0,baz=264,slow=2.5,SNR=3.1							
SUMG	**Summit**	**50.77**	**18**	*eP*	**P**	**10 14 39.9**	**+1.6**
WMOK	**Wichita Mounta**	**50.74**	**82**	*eP*	**P**	**10 14 38.3**	**-0.5**
	1.2nm,0.5s,mb4.1							
TXAR	**Lajitas Array**	**51.44**	**90**	P	**P**	**10 14 43.6**	**-0.6**
	0.9nm,0.7s,mb3.8,baz=291,slow=5.5,SNR=16							
TXAR	**Lajitas Array**	**51.44**	**90**	P	**P**	**10 14 43.6**	**-0.6**
SONM	**Songino Array**	**52.61**	**302**	P	**P**	**10 14 51.8**	**-0.9**
	1.1nm,0.7s,mb3.9,baz=23,slow=6.8,SNR=2.3							
SSE	**Sheshan**	**55.14**	**277**	⇓P	**P**	**10 15 13.3**	**+1.7**
NJ2	**Nanjing**	**55.90**	**280**	*eP*	**P**	**10 15 18.3**	**+1.2**
ARCES	**ARCESS Array B**	**56.24**	**355**	P	**P**	**10 15 33.3**	**-1.0**
	2.9nm,0.8s,mb4.3,baz=59,slow=10,SNR=4.1							
LZH	**Lanzhou**	**61.94**	**293**	*eP*	**P**	**10 16 02.8**	**+3.8**
BVAR	**Borovoye Array**	**64.75**	**326**	P	**P**	**10 16 16.6**	**-0.5**
	1.2nm,0.6s,mb4.1,baz=56,slow=11,SNR=7.8							
WMQ	**Urumqi**	**64.78**	**309**	*eP*	**P**	**10 16 19.9**	**+2.4**
MKAR	**Makanchi Array**	**65.00**	**315**	P	**P**	**10 16 17.7**	**-1.1**
	0.8nm,0.8s,mb3.8,baz=59,slow=7.1,SNR=4.9							
MKAR	**Makanchi Array**	**65.00**	**315**	P	**P**	**10 16 17.7**	**-1.1**
ZRNK	**Zerenda**	**65.29**	**326**	*eP*	**P**	**10 16 20.3**	**-0.3**
FINES	**FINESS Array B**	**66.40**	**353**	P	**P**	**10 16 26.5**	**-1.0**
	2.3nm,1.0s,mb4.2,baz=27,slow=8.5,SNR=6.4							
NB2	**NORSAR Subarra**	**67.29**	**1**	P	**P**	**10 16 43.9**	**+11**
	2.3nm,0.9s,mb4.2,baz=4.0,slow=6.5							
NOA	**NORSAR Array B**	**67.29**	**1**	P	**P**	**10 16 33.8**	**+0.5**
	1.1nm,0.8s,mb4.0,baz=11,slow=4.2,SNR=2.7							
HFS	**Hagfors**	**68.21**	**359**	P	**P**	**10 16 38.9**	**-0.1**
	1.7nm,0.4s,mb4.4,slow=4.4,SNR=7.6							
AKASG	**Malin Array Be**	**76.72**	**349**	P	**P**	**10 17 29.1**	**-0.2**
	1.9nm,0.5s,mb4.3,baz=12,slow=5.7,SNR=7.8							
BRTR	**Keskin Array B**	**86.85**	**344**	P	**P**	**10 18 24.5**	**+2.2**
	1.1nm,0.9s,mb4.1,baz=45,slow=4.1,SNR=2.6							
WRA	**Warramunga Arr**	**87.83**	**233**	P	**P**	**10 18 26.0**	**-1.5**
	1.0nm,0.8s,mb4.1,baz=39,slow=6.3,SNR=6.5							
ASAR	**Alice Springs**	**91.19**	**232**	P	**P**	**10 18 42.5**	**-0.7**
	1.8nm,0.7s,mb4.5,baz=29,slow=4.4,SNR=20							

IDC 19 10:51:58.0±1.4, 57.40S×122.94W, mb3.9/3, mb1 4.1/3, mb1mx3.9/10, MS4.0/11, Ms1 4.0/11, ms1mx3.9/14, Error ellipse: s-maj=1410.0km s-min=33.1km az=158.0, Southern East Pacific Rise

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RPZ	**Rata Peaks**	**42.39**	**259**	LR	LR	11 12 58.5	
	comp=Z,202nm,20.0s,baz=159,slow=30						
URZ	**Urewera**	**42.96**	**270**	LR	LR	11 13 20.7	
	comp=Z,178nm,19.1s,baz=11,slow=30						
CPUP	**Villa Florida**	**55.14**	**85**	LR	LR	11 21 31.2	
	comp=Z,117nm,20.2s,baz=247,slow=32						
MAW	**Mawson**	**55.23**	**183**	LR	LR	11 24 28.3	
	comp=Z,245nm,20.2s,baz=327,slow=35						
LPAZ	**La Paz**	**57.72**	**68**	P	P	11 01 51.1	-1.7
	2.8nm,1.1s,baz=197,slow=4.5,SNR=4.3						
LPAZ				LR	LR	11 19 25.7	
	comp=Z,36nm,20.2s,baz=262,slow=28						
STKA	**Stephens Creek**	**66.55**	**247**	LR	LR	11 25 10.2	
	comp=Z,121nm,18.9s,baz=205,slow=30						
BDFB	**Brasilia**	**68.84**	**86**	LR	LR	11 30 18.4	
	comp=Z,145nm,21.8s,baz=21,slow=33						
ROSC	**El Rosal**	**73.38**	**51**	LR	LR	11 27 01.9	
	comp=Z,90nm,21.0s,baz=82,slow=29						
CTA	**Charters Tower**	**73.75**	**258**	LR	LR	11 29 00.6	
	comp=Z,82nm,20.2s,baz=285,slow=30						
ASAR	**Alice Springs**	**77.14**	**246**	P	P	11 03 53.0	-1.8
	0.5nm,0.8s,baz=152,slow=5.2,SNR=4.8						
ASAR				LR	LR	11 31 56.5	
	comp=Z,89nm,21.4s,baz=313,slow=31						
WRA	**Warramunga Arr**	**80.04**	**249**	P	P	11 04 09.7	-1.0
	1.1nm,0.9s,baz=144,slow=5.0,SNR=4.2						
PMG	**Port Moresby**	**82.10**	**265**	LR	LR	11 36 01.5	
	comp=Z,100nm,18.4s,baz=234,slow=32						

IDC 19 11:00:39.9±3.2, 18.81S×177.32W, mb3.7/3, mb1 4.0/3, mb1mx3.8/12, Error ellipse: s-maj=376.0km s-min=33.2km az=160.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**45.49**	**260**	P	P	11 09 00.3	-2.8
	0.3nm,0.5s,baz=98,slow=6.4,SNR=4.6						
ASAR	**Alice Springs**	**45.55**	**255**	P	P	11 09 02.5	-1.0
	1.4nm,0.5s,baz=91,slow=8.6,SNR=17						
TXAR	**Lajitas Array**	**85.61**	**57**	P	P	11 13 20.8	-1.1
	0.2nm,0.6s,baz=225,slow=3.8,SNR=4.7						

*IDC **19** 11:03:01.6±2.1, 3.39S×144.64E, mb4.1/3, mb1 4.2/5, mb1mx3.9/13, ML3.7/2, Error ellipse: s-maj=52.0km s-min=26.5km az=87.0*
*NEIC **19** 11:03:02.3±0.6, 3.44S×144.89E, h10km, mb4.3/3, Error ellipse: s-maj=15.2km s-min=10.0km az=94.0*
ISC 19 11:03:00.4±0.8, 3.43S±0.08×144.8E±0.1, h10km, n14, σ1°02/14, mb4.3/5, 3C, Near north coast of New Guinea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WAU	**Wau**	**4.32**	**154**	*eP*	**Pn**	**11 04 06.4**	**-1.3**
PMG	**Port Moresby**	**6.37**	**159**	Pn	**Pn**	**11 04 37.5**	**+0.8**
	2.5nm,0.3s,baz=325,slow=16,SNR=7.3						
WRAB	**Tennant Creek**	**19.33**	**211**	*eP*	**P**	**11 07 27.9**	**-0.9**
	12nm,0.7s						
WB2	**Warramunga Arr**	**19.34**	**211**	⇑*iP*	**P**	**11 07 28.4**	**-0.4**
WRA	**Warramunga Arr**	**19.34**	**211**	P	**P**	**11 07 28.2**	**-0.7**
	0.5nm,0.3s,baz=32,slow=11,SNR=26						
AS12	**Alice Springs**	**22.72**	**207**	⇑*iP*	**P**	**11 08 05.2**	**+1.3**
	5.0nm,1.2s,mb3.8						
ASAR	**Alice Springs**	**22.72**	**207**	P	**P**	**11 08 05.0**	**+1.1**
	3.2nm,0.7s,mb3.9,baz=32,slow=9.9,SNR=70						
FITZ	**Fitzroy Crossi**	**23.79**	**231**	⇑*iP*	**P**	**11 08 15.7**	**+1.3**
	11nm,0.6s,mb4.5						
FITZ	**Fitzroy Crossi**	**23.79**	**231**	P	**P**	**11 08 15.4**	**+1.0**
	10nm,0.5s,mb4.6,baz=26,slow=7.6,SNR=44						
BILL	**Bilibino**	**72.88**	**8**	*eP*	**P**	**11 14 31.7**	**+0.5**
MKAR	**Makanchi Array**	**74.16**	**321**	P	**P**	**11 14 39.2**	**+0.2**
	0.7nm,1.0s,mb3.5,baz=114,slow=5.2,SNR=3.1						
MCK	**McKinley**	**82.77**	**24**	P	**P**	**11 15 25.9**	**+0.1**
	1.1nm,0.7s,mb4.0						
ZRNK	**Zerenda**	**84.23**	**324**	P	**P**	**11 15 30.9**	**-2.6**
QSPA	**South Pole Qui**	**86.52**	**180**	*eP*	**P**	**11 15 45.4**	**+1.1**
	85nm,1.7s,mb5.7						

*TAP **19** 11:39:21.0, 24.88N×122.09E, h102km±1km, ML3.6*
*JMA **19** 11:39:21.2±0.3, 24.79N×122.16E, h104km, M2.8*
ISC 19 11:39:20.9±2.6, 24.9N±0.7×122.1E±0.2, h101km±54km, n5, σ0°23/9, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
YOJ	**Yonaguni jima**	**0.89**	**117**	P	**P**	**11 39 40.5**	**+0.1**
IRIF	**Iriomote-Funau**	**1.54**	**110**	P	**P**	**11 39 47.7**	**-0.3**
IRIF				S	**S**	**11 40 08.3**	**0.0**
JKRS	**Kuro-shima**	**1.81**	**110**	P	**P**	**11 39 51.8**	**+0.3**
JKRS				*eS*	**S**	**11 40 14.4**	**+0.2**
JIJ	**Ishigaki jima**	**1.89**	**105**	P	**P**	**11 39 52.3**	**-0.2**
JIJ				S	**S**	**11 40 15.5**	**-0.4**
JTJ	**Tarama**	**2.34**	**95**	P	**P**	**11 39 58.6**	**+0.1**
JTJ				*eS*	**S**	**11 40 26.8**	**+0.1**

*HEL **19** 11:47:53.8±0.5, 59.18N×28.00E, ML1.7, ML2.3(NAO), Explosion*
*BER **19** 11:47:57.5±2.0, 59.37N×27.73E, ML2.3(NAO), Suspected explosion*
*NAO **19** 11:47:57.9±5.0, 59.45N×27.57E, ML2.3*
ISC 19 11:47:53.2±2.1, 59.24N±0.10×28.0E±0.2, n12, σ0°63/15, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
VJF	**Virojoki**	**1.33**	**350**	*eP*	**Pb**	**11 48 18.2**	**-0.5**
VJF				*eS*	**Sb**	**11 48 36.9**	**+0.7**
PVF	**Pernaja**	**1.71**	**321**	*eP*	**Pn**	**11 48 24.7**	**+0.3**
PVF				*eS*	**Sb**	**11 48 47.2**	**0.0**
MEF	**Metsahovi**	**2.09**	**300**	*eP*	**Pn**	**11 48 30.4**	**+0.5**
MEF				*eS*	**Sn**	**11 48 56.7**	**-0.3**
MEF				MSG		11 48 59.1	
	comp=Z,2.9nm,0.1s						
FIA0	**FINESS Array S**	**2.42**	**337**	*eP*	**Pn**	**11 48 34.4**	**-0.2**
FIA0				*eS*	**Sn**	**11 49 04.8**	**-0.6**
FIA0				MSG		11 49 12.0	
	comp=Z,3.5nm,0.1s						
FIA0	**FINESS Array S**	**2.42**	**337**	Pn	**Pn**	**11 48 34.6**	**0.0**
	baz=158,slow=18						
FIA0				Lg		11 49 05.5	
	baz=162,slow=37						
KEF	**Keuruu**	**3.33**	**333**	*eP*	**Pn**	**11 48 47.9**	**+0.4**
KEF				MSG		11 49 44.9	
	comp=Z,1.7nm,0.2s						
SUF	**Sumiainen**	**3.61**	**346**	MSG		11 49 54.2	
	comp=Z,1.5nm,0.3s						
HFS	**Hagfors**	**7.32**	**283**	Lg		11 51 37.7	
	baz=82,slow=37						
HFS	**Hagfors**	**7.32**	**283**	*e*SG	**Sg**	**11 51 37.7**	**-19**
HFS	**Hagfors**	**7.32**	**283**	Lg		11 51 37.7	
	baz=82,slow=37						
ARA0	**ARCESS Array S**	**10.40**	**355**	Pn	**P**	**11 50 22.6**	**-3.9**
	baz=172,slow=14						
ARA0				Sn	**S**	**11 52 13.9**	**-11**
	baz=173,slow=28						
ARA0				Lg		11 53 14.2	
	baz=173,slow=37						
ARA0	**ARCESS Array S**	**10.40**	**355**	*eP*	**P**	**11 50 22.6**	**-3.9**
ARA0				*eS*	**S**	**11 52 13.9**	**-11**
ARA0				*e*SG		11 53 14.2	

IDC 19 11:55:19.2±6.5, 34.48S×56.41E, mb3.4/2, mb1 3.6/2, mb1mx3.4/17, Error ellipse: s-maj=408.0km s-min=48.8km az=33.0, South Indian Ocean

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ASAR	**Alice Springs**	**67.11**	**104**	P	P	12 06 13.8	-3.1
	0.4nm,1.0s,baz=236,slow=6.1,SNR=4.5						
WRA	**Warramunga Arr**	**69.29**	**100**	P	P	12 06 30.3	-0.3
	0.4nm,1.0s,baz=243,slow=5.6,SNR=2.5						
ILAR	**Eielson Array**	**146.54**	**18**	PKPbc	PKPbc	12 15 00.2	-1.2
	0.3nm,0.8s,baz=316,slow=3.6,SNR=4.7						
YKA	**Yellowknife Ar**	**151.39**	**351**	PKPbc	PKPdf	12 15 14.2	+4.6
	0.2nm,0.7s,baz=358,slow=2.5,SNR=6.5						

IDC 19 11:58:15.9±5.2, 33.30S×57.37E, mb3.3/2, mb1 3.6/2, mb1mx3.4/17, Error ellipse: s-maj=307.0km s-min=43.9km az=34.0, Southwest Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ASAR	**Alice Springs**	**66.62**	**104**	P	P	12 09 08.3	-2.2
	0.3nm,0.8s,baz=238,slow=5.8,SNR=7.2						
WRA	**Warramunga Arr**	**68.72**	**100**	P	P	12 09 22.2	-1.6
	0.2nm,0.6s,baz=238,slow=5.7,SNR=4.7						
ILAR	**Eielson Array**	**145.18**	**18**	PKPbc	PKPbc	12 17 53.5	-1.4
	0.9nm,1.0s,baz=307,slow=4.5,SNR=9.4						
YKA	**Yellowknife Ar**	**150.34**	**352**	PKPbc	PKPdf	12 18 07.9	+3.1
	0.5nm,0.6s,baz=10,slow=2.1,SNR=14						

*MDD **19** 12:09:08.6±1.0, 35.31N×4.04W, mb3.5/8, Error ellipse: s-maj=8.6km s-min=3.1km az=25.0, AftershockPLICA PRXIMO*
*NEIC **19** 12:09:09.6, 35.10N×3.95W, h12km, MG3.8(MDD), After MDD.*
ISC 19 12:09:08.4±0.8, 35.22N±0.05×4.05W±0.03, h12km, n36, σ1°20/64, Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
EMEL	**Melilla**	**0.90**	**85**	P	**Pb**	**12 09 24.7**	**-0.9**
	128nm,0.1s,SNR=8.4						
EMEL				S	**Sb**	**12 09 37.0**	**-0.3**
	299nm,0.1s,SNR=7.0						
MELI	**Melilla**	**0.92**	**85**	P	**Pb**	**12 09 26.0**	**+0.2**
MELI				S	**Sb**	**12 09 36.2**	**-1.6**
EJIF	**Jimena Fronter**	**1.68**	**317**	P	**Pn**	**12 09 39.9**	**+1.9**
	9.7nm,0.3s,SNR=7.9						
EJIF	**Jimena Fronter**	**1.68**	**317**	P	**Pn**	**12 09 39.1**	**+1.2**
EJIF				S	**Sn**	**12 10 01.0**	**+1.4**
ERON	**Agron**	**1.81**	**6**	P	**Pn**	**12 09 40.0**	**+0.2**
	1.7nm,0.2s,SNR=7.5						
ERON				S	**Sn**	**12 10 02.7**	**-0.1**
	5.8nm,0.2s						
ERON	**Agron**	**1.81**	**6**	P	**Pn**	**12 09 39.7**	**-0.1**
ERON				S	**Sn**	**12 10 04.1**	**+1.3**
EBER	**Berja**	**1.92**	**29**	P	**Pn**	**12 09 40.4**	**-1.0**
	1.8nm,0.2s,SNR=9.9						
EBER				S	**Sn**	**12 10 03.7**	**-2.0**
	22nm,0.4s,SNR=11						
EBER	**Berja**	**1.92**	**29**	P	**Pn**	**12 09 40.4**	**-1.0**
EBER				S	**Sn**	**12 10 03.1**	**-2.6**
ELOJ	**Sierra Loja**	**1.92**	**358**	P	**Pn**	**12 09 42.6**	**+1.1**
ELOJ				S	**Sn**	**12 10 06.8**	**+1.1**
ELIJ	**Sierra de Lija**	**2.00**	**328**	P	**Pn**	**12 09 44.0**	**+1.4**
	5.7nm,0.2s,SNR=4.0						
ELIJ				S	**Sn**	**12 10 07.6**	**-0.2**
	2.9nm,0.3s,SNR=4.0						
ELIJ	**Sierra de Lija**	**2.00**	**328**	P	**Pn**	**12 09 45.4**	**+2.8**
ELIJ				S	**Sn**	**12 10 06.9**	**-0.9**
ESPR	**Espera**	**2.20**	**319**	P	**Pn**	**12 09 45.4**	**0.0**
	0.4nm,0.1s,SNR=6.2						
ESPR				S	**Sn**	**12 10 12.4**	**-0.4**
	9.8nm,0.4s,SNR=7.9						
ESPR	**Espera**	**2.20**	**319**	P	**Pn**	**12 09 47.7**	**+2.3**
ESPR				S	**Sn**	**12 10 16.1**	**+3.4**
ELUQ	**Luque**	**2.34**	**356**	P	**Pn**	**12 09 49.9**	**+2.5**
ELUQ				S	**Sn**	**12 10 20.7**	**+4.3**
EQES	**Quesada**	**2.70**	**17**	P	**Pn**	**12 09 53.8**	**+1.3**
	1.2nm,0.1s,SNR=17						
EQES				S	**Sn**	**12 10 26.6**	**+1.3**
	7.6nm,0.2s						
EQES	**Quesada**	**2.70**	**17**	P	**Pn**	**12 09 54.0**	**+1.5**
EQES				S	**Sn**	**12 10 25.7**	**+0.3**
EHUE	**Huescar**	**2.84**	**24**	S	**Sn**	**12 10 30.0**	**+0.9**
	1.9nm,0.2s						
EADA	**Adamuz**	**2.97**	**352**	P	**Pn**	**12 09 55.1**	**-1.3**
	0.5nm,0.1s,SNR=12						
EADA				S	**Sn**	**12 10 32.2**	**-0.2**
	1.8nm,0.2s,SNR=4.0						
EADA	**Adamuz**	**2.97**	**352**	P	**Pn**	**12 09 55.0**	**-1.4**
EADA				S	**Sn**	**12 10 33.0**	**+0.7**
ECAB	**El Cabril**	**3.05**	**339**	P	**Pn**	**12 09 58.3**	**+0.7**
	1.2nm,0.1s,SNR=12						
ECAB				S	**Sn**	**12 10 34.9**	**+0.5**
	6.6nm,0.3s,SNR=7.1						
EMIN	**Mina Concepcio**	**3.30**	**321**	P	**Pn**	**12 10 01.6**	**+0.5**
	1.7nm,0.1s,SNR=20						
EMIN				S	**Sn**	**12 10 39.4**	**-1.3**
	1.4nm,0.2s						
EMIN	**Mina Concepcio**	**3.30**	**321**	P	**Pn**	**12 10 01.6**	**+0.5**
EMIN				S	**Sn**	**12 10 38.5**	**-2.2**
PALC	**Alcoutim**	**3.56**	**310**	*e*Pn	**Pn**	**12 10 05.6**	**+0.9**
PALC				*e*Sn	**Sn**	**12 10 46.0**	**-1.1**
	7.9nm,0.3s						
PALC	**Alcoutim**	**3.56**	**310**	Pn	**Pn**	**12 10 05.6**	**+0.9**
PALC				Sn	**Sn**	**12 10 46.0**	**-1.1**
	4.0nm,0.3s						
EGRO	**El Granado**	**3.60**	**311**	P	**Pn**	**12 10 05.9**	**+0.5**
	1.8nm,0.1s,SNR=5.2						
EGRO				S	**Sn**	**12 10 47.0**	**-1.4**
	3.6nm,0.2s,SNR=4.8						
EGRO	**El Granado**	**3.60**	**311**	P	**Pn**	**12 10 05.9**	**+0.5**
EGRO				S	**Sn**	**12 10 46.8**	**-1.5**
ETOB	**Tobarra**	**3.96**	**30**	P	**Pn**	**12 10 11.5**	**+1.0**
	0.9nm,0.2s,SNR=7.9						
ETOB				S	**Sn**	**12 10 55.9**	**-1.6**
	1.4nm,0.2s,SNR=4.0						
ETOB	**Tobarra**	**3.96**	**30**	P	**Pn**	**12 10 11.4**	**+0.9**
ETOB				S	**Sn**	**12 10 54.3**	**-3.1**
PBEJ	**Beja**	**4.15**	**314**	*e*Sn	**Sn**	**12 11 01.1**	**-1.2**
	2.3nm,0.1s						
PBEJ	**Beja**	**4.15**	**314**	Sn	**Sn**	**12 11 01.1**	**-1.2**
	1.1nm,0.1s						
EBAD	**Badajoz**	**4.25**	**327**	P	**Pn**	**12 10 14.6**	**0.0**
	1.6nm,0.1s,SNR=12						
EBAD				S	**Sn**	**12 11 03.7**	**-1.0**
	5.4nm,0.2s,SNR=4.9						
EBAD	**Badajoz**	**4.25**	**327**	P	**Pn**	**12 10 14.7**	**+0.1**
EBAD				S	**Sn**	**12 11 03.0**	**-1.7**
PTEO	**Sao Teotonio**	**4.42**	**303**	*e*Sn	**Sn**	**12 11 08.0**	**-1.2**
	7.0nm,0.5s						
PTEO	**Sao Teotonio**	**4.42**	**303**	Sn	**Sn**	**12 11 08.0**	**-1.2**
	3.5nm,0.5s						
ESDC	**Sonseca Array**	**4.45**	**1**	P	**Pn**	**12 10 17.6**	**+0.2**
	2.8nm,0.2s,baz=178,slow=12,SNR=7.9						
MOE	**Montemor**	**4.77**	**315**	*e*Sn	**Sn**	**12 11 16.2**	**-1.6**

*GII **19** 12:21:21.7±0.5, 29.11N×34.74E, h14km±3km, ML1.8/2*
*SNSN **19** 12:21:22.1, 29.08N×34.82E, h19km, MI1.8*
ISC 19 12:21:22.2±0.7, 29.09N±0.03×34.82E±0.10, h22km±9km, n12, σ0°46/19, Egypt

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
HAQS	**Haql**	**0.10**	**113**	P	**Pb**	**12 21 26.1**	**-0.3**
HAQS				S	**Sb**	**12 21 28.9**	**-0.4**
JMOS	**Jabal al Moall**	**0.26**	**73**	P	**Pb**	**12 21 28.2**	**-0.2**
JMOS				S	**Sb**	**12 21 32.7**	**+0.1**
ALWS	**Ilw as Safayha**	**0.30**	**44**	P	**Pb**	**12 21 28.6**	**-0.4**
TAYS	**Tayyib Ism**	**0.54**	**176**	P	**Pb**	**12 21 32.9**	**-0.1**
TAYS				S	**Sb**	**12 21 40.8**	**+0.5**
EIL	**Elat**	**0.58**	**11**	Pg	**Pb**	**12 21 33.2**	**-0.4**
AQBJ	**Aqaba**	**0.66**	**17**	Pg	**Pb**	**12 21 34.7**	**-0.3**
MBH	**Mount Berech**	**0.70**	**7**	Pg	**Pb**	**12 21 35.5**	**-0.1**
BDAS	**Al Bad'**	**0.70**	**160**	P	**Pb**	**12 21 35.6**	**-0.1**
BDAS				S	**Sb**	**12 21 45.4**	**+0.5**
JMQS	**Jabal Moqyreh**	**0.95**	**102**	P	**Pb**	**12 21 40.1**	**+0.3**
HRFI	**Mount Harif**	**0.96**	**11**	Pg	**Pb**	**12 21 40.0**	**0.0**
HRFI				Sg	**Sb**	**12 21 52.8**	**+0.6**
KMTI	**Karmit**	**1.01**	**355**	Pg	**Pb**	**12 21 40.6**	**-0.2**
KMTI				Sg	**Sb**	**12 21 54.2**	**+0.5**
PRNI	**Paran**	**1.26**	**7**	Pg	**Pn**	**12 21 43.8**	**-1.0**
PRNI				Sg	**Sb**	**12 22 02.1**	**+1.0**

*NEIC **19** 12:22:08.2, 32.00S×71.66W, h24km, ML2.9(GUC), After GUC.*
GUC 19 12:22:08.2±0.8, 32.00S×71.66W, h24km±4km, MD3.5, ML2.9, 4C-2D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ILCH	**Illapel**	**0.56**	**49**	⇑*iP*	Pb	12 22 19.3	0.0
ILCH				*i* S	Sb	12 22 27.2	+0.4
ILCH				AMP		12 22 28.2	
	comp=N,366nm,0.2s						
PACH	**Papudo**	**0.57**	**160**	*i* P	Pb	12 22 19.1	-0.4
PACH				*i* S	Sb	12 22 27.2	0.0
PTCH	**Petorca**	**0.68**	**113**	⇓*i*P	Pb	12 22 21.2	0.0
PTCH				*i* S	Sb	12 22 30.1	-0.1
PTCH				AMP		12 22 32.7	
	comp=E,936nm,0.3s						
CMCH	**Combarbala**	**1.00**	**35**	⇑*iP*	Pb	12 22 26.1	-0.6
CMCH				*i* S	Sb	12 22 39.6	+0.1
CMCH				AMP		12 22 43.3	
	comp=N,1μm,0.5s						
ROCH	**El Roble**	**1.12**	**151**	*eP*	Pn	12 22 28.5	+0.1
ROCH				*i* S	Sb	12 22 43.7	+0.9
JACH	**Jahuel**	**1.13**	**127**	*eP*	Pn	12 22 28.3	-0.4
JACH				*i* S	Sb	12 22 43.9	+0.5
PEL	**Peldehue**	**1.41**	**144**	*i* S	Sn	12 22 50.8	+0.2
PEL				AMP		12 22 53.1	
	comp=E,650nm,0.4s						
LCCH	**Las Cruces**	**1.47**	**177**	⇓*i*P	Pn	12 22 33.0	-0.6
LCCH				*i* S	Sn	12 22 52.6	+0.4
CLCH	**Cerro Calan**	**1.69**	**146**	⇑*i*P	Pn	12 22 37.1	+0.5
CLCH				*i* S	Sn	12 22 58.7	+1.1
CLCH				AMP		12 23 00.9	
	comp=E,246nm,0.6s						
FCH	**Farellones**	**1.76**	**139**	*eP*

ASAJ	**Asahikawa**	**10.95**	**13**	P		**P**	**12 39 12.1**	**0.0**	
	2.2nm,0.3s,baz=233,slow=7.9,SNR=16								
MDJ	**Mudanjiang**	**13.44**	**329**	P		**P**	**12 39 44.6**	**+1.2**	
MDJ				AMB	AMB				
	comp=Z,10.0nm,0.9s								
MDJ				AMB	AMB				
	comp=Z,73nm,5.1s								
MDJ	**Mudanjiang**	**13.44**	**329**	P		**P**	**12 39 44.7**	**+1.3**	
YSS	**Yuzh-Sakhalins**	**13.73**	**10**	*eP*		**P**	**12 39 46.5**	**-0.5**	
	comp=Z,1.1nm,0.5s								
CN2	**Changchun**	**14.94**	**318**	*eP*		**P**	**12 40 04.6**	**+2.7**	
HIA	**Hailar**	**21.46**	**323**	*eP*		**P**	**12 41 13.2**	**+1.3**	
	comp=Z,4.1nm,0.5s,mb4.2								
ULN	**Ulaanbaatar**	**28.14**	**310**	*eP*		**P**	**12 42 14.1**	**0.0**	
	comp=Z,0.9nm,0.6s,mb3.6								
SONM	**Songino Array**	**28.55**	**310**	P		**P**	**12 42 17.8**	**+0.1**	
	comp=Z,1.4nm,0.6s,mb3.7,baz=117,slow=11,SNR=6.8								
WMQ	**Urumqi**	**41.02**	**300**	*eP*		**P**	**12 44 04.3**	**+0.8**	
WMQ				AP		pP	12 44 48.3	-1.3	
WMQ				XP		sP	12 45 11.3	-3.4	
WMQ				PP		PP	12 45 46.3	+2.7	
WMQ				AMB	AMB				
	comp=Z,11nm,1.4s,mb4.1								
WMQ				AMB	AMB				
	comp=Z,44nm,4.8s								
MKAR	**Makanchi Array**	**44.65**	**305**	P		**P**	**12 44 32.4**	**-0.2**	
	comp=Z,8.6nm,0.9s,mb4.1,baz=91,slow=9.8,SNR=24								
MKAR	**Makanchi Array**	**44.65**	**305**	P		**P**	**12 44 32.4**	**-0.2**	
KURK	**Kurchatov**	**46.86**	**311**	*eP*		**P**	**12 44 48.9**	**-0.9**	
BVAR	**Borovoye Array**	**51.76**	**314**	P		**P**	**12 45 27.3**	**+0.3**	
	comp=Z,0.9nm,0.4s,mb3.6,baz=59,slow=8.6,SNR=5.5								
ZRNK	**Zerenda**	**52.60**	**314**	*eP*		**P**	**12 45 33.0**	**-0.2**	
WRA	**Warramunga Arr**	**53.31**	**186**	P		**P**	**12 45 37.3**	**-1.6**	
	comp=Z,1.4nm,0.3s,mb3.8,baz=0.7,slow=7.7,SNR=43								
ILAR	**Eielson Array**	**53.44**	**31**	P		**P**	**12 45 43.2**	**+3.9**	
	comp=Z,0.2nm,0.8s,mb2.6,baz=282,slow=6.8,SNR=4.4								
ASAR	**Alice Springs**	**57.04**	**186**	P		**P**	**12 46 04.5**	**-1.1**	
	comp=Z,0.8nm,0.5s,mb3.6,baz=16,slow=13,SNR=14								
STKA	**Stephens Creek**	**65.02**	**178**	P		**P**	**12 46 59.1**	**+0.1**	
	comp=Z,1.3nm,0.5s,mb3.8,baz=1.5,slow=5.9,SNR=4.5								
FINES	**FINESS Array B**	**71.17**	**332**	P		**P**	**12 47 36.3**	**-0.2**	
	comp=Z,0.7nm,0.7s,mb3.4,baz=79,slow=7.1,SNR=4.8								
RPZ	**Rata Peaks**	**82.09**	**157**	P		**P**	**12 48 38.1**	**+0.7**	
	comp=Z,12nm,0.9s,mb4.5,baz=22,slow=5.4,SNR=3.4								
LPAZ	**La Paz**	**149.94**	**62**	PKPbc		PKPdf	12 56 10.6	+11	
	comp=Z,1.5nm,0.6s,baz=342,slow=6.9,SNR=4.8								
LPAZ	**La Paz**	**149.94**	**62**	PKPbc		PKPdf	12 56 10.6	+11	

IDC 19 12:46:15.9±5.2, 24.55S×177.33W, mb4.0/4, mb1 4.3/5, mb1mx4.0/13, ML3.8/1, MS3.3/1, Ms1 3.2/1, ms1mx2.4/22, 1C-2D, Error ellipse: s-maj=107.0km s-min=58.9km az=95.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
URZ	**Urewera**	**14.47**	**198**	Pn		P	12 49 41.4	-2.6
	0.4nm,0.3s,baz=321,slow=6.5,SNR=3.1							
URZ				Sn		S	12 52 08.2	-18
	0.2nm,0.3s,baz=139,slow=20,SNR=3.6							
STKA	**Stephens Creek**	**36.76**	**249**	P		P	12 53 25.2	-1.7
	1.1nm,0.7s,baz=87,slow=11,SNR=3.7							
STKA				LR		LR	13 07 08.5	
	comp=Z,44nm,19.9s,baz=35,slow=34							
ASAR	**Alice Springs**	**44.33**	**261**	P		P	12 54 28.4	-1.2
	1.4nm,1.0s,baz=110,slow=8.6,SNR=7.9							
WRA	**Warramunga Arr**	**44.79**	**266**	P		P	12 54 31.1	-2.4
	2.4nm,1.1s,baz=100,slow=8.2,SNR=6.2							
VNA3	**Neumayer Olymp**	**84.08**	**176**	*i*		P	12 58 38.8	-10
VNA2	**Neumayer--Watz**	**84.53**	**177**	*i*		P	12 58 40.4	-11
VNA1	**Neumayer--Stat**	**84.75**	**176**	*i*		P	12 58 39.0	-14
CMAR	**Chiang Mai Arr**	**92.03**	**289**	P		P	12 59 27.3	-1.2
	2.1nm,0.9s,baz=137,slow=3.3,SNR=6.7							

*NEIC **19** 12:49:28.5±1.1, 10.73S×118.37E, h40km, Error ellipse: s-maj=73.4km s-min=10.8km az=222.0*
*IDC **19** 12:49:28.5±3.6, 11.60S×117.78E, mb3.5/1, mb1 3.6/4, mb1mx3.5/12, ML3.3/3, Error ellipse: s-maj=239.0km s-min=26.7km az=47.0*
*DJA **19** 12:49:42.5±1.2, 10.69S×116.97E, h85km±27km, MD4.7/4, ML4.9/4, Error ellipse: s-maj=36.3km s-min=29.4km az=163.0*
ISC 19 12:49:25.6±0.9, 11.5S±0.3×117.8E±0.3, h40km, n13, σ1s50/23, mb3.6/1, 8C-5D, South of Sumbawa

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
KEDI	**Kedomdong**	**3.39**	**331**	↓*e*Pn		**P**	**12 50 19.4**	**+1.9**
	608nm,0.2s							
KEDI	**Kedomdong**	**3.39**	**331**	↑*i*P		**P**	**12 50 20.4**	**+2.9**
KEDI				↑*i*Sn		**S**	**12 50 42.8**	**-14**
KEDI	**Kedomdong**	**3.39**	**331**	↑*i*P		**P**	**12 50 20.4**	**+2.9**
KEDI				*i* Sn		**S**	**12 50 57.0**	**+0.1**
RATI	**Rata**	**3.52**	**321**	↓*e*Pn		**P**	**12 50 20.5**	**+1.3**
	636nm,0.2s							
RATI				↑*i*Sn		**S**	**12 50 48.5**	**-12**
RATI	**Rata**	**3.52**	**321**	↓*e*Pn		**S**	**12 50 20.5**	**+1.3**
RATI				*e*Sn		**S**	**12 50 58.4**	**-1.6**
INGI	**Ingas**	**3.70**	**315**	↑*e*Pn		**P**	**12 50 22.4**	**+0.6**
	606nm,0.2s							
INGI				↑*i*Sn		**S**	**12 50 51.2**	**-13**
INGI	**Ingas**	**3.70**	**315**	↑*e*Pn		**P**	**12 50 22.4**	**+0.6**
INGI				*i* Sn		**S**	**12 51 03.1**	**-1.6**
KELI	**Kelakatan**	**4.58**	**315**	↓*e*Pn		**P**	**12 50 35.1**	**+0.9**
	173nm,0.2s							
KELI				↑*e*Sn		S	12 51 04.1	-23
KELI	**Kelakatan**	**4.58**	**315**	↓*e*Pn		**P**	**12 50 35.1**	**+0.9**
KELI				*e*Sn		**S**	**12 51 24.9**	**-2.0**
FITZ	**Fitzroy Crossi**	**10.06**	**132**	Pn		**P**	**12 51 52.0**	**+1.3**
	0.5nm,0.3s,baz=316,slow=8.3,SNR=29							
FITZ				Sn		**S**	**12 53 37.2**	**-6.2**
	1.0nm,0.3s,baz=181,slow=17,SNR=14							
WRA	**Warramunga Arr**	**18.02**	**120**	P		**P**	**12 53 39.0**	**+4.1**
	0.1nm,0.3s,baz=286,slow=14,SNR=4.9							
WRA				S		**S**	**12 56 46.8**	**-4.8**
	0.1nm,0.3s,baz=289,slow=25,SNR=4.6							
ASAR	**Alice Springs**	**19.56**	**130**	P		**P**	**12 53 58.9**	**+6.0**
	0.1nm,0.3s,baz=309,slow=13,SNR=8.2							
ASAR				S		**S**	**12 57 24.6**	**-1.5**
	0.1nm,0.3s,baz=297,slow=22,SNR=4.7							
MKAR	**Makanchi Array**	**66.12**	**334**	P		**P**	**13 00 18.1**	**+7.1**
	0.4nm,0.6s,mb3.6,baz=135,slow=6.9,SNR=4.0							

*NEIC **19** 13:23:25.4±1.0, 17.76N×146.21E, Error ellipse: s-maj=139.0km s-min=13.4km az=110.0*
*IDC **19** 13:23:25.9±1.3, 17.81N×146.22E, h149km±8km, mb3.1/4, mb1 3.4/4, mb1mx3.1/18, Error ellipse: s-maj=224.0km s-min=16.8km az=111.0*
ISC 19 13:23:24.2±1.4, 17.7N±0.2×146.5E±0.6, h143km±14km, h148km±4.3km; pP-P, n9, σ0s95/13, mb3.2/4, 1C-1D, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
SARN	**Sarigan**	**1.18**	**217**	↓*i*P		**P**	**13 23 50.3**	**+0.1**
SARN				*e*S		**S**	**13 24 05.7**	**-4.6**
ANA2	**Anatahan**	**1.50**	**210**	*e*P		**S**	**13 23 54.4**	**+0.8**
ANA2				S		**S**	**13 24 14.8**	**-1.5**
ANAT	**Anatahan**	**1.52**	**212**	P		**P**	**13 23 54.6**	**+0.8**
SAPN	**Saipan**	**2.53**	**197**	↑*i*P		**P**	**13 24 07.0**	**+1.1**
SAPN				*e*S		**S**	**13 24 36.9**	**-0.9**
GUMO	**Guam**	**4.33**	**201**	*e*Pn		**P**	**13 24 30.4**	**+0.9**
GUMO				*e*Sn		**S**	**13 25 19.5**	**-0.4**
WRA	**Warramunga Arr**	**39.22**	**198**	P		**P**	**13 30 40.4**	**+0.2**
	1.3nm,0.9s,mb3.6,baz=18,slow=9.6,SNR=6.9							
WRA				pP		pP	13 31 12.2	+0.2
	0.2nm,0.3s,baz=24,slow=8.7,SNR=1.1							
ASAR	**Alice Springs**	**42.87**	**197**	P		**P**	**13 31 10.5**	**+0.4**
	0.2nm,0.5s,mb3.0,baz=20,slow=7.5,SNR=6.3							
ILAR	**Eielson Array**	**64.25**	**26**	P		**P**	**13 33 46.0**	**+0.2**
	0.6nm,0.8s,mb3.5,baz=259,slow=4.6,SNR=5.1							
ILAR				pP		pP	13 34 20.4	+0.1
	2.0nm,1.2s,baz=263,slow=6.0,SNR=5.1							
YKA	**Yellowknife Ar**	**78.55**	**28**	P		**P**	**13 35 08.6**	**-2.2**
	0.1nm,0.4s,mb2.8,baz=285,slow=5.4,SNR=4.8							
YKA				pP		pP	13 35 47.6	+0.9
	0.2nm,0.6s,baz=289,slow=5.6,SNR=4.1							

IDC 19 13:28:56.6±9.0, 4.22N×94.69E, mb3.4/3, mb1 3.6/3, mb1mx3.4/17, Error ellipse: s-maj=448.0km s-min=29.5km az=57.0, Off west coast of northern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
MKAR	**Makanchi Array**	**43.75**	**348**	P		P	13 37 03.7	-1.8
	0.3nm,0.5s,baz=171,slow=8.6,SNR=5.0							
WRA	**Warramunga Arr**	**45.76**	**123**	P		P	13 37 20.1	-1.8
	0.6nm,0.7s,baz=301,slow=9.7,SNR=3.2							
ASAR	**Alice Springs**	**47.21**	**128**	P		P	13 37 31.5	-1.9
	0.2nm,0.5s,baz=298,slow=8.0,SNR=6.2							

*NIED **19** 13:45:00, 40.50N×139.10E, h5km, Mw3.6 Best double couple: M0 3×10^14 NP1:φs31°, δ62°, λ95°. NP2:φs201°, δ29°, λ81°.*
*JMA **19** 13:45:37.0±0.2, 40.49N×139.06E, h22km±2km, M3.9*
ISC 19 13:45:36.5±1.2, 40.49N±0.03×139.03E±0.07, h28km±7km, n11, σ0s58/21, 3D, Near west coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JIW	**Iwasaki**	**0.75**	**82**	↓P		**Pb**	**13 45 50.7**	**-0.2**
JIW				S		**Sb**	**13 46 00.2**	**-0.7**
JOG2	**Oga 2**	**0.82**	**134**	↓P		**Pb**	**13 45 52.1**	**0.0**
JOG2				S		**Sb**	**13 46 03.0**	**+0.2**
JAH	**Hinai**	**1.26**	**103**	↓P		**Pn**	**13 45 58.6**	**0.0**
JAH				*e*S		**Sn**	**13 46 14.6**	**-0.2**
JSR	**Shiriuchi**	**1.48**	**45**	P		**Pn**	**13 46 02.1**	**+0.5**
JSR				*e*S		**Sn**	**13 46 20.4**	**+0.2**
JTM	**Tenmabayashi**	**1.58**	**79**	P		**Pn**	**13 46 03.7**	**+0.6**
JTM				*e*S		**Sn**	**13 46 22.6**	**-0.2**
JOSM	**Okushiri--Mats**	**1.62**	**12**	P		**Pn**	**13 46 03.1**	**-0.7**
JOSM				*e*S		**Sn**	**13 46 22.4**	**-1.5**
JOT	**Ohata**	**1.77**	**59**	P		**Pn**	**13 46 06.4**	**+0.6**
JOT				*e*S		**Sn**	**13 46 27.8**	**+0.2**
JYK	**Kaneyama**	**1.88**	**146**	P		**Pn**	**13 46 07.1**	**-0.3**
JYK				*e*S		**Sn**	**13 46 29.8**	**-0.6**
JANG	**Nango**	**1.90**	**93**	P		**Pn**	**13 46 08.5**	**+0.8**
JYM2	**Yakumo 2**	**1.91**	**31**	P		**Pn**	**13 46 08.8**	**+0.9**
JYM2				*e*S		**Sn**	**13 46 31.5**	**+0.2**
MAT	**Matsushiro**	**4.00**	**190**	P		**Pn**	**13 46 38.4**	**+0.8**
MAT				S		**Sn**	**13 47 23.5**	**-0.6**

*NSSC **19** 14:17:20.2, 33.83N×36.63E, h17km±1km*
*GII **19** 14:17:20.8±0.7, 33.90N×36.52E, h5km±30km, ML2.4/5, Mw2.6/2*
*GRAL **19** 14:17:20.3±10.0, 33.86N×36.74E, h15km±999km, MD2.8*
ISC 19 14:17:20.0±1.1, 33.82N±0.03×36.64E±0.06, h6km±5km, n15, σ0s72/25, 3D, Jordan - Syria region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
MARH	**Ras Al Marh**	**0.25**	**328**	↑P		**Pg**	**14 17 25.8**	**+0.7**
MARH				↑S		**Sg**	**14 17 29.4**	**+0.9**
QASN	**Qassioun**	**0.42**	**227**	↓P		**Pg**	**14 17 28.8**	**+0.4**
QASN				↓S		**Sg**	**14 17 34.9**	**+0.9**
TOTH	**TOTAH**	**0.49**	**202**	↑P		**Pg**	**14 17 30.0**	**+0.2**
TOTH				↑S		**Sg**	**14 17 37.4**	**+1.1**
BRBR	**Barbar**	**0.70**	**235**	↑P		**Pg**	**14 17 34.2**	**+0.1**
BRBR				↑S		**Sg**	**14 17 43.9**	**+0.4**
HWQ	**Hawqa**	**0.74**	**309**	*i* PG		**Pg**	**14 17 34.3**	**-0.5**
	baz=72,slow=4.0							
HWQ				*i* SG		**Sg**	**14 17 44.6**	**-0.1**
BHL	**Bhannes**	**0.83**	**276**	*i* PG		**Pg**	**14 17 35.6**	**-1.0**
BHL				*i* SG		**Sg**	**14 17 47.6**	**-0.1**
HRI	**Mount Hermon**	**0.94**	**234**	Sg		**Sg**	**14 17 50.7**	**-0.5**
KSDI	**Kefar Szold**	**1.03**	**233**	Pg		**Pg**	**14 17 39.2**	**-1.4**
KSDI				Sg		**Sg**	**14 17 53.4**	**-0.9**
KSHT	**Keshet**	**1.08**	**220**	Sg		**Sg**	**14 17 56.2**	**0.0**
SALA	**Sala**	**1.10**	**176**	↓P		**Pb**	**14 17 40.5**	**-0.6**
TCHB	**Talchebab**	**1.27**	**206**	↑P		**Pb**	**14 17 43.6**	**-0.5**
TCHB				↑S		**Sb**	**14 17 59.4**	**-1.1**
HNTI	**Hanita**	**1.43**	**240**	Pn		**Pn**	**14 17 46.1**	**-0.4**
HNTI				Sn		**Sn**	**14 18 05.8**	**0.0**
HMDT	**Nahal Hemdat**	**1.82**	**211**	Pn		**Pn**	**14 17 52.3**	**+0.2**
HMDT				Sn		**Sn**	**14 18 17.4**	**+1.7**
OFRI	**'Ofer**	**1.83**	**230**	Sn		**Sn**	**14 18 16.1**	**0.0**
SLTI	**Sal'it**	**2.07**	**221**	Sn		**Sn**	**14 18 22.7**	**+0.6**

*IDC **19** 14:26:15.6±2.4, 11.23S×120.14E, mb3.8/1, mb1 4.0/4, mb1mx3.7/13, ML3.7/3, Error ellipse: s-maj=202.0km s-min=25.6km az=51.0*
*NEIC **19** 14:26:17.5±1.4, 10.83S×120.36E, h55km, Error ellipse: s-maj=67.9km s-min=8.9km az=215.0*
*DJA **19** 14:26:17.8±0.9, 11.71S×119.59E, h200km±1km, MD4.7/3, ML5.0/4, Error ellipse: s-maj=78.7km s-min=19.2km az=36.0*
ISC 19 14:26:16.1±1.4, 12.1S±0.3×119.5E±0.3, h49km±24km, n13, σ0s97/24, mb3.8/1, 9C-2D, South of Sumba

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
KEDI	**Kedomdong**	**4.92**	**317**	↑*e*Pn		**P**	**14 27 30.2**	**+0.8**
	61nm,0.2s							
KEDI				↑*i*Sn		**S**	**14 28 23.1**	**-2.6**
KEDI	**Kedomdong**	**4.92**	**317**	↑*e*Pn		**P**	**14 27 29.7**	**+0.3**
KEDI				*i* Sn		**S**	**14 28 24.4**	**-1.3**
RATI	**Rata**	**5.16**	**310**	↓*e*Pn		**P**	**14 27 33.5**	**+0.7**
	452nm,0.2s							
RATI				↓*e*Sn		**S**	**14 28 30.6**	**-1.3**
INGI	**Ingas**	**5.40**	**307**	↑*e*Pn		**P**	**14 27 37.4**	**+1.3**
	422nm,0.2s							
INGI				↑*i*Sn		**S**	**14 28 33.8**	**-4.0**
INGI	**Ingas**	**5.40**	**307**	↑*e*Pn		**P**	**14 27 37.4**	**+1.3**
INGI				*i* Sn		**S**	**14 28 37.8**	**0.0**
KELI	**Kelakatan**	**6.28**	**308**	↑*i*Pn		**P**	**14 27 48.8**	**+0.4**
	82nm,0.2s							
KELI				↑*i*Sn		**S**	**14 28 55.4**	**-4.3**
KELI	**Kelakatan**	**6.28**	**308**	↑*i*Pn		**P**	**14 27 48.8**	**+0.4**
KELI				*i* Sn		**S**	**14 28 59.6**	**-0.1**
FITZ	**Fitzroy Crossi**	**8.39**	**136**	*e*P		**P**	**14 28 22.1**	**+4.3**
	4.1nm,0.4s							
FITZ				*e*S		**S**	**14 29 51.8**	**-0.4**
FITZ	**Fitzroy Crossi**	**8.39**	**136**	Pn		**P**	**14 28 22.4**	**+4.6**
	1.0nm,0.3s,baz=349,slow=5.2,SNR=31							
FITZ				Sn		**S**	**14 29 51.9**	**-0.4**
	1.9nm,0.3s,baz=186,slow=16,SNR=12							
WRA	**Warramunga Arr**	**16.23**	**120**	Pn		**P**	**14 30 02.7**	**+0.2**
	0.2nm,0.3s,baz=299,slow=13,SNR=8.9							
WRA				Sn		**S**	**14 32 52.8**	**-7.8**
	0.2nm,0.3s,baz=290,slow=25,SNR=4.0							
ASAR	**Alice Springs**	**17.86**	**132**	P		**P**	**14 30 28.6**	**+5.8**
	0.4nm,0.3s,baz=303,slow=12,SNR=27							
ASAR				S		**S**	**14 33 36.6**	**-0.9**
	0.1nm,0.3s,baz=312,slow=24,SNR=7.6							
MKAR	**Makanchi Array**	**67.45**	**333**	P		**P**	**14 37 10.0**	**+1.1**
	0.7nm,0.7s,mb3.8,baz=144,slow=7.2,SNR=7.9							
MKAR	**Makanchi Array**	**67.45**	**333**	P		**P**	**14 37 10.0**	**+1.1**

*NIED **19** 14:43:00, 35.00N×135.50E, h11km, Mw3.4 Best double couple: M0 1.2×10^14 NP1:φs203°, δ61°, λ110°. NP2:φs346°, δ35°, λ59°.*
*JMA **19** 14:43:16.5, 34.97N×135.53E, h13km±1km, M3.6 Broadband fault plane solution: P waves. NP1:φs345°, δ42°, λ52°. NP2:φs211°, δ58°, λ119°. Principal axes: T Plg64°, Azm172°; N Plg24°, Azm15°; P Plg9°, Azm281°; JMA Felt II J1.*
ISC 19 14:43:16.3±0.6, 34.96N±0.03×135.53E±0.04, h10km±5km, n11, σ0s53/22, 2C-8D, Near south coast of western Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JHE	**Heguri**	**0.33**	**157**	↓P		**Pg**	**14 43 23.3**	**+0.2**
JHE				*e*S		**Sg**	**14 43 28.0**	**+0.3**
JWT	**Wachi**	**0.34**	**342**	↑P		**Pg**	**14 43 23.3**	**0.0**
JWT				*e*S		**Sg**	**14 43 27.7**	**-0.2**
JMIK	**Miki**	**0.42**	**249**	↓P		**Pg**	**14 43 25.1**	**+0.3**
JMIK				*e*S		**Sg**	**14 43 31.1**	**+0.6**
JKS	**Kasai**	**0.56**	**273**	↓P		**Pg**	**14 43 27.4**	**-0.2**
JKS				*e*S		**Sg**	**14 43 35.0**	**-0.2**
JWY	**Kouya**	**0.74**	**176**	↑P		**Pb**	**14 43 30.6**	**-0.2**
JWY				*e*S		**Sb**	**14 43 40.5**	**-0.2**
JKY	**Yasaka**	**0.75**	**333**	↓P		**Pb**	**14 43 30.7**	**-0.2**
JKY				*e*S		**Sb**	**14 43 40.5**	**-0.5**
JAJ2	**Tsuna**	**0.76**	**225**	↓P		**Pb**	**14 43 30.8**	**-0.2**
JAJ2				*e*S		**Sb**	**14 43 41.5**	**+0.4**
TSUJ	**Tsu 2**	**0.78**	**109**	↓P		**Pb**	**14 43 30.8**	**-0.5**
TSUJ				*e*S		**Sb**	**14 43 41.0**	**-0.6**
JKN	**Kiinagashima**	**0.93**	**139**	↓P		**Pb**	**14 43 33.8**	**-0.3**
JKN				*e*S		**Sb**	**14 43 46.1**	**-0.2**
JKSM	**Kasumi**	**0.94**	**312**	↓P		**Pb**	**14 43 34.1**	**-0.1**
JKSM				*e*S		**Sb**	**14 43 46.6**	**0.0**
MAT	**Matsushiro**	**2.69**	**53**	P		**Pn**	**14 44 00.5**	**+0.1**
MAT				*e*S		**Sn**	**14 44 35.7**	**+2.4**

*IDC **19** 15:10:28.6±2.5, 23.25S×69.20W, h80km±16km, mb3.4/2, mb1 3.5/4, mb1mx3.4/13, Error ellipse: s-maj=46.1km s-min=32.4km az=45.0*
*NEIC **19** 15:10:29.7±1.5, 23.23S×69.16W, h90km±12km, Error ellipse: s-maj=25.9km s-min=15.8km az=54.0*
ISC 19 15:10:29.0±1.3, 23.2S±0.1×69.1W±0.2, h94km±11km, n11, σ0s53/11, mb3.8/3, Northern Chile

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
LVC	**Limon Verde**	**0.63**	**16**	P		**P**	**15 10 45.1**	**-0.4**
	305nm,0.3s,baz=196,slow=8.3,SNR=2142							
LVC				S		**S**	**15 10 57.6**	**-0.1**
	620nm,0.3s,baz=287,slow=19,SNR=152							
LVC	**Limon Verde**	**0.63**	**16**	P		**P**	**15 10 45.1**	**-0.4**
LVC				S		**S**	**15 10 57.6**	**-0.1**
LPAZ	**La Paz**	**6.96**	**8**	P		**P**	**15 12 11.1**	**+1.0**
	0.5nm,0.3s,baz=173,slow=6.2,SNR=7.4							
LPAZ	**La Paz**	**6.96**	**8**	P		**P**	**15 12 11.1**	**+1.0**
CPUP	**Villa Florida**	**11.14**	**109**	P		**P**	**15 13 07.1**	**+0.5**
	0.1nm,0.3s,baz=315,slow=11,SNR=3.5							
BDFB	**Brasilia**	**21.25**	**73**	P		**P**	**15 15 08.6**	**-0.7**
	1.2nm,0.4s,mb3.6,baz=242,slow=5.1,SNR=3.0							
QSPA	**South Pole Qui**	**66.98**	**180**	*eP*		**P**	**15 21 13.2**	**0.0**
	2.2nm,0.5s,mb4.2							
MRZ	**Mangatainoka R**	**92.57**	**224**	*eP*		**P**	**15 23 31.5**	**+0.3**
YKA	**Yellowknife Ar**	**92.74**	**341**	P		**P**	**15 23 30.8**	**-0.6**
	0.2nm,0.3s,mb3.6,baz=141,slow=4.4,SNR=6.8							
ASAR	**Alice Springs**	**128.31**	**207**	PKP		PKPdf	15 29 26.1	+0.8
	0.2nm,0.5s,baz=169,slow=1.7,SNR=5.9							
MKAR	**Makanchi Array**	**147.12**	**37**	PKPbc		PKPdf	15 30 02.5	+3.9
	0.1nm,0.4s,baz=315,slow=2.0,SNR=4.5							

*IDC **19** 15:25:28.9±2.4, 18.26S×169.53E, mb4.2/6, mb1 4.5/6, mb1mx4.2/12, Error ellipse: s-maj=106.0km s-min=27.4km az=146.0*
*NEIC **19** 15:25:56.1±2.8, 18.10S×169.00E, h227km±35km, mb3.9/2, Error ellipse: s-maj=66.9km s-min=17.6km az=156.0*
ISC 19 15:25:57.8±3.2, 18.4S±0.5×169.0E±0.3, h257km±40km, n14, σ0s80/12, mb3.9/6, 1D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
NOUC	**Port Laguerre**	**4.45**	**214**	*eP*		**P**	**15 27 07.7**	**0.0**
NOUC	**Port Laguerre**	**4.45**	**214**	*eP*		**P**	**15 27 07.7**	**0.0**
CTA	**Charters Tower**	**21.50**	**262**	*eP*		**P**	**15 30 29.1**	**+2.0**
	3.1nm,0.8s,mb3.7							
CTA	**Charters Tower**	**21.50**	**262**	P		**P**	**15 30 26.1**	**-1.0**
	2.5nm,0.5s,mb3.8,baz=83,slow=12,SNR=5.2							
STKA	**Stephens Creek**	**28.08**	**236**	*eP*		**P**	**15 31 28.9**	**+0.9**
	1.3nm,0.6s,mb3.5							
STKA	**Stephens Creek**	**28.08**	**236**	P		**P**	**15 31 27.2**	**-0.7**
	1.4nm,0.7s,mb3.5,baz=69,slow=9.9,SNR=5.6							
WB2	**Warramunga Arr**	**32.69**	**262**	*eP*		**P**	**15 32 07.7**	**-0.6**
WRA	**Warramunga Arr**	**32.70**	**262**	P		**P**	**15 32 07.5**	**-0.9**
	1.4nm,0.3s,mb4.0,baz=92,slow=8.7,SNR=54							
AS12	**Alice Springs**	**33.08**	**255**	↓*i*P		**P**	**15 32 11.7**	**+0.1**
	16nm,0.4s,mb4.9							
ASAR	**Alice Springs**	**33.08**	**255**	P		**P**	**15 32 11.7**	**+0.1**
	11nm,0.4s,mb4.8,baz=82,slow=8.7,SNR=662							
FITZ	**Fitzroy Crossi**	**41.07**	**263**	*eP*		**P**	**15 33 19.2**	**+1.0**
	4.3nm,0.6s,mb3.9							
ILAR	**Eielson Array**	**89.50**	**17**	P		**P**	**15 38 26.5**	**0.0**
	0.2nm,0.6s,mb3.1,baz=238,slow=6.2,SNR=4.9							
YKA	**Yellowknife Ar**	**100.04**	**27**	P		P	15 39 13.5	-1.3
	0.2nm,0.6s,baz=254,slow=4.7,SNR=5.6							
YKA	**Yellowknife Ar**	**100.04**	**27**	P		P	15 39 13.5	-1.3

*TAP **19** 15:37:21.9, 22.75N×121.34E, h26km, ML

NNZ	**Nelson**	**5.24 212**	PN	P	15 41 01.8	-2.8
NNZ	**Nelson**	**5.24 212**	*e*P	P	15 41 01.8	-2.8
QRZ	**Quartz Range**	**5.34 220**	PN	P	15 41 02.6	-3.2
QRZ	**Quartz Range**	**5.34 220**	*e*P	P	15 41 02.6	-3.2
THZ	**Tophouse**	**5.89 212**	PN	P	15 41 09.1	-3.4
THZ	**Tophouse**	**5.89 212**	P	P	15 41 10.0	-2.5
KHZ	**Kahutara**	**6.21 205**	PN	P	15 41 14.2	-2.2
KHZ	**Kahutara**	**6.21 205**	P	P	15 41 14.2	-2.2
DSZ	**Denniston Nort**	**6.39 218**	PN	P	15 41 16.1	-2.5
DSZ	**Denniston Nort**	**6.39 218**	P	P	15 41 16.1	-2.5
LTZ	**Lake Taylor**	**7.00 211**	PN	P	15 41 23.0	-3.1
LTZ	**Lake Taylor**	**7.00 211**	P	P	15 41 23.0	-3.2

IDC 19 15:48:52.5±72.0, **7.76S**×**124.49E**, **h545**km±183km, **mb3.1**/1, **mb1 3.1**/4, **mb1mx2.8**/13, **Error ellipse: s-maj=970.0km s-min=153.2km az=161.0**, **Banda Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**10.34 174**		*e*P	P	15 51 13.7	-1.1
	2.5nm,0.3s						
FITZ	**Fitzroy Crossi**	**10.34 174**		P	P	15 51 13.9	-0.8
	1.0nm,0.3s,baz=10.0,slow=11,SNR=44						
WRA	**Warramunga Arr**	**15.42 143**		P	P	15 52 06.1	+0.1
	0.7nm,0.3s,baz=319,slow=11,SNR=22						
WB2	**Warramunga Arr**	**15.43 143**		*e*P	P	15 52 06.2	+0.2
AS12	**Alice Springs**	**18.21 151**		*e*P	P	15 52 32.5	-0.5
	2.2nm,0.5s						
ASAR	**Alice Springs**	**18.21 151**		P	P	15 52 32.6	-0.4
	0.7nm,0.3s,baz=329,slow=8.5,SNR=51						
STKA	**Stephens Creek**	**28.80 149**		*e*P	P	15 54 06.7	-1.7
	1.3nm,0.6s						
STKA	**Stephens Creek**	**28.80 149**		P	P	15 54 06.8	-1.6
	1.0nm,0.3s,baz=326,slow=9.4,SNR=11						

*IDC **19** 16:12:12.7*±*0.6,58.26S*×*11.49W,mb4.5/9,mb1 4.6/9, mb1mx4.4/15,MS3.7/7,Ms1 3.7/7,ms1mx3.6/14,Error ellipse: s-maj=30.5km s-min=18.7km az=28.0*

*NEIC **19** 16:12:14.7*±*0.4,58.06S*×*11.48W,h10*km*,mb4.8/4,Error ellipse: s-maj=14.8km s-min=9.4km az=71.0*

*BJI **19** 16:12:14.6,58.10S*×*11.50W,h10*km*,mB5.0,Ms4.8, Msz5.1*

*SYO **19** 16:12:14.6,58.06S*×*11.48W,h10*km*,MB4.8*

ISC 19 16:12:13.4±0.5, **58.12S**±0.07×**11.6W**±0.2, **h10**km, **n56**, σ1§**17**/**32**, **mb4.5**/11, **MS3.6**/8, **8C-8D**, **East of South Sandwich Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VNA1	**Neumayer--Stat**	**12.66 175**		⇑*i*	P	**16 15 18.0**	**+1.8**
VNA1	**Neumayer--Stat**	**12.66 175**		⇓*i*	P	**16 15 24.8**	**+8.6**
VNA2	**Neumayer--Watz**	**12.98 174**		⇓*i*	P	**16 15 20.6**	**+0.2**
VNA2	**Neumayer--Watz**	**12.98 174**		⇓*i*	P	**16 15 23.6**	**+3.2**
VNA2	**Neumayer--Watz**	**12.98 174**		⇑*i*	P	**16 15 29.5**	**+9.1**
VNA2	**Neumayer--Watz**	**12.98 174**		⇑*i*	P	**16 15 36.5**	**+16**
VNA3	**Neumayer Olymp**	**13.21 177**		⇑*i*	P	**16 15 23.7**	**+0.4**
VNA3	**Neumayer Olymp**	**13.21 177**		⇑*i*	P	**16 15 25.5**	**+2.2**
VNA3	**Neumayer Olymp**	**13.21 177**		⇑*i*	P	**16 15 32.3**	**+9.0**
VNA3	**Neumayer Olymp**	**13.21 177**		⇑*i*	P	**16 15 38.0**	**+15**
SNAA	**Sanae**	**14.08 169**		*e*P	P	**16 15 32.1**	**-2.5**
MAIT	**Maitri**	**16.03 152**		*e*P	P	**16 15 57.2**	**-2.9**
MAIT				*e*S	S	**16 18 59.5**	**+1.6**
SYO	**Syowa Base**	**24.43 137**		⇓P	P	**16 17 32.3**	**-0.3**
SYO	**Syowa Base**	**24.43 137**		⇓pP		16 17 33.2	
SYO	**Syowa Base**	**24.43 137**		⇓sP		16 17 37.0	
SYO	**Syowa Base**	**24.43 137**		⇓*e*P	P	**16 17 32.3**	**-0.3**
SYO				⇓*e*PP	PP	16 17 33.2	-35
SYO				⇓*e*SP		16 17 37.0	
USHA	**Ushuaia**	**30.77 251**		P	P	**16 18 30.0**	**-0.7**
	3.3nm,0.8s,mb4.2,baz=82,slow=8.8,SNR=2.8						
USHA				LR	LR	16 27 38.9	
	comp=Z,118nm,20.4s,MS3.5,baz=21,slow=30						
QSPA	**South Pole Qui**	**32.12 180**		*e*P	P	**16 18 42.0**	**-0.3**
	15nm,0.7s,mb4.9						
QSPA				*e*		16 21 30.6	
QSPA				LR	LR		
	comp=Z,150nm,21.5s,MS3.6						
MAW	**Mawson**	**33.14 138**		*e*P	P	**16 18 50.6**	**-0.7**
	comp=Z,9.5nm,0.9s,mb4.7						
MAW	**Mawson**	**33.14 138**		P	P	**16 18 50.4**	**-0.9**
	comp=Z,12nm,0.9s,mb4.8,baz=255,slow=7.8,SNR=13						
MAW				LR	LR	16 29 02.0	
	comp=Z,152nm,21.5s,MS3.7,baz=51,slow=31						
SUR	**Sutherland**	**33.81 55**		LR	LR	16 29 09.5	
	comp=Z,69nm,21.3s,MS3.4,baz=224,slow=30						
SUR	**Sutherland**	**33.81 55**		*e*P	P	**16 18 58.4**	**+0.9**
TRQA	**Tornquist**	**38.05 279**		*e*P	P	**16 19 33.9**	**+0.5**
SBA	**Scott Base**	**44.28 179**		*e*P	P	**16 20 25.4**	**+1.3**
	comp=Z,87nm,2.1s,mb5.1						
TSUM	**Tsumeb**	**44.35 41**		P	P	**16 20 26.1**	**+0.7**
	comp=Z,3.4nm,1.0s,mb4.0,baz=196,slow=6.5,SNR=5.5						
VNDA	**Vanda**	**44.56 178**		LR	LR	16 37 57.2	
	comp=Z,206nm,20.3s,MS4.0,baz=169,slow=35						
CPUP	**Villa Florida**	**45.06 295**		P	P	**16 20 31.3**	**+0.3**
	comp=Z,1.3nm,0.8s,mb3.8,baz=140,slow=3.4,SNR=3.8						
CPUP				LR	LR	16 34 46.7	
	comp=Z,41nm,21.6s,MS3.3,baz=303,slow=30						
CPUP	**Villa Florida**	**45.06 295**		P	P	**16 20 31.3**	**+0.3**
CPUP				LR	LR	16 34 46.7	
BDFB	**Brasilia**	**50.32 312**		LR	LR	16 37 50.6	
	comp=Z,77nm,21.4s,MS3.7,baz=295,slow=30						
LVC	**Limon Verde**	**53.93 286**		P	P	**16 21 38.9**	**-0.1**
	comp=Z,5.6nm,0.6s,mb4.7,baz=210,slow=1.5,SNR=13						
LVC	**Limon Verde**	**53.93 286**		*e*P	P	**16 21 40.0**	**+0.9**
	comp=Z,5.3nm,0.6s,mb4.7						
LVC				*e*		16 21 51.5	
LPAZ	**La Paz**	**58.85 291**		P	P	**16 22 14.7**	**+0.3**
	comp=Z,3.7nm,0.7s,mb4.5,baz=165,slow=7.5,SNR=23						
STKA	**Stephens Creek**	**87.57 157**		*e*P	P	**16 25 02.3**	**-0.1**
	comp=Z,4.2nm,0.8s,mb4.7						
STKA	**Stephens Creek**	**87.57 157**		P	P	**16 25 01.3**	**-1.1**
	comp=Z,4.6nm,0.8s,mb4.8,baz=173,slow=3.6,SNR=8.2						
ASAR	**Alice Springs**	**93.60 149**		P	P	**16 25 29.6**	**-1.0**
	comp=Z,2.0nm,0.8s,mb4.6,baz=194,slow=4.5,SNR=19						
WRA	**Warramunga Arr**	**97.25 148**		P	P	**16 25 45.3**	**-2.1**
	comp=Z,1.0nm,0.7s,mb4.3,baz=209,slow=4.5,SNR=6.3						
ESDC	**Sonseca Array**	**97.64**	**6**	LR	LR	17 03 08.0	
	comp=Z,43nm,19.0s,MS4.0,baz=140,slow=31						
FINES	**FINESS Array B**	**122.78**	**20**	PKP	PKPdf	16 31 07.9	-3.5
	comp=Z,4.9nm,1.0s,baz=214,slow=6.9,SNR=7.1						
MSU	**Marysvale**	**127.02 285**		*e*PKPdf	PKPdf	16 31 18.9	-1.1
PDAR	**Pinedale Array**	**128.87 290**		PKP	PKPdf	16 31 20.4	-3.2
	comp=Z,0.8nm,0.7s,baz=137,slow=5.1,SNR=7.5						
HWUT	**Hardware Ranch**	**129.02 288**		*e*PKPdf	PKPdf	16 31 21.8	-2.2
FRB	**Frobisher Bay**	**129.08 331**		PKP	PKPdf	16 31 20.4	-3.0
	comp=Z,4.1nm,1.0s,baz=62,slow=4.1,SNR=4.3						
BVAR	**Borovoye Array**	**129.10**	**50**	PKP	PKPdf	16 31 21.5	-2.3
	comp=Z,0.6nm,0.7s,baz=297,slow=3.3,SNR=3.9						
ARCES	**ARCESS Array B**	**130.13**	**16**	PKP	PKPdf	16 31 22.1	-3.2
	comp=Z,4.9nm,1.1s,baz=180,slow=1.8,SNR=8.1						
WMQ	**Urumqi**	**130.30**	**69**	*e*PKP	PKPdf	16 31 26.1	-0.2
RES	**Resolute Bay**	**143.19 334**		*e*PKPdf	PKPdf	16 31 44.1	-4.7
YKA	**Yellowknife Ar**	**143.72 310**		PKhKP		16 31 44.2	
	comp=Z,1.5nm,0.7s,baz=115,slow=4.3,SNR=31						
YKA				PKP	PKPdf	16 31 47.4	-2.5
	comp=Z,1.3nm,0.8s,baz=114,slow=3.8,SNR=15						
YKA	**Yellowknife Ar**	**143.72 310**		PKP	PKPdf	16 31 44.2	-5.7
YKA				PKP	PKPdf	16 31 47.4	-2.5
YKW3	**Yellowknife Ar**	**143.75 310**		*e*PKPdf	PKPdf	16 31 44.5	-5.5
DLBC	**Dease Lake**	**148.62 297**		PKPbc	PKPdf	16 32 00.7	+2.3
	comp=Z,2.0nm,0.3s,baz=97,slow=8.1,SNR=6.7						
DLBC	**Dease Lake**	**148.62 297**		*e*PKPbc	PKPdf	16 32 00.7	+2.4
CN2	**Changchun**	**149.98 100**		*e*PKP	PKPdf	16 31 57.3	-3.7
MDJ	**Mudanjiang**	**152.70 103**		PKP	PKPdf	16 32 03.8	-1.2
INK	**Inuvik**	**153.01 316**		PKPbc	PKPdf	16 32 09.8	+5.1
	comp=Z,2.8nm,0.5s,baz=129,slow=6.5,SNR=7.9						
INK	**Inuvik**	**153.01 316**		*e*PKPbc	PKPdf	16 32 09.9	+5.2
INK				*e*PKPab	PKPab	16 32 22.0	-0.9
ILAR	**Eielson Array**	**158.03 306**		PKPab	PKPab	16 32 44.0	-0.4
	comp=Z,0.9nm,0.7s,baz=90,slow=3.3,SNR=11						

*IDC **19** 16:17:49.0*±*1.2, 19.72N*×*95.76E, mb3.7/6, mb1 3.9/7, mb1mx3.7/19, ML3.0/1, Error ellipse: s-maj=46.2km s-min=14.6km az=40.0*

*NEIC **19** 16:17:49.2*±*3.5, 19.66N*×*95.78E, h4km*±*23km, Error ellipse: s-maj=22.4km s-min=7.8km az=220.0*

ISC 19 16:17:46.5±0.6, **19.67N**±0.09×**95.88E**±0.07, **h4**km, **n18**, σ1§**15**/**23**, **mb3.7**/6, **Myanmar**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**3.14 112**		Pn	**Pn**	**16 18 40.2**	**+2.4**
	0.4nm,0.3s,baz=288,slow=13,SNR=7.3						
CMAR				Pg	**Pg**	**16 18 49.4**	**+0.1**
	5.6nm,0.3s,baz=290,slow=17,SNR=36						
CMAR				Lg		16 19 33.1	
	14nm,0.3s,baz=288,slow=32,SNR=11						
CHRT	**Chiangrai**	**3.68 86**		PN	**Pn**	**16 18 50.5**	**+5.0**
CHRT				PG	**Pg**	**16 19 01.0**	**+0.9**
CHRT				SG	**Sg**	**16 19 45.0**	**-4.1**
BDT	**Bhumibol Dam**	**3.82 129**		PG	**Pg**	**16 19 01.0**	**-1.9**
BDT				SG	**Sg**	**16 19 53.5**	**-0.4**
NANT	**Nan**	**4.64 100**		PG	**Pg**	**16 19 19.0**	**-0.1**
NANT				SG	**Sg**	**16 20 19.0**	**-1.9**
LSA	**Lhasa**	**10.87 338**		*e*P	P	**16 20 27.2**	**+1.1**
PKI	**Pulchoki**	**12.40 311**		*e*P	P	**16 20 45.3**	**-1.6**
	7.1nm,0.7s						
KKN	**Kakani**	**12.62 312**		*e*P	P	**16 20 49.4**	**-0.4**
DMN	**Daman**	**12.64 311**		*e*P	P	**16 20 49.2**	**-0.8**
GKN	**Gorkha**	**13.21 311**		*e*P	P	**16 20 57.0**	**-0.6**
	10nm,0.6s						
KOLN	**Koldanda**	**13.83 308**		*e*P	P	**16 21 04.5**	**-1.4**
	33nm,1.4s						
MKAR	**Makanchi Array**	**29.25 341**		P	P	**16 23 51.9**	**+0.1**
	0.7nm,0.6s,mb3.5,baz=152,slow=9.5,SNR=8.4						
KURK	**Kurchatov**	**33.86 340**		*e*P	P	**16 24 31.9**	**-0.4**
ZAL	**Zalesovo**	**35.25 349**		P	P	**16 24 44.6**	**+0.5**
	0.5nm,0.3s,mb3.9,baz=249,slow=12,SNR=3.3						
WRA	**Warramunga Arr**	**54.50 134**		P	P	**16 27 18.6**	**+0.5**
	0.8nm,0.8s,mb3.7,baz=326,slow=7.2,SNR=3.4						
TIXI	**Tiksi**	**55.41 12**		*e*P	P	**16 27 23.8**	**-0.3**
ASAR	**Alice Springs**	**56.83 138**		P	P	**16 27 37.0**	**+2.1**
	0.6nm,0.8s,mb3.7,baz=318,slow=7.2,SNR=7.5						
GERES	**GERESS Array B**	**70.37 316**		P	P	**16 29 04.4**	**+0.8**
	1.1nm,0.7s,mb3.9,baz=76,slow=5.5,SNR=5.9						
ILAR	**Eielson Array**	**83.25 23**		P	P	**16 30 17.0**	**+1.7**
	0.3nm,0.6s,mb3.5,baz=288,slow=5.3,SNR=4.5						

*IDC **19** 17:15:52.8*±*4.3,21.59S*×*172.06W,mb3.9/5,mb1 4.1/5, mb1mx3.9/14, Error ellipse: s-maj=174.0km s-min=34.4km az=143.0*

ISC 19 17:15:55.1±4.4, **22.0S**±1.0×**171.9W**±0.8, **h33**km, **n5**, σ0§**61**/**5**, **mb3.9**/5, **Tonga Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**39.05 265**		P	P	**17 23 20.1**	**-0.6**
	2.1nm,0.3s,mb4.3,baz=89,slow=11,SNR=12						
STKA	**Stephens Creek**	**42.37 246**		P	P	**17 23 47.8**	**-0.3**
	1.0nm,0.5s,mb3.8,baz=99,slow=11,SNR=5.8						
ASAR	**Alice Springs**	**49.76 257**		P	P	**17 24 47.1**	**+0.4**
	0.6nm,0.8s,mb3.7,baz=90,slow=7.4,SNR=13						
WRA	**Warramunga Arr**	**50.06 262**		P	P	**17 24 49.6**	**+0.6**
	0.4nm,0.3s,mb3.9,baz=90,slow=6.0,SNR=12						
ILAR	**Eielson Array**	**88.62 10**		P	P	**17 28 45.5**	**-0.1**
	1.1nm,1.2s,mb4.0,baz=207,slow=6.0,SNR=3.5						

IDC 19 17:30:38.8±9.9, **12.45S**×**166.30E**, **mb3.7**/3, **mb1 3.8**/3, **mb1mx3.6**/12, **MS3.2**/1, **Ms1 3.2**/1, **ms1mx2.6**/12, **Error ellipse: s-maj=303.0km s-min=55.1km az=126.0**, **Santa Cruz Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**31.54 252**		P	P	17 37 02.6	-2.5
	0.3nm,0.5s,baz=84,slow=9.1,SNR=5.1						
ASAR	**Alice Springs**	**32.68 245**		P	P	17 37 13.3	-1.7
	0.4nm,0.7s,baz=72,slow=9.1,SNR=8.5						
ASAR				LR	LR	17 48 47.0	
	comp=Z,38nm,20.2s,baz=82,slow=33						
MKAR	**Makanchi Array**	**94.91 317**		P	P	17 44 02.9	-1.3
	0.5nm,0.7s,baz=97,slow=6.5,SNR=5.9						

*NEIC **19** 17:58:38.7*±*0.8,34.43S*×*58.78E, h10*km*, mb4.6/1, Error ellipse: s-maj=30.1km s-min=20.9km az=124.0*

*IDC **19** 17:58:39.0*±*0.9,33.76S*×*59.30E, mb4.2/5, mb1 4.3/5, mb1mx3.8/19, Error ellipse: s-maj=58.5km s-min=24.8km az=19.0*

ISC 19 17:58:40.5±1.2, **35.1S**±0.2×**59.3E**±0.2, **h10**km, **n15**, σ0§**62**/**10**, **mb4.3**/6, **3C**, **South Indian Ocean**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SUR	**Sutherland**	**31.96 264**		P	P	**18 05 08.6**	**-0.2**
	4.7nm,0.8s,mb4.3,baz=154,slow=9.7,SNR=2.0						
VNA2	**Neumayer--Watz**	**49.67 203**		⇑*i*	P	**18 07 34.1**	**+0.1**
VNA1	**Neumayer--Stat**	**49.92 204**		⇑*i*	P	**18 07 41.0**	**+5.2**
VNA3	**Neumayer Olymp**	**50.45 203**		⇑*i*	P	**18 07 40.7**	**+0.8**
QSPA	**South Pole Qui**	**55.10 180**		*e*P	P	**18 08 14.4**	**-0.1**
	6.9nm,1.1s,mb4.6						
SBA	**Scott Base**	**59.54 166**		P	P	**18 08 44.7**	**-1.2**
ASAR	**Alice Springs**	**64.69 102**		P	P	**18 09 20.9**	**-0.1**
	1.0nm,0.7s,mb4.0,baz=234,slow=6.0,SNR=24						
STKA	**Stephens Creek**	**66.81 113**		P	P	**18 09 35.6**	**+1.1**
	0.9nm,0.3s,mb4.3,baz=225,slow=11,SNR=3.6						
WRA	**Warramunga Arr**	**66.88 99**		P	P	**18 09 34.8**	**-0.4**
	1.5nm,0.6s,mb4.2,baz=238,slow=5.3,SNR=7.1						
CTA	**Charters Tower**	**76.36 105**		P	P	**18 10 31.8**	**-0.1**
	3.1nm,1.0s,mb4.2,baz=236,slow=3.6,SNR=2.9						
INK	**Inuvik**	**145.94 8**		PKP	PKPdf	18 18 15.5	-6.1
	1.4nm,0.9s,baz=343,slow=4.9,SNR=5.7						
INK	**Inuvik**	**145.94 8**		PKP	PKPdf	18 18 15.5	-6.1
ILAR	**Eielson Array**	**146.35 20**		PKPbc	PKPbc	18 18 15.7	-4.9
	0.6nm,0.9s,baz=305,slow=3.4,SNR=5.4						
YKA	**Yellowknife Ar**	**152.29 354**		PKP	PKPdf	18 18 27.3	-4.5
	0.4nm,0.7s,baz=3.4,slow=2.3,SNR=7.5						
YKA				PKPbc	PKPdf	18 18 33.1	+1.3
	0.4nm,0.9s,baz=6.6,slow=2.2,SNR=7.0						
YKA				PKPab	PKPab	18 18 39.6	-8.3
	1.0nm,0.7s,baz=5.3,slow=3.9,SNR=19						
YKA	**Yellowknife Ar**	**152.29 354**		PKP	PKPdf	18 18 27.3	-4.5
YKA				PKPbc	PKPdf	18 18 33.1	+1.3
YKA				PKPab	PKPab	18 18 39.6	-8.2

*LDG **19** 18:23:40.7*±*0.2,39.94N*×*77.48E, h10*km*, Mb4.6/18, Ms3.6/6, Error ellipse: s-maj=9.8km s-min=5.5km az=163.0*

*IDC **19** 18:23:42.6*±*0.7,40.05N*×*77.54E, mb4.5/17, mb1 4.7/20, mb1mx4.6/22, ML4.0/3, MS3.8/9, Ms1 3.9/9, ms1mx3.6/29, Error ellipse: s-maj=14.0km s-min=13.0km az=115.0*

*NEIC **19** 18:23:44.4*±*0.2,40.15N*×*77.44E, h10*km*, mb4.7/25, MS4.0/2, Error ellipse: s-maj=5.3km s-min=4.2km az=29.0*

*BJI **19** 18:23:45.5,40.23N*×*77.58E, h20*km*, mB4.9, mb4.6, ML5.1, Ms4.4, Msz4.0*

*MOS **19** 18:23:46.7*±*1.6,40.20N*×*77.46E, h33*km*, mb4.8/14, Error ellipse: s-maj=11.1km s-min=5.6km az=112.6*

*NNC **19** 18:23:50.7*±*3.5,40.57N*×*77.24E, h14km±17km, mpv4.4, Error ellipse: s-maj=24.3km s-min=9.3km az=155.0*

ISC 19 18:23:41.1±0.9, **40.12N**±0.02×**77.43E**±0.03, **h1**km±5km, **h12**km±1.8km: **pP-P**, **n203**, σ1§**21**/**217**, **mb4.6**/55, **MS4.0**/21, **17C-10D**, **Kyrgyzstan-Xinjiang border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSH	**Kashi**	**1.28 242**		PG	**Pg**	**18 24 10.6**	**+4.0**
KSH				SG	**Sg**	**18 24 30.8**	**+7.2**
KSH				S	Sb		
	comp=N,26μm,0.6s						
KSH				S	Sb		
	comp=E,32μm,0.5s						
ULHL	**Ulahol**	**2.31 337**		P	**Pb**	**18 24 25.6**	**+2.4**
	SNR=993						
KZA	**Kyzart**	**2.56 321**		P	**Pb**	**18 24 29.5**	**+1.9**
	SNR=246						
UCH	**Uchtor**	**3.05 315**		P	**Pb**	**18 24 36.5**	**+0.5**
	SNR=309						
TKM2	**Tokmak 2**	**3.12 334**		P	**Pb**	**18 24 37.4**	**+0.2**
	SNR=255						
KBK	**Karagaybulak**	**3.15 324**		P	**Pb**	**18 24 37.8**	**+0.1**
	SNR=304						
AAA	**Alma-Ata**	**3.17 354**	*c*	*i*PN	**Pb**	**18 24 36.8**	**-1.3**
AAA				*i*		18 25 20.8	
AAK	**Ala-Archa**	**3.35 320**		P	**Pb**	**18 24 40.5**	**-0.6**
	SNR=187						
FRU	**Bishkek**	**3.44 323**		⇑*i*PN	**Pb**	**18 24 42.5**	**-0.2**
FRU				*e*S	**Sn**	**18 25 19.0**	**0.0**
FRU				*i*		18 25 28.0	
FRU				pmax	pmax		
	comp=Z,2μm,1.0s						
FRU				pmax	pmax		
	comp=Z,1μm,0.9s						
FRU				smax			
	comp=N,3μm,2.0s						
FRU				smax			
	comp=N,8μm,3.0s						
AML	**Almayashu**	**3.47 307**		P	**Pb**	**18 24 42.9**	**-0.3**
	SNR=186						
CHMS	**Chumysh**	**3.51 326**		P	**Pb**	**18 24 42.7**	**-1.2**
	SNR=66						
EKS2	**Erkin-Say**	**3.75 314**		P	**Pb**	**18 24 46.2**	**-1.6**
	SNR=319						
USP	**Ospenovka**	**3.84 326**		P	**Pb**	**18 24 47.1**	**-2.4**
	SNR=48						
KK31	**Karatay Array**	**5.99 302**		Pn	**Pn**	**18 25 15.0**	**+2.0**
	comp=N,3.5nm,0.4s,baz=117,slow=12,SNR=67						
KK31				⇓Pg	**Pg**	**18 25 33.0**	**-7.5**
	comp=N,60nm,0.7s,baz=104,slow=16,SNR=12						
KK31				⇑Lg		18 26 49.9	
	comp=N,181nm,0.7s,baz=112,slow=28,SNR=6.4						
KK31				⇓Rg		18 27 23.1	
	comp=N,2μm,8.0s						
KKAR	**Karatay Array**	**5.99 302**		*i* PN	**Pn**	**18 25 15.0**	**+2.0**
KKAR						18 26 49.9	
KKAR				pmax	pmax		
	comp=Z,2.0nm,0.3s						
KKAR				smax			
	comp=Z,90nm,0.6s						
CHCP	**Chirah Chowk**	**7.26 209**		P	**Pn**	**18 25 34.2**	**+3.2**
CHCP				S	**Sn**	**18 26 55.0**	**0.0**
MK31	**Makanchi Array**	**7.55 26**		Pn	**Pn**	**18 25 35.7**	**+0.7**
	comp=Z,36nm,0.7s,baz=205,slow=14,SNR=157						
MK31				⇑Lg		18 27 41.5	
	comp=Z,92nm,0.7s,baz=203,slow=24,SNR=3.7						
MK31				⇓Rg		18 28 27.5	
	comp=Z,2μm,9.2s,baz=142,slow=44,SNR=4.0						
MKAR	**Makanchi Array**	**7.55 26**		Pn	**Pn**	**18 25 35.9**	**+0.9**
	comp=Z,4.7nm,0.3s,baz=205,slow=15,SNR=84						
MKAR				Sn	**Sn**	**18 27 00.6**	**-1.7**
	comp=Z,4.8nm,0.3s,baz=201,slow=23,SNR=5.3						
MKAR				Lg		18 27 43.0	
	comp=Z,6.6nm,0.3s,baz=219,slow=30,SNR=3.9						
MKAR	**Makanchi Array**	**7.55 26**		*i* P	**Pn**	**18 25 35.7**	**+0.7**
MKAR				pmax	pmax		
	comp=Z,4.0nm,0.4s						
MKAR	**Makanchi Array**	**7.55 26**		Pn	**Pn**	**18 25 35.9**	**+0.9**
MKAR				Sn	**Sn**	**18 27 00.6**	**-1.7**
MKAR				Lg		18 27 43.0	
CEP	**Cherat**	**7.68 217**		P	**Pn**	**18 25 38.8**	**+2.0**
CEP				S	**Sn**	**18 27 05.0**	**-0.6**
WMQ	**Urumqi**	**8.49 61**	⇓	*i*P	P	**18 25 49.6**	**+1.5**
WMQ				S	**Sn**	**18 27 31.0**	**+5.2**
WMQ				S	Sn		
	comp=N,151nm,0.7s						
WMQ				S	Sn		
	comp=E,221nm,1.0s						
THW	**Thamme Wali**	**8.62 214**		P	**P**	**18 25 50.5**	**+0.5**
BHK	**Bhakra**	**8.72 186**		*e*P	**P**	**18 25 53.0**	**+1.7**
BHK				*e*		18 27 28.0	
SARP	**Sargodha**	**9.04 207**		P	**P**	**18 25 56.5**	**+0.7**
SBDP	**Sheikh Budin**	**9.46 216**		P	**P**	**18 26 01.8**	**+0.3**
KKF	**Kurukshetra**	**10.14 183**		*e*P	**P**	**18 26 11.8**	**+0.8**
DRP	**Derazinda**	**10.20 217**		P	**P**	**18 26 13.0**	**+1.2**
KURK	**Kurchatov**	**10.63 4**		⇑Pn	**P**	**18 26 16.4**	**-1.2**
	comp=E,25nm,0.8s,baz=196,slow=10.0,SNR=166						
KURK				⇑Lg		18 29 15.7	
	comp=E,182nm,1.1s,baz=55,slow=15,SNR=5.3						
KURK				⇓Rg		18 30 02.6	
	comp=E,1μm,9.8s,baz=246,slow=7.9,SNR=4.6						
KURK	**Kurchatov**	**10.63 4**		*i* P	**P**	**18 26 16.3**	**-1.3**
KURK				pmax	pmax		
	comp=Z,20nm,0.8s						
KURK	**Kurchatov**	**10.63 4**		*e*Pn	**P**	**18 26 16.2**	**-1.4**
KALG	**Kalgarh**	**10.64 174**		*e*P	**P**	**18 26 14.0**	**-3.8**
KALG				AML	AML	18 28 14.0	
	comp=E,212nm,0.9s						
KALG				AML	AML	18 28 14.5	
	comp=N,34nm,0.4s						
RTK	**Rohtak**	**11.09 185**		*e*P	**P**	**18 26 23.0**	**-0.9**
ASOR	**Ausora**	**11.34 178**		*e*P	**P**	**18 26 24.2**	**-3.1**
NDI	**New Delhi**	**11.41 181**		*e*P	**P**	**18 26 25.0**	**-3.3**
NDI				*e*S	**S**	**18 28 28.0**	**-10**
AYAN	**Aya Nagar**	**11.61 181**		*e*P	**P**	**18 26 28.7**

comp=Z,8.0nm,0.7s
BHPL Bhopal 16.83 180 eP P 18 27 38.2 -1.3
BHPL eS S 18 30 47.1 +0.7
GTA Gaotai 17.22 85 eP P 18 27 42.8 -1.6
GTA AP 18 27 48.6
GTA XP 18 27 51.6
GTA S S 18 30 57.9 +2.5
GTA LG2 18 33 08.1
GTA AMB AMB
comp=Z,6.0nm,0.8s
GTA LR LR
comp=N,362nm,6.1s
GTA LR LR
comp=E,289nm,5.3s
GTA LR LR
comp=Z,129nm,6.1s
SHL Shillong 18.88 136 eP P 18 28 05.0 -0.1
SHL e 18 31 44.0
ARU Arti 20.48 329 eP P 18 28 22.9 +0.1
ARU pmax pmax
comp=Z,16nm,0.5s
ARU MLR MLR
comp=Z,300nm,17.0s,MS3.7
ARU Arti 20.48 329 eP P 18 28 23.1 +0.2
comp=Z,20nm,0.6s
THR Tehran 21.12 267 P P 18 28 31.2 +1.6
comp=Z,0.9nm,0.6s,baz=22,slow=11,SNR=3.0
THR Tehran 21.12 267 P P 18 28 31.2 +1.6
THR pmax pmax
comp=Z,1.0nm,0.6s
LZH Lanzhou 21.14 93 eP P 18 28 30.5 +0.7
LZH AP 18 28 39.9
LZH XP 18 28 44.0
LZH AMB AMB
comp=Z,31nm,1.3s,mb4.5
TLY Talaya 21.47 49 eP P 18 28 37.9 +4.9
TLY e 18 28 58.7
TLY eS S 18 32 34.2 +7.1
TLY eSS SS 18 32 59.1 -2.5
TLY pmax pmax
comp=Z,38nm,0.8s,mb4.8
TLY MLR MLR
comp=Z,1μm,15.0s,MS4.4
SONM Songino Array 22.13 60 P P 18 28 40.8 +1.2
comp=Z,12nm,0.9s,mb4.3,baz=256,slow=10,SNR=26
ULN Ulaanbaatar 22.57 60 eP P 18 28 46.3 +2.3
ULN Ulaanbaatar 22.57 60 eP P 18 28 46.5 +2.5
comp=Z,12nm,0.8s,mb4.5
HYB Hyderabad 22.64 177 *i* P P 18 28 45.0 0.0
HYB eS S 18 32 44.0 -4.9
HYB Hyderabad 22.64 177 eP P 18 28 45.0 0.0
KAD Karad 22.90 188 eP P 18 28 49.0 +1.5
CD2 Chengdu 23.25 105 P P 18 28 53.5 +2.8
CD2 AMB AMB
comp=Z,20nm,1.0s,mb4.6
SOKR Solikamsk 23.40 333 eP P 18 28 54.4 +2.4
GNI Garni 24.92 281 P P 18 29 09.6 +2.7
comp=Z,1.6nm,0.4s,mb4.1,baz=168,slow=20,SNR=2.0
GNI LR LR 18 40 40.0
comp=Z,98nm,19.0s,MS3.3,baz=142,slow=41
GNI Garni 24.92 281 P P 18 29 09.6 +2.7
GNI pmax pmax
comp=Z,2.0nm,0.4s
GNI MLR MLR
comp=Z,98nm,19.0s
GNI Garni 24.92 281 P P 18 29 09.6 +2.7
GNI LR LR 18 40 40.0
ZEI Tsey 25.19 287 eP P 18 29 09.0 -0.4
ZEI eS S 18 33 28.0 -4.8
ZEI MLR MLR
comp=Z,300nm,17.0s,MS3.9
GOF Gofitskoye 25.68 292 eP P 18 29 15.0 +1.0
GOF pmax pmax
comp=Z,30nm,1.5s,mb4.7
GOF MLR MLR
comp=N,3μm,15.0s,MS5.2
GOF MLR MLR
comp=E,4μm,15.0s,MS5.2
XAN Xi'an 25.76 94 P P 18 29 15.3 +0.4
XAN AP pP 18 29 22.9 +7.8
XAN AMB AMB
comp=Z,16nm,1.1s,mb4.6
KMI Kunming 25.92 118 eP P 18 29 17.9 +1.5
KMI AP pP 18 29 28.3 +12
KMI S S 18 33 49.4 +4.3
KMI AMB AMB
comp=Z,28nm,0.8s,mb4.9
KMI LR LR
comp=Z,79nm,15.7s,MS3.4
GYA Guiyang 27.83 110 P P 18 29 33.0 -1.0
GYA AMB AMB
comp=Z,10.0nm,0.6s,mb4.8
ENH Enshi 27.85 101 eP P 18 29 34.6 +0.5
SOC Sochi 28.15 290 eP P 18 29 37.1 +0.4
SOC e 18 30 26.0
SOC eS S 18 34 19.8 -1.6
SOC eSS SS 18 35 38.6 -4.6
SOC pmax pmax
comp=Z,15nm,0.9s,mb4.8
SOC pmax pmax
comp=N,6.0nm,0.5s
SOC pmax pmax
comp=E,18nm,0.7s
SOC smax
comp=N,31nm,0.9s
SOC smax
comp=E,28nm,0.9s
SOC MLR MLR
comp=Z,206nm,15.0s,MS3.8
SOC MLR MLR
comp=N,363nm,17.0s,MS4.1
SOC MLR MLR
comp=E,190nm,14.0s,MS4.1
CMAR Chiang Mai Arr 28.46 133 P P 18 29 39.4 -0.3
comp=E,0.7nm,0.5s,mb3.7,baz=310,slow=8.6,SNR=6.5
CMAR LR LR 18 42 43.9
comp=E,54nm,18.7s,MS3.2,baz=157,slow=40
CMAR Chiang Mai Arr 28.46 133 P P 18 29 39.4 -0.3
CMAR pmax pmax
comp=Z,1.0nm,0.5s
CMAR MLR MLR
comp=Z,54nm,18.7s
BOD Bodaibo 29.33 41 eP P 18 29 46.9 -0.3
MOS Moscow 30.41 314 eP P 18 29 54.1 -2.7
MOS pmax pmax
comp=Z,100nm,0.6s
OBN Obninsk 30.85 313 eP P 18 30 00.5 -0.2
OBN e 18 31 01.5
OBN pmax pmax
comp=Z,22nm,1.2s,mb5.0
OBN MLR MLR
comp=Z,200nm,19.0s,MS3.8
WHN Wuhan 31.41 96 eP P 18 30 09.5 +3.6
BRTR Keskin Array B 33.34 284 P P 18 30 23.5 +0.9
comp=Z,3.5nm,0.6s,mb4.4,baz=93,slow=7.9,SNR=20
NJ2 Nanjing 34.18 90 eP P 18 30 32.4 +2.4
CN2 Changchun 35.50 68 eP P 18 30 42.3 +1.1
CN2 eAP pP 18 30 44.5 +3.1
CN2 eS S 18 36 15.3 -1.4
CN2 AMB AMB
comp=Z,10.0nm,0.6s,mb4.9
CN2 LR LR
comp=N,300nm,14.0s,MS4.3
CN2 LR LR
comp=E,300nm,14.0s,MS4.3
CN2 LR LR
comp=Z,300nm,15.0s,MS4.2
JOF Joensuu 35.52 325 *ep* **P 18 30 35.0 -6.1**
LVZ Lovozero 36.19 334 eP P 18 30 47.0 +0.2
LVZ pmax pmax
comp=Z,38nm,1.0s,mb5.2
LVZ MLR MLR
comp=Z,400nm,15.0s,MS4.3
SSE Sheshan 36.39 90 ||P P 18 30 51.0 +2.2
SSE AMB AMB
comp=Z,41nm,0.7s,mb5.4
SSE AMB AMB
comp=Z,168nm,6.2s
FINES FINESS Array B 37.54 322 P P 18 30 58.9 +0.8
comp=Z,8.6nm,0.6s,mb4.7,baz=107,slow=9.5,SNR=76
FINES FINESS Array B 37.54 322 P P 18 30 58.9 +0.8
FINES pmax pmax
comp=Z,9.0nm,0.6s
FINES FINESS Array B 37.54 322 P P 18 30 58.9 +0.8
KAF Kangasniemi 37.56 323 *ep* **P 18 31 01.4 +3.1**

YAK Yakutsk 38.06 37 eP P 18 31 05.4 +2.9
YAK pmax pmax
comp=Z,3.0nm,0.7s,mb4.1
YAK pmax pmax
comp=E,2.0nm,1.3s
YAK MLR MLR
comp=Z,108nm,20.0s,MS3.7
YAK MLR MLR
comp=E,60nm,13.0s
MDJ Mudanjiang 38.26 66 P P 18 31 03.5 -0.9
MDJ PP PP 18 32 36.6 +1.7
MDJ PCP PcP 18 33 17.3 -1.9
MDJ S S 18 36 57.1 -1.8
MDJ PCS 18 37 03.5
MDJ SCS ScS 18 41 12.0 -3.2
MDJ AMB AMB
comp=Z,13nm,2.4s,mb4.2
MDJ AMB AMB
comp=Z,77nm,4.0s
MDJ LR LR
comp=N,62nm,15.7s,MS3.7
MDJ LR LR
comp=E,62nm,15.7s,MS3.7
MDJ LR LR
comp=Z,99nm,16.6s,MS3.7
KEV Kevo 39.49 335 *ep* **P 18 31 14.2 -0.3**
ARCES ARCESS Array B 39.90 334 P P 18 31 18.9 +1.1
comp=Z,22nm,0.7s,mb4.9,baz=103,slow=9.6,SNR=62
ARCES LR LR 18 48 39.8
comp=Z,229nm,19.5s,MS4.0,baz=103,slow=37
ARCES ARCESS Array B 39.90 334 P P 18 31 19.0 +1.1
ARCES pmax pmax
comp=Z,22nm,0.7s
ARCES MLR MLR
comp=Z,229nm,19.5s
TIXI Tiksi 40.52 22 eP P 18 31 22.9 0.0
TIXI *e* 18 32 54.3
TIXI pmax pmax
comp=Z,70nm,0.7s,mb5.5
TIXI MLR MLR
comp=Z,3μm,13.0s
TIXI Tiksi 40.52 22 eP P 18 31 22.9 +0.1
comp=Z,13nm,0.6s,mb4.8
NIE Niedzica 40.72 303 eP P 18 31 26.3 +1.5
OJC Ojcow 40.92 304 eP P 18 31 29.8 +3.4
VYHS Vyhne 41.84 302 eP P 18 31 32.9 -1.0
OKC Ostrava-Krasne 42.04 304 L 18 50 10.0
comp=Z,0.3nm,15.8s
MORC Moravsky Berou 42.43 304 P P 18 31 39.5 +0.8
DPC Dobruska-Polom 43.10 305 eP P 18 31 45.8 +1.6
DPC epP pP 18 31 48.9 +4.5
DPC L 18 50 40.0
comp=Z,0.4nm,14.0s
DPC Dobruska-Polom 43.10 305 eP P 18 31 45.8 +1.6
DPC MLR MLR
comp=Z,400nm,14.0s,MS4.5
UPC Upice 43.27 305 eP P 18 31 46.9 +1.4
UPC epP pP 18 31 50.4 +4.6
PVCC Panska Ves 44.17 305 L 18 51 20.0
comp=Z,0.4nm,14.2s
PRU Pruhonice 44.30 305 eP P 18 31 54.7 +0.8
PRU epP pP 18 31 58.1 +4.0
PRU L 18 51 30.0
BRG Berggiesshubel 44.49 306 eP P 18 31 56.6 +1.2
BRG pmax pmax
comp=Z,5.0nm,1.0s,mb4.2
BRG MLR MLR
comp=N,160nm,17.0s,MS4.3
BRG MLR MLR
comp=E,310nm,17.0s,MS4.3
BRG MLR MLR
comp=Z,9μm,17.0s
BRG Berggiesshubel 44.49 306 eP P 18 31 56.6 +1.2
comp=Z,5.4nm,1.0s,mb4.2
BRG *e* 18 31 59.9
BRG LR LR
comp=Z,9μm,17.0s
NB2 NORSAR Subarra 44.67 321 P P 18 31 56.9 +0.1
comp=Z,8.8nm,0.8s,mb4.7,baz=87,slow=7.9
NOA NORSAR Array B 44.67 321 P P 18 31 57.1 +0.3
comp=Z,5.3nm,0.6s,mb4.7,baz=88,slow=7.9,SNR=14
NOA LR LR 18 51 21.4
comp=Z,208nm,19.6s,MS4.1,baz=70,slow=37
NOA NORSAR Array B 44.67 321 P P 18 31 57.1 +0.3
NOA pmax pmax
comp=Z,5.0nm,0.6s
NOA MLR MLR
comp=Z,208nm,19.6s
NOA NORSAR Array B 44.67 321 P P 18 31 57.1 +0.3
NOA LR LR 18 51 21.4
PERS Pernice 44.72 300 eP P 18 31 58.1 +0.8
BOJS Bojanci 44.93 298 eP P 18 31 59.9 +0.8
CLL Collm 44.98 307 P P 18 32 00.0 +0.6
CLL *e**PP pP 18 32 03.0 +3.4
CLL *e**SP sP 18 32 07.0 +7.3
CLL *e* 18 33 02.0
CLL Collm 44.98 307 eP P 18 32 00.0 +0.6
CLL *e* 18 33 03.0
CLL *e* 18 33 02.0
GERES GERESS Array B 45.09 303 P P 18 32 01.1 +0.8
comp=Z,9.4nm,0.9s,mb4.7,baz=68,slow=7.2,SNR=29
GERES GERESS Array B 45.09 303 P P 18 32 01.1 +0.8
GERES pmax pmax
comp=Z,9.0nm,0.9s
KHC Kasperske Hory 45.10 304 eP P 18 32 01.5 +1.1
KHC epP pP 18 32 05.0 +4.4
KHC L 18 52 00.0
comp=Z,0.2nm,16.4s
KHC Kasperske Hory 45.10 304 eP P 18 32 01.5 +1.1
KHC MLR MLR
comp=Z,200nm,16.4s,MS4.1
VISS Visnje 45.13 299 eP P 18 32 01.2 +0.6
NKC Novy Kostel 45.56 305 L 18 52 20.0
comp=Z,0.4nm,17.2s
MOX Moxa 45.98 306 eP P 18 32 12.0 +4.7
MOX L 18 52 43.0
GRA1 Grafenberg Arr 46.45 305 eP P 18 32 12.5 +1.4
GRA1 epP pP 18 32 15.7 +4.4
GRF Grafenberg Arr 46.45 305 eP P 18 32 12.5 +1.4
CDF Champ du Feu 49.30 304 eP P 18 32 33.3 -0.1
comp=Z,14nm,1.0s,mb4.6
HINF Hinteralfeld 49.76 304 eP P 18 32 36.6 -0.3
comp=Z,16nm,1.0s,mb4.6
HAU Haudompre 50.02 304 eP P 18 32 38.5 -0.4
HAU eR
comp=Z,207nm,17.2s
PGF Pioggiola 50.16 296 eP P 18 32 39.7 -0.3
comp=Z,15nm,1.2s,mb4.5
LPG La Plagne 50.61 301 eP P 18 32 43.9 +0.5
comp=Z,30nm,1.3s,mb4.8
LPL La Plagne 50.61 301 eP P 18 32 43.9 +0.5
comp=Z,22nm,1.0s,mb4.8
CABF La Chapelle 50.65 302 eP P 18 32 43.5 -0.2
comp=Z,15nm,1.1s,mb4.5
MEZF Maizieres J'vi 50.68 305 eP P 18 32 43.1 -0.8
comp=Z,24nm,0.9s,mb4.8
BAIF Baives 50.70 307 eP P 18 32 43.4 -0.6
SBF Sospel 50.74 299 eP P 18 32 44.5 +0.1
BNI Bardonecchia 50.81 300 eP P 18 32 45.2 +0.2
MBDF Montbardon 50.87 300 eP P 18 32 44.7 -0.7
FRF La Foret Royal 51.38 299 eP P 18 32 48.5 -0.8
ORIF Oris-en-Rattie 51.39 300 eP P 18 32 47.8 -1.5
comp=Z,9.3nm,0.8s,mb4.4
ORIF eR
comp=Z,280nm,21.5s
SMF Signal de Mont 52.09 303 eP P 18 32 53.8 -0.8
comp=Z,25nm,1.1s,mb4.7
SSF Saint Saulge 52.16 304 eP P 18 32 54.4 -0.7
comp=Z,12nm,1.1s,mb4.5
VIVF Saint-Julien-l 52.21 301 eP P 18 32 55.2 -0.3
AVF Avril sur Loir 52.35 303 eP P 18 32 55.9 -0.7
comp=Z,34nm,1.0s,mb4.9
DAG Danmarks Havn 52.71 343 ⇑ *iP* P 18 32 59.2 +0.3
comp=Z,18nm,0.7s,mb5.1
DAG Danmarks Havn 52.71 343 ⇑ *iP* P 18 32 59.2 +0.3
DAG pmax pmax
comp=Z,18nm,0.7s,mb5.1
BGF Bois d'Agland 52.76 303 eP P 18 32 58.7 -0.9
LASF Ste Croix 53.05 300 eP P 18 33 00.5 -1.3
comp=Z,15nm,1.1s,mb4.5
TCF Toulx Ste Croi 53.27 303 eP P 18 33 03.0 -0.4
comp=Z,14nm,1.0s,mb4.5
LDF La Druitiere 53.87 307 eP P 18 33 06.8 -0.9
CAF Calviac 53.89 302 eP P 18 33 07.8 -0.2
FLN La Foliniere 54.02 307 eP P 18 33 07.8 -1.1
FLN *e*R
comp=Z,148nm,19.5s
RJF Les Rejaudoux 54.10 302 eP P 18 33 09.4 -0.1
RJF eR
comp=Z,107nm,19.5s
GRR Gorron 54.40 307 eP P 18 33 10.5 -1.1
comp=Z,16nm,1.0s,mb4.7
MTLF Montolieu 54.43 300 eP P 18 33 11.5 -0.5
MFF Saint Martin d 54.65 304 eP P 18 33 12.6 -0.9
LFF La Frestale 54.75 302 eP P 18 33 14.1 -0.2
KMBO Kilima Mbogo 55.02 232 eP P 18 33 18.4 +1.7
SGMF Saint Gilles 55.49 307 eP P 18 33 18.8 -0.9
comp=Z,20nm,1.0s,mb4.8
ROSF Rostrenen 55.90 307 eP P 18 33 22.1 -0.5
QUIF Quistinic 56.00 307 eP P 18 33 22.2 -1.1
comp=Z,9.6nm,0.8s,mb4.6
ESDC Sonseca Array 60.22 298 P P 18 33 52.7 -0.4
comp=Z,3.1nm,0.7s,mb4.4,baz=59,slow=7.9,SNR=5.4
ESDC LR LR 19 05 03.0
comp=Z,60nm,18.0s,MS3.8,baz=85,slow=41
IMA Indian Mountai 67.07 20 eP P 18 34 37.3 -0.3
INK Inuvik 69.43 12 eP P 18 34 51.6 -0.7
comp=Z,11nm,0.8s,mb5.2
ILAR Eielson Array 69.83 19 P P 18 34 53.8 -1.0
comp=Z,2.7nm,0.8s,mb4.5,baz=321,slow=5.1,SNR=29
ILAR Eielson Array 69.83 19 P P 18 34 53.8 -1.0
ILAR pmax pmax
comp=Z,3.0nm,0.8s
FITZ Fitzroy Crossi 73.27 132 eP P 18 35 16.2 +0.1
comp=Z,5.4nm,1.1s,mb4.6
YKW3 Yellowknife Ar 77.21 6 eP P 18 35 36.8 -0.9
YKA Yellowknife Ar 77.28 6 P P 18 35 37.8 -0.3
comp=Z,1.9nm,0.5s,mb4.5,baz=346,slow=5.4,SNR=60
YKA Yellowknife Ar 77.28 6 P P 18 35 37.8 -0.3
YKA pmax pmax
comp=Z,2.0nm,0.5s
YKA Yellowknife Ar 77.28 6 P P 18 35 37.8 -0.3
WRA Warramunga Arr 79.84 127 P P 18 35 52.5 -0.5
comp=Z,3.2nm,1.0s,mb4.2,baz=324,slow=5.1,SNR=9.3
WRA Warramunga Arr 79.84 127 P P 18 35 52.5 -0.5
WRA pmax pmax
comp=Z,3.0nm,1.0s
WRAB Tennant Creek 79.84 127 P P 18 35 53.7 +0.7
DBIC Dimbokro 79.85 270 P P 18 35 53.1 0.0
comp=Z,6.6nm,0.8s,mb4.6,baz=113,slow=3.7,SNR=3.7
DBIC Dimbokro 79.85 270 P P 18 35 53.1 -0.1
DBIC pmax pmax
comp=Z,7.0nm,0.8s
SCHQ Schefferville 80.60 340 P P 18 35 56.0 -0.3
comp=Z,3.8nm,0.8s,mb4.5,baz=23,slow=7.6,SNR=3.8
SCHQ LR LR 19 11 43.6
comp=Z,55nm,21.6s,MS3.9,baz=318,slow=36
AS12 Alice Springs 82.40 130 eP P 18 36 06.1 -0.3
comp=Z,2.5nm,0.7s,mb4.5
ASAR Alice Springs 82.40 130 P P 18 36 06.2 -0.2
comp=Z,3.9nm,1.0s,mb4.5,baz=324,slow=5.3,SNR=14
FFC Flin Flon 85.53 360 eP P 18 36 21.1 -0.4
comp=Z,11nm,1.0s,mb4.9
ULM Lac du Bonnet 89.82 356 P P 18 36 42.3 0.0
comp=Z,5.3nm,1.0s,mb4.7,baz=6.3,slow=2.7,SNR=4.1
ULM LR LR 19 20 19.1
comp=Z,116nm,18.6s,MS4.3,baz=20,slow=38
BOZ Bozeman (W) 94.23 6 eP P 18 37 03.3 +0.6
comp=Z,2.7nm,1.0s,mb4.5
KSWY Kelly School 96.33 6 eP P 18 37 13.4 +1.0
PDAR Pinedale Array 97.26 5 P P 18 37 17.2 +0.6
comp=Z,0.3nm,0.4s,mb4.2,baz=45,slow=6.3,SNR=4.5
CPUP Villa Florida 140.15 276 PKP PKPdf 18 43 14.0 +0.3
comp=Z,2.1nm,0.9s,baz=180,slow=1.0,SNR=4.6
CPUP Villa Florida 140.15 276 PKIKP PKPdf 18 43 14.0 +0.3
CPUP pmax pmax
comp=Z,2.0nm,0.9s
CPUP Villa Florida 140.15 276 PKP PKPdf 18 43 14.0 +0.3
LVC Limon Verde 146.64 291 *e*PKPbc PKPbc 18 43 27.3 +2.9
TRQA Tornquist 148.62 260 *e*PKPbc PKPdf 18 43 30.9 +3.1
TRQA *e*PKPab PKPab 18 43 34.2 -1.1

NEIC ***19*** *18:35:26.8±0.8, 12.10S×166.06E, h10km, mb4.2/4, Error ellipse: s-maj=23.1km s-min=12.6km az=123.0*
IDC ***19*** *18:35:31.8±2.2, 12.15S×165.85E, h43km±9km, mb4.0/8, mb1 4.1/8, mb1mx4.0/14, MS3.8/4, Ms1 3.7/4, ms1mx3.4/22, Error ellipse: s-maj=74.7km s-min=21.3km az=134.0*
ISC 19 18:35:29.6±0.8, 12.2S±0.1×165.9E±0.1, h41km, h41km±2.1km:pP-P, n24, σ0=92/22, mb4.2/9, MS3.7/4, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
PMG	Port Moresby	18.64	277	P		P	18 39 48.0	+1.5
CTA	Charters Tower	20.45	245	*e*P		P	18 40 07.7	+1.3
	4.5nm,0.8s							
CTA	Charters Tower	20.45	245	P		P	18 40 05.9	-0.5
	6.4nm,0.8s,baz=72,slow=11,SNR=4.7							
CTA				LR	LR		18 47 03.3	
	comp=Z,132nm,18.3s,MS3.3,baz=278,slow=34							
CTAO	Charters Tower	20.45	245	*e*P		P	18 40 05.4	-1.0
	10.0nm,1.0s							
ARMA	Armidale	22.48	214	*e*P		P	18 40 29.6	+2.9
STKA	Stephens Creek	29.76	225	LR	LR		18 52 00.1	
	comp=Z,135nm,19.8s,MS3.6,baz=26,slow=33							
WRAB	Tennant Creek	31.27	252	P		P	18 41 47.6	-0.5
WRA	Warramunga Arr	31.28	252	P		P	18 41 47.3	-0.9
	0.8nm,0.9s,mb3.6,baz=82,slow=9.0,SNR=5.1							
WRA				pP		pP	18 41 58.7	-0.7
	1.6nm,0.8s,baz=83,slow=8.9,SNR=6.6							
ASAR	Alice Springs	32.46	245	P		P	18 41 57.6	-0.9
	2.2nm,0.7s,mb4.1,baz=70,slow=9.4,SNR=32							
ASAR				pP		pP	18 42 09.9	+0.2
	1.9nm,0.7s,baz=71,slow=9.5,SNR=8.3							
ASAR				PcP		PcP	18 44 44.4	-0.7
	0.2nm,0.6s,baz=49,slow=3.2,SNR=3.4							
ASAR				pPcP			18 44 56.1	
	0.6nm,0.8s,baz=63,slow=2.3,SNR=4.2							
ASAR				LR	LR		18 52 53.9	
	comp=Z,64nm,20.2s,MS3.3,baz=25,slow=32							
JOW	Kunigami	53.29	317	LR	LR		19 05 58.2	
	comp=Z,429nm,21.2s,MS4.5,baz=136,slow=34							
MAJO	Matsushiro	55.05	333	P		P	18 44 59.9	+0.2
SBA	Scott Base	65.68	180	P		P	18 46 11.3	-0.3
ENH	Enshi	68.74	309	P		P	18 46 31.0	-0.6
BJT	Baijiatuau	69.45	321	P		P	18 46 36.3	+0.4
HIA	Hailar	73.43	330	*e*P		P	18 46 58.4	-1.0
QSPA	South Pole Qui	77.84	180	*e*P		P	18 47 30.3	+6.3
	3.6nm,0.9s,mb4.3							
ULN	Ulaanbaatar	79.31	324	*e*P		P	18 47 33.1	+0.4
	2.6nm,0.6s,mb4.3							
ULN				*e*	pP		18 47 44.0	-0.9
SONM	Songino Array	79.67	324	P		P	18 47 35.1	+0.5
	1.3nm,0.8s,mb3.9,baz=135,slow=6.1,SNR=8.1							
SONM				pP		pP	18 47 47.6	+0.7
	0.9nm,0.8s,baz=124,slow=4.5,SNR=3.1							
ILAR	Eielson Array	84.52	18	P		P	18 48 00.6	+1.4
	0.8nm,0.5s,mb4.1,baz=250,slow=4.8,SNR=13							
MKAR	Makanchi Array	94.45	317	P		P	18 48 47.0	+0.3
	4.2nm,0.6s,mb5.0,baz=91,slow=6.7,SNR=46							
MKAR	Makanchi Array	94.45	317	P		P	18 48 47.0	+0.3
ZAL	Zalesovo	94.57	324	P		P	18 48 46.3	-0.7
	0.5nm,0.3s,mb4.4,baz=83,slow=14,SNR=3.4							
YKA	Yellowknife Ar	95.89	27	P		P	18 48 52.6	-0.2
	0.3nm,0.7s,mb3.8,baz=254,slow=4.5,SNR=5.8							
KURK	Kurchatov	97.61	320	*e*P		P	18 48 60.0	-1.0

IDC ***19*** *18:47:59.4±0.5, 12.34N×144.04E, mb4.4/21, mb1 4.5/21, mb1mx4.5/25, MS3.8/12, Ms1 3.8/12, ms1mx3.6/28, Error ellipse: s-maj=20.9km s-min=13.2km az=94.0*
BJI ***19*** *18:48:01.8, 12.37N×144.26E, h36km, mB5.2, mb4.8, Ms4.7, Msz4.4*
NEIC ***19*** *18:48:03.3±2.2, 12.30N×143.94E, h25km±15km, mb4.8/19, Error ellipse: s-maj=7.9km s-min=5.5km az=103.0*
ISC 19 18:47:59.5±2.2, 12.26N±0.05×143.92E±0.06, h11km±13km, n76, σ0=99/67, mb4.6/42, MS3.9/13, 2C-2D, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
GUMO	Guam	1.61	35	*e*Pn		Pn	18 48 28.4	+0.3
SAPN	Saipan	3.43	31	‖*e*P		Pn	18 48 54.5	+0.4
SAPN				eS		Sn	18 49 33.3	-1.9
SARN	Sarigan	4.76	22	‖*e*P		Pn	18 49 14.0	+1.0
PMG	Port Moresby	21.77	171	LR	LR		18 59 52.3	
	comp=Z,134nm,20.1s,MS3.3,baz=353,slow=33							
JNU	Nakatsue	23.95	332	P		P	18 53 16.0	+1.2

16nm,1.0s,mb4.4,baz=82,slow=11,SNR=5.0
MAJO Matsushiro 24.72 349 P **P** **18 53 21.5 -0.7**
CTA Charters Tower 32.23 176 *eP* **P** **18 54 29.2 -1.1**
2.7nm,0.8s,mb4.1
CTA Charters Tower 32.23 176 P **P** **18 54 29.8 -0.5**
2.9nm,0.6s,mb4.3,baz=25,slow=12,SNR=5.7
CTAO Charters Tower 32.23 176 *eP* **P** **18 54 30.2 -0.2**
2.5nm,0.5s,mb4.3
WRAB Tennant Creek 33.35 197 *eP* **P** **18 54 39.8 -0.3**
11nm,0.6s,mb5.0
WB2 Warramunga Arr 33.36 197 *eP* **P** **18 54 39.9 -0.3**
WRA Warramunga Arr 33.36 197 P **P** **18 54 40.0 -0.2**
1.4nm,0.5s,mb4.1,baz=21,slow=9.6,SNR=5.9
WRA LR LR 19 08 11.4
comp=Z,246nm,18.6s,MS4.0,baz=20,slow=36
MDJ Mudanjiang 34.50 342 P **P** **18 54 49.6 -0.2**
MDJ PP PP 18 56 09.3 +3.4
MDJ PCP PcP 18 57 24.1 -1.0
MDJ S **S** **19 00 19.1 +1.8**
MDJ SCP 19 01 08.8
MDJ PCS 19 01 11.6
MDJ AMB AMB
comp=Z,8.0nm,1.8s,mb4.3
MDJ AMB AMB
comp=Z,39nm,3.1s
FITZ Fitzroy Crossi 35.16 211 P **P** **18 54 55.6 -0.1**
comp=Z,4.4nm,0.9s,mb4.4,baz=3.1,slow=10,SNR=4.2
FITZ PcP PcP 18 57 28.2 +1.0
comp=Z,3.1nm,0.7s,baz=325,slow=4.7,SNR=5.6
ENH Enshi 36.56 305 *eP* **P** **18 55 07.4 0.0**
comp=Z,14nm,0.9s,mb4.8
ENH *e*PcP PcP 18 57 31.1 -0.1
BJI Beijing 36.93 323 P **P** **18 55 08.4 -2.0**
BJI AMB AMB
comp=Z,10.0nm,0.6s,mb4.8
AS12 Alice Springs 37.03 195 *eP* **P** **18 55 11.9 +0.5**
comp=Z,2.6nm,0.6s,mb4.2
ASAR Alice Springs 37.03 195 P **P** **18 55 11.8 +0.3**
comp=Z,1.8nm,0.5s,mb4.1,baz=20,slow=10,SNR=34
ASAR PcP PcP 18 57 33.1 +0.4
comp=Z,1.3nm,0.6s,baz=38,slow=2.6,SNR=12
ASAR LR LR 19 10 08.0
comp=Z,146nm,19.9s,MS3.8,baz=22,slow=36
KMI Kunming 40.89 294 *eP* **P** **18 55 45.4 +1.8**
KMI AMB AMB
comp=Z,7.0nm,0.9s,mb4.3
LZH Lanzhou 43.15 310 *eP* **P** **18 56 03.5 +1.5**
LZH AP pP 18 56 13.1 +7.9
LZH XP sP 18 56 18.0 +11
LZH AMB AMB
comp=Z,39nm,1.5s,mb4.9
CMAR Chiang Mai Arr 43.72 284 P **P** **18 56 08.5 +1.6**
comp=Z,5.5nm,0.8s,mb4.3,baz=84,slow=6.3,SNR=24
CMAR LR LR 19 11 52.2
comp=Z,76nm,19.2s,MS3.6,baz=100,slow=33
STKA Stephens Creek 43.94 183 P **P** **18 56 08.2 -0.3**
comp=Z,1.3nm,0.6s,mb3.9,baz=331,slow=4.7,SNR=4.7
STKA LR LR 19 16 54.8
comp=Z,114nm,18.6s,MS3.8,baz=24,slow=39
SONM Songino Array 47.30 326 P **P** **18 56 35.7 +0.7**
comp=Z,0.9nm,0.4s,mb4.0,baz=146,slow=8.8,SNR=8.3
SONM PcP PcP 18 58 06.1 -0.4
comp=Z,1.6nm,0.7s,baz=150,slow=3.1,SNR=6.4
GTA Gaotai 47.38 313 *eP* **P** **18 56 36.4 +0.6**
GTA PCP PcP 18 58 07.4 +0.5
GTA AMB AMB
comp=Z,7.0nm,0.9s,mb4.6
LSA Lhasa 51.79 298 P **P** **18 57 11.5 +1.7**
LSA Lhasa 51.79 298 *eP* **P** **18 57 11.2 +1.4**
comp=Z,5.5nm,0.6s,mb4.7
PKI Pulchoki 56.61 295 *eP* **P** **18 57 44.7 -0.5**
comp=Z,14nm,0.5s,mb5.3
KKN Kakani 56.74 295 *eP* **P** **18 57 45.3 -0.8**
comp=Z,27nm,0.8s,mb5.3
DMN Daman 56.88 295 *eP* **P** **18 57 46.7 -0.4**
comp=Z,30nm,1.0s,mb5.3
GKN Gorkha 57.32 295 *eP* **P** **18 57 49.6 -0.6**
comp=Z,24nm,0.5s,mb5.5
WMQ Urumqi 57.39 314 *eP* **P** **18 57 51.6 +1.1**
WMQ PCP PcP 18 58 45.3 +1.0
WMQ PP PP 19 00 00.6 +1.0
WMQ SCP 19 02 43.1
WMQ S **S** **19 05 46.3 +1.0**
WMQ AMB AMB
comp=Z,23nm,1.8s,mb4.9
WMQ AMB AMB
comp=Z,118nm,6.3s
WMQ LR LR
comp=N,455nm,21.2s,MS4.7
WMQ LR LR
comp=E,357nm,21.0s,MS4.7
WMQ LR LR
comp=Z,633nm,21.5s,MS4.7
DANN Dangsing 58.11 296 *eP* **P** **18 57 55.8 +0.1**
comp=Z,3.9nm,0.5s,mb4.7
KOLN Koldanda 58.22 295 *eP* **P** **18 57 55.0 -1.5**
comp=Z,26nm,0.9s,mb5.3
TIXI Tiksi 60.06 355 *eP* **P** **18 58 08.0 -0.6**
RPZ Rata Peaks 60.96 158 LR LR 19 20 49.3
comp=Z,104nm,18.7s,MS4.0,baz=257,slow=32
MKAR Makanchi Array 61.81 317 P **P** **18 58 20.6 -0.2**
comp=Z,4.7nm,0.5s,mb4.9,baz=92,slow=8.3,SNR=61
ZAL Zalesovo 62.17 325 P **P** **18 58 22.4 -0.8**
comp=Z,1.3nm,0.6s,mb4.2,baz=296,slow=7.5,SNR=3.3
ZAL PcP PcP 18 59 01.8 -1.3
comp=Z,2.9nm,0.7s,baz=253,slow=3.1,SNR=11
ZAL Zalesovo 62.17 325 P **P** **18 58 22.4 -0.8**
ZAL PcP PcP 18 59 01.8 -1.3
KURK Kurchatov 65.01 320 *eP* **P** **18 58 40.9 -1.0**
ILAR Eielson Array 70.15 25 P **P** **18 59 11.4 -2.5**
comp=Z,3.0nm,0.7s,mb4.3,baz=255,slow=5.3,SNR=34
ILAR LR LR 19 27 51.4
comp=Z,44nm,20.7s,MS3.7,baz=80,slow=34
BRVK Borovoye 70.46 322 *eP* **P** **18 59 15.8 -0.2**
ZRNK Zerenda 71.22 322 *eP* **P** **18 59 19.8 -0.8**
INK Inuvik 75.94 22 P **P** **18 59 47.0 -0.8**
comp=Z,6.4nm,0.9s,mb4.5,baz=259,slow=6.5,SNR=25
INK Inuvik 75.94 22 *eP* **P** **18 59 46.7 -1.1**
comp=Z,6.1nm,0.8s,mb4.6
ARU Arti 77.33 325 *eP* **P** **18 59 55.3 -0.5**
comp=Z,10.0nm,0.8s,mb4.8
DLBC Dease Lake 77.59 32 P **P** **18 59 57.6 +0.4**
comp=Z,1.9nm,0.5s,mb4.3,baz=211,slow=24,SNR=4.6
YBH Yreka Blue Hor 84.43 49 P **P** **19 00 34.7 +1.0**
comp=Z,2.9nm,0.8s,mb4.4,baz=345,slow=3.3,SNR=8.6
YBH Yreka Blue Hor 84.43 49 *eP* **P** **19 00 34.6 +0.9**
comp=Z,3.1nm,0.9s,mb4.4
YKA Yellowknife Ar 84.45 27 P **P** **19 00 33.4 +0.1**
comp=Z,3.1nm,0.7s,mb4.5,baz=288,slow=5.5,SNR=59
YKA LR LR 19 36 30.3
comp=Z,92nm,20.2s,MS4.2,baz=275,slow=34
THR Tehran 85.15 306 P **P** **19 00 38.7 +1.2**
comp=Z,4.0nm,1.1s,mb4.5,baz=102,slow=4.4,SNR=8.9
THR LR LR 19 37 52.5
comp=Z,14nm,19.4s,MS3.4,baz=229,slow=35
THR Tehran 85.15 306 P **P** **19 00 38.7 +1.2**
THR LR LR 19 37 52.5
RES Resolute Bay 86.05 13 *eP* **P** **19 00 41.4 +0.4**
comp=Z,15nm,0.8s,mb5.3
NEW Newport 86.83 41 *eP* **P** **19 00 46.0 +0.6**
comp=Z,3.7nm,0.6s,mb4.8
WVOR Wild Horse Val 87.24 47 *eP* **P** **19 00 48.4 +0.8**
ARCES ARCESS Array B 88.06 342 P **P** **19 00 50.3 -0.5**
comp=Z,1.2nm,0.5s,mb4.4,baz=74,slow=7.4,SNR=15
ARCES LR LR 19 41 09.8
comp=Z,59nm,18.5s,MS4.0,baz=62,slow=36
JOF Joensuu 89.11 335 *ep* **P** **19 00 54.1 -1.9**
TPH Tonopah 89.38 51 *eP* **P** **19 00 59.4 +1.4**
comp=Z,2.6nm,0.6s,mb4.7
HLID Hailey 89.93 45 *eP* **P** **19 01 01.2 +0.9**
comp=Z,2.1nm,1.0s,mb4.4
MCMT McKenzie Canyo 90.62 44 P **P** **19 01 04.1 +0.6**
BOZ Bozeman (W) 91.18 43 *eP* **P** **19 01 06.5 +0.5**
comp=Z,0.9nm,0.6s,mb4.3
KAF Kangasniemi 91.54 335 *ep* **P** **19 01 05.4 -1.9**
baz=58,slow=4.4
QLMT Earthquake Lak 91.58 44 P **P** **19 01 09.8 +1.8**
FINES FINESS Array B 91.97 335 P **P** **19 01 08.0 -1.3**
comp=Z,4.6nm,0.5s,mb5.0,baz=66,slow=5.1,SNR=52
PDAR Pinedale Array 93.55 45 P **P** **19 01 17.4 +0.4**
comp=Z,0.3nm,0.5s,mb4.0,baz=277,slow=7.3,SNR=2.9
PDAR LR LR 19 39 34.3
comp=Z,55nm,18.2s,MS4.1,baz=154,slow=33
AKASG Malin Array Be 95.56 325 P **P** **19 01 25.8 -0.3**
comp=Z,1.4nm,0.7s,mb4.5,baz=51,slow=4.7,SNR=8.5
BRTR Keskin Array B 97.30 313 P **P** **19 01 33.5 -0.7**
comp=Z,1.0nm,0.7s,mb4.4,baz=83,slow=2.6,SNR=5.2
NOA NORSAR Array B 97.95 339 LR LR 19 50 05.3
comp=Z,320nm,18.8s,MS3.8,baz=240,slow=38
VNA2 Neumayer--Watz 118.77 190 PKPdf 19 06 52.0 +1.2
VNA3 Neumayer Olymp 118.88 189 ⇑*i* PKPdf 19 06 52.7 +1.7
VNA1 Neumayer--Stat 119.15 190 ⇑*i* PKPdf 19 06 52.2 +0.7
DBIC Dimbokro 143.71 300 PKP PKPdf 19 07 34.8 -4.1
comp=Z,6.4nm,0.4s,baz=89,slow=2.6,SNR=21
KIC Kosan Boka 143.77 299 *e*PKIKP PKPdf 19 07 35.1 -3.9
comp=Z,170nm,1.5s
TIC Toumodi 143.86 300 *e*PKIKP PKPdf 19 07 35.4 -3.7
comp=Z,34nm,0.4s
LIC Lamto 144.08 299 *e*PKIKP PKPdf 19 07 35.1 -4.4
comp=Z,71nm,0.9s
TRQA Tornquist 145.45 143 *e*PKP PKPdf 19 07 39.8 -1.4
LPAZ La Paz 148.70 101 PKPbc PKPdf 19 07 51.3 +4.1
comp=Z,1.7nm,0.5s,baz=349,slow=2.9,SNR=8.8

*KRSC **19** 19:43:02.8±0.4,54.62N×162.20E,h25km±2km,ML3.8*
ISC 19 19:43:03.5±0.8,54.61N±0.02×162.17E±0.08,h30km±5km, n28,σ0°60/51,Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
MKZ	**Mys Kozlova**	**0.26**	**258**	*i* P		**Pb**		**19 43 10.2**	**-0.2**
MKZ				*e*S		**Sb**		**19 43 15.2**	**+0.1**
TUMR	**Tumrok**	**1.35**	**301**	*i* P		**Pn**		**19 43 26.3**	**-0.3**
TUMR				*i* S		**Sn**		**19 43 43.7**	**0.0**
KMNR	**Kamenistaya**	**1.60**	**317**	*e*P		**Pn**		**19 43 29.9**	**-0.3**
KMNR				*i* S		**Sn**		**19 43 49.6**	**-0.4**
ZLN	**Zelenaya**	**1.61**	**332**	*e*P		**Pn**		**19 43 30.4**	**0.0**
ZLN				*e*S		**Sn**		**19 43 50.6**	**+0.2**
KBTR	**Krutoberegovo**	**1.64**	**13**	*e*P		**Pn**		**19 43 30.6**	**-0.2**
KBTR				*e*S		**Sn**		**19 43 51.1**	**0.0**
KBG	**Krutoberegovo**	**1.68**	**10**	*e*P		**Pn**		**19 43 31.2**	**-0.1**
KBG				*e*S		**Sn**		**19 43 53.8**	**+1.8**
KBG				Smax					
	600nm,0.6s								
KII	**Karymskiy**	**1.70**	**251**	*e*P		**Pn**		**19 43 31.7**	**+0.1**
KII				*e*S		**Sn**		**19 43 52.7**	**+0.2**
LGNR	**Loginova**	**1.70**	**331**	*i* P		**Pn**		**19 43 32.0**	**+0.3**
CIRR	**Tsirk**	**1.71**	**332**	*e*P		**Pn**		**19 43 31.6**	**-0.3**
CIRR				*e*S		**Sn**		**19 43 52.4**	**-0.5**
KPT	**Kopyto**	**1.76**	**321**	*e*P		**Pn**		**19 43 32.4**	**-0.1**
KPT				*i* S		**Sn**		**19 43 53.9**	**-0.2**
KRSR	**Krestovskiy**	**1.85**	**331**	*e*P		**Pn**		**19 43 34.0**	**+0.2**
KRSR				*e*S		**Sn**		**19 43 56.9**	**+0.4**
KLY	**Klyuchi**	**1.91**	**334**	*e*P		**Pn**		**19 43 34.6**	**-0.1**
KLY				*e*S		**Sn**		**19 43 57.5**	**-0.5**
KOZ	**Kozyrevsk**	**1.96**	**319**	*e*P		**Pn**		**19 43 36.5**	**+1.2**
KOZ				*i* S		**Sn**		**19 44 01.0**	**+1.9**
SPN	**Mys Shipunski**	**1.98**	**221**	*e*P		**Pn**		**19 43 35.1**	**-0.6**
SPN				*e*S		**Sn**		**19 43 58.6**	**-1.1**
SVLR	**Shiveluch**	**2.04**	**345**	*e*P		**Pn**		**19 43 36.4**	**-0.2**
SVLR				*e*S		**Sn**		**19 44 00.6**	**-0.7**
SRDR	**Sredinnyy**	**2.21**	**322**	*e*P		**Pn**		**19 43 38.1**	**-0.9**
SRDR				*e*S		**Sn**		**19 44 03.9**	**-1.6**
NLC	**Nalytchevo**	**2.21**	**230**	*e*P		**Pn**		**19 43 39.2**	**+0.2**
NLC				*i* S		**Sn**		**19 44 05.9**	**+0.3**
BKI	**Bering**	**2.27**	**73**	*e*S		**Sn**		**19 44 02.9**	**-4.3**
BKI				Smax					
	40nm,0.3s								
SDLR	**Sedlovina**	**2.36**	**237**	*i* P		**Pn**		**19 43 40.9**	**-0.2**
SDLR				*e*S		**Sn**		**19 44 08.7**	**-0.6**
ESO	**Esso**	**2.38**	**305**	*e*P		**Pn**		**19 43 41.8**	**+0.3**
SMAR	**Somma**	**2.41**	**237**	*e*P		**Pn**		**19 43 41.7**	**-0.1**
UGLR	**Uglovaya**	**2.43**	**236**	*e*P		**Pn**		**19 43 41.9**	**-0.2**
AVH	**Avacha**	**2.44**	**238**	*i* P		**Pn**		**19 43 42.4**	**+0.2**
AVH				*i* S		**Sn**		**19 44 11.3**	**0.0**
KOK	**Koryaka**	**2.47**	**239**	*i* P		**Pn**		**19 43 43.1**	**+0.4**
KOK				*i* S		**Sn**		**19 44 12.5**	**+0.3**
PET	**Petropavlovsk**	**2.62**	**234**	*e*P		**Pn**		**19 43 45.0**	**+0.1**
PET				*i* S		**Sn**		**19 44 15.7**	**-0.3**
GNL	**Ganaly**	**2.65**	**251**	*e*P		**Pn**		**19 43 45.7**	**+0.4**
GNL				*e*S		**Sn**		**19 44 16.9**	**+0.1**
RUS	**Russkaya**	**3.09**	**227**	*e*P		**Pn**		**19 43 51.9**	**+0.4**
RUS				*e*S		**Sn**		**19 44 27.9**	**+0.1**
GRL	**Gorelyy**	**3.20**	**231**	*e*P		**Pn**		**19 43 53.7**	**+0.7**
GRL				*i* S		**Sn**		**19 44 31.0**	**+0.4**

*NEIC **19** 19:59:47.5±1.0,20.41S×68.69W,h130km±11km,mb3.9/3, Error ellipse: s-maj=18.3km s-min=11.4km az=68.0*
*IDC **19** 19:59:47.1±0.8,20.39S×68.60W,h118km±7km,mb4.0/3, mb1 4.0/6,mb1mx3.8/14,Error ellipse: s-maj=27.5km s-min=8.5km az=96.0*
ISC 19 19:59:46.2±0.7,20.40S±0.05×68.7W±0.1,h133km±8km, n20,σ1°20/21,mb4.8/7,Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
LVC	**Limon Verde**	**2.21**	**186**	P		**P**		**20 00 23.8**	**+0.2**
	17nm,0.3s,baz=18,slow=11,SNR=172								
LVC				S		**S**		**20 00 51.9**	**0.0**
	33nm,0.3s,baz=357,slow=6.9,SNR=7.8								
LVC	**Limon Verde**	**2.21**	**186**	*e*Pn		**P**		**20 00 23.8**	**+0.2**
LVC				*e*Sn		**S**		**20 00 50.8**	**-1.1**
LPAZ	**La Paz**	**4.12**	**7**	P		**P**		**20 00 50.3**	**+1.7**
	3.8nm,0.3s,baz=199,slow=5.9,SNR=52								
LPAZ				S		**S**		**20 01 35.4**	**-1.1**
	1.9nm,0.3s,baz=224,slow=22,SNR=3.7								
LPAZ	**La Paz**	**4.12**	**7**	P		**P**		**20 00 50.3**	**+1.7**
LPAZ				S		**S**		**20 01 35.4**	**-1.1**
CPUP	**Villa Florida**	**11.97**	**122**	P		**P**		**20 02 34.0**	**+0.6**
	0.3nm,0.3s,baz=328,slow=12,SNR=13								
TRQA	**Tornquist**	**18.53**	**163**	*e*P		**P**		**20 03 54.8**	**-0.2**
	0.4nm,0.6s								
BDFB	**Brasilia**	**20.20**	**80**	P		**P**		**20 04 12.0**	**-0.5**
	5.9nm,0.6s,baz=263,slow=11,SNR=6.6								
OTAV	**Otavalo**	**22.64**	**334**	P		**P**		**20 04 39.4**	**+2.6**
PLAL	**Pickwick Lake**	**58.08**	**341**	P		**P**		**20 09 26.8**	**-1.1**
WVT	**Waverly**	**59.07**	**342**	P		**P**		**20 09 32.9**	**-1.9**
WMOK	**Wichita Mounta**	**61.85**	**332**	*e*P		**P**		**20 09 50.8**	**-2.9**
	2.8nm,0.6s,mb4.3								
ANMO	**Albuquerque**	**65.71**	**326**	P		**P**		**20 10 19.5**	**+0.5**
	1.1nm,0.5s,mb3.9								
LIC	**Lamto**	**67.87**	**74**	*e*P		**P**		**20 10 38.1**	**+5.3**
	172nm,1.8s,mb5.5								
TIC	**Toumodi**	**68.05**	**74**	*e*P		**P**		**20 10 34.3**	**+0.3**
	19nm,0.2s,mb5.5								
KIC	**Kosan Boka**	**68.18**	**74**	*e*P		**P**		**20 10 34.6**	**-0.2**
	393nm,2.1s,mb5.8								
DBIC	**Dimbokro**	**68.21**	**74**	P		**P**		**20 10 34.9**	**0.0**
	8.4nm,0.8s,mb4.5,baz=236,slow=5.4,SNR=8.7								
YKA	**Yellowknife Ar**	**90.23**	**341**	P		**P**		**20 12 34.3**	**+1.9**
	1.5nm,1.0s,mb3.9,baz=129,slow=4.6,SNR=11								
YKA				pP		pP		20 13 04.3	-2.5
	0.8nm,0.7s,baz=133,slow=4.8,SNR=6.0								
YKA				sP		sP		20 13 16.9	-4.5
	1.2nm,0.8s,baz=132,slow=4.8,SNR=4.8								
ASAR	**Alice Springs**	**130.99**	**208**	PKP		PKPdf		20 18 45.3	+2.4
	0.3nm,0.6s,baz=171,slow=1.7,SNR=4.5								
MKAR	**Makanchi Array**	**144.61**	**35**	PKP		PKPdf		20 19 08.7	+1.8
	0.7nm,0.7s,baz=312,slow=3.8,SNR=4.9								
MKAR				pPKP				20 19 42.1	
	0.5nm,0.7s,baz=333,slow=2.7,SNR=3.8								
SONM	**Songino Array**	**152.34**	**7**	pPKPbc				20 20 01.6	
	0.6nm,0.7s,slow=1.2,SNR=3.7								

*NEIC **19** 20:01:26.7±0.5,43.81N×105.24W,ML3.5,Error ellipse: s-maj=7.4km s-min=5.3km az=136.0,Suspected Mining explosion.*
NEIC 55 km [35 miles] SSE of Gillette. ML 3.5 [GS].
*IDC **19** 20:01:26.6±1.8,43.83N×105.44W,mb4.3/1,mb1 4.0/4, mb1mx3.7/22,ML3.6/3,Error ellipse: s-maj=49.1km s-min=7.9km az=149.0*
ISC 19 20:01:24.4±0.7,43.83N±0.05×105.22W±0.09,n22, σ1°23/23,mb4.4/1,Wyoming

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RSSD	**Black Hills**	**0.90**	**71**	*e*P		**Pg**		**20 01 45.5**	**+3.1**
BW06	**Boulder Array**	**3.34**	**253**	*e*P		**Pn**		**20 02 20.1**	**+1.2**
PDAR	**Pinedale Array**	**3.34**	**253**	Pn		**Pn**		**20 02 20.4**	**+1.6**
	3.9nm,0.3s,baz=69,slow=15,SNR=77								
PDAR				Pg		**Pg**		**20 02 29.0**	**-2.0**
	12nm,0.3s,baz=67,slow=21,SNR=34								
PDAR				Lg				20 03 06.0	
	15nm,0.3s,baz=71,slow=31,SNR=8.5								
KSWY	**Kelly School**	**3.92**	**269**	P		**Pn**		**20 02 28.0**	**+0.9**
ISCO	**Idaho Springs**	**4.04**	**184**	*e*P		**Pn**		**20 02 29.6**	**+0.7**
BOZ	**Bozeman (W)**	**4.91**	**294**	*e*P		**Pn**		**20 02 41.5**	**+0.2**
HWUT	**Hardware Ranch**	**5.17**	**247**	*e*P		**Pn**		**20 02 45.0**	**+0.1**
	8.5nm,0.5s								
TCUT	**Toone Canyon**	**5.32**	**241**	*e*P		**Pn**		**20 02 47.2**	**+0.3**
HRY	**Holter Researc**	**5.48**	**304**	*e*P		**Pn**		**20 02 50.4**	**+1.2**
MCMT	**McKenzie Canyo**	**5.56**	**283**	*e*P		**Pn**		**20 02 52.4**	**+2.0**
DAU	**Daniels Canyon**	**5.64**	**235**	P		**Pn**		**20 02 51.4**	**-0.1**
JLU	**Jordanelle**	**5.64**	**237**	P		**Pn**		**20 02 51.4**	**-0.1**
HVU	**Hansel Valley**	**5.92**	**252**	P		**Pn**		**20 02 52.5**	**-3.0**
SRU	**San Rafael**	**6.17**	**222**	*e*P		**Pn**		**20 02 57.2**	**-1.8**
PV01	**Paradox Valley**	**6.23**	**205**	*e*P		**Pn**		**20 03 00.6**	**+0.7**
CHMT	**Chamberlain Mo**	**6.44**	**301**	*e*P		**Pn**		**20 03 03.3**	**+0.6**
MSU	**Marysvale**	**7.47**	**227**	*e*P		**Pn**		**20 03 16.9**	**-0.3**
MVU	**Marysvale**	**7.49**	**227**	*e*P		**Pn**		**20 03 16.5**	**-1.1**
	2.6nm,0.5s								
WALA	**Waterton Lakes**	**7.96**	**314**	*e*P		**Pn**		**20 03 21.9**	**-2.2**
	4.0nm,0.6s								
ULM	**Lac du Bonnet**	**9.05**	**42**	Pn		**P**		**20 03 37.9**	**-1.3**
	1.8nm,0.3s,baz=227,slow=10,SNR=11								
ULM				Lg				20 06 08.8	
	0.4nm,0.3s,baz=137,slow=19,SNR=3.6								
YKA	**Yellowknife Ar**	**19.48**	**347**	P		**P**		**20 05 54.6**	**-0.7**
	1.0nm,0.3s,baz=158,slow=13,SNR=10.0								
ARCES	**ARCESS Array B**	**61.32**	**18**	P		**P**		**20 11 43.1**	**-0.3**
	3.2nm,1.0s,mb4.4,baz=324,slow=7.8,SNR=6.8								

*NEIC **19** 20:02:27.0±3.4,23.98S×179.65W,h471km±35km,mb4.3/5, Error ellipse: s-maj=28.3km s-min=16.3km az=218.0*
*IDC **19** 20:02:28.9±1.9,24.07S×179.73W,h491km±14km,mb3.7/7, mb1 3.8/8,mb1mx3.7/13,Error ellipse: s-maj=22.8km s-min=20.3km az=163.0*
ISC 19 20:02:27.5±2.7,24.1S±0.1×179.9W±0.1,h475km±30km, n28,σ0°78/24,mb4.2/10,2D,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**14.38**	**190**	P		**P**		**20 05 30.8**	**-1.7**
	2.5nm,0.3s,baz=350,slow=5.7,SNR=11								
URZ				S		**S**		**20 08 02.3**	**+0.5**
	0.8nm,0.3s,baz=23,slow=22,SNR=6.4								
RPZ	**Rata Peaks**	**20.98**	**199**	P		**P**		**20 06 37.2**	**+0.1**
	11nm,0.5s,baz=57,slow=7.8,SNR=9.2								
ARMA	**Armidale**	**26.09**	**250**	*e*P		**P**		**20 07 25.4**	**+1.8**
CTA	**Charters Tower**	**31.61**	**270**	*e*P		**P**		**20 08 12.7**	**+1.0**
	15nm,0.3s,mb4.9								
CTAO	**Charters Tower**	**31.61**	**270**	*e*P		**P**		**20 08 12.4**	**+0.7**
TAU	**Tasmania Unive**	**32.92**	**227**	P		**P**		**20 08 22.8**	**+0.3**
PMG	**Port Moresby**	**34.67**	**289**	P		**P**		**20 08 37.4**	**-0.1**
	8.8nm,0.5s,mb4.5,baz=130,slow=7.7,SNR=3.5								
STKA	**Stephens Creek**	**34.78**	**248**	*e*P		**P**		**20 08 38.9**	**+0.6**
	2.6nm,0.8s,mb3.7								
STKA	**Stephens Creek**	**34.78**	**248**	P		**P**		**20 08 39.0**	**+0.7**
	2.2nm,0.4s,mb4.0,baz=84,slow=11,SNR=15								
STKA				PcP		PcP		20 10 58.5	-1.0
	1.1nm,0.8s,baz=112,slow=23,SNR=2.8								
AS12	**Alice Springs**	**42.14**	**261**	*i* P		**P**		**20 09 38.4**	**-0.1**
	5.5nm,0.5s,mb4.2								
ASAR	**Alice Springs**	**42.14**	**261**	P		**P**		**20 09 38.5**	**0.0**
	4.2nm,0.4s,mb4.2,baz=96,slow=6.9,SNR=120								
ASAR				ScP				20 14 25.5	
	2.2nm,1.2s,baz=108,slow=3.8,SNR=4.4								
ASAR				S		**S**		**20 15 22.6**	**-1.1**
	0.4nm,0.7s,baz=92,slow=15,SNR=3.5								
ASAR	**Alice Springs**	**42.14**	**261**	P		**P**		**20 09 38.5**	**0.0**
ASAR				ScP				20 14 25.5	
ASAR				S		**S**		**20 15 22.6**	**-1.1**
WB2	**Warramunga Ar**	**42.52**	**266**	*i* P		**P**		**20 09 41.0**	**-0.6**
WRAB	**Tennant Creek**	**42.52**	**266**	*e*P		**P**		**20 09 40.4**	**-1.2**
	54nm,1.1s,mb4.9								
WRA	**Warramunga Arr**	**42.53**	**266**	P		**P**		**20 09 41.2**	**-0.5**
	12nm,0.5s,mb4.6,baz=101,slow=8.3,SNR=115								
WRA				ScP				20 14 27.9	
	1.1nm,0.9s,baz=88,slow=4.1,SNR=5.3								
FITZ	**Fitzroy Crossi**	**50.95**	**266**	*e*P		**P**		**20 10 45.6**	**-0.5**
	7.6nm,0.8s,mb4.1								
SBA	**Scott Base**	**54.22**	**183**	P		**P**		**20 11 09.4**	**+0.4**
MAW	**Mawson**	**77.64**	**200**	P		**P**		**20 13 34.1**	**-0.5**
CMAR	**Chiang Mai Arr**	**89.70**	**290**	P		**P**		**20 14 36.3**	**+0.7**
	1.2nm,0.9s,mb3.7,baz=145,slow=2.4,SNR=4.5								
HLID	**Hailey**	**90.13**	**41**	P		**P**		**20 14 36.9**	**-0.1**
	0.5nm,0.3s,mb3.8								
SONM	**Songino Array**	**97.31**	**319**	P		**P**		**20 15 10.0**	**+0.4**
	0.1nm,0.3s,mb3.5,baz=90,slow=1.4,SNR=3.6								
BVAR	**Borovoye Array**	**120.65**	**319**	PKP		PKPdf		20 20 23.6	-0.7
	0.6nm,0.5s,baz=131,slow=2.0,SNR=4.7								
ARCES	**ARCESS Array B**	**132.07**	**348**	PKP		PKPdf		20 20 45.0	-0.7
	4.4nm,1.0s,baz=72,slow=2.9,SNR=4.8								
ARCES				SKPbc				20 23 24.7	
	2.1nm,0.8s,baz=34,slow=4.4,SNR=6.3								
ARCES	**ARCESS Array B**	**132.07**	**348**	PKP		PKPdf		20 20 45.0	-0.7
ARCES				SKPbc				20 23 24.7	
FINES	**FINESS Array B**	**138.64**	**341**	PKP		PKPdf		20 20 55.6	-2.3
	4.1nm,1.1s,baz=45,slow=2.7,SNR=3.8								
FINES				SKPbc				20 23 44.5	
	1.7nm,0.9s,baz=90,slow=3.8,SNR=6.3								
AKASG	**Malin Array Be**	**145.18**	**327**	PKPbc		PKPbc		20 21 09.6	-0.9
	0.6nm,0.4s,baz=44,slow=3.2,SNR=9.1								
AKASG				SKPbc				20 24 01.8	
	0.2nm,0.3s,baz=47,slow=2.8,SNR=5.1								
BRTR	**Keskin Array B**	**147.78**	**307**	PKPbc		PKPd

CHN3	**Shinhua**	**1.07**	**294**	*e*P		**Pb**	**20 21 12.1**	**+0.9**
CHN3				S		**Sb**	**20 21 27.1**	**+2.2**
ESL	**Shilin**	**1.17**	**0**	*e*P		**Pn**	**20 21 12.3**	**-0.4**
CHN5	**Tsauling**	**1.18**	**324**	*i* P		**Pn**	**20 21 12.8**	**0.0**
CHN5				S		**Sb**	**20 21 29.2**	**+1.3**
CHN2	**Minshiung**	**1.25**	**315**	*e*P		**Pn**	**20 21 14.3**	**+0.5**
CHN2				S		**Sb**	**20 21 30.8**	**+0.9**
SCLT	**Jiali**	**1.25**	**295**	*e*P		**Pn**	**20 21 14.5**	**+0.5**
SCLT				S		**Sb**	**20 21 31.5**	**+1.3**
CHY	**Chiayi**	**1.26**	**313**	⇓ *i* P		**Pn**	**20 21 14.5**	**+0.5**
CHY				S		**Sb**	**20 21 30.0**	**-0.2**
WGK	**Gukeng**	**1.31**	**323**	*e*P		**Pn**	**20 21 15.8**	**+1.0**
WGK				S		**Sn**	**20 21 31.8**	**+0.2**
CHN8	**Yiju**	**1.32**	**302**	*e*P		**Pn**	**20 21 15.1**	**+0.2**
CHN8				S		**Sn**	**20 21 31.9**	**-0.1**
SMLT	**Sun Moon Lake**	**1.33**	**339**	*e*P		**Pn**	**20 21 15.3**	**+0.3**
SMLT				S		**Sn**	**20 21 32.5**	**+0.4**
HWA	**Hwalien**	**1.34**	**7**	*e*P		**Pn**	**20 21 13.2**	**-2.0**
HWA				S		**Sn**	**20 21 33.0**	**+0.6**
TYC	**Yuchr**	**1.36**	**337**	*e*P		**Pn**	**20 21 16.2**	**+0.7**
TYC				S		**Sn**	**20 21 33.6**	**+0.6**
WNT	**Mingjian**	**1.41**	**331**	*e*P		**Pn**	**20 21 17.5**	**+1.3**
WNT				S		**Sn**	**20 21 34.9**	**+0.8**
TWD	**Chiawan**	**1.44**	**6**	*e*P		**Pn**	**20 21 15.9**	**-0.7**
TWD				S		**Sn**	**20 21 33.5**	**-1.4**
WSF	**Szhu**	**1.49**	**312**	*e*P		**Pn**	**20 21 17.5**	**+0.2**
WSF				S		**Sn**	**20 21 36.5**	**+0.3**
WHF	**Hehuan Shan**	**1.50**	**354**	*e*P		**Pn**	**20 21 17.2**	**-0.3**
WTCT	**Ta-ch'eng**	**1.61**	**319**	*e*P		**Pn**	**20 21 18.8**	**-0.3**
WTCT				S		**Sn**	**20 21 39.6**	**+0.3**
TWT	**Tachien**	**1.62**	**352**	*e*P		**Pn**	**20 21 19.6**	**+0.4**
TCU	**Taichung**	**1.65**	**335**	*e*P		**Pn**	**20 21 20.8**	**+1.2**
TCU				S		**Sn**	**20 21 40.5**	**+0.3**
WDGT	**Dungji**	**1.74**	**291**	*i* P		**Sn**	**20 21 20.1**	**-0.8**
WDGT				S		**Sn**	**20 21 40.2**	**-2.5**
NNS	**Nan Shan**	**1.79**	**358**	*e*P		**Pn**	**20 21 21.9**	**+0.2**
ENA	**Nanau**	**1.80**	**9**	*e*P		**Pn**	**20 21 21.4**	**-0.4**
TWQ1	**Liyutan**	**1.80**	**341**	*e*P		**Pn**	**20 21 23.0**	**+1.2**
TWQ1				S		**Sn**	**20 21 46.1**	**+2.0**
NSY	**Sanyi**	**1.87**	**341**	*e*P		**Pn**	**20 21 24.1**	**+1.3**
NSY				S		**Sn**	**20 21 47.6**	**+1.7**
PNG	**Penghu**	**1.96**	**298**	*e*P		**Pn**	**20 21 23.5**	**-0.5**
PNG				S		**Sn**	**20 21 45.8**	**-2.2**
ENTT	**Nioudou**	**1.99**	**4**	*e*P		**Pn**	**20 21 24.5**	**0.0**
TWC	**Suao**	**2.00**	**11**	P		**Pn**	**20 21 25.3**	**+0.7**
TWC				S		**Sn**	**20 21 48.6**	**-0.4**
NSTT	**Nanjuang**	**2.02**	**349**	*e*P		**Pn**	**20 21 25.8**	**+0.9**
NSK	**Sanguang**	**2.02**	**358**	*e*P		**Pn**	**20 21 25.6**	**+0.6**
TWE	**Neicheng**	**2.08**	**6**	*e*P		**Pn**	**20 21 26.6**	**+0.8**
ILA	**Ilan**	**2.13**	**8**	*e*P		**Pn**	**20 21 28.1**	**+1.6**
ILA				S		**Sn**	**20 21 51.6**	**-1.0**
YOJ	**Yonaguni jima**	**2.32**	**38**	P		**Pn**	**20 21 29.8**	**+0.6**
YOJ				S		**Sn**	**20 21 56.9**	**-0.5**
TATO	**Taipei**	**2.32**	**1**	*e*P		**Pn**	**20 21 29.5**	**+0.3**
TAP	**Taipei**	**2.39**	**2**	*e*P		**Pn**	**20 21 32.9**	**+2.7**
TAP1	**Taipei**	**2.39**	**2**	*e*P		**Pn**	**20 21 31.4**	**+1.2**
TWB1	**Santiao Chiao**	**2.41**	**12**	*e*P		**Pn**	**20 21 31.7**	**+1.2**
TWB1				S		**Sn**	**20 21 58.1**	**-1.6**
NWF	**Wu-fen Shan**	**2.44**	**8**	*e*P		**Pn**	**20 21 31.9**	**+1.0**
NWF				S		**Sn**	**20 22 01.1**	**+0.8**
TWS1	**Kuangyinshan**	**2.45**	**360**	*e*P		**Pn**	**20 21 32.8**	**+1.7**
TWS1				S		**Sn**	**20 22 00.5**	**-0.1**
HATJ	**Hateruma jima**	**2.60**	**57**	P		**Pn**	**20 21 33.6**	**+0.4**
HATJ				S		**Sn**	**20 22 03.1**	**-1.3**
TWY	**Chenhua**	**2.63**	**3**	*e*P		**Pn**	**20 21 34.7**	**+1.1**
IRIF	**Iriomote-Funau**	**2.70**	**51**	P		**Pn**	**20 21 34.9**	**+0.2**
IRIF				S		**Sn**	**20 22 07.1**	**+0.1**
JKRS	**Kuro-shima**	**2.85**	**56**	P		**Pn**	**20 21 37.3**	**+0.5**
JKRS				S		**Sn**	**20 22 10.4**	**-0.5**
JIJ	**Ishigaki jima**	**3.02**	**55**	P		**Pn**	**20 21 39.1**	**-0.1**
JIJ				S		**Sn**	**20 22 13.9**	**-1.3**
KNM	**Kinmen**	**3.27**	**303**	P		**Pn**	**20 21 43.0**	**+0.3**
JTJ	**Tarama**	**3.60**	**56**	P		**Pn**	**20 21 47.6**	**+0.2**
JTJ				S		**Sn**	**20 22 29.2**	**-0.6**
JMJ	**Miyako jima 2**	**4.15**	**58**	P		**Pn**	**20 21 55.3**	**0.0**
JMJ				S		**Sn**	**20 22 44.1**	**+0.4**
JOW	**Kunigami**	**7.49**	**55**	Pn		**Pn**	**20 22 38.7**	**-3.6**
	4.0nm,0.3s,baz=245,slow=13,SNR=15							
JOW				Sn		**Sn**	**20 24 01.2**	**-6.2**
	1.2nm,0.3s,baz=163,slow=19,SNR=2.4							
CMAR	**Chiang Mai Arr**	**21.46**	**263**	P		**P**	**20 25 40.4**	**-0.2**
	2.2nm,0.8s,mb3.5,baz=67,slow=9.2,SNR=8.5							
CMAR				LR		LR	20 35 14.9	
	comp=Z,69nm,18.3s,MS3.1,baz=75,slow=40							
SONM	**Songino Array**	**27.87**	**338**	P		**P**	**20 26 39.9**	**-1.7**
	0.4nm,0.6s,mb3.2,baz=143,slow=7.2,SNR=2.7							
MKAR	**Makanchi Array**	**39.61**	**317**	P		**P**	**20 28 22.6**	**-0.4**
	0.7nm,0.7s,mb3.5,baz=111,slow=11,SNR=6.9							
FITZ	**Fitzroy Crossi**	**40.70**	**174**	P		**P**	**20 28 30.1**	**-2.3**
	3.0nm,0.9s,mb3.9,baz=286,slow=7.4,SNR=2.8							
ZAL	**Zalesovo**	**41.66**	**328**	P		**P**	**20 28 38.6**	**-1.2**
	0.8nm,0.6s,mb3.5,baz=242,slow=5.2,SNR=3.9							
WRA	**Warramunga Arr**	**44.16**	**162**	P		**P**	**20 28 57.7**	**-3.0**
	0.6nm,0.5s,mb3.6,baz=345,slow=8.8,SNR=4.9							
ASAR	**Alice Springs**	**47.60**	**164**	P		**P**	**20 29 26.2**	**-1.8**
	0.4nm,0.3s,mb3.9,baz=340,slow=6.5,SNR=7.5							
BVAR	**Borovoye Array**	**49.01**	**322**	P		**P**	**20 29 37.7**	**-0.7**
	0.6nm,0.6s,mb3.8,baz=102,slow=7.5,SNR=6.1							
BVAR				PcP		PcP	20 31 00.4	-2.2
	1.9nm,0.8s,baz=112,slow=3.2,SNR=9.2							
FINES	**FINESS Array B**	**72.89**	**330**	P		**P**	**20 32 17.9**	**-2.5**
	1.1nm,0.8s,mb3.9,baz=68,slow=7.5,SNR=6.2							

MOS ***19*** *20:25:52.8±3.3,51.07N×159.66E,h32km,mb4.2/2, Error ellipse: s-maj=99.9km s-min=29.6km az=108.5*
IDC ***19*** *20:25:52.6±21.0,51.37N×158.88E,mb4.2/4,mb1 4.1/4, mb1mx3.6/21, Error ellipse: s-maj=469.0km s-min=78.7km az=152.0*
KRSC ***19*** *20:25:53.1±1.5,51.05N×159.46E,h20km±6km,ML3.8*
NEIC ***19*** *20:25:56.2±15.0,51.15N×158.91E,h32km±62km,mb4.3/2, Error ellipse: s-maj=165.1km s-min=18.9km az=128.0*
ISC 19 20:25:53.4±1.0,51.00N±0.06×159.55E±0.08,h53km±8km, n39,σ1§01/50,mb4.2/6,East of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RUS	**Russkaya**	**1.58**	**336**	*i* P		**P**	**P**	**20 26 18.8**	**-0.7**
RUS				*e*S		**S**	**S**	**20 26 38.5**	**-0.4**
PAU	**Pauzhetka**	**1.79**	**286**	*e*P		**P**	**P**	**20 26 22.9**	**+0.5**
PAU				*e*S		**S**	**S**	**20 26 41.8**	**-2.2**
PAU				Smax					
	640nm,0.8s								
GRL	**Gorelyy**	**1.81**	**330**	*e*P		**P**	**P**	**20 26 23.4**	**+0.7**
GRL				*e*S		**S**	**S**	**20 26 45.4**	**+0.9**
PET	**Petropavlovsk**	**2.11**	**345**	*e*P		**P**	**P**	**20 26 26.7**	**-0.2**
PET				*e*S		**S**	**S**	**20 26 51.1**	**-0.8**
PET	**Petropavlovsk**	**2.11**	**345**	*e*PN		**P**	**P**	**20 26 31.6**	**+4.7**
PET	**Petropavlovsk**	**2.11**	**345**	*e*P		**P**	**P**	**20 26 20.0**	**-0.9**
SPN	**Mys Shipunski**	**2.13**	**8**	*e*P		**P**	**P**	**20 26 26.6**	**-0.6**
SPN				*e*S		**S**	**S**	**20 26 51.8**	**-0.6**
MIPR	**Malaya Ipel'ka**	**2.16**	**307**	*i* P		**P**	**P**	**20 26 28.4**	**+0.7**
MIPR				*e*S		**S**	**S**	**20 26 54.7**	**+1.4**
NLC	**Nalytchevo**	**2.18**	**357**	*e*P		**P**	**P**	**20 26 28.6**	**+0.6**
NLC				*e*S		**S**	**S**	**20 26 54.7**	**+0.8**
SKR	**Severo-Kuril's**	**2.20**	**263**	*e*P		**P**	**P**	**20 26 28.0**	**-0.3**
SKR				*i* S		**S**	**S**	**20 26 53.0**	**-1.3**
UGLR	**Uglovaya**	**2.26**	**349**	*e*P		**P**	**P**	**20 26 29.3**	**+0.1**
SMAR	**Somma**	**2.32**	**349**	*e*P		**P**	**P**	**20 26 30.3**	**+0.3**
SDLR	**Sedlovina**	**2.32**	**350**	*i* P		**P**	**P**	**20 26 29.7**	**-0.3**
AVH	**Avacha**	**2.33**	**348**	*e*P		**P**	**P**	**20 26 30.3**	**+0.2**
AVH				*e*S		**S**	**S**	**20 26 57.8**	**+0.2**
KOK	**Koryaka**	**2.37**	**347**	*e*P		**P**	**P**	**20 26 30.9**	**+0.2**
ALID	**Alaid**	**2.54**	**269**	*e*P		**P**	**P**	**20 26 33.7**	**+0.7**
GNL	**Ganaly**	**2.88**	**341**	*e*P		**P**	**P**	**20 26 38.2**	**+0.3**
KII	**Karymskiy**	**3.05**	**359**	*e*P		**P**	**P**	**20 26 41.2**	**+0.9**
MKZ	**Mys Kozlova**	**3.81**	**19**	*e*P		**P**	**P**	**20 26 49.9**	**-1.1**
MKZ				*e*S		**S**	**S**	**20 27 32.4**	**-2.5**
TUMR	**Tumrok**	**4.31**	**5**	*e*P		**P**	**P**	**20 26 58.4**	**+0.3**
KMNR	**Kamenistaya**	**4.79**	**5**	*e*P		**P**	**P**	**20 27 06.2**	**+1.4**
KPT	**Kopyto**	**5.00**	**4**	*e*P		**P**	**P**	**20 27 09.1**	**+1.4**
ZLN	**Zelenaya**	**5.09**	**8**	*e*P		**P**	**P**	**20 27 10.3**	**+1.3**
LGNR	**Loginova**	**5.14**	**7**	*e*P		**P**	**P**	**20 27 08.4**	**-1.3**
KBTR	**Krutoberegovo**	**5.57**	**19**	*e*P		**P**	**P**	**20 27 15.2**	**-0.5**
KBTR				*e*S		**S**	**S**	**20 28 16.8**	**-2.5**
SVLR	**Shiveluch**	**5.68**	**9**	*e*P		**P**	**P**	**20 27 18.4**	**+1.2**
BKI	**Bering**	**5.72**	**40**	*e*S		**S**	**S**	**20 28 16.1**	**-6.9**
MDJ	**Mudanjiang**	**21.01**	**264**	P		**P**	**P**	**20 30 32.7**	**-1.7**
TIXI	**Tiksi**	**24.87**	**337**	*e*P		**P**	**P**	**20 31 12.7**	**+0.8**
TIXI	**Tiksi**	**24.87**	**337**	*e*P		**P**	**P**	**20 31 13.3**	**+1.4**
	6.7nm,0.5s,mb4.4								
BOD	**Bodaibo**	**26.93**	**302**	*e*P		**P**	**P**	**20 31 29.6**	**-1.6**
KURK	**Kurchatov**	**48.58**	**303**	*e*P		**P**	**P**	**20 34 32.6**	**-0.3**
MKAR	**Makanchi Array**	**48.79**	**297**	P		**P**	**P**	**20 34 35.0**	**+0.4**
	0.9nm,0.5s,mb4.1,baz=60,slow=6.9,SNR=30								
MKAR	**Makanchi Array**	**48.79**	**297**	P		**P**	**P**	**20 34 35.0**	**+0.4**
MKAR				pmax		pmax			
	comp=Z,1.0nm,0.5s								
BVAR	**Borovoye Array**	**51.45**	**309**	P		**P**	**P**	**20 34 54.6**	**-0.2**
	comp=Z,1.3nm,0.4s,mb4.2,baz=60,slow=7.6,SNR=14								
ARU	**Arti**	**54.73**	**318**	*e*P		**P**	**P**	**20 35 18.5**	**-0.6**
	comp=Z,1.2nm,0.5s,mb4.2								
FINES	**FINESS Array B**	**61.92**	**337**	P		**P**	**P**	**20 36 10.2**	**+1.0**
	comp=Z,0.9nm,0.6s,mb4.1,baz=53,slow=9.5,SNR=4.6								
FINES	**FINESS Array B**	**61.92**	**337**	P		**P**	**P**	**20 36 10.2**	**+1.0**
FINES				pmax		pmax			
	comp=Z,1.0nm,0.6s								
AKASG	**Malin Array Be**	**70.24**	**329**	P		**P**	**P**	**20 37 03.6**	**+1.4**
	comp=Z,6.3nm,1.0s,mb4.5,baz=31,slow=6.1,SNR=9.8								

NEIC ***19*** *20:42:12.1,36.66N×28.00E,h29km,MD3.1(ATH), After ATH.*
ATH ***19*** *20:42:12.1,36.66N×28.00E,h29km,MD3.1/3*
ISK ***19*** *20:42:13.3,36.72N×27.92E,h19km,MD3.2*
ISC 19 20:42:13.7±0.8,36.65N±0.04×27.95E±0.06,h20km±10km, n14,σ1§02/19,Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ARG	**Arkhangelos**	**0.46**	**162**	*e*PB		**Pb**	**Pb**	**20 42 22.0**	**-1.0**
YER	**Yerkesik**	**0.55**	**29**	*i* PG		**Pb**	**Pb**	**20 42 23.4**	**-1.1**
YER				*i* SG		**Sb**	**Sb**	**20 42 32.0**	**+0.1**
BDRM	**Kayabasi**	**0.58**	**315**	*i* P		**Pb**	**Pb**	**20 42 24.2**	**-0.8**
BDRM				S		**Sb**	**Sb**	**20 42 33.7**	**+0.9**
MLSB	**Milas**	**0.66**	**348**	*e*PG		**Pb**	**Pb**	**20 42 26.2**	**-0.2**
AYDN	**Tasoluk**	**1.01**	**357**	*i* P		**Pb**	**Pb**	**20 42 32.0**	**-0.4**
AYDN				S		**Sb**	**Sb**	**20 42 46.3**	**+1.1**
KARP	**Karpathos**	**1.28**	**210**	*e*PN		**Pn**	**Pn**	**20 42 37.0**	**+0.3**
KARP				*e*SN		**Sn**	**Sn**	**20 42 53.6**	**+0.3**
DNZL	**Cakiroluk**	**1.35**	**40**	P		**Pn**	**Pn**	**20 42 37.6**	**-0.2**
DNZL				*e*S		**Sb**	**Sb**	**20 42 57.9**	**+2.8**
SMG	**Samos**	**1.38**	**320**	*e*PN		**Pn**	**Pn**	**20 42 37.5**	**-0.7**
DENT	**Denizli**	**1.40**	**38**	*e*PN		**Pn**	**Pn**	**20 42 38.2**	**-0.2**
ELL	**Elmali**	**1.57**	**86**	*e*PN		**Pn**	**Pn**	**20 42 41.7**	**+0.8**
KDAG	**Bornova**	**1.83**	**343**	*e*P		**Pn**	**Pn**	**20 42 43.6**	**-1.0**
MANT	**Manisa**	**1.90**	**14**	*e*P		**Pn**	**Pn**	**20 42 50.6**	**+5.0**
AKS	**Akhisar**	**2.23**	**357**	*e*PN		**Pn**	**Pn**	**20 42 48.9**	**-1.3**
KRIS	**Kristallenia**	**2.47**	**234**	*e*P		**Pn**	**Pn**	**20 42 56.4**	**+2.6**

IDC ***19*** *20:58:44.1±1.1,11.22S×117.77E,mb3.8/4,mb1 4.1/7, mb1mx3.9/14,ML3.8/3, Error ellipse: s-maj=51.8km s-min=18.8km az=61.0*
NEIC ***19*** *20:58:49.8±0.8,11.27S×117.94E,h40km,mb4.1/4, Error ellipse: s-maj=19.1km s-min=11.5km az=58.0*
ISC 19 20:58:54.6±2.8,11.27S±0.10×118.1E±0.1,h120km±28km, n19,σ1§10/24,mb4.2/7,South of Sumbawa

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**9.94**	**134**	*e*P		**P**	**P**	**21 01 10.7**	**-4.8**
	12nm,0.6s								
FITZ				*e*S		**S**	**S**	**21 02 55.5**	**-10**
FITZ	**Fitzroy Crossi**	**9.94**	**134**	Pn		**P**	**P**	**21 01 11.0**	**-4.5**
	1.5nm,0.3s,baz=347,slow=6.7,SNR=37								
FITZ				Sn		**S**	**S**	**21 02 57.3**	**-8.2**
	2.2nm,0.3s,baz=174,slow=17,SNR=6.9								
WRA	**Warramunga Arr**	**17.82**	**121**	P		**P**	**P**	**21 02 56.7**	**+0.2**
	0.3nm,0.3s,baz=291,slow=12,SNR=8.5								
WRA				S		**S**	**S**	**21 06 06.1**	**-2.2**
	0.3nm,0.3s,baz=285,slow=25,SNR=4.7								
WRAB	**Tennant Creek**	**17.83**	**121**	*e*P		**P**	**P**	**21 02 57.5**	**+0.9**
	7.5nm,0.7s								
WB2	**Warramunga Arr**	**17.83**	**121**	*e*P		**P**	**P**	**21 02 56.6**	**0.0**
AS12	**Alice Springs**	**19.43**	**131**	*e*P		**P**	**P**	**21 03 19.0**	**+5.0**
	6.2nm,1.0s								
AS12				*e*				21 03 28.6	
ASAR	**Alice Springs**	**19.43**	**131**	P		**P**	**P**	**21 03 16.9**	**+3.0**
	0.4nm,0.3s,baz=308,slow=12,SNR=21								
ASAR				S		**S**	**S**	**21 06 42.5**	**+0.5**
	0.1nm,0.3s,baz=310,slow=24,SNR=8.8								
KLBR	**Kellerberrin**	**20.23**	**181**	*e*P		**P**	**P**	**21 03 21.0**	**-1.2**
	8.8nm,0.9s								
MUN	**Mundaring**	**20.68**	**185**	*e*P		**P**	**P**	**21 03 27.3**	**+0.5**
	3.8nm,0.5s								
MUN				*e*S		**S**	**S**	**21 06 57.2**	**-8.7**
FORT	**Forrest**	**21.49**	**156**	*e*P		**P**	**P**	**21 03 35.3**	**+0.5**
	26nm,0.6s,mb4.7								
NWAO	**Narrogin (SRO)**	**21.57**	**182**	P		**P**	**P**	**21 03 36.2**	**+0.6**
	5.8nm,0.4s,mb4.2,baz=20,slow=15,SNR=12								
NWAO	**Narrogin (SRO)**	**21.57**	**182**	P		**P**	**P**	**21 03 36.2**	**+0.6**
PKI	**Pulchoki**	**49.97**	**321**	*e*P		**P**	**P**	**21 07 37.5**	**-1.1**
DMN	**Daman**	**50.18**	**321**	*e*P		**P**	**P**	**21 07 34.4**	**-5.9**
	6.8nm,0.4s,mb5.0								
KKN	**Kakani**	**50.20**	**321**	*e*P		**P**	**P**	**21 07 39.5**	**-0.9**
KOLN	**Koldanda**	**51.24**	**320**	*e*P		**P**	**P**	**21 07 47.1**	**-1.2**
	8.2nm,0.7s,mb4.9								
SONM	**Songino Array**	**59.76**	**351**	P		**P**	**P**	**21 08 51.5**	**+2.3**
	0.2nm,0.5s,mb3.4,baz=172,slow=6.7,SNR=3.0								
MKAR	**Makanchi Array**	**66.09**	**334**	P		**P**	**P**	**21 09 31.6**	**+0.6**
	0.8nm,0.8s,mb3.6,baz=154,slow=8.1,SNR=6.5								
ZAL	**Zalesovo**	**70.85**	**340**	P		**P**	**P**	**21 10 00.5**	**+0.3**
	0.5nm,0.4s,mb3.7,baz=228,slow=15,SNR=2.5								

NIED ***19*** *21:04:00,27.40N×128.40E,h47km,Mw4.9 Best double couple: M0 2.17×10^16 NP1:φs58°,δ58°,λ95°. NP2:φs229°, δ32°,λ83°.*
IDC ***19*** *21:04:12.8±0.7,27.38N×128.29E,h41km±6km,mb4.7/28, mb1 4.8/30,mb1mx4.8/32,ML4.6/2,MS4.0/20,Ms1 4.0/20, ms1mx3.8/35, Error ellipse: s-maj=14.9km s-min=9.6km az=78.0*
JMA ***19*** *21:04:13.7±0.1,27.30N×128.44E,h45km±2km,M5.1*
JMA Felt IV J1.
BJI ***19*** *21:04:13.7,27.28N×128.46E,h76km,mB4.8,mb5.0, Ms4.2,Msz4.0*
NEIC ***19*** *21:04:14.8±0.1,27.34N×128.32E,mb5.1/101, Error ellipse: s-maj=4.2km s-min=3.9km az=169.0*
NEIC Felt in the northern Ryukyu Islands. Recorded [4 JMA] on Tokuno-shima; [3 JMA] on Okino-erabu-shima and Yoron-jima; [2 JMA] on Okinawa-jima and Amami-oshima.
SYO ***19*** *21:04:14.7,27.34N×128.32E,h60km,MB5.1*
HRVD ***19*** *21:04:14.8±0.3,27.18N×128.55E,h55km±1km,MW5.0/44, Centroid moment Tensor Solution. LP body waves: s38,c57;Mantle waves: s44,c75; Half duration: 0 Moment tensor: Scale 10^16Nm; Mrr3.51±.14; Mθθ-1.38±.10; Mφφ-2.13±.11; Mrθ0.82±.08; Mθφ-1.95±.07; Mφr0.63±.08; Best double couple: M0 3.77×10^16 NP1:φs216°, δ37°,λ84°. NP2:φs43°, δ53°,λ95°. Principal axes: T 3.66, Plg81°, Azm335°; N .22, Plg4°, Azm220°; P -3.88, Plg8°, Azm130°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
MOS ***19*** *21:04:14.8±0.8,28.20N×128.09E,h33km,mb5.7/23, MS4.7/11 Error ellipse: s-maj=16.0km s-min=6.3km az=119.4*
ISC 19 21:04:12.9±0.2,27.31N±0.02×128.38E±0.02,h56km±2km, h57km±2.4km:pP-P,n461,σ0§99/476,mb5.1/142,MS4.3/40, 67C-18D,Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JIH	**Iheya**	**0.46**	**234**	P		**P**	**P**	**21 04 24.6**	**+0.5**
JIH				S		**S**	**S**	**21 04 32.0**	**-0.3**
JOW	**Kunigami**	**0.48**	**191**	P		**P**	**P**	**21 04 24.2**	**-0.1**
	11μm,0.3s,baz=75,slow=18								
JOW				S		**S**	**S**	**21 04 32.0**	**-0.8**
	40μm,0.3s,baz=175,slow=25,SNR=236								
JOW	**Kunigami**	**0.48**	**191**	P		**P**	**P**	**21 04 24.3**	**-0.1**
JOW				S		**S**	**S**	**21 04 31.7**	**-1.1**
JTK	**Tokunoshima**	**0.70**	**46**	P		**P**	**P**	**21 04 26.8**	**-0.1**
JTK				S		**S**	**S**	**21 04 35.9**	**-1.5**
JAGN	**Aguni-jima**	**1.24**	**235**	P		**P**	**P**	**21 04 35.0**	**+0.7**
JAGN				S		**S**	**S**	**21 04 50.4**	**+0.1**
NAH1	**Naha**	**1.26**	**210**	P		**P**	**P**	**21 04 35.6**	**+1.0**
NAH1				S		**S**	**S**	**21 04 51.0**	**+0.3**
JJT2	**Tamagusuku 2**	**1.29**	**206**	P		**P**	**P**	**21 04 36.5**	**+1.4**
JJT2				S		**S**	**S**	**21 04 54.2**	**+2.6**
JAM	**Amami Oshima**	**1.55**	**44**	P		**P**	**P**	**21 04 38.2**	**-0.5**
JAM				S		**S**	**S**	**21 04 57.3**	**-0.4**
JKE	**Kume jima 2**	**1.73**	**236**	P		**P**	**P**	**21 04 41.1**	**0.0**
JKE				S		**S**	**S**	**21 05 02.1**	**0.0**
JZK	**Kikaishima**	**1.73**	**54**	P		**P**	**P**	**21 04 41.9**	**+0.7**
JZK				*e*S		**S**	**S**	**21 05 03.4**	**+1.2**
JNN	**Nakanoshima**	**2.85**	**27**	P		**P**	**P**	**21 04 56.3**	**-0.7**
JNN				S		**S**	**S**	**21 05 27.1**	**-3.1**
JMZ	**Minamidaito 2**	**2.94**	**120**	P		**P**	**P**	**21 04 55.4**	**-3.0**
JMZ				S		**S**	**S**	**21 05 26.7**	**-5.9**
JKC	**Kuchinoerabu**	**3.53**	**26**	P		**P**	**P**	**21 05 06.0**	**-0.6**
JKC				*e*S		**S**	**S**	**21 05 45.0**	**-2.3**
JOGS	**Gusukube**	**3.69**	**227**	P		**P**	**P**	**21 05 09.0**	**+0.2**
JMJ	**Miyako jima 2**	**3.72**	**229**	P		**P**	**P**	**21 05 09.2**	**-0.1**
JMJ				*e*S		**S**	**S**	**21 05 52.6**	**+0.3**
JTN	**Tanegashima 3**	**4.04**	**34**	P		**P**	**P**	**21 05 14.1**	**+0.3**
JTJ	**Tarama**	**4.24**	**232**	P		**P**	**P**	**21 05 15.5**	**-1.1**
JTJ				*e*S		**S**	**S**	**21 06 03.4**	**-2.0**
JIJ	**Ishigaki jima**	**4.81**	**233**	P		**P**	**P**	**21 05 21.6**	**-3.0**
JIJ				*e*S		**S**	**S**	**21 06 14.8**	**-4.9**
JKRS	**Kuro-shima**	**4.99**	**233**	P		**P**	**P**	**21 05 28.3**	**+1.3**
IRIF	**Iriomote-Funau**	**5.13**	**236**	P		**P**	**P**	**21 05 27.1**	**-1.9**
IRIF				*e*S		**S**	**S**	**21 06 23.6**	**-4.0**
JTZ	**Takazaki**	**5.15**	**27**	P		**P**	**P**	**21 05 29.6**	**+0.3**
JFU	**Fukue jima 2**	**5.34**	**3**	P		**P**	**P**	**21 05 33.7**	**+1.7**
YOJ	**Yonaguni jima**	**5.60**	**241**	P		**P**	**P**	**21 05 34.5**	**-1.1**
JKIT	**Kitakata**	**5.93**	**26**	P		**P**	**P**	**21 05 39.6**	**-0.6**
JTA	**Tamana**	**5.94**	**18**	P		**P**	**P**	**21 05 41.9**	**+1.6**
JNU	**Nakatsue**	**6.19**	**20**	P		**P**	**P**	**21 05 44.8**	**+1.0**
	18nm,0.3s,baz=205,slow=6.1,SNR=82								
JNU				S		**S**	**S**	**21 07 00.3**	**+6.3**
	baz=216,slow=37,SNR=1.4								
JNU				LR		LR	LR	21 08 23.5	
	comp=Z,755nm,20.7s,baz=190,slow=41								
JNU	**Nakatsue**	**6.19**	**20**	P		**P**	**P**	**21 05 44.7**	**+1.0**
JFI	**Itaya**	**6.34**	**15**	P		**P**	**P**	**21 05 47.8**	**+1.8**
TATO	**Taipei**	**6.61**	**251**	*e*P		**P**	**P**	**21 05 50.4**	**+0.7**
	144nm,0.6s								
JFA	**Akaike**	**6.72**	**17**	P		**P**	**P**	**21 05 52.2**	**+1.0**
SSE	**Sheshan**	**7.33**	**303**	⇓ P		**P**	**P**	**21 05 59.8**	**0.0**
SSE				S		**S**	**S**	**21 07 27.3**	**+4.9**
SSE				AMB		AMB			
	comp=Z,87nm

HHC AMB AMB
comp=Z,210nm,4.1s
HHC LR LR
comp=N,369nm,12.4s
HHC LR LR
comp=E,328nm,15.3s
HHC LR LR
comp=Z,507nm,16.0s
GYA Guiyang 19.39 272 ⇓*i* P **P 21 08 37.5 +0.6**
GYA AP 21 08 51.4
GYA PP PP 21 08 56.8 +1.4
GYA XP 21 09 02.6
GYA S **S 21 12 01.4 -6.1**
GYA LR LR
comp=N,540nm,16.2s
GYA LR LR
comp=E,940nm,16.8s
GYA LR LR
comp=Z,810nm,17.1s
BTO Baotou 20.14 316 *e*P **P 21 08 43.8 -1.1**
BTO AMB AMB
comp=Z,64nm,0.7s
BTO LR LR
comp=N,1μm,18.8s,MS4.4
BTO LR LR
comp=E,900nm,17.1s,MS4.4
ASAJ Asahikawa 20.31 31 P **P 21 08 45.8 -0.9**
comp=E,15nm,0.7s,baz=281,slow=5.9,SNR=5.9
ASAJ LR LR 21 16 44.5
comp=E,452nm,21.7s,MS3.8,baz=152,slow=37
GUMO Guam 20.58 128 *e*P **P 21 08 50.0 +0.4**
comp=E,62nm,0.8s
CD2 Chengdu 21.80 285 P **P 21 09 01.1 -0.7**
CD2 AP 21 09 17.8
CD2 XP 21 09 26.3
CD2 S **S 21 12 52.3 -2.0**
CD2 XS 21 13 20.1
CD2 SS SS 21 13 35.3 +0.6
CD2 AMB AMB
comp=Z,180nm,5.0s
CD2 LR LR
comp=E,610nm,14.4s
CD2 LR LR
comp=Z,840nm,15.6s,MS4.2
LZH Lanzhou 22.59 299 *e*P **P 21 09 11.1 +1.5**
LZH AP 21 09 25.5
LZH XP 21 09 32.0
LZH PP PP 21 09 41.0 +1.9
LZH S **S 21 13 09.3 +0.7**
LZH SS SS 21 13 54.0 +0.1
LZH AMB AMB
comp=Z,117nm,1.3s,mb5.2
LZH AMB AMB
comp=Z,350nm,5.1s
LZH LR LR
comp=E,420nm,13.2s
LZH LR LR
comp=Z,670nm,17.7s,MS4.1
YSS Yuzh-Sakhalins 22.65 26 *e*P **P 21 09 07.7 -2.3**
YSS *e* 21 09 20.7
YSS pmax pmax
comp=Z,50nm,1.2s,mb4.8
YSS MLR MLR
comp=Z,500nm,18.0s,MS4.0
YSS Yuzh-Sakhalins 22.65 26 *e*P **P 21 09 08.8 -1.2**
comp=Z,38nm,1.0s,mb4.8
HIA Hailar 22.92 345 *e*P **P 21 09 13.0 +0.4**
comp=Z,6.1nm,0.5s,mb4.3
KMI Kunming 23.10 270 *e*P **P 21 09 15.4 +0.8**
KMI AP 21 09 31.3
KMI PP PP 21 09 47.3 +1.0
KMI S **S 21 13 14.6 -3.0**
KMI SSS SSS 21 14 16.0 -6.7
KMI AMB AMB
comp=Z,41nm,1.1s,mb4.8
KMI LR LR
comp=N,341nm,14.0s,MS4.2
KMI LR LR
comp=E,446nm,13.4s,MS4.2
KMI LR LR
comp=Z,473nm,17.0s,MS4.0
ULN Ulaanbaatar 26.43 327*c i*P **P 21 09 44.7 -1.4**
ULN Ulaanbaatar 26.43 327 *e*P **P 21 09 44.6 -1.5**
comp=Z,29nm,0.8s,mb4.9
GTA Gaotai 26.62 304 P **P 21 09 45.9 -2.1**
GTA PCP PcP 21 13 11.5 +0.2
GTA PCS 21 16 50.8
GTA AMB AMB
comp=Z,15nm,0.5s,mb4.8
GTA LR LR
comp=N,219nm,13.7s,MS4.0
GTA LR LR
comp=E,227nm,18.2s,MS4.0
GTA LR LR
comp=Z,328nm,19.0s,MS3.9
SONM Songino Array 26.73 326 P **P 21 09 47.5 -1.4**
comp=Z,15nm,0.5s,mb4.8,baz=146,slow=11,SNR=58
SONM ScP 21 16 46.7
comp=Z,1.5nm,1.1s,baz=180,slow=2.5,SNR=4.9
CHRT Chiangrai 27.19 260 ⇓P **P 21 09 54.0 +0.6**
comp=Z,145nm,0.7s,mb5.6
CMAR Chiang Mai Arr 28.46 258 P **P 21 10 04.3 -0.5**
comp=Z,7.2nm,0.5s,mb4.6,baz=56,slow=7.9,SNR=64
CMAR PcP PcP 21 13 16.3 +0.4
comp=Z,4.2nm,0.6s,baz=41,slow=1.7,SNR=16
CMAR ScP 21 16 54.0
comp=Z,1.4nm,0.9s,baz=154,slow=2.1,SNR=4.7
CMAR LR LR 21 21 38.7
comp=Z,227nm,22.0s,MS3.7,baz=70,slow=37
BDT Bhumibol Dam 28.91 256 P **P 21 10 08.0 -0.8**
ZAK Zakamensk 29.96 327 *e*P **P 21 10 12.7 -5.1**
ZAK *e* 21 16 56.2
TLY Talaya 30.66 329 *e*P **P 21 10 12.6 -11**
TLY pmax pmax
comp=Z,42nm,0.8s,mb5.3
TLY MLR MLR
comp=Z,5μm,21.0s,MS5.1
SKR Severo-Kuril's 31.45 35 *e*P **P 21 10 28.5 -2.5**
SKR pmax pmax
comp=E,50nm,0.8s
SKR pmax pmax
comp=Z,80nm,0.8s,mb5.6
BOD Bodaibo 32.14 346 *e*P **P 21 10 34.3 -2.7**
LSA Lhasa 32.72 283 P **P 21 10 42.5 +0.2**
LSA Lhasa 32.72 283 *e*P **P 21 10 41.9 -0.4**
comp=Z,9.2nm,0.3s,mb5.2
PET Petropavlovsk 34.12 33 ⇑*i*P **P 21 10 53.1 -1.1**
PET *e*S **S 21 16 13.6 -1.6**
PET pmax pmax
comp=Z,78nm,0.6s,mb5.8
PET pmax pmax
comp=N,51nm,0.8s
PET pmax pmax
comp=E,29nm,0.8s
PET smax
comp=N,103nm,17.5s
PET MLR MLR
comp=Z,90nm,20.0s,MS3.5
PET Petropavlovsk 34.12 33 *e*P **P 21 10 52.5 -1.6**
comp=Z,33nm,0.6s,mb5.5
IPM Ipoh 34.51 234 ⇓*e*P **P 21 10 59.5 +1.6**
YAK Yakutsk 34.73 1 *e*P **P 21 10 57.6 -1.7**
YAK pmax pmax
comp=Z,12nm,0.7s,mb4.9
YAK pmax pmax
comp=N,5.0nm,1.0s
WMQ Urumqi 36.56 308 *e*P **P 21 11 15.3 +0.3**
WMQ AP pP 21 11 30.4 +0.9
WMQ XP sP 21 11 37.6 +1.2
WMQ PP PP 21 12 40.8 +0.3
WMQ PCP PcP 21 13 38.3 +0.5
WMQ S **S 21 16 52.4 -0.5**
WMQ SCP 21 17 18.3
WMQ SS SS 21 19 20.9 -0.7
WMQ SCS ScS 21 21 23.4 -0.2
WMQ AMB AMB
comp=Z,53nm,1.2s,mb5.2
WMQ AMB AMB
comp=Z,259nm,4.3s
WMQ LR LR
comp=N,2μm,18.2s,MS5.0
WMQ LR LR
comp=E,1μm,17.3s,MS5.0
PKI Pulchoki 38.00 281 *e*P **P 21 11 26.3 -0.9**
comp=E,93nm,0.4s,mb5.9
KKN Kakani 38.07 281 *e*P **P 21 11 27.5 -0.3**
comp=E,66nm,0.3s,mb5.8
DMN Daman 38.26 281 *e*P **P 21 11 28.3 -1.0**
comp=E,50nm,0.4s,mb5.6
GKN Gorkha 38.60 281 *e*P **P 21 11 31.6 -0.6**
comp=E,147nm,0.4s,mb6.1
DANN Dangsing 39.30 282 *e*P **P 21 11 38.6 +0.6**
KOLN Koldanda 39.54 281 *e*P **P 21 11 38.9 -1.1**
PMG Port Moresby 40.78 151 P **P 21 11 50.5 +0.1**
comp=E,20nm,0.8s,mb4.8,baz=333,slow=2.3,SNR=4.2
PMG pP pP 21 12 02.7 -2.3
comp=E,23nm,0.8s,baz=34,slow=8.7,SNR=4.1
PMG LR LR 21 25 56.0
comp=E,258nm,21.8s,MS4.0,baz=163,slow=32
MKAR Makanchi Array 40.93 311 P **P 21 11 50.3 -1.0**
comp=E,19nm,0.5s,mb5.0,baz=90,slow=11,SNR=144
MKAR PcP PcP 21 13 50.5 -1.0
comp=E,5.8nm,0.6s,baz=72,slow=3.8,SNR=6.7
MKAR ScP 21 17 40.0
comp=E,0.7nm,0.7s,baz=105,slow=4.8,SNR=4.8
MKAR LR LR 21 31 05.9
comp=E,228nm,18.4s,MS4.1,baz=101,slow=40
MKAR Makanchi Array 40.93 311 *e*P **P 21 11 50.4 -0.9**
MKAR pmax pmax
comp=Z,5.0nm,0.5s
MKAR Makanchi Array 40.93 311 P **P 21 11 50.3 -1.0**
MKAR PcP PcP 21 13 50.5 -1.0
MKAR ScP 21 17 40.0
MKAR LR LR 21 31 05.9
ZAL Zalesovo 41.49 322 P **P 21 11 53.8 -2.0**
comp=Z,15nm,0.6s,mb4.8,baz=274,slow=7.9,SNR=71
ZAL PcP PcP 21 13 51.5 -1.7
comp=Z,3.0nm,0.5s,baz=227,slow=3.4,SNR=5.2
ZAL ScP 21 17 38.8
comp=Z,1.1nm,0.7s,baz=108,slow=3.6,SNR=3.9
ZAL LR LR 21 31 39.5
comp=Z,660nm,18.1s,MS4.5,baz=268,slow=40
NVS Novosibirsk 42.67 323 *i*P **P 21 12 03.9 -1.6**
NVS *i* 21 13 53.4
NVS pmax pmax
comp=N,5.0nm,0.9s
NVS pmax pmax
comp=E,7.0nm,0.9s
NVS pmax pmax
comp=Z,8.0nm,0.9s,mb4.5
KURK Kurchatov 44.14 316 *i*P **P 21 12 15.4 -2.0**
KURK pmax pmax
comp=Z,10.0nm,0.6s,mb4.7
KURK Kurchatov 44.14 316 *e*P **P 21 12 15.3 -2.1**
TIXI Tiksi 44.39 0 *e*P **P 21 12 17.3 -1.9**
TIXI *e* 21 14 00.4
TIXI *e*S **S 21 18 49.7 +0.7**
TIXI pmax pmax
comp=Z,63nm,1.1s,mb5.3
TIXI MLR MLR
comp=Z,2μm,19.0s,MS5.1
TIXI Tiksi 44.39 0 *e*P **P 21 12 17.9 -1.3**
comp=Z,9.4nm,0.1s,mb5.5
ULHL Ulahol 44.67 304 P **P 21 12 22.9 +1.1**
SNR=9.6
KSH Kashi 44.84 300 *e*P **P 21 12 24.1 +0.9**
KSH *e*AP pP 21 12 42.8 +4.9
KSH *e*XP sP 21 12 51.6 +7.1
KSH *e*PCP PcP 21 14 05.5 +0.8
KSH *e*PP PP 21 14 10.6 +1.1
KSH *e*SCP 21 17 49.5
KSH *e*PCS 21 17 57.8
KSH *e*S **S 21 18 54.9 -1.1**
KSH *e*XS 21 19 27.0
KSH *e*SS SS 21 22 08.1 -1.2
KSH *e*SCS ScS 21 22 11.4 -1.4
KSH AMB AMB
comp=Z,30nm,0.7s,mb5.2
KSH LR LR
comp=N,240nm,7.6s
KSH LR LR
comp=E,300nm,4.6s
TKM2 Tokmak 2 45.17 304 P **P 21 12 27.0 +1.1**
SNR=109
FITZ Fitzroy Crossi 45.21 184 *e*P **P 21 12 25.4 -1.1**
comp=E,18nm,1.8s,mb4.6
FITZ Fitzroy Crossi 45.21 184 P **P 21 12 25.9 -0.6**
comp=E,4.4nm,0.5s,mb4.5,baz=50,slow=2.3,SNR=21
FITZ PcP PcP 21 14 05.4 -0.8
comp=E,3.2nm,0.8s,baz=10.0,slow=3.8,SNR=3.1
KZA Kyzart 45.40 303 P **P 21 12 29.1 +1.5**
SNR=83
KBK Karagaybulak 45.64 304 P **P 21 12 30.6 +1.0**
SNR=37
CHMS Chumysh 45.80 305 P **P 21 12 31.3 +0.5**
SNR=45
FRU Bishkek 45.89 304 *i*P **P 21 12 32.0 +0.5**
FRU pmax pmax
comp=Z,60nm,1.9s,mb5.2
UCH Uchtor 45.95 303 P **P 21 12 33.9 +1.8**
SNR=121
AAK Ala-Archa 45.98 304 P **P 21 12 32.8 +0.6**
SNR=17
USP Ospenovka 45.99 305 P **P 21 12 32.6 +0.3**
SNR=17
EKS2 Erkin-Say 46.51 304 P **P 21 12 36.9 +0.5**
SNR=23
AML Almayashu 46.56 303 P **P 21 12 37.7 +0.9**
SNR=22
BILL Bilibino 46.61 19*c i*P **P 21 12 35.4 -1.5**
BILL pmax pmax
comp=Z,21nm,1.1s,mb5.0
BILL MLR MLR
comp=Z,200nm,19.0s,MS4.1
BILL Bilibino 46.61 19 *e*P **P 21 12 35.6 -1.3**
comp=E,16nm,1.0s,mb4.9
HYB Hyderabad 46.86 269 *i*P **P 21 12 39.0 -0.5**
HYB Hyderabad 46.86 269 *e*P **P 21 12 39.0 -0.5**
WRAB Tennant Creek 47.31 172 *e*P **P 21 12 42.3 -0.7**
comp=Z,22nm,0.8s,mb5.1
WRA Warramunga Arr 47.32 172 P **P 21 12 42.6 -0.4**
comp=Z,5.1nm,0.5s,mb4.7,baz=353,slow=8.4,SNR=23
WRA pP pP 21 12 55.3 -2.5
comp=Z,7.3nm,0.6s,baz=350,slow=8.3,SNR=8.9
WB2 Warramunga Arr 47.32 172 *e*P **P 21 12 42.5 -0.6**
KKAR Karatay Array 48.91 305 *i*P **P 21 12 54.9 -0.2**
KKAR pmax pmax
comp=Z,5.0nm,0.5s,mb4.8
VOSK Vostochnaya 49.17 317 P **P 21 12 54.3 -2.7**
VOSK pmax pmax
comp=Z,13nm,0.7s,mb5.1
BVAR Borovoye Array 49.57 318 P **P 21 12 58.0 -2.1**
comp=Z,34nm,0.6s,mb5.5,baz=86,slow=10,SNR=133
BVAR PcP PcP 21 14 20.5 -0.8
comp=Z,10nm,0.4s,baz=104,slow=2.9,SNR=13
BRVK Borovoye 49.64 318 P **P 21 12 58.7 -1.9**
BRVK pmax pmax
comp=Z,20nm,0.7s,mb5.3
BRVK Borovoye 49.64 318 *e*P **P 21 12 58.3 -2.2**
BRVK *e*PcP PcP 21 14 20.2 -1.4
CTA Charters Tower 50.19 158 *e*P **P 21 13 05.4 +0.1**
comp=Z,8.9nm,1.2s,mb4.7
CTA *i* pP 21 13 18.2 -1.9
CTA Charters Tower 50.19 158 P **P 21 13 05.4 +0.1**
comp=Z,3.8nm,0.6s,mb4.6,baz=357,slow=10.0,SNR=9.2
CTA pP pP 21 13 18.3 -1.8
comp=Z,16nm,0.8s,baz=333,slow=8.4,SNR=9.8
CTA LR LR 21 33 50.6
comp=Z,159nm,20.9s,MS4.0,baz=146,slow=35
CTAO Charters Tower 50.19 158 *e*P **P 21 13 05.2 -0.1**
comp=Z,6.4nm,1.0s,mb4.6
CTAO LR LR
comp=Z,213nm,22.0s,MS4.1
ZRNK Zerenda 50.39 317 P **P 21 13 04.3 -2.0**
ZRNK pmax pmax
comp=Z,23nm,0.7s,mb5.3
ZRNK Zerenda 50.39 317 *e*P **P 21 13 03.8 -2.6**
ZRNK *e*pP pP 21 13 20.7 -0.5
ZRNK *e*PcP PcP 21 14 22.9 -1.4
AS12 Alice Springs 50.95 173 *e*P **P 21 13 10.7 -0.3**
comp=Z,2.9nm,0.5s,mb4.5
AS12 *i* pP 21 13 23.8 -2.1
ASAR Alice Springs 50.95 173 P **P 21 13 11.5 +0.5**
comp=Z,3.1nm,0.5s,mb4.5,baz=5.1,slow=14,SNR=51
ANM Nome 55.51 29 *e*P **P 21 13 44.0 -0.1**
AB31 Akbulak array 56.02 313 *i*P **P 21 13 46.3 -1.7**
AB31 pmax pmax
comp=Z,6.0nm,0.4s,mb5.0
ARU Arti 56.64 321*c e*P **P 21 13 50.2 -2.1**
ARU pmax pmax
comp=Z,40nm,0.9s,mb5.5
ARU MLR MLR
comp=Z,400nm,16.0s,MS4.6
ARU Arti 56.64 321 *e*P **P 21 13 50.0 -2.3**
comp=Z,28nm,0.4s,mb5.6
SOKR Solikamsk 57.60 325 ⇑*i*P **P 21 13 56.2 -2.9**
SOKR pmax pmax
comp=Z,10.0nm,0.9s,mb4.8
SOKR MLR MLR
comp=Z,330nm,17.0s,MS4.5
SVW Sparrevohn 59.77 33 *e*P **P 21 14 14.2 0.0**
STKA Stephens Creek 60.18 167 *e*P **P 21 14 16.3 -1.1**
comp=Z,3.1nm,0.6s,mb4.5
STKA Stephens Creek 60.18 167 P **P 21 14 16.6 -0.9**
comp=Z,2.6nm,0.5s,mb4.5,baz=342,slow=8.2,SNR=10.0
IMA Indian Mountai 60.50 27 *e*P **P 21 14 18.8 -0.3**
NWAO Narrogin (SRO) 60.83 191 P **P 21 14 20.5 -1.3**
comp=Z,13nm,1.2s,mb4.9,baz=31,slow=5.9,SNR=5.7
KDAK Kodiak Island 61.58 37 *e*P **P 21 14 25.4 -1.1**
comp=Z,125nm,1.1s,mb6.0
FIB Fire Island 62.40 33 *e*P **P 21 14 31.0 -0.9**
PWA Palmer West 62.49 32 *e*P **P 21 14 31.8 -0.7**
MCK McKinley 62.67 30 *e*P **P 21 14 32.5 -1.3**
comp=Z,19nm,1.1s,mb5.1
PMS Palmer South 62.69 33 *e*P **P 21 14 33.5 -0.3**
PMR Palmer 62.85 32 *e*P **P 21 14 34.4 -0.5**
COLA College 63.01 28*d i*P **P 21 14 35.8 -0.2**
COLA College 63.01 28 *e*P **P 21 14 35.8 -0.2**
SML Sawmill 63.20 32 *e*P **P 21 14 35.9 -1.3**
ILAR Eielson Array 63.43 28 P **P 21 14 37.0 -1.7**
comp=Z,7.8nm,0.6s,mb5.0,baz=274,slow=5.9,SNR=46
ILAR LR LR 21 44 08.9
comp=Z,44nm,20.9s,MS3.6,baz=295,slow=38
TOA Tolsona 64.16 31 *e*P **P 21 14 43.7 +0.3**
THR Tehran 64.80 299 P **P 21 14 48.5 +0.5**
comp=Z,9.4nm,0.6s,mb5.0,baz=81,slow=4.7,SNR=35
THR LR LR 21 46 48.2
comp=Z,70nm,21.1s,MS3.8,baz=69,slow=40
THR Tehran 64.80 299 P **P 21 14 48.5 +0.5**
THR LR LR 21 46 48.2
APA Apatity 66.94 335 ⇓*i*P **P 21 14 59.1 -2.0**
APA pmax pmax
comp=Z,22nm,0.5s,mb5.4
INK Inuvik 67.85 23 P **P 21 15 06.7 -0.2**
comp=Z,17nm,0.8s,mb5.1,baz=294,slow=6.8,SNR=48
INK Inuvik 67.85 23 *e*P **P 21 15 05.9 -0.9**
comp=Z,59nm,1.4s,mb5.4
GOF Gofitskoye 68.10 310 ⇓*i*P **P 21 15 08.0 -0.7**
GOF pmax pmax
comp=Z,60nm,1.5s,mb5.4
ZEI Tsey 68.18 308 *e*P **P 21 15 08.7 -0.6**
MOS Moscow 68.31 323 *e*P **P 21 15 08.0 -1.8**
MOS pmax pmax
comp=Z,70nm,0.6s,mb5.9
MOS MLR MLR
comp=Z,1μm,21.0s,MS5.1
KEV Kevo 68.49 338 *e*p **P 21 15 09.0 -1.8**
KIV Kislovodsk 68.66 309 *i*P **P 21 15 12.2 -0.1**
KIV pmax pmax
comp=Z,80nm,1.4s,mb5.5
KIV pmax pmax
comp=N,30nm,1.3s
KIV MLR MLR
comp=Z,100nm,18.0s,MS4.1
KIV MLR MLR
comp=N,10.0nm,17.0s,MS4.0
KIV MLR MLR
comp=E,70nm,18.0s,MS4.0
KIV Kislovodsk 68.66 309 *e*P **P 21 15 11.8 -0.5**
comp=E,103nm,1.2s,mb5.6
ARCES ARCESS Array B 69.06 338 P **P 21 15 12.9 -1.4**
comp=E,13nm,0.8s,mb4.9,baz=65,slow=8.3,SNR=67
ARCES LR LR 21 47 45.5
comp=E,143nm,21.2s,MS4.2,baz=68,slow=38
OBN Obninsk 69.07 322 *e*P **P 21 15 13.3 -1.2**
OBN *e* 21 15 38.9
OBN *e* 21 17 41.7
OBN *e*S S 21 24 08.8 -5.3
OBN pmax pmax
comp=Z,16nm,0.5s,mb5.2
OBN MLR MLR
comp=Z,400nm,17.0s,MS4.7
OBN Obninsk 69.07 322 *e*P **P 21 15 12.2 -2.3**
comp=Z,22nm,0.5s,mb5.3
JOF Joensuu 69.17 331 *e*p **P 21 15 12.0 -3.1**
comp=Z,35nm,0.6s,mb5.5
JOF Joensuu 69.17 331 *e*P **P 21 15 12.0 -3.1**
JOF pmax pmax
comp=Z,35nm,0.6s,mb5.5
SOC Sochi 70.82 310 *i*P **P 21 15 24.7 -0.7**
SOC *e* 21 18 06.6
SOC *e*PPP PPP 21 19 39.8 -6.1
SOC *e*S S 21 24 27.3 -7.4
SOC *e* 21 25 20.0
SOC *e*SS SS 21 29 06.9 -3.0
SOC *e*SSS SSS 21 32 06.2 -10
SOC pmax pmax
comp=Z,50nm,0.5s,mb5.7
SOC pmax pmax
comp=N,11nm,0.7s
SOC pmax pmax
comp=E,11nm,0.6s
SOC smax
comp=N,19nm,0.9s
SOC smax
comp=E,31nm,1.1s
SOC MLR MLR
comp=N,172nm,23.0s
SOC MLR MLR
comp=Z,233nm,23.0s,MS4.4
SOC MLR MLR
comp=E,131nm,17.0s
ERZM Erzurum 70.90 306 P **P 21 15 26.8 +0.8**
KAF Kangasniemi 71.63 331 *e*p **P 21 15 27.8 -2.1**
baz=64,slow=5.7
BEST Besiri 71.67 304 P **P 21 15 30.8 +0.2**
FINES FINESS Array B 72.00 330 P **P 21 15 30.7 -1.4**
comp=E,17nm,0.5s,mb5.3,baz=72,slow=6.2,SNR=197
FINES LR LR 21 51 10.2
comp=E,263nm,19.6s,MS4.5,baz=256,slow=39
FINES FINESS Array B 72.00 330 *e*P **P 21 15 30.4 -1.7**
DLBC Dease Lake 72.90 33 *e*P **P 21 15 38.1 +0.6**
ELZG Elazig 73.13 305 *i*P **P 21 15 40.1 +0.9**
LOF Lofoten 73.56 339 *e*P **P 21 15 41.8 +0.7**
LOF AMb AMB 21 15 51.9
comp=Z,79nm,2.0s,mb5.3
MZLS Mizel 73.65 289 P **P 21 15 42.8 +0.2**
DAG Danmarks Havn 74.21 353 ⇓*i*P **P 21 15 43.9 -0.9**
comp=Z,10.0nm,0.6s,mb4.9
DAG Danmarks Havn 74.21 353 ⇓*i*P **P 21 15 43.9 -0.9**
DAG pmax pmax
comp=Z,10.0nm,0.6s,mb4.9
MOR8 Moi Rana 74.32 337 *e*P **P 21 15 43.8 -1.9**
MOR8 AMb AMB 21 15 44.3
comp=Z,46nm,1.4s,mb5.2
MOR8 Moi Rana 74.32 337 *e*P **P 21 15 43.8 -1.9**
comp=Z,46nm,1.4s,mb5.2
RES Resolute Bay 74.47 11 *e*P **P 21 15 45.5 -0.9**
comp=Z,34nm,0.8s,mb5.3
ARSS Ar Rass 74.58 291 P **P 21 15 47.6 -0.3**
GZT Gaziantep 74.60 304 *i*P **P 21 15 48.4 +0.6**
AKASG Malin Array Be 74.81 319 P **P 21 15 47.1 -1.6**
comp=Z,25nm,0.5s,mb5.5,baz=58,slow=6.3,SNR=120
HILS Ha'il 75.18 293 P **P 21 15 51.8 +0.5**
CTKT Corum 75.31 308 *i*P **P 21 15 52.2 +0.4**
AFFS 'Afif 75.55 290 P **P 21 15 53.8 +0.3**
BALT Daday 75.92 310 *i*P **P 21 15 55.6 +0.4**
AVNT Avonos 76.00 306 P **P 21 15 55.6 -0.2**
NSS Namsos 76.10 336 *e*P **P 21 15 53.5 -2.3**
NSS AMb AMB 21 15 54.5
comp=Z,67nm,0.8s,mb5.6
NSS *e*pP pP 21 16 12.2 +0.6
NSS Namsos 76.10 336 *e*P **P 21 15 53.5 -2.3**
comp=Z,67nm,0.8s,mb5.6
BRTR Keskin Array B 76.48 308 P **P 21 15 58.4 -0.1**
comp=Z,41nm,0.8s,mb5.4,baz=90,slow=4.9,SNR=193
BRTR LR LR 21 53 40.8
comp=Z,52nm,18.7s,MS3.9,baz=55,slow=39
KIS Kishinev 76.62 316 ⇓*i*P **P 21 15 58.0 -1.1**
KIS *e* 21 16 05.0
KIS MLR MLR
comp=Z,200nm,18.0s,MS4.5
SUW Suwalki 76.67 324 ⇑*e*P **P 21 15 58.7 -0.5**
TATS Tathlith 76.92 285 P **P 21 16 01.9 +0.5**
QURS Qurayyt al Mil 77.15 299 P **P 21 16 03.3 +0.9**
YKW3 Yellowknife Ar 77.45 25 *e*P **P 21 16 03.2 -0.3**
YKA Yellowknife Ar 77.50 25 P **P 21 16 04.0 +0.4**

comp=Z,16nm,0.7s,mb5.1,baz=302,slow=5.8,SNR=263
YKA PKKPbc 21 35 05.4
comp=Z,0.2nm,0.4s,baz=130,slow=2.4,SNR=5.1
YKA LR LR 21 55 31.8
comp=Z,53nm,18.2s,MS3.9,baz=270,slow=40
YKA Yellowknife Ar 77.50 25 P **P 21 16 04.0 +0.4**
YKA PKKPbc 21 35 05.4
YKA LR LR 21 55 31.8
DJNS Zahran al Janu 77.63 284 P **P 21 16 06.4 +1.2**
KSHT Keshet 77.66 301 P **P 21 16 05.3 +0.1**
CFR Carcaliu 77.84 315⇑ *iP* **P 21 16 05.6 -0.3**
CFR Carcaliu 77.84 315⇑ P **P 21 16 05.6 -0.4**
KBRS Khaybar 77.89 293 P **P 21 16 07.6 +1.0**
HENT Hendek 77.92 310 P **P 21 16 05.6 -0.8**
HNTI Hanita 78.11 301 P **P 21 16 07.8 +0.2**
HMDT Nahal Hemdat 78.18 300 P **P 21 16 08.4 +0.3**
HARR Harsova 78.19 314⇑ *iP* **P 21 16 08.0 +0.2**
HARR Harsova 78.19 314⇑ P **P 21 16 08.1 +0.2**
BLJS Baljurashi 78.39 286 P **P 21 16 10.6 +1.1**
NB2 NORSAR Subarra 78.41 334 P **P 21 16 07.9 -0.8**
comp=Z,51nm,0.7s,mb5.6,baz=52,slow=5.6
NB2 NORSAR Subarra 78.41 334 P **P 21 16 07.9 -0.8**
baz=52,slow=5.9
NOA NORSAR Array B 78.41 334 P **P 21 16 07.9 -0.8**
comp=Z,46nm,0.7s,mb5.5,baz=51,slow=5.5,SNR=140
NOA LR LR 21 54 35.1
comp=Z,132nm,18.2s,MS4.3,baz=45,slow=39
VRI Vrincioaia 78.42 316⇑ *iP* **P 21 16 09.5 +0.4**
VRI Vrincioaia 78.42 316⇓ P **P 21 16 09.6 +0.5**
OFRI 'Ofer 78.44 301 P **P 21 16 09.6 +0.1**
ESKT Eskisehir 78.52 309 *i* P **P 21 16 08.8 -1.0**
SLTI Sal'it 78.56 300 P **P 21 16 10.5 +0.3**
DRGI Dragot 78.56 300 P **P 21 16 10.6 +0.4**
DOMB Dombas 78.63 335 *eP* **P 21 16 09.4 -0.5**
DOMB AMb AMB 21 16 10.5
comp=Z,70nm,1.0s,mb5.5
DOMB *epP* pP 21 16 25.6 -0.2
DOMB Dombas 78.63 335 *eP* **P 21 16 09.4 -0.5**
comp=Z,70nm,1.0s,mb5.5
WAR Warsaw 78.66 323 *eP* **P 21 16 06.7 -3.6**
MAMC Mammari 78.69 304⇑ P **P 21 16 10.6 -0.2**
MAMC Mammari 78.69 304⇑ *iP* **P 21 16 10.6 -0.2**
CSS Prodhromos 78.70 303⇑ P **P 21 16 10.8 -0.1**
comp=Z,0.6nm,0.5s
CSS Prodhromos 78.70 303⇑ *iP* **P 21 16 10.8 -0.1**
MOL Molde 78.86 336 *eP* **P 21 16 14.9 +3.7**
MOL AMb AMB 21 16 21.1
comp=Z,129nm,1.6s,mb5.6
MOL Molde 78.86 336 *eP* **P 21 16 14.9 +3.7**
comp=Z,129nm,1.6s,mb5.6
KWP Kalwaria 79.03 320⇑ *eP* **P 21 16 12.6 +0.3**
KWP MLR MLR 21 53 24.1
comp=Z,600nm,20.9s,MS4.9
TBKS Tabuk 79.07 296 P **P 21 16 13.5 +0.5**
MLR Muntele Rosu 79.08 316⇑ *iP* **P 21 16 12.9 +0.2**
MLR Muntele Rosu 79.08 316⇑ P **P 21 16 12.9 +0.2**
SZAC Souni-Zanaja 79.12 303⇑ P **P 21 16 12.7 -0.5**
SZAC Souni-Zanaja 79.12 303⇑ *eP* **P 21 16 12.7 -0.5**
ALFC Alevga 79.16 304 P **P 21 16 12.5 -0.9**
comp=Z,1.0nm,0.5s
PRD Provadia 79.21 313 *i* P **P 21 16 14.0 +0.5**
FRSS Farasan al Kab 79.27 283 P **P 21 16 15.6 +1.2**
JMQS Jabal Moqyreh 79.33 297 P **P 21 16 14.7 +0.3**
PRNI Paran 79.39 299 P **P 21 16 15.0 +0.3**
ULDT Uludag 79.43 310 P **P 21 16 14.6 -0.1**
SVTA Shivta 79.44 299 P **P 21 16 15.1 +0.1**
PPCY Paphos 79.46 304 P **P 21 16 14.5 -0.5**
PPCY Paphos 79.46 304 *eP* **P 21 16 14.5 -0.5**
YNBS Yanbu' al Bahr 79.54 292 P **P 21 16 16.6 +1.0**
KZIT Kziot 79.63 299 P **P 21 16 16.0 0.0**
KMTI Karmit 79.72 298 P **P 21 16 16.4 -0.1**
EIL Elat 79.72 298 P **P 21 16 16.5 -0.1**
ALWS Ilw as Safayha 79.79 298 P **P 21 16 17.3 +0.4**
JMOS Jabal al Moail 79.81 297 P **P 21 16 17.3 +0.2**
HAQS Haql 80.00 297 P **P 21 16 18.4 +0.4**
JMB Yambol 80.08 313 *i* P **P 21 16 18.5 +0.3**
CRVS Cervenica-Dubn 80.10 320 *i* P **P 21 16 18.5 +0.4**
AYUS 'Aynunah 80.11 297 P **P 21 16 18.6 0.0**
BDAS Al Bad' 80.14 297 P **P 21 16 18.6 -0.2**
BSD Bornholm Skovb 80.22 328⇑ *iP* **P 21 16 18.3 -0.4**
comp=Z,66nm,0.6s,mb5.7
BSD Bornholm Skovb 80.22 328⇑ *iP* **P 21 16 18.3 -0.4**
BSD pmax pmax
comp=Z,66nm,0.6s,mb5.7
OJC Ojcow 80.36 322 *eP* **P 21 16 19.7 +0.2**
NIE Niedzica 80.48 321⇑ *eP* **P 21 16 20.5 +0.3**
SART Tekirdag 80.51 311 P **P 21 16 20.5 0.0**
PVL Pavlikeni 80.53 314 P **P 21 16 21.5 +0.9**
MANT Manisa 80.58 308 P **P 21 16 20.6 -0.3**
DNZL Cakiroluk 80.60 307 *i* P **P 21 16 20.9 -0.1**
KECS Kecovo 80.87 320 *eP* **P 21 16 20.8 0.0**
DIM Dimitrovgrad 80.96 313 *i* P **P 21 16 23.5 +0.6**
COP Copenhagen 81.05 329 *i* P **P 21 16 18.7 -4.3**
comp=Z,51nm,1.1s,mb5.4
COP Copenhagen 81.05 329 *eP* **P 21 16 18.7 -4.3**
COP pmax pmax
comp=Z,51nm,1.1s,mb5.4
COP Copenhagen 81.05 329 *eP* **P 21 16 18.7 -4.3**
comp=Z,51nm,1.1s,mb5.4
ALN Alexandroupoli 81.17 311 *eP* **P 21 16 23.6 -0.4**
AYDN Tasoluk 81.44 308 P **P 21 16 26.6 +1.2**
OKC Ostrava-Krasne 81.46 322⇑ *iP* **P 21 16 25.6 +0.3**
PLD Plovdiv 81.48 313 *i* P **P 21 16 26.0 +0.4**
PSZ Piszkesteto 81.50 320 *eP* **P 21 16 25.4 -0.1**
comp=Z,35nm,1.5s,mb5.1
KDAG Bornova 81.52 309 P **P 21 16 26.0 +0.1**
PGB Panagyurishte 81.61 314 P **P 21 16 26.0 -0.2**
RZN Rozhen 81.67 313 *i* P **P 21 16 27.0 +0.4**
VYHS Vyhne 81.80 321 *i* P **P 21 16 27.9 +0.8**
MORC Moravsky Berou 81.83 322 *eP* **P 21 16 26.6 -0.6**
comp=Z,16nm,0.8s,mb5.1
KSP Ksiaz 81.91 324 *eP* **P 21 16 28.4 +0.8**
KSP MLR MLR 21 56 26.1
comp=Z,700nm,17.6s,MS5.1
KSP Ksiaz 81.91 324⇑ *eP* **P 21 16 28.2 +0.6**
KSP LR LR
comp=Z,800nm,17.6s,MS5.1
KOLL Kolacno 82.00 321 *eP* **P 21 16 28.9 +0.8**
BDRM Kayabasi 82.02 308 P **P 21 16 28.3 -0.2**
MUD Monsted U'grnd 82.04 331⇑ *iP* **P 21 16 28.3 +0.1**
comp=Z,79nm,1.0s,mb5.6
MUD Monsted U'grnd 82.04 331⇑ *iP* **P 21 16 28.3 +0.1**
MUD pmax pmax
comp=Z,79nm,1.0s,mb5.6
RPW Rockport 82.14 39 P **P 21 16 29.9 +1.0**
DPC Dobruska-Polom 82.17 323⇑ *iP* **P 21 16 29.6 +0.7**
VTS Vitosha 82.20 314 *i* P **P 21 16 30.3 +1.0**
UPC Upice 82.25 323⇑ *iP* **P 21 16 30.0 +0.7**
MMB Musomiste 82.36 313 *i* P **P 21 16 30.3 +0.2**
BOLS Boljevac 82.37 316⇑ *iP* **P 21 16 29.9 -0.2**
RMW Rattlesnake Mo 82.50 40 P **P 21 16 31.7 +1.0**
SMOL Smolenice 82.58 321 *eP* **P 21 16 32.3 +1.2**
KKB Krupnik 82.64 313 *i* P **P 21 16 32.0 +0.4**
KKB Krupnik 82.64 313⇑ *iP* **P 21 16 32.0 +0.4**
SRS Serrai 82.69 313 *eP* **P 21 16 31.4 -0.4**
FMW Mount Fremont 82.86 40 P **P 21 16 33.8 +1.2**
ZST Bratislava 82.93 321 *eP* **P 21 16 33.7 +0.8**
SOH Sokhos 82.99 312 *eP* **P 21 16 32.7 -0.6**
PVCC Panska Ves 83.00 324⇑ *iP* **P 21 16 33.8 +0.6**
BSEG Bad Segeberg 83.08 328 *eP* **P 21 16 34.2 +0.7**
BSEG pmax pmax
comp=Z,73nm,0.9s,mb5.7
BRG Berggiesshubel 83.12 324 *i* P **P 21 16 34.4 +0.6**
BRG *e* pP 21 16 49.9 +0.1
BRG pmax pmax
comp=Z,15nm,0.8s,mb5.1
BRG Berggiesshubel 83.12 324 *i* P **P 21 16 34.4 +0.6**
comp=Z,15nm,0.8s,mb5.1
BRG *e* pP 21 16 49.9 +0.1
PAIG Paliouri 83.22 311 *eP* **P 21 16 34.1 -0.4**
VAY Valandovo 83.25 313⇑ *iP* **P 21 16 34.6 -0.1**
ETW Entiat 83.26 39 P **P 21 16 35.7 +1.1**
PRU Pruhonice 83.32 324⇑ *iP* **P 21 16 35.2 +0.4**
PRU pmax pmax
comp=Z,34nm,1.4s,mb5.2
PRU Pruhonice 83.32 324⇑ *iP* **P 21 16 35.2 +0.4**
comp=Z,34nm,1.4s,mb5.2
CLL Collm 83.35 325⇑ P **P 21 16 35.4 +0.5**
comp=Z,logA/T=1.9,mb5.7
CLL *ePP* PP 21 19 31.0 -18
CLL Collm 83.35 325⇑ *iP* **P 21 16 35.4 +0.5**
CLL pmax pmax
comp=Z,55nm,0.7s,mb5.7
CLL Collm 83.35 325⇑ *iP* **P 21 16 35.4 +0.5**
comp=Z,55nm,0.7s,mb5.7
DIVS Divcibare 83.44 317⇑ *iP* **P 21 16 35.3 -0.3**
AOS Alonnisos 83.46 311 *eP* **P 21 16 35.3 -0.5**
RHK1 Bakonya 83.53 319⇑ *eP* **P 21 16 36.1 +0.2**
SKO Skopje 83.65 314 *i* P **P 21 16 37.5 +0.9**
comp=Z,0.0nm,0.8s
LIT Litokhoron 83.92 312 *eP* **P 21 16 37.4 -0.6**
IVA Berane 84.15 316⇑ *iP* **P 21 16 39.2 0.0**
PLE Pljevlja 84.22 316⇑ *iP* **P 21 16 40.9 +1.4**
PVY Piav 84.25 315⇑ *iP* **P 21 16 38.5 -1.2**
NKC Novy Kostel 84.27 325⇑ *iP* **P 21 16 40.2 +0.6**
FNA Florina 84.30 313 *eP* **P 21 16 39.1 -0.9**
DPW Davenport 84.30 38 *eP* **P 21 16 40.5 +0.7**
DPW *epP* pP 21 16 56.6 +0.7
KRIS Kristallenia 84.31 307 *eP* **P 21 16 40.2 0.0**
comp=Z,90nm,0.6s,mb6.1
KHC Kasperske Hory 84.33 323⇑ *iP* **P 21 16 40.5 +0.6**
CLZ Clausthal 84.34 327 *eP* **P 21 16 41.0 +1.1**
comp=Z,99nm,0.9s,mb5.9
ARSA Arzberg 84.34 321⇑ *iP* **P 21 16 40.6 +0.6**
comp=Z,9.8nm,1.4s,mb4.8
HAWA Hanford 84.39 40 *eP* **P 21 16 41.2 +0.9**
comp=Z,9.1nm,0.9s,mb4.9
HUMO Hull Mountain 84.40 45 *eP* **P 21 16 41.1 +0.7**
GEC2 GERESS Array S 84.43 323 *eP* **P 21 16 40.9 +0.5**
GEC2 pmax pmax
comp=Z,35nm,1.5s,mb5.3
GEC2 GERESS Array S 84.43 323 *eP* **P 21 16 40.9 +0.5**
comp=Z,35nm,1.5s,mb5.3
GERES GERESS Array B 84.43 323 P **P 21 16 41.0 +0.6**
comp=Z,8.7nm,0.7s,mb5.0,baz=45,slow=3.8,SNR=78
MOX Moxa 84.45 325 *i* P **P 21 16 41.1 +0.6**
comp=Z,logA/T=1.3,mb5.2
MOX L 21 59 08.0
MOX Moxa 84.45 325 *eP* **P 21 16 41.1 +0.6**
MOX pmax pmax
comp=Z,29nm,1.5s,mb5.2
MOX MLR MLR
comp=Z,300nm,18.0s,MS4.7
MOX Moxa 84.45 325 *eP* **P 21 16 41.1 +0.6**
comp=Z,29nm,1.5s,mb5.2
MOX LR LR
comp=Z,300nm,18.0s,MS4.7
AGG Agios Georgios 84.58 311 *eP* **P 21 16 40.2 -1.2**
UPM Unac-Piva 84.59 316⇑ *iP* **P 21 16 40.9 -0.5**
NEW Newport 84.67 38 *eP* **P 21 16 42.3 +0.7**
comp=Z,16nm,1.1s,mb5.1
NEW LR LR
comp=Z,81nm,19.0s,MS4.1
WET Wettzell 84.69 323 *eP* **P 21 16 42.6 +0.9**
WET pmax pmax
comp=Z,54nm,1.9s,mb5.3
WET Wettzell 84.69 323 *eP* **P 21 16 42.6 +0.9**
comp=Z,54nm,1.9s,mb5.3
MOA Molln 84.70 322⇑ *iP* **P 21 16 42.8 +1.0**
comp=Z,20nm,0.9s,mb5.2
NKY Niksic 84.74 316⇑ *iP* **P 21 16 40.8 -1.3**
TTG Podgorica 84.78 315⇑ *iP* **P 21 16 41.6 -0.7**
MEV Metsovon 84.92 312 *eP* **P 21 16 43.2 +0.2**
PERS Pernice 84.92 321 *eP* **P 21 16 43.3 +0.4**
BRY Bratogost 84.97 316⇑ *iP* **P 21 16 42.1 -1.1**
BUOR Burton Butte 85.02 45 P **P 21 16 45.5 +1.9**
YBH Yreka Blue Hor 85.02 45 P **P 21 16 45.2 +1.7**
comp=Z,4.5nm,0.9s,mb4.6,baz=347,slow=1.9,SNR=8.0
YBH Yreka Blue Hor 85.02 45 *eP* **P 21 16 44.8 +1.2**
comp=Z,9.9nm,1.3s,mb4.8
ULC Ulcinj 85.04 315⇑ *iP* **P 21 16 43.3 -0.3**
BUM Brajici-Budva 85.08 315⇑ *iP* **P 21 16 43.0 -0.8**
GRA1 Grafenberg Arr 85.23 325 *i* P **P 21 16 45.5 +1.1**
comp=Z,68nm,1.0s,mb5.7
GRF Grafenberg Arr 85.23 325 *i* P **P 21 16 45.5 +1.1**
GRF pmax pmax
comp=Z,68nm,1.0s,mb5.7
HCY Herceg Novi 85.25 316⇑ *iP* **P 21 16 43.4 -1.2**
OBKA Obir 85.32 321⇑ *iP* **P 21 16 45.3 +0.4**
comp=Z,14nm,0.8s,mb5.1
LNOR Lincton Mounta 85.40 40 *eP* **P 21 16 46.1 +0.8**
BOJS Bojanci 85.49 320 *eP* **P 21 16 46.2 +0.4**
LJU Ljubljana 85.60 320 *eP* **P 21 16 46.5 +0.2**
KBA Koelnbreinsper 85.66 322⇑ *iP* **P 21 16 47.2 +0.7**
comp=Z,21nm,0.9s,mb5.4
WDC Whiskeytown Da 85.75 46 *eP* **P 21 16 47.7 +0.6**
comp=Z,11nm,1.1s,mb5.0
JAVS Javornik 85.95 320 *eP* **P 21 16 47.8 -0.2**
VOY Vojsko 85.97 321 *eP* **P 21 16 47.9 -0.1**
FUR Furstenfeldbru 86.13 323 *eP* **P 21 16 50.0 +1.2**
FUR pmax pmax
comp=Z,80nm,1.0s,mb5.9
FUR Furstenfeldbru 86.13 323 *eP* **P 21 16 50.0 +1.2**
comp=Z,80nm,1.0s,mb5.9
BSMT Bassoo Peak 86.17 37 P **P 21 16 51.0 +1.9**
FVI Forni Avoltri 86.25 321 *eP* **P 21 16 49.7 +0.3**
WATA Walderalm 86.47 323⇑ *iP* **P 21 16 51.0 +0.5**
comp=Z,13nm,1.0s,mb5.1
WTTA Wattenberg 86.48 322⇑ *iP* **P 21 16 50.5 -0.1**
comp=Z,35nm,1.2s,mb5.5
MOTA Moosalm 86.72 323⇑ *iP* **P 21 16 51.8 +0.1**
comp=Z,12nm,1.0s,mb5.1
SQTA Sankt Quirin 86.74 323⇑ *iP* **P 21 16 52.4 +0.6**
comp=Z,21nm,1.2s,mb5.2
WVOR Wild Horse Val 87.16 43 *eP* **P 21 16 54.5 +0.5**
comp=Z,64nm,2.0s,mb5.5
WVOR LR LR
comp=Z,188nm,19.0s,MS4.5
CTI Castel Tesino 87.21 321 *eP* **P 21 16 54.4 +0.2**
MSO Missoula 87.25 38 *eP* **P 21 16 55.0 +0.6**
comp=Z,11nm,1.2s,mb5.0
DAVA Damuels 87.41 323⇓ *iP* **P 21 16 55.2 +0.1**
comp=Z,21nm,0.5s,mb5.6
BFO Black Forest 87.57 325 *eP* **P 21 16 56.5 +0.7**
CHMT Chamberlain Mo 87.57 37 *eP* **P 21 16 56.2 +0.3**
FFC Flin Flon 87.57 27 *eP* **P 21 16 56.0 +0.3**
comp=Z,45nm,0.8s,mb5.8
BRMO Bormio 87.65 322 *eP* **P 21 16 57.5 +1.2**
WLF Walferdange 87.80 327 *eP* **P 21 16 56.8 -0.1**
comp=Z,8.9nm,0.6s,mb5.2
ESK Eskdalemuir 87.89 335 *eP* **P 21 16 56.2 -1.0**
FG5 Orsara di Pugl 87.90 316 *eP* **P 21 16 59.6 +2.1**
FSSB Fossombrone 87.99 319 *eP* **P 21 16 58.7 +0.8**
ARV Arcevia 88.01 319 *eP* **P 21 16 58.6 +0.6**
CDF Champ du Feu 88.05 325 *eP* **P 21 16 57.3 -0.8**
comp=Z,7.8nm,0.7s,mb4.7
MRLC Muro Lucano 88.06 316 *eP* **P 21 17 01.3 +2.9**
GIVF Givet 88.15 328 *eP* **P 21 16 58.3 -0.2**
comp=Z,8.7nm,0.5s,mb5.0
SNTG Esanatoglia 88.15 319 *eP* **P 21 16 59.8 +1.1**
TDS Terranova Siba 88.15 314 *eP* **P 21 16 59.3 +0.5**
CII Carovilli 88.24 317 *eP* **P 21 17 00.5 +1.4**
RNI2 Rionero Sannit 88.34 317 *eP* **P 21 17 00.9 +1.3**
SGG Gregorio Mates 88.39 317 *eP* **P 21 17 01.9 +2.0**
MURB Monte Urbino 88.39 319 *eP* **P 21 17 01.8 +1.9**
SFI Santa Sofia 88.40 320 *eP* **P 21 17 01.4 +1.5**
AQU L'Aquila 88.41 318 *eP* **P 21 17 01.4 +1.4**
HRY Holter Researc 88.46 37 *eP* **P 21 17 01.6 +1.5**
BAIF Baives 88.47 328 *eP* **P 21 16 59.7 -0.4**
comp=Z,6.6nm,0.7s,mb4.7
PGD Poggio Sodo 88.49 320 *eP* **P 21 17 02.5 +2.2**
CMB Columbia Colle 88.54 47 *eP* **P 21 17 01.0 +0.3**
comp=Z,8.4nm,1.1s,mb5.0
CMB *epP* pP 21 17 19.1 +2.2
PTQR Pietraquaria 88.61 317 *eP* **P 21 17 01.2 +0.3**
HINF Hinteralfeld 88.66 325 *eP* **P 21 16 59.9 -1.1**
comp=Z,7.8nm,0.6s,mb4.9
HAU Haudompre 88.79 325 *eP* **P 21 17 00.8 -0.8**
comp=Z,5.0nm,0.5s,mb4.8
HAU *eR*
comp=Z,274nm,18.5s
LCCM Lewis and Clar 88.99 37 P **P 21 17 04.4 +1.7**
HLID Hailey 88.99 40 *eP* **P 21 17 04.3 +1.6**
comp=Z,5.9nm,0.8s,mb5.0
HLID *epP* pP 21 17 20.6 +1.6
HLID LR LR
comp=Z,184nm,20.0s,MS4.5
MCMT McKenzie Canyo 89.09 39 *eP* **P 21 17 04.1 +0.9**
MEZF Maizieres J'vi 89.11 326 *eP* **P 21 17 02.8 -0.3**
comp=Z,8.3nm,0.6s,mb5.0
BOZ Bozeman (W) 89.25 37 *eP* **P 21 17 04.8 +1.0**
comp=Z,21nm,1.6s,mb5.2
CABF La Chapelle 89.84 324 *eP* **P 21 17 05.7 -0.9**
comp=Z,13nm,1.0s,mb4.9
LPL La Plagne 90.22 323 *eP* **P 21 17 08.2 -0.2**
comp=Z,13nm,0.7s,mb5.1
LPG La Plagne 90.22 323 *eP* **P 21 17 08.4 0.0**
comp=Z,12nm,0.7s,mb5.0
BNI Bardonecchia 90.55 323 *eP* **P 21 17 09.4 -0.5**
MBDF Montbardon 90.71 323 *eP* **P 21 17 10.1 -0.7**
comp=Z,5.3nm,0.5s,mb4.8
SSF Saint Saulge 90.85 326 *eP* **P 21 17 10.7 -0.7**
comp=Z,1.7nm,0.5s,mb4.3
PGF Pioggiola 90.87 320 *eP* **P 21 17 10.7 -0.9**
comp=Z,50nm,1.3s,mb5.4
SBF Sospel 90.91 322 *eP* **P 21 17 10.9 -0.8**
comp=Z,14nm,0.5s,mb5.2
SMF Signal de Mont 90.97 325 *eP* **P 21 17 11.0 -0.9**
comp=Z,9.3nm,0.8s,mb4.8
ORIF Oris-en-Rattie 91.07 323 *eP* **P 21 17 11.6 -0.8**
comp=Z,3.4nm,0.5s,mb4.6
ORIF *eR*
comp=Z,343nm,17.0s
AVF Avril sur Loir 91.11 326 *eP* **P 21 17 11.5 -1.1**
comp=Z,6.0nm,0.7s,mb4.7
KMBO Kilima Mbogo 91.52 270 P **P 21 17 16.4 +1.2**
comp=Z,4.9nm,1.1s,mb4.7,baz=48,slow=12,SNR=4.9
LDF La Druitiere 91.52 329 *eP* **P 21 17 13.7 -0.7**
comp=Z,16nm,0.8s,mb5.1
BGF Bois d'Agland 91.53 326 *eP* **P 21 17 13.8 -0.7**
FRF La Foret Royal 91.54 322 *eP* **P 21 17 13.8 -0.9**
comp=Z,6.8nm,0.7s,mb4.8
FLN La Foliniere 91.57 329 *eP* **P 21 17 13.8 -0.8**
comp=Z,18nm,0.9s,mb5.1
FLN *eR*
comp=Z,251nm,21.0s
VIVF Saint-Julien-l 91.75 324 *eP* **P 21 17 14.7 -0.9**
comp=Z,3.0nm,0.6s,mb4.5
LMR La Mourre 91.77 322 *eP* **P 21 17 15.1 -0.6**
comp=Z,33nm,1.2s,mb5.2
SMRF Simiane la Rot 91.85 323 *eP* **P 21 17 15.6 -0.5**
HWUT Hardware Ranch 91.86 40 *eP* **P 21 17 17.4 +1.3**
comp=Z,23nm,1.4s,mb5.3
GRR Gorron 92.01 329 *eP* **P 21 17 16.2 -0.5**
comp=Z,18nm,0.7s,mb5.2
TCF Toulx Ste Croi 92.03 326 *eP* **P 21 17 16.0 -0.8**
comp=Z,5.5nm,0.8s,mb4.6
BW06 Boulder Array 92.24 39 *eP* **P 21 17 18.6 +0.7**
comp=Z,2.6nm,0.9s,mb4.6
BW06 *epP* pP 21 17 35.0 +0.8
PDAR Pinedale Array 92.24 39 P **P 21 17 19.1 +1.3**
comp=Z,2.2nm,0.8s,mb4.5,baz=315,slow=2.1,SNR=11
LASF Ste Croix 92.70 324 *eP* **P 21 17 19.5 -0.5**
comp=Z,4.4nm,0.7s,mb4.7
SGMF Saint Gilles 92.88 330 *eP* **P 21 17 20.2 -0.5**
comp=Z,18nm,0.8s,mb5.3
MFF Saint Martin d 92.96 327 *eP* **P 21 17 20.5 -0.6**
comp=Z,18nm,0.9s,mb5.2
CAF Calviac 93.05 325 *eP* **P 21 17 20.7 -0.8**
comp=Z,4.6nm,0.6s,mb4.8
ROSF Rostrenen 93.14 330 *eP* **P 21 17 21.1 -0.8**
comp=Z,25nm,0.9s,mb5.4
ULM Lac du Bonnet 93.40 27 P **P 21 17 23.1 +0.2**
comp=Z,15nm,0.8s,mb5.5,baz=338,slow=3.3,SNR=11
ULM LR LR 22 04 37.2
comp=Z,40nm,19.4s,MS3.9,baz=356,slow=39
ULM Lac du Bonnet 93.40 27 *eP* **P 21 17 22.7 -0.3**
comp=Z,22nm,0.9s,mb5.6
QUIF Quistinic 93.41 330 *eP* **P 21 17 22.4 -0.7**
comp=Z,11nm,0.7s,mb5.1
MSU Marysvale 93.45 43 *eP* **P 21 17 25.1 +1.6**
PFO Pinyon Flat Ob 93.69 49 *eP* **P 21 17 25.3 +0.6**
LFF La Frestale 93.71 326 *eP* **P 21 17 23.7 -0.8**
comp=Z,10nm,0.8s,mb5.0
MTLF Montolieu 94.07 324 *eP* **P 21 17 25.2 -1.0**
comp=Z,5.6nm,1.0s,mb4.7
RSSD Black Hills 94.26 35 *eP* **P 21 17 27.9 +0.8**
comp=Z,4.6nm,0.8s,mb5.0
PV10 Paradox Valley 95.42 42 *eP* **P 21 17 32.1 -0.4**
SCHQ Schefferville 97.16 9 P **P 21 17 41.0 +1.0**
comp=Z,4.4nm,0.8s,mb4.9,baz=275,slow=3.4,SNR=4.1
SCHQ LR LR 22 05 36.6
comp=Z,92nm,20.3s,MS4.2,baz=22,slow=38
ESDC Sonseca Array 99.93 325 LR LR 22 08 19.0
comp=Z,134nm,18.5s,MS4.5,slow=38
SYO Syowa Base 114.76 203⇑ Pdiff Pdif 21 18 59.9 +2.2
SYO Syowa Base 114.76 203⇑ *e*Pdif Pdif 21 18 59.9 +2.2
QSPA South Pole Qui 117.08 180 *e*PKP PKPdf 21 22 51.8 +1.0
DBIC Dimbokro 123.56 300 PKP PKPdf 21 23 04.5 -0.3
comp=Z,4.2nm,0.6s,baz=24,slow=4.9,SNR=5.5
VNA2 Neumayer--Watz 129.83 197⇓ *i* PKPdf 21 23 20.4 +4.9
VNA2 Neumayer--Watz 129.83 197⇓ *i* PKPdf 21 23 21.0 +5.5
VNA2 Neumayer--Watz 129.83 197 P Pdif 21 20 04.9 +1.0
VNA2 ⇓ *i*P 21 23 20.4
VNA1 Neumayer--Stat 130.23 197⇓ *i* Pdif 21 20 01.4 -4.2
VNA1 Neumayer--Stat 130.23 197⇑ *i* PKPdf 21 23 21.6 +5.4
VNA1 Neumayer--Stat 130.23 197⇑ *i* PKPdf 21 23 22.2 +6.0
VNA3 Neumayer Olymp 130.23 196⇑ *i* Pdif 21 19 59.3 -6.3
VNA3 Neumayer Olymp 130.23 196⇓ *i* PKPdf 21 23 20.1 +3.9
VNA3 Neumayer Olymp 130.23 196⇓ *i* PKPdf 21 23 21.4 +5.2
SDV Santo Domingo 139.58 30 PKP PKPdf 21 23 37.2 +2.2
baz=8.4,slow=0.4
LPAZ La Paz 161.18 58 PKP PKPdf 21 24 10.9 +3.7
comp=Z,8.4nm,1.3s,baz=21,slow=2.9,SNR=8.8
BDFB Brasilia 167.92 343 PKP PKPdf 21 24 15.0 +1.8
comp=Z,1.5nm,0.5s,baz=185,slow=5.8,SNR=4.0
BDFB PKPab PKPab 21 25 21.2 -1.5
comp=Z,3.1nm,0.6s,baz=318,slow=3.2,SNR=5.9
CPUP Villa Florida 174.81 81 PKP PKPdf 21 24 17.6 +1.2
comp=Z,1.5nm,1.0s,baz=223,slow=4.4,SNR=3.0

*MAN **19** 21:28:07.8, 10.01N×123.98E, h5km, mb5.8, ML4.8, MS5.2*
MAN F TUBIGON BOHOL VI LOBOC BOHOL V CORELLA BOHOL IV CEBU CITY IV TAGBILARAN III LAPU-LAPU III ARGAO III.
*MOS **19** 21:28:08.1±0.8, 10.00N×124.13E, h33km, mb5.0/7, Error ellipse: s-maj=36.8km s-min=13.4km az=105.4*
*BJI **19** 21:28:08.9, 10.14N×124.04E, h14km, mB5.1, mb4.7, Ms4.3, Ms4.1*
*NEIC **19** 21:28:10.6±0.2, 9.93N×124.04E, h35km, mb4.8/17, MS4.1/2, Error ellipse: s-maj=10.2km s-min=5.2km az=67.0*
NEIC Slight damage [VI PIVS] in Tubigon. Felt [V PIVS] at Loboc, [IV PIVS] at Corella and [III PIVS] at Tagbilaran. Also felt [IV PIVS] at Cebu City and [III PIVS] at Argao and Lapu-Lapu City, Cebu.
*IDC **19** 21:28:18.8±2.8, 9.89N×124.12E, h110km±26km, mb4.0/21, mb1 4.1/23, mb1mx4.1/26, MS3.9/16, Ms1 3.9/16, ms1mx3.6/36, Error ellipse: s-maj=24.9km s-min=9.8km az=69.0*

ISC 19 21:28:06.1±0.2,**10.03N**±0.02×**124.02E**±0.02,**h5**km,**n143,** σ1°**35**/166,**mb4.6**/55,**MS4.0**/29,**22C-5D, Leyte**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op		h m s	ISC
TBP	**Tagbilaran**	**0.37**	**205**	*i* P		**Pg**	**21 28 14.9 +1.4**
TBP				*i* S		**Sg**	**21 28 20.7 +2.3**
MSLP	**Maasin**	**0.83**	**83**⇑	*e*P		**Pb**	**21 28 24.0 +1.4**
MSLP				*e*S		**Sg**	**21 28 37.2 +3.4**
SNPH	**Sibulan**	**1.03**	**229**⇓	*i*P		**Pb**	**21 28 27.5 +1.5**
SNPH				*i* S		**Sb**	**21 28 40.5 +0.9**
OCLP	**Ormoc**	**1.17**	**30**⇑	*e*P		**Pb**	**21 28 29.8 +1.4**
OCLP				*e*S		**Sb**	**21 28 51.9 +8.2**
PLP	**Palo**	**1.47**	**40**	*i* P		**Pn**	**21 28 34.9 +1.6**
PLP				*i* S		**Sb**	**21 28 55.2 +2.8**
CGP	**Cagayan de Oro**	**1.70**	**157**⇓	*e*P		**Pn**	**21 28 37.1 +0.6**
CGP				*e*S		**Sn**	**21 28 57.2 -1.6**
BUTP	**Butuan**	**1.90**	**124**⇑	*e*P		**Pn**	**21 28 40.6 +1.2**
BUTP				*e*S		**Sn**	**21 29 06.8 +2.8**
RCP	**Roxas**	**1.97**	**321**⇓	*e*P		**Pn**	**21 28 42.3 +1.8**
RCP				*i* S		**Sn**	**21 29 08.9 +3.0**
AAP	**Anini-y**	**2.08**	**281**	*e*P		**Pn**	**21 28 44.0 +1.9**
BESP	**Borongan**	**2.09**	**42**⇑	*e*P		**Pn**	**21 28 43.7 +1.4**
BESP				*e*S		**Sn**	**21 29 15.5 +6.5**
PAGZ	**Pagadian**	**2.25**	**196**⇑	*e*P		**Pn**	**21 28 45.6 +1.1**
PAGZ				*e*S		**Sn**	**21 29 14.3 +1.2**
MMPH	**Masbate**	**2.35**	**350**⇑	*i*P		**Pn**	**21 28 48.2 +2.3**
MMPH				*i* S		**Sn**	**21 29 18.6 +3.2**
CNP	**Catarman**	**2.55**	**14**⇑	*e*P		**Pn**	**21 28 49.8 +1.1**
CTBH	**Cotabato--PC H**	**2.80**	**175**⇑	*e*P		**Pn**	**21 28 53.7 +1.4**
CTBH				*i* S		**Sn**	**21 29 28.3 +1.5**
BIPH	**Bislig**	**2.95**	**128**⇑	*i*P		**Pn**	**21 28 56.5 +2.1**
BIPH				*i* S		**Sn**	**21 29 31.8 +1.2**
OTRP	**Odiongan**	**3.04**	**320**⇑	*e*P		**Pn**	**21 28 58.0 +2.2**
OT

PVCP	**Virac**	**3.55**	**2**⇑	*eP*		**Pn**	**21 29 03.8**	**+0.8**
SJMP	**San Jose**	**3.74**	**311**⇑	*eP*		**Pn**	**21 29 07.7**	**+2.0**
SJMP				*eS*		**Sn**	**21 29 51.1**	**+0.5**
BOAC	**Boac**	**4.02**	**328**⇑	*eP*		**Pn**	**21 29 17.0**	**+7.3**
BOAC				*eS*		**Sn**	**21 29 58.2**	**+0.4**
BUSP	**Coron**	**4.24**	**298**⇑	*eP*		**Pn**	**21 29 13.7**	**+0.9**
BUSP				*eS*		**Sn**	**21 30 03.0**	**-0.2**
ENPP	**El Nido**	**4.67**	**285**⇑	*eP*		**Pn**	**21 29 19.3**	**+0.4**
ENPP				*eS*		**Sn**	**21 30 10.7**	**-3.5**
TGY	**Tagaytay City**	**5.05**	**324**	P		**Pn**	**21 29 35.9**	**+12**
	20nm,0.3s,baz=224,slow=4.4,SNR=3.5							
TGY				LR		LR	21 31 47.9	
	comp=E,1µm,21.0s,baz=65,slow=40							
QIZ				LR		LR		
	comp=E,592nm,19.6s							
QIZ	**Qiongzhong**	**16.37**	**305**	*eP*		**P**	**21 31 57.0**	**-1.5**
JOW	**Kunigami**	**17.19**	**13**	P		**P**	**21 32 14.6**	**+5.9**
	comp=Z,2.2nm,0.3s,baz=94,slow=5.5,SNR=5.8							
JOW				LR		LR	21 37 56.7	
	comp=Z,390nm,20.3s,baz=116,slow=33							
SSE	**Sheshan**	**21.13**	**353**	⇓P		**P**	**21 32 55.4**	**+1.2**
SSE				S		**S**	**21 36 44.0**	**-0.9**
SSE				AMB		AMB		
	comp=Z,51nm,1.4s,mb4.7							
SSE				AMB		AMB		
	comp=Z,382nm,8.3s							
SSE				LR		LR		
	comp=N,143nm,20.0s,MS3.8							
SSE				LR		LR		
	comp=E,376nm,20.0s,MS3.8							
SSE				LR		LR		
	comp=Z,133nm,20.0s,MS3.3							
WHN	**Wuhan**	**22.31**	**338**	⇑P		**P**	**21 33 08.5**	**+2.4**
NJ2	**Nanjing**	**22.43**	**348**	*eP*		**P**	**21 33 06.5**	**-0.8**
NJ2				SS		SS	21 37 50.0	+0.3
NJ2				AMB		AMB		
	comp=Z,50nm,1.0s,mb4.9							
NJ2				AMB		AMB		
	comp=Z,1µm,5.4s							
NJ2				LR		LR		
	comp=N,1µm,21.1s,MS4.4							
NJ2				LR		LR		
	comp=E,980nm,16.4s,MS4.4							
NJ2				LR		LR		
	comp=E,850nm,22.8s							
GYA	**Guiyang**	**23.16**	**317**	P		**P**	**21 33 16.4**	**+1.8**
GYA				AP			21 33 26.8	
GYA				S		**S**	**21 37 26.3**	**+3.9**
GYA				SS		SS	21 38 09.8	+2.4
GYA				AMB		AMB		
	comp=Z,20nm,1.0s,mb4.5							
GYA				LR		LR		
	comp=N,360nm,15.8s,MS4.0							
GYA				LR		LR		
	comp=E,280nm,15.6s,MS4.0							
GYA				LR		LR		
	comp=Z,500nm,16.5s,MS4.0							
IPM	**Ipoh**	**23.43**	**258**⇓	*eP*		**P**	**21 33 19.8**	**+2.5**
	comp=Z,38nm,0.8s,mb4.9							
JNU	**Nakatsue**	**23.84**	**14**	P		**P**	**21 33 21.2**	**+0.1**
	comp=Z,6.6nm,0.7s,mb4.2,baz=116,slow=6.4,SNR=3.5							
JNU	**Nakatsue**	**23.84**	**14**	P		**P**	**21 33 21.2**	**+0.1**
NANT	**Nan**	**24.19**	**294**	P		**P**	**21 33 24.5**	**-0.1**
ENH	**Enshi**	**24.28**	**328**	*eP*		**P**	**21 33 25.2**	**-0.2**
	comp=Z,67nm,1.5s,mb4.8							
KMI	**Kunming**	**25.18**	**309**	*eP*		**P**	**21 33 34.0**	**-0.1**
KMI				S		**S**	**21 37 53.4**	**-3.6**
KMI				AMB		AMB		
	comp=Z,9.0nm,1.4s,mb4.1							
KMI				LR		LR		
	comp=N,193nm,7.1s							
KMI				LR		LR		
	comp=E,383nm,18.9s							
KMI				LR		LR		
	comp=Z,519nm,26.6s							
BDT	**Bhumibol Dam**	**25.33**	**289**	P		**P**	**21 33 34.5**	**-1.1**
CMAR	**Chiang Mai Arr**	**25.69**	**292**	P		**P**	**21 33 39.6**	**+0.7**
	comp=Z,4.7nm,0.9s,mb4.0,baz=110,slow=7.0,SNR=15							
CMAR				LR		LR	21 44 12.7	
	comp=Z,256nm,18.6s,MS3.8,baz=125,slow=37							
XAN	**Xi'an**	**27.62**	**332**	P		**P**	**21 33 56.3**	**-0.3**
XAN				AMB		AMB		
	comp=Z,8.0nm,1.5s,mb4.1							
FITZ	**Fitzroy Crossi**	**27.99**	**177**	*eP*		**P**	**21 33 57.7**	**-2.4**
	comp=Z,6.3nm,1.0s,mb4.2							
FITZ	**Fitzroy Crossi**	**27.99**	**177**	P		**P**	**21 33 57.5**	**-2.6**
	comp=Z,8.4nm,1.2s,mb4.3,baz=6.4,slow=14,SNR=4.6							
MAJO	**Matsushiro**	**29.36**	**24**	P		**P**	**21 34 12.8**	**+0.5**
BJT	**Baijiatuan**	**30.67**	**348**	*eP*		**P**	**21 34 23.0**	**-0.9**
BJI	**Beijing**	**30.69**	**348**	P		**P**	**21 34 23.3**	**-0.7**
BJI				AMB		AMB		
	comp=Z,16nm,1.1s,mb4.8							
BJI				LR		LR		
	comp=N,164nm,18.6s,MS4.0							
BJI				LR		LR		
	comp=E,249nm,18.6s,MS4.0							
BJI				LR		LR		
	comp=Z,124nm,21.8s,MS3.5							
WRAB	**Tennant Creek**	**31.46**	**161**	*eP*		**P**	**21 34 27.6**	**-3.3**
WRA	**Warramunga Arr**	**31.46**	**161**	P		**P**	**21 34 27.6**	**-3.5**
	comp=Z,3.8nm,0.8s,mb4.3,baz=341,slow=9.4,SNR=7.9							
WB2	**Warramunga Arr**	**31.47**	**161**	*eP*		**P**	**21 34 28.1**	**-3.0**
LZH	**Lanzhou**	**31.76**	**328**	*eP*		**P**	**21 34 34.5**	**+1.0**
LZH				PP		PP	21 35 40.6	+2.1
LZH				*eS*		**S**	**21 39 42.0**	**-0.8**
LZH				SS		SS	21 41 34.1	+1.6
LZH				AMB		AMB		
	comp=Z,83nm,1.5s,mb5.3							
LZH				AMB		AMB		
	comp=Z,278nm,4.0s							
LZH				LR		LR		
	comp=E,412nm,14.9s							
LZH				LR		LR		
	comp=Z,523nm,15.5s,MS4.3							
HHC	**Hu-ho-hao-te**	**32.62**	**342**	⇑P		**P**	**21 34 41.4**	**+0.5**
HHC				AMB		AMB		
	comp=Z,11nm,1.5s,mb4.6							
HHC				AMB		AMB		
	comp=Z,107nm,6.2s							
CN2	**Changchun**	**33.67**	**2**	*eP*		**P**	**21 34 51.0**	**+1.0**
CN2				*eS*		**S**	**21 40 12.0**	**-0.4**
CN2				LR		LR		
	comp=N,600nm,19.0s,MS4.4							
CN2				LR		LR		
	comp=E,400nm,19.0s,MS4.4							
CN2				LR		LR		
	comp=Z,300nm,19.0s,MS4.0							
MDJ	**Mudanjiang**	**34.80**	**7**	P		**P**	**21 34 59.3**	**-0.5**
MDJ				AMB		AMB		
	comp=Z,25nm,1.6s,mb4.9							
MDJ				AMB		AMB		
	comp=Z,131nm,5.8s							
MDJ				LR		LR		
	comp=N,69nm,25.3s,MS3.8							
MDJ				LR		LR		
	comp=E,194nm,23.4s,MS3.8							
MDJ				LR		LR		
	comp=Z,82nm,20.4s,MS3.5							
MDJ	**Mudanjiang**	**34.80**	**7**	*eP*		**P**	**21 34 59.4**	**-0.3**
	comp=Z,14nm,0.9s,mb4.9							
AS12	**Alice Springs**	**34.85**	**164**	*eP*		**P**	**21 34 57.7**	**-2.7**
	comp=Z,25nm,1.8s,mb4.8							
ASAR	**Alice Springs**	**34.85**	**164**	P		**P**	**21 34 57.9**	**-2.6**
	comp=Z,3.6nm,0.6s,mb4.5,baz=342,slow=7.0,SNR=39							
ASAR				PcP		PcP	21 37 30.6	-3.2
	comp=Z,0.2nm,0.4s,baz=339,slow=2.0,SNR=5.5							
ASAR				LR		LR	21 49 28.6	
	comp=Z,87nm,18.7s,MS3.5,baz=341,slow=37							
GTA	**Gaotai**	**36.36**	**328**	*eP*		**P**	**21 35 13.8**	**+0.7**
GTA				AMB		AMB		
	comp=Z,11nm,1.4s,mb4.6							
GTA				AMB		AMB		
	comp=Z,135nm,3.8s							
GTA				LR		LR		
	comp=N,125nm,16.4s,MS4.0							
GTA				LR		LR		
	comp=E,193nm,18.6s,MS4.0							
GTA				LR		LR		
	comp=Z,257nm,20.5s,MS4.0							
LSA	**Lhasa**	**36.39**	**307**	P		**P**	**21 35 17.5**	**+4.1**
LSA	**Lhasa**	**36.39**	**307**	*eP*		**P**	**21 35 13.7**	**+0.3**
	comp=Z,15nm,1.4s,mb4.7							
CTA	**Charters Tower**	**37.07**	**144**	P		**P**	**21 35 16.1**	**-3.2**
	comp=Z,1.5nm,0.6s,mb4.0,baz=285,slow=13,SNR=2.9							
CTAO	**Charters Tower**	**37.07**	**144**	*eP*		**P**	**21 35 18.1**	**-1.1**
HIA	**Hailar**	**39.28**	**356**	*eP*		**P**	**21 35 36.6**	**-0.8**
	comp=Z,39nm,1.4s,mb5.0							
PKI	**Pulchoki**	**40.29**	**301**	*eP*		**P**	**21 35 45.8**	**-0.2**
	comp=Z,60nm,1.3s,mb5.2							
ULN	**Ulaanbaatar**	**40.34**	**342**	*eP*		**P**	**21 35 45.7**	**-0.5**
ULN	**Ulaanbaatar**	**40.34**	**342**	*eP*		**P**	**21 35 45.8**	**-0.5**
	comp=Z,12nm,1.3s,mb4.5							
KKN	**Kakani**	**40.46**	**301**	*eP*		**P**	**21 35 47.3**	**-0.1**
	comp=Z,46nm,1.3s,mb5.1							
SONM	**Songino Array**	**40.51**	**342**	P		**P**	**21 35 48.2**	**+0.6**
	comp=Z,3.4nm,1.2s,mb3.9,baz=162,slow=7.8,SNR=14							
DMN	**Daman**	**40.55**	**301**	*eP*		**P**	**21 35 48.1**	**-0.1**
	comp=E,56nm,1.3s,mb5.0							
FORT	**Forrest**	**40.75**	**175**	*eP*		**P**	**21 35 47.2**	**-2.6**
	comp=Z,31nm,0.8s,mb5.0							
GKN	**Gorkha**	**41.07**	**301**	*eP*		**P**	**21 35 52.0**	**-0.4**
	comp=Z,62nm,1.5s,mb5.0							
KOLN	**Koldanda**	**41.88**	**301**	*eP*		**P**	**21 35 59.1**	**0.0**
	comp=Z,51nm,1.3s,mb5.0							
NWAO	**Narrogin (SRO)**	**43.20**	**188**	P		**P**	**21 36 08.7**	**-1.2**
	comp=Z,12nm,1.1s,mb4.5,baz=8.6,slow=9.4,SNR=3.0							
ZAK	**Zakamensk**	**43.73**	**341**	*eP*		**P**	**21 36 13.2**	**-0.8**
ZAK				*e*			21 37 59.2	
HYB	**Hyderabad**	**44.69**	**285**	*i* P		**P**	**21 36 22.5**	**+0.3**
HYB	**Hyderabad**	**44.69**	**285**	*eP*		**P**	**21 36 22.5**	**+0.3**
TLY	**Talaya**	**44.75**	**342**	*eP*		**P**	**21 36 21.5**	**-0.7**
TLY				pmax		pmax		
	comp=Z,122nm,1.6s,mb5.5							
STKA	**Stephens Creek**	**44.93**	**159**	*eP*		**P**	**21 36 22.2**	**-1.7**
	comp=Z,4.8nm,0.7s,mb4.4							
STKA	**Stephens Creek**	**44.93**	**159**	P		**P**	**21 36 22.5**	**-1.4**
	comp=Z,5.4nm,0.7s,mb4.5,baz=339,slow=8.8,SNR=21							
WMQ	**Urumqi**	**46.08**	**323**	*eP*		**P**	**21 36 33.4**	**+0.6**
WMQ				PCP		PcP	21 38 09.1	-0.6
WMQ				PP		PP	21 38 21.6	+0.4
WMQ				S		**S**	**21 43 16.0**	**-2.1**
WMQ				AMB		AMB		
	comp=Z,3.0nm,1.1s,mb4.1							
WMQ				AMB		AMB		
	comp=Z,32nm,8.6s							
WMQ				LR		LR		
	comp=N,311nm,19.6s,MS4.4							
WMQ				LR		LR		
	comp=E,325nm,17.8s,MS4.4							
WMQ				LR		LR		
	comp=Z,518nm,20.2s,MS4.5							
CLNS	**Chul'man**	**46.70**	**1**	*eP*		**P**	**21 36 34.8**	**-2.8**
CLNS				*e*			21 46 48.9	
CLNS				pmax		pmax		
	comp=Z,20nm,1.1s,mb5.0							
CLNS				pmax		pmax		
	comp=N,10.0nm,1.3s							
CLNS				pmax		pmax		
	comp=E,6.0nm,1.1s							
CLNS				pmax		pmax		
	comp=N,3.0nm,0.6s							
MKAR	**Makanchi Array**	**50.90**	**324**	P		**P**	**21 37 10.0**	**-0.2**
	comp=N,5.5nm,0.9s,mb4.5,baz=124,slow=8.7,SNR=32							
MKAR				LR		LR	22 00 13.4	
	comp=N,256nm,19.3s,MS4.3,baz=266,slow=38							
MKAR	**Makanchi Array**	**50.90**	**324**	*i* P		**P**	**21 37 10.0**	**-0.2**
MKAR				pmax		pmax		
	comp=Z,6.0nm,0.9s							
PET	**Petropavlovsk**	**51.14**	**26**	*eP*		**P**	**21 37 10.3**	**-1.7**
PET				pmax		pmax		
	comp=Z,24nm,1.6s,mb4.9							
KSH	**Kashi**	**51.76**	**313**	*eP*		**P**	**21 37 17.3**	**+0.4**
YAK	**Yakutsk**	**52.08**	**3**	*eP*		**P**	**21 37 17.2**	**-1.7**
YAK				pmax		pmax		
	comp=Z,10.0nm,1.0s,mb4.7							
YAK				pmax		pmax		
	comp=N,7.0nm,1.1s							
YAK				pmax		pmax		
	comp=E,3.0nm,1.1s							
KZA	**Kyzart**	**53.22**	**316**	P		**P**	**21 37 29.1**	**+1.3**
	SNR=13							
TKM2	**Tokmak 2**	**53.31**	**317**	P		**P**	**21 37 28.6**	**+0.2**
	SNR=9.6							
UCH	**Uchtor**	**53.78**	**316**	P		**P**	**21 37 32.4**	**+0.6**
	SNR=20							
ZAL	**Zalesovo**	**53.80**	**332**	P		**P**	**21 37 31.3**	**-0.5**
	comp=E,2.5nm,0.9s,mb4.1,baz=272,slow=8.0,SNR=14							
ZAL				LR		LR	22 02 22.5	
	comp=E,235nm,19.1s,MS4.3,baz=252,slow=38							
CHMS	**Chumysh**	**53.91**	**317**	P		**P**	**21 37 32.9**	**+0.1**
	SNR=7.2							
FRU	**Bishkek**	**53.94**	**316**	*eP*		**P**	**21 37 33.5**	**+0.5**
USP	**Ospenovka**	**54.19**	**317**	P		**P**	**21 37 34.2**	**-0.6**
	SNR=6.4							
AML	**Almayashu**	**54.32**	**315**	P		**P**	**21 37 36.8**	**+1.0**
	SNR=9.2							
EKS2	**Erkin-Say**	**54.45**	**316**	P		**P**	**21 37 36.9**	**+0.2**
	SNR=11							
KURK	**Kurchatov**	**55.03**	**326**	*eP*		**P**	**21 37 39.7**	**-1.3**
NVS	**Novosibirsk**	**55.08**	**333**	*i* P		**P**	**21 37 38.5**	**-2.7**
NVS				pmax		pmax		
	comp=Z,55nm,2.4s,mb5.2							
NVS				pmax		pmax		
	comp=N,20nm,1.8s							
NVS				pmax		pmax		
	comp=E,15nm,1.8s							
BRVK	**Borovoye**	**60.69**	**326**	*eP*		**P**	**21 38 18.9**	**-1.8**
ZRNK	**Zerenda**	**61.35**	**326**	*eP*		**P**	**21 38 21.6**	**-3.6**
TIXI	**Tiksi**	**61.65**	**2**	*eP*		**P**	**21 38 24.4**	**-2.5**
TIXI				*eS*		**S**	**21 46 35.3**	**-13**
TIXI				pmax		pmax		
	comp=Z,90nm,1.6s,mb5.7							
TIXI				MLR		MLR		
	comp=Z,700nm,16.0s,MS4.9							
TIXI	**Tiksi**	**61.65**	**2**	*eP*		**P**	**21 38 24.4**	**-2.5**
BILL	**Bilibino**	**64.25**	**16**	*eP*		**P**	**21 38 42.0**	**-2.1**
BILL				pmax		pmax		
	comp=Z,6.0nm,1.7s,mb4.3							
BILL				MLR		MLR		
	comp=Z,100nm,21.0s,MS4.0							
ARU	**Arti**	**68.22**	**327**⇑	*iP*		**P**	**21 39 07.6**	**-2.0**
ARU				*e*			21 39 31.5	
ARU				*e*			21 41 37.6	
ARU				*eS*		S	21 48 07.2	-1.9
ARU				pmax		pmax		
	comp=Z,10.0nm,0.8s,mb4.9							
ARU				MLR		MLR		
	comp=Z,100nm,22.0s,MS4.0							
ARU				MLR		MLR		
	comp=N,100nm,18.0s							
ARU				MLR		MLR		
	comp=E,100nm,24.0s							
ARU	**Arti**	**68.22**	**327**	*eP*		**P**	**21 39 07.2**	**-2.5**
	comp=E,5.9nm,0.6s,mb4.8							
RPZ	**Rata Peaks**	**68.43**	**145**	LR		LR	22 07 42.8	
	comp=E,101nm,20.9s,MS4.0,baz=108,slow=35							
UNV	**Unalaska Valle**	**69.88**	**36**	P		**P**	**21 39 20.1**	**+0.1**
THR	**Tehran**	**70.36**	**305**	P		**P**	**21 39 21.9**	**-1.3**
	comp=E,1.0nm,0.6s,mb3.9,baz=61,slow=3.8,SNR=3.9							
THR				LR		LR	22 14 19.9	
	comp=E,27nm,21.6s,MS3.5,baz=250,slow=39							
MZLS	**Mizel**	**75.83**	**292**	P		**P**	**21 39 54.8**	**-0.8**
ZEI	**Tsey**	**76.03**	**312**	*eP*		**P**	**21 39 55.5**	**-0.8**
CASY	**Casey**	**76.74**	**186**	*eP*		**P**	**21 39 56.9**	**-3.0**
KAMS	**Al Khamasin**	**76.76**	**289**	P		**P**	**21 39 59.3**	**-1.5**
KIV	**Kislovodsk**	**76.89**	**313**	*i* P		**P**	**21 40 00.8**	**-0.3**
KIV				pmax		pmax		
	comp=Z,16nm,1.5s,mb4.7							
KIV				MLR		MLR		
	comp=Z,100nm,21.0s,MS4.1							
ARSS	**Ar Rass**	**77.46**	**294**	P		**P**	**21 40 03.9**	**-0.8**
AFFS	**'Afif**	**77.85**	**292**	P		**P**	**21 40 06.6**	**-0.2**
TATS	**Tathlith**	**77.87**	**288**	P		**P**	**21 40 06.2**	**-0.8**
HILS	**Ha'il**	**78.61**	**296**	P		**P**	**21 40 11.2**	**+0.3**
BLJS	**Baljurashi**	**79.59**	**288**	P		**P**	**21 40 16.6**	**+0.2**
PMR	**Palmer**	**79.76**	**29**	PFAKE			**21 40 30.0**	**+14**
PMR				LR		LR		
	comp=Z,109nm,22.0s,MS4.2							
MCK	**McKinley**	**79.78**	**27**	*eP*		**P**	**21 40 14.6**	**-1.9**
	comp=Z,5.4nm,1.1s,mb4.4							
OBN	**Obninsk**	**80.40**	**324**	*i* P		**P**	**21 40 18.6**	**-1.4**
OBN				*e*			21 40 25.7	
OBN				*eS*		S	21 50 22.7	-2.6
OBN				pmax		pmax		
	comp=Z,16nm,1.7s,mb4.7							
OBN				MLR		MLR		
	comp=Z,200nm,23.0s,MS4.4							
RAR	**Rarotonga**	**80.97**	**113**	LR		LR	22 08 52.5	
	comp=Z,175nm,19.8s,MS4.4,baz=281,slow=30							
KBRS	**Khaybar**	**81.03**	**295**	P		**P**	**21 40 24.0**	**+0.1**
ASF	**Jabal al Asfar**	**82.33**	**301**	LR		LR	22 23 39.6	
	comp=Z,34nm,20.1s,MS3.7,baz=167,slow=40							
YNBS	**Yanbu' al Bahr**	**82.35**	**293**	P		**P**	**21 40 31.6**	**+0.8**
JOF	**Joensuu**	**82.39**	**333**	*ep*		**P**	**21 40 27.2**	**-3.0**
KEV	**Kevo**	**83.09**	**340**	*ep*		**P**	**21 40 30.3**	**-3.5**
TBKS	**Tabuk**	**83.13**	**297**	P		**P**	**21 40 35.5**	**+0.7**
ARCES	**ARCESS Array B**	**83.65**	**340**	P		**P**	**21 40 35.9**	**-0.7**
	comp=Z,2.1nm,0.5s,mb4.6,baz=84,slow=6.6,SNR=32							
ARCES				LR		LR	22 22 07.7	
	comp=Z,74nm,20.0s,MS4.1,baz=329,slow=38							
SPITS	**Spitsbergen Ar**	**83.82**	**349**	LR		LR	22 21 37.7	
	comp=Z,9.1nm,18.7s,MS3.2,baz=99,slow=38							
DAWY	**Dawson**	**83.94**	**26**	*eP*		**P**	**21 40 37.7**	**-0.4**
BRTR	**Keskin Array B**	**83.97**	**309**	P		**P**	**21 40 38.0**	**-1.0**
	comp=Z,1.2nm,1.1s,mb4.0,baz=143,slow=6.2,SNR=4.9							
BRTR				LR		LR	22 25 08.6	
	comp=Z,46nm,18.8s,MS3.9,baz=25,slow=40							
KAF	**Kangasniemi**	**84.81**	**332**	*ep*		**P**	**21 40 41.5**	**-1.1**
FINES	**FINESS Array B**	**85.05**	**331**	P		**P**	**21 40 42.8**	**-1.0**
	comp=Z,1.8nm,0.7s,mb4.3,baz=70,slow=4.7,SNR=26							
FINES				LR		LR	22 19 58.3	
	comp=Z,76nm,19.1s,MS4.1,baz=106,slow=36							
INK	**Inuvik**	**85.32**	**21**	*eP*		**P**	**21 40 44.2**	**-0.8**
	comp=Z,8.5nm,1.0s,mb4.8							
AKASG	**Malin Array Be**	**85.35**	**321**	P		**P**	**21 40 43.5**	**-2.1**
	comp=Z,1.6nm,0.6s,mb4.3,baz=64,slow=4.7,SNR=18							
KMBO	**Kilima Mbogo**	**87.01**	**268**	P		**P**	**21 40 53.5**	**-1.1**
	comp=Z,9.5nm,1.2s,mb4.9,baz=52,slow=6.4,SNR=7.8							
KMBO				LR		LR	22 14 43.6	
	comp=Z,65nm,20.8s,MS4.0,baz=96,slow=32							
KMBO	**Kilima Mbogo**	**87.01**	**268**	*eP*		**P**	**21 40 54.2**	**-0.5**
KMBO				LR		LR		
	comp=Z,86nm,21.0s,MS4.1							
VNDA	**Vanda**	**89.98**	**172**	P		**P**	**21 41 05.0**	**-2.3**
	comp=Z,1.6nm,0.8s,mb4.4,baz=312,slow=7.8,SNR=4.7							
NOA	**NORSAR Array B**	**91.99**	**333**	P		**P**	**21 41 15.1**	**-1.8**
	comp=Z,0.8nm,0.8s,mb4.1,baz=78,slow=5.9,SNR=2.6							
NOA				LR		LR	22 25 43.2	
	comp=Z,102nm,20.1s,MS4.3,baz=50,slow=37							
NOA	**NORSAR Array B**	**91.99**	**333**	P		**P**	**21 41 15.1**	**-1.8**
NOA				LR		LR	22 25 43.2	
YKA	**Yellowknife Ar**	**94.87**	**23**	P		**P**	**21 41 29.5**	**-0.6**
	comp=Z,0.6nm,0.6s,mb4.2,baz=300,slow=4.4,SNR=12							
GERES	**GERESS Array B**	**95.51**	**322**	P		**P**	**21 41 32.7**	**-0.7**
	comp=Z,0.3nm,0.5s,mb4.0,baz=34,slow=4.8,SNR=6.9							

LDG ***19*** *21:49:16.7*±*0.3, 19.25S*×*169.01E, h10*km*, Mb4.9/4, Error ellipse: s-maj=31.3km s-min=14.9km az=10.0*

NEIC ***19*** *21:49:28.7*±*0.2, 19.33S*×*168.98E, mb4.9/24, Error ellipse: s-maj=9.1km s-min=6.1km az=142.0*

HRVD ***19*** *21:49:28.7*±*0.9, 19.62S*×*168.93E, h122*km±*10*km*, MW4.8/34, Centroid moment Tensor Solution. LP body waves: s5,c6;Mantle waves: s34,c41; Half duration: 0 Moment tensor: Scale 10*^{16}*Nm; M*$_{rr}$*-1.03*±*.18; M*$_{\theta\theta}$*1.19*±*.22; M*$_{\phi\phi}$*-0.16*±*.22; M*$_{r\theta}$*0.02*±*.16; M*$_{\theta\phi}$*1.21*±*.25; M*$_{r\phi}$*-0.91*±*.10; Best double couple: M*$_0$*1.87*×*10*^{16} *NP1: *ϕ_s*274°,*δ*50°,*λ*-33°. NP2:*ϕ_s*27°,*δ*65°,*λ*-135°. Principal axes: T 1.97, Plg9°, Azm147°; N -.2, Plg40°, Azm49°; P -1.78, Plg48°, Azm247°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

BJI ***19*** *21:49:28.1, 19.16S*×*169.82E, h123km, mB5.1, mb4.8*

SYO ***19*** *21:49:28.7, 19.33S*×*168.98E, h102km, MB4.9*

IDC ***19*** *21:49:29.2*±*4.8, 19.33S*×*169.15E, h105km*±*41km, mb4.7/17, mb1 4.8/17, mb1mx4.8/18, MS3.5/4, Ms1 3.6/4, ms1mx3.2/17, Error ellipse: s-maj=18.1km s-min=12.0km az=69.0*

ISC 19 21:49:29.4±**1.1, 19.44S**±**0.05**×**169.03E**±**0.06, h116**km±**9**km**, h103**km±**1.1**km**; pP-P, n200,**σ**195/85, mb4.8/46, 9C-40D, Vanuatu Islands**

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**			**1.91**	**337**⇑	*iP*	**P**	**21 50 02.6**	**+0.7**
NOUC	**Port Laguerre**			**3.68**	**223**	*eP*	**P**	**21 50 25.1**	**-0.5**
NOUC						*eS*	**S**	**21 51 04.7**	**-3.8**
ARMA	**Armidale**			**19.17**	**232**⇓	*iP*	**P**	**21 53 47.8**	**+1.5**
URZ	**Urewera**			**20.03**	**161**	P	**P**	**21 53 54.0**	**-1.3**
	41nm,0.7s,baz=344,slow=21,SNR=19								
URZ						S	**S**	**21 57 38.0**	**+9.2**
	16nm,1.1s,baz=331,slow=10,SNR=3.1								
URZ	**Urewera**			**20.03**	**161**	P	**P**	**21 53 53.6**	**-1.7**
MGZ	**Maungaku**			**20.30**	**165**	P	**P**	**21 54 00.6**	**+2.7**
NGZ	**Ngauruioe**			**20.48**	**165**	P	**P**	**21 54 00.8**	**+1.0**
CTA	**Charters Tower**			**21.44**	**264**	*eP*	**P**	**21 54 06.9**	**-2.6**
	24nm,1.9s,mb4.2								
CTA						*e*		21 54 12.8	
CTA	**Charters Tower**			**21.44**	**264**	P	**P**	**21 54 11.7**	**+2.1**
	45nm,0.7s,mb4.9,baz=91,slow=12,SNR=58								
CTA						LR	LR	22 01 53.0	
	comp=Z,58nm,19.3s,baz=293,slow=34								
CTA	**Charters Tower**			**21.44**	**264**	*eP*	**P**	**21 54 06.9**	**-2.6**
	24nm,1.9s,mb4.2								
CTA						P		21 54 11.7	
CTA						*e*		21 54 12.8	

CN2	**Changchun**	**74.52**	**329**	*e*P	**P**	**22 00 57.0**	**0.0**
CN2				*e*AP	pP	22 01 24.4	-2.1
CN2				*e*S	S	22 10 23.6	+2.5
CN2				AMB	AMB		
	comp=Z,10.0nm,0.6s,mb4.7						
CN2				AMB	AMB		
	comp=Z,200nm,3.0s						
GYA	**Guiyang**	**75.77**	**305**	P	**P**	**22 01 05.0**	**+0.6**
GYA				AP	pP	22 01 32.4	-1.6
GYA				PP	PP	22 03 59.3	+1.9
GYA				S	S	22 10 37.6	+2.4
GYA				SKS	SKS	22 11 02.4	+3.7
GYA				SS	SS	22 15 34.3	+2.2
GYA				AMB	AMB		
	comp=Z,10.0nm,1.0s,mb4.5						
BJT	**Baijiatuan**	**76.95**	**321**	*e*P	**P**	**22 01 11.0**	**+0.2**
	comp=Z,6.1nm,0.7s,mb4.4						
BJI	**Beijing**	**76.96**	**321**	P	**P**	**22 01 11.3**	**+0.4**
BJI				AMB	AMB		
	comp=Z,14nm,0.7s,mb4.8						
XAN	**Xi'an**	**78.09**	**313**	P	**P**	**22 01 17.8**	**+0.6**
XAN				AMB	AMB		
	comp=Z,13nm,0.8s,mb4.7						
MAW	**Mawson**	**78.18**	**202**	P	**P**	**22 01 17.5**	**+0.5**
	comp=Z,5.7nm,0.7s,mb4.4,baz=116,slow=7.0,SNR=16						
MAW	**Mawson**	**78.18**	**202**	*e*P	**P**	**22 01 16.1**	**-0.9**
KMI	**Kunming**	**78.21**	**302**	*e*P	**P**	**22 01 19.5**	**+1.5**
KMI				AP	pP	22 01 45.8	-1.9
KMI				AMB	AMB		
	comp=Z,22nm,0.9s,mb4.9						
CMAR	**Chiang Mai Arr**	**78.40**	**294**	P	**P**	**22 01 20.6**	**+1.4**
	comp=Z,16nm,1.1s,mb4.7,baz=131,slow=4.4,SNR=26						
LZH	**Lanzhou**	**82.71**	**312**	*e*P	**P**	**22 01 43.0**	**+1.3**
LZH				AMB	AMB		
	comp=Z,30nm,1.0s,mb5.1						
SYO	**Syowa Base**	**84.69**	**196**	⇓P	**P**	**22 01 52.0**	**+1.1**
SYO	**Syowa Base**	**84.69**	**196**	⇓pP	pP	22 02 17.1	-3.9
ULN	**Ulaanbaatar**	**86.90**	**323**	*e*P	**P**	**22 02 02.5**	**+0.3**
	comp=Z,6.4nm,0.8s,mb4.6						
ULN				*e*pP	pP	22 02 29.9	-2.5
GTA	**Gaotai**	**87.11**	**314**	*e*P	**P**	**22 02 04.5**	**+1.1**
GTA				AMB	AMB		
	comp=Z,9.0nm,0.9s,mb4.7						
WDC	**Whiskeytown Da**	**87.14**	**45**	*e*P	**P**	**22 02 03.2**	**-0.3**
	comp=Z,4.0nm,0.8s,mb4.4						
BILL	**Bilibino**	**87.24**	**359**	*e*P	**P**	**22 02 02.5**	**-0.8**
	comp=Z,19nm,1.3s,mb4.9						
SONM	**Songino Array**	**87.25**	**323**	P	**P**	**22 02 04.7**	**+0.9**
	comp=Z,4.6nm,0.7s,mb4.5,baz=149,slow=5.4,SNR=52						
CMB	**Columbia Colle**	**87.43**	**48**	*e*P	**P**	**22 02 03.7**	**-1.3**
	comp=Z,9.8nm,0.8s,mb4.8						
YBH	**Yreka Blue Hor**	**87.58**	**44**	P	**P**	**22 02 06.0**	**+0.4**
	comp=Z,10nm,0.9s,mb4.8,baz=188,slow=1.0,SNR=20						
YBH	**Yreka Blue Hor**	**87.58**	**44**	*e*P	**P**	**22 02 05.3**	**-0.2**
	comp=Z,10.0nm,0.9s,mb4.8						
MTUM	**Tungsten Hills**	**88.43**	**49**	*e*P	**P**	**22 02 09.9**	**+0.1**
VNA3	**Neumayer Olymp**	**89.56**	**180**	⇓*i*	**P**	**22 02 16.7**	**+2.5**
OCWA	**Octopus Mounta**	**89.61**	**38**	*e*P	**P**	**22 02 15.0**	**0.0**
TPH	**Tonopah**	**89.70**	**49**	*e*P	**P**	**22 02 15.4**	**-0.2**
VNA2	**Neumayer--Watz**	**89.85**	**181**	⇓*i*	**P**	**22 02 18.3**	**+2.7**
TDH	**Tom, Dick, Har**	**89.86**	**41**	P	**P**	**22 02 16.5**	**+0.3**
VFP	**Flag Point**	**90.07**	**41**	P	**P**	**22 02 17.8**	**+0.5**
VNA1	**Neumayer--Stat**	**90.14**	**181**	⇓*i*	**P**	**22 02 19.7**	**+2.7**
GNW	**Green Mountain**	**90.31**	**39**	*e*P	**P**	**22 02 17.2**	**-1.1**
NEN	**Nelson**	**90.44**	**52**	*e*P	**P**	**22 02 19.2**	**-0.1**
ILAR	**Eielson Array**	**90.47**	**17**	P	**P**	**22 02 16.8**	**-1.9**
	comp=Z,3.1nm,0.5s,mb4.7,baz=246,slow=5.3,SNR=26						
WVOR	**Wild Horse Val**	**90.59**	**45**	*e*P	**P**	**22 02 19.5**	**-0.3**
	comp=Z,14nm,1.0s,mb5.1						
BMN	**Battle Mountai**	**90.69**	**47**	*e*P	**P**	**22 02 20.1**	**-0.2**
FMW	**Mount Fremont**	**90.70**	**40**	P	**P**	**22 02 20.6**	**+0.4**
GSM	**Grass Mountain**	**90.76**	**40**	P	**P**	**22 02 21.0**	**+0.6**
RMW	**Rattlesnake Mo**	**90.87**	**39**	*e*P	**P**	**22 02 20.7**	**-0.3**
HAWA	**Hanford**	**91.77**	**41**	P	**P**	**22 02 25.6**	**+0.5**
DLBC	**Dease Lake**	**92.31**	**27**	P	**P**	**22 02 26.8**	**-0.5**
	comp=Z,8.6nm,1.1s,mb4.9,baz=232,slow=6.7,SNR=8.8						
DLBC	**Dease Lake**	**92.31**	**27**	*e*P	**P**	**22 02 26.9**	**-0.4**
PKI	**Pulchoki**	**93.39**	**298**	*e*P	**P**	**22 02 32.2**	**-0.8**
	comp=Z,10nm,1.0s,mb5.1						
KKN	**Kakani**	**93.57**	**298**	*e*P	**P**	**22 02 33.1**	**-0.7**
	comp=Z,20nm,1.2s,mb5.3						
DMN	**Daman**	**93.66**	**298**	*e*P	**P**	**22 02 33.7**	**-0.5**
	comp=Z,19nm,1.1s,mb5.3						
HLID	**Hailey**	**93.88**	**45**	*e*P	**P**	**22 02 34.7**	**-0.2**
	comp=Z,2.6nm,0.9s,mb4.6						
GKN	**Gorkha**	**94.18**	**298**	*e*P	**P**	**22 02 36.2**	**-0.4**
	comp=Z,1.9nm,0.2s,mb5.0						
KOLN	**Koldanda**	**94.97**	**298**	*e*P	**P**	**22 02 39.6**	**-0.6**
	comp=Z,13nm,1.2s,mb5.2						
MCMT	**McKenzie Canyo**	**95.40**	**44**	*e*P	**P**	**22 02 42.8**	**+1.0**
INK	**Inuvik**	**96.79**	**18**	*e*P	**P**	**22 02 45.8**	**-1.7**
	comp=Z,3.8nm,0.8s,mb4.9						
BW06	**Boulder Array**	**96.89**	**47**	P	**P**	**22 02 48.5**	**-0.1**
PDAR	**Pinedale Array**	**96.89**	**47**	P	**P**	**22 02 48.3**	**-0.3**
	comp=Z,0.2nm,0.5s,mb3.8,baz=180,slow=3.0,SNR=3.1						
TXAR	**Lajitas Array**	**97.03**	**62**	P	**P**	**22 02 49.5**	**0.0**
	comp=Z,0.4nm,0.3s,mb4.4,baz=194,slow=3.7,SNR=2.4						
WMQ	**Urumqi**	**97.20**	**314**	*e*P	**P**	**22 02 49.3**	**-0.6**
WMQ				PP	PP	22 06 49.1	-0.9
WMQ				AMB	AMB		
	comp=Z,46nm,8.4s						
WMQ				LR	LR		
	comp=N,122nm,21.4s						
WMQ				LR	LR		
	comp=E,258nm,21.3s						
WMQ				LR	LR		
	comp=Z,327nm,23.2s						
YKA	**Yellowknife Ar**	**100.93**	**27**	P	P	22 03 05.9	-0.5
	comp=Z,1.3nm,0.4s,baz=254,slow=4.6,SNR=30						
YKA	**Yellowknife Ar**	**100.93**	**27**	P	P	22 03 05.9	-0.5
MKAR	**Makanchi Array**	**101.74**	**316**	P	P	22 03 10.6	+0.3
	comp=Z,1.1nm,0.6s,baz=104,slow=5.0,SNR=10						
MKAR				PP	PP	22 07 21.4	-2.9
	comp=Z,1.0nm,1.0s,baz=121,slow=7.1,SNR=4.9						
MKAR				PKiKP		22 07 31.2	
	comp=Z,0.3nm,0.6s,baz=90,slow=2.4,SNR=3.8						
MKAR	**Makanchi Array**	**101.74**	**316**	P	P	22 03 10.6	+0.3
MKAR				PP	PP	22 07 21.4	-3.0
SPITS	**Spitsbergen Ar**	**119.77**	**354**	PKP	PKPdf	22 08 04.6	-0.6
	comp=Z,9.5nm,1.2s,baz=112,slow=9.7,SNR=11						
ARCES	**ARCESS Array B**	**125.20**	**345**	PKP	PKPdf	22 08 15.7	-0.1
	comp=Z,2.4nm,0.4s,baz=74,slow=2.6,SNR=65						
FINES	**FINESS Array B**	**130.69**	**338**	PKhKP		22 08 21.3	
	comp=Z,1.5nm,0.8s,baz=169,slow=19,SNR=4.8						
FINES				PKP	PKPdf	22 08 27.2	+0.7
	comp=Z,2.9nm,1.0s,baz=163,slow=0.7,SNR=7.4						
FINES	**FINESS Array B**	**130.69**	**338**	PKP	PKPdf	22 08 27.2	+0.7
NB2	**NORSAR Subarra**	**135.58**	**345**	PKPdf	PKPdf	22 08 36.4	+0.8
	comp=Z,0.7nm,0.8s,baz=31,slow=1.9						
NOA	**NORSAR Array B**	**135.58**	**345**	PKP	PKPdf	22 08 36.0	+0.4
	comp=Z,1.8nm,1.1s,baz=50,slow=3.3,SNR=2.9						
HFS	**Hagfors**	**135.69**	**343**	PKP	PKPdf	22 08 35.6	-0.3
	comp=Z,34nm,1.4s,baz=90,slow=4.3,SNR=6.6						
BRTR	**Keskin Array B**	**136.78**	**308**	PKP	PKPdf	22 08 39.2	+0.8
	comp=Z,0.7nm,0.6s,baz=135,slow=3.5,SNR=4.2						
OKC	**Ostrava-Krasne**	**141.80**	**329**	⇓*e*PKPDF	PKPdf	22 08 48.8	+1.7
DPC	**Dobruska-Polom**	**142.30**	**331**	*e*PKPDF	PKPdf	22 08 44.9	-3.1
DPC				*ex*	x	22 25 33.8	
DPC				L		22 43 00.0	
	comp=Z,0.2nm,12.2s						
BRG	**Berggiesshubel**	**142.96**	**334**	*i* P	PKPdf	22 08 46.7	-2.4
CLL	**Collm**	**143.01**	**335**	*i*	PKPbc	22 08 46.7	-0.5
PRU	**Pruhonice**	**143.36**	**332**	⇓*e*PKPDF	PKPdf	22 08 50.0	+0.2
PRU				*ex*	x	22 26 18.2	
PRU				L		22 43 30.0	
EKA	**Eskdalemuir Ar**	**143.68**	**352**	PKhKP		22 08 48.0	
	comp=Z,2.9nm,0.6s,baz=358,slow=2.5,SNR=20						
EKA				PKP	PKPdf	22 08 50.8	+0.6
	comp=Z,2.9nm,0.6s,baz=358,slow=2.4,SNR=18						
NKC	**Novy Kostel**	**144.06**	**334**	⇓*i* PKPDF	PKPdf	22 08 50.7	-0.3
NKC				*ex*	x	22 26 03.0	
NKC				L		22 44 30.0	
	comp=Z,0.1nm,16.3s						
MOX	**Moxa**	**144.08**	**335**	*i* P	PKPbc	22 08 50.4	0.0
	comp=Z,logA/T=1.1						
MOX	**Moxa**	**144.08**	**335**	*e*PKP	PKPdf	22 08 50.4	-0.6
RHK1	**Bakonya**	**144.26**	**325**	⇑*i* P	PKPbc	22 08 51.9	+0.9
KHC	**Kasperske Hory**	**144.41**	**332**	⇓*i* PKPDF	PKPdf	22 08 51.8	+0.2
KHC				L		22 43 50.0	
	comp=Z,0.2nm,13.3s						
SKO	**Skopje**	**144.53**	**316**	*i* P	PKPbc	22 08 52.5	+0.6
GERES	**GERESS Array B**	**144.57**	**332**	PKP	PKPdf	22 08 52.1	+0.2
	comp=Z,11nm,0.6s,baz=34,slow=4.2,SNR=125						
WTSB	**Winterswijk**	**144.67**	**341**	*e*P	PKPbc	22 08 52.0	0.0
	comp=Z,8.1nm,0.6s						
IDI	**Anoyia**	**144.68**	**304**	PKP	PKPdf	22 08 52.8	+0.2
	comp=Z,10.0nm,0.3s,baz=2.3,slow=9.4,SNR=36						
ARSA	**Arzberg**	**144.84**	**328**	⇑*i* PKP	PKPdf	22 08 53.6	+1.1
MOA	**Molln**	**145.03**	**330**	⇓*i* PKP	PKPdf	22 08 54.2	+1.4
WME	**Myndd Eilian**	**145.71**	**353**	*e*P	PKPdf	22 08 54.8	+1.0
WME				AMB	AMB	22 08 56.5	
	comp=Z,5.6nm,0.4s						
WCB1	**Church Bay**	**145.76**	**353**	⇓*e*P	PKPdf	22 08 54.7	+0.9
WCB1				AMB	AMB	22 08 56.7	
	comp=Z,24nm,1.1s						
WPM1	**Penmaenmawr**	**145.80**	**352**	*e*P	PKPdf	22 08 55.0	+1.1
WLF1	**Llynfaes**	**145.83**	**353**	*e*P	PKPdf	22 08 54.9	+0.9
OBKA	**Obir**	**145.83**	**328**	⇑*i* PKP	PKPdf	22 08 56.8	+2.6
YLL	**Llanberis**	**145.95**	**353**	⇓*e*P	PKPdf	22 08 55.4	+1.2
HGN	**Heimansgroeve**	**145.99**	**341**	*e*P	PKPdf	22 08 57.2	+2.9
	comp=Z,7.3nm,0.7s						
KBA	**Koelnbreinsper**	**146.02**	**330**	⇑*i* PKP	PKPdf	22 08 56.4	+1.9
FVI	**Forni Avoltri**	**146.63**	**330**	*e*PKP	PKPdf	22 08 58.0	+2.4
WATA	**Walderalm**	**146.64**	**332**	⇑*i* PKP	PKPdf	22 08 58.6	+3.1
WTTA	**Wattenberg**	**146.67**	**332**	⇓*i* PKP	PKPdf	22 08 58.7	+3.1
MOTA	**Moosalm**	**146.85**	**332**	⇑*i* PKP	PKPdf	22 08 58.8	+3.0
WLF	**Walferdange**	**146.87**	**340**	*e*PKPbc	PKPbc	22 08 59.4	+1.9
SQTA	**Sankt Quirin**	**146.90**	**332**	⇓*i* PKP	PKPdf	22 08 59.2	+3.3
GIVF	**Givet**	**146.91**	**341**	*e*PKP1	PKPbc	22 08 58.8	+1.2
	comp=Z,7.2nm,0.3s						
BAIF	**Baives**	**147.13**	**342**	*e*PKP1	PKPdf	22 08 59.6	+3.4
	comp=Z,22nm,0.8s						
DAVA	**Damuels**	**147.42**	**333**	⇑*i* PKP	PKPdf	22 09 00.6	+3.8
CDF	**Champ du Feu**	**147.54**	**337**	*e*PKP1	PKPdf	22 09 00.6	+3.6
	comp=Z,31nm,0.9s						
ZUR	**Zurich**	**147.90**	**335**	⇓*e*PKPbc	PKPdf	22 09 01.7	+4.1
	comp=Z,17nm,0.6s						
BERNI	**Berninapass**	**148.04**	**332**	⇓*e*PKPbc	PKPdf	22 09 02.8	+5.0
	comp=Z,33nm,1.1s						
LLS	**Linth-Limmern**	**148.13**	**334**	⇓*e*PKPbc	PKPdf	22 09 02.7	+4.7
	comp=Z,17nm,0.6s						
MUO	**Muotathal**	**148.19**	**334**	⇓*e*PKPbc	PKPdf	22 09 02.8	+4.7
	comp=Z,40nm,1.3s						
HINF	**Hinteralfeld**	**148.20**	**337**	*e*PKP1	PKPdf	22 09 02.1	+4.0
	comp=Z,5.2nm,0.4s						
HAU	**Haudompre**	**148.22**	**338**	*e*PKP1	PKPdf	22 09 02.4	+4.3
	comp=Z,17nm,0.6s						
MEZF	**Maizieres J'vi**	**148.24**	**340**	*e*PKP1	PKPdf	22 09 02.8	+4.7
	comp=Z,22nm,0.6s						
BALST	**Balsthal**	**148.27**	**336**	⇓*e*PKPbc	PKPdf	22 09 02.7	+4.5
	comp=Z,12nm,0.6s						
BNALP	**Bannalp**	**148.36**	**334**	⇓*e*PKPbc	PKPdf	22 09 03.2	+4.8
	comp=Z,24nm,0.6s						
BOURR	**Bourrignon**	**148.41**	**336**	⇓*e*PKPdf	PKPdf	22 09 03.2	+4.8
	comp=Z,25nm,0.9s						
HASLI	**Hasliberg**	**148.56**	**334**	⇓*e*PKPdf	PKPdf	22 09 03.6	+4.9
	comp=Z,23nm,0.6s						
FUSIO	**Fusio**	**148.59**	**334**	⇓*e*PKPdf	PKPdf	22 09 04.0	+5.3
	comp=Z,46nm,0.6s						
CING	**Cingoli**	**148.67**	**325**	*e*PKP	PKPdf	22 09 04.5	+5.6
FSSB	**Fossombrone**	**148.68**	**326**	*e*PKP	PKPdf	22 09 04.5	+5.6
ARV	**Arcevia**	**148.72**	**325**	*e*PKP	PKPdf	22 09 00.1	+1.1
MUGIO	**Muggio**	**148.85**	**332**	⇓*e*PKPdf	PKPdf	22 09 03.7	+4.5
	comp=Z,28nm,0.5s						
WIMIS	**Wimmis**	**148.85**	**335**	⇓*e*PKPdf	PKPdf	22 09 04.2	+5.1
	comp=Z,14nm,0.7s						
SNTG	**Esanatoglia**	**148.89**	**325**	*e*PKP	PKPdf	22 09 05.0	+5.6
MRLC	**Muro Lucano**	**148.97**	**319**	*e*PKP	PKPdf	22 09 05.7	+6.2
TORNY	**Torny**	**149.02**	**336**	⇓*e*PKPdf	PKPdf	22 09 05.2	+5.8
	comp=Z,33nm,0.8s						
TDS	**Terranova Siba**	**149.04**	**316**	*e*PKP	PKPdf	22 09 05.4	+5.7
BRANT	**Les Verrieres**	**149.07**	**336**	⇓*e*PKPdf	PKPdf	22 09 05.0	+5.5
	comp=Z,22nm,1.5s						
LKBD	**Leukerbad**	**149.07**	**335**	⇓*e*PKPdf	PKPdf	22 09 05.0	+5.5
	comp=Z,25nm,1.1s						
MURB	**Monte Urbino**	**149.10**	**325**	*e*PKP	PKPdf	22 09 05.2	+5.5
CII	**Carovilli**	**149.10**	**321**	*e*PKPbc	PKPdf	22 09 05.8	+6.1
CSSN	**Cassano Irpino**	**149.19**	**320**	*e*PKP	PKPdf	22 09 04.9	+5.0
FNVD	**Fontana Vidola**	**149.19**	**328**	*e*PKP	PKPdf	22 09 06.0	+6.2
MMK	**Mattmark**	**149.21**	**334**	⇓*e*PKPdf	PKPdf	22 09 05.9	+6.2
	comp=Z,33nm,1.3s						
RNI2	**Rionero Sannit**	**149.21**	**322**	*e*PKP	PKPdf	22 09 06.0	+6.1
AQU	**L'Aquila**	**149.23**	**323**	*e*PKPbc	PKPdf	22 09 05.2	+5.4
SENIN	**Lac Senin**	**149.23**	**335**	⇓*e*PKPdf	PKPdf	22 09 05.6	+5.9
	comp=Z,27nm,1.2s						
SGG	**Gregorio Mates**	**149.27**	**321**	*e*PKP	PKPdf	22 09 05.3	+5.4
GSCL	**Gusciola**	**149.33**	**329**	*e*PKP	PKPdf	22 09 06.0	+6.1
AIGLE	**Aigle**	**149.38**	**335**	⇓*e*PKPdf	PKPdf	22 09 05.8	+5.8
	comp=Z,26nm,1.1s						
SDI	**San Donato**	**149.40**	**322**	*e*PKP	PKPdf	22 09 05.6	+5.4
DIX	**Grande Dixence**	**149.41**	**334**	⇓*e*PKPdf	PKPdf	22 09 06.4	+6.4
	comp=Z,11nm,0.5s						
GIMEL	**Gimel**	**149.49**	**336**	⇓*e*PKPdf	PKPdf	22 09 06.4	+6.3
	comp=Z,9.5nm,0.6s						
CABF	**La Chapelle**	**149.49**	**337**	*e*PKP1	PKPdf	22 09 06.2	+6.1
	comp=Z,26nm,0.6s						
SALAN	**Lac Salanfe**	**149.53**	**335**	⇓*e*PKPdf	PKPdf	22 09 06.4	+6.2
	comp=Z,12nm,0.6s						
FLN	**La Foliniere**	**149.54**	**346**	*e*PKP1	PKPdf	22 09 05.3	+5.2
	comp=Z,12nm,0.5s						
BOB	**Bobbio (Coli)**	**149.56**	**331**	*e*PKP	PKPdf	22 09 06.2	+5.9
LDF	**La Druitiere**	**149.62**	**346**	*e*PKP1	PKPdf	22 09 05.3	+5.0
EMV	**Vieux Emosson**	**149.63**	**335**	⇓*e*PKPdf	PKPdf	22 09 06.6	+6.2
	comp=Z,11nm,0.7s						
GRR	**Gorron**	**149.98**	**346**	*e*PKP1	PKPdf	22 09 06.4	+5.6
	comp=Z,12nm,0.4s						
SSF	**Saint Saulge**	**150.01**	**340**	*e*PKP1	PKPdf	22 09 06.9	+6.0
	comp=Z,13nm,0.5s						
LPL	**La Plagne**	**150.15**	**335**	*e*PKP1	PKPdf	22 09 08.0	+6.8
	comp=Z,13nm,0.6s						
LPG	**La Plagne**	**150.15**	**335**	*e*PKP1	PKPdf	22 09 08.0	+6.8
	comp=Z,22nm,0.7s						
SMF	**Signal de Mont**	**150.26**	**339**	*e*PKP1	PKPdf	22 09 07.2	+5.9
AVF	**Avril sur Loir**	**150.29**	**340**	*e*PKP1	PKPdf	22 09 07.1	+5.7
	comp=Z,1.7nm,0.4s						
SGMF	**Saint Gilles**	**150.45**	**349**	*e*PKP1	PKPdf	22 09 07.3	+5.7
	comp=Z,8.3nm,0.5s						
ROSF	**Rostrenen**	**150.50**	**350**	*e*PKP1	PKPdf	22 09 07.3	+5.7
	comp=Z,4.9nm,0.5s						
BNI	**Bardonecchia**	**150.55**	**334**	*e*PKPbc	PKPdf	22 09 08.2	+6.4
BGF	**Bois d'Agland**	**150.66**	**340**	*e*PKP1	PKPdf	22 09 08.3	+6.4
	comp=Z,18nm,0.7s						
MBDF	**Montbardon**	**150.77**	**334**	*e*PKP1	PKPdf	22 09 09.3	+7.2
	comp=Z,11nm,0.6s						
QUIF	**Quistinic**	**150.89**	**349**	*e*PKP1	PKPdf	22 09 08.1	+5.9
	comp=Z,9.8nm,0.8s						
ORIF	**Oris-en-Rattie**	**150.98**	**335**	*e*PKP1	PKPdf	22 09 09.5	+7.0
	comp=Z,25nm,0.6s						
TCF	**Toulx Ste Croi**	**151.10**	**341**	*e*PKP1	PKPdf	22 09 09.2	+6.6
	comp=Z,12nm,0.7s						
SBF	**Sospel**	**151.17**	**332**	*e*PKP1	PKPdf	22 09 09.3	+6.5
	comp=Z,25nm,0.7s						
PGF	**Pioggiola**	**151.44**	**328**	*e*PKP1	PKPdf	22 09 10.4	+7.2
	comp=Z,58nm,0.6s						
MFF	**Saint Martin d**	**151.48**	**344**	*e*PKP1	PKPdf	22 09 10.0	+6.9
	comp=Z,8.1nm,0.5s						
VIVF	**Saint-Julien-l**	**151.50**	**336**	*e*PKP1	PKPdf	22 09 10.5	+7.3
	comp=Z,11nm,0.8s						
FRF	**La Foret Royal**	**151.76**	**332**	*e*PKP1	PKPdf	22 09 10.7	+7.0
	comp=Z,15nm,0.7s						
SMRF	**Simiane la Rot**	**151.88**	**334**	*e*PKP1	PKPdf	22 09 11.6	+7.8
	comp=Z,18nm,0.8s						
LMR	**La Mourre**	**152.00**	**332**	*e*PKP1	PKPdf	22 09 11.3	+7.3
	comp=Z,21nm,0.9s						
RJF	**Les Rejaudoux**	**152.20**	**341**	*e*PKP1	PKPdf	22 09 11.7	+7.4
	comp=Z,5.4nm,0.6s						
CAF	**Calviac**	**152.36**	**340**	*e*PKP1	PKPdf	22 09 12.3	+7.8
	comp=Z,2.6nm,0.5s						
LASF	**Ste Croix**	**152.47**	**336**	*e*PKP1	PKPdf	22 09 12.7	+8.0
	comp=Z,7.6nm,0.7s						
LFF	**La Frestale**	**152.76**	**342**	*e*PKP1	PKPdf	22 09 13.3	+8.2
	comp=Z,7.9nm,0.6s						
MTLF	**Montolieu**	**153.71**	**338**	*e*PKP1	PKPdf	22 09 15.3	+8.9
	comp=Z,2.2nm,0.5s						

*INMG **19** 21:57:46.6±0.8, 36.70N×7.41W, h31km±6km, ML1.4, Error ellipse: s-maj=6.6km s-min=3.0km az=69.0*
*MDD **19** 21:57:46.3±1.4, 36.70N×7.42W, h27km±8km, mbLg1.6/4, Error ellipse: s-maj=13.1km s-min=7.4km az=42.0, PRXIMO*
*NEIC **19** 21:57:48.5, 36.81N×7.25W, MN1.7(MDD), After MDD.*

ISC 19 21:57:46.3±1.4, 36.75N±0.09×7.51W±0.08, h31km, n18, σ1§18/22, 1D, Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
PALC	**Alcoutim**	**0.71**	**2**	*i* Pg		**Pb**	**21 58 00.8**	**+0.6**
PALC				*e*Sg		**Sb**	**21 58 11.3**	**+1.5**
	12nm,0.2s							

PALC	**Alcoutim**	**0.71**	**2**	⇓Pg		**Pb**	**21 58 00.8**	**+0.6**
PALC				Lg			21 58 11.3	
	6.1nm,0.2s							
EGRO	**El Granado**	**0.78**	**2**	Pg		**Pn**	**21 58 01.8**	**+0.5**
	1.7nm,0.1s,SNR=7.9							
EGRO				Lg			21 58 12.8	
	7.1nm,0.1s,SNR=7.9							
EGRO	**El Granado**	**0.78**	**2**	Pg		**Pn**	**21 58 01.8**	**+0.6**
EGRO				Lg			21 58 12.8	
EMIN	**Mina Concepcio**	**1.22**	**33**	Pg		**Pn**	**21 58 07.6**	**+0.1**
	0.0nm,0.0s,SNR=7.9							
EMIN				Lg			21 58 22.1	
	0.4nm,0.1s,SNR=7.9							
EMIN	**Mina Concepcio**	**1.22**	**33**	Pg		**Pn**	**21 58 07.6**	**+0.1**
EMIN				Lg			21 58 22.2	
PTEO	**Sao Teotonio**	**1.25**	**310**	*e*P		**Pn**	**21 58 07.8**	**-0.1**
PTEO				*e*S		**Sn**	**21 58 23.7**	**-0.1**
	3.0nm,0.5s							
PTEO	**Sao Teotonio**	**1.25**	**310**	P		**Pn**	**21 58 07.8**	**-0.1**
PTEO				S		**Sn**	**21 58 23.7**	**-0.1**
	1.5nm,0.5s							
PBEJ	**Beja**	**1.30**	**348**	*e*Sn		**Sn**	**21 58 25.2**	**0.0**
	1.8nm,0.2s							
PBEJ	**Beja**	**1.30**	**348**	Sn		**Sn**	**21 58 25.2**	**0.0**
	0.9nm,0.2s							
ESPR	**Espera**	**1.33**	**84**	Pg		**Pn**	**21 58 08.6**	**-0.6**
	0.0nm,0.0s,SNR=7.9							
ESPR				Lg			21 58 24.8	
	11nm,0.3s,SNR=7.9							
ESPR	**Espera**	**1.33**	**84**	Pg		**Pn**	**21 58 08.6**	**-0.6**
ESPR				Lg			21 58 24.7	
MOE	**Montemor**	**1.89**	**340**	*e*Sn		**Sn**	**21 58 38.8**	**-1.3**
EBAD	**Badajoz**	**2.04**	**11**	Lg			21 58 47.2	
	0.8nm,0.2s,SNR=7.9							
EADA	**Adamuz**	**2.73**	**58**	Pg		**Pn**	**21 58 30.7**	**+1.6**
	0.4nm,0.3s,SNR=7.9							
EADA				Sn		**Sn**	**21 58 58.5**	**-2.9**
	0.2nm,0.1s,SNR=7.9							
EADA	**Adamuz**	**2.73**	**58**	Pn		**Pn**	**21 58 31.0**	**+1.9**
EADA				Sn		**Sn**	**21 58 58.5**	**-2.9**
PTOM	**Tomar**	**2.95**	**346**	*e*Sn		**Sn**	**21 59 03.5**	**-3.4**
	2

GRUS	**Gruza**	**3.19**	**247**	⇓*i*	Pn		**Pn**	**22 38 43.3**	**+1.0**
GRUS					Sn		**Sn**	**22 39 23.7**	**+2.4**
DIM	**Dimitrovgrad**	**3.19**	**170**		P		**Pn**	**22 38 43.0**	**+0.6**
KIS	**Kishinev**	**3.33**	**56**	*e*	P		**Pn**	**22 38 46.0**	**+1.6**
KIS				*e*	S		**Sn**	**22 39 31.0**	**+6.0**
KIS					MLR		MLR		
	comp=Z,500nm,8.0s								
KIS					MLR		MLR		
	comp=Z,400nm,8.0s								
RZN	**Rozhen**	**3.51**	**181**	*i*	P		**Pn**	**22 38 47.0**	**+0.1**
KKB	**Krupnik**	**3.55**	**201**	*i*	P		**Pn**	**22 38 48.3**	**+0.8**
KDZ	**Kurdzhali**	**3.58**	**172**		P		**Pn**	**22 38 48.0**	**+0.1**
MMB	**Musomiste**	**3.69**	**192**	*i*	P		**Pn**	**22 38 50.5**	**+1.1**
PKSN	**Nyarlorinc**	**3.82**	**298**	*e*	P		**Pn**	**22 38 53.6**	**+2.2**
SKO	**Skopje**	**4.04**	**218**	*e*	P		**Pn**	**22 38 54.5**	**+0.1**
SRS	**Serrai**	**4.17**	**192**	*e*	Pn		**Pn**	**22 38 56.4**	**+0.1**
PKS7	**Kunszentmiklos**	**4.33**	**297**⇑	*e*	P		**Pn**	**22 39 00.7**	**+2.2**
PSZ	**Piszkesteto**	**4.33**	**311**⇑	*e*	Pn		**Pn**	**22 38 58.3**	**-0.3**
PSZ				*e*	Sn		**Sn**	**22 39 48.1**	**-2.2**
PSZ	**Piszkesteto**	**4.33**	**311**	*e*	P		**Pn**	**22 38 57.9**	**-0.7**
CRVS	**Cervenica-Dubn**	**4.35**	**330**	*i*	PN		**Pn**	**22 38 59.0**	**+0.2**
CRVS				*e*				22 39 20.9	
CRVS				*e*				22 40 28.7	
ALN	**Alexandroupoli**	**4.40**	**167**	*e*	Pn		**Pn**	**22 38 58.8**	**-0.7**
ALN				*e*	Sn		**Sn**	**22 40 02.7**	**+11**
KECS	**Kecovo**	**4.42**	**320**	*e*	PN		**Pn**	**22 39 00.9**	**+1.1**
SOH	**Sokhos**	**4.50**	**194**	*e*	Pn		**Pn**	**22 39 01.0**	**0.0**
GRG	**Griva**	**4.58**	**203**	*e*	Pn		**Pn**	**22 39 01.9**	**-0.2**
BUD	**Budapest**	**4.60**	**302**	*e*	Pn		**Pn**	**22 39 05.1**	**+2.7**
KWP	**Kalwaria**	**4.66**	**343**	*e*	Pn		**Pn**	**22 39 03.7**	**+0.5**
KWP				*e*				22 39 04.8	
KWP				*e*				22 39 07.9	
KWP				*e*	Pg		**Pg**	**22 39 22.2**	**-1.2**
KWP				*e*	Sn		**Sn**	**22 39 56.7**	**-1.7**
KWP				*e*	Sg		**Sg**	**22 40 20.2**	**-5.3**
THE	**Thessaloniki**	**4.75**	**197**	*e*	Pn		**Pn**	**22 39 03.8**	**-0.8**
RHK1	**Bakonya**	**4.79**	**283**⇑	*i*	P		**Pn**	**22 39 06.7**	**+1.6**
SART	**Tekirdag**	**4.84**	**158**	*i*	P		**Pn**	**22 39 04.5**	**-1.3**
PKSG		**4.94**	**299**⇑	*e*	P		**Pn**	**22 39 09.5**	**+2.2**
FNA	**Florina**	**5.07**	**211**	*e*	Pn		**Pn**	**22 39 08.3**	**-0.8**
NIE	**Niedzica**	**5.20**	**326**	*e*	P		**Pn**	**22 39 11.4**	**+0.5**
VYHS	**Vyhne**	**5.25**	**311**	*e*	PN		**Pn**	**22 39 11.2**	**-0.3**
VYHS				*e*	SG		**Sg**	**22 40 45.1**	**0.0**
LOS	**Limnos**	**5.26**	**178**	*e*	Pn		**Pn**	**22 39 10.0**	**-1.8**
PAIG	**Palouri**	**5.33**	**189**	*e*	Pn		**Pn**	**22 39 11.7**	**-1.0**
LIT	**Litokhoron**	**5.37**	**199**	*e*	Pn		**Pn**	**22 39 12.1**	**-1.2**
KOLL	**Kolacno**	**5.53**	**310**	*i*	PN		**Pn**	**22 39 16.1**	**+0.6**
ULDT	**Uludag**	**5.98**	**146**		P		**Pn**	**22 39 19.2**	**-2.7**
MEV	**Metsovon**	**6.01**	**207**	*e*	Pn		**Pn**	**22 39 21.8**	**-0.6**
SMOL	**Smolenice**	**6.04**	**306**	*e*	PN		**Pn**	**22 39 21.8**	**-0.9**
SMOL				*e*				22 39 30.7	
OJC	**Ojcow**	**6.05**	**328**	*e*	Pn		**Pn**	**22 39 28.4**	**+5.6**
OJC				*e*	Sn		**Sn**	**22 40 45.8**	**+12**
ZST	**Bratislava**	**6.08**	**302**	*i*	PN		**Pn**	**22 39 23.7**	**+0.5**
ZST				*e*	SN		**Sn**	**22 40 32.7**	**-1.4**
HENT	**Hendek**	**6.26**	**132**		P		**Pn**	**22 39 22.7**	**-3.2**
AKASG	**Malin Array Be**	**6.26**	**27**		Pn		**Pn**	**22 39 23.6**	**-2.3**
	comp=Z,6.7nm,0.3s,baz=216,slow=13,SNR=46								
AKASG					Sn		**Sn**	**22 40 32.5**	**-6.3**
	comp=Z,2.8nm,0.3s,baz=50,slow=24,SNR=5.9								
AKASG					Lg			22 41 02.7	
	comp=Z,2.5nm,0.3s,baz=210,slow=28,SNR=6.4								
OKC	**Ostrava-Krasne**	**6.46**	**318**	*e*	PN		**Pn**	**22 39 30.1**	**+1.4**
OKC				*e*	SN		**Sn**	**22 40 36.3**	**-7.4**
MORC	**Moravsky Berou**	**6.71**	**316**	*e*	P		**Pn**	**22 39 32.9**	**+0.7**
	comp=Z,0.8nm,0.4s								
ARSA	**Arzberg**	**6.74**	**291**	⇓*i*	PN		**Pn**	**22 39 34.1**	**+1.4**
ARSA				*i*	SN		**Sn**	**22 40 46.9**	**-3.9**
VRAC	**Vranov**	**6.92**	**309**		Pn		**Pn**	**22 39 34.9**	**-0.3**
	comp=Z,1.0nm,0.3s,baz=123,slow=14,SNR=11								
VRAC					Sn		**Sn**	**22 40 51.8**	**-3.5**
	comp=Z,0.6nm,0.3s,baz=208,slow=21,SNR=2.1								
ESKT	**Eskisehir**	**7.24**	**140**		P		**Pn**	**22 39 37.0**	**-2.5**
BALT	**Daday**	**7.26**	**117**		P		**Pn**	**22 39 37.7**	**-2.2**
MANT	**Manisa**	**7.27**	**156**		P		**Pn**	**22 39 38.9**	**-1.2**
DPC	**Dobruska-Polom**	**7.68**	**315**	*e*	PN		**Pn**	**22 39 44.2**	**-1.6**
DPC				*e*	SN		**Sn**	**22 41 04.1**	**-10**
KSP	**Ksiaz**	**8.02**	**318**	*e*	Pn		**P**	**22 39 50.7**	**+0.2**
KSP				*e*	P*		**P**	**22 40 11.6**	**+21**
GERES	**GERESS Array B**	**8.40**	**300**		Pn		**P**	**22 39 56.0**	**+0.1**
	comp=Z,0.3nm,0.3s,baz=105,slow=13,SNR=9.9								
GERES					Sn		**Sn**	**22 41 29.2**	**-3.1**
	comp=Z,0.3nm,0.3s,baz=112,slow=26,SNR=4.6								
PRU	**Pruhonice**	**8.42**	**308**	*e*	PN		**P**	**22 39 55.8**	**-0.3**
BRTR	**Keskin Array B**	**8.53**	**127**		Pn		**P**	**22 39 56.9**	**-0.8**
	comp=Z,0.1nm,0.3s,baz=95,slow=30,SNR=3.3								
KHC	**Kasperske Hory**	**8.59**	**301**	*e*	PN		**P**	**22 39 57.4**	**-1.1**
KHC					x		x	22 40 05.5	
KHC				*e*	SN		**Sn**	**22 41 26.2**	**-11**
KHC	**Kasperske Hory**	**8.59**	**301**	*e*	P		**P**	**22 39 57.4**	**-1.1**
KHC				*e*				22 41 26.2	
KHC	**Kasperske Hory**	**8.59**	**301**	*e*	Pn		**P**	**22 39 57.4**	**-1.1**
KHC				*e*				22 40 05.5	
KHC				*e*	Sn		**Sn**	**22 41 26.2**	**-11**
AQU	**L'Aquila**	**8.71**	**255**		P		**P**	**22 39 57.2**	**-2.9**
OBN	**Obninsk**	**12.46**	**33**	*e*	P		**P**	**22 40 45.2**	**-6.1**
OBN					pmax		pmax		
	comp=Z,12nm,0.9s								
OBN	**Obninsk**	**12.46**	**33**	*e*	P		**P**	**22 40 45.0**	**-6.3**
FINES	**FINESS Array B**	**16.30**	**2**		Pn		**P**	**22 41 35.1**	**-6.4**
	comp=Z,0.2nm,0.3s,baz=164,slow=14,SNR=8.9								
ARU	**Arti**	**23.87**	**50**	*e*	P		**P**	**22 43 06.5**	**+1.2**
	comp=Z,4.9nm,0.6s,mb4.1								
ARCES	**ARCESS Array B**	**24.41**	**1**		P		**P**	**22 43 10.3**	**-0.1**
	comp=Z,3.4nm,1.0s,mb3.7,baz=188,slow=13,SNR=4.2								
ARCES	**ARCESS Array B**	**24.41**	**1**		P		**P**	**22 43 10.3**	**-0.1**
MKAR	**Makanchi Array**	**39.22**	**66**		P		**P**	**22 45 19.6**	**-1.5**
	comp=Z,0.3nm,0.5s,mb3.2,baz=312,slow=5.2,SNR=3.7								
YKA	**Yellowknife Ar**	**67.85**	**341**		P		**P**	**22 48 49.9**	**-1.3**
	comp=Z,0.5nm,0.9s,mb3.5,baz=23,slow=6.4,SNR=7.4								
YKA	**Yellowknife Ar**	**67.85**	**341**		P		**P**	**22 48 49.9**	**-1.3**

DJA 19 23:47:28.4±0.9, 9.57S×115.88E, h53km±19km, ML3.8/4, 2C-6D, Error ellipse: s-maj=32.6km s-min=12.2km az=173.0, South of Bali

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
RATI	**Rata**	**0.91**	**338**⇓	*e*	Pn		P 23 47 44.4	-0.7
	213nm,0.2s							
RATI				⇑	*i*	Sn	S 23 47 55.9	-1.7
INGI	**Ingas**	**1.04**	**316**⇑	*i*	Pn		P 23 47 46.2	-0.8
	218nm,0.2s							
INGI				⇓	*i*	Sn	S 23 47 59.1	-1.7
KEDI	**Kedomdong**	**1.10**	**12**⇓	*i*	Pn		P 23 47 47.1	-0.8
	130nm,0.2s							
KEDI				⇓	*i*	Sn	S 23 48 00.7	-1.6
KELI	**Kelakatan**	**1.92**	**314**⇓	*e*	Pn		P 23 47 58.2	-1.1
	22nm,0.2s							
KELI				⇓	*i*	Sn	S 23 48 20.5	-1.8

*NEIC **19** 23:54:07.6±1.3,31.21S×68.57W, h100km, MD3.8(GUC), Error ellipse: s-maj=21.0km s-min=10.2km az=223.0*
*GUC **19** 23:54:08.6±0.9,31.22S×68.99W, h152km±24km, MD3.4, ML3.8*
ISC 19 23:54:09.1±1.8, 31.25S±0.06×69.3W±0.4, h182km±35km, n15, σ0§42/18, 2C-2D, San Juan Province

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
CMCH	**Combarbala**	**1.46**	**273**	⇓	*i*	P	**P 23 54 41.2**	**0.0**
CMCH					*i*	S	**S 23 55 06.2**	**+0.2**
CMCH					AMP		23 55 07.9	
	comp=N,3μm,0.5s							
ILCH	**Illapel**	**1.64**	**256**		*i*	P	**P 23 54 43.6**	**+0.6**
ILCH					*i*	S	**S 23 55 09.2**	**+0.1**
ILCH					AMP		23 55 14.7	
	comp=E,537nm,0.2s							
TLL	**Tololo Astrono**	**1.69**	**310**⇑		*i*	P	**P 23 54 43.4**	**0.0**
TLL					*i*	S	**S 23 55 10.1**	**+0.2**
TLL					AMP		23 55 12.8	
	comp=N,679nm,0.3s							
PTCH	**Petorca**	**1.71**	**234**	⇓	*i*	P	**P 23 54 42.9**	**-0.8**
PTCH					*i*	S	**S 23 55 09.2**	**-1.1**
PTCH					AMP		23 55 13.3	
	comp=N,815nm,0.1s							
JACH	**Jahuel**	**1.80**	**217**	*i*		S	**S 23 55 12.0**	**+0.1**
LSCH	**La Serena**	**2.15**	**308**⇑		*i*	P	**P 23 54 48.5**	**+0.2**
LSCH					*i*	S	**S 23 55 18.3**	**-0.2**
LSCH					AMP		23 55 20.4	
	comp=N,385nm,0.3s							

PEL	**Peldehue**	**2.22**	**212**		AMP			23 55 21.1	
	comp=E,417nm,0.2s								
FCH	**Farellones**	**2.23**	**202**	*i*	P		**P**	**23 54 49.0**	**-0.2**
FCH				*i*	S		**S**	**23 55 20.4**	**+0.2**
FCH					AMP			23 55 31.3	
	comp=E,123nm,0.3s								
CLCH	**Cerro Calan**	**2.38**	**206**		AMP			23 55 26.4	
	comp=E,172nm,0.6s								
RCDM	**Rinconada Maip**	**2.57**	**209**		AMP			23 55 30.1	
	comp=E,232nm,0.2s								
PCH	**Pirque**	**2.57**	**203**	*i*	P		**P**	**23 54 53.0**	**-0.2**
PCH				*i*	S		**S**	**23 55 27.7**	**+0.4**
LMEL	**Las Melosas**	**2.70**	**196**		AMP			23 55 38.3	
	comp=N,107nm,0.2s								
TACH	**Talagante**	**2.76**	**210**	*i*	S		**S**	**23 55 31.8**	**+0.5**
CHCH	**Chadas Angostu**	**2.91**	**203**	*i*	S		**S**	**23 55 34.3**	**-0.1**
TRQA	**Tornquist**	**9.07**	**140**	*e*	P		**P**	**23 56 10.7**	**-6.6**

*INMG **20** 00:13:36.8±1.4, 40.30N×9.55W, h20km±4km, ML2.0, Error ellipse: s-maj=7.2km s-min=2.4km az=85.0*
*NEIC **20** 00:13:36.1, 40.29N×9.58W, h21km, MN2.1(MDD), After MDD.*
*MDD **20** 00:13:36.1±0.8, 40.29N×9.57W, h21km±2km, mbLg2.2/11, Error ellipse: s-maj=8.1km s-min=3.9km az=88.0, PRXIMO*
ISC 20 00:13:33.3±0.7, 40.34N±0.03×9.66W±0.07, h20km, n42, σ1§30/81, Portugal

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
PCOI	**Coimbra**	**0.93**	**101**	*e*	P	**Pb**	**00 13 51.7**	**+1.1**
PCOI				*e*	S	**Sb**	**00 14 03.6**	**+1.1**
	81nm,0.2s							
PCOI	**Coimbra**	**0.93**	**101**		P	**Pb**	**00 13 51.7**	**+1.1**
PCOI					S	**Sb**	**00 14 03.6**	**+1.1**
	41nm,0.2s							
PTOM	**Tomar**	**1.20**	**126**	*e*	P	**Pb**	**00 13 56.4**	**+1.3**
PTOM				*e*	S	**Sb**	**00 14 10.3**	**+0.1**
	29nm,0.1s							
PTOM	**Tomar**	**1.20**	**126**		P	**Pb**	**00 13 56.4**	**+1.3**
PTOM					S	**Sb**	**00 14 10.3**	**+0.1**
	15nm,0.1s							
PVIS	**Viseu**	**1.40**	**74**	*e*	P	**Pn**	**00 13 58.4**	**+0.4**
PVIS				*e*	S	**Sb**	**00 14 16.3**	**+0.3**
	32nm,0.1s							
PVIS	**Viseu**	**1.40**	**74**		P	**Pn**	**00 13 58.4**	**+0.4**
PVIS					S	**Sb**	**00 14 16.3**	**+0.3**
	16nm,0.1s							
PLOU	**Loures**	**1.50**	**165**	*e*	P	**Pn**	**00 13 59.3**	**-0.2**
PLOU				*e*	S	**Sn**	**00 14 19.9**	**+1.3**
	17nm,0.1s							
MTE	**Manteigas**	**1.62**	**87**	*e*	Pg	**Pn**	**00 14 04.8**	**+3.7**
MTE				*e*	Sg	**Sn**	**00 14 23.1**	**+1.6**
	28nm,0.3s							
MTE	**Manteigas**	**1.62**	**87**		Pg	**Pn**	**00 14 04.8**	**+3.7**
MTE					Lg		00 14 23.1	
	14nm,0.3s							
PCBR	**Castelo Branco**	**1.74**	**106**	*e*	Pg	**Pn**	**00 14 06.1**	**+3.1**
	11nm,0.3s							
PVRL	**Vila Real**	**1.75**	**57**	*e*	Pn	**Pn**	**00 14 04.0**	**+1.0**
PVRL				*e*	Sn	**Sn**	**00 14 23.7**	**-1.2**
	12nm,0.1s							
PVRL	**Vila Real**	**1.75**	**57**		Pn	**Pn**	**00 14 04.0**	**+1.0**
PVRL					Sn	**Sn**	**00 14 23.7**	**-1.2**
	5.9nm,0.1s							
ELOB	**Lobios**	**1.95**	**38**		Pn	**Pn**	**00 14 07.5**	**+1.6**
	0.3nm,0.1s,SNR=7.9							
ELOB					Pg	**Pn**	**00 14 10.1**	**+4.2**
	0.9nm,0.1s,SNR=7.9							
ELOB					Sn	**Sn**	**00 14 29.3**	**-0.7**
	1.6nm,0.1s,SNR=7.9							
ELOB					Lg		00 14 35.3	
	7.4nm,0.1s,SNR=7.9							
ELOB	**Lobios**	**1.95**	**38**		Pn	**Pn**	**00 14 07.3**	**+1.4**
ELOB					Pg	**Pn**	**00 14 10.1**	**+4.2**
ELOB					Sn	**Sn**	**00 14 30.9**	**+0.9**
ELOB					Lg		00 14 35.3	
EZAM	**Zamans**	**1.95**	**22**		Pg	**Pn**	**00 14 11.1**	**+5.1**
	1.3nm,0.2s,SNR=4.0							
EZAM					Lg		00 14 37.1	
	4.5nm,0.3s,SNR=7.9							
MOE	**Montemor**	**2.07**	**150**	*e*	Sg	**Sn**	**00 14 37.3**	**+4.1**
EBAD	**Badajoz**	**2.58**	**127**		Pn	**Pn**	**00 14 13.5**	**-1.5**
	0.2nm,0.1s,SNR=7.9							
EBAD					Pg	**Pn**	**00 14 21.5**	**+6.5**
	0.6nm,0.1s,SNR=7.9							
EBAD					Lg		00 14 52.6	
	4.7nm,0.2s,SNR=7.9							
EBAD	**Badajoz**	**2.58**	**127**		Pn	**Pn**	**00 14 14.2**	**-0.8**
EBAD					Pg	**Pn**	**00 14 21.5**	**+6.6**
EBAD					Sn	**Sn**	**00 14 43.0**	**-3.1**
EBAD					Lg		00 14 52.2	
EMAZ	**Mazaricos**	**2.66**	**11**		Pn	**Pn**	**00 14 17.7**	**+1.6**
	0.9nm,0.1s,SNR=6.3							
EMAZ					Sn	**Sn**	**00 14 47.0**	**-1.1**
	1.1nm,0.1s,SNR=5.0							
EMAZ					Lg		00 15 00.1	
	1.7nm,0.2s,SNR=7.9							
EMAZ	**Mazaricos**	**2.66**	**11**		Pn	**Pn**	**00 14 17.7**	**+1.6**
EMAZ					Sn	**Sn**	**00 14 47.2**	**-0.9**
EMAZ					Lg		00 15 01.7	
PBEJ	**Beja**	**2.69**	**148**	*e*	Pn	**Pn**	**00 14 16.4**	**-0.1**
PBEJ				*e*	Sn	**Sn**	**00 14 45.6**	**-3.3**
	1.9nm,0.3s							
PBEJ	**Beja**	**2.69**	**148**		Pn	**Pn**	**00 14 16.4**	**-0.1**
PBEJ					Sn	**Sn**	**00 14 45.6**	**-3.3**
	0.9nm,0.3s							
ECAL	**Calabor**	**2.73**	**53**		Pn	**Pn**	**00 14 17.6**	**+0.5**
	0.3nm,0.1s,SNR=9.8							
ECAL					Pg	**Pn**	**00 14 22.7**	**+5.7**
	1.3nm,0.2s,SNR=4.0							
ECAL					Sn	**Sn**	**00 14 48.3**	**-1.5**
	1.1nm,0.2s,SNR=5.0							
ECAL					Lg		00 14 59.1	
	1.6nm,0.2s,SNR=7.9							
ECAL	**Calabor**	**2.73**	**53**		Pn	**Pn**	**00 14 17.7**	**+0.7**
ECAL					Pg	**Pn**	**00 14 26.0**	**+8.9**
ECAL					Sn	**Sn**	**00 14 48.9**	**-0.9**
ECAL					Lg		00 14 59.9	
PTEO	**Sao Teotonio**	**2.88**	**165**	*e*	Pn	**Pn**	**00 14 19.2**	**0.0**
PTEO				*e*	Sg	**Sn**	**00 15 03.5**	**+10**
	5.3nm,0.5s							
PTEO	**Sao Teotonio**	**2.88**	**165**		Pn	**Pn**	**00 14 19.2**	**0.0**
PTEO					Lg		00 15 03.5	
	2.7nm,0.5s							
EINC	**Incio**	**2.90**	**36**		Pn	**Pn**	**00 14 20.7**	**+1.2**
	3.6nm,0.1s,SNR=4.0							
EINC					Sn	**Sn**	**00 14 52.3**	**-1.8**
	0.5nm,0.1s,SNR=5.0							
EINC					Lg		00 15 06.1	
	0.6nm,0.1s,SNR=7.9							
EGRO	**El Granado**	**3.27**	**148**		Pn	**Pn**	**00 14 23.1**	**-1.6**
	0.2nm,0.0s,SNR=7.9							
EGRO					Sn	**Sn**	**00 14 58.6**	**-4.9**
	1.1nm,0.1s,SNR=7.9							
EGRO					Lg		00 15 13.9	
	0.8nm,0.2s,SNR=7.9							
EGRO	**El Granado**	**3.27**	**148**		Pn	**Pn**	**00 14 24.1**	**-0.7**
EGRO					Sn	**Sn**	**00 14 59.4**	**-4.1**
EGRO					Lg		00 15 16.1	
PALC	**Alcoutim**	**3.33**	**149**	*e*	Pn	**Pn**	**00 14 24.9**	**-0.7**
PALC				*e*	Sg	**Sn**	**00 15 16.3**	**+11**
	2.9nm,0.2s							
PALC	**Alcoutim**	**3.33**	**149**		Pn	**Pn**	**00 14 24.9**	**-0.7**
PALC					Lg		00 15 16.3	
	1.4nm,0.2s							
EMIN	**Mina Concepcio**	**3.46**	**137**		Pn	**Pn**	**00 14 26.1**	**-1.3**
	0.3nm,0.1s,SNR=12							
EMIN					Sn	**Sn**	**00 15 02.9**	**-5.4**
	0.3nm,0.1s,SNR=5.0							
EMIN					Lg		00 15 19.8	
	0.3nm,0.2s,SNR=7.9							
EMIN	**Mina Concepcio**	**3.46**	**137**		Pn	**Pn**	**00 14 26.6**	**-0.8**
EMIN					Sn	**Sn**	**00 15 03.0**	**-5.3**
EMIN					Lg		00 15 21.5	
EPON	**Pontenova**	**3.53**	**31**		Pn	**Pn**	**00 14 29.2**	**+0.8**
	1.9nm,0.1s,SNR=13							
EPON					Sn	**Sn**	**00 15 07.3**	**-2.8**
	0.8nm,0.3s,SNR=5.0							
EPON					Lg		00 15 24.4	
	0.7nm,0.2s,SNR=7.9							
EPON	**Pontenova**	**3.53**	**31**		Pn	**Pn**	**00 14 29.0**	**+0.6**
EPON					Pg	**Pn**	**00 14 37.7**	**+9.3**
EPON					Sn	**Sn**	**00 15 08.1**	**-2.0**
EPON					Lg		00 15 27.7	

ESDC	**Sonseca Array**	**4.42**	**97**		Sn		**Sn**	**00 15 25.7**	**-7.0**
	0.3nm,0.1s,baz=275,slow=24,SNR=7.9								
EARI	**Arriondas**	**4.45**	**47**		Pn		**Pn**	**00 14 42.1**	**+0.6**
	0.0nm,0.1s,SNR=4.0								
EARI	**Arriondas**	**4.45**	**47**		Pn		**Pn**	**00 14 42.4**	**+0.9**
EADA	**Adamuz**	**4.50**	**117**		Pn		**Pn**	**00 14 39.9**	**-2.3**
	0.2nm,0.1s,SNR=7.9								
EADA					Sn		**Sn**	**00 15 26.8**	**-7.8**
	0.7nm,0.2s,SNR=7.9								
EADA					Lg			00 15 51.2	
	0.4nm,0.1s,SNR=7.9								
EADA	**Adamuz**	**4.50**	**117**		Pn		**Pn**	**00 14 40.6**	**-1.6**
EADA					Sn		**Sn**	**00 15 28.4**	**-6.2**
EADA					Lg			00 15 54.5	
ELAN	**Lanestosa**	**5.48**	**56**		Pn		**Pn**	**00 14 56.1**	**+0.1**
	0.2nm,0.1s,SNR=7.9								
ELAN					Sn		**Sn**	**00 15 54.3**	**-5.0**
	0.1nm,0.1s,SNR=7.9								
ELAN	**Lanestosa**	**5.48**	**56**		Pn		**Pn**	**00 14 56.1**	**+0.1**
ELAN					Sn		**Sn**	**00 15 54.3**	**-5.0**

*NEIC **20** 00:24:46.7±1.0, 8.29N×102.82W, h10km, mb4.4/7, Error ellipse: s-maj=28.5km s-min=16.9km az=69.0*
*IDC **20** 00:24:59.5±10.0, 8.47N×102.88W, h119km±97km, mb3.4/6, mb1 3.7/6, mb1mx3.6/17, MS4.0/7, Ms1 4.0/7, ms1mx3.8/14, Error ellipse: s-maj=42.0km s-min=20.2km az=65.0*
ISC 20 00:24:44.9±0.9, 8.3N±0.1×102.9W±0.2, h10km, n21, σ1§34/20, mb4.2/12, MS4.0/4, Northern East Pacific Rise

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
TXAR	**Lajitas Array**	**20.96**	**358**		P	**P**	**00 29 30.9**	**+0.3**
	1.1nm,0.9s,baz=184,slow=12,SNR=13							
TXAR					LR	LR	00 36 59.7	
	comp=Z,516nm,18.5s,MS3.9,baz=180,slow=35							
TXAR	**Lajitas Array**	**20.96**	**358**		P	**P**	**00 29 30.9**	**+0.3**
JCT	**Junction City**	**22.27**	**7**	*e*	P	**P**	**00 29 43.4**	**-0.4**
	12nm,1.1s,mb4.2							
HKT	**Hockley**	**22.55**	**16**	*e*	P	**P**	**00 29 47.8**	**+1.2**
	70nm,1.8s,mb4.8							
OTAV	**Otavalo**	**25.60**	**107**	*e*	P	**P**	**00 30 15.2**	**-1.1**
	9.5nm,1.2s,mb4.2							
LAZ	**Ladron**	**26.30**	**352**	*e*	P	**P**	**00 30 24.4**	**+1.9**
WMOK	**Wichita Mounta**	**26.60**	**8**	*e*	P	**P**	**00 30 23.6**	**-1.7**
	3.5nm,1.1s,mb3.8							
SDCO	**Great Sand Dun**	**29.43**	**356**		P	**P**	**00 30 55.8**	**+4.8**
PV10	**Paradox Valley**	**30.48**	**350**	*e*	P	**P**	**00 31 00.4**	**+0.1**
HWUT	**Hardware Ranch**	**34.08**	**348**	*e*	P	**P**	**00 31 33.0**	**+1.3**
	8.5nm,1.4s,mb4.5							
PDAR	**Pinedale Array**	**34.85**	**351**		P	**P**	**00 31 38.5**	**+0.2**
	1.6nm,0.9s,mb3.9,baz=170,slow=9.0,SNR=7.7							
HLID	**Hailey**	**36.57**	**346**	*e*	P	**P**	**00 31 48.4**	**-4.5**
	8.1nm,1.5s,mb4.3							
LPAZ	**La Paz**	**42.16**	**125**		P	**P**	**00 32 42.2**	**+2.6**
	1.2nm,0.6s,mb3.7,baz=319,slow=7.8,SNR=8.2							
LPAZ	**La Paz**	**42.16**	**125**		P	**P**	**00 32 42.2**	**+2.6**
YKA	**Yellowknife Ar**	**54.79**	**353**		P	**P**	**00 34 13.9**	**-3.1**
	0.3nm,0.7s,mb3.4,baz=166,slow=7.3,SNR=6.9							
YKA					LR	LR	00 57 55.1	
	comp=Z,179nm,20.4s,MS4.1,baz=145,slow=36							
YKA	**Yellowknife Ar**	**54.79**	**353**		P	**P**	**00 34 13.9**	**-3.1**
RAR	**Rarotonga**	**63.08**	**241**		P	**P**	**00 35 15.2**	**+0.1**
	39nm,1.1s,mb5.5,baz=352,slow=6.3,SNR=3.1							
INK	**Inuvik**	**63.30**	**348**		P	**P**	**00 35 15.8**	**-0.2**
	3.7nm,1.2s,mb4.4,baz=143,slow=7.6,SNR=5.5							
INK	**Inuvik**	**63.

IDC 20 00:46:22.1±10.0, 7.09N×102.28W, mb3.3/4, mb1 3.8/4, mb1mx3.7/15, MS3.6/4, Ms1 3.5/4, ms1mx3.3/9, Error ellipse: s-maj=366.0km s-min=105.2km az=107.0, Northern East Pacific Rise

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TXAR	**Lajitas Array**	**22.16**	**357**	P	P	00 51 19.7	-1.7
	0.8nm,0.9s,baz=188,slow=11,SNR=7.4						
TXAR				LR	LR	00 58 47.6	
	comp=Z,133nm,19.6s,baz=205,slow=34						
PDAR	**Pinedale Array**	**36.11**	**351**	P	P	00 53 26.6	-1.1
	0.5nm,0.8s,baz=164,slow=6.6,SNR=4.9						
SCHQ	**Schefferville**	**55.40**	**24**	LR	LR	01 20 24.8	
	comp=Z,43nm,20.0s,baz=216,slow=37						
YKA	**Yellowknife Ar**	**56.03**	**353**	P	P	00 56 01.9	-2.9
	0.2nm,0.7s,baz=164,slow=7.4,SNR=3.9						
YKA				LR	LR	01 19 53.3	
	comp=Z,44nm,18.1s,baz=230,slow=36						
BDFB	**Brasilia**	**58.29**	**113**	LR	LR	01 21 21.3	
	comp=Z,58nm,18.3s,baz=293,slow=36						
ILAR	**Eielson Array**	**65.57**	**341**	P	P	00 57 07.5	-2.1
	0.8nm,0.9s,baz=157,slow=4.4,SNR=6.8						

*IDC **20** 00:53:51.0±1.0,57.92S×25.80W,mb4.2/5,mb1 4.2/5, mb1mx4.1/11,Error ellipse: s-maj=51.8km s-min=29.6km az=44.0*
*NEIC **20** 00:54:03.6±2.5,57.74S×25.83W,h95km±23km,mb4.4/2, Error ellipse: s-maj=23.4km s-min=10.0km az=45.0*
ISC 20 00:54:02.1±4.0, 57.7S±0.2×25.9W±0.3, h96km±41km, n18, σ0§71/11, mb4.0/7, 2C-1D, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VNA1	**Neumayer--Stat**	**14.98**	**157**	*i*	**P**	**00 57 39.4**	**+10**
VNA3	**Neumayer Olymp**	**15.18**	**160**	⇓*i*	**P**	**00 57 31.3**	**-0.6**
VNA2	**Neumayer--Watz**	**15.38**	**157**	⇑*i*	**P**	**00 57 34.9**	**+0.5**
EFI	**East Falkland**	**19.43**	**274**	P	**P**	**00 58 23.9**	**+1.0**
	28nm,1.3s						
TRQA	**Tornquist**	**30.65**	**294**	P	**P**	**01 00 07.8**	**-1.4**
	0.3nm,0.9s,mb3.0						
QSPA	**South Pole Qui**	**32.54**	**180**	*eP*	**P**	**01 00 25.2**	**0.0**
	3.2nm,0.5s,mb4.4						
CPUP	**Villa Florida**	**38.45**	**311**	P	**P**	**01 01 15.0**	**-0.8**
	0.7nm,0.8s,mb3.6,baz=189,slow=14,SNR=2.4						
BDFB	**Brasilia**	**45.16**	**329**	P	**P**	**01 02 11.6**	**+1.0**
	2.4nm,0.8s,mb4.0,baz=124,slow=7.3,SNR=3.1						
LPAZ	**La Paz**	**51.92**	**305**	P	**P**	**01 03 03.2**	**+0.3**
	0.6nm,0.4s,mb4.0,baz=140,slow=1.2,SNR=5.1						
DBIC	**Dimbokro**	**66.40**	**23**	P	**P**	**01 04 42.8**	**0.0**
	11nm,1.2s,mb4.5,baz=359,slow=6.0,SNR=3.8						
ASAR	**Alice Springs**	**97.19**	**161**	P	**P**	**01 07 24.6**	**0.0**
	0.5nm,0.6s,mb4.1,baz=184,slow=3.9,SNR=8.4						
FINES	**FINESS Array B**	**125.52**	**28**	PKP	PKPdf	01 12 52.1	+1.4
	6.3nm,1.2s,baz=225,slow=5.4,SNR=9.8						
ARCES	**ARCESS Array B**	**132.22**	**22**	PKP	PKPdf	01 13 04.5	+1.2
	1.8nm,0.8s,baz=225,slow=3.4,SNR=7.6						
YKA	**Yellowknife Ar**	**137.88**	**316**	PKhKP		01 13 06.1	
	0.1nm,0.7s,baz=120,slow=3.2,SNR=3.8						
YKA				PKP	PKPdf	01 13 15.8	+1.9
	0.3nm,0.3s,baz=132,slow=2.0,SNR=21						
YKA	**Yellowknife Ar**	**137.88**	**316**	PKP	PKPdf	01 13 06.1	-7.8
YKA				PKP	PKPdf	01 13 15.8	+1.9
INK	**Inuvik**	**147.54**	**319**	*e*PKPbc	PKPdf	01 13 35.3	+4.9
SONM	**Songino Array**	**150.08**	**88**	PKPbc	PKPdf	01 13 42.2	+7.1
	1.4nm,0.4s,baz=226,slow=3.7,SNR=11						
SONM				pPKPbc		01 13 59.7	
	0.9nm,0.8s,baz=217,slow=2.8,SNR=3.9						
ILAR	**Eielson Array**	**151.74**	**309**	PKPbc	PKPdf	01 13 45.9	+8.8
	2.4nm,0.6s,baz=139,slow=3.8,SNR=26						

*IDC **20** 01:00:15.8±2.9,32.49S×178.18W,mb3.9/2,mb1 4.2/3, mb1mx3.9/12,ML3.4/1,MS3.3/1,Ms1 3.3/1,ms1mx2.7/18, Error ellipse: s-maj=70.3km s-min=36.2km az=118.0*
ISC 20 01:00:15.7±5.6, 32.7S±0.2×177.7W±0.9, h33km, n5, σ0§42/4, mb3.8/2, MS3.3/1, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**6.98**	**216**	Pn	**Pn**	**01 01 58.3**	**0.0**
	0.7nm,0.3s,baz=5.2,slow=11,SNR=3.6						
URZ				Sn	**Sn**	**01 03 17.3**	**0.0**
	0.9nm,0.3s,baz=135,slow=20,SNR=6.0						
CTA	**Charters Tower**	**34.49**	**282**	LR	LR	01 19 15.7	
	comp=Z,48nm,18.0s,MS3.3,baz=228,slow=34						
ASAR	**Alice Springs**	**43.30**	**269**	P	**P**	**01 08 16.5**	**+0.3**
	0.8nm,0.7s,mb3.6,baz=111,slow=7.5,SNR=7.0						
WRA	**Warramunga Arr**	**44.49**	**274**	P	**P**	**01 08 25.6**	**-0.3**
	1.2nm,0.4s,mb4.0,baz=114,slow=7.9,SNR=10						
FINES	**FINESS Array B**	**147.39**	**339**	PKPbc	PKPdf	01 19 58.9	+6.1
	1.2nm,0.7s,baz=45,slow=1.7,SNR=9.7						

*IDC **20** 01:20:07.5±1.4,6.71S×155.62E,mb3.8/7,mb1 4.0/7, mb1mx4.0/12,Error ellipse: s-maj=54.8km s-min=22.9km az=119.0*
ISC 20 01:20:11.1±1.1, 6.8S±0.2×155.6E±0.3, h33km, n7, σ0§97/7, mb3.6/7, Bougainville - Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**24.42**	**236**	P	**P**	**01 25 29.3**	**+1.3**
	2.4nm,0.8s,mb3.7,baz=58,slow=9.1,SNR=9.1						
ASAR	**Alice Springs**	**26.75**	**229**	P	**P**	**01 25 49.5**	**-0.4**
	1.0nm,0.8s,mb3.4,baz=57,slow=8.8,SNR=6.7						
STKA	**Stephens Creek**	**28.17**	**206**	P	**P**	**01 26 01.9**	**-0.9**
	1.3nm,0.4s,mb3.9,baz=69,slow=7.2,SNR=7.1						
SONM	**Songino Array**	**69.49**	**327**	P	**P**	**01 31 16.7**	**-1.6**
	0.8nm,0.9s,mb3.6,baz=129,slow=9.2,SNR=4.4						
ILAR	**Eielson Array**	**82.97**	**21**	P	**P**	**01 32 33.6**	**-0.3**
	0.3nm,0.8s,mb3.4,baz=243,slow=6.0,SNR=4.2						
MKAR	**Makanchi Array**	**83.65**	**319**	P	**P**	**01 32 38.8**	**+1.0**
	0.5nm,0.7s,mb3.7,baz=108,slow=4.6,SNR=3.8						
PDAR	**Pinedale Array**	**98.12**	**48**	P	**P**	**01 33 46.7**	**+0.8**
	0.1nm,0.5s,mb3.6,baz=260,slow=5.5,SNR=2.6						

ISC 20 01:23:35.0±0.5, 46.40N±0.03×15.05E±0.04, n13, σ0§96/19, 2C, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PERS	**Pernice**	**0.24**	**11**	*e*Pg	**Pg**	**01 23 40.1**	**+0.3**
PERS				*i* Sg	**Sg**	**01 23 44.1**	**+1.1**
	comp=Z,17nm,0.2s						
GROS	**Grobnik**	**0.32**	**79**	*e*Pg	**Pg**	**01 23 41.1**	**-0.2**
GROS				*i* Sg	**Sg**	**01 23 46.1**	**+0.5**
	comp=Z,16nm,0.3s						
OBKA	**Obir**	**0.36**	**288**	⇑*i*PG	**Pg**	**01 23 42.5**	**+0.2**
OBKA				*i* SG	**Sg**	**01 23 48.6**	**+1.5**
	comp=Z,14nm,0.3s						
DOBS	**Dobrina**	**0.38**	**131**	*e*Pg	**Pg**	**01 23 42.1**	**-0.5**
LEGS	**Legarje**	**0.49**	**158**	*e*Pg	**Pg**	**01 23 44.4**	**-0.3**
LEGS				*e*Sg	**Sg**	**01 23 50.5**	**-0.7**
GOLS	**Golise**	**0.56**	**134**	*e*Pg	**Pg**	**01 23 46.2**	**+0.1**
	comp=Z,6.0nm,0.2s						
VISS	**Visnje**	**0.61**	**194**	*e*Pg	**Pg**	**01 23 46.6**	**-0.6**
JAVS	**Javornik**	**0.85**	**234**	Pg	**Pg**	**01 23 51.5**	**-0.5**
VOY	**Vojsko**	**0.88**	**246**	*e*Pg	**Pg**	**01 23 53.8**	**+1.2**
VOY				*e*Sg	**Sg**	**01 24 03.1**	**-1.3**
BOJS	**Bojanci**	**0.91**	**171**	*e*Pg	**Pg**	**01 23 54.1**	**+1.0**
VBY	**Vinica-Bojanci**	**0.91**	**171**	*e*Sg	**Sg**	**01 24 07.8**	**+2.6**
ARSA	**Arzberg**	**0.91**	**21**	⇑*i*PG	**Pg**	**01 23 52.0**	**-1.2**
ARSA				*i* SG	**Sg**	**01 24 04.4**	**-0.9**
	comp=Z,2.8nm,0.2s						
CADS	**Cadrg**	**0.93**	**260**	*e*Pg	**Pg**	**01 23 52.3**	**-1.2**

IDC 20 01:29:05.3±4.2, 21.68S×176.07W, mb4.0/3, mb1 4.2/3, mb1mx3.9/12, MS3.5/2, Ms1 3.5/2, ms1mx3.1/13, Error ellipse: s-maj=195.0km s-min=65.4km az=151.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**15.18**	**91**	LR	LR	01 37 11.4	
	comp=Z,151nm,19.1s,baz=271,slow=32						
STKA	**Stephens Creek**	**38.93**	**246**	P	P	01 36 31.9	-2.8
	1.9nm,0.8s,baz=90,slow=9.1,SNR=3.4						
ASAR	**Alice Springs**	**46.02**	**258**	P	P	01 37 30.9	-1.6
	2.7nm,0.9s,baz=100,slow=7.0,SNR=18						
ASAR				LR	LR	01 55 27.2	
	comp=Z,55nm,20.1s,baz=204,slow=34						
WRA	**Warramunga Arr**	**46.23**	**263**	P	P	01 37 33.1	-1.2
	1.7nm,0.9s,baz=95,slow=8.4,SNR=11						
AKASG	**Malin Array Be**	**144.90**	**332**	PKP	PKPdf	01 48 43.5	-2.4
	1.0nm,0.6s,baz=42,slow=3.8,SNR=6.5						

*TAP **20** 02:15:40.9,24.41N×121.92E,h31km,ML3.9*
TAP Felt II J at Nanau.
*JMA **20** 02:15:40.2±0.2,24.60N×121.99E,h71km,M3.0*
ISC 20 02:15:40.8±0.3, 24.40N±0.02×121.99E±0.02, h31km±3km, n40, σ0§60/65, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ENA	**Nanau**	**0.23**	**277**	*i* P	**Pb**	**02 15 47.5**	**+0.1**
TWC	**Suao**	**0.24**	**328**	*i* P	**Pb**	**02 15 48.0**	**+0.4**
TWC				S	**Sb**	**02 15 52.8**	**+0.5**
ILA	**Ilan**	**0.43**	**329**	*e*P	**Pb**	**02 15 50.2**	**+0.1**
ILA				S	**Sb**	**02 15 57.6**	**+1.1**
TWE	**Neicheng**	**0.43**	**317**	*i* P	**Pb**	**02 15 50.1**	**-0.2**
TWE				S	**Sb**	**02 15 56.6**	**-0.1**
ENT	**Nioudou**	**0.46**	**302**	P	**Pb**	**02 15 50.3**	**-0.3**
TWD	**Chiawan**	**0.48**	**229**	P	**Pb**	**02 15 50.5**	**-0.5**
TWD				S	**Sb**	**02 15 57.7**	**-0.3**
NNS	**Nan Shan**	**0.57**	**274**	P	**Pb**	**02 15 51.9**	**-0.4**
NNS				S	**Sb**	**02 15 59.9**	**-0.3**
TWB1	**Santiao Chiao**	**0.60**	**360**	P	**Pb**	**02 15 53.1**	**+0.2**
TWB1				S	**Sb**	**02 16 02.1**	**+0.8**
NSK	**Sanguang**	**0.64**	**296**	*e*P	**Pb**	**02 15 53.0**	**-0.5**
NSK				S	**Sb**	**02 16 01.7**	**-0.5**
TWA	**Mucha**	**0.69**	**327**	*e*P	**Pb**	**02 15 54.3**	**0.0**
TWA				S	**Sb**	**02 16 03.3**	**-0.2**
NWF	**Wu-fen Shan**	**0.69**	**344**	P	**Pb**	**02 15 54.7**	**+0.3**
NWF				S	**Sb**	**02 16 03.9**	**+0.2**
WHF	**Hehuan Shan**	**0.71**	**249**	*e*P	**Pb**	**02 15 54.2**	**-0.5**
WHF				S	**Sb**	**02 16 03.4**	**-0.8**
TWT	**Tachien**	**0.76**	**259**	*e*P	**Pn**	**02 15 55.3**	**-0.2**
TWT				S	**Sb**	**02 16 05.4**	**-0.2**
TAP1	**Taipei**	**0.77**	**326**	*e*P	**Pn**	**02 15 55.2**	**-0.3**
TAP1				S	**Sb**	**02 16 05.8**	**+0.1**
TAP	**Taipei**	**0.78**	**325**	*e*P	**Pn**	**02 15 55.5**	**-0.2**
TAP				S	**Sb**	**02 16 06.3**	**+0.3**
ESL	**Shilin**	**0.78**	**221**	*e*P	**Pn**	**02 15 54.7**	**-1.0**
TWS1	**Kuangyinshan**	**0.87**	**323**	P	**Pn**	**02 15 56.7**	**-0.4**
TWS1				S	**Sb**	**02 16 08.7**	**0.0**
YOJ	**Yonaguni jima**	**0.93**	**86**	P	**Pn**	**02 15 58.1**	**+0.2**
YOJ				S	**Sn**	**02 16 11.3**	**+1.1**
NSTT	**Nanjuang**	**0.93**	**284**	*e*P	**Pn**	**02 15 57.5**	**-0.4**
NSTT				S	**Sn**	**02 16 09.7**	**-0.5**
TWY	**Chenhua**	**0.94**	**338**	*e*P	**Pn**	**02 15 57.9**	**-0.2**
TWY				S	**Sn**	**02 16 10.5**	**0.0**
HSN	**Hsinchu**	**1.01**	**293**	*e*P	**Pn**	**02 15 58.6**	**-0.4**
HSN				S	**Sn**	**02 16 11.7**	**-0.7**
TWQ1	**Liyutan**	**1.11**	**268**	*e*P	**Pn**	**02 16 01.2**	**+0.7**
TWQ1				S	**Sn**	**02 16 15.2**	**+0.3**
NSY	**Sanyi**	**1.12**	**271**	*e*P	**Pn**	**02 16 01.3**	**+0.7**
SMLT	**Sun Moon Lake**	**1.12**	**243**	*e*P	**Pn**	**02 16 01.0**	**+0.3**
TYC	**Yuchr**	**1.15**	**245**	*e*P	**Pn**	**02 16 00.9**	**-0.1**
TYC				S	**Sn**	**02 16 16.2**	**+0.4**
TWF1	**Yuli**	**1.22**	**212**	*e*P	**Pn**	**02 16 00.5**	**-1.5**
PCYT	**Pengchaiyu**	**1.23**	**3**	*e*P	**Pn**	**02 16 01.6**	**-0.5**
ALS	**Alishan**	**1.40**	**231**	*e*P	**Pn**	**02 16 05.4**	**+0.7**
CHN5	**Tsauling**	**1.44**	**237**	P	**Pn**	**02 16 06.0**	**+0.8**
ELDTW	**Lidau**	**1.50**	**217**	*e*P	**Pn**	**02 16 05.8**	**-0.3**
IRIF	**Iriomote-Funau**	**1.59**	**92**	P	**Pn**	**02 16 06.6**	**-0.7**
IRIF				*e*S	**Sn**	**02 16 26.8**	**-0.1**
CHN4	**Tsaushan**	**1.65**	**231**	*e*P	**Pn**	**02 16 08.9**	**+0.7**
HATJ	**Hateruma jima**	**1.69**	**101**	*e*S	**Sn**	**02 16 30.6**	**+1.1**
WTP	**Ta-pu**	**1.71**	**228**	*e*P	**Pn**	**02 16 10.1**	**+1.1**
TWK	**Hsinying**	**1.78**	**231**	*e*P	**Pn**	**02 16 11.4**	**+1.3**
TWK				S	**Sn**	**02 16 32.1**	**+0.3**
CHN1	**Nanshi**	**1.81**	**228**	*e*P	**Pn**	**02 16 11.3**	**+0.8**
SGST	**Jiashian**	**1.84**	**225**	*e*P	**Pn**	**02 16 11.8**	**+0.9**
JKRS	**Kuro-shima**	**1.85**	**95**	P	**Pn**	**02 16 10.9**	**-0.1**
JKRS				S	**Sn**	**02 16 33.8**	**+0.3**
JIJ	**Ishigaki jima**	**1.96**	**91**	P	**Pn**	**02 16 12.1**	**-0.5**
JIJ				S	**Sn**	**02 16 35.9**	**-0.5**
JTJ	**Tarama**	**2.48**	**84**	P	**Pn**	**02 16 19.4**	**-0.7**
JTJ				*e*S	**Sn**	**02 16 48.0**	**-1.6**

*IDC **20** 02:24:02.4±1.6, 10.24S×66.45E,mb4.0/8,mb1 4.1/8, mb1mx3.9/19,MS3.0/1,Ms1 3.2/1,ms1mx2.6/16,Error ellipse: s-maj=57.4km s-min=22.3km az=49.0*
*NEIC **20** 02:24:03.7±0.7, 10.30S×66.48E,h10km,Error ellipse: s-maj=29.7km s-min=13.2km az=51.0*
ISC 20 02:24:01.5±1.7, 10.3S±0.3×66.5E±0.3, h10km, n18, σ0§61/11, mb4.2/10, MS3.0/1, Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**42.92**	**48**	LR	LR	02 48 52.6	
	comp=Z,19nm,20.4s,MS3.0,baz=332,slow=35						
BRTR	**Keskin Array B**	**58.30**	**331**	P	**P**	**02 33 59.7**	**+0.7**
	0.3nm,0.5s,mb3.6,baz=130,slow=11,SNR=3.0						
MKAR	**Makanchi Array**	**58.53**	**13**	P	**P**	**02 34 00.3**	**-0.2**
	0.8nm,0.7s,mb3.9,baz=194,slow=10.0,SNR=6.4						
KURK	**Kurchatov**	**61.63**	**9**	*e*P	**P**	**02 34 21.1**	**-0.6**
BVAR	**Borovoye Array**	**63.12**	**3**	P	**P**	**02 34 31.3**	**-0.2**
	0.8nm,0.6s,mb4.0,baz=191,slow=7.3,SNR=4.4						
ASAR	**Alice Springs**	**65.38**	**111**	P	**P**	**02 34 47.1**	**+0.3**
	1.1nm,0.7s,mb4.0,baz=277,slow=6.7,SNR=10						
ZAL	**Zalesovo**	**65.81**	**12**	P	**P**	**02 34 48.9**	**-0.2**
	1.3nm,0.5s,mb4.2,baz=116,slow=3.4,SNR=5.4						
WRA	**Warramunga Arr**	**65.89**	**107**	P	**P**	**02 34 50.8**	**+0.7**
	2.1nm,0.7s,mb4.2,baz=276,slow=5.5,SNR=9.9						
WRAB	**Tennant Creek**	**65.90**	**107**	*e*P	**P**	**02 34 50.3**	**+0.1**
	9.1nm,0.7s,mb4.9						
SONM	**Songino Array**	**67.81**	**28**	P	**P**	**02 35 02.9**	**+1.0**
	1.9nm,0.8s,mb4.2,baz=210,slow=6.0,SNR=10						
AKASG	**Malin Array Be**	**68.78**	**336**	P	**P**	**02 35 07.5**	**-0.3**
	0.9nm,0.6s,mb3.9,baz=142,slow=5.9,SNR=5.3						
CTAO	**Charters Tower**	**77.05**	**108**	P	**P**	**02 35 55.9**	**-1.2**
	17nm,1.4s,mb4.8						
YKA	**Yellowknife Ar**	**127.85**	**1**	PKP	PKPdf	02 43 09.0	-1.4
	0.5nm,0.9s,baz=349,slow=2.4,SNR=7.8						
YKA	**Yellowknife Ar**	**127.85**	**1**	PKP	PKPdf	02 43 09.0	-1.4
LRAL	**Lakeview Retre**	**146.67**	**317**	*e*PKPbc	PKPbc	02 43 46.5	+2.6
HLID	**Hailey**	**146.81**	**1**	*e*PKPdf	PKPdf	02 43 44.8	-0.6
HLID				*e*PKPbc	PKPbc	02 43 47.7	+3.8
PDAR	**Pinedale Array**	**147.43**	**355**	PKPbc	PKPdf	02 43 49.1	+2.7
	0.9nm,0.8s,baz=22,slow=2.1,SNR=9.0						
HWUT	**Hardware Ranch**	**148.72**	**357**	*e*PKPbc	PKPdf	02 43 52.6	+4.0

*ATH **20** 02:37:11.7,37.81N×21.12E,h5km,MD3.4/4*
*THE **20** 02:37:12.1,37.64N×21.01E,h5km*
ISC 20 02:37:11.1±1.2, 37.68N±0.07×20.99E±0.08, h5km, n10, σ1§01/14, Ionian Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VLS	**Valsamata**	**0.58**	**328**	*e*PG	**Pg**	**02 37 22.5**	**-0.3**
VLS				*e*SB	**Sb**	**02 37 32.0**	**+0.3**
ITM	**Ithomi**	**0.90**	**124**	*e*PG	**Pg**	**02 37 28.6**	**-0.5**
EVR	**Evrytania**	**1.39**	**27**	*e*PN	**Pn**	**02 37 34.5**	**-2.7**
AGG	**Agios Georgios**	**1.70**	**38**	*e*Pb	**Pb**	**02 37 41.4**	**-1.1**
AGG				*e*Sb	**Sb**	**02 38 04.3**	**+0.2**
NSAL	**Nisos Salamina**	**1.97**	**83**	*e*PN	**Pn**	**02 37 48.0**	**+2.5**
MEV	**Metsovon**	**2.11**	**5**	*e*Pn	**Pn**	**02 37 48.1**	**+0.6**
MEV				*e*Sn	**Sn**	**02 38 14.5**	**+0.2**
LIT	**Litokhoron**	**2.68**	**25**	*e*Pn	**Pn**	**02 37 57.2**	**+1.5**
LIT				*e*Sn	**Sn**	**02 38 28.9**	**-0.1**
AOS	**Alonnisos**	**2.71**	**56**	*e*Pn	**Pn**	**02 37 55.6**	**-0.6**
FNA	**Florina**	**3.11**	**5**	*e*Pn	**Pn**	**02 38 01.3**	**-0.5**
SOH	**Sokhos**	**3.63**	**30**	*e*Pn	**Pn**	**02 38 09.6**	**+0.4**

NNC 20 03:31:30.8±3.7, 49.82N×87.91E, h22km±14km, mpv3.7, 9C-2D, Error ellipse: s-maj=22.2km s-min=15.6km az=83.0, Kazakhstan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MK31	**Makanchi Array**	**4.82**	**233**	⇑Pn	Pn	03 32 44.3	+0.3
	5.3nm,0.5s,baz=69,slow=11,SNR=76						
MK31				⇑Pg	Pn	03 32 57.9	+14
	5.6nm,0.2s,baz=48,slow=17,SNR=8.9						
MK31				⇑Sn	Sn	03 33 43.6	+3.7
	13nm,0.7s,baz=53,slow=16,SNR=9.6						
MK31				⇑Lg		03 34 05.1	
	14nm,0.5s,baz=47,slow=17,SNR=3.7						
KURK	**Kurchatov**	**6.03**	**282**	⇑Pn	Pn	03 32 59.7	-1.3
	2.4nm,0.5s,baz=96,slow=8.6,SNR=13						
KURK				⇑Sn	Sn	03 34 11.0	+0.8
	4.8nm,0.7s,baz=100,slow=16,SNR=5.9						
KURK				⇓Lg		03 34 41.1	
	16nm,1.0s,baz=9.5,slow=15,SNR=7.4						
VOSK	**Vostochnaya**	**11.00**	**292**	⇑Sn	S	03 36 06.8	-6.5
	0.9nm,0.5s						
BVA0	**Borovoye Array**	**11.40**	**293**	⇑Sn	S	03 36 21.4	-1.8
	0.6nm,1.4s,baz=103,slow=25,SNR=3.7						
ZRNK	**Zerenda**	**12.22**	**292**	⇓Sn	S	03 36 37.9	-5.1
	1.1nm,0.8s						
KK31	**Karatay Array**	**13.73**	**247**	⇑Sn	S	03 37 16.7	-2.6
	0.9nm,0.7s,baz=52,slow=22,SNR=4.7						

*NEIC **20** 03:49:28.4±1.1,7.49S×147.61E,h56km±10km,mb4.4/13, Error ellipse: s-maj=13.9km s-min=7.8km az=91.0*
*IDC **20** 03:49:31.3±1.9,7.54S×147.52E,h79km±17km,mb3.8/6, mb1 4.0/8,mb1mx4.0/13,MS3.2/3,Ms1 3.1/3,ms1mx2.8/16, Error ellipse: s-maj=28.7km s-min=13.8km az=114.0*
ISC 20 03:49:29.2±1.0, 7.47S±0.06×147.4E±0.1, h81km±9km, n31, σ1§11/38, mb4.2/14, 1C-1D, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WAU	**Wau**	**0.73**	**279**	⇑*i*P	**P**	**03 49 45.4**	**-0.1**
PMG	**Port Moresby**	**1.95**	**188**	P	**P**	**03 49 59.7**	**-1.3**
	146nm,0.3s,baz=3.8,slow=6.9,SNR=138						
PMG				S	**S**	**03 50 25.7**	**+1.3**
	333nm,0.3s,baz=22,slow=15,SNR=10						
PMG				LR	LR	03 50 31.9	
	comp=Z,615nm,18.9s,baz=109,slow=32						
PMG	**Port Moresby**	**1.95**	**188**	⇓*e*P	**P**	**03 49 59.3**	**-1.7**
PMG				*e*Pn	**P**	**03 49 59.5**	**-1.5**
PMG				*e*Pg	**P**	**03 50 02.5**	**+1.5**
PMG				*e*Sn	**S**	**03 50 26.1**	**+1.7**
PMG				*e*S	**S**	**03 50 27.2**	**+2.8**
CTA	**Charters Tower**	**12.60**	**185**	*e*P	**P**	**03 52 25.2**	**-1.6**
	3.5nm,0.4s						
CTA				*e*S	**S**	**03 54 54.2**	**+8.5**
CTA	**Charters Tower**	**12.60**	**185**	P	**P**	**03 52 25.9**	**-0.9**
	0.9nm,0.3s,baz=356,slow=14,SNR=6.6						
CTA				LR	LR	03 56 43.8	
	comp=Z,112nm,20.4s,baz=46,slow=34						
CTAO	**Charters Tower**	**12.60**	**185**	*e*P	**P**	**03 52 25.9**	**-0.9**
KAKA	**Kakadu**	**15.69**	**249**	*e*P	**P**	**03 53 07.4**	**+0.5**
	13nm,0.6s						
WRAB	**Tennant Creek**	**17.74**	**224**	*e*P	**P**	**03 53 32.8**	**+0.3**
	18nm,0.7s						
WB2	**Warramunga Arr**	**17.75**	**224**	*e*P	**P**	**03 53 32.5**	**-0.1**
WB2				*e*S	**S**	**03 56 42.2**	**-2.5**
WRA	**Warramunga Arr**	**17.75**	**224**	P	**P**	**03 53 32.5**	**-0.1**
	1.0nm,0.3s,baz=53,slow=12,SNR=18						
WRA				S	**S**	**03 56 40.6**	**-4.3**
	0.3nm,0.3s,baz=49,slow=22,SNR=4.9						
AS12	**Alice Springs**	**20.70**	**217**	*e*P	**P**	**03 54 04.1**	**-0.9**
	6.4nm,0.4s						
ASAR	**Alice Springs**	**20.70**	**217**	P	**P**	**03 54 04.9**	**-0.1**
	11nm,0.8s,baz=52,slow=8.6,SNR=50						
ASAR				S	**S**	**03 57 52.4**	**+5.9**
	1.8nm,0.7s,baz=29,slow=24,SNR=5.8						
ASAR				LR	LR	04 01 58.8	
	comp=Z,59nm,21.1s,baz=35,slow=36						
GUMO	**Guam**	**21.07**	**353**	*e*P	**P**	**03 54 07.1**	**-1.7**
	58nm,0.9s,mb4.9						
FITZ	**Fitzroy Crossi**	**23.71**	**241**	*e*P	**P**	**03 54 36.4**	**+1.7**
	3.0nm,0.6s,mb3.8						
FITZ	**Fitzroy Crossi**	**23.71**	**241**	P	**P**	**03 54 36.7**	**+2.0**
	6.1nm,0.9s,mb3.9,baz=61,slow=5.2,SNR=13						
STKA	**Stephens Creek**	**24.89**	**192**	*e*P	**P**	**03 54 45.9**	**-0.2**
	4.7nm,1.8s,mb3.6						
STKA	**Stephens Creek**	**24.89**	**192**	P	**P**	**03 54 46.4**	**+0.3**
	1.6nm,0.4s,mb3.8,baz=17,slow=13,SNR=7.2						
STKA				LR	LR	04 05 47.5	
	comp=Z,47nm,19.0s,baz=199,slow=39						
FORT	**Forrest**	**29.45**	**216**	*

WEL	**Wellington**	**0.92**	**120**	PN	P	04 20 03.6	-0.1
WEL				SN	S	04 20 17.1	-1.1
CMWZ	**Cape Campbell**	**1.00**	**158**	PN	P	04 20 04.9	+0.4
BHW	**Baring Head**	**1.05**	**124**	PN	P	04 20 04.6	-0.5
BHW				SN	S	04 20 19.2	-1.7
CAW	**Cannon Point**	**1.06**	**106**	PN	P	04 20 04.9	-0.3
CAW				SN	S	04 20 19.9	-1.2
THZ	**Tophouse**	**1.12**	**213**	PN	P	04 20 05.2	-0.8
THZ				SN	S	04 20 21.4	-0.9
MSWZ	**Moikau Station**	**1.30**	**118**	PN	P	04 20 07.7	-0.5
MSWZ				SN	S	04 20 24.2	-1.8
MTW	**Mount Morrison**	**1.40**	**105**	PN	P	04 20 08.4	-0.9
MTW				SN	S	04 20 26.3	-1.6
MRZ	**Mangatainoka R**	**1.43**	**84**	PN	P	04 20 08.6	-1.1
MRZ				SN	S	04 20 27.1	-1.5
WAZ	**Wanganui**	**1.44**	**43**	PN	P	04 20 09.7	-0.2
WAZ				SN	S	04 20 30.8	+1.9
NRZ	**Ngariki Road**	**1.49**	**7**	PN	P	04 20 10.0	-0.5
DFE	**Dawson Falls**	**1.52**	**11**	PN	P	04 20 10.5	-0.4
NWEZ	**Newall Road**	**1.55**	**4**	PN	P	04 20 10.7	-0.6
NWEZ				SN	S	04 20 30.2	-1.1
NEZ	**North Egmont**	**1.58**	**11**	PN	P	04 20 11.2	-0.4
KHZ	**Kahutara**	**1.60**	**185**	⇑PN	P	04 20 11.1	-0.7
KHZ				SN	S	04 20 30.5	-1.8
RAEZ	**Rainy Point**	**1.62**	**19**	PN	P	04 20 11.2	-0.9
RAEZ				SN	S	04 20 32.8	0.0
PKE	**Pukeiti**	**1.64**	**7**	PN	P	04 20 11.7	-0.7
PKE				SN	S	04 20 32.4	-0.8
DSZ	**Denniston Nort**	**1.71**	**237**	PN	P	04 20 11.8	-1.5
DSZ				SN	S	04 20 32.5	-2.2
VRZ	**Vera Road**	**1.88**	**26**	PN	P	04 20 14.9	-0.5
VRZ				SN	S	04 20 38.4	-0.1
BFZ	**Birch Farm**	**1.93**	**87**	SN	S	04 20 37.4	-2.2
WNVZ	**Wahianoa**	**2.08**	**45**	PN	P	04 20 17.1	-1.0
FWVZ	**Far West T-bar**	**2.11**	**43**	PN	P	04 20 17.5	-1.0
WPVZ	**Whakapapa**	**2.14**	**42**	PN	P	04 20 17.5	-1.5
CNZ	**Chateau**	**2.15**	**42**	PN	P	04 20 17.7	-1.4
TUVZ	**Tukino**	**2.15**	**44**	PN	P	04 20 18.0	-1.1
NGZ	**Ngauruhoe**	**2.19**	**42**	PN	P	04 20 18.3	-1.4
NGZ				PN	P	04 20 18.4	-1.3
TWVZ	**Taurewa**	**2.19**	**38**	PN	P	04 20 18.3	-1.4
WTVZ	**West Tongariro**	**2.23**	**41**	PN	P	04 20 18.7	-1.6
LTZ	**Lake Taylor**	**2.24**	**208**	PN	P	04 20 18.4	-1.9
LTZ				SN	S	04 20 43.0	-4.1
KAVZ	**Karewarewa**	**2.27**	**41**	PN	P	04 20 19.2	-1.6
MGZ	**Maungaku**	**2.30**	**38**	PN	P	04 20 19.2	-2.0
KATZ	**Kakaramea**	**2.39**	**40**	PN	P	04 20 20.9	-1.5
HIZ	**Hauiti**	**2.47**	**21**	PN	P	04 20 22.0	-1.5
HIZ				SN	S	04 20 50.4	-2.4
BKZ	**Black Stump Fm**	**2.70**	**53**	PN	P	04 20 23.5	-3.2
CRLZ	**Canterbury Las**	**2.87**	**196**	SN	S	04 20 55.8	-6.9
MQZ	**McQueen's Vall**	**2.99**	**195**	PN	P	04 20 27.1	-3.6
MQZ				SN	S	04 20 58.6	-7.1
WVZ	**Waitaha Valley**	**3.16**	**224**	PN	P	04 20 30.1	-3.0
WVZ				SN	S	04 21 04.2	-5.7
RPZ	**Rata Peaks**	**3.50**	**213**	PN	P	04 20 34.5	-3.2
RPZ				SN	S	04 21 12.3	-5.9
URZ	**Urewera**	**3.67**	**47**	PN	P	04 20 34.9	-5.1
URZ				SN	S	04 21 17.1	-5.2
MWZ	**Matawai**	**3.85**	**51**	PN	P	04 20 37.5	-5.0
ODZ	**Otahua Downs**	**4.78**	**207**	PN	P	04 20 51.5	-3.8
ODZ				SN	S	04 21 41.2	-8.7

NAO ***20*** *04:33:10.6±5.1,78.63N×7.32E,h10km±41km,ML2.0*
BER ***20*** *04:33:11.1±5.5,78.44N×6.32E,h29km±330km,MD2.6, ML2.3,ML2.0(NAO)*

ISC 20 04:33:08.1±2.6,78.4N±0.1×6.9E±0.8,h10km,n4,σ1§09/6, Svalbard region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
KBS	**Kingsbay**	**1.15**	**59**	Pn		**Pn**	**04 33 30.1**	**-0.1**
KBS				Lg			04 33 42.4	
KBS	**Kingsbay**	**1.15**	**59**	*eP*		**Pb**	**04 33 30.1**	**+0.5**
KBS				*eS*		**Sb**	**04 33 43.4**	**-0.9**
KBS				AML		AML	04 33 45.1	
	comp=Z,75nm,0.4s							
SPA0	**Spitsbergen Ar**	**1.95**	**91**	Pn		**Pn**	**04 33 42.8**	**+1.1**
	baz=284,slow=9.3							
SPA0				Sn		**Sn**	**04 34 06.8**	**+0.4**
	baz=258,slow=22							
ARA0	**ARCESS Array S**	**10.19**	**141**	Pn		**P**	**04 35 36.2**	**-1.0**
	baz=348,slow=10							

IDC ***20*** *04:35:50.0±0.8,36.44N×71.50E,h122km±6km,mb4.0/17, mb1 4.2/21,mb1mx4.0/29,Error ellipse: s-maj=20.5km s-min=13.4km az=26.0,putative timing error at GNI*
NEIC ***20*** *04:35:50.1±0.4,36.46N×71.41E,mb4.2/32,Error ellipse: s-maj=8.2km s-min=5.2km az=175.0*
BJI ***20*** *04:35:50.1,36.45N×71.34E,h136km,mB4.3,mb4.4*
MOS ***20*** *04:35:54.7±1.2,36.90N×71.22E,h151km,mb4.7/13,Error ellipse: s-maj=13.6km s-min=6.7km az=100.9*
NNC ***20*** *04:35:55.5±4.7,36.91N×70.46E,h134km±39km,mpv5.2, Error ellipse: s-maj=49.9km s-min=32.7km az=38.0*

ISC 20 04:35:47.5±0.2,36.32N±0.03×71.41E±0.04,h123km, h123km±1.3km:pP-P,n144,σ1§14/157,mb4.3/51,13C-5D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
CEP	**Cherat**	**2.52**	**170**	⇓P		**P**	**04 36 30.8**	**+2.4**
CHCP	**Chirah Chowk**	**3.06**	**150**	P		**P**	**04 36 38.2**	**+2.7**
THW	**Thamme Wali**	**3.52**	**175**	⇓P		**P**	**04 36 43.3**	**+1.5**
SARP	**Sargodha**	**4.50**	**166**	P		**P**	**04 36 55.3**	**+0.3**
DRP	**Derazinda**	**4.67**	**193**	P		**P**	**04 36 56.5**	**-0.6**
KSH	**Kashi**	**4.82**	**47**	*eP*		**P**	**04 37 02.4**	**+3.2**
KSH				*eS*		**S**	**04 37 55.8**	**+1.4**
KSH				S		S		
	comp=N,370nm,0.3s							
KSH				S		S		
	comp=E,340nm,0.2s							
AML	**Almayashu**	**6.07**	**16**	P		**P**	**04 37 15.9**	**-0.2**
	SNR=253							
UCH	**Uchtor**	**6.38**	**21**	P		**P**	**04 37 20.3**	**+0.1**
	SNR=136							
KZA	**Kyzart**	**6.48**	**26**	P		**P**	**04 37 21.6**	**-0.1**
	SNR=55							
EKS2	**Erkin-Say**	**6.60**	**15**	P		**P**	**04 37 22.9**	**-0.4**
	SNR=66							
AAK	**Ala-Archa**	**6.75**	**20**	P		**P**	**04 37 24.8**	**-0.6**
	SNR=104							
KK31	**Karatay Array**	**6.81**	**354**	⇓P		**P**	**04 37 24.3**	**-1.9**
	comp=E,109nm,0.5s,baz=183,slow=13,SNR=1055							
KK31				⇑S		**S**	**04 38 36.0**	**-6.8**
	comp=E,30nm,0.3s,baz=187,slow=26,SNR=7.7							
KKAR	**Karatay Array**	**6.81**	**354**	*i* PN		**P**	**04 37 24.3**	**-2.0**
KKAR				pmax	pmax			
	comp=Z,85nm,0.2s							
KBK	**Karagaybulak**	**6.90**	**22**	P		**P**	**04 37 27.5**	**+0.1**
	SNR=22							
ULHL	**Ulahol**	**7.01**	**31**	P		**P**	**04 37 28.8**	**-0.1**
	SNR=19							
CHMS	**Chumysh**	**7.16**	**20**	P		**P**	**04 37 30.2**	**-0.7**
	SNR=49							
USP	**Ospenovka**	**7.34**	**18**	P		**P**	**04 37 32.5**	**-0.9**
	SNR=40							
TKM2	**Tokmak 2**	**7.35**	**25**	P		**P**	**04 37 33.3**	**-0.2**
	SNR=43							
NDI	**New Delhi**	**9.05**	**146**	*eP*		**P**	**04 37 55.6**	**-0.7**
NDI				*eS*		**S**	**04 39 31.7**	**-5.2**
NDI				AML		AML	04 39 35.4	
	comp=E,80nm,0.1s							
NDI				AML		AML	04 39 35.9	
	comp=N,81nm,0.0s							
PTH	**Pithoragarh**	**10.01**	**130**	*eP*		**P**	**04 38 09.0**	**-0.1**
PTH				*eS*		**S**	**04 39 53.0**	**-6.9**
AJM	**Ajmer**	**10.19**	**163**	⇓*iP*		**P**	**04 38 10.0**	**-1.5**
AJM				*eS*		**S**	**04 39 58.0**	**-6.1**
DANN	**Dangsing**	**13.11**	**124**	*eP*		**P**	**04 38 49.3**	**-0.7**
MK31	**Makanchi Array**	**13.25**	**34**	⇑P		**P**	**04 38 54.2**	**+2.5**
	comp=N,4.1nm,0.6s,baz=207,slow=39,SNR=49							
MKAR	**Makanchi Array**	**13.25**	**34**	P		**P**	**04 38 51.8**	**0.0**
	comp=N,0.5nm,0.3s,baz=231,slow=9.0,SNR=17							
MKAR	**Makanchi Array**	**13.25**	**34**	P		**P**	**04 38 51.8**	**+0.1**
MKAR				pmax	pmax			
	comp=Z,1.0nm,0.3s							
KOLN	**Koldanda**	**13.39**	**126**	*eP*		**P**	**04 38 51.9**	**-1.6**
	comp=Z,61nm,0.3s							
GKN	**Gorkha**	**13.93**	**123**	*eP*		**P**	**04 38 59.0**	**-1.4**
	comp=Z,376nm,0.5s							
BHPL	**Bhopal**	**14.03**	**157**	*eP*		**P**	**04 39 00.4**	**-1.4**
BHPL				*e*			04 41 29.9	
DMN	**Daman**	**14.50**	**123**	*eP*		**P**	**04 39 06.2**	**-1.6**
	comp=Z,131nm,0.6s							
KKN	**Kakani**	**14.50**	**122**	*eP*		**P**	**04 39 06.1**	**-1.7**
	comp=Z,208nm,0.5s							
WMQ	**Urumqi**	**14.54**	**54**	*eP*		**P**	**04 39 10.3**	**+2.2**
WMQ				XP			04 39 44.8	
WMQ				S		**S**	**04 41 47.9**	**+1.5**
WMQ				PCP		PcP	04 44 17.3	+2.3
PKI	**Pulchoki**	**14.73**	**122**	*eP*		**P**	**04 39 08.8**	**-1.9**
	comp=Z,154nm,0.4s							
KURK	**Kurchatov**	**15.30**	**18**	⇑P		**P**	**04 39 19.6**	**+1.8**
	comp=Z,6.5nm,0.9s,baz=204,slow=7.8,SNR=14							
KURK	**Kurchatov**	**15.30**	**18**	*i* P		**P**	**04 39 19.7**	**+1.9**
KURK				pmax	pmax			
	comp=Z,6.0nm,0.9s							
KURK	**Kurchatov**	**15.30**	**18**	*eP*		**P**	**04 39 19.5**	**+1.7**
KURK				*eS*		**S**	**04 42 16.4**	**+13**
AB31	**Akbulak array**	**15.41**	**331**	⇑P		**P**	**04 39 16.0**	**-3.1**
	comp=Z,14nm,0.5s,baz=140,slow=11,SNR=710							
AB31				⇑S		**S**	**04 41 52.7**	**-14**
	comp=Z,18nm,0.6s,baz=158,slow=20,SNR=15							
AB31	**Akbulak array**	**15.41**	**331**	*i* P		**P**	**04 39 15.8**	**-3.3**
AB31				*eS*		**S**	**04 41 52.6**	**-14**
AB31				pmax	pmax			
	comp=Z,9.0nm,0.4s							
AB31				smax				
	comp=Z,4.0nm,0.4s							
THR	**Tehran**	**16.40**	**275**	P		**P**	**04 39 34.5**	**+2.9**
	comp=Z,0.3nm,0.3s,baz=80,slow=8.4,SNR=13							
VOSK	**Vostochnaya**	**16.41**	**359**	⇑P		**P**	**04 39 29.0**	**-2.6**
	comp=Z,16nm,0.8s							
VOSK	**Vostochnaya**	**16.41**	**359**	P		**P**	**04 39 28.9**	**-2.7**
VOSK				pmax	pmax			
	comp=Z,13nm,0.9s							
ZRNK	**Zerenda**	**16.72**	**355**	⇑P		**P**	**04 39 34.8**	**-0.6**
	comp=Z,12nm,0.6s							
ZRNK	**Zerenda**	**16.72**	**355**	P		**P**	**04 39 34.8**	**-0.6**
ZRNK				pmax	pmax			
	comp=Z,7.0nm,0.6s							
ZRNK	**Zerenda**	**16.72**	**355**	*eP*		**P**	**04 39 33.3**	**-2.1**
BVA0	**Borovoye Array**	**16.72**	**358**	⇑P		**P**	**04 39 34.7**	**-0.8**
	comp=Z,2.2nm,1.1s,baz=167,slow=12,SNR=38							
BVA0	**Borovoye Array**	**16.72**	**358**	*i* P		**P**	**04 39 34.7**	**-0.8**
BVAR	**Borovoye Array**	**16.72**	**358**	P		**P**	**04 39 34.3**	**-1.2**
	comp=Z,2.3nm,0.3s,baz=169,slow=12,SNR=18							
BVAR				S		**S**	**04 42 29.9**	**-6.2**
	comp=Z,0.6nm,0.3s,baz=170,slow=27,SNR=5.4							
BRVK	**Borovoye**	**16.76**	**358**	⇑P		**P**	**04 39 35.3**	**-0.6**
	comp=Z,3.4nm,0.5s							
BRVK	**Borovoye**	**16.76**	**358**	*eP*		**P**	**04 39 35.1**	**-0.8**
LSA	**Lhasa**	**17.81**	**106**	P		**P**	**04 39 52.0**	**+3.1**
LSA	**Lhasa**	**17.81**	**106**	*eP*		**P**	**04 39 51.0**	**+2.1**
	comp=Z,23nm,0.9s							
ZAL	**Zalesovo**	**19.93**	**24**	P		**P**	**04 40 10.9**	**-0.6**
	comp=Z,8.2nm,0.3s,baz=164,slow=5.1,SNR=20							
ZAL	**Zalesovo**	**19.93**	**24**	P		**P**	**04 40 11.0**	**-0.6**
ZAL				pmax	pmax			
	comp=Z,8.0nm,0.3s							
NVS	**Novosibirsk**	**20.24**	**20**	*eP*		**P**	**04 40 13.2**	**-1.5**
NVS				*eS*		**S**	**04 43 48.8**	**-1.0**
NVS				pmax	pmax			
	comp=Z,10.0nm,0.6s							
NVS				pmax	pmax			
	comp=N,14nm,0.7s							
NVS				smax				
	comp=E,7.0nm,0.9s							
SHL	**Shillong**	**20.53**	**116**	*eP*		**P**	**04 40 19.5**	**+1.6**
SHL				*e*			04 43 54.0	
ARU	**Arti**	**21.92**	**341**	*c iP*		**P**	**04 40 32.1**	**+0.7**
ARU				pmax	pmax			
	comp=Z,56nm,0.8s,mb5.0							
ARU	**Arti**	**21.92**	**341**	*eP*		**P**	**04 40 32.0**	**+0.7**
	comp=Z,76nm,0.9s,mb5.0							
ZEI	**Tsey**	**22.11**	**295**	*eP*		**P**	**04 40 36.5**	**+3.1**
ZEI				*e*			04 44 33.0	
GTA	**Gaotai**	**22.60**	**74**	*eP*		**P**	**04 40 43.8**	**+5.6**
GTA				AMB		AMB		
	comp=Z,6.0nm,1.1s,mb3.8							
KIV	**Kislovodsk**	**23.17**	**298**	*eP*		**P**	**04 40 45.3**	**+1.7**
KIV				pmax	pmax			
	comp=Z,7.0nm,0.8s,mb4.0							
KIV				MLR		MLR		
	comp=N,10.0nm,18.0s							
KIV				MLR		MLR		
	comp=Z,10.0nm,18.0s							
KIV	**Kislovodsk**	**23.17**	**298**	*eP*		**P**	**04 40 45.2**	**+1.6**
	comp=Z,18nm,0.6s,mb4.6							
SOKR	**Solikamsk**	**25.13**	**342**	*eP*		**P**	**04 41 04.3**	**+2.1**
SOC	**Sochi**	**25.25**	**296**	*i* P		**P**	**04 41 01.6**	**-1.9**
SOC				*eS*		**S**	**04 45 18.5**	**+1.0**
SOC				*eSS*		SS	04 46 27.0	-2.3
SOC				pmax	pmax			
	comp=Z,24nm,1.0s,mb4.6							
SOC				pmax	pmax			
	comp=N,3.0nm,0.4s							
SOC				pmax	pmax			
	comp=E,30nm,0.9s							
SOC				MLR	MLR			
	comp=Z,168nm,27.0s							
SOC				MLR	MLR			
	comp=N,80nm,18.0s							
SOC				MLR	MLR			
	comp=E,82nm,22.0s							
ZAK	**Zakamensk**	**26.86**	**48**	*eP*		**P**	**04 41 25.4**	**+7.1**
ULN	**Ulaanbaatar**	**28.61**	**55**	P		**P**	**04 41 32.7**	**-1.4**
	comp=E,1.0nm,0.6s,mb3.6							
BRTR	**Keskin Array B**	**29.80**	**288**	P		**P**	**04 41 44.9**	**0.0**
	comp=E,0.9nm,0.5s,mb3.7,baz=103,slow=10,SNR=6.0							
OBN	**Obninsk**	**30.29**	**319**	*eP*		**P**	**04 41 48.7**	**-0.3**
OBN				*e*			04 42 23.1	
OBN				pmax	pmax			
	comp=Z,31nm,1.7s,mb4.7							
OBN	**Obninsk**	**30.29**	**319**	*eP*		**P**	**04 41 48.8**	**-0.2**
	comp=Z,14nm,0.6s,mb4.8							
AKASG	**Malin Array Be**	**33.32**	**309**	P		**P**	**04 42 13.7**	**-1.6**
	comp=Z,2.0nm,0.3s,mb4.4,baz=81,slow=8.1,SNR=22							
BJI	**Beijing**	**35.11**	**70**	*eP*		**P**	**04 42 34.1**	**+3.4**
BJI				AMB		AMB		
	comp=Z,4.0nm,0.7s,mb4.4							
MLR	**Muntele Rosu**	**35.16**	**299**	P		**P**	**04 42 33.9**	**+2.8**
	comp=Z,6.9nm,0.7s,mb4.6,baz=82,slow=14,SNR=14							
MLR	**Muntele Rosu**	**35.16**	**299**	P		**P**	**04 42 33.9**	**+2.8**
MLR				pmax	pmax			
	comp=Z,7.0nm,0.7s							
JOF	**Joensuu**	**36.19**	**330**	*ep*		**P**	**04 42 38.9**	**-0.7**
FINES	**FINESS Array B**	**37.82**	**326**	P		**P**	**04 42 53.5**	**+0.2**
	comp=Z,4.3nm,0.3s,mb4.7,baz=120,slow=8.6,SNR=72							
FINES	**FINESS Array B**	**37.82**	**326**	P		**P**	**04 42 53.5**	**+0.2**
FINES				pmax	pmax			
	comp=Z,4.0nm,0.3s							
KAF	**Kangasniemi**	**37.96**	**327**	*ep*		**P**	**04 42 54.2**	**-0.2**
	baz=112,slow=8.6							
NJ2	**Nanjing**	**39.17**	**82**	*eP*		**P**	**04 43 03.9**	**-0.9**
NJ2				S		**S**	**04 48 59.0**	**+3.7**
NJ2				PCS			04 49 03.0	
NJ2				AMB		AMB		
	comp=Z,10.0nm,0.6s,mb4.8							
MORC	**Moravsky Berou**	**40.74**	**307**	*eP*		**P**	**04 43 17.2**	**-0.3**
	comp=Z,2.2nm,0.7s,mb4.1							
KEV	**Kevo**	**41.10**	**338**	*ep*		**P**	**04 43 19.6**	**-0.6**
SSE	**Sheshan**	**41.37**	**82**	⇓P		**P**	**04 43 20.1**	**-2.8**
SSE				AMB		AMB		
	comp=Z,48nm,4.4s							
VRAC	**Vranov**	**41.38**	**306**	P		**P**	**04 43 25.0**	**+2.3**
	comp=Z,3.9nm,0.8s,mb4.3,baz=98,slow=8.9,SNR=3.6							
CN2	**Changchun**	**41.40**	**62**	*eP*		**P**	**04 43 23.8**	**+0.8**
ARCES	**ARCESS Array B**	**41.44**	**338**	P		**P**	**04 43 23.8**	**+0.7**
	comp=Z,9.3nm,0.5s,mb4.9,baz=110,slow=8.6,SNR=125							
ARCES	**ARCESS Array B**	**41.44**	**338**	P		**P**	**04 43 23.8**	**+0.7**
ARCES				pmax	pmax			
	comp=Z,9.0nm,0.5s							
KTK1	**Kautokeino**	**41.92**	**336**	*eP*		**P**	**04 43 28.1**	**+1.2**
KTK1				AMb		AMB	04 43 36.7	
	comp=Z,23nm,1.4s,mb4.7							
BRG	**Berggiesshubel**	**43.00**	**308**	*eP*		**P**	**04 43 36.9**	**+1.0**
BRG				pmax	pmax			
	comp=Z,5.0nm,0.6s,mb4.4							
BRG	**Berggiesshubel**	**43.00**	**308**	*eP*		**P**	**04 43 36.9**	**+1.0**
	comp=Z,4.7nm,0.6s,mb4.4							
GERES	**GERESS Array B**	**43.31**	**305**	P		**P**	**04 43 39.9**	**+1.4**
	comp=Z,0.4nm,0.5s,mb3.4,baz=82,slow=9.4,SNR=4.3							
GERES				PP	PP		04 45 21.2	-1.6
	comp=Z,0.6nm,0.8s,baz=84,slow=13,SNR=3.2							
GERES	**GERESS Array B**	**43.31**	**305**	P		**P**	**04 43 39.9**	**+1.5**
GERES							04 45 21.2	
GERES				pmax	pmax			
	comp=Z,1.0nm,0.8s							
HFS	**Hagfors**	**43.42**	**322**	P		**P**	**04 43 39.0**	**-0.2**
	comp=Z,11nm,0.4s,mb4.9,baz=106,slow=11,SNR=84							
HFS				pP	pP		04 44 07.4	+0.1
	comp=Z,6.6nm,0.8s,baz=106,slow=11,SNR=2.9							
HFS				PP	PP		04 45 22.1	-1.7
	comp=Z,5.1nm,0.8s,baz=90,slow=12,SNR=2.8							
HFS	**Hagfors**	**43.42**	**322**	P		**P**	**04 43 39.0**	**-0.1**
HFS							04 45 22.1	
HFS				pmax	pmax			
	comp=Z,11nm,0.4s							
HFS				pmax	pmax			
	comp=N,7.0nm,0.8s							
HFS				pmax	pmax			
	comp=Z,5.0nm,0.8s							
MOR8	**Moi Rana**	**44.14**	**331**	*eP*		**P**	**04 43 44.5**	**-0.4**
MOR8				*epP*		pP	04 44 11.8	-1.2
NB2	**NORSAR Subarra**	**44.73**	**323**	P		**P**	**04 43 49.1**	**-0.6**
	comp=Z,5.6nm,0.4s,mb4.7,baz=96,slow=7.9							
NB2	**NORSAR Subarra**	**44.73**	**323**	P		**P**	**04 43 49.1**	**-0.6**
	baz=96,slow=7.9							
NOA	**NORSAR Array B**	**44.73**	**323**	P		**P**	**04 43 49.4**	**-0.3**
	comp=Z,5.8nm,0.4s,mb4.6,baz=97,slow=7.7,SNR=33							
NOA				pP	pP		04 44 17.2	-0.7
	comp=Z,1.9nm,0.6s,baz=97,slow=8.1,SNR=2.2							
NOA	**NORSAR Array B**	**44.73**	**323**	P		**P**	**04 43 49.4**	**-0.3**
NOA				pmax	pmax			
	comp=Z,6.0nm,0.4s							
NOA				pmax	pmax			
	comp=N,2.0nm,0.6s							
TIXI	**Tiksi**	**45.82**	**22**	*eP*		**P**	**04 43 58.6**	**+0.4**
TIXI				*e**PP		pP	04 44 27.9	+1.4
TIXI				pmax	pmax			
	comp=Z,32nm,0.8s,mb5.1							
TIXI	**Tiksi**	**45.82**	**22**	*eP*		**P**	**04 43 58.5**	**+0.3**
	comp=Z,8.1nm,1.0s,mb4.4							
SPITS	**Spitsbergen Ar**	**47.75**	**347**	P		**P**	**04 44 14.4**	**+1.1**
	comp=Z,12nm,1.0s,mb4.7,baz=100,slow=10,SNR=14							
HINF	**Hinteralfeld**	**47.97**	**305**	*eP*		**P**	**04 44 14.8**	**-0.6**
	comp=Z,3.9nm,0.6s,mb4.1							
LPG	**La Plagne**	**48.52**	**302**	*eP*		**P**	**04 44 19.8**	**+0.1**
	comp=Z,1.8nm,0.4s,mb4.0							
LPL	**La Plagne**	**48.53**	**302**	*eP*		**P**	**04 44 19.9**	**+0.2**
	comp=Z,2.5nm,0.4s,mb4.2							
CABF	**La Chapelle**	**48.73**	**304**	*eP*		**P**	**04 44 21.1**	**-0.1**
	comp=Z,3.9nm,0.6s,mb4.2							
MEZF	**Maizieres J'vi**	**49.02**	**306**	*eP*		**P**	**04 44 23.5**	**0.0**
ORIF	**Oris-en-Rattie**	**49.26**	**301**	*eP*		**P**	**04 44 25.5**	**+0.2**
	comp=Z,1.7nm,0.4s,mb4.0							
BAIF	**Baives**	**49.27**	**308**	*eP*		**P**	**04 44 25.5**	**+0.2**
	comp=Z,4.9nm,0.6s,mb4.3							
SMF	**Signal de Mont**	**50.23**	**304**	*eP*		**P**	**04 44 32.1**	**-0.6**
	comp=Z,4.6nm,0.6s,mb4.3							
SSF	**Saint Saulge**	**50.35**	**305**	*eP*		**P**	**04 44 33.9**	**+0.2**
TCF	**Toulx Ste Croi**	**51.41**	**304**	*eP*		**P**	**04 44 41.3**	**-0.4**
	comp=Z,1.8nm,0.5s,mb4.1							
CAF	**Calviac**	**51.88**	**302**	*eP*		**P**	**04 44 45.1**	**-0.1**
RJF	**Les Rejaudoux**	**52.14**	**303**	*eP*		**P**	**04 44 47.3**	**+0.1**
	comp=Z,1.1nm,0.4s,mb3.9							
MTLF	**Montolieu**	**52.22**	**300**	*eP*		**P**	**04 44 46.8**	**-1.0**
	comp=Z,1.6nm,0.5s,mb4.0							
LDF	**La Druitiere**	**52.35**	**307**	*eP*		**P**	**04 44 48.7**	**0.0**
	comp=Z,2.9nm,0.6s,mb4.2							
FLN	**La Foliniere**	**52.54**	**308**	*eP*		**P**	**04 44 50.0**	**-0.1**
	comp=Z,3.1nm,0.5s,mb4.3							
EKA	**Eskdalemuir Ar**	**52.65**	**316**	P		**P**	**04 44 50.7**	**-0.1**
	comp=Z,3.8nm,1.0s,mb4.4,baz=84,slow=7.1,SNR=4.2							
EKA	**Eskdalemuir Ar**	**52.65**	**316**	P		**P**	**04 44 50.7**	**-0.1**
EKA				pmax	pmax			
	comp=Z,4.0nm,1.0s							
MAJO	**Matsushiro**	**52.71**	**68**	*eP*		**P**	**04 44 52.6**	**+1.1**
	comp=Z,5.8nm,0.7s,mb4.7							
LFF	**La Frestale**	**52.77**	**303**	*eP*		**P**	**04 44 51.6**	**-0.3**
	comp=Z,2.5nm,0.4s,mb4.3							
GRR	**Gorron**	**52.88**	**307**	*eP*		**P**	**04 44 52.2**	**-0.4**
MFF	**Saint Martin d**	**52.90**	**305**	*eP*		**P**	**04 44 51.6**	**-1.2**
	comp=Z,1.2nm,0.4s,mb4.0							
EPF	**Esparros**	**53.63**	**301**	*eP*		**P**	**04 44 58.3**	**+0.1**
	comp=Z,1.8nm,0.5s,mb4.0							
SGMF	**Saint Gilles**	**54.01**	**307**	*eP*		**P**	**04 45 01.0**	**+0.2**
ETSF	**Etsaut**	**54.29**	**301**	*eP

AAK	**Ala-Archa**	**5.24**	**348**	P	**P**	**05 00 10.2**	**+0.5**
	SNR=11						
EKS2	**Erkin-Say**	**5.41**	**343**	P	**P**	**05 00 12.0**	**0.0**
	SNR=10						
TKM2	**Tokmak 2**	**5.42**	**357**	P	**P**	**05 00 12.2**	**+0.2**
	SNR=7.7						
USP	**Ospenovka**	**5.86**	**350**	P	**P**	**05 00 19.1**	**+1.1**
	SNR=5.2						
KK31	**Karatay Array**	**6.96**	**325**	⇑P	**P**	**05 00 31.5**	**-1.6**
	comp=E,1.0nm,0.2s,baz=124,slow=12,SNR=11						
KK31				⇑S	**S**	**05 01 43.8**	**-7.5**
	comp=E,1.9nm,0.3s,baz=134,slow=46,SNR=4.6						
NDI	**New Delhi**	**8.86**	**173**	*eP*	x	05 02 31.0	
NDI				*eS*	**S**	**05 02 37.0**	**-0.3**
MKAR	**Makanchi Array**	**10.41**	**25**	Pn	**P**	**05 01 17.8**	**-1.5**
	comp=E,0.5nm,0.3s,baz=182,slow=13,SNR=16						
DANN	**Dangsing**	**11.24**	**142**	*eP*	**P**	**05 01 31.3**	**+0.9**
KOLN	**Koldanda**	**11.65**	**144**	*eP*	**P**	**05 01 36.0**	**+0.2**
	comp=E,11nm,0.2s						
GKN	**Gorkha**	**11.97**	**140**	*eP*	**P**	**05 01 39.9**	**-0.1**
	comp=E,39nm,0.3s						
KKN	**Kakani**	**12.47**	**138**	*eP*	**P**	**05 01 46.7**	**0.0**
	comp=E,11nm,0.2s						
DMN	**Daman**	**12.53**	**139**	*eP*	**P**	**05 01 47.3**	**-0.1**
	comp=E,8.3nm,0.2s						
PKI	**Pulchoki**	**12.72**	**138**	*eP*	**P**	**05 01 49.2**	**-0.7**
	comp=E,11nm,0.3s						
BVAR	**Borovoye Array**	**16.00**	**348**	Pn	**P**	**05 02 31.1**	**-0.5**
	comp=E,0.3nm,0.3s,baz=166,slow=12,SNR=6.7						
AB31	**Akbulak array**	**16.49**	**321**	⇑P	**P**	**05 02 37.6**	**-0.1**
	comp=E,1.3nm,0.7s,baz=127,slow=13,SNR=19						
SONM	**Songino Array**	**24.52**	**55**	P	**P**	**05 04 06.1**	**+4.3**
	comp=E,0.3nm,0.4s,mb3.1,baz=247,slow=11,SNR=4.1						
FINES	**FINESS Array B**	**38.92**	**324**	P	**P**	**05 06 08.1**	**+0.3**
	comp=E,1.3nm,0.5s,mb4.0,baz=111,slow=9.3,SNR=15						
ARCES	**ARCESS Array B**	**41.78**	**336**	P	**P**	**05 06 30.7**	**-0.4**
	comp=E,2.6nm,1.0s,mb3.9,baz=112,slow=9.7,SNR=4.6						
HFS	**Hagfors**	**44.75**	**321**	P	**P**	**05 06 55.6**	**+0.4**
	comp=E,1.9nm,0.8s,mb3.9,baz=100,slow=9.0,SNR=7.1						
JOW	**Kunigami**	**45.06**	**88**	LR	LR	05 26 22.7	
	comp=E,267nm,19.0s,baz=117,slow=37						
NB2	**NORSAR Subarra**	**45.98**	**322**	P	**P**	**05 07 04.8**	**-0.1**
	comp=E,0.7nm,0.5s,mb3.6,baz=91,slow=7.9						
NOA	**NORSAR Array B**	**45.98**	**322**	P	**P**	**05 07 05.1**	**+0.1**
	comp=E,0.7nm,0.8s,mb3.5,baz=99,slow=7.3,SNR=3.1						

*NEIC **20** 05:10:25.7,38.27S×176.03E,h156km, After WEL.*
WEL 20 05:10:26.2±0.4,38.30S×176.05E,h151km±3km,ML3.9/4, 4C-2D, Error ellipse: s-maj=3.0km s-min=2.5km az=0.0, North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MGZ	**Maungaku**	**0.81**	**209**	⇑PN	P	05 10 50.0	+0.1
MGZ				SN	S	05 11 06.3	-1.8
MGZ	**Maungaku**	**0.81**	**209**	P	P	05 10 50.0	+0.1
URZ	**Urewera**	**0.84**	**88**	⇓PN	P	05 10 49.6	-0.5
URZ				SN	S	05 11 08.0	-0.5
URZ	**Urewera**	**0.84**	**88**	P	P	05 10 49.6	-0.5
KAVZ	**Karewarewa**	**0.86**	**201**	PN	P	05 10 50.1	-0.2
WTVZ	**West Tongariro**	**0.89**	**203**	PN	P	05 10 50.3	-0.1
TWVZ	**Taurewa**	**0.91**	**211**	⇑PN	P	05 10 50.4	-0.2
BKZ	**Black Stump Fm**	**0.94**	**158**	⇑PN	P	05 10 50.8	0.0
BKZ				SN	S	05 11 08.6	-1.0
NGZ	**Ngauruhoe**	**0.94**	**201**	PN	P	05 10 50.7	-0.1
NGZ	**Ngauruhoe**	**0.94**	**201**	P	P	05 10 50.9	+0.1
CNZ	**Chateau**	**0.98**	**203**	PN	P	05 10 50.9	-0.3
CNZ	**Chateau**	**0.98**	**203**	P	P	05 10 51.1	0.0
WPVZ	**Whakapapa**	**0.99**	**203**	PN	P	05 10 51.2	0.0
TUVZ	**Tukino**	**1.02**	**197**	PN	P	05 10 51.4	0.0
TUVZ	**Tukino**	**1.02**	**197**	P	P	05 10 51.5	+0.1
FWVZ	**Far West T-bar**	**1.03**	**202**	PN	P	05 10 51.6	+0.1
FWVZ	**Far West T-bar**	**1.03**	**202**	*eP*	P	05 10 51.6	0.0
WNVZ	**Wahianoa**	**1.09**	**199**	PN	P	05 10 51.9	-0.2
WNVZ				SN	S	05 11 11.2	-0.8
MWZ	**Matawai**	**1.17**	**92**	⇓PN	P	05 10 52.6	-0.2
MWZ				SN	S	05 11 12.9	-0.5
KNZ	**Kokohu**	**1.47**	**120**	PN	P	05 10 56.1	+0.2
KNZ				SN	S	05 11 18.0	-0.7
KNZ	**Kokohu**	**1.47**	**120**	*eP*	P	05 10 56.1	+0.2
KNZ				S	S	05 11 18.2	-0.5
WAZ	**Wanganui**	**1.68**	**209**	PN	P	05 10 57.1	-1.0
WAZ	**Wanganui**	**1.68**	**209**	*eP*	P	05 10 57.3	-0.8
PUZ	**Puketiti**	**1.76**	**83**	PN	P	05 10 58.3	-0.7
PUZ				SN	S	05 11 22.3	-1.9
PUZ	**Puketiti**	**1.76**	**83**	P	P	05 10 58.4	-0.6
PUZ				S	S	05 11 22.0	-2.2
TSZ	**Takapari Road**	**1.76**	**182**	PN	P	05 10 58.1	-1.0
TSZ				SN	S	05 11 21.5	-2.9
TSZ	**Takapari Road**	**1.76**	**182**	P	P	05 10 58.1	-1.0
PWZ	**Pawanui**	**1.84**	**160**	PN	P	05 10 59.4	-0.6
PWZ	**Pawanui**	**1.84**	**160**	P	P	05 10 59.5	-0.5
MRZ	**Mangatainoka R**	**2.39**	**189**	⇑PN	P	05 11 04.2	-2.4
MRZ				SN	S	05 11 33.2	-4.3
KIW	**Kapiti Island**	**2.71**	**199**	PN	P	05 11 07.6	-3.1
KIW	**Kapiti Island**	**2.71**	**199**	P	P	05 11 07.7	-2.9
MTW	**Mount Morrison**	**2.89**	**188**	PN	P	05 11 09.5	-3.4
MTW	**Mount Morrison**	**2.89**	**188**	P	P	05 11 09.5	-3.4
CAW	**Cannon Point**	**2.91**	**195**	PN	P	05 11 09.9	-3.3
CAW				SN	S	05 11 43.2	-5.9
CAW	**Cannon Point**	**2.91**	**195**	P	P	05 11 09.9	-3.3
MRW	**Makara Radio**	**3.11**	**199**	PN	P	05 11 12.1	-3.7
MRW				SN	S	05 11 47.6	-6.0
MSWZ	**Moikau Station**	**3.17**	**191**	PN	P	05 11 12.7	-3.9
MSWZ				SN	S	05 11 48.3	-6.9
BHW	**Baring Head**	**3.24**	**196**	PN	P	05 11 13.3	-4.1
BHW				SN	S	05 11 50.0	-6.6
BHW	**Baring Head**	**3.24**	**196**	P	P	05 11 13.3	-4.1
BHW				S	S	05 11 49.8	-6.8
TUWZ	**Tuamarina**	**3.52**	**207**	PN	P	05 11 16.8	-4.4
TUWZ				SN	S	05 11 56.6	-6.6
NNZ	**Nelson**	**3.57**	**214**	PN	P	05 11 17.2	-4.5
NNZ				SN	S	05 11 58.4	-5.9
NNZ	**Nelson**	**3.57**	**214**	*eP*	P	05 11 17.2	-4.5
QRZ	**Quartz Range**	**3.71**	**226**	SN	S	05 12 01.0	-6.6
THZ	**Tophouse**	**4.22**	**214**	PN	P	05 11 25.0	-5.2
THZ				SN	S	05 12 12.9	-6.6
THZ	**Tophouse**	**4.22**	**214**	*eP*	P	05 11 25.1	-5.2
KHZ	**Kahutara**	**4.54**	**204**	PN	P	05 11 29.4	-5.1
KHZ	**Kahutara**	**4.54**	**204**	*eP*	P	05 11 29.5	-5.0
MQZ	**McQueen's Vall**	**5.98**	**204**	SN	S	05 12 49.1	-12

*NEIC **20** 05:24:05.4±2.5,51.40N×16.20E,h5km, Error ellipse: s-maj=29.1km s-min=9.3km az=36.0*
*WAR **20** 05:24:06,51.40N×16.19E,ML2.6,Mining Induced PRU **20** 05:24:06.2,51.40N×16.23E*
ISC 20 05:24:03.8±1.3,51.41N±0.06×16.13E±0.07,n10,σ0$74/18, Poland

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KSP	**Ksiaz**	**0.58**	**170**	*e*PG	**Pg**	**05 24 16.0**	**+0.6**
KSP				*e*SG	**Sg**	**05 24 24.0**	**+0.9**
UPC	**Upice**	**0.91**	**185**	*e*PG	**Pg**	**05 24 22.3**	**+0.3**
DPC	**Dobruska-Polom**	**1.07**	**174**	*e*PG	**Pg**	**05 24 25.0**	**-0.2**
DPC				*e*SG	**Sg**	**05 24 39.8**	**+0.3**
PVCC	**Panska Ves**	**1.33**	**229**	*e*PG	**Pg**	**05 24 31.0**	**+0.6**
BRG	**Berggiesshubel**	**1.48**	**249**	*e*Pg	**Pg**	**05 24 33.3**	**-0.1**
BRG				*e*Sg	**Sg**	**05 24 53.7**	**+0.5**
PRU	**Pruhonice**	**1.75**	**216**	*e*PG	**Pg**	**05 24 37.6**	**-1.2**
PRU				*e*SG	**Sg**	**05 25 01.6**	**-0.5**
MORC	**Moravsky Berou**	**1.87**	**151**	*e*Pn	**Pn**	**05 24 37.5**	**+0.2**
MORC				*e*Sn	**Sn**	**05 25 01.6**	**-0.3**
CLL	**Collm**	**1.97**	**268**	*i* PG	**Pg**	**05 24 43.0**	**-0.1**
CLL				*i*		05 24 57.6	
CLL				*i* SG	**Sg**	**05 25 10.1**	**+0.8**
CLL	**Collm**	**1.97**	**268**	*i* Pg	**Pg**	**05 24 43.0**	**-0.1**
CLL				*i* Sg	**Sg**	**05 25 10.1**	**+0.8**
KHC	**Kasperske Hory**	**2.81**	**217**	*e*PG	**Pg**	**05 24 57.2**	**-2.8**
KHC				*e*SG	**Sg**	**05 25 37.2**	**-0.3**

*IDC **20** 05:28:07.1±1.4,11.36N×126.70E,mb3.6/4,mb1 3.8/4, mb1mx3.6/18, Error ellipse: s-maj=88.3km s-min=26.3km az=73.0*
*MAN **20** 05:28:14.3,11.64N×126.24E,h27km,mb3.8,ML2.5, MS2.0*
ISC 20 05:28:08.6±3.8,11.41N±0.08×126.56E±0.07,h23km±29km, n9,σ0$92/12,mb3.6/4,4C,Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BESP	**Borongan**	**1.12**	**280**	⇑*e*P	**Pn**	**05 28 29.4**	**+0.4**
PLP	**Palo**	**1.57**	**261**	*e*P	**Pn**	**05 28 35.8**	**+0.3**
PLP				*e*S	**Sn**	**05 28 53.5**	**-1.7**
MSLP	**Maasin**	**2.10**	**233**	⇑*e*P	**Pn**	**05 28 47.9**	**+4.8**
MSLP				*e*S	**Sn**	**05 29 10.2**	**+1.5**
CNP	**Catarman**	**2.15**	**301**	⇑*e*P	**Pn**	**05 28 44.0**	**+0.2**
CNP				*e*S	**Sn**	**05 29 09.9**	**-0.2**
PVCP	**Virac**	**3.20**	**313**	⇑*e*P	**Pn**	**05 28 58.0**	**-0.7**
WRA	**Warramunga Arr**	**32.08**	**166**	P	**P**	**05 34 35.2**	**-1.2**
	0.7nm,0.8s,mb3.5,baz=343,slow=9.6,SNR=3.2						
ASAR	**Alice Springs**	**35.59**	**168**	P	**P**	**05 35 06.2**	**-0.5**
	0.4nm,0.3s,mb3.8,baz=352,slow=7.4,SNR=5.1						
MKAR	**Makanchi Array**	**51.30**	**322**	P	**P**	**05 37 14.4**	**+1.4**
	0.6nm,0.7s,mb3.7,baz=117,slow=8.1,SNR=4.2						
YKA	**Yellowknife Ar**	**92.61**	**24**	P	**P**	**05 41 19.6**	**+0.3**
	0.2nm,0.9s,mb3.5,baz=298,slow=5.0,SNR=4.0						

*TAP **20** 05:32:28.3,22.66N×121.41E,h10km±1km,ML3.7*
*JMA **20** 05:32:30.4±0.3,22.67N×121.50E,h81km,M3.1*
ISC 20 05:32:29.9±2.1,22.6N±0.2×121.7E±0.2,h10km,n6, σ0$40/12,Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
YOJ	**Yonaguni jima**	**2.18**	**34**	P	**Pn**	**05 33 06.4**	**-0.4**
YOJ				S	**Sn**	**05 33 34.0**	**-0.1**
HATJ	**Hateruma jima**	**2.40**	**54**	P	**Pn**	**05 33 10.1**	**+0.2**
HATJ				S	**Sn**	**05 33 40.1**	**+0.4**
IRIF	**Iriomote-Funau**	**2.52**	**48**	P	**Pn**	**05 33 11.9**	**+0.3**
IRIF				S	**Sn**	**05 33 43.6**	**+0.9**
JKRS	**Kuro-shima**	**2.66**	**53**	P	**Pn**	**05 33 13.9**	**+0.3**
JKRS				S	**Sn**	**05 33 45.7**	**-0.5**
JJJ	**Ishigaki jima**	**2.83**	**52**	P	**Pn**	**05 33 15.8**	**-0.3**
JJJ				S	**Sn**	**05 33 50.5**	**-0.1**
JTJ	**Tarama**	**3.41**	**54**	P	**Pn**	**05 33 24.2**	**0.0**
JTJ				S	**Sn**	**05 34 04.6**	**-0.6**

*IDC **20** 05:38:31.4±0.6,15.14S×173.66W,mb4.1/12,mb1 4.3/12, mb1mx4.3/16,MS3.6/11,Ms1 3.6/11,ms1mx3.4/20, Error ellipse: s-maj=33.1km s-min=15.5km az=130.0*
*NEIC **20** 05:38:32.8±0.3,15.10S×173.72W,h10km,mb4.5/10, Error ellipse: s-maj=15.5km s-min=7.8km az=131.0*
*SYO **20** 05:38:32.8,15.10S×173.72W,h10km,MB4.5*
ISC 20 05:38:31.2±0.4,15.1S±0.1×173.8W±0.1,h10km,n33, σ0$71/27,mb4.2/20,MS3.6/11,1D,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**24.44**	**198**	P	**P**	**05 43 50.6**	**-0.7**
	5.5nm,0.4s,mb4.4,baz=4.0,slow=3.0,SNR=10.0						
URZ				LR	LR	05 52 03.3	
	comp=Z,166nm,20.5s,MS3.5,baz=238,slow=33						
SNZO	**South Karori**	**27.96**	**199**	*e*P	**P**	**05 44 20.2**	**-3.8**
	11nm,0.7s,mb4.6						
STKA	**Stephens Creek**	**43.88**	**240**	*e*P	**P**	**05 46 40.9**	**+1.1**
	2.5nm,0.8s,mb4.0						
STKA	**Stephens Creek**	**43.88**	**240**	P	**P**	**05 46 40.7**	**+0.9**
	2.9nm,0.7s,mb4.1,baz=81,slow=12,SNR=6.1						
STKA				LR	LR	06 03 00.7	
	comp=Z,69nm,19.1s,MS3.6,baz=26,slow=33						
WB2	**Warramunga Arr**	**49.56**	**257**	*e*P	**P**	**05 47 24.3**	**-0.4**
WRAB	**Tennant Creek**	**49.56**	**257**	*e*P	**P**	**05 47 25.2**	**+0.4**
	1.5nm,0.4s,mb4.4						
WRA	**Warramunga Arr**	**49.57**	**257**	P	**P**	**05 47 25.0**	**+0.2**
	0.7nm,0.3s,mb4.2,baz=97,slow=7.9,SNR=17						
AS12	**Alice Springs**	**49.87**	**252**	*e*P	**P**	**05 47 26.8**	**-0.3**
	7.2nm,0.7s,mb4.8						
ASAR	**Alice Springs**	**49.87**	**252**	P	**P**	**05 47 26.9**	**-0.2**
	7.5nm,0.5s,mb4.9,baz=87,slow=8.1,SNR=75						
ASAR				LR	LR	06 07 04.6	
	comp=Z,53nm,19.7s,MS3.5,baz=28,slow=34						
SBA	**Scott Base**	**63.52**	**185**	*e*P	**P**	**05 49 04.7**	**+1.1**
	4.8nm,0.8s,mb4.6						
VNDA	**Vanda**	**63.63**	**186**	P	**P**	**05 49 04.3**	**-0.1**
	slow=7.4						
NWAO	**Narrogin (SRO)**	**64.46**	**240**	*e*P	**P**	**05 49 09.3**	**-1.2**
YBH	**Yreka Blue Hor**	**73.57**	**37**	P	**P**	**05 50 06.8**	**+0.2**
	0.5nm,0.5s,mb3.7,baz=270,slow=5.1,SNR=6.3						
NVAR	**Mina Array Bea**	**74.34**	**42**	P	**P**	**05 50 11.3**	**+0.2**
	1.9nm,0.8s,mb4.1,baz=220,slow=7.7,SNR=11						
NVAR				LR	LR	06 16 45.6	
	comp=Z,45nm,18.2s,MS3.8,baz=90,slow=31						
NVAR	**Mina Array Bea**	**74.34**	**42**	P	**P**	**05 50 11.3**	**+0.2**
NVAR				LR	LR	06 16 45.6	
TPH	**Tonopah**	**74.85**	**43**	*e*P	**P**	**05 50 14.0**	**0.0**
	8.2nm,1.1s,mb4.6						
QSPA	**South Pole Qui**	**74.94**	**180**	*e*P	**P**	**05 50 13.9**	**+0.1**
	6.8nm,0.8s,mb4.6						
HWUT	**Hardware Ranch**	**80.41**	**42**	P	**P**	**05 50 44.1**	**-0.6**
	0.6nm,0.6s,mb3.7						
NEW	**Newport**	**80.66**	**34**	LR	LR	06 21 47.3	
	comp=Z,43nm,19.1s,MS3.8,baz=280,slow=32						
TXAR	**Lajitas Array**	**80.74**	**56**	P	**P**	**05 50 46.1**	**-0.5**
	0.2nm,0.6s,mb3.2,baz=211,slow=7.3,SNR=4.2						
TXAR				LR	LR	06 21 44.4	
	comp=Z,22nm,19.4s,MS3.5,baz=255,slow=32						
MCK	**McKinley**	**80.90**	**11**	*e*P	**P**	**05 50 46.7**	**-0.1**
	1.9nm,0.9s,mb4.0						
DLBC	**Dease Lake**	**81.55**	**22**	LR	LR	06 21 03.6	
	comp=Z,25nm,20.4s,MS3.5,baz=45,slow=31						
COLA	**College**	**82.14**	**11**	*e*P	**P**	**05 50 53.0**	**-0.2**
	3.9nm,0.8s,mb4.4						
ILAR	**Eielson Array**	**82.22**	**11**	P	**P**	**05 50 52.9**	**-0.8**
	0.6nm,0.7s,mb3.6,baz=220,slow=6.2,SNR=7.9						
ILAR				LR	LR	06 18 24.3	
	comp=Z,28nm,21.8s,MS3.6,baz=183,slow=29						
PDAR	**Pinedale Array**	**82.28**	**42**	P	**P**	**05 50 54.5**	**+0.1**
	0.8nm,1.1s,mb3.6,baz=225,slow=4.2,SNR=4.4						
PDAR				LR	LR	06 18 11.0	
	comp=Z,26nm,20.8s,MS3.6,baz=69,slow=29						
MAW	**Mawson**	**87.96**	**199**	P	**P**	**05 51 23.4**	**+1.2**
	2.9nm,0.5s,mb4.8,baz=130,slow=4.6,SNR=7.3						
MAW	**Mawson**	**87.96**	**199**	*e*P	**P**	**05 51 21.6**	**-0.6**
	12nm,1.0s,mb5.1						
INK	**Inuvik**	**88.06**	**14**	P	**P**	**05 51 24.6**	**+1.8**
	0.4nm,0.9s,mb3.6,baz=169,slow=5.2,SNR=3.1						
INK				LR	LR	06 22 30.9	
	comp=Z,35nm,21.2s,MS3.8,baz=185,slow=30						
YKA	**Yellowknife Ar**	**89.96**	**23**	P	**P**	**05 51 31.7**	**-0.1**
	0.4nm,0.8s,mb3.8,baz=238,slow=4.4,SNR=8.8						
YKA				LR	LR	06 24 35.9	
	comp=Z,34nm,18.7s,MS3.8,baz=265,slow=31						
SYO	**Syowa Base**	**92.82**	**191**	⇓pP	pP	05 51 49.2	+1.1
MLR	**Muntele Rosu**	**145.45**	**335**	PKPbc	PKPbc	05 58 12.2	+1.9
	4.9nm,1.0s,baz=153,slow=4.5,SNR=5.3						
BRTR	**Keskin Array B**	**145.71**	**321**	PKPbc	PKPbc	05 58 13.2	+2.2
	6.3nm,1.1s,baz=96,slow=2.6,SNR=13						
GERES	**GERESS Array B**	**145.80**	**351**	PKPbc	PKPbc	05 58 12.0	+1.0
	0.4nm,0.5s,baz=34,slow=4.8,SNR=4.7						

*IDC **20** 05:44:05.1±1.6,6.77N×71.86W,h77km±13km,mb2.8/1, mb1 3.2/4,mb1mx3.0/22,MS2.9/1,Ms1 3.0/1,ms1mx2.3/5, Error ellipse: s-maj=49.7km s-min=7.9km az=131.0*
ISC 20 05:44:03.7±1.2,6.7N±0.2×71.8W±0.2,h95km±17km,n6, σ1$56/6,mb2.9/1,Northern Colombia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SDV	**Santo Domingo**	**2.45**	**28**	P	**P**	**05 44 41.7**	**-1.1**
	3.9nm,0.3s,baz=198,slow=5.5,SNR=4.1						
SDV				S	**S**	**05 45 12.6**	**+0.7**
	7.5nm,0.3s,baz=265,slow=21,SNR=7.8						
ROSC	**El Rosal**	**3.12**	**234**	P	**P**	**05 44 50.7**	**-1.3**
	2.0nm,0.3s,baz=33,slow=22,SNR=5.5						
ROSC				S	**S**	**05 45 29.6**	**+1.1**
	1.8nm,0.3s,baz=172,slow=23,SNR=2.5						
PCRV	**Puerto La Cruz**	**7.87**	**64**	P	**P**	**05 45 57.7**	**+0.5**
	0.6nm,0.3s,baz=200,slow=3.9,SNR=7.8						
LPAZ	**La Paz**	**23.13**	**171**	LR	LR	05 57 41.2	
	comp=Z,29nm,21.7s,baz=263,slow=35						
YKA	**Yellowknife Ar**	**63.83**	**339**	P	**P**	**05 54 28.1**	**+0.1**
	0.1nm,0.5s,mb2.9,baz=128,slow=6.9,SNR=4.9						
WRA	**Warramunga Arr**	**151.43**	**240**	PKPbc	PKPdf	06 03 51.3	+10
	0.7nm,1.0s,baz=105,slow=2.7,SNR=5.5						

*THE **20** 05:59:30.1,37.58N×20.49E,h13km,ML3.7*
*NEIC **20** 05:59:32.0,37.87N×20.58E,h14km,MD3.7(ATH), MD3.5(PDG),After ATH.*

*ATH **20** 05:59:32.0,37.87N×20.58E,h14km±6km,MD3.7/10*
*IDC **20** 05:59:38.1±3.5,37.83N×20.44E,h98km±34km,mb3.3/6, mb1 3.4/8,mb1mx3.3/24,Error ellipse: s-maj=49.7km s-min=27.1km az=42.0*
ISC 20 05:59:30.9±0.8,38.04N±0.05×20.23E±0.06,h14km,n39, σ1$40/54,mb3.6/6,1D,Greece

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
VLS	**Valsamata**	**0.32**	**64**	⇓*i*PG	**Pg**	**05 59 37.5**	**-0.2**
EVR	**Evrytania**	**1.52**	**54**	*e*PB	**Pb**	**06 00 00.0**	**+1.7**
ITM	**Ithomi**	**1.60**	**122**	*e*PB	**Pb**	**05 59 56.5**	**-3.2**
JAN	**Janina**	**1.69**	**17**	*e*PG	**Pg**	**06 00 06.5**	**+1.8**
MEV	**Metsovon**	**1.91**	**24**	*e*Pn	**Pn**	**06 00 07.5**	**+4.1**
MEV				*e*Sn	**Sn**	**06 00 34.3**	**+6.9**
AGG	**Agios Georgios**	**1.92**	**59**	*e*Pn	**Pn**	**06 00 04.8**	**+1.2**
AGG				*e*Sn	**Sn**	**06 00 28.5**	**+0.9**
MKIT	**Kithairon Oros**	**2.40**	**86**	*e*PN	**Pn**	**06 00 09.0**	**-1.4**
NSAL	**Nisos Salamina**	**2.56**	**92**	*e*PB	**Pb**	**06 00 10.5**	**-5.7**
NAIG	**Nisos Aigina**	**2.59**	**95**	*e*PN	**Pn**	**06 00 12.5**	**-0.7**
NEO	**Neokhori**	**2.66**	**61**	*e*PB	**Pb**	**06 00 13.9**	**-4.0**
LIT	**Litokhoron**	**2.71**	**40**	*e*Pn	**Pn**	**06 00 16.4**	**+1.5**
KYTH	**Kithira**	**2.85**	**127**	*e*PN	**Pn**	**06 00 15.0**	**-1.8**
FNA	**Florina**	**2.88**	**18**	*e*Pn	**Pn**	**06 00 20.5**	**+3.2**
FNA				*e*Sn	**Sn**	**06 00 58.8**	**+6.7**
AOS	**Alonnisos**	**3.08**	**67**	*e*Pn	**Pn**	**06 00 18.6**	**-1.4**
PAIG	**Paliouri**	**3.28**	**54**	*e*Pn	**Pn**	**06 00 22.1**	**-0.9**
PLG	**Polygyros**	**3.42**	**46**	*e*PN	**Pn**	**06 00 25.0**	**+0.1**
SOH	**Sokhos**	**3.69**	**40**	*e*Pn	**Pn**	**06 00 30.2**	**+1.5**
OUR	**Ouranopolis**	**3.71**	**51**	*e*Pn	**Pn**	**06 00 28.8**	**-0.3**
ULC	**Ulcinj**	**3.99**	**349**	*e*Pn	**Pn**	**06 00 35.0**	**+1.9**
ULC				*e*Sn	**Sn**	**06 01 19.8**	**-0.3**
SRS	**Serrai**	**4.03**	**39**	*e*Pn	**Pn**	**06 00 34.0**	**+0.4**
SKO	**Skopje**	**4.04**	**13**	*e*Pn	**Pn**	**06 00 41.0**	**+7.3**
BUM	**Brajici-Budva**	**4.38**	**347**	*e*Pn	**Pn**	**06 00 40.3**	**+1.8**
BUM				*e*Sn	**Sn**	**06 01 29.0**	**-0.9**
TTG	**Podgorica**	**4.45**	**351**	*e*Pn	**Pn**	**06 00 41.2**	**+1.7**
TTG				*e*Sn	**Sn**	**06 01 30.5**	**-1.2**
PVY	**Plav**	**4.56**	**358**	*e*Pn	**Pn**	**06 00 42.4**	**+1.3**
PVY				*e*Sn	**Sn**	**06 01 32.9**	**-1.5**
HCY	**Herceg Novi**	**4.60**	**344**	*e*Pn	**Pn**	**06 00 43.0**	**+1.3**
HCY				*e*Sn	**Sn**	**06 01 34.7**	**-0.9**
IDI	**Anoyia**	**4.64**	**125**	P	**Pn**	**06 00 42.2**	**-0.2**
	1.2nm,0.3s,baz=314,slow=12,SNR=4.6						
IDI				S	**Sn**	**06 01 28.7**	**-8.0**
	6.3nm,0.3s,baz=325,slow=19,SNR=9.6						
IVA	**Berane**	**4.83**	**357**	*e*Pn	**Pn**	**06 00 46.0**	**+0.9**
IVA				*e*Sn	**Sn**	**06 01 39.7**	**-1.8**
NKY	**Niksic**	**4.86**	**349**	*e*Pn	**Pn**	**06 00 46.7**	**+1.3**
NKY				*e*Sn	**Sn**	**06 01 40.6**	**-1.5**
BRY	**Bratogost**	**5.02**	**346**	*e*Pn	**Pn**	**06 00 48.9**	**+1.2**
BRY				*e*Sn	**Sn**	**06 01 45.1**	**-1.2**
STON	**Ston**	**5.20**	**339**	*i* Pn	**Pn**	**06 00 49.7**	**-0.5**
STON				*i* Sn	**Sn**	**06 01 49.1**	**-1.6**
UPM	**Unac-Piva**	**5.26**	**349**	*e*Pn	**Pn**	**06 00 52.2**	**+1.2**
UPM				*e*Sn	**Sn**	**06 01 50.4**	**-1.7**
PLE	**Pljevlja**	**5.32**	**353**	*e*Pn	**Pn**	**06 00 52.8**	**+0.9**
PLE				*e*Sn	**Sn**	**06 01 51.8**	**-2.0**
MLR	**Muntele Rosu**	**8.58**	**28**	P	**P**	**06 01 41.8**	**+4.1**
	0.3nm,0.3s,baz=118,slow=6.9,SNR=4.3						
HFS	**Hagfors**	**22.50**	**351**	P	**P**	**06 04 30.2**	**-0.9**
	1.2nm,0.4s,mb3.7,baz=153,slow=9.9,SNR=9.5						
EKA	**Eskdalemuir Ar**	**

CHOJ				S	**Sb**	**06 34 07.4**	**+0.4**	
JHO	**Hitachi**	**1.08 304**		P	**Pn**	**06 34 01.5**	**-0.9**	
JYT	**Yasato**	**1.22 281**		P	**Pn**	**06 34 03.6**	**-0.9**	
JYT				S	**Sn**	**06 34 20.7**	**+0.5**	
BSO1	**Boso 1**	**1.47 203**		P	**Pn**	**06 34 08.8**	**+0.7**	
JFK	**Kawauchi**	**1.50 335**		P	**Pn**	**06 34 08.5**	**0.0**	
JFK				*e*S	**Sn**	**06 34 26.3**	**-0.9**	
BSO3	**Boso 3**	**1.54 219**		P	**Pn**	**06 34 10.1**	**+1.0**	
JAG	**Ashikaga**	**1.85 284**	⇓	P	**Pn**	**06 34 12.6**	**-0.8**	
JFT	**Otama**	**1.85 325**	⇑	P	**Pn**	**06 34 13.9**	**+0.4**	
JFT				S	**Sn**	**06 34 37.1**	**+1.0**	
JMM	**Marumori**	**1.98 339**		P	**Pn**	**06 34 15.5**	**+0.1**	
JMM				S	**Sn**	**06 34 40.0**	**+0.5**	
JKT	**Katashina**	**2.10 292**		P	**Pn**	**06 34 17.1**	**0.0**	
JIM2	**Oshima 3**	**2.25 236**		P	**Pn**	**06 34 19.1**	**-0.1**	
MAT	**Matsushiro**	**2.85 282**		P	**Pn**	**06 34 26.3**	**-1.6**	
MAT				S	**Sn**	**06 35 02.1**	**+0.5**	
ILAR	**Eielson Array**	**50.24 32**		P	**P**	**06 42 38.2**	**-0.1**	
	0.2nm,0.5s,mb3.4,baz=266,slow=6.0,SNR=5.9							
WRA	**Warramunga Arr**	**56.08 188**		P	**P**	**06 43 20.5**	**-1.7**	
	0.3nm,0.4s,mb3.7,baz=4.2,slow=7.4,SNR=5.2							
PDAR	**Pinedale Array**	**78.23 45**		P	**P**	**06 45 43.0**	**+1.4**	
	0.5nm,0.8s,mb3.5,baz=256,slow=3.7,SNR=4.2							

IDC 20 06:55:39.9±2.4,55.64S×147.95E,mb3.7/2,mb1 4.0/2, mb1mx3.8/7,MS3.7/1,Ms1 3.6/1,ms1mx3.0/12,Error ellipse: s-maj=147.0km s-min=25.3km az=77.0,West of Macquarie Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
VNDA	**Vanda**	**22.52**	**172**	P	P	07 00 40.6	-1.4
ASAR	**Alice Springs**	**33.58**	**336**	P	P	07 02 22.4	-1.3
	1.2nm,1.1s,baz=163,slow=9.4,SNR=3.8						
WRA	**Warramunga Arr**	**37.09**	**338**	P	P	07 02 50.6	-2.9
	1.1nm,0.9s,baz=165,slow=7.6,SNR=5.8						
MAW	**Mawson**	**38.79**	**218**	LR	LR	07 18 38.9	
	comp=Z,120nm,21.6s,baz=69,slow=36						
GERES	**GERESS Array B**	**151.61**	**276**	PKPbc	PKPdf	07 15 35.5	+5.1
	0.4nm,0.6s,baz=124,slow=3.5,SNR=3.1						
GERES				PKPab	PKPab	07 15 42.9	-2.8
	0.9nm,0.9s,baz=180,slow=4.0,SNR=4.7						

*HEL **20** 07:58:17.6±0.1,59.30N×27.12E,ML1.6,ML2.1(NAO), Explosion*
*BER **20** 07:58:17.0±3.4,59.23N×27.15E,ML2.1(NAO)*
*NAO **20** 07:58:18.7±3.9,59.33N×26.83E,ML2.1*
ISC 20 07:58:17.2±2.1,59.36N±0.10×27.1E±0.1,n13,σ0^{2}82/16, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
VJF	**Virojoki**	**1.20**	**11**	*e*P	**Pb**	**07 58 40.1**	**-0.4**
VJF				*e*S	**Sb**	**07 58 55.8**	**-0.6**
PVF	**Pernaja**	**1.34**	**333**	*e*P	**Pb**	**07 58 42.7**	**-0.1**
PVF				*e*S	**Sb**	**07 59 00.6**	**+0.2**
MEF	**Metsahovi**	**1.61**	**303**	*e*P	**Pn**	**07 58 46.9**	**-0.1**
MEF				*e*S	**Sb**	**07 59 08.2**	**-0.2**
FIA0	**FINESS Array S**	**2.15**	**347**	*e*P	**Pn**	**07 58 55.5**	**+0.8**
FIA0				*e*S	**Sn**	**07 59 23.1**	**+0.7**
FIA0	**FINESS Array S**	**2.15**	**347**	Pn	**Pn**	**07 58 55.8**	**+1.1**
	baz=160,slow=18						
FIA0				Pg	**Pg**	**07 58 57.1**	**-2.9**
	baz=165,slow=18						
FIA0				Sn	**Sn**	**07 59 24.1**	**+1.7**
	baz=166,slow=37						
FIA0				Lg		07 59 26.0	
	baz=169,slow=37						
KAF	**Kangasniemi**	**2.79**	**352**	*e*P	**Pn**	**07 59 04.3**	**+0.5**
KAF				*e*S	**Sn**	**07 59 38.4**	**-0.3**
KAF				MSG		07 59 46.8	
	comp=Z,1.3nm,0.2s						
SUF	**Sumiainen**	**3.40**	**353**	MSG		08 00 05.0	
	comp=Z,1.1nm,0.3s						
JOF	**Joensuu**	**4.11**	**28**	*e*SB	**Sb**	**08 00 21.2**	**+0.3**
HFS	**Hagfors**	**6.82**	**282**	Lg		08 01 48.8	
	baz=95,slow=37						
HFS	**Hagfors**	**6.82**	**282**	*e*SG		08 01 48.8	
HFS	**Hagfors**	**6.82**	**282**	Lg		08 01 48.8	
	baz=95,slow=37						
ARA0	**ARCESS Array S**	**10.24**	**357**	Pn	**P**	**08 00 43.5**	**-4.7**
	baz=176,slow=14						
ARA0	**ARCESS Array S**	**10.24**	**357**	*e*P	**P**	**08 00 43.5**	**-4.7**

*IDC **20** 07:58:22.5±0.5,52.40S×13.87E,mb4.8/15,mb1 4.9/15, mb1mx4.8/17,MS4.9/18,Ms1 4.8/18,ms1mx4.8/22,Error ellipse: s-maj=19.4km s-min=17.0km az=55.0*
*NEIC **20** 07:58:23.8±0.3,52.27S×13.99E,h10km,mb5.2/13, MS5.2/88,MW5.4, Error ellipse: s-maj=11.2km s-min=8.5km az=88.0,Moment Tensor Solution. s3 Moment tensor: Scale 10^{17}Nm; M_{rr}=0.58; $M_{\theta\theta}$=0.77; $M_{\phi\phi}$=0.19; $M_{r\theta}$=0.54; $M_{\theta\phi}$=-1.23; $M_{r\phi}$=0.53; Best double couple: M_0=1.6×10^{17} NP1:ϕ_s163°,δ62°,λ=-25°. NP2:ϕ_s266°, δ68°,λ=-149°. Principal axes: T 1.62, Plg4°, Azm33°; N -.03, Plg53°, Azm298°; P -1.58, Plg37°, Azm126°;*
*HRVD **20** 07:58:23.8±0.2,52.28S×14.10E,h12km,MW5.4/63, Centroid moment Tensor Solution. LP body waves: s53,c83;Mantle waves: s63,c120; Half duration: 1s2 Moment tensor: Scale 10^{17}Nm; M_{rr}=1.18±.03; $M_{\theta\theta}$=1.50±.03; $M_{\phi\phi}$=-0.32±.03; $M_{r\theta}$=0.48±.07; $M_{\theta\phi}$=-0.27±.03; $M_{r\phi}$=0.16±.08; Best double couple: M_0=1.46×10^{17} NP1: ϕ_s112°,δ37°,λ=-68°. NP2:ϕ_s266°,δ56°,λ=-106°. Principal axes: T 1.61, Plg9°, Azm7°; N -.31, Plg13°, Azm275°; P -1.31, Plg74°, Azm132°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*BJI **20** 07:58:23.7,52.30S×14.00E,h10km,mB5.1,Ms5.2, Msz5.0*
*SYO **20** 07:58:23.7,52.27S×13.99E,h10km,MB5.2,MS5.2*
*MOS **20** 07:58:26.0±0.9,52.36S×13.73E,h33km,mb5.3/1,Error ellipse: s-maj=60.4km s-min=26.1km az=118.3*

ISC 20 07:58:22.6±0.4,52.30S±0.06×13.9E±0.1,h10km,n193, σ0^{2}98/48,mb4.9/24,MS5.1/104,7C-6D,Southwest of Africa

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SUR	**Sutherland**	**20.53**	**17**	P	**P**	**08 03 01.9**	**-1.7**
	63nm,0.8s,baz=190,slow=9.1,SNR=25						
SUR				LR	LR	08 09 06.2	
	comp=Z,4μm,20.7s,MS4.8,baz=165,slow=31						
SUR	**Sutherland**	**20.53**	**17**	*e*P	**P**	**08 03 01.2**	**-2.4**
	133nm,0.7s						
SUR				LR	LR		
	comp=Z,4μm,20.0s,MS4.8						
SYO	**Syowa Base**	**20.66**	**154**	⇓P	**P**	**08 03 03.2**	**-1.5**
SYO	**Syowa Base**	**20.66**	**154**	⇓pP		08 03 07.1	
SYO	**Syowa Base**	**20.66**	**154**	⇓pP		08 03 11.1	
SYO	**Syowa Base**	**20.66**	**154**	⇓PnPn		08 03 17.2	
SNAA	**Sanae**	**20.81**	**195**	*e*P	**P**	**08 03 04.8**	**-1.5**
VNA1	**Neumayer--Stat**	**20.99**	**201**	*e*	**P**	**08 03 12.1**	**+4.1**
VNA1	**Neumayer--Stat**	**20.99**	**201**	*e*S	**S**	**08 07 05.0**	**+8.1**
VNA1	**Neumayer--Stat**	**20.99**	**201**	⇑*i*P	**P**	**08 03 08.6**	**+0.6**
VNA1				*e*		08 03 12.1	
VNA1				*e*S	**S**	**08 07 05.0**	**+8.1**
VNA2	**Neumayer--Watz**	**21.02**	**199**	*e*	**P**	**08 03 12.1**	**+3.8**
VNA2	**Neumayer--Watz**	**21.02**	**199**	*e*S	**S**	**08 07 05.5**	**+8.0**
VNA2	**Neumayer--Watz**	**21.02**	**199**	⇑*i*P	**P**	**08 03 08.8**	**+0.5**
VNA2				*e*		08 03 12.1	
VNA2				*e*S	**S**	**08 07 05.5**	**+8.0**
VNA3	**Neumayer Olymp**	**21.74**	**200**	*e*	**P**	**08 03 19.4**	**+3.8**
VNA3	**Neumayer Olymp**	**21.74**	**200**	*e*S	**S**	**08 07 12.9**	**+1.8**
VNA3	**Neumayer Olymp**	**21.74**	**200**	⇑*i*P	**P**	**08 03 16.2**	**+0.6**
VNA3				*e*		08 03 19.4	
VNA3				*e*S	**S**	**08 07 12.9**	**+1.8**
MAW	**Mawson**	**27.93**	**142**	P	**P**	**08 04 14.5**	**+0.1**
	comp=Z,9.8nm,1.0s,mb4.4,baz=278,slow=12,SNR=8.0						
MAW				LR	LR	08 13 20.8	
	comp=Z,3μm,19.6s,MS5.0,baz=290,slow=32						
MAW	**Mawson**	**27.93**	**142**	*e*P	**P**	**08 04 13.6**	**-0.7**
	comp=Z,20nm,1.1s,mb4.7						
MAW				LR	LR		
	comp=Z,6μm,22.0s,MS5.2						
TSUM	**Tsumeb**	**33.16**	**6**	P	**P**	**08 05 01.2**	**0.0**
	comp=Z,12nm,0.9s,mb4.8,baz=168,slow=10,SNR=11						
TSUM				LR	LR	08 15 44.6	
	comp=Z,4μm,21.6s,MS5.1,baz=120,slow=31						
QSPA	**South Pole Qui**	**37.93**	**180**	*e*P	**P**	**08 05 41.3**	**+0.1**
	comp=Z,40nm,0.9s,mb5.2						
QSPA				LR	LR		
	comp=Z,2μm,21.3s,MS5.0						
MIR	**Mirnyy**	**39.67**	**142**	⇓*e*P	**P**	**08 05 56.5**	**+0.7**
MIR				*e*		08 06 12.0	
MIR				pmax	pmax		
	comp=Z,40nm,1.4s,mb5.0						
MIR				MLR	MLR		
	comp=Z,2μm,19.0s,MS4.8						
PMSA	**Palmer Station**	**39.83**	**221**	P	**P**	**08 05 57.2**	**0.0**
EFI	**East Falkland**	**42.62**	**241**	*e*P	**P**	**08 06 20.4**	**+0.3**
	comp=Z,46nm,1.1s,mb5.1						
EFI				LR	LR		
	comp=Z,440nm,20.0s,MS4.3						
USHA	**Ushuaia**	**46.29**	**232**	P	**P**	**08 06 49.2**	**-0.3**
	comp=Z,9.5nm,0.9s,mb4.7,baz=97,slow=6.3,SNR=3.6						
SBA	**Scott Base**	**49.03**	**173**	*e*P	**P**	**08 07 10.4**	**-0.3**
	comp=Z,18nm,1.1s,mb5.0						
SBA				*e*PcP	PcP	08 08 35.1	+0.1
SBA				*e*PP	PP	08 09 00.8	-3.8
SBA				LR	LR		
	comp=Z,2μm,21.0s,MS5.1						
TRQA	**Tornquist**	**52.94**	**254**	*e*P	**P**	**08 07 39.5**	**-1.5**
	comp=Z,3.7nm,1.3s,mb4.2						
KMBO	**Kilima Mbogo**	**54.61**	**29**	P	**P**	**08 07 55.6**	**+2.1**
	comp=Z,2.5nm,0.9s,mb4.2,baz=194,slow=12,SNR=4.1						
KMBO				LR	LR		
	comp=Z,1μm,18.8s,MS5.0,baz=100,slow=34						
KMBO	**Kilima Mbogo**	**54.61**	**29**	*e*P	**P**	**08 07 55.2**	**+1.7**
	comp=Z,27nm,1.8s,mb5.0						
KMBO				LR	LR		
	comp=Z,745nm,19.0s,MS4.8						
CPUP	**Villa Florida**	**58.31**	**267**	P	**P**	**08 08 18.2**	**-1.6**
	comp=Z,12nm,0.8s,mb5.0,baz=146,slow=5.7,SNR=17						
CPUP				LR	LR		
	comp=Z,618nm,21.2s,MS4.7,baz=169,slow=31						
BDFB	**Brasilia**	**60.67**	**283**	P	**P**	**08 08 36.0**	**-0.2**
	comp=Z,12nm,1.0s,mb5.0,baz=136,slow=5.0,SNR=12						
BDFB				LR	LR		
	comp=Z,610nm,20.1s,MS4.7,baz=236,slow=31						
DBIC	**Dimbokro**	**60.89**	**339**	P	**P**	**08 08 37.6**	**-0.1**
	comp=Z,14nm,1.0s,mb5.1,baz=144,slow=8.6,SNR=4.9						
DBIC				LR	LR		
	comp=Z,642nm,18.1s,MS4.8,baz=144,slow=33						
LVC	**Limon Verde**	**68.13**	**261**	LR	LR	08 35 29.5	
	comp=Z,293nm,21.5s,MS4.5,baz=154,slow=33						
LVC	**Limon Verde**	**68.13**	**261**	*e*P	**P**	**08 09 24.4**	**-0.3**
	comp=Z,33nm,1.1s,mb5.3						
LVC				LR	LR		
	comp=Z,377nm,20.0s,MS4.6						
NWAO	**Narrogin (SRO)**	**72.06**	**121**	PFAKE		08 10 00.0	+11
NWAO				LR	LR		
	comp=Z,560nm,22.0s,MS4.8						
MUN	**Mundaring**	**72.25**	**119**	⇓*i*P	**P**	**08 09 49.5**	**-0.1**
	comp=Z,24nm,0.8s,mb5.2						
LPAZ	**La Paz**	**72.45**	**266**	P	**P**	**08 09 51.5**	**+0.5**
	comp=Z,22nm,1.0s,mb5.0,baz=137,slow=4.3,SNR=34						
LPAZ				LR	LR	08 36 59.4	
	comp=Z,453nm,21.9s,MS4.7,baz=293,slow=32						
KLBR	**Kellerberrin**	**73.37**	**120**	⇑*i*P	**P**	**08 09 55.3**	**-0.9**
	comp=Z,31nm,1.0s,mb5.2						
ARE	**Arequipa**	**74.37**	**263**	*e*P	**P**	**08 10 03.0**	**+0.8**
SACV	**Santiago Islan**	**74.45**	**322**	*e*P	**P**	**08 10 02.2**	**-0.5**
FORT	**Forrest**	**79.30**	**127**	⇑*i*P	**P**	**08 10 29.9**	**+0.4**
	comp=Z,66nm,0.9s,mb5.6						
RPZ	**Rata Peaks**	**82.34**	**163**	LR	LR	08 45 59.3	
	comp=Z,2μm,18.4s,MS5.5,baz=114,slow=35						
STKA	**Stephens Creek**	**84.52**	**137**	⇑*i*P	**P**	**08 10 57.2**	**+0.5**
	comp=Z,16nm,0.9s,mb5.2						
STKA	**Stephens Creek**	**84.52**	**137**	P	**P**	**08 10 57.2**	**+0.5**
	comp=Z,18nm,0.8s,mb5.2,baz=198,slow=3.4,SNR=15						
STKA				LR	LR	08 43 05.1	
	comp=Z,276nm,19.7s,MS4.6,baz=203,slow=32						
SNZO	**South Karori**	**85.28**	**166**	PFAKE		08 11 10.0	+10
SNZO				LR	LR		
	comp=Z,1μm,20.0s,MS5.3						
AS12	**Alice Springs**	**88.07**	**127**	⇑*i*P	**P**	**08 11 14.3**	**0.0**
	comp=Z,29nm,0.9s,mb5.5						
ASAR	**Alice Springs**	**88.07**	**127**	P	**P**	**08 11 14.5**	**+0.2**
	comp=Z,21nm,0.8s,mb5.4,baz=206,slow=5.3,SNR=53						
ASAR				LR	LR	08 43 57.6	
	comp=Z,409nm,19.6s,MS4.8,baz=206,slow=31						
ASAR	**Alice Springs**	**88.07**	**127**	P	**P**	**08 11 14.5**	**+0.2**
ASAR				LR	LR	08 43 57.6	
URZ	**Urewera**	**88.63**	**167**	P	**P**	**08 11 16.9**	**+0.3**
	comp=Z,14nm,1.1s,mb5.2,baz=231,slow=3.6,SNR=5.2						
URZ				LR	LR	08 51 24.6	
	comp=Z,1μm,18.0s,MS5.4,baz=186,slow=36						
WRA	**Warramunga Arr**	**91.43**	**126**	P	**P**	**08 11 29.9**	**-0.1**
	comp=Z,4.4nm,0.9s,mb4.8,baz=208,slow=3.6,SNR=13						
WRA				LR	LR	08 49 16.9	
	comp=Z,387nm,18.4s,MS4.9,baz=190,slow=33						
WRAB	**Tennant Creek**	**91.44**	**126**	PFAKE		08 11 40.0	+10
WRAB				LR	LR		
	comp=Z,520nm,19.0s,MS5.0						
OTAV	**Otavalo**	**91.64**	**268**	*e*P	**P**	**08 11 32.5**	**+1.2**
	comp=Z,7.5nm,1.0s,mb5.0						
ESDC	**Sonseca Array**	**92.91**	**346**	P	**P**	**08 11 37.9**	**+1.4**
	comp=Z,0.3nm,0.3s,mb4.2,baz=182,slow=3.4,SNR=5.2						
BRTR	**Keskin Array B**	**93.24**	**15**	P	**P**	**08 11 41.3**	**+3.3**
	comp=Z,0.9nm,0.9s,mb4.2,baz=180,slow=7.2,SNR=2.9						
BRTR				PP	PP	08 15 22.3	-2.1
	comp=Z,0.5nm,0.5s,baz=166,slow=5.1,SNR=3.8						
BRTR				LR	LR	08 58 56.6	
	comp=Z,371nm,18.5s,MS4.9,baz=140,slow=39						
SDV	**Santo Domingo**	**93.64**	**280**	LR	LR	08 50 54.7	
	comp=Z,743nm,19.0s,MS5.2,baz=172,slow=34						
THR	**Tehran**	**93.66**	**29**	LR	LR	08 54 03.6	
	comp=Z,298nm,19.2s,MS4.8,baz=359,slow=36						
CTA	**Charters Tower**	**96.85**	**136**	LR	LR	08 53 16.9	
	comp=Z,403nm,18.4s,MS4.9,baz=222,slow=34						
CTAO	**Charters Tower**	**96.85**	**136**	PFAKE		08 12 10.0	+15
CTAO				LR	LR		
	comp=Z,621nm,20.0s,MS5.1						
SJG	**San Juan**	**98.23**	**289**	PFAKE		08 12 10.0	+8.9
SJG				LR	LR		
	comp=Z,347nm,19.0s,MS4.9						
KIV	**Kislovodsk**	**99.04**	**21**	PFAKE		08 12 20.0	+16
KIV				LR	LR		
	comp=Z,524nm,20.0s,MS5.0						
GERES	**GERESS Array B**	**100.77**	**360**	PP	PP	08 16 19.5	-2.9
	comp=Z,0.2nm,0.3s,baz=201,slow=11,SNR=4.4						
MORC	**Moravsky Berou**	**101.75**	**2**	*e*PKPdf	P	08 12 18.3	+1.9
	comp=Z,4.9nm,0.6s						
AKASG	**Malin Array Be**	**103.44**	**10**	PP	PP	08 16 42.0	-0.3
	comp=Z,0.1nm,0.2s,baz=196,slow=7.5,SNR=4.4						
JTS	**JuntasAbangare**	**103.49**	**269**	PFAKE		08 12 40.0	+15
JTS				LR	LR		
	comp=Z,86nm,22.0s,MS4.2						
LSA	**Lhasa**	**105.72**	**62**	PFAKE		08 17 00.0	
LSA				LR	LR		
	comp=Z,185nm,19.0s,MS4.7						
PMG	**Port Moresby**	**106.67**	**131**	PFAKE		08 17 00.0	
PMG				LR	LR		
	comp=Z,367nm,20.0s,MS4.9						
ESK	**Eskdalemuir**	**108.19**	**350**	PFAKE		08 17 00.0	
ESK				LR	LR		
	comp=Z,965nm,20.0s,MS5.4						
BBSR	**BB Station**	**108.54**	**299**	PFAKE		08 17 00.0	
BBSR				LR	LR		
	comp=Z,2μm,21.0s,MS5.7						
OBN	**Obninsk**	**108.69**	**14**	PFAKE		08 17 00.0	
OBN				LR	LR		
	comp=Z,569nm,20.0s,MS5.1						
TEIG	**Tepich**	**113.15**	**273**	*e*PKPdf	PKPdf	08 17 02.0	-1.1
ARU	**Arti**	**114.43**	**25**	PFAKE		08 17 10.0	+5.2
ARU				LR	LR		
	comp=Z,607nm,20.0s,MS5.2						
MKAR	**Makanchi Array**	**114.70**	**45**	PKP	PKPdf	08 17 02.5	-3.0
	comp=Z,0.5nm,0.6s,baz=180,slow=1.4,SNR=4.2						
WMQ	**Urumqi**	**114.86**	**50**	PKP	PKPdf	08 17 04.0	-1.9
WMQ				PP	PP	08 18 07.3	+0.9
WMQ				PP	PP		
	comp=Z,32nm,10.2s						
WMQ				LR	LR		
	comp=N,658nm,28.2s,MS5.2						
WMQ				LR	LR		
	comp=E,452nm,29.0s,MS5.2						
WMQ				LR	LR		
	comp=Z,949nm,28.6s,MS5.2						
DWPF	**Disney**	**114.87**	**284**	PFAKE		08 17 20.0	+14
DWPF				LR	LR		
	comp=Z,745nm,22.0s,MS5.2						
BVAR	**Borovoye Array**	**115.09**	**34**	PKKPbc		08 27 38.5	
	comp=Z,1.0nm,0.7s,baz=56,slow=5.3,SNR=5.1						
ENH	**Enshi**	**116.58**	**74**	PFAKE		08 17 20.0	+10
ENH				LR	LR		
	comp=Z,183nm,19.0s,MS4.7						
LZH	**Lanzhou**	**117.53**	**66**	*e*PKP	PKPdf	08 17 07.3	-4.0
LZH				XPKP		08 17 12.0	
EMMW	**East Machias**	**119.19**	**306**	PFAKE		08 17 20.0	+5.7
EMMW				LR	LR		
	comp=Z,3μm,20.0s,MS6.0						
WES	**Weston**	**119.50**	**302**	PFAKE		08 17 20.0	+5.1
WES				LR	LR		
	comp=Z,4μm,21.0s,MS6.1						
HRV	**Harvard--Oak R**	**119.70**	**302**	PFAKE		08 17 20.0	+4.7
HRV				LR	LR		
	comp=Z,167nm,21.0s,MS4.7						
WVL	**Waterville**	**120.19**	**305**	PFAKE		08 17 30.0	+14
WVL				LR	LR		
	comp=Z,3μm,21.0s,MS5.9						
BLA	**Blacksburg**	**120.82**	**292**	PFAKE		08 17 30.0	+12
BLA				LR	LR		
	comp=Z,578nm,20.0s,MS5.2						
PQI	**Presque Isle**	**120.86**	**307**	PFAKE		08 17 30.0	+12
PQI				LR	LR		
	comp=Z,3μm,20.0s,MS5.9						
NVS	**Novosibirsk**	**121.22**	**39**	*e*PKIKP	PKPdf	08 17 22.8	+4.7
MYNC	**Murphy**	**121.47**	**288**	PFAKE		08 17 30.0	+11
MYNC				LR	LR		
	comp=Z,577nm,19.0s,MS5.2						
LRAL	**Lakeview Retre**	**121.73**	**284**	PFAKE		08 17 30.0	+10
LRAL				LR	LR		
	comp=Z,421nm,20.0s,MS5.1						
SSPA	**Standing Stone**	**121.79**	**297**	PFAKE		08 17 30.0	+10
SSPA				LR	LR		
	comp=Z,3μm,20.0s,MS5.9						
BINY	**Binghamton**	**121.83**	**299**	PFAKE		08 17 30.0	+10
BINY				LR	LR		
	comp=Z,341nm,20.0s,MS5.0						
NCB	**Newcomb**	**122.12**	**302**	PFAKE		08 17 30.0	+10
NCB				LR	LR		
	comp=Z,167nm,21.0s,MS4.7						
MCWV	**Mont Chateau**	**122.20**	**294**	PFAKE		08 17 30.0	+10
MCWV				LR	LR		
	comp=Z,587nm,20.0s,MS5.2						
NJ2	**Nanjing**	**123.45**	**80**	*e*PKP	PKPdf	08 17 22.5	-0.4
NJ2				PP	PP	08 19 10.0	+4.2
NJ2				PKS	PKS	08 20 58.0	+2.5
NJ2				PPP	PPP	08 21 28.0	-15
NJ2				SKS	SKS	08 24 35.0	+10
NJ2				PP	PP		
	comp=Z,60nm,5.0s						
PLAL	**Pickwick Lake**	**123.73**	**285**	PFAKE		08 17 30.0	+6.6
PLAL				LR	LR		
	comp=Z,451nm,22.0s,MS5.1						
ERPA	**Erie**	**123.95**	**297**	PFAKE		08 17 30.0	+6.3
ERPA				LR	LR		
	comp=Z,548nm,20.0s,MS5.2						
SSE	**Sheshan**	**124.19**	**82**	PKP	PKPdf	08 17 25.3	+0.9
SSE				SS	SS	08 36 02.6	+4.3
SSE				LR	LR		
	comp=N,37nm,20.0s,MS4.4						
SSE				LR	LR		
	comp=E,79nm,20.0s,MS4.4						
OXF	**Oxford**	**124.20**	**284**	PFAKE		08 17 30.0	+5.7
OXF				LR	LR		
	comp=Z,340nm,19.0s,MS5.0						
ACSO	**Alum Creek Sta**	**124.35**	**293**	PFAKE		08 17 30.0	+5.5
ACSO				LR	LR		
	comp=Z,872nm,21.0s,MS5.4						
WVT	**Waverly**	**124.37**	**286**	PFAKE		08 17 30.0	+5.4
WVT				LR	LR		
	comp=Z,443nm,22.0s,MS5.1						
HKT	**Hockley**	**124.90**	**275**	PFAKE		08 17 40.0	+14
HKT				LR	LR		
	comp=Z,327nm,20.0s,MS5.0						
SCHQ	**Schefferville**	**125.92**	**315**	PFAKE		08 17 40.0	+13
SCHQ				LR	LR		
	comp=Z,1μm,21.0s,MS5.6						
AAM	**Ann Arbor**	**126.11**	**294**	PFAKE		08 17 40.0	+12
AAM				LR	LR		
	comp=Z,522nm,20.0s,MS5.2						
MIAR	**Mount Ida**	**126.72**	**281**	PFAKE		08 17 40.0	+11
MIAR				LR	LR		
	comp=Z,439nm,19.0s,MS5.2						
ZAK	**Zakamensk**	**127.01**	**53**	*e*PKIKP	PKPdf	08 17 22.3	-6.8
BJT	**Baijiatuan**	**127.27**	**71**	PFAKE		08 17 40.0	+10
BJT				LR	LR		
	comp=Z,231nm,19.0s,MS4.9						
BJI	**Beijing**	**127.29**	**71**	PKP	PKPdf	08 17 29.0	-1.0
BJI				PP	PP	08 19 36.4	+6.0
BJI				LR	LR		
	comp=N,242nm,15.6s						
ULN	**Ulaanbaatar**	**127.31**	**58**	PFAKE		08 17 40.0	+10
ULN				LR	LR		
	comp=Z,184nm,20.0s,MS4.8						
JCT	**Junction City**	**127.70**	**273**	PFAKE		08 17 40.0	+8.9
JCT				LR	LR		
	comp=Z,521nm,21.0s,MS5.2						
TXAR	**Lajitas Array**	**129.27**	**269**	PKP	PKPdf	08 17 30.6	-3.6
	comp=Z,1.5nm,0.9s,baz=162,slow=4.0,SNR=12						
SUMG	**Summit**	**129.76**	**342**	*e*PKPdf	PKPdf	08 17 33.5	-0.4
WMOK	**Wichita Mounta**	**130.00**	**277**	PFAKE		08 17 40.0	+4.6
WMOK				LR	LR		
	comp=Z,361nm,19.0s,MS5.1						
JFWS	**Jewell Farm**	**130.23**	**291**	PFAKE		08 17 50.0	+14
JFWS				LR	LR		
	comp=Z,298nm,20.0s,MS5.0						
KBS	**King

NLU	**North Lily Min**	**141.47**	**273**	*e*PKPdf	PKPdf	08 17 49.2	-7.0
NLU				*e*PKPdf	PKPdf	08 17 54.8	-1.5
JLU	**Jordanelle**	**141.47**	**275**	*e*PKPdf	PKPdf	08 17 53.4	-2.8
BW06	**Boulder Array**	**141.57**	**279**	*e*PKPpre		08 17 47.5	
BW06				LR	LR		
	comp=Z,634nm,20.0s,MS5.4						
PDAR	**Pinedale Array**	**141.57**	**279**	PKhKP		08 17 48.0	
	comp=Z,1.9nm,0.8s,baz=117,slow=3.3,SNR=18						
PDAR				PP	PP	08 20 59.1	-1.5
	comp=Z,0.3nm,0.8s,baz=101,slow=7.6,SNR=4.3						
TCUT	**Toone Canyon**	**141.75**	**275**	*e*PKPdf	PKPdf	08 17 50.7	-6.0
TCUT				*e*PKPdf	PKPdf	08 17 56.3	-0.4
HWUT	**Hardware Ranch**	**142.13**	**276**	*e*PKPdf	PKPdf	08 17 50.7	-6.6
HWUT				LR	LR		
	comp=Z,704nm,20.0s,MS5.4						
AHID	**Auburn Hatcher**	**142.51**	**278**	PFAKE		08 18 10.0	+12
AHID				LR	LR		
	comp=Z,662nm,20.0s,MS5.4						
FFC	**Flin Flon**	**142.98**	**300**	PFAKE		08 18 10.0	+12
FFC				LR	LR		
	comp=Z,161nm,20.0s,MS4.8						
TPH	**Tonopah**	**143.47**	**267**	PFAKE		08 18 10.0	+15
TPH				LR	LR		
	comp=Z,367nm,21.0s,MS5.1						
QLMT	**Earthquake Lak**	**143.84**	**280**	*e*PKPdf	PKPdf	08 17 56.6	-3.5
NVAR	**Mina Array Bea**	**144.35**	**266**	PKP	PKPdf	08 17 58.0	-3.2
	comp=Z,2.4nm,0.6s,baz=127,slow=4.5,SNR=23						
BOZ	**Bozeman (W)**	**144.38**	**281**	*e*PKPdf	PKPdf	08 17 56.7	-4.3
BOZ				LR	LR		
	comp=Z,616nm,20.0s,MS5.4						
RES	**Resolute Bay**	**144.44**	**334**	*e*PKPdf	PKPdf	08 17 55.9	-4.5
MCMT	**McKenzie Canyo**	**144.69**	**279**	*e*PKPdf	PKPdf	08 17 58.6	-3.0
BMN	**Battle Mountai**	**144.91**	**270**	*e*PKPdf	PKPdf	08 17 59.0	-3.1
BMN				LR	LR		
	comp=Z,400nm,21.0s,MS5.2						
HLID	**Hailey**	**144.97**	**277**	*e*PKPdf	PKPdf	08 17 59.6	-2.6
HLID				LR	LR		
	comp=Z,540nm,20.0s,MS5.3						
HRY	**Holter Researc**	**145.04**	**283**	*e*PKPdf	PKPdf	08 17 59.6	-2.6
SAO	**San Andreas Ge**	**145.21**	**261**	PFAKE		08 18 10.0	+10
SAO				LR	LR		
	comp=Z,559nm,20.0s,MS5.3						
YAK	**Yakutsk**	**145.27**	**48**	*e*PKP2	PKPab	08 17 58.1	-2.9
YAK				pmax	pmax		
	comp=Z,17nm,1.0s						
YAK				pmax	pmax		
	comp=N,3.0nm,0.8s						
YAK				pmax	pmax		
	comp=E,7.0nm,1.2s						
YAK	**Yakutsk**	**145.27**	**48**	*e*PKPdf	PKPdf	08 17 58.6	-3.5
YAK				LR	LR		
	comp=Z,201nm,19.0s,MS4.9						
CMB	**Columbia Colle**	**145.38**	**264**	PKPbc	PKPbc	08 18 00.7	+0.1
CMB	**Columbia Colle**	**145.38**	**264**	*e*PKPdf	PKPdf	08 18 00.6	-2.5
CMB				LR	LR		
	comp=Z,319nm,19.0s,MS5.1						
ASAJ	**Asahikawa**	**145.48**	**83**	PKPbc	PKPbc	08 18 00.3	-0.3
	comp=Z,8.1nm,0.6s,baz=288,slow=13,SNR=5.8						
WCN	**Washoe City**	**145.78**	**266**	*e*PKPdf	PKPdf	08 18 02.5	-1.2
CHMT	**Chamberlain Mo**	**145.99**	**282**	*e*PKPdf	PKPdf	08 18 02.6	-1.2
TIXI	**Tiksi**	**146.17**	**31**	*e*PKIKP	PKPdf	08 18 00.7	-2.7
TIXI	**Tiksi**	**146.17**	**31**	*e*PKPdf	PKPdf	08 18 01.0	-2.4
TIXI				LR	LR		
	comp=Z,297nm,22.0s,MS5.0						
MSO	**Missoula**	**146.36**	**282**	*e*PKPdf	PKPdf	08 18 02.5	-2.0
MSO				LR	LR		
	comp=Z,904nm,20.0s,MS5.5						
BEKR	**Beckwourth**	**146.50**	**267**	*e*PKPdf	PKPdf	08 18 04.7	-0.2
OHCM	**Honcut**	**146.86**	**265**	*e*PKPdf	PKPdf	08 18 05.3	-0.3
WVOR	**Wild Horse Val**	**146.93**	**272**	*e*PKPdf	PKPdf	08 18 06.2	+0.7
WVOR				LR	LR		
	comp=Z,706nm,22.0s,MS5.4						
YSS	**Yuzh-Sakhalins**	**147.01**	**79**	*e*PKPdf	PKPdf	08 18 04.0	-1.5
YSS				*e*		08 18 07.8	
YSS				LR	LR		
	comp=Z,214nm,21.0s,MS4.9						
WALA	**Waterton Lakes**	**147.37**	**285**	*e*PKPdf	PKPdf	08 18 06.2	+0.2
HOPS	**Hopland**	**147.62**	**263**	PFAKE		08 18 20.0	+13
HOPS				LR	LR		
	comp=Z,486nm,21.0s,MS5.3						
WDC	**Whiskeytown Da**	**148.26**	**266**	*e*PKP	PKPdf	08 18 06.0	-1.8
WDC				LR	LR		
	comp=Z,372nm,22.0s,MS5.1						
NEW	**Newport**	**148.94**	**282**	PFAKE		08 18 20.0	+11
NEW				LR	LR		
	comp=Z,728nm,19.0s,MS5.5						
YBH	**Yreka Blue Hor**	**149.04**	**268**	*e*PKPdf	PKPdf	08 18 08.8	-0.1
YBH				LR	LR		
	comp=Z,361nm,22.0s,MS5.1						
DPW	**Davenport**	**149.41**	**281**	*e*PKPdf	PKPdf	08 18 08.5	-0.8
HAWA	**Hanford**	**149.54**	**278**	*e*PKPbc	PKPdf	08 18 12.3	+2.7
HAWA				*e*PKPab	PKPab	08 18 17.6	-0.7
HAWA				LR	LR		
	comp=Z,577nm,21.0s,MS5.3						
HUMO	**Hull Mountain**	**149.68**	**269**	*e*PKPbc	PKPdf	08 18 13.6	+3.6
HSO	**Harness Mounta**	**150.26**	**270**	*e*PKPbc	PKPdf	08 18 16.0	+5.1
NLW	**Nelson Butte**	**150.79**	**280**	*e*PKPdf	PKPdf	08 18 08.3	-3.2
NLW				*e*PKPbc	PKPdf	08 18 14.4	+2.9
COR	**Corvallis**	**150.95**	**272**	PFAKE		08 18 20.0	+8.2
COR				LR	LR		
	comp=Z,879nm,19.0s,MS5.6						
LON	**Longmire**	**151.09**	**277**	*e*PKPdf	PKPdf	08 18 10.6	-1.4
YKA	**Yellowknife Ar**	**151.24**	**311**	PKPbc	PKPdf	08 18 14.7	+3.1
	comp=Z,7.0nm,0.8s,baz=91,slow=2.4,SNR=87						
YKA	**Yellowknife Ar**	**151.24**	**311**	PKPbc	PKPdf	08 18 14.7	+3.0
YKW3	**Yellowknife Ar**	**151.25**	**311**	*e*PKPbc	PKPdf	08 18 14.5	+2.8
BMW	**Boistfort Moun**	**151.83**	**275**	*e*PKPdf	PKPdf	08 18 13.4	+0.3
BMW				*e*PKPbc	PKPdf	08 18 18.1	+5.0
BMW				*e*PKPab	PKPab	08 18 27.8	-0.1
GNW	**Green Mountain**	**152.08**	**278**	*e*PKPdf	PKPdf	08 18 12.2	-1.2
GNW				*e*PKPbc	PKPdf	08 18 17.7	+4.3
GNW				*e*PKPdf	PKPdf	08 18 27.4	+14
OCWA	**Octopus Mounta**	**152.98**	**277**	PFAKE		08 18 20.0	+5.3
OCWA				LR	LR		
	comp=Z,942nm,20.0s,MS5.6						
MA2	**Magadan**	**155.15**	**56**	PFAKE		08 18 30.0	+13
MA2				LR	LR		
	comp=Z,410nm,22.0s,MS5.2						
INK	**Inuvik**	**157.68**	**328**	PKP	PKPdf	08 18 20.9	+0.5
	comp=Z,1.0nm,0.9s,baz=46,slow=4.5,SNR=4.3						
INK				PKPab	PKPab	08 18 52.8	+0.7
	comp=Z,6.1nm,1.0s,baz=74,slow=4.3,SNR=10						
INK	**Inuvik**	**157.68**	**328**	*e*PKP	PKPdf	08 18 21.0	+0.6
INK				*e*PKPab	PKPab	08 18 52.1	0.0
PET	**Petropavlovsk**	**158.72**	**74**	*e*PKIKP	PKPdf	08 18 24.0	+1.9
PET				pmax	pmax		
	comp=Z,54nm,12.1s						
BILL	**Bilibino**	**159.37**	**30**	PKIKP	PKPdf	08 18 18.0	-4.4
SIT	**Sitka**	**161.69**	**297**	PFAKE		08 18 30.0	+4.9
SIT				LR	LR		
	comp=Z,882nm,19.0s						
ILAR	**Eielson Array**	**164.08**	**329**	PKP	PKPdf	08 18 27.8	+0.5
	comp=Z,1.3nm,1.3s,slow=0.9,SNR=3.1						
ILAR				PKPab	PKPab	08 19 20.2	+0.4
	comp=Z,2.6nm,1.1s,baz=32,slow=3.2,SNR=9.6						
COLA	**College**	**164.31**	**330**	PFAKE		08 18 40.0	+13
COLA				LR	LR		
	comp=Z,312nm,20.0s						
MCK	**McKinley**	**165.45**	**329**	PFAKE		08 18 40.0	+11
MCK				LR	LR		
	comp=Z,207nm,19.0s						
TNA	**Tin City**	**166.67**	**3**	PFAKE		08 18 40.0	+10
TNA				LR	LR		
	comp=Z,225nm,21.0s						
PMR	**Palmer**	**166.92**	**322**	PFAKE		08 18 40.0	+10
PMR				LR	LR		
	comp=Z,351nm,19.0s						
SMY	**Shemya**	**167.92**	**80**	PFAKE		08 18 40.0	+9.3
SMY				LR	LR		
	comp=Z,608nm,19.0s						
KDAK	**Kodiak Island**	**170.51**	**311**	PFAKE		08 18 40.0	+7.9
KDAK				LR	LR		
	comp=Z,532nm,20.0s						
UNV	**Unalaska Valle**	**178.43**	**9**	PFAKE		08 18 40.0	+5.2
UNV				LR	LR		
	comp=Z,2μm,21.0s						

WEL 20 08:00:46.2±0.5, 37.64S×179.13E, h33km, ML3.7/4, Error ellipse: s-maj=3.7km s-min=2.8km az=90.0, Off east coast of North Island

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

MXZ	**Matakaoa Point**	**0.66**	**276**	PN	Pn	08 00 58.8	-0.4
MXZ				SN	Sn	08 01 07.7	-0.8
PUZ	**Puketiti**	**0.82**	**238**	PN	Pn	08 01 00.6	-0.9
PUZ				SN	Sn	08 01 11.0	-1.5
MWZ	**Matawai**	**1.45**	**241**	PN	Pn	08 01 09.3	-1.2
MWZ				SN	Sn	08 01 26.4	-2.1
URZ	**Urewera**	**1.72**	**248**	*e*PN	Pn	08 01 13.7	-0.6
URZ				SN	Sn	08 01 34.2	-1.1
KNZ	**Kokohu**	**1.79**	**219**	PN	Pn	08 01 13.9	-1.6
TAZ	**Tarawera**	**2.16**	**253**	PN	Pn	08 01 19.9	-0.8
BKZ	**Black Stump Fm**	**2.58**	**233**	PN	Pn	08 01 25.1	-1.5
BKZ				SN	Sn	08 01 53.7	-3.4
KUZ	**Kuaotunu**	**2.87**	**287**	PN	Pn	08 01 30.1	-0.7
KUZ				SN	Sn	08 02 02.3	-2.2
KAVZ	**Karewarewa**	**3.10**	**241**	PN	Pn	08 01 32.4	-1.8
KAVZ				SN	Sn	08 02 05.8	-4.7
NGZ	**Ngauruhoe**	**3.17**	**240**	PN	Pn	08 01 33.0	-2.1
NGZ				SN	Sn	08 02 07.8	-4.4
TUVZ	**Tukino**	**3.18**	**238**	PN	Pn	08 01 33.7	-1.6
CNZ	**Chateau**	**3.22**	**240**	PN	Pn	08 01 33.9	-1.9
WNVZ	**Wahianoa**	**3.25**	**238**	PN	Pn	08 01 33.2	-2.9
WNVZ				SN	Sn	08 02 10.6	-3.6
TSZ	**Takapari Road**	**3.46**	**225**	SN	Sn	08 02 13.8	-5.7
BFZ	**Birch Farm**	**3.78**	**216**	PN	Pn	08 01 39.5	-4.2
BFZ				SN	Sn	08 02 20.3	-7.2
WAZ	**Wanganui**	**3.87**	**236**	PN	Pn	08 01 43.3	-1.7
MRZ	**Mangatainoka R**	**4.09**	**221**	PN	Pn	08 01 43.6	-4.6
MRZ				SN	Sn	08 02 27.0	-8.5

IDC ***20*** *08:04:15.0±5.4, 6.06S×150.98E, h61km±47km, mb3.9/8, mb1 4.1/9, mb1mx4.0/14, ML2.8/1, MS3.3/3, Ms1 3.3/3, ms1mx3.0/22, Error ellipse: s-maj=50.1km s-min=26.2km az=120.0*

NEIC ***20*** *08:04:15.3±1.0, 5.87S×150.78E, h66km±10km, mb4.4/5, Error ellipse: s-maj=24.8km s-min=7.5km az=126.0*

ISC 20 08:04:14.2±1.3, 5.9S±0.1×150.7E±0.2, h68km±12km, n23, σ0s87/22, mb4.1/12, 2C-1D, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAB	**Rabaul**	**2.20**	**40**	*e*P	**P**	**08 04 49.2**	**-0.1**
PMG	**Port Moresby**	**4.98**	**225**	P	**P**	**08 05 28.4**	**+0.1**
	2.6nm,0.3s,baz=57,slow=1.3,SNR=5.5						
PMG				S	**S**	**08 06 26.3**	**+1.2**
	5.6nm,0.3s,baz=300,slow=23,SNR=4.2						
PMG				LR	LR	08 07 23.3	
	comp=Z,198nm,19.7s,baz=62,slow=37						
PMG	**Port Moresby**	**4.98**	**225**	*e*Pn	**P**	**08 05 28.0**	**-0.2**
	28nm,0.8s						
PMG				*e*Sn	**S**	**08 06 21.0**	**-4.1**
CTA	**Charters Tower**	**14.78**	**197**	LR	LR	08 12 37.7	
	comp=Z,110nm,20.0s,baz=229,slow=34						
WRAB	**Tennant Creek**	**21.18**	**227**	*e*P	**P**	**08 08 55.5**	**-0.6**
	30nm,0.8s,mb4.7						
WB2	**Warramunga Arr**	**21.19**	**227**	⇓*i*P	**P**	**08 08 56.2**	**0.0**
WRA	**Warramunga Arr**	**21.20**	**227**	P	**P**	**08 08 55.9**	**-0.3**
	7.2nm,0.5s,mb4.2,baz=52,slow=11,SNR=59						
AS12	**Alice Springs**	**23.98**	**221**	⇑*i*P	**P**	**08 09 24.7**	**+1.2**
	6.5nm,0.6s,mb4.1						
ASAR	**Alice Springs**	**23.98**	**221**	P	**P**	**08 09 24.3**	**+0.8**
	5.3nm,0.5s,mb4.1,baz=58,slow=9.2,SNR=59						
STKA	**Stephens Creek**	**27.24**	**197**	⇑*i*P	**P**	**08 09 53.5**	**-0.6**
	4.1nm,0.8s,mb4.0						
STKA	**Stephens Creek**	**27.24**	**197**	P	**P**	**08 09 52.4**	**-1.7**
	5.7nm,0.8s,mb4.1,baz=5.7,slow=13,SNR=7.4						
FITZ	**Fitzroy Crossi**	**27.34**	**241**	P	**P**	**08 09 55.0**	**-0.2**
	3.0nm,0.6s,mb4.0,baz=150,slow=8.4,SNR=8.3						
JHJ	**Hachijo jima 2**	**40.16**	**346**	LR	LR	08 25 15.2	
	comp=Z,68nm,21.9s,baz=138,slow=31						
SBA	**Scott Base**	**72.42**	**176**	*e*P	**P**	**08 15 42.8**	**+8.1**
	3.2nm,0.9s,mb4.2						
MKAR	**Makanchi Array**	**79.80**	**320**	P	**P**	**08 16 18.5**	**+1.6**
	1.0nm,0.8s,mb3.7,baz=121,slow=7.1,SNR=4.6						
MCK	**McKinley**	**82.65**	**23**	*e*P	**P**	**08 16 31.2**	**-0.2**
	2.7nm,0.9s,mb4.1						
KURK	**Kurchatov**	**83.36**	**322**	*e*P	**P**	**08 16 34.3**	**-1.0**
ILAR	**Eielson Array**	**83.93**	**22**	P	**P**	**08 16 37.5**	**-0.4**
	1.0nm,0.7s,mb3.8,baz=247,slow=5.4,SNR=17						
QSPA	**South Pole Qui**	**84.08**	**180**	P	**P**	**08 16 38.7**	**+0.4**
	13nm,0.8s,mb4.8						
ZRNK	**Zerenda**	**89.68**	**323**	*e*P	**P**	**08 17 04.6**	**-1.4**
INK	**Inuvik**	**90.20**	**21**	P	**P**	**08 17 08.5**	**+0.4**
	0.3nm,0.5s,mb3.7,baz=215,slow=6.4,SNR=6.2						
YKA	**Yellowknife Ar**	**97.34**	**28**	P	**P**	**08 17 42.5**	**+1.6**
	0.2nm,0.6s,mb3.8,baz=272,slow=4.8,SNR=8.0						
GERES	**GERESS Array B**	**123.87**	**327**	PKP	PKPdf	08 23 07.9	+3.1
	0.4nm,0.6s,baz=56,slow=4.8,SNR=4.0						

IDC ***20*** *08:13:51.5±16.0, 21.61N×143.03E, h271km±160km, mb3.3/5, mb1 3.5/5, mb1mx3.1/21, Error ellipse: s-maj=59.0km s-min=29.3km az=85.0*

ISC 20 08:13:47.9±1.1, 21.6N±0.2×143.0E±0.6, h250km, n6, σ0s69/5, mb3.5/5, Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**42.16**	**192**	P	**P**	**08 21 17.5**	**-0.3**
	1.6nm,0.7s,mb3.5,baz=17,slow=9.3,SNR=14						
ASAR	**Alice Springs**	**45.86**	**192**	P	**P**	**08 21 47.6**	**+0.3**
	0.2nm,0.5s,mb2.7,baz=15,slow=14,SNR=3.3						
YKA	**Yellowknife Ar**	**76.61**	**28**	P	**P**	**08 25 12.0**	**-0.1**
	0.3nm,0.4s,mb3.2,baz=290,slow=5.8,SNR=9.4						
ARCES	**ARCESS Array B**	**78.97**	**341**	P	**P**	**08 25 25.5**	**+0.7**
	3.5nm,1.0s,mb4.0,baz=66,slow=8.9,SNR=6.7						
FINES	**FINESS Array B**	**83.20**	**334**	P	**P**	**08 25 46.3**	**-0.7**
	2.7nm,1.0s,mb3.9,baz=63,slow=3.1,SNR=5.2						
LPAZ	**La Paz**	**150.09**	**85**	PKPbc	PKPdf	08 33 11.4	+7.2
	0.7nm,0.8s,baz=288,slow=2.5,SNR=4.8						

DJA 20 08:14:31.8±1.1, 6.48S×115.79E, h33km, MD4.8/2, ML4.4/2, 1C-3D, Error ellipse: s-maj=26.3km s-min=15.9km az=176.0, Bali Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEDI	**Kedomdong**	**2.02**	**171**	⇑*e*Pn	Pn	08 15 02.5	-1.7
	170nm,0.2s						
KEDI	**Kedomdong**	**2.02**	**171**	*e*P	P	08 15 03.7	-0.4
KELI	**Kelakatan**	**2.15**	**217**	⇓*e*Pn	Pn	08 15 04.4	-1.8
KELI				*e*Sn	Sn	08 15 28.7	-3.3
RATI	**Rata**	**2.24**	**187**	⇓*e*Pn	Pn	08 15 05.9	-1.6
	240nm,0.2s						
RATI				*e*Sn	Sn	08 15 30.8	-3.5
INGI	**Ingas**	**2.41**	**195**	⇓*e*Pn	Pn	08 15 09.0	-0.8

IDC ***20*** *08:25:55.2±0.8, 26.27S×176.94W, mb4.3/8, mb1 4.5/9, mb1mx4.5/12, ML4.0/1, MS3.7/1, Ms1 3.7/1, ms1mx3.2/15, Error ellipse: s-maj=39.6km s-min=19.9km az=146.0*

BJI ***20*** *08:25:59.3, 25.83S×176.45W, h16km, mb4.6, mb4.9, Ms4.7, Msz4.4*

NEIC ***20*** *08:26:00.0±0.3, 26.37S×176.92W, h30km, mb4.6/11, Error ellipse: s-maj=15.2km s-min=9.2km az=128.0*

SYO ***20*** *08:26:00.0, 26.37S×176.92W, h30km, MB4.6*

ISC 20 08:25:58.9±0.4, 26.47S±0.08×176.9W±0.1, h30km, (h34km±2.1km:pP-P), n44, σ1s21/36, mb4.5/19, MS4.4/3, 2C-4D, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**12.80**	**202**	Pn	**P**	**08 28 59.4**	**-2.3**
	0.9nm,0.3s,baz=137,slow=16,SNR=6.1						
URZ				Sn	**S**	**08 31 15.6**	**-8.5**
	1.7nm,0.3s,baz=195,slow=18,SNR=8.1						
SNZO	**South Karori**	**16.35**	**203**	*e*P	**P**	**08 29 46.7**	**-1.2**
	41nm,1.2s						
RAR	**Rarotonga**	**16.51**	**75**	LR	LR	08 34 01.5	
	comp=Z,250nm,20.2s,baz=275,slow=30						
CTAO	**Charters Tower**	**34.35**	**273**	*e*P	**P**	**08 32 46.3**	**+0.9**
	10nm,0.7s,mb4.9						
CTAO				*e*		08 32 57.4	
STKA	**Stephens Creek**	**36.48**	**251**	P	**P**	**08 33 01.0**	**-2.4**
	2.6nm,1.0s,mb4.1,baz=175,slow=20,SNR=2.9						
AS12	**Alice Springs**	**44.44**	**262**	*e*P	**P**	**08 34 08.8**	**-0.4**
	12nm,1.3s,mb4.5						
ASAR	**Alice Springs**	**44.44**	**262**	P	**P**	**08 34 08.9**	**-0.3**
	3.5nm,0.6s,mb4.2,baz=91,slow=7.0,SNR=46						
WB2	**Warramunga Arr**	**45.06**	**268**	⇓*i*P	**P**	**08 34 13.5**	**-0.8**
WRA	**Warramunga Arr**	**45.08**	**268**	P	**P**	**08 34 13.6**	**-0.7**
	2.9nm,0.6s,mb4.3,baz=103,slow=7.8,SNR=24						

SBA	**Scott Base**	**52.02**	**184**	*e*P	**P**	**08 35 09.1**	**+1.7**
	5.9nm,0.9s,mb4.5							
NWAO	**Narrogin (SRO)**	**56.77**	**247**	*e*P	**P**	**08 35 43.6**	**+0.9**
QSPA	**South Pole Qui**	**63.63**	**180**	*e*P	**P**	**08 36 29.0**	**+0.1**
	5.6nm,1.0s,mb4.5							
MAW	**Mawson**	**76.32**	**200**	P	**P**	**08 37 47.1**	**+0.8**
	6.7nm,0.7s,mb4.7,baz=135,slow=5.2,SNR=15							
MAW	**Mawson**	**76.32**	**200**	*e*P	**P**	**08 37 46.8**	**+0.5**
	8.5nm,0.6s,mb4.8							
MAW				*e*	pP	08 37 58.2	+2.4
SYO	**Syowa Base**	**81.15**	**193**	⇓P	**P**	**08 38 12.6**	**+0.1**
SYO	**Syowa Base**	**81.15**	**193**	⇓*e*P	**P**	**08 38 12.6**	**+0.1**
SNAA	**Sanae**	**82.05**	**178**	*e*P	**P**	**08 38 16.6**	**-0.5**
VNA3	**Neumayer Olymp**	**82.15**	**176**	⇑*i*	**P**	**08 38 19.2**	**+1.5**
VNA2	**Neumayer--Watz**	**82.60**	**177**	⇓*i*	**P**	**08 38 22.2**	**+2.2**
VNA1	**Neumayer--Stat**	**82.82**	**176**	⇑*i*	**P**	**08 38 24.8**	**+3.6**
CMB	**Columbia Colle**	**83.19**	**42**	*e*P	**P**	**08 38 23.8**	**+0.1**
	1.8nm,0.7s,mb4.2							
NVAR	**Mina Array Bea**	**84.69**	**42**	P	**P**	**08 38 31.1**	**-0.2**
	1.7nm,0.8s,mb4.2,baz=231,slow=11,SNR=11							
TPH	**Tonopah**	**85.12**	**43**	*e*P	**P**	**08 38 33.3**	**-0.2**
	4.5nm,1.0s,mb4.5							
TUC	**Tucson**	**85.89**	**51**	*e*P	**P**	**08 38 37.8**	**+0.3**
	3.8nm,0.8s,mb4.7							
CN2	**Changchun**	**87.62**	**322**	*e*P	**P**	**08 38 47.4**	**+1.8**
CN2				LR	LR			
	comp=Z,300nm,18.0s,MS4.8							
RMW	**Rattlesnake Mo**	**88.71**	**34**	*e*P	**P**	**08 38 50.5**	**-0.2**
TXAR	**Lajitas Array**	**89.44**	**57**	P	**P**	**08 38 54.6**	**0.0**
	comp=Z,1.1nm,0.8s,mb4.2,baz=200,slow=7.7,SNR=14							
HLID	**Hailey**	**90.19**	**40**	*e*P	**P**	**08 38 57.8**	**0.0**
	comp=Z,2.5nm,1.1s,mb4.5							
ANMO	**Albuquerque**	**90.36**	**51**	*e*P	**P**	**08 38 56.9**	**-1.9**
	comp=Z,3.6nm,0.9s,mb4.7							
PMR	**Palmer**	**90.57**	**13**	*e*P	**P**	**08 38 57.4**	**-1.7**
	comp=Z,6.2nm,1.1s,mb4.8							
BJI	**Beijing**	**90.82**	**315**	*e*P	**P**	**08 39 07.8**	**+7.0**
BJI				AMB	AMB			
	comp=Z,6.0nm,0.7s,mb5.0							
MCMT	**McKenzie Canyo**	**91.85**	**40**	*e*P	**P**	**08 39 05.4**	**0.0**
PDAR	**Pinedale Array**	**92.61**	**43**	P	**P**	**08 39 08.2**	**-0.8**
	comp=Z,1.2nm,0.9s,mb4.3,baz=230,slow=1.8,SNR=9.7							
KMI	**Kunming**	**92.93**	**297**	*e*P	**P**	**08 39 12.6**	**+1.8**
KMI				AP	pP	08 39 24.6	+4.2
KMI				XP	sP	08 39 29.6	+6.1
KMI				S	S	08 50 09.8	-1.8
KMI				XS		08 50 30.3	
KMI				AMB	AMB			
	comp=Z,7.0nm,1.2s,mb5.0							
KMI				LR	LR			
	comp=N,184nm,24.1s,MS4.5							
KMI				LR	LR			
	comp=E,140nm,25.1s,MS4.5							
KMI				LR	LR			
	comp=Z,35nm,22.4s,MS3.8							
ILAR	**Eielson Array**	**93.89**	**12**	P	**P**	**08 39 12.7**	**-1.6**
	comp=Z,0.5nm,0.8s,mb4.0,baz=224,slow=6.0,SNR=4.7							
LZH	**Lanzhou**	**97.16**	**307**	*e*P	**P**	**08 39 32.0**	**+2.1**
LZH				AP	pP	08 39 41.5	+1.9
LZH				XP	sP	08 39 46.0	+3.4
WMQ	**Urumqi**	**111.53**	**309**	PKP	PKPdf	08 44 31.5	-3.8
WMQ				PP	PP	08 45 17.8	+1.7
WMQ				PP	PP		
	comp=Z,6.0nm,10.2s							
WMQ				LR	LR			
	comp=N,87nm,28.2s,MS4.3							
WMQ				LR	LR			
	comp=E,95nm,29.0s,MS4.3							
WMQ				LR	LR			
	comp=Z,152nm,28.6s,MS4.4							
MKAR	**Makanchi Array**	**115.95**	**311**	PKP	PKPdf	08 44 38.1	-5.8
	comp=Z,1.2nm,0.9s,SNR=4.6							
ARCES	**ARCESS Array B**	**134.94**	**349**	PKP	PKPdf	08 45 14.4	-5.3
	comp=Z,1.4nm,0.7s,SNR=4.3							
FINES	**FINESS Array B**	**141.75**	**342**	PKhKP		08 45 22.7	
	comp=Z,2.8nm,1.0s,baz=180,slow=1.9,SNR=3.7							
FINES	**FINESS Array B**	**141.75**	**342**	PKP	PKPdf	08 45 22.7	-9.4
NB2	**NORSAR Subarra**	**145.00**	**353**	PKP		08 45 30.8	
	comp=Z,3.7nm,0.8s,baz=11,slow=3.6							
NOA	**NORSAR Array B**	**145.00**	**355**	PKP	PKPdf	08 45 31.9	-5.8
	comp=Z,6.6nm,0.9s,baz=11,slow=2.4,SNR=14							
BRTR

PTOM Tomar 20.80 71 *e*P P **08 49 56.5 +0.1**
37nm,1.1s
EMAZ Mazaricos 20.82 62 P P **08 49 55.0 -1.5**
15nm,0.9s
MOE Montemor 20.82 74 *e*P P **08 49 56.7 +0.1**
MOE Montemor 20.82 74 *e*P P **08 49 56.6 0.0**
EVO Evora 21.09 74 *e*P P **08 49 57.6 -1.7**
39nm,1.2s,mb4.3
EVO *e*R
977nm,20.2s
STS Santiago 21.11 62 P P **08 49 58.1 -1.4**
3.7nm,0.4s,mb4.1
PBEJ Beja 21.21 76 *e*P P **08 49 59.8 -0.8**
16nm,1.0s,mb4.3
PBEJ Beja 21.21 76 *e*P P **08 49 59.7 -0.9**
PVIS Viseu 21.28 68 *e*P P **08 50 01.5 +0.3**
18nm,0.9s,mb4.4
ELOB Lobios 21.29 65 P P **08 50 00.2 -1.2**
8.0nm,0.9s,mb4.0
PVRL Vila Real 21.47 67 *e*P P **08 50 03.5 +0.3**
25nm,1.3s,mb4.4
PVRL Vila Real 21.47 67 *e*P P **08 50 03.4 +0.2**
MTE Manteigas 21.52 69 *e*P P **08 50 03.7 0.0**
43nm,1.1s,mb4.8
MTE Manteigas 21.52 69 *e*P P **08 50 03.9 +0.3**
EGRO El Granado 21.54 77 P P **08 50 02.6 -1.2**
14nm,0.8s,mb4.5
PCBR Castelo Branco 21.54 71 *e*P P **08 50 03.5 -0.3**
16nm,1.1s,mb4.3
PCBR Castelo Branco 21.54 71 *e*P P **08 50 03.4 -0.4**
EBAD Badajoz 21.87 74 P P **08 50 06.2 -1.0**
24nm,0.9s,mb4.6
EINC Incio 21.94 63 P P **08 50 07.1 -0.8**
27nm,1.0s,mb4.6
EMIN Mina Concepcio 22.17 76 P P **08 50 09.4 -0.8**
23nm,0.9s,mb4.6
EPON Pontenova 22.20 61 P P **08 50 09.9 -0.6**
12nm,1.0s,mb4.3
PBRG Bragança 22.26 66 *e*P P **08 50 12.6 +1.5**
17nm,1.3s,mb4.3
ECAL Calabor 22.28 65 P P **08 50 10.3 -1.0**
17nm,1.1s,mb4.4
ESPR Espera 22.88 78 P P **08 50 18.3 +1.1**
13nm,0.4s,mb4.7
ELIJ Sierra de Lija 23.25 78 P P **08 50 21.5 +0.6**
14nm,1.0s,mb4.3
EARI Arriondas 23.59 62 P P **08 50 25.6 +1.5**
7.1nm,1.1s,mb4.0
EADA Adamuz 23.80 75 P P **08 50 26.9 +0.8**
5.0nm,0.8s,mb4.0
ELUQ Luque 24.08 76 P P **08 50 29.6 +0.7**
GUD Guadarrama 24.11 69 P P **08 50 30.5 +1.3**
3.6nm,0.6s,mb4.0
ELOJ Sierra Loja 24.21 77 P P **08 50 31.1 +0.9**
28nm,1.0s,mb4.6
ESDC Sonseca Array 24.24 71 P P **08 50 31.3 +0.9**
5.4nm,0.7s,mb4.1,baz=272,slow=8.9,SNR=24
ESDC LR LR 08 57 37.6
comp=Z,647nm,21.7s,MS4.1,baz=275,slow=31
ESDC Sonseca Array 24.24 71 P P **08 50 30.7 +0.3**
5.4nm,0.8s,mb4.0
EBAN Banos Encina 24.42 75 P P **08 50 32.7 +0.5**
ERON Agron 24.50 78 P P **08 50 34.5 +1.5**
16nm,1.2s,mb4.3
ECOG Cogollos-Vega 24.66 77 P P **08 50 35.8 +1.2**
23nm,1.0s,mb4.7
ELAN Lanestosa 24.87 63 P P **08 50 36.8 +0.3**
8.8nm,0.9s,mb4.3
EQES Quesada 25.01 76 P P **08 50 38.4 +0.5**
68nm,1.8s,mb4.9
EHUE Huescar 25.39 76 P P **08 50 41.5 +0.1**
6.9nm,0.9s,mb4.2
EVIA Vianos 25.40 74 P P **08 50 41.7 +0.1**
22nm,0.9s,mb4.7
BBSR BB Station 25.43 272 PFAKE 08 50 50.0 +8.1
BBSR LR LR
comp=Z,2μm,21.0s,MS4.7
QUIF Quistinic 26.04 52 *e*P P **08 50 47.3 -0.1**
comp=Z,15nm,0.9s,mb4.2
ROSF Rostrenen 26.09 51 *e*P P **08 50 47.9 0.0**
comp=Z,14nm,1.0s,mb4.2
ETOB Tobarra 26.15 74 P P **08 50 49.6 +1.1**
comp=Z,9.8nm,0.7s,mb4.5
SGMF Saint Gilles 26.52 52 *e*P P **08 50 51.5 -0.4**
comp=Z,17nm,0.8s,mb4.3
EMMW East Machias 26.82 300 PFAKE 08 51 10.0 +15
EMMW LR LR
comp=Z,3μm,20.0s,MS4.9
ETSF Etsaut 26.93 64 *e*P P **08 50 55.8 +0.1**
PQI Presque Isle 27.54 304 PFAKE 08 51 10.0 +8.8
PQI LR LR
comp=Z,3μm,20.0s,MS4.8
EPF Esparros 27.60 64 *e*P P **08 51 01.8 0.0**
GRR Gorron 27.65 52 *e*P P **08 51 01.5 -0.7**
comp=Z,14nm,0.8s,mb4.3
MFF Saint Martin d 27.72 56 *e*P P **08 51 02.8 0.0**
comp=Z,30nm,1.0s,mb4.6
LFF La Frestale 28.07 60 *e*P P **08 51 05.6 -0.4**
LDF La Druitiere 28.18 52 *e*P P **08 51 06.8 -0.1**
comp=Z,12nm,0.8s,mb4.3
WVL Waterville 28.36 299 PFAKE 08 51 20.0 +11
WVL LR LR
comp=Z,3μm,22.0s,MS4.8
RJF Les Rejaudoux 28.66 59 *e*P P **08 51 10.6 -0.7**
RJF *e*R
comp=Z,341nm,17.8s
ESK Eskdalemuir 28.97 37 *e*P P **08 51 13.9 -0.1**
comp=Z,16nm,0.8s,mb4.8
ESK LR LR
comp=Z,965nm,20.0s,MS4.4
MTLF Montolieu 28.99 63 *e*P P **08 51 13.8 -0.5**
CAF Calviac 29.00 60 *e*P P **08 51 14.0 -0.4**
comp=Z,11nm,0.8s,mb4.3
EKA Eskdalemuir Ar 29.00 37 P P **08 51 14.7 +0.4**
comp=Z,6.6nm,0.7s,mb4.5,baz=242,slow=7.8,SNR=26
TCF Toulx Ste Croi 29.27 57 *e*P P **08 51 16.4 -0.4**
comp=Z,24nm,0.8s,mb4.7
WES Weston 29.44 295 PFAKE 08 51 30.0 +12
WES LR LR
comp=Z,2μm,19.0s,MS4.8
SCHQ Schefferville 29.55 321 P P **08 51 18.5 -0.7**
comp=Z,11nm,1.2s,mb4.5,baz=109,slow=11,SNR=8.5
SCHQ PcP PcP 08 54 23.1 -1.3
comp=Z,4.0nm,0.8s,baz=125,slow=4.1,SNR=3.6
SCHQ LR LR 09 01 41.7
comp=Z,894nm,21.6s,MS4.4,baz=103,slow=34
SCHQ Schefferville 29.55 321 *e*P P **08 51 17.6 -1.7**
comp=Z,14nm,0.9s,mb4.7
SCHQ LR LR
comp=Z,1μm,21.0s,MS4.6
HRV Harvard--Oak R 29.62 295 *e*P P **08 51 19.7 -0.3**
comp=Z,22nm,1.2s,mb4.8
HRV LR LR
comp=Z,167nm,21.0s,MS3.6
BGF Bois d'Agland 29.74 57 *e*P P **08 51 20.8 -0.3**
comp=Z,13nm,0.8s,mb4.4
AVF Avril sur Loir 30.12 57 *e*P P **08 51 24.2 -0.2**
comp=Z,6.1nm,0.8s,mb4.1
BORG Borgarnes 30.18 11 LR LR 09 00 50.5
comp=Z,476nm,19.1s,MS4.2,baz=219,slow=31
LASF Ste Croix 30.21 62 *e*P P **08 51 24.6 -0.7**
SSF Saint Saulge 30.27 56 *e*P P **08 51 26.2 +0.5**
comp=Z,8.0nm,0.8s,mb4.2
SMF Signal de Mont 30.43 57 *e*P P **08 51 26.6 -0.6**
comp=Z,11nm,0.8s,mb4.3
VIVF Saint-Julien-l 30.84 61 *e*P P **08 51 30.4 -0.4**
ACCN Adirondack Com 31.18 297 *e*P P **08 51 34.2 +0.4**
BAIF Baives 31.27 51 *e*P P **08 51 34.1 -0.5**
comp=Z,45nm,1.1s,mb4.9
SMRF Simiane la Rot 31.45 62 *e*P P **08 51 35.7 -0.4**
MEZF Maizieres J'vi 31.52 54 *e*P P **08 51 36.6 -0.1**
GIVF Givet 31.67 51 *e*P P **08 51 37.7 -0.3**
BRNJ Basking Ridge 31.93 291 *e*P P **08 51 40.7 +0.3**
CABF La Chapelle 31.97 57 *e*P P **08 51 40.4 -0.3**
comp=Z,22nm,1.0s,mb4.6
HAU Haudompre 32.30 55 *e*P P **08 51 43.5 -0.1**
comp=Z,16nm,0.9s,mb4.5
HAU *e*R
comp=Z,278nm,17.8s
LPL La Plagne 32.34 59 *e*P P **08 51 43.6 -0.3**
comp=Z,8.0nm,0.9s,mb4.2
LPG La Plagne 32.35 60 *e*P P **08 51 43.9 -0.1**
comp=Z,15nm,1.1s,mb4.4
WLF Walferdange 32.43 52 *e*P P **08 51 45.0 +0.3**
comp=Z,18nm,0.9s,mb4.9
HINF Hinteralfeld 32.62 55 *e*P P **08 51 46.1 -0.2**
comp=Z,3.5nm,0.6s,mb4.2

CDF Champ du Feu 32.97 54 *e*P P **08 51 49.5 +0.1**
comp=Z,46nm,1.3s,mb5.0
SJG San Juan 33.20 247 PFAKE 08 52 00.0 +8.3
SJG LR LR
comp=Z,347nm,19.0s,MS4.1
BFO Black Forest 33.66 55 *e*P P **08 51 55.6 +0.2**
BFO pmax pmax
comp=Z,16nm,1.2s,mb4.8
BFO Black Forest 33.66 55 *e*P P **08 51 55.6 +0.2**
comp=Z,16nm,1.2s,mb4.8
PGF Pioggiola 33.96 65 *e*P P **08 51 58.1 0.0**
comp=Z,13nm,1.0s,mb4.5
STU Stuttgart 34.28 54 *e*P P **08 52 00.1 -0.7**
SSPA Standing Stone 34.45 292 PFAKE 08 52 10.0 +7.7
SSPA LR LR
comp=Z,3μm,20.0s,MS5.0
DAVA Damuels 34.61 57⇓ *i*P P **08 52 04.4 +0.8**
comp=Z,11nm,0.9s,mb4.8
FRB Frobisher Bay 35.06 334 P P **08 52 06.6 -0.7**
comp=Z,20nm,0.9s,mb5.0,baz=128,slow=8.6,SNR=22
SADO Sadowa 35.13 299 P P **08 52 07.0 -1.1**
comp=Z,8.2nm,0.9s,mb4.7,baz=102,slow=8.4,SNR=7.0
SADO Sadowa 35.13 299 P P **08 52 07.0 -1.1**
ZCCA Zocca 35.33 62 *e*P P **08 52 11.4 +1.6**
CLZ Clausthal 35.44 49 *e*P P **08 52 11.5 +0.8**
comp=Z,16nm,1.2s,mb4.8
MOTA Moosalm 35.45 56⇑ *i*P P **08 52 11.4 +0.7**
comp=Z,24nm,1.9s,mb4.8
SQTA Sankt Quirin 35.51 57⇑ *i*P P **08 52 12.8 +1.5**
comp=Z,17nm,1.5s,mb4.8
GRA1 Grafenberg Arr 35.70 52 *e*P P **08 52 13.6 +0.8**
comp=Z,27nm,1.3s,mb5.0
GRF Grafenberg Arr 35.70 52 *e*P P **08 52 13.6 +0.8**
GRF pmax pmax
comp=Z,27nm,1.3s,mb5.0
WTTA Wattenberg 35.81 57⇑ *i*P P **08 52 14.9 +1.1**
comp=Z,12nm,0.9s,mb4.8
ERPA Erie 35.88 295 PFAKE 08 52 30.0 +16
ERPA LR LR
comp=Z,548nm,20.0s,MS4.3
MOX Moxa 36.05 51 *i* P P **08 52 16.9 +1.1**
comp=Z,logA/T=1.1,mb4.8
MOX S **S** **08 58 00.0 +5.9**
MOX LR LR 09 02 00.0
MOX Moxa 36.05 51 *e*P P **08 52 16.9 +1.1**
MOX pmax pmax
comp=Z,19nm,1.5s,mb4.8
MOX Moxa 36.05 51 *e*P P **08 52 16.9 +1.1**
comp=Z,19nm,1.5s,mb4.8
MCWV Mont Chateau 36.06 290 PFAKE 08 52 30.0 +14
MCWV LR LR
comp=Z,587nm,20.0s,MS4.3
NKC Novy Kostel 36.54 52 *e*P P **08 52 20.7 +0.8**
WET Wettzell 36.73 54 *e*P P **08 52 21.8 +0.3**
WET pmax pmax
comp=Z,12nm,1.6s,mb4.5
WET Wettzell 36.73 54 *e*P P **08 52 21.8 +0.3**
comp=Z,12nm,1.6s,mb4.5
ARV Arcevia 36.79 63 *e*P P **08 52 21.8 -0.3**
SNTG Esanatoglia 36.81 63 *e*P P **08 52 22.7 +0.4**
BLA Blacksburg 36.93 286 PFAKE 08 52 40.0 +17
BLA LR LR
comp=Z,578nm,20.0s,MS4.4
KBA Koelnbreinsper 36.97 57⇑ *i*P P **08 52 24.3 +0.7**
comp=Z,18nm,1.1s,mb4.8
PTCC Patocco-Chiusa 36.97 58 *e*P P **08 52 24.0 +0.4**
CLL Collm 37.00 50 P P **08 52 25.0 +1.2**
comp=Z,logA/T=0.9,mb4.5
CLL *e*S **S** **08 58 12.0 +3.4**
CLL Collm 37.00 50 *e*P P **08 52 25.0 +1.2**
CLL pmax pmax
comp=Z,8.0nm,1.1s,mb4.5
CLL Collm 37.00 50 *e*P P **08 52 25.0 +1.2**
comp=Z,8.0nm,1.1s,mb4.5
SUMG Summit 37.09 358 *e*P P **08 52 24.9 +0.5**
KHC Kasperske Hory 37.19 54 *e*P P **08 52 26.1 +0.7**
AQU L'Aquila 37.23 65 *e*P P **08 52 25.9 +0.1**
ERC Erice 37.24 72 *e*P P **08 52 27.7 +1.8**
GEC2 GERESS Array S 37.25 54 *e*P P **08 52 26.4 +0.5**
GERES GERESS Array B 37.25 54 P P **08 52 26.7 +0.8**
comp=Z,3.7nm,1.0s,mb4.2,baz=259,slow=6.8,SNR=16
JAVS Javornik 37.48 59 *e*P P **08 52 28.6 +0.7**
BRG Berggiesshubel 37.54 51 *e*P P **08 52 29.3 +0.9**
BRG pmax pmax
comp=Z,7.0nm,1.0s,mb4.3
BRG Berggiesshubel 37.54 51 *e*P P **08 52 29.3 +0.9**
comp=Z,7.3nm,1.0s,mb4.4
MOA Molln 37.60 56⇑ *i*P P **08 52 29.1 +0.2**
comp=Z,12nm,0.8s,mb4.7
SDI San Donato 37.60 66 *e*P P **08 52 35.3 +6.4**
OBKA Obir 37.80 58⇑ *i*P P **08 52 31.1 +0.6**
comp=Z,26nm,0.7s,mb5.1
PRU Pruhonice 37.86 52 *e*P P **08 52 32.8 +1.8**
CPI2 Carpinone 37.99 66 *e*P P **08 52 33.9 +1.7**
VISS Visnje 38.02 59 *e*P P **08 52 33.7 +1.2**
JSC Jenkinsville 38.30 282 *e*P P **08 52 35.5 +0.6**
NB2 NORSAR Subarra 38.30 34 P P **08 52 34.9 +0.3**
comp=Z,24nm,1.4s,mb4.7,baz=250,slow=8.6
NB2 NORSAR Subarra 38.30 34 P P **08 52 41.6 +7.0**
NOA NORSAR Array B 38.30 34 P P **08 52 35.4 +0.7**
comp=Z,49nm,1.4s,mb5.0,baz=251,slow=8.5,SNR=4.3
NOA LR LR 09 05 46.3
comp=Z,172nm,19.2s,MS3.9,baz=215,slow=32
BOJS Bojanci 38.32 60 *e*P P **08 52 36.0 +1.1**
ACSO Alum Creek Sta 38.36 292 *e*P P **08 52 35.8 +0.4**
comp=Z,28nm,1.0s,mb5.0
ACSO LR LR
comp=Z,872nm,21.0s,MS4.5
ARSA Arzberg 38.45 57⇑ *i*P P **08 52 35.9 -0.2**
comp=Z,6.9nm,0.8s,mb4.4
AAM Ann Arbor 38.57 295 PFAKE 08 52 50.0 +13
AAM LR LR
comp=Z,522nm,20.0s,MS4.3
CSSN Cassano Irpino 38.62 67 *e*P P **08 52 39.1 +1.6**
UPC Upice 38.83 52 *e*P P **08 52 40.0 +0.8**
SGO Sicignano 38.88 67 *e*P P **08 52 41.1 +1.4**
MRLC Muro Lucano 38.99 67 *e*P P **08 52 42.1 +1.5**
DPC Dobruska-Polom 39.02 52 *e*P P **08 52 41.9 +1.1**
KSP Ksiaz 39.03 51 *e*P P **08 52 42.0 +1.2**
MGR Morigerati 39.13 68 *e*P P **08 52 43.8 +2.0**
SLCN Sala Consilina 39.15 68 *e*P P **08 52 43.7 +1.8**
DBIC Dimbokro 39.44 130 P P **08 52 44.5 -0.2**
comp=Z,12nm,1.0s,mb4.6,baz=310,slow=8.7,SNR=4.5
DBIC LR LR 09 06 25.4
comp=Z,280nm,20.5s,MS4.1,baz=299,slow=32
DBIC Dimbokro 39.44 130 P P **08 52 44.5 -0.2**
DBIC LR LR 09 06 25.4
MORC Moravsky Berou 39.79 53 *e*P P **08 52 48.3 +1.1**
comp=Z,4.2nm,0.9s,mb4.2
MYNC Murphy 40.35 284 *e*P P **08 52 52.4 +0.4**
comp=Z,44nm,1.4s,mb5.0
MYNC LR LR
comp=Z,577nm,19.0s,MS4.5
DWPF Disney 40.48 273 PFAKE 08 53 00.0 +6.9
DWPF LR LR
comp=Z,745nm,22.0s,MS4.5
CPCT Cooper Cave 40.56 285 *e*P P **08 52 54.5 +0.8**
VYHS Vyhne 40.65 55 *i* P P **08 52 54.7 +0.4**
BLO Bloomington 41.23 291 *e*P P **08 52 59.6 +0.5**
comp=Z,13nm,0.8s,mb4.6
PSZ Piszkesteto 41.39 56 *e*P P **08 53 01.7 +1.4**
comp=Z,12nm,1.1s,mb4.4
SWET Sewanee 41.74 285 *e*P P **08 53 04.2 +0.9**
DAG Danmarks Havn 41.84 5⇑ *i*P P **08 53 04.3 +0.6**
comp=Z,4.0nm,0.6s,mb4.2
DAG Danmarks Havn 41.84 5⇑ *i*P P **08 53 04.3 +0.6**
DAG pmax pmax
comp=Z,4.0nm,0.6s,mb4.2
CRVS Cervenica-Dubn 42.38 54 *e*P P **08 53 09.1 +0.8**
SDV Santo Domingo 42.53 240 P P **08 53 11.6 +1.5**
comp=Z,4.3nm,0.3s,mb4.7,baz=162,slow=2.1,SNR=9.4
WVT Waverly 42.97 287 *e*P P **08 53 13.3 -0.1**
comp=Z,7.8nm,1.0s,mb4.4
WVT LR LR
comp=Z,443nm,22.0s,MS4.3
LRAL Lakeview Retre 43.23 282 *e*P P **08 53 16.4 +0.8**
comp=Z,36nm,1.5s,mb4.9
LRAL LR LR
comp=Z,421nm,20.0s,MS4.3
JFWS Jewell Farm 43.30 297 PFAKE 08 53 30.0 +14
JFWS LR LR
comp=Z,298nm,20.0s,MS4.2
PLAL Pickwick Lake 43.49 286 *e*P P **08 53 17.8 +0.2**
comp=Z,9.1nm,0.9s,mb4.5
PLAL *e*PcP PcP 08 55 04.5 -1.7
PLAL LR LR
comp=Z,451nm,22.0s,MS4.3
SIUC Southern Illin 43.63 290 *e*P P **08 53 19.1 +0.4**
comp=Z,24nm,0.8s,mb5.0
FVM French Village 44.49 290 *e*P P **08 53 25.6 -0.1**
comp=Z,6.8nm,0.7s,mb4.5
OXF Oxford 44.68 285 *e*P P **08 53 26.9 -0.4**
comp=Z,26nm,0.8s,mb5.1
OXF LR LR
comp=Z,340nm,19.0s,MS4.3
FCC Fort Churchill 44.93 320 *e*P P **08 53 29.7 +0.8**
comp=Z,75nm,1.1s,mb5.4
FINES FINESS Array B 45.38 36 P P **08 53 33.3 +0.9**
comp=Z,4.1nm,0.9s,mb4.3,baz=214,slow=6.9,SNR=7.9
FINES LR LR 09 10 16.2
comp=Z,390nm,18.3s,MS4.4,baz=349,slow=33
VSU Vasula 45.48 40 *e*P P **08 53 33.7 +0.4**
ULM Lac du Bonnet 46.14 308 P P **08 53 37.9 -0.8**
comp=Z,12nm,0.8s,mb4.8,baz=83,slow=7.9,SNR=7.1
ULM LR LR 09 11 53.7
comp=Z,884nm,20.8s,MS4.7,baz=54,slow=35
ULM Lac du Bonnet 46.14 308 *e*P P **08 53 37.9 -0.8**
comp=Z,20nm,0.9s,mb5.1
ULM LR LR
comp=Z,1μm,21.0s,MS4.9
RDO Rodhopi 46.37 64 P P **08 53 42.8 +2.2**
ARCES ARCESS Array B 46.59 25 P P **08 53 42.1 +0.2**
comp=Z,23nm,0.8s,mb5.1,baz=260,slow=7.4,SNR=34
AKASG Malin Array Be 47.23 51 P P **08 53 47.1 -0.1**
KBS Kingsbay 47.32 11 PFAKE 08 54 00.0 +12
KBS LR LR
comp=Z,330nm,19.0s,MS4.3
MIAR Mount Ida 47.93 287 *e*P P **08 53 52.4 -0.6**
comp=Z,62nm,1.4s,mb5.5
MIAR *e*PcP PcP 08 55 21.5 -0.2
MIAR LR LR
comp=Z,439nm,19.0s,MS4.5
ROSC El Rosal 47.96 240 P P **08 53 53.6 +0.2**
comp=Z,3.6nm,0.3s,mb4.8,baz=80,slow=21,SNR=3.7
ROSC LR LR 09 10 55.3
comp=Z,602nm,20.6s,MS4.6,baz=50,slow=32
RES Resolute Bay 48.32 342 *e*P P **08 53 55.8 +0.3**
comp=Z,18nm,0.9s,mb5.1
RES *e*PcP PcP 08 55 21.9 -0.8
KSU1 Kansas State U 48.85 294 *e*P P **08 53 58.7 -1.3**
FFC Flin Flon 49.37 315 *e*P P **08 54 04.0 +0.2**
comp=Z,18nm,0.8s,mb5.2
OBN Obninsk 51.05 44K *i*P P **08 54 16.3 -0.4**
OBN pmax pmax
comp=Z,73nm,0.9s,mb5.6
OBN MLR MLR
comp=Z,100nm,15.0s,MS4.0
OBN Obninsk 51.05 44 *e*P P **08 54 16.4 -0.3**
comp=Z,58nm,0.7s,mb5.6
OBN LR LR
comp=Z,442nm,19.0s,MS4.5
CBKS Cedar Bluff 51.27 294 PFAKE 08 54 30.0 +11
CBKS LR LR
comp=Z,490nm,19.0s,MS4.5
HKT Hockley 51.38 282 *e*P P **08 54 19.6 +0.2**
comp=Z,7.0nm,1.0s,mb4.5
HKT LR LR
comp=Z,327nm,20.0s,MS4.3
WMOK Wichita Mounta 51.90 289 *e*P P **08 54 22.1 -1.2**
comp=Z,16nm,1.3s,mb4.8
WMOK *e*PcP PcP 08 55 36.0 -0.3
WMOK LR LR
comp=Z,361nm,19.0s,MS4.4
JTS JuntasAbangare 52.38 254 PFAKE 08 54 40.0 +13
JTS LR LR
comp=Z,86nm,22.0s,MS3.8
BDFB Brasilia 52.63 197 P P **08 54 29.4 +0.4**
comp=Z,12nm,0.9s,mb4.8,baz=34,slow=7.5,SNR=13
BDFB LR LR 09 13 20.5
comp=Z,277nm,18.8s,MS4.3,baz=299,slow=32
BRTR Keskin Array B 52.71 64 P P **08 54 29.6 +0.3**
comp=Z,5.4nm,1.1s,mb4.4,baz=281,slow=6.3,SNR=12
BRTR PcP PcP 08 55 39.1 0.0
comp=Z,1.3nm,0.8s,baz=270,slow=1.2,SNR=3.9
BRTR LR LR 09 15 16.5
comp=Z,114nm,21.2s,MS3.9,baz=85,slow=34
RSSD Black Hills 52.79 302 P P **08 54 29.1 -0.9**
comp=Z,5.9nm,1.3s,mb4.4
RSSD LR LR
comp=Z,792nm,20.0s,MS4.8
OTAV Otavalo 54.11 239 *e*P P **08 54 39.8 -0.2**
comp=Z,26nm,1.3s,mb5.1
JCT Junction City 54.31 285 *e*P P **08 54 40.0 -1.2**
comp=Z,20nm,1.0s,mb5.0
JCT *e*PcP PcP 08 55 44.6 -0.7
JCT LR LR
comp=Z,521nm,21.0s,MS4.6
YKW3 Yellowknife Ar 54.78 326 *e*P P **08 54 43.7 -0.6**
YKA Yellowknife Ar 54.78 326 P P **08 54 43.8 -0.5**
comp=Z,15nm,0.9s,mb5.0,baz=80,slow=7.3,SNR=195
YKA PcP PcP 08 55 45.7 -1.0
comp=Z,2.4nm,0.9s,baz=80,slow=4.4,SNR=8.1
YKA LR LR 09 17 20.8
comp=Z,509nm,20.4s,MS4.6,baz=85,slow=35
YKA Yellowknife Ar 54.78 326 P P **08 54 43.8 -0.5**
YKA PcP PcP 08 55 45.7 -1.0
YKA LR LR 09 17 20.8
ISCO Idaho Springs 55.26 297 *e*P P **08 54 48.1 -0.1**
comp=Z,7.3nm,0.9s,mb4.7
ISCO *e*PcP PcP 08 55 49.5 +0.7
ISCO LR LR
comp=Z,543nm,20.0s,MS4.6
SOC Sochi 55.80 58 *e*P P **08 54 52.1 +0.1**
SOC *e*PPP PPP 08 58 19.0 +6.3
SOC *e*S **S** **09 02 34.7 -2.4**
SOC pmax pmax
comp=N,15nm,1.0s
SOC pmax pmax
comp=Z,12nm,1.0s,mb4.9
SOC pmax pmax
comp=E,19nm,0.9s
SOC MLR MLR
comp=Z,532nm,32.0s,MS4.4
SOC MLR MLR
comp=N,124nm,16.0s
SOC MLR MLR
comp=E,314nm,35.0s
SOC Sochi 55.80 58 *e*P P **08 54 52.1 +0.1**
comp=E,12nm,1.0s,mb4.9
SOC *e*PPP PPP 08 58 19.0 +6.3
SOC *e*S **S** **09 02 34.7 -2.4**
SOC LR LR
comp=Z,530nm,32.0s,MS4.4
SDCO Great Sand Dun 55.90 295 *e*P P **08 54 52.5 -0.2**
comp=Z,6.7nm,0.8s,mb4.7
SDCO LR LR
comp=Z,486nm,20.0s,MS4.6
CPRX Cap Rock 56.46 289 *e*P P **08 54 54.2 -2.6**
CLNB Carlsbad 56.77 288 *e*P P **08 54 56.8 -2.4**
BW06 Boulder Array 57.04 302 PFAKE 08 55 10.0 +9.1
BW06 LR LR
comp=Z,634nm,20.0s,MS4.7
PDAR Pinedale Array 57.04 302 P P **08 55 00.0 -0.9**
comp=Z,3.3nm,0.9s,mb4.4,baz=76,slow=6.1,SNR=28
PDAR LR LR 09 19 37.3
comp=Z,552nm,18.4s,MS4.7,baz=99,slow=36
GDL2 Guadalupe Moun 57.17 288 *e*P P **08 55 01.0 -1.0**
HRY Holter Researc 57.25 307 *e*P P **08 55 01.3 -1.0**
YMR Madison River 57.35 304 *e*P P **08 55 03.5 +0.4**
BOZ Bozeman (W) 57.47 306 *e*P P **08 55 03.5 -0.4**
comp=Z,13nm,1.2s,mb4.8
BOZ LR LR
comp=Z,616nm,20.0s,MS4.7
QLMT Earthquake Lak 57.61 305 *e*P P **08 55 04.9 0.0**
ANMO Albuquerque 57.67 292c *i*P P **08 55 06.0 +0.6**
ANMO Albuquerque 57.67 292 *e*P P **08 55 05.2 -0.2**
comp=Z,14nm,1.3s,mb4.8
ANMO *e*PcP PcP 08 55 57.9 -0.4
ANMO LR LR
comp=Z,671nm,22.0s,MS4.7
KIV Kislovodsk 57.70 56 *e*P P **08 55 05.6 +0.1**
KIV pmax pmax
comp=Z,8.0nm,0.9s,mb4.8
KIV Kislovodsk 57.70 56 *e*P P **08 55 05.7 +0.2**
KIV LR LR
comp=Z,93nm,19.0s,MS3.9
WALA Waterton Lakes 57.82 310 *e*P P **08 55 05.1 -1.1**
comp=Z,8.2nm,1.0s,mb4.7
TXAR Lajitas Array 57.84 285 P P **08 55 05.8 -0.8**
comp=Z,5.6nm,0.9s,mb4.6,baz=83,slow=7.6,SNR=61
TXAR PcP PcP 08 55 58.8 -0.2
comp=Z,2.1nm,1.0s,baz=76,slow=5.2,SNR=4.0

TXAR					LR	LR	09 17 24.7	
	comp=Z,310nm,21.3s,MS4.4,baz=95,slow=33							
TXAR	**Lajitas Array**	**57.84**	**285**	P	**P**	**08 55 05.8**	**-0.8**
TXAR				PcP	PcP	08 55 58.8	-0.2
TXAR				LR	LR	09 17 24.7	
PV01	**Paradox Valley**	**58.01**	**296**	*eP*	**P**	**08 55 08.1**	**+0.4**
AHID	**Auburn Hatcher**	**58.10**	**302**	*eP*	**P**	**08 55 07.9**	**-0.4**
	comp=Z,31nm,1.3s,mb5.2							
AHID				*e*		08 55 16.7		
AHID				LR	LR			
	comp=Z,662nm,20.0s,MS4.8							
CHMT	**Chamberlain Mo**	**58.11**	**308**	*eP*	**P**	**08 55 07.4**	**-0.9**
CHMT				*e*		08 55 17.2		
CHMT				*e*PcP	PcP	08 55 58.5	-1.3
CHMT				*e*PP	PP	08 57 16.2	-2.5
BNM	**Barren Site**	**58.12**	**291**	*eP*	**P**	**08 55 08.9**	**+0.3**
BNM				*e*PcP	PcP	08 56 00.4	+0.4
MNTX	**Cornudas Mount**	**58.17**	**288**	*eP*	**P**	**08 55 07.6**	**-1.3**
	comp=Z,11nm,1.2s,mb4.8							
MNTX				LR	LR			
	comp=Z,466nm,19.0s,MS4.6							
LENM	**Lemitar**	**58.37**	**292**	*eP*	**P**	**08 55 10.6**	**+0.2**
MCMT	**McKenzie Canyo**	**58.56**	**305**	*eP*	**P**	**08 55 11.3**	**-0.2**
MCMT				*e*		08 55 20.5		
MSO	**Missoula**	**58.58**	**308**	PFAKE		08 55 20.0	+8.4
MSO				LR	LR			
	comp=Z,904nm,20.0s,MS4.9							
HWUT	**Hardware Ranch**	**58.84**	**301**	*eP*	**P**	**08 55 13.1**	**-0.5**
	comp=Z,12nm,1.0s,mb4.9							
HWUT				LR	LR			
	comp=Z,704nm,20.0s,MS4.8							
TCUT	**Toone Canyon**	**58.92**	**301**	*eP*	**P**	**08 55 13.5**	**-0.6**
TCUT				*e*		08 57 23.7		
SRU	**San Rafael**	**59.05**	**298**	*eP*	**P**	**08 55 14.4**	**-0.5**
SRU				*e*PcP	PcP	08 56 03.4	-0.2
DAU	**Daniels Canyon**	**59.07**	**300**	*eP*	**P**	**08 55 15.2**	**+0.1**
JLU	**Jordanelle**	**59.14**	**300**	*eP*	**P**	**08 55 14.8**	**-0.7**
HVU	**Hansel Valley**	**59.62**	**302**	*eP*	**P**	**08 55 17.8**	**-1.1**
NLU	**North Lily Min**	**59.83**	**300**	*eP*	**P**	**08 55 20.4**	**0.0**
HLID	**Hailey**	**60.07**	**304**	*eP*	**P**	**08 55 21.9**	**-0.1**
	comp=Z,5.6nm,1.1s,mb4.5							
HLID				*e*PcP	PcP	08 56 08.1	+0.5
HLID				LR	LR			
	comp=Z,540nm,20.0s,MS4.7							
NEW	**Newport**	**60.09**	**310**	*eP*	**P**	**08 55 21.0**	**-1.0**
	comp=Z,16nm,1.0s,mb5.0							
NEW				LR	LR			
	comp=Z,728nm,19.0s,MS4.8							
MSU	**Marysvale**	**60.47**	**298**	*eP*	**P**	**08 55 25.4**	**+0.6**
MSU				*e*PcP	PcP	08 56 09.8	+0.5
MVU	**Marysvale**	**60.50**	**298**	*eP*	**P**	**08 55 25.4**	**+0.5**
	comp=Z,11nm,1.0s,mb4.8							
MVU				*e*PcP	PcP	08 56 10.1	+0.7
MVU				LR	LR			
	comp=Z,366nm,19.0s,MS4.5							
INK	**Inuvik**	**60.71**	**335**	*eP*	**P**	**08 55 25.1**	**-0.9**
	comp=Z,73nm,1.4s,mb5.6							
INK				*e*PP	PP	08 57 36.8	-5.1
LPAZ	**La Paz**	**60.80**	**218**	P	**P**	**08 55 27.9**	**+0.6**
	comp=Z,6.7nm,0.9s,mb4.8,baz=19,slow=7.3,SNR=24							
LPAZ				LR	LR	09 19 34.6		
	comp=Z,217nm,19.5s,MS4.3,baz=65,slow=34							
DPW	**Davenport**	**60.91**	**310**	*eP*	**P**	**08 55 26.4**	**-1.2**
WUAZ	**Wupatki**	**61.11**	**295**	*eP*	**P**	**08 55 29.8**	**+0.6**
	comp=Z,29nm,1.3s,mb5.2							
WUAZ				LR	LR			
	comp=Z,426nm,19.0s,MS4.6							
LNOR	**Lincton Mounta**	**61.73**	**308**	*eP*	**P**	**08 55 31.3**	**-1.9**
TUC	**Tucson**	**62.05**	**291**	PFAKE		08 55 50.0	+14
TUC				LR	LR			
	comp=Z,457nm,19.0s,MS4.7							
NLW	**Nelson Butte**	**62.16**	**311**	*eP*	**P**	**08 55 33.9**	**-2.1**
HAWA	**Hanford**	**62.32**	**309**	PFAKE		08 55 50.0	+13
HAWA				LR	LR			
	comp=Z,577nm,21.0s,MS4.7							
ARU	**Arti**	**62.61**	**39**⇑	*iP*	**P**	**08 55 39.1**	**+0.2**
ARU				*e*		08 57 57.1		
ARU				*e*PPP	PPP	08 59 25.2	-3.5
ARU				*e*S	**S**	**09 04 07.4**	**+2.2**
ARU				*e*SS	SS	09 08 11.7	+0.2
ARU				pmax	pmax			
	comp=Z,10.0nm,1.3s,mb4.8							
ARU	**Arti**	**62.61**	**39**	*eP*	**P**	**08 55 38.9**	**0.0**
	comp=Z,34nm,1.8s,mb5.2							
ARU				LR	LR			
	comp=Z,211nm,20.0s,MS4.3							
BMN	**Battle Mountai**	**63.24**	**302**	*eP*	**P**	**08 55 43.1**	**-0.2**
	comp=Z,9.4nm,0.8s,mb5.0							
BMN				LR	LR			
	comp=Z,400nm,21.0s,MS4.6							
DLBC	**Dease Lake**	**63.27**	**324**	*eP*	**P**	**08 55 43.7**	**+0.4**
WVOR	**Wild Horse Val**	**63.36**	**304**	*eP*	**P**	**08 55 44.4**	**+0.4**
	comp=Z,31nm,1.4s,mb5.2							
WVOR				LR	LR			
	comp=Z,706nm,22.0s,MS4.8							
NEN	**Nelson**	**63.61**	**296**	*eP*	**P**	**08 55 46.2**	**+0.4**
TPH	**Tonopah**	**64.25**	**300**	*eP*	**P**	**08 55 49.7**	**-0.3**
	comp=Z,30nm,1.2s,mb5.2							
TPH				LR	LR			
	comp=Z,367nm,21.0s,MS4.5							
OCWA	**Octopus Mounta**	**64.64**	**312**	PFAKE		08 56 00.0	+7.6
OCWA				LR	LR			
	comp=Z,942nm,20.0s,MS5.0							
DAWY	**Dawson**	**64.73**	**332**	*eP*	**P**	**08 55 53.4**	**+0.7**
NVAR	**Mina Array Bea**	**64.86**	**300**	P	**P**	**08 55 53.3**	**-0.7**
	comp=Z,9.9nm,1.0s,mb4.8,baz=75,slow=7.2,SNR=51							
NVAR				PcP	PcP	08 56 28.4	+1.2
	comp=Z,0.9nm,0.8s,baz=213,slow=1.9,SNR=3.6							
NVAR				LR	LR	09 24 07.7		
	comp=Z,412nm,20.1s,MS4.6,baz=135,slow=36							
CPUP	**Villa Florida**	**65.37**	**203**	P	**P**	**08 55 55.4**	**-2.0**
	comp=Z,2.0nm,0.9s,mb4.2,baz=28,slow=4.2,SNR=3.4							
CPUP				LR	LR	09 23 42.4		
	comp=Z,61nm,18.9s,MS3.8,baz=247,slow=35							
CPUP	**Villa Florida**	**65.37**	**203**	P	**P**	**08 55 55.4**	**-2.0**
CPUP				LR	LR	09 23 42.4		
WCN	**Washoe City**	**65.48**	**302**	*eP*	**P**	**08 55 57.4**	**-0.5**
	comp=Z,12nm,1.1s,mb4.8							
MTUM	**Tungsten Hills**	**65.53**	**299**	*eP*	**P**	**08 55 58.6**	**+0.3**
BEKR	**Beckwourth**	**65.65**	**303**	*eP*	**P**	**08 55 58.8**	**-0.2**
	comp=Z,22nm,1.1s,mb5.1							
PFO	**Pinyon Flat Ob**	**65.72**	**295**	*eP*	**P**	**08 56 00.5**	**+1.0**
	comp=Z,42nm,1.3s,mb5.3							
PFO				LR	LR			
	comp=Z,778nm,19.0s,MS4.9							
HUMO	**Hull Mountain**	**66.15**	**306**	*eP*	**P**	**08 56 00.6**	**-1.5**
YBH	**Yreka Blue Hor**	**66.39**	**305**	PFAKE		08 56 20.0	+16
YBH				LR	LR			
	comp=Z,361nm,22.0s,MS4.5							
SIT	**Sitka**	**66.43**	**324**	PFAKE		08 56 20.0	+16
SIT				LR	LR			
	comp=Z,882nm,19.0s,MS5.0							
CMB	**Columbia Colle**	**66.50**	**301**	*eP*	**P**	**08 56 03.9**	**-0.5**
	comp=Z,7.6nm,0.8s,mb4.8							
CMB				LR	LR			
	comp=Z,319nm,19.0s,MS4.5							
LVC	**Limon Verde**	**66.58**	**215**	*eP*	**P**	**08 56 04.5**	**-0.8**
	comp=Z,5.9nm,0.9s,mb4.6							
OHCM	**Honcut**	**66.66**	**302**	*eP*	**P**	**08 56 05.0**	**-0.5**
OHCM				*e*PcP	PcP	08 56 28.6	-6.0
WDC	**Whiskeytown Da**	**66.81**	**304**	PFAKE		08 56 20.0	+14
WDC				LR	LR			
	comp=Z,372nm,22.0s,MS4.6							
THR	**Tehran**	**66.91**	**62**	LR	LR	09 24 05.3		
	comp=Z,76nm,19.9s,MS3.9,baz=79,slow=35							
ILAR	**Eielson Array**	**67.09**	**335**	P	**P**	**08 56 08.1**	**+0.3**
	comp=Z,3.9nm,0.9s,mb4.4,baz=47,slow=5.7,SNR=54							
COLA	**College**	**67.37**	**335**	*eP*	**P**	**08 56 09.9**	**+0.4**
SAO	**San Andreas Ge**	**67.84**	**300**	PFAKE		08 56 20.0	+7.0
SAO				LR	LR			
	comp=Z,559nm,20.0s,MS4.8							
HOPS	**Hopland**	**67.91**	**303**	PFAKE		08 56 30.0	+17
HOPS				LR	LR			
	comp=Z,486nm,21.0s,MS4.7							
MCK	**McKinley**	**68.43**	**334**	*e*PKPdf	**P**	**08 56 16.2**	**+0.1**
	comp=Z,6.5nm,1.1s,mb4.6							
MCK				LR	LR			
	comp=Z,207nm,19.0s,MS4.4							
IMA	**Indian Mountai**	**68.54**	**338**	*eP*	**P**	**08 56 17.0**	**+0.2**
SML	**Sawmill**	**69.38**	**332**	*eP*	**P**	**08 56 22.9**	**+0.8**
ZRNK	**Zerenda**	**69.59**	**39**	*eP*	**P**	**08 56 24.0**	**+0.6**
PMR	**Palmer**	**69.82**	**332**	*eP*	**P**	**08 56 25.2**	**+0.5**
PWA	**Palmer West**	**70.06**	**333**	*eP*	**P**	**08 56 26.2**	**0.0**
BRVK	**Borovoye**	**70.18**	**38**	*eP*	**P**	**08 56 28.0**	**+0.9**
PMS	**Palmer South**	**70.19**	**332**	*eP*	**P**	**08 56 27.4**	**+0.4**
BVAR	**Borovoye Array**	**70.25**	**38**	LR	LR	09 27 44.3		
	comp=Z,209nm,18.1s,MS4.4,baz=265,slow=36							
TIXI	**Tiksi**	**72.36**	**6**	*eP*	**P**	**08 56 40.5**	**+0.6**
TIXI				*e*S	S	09 06 09.2	+7.2
TIXI				pmax	pmax			
	comp=Z,217nm,1.1s							
TIXI	**Tiksi**	**72.36**	**6**	*eP*	**P**	**08 56 40.7**	**+0.7**
	comp=Z,36nm,1.1s,mb5.2							
TIXI				LR	LR			
	comp=Z,297nm,22.0s,MS4.5							
SVW	**Sparrevohn**	**72.50**	**334**	*eP*	**P**	**08 56 40.4**	**-0.4**
TNA	**Tin City**	**72.96**	**342**	PFAKE		08 57 00.0	+17
TNA				LR	LR			
	comp=Z,225nm,21.0s,MS4.4							
KDAK	**Kodiak Island**	**73.61**	**331**	PFAKE		08 57 00.0	+13
KDAK				LR	LR			
	comp=Z,532nm,20.0s,MS4.8							
NVS	**Novosibirsk**	**75.19**	**32**	*eP*	**P**	**08 56 56.0**	**-0.5**
NVS				pmax	pmax			
	comp=Z,16nm,1.5s,mb4.7							
NVS	**Novosibirsk**	**75.19**	**32**	*eP*	**P**	**08 56 56.0**	**-0.5**
	comp=Z,16nm,1.5s,mb4.7							
BILL	**Bilibino**	**75.52**	**352**	*diP*	**P**	**08 56 58.7**	**+0.6**
BILL				pmax	pmax			
	comp=Z,17nm,1.4s,mb4.8							
BILL				MLR	MLR			
	comp=Z,100nm,22.0s,MS4.1							
BILL	**Bilibino**	**75.52**	**352**	*i* Pr		08 56 58.7		
	comp=Z,17nm,1.4s							
BILL				LR	LR			
	comp=Z,100nm,22.0s,MS4.1							
KMBO	**Kilima Mbogo**	**75.67**	**102**	LR	LR	09 31 43.1		
	comp=Z,242nm,21.4s,MS4.5,baz=98,slow=37							
KMBO	**Kilima Mbogo**	**75.67**	**102**	PFAKE		08 57 10.0	+10
KMBO				LR	LR			
	comp=Z,175nm,19.0s,MS4.4							
KURK	**Kurchatov**	**75.73**	**37**	*eP*	**P**	**08 57 00.2**	**+0.5**
ZAL	**Zalesovo**	**76.47**	**32**	P	**P**	**08 57 04.6**	**+0.8**
	comp=Z,2.2nm,0.6s,mb4.3,baz=62,slow=4.9,SNR=9.4							
ZAL				LR	LR	09 30 45.5		
	comp=Z,187nm,20.1s,MS4.4,baz=13,slow=36							
ZAL	**Zalesovo**	**76.47**	**32**	P	**P**	**08 57 04.6**	**+0.7**
ZAL				LR	LR	09 30 45.5		
MKAR	**Makanchi Array**	**80.13**	**39**	P	**P**	**08 57 24.6**	**+0.6**
	comp=Z,7.4nm,0.8s,mb4.7,baz=329,slow=7.1,SNR=34							
MKAR				LR	LR	09 31 01.1		
	comp=Z,197nm,21.2s,MS4.4,baz=114,slow=34							
KSH	**Kashi**	**81.38**	**47**	*eP*	**P**	**08 57 33.3**	**+2.5**
KSH				*e*AP	pP	08 57 38.0	+4.1
KSH				*e*XP	sP	08 57 41.3	+6.3
YAK	**Yakutsk**	**81.82**	**8**	*eP*	**P**	**08 57 32.4**	**-0.2**
YAK				pmax	pmax			
	comp=Z,17nm,1.0s,mb4.9							
YAK				pmax	pmax			
	comp=N,9.0nm,1.3s							
YAK				pmax	pmax			
	comp=E,4.0nm,0.8s							
YAK	**Yakutsk**	**81.82**	**8**	*eP*	**P**	**08 57 32.9**	**+0.3**
	comp=E,73nm,1.4s,mb5.4							
YAK				LR	LR			
	comp=Z,201nm,19.0s,MS4.5							
UNV	**Unalaska Valle**	**81.83**	**334**	PFAKE		08 57 40.0	+7.3
UNV				LR	LR			
	comp=Z,2μm,21.0s,MS5.5							
BOD	**Bodaibo**	**83.16**	**16**⇑	*iP*	**P**	**08 57 40.0**	**+0.4**
MOY	**Mondy**	**84.64**	**26**	*eP*	**P**	**08 57 49.3**	**+2.2**
WMQ	**Urumqi**	**84.94**	**38**	*eP*	**P**	**08 57 50.9**	**+2.1**
WMQ				AP	pP	08 57 54.5	+2.5
WMQ				XP	sP	08 57 57.3	+4.2
WMQ				PP	PP	09 01 09.5	+2.2
WMQ				SKS	SKS	09 08 11.5	-3.2
WMQ				S	S	09 08 18.1	+2.0
WMQ				XS		09 08 26.1		
WMQ				PS	PS	09 09 15.9	+2.6
WMQ				SS	SS	09 13 54.1	+2.2
WMQ				AMB	AMB			
	comp=Z,30nm,1.5s,mb5.2							
WMQ				LR	LR			
	comp=N,322nm,17.2s,MS4.9							
WMQ				LR	LR			
	comp=E,254nm,18.7s,MS4.9							
WMQ				LR	LR			
	comp=Z,384nm,18.0s,MS4.8							
SUR	**Sutherland**	**85.06**	**136**	*eP*	**P**	**08 57 50.4**	**+0.6**
	comp=Z,20nm,1.2s,mb5.1							
MA2	**Magadan**	**85.07**	**357**	PFAKE		08 58 00.0	+11
MA2				LR	LR			
	comp=Z,410nm,22.0s,MS4.8							
TLY	**Talaya**	**85.56**	**25**⇓	*iP*	**P**	**08 57 53.1**	**+1.4**
TLY				*i*	pP	08 57 57.6	+2.7
TLY				pmax	pmax			
	comp=Z,173nm,1.6s							
TLY				MLR	MLR			
	comp=Z,1μm,20.0s,MS5.2							
ZAK	**Zakamensk**	**86.52**	**26**⇓	*iP*	**P**	**08 57 57.9**	**+1.4**
SMY	**Shemya**	**88.62**	**343**	PFAKE		08 58 20.0	+13
SMY				LR	LR			
	comp=Z,608nm,19.0s,MS5.0							
SONM	**Songino Array**	**89.76**	**25**	P	**P**	**08 58 14.3**	**+2.1**
	comp=Z,2.1nm,1.1s,mb4.4,baz=297,slow=5.5,SNR=4.9							
ULN	**Ulaanbaatar**	**89.97**	**25**⇑	*eP*	**P**	**08 58 14.8**	**+1.7**
ULN				pmax	pmax			
	comp=Z,22nm,1.9s,mb5.2							
ULN	**Ulaanbaatar**	**89.97**	**25**	*eP*	**P**	**08 58 14.6**	**+1.5**
	comp=Z,3.4nm,0.9s,mb4.7							
ULN				LR	LR			
	comp=Z,170nm,20.0s,MS4.5							
PET	**Petropavlovsk**	**91.02**	**352**	PFAKE		08 58 30.0	+12
PET				LR	LR			
	comp=Z,301nm,22.0s,MS4.7							
HIA	**Hailar**	**92.38**	**17**	PFAKE		08 58 40.0	+16
HIA				LR	LR			
	comp=Z,181nm,20.0s,MS4.5							
GTA	**Gaotai**	**94.14**	**34**	*eP*	**P**	**08 58 33.4**	**+0.9**
GTA				AP	pP	08 58 39.8	+4.1
GTA				AMB	AMB			
	comp=Z,7.0nm,1.2s,mb5.0							
LSA	**Lhasa**	**97.16**	**46**	PFAKE		08 59 00.0	+14
LSA				LR	LR			
	comp=Z,140nm,22.0s,MS4.4							
YSS	**Yuzh-Sakhalins**	**97.76**	**2**	PFAKE		08 59 00.0	+11
YSS				LR	LR			
	comp=Z,214nm,21.0s,MS4.6							
LZH	**Lanzhou**	**98.68**	**33**	*eP*	**P**	**08 58 51.6**	**-1.6**
LZH				PP	PP	09 02 54.0	-2.7
LZH				SKS	SKS	09 09 27.8	-7.3
LZH				*e*S	S	09 10 15.0	-3.9
LZH				LR	LR			
	comp=N,143nm,15.2s							
LZH				LR	LR			
	comp=Z,223nm,18.0s,MS4.7							
MDJ	**Mudanjiang**	**98.80**	**12**	PFAKE		08 59 10.0	+16
MDJ				LR	LR			
	comp=Z,131nm,19.0s,MS4.5							
CN2	**Changchun**	**98.82**	**15**	*eP*	**P**	**08 58 53.3**	**-0.3**
CN2				LR	LR			
	comp=Z,300nm,21.0s,MS4.8							
BJT	**Baijiatuau**	**99.94**	**23**	PFAKE		08 59 10.0	+11
BJT				LR	LR			
	comp=Z,224nm,20.0s,MS4.7							
ENH	**Enshi**	**106.10**	**32**	PFAKE		09 03 50.0		
ENH				LR	LR			
	comp=Z,127nm,20.0s,MS4.5							
SSE	**Sheshan**	**109.73**	**22**	PDIF	Pdif	08 59 44.9	+2.5
SSE				S	x	09 11 52.3		
SSE				LR	LR			
	comp=N,19nm,20.0s,MS4.3							
SSE				LR	LR			
	comp=E,76nm,20.0s,MS4.3							
SSE				LR	LR			
	comp=Z,78nm,18.3s,MS4.3							
WAKE	**Wake Island**	**121.92**	**337**	PFAKE		09 04 20.0	+9.4
WAKE				LR	LR			
	comp=Z,1μm,20.0s,MS5.5							
QSPA	**South Pole Qui**	**125.51**	**180**	*e*PKP	PKPdf	09 04 13.1	-2.9
COCO	**West Island**	**130.16**	**75**	PFAKE		09 04 40.0	+13
COCO				LR	LR			
	comp=Z,1μm,22.0s,MS5.5							
VNDA	**Vanda**	**137.41**	**185**	PKP	PKPdf	09 04 37.6	-0.9
	baz=266,slow=1.7							
WRAB	**Tennant Creek**	**161.41**	**36**	PFAKE		09 05 30.0	+14
WRAB				LR	LR			
	comp=Z,367nm,21.0s							
WRA	**Warramunga Arr**	**161.42**	**36**	PKP	PKPdf	09 05 14.3	-2.1
	comp=Z,0.9nm,0.8s,baz=340,slow=1.5,SNR=6.4							
WRA				PKPab	PKPab	09 06 00.0	-0.1
	comp=Z,3.3nm,0.7s,baz=339,slow=4.5,SNR=18							
ASAR	**Alice Springs**	**164.26**	**44**	PKP	PKPdf	09 05 17.8	-1.4
	comp=Z,1.7nm,1.1s,baz=193,slow=1.7,SNR=5.9							
ASAR				PKPab	PKPab	09 06 12.3	-0.1
	comp=Z,1.0nm,0.8s,baz=331,slow=3.3,SNR=7.0							
STKA	**Stephens Creek**	**174.89**	**44**	PKP	PKPdf	09 05 23.3	-2.0
	comp=Z,1.9nm,0.8s,baz=87,slow=17,SNR=3.3							
STKA				PKPab	PKPab	09 06 58.2	-0.8
	comp=Z,2.2nm,0.8s,baz=315,slow=5.7,SNR=3.3							

NEIC ***20*** *09:07:28.2,24.59S×69.39W,h52km,MD3.9(GUC),After GUC.*

GUC 20 09:07:28.2±0.8,24.59S×69.39W,h52km±81km,MD3.9, ML3.6,1C-1D,Northern Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CPN1	**Cerro Paranal**	**0.92**	**268**	*eP*	P	09 07 46.6	+1.5
CPN1				*i* S	S	09 07 59.5	+1.8
CPN1				AMP		09 08 05.1	
	comp=N,2μm,0.5s						
ANCH	**Antofagasta**	**1.30**	**314**⇓	*iP*	P	09 07 50.8	+0.3
ANCH				*i* S	S	09 08 06.9	-0.1
ANCH				AMP		09 08 09.1	
	comp=N,2μm,0.1s						
LVC	**Limon Verde**	**2.02**	**13**⇑	*iP*	P	09 08 00.9	+0.4
LVC				*i* S	S	09 08 25.6	+1.1
LVC				AMP		09 08 29.9	
	comp=N,672nm,0.5s						
CPCH	**Copiapo**	**2.89**	**197**	*eP*	P	09 08 11.4	-1.5
CPCH				*i* S	S	09 08 44.8	-1.9
VACH	**Vallenar**	**4.15**	**197**	*iP*	P	09 08 29.4	-1.3
VACH				*i* S	S	09 09 16.4	-2.1
ARE	**Arequipa**	**8.32**	**346**	*eP*	P	09 09 23.0	-5.8

SNSN ***20*** *09:33:38.6,28.82N×34.77E,h8km,Ml2.8*
GII ***20*** *09:33:39.4±0.6,28.85N×34.79E,h5km±30km,ML3.5/6, Mw3.1/4*

ISC 20 09:33:38.2±1.1,28.82N±0.04×34.74E±0.07,h8km,n13, σ0s79/19,Egypt

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HAQS	**Haql**	**0.28**	**36**	P	**Pg**	**09 33 44.0**	**+0.1**
JMOS	**Jabal al Moall**	**0.47**	**43**	P	**Pg**	**09 33 47.5**	**-0.2**
JMOS				S	**Sg**	**09 33 54.1**	**0.0**
BDAS	**Al Bad'**	**0.50**	**141**	P	**Pg**	**09 33 48.4**	**0.0**
EIL	**Elat**	**0.86**	**12**	Pg	**Pg**	**09 33 55.2**	**-0.2**
EIL				Sg	**Sg**	**09 34 07.9**	**+1.0**
AQBJ	**Aqaba**	**0.94**	**17**	Pg	**Pg**	**09 33 56.4**	**-0.6**
MBH	**Mount Berech**	**0.98**	**9**	Pg	**Pg**	**09 33 57.1**	**-0.6**
JMQS	**Jabal Moqyreh**	**1.00**	**86**	P	**Pb**	**09 33 56.9**	**-0.5**
JMQS				S	**Sb**	**09 34 11.0**	**+0.6**
HRFI	**Mount Harif**	**1.23**	**12**	Pg	**Pg**	**09 34 01.5**	**-1.4**
HRFI				Sg	**Sg**	**09 34 18.2**	**-1.2**
KMTI	**Karmit**	**1.28**	**359**	Pg	**Pg**	**09 34 02.6**	**-1.1**
KMTI				Sg	**Sg**	**09 34 20.3**	**-0.4**
PRNI	**Paran**	**1.54**	**9**	Pn	**Pn**	**09 34 07.2**	**+1.1**
PRNI				Sn	**Sn**	**09 34 27.4**	**+1.0**
TBKS	**Tabuk**	**1.70**	**110**	P	**Pn**	**09 34 08.5**	**+0.1**
ZFRI	**Zfri**	**1.77**	**12**	Pn	**Pn**	**09 34 10.1**	**+0.8**
KZIT	**Kziot**	**2.10**	**352**	Sn	**Sn**	**09 34 42.1**	**+1.5**

NEIC ***20*** *09:38:09.2,35.18S×71.21W,h97km,MD3.7(GUC),After GUC.*

GUC 20 09:38:09.2±0.9,35.18S×71.21W,h97km±3km,MD3.7, ML4.0,10C-5D,Central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TALC	**Talca**	**0.41**	**237**⇑	*iP*	P	09 38 24.1	0.0
TALC				*i* S	S	09 38 35.4	0.0
TALC				AMP		09 38 36.0	
	comp=N,18μm,0.1s						
SFDO	**San Fernando**	**0.58**	**16**⇓	*iP*	P	09 38 25.3	-0.2
SFDO				*i* S	S	09 38 37.6	0.0
CICH	**Cipreses**	**1.07**	**38**⇓	*iP*	P	09 38 30.6	+0.1
CICH				*i* S	S	09 38 47.1	+0.5
CACH	**El Canelo**	**1.17**	**26**⇑	*iP*	P	09 38 32.0	+0.2
CACH				*i* S	S	09 38 49.2	+0.7
LNV	**Longovilo**	**1.23**	**352**⇑	*iP*	P	09 38 32.5	+0.1
LNV				*i* S	S	09 38 49.8	+0.1
CHCH	**Chadas Angostu**	**1.32**	**21**⇑	*iP*	P	09 38 33.4	-0.1
CHCH				*i* S	S	09 38 51.6	0.0
TACH	**Talagante**	**1.54**	**9**⇓	*iP*	P	09 38 36.0	-0.2
TACH				*i* S	S	09 38 55.8	+0.3
LMEL	**Las Melosas**	**1.56**	**33**⇑	*iP*	P	09 38 37.0	+0.5
LMEL				*i* S	S	09 38 58.0	+1.3
LMEL				AMP		09 39 01.6	
	comp=N,861nm,0.2s						
CCHI	**Chillan**	**1.59**	**206**⇑	*iP*	P	09 38 36.7	-0.1
CCHI				*i* S	S	09 38 57.3	+0.1
PCH	**Pirque**	**1.66**	**21**	*i* P	P	09 38 37.6	0.0
PCH				*i* S	S	09 38 59.4	+0.6
ANTU	**Antumapu**	**1.67**	**17**	*i* P	P	09 38 38.1	+0.2
ANTU				*i* S	S	09 39 00.1	+1.0
RCDM	**Rinconada Maip**	**1.71**	**11**⇓	*iP*	P	09 38 38.4	-0.1
RCDM				*i* S	S	09 38 60.0	-0.1
RCDM				AMP		09 39 02.0	
	comp=E,1μm,0.2s						
LCCH	**Las Cruces**	**1.72**	**350**	*i* P	P	09 38 38.3	-

JTK	**Tokunoshima**	**1.40**	**360**	P	**P**	**09 45 30.5**	**+0.1**
JTK				S	**S**	**09 45 47.5**	**-0.4**
JAGN	**Aguni-jima**	**1.55**	**278**	P	**P**	**09 45 32.4**	**-0.1**
JAGN				S	**S**	**09 45 51.2**	**-0.4**
JKE	**Kume jima 2**	**1.95**	**269**	P	**P**	**09 45 37.0**	**-1.1**
JKE				S	**S**	**09 46 01.3**	**-0.3**
JAM	**Amami Oshima**	**2.11**	**16**	P	**P**	**09 45 40.3**	**-0.1**
JAM				S	**S**	**09 46 05.6**	**-0.1**
JMZ	**Minamidaito 2**	**2.11**	**105**	P	**P**	**09 45 40.5**	**0.0**
JMZ				S	**S**	**09 46 04.2**	**-1.6**
JNU	**Nakatsue**	**6.93**	**14**	Pn	**P**	**09 46 48.0**	**-0.6**
	0.7nm,0.3s,baz=351,slow=30,SNR=3.9						
JNU				LR	LR	09 49 44.5	
	comp=Z,84nm,21.8s,baz=243,slow=40						
JNU	**Nakatsue**	**6.93**	**14**	Pn	**P**	**09 46 48.0**	**-0.6**
JNU				LR	LR	09 49 44.5	
ULN	**Ulaanbaatar**	**27.48**	**327**	P	**P**	**09 50 52.9**	**+1.0**
	1.2nm,0.6s,mb3.6						
SONM	**Songino Array**	**27.79**	**326**	P	**P**	**09 50 56.1**	**+1.5**
	1.5nm,0.5s,mb3.9,baz=138,slow=11,SNR=4.3						
MKAR	**Makanchi Array**	**41.92**	**312**	P	**P**	**09 52 54.7**	**-1.0**
	0.5nm,0.5s,mb3.4,baz=96,slow=9.2,SNR=7.0						
MKAR	**Makanchi Array**	**41.92**	**312**	P	**P**	**09 52 54.7**	**-1.0**
WRA	**Warramunga Arr**	**46.34**	**173**	P	**P**	**09 53 32.1**	**+0.5**
	0.5nm,0.7s,mb3.5,baz=353,slow=8.3,SNR=3.4						
ASAR	**Alice Springs**	**49.98**	**174**	P	**P**	**09 54 01.6**	**+1.7**
	0.2nm,0.5s,mb3.4,baz=5.4,slow=13,SNR=5.9						
ZRNK	**Zerenda**	**51.42**	**318**	P	**P**	**09 54 07.9**	**-2.5**
FINES	**FINESS Array B**	**73.06**	**331**	P	**P**	**09 56 34.9**	**+0.1**
	1.6nm,0.7s,mb4.0,baz=165,slow=30,SNR=3.8						
FINES				pP	pP	09 56 44.1	-1.4
	2.7nm,1.0s,baz=63,slow=4.3,SNR=1.7						
FINES	**FINESS Array B**	**73.06**	**331**	P	**P**	**09 56 34.9**	**+0.1**
FINES				pP	pP	09 56 44.1	-1.4
RES	**Resolute Bay**	**75.28**	**11**	P	**P**	**09 56 52.3**	**+4.8**
	3.7nm,0.9s,mb4.3						
BRTR	**Keskin Array B**	**77.46**	**308**	P	**P**	**09 57 01.3**	**+0.8**
	0.8nm,0.7s,mb3.8,baz=56,slow=4.5,SNR=3.6						
BRTR				pP	pP	09 57 12.1	+0.8
	0.5nm,0.7s,baz=117,slow=5.5,SNR=3.4						
YKA	**Yellowknife Ar**	**78.12**	**25**	P	**P**	**09 57 05.1**	**+1.5**
	0.2nm,0.7s,mb3.2,baz=302,slow=5.3,SNR=5.9						
YKA				pP	pP	09 57 17.3	+3.0
	0.2nm,0.6s,baz=303,slow=5.5,SNR=3.8						
YKA	**Yellowknife Ar**	**78.12**	**25**	P	**P**	**09 57 05.1**	**+1.5**
YKA				pP	pP	09 57 17.3	+3.0
MORC	**Moravsky Berou**	**82.87**	**323**	P	**P**	**09 57 30.3**	**+1.2**
	2.7nm,0.5s,mb4.5						

*IDC **20** 09:50:17.9±1.0, 44.28N×152.51E, mb3.5/6, mb1 3.8/6, mb1mx3.6/22, Error ellipse: s-maj=34.9km s-min=25.8km az=129.0*
*NEIC **20** 09:50:23.1±0.9, 44.41N×152.22E, h35km, mb4.0/3, Error ellipse: s-maj=24.1km s-min=16.9km az=159.0*
ISC 20 09:50:21.3±0.9, 44.4N±0.2×152.3E±0.2, h35km, n15, σ1s13/15, mb3.8/10, East of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MCK	**McKinley**	**37.86**	**38**	*e*P	**P**	**09 57 35.8**	**-0.3**
	2.4nm,1.1s,mb3.8						
ILAR	**Eielson Array**	**38.79**	**37**	P	**P**	**09 57 43.4**	**-0.5**
	0.2nm,0.5s,mb3.1,baz=248,slow=8.3,SNR=4.2						
INK	**Inuvik**	**43.99**	**31**	*e*P	**P**	**09 58 26.5**	**+0.2**
	3.0nm,1.0s,mb4.0						
MKAR	**Makanchi Array**	**47.55**	**299**	P	**P**	**09 58 57.2**	**+2.2**
	0.6nm,0.7s,mb3.7,baz=70,slow=7.1,SNR=4.4						
MKAR	**Makanchi Array**	**47.55**	**299**	P	**P**	**09 58 57.2**	**+2.2**
KURK	**Kurchatov**	**48.23**	**305**	*e*P	**P**	**09 59 01.3**	**+1.2**
BRVK	**Borovoye**	**51.99**	**311**	P	**P**	**09 59 27.2**	**-1.6**
YKA	**Yellowknife Ar**	**53.19**	**35**	P	**P**	**09 59 37.5**	**-0.2**
	0.4nm,0.7s,mb3.5,baz=296,slow=7.1,SNR=7.3						
YKA	**Yellowknife Ar**	**53.19**	**35**	P	**P**	**09 59 37.5**	**-0.2**
RES	**Resolute Bay**	**53.28**	**18**	*e*P	**P**	**09 59 30.5**	**-7.7**
	1.8nm,0.8s,mb4.0						
ARU	**Arti**	**56.39**	**318**	*e*P	**P**	**09 59 58.2**	**-2.8**
	27nm,1.3s,mb5.1						
FINES	**FINESS Array B**	**65.95**	**335**	P	**P**	**10 01 05.6**	**+0.2**
	1.7nm,0.9s,mb4.0,baz=253,slow=32,SNR=2.9						
WRA	**Warramunga Arr**	**66.07**	**198**	P	**P**	**10 01 06.3**	**-0.6**
	0.2nm,0.7s,mb3.3,baz=20,slow=7.1,SNR=3.4						
TXAR	**Lajitas Array**	**79.19**	**60**	P	**P**	**10 02 24.6**	**+0.4**
	0.4nm,0.4s,mb3.7,baz=304,slow=4.0,SNR=12						
UTMT	**University of**	**82.43**	**46**	P	**P**	**10 02 42.4**	**+1.2**

*FUNV **20** 10:13:07.6, 10.96N×61.47W, h28km, MW3.2*
*TRN **20** 10:13:09.1, 11.12N×61.59W, h13km, MD3.7*
TRN Felt (II) in Port of Spain and Westmoorings.
ISC 20 10:13:07.2±0.4, 10.95N±0.02×61.63W±0.03, h81km±6km, n41, σ1s12/74, 4C-10D, Trinidad

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
TCE	**Chacachacare**	**0.27**	**205**	⇑*i*P	**P**	**10 13 19.4**	**-0.1**
TCE				*e*S	**S**	**10 13 25.7**	**-3.0**
TRN	**Trinidad (W)**	**0.37**	**142**	⇑*i*P	**P**	**10 13 19.8**	**-0.3**
TRN				*e*S	**S**	**10 13 26.8**	**-3.0**
TPP	**Pointe-a-Pierr**	**0.65**	**164**	*e*P	**P**	**10 13 23.8**	**+1.2**
TPP	**Pointe-a-Pierr**	**0.65**	**164**	*e*	**P**	**10 13 25.1**	**+2.5**
TPP				*e*S	**S**	**10 13 36.0**	**+2.0**
GUIV	**Guiria**	**0.65**	**243**	⇓*e*P	**P**	**10 13 22.8**	**+0.2**
GUIV				*e*S	**S**	**10 13 33.5**	**-0.5**
TBH	**Brigand Hill**	**0.72**	**129**	*e*P	**P**	**10 13 24.1**	**+0.8**
TBH	**Brigand Hill**	**0.72**	**129**	*e*	**P**	**10 13 25.8**	**+2.4**
TBH				*e*S	**S**	**10 13 36.7**	**+1.3**
ALNG	**Atlantic LNG**	**0.76**	**184**	*e*	**P**	**10 13 33.9**	**+10**
ALNG				*e*S	**S**	**10 13 41.3**	**+5.2**
TPR	**Prospect**	**0.87**	**74**	⇓*i*P	**P**	**10 13 24.8**	**-0.2**
TPR				*e*S	**S**	**10 13 36.9**	**-1.5**
BOT	**Bacolet**	**0.93**	**76**	*e*P	**P**	**10 13 25.9**	**+0.2**
BOT				*e*S	**S**	**10 13 38.7**	**-0.8**
GRHS	**Sauteurs**	**1.27**	**360**	⇑*e*P	**P**	**10 13 30.4**	**+0.4**
GRHS				*e*S	**S**	**10 13 46.1**	**-0.9**
GUNV	**Guanoco**	**1.50**	**239**	⇓*e*P	**P**	**10 13 34.5**	**+1.4**
GUNV				*e*S	**S**	**10 13 53.9**	**+1.7**
ITEV	**Isla Los Testi**	**1.53**	**286**	⇓*e*P	**P**	**10 13 34.3**	**+0.9**
ITEV				*e*S	**S**	**10 13 53.9**	**+1.2**
GRCU	**Cariacou**	**1.53**	**7**	*e*P	**P**	**10 13 33.9**	**+0.5**
GRCU				*e*S	**S**	**10 13 51.6**	**-1.1**
CRUV	**Carupano**	**1.60**	**260**	⇓*i*P	**P**	**10 13 34.8**	**+0.5**
CRUV				*e*S	**S**	**10 13 55.5**	**+1.2**
SVB	**Belmont**	**2.34**	**9**	*e*P	**P**	**10 13 45.8**	**+1.3**
SVB				*e*S	**S**	**10 14 13.1**	**+0.9**
SVV	**Soufriere Volc**	**2.39**	**10**	*e*P	**P**	**10 13 45.7**	**+0.5**
SVV				*e*S	**S**	**10 14 13.8**	**+0.4**
SVV				*e*S	**S**	**10 14 15.1**	**+1.7**
SSV	**Crater Summit**	**2.41**	**10**	*e*P	**P**	**10 13 46.3**	**+0.9**
SSV				*e*S	**S**	**10 14 14.4**	**+0.6**
MCLT	**Moule a Chique**	**2.83**	**14**	*e*P	**P**	**10 13 51.6**	**+0.3**
MCLT				*e*S	**S**	**10 14 22.7**	**-1.7**
RIOV	**Rio Grande**	**2.86**	**184**	*e*P	**P**	**10 13 51.4**	**-0.4**
RIOV				*e*S	**S**	**10 14 23.2**	**-2.0**
SLB	**Belfond**	**2.92**	**11**	*e*S	**S**	**10 14 26.1**	**-0.6**
SLB	**Belfond**	**2.92**	**11**	*e*S	**S**	**10 14 26.9**	**+0.2**
SLPE	**Piton Saint Es**	**2.95**	**12**	*e*P	**P**	**10 13 53.4**	**+0.5**
SLPE				*e*S	**S**	**10 14 26.2**	**-1.1**
SLW	**Petit Monier**	**3.13**	**12**	*e*P	**P**	**10 13 56.1**	**+0.7**
SLW				*e*S	**S**	**10 14 31.1**	**-0.8**
GURV	**El Guri**	**3.47**	**204**	*e*P	**P**	**10 13 60.0**	**-0.3**
GURV				*i* S	**S**	**10 14 37.7**	**-2.6**
BIM	**Bigot**	**3.59**	**9**	⇓*i*P	**P**	**10 14 02.3**	**+0.4**
BIM				*e*S	**S**	**10 14 42.7**	**-0.6**
MVM	**Montagne Vaucl**	**3.66**	**11**	*e*P	**P**	**10 14 03.0**	**+0.2**
MVM				*e*S	**S**	**10 14 43.2**	**-1.8**
PARV	**Pariaguan**	**3.68**	**238**	⇑*e*P	**P**	**10 14 03.7**	**+0.6**
PARV				*e*S	**S**	**10 14 45.0**	**-0.6**
FDF	**Fort de France**	**3.79**	**7**	⇓*i*P	**P**	**10 14 05.0**	**+0.4**
FDF				*e*S	**S**	**10 14 45.3**	**-3.1**
CRM	**Caravelle**	**3.85**	**10**	*e*P	**P**	**10 14 06.0**	**+0.5**
CRM				*e*S	**S**	**10 14 48.3**	**-1.5**
CUPV	**Cœpira**	**4.18**	**258**	⇓*e*P	**P**	**10 14 10.8**	**+0.8**
CUPV				*e*S	**S**	**10 14 57.3**	**-0.6**
DSTT	**Stowe**	**4.29**	**4**	*e*P	**P**	**10 14 12.0**	**+0.5**
DBCT	**Belle View Cho**	**4.31**	**4**	*e*P	**P**	**10 14 12.5**	**+0.7**
MDN	**Morne-Daniel**	**4.35**	**3**	*e*P	**P**	**10 14 13.6**	**+1.1**
BBL	**Barber's Block**	**4.56**	**2**	*e*P	**P**	**10 14 15.4**	**+0.1**
BIRV	**Birongo**	**4.58**	**265**	*e*P	**P**	**10 14 15.9**	**+0.3**
BIRV				*e*S	**S**	**10 15 06.8**	**-1.1**
MERV	**Las Mercedes**	**4.89**	**250**	⇓*e*P	**S**	**10 14 19.9**	**0.0**
MERV				*e*S	**S**	**10 15 13.4**	**-2.3**
DEG	**La Desirade**	**5.37**	**6**	*e*P	**P**	**10 14 26.7**	**+0.4**
DEG				*e*S	**S**	**10 15 23.1**	**-4.3**
SEG	**Port Louis**	**5.43**	**1**	*e*P	**P**	**10 14 30.5**	**+3.3**
CAOV	**Caicara del Or**	**5.86**	**233**	*e*P	**P**	**10 14 32.1**	**-1.0**
CAOV				*e*S	**S**	**10 15 34.8**	**-4.9**
BAUV	**El Baul**	**6.62**	**253**	⇓*i*P	**P**	**10 14 42.4**	**-1.4**
BAUV				*e*S	**S**	**10 15 54.3**	**-4.0**

IDC 20 10:18:22.3±2.0, 1.10N×126.82E, mb3.6/3, mb1 3.9/3, mb1mx3.6/15, Error ellipse: s-maj=169.0km s-min=24.4km az=66.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**22.17**	**161**	P	P	10 23 19.2	-2.6
	3.1nm,0.8s,baz=339,slow=11,SNR=24						
WB2	**Warramunga Arr**	**22.18**	**161**	*e*P	P	10 23 19.2	-2.6
ASAR	**Alice Springs**	**25.56**	**165**	P	P	10 23 53.9	-0.9
	0.6nm,0.4s,baz=347,slow=13,SNR=20						
MKAR	**Makanchi Array**	**59.76**	**326**	P	P	10 28 29.1	-2.4
	0.2nm,0.4s,baz=118,slow=8.2,SNR=2.6						

*IDC **20** 10:30:04.9±0.7, 12.36N×144.09E, mb4.2/11, mb1 4.4/11, mb1mx4.3/20, MS3.5/3, Ms1 3.5/3, ms1mx3.1/28, Error ellipse: s-maj=25.1km s-min=18.9km az=113.0*
*NEIC **20** 10:30:09.6±3.4, 12.33N×143.96E, h34km±23km, mb4.5/9, Error ellipse: s-maj=14.3km s-min=10.6km az=116.0*
ISC 20 10:30:07.5±3.2, 12.34N±0.08×143.89E±0.08, h31km±23km, n41, σ1s04/36, mb4.5/24, MS3.5/3, 1D, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GUMO	**Guam**	**1.56**	**38**	*e*Pn	**Pn**	**10 30 33.4**	**-0.2**
GUMO				*e*Sn	**Sn**	**10 30 49.9**	**-3.1**
SAPN	**Saipan**	**3.38**	**32**	⇓*e*P	**Pn**	**10 30 59.7**	**+0.2**
SAPN				*e*S	**Sn**	**10 31 39.1**	**+0.1**
SARN	**Sarigan**	**4.70**	**23**	P	**Pn**	**10 31 19.4**	**+1.1**
PMG	**Port Moresby**	**21.85**	**171**	LR	LR	10 42 19.8	
	comp=Z,68nm,18.7s,MS3.1,baz=236,slow=34						
MAJO	**Matsushiro**	**24.63**	**349**	P	**P**	**10 35 25.7**	**-1.1**
	5.5nm,0.8s,mb4.1						
WRAB	**Tennant Creek**	**33.42**	**196**	P	**P**	**10 36 44.1**	**-1.8**
	7.7nm,0.7s,mb4.7						
WRA	**Warramunga Arr**	**33.43**	**196**	P	**P**	**10 36 45.6**	**-0.4**
	1.6nm,0.8s,mb4.0,baz=21,slow=9.5,SNR=9.5						
ENH	**Enshi**	**36.48**	**305**	P	**P**	**10 37 11.5**	**-0.4**
	4.5nm,0.4s,mb4.8						
ASAR	**Alice Springs**	**37.10**	**195**	P	**P**	**10 37 17.5**	**+0.3**
	0.9nm,0.6s,mb3.8,baz=20,slow=9.8,SNR=8.4						
ASAR				LR	LR	10 52 52.2	
	comp=Z,67nm,19.0s,MS3.5,baz=200,slow=37						
MBWA	**Marble Bar**	**40.89**	**216**	P	**P**	**10 37 53.2**	**+4.5**
	0.2nm,1.0s						
CMAR	**Chiang Mai Arr**	**43.67**	**284**	P	**P**	**10 38 13.9**	**+2.3**
	6.3nm,1.1s,mb4.2,baz=97,slow=7.4,SNR=12						
CMAR				PcP	PcP	10 40 00.8	+1.8
	1.3nm,0.6s,baz=118,slow=1.7,SNR=5.7						
ULN	**Ulaanbaatar**	**46.87**	**326**	P	**P**	**10 38 36.4**	**-0.4**
	1.1nm,0.8s,mb3.8						
SONM	**Songino Array**	**47.21**	**326**	P	**P**	**10 38 41.1**	**+1.7**
	0.5nm,0.4s,mb3.8,baz=149,slow=8.4,SNR=3.2						
LSA	**Lhasa**	**51.72**	**298**	*e*P	**P**	**10 39 15.6**	**+1.2**
	5.8nm,0.8s,mb4.6						
PKI	**Pulchoki**	**56.54**	**295**	*e*P	**P**	**10 39 49.7**	**-0.1**
	6.1nm,0.5s,mb4.9						
KKN	**Kakani**	**56.67**	**295**	*e*P	**P**	**10 39 50.5**	**-0.2**
	11nm,0.8s,mb5.0						
DMN	**Daman**	**56.81**	**295**	*e*P	**P**	**10 39 51.4**	**-0.3**
	11nm,0.8s,mb4.9						
GKN	**Gorkha**	**57.25**	**295**	*e*P	**P**	**10 39 54.0**	**-0.8**
	12nm,0.5s,mb5.2						
BILL	**Bilibino**	**57.54**	**10**	P	**P**	**10 39 55.1**	**-1.2**
	1.5nm,0.5s,mb4.3						
KOLN	**Koldanda**	**58.16**	**295**	*e*P	**P**	**10 40 00.3**	**-0.8**
	9.1nm,0.8s,mb4.9						
MKAR	**Makanchi Array**	**61.73**	**317**	P	**P**	**10 40 26.1**	**+0.7**
	2.1nm,0.5s,mb4.5,baz=92,slow=7.9,SNR=16						
KURK	**Kurchatov**	**64.92**	**320**	*e*P	**P**	**10 40 45.1**	**-1.3**
ILAR	**Eielson Array**	**70.09**	**25**	P	**P**	**10 41 16.6**	**-1.9**
	1.1nm,0.5s,mb4.1,baz=250,slow=5.8,SNR=47						
BRVK	**Borovoye**	**70.38**	**322**	*e*P	**P**	**10 41 20.8**	**+0.3**
ZRNK	**Zerenda**	**71.14**	**322**	*e*P	**P**	**10 41 24.9**	**-0.2**
INK	**Inuvik**	**75.88**	**22**	P	**P**	**10 41 52.2**	**-0.3**
	2.5nm,0.9s,mb4.2,baz=277,slow=6.7,SNR=24						
INK	**Inuvik**	**75.88**	**22**	*e*P	**P**	**10 41 51.8**	**-0.7**
	3.4nm,0.9s,mb4.3						
YKW3	**Yellowknife Ar**	**84.37**	**27**	*e*P	**P**	**10 42 38.0**	**+0.2**
YKA	**Yellowknife Ar**	**84.40**	**27**	P	**P**	**10 42 38.6**	**+0.6**
	1.2nm,0.5s,mb4.3,baz=288,slow=5.4,SNR=33						
YKA				LR	LR	11 19 55.6	
	comp=Z,46nm,18.1s,MS3.9,baz=245,slow=36						
YBH	**Yreka Blue Hor**	**84.41**	**49**	P	**P**	**10 42 40.1**	**+1.6**
	1.2nm,0.8s,mb4.1,baz=332,slow=4.1,SNR=5.6						
RES	**Resolute Bay**	**85.97**	**13**	*e*P	**P**	**10 42 46.1**	**+0.5**
	6.3nm,0.7s,mb5.0						
NEW	**Newport**	**86.79**	**41**	*e*P	**P**	**10 42 51.3**	**+1.1**
	4.7nm,1.0s,mb4.7						
NVAR	**Mina Array Bea**	**88.44**	**51**	P	**P**	**10 43 00.3**	**+2.0**
	1.0nm,0.5s,mb4.3,baz=267,slow=4.5,SNR=15						
NVAR	**Mina Array Bea**	**88.44**	**51**	P	**P**	**10 43 00.3**	**+1.9**
FINES	**FINESS Array B**	**91.88**	**335**	P	**P**	**10 43 13.4**	**-0.4**
	1.5nm,0.4s,mb4.7,baz=65,slow=5.9,SNR=19						
DBIC	**Dimbokro**	**143.64**	**300**	PKP	PKPdf	10 49 40.3	-5.3
	2.7nm,0.4s,baz=14,slow=3.8,SNR=8.8						
KIC	**Kosan Boka**	**143.70**	**299**	*e*P	PKPbc	10 49 40.2	+0.8
	218nm,1.5s						
TIC	**Toumodi**	**143.79**	**300**	*e*P	PKPbc	10 49 39.5	-0.1
	13nm,0.3s						
LIC	**Lamto**	**144.01**	**299**	*e*P	PKPbc	10 49 41.2	+0.9
	98nm,1.7s						
LPAZ	**La Paz**	**148.75**	**101**	PKPbc	PKPdf	10 49 55.7	+1.6
	0.5nm,0.4s,baz=13,slow=4.5,SNR=3.5						
LPAZ	**La Paz**	**148.75**	**101**	PKPbc	PKPdf	10 49 55.7	+1.6

*NEIC **20** 10:34:49.5, 49.40N×6.80E, h1km, ML2.4(LDG), ML2.0(STR), After STR.*
*LDG **20** 10:34:50.2±0.1, 49.38N×6.93E, h1km, Md2.6/1, Ml2.4/10, Error ellipse: s-maj=1.7km s-min=1.1km az=91.0, Suspected Mining induced.*
*BNS **20** 10:34:52.3±1.5, 49.46N×6.93E, h1km, ML1.3*
ISC 20 10:34:48.7±0.4, 49.37N±0.02×6.85E±0.03, n20, σ0s86/40, Germany

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WLF	**Walferdange**	**0.54**	**303**	*e*Pg	**Pg**	**10 35 00.7**	**+1.2**
	SNR=3.5						
WLF				*e*Sg	**Sg**	**10 35 07.1**	**+0.5**
LANF	**Langenberg**	**0.74**	**121**	Pg	**Pg**	**10 35 04.1**	**+0.6**
LANF				Sg	**Sg**	**10 35 15.3**	**+2.0**
BGG	**Burgeitz**	**0.90**	**21**	*e*Pg	**Pg**	**10 35 07.0**	**+0.4**
BGG				*e*Sg	**Sg**	**10 35 18.6**	**+0.1**
	15nm,0.7s						
CDF	**Champ du Feu**	**1.00**	**163**	*e*Pg	**Pg**	**10 35 08.5**	**-0.1**
CDF				*e*Pn	**Pn**	**10 35 09.4**	**-0.4**
CDF				*e*Sg	**Sg**	**10 35 21.7**	**-0.3**
	8.8nm,0.2s						
WLS	**Welschbruch**	**1.01**	**161**	Pg	**Pg**	**10 35 09.2**	**+0.3**
WLS				Sg	**Sg**	**10 35 24.1**	**+1.7**
RFYF	**Reffroy**	**1.17**	**231**	*e*Pg	**Pg**	**10 35 13.1**	**+1.1**
RFYF				*e*Sg	**Sg**	**10 35 28.7**	**+1.1**
	13nm,0.2s						
ECH	**Echery**	**1.17**	**170**	Pg	**Pg**	**10 35 12.3**	**+0.2**
ECH				Sg	**Sg**	**10 35 28.8**	**+1.1**
STB	**Steinbach**	**1.23**	**360**	*e*Sg	**Sg**	**10 35 29.7**	**+0.2**
THEF	**They Montfort**	**1.28**	**207**	Pg	**Pg**	**10 35 13.7**	**-0.5**
THEF				Sg	**Sg**	**10 35 31.6**	**+0.4**
KLL	**Kalltalsperre**	**1.32**	**345**	*e*Pg	**Pg**	**10 35 14.2**	**-0.9**
KLL				*e*Sg	**Sg**	**10 35 32.3**	**-0.4**
HAU	**Haudompre**	**1.40**	**194**	*e*Pn	**Pn**	**10 35 15.5**	**-0.1**
HAU				*e*Pg	**Pg**	**10 35 16.3**	**-0.4**
HAU				*e*Sg	**Sg**	**10 35 35.4**	**0.0**
	10nm,0.3s						
BFO	**Black Forest**	**1.43**	**136**	*e*Pg	**Pg**	**10 35 17.1**	**-0.1**
	SNR=2.5						
BFO				*e*Sg	**Sg**	**10 35 34.8**	**-1.5**
MEZF	**Maizieres J'vi**	**1.47**	**234**	*e*Pn	**Pn**	**10 35 16.7**	**+0.2**
MEZF				*e*Sg	**Sg**	**10 35 38.7**	**+1.2**
	3.9nm,0.3s						
GIVF	**Givet**	**1.50**	**300**	*e*Pn	**Pn**	**10 35 17.0**	**0.0**
GIVF				*e*Sg	**Sg**	**10 35 38.6**	**-0.1**
	5.7nm,0.3s						
MOF	**Molkenrain**	**1.53**	**173**	Pg	**Pg**	**10 35 18.9**	**-0.4**
MOF				Sg	**Sg**	**10 35 40.5**	**+0.8**
HINF	**Hinteralfeld**	**1.55**	**180**	*e*Pg	**Pg**	**10 35 19.2**	**-0.5**
HINF				*e*Sg	**Sg**	**10 35 39.6**	**-0.8**
	6.7nm,0.2s						
SFTF	**Sexfontaines**	**1.67**	**226**	*e*Pn	**Pn**	**10 35 19.5**	**+0.1**
SFTF				*e*Sg	**Sg**	**10 35 44.0**	**-0.3**
	3.3nm,0.2s						
BAIF	**Baives**	**1.85**	**293**	*e*Sg	**Sg**	**10 35 49.8**	**-0.3**
	2.3nm,0.3s						
CABF	**La Chapelle**	**2.81**	**191**	*e*Pn	**Pn**	**10 35 34.6**	**-1.0**
CABF				*e*Pg	**Pg**	**10 35 42.9**	**-1.8**
CABF				*e*Sg	**Sg**	**10 36 19.4**	**-2.7**
	1.3nm,0.3s						
SSF	**Saint Saulge**	**3.21**	**225**	*e*Pn	**Pn**	**10 35 40.2**	**-1.2**

*NAO **20** 10:40:31.9±1.2, 67.41N×22.52E, ML2.3*
*HEL **20** 10:40:32.7±0.2, 67.38N×22.28E, h4km±2km, ML2.0, ML2.0(BER), ML2.3(UPP)*
*BER **20** 10:40:32.8±4.5, 67.37N×22.26E, ML2.0, ML2.3(NAO), Suspected explosion*
ISC 20 10:40:29.0±0.4, 67.29N±0.02×22.13E±0.07, n26, σ1s69/47, Sweden

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SGF	**Sodankyl**	**1.71**	**83**	*e*P	**Pn**	**10 41 02.2**	**+1.9**
SGF				*e*S	**Sb**	**10 41 23.4**	**+0.4**
KTK1	**Kautokeino**	**1.77**	**13**	*e*P	**Pn**	**10 41 03.0**	**+1.9**
KTK1				*e*SN	**Sn**	**10 41 24.7**	**0.0**
KTK1				AML	AML	10 41 27.4	
	comp=Z,19nm,0.2s						
KIF	**Kilpisjarvi**	**1.79**	**345**	*e*P	**Pn**	**10 41 03.2**	**+1.9**
KIF				*e*S	**Sn**	**10 41 25.9**	**+0.8**
ARA0	**ARCESS Array S**	**2.58**	**27**	*e*P	**Pn**	**10 41 12.9**	**+0.3**
ARA0				*e*SG	**Sg**	**10 41 47.9**	**-6.8**
ARA0	**ARCESS Array S**	**2.58**	**27**	Pn	**Pn**	**10 41 12.8**	**+0.2**
	baz=208,slow=16						
ARA0				Lg		10 41 46.1	
	baz=208,slow=28						
OUL	**Oulu**	**2.69**	**144**	*e*P	**Pn**	**10 41 19.0**	**+4.7**
OUL				*e*SB	**Sb**	**10 41 54.7**	**+3.1**
KEV	**Kevo**	**3.06**	**34**	*e*P	**Pn**	**10 41 19.0**	**-0.5**
KEV				*e*S	**Sn**	**10 41 54.8**	**-2.5**
KEV				*e*SB	**Sb**	**10 42 00.8**	**-1.3**
KEV				MSG		10 42 09.5	
	comp=Z,5.9nm,0.2s						
MSF	**Maaselka**	**3.09**	**114**	*e*P	**Pn**	**10 41 21.6**	**+1.7**
MSF				*e*S	**Sn**	**10 41 58.8**	**+0.7**
MSF				*e*SG	**Sg**	**10 42 08.1**	**-3.7**
MOR8	**Moi Rana**	**3.25**	**253**	*e*SG	**Sg**	**10 42 09.9**	**-7.4**
MOR8				AML	AML	10 42 14.4	
	comp=Z,9.7nm,0.4s						
LOF	**Lofoten**	**3.38**	**288**	*e*SG	**Sg**	**10 42 21.1**	**-0.3**
LOF				AML	AML	10 42 26.3	
	comp=Z,7.8nm,0.3s						
STOK	**Stokkvaagen**	**3.73**	**259**	*e*SG	**Sg**	**10 42 30.9**	**-2.2**
STOK				AML	AML	10 42 31.4	
	comp=Z,19nm,0.5s						
KJN	**Kajaani**	**3.96**	**142**	*e*P	**Pn**	**10 41 34.9**	**+2.5**
KJN				*e*SB	**Sb**	**10 42 30.0**	**+1.5**
KJN				MSG		10 42 36.0	
	comp=Z,3.5nm,0.2s						
APA0	**Apatity Array**	**4.20**	**81**	*e*S	**Sn**	**10 42 22.4**	**-3.8**
APA0				*e*SG	**Sg**	**10 42 38.8**	**-10**
APA0	**Apatity Array**	**4.20**	**81**	Sn	**Sn**	**10 42 22.4**	**-3.8**
	baz=267,slow=28						
APA0				Lg		10

GUMO	**Guam**	**4.21**	**192**	*e*Pn		**P**		**10 53 37.2**	**+1.1**
GUMO				*e*Sn		**S**		**10 54 26.2**	**+0.4**
JOW	**Kunigami**	**18.56**	**302**	P		**P**		**10 56 37.8**	**+0.2**
	baz=124,slow=11								
MAJO	**Matsushiro**	**19.91**	**342**	*e*P		**P**		**10 56 54.7**	**+3.2**
	5.4nm,0.6s								
TGY	**Tagaytay City**	**24.17**	**265**	P		**P**		**10 57 34.3**	**+1.0**
	144nm,0.4s,baz=158,slow=6.9,SNR=3.9								
WAU	**Wau**	**24.93**	**178**	*e*P		**P**		**10 57 39.5**	**-0.9**
PMG	**Port Moresby**	**27.00**	**177**	P		**P**		**10 57 59.1**	**-0.3**
	18nm,0.8s,mb4.8,baz=346,slow=18,SNR=6.7								
PMG	**Port Moresby**	**27.00**	**177**	*e*P		**P**		**10 57 58.4**	**-1.0**
	35nm,0.9s,mb5.0								
CN2	**Changchun**	**31.15**	**331**	*e*P		**P**		**10 58 39.0**	**+2.9**
KAKA	**Kakadu**	**33.00**	**205**	*e*P		**P**		**10 58 51.5**	**-0.9**
	12nm,0.6s,mb4.8								
BJI	**Beijing**	**33.90**	**317**	*e*P		**P**		**10 59 03.8**	**+4.0**
BJI				AMB		AMB			
	comp=Z,5.0nm,0.7s,mb4.3								
QIZ	**Qiongzhong**	**34.11**	**278**	*e*P		**P**		**10 59 02.2**	**+0.4**
	comp=Z,21nm,0.9s,mb4.9								
CTA	**Charters Tower**	**37.58**	**179**	*e*P		**P**		**10 59 31.1**	**+0.1**
	comp=Z,6.2nm,0.7s,mb4.3								
CTAO	**Charters Tower**	**37.58**	**179**	*e*P		**P**		**10 59 31.1**	**+0.1**
	comp=Z,8.3nm,0.7s,mb4.5								
WRAB	**Tennant Creek**	**39.08**	**197**	*e*P		**P**		**10 59 43.6**	**+0.2**
	comp=Z,58nm,0.6s,mb5.4								
WB2	**Warramunga Arr**	**39.09**	**197**	*e*P		**P**		**10 59 42.7**	**-0.8**
WRA	**Warramunga Arr**	**39.09**	**197**	P		**P**		**10 59 43.0**	**-0.5**
	comp=Z,12nm,0.5s,mb4.8,baz=19,slow=8.7,SNR=93								
WRA				PcP		PcP		11 01 48.9	-1.4
	comp=Z,2.1nm,0.5s,baz=14,slow=3.3,SNR=8.1								
FITZ	**Fitzroy Crossi**	**40.75**	**210**	*e*P		**P**		**10 59 57.2**	**0.0**
	comp=Z,15nm,0.6s,mb4.8								
LZH	**Lanzhou**	**41.27**	**305**	*e*P		**P**		**11 00 06.0**	**+4.8**
LZH				AP		pP		11 00 45.5	+6.0
LZH				PP		PP		11 01 47.0	+5.5
LZH				AMB		AMB			
	comp=Z,24nm,1.4s,mb4.6								
AS12	**Alice Springs**	**42.75**	**196**	*e*P		**P**		**11 00 13.2**	**-0.3**
	comp=Z,7.8nm,0.5s,mb4.6								
ASAR	**Alice Springs**	**42.75**	**196**	P		**P**		**11 00 13.2**	**-0.4**
	comp=Z,4.4nm,0.4s,mb4.4,baz=14,slow=7.0,SNR=113								
ASAR				PcP		PcP		11 02 00.8	-1.4
	comp=Z,2.0nm,0.6s,baz=25,slow=2.6,SNR=7.6								
SONM	**Songino Array**	**43.96**	**322**	P		**P**		**11 00 22.1**	**-0.7**
	comp=Z,0.8nm,0.6s,mb3.5,baz=124,slow=8.9,SNR=3.8								
SONM				pP		pP		11 01 02.4	+0.9
	comp=Z,1.3nm,0.8s,baz=124,slow=8.9,SNR=2.8								
SONM				PcP		PcP		11 02 04.2	-1.8
	comp=Z,0.8nm,0.8s,baz=114,slow=7.2,SNR=2.3								
CMAR	**Chiang Mai Arr**	**44.45**	**278**	P		**P**		**11 00 27.6**	**+0.4**
	comp=Z,23nm,1.3s,mb4.7,baz=69,slow=6.8,SNR=17								
ARMA	**Armidale**	**48.20**	**173**	*e*P		**P**		**11 00 56.3**	**-0.1**
STKA	**Stephens Creek**	**49.48**	**185**	*e*P		**P**		**11 01 05.0**	**-1.2**
	comp=Z,7.8nm,0.8s,mb4.4								
STKA	**Stephens Creek**	**49.48**	**185**	P		**P**		**11 01 05.1**	**-1.1**
	comp=Z,7.2nm,0.6s,mb4.5,baz=346,slow=8.7,SNR=19								
LSA	**Lhasa**	**51.02**	**294**	*e*P		**P**		**11 01 19.4**	**+1.5**
	comp=Z,4.9nm,0.6s,mb4.3								
FORT	**Forrest**	**51.16**	**200**	*e*P		**P**		**11 01 18.0**	**-0.9**
	comp=Z,49nm,0.5s,mb5.4								
BILL	**Bilibino**	**51.95**	**10**	*e*P		**P**		**11 01 22.8**	**-1.6**
	comp=Z,5.8nm,1.0s,mb4.2								
WMQ	**Urumqi**	**55.02**	**311**	*e*P		**P**		**11 01 49.8**	**+2.7**
KLBR	**Kellerberrin**	**55.94**	**209**	*e*P		**P**		**11 01 52.4**	**-1.5**
	comp=Z,24nm,1.1s,mb5.0								
MUN	**Mundaring**	**56.98**	**210**	*e*P		**P**		**11 02 00.1**	**-1.2**
	comp=Z,2nm,0.8s,mb4.8								
NWAO	**Narrogin (SRO)**	**57.30**	**209**	*e*P		**P**		**11 02 02.4**	**-1.1**
	comp=Z,29nm,1.0s,mb5.1								
MKAR	**Makanchi Array**	**59.20**	**314**	P		**P**		**11 02 14.7**	**-1.8**
	comp=Z,1.1nm,0.7s,mb3.8,baz=98,slow=8.6,SNR=7.6								
MKAR				PcP		PcP		11 02 59.6	-3.1
	comp=Z,1.1nm,0.7s,baz=90,slow=9.7,SNR=4.2								
PMR	**Palmer**	**62.75**	**29**	*e*P		**P**		**11 02 37.2**	**-2.9**
	comp=Z,4.2nm,0.8s,mb4.3								
COLA	**College**	**64.09**	**26**	*e*P		**P**		**11 02 49.2**	**+0.4**
	comp=Z,1.4nm,0.7s,mb3.9								
ILAR	**Eielson Array**	**64.47**	**26**	P		**P**		**11 02 49.0**	**-2.3**
	comp=Z,0.6nm,0.4s,mb3.8,baz=253,slow=6.0,SNR=20								
ILAR				pP		pP		11 03 32.2	-0.5
	comp=Z,1.1nm,1.0s,baz=263,slow=6.3,SNR=3.5								
BVAR	**Borovoye Array**	**67.28**	**321**	P		**P**		**11 03 07.0**	**-2.3**
	comp=Z,1.5nm,0.4s,mb4.2,baz=97,slow=8.0,SNR=11								
BVAR				PcP		PcP		11 03 35.5	-0.2
	comp=Z,1.3nm,0.7s,baz=72,slow=4.7,SNR=4.1								
BVAR				pP		pP		11 03 49.9	-1.2
	comp=Z,1.5nm,0.6s,baz=101,slow=7.6,SNR=2.6								
INK	**Inuvik**	**70.22**	**23**	P		**P**		**11 03 26.1**	**-1.0**
	comp=Z,5.2nm,1.1s,mb4.2,baz=267,slow=9.7,SNR=13								
INK	**Inuvik**	**70.22**	**23**	*e*P		**P**		**11 03 25.6**	**-1.4**
	comp=Z,3.5nm,0.8s,mb4.1								
INK				*e*		pP		11 04 07.1	-2.1
YKA	**Yellowknife Ar**	**78.80**	**28**	P		**P**		**11 04 15.3**	**-0.8**
	comp=Z,0.7nm,0.5s,mb3.5,baz=289,slow=5.4,SNR=18								
YKA				pP		pP		11 04 56.4	-2.7
	comp=Z,0.9nm,0.7s,baz=288,slow=5.5,SNR=3.0								
YKA	**Yellowknife Ar**	**78.80**	**28**	P		**P**		**11 04 15.3**	**-0.8**
YKA				pP		pP		11 04 56.4	-2.7
YBH	**Yreka Blue Hor**	**79.51**	**50**	P		**P**		**11 04 19.3**	**-1.1**
	comp=Z,1.2nm,0.6s,mb3.7,baz=259,slow=0.5,SNR=7.2								
ARCES	**ARCESS Array B**	**83.44**	**342**	P		**P**		**11 04 38.2**	**-2.0**
	comp=Z,1.7nm,0.8s,mb3.8,baz=74,slow=6.6,SNR=3.9								
ARCES	**ARCESS Array B**	**83.44**	**342**	P		**P**		**11 04 38.2**	**-2.0**
NVAR	**Mina Array Bea**	**83.66**	**52**	P		**P**		**11 04 43.3**	**+1.2**
	comp=Z,2.3nm,0.6s,mb4.1,baz=265,slow=4.8,SNR=26								
NVAR				pP		pP		11 05 23.1	-2.4
	comp=Z,1.0nm,0.6s,baz=274,slow=4.0,SNR=2.3								
CHMT	**Chamberlain Mo**	**84.48**	**43**	*e*P		**P**		**11 04 46.2**	**+0.4**
HLID	**Hailey**	**84.83**	**46**	*e*P		**P**		**11 04 49.0**	**+1.2**
	comp=Z,3.3nm,0.9s,mb4.1								
MCMT	**McKenzie Canyo**	**85.46**	**44**	*e*P		**P**		**11 04 51.2**	**+0.4**
HRY	**Holter Researc**	**85.47**	**42**	*e*P		**P**		**11 04 51.4**	**+0.7**
QLMT	**Earthquake Lak**	**86.41**	**44**	*e*P		**P**		**11 04 56.6**	**+1.2**
HWUT	**Hardware Ranch**	**87.49**	**47**	*e*P		**P**		**11 05 01.9**	**+1.2**
	comp=Z,4.0nm,1.0s,mb4.2								
FINES	**FINESS Array B**	**87.80**	**335**	P		**P**		**11 04 58.5**	**-3.1**
	comp=Z,3.2nm,1.1s,mb4.0,baz=63,slow=6.2,SNR=5.0								
SRU	**San Rafael**	**89.15**	**49**	*e*P		**P**		**11 05 09.2**	**+0.7**
SRU				*e*				11 05 16.2	
PV10	**Paradox Valley**	**90.51**	**49**	*e*P		**P**		**11 05 15.8**	**+0.8**
PV01	**Paradox Valley**	**90.94**	**49**	*e*P		**P**		**11 05 17.3**	**+0.3**
ANMO	**Albuquerque**	**93.78**	**52**	P		**P**		**11 05 31.5**	**+1.4**
LPAZ	**La Paz**	**147.55**	**93**	PKP		PKPdf		11 11 54.0	+1.0
	comp=Z,3.6nm,0.7s,baz=350,slow=1.8,SNR=4.2								
LPAZ				PKPbc		PKPdf		11 11 58.1	+5.1
	comp=Z,2.9nm,0.6s,baz=285,slow=2.6,SNR=17								
CPUP	**Villa Florida**	**156.94**	**116**	PKPab		PKPab		11 12 38.2	-1.6
	comp=Z,2.1nm,0.8s,baz=271,slow=5.7,SNR=4.5								

*THE **20** 11:05:12.8,39.34N×25.86E,h10km*
*NEIC **20** 11:05:13.5,39.33N×26.40E,h5km,MD3.0(ISK),After ISK.*
*ISK **20** 11:05:13.5,39.33N×26.40E,h5km,MD3.0*
ISC 20 11:05:11.0±0.9,39.29N±0.05×25.94E±0.05,h10km,n14, σ0§82/22,Aegean Sea

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
BOZC	**Bozcaada**	**0.56**	**9**	*i* P		**Pg**	**11 05 21.9**	**-0.3**
BOZC				*i* S		**Sg**	**11 05 30.5**	**+0.7**
EZN	**Ezine**	**0.61**	**29**	*i* PG		**Pg**	**11 05 23.4**	**+0.1**
EZN				*i* SG		**Sg**	**11 05 32.9**	**+1.3**
LOS	**Limnos**	**0.92**	**314**	*e*Pg		**Pg**	**11 05 28.7**	**-0.8**
LOS				*e*Sg		**Sg**	**11 05 41.0**	**-0.9**
LPK	**Lapseki**	**1.25**	**30**	PG		**Pg**	**11 05 34.5**	**-1.5**
LPK				SG		**Sg**	**11 05 51.3**	**-1.5**
KGT	**Karabiga**	**1.56**	**42**	PN		**Pn**	**11 05 39.0**	**0.0**
AOS	**Alonnisos**	**1.60**	**266**	*e*Pb		**Pb**	**11 05 40.0**	**-0.3**
AOS				*e*Sb		**Sb**	**11 06 01.7**	**+1.2**
ALN	**Alexandroupoli**	**1.61**	**3**	*e*Pb		**Pb**	**11 05 41.0**	**+0.6**
ALN				*e*Sb		**Sb**	**11 06 01.4**	**+0.8**
MRMT	**Marmara Adasi**	**1.83**	**44**	Pn		**Pn**	**11 05 43.9**	**+1.1**
OUR	**Ouranopolis**	**1.83**	**305**	*e*Pb		**Pb**	**11 05 44.0**	**-0.2**
BNT	**Bandirma**	**1.86**	**54**	PN		**Pn**	**11 05 43.1**	**-0.1**
KCT	**Karacabey**	**2.10**	**62**	PN		**Pn**	**11 05 46.8**	**+0.1**
MANT	**Manisa**	**2.19**	**111**	*i* P		**Pn**	**11 05 53.7**	**+5.6**
MANT				*i* S		**Sn**	**11 06 24.3**	**+8.9**
ARMT	**Armutlu**	**2.58**	**60**	*e*PN		**Pn**	**11 05 53.3**	**-0.3**
ULDT	**Uludag**	**2.61**	**70**	*i* P		**Pn**	**11 06 00.9**	**+7.0**
ULDT				*i* S		**Sn**	**11 06 36.5**	**+11**

*NEIC **20** 11:25:06.5,39.93N×40.71E,h5km,MD3.8(ISK),After ISK.*
*ISK **20** 11:25:06.5,39.93N×40.71E,h5km,MD3.8*
*IDC **20** 11:25:08.7±2.7,39.90N×40.70E,mb3.7/3,mb1 3.8/5, mb1mx3.5/19,ML1.7/1,MS3.0/2,Ms1 3.0/2,ms1mx2.3/32, Error ellipse: s-maj=52.6km s-min=31.2km az=104.0, Putative timing error at GNI*
ISC 20 11:25:07.6±0.4,39.96N±0.04×40.74E±0.04,h5km,n29, σ1§18/34,mb3.6/3,1C,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
EZM	**Erzurum**	**0.38**	**98**	*i* PG		**Pg**	**11 25 15.7**	**+0.5**
ERZM	**Erzurum**	**0.49**	**96**	*i* P		**Pg**	**11 25 15.7**	**-1.6**
ERZM				*i* S		**Sg**	**11 25 22.3**	**-1.6**
EZC	**Erzincan**	**0.74**	**254**	*i* PG		**Pg**	**11 25 27.7**	**+5.4**
GUMT	**Gumushane**	**1.08**	**298**	*i* PN		**Pn**	**11 25 27.9**	**-1.4**
GUMT				*i* SN		**Sn**	**11 25 44.8**	**-0.1**
BINT	**Bingol**	**1.10**	**190**	*i* PG		**Pg**	**11 25 27.1**	**-2.4**
BINT				*i* SG		**Sg**	**11 25 43.9**	**-0.2**
KELT	**Kelkit**	**1.15**	**280**	*i* P		**Pb**	**11 25 29.4**	**-0.2**
KELT				*i* S		**Sb**	**11 25 51.0**	**+6.4**
BCA	**Borcka**	**1.63**	**24**	PN		**Pn**	**11 25 37.0**	**-0.1**
AGRT	**Agri**	**1.77**	**101**	PN		**Pn**	**11 25 39.7**	**+0.6**
BTMT	**Batman**	**1.86**	**161**	PN		**Pn**	**11 25 41.0**	**+0.6**
KARS	**Kars**	**1.92**	**69**	*e*PN		**Pn**	**11 25 42.4**	**+1.2**
ELZG	**Elazig**	**2.00**	**224**	⇑*i* P		**Pn**	**11 25 42.7**	**+0.4**
ELZG				*i* S		**Sn**	**11 26 22.4**	**+14**
DIY	**Diyarbakir**	**2.10**	**191**	*e*PN		**Pn**	**11 25 44.0**	**+0.2**
BEST	**Besiri**	**2.10**	**168**	*i* P		**Pn**	**11 25 45.6**	**+1.7**
BEST				*i* S		**Sn**	**11 26 16.1**	**+5.3**
MYA	**Malataya**	**2.43**	**229**	*e*PN		**Pn**	**11 25 48.7**	**+0.2**
VANB	**Van**	**2.47**	**123**	*e*PN		**Pn**	**11 25 49.2**	**+0.1**
TVAN	**Van**	**2.52**	**124**	*i* P		**Pn**	**11 25 53.4**	**+3.6**
TVAN				*i* S		**Sn**	**11 26 28.2**	**+7.0**
SVSK	**Karacayir**	**2.88**	**270**	*e*PN		**Pn**	**11 25 55.3**	**+0.4**
SVST	**Sivas**	**2.92**	**268**	*i* P		**Pn**	**11 26 01.4**	**+5.8**
SVST				*i* S		Sn	11 26 52.4	+21
GNI	**Garni**	**3.08**	**85**	Pn		Px	11 25 40.4	
	3.1nm,0.3s,baz=354,slow=10,SNR=8.0							
BRTR	**Keskin Array B**	**5.47**	**270**	Pn		**Pn**	**11 26 32.1**	**+0.4**
	0.0nm,0.3s,baz=306,slow=42,SNR=2.1							
ELL	**Elmali**	**9.09**	**253**	PN		**P**	**11 27 21.9**	**-0.5**
DENT	**Denizli**	**9.39**	**260**	*e*PN		**P**	**11 27 24.9**	**-1.7**
AKS	**Akhisar**	**10.06**	**268**	*i* PN		**P**	**11 27 38.2**	**+2.4**
IZM	**Izmir**	**10.58**	**266**	*i* PN		**P**	**11 27 33.0**	**-10**
MLR	**Muntele Rosu**	**12.20**	**302**	LR		LR	11 33 43.2	
	comp=Z,74nm,18.2s,baz=60,slow=42							
AKASG	**Malin Array Be**	**13.44**	**327**	Pn		**P**	**11 28 19.3**	**-2.1**
	0.6nm,0.3s,baz=135,slow=12,SNR=5.5							
FINES	**FINESS Array B**	**23.32**	**342**	P		**P**	**11 30 19.1**	**+2.1**
	1.8nm,0.8s,mb3.6,baz=141,slow=18,SNR=4.0							
FINES				LR		LR	11 39 54.9	
	comp=Z,35nm,18.1s,baz=167,slow=38							
DBIC	**Dimbokro**	**52.55**	**243**	P		**P**	**11 34 23.2**	**-1.1**
	4.1nm,0.9s,mb4.4,baz=34,slow=7.3,SNR=4.1							
YKA	**Yellowknife Ar**	**75.98**	**348**	P		**P**	**11 36 57.5**	**+0.9**
	0.2nm,1.0s,mb3.0,baz=14,slow=5.1,SNR=4.4							

*BJI **20** 11:26:52.8,36.75N×27.72E,h68km,mB4.3,mb4.1,Ms4.2, Msz4.2*
*NEIC **20** 11:26:55.8,36.23N×28.25E,h60km,mb4.1/36, MD4.0(ISK),After ATH.*
*ISK **20** 11:26:55.7,36.21N±28.14E,h75km,MD4.0,ML4.1*
*ATH **20** 11:26:56.0,36.23N×28.21E,h62km±2km*
*IDC **20** 11:26:56.8±1.3,36.19N×28.21E,h62km±16km,mb3.6/7, mb1 3.9/16,mb1mx3.8/27,Error ellipse: s-maj=20.6km s-min=9.3km az=162.0*
*NIC **20** 11:26:58.4±0.3,36.66N×28.71E,h76km,mb4.3,ML3.8, MW3.6*
*THE **20** 11:27:00.0,36.28N×28.07E,h20km,ML4.3*
*NSSC **20** 11:27:38.2,35.26N×32.03E,h40km*
ISC 20 11:26:55.4±0.2,36.12N±0.02×28.27E±0.02,h75km±3km, n172,σ1§01/198,mb4.0/29,9C-11D,Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
ARG	**Arkhangelos**	**0.15**	**311**	⇑*i* P		**P**	**11 27 05.8**	**-0.5**
YER	**Yerkesik**	**1.01**	**1**	*i* PG		**P**	**11 27 14.6**	**+0.1**
NISR	**Nisiros**	**1.04**	**299**	*e*P		**P**	**11 27 14.2**	**-0.7**
KARP	**Karpathos**	**1.06**	**238**	⇓*i* P		**P**	**11 27 16.3**	**+1.2**
KSL	**Kastellorizon**	**1.07**	**88**	⇓*i* P		**P**	**11 27 16.5**	**+1.3**
KSL				*e*S		**S**	**11 27 29.9**	**-0.1**
BDRM	**Kayabasi**	**1.15**	**325**	*i* P		**P**	**11 27 16.9**	**-2.8**
BDRM				*i* S		**S**	**11 27 29.2**	**-2.8**
MLSB	**Milas**	**1.24**	**342**	*i* PN		**P**	**11 27 16.8**	**-0.6**
MLSB				*i* SN		**S**	**11 27 32.3**	**-1.6**
AYDN	**Tasoluk**	**1.57**	**349**	⇑*i* P		**P**	**11 27 22.2**	**+0.2**
AYDN				*i* S		**S**	**11 27 45.5**	**+4.0**
DNZL	**Cakiroluk**	**1.69**	**22**	⇑*i* P		**P**	**11 27 24.5**	**+1.0**
DNZL				*i* S		**S**	**11 27 49.4**	**+5.2**
SMG	**Samos**	**1.96**	**325**	*e*P		**P**	**11 27 26.5**	**-0.6**
ANTB	**Antalya**	**2.08**	**67**	*e*PN		**P**	**11 27 30.3**	**+1.5**
THR1	**Thera Island**	**2.28**	**277**	*e*Pn		**P**	**11 27 31.9**	**+0.2**
THR1				*e*Sn		**S**	**11 27 56.5**	**-2.1**
NPS	**Neapolis**	**2.32**	**249**	⇓*i* P		**P**	**11 27 32.6**	**+0.3**
THR6	**Thira Island,**	**2.33**	**277**	*e*Pn		**P**	**11 27 33.0**	**+0.6**
THR3	**Thira Island,**	**2.33**	**278**	*e*Pn		**P**	**11 27 33.0**	**+0.5**
THR4	**Thira Island,**	**2.34**	**279**	*e*Pn		**P**	**11 27 33.0**	**+0.4**
THR5	**Thira Island,**	**2.38**	**278**	*e*Pn		**P**	**11 27 33.8**	**+0.8**
MANT	**Manisa**	**2.38**	**6**	⇑*i* P		**P**	**11 27 33.0**	**-0.1**
MANT				*i* S		**S**	**11 28 01.2**	**+0.1**
APE	**Apeiranthos**	**2.40**	**294**	*i* PN		**P**	**11 27 32.5**	**-0.8**
APE	**Apeiranthos**	**2.40**	**294**	*e*P		**P**	**11 27 33.2**	**-0.1**
APE				*e*S		**S**	**11 28 00.0**	**-1.6**
KDAG	**Bornova**	**2.42**	**341**	*i* P		**P**	**11 27 32.9**	**-0.6**
KDAG				*i* S		**S**	**11 28 06.1**	**+4.0**
KHL	**Karahalli**	**2.42**	**24**	*e*PN		**P**	**11 27 33.9**	**+0.3**
KRIS	**Kristallenia**	**2.44**	**248**	*e*PN		**P**	**11 27 34.8**	**+0.9**
XRY	**Khrisi**	**2.44**	**240**	⇑*i* P		**P**	**11 27 35.1**	**+1.2**
IDI	**Anoyia**	**2.87**	**254**	P		**P**	**11 27 40.4**	**+0.4**
	22nm,0.3s,baz=63,slow=16,SNR=148							
IDI				S		**S**	**11 28 13.6**	**+0.1**
	34nm,0.3s,baz=252,slow=16,SNR=5.3							
VAM	**Vamos**	**3.38**	**259**	*e*P		**P**	**11 27 49.1**	**+2.0**
AKMC	**Akamas**	**3.49**	**107**	⇓P		**P**	**11 27 49.6**	**+1.0**
AKMC	**Akamas**	**3.49**	**107**	⇓*i* P		**P**	**11 27 49.6**	**+1.0**
PRK	**Paraskevi**	**3.50**	**334**	*e*P		**P**	**11 27 48.2**	**-0.5**
HDMB	**Hadim**	**3.50**	**75**	*e*PN		**P**	**11 27 51.2**	**+2.4**
BALB	**Balikesir**	**3.53**	**355**	*e*PN		**P**	**11 27 48.2**	**-0.9**
PPCY	**Paphos**	**3.55**	**109**	⇓P		**P**	**11 27 50.6**	**+1.2**
PPCY	**Paphos**	**3.55**	**109**	⇓*e*P		**P**	**11 27 50.6**	**+1.2**
GAVD	**Gavdhos**	**3.64**	**251**	*e*P		**P**	**11 27 52.3**	**+1.6**
ALFC	**Alevga**	**3.66**	**104**	P		**P**	**11 27 51.3**	**+0.4**
	27nm,0.2s							
ALFC				S		**S**	**11 28 32.2**	**-0.9**
KONT	**Konya--Tatoy**	**3.75**	**60**	*i* PN		**P**	**11 27 54.1**	**+1.9**
LEF	**Lefka**	**3.90**	**103**	*e*PN		**P**	**11 27 54.4**	**+0.1**
ORLT	**Orhaneli**	**3.95**	**7**	*e*PN		**P**	**11 27 55.7**	**+0.7**
ESKT	**Eskisehir**	**3.96**	**30**	*e*PN		**P**	**11 27 55.4**	**+0.2**
KIZT	**Kizilcal**	**3.98**	**45**	*i* PN		**P**	**11 27 56.4**	**+1.0**
SZAC	**Souni-Zanaja**	**4.01**	**108**	⇑P		**P**	**11 27 56.6**	**+0.8**
	32nm,0.2s							
SZAC				S		**S**	**11 28 43.0**	**+1.2**
SZAC	**Souni-Zanaja**	**4.01**	**108**	⇑*i* P		**P**	**11 27 56.6**	**+0.8**
SZAC				S		**S**	**11 28 43.0**	**+1.2**
KCT	**Karacabey**	**4.14**	**1**	*e*PN		**P**	**11 27 57.1**	**-0.6**
KYTH	**Kithira**	**4.23**	**274**	*e*P		**P**	**11 28 00.0**	**+1.1**
EDC	**Edincik**	**4.23**	**356**	*e*PN		**P**	**11 27 58.3**	**-0.7**
NSAL	**Nisos Salamina**	**4.24**	**296**	*e*P		**P**	**11 28 00.0**	**+1.0**
BNT	**Bandirma**	**4.24**	**356**	*i* PN		**P**	**11 27 58.0**	**-1.0**
CSS	**Prodhromos**	**4.29**	**104**	⇓P		**P**	**11 28 00.3**	**+0.6**
	8.4nm,0.3s							
CSS				S		**S**	**11 28 48.1**	**-0.8**
CSS	**Prodhromos**	**4.29**	**104**	⇓*e*P		**P**	**11 28 00.3**	**+0.6**
CSS				S		**S**	**11 28 48.1**	**-0.8**
VLI	**Veliai**	**4.34**	**279**	*e*P		**P**	**11 28 02.0**	**+1.6**
IKL	**Isikli**	**4.39**	**87**	*e*PN		**P**	**11 28 02.4**	**+1.3**
KGT	**Karabiga**	**4.39**	**350**	*i* PN		**P**	**11 28 00.2**	**-1.0**
LPK	**Lapseki**	**4.41**	**345**	PN		**P**	**11 28 00.9**	**-0.5**
YLV	**Yalova**	**4.53**	**11**	*i* PN		**P**	**11 28 02.7**	**-0.3**
LOS	**Limnos**	**4.56**	**328**	*e*Pn		**P**	**11 28 03.8**	**+0.2**
AOS	**Alonnisos**	**4.62**	**313**	*e*Pn		**P**	**11 28 03.8**	**-0.6**
PHNC	**Paralimni**	**4.83**	**102**	P		**P**	**11 28 09.1**	**+1.9**
ALN	**Alexandroupoli**	**5.08**	**341**	*e*Pn		**P**	**11 28 10.2**	**-0.5**
ALN				*e*Sn		**S**	**11 29 03.3**	**-5.3**
XOR	**Xorichti**	**5.17**	**310**	*e*Pn		**P**	**11 28 11.8**	**0.0**
ANTO	**Ankara**	**5.18**	**42**	*e*PN		**P**	**11 28 12.6**	**+0.6**
ITM	**Ithomi**	**5.21**	**284**	*e*P		**P**	**11 28 15.5**	**+3.1**
PAIG	**Paliouri**	**5.25**	**318**	*e*Pn		**P**	**11 28 12.9**	**-0.1**
OUR	**Ouranopolis**	**5.39**	**323**	*e*Pn		**P**	**11 28 14.7**	**-0.3**
AGG	**Agios Georgios**	**5.53**	**303**	*e*Pn		**P**	**11 28 17.6**	**+0.8**
BRTR	**Keskin Array B**	**5.57**	**48**	P		**P**	**11 28 17.8**	**+0.4**
	2.3nm,0.3s,baz=222,slow=14,SNR=29							
BRTR				S		**S**	**11 29 19.4**	**-1.3**
	0.8nm,0.3s,baz=216,slow=23,SNR=3.3							
KDZ	**Kurdzhali**	**5.95**	**339**	P		**P**	**11 28 22.0**	**-0.7**
SRS	**Serrai**	**6.19**	**325**	*e*Pn		**P**	**11 28 25.8**	**-0.1**
RZN	**Rozhen**	**6.21**	**335**	P		**P**	**11 28 26.0**	**-0.3**
ARNB	**Al Arnab**	**6.25**	**90**	⇓P		**P**	**11 28 27.5**	**+0.6**
ARNB				⇓S		x	11 29 03.9	
DIM	**Dimitrovgrad**	**6.29**	**341**	P		**P**	**11 28 27.0**	**-0.4**
HNTI	**Hanita**	**6.45**	**116**	P		**P**	**11 28 29.7**	**0.0**
HNTI				S		**S**	**11 29 37.3**	**-5.2**
SLNF	**Slenfeh**	**6.48**	**92**	⇑P		**P**	**11 28 30.1**	**0.0**
SLNF				⇑S		x	11 29 07.9	
HAF	**Haifa**	**6.50**	**119**	S		**S**	**11 29 38.3**	**-5.5**
MMB	**Musomiste**	**6.51**	**328**	P		**P**	**11 28 30.0**	**-0.5**
OFRI	**'Ofer**	**6.56**	**120**	P		**P**	**11 28 30.2**	**-1.0**
BTCH	**Batrach**	**6.64**	**88**	⇑P		**P**	**11 28 32.0**	**-0.2**
BTCH				⇑S		x	11 29 12.9	
MEV	**Metsovon**	**6.66**	**305**	*e*Pn		**P**	**11 28 33.5**	**+1.0**
KSDI	**Kefar Szold**	**6.75**	**113**	P		**P**	**11 28 33.8**	**-0.1**
HRI	**Mount Hermon**	**6.78**	**113**	P		**P**	**11 28 34.0**	**-0.2**
SLTI	**Sal'it**	**6.82**	**123**	P		**P**	**11 28 34.5**	**-0.3**
SLTI				S		**S**	**11 29 45.5**	**-6.1**
BRBR	**Barbar**

ARCES	**ARCESS Array B**	33.51	358	P		**P**	11 33 29.2	-0.1
	3.3nm,0.9s,mb4.2,baz=176,slow=8.4,SNR=17							
BRVK	**Borovoye**	33.80	47	P		**P**	11 33 33.5	+1.5
KMBO	**Kilima Mbogo**	37.99	165	P		**P**	11 34 06.3	-1.5
KURK	**Kurchatov**	38.61	52	*e*P		**P**	11 34 12.7	+0.2
MKAR	**Makanchi Array**	41.13	58	P		**P**	11 34 34.7	+1.3
	0.4nm,0.5s,mb3.5,baz=275,slow=5.9,SNR=4.3							
MKAR	**Makanchi Array**	41.13	58	P		**P**	11 34 34.7	+1.3
WMQ	**Urumqi**	45.33	61	*e*P		**P**	11 35 08.8	+1.3
WMQ				AP		pP	11 35 27.3	+1.3
WMQ				XP		sP	11 35 36.3	+1.7
WMQ				PP		PP	11 36 56.8	+1.6
WMQ				S		**S**	11 41 43.6	+1.7
WMQ				AMB		AMB		
	comp=Z,1.0nm,1.2s,mb3.4							
WMQ				AMB		AMB		
	comp=Z,8.0nm,7.4s							
WMQ				LR		LR		
	comp=N,101nm,19.2s							
WMQ				LR		LR		
	comp=E,98nm,18.3s							
WMQ				LR		LR		
	comp=Z,161nm,20.1s							
LZH	**Lanzhou**	59.50	66	*e*P		**P**	11 36 49.0	-4.0
LZH				AP		pP	11 37 07.5	-4.8
LZH				XP		sP	11 37 15.0	-5.8
SCHQ	**Schefferville**	64.09	320	P		**P**	11 37 23.1	-0.3
	comp=Z,3.2nm,0.9s,mb4.2,baz=54,slow=4.4,SNR=7.4							
SCHQ	**Schefferville**	64.09	320	*e*P		**P**	11 37 22.6	-0.8
	comp=Z,4.6nm,0.8s,mb4.4							
CN2	**Changchun**	70.64	50	*e*P		**P**	11 38 04.5	-0.1
INK	**Inuvik**	75.00	353	*e*P		**P**	11 38 30.1	+0.5
	comp=Z,0.4nm,0.5s,mb3.4							
ILAR	**Eielson Array**	79.37	358	P		**P**	11 38 55.8	+1.7
	comp=Z,0.3nm,0.7s,mb3.2,baz=336,slow=3.4,SNR=4.3							
DAWY	**Dawson**	79.67	355	*e*P		**P**	11 38 57.4	+1.6

NEIC ***20*** *11:36:52.2,38.84N×22.19E,h3km,MD3.3(ATH),After ATH.*
ATH ***20*** *11:36:52.2,38.84N×22.19E,h3km,MD3.3/9*
THE ***20*** *11:36:53.4,38.91N×22.26E,h9km,ML3.2*
ISC 20 11:36:51.9±0.7,38.90N±0.04×22.21E±0.04,h6km±7km, n18,σ0§79/21,1C,Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AGG	**Agios Georgios**	0.16	38	*e*Pg	**Pg**	11 36 56.0	+0.8
EVR	**Evrytania**	0.31	273⇑	*i*PG	**Pg**	11 36 58.0	-0.2
NEO	**Neokhori**	0.89	62	*e*PB	**Pb**	11 37 09.6	+0.3
XOR	**Xorichti**	0.90	58	*e*Pg	**Pg**	11 37 09.8	-0.1
XOR				*e*Sg	**Sg**	11 37 22.0	+0.2
LIT	**Litokhoron**	1.22	10	*e*Pb	**Pb**	11 37 14.7	-0.2
LIT				*e*Sb	**Sb**	11 37 32.5	+1.8
JAN	**Janina**	1.29	306	*e*PB	**Pb**	11 37 17.1	+0.9
AOS	**Alonnisos**	1.33	78	*e*Pb	**Pb**	11 37 16.4	-0.4
NSAL	**Nisos Salamina**	1.40	135	*e*PB	**Pb**	11 37 18.0	0.0
VLS	**Valsamata**	1.46	241	*e*PB	**Pb**	11 37 18.0	-1.0
NAIG	**Nisos Aigina**	1.52	138	*e*PB	**Pb**	11 37 20.4	+0.3
PAIG	**Paliouri**	1.54	48	*e*Pb	**Pb**	11 37 18.9	-1.4
IGT	**Igoumenitsa**	1.59	294	*e*Pb	**Pb**	11 37 22.2	+1.1
ITM	**Ithomi**	1.73	187	*e*PB	**Pb**	11 37 25.0	+1.4
OUR	**Ouranopolis**	1.98	43	*e*Pb	**Pb**	11 37 26.9	-1.1
FNA	**Florina**	1.99	342	*e*Pn	**Pn**	11 37 26.1	-0.3
FNA				*e*Sn	**Sn**	11 37 51.2	-0.6
KEK	**Kerkira**	2.04	294	*e*PG	**Pg**	11 37 31.5	-1.0
VLI	**Veliai**	2.25	165	*e*PN	**Pn**	11 37 30.0	-0.2
SRS	**Serrai**	2.46	25	*e*Pn	**Pn**	11 37 32.9	-0.2

CASC ***20*** *11:46:11.4±2.1,8.35N×82.96W,h0km±5km,MD4.1*
ISC 20 11:46:10.2±0.9,8.23N±0.05×83.00W±0.04,h1km,n17, σ0§74/25,4C-6D,Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ACR	**Cerro Adams**	0.45	339⇓	*e*P	**Pg**	11 46 18.9	-0.4
ACR				*e*S	**Sg**	11 46 25.4	0.0
PTP1	**Petroterminal**	0.57	92⇑	*i*P	**Pg**	11 46 15.7	-5.9
DVD	**David**	0.58	69⇓	*i*P	**Pg**	11 46 22.0	+0.1
BRU2	**Volcan**	0.64	29⇓	*i*P	**Pg**	11 46 22.6	-0.5
BRU2				*e*S	**Sg**	11 46 31.9	+0.3
BUS	**Buena Vista**	1.52	331	*e*P	**Pn**	11 46 37.6	-0.9
BUS				*e*S	**Sb**	11 46 58.0	-0.5
URSC	**Urasca**	1.77	334⇑	*e*P	**Pn**	11 46 41.5	-0.7
URSC				*e*S	**Sn**	11 47 04.6	-1.0
LCR2	**La Lucha 2**	1.80	327⇓	*e*P	**Pn**	11 46 41.9	-0.8
LCR2				*e*S	**Sn**	11 47 07.0	+0.6
ICR	**Volcan Irazu**	1.92	335	*e*P	**Pn**	11 46 45.0	+0.6
ICR				*e*S	**Sn**	11 47 11.3	+1.7
LAJ	**Bijagual**	1.96	326	*e*P	**Pn**	11 46 46.2	+1.2
LAJ				*e*S	**Sn**	11 47 16.3	+5.7
SJS	**Escuela Geolog**	1.99	329⇑	*e*P	**Pn**	11 46 45.9	+0.5
CGA2	**Cerro Gallo 2**	2.29	321⇑	*e*P	**Pn**	11 46 49.6	0.0
TRTC	**Tortuguero**	2.44	343⇓	*e*P	**Pn**	11 46 51.0	-0.7
TRTC				*e*S	**Sn**	11 47 22.2	-0.4
AZU	**Azuero**	2.74	99⇓	*e*P	**Pn**	11 46 56.3	+0.3
FORC	**Fortuna**	2.77	324	*e*P	**Pn**	11 46 58.0	+1.5
VCR	**Vista de Mar**	3.21	306	*e*P	**Pn**	11 47 01.9	-0.9
UPA	**Univ. de Panam**	3.51	77	*e*P	**Pn**	11 47 06.9	-0.2
CRZC	**La Cruz**	3.73	317	*e*P	**Pn**	11 47 10.4	+0.3

TAP ***20*** *11:55:18.5,22.95N×120.55E,h13km,ML4.0*
TAP Felt III J at Sandimen.
IDC ***20*** *11:55:25.2±4.8,22.45N×123.78E,mb3.4/3,mb1 3.7/3, mb1mx3.4/20,Error ellipse: s-maj=333.0km s-min=32.2km az=91.0*
ISC 20 11:55:19.8±0.3,22.93N±0.01×120.54E±0.02,h11km±1km, n63,σ1§06/122,mb3.5/3,1C-21D,Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SGST	**Jiashian**	0.16	15⇑	*i*P	**Pg**	11 55 23.3	-0.3
SGST				S	**Sg**	11 55 26.8	+0.7
SSD	**Sandimen**	0.20	154⇓	*i*P	**Pg**	11 55 23.8	-0.4
SSD				S	**Sg**	11 55 27.6	+0.4
SGLT	**Jiouru**	0.20	192	*e*P	**Pg**	11 55 24.6	+0.3
SGLT				S	**Sg**	11 55 28.9	+1.6
CHN3	**Shinhua**	0.22	314	⇓P	**Pg**	11 55 25.3	+0.7
CHN3				S	**Sg**	11 55 31.2	+3.4
CHN1	**Nanshi**	0.26	358⇓	*i*P	**Pg**	11 55 25.0	-0.4
CHN1				S	**Sg**	11 55 29.8	+0.7
TAI1	**Yung-k'ang**	0.31	292	*e*P	**Pg**	11 55 26.5	+0.2
TAI1				S	**Sg**	11 55 32.6	+2.0
STYT	**Tauyuan**	0.31	40⇓	*i*P	**Pg**	11 55 26.7	-0.6
STYT				S	**Sg**	11 55 30.8	+0.1
WTP	**Ta-pu**	0.33	12⇓	*i*P	**Pg**	11 55 26.1	-0.5
WTP				S	**Sg**	11 55 31.7	+0.5
TWK	**Hsinying**	0.34	352⇓	*i*P	**Pg**	11 55 26.5	-0.4
TWK				S	**Sg**	11 55 32.5	+0.8
SCLT	**Jiali**	0.40	308	⇓P	**Pg**	11 55 27.9	-0.2
SCLT				S	**Sg**	11 55 35.6	+2.0
KAU	**Kaohsiung**	0.41	211	P	**Pg**	11 55 29.2	+0.9
KAU				S	**Sg**	11 55 37.3	+3.4
CHN4	**Tsaushan**	0.43	7	*i*P	**Pg**	11 55 27.5	-1.0
CHN4				S	**Sg**	11 55 34.6	+0.2
ECL	**Taimali**	0.50	130⇓	*i*P	**Pg**	11 55 28.8	-1.2
ECL				S	**Sg**	11 55 35.7	-1.2
TWG	**Pinlang**	0.50	102⇓	*i*P	**Pg**	11 55 29.2	-0.8
TWG				S	**Sg**	11 55 37.0	+0.1
ELDTW	**Lidau**	0.51	59⇓	*i*P	**Pg**	11 55 29.1	-1.1
ELDTW				S	**Sg**	11 55 37.0	-0.2
CHN8	**Yiju**	0.52	324	P	**Pg**	11 55 29.7	-0.6
CHN8				S	**Sg**	11 55 38.7	+1.4
SCZT	**Fangliau**	0.56	172	⇓P	**Pb**	11 55 29.9	-1.0
SCZT				S	**Sg**	11 55 40.2	+1.7
CHY	**Chiayi**	0.58	350	*i*P	**Pb**	11 55 30.5	-0.9
CHY				S	**Sb**	11 55 39.9	+0.6
TTN	**Taitung**	0.59	107⇓	*i*P	**Pb**	11 55 31.4	-0.1
TTN				S	**Sb**	11 55 41.3	+1.7
TWP	**Hsiaoliuchiu**	0.60	196	P	**Pb**	11 55 33.0	+1.2
TWP				S	**Sb**	11 55 44.7	+4.8
CHN2	**Minshiung**	0.61	355	P	**Pb**	11 55 31.3	-0.6
CHN2				S	**Sb**	11 55 40.9	+0.8
EAST	**Anshuo**	0.61	152⇓	*i*P	**Pb**	11 55 31.0	-0.9
EAST				S	**Sb**	11 55 41.1	+0.9
ALS	**Alishan**	0.63	23⇓	*i*P	**Pb**	11 55 31.2	-1.1
ALS				S	**Sb**	11 55 41.0	+0.1
TAW	**Tawu**	0.65	150⇓	*i*P	**Pb**	11 55 31.6	-1.0
TAW				S	**Sb**	11 55 42.7	+1.2
YUS	**Yu-Shan**	0.68	34⇓	*i*P	**Pb**	11 55 32.2	-0.9
YUS				S	**Sb**	11 55 42.0	-0.2
CHN5	**Tsauling**	0.68	11	*i*P	**Pb**	11 55 31.9	-1.2
CHN5				S	**Sb**	11 55 43.0	+0.7
WGK	**Gukeng**	0.76	2	P	**Pb**	11 55 33.8	-0.7
WGK				S	**Sb**	11 55 46.0	+1.5
WSF	**Szhu**	0.77	338	*e*P	**Pb**	11 55 33.7	-0.9
WSF				S	**Sb**	11 55 45.6	+0.8
CHKT	**Chengkung**	0.78	77⇓	*i*P	**Pb**	11 55 34.2	-0.7
CHKT				S	**Sb**	11 55 47.8	+2.6
TWF1	**Yuli**	0.82	59⇓	*i*P	**Pb**	11 55 34.3	-1.2
TWF1				S	**Sb**	11 55 45.6	-0.7
WDGT	**Dungji**	0.87	293	*e*P	**Pb**	11 55 34.6	-1.8
WDGT				S	**Sb**	11 55 46.7	-1.2
EHY	**Hungye**	0.93	51⇓	*i*P	**Pb**	11 55 36.1	-1.2
EHY				S	**Sb**	11 55 50.8	+1.5
HEN	**Hengchun**	0.93	168	P	**Pb**	11 55 37.5	+0.1
HEN				S	**Sb**	11 55 51.7	+2.1
WNT	**Mingjian**	0.96	8	P	**Pb**	11 55 36.9	-1.0
WNT				S	**Sb**	11 55 50.9	+0.5
WTCT	**Ta-ch'eng**	0.96	346	P	**Pb**	11 55 36.5	-1.5
WTCT				S	**Sb**	11 55 50.5	+0.1
TWK1	**Hengchun**	1.01	166	P	**Pb**	11 55 38.5	-0.2
TWK1				S	**Sb**	11 55 53.3	+1.6
SMLT	**Sun Moon Lake**	1.01	19⇓	*i*P	**Pb**	11 55 38.1	-0.7
SMLT				S	**Sb**	11 55 52.9	+1.0
TYC	**Yuchr**	1.02	17	*e*P	**Pb**	11 55 37.9	-1.0
TYC				S	**Sb**	11 55 52.7	+0.6
PNG	**Penghu**	1.11	305	*e*P	**Pb**	11 55 38.1	-2.4
PNG				S	**Sb**	11 55 52.4	-2.2
ESL	**Shilin**	1.21	43⇓	*i*P	**Pb**	11 55 41.1	-1.1
ESL				S	**Sb**	11 55 58.8	+1.2
TCU	**Taichung**	1.22	6	*e*P	**Pb**	11 55 41.2	-1.2
TCU				S	**Sb**	11 55 58.0	-0.1
LAY	**Lan-yu**	1.29	133	*e*P	**Pb**	11 55 41.3	-2.2
LAY				S	**Sb**	11 55 58.9	-0.9
WHF	**Hehuan Shan**	1.39	29	*i*P	**Pn**	11 55 44.3	-0.8
WHF				S	**Sb**	11 56 02.8	0.0
TWQ1	**Liyutan**	1.43	9	P	**Pn**	11 55 44.6	-1.2
TWQ1				S	**Sb**	11 56 04.4	+0.3
TWT	**Tachien**	1.45	24	P	**Pn**	11 55 45.0	-0.9
TWT				S	**Sb**	11 56 05.1	+0.6
NSY	**Sanyi**	1.50	8	*e*P	**Pn**	11 55 45.4	-1.3
NSY				S	**Sb**	11 56 06.7	+0.7
TWD	**Chiawan**	1.51	40	P	**Pn**	11 55 46.2	-0.6
TWD				S	**Sb**	11 56 06.5	+0.3
NNS	**Nan Shan**	1.69	27	P	**Pn**	11 55 49.1	-0.4
NNS				S	**Sn**	11 56 10.8	-0.4
NSTT	**Nanjuang**	1.75	14	*e*P	**Pn**	11 55 48.7	-1.6
NSTT				S	**Sn**	11 56 12.3	-0.4
ENA	**Nanau**	1.86	36	*e*P	**Pn**	11 55 51.4	-0.4
ENA				S	**Sn**	11 56 17.1	+1.6
NSK	**Sanguang**	1.90	23	P	**Pn**	11 55 52.7	+0.3
NSK				S	**Sn**	11 56 16.6	+0.2
ENTT	**Nioudou**	1.95	29	P	**Pn**	11 55 52.9	-0.2
ENTT				S	**Sn**	11 56 20.1	+2.3
TWC	**Suao**	2.06	35	P	**Pn**	11 55 55.2	+0.5
TWC				S	**Sn**	11 56 22.4	+1.7
TWE	**Neicheng**	2.07	30	*e*P	**Pn**	11 55 55.4	+0.6
TWE				S	**Sn**	11 56 22.6	+1.9
TWA	**Mucha**	2.26	25	*e*P	**Pn**	11 55 58.5	+0.9
TWA				S	**Sn**	11 56 25.9	+0.3
TAP1	**Taipei**	2.29	23	*e*P	**Pn**	11 55 57.0	-1.0
TAP1				S	**Sn**	11 56 26.4	0.0
TWS1	**Kuangyinshan**	2.31	20	*e*P	**Pn**	11 55 57.6	-0.7
TWS1				S	**Sn**	11 56 26.1	-0.9
NWF	**Wu-fen Shan**	2.42	28	*e*P	**Pn**	11 56 10.4	+0.2
NWF				S	**Sn**	11 56 30.6	+0.8
TWB1	**Santiao Chiao**	2.46	32	*e*P	**Pn**	11 56 00.4	-0.1
TWB1				S	**Sn**	11 56 32.5	+1.7
TWY	**Chenhua**	2.53	22	*e*P	**Pn**	11 56 00.4	-1.1
WRA	**Warramunga Arr**	44.68	161	P	**P**	12 03 28.7	-6.0
	0.3nm,0.5s,mb3.4,baz=343,slow=8.9,SNR=4.5							
ASAR	**Alice Springs**	48.10	163	P	**P**	12 03 58.0	-3.7
	0.3nm,0.5s,mb3.5,baz=357,slow=14,SNR=8.1							
YKA	**Yellowknife Ar**	84.36	23	P	**P**	12 07 55.2	+2.5
	0.2nm,0.5s,mb3.5,baz=309,slow=4.9,SNR=8.3							

IDC ***20*** *12:16:38.1±0.7,4.03N×126.56E,mb4.1/10,mb1 4.2/10, mb1mx4.1/19,Error ellipse: s-maj=64.7km s-min=15.5km az=74.0*
NEIC ***20*** *12:16:47.2±4.6,3.94N×126.56E,h72km±43km,mb4.3/10, Error ellipse: s-maj=26.2km s-min=9.6km az=76.0*
ISC 20 12:16:41.4±0.4,3.96N±0.07×126.5E±0.2,h33km,n25, σ0§79/25,mb4.2/17,Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	21.93	182	*e*P	**P**	12 21 35.2	+1.4
	5.0nm,1.5s,mb3.7						
FITZ	**Fitzroy Crossi**	21.93	182	P	**P**	12 21 33.3	-0.5
	3.1nm,0.6s,mb3.9,baz=176,slow=19,SNR=7.4						
WRAB	**Tennant Creek**	24.97	162	*e*P	**P**	12 22 02.5	-1.2
	24nm,1.1s,mb4.6						
WRA	**Warramunga Arr**	24.98	162	P	**P**	12 22 03.6	-0.1
	2.8nm,0.7s,mb3.9,baz=340,slow=11,SNR=14						
WB2	**Warramunga Arr**	24.98	162	*e*P	**P**	12 22 03.5	-0.2
ASAR	**Alice Springs**	28.40	166	P	**P**	12 22 34.9	-0.2
	0.4nm,0.7s,mb3.2,baz=347,slow=6.9,SNR=10						
ASAR				PcP	PcP	12 25 47.5	+0.3
	0.5nm,0.8s,baz=303,slow=1.8,SNR=3.8						
NWAO	**Narrogin (SRO)**	37.71	193	*e*P	**P**	12 23 56.2	+0.4
	39nm,1.4s,mb4.9						
STKA	**Stephens Creek**	38.43	159	*e*P	**P**	12 24 02.3	+0.5
	4.2nm,1.0s,mb4.1						
STKA	**Stephens Creek**	38.43	159	P	**P**	12 24 02.8	+0.9
	0.9nm,0.4s,mb3.9,baz=318,slow=11,SNR=8.5						
STKA				PcP	PcP	12 26 15.3	0.0
	1.1nm,0.8s,baz=14,slow=4.2,SNR=2.9						
YSS	**Yuzh-Sakhalins**	45.09	16	P	**P**	12 24 55.4	-0.8
	49nm,1.4s,mb5.1						
HIA	**Hailar**	45.51	354	*e*P	**P**	12 25 00.5	+0.9
	7.6nm,1.0s,mb4.6						
ULN	**Ulaanbaatar**	46.82	342	*e*P	**P**	12 25 10.4	+0.6
	1.4nm,0.7s,mb4.0						
SONM	**Songino Array**	47.00	342	P	**P**	12 25 11.2	-0.1
	0.4nm,0.6s,mb3.5,baz=153,slow=6.4,SNR=2.9						
MKAR	**Makanchi Array**	57.22	325	P	**P**	12 26 27.9	+0.1
	1.0nm,0.5s,mb4.1,baz=123,slow=7.8,SNR=8.7						
MKAR				PcP	PcP	12 27 20.9	-0.9
	1.6nm,0.6s,baz=100,slow=3.0,SNR=7.0						
MKAR	**Makanchi Array**	57.22	325	P	**P**	12 26 27.9	+0.1
MKAR				PcP	PcP	12 27 20.9	-0.9
ZRNK	**Zerenda**	67.71	327	P	**P**	12 27 36.5	-1.0
ARU	**Arti**	74.61	328	*e*P	**P**	12 28 18.8	0.0
MCK	**McKinley**	84.08	26	P	**P**	12 29 11.7	+1.9
	0.9nm,0.6s,mb4.1						
SBA	**Scott Base**	84.59	172	*e*P	**P**	12 29 12.8	+0.6
	3.7nm,0.8s,mb4.6						
INK	**Inuvik**	90.05	21	P	**P**	12 29 39.4	+0.7
	0.5nm,0.7s,mb4.0,baz=273,slow=2.9,SNR=5.9						
INK	**Inuvik**	90.05	21	*e*P	**P**	12 29 38.9	+0.2
	0.6nm,0.7s,mb4.0						
ARCES	**ARCESS Array B**	90.15	340	P	**P**	12 29 38.9	-0.2
	4.0nm,1.0s,mb4.7,baz=79,slow=6.2,SNR=4.7						
NB2	**NORSAR Subarra**	98.47	334	P	**P**	12 30 16.4	-0.9
	0.9nm,0.6s,mb4.5,baz=66,slow=4.6						
NOA	**NORSAR Array B**	98.47	334	P	**P**	12 30 16.8	-0.5
	1.3nm,0.7s,mb4.6,baz=66,slow=4.6,SNR=4.3						
YKA	**Yellowknife Ar**	99.40	24	P	**P**	12 30 20.1	-1.4
	0.2nm,0.7s,mb3.8,baz=297,slow=4.1,SNR=4.9						

HEL ***20*** *12:22:57.8±0.2,60.96N×28.97E,ML2.0,ML2.0(UPP), Explosion*
IDC ***20*** *12:22:58.9±1.8,60.90N×28.88E,mb1 3.3/3, mb1mx3.1/20,ML3.0/3,Error ellipse: s-maj=18.9km s-min=11.0km az=173.0*
ISC 20 12:22:56.0±1.0,60.96N±0.05×28.9E±0.1,n11,σ1§12/21, Finland-Karelia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VJF	**Virojoki**	0.80	238	*e*P	**Pg**	12 23 12.2	+0.1
VJF				*e*S	**Sg**	12 23 23.3	+0.5
FIA0	**FINESS Array S**	1.47	290	*e*P	**Pn**	12 23 23.7	-0.1
FIA0				*e*S	**Sb**	12 23 43.2	+0.2
FINES	**FINESS Array B**	1.47	290	Pg	**Pg**	12 23 23.9	-1.4
	3.3nm,0.3s,baz=114,slow=17,SNR=76						
FINES				Lg		12 23 44.5	
	4.1nm,0.3s,baz=119,slow=31,SNR=20						
FINES				Rg		12 23 52.2	
	35nm,0.8s,baz=120,slow=38,SNR=30						
PVF	**Pernaja**	1.57	256	*e*P	**Pn**	12 23 25.4	+0.2
PVF				*e*S	**Sb**	12 23 46.4	+0.4
KAF	**Kangasniemi**	1.71	314	*e*P	**Pn**	12 23 28.7	+1.4
KAF				*e*S	**Sb**	12 23 49.9	-0.1
SUF	**Sumiainen**	2.20	324	*e*P	**Pn**	12 23 36.3	+2.0
SUF				*e*S	**Sn**	12 24 03.8	+1.1
JOF	**Joensuu**	2.26	29	*e*P	**Pn**	12 23 36.3	+1.1
JOF				*e*S	**Sn**	12 24 04.0	-0.1
KJN	**Kajaani**	3.18	350	*e*P	**Pn**	12 23 49.2	+0.9
KJN				*e*S	**Sn**	12 24 26.3	-1.3
KJN				*e*SB	**Sb**	12 24 32.9	0.0
KJN				MSG		12 24 33.7	
	comp=Z,4.6nm,0.4s						
HFS	**Hagfors**	7.56	270	Pn	**Pn**	12 24 48.4	-1.8
	comp=Z,0.1nm,0.3s,baz=84,slow=13,SNR=5.3						
HFS				Sn	**Sn**	12 26 12.3	-5.4
	comp=Z,0.1nm,0.3s,baz=90,slow=29,SNR=3.7						
HFS				Lg		12 26 53.8	
	comp=Z,0.1nm,0.3s,baz=78,slow=28,SNR=6.6						
NOA	**NORSAR Array B**	8.61	278	Pn	**P**	12 25 02.1	-2.7
	comp=Z,0.2nm,0.3s,baz=116,slow=22,SNR=2.8						
NOA				Sn	**Sn**	12 26 37.3	-6.6
	comp=Z,0.2nm,0.3s,baz=34,slow=11,SNR=2.8						
NOA				Lg		12 27 31.0	
	comp=Z,0.3nm,0.3s,baz=226,slow=14,SNR=3.3						
ARCES	**ARCESS Array B**	8.72	352	Pn	**P**	12 25 04.8	-1.7
	comp=Z,0.3nm,0.3s,baz=173,slow=12,SNR=22						

HEL ***20*** *12:24:41.1±0.2,68.14N×33.22E,Explosion*
NAO ***20*** *12:24:42.7±3.0,68.03N×32.51E,ML1.7*
ISC 20 12:24:40.5±1.5,68.09N±0.06×32.9E±0.2,n7,σ1§17/12, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
APA0	**Apatity Array**	0.49	175	Pg	**Pg**	12 24 50.8	+0.5
	baz=352,slow=16						
APA0				Lg		12 24 58.0	
	baz=355,slow=37						
APA0				Rg		12 24 59.4	
	baz=353,slow=28						
SGF	**Sodankyl**	2.51	258	*e*P	**Pn**	12 25 23.9	+0.8
SGF				*e*S	**Sn**	12 25 57.0	+2.2
KEV	**Kevo**	2.71	311	*e*P	**Pn**	12 25 26.8	+0.8
KEV				*e*S	**Sn**	12 25 59.7	-0.3
ARA0	**ARCESS Array S**	3.05	302	Pn	**Pn**	12 25 31.2	+0.3
	baz=131,slow=16						
ARA0				Sn	**Sn**	12 26 07.2	-1.4
	baz=116,slow=28						
ARA0				Lg		12 26 15.2	
	baz=125,slow=28						
ARA0				Rg		12 26 32.0	
	baz=115,slow=37						
KIF	**Kilpisjarvi**	4.53	287	*e*P	**Pn**	12 25 51.2	-0.8
KIF				*e*S	**Sn**	12 26 44.8	-1.4
KIF				*e*SB	**Sb**	12 26 58.1	+1.6
KJN	**Kajaani**	4.54	210	*e*S	**Sn**	12 26 44.8	-1.6
JOF	**Joensuu**	5.24	188	*e*SG	**Sg**	12 27 23.9	-11

HEL ***20*** *12:37:12.3±0.3,61.36N×34.58E,ML2.0,ML2.1(NAO), Explosion*
NAO ***20*** *12:37:13.9±3.4,61.80N×34.35E,ML2.1*
ISC 20 12:37:17.8±1.4,61.44N±0.06×33.6E±0.1,n10,σ1§20/23, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOF	**Joensuu**	1.84	325	*e*P	**Pn**	12 37 50.6	-0.4
JOF				*e*S	**Sn**	12 38 16.7	+1.4
VJF	**Virojoki**	3.10	256	*e*P	**Pn**	12 38 08.5	-0.4
VJF				*e*S	**Sn**	12 38 49.2	+1.9
KAF	**Kangasniemi**	3.55	284	*e*P	**Pn**	12 38 14.9	-0.4
KAF				*e*S	**Sn**	12 39 01.0	+2.4
KAF				*e*SG	**Sg**	12 39 15.2	-0.7
FIA0	**FINESS Array S**	3.63	273	*e*P	**Pn**	12 38 15.8	-0.7
FIA0				*e*PB	**Pb**	12 38 23.5	+0.8
FIA0				*e*SG	**Sg**	12 39 18.4	-0.2
FIA0	**FINESS Array S**	3.63	273	Pn	**Pn**	12 38 15.8	-0.7
	baz=96,sl

CASC ***20*** *12:42:23.5±2.0, 13.27N×90.06W, h34km±6km, MD4.4, ML4.7, mb4.4(NEIC)*
NEIC ***20*** *12:42:24.9±0.9, 13.37N×89.96W, h68km±9km, mb4.4/12, MD4.6(SNET), MD4.6(MEX), Error ellipse: s-maj=13.4km s-min=8.1km az=47.0*
NEIC Felt [III] at San Salvador.
BJI ***20*** *12:42:24.9, 13.40N×90.00W, h67km, Ms4.8, Msz4.7*
MEX ***20*** *12:42:26.8±0.5, 12.57N×91.29W, h16km±144km, MD4.6*
IDC ***20*** *12:42:27.8±2.9, 13.64N×89.57W, h90km±28km, mb3.6/9, mb1 3.9/11, mb1mx3.8/21, MS3.5/9, Ms1 3.5/9, ms1mx3.4/16, Error ellipse: s-maj=33.2km s-min=14.0km az=54.0*

ISC 20 12:42:21.3±0.3, 13.15N±0.03×90.15W±0.02, h34km, n99, σ1$30/121, mb4.3/21, MS3.5/8, 15C-6D, Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
CUSS	**Cusmapa**	**0.78**	**15**	⇑*eP*	**P**		**12 42 36.1**	**+0.2**
CUSS				*eS*	**S**		**12 42 46.1**	**-0.4**
SBLS	**San Blas**	**0.86**	**37**	⇑*iP*	**P**		**12 42 37.4**	**+0.4**
SNJE	**San Jose**	**0.89**	**36**	⇑*eP*	**P**		**12 42 37.8**	**+0.4**
SNJE				*eS*	**S**		**12 42 51.7**	**+2.4**
RTR	**El Retiro**	**0.89**	**33**	⇑*eP*	**P**		**12 42 38.0**	**+0.6**
RTR				*eS*	**S**		**12 42 54.4**	**+5.0**
BQQS	**Boqueron**	**1.03**	**55**	⇑*eP*	**P**		**12 42 39.6**	**+0.2**
SNET	**Serv Nac Est T**	**1.04**	**59**	*eP*	**P**		**12 42 39.8**	**+0.2**
SNET				*eS*	**S**		**12 42 52.4**	**-0.8**
SNET				*i*			12 42 54.9	
	comp=Z,17μm,0.6s							
PICS	**Picacho**	**1.05**	**56**	⇑*eP*	**P**		**12 42 39.8**	**+0.1**
RBDL	**Robledal**	**1.06**	**25**	⇑*eP*	**P**		**12 42 40.5**	**+0.6**
IXG	**Ixpaco**	**1.06**	**344**	*eP*	**P**		**12 42 40.5**	**+0.7**
IXG				*eS*	**S**		**12 42 52.3**	**-1.3**
IXG				AML	AML		12 42 55.0	
	comp=E,198μm,0.3s							
LFRS	**El Faro**	**1.16**	**66**	⇑*eP*	**P**		**12 42 41.1**	**-0.2**
LFU	**La Fuente**	**1.17**	**59**	⇑*eP*	**P**		**12 42 41.9**	**+0.5**
LBRS	**Las Brisas**	**1.23**	**61**	⇓*eP*	**P**		**12 42 42.7**	**+0.5**
LBRS				⇓*eS*	**S**		**12 42 57.6**	**-0.3**
LCBS	**La Ceiba**	**1.25**	**66**	⇑*eP*	**P**		**12 42 42.3**	**-0.1**
LCBS				*eS*	**S**		**12 42 55.4**	**-3.0**
PCG	**Pacaya**	**1.32**	**340**	*eP*	**P**		**12 42 44.5**	**+1.0**
SNVI	**San Vicente**	**1.36**	**70**	⇓*eP*	**P**		**12 42 44.4**	**+0.2**
SNVI				*eS*	**S**		**12 43 01.2**	**+0.1**
MTO2	**Montecristo 2**	**1.46**	**32**	⇑*eP*	**P**		**12 42 45.9**	**+0.2**
MTO2				*eS*	**S**		**12 43 04.4**	**+0.6**
GCG	**Guatemala City**	**1.48**	**346**	*eP*	**P**		**12 42 48.2**	**+2.4**
GCG				*eS*	**S**		**12 43 05.8**	**+1.6**
GCG				AML	AML		12 43 11.3	
	comp=N,12μm,0.5s							
TP2	**Tecpan 2**	**1.83**	**333**	*eP*	**P**		**12 42 52.9**	**+2.0**
TP2				*eS*	**S**		**12 43 16.2**	**+3.1**
TP2				AML	AML		12 43 18.7	
	comp=N,16μm,0.8s							
VSM	**San Miguel**	**1.85**	**81**	⇓*eP*	**P**		**12 42 52.0**	**+0.9**
VSM				*eS*	**S**		**12 43 14.6**	**+1.0**
JAT	**Jato**	**1.85**	**309**	*eP*	**P**		**12 42 52.7**	**+1.5**
JAT				*eS*	**S**		**12 43 16.1**	**+2.4**
JAT				AML	AML		12 43 18.4	
	comp=E,22μm,0.3s							
BLLM	**Bellamira**	**1.89**	**81**	*eP*	**P**		**12 42 52.6**	**+0.9**
BLLM				*eS*	**S**		**12 43 14.4**	**-0.1**
CAHU	**Cacacuatique**	**1.99**	**72**	⇓*eP*	**P**		**12 42 53.3**	**+0.2**
CNCH	**Conchagua**	**2.26**	**86**	⇓*eP*	**P**		**12 42 57.4**	**+0.4**
CNCH				*eS*	**S**		**12 43 24.7**	**+0.7**
TPX	**Tapachula**	**2.69**	**311**	*iP*	**P**		**12 43 04.0**	**+0.8**
TPX				*iS*	**S**		**12 43 33.0**	**-1.9**
CRIN	**San Cristobal**	**3.06**	**98**	*eP*	**P**		**12 42 13.4**	**+5.0**
PYN	**Poneloya**	**3.15**	**104**	*eP*	**P**		**12 43 09.8**	**+0.2**
PYN				*eS*	**S**		**12 43 45.3**	**-1.2**
LEON	**Leon**	**3.26**	**103**	⇑*eP*	**P**		**12 43 11.9**	**+0.6**
TEL3	**Telica 3**	**3.27**	**100**	*eP*	**P**		**12 43 11.9**	**+0.4**
CNGN	**Cerro Negro**	**3.43**	**100**	*eP*	**P**		**12 43 13.9**	**+0.2**
MOMJ	**Momotombo**	**3.60**	**101**	*eP*	**P**		**12 43 17.3**	**+1.2**
MOMJ				*eS*	**S**		**12 43 57.0**	**-1.0**
COPN	**Copaltepe**	**3.60**	**105**	*eP*	**P**		**12 43 17.2**	**+1.0**
COPN				*eS*	**S**		**12 43 54.7**	**-3.4**
QUIN	**Quiabu**	**3.64**	**90**	⇑*eP*	**P**		**12 43 16.3**	**-0.4**
QUIN				*eS*	**S**		**12 43 57.7**	**-1.3**
CCIG	**Comitan**	**3.66**	**329**	*iP*	**P**		**12 43 18.8**	**+1.8**
CCIG				*iS*	**S**		**12 44 06.2**	**+6.6**
XAVN	**Gruta Xavier**	**3.86**	**104**	*eP*	**P**		**12 43 19.5**	**-0.3**
MGAN	**Managua**	**3.94**	**104**	*eP*	**P**		**12 43 21.2**	**+0.3**
MGAN				*i*			12 44 10.4	
	comp=N,405nm,0.4s							
WILN	**Americas 2**	**3.99**	**104**	*eS*	**S**		**12 44 04.2**	**-3.8**
APON	**Apoyo**	**4.17**	**107**	*eP*	**P**		**12 43 26.2**	**+1.9**
APON				*eS*	**S**		**12 44 10.7**	**-1.9**
SCX	**San Cristobal**	**4.30**	**326**	*eP*	**P**		**12 43 33.0**	**+6.9**
SCX				*iS*	**S**		**12 44 23.0**	**+7.3**
CONN	**Concepcion**	**4.69**	**109**	*eP*	**P**		**12 43 32.8**	**+1.1**
CRZC	**La Cruz**	**4.96**	**116**	*eP*	**P**		**12 43 36.4**	**+1.0**
CRZC				*eS*	**S**		**12 44 31.8**	**-0.5**
VCR	**Vista de Mar**	**5.35**	**124**	*eP*	**P**		**12 43 41.7**	**+0.9**
VCR				*eS*	**S**		**12 44 42.9**	**+0.7**
JTS	**JuntasAbangare**	**5.83**	**119**	P	**P**		**12 43 48.0**	**+0.4**
	comp=N,6.7nm,0.3s,baz=309,slow=22,SNR=40							
JTS				S	**S**		**12 44 52.3**	**-1.9**
	comp=N,0.6nm,0.3s,baz=300,slow=20,SNR=2.2							
JTS	**JuntasAbangare**	**5.83**	**119**	*ePn*	**P**		**12 43 48.0**	**+0.5**
	comp=N,5.8nm,0.8s							
JTS				*e*			12 43 58.1	
CMIG	**Matias Romero**	**6.02**	**311**	*eP*	**P**		**12 43 50.1**	**-0.2**
CMIG				*iS*	**S**		**12 44 51.6**	**-7.4**
CGA2	**Cerro Gallo 2**	**6.38**	**119**	⇑*eP*	**P**		**12 43 57.0**	**+1.6**
CGA2				*eS*	**S**		**12 45 08.2**	**+0.2**
LAJ	**Bijagual**	**6.75**	**118**	*eP*	**P**		**12 43 57.3**	**-3.3**
LCR2	**La Lucha 2**	**6.91**	**119**	⇑*eP*	**P**		**12 44 05.3**	**+2.5**
LCR2				*eS*	**S**		**12 45 18.7**	**-2.4**
BUS	**Buena Vista**	**7.21**	**119**	*eP*	**P**		**12 44 09.9**	**+2.8**
TEIG	**Tepich**	**7.26**	**14**	P	**P**		**12 44 06.8**	**-0.9**
	comp=N,37nm,0.3s,baz=182,slow=12,SNR=35							
TEIG	**Tepich**	**7.26**	**14**	*ePn*	**P**		**12 44 05.7**	**-2.0**
TEIG				*e*			12 44 15.9	
EVV	**El Vigia**	**7.27**	**317**	*eP*	**P**		**12 44 10.0**	**+2.2**
EVV				*iS*	**S**		**12 45 28.0**	**-2.1**
OXX	**Oaxaca**	**7.45**	**302**	*eP*	**P**		**12 44 10.0**	**-0.4**
OXX				*iS*	**S**		**12 45 29.0**	**-5.7**
VHO	**Vista Hermosa**	**7.46**	**302**	*iP*	**P**		**12 44 03.5**	**-6.9**
VHO				*iS*	**S**		**12 45 23.5**	**-11**
PPM	**Popocatepetl**	**10.05**	**307**	*eP*	**P**		**12 44 48.0**	**+1.6**
PPM				*iP*			12 44 48.1	
PPM				*iS*	**S**		**12 46 28.9**	**-10**
PPM	**Popocatepetl**	**10.05**	**307**	*eP*	**P**		**12 44 48.0**	**+1.6**
PPM				*iS*	**S**		**12 46 28.9**	**-10**
OTAV	**Otavalo**	**17.29**	**137**	P	**P**		**12 46 24.5**	**+2.6**
ROSC	**El Rosal**	**17.65**	**116**	LR	LR		12 53 54.1	
	comp=N,90nm,20.2s,baz=314,slow=40							
SDV	**Santo Domingo**	**19.62**	**100**	P	**P**		**12 46 45.9**	**-3.9**
	comp=N,0.5nm,0.3s,baz=210,slow=3.5,SNR=5.5							
TXAR	**Lajitas Array**	**20.41**	**324**	P	**P**		**12 46 58.2**	**0.0**
	comp=N,4.2nm,0.7s,baz=148,slow=11,SNR=24							
TXAR	**Lajitas Array**	**20.41**	**324**	P	**P**		**12 46 58.2**	**0.0**
OXF	**Oxford**	**21.28**	**2**	*eP*	**P**		**12 47 03.9**	**-3.1**
	comp=N,44nm,0.8s,mb4.8							
MIAR	**Mount Ida**	**21.53**	**352**	*eP*	**P**		**12 47 09.2**	**-0.3**
	comp=N,8.8nm,0.8s,mb4.2							
UALR	**University of**	**21.62**	**355**	*eP*	**P**		**12 47 08.2**	**-2.3**
	comp=N,14nm,0.8s,mb4.5							
PLAL	**Pickwick Lake**	**21.82**	**5**	*eP*	**P**		**12 47 09.6**	**-2.8**
	comp=N,12nm,1.0s,mb4.3							
SWET	**Sewanee**	**22.30**	**9**	*eP*	**P**		**12 47 14.4**	**-2.8**
JSC	**Jenkinsville**	**22.54**	**20**	*eP*	**P**		**12 47 18.4**	**-1.2**
JSC				*e*			12 47 36.6	
WMOK	**Wichita Mounta**	**22.87**	**341**	*eP*	**P**		**12 47 19.1**	**-3.9**
	comp=N,18nm,1.2s,mb4.4							
WVT	**Waverly**	**22.98**	**5**	*eP*	**P**		**12 47 21.1**	**-2.9**
	comp=N,9.8nm,1.0s,mb4.2							
GDL2	**Guadalupe Moun**	**23.01**	**328**	*eP*	**P**		**12 47 24.5**	**+0.2**
GDL2				*e*			12 47 40.0	
MNTX	**Cornudas Mount**	**23.17**	**325**	*eP*	**P**		**12 47 24.8**	**-1.1**
	comp=N,12nm,1.1s,mb4.2							
SIUC	**Southern Illin**	**24.48**	**2**	*eP*	**P**		**12 47 36.7**	**-1.9**
	comp=N,29nm,0.7s,mb4.8							
SIUC				*e*			12 47 48.9	
USIN	**University of**	**24.82**	**5**	*eP*	**P**		**12 47 37.2**	**-4.6**
	comp=N,23nm,0.7s,mb4.8							
PCRV	**Puerto La Cruz**	**25.16**	**94**	LR	LR		12 57 52.5	
	comp=N,90nm,21.5s,MS3.2,baz=30,slow=38							
NEN	**Nelson**	**31.57**	**319**	*eP*	**P**		**12 48 42.5**	**-0.5**
PDAR	**Pinedale Array**	**33.95**	**334**	P	**P**		**12 49 02.8**	**-0.8**
	comp=N,0.6nm,0.9s,mb3.5,baz=143,slow=7.4,SNR=5.0							
PDAR				PcP	PcP		12 51 38.7	-2.8
	comp=N,0.9nm,0.8s,baz=133,slow=5.3,SNR=7.2							
PDAR				ScP			12 55 20.7	
	comp=N,0.9nm,1.0s,baz=135,slow=2.1,SNR=6.8							
PDAR				LR	LR		13 05 11.8	
	comp=N,44nm,20.6s,MS3.2,baz=77,slow=40							
TPH	**Tonopah**	**34.58**	**321**	*eP*	**P**		**12 49 08.5**	**-0.5**
	comp=N,4.0nm,0.8s,mb4.4							
NVAR	**Mina Array Bea**	**35.47**	**320**	P	**P**		**12 49 17.0**	**+0.4**
	comp=N,10nm,0.7s,mb4.9,baz=149,slow=6.5,SNR=92							
NVAR				PcP	PcP		12 51 44.7	-1.3
	comp=N,2.5nm,0.7s,baz=123,slow=4.8,SNR=11							
NVAR				ScP			12 55 27.6	
	comp=N,0.7nm,0.8s,baz=126,slow=5.3,SNR=4.7							
LPAZ	**La Paz**	**36.46**	**143**	P	**P**		**12 49 25.0**	**-0.2**
	comp=N,1.2nm,1.0s,mb3.8,baz=337,slow=9.2,SNR=3.9							
LPAZ				LR	LR		13 03 10.2	
	comp=N,73nm,21.9s,MS3.4,baz=292,slow=34							
CMB	**Columbia Colle**	**36.56**	**318**	*eP*	**P**		**12 49 25.1**	**-0.8**
	comp=N,8.4nm,1.1s,mb4.5							
MCMT	**McKenzie Canyo**	**37.03**	**333**	*eP*	**P**		**12 49 28.2**	**-1.6**
MCMT				*e*			12 49 42.3	
ULM	**Lac du Bonnet**	**37.29**	**354**	P	**P**		**12 49 26.6**	**-5.3**
	comp=N,2.6nm,0.5s,mb4.3,baz=176,slow=9.6,SNR=4.0							
YBH	**Yreka Blue Hor**	**40.15**	**321**	P	**P**		**12 49 53.7**	**-2.0**
	comp=N,2.3nm,0.6s,mb4.1,baz=92,slow=4.0,SNR=9.0							
SCHQ	**Schefferville**	**45.42**	**19**	P	**P**		**12 50 33.1**	**-5.4**
	comp=N,4.5nm,0.8s,mb4.3,baz=219,slow=7.2,SNR=10							
BDFB	**Brasilia**	**50.55**	**123**	LR	LR		13 13 24.9	
	comp=N,62nm,19.6s,MS3.6,baz=109,slow=37							
CPUP	**Villa Florida**	**50.58**	**141**	LR	LR		13 13 48.9	
	comp=N,44nm,19.1s,MS3.5,baz=155,slow=37							
YKA	**Yellowknife Ar**	**52.27**	**346**	P	**P**		**12 51 26.7**	**-4.6**
	comp=N,1.0nm,0.6s,mb3.9,baz=146,slow=7.6,SNR=27							
YKA				LR	LR		13 17 14.6	
	comp=N,53nm,19.1s,MS3.6,baz=150,slow=40							
YKA	**Yellowknife Ar**	**52.27**	**346**	P	**P**		**12 51 26.7**	**-4.6**
YKA				LR	LR		13 17 14.6	
RES	**Resolute Bay**	**61.58**	**359**	*eP*	**P**		**12 52 31.3**	**-6.0**
	comp=N,2.9nm,0.7s,mb4.5							
INK	**Inuvik**	**61.77**	**343**	P	**P**		**12 52 32.8**	**-5.8**
	comp=N,0.8nm,0.7s,mb4.0,baz=138,slow=7.1,SNR=6.1							
ILAR	**Eielson Array**	**64.33**	**337**	P	**P**		**12 52 51.0**	**-4.5**
	comp=N,0.6nm,0.8s,mb3.7,baz=168,slow=4.9,SNR=11							
ILAR				LR	LR		13 23 19.6	
	comp=N,45nm,21.4s,MS3.6,baz=354,slow=38							
PMSA	**Palmer Station**	**80.17**	**169**	*eP*	**P**		**12 54 27.3**	**-2.1**
FINES	**FINESS Array B**	**90.50**	**26**	LR	LR		13 36 25.9	
	comp=N,32nm,19.1s,MS3.8,baz=151,slow=36							
CN2	**Changchun**	**114.69**	**332**	*e*PKP	PKPdf		13 00 54.5	-3.9
WMQ	**Urumqi**	**123.28**	**2**	*e*PKP	PKPdf		13 01 12.1	-3.0
STKA	**Stephens Creek**	**129.19**	**240**	PKP	PKPdf		13 01 27.4	+0.6
	comp=N,1.2nm,0.9s,baz=27,slow=4.5,SNR=3.6							
LZH	**Lanzhou**	**129.28**	**345**	*e*PKP	PKPdf		13 01 23.0	-3.9
LZH				*i*PKP			13 01 52.5	
WRA	**Warramunga Arr**	**136.92**	**255**	PKP	PKPdf		13 01 42.2	+0.6
	comp=N,1.2nm,0.8s,baz=89,slow=2.4,SNR=9.1							
ASAR	**Alice Springs**	**137.06**	**249**	PKP	PKPdf		13 01 40.5	-1.2
	comp=N,0.7nm,1.0s,baz=96,slow=2.3,SNR=4.6							
FITZ	**Fitzroy Crossi**	**145.22**	**257**	PKPbc	PKPbc		13 01 57.1	+0.3
	comp=N,27nm,1.3s,baz=142,slow=3.9,SNR=6.2							

STR ***20*** *12:43:03.4±1.8, 44.38N×5.90E, h2km±1km, Ml2.0, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
NEIC ***20*** *12:43:05.8, 44.20N×6.07E, h2km, Md1.8/1, Ml1.8/2, Error ellipse: s-maj=1.8km s-min=1.4km az=67.0*
LDG ***20*** *12:43:05.8±0.1, 44.20N×6.07E, h2km, Md1.8/1, Ml1.8/2, Error ellipse: s-maj=1.8km s-min=1.4km az=67.0*

ISC 20 12:43:05.1±1.8, 44.20N±0.03×6.07E±0.06, h10km±57km, n11, σ0$78/17, France

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
SMRF	**Simiane la Rot**	**0.42**	**238**	*e*Pg	**Pg**		**12 43 14.1**	**+0.4**
SMRF				*e*Sg	**Sg**		**12 43 19.3**	**-0.1**
	6.0nm,0.3s							
TAVF	**Tavernes**	**0.58**	**181**	Pg	**Pg**		**12 43 18.3**	**+1.4**
MBDF	**Montbardon**	**0.73**	**44**	*e*Sg	**Sg**		**12 43 29.3**	**-0.3**
	1.6nm,0.3s							
ORIF	**Oris-en-Rattie**	**0.73**	**350**	*e*Pg	**Pg**		**12 43 19.8**	**0.0**
ORIF				*e*Sg	**Sg**		**12 43 29.3**	**-0.3**
	1.9nm,0.3s							
CALN	**Calern**	**0.74**	**127**	Pg	**Pg**		**12 43 20.8**	**+0.7**
FRF	**La Foret Royal**	**0.77**	**147**	*e*Pg	**Pg**		**12 43 20.0**	**-0.5**
FRF				*e*Sg	**Sg**		**12 43 30.3**	**-0.5**
	1.8nm,0.2s							
TOUF	**Mont Tournerai**	**0.87**	**102**	Pg	**Pg**		**12 43 23.3**	**+0.7**
LMR	**La Mourre**	**0.92**	**160**	*e*Pg	**Pg**		**12 43 22.8**	**-0.9**
LMR				*e*Sg	**Sg**		**12 43 35.6**	**-0.4**
	1.9nm,0.2s							
AURF	**Auriere**	**0.96**	**109**	Pg	**Pg**		**12 43 23.6**	**-0.8**
AUTN	**L'Aution**	**1.00**	**101**	Pg	**Pg**		**12 43 25.8**	**+0.6**
AUTN				Sg	**Sg**		**12 43 41.6**	**+3.0**
SBF	**Sospel**	**1.04**	**108**	*e*Pg	**Pg**		**12 43 25.5**	**-0.5**
SBF				*e*Sg	**Sg**		**12 43 39.4**	**-0.6**
	1.9nm,0.2s							

IDC 20 12:46:40.5±28.0, 24.17S×173.05W, mb4.0/4, mb1 4.2/4, mb1mx3.9/14, Error ellipse: s-maj=526.0km s-min=150.0km az=79.0, South of Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**37.82**	**268**	P	P		12 53 59.3	-1.3
	4.1nm,0.8s,baz=84,slow=12,SNR=4.1							
STKA	**Stephens Creek**	**40.53**	**249**	P	P		12 54 21.1	-2.0
	1.1nm,0.4s,baz=94,slow=12,SNR=9.4							
ASAR	**Alice Springs**	**48.24**	**259**	P	P		12 55 23.6	-1.6
	0.8nm,0.5s,baz=94,slow=7.3,SNR=48							
WRA	**Warramunga Arr**	**48.71**	**264**	P	P		12 55 26.7	-2.2
	0.7nm,0.4s,baz=104,slow=8.3,SNR=10							

DJA 20 12:53:19.7±0.8, 9.61S×115.33E, h33km, MD5.3/4, ML4.6/2, 7C-2D, Error ellipse: s-maj=18.2km s-min=9.7km az=6.0, South of Bali

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
INGI	**Ingas**	**0.81**	**347**	⇑*e*Pn		Pn	12 53 33.4	-1.4
	2μm,0.1s							
INGI				⇑*e*Sn		Sn	12 53 43.5	-2.2
RATI	**Rata**	**0.90**	**13**	⇓*e*Pn		Pn	12 53 35.0	-1.2
	2μm,0.1s							
RATI				⇓*e*Sn		Sn	12 53 45.9	-2.2
KEDI	**Kedomdong**	**1.35**	**35**	⇑*e*Pn		Pn	12 53 41.8	-0.9
	420nm,0.1s							
KEDI	**Kedomdong**	**1.35**	**35**	⇑*i*P		P	12 53 42.0	-0.5
KEDI				⇑*e*Sn		Sn	12 53 57.0	-2.6
KELI	**Kelakatan**	**1.61**	**329**	⇑*e*Pn		Pn	12 53 45.1	-1.3
KELI				⇑*e*Sn		Sn	12 54 04.0	-2.2

CASC 20 13:19:40.1±2.4, 8.33N×82.94W, MD3.7, MW3.5, 3C-5D, Panama-Costa Rica border region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
ACR	**Cerro Adams**	**0.39**	**325**	⇓*i*P		Pg	13 19 48.2	+0.3
ACR				*e*S		Sg	13 19 54.1	+1.0
DVD	**David**	**0.49**	**78**	⇓*e*P		Pg	13 19 50.7	+0.7
BRU2	**Volcan**	**0.52**	**28**	⇓*i*P		Pg	13 19 51.9	+1.4
BRU2				*e*S		Sg	13 20 01.0	+3.5
PTP1	**Petroterminal**	**0.52**	**104**	⇑*i*P		Pg	13 19 44.3	-6.2
CNI	**Changuinola**	**1.16**	**21**	⇑*e*P		Pb	13 19 44.2	-19
BUS	**Buena Vista**	**1.46**	**326**	⇑*e*P		Pn	13 20 06.7	-1.1
BUS				*e*S		Sb	13 20 28.9	+2.0
URSC	**Urasca**	**1.71**	**331**	*e*P		Pn	13 20 11.6	+0.2
URSC				*e*S		Sb	13 20 36.6	+2.5
LCR2	**La Lucha 2**	**1.75**	**323**	*e*P		Pn	13 20 11.9	0.0
LCR2				*e*S		Sn	13 20 38.2	+2.9
ICR	**Volcan Irazu**	**1.86**	**332**	*e*P		Pn	13 20 14.9	+1.4
LAJ	**Bijagual**	**1.92**	**323**	*e*P		Pn	13 20 15.7	+1.4
LAJ				*e*S		Sn	13 20 45.4	+5.9
CGA2	**Cerro Gallo 2**	**2.25**	**318**	*e*P		Pn	13 20 19.1	0.0
CGA2				*e*S		Sn	13 20 49.9	+1.9
TRTC	**Tortuguero**	**2.36**	**341**	⇓*e*P		Pn	13 20 20.6	0.0
TRTC				*e*S		Sn	13 20 54.5	+3.9
AZU	**Azuero**	**2.69**	**101**	⇓*e*P		Pn	13 20 23.1	-2.3

IDC 20 13:25:18.7±2.2, 3.33S×130.39E, mb3.7/2, mb1 3.9/3, mb1mx3.6/13, ML3.5/1, Error ellipse: s-maj=108.0km s-min=29.9km az=70.0, Seram

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**16.96**	**167**	Pn		P	13 29 18.7	-0.4
	0.2nm,0.3s,baz=347,slow=12,SNR=5.6							
ASAR	**Alice Springs**	**20.50**	**171**	P		P	13 29 58.1	-3.1
	3.4nm,0.9s,baz=349,slow=11,SNR=31							
MKAR	**Makanchi Array**	**65.41**	**326**	P		P	13 36 03.4	-2.1
	0.6nm,0.8s,baz=112,slow=7.8,SNR=3.7							

IDC ***20*** *13:30:02.7±1.2, 6.68S×129.30E, mb3.9/4, mb1 4.2/7, mb1mx4.0/14, ML4.0/3, Error ellipse: s-maj=54.5km s-min=21.6km az=67.0*
NEIC ***20*** *13:30:15.2±2.9, 7.14S×129.06E, h127km±31km, mb3.9/7, Error ellipse: s-maj=33.0km s-min=17.7km az=56.0*

ISC 20 13:30:15.8±1.9, 7.30S±0.08×128.9E±0.1, h156km±21km, n17, σ1$32/25, mb3.7/7, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
KAKA	**Kakadu**	**6.38**	**147**	*eP*		**P**	**13 31 49.6**	**+1.1**
	47nm,0.6s							
KAKA				*eS*		**S**	**13 32 56.0**	**-4.6**
FITZ	**Fitzroy Crossi**	**11.19**	**196**	*eP*		**P**	**13 32 54.8**	**+2.5**
	1.9nm,0.6s							
FITZ				*eS*		**S**	**13 34 52.7**	**-2.2**
FITZ	**Fitzroy Crossi**	**11.19**	**196**	Pn		**P**	**13 32 54.5**	**+2.3**
	0.4nm,0.3s,baz=16,slow=9.9,SNR=16							
FITZ				Sn		**S**	**13 34 54.3**	**-0.6**
	2.2nm,0.3s,baz=169,slow=19,SNR=7.8							
WRAB	**Tennant Creek**	**13.63**	**158**	*eP*		**P**	**13 33 22.9**	**-0.9**
	36nm,0.9s							
WRAB				*eS*		**S**	**13 35 45.4**	**-6.4**
WRA	**Warramunga Arr**	**13.63**	**158**	Pn		**P**	**13 33 22.6**	**-1.2**
	0.9nm,0.3s,baz=343,slow=12,SNR=27							
WRA				Sn		**S**	**13 35 45.5**	**-6.4**
	2.9nm,0.3s,baz=325,slow=23,SNR=9.5							
WB2	**Warramunga Arr**	**13.64**	**158**	*eP*		**P**	**13 33 22.5**	**-1.4**
WB2				*eS*		**S**	**13 35 41.5**	**-10**
AS12	**Alice Springs**	**16.97**	**164**	*eP*		**P**	**13 34 07.1**	**+1.7**
	8.8nm,0.6s							
AS12				*eS*		**S**	**13 37 07.4**	**0.0**
ASAR	**Alice Springs**	**16.97**	**164**	P		**P**	**13 34 07.6**	**+2.2**
	1.6nm,0.3s,baz=344,slow=11,SNR=98							
ASAR				S		**S**	**13 37 07.5**	**+0.1**
	0.6nm,0.3s,baz=350,slow=26,SNR=5.6							
CTA	**Charters Tower**	**21.09**	**129**	P		**P**	**13 34 50.1**	**+0.9**
	6.7nm,1.1s,mb3.9,baz=303,slow=14,SNR=4.4							
CTAO	**Charters Tower**	**21.09**	**129**	*eP*		**P**	**13 34 49.7**	**+0.5**
	1.0nm,0.4s,mb3.5							
STKA	**Stephens Creek**	**27.17**	**156**	*eP*		**P**	**13 35 47.4**	**+0.6**
	1.4nm,0.5s,mb3.9							
STKA	**Stephens Creek**	**27.17**	**156**	P		**P**	**13 35 47.7**	**+0.9**
	1.5nm,0.4s,mb4.0,baz=338,slow=12,SNR=4.1							
ENH	**Enshi**	**41.74**	**334**	P		**P**	**13 37 49.2**	**-2.2**
	4.4nm,0.7s,mb4.2							
ULN	**Ulaanbaatar**	**58.22**	**343**	*eP*		**P**	**13 39 55.5**	**-0.5**
	0.7nm,0.6s,mb3.7							
SONM	**Songino Array**	**58.38**	**342**	P		**P**	**13 39 58.0**	**+0.8**
	0.1nm,0.4s,mb3.0,baz=169,slow=7.3,SNR=2.5							

FITZ	**Fitzroy Crossi**	**22.19**	**228**	P	**P**	**13 52 31.3**	**+1.6**	
	13nm,0.9s,mb4.4,baz=39,slow=6.8,SNR=17							
FITZ				LR	LR	14 01 13.7		
	comp=Z,98nm,18.9s,MS3.2,baz=71,slow=37							
STKA	**Stephens Creek**	**28.35**	**182**	*e*P	**P**	**13 53 27.2**	**-0.7**	
	3.4nm,0.8s,mb4.0							
STKA	**Stephens Creek**	**28.35**	**182**	P	**P**	**13 53 27.5**	**-0.4**	
	3.9nm,0.8s,mb4.1,baz=344,slow=11,SNR=11							
STKA				LR	LR	14 06 14.4		
	comp=Z,113nm,20.4s,MS3.5,baz=196,slow=40							
CMAR	**Chiang Mai Arr**	**48.24**	**298**	P	**P**	**13 56 14.0**	**-0.5**	
	1.4nm,0.7s,mb4.1,baz=120,slow=7.3,SNR=6.7							
CMAR				LR	LR	14 15 07.9		
	comp=Z,24nm,20.0s,MS3.2,baz=97,slow=34							
ULN	**Ulaanbaatar**	**59.81**	**333**	*e*P	**P**	**13 57 38.3**	**-0.6**	
	1.2nm,0.7s,mb4.0							
PKI	**Pulchoki**	**63.13**	**303**	*e*P	**P**	**13 58 01.6**	**0.0**	
KKN	**Kakani**	**63.31**	**303**	*e*P	**P**	**13 58 02.7**	**0.0**	
	12nm,0.9s,mb5.0							
DMN	**Daman**	**63.40**	**303**	*e*P	**P**	**13 58 04.1**	**+0.8**	
GKN	**Gorkha**	**63.92**	**303**	*e*P	**P**	**13 58 06.5**	**-0.3**	
KOLN	**Koldanda**	**64.71**	**303**	*e*P	**P**	**13 58 12.7**	**+0.8**	
	16nm,1.1s,mb5.0							
MKAR	**Makanchi Array**	**72.78**	**321**	P	**P**	**13 59 01.6**	**+0.2**	
	0.9nm,0.5s,mb4.0,baz=98,slow=8.6,SNR=7.1							
KURK	**Kurchatov**	**76.58**	**324**	*e*P	**P**	**13 59 22.4**	**-0.8**	
BVAR	**Borovoye Array**	**82.16**	**324**	P	**P**	**13 59 53.9**	**+0.7**	
	1.8nm,0.8s,mb4.1,baz=117,slow=6.6,SNR=6.8							
MAW	**Mawson**	**83.00**	**202**	LR	LR	14 33 58.0		
	comp=Z,81nm,19.1s,MS4.1,baz=52,slow=34							
MCK	**McKinley**	**83.63**	**25**	P	**P**	**14 00 01.3**	**+0.8**	
	4.3nm,1.1s,mb4.5							
ILAR	**Eielson Array**	**84.82**	**24**	P	**P**	**14 00 04.8**	**-1.8**	
	1.8nm,0.8s,mb4.2,baz=256,slow=5.1,SNR=13							
QSPA	**South Pole Qui**	**86.56**	**180**	*e*P	**P**	**14 00 16.1**	**+1.4**	
	3.9nm,0.9s,mb4.6							
DBIC	**Dimbokro**	**147.51**	**277**	PKPbc	PKPdf	14 07 18.5	+5.0	
	8.1nm,0.9s,baz=52,slow=4.6,SNR=3.6							

MAN 20 14:23:28.6,7.52N×126.34E,h1km,mb3.0,ML2.7,MS4.2, 1C-2D,Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BIPH	**Bislig**	**0.66**	**2**	⇓*i*P	Pg	14 23 42.3	+0.4
BIPH				*e*S	Sg	14 23 51.4	+0.7
DMPH	**Davao City--Mi**	**0.93**	**242**	*e*P	Pg	14 23 46.6	-0.6
DMPH				*e*S	Sg	14 24 03.2	+3.6
KCP	**Kidapawan**	**1.34**	**248**	⇓*i*P	Pb	14 23 53.5	-0.7
KCP				*i* S	Sb	14 24 11.2	-0.5
BUTP	**Butuan**	**1.60**	**334**	⇑*e*P	Pn	14 23 58.5	+0.2
BUTP				*e*S	Sb	14 24 20.0	+0.5

*NEIC **20** 14:41:11.5,46.00N×7.90E,h10km,ML2.6(LDG), ML2.5(STR),ML2.3(ZUR),After ZUR.*
*LDG **20** 14:41:12.2±0.1,45.95N×7.92E,h2km,Md2.8/1,Ml2.6/16, Error ellipse: s-maj=2.9km s-min=1.4km az=106.0*
*ZUR **20** 14:41:12.2,46.00N×7.88E,h4km,ML2.1/5*
*STR **20** 14:41:14.3±0.2,46.07N×7.87E,h10km±1km,Ml2.5,Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*

ISC 20 14:41:10.6±0.2,45.97N±0.01×7.88E±0.02,h8km±2km,n61, σ1s17/110,4C-5D,Northern Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MCGN	**Macugnaga**	**0.07**	**97**	⇓*i*Pg	**Pg**	**14 41 13.8**	**+1.1**
MCGN				*e*Sg	**Sg**	**14 41 14.9**	**+0.7**
MMK	**Mattmark**	**0.10**	**35**	⇑*i*Pg	**Pg**	**14 41 14.4**	**+1.3**
	90nm,0.1s						
MMK				*i* Sg	**Sg**	**14 41 15.9**	**+1.1**
	90nm,0.1s						
DIX	**Grande Dixence**	**0.35**	**289**	⇓*i*Pg	**Pg**	**14 41 19.3**	**+1.7**
	15nm,0.3s						
DIX				*e*Sg	**Sg**	**14 41 24.3**	**+1.9**
	15nm,0.3s						
ORO	**Oropa**	**0.35**	**168**	⇑*i*Pg	**Pg**	**14 41 18.7**	**+1.0**
ORO				*e*Sg	**Sg**	**14 41 22.8**	**+0.4**
LKBD	**Leukerbad**	**0.46**	**337**	*e*Pg	**Pg**	**14 41 21.0**	**+1.2**
	5.6nm,0.2s						
LKBD				*e*Sg	**Sg**	**14 41 27.0**	**+1.1**
	5.6nm,0.2s						
SENIN	**Lac Senin**	**0.57**	**315**	*e*Pg	**Pg**	**14 41 23.2**	**+1.2**
	5.3nm,0.3s						
SENIN				*e*Sg	**Sg**	**14 41 30.8**	**+1.2**
	5.3nm,0.3s						
VAI	**Varese**	**0.63**	**99**	*e*Pg	**Pg**	**14 41 22.7**	**-0.5**
VAI				*e*Sg	**Sg**	**14 41 31.5**	**-0.1**
SALAN	**Lac Salanfe**	**0.66**	**286**	⇓*i*Pg	**Pg**	**14 41 25.1**	**+1.3**
	0.8nm,0.2s						
EMV	**Vieux Emosson**	**0.69**	**278**	⇓*i*Pg	**Pg**	**14 41 25.7**	**+1.3**
	0.5nm,0.1s						
LSD	**Ceresole Reale**	**0.72**	**225**	P	**Pb**	**14 41 26.1**	**+1.2**
LSD				S	**Sb**	**14 41 35.1**	**+0.5**
WIMIS	**Wimmis**	**0.72**	**346**	⇑*i*Pg	**Pg**	**14 41 25.8**	**+0.8**
FUSIO	**Fusio**	**0.73**	**48**	⇓*i*Pg	**Pg**	**14 41 25.0**	**-0.2**
	2.5nm,0.4s						
MUGIO	**Muggio**	**0.81**	**93**	*e*Pg	**Pg**	**14 41 26.0**	**-0.8**
	1.1nm,0.1s						
MUGIO				*e*Sg	**Sg**	**14 41 36.6**	**-1.1**
	1.1nm,0.1s						
HASLI	**Hasliberg**	**0.81**	**13**	*e*Pg	**Pg**	**14 41 26.9**	**+0.1**
	1.8nm,0.3s						
OG01	**Vacheresse**	**0.91**	**294**	Pg	**Pg**	**14 41 30.1**	**+1.3**
OG01				Sg	**Sg**	**14 41 42.6**	**+1.7**
LPG	**La Plagne**	**0.92**	**240**	*e*Pg	**Pg**	**14 41 29.3**	**+0.3**
	SNR=1.0						
LPG				*e*Sg	**Sg**	**14 41 41.6**	**+0.3**
	28nm,0.2s,SNR=1.0						
LPL	**La Plagne**	**0.92**	**241**	*e*Pg	**Pg**	**14 41 29.5**	**+0.5**
	SNR=1.0						
LPL				*e*Sg	**Sg**	**14 41 41.7**	**+0.3**
	24nm,0.3s,SNR=1.0						
RSP	**Reno Superiore**	**0.93**	**208**	P	**Pb**	**14 41 29.4**	**+1.0**
RSP				S	**Sb**	**14 41 41.6**	**+1.0**
FENE	**Fenestrelle**	**1.10**	**212**	P	**Pb**	**14 41 31.9**	**+0.5**
FENE				S	**Sb**	**14 41 45.6**	**-0.1**
BHB	**Bricherasio**	**1.21**	**201**	P	**Pb**	**14 41 33.7**	**+0.5**
BHB				S	**Sb**	**14 41 48.5**	**-0.2**
BNI	**Bardonecchia**	**1.25**	**223**	*e*Pn	**Pn**	**14 41 35.3**	**+1.1**
BNI				*e*Sn	**Sn**	**14 41 50.5**	**-0.7**
RRL	**Cesana Torines**	**1.30**	**217**	P	**Pb**	**14 41 35.9**	**+1.1**
CABF	**La Chapelle**	**1.40**	**298**	*e*Pg	**Pg**	**14 41 39.1**	**+0.5**
	SNR=1.0						
CABF				*e*Sg	**Sg**	**14 41 57.5**	**+0.2**
	9.9nm,0.3s,SNR=1.0						
MBDF	**Montbardon**	**1.47**	**213**	*e*Pn	**Pn**	**14 41 38.4**	**+1.0**
	SNR=1.0						
MBDF				*e*Pg	**Pg**	**14 41 39.3**	**-0.6**
MBDF				*e*Sn	**Sn**	**14 41 56.9**	**0.0**
	SNR=1.0						
MBDF				*e*Sg	**Sg**	**14 41 58.5**	**-0.9**
	38nm,0.5s						
PCP	**Pian Castagno**	**1.50**	**162**	P	**Pn**	**14 41 38.6**	**+0.8**
BBS	**Basel-Blauen**	**1.52**	**350**	Pg	**Pg**	**14 41 41.4**	**+0.5**
BBS				Sg	**Sg**	**14 42 00.7**	**-0.5**
PZZ	**Prazzo**	**1.56**	**201**	P	**Pn**	**14 41 38.6**	**-0.2**
LOMF	**Lomont**	**1.56**	**333**	Pg	**Pg**	**14 41 41.2**	**-0.6**
LOMF				Sg	**Sg**	**14 42 02.8**	**+0.1**
ROB	**Roburent**	**1.67**	**180**	P	**Pn**	**14 41 40.6**	**+0.3**
ORIF	**Oris-en-Rattie**	**1.76**	**234**	*e*Pg	**Pg**	**14 41 44.7**	**-1.0**
	SNR=1.0						
ORIF				*e*Sg	**Sg**	**14 42 07.8**	**-1.3**
	20nm,0.5s,SNR=1.0						
ENR	**Entracque**	**1.77**	**191**	P	**Pn**	**14 41 41.1**	**-0.6**
FIN	**Finale Ligure**	**1.77**	**172**	P	**Pn**	**14 41 41.5**	**-0.3**
MONE	**Monesi**	**1.89**	**183**	P	**Pn**	**14 41 43.6**	**+0.1**
DAVA	**Damuels**	**1.91**	**46**	⇑*i*PN	**Pn**	**14 41 46.5**	**+2.8**
DAVA				*i* SN	**Sn**	**14 42 13.2**	**+5.1**
MOF	**Molkenrain**	**1.95**	**345**	Pn	**Pn**	**14 41 45.0**	**+0.6**
MOF				Pg	**Pg**	**14 41 49.4**	**-0.2**
MOF				Sg	**Sg**	**14 42 14.6**	**-1.1**
HINF	**Hinteralfeld**	**1.98**	**340**	*e*Pn	**Pn**	**14 41 45.9**	**+1.2**
	SNR=1.0						
HINF				*e*Pg	**Pg**	**14 41 49.3**	**-0.8**
HINF				*e*Sn	**Sn**	**14 42 09.4**	**-0.5**
	SNR=1.0						
HINF				*e*Sg	**Sg**	**14 42 15.5**	**-1.0**
	5.8nm,0.2s,SNR=1.0						
IMI	**Imperia**	**2.06**	**180**	P	**Pn**	**14 41 45.2**	**-0.6**
NEGI	**Negi**	**2.12**	**183**	P	**Pn**	**14 41 45.9**	**-0.8**
SBF	**Sospel**	**2.13**	**189**	*e*Pg	**Pg**	**14 41 51.4**	**-1.7**
	SNR=1.0						
SBF				*e*Sg	**Sg**	**14 42 18.3**	**-3.1**
	15nm,0.6s						
SPAK	**Spaichingen**	**2.22**	**16**	Pg	**Pg**	**14 41 53.6**	**-1.4**
SPAK				Sg	**Sg**	**14 42 23.5**	**-1.1**
HAU	**Haudompre**	**2.29**	**333**	*e*Pn	**Pn**	**14 41 50.0**	**+0.8**
	SNR=1.0						
HAU				*e*Pg	**Pg**	**14 41 55.5**	**-0.9**
	SNR=1.0						
HAU				*e*Sn	**Sn**	**14 42 16.5**	**-1.4**
HAU				*e*Sg	**Sg**	**14 42 23.6**	**-3.4**
	9.3nm,0.2s,SNR=1.0						
ECH	**Echery**	**2.30**	**348**	Pn	**Pn**	**14 41 49.9**	**+0.5**
BFO	**Black Forest**	**2.38**	**7**	*e*Pn	**Pn**	**14 41 50.7**	**+0.2**
WLS	**Welschbruch**	**2.47**	**352**	Pn	**Pn**	**14 41 51.7**	**-0.1**
CDF	**Champ du Feu**	**2.48**	**351**	*e*Pn	**Pn**	**14 41 52.5**	**+0.6**
	SNR=1.0						
CDF				*e*Pg	**Pg**	**14 41 59.0**	**-1.1**
	SNR=1.0						
CDF				*e*Sn	**Sn**	**14 42 21.1**	**-1.6**
	SNR=1.0						
CDF				*e*Sg	**Sg**	**14 42 30.6**	**-2.6**
	4.2nm,0.3s,SNR=1.0						
VIVF	**Saint-Julien-l**	**2.52**	**245**	*e*Pg	**Pg**	**14 41 58.7**	**-2.1**
	SNR=1.0						
VIVF				*e*Sn	**Sn**	**14 42 22.2**	**-1.4**
	SNR=1.0						
VIVF				*e*Sg	**Sg**	**14 42 31.3**	**-3.1**
	5.7nm,0.4s,SNR=1.0						
FRF	**La Foret Royal**	**2.56**	**201**	*e*Pg	**Pg**	**14 41 59.2**	**-2.5**
FRF				*e*Sg	**Sg**	**14 42 32.1**	**-3.8**
	5.9nm,0.5s						
SMRF	**Simiane la Rot**	**2.58**	**220**	*e*Pg	**Pg**	**14 42 00.5**	**-1.5**
	SNR=1.0						
SMRF				*e*Sg	**Sg**	**14 42 33.7**	**-2.7**
	7.7nm,0.7s						
THEF	**They Montfort**	**2.60**	**331**	Pn	**Pn**	**14 41 53.5**	**-0.2**
SMF	**Signal de Mont**	**2.88**	**285**	*e*Pg	**Pg**	**14 42 05.9**	**-2.2**
	SNR=1.0						
SMF				*e*Sg	**Sg**	**14 42 43.4**	**-3.1**
	4.0nm,0.2s,SNR=1.0						
MEZF	**Maizieres J'vi**	**3.19**	**324**	*e*Pn	**Pn**	**14 42 01.7**	**-0.2**
MEZF				*e*Sn	**Sn**	**14 42 37.5**	**-3.0**
MEZF				*e*Sg	**Sg**	**14 42 53.3**	**-3.3**
	16nm,0.7s						
SSF	**Saint Saulge**	**3.21**	**291**	*e*Pn	**Pn**	**14 42 04.3**	**+2.0**
	SNR=1.0						
SSF				*e*Pg	**Pg**	**14 42 12.8**	**-1.9**
SSF				*e*Sn	**Sn**	**14 42 35.7**	**-5.5**
	SNR=1.0						
SSF				*e*Sg	**Sg**	**14 42 52.3**	**-5.3**
	2.7nm,0.3s,SNR=1.0						
AVF	**Avril sur Loir**	**3.24**	**286**	*e*Pn	**Pn**	**14 42 04.5**	**+1.8**
	SNR=1.0						
AGO	**Saint Agoulin**	**3.31**	**273**	Pn	**Pn**	**14 42 04.5**	**+0.8**
LBL	**Lubilhac**	**3.33**	**259**	Pn	**Pn**	**14 42 05.2**	**+1.1**
LBL				Pg	**Pg**	**14 42 17.5**	**+0.3**
PYM	**Petit Puy Mans**	**3.41**	**268**	Pn	**Pn**	**14 42 06.0**	**+0.8**
BGF	**Bois d'Agland**	**3.54**	**281**	*e*Pn	**Pn**	**14 42 08.2**	**+1.2**
	SNR=1.0						
BGF				*e*Pg	**Pg**	**14 42 18.4**	**-2.9**
	SNR=1.0						
HYF	**Humbligny**	**3.84**	**292**	*e*Pn	**Pn**	**14 42 10.8**	**-0.4**
TCF	**Toulx Ste Croi**	**3.96**	**277**	*e*Pg	**Pg**	**14 42 25.6**	**-4.0**
CAF	**Calviac**	**4.22**	**258**	*e*Pn	**Pn**	**14 42 17.3**	**+0.6**
	SNR=1.0						
BAIF	**Baives**	**4.78**	**330**	*e*Pn	**Pn**	**14 42 25.7**	**+1.1**
	SNR=1.0						

*CSEM **20** 14:42:40.0,43.00N×136.34E,h26km,mb5.6*
*NIED **20** 14:43:00,43.00N×136.60E,h300km,Mw5.4 Best double couple: M0 1.47×10^17 NP1:φs215°,δ73°,λ74°. NP2:φs78°, δ23°,λ131°.*
*JMA **20** 14:43:13.5±0.2,43.04N×136.58E,h334km±4km,M5.4*
JMA Felt I J1.
*BJI **20** 14:43:13.5,43.13N×136.49E,h343km,mB5.3,mb5.3*
*NEIC **20** 14:43:14.0±0.1,43.13N×136.41E,mb5.3/175,MW5.6, Error ellipse: s-maj=2.6km s-min=2.0km az=176.0, Moment Tensor Solution. s12 Moment tensor: Scale 10^17 Nm; Mrr0.85; Mθθ-1.09; Mφφ0.24; Mrθ-0.49; Mθφ-1.23; Mφr-1.67; Best double couple: M0 2.4×10^17 NP1:φs96°, δ37°,λ158°. NP2:φs204°,δ77°,λ55°. Principal axes: T 2.3, Plg47°, Azm78°; N .1, Plg34°, Azm213°; P -2.4, Plg24°, Azm320°;*
NEIC Recorded [1 JMA] in eastern and south-central Hokkaido. Also recorded [1 JMA] in Aomori Prefecture, Honshu.
*IDC **20** 14:43:14.4±0.5,43.13N×136.37E,h316km±4km,mb4.9/32, mb1 5.0/36,mb1mx5.0/36 Error ellipse: s-maj=6.9km s-min=6.2km az=146.0,Putative timing error at GNI*
*SKHL **20** 14:43:14.4±0.6,43.16N×136.58E,h326km±25km,mb6.2/5, mbh5.9/2,Ms5.2/1,msh6.0/9*
*HRVD **20** 14:43:14.0±0.2,43.14N×136.52E,h335km±1km, MW5.4/57,Centroid moment Tensor Solution. LP body waves: s57,c112; Half duration: 1s2 Moment tensor: Scale 10^17Nm; Mrr0.90±.03; Mθθ-0.63±.05; Mφφ-0.27±.05; Mrθ-0.36±.05; Mθφ-0.76±.05; Mφr-1.04±.05; Best double couple: M0 1.56×10^17 NP1:φs78°,δ30°,λ136°. NP2:φs208°, δ70°,λ67°. Principal axes: T 1.51, Plg59°, Azm86°; N .1, Plg21°, Azm216°; P -1.6, Plg22°, Azm315°; nsta1 refers to body waves, cutoff=40s.*
*BGS **20** 14:43:14.0±2.3,43.10N×136.43E,h313km*
*MOS **20** 14:43:14.8±0.8,43.42N×136.36E,h320km,mb5.4/67, Error ellipse: s-maj=7.1km s-min=4.6km az=96.3*

ISC 20 14:43:13.4±0.1,43.12N±0.01×136.47E±0.02,h318km±1km, h318km±1.5km:pP-P,n1003,σ0s87/1068,mb5.2/275, 117C-209D,Eastern Sea of Japan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TEY	**Ternei**	**1.92**	**3**	⇓*i*P	**P**	**14 44 03.0**	**+1.5**
TEY				AMB	AMB	14 44 04.0	
	2μm,1.5s						
TEY				AMB	AMB	14 44 04.0	
	2μm,1.5s						
TEY				AMB	AMB	14 44 04.0	
	3μm,1.5s						
TEY				AMB	AMB	14 44 04.0	
	13μm,1.5s						
TEY				*i* S	**S**	**14 44 40.0**	**+0.9**
TEY				A		14 44 43.0	
	20μm,2.0s						
TEY				A		14 44 43.0	
	2μm,1.0s						
TEY				A		14 44 43.0	
	21μm,3.5s						
TEY				A		14 44 43.0	
	32μm,3.5s						
JOSM	**Okushiri--Mats**	**2.45**	**114**	⇓P	**P**	**14 44 06.0**	**+0.2**
JOSM				*e*S	**S**	**14 44 47.6**	**+0.9**
JSH	**Shimam**	**2.67**	**99**	⇓P	**P**	**14 44 08.1**	**+0.3**
JSH				S	**S**	**14 44 50.8**	**+0.6**
JSK	**Shakotan**	**2.94**	**84**	⇓P	**P**	**14 44 10.5**	**+0.3**
JSK				*e*S	**S**	**14 44 55.1**	**+0.5**
JYM2	**Yakumo 2**	**3.05**	**108**	⇓P	**P**	**14 44 11.8**	**+0.5**
JSR	**Shiriuchi**	**3.33**	**117**	⇓P	**P**	**14 44 14.4**	**+0.3**
VLA	**Vladivostok**	**3.35**	**272**	⇓*i*P	**P**	**14 44 16.0**	**+1.7**
VLA				AMB	AMB	14 44 18.0	
	2μm,3.0s						
VLA				AMB	AMB	14 44 18.0	
	2μm,2.0s						
VLA				AMB	AMB	14 44 18.0	
	10μm,2.0s						
VLA				*i* rx	rx	14 44 22.0	
VLA				*i* S	**S**	**14 45 04.0**	**+2.1**
VLA				A		14 45 08.0	
	28μm,10.0s						
VLA				A		14 45 08.0	
	26μm,10.0s						
VLA	**Vladivostok**	**3.35**	**272**	⇓*i*P	**P**	**14 44 16.0**	**+1.7**
VLA				*i* S	**S**	**14 45 04.0**	**+2.1**
VLA				pmax	pmax		
	comp=N,2μm,2.0s						
VLA				pmax	pmax		
	comp=Z,10μm,2.0s						
VLA				pmax	pmax		
	comp=E,10μm,3.0s						
VLA				smax			
	comp=N,27μm,10.0s						
VLA				smax			
	comp=E,26μm,10.0s						
VLA				smax			
	comp=Z,18μm,6.0s						
JNB	**Noboribetsu**	**3.42**	**99**	⇓P	**P**	**14 44 14.9**	**-0.1**
JSI2	**Shiura 2**	**3.58**	**124**	⇓P	**P**	**14 44 17.0**	**+0.4**
JKB	**Kayabe**	**3.59**	**108**	⇓P	**P**	**14 44 16.7**	**0.0**
JKB				*e*S	**S**	**14 45 05.3**	**-1.0**
JIW	**Iwasaki**	**3.65**	**132**	⇓P	**P**	**14 44 17.7**	**+0.3**
JEW	**Eniwo**	**3.67**	**93**	⇓P	**P**	**14 44 17.8**	**+0.3**
JEW				*e*S	**S**	**14 45 08.0**	**+0.3**
JOT	**Ohata**	**3.81**	**115**	⇓P	**P**	**14 44 18.6**	**-0.5**
JOT				*e*S	**S**	**14 45 09.3**	**-1.2**
JYG	**Yagishiri**	**3.82**	**68**	⇓P	**P**	**14 44 19.3**	**+0.2**
JYG				*e*S	**S**	**14 45 09.6**	**-1.0**
JHR	**Hokuryu**	**3.88**	**79**	⇓P	**P**	**14 44 20.3**	**+0.6**
JHR				*e*S	**S**	**14 45 12.7**	**+1.0**
JSS	**Shosan**	**4.11**	**70**	⇓P	**P**	**14 44 22.9**	**+0.7**
JTM	**Tenmabayashi**	**4.14**	**123**	⇓P	**P**	**14 44 22.1**	**-0.5**
JAB	**Ashibetsu**	**4.22**	**83**	⇓P	**P**	**14 44 23.7**	**+0.3**
JAH	**Hinai**	**4.28**	**132**	⇓P	**P**	**14 44 23.7**	**-0.3**
JBT2	**Biratori 2**	**4.34**	**92**	⇓P	**P**	**14 44 24.0**	**-0.7**
JWK2	**Keihoku**	**4.48**	**59**	⇓P	**P**	**14 44 27.6**	**+1.3**
JWK2				S	**S**	**14 45 24.3**	**+0.9**
JFR	**Furan**	**4.48**	**87**	⇓P	**P**	**14 44 25.7**	**-0.6**
JFR				S	**S**	**14 45 21.0**	**-2.5**
JYW	**Yuwa**	**4.55**	**141**	⇓P	**P**	**14 44 27.0**	**0.0**
ASAJ	**Asahikawa**	**4.56**	**75**	P	**P**	**14 44 27.1**	**-0.1**
	comp=Z,159nm,0.3s,baz=259,slow=11,SNR=902						
ASAJ				S	**S**	**14 45 23.4**	**-1.6**
	baz=78,slow=30,SNR=13						
ASAJ	**Asahikawa**	**4.56**	**75**	⇓P	**P**	**14 44 27.0**	**-0.2**
ASAJ	**Asahikawa**	**4.56**	**75**	P	**P**	**14 44 27.1**	**-0.1**
ASAJ				S	**S**	**14 45 23.5**	**-1.5**
ASAJ				pmax	pmax		
	comp=Z,159nm,0.3s						
JKK2	**Kamakawa 2**	**4.63**	**78**	⇓P	**P**	**14 44 28.0**	**0.0**
JNBK	**Urakawa-nobuka**	**4.71**	**98**	⇓P	**P**	**14 44 27.4**	**-1.4**
JSE	**Soyaes**	**4.78**	**65**	⇓P	**P**	**14 44 29.9**	**+0.3**
JSE				S	**S**	**14 45 29.8**	**+0.4**
JRG	**Rokugo**	**4.86**	**138**	⇓P	**P**	**14 44 29.9**	**-0.7**
JEM	**Erimo**	**5.06**	**100**	⇓P	**P**	**14 44 31.9**	**-0.9**
JMP	**Maruseppu**	**5.09**	**78**	⇓P	**P**	**14 44 32.6**	**-0.5**
JCH	**Churui**	**5.09**	**93**	⇓P	**P**	**14 44 31.0**	**-2.2**
JCH				*e*S	**S**	**14 45 30.5**	**-5.3**
JAW	**Awa shima**	**5.11**	**155**	P	**P**	**14 44 33.5**	**+0.1**
JYK	**Kaneyama**	**5.12**	**144**	⇓P	**P**	**14 44 32.8**	**-0.7**
JYA	**Atsumi**	**5.14**	**150**	⇓P	**P**	**14 44 33.6**	**-0.2**
MDJ	**Mudanjiang**	**5.19**	**289**	P	**P**	**14 44 35.8**	**+1.4**
MDJ				S	**S**	**14 45 38.8**	**+0.9**
MDJ				PCP	PcP	14 51 02.1	-6.6
MDJ				SCS	ScS	14 57 37.8	-2.1
MDJ				AMB	AMB		
	comp=Z,409nm,0.8s						
MDJ				AMB	AMB		
	comp=Z,520nm,3.6s						
MDJ	**Mudanjiang**	**5.19**	**289**	⇑*i*Pn	**P**	**14 44 36.0**	**+1.6**
	comp=Z,334nm,0.7s						
MDJ				*e*S	**S**	**14 45 34.3**	**-3.7**
JSD	**Sado**	**5.25**	**164**	P	**P**	**14 44 35.5**	**+0.5**
JHG	**Hegura jima**	**5.27**	**176**	P	**P**	**14 44 36.6**	**+1.3**
JAR	**Ashorobuto**	**5.34**	**86**	⇓P	**P**	**14 44 34.9**	**-1.1**
JOB	**Onbets**	**5.41**	**90**	⇓P	**P**	**14 44 35.0**	**-1.8**
JTKR	**Abashiri--Toko**	**5.47**	**78**	⇓P	**P**	**14 44 37.0**	**-0.6**
JTKR				*e*S	**S**	**14 45 40.9**	**-2.8**
JMK	**Ichinoseki**	**5.49**	**138**	⇓P	**P**	**14 44 35.5**	**-2.4**
OFUJ	**Ofunato**	**5.63**	**134**	⇓P	**P**	**14 44 36.5**	**-2.9**
JSZ	**Suzu**	**5.70**	**173**	P	**P**	**14 44 41.4**	**+1.1**
JIZZ	**Izumozaki**	**5.83**	**162**	P	**P**	**14 44 42.4**	**+0.6**
YSS	**Yuzh-Sakhalins**	**5.88**	**47**	*i* P	**P**	**14 44 41.8**	**-0.6**
YSS				AMB	AMB	14 44 44.0	
	comp=Z,320nm,0.7s						
YSS				AMB	AMB	14 44 44.0	
	comp=Z,370nm,0.7s						
YSS				*i* rx	rx	14 44 45.0	
YSS				*i* S	**S**	**14 45 49.0**	**-3.2**
YSS				A		14 45 51.5	
	comp=Z,900nm,1.1s						
YSS				A		14 45 51.5	
	comp=Z,970nm,1.1s						
YSS				A		14 45 55.0	
	comp=Z,3μm,8.0s						
YSS				A		14 45 55.0	
	comp=Z,3μm,8.0s						
YSS	**Yuzh-Sakhalins**	**5.88**	**47**	⇑*i*P	**P**	**14 44 41.0**	**-1.4**
YSS				*i* S	**S**	**14 45 49.0**	**-3.2**
YSS				pmax	pmax		
	comp=N,320nm,0.7s						
YSS				pmax	pmax		
	comp=Z,370nm,0.7s						
YSS				smax			
	comp=E,970nm,1.2s						
YSS				smax			
	comp=N,900nm,1.0s						
YSS				smax			
	comp=N,3μm,8.0s						
YSS				smax			
	comp=E,3μm,8.0s						
YSS	**Yuzh-Sakhalins**	**5.88**	**47**	*e*Pn	**P**	**14 44 41.8**	**-0.6**
	comp=E,248nm,0.4s						
YSS				*e*S	**S**	**14 45 50.7**	**-1.5**
JJN	**Nakama**	**6.14**	**167**	P	**P**	**14 44 46.2**	**+0.7**
JHK	**Hiroka**	**6.17**	**161**	P	**P**	**14 44 45.4**	**-0.5**
JJH	**Hakui**	**6.19**	**178**	P	**P**	**14 44 47.3**	**+1.3**
JRA	**Rausu**	**6.34**	**80**	⇓P	**P**	**14 44 46.7**	**-1.2**
JTT	**Ttatey**	**6.54**	**174**	P	**P**	**14 44 50.5**	**+0.3**
MAJO	**Matsushiro**	**6.70**	**168**

YUK MLR MLR
comp=Z,5µm,13.0s
YUK MLR MLR
comp=N,5µm,12.0s
YUK MLR MLR
comp=E,4µm,12.0s
JGN Niukaw 6.91 174 P **P** **14 44 55.0 +0.2**
KLR Kul'dur 6.94 333 *i* P **P** **14 44 55.0 0.0**
KLR AMB AMB 14 44 56.5
comp=E,560nm,1.4s
KLR AMB AMB 14 44 56.5
comp=E,700nm,1.4s
KLR *e*S **S** **14 46 16.6 +1.8**
KLR A 14 46 19.8
comp=E,400nm,1.6s
KLR A 14 46 19.8
comp=E,880nm,1.6s
JAG Ashikaga 7.07 160 P **P** **14 44 54.4 -2.2**
UGL Uglegorsk 7.12 31 *i* P **P** **14 44 57.0 -0.2**
UGL AMB AMB 14 44 57.5
comp=E,56nm,0.6s
UGL AMB AMB 14 44 57.5
comp=E,72nm,0.6s
UGL AMB AMB 14 44 57.5
comp=E,111nm,0.6s
UGL *e*rx rx 14 45 05.0
UGL *e*rx rx 14 45 15.0
UGL *e*S **S** **14 46 18.0 -0.8**
UGL A 14 46 22.0
comp=E,2µm,8.0s
UGL Uglegorsk 7.12 31⇑ *i* P **P** **14 44 57.0 -0.2**
UGL *i* S **S** **14 46 18.0 -0.8**
UGL pmax pmax
comp=N,56nm,0.6s
UGL pmax pmax
comp=E,72nm,0.6s
UGL pmax pmax
comp=Z,111nm,0.6s
UGL smax
comp=N,2µm,8.0s
UGL smax
comp=E,2µm,8.0s
JHO Hitachi 7.22 153 P **P** **14 44 54.0 -4.4**
JHO S **S** **14 46 14.8 -6.1**
SAI Saigo 7.31 200 P **P** **14 45 01.4 +1.8**
JRY Ryogami san 7.33 164 P **P** **14 44 57.9 -1.9**
JRY *e*S **S** **14 46 21.2 -2.2**
JNT Takato 7.34 169 P **P** **14 44 59.2 -0.8**
JGM Miyama 7.41 178 P **P** **14 45 01.4 +0.7**
JKY Yasaka 7.55 188 P **P** **14 45 03.5 +1.1**
JFM Mihama 7.59 183 P **P** **14 45 03.9 +1.0**
JKSM Kasumi 7.65 191 P **P** **14 45 04.6 +1.0**
GRNR Gornyy 7.66 360 *i* P **P** **14 45 04.0 +0.3**
GRNR AMB AMB 14 45 05.1
comp=E,630nm,1.0s
GRNR AMB AMB 14 45 05.1
comp=E,90nm,1.0s
GRNR AMB AMB 14 45 05.1
comp=E,370nm,1.0s
GRNR *e*S **S** **14 46 31.8 +1.3**
GRNR A 14 46 33.1
comp=E,830nm,1.6s
JYN Shimob 7.78 167 P **P** **14 45 02.6 -2.6**
JYN S **S** **14 46 31.3 -1.7**
JAO Obara 7.86 175 P **P** **14 45 05.6 -0.6**
JWT Wachi 7.87 186 P **P** **14 45 07.2 +0.9**
CN2 Changchun 8.05 279 *e*P **P** **14 45 09.1 +0.6**
CN2 *e*XP 14 46 15.3
CN2 *e*S **S** **14 46 38.9 -0.1**
CN2 SCP 14 54 09.3
CN2 SCS ScS 14 57 41.8 -1.5
JNM Ikuma 8.06 200 P **P** **14 45 10.5 +1.9**
JOD2 Odawara 2 8.10 165 P **P** **14 45 06.4 -2.7**
JOD2 *e*S **S** **14 46 34.2 -5.9**
JKS Kasai 8.22 189 P **P** **14 45 11.8 +1.3**
HMMJ Hamamatsu 2 8.30 173 P **P** **14 45 09.4 -2.2**
HMMJ S **S** **14 46 41.4 -3.2**
JAD Aida 8.36 193 P **P** **14 45 13.3 +1.1**
KUR Kuril'sk 8.46 72 *i* P **P** **14 45 11.8 -1.7**
KUR AMB AMB 14 45 19.0
comp=E,1µm,2.0s
KUR AMB AMB 14 45 19.0
comp=E,1µm,2.0s
KUR AMB AMB 14 45 19.0
comp=E,90nm,0.5s
KUR AMB AMB 14 45 19.0
comp=E,140nm,0.5s
KUR AMB AMB 14 45 19.0
comp=E,360nm,0.5s
KUR AMB AMB 14 45 19.0
comp=E,2µm,2.0s
KUR *i* S **S** **14 46 43.0 -5.0**
KUR A 14 46 45.0
comp=E,10µm,5.0s
KUR A 14 46 52.4
comp=E,300nm,0.5s
KUR A 14 46 52.4
comp=E,530nm,0.5s
KUR Kuril'sk 8.46 72⇓ *i* P **P** **14 45 11.8 -1.7**
KUR *i* S **S** **14 46 43.0 -5.0**
KUR pmax pmax
comp=N,90nm,0.5s
KUR pmax pmax
comp=E,140nm,0.5s
KUR pmax pmax
comp=Z,360nm,0.5s
KUR pmax pmax
comp=N,1µm,2.0s
KUR pmax pmax
comp=E,1µm,2.0s
KUR pmax pmax
comp=Z,2µm,2.0s
KUR smax
comp=N,610nm,0.5s
KUR smax
comp=E,530nm,0.5s
KUR smax
comp=N,10µm,5.0s
KUR smax
comp=E,4µm,5.0s
JHS Saijyo 8.51 199 P **P** **14 45 15.5 +1.4**
KS15 Wonju Array Si 8.67 232 *e*Pn **P** **14 45 14.8 -1.2**
JGT Gotsu 8.69 203 P **P** **14 45 17.9 +1.6**
JIE Ise 8.71 179 P **P** **14 45 16.2 -0.3**
TYV Tymovskoe 8.83 26⇓ *i* P **P** **14 45 17.0 -0.9**
TYV AMB AMB 14 45 24.1
comp=E,183nm,0.9s
TYV *e*rx rx 14 45 32.1
TYV *e*rx rx 14 46 45.0
TYV A 14 47 06.0
comp=E,2µm,6.0s
TYV A 14 47 06.0
comp=E,2µm,6.0s
TYV Tymovskoe 8.83 26 *e*P **P** **14 45 17.0 -0.9**
TYV *e*S **S** **14 46 45.0 -11**
TYV pmax pmax
comp=Z,183nm,0.9s
TYV smax
comp=E,2µm,6.0s
JJG Jouge 8.85 198 P **P** **14 45 19.9 +1.7**
JJS Sakaide 8.95 194 P **P** **14 45 20.6 +1.2**
JHT Toyohira 9.01 202 P **P** **14 45 21.8 +1.6**
JHIK Hikimi 9.27 204 P **P** **14 45 25.2 +1.8**
INCN Inchon 9.38 236 *e*P **P** **14 45 25.0 +0.2**
INCN *e*S **S** **14 47 13.6 +5.3**
JHM Kurahashi 9.47 200 P **P** **14 45 27.5 +1.7**
JMN Monobe 9.59 193 P **P** **14 45 28.5 +1.3**
JET Tanbara 9.70 197 P **P** **14 45 30.3 +1.8**
MRT2 Murotomisaki 2 9.88 191 P **P** **14 45 31.5 +0.7**
JKU Kubokawa 10.15 196 P **P** **14 45 35.5 +1.5**
EKMR Ekimchan 10.23 348 *i* P **P** **14 45 34.5 -0.5**
EKMR ⇓ *e*rx rx 14 47 30.5
JHJ Hachijo jima 2 10.31 164 P **P** **14 45 32.5 -3.6**
comp=E,402nm,0.3s,baz=296,slow=3.1,SNR=68
JHJ S **S** **14 47 20.6 -8.3**
comp=E,154nm,0.3s,baz=82,slow=23,SNR=11
UWA2 Uwa jima 2 10.34 198 P **P** **14 45 38.0 +1.7**
NKL Nikolayevsk 10.43 14⇓ *i* P **P** **14 45 34.0 -3.3**
NKL AMB AMB 14 45 34.8
comp=E,96nm,0.8s
NKL AMB AMB 14 45 34.8
comp=E,23nm,0.8s
NKL AMB AMB 14 45 34.8
comp=E,180nm,0.8s
NKL AMB AMB 14 45 35.0
comp=E,700nm,3.0s
NKL AMB AMB 14 45 35.0
comp=E,1µm,3.0s
NKL *i* S **S** **14 47 28.0 -3.2**
NKL A 14 47 30.5
comp=E,1µm,4.0s
NKL A 14 47 30.5
comp=E,3µm,4.0s
NKL A 14 47 31.0
comp=E,470nm,1.6s
NKL A 14 47 31.0
comp=E,260nm,1.6s
JTO Tosashimizu 10.64 197 P **P** **14 45 41.3 +1.3**
JUS Usuki 10.70 202 P **P** **14 45 42.1 +1.4**
JUS S **S** **14 47 41.2 +4.0**
JNU Nakatsue 10.90 206 P **P** **14 45 45.0 +1.8**
comp=E,6.3nm,0.3s,baz=39,slow=16,SNR=62
JNU S **S** **14 47 42.1 +0.4**
comp=E,0.8nm,0.3s,baz=149,slow=19,SNR=1.3
JNU ScP 14 54 13.1
comp=E,0.7nm,0.3s,baz=348,slow=1.6,SNR=4.7
OKH Okha 11.29 20 *e*P **P** **14 45 48.1 +0.2**
OKH *e*S **S** **14 47 52.0 +1.9**
OKH A 14 47 53.8
comp=E,5µm,4.0s
OKH Okha 11.29 20 *e*P **P** **14 45 48.0 +0.1**
OKH *i* S **S** **14 47 52.0 +1.9**
OKH smax
comp=N,5µm,3.0s
YASR Yasnyy 11.64 334 *i* P **P** **14 45 52.0 -0.2**
YASR AMB AMB 14 45 52.7
comp=N,230nm,1.0s
YASR AMB AMB 14 45 52.7
comp=N,210nm,1.0s
YASR AMB AMB 14 45 52.7
comp=N,930nm,1.0s
JHD Hondo 11.75 207 P **P** **14 45 55.1 +1.5**
DL2 Dalian 11.97 254 P **P** **14 45 58.5 +2.2**
DL2 S **S** **14 48 10.5 +5.3**
DL2 SCP 14 54 14.6
DL2 SCS ScS 14 57 49.4 -1.0
DL2 AMB AMB
comp=Z,300nm,1.0s
DL2 AMB AMB
comp=Z,600nm,3.7s
ZEA Zeya 12.26 333⇓ *i* P **P** **14 45 59.3 -0.4**
ZEA ⇓ *i* P 14 45 59.3
ZEA AMB AMB 14 46 01.0
comp=Z,3µm,2.0s
ZEA AMB AMB 14 46 01.0
comp=Z,5µm,2.0s
ZEA AMB AMB 14 46 01.7
comp=Z,3µm,1.4s
ZEA AMB AMB 14 46 01.7
comp=Z,2µm,1.4s
ZEA AMB AMB 14 46 01.7
comp=Z,6µm,1.4s
ZEA *e*S **S** **14 48 13.0 +1.6**
ZEA A 14 48 16.5
comp=Z,2µm,3.0s
ZEA A 14 48 16.5
comp=Z,3µm,3.0s
ZEA A 14 48 16.5
comp=Z,1µm,3.0s
ZEA A 14 48 16.6
comp=Z,390nm,1.5s
ZEA A 14 48 16.6
comp=Z,830nm,1.5s
ZEA AMS AMS 14 50 31.0
comp=Z,2µm,6.0s
ZEA AMS AMS 14 50 31.0
comp=Z,2µm,6.0s
ZEA AMS AMS 14 50 31.0
comp=Z,2µm,5.0s
BMKR Bomnak 12.63 339 *i* P **P** **14 46 03.4 -0.9**
BMKR AMB AMB 14 46 05.4
comp=Z,2µm,0.9s
KROS Kirovskiy 12.93 334 *i* P **P** **14 46 07.4 -0.4**
KROS AMB AMB 14 46 09.0
comp=Z,690nm,0.9s
KROS AMB AMB 14 46 09.0
comp=Z,600nm,0.9s
KROS AMB AMB 14 46 09.0
comp=Z,1µm,0.9s
HIA Hailar 13.11 304 P **P** **14 46 09.5 -0.6**
HIA ScS ScS 14 57 51.5 -1.4
HIA Hailar 13.11 304⇓ *i* P **P** **14 46 09.3 -0.7**
SKR Severo-Kuril's 15.39 54 *e*P **P** **14 46 32.5 -3.5**
SKR AMB AMB 14 46 34.2
comp=Z,110nm,0.5s
SKR AMB AMB 14 46 34.2
comp=Z,450nm,0.5s
SKR AMB AMB 14 46 35.0
comp=Z,800nm,2.0s
SKR AMB AMB 14 46 35.0
comp=Z,1µm,2.0s
SKR AMB AMB 14 46 35.0
comp=Z,1µm,2.0s
SKR *e*S **S** **14 49 13.0 -5.4**
SKR A 14 49 24.0
comp=Z,2µm,10.0s
SKR A 14 49 24.0
comp=Z,2µm,10.0s
SKR Severo-Kuril's 15.39 54 *e*P **P** **14 46 32.5 -3.5**
SKR *e*S **S** **14 49 13.0 -5.4**
SKR pmax pmax
comp=N,110nm,0.5s
SKR pmax pmax
comp=E,110nm,0.5s
SKR pmax pmax
comp=Z,450nm,0.5s
SKR pmax pmax
comp=N,800nm,2.0s
SKR pmax pmax
comp=E,1µm,2.0s
SKR pmax pmax
comp=Z,2µm,2.0s
SKR smax
comp=E,2µm,12.0s
SKR smax
comp=N,2µm,8.0s
SKR MLR MLR
comp=N,1.0nm,12.0s
SKR MLR MLR
comp=N,1µm,12.0s
SKR MLR MLR
comp=E,1µm,12.0s
BJI Beijing 15.49 265 P **P** **14 46 36.8 -0.5**
BJI XP 14 47 58.8
BJI S **S** **14 49 21.3 +0.6**
BJI SCS ScS 14 57 57.9 -1.0
BJT Baijiatuau 15.51 265 P **P** **14 46 36.6 -0.8**
BJT S **S** **14 49 22.8 +1.9**
BJT S x 14 50 16.2
BJT ScS ScS 14 57 58.1 -0.8
BJT Baijiatuau 15.51 265⇓ *i* P **P** **14 46 36.3 -1.1**
comp=E,614nm,0.9s
BJT *e*S **S** **14 49 20.8 -0.1**
CLNS Chul'man 15.59 336 *e*P **P** **14 46 37.0 -1.2**
CLNS *e*S **S** **14 49 25.3 +2.8**
CLNS pmax pmax
comp=Z,870nm,0.9s
CLNS pmax pmax
comp=N,540nm,1.0s
CLNS pmax pmax
comp=E,250nm,0.8s
CLNS pmax pmax
comp=Z,600nm,1.0s
CLNS pmax pmax
comp=N,130nm,0.8s
CLNS pmax pmax
comp=E,230nm,0.7s
CLNS smax
comp=E,440nm,12.0s
CLNS smax
comp=Z,530nm,13.1s
CLNS smax
comp=N,560nm,13.8s
CLNS MLR MLR
comp=Z,700nm,11.0s
CLNS MLR MLR
comp=N,600nm,12.0s
CLNS MLR MLR
comp=E,200nm,11.0s
TIA Tai'an 16.40 252 ⇓ P **P** **14 46 46.6 -0.4**
TIA S **S** **14 49 40.3 +1.8**
TIA AMB AMB
comp=Z,237nm,1.5s
TIA LR LR
comp=N,813nm,8.0s
CBIJ Chichi jima 16.65 162 P **P** **14 46 46.7 -3.0**
comp=N,267nm,0.3s,baz=286,slow=13,SNR=16
CBIJ S **S** **14 49 40.6 -2.7**
comp=N,169nm,0.3s,baz=268,slow=21,SNR=11
SSE Sheshan 17.07 230⇑ P **P** **14 46 53.3 -0.7**
SSE S **S** **14 49 49.8 -1.7**
SSE AMB AMB
comp=Z,47nm,0.7s
SSE LR LR
comp=N,389nm,15.0s
SSE LR LR
comp=E,379nm,15.0s
SSE LR LR
comp=Z,356nm,10.3s
JOW Kunigami 17.56 205 P **P** **14 46 57.1 -2.0**
comp=Z,2.1nm,0.3s,baz=121,slow=12,SNR=6.8
NJ2 Nanjing 17.76 237⇑ P **P** **14 47 01.3 +0.2**
NJ2 XP 14 48 25.3
NJ2 S **S** **14 50 04.0 -0.7**
NJ2 PCP PcP 14 51 23.8 +1.2
NJ2 SCP 14 54 25.5
NJ2 PCS 14 54 54.0
NJ2 AMB AMB
comp=Z,150nm,0.7s
NJ2 AMB AMB
comp=Z,1µm,6.8s
NJ2 LR LR
comp=N,870nm,13.6s
NJ2 LR LR
comp=E,920nm,15.2s
NJ2 LR LR
comp=Z,3µm,12.2s
PET Petropavlovsk 17.76 48⇑ *i* P **P** **14 46 58.5 -2.4**
PET *e*S **S** **14 49 57.2 -7.3**
PET pmax pmax
comp=Z,198nm,1.0s
PET pmax pmax
comp=N,97nm,1.1s
PET pmax pmax
comp=E,95nm,1.1s
PET pmax pmax
comp=Z,222nm,14.9s
PET pmax pmax
comp=N,78nm,16.4s
PET pmax pmax
comp=E,156nm,18.0s
PET pmax pmax
comp=Z,548nm,13.4s
PET Petropavlovsk 17.76 48⇑ *e*P **P** **14 46 57.9 -3.0**
comp=Z,454nm,1.4s
PET *e*S **S** **14 50 05.2 +0.7**
PET *e*ScP 14 54 24.1
HHC Hu-ho-hao-te 18.64 272⇓ *i* P **P** **14 47 09.4 -0.5**
HHC AMB AMB
comp=Z,78nm,1.3s
HHC LR LR
comp=N,2µm,7.4s
HHC LR LR
comp=E,1µm,6.8s
HHC LR LR
comp=Z,402nm,7.2s
MA2 Magadan 18.67 23*d* *i* P **P** **14 47 08.9 -1.2**
MA2 *i* S **S** **14 50 21.2 -0.3**
MA2 pmax pmax
comp=Z,180nm,0.7s
MA2 Magadan 18.67 23⇓ *i* P **P** **14 47 08.6 -1.5**
comp=Z,324nm,0.7s
MA2 *e*S **S** **14 50 25.6 +4.1**
MA2 *e*ScP 14 54 25.9
TIY Taiyuan 19.05 262 PR 14 47 13.0
TIY S **S** **14 50 32.0 +3.4**
YAK Yakutsk 19.37 350 *e*P **P** **14 47 13.4 -3.6**
YAK *e*S **S** **14 50 35.9 +1.8**
YAK pmax pmax
comp=Z,340nm,0.9s
YAK Yakutsk 19.37 350⇓ *i* P **P** **14 47 13.5 -3.5**
comp=Z,508nm,1.0s
YAK *e*S **S** **14 50 35.9 +1.8**
YAK *e*ScP 14 54 27.4
BTO Baotou 19.83 272 *e*P **P** **14 47 21.3 -0.4**
BTO S **S** **14 50 44.8 +2.3**
BTO AMB AMB
comp=Z,330nm,0.9s
BTO LR LR
comp=N,4µm,9.1s
BTO LR LR
comp=E,1µm,5.4s
BOD Bodaibo 20.38 324 *e*P **P** **14 47 24.4 -2.5**
ULN Ulaanbaatar 21.09 293 P **P** **14 47 33.6 -0.3**
ULN ScP 14 54 32.6
ULN ScS ScS 14 58 15.6 -0.7
ULN Ulaanbaatar 21.09 293 *e*P **P** **14 47 33.1 -0.8**
ULN pmax pmax
comp=Z,250nm,1.0s,mb5.4
ULN Ulaanbaatar 21.09 293⇓ *i* P **P** **14 47 33.4 -0.6**
comp=Z,158nm,0.7s,mb5.3
ULN *e*ScP 14 54 31.9
SONM Songino Array 21.54 293 P **P** **14 47 37.8 -0.4**
comp=Z,192nm,0.9s,mb5.3,baz=98,slow=8.4,SNR=424
SONM S **S** **14 51 14.9 +2.9**
comp=Z,4.0nm,0.9s,slow=16,SNR=2.3
SONM PcP PcP 14 51 28.3 -1.1
comp=Z,10nm,0.8s,baz=114,slow=1.4,SNR=5.4
SONM ScP 14 54 33.3
comp=Z,17nm,0.8s,baz=90,slow=1.2,SNR=13
WHN Wuhan 21.62 242⇑ P **P** **14 47 38.3 -0.9**
WHN S **S** **14 51 11.0 -2.6**
WHN LR LR
comp=N,508nm,8.0s
WHN LR LR
comp=E,388nm,8.0s
WHN LR LR
comp=Z,670nm,16.3s
SEY Seymchan 21.92 20 *i* P **P** **14 47 42.4 +0.6**
SEY *e*S **S** **14 51 23.3 +4.9**
SEY *e* 14 51 29.5
SEY *e* 14 58 15.3
SEY pmax pmax
comp=N,2µm,0.7s
SEY pmax pmax
comp=E,2µm,0.7s
SEY pmax pmax
comp=Z,6µm,0.7s
XAN Xi'an 23.28 256 P **P** **14 47 53.1 -1.7**
XAN AP 14 47 58.8
XAN S **S** **14 51 47.6 +6.2**
XAN AMB AMB
comp=Z,198nm,4.4s
XAN LR LR
comp=N,839nm,11.0s
XAN LR LR
comp=E,567nm,8.9s
XAN LR LR
comp=Z,1µm,17.2s
IRK Irkutsk 23.35 304 *e*P **P** **14 47 54.1 -1.1**
IRK *e* 14 51 46.7
TLY Talaya 23.65 303 *e*P **P** **14 47 56.1 -1.9**
TLY *i* S **S** **14 51 48.4 +1.1**
TLY pmax pmax
comp=Z,3µm,1.1s
TLY MLR MLR
comp=Z,2µm,18.0s
ZAK Zakamensk 23.73 299⇑ *i* P **P** **14 47 57.0 -1.7**
ENH Enshi 25.03 248 *e*P **P** **14 48 08.2 -2.5**
comp=Z,41nm,0.8s,mb4.7
ENH *e*PP PP 14 49 11.6 +8.2
MOY Mondy 25.28 302 *e*P **P** **14 48 11.0 -1.8**
LZH Lanzhou 25.98 265 ⇓ P **P** **14 48 18.8 -0.6**
LZH AP 14 49 15.6
LZH PCP PcP 14 51 38.9 +0.1
LZH S **S** **14 52 23.0 -2.3**
LZH SCS ScS 14 58 35.1 -0.5
LZH AMB AMB
comp=Z,226nm,1.3s,mb5.2
LZH AMB AMB
comp=Z,468nm,4.0s
FX1 Attu Island--F 26.16 55 P **P** **14 48 20.9 +0.1**
comp=Z,162nm,0.3s,mb5.7,baz=310,slow=3.0,SNR=317
FX1 Attu Island--F 26.16 55 P **P** **14 48 20.9 +0.1**
FX1 pmax pmax
comp=Z,162nm,0.4s

FX1	**Attu Island--F**	**26.16**	**55**	⇑*iP*	**P**	**14 48 25.2**	**+4.4**
FX1				*e*PcP	PcP	14 51 42.2	+3.1
FX1				*e*ScP		14 54 49.4	
SMY	**Shemya**	**26.71**	**56**	*eP*	**P**	**14 48 25.7**	**-0.1**
GTA	**Gaotai**	**27.66**	**275**	⇓P	**P**	**14 48 33.3**	**-1.2**
GTA				AP		14 49 36.3	
GTA				PCP	PcP	14 51 42.9	+0.1
GTA				S	**S**	**14 52 48.3**	**-3.6**
GTA				SCP		14 54 51.0	
GTA				SCS	ScS	14 58 42.4	-0.5
GTA				AMB	AMB		
	comp=Z,211nm,4.1s						
GTA				LR	LR		
	comp=N,70nm,8.7s						
GTA				LR	LR		
	comp=E,58nm,8.4s						
GTA				LR	LR		
	comp=Z,78nm,8.8s						
GZH	**Guangzhou**	**27.67**	**231**	P	**P**	**14 48 33.0**	**-1.7**
GZH				S	**S**	**14 52 46.4**	**-5.8**
GZH				LR	LR		
	comp=N,498nm,17.3s						
GZH				LR	LR		
	comp=E,403nm,15.7s						
CD2	**Chengdu**	**28.64**	**256**	⇓*iP*	**P**	**14 48 41.0**	**-2.2**
CD2				AP		14 49 45.6	
CD2				S	**S**	**14 53 00.8**	**-6.6**
CD2				XS		14 54 54.5	
CD2				AMB	AMB		
	comp=Z,40nm,0.7s,mb4.8						
CD2				AMB	AMB		
	comp=Z,170nm,4.3s						
CD2				LR	LR		
	comp=N,700nm,8.0s						
CD2				LR	LR		
	comp=Z,400nm,9.6s						
TIXI	**Tiksi**	**28.85**	**355**	*eP*	**P**	**14 48 41.4**	**-3.3**
TIXI				*eS*	**S**	**14 53 05.7**	**-4.7**
TIXI				*e*		14 54 52.9	
TIXI				pmax	pmax		
	comp=Z,2μm,0.6s						
TIXI				MLR	MLR		
	comp=Z,2μm,11.0s						
TIXI	**Tiksi**	**28.85**	**355**	⇓*iP*	**P**	**14 48 42.1**	**-2.6**
	comp=Z,343nm,0.6s,mb5.8						
TIXI				*eS*	**S**	**14 53 05.2**	**-5.3**
TIXI				*e*ScP		14 54 51.0	
GYA	**Guiyang**	**29.38**	**245**	⇑*iP*	**P**	**14 48 47.4**	**-2.4**
GYA				AP		14 49 55.6	
GYA				SCP		14 54 57.6	
GYA				AMB	AMB		
	comp=Z,30nm,0.8s,mb4.6						
GYA				AMB	AMB		
	comp=Z,120nm,3.3s						
GYA				LR	LR		
	comp=N,250nm,12.0s						
GYA				LR	LR		
	comp=E,810nm,11.1s						
GYA				LR	LR		
	comp=Z,550nm,10.5s						
BILL	**Bilibino**	**29.54**	**22**	*d iP*	**P**	**14 48 49.7**	**-1.0**
BILL				pmax	pmax		
	comp=Z,58nm,0.7s,mb4.9						
BILL				MLR	MLR		
	comp=Z,100nm,14.0s						
BILL	**Bilibino**	**29.54**	**22**	⇓*iP*	**P**	**14 48 49.7**	**-1.0**
	comp=Z,82nm,0.8s,mb5.0						
BILL				*e*PcP	PcP	14 51 46.6	-0.7
BILL				*eS*	**S**	**14 53 21.6**	**+0.3**
BILL				*e*ScP		14 54 57.4	
ADK	**Adak**	**32.34**	**58**	*eP*	**P**	**14 49 13.7**	**-1.4**
QIZ	**Qiongzhong**	**32.86**	**231**	P	**P**	**14 49 20.5**	**+0.7**
QIZ				S	**S**	**14 54 13.3**	**0.0**
QIZ				XS		14 56 02.8	
QIZ				SS	SS	14 56 39.8	-2.2
QIZ				LR	LR		
	comp=E,329nm,13.8s						
QIZ				LR	LR		
	comp=Z,260nm,11.0s						
QIZ	**Qiongzhong**	**32.86**	**231**	*eP*	**P**	**14 49 18.7**	**-1.1**
	comp=Z,24nm,1.1s,mb4.3						
KMI	**Kunming**	**32.90**	**248**	*eP*	**P**	**14 49 18.9**	**-1.2**
KMI				AP	pP	14 50 24.8	+2.6
KMI				PCP	PcP	14 51 56.3	-0.4
KMI				S	**S**	**14 54 08.6**	**-5.3**
KMI				SCP		14 55 09.1	
KMI				SS	SS	14 56 40.9	-1.9
KMI				AMB	AMB		
	comp=Z,46nm,1.0s,mb4.7						
KMI				AMB	AMB		
	comp=Z,116nm,3.1s						
KMI				LR	LR		
	comp=N,237nm,9.0s						
KMI				LR	LR		
	comp=E,277nm,6.2s						
KMI				LR	LR		
	comp=Z,215nm,8.5s						
WMQ	**Urumqi**	**35.00**	**288**	*eP*	**P**	**14 49 37.8**	**+0.2**
WMQ				AP	pP	14 50 40.5	+0.1
WMQ				PP	PP	14 51 09.0	+3.8
WMQ				XP	sP	14 51 16.5	-0.4
WMQ				PCP	PcP	14 52 02.6	+0.1
WMQ				S	**S**	**14 54 46.1**	**+0.2**
WMQ				SCP		14 55 16.6	
WMQ				PCS		14 55 48.8	
WMQ				XS		14 56 36.6	
WMQ				SCS	ScS	14 59 19.8	+0.2
WMQ				AMB	AMB		
	comp=Z,78nm,0.9s,mb4.9						
WMQ				AMB	AMB		
	comp=Z,675nm,6.2s						
ZAL	**Zalesovo**	**35.14**	**306**	P	**P**	**14 49 37.6**	**-1.2**
	comp=Z,41nm,0.7s,mb4.8,baz=297,slow=9.3,SNR=177						
ZAL				PcP	PcP	14 52 01.9	-1.0
	comp=Z,15nm,0.6s,baz=276,slow=3.6,SNR=5.4						
ZAL				ScP		14 55 15.8	
	comp=Z,26nm,0.5s,baz=280,slow=3.6,SNR=42						
ZAL	**Zalesovo**	**35.14**	**306**	*i* P	**P**	**14 49 37.6**	**-1.1**
ZAL				pmax	pmax		
	comp=Z,41nm,0.7s						
NVS	**Novosibirsk**	**36.00**	**308**	*i* P	**P**	**14 49 44.1**	**-1.8**
NVS				*i* *PP	pP	14 50 47.1	-1.9
NVS				*i*		14 51 16.0	
NVS				*i* S	**S**	**14 55 00.2**	**-0.8**
NVS				*i*		14 59 22.9	
NVS				pmax	pmax		
	comp=Z,354nm,2.1s,mb5.2						
NVS				pmax	pmax		
	comp=E,235nm,2.0s						
NVS				pmax	pmax		
	comp=N,97nm,1.6s						
NVS				pmax	pmax		
	comp=Z,62nm,1.6s,mb4.6						
NVS				pmax	pmax		
	comp=N,47nm,1.8s						
NVS				pmax	pmax		
	comp=E,38nm,1.8s						
NVS				smax			
	comp=N,15nm,1.4s						
NVS				smax			
	comp=E,43nm,1.4s						
MKAR	**Makanchi Array**	**37.88**	**295**	P	**P**	**14 50 00.9**	**-0.8**
	comp=E,102nm,0.7s,mb5.2,baz=81,slow=8.7,SNR=403						
MKAR				ScP		14 55 25.6	
	comp=E,13nm,0.8s,baz=72,slow=3.8,SNR=7.4						
MKAR				P3KPbc		15 20 09.3	
	comp=E,3.6nm,1.2s,baz=236,slow=4.4,SNR=4.7						
MKAR	**Makanchi Array**	**37.88**	**295**	*i* P	**P**	**14 50 00.9**	**-0.8**
MKAR				pmax	pmax		
	comp=Z,164nm,0.8s						
MKAR	**Makanchi Array**	**37.88**	**295**	P	**P**	**14 50 00.9**	**-0.8**
MKAR				ScP		14 55 25.6	
MKAR				*e*		15 20 09.3	
UNV	**Unalaska Valle**	**38.30**	**53**	*eP*	**P**	**14 50 02.3**	**-2.8**
	comp=Z,260nm,1.2s,mb5.3						
UNV				*e*PcP	PcP	14 52 11.1	-1.4
LSA	**Lhasa**	**38.40**	**265**	⇓*iP*	**P**	**14 50 06.5**	**+0.3**
	comp=Z,29nm,0.9s,mb4.5						
ANM	**Nome**	**38.64**	**36**	*eP*	**P**	**14 50 07.5**	**-0.3**
NANT	**Nan**	**38.65**	**242**	P	**P**	**14 50 07.5**	**-0.8**
KKTK	**Khon Kaen**	**39.13**	**237**	P	**P**	**14 50 12.3**	**0.0**
	comp=Z,679nm,0.6s,mb6.0						
KURK	**Kurchatov**	**39.34**	**302**	*i* P	**P**	**14 50 12.5**	**-1.1**
KURK				pmax	pmax		
	comp=Z,166nm,1.0s,mb5.2						
KURK	**Kurchatov**	**39.34**	**302**	⇓*iP*	**P**	**14 50 12.5**	**-1.1**
KURK				*e*PP	PP	14 51 50.1	-2.5
KURK				*e*PcP	PcP	14 52 13.0	-2.8
KURK				*e*ScP		14 55 31.3	
KURK				*eS*	**S**	**14 55 48.3**	**-2.7**
CHTO	**Chiang Mai**	**39.79**	**244**	P	**P**	**14 50 17.2**	**-0.5**
CHTO				P		14 50 48.7	
CHTO				ScP		14 55 34.0	
CHTO				S	**S**	**14 55 54.6**	**-3.4**
CMAR	**Chiang Mai Arr**	**40.05**	**244**	P	**P**	**14 50 19.4**	**-0.4**
	comp=Z,7.4nm,0.8s,baz=38,slow=7.0,SNR=32						
CMAR				PcP	PcP	14 52 17.9	-0.5
	comp=Z,6.8nm,0.6s,baz=13,slow=1.8,SNR=9.3						
CMAR				ScP		14 55 35.5	
	comp=Z,11nm,0.9s,baz=14,slow=3.0,SNR=15						
CMAR				S	**S**	**14 56 01.1**	**-0.7**
	comp=Z,3.5nm,1.0s,baz=33,slow=16,SNR=5.9						
CMAR	**Chiang Mai Arr**	**40.05**	**244**	P	**P**	**14 50 19.4**	**-0.3**
CMAR						14 52 17.9	
CMAR				S	**S**	**14 56 01.1**	**-0.7**
CMAR				pmax	pmax		
	comp=Z,7.0nm,0.8s						
CMAR				pmax	pmax		
	comp=Z,7.0nm,0.6s						
CMAR				pmax	pmax		
	comp=N,11nm,0.9s						
CMAR				smax			
	comp=N,4.0nm,1.0s						
SHL	**Shillong**	**40.24**	**259**	*i* P	**P**	**14 50 20.3**	**-1.0**
SHL				*e*		14 55 36.0	
SHL				*e*		14 59 46.2	
NST	**Nakhon Sawan**	**41.32**	**240**	P	**P**	**14 50 31.0**	**+0.9**
	comp=N,42nm,1.0s,mb4.6						
SDN	**Sand Point**	**41.53**	**50**	*eP*	**P**	**14 50 30.1**	**-1.2**
SDPT	**Sand Point**	**41.54**	**50**	*eP*	**P**	**14 50 30.2**	**-1.2**
SVW	**Sparrevohn**	**43.19**	**41**	*eP*	**P**	**14 50 45.7**	**+1.1**
ULHL	**Ulahol**	**43.44**	**290**	P	**P**	**14 50 47.9**	**+1.1**
	SNR=10						
VOSK	**Vostochnaya**	**43.50**	**306**	P	**P**	**14 50 46.6**	**-0.6**
VOSK				pmax	pmax		
	comp=Z,138nm,0.9s,mb5.1						
VOSK	**Vostochnaya**	**43.50**	**306**	*i* P	**P**	**14 50 46.7**	**-0.5**
TKM2	**Tokmak 2**	**43.62**	**292**	P	**P**	**14 50 48.7**	**+0.4**
	SNR=254						
KKN	**Kakani**	**43.74**	**267**	*eP*	**P**	**14 50 48.8**	**-0.7**
	comp=Z,139nm,0.8s,mb5.2						
PKI	**Pulchoki**	**43.77**	**266**	*eP*	**P**	**14 50 49.2**	**-0.5**
	comp=Z,199nm,0.8s,mb5.3						
BVA0	**Borovoye Array**	**43.77**	**307**	P	**P**	**14 50 49.0**	**-0.4**
BVAR	**Borovoye Array**	**43.77**	**307**	P	**P**	**14 50 49.1**	**-0.3**
	comp=Z,84nm,0.7s,mb5.0,baz=80,slow=9.0,SNR=437						
BVAR				PcP	PcP	14 52 29.8	-0.6
	comp=Z,14nm,0.6s,baz=76,slow=3.7,SNR=4.3						
BVAR				ScP		14 55 49.4	
	comp=Z,20nm,0.7s,baz=78,slow=4.3,SNR=24						
BVAR				S	**S**	**14 56 54.1**	**-1.4**
	comp=Z,4.8nm,0.9s,baz=69,slow=12,SNR=3.1						
BVAR				ScS	ScS	15 00 10.9	-0.1
	comp=Z,9.2nm,0.9s,baz=108,slow=4.7,SNR=9.2						
BRVK	**Borovoye**	**43.83**	**307**	P	**P**	**14 50 49.7**	**-0.1**
BRVK	**Borovoye**	**43.83**	**307**	⇓*iP*	**P**	**14 50 49.4**	**-0.4**
BRVK				*e*ScP		14 55 49.4	
BRVK				*eS*	**S**	**14 56 55.8**	**-0.4**
DMN	**Daman**	**43.97**	**267**	*eP*	**P**	**14 50 51.0**	**-0.3**
	comp=Z,148nm,0.8s,mb5.2						
GKN	**Gorkha**	**44.09**	**268**	*eP*	**P**	**14 50 51.5**	**-0.8**
	comp=Z,201nm,0.7s,mb5.4						
KBK	**Karagaybulak**	**44.16**	**291**	P	**P**	**14 50 52.8**	**+0.2**
	SNR=373						
CHMS	**Chumysh**	**44.17**	**292**	P	**P**	**14 50 52.1**	**-0.5**
	SNR=57						
KZA	**Kyzart**	**44.18**	**291**	P	**P**	**14 50 53.9**	**+1.1**
	SNR=38						
USP	**Ospenovka**	**44.24**	**292**	P	**P**	**14 50 52.8**	**-0.4**
	SNR=71						
FRU	**Bishkek**	**44.32**	**292**	⇓*iP*	**P**	**14 50 54.0**	**+0.1**
FRU				*i*	pP	14 52 01.0	+2.0
FRU				pmax	pmax		
	comp=Z,220nm,1.4s,mb5.1						
AAK	**Ala-Archa**	**44.48**	**292**	P	**P**	**14 50 54.9**	**-0.2**
	SNR=66						
DANN	**Dangsing**	**44.54**	**269**	*eP*	**P**	**14 50 55.8**	**0.0**
	comp=Z,208nm,0.9s,mb5.3						
ZRNK	**Zerenda**	**44.60**	**307**	P	**P**	**14 50 55.8**	**-0.2**
ZRNK				pmax	pmax		
	comp=Z,210nm,0.8s,mb5.3						
ZRNK	**Zerenda**	**44.60**	**307**	⇓*iP*	**P**	**14 50 56.0**	**0.0**
ZRNK				*e*pP	pP	14 52 00.3	-0.8
UCH	**Uchtor**	**44.63**	**291**	P	**P**	**14 50 56.6**	**+0.3**
	SNR=57						
KSH	**Kashi**	**44.72**	**287**	*i* PR		14 50 57.3	
KSH				AP	pP	14 52 02.3	0.0
KSH				PCP	PcP	14 52 33.4	-0.5
KSH				PP	PP	14 52 47.6	+1.6
KSH				SCP		14 55 44.3	
KSH				PCS		14 56 26.1	
KSH				S	**S**	**14 57 09.1**	**0.0**
KSH				SCS	ScS	15 00 17.1	-0.2
KSH				SS	SS	15 00 31.3	+1.1
KSH				AMB	AMB		
	comp=Z,260nm,1.0s,mb5.3						
KSH				LR	LR		
	comp=N,520nm,8.4s						
KSH				LR	LR		
	comp=E,570nm,5.9s						
EKS2	**Erkin-Say**	**44.96**	**292**	P	**P**	**14 50 58.6**	**-0.3**
	SNR=71						
KOLN	**Koldanda**	**44.98**	**268**	*eP*	**P**	**14 50 58.9**	**-0.4**
	comp=E,420nm,1.0s,mb5.5						
AML	**Almayashu**	**45.22**	**291**	P	**P**	**14 51 01.4**	**+0.4**
	SNR=72						
KDAK	**Kodiak Island**	**45.32**	**45**	⇑*iP*	**P**	**14 51 00.5**	**-1.0**
	comp=E,113nm,0.7s,mb5.1						
KDAK				*e*PcP	PcP	14 52 34.8	-0.9
KDAK				*e*ScP		14 55 57.0	
FIB	**Fire Island**	**45.79**	**40**	*eP*	**P**	**14 51 05.1**	**0.0**
MCK	**McKinley**	**45.86**	**37**	P	**P**	**14 51 05.6**	**0.0**
MCK				pmax	pmax		
	comp=Z,130nm,0.9s,mb5.1						
MCK	**McKinley**	**45.86**	**37**	⇑*iP*	**P**	**14 51 05.3**	**-0.4**
	comp=Z,158nm,1.0s,mb5.1						
MCK				*e*PcP	PcP	14 52 35.7	-1.8
MCK				*e*PP	PP	14 52 58.9	+2.1
MCK				*e*ScP		14 55 58.3	
PMS	**Palmer South**	**46.06**	**40**	*eP*	**P**	**14 51 06.8**	**-0.5**
COLA	**College**	**46.12**	**35**	P	**P**	**14 51 08.3**	**+0.6**
COLA	**College**	**46.12**	**35**	P	**P**	**14 51 08.2**	**+0.5**
COLA				pmax	pmax		
	comp=Z,320nm,1.0s,mb5.4						
COLA	**College**	**46.12**	**35**	*eP*	**P**	**14 51 08.1**	**+0.4**
PMR	**Palmer**	**46.19**	**40**	P	**P**	**14 51 07.7**	**-0.5**
PMR				pmax	pmax		
	comp=Z,410nm,1.3s,mb5.4						
PMR	**Palmer**	**46.19**	**40**	*eP*	**P**	**14 51 07.9**	**-0.3**
SML	**Sawmill**	**46.52**	**39**	P	**P**	**14 51 10.8**	**+0.1**
SML	**Sawmill**	**46.52**	**39**	⇑*iP*	**P**	**14 51 10.6**	**-0.1**
SML				*e*ScP		14 56 01.7	
ILAR	**Eielson Array**	**46.55**	**35**	P	**P**	**14 51 10.7**	**-0.3**
	comp=Z,109nm,0.8s,mb5.2,baz=286,slow=6.5,SNR=890						
ILAR				PcP	PcP	14 52 37.6	-2.4
	comp=Z,8.8nm,0.7s,baz=282,slow=5.6,SNR=4.3						
ILAR				ScP		14 56 00.9	
	comp=Z,1.3nm,0.7s,baz=308,slow=4.6,SNR=4.5						
ILAR				S	**S**	**14 57 34.6**	**+0.1**
	comp=Z,5.1nm,1.0s,baz=261,slow=10,SNR=11						
ILAR				ScS	ScS	15 00 29.9	+1.1
	comp=Z,0.7nm,0.9s,baz=270,slow=6.1,SNR=4.3						
ILAR	**Eielson Array**	**46.55**	**35**	P	**P**	**14 51 10.7**	**-0.2**
ILAR						14 52 37.6	
ILAR				S	**S**	**14 57 34.6**	**+0.1**
ILAR						15 00 29.9	
ILAR				pmax	pmax		
	comp=Z,109nm,0.8s						
ILAR				pmax	pmax		
	comp=Z,9.0nm,0.7s						
ILAR				pmax	pmax		
	comp=N,1.0nm,0.7s						
ILAR				smax			
	comp=N,5.0nm,1.0s						
ILAR				pmax	pmax		
	comp=N,1.0nm,0.9s						
KKAR	**Karatay Array**	**46.99**	**294**	*i* P	**P**	**14 51 13.8**	**-0.9**
KKAR				pmax	pmax		
	comp=Z,131nm,0.8s,mb5.2						
TOA	**Tolsona**	**47.44**	**39**	*eP*	**P**	**14 51 19.1**	**+1.2**
EYAK	**Cordova Ski Ar**	**48.04**	**41**	⇑*iP*	**P**	**14 51 22.9**	**+0.4**
EYAK				*e*PcP	PcP	14 52 44.8	-0.6
EYAK				*e*ScP		14 56 09.2	
NDI	**New Delhi**	**49.15**	**273**	*eP*	**P**	**14 51 30.0**	**-1.4**
	comp=Z,18nm,0.5s,mb4.6						
NDI				*e*	pP	14 52 37.0	-1.0
NDI				*eS*	**S**	**14 58 08.0**	**-3.2**
ARU	**Arti**	**49.35**	**314**	*d iP*	**P**	**14 51 32.1**	**-0.4**
ARU				pmax	pmax		
	comp=Z,517nm,1.1s,mb5.7						
ARU	**Arti**	**49.35**	**314**	⇓*iP*	**P**	**14 51 32.0**	**-0.4**
	comp=Z,811nm,1.2s,mb5.8						
ARU				*e*ScP		14 56 11.6	
ARU				*eS*	**S**	**14 58 13.6**	**0.0**
DAWY	**Dawson**	**49.87**	**35**	⇑*iP*	**P**	**14 51 36.2**	**-0.1**
DAWY				*e*ScP		14 56 16.3	
DAWY				*eS*	**S**	**14 58 30.0**	**+9.3**
KGM	**Kluang**	**50.47**	**225**	⇓*eP*	**P**	**14 51 42.0**	**+0.5**
INK	**Inuvik**	**50.79**	**29**	PcP	PcP	14 52 54.5	-0.9
	comp=Z,36nm,1.1s,baz=33,slow=3.5,SNR=6.0						
INK				ScP		14 56 19.6	
	comp=Z,11nm,0.9s,baz=257,slow=3.7,SNR=6.5						
INK				S	**S**	**14 58 33.5**	**+0.4**
	comp=Z,11nm,0.9s,baz=117,slow=18,SNR=16						
INK	**Inuvik**	**50.79**	**29**	P	**P**	**14 51 42.9**	**-0.2**
INK				pmax	pmax		
	comp=Z,87nm,0.9s						
INK	**Inuvik**	**50.79**	**29**	⇑*iP*	**P**	**14 51 42.9**	**-0.2**
	comp=Z,84nm,0.8s,mb5.0						
INK				*e*PcP	PcP	14 52 54.2	-1.1
INK				*e*ScP		14 56 19.5	
INK				*eS*	**S**	**14 58 33.3**	**+0.1**
WAU	**Wau**	**51.08**	**167**	⇑*iP*	**P**	**14 51 44.9**	**-1.0**
AB31	**Akbulak array**	**51.23**	**305**	P	**P**	**14 51 46.1**	**-0.5**
AB31				pmax	pmax		
	comp=Z,176nm,0.7s,mb5.4						
BHPL	**Bhopal**	**52.15**	**267**	*eP*	**P**	**14 51 51.5**	**-2.3**
BHPL				AMb	AMB	14 51 54.2	
	comp=Z,116nm,0.8s,mb5.2						
JOHN	**Johnston Islan**	**52.61**	**103**	⇑*eP*	**P**	**14 51 57.0**	**-0.1**
PMG	**Port Moresby**	**53.17**	**167**	P	**P**	**14 52 00.2**	**-1.1**
	baz=18,slow=8.6						
KGD	**Kothagudem**	**53.35**	**260**	*eP*	**P**	**14 52 01.6**	**-0.9**
KGD				*ep*P	pP	14 53 10.4	-0.1
KGD				*eS*	**S**	**14 59 05.0**	**-3.4**
KGD				*e*		15 05 31.8	
KBS	**Kingsbay**	**53.99**	**349**	P	**P**	**14 52 05.7**	**-0.7**
KBS				pmax	pmax		
	comp=Z,28nm,0.8s,mb4.6						
KBS	**Kingsbay**	**53.99**	**349**	*eP*	**P**	**14 52 05.7**	**-0.7**
	comp=Z,58nm,0.9s,mb4.9						
SIT	**Sitka**	**54.34**	**42**	P	**P**	**14 52 10.2**	**+1.1**
SIT				pmax	pmax		
	comp=Z,290nm,1.1s,mb5.5						
SIT	**Sitka**	**54.34**	**42**	*eP*	**P**	**14 52 09.9**	**+0.8**
HYB	**Hyderabad**	**54.98**	**261**	⇓*iP*	**P**	**14 52 13.0**	**-1.2**
	comp=Z,46nm,0.8s,mb4.9						
HYB				*e*		14 52 58.0	
HYB	**Hyderabad**	**54.98**	**261**	⇓*eP*	**P**	**14 52 13.0**	**-1.2**
	comp=Z,46nm,0.8s,mb4.9						
LVZ	**Lovozero**	**55.00**	**333**	*eP*	**P**	**14 52 10.9**	**-2.8**
LVZ				*e**SS		15 01 19.7	
LVZ				pmax	pmax		
	comp=Z,30nm,0.9s,mb4.6						
LVZ				pmax	pmax		
	comp=N,8.0nm,0.5s						
LVZ				pmax	pmax		
	comp=E,2.0nm,0.6s						
LVZ				pmax	pmax		
	comp=Z,280nm,2.7s,mb5.1						
APA	**Apatity**	**55.58**	**333**	⇑*iP*	**P**	**14 52 15.6**	**-2.2**
APA				*i*	pP	14 53 24.1	-2.4
APA				pmax	pmax		
	comp=Z,40nm,0.7s,mb4.9						
KAKA	**Kakadu**	**55.66**	**185**	⇑*iP*	**P**	**14 52 18.0**	**-1.1**
	comp=Z,93nm,0.7s,mb5.2						
DLBC	**Dease Lake**	**56.24**	**39**	P	**P**	**14 52 23.5**	**+0.9**
	comp=Z,113nm,1.1s,mb5.1,baz=302,slow=8.4,SNR=18						
DLBC				ScP		14 56 45.1	
	comp=Z,29nm,1.3s,baz=275,slow=4.0,SNR=7.6						
DLBC	**Dease Lake**	**56.24**	**39**	⇑*iP*	**P**	**14 52 23.9**	**+1.2**
DLBC				*e*ScP		14 56 45.3	
KEV	**Kevo**	**56.39**	**337**	*ep*	**P**	**14 52 21.5**	**-2.0**
CUD	**Cuddapah**	**56.76**	**258**	*eP*	**P**	**14 52 26.2**	**-0.6**
CUD				*ep*P	pP	14 53 34.8	-1.1
CUD				*es*P	sP	14 54 04.9	-5.2
CUD				*e*		14 57 38.7	
ARCES	**ARCESS Array B**	**56.95**	**337**	P	**P**	**14 52 26.5**	**-0.9**
	comp=Z,32nm,0.7s,mb4.8,baz=65,slow=9.0,SNR=189						
ARCES				PcP	PcP	14 53 18.1	-0.8
	comp=Z,3.9nm,0.5s,baz=45,slow=5.1,SNR=4.2						
ARCES				PP	PP	14 54 34.3	-4.9
	comp=Z,15nm,0.9s,baz=45,slow=8.6,SNR=4.8						
ARCES				ScP		14 56 45.6	
	comp=Z,15nm,0.9s,baz=45,slow=5.1,SNR=9.1						
ARCES	**ARCESS Array B**	**56.95**	**337**	P	**P**	**14 52 26.5**	**-0.9**
ARCES						14 53 18.1	
ARCES						14 54 34.3	
ARCES				pmax	pmax		
	comp=Z,32nm,0.7s						
ARCES				pmax	pmax		
	comp=Z,4.0nm,0.5s						
ARCES				pmax	pmax		
	comp=Z,15nm,0.9s						
ARCES				pmax	pmax		
	comp=N,15nm,0.9s						
RES	**Resolute Bay**	**57.66**	**14**	P	**P**	**14 52 31.6**	**-0.6**
RES				pmax	pmax		
	comp=Z,49nm,0.9s,mb4.8						
RES	**Resolute Bay**	**57.66**	**14**	*eP*	**P**	**14 52 31.5**	**-0.7**
	comp=Z,58nm,0.9s,mb4.9						
RES				*e*PcP	PcP	14 53 20.6	-1.0
RES				*e*PP	PP	14 54 38.7	-6.7
RES				*e*ScP		14 56 48.9	
POO	**Poona**	**57.68**	**266**	*eP*	**P**	**14 52 30.7**	**-2.4**
POO				AMb	AMB	14 52 33.5	
	comp=Z,334nm,0.8s,mb5.7						
BHUJ	**Bhuj**	**57.83**	**273**	*eP*	**P**	**14 52 32.8**	**-1.3**
BHUJ				AMb	AMB	14 52 36.0	
	comp=Z,214nm,0.5s,mb5.7						
KTK1	**Kautokeino**	**57.91**	**337**	⇓*iP*	**P**	**14 52 34.2**	**+0.1**
KTK1				AMb	AMB	14 52 35.5	
	comp=Z,116nm,1.3s,mb5.0						
KTK1	**Kautokeino**	**57.91**	**337**	⇓*iP*	**P**	**14 52 34.2**	**+0.1**
	comp=Z,116nm,1.3s,mb5.0						
KIP	**Kipapa**	**57.99**	**90**	P	**P**	**14 52 35.3**	**+0.1**
KIP				pmax	pmax		
	comp=Z,180nm,1.1s,mb5.3						
KIP	**Kipapa**	**57.99**	**90**	*eP*	**P**	**14 52 34.7**	**-0.5**
	comp=Z,141nm,0.8s,mb5.3						
KAD	**Karad**	**58.22**	**264**	⇓*iP*	**P**	**14 52 34.6**	**-2.3**
TRO	**Tromso**	**58.71**	**339**	⇓*iP*	**P**	**14 52 38.2**	**-1.4**
JOF	**Joensuu**	**58.81**	**329**	*ep*	**P**	**14 52 38.3**	**-2.1**
	comp=Z,86nm,0.7s,mb5.3						
JOF	**Joensuu**	**58.81**	**329**	*eP*	**P**	**14 52 38.3**	**-2.1**
JOF			

YKA PP PP 14 55 08.8 -1.8
comp=E,1.2nm,0.5s,baz=303,slow=7.1,SNR=2.9
YKA ScP 14 57 02.4
comp=E,2.9nm,0.9s,baz=312,slow=4.6,SNR=5.4
YKA PKPPKP 15 22 06.5
comp=E,0.8nm,0.9s,baz=136,slow=2.8,SNR=6.4
YKA P4KPbc 15 29 51.9
comp=E,0.6nm,0.8s,baz=309,slow=4.4,SNR=12
YKA Yellowknife Ar 60.47 30 P P 14 52 50.8 -0.7
YKA 14 53 32.5
YKA 14 55 08.8
YKA pmax pmax
comp=Z,17nm,0.6s
YKA pmax pmax
comp=Z,8.0nm,0.7s
YKA pmax pmax
comp=Z,1.0nm,0.5s
YKA pmax pmax
comp=N,3.0nm,0.9s
YKA pmax pmax
comp=Z,1.0nm,0.9s
YKA pmax pmax
comp=Z,1.0nm,0.8s
YKA Yellowknife Ar 60.47 30 P P 14 52 50.9 -0.7
YKA PcP PcP 14 53 32.5 -0.4
YKA PP PP 14 55 08.8 -1.8
YKA ScP 14 57 02.4
YKA P'P' 15 22 06.5
POHA Pohakuloa 60.84 90 *eP* **P 14 52 54.4 -0.2**
comp=Z,285nm,0.9s,mb5.7
POHA *e* 14 53 15.7
OBN Obninsk 60.98 320κ *iP* **P 14 52 54.1 -0.9**
OBN *e* 14 53 36.7
OBN *e* 14 55 09.6
OBN *i* S **S 15 00 46.8 -0.2**
OBN *i* *SS 15 02 09.4
OBN *e*SS SS 15 04 54.1 0.0
OBN pmax pmax
comp=Z,159nm,0.8s,mb5.5
OBN MLR MLR
comp=Z,100nm,15.0s
OBN Obninsk 60.98 320⇓ *iP* **P 14 52 54.1 -1.0**
comp=Z,176nm,0.8s,mb5.5
KAF Kangasniemi 61.16 330 *ep* **P 14 52 53.6 -2.5**
comp=Z,95nm,0.7s,mb5.3,baz=50,slow=6.3
KAF Kangasniemi 61.16 330 *eP* **P 14 52 53.6 -2.5**
KAF pmax pmax
comp=Z,95nm,0.7s,mb5.3
LOF Lofoten 61.17 339 *eP* **P 14 52 56.8 +0.7**
LOF AMb AMB 14 53 04.1
comp=Z,121nm,2.1s,mb5.0
LOF Lofoten 61.17 339 *eP* **P 14 52 56.8 +0.7**
comp=Z,121nm,2.1s,mb5.0
VOR Voronezh 61.60 315 *eP* **P 14 52 58.0 -1.1**
VOR *e* 14 55 17.0
VOR S **S 15 00 52.0 -2.7**
VOR pmax pmax
comp=Z,220nm,1.6s,mb5.4
VOR pmax pmax
comp=E,130nm,1.3s
VOR smax
comp=E,180nm,2.0s
VOR smax
comp=Z,150nm,2.5s
FINES FINESS Array B 61.66 329 P P **14 52 58.5 -0.9**
comp=Z,144nm,0.7s,mb5.6,baz=46,slow=9.1,SNR=431
FINES PcP PcP 14 53 36.5 -1.3
comp=Z,12nm,0.6s,baz=68,slow=5.2,SNR=6.1
FINES pP pP 14 54 07.3 -2.6
comp=Z,9.9nm,0.7s,baz=53,slow=9.5,SNR=3.1
FINES S **S 15 00 54.5 -1.0**
comp=Z,22nm,1.1s,baz=45,slow=8.1,SNR=15
FINES FINESS Array B 61.66 329 P P **14 52 58.6 -0.8**
FINES 14 53 36.5
FINES *PP pP 14 54 07.4 -2.5
FINES S **S 15 00 54.5 -0.9**
FINES pmax pmax
comp=Z,144nm,0.7s
FINES pmax pmax
comp=Z,12nm,0.6s
FINES pmax pmax
comp=N,10.0nm,0.7s
FINES smax
comp=N,22nm,1.1s
FINES FINESS Array B 61.66 329 P P **14 52 58.5 -0.9**
FINES PcP PcP 14 53 36.5 -1.3
FINES pP pP 14 54 07.3 -2.6
FINES S **S 15 00 54.5 -1.0**
FITZ Fitzroy Crossi 61.72 192⇑ *iP* **P 14 52 59.6 -0.8**
comp=N,34nm,0.8s,mb4.9
MOR8 Moi Rana 62.32 337 *eP* **P 14 53 01.1 -2.6**
MOR8 AMb AMB 14 53 02.7
comp=Z,186nm,0.9s,mb5.6
MOR8 Moi Rana 62.32 337 *eP* **P 14 53 01.1 -2.6**
comp=Z,186nm,0.9s,mb5.6
WRAB Tennant Creek 62.76 182⇑ *iP* **P 14 53 05.8 -1.4**
comp=Z,98nm,0.7s,mb5.5
WRAB *e*PcP PcP 14 53 42.3 -0.5
WRAB *e*ScP 14 57 11.1
WB2 Warramunga Arr 62.77 182⇑ *iP* **P 14 53 05.8 -1.4**
WB2 *e* 14 53 42.3
WRA Warramunga Arr 62.77 182 P P **14 53 05.9 -1.4**
comp=Z,36nm,0.6s,mb5.1,baz=360,slow=7.2,SNR=228
WRA PcP PcP 14 53 42.1 -0.8
comp=Z,34nm,0.5s,baz=359,slow=4.8,SNR=20
WRA pP pP 14 54 15.9 -2.1
comp=Z,7.9nm,0.8s,baz=0.9,slow=7.3,SNR=1.6
WRA S **S 15 01 10.2 +0.5**
comp=Z,2.4nm,1.0s,baz=0.2,slow=13,SNR=6.2
WRA PKP2bc 15 22 09.7
comp=Z,1.2nm,0.7s,baz=191,slow=2.2,SNR=5.1
WRA Warramunga Arr 62.77 182 P P **14 53 05.9 -1.3**
WRA 14 53 42.1
WRA *PP pP 14 54 15.9 -2.1
WRA S **S 15 01 10.2 +0.5**
WRA pmax pmax
comp=Z,37nm,0.6s
WRA pmax pmax
comp=Z,34nm,0.5s
WRA pmax pmax
comp=N,8.0nm,0.8s
WRA smax
comp=N,2.0nm,1.0s
WRA pmax pmax
comp=Z,1.0nm,0.7s
WRA Warramunga Arr 62.77 182 P P **14 53 05.9 -1.4**
WRA PcP PcP 14 53 42.1 -0.8
WRA pP pP 14 54 15.9 -2.1
WRA S **S 15 01 10.2 +0.5**
WRA ⇑*e* 15 22 09.7
GOF Gofitskoye 63.30 308⇑ *iP* **P 14 53 10.5 +0.2**
GOF *i* S **S 15 01 17.0 +1.1**
GOF pmax pmax
comp=Z,280nm,1.5s,mb5.6
GOF smax
comp=N,120nm,1.3s
GOF smax
comp=E,200nm,1.3s
THR Tehran 63.52 295 P P **14 53 12.2 +0.4**
comp=E,17nm,0.8s,mb4.7,baz=32,slow=2.9,SNR=47
THR Tehran 63.52 295 P P **14 53 12.2 +0.4**
THR pmax pmax
comp=Z,17nm,0.8s
CTA Charters Tower 63.53 170 *eP* **P 14 53 09.7 -2.4**
comp=Z,50nm,1.1s,mb5.0
CTA *e* pP 14 54 25.3 +2.1
CTAO Charters Tower 63.53 170 P P **14 53 09.9 -2.2**
CTAO pmax pmax
comp=Z,130nm,1.2s,mb5.4
CTAO Charters Tower 63.53 170⇑ *eP* **P 14 53 10.8 -1.3**
comp=Z,130nm,1.2s,mb5.4
CTAO *e*pP pP 14 54 25.0 +1.8
ZEI Tsey 64.11 305⇑ *iP* **P 14 53 14.0 -1.5**
ZEI *e**PP pP 14 54 21.0 -5.7
ZEI *i* S **S 15 01 25.0 -0.9**
ZEI pmax pmax
comp=Z,100nm,1.0s,mb5.4
KIV Kislovodsk 64.14 307*c* *iP* **P 14 53 15.8 +0.1**
KIV *e**PP pP 14 54 25.5 -1.4
KIV *e* 14 55 40.2
KIV *i* S **S 15 01 26.0 -0.2**
KIV *e*SS SS 15 05 44.3 +0.8
KIV pmax pmax
comp=E,160nm,1.0s
KIV pmax pmax
comp=Z,420nm,1.0s,mb6.0
KIV smax
comp=N,170nm,1.5s
KIV MLR MLR
comp=N,70nm,17.0s
KIV MLR MLR
comp=Z,100nm,17.0s
KIV MLR MLR
comp=E,40nm,19.0s
KIV Kislovodsk 64.14 307⇓ *iP* **P 14 53 15.8 +0.1**
comp=E,510nm,1.0s,mb6.1
KIV *ep*P pP 14 54 25.4 -1.5
SUMG Summit 64.56 358⇓ *iP* **P 14 53 18.5 +0.7**
PGC Sidney 64.87 46⇑ *iP* **P 14 53 20.4 +0.1**
comp=E,151nm,0.7s,mb5.7
PGC *e*PcP PcP 14 53 50.9 -0.1
SNB Saturna Island 64.94 46 P **P 14 53 21.3 +0.6**
OCWA Octopus Mounta 65.02 47⇑ *iP* **P 14 53 22.0 +0.7**
comp=E,74nm,0.8s,mb5.4
OCWA *e*PcP PcP 14 53 52.4 +0.7
IZAR Zarasai 65.26 324 *eP* **P 14 53 22.4 -0.2**
IZAR AMPb AMB 14 53 23.4
comp=Z,32nm,0.8s,mb5.0
IDID Didziasalis 65.33 324⇓ *iP* **P 14 53 22.8 -0.3**
IDID AMPb AMB 14 53 24.1
comp=Z,37nm,0.9s,mb5.0
VDB Vedder Mountai 65.34 45 P **P 14 53 22.8 -0.4**
MNK Minsk 65.38 323⇓ *eP* **P 14 53 22.0 -1.4**
MNK pmax pmax
comp=Z,710nm,1.0s,mb6.2
ISAL Salakas 65.42 324 *eP* **P 14 53 23.5 -0.1**
ISAL AMPb AMB 14 53 25.3
comp=Z,70nm,1.0s,mb5.2
TRON Trondheim 65.49 336 *eP* **P 14 53 24.4 +0.4**
IIGN Ignalina 65.53 324⇓ *iP* **P 14 53 24.1 -0.2**
IIGN AMPb AMB 14 53 25.3
comp=Z,54nm,0.6s,mb5.5
SCO Scoresbysund 65.64 352 *i* P **P 14 53 24.9 +0.1**
comp=Z,8.7nm,0.8s,mb4.5
SCO Scoresbysund 65.64 352 *i* P **P 14 53 24.9 +0.1**
SCO pmax pmax
comp=Z,9.0nm,0.8s,mb4.5
GNW Green Mountain 65.86 47 P **P 14 53 27.1 +0.5**
RPW Rockport 66.01 45 *eP* **P 14 53 27.4 0.0**
SOC Sochi 66.09 308 *eP* **P 14 53 27.6 -0.5**
SOC *e**PP pP 14 54 37.2 -2.6
SOC *e*PPP PPP 14 57 41.3 +3.5
SOC *e*S S 15 01 49.3 -0.5
SOC pmax pmax
comp=Z,204nm,1.5s,mb5.6
SOC pmax pmax
comp=N,57nm,1.2s
SOC pmax pmax
comp=E,76nm,0.9s
SOC pmax pmax
comp=Z,341nm,1.7s,mb5.8
SOC pmax pmax
comp=N,224nm,2.2s
SOC pmax pmax
comp=E,154nm,1.1s
SOC smax
comp=N,304nm,3.1s
SOC smax
comp=E,644nm,3.0s
BMW Boistfort Moun 66.32 48 P **P 14 53 30.4 +1.0**
BMW Boistfort Moun 66.32 48 *eP* **P 14 53 30.2 +0.7**
PNT Penticton 66.44 44 P **P 14 53 30.1 0.0**
RMW Rattlesnake Mo 66.47 46 P **P 14 53 31.3 +0.9**
RMW Rattlesnake Mo 66.47 46 P **P 14 53 31.2 +0.8**
AS12 Alice Springs 66.49 183⇑ *iP* **P 14 53 30.4 -0.5**
comp=E,64nm,0.8s,mb5.4
ASAR Alice Springs 66.49 183 P **P 14 53 30.4 -0.5**
comp=E,79nm,0.8s,mb5.5,baz=354,slow=5.6,SNR=958
ASAR PcP PcP 14 53 57.9 -0.3
comp=E,30nm,1.0s,baz=12,slow=5.3,SNR=5.7
ASAR PKiKP 14 59 55.4
comp=E,0.9nm,0.8s,baz=9.5,slow=1.7,SNR=4.5
ASAR PKP2bc 15 21 57.0
comp=E,1.7nm,0.9s,baz=168,slow=3.2,SNR=9.6
WRW Wenatchee Ridg 66.71 46 P **P 14 53 32.2 +0.4**
NLW Nelson Butte 66.85 45 P **P 14 53 33.2 +0.4**
FMW Mount Fremont 66.87 47 P **P 14 53 33.6 +0.7**
LON Longmire 66.91 47 P **P 14 53 33.4 +0.2**
LON Longmire 66.91 47⇑ *iP* **P 14 53 33.3 +0.1**
SLFW Sugar Loaf 66.95 46 P **P 14 53 33.9 +0.4**
DOMB Dombas 66.98 336⇓ *iP* **P 14 53 32.8 -0.5**
DOMB AMb AMB 14 53 34.0
comp=Z,91nm,0.8s,mb5.6
DOMB Dombas 66.98 336⇓ *iP* **P 14 53 32.8 -0.5**
comp=Z,91nm,0.8s,mb5.6
MOL Molde 67.01 337 *eP* **P 14 53 35.6 +2.1**
MOL AMb AMB 14 53 41.2
comp=Z,97nm,1.5s,mb5.3
MOL Molde 67.01 337 *eP* **P 14 53 35.6 +2.1**
comp=Z,97nm,1.5s,mb5.3
SHW Mount Saint He 67.03 48 P **P 14 53 35.1 +1.2**
SHW Mount Saint He 67.03 48 *eP* **P 14 53 34.7 +0.8**
NB2 NORSAR Subarra 67.10 334 P **P 14 53 33.2 -0.9**
comp=Z,80nm,0.8s,mb5.5,baz=40,slow=6.2
NB2 NORSAR Subarra 67.10 334 P **P 14 53 33.2 -0.9**
baz=40,slow=6.5
NOA NORSAR Array B 67.10 334 P **P 14 53 33.5 -0.6**
comp=Z,156nm,1.1s,mb5.7,baz=39,slow=6.2,SNR=223
NOA pP pP 14 54 43.6 -2.4
comp=Z,4.4nm,0.8s,baz=44,slow=5.8,SNR=1.5
NOA NORSAR Array B 67.10 334 P **P 14 53 33.5 -0.6**
NOA *PP pP 14 54 43.6 -2.4
NOA pmax pmax
comp=Z,156nm,1.1s
NOA pmax pmax
comp=N,4.0nm,0.8s
AKASG Malin Array Be 67.20 319 P **P 14 53 34.2 -0.7**
KIEV Kiev 67.21 319 P **P 14 53 34.3 -0.7**
KIEV S S 15 02 02.3 -0.8
TBM Table Mountain 67.29 46 P **P 14 53 35.9 +0.4**
MPOR Mary's Peak 67.36 50 P **P 14 53 37.2 +1.2**
EZM Erzurum 67.44 304 *eP* **P 14 53 36.9 +0.3**
NAC Naches 67.45 47 P **P 14 53 37.1 +0.6**
COR Corvallis 67.45 50 P **P 14 53 37.9 +1.3**
COR pmax pmax
comp=Z,170nm,0.9s,mb5.8
COR Corvallis 67.45 50⇑ *iP* **P 14 53 37.7 +1.2**
comp=Z,211nm,0.9s,mb5.9
EBG Ellensburg 67.47 46 P **P 14 53 37.3 +0.6**
SUW Suwalki 67.74 324⇓ *iP* **P 14 53 37.3 -0.8**
comp=Z,300nm,1.9s,mb5.7
SUW *e*S S 15 02 07.4 -1.8
SUW *e*SKS SKS 15 03 02.6 +1.6
SSOR Sweet Springs 67.75 49 P **P 14 53 39.0 +0.6**
SSOR Sweet Springs 67.75 49 *eP* **P 14 53 38.9 +0.6**
TDH Tom, Dick, Har 67.84 48 P **P 14 53 39.6 +0.7**
KEBM Edson Butte 67.94 52 *eP* **P 14 53 40.5 +0.9**
KEBM *e*PcP PcP 14 54 01.8 -2.2
GL2 New Goldendale 67.94 47 P **P 14 53 40.4 +0.9**
DPW Davenport 68.09 44 P **P 14 53 40.7 +0.3**
DPW Davenport 68.09 44 *eP* **P 14 53 40.6 +0.2**
DPW *e*PcP PcP 14 54 02.7 -1.8
OD2 Odessa Site #2 68.14 45 P **P 14 53 40.7 0.0**
GUMT Gumushane 68.15 305 *iP* **P 14 53 41.3 +0.4**
HSO Harness Mounta 68.23 50 P **P 14 53 42.6 +1.2**
HSO Harness Mounta 68.23 50 *eP* **P 14 53 42.5 +1.1**
SNIWA Snively Ranch 68.24 46 P **P 14 53 42.0 +0.6**
VGB Gordon Butte 68.25 48 P **P 14 53 42.1 +0.7**
VGB Gordon Butte 68.25 48 *eP* **P 14 53 42.0 +0.6**
HAWA Hanford 68.35 46⇑ *iP* **P 14 53 41.7 -0.3**
comp=Z,134nm,1.0s,mb5.6
NEW Newport 68.38 44 P **P 14 53 42.4 +0.2**
comp=Z,38nm,0.8s,mb5.2,baz=318,slow=4.4,SNR=47
NEW PcP PcP 14 54 05.0 -0.8
comp=Z,18nm,0.8s,baz=269,slow=3.5,SNR=6.2
NEW Newport 68.38 44 P **P 14 53 42.4 +0.2**
NEW 14 54 05.0
NEW pmax pmax
comp=Z,38nm,0.9s
NEW pmax pmax
comp=Z,18nm,0.8s
NEW Newport 68.38 44⇑ *iP* **P 14 53 42.0 -0.2**
comp=Z,56nm,1.0s,mb5.2
NEW *e*PcP PcP 14 54 04.1 -1.7
DBO Dodson Butte 68.41 51 P **P 14 53 43.5 +1.1**
KBO Bosley Butte 68.41 52⇑ *iP* **P 14 53 43.5 +1.0**
KONO Kongsberg 68.68 334⇓ *eP* **P 14 53 43.1 -0.7**
KONO Kongsberg 68.68 334 *eP* **P 14 53 43.2 -0.6**
comp=Z,49nm,0.8s,mb5.3
YPT Yellepit 68.88 46 P **P 14 53 45.8 +0.6**
HUMO Hull Mountain 68.89 51⇑ *iP* **P 14 53 46.0 +0.6**
VIPM Ingram Point 68.98 48 P **P 14 53 46.6 +0.7**
DIY Diyarbakir 69.30 303 P **P 14 53 48.7 +0.7**
LNOR Lincton Mounta 69.35 46 P **P 14 53 48.9 +0.8**
LNOR Lincton Mounta 69.35 46 *eP* **P 14 53 48.6 +0.4**
WALA Waterton Lakes 69.44 41⇑ *iP* **P 14 53 48.9 +0.3**
comp=Z,124nm,1.1s,mb5.5
BUOR Burton Butte 69.51 51 P **P 14 53 50.1 +0.9**
KHMM Horse Mountain 69.55 53 *eP* **P 14 53 50.4 +1.0**
YBH Yreka Blue Hor 69.59 52 P **P 14 53 50.7 +1.0**
comp=Z,41nm,0.7s,mb5.3,baz=18,slow=3.3,SNR=128
YBH Yreka Blue Hor 69.59 52 P **P 14 53 50.7 +1.0**
YBH pmax pmax
comp=Z,41nm,0.7s
YBH Yreka Blue Hor 69.59 52⇑ *iP* **P 14 53 50.3 +0.6**
comp=Z,52nm,0.8s,mb5.3
YBH *e*PP PP 14 56 33.4 +3.5
BSMT Bassoo Peak 69.83 43 P **P 14 53 51.9 +0.9**
KIS Kishinev 69.85 316κ *iP* **P 14 53 50.5 -0.7**
KIS *i* *PP pP 14 55 02.0 -1.6
KIS *i* 14 56 30.0
KIS *e*S S 15 02 33.0 -1.0
KIS *e* 15 02 54.0
KIS *e*SS SS 15 07 12.0 +0.7
KIS pmax pmax
comp=Z,400nm,1.0s,mb6.1
KIS pmax pmax
comp=Z,300nm,1.0s,mb6.0
KIS pmax pmax
comp=Z,400nm,1.5s,mb5.9
KIS pmax pmax
comp=Z,400nm,1.6s,mb5.9
KIS MLR MLR
comp=Z,300nm,15.0s
KIS MLR MLR
comp=Z,300nm,16.0s
KIS Kishinev 69.85 316 *i* Pdr 14 53 50.5
KIS *i* pP pP 14 55 02.0 -1.6
KIS *i* 14 56 30.0
KIS *e*S S 15 02 33.0 -1.0
KIS *e* 15 02 54.0
KIS *e*SS SS 15 07 12.0 +0.7
WAR Warsaw 69.91 324 *eP* **P 14 53 49.3 -2.1**
WAR *e*S S 15 02 37.1 +2.5
WAR *e*SKS SKS 15 03 17.7 +0.6
SVSK Karacayir 69.97 306 P **P 14 53 52.6 +0.6**
TOKT Tokat 69.98 307 *eP* **P 14 53 52.5 +0.4**
SFJ Sondre 70.09 3 P **P 14 53 52.1 -0.2**
MYA Malataya 70.13 304 *iP* **P 14 53 53.9 +0.9**
FCC Fort Churchill 70.20 25 P **P 14 53 52.9 -0.2**
FCC pmax pmax
comp=Z,120nm,1.0s,mb5.6
FCC Fort Churchill 70.20 25⇑ *iP* **P 14 53 52.2 -0.9**
comp=Z,109nm,1.0s,mb5.5
BYBT Boyabat 70.27 309 *i* P **P 14 53 54.5 +0.7**
BSD Bornholm Skovb 70.29 329⇓ *iP* **P 14 53 53.0 -0.7**
comp=Z,108nm,0.9s,mb5.6
BSD Bornholm Skovb 70.29 329⇓ *iP* **P 14 53 53.0 -0.7**
BSD pmax pmax
comp=Z,110nm,0.9s,mb5.6
BZK Bozkurt 70.38 309 P **P 14 53 54.9 +0.4**
WDC Whiskeytown Da 70.43 53 P **P 14 53 55.3 +0.5**
WDC pmax pmax
comp=Z,93nm,1.2s,mb5.4
WDC Whiskeytown Da 70.43 53⇑ *iP* **P 14 53 55.1 +0.3**
comp=Z,61nm,1.0s,mb5.3
NOUC Port Laguerre 70.47 151 *eP* **P 14 53 56.1 +0.7**
DZM Mont Dzumac 70.49 151 *eP* **P 14 53 56.0 +0.6**
DZM Mont Dzumac 70.49 151 *eP* **P 14 53 56.0 +0.6**
FFC Flin Flon 70.58 32⇑ *iP* **P 14 53 55.0 -0.5**
comp=Z,120nm,1.0s,mb5.6
FFC *e*PcP PcP 14 54 14.4 -0.5
FFC *ep*P pP 14 55 08.3 +0.3
COP Copenhagen 70.78 330⇓ *iP* **P 14 53 56.6 0.0**
comp=Z,67nm,0.8s,mb5.4
COP Copenhagen 70.78 330⇓ *iP* **P 14 53 56.6 0.0**
COP pmax pmax
comp=Z,67nm,0.8s,mb5.4
MSO Missoula 70.94 43⇑ *iP* **P 14 53 57.6 -0.1**
comp=Z,73nm,1.0s,mb5.4
TOS Tosya 70.97 309 P **P 14 53 58.8 +0.7**
HASS Wahat al Ahsa' 71.00 287 P **P 14 53 57.4 -1.0**
KWP Kalwaria 71.00 321⇓ *iP* **P 14 53 58.6 +0.5**
comp=Z,500nm,1.6s,mb6.0
KWP *e*PP PP 14 56 38.8 -3.1
KWP *e*S S 15 02 48.2 +1.0
KWP *e*SKS SKS 15 03 28.6 +3.3
KWP Kalwaria 71.00 321⇓ *iP* **P 14 53 58.6 +0.5**
KWP *e* 14 56 38.8
KWP *e*S S 15 02 48.2 +1.0
KWP *e* 15 03 28.6
KWP pmax pmax
comp=Z,1.0nm,1.6s
YOZ Yozgat 71.13 307 *eP* **P 14 53 58.8 -0.2**
HOPS Hopland 71.14 54 *eP* **P 14 53 59.1 0.0**
comp=Z,73nm,0.9s,mb5.4
CHMT Chamberlain Mo 71.23 43 *eP* **P 14 53 59.3 -0.2**
MUD Monsted U'grnd 71.33 332⇓ *iP* **P 14 53 59.9 0.0**
comp=Z,49nm,1.0s,mb5.2
MUD Monsted U'grnd 71.33 332⇓ *iP* **P 14 53 59.9 0.0**
MUD pmax pmax
comp=Z,49nm,1.0s,mb5.2
BNN Bunyan 71.33 306 *iP* **P 14 54 00.8 +0.6**
CFR Carcaliu 71.43 315⇓ *iP* **P 14 54 00.3 -0.4**
CFR Carcaliu 71.43 315⇓ *iP* **P 14 54 00.3 -0.4**
WVOR Wild Horse Val 71.43 49 P **P 14 54 01.2 +0.5**
WVOR pmax pmax
comp=Z,68nm,1.0s,mb5.3
WVOR Wild Horse Val 71.43 49⇑ *iP* **P 14 54 01.2 +0.5**
comp=Z,44nm,0.8s,mb5.2
FRB Frobisher Bay 71.65 11 P **P 14 54 01.3 -0.4**
comp=Z,83nm,0.6s,mb5.6,baz=346,slow=6.4,SNR=96
FRB PP PP 14 56 45.0 -1.8
comp=Z,4.7nm,0.5s,baz=291,slow=4.1,SNR=4.9
FRB Frobisher Bay 71.65 11 P **P 14 54 01.3 -0.4**
FRB 14 56 45.0
FRB pmax pmax
comp=Z,83nm,0.6s
FRB pmax pmax
comp=Z,5.0nm,0.5s
FRB Frobisher Bay 71.65 11 P **P 14 54 01.3 -0.4**
FRB PP PP 14 56 45.0 -1.8
VRI Vrincioaia 71.68 316⇓ *iP* **P 14 54 02.5 +0.3**
VRI Vrincioaia 71.68 316⇓ *iP* **P 14 54 02.4 +0.2**
NSHM Saint Helena R 71.73 54 *eP* **P 14 54 02.6 +0.1**
OHCM Honcut 71.86 53 *eP* **P 14 54 02.9 -0.4**
HARR Harsova 71.87 315⇓ *iP* **P 14 54 03.2 -0.1**
HARR Harsova 71.87 315⇓ *iP* **P 14 54 03.2 -0.1**
OJC Ojcow 71.90 323 *eP* **P 14 54 03.7 +0.3**
BRTR Keskin Array B 72.06 308 P **P 14 54 04.5 0.0**
comp=Z,18nm,0.7s,mb4.9,baz=63,slow=4.1,SNR=96
BRTR pP pP 14 55 15.9 -1.4
comp=Z,4.1nm,0.9s,baz=108,slow=3.9,SNR=1.8
BRTR PP PP 14 56 44.0 -6.5
comp=Z,8.4nm,0.9s,baz=68,slow=6.7,SNR=6.2
BRTR Keskin Array B 72.06 308 P **P 14 54 04.5 0.0**
BRTR pP pP 14 55 15.8 -1.4
BRTR PP PP 14 56 44.0 -6.5
HRY Holter Researc 72.07 42 *eP* **P 14 54 05.2 +0.7**
CRVS Cervenica-Dubn 72.10 321 *iP* **P 14 54 04.7 +0.1**
BEKR Beckwourth 72.16 52⇑ *iP* **P 14 54 05.4 +0.3**
comp=Z,124nm,0.9s,mb5.6
BEKR *ep*P pP 14 55 19.3 +1.4
NIE Niedzica 72.25 322⇓ *eP* **P 14 54 05.8 +0.4**
KAMT Kaman 72.25 307 *iP* **P 14 54 05.5 -0.1**
ISR Istrita 72.29 316⇑ *iP* **P 14 54 06.8 +1.0**
ISR Istrita 72.29 316⇓ *iP* **P 14 54 06.8 +1.0**
PSN Preselentsi 72.42 314 *eP* **P 14 54 07.0 +0.4**
ANTO Ankara 72.45 308 *iP* **P 14 54 06.0 -0.8**
NIG Nigde 72.55 306 *iP* **P 14 54 08.2 +0.8**
CEYT Ceyhan 72.60 304 P **P 14 54 08.4 +0.7**
RAC Raciborz 72.70 324 *eP* **P 14 54 08.7 +0.7**
RAC *ep*P PP 14 56 53.7 -2.2
RAC *e*S S 15 03 06.1 -0.1
RAC *e*SKS(ac) 15 03 40.7
RUE Ruedersdorf 72.73 327⇓ *iP* **P 14 54 08.1 -0.1**
PAHR Pah Rah Range 72.83 52⇑ *iP* **P 14 54 09.4 +0.4**
comp=Z,95nm,0.7s,mb5.6
MCMT McKenzie Canyo 72.88 44 *eP* **P 14 54 09.0 -0.2**
WCN Washoe City 72.88 52 P **P 14 54 10.2 +0.8**
WCN pmax pmax
comp=Z,71nm,1.0s,mb5.3

WCN Washoe City 72.88 52⇑*iP* P 14 54 09.9 +0.6
comp=Z,145nm,1.1s,mb5.6
OKC Ostrava-Krasne 72.90 323⇓*iP* P 14 54 09.6 +0.4
OKC *eP*P pP 14 55 21.0 -1.1
OKC *eP*P PP 14 56 57.5 -0.2
OKC *eS* S 15 03 09.5 +1.0
OKC *ex* x 15 28 35.5
BSEG Bad Segeberg 72.92 330 *eP* **P 14 54 09.5 +0.3**
BSEG pmax pmax
comp=Z,70nm,0.9s,mb5.4
BOZ Bozeman (W) 72.92 43⇑*iP* P 14 54 10.0 +0.5
comp=Z,124nm,0.9s,mb5.6
HLID Hailey 72.94 46⇑*iP* P 14 54 10.3 +0.7
comp=Z,34nm,0.9s,mb5.1
KSP Ksiaz 72.95 325⇓*iP* P 14 54 09.8 +0.3
comp=Z,400nm,2.0s,mb5.8
KSP *eP*cP PcP 14 54 22.6 -2.4
KSP *eP*P PP 14 56 52.4 -5.7
KSP *eS* S 15 03 10.5 +1.6
KSP *eS*KS SKS 15 03 43.1 +3.6
KSP Ksiaz 72.95 325⇓*iP* P 14 54 09.8 +0.3
KSP *e**PP pP 14 55 19.2 -3.1
KSP *e* 14 56 53.4 -
KSP *eS* S 15 03 06.5 -2.4
KSP Ksiaz 72.95 325⇓*iP* P 14 54 09.8 +0.3
KSP *e* 14 54 14.9
KSP *eP*P pP 14 55 19.2 -3.1
KSP *eP*P PP 14 56 53.4 -4.7
KSP *eS* S 15 03 06.5 -2.4
MDU Mudurnu 72.95 310 *iP* **P 14 54 09.7 0.0**
LIKS Likavka 73.06 322 *iP* **P 14 54 11.0 +0.8**
BUC1 Bucharest 73.09 315⇓*iP* P 14 54 10.5 0.0
BUC1 Bucharest 73.09 315⇓*iP* P 14 54 10.5 0.0
PRD Provadia 73.17 314 *eP* **P 14 54 20.0 +9.1**
MORC Moravsky Berou 73.21 324⇓*iP* P 14 54 11.3 +0.3
comp=Z,95nm,0.7s,mb5.6
MORC *eP*P PP 14 56 59.5 -0.8
DPC Dobruska-Polom 73.30 325⇓*iP* P 14 54 12.3 +0.7
DPC *eP*P pP 14 55 23.9 -0.6
DPC *eP*P PP 14 57 00.9 -0.1
DPC *eS* S 15 03 14.9 +2.0
UPC Upice 73.32 325⇓*iP* P 14 54 12.1 +0.5
UPC *eP*P pP 14 55 22.8 -1.8
UPC *eP*P PP 14 57 04.0 +2.9
CMB Columbia Colle 73.36 53 P P 14 54 12.5 +0.3
CMB Columbia Colle 73.36 53 P P 14 54 12.4 +0.2
CMB pmax pmax
comp=Z,130nm,1.1s,mb5.6
CMB Columbia Colle 73.36 53⇑*iP* P 14 54 12.1 -0.1
comp=Z,57nm,0.7s,mb5.4
PSZ Piszkesteto 73.53 321⇓*i* P 14 54 13.4 +0.5
BMN Battle Mountai 73.56 50 P P 14 54 14.1 +0.8
BMN pmax pmax
comp=Z,120nm,1.0s,mb5.6
BMN Battle Mountai 73.56 50⇑*iP* P 14 54 13.8 +0.5
comp=Z,58nm,0.7s,mb5.4
HRT Hereke 73.57 311 *eP* **P 14 54 08.7 -4.7**
SAO San Andreas Ge 73.58 55 P P 14 54 13.4 -0.1
SAO San Andreas Ge 73.58 55 *eP* **P 14 54 13.2 -0.3**
comp=Z,34nm,1.0s,mb5.0
VYHS Vyhne 73.59 322 *iP* **P 14 54 13.8 +0.5**
VYHS *eP*P PP 14 56 58.6 -4.7
QLMT Earthquake Lak 73.59 43 *eP* **P 14 54 13.9 +0.6**
KIZT Kizilcal 73.64 308 *iP* **P 14 54 13.5 -0.3**
SZH Strazhica 73.89 315 *eP* **P 14 54 15.0 -0.2**
BRG Berggiesshubel 73.90 326 *iP* **P 14 54 15.1 +0.1**
BRG *e* 14 56 59.7
BRG *e* 15 03 20.0
BRG *e* 15 03 54.0
BRG pmax pmax
comp=Z,43nm,0.8s,mb5.2
BRG MLR MLR
comp=N,150nm,16.2s
BRG MLR MLR
comp=E,120nm,16.2s
BRG MLR MLR
comp=Z,270nm,16.2s
BRG Berggiesshubel 73.90 326 *iP* **P 14 54 15.1 +0.1**
comp=Z,43nm,0.8s,mb5.2
BRG *eP*P PP 14 56 59.7 -6.0
BRG *e* 15 03 20.0
BRG *e* 15 03 54.0
BRG LR LR
comp=Z,270nm,16.2s
PVCC Panska Ves 73.90 326⇓*iP* P 14 54 15.6 +0.6
PVCC *eP*P PP 14 57 10.1 +4.4
PVCC *eS* S 15 03 08.1 -11
PVCC *ex* x 15 29 08.8
FORT Forrest 73.94 188⇑*iP* P 14 54 15.3 -0.4
comp=Z,294nm,0.6s,mb6.2
CLL Collm 73.94 327 ⇓P P 14 54 15.1 -0.1
comp=Z,logA/T=2.0,mb5.5
CLL *i* 14 54 21.8
CLL *eP*CP PcP 14 54 32.0 +2.8
CLL *e**PP pP 14 55 28.0 -0.2
CLL *eP*P PP 14 57 02.0 -4.0
CLL *e**PPP 14 57 59.0
CLL Collm 73.94 327⇓*iP* P 14 54 15.1 -0.1
CLL pmax pmax
comp=Z,75nm,0.7s,mb5.5
CLL Collm 73.94 327⇓*iP* P 14 54 15.1 -0.1
comp=Z,75nm,0.7s,mb5.5
CLL *i* 14 54 21.8
YMR Madison River 73.94 43⇑*iP* P 14 54 16.2 +0.8
LRV Little Rabbit 74.06 55 *eP* **P 14 54 14.7 -1.5**
SMOL Smolenice 74.20 323 *iP* **P 14 54 18.1 +1.3**
PVL Pavlikeni 74.24 315 *eP* **P 14 54 18.0 +0.8**
NVAR Mina Array Bea 74.31 52 P P 14 54 18.5 +0.8
comp=Z,134nm,0.7s,mb5.8,baz=311,slow=4.0,SNR=792
NVAR pP pP 14 55 30.1 -0.5
comp=Z,1.4nm,0.5s,baz=232,slow=32,SNR=0.7
PRU Pruhonice 74.33 325⇓*iP* P 14 54 17.9 +0.4
PRU *eP*P pP 14 55 29.6 -0.9
PRU *eP*P PP 14 57 09.9 +0.5
PRU *eS* S 15 03 25.8 +1.7
PRU *ex* x 15 29 22.7
PRU Pruhonice 74.33 325⇓*iP* P 14 54 17.9 +0.4
PRU *e**PP pP 14 55 29.6 -0.9
PRU *e* 14 57 09.9
PRU *eS* S 15 03 25.8 +1.7
PRU pmax pmax
comp=Z,52nm,0.8s,mb5.3
PRU Pruhonice 74.33 325⇓*iP* P 14 54 17.9 +0.4
comp=Z,52nm,0.8s,mb5.3
PRU *eP*P pP 14 55 29.6 -0.9
PRU *eP*P PP 14 57 09.9 +0.5
IKL Isikli 74.35 305 P P 14 54 17.6 -0.3
EDRB Edirne 74.46 313 P P 14 54 18.4 0.0
ZST Bratislava 74.58 323 *eP* **P 14 54 19.5 +0.5**
STKA Stephens Creek 74.77 175⇑*iP* P 14 54 20.8 +0.4
comp=Z,63nm,0.7s,mb5.5
STKA Stephens Creek 74.77 175 P P 14 54 20.9 +0.4
comp=Z,72nm,0.5s,mb5.6,baz=344,slow=6.5,SNR=223
BNT Bandirma 74.86 311 *iP* **P 14 54 20.7 0.0**
KSWY Kelly School 74.86 44 *eP* **P 14 54 21.7 +1.0**
WUWY Wally Ulrich 74.86 44⇑*iP* P 14 54 21.8 +1.1
MZLS Mizel 74.87 289 P P 14 54 20.7 -0.4
MTUM Tungsten Hills 74.89 53 *eP* **P 14 54 21.4 +0.4**
MTUM *eP*P PP 14 57 13.3 -1.4
NKC Novy Kostel 75.00 327⇓*iP* P 14 54 21.4 +0.1
NKC *eP*P pP 14 55 33.4 -1.0
NKC *eP*P PP 14 57 13.0 -2.4
NKC *eS* S 15 03 31.5 0.0
NKC *ex* x 15 30 08.2
MOX Moxa 75.01 327 *iP* **P 14 54 21.0 -0.4**
comp=Z,logA/T=1.5,mb5.0
MOX *eP* pP 14 55 34.0 -0.5
MOX *eP*P PP 14 57 02.0 -13
MOX *eS* S 15 03 32.0 +0.4
MOX Moxa 75.01 327 *eP* **P 14 54 21.0 -0.4**
MOX *e* pP 14 55 33.5 -1.0
MOX pmax pmax
comp=Z,52nm,1.6s,mb5.0
MOX Moxa 75.01 327 *eP* **P 14 54 21.0 -0.4**
comp=Z,52nm,1.6s,mb5.0
MOX *e* pP 14 55 33.5 -1.0
MOX *e* 14 57 02.4
HILS Ha'il 75.02 293 P P 14 54 21.8 -0.1
HVU Hansel Valley 75.05 46⇑*iP* P 14 54 22.4 +0.5
ASF Jabal al Asfar 75.07 300 P P 14 54 22.3 +0.2
comp=Z,31nm,0.8s,mb5.1,baz=272,slow=3.3,SNR=38
HRI Mount Hermon 75.08 302 P P 14 54 22.2 +0.1
HRI Mount Hermon 75.08 302 ⇓P P 14 54 22.2 +0.1
WIT Witteveen 75.13 331 *eP* **P 14 54 22.8 +0.8**
comp=Z,302nm,0.7s,mb6.2
KGT Karabiga 75.13 312 *eP* **P 14 54 22.7 +0.4**
TPH Tonopah 75.17 52 P P 14 54 23.2 +0.6
TPH pmax pmax
comp=Z,160nm,0.8s,mb5.8
TPH Tonopah 75.17 52⇑*iP* P 14 54 23.0 +0.4
comp=Z,128nm,0.7s,mb5.8
KSHT Keshet 75.22 301 P P 14 54 23.0 +0.1
AHID Auburn Hatcher 75.23 45⇑*iP* P 14 54 23.2 +0.4
comp=Z,60nm,0.8s,mb5.4
KDZ Kurdzhali 75.30 314 *eP* **P 14 54 23.5 +0.3**
PGB Panagyurishte 75.32 315 P P 14 54 23.0 -0.3
PLD Plovdiv 75.36 314 *eP* **P 14 54 23.0 -0.5**
BALB Balikesir 75.38 311 *eP* **P 14 54 23.2 -0.5**
KHC Kasperske Hory 75.39 325⇓*iP* P 14 54 24.0 +0.5
KHC *eP*P pP 14 55 36.1 -0.6
KHC *eP*P PP 14 57 18.9 +0.4
KHC *eS* S 15 03 38.0 +2.3
KHC *ex* x 15 30 03.1
CSS Prodhromos 75.42 304 *eP* **P 14 54 23.0 -1.0**
CSS *eP*P PP 14 57 16.3 -2.8
ALN Alexandroupoli 75.50 313 *eP* **P 14 54 24.1 -0.3**
BOLS Boljevac 75.52 317⇓*iP* P 14 54 23.8 -0.6
BGU Big Grassy Mou 75.52 47 *eP* **P 14 54 22.4 -2.1**
HNTI Hanita 75.55 302 P P 14 54 24.8 0.0
HNTI Hanita 75.55 302 ⇓P P 14 54 24.8 0.0
GEC2 GERESS Array S 75.56 325 *eP* **P 14 54 24.5 0.0**
GEC2 pmax pmax
comp=Z,27nm,0.8s,mb5.0
GEC2 GERESS Array S 75.56 325 *eP* **P 14 54 24.5 0.0**
comp=Z,27nm,0.8s,mb5.0
GERES GERESS Array B 75.56 325 P P 14 54 24.5 0.0
comp=Z,17nm,0.7s,mb4.9,baz=34,slow=4.8,SNR=154
GERES PP PP 14 57 19.0 -0.8
comp=Z,6.1nm,1.0s,baz=27,slow=9.0,SNR=6.4
GERES GERESS Array B 75.56 325 P P 14 54 24.5 0.0
GERES 14 57 19.0
GERES pmax pmax
comp=Z,17nm,0.7s
GERES pmax pmax
comp=Z,6.0nm,1.0s
RZN Rozhen 75.64 314 *iP* **P 14 54 25.2 +0.1**
RZN Rozhen 75.64 314⇓*iP* P 14 54 25.2 +0.1
WET Wettzell 75.67 326 *eP* **P 14 54 25.6 +0.5**
WET pmax pmax
comp=Z,38nm,0.9s,mb5.1
WET Wettzell 75.67 326 *eP* **P 14 54 25.6 +0.5**
comp=Z,38nm,0.9s,mb5.1
RHK1 Bakonya 75.72 321⇓*eP* P 14 54 25.2 -0.2
WTSB Winterswijk 75.77 331 *eP* **P 14 54 25.4 -0.2**
comp=Z,110nm,1.0s,mb5.6
WTSB *eP* 14 57 20.4
comp=Z,24nm,1.3s
VTS Vitosha 75.78 316 *iP* **P 14 54 26.2 +0.3**
VTS Vitosha 75.78 316⇓*iP* P 14 54 26.2 +0.3
PCOU Corrie 75.79 338⇓*eP* P 14 54 25.7 +0.1
PCOU AMB AMB 14 54 26.7
comp=Z,126nm,0.6s,mb5.8
HWUT Hardware Ranch 75.81 46⇑*iP* P 14 54 26.7 +0.6
comp=Z,113nm,0.8s,mb5.7
HWUT *eP*P pP 14 55 39.4 +0.1
HAF Haifa 75.85 302 P P 14 54 26.3 -0.2
HMDT Nahal Hemdat 75.89 301 P P 14 54 26.9 +0.2
HMDT Nahal Hemdat 75.89 301 ⇓P P 14 54 26.9 +0.2
GRA1 Grafenberg Arr 75.91 327 *iP* **P 14 54 27.1 +0.6**
comp=Z,109nm,0.9s,mb5.6
GRF Grafenberg Arr 75.91 327 *iP* **P 14 54 27.1 +0.6**
GRF pmax pmax
comp=Z,109nm,0.9s,mb5.6
AKS Akhisar 75.94 310 P P 14 54 26.3 -0.6
OFRI 'Ofer 75.98 302 P P 14 54 27.1 -0.1
OFRI 'Ofer 75.98 302 ⇓P P 14 54 27.1 -0.1
ARSA Arzberg 76.00 323⇓*iP* P 14 54 27.2 +0.2
comp=Z,33nm,1.1s,mb5.0
BW06 Boulder Array 76.02 44⇑*iP* P 14 54 27.4 +0.2
comp=Z,145nm,0.8s,mb5.8
BW06 *eP*P pP 14 55 42.0 +1.5
PDAR Pinedale Array 76.02 44 P P 14 54 27.4 +0.3
comp=Z,117nm,0.8s,mb5.7,baz=312,slow=1.8,SNR=678
PDAR pP pP 14 55 39.4 -1.0
comp=Z,9.7nm,0.9s,baz=294,slow=3.7,SNR=1.2
MOA Molln 76.08 324⇑*iP* P 14 54 27.7 +0.2
comp=Z,22nm,0.8s,mb4.9
PCA1 Carrot 76.09 338⇓*eP* P 14 54 27.3 0.0
PCA1 AMB AMB 14 54 28.3
comp=Z,63nm,0.7s,mb5.5
GRUS Gruza 76.09 318⇑*iP* P 14 54 27.4 -0.2
PMSU Muirshiel 76.09 339⇓*eP* P 14 54 27.1 -0.2
ESK Eskdalemuir 76.14 338 P P 14 54 27.3 -0.3
ESK pmax pmax
comp=Z,11nm,0.7s,mb4.7
ESK Eskdalemuir 76.14 338 *eP* **P 14 54 26.9 -0.6**
comp=Z,21nm,0.7s,mb5.0
ESK *eP*P PP 14 57 22.7 -1.6
SLTI Sal'it 76.20 301 P P 14 54 28.5 +0.1
ELL Elmali 76.23 308 P P 14 54 28.2 -0.3
MMB Musomiste 76.23 315 *iP* **P 14 54 23.0 -5.4**
MMB Musomiste 76.23 315⇓*iP* P 14 54 23.0 -5.4
TCUT Toone Canyon 76.25 46⇑*iP* P 14 54 29.3 +0.8
MKRJ Makawir 76.28 300 P P 14 54 29.3 +0.4
DIVS Divcibare 76.29 318⇑*iP* P 14 54 28.1 -0.6
KLBR Kellerberrin 76.30 196⇑*iP* P 14 54 28.0 -1.0
comp=Z,39nm,0.8s,mb5.2
CTU Camp Tracy 76.37 47⇑*iP* P 14 54 29.6 +0.5
KKB Krupnik 76.37 315 *iP* **P 14 54 30.0 +0.9**
DRGI Dragot 76.41 301 P P 14 54 29.6 0.0
DRGI Dragot 76.41 301 ⇓P P 14 54 29.6 0.0
ULM Lac du Bonnet 76.41 32 P P 14 54 28.4 -0.8
comp=Z,42nm,0.6s,mb5.3,baz=320,slow=6.7,SNR=63
ULM Lac du Bonnet 76.41 32⇑*iP* P 14 54 28.0 -1.2
comp=Z,122nm,0.9s,mb5.6
AFFS 'Afif 76.46 290 P P 14 54 29.7 -0.3
JLU Jordanelle 76.59 46⇑*iP* P 14 54 31.0 +0.5
GROS Grobnik 76.61 322 *iP* **P 14 54 30.4 0.0**
GROS *eP*P pP 14 55 42.5 -1.3
GROS *eP*P PP 14 57 26.4 -1.8
GROS *eS* S 15 03 49.6 +0.6
MZDA Masada 76.62 300 P P 14 54 30.8 0.0
SRS Serrai 76.64 314 *eP* **P 14 54 30.4 -0.3**
NLU North Lily Min 76.72 47⇑*iP* P 14 54 31.6 +0.4
GMK Mull of Kintyr 76.76 339⇓*eP* P 14 54 30.7 -0.3
SIND Sindeldorf 76.83 327⇓*eP* P 14 54 31.4 -0.1
DAU Daniels Canyon 76.83 47 P P 14 54 32.7 +1.0
DAU Daniels Canyon 76.83 47 *eP* **P 14 54 32.8 +1.1**
DAU *eP*P PP 14 57 29.9 -0.2
NVSS Nova Varos 2 76.87 318⇑*iP* P 14 54 32.1 +0.3
YER Yerkesik 76.90 309 *eP* **P 14 54 32.1 -0.1**
MPU Maple Canyon 76.91 47⇑*iP* P 14 54 32.8 +0.6
TOD Tromm 76.93 328⇓*eP* P 14 54 32.3 +0.2
TOD Tromm 76.93 328 *eP* **P 14 54 32.0 -0.1**
GAL1 Galloway 76.95 338⇓*eP* P 14 54 31.7 -0.3
GAL1 AMB AMB 14 54 32.8
comp=Z,76nm,0.7s,mb5.6
OBKA Obir 76.99 323⇑*iP* P 14 54 32.5 0.0
comp=Z,22nm,0.7s,mb5.0
OUR Ouranopolis 77.00 314 *eP* **P 14 54 32.5 -0.1**
MUN Mundaring 77.00 198 *eP* **P 14 54 31.7 -1.1**
comp=Z,14nm,0.8s,mb4.7
VAY Valandovo 77.03 315⇓*iP* P 14 54 33.0 +0.2
HGN Heimansgroeve 77.07 330 *eP* **P 14 54 32.5 -0.3**
comp=Z,98nm,1.4s,mb5.3
HGN ⇑*eP* 14 57 31.0
comp=Z,6.8nm,1.9s
SWS Schriesheim 77.07 328⇓*eP* P 14 54 32.8 0.0
KBA Koelnbreinsper 77.08 324⇑*iP* P 14 54 33.1 +0.2
comp=Z,63nm,0.8s,mb5.4
FUR Furstenfeldbru 77.10 326 *eP* **P 14 54 33.5 +0.5**
FUR pmax pmax
comp=Z,58nm,0.9s,mb5.3
FUR Furstenfeldbru 77.10 326 *eP* **P 14 54 33.5 +0.5**
comp=Z,58nm,0.9s,mb5.3
SKO Skopje 77.13 316⇓*iP* P 14 54 34.1 +0.8
comp=Z,0.0nm,0.8s
GCL Cushendall 77.14 339⇓*eP* P 14 54 32.9 -0.2
GCL AMB AMB 14 54 34.1
comp=Z,102nm,0.7s,mb5.7
PLE Pljevlja 77.15 318⇑*iP* P 14 54 34.0 +0.6
ABH Alteburg 77.19 329⇓*eP* P 14 54 33.6 +0.1
ABH Alteburg 77.19 329 *eP* **P 14 54 33.4 -0.1**
HDH Heidenheim 77.20 327 *eP* **P 14 54 33.4 -0.1**
IVA Berane 77.24 318⇑*iP* P 14 54 34.3 +0.3
ZFRI Zfri 77.25 300 P P 14 54 34.4 +0.2
PAS Pasadena 77.31 55 P P 14 54 34.3 -0.2
SVTA Shivta 77.34 300 P P 14 54 34.6 -0.1
LJU Ljubljana 77.36 323 *eP* **P 14 54 34.3 -0.2**
LJU *eP*P PP 14 57 35.4 +0.9
LJU *eS* S 15 03 58.3 +1.3
PVY Plav 77.41 317⇑*iP* P 14 54 34.8 -0.1
KTD Kalmit 77.44 328 *eP* **P 14 54 34.9 0.0**
KTD Kalmit 77.44 328 *eP* **P 14 54 34.4 -0.5**
STU Stuttgart 77.45 327 P P 14 54 35.2 +0.3
STU Stuttgart 77.45 327 *eP* **P 14 54 34.9 0.0**
BOJS Bojanci 77.45 322 *eP* **P 14 54 34.8 -0.2**
BOJS *eS* S 15 03 57.2 -0.7
PAIG Paliouri 77.45 313 *eP* **P 14 54 34.7 -0.5**
UPM Unac-Piva 77.48 318⇑*iP* P 14 54 35.1 -0.1
PRNI Paran 77.49 300 P P 14 54 35.9 +0.4
PRNI Paran 77.49 300 ⇓P P 14 54 35.9 +0.4
KZIT Kziot 77.50 301 P P 14 54 35.6 0.0
KZIT Kziot 77.50 301 ⇓P P 14 54 35.6 0.0
RUP Ruppelstein 77.52 329⇓*eP* P 14 54 35.4 +0.1
RUP Ruppelstein 77.52 329 *eP* **P 14 54 33.7 -1.6**
PTCC Patocco-Chiusa 77.60 324 *eP* **P 14 54 34.9 -0.9**
WATA Walderalm 77.63 325⇓*iP* P 14 54 36.3 +0.4
comp=Z,21nm,1.0s,mb4.8
BUCH Bad Urach 77.65 327⇓*eP* P 14 54 36.4 +0.4
VOY Vojsko 77.65 323 *eP* **P 14 54 35.0 -1.1**
WTTA Wattenberg 77.66 325⇑*iP* P 14 54 36.2 +0.1
comp=Z,35nm,0.7s,mb5.2
MVU Marysvale 77.68 48⇑*iP* P 14 54 37.5 +1.1
comp=Z,96nm,1.1s,mb5.4
JAVS Javornik 77.68 323 *eP* **P 14 54 35.5 -0.7**
JAVS *eP*P pP 14 55 42.5 -7.4
JAVS *eP*P PP 14 57 37.7 +0.4
LBG Lerchenberg 77.69 328⇓*eP* P 14 54 36.5 +0.3
MSU Marysvale 77.69 48 P P 14 54 37.9 +1.4
MSU Marysvale 77.69 48 *eP* **P 14 54 37.5 +1.1**
MSU *eP*P pP 14 55 53.8 +3.7
MSU *eP*P PP 14 57 39.6 +2.0
NWAO Narrogin (SRO) 77.70 196 P P 14 54 34.7 -1.9
NWAO pmax pmax
comp=Z,65nm,1.0s
NWAO Narrogin (SRO) 77.70 196⇓*eP* P 14 54 36.3 -0.3
comp=Z,79nm,1.0s,mb5.4
NWAO *eP*P pP 14 55 54.9 +4.7
RSSD Black Hills 77.72 40 P P 14 54 36.7 +0.2
RSSD PcP PcP 14 54 43.4 -2.2
RSSD S S 15 04 00.6 -0.2
RSSD Black Hills 77.72 40 P P 14 54 36.8 +0.3
RSSD pmax pmax
comp=Z,97nm,1.1s,mb5.5
RSSD Black Hills 77.72 40⇑*iP* P 14 54 36.5 0.0
comp=Z,95nm,1.1s,mb5.4
NKY Niksic 77.73 318⇑*iP* P 14 54 36.0 -0.6
KAMS Al Khamasin 77.74 286 P P 14 54 38.2 +1.2
RIV Riverview 77.74 168 *eP* **P 14 54 37.9 +1.1**
KBRS Khaybar 77.77 294 P P 14 54 37.4 +0.3
MOTA Moosalm 77.82 325⇓*iP* P 14 54 37.3 +0.4
comp=Z,32nm,1.0s,mb5.0
LANF Langenberg 77.83 328 *eP* **P 14 54 36.7 -0.2**
GMM Mts of Mourne 77.84 339⇓*eP* P 14 54 36.5 -0.4
SQTA Sankt Quirin 77.87 325⇑*iP* P 14 54 37.6 +0.4
comp=Z,14nm,0.9s,mb4.7
BRY Bratogost 77.88 318⇑*iP* P 14 54 36.9 -0.5
TTG Podgorica 77.89 318⇑*iP* P 14 54 37.3 -0.1
WLF Walferdange 77.89 330 P P 14 54 37.8 +0.5
WLF pmax pmax
comp=Z,10.0nm,0.7s,mb4.7
WLF Walferdange 77.89 330⇓*eP* P 14 54 37.1 -0.2
comp=Z,18nm,0.8s,mb4.8
AOS Alonnisos 77.89 313 *eP* **P 14 54 37.0 -0.5**
JMQS Jabal Moqyreh 77.92 298 P P 14 54 38.2 +0.3
MBH Mount Berech 77.93 299 P P 14 54 38.3 +0.4
MBH Mount Berech 77.93 299 ⇓P P 14 54 38.3 +0.4
TBKS Tabuk 77.93 297 P P 14 54 38.3 +0.3
LIT Litokhoron 77.96 314 *eP* **P 14 54 37.2 -0.7**
UBR Uberruh 77.96 326⇓*eP* P 14 54 37.6 -0.1
EIL Elat 77.99 299 P P 14 54 38.4 +0.2
EIL Elat 77.99 299 ⇓P P 14 54 38.4 +0.2
GIVF Givet 78.02 331 *eP* **P 14 54 37.4 -0.6**
comp=Z,38nm,0.8s,mb4.9
FNA Florina 78.04 315 *eP* **P 14 54 37.0 -1.2**
GUT Gutenstein 78.05 327⇓*eP* P 14 54 38.3 +0.1
XOR Xorichti 78.12 313 *eP* **P 14 54 37.5 -1.3**
BFO Black Forest 78.15 328 *eP* **P 14 54 38.9 +0.2**
SPAK Spaichingen 78.15 327⇓*eP* P 14 54 39.0 +0.3
SPAK Spaichingen 78.15 327 *eP* **P 14 54 38.6 -0.1**
ALWS Ilw as Safayha 78.16 299 P P 14 54 39.5 +0.3
BUM Brajici-Budva 78.16 318 *eP* **P 14 54 38.8 -0.1**
SRU San Rafael 78.16 47 P P 14 54 39.6 +0.6
SRU San Rafael 78.16 47⇑*iP* P 14 54 39.2 +0.3
SRU *eP*P PP 14 57 36.7 -4.9
JMOS Jabal al Moall 78.23 299 P P 14 54 39.7 +0.1
NEN Nelson 78.23 52⇑*iP* P 14 54 40.0 +0.6
ULC Ulcinj 78.24 317⇑*iP* P 14 54 39.2 -0.1
BAIF Baives 78.27 331 *eP* **P 14 54 38.8 -0.5**
comp=Z,24nm,0.9s,mb4.6
DAVA Damuels 78.37 326⇑*iP* P 14 54 40.3 +0.4
comp=Z,73nm,1.1s,mb5.3
HAQS Haql 78.42 299 P P 14 54 40.7 +0.2
WLS Welschbruch 78.46 328 *eP* **P 14 54 40.3 -0.1**
LDFC Landfair 78.47 53⇑*iP* P 14 54 40.9 +0.2
CDF Champ du Feu 78.49 328 *eP* **P 14 54 40.5 0.0**
comp=Z,76nm,1.0s,mb5.1
CDF *eP*P pP 14 55 53.5 -0.8
KAMOR Kamor 78.52 326⇓*eP* P 14 54 41.1 +0.4
comp=Z,56nm,1.1s,mb5.2
SLE Schleitheim 78.54 327⇓*eP* P 14 54 40.7 -0.1
comp=Z,40nm,0.8s,mb5.2
LIBD Limburg 78.58 328 *eP* **P 14 54 41.4 +0.4**
LIBD Limburg 78.58 328 *eP* **P 14 54 41.0 0.0**
CTI Castel Tesino 78.61 324 *eP* **P 14 54 40.5 -0.7**
KIZ Kirchzarten 78.61 328⇓*eP* P 14 54 41.1 -0.1
FELD Feldberg 78.64 327 *eP* **P 14 54 41.5 +0.2**
WILA Wila 78.66 327⇓*eP* P 14 54 41.4 0.0
comp=Z,62nm,1.7s,mb5.1
ECH Echery 78.70 328 *eP* **P 14 54 41.2 -0.4**
PFO Pinyon Flat Ob 78.71 54 P P 14 54 41.1 -0.9
PFO pmax pmax
comp=Z,150nm,1.0s,mb5.7
PFO Pinyon Flat Ob 78.71 54⇑*iP* P 14 54 41.9 -0.2
comp=Z,150nm,1.0s,mb5.7
BDAS Al Bad' 78.73 298 P P 14 54 42.5 +0.3
FUORN Ofenpass 78.74 325⇓*eP* P 14 54 42.8 +0.9
comp=Z,100nm,0.7s,mb5.7
PLONS Plons 78.76 326⇓*eP* P 14 54 42.3 +0.3
comp=Z,66nm,0.9s,mb5.3
DAVOX Davos 78.77 326 PKKPbc 15 13 32.3
comp=Z,1.8nm,0.5s,baz=355,slow=22,SNR=3.9
DAVOX Davos 78.77 326⇓*eP* P 14 54 42.7 +0.7
comp=Z,66nm,1.5s,mb5.2
BRMO Bormio 78.81 325 *eP* **P 14 54 43.2 +0.9**
AGG Agios Georgios 78.83 314 *eP* **P 14 54 40.9 -1.6**
SULZ Sulz-Cheisache 78.88 327⇓*eP* P 14 54 42.7 +0.1
comp=Z,115nm,0.9s,mb5.6
CNB Canberra Magne 78.94 169⇑*iP* P 14 54 43.9 +0.7
comp=Z,29nm,0.9s,mb5.0
DCN Croghan 78.99 339 *eP* **P 14 54 41.0 -2.1**
MOF Molkenrain 79.00 328 *eP* **P 14 54 43.1 -0.1**
BERNI Berninapass 79.01 325⇓*eP* P 14 54 44.0 +0.7
comp=Z,66nm,1.1s,mb5.3
TATS Tathlith 79.03 286 P P 14 54 44.4 +0.4
LLS Linth-Limmern 79.07 326⇓*eP* P 14 54 43.9 +0.3
comp=Z,31nm,0.7s,mb5.2
MUO Muotathal 79.13 327⇓*eP* P 14 54 44.2 +0.3
comp=Z,87nm,1.5s,mb5.3
THEF They Montfort 79.14 329 *eP* **P 14 54 43.6 -0.3**
HINF Hinteralfeld 79.14 328 *eP* **P 14 54 43.6 -0.4**
comp=Z,32nm,0.8s,mb4.8
BBS Basel-Blauen 79.17 328⇓*eP* P 14 54 44.3 +0.2
BBS Basel-Blauen 79.17 328 *eP* **P 14 54 44.2 +0.1**
HAU Haudompre 79.18 328 *eP* **P 14 54 43.8 -0.4**
comp=Z,44nm,0.7s,mb5.0
HAU *eR* 14 57 32.3
comp=Z,138nm,19.8s
BALST Balsthal 79.21 327⇓*eP* P 14 54 44.4 +0.1
comp=Z,77nm,1.1s,mb5.3
BAR Barrett 79.23 55⇑*iP* P 14 54 44.8 0.0
MEZF Maizieres J'vi 79.26 329 *eP* **P 14 54 44.7 +0.1**
comp=Z,55nm,0.9s,mb5.0
BNALP Bannalp 79.29 327⇓*eP* P 14 54 45.1 +0.3
comp=Z,39nm,0.8s,mb5.2
BOURR Bourrignon 79.34 328⇓*eP* P 14 54 45.3 +0.3
comp=Z,104nm,1.8s,mb5.3
PV10 Paradox Valley 79.49 47 *eP* **P 14 54 47.4 +1.4**

HASLI **Hasliberg** 79.49 327⇓*e*P P 14 54 46.1 +0.2
comp=Z,87nm,0.9s,mb5.5
FUSIO **Fusio** 79.53 326⇓*e*P P 14 54 46.5 +0.4
comp=Z,58nm,1.1s,mb5.2
LOMF **Lomont** 79.53 328 *e*P P 14 54 45.9 -0.2
YNBS **Yanbu' al Bahr** 79.59 293 P P 14 54 47.2 +0.4
WIMIS **Wimmis** 79.78 327⇓*e*P P 14 54 47.4 0.0
comp=Z,39nm,0.9s,mb5.1
MUGIO **Muggio** 79.81 326⇓*e*P P 14 54 47.1 -0.4
comp=Z,86nm,0.8s,mb5.6
KRIS **Kristallenia** 79.87 309⇓*e*P P 14 54 48.1 0.0
comp=Z,102nm,0.9s,mb5.5
PV01 **Paradox Valley** 79.92 47 *e*P P 14 54 48.9 +0.6
PV01 *e*pP pP 14 56 06.3 +3.9
RSM **Repubblica di** 79.93 323 *e*P P 14 54 49.1 +0.9
TORNY **Torny** 79.95 327⇓*e*P P 14 54 48.5 +0.2
comp=Z,28nm,0.6s,mb5.2
VAI **Varese** 79.96 326 *e*P P 14 54 48.0 -0.4
FSSB **Fossombrone** 79.97 322⇓*i*P P 14 54 48.8 +0.3
LKBD **Leukerbad** 80.01 327⇓*e*P P 14 54 48.8 +0.2
comp=Z,50nm,0.8s,mb5.3
BRANT **Les Verrieres** 80.01 328⇓*e*P P 14 54 48.8 +0.2
comp=Z,35nm,1.3s,mb5.0
ARV **Arcevia** 80.05 322 *e*P P 14 54 49.2 +0.3
BLJS **Baljurashi** 80.11 288 P P 14 54 50.5 +0.9
MMK **Mattmark** 80.14 326⇓*e*P P 14 54 50.0 +0.7
comp=Z,62nm,0.8s,mb5.4
SENIN **Lac Senin** 80.16 327⇓*e*P P 14 54 49.7 +0.3
comp=Z,40nm,0.8s,mb5.2
ISCO **Idaho Springs** 80.21 44 P P 14 54 50.9 +1.1
ISCO pmax pmax
comp=Z,50nm,1.0s,mb5.2
ISCO **Idaho Springs** 80.21 44⇑*i*P P 14 54 50.4 +0.6
comp=Z,44nm,0.9s,mb5.2
ISCO *e*pP pP 14 56 07.2 +3.2
MCGN **Macugnaga** 80.21 326 *e*P P 14 54 50.2 +0.6
SFI **Santa Sofia** 80.22 323 *e*P P 14 54 50.9 +1.2
SNTG **Esanatoglia** 80.24 322⇓*i*P P 14 54 50.3 +0.4
ZCCA **Zocca** 80.25 324 *e*P P 14 54 51.5 +1.6
WUAZ **Wupatki** 80.30 50⇑*i*P P 14 54 51.2 +0.8
comp=Z,156nm,1.0s,mb5.7
RW3 **Ridgway** 80.30 46 P P 14 54 51.3 +1.0
RW3 **Ridgway** 80.30 46 *e*P P 14 54 51.2 +0.9
PGD **Poggio Sodo** 80.30 323 *e*P P 14 54 51.7 +1.5
VMG **Vicchio** 80.31 323⇓*i*P P 14 54 52.0 +1.8
AIGLE **Aigle** 80.31 327⇓*e*P P 14 54 50.1 -0.1
comp=Z,26nm,0.8s,mb5.0
GRYON **Gryon** 80.32 327⇓*e*P P 14 54 50.5 +0.3
comp=Z,42nm,0.8s,mb5.2
FNVD **Fontana Vidola** 80.33 323 *e*P P 14 54 51.5 +1.1
DIX **Grande Dixence** 80.34 327⇓*e*P P 14 54 51.0 +0.7
comp=Z,27nm,0.8s,mb5.0
CRE **Caprese Michel** 80.40 323 *e*P P 14 54 51.5 +0.8
GSCL **Gusciola** 80.42 324 *e*P P 14 54 51.8 +1.0
GIMEL **Gimel** 80.42 328⇓*e*P P 14 54 50.9 +0.1
comp=Z,30nm,1.1s,mb5.0
MURB **Monte Urbino** 80.42 322 *e*P P 14 54 52.0 +1.1
SCHQ **Schefferville** 80.42 13 P P 14 54 50.6 0.0
comp=Z,22nm,0.8s,mb4.9,baz=358,slow=5.9,SNR=26
SCHQ PKKPbc 15 13 27.1
comp=Z,3.9nm,0.6s,baz=116,slow=1.6,SNR=6.0
SCHQ **Schefferville** 80.42 13⇓*i*P P 14 54 50.5 -0.1
comp=Z,60nm,1.1s,mb5.2
CABF **La Chapelle** 80.43 328 *e*P P 14 54 50.7 -0.1
comp=Z,19nm,0.9s,mb4.5
TERO **Teramo** 80.44 321 *e*P P 14 54 51.3 +0.4
ERBM **Eremo** 80.44 324 *e*P P 14 54 52.3 +1.4
SALAN **Lac Salanfe** 80.47 327⇓*e*P P 14 54 51.3 +0.3
comp=Z,25nm,0.7s,mb5.0
ORO **Oropa** 80.48 326 *e*P P 14 54 51.1 0.0
GRAM 80.53 324 P P 14 54 51.7 +0.3
EMV **Vieux Emosson** 80.56 327⇓*e*P P 14 54 51.8 +0.3
comp=Z,36nm,0.8s,mb5.1
BOB **Bobbio (Coli)** 80.57 325⇓*i*P P 14 54 52.0 +0.4
SARO **Sassorosso** 80.63 324 P P 14 54 52.4 +0.5
BDI **Bagni Di Lucca** 80.64 324 *e*P P 14 54 51.8 -0.1
BACM 80.70 324 P P 14 54 52.2 0.0
FG5 **Orsara di Pugl** 80.70 319 P P 14 54 53.2 +0.9
CODM 80.70 324 P P 14 54 52.4 +0.1
TOO **Toolangi** 80.72 173⇑*i*P P 14 54 53.7 +1.2
comp=Z,37nm,0.8s,mb5.2
TOO *e* pP 14 56 11.7 +4.9
AQU **L'Aquila** 80.74 321 *e*P P 14 54 53.8 +1.3
VINC **Vinca** 80.77 324 P P 14 54 52.1 -0.5
MAIM 80.81 324 P P 14 54 52.2 -0.6
CSNT **Castellina Chi** 80.81 323 *e*P P 14 54 52.3 -0.5
CII **Carovilli** 80.81 320 *e*P P 14 54 54.0 +1.1
RNI2 **Rionero Sannit** 80.90 320 *e*P P 14 54 54.7 +1.3
CPI2 **Carpinone** 80.91 320 *e*P P 14 54 54.5 +1.1
PII **Pisa** 80.95 324 *e*P P 14 54 52.9 -0.7
LSD **Ceresole Reale** 80.95 327 P P 14 54 54.3 +0.7
MRLC **Muro Lucano** 81.00 319 *e*P P 14 54 54.1 +0.2
FLN **La Foliniere** 81.00 333 *e*P P 14 54 53.1 -0.6
comp=Z,13nm,0.6s,mb4.5
FLN *e*R
comp=Z,165nm,20.0s
PTQR **Pietraquaria** 81.00 321 *e*P P 14 54 54.6 +0.7
LDF **La Druitiere** 81.02 332 *e*P P 14 54 53.1 -0.7
comp=Z,15nm,0.8s,mb4.5
SGG **Gregorio Mates** 81.04 320 *e*P P 14 54 54.5 +0.4
SSF **Saint Saulge** 81.04 330 *e*P P 14 54 53.6 -0.3
comp=Z,46nm,0.9s,mb4.9
SSF *e*pP pP 14 56 07.1 -1.1
MNS **Montasola** 81.05 321 *e*P P 14 54 53.9 -0.2
SDI **San Donato** 81.05 320 *e*P P 14 54 54.3 +0.1
ORI **Oriolo Calabro** 81.06 318 *e*P P 14 54 55.2 +1.0
LPL **La Plagne** 81.08 327 *e*P P 14 54 54.6 +0.4
comp=Z,74nm,0.7s,mb5.2
LPL *e*pP pP 14 56 08.1 -0.4
LPG **La Plagne** 81.08 327 *e*P P 14 54 54.8 +0.6
comp=Z,80nm,0.7s,mb5.2
PCP **Pian Castagno** 81.13 325 P P 14 54 53.7 -0.8
CSSN **Cassano Irpino** 81.14 319 *e*P P 14 54 54.6 0.0
RSP **Reno Superiore** 81.16 326 P P 14 54 53.5 -1.1
HYF **Humbligny** 81.18 330 *e*P P 14 54 54.8 +0.1
SLCN **Sala Consilina** 81.21 318 *e*P P 14 54 55.9 +0.9
SGO **Sicignano** 81.23 319 *e*P P 14 54 55.3 +0.2
SMF **Signal de Mont** 81.26 329 *e*P P 14 54 54.9 -0.2
comp=Z,54nm,0.8s,mb5.0
AVF **Avril sur Loir** 81.32 330 *e*P P 14 54 55.3 -0.1
comp=Z,95nm,0.8s,mb5.3
AVF *e*pP pP 14 56 08.8 -1.0
BHB **Bricherasio** 81.42 326 P P 14 54 54.4 -1.5
TDS **Terranova Siba** 81.42 318 *e*P P 14 54 57.1 +1.0
MGR **Morigerati** 81.44 318 *e*P P 14 54 55.6 -0.6
GRR **Gorron** 81.45 333 *e*P P 14 54 55.6 -0.4
comp=Z,42nm,1.0s,mb4.8
BNI **Bardonecchia** 81.48 327 P P 14 54 56.5 +0.2
BNI **Bardonecchia** 81.48 327⇓*i*P P 14 54 56.3 0.0
FIN **Finale Ligure** 81.54 325 *e*P P 14 54 55.7 -0.9
RRL **Cesana Torines** 81.55 326 P P 14 54 56.4 -0.3
GDM **Grand'Maison** 81.58 327 *e*P P 14 54 57.5 +0.7
ROB **Roburent** 81.61 325 P P 14 54 56.1 -0.9
RORO 81.68 325 P P 14 54 56.2 -1.2
GRN **Grenoble** 81.70 327 *e*P P 14 54 57.8 +0.4
BGF **Bois d'Agland** 81.71 330 *e*P P 14 54 57.2 -0.2
comp=Z,16nm,0.6s,mb4.7
MBDF **Montbardon** 81.71 326 *e*P P 14 54 57.3 -0.2
comp=Z,49nm,0.9s,mb5.0
PZZ **Prazzo** 81.76 326 P P 14 54 56.5 -1.2
SDCO **Great Sand Dun** 81.82 45⇑*i*P P 14 54 58.7 +0.5
comp=Z,32nm,0.8s,mb5.2
MONE **Monesi** 81.84 325 P P 14 54 57.4 -0.8
ENR **Entracque** 81.86 326 P P 14 54 56.6 -1.7
SURF **Saint Ours** 81.90 326 *e*P P 14 54 58.5 0.0
ORIF **Oris-en-Rattie** 81.91 327 *e*P P 14 54 58.5 0.0
comp=Z,30nm,0.8s,mb4.9
ORIF *e*R
comp=Z,165nm,20.2s
PLDF **La Plantade** 81.91 329 *e*P P 14 54 58.5 0.0
IMI **Imperia** 81.92 325 *e*P P 14 54 58.3 -0.3
SAOF **Saorge** 82.00 325 *e*P P 14 54 58.4 -0.6
AGO **Saint Agoulin** 82.03 329 *e*P P 14 54 59.4 +0.3
AUTN **L'Aution** 82.04 326 *e*P P 14 54 59.0 -0.2
NEGI **Negi** 82.05 325 P P 14 54 58.2 -1.1
TOUF **Mont Tournerai** 82.10 326 *e*P P 14 55 00.2 +0.7
SGMF **Saint Gilles** 82.12 334 *e*P P 14 54 59.4 -0.1
comp=Z,56nm,0.9s,mb5.1
SBF **Sospel** 82.15 325 *e*P P 14 54 59.1 -0.7
comp=Z,52nm,0.7s,mb5.2
TCF **Toulx Ste Croi** 82.17 330 *e*P P 14 54 59.8 0.0
comp=Z,27nm,0.8s,mb4.8
AURF **Auriere** 82.17 326 *e*P P 14 54 59.4 -0.5
MVIF **Mont Vial** 82.24 326 *e*P P 14 54 59.8 -0.4

COLF **Collangettes** 82.26 329 *e*P P 14 55 00.6 +0.3
REVF **Revere** 82.28 325 *e*P P 14 54 59.8 -0.6
ROSF **Rostrenen** 82.28 334 *e*P P 14 55 00.4 +0.1
comp=Z,63nm,0.8s,mb5.2
PYM **Petit Puy Mans** 82.33 329 *e*P P 14 55 00.1 -0.5
OCF **Saint Nazaire** 82.42 327 *e*P P 14 55 01.6 +0.4
OG26 **St.-Nazaire-De** 82.42 327 *e*P P 14 55 01.6 +0.4
VIVF **Saint-Julien-l** 82.44 328 *e*P P 14 55 01.0 -0.2
comp=Z,50nm,0.9s,mb5.0
VIVF *e*pP pP 14 56 15.1 -0.7
CALN **Calern** 82.46 326 *e*P P 14 55 01.1 -0.3
PGF **Pioggiola** 82.55 324 *e*P P 14 55 01.4 -0.5
comp=Z,28nm,0.9s,mb4.8
QUIF **Quistinic** 82.61 334 *e*P P 14 55 01.9 -0.1
comp=Z,46nm,0.7s,mb5.1
LBL **Lubilhac** 82.67 329 *e*P P 14 55 02.7 +0.3
FRF **La Foret Royal** 82.72 326 *e*P P 14 55 02.2 -0.5
comp=Z,62nm,1.1s,mb5.1
MFF **Saint Martin d** 82.75 331 *e*P P 14 55 02.9 +0.2
comp=Z,42nm,0.8s,mb5.0
SOI **Samo** 82.78 317 *e*P P 14 55 03.5 +0.4
SMRF **Simiane la Rot** 82.81 327 *e*P P 14 55 03.1 0.0
comp=Z,32nm,1.1s,mb4.8
LMR **La Mourre** 82.96 326 *e*P P 14 55 03.4 -0.5
comp=Z,86nm,0.9s,mb5.3
TUC **Tucson** 82.97 52 P P 14 55 05.0 +0.9
TUC pmax pmax
comp=Z,38nm,0.8s,mb5.3
TUC **Tucson** 82.97 52⇓*i*P P 14 55 04.9 +0.8
comp=Z,42nm,0.8s,mb5.3
TUC *e*pP pP 14 56 22.2 +3.5
MTTG **Motta San Giov** 83.02 317 *e*P P 14 55 04.1 -0.1
RJF **Les Rejaudoux** 83.26 330 *e*P P 14 55 05.5 +0.2
comp=Z,30nm,1.0s,mb4.8
RJF *e*R
comp=Z,101nm,22.8s
CAF **Calviac** 83.38 329 *e*P P 14 55 06.7 +0.8
comp=Z,52nm,1.0s,mb5.0
LASF **Ste Croix** 83.41 328 *e*P P 14 55 06.4 +0.3
comp=Z,71nm,1.1s,mb5.1
ANMO **Albuquerque** 83.42 47 P P 14 55 07.8 +1.5
ANMO **Albuquerque** 83.42 47 P P 14 55 07.5 +1.1
ANMO pmax pmax
comp=Z,130nm,1.4s
ANMO **Albuquerque** 83.42 47⇓*i*P P 14 55 07.4 +1.0
comp=Z,156nm,1.4s,mb5.7
ANMO *e*pP pP 14 56 24.4 +3.4
MNO **Monte Soro** 83.57 317 *e*P P 14 55 07.3 +0.3
LENM **Lemitar** 83.73 48 *e*P P 14 55 08.9 +0.9
LFF **La Frestale** 83.86 330 *e*P P 14 55 08.9 +0.6
comp=Z,65nm,1.0s,mb5.1
BNM **Barren Site** 83.93 48⇑*i*P P 14 55 10.2 +1.2
PZI **Palazzolo** 84.13 317 *e*P P 14 55 10.8 +0.9
JFWS **Jewell Farm** 84.65 32 P P 14 55 11.9 -0.4
JFWS pmax pmax
comp=Z,17nm,0.5s,mb5.1
JFWS **Jewell Farm** 84.65 32⇓*i*P P 14 55 11.9 -0.4
comp=Z,49nm,0.7s,mb5.5
MTLF **Montolieu** 84.67 328 *e*P P 14 55 12.7 +0.3
comp=Z,30nm,0.8s,mb4.9
KSU1 **Kansas State U** 85.10 39⇓*i*P P 14 55 14.4 -0.2
EPF **Esparros** 85.64 329 *e*P P 14 55 17.2 0.0
comp=Z,27nm,0.8s,mb4.8
ETSF **Etsaut** 86.09 330 *e*P P 14 55 20.3 +1.0
comp=Z,37nm,0.9s,mb4.6
EALK **Alkurruntz** 86.16 331 P P 14 55 20.1 +0.5
CPRX **Cap Rock** 86.27 47 *e*P P 14 55 20.5 +0.1
EGRA **Graus** 86.37 329 P P 14 55 19.9 -0.8
MNTX **Cornudas Mount** 86.47 49⇑*i*P P 14 55 22.0 +0.6
comp=Z,26nm,0.8s,mb5.1
MNTX *e*pP pP 14 56 39.2 +2.6
GDL2 **Guadalupe Moun** 86.64 48 *e*P P 14 55 22.8 +0.6
GDL2 *e*pP pP 14 56 36.6 -0.8
GDL2 *e*PP PP 14 58 48.6 -2.1
EPOB **Poblet** 86.81 328 P P 14 55 21.9 -0.9
comp=Z,5.4nm,0.4s,mb4.7
ELAN **Lamestosa** 86.83 332 P P 14 55 22.3 -0.5
comp=Z,4.0nm,0.5s,mb4.5
CLNB **Carlsbad** 86.86 48 *e*P P 14 55 23.8 +0.5
SADO **Sadowa** 86.91 25 P P 14 55 22.6 -0.6
comp=Z,9.4nm,0.7s,mb4.7,baz=348,slow=5.4,SNR=6.5
ESAC **San Caprasio** 87.08 329 P P 14 55 23.3 -0.8
comp=Z,15nm,0.4s,mb5.2
EARI **Arriondas** 87.37 333 P P 14 55 24.9 -0.5
comp=Z,5.0nm,0.6s,mb4.5
WMOK **Wichita Mounta** 87.56 43 P P 14 55 27.0 +0.4
WMOK pmax pmax
comp=Z,49nm,1.0s,mb5.3
WMOK **Wichita Mounta** 87.56 43 *e*P P 14 55 26.7 +0.2
comp=Z,41nm,0.8s,mb5.3
AAM **Ann Arbor** 87.64 29 *e*P P 14 55 27.2 +0.5
comp=Z,62nm,0.9s,mb5.4
EPON **Pontenova** 87.97 334 P P 14 55 27.8 -0.5
comp=Z,19nm,0.6s,mb5.1
EMOS **Mosqueruela** 88.25 329 P P 14 55 28.8 -0.9
comp=Z,8.6nm,0.4s,mb4.9
SLM **Saint Louis** 88.27 35 P P 14 55 30.5 +0.7
SLM pmax pmax
comp=Z,50nm,0.8s,mb5.4
SLM **Saint Louis** 88.27 35 *e*P P 14 55 29.9 +0.1
comp=Z,133nm,1.1s,mb5.7
ETOR **Torete** 88.45 330 P P 14 55 29.7 -0.9
comp=Z,6.6nm,0.5s,mb4.7
EINC **Incio** 88.64 334 P P 14 55 30.9 -0.5
comp=Z,8.3nm,0.6s,mb4.7
EIBI **Ibiza** 88.69 327 P P 14 55 30.4 -1.4
comp=Z,10nm,0.4s,mb5.0
FVM **French Village** 88.74 35 P P 14 55 32.1 +0.1
FVM pmax pmax
comp=Z,57nm,1.2s,mb5.3
FVM **French Village** 88.74 35 *e*P P 14 55 32.0 0.0
comp=Z,59nm,1.0s,mb5.4
ERUA **La Rua** 88.81 334 P P 14 55 31.6 -0.6
comp=Z,7.5nm,0.6s,mb4.7
EMAZ **Mazaricos** 88.88 335 P P 14 55 32.1 -0.4
comp=Z,6.0nm,0.4s,mb4.8
ERPA **Erie** 89.04 26 *e*P P 14 55 33.6 +0.4
comp=Z,53nm,0.7s,mb5.5
NCB **Newcomb** 89.05 22 *e*P P 14 55 33.2 0.0
comp=Z,16nm,0.8s,mb4.9
MGZ **Maungaku** 89.07 151 P P 14 55 34.5 +1.0
ECAL **Calabor** 89.09 333 P P 14 55 33.0 -0.5
PBRG **Braganca** 89.21 333 *e*P P 14 55 34.3 +0.2
TXAR **Lajitas Array** 89.22 49 P P 14 55 35.2 +0.8
comp=Z,60nm,0.7s,mb5.6,baz=294,slow=3.2,SNR=272
TXAR PKKPbc 15 13 09.6
comp=Z,0.2nm,0.3s,baz=135,slow=3.5,SNR=3.5
TXAR **Lajitas Array** 89.22 49 P P 14 55 35.2 +0.8
TXAR PKKPbc 15 13 09.6
NGZ **Ngauruhoe** 89.25 151 P P 14 55 35.4 +1.1
FWVZ **Far West T-bar** 89.30 151 P P 14 55 35.0 +0.4
GUD **Guadarrama** 89.36 331 P P 14 55 34.1 -0.7
comp=Z,4.4nm,0.4s,mb4.6
SIUC **Southern Illin** 89.48 35 *e*P P 14 55 35.9 +0.5
comp=Z,248nm,0.9s,mb6.0
ELOB **Lobios** 89.58 334 P P 14 55 35.3 -0.5
comp=Z,5.9nm,0.6s,mb4.7
QRZ **Quartz Range** 89.67 153 P P 14 55 36.1 -0.2
QRZ **Quartz Range** 89.67 153 *e*P P 14 55 36.6 +0.3
ACSO **Alum Creek Sta** 89.70 29 *e*P P 14 55 36.8 +0.3
comp=Z,140nm,0.9s,mb5.9
HNH **Hanover** 89.81 20 *e*P P 14 55 37.6 +0.7
comp=Z,3.8nm,1.1s
PMOR **Pomariorio Ree** 89.98 111 *e*P P 14 55 40.1 +1.8
comp=Z,143nm,1.0s,mb5.9
PVRL **Vila Real** 90.00 334 *e*P P 14 55 38.5 +0.7
ESDC **Sonseca Array** 90.15 331 P P 14 55 38.5 -0.1
comp=Z,2.6nm,0.5s,mb4.4,baz=26,slow=4.4,SNR=7.3
ESDC PP PP 14 59 15.6 -3.1
comp=Z,8.5nm,0.8s,baz=26,slow=7.7,SNR=11
ESDC **Sonseca Array** 90.15 331 P P 14 55 37.6 -1.0
comp=Z,2.1nm,0.5s,mb4.3
BINY **Binghamton** 90.19 24 *e*P P 14 55 38.6 -0.1
comp=Z,26nm,0.8s,mb5.2
MIAR **Mount Ida** 90.22 39⇑*i*P P 14 55 39.4 +0.4
comp=Z,50nm,0.8s,mb5.5
JCT **Junction City** 90.42 46 P P 14 55 40.2 +0.2
JCT pmax pmax
comp=Z,6.0nm,0.3s,mb5.0
JCT **Junction City** 90.42 46 *e*P P 14 55 40.1 +0.1
comp=Z,108nm,0.8s,mb5.8
PVIS **Viseu** 90.57 334 *e*P P 14 55 41.4 +0.9
GNAR **Gosnell** 90.62 36 *e*P P 14 55 41.3 +0.4
PPT **Papeete** 90.64 114 P P 14 55 43.4 +2.1
comp=Z,30nm,0.8s,mb5.3,baz=85,slow=13,SNR=4.9
PPT **Papeete** 90.64 114 *e*P P 14 55 43.3 +2.0
comp=Z,77nm,1.1s,mb5.5
PPT **Papeete** 90.64 114 P P 14 55 43.4 +2.1
PPT pmax pmax
comp=Z,30nm,0.8s
GLAT **Glass** 90.67 35 *e*P P 14 55 42.0 +0.9
PAE **Paea** 90.71 114 *e*P P 14 55 43.3 +1.7
comp=Z,246nm,1.2s,mb6.0
MTE **Manteigas** 90.74 333 *e*P P 14 55 41.7 +0.5
TVO **Taravao** 91.01 113 *e*P P 14 55 45.1 +2.1
comp=Z,243nm,1.0s,mb6.1
SSPA **Standing Stone** 91.05 25 *e*P P 14 55 42.9 +0.2
comp=Z,52nm,1.0s,mb5.4
HRV **Harvard--Oak R** 91.12 20 P P 14 55 43.9 +1.0
HRV pmax pmax
comp=Z,41nm,1.3s,mb5.2
HRV **Harvard--Oak R** 91.12 20 *e*P P 14 55 43.5 +0.5
comp=Z,31nm,1.1s,mb5.2
WES **Weston** 91.29 20 *e*P P 14 55 44.1 +0.3
comp=Z,46nm,1.0s,mb5.4
MCWV **Mont Chateau** 91.30 27 *e*P P 14 55 44.3 +0.5
comp=Z,114nm,1.4s,mb5.6
WVT **Waverly** 91.41 34 P P 14 55 45.0 +0.6
WVT pmax pmax
comp=Z,35nm,1.0s,mb5.2
WVT **Waverly** 91.41 34 *e*P P 14 55 44.8 +0.3
comp=Z,40nm,0.9s,mb5.3
BWZ **Berwen** 92.22 157 P P 14 55 48.7 +0.6
PLAL **Pickwick Lake** 92.29 35 *e*P P 14 55 48.2 -0.4
comp=Z,28nm,0.9s,mb5.2
SWET **Sewanee** 92.97 34 *e*P P 14 55 51.5 -0.2
ELIJ **Sierra de Lija** 93.11 330 P P 14 55 51.1 -1.3
ELN **Prospectdale** 93.16 29 *e*P P 14 55 52.2 -0.4
CPCT **Cooper Cave** 93.33 32 *e*P P 14 55 53.4 +0.1
LRAL **Lakeview Retre** 94.41 35 *e*P P 14 55 57.9 -0.5
comp=Z,13nm,0.9s,mb5.0
JSC **Jenkinsville** 95.61 31 P P 14 56 04.1 +0.3
JSC **Jenkinsville** 95.61 31 *e*P P 14 56 03.1 -0.7
KMBO **Kilima Mbogo** 97.50 275 P P 14 56 13.9 +1.1
comp=Z,4.9nm,1.0s,mb4.7,baz=33,slow=9.2,SNR=8.0
KMBO PKKPbc 15 12 49.7
comp=Z,1.9nm,0.6s,baz=129,slow=1.6,SNR=7.4
KMBO **Kilima Mbogo** 97.50 275 *e*P P 14 56 13.8 +1.0
comp=Z,4.8nm,1.1s,mb4.6
DBIC **Dimbokro** 119.30 315 PKP PKPdf 15 01 25.5 +0.3
comp=Z,9.2nm,0.6s,baz=24,slow=1.3,SNR=13
DBIC pPKP 15 02 44.6
comp=Z,9.4nm,0.8s,baz=5.2,slow=7.6,SNR=2.6
DBIC SKP 15 04 30.3
comp=Z,2.5nm,0.6s,baz=136,slow=6.9,SNR=4.1
DBIC **Dimbokro** 119.30 315 PKIKP PKPdf 15 01 25.5 +0.3
DBIC 15 02 44.7
DBIC pmax pmax
comp=Z,9.0nm,0.6s
DBIC pmax pmax
comp=N,9.0nm,0.8s
DBIC pmax pmax
comp=N,3.0nm,0.6s
DBIC **Dimbokro** 119.30 315 PKP PKPdf 15 01 25.5 +0.3
DBIC pPKP 15 02 44.6
DBIC SKP 15 04 30.3
TIC **Toumodi** 119.40 315 *e*PKIKP PKPdf 15 01 25.5 +0.1
comp=N,31nm,0.2s
KIC **Kosan Boka** 119.50 314 *e*PKIKP PKPdf 15 01 25.8 +0.2
comp=N,92nm,0.9s
LIC **Lamto** 119.76 315 *e*PKIKP PKPdf 15 01 25.9 -0.2
comp=N,68nm,1.0s
VNDA **Vanda** 121.38 174 SKP 15 04 32.4
baz=313,slow=4.9
LBTB **Lobatse** 121.54 264 *e*PKPdf PKPdf 15 01 30.2 +0.9
SBA **Scott Base** 122.11 173 PKIKP PKPdf 15 01 30.3 +1.0
SBA **Scott Base** 122.11 173 *e*PKPdf PKPdf 15 01 30.0 +0.8
SBA *e*SKP 15 04 34.1
SDV **Santo Domingo** 122.66 32 PKP PKPdf 15 01 32.9 +1.3
baz=312,slow=2.0
SDV SKP 15 04 37.3
comp=N,30nm,0.9s,baz=46,slow=1.7,SNR=16
MAW **Mawson** 123.35 206 *e*P PKPdf 15 01 32.4 +0.6
comp=N,5.3nm,1.6s
MAW **Mawson** 123.35 206 *e*P PKPdf 15 01 32.4 +0.6
comp=N,14nm,0.7s
MAW **Mawson** 123.35 206 PKP PKPdf 15 01 32.9 +1.1
comp=N,20nm,0.8s,baz=343,slow=2.8,SNR=23
MAW PKKPbc 15 11 23.3
comp=N,1.6nm,0.7s,baz=282,slow=7.8,SNR=3.6
MAW **Mawson** 123.35 206 PKIKP PKPdf 15 01 32.9 +1.1
MAW pmax pmax
comp=Z,20nm,0.8s
MAW pmax pmax
comp=Z,2.0nm,0.7s
PCRV **Puerto La Cruz** 123.57 25 PKP PKPdf 15 01 32.7 -0.7
baz=333,slow=3.6
ROSC **El Rosal** 124.72 38 PKP PKPdf 15 01 37.9 +2.1
comp=Z,21nm,0.5s,baz=343,slow=2.3,SNR=9.7
OTAV **Otavalo** 126.70 46 *e*PKPdf PKPdf 15 01 40.9 +1.3
SYO **Syowa Base** 131.82 209 ⇑Pdiff Pdif 14 58 46.5 +3.7
SYO **Syowa Base** 131.82 209⇑*e*Pdif Pdif 14 58 46.5 +3.7
MAIT **Maitri** 141.33 206 *e*PKPdf PKPdf 15 02 00.3 -4.7
MAIT *e*PP PP 15 05 10.8 -3.7
ARE **Arequipa** 144.33 50 *e*P PKPbc 15 02 13.0 +1.4
CAUB **Caruaru** 144.58 347 *c i*P PKPdf 15 02 13.1 +0.8
CAUB *i* 15 02 16.5
CAUB *i* 15 02 19.7
SNAA **Sanae** 145.25 201 *e*PKPdf PKPdf 15 02 12.6 +0.8
SNAA *e*pPKPdf 15 03 33.3
SNAA *e*SKP 15 05 21.1
LPAZ **La Paz** 146.02 46 PKPbc PKPbc 15 02 17.2 +1.2
comp=Z,81nm,0.8s,baz=342,slow=3.0,SNR=184
LPAZ SKPbc 15 05 25.4
comp=Z,13nm,1.1s,baz=332,slow=3.5,SNR=5.9
LPAZ **La Paz** 146.02 46 PKIKP PKPdf 15 02 17.2 +2.5
LPAZ pmax pmax
comp=Z,81nm,0.8s
LPAZ pmax pmax
comp=N,13nm,1.1s
LPAZ **La Paz** 146.02 46 *e*PKPdf PKPdf 15 02 17.4 +2.7
LPAZ *e*SKP 15 05 20.8
VNA2 **Neumayer--Watz** 146.89 201⇑*i* PKPdf 15 02 17.8 +4.2
VNA2 **Neumayer--Watz** 146.89 201⇑*i* PKPdf 15 02 21.3 +6.7
VNA2 **Neumayer--Watz** 146.89 201⇑*i* PKPdf 15 02 23.2 +8.6
VNA3 **Neumayer Olymp** 147.26 199⇑*i* PKPdf 15 02 18.8 +3.7
VNA3 **Neumayer Olymp** 147.26 199⇑*i* PKPdf 15 02 21.9 +6.8
VNA3 **Neumayer Olymp** 147.26 199⇑*i* PKPdf 15 02 25.0 +10
VNA1 **Neumayer--Stat** 147.28 201⇓*i* PKPdf 15 02 19.9 +4.7
VNA1 **Neumayer--Stat** 147.28 201⇑*i* PKPdf 15 02 22.5 +7.3
VNA1 **Neumayer--Stat** 147.28 201⇑*i* PKPdf 15 02 24.7 +10
LVC **Limon Verde** 150.66 54 PKP PKPdf 15 02 24.7 +2.8
comp=N,11nm,0.9s,baz=266,slow=3.5,SNR=12
LVC PKPbc PKPdf 15 02 30.3 +8.5
comp=N,102nm,0.8s,baz=291,slow=2.6,SNR=14
LVC PKPab PKPab 15 02 37.9 -0.3
comp=N,17nm,0.8s,baz=312,slow=5.3,SNR=5.5
LVC **Limon Verde** 150.66 54 *e*PKPdf PKPdf 15 02 24.8 +2.9
LVC *e*PKPbc PKPdf 15 02 30.6 +8.7
LVC *e*PKPab PKPab 15 02 37.5 -0.6
BDFB **Brasilia** 152.35 9 PKP PKPdf 15 02 26.3 +1.7
comp=N,23nm,0.8s,baz=64,slow=0.3,SNR=16
BDFB PKPbc PKPdf 15 02 33.1 +8.6
comp=N,30nm,0.8s,baz=236,slow=0.7,SNR=16
BDFB PKPab PKPab 15 02 43.7 -1.8
comp=N,13nm,0.9s,baz=191,slow=5.2,SNR=3.9
BDFB **Brasilia** 152.35 9 PKIKP PKPdf 15 02 26.3 +1.8
BDFB 15 02 43.7
BDFB pmax pmax
comp=Z,23nm,0.8s
BDFB pmax pmax
comp=Z,30nm,0.8s
BDFB pmax pmax
comp=Z,13nm,0.9s
CPUP **Villa Florida** 159.82 38 PKP PKPdf 15 02 35.1 +1.2
comp=Z,6.7nm,1.0s,baz=70,slow=1.1,SNR=9.0
CPUP PKPab PKPab 15 03 16.5 -0.6
comp=Z,20nm,1.0s,baz=10,slow=4.3,SNR=16
CPUP **Villa Florida** 159.82 38 PKIKP PKPdf 15 02 35.1 +1.2
CPUP 15 03 16.5
CPUP pmax pmax
comp=Z,7.0nm,1.0s
CPUP pmax pmax
comp=Z,20nm,1.0s
CPUP **Villa Florida** 159.82 38 *e*PKPdf PKPdf 15 02 34.9 +1.1
CPUP *e*PKPab PKPab 15 03 15.4 -1.7
CPUP *e* 15 04 30.1
CPUP *e*PP PP 15 06 56.4 -3.7
USHA **Ushuaia** 160.01 135 PKPab PKPab 15 03 16.9 -0.1
baz=222,slow=6.1

NEIC ***20*** *15:28:40.7±3.4, 1.88N×124.59E, h297km×39km, mb4.5/12, Error ellipse: s-maj=19.2km s-min=8.2km az=75.0*
IDC ***20*** *15:28:43.1±2.9, 1.84N×124.46E, h325km±31km, mb3.7/8, mb1 3.9/9, mb1mx3.6/21, Error ellipse: s-maj=38.5km s-min=9.3km az=68.0*
ISC 20 15:28:37.2±1.2, 1.92N±0.06×124.7E±0.1, h277km±13km, n29, σ0§94/33, mb4.2/17, 2D, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
KCP	**Kidapawan**	**5.07**	**5**	⇓	*eP*	**P**	**15 29 55.8**	**+0.5**
BIPH	**Bislig**	**6.44**	**15**	⇓	*eP*	**P**	**15 30 10.4**	**-1.6**
KAKA	**Kakadu**	**16.42**	**152**		*eP*	**P**	**15 32 13.8**	**0.0**
KAKA	14nm,0.7s				*eS*	**S**	**15 35 05.7**	**-1.5**
FITZ	**Fitzroy Crossi**	**19.92**	**177**		*eP*	**P**	**15 32 49.1**	**-0.4**
	13nm,0.3s							
FITZ	**Fitzroy Crossi**	**19.92**	**177**	P		**P**	**15 32 49.8**	**+0.3**
	6.9nm,0.3s,baz=8.8,slow=9.2,SNR=50							
WRAB	**Tennant Creek**	**23.70**	**157**		*eP*	**P**	**15 33 26.0**	**0.0**
	39nm,0.4s,mb5.1							
WRAB					*e*		15 34 04.8	
WRAB					*eS*	**S**	**15 37 09.3**	**-8.9**
WRA	**Warramunga Arr**	**23.70**	**157**	P		**P**	**15 33 26.2**	**+0.2**
	13nm,0.3s,mb4.7,baz=333,slow=11,SNR=125							
WRA				S		**S**	**15 37 17.9**	**-0.5**
	5.9nm,1.2s,baz=330,slow=16,SNR=5.1							
WB2	**Warramunga Arr**	**23.70**	**157**		*eP*	**P**	**15 33 26.2**	**+0.1**
WB2					*eS*	**S**	**15 37 17.8**	**-0.6**
PMG	**Port Moresby**	**25.06**	**117**	P		**P**	**15 33 39.4**	**+0.9**
	44nm,1.3s,mb4.7							
AS12	**Alice Springs**	**26.97**	**161**		*eP*	**P**	**15 33 56.0**	**+0.2**
	2.9nm,0.3s,mb4.2							
ASAR	**Alice Springs**	**26.97**	**161**	P		**P**	**15 33 56.1**	**+0.4**
	1.7nm,0.4s,mb3.9,baz=338,slow=8.7,SNR=40							
FORT	**Forrest**	**32.67**	**175**		*eP*	**P**	**15 34 45.7**	**-0.1**
	40nm,0.5s,mb5.2							
NWAO	**Narrogin (SRO)**	**35.37**	**191**	P		**P**	**15 35 08.8**	**+0.2**
	9.1nm,0.8s,mb4.3,baz=27,slow=8.0,SNR=9.3							
NWAO	**Narrogin (SRO)**	**35.37**	**191**	P		**P**	**15 35 08.8**	**+0.2**
KS15	**Wonju Array Si**	**35.47**	**4**		*eP*	**P**	**15 35 11.8**	**+2.4**
MAJO	**Matsushiro**	**36.05**	**18**		*eP*	**P**	**15 35 19.2**	**-0.1**
	9.0nm,0.7s,mb4.3							
STKA	**Stephens Creek**	**37.24**	**156**		*eP*	**P**	**15 35 25.3**	**+1.0**
	2.1nm,0.5s,mb3.8							
STKA	**Stephens Creek**	**37.24**	**156**	P		**P**	**15 35 25.5**	**+1.2**
	2.4nm,0.3s,mb4.1,baz=348,slow=7.0,SNR=29							
LSA	**Lhasa**	**42.16**	**314**		*eP*	**P**	**15 36 07.1**	**+2.4**
	2.1nm,0.6s,mb3.5							
MDJ	**Mudanjiang**	**42.74**	**5**		*eP*	**P**	**15 36 10.0**	**+0.9**
	6.9nm,0.6s,mb4.1							
ULN	**Ulaanbaatar**	**48.24**	**344**		*eP*	**P**	**15 36 52.4**	**+0.2**
	2.6nm,0.9s,mb3.6							
SONM	**Songino Array**	**48.40**	**344**	P		**P**	**15 36 52.9**	**-0.5**
	1.8nm,0.8s,mb3.5,baz=158,slow=6.5,SNR=14							
TAU	**Tasmania Unive**	**49.07**	**158**		*eP*	**P**	**15 36 59.2**	**+0.7**
	109nm,1.4s,mb5.0							
MKAR	**Makanchi Array**	**57.91**	**327**	P		**P**	**15 38 02.3**	**-0.2**
	2.2nm,0.6s,mb3.7,baz=126,slow=8.1,SNR=17							
YAK	**Yakutsk**	**60.08**	**3**		*eP*	**P**	**15 38 16.5**	**-0.7**
	7.9nm,0.8s,mb4.3							
KURK	**Kurchatov**	**62.19**	**329**		*eP*	**P**	**15 38 30.2**	**-1.1**
KURK					*e*	pP	15 39 27.9	-6.0
KURK					*e*	pP	15 39 37.6	+3.6
URZ	**Urewera**	**62.66**	**135**	P		**P**	**15 38 34.9**	**+0.3**
	4.3nm,0.7s,mb4.2,baz=73,slow=19,SNR=3.7							
BVAR	**Borovoye Array**	**67.74**	**328**	P		**P**	**15 39 04.7**	**-2.0**
	0.8nm,0.7s,mb3.5,baz=135,slow=8.4,SNR=5.4							
ZRNK	**Zerenda**	**68.44**	**327**		*eP*	**P**	**15 39 10.2**	**-0.8**
ZRNK					*e*		15 39 12.9	

BJI ***20*** *15:39:23.0, 33.08N×68.44E, h4km, mB4.5, mb4.5, ML4.4, Ms4.3, Msz3.9*
IDC ***20*** *15:39:23.4±1.1, 33.20N×68.28E, mb4.0/12, mb1 4.2/14, mb1mx4.1/21, ML4.2/2, MS3.5/3, Ms1 3.5/3, ms1mx3.1/24, Error ellipse: s-maj=30.5km s-min=17.7km az=45.0, Putative timing error at GNI*
NEIC ***20*** *15:39:24.4±0.4, 33.20N×68.20E, h10km, mb4.5/21, Error ellipse: s-maj=10.6km s-min=6.7km az=193.0*
MOS ***20*** *15:39:27.4±1.3, 33.38N×68.35E, h33km, mb4.4/9, Error ellipse: s-maj=24.5km s-min=11.6km az=92.6*
NNC ***20*** *15:39:28.4±6.3, 33.32N×68.18E, h38km±53km, Error ellipse: s-maj=42.6km s-min=35.2km az=159.0*
ISC 20 15:39:21.2±1.7, 33.19N±0.03×68.25E±0.04, h2km±11km, n112, σ1§24/122, mb4.3/37, MS3.6/4, 8C-4D, Southeastern Afghanistan

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
DRP	**Derazinda**	**2.20**	**131**		P	**Pn**	**15 40 05.0**	**+5.7**
SBDP	**Sheikh Budin**	**2.34**	**112**		P	**Pn**	**15 40 06.0**	**+4.7**
THW	**Thamme Wali**	**2.97**	**97**	⇑	P	**Pn**	**15 40 14.1**	**+3.8**
CEP	**Cherat**	**3.12**	**77**	⇓	P	**Pn**	**15 40 17.0**	**+4.5**
CHCP	**Chirah Chowk**	**4.22**	**82**	⇓	P	**Pn**	**15 40 31.2**	**+3.1**
JASL	**Jaisalmer**	**6.66**	**159**		*eP*	**Pn**	**15 41 04.5**	**+2.0**
KKR	**Kurukshetra**	**7.99**	**111**		*eP*	**Pn**	**15 41 20.1**	**-1.1**
RTK	**Rohtak**	**8.14**	**118**		*eP*	**P**	**15 41 22.2**	**-1.1**
RTK					*eS*	**Sn**	**15 42 49.8**	**-7.2**
KHET	**Khetri**	**8.27**	**126**		*eP*	**P**	**15 41 26.5**	**+1.3**
KHET					AMb	AMB	15 41 30.1	
	comp=Z,11nm,0.6s							
KHET					*eS*	**Sn**	**15 42 51.5**	**-8.8**
KUDL	**Kundal**	**8.70**	**123**		*eP*	**P**	**15 41 29.6**	**-1.6**
KUDL					*eS*	**Sn**	**15 43 00.5**	**-10**
KSH	**Kashi**	**8.87**	**42**		*eP*	**P**	**15 41 36.1**	**+2.7**
KSH					*eS*	**Sn**	**15 43 13.5**	**-1.6**
KSH					*e*PCP	PcP	15 47 59.3	+0.3
KSH					AMB	AMB		
	comp=Z,290nm,3.2s							
KSH					S	Sn		
	comp=N,80nm,0.6s							
KSH					S	Sn		
	comp=E,80nm,0.9s							
KSH					LR	LR		
	comp=N,2μm,5.4s							
KSH					LR	LR		
	comp=E,2μm,4.6s							
NDI	**New Delhi**	**8.92**	**118**		*eP*	**P**	**15 41 33.0**	**-1.1**
NDI					*eS*	**Sn**	**15 43 09.0**	**-7.4**
NDI					*e*		15 44 04.0	
RTUL	**Rataul**	**8.93**	**117**		*e*	**P**	**15 41 28.8**	**-5.5**
AYAN	**Aya Nagar**	**8.96**	**119**		*eP*	**P**	**15 41 33.0**	**-1.7**
AYAN					AMb	AMB	15 41 36.4	
	comp=Z,6.9nm,0.3s							
AYAN					*eS*	**Sn**	**15 43 09.3**	**-8.2**
SONA	**Sohna**	**9.06**	**121**		*eP*	**P**	**15 41 33.9**	**-2.2**
SONA					AMb	AMB	15 41 34.1	
	comp=Z,4.0nm,0.2s							
SONA					*eS*	**Sn**	**15 43 11.5**	**-8.5**
ASOR	**Ausora**	**9.30**	**116**		*eP*	**P**	**15 41 41.1**	**+1.7**
KALG	**Kalgarh**	**9.71**	**109**		*e*	**P**	**15 41 38.9**	**-6.2**
KALG					*e*		15 43 14.2	
AML	**Almayashu**	**9.91**	**24**	P		**P**	**15 41 48.2**	**+0.4**
	SNR=28							
KK31	**Karatay Array**	**10.05**	**10**	⇑	P	**P**	**15 41 50.3**	**+0.5**
	comp=Z,15nm,0.8s,baz=198,slow=14,SNR=94							
KK31				⇑	S	**S**	**15 43 39.4**	**-4.9**
	comp=Z,11nm,0.9s,baz=196,slow=23,SNR=3.9							
KKAR	**Karatay Array**	**10.05**	**10**		*eP*	**P**	**15 41 49.5**	**-0.3**
KKAR					S	**S**	**15 43 40.0**	**-4.4**
KKAR					pmax	pmax		
	comp=Z,7.0nm,0.6s							
KKAR					smax			
	comp=Z,2.0nm,0.5s							
UCH	**Uchtor**	**10.29**	**27**	P		**P**	**15 41 53.4**	**+0.4**
	SNR=13							
EKS2	**Erkin-Say**	**10.41**	**23**	P		**P**	**15 41 54.9**	**+0.3**
	SNR=12							
AAK	**Ala-Archa**	**10.63**	**26**	P		**P**	**15 41 58.2**	**+0.5**
	SNR=13							
KBK	**Karagaybulak**	**10.82**	**27**	P		**P**	**15 42 03.4**	**+3.1**
	SNR=13							
CHMS	**Chumysh**	**11.04**	**26**	P		**P**	**15 42 03.1**	**-0.2**
	SNR=17							
USP	**Ospenovka**	**11.19**	**24**	P		**P**	**15 42 05.7**	**+0.4**
	SNR=14							
TKM2	**Tokmak 2**	**11.30**	**29**	P		**P**	**15 42 06.8**	**-0.1**
	SNR=8.6							
KOLN	**Koldanda**	**14.30**	**108**		*eP*	**P**	**15 42 41.6**	**-5.3**
	comp=Z,38nm,0.5s							
GKN	**Gorkha**	**15.03**	**106**		*eP*	**P**	**15 42 54.3**	**-2.2**
	comp=Z,9.8nm,0.3s							
DMN	**Daman**	**15.57**	**106**		*eP*	**P**	**15 43 00.6**	**-3.0**
	comp=Z,30nm,0.7s							
KKN	**Kakani**	**15.64**	**106**		*eP*	**P**	**15 43 01.7**	**-2.7**
	comp=Z,42nm,0.6s							
PKI	**Pulchoki**	**15.83**	**106**		*eP*	**P**	**15 43 04.1**	**-2.8**
	comp=Z,32nm,0.6s							
AB31	**Akbulak array**	**17.20**	**341**	⇑	P	**P**	**15 43 23.1**	**-1.1**
	comp=Z,1.1nm,0.6s,baz=96,slow=6.6,SNR=3.5							
AB31	**Akbulak array**	**17.20**	**341**		*i* P	**P**	**15 43 22.8**	**-1.4**
MK31	**Makanchi Array**	**17.29**	**34**	⇑	P	**P**	**15 43 24.6**	**-0.8**
	comp=Z,4.5nm,0.8s							
MKAR	**Makanchi Array**	**17.29**	**34**		P	**P**	**15 43 24.4**	**-1.0**
	comp=Z,0.7nm,0.3s,baz=214,slow=10,SNR=16							
MKAR	**Makanchi Array**	**17.29**	**34**		P	**P**	**15 43 24.4**	**-0.9**
MKAR					pmax	pmax		
	comp=Z,3.0nm,0.7s							
WMQ	**Urumqi**	**18.51**	**49**		*eP*	**P**	**15 43 45.0**	**+4.4**
WMQ					PP	PP	15 44 02.0	+5.8
WMQ					S	**S**	**15 47 03.9**	**-0.8**
WMQ					SS	SS	15 47 29.5	+0.8
WMQ					PCP	PcP	15 48 15.0	+3.7
WMQ					SCP		15 51 44.0	
WMQ					SCS	ScS	15 55 23.3	-2.9
WMQ					AMB	AMB		
	comp=Z,18nm,0.8s							
WMQ					AMB	AMB		
	comp=Z,106nm,4.7s							
WMQ					LR	LR		
	comp=N,412nm,15.0s							
WMQ					LR	LR		
	comp=E,489nm,15.4s							
WMQ					LR	LR		
	comp=Z,633nm,17.3s							
KURK	**Kurchatov**	**19.10**	**20**	⇓	P	**P**	**15 43 46.2**	**-1.5**
	comp=Z,7.5nm,1.6s,baz=204,slow=8.4,SNR=12							
KURK	**Kurchatov**	**19.10**	**20**		*eP*	**P**	**15 43 46.3**	**-1.3**
VOSK	**Vostochnaya**	**19.62**	**5**	⇑	P	**P**	**15 43 52.6**	**-1.1**
	comp=Z,4.0nm,0.8s							
ZRNK	**Zerenda**	**19.75**	**1**	⇑	P	**P**	**15 43 54.7**	**-0.5**
	comp=Z,4.8nm,0.9s							
ZRNK	**Zerenda**	**19.75**	**1**		*eP*	**P**	**15 43 54.2**	**-1.0**
LSA	**Lhasa**	**19.84**	**94**		*eP*	**P**	**15 43 57.0**	**+0.7**
	comp=Z,6.6nm,0.8s							
BVA0	**Borovoye Array**	**19.88**	**4**	⇓	P	**P**	**15 43 55.7**	**-0.9**
	comp=Z,0.8nm,0.6s,baz=176,slow=11,SNR=43							
BVA0	**Borovoye Array**	**19.88**	**4**		*i* P	**P**	**15 43 55.4**	**-1.2**
BVAR	**Borovoye Array**	**19.88**	**4**		P	**P**	**15 43 55.7**	**-0.9**
	comp=Z,1.0nm,0.3s,baz=184,slow=10,SNR=24							
BVAR					LR	LR	15 52 18.8	
	comp=Z,76nm,21.7s,baz=45,slow=39							
BRVK	**Borovoye**	**19.91**	**4**	⇑	P	**P**	**15 43 56.3**	**-0.6**
	comp=Z,3.3nm,0.6s							
BRVK	**Borovoye**	**19.91**	**4**		*eP*	**P**	**15 43 55.8**	**-1.1**
GNI	**Garni**	**20.06**	**297**	P		**P**	**15 43 39.1**	**-20**
	comp=Z,5.1nm,0.6s,baz=132,slow=7.8,SNR=9.2							
GNI					LR	LR	15 53 11.9	
	comp=Z,79nm,21.4s,MS3.0,baz=154,slow=41							
SHL	**Shillong**	**21.93**	**104**		*eP*	**P**	**15 44 18.7**	**+0.9**
KIV	**Kislovodsk**	**22.60**	**306**		*eP*	**P**	**15 44 27.2**	**+2.8**
KIV					pmax	pmax		
	comp=Z,10.0nm,0.8s,mb4.3							
KIV					MLR	MLR		
	comp=Z,60nm,17.0s,MS3.1							
KIV					MLR	MLR		
	comp=N,30nm,16.0s,MS3.1							
KIV					MLR	MLR		
	comp=E,50nm,17.0s,MS3.1							
KIV	**Kislovodsk**	**22.60**	**306**		*eP*	**P**	**15 44 28.0**	**+3.6**
	comp=E,17nm,0.8s,mb4.5							
ZAL	**Zalesovo**	**23.84**	**25**	P		**P**	**15 44 37.5**	**+1.1**
	comp=E,3.8nm,0.4s,mb4.2,baz=160,slow=8.4,SNR=16							
ZAL	**Zalesovo**	**23.84**	**25**	P		**P**	**15 44 37.5**	**+1.1**
ZAL					pmax	pmax		
	comp=Z,4.0nm,0.4s							
ZAL	**Zalesovo**	**23.84**	**25**	P		**P**	**15 44 37.5**	**+1.1**
NVS	**Novosibirsk**	**24.08**	**22**		*i* P	**P**	**15 44 38.9**	**+0.2**
NVS					*e*		15 45 17.9	
NVS					pmax	pmax		
	comp=Z,17nm,1.9s,mb4.2							
NVS					pmax	pmax		
	comp=N,24nm,1.8s							
ARU	**Arti**	**24.18**	**347**		*eP*	**P**	**15 44 41.7**	**+2.0**
ARU	**Arti**	**24.18**	**347**		*eP*	**P**	**15 44 41.5**	**+1.8**
	comp=N,3.6nm,0.7s,mb3.9							
GTA	**Gaotai**	**26.10**	**67**		*eP*	**P**	**15 45 00.1**	**+2.0**
GTA					AMB	AMB		
	comp=Z,6.0nm,0.9s,mb4.1							
LZH	**Lanzhou**	**29.33**	**74**		*eP*	**P**	**15 45 28.4**	**+0.9**
LZH					AMB	AMB		
	comp=Z,28nm,1.5s,mb4.8							
ZAK	**Zakamensk**	**30.89**	**46**		*eP*	**P**	**15 45 41.7**	**+0.5**
ZAK					*e*		15 46 36.3	
CMAR	**Chiang Mai Arr**	**31.15**	**110**		P	**P**	**15 45 44.9**	**+1.1**
	comp=Z,2.5nm,0.8s,mb4.1,baz=296,slow=8.7,SNR=6.4							
CMAR	**Chiang Mai Arr**	**31.15**	**110**		P	**P**	**15 45 44.9**	**+1.1**
CMAR					pmax	pmax		
	comp=Z,3.0nm,0.8s							
TLY	**Talaya**	**31.58**	**44**		*eP*	**P**	**15 45 49.1**	**+1.9**
TLY					pmax	pmax		
	comp=Z,20nm,0.8s,mb5.0							
SONM	**Songino Array**	**32.12**	**52**	P		**P**	**15 45 53.1**	**+1.1**
	comp=Z,1.4nm,0.8s,mb3.8,baz=258,slow=8.4,SNR=13							
PSZ	**Piszkesteto**	**38.92**	**307**		*eP*	**P**	**15 46 51.9**	**+1.9**
	comp=Z,12nm,1.4s,mb4.4							
FINES	**FINESS Array B**	**39.06**	**329**	P		**P**	**15 46 53.2**	**+2.2**
	comp=Z,2.0nm,0.9s,mb3.9,baz=90,slow=1.9,SNR=4.0							
FINES	**FINESS Array B**	**39.06**	**329**	P		**P**	**15 46 53.2**	**+2.2**
FINES					pmax	pmax		
	comp=Z,2.0nm,0.9s							
FINES	**FINESS Array B**	**39.06**	**329**	P		**P**	**15 46 53.2**	**+2.2**
BOD	**Bodaibo**	**39.34**	**37**		*eP*	**P**	**15 46 53.4**	**0.0**
MORC	**Moravsky Berou**	**40.61**	**310**		*eP*	**P**	**15 47 05.3**	**+1.3**
	comp=Z,4.6nm,0.8s,mb4.2							
HIA	**Hailar**	**41.09**	**51**		*eP*	**P**	**15 47 08.8**	**+0.8**
	comp=Z,3.4nm,1.0s,mb3.9							
NJ2	**Nanjing**	**42.30**	**77**		*eP*	**P**	**15 47 19.6**	**+1.6**
NJ2					AMB	AMB		
	comp=Z,10.0nm,0.5s,mb4.7							
BRG	**Berggiesshubel**	**42.98**	**311**		*eP*	**P**	**15 47 25.5**	**+2.1**
BRG					pmax	pmax		
	comp=Z,5.0nm,1.1s,mb4.2							
BRG	**Berggiesshubel**	**42.98**	**311**	P		**P**	**15 47 25.5**	**+2.1**
	comp=Z,5.2nm,1.1s,mb4.2							
GERES	**GERESS Array B**	**43.08**	**308**	P		**P**	**15 47 25.2**	**+1.0**
	comp=Z,1.5nm,0.9s,mb3.7,baz=80,slow=8.1,SNR=9.5							
GERES	**GERESS Array B**	**43.08**	**308**	P		**P**	**15 47 25.2**	**+1.0**
GERES					pmax	pmax		
	comp=Z,2.0nm,0.9s							
ARCES	**ARCESS Array B**	**43.39**	**340**	P		**P**	**15 47 27.5**	**+1.0**
	comp=Z,4.3nm,0.7s,mb4.3,baz=127,slow=6.1,SNR=18							
ARCES	**ARCESS Array B**	**43.39**	**340**	P		**P**	**15 47 27.5**	**+1.1**
ARCES					pmax	pmax		
	comp=Z,4.0nm,0.7s							
GRA1	**Grafenberg Arr**	**44.70**	**309**		*eP*	**P**	**15 47 39.0**	**+1.7**
	comp=Z,12nm,0.9s,mb4.7							
GRF	**Grafenberg Arr**	**44.70**	**309**		*eP*	**P**	**15 47 39.0**	**+1.7**
GRF					pmax	pmax		
	comp=Z,12nm,0.9s,mb4.7							
CN2	**Changchun**	**45.20**	**59**		*eP*	**P**	**15 47 41.9**	**+0.6**
CN2					LR	LR		
	comp=Z,300nm,18.0s,MS4.3							
NOA	**NORSAR Array B**	**45.73**	**325**	P		**P**	**15 47 45.5**	**+0.2**
	comp=Z,0.8nm,0.8s,mb3.7,baz=108,slow=7.6,SNR=2.8							
NOA					LR	LR	16 10 10.7	
	comp=Z,135nm,18.2s,MS3.9,baz=100,slow=40							
NOA	**NORSAR Array B**	**45.73**	**325**	P		**P**	**15 47 45.5**	**+0.2**
NOA					pmax	pmax		
	comp=Z,1.0nm,0.8s							
NOA					MLR	MLR		
	comp=Z,135nm,18.2s							
CDF	**Champ du Feu**	**47.36**	**308**		*eP*	**P**	**15 47 57.7**	**-0.7**
SBF	**Sospel**	**47.77**	**301**		*eP*	**P**	**15 48 00.5**	**-1.2**
YAK	**Yakutsk**	**47.97**	**34**		*eP*	**P**	**15 48 02.4**	**-0.6**
	comp=Z,13nm,0.8s,mb5.0							
HAU	**Haudompre**	**48.01**	**307**		*eP*	**P**	**15 48 02.7**	**-0.8**
LPG	**La Plagne**	**48.03**	**304**		*eP*	**P**	**15 48 03.0**	**-0.7**
	comp=Z,8.5nm,0.8s,mb4.5							
LPL	**La Plagne**	**48.04**	**304**		*eP*	**P**	**15 48 03.0**	**-0.8**
	comp=Z,5.7nm,0.5s,mb4.5							
MBDF	**Montbardon**	**48.12**	**303**		*eP*	**P**	**15 48 03.0**	**-1.4**
CABF	**La Chapelle**	**48.34**	**305**		*eP*	**P**	**15 48 05.8**	**-0.3**
	comp=Z,8.2nm,0.8s,mb4.5							
GIVF	**Givet**	**48.82**	**310**		*eP*	**P**	**15 48 10.0**	**+0.3**
MEZF	**Maizieres J'vi**	**48.82**	**308**		*eP*	**P**	**15 48 08.8**	**-1.0**
	comp=Z,11nm,0.7s,mb4.7							
BAIF	**Baives**	**49.22**	**310**		*eP*	**P**	**15 48 13.2**	**+0.4**
	comp=Z,18nm,1.0s,mb4.8							
VIVF	**Saint-Julien-l**	**49.58**	**303**		*eP*	**P**	**15 48 14.7**	**-0.9**
TIXI	**Tiksi**	**49.67**	**21**		*eP*	**P**	**15 48 15.6**	**-0.4**
TIXI					pmax	pmax		
	comp=Z,16nm,0.9s,mb5.0							
SMF	**Signal de Mont**	**49.87**	**306**		*eP*	**P**	**15 48 17.0**	**-0.9**
	comp=Z,17nm,0.9s,mb4.8							
SSF	**Saint Saulge**	**50.04**	**306**		*eP*	**P**	**15 48 18.2**	**-0.9**
	comp=Z,20nm,1.1s,mb4.7							
AVF	**Avril sur Loir**	**50.18**	**306**		*eP*	**P**	**15 48 19.3**	**-0.9**
	comp=Z,9.7nm,1.0s,mb4.5							
LASF	**Ste Croix**	**50.29**	**302**		*eP*	**P**	**15 48 20.0**	**-1.1**
TCF	**Toulx Ste Croi**	**51.04**	**305**		*eP*	**P**	**15 48 26.1**	**-0.7**
	comp=Z,8.7nm,1.0s,mb4.3							
LDF	**La Druitiere**	**52.22**	**309**		*eP*	**P**	**15 48 34.3**	**-1.3**
	comp=Z,8.4nm,0.8s,mb4.4							
MFF	**Saint Martin d**	**52.59**	**306**		*eP*	**P**	**15 48 36.9**	**-1.6**
	comp=Z,5.9nm,0.9s,mb4.2							
ILAR	**Eielson Array**	**78.56**	**15**	P		**P**	**15 51 26.7**	**+1.4**
	comp=Z,0.4nm,0.9s,mb3.3,baz=301,slow=5.3,SNR=3.9							
WRA	**Warramunga Arr**	**82.25**	**120**	P		**P**	**15 51 46.3**	**+0.5**
	comp=Z,2.3nm,1.0s,mb4.1,baz=322,slow=4.8,SNR=15							
WRA	**Warramunga Arr**	**82.25**	**120**	P		**P**	**15 51 46.3**	**+0.5**
WRA					pmax	pmax		
	comp=Z,2.0nm,1.0s							
WRAB	**Tennant Creek**	**82.25**	**120**		*eP*	**P**	**15 51 45.5**	**-0.3**
	comp=Z,8.3nm,0.8s,mb4.7							
WB2	**Warramunga Arr**	**82.25**	**120**		*eP*	**P**	**15 51 46.6**	**+0.8**
ASAR	**Alice Springs**	**84.30**	**123**	P		**P**	**15 51 56.9**	**+0.6**
	comp=Z,0.6nm,0.5s,mb4.0,baz=310,slow=4.9,SNR=10							
YKA	**Yellowknife Ar**	**84.62**	**1**	P		**P**	**15 51 57.4**	**+0.4**
	comp=Z,0.3nm,0.6s,mb3.6,baz=351,slow=5.5,SNR=8.4							

IDC ***20*** *15:55:57.0±7.2, 18.01S×177.45W, h496km±81km, mb3.3/5, mb1 3.6/5, mb1mx3.3/13, Error ellipse: s-maj=93.8km s-min=30.3km az=147.0*
NEIC ***20*** *15:55:58.0±0.6, 17.74S×177.69W, h500km, mb4.0/6, Error ellipse: s-maj=23.0km s-min=15.4km az=144.0*
ISC 20 15:55:57.1±0.9, 17.8S±0.2×177.7W±0.2, h500km, n16, σ0§86/13, mb3.8/10, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
STKA	**Stephens Creek**	**39.27**	**241**		*eP*	**P**	**16 02 44.0**	**+0.9**
	4.3nm,1.1s,mb3.8							
STKA	**Stephens Creek**	**39.27**	**241**	P		**P**	**16 02 44.0**	**+0.9**
	2.8nm,0.6s,mb3.9,baz=85,slow=11,SNR=14							
WB2	**Warramunga Arr**	**45.30**	**259**		*eP*	**P**	**16 03 30.8**	**-0.4**
WRAB	**Tennant Creek**	**45.30**	**259**		*eP*	**P**	**16 03 30.5**	**-0.7**
	8.5nm,0.8s,mb4.2							
WRA	**Warramunga Arr**	**45.31**	**259**	P		**P**	**16 03 31.0**	**-0.3**
	2.1nm,0.5s,mb3.8,baz=95,slow=7.3,SNR=45							
AS12	**Alice Springs**	**45.46**	**254**		*eP*	**P**	**16 03 32.0**	**-0.4**
	11nm,1.1s,mb4.2							
ASAR	**Alice Springs**	**45.46**	**254**	P		**P**	**16 03 32.2**	**-0.2**
	9.7nm,0.8s,mb4.3,baz=88,slow=8.5,SNR=122							
ASAR					PcP	PcP	16 04 59.8	-1.7
	0.5nm,0.5s,baz=104,slow=3.7,SNR=5.6							
NWAO	**Narrogin (SRO)**	**59.85**	**242**	P		**P**	**16 05 10.4**	**-5.3**
	19nm,1.2s,mb4.4							
SBA	**Scott Base**	**60.56**	**184**		*eP*	**P**	**16 05 20.3**	**+0.5**
	5.4nm,1.2s,mb3.9							
QSPA	**South Pole Qui**	**72.25**	**180**		*eP*	**P**	**16 06 31.7**	**-0.2**
	1.0nm,0.5s,mb3.6							
NVAR	**Mina Array Bea**	**78.89**	**44**	P		**P**	**16 07 07.5**	**-1.7**
	0.7nm,0.8s,mb3.2,baz=211,slow=5.8,SNR=4.1							
ENH	**Enshi**	**84.77**	**304**		*eP*	**P**	**16 07 40.0**	**+0.7**
	2.7nm,0.7s,mb4.0							
ILAR	**Eielson Array**	**85.64**	**13**	P		**P**	**16 07 44.2**	**+1.6**
	0.2nm,0.5s,mb3.0,baz=222,slow=4.7,SNR=4.9							
BRTR	**Keskin Array B**	**145.18**	**315**	PKPbc		PKPbc	**16 14 38.9**	**+

EQES				S	Sn	16 51 36.8	+0.4	
ELIJ	**Sierra de Lija**	**2.87**	**308**	P	Pn	16 51 06.9	+0.1	
	1.8nm,0.4s,SNR=5.6							
ELIJ				S	Sn	16 51 44.1	+2.3	
	1.5nm,0.4s,SNR=7.9							
ELIJ	**Sierra de Lija**	**2.87**	**308**	P	Pn	16 51 06.5	-0.4	
ELIJ				S	Sn	16 51 40.1	-1.7	
EMUR	**La Murta**	**2.87**	**21**	P	Pn	16 51 08.1	+1.2	
	7.3nm,0.2s,SNR=8.3							
EMUR				S	Sn	16 51 40.9	-0.9	
	11nm,0.4s,SNR=7.9							
ESPR	**Espera**	**3.16**	**303**	P	Pn	16 51 11.9	+1.0	
	1.4nm,0.2s,SNR=7.9							
ESPR				S	Sn	16 51 50.3	+1.2	
	4.9nm,0.3s,SNR=7.9							
ESPR	**Espera**	**3.16**	**303**	P	Pn	16 51 10.9	0.0	
EADA	**Adamuz**	**3.40**	**332**	P	Pn	16 51 14.2	-0.1	
	2.3nm,0.4s,SNR=5.0							
EADA	**Adamuz**	**3.40**	**332**	P	Pn	16 51 14.1	-0.3	
EADA				S	Sn	16 51 52.1	-3.1	
EVIA	**Vianos**	**3.46**	**1**	P	Pn	16 51 15.8	+0.5	
	2.3nm,0.4s,SNR=4.0							
EVIA				S	Sn	16 51 57.2	+0.5	
	2.1nm,0.2s,SNR=7.9							
EVIA	**Vianos**	**3.46**	**1**	P	Pn	16 51 21.5	+6.3	
EVIA				S	Sn	16 51 56.4	-0.4	
ETOB	**Tobarra**	**3.56**	**13**	P	Pn	16 51 16.4	-0.3	
	1.3nm,0.3s,SNR=7.9							
ETOB				S	Sn	16 51 59.2	-0.2	
	5.8nm,0.4s,SNR=7.9							
ETOB	**Tobarra**	**3.56**	**13**	P	Pn	16 51 16.0	-0.7	
ETOB				S	Sn	16 51 58.3	-1.0	
ECAB	**El Cabril**	**3.70**	**322**	P	Pn	16 51 17.8	-0.8	
	0.6nm,0.3s,SNR=7.9							
ECAB				S	Sn	16 52 03.1	+0.4	
	7.4nm,0.5s,SNR=4.0							
EMIN	**Mina Concepcio**	**4.20**	**309**	P	Pn	16 51 23.1	-2.6	
EMIN				S	Sn	16 52 11.9	-3.6	
EBAD	**Badajoz**	**5.05**	**316**	P	Pn	16 51 36.2	-1.6	
EBAD				S	Sn	16 52 31.8	-5.1	

NEIC 20 17:00:20.0, 37.31N×114.82W, h0^{km}, ML3.9(REN), **After REN., Southern Nevada**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NEN	**Nelson**	**1.65**	**181**	*e*P	Pn	17 00 51.3	+0.9
NEN				*e*S	Sb	17 01 13.4	+1.1
TPH	**Tonopah**	**2.05**	**293**	*e*Pn	Pn	17 00 55.3	-0.8
LDFC	**Landfair**	**2.23**	**186**	*e*Pn	Pn	17 00 58.1	-0.6
MVU	**Marysvale**	**2.38**	**59**	*e*Pn	Pn	17 01 00.5	-0.4
MSU	**Marysvale**	**2.41**	**59**	*e*Pn	Pn	17 01 01.6	+0.4
MTUM	**Tungsten Hills**	**2.98**	**272**	*e*Pn	Pn	17 01 08.6	-0.8
WUAZ	**Wupatki**	**3.31**	**122**	*e*Pn	Pn	17 01 13.0	-1.0
NLU	**North Lily Min**	**3.41**	**38**	Pn	Pn	17 01 14.5	-1.0
BMN	**Battle Mountai**	**3.64**	**330**	*e*Pn	Pn	17 01 16.4	-2.4
MPU	**Maple Canyon**	**3.68**	**42**	Pn	Pn	17 01 18.4	-0.9
SRU	**San Rafael**	**3.83**	**61**	*e*Pn	Pn	17 01 21.9	+0.4
BGU	**Big Grassy Mou**	**3.87**	**21**	Pn	Pn	17 01 21.3	-0.8
PFO	**Pinyon Flat Ob**	**3.92**	**200**	Pn	Pn	17 01 19.5	-3.3
MWC	**Mount Wilson**	**4.05**	**222**	*e*Pn	Pn	17 01 23.4	-1.2
DAU	**Daniels Canyon**	**4.17**	**41**	Pn	Pn	17 01 26.8	+0.6
JLU	**Jordanelle**	**4.21**	**38**	Pn	Pn	17 01 27.3	+0.4
WCN	**Washoe City**	**4.36**	**299**	Pn	Pn	17 01 27.6	-1.4
CMB	**Columbia Colle**	**4.47**	**281**	Pn	Pn	17 01 29.3	-1.3
TCUT	**Toone Canyon**	**4.64**	**34**	*e*Pn	Pn	17 01 30.3	-2.7
HVU	**Hansel Valley**	**4.74**	**19**	Pn	Pn	17 01 32.5	-1.9
BAR	**Barrett**	**4.86**	**199**	Pn	Pn	17 01 35.3	-0.8
HWUT	**Hardware Ranch**	**4.98**	**29**	*e*Pn	Pn	17 01 35.0	-2.7
PV01	**Paradox Valley**	**5.03**	**79**	Pn	Pn	17 01 38.2	-0.2
RW3	**Ridgway**	**5.73**	**78**	Pn	Pn	17 01 47.1	-1.3
WVOR	**Wild Horse Val**	**5.90**	**331**	Pn	Pn	17 01 51.8	+1.0
HLID	**Hailey**	**6.26**	**3**	Pn	Pn	17 01 54.0	-1.8
LAZ	**Ladron**	**6.88**	**113**	Pn	Pn	17 02 01.3	-3.2

*TAP **20** 17:10:43.6, 22.64N×121.42E, h15^{km}±1^{km}, ML3.5*
*JMA **20** 17:10:45.5±0.3, 22.62N×121.62E, h73^{km}, M2.9*
ISC 20 17:10:44.9±2.1, **22.7N**±0.2×**121.7E**±0.2, **h15**^{km}, **n6, g0§42/12, Taiwan region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**2.17**	**34**	P	Pn	17 11 21.2	+0.3
YOJ				*e*S	Sn	17 11 47.2	-0.5
HATJ	**Hateruma jima**	**2.40**	**54**	P	Pn	17 11 24.2	0.0
HATJ				*e*S	Sn	17 11 53.6	+0.1
IRIF	**Iriomote-Funau**	**2.51**	**48**	P	Pn	17 11 25.9	0.0
IRIF				*e*S	Sn	17 11 57.7	+1.2
JKRS	**Kuro-shima**	**2.65**	**53**	P	Pn	17 11 28.0	+0.1
JKRS				*e*S	Sn	17 11 59.6	-0.4
JIJ	**Ishigaki jima**	**2.83**	**53**	P	Pn	17 11 30.3	-0.1
JIJ				*e*S	Sn	17 12 04.2	-0.2
JTJ	**Tarama**	**3.40**	**54**	P	Pn	17 11 38.3	-0.2
JTJ				*e*S	Sn	17 12 18.7	-0.2

*ATH **20** 17:15:25.8, 40.98N×19.31E, h45^{km}, MD3.7/7*
*THE **20** 17:15:27.1, 40.97N×19.33E, h21^{km}, ML3.8*
*TIR **20** 17:15:28.3, 40.80N×19.84E, h5^{km}, Ml3.6*
*NEIC **20** 17:15:30.9±0.3, 40.79N×19.68E, h58^{km}±6^{km}, MD3.8(ATH), MD3.5(PDG), Error ellipse: s-maj=4.3km s-min=3.4km az=202.0*
*IDC **20** 17:15:31.3±4.9, 40.94N×19.51E, h56^{km}±32^{km}, mb3.3/8, mb1 3.4/12, mb1mx3.3/27, ML3.2/4, MS2.8/1, Ms1 2.9/1, ms1mx2.2/17, Error ellipse: s-maj=52.5km s-min=18.6km az=25.0*
ISC 20 17:15:29.3±0.3, **40.77N**±0.02×**19.62E**±0.02, **h28**^{km}±3^{km}, **n93, σ1§32/138, mb3.8/6, 11C-3D, Albania**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VLO	**Vlora**	**0.32**	**197**	*i* Pg	Pb	17 15 36.6	-0.2
VLO				*i* Sg	Sb	17 15 42.3	+0.4
TPE	**Tepelena**	**0.56**	**148**	*i* Pg	Pb	17 15 38.2	-2.4
TPE				*i* Sg	Sb	17 15 47.0	-1.4
TIR	**Tirane**	**0.60**	**18**	*i* Pg	Pb	17 15 40.1	-1.2
TIR				*i* Sg	Sb	17 15 50.5	+0.9
QSH	**Qafa e Shtames**	**0.78**	**16**	*i* pg?	Pb	17 15 45.9	+1.7
LACI	**Lac**	**0.87**	**5**	*i* Pg	Pb	17 15 44.3	-1.4
LACI				*i* Sg	Sb	17 15 58.4	+1.4
KBN	**Korca**	**0.90**	**99**	*i* Pg	Pn	17 15 43.4	-2.8
KBN				*i* Sg	Sb	17 15 45.4	-13
SRN	**Sarande**	**0.94**	**162**	*i* Pg	Pn	17 15 47.1	+0.4
SRN				*i* Sg	Sb	17 16 01.2	+2.3
OHR	**Ohrid**	**0.96**	**69**	⇓*i*Pg	Pn	17 15 44.1	-2.9
OHR				*i*		17 15 48.9	
OHR				*i*		17 15 54.1	
OHR				*i* Sg	Sb	17 15 59.1	-0.4
LSK	**Leskovik**	**0.97**	**129**	*i* Pg	Pn	17 15 45.0	-2.2
LSK				*i* Sg	Sb	17 16 01.0	+1.1
KEK	**Kerkira**	**1.07**	**172**	*e*P	Pn	17 15 49.0	+0.4
KEK				*e*S	Sn	17 16 05.5	+3.0
ULC	**Ulcinj**	**1.22**	**347**	*e*Pg	Pn	17 15 50.8	0.0
ULC				*e*Sg	Sn	17 16 07.3	+0.8
LCI	**Lecce**	**1.23**	**250**	*e*Pn	Pn	17 15 51.5	+0.7
LCI				*e*Sn	Sn	17 16 11.2	+4.6
SDA	**Shkodra**	**1.28**	**356**	*i* Pg	Pn	17 15 52.7	+1.0
SDA				*i* Sg	Sn	17 16 11.4	+3.4
PUK	**Puka**	**1.29**	**9**	*i* Pg	Pn	17 15 52.8	+1.1
PUK				*i* Sg	Sn	17 16 11.9	+3.8
BIA	**Bitola**	**1.32**	**79**	*i* Pn	Pn	17 15 49.6	-2.5
BIA				*i*		17 15 53.2	
BIA				*i* Sg	Sn	17 16 09.1	+0.2
FNA	**Florina**	**1.33**	**89**	*e*Pb	Pb	17 15 51.4	-2.2
FNA				*e*Sb	Sb	17 16 11.0	+0.7
IGT	**Igoumenitsa**	**1.35**	**156**	*e*Pb	Pb	17 15 53.3	-0.6
IGT				*e*Sb	Sb	17 16 12.8	+1.9
JAN	**Janina**	**1.46**	**139**	⇓*i*P	Pn	17 15 55.2	+1.0
JAN				*e*S	Sn	17 16 18.5	+6.0
MEV	**Metsovon**	**1.58**	**128**	*e*Pb	Pb	17 15 57.7	0.0
MEV				*e*Sb	Sb	17 16 18.4	+1.1
BUM	**Brajici-Budva**	**1.62**	**341**	⇑*i*Pg	Pn	17 15 57.0	+0.5
BUM				*e*Sg	Sn	17 16 19.4	+2.8
TTG	**Podgorica**	**1.68**	**351**	*e*Pn	Pn	17 15 57.7	+0.4
TTG				*e*Sn	Sn	17 16 20.9	+2.8
KZN	**Kozani**	**1.71**	**105**	*e*P	Pn	17 15 58.0	+0.3
KZN				*e*S	Sn	17 16 22.5	+3.7
SKO	**Skopje**	**1.82**	**48**	⇑*i*Pn	Pn	17 15 59.6	+0.2
	comp=Z,0.1nm,0.5s						
SKO				*i*		17 16 00.1	
SKO				*i*		17 16 03.4	
SKO				*i* Sg	Sn	17 16 23.7	+2.0
SKO				Lg		17 16 27.0	
	comp=Z,0.4nm,0.7s						
BRT	**Bari-Castellan**	**1.83**	**274**	*e*Pn	Pn	17 16 00.3	+0.8
PVY	**Plav**	**1.84**	**8**	⇑*i*Pn	Pn	17 16 00.8	+1.2
PVY				*e*Sn	Sn	17 16 25.9	+3.6
HCY	**Herceg Novi**	**1.87**	**334**	⇑*i*Pn	Pn	17 15 59.7	-0.4
HCY				*e*Sn	Pn	17 16 25.2	+2.1
NKY	**Niksic**	**2.09**	**347**	⇑*i*Pn	Pn	17 16 04.0	+0.8
NKY				*e*Sn	Sn	17 16 30.9	+2.3
IVA	**Berane**	**2.11**	**6**	⇑*i*Pn	Pn	17 16 05.0	+1.5
IVA				*e*Sn	Sn	17 16 32.3	+3.3
GRG	**Griva**	**2.12**	**84**	*e*Pn	Pn	17 16 03.5	-0.2
GRG				*e*Sn	Sn	17 16 30.0	+0.7
BRY	**Bratogost**	**2.27**	**340**	⇑*i*Pn	Pn	17 16 06.1	+0.3
BRY				*e*Sn	Sn	17 16 35.2	+1.9
LIT	**Litokhoron**	**2.29**	**106**	*e*Pn	Pn	17 16 06.1	0.0
LIT				*e*Sn	Sn	17 16 36.0	+2.3
UPM	**Unac-Piva**	**2.49**	**348**	*e*Pn	Pn	17 16 09.3	+0.5
UPM				*e*Sn	Sn	17 16 39.8	+1.2
EVR	**Evrytania**	**2.50**	**137**	*e*P	Pn	17 16 10.1	+0.9
KNT	**Kendrikon**	**2.51**	**80**	*e*Pn	Pn	17 16 08.6	-0.6
KNT				*e*Sn	Sn	17 16 39.1	-0.2
ORI	**Oriolo Calabro**	**2.52**	**255**	*e*Pn	Pn	17 16 09.9	+0.6
STON	**Ston**	**2.54**	**326**	*i* Pn	Pn	17 16 07.9	-1.8
STON				*i* Sn	Sn	17 16 39.3	-0.7
PLE	**Pljevlja**	**2.56**	**356**	⇑*i*Pn	Pn	17 16 10.9	+0.9
PLE				*e*Sn	Sn	17 16 43.0	+2.4
VLS	**Valsamata**	**2.70**	**164**	*e*P	Pn	17 16 10.5	-1.4
AGG	**Agios Georgios**	**2.72**	**129**	*e*Pn	Pn	17 16 12.6	+0.4
AGG				*e*Sn	Sn	17 16 46.0	+1.4
NVSS	**Nova Varos 2**	**2.73**	**1**	⇑*i*Pn	Pn	17 16 11.6	-0.8
NVSS				Sn	Sn	17 16 45.0	+0.1
TDS	**Terranova Siba**	**2.75**	**247**	*e*Pn	Pn	17 16 14.5	+1.9
SOH	**Sokhos**	**2.84**	**88**	*e*Pn	Pn	17 16 13.3	-0.6
FGMS	**Monte Sant'Ang**	**2.92**	**290**	*e*Pn	Pn	17 16 14.9	-0.1
PLG	**Polygyros**	**2.94**	**97**	*e*P	Pn	17 16 14.7	-0.7
SRS	**Serrai**	**3.03**	**82**	*e*Pn	Pn	17 16 15.9	-0.7
SRS				*e*Sn	Sn	17 16 52.1	-0.3
SLCN	**Sala Consilina**	**3.06**	**264**	*e*Pn	Pn	17 16 17.4	+0.4
FG4	**Candela**	**3.13**	**278**	*e*Pn	Pn	17 16 18.2	+0.3
NEO	**Neokhori**	**3.13**	**117**	*e*P	Pn	17 16 20.0	+2.0
MRLC	**Muro Lucano**	**3.14**	**271**	*e*Pn	Pn	17 16 19.3	+1.2
MGR	**Morigerati**	**3.17**	**260**	*e*Pn	Pn	17 16 19.1	+0.5
RGNG	**Rignano Grg**	**3.17**	**288**	*e*Pn	Pn	17 16 18.4	-0.2
RGNG				*e*Sn	Sn	17 16 55.2	-0.8
PAIG	**Paliouri**	**3.22**	**104**	*e*Pn	Pn	17 16 18.2	-1.1
SGO	**Sicignano**	**3.29**	**268**	*e*Pn	Pn	17 16 20.2	-0.1
FG5	**Orsara di Pugl**	**3.33**	**280**	*e*Pn	Pn	17 16 22.2	+1.3
OUR	**Ouranopolis**	**3.35**	**96**	*e*Pn	Pn	17 16 20.2	-1.0
CSSN	**Cassano Irpino**	**3.49**	**273**	*e*Pn	Pn	17 16 24.4	+1.3
BOLS	**Boljevac**	**3.52**	**29**	⇑*i*Pn	Pn	17 16 22.3	-1.2
BOLS				Sn	Sn	17 17 03.0	-1.6
SOI	**Samo**	**3.86**	**227**	*e*Pn	Pn	17 16 27.7	-0.7
SOI				*e*Sn	Sn	17 17 13.8	+0.5
SGG	**Gregorio Mates**	**4.01**	**281**	*e*Pn	Pn	17 16 31.4	+0.9
ITM	**Ithomi**	**4.01**	**153**	*e*P	Pn	17 16 31.0	+0.4
CPI2	**Carpinone**	**4.08**	**283**	*e*Pn	Pn	17 16 32.2	+0.6
CII	**Carovilli**	**4.12**	**285**	*e*Pn	Pn	17 16 32.8	+0.8
RNI2	**Rionero Sannit**	**4.22**	**285**	*e*Pn	Pn	17 16 34.4	+0.8
INTR	**Introdacqua**	**4.47**	**288**	*e*Pn	Pn	17 16 36.8	-0.3
SDI	**San Donato**	**4.48**	**284**	*e*Pn	Pn	17 16 37.2	+0.1
TERO	**Teramo**	**4.87**	**294**	*e*Pn	Pn	17 16 42.0	-0.4
TERO				*e*Sn	Sn	17 17 36.0	-2.9
ALN	**Alexandroupoli**	**4.88**	**86**	*e*Pn	Pn	17 16 41.1	-1.7
AQU	**L'Aquila**	**4.92**	**291**	*e*Pn	Pn	17 16 42.8	-0.7
CERT	**Cerreto**	**5.13**	**285**	*e*Pn	Pn	17 16 45.9	-0.5
NVLJ	**Novalja**	**5.16**	**319**	*i* Pn	Pn	17 16 44.9	-1.9
NVLJ				*i* Sn	Sn	17 17 43.0	-3.1
CING	**Cingoli**	**5.44**	**301**	*e*Pn	Pn	17 16 49.1	-1.7
MNS	**Montasola**	**5.45**	**289**	*e*Pn	Pn	17 16 50.7	-0.1
SNTG	**Esanatoglia**	**5.56**	**299**	*e*Pn	Pn	17 16 50.6	-1.8
SNTG				*e*Sn	Sn	17 17 52.0	-4.2
ARV	**Arcevia**	**5.66**	**301**	*e*Pn	Pn	17 16 52.0	-1.9
FSSB	**Fossombrone**	**5.86**	**302**	*e*Pn	Pn	17 16 54.7	-1.9
SANT	**Santorini**	**6.34**	**132**	P	Pn	17 16 55.8	-7.7
MLR	**Muntele Rosu**	**6.61**	**42**	P	Pn	17 17 06.6	-0.6
	comp=Z,0.7nm,0.3s,baz=195,slow=6.5,SNR=6.9						
VOY	**Vojsko**	**6.71**	**323**	*e*Pn	Pn	17 17 07.0	-1.6
VOY				*e*Sn	Sn	17 18 19.5	-5.4
OBKA	**Obir**	**6.81**	**329**	⇓*i*PN	Pn	17 17 08.2	-1.9
OBKA				*i* SN	Sn	17 18 21.4	-6.1
KRIS	**Kristallenia**	**7.26**	**138**	*e*Pn	Pn	17 17 12.1	-4.4
WTTA	**Wattenberg**	**8.67**	**321**	⇑*i*PN	P	17 17 34.7	-1.3
WTTA				*i* SN	Sn	17 19 07.7	-6.1
GERES	**GERESS Array B**	**9.10**	**334**	P	P	17 17 38.3	-3.7
	comp=Z,0.1nm,0.3s,baz=163,slow=13,SNR=3.3						
GERES				S	Sn	17 19 16.7	-7.8
	comp=Z,0.5nm,0.3s,baz=154,slow=23,SNR=7.9						
BRTR	**Keskin Array B**	**10.77**	**91**	P	P	17 18 02.7	-2.1
	comp=Z,0.1nm,0.3s,baz=275,slow=16,SNR=2.7						
ESDC	**Sonseca Array**	**18.04**	**274**	LR	LR	17 26 24.8	
	comp=Z,30nm,20.9s,baz=270,slow=36						
HFS	**Hagfors**	**19.73**	**351**	P	P	17 19 53.1	-6.4
	comp=Z,0.0nm,0.3s,baz=190,slow=16,SNR=2.1						
EKA	**Eskdalemuir Ar**	**20.93**	**322**	P	P	17 20 05.5	-6.6
	comp=Z,1.1nm,0.9s,baz=110,slow=11,SNR=3.0						
NOA	**NORSAR Array B**	**20.94**	**349**	P	P	17 20 08.3	-3.8
	comp=Z,0.6nm,0.8s,baz=111,slow=4.8,SNR=2.5						
FINES	**FINESS Array B**	**21.07**	**9**	P	P	17 20 09.2	-4.3
	comp=Z,1.2nm,0.6s,mb3.4,baz=162,slow=18,SNR=4.2						
ARCES	**ARCESS Array B**	**29.00**	**4**	P	P	17 21 23.2	-5.1
	comp=Z,1.2nm,0.8s,mb3.7,baz=200,slow=34,SNR=3.0						
BVAR	**Borovoye Array**	**36.04**	**53**	P	P	17 22 26.1	-3.9
	comp=Z,0.7nm,0.5s,mb3.8,baz=284,slow=9.2,SNR=7.4						
MKAR	**Makanchi Array**	**44.59**	**60**	P	P	17 23 37.4	-3.1
	comp=Z,0.9nm,0.6s,mb3.8,baz=276,slow=7.1,SNR=14						
SCHQ	**Schefferville**	**56.10**	**316**	P	P	17 25 04.0	-4.0
	comp=Z,1.2nm,0.5s,mb4.2,baz=207,slow=15,SNR=4.2						
SONM	**Songino Array**	**59.37**	**51**	P	P	17 25 28.2	-3.0
	comp=Z,0.5nm,0.6s,mb3.7,baz=284,slow=5.9,SNR=6.7						

DJA 20 17:15:36.9±1.0, **8.77S**×**116.14E, h33**^{km}, **MD4.6**/3, **ML5.3**/1, **2C-4D, Error ellipse: s-maj=32.1km s-min=10.2km az=137.0, Sumbawa region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEDI	**Kedomdong**	**0.28**	**354**	⇓*e*Pg	P	17 15 44.3	-0.1
	5μm,0.1s						
KEDI				⇑*i*Sg	Sb	17 15 49.2	-0.4
RATI	**Rata**	**0.61**	**275**	⇓*i*Pg	P	17 15 47.4	-1.5
	5μm,0.1s						
RATI				⇓*i*Sg	Sb	17 15 56.1	-1.5
INGI	**Ingas**	**0.99**	**267**	⇓*e*Pn	Pn	17 15 53.4	-1.2
	4μm,0.2s						
INGI				⇑*e*Sn	Sn	17 16 05.2	-2.3

*IDC **20** 17:24:05.5±2.0, 7.42N×125.79E, mb3.8/5, mb1 3.9/5, mb1mx3.6/19, MS2.8/2, Ms1 2.8/2, ms1mx2.6/28, Error ellipse: s-maj=125.0km s-min=24.7km az=67.0*
*MAN **20** 17:24:07.7, 7.71N×126.05E, h1^{km}, mb4.6, ML3.5, MS3.3*
ISC 20 17:24:06.5±1.0, **7.59N**±0.04×**126.33E**±0.05, **h24**^{km}±8^{km}, **n20, σ1§12/29, mb3.6/5, MS2.9/1, 7C-2D, Mindanao**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BIPH	**Bislig**	**0.59**	**3**	⇓*e*P	Pb	17 24 17.6	-0.6
BIPH				*e*S	Sb	17 24 26.2	0.0
DMPH	**Davao City--Mi**	**0.96**	**239**	*e*P	Pb	17 24 23.4	-0.9
DMPH				*e*S	Sb	17 24 39.9	+3.3
BUTP	**Butuan**	**1.54**	**333**	⇑*e*P	Pn	17 24 33.4	+0.5
BUTP				*e*S	Sn	17 24 54.2	+1.8
CGP	**Cagayan de Oro**	**1.84**	**298**	⇓*i*P	Pn	17 24 36.4	-0.8
CGP				*e*S	Sn	17 25 00.5	+0.6
CTBH	**Cotabato--PC H**	**2.10**	**260**	*e*P	Pn	17 24 40.3	-0.6
CTBH				*i* S	Sn	17 25 06.2	-0.3
MSLP	**Maasin**	**2.92**	**330**	⇑*e*P	Pn	17 24 53.5	+0.9
MSLP				*e*S	Sn	17 25 23.7	-3.7
PAGZ	**Pagadian**	**2.94**	**275**	⇑*e*P	Pn	17 24 52.1	-0.8
PAGZ				*e*S	Sn	17 25 28.9	+1.1
DCPH	**Dipolog City**	**3.11**	**289**	⇑*i*P	Pn	17 24 56.7	+1.3
TBP	**Tagbilaran**	**3.21**	**311**	*e*P	Pn	17 24 55.6	-1.2
TBP				*e*S	Sn	17 25 33.2	-1.6
PLP	**Palo**	**3.80**	**340**	*e*P	Pn	17 25 04.8	-0.3
PLP				*e*S	Sn	17 25 55.2	+5.6
OCLP	**Ormoc**	**3.84**	**334**	⇑*e*P	Pn	17 25 06.8	+1.1
BESP	**Borongan**	**4.09**	**348**	⇑*e*P	Pn	17 25 11.4	+2.2
BESP				*e*S	Sn	17 25 55.7	-1.2
CNP	**Catarman**	**5.16**	**342**	⇑*e*P	Pn	17 25 25.8	+1.3
CNP				*e*S	Sn	17 26 21.1	-2.9
TGY	**Tagaytay City**	**8.37**	**321**	LR	LR	17 30 03.4	
	comp=Z,44nm,21.7s,baz=100,slow=44						
FITZ	**Fitzroy Crossi**	**25.53**	**182**	P	P	17 29 35.3	-0.1
	2.4nm,0.6s,mb3.9,baz=354,slow=10,SNR=3.4						
PMG	**Port Moresby**	**26.75**	**129**	LR	LR	17 40 16.9	
	comp=Z,34nm,20.6s,MS2.9,baz=92,slow=36						
WRA	**Warramunga Arr**	**28.47**	**164**	P	P	17 30 03.1	+0.9
	0.4nm,0.9s,mb3.0,baz=341,slow=9.9,SNR=5.1						
ASAR	**Alice Springs**	**31.93**	**167**	P	P	17 30 32.1	-0.8
	0.5nm,0.5s,mb3.6,baz=339,slow=7.2,SNR=13						
STKA	**Stephens Creek**	**41.86**	**160**	P	P	17 31 56.7	0.0
	0.8nm,0.5s,mb3.6,baz=331,slow=8.7,SNR=4.4						
MKAR	**Makanchi Array**	**54.20**	**324**	P	P	17 33 31.6	-1.0
	1.5nm,0.6s,mb4.1,baz=121,slow=8.6,SNR=5.7						

DJA 20 17:42:49.2±1.0, **8.18S**×**114.95E, h15**^{km}, **MD4.5**/1, **ML3.9**/1, **4C-2D, Error ellipse: s-maj=19.9km s-min=11.9km az=134.0, Bali region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
INGI	**Ingas**	**0.67**	**163**	⇓*e*Pg	Pg	17 43 01.4	-1.4
INGI				⇑*i*Sg	Sg	17 43 10.4	-1.5
RATI	**Rata**	**0.80**	**133**	⇓*e*Pg	Pg	17 43 02.9	-2.4
RATI				⇓*e*Sg	Sg	17 43 13.1	-3.0
KEDI	**Kedomdong**	**1.20**	**105**	⇑*e*Pg	Pg	17 43 09.7	-3.5
	164nm,0.1s						
KEDI				⇑*e*Sg	Sg	17 43 24.8	-4.5

*IDC **20** 17:53:00.6±0.8, 24.00N×142.12E, h89^{km}±7^{km}, mb3.6/12, mb1 3.8/14, mb1mx3.7/25, Error ellipse: s-maj=26.0km s-min=9.0km az=92.0*
*NEIC **20** 17:53:05.5±3.5, 24.06N×141.74E, h144^{km}±33^{km}, mb4.1/6, Error ellipse: s-maj=35.3km s-min=11.8km az=99.0*
ISC 20 17:52:60.0±1.3, **24.03N**±0.07×**141.9E**±0.1, **h102**^{km}±11^{km}, **h90**^{km}±..2^{km}: **pP-P, n36, σ1§25/42, mb4.0**/17, **Volcano Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHHJ	**Haha-jima-NKT**	**2.61**	**6**	P	P	17 53 42.1	+0.7
JHHJ				S	S	17 54 14.5	+2.1
CBIJ	**Chichi jima**	**3.06**	**5**	P	P	17 53 48.4	+0.7
	84nm,0.3s,baz=265,slow=23,SNR=6.0						
CBIJ				S	S	17 54 23.2	-0.4
	81nm,0.3s,baz=304,slow=23,SNR=7.4						
CBIJ	**Chichi jima**	**3.06**	**5**	P	P	17 53 48.6	+0.9
CBIJ				S	S	17 54 24.7	+1.1
JHJ2	**Mitsune**	**9.23**	**349**	*e*S	S	17 56 52.8	-1.8
JHJ	**Hachijo jima 2**	**9.25**	**349**	P	P	17 55 11.2	-0.7
	14nm,0.3s,baz=62,slow=20,SNR=2.9						
JHJ				S	S	17 56 50.6	-4.2
	5.0nm,0.3s,baz=62,slow=21,SNR=2.5						
NJJJ	**Nii jima 2**	**10.59**	**348**	P	P	17 55 35.0	+5.1
NJJJ				*e*S	S	17 57 31.4	+4.3
**BSO

EHUE	**Huescar**	**2.80**	**26**	P		Pn	18 04 33.4	-0.8
EADA	**Adamuz**	**2.89**	**353**	P		Pn	18 04 34.5	-1.0
	0.2nm,0.2s,SNR=7.9							
EADA				S		Sn	18 05 10.5	-1.0
	0.8nm,0.2s,SNR=7.9							
EADA	**Adamuz**	**2.89**	**353**	P		Pn	18 04 35.2	-0.3
EADA				S		Sn	18 05 10.3	-1.2
ECAB	**El Cabril**	**2.96**	**340**	P		Pn	18 04 36.6	+0.1
	0.4nm,0.2s,SNR=7.9							
ECAB				S		Sn	18 05 12.2	-1.1
	1.8nm,0.3s,SNR=7.9							
EMIN	**Mina Concepcio**	**3.21**	**321**	S		Sn	18 05 18.1	-1.4
	0.6nm,0.2s							
EMIN	**Mina Concepcio**	**3.21**	**321**	P		Pn	18 04 39.7	-0.3
EMIN				S		Sn	18 05 18.3	-1.2
EMUR	**La Murta**	**3.44**	**42**	S		Sn	18 05 23.1	-2.4
	11nm,0.5s,SNR=4.0							
EMUR	**La Murta**	**3.44**	**42**	P		Pn	18 04 42.1	-1.3
EMUR				S		Sn	18 05 21.0	-4.5
EGRO	**El Granado**	**3.51**	**311**	P		Pn	18 04 43.9	-0.4
	0.3nm,0.1s,SNR=7.9							
EGRO				S		Sn	18 05 25.1	-2.1
	0.7nm,0.1s,SNR=7.9							
EGRO	**El Granado**	**3.51**	**311**	P		Pn	18 04 44.1	-0.2
EGRO				S		Sn	18 05 25.1	-2.1
ETOB	**Tobarra**	**3.93**	**31**	P		Pn	18 04 50.4	+0.2
	1.4nm,0.2s,SNR=9.4							
ETOB				S		Sn	18 05 36.1	-1.6
	1.9nm,0.3s							
ETOB	**Tobarra**	**3.93**	**31**	P		Pn	18 04 49.5	-0.8
ETOB				S		Sn	18 05 33.1	-4.7
EBAD	**Badajoz**	**4.16**	**327**	P		Pn	18 04 53.5	0.0
	0.4nm,0.1s,SNR=7.9							
EBAD				S		Sn	18 05 41.0	-2.5
	2.3nm,0.2s,SNR=7.9							
EBAD	**Badajoz**	**4.16**	**327**	P		Pn	18 04 52.9	-0.6
EBAD				S		Sn	18 05 41.0	-2.5

ISC 20 18:03:57.9±0.7,**46.40N**±0.03×**15.11E**±0.07,**n5,**σ@**61**/9,
1C-1D, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PERS	**Pernice**	**0.24**	**1**	*i* Pg	**Pg**	**18 04 03.1**	**+0.4**
PERS				*i* Sg	**Sg**	**18 04 07.1**	**+1.2**
GROS	**Grobnik**	**0.28**	**76**	*i* Pg	**Pg**	**18 04 03.7**	**+0.3**
OBKA	**Obir**	**0.40**	**287**	↑*i* PG	**Pg**	**18 04 05.4**	**-0.6**
OBKA				*i* SG	**Sg**	**18 04 11.5**	**+0.2**
	9.8nm,0.4s						
LEGS	**Legarje**	**0.47**	**162**	*i* Pg	**Pg**	**18 04 07.1**	**-0.1**
LEGS				*i* Sg	**Sg**	**18 04 13.9**	**+0.3**
	comp=Z,9.0nm,0.3s						
ARSA	**Arzberg**	**0.90**	**18**	↓*i* PG	**Pg**	**18 04 15.0**	**-0.9**
ARSA				*i* SG	**Sg**	**18 04 27.2**	**-0.7**
	comp=Z,2.3nm,0.3s						

*NEIC **20** 18:04:50.7±0.8, 44.01N×105.53W, ML3.3, Error ellipse: s-maj=13.0km s-min=8.9km az=175.0, Suspected Mining explosion.*
NEIC 30 km [20 miles] S of Gillette. ML 3.3 [GS].
*IDC **20** 18:04:53.6±1.4, 44.02N×105.78W, mb4.2/1, mb1 3.8/5, mb1mx3.5/23, ML3.4/4, Error ellipse: s-maj=43.8km s-min=8.5km az=146.0*

ISC 20 18:04:50.0±0.6,**43.97N**±0.07×**105.55W**±0.08,**n25,**
σ1$**37**/26,**mb4.3/1, Wyoming**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RSSD	**Black Hills**	**1.10**	**82**	*e*P	**Pb**	**18 05 11.9**	**+0.2**
BW06	**Boulder Array**	**3.16**	**249**	*e*P	**Pn**	**18 05 43.2**	**+1.2**
PDAR	**Pinedale Array**	**3.16**	**249**	Pn	**Pn**	**18 05 46.1**	**+4.1**
	4.4nm,0.3s,baz=73,slow=15,SNR=66						
PDAR				Pg	**Pg**	**18 05 51.6**	**-1.5**
	9.1nm,0.3s,baz=69,slow=20,SNR=39						
PDAR				Lg		18 06 26.9	
	9.1nm,0.3s,baz=72,slow=26,SNR=7.4						
KSWY	**Kelly School**	**3.69**	**266**	P	**Pn**	**18 05 49.2**	**-0.4**
YMR	**Madison River**	**3.95**	**282**	P	**Pn**	**18 05 58.1**	**+4.9**
ISCO	**Idaho Springs**	**4.17**	**181**	*e*P	**Pn**	**18 05 54.9**	**-1.4**
AHID	**Auburn Hatcher**	**4.22**	**255**	P	**Pn**	**18 05 58.6**	**+1.5**
QLMT	**Earthquake Lak**	**4.30**	**284**	P	**Pn**	**18 06 04.8**	**+6.6**
BOZ	**Bozeman (W)**	**4.64**	**293**	*e*P	**Pn**	**18 06 02.3**	**-0.7**
HWUT	**Hardware Ranch**	**5.02**	**244**	P	**Pn**	**18 06 06.6**	**-1.8**
	4.9nm,0.4s						
TCUT	**Toone Canyon**	**5.18**	**239**	P	**Pn**	**18 06 11.2**	**+0.5**
MCMT	**McKenzie Canyo**	**5.30**	**282**	P	**Pn**	**18 06 13.7**	**+1.3**
JLU	**Jordanelle**	**5.52**	**234**	P	**Pn**	**18 06 16.3**	**+0.9**
DAU	**Daniels Canyon**	**5.53**	**232**	*e*P	**Pn**	**18 06 13.8**	**-1.8**
HVU	**Hansel Valley**	**5.74**	**250**	P	**Pn**	**18 06 16.8**	**-1.8**
SRU	**San Rafael**	**6.12**	**219**	*e*P	**Pn**	**18 06 23.5**	**-0.4**
CHMT	**Chamberlain Mo**	**6.17**	**301**	P	**Pn**	**18 06 21.8**	**-2.8**
HLID	**Hailey**	**6.43**	**269**	P	**Pn**	**18 06 27.3**	**-1.1**
	2.2nm,0.9s						
MSU	**Marysvale**	**7.39**	**225**	P	**Pn**	**18 06 43.4**	**+1.6**
MVU	**Marysvale**	**7.41**	**225**	P	**Pn**	**18 06 44.1**	**+1.9**
	2.6nm,0.5s						
ULM	**Lac du Bonnet**	**9.11**	**43**	Pn	**P**	**18 07 04.9**	**-0.8**
	1.4nm,0.3s,baz=241,slow=12,SNR=5.5						
NVAR	**Mina Array Bea**	**11.08**	**244**	Pn	**P**	**18 07 35.6**	**+2.8**
	0.1nm,0.3s,baz=58,slow=17,SNR=2.7						
YKA	**Yellowknife Ar**	**19.30**	**347**	P	**P**	**18 09 20.3**	**+1.5**
	0.1nm,0.3s,baz=159,slow=12,SNR=4.0						
YKA	**Yellowknife Ar**	**19.30**	**347**	P	**P**	**18 09 20.3**	**+1.5**
ARCES	**ARCESS Array B**	**61.26**	**18**	P	**P**	**18 15 08.8**	**+0.1**
	2.6nm,1.0s,mb4.3,baz=334,slow=7.1,SNR=7.9						

*IDC **20** 18:11:51.7±2.1, 14.48S×178.84W, mb4.0/5, mb1 4.3/5, mb1mx4.0/13, MS3.7/1, Ms1 3.6/1, ms1mx2.2/19, Error ellipse: s-maj=126.0km s-min=24.1km az=143.0*

ISC 20 18:11:55.5±2.0,**14.4S**±0.7×**179.0W**±0.5,**h33**km,**n5,**
σ@**15**/5,**mb3.9**/5,**MS3.6**/1, **Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**39.96**	**237**	P	**P**	**18 19 28.6**	**+0.1**
	0.6nm,0.5s,mb3.6,baz=68,slow=11,SNR=3.0						
STKA				LR	LR	18 33 37.4	
	comp=Z,86nm,18.1s,MS3.6,baz=26,slow=33						
WRA	**Warramunga Arr**	**44.84**	**256**	P	**P**	**18 20 08.5**	**-0.2**
	0.3nm,0.5s,mb3.4,baz=92,slow=7.8,SNR=3.4						
ASAR	**Alice Springs**	**45.33**	**251**	P	**P**	**18 20 12.6**	**+0.1**
	6.4nm,0.4s,mb4.8,baz=84,slow=8.5,SNR=350						
NVAR	**Mina Array Bea**	**77.30**	**45**	P	**P**	**18 23 48.5**	**-0.1**
	0.7nm,0.7s,mb3.7,baz=230,slow=9.6,SNR=5.3						
ILAR	**Eielson Array**	**82.61**	**13**	P	**P**	**18 24 16.5**	**+0.1**
	0.9nm,0.9s,mb3.8,baz=230,slow=7.0,SNR=5.5						

WEL 20 18:35:24.2±0.4,**45.16S×167.47E,h111**km±3km,**ML3.6/8,**
4C-2D, Error ellipse: s-maj=3.2km s-min=2.3km az=90.0,
South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DCZ	**Deep Cove**	**0.39**	**214**	PN	P	18 35 39.9	-0.9
DCZ				SN	S	18 35 52.1	-1.0
MLZ	**Mavora Lakes**	**0.53**	**111**	↓PN	P	18 35 41.3	-0.3
MLZ				SN	S	18 35 54.4	-0.3
MSZ	**Milford Sound**	**0.58**	**34**	PN	P	18 35 41.8	-0.1
MSZ				SN	S	18 35 54.7	-0.6
WHZ	**Wether Hill Ro**	**0.81**	**156**	↓PN	P	18 35 43.8	-0.2
WHZ				*e*SN	S	18 35 58.6	-0.1
AXZ	**Alexandra**	**1.32**	**95**	↑PN	P	18 35 49.1	-0.4
AXZ				SN	S	18 36 06.7	-1.8
TUZ	**Tuapeka**	**1.72**	**119**	↑PN	P	18 35 53.8	-0.4
TUZ				SN	S	18 36 14.3	-2.4
BWZ	**Berwen**	**1.83**	**71**	↑PN	P	18 35 54.1	-1.5
ODZ	**Otahua Downs**	**2.25**	**88**	↑PN	P	18 35 59.5	-1.6
ODZ				SN	S	18 36 25.6	-3.2
WVZ	**Waitaha Valley**	**3.14**	**50**	PN	P	18 36 09.5	-3.7
MQZ	**McQueen's Vall**	**3.98**	**71**	PN	P	18 36 22.2	-2.3
DSZ	**Dennistion Nort**	**4.64**	**44**	PN	P	18 36 29.3	-4.2
THZ	**Tophouse**	**5.21**	**51**	PN	P	18 36 36.8	-4.3
THZ				SN	S	18 37 34.0	-6.5
QRZ	**Quartz Range**	**5.70**	**42**	PN	P	18 36 43.7	-4.0

IDC 20 18:46:24.1±1.0,**18.93S×178.88W,h591**km±211km,
mb3.0/3, mb1 3.3/3, mb1mx3.0/13, Error ellipse:
s-maj=274.0km s-min=75.4km az=136.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**11.87**	**201**	Pn	P	19 01 04.3	-3.6
	1.3nm,0.3s,baz=24,slow=8.5,SNR=51						
FITZ				Sn	S	19 03 03.1	-19
	1.8nm,0.3s,baz=59,slow=8.5,SNR=10						
WRA	**Warramunga Arr**	**13.58**	**162**	Pn	P	19 01 28.5	-2.4
	0.6nm,0.3s,baz=346,slow=12,SNR=12						
WRA				Sn	S	19 03 47.6	-16
	2.1nm,0.3s,baz=337,slow=22,SNR=16						
ASAR	**Alice Springs**	**17.04**	**168**	P	P	19 02 14.6	-1.1
	0.4nm,0.3s,baz=355,slow=11,SNR=46						
ASAR				S	S	19 05 11.3	-13
	0.5nm,0.3s,baz=348,slow=26,SNR=12						
ASAR				LR	LR	19 09 13.4	
	comp=Z,73nm,18.9s,baz=196,slow=39						
MKAR	**Makanchi Array**	**68.19**	**327**	P	P	19 09 16.6	-2.1
	0.7nm,0.4s,baz=119,slow=7.7,SNR=11						

DJA 20 19:14:05.7±1.0,**9.18S×115.24E,h371**km±32km,**MD4.3/3,**
ML3.4/1, 1C-3D, Error ellipse: s-maj=929.3km
s-min=47.4km az=159.0, South of Bali

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
INGI	**Ingas**	**0.37**	**346**	↓*e*Pn	P	19 14 52.6	+0.3
INGI				↓*e*Sn	S	19 15 27.1	-1.8
RATI	**Rata**	**0.54**	**33**	↓*e*Pn	P	19 14 53.0	+0.4
RATI				*e*Sn	S	19 15 27.6	-1.8
KEDI	**Kedomdong**	**1.11**	**52**	↑*e*Pn	P	19 14 54.9	+0.5
	58nm,0.2s						
KEDI				*e*Sn	S	19 15 30.6	-2.0

TRN 20 19:15:54.9, 17.99N×62.49W, h16km,**MD3.3, M3.5**(FDF),
Leeward Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STMA	**St. Maarten, A**	**0.59**	**275**	*e*P	Pb	19 16 08.7	+2.4
STMA				*e*S	Sb	19 16 18.1	+4.0
CPB	**Codrington**	**0.73**	**119**	*e*P	Pb	19 16 11.8	+3.1
CPB				*e*S	Sb	19 16 22.7	+4.6
SABT	**Saba**	**0.80**	**243**	*e*P	Pb	19 16 14.1	+4.1
SABT				*e*S	Sb	19 16 25.8	+5.4
BPA	**Boggy Peak**	**1.12**	**147**	*e*P	Pb	19 16 18.4	+3.0
BPA				*e*S	Sb	19 16 34.2	+4.6
DEG	**La Desirade**	**2.16**	**140**	*e*P	Pn	19 16 34.3	+3.5
DEG				*e*S	Sn	19 17 02.5	+5.0

*NEIC **20** 19:56:30.5, 16.14N×98.56W, h30km, MD3.9(MEX), After MEX.*
MEX 20 19:56:32.0±1.1,**16.43N×98.53W,h28**km±20km,**MD3.9,**
Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	**Pinotepa**	**0.39**	**95**	*i* P	Pb	19 56 39.3	-1.3
PNIG				*i* S	Sb	19 56 44.7	-1.8
ACX	**Acapulco**	**1.40**	**288**	*i* P	Pn	19 56 53.0	-3.0
ACX				*i* S	Sn	19 57 12.0	-1.6
CAIG	**El Cayaco**	**1.77**	**291**	*i* P	Pn	19 56 57.8	-3.6
CAIG				*i* S	Sn	19 57 20.2	-3.0
OXX	**Oaxaca**	**1.85**	**69**	*i* P	Pn	19 57 00.0	-2.4
OXX				*i* S	Sn	19 57 25.0	0.0
YAIG	**Yautepec**	**2.47**	**348**	*i* P	Pn	19 57 11.8	+0.5
YAIG				*i* S	Sn	19 57 42.1	+1.2
PPM	**Popocatepetl**	**2.62**	**358**	*e*P	Pn	19 57 13.0	-0.5
PPM				*i* P		19 57 13.0	
PPM				*e*P		19 57 13.8	
PPM				*i* S	Sn	19 57 47.5	+2.8
PPM	**Popocatepetl**	**2.62**	**358**	*i* P	Pn	19 57 13.0	-0.5
PPM				*i* S	Sn	19 57 47.5	+2.8
IISM	**Ciudad Serdan**	**2.77**	**23**	*e*P	Pn	19 57 11.0	-4.6
POHV	**Veracruz**	**2.88**	**24**	*e*P	Pn	19 57 14.5	-2.7
ZIIG	**Zihuatanejo**	**3.04**	**293**	*e*P	Pn	19 57 20.9	+1.5
ZIIG				*i* S	Sn	19 57 49.8	-5.6
CMIG	**Matias Romero**	**3.55**	**79**	*i* P	Pn	19 57 23.6	-3.1
CMIG				*i* S	Sn	19 58 07.6	-0.7

*NEIC **20** 20:12:27.6±2.8, 18.60S×169.10E, h216km±29km, mb4.4/2, Error ellipse: s-maj=59.1km s-min=28.5km az=159.0*
*IDC **20** 20:12:32.9±28.0, 18.40S×168.84E, h255km±242km, mb3.7/6, mb1 3.9/6, mb1mx3.6/13, Error ellipse: s-maj=130.0km s-min=62.5km az=80.0*

ISC 20 20:12:28.1±2.2,**18.5S**±0.2×**168.7E**±0.4,**h211**km±11km,
n14,σ@**79**/17,**mb4.1**/7,**1C, Vanuatu Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**0.91**	**330**	↑*i*P	**P**	**20 12 58.5**	**-0.1**
DZM	**Mont Dzumac**	**4.19**	**210**	*e*P	**P**	**20 13 33.1**	**-0.1**
DZM				*e*S	**S**	**20 14 24.1**	**+0.4**
DZM	**Mont Dzumac**	**4.19**	**210**	*e*P	**P**	**20 13 33.1**	**-0.1**
DZM				*e*S	**S**	**20 14 24.1**	**+0.4**
NOUC	**Port Laguerre**	**4.28**	**212**	*e*P	**P**	**20 13 34.5**	**+0.2**
NOUC				*e*S	**S**	**20 14 25.4**	**-0.4**
NOUC	**Port Laguerre**	**4.28**	**212**	*e*P	**P**	**20 13 34.5**	**+0.2**
NOUC				*e*S	**S**	**20 14 25.4**	**-0.4**
CTA	**Charters Tower**	**21.27**	**262**	P	**P**	**20 17 01.7**	**+3.0**
	3.9nm,0.7s,mb4.0,baz=105,slow=12,SNR=3.4						
CTAO	**Charters Tower**	**21.27**	**262**	*e*P	**P**	**20 17 01.4**	**+2.6**
	6.2nm,0.9s,mb4.1						
STKA	**Stephens Creek**	**27.86**	**236**	P	**P**	**20 18 00.3**	**0.0**
	1.5nm,0.7s,mb3.7,baz=76,slow=11,SNR=6.4						
WRAB	**Tennant Creek**	**32.47**	**262**	*e*P	**P**	**20 18 39.6**	**-1.2**
	6.1nm,0.4s,mb4.5						
WRA	**Warramunga Arr**	**32.48**	**262**	P	**P**	**20 18 40.0**	**-0.9**
	2.1nm,0.3s,mb4.2,baz=88,slow=8.4,SNR=59						
ASAR	**Alice Springs**	**32.85**	**255**	P	**P**	**20 18 43.8**	**-0.3**
	12nm,0.4s,mb4.8,baz=82,slow=8.6,SNR=263						
FITZ	**Fitzroy Crossi**	**40.84**	**263**	P	**P**	**20 19 51.6**	**+0.6**
	7.0nm,0.7s,mb4.2,baz=102,slow=3.5,SNR=30						
SONM	**Songino Array**	**86.30**	**323**	P	**P**	**20 24 47.6**	**+0.4**
	0.3nm,0.5s,mb3.3,baz=135,slow=2.0,SNR=4.9						
ARCES	**ARCESS Array B**	**124.19**	**345**	PKP	PKPdf	20 30 59.4	-1.8
	2.5nm,0.8s,baz=63,slow=2.0,SNR=6.0						

*NEIC **20** 20:31:48.5±0.9, 8.41S×118.50E, h121km±10km, mb4.6/4, Error ellipse: s-maj=17.5km s-min=6.0km az=217.0*
NEIC Felt [II] at Mataram, Lombok.
*DJA **20** 20:31:49.0±0.2, 8.61S×118.35E, h160km, MD4.5/3, Error ellipse: s-maj=10.4km s-min=4.2km az=3.0*
*IDC **20** 20:31:55.3±3.4, 8.29S×118.85E, h190km±33km, mb3.4/8, mb1 3.6/10, mb1mx3.5/17, Error ellipse: s-maj=27.0km s-min=9.0km az=51.0*

ISC 20 20:31:49.1±0.5,**8.58S**±0.07×**118.37E**±0.04,**h154**km±5km,
n30,σ1$**02**/43,**mb3.7**/8,**3C-8D, Sumbawa region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WSI	**Waingapu**	**2.19**	**120**	*e*Pn	**P**	**20 32 27.8**	**+0.6**
WSI				*e*Sn	**S**	**20 32 59.0**	**+2.6**
KEDI	**Kedomdong**	**2.23**	**272**	↓*e*Pn	**P**	**20 32 26.9**	**-0.8**
KEDI	**Kedomdong**	**2.23**	**272**	↓*e*P	**P**	**20 32 27.8**	**+0.1**
KEDI				↑*e*Sn	**S**	**20 32 56.2**	**-1.1**
KEDI	**Kedomdong**	**2.23**	**272**	↓*e*Pn	**P**	**20 32 27.1**	**-0.6**
KEDI				*e*Sn	**S**	**20 32 58.1**	**+0.8**
RATI	**Rata**	**2.81**	**267**	↓*e*Pn	**P**	**20 32 34.8**	**-0.1**
RATI				↑*e*Sn	**S**	**20 33 09.8**	**-0.1**
RATI	**Rata**	**2.81**	**267**	↓*e*Pn	**P**	**20 32 34.7**	**-0.2**
RATI				*e*Sn	**S**	**20 33 09.9**	**0.0**
INGI	**Ingas**	**3.19**	**265**	↓*e*Pn	**P**	**20 32 39.3**	**-0.5**
INGI	**Ingas**	**3.19**	**265**	↓*e*P	**P**	**20 32 39.8**	**0.0**
INGI				↑*i* Sn	**S**	**20 33 18.3**	**-0.4**
INGI	**Ingas**	**3.19**	**265**	↓*e*Pn	**P**	**20 32 39.4**	**-0.4**
INGI				*e*Sn	**S**	**20 33 18.4**	**-0.3**
MKS	**Makassar**	**3.52**	**18**	*e*Pn	**P**	**20 32 44.7**	**+0.7**
KUG	**Kupang**	**5.40**	**107**	*e*P	**P**	**20 33 08.5**	**-0.2**
KUG				*e*S	**S**	**20 34 09.0**	**-1.4**
FITZ	**Fitzroy Crossi**	**11.81**	**144**	*e*P	**P**	**20 34 32.5**	**-1.2**
	14nm,0.6s						
FITZ				*e*S	**S**	**20 36 33.8**	**-9.0**
FITZ	**Fitzroy Crossi**	**11.81**	**144**	P	**P**	**20 34 32.3**	**-1.4**
	2.2nm,0.3s,baz=354,slow=7.4,SNR=55						
FITZ				S	**S**	**20 36 35.6**	**-7.3**
	2.4nm,0.3s,baz=183,slow=22,SNR=8.0						
KAKA	**Kakadu**	**14.39**	**108**	*e*P	**P**	**20 35 06.6**	**-0.2**
	10.0nm,0.4s						
WRA	**Warramunga Arr**	**19.14**	**128**	P	**P**	**20 36 02.2**	**-0.6**
	0.5nm,0.3s,baz=301,slow=12,SNR=25						
WRA				S	**S**	**20 39 26.5**	**-0.2**
	0.5nm,0.3s,baz=300,slow=25,SNR=5.1						
WRAB	**Tennant Creek**	**19.15**	**128**	*e*P	**P**	**20 36 02.9**	**0.0**
	42nm,0.7s						
WRAB				*e*S	**S**	**20 39 28.1**	**+1.3**
WRAB				*e*ScP		20 43 43.0	
WB2	**Warramunga Arr**	**19.15**	**128**	*e*P	**P**	**20 36 02.3**	**-0.6**
WB2				*e*S	**S**	**20 39 25.1**	**-1.8**
AS12	**Alice Springs**	**21.13**	**137**	*e*P	**P**	**20 36 24.1**	**+1.2**
	3.4nm,0.5s,mb3.9						
ASAR	**Alice Springs**	**21.13**	**137**	P	**P**	**20 36 24.4**	**+1.5**
	1.8nm,0.4s,mb3.7,baz=311,slow=9.1,SNR=26						
ASAR				S	**S**	**20 40 09.2**	**+5.5**
	1.5nm,0.9s,baz=318,slow=21,SNR=6.1						
STKA	**Stephens Creek**	**31.67**	**140**	P	**P**	**20 38 01.0**	**+0.8**
	1.2nm,0.5s,mb3.9,baz=276,slow=22,SNR=7.4						
CMAR	**Chiang Mai Arr**	**33.00**	**325**	P	**P**	**20 38 12.9**	**+1.2**
	0.7nm,0.8s,mb3.4,baz=159,slow=5.8,SNR=5.2						
SONM	**Songino Array**	**57.16**	**350**	P	**P**	**20 41 22.1**	**+0.1**
	0.9nm,0.6s,mb3.8,baz=167,slow=8.7,SNR=10						
MKAR	**Makanchi Array**	**63.80**	**333**	P	**P**	**20 42 06.4**	**-0.6**
	0.6nm,0.5s,mb3.7,baz=147,slow=6.2,SNR=11						
KURK	**Kurchatov**	**68.34**	**334**	*e*P	**P**	**20 42 35.7**	**-0.1**
ZAL	**Zalesovo**	**68.43**	**339**	P	**P**	**20 42 34.5**	**-1.7**
	1.0nm,0.6s,mb3.7,baz=206,slow=2.7,SNR=5.5						
ZAL	**Zalesovo**	**68.43**	**339**	P	**P**	**20 42 34.5**	**-1.7**
MAW	**Mawson**	**69.42**	**200**	P	**P**	**20 42 44.5**	**+2.4**
	1.6nm,0.7s,mb3.9,baz=86,slow=19,SNR=4.0						
ZRNK	**Zerenda**	**74.23**	**332**	*e*P	**P**	**20 43 10.8**	**+0.1**
KMBO	**Kilima Mbogo**	**81.05**	**270**	P	**P**	**20 43 52.5**	**+3.5**
	0.4nm,0.3s,mb3.5,baz=75,slow=19,SNR=3.2						
CPUP	**Villa Florida**	**145.05**	**187**	PKPbc	PKPbc	20 51 12.5	+3.5
	2.5nm,0.7s,baz=200,slow=3.0,SNR=6.1						

*IDC **20** 20:39:39.9±2.0, 3.08S×130.33E, mb4.0/2, mb1 4.2/4, mb1mx3.8/17, ML3.6/2, MS3.2/1, Ms1 3.2/1, ms1mx2.7/20, Error ellipse: s-maj=87.4km s-min=26.4km az=74.0*

ISC 20 20:39:42.6±1.7,**3.2S**±0.2×**130.3E**±0.4,**h33**km,**n7,**σ1$**43**/6,
mb3.8/1, Seram

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**15.50**	**197**	Pn	**P**	**20 43 20.5**	**0.0**
	0.1nm,0.3s,baz=21,slow=7.8,SNR=2.5						
WRA	**Warramunga Arr**	**17.11**	**167**	P	**P**	**20 43 42.6**	**+1.7**
	0.4nm,0.3s,baz=348,slow=12,SNR=6.9						
WB2	**Warramunga Arr**	**17.11**	**167**	*e*P	**P**	**20 43 39.4**	**-1.6**
TGY	**Tagaytay City**	**19.52**	**332**	LR	LR	20 52 05.8	
	comp=Z,70nm,18.6s,baz=50,slow=38						
AS12	**Alice Springs**	**20.65**	**171**	*e*P	**P**	**20 44 22.0**	**-0.1**
	9.1nm,0.6s						
ASAR	**Alice Springs**	**20.65**	**171**	P	**P**	**20 44 22.1**	**-0.1**
	8.4nm,0.7s,baz=350,slow=10,SNR=48						
MKAR	**Makanchi Array**	**65.24**	**326**	P	**P**	**20 50 23.2**	**0.0**
	0.6nm,0.7s,mb3.8,baz=115,slow=8.1,SNR=6.5						

DJA 20 20:44:28.9±1.0,**6.81S×116.57E,h76**km±379km,**MD4.7/3,**
ML3.8/2, 2C-4D, Error ellipse: s-maj=601.9km
s-min=31.5km az=157.0, Bali Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEDI	**Kedomdong**	**1.73**	**195**	↑*e*Pn	P	20 44 56.8	-0.8
	37nm,0.2s						
KEDI				↓*e*Sn	S	20 45 17.3	-1.4
RATI	**Rata**	**2.16**	**208**	↑*e*Pn	P	20 45 02.8	-0.7
RATI				↓*e*Sn	S	20 45 27.6	-1.6
INGI	**Ingas**	**2.44**	**215**	↓*e*Pn	P	20 45 06.6	-0.9
	78nm,0.2s						
INGI				↓*e*Sn	S	20 45 34.2	-2.1

*NEIC **20** 20:56:00.4, 17.78N×95.58W, h102km, MD4.2(MEX), After MEX.*
*MEX **20** 20:56:00.0±1.1, 17.69N×95.63W, h106km±13km, MD4.2*

ISC 20 20:55:57.3±0.9,**17.70N**±0.05×**95.61W**±0.04,
h117km±10km,**n17,**σ@**98**/31,**1C-1D, Oaxaca**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EVV	**El Vigia**	**0.80**	**18**	*i* P	**P**	**20 56 17.9**	**+0.5**
EVV				*i* S	**S**	**20 56 30.7**	**-1.8**
EVV	**El Vigia**	**0.80**	**18**	*i* P	**P**	**20 56 17.9**	**+0.5**
EVV				*i* S	**S**	**20 56 28.0**	**-4.5**
CMIG	**Matias Romero**	**0.92**	**131**	↓*i* P	**P**	**20 56 18.9**	**+0.3**
CMIG				*i* S	**S**	**20 56 33.6**	**-0.9**
TUIG	**Tuzandepetl**	**1.18**	**73**	↑*i* P	**P**	**20 56 21.8**	**+0.5**
TUIG				*e*S	**S**	**20 56 39.1**	**-0.2**
OXX	**Oaxaca**	**1.23**	**240**	*i* P	**P**	**20 56 22.8**	**+0.9**
OXX				*i* S	**S**	**20 56 41.9**	**+1.6**
OXX	**Oaxaca**	**

ARSA Arzberg 0.90 18⇑*i*PG Pg 21 03 50.4 -1.2
ARSA *i* SG **Sg** **21 04 02.7 -0.9**
comp=Z,1.5nm,0.3s

DHMR 20 21:06:50.3±1.7, 13.02N×43.88E, h21km±5km, ML3.8, 2C-3D, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TRBA	**At Turbah**	**0.30**	**52⇑**	*i*P	Pb	21 06 57.0	0.0
TRBA				*i* S	Sb	21 07 01.8	+0.2
TRBA				AML	AML	21 07 04.8	
	comp=N,4μm,0.2s						
UDYN	**Al 'Udayn**	**0.95**	**7⇓**	*e*P	Pb	21 07 08.7	+0.8
UDYN				*i* S	Sb	21 07 21.2	+1.2
ADEN	**Aden**	**1.10**	**103**	*i*P	Pb	21 07 04.0	-6.5
ADEN				*i* S	Sb	21 07 19.0	-5.5
ADEN				AML	AML	21 07 20.9	
	comp=N,3μm,0.5s						
LBOS		**1.58**	**57⇓**	*i*P	Pn	21 07 18.2	+0.8
LBOS				*i* S	Sn	21 07 39.7	+2.3
DHBB	**Dhamar BB**	**1.61**	**18**	*i* P	Pn	21 07 19.2	+1.4
DHBB				*e*S	Sn	21 07 41.4	+3.2
SANA	**San'a**	**2.21**	**6**	*i* P	Pb	21 07 31.1	+1.8
SANA				*i* S	Sb	21 08 02.4	+6.0
HAJJ	**Hajjah**	**2.68**	**354⇓**	*i*P	Pn	21 07 34.0	+0.8
HAJJ				*i* S	Sn	21 08 04.9	-0.4
HAJJ				AML	AML	21 08 19.9	
	comp=N,1μm,0.4s						

MAN 20 21:11:47.0, 10.29N×126.48E, h79km, mb3.9, ML2.6, MS2.2, 4C, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SCPH	**Surigao**	**1.10**	**243**	*i* P	P	21 12 06.7	-0.7
SCPH				*i* S	S	21 12 21.3	-1.5
BUTP	**Butuan**	**1.56**	**213⇑**	*e*P	P	21 12 14.5	+0.9
BUTP				*e*S	S	21 12 36.1	+2.9
MSLP	**Maasin**	**1.61**	**265⇑**	*e*P	P	21 12 14.7	+0.5
MSLP				*e*S	S	21 12 35.4	+1.2
BESP	**Borongan**	**1.66**	**322⇑**	*e*P	P	21 12 15.2	+0.4
BESP				*e*S	S	21 12 40.9	+5.4
PLP	**Palo**	**1.72**	**301**	*e*P	P	21 12 15.6	-0.1
PLP				*e*S	S	21 12 33.4	-3.3
CNP	**Catarman**	**2.84**	**321⇑**	*e*P	P	21 12 31.7	+0.5
CNP				*e*S	S	21 13 03.0	-1.3

MAN 20 21:54:26.7, 17.83N×121.13E, h8km, mb4.4, ML3.3, MS3.1, 8C-3D, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
APYP	**Conner**	**0.11**	**73⇑**	*e*P	Pg	21 54 30.8	+1.4
APYP				*e*S	Sg	21 54 33.9	+2.7
ABRA	**Dolores**	**0.44**	**246⇑**	*e*P	Pg	21 54 36.0	+0.5
ABRA				*e*S	Sg	21 54 42.6	+1.2
CVP	**Callao Caves**	**0.67**	**101⇓**	*i*P	Pg	21 54 39.0	-1.2
CVP				*i* S	Sg	21 54 47.0	-2.2
SGCP	**Mt. Cagua**	**0.96**	**65⇑**	*e*P	Pb	21 54 44.5	-0.8
SGCP				*e*S	Sb	21 54 57.6	-0.3
CAUP	**Cauayan**	**1.10**	**143⇑**	*e*P	Pb	21 54 47.5	0.0
CAUP				*e*S	Sb	21 55 04.7	+2.8
PALP	**Palanan**	**1.45**	**121⇑**	*e*P	Pn	21 54 52.6	-0.8
PALP				*e*S	Sb	21 55 13.9	+1.8
BCPH	**Baguio City Da**	**1.53**	**200⇓**	*e*P	Pn	21 54 53.7	-0.8
BCPH				*e*S	Sb	21 55 13.1	-1.3
BOLP	**Bolinao**	**1.85**	**219⇑**	*e*P	Pn	21 54 58.4	-0.6
BOLP				*e*S	Sn	21 55 21.5	-1.3
BALP	**Baler**	**2.12**	**168⇑**	*e*P	Pn	21 55 02.9	0.0
PCPH	**Palayan**	**2.25**	**181⇓**	*e*P	Pn	21 55 04.8	0.0
SCZP	**Santa Cruz**	**2.35**	**210⇑**	*e*P	Pb	21 55 08.2	-0.7
SCZP				*e*S	Sb	21 55 39.5	+1.3

*IDC **20** 21:56:17.8±0.9, 6.54N×72.77W, h172km±8km, mb3.5/2, mb1 3.7/4, mb1mx3.2/21, Error ellipse: s-maj=48.5km s-min=8.1km az=131.0*
ISC 20 21:56:17.9±0.8, 6.8N±0.2×73.0W±0.2, h172km, n7, σ1§11/6, mb3.8/2, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ROSC	**El Rosal**	**2.32**	**215**	P	**P**	**21 56 59.3**	**+0.9**
	95nm,0.3s,baz=310,slow=9.8,SNR=156						
ROSC				S	**S**	**21 57 28.9**	**-0.7**
	105nm,0.3s,baz=121,slow=23,SNR=6.1						
SDV	**Santo Domingo**	**3.15**	**48**	P	**P**	**21 57 09.2**	**+0.6**
	11nm,0.3s,baz=127,slow=0.4,SNR=33						
SDV				S	**S**	**21 57 47.0**	**-0.6**
	41nm,0.3s,baz=96,slow=18,SNR=45						
SCHQ	**Schefferville**	**48.17**	**5**	P	**P**	**22 04 43.4**	**+0.9**
	3.3nm,0.7s,mb4.1,baz=209,slow=4.7,SNR=5.2						
YKA	**Yellowknife Ar**	**63.34**	**340**	P	**P**	**22 06 29.7**	**-0.9**
	0.6nm,0.9s,mb3.4,baz=131,slow=6.7,SNR=11						
MKAR	**Makanchi Array**	**122.33**	**20**	PKP	PKPdf	22 14 53.2	+0.5
	0.1nm,0.3s,baz=331,slow=1.7,SNR=4.1						
ASAR	**Alice Springs**	**149.18**	**234**	PKPbc	PKPdf	22 15 44.6	+2.4
	0.6nm,0.7s,baz=135,slow=2.0,SNR=4.3						
WRA	**Warramunga Arr**	**150.41**	**241**	PKPbc	PKPdf	22 15 50.5	+6.3
	0.2nm,0.4s,baz=99,slow=2.3,SNR=7.6						

*INMG **20** 22:04:21.9±0.8, 36.05N×10.67W, h10km, ML1.9, Error ellipse: s-maj=6.3km s-min=4.5km az=88.0*
*NEIC **20** 22:04:21.3, 36.19N×10.61W, After MDD.*
*MDD **20** 22:04:21.2±2.2, 36.11N×10.58W, mbLg2.4/10, Error ellipse: s-maj=19.5km s-min=16.4km az=79.0, PRXIMO*
ISC 20 22:04:22.4±1.4, 36.20N±0.07×10.36W±0.08, h10km, n28, σ1§19/51, 2C, Azores-Cape St. Vincent Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PTEO	**Sao Teotonio**	**1.88**	**44**	*e*Pn	**Pn**	**22 04 55.9**	**+1.0**
PTEO				*e*Sn	**Sn**	**22 05 22.1**	**+3.2**
	3.5nm,0.2s						
PTEO	**Sao Teotonio**	**1.88**	**44**	Pn	**Pn**	**22 04 55.9**	**+1.0**
PTEO				S	**Sn**	**22 05 22.1**	**+3.2**
	1.8nm,0.2s						
PALC	**Alcoutim**	**2.63**	**60**	*e*Pn	**Pn**	**22 05 06.6**	**+0.8**
PALC				*e*Sn	**Sn**	**22 05 40.1**	**+2.0**
	3.8nm,0.2s						
PALC	**Alcoutim**	**2.63**	**60**	Pn	**Pn**	**22 05 06.6**	**+0.8**
PALC				S	**Sn**	**22 05 40.1**	**+2.0**
	1.9nm,0.2s						
EGRO	**El Granado**	**2.66**	**59**	⇑Pn	**Pn**	**22 05 07.0**	**+0.8**
	1.8nm,0.1s,SNR=18						
EGRO				S	**Sn**	**22 05 39.6**	**+0.8**
	2.3nm,0.1s,SNR=5.0						
EGRO	**El Granado**	**2.66**	**59**	⇑Pn	**Pn**	**22 05 07.0**	**+0.8**
EGRO				Sn	**Sn**	**22 05 40.6**	**+1.8**
PBEJ	**Beja**	**2.70**	**47**	*e*Pn	**Pn**	**22 05 06.9**	**+0.2**
PBEJ				*e*Sn	**Sn**	**22 05 41.0**	**+1.2**
	2.2nm,0.1s						
PBEJ	**Beja**	**2.70**	**47**	P	**Pn**	**22 05 06.9**	**+0.2**
PBEJ				S	**Sn**	**22 05 41.0**	**+1.2**
	1.1nm,0.1s						
MOE	**Montemor**	**2.82**	**34**	*e*Pn	**Pn**	**22 05 08.8**	**+0.4**
MOE				*e*Sn	**Sn**	**22 05 44.5**	**+1.7**
EMIN	**Mina Concepcio**	**3.34**	**61**	P	**Pn**	**22 05 16.0**	**+0.2**
	0.2nm,0.1s,SNR=10.0						
EMIN				S	**Sn**	**22 05 57.2**	**+1.2**
	0.8nm,0.1s,SNR=5.0						
EMIN	**Mina Concepcio**	**3.34**	**61**	Pn	**Pn**	**22 05 16.0**	**+0.2**
EMIN				Sn	**Sn**	**22 05 56.7**	**+0.7**
ESPR	**Espera**	**3.69**	**78**	P	**Pn**	**22 05 20.9**	**+0.2**
	0.6nm,0.1s,SNR=17						
ESPR				S	**Sn**	**22 06 04.4**	**-0.3**
	9.8nm,0.2s,SNR=5.0						
ESPR	**Espera**	**3.69**	**78**	Pn	**Pn**	**22 05 21.1**	**+0.4**
ESPR				Sn	**Sn**	**22 06 04.3**	**-0.3**
EBAD	**Badajoz**	**3.69**	**45**	P	**Pn**	**22 05 20.3**	**-0.5**
	0.5nm,0.1s,SNR=6.5						
EBAD				S	**Sn**	**22 06 04.6**	**-0.2**
	1.6nm,0.1s,SNR=7.9						
EBAD	**Badajoz**	**3.69**	**45**	Pn	**Pn**	**22 05 20.2**	**-0.5**
EBAD				Sn	**Sn**	**22 06 04.6**	**-0.1**
EJIF	**Jimena Fronter**	**3.95**	**85**	P	**Pn**	**22 05 24.5**	**0.0**
	0.6nm,0.1s,SNR=7.9						
EJIF				S	**Sn**	**22 06 11.3**	**-0.2**
	0.7nm,0.2s,SNR=7.9						
EJIF	**Jimena Fronter**	**3.95**	**85**	Pn	**Pn**	**22 05 25.2**	**+0.7**
EJIF				Sn	**Sn**	**22 06 11.9**	**+0.4**
ELIJ	**Sierra de Lija**	**4.07**	**78**	Pn	**Pn**	**22 05 26.3**	**+0.2**
ELIJ				Sn	**Sn**	**22 06 12.8**	**-1.6**
PCBR	**Castelo Branco**	**4.29**	**31**	*e*Pn	**Pn**	**22 05 28.8**	**-0.5**
PCBR				*e*Sn	**Sn**	**22 06 18.3**	**-1.7**
EADA	**Adamuz**	**5.02**	**65**	P	**Pn**	**22 05 39.1**	**-0.5**
	1.0nm,0.2s,SNR=7.3						
EADA				S	**Sn**	**22 06 36.2**	**-2.1**
	1.5nm,0.1s,SNR=5.0						
EADA	**Adamuz**	**5.02**	**65**	Pn	**Pn**	**22 05 39.1**	**-0.5**
EADA				Sn	**Sn**	**22 06 36.0**	**-2.4**
PVRL	**Vila Real**	**5.48**	**21**	*e*Sn	**Sn**	**22 06 46.3**	**-3.6**
	1.9nm,0.2s						
PVRL	**Vila Real**	**5.48**	**21**	S	**Sn**	**22 06 46.3**	**-3.6**
	0.9nm,0.2s						
ELOB	**Lobios**	**5.94**	**17**	S	**Sn**	**22 06 57.2**	**-4.4**
	0.9nm,0.1s,SNR=7.9						
EQES	**Quesada**	**6.05**	**72**	P	**Pn**	**22 05 53.7**	**-0.4**
	0.3nm,0.3s,SNR=4.0						
EQES				S	**Sn**	**22 07 02.1**	**-2.0**
	0.6nm,0.3s,SNR=4.0						
EQES	**Quesada**	**6.05**	**72**	Pn	**Pn**	**22 05 53.7**	**-0.4**
EQES				Sn	**Sn**	**22 07 02.8**	**-1.4**
ESDC	**Sonseca Array**	**6.13**	**54**	P	**Pn**	**22 05 54.3**	**-1.0**
	1.3nm,0.2s,baz=240,slow=13,SNR=7.1						
ECAL	**Calabor**	**6.39**	**25**	S	**Sn**	**22 07 09.2**	**-3.6**
	1.0nm,0.3s,SNR=7.9						

*NEIC **20** 22:08:16.5, 34.36N×32.11E, h25km, ML3.5(NIC), After NIC.*
*NIC **20** 22:08:16.5±0.3, 34.36N×32.11E, h25km, ML3.5, MW3.1*
*GII **20** 22:08:20.4±2.0, 34.31N×32.31E, h25km±30km, ML2.7/10, Mw3.1/10*
ISC 20 22:08:16.0±0.7, 34.34N±0.02×32.18E±0.06, h25km, n35, σ0§88/51, 10C-2D, Cyprus region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PPCY	**Paphos**	**0.56**	**14**	⇑P	**Pb**	**22 08 26.7**	**-0.5**
PPCY	**Paphos**	**0.56**	**14**	⇑*i*P	**Pb**	**22 08 26.7**	**-0.5**
AKMC	**Akamas**	**0.70**	**10**	⇑P	**Pb**	**22 08 29.3**	**-0.1**
AKMC	**Akamas**	**0.70**	**10**	⇑*i*P	**Pb**	**22 08 29.3**	**-0.1**
SZAC	**Souni-Zanaja**	**0.72**	**54**	⇓P	**Pb**	**22 08 29.7**	**-0.1**
	47nm,0.1s						
SZAC				S	**Sb**	**22 08 40.7**	**+1.5**
SZAC	**Souni-Zanaja**	**0.72**	**54**	⇓*i*P	**Pb**	**22 08 29.7**	**-0.1**
SZAC				S	**Sb**	**22 08 40.7**	**+1.5**
ALFC	**Alevga**	**0.89**	**23**	⇑P	**Pb**	**22 08 31.6**	**-1.0**
	28nm,0.2s						
ALFC				S	**Sb**	**22 08 43.8**	**-0.3**
ALFC	**Alevga**	**0.89**	**23**	⇑*i*P	**Pb**	**22 08 31.6**	**-1.0**
ALFC				S	**Sb**	**22 08 43.8**	**-0.3**
LEF	**Lefka**	**0.98**	**37**	*i* PG	**Pb**	**22 08 33.7**	**-0.4**
LEF				SG	**Sb**	**22 08 48.7**	**+2.1**
CSS	**Prodhromos**	**1.14**	**56**	⇑P	**Pn**	**22 08 35.9**	**-0.6**
	9.0nm,0.2s						
CSS				S	**Sb**	**22 08 50.1**	**-1.2**
CSS	**Prodhromos**	**1.14**	**56**	⇑*i*P	**Pn**	**22 08 35.9**	**-0.6**
CSS				S	**Sb**	**22 08 50.1**	**-1.2**
MAMC	**Mammari**	**1.20**	**46**	⇑P	**Pn**	**22 08 37.4**	**+0.1**
MAMC	**Mammari**	**1.20**	**46**	⇑*i*P	**Pn**	**22 08 37.4**	**+0.1**
PHNC	**Paralimni**	**1.67**	**66**	P	**Pn**	**22 08 44.9**	**+0.8**
IKL	**Isikli**	**2.27**	**33**	*i* PN	**Pn**	**22 08 52.6**	**0.0**
IKL				SN	**Sn**	**22 09 19.3**	**-0.7**
HNTI	**Hanita**	**2.79**	**116**	Pn	**Pn**	**22 08 59.9**	**-0.3**
HNTI				Sn	**Sn**	**22 09 31.9**	**-1.6**
OFRI	**'Ofer**	**2.91**	**125**	Pn	**Pn**	**22 09 02.2**	**+0.5**
KSDI	**Kefar Szold**	**3.12**	**110**	Pn	**Pn**	**22 09 04.8**	**0.0**
HRI	**Mount Hermon**	**3.15**	**109**	Pn	**Pn**	**22 09 06.2**	**+1.0**
SLTI	**Sal'it**	**3.18**	**130**	Pn	**Pn**	**22 09 06.2**	**+0.5**
SLTI				Sn	**Sn**	**22 09 41.9**	**-1.4**
KSHT	**Keshet**	**3.32**	**113**	Pn	**Pn**	**22 09 07.9**	**+0.3**
HMDT	**Nahal Hemdat**	**3.49**	**126**	Pn	**Pn**	**22 09 10.7**	**+0.6**
DRGI	**Dragot**	**3.85**	**134**	Pn	**Pn**	**22 09 15.6**	**+0.5**
KZIT	**Kziot**	**3.90**	**151**	Pn	**Pn**	**22 09 16.7**	**+0.8**
KZIT				Sn	**Sn**	**22 10 01.2**	**-0.2**
SVTA	**Shivta**	**3.97**	**148**	Pn	**Pn**	**22 09 17.1**	**+0.2**
MKRJ	**Makawir**	**4.03**	**133**	Pn	**Pn**	**22 09 18.4**	**+0.8**
MZDA	**Masada**	**4.04**	**137**	Pn	**Pn**	**22 09 18.6**	**+0.7**
MZDA				Sn	**Sn**	**22 10 03.3**	**-1.7**
DNZL	**Cakiroluk**	**4.20**	**324**	*i* P	**Pn**	**22 09 18.8**	**-1.3**
DNZL				*i* S	**Sn**	**22 09 53.2**	**-16**
ZFRI	**Zfri**	**4.55**	**145**	Pn	**Pn**	**22 09 25.1**	**0.0**
PRNI	**Paran**	**4.64**	**148**	Pn	**Pn**	**22 09 27.1**	**+0.7**
PRNI				Sn	**Sn**	**22 10 19.5**	**-0.6**
BDRM	**Kayabasi**	**4.71**	**307**	*i* P	**Pn**	**22 09 22.6**	**-4.8**
BDRM				*i* S	**Sn**	**22 10 15.3**	**-6.7**
KMTI	**Karmit**	**4.74**	**152**	Pn	**Pn**	**22 09 28.6**	**+0.8**
KMTI				Sn	**Sn**	**22 10 21.2**	**-1.4**
MBH	**Mount Berech**	**5.09**	**152**	Pn	**Pn**	**22 09 33.8**	**+1.0**
AQBJ	**Aqaba**	**5.20**	**151**	Pn	**Pn**	**22 09 34.4**	**+0.1**
EIL	**Elat**	**5.22**	**152**	Pn	**Pn**	**22 09 34.8**	**+0.2**

*IDC **20** 22:16:13.7±1.2, 23.52N×120.96E, mb3.7/6, mb1 3.8/7, mb1mx3.6/24, ML3.1/1, Error ellipse: s-maj=39.0km s-min=23.6km az=56.0*
*TAP **20** 22:16:16.0, 23.41N×120.65E, h10km, ML4.2*
TAP Felt III J at Dapu, II J at Alishan, III J at Tsauling, I J at Dungshan, III J at Chiayi, I J at Nanshi, II J at Tauyuan, I J at Szhu, II J at Mingjian, I J at Jiali, I J at Dacheng, I J at Penghu.
*JMA **20** 22:16:18.4±0.4, 23.38N×120.63E, h112km, M3.4*
*NEIC **20** 22:16:22.1±2.1, 23.58N×121.14E, h69km±18km, Error ellipse: s-maj=27.0km s-min=13.0km az=48.0*
NEIC Recorded [3 TAP] in Chia-i; [2 TAP] in Kao-hsiung, Nan-t'ou and T'ai-nan; [1 TAP] in Chang-hua and Yun-lin Counties.
*BJI **20** 22:16:27.3, 24.30N×120.10E, h11km, mb4.4, ML4.1, Ms3.8, Mszo3.7*
ISC 20 22:16:17.4±0.2, 23.42N±0.01×120.64E±0.01, h12km±1km, n80, σ1§09/137, mb3.6/6, 15C-8D, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHN5	**Tsauling**	**0.18**	**13**	*i*P	**Pg**	**22 16 20.7**	**-0.8**
ALS	**Alishan**	**0.18**	**61**	⇑*i*P	**Pg**	**22 16 21.0**	**-0.6**
ALS				S	**Sg**	**22 16 24.3**	**-0.1**
WTP	**Ta-pu**	**0.18**	**187**	⇓*i*P	**Pg**	**22 16 20.6**	**-1.0**
CHN2	**Minshiung**	**0.18**	**306**	⇑*i*P	**Pg**	**22 16 21.5**	**-0.2**
TWK	**Hsinying**	**0.21**	**221**	⇓*i*P	**Pg**	**22 16 21.3**	**-0.8**
TWK				S	**Sg**	**22 16 25.5**	**+0.3**
CHY	**Chiayi**	**0.21**	**291**	⇑*i*P	**Pg**	**22 16 21.6**	**-0.5**
CHY				S	**Sg**	**22 16 25.9**	**+0.6**
CHN1	**Nanshi**	**0.26**	**203**	⇓*i*P	**Pg**	**22 16 22.1**	**-0.9**
CHN1				S	**Sg**	**22 16 26.8**	**+0.1**
WGK	**Gukeng**	**0.27**	**345**	⇑*i*P	**Pg**	**22 16 23.1**	**-0.1**
WGK				S	**Sg**	**22 16 28.5**	**+1.4**
STYT	**Tauyuan**	**0.28**	**157**	⇑*i*P	**Pg**	**22 16 22.6**	**-0.9**
STYT				S	**Sg**	**22 16 27.2**	**-0.3**
YUS	**Yu-Shan**	**0.30**	**77**	⇑*i*P	**Pg**	**22 16 23.2**	**-0.5**
YUS				S	**Sg**	**22 16 28.2**	**+0.2**
SGST	**Jiashian**	**0.34**	**188**	*i* P	**Pg**	**22 16 23.8**	**-0.8**
SGST				S	**Sg**	**22 16 29.8**	**+0.4**
CHN8	**Yiju**	**0.40**	**259**	⇑*i*P	**Pg**	**22 16 25.0**	**-0.7**
CHN8				S	**Sg**	**22 16 32.4**	**+1.3**
ELDTW	**Lidau**	**0.42**	**124**	⇑*i*P	**Pg**	**22 16 25.1**	**-1.0**
ELDTW				S	**Sg**	**22 16 32.0**	**+0.1**
CHN3	**Shinhua**	**0.43**	**216**	P	**Pg**	**22 16 26.5**	**+0.3**
CHN3				S	**Sg**	**22 16 34.8**	**+2.8**
WSF	**Szhu**	**0.44**	**299**	P	**Pg**	**22 16 25.7**	**-0.7**
WSF				S	**Sg**	**22 16 33.3**	**+0.9**
WNT	**Mingjian**	**0.46**	**6**	⇓*i*P	**Pg**	**22 16 26.5**	**-0.3**
WNT				S	**Sg**	**22 16 34.0**	**+1.0**
SCLT	**Jiali**	**0.48**	**239**	P	**Pg**	**22 16 27.1**	**0.0**
SCLT				S	**Sg**	**22 16 35.3**	**+1.7**
SMLT	**Sun Moon Lake**	**0.52**	**28**	⇓*i*P	**Pb**	**22 16 27.3**	**-0.6**
SMLT				S	**Sg**	**22 16 35.8**	**+0.8**
TYC	**Yuchr**	**0.52**	**23**	⇓*i*P	**Pb**	**22 16 27.4**	**-0.5**
TYC				S	**Sg**	**22 16 36.0**	**+0.9**
TAI1	**Yung-k'ang**	**0.54**	**225**	*i* P	**Pb**	**22 16 28.7**	**+0.5**
TAI1				S	**Sg**	**22 16 37.7**	**+2.1**
WTCT	**Ta-ch'eng**	**0.55**	**323**	P	**Pb**	**22 16 27.6**	**-0.8**
WTCT				S	**Sb**	**22 16 36.5**	**+0.6**
TWF1	**Yuli**	**0.61**	**97**	⇑*i*P	**Pb**	**22 16 28.5**	**-1.0**
TWF1				S	**Sb**	**22 16 37.1**	**-0.6**
EHY	**Hungye**	**0.64**	**82**	⇑*i*P	**Pb**	**22 16 29.1**	**-0.8**
EHY				S	**Sb**	**22 16 37.6**	**-0.9**
SSD	**Sandimen**	**0.67**	**180**	⇑*i*P	**Pb**	**22 16 30.0**	**-0.6**
SSD				S	**Sb**	**22 16 40.6**	**+1.1**
SGLT	**Jiouru**	**0.71**	**191**	*e*P	**Pb**	**22 16 32.9**	**+1.7**
SGLT				S	**Sb**	**22 16 45.1**	**+4.6**
TCU	**Taichung**	**0.72**	**3**	⇓P	**Pb**	**22 16 31.0**	**-0.3**
TCU				S	**Sb**	**22 16 41.8**	**+0.8**
TWG	**Pinlang**	**0.72**	**146**	⇑*i*P	**Pb**	**22 16 30.7**	**-0.7**
TWG				S	**Sb**	**22 16 41.3**	**+0.4**
CHKT	**Chengkung**	**0.74**	**116**	⇑P	**Pb**	**22 16 31.7**	**0.0**
CHKT				S	**Sb**	**22 16 42.8**	**+1.2**
TTN	**Taitung**	**0.82**	**145**	*e*P	**Pb**	**22 16 33.2**	**+0.2**
TTN				S	**Sb**	**22 16 46.2**	**+2.6**
ESL	**Shilin**	**0.83**	**62**	⇑*i*P	**Pb**	**22 16 32.6**	**-0.5**
ESL				S	**Sb**	**22 16 44.0**	**0.0**
ECL	**Taimali**	**0.87**	**160**	⇑P	**Pb**	**22 16 33.2**	**-0.7**
ECL				S	**Sb**	**22 16 45.3**	**-0.1**
KAU	**Kaohsiung**	**0.90**	**200**	*e*P	**Pb**	**22 16 35.4**	**+0.9**
WDGT	**Dungji**	**0.91**	**260**	*e*P	**Pb**	**22 16 33.4**	**-1.2**
WDGT				S	**Sb**	**22 16 45.7**	**-0.7**
WHF	**Hehuan Shan**	**0.92**	**39**	*e*P	**Pb**	**22 16 34.5**	**-0.3**
WHF				S	**Sb**	**22 16 47.3**	**+0.6**
TWQ1	**Liyutan**	**0.93**	**8**	*e*P	**Pb**	**22 16 34.7**	**-0.2**
TWQ1				S	**Sb**	**22 16 48.2**	**+1.3**
TWT	**Tachien**	**0.96**	**31**	*e*P	**Pb**	**22 16 34.4**	**-1.1**
NSY	**Sanyi**	**0.99**	**7**	*e*P	**Pb**	**22 16 35.9**	**-0.1**
NSY				S	**Sb**	**22 16 50.7**	**+1.8**
PNG	**Penghu**	**1.00**	**278**	*e*P	**Pb**	**22 16 34.7**	**-1.4**
PNG				S	**Sb**	**22 16 48.5**	**-0.5**
HWA	**Hwalien**	**1.04**	**58**	*e*P	**Pb**	**22 16 37.0**	**+0.1**
HWA				S	**Sb**	**22 16 51.8**	**+1.4**
SCZT	**Fangliau**	**1.05**	**181**	*e*P	**Pb**	**22 16 36.6**	**-0.4**
SCZT				S	**Sb**	**22 16 53.2**	**+2.9**
EAST	**Anshuo**	**1.05**	**169**	*e*P	**Pb**	**22 16 36.8**	**-0.3**
EAST				S	**Sb**	**22 16 52.2**	**+1.6**
TWD	**Chiawan**	**1.10**	**53**	*e*P	**Pb**	**22 16 37.4**	**-0.4**
TWD				S	**Sb**	**22 16 52.8**	**+1.0**
TWP	**Hsiaoliuchiu**	**1.10**	**193**	*e*P	**Pb**	**22 16 39.4**	**+1.5**
NNS	**Nan Shan**	**1.22**	**34**	*e*P	**Pb**	**22 16 38.9**	**-0.9**
NNS				S	**Sb**	**22 16 57.7**	**+2.4**
NSTT	**Nanjuang**	**1.25**	**15**	*e*P	**Pb**	**22 16 39.6**	**-0.7**
NSTT				S	**Sb**	**22 16 57.2**	**+1.0**
HSN	**Hsinchu**	**1.41**	**12**	*e*P	**Pn**	**22 16 42.5**	**-0.4**
HSN				S	**Sb**	**22 17 03.6**	**+2.8**
NSK	**Sanguang**	**1.41**	**28**	*e*P	**Pn**	**22 16 42.7**	**-0.3**
NSK				S	**Sb**	**22 17 01.9**	**+1.0**
HEN	**Hengchun**	**1.41**	**176**	*e*P	**Pn**	**22 16 43.0**	**-0.1**
HEN				S	**Sb**	**22 17 03.8**	**+2.8**
ENA	**Nanau**	**1.42**	**45**	*e*P	**Pn**	**22 16 43.0**	**-0.2**
ENA				S	**Sb**	**22 17 03.1**	**+1.8**
ENTT	**Nioudou**	**1.48**	**35**	*e*P	**Pn**	**22 16 43.8**	**-0.2**
ENTT				S	**Sb**	**22 17 06.0**	**+3.0**
TWK1	**Hengchun**	**1.48**	**174**	*e*P	**Pn**	**22 16 44.6**	**+0.6**
TWE	**Neicheng**	**1.60**	**36**	*e*P	**Pn**	**22 16 45.9**	**+0.3**
TWE				S	**Sn**	**22 17 08.6**	**+2.3**
TWC	**Suao**	**1.62**	**43**	*e*P	**Pn**	**22 16 46.8**	**+0.9**
TWC				S	**Sn**	**22 17 08.8**	**+1.9**
TATO	**Taipei**	**1.73**	**27**	*e*Pn	**Pn**	**22 16 46.6**	**-1.0**
TWA	**Mucha**	**1.77**	**29**	*e*P	**Pn**	**22 16 47.8**	**-0.4**
TWA				S	**Sn**	**22 17 11.9**	**+1.1**
TAP1	**Taipei**	**1.80**	**27**	*e*P	**Pn**	**22 16 47.2**	**-1.4**
TWS1	**Kuangyinshan**	**1.82**	**23**	*e*P	**Pn**	**22 16 48.1**	**-0.6**
TWS1				S	**Sn**	**22 17 12.3**	**+0.5**
NWF	**Wu-fen Shan**	**1.94**	**32**	*e*P	**Pn**	**22 16 50.3**	**-0.3**
TWB1	**Santiao Chiao**	**2.00**	**38**	*e*P	**Pn**	**22 16 51.4**	**0.0**
TWY	**Chenhua**	**2.04**	**25**	*e*P	**Pn**	**22 16 51.6**	**-0.4**
KNM	**Kinmen**	**2.25**	**297**	*e*P	**Pn**	**22 16 54.2**	**-0.7**
QZH	**Quanzhou**	**2.40**	**309**	P	**Pn**	**22 16 54.8**	**-2.4**
QZH				S	**Sn**	**22 17 22.5**	**-4.2**
QZH				S	Sn		
	comp=N,1μm,0.4s						
QZH				S	Sn		
	comp=E,1μm,0.8s						
YOJ	**Yonaguni jima**	**2.41**	**64**	P	**Pn**	**22 16 57.5**	**+0.3**
YOJ				*e*S	**Sn**	**22 17 27.2**	**+0.4**
HATJ	**Hateruma jima**	**2.97**	**77**	P	**Pn**	**22 17 04.6**	**-0.7**
HATJ				S	**Sn**	**22 17 40.2**	**-1.0**
**IRIF

DZM	**Mont Dzumac**	**9.63**	**181**	*e*P		**P**	**22**	**34**	**15.1 +3.8**
DZM				*e*S		**Sn**	**22**	**36**	**00.2 0.0**
NOUC	**Port Laguerre**	**9.66**	**181**	*e*P		**P**	**22**	**34**	**16.0 +4.3**
NOUC				*e*S		**Sn**	**22**	**35**	**58.2 -2.8**
NOUC	**Port Laguerre**	**9.66**	**181**	*e*P		**P**	**22**	**34**	**16.0 +4.3**
NOUC				*e*S		**Sn**	**22**	**35**	**58.2 -2.8**
PMG	**Port Moresby**	**19.28**	**277**	P		**P**	**22**	**36**	**16.1 -0.9**
	0.6nm,0.3s,baz=162,slow=20,SNR=2.4								
PMG	**Port Moresby**	**19.28**	**277**	*e*P		**P**	**22**	**36**	**18.3 +1.2**
	48nm,1.0s								
CTA	**Charters Tower**	**20.93**	**246**	*e*P		**P**	**22**	**36**	**38.6 +3.8**
	20nm,0.9s								
CTA				*e*S		**S**	**22**	**40**	**16.2 -6.5**
CTA	**Charters Tower**	**20.93**	**246**	P		**P**	**22**	**36**	**34.0 -0.8**
	3.3nm,0.5s,baz=75,slow=13,SNR=4.1								
CTA				LR		LR	22	43	24.0
	comp=Z,1μm,22.0s,MS4.2,baz=58,slow=33								
CTA	**Charters Tower**	**20.93**	**246**	P		**P**	**22**	**36**	**34.0 -0.8**
CTA				*e*S		**S**	**22**	**40**	**16.2 -6.5**
CTA				LR		LR	22	43	24.0
CTAO	**Charters Tower**	**20.93**	**246**	*e*P		**P**	**22**	**36**	**34.5 -0.2**
	50nm,1.1s								
CTAO				LR		LR			
	comp=Z,914nm,20.0s,MS4.2								
ARMA	**Armidale**	**22.65**	**215**	*e*P		**P**	**22**	**36**	**54.3 +2.2**
RIV	**Riverview**	**25.55**	**211**	*e*P		**P**	**22**	**37**	**22.2 +2.2**
URZ	**Urewera**	**27.43**	**162**	P		**P**	**22**	**37**	**37.5 +0.2**
	comp=Z,9.5nm,0.8s,mb4.4,baz=266,slow=1.0,SNR=4.0								
URZ				S		**S**	**22**	**42**	**14.8 -0.5**
	comp=Z,4.5nm,0.8s,baz=37,slow=19,SNR=2.1								
URZ				LR		LR	22	46	54.2
	comp=Z,661nm,20.2s,MS4.2,baz=331,slow=33								
STKA	**Stephens Creek**	**30.05**	**226**	*e*P		**P**	**22**	**38**	**01.1 +0.2**
	comp=Z,17nm,0.7s,mb4.9								
STKA	**Stephens Creek**	**30.05**	**226**	P		**P**	**22**	**38**	**00.9 0.0**
	comp=Z,21nm,0.7s,mb5.0,baz=42,slow=7.4,SNR=52								
STKA				LR		LR	22	49	34.7
	comp=Z,915nm,19.8s,MS4.4,baz=67,slow=35								
TOO	**Toolangi**	**31.37**	**213**	*e*P		**P**	**22**	**38**	**12.4 -0.1**
	comp=Z,10nm,0.8s,mb4.7								
RPZ	**Rata Peaks**	**31.46**	**174**	P		**P**	**22**	**38**	**13.5 +0.3**
	comp=Z,20nm,0.5s,mb5.2,baz=29,slow=11,SNR=8.5								
RPZ	**Rata Peaks**	**31.46**	**174**	P		**P**	**22**	**38**	**13.5 +0.3**
WRAB	**Tennant Creek**	**31.79**	**252**	*e*P		**P**	**22**	**38**	**15.3 -1.0**
	comp=Z,35nm,1.1s,mb5.1								
WRAB				LR		LR			
	comp=Z,628nm,20.0s,MS4.3								
WB2	**Warramunga Arr**	**31.79**	**252**	*e*P		**P**	**22**	**38**	**15.3 -1.1**
WRA	**Warramunga Arr**	**31.80**	**252**	P		**P**	**22**	**38**	**15.4 -1.1**
	comp=Z,3.4nm,0.8s,mb4.2,baz=80,slow=8.9,SNR=16								
WRA				PcP		PcP			
	comp=Z,1.3nm,0.7s,baz=73,slow=3.0,SNR=3.3								
WRA				ScP			22	44	51.0
	comp=Z,1.3nm,0.8s,baz=78,slow=3.7,SNR=5.6								
WRA				LR		LR	22	50	04.5
	comp=Z,399nm,20.6s,MS4.1,baz=80,slow=34								
AS12	**Alice Springs**	**32.93**	**246**	*e*P		**P**	**22**	**38**	**24.9 -1.4**
	comp=Z,10nm,0.7s,mb4.9								
ASAR	**Alice Springs**	**32.93**	**246**	P		**P**	**22**	**38**	**25.6 -0.7**
	comp=Z,9.9nm,0.7s,mb4.9,baz=74,slow=9.4,SNR=74								
ASAR				ScP			22	44	54.3
	comp=Z,2.0nm,0.8s,baz=89,slow=3.2,SNR=7.5								
ASAR				LR		LR	22	50	40.3
	comp=Z,529nm,20.8s,MS4.2,baz=66,slow=34								
KAKA	**Kakadu**	**33.33**	**266**	*e*P		**P**	**22**	**38**	**28.9 -0.9**
	comp=Z,24nm,0.9s,mb5.1								
GUMO	**Guam**	**33.59**	**319**	*e*P		**P**	**22**	**38**	**32.4 +0.2**
	comp=Z,42nm,0.8s,mb5.4								
TAU	**Tasmania Unive**	**34.68**	**205**	*e*P		**P**	**22**	**38**	**41.3 +0.1**
	comp=Z,42nm,0.8s,mb5.4								
FITZ	**Fitzroy Crossi**	**39.83**	**257**	*e*P		**P**	**22**	**39**	**24.8 +0.1**
	comp=Z,16nm,1.1s,mb4.7								
FORT	**Forrest**	**39.95**	**237**	*e*P		**P**	**22**	**39**	**26.0 +0.3**
	comp=Z,130nm,0.7s,mb5.8								
KLBR	**Kellerberrin**	**48.68**	**239**	*e*P		**P**	**22**	**40**	**35.5 -0.3**
	comp=Z,48nm,0.8s,mb5.6								
NWAO	**Narrogin (SRO)**	**49.39**	**237**	*e*P		**P**	**22**	**40**	**41.3 0.0**
	comp=Z,44nm,0.7s,mb5.6								
NWAO				LR		LR			
	comp=Z,579nm,20.0s,MS4.6								
MUN	**Mundaring**	**50.05**	**239**	*e*P		**P**	**22**	**40**	**46.3 -0.1**
	comp=Z,54nm,0.8s,mb5.6								
KKM	**Kota Kinabalu**	**53.29**	**287**⇓	*e*P		**P**	**22**	**41**	**11.9 +0.9**
	comp=Z,55nm,1.0s,mb5.4								
JOW	**Kunigami**	**53.87**	**317**	P		**P**	**22**	**41**	**14.3 -0.8**
	comp=Z,66nm,0.7s,mb5.7,baz=150,slow=7.2,SNR=30								
JOW				LR		LR	23	00	41.2
	comp=Z,180nm,21.9s,MS4.1,baz=119,slow=32								
JOW	**Kunigami**	**53.87**	**317**	P		**P**	**22**	**41**	**14.3 -0.8**
JOW				LR		LR	23	00	41.2
JNU	**Nakatsue**	**56.63**	**324**	P		**P**	**22**	**41**	**34.2 -0.8**
	comp=Z,56nm,0.9s,mb5.6,baz=94,slow=7.6,SNR=26								
JNU				LR		LR	23	02	06.7
	comp=Z,169nm,20.0s,MS4.1,baz=281,slow=32								
ASAJ	**Asahikawa**	**60.32**	**340**	LR		LR	23	02	09.4
	comp=Z,292nm,21.8s,MS4.4,baz=311,slow=30								
KS15	**Wonju Array Si**	**61.44**	**326**	P		**P**	**22**	**42**	**07.2 -1.1**
YSS	**Yuzh-Sakhalins**	**62.80**	**342**	PFAKE			22	42	30.0 +13
YSS				LR		LR			
	comp=Z,392nm,20.0s,MS4.6								
NJ2	**Nanjing**	**63.53**	**315**	*e*P		**P**	**22**	**42**	**22.5 +0.1**
NJ2				AP		pP	22	42	28.3 +1.2
NJ2				XP		sP	22	42	30.1 +1.3
NJ2				S		**S**	**22**	**50**	**54.0 +0.4**
NJ2				XS			22	50	58.0
NJ2				PS		PS	22	51	12.0 -2.3
NJ2				LR		LR			
	comp=N,480nm,26.0s,MS4.7								
NJ2				LR		LR			
	comp=E,380nm,24.0s,MS4.7								
QIZ	**Qiongzhong**	**64.01**	**298**	P		**P**	**22**	**42**	**26.8 +1.0**
QIZ				S		**S**	**22**	**51**	**01.8 +2.0**
QIZ				AMB		AMB			
	comp=Z,40nm,1.1s,mb5.4								
KGM	**Kluang**	**64.39**	**278**⇓	*e*P		**P**	**22**	**42**	**29.0 +0.6**
FX1	**Attu Island--F**	**65.25**	**4**	P		**P**	**22**	**42**	**32.1 -1.1**
	comp=Z,12nm,0.6s,mb5.1,baz=121,slow=17,SNR=4.2								
CASY	**Casey**	**65.43**	**202**	*e*P		**P**	**22**	**43**	**33.1 -1.1**
SBA	**Scott Base**	**65.46**	**180**	*e*P		**P**	**22**	**42**	**34.8 +0.5**
	comp=Z,48nm,0.9s,mb5.5								
SBA				LR		LR			
	comp=Z,446nm,19.0s,MS4.7								
WHN	**Wuhan**	**65.87**	**312**	⇑P		**P**	**22**	**42**	**37.0 -0.6**
WHN				AMB		AMB			
	comp=Z,32nm,1.0s,mb5.3								
MDJ	**Mudanjiang**	**65.90**	**332**	P		**P**	**22**	**42**	**38.3 +0.8**
MDJ				AMB		AMB			
	comp=Z,14nm,0.9s,mb5.0								
MDJ				AMB		AMB			
	comp=Z,129nm,5.0s								
MDJ	**Mudanjiang**	**65.90**	**332**	*e*P		**P**	**22**	**42**	**37.6 0.0**
	comp=Z,21nm,0.9s,mb5.2								
MDJ				LR		LR			
	comp=Z,233nm,20.0s,MS4.4								
DL2	**Dalian**	**66.02**	**323**	P		**P**	**22**	**42**	**38.5 +0.1**
DL2				AMB		AMB			
	comp=Z,20nm,1.0s,mb5.1								
TIA	**Tai'an**	**67.14**	**318**	*e*P		**P**	**22**	**42**	**45.1 -0.5**
IPM	**Ipoh**	**67.27**	**280**⇑	*e*P		**P**	**22**	**42**	**47.0 +0.2**
CN2	**Changchun**	**67.30**	**329**	*e*P		**P**	**22**	**42**	**46.4 -0.1**
CN2				*e*XP		sP	22	42	55.0 +2.2
CN2				AMB		AMB			
	comp=Z,20nm,1.0s,mb5.1								
CN2				AMB		AMB			
	comp=Z,200nm,3.0s								
KLR	**Kul'dur**	**68.60**	**336**	*e*P		**P**	**22**	**42**	**54.8 +0.3**
KKTK	**Khon Kaen**	**69.17**	**293**	P		**P**	**22**	**42**	**59.8 +1.2**
ENH	**Enshi**	**69.36**	**309**	*e*P		**P**	**22**	**42**	**59.2 -0.3**
	comp=Z,106nm,0.8s,mb5.8								
ENH				LR		LR			
	comp=Z,155nm,20.0s,MS4.2								
GYA	**Guiyang**	**69.83**	**304**⇑	*i*P		**P**	**22**	**43**	**03.1 +0.7**
GYA				AMB		AMB			
	comp=Z,50nm,0.6s,mb5.6								
BJT	**Baijiatuan**	**70.01**	**321**	*e*P		**P**	**22**	**43**	**03.4 +0.1**
	comp=Z,29nm,0.9s,mb5.2								
BJT				*e*			22	43	14.5
BJI	**Beijing**	**70.02**	**321**	*e*P		**P**	**22**	**43**	**03.4 0.0**
BJI				AP		pP	22	43	14.3 +6.3
BJI				AMB		AMB			
	comp=Z,24nm,1.0s,mb5.1								
BJI				LR		LR			
	comp=N,187nm,31.1s,MS4.4								
BJI				LR		LR			
	comp=E,238nm,26.6s,MS4.4								
BJI				LR		LR			
	comp=Z,352nm,24.9s,MS4.5								
NST	**Nakhon Sawan**	**71.39**	**291**	P		**P**	**22**	**43**	**13.0 +1.0**
XAN	**Xi'an**	**71.61**	**312**	P		**P**	**22**	**43**	**13.6 +0.5**
XAN				AP		pP	22	43	24.3 +6.5
XAN				AMB		AMB			
	comp=Z,69nm,0.8s,mb5.6								
XAN				AMB		AMB			
	comp=Z,78nm,8.9s								
MIR	**Mirnyy**	**72.17**	**204**⇓	*e*P		**P**	**22**	**43**	**16.0 +0.1**
MIR				pmax		pmax			
	comp=Z,40nm,1.4s,mb5.2								
KMI	**Kunming**	**72.50**	**301**	*e*P		**P**	**22**	**43**	**20.3 +1.8**
KMI				AP		pP	22	43	30.1 +6.9
KMI				AMB		AMB			
	comp=Z,66nm,1.1s,mb5.5								
KMI				AMB		AMB			
	comp=Z,235nm,4.7s								
KMI				LR		LR			
	comp=Z,137nm,20.5s,MS4.2								
CHRT	**Chiangrai**	**73.11**	**295**	⇑P		**P**	**22**	**43**	**23.3 +1.0**
	comp=Z,250nm,0.8s,mb6.2								
CM31	**Chiang Mai Arr**	**73.38**	**294**	*e*P		**P**	**22**	**43**	**24.9 +1.0**
	comp=Z,33nm,0.8s,mb5.3								
CMAR	**Chiang Mai Arr**	**73.38**	**294**	P		**P**	**22**	**43**	**24.4 +0.6**
	comp=Z,25nm,0.8s,mb5.2,baz=124,slow=4.7,SNR=98								
CMAR				LR		LR	23	15	37.6
	comp=Z,54nm,19.4s,MS3.9,baz=100,slow=36								
HIA	**Hailar**	**73.92**	**330**	*e*P		**P**	**22**	**43**	**26.5 +0.1**
	comp=Z,16nm,1.0s,mb4.9								
CD2	**Chengdu**	**74.05**	**307**⇑	*i*P		**P**	**22**	**43**	**28.0 +0.5**
BTO	**Baotou**	**74.22**	**319**	*e*P		**P**	**22**	**43**	**27.9 -0.4**
LZH	**Lanzhou**	**76.24**	**312**	⇑P		**P**	**22**	**43**	**41.5 +1.5**
LZH				AMB		AMB			
	comp=Z,108nm,1.4s,mb5.6								
LZH				AMB		AMB			
	comp=Z,298nm,4.0s								
LZH				LR		LR			
	comp=N,162nm,14.2s								
LZH				LR		LR			
	comp=Z,246nm,17.4s,MS4.6								
QSPA	**South Pole Qui**	**77.63**	**180**	*e*P		**P**	**22**	**43**	**47.1 +0.2**
	comp=Z,19nm,1.0s,mb5.0								
QSPA				LR		LR			
	comp=Z,140nm,19.5s,MS4.3								
YAK	**Yakutsk**	**79.60**	**343**	PFAKE			22	44	10.0 +12
YAK				LR		LR			
	comp=Z,229nm,21.0s,MS4.5								
ULN	**Ulaanbaatar**	**79.85**	**324**	*e*P		**P**	**22**	**44**	**00.3 +0.8**
	comp=Z,17nm,0.8s,mb5.0								
ULN				LR		LR			
	comp=Z,175nm,21.0s,MS4.4								
BILL	**Bilibino**	**80.21**	**360**	*e*P		**P**	**22**	**44**	**00.9 -0.2**
BILL				pmax		pmax			
	comp=Z,10.0nm,1.4s,mb4.5								
BILL	**Bilibino**	**80.21**	**360**	*e*P		**P**	**22**	**44**	**00.4 -0.8**
	comp=Z,8.6nm,1.1s,mb4.6								
SONM	**Songino Array**	**80.21**	**324**	P		**P**	**22**	**44**	**01.9 +0.3**
	comp=Z,2.4nm,0.4s,mb4.5,baz=143,slow=5.6,SNR=27								
SONM				PKKPbc			23	02	44.2
	comp=Z,0.4nm,0.8s,baz=180,slow=1.2,SNR=3.7								
GTA	**Gaotai**	**80.56**	**314**	*e*P		**P**	**22**	**44**	**05.0 +1.5**
GTA				AMB		AMB			
	comp=Z,23nm,1.1s,mb5.0								
SHL	**Shillong**	**81.85**	**298**	*e*P		**P**	**22**	**44**	**11.5 +0.9**
BOD	**Bodaibo**	**82.08**	**335**	*e*P		**P**	**22**	**44**	**09.6 -1.5**
MCK	**McKinley**	**83.16**	**18**	PFAKE			22	44	30.0 +13
MCK				LR		LR			
	comp=Z,114nm,20.0s,MS4.2								
ZAK	**Zakamensk**	**83.25**	**325**⇓	*e*P		**P**	**22**	**44**	**16.0 -1.3**
TLY	**Talaya**	**83.67**	**326**	*e*P		**P**	**22**	**44**	**19.3 -0.1**
TLY				*e*			22	47	29.9
TLY				pmax		pmax			
	comp=Z,100nm,1.0s,mb5.9								
TLY				MLR		MLR			
	comp=Z,600nm,17.0s,MS5.0								
LSA	**Lhasa**	**83.74**	**302**	*e*P		**P**	**22**	**44**	**22.0 +1.7**
	comp=Z,12nm,0.8s,mb5.1								
LSA				LR		LR			
	comp=Z,111nm,20.0s,MS4.2								
MAW	**Mawson**	**83.78**	**202**	*e*P		**P**	**22**	**44**	**19.3 -0.3**
	comp=Z,15nm,0.9s,mb5.1								
MAW	**Mawson**	**83.78**	**202**	P		**P**	**22**	**44**	**20.0 +0.4**
	comp=Z,16nm,0.8s,mb5.2,baz=88,slow=8.1,SNR=19								
MAW				LR		LR	23	16	07.5
	comp=Z,204nm,20.2s,MS4.5,baz=238,slow=32								
YBH	**Yreka Blue Hor**	**84.26**	**45**	P		**P**	**22**	**44**	**22.3 -0.4**
	comp=Z,4.6nm,0.8s,mb4.7,baz=292,slow=3.1,SNR=9.9								
YBH	**Yreka Blue Hor**	**84.26**	**45**	*e*P		**P**	**22**	**44**	**23.1 +0.4**
	comp=Z,9.9nm,1.1s,mb4.8								
YBH				*e*			22	44	36.2
COLA	**College**	**84.31**	**18**	PFAKE			22	44	30.0 +7.7
COLA				LR		LR			
	comp=Z,199nm,20.0s,MS4.5								
HUMO	**Hull Mountain**	**84.42**	**44**	*e*P		**P**	**22**	**44**	**24.2 +0.7**
ILAR	**Eielson Array**	**84.53**	**18**	P		**P**	**22**	**44**	**22.4 -1.1**
	comp=Z,4.3nm,0.6s,mb4.8,baz=246,slow=4.8,SNR=39								
ILAR				LR		LR	23	16	14.3
	comp=Z,128nm,20.1s,MS4.3,baz=242,slow=32								
BEKR	**Beckwourth**	**85.25**	**48**	*e*P		**P**	**22**	**44**	**29.4 +1.8**
	comp=Z,4.4nm,0.9s,mb4.6								
NVAR	**Mina Array Bea**	**86.28**	**50**	P		**P**	**22**	**44**	**33.1 +0.3**
	comp=Z,2.5nm,0.7s,mb4.5,baz=221,slow=6.6,SNR=15								
NVAR				LR		LR	23	17	17.8
	comp=Z,237nm,18.2s,MS4.6,baz=260,slow=32								
TIXI	**Tiksi**	**87.55**	**349**	*e*P		**P**	**22**	**44**	**37.1 -1.1**
TIXI				*e*			22	44	52.5
TIXI				pmax		pmax			
	comp=Z,18nm,1.2s,mb5.2								
PKI	**Pulchoki**	**87.98**	**299**	*e*P		**P**	**22**	**44**	**41.6 +0.3**
	comp=Z,97nm,1.0s,mb6.0								
KKN	**Kakani**	**88.14**	**299**	*e*P		**P**	**22**	**44**	**42.5 +0.4**
	comp=Z,70nm,0.8s,mb5.9								
DMN	**Daman**	**88.25**	**299**	*e*P		**P**	**22**	**44**	**43.3 +0.7**
	comp=Z,185nm,0.9s								
GKN	**Gorkha**	**88.75**	**299**	*e*P		**P**	**22**	**44**	**44.8 -0.2**
	comp=Z,112nm,0.8s,mb6.2								
KOLN	**Koldanda**	**89.58**	**298**	*e*P		**P**	**22**	**44**	**48.5 -0.4**
	comp=Z,52nm,0.9s,mb5.9								
DANN	**Dangsing**	**89.58**	**299**	*e*P		**P**	**22**	**44**	**48.6 -0.3**
WMQ	**Urumqi**	**90.60**	**315**	*e*P		**P**	**22**	**44**	**53.8 +0.6**
WMQ				AP		pP	22	44	57.4 -0.7
WMQ				XP		sP	22	45	00.0 +0.4
WMQ				PP		PP	22	48	31.5 +0.7
WMQ				SKS		SKS	22	55	23.0 -5.3
WMQ				S		S	22	55	47.0 +1.2
WMQ				XS			22	55	54.8
WMQ				PS		PS	22	56	59.8 +1.1
WMQ				SS		SS	23	01	51.9 +0.9
WMQ				AMB		AMB			
	comp=Z,148nm,6.5s								
WMQ				LR		LR			
	comp=N,799nm,21.3s,MS5.2								
WMQ				LR		LR			
	comp=E,625nm,21.6s,MS5.2								
WMQ				LR		LR			
	comp=Z,1μm,22.2s,MS5.2								
HLID	**Hailey**	**90.64**	**46**	*e*P		**P**	**22**	**44**	**53.4 -0.1**
	comp=Z,1.9nm,0.6s,mb4.6								
HLID				LR		LR			
	comp=Z,222nm,22.0s,MS4.5								
SYO	**Syowa Base**	**90.74**	**197**	⇓P		**P**	**22**	**44**	**50.9 -2.4**
SYO	**Syowa Base**	**90.74**	**197**	⇓PcP		PcP	22	44	55.5 +0.8
SYO	**Syowa Base**	**90.74**	**197**	⇓pP		pP	22	44	58.3 +0.2
SYO	**Syowa Base**	**90.74**	**197**	⇓*e*P		**P**	**22**	**44**	**50.9 -2.4**
SYO				⇓*e*PcP		PcP	22	44	55.5 +0.8
SYO				⇓*e*PP		pP	22	44	58.3 +0.2
HYB	**Hyderabad**	**91.77**	**287**	*i* P		**P**	**22**	**45**	**00.0 +0.8**
HYB	**Hyderabad**	**91.77**	**287**	*e*P		**P**	**22**	**45**	**00.0 +0.8**
PDAR	**Pinedale Array**	**93.87**	**47**	P		**P**	**22**	**45**	**08.0 -0.4**
	comp=Z,0.2nm,0.4s,baz=235,slow=11,SNR=3.4								
PDAR				LR		LR	23	19	00.1
	comp=Z,84nm,21.9s,MS4.2,baz=256,slow=30								
LENM	**Lemitar**	**93.97**	**56**	*e*P		**P**	**22**	**45**	**13.9 +4.9**
RW3	**Ridgway**	**94.27**	**52**	*e*P		**P**	**22**	**45**	**11.7 +1.5**
ANMO	**Albuquerque**	**94.55**	**55**	PFAKE			22	45	20.0 +8.4
ANMO				LR		LR			
	comp=Z,223nm,20.0s,MS4.6								
MKAR	**Makanchi Array**	**95.04**	**317**	P		**P**	**22**	**45**	**13.8 +0.2**
	comp=Z,16nm,0.6s,mb5.6,baz=97,slow=6.2,SNR=140								
MKAR				PP		PP	22	49	00.3 -5.0
	comp=Z,3.4nm,1.2s,baz=113,slow=9.2,SNR=5.9								
MKAR				PKKPbc			23	02	06.8
	comp=Z,3.0nm,1.1s,baz=275,slow=2.2,SNR=12								
MKAR				LR		LR	23	26	06.1
	comp=Z,91nm,20.8s,MS4.2,baz=99,slow=34								
MKAR	**Makanchi Array**	**95.04**	**317**	*i* P		**P**	**22**	**45**	**13.4 -0.2**
MKAR				pmax		pmax			
	comp=Z,10.0nm,0.7s								
MKAR	**Makanchi Array**	**95.04**	**317**	P		**P**	**22**	**45**	**13.8 +0.2**
MKAR				PP		PP	22	49	00.3 -4.9
MKAR				PKKPbc			23	02	06.8
MKAR				LR		LR	23	26	06.1
ZAL	**Zalesovo**	**95.11**	**324**	P		**P**	**22**	**45**	**12.6 -1.2**
	comp=Z,1.9nm,0.6s,mb4.7,baz=256,slow=5.1,SNR=14								
ZAL				LR		LR	23	25	55.8
	comp=Z,104nm,19.6s,MS4.3,baz=276,slow=34								
ZAL	**Zalesovo**	**95.11**	**324**	P		**P**	**22**	**45**	**12.6 -1.2**
ZAL				LR		LR	23	25	55.8
TXAR	**Lajitas Array**	**95.77**	**61**	P		**P**	**22**	**45**	**18.0 +0.6**
	comp=Z,1.0nm,0.6s,mb4.4,baz=221,slow=5.7,SNR=8.7								
TXAR				LR		LR	23	19	34.3
	comp=Z,99nm,19.1s,MS4.3,baz=240,slow=30								
YKA	**Yellowknife Ar**	**95.79**	**27**	P		**P**	**22**	**45**	**14.2 -2.4**
	comp=Z,0.3nm,0.5s,baz=259,slow=4.8,SNR=8.4								
YKA				PKIKP			22	49	55.7
	comp=Z,0.2nm,0.5s,baz=249,slow=1.3,SNR=5.9								
YKA				LR		LR	23	21	13.9
	comp=Z,103nm,20.8s,MS4.3,baz=265,slow=31								
YKA	**Yellowknife Ar**	**95.79**	**27**	P		**P**	**22**	**45**	**14.2 -2.4**
SNAA	**Sanae**	**95.83**	**183**	*e*P		**P**	**22**	**45**	**15.4 -1.3**
SDCO	**Great Sand Dun**	**95.86**	**53**	PFAKE			22	45	30.0 +12
SDCO				LR		LR			
	comp=Z,377nm,20.0s,MS4.9								
VNA3	**Neumayer Olymp**	**96.53**	**181**⇑	*i*		**P**	**22**	**45**	**21.3 +1.5**
VNA2	**Neumayer--Watz**	**96.78**	**182**⇑	*i*		**P**	**22**	**45**	**23.8 +2.8**
KSH	**Kashi**	**98.21**	**309**	*e*P		**P**	**22**	**45**	**29.4 +1.3**
KSH				*e*AP		pP	22	45	33.4 +0.4
KSH				*e*XP		sP	22	45	36.3 +1.8
KSH				*e*PP		PP	22	49	32.0 +1.4
WMOK	**Wichita Mounta**	**100.73**	**57**	PFAKE			22	45	50.0 +10
WMOK				LR		LR			
	comp=Z,248nm,20.0s,MS4.7								
ARU	**Arti**	**110.18**	**326**	PFAKE			22	50	30.0 +5.4
ARU				LR		LR			
	comp=Z,93nm,21.0s,MS4.3								
ACSO	**Alum Creek Sta**	**113.49**	**51**	PFAKE			22	50	40.0 +8.5
ACSO				LR		LR			
	comp=Z,569nm,22.0s,MS5.1								
ARCES	**ARCESS Array B**	**117.83**	**346**	PKP		PKPdf	22	50	35.8 -3.4
	comp=Z,1.3nm,0.3s,baz=73,slow=2.0,SNR=42								
ARCES				PKKPbc			23	00	56.0
	comp=Z,5.9nm,1.1s,baz=90,slow=1.2,SNR=8.9								
LPAZ	**La Paz**	**118.88**	**116**	PKP		PKPdf	22	50	39.9 -2.6
	comp=Z,0.7nm,0.7s,baz=7.7,slow=8.4,SNR=4.2								
LPAZ				PKKPbc			23	00	54.5
	comp=Z,1.4nm,0.8s,baz=109,slow=1.5,SNR=6.3								
SCHQ	**Schefferville**	**120.73**	**33**	PKP		PKPdf	22	50	42.5 -2.7
	comp=Z,1.8nm,0.5s,baz=238,slow=5.3,SNR=6.6								
SCHQ	**Schefferville**	**120.73**	**33**	PKP		PKPdf	22	50	42.5 -2.7
CPUP	**Villa Florida**	**122.54**	**132**	PKP		PKPdf	22	50	45.7 -3.6
	comp=Z,1.9nm,0.8s,baz=171,slow=5.5,SNR=4.5								
CPUP	**Villa Florida**	**122.54**	**132**	PKP		PKPdf	22	50	45.7 -3.6
FINES	**FINESS Array B**	**123.30**	**339**	PKP		PKPdf	22	50	46.5 -3.5
	comp=Z,3.9nm,0.9s,baz=84,slow=2.7,SNR=15								
KMBO	**Kil

region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**31.92**	**264**	P	P	00 00 32.4	-0.8
	4.5nm,0.9s,baz=90,slow=10,SNR=3.8						
ASAR	**Alice Springs**	**43.04**	**256**	P	P	00 02 01.0	-1.9
	0.7nm,0.4s,baz=92,slow=7.4,SNR=11						
ASAR				PcP	PcP	00 03 34.5	-2.2
	0.4nm,0.5s,baz=116,slow=3.6,SNR=4.3						
WRA	**Warramunga Arr**	**43.06**	**262**	P	P	00 02 01.3	-1.7
	0.4nm,0.3s,baz=96,slow=7.2,SNR=14						
BRTR	**Keskin Array B**	**145.33**	**312**	PKPbc	PKPbc	00 13 21.8	+0.6
	0.5nm,0.6s,baz=97,slow=5.5,SNR=3.6						
GERES	**GERESS Array B**	**149.30**	**343**	PKPbc	PKPdf	00 13 31.1	+5.0
	0.5nm,0.7s,baz=45,slow=3.8,SNR=5.8						

*NEIC **20** 23:55:32.4, 46.27N×7.23E, h2km, ML2.1(LDG), ML1.6(ZUR), After LDG.*
*LDG **20** 23:55:32.4±0.1, 46.27N×7.23E, h2km, Md1.9/1, Ml2.1/8, Error ellipse: s-maj=2.2km s-min=1.2km az=104.0*
*ZUR **20** 23:55:32.1, 46.28N×7.19E, h8km, ML1.3/7*

ISC 20 23:55:31.1±0.5, 46.31N±0.02×7.14E±0.03, h15km±4km, n20, σ0§95/37, 4C-4D, Switzerland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GRYON	**Gryon**	**0.07**	**200**	⇓*i* Pg	**Pg**	**23 55 34.3**	**+0.2**
	7.2nm,0.2s						
GRYON				*i* Sg	**Sg**	**23 55 35.7**	**-0.3**
	7.2nm,0.2s						
SENIN	**Lac Senin**	**0.12**	**64**	⇑*i* Pg	**Pg**	**23 55 35.0**	**+0.3**
	12nm,0.3s						
SENIN				*i* Sg	**Sg**	**23 55 37.0**	**-0.1**
	12nm,0.3s						
AIGLE	**Aigle**	**0.14**	**283**	⇓*i* Pg	**Pg**	**23 55 35.9**	**+1.0**
	1.6nm,0.2s						
AIGLE				*e*Sg	**Sg**	**23 55 38.6**	**+1.2**
	1.6nm,0.2s						
SALAN	**Lac Salanfe**	**0.20**	**215**	⇑*i* Pg	**Pg**	**23 55 36.7**	**+0.7**
	3.0nm,0.2s						
SALAN				*e*Sg	**Sg**	**23 55 39.5**	**+0.3**
	3.0nm,0.2s						
DIX	**Grande Dixence**	**0.30**	**141**	⇓*i* Pg	**Pg**	**23 55 37.8**	**+0.2**
	1.4nm,0.3s						
DIX				*e*Sg	**Sg**	**23 55 41.4**	**-0.5**
	1.4nm,0.3s						
EMV	**Vieux Emosson**	**0.30**	**214**	⇑*i* Pg	**Pg**	**23 55 38.3**	**+0.6**
	1.9nm,0.2s						
EMV				*e*Sg	**Sg**	**23 55 42.3**	**+0.3**
	1.9nm,0.2s						
LKBD	**Leukerbad**	**0.34**	**77**	⇓*i* Pg	**Pg**	**23 55 38.7**	**+0.2**
	4.4nm,0.4s						
LKBD				*e*Sg	**Sg**	**23 55 43.2**	**-0.2**
	4.4nm,0.4s						
MMK	**Mattmark**	**0.63**	**114**	⇑*i* Pg	**Pg**	**23 55 43.9**	**0.0**
CABF	**La Chapelle**	**0.79**	**293**	*e*Sg	**Sg**	**23 56 00.5**	**+2.8**
	4.9nm,0.2s						
CABF	**La Chapelle**	**0.79**	**293**	*e*Pg	**Pg**	**23 55 48.7**	**+1.6**
CABF				*e*Sg	**Sg**	**23 56 00.5**	**+2.8**
LPL	**La Plagne**	**0.84**	**200**	*e*Pg	**Pg**	**23 55 48.3**	**+0.1**
LPL				*e*Sg	**Sg**	**23 55 59.3**	**-0.3**
	1.8nm,0.3s						
LPG	**La Plagne**	**0.86**	**199**	*e*Pg	**Pg**	**23 55 48.7**	**+0.2**
LPG				*e*Sg	**Sg**	**23 55 59.7**	**-0.3**
	1.7nm,0.2s						
HINF	**Hinteralfeld**	**1.52**	**353**	*e*Pg	**Pg**	**23 56 01.7**	**+0.1**
HINF				*e*Sg	**Sg**	**23 56 21.3**	**-0.6**
	4.5nm,0.2s						
ORIF	**Oris-en-Rattie**	**1.65**	**213**	*e*Pg	**Pg**	**23 56 03.3**	**-0.9**
ORIF				*e*Sg	**Sg**	**23 56 25.0**	**-1.3**
	2.1nm,0.3s						
HAU	**Haudompre**	**1.78**	**343**	*e*Sg	**Sg**	**23 56 30.1**	**-0.4**
	3.7nm,0.3s						
CDF	**Champ du Feu**	**2.10**	**2**	*e*Pn	**Pn**	**23 56 07.6**	**+1.2**
CDF				*e*Pg	**Pg**	**23 56 12.3**	**-0.9**
CDF				*e*Sg	**Sg**	**23 56 39.7**	**-1.6**
	0.8nm,0.3s						
VIVF	**Saint-Julien-l**	**2.26**	**231**	*e*Sg	**Sg**	**23 56 43.3**	**-3.3**
	1.4nm,0.2s						
SMF	**Signal de Mont**	**2.31**	**280**	*e*Pg	**Pg**	**23 56 16.4**	**-0.8**
SMF				*e*Sg	**Sg**	**23 56 47.2**	**-0.8**
	1.3nm,0.1s						
SSF	**Saint Saulge**	**2.61**	**288**	*e*Pn	**Pn**	**23 56 14.7**	**+1.1**
SSF				*e*Pg	**Pg**	**23 56 22.2**	**-1.2**
SSF				*e*Sg	**Sg**	**23 56 56.2**	**-2.0**
	1.0nm,0.3s						
AVF	**Avril sur Loir**	**2.66**	**282**	*e*Pn	**Pn**	**23 56 16.0**	**+1.7**

*IDC **21** 00:02:01.4±2.0, 43.48N×105.31W, mb4.2/3, mb1 3.9/5, mb1mx3.6/21, ML3.6/2, Error ellipse: s-maj=51.2km s-min=10.0km az=155.0*
*NEIC **21** 00:02:03.8±0.5, 43.78N×105.28W, ML3.2, Error ellipse: s-maj=9.4km s-min=5.4km az=164.0, Suspected Mining explosion.*
NEIC 60 km [40 miles] SSE of Gillette.

ISC 21 00:02:02.3±0.7, 43.79N±0.08×105.20W±0.08, n16, σ0§95/17, mb4.3/3, Wyoming

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RSSD	**Black Hills**	**0.90**	**68**	*e*Pg	**Pg**	**00 02 22.4**	**+2.1**
BW06	**Boulder Array**	**3.34**	**254**	*e*Pn	**Pn**	**00 02 56.4**	**-0.5**
PDAR	**Pinedale Array**	**3.34**	**254**	P	**Pn**	**00 02 57.0**	**+0.1**
	1.7nm,0.3s,baz=76,slow=17,SNR=52						
PDAR				Pg	**Pg**	**00 03 02.0**	**-7.0**
	5.0nm,0.3s,baz=75,slow=18,SNR=39						
PDAR				Lg		00 03 40.8	
	4.8nm,0.3s,baz=79,slow=34,SNR=14						
KSWY	**Kelly School**	**3.94**	**269**	*e*Pb	**Pb**	**00 03 12.8**	**+0.3**
ISCO	**Idaho Springs**	**4.00**	**185**	*e*Pn	**Pn**	**00 03 06.1**	**-0.1**
WUWY	**Wally Ulrich**	**4.03**	**268**	*e*Pb	**Pb**	**00 03 14.2**	**+0.1**
AHID	**Auburn Hatcher**	**4.43**	**259**	*e*Pb	**Pb**	**00 03 22.7**	**+1.8**
QLMT	**Earthquake Lak**	**4.59**	**285**	*e*Pb	**Pb**	**00 03 24.7**	**+1.1**
BOZ	**Bozeman (W**	**4.95**	**294**	*e*Pn	**Pn**	**00 03 19.0**	**-0.7**
MCMT	**McKenzie Canyo**	**5.59**	**283**	*e*Pg	**Pg**	**00 03 48.6**	**-5.3**
MPU	**Maple Canyon**	**6.10**	**234**	*e*P	**Pn**	**00 03 35.0**	**-1.0**
YKA	**Yellowknife Ar**	**19.53**	**347**	P	**P**	**00 06 33.5**	**-0.2**
	0.1nm,0.3s,baz=155,slow=12,SNR=3.4						
YKA	**Yellowknife Ar**	**19.53**	**347**	P	**P**	**00 06 33.5**	**-0.3**
ARCES	**ARCESS Array B**	**61.36**	**18**	P	**P**	**00 12 20.1**	**-1.5**
	4.3nm,1.0s,mb4.5,baz=333,slow=6.0,SNR=5.4						
FINES	**FINESS Array B**	**67.97**	**23**	P	**P**	**00 13 03.7**	**-0.9**
	2.9nm,1.1s,mb4.4,baz=315,slow=3.9,SNR=3.0						
MKAR	**Makanchi Array**	**89.56**	**355**	P	**P**	**00 15 02.2**	**-0.2**
	0.9nm,1.2s,mb3.9,baz=36,slow=6.3,SNR=3.7						

SKHL 21 00:09:58.8±0.7, 55.08N×142.15E, h13km±2km, mb4.3/3, Sea of Okhotsk

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OKH	**Okha**	**1.60**	**163**	*e*Pg	Pg	00 10 30.0	-0.8
OKH				AMB	AMB	00 10 34.0	
	400nm,0.4s						
OKH				pP		00 10 34.9	
OKH				*e*Sg	Sg	00 10 52.0	-0.2
OKH				A		00 10 55.1	
	1µm,0.5s						
NKL	**Nikolayevsk**	**2.12**	**205**	*i* Pg	Pg	00 10 40.5	-0.7
NKL				AMB	AMB	00 10 41.5	
	60nm,0.3s						
NKL				AMB	AMB	00 10 41.5	
	40nm,0.3s						
NKL				AMB	AMB	00 10 41.5	
	80nm,0.3s						
NKL				pP		00 10 44.5	
NKL				sP		00 10 48.0	
NKL				*e*Sg	Sg	00 11 10.0	+0.6
NKL				A		00 11 20.0	
	510nm,0.5s						
NKL				A		00 11 20.0	
	520nm,0.5s						
NKL				A		00 11 20.0	
	900nm,2.0s						
NKL				A		00 11 20.0	
	800nm,2.0s						
TYV	**Tymovskoe**	**4.24**	**176**	*e*Pn	Pn	00 11 04.4	-0.2
TYV				*e*Pb	Pb	00 11 13.8	+1.0
TYV				*e*Pg	Pg	00 11 23.0	-0.4
TYV				sP		00 11 30.0	
TYV				*e*Sn	Sn	00 11 56.0	+1.5
TYV				*e*Sb	Sb	00 12 02.4	-1.9
TYV				*e*Sg	Sg	00 12 20.5	+0.6
TYV				A		00 12 25.4	
	20nm,0.4s						
GRNR	**Gornyy**	**5.54**	**221**	*e*rx	rx	00 11 40.8	
GRNR				*e*Pg	Pg	00 11 47.5	-1.8
GRNR				*e*Sg	Sg	00 13 04.0	+0.9
GRNR				A		00 13 04.8	
	60nm,0.7s						
EKMR	**Ekimchan**	**5.78**	**253**	*e*rx	rx	00 11 31.0	
EKMR				*e*Pg	Pg	00 11 52.5	-1.7
EKMR				AMB	AMB	00 11 57.3	
	10.0nm,0.2s						
EKMR				*e*rx	rx	00 12 18.0	
EKMR				*e*Sg	Sg	00 13 12.5	+1.3
EKMR				A		00 13 33.8	
	30nm,0.4s						
EKMR				A		00 13 33.8	
	40nm,0.4s						
BMKR	**Bomnak**	**7.69**	**273**	*e*P	Pn	00 11 54.5	+1.3
BMKR				*e*S	Sn	00 13 24.5	+3.5
YASR	**Yasnyy**	**8.50**	**264**	*e*P	P	00 12 07.4	+2.8
YASR				*e*S	Sn	00 13 44.4	+3.0
KLR	**Kul'dur**	**8.67**	**232**	*e*rx	rx	00 14 37.8	
ZEA	**Zeya**	**8.80**	**267**	*e*rx	rx	00 14 44.1	
KROS	**Kirovskiy**	**8.80**	**272**	*e*P	P	00 12 09.8	+1.0
KROS				*e*S	Sn	00 13 52.5	+3.6

*THE **21** 00:15:38.5, 39.00N×20.36E, h10km, ML3.3*
*NEIC **21** 00:15:41.3, 39.23N×20.55E, h27km, MD3.4(ATH), After ATH.*
*ATH **21** 00:15:41.6, 39.24N×20.57E, h16km±4km, MD3.3/6*

ISC 21 00:15:38.8±1.0, 39.08N±0.05×20.35E±0.07, h10km, n22, σ1§17/29, Greece-Albania border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IGT	**Igoumenitsa**	**0.46**	**359**	*e*Pg	**Pg**	**00 15 19.1**	**+0.9**
IGT				*e*Sg	**Sg**	**00 15 56.3**	**+2.0**
JAN	**Janina**	**0.70**	**34**	*e*Pb	**Pb**	**00 15 51.0**	**-1.6**
JAN				*e*Sb	**Sb**	**00 16 00.0**	**-2.1**
KEK	**Kerkira**	**0.77**	**326**	*e*PN	**Pn**	**00 15 56.1**	**+0.7**
VLS	**Valsamata**	**0.92**	**168**	*e*PN	**Pn**	**00 16 01.5**	**+3.9**
VLS				*e*SN	**Sn**	**00 16 17.7**	**+6.9**
MEV	**Metsovon**	**0.98**	**44**	*e*Pg	**Pg**	**00 15 55.7**	**-2.8**
EVR	**Evrytania**	**1.15**	**97**	*e*PN	**Pn**	**00 16 00.7**	**-0.2**
AGG	**Agios Georgios**	**1.54**	**91**	*e*Pb	**Pb**	**00 16 05.6**	**-1.5**
AGG				*e*Sb	**Sb**	**00 16 28.4**	**+1.8**
KZN	**Kozani**	**1.65**	**41**	*e*PN	**Pn**	**00 16 08.2**	**+0.1**
FNA	**Florina**	**1.88**	**25**	*e*Pb	**Pb**	**00 16 13.0**	**+0.2**
FNA				*e*Sb	**Sb**	**00 16 37.5**	**+1.1**
LIT	**Litokhoron**	**1.95**	**58**	*e*Pn	**Pn**	**00 16 12.6**	**+0.3**
LIT				*e*Sn	**Sn**	**00 16 38.0**	**+0.9**
XOR	**Xorichti**	**2.23**	**82**	*e*Pn	**Pn**	**00 16 17.2**	**+0.8**
NEO	**Neokhori**	**2.25**	**83**	*e*PN	**Pn**	**00 16 18.2**	**+1.4**
GRG	**Griva**	**2.45**	**39**	*e*Pn	**Pn**	**00 16 19.9**	**+0.3**
PAIG	**Paliouri**	**2.71**	**71**	*e*Pn	**Pn**	**00 16 22.2**	**-1.1**
AOS	**Alonnisos**	**2.75**	**87**	*e*Pn	**Pn**	**00 16 23.4**	**-0.4**
KNT	**Kendrikon**	**2.86**	**42**	*e*Pn	**Pn**	**00 16 25.4**	**+0.1**
SOH	**Sokhos**	**2.90**	**52**	*e*Pn	**Pn**	**00 16 26.0**	**+0.1**
SKO	**Skopje**	**3.01**	**16**	*e*Pn	**Pn**	**00 16 35.0**	**+7.5**
OUR	**Ouranopolis**	**3.07**	**65**	*e*Pn	**Pn**	**00 16 28.6**	**+0.2**
SRS	**Serrai**	**3.22**	**50**	*e*Pn	**Pn**	**00 16 29.9**	**-0.6**
STON	**Ston**	**4.29**	**333**	*i* Pn	**Pn**	**00 16 45.6**	**-0.1**
STON				*i* Sn	**Sn**	**00 17 33.6**	**-2.8**
ALN	**Alexandroupoli**	**4.74**	**66**	*e*Pn	**Pn**	**00 16 51.1**	**-1.0**

*ATH **21** 00:55:43.8, 37.87N×20.61E, h5km, MD3.5/8*
*NEIC **21** 00:55:44.2, 37.92N×20.63E, h5km, MD3.5(ATH), After ATH.*

ISC 21 00:55:44.0±1.5, 37.89N±0.09×20.7E±0.1, h5km, n16, σ1§19/17, 1C, Ionian Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VLS	**Valsamata**	**0.31**	**340**	⇑*i* Pg	**Pg**	**00 55 49.5**	**-0.7**
VLS				*e*Sg	**Sg**	**00 55 53.0**	**-1.3**
ITM	**Ithomi**	**1.19**	**126**	*e*PB	**Pb**	**00 56 06.0**	**-0.7**
EVR	**Evrytania**	**1.34**	**39**	*e*PB	**Pb**	**00 56 10.5**	**+1.3**
IGT	**Igoumenitsa**	**1.67**	**350**	*e*P	**Pn**	**00 56 13.4**	**-0.8**
AGG	**Agios Georgios**	**1.70**	**48**	*e*P	**Pn**	**00 56 14.5**	**0.0**
JAN	**Janina**	**1.77**	**3**	*e*PN	**Pn**	**00 56 18.5**	**+3.0**
MEV	**Metsovon**	**1.94**	**12**	*e*P	**Pn**	**00 56 19.3**	**+1.4**
KEK	**Kerkira**	**1.96**	**339**	*e*PN	**Pn**	**00 56 20.5**	**+2.2**
VLI	**Veliai**	**2.12**	**123**	*e*PG	**Pg**	**00 56 26.0**	**-0.3**
NSAL	**Nisos Salamina**	**2.17**	**89**	*e*PN	**Pn**	**00 56 26.1**	**+3.8**
NAIG	**Nisos Aigina**	**2.19**	**93**	*e*PN	**Pn**	**00 56 25.5**	**+3.9**
XOR	**Xorichti**	**2.43**	**52**	*e*P	**Pn**	**00 56 24.8**	**-0.2**
AOS	**Alonnisos**	**2.79**	**62**	*e*P	**Pn**	**00 56 29.1**	**-1.1**
FNA	**Florina**	**2.94**	**10**	*e*P	**Pn**	**00 56 31.4**	**-0.9**
PAIG	**Paliouri**	**3.08**	**48**	*e*P	**Pn**	**00 56 33.3**	**-1.0**
SRS	**Serrai**	**3.92**	**34**	*e*P	**Pn**	**00 56 46.5**	**+0.4**

*NEIC **21** 01:33:57.9±5.8, 22.04N×121.54E, h10km±36km, mb4.6/12, ML4.7(TAP), Error ellipse: s-maj=19.9km s-min=7.6km az=67.0*
NEIC Recorded [4 TAP] in T'ai-tung and [1 TAP] in P'ing-tung Counties.
*BJI **21** 01:33:58.2, 22.11N×121.20E, h10km, mB4.6, mb4.5, ML4.5, Ms4.3, Msz4.2*
*TAP **21** 01:33:59.5, 22.20N×121.36E, h16km±1km, ML4.7*
TAP Felt IV J at Lanyu, I J at Tawa, I J at Taimali, I J at Hengchun, I J at Sandimen, I J at Chenggung.
*NIED **21** 01:34:00, 22.20N×121.60E, h32km, Mw4.4 `Best double couple: M₀3.86×10¹⁵ NP1:φ₀65°, δ84°, λ160°. NP2:φ₀157°, δ70°, λ6°.*
*IDC **21** 01:34:01.8±3.0, 22.20N×121.74E, h42km±27km, mb4.0/15, mb1 4.1/16, mb1mx4.1/23, ML3.9/1, MS3.8/10, Ms1 3.8/10, ms1mx3.5/32, Error ellipse: s-maj=25.3km s-min=12.4km az=68.0*
*JMA **21** 01:34:02.8±0.3, 22.24N×121.65E, h87km, M4.5*

ISC 21 01:33:58.5±0.4, 22.12N±0.01×121.51E±0.02, h20km±2km, h17km±1.7km: pP-P, n152, σ1§34/207, mb4.4/28, MS3.9/13, 25C-1D, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LAY	**Lan-yu**	**0.09**	**155**	⇑*i* P	**Sb**	**01 34 05.6**	**+0.7**
TAW	**Tawu**	**0.62**	**293**	⇑*i* P	**Pb**	**01 34 09.5**	**-1.0**
TAW				S	**Sb**	**01 34 16.5**	**-2.2**
EAST	**Anshuo**	**0.67**	**293**	⇑*i* P	**Pb**	**01 34 10.4**	**-0.9**
TWK1	**Hengchun**	**0.68**	**255**	⇑*i* P	**Pb**	**01 34 11.4**	**-0.1**
TWK1				S	**Sb**	**01 34 19.3**	**-1.1**
ECL	**Taimali**	**0.70**	**313**	⇑*i* P	**Pb**	**01 34 10.8**	**-1.2**
TTN	**Taitung**	**0.72**	**332**	⇑P	**Pb**	**01 34 13.0**	**+0.8**
HEN	**Hengchun**	**0.73**	**261**	⇑*i* P	**Pb**	**01 34 12.2**	**-0.1**
HEN				S	**Sb**	**01 34 20.9**	**-0.9**
TWG	**Pinlang**	**0.81**	**330**	⇑*i* P	**Pb**	**01 34 12.7**	**-1.0**
TWG				S	**Sb**	**01 34 21.1**	**-3.1**
SCZT	**Fangliau**	**0.86**	**287**	⇑*i* P	**Pb**	**01 34 13.6**	**-1.0**
CHKT	**Chengkung**	**0.99**	**352**	*i* P	**Pb**	**01 34 16.3**	**-0.5**
CHKT				S	**Sb**	**01 34 27.4**	**-2.0**
SSD	**Sandimen**	**1.03**	**308**	⇑*i* P	**Pb**	**01 34 15.9**	**-1.6**
TWP	**Hsiaoliuchiu**	**1.09**	**282**	*e*P	**Pb**	**01 34 20.2**	**+1.7**
SGLT	**Jiouru**	**1.12**	**303**	*e*P	**Pb**	**01 34 20.6**	**+1.5**
ELDTW	**Lidau**	**1.16**	**337**	⇑P	**Pb**	**01 34 17.8**	**-2.0**
KAU	**Kaohsiung**	**1.20**	**292**	*e*P	**Pn**	**01 34 21.5**	**+1.1**
TWF1	**Yuli**	**1.25**	**351**	*e*P	**Pn**	**01 34 19.0**	**-2.0**
STYT	**Tauyuan**	**1.25**	**326**	*i* P	**Pn**	**01 34 19.8**	**-1.3**
STYT				S	**Sb**	**01 34 38.9**	**+1.9**
SGST	**Jiashian**	**1.29**	**318**	*e*P	**Pn**	**01 34 21.5**	**-0.1**
SGST				S	**Sb**	**01 34 38.7**	**+0.6**
EHY	**Hungye**	**1.39**	**353**	*e*P	**Pn**	**01 34 21.9**	**-1.3**
WTP	**Ta-pu**	**1.40**	**324**	*e*P	**Pn**	**01 34 23.2**	**0.0**
WTP				S	**Sn**	**01 34 41.4**	**+0.3**
CHN1	**Nanshi**	**1.40**	**320**	*e*P	**Pn**	**01 34 23.6**	**+0.4**
CHN1				S	**Sn**	**01 34 41.9**	**+0.7**
CHN3	**Shinhua**	**1.43**	**312**	*e*P	**Pn**	**01 34 24.8**	**+1.2**
YUS	**Yu-Shan**	**1.46**	**339**	*e*P	**Pn**	**01 34 23.9**	**-0.2**
TWK	**Hsinying**	**1.48**	**321**	*e*P	**Pn**	**01 34 24.8**	**+0.3**
TWK				S	**Sn**	**01 34 44.1**	**+0.8**
TAI1	**Yung-k'ang**	**1.50**	**308**	*e*P	**Pn**	**01 34 23.9**	**-0.8**
ALS	**Alishan**	**1.53**	**335**	*e*P	**Pn**	**01 34 25.5**	**+0.4**
SCLT	**Jiali**	**1.61**	**311**	*e*P	**Pn**	**01 34 26.5**	**+0.3**
SCLT				S	**Sn**	**01 34 46.5**	**0.0**
CHN5	**Tsauling**	**1.66**	**333**	*e*P	**Pn**	**01 34 27.2**	**+0.3**
ESL	**Shilin**	**1.69**	**358**	P	**Pn**	**01 34 27.8**	**+0.5**
ESL				S	**Sn**	**01 34 47.7**	**-1.0**
CHY	**Chiayi**	**1.70**	**324**	*e*P	**Pn**	**01 34 27.8**	**+0.2**
CHY				S	**Sn**	**01 34 49.1**	**+0.2**
CHN2	**Minshiung**	**1.70**	**326**	*e*P	**Pn**	**01 34 28.8**	**+1.3**
CHN8	**Yiju**	**1.71**	**316**	*e*P	**Pn**	**01 34 28.0**	**+0.2**
BBP	**Basco**	**1.72**	**166**	⇑*e*P	**Pn**	**01 34 29.5**	**+1.7**
BBP				*e*S	**Sn**	**01 34 52.8**	**+3.4**
BBP	**Basco**	**1.72**	**166**	⇑*e*P	**Pn**	**01 34 29.5**	**+1.7**
BBP				*e*S	**Sn**	**01 34 52.8**	**+3.4**
WGK	**Gukeng**	**1.79**	**331**	*e*P	**Pn**	**01 34 29.6**	**+0.8**
WGK				S	**Sn**	**01 34 52.4**	**+1.2**
SMLT	**Sun Moon Lake**	**1.85**	**342**	*e*P	**Pn**	**01 34 30.2**	**+0.6**
SMLT				S	**Sn**	**01 34 53.5**	**+1.0**
TYC	**Yuchr**	**1.88**	**341**	*e*P	**Pn**	**01 34 31.1**	**+1.1**
TYC				S	**Sn**	**01 34 55.4**	**+2.0**
WNT	**Mingjian**	**1.91**	**337**	*e*P	**Pn**	**01 34 31.8**	**+1.2**
WNT				S	**Sn**	**01 34 55.2**	**+0.9**
WSF	**Szhu**	**1.93**	**322**	*e*P	**Pn**	**01 34 27.0**	**-3.7**
WSF				S	**Sn**	**01 34 53.6**	**-0.9**
TWD	**Chiawan**	**1.96**	**2**	*e*P	**Pn**	**01 34 30.6**	**-0.6**
TWD				S	**Sn**	**01 34 54.4**	**-1.0**
WHF	**Hehuan Shan**	**2.03**	**354**	*e*P	**Pn**	**01 34 32.1**	**-0.1**
WDGT	**Dungji**	**2.05**	**304**	⇑P	**Pn**	**01 34 31.2**	**-1.4**
WDGT				S	**Sn**	**01 34 53.7**	**-4.1**
TWT	**Tachien**	**2.15**	**352**	*e*P	**Pn**	**01 34 35.0**	**+1.1**
TWT				S	**Sn**	**01 35 01.6**	**+1.3**
TCU	**Taichung**	**2.16**	**339**	*e*P	**Pn**	**01 34 35.2**	**+1.0**
TCU				S	**Sn**	**01 35 01.4**	**+0.8**
ENA	**Nanau**	**2.31**	**5**	*e*P	**Pn**	**01 34 36.2**	**0.0**
ENA				S	**Sn**	**01 35 04.2**	**-0.1**
PNG	**Penghu**	**2.31**	**309**	*e*P	**Pn**	**01 34 46.6**	**+1.7**
PNG				S	**Sn**	**01 35 00.4**	**-4.0**
NNS	**Nan Shan**	**2.32**	**357**	*e*P	**Pn**	**01 34 37.2**	**+0.9**
NNS				S	**Sn**	**01 35 06.8**	**+2.3**
TWQ1	**Liyutan**	**2.32**	**343**	*e*P	**Pn**	**01 34 37.5**	**+1.1**
TWQ1				S	**Sn**	**01 35 06.3**	**+1.6**
NSY	**Sanyi**	**2.39**	**343**	*e*P	**Pn**	**01 34 39.0**	**+1.6**
TWC	**Suao**	**2.50**	**7**	*e*P	**Pn**	**01 34 39.2**	**+0.3**
TWC				S	**Sn**	**01 35 09.0**	**-0.2**
ENTT	**Nioudou**	**2.51**	**1**	*e*P	**Pn**	**01 34 39.0**	**-0.1**
ENTT				S	**Sn**	**01 35 08.8**	**-0.8**
NSTT	**Nanjuang**	**2.55**	**349**	*e*P	**Pn**	**01 34 40.7**	**+1.1**
NSTT				S	**Sn**	**01 35 11.6**	**+1.2**
NSK	**Sanguang**	**2.55**	**357**	*e*P	**Pn**	**01 34 40.6**	**+0.9**
NSK				S	**Sn**	**01 35 11.6**	**+1.1**
TWE	**Neicheng**	**2.60**	**3**	*e*P	**Pn**	**01 34 41.8**	**+1.5**
TWE				S	**Sn**	**01 35 14.2**	**+2.6**
YOJ	**Yonaguni jima**	**2.71**	**30**	P	**Pn**	**01 34 43.0**	**+1.0**
YOJ				*e*S	**Sn**	**01 35 12.3**	**-2.2**
TATO	**Taipei**	**2.85**	**360**	*e*Pn	**Pn**	**01 34 45.3**	**+1.4**
TATO				*e*Pg	**Pn**	**01 34 55.5**	**+12**
TATO				*e*Sn	**Sn**	**01 35 21.7**	**+3.7**
TWA	**Mucha**	**2.85**	**1**	*e*P	**Pn**	**01 34 46.6**	**+2.6**
TWA				S	**Sn**	**01 35 20.2**	**+2.1**
HATJ	**Hateruma jima**	**2.86**	**47**	P	**Pn**	**01 34 44.7**	**+0.6**
HATJ				S	**Sn**	**01 35 16.7**	**-1.7**
TWB1	**Santiao Chiao**	**2.91**	**9**	*e*P	**Pn**	**01 34 46.6**	**+1.7**
NWF	**Wu-fen Shan**	**2.95**	**5**	*e*P	**Pn**	**01 34 46.1**	**+0.7**
NWF				S	**Sn**	**01 35 20.8**	**+0.1**
TWS1	**Kuangyinshan**	**2.97**	**358**	*e*P	**Pn**	**01 34 47.9**	**+2.2**
IRIF	**Iriomote-Funau**	**3.01**	**42**	P	**Pn**	**01 34 47.1**	**+0.9**
IRIF				S	**Sn**	**01 35 20.9**	**-1.1**
JKRS	**Kuro-shima**	**3.12**	**47**	P	**Pn**	**01 34 48.6**	**+0.8**
JKRS				S	**Sn**	**01 35 23.2**	**-1.7**
TWY	**Chenhua**	**3.15**	**1**	*e*P	**Pn**	**01 34 51.6**	**+3.5**
JIJ	**Ishigaki jima**	**3.29**	**47**	P	**Pn**	**01 34 50.4**	**+0.1**
JIJ				S	**Sn**	**01 35 26.5**	**-2.8**
PCYT	**Pengchaiyu**	**3.53**	**8**	*e*P	**Pn**	**01 34 55.2**	**+1.6**
KNM	**Kinmen**	**3.64**	**310**	*e*P	**Pn**	**01 34 54.5**	**-0.6**
JTJ	**Tarama**	**3.86**	**49**	P	**Pn**	**01 34 58.6**	**+0.3**
JTJ				*e*S	**Sn**	**01 35 41.8**	**-1.8**
QZH	**Quanzhou**	**3.88**	**317**	⇑*i* P	**Pn**	**01 34 56.8**	**-1.9**
QZH				S	**Sn**	**01 35 38.1**	**-6.2**
SGCP	**Mt. Cagua**	**3.89**	**172**	⇑*e*P	**Pn**	**01 35 00.1**	**+1.4**
SGCP				*e*S	**Sn**	**01 35 46.6**	**+2.3**
SGCP	**Mt. Cagua**	**3.89**	**172**	⇑*e*P	**Pn**	**01 35 00.1**	**+1.4**
SGCP				*e*S	**Sn**	**01 35 46.6**	**+2.3**
APYP	**Conner**	**4.24**	**183**

comp=Z,117nm,4.1s
LZH LR LR
comp=E,597nm,10.5s
LZH LR LR
comp=Z,932nm,12.5s,MS4.4
CMAR Chiang Mai Arr 21.48 264 LR LR 01 48 10.9
comp=Z,271nm,18.5s,MS3.7,baz=80,slow=39
CN2 Changchun 21.87 8 eP **P 01 38 54.8 +2.9**
CN2 eS **S 01 42 52.8 +5.2**
CN2 LR LR
comp=N,540nm,17.0s,MS4.1
CN2 LR LR
comp=E,290nm,17.0s,MS4.1
MDJ Mudanjiang 23.41 15 P **P 01 39 09.3 +2.2**
MDJ AP 01 39 12.3
MDJ XP 01 39 13.5
MDJ PCP PcP 01 42 52.6 -2.4
MDJ S **S 01 43 23.9 +8.6**
MDJ XS 01 43 29.9
MDJ SCP 01 46 31.8
MDJ PCS 01 46 33.4
MDJ SCS ScS 01 50 18.5 +2.9
MDJ AMB AMB
comp=Z,15nm,2.1s,mb4.0
MDJ AMB AMB
comp=Z,74nm,3.6s
MDJ LR LR
comp=N,171nm,10.0s
MDJ LR LR
comp=E,187nm,18.3s
GTA Gaotai 25.29 318 eP **P 01 39 24.6 -0.7**
GTA AP pP 01 39 30.8 -0.2
GTA XP sP 01 39 34.0 +0.3
GTA AMB AMB
comp=Z,4.0nm,1.0s,mb3.9
ASAJ Asahikawa 28.01 33 LR LR 01 51 01.0
comp=Z,101nm,20.6s,MS3.4,baz=360,slow=37
SONM Songino Array 28.39 338 P **P 01 39 52.2 -1.4**
comp=Z,3.4nm,0.8s,mb4.0,baz=152,slow=9.2,SNR=24
WMQ Urumqi 35.32 316 eP **P 01 40 54.4 0.0**
WMQ AP pP 01 40 58.8 -1.5
WMQ XP sP 01 41 01.4 -1.5
WMQ PP PP 01 42 13.8 -0.2
WMQ PCP PcP 01 43 24.4 -0.5
WMQ S **S 01 46 27.1 +0.4**
WMQ XS 01 46 34.3
WMQ SCP 01 47 09.0
WMQ SS SS 01 48 44.4 +0.1
WMQ SCS ScS 01 51 11.4 +0.2
WMQ AMB AMB
comp=Z,8.0nm,0.9s,mb4.7
WMQ AMB AMB
comp=Z,59nm,5.4s
WMQ LR LR
comp=N,381nm,16.1s,MS4.4
WMQ LR LR
comp=E,387nm,17.2s,MS4.4
WMQ LR LR
comp=Z,588nm,16.8s,MS4.4
MKAR Makanchi Array 40.04 318 P **P 01 41 33.7 -0.3**
comp=Z,6.6nm,0.9s,mb4.4,baz=110,slow=9.5,SNR=35
MKAR PcP PcP 01 43 36.3 -3.0
comp=Z,0.9nm,0.7s,baz=101,slow=5.7,SNR=3.7
MKAR ScP 01 47 22.6
comp=Z,0.5nm,0.6s,baz=106,slow=4.7,SNR=4.4
ZAL Zalesovo 42.15 328 P **P 01 41 50.1 -1.0**
comp=Z,2.8nm,0.8s,mb3.9,baz=269,slow=5.9,SNR=18
ZAL LR LR 02 01 57.5
comp=Z,147nm,18.9s,MS3.9,baz=254,slow=40
KSH Kashi 42.30 305 eP **P 01 41 51.0 -1.6**
KSH eAP pP 01 41 55.8 -2.8
KSH eXP sP 01 41 57.8 -3.2
KSH ePP PP 01 43 31.4 -2.2
KSH ePCP PcP 01 43 46.1 -0.7
KSH eSCP 01 47 34.9
KSH ePCS 01 47 36.9
KSH eS **S 01 48 10.0 -2.1**
KSH eSS SS 01 51 12.0 -3.1
KSH eSCS ScS 01 51 50.9 -0.6
KSH LR LR
comp=N,270nm,5.2s
KSH LR LR
comp=E,270nm,7.0s
WRAB Tennant Creek 43.63 162 eP **P 01 42 01.5 -2.2**
WRA Warramunga Arr 43.64 162 P **P 01 42 01.5 -2.2**
comp=E,2.9nm,0.6s,mb4.2,baz=344,slow=8.9,SNR=20
WRA PcP PcP 01 43 49.1 -2.5
comp=E,0.8nm,0.6s,baz=348,slow=3.9,SNR=5.7
WB2 Warramunga Arr 43.64 162 eP **P 01 42 01.4 -2.4**
KURK Kurchatov 43.88 321 eP **P 01 42 04.2 -1.0**
AS12 Alice Springs 47.08 164 eP **P 01 42 29.0 -2.1**
comp=E,7.4nm,1.2s,mb4.5
ASAR Alice Springs 47.08 164 P **P 01 42 29.9 -1.3**
comp=E,1.3nm,0.5s,mb4.1,baz=353,slow=15,SNR=18
ASAR PcP PcP 01 44 01.1 -2.4
comp=E,1.6nm,0.7s,baz=348,slow=4.7,SNR=5.4
ASAR LR LR 02 04 59.0
comp=E,91nm,18.4s,MS3.8,baz=19,slow=39
BRVK Borovoye 49.54 322 eP **P 01 42 48.5 -1.3**
ZRNK Zerenda 50.24 321 eP **P 01 42 54.1 -1.1**
ARU Arti 56.94 324 eP **P 01 43 41.8 -2.9**
comp=E,2.5nm,0.3s,mb4.7
STKA Stephens Creek 57.03 160 eP **P 01 43 43.6 -2.0**
comp=E,3.2nm,0.5s,mb4.6
STKA Stephens Creek 57.03 160 P **P 01 43 43.7 -2.0**
comp=E,3.5nm,0.5s,mb4.7,baz=335,slow=6.9,SNR=14
THR Tehran 61.88 300 LR LR 02 14 23.2
comp=E,29nm,20.1s,MS3.4,baz=166,slow=39
GNI Garni 66.23 305 LR LR 02 17 10.8
comp=E,56nm,18.4s,MS3.8,baz=317,slow=39
JOF Joensuu 70.65 331 ep **P 01 45 12.6 -1.9**
KEV Kevo 71.00 338 ep **P 01 45 15.2 -1.3**
ARCES ARCESS Array B 71.56 338 P **P 01 45 18.6 -1.3**
comp=E,2.8nm,0.8s,mb4.3,baz=79,slow=6.2,SNR=6.9
ARCES LR LR 02 22 10.0
comp=E,50nm,19.5s,MS3.8,baz=56,slow=40
FINES FINESS Array B 73.38 330 P **P 01 45 29.5 -1.2**
comp=E,2.2nm,0.6s,mb4.2,baz=56,slow=6.4,SNR=14
FINES LR LR 02 22 34.9
comp=E,62nm,18.2s,MS3.9,baz=168,slow=40
AKASG Malin Array Be 74.61 319 P **P 01 45 36.1 -1.9**
comp=E,1.8nm,0.7s,mb4.1,baz=60,slow=5.6,SNR=6.8
BRTR Keskin Array B 74.64 307 P **P 01 45 38.3 -0.1**
comp=E,1.0nm,0.6s,mb3.9,baz=126,slow=4.4,SNR=7.9
INK Inuvik 75.02 22 eP **P 01 45 38.8 -1.3**
KWP Kalwaria 78.92 319 eP **P 01 46 01.9 -0.3**
comp=E,8.7nm,0.9s,mb4.7
HFS Hagfors 79.51 331 P **P 01 46 04.7 -0.4**
comp=E,2.6nm,0.7s,mb4.3,baz=153,slow=3.3,SNR=5.2
NB2 NORSAR Subarra 80.19 332 P **P 01 46 06.6 -2.1**
comp=E,2.3nm,0.9s,mb4.1,baz=58,slow=5.3
NOA NORSAR Array B 80.19 332 P **P 01 46 07.1 -1.6**
comp=E,0.7nm,0.8s,mb3.7,baz=63,slow=3.7,SNR=5.0
NOA LR LR 02 25 21.9
comp=E,161nm,19.4s,MS4.4,baz=30,slow=38
OJC Ojcow 80.45 320 eP **P 01 46 10.9 +0.6**
NIE Niedzica 80.45 319 eP **P 01 46 11.5 +1.1**
VYHS Vyhne 81.71 319 eP **P 01 46 17.8 +0.8**
BRG Berggieshubel 83.56 323 eP **P 01 46 28.1 +1.7**
comp=E,8.0nm,1.4s,mb4.7
CLL Collm 83.88 323 P **P 01 46 28.0 -0.1**
CLL Collm 83.88 323 eP **P 01 46 28.0 -0.1**
KHC Kasperske Hory 84.57 321 eP **P 01 46 34.5 +2.9**
GERES GERESS Array B 84.63 321 P **P 01 46 31.7 -0.2**
comp=E,3.2nm,0.7s,mb4.6,baz=45,slow=3.8,SNR=12
YKA Yellowknife Ar 84.75 23 P **P 01 46 30.8 -1.4**
comp=E,0.9nm,0.8s,mb4.0,baz=312,slow=4.7,SNR=13
YKA LR LR 02 32 09.9
comp=E,32nm,18.4s,MS3.8,baz=335,slow=41
KMBO Kilima Mbogo 85.10 267 P **P 01 46 35.4 +0.3**
comp=E,1.9nm,0.8s,mb4.3,baz=61,slow=10,SNR=4.8
GRA1 Grafenberg Arr 85.65 322 eP **P 01 46 41.1 +4.1**
comp=E,4.0nm,1.2s,mb4.5
LPG La Plagne 90.41 320 eP **P 01 47 01.0 +1.1**
comp=E,6.3nm,0.8s,mb4.7
LPL La Plagne 90.41 320 eP **P 01 47 00.6 +0.7**
PGF Pioggiola 90.58 317 eP **P 01 47 00.6 -0.2**
comp=E,11nm,0.8s,mb4.9
SBF Sospel 90.87 319 eP **P 01 47 02.1 0.0**
SSF Saint Saulge 91.41 323 eP **P 01 47 05.5 +1.1**
comp=E,3.6nm,0.7s,mb4.5
SMF Signal de Mont 91.45 322 eP **P 01 47 05.8 +1.1**
comp=E,4.0nm,0.7s,mb4.6
AVF Avril sur Loir 91.65 323 eP **P 01 47 07.1 +1.5**
comp=E,4.6nm,0.8s,mb4.6
RJF Les Rejaudoux 93.55 322 eP **P 01 47 15.5 +1.1**
comp=E,6.7nm,0.8s,mb4.8
VNA2 Neumayer--Watz 123.02 198 ⇑iP PKPdf 01 52 55.1 -2.2
VNA2 e 01 54 28.4
VNA1 Neumayer--Stat 123.41 198 ⇑iP PKPdf 01 52 54.8 -3.3
VNA1 e 01 54 28.3
VNA3 Neumayer Olymp 123.48 197 ⇑iP PKPdf 01 52 55.7 -2.5
VNA3 e 01 54 29.7
USHA Ushuaia 146.49 170 PKPbc PKPbc 01 53 39.0 +1.0
comp=E,8.4nm,1.0s,baz=194,slow=4.2,SNR=4.9

MAN 21 01:34:17.2, 12.66N×124.71E, h28km, mb3.6, ML2.3, MS1.8, 4C, Samar

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CNP	**Catarman**	**0.15**	**196**	⇑eP	Pb	01 34 24.0	+1.3
CNP				eS	Sb	01 34 30.8	+4.4
PVCP	**Virac**	**1.08**	**330**	⇑eP	Pn	01 34 36.1	-0.4
PVCP				eS	Sn	01 34 54.0	+3.3
BESP	**Borongan**	**1.27**	**146**	⇑eP	Pn	01 34 38.0	-1.3
PLP	**Palo**	**1.51**	**170**	eP	Pn	01 34 42.2	-0.6
PLP				eS	Sn	01 35 01.8	+0.2
PALP	**Palanan**	**4.90**	**334**	⇑eP	Pn	01 35 32.7	+1.6
PALP				eS	Sn	01 36 22.9	-4.7

*NEIC **21** 01:54:53.8, 44.23N×7.42E, h4km, ML1.9(GEN), ML1.8(LDG), ML1.6(STR), After GEN.*
*LDG **21** 01:54:53.6±0.1, 44.27N×7.53E, h2km, Md1.9/1, Ml1.8/3, Error ellipse: s-maj=3.0km s-min=1.9km az=62.0*
*STR **21** 01:54:54.4±0.7, 44.23N×7.43E, h5km±1km, Ml1.6, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
ISC 21 01:54:53.5±0.4, **44.26N**±0.02×**7.43E**±0.03, **h8**km±4km, **n20**, σ0s**49**/38, **Northern Italy**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ENR	**Entracque**	**0.03**	**194**	P	**Pg**	**01 54 54.6**	**-0.4**
ENR				S	**Sg**	**01 54 55.3**	**-0.7**
STV2	**Anna di Valdie**	**0.08**	**261**	P	**Pg**	**01 54 55.3**	**-0.2**
STV2				S	**Sg**	**01 54 56.6**	**-0.4**
STV	**Sta Anna Valdi**	**0.08**	**260**	P	**Pg**	**01 54 55.3**	**-0.2**
STV				S	**Sg**	**01 54 56.6**	**-0.3**
TOUF	**Mont Tournerai**	**0.28**	**208**	Pg	**Pg**	**01 54 59.5**	**+0.3**
TOUF				Sg	**Sg**	**01 55 03.5**	**+0.5**
SAOF	**Saorge**	**0.29**	**162**	Pg	**Pg**	**01 55 00.2**	**+0.8**
SAOF				Sg	**Sg**	**01 55 03.4**	**+0.1**
MONE	**Monesi**	**0.29**	**127**	P	**Pg**	**01 54 59.6**	**+0.1**
MONE				S	**Sg**	**01 55 03.6**	**0.0**
ROB	**Roburent**	**0.32**	**83**	P	**Pg**	**01 55 00.5**	**+0.5**
ROB				S	**Sg**	**01 55 05.1**	**+0.8**
PZZ	**Prazzo**	**0.34**	**316**	P	**Pg**	**01 55 00.8**	**+0.3**
PZZ				S	**Sg**	**01 55 05.6**	**+0.4**
AURF	**Auriere**	**0.38**	**191**	Pg	**Pg**	**01 55 01.4**	**+0.2**
AURF				Sg	**Sg**	**01 55 07.0**	**+0.7**
SBF	**Sospel**	**0.40**	**180**	ePg	**Pg**	**01 55 01.7**	**+0.2**
SBF				eSg	**Sg**	**01 55 07.2**	**+0.3**
	3.1nm,0.2s						
IMI	**Imperia**	**0.48**	**136**	P	**Pg**	**01 55 03.0**	**-0.2**
IMI				S	**Sg**	**01 55 09.2**	**-0.4**
RORO		**0.48**	**107**	P	**Pg**	**01 55 03.3**	**+0.1**
RORO				S	**Sg**	**01 55 09.6**	**-0.1**
FIN	**Finale Ligure**	**0.56**	**95**	P	**Pg**	**01 55 04.8**	**0.0**
FIN				S	**Sg**	**01 55 12.2**	**-0.1**
BHB	**Bricherasio**	**0.60**	**348**	P	**Pg**	**01 55 05.5**	**0.0**
BHB				S	**Sg**	**01 55 13.4**	**-0.1**
MBDF	**Montbardon**	**0.67**	**315**	ePg	**Pg**	**01 55 07.1**	**+0.2**
MBDF				eSg	**Sg**	**01 55 16.1**	**+0.3**
	1.8nm,0.2s						
PCP	**Pian Castagno**	**0.85**	**70**	P	**Pb**	**01 55 09.7**	**-0.4**
FRF	**La Foret Royal**	**0.90**	**219**	ePg	**Pg**	**01 55 11.5**	**0.0**
FRF				eSg	**Sg**	**01 55 24.5**	**+1.0**
	1.8nm,0.2s						
LMR	**La Mourre**	**1.14**	**216**	ePg	**Pg**	**01 55 15.6**	**-0.7**
LMR				eSg	**Sg**	**01 55 30.8**	**-0.7**
	3.1nm,0.2s						
SMRF	**Simiane la Rot**	**1.37**	**259**	ePg	**Pg**	**01 55 20.8**	**0.0**
SMRF				eSg	**Sg**	**01 55 39.0**	**-0.1**
	0.9nm,0.3s						
PGF	**Pioggiola**	**2.06**	**146**	ePn	**Pn**	**01 55 27.2**	**-1.7**

IDC 21 02:05:59.1±2.3, **1.86N**×**127.38E**, **mb3.7**/3, **mb1 3.9**/3, **mb1mx3.5**/16, **Error ellipse: s-maj=189.0km s-min=25.1km az=67.0, Halmahera**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**22.71**	**163**	P	P	02 11 03.2	-0.8
	1.0nm,0.5s,baz=342,slow=11,SNR=17						
ASAR	**Alice Springs**	**26.15**	**166**	P	P	02 11 34.7	-2.3
	0.4nm,0.3s,baz=347,slow=7.5,SNR=5.5						
MKAR	**Makanchi Array**	**59.46**	**326**	P	P	02 16 04.0	-2.2
	0.6nm,0.6s,baz=123,slow=7.1,SNR=7.1						

*LDG **21** 02:23:52.2±0.2, 42.64N×85.03E, h10km, Mb4.3/9, Ms2.9/1, Error ellipse: s-maj=8.2km s-min=5.0km az=84.0*
*MOS **21** 02:23:54.6±1.1, 42.28N×84.96E, h33km, mb4.4/10, Error ellipse: s-maj=20.2km s-min=8.9km az=112.6*
*NNC **21** 02:23:54.1±7.5, 42.36N×85.01E, h7km±10km, mpv4.0, Error ellipse: s-maj=82.5km s-min=33.9km az=102.0*
*BJI **21** 02:23:55.9, 42.34N×85.14E, h37km, mB4.9, mb4.4, ML4.3, Ms4.1, Ms2.4.0*
*IDC **21** 02:23:55.2±3.5, 42.43N×85.35E, h24km±22km, mb3.9/12, mb1 4.1/16, mb1mx4.0/26, ML3.9/4, MS3.0/1, Ms1 3.0/1, ms1mx2.5/27, Error ellipse: s-maj=23.1km s-min=13.7km az=55.0*
*NEIC **21** 02:23:57.2±1.0, 42.42N×85.22E, h37km±8km, mb4.4/12, Error ellipse: s-maj=10.2km s-min=5.1km az=199.0*
ISC 21 02:23:53.8±1.5, **42.24N**±0.04×**85.00E**±0.05, **h29**km±11km, **n95**, σ1s**05**/99, **mb4.2**/28, **MS4.2**/3, **4C-5D**, **Northern Xinjiang**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WMQ	**Urumqi**	**2.53**	**50**	⇑iP	**Pn**	**02 24 35.0**	**+1.0**
WMQ				S	**Sn**	**02 25 08.3**	**+4.1**
WMQ				S	Sn		
	comp=N,4μm,1.0s						
WMQ				S	Sn		
	comp=E,3μm,1.0s						
MK31	**Makanchi Array**	**4.95**	**338**	⇓Pn	**Pn**	**02 25 08.8**	**+0.5**
	comp=E,4.2nm,0.3s,baz=152,slow=14,SNR=279						
MK31				Pg	**Pn**	**02 25 23.0**	**+15**
	comp=E,20nm,0.4s,baz=151,slow=15,SNR=20						
MK31				⇓Lg		02 26 25.3	
	comp=E,313nm,0.8s,baz=152,slow=28						
MKAR	**Makanchi Array**	**4.95**	**338**	Pn	**Pn**	**02 25 08.9**	**+0.6**
	comp=E,6.0nm,0.3s,baz=151,slow=14,SNR=75						
MKAR				Pg	**Pn**	**02 25 23.2**	**+15**
	comp=E,13nm,0.3s,baz=148,slow=17,SNR=33						
MKAR				Lg		02 26 26.3	
	comp=E,66nm,0.3s,baz=149,slow=31,SNR=23						
MKAR	**Makanchi Array**	**4.95**	**338**	P	**Pn**	**02 25 08.7**	**+0.4**
MKAR				pmax	pmax		
	comp=Z,5.0nm,0.3s						
KURK	**Kurchatov**	**9.55**	**335**	⇑Lg		02 28 54.1	
	comp=Z,39nm,0.9s,baz=62,slow=17,SNR=9.6						
KURK	**Kurchatov**	**9.55**	**335**	eP	**P**	**02 26 10.1**	**-2.4**
KK31	**Karatay Array**	**10.71**	**280**	⇑Lg		02 29 35.1	
	comp=Z,3.8nm,0.6s,baz=80,slow=28,SNR=3.8						
GTA	**Gaotai**	**11.58**	**99**	eP	**P**	**02 26 41.5**	**+1.2**
GTA				AP		02 26 47.1	
GTA				XP		02 26 49.4	
GTA				S	**S**	**02 28 48.9**	**-0.7**
GTA				AMB	AMB		
	comp=Z,4.0nm,0.7s						
GTA				AMB	AMB		
	comp=Z,117nm,5.3s						
GTA				LR	LR		
	comp=N,122nm,9.9s						
GTA				LR	LR		
	comp=E,110nm,9.2s						
ZAL	**Zalesovo**	**11.71**	**359**	Pn	**P**	**02 26 37.7**	**-4.3**
	comp=E,1.7nm,0.3s,baz=241,slow=6.6,SNR=8.1						
ZAL				Sn	**S**	**02 28 43.3**	**-9.4**
	comp=E,1.4nm,0.3s,baz=334,slow=23,SNR=4.9						
ZAL				Lg		02 29 59.1	
	comp=E,1.5nm,0.3s,baz=217,slow=0.7,SNR=2.2						
ZAL	**Zalesovo**	**11.71**	**359**	P	**P**	**02 26 37.7**	**-4.3**
ZAL						02 28 43.3	
ZAL				pmax	pmax		
	comp=Z,2.0nm,0.3s						
ZAL				smax			
	comp=Z,1.0nm,0.3s						
CHCP	**Chirah Chowk**	**12.60**	**231**	P	**P**	**02 26 53.6**	**-0.5**
CEP	**Cherat**	**13.29**	**235**	P	**P**	**02 27 03.2**	**0.0**
CEP				S	**S**	**02 29 26.0**	**-4.9**
VOSK	**Vostochnaya**	**14.11**	**323**	⇓P	**P**	**02 27 13.4**	**-0.3**
	comp=Z,2.9nm,0.6s						
VOSK	**Vostochnaya**	**14.11**	**323**	P	**P**	**02 27 13.3**	**-0.4**
VOSK				pmax	pmax		
	comp=Z,2.0nm,0.6s						
THW	**Thamme Wali**	**14.11**	**232**	P	**P**	**02 27 11.6**	**-2.3**
GKN	**Gorkha**	**14.21**	**181**	eP	**P**	**02 27 15.0**	**-0.2**
	comp=Z,9.4nm,0.5s						
GUN	**Gumba**	**14.31**	**177**	eP	**P**	**02 27 17.5**	**+0.9**
	comp=Z,19nm,0.7s						
KKN	**Kakani**	**14.42**	**179**	eP	**P**	**02 27 18.0**	**0.0**
KOLN	**Koldanda**	**14.48**	**185**	eP	**P**	**02 27 16.2**	**-2.6**
	comp=Z,7.6nm,0.6s						
BVA0	**Borovoye Array**	**14.58**	**323**	⇑P	**P**	**02 27 19.8**	**0.0**
	comp=Z,0.7nm,0.6s,baz=232,slow=41,SNR=32						
BVAR	**Borovoye Array**	**14.58**	**323**	Pn	**P**	**02 27 19.6**	**-0.3**
	comp=Z,0.6nm,0.3s,baz=126,slow=12,SNR=15						
BVAR				Lg		02 31 26.7	
	comp=Z,0.3nm,0.3s,baz=122,slow=19,SNR=2.6						
BVAR				LR	LR	02 32 58.5	
	comp=Z,58nm,18.2s,baz=45,slow=37						
PKI	**Pulchoki**	**14.64**	**179**	eP	**P**	**02 27 19.2**	**-1.6**
	comp=Z,12nm,0.8s						
BRVK	**Borovoye**	**14.65**	**323**	ePn	**P**	**02 27 20.9**	**+0.1**
ZAK	**Zakamensk**	**15.00**	**51**	eP	**P**	**02 27 27.8**	**+2.3**
ZRNK	**Zerenda**	**15.17**	**320**	⇓P	**P**	**02 27 27.9**	**+0.3**
	comp=Z,6.7nm,0.7s						
ZRNK	**Zerenda**	**15.17**	**320**	ePn	**P**	**02 27 28.0**	**+0.4**
SONM	**Songino Array**	**16.11**	**62**	Pn	**P**	**02 27 36.2**	**-3.5**
	comp=Z,0.1nm,0.3s,baz=252,slow=12,SNR=17						
SONM				Lg		02 32 06.5	
	baz=252,slow=31,SNR=2.4						
ULN	**Ulaanbaatar**	**16.55**	**63**	eP	**P**	**02 27 44.5**	**-0.8**
AB31	**Akbulak array**	**18.79**	**301**	⇓P	**P**	**02 28 11.9**	**-1.2**
	comp=Z,0.5nm,0.4s						
ARU	**Arti**	**22.14**	**319**	eP	**P**	**02 28 50.2**	**+1.6**
ARU	**Arti**	**22.14**	**319**	eP	**P**	**02 28 50.5**	**+1.9**
	comp=E,6.2nm,0.6s,mb4.2						
KMI	**Kunming**	**22.49**	**134**	eP	**P**	**02 28 55.8**	**+3.5**
KMI				AP		02 29 01.0	
KMI				AMB	AMB		
	comp=Z,6.0nm,0.7s,mb4.1						
GYA	**Guiyang**	**23.73**	**125**	eP	**P**	**02 29 08.6**	**+4.3**
GYA				AP		02 29 18.3	
GYA				XP		02 29 23.8	
GYA				S	**S**	**02 33 20.3**	**+6.0**
GYA				AMB	AMB		
	comp=Z,10.0nm,0.8s,mb4.3						
BOD	**Bodaibo**	**24.03**	**40**	eP	**P**	**02 29 06.6**	**-0.4**
HIA	**Hailar**	**25.08**	**62**	P	**P**	**02 29 17.6**	**+0.5**
CMAR	**Chiang Mai Arr**	**26.51**	**149**	P	**P**	**02 29 32.1**	**+1.3**
	comp=Z,2.4nm,0.6s,mb3.9,baz=326,slow=9.1,SNR=8.3						
CMAR	**Chiang Mai Arr**	**26.51**	**149**	P	**P**	**02 29 32.1**	**+1.3**
CMAR				pmax	pmax		
	comp=Z,2.0nm,0.6s						
NJ2	**Nanjing**	**28.67**	**100**	eP	**P**	**02 29 52.3**	**+2.0**
CN2	**Changchun**	**29.41**	**73**	eP	**P**	**02 29 57.3**	**+0.5**
CN2				LR	LR		
	comp=Z,170nm,15.0s,MS3.8						
MDJ	**Mudanjiang**	**32.17**	**70**	P	**P**	**02 30 19.1**	**-2.0**
MDJ				AP	pP	02 30 27.9	-1.7
MDJ				XP	sP	02 30 31.8	-1.5
MDJ				PP	PP	02 31 31.3	+2.9
MDJ				PCP	PcP	02 33 09.3	-0.4
MDJ				S	**S**	**02 35 28.6**	**-2.3**
MDJ				XS		02 35 44.0	
MDJ				SCP		02 36 48.8	
MDJ				PCS		02 36 53.8	
MDJ				SCS	ScS	02 40 50.1	+2.7
MDJ				AMB	AMB		
	comp=Z,12nm,2.1s,mb4.4						
MDJ				AMB	AMB		
	comp=Z,74nm,3.7s						
MDJ				LR	LR		
	comp=N,83nm,8.5s						
MDJ				LR	LR		
	comp=E,76nm,11.8s						
MDJ				LR	LR		
	comp=Z,161nm,10.3s,MS4.0						
TIXI	**Tiksi**	**36.41**	**22**	eP	**P**	**02 30 55.8**	**-1.4**
TIXI				pmax	pmax		
	comp=Z,10.0nm,0.8s,mb4.8						
TIXI				MLR	MLR		
	comp=Z,900nm,13.0s,MS4.7						
JOF	**Joensuu**	**37.18**	**322**	ep	**P**	**02 31 03.7**	**-0.1**
BRTR	**Keskin Array B**	**38.38**	**284**	P	**P**	**02 31 16.2**	**+2.1**
	comp=Z,1.6nm,0.9s,mb3.7,baz=90,slow=8.6,SNR=4.2						
KAF	**Kangasniemi**	**39.42**	**321**	ep	**P**	**02 31 22.4**	**-0.2**
	baz=92,slow=7.7						
FINES	**FINESS Array B**	**39.51**	**320**	P	**P**	**02 31 23.3**	**0.0**
	comp=Z,2.5nm,0.3s,mb3.7,baz=97,slow=9.4,SNR=16						
FINES	**FINESS Array B**	**39.51**	**320**	P	**P**	**02 31 23.3**	**0.0**
FINES				pmax	pmax		
	comp=Z,1.0nm,0.3s						
KEV	**Kevo**	**40.10**	**333**	ep	**P**	**02 31 27.6**	**-0.6**
ARCES	**ARCESS Array B**	**40.58**	**332**	P	**P**	**02 31 32.4**	**+0.3**
	comp=Z,4.7nm,0.5s,mb4.4,baz=87,slow=7.5,SNR=61						
ARCES	**ARCESS Array B**	**40.58**	**332**	P	**P**	**02 31 32.4**	**+0.4**
ARCES				pmax	pmax		
	comp=Z,5.0nm,0.5s						
ARE0	**ARCESS Array S**	**40.58**	**332**	eP	**P**	**02 31 32.3**	**+0.2**
KWP	**Kalwaria**	**42.83**	**302**	P	**P**	**02 31 52.5**	**+1.9**
HFS	**Hagfors**	**45.66**	**318**	P	**P**	**02 32 13.5**	**+0.2**
	comp=Z,2.0nm,0.5s,mb4.3,baz=102,slow=7.7,SNR=10.0						
HFS	**Hagfors**	**45.66**	**318**	P	**P**	**02 32 13.5**	**+0.3**
HFS				pmax	pmax		
	comp=Z,2.0nm,0.5s						
KRIS	**Kristallenia**	**46.14**	**282**	eP	**P**	**02 32 19.1**	**+1.7**
NB2	**NORSAR Subarra**	**46.69**	**320**	P	**P**	**02 32 21.0**	**-0.3**
	comp=Z,2.0nm,0.4s,mb4.4,baz=78,slow=7.9						
NOA	**NORSAR Array B**	**46.69**	**320**	P	**P**	**02 32 21.2**	**-0.1**
	comp=Z,3.5nm,0.7s,mb4.4,baz=79,slow=7.8,SNR=7.3						
NOA	**NORSAR Array B**	**46.69**	**320**	P	**P**	**02 32 21.2**	**-0.1**
NOA				pmax	pmax		
	comp=Z,4.0nm,0.7s						
NAO01	**NORSAR Array S**	**46.88**	**320**	eP	**P**	**02 32 22.4**	**-0.4**
GERES	**GERESS Array B**	**48.69**	**304**	P	**P**	**02 32 38.1**	**+0.9**
	comp=Z,0.4nm,0.5s,mb3.7,baz=67,slow=10,SNR=4.3						
CABF	**La Chapelle**	**54.29**	**304**	eP	**P**	**02 33 19.5**	**+0.1**
LPG	**La Plagne**	**54.37**	**302**	eP	**P**	**02 33 21.3**	**+1.3**
	comp=Z,7.4nm,0.6s,mb4.5						
LPL	**La Plagne**	**54.38**	**302**	eP	**P**	**02 33 21.2**	**+1.1**
	comp=Z,1.1nm,0.6s,mb4.7						
ORIF	**Oris-en-Rattie**	**55.19**	**302**	eP	**P**	**02 33 26.1**	**+0.1**
	comp=Z,4.4nm,0.6s,mb4.4						
SMF	**Signal de Mont**	**55.66**	**304**	eP	**P**	**02 33 29.3**	**-0.1**
	comp=Z,2.2nm,0.4s,mb4.2						
SSF	**Saint Saulge**	**55.67**	**305**	eP	**P**	**02 33 28.9**	**-0.6**
EKA	**Eskdalemuir Ar**	**55.72**	**316**	P	**P**	**02 33 29.4**	**-0.3**
	comp=Z,1.5nm,0.6s,mb4.2,baz=66,slow=6.6,SNR=6.4						
EKA	**Eskdalemuir Ar**	**55.72**	**316**	P	**P**	**02 33 29.4**	**-0.3**
EKA				pmax	pmax		
	comp=Z,2.0nm,0.6s						
AVF	**Avril sur Loir**	**55.89**	**305**	eP	**P**	**02 33 30.3**	**-0.8**
	comp=Z,2.2nm,0.5s,mb4.1						
VIVF	**Saint-Julien-l**	**55.98**	**302**	eP	**P**	**02 33 31.8**	**+0.1**
	comp=Z,1.4nm,0.5s,mb4.0						
TCF	**Toulx Ste Croi**	**56.83**	**305**	eP	**P**	**02 33 37.9**	**+0.1**
	comp=Z,2.9nm,0.5s,mb4.2						
LDF	**La Druitiere**	**57.13**	**308**	eP	**P**	**02 33 39.4**	**-0.5**
FLN	**La Foliniere**	**57.26**	**308**	eP	**P**	**02 33 40.2**	**-0.6**
CAF	**Calviac**	**57.57**	**303**	eP	**P**	**02 33 43.6**	**+0.5**

	comp=Z,0.8nm,0.6s,mb3.8,baz=337,slow=6.0,SNR=21							
YKA	**Yellowknife Ar**	**74.43**	**9**	P	**P**	**02 35 29.3**	**-1.0**
YKA				pmax	pmax			
	comp=Z,1.0nm,0.6s							
YKA	**Yellowknife Ar**	**74.43**	**9**	P	**P**	**02 35 29.3**	**-1.0**
WRAB	**Tennant Creek**	**76.81**	**133**	*e*P	**P**	**02 35 44.2**	**-0.5**
WRA	**Warramunga Arr**	**76.81**	**133**	P	**P**	**02 35 44.3**	**-0.4**
	comp=Z,1.8nm,0.7s,mb4.1,baz=330,slow=5.2,SNR=13							
WRA	**Warramunga Arr**	**76.81**	**133**	P	**P**	**02 35 44.3**	**-0.4**
WRA				pmax	pmax			
	comp=Z,2.0nm,0.7s							
ASAR	**Alice Springs**	**79.62**	**135**	P	**P**	**02 35 60.0**	**-0.1**
	comp=Z,1.2nm,0.8s,mb3.9,baz=316,slow=5.0,SNR=4.6							
CTAO	**Charters Tower**	**83.86**	**124**	P	**P**	**02 36 25.0**	**+2.8**
CHMT	**Chamberlain Mo**	**89.77**	**12**	*e*P	**P**	**02 36 50.1**	**-0.3**
BOZ	**Bozeman (W)**	**91.25**	**12**	P	**P**	**02 36 57.8**	**+0.5**
	comp=Z,1.1nm,0.3s,mb4.7							
HWUT	**Hardware Ranch**	**95.21**	**12**	*e*P	**P**	**02 37 16.7**	**+1.1**
	comp=Z,1.5nm,0.5s,mb4.7							
LPAZ	**La Paz**	**145.37**	**310**	PKPbc	PKPbc	02 43 31.2	+1.5
	comp=Z,1.4nm,0.6s,baz=33,slow=4.2,SNR=9.0							
CPUP	**Villa Florida**	**145.38**	**285**	PKPbc	PKPbc	02 43 30.6	+1.2
	comp=Z,2.5nm,1.2s,baz=36,slow=6.6,SNR=3.4							

*LDG **21** 02:26:36.2±0.4,38.21N×20.74E,h10km,Mb4.2/12, Ms2.8/5,Error ellipse: s-maj=20.2km s-min=10.0km az=28.0*
*THE **21** 02:26:37.2,37.75N×20.55E,h10km,ML4.4*
*IDC **21** 02:26:37.1±1.2,38.09N×20.73E,mb3.9/10,mb1 4.0/18, mb1mx3.9/31,ML3.8/8,MS3.2/3,Ms1 3.3/3,ms1mx2.8/38, Error ellipse: s-maj=23.8km s-min=16.4km az=30.0*
*NEIC **21** 02:26:38.5,37.90N×20.74E,h7km,mb4.3/5,ML4.1(ATH), ML4.1(THE),After ATH.*
*ATH **21** 02:26:38.4,37.90N×20.75E,h7km±5km,MD4.1/18,ML4.1*
*MOS **21** 02:26:38.8±1.5,37.84N×20.51E,h33km,mb4.1/7,Error ellipse: s-maj=12.0km s-min=5.9km az=78.9*

ISC 21 02:26:37.2±0.2,37.90N±0.02×20.58E±0.02,h7km,n169,
σ1§50/207,mb4.0/11,MS3.6/4,§5C-3D,Ionian Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VLS	**Valsamata**	**0.27**	**1**	⇑*i*PB	**Pb**	**02 26 45.0**	**+1.0**
ITM	**Ithomi**	**1.29**	**124**	*e*PG	**Pn**	**02 27 00.5**	**-1.2**
EVR	**Evrytania**	**1.40**	**43**	*e*Pn	**Pn**	**02 27 02.4**	**-0.8**
IGT	**Igoumenitsa**	**1.64**	**353**	*e*Pb	**Pb**	**02 27 08.7**	**+1.3**
IGT				*e*Sb	**Sb**	**02 27 33.4**	**+5.3**
IGT	**Igoumenitsa**	**1.64**	**353**	P	**Pb**	**02 27 08.7**	**+1.3**
IGT				S	**Sb**	**02 27 32.3**	**+4.1**
JAN	**Janina**	**1.76**	**7**	*e*PN	**Pg**	**02 27 12.3**	**-0.2**
AGG	**Agios Georgios**	**1.77**	**50**	*e*Pb	**Pb**	**02 27 10.2**	**+0.6**
AGG				*e*Sb	**Sb**	**02 27 36.0**	**+4.0**
AGG	**Agios Georgios**	**1.77**	**50**	P	**Pb**	**02 27 10.2**	**+0.6**
AGG				S	**Sn**	**02 27 34.7**	**+3.2**
KEK	**Kerkira**	**1.91**	**342**	*e*PB	**Pb**	**02 27 12.1**	**+0.1**
MEV	**Metsovon**	**1.94**	**15**	*e*Pn	**Pb**	**02 27 13.9**	**+1.2**
VLI	**Veliai**	**2.22**	**122**	*e*PG	**Pb**	**02 27 18.0**	**+0.7**
NSAL	**Nisos Salamina**	**2.28**	**89**	*e*PN	**Pn**	**02 27 16.1**	**+0.2**
NAIG	**Nisos Aigina**	**2.31**	**93**	*e*PN	**Pn**	**02 27 17.0**	**+0.7**
ATH	**Athens Observa**	**2.48**	**87**	*e*PN	**Pn**	**02 27 19.3**	**+0.6**
MPAR	**Parnis Oros**	**2.50**	**83**	*e*PN	**Pn**	**02 27 20.5**	**+1.4**
XOR	**Xorichti**	**2.51**	**54**	*e*Pn	**Pn**	**02 27 20.3**	**+1.1**
KYTH	**Kithira**	**2.54**	**129**	*e*PN	**Pn**	**02 27 21.2**	**+1.5**
KZN	**Kozani**	**2.57**	**21**	*e*PG	**Pg**	**02 27 24.0**	**-4.6**
PTL	**Penteli**	**2.60**	**86**	*e*PN	**Pn**	**02 27 21.0**	**+0.6**
LIT	**Litokhoron**	**2.65**	**34**	*e*Pn	**Pn**	**02 27 22.4**	**+1.2**
	comp=Z,23nm,0.7s							
LIT	**Litokhoron**	**2.65**	**34**	P	**Pn**	**02 27 22.4**	**+1.2**
LIT				S	**Sn**	**02 27 56.9**	**+3.0**
VLO	**Vlora**	**2.70**	**342**	*i* Pg	**Sb**	**02 28 02.1**	**+3.2**
VLO				*i* Sg	**Sg**	**02 28 08.6**	**+1.6**
AOS	**Alonnisos**	**2.88**	**63**	*e*Pn	**Pn**	**02 27 24.4**	**-0.1**
FNA	**Florina**	**2.94**	**12**	*e*Pn	**Pn**	**02 27 27.0**	**+1.7**
	comp=Z,8.7nm,0.4s							
LCI	**Lecce**	**3.10**	**322**	*e*Pn	**Pn**	**02 27 29.0**	**+1.5**
PAIG	**Paliouri**	**3.15**	**49**	*e*Pn	**Pn**	**02 27 28.3**	**0.0**
BIA	**Bitola**	**3.16**	**10**	*i* Pn	**Pn**	**02 27 28.9**	**+0.4**
BIA				*i* Pg	**Pg**	**02 27 33.0**	**-0.5**
BIA				*i* Pg	**Pg**	**02 27 36.6**	**-3.8**
BIA				*i* Sg	**Sg**	**02 28 17.1**	**-5.5**
BIA				*i*		02 28 25.4	
OHR	**Ohrid**	**3.21**	**3**	⇑*i*PN	**Pn**	**02 27 30.7**	**+1.6**
OHR				*i* Pg	**Pg**	**02 27 41.2**	**-0.1**
OHR				*i* Sn	**Sn**	**02 28 09.6**	**+1.6**
OHR				*i* Sb	**Sb**	**02 28 18.2**	**+4.5**
OHR				*i* Sg	**Sg**	**02 28 21.9**	**-2.2**
THE	**Thessaloniki**	**3.29**	**33**	*e*Pn	**Pn**	**02 27 32.8**	**+2.4**
PLG	**Polygyros**	**3.32**	**41**	*e*PN	**Pn**	**02 27 32.0**	**+1.3**
GRG	**Griva**	**3.36**	**24**	*e*Pn	**Pn**	**02 27 32.4**	**+1.1**
GRI	**Girifalco**	**3.40**	**287**	*e*Pn	**Pn**	**02 27 34.2**	**+2.4**
TIR	**Tirane**	**3.48**	**351**	*e*Pn	**Pn**	**02 27 40.2**	**+7.2**
OUR	**Ouranopolis**	**3.59**	**46**	*e*Pn	**Pn**	**02 27 34.8**	**+0.3**
	comp=Z,6.9nm,0.7s							
SOH	**Sokhos**	**3.62**	**36**	*e*Pn	**Pn**	**02 27 36.3**	**+1.3**
KNT	**Kendrikon**	**3.71**	**28**	*e*Pn	**Pn**	**02 27 37.5**	**+1.2**
VAY	**Valandovo**	**3.74**	**24**	*i* Pn	**Pn**	**02 27 40.0**	**+3.3**
VAY				*i* Pb	**Pb**	**02 27 45.7**	**+2.3**
VAY				*i* Pg	**Pg**	**02 27 51.9**	**-0.1**
VAY				*i* Sn	**Sn**	**02 28 20.8**	**-0.8**
VAY				*i* Sb	**Sb**	**02 28 32.2**	**+2.9**
TDS	**Terranova Siba**	**3.75**	**299**	*e*Pn	**Pn**	**02 27 39.5**	**+2.6**
TDS				*e*Sn	**Sn**	**02 28 26.6**	**+4.8**
PHP	**Peshkopia**	**3.78**	**358**	⇓*i*Pn	**Pn**	**02 27 38.5**	**+1.3**
PHP				*i* Sn	**Sn**	**02 28 30.5**	**+8.0**
VAM	**Vamos**	**3.83**	**129**	*e*PN	**Pn**	**02 27 38.0**	**+0.1**
SCLL	**Scilla**	**3.86**	**277**	*e*Pn	**Pn**	**02 27 40.7**	**+2.4**
ORI	**Oriolo Calabro**	**3.88**	**305**	*e*Pn	**Pn**	**02 27 40.6**	**+2.1**
BRT	**Bari-Castellan**	**3.96**	**320**	*e*Pn	**Pn**	**02 27 41.3**	**+1.6**
SRS	**Serrai**	**3.96**	**35**	*e*Pn	**Pn**	**02 27 39.8**	**0.0**
APE	**Apeiranthos**	**4.02**	**100**	*e*PB	**Pb**	**02 27 44.5**	**-3.7**
SKO	**Skopje**	**4.12**	**9**	*e*Pn	**Pn**	**02 27 42.2**	**+0.2**
SKO				*i* Pg	**Pg**	**02 27 53.3**	**-6.1**
SKO				*i* Sn	**Sn**	**02 28 24.9**	**-6.1**
SKO				*i* Sb	**Sb**	**02 28 40.2**	**+0.1**
SKO				*i* Sg	**Sg**	**02 28 45.3**	**-9.0**
SKO				Lg		02 28 52.0	
	comp=Z,0.2nm,0.7s							
THR6	**Thira Island,**	**4.15**	**110**	P	**Pn**	**02 27 42.4**	**-0.1**
SANT	**Santorini**	**4.19**	**110**	P	**Pn**	**02 27 43.9**	**+0.8**
SDA	**Shkodra**	**4.23**	**349**	*e*Pn	**Pn**	**02 27 40.5**	**-3.1**
SDA				*i* Sn	**Sn**	**02 28 34.0**	**+0.2**
AGST	**Augusta-Monte**	**4.30**	**263**	*e*Pn	**Pn**	**02 27 43.1**	**-1.5**
IDI	**Anoyia**	**4.34**	**126**	Pn	**Pn**	**02 27 45.5**	**+0.3**
	comp=Z,1.6nm,0.3s,baz=327,slow=16,SNR=11							
IDI				Sn	**Sn**	**02 28 32.9**	**-3.8**
	comp=Z,16nm,0.3s,baz=351,slow=22,SNR=16							
KKB	**Krupnik**	**4.40**	**25**	P	**Pn**	**02 27 47.0**	**+0.9**
MMB	**Musomiste**	**4.41**	**32**	P	**Pn**	**02 27 46.0**	**-0.1**
MGR	**Morigerati**	**4.51**	**301**	*e*Pn	**Pn**	**02 27 48.7**	**+1.1**
PZI	**Palazzolo**	**4.56**	**261**	*e*Pn	**Pn**	**02 27 47.2**	**-1.1**
MEU	**Monte Lauro**	**4.56**	**262**	*e*Pn	**Pn**	**02 27 48.3**	**-0.1**
SLNA	**Salina**	**4.57**	**280**	*e*Pn	**Pn**	**02 27 50.2**	**+1.6**
MNO	**Monte Soro**	**4.66**	**272**	*e*Pn	**Pn**	**02 27 52.4**	**+2.8**
PRK	**Paraskevi**	**4.66**	**72**	*e*PN	**Pn**	**02 27 51.5**	**+1.8**
KRIS	**Kristallenia**	**4.81**	**123**	*e*P	**Pn**	**02 27 50.3**	**-1.5**
MRLC	**Muro Lucano**	**4.87**	**307**	*e*Pn	**Pn**	**02 27 54.1**	**+1.4**
SGO	**Sicignano**	**4.88**	**305**	*e*Pn	**Pn**	**02 27 55.0**	**+2.2**
VAE	**Valguarnera**	**4.91**	**267**	Pn	**Pn**	**02 27 55.3**	**+2.0**
	comp=Z,1.0nm,0.3s,baz=77,slow=15,SNR=11							
VAE				Sn	**Sn**	**02 28 51.3**	**+0.2**
	comp=Z,5.9nm,0.3s,baz=172,slow=19,SNR=6.3							
RZN	**Rozhen**	**4.94**	**39**	P	**Pn**	**02 27 54.0**	**+0.3**
RDO	**Rodhopi**	**5.02**	**48**	*e*PN	**Pn**	**02 27 54.5**	**-0.3**
FG4	**Candela**	**5.07**	**311**	*e*Pn	**Pn**	**02 27 57.0**	**+1.4**
ALN	**Alexandroupoli**	**5.18**	**53**	P	**Pn**	**02 27 55.8**	**-1.3**
CSSN	**Cassano Irpino**	**5.22**	**306**	*e*Pn	**Pn**	**02 27 58.2**	**+0.5**
KDZ	**Kurdzhali**	**5.28**	**43**	P	**Pn**	**02 27 57.2**	**-1.3**
KDAG	**Bornova**	**5.29**	**83**	*i* P	**Pn**	**02 27 59.1**	**+0.5**
RGNG	**Rignano Grg**	**5.38**	**316**	*e*Pn	**Pn**	**02 27 59.9**	**0.0**
MRB1	**Monte Rocchett**	**5.40**	**308**	*e*P	**Pn**	**02 28 02.3**	**+2.1**
STON	**Ston**	**5.43**	**337**	*i* Pn	**Pn**	**02 27 58.6**	**-1.9**
STON				*i* Sn	**Sn**	**02 28 58.4**	**-5.7**
DIM	**Dimitrovgrad**	**5.62**	**41**	*e*P	**Pn**	**02 28 06.0**	**+2.7**
NVSS	**Nova Varos 2**	**5.64**	**353**	*e*Pn	**Pn**	**02 28 02.3**	**-1.3**
KARP	**Karpathos**	**5.78**	**112**	*e*Pb	**Pb**	**02 28 10.0**	**-8.3**
USI	**Ustica**	**5.88**	**280**	*e*P	**Pn**	**02 28 08.4**	**+1.5**
SGG	**Gregorio Mates**	**5.92**	**308**	*e*P	**Pn**	**02 28 09.2**	**+1.8**
CPI2	**Carpinone**	**6.07**	**309**	*e*P	**Pn**	**02 28 11.5**	**+1.9**
MSC	**Monte Massico**	**6.07**	**305**	*e*P	**Pn**	**02 28 10.4**	**+0.7**
CII	**Carovilli**	**6.16**	**310**	*e*P	**Pn**	**02 28 12.3**	**+1.4**
PVL	**Pavlikeni**	**6.42**	**33**	*e*P	**Pn**	**02 28 14.5**	**-0.1**
SDI	**San Donato**	**6.45**	**308**	*e*P	**Pn**	**02 28 15.6**	**+0.6**
INTR	**Introdacqua**	**6.57**	**311**	*e*P	**Pn**	**02 28 17.5**	**+0.9**
PTQR	**Pietraquaria**	**6.88**	**309**	*e*P	**Pn**	**02 28 18.8**	**-2.3**
ULDT	**Uludag**	**7.03**	**69**	*i* P	**Pn**	**02 28 22.7**	**-0.4**
AQU	**L'Aquila**	**7.07**	**311**	*e*Pn	**Pn**	**02 28 24.7**	**+1.0**
TERO	**Teramo**	**7.12**	**314**	*e*P	**Pn**	**02 28 24.9**	**+0.5**
MNS	**Montasola**	**7.53**	**309**	*e*P	**Pn**	**02 28 30.6**	**+0.5**
CING	**Cingoli**	**7.83**	**317**	*e*P	**Pn**	**02 28 33.9**	**-0.6**
SNTG	**Esanatoglia**	**7.90**	**315**	*e*P	**Pn**	**02 28 35.4**	**+0.1**
NVLJ	**Novalja**	**7.92**	**329**	*i* Pn	**Pn**	**02 28 34.1**	**-1.5**
ARV	**Arcevia**	**8.05**	**316**	*e*P	**P**	**02 28 37.1**	**-0.4**
ESKT	**Eskisehir**	**8.19**	**75**	*i* P	**P**	**02 28 40.2**	**+0.8**
FSSB	**Fossombrone**	**8.27**	**317**	*e*P	**P**	**02 28 40.1**	**-0.4**
HENT	**Hendek**	**8.51**	**67**	*i* P	**P**	**02 28 44.6**	**+0.9**
MLR	**Muntele Rosu**	**8.57**	**26**	Pn	**P**	**02 28 47.6**	**+2.9**
	comp=Z,0.5nm,0.3s,baz=158,slow=10,SNR=13							
MLR	**Muntele Rosu**	**8.57**	**26**	P	**P**	**02 28 47.6**	**+2.9**
MLR				pmax	pmax			
	comp=Z,1.0nm,0.3s							
RSM	**Repubblica di**	**8.61**	**317**	*e*P	**P**	**02 28 46.2**	**+1.0**
SFI	**Santa Sofia**	**8.92**	**315**	*e*P	**P**	**02 28 50.9**	**+1.4**
CSNT	**Castellina Chi**	**8.98**	**311**	*e*P	**P**	**02 28 51.8**	**+1.4**
LJU	**Ljubljana**	**9.30**	**333**	*e*Pn	**P**	**02 28 52.0**	**-2.7**
VOY	**Vojsko**	**9.52**	**331**	*e*Pn	**P**	**02 28 55.6**	**-2.2**
VOY				*e*Sn	**Sn**	**02 30 37.5**	**-8.7**
OBKA	**Obir**	**9.69**	**334**	⇑*i*PN	**P**	**02 28 57.8**	**-2.3**
OBKA				*i* SN	**Sn**	**02 30 39.0**	**-11**
GMNA	**Gemona**	**9.98**	**329**	*e*P	**P**	**02 29 06.1**	**+1.9**
PGF	**Pioggiola**	**10.00**	**301**	*e*P	**P**	**02 29 00.6**	**-3.7**
	comp=Z,18nm,1.3s							
PSZ	**Piszkesteto**	**10.02**	**357**	Pn	**P**	**02 29 05.2**	**+0.5**
PTCC	**Patocco-Chiusa**	**10.04**	**330**	*e*P	**P**	**02 29 02.6**	**-2.4**
ARSA	**Arzberg**	**10.05**	**340**	⇑*i*PN	**P**	**02 29 02.1**	**-3.0**
ARSA				*i* SN	**S**	**02 30 47.0**	**-12**
BRTR	**Keskin Array B**	**10.35**	**76**	Pn	**P**	**02 29 09.5**	**+0.3**
	comp=Z,0.2nm,0.3s,baz=260,slow=12,SNR=6.4							
CTI	**Castel Tesino**	**10.50**	**324**	*e*P	**P**	**02 29 09.3**	**-2.0**
VYHS	**Vyhne**	**10.66**	**354**	*e*PN	**P**	**02 29 10.5**	**-2.9**
VYHS				*e*		02 29 55.4	
CSS	**Prodhromos**	**10.68**	**102**	Pn	**P**	**02 29 16.5**	**+2.7**
MOA	**Molln**	**10.96**	**337**	⇓*i*PN	**P**	**02 29 15.0**	**-2.5**
MOA				*i* SN	**S**	**02 31 10.6**	**-11**
WTTA	**Wattenberg**	**11.44**	**328**	⇑*i*PN	**P**	**02 29 21.6**	**-2.4**
WTTA				*i* SN	**S**	**02 31 20.1**	**-13**
MOTA	**Moosalm**	**11.73**	**327**	⇓*i*Pn	**P**	**02 29 25.8**	**-2.2**
MOTA				*i* Sn	**S**	**02 31 32.1**	**-8.1**
DAVOX	**Davos**	**11.88**	**322**	Pn	**P**	**02 29 30.1**	**+0.1**
	comp=Z,0.2nm,0.3s,baz=164,slow=18,SNR=3.2							
DAVOX				Sn	**S**	**02 31 30.9**	**-13**
	comp=Z,0.2nm,0.3s,baz=133,slow=23,SNR=1.7							
DAVOX	**Davos**	**11.88**	**322**	Pn	**P**	**02 29 30.1**	**+0.1**
DAVOX				Sn	**S**	**02 31 30.9**	**-13**
LMR	**La Mourre**	**11.99**	**301**	*e*P	**P**	**02 29 30.7**	**-0.8**
GEC2	**GERESS Array S**	**12.02**	**338**	*e*Pn	**P**	**02 29 31.8**	**-0.1**
GEC2				*e*Sn	**S**	**02 31 42.1**	**-5.2**
GERES	**GERESS Array B**	**12.02**	**338**	Pn	**P**	**02 29 28.7**	**-3.2**
	comp=Z,0.3nm,0.3s,baz=163,slow=14,SNR=13							
GERES				Sn	**S**	**02 31 40.1**	**-7.3**
	comp=Z,0.2nm,0.3s,baz=153,slow=24,SNR=3.1							
KHC	**Kasperske Hory**	**12.31**	**338**	*e*P	**P**	**02 29 33.0**	**-2.8**
KHC				x	x	02 29 48.0		
KHC	**Kasperske Hory**	**12.31**	**338**	*e*P	**P**	**02 29 33.0**	**-2.8**
KHC				*e*		02 29 48.0		
MBDF	**Montbardon**	**12.41**	**308**	*e*P	**P**	**02 29 39.4**	**+2.2**
STU	**Stuttgart**	**13.64**	**326**	*e*P	**P**	**02 29 53.8**	**+0.3**
CABF	**La Chapelle**	**13.80**	**314**	*e*P	**P**	**02 29 52.1**	**-3.5**
	comp=Z,12nm,1.1s							
VIVF	**Saint-Julien-l**	**13.80**	**305**	*e*P	**P**	**02 29 52.1**	**-3.5**
	comp=Z,7.2nm,1.0s							
HINF	**Hinteralfeld**	**14.10**	**319**	*e*P	**P**	**02 29 55.9**	**-3.6**
	comp=Z,4.5nm,0.6s							
AKASG	**Malin Array Be**	**14.20**	**23**	Pn	**P**	**02 29 57.0**	**-3.7**
	comp=Z,0.4nm,0.3s,baz=214,slow=13,SNR=4.1							
MOX	**Moxa**	**14.25**	**336**	*i* P	**P**	**02 30 00.4**	**-1.0**
MOX				QM		02 35 12.0		
MOX				RM		02 36 39.0		
MOX	**Moxa**	**14.25**	**336**	*e*Pn	**P**	**02 30 00.4**	**-1.0**
CDF	**Champ du Feu**	**14.28**	**322**	*e*P	**P**	**02 29 58.0**	**-3.9**
HAU	**Haudompre**	**14.49**	**319**	*e*P	**P**	**02 30 01.2**	**-3.4**
	comp=Z,19nm,1.0s							
HAU				*e*R				
	comp=Z,105nm,18.0s							
MTLF	**Montolieu**	**14.96**	**297**	*e*P	**P**	**02 30 07.1**	**-3.6**
	comp=Z,26nm,1.3s							
SMF	**Signal de Mont**	**15.14**	**311**	*e*P	**P**	**02 30 10.0**	**-3.1**
MEZF	**Maizieres J'vi**	**15.47**	**318**	*e*P	**P**	**02 30 14.5**	**-3.0**
	comp=Z,35nm,1.1s							
SSF	**Saint Saulge**	**15.54**	**311**	*e*P	**P**	**02 30 16.0**	**-2.4**
	comp=Z,2.3nm,0.5s							
SOC	**Sochi**	**15.56**	**63**	*e*P	**P**	**02 30 17.2**	**-1.4**
SOC				*e*S	**S**	**02 33 01.8**	**-10**
SOC				pmax	pmax			
	comp=Z,50nm,1.8s							
SOC				pmax	pmax			
	comp=N,30nm,0.8s							
SOC				pmax	pmax			
	comp=E,60nm,0.9s							
SOC				MLR	MLR			
	comp=Z,240nm,34.0s							
SOC				MLR	MLR			
	comp=N,70nm,25.0s							
SOC				MLR	MLR			
	comp=E,750nm,43.0s							
WLF	**Walferdange**	**15.68**	**323**	P	**P**	**02 30 19.4**	**-0.7**
	comp=E,19nm,1.1s							
SUW	**Suwalki**	**16.21**	**6**	*e*P	**P**	**02 30 26.0**	**-0.9**
SUW				*e*		02 30 28.5		
SUW	**Suwalki**	**16.21**	**6**	*e*P	**P**	**02 30 25.3**	**-1.6**
BAIF	**Baives**	**16.88**	**321**	*e*P	**P**	**02 30 33.5**	**-1.9**
MFF	**Saint Martin d**	**17.60**	**306**	*e*P	**P**	**02 30 43.9**	**-0.5**
KIV	**Kislovodsk**	**17.74**	**63**	*e*P	**P**	**02 30 43.3**	**-2.9**
KIV				pmax	pmax			
	comp=Z,9.0nm,1.3s							
ZEI	**Tsey**	**18.41**	**67**	*e*P	**P**	**02 30 53.0**	**-1.6**
ZEI				*e*S	**S**	**02 34 14.0**	**-3.2**
ESDC	**Sonseca Array**	**19.20**	**283**	P	**P**	**02 31 02.8**	**-1.4**
	comp=Z,0.4nm,0.3s,baz=78,slow=11,SNR=6.3							
ESDC				LR	LR	02 39 58.7		
	comp=Z,42nm,18.2s,baz=150,slow=42							
ESLA	**Sonseca Array**	**19.20**	**283**	P	**P**	**02 31 04.6**	**+0.4**
QUIF	**Quistinic**	**19.99**	**308**	*e*P	**P**	**02 31 11.2**	**-1.9**
	comp=Z,46nm,1.2s							
OBN	**Obninsk**	**20.34**	**27**	*e*P	**P**	**02 31 15.1**	**-1.6**
OBN				pmax	pmax			
	comp=Z,6.0nm,0.7s							
OBN				MLR	MLR			
	comp=Z,100nm,17.0s,MS3.2							
HFS	**Hagfors**	**22.68**	**351**	P	**P**	**02 31 38.0**	**-2.1**
	comp=Z,2.9nm,0.7s,mb3.9,baz=164,slow=11,SNR=11							
HFS	**Hagfors**	**22.68**	**351**	P	**P**	**02 31 38.0**	**-2.2**
HFS				pmax	pmax			
	comp=Z,3.0nm,0.7s							
EKA	**Eskdalemuir Ar**	**23.68**	**325**	P	**P**	**02 31 49.8**	**-0.1**
	comp=Z,6.1nm,0.9s,mb4.0,baz=131,slow=8.9,SNR=14							
EKA	**Eskdalemuir Ar**	**23.68**	**325**	P	**P**	**02 31 49.8**	**-0.2**
EKA				pmax	pmax			
	comp=Z,6.0nm,0.9s							
FINES	**FINESS Array B**	**23.81**	**7**	P	**P**	**02 31 49.8**	**-1.4**
	comp=Z,4.8nm,0.9s,mb3.9,baz=180,slow=7.6,SNR=4.7							
FINES				LR	LR	02 42 16.6		
	comp=Z,75nm,21.2s,MS3.1,baz=177,slow=40							
FINES	**FINESS Array B**	**23.81**	**7**	P	**P**	**02 31 49.8**	**-1.4**
FINES				pmax	pmax			
	comp=Z,5.0nm,0.9s							
FINES				MLR	MLR			
	comp=Z,75nm,21.2s							
NOA	**NORSAR Array B**	**23.90**	**349**	P	**P**	**02 31 51.2**	**-0.8**
	comp=Z,1.8nm,0.7s,mb3.6,baz=159,slow=8.9,SNR=5.7							
NOA	**NORSAR Array B**	**23.90**	**349**	P	**P**	**02 31 51.2**	**-0.8**
NOA				pmax	pmax			
	comp=Z,2.0nm,0.7s							
THR	**Tehran**	**24.46**	**85**	P	**P**	**02 31 56.9**	**-0.8**
	comp=Z,3.1nm,1.2s,mb3.6,baz=133,slow=11,SNR=3.3							
THR	**Tehran**	**24.46**	**85**	P	**P**	**02 31 56.9**	**-0.8**
THR				pmax	pmax			
	comp=Z,3.0nm,1.2s							
ARCES	**ARCESS Array B**	**31.80**	**3**	P	**P**	**02 33 01.5**	**-2.7**
	comp=Z,1.9nm,0.5s,mb4.2,baz=191,slow=11,SNR=11							
ARCES	**ARCESS Array B**	**31.80**	**3**	P	**P**	**02 33 01.5**	**-2.7**
ARCES				pmax	pmax			
	comp=Z,2.0nm,0.5s							
BVAR	**Borovoye Array**	**37.26**	**50**	LR	LR	02 50 40.5		
	comp=Z,54nm,19.7s,MS3.3,baz=65,slow=39							
MKAR	**Makanchi Array**	**45.41**	**58**	P	**P**	**02 34 55.0**	**-3.1**
	comp=Z,3.8nm,0.5s,mb4.5,baz=278,slow=7.8,SNR=31							
MKAR	**Makanchi Array**	**45.41**	**58**	P	**P**	**02 34 55.0**	**-3.1**
MKAR				pmax	pmax			
	comp=Z,4.0nm,0.5s							
MKAR	**Makanchi Array**	**45.41**	**58**	P	**P**	**02 34 55.0**	**-3.1**
TIXI	**Tiksi**	**59.89**	**20**	*e*P	**P**	**02 36 43.8**	**-1.8**
TIXI				pmax	pmax			
	comp=Z,13nm,1.3s,mb4.8							
TIXI				MLR	MLR			
	comp=Z,400nm,16.0s,MS4.7							
SONM	**Songino Array**	**60.60**	**50**	P	**P**	**02 36 47.7**	**-3.0**
	comp=Z,0.9nm,0.8s,mb4.0,baz=280,slow=7.2,SNR=4.4							
YKA	**Yellowknife Ar**	**73.66**	**340**	P	**P**	**02 38 11.8**	**-0.9**
	comp=Z,0.3nm,0.4s,mb3.6,baz=33,slow=5.3,SNR=12							
TXAR	**Lajitas Array**	**95.20**	**314**	P	**P**	**02 40 02.4**	**-0.4**
	comp=Z,0.1nm,0.6s,mb3.4,baz=82,slow=6.4,SNR=3.5							

*IDC **21** 02:39:25.7±26.0,22.03N×141.18E,h545km±347km, mb2.9/6,mb1 3.1/6,mb1mx2.8/22,Error ellipse: s-maj=60.1km s-min=26.4km az=69.0*

ISC 21 02:39:24.4±1.1,22.0N±0.1×141.2E±0.4,h550km,n6,
σ0§80/6,mb3.4/6,Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**42.27**	**190**	P	**P**	**02 46 31.6**	**+0.2**
	2.5nm,0.3s,mb4.2,baz=8.8,slow=8.8,SNR=21						
FITZ	**Fitzroy Crossi**	**42.72**	**202**	P	**P**	**02 46 33.9**	**-1.0**
	3.0nm,0.9s,mb3.8,baz=356,slow=12,SNR=12						
ASAR	**Alice Springs**	**45.99**	**189**	P	**P**	**02 47 01.1**	**+0.9**
	0.4nm,0.6s,mb3.1,baz=11,slow=14,SNR=3.4						
MKAR	**Makanchi Array**	**53.14**	**313**	P	**P**	**02 47 53.0**	**+0.2**
	0.5nm,0.8s,mb2.9,baz=90,slow=6.1,SNR=3.8						
STKA	**Stephens Creek**	**53.61**	**180**	P	**P**	**02 47 56.2**	**-0.1**
	1.2nm,0.4s,mb3.6,baz=16,slow=5.3,SNR=5.5						
ILAR	**Eielson Array**	**62.56**	**27**	P	**P**	**02 48 56.0**	**-0.2**
	0.4nm,0.8s,mb2.9,baz=242,slow=6.5,SNR=4.6						

*MOS **21**

comp=Z,4.3nm,0.8s,mb4.3
WVOR Wild Horse Val 37.65 82 *eP* **P 03 16 31.4 +0.3**
comp=Z,3.4nm,0.8s,mb4.1
MDJ Mudanjiang 37.83 282 P **P 03 16 30.9 -1.7**
MDJ AP pP 03 16 42.4 -1.5
MDJ PCP PcP 03 18 47.3 -1.7
MDJ S **S 03 22 18.8 -1.6**
MDJ PCS 03 22 36.1
MDJ AMB AMB
comp=Z,8.0nm,1.4s,mb4.3
MDJ AMB AMB
comp=Z,40nm,3.8s
MDJ LR LR
comp=N,172nm,21.4s,MS4.0
MDJ LR LR
comp=E,175nm,17.6s,MS4.0
MDJ LR LR
comp=Z,256nm,17.0s,MS4.1
MSO Missoula 38.21 73 *eP* **P 03 16 36.0 +0.3**
comp=Z,2.6nm,0.7s,mb4.1
CHMT Chamberlain Mo 38.58 73 *eP* **P 03 16 38.3 -0.4**
CMB Columbia Colle 39.13 89 P **P 03 16 44.2 +0.8**
HRY Holter Researc 39.52 72 P **P 03 16 48.8 +2.2**
HLID Hailey 39.62 78 *eP* **P 03 16 48.3 +0.8**
comp=Z,1.0nm,0.5s,mb3.8
MCMT McKenzie Canyo 39.89 75 *eP* **P 03 16 50.1 +0.4**
NVAR Mina Array Bea 40.18 87 P **P 03 16 53.1 +1.0**
comp=Z,2.0nm,0.9s,mb3.9,baz=298,slow=6.6,SNR=10
BOZ Bozeman (W) 40.19 73 *eP* **P 03 16 52.6 +0.5**
comp=Z,1.8nm,0.6s,mb4.0
BOD Bodaibo 40.51 308 *eP* **P 03 16 52.0 -2.7**
QLMT Earthquake Lak 40.74 74 P **P 03 16 57.7 +0.9**
CN2 Changchun 40.78 284 *eP* **P 03 16 57.4 +0.3**
TPH Tonopah 41.07 87 *eP* **P 03 17 00.2 +0.7**
FFC Flin Flon 41.25 57 *eP* **P 03 17 00.3 -0.5**
comp=Z,4.9nm,0.8s,mb4.2
HVU Hansel Valley 41.62 79 *eP* **P 03 17 04.6 +0.7**
HWUT Hardware Ranch 42.46 78 *eP* **P 03 17 10.9 +0.1**
BW06 Boulder Array 43.02 76 *eP* **P 03 17 14.9 -0.4**
comp=Z,2.7nm,0.8s,mb4.0
PDAR Pinedale Array 43.02 76 P **P 03 17 15.7 +0.3**
comp=Z,1.6nm,0.6s,mb4.0,baz=307,slow=4.2,SNR=20
PDAR pP pP 03 17 25.9 -0.8
comp=Z,2.0nm,0.6s,baz=324,slow=5.4,SNR=7.9
PDAR sP sP 03 17 31.0 -0.7
comp=Z,7.1nm,1.1s,baz=304,slow=5.3,SNR=8.9
FCC Fort Churchill 43.34 48 *eP* **P 03 17 17.9 +0.2**
SRU San Rafael 44.59 81 *eP* **P 03 17 28.4 +0.4**
RSSD Black Hills 45.54 71 *eP* **P 03 17 35.3 -0.3**
comp=Z,2.3nm,0.6s,mb4.3
ULM Lac du Bonnet 46.71 59 P **P 03 17 44.4 -0.4**
comp=Z,2.9nm,0.6s,mb4.4,baz=308,slow=8.7,SNR=4.8
ULM Lac du Bonnet 46.71 59 *eP* **P 03 17 44.3 -0.5**
comp=Z,4.6nm,0.8s,mb4.5
BJI Beijing 48.59 285 *eP* **P 03 17 59.3 -0.3**
BJI AMB AMB
comp=Z,7.0nm,0.8s,mb4.7
BJI LR LR
comp=Z,93nm,21.6s,MS3.7
TLY Talaya 48.74 305 *eP* **P 03 18 00.0 -0.6**
TLY pmax pmax
comp=Z,33nm,1.0s,mb5.3
TLY MLR MLR
comp=Z,700nm,18.0s,MS4.7
ULN Ulaanbaatar 49.14 299 *deP* **P 03 18 03.3 -0.4**
SONM Songino Array 49.51 299 P **P 03 18 05.8 -0.7**
comp=Z,3.0nm,0.5s,mb4.6,baz=47,slow=7.9,SNR=34
SONM sP sP 03 18 19.6 -3.4
comp=Z,1.4nm,0.5s,baz=47,slow=8.1,SNR=6.6
ZAK Zakamensk 49.68 303 *eP* **P 03 18 07.2 -0.6**
ZAK *e* pP 03 18 21.2 +1.9
ZAK *e* 03 19 27.4
ANMO Albuquerque 49.74 82 *eP* **P 03 18 07.6 -0.9**
FRB Frobisher Bay 51.03 34 P **P 03 18 16.3 -1.6**
comp=Z,4.0nm,0.6s,mb4.5,baz=7.4,slow=8.8,SNR=6.4
FRB Frobisher Bay 51.03 34 P **P 03 18 16.3 -1.6**
FRB pmax pmax
comp=Z,4.0nm,0.6s
SSE Sheshan 51.35 273 P **P 03 18 19.8 -1.0**
SSE AMB AMB
comp=Z,36nm,0.7s,mb5.4
NJ2 Nanjing 52.15 276 *eP* **P 03 18 28.3 +1.5**
MNTX Cornudas Mount 52.59 84 *eP* **P 03 18 29.4 -0.7**
WMOK Wichita Mounta 54.59 77 *eP* **P 03 18 43.4 -1.4**
comp=Z,1.4nm,0.8s,mb4.0
TXAR Lajitas Array 55.29 85 P **P 03 18 49.2 -0.7**
comp=Z,1.2nm,0.9s,mb3.9,baz=288,slow=4.7,SNR=12
TXAR pP pP 03 19 00.3 -1.4
comp=Z,1.8nm,0.6s,baz=298,slow=5.0,SNR=13
TXAR Lajitas Array 55.29 85 P **P 03 18 49.2 -0.7**
TXAR pP pP 03 19 00.3 -1.4
ZAL Zalesovo 56.28 316 LR LR 03 46 32.0
comp=Z,38nm,19.8s,MS3.5,baz=246,slow=40
CCM Cathedral Cave 56.85 69 P **P 03 18 59.2 -1.9**
SCHQ Schefferville 57.69 41 P **P 03 19 05.9 -0.8**
comp=Z,2.7nm,0.6s,mb4.5,baz=304,slow=4.5,SNR=8.0
MIAR Mount Ida 57.86 74 *eP* **P 03 19 06.9 -1.3**
comp=Z,7.1nm,1.0s,mb4.7
ARCES ARCESS Array B 58.38 352 P **P 03 19 10.4 -1.0**
comp=Z,1.9nm,0.6s,mb4.3,baz=22,slow=6.5,SNR=8.8
ARCES PcP PcP 03 20 01.4 -0.3
comp=Z,2.5nm,0.6s,baz=14,slow=5.0,SNR=7.0
ARCES LR LR 03 45 00.4
comp=Z,45nm,18.0s,MS3.6,baz=61,slow=37
ARCES ARCESS Array B 58.38 352 P **P 03 19 10.4 -1.0**
ARCES 03 20 01.4
ARCES pmax pmax
comp=Z,2.0nm,0.6s
ARCES pmax pmax
comp=Z,3.0nm,0.6s
ARCES MLR MLR
comp=Z,45nm,18.0s
GTA Gaotai 58.56 295 *eP* **P 03 19 10.9 -2.2**
GTA AMB AMB
comp=Z,4.0nm,0.8s,mb4.5
SADO Sadowa 58.97 56 P **P 03 19 15.1 -0.7**
comp=Z,2.8nm,0.6s,mb4.5,baz=240,slow=6.6,SNR=5.5
SADO pP pP 03 19 27.4 -0.2
comp=Z,2.9nm,0.7s,baz=332,slow=6.5,SNR=2.9
SADO Sadowa 58.97 56 P **P 03 19 15.1 -0.7**
SADO pP pP 03 19 27.4 -0.2
ENH Enshi 59.16 281 P **P 03 19 18.9 +1.5**
MSNY Massena 60.99 53 *eP* **P 03 19 28.3 -1.4**
MKAR Makanchi Array 62.47 311 P **P 03 19 37.7 -1.9**
comp=Z,1.8nm,0.4s,mb4.5,baz=49,slow=5.7,SNR=30
MKAR LR LR 03 45 41.3
comp=Z,41nm,18.9s,MS3.6,baz=278,slow=35
SSPA Standing Stone 62.53 59 *eP* **P 03 19 39.4 -0.6**
comp=Z,4.0nm,0.6s,mb4.7
ACCN Adirondack Com 62.74 54 *eP* **P 03 19 39.8 -1.6**
BVAR Borovoye Array 62.83 322 P **P 03 19 40.8 -1.0**
comp=Z,4.8nm,0.5s,mb4.9,baz=50,slow=6.3,SNR=41
BVAR pPcP 03 20 32.3
comp=Z,3.3nm,0.8s,baz=40,slow=3.8,SNR=6.1
FWV Forest Hill 63.12 63 *eP* **P 03 19 43.6 -0.4**
ZRNK Zerenda 63.41 323 *eP* **P 03 19 44.5 -1.2**
GYA Guiyang 63.62 280 P **P 03 19 47.4 0.0**
GYA AMB AMB
comp=Z,10.0nm,1.0s,mb4.8
GYA LR LR
comp=Z,90nm,4.6s
MVL Millersville 63.80 58 *eP* **P 03 19 47.7 -0.7**
ARU Arti 64.11 331 *eP* **P 03 19 49.6 -0.5**
ARU pmax pmax
comp=Z,5.0nm,0.6s,mb4.7
ARU MLR MLR
comp=Z,100nm,19.0s,MS4.0
ARU Arti 64.11 331 *eP* **P 03 19 49.0 -1.0**
comp=Z,4.5nm,0.4s,mb4.8
JOF Joensuu 64.17 348 *ep* **P 03 19 48.3 -2.0**
JSC Jenkinsville 65.24 66 *eP* **P 03 19 57.0 -0.8**
KAF Kangasniemi 65.55 350 *ep* **P 03 19 57.9 -1.4**
baz=8.7,slow=6.1
FINES FINESS Array B 66.23 350 P **P 03 20 02.2 -1.4**
comp=Z,1.0nm,0.6s,mb4.1,baz=27,slow=8.5,SNR=6.4
FINES PcP PcP 03 20 32.8 -0.6
comp=Z,1.3nm,0.5s,baz=90,slow=1.9,SNR=8.2
FINES pPcP 03 20 46.0
comp=Z,2.2nm,0.9s,baz=72,slow=6.0,SNR=3.7
FINES FINESS Array B 66.23 350 P **P 03 20 02.2 -1.4**
FINES 03 20 32.8
FINES pmax pmax
comp=Z,1.0nm,0.6s
FINES pmax pmax
comp=Z,1.0nm,0.5s
FINES pmax pmax
comp=Z,2.0nm,1.0s
FINES FINESS Array B 66.23 350 P **P 03 20 02.2 -1.4**
FINES PcP PcP 03 20 32.8 -0.6
FINES pPcP 03 20 46.0
KMI Kunming 67.00 282 *eP* **P 03 20 08.6 -0.5**
KMI AMB AMB
comp=Z,9.0nm,1.3s,mb4.6
NOA NORSAR Array B 67.65 358 P **P 03 20 11.8 -0.7**
comp=Z,2.4nm,1.2s,mb4.1,baz=23,slow=4.2,SNR=2.8
NOA NORSAR Array B 67.65 358 P **P 03 20 11.9 -0.6**
NOA pmax pmax
comp=Z,2.0nm,1.2s
HFS Hagfors 68.47 356 P **P 03 20 16.7 -0.9**
comp=Z,1.2nm,0.5s,mb4.2,baz=45,slow=2.1,SNR=7.8
HFS Hagfors 68.47 356 P **P 03 20 16.7 -1.0**
HFS pmax pmax
comp=Z,1.0nm,0.5s
TKM2 Tokmak 2 68.51 313 P **P 03 20 18.8 +0.6**
SNR=7.2
USP Ospenovka 68.74 313 P **P 03 20 19.9 +0.3**
SNR=14
KBK Karagaybulak 69.01 313 P **P 03 20 22.1 +0.7**
SNR=6.2
AAK Ala-Archa 69.24 313 P **P 03 20 23.4 +0.7**
SNR=7.9
EKS2 Erkin-Say 69.54 313 P **P 03 20 25.2 +0.7**
SNR=9.4
AML Almayashu 70.00 313 P **P 03 20 28.5 +1.2**
SNR=6.6
LSA Lhasa 70.49 293 P **P 03 20 33.0 +2.4**
LSA Lhasa 70.49 293 *eP* **P 03 20 32.1 +1.5**
comp=Z,12nm,0.7s,mb4.9
LSA *e* pP 03 20 44.8 +2.1
CMAR Chiang Mai Arr 74.31 280 P **P 03 20 53.5 +0.1**
comp=Z,0.9nm,0.4s,mb4.0,baz=14,slow=7.4,SNR=4.9
CMAR Chiang Mai Arr 74.31 280 P **P 03 20 53.5 +0.2**
CMAR pmax pmax
comp=Z,1.0nm,0.4s
GUN Gumba 74.84 296 *eP* **P 03 20 57.0 +0.8**
comp=Z,77nm,1.0s,mb5.6
KKN Kakani 75.27 296 *eP* **P 03 20 59.2 +0.5**
comp=Z,22nm,0.8s,mb5.2
PKI Pulchoki 75.37 296 *eP* **P 03 20 59.6 +0.3**
comp=Z,43nm,1.1s,mb5.3
GKN Gorkha 75.47 297 *eP* **P 03 21 00.2 +0.4**
comp=Z,68nm,1.0s,mb5.5
DANN Dangsing 75.68 298 *eP* **P 03 21 02.0 +0.9**
KOLN Koldanda 76.22 297 *eP* **P 03 21 04.2 +0.1**
comp=Z,29nm,1.0s,mb5.2
AKASG Malin Array Be 76.28 345 P **P 03 21 03.2 -0.8**
comp=Z,1.9nm,0.4s,mb4.4,baz=15,slow=5.7,SNR=12
CLL Collm 77.32 356 P **P 03 21 10.0 +0.2**
CLL Collm 77.32 356 *eP* **P 03 21 10.0 +0.2**
BRG Berggiesshubel 77.71 355 *eP* **P 03 21 12.3 +0.3**
BRG pmax pmax
comp=Z,9.0nm,1.3s,mb4.5
BRG Berggiesshubel 77.71 355 *eP* **P 03 21 12.3 +0.3**
comp=Z,9.3nm,1.3s,mb4.5
BAIF Baives 78.69 2 *eP* **P 03 21 18.8 +1.4**
GRA1 Grafenberg Arr 79.00 357 *eP* **P 03 21 19.9 +0.8**
comp=Z,8.0nm,1.2s,mb4.5
GRF Grafenberg Arr 79.00 357 *eP* **P 03 21 19.9 +0.8**
GRF pmax pmax
comp=Z,8.0nm,1.2s,mb4.5
KHC Kasperske Hory 79.47 355 *eP* **P 03 21 22.5 +0.9**
GERES GERESS Array B 79.75 355 P **P 03 21 23.6 +0.5**
comp=Z,0.7nm,0.5s,mb3.9,baz=11,slow=5.0,SNR=0.7
GERES GERESS Array B 79.75 355 P **P 03 21 23.6 +0.5**
GERES pmax pmax
comp=Z,1.0nm,0.5s
GERES GERESS Array B 79.75 355 P **P 03 21 23.6 +0.5**
KIV Kislovodsk 79.82 334 *eP* **P 03 21 21.4 -2.2**
KIV *e* 03 21 30.3
KIV pmax pmax
comp=Z,5.0nm,0.8s,mb4.5
ROSF Rostrenen 80.08 7 *eP* **P 03 21 26.4 +1.4**
comp=Z,72nm,1.3s,mb5.1
CDF Champ du Feu 80.36 360 *eP* **P 03 21 26.8 +0.4**
ZEI Tsey 80.58 333 *eP* **P 03 21 27.6 -0.1**
HAU Haudompre 80.77 0 *eP* **P 03 21 29.0 +0.4**
HINF Hinteralfeld 80.96 360 *eP* **P 03 21 29.7 +0.1**
comp=Z,4.8nm,0.5s,mb4.3
SSF Saint-Saulge 81.68 2 *eP* **P 03 21 34.1 +0.7**
comp=Z,4.6nm,0.6s,mb4.3
MLR Muntele Rosu 81.85 346 P **P 03 21 34.2 -0.1**
comp=Z,1.7nm,0.6s,mb4.2,baz=103,slow=7.4,SNR=5.4
MLR Muntele Rosu 81.85 346 P **P 03 21 34.2 -0.1**
MLR pmax pmax
comp=Z,2.0nm,0.6s
AVF Avril sur Loir 81.95 2 *eP* **P 03 21 35.1 +0.3**
DAVOX Davos 81.95 358 P **P 03 21 35.9 +1.0**
comp=Z,2.3nm,0.7s,mb4.2,baz=346,slow=17,SNR=4.8
SMF Signal de Mont 82.17 2 *eP* **P 03 21 35.8 +0.2**
CABF La Chapelle 82.17 0 *eP* **P 03 21 36.9 +1.0**
THR Tehran 84.52 325 P **P 03 21 48.2 +0.2**
comp=Z,2.2nm,1.1s,mb4.2,baz=63,slow=2.3,SNR=3.6
THR Tehran 84.52 325 P **P 03 21 48.2 +0.2**
THR pmax pmax
comp=Z,2.0nm,1.1s
THR Tehran 84.52 325 P **P 03 21 48.2 +0.2**
WRA Warramunga Arr 84.59 228 P **P 03 21 50.1 +1.4**
comp=Z,0.7nm,0.9s,mb3.8,baz=33,slow=5.8,SNR=2.8
WRA pP pP 03 22 00.1 -0.9
comp=Z,1.0nm,0.6s,baz=33,slow=5.5,SNR=6.0
WRA Warramunga Arr 84.59 228 P **P 03 21 50.1 +1.4**
WRA *PP pP 03 22 00.1 -0.9
WRA pmax pmax
comp=Z,1.0nm,0.9s
WRA pmax pmax
comp=Z,1.0nm,0.6s
SMRF Simiane la Rot 84.80 1 *eP* **P 03 21 51.2 +2.0**
comp=Z,29nm,1.3s,mb5.0
SBF Sospel 84.91 359 *eP* **P 03 21 50.8 +1.0**
comp=Z,21nm,0.9s,mb5.0
FRF La Foret Royal 85.22 360 *eP* **P 03 21 52.3 +1.0**
comp=Z,15nm,1.1s,mb4.7
LMR La Mourre 85.44 0 *eP* **P 03 21 53.6 +1.2**
comp=Z,12nm,1.0s,mb4.7
BRTR Keskin Array B 86.03 339 P **P 03 21 56.2 +0.8**
comp=Z,1.7nm,0.7s,mb4.4,baz=40,slow=2.9,SNR=12
BRTR sP sP 03 22 10.6 -1.4
comp=Z,1.1nm,0.8s,baz=42,slow=2.8,SNR=4.9
BRTR LR LR 04 04 09.5
comp=Z,20nm,19.7s,MS3.5,baz=95,slow=38
PGF Pioggiola 86.20 358 *eP* **P 03 21 57.1 +1.0**
comp=Z,33nm,1.3s,mb5.1
ASAR Alice Springs 88.01 227 P **P 03 22 04.8 -0.5**
comp=Z,1.1nm,0.7s,mb4.2,baz=34,slow=4.5,SNR=7.8
ASAR pP pP 03 22 17.6 -0.2
comp=Z,3.0nm,0.8s,baz=30,slow=4.9,SNR=12
ESDC Sonseca Array 88.63 8 P **P 03 22 07.6 -0.4**
comp=Z,0.5nm,0.6s,mb4.0,baz=333,slow=5.7,SNR=5.1
QSPA South Pole Qui 141.36 180 *eP* PKPdf 03 28 45.5 +2.3
MAW Mawson 148.72 218 PKPbc PKPdf 03 29 00.8 +4.9
comp=Z,6.0nm,1.1s,baz=48,slow=3.7,SNR=3.7
MAW pPKPbc 03 29 13.8
comp=Z,7.3nm,0.8s,baz=68,slow=2.0,SNR=5.2
MAW Mawson 148.72 218 PKP2 PKPab 03 29 00.8 -4.9
MAW pmax pmax
comp=Z,6.0nm,1.1s
MAW pmax pmax
comp=Z,7.0nm,0.8s
VNA3 Neumayer Olymp 158.97 165 ⇓*i* P PKPdf 03 29 10.0 -0.1
VNA3 *e* 03 33 25.0
VNA2 Neumayer--Watz 159.59 167 ⇓*i* P PKPdf 03 29 08.6 -2.2
VNA2 *e* 03 30 04.6
VNA2 *e* 03 33 24.1
VNA1 Neumayer--Stat 159.71 166 ⇓*i* PKPdf 03 29 12.8 +1.9

*IDC **21** 03:28:06.5±4.0,4.24N×126.81E,h62km±35km,mb3.6/5, mb1 3.8/5,mb1mx3.5/19,Error ellipse: s-maj=97.6km s-min=20.7km az=69.0*

ISC 21 03:28:10.3±2.1,4.1N±0.2×126.6E±0.5,h116km±25km,n9, σ0§57/11,mb3.8/5,1C-1D,Talaud Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KCP	**Kidapawan**	**3.22**	**332**	⇓*eP*	**P**	**03 29 00.3**	**-0.2**
KCP				*i* S	**S**	**03 29 39.1**	**+0.7**
PAGZ	**Pagadian**	**4.88**	**319**	⇓*eP*	**P**	**03 29 21.9**	**-0.9**
PAGZ				*eS*	S	03 29 50.4	-28
FITZ	**Fitzroy Crossi**	**22.12**	**182**	*eP*	**P**	**03 32 57.7**	**+0.5**
	10nm,0.8s,mb4.2						
FITZ	**Fitzroy Crossi**	**22.12**	**182**	P	**P**	**03 32 58.3**	**+1.2**
	4.0nm,0.9s,mb3.7,baz=359,slow=8.7,SNR=7.1						
WRA Warramunga Arr 25.11 163 P **P 03 33 25.5 -0.6**
3.0nm,0.5s,mb4.0,baz=343,slow=9.9,SNR=15
WRA S **S 03 37 47.5 +8.0**
1.4nm,1.1s,baz=339,slow=19,SNR=2.7
WB2 Warramunga Ar 25.11 163 *eP* **P 03 33 26.0 -0.1**
ASAR Alice Springs 28.54 166 P **P 03 33 57.0 -0.4**
0.5nm,0.5s,mb3.4,baz=352,slow=7.4,SNR=7.1
STKA Stephens Creek 38.55 159 P **P 03 35 24.0 +0.6**
1.8nm,0.7s,mb4.0,baz=342,slow=6.4,SNR=3.0
MKAR Makanchi Array 57.15 325 P **P 03 37 47.1 -0.1**
0.3nm,0.5s,mb3.6,baz=117,slow=6.9,SNR=4.5

NNC 21 03:33:32.7±15.0,42.67N×78.70E,mpv3.9,1D,Error ellipse: s-maj=240.1km s-min=95.1km az=151.0,Lake Issyk-Kul region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KK31	**Karatay Array**	**6.03**	**277**	P	Pn	03 35 03.2	-2.1
	1.7nm,0.3s,baz=180,slow=13,SNR=32						
KK31				⇓S	Sn	03 36 14.0	-2.1
	2.0nm,0.6s,baz=182,slow=22,SNR=5.6						
KURK	**Kurchatov**	**8.04**	**360**	P	P	03 35 30.7	-2.9
	4.0nm,0.2s,baz=301,slow=16,SNR=8.3						
AB31	**Akbulak array**	**14.59**	**303**	P	P	03 36 54.5	-7.8
	0.4nm,0.5s,baz=156,slow=12,SNR=7.4						

*NEIC **21** 03:34:02.9,40.37N×19.55E,h4km,MD3.3(ATH),After ATH.*
*ATH **21** 03:34:02.9,40.37N×19.55E,h4km,MD3.3/5*
*THE **21** 03:34:05.5,40.24N×19.73E,h10km,ML3.1*
*TIR **21** 03:34:05.0,40.26N×19.88E*

ISC 21 03:34:05.8±0.5,40.27N±0.02×19.87E±0.04,n21,σ1§18/22, Albania

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TPE	**Tepelena**	**0.12**	**76**	*e*Pg	**Pg**	**03 34 07.1**	**-1.0**
TPE				*i* Sg	**Sg**	**03 34 10.9**	**+1.3**
VLO	**Vlora**	**0.35**	**306**	*i* Pg	**Pg**	**03 34 12.2**	**-0.5**
VLO				*i* Sg	**Sg**	**03 34 16.7**	**+1.4**
SRN	**Sarande**	**0.40**	**165**	*i* Pg	**Pg**	**03 34 12.8**	**-1.0**
SRN				*i* Sg	**Sg**	**03 34 20.8**	**+1.7**
KEK	**Kerkira**	**0.56**	**185**	*e*PG	**Pg**	**03 34 15.1**	**-1.8**
KEK				*e*SG	**Sg**	**03 34 26.0**	**+1.7**
IGT	**Igoumenitsa**	**0.82**	**154**	*e*Pg	**Pg**	**03 34 21.0**	**-1.1**
IGT				*e*Sg	**Sg**	**03 34 33.1**	**+0.2**
JAN	**Janina**	**0.97**	**128**	*e*PG	**Pg**	**03 34 25.7**	**+0.5**
MEV	**Metsovon**	**1.15**	**114**	*e*Pb	**Pb**	**03 34 28.1**	**-0.2**
	comp=Z,9.0nm,0.4s						
QSH	**Qafa e Shtames**	**1.25**	**1**	*e*pn?	**Pn**	**03 34 31.9**	**+1.4**
QSH				*i* Sn	**Sn**	**03 34 49.0**	**+0.6**
FNA	**Florina**	**1.26**	**65**	*e*Pb	**Pb**	**03 34 29.1**	**-1.0**
	comp=Z,2.7nm,0.4s						
BIA	**Bitola**	**1.34**	**55**	*i* Pn	**Pn**	**03 34 30.0**	**-1.8**
BIA				*i*		03 34 32.9	
BIA				*i* Sg	**Sg**	**03 34 51.9**	**+1.4**
BIA	**Bitola**	**1.34**	**55**	*i* Pn	**Pn**	**03 34 30.0**	**-1.8**
BIA				*i* Sg	**Sg**	**03 34 51.9**	**+1.4**
KZN	**Kozani**	**1.46**	**88**	*e*PB	Px	03 34 35.0	
PUK	**Puka**	**1.77**	**1**	*i* Pn	**Pg**	**03 34 39.2**	**-2.0**
PUK				*i* Sn	**Sg**	**03 35 05.2**	**+0.3**
EVR	**Evrytania**	**2.02**	**131**	*e*PN	Px	03 34 43.0	
LIT	**Litokhoron**	**2.02**	**94**	*e*Pn	Px	03 34 42.7	
	comp=Z,2.0nm,0.6s						
GRG	**Griva**	**2.05**	**70**	*e*Pn	Px	03 34 42.5	
SKO	**Skopje**	**2.08**	**34**	*e*Pn	Px	03 34 43.0	
VLS	**Valsamata**	**2.16**	**165**	*e*PG	Px	03 34 45.5	
AGG	**Agios Georgios**	**2.27**	**122**	*e*Pn	Px	03 34 46.8	
KNT	**Kendrikon**	**2.47**	**68**	*e*Pn	Px	03 34 48.3	
PAIG	**Paliouri**	**2.95**	**95**	*e*Pn	**Pn**	**03 34 54.6**	**-0.1**

*IDC **21** 04:09:52.6±0.6,18.11N×102.92W,mb5.0/20,mb1 5.1/22, mb1mx5.1/23,ML4.1/2,MS4.4/15,Ms1 4.4/15, ms1mx4.2/22,Error ellipse: s-maj=23.9km s-min=13.2km az=63.0*
*MOS **21** 04:09:56.6±1.1,18.08N×102.99W,h33km,mb5.3/27, MS4.5/10,Error ellipse: s-maj=15.4km s-min=9.5km az=90.8*
*MEX **21** 04:09:56.6±0.9,17.87N×103.11W,h16km±12km,MD4.8*
*NEIC **21** 04:10:01.2±0.5,18.27N×102.81W,h53km±3km,mb5.2/130, MS4.5/11,MD4.7(MEX),Error ellipse: s-maj=5.9km s-min=2.5km az=213.0*
*BJI **21** 04:10:01.1,18.30N×102.80W,h52km,mB4.7,mb5.4, Ms4.7,Msz4.9*
*HRVD **21** 04:10:01.2±0.4,18.06N×103.01W,h28km±1km,MW5.2/50, Centroid moment Tensor Solution. LP body waves: s46,c75;Mantle waves: s50,c88; Half duration: 0 Moment tensor: Scale 10^16Nm; Mrr4.22±.22; Mθθ-4.44±.15; Mφφ0.22±.18; Mrθ3.98±.26; Mrφ2.54±.12; Mθφ-2.23±.31; Best double couple: M0:6.69×10^16 NP1:φs287°,δ24°,λ79°. NP2:φs118°,δ67°,λ95°. Principal axes: T:6.04, Plg68°, Azm37°; N 1.3, Plg4°, Azm297°; P -7.34, Plg21°, Azm205°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 21 04:09:55.6±0.2,18.11N±0.04×102.95W±0.02,h25km, h25km±1.4km:pP-P,n398,σ1§09/384,mb5.2/158,MS4.5/33, 7C-4D,Michoacan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
COLM	**Colima**	**1.28**	**327**	*i* P	**Pn**	**04 10 17.5**	**-0.6**
COLM				*i* S	**Sn**	**04 10 35.7**	**+1.2**
ZIIG	**Zihuatanejo**	**1.50**	**109**	*i* P	**Pn**	**04 10 20.8**	**-0.5**
ZIIG				*i* S	**Sn**	**04 10 38.0**	**-1.7**
CGX	**Ciudad Guzman**	**1.66**	**342**	*i* P	**Pn**	**04 10 24.2**	**+0.6**
CGX				*i* S	**Sn**	**04 10 49.5**	**+5.2**
MOIG	**Morelia**	**2.28**	**47**	*i* P	**Pn**	**04 10 34.8**	**+2.3**
MOIG				*i* S	**Sn**	**04 11 04.2**	**+4.1**
SFJM	**Santa Fe**	**2.37**	**358**	*i* P	**Pn**	**04 10 35.5**	**+1.8**
CJM	**Chamela**	**2.42**	**305**	*e*P	**Pn**	**04 10 34.8**	**+0.4**
CJM				*i* S	**Sn**	**04 11 00.6**	**-2.9**
CJM	**Chamela**	**2.42**	**305**	*e*P	**Pn**	**04 10 36.3**	**+1.8**
CJM				*i* S	**Sn**	**04 11 04.1**	**+0.6**
CAIG	**El Cayaco**	**2.77**	**112**	*e*P	**Pn**	**04 10 37.4**	**-2.1**
CAIG				*e*S	**Sn**	**04 11 11.4**	**-1.0**
ACX	**Acapulco**	**3.15**	**113**	*e*P	**Pn**	**04 10 45.9**	**+1.1**
ACX				*e*S	**Sn**	**04 11 18.7**	**-3.3**
IIZ	**Mezontepec**	**3.67**	**72**	*i* P	**Pn**	**04 10 53.0**	**+0.7**
CHVM	**Chichinautzin**	**3.73**	**74**	*e*P	**Pn**	**04 10 57.9**	**+4.7**
YAIG	**Yautepec**	**3.76**	**78**	*i* P	**Pn**	**04 10 54.5**	**+0.9**
YAIG				*i* S	**Sn**	**04 11 39.5**	**+2.0**
UNM	**Universidad Na**	**3.77**	**71**	*e*P	**Pn**	**04 10 54.2**	**+0.5**
UNM				*e*P		04 10 54.5	
UNM				*i* P		04 10 58.4	
UNM				*i* S	**Sn**	**04 11 40.7**	**+2.8**
UNM	**Universidad Na**	**3.77**	**71**	*e*P	**Pn**	**04 10 54.5**	**+0.8**
UNM				*e*S	**Sn**	**04 11 52.1**	**+14**
PBVM	**Pinon**	**3.89**	**70**	*i* P	**Pn**	**04 11 01.5**	**+6.1**
PBVM				*e*S	**Sn**	**04 11 52.4**	**+11**
PTVM	**Pico Tres Padr**	**3.92**	**67**	*e*P	**Pn**	**04 11 03.1**	**+7.3**
PPM	**Popocatepetl**	**4.21**	**76**	*e*P	**Pn**	**04 11 01.0**	**+1.1**
PPM				*e*P		04 11 01.9	
PPM				*i* S	**Sn**	**04 11 49.2**	**+0.3**
PPM	**Popocatepetl**	**4.21**	**76**	*e*P	**Pn**	**04 11 01.9**	**+2.0**
PPM				*i* S	**Sn**	**04 11 49.2**	**+0.3**
IIB	**San Bernardino**	**4.45**	**78**	*e*P	**Pn**	**04 11 04.9**	**+1.6**
ZAIG	**Zacatecas**	**4.65**	**4**	*e*P	**Pn**	**04 11 08.2**	**+2.1**
ZAIG				*i* S	**Sn**	**04 12 06.7**	**+6.7**
IISM	**Ciudad Serdan**	**5.36**	**80**	*e*P	**Pn**	**04 11 16.4**	**+0.3**
POHV	**Veracruz**	**5.46**	**79**	*e*P	**Pn**	**04 11 19.4**	**+1.8**
VHO	**Vista Hermosa**	**6.02**	**99**	*i* P	**Pn**	**04 11 26.5**	**+1.0**
VHO				*i* S	**Sn**	**04 12 30.2**	**-4.1**
OXX	**Oaxaca**	**6.03**	**99**	*i* P	**Pn**	**04 11 27.4**	**+1.8**
LVIG	**Laguna Verde**	**6.39**	**74**	*e*P	**Pn**	**04 11 31.3**	**+0.7**
LVIG				*i* S	**Sn**	**04 12 46.1**	**+2.5**
HUIG	**Huatulco**	**6.95**	**109**	*i* S	**Sn**	**04 12 58.3**	**+0.7**
EVV	**El Vigia**	**7.23**	**86**	*i* P	**Pn**	**04 11 42.9**	**+0.4**
CMIG	**Matias Romero**	**7.76**	**96**	*e*P	**Pn**	**04 11 50.1**	**+0.2**
CMIG				*i* S	**Sn**	**04 13 15.3**	**-2.5**
CCIG	**Comitan**	**10.49**	**98**	*e*P	**P**	**04 12 27.6**	**-0.2**
CCIG				*i* S	**S**	**04 14 23.2**	**-2.3**
TXAR	**Lajitas Array**	**11.19**	**357**	Pn	**P**	**04 12 37.8**	**+0.6**
	0.5nm,0.3s,baz=175,slow=15,SNR=83						
TXAR				Pg	P	04 13 22.6	+45
	0.4nm,0.3s,baz=201,slow=21,SNR=5.8						

TXAR Lg 04 15 47.1
0.5nm,0.3s,baz=182,slow=29,SNR=6.0
TXAR LR LR 04 17 41.2
comp=Z,2µm,18.6s,baz=180,slow=42
HKT Hockley 13.45 28 *e*P **P 04 13 07.8 +0.2**
14nm,0.9s
MNTX Cornudas Mount 13.71 351 *e*P **P 04 13 12.7 +1.7**
50nm,1.3s
GDL2 Guadalupe Moun 14.09 355 *e*P **P 04 13 18.3 +2.4**
CLNB Carlsbad 14.12 357 *e*P **P 04 13 19.2 +2.9**
CPRX Cap Rock 14.88 357 *e*P **P 04 13 27.6 +1.3**
TUC Tucson 15.81 335 *e*P **P 04 13 39.0 +0.7**
28nm,1.1s
BNM Barren Site 16.31 349 *e*P **P 04 13 46.5 +1.8**
LENM Lemitar 16.39 348 *e*P **P 04 13 47.9 +2.1**
WMOK Wichita Mounta 16.97 12 *e*P **P 04 13 51.6 -1.4**
107nm,1.1s
ANMO Albuquerque 17.06 350 *e*P **P 04 13 55.8 +1.6**
ANMO Albuquerque 17.06 350 *e*P **P 04 13 55.7 +1.5**
16nm,1.0s
BAR Barrett 19.05 322 *e*P **P 04 14 18.6 -0.1**
JTS JuntasAbangare 19.09 112 P **P 04 14 23.1 +3.8**
0.3nm,0.3s,baz=336,slow=16,SNR=5.9
UALR University of 19.10 28 *e*P **P 04 14 18.2 -1.0**
152nm,1.0s
PFO Pinyon Flat Ob 19.61 325 *e*P **P 04 14 25.4 +0.2**
48nm,1.0s
LDFC Landfair 20.06 330 *e*P **P 04 14 30.6 +0.6**
NEN Nelson 20.41 331 *e*P **P 04 14 33.5 -0.1**
PV01 Paradox Valley 20.55 347 *e*P **P 04 14 34.4 -0.6**
CBKS Cedar Bluff 20.82 7 *e*P **P 04 14 35.8 -2.0**
99nm,1.0s
CBKS LR LR
comp=Z,1µm,21.0s,MS4.3
PV10 Paradox Valley 20.88 346 *e*P **P 04 14 37.5 -1.0**
MWC Mount Wilson 20.97 323 *e*P **P 04 14 39.6 +0.3**
GNAR Gosnell 21.15 30 *e*P **P 04 14 40.6 -0.5**
PLAL Pickwick Lake 21.39 35 *e*P **P 04 14 40.7 -2.9**
comp=Z,94nm,0.8s,mb5.2
PLAL *e*PcP PcP 04 18 45.7 -1.6
KSU1 Kansas State U 21.63 13 *e*P **P 04 14 44.4 -1.6**
ISCO Idaho Springs 21.74 354 *e*P **P 04 14 46.8 -0.3**
comp=Z,21nm,1.0s,mb4.5
ISCO LR LR
comp=Z,1µm,19.0s,MS4.3
GLAT Glass 21.75 31 *e*P **P 04 14 46.6 -0.6**
MSU Marysvale 21.86 340 *e*P **P 04 14 48.8 +0.5**
SRU San Rafael 21.94 344 *e*P **P 04 14 49.0 -0.1**
DWPF Disney 22.12 59 *e*P **P 04 14 50.2 -0.8**
DAC Darwin (Calif) 22.25 327 *e*P **P 04 14 54.1 +1.9**
comp=Z,48nm,1.3s,mb4.8
CCM Cathedral Cave 22.36 25 *e*P **P 04 14 51.9 -1.4**
comp=Z,82nm,1.0s,mb5.1
WVT Waverly 22.38 34 *e*P **P 04 14 50.6 -3.0**
comp=Z,27nm,0.8s,mb4.7
WVT LR LR
comp=Z,693nm,20.0s,MS4.1
FVM French Village 22.63 26 *e*P **P 04 14 53.9 -2.1**
comp=Z,96nm,0.9s,mb5.2
SWET Sewanee 22.78 38 *e*P **P 04 14 55.3 -2.2**
SIUC Southern Illin 22.94 29 *e*P **P 04 14 57.8 -1.3**
comp=Z,155nm,1.0s,mb5.4
MPU Maple Canyon 23.09 343 *e*P **P 04 15 01.9 +1.4**
NLU North Lily Min 23.16 342 *e*P **P 04 15 02.6 +1.5**
NLU *e*PcP PcP 04 18 50.2 -0.5
SLM Saint Louis 23.26 26 *e*P **P 04 15 01.6 -0.5**
comp=Z,220nm,0.9s,mb5.6
DAU Daniels Canyon 23.35 344 *e*P **P 04 15 04.2 +1.2**
TPH Tonopah 23.48 331 *e*P **P 04 15 05.5 +1.2**
comp=Z,51nm,1.0s,mb4.9
MTUM Tungsten Hills 23.57 328 *e*P **P 04 15 06.5 +1.4**
JLU Jordanelle 23.58 344 *e*P **P 04 15 06.2 +0.9**
CTU Camp Tracy 23.75 343 *e*P **P 04 15 08.1 +1.2**
CPCT Cooper Cave 23.78 40 *e*P **P 04 15 05.5 -1.7**
USIN University of 23.88 31 *e*P **P 04 15 07.4 -0.8**
comp=Z,450nm,1.3s,mb5.7
TCUT Toone Canyon 24.05 344 *e*P **P 04 15 10.9 +1.0**
LRV Little Rabbit 24.23 322 *e*P **P 04 15 13.0 +1.4**
NVAR Mina Array Bea 24.28 330 P **P 04 15 13.7 +1.6**
comp=Z,39nm,0.8s,mb4.9,baz=146,slow=11,SNR=199
HWUT Hardware Ranch 24.55 344 *e*P **P 04 15 15.2 +0.6**
comp=Z,28nm,1.0s,mb4.8
HWUT *e*PcP PcP 04 18 52.7 -1.0
HWUT LR LR
comp=Z,2µm,20.0s,MS4.6
SAO San Andreas Ge 24.71 322 *e*P **P 04 15 16.6 +0.4**
comp=Z,21nm,0.9s,mb4.7
WCI Wyandotte Cave 24.77 33 *e*P **P 04 15 14.8 -2.0**
comp=Z,101nm,0.9s,mb5.3
WCI *e*PcP PcP 04 18 53.0 -1.2
CMB Columbia Colle 25.03 326 *e*P **P 04 15 19.4 +0.1**
comp=Z,37nm,0.9s,mb4.9
HVU Hansel Valley 25.04 342 *e*P **P 04 15 19.7 +0.4**
COW Cow Castle Cre 25.08 48 *e*P **P 04 15 17.2 -2.6**
JSC Jenkinsville 25.18 46 *e*P **P 04 15 19.1 -1.6**
PDAR Pinedale Array 25.21 349 P **P 04 15 19.6 -1.4**
comp=Z,22nm,0.9s,mb4.7,baz=162,slow=9.4,SNR=101
PDAR PcP PcP 04 18 54.0 -1.0
comp=Z,1.9nm,0.7s,baz=140,slow=3.8,SNR=4.4
BLO Bloomington 25.38 31 *e*P **P 04 15 20.6 -2.0**
comp=Z,114nm,0.9s,mb5.4
BMN Battle Mountai 25.42 334 *e*P **P 04 15 23.7 +0.7**
comp=Z,59nm,1.2s,mb5.0
AHID Auburn Hatcher 25.53 346 *e*P **P 04 15 23.7 -0.3**
comp=Z,12nm,1.0s,mb4.4
WCN Washoe City 25.67 329 *e*P **P 04 15 26.4 +1.1**
comp=Z,77nm,1.0s,mb5.2
LKC Lake Chabot 25.74 323 *e*P **P 04 15 26.7 +0.8**
RSSD Black Hills 25.95 358 *e*P **P 04 15 27.2 -0.6**
comp=Z,15nm,0.9s,mb4.5
WUWY Wally Ulrich 26.19 347 *e*P **P 04 15 29.8 -0.2**
KSWY Kelly School 26.25 347 *e*P **P 04 15 30.6 0.0**
BEKR Beckwourth 26.40 329 *e*P **P 04 15 32.8 +0.7**
comp=Z,62nm,0.9s,mb5.1
OHCM Honcut 26.57 327 *e*P **P 04 15 34.1 +0.5**
NSHM Saint Helena R 26.59 324 *e*P **P 04 15 34.2 +0.4**
HLID Hailey 27.16 342 *e*P **P 04 15 39.0 0.0**
comp=Z,6.6nm,0.8s,mb4.2
HLID LR LR
comp=Z,1µm,19.0s,MS4.6
ELN Prospectdale 27.25 41 *e*P **P 04 15 37.2 -2.6**
YMR Madison River 27.32 347 *e*P **P 04 15 40.7 +0.3**
FWV Forest Hill 27.44 41 *e*P **P 04 15 39.2 -2.3**
BLA Blacksburg 27.45 42 *e*P **P 04 15 39.0 -2.6**
comp=Z,34nm,0.9s,mb4.9
QLMT Earthquake Lak 27.57 347 *e*P **P 04 15 42.9 +0.2**
MCMT McKenzie Canyo 27.90 345 *e*P **P 04 15 46.0 +0.4**
ACSO Alum Creek Sta 27.98 34 *e*P **P 04 15 44.4 -2.1**
WDC Whiskeytown Da 28.04 327 *e*P **P 04 15 44.8 -2.1**
comp=Z,15nm,1.3s,mb4.5
BOZ Bozeman (W) 28.39 347 *e*P **P 04 15 49.2 -0.8**
comp=Z,17nm,0.9s,mb4.7
BOZ LR LR
comp=Z,2µm,19.0s,MS4.8
KHMM Horse Mountain 28.87 326 *e*P **P 04 15 54.9 +0.5**
YBH Yreka Blue Hor 28.98 329 P **P 04 15 54.0 -1.4**
comp=Z,7.9nm,0.8s,mb4.5,baz=108,slow=4.8,SNR=26
YBH Yreka Blue Hor 28.98 329 P **P 04 15 54.0 -1.4**
YBH pmax pmax
comp=Z,8.0nm,0.8s
YBH Yreka Blue Hor 28.98 329 *e*P **P 04 15 53.8 -1.6**
comp=Z,6.0nm,0.8s,mb4.4
MCWV Mont Chateau 29.34 38 *e*P **P 04 15 55.9 -2.8**
KRMB Red Mountain 29.43 327 *e*P **P 04 15 59.6 +0.2**
HRY Holter Researc 29.45 348 *e*P **P 04 15 58.6 -1.0**
HUMO Hull Mountain 29.75 329 *e*P **P 04 16 01.6 -0.8**
OTAV Otavalo 29.92 124 *e*P **P 04 16 06.2 +2.1**
comp=Z,3.9nm,0.8s,mb4.2
CHMT Chamberlain Mo 29.95 346 *e*P **P 04 16 02.9 -1.2**
CBN Corbin 29.99 43 *e*P **P 04 16 01.0 -3.5**
MSO Missoula 30.04 345 *e*P **P 04 16 03.6 -1.3**
comp=Z,17nm,1.0s,mb4.7
KBO Bosley Butte 30.09 327 *e*P **P 04 16 05.8 +0.4**
HSO Harness Mounta 30.51 330 *e*P **P 04 16 08.2 -0.9**
KEBM Edson Butte 30.63 328 *e*P **P 04 16 10.8 +0.7**
ERPA Erie 30.91 34 *e*P **P 04 16 09.1 -3.4**
comp=Z,32nm,0.7s,mb5.2
ROSC El Rosal 30.92 112 P **P 04 16 16.4 +3.5**
comp=Z,8.9nm,0.8s,mb4.7,baz=308,slow=16,SNR=7.5
SSPA Standing Stone 31.12 39 *e*P **P 04 16 12.1 -2.4**
comp=Z,12nm,1.2s,mb4.6
SSOR Sweet Springs 31.26 333 *e*P **P 04 16 14.6 -1.1**
PRW Prosser 31.27 337 P **P 04 16 15.2 -0.5**
COR Corvallis 31.43 332 *e*P **P 04 16 16.9 -0.2**
MVL Millersville 31.67 41 *e*P **P 04 16 16.7 -2.6**

WALA Waterton Lakes 32.12 346 *e*P **P 04 16 21.6 -1.5**
comp=Z,22nm,1.0s,mb4.9
DPW Davenport 32.20 341 *e*P **P 04 16 23.4 -0.4**
DPW *e*PcP PcP 04 19 11.4 -0.9
NEW Newport 32.22 342 *e*P **P 04 16 23.3 -0.7**
comp=Z,13nm,1.0s,mb4.7
ULM Lac du Bonnet 32.56 8 P **P 04 16 24.4 -2.6**
comp=Z,23nm,0.9s,mb5.1,baz=194,slow=9.3,SNR=25
ULM PcP PcP 04 19 11.4 -1.9
comp=Z,5.1nm,0.7s,baz=219,slow=3.6,SNR=4.2
ULM LR LR 04 29 26.1
comp=Z,400nm,18.0s,MS4.2,baz=67,slow=36
ULM Lac du Bonnet 32.56 8 *e*P **P 04 16 23.7 -3.2**
comp=Z,37nm,1.0s,mb5.3
ULM *e*PcP PcP 04 19 11.8 -1.5
FMW Mount Fremont 32.62 336 P **P 04 16 27.9 +0.5**
WTV Waterville 32.63 339 P **P 04 16 27.3 -0.2**
BMW Boistfort Moun 32.88 334 *e*P **P 04 16 29.9 +0.2**
GSM Grass Mountain 32.89 336 P **P 04 16 30.0 +0.2**
NLW Nelson Butte 33.09 338 *e*P **P 04 16 30.8 -0.8**
RMW Rattlesnake Mo 33.10 336 P **P 04 16 31.6 -0.1**
BINY Binghamton 33.21 38 *e*P **P 04 16 30.1 -2.6**
GNW Green Mountain 33.59 335 *e*P **P 04 16 34.9 -1.0**
JCW Jim Creek 33.76 337 P **P 04 16 36.5 -0.9**
RPW Rockport 33.82 338 P **P 04 16 37.5 -0.4**
CMW Cultus Mountai 34.02 337 P **P 04 16 38.9 -0.7**
OCWA Octopus Mounta 34.28 334 *e*P **P 04 16 42.0 +0.1**
comp=Z,48nm,0.9s,mb5.4
VDB Vedder Mountai 34.52 338 P **P 04 16 43.3 -0.6**
SNB Saturna Island 34.71 336 P **P 04 16 45.5 -0.1**
PGC Sidney 34.71 336 *e*P **P 04 16 45.1 -0.5**
comp=Z,142nm,1.0s,mb5.8
SJG San Juan 34.94 84 P **P 04 16 46.4 -1.4**
comp=Z,41nm,1.1s,mb5.3,baz=278,slow=5.7,SNR=5.9
SJG San Juan 34.94 84 P **P 04 16 46.4 -1.4**
SJG pmax pmax
comp=Z,41nm,1.1s
SJG San Juan 34.94 84 *e*P **P 04 16 46.5 -1.3**
SJG LR LR
comp=Z,583nm,21.0s,MS4.3
ACCN Adirondack Com 35.29 38 *e*P **P 04 16 47.2 -3.4**
NCB Newcomb 35.32 37 *e*P **P 04 16 47.5 -3.3**
comp=Z,14nm,0.8s,mb4.9
MSNY Massena 35.60 35 *e*P **P 04 16 50.2 -3.0**
OZB Mount Ozzard 35.78 334 P **P 04 16 54.9 +0.2**
FFC Flin Flon 36.55 1 *e*P **P 04 16 59.2 -1.9**
comp=Z,68nm,1.1s,mb5.4
DLBC Dease Lake 44.91 340 LR LR 04 39 30.6
comp=Z,515nm,19.3s,MS4.5,baz=303,slow=40
DLBC Dease Lake 44.91 340 *e*P **P 04 18 10.8 +0.8**
YKA Yellowknife Ar 45.08 352 P **P 04 18 09.0 -2.2**
comp=Z,25nm,0.9s,mb5.0,baz=163,slow=7.4,SNR=213
YKA PcP PcP 04 19 50.2 -1.9
comp=Z,2.8nm,0.8s,baz=166,slow=3.0,SNR=9.9
YKA LR LR 04 36 18.0
comp=Z,413nm,18.7s,MS4.4,baz=180,slow=35
YKA Yellowknife Ar 45.08 352 P **P 04 18 09.0 -2.2**
YKA 04 19 50.2
YKA pmax pmax
comp=Z,25nm,0.9s
YKA pmax pmax
comp=Z,3.0nm,0.8s
YKA MLR MLR
comp=Z,413nm,18.7s
YKA Yellowknife Ar 45.08 352 P **P 04 18 09.0 -2.2**
YKA PcP PcP 04 19 50.2 -1.9
YKA LR LR 04 36 18.0
YKW3 Yellowknife Ar 45.15 352 *e*P **P 04 18 09.9 -1.9**
SCHQ Schefferville 45.85 28 P **P 04 18 15.3 -2.1**
comp=Z,65nm,0.8s,mb5.6,baz=235,slow=5.8,SNR=67
SCHQ LR LR 04 41 50.1
comp=Z,398nm,18.6s,MS4.4,baz=132,slow=42
SCHQ Schefferville 45.85 28 *e*P **P 04 18 15.2 -2.2**
comp=Z,84nm,0.9s,mb5.7
SCHQ *e*PP PP 04 20 02.6 -2.6
LPAZ La Paz 48.41 133 P **P 04 18 37.8 -0.2**
comp=Z,1.6nm,0.8s,mb4.1,baz=337,slow=11,SNR=8.5
LPAZ LR LR 04 36 53.4
comp=Z,159nm,20.6s,MS4.0,baz=312,slow=34
LPAZ La Paz 48.41 133 *e*P **P 04 18 38.2 +0.2**
comp=Z,5.2nm,1.0s,mb4.5
FRB Frobisher Bay 51.27 19 LR LR 04 41 48.9
comp=Z,620nm,18.2s,MS4.7,baz=70,slow=37
DAWY Dawson 52.13 341 *e*P **P 04 19 05.2 -0.6**
LVC Limon Verde 52.40 139 *e*P **P 04 19 09.9 +1.5**
comp=Z,32nm,1.1s,mb5.2
TOA Telsona 53.23 336 *e*P **P 04 19 14.8 +0.8**
INK Inuvik 53.75 346 LR LR 04 43 23.9
comp=Z,267nm,21.8s,MS4.3,baz=138,slow=37
INK Inuvik 53.75 346 *e*P **P 04 19 16.3 -1.5**
comp=Z,68nm,1.0s,mb5.5
SML Sawmill 53.91 335 *e*P **P 04 19 18.6 -0.3**
PMS Palmer South 54.10 334 *e*P **P 04 19 20.0 -0.4**
PMR Palmer 54.11 335 *e*P **P 04 19 19.5 -0.9**
comp=Z,42nm,0.8s,mb5.4
PWA Palmer West 54.44 335 *e*P **P 04 19 21.9 -1.0**
ILAR Eielson Array 55.06 339 P **P 04 19 26.6 -0.9**
comp=Z,39nm,0.9s,mb5.5,baz=149,slow=5.6,SNR=331
ILAR PcP PcP 04 20 27.4 -1.2
comp=Z,3.1nm,0.6s,baz=152,slow=2.4,SNR=5.4
ILAR Eielson Array 55.06 339 P **P 04 19 26.6 -0.9**
ILAR 04 20 27.4
ILAR pmax pmax
comp=Z,39nm,0.9s
ILAR pmax pmax
comp=Z,3.0nm,0.6s
MCK McKinley 55.20 337 *e*P **P 04 19 27.8 -0.6**
comp=Z,26nm,0.9s,mb5.3
COLA College 55.46 339⇑ *i*P **P 04 19 28.0 -2.3**
COLA College 55.46 339 *e*P **P 04 19 28.7 -1.6**
comp=Z,34nm,0.9s,mb5.4
COLA *e*PcP PcP 04 20 29.6 -0.6
COLA LR LR
comp=Z,271nm,19.0s,MS4.3
SVW Sparrevohn 56.62 332 *e*P **P 04 19 36.6 -2.1**
RES Resolute Bay 56.76 3 *e*P **P 04 19 36.9 -2.7**
comp=Z,11nm,0.9s,mb4.9
IMA Indian Mountai 58.15 338 *e*P **P 04 19 47.3 -2.1**
ANM Nome 62.04 334 *e*P **P 04 20 15.7 -0.4**
CPUP Villa Florida 62.57 134 P **P 04 20 18.5 -1.6**
comp=Z,50nm,1.6s,mb5.4,baz=345,slow=8.1,SNR=11
CPUP LR LR 04 47 28.1
comp=Z,149nm,18.8s,MS4.2,baz=352,slow=36
CPUP Villa Florida 62.57 134 P **P 04 20 18.5 -1.6**
CPUP pmax pmax
comp=Z,50nm,1.6s
CPUP MLR MLR
comp=Z,149nm,18.8s
CPUP Villa Florida 62.57 134 *e*P **P 04 20 18.8 -1.3**
comp=Z,9.6nm,1.0s,mb4.9
TNA Tin City 63.36 335 *e*P **P 04 20 24.1 -0.7**
comp=Z,57nm,1.0s,mb5.7
BDFB Brasilia 63.66 118 P **P 04 20 25.9 -1.6**
comp=Z,4.8nm,0.8s,mb4.6,baz=280,slow=6.5,SNR=7.8
BDFB LR LR 04 50 26.8
comp=Z,273nm,19.3s,MS4.5,baz=178,slow=38
BDFB Brasilia 63.66 118 P **P 04 20 25.9 -1.7**
BDFB pmax pmax
comp=Z,5.0nm,0.8s
BDFB MLR MLR
comp=Z,273nm,19.3s
SUMG Summit 65.29 17 *e*P **P 04 20 36.1 -1.1**
TRQA Tornquist 67.84 146 *e*P **P 04 20 53.5 -0.5**
comp=Z,1.8nm,1.1s,mb4.0
BORG Borgarnes 70.21 27 LR LR 04 52 53.9
comp=Z,522nm,18.4s,MS4.8,baz=282,slow=37
DAG Danmarks Havn 71.19 14⇓ *i*P **P 04 21 12.3 -1.6**
comp=Z,8.9nm,0.7s,mb4.8
DAG Danmarks Havn 71.19 14⇓ *i*P **P 04 21 12.3 -1.6**
DAG pmax pmax
comp=Z,9.0nm,0.7s,mb4.8
BILL Bilibino 73.66 337 *c i*P **P 04 21 28.5 0.0**
BILL pmax pmax
comp=Z,25nm,1.1s,mb5.1
BILL MLR MLR
comp=Z,500nm,16.0s,MS4.9
BILL Bilibino 73.66 337 *e*P **P 04 21 28.2 -0.4**
comp=Z,19nm,1.0s,mb5.0
KBS Kingsbay 76.95 10 *e*P **P 04 21 47.2 0.0**
comp=Z,12nm,0.7s,mb5.0
KBS LR LR
comp=Z,276nm,20.0s,MS4.6
SPB4 Spitsbergen Ar 78.09 11 *e*P **P 04 21 53.9 +0.5**
DCN Croghan 79.00 37 *e*P **P 04 21 56.9 -1.9**
DMUB Kingscourt 79.06 37 *e*P **P 04 21 57.2 -2.0**
DLF Lyons Farm 79.44 37 *e*P **P 04 21 59.1 -2.1**

SEY Seymchan 80.53 333 *e*P **P 04 22 07.9 +1.0**
SEY pP 04 22 15.0 +0.1
SEY *e* 04 25 10.8
SEY *e*PPP PPP 04 26 57.4 -5.9
SEY *e*S S 04 32 03.1 -7.4
SEY *e* 04 32 15.4
SEY pmax pmax
comp=E,20nm,1.0s
SEY pmax pmax
comp=Z,20nm,1.0s,mb5.0
SEY pmax pmax
comp=N,10.0nm,0.7s
SEY MLR MLR
comp=Z,920nm,18.0s,MS5.2
SEY MLR MLR
comp=E,290nm,17.0s
PET Petropavlovsk 80.66 323 *e*P **P 04 22 07.4 -0.4**
PET *e*S S 04 32 09.6 -2.5
PET pmax pmax
comp=Z,208nm,14.5s
PET smax
comp=N,216nm,12.0s
PET MLR MLR
comp=Z,137nm,21.0s,MS4.3
ESK Eskdalemuir 80.71 35 *e*P **P 04 22 07.8 -0.2**
EMAZ Mazaricos 80.71 48 P **P 04 22 09.1 +0.8**
comp=Z,60nm,1.1s,mb5.4
EKA Eskdalemuir Ar 80.73 35 P **P 04 22 07.8 -0.3**
comp=Z,25nm,0.9s,mb5.1,baz=290,slow=5.6,SNR=35
EKA Eskdalemuir Ar 80.73 35 P **P 04 22 07.8 -0.3**
EKA pmax pmax
comp=Z,25nm,0.9s
STS Santiago 81.03 48 P **P 04 22 10.6 +0.7**
comp=Z,35nm,0.9s,mb5.3
EZAM Zamans 81.14 49 P **P 04 22 11.5 +1.0**
comp=Z,30nm,1.1s,mb5.1
ELOB Lobios 81.67 49 P **P 04 22 13.1 -0.2**
comp=Z,46nm,0.9s,mb5.4
EPON Pontenova 81.89 47 P **P 04 22 15.5 +1.1**
comp=Z,43nm,1.0s,mb5.3
EINC Incio 81.94 48 P **P 04 22 14.5 -0.2**
comp=Z,52nm,1.7s,mb5.2
EINC pP pP 04 22 21.8 -0.9
PTOM Tomar 82.06 51 *e*P **P 04 22 16.1 +0.7**
comp=Z,52nm,1.1s,mb5.4
PVRL Vila Real 82.09 49 *e*P **P 04 22 15.5 0.0**
comp=Z,59nm,1.5s,mb5.3
PVIS Viseu 82.12 50 *i* P **P 04 22 16.0 +0.3**
comp=Z,46nm,1.3s,mb5.2
ERUA La Rua 82.17 48 P **P 04 22 16.9 +1.1**
comp=Z,32nm,0.9s,mb5.2
ERUA pP pP 04 22 23.0 -1.0
ERUA pP pP 04 22 24.1 +0.1
MOE Montemor 82.43 52 *e*P **P 04 22 18.6 +1.3**
PTEO Sao Teotonio 82.43 53 *i* P **P 04 22 17.9 +0.6**
comp=Z,56nm,1.1s,mb5.4
MTE Manteigas 82.47 50 *i* P **P 04 22 18.0 +0.5**
comp=Z,65nm,1.2s,mb5.4
MTE Manteigas 82.47 50 *e*P **P 04 22 17.9 +0.4**
MA2 Magadan 82.52 330 *e*P **P 04 22 17.2 -0.1**
MA2 pmax pmax
comp=Z,19nm,1.0s,mb5.1
MA2 Magadan 82.52 330 *e*P **P 04 22 17.2 -0.1**
ECAL Calabor 82.59 48 P **P 04 22 17.7 -0.4**
comp=Z,25nm,1.3s,mb5.1
PBRG Braganca 82.63 49 *i* P **P 04 22 19.4 +1.1**
comp=Z,26nm,1.2s,mb5.1
EVO Evora 82.68 52⇑ *i* P **P 04 22 19.0 +0.4**
comp=Z,62nm,0.9s,mb5.3
EVO *e*R
comp=Z,310nm,20.0s
PCBR Castelo Branco 82.69 51 *i* P **P 04 22 19.1 +0.5**
comp=Z,45nm,1.2s,mb5.4
ROSF Rostrenen 82.91 42 *e*P **P 04 22 20.1 +0.5**
comp=Z,72nm,1.2s,mb5.3
PBEJ Beja 82.94 52 *i* P **P 04 22 20.6 +0.7**
comp=Z,22nm,1.0s,mb5.1
QUIF Quistinic 83.11 42 *e*P **P 04 22 20.5 -0.1**
comp=Z,47nm,1.3s,mb5.1
EARI Arriondas 83.25 47 P **P 04 22 21.5 +0.1**
comp=Z,20nm,0.9s,mb5.2
EBAD Badajoz 83.36 52 P **P 04 22 21.8 -0.2**
comp=Z,15nm,1.0s,mb5.0
EGRO El Granado 83.37 53 P **P 04 22 22.0 -0.2**
SGMF Saint Gilles 83.39 41 *e*P **P 04 22 22.7 +0.7**
TIXI Tiksi 83.87 345 *e*P **P 04 22 23.6 -0.4**
TIXI *e* pP 04 22 32.6 +0.5
TIXI *e*S S 04 32 47.3 +2.9
TIXI pmax pmax
comp=Z,247nm,1.1s,mb6.2
TIXI MLR MLR
comp=Z,2µm,20.0s,MS5.5
TIXI Tiksi 83.87 345 *e*P **P 04 22 23.4 -0.5**
comp=Z,64nm,1.4s,mb5.6
EMIN Mina Concepcio 83.91 52 P **P 04 22 24.8 -0.2**
comp=Z,24nm,0.9s,mb5.3
GRR Gorron 84.40 41 *e*P **P 04 22 28.3 +1.1**
comp=Z,172nm,1.1s,mb5.8
ELAN Lanestosa 84.49 46 P **P 04 22 27.4 -0.4**
comp=Z,41nm,1.1s,mb5.5
FLN La Foliniere 84.50 40 *e*P **P 04 22 28.9 +1.2**
comp=Z,204nm,1.0s,mb5.9
FLN *e*R
comp=Z,251nm,17.5s
LDF La Druitiere 84.79 41 *e*P **P 04 22 30.2 +1.1**
comp=Z,111nm,1.1s,mb5.6
ESPR Espera 84.81 53 P **P 04 22 29.5 0.0**
comp=Z,39nm,1.0s,mb5.5
GUD Guadarrama 84.85 49 P **P 04 22 30.6 +1.0**
comp=Z,27nm,1.0s,mb5.3
ELIJ Sierra de Lija 85.16 53 P **P 04 22 32.4 +1.2**
comp=Z,13nm,0.9s,mb5.0
EJIF Jimena Fronter 85.24 53 P **P 04 22 32.7 +1.1**
comp=Z,1.6nm,0.8s,mb4.2
ESDC Sonseca Array 85.31 50 P **P 04 22 32.2 +0.3**
comp=Z,14nm,0.9s,mb5.1,baz=304,slow=5.1,SNR=60
ESDC LR LR 05 00 11.4
comp=Z,148nm,20.4s,MS4.4,baz=295,slow=35
ESDC Sonseca Array 85.31 50 P **P 04 22 32.3 +0.4**
comp=Z,17nm,0.8s,mb5.2
ESLA Sonseca Array 85.31 50 *e*P **P 04 22 32.8 +0.9**
comp=Z,16nm,1.4s,mb5.0
ARCES ARCESS Array B 85.34 16 P **P 04 22 31.7 +0.3**
comp=Z,14nm,0.7s,mb5.2,baz=315,slow=2.2,SNR=27
ARCES LR LR 05 01 07.6
comp=Z,342nm,19.3s,MS4.8,baz=235,slow=36
ARCES ARCESS Array B 85.34 16 P **P 04 22 31.7 +0.3**
ARCES pmax pmax
comp=Z,14nm,0.7s
ARCES MLR MLR
comp=Z,342nm,19.3s
ARCES ARCESS Array B 85.34 16 P **P 04 22 31.7 +0.3**
ARCES LR LR 05 01 07.6
ARE0 ARCESS Array S 85.34 16 *e*P **P 04 22 31.9 +0.5**
EADA Adamuz 85.36 51 P **P 04 22 32.9 +0.7**
comp=Z,42nm,1.1s,mb5.5
EADA pP pP 04 22 41.4 +1.1
KONO Kongsberg 85.36 28 *e*P **P 04 22 32.1 +0.5**
comp=Z,30nm,0.8s,mb5.5
NB2 NORSAR Subarra 85.39 26 P **P 04 22 32.4 +0.6**
comp=Z,5.3nm,0.7s,mb4.8,baz=298,slow=4.8
NOA NORSAR Array B 85.39 26 P **P 04 22 32.0 +0.3**
comp=Z,11nm,0.8s,mb5.0,baz=299,slow=4.8,SNR=25
NOA LR LR 05 02 21.7
comp=Z,137nm,18.7s,MS4.4,baz=315,slow=37
NOA NORSAR Array B 85.39 26 P **P 04 22 32.0 +0.2**
NOA pmax pmax
comp=Z,11nm,0.9s
NOA MLR MLR
comp=Z,137nm,18.7s
MFF Saint Martin d 85.50 42 *e*P **P 04 22 33.7 +1.0**
comp=Z,72nm,1.2s,mb5.5
ELUQ Luque 85.79 52 P **P 04 22 35.2 +0.8**
comp=Z,9.3nm,0.8s,mb5.1
EALK Alkurruntz 85.82 46 P **P 04 22 34.6 +0.3**
comp=Z,45nm,1.2s,mb5.6
EBAN Banos Encina 85.94 51 P **P 04 22 35.8 +0.7**
comp=Z,26nm,0.9s,mb5.5
ELOJ Sierra Loja 86.01 52 P **P 04 22 36.4 +0.9**
comp=Z,26nm,0.9s,mb5.5
ETOR Torete 86.29 48 P **P 04 22 37.4 +0.7**
comp=Z,39nm,1.0s,mb5.6
ERON Agron 86.32 52 P **P 04 22 38.0 +1.0**
comp=Z,27nm,0.9s,mb5.5
ECOG Cogollos-Vega 86.41 52 P **P 04 22 38.4 +0.9**
comp=Z,27nm,1.0s,mb5.4
ETSF Etsaut 86.58 46 *e*P **P 04 22 39.0 +0.9**

	comp=Z,60nm,0.9s,mb5.5							
EQES	**Quesada**	**86.60**	**51**	P		**P**	**04 22 39.2**	**+0.9**
	comp=Z,21nm,1.0s,mb5.3							
LFF	**La Frestale**	**86.70**	**44**	*e*P		**P**	**04 22 38.8**	**+0.2**
	comp=Z,89nm,0.9s,mb5.7							
EVIA	**Vianos**	**86.73**	**50**	P		**P**	**04 22 40.6**	**+1.6**
	comp=Z,50nm,0.9s,mb5.8							
BAIF	**Baives**	**86.83**	**38**	*e*P		**P**	**04 22 39.3**	**+0.2**
	comp=Z,33nm,1.1s,mb5.2							
EHUE	**Huescar**	**86.95**	**51**	P		**P**	**04 22 41.3**	**+1.3**
	comp=Z,31nm,1.0s,mb5.5							
VIEF	**Viey**	**86.99**	**46**	*e*P		**P**	**04 22 41.7**	**+1.6**
RJF	**Les Rejaudoux**	**87.06**	**43**	*e*P		**P**	**04 22 40.4**	**0.0**
	comp=Z,93nm,1.0s,mb5.7							
RJF				*e*R				
	comp=Z,332nm,18.5s							
ESAC	**San Caprasio**	**87.08**	**47**	P		**P**	**04 22 41.2**	**+0.6**
	comp=Z,40nm,1.0s,mb5.6							
TCF	**Toulx Ste Croi**	**87.13**	**42**	*e*P		**P**	**04 22 40.5**	**-0.2**
	comp=Z,49nm,1.1s,mb5.3							
EPF	**Esparros**	**87.15**	**46**	*e*P		**P**	**04 22 41.2**	**+0.3**
	comp=Z,63nm,1.1s,mb5.5							
GIVF	**Givet**	**87.17**	**38**	*e*P		**P**	**04 22 41.1**	**+0.3**
	comp=Z,42nm,1.2s,mb5.2							
RESF	**Ens**	**87.23**	**46**	*e*P		**P**	**04 22 42.8**	**+1.5**
BGF	**Bois d'Agland**	**87.42**	**42**	*e*P		**P**	**04 22 41.7**	**-0.4**
	comp=Z,49nm,1.2s,mb5.3							
ETOB	**Tobarra**	**87.43**	**50**	P		**P**	**04 22 43.2**	**+0.8**
	comp=Z,14nm,0.8s,mb5.2							
WTSB	**Winterswijk**	**87.48**	**36**	*e*P		**P**	**04 22 42.9**	**+0.6**
	comp=Z,14nm,1.0s,mb5.1							
HGN	**Heimansgroeve**	**87.52**	**37**⇑	*e*P		**P**	**04 22 42.8**	**+0.3**
	comp=Z,11nm,1.1s,mb5.0							
CAF	**Calviac**	**87.57**	**43**	*e*P		**P**	**04 22 42.6**	**-0.3**
	comp=Z,34nm,1.3s,mb5.1							
EMOS	**Mosqueruela**	**87.58**	**48**	P		**P**	**04 22 43.9**	**+0.9**
	comp=Z,30nm,0.8s,mb5.6							
SSF	**Saint Saulge**	**87.63**	**41**	*e*P		**P**	**04 22 42.7**	**-0.4**
	comp=Z,38nm,1.1s,mb5.2							
AVF	**Avril sur Loir**	**87.65**	**41**	*e*P		**P**	**04 22 42.4**	**-0.8**
	comp=Z,16nm,1.0s,mb4.9							
MLS	**Moulis**	**87.69**	**45**	*e*P		**P**	**04 22 43.7**	**+0.2**
SALF	**Salau**	**87.83**	**46**	*e*P		**P**	**04 22 45.1**	**+0.9**
PYM	**Petit Puy Mans**	**87.85**	**42**	*e*P		**P**	**04 22 43.9**	**-0.3**
EMUR	**La Murta**	**87.94**	**51**	P		**P**	**04 22 45.7**	**+0.9**
	comp=Z,13nm,0.8s,mb5.2							
MEZF	**Maizieres J'vi**	**87.98**	**39**	*e*P		**P**	**04 22 44.6**	**-0.1**
	comp=Z,27nm,1.0s,mb5.1							
SMF	**Signal de Mont**	**88.02**	**41**	*e*P		**P**	**04 22 44.2**	**-0.7**
	comp=Z,24nm,1.3s,mb5.0							
WLF	**Walferdange**	**88.13**	**38**	*e*P		**P**	**04 22 45.3**	**-0.1**
PLDF	**La Plantade**	**88.15**	**42**	*e*P		**P**	**04 22 46.0**	**+0.4**
LBL	**Lubilhac**	**88.22**	**43**	*e*P		**P**	**04 22 46.2**	**+0.3**
EPOB	**Poblet**	**88.29**	**47**	P		**P**	**04 22 45.6**	**-0.9**
	comp=Z,13nm,1.0s,mb5.1							
MTLF	**Montolieu**	**88.30**	**45**	*e*P		**P**	**04 22 46.3**	**-0.1**
	comp=Z,30nm,1.1s,mb5.2							
EMIR	**Miracle**	**88.39**	**46**	P		**P**	**04 22 47.0**	**+0.2**
	comp=Z,20nm,1.1s,mb5.3							
BSEG	**Bad Segeberg**	**88.45**	**33**	*e*P		**P**	**04 22 47.3**	**+0.5**
BSEG					pmax	pmax		
	comp=Z,25nm,1.3s,mb5.3							
HAU	**Haudompre**	**88.98**	**39**	*e*P		**P**	**04 22 49.2**	**-0.3**
	comp=Z,21nm,1.0s,mb5.1							
HAU				*e*R				
	comp=Z,518nm,17.8s							
LASF	**Ste Croix**	**89.09**	**44**	*e*P		**P**	**04 22 50.4**	**+0.3**
	comp=Z,42nm,1.2s,mb5.3							
VIVF	**Saint-Julien-l**	**89.29**	**43**	*e*P		**P**	**04 22 51.0**	**-0.1**
	comp=Z,27nm,1.4s,mb5.1							
CDF	**Champ du Feu**	**89.35**	**39**	*e*P		**P**	**04 22 50.9**	**-0.4**
	comp=Z,18nm,1.1s,mb5.0							
HINF	**Hinteralfeld**	**89.36**	**39**	*e*P		**P**	**04 22 50.7**	**-0.7**
WLS	**Welschbruch**	**89.40**	**39**	*e*P		**P**	**04 22 48.3**	**-3.2**
CABF	**La Chapelle**	**89.43**	**41**	*e*P		**P**	**04 22 51.4**	**-0.3**
	comp=Z,35nm,1.3s,mb5.2							
CLZ	**Clausthal**	**89.50**	**35**	*e*P		**P**	**04 22 52.4**	**+0.5**
	comp=Z,23nm,1.1s,mb5.4							
MOF	**Molkenrain**	**89.52**	**39**	*e*P		**P**	**04 22 51.8**	**-0.3**
YAK	**Yakutsk**	**89.98**	**338**	*e*P		**P**	**04 22 53.8**	**-0.1**
YAK					pmax	pmax		
	comp=Z,13nm,0.8s,mb5.3							
YAK					pmax	pmax		
	comp=E,3.0nm,1.0s							
YAK	**Yakutsk**	**89.98**	**338**	*e*P		**P**	**04 22 54.7**	**+0.8**
BFO	**Black Forest**	**90.01**	**38**	*e*P		**P**	**04 22 54.2**	**-0.2**
BFO					pmax	pmax		
	comp=Z,8.0nm,1.2s,mb4.9							
BFO	**Black Forest**	**90.01**	**38**	*e*P		**P**	**04 22 54.2**	**-0.2**
	comp=Z,8.0nm,1.2s,mb4.9							
FELD	**Feldberg**	**90.03**	**39**	*e*P		**P**	**04 22 54.4**	**-0.1**
ORIF	**Oris-en-Rattie**	**90.04**	**42**	*e*P		**P**	**04 22 54.5**	**-0.1**
	comp=Z,11nm,1.0s,mb4.9							
ORIF				*e*R				
	comp=Z,391nm,19.2s							
SMRF	**Simiane la Rot**	**90.25**	**43**	*e*P		**P**	**04 22 55.9**	**+0.3**
	comp=Z,23nm,1.4s,mb5.0							
LPL	**La Plagne**	**90.32**	**41**	*e*P		**P**	**04 22 56.3**	**+0.4**
	comp=Z,10nm,0.9s,mb4.8							
LPG	**La Plagne**	**90.34**	**41**	*e*P		**P**	**04 22 56.6**	**+0.7**
	comp=Z,22nm,1.3s,mb5.0							
SPAK	**Spaichingen**	**90.39**	**39**	*e*P		**P**	**04 22 55.7**	**-0.4**
MBDF	**Montbardon**	**90.69**	**42**	*e*P		**P**	**04 22 57.7**	**+0.1**
	comp=Z,18nm,1.1s,mb5.0							
MOX	**Moxa**	**90.77**	**35**⇓	*i*P		**P**	**04 22 58.5**	**+0.7**
MOX				L			05 05 57.0	
MOX	**Moxa**	**90.77**	**35**	*e*P		**P**	**04 22 58.5**	**+0.7**
MOX					LR	LR		
	comp=Z,200nm,18.0s,MS4.6							
FINES	**FINESS Array B**	**90.96**	**22**	P		**P**	**04 22 56.9**	**-1.5**
	comp=Z,4.2nm,0.8s,mb4.8,baz=270,slow=1.9,SNR=10							
FINES					PP	PP	04 26 31.7	-5.5
	comp=Z,3.1nm,0.8s,baz=292,slow=7.5,SNR=5.4							
FINES					LR	LR	05 03 49.4	
	comp=Z,258nm,19.5s,MS4.7,baz=352,slow=36							
FINES	**FINESS Array B**	**90.96**	**22**	P		**P**	**04 22 56.9**	**-1.5**
FINES							04 26 31.7	
FINES					pmax	pmax		
	comp=Z,4.0nm,0.8s							
FINES					pmax	pmax		
	comp=Z,3.0nm,0.8s							
FINES					MLR	MLR		
	comp=Z,258nm,19.5s							
FINES	**FINESS Array B**	**90.96**	**22**	P		**P**	**04 22 56.9**	**-1.5**
FINES					PP	PP	04 26 31.7	-5.5
FINES					LR	LR	05 03 49.4	
GRA1	**Grafenberg Arr**	**91.03**	**36**	*e*P		**P**	**04 23 00.0**	**+1.0**
	comp=Z,13nm,1.0s,mb5.2							
GRF	**Grafenberg Arr**	**91.03**	**36**	*e*P		**P**	**04 23 00.0**	**+1.0**
GRF					pmax	pmax		
	comp=Z,13nm,1.0s,mb5.2							
FRF	**La Foret Royal**	**91.13**	**43**	*e*P		**P**	**04 22 59.2**	**-0.4**
LMR	**La Mourre**	**91.14**	**43**	*e*P		**P**	**04 22 59.3**	**-0.4**
	comp=Z,28nm,1.1s,mb5.2							
CLL	**Collm**	**91.19**	**34**	P		**P**	**04 22 59.0**	**-0.7**
CLL	**Collm**	**91.19**	**34**	*e*P		**P**	**04 22 59.0**	**-0.7**
CALN	**Calern**	**91.20**	**43**	*e*P		**P**	**04 23 00.0**	**0.0**
MVIF	**Mont Vial**	**91.31**	**43**	*e*P		**P**	**04 22 59.9**	**-0.5**
AURF	**Auriere**	**91.43**	**43**	*e*P		**P**	**04 23 00.4**	**-0.6**
NKC	**Novy Kostel**	**91.44**	**35**	*e*P		**P**	**04 23 01.5**	**+0.6**
SBF	**Sospel**	**91.51**	**43**	*e*P		**P**	**04 23 00.9**	**-0.5**
	comp=Z,40nm,1.3s,mb5.3							
REVF	**Revere**	**91.52**	**43**	*e*P		**P**	**04 23 01.2**	**-0.2**
SAOF	**Saorge**	**91.53**	**43**	*e*P		**P**	**04 23 01.0**	**-0.5**
DAVOX	**Davos**	**91.67**	**39**	P		**P**	**04 23 02.5**	**+0.5**
	comp=Z,3.0nm,0.9s,mb4.6,baz=310,slow=15,SNR=3.7							
BRG	**Berggiesshubel**	**91.92**	**34**	*e*P		**P**	**04 23 03.7**	**+0.6**
BRG					pmax	pmax		
	comp=Z,12nm,1.4s,mb5.0							
BRG					MLR	MLR		
	comp=N,220nm,15.4s,MS4.8							
BRG					MLR	MLR		
	comp=E,190nm,15.4s,MS4.8							
BRG					MLR	MLR		
	comp=Z,270nm,15.4s,MS4.8							
BRG	**Berggiesshubel**	**91.92**	**34**	*e*P		**P**	**04 23 03.7**	**+0.6**
	comp=Z,12nm,1.4s,mb5.0							
BRG					LR	LR		
	comp=Z,270nm,15.4s,MS4.8							
YSS	**Yuzh-Sakhalins**	**92.46**	**321**	P		**P**	**04 23 03.0**	**-2.7**
YSS	**Yuzh-Sakhalins**	**92.46**	**321**	*e*P		**P**	**04 23 05.9**	**+0.2**
KHC	**Kasperske Hory**	**92.64**	**36**	*e*P		**P**	**04 23 07.4**	**+1.0**
PRU	**Pruhonice**	**92.72**	**35**	*e*P		**P**	**04 23 06.9**	**+0.1**
	comp=Z,12nm,1.0s,mb5.3							
PRU	**Pruhonice**	**92.72**	**35**	*e*P		**P**	**04 23 06.9**	**+0.1**
PRU					pmax	pmax		
	comp=Z,12nm,1.0s,mb5.3							
GEC2	**GERESS Array S**	**92.86**	**36**	*e*P		**P**	**04 23 07.9**	**+0.5**
GEC2					pmax	pmax		
	comp=Z,13nm,1.5s,mb5.1							
GEC2	**GERESS Array S**	**92.86**	**36**	*e*P		**P**	**04 23 07.9**	**+0.5**
	comp=Z,13nm,1.5s,mb5.1							
GERES	**GERESS Array B**	**92.86**	**36**	P		**P**	**04 23 07.2**	**-0.3**
	comp=Z,2.2nm,0.8s,mb4.6,baz=315,slow=3.8,SNR=19							
GERES					PP	PP	04 26 45.8	-6.8
	comp=Z,0.6nm,0.8s,baz=288,slow=8.4,SNR=5.0							
GERES	**GERESS Array B**	**92.86**	**36**	P		**P**	**04 23 07.2**	**-0.2**
GERES							04 26 45.8	
GERES					pmax	pmax		
	comp=Z,2.0nm,0.8s							
GERES					pmax	pmax		
	comp=Z,1.0nm,0.8s							
PGF	**Pioggiola**	**93.13**	**43**	*e*P		**P**	**04 23 08.4**	**-0.4**
	comp=Z,13nm,1.0s,mb5.0							
UPC	**Upice**	**93.23**	**34**	*e*P		**P**	**04 23 09.8**	**+0.7**
DPC	**Dobruska-Polom**	**93.48**	**34**	*e*P		**P**	**04 23 11.2**	**+0.9**
ROBS	**Robic**	**94.11**	**39**	*e*P		**P**	**04 23 13.3**	**0.0**
MORC	**Moravsky Berou**	**94.45**	**34**	*e*P		**P**	**04 23 14.9**	**+0.2**
	comp=Z,12nm,1.1s,mb5.2							
CEY	**Cerknica**	**94.92**	**39**	*e*P		**P**	**04 23 17.4**	**+0.4**
ZST	**Bratislava**	**95.11**	**36**	*i* P		**P**	**04 23 19.4**	**+1.6**
DBIC	**Dimbokro**	**95.59**	**81**	P		**P**	**04 23 20.1**	**-0.7**
	comp=Z,6.9nm,0.9s,mb5.1,baz=247,slow=14,SNR=4.0							
DBIC	**Dimbokro**	**95.59**	**81**	P		**P**	**04 23 20.2**	**-0.6**
DBIC					pmax	pmax		
	comp=Z,7.0nm,0.9s							
VYHS	**Vyhne**	**95.89**	**35**	*i* P		**P**	**04 23 22.0**	**+0.6**
VYHS				*e*		pP	04 23 31.1	+1.6
SRO	**Srobarova**	**96.00**	**35**	*e*P		**P**	**04 23 22.9**	**+1.0**
SRO				*e*		pP	04 23 32.3	+2.2
PSZ	**Piszkesteto**	**96.80**	**35**⇑	*e*P		**P**	**04 23 26.8**	**+1.3**
PSZ	**Piszkesteto**	**96.80**	**35**	*e*P		**P**	**04 23 26.6**	**+1.1**
	comp=Z,30nm,1.0s,mb5.7							
CRVS	**Cervenica-Dubn**	**97.04**	**33**	*e*P		**P**	**04 23 27.2**	**+0.6**
CRVS				*e*		pP	04 23 34.8	+0.1
CRVS				*e*pP		pP	04 23 42.8	+8.1
KWP	**Kalwaria**	**97.23**	**32**	*e*P		**P**	**04 23 27.2**	**-0.2**
BOD	**Bodaibo**	**98.38**	**341**	*e*P		**P**	**04 23 31.3**	**-1.1**
OBN	**Obninsk**	**99.37**	**22**	*de*P		**P**	**04 23 36.4**	**-0.5**
OBN				*e*			04 27 50.1	
OBN					pmax	pmax		
	comp=Z,11nm,0.6s,mb5.6							
OBN					MLR	MLR		
	comp=Z,300nm,20.0s,MS4.8							
OBN	**Obninsk**	**99.37**	**22**	*e*Pr			04 23 36.4	
AKASG	**Malin Array Be**	**99.65**	**29**	P		**P**	**04 23 38.5**	**+0.2**
	comp=Z,3.6nm,0.8s,mb4.9,baz=291,slow=3.8,SNR=15							
MDJ	**Mudanjiang**	**101.35**	**325**	P		P	04 23 46.8	+0.6
MDJ					AMB	AMB		
	comp=Z,15nm,2.3s							
MLR	**Muntele Rosu**	**101.56**	**34**	P		P	04 23 47.7	+0.6
	comp=Z,3.0nm,1.0s,baz=258,slow=5.1,SNR=4.3							
MLR	**Muntele Rosu**	**101.56**	**34**	P		P	04 23 47.7	+0.6
MLR					pmax	pmax		
	comp=Z,3.0nm,1.0s							
ZAL	**Zalesovo**	**107.94**	**355**	PP		PP	04 28 42.4	-4.9
	comp=Z,1.4nm,0.7s,baz=27,slow=9.1,SNR=7.9							
ZRNK	**Zerenda**	**108.89**	**5**	*e*PKPdf			04 28 23.6	
BVAR	**Borovoye Array**	**108.93**	**4**	PP		PP	04 28 46.2	-8.9
	comp=Z,3.9nm,1.2s,slow=4.3,SNR=4.6							
SONM	**Songino Array**	**109.28**	**340**	PP		PP	04 28 55.7	-2.1
	comp=Z,0.5nm,0.3s,baz=45,slow=4.1,SNR=5.5							
BRTR	**Keskin Array B**	**109.64**	**34**	PKiKP			04 28 25.9	
	comp=Z,1.1nm,0.8s,baz=90,slow=1.2,SNR=5.6							
KIV	**Kislovodsk**	**110.69**	**26**	PKIKP		PKPdf	04 28 27.4	-3.4
KIV				*e*			04 29 02.8	
KIV					pmax	pmax		
	comp=Z,3.0nm,0.6s							
BJI	**Beijing**	**111.62**	**329**	PKP		PKPdf	04 28 28.4	-4.3
BJI					LR	LR		
	comp=Z,168nm,21.2s,MS4.6							
MKAR	**Makanchi Array**	**115.23**	**356**	PKP		PKPdf	04 28 34.7	-4.9
	comp=Z,1.1nm,0.7s,baz=27,slow=2.7,SNR=9.0							
MKAR	**Makanchi Array**	**115.23**	**356**	PKIKP		PKPdf	04 28 34.7	-4.9
MKAR					pmax	pmax		
	comp=Z,1.0nm,0.7s							
MKAR	**Makanchi Array**	**115.23**	**356**	PKP		PKPdf	04 28 34.7	-4.9
SSE	**Sheshan**	**115.26**	**319**	PKP		PKPdf	04 28 37.3	-2.8
SSE					LR	LR		
	comp=N,83nm,22.9s,MS4.5							
SSE					LR	LR		
	comp=E,116nm,22.7s,MS4.5							
SSE					LR	LR		
	comp=Z,84nm,21.4s,MS4.3							
NJ2	**Nanjing**	**116.03**	**321**	*e*PKP		PKPdf	04 28 35.5	-6.1
NJ2					PP	PP	04 29 45.0	-1.4
NJ2					PP	PP		
	comp=Z,20nm,4.0s							
NJ2					LR	LR		
	comp=Z,330nm,24.9s,MS4.8							
STKA	**Stephens Creek**	**120.67**	**243**	PKP		PKPdf	04 28 46.0	-4.6
	comp=Z,1.6nm,0.7s,baz=107,slow=0.5,SNR=5.3							
STKA	**Stephens Creek**	**120.67**	**243**	PKP		PKPdf	04 28 46.0	-4.6
THR	**Tehran**	**120.93**	**24**	PKP		PKPdf	04 28 48.4	-2.7
	comp=Z,1.0nm,0.7s,baz=290,slow=3.0,SNR=4.8							
THR	**Tehran**	**120.93**	**24**	PKIKP		PKPdf	04 28 48.4	-2.6
THR					pmax	pmax		
	comp=Z,1.0nm,0.7s							
WRA	**Warramunga Arr**	**126.03**	**258**	PKP		PKPdf	04 28 57.1	-4.1
	comp=Z,3.0nm,0.8s,baz=84,slow=2.3,SNR=18							
WRA	**Warramunga Arr**	**126.03**	**258**	PKIKP		PKPdf	04 28 57.1	-4.1
WRA					pmax	pmax		
	comp=Z,3.0nm,0.8s							
ASAR	**Alice Springs**	**126.88**	**254**	PKhKP			04 28 50.2	
	comp=Z,0.6nm,0.8s,baz=80,slow=3.0,SNR=4.9							
ASAR					PKP	PKPdf	04 28 58.5	-4.3
	comp=Z,2.5nm,0.8s,baz=94,slow=2.0,SNR=17							
MAW	**Mawson**	**129.70**	**173**	PKP		PKPdf	04 29 03.5	-3.5
	comp=Z,5.2nm,1.1s,baz=240,slow=11,SNR=3.2							
MAW	**Mawson**	**129.70**	**173**	PKIKP		PKPdf	04 29 03.5	-3.5
MAW					pmax	pmax		
	comp=Z,5.0nm,1.1s							
CMAR	**Chiang Mai Arr**	**137.77**	**328**	PKP		PKPdf	04 29 21.1	-2.3
	comp=Z,1.3nm,0.4s,baz=23,slow=1.0,SNR=6.3							
CMAR	**Chiang Mai Arr**	**137.77**	**328**	PKIKP		PKPdf	04 29 21.1	-2.3
CMAR					pmax	pmax		
	comp=Z,1.0nm,0.4s							
HYB	**Hyderabad**	**144.67**	**358**⇑	*i*PKP		PKPdf	04 29 30.0	-5.6
	comp=Z,62nm,0.8s							
HYB				*e*			04 29 39.0	
HYB	**Hyderabad**	**144.67**	**358**⇑	*e*P		PKPbc	04 29 30.0	-0.8

*TAP **21** 04:18:01.5,23.96N×121.16E,h21km±1km,ML3.9*
TAP Felt I J at Hehuanshan, I J at Ryuetan, I J at Tachien, I J at Shilin, I J at Hualien, II J at Mingjian, I J at Dacheng.
ISC 21 04:18:01.6±0.2,23.96N±0.01×121.15E±0.02,h22km±3km, n54,σ0°84/99,13C-11D,Taiwan

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
WHF	**Hehuan Shan**	**0.21**	**31**	*i*P		**Pb**	**04 18 07.0**	**-0.1**
WHF					S	**Sb**	**04 18 11.2**	**+0.4**
SMLT	**Sun Moon Lake**	**0.24**	**251**	*i*P		**Pb**	**04 18 06.7**	**-0.9**
SMLT					S	**Sb**	**04 18 11.7**	**+0.1**
TYC	**Yuchr**	**0.27**	**257**	*i*P		**Pb**	**04 18 07.1**	**-0.9**
TYC					S	**Sb**	**04 18 11.7**	**-0.7**
TWT	**Tachien**	**0.29**	**5**	*i*P		**Pb**	**04 18 07.4**	**-0.8**
TWT					S	**Sb**	**04 18 12.2**	**-0.5**
ESL	**Shilin**	**0.30**	**120**	*i*P		**Pb**	**04 18 08.1**	**-0.3**
ESL					S	**Sb**	**04 18 13.3**	**+0.3**
HWA	**Hwalien**	**0.42**	**88**	*i*P		**Pb**	**04 18 10.2**	**0.0**
HWA					S	**Sb**	**04 18 17.6**	**+1.4**
TWD	**Chiawan**	**0.42**	**74**	*i*P		**Pb**	**04 18 09.7**	**-0.7**
TWD					S	**Sb**	**04 18 16.8**	**+0.4**
WNT	**Mingjian**	**0.43**	**259**	*i*P		**Pb**	**04 18 10.3**	**-0.3**
WNT					S	**Sb**	**04 18 17.4**	**+0.8**
TCU	**Taichung**	**0.47**	**293**	*i*P		**Pb**	**04 18 10.9**	**-0.2**
TCU					S	**Sb**	**04 18 18.0**	**+0.4**
EHY	**Hungye**	**0.48**	**161**	*i* P		**Pb**	**04 18 10.9**	**-0.5**
EHY					S	**Sb**	**04 18 17.7**	**-0.4**
YUS	**Yu-Shan**	**0.51**	**201**	*i*P		**Pb**	**04 18 11.4**	**-0.3**
YUS					S	**Sb**	**04 18 19.3**	**+0.6**
TWQ1	**Liyutan**	**0.51**	**318**	*i*P		**Pb**	**04 18 11.7**	**-0.1**
TWQ1					S	**Sb**	**04 18 19.9**	**+1.0**
NNS	**Nan Shan**	**0.52**	**23**	*i*P		**Pb**	**04 18 11.2**	**-0.8**
NNS					S	**Sb**	**04 18 18.1**	**-0.9**
ALS	**Alishan**	**0.55**	**215**	*i*P		**Pb**	**04 18 12.1**	**-0.4**
ALS					S	**Sb**	**04 18 20.6**	**+0.7**
CHN5	**Tsauling**	**0.56**	**230**	*i*P		**Pb**	**04 18 12.2**	**-0.5**
CHN5					S	**Sb**	**04 18 20.8**	**+0.5**
NSY	**Sanyi**	**0.57**	**322**	*i*P		**Pb**	**04 18 13.2**	**+0.3**
NSY					S	**Sb**	**04 18 22.2**	**+1.7**
WGK	**Gukeng**	**0.60**	**243**	*i*P		**Pb**	**04 18 13.0**	**-0.4**
WGK					S	**Sb**	**04 18 22.3**	**+0.8**
TWF1	**Yuli**	**0.62**	**167**	*i*P		**Pb**	**04 18 13.2**	**-0.5**
TWF1					S	**Sb**	**04 18 21.7**	**-0.3**
NSTT	**Nanjuang**	**0.68**	**349**	*i*P		**Pb**	**04 18 14.4**	**-0.2**
NSTT					S	**Sb**	**04 18 23.5**	**0.0**
ENA	**Nanau**	**0.71**	**49**	*i*P		**Pb**	**04 18 14.4**	**-0.7**
ENA					S	**Sb**	**04 18 24.2**	**-0.4**
NSK	**Sanguang**	**0.73**	**15**⇓	*i*P		**Pb**	**04 18 14.9**	**-0.6**
NSK					S	**Sb**	**04 18 24.2**	**-0.9**
CHN2	**Minshiung**	**0.75**	**235**	*e*P		**Pb**	**04 18 15.4**	**-0.5**
CHN2					S	**Sb**	**04 18 26.6**	**+0.9**
ENTT	**Nioudou**	**0.77**	**29**	⇓P		**Pb**	**04 18 15.7**	**-0.5**
ENTT					S	**Sb**	**04 18 25.8**	**-0.5**
ELDTW	**Lidau**	**0.78**	**189**	⇓P		**Pb**	**04 18 15.8**	**-0.5**
ELDTW					S	**Sb**	**04 18 26.6**	**+0.1**
WTCT	**Ta-ch'eng**	**0.80**	**263**	*e*P		**Pb**	**04 18 15.7**	**-1.0**
WTCT					S	**Sb**	**04 18 27.4**	**+0.3**
CHY	**Chiayi**	**0.81**	**235**	*e*P		**Pb**	**04 18 16.1**	**-0.8**
CHY					S	**Sb**	**04 18 27.7**	**+0.4**
HSN	**Hsinchu**	**0.85**	**349**	*e*P		**Pb**	**04 18 18.8**	**+1.2**
WTP	**Ta-pu**	**0.87**	**215**	P		**Pb**	**04 18 17.2**	**-0.6**
WTP					S	**Sb**	**04 18 29.6**	**+0.6**
STYT	**Tauyuan**	**0.88**	**204**	⇑P		**Pb**	**04 18 17.5**	**-0.5**
STYT					S	**Sb**	**04 18 29.2**	**0.0**
CHKT	**Chengkung**	**0.88**	**167**	*e*P		**Pb**	**04 18 17.1**	**-1.0**
CHKT					S	**Sb**	**04 18 30.9**	**+1.4**
TWE	**Neicheng**	**0.89**	**32**	P		**Pb**	**04 18 18.0**	**-0.2**
TWE					S	**Sb**	**04 18 29.9**	**+0.3**
TWC	**Suao**	**0.91**	**45**	P		**Pb**	**04 18 17.9**	**-0.6**
TWC					S	**Sb**	**04 18 30.3**	**+0.2**
WSF	**Szhu**	**0.91**	**249**	P		**Pb**	**04 18 17.6**	**-0.9**
WSF					S	**Sb**	**04 18 30.3**	**+0.1**
TWK	**Hsinying**	**0.92**	**221**	P		**Pb**	**04 18 17.9**	**-0.8**
TWK					S	**Sb**	**04 18 31.4**	**+0.8**
CHN1	**Nanshi**	**0.96**	**216**	P		**Pb**	**04 18 18.7**	**-0.7**
CHN1					S	**Sb**	**04 18 32.6**	**+0.9**
SGST	**Jiashian**	**1.02**	**211**	*e*P		**Pb**	**04 18 20.0**	**-0.4**
SGST					S	**Sb**	**04 18 34.3**	**+0.9**
CHN8	**Yiju**	**1.06**	**235**	*e*P		**Pb**	**04 18 20.2**	**-0.9**
CHN8					S	**Sb**	**04 18 35.4**	**+0.9**
TAP1	**Taipei**	**1.12**	**18**	*e*P		**Pn**	**04 18 22.9**	**+0.8**
TAP1					S	**Sb**	**04 18 37.9**	**+1.5**
CHN3	**Shinhua**	**1.14**	**219**	*e*P		**Pn**	**04 18 22.8**	**+0.4**
TWG	**Pinlang**	**1.14**	**184**	*e*P		**Pn**	**04 18 21.4**	**-0.9**
TWS1	**Kuangyinshan**	**1.16**	**12**	*e*P		**Pn**	**04 18 23.6**	**+1.0**
TWS1					S	**Sb**	**04 18 40.0**	**+2.7**
SCLT	**Jiali**	**1.18**	**228**	*e*P		**Pn**	**04 18 22.6**	**-0.3**
SCLT					S	**Sb**	**04 18 39.8**	**+1.9**
NWF	**Wu-fen Shan**	**1.24**	**27**	*e*P		**Pn**	**04 18 24.6**	**+0.8**
NWF					S	**Sb**	**04 18 41.0**	**+1.2**
**SS

YBH	**Yreka Blue Hor**	**93.73**	**49**	P	**P**	**04 39 33.8**	**+1.5**
	4.1nm,1.0s,mb4.4,baz=190,slow=2.2,SNR=6.8						
NVAR	**Mina Array Bea**	**96.96**	**52**	P	**P**	**04 39 48.8**	**+1.7**
	1.4nm,0.7s,mb4.3,baz=252,slow=4.4,SNR=14						
NEW	**Newport**	**97.89**	**42**	P	**P**	**04 39 52.5**	**+1.4**
	1.4nm,0.7s,mb4.4,baz=331,slow=15,SNR=4.5						
YKA	**Yellowknife Ar**	**98.63**	**28**	P	**P**	**04 39 54.1**	**+0.1**
	0.1nm,0.5s,mb3.4,baz=273,slow=5.2,SNR=4.3						
PDAR	**Pinedale Array**	**103.48**	**47**	Pdiff	Pdif	04 40 17.1	+0.9
	0.8nm,0.9s,baz=239,slow=2.7,SNR=5.9						
FRB	**Frobisher Bay**	**116.36**	**17**	PKP	PKPdf	04 44 55.7	-0.7
	6.6nm,1.0s,baz=37,slow=12,SNR=5.5						
GERES	**GERESS Array B**	**121.48**	**326**	PKP	PKPdf	04 45 07.0	+0.3
	0.2nm,0.3s,baz=72,slow=4.2,SNR=6.1						
SADO	**Sadowa**	**123.83**	**38**	PKP	PKPdf	04 45 10.4	-0.9
	4.6nm,1.2s,baz=333,slow=4.5,SNR=3.8						
EKA	**Eskdalemuir Ar**	**124.81**	**340**	PKP	PKPdf	04 45 14.0	+1.1
	0.6nm,0.7s,baz=27,slow=3.2,SNR=4.2						
BDFB	**Brasilia**	**154.28**	**145**	PKPbc	PKPdf	04 46 15.1	+10
	2.4nm,0.5s,baz=248,slow=8.7,SNR=7.0						

NNC 21 04:58:50.6±2.9, 37.92N×70.52E, mpv3.5, 1C-1D, Error ellipse: s-maj=35.1km s-min=19.1km az=153.0, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KK31	**Karatay Array**	**5.17**	**360**	P	Pn	05 00 09.3	-1.8
	2.5nm,0.4s,baz=178,slow=13,SNR=17						
KK31				⇑S	Sn	05 01 10.9	-1.6
	1.7nm,0.2s,baz=171,slow=21,SNR=12						
AB31	**Akbulak array**	**13.66**	**329**	⇓P	P	05 02 05.5	-2.4
	0.2nm,0.3s						

*IDC **21** 05:08:27.3±16.0, 24.32S×179.60E, h646km±214km, mb3.0/5, mb1 3.2/5, mb1mx3.1/12, Error ellipse: s-maj=108.0km s-min=77.2km az=147.0*

ISC 21 05:08:26.6±1.9, 24.2S±0.9×179.5E±0.4, h650km, n5, σ0s26/5, mb3.7/5, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**31.04**	**271**	P	**P**	**05 13 56.4**	**+0.1**
	5.5nm,0.5s,mb4.4,baz=92,slow=10,SNR=12						
STKA	**Stephens Creek**	**34.20**	**248**	P	**P**	**05 14 22.6**	**+0.1**
	0.9nm,0.7s,mb3.4,baz=102,slow=14,SNR=3.6						
ASAR	**Alice Springs**	**41.55**	**261**	P	**P**	**05 15 21.7**	**-0.4**
	0.6nm,0.5s,mb3.3,baz=90,slow=7.4,SNR=6.2						
WRA	**Warramunga Arr**	**41.95**	**267**	P	**P**	**05 15 25.3**	**+0.1**
	2.6nm,0.7s,mb3.8,baz=106,slow=8.1,SNR=11						
TXAR	**Lajitas Array**	**90.96**	**58**	P	**P**	**05 20 24.7**	**0.0**
	0.7nm,1.0s,mb3.4,baz=225,slow=5.1,SNR=3.9						

*CASC **21** 05:56:19.6±2.3, 13.33N×90.06W, h55km±31km, MD3.8, ML4.1*
*IDC **21** 05:56:24.4±5.0, 13.71N×89.33W, h94km±87km, mb3.1/3, mb1 3.5/4, mb1mx3.3/17, ML3.5/1, Error ellipse: s-maj=157.0km s-min=37.5km az=34.0*

ISC 21 05:56:19.3±0.8, 13.25N±0.08×90.05W±0.04, h53km±12km, n26, σ0s95/43, mb3.7/2, 12C, Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CUSS	**Cusmapa**	**0.66**	**9**	⇑*eP*	**P**	**05 56 32.2**	**-0.5**
SBLS	**San Blas**	**0.72**	**36**	⇑*iP*	**P**	**05 56 33.6**	**+0.2**
SBLS				*eS*	**S**	**05 56 47.1**	**+3.2**
SNJE	**San Jose**	**0.75**	**35**	⇑*iP*	**P**	**05 56 34.1**	**+0.2**
SNJE				*eS*	**S**	**05 56 43.0**	**-1.7**
RTR	**El Retiro**	**0.75**	**32**	⇑*iP*	**P**	**05 56 34.3**	**+0.3**
BOQS	**Boqueron**	**0.89**	**57**	⇑*eP*	**P**	**05 56 35.9**	**+0.1**
BOQS				*eS*	**S**	**05 56 49.1**	**+1.0**
SNET	**Serv Nac Est T**	**0.91**	**62**	⇑*eP*	**P**	**05 56 35.8**	**-0.2**
SNET				*eS*	**S**	**05 56 46.5**	**-2.0**
SNET				*i*		05 56 50.7	
	comp=Z,3μm,0.4s						
PICS	**Picacho**	**0.92**	**58**	*eP*	**P**	**05 56 36.2**	**+0.1**
RBDL	**Robledal**	**0.93**	**23**	⇑*iP*	**P**	**05 56 36.6**	**+0.4**
RBDL				*eS*	**S**	**05 56 49.7**	**+0.7**
IXG	**Ixpaco**	**0.99**	**337**	*eP*	**P**	**05 56 36.5**	**-0.7**
IXG				*eS*	**S**	**05 56 49.8**	**-0.8**
IXG				AML	AML	05 56 51.0	
	comp=N,31μm,0.4s						
LFRS	**El Faro**	**1.03**	**69**	⇑*eP*	**P**	**05 56 37.5**	**-0.3**
LBRS	**Las Brisas**	**1.09**	**64**	⇑*eP*	**P**	**05 56 38.7**	**0.0**
LCBS	**La Ceiba**	**1.12**	**69**	*eP*	**P**	**05 56 38.9**	**-0.1**
LCBS				*eS*	**S**	**05 56 52.8**	**-0.8**
SNVI	**San Vicente**	**1.23**	**73**	⇑*eP*	**P**	**05 56 40.6**	**0.0**
SNVI				*eS*	**S**	**05 56 57.3**	**+0.9**
SNVI				*eS*	**S**	**05 56 58.0**	**+1.5**
PCG	**Pacaya**	**1.25**	**335**	*eP*	**P**	**05 56 40.7**	**-0.2**
PCG				*eS*	**S**	**05 56 57.6**	**+0.7**
MTO2	**Montecristo 2**	**1.32**	**30**	⇑*eP*	**P**	**05 56 41.9**	**0.0**
MTO2				*eS*	**S**	**05 56 56.6**	**-2.1**
GCG	**Guatemala City**	**1.41**	**341**	*eP*	**P**	**05 56 44.5**	**+1.4**
GCG				*eS*	**S**	**05 57 02.4**	**+1.7**
GCG				AML	AML	05 57 05.5	
	comp=N,2μm,0.5s						
FUG	**Fuego 3**	**1.41**	**327**	*eP*	**P**	**05 56 42.2**	**-1.0**
VSM	**San Miguel**	**1.74**	**84**	*eP*	**P**	**05 56 48.5**	**+0.8**
VSM				*eS*	**S**	**05 57 11.9**	**+3.1**
BLLM	**Bellamira**	**1.78**	**84**	⇑*eP*	**P**	**05 56 48.9**	**+0.7**
BLLM				*eS*	**S**	**05 57 08.6**	**-1.1**
CAHU	**Cacacuatique**	**1.86**	**74**	*eP*	**P**	**05 56 49.4**	**-0.1**
JAT	**Jato**	**1.87**	**305**	*eP*	**P**	**05 56 48.8**	**-0.7**
JAT				*eS*	**S**	**05 57 12.0**	**+0.1**
JAT				AML	AML	05 57 18.9	
	comp=E,2μm,0.2s						
CNCH	**Conchagua**	**2.16**	**89**	*eP*	**P**	**05 56 53.9**	**+0.3**
CNCH				*eS*	**S**	**05 57 19.3**	**+0.1**
JTS	**JuntasAbangare**	**5.80**	**120**	P	**P**	**05 57 44.4**	**-0.3**
	comp=E,1.6nm,0.3s,baz=306,slow=19,SNR=6.5						
JTS				S	**S**	**05 58 45.0**	**-5.8**
	comp=E,0.6nm,0.3s,baz=17,slow=19,SNR=1.5						
TXAR	**Lajitas Array**	**20.39**	**324**	P	**P**	**06 00 54.0**	**-0.3**
	comp=E,0.4nm,0.5s,baz=148,slow=11,SNR=7.6						
NVAR	**Mina Array Bea**	**35.45**	**320**	P	**P**	**06 03 13.1**	**+0.6**
	comp=E,3.0nm,1.0s,mb4.2,baz=124,slow=9.3,SNR=12						
YKA	**Yellowknife Ar**	**52.20**	**346**	P	**P**	**06 05 23.2**	**-3.4**
	comp=E,0.1nm,0.4s,mb3.1,baz=149,slow=7.7,SNR=4.3						

*THE **21** 05:57:58.3, 37.71N×20.64E, h10km, ML3.4*
*NEIC **21** 05:57:59.9, 37.88N×20.72E, h5km, MD3.5(ATH), After ATH.*

ATH 21 05:57:59.9, 37.88N×20.72E, h5km, MD3.5/6, 2C, Ionian Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VLS	**Valsamata**	**0.31**	**341**	⇑*iPB*	Pg	05 58 06.0	-0.2
RLS	**Riolos of Patr**	**0.62**	**73**	*ePG*	Pg	05 58 11.6	-0.6
RLS				*eSB*	Sb	05 58 21.1	-0.4
ITM	**Ithomi**	**1.19**	**126**	⇑*iPB*	Pb	05 58 22.5	0.0
EVR	**Evrytania**	**1.34**	**39**	*ePB*	Pb	05 58 25.6	+0.4
IGT	**Igoumenitsa**	**1.68**	**350**	*ePb*	Pb	05 58 31.3	+0.4
IGT				*eSb*	Sb	05 58 55.1	+2.8
AGG	**Agios Georgios**	**1.70**	**47**	*ePb*	Pb	05 58 30.8	-0.5
	comp=Z,3.5nm,0.6s						
AGG				*eSb*	Sb	05 58 56.4	+3.4
MEV	**Metsovon**	**1.94**	**12**	*ePn*	Pn	05 58 33.5	-0.4
KEK	**Kerkira**	**1.97**	**339**	*ePN*	Pb	05 58 37.6	+1.7
NSAL	**Nisos Salamina**	**2.17**	**88**	*ePG*	Pg	05 58 40.0	-3.2
AOS	**Alonnisos**	**2.79**	**62**	*ePn*	Pn	05 58 45.6	-0.5

*MAN **21** 06:10:18.8, 9.80N×126.74E, h31km, mb4.8, ML3.7, MS3.7*
*IDC **21** 06:10:23.9±4.0, 9.75N×126.39E, h67km±36km, mb4.1/17, mb1 4.2/17, mb1mx4.1/25, ML5.0/1, MS3.8/3, Ms1 3.8/3, ms1mx3.0/29, Error ellipse: s-maj=32.1km s-min=11.3km az=70.0*
*BJI **21** 06:10:24.6, 10.04N×126.06E, h57km, mB4.6, mb4.6, Ms4.3, Msz4.1*
*NEIC **21** 06:10:25.2±1.8, 9.73N×126.31E, h78km±16km, mb4.6/7, Error ellipse: s-maj=17.5km s-min=6.0km az=70.0*

ISC 21 06:10:20.5±0.8, 9.81N±0.03×126.57E±0.05, h51km±7km, n61, σ1s23/72, mb4.5/27, MS3.8/5, 10C-2D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BUTP	**Butuan**	**1.26**	**228**	⇑*eP*	**P**	**06 10 41.9**	**-0.2**
BUTP				*eS*	**S**	**06 10 57.9**	**-0.3**
BIPH	**Bislig**	**1.63**	**187**	⇓*eP*	**P**	**06 10 46.3**	**-1.1**
BIPH				*eS*	**S**	**06 11 05.2**	**-2.1**
MSLP	**Maasin**	**1.72**	**281**	⇑*eP*	**P**	**06 10 48.6**	**+0.1**
MSLP				*eS*	**S**	**06 11 11.2**	**+1.8**
PLP	**Palo**	**2.06**	**311**	*iP*	**P**	**06 10 53.5**	**+0.1**
PLP				*iS*	**S**	**06 11 20.6**	**+2.6**
BESP	**Borongan**	**2.10**	**328**	⇑*eP*	**P**	**06 10 52.9**	**-1.0**
BESP				*eS*	**S**	**06 11 18.0**	**-0.8**
OCLP	**Ormoc**	**2.29**	**303**	⇑*eP*	**P**	**06 10 58.1**	**+1.4**
LLP	**Lapu-Lapu**	**2.62**	**281**	⇑*eP*	**P**	**06 11 01.9**	**+0.6**
LLP				*eS*	**S**	**06 11 30.9**	**-1.1**
TBP	**Tagbilaran**	**2.68**	**268**	*eP*	**P**	**06 11 02.0**	**-0.1**
TBP				*eS*	**S**	**06 11 33.8**	**+0.3**
KCP	**Kidapawan**	**3.15**	**208**	⇓*eP*	**P**	**06 11 11.2**	**+2.4**
KCP				*iS*	**S**	**06 11 47.0**	**+1.5**
CNP	**Catarman**	**3.27**	**325**	⇑*eP*	**P**	**06 11 09.9**	**-0.6**
CNP				*eS*	**S**	**06 11 46.7**	**-1.9**
SNPH	**Sibulan**	**3.33**	**262**	⇑*eP*	**P**	**06 11 12.0**	**+0.7**
PAGZ	**Pagadian**	**3.71**	**238**	⇑*eP*	**P**	**06 11 17.2**	**+0.4**
PAGZ				*eS*	**S**	**06 11 59.4**	**-0.3**
RCP	**Roxas**	**4.14**	**295**	⇑*eP*	**P**	**06 11 23.5**	**+0.6**
PVCP	**Virac**	**4.44**	**328**	⇑*eP*	**P**	**06 11 26.1**	**-1.0**
PVCP				*eS*	**S**	**06 12 14.6**	**-3.5**
TGY	**Tagaytay City**	**6.97**	**308**	P	**P**	**06 12 03.4**	**+1.0**
	26nm,0.3s,baz=63,slow=21,SNR=4.1						
TGY				LR	LR	06 15 03.6	
	comp=Z,1μm,19.3s,baz=104,slow=41						
KAKA	**Kakadu**	**23.10**	**165**	*eP*	**P**	**06 15 23.1**	**+0.2**
	13nm,0.6s,mb4.5						
NJ2	**Nanjing**	**23.25**	**343**	*eP*	**P**	**06 15 26.1**	**+1.9**
NJ2				AP		06 15 40.3	
NJ2				XP		06 15 47.8	
NJ2				PP	PP	06 15 59.4	+3.0
NJ2				S	**S**	**06 19 32.0**	**+3.1**
NJ2				AMB	AMB		
	comp=Z,50nm,0.8s,mb5.0						
NJ2				LR	LR		
	comp=N,350nm,17.2s,MS4.0						
NJ2				LR	LR		
	comp=E,240nm,14.9s,MS4.0						
ENH	**Enshi**	**25.85**	**324**	*eP*	**P**	**06 15 47.5**	**-1.7**
KMI	**Kunming**	**27.29**	**307**	*eP*	**P**	**06 16 04.8**	**+2.4**
KMI				XP	sP	06 16 24.0	+2.3
KMI				S	**S**	**06 20 33.9**	**-2.5**
KMI				SS	SS	06 21 48.8	-6.6
KMI				AMB	AMB		
	comp=Z,10.0nm,0.8s,mb4.4						
KMI				AMB	AMB		
	comp=Z,56nm,6.1s						
KMI				LR	LR		
	comp=N,144nm,15.7s,MS3.8						
KMI				LR	LR		
	comp=E,138nm,18.7s,MS3.8						
FITZ	**Fitzroy Crossi**	**27.75**	**182**	*eP*	**P**	**06 16 05.4**	**-1.3**
	comp=E,20nm,0.7s,mb4.9						
FITZ	**Fitzroy Crossi**	**27.75**	**182**	P	**P**	**06 16 05.4**	**-1.3**
	comp=E,33nm,0.8s,mb5.0,baz=12,slow=9.5,SNR=27						
CMAR	**Chiang Mai Arr**	**28.11**	**291**	P	**P**	**06 16 08.6**	**-1.3**
	comp=E,0.6nm,0.4s,mb3.6,baz=104,slow=7.4,SNR=4.3						
XAN	**Xi'an**	**29.05**	**329**	P	**P**	**06 16 16.1**	**-2.0**
XAN				AMB	AMB		
	comp=Z,16nm,0.7s,mb4.9						
WRA	**Warramunga Ar**	**30.54**	**166**	P	**P**	**06 16 29.2**	**-2.3**
	comp=Z,3.2nm,1.2s,mb4.0,baz=345,slow=8.7,SNR=5.2						
WB2	**Warramunga Arr**	**30.54**	**165**	*eP*	**P**	**06 16 30.7**	**-0.8**
CN2	**Changchun**	**33.87**	**359**	*eP*	**P**	**06 17 02.0**	**+1.7**
CN2				*eS*	**S**	**06 22 25.8**	**+5.8**
CN2				AMB	AMB		
	comp=Z,10.0nm,0.8s,mb4.8						
CN2				LR	LR		
	comp=Z,220nm,16.0s,MS4.0						
AS12	**Alice Springs**	**34.04**	**168**	*eP*	**P**	**06 17 04.0**	**+2.1**
	comp=Z,13nm,1.4s,mb4.7						
ASAR	**Alice Springs**	**34.04**	**168**	P	**P**	**06 17 01.1**	**-0.8**
	comp=Z,1.1nm,0.8s,mb3.8,baz=9.5,slow=8.7,SNR=7.0						
ASAR				PcP	PcP	06 19 38.8	-0.2
	comp=Z,1.9nm,0.8s,baz=338,slow=2.1,SNR=8.2						
MDJ	**Mudanjiang**	**34.77**	**4**	P	**P**	**06 17 08.8**	**+0.8**
MDJ				PP	PP	06 18 26.8	+0.4
MDJ				PCP	PcP	06 19 41.0	+0.1
MDJ				S	**S**	**06 22 38.9**	**+5.0**
MDJ				SCP		06 23 26.5	
MDJ				PCS		06 23 27.9	
MDJ				LR	LR		
	comp=N,107nm,4.2s						
MDJ				LR	LR		
	comp=E,140nm,3.7s						
CTA	**Charters Tower**	**35.47**	**147**	P	**P**	**06 17 14.6**	**+0.4**
	comp=E,5.7nm,0.8s,mb4.6,baz=332,slow=11,SNR=3.9						
CTAO	**Charters Tower**	**35.47**	**147**	*eP*	**P**	**06 17 15.2**	**+1.0**
	comp=E,3.5nm,0.6s,mb4.5						
ASAJ	**Asahikawa**	**36.89**	**19**	LR	LR	06 31 01.1	
	comp=E,117nm,18.6s,MS3.7,baz=232,slow=33						
GTA	**Gaotai**	**37.92**	**325**	*eP*	**P**	**06 17 33.4**	**-1.3**
GTA				AMB	AMB		
	comp=Z,3.0nm,0.7s,mb4.1						
FORT	**Forrest**	**40.38**	**178**	*eP*	**P**	**06 17 55.3**	**+0.1**
	comp=Z,42nm,0.6s,mb5.3						
ULN	**Ulaanbaatar**	**41.35**	**340**	*eP*	**P**	**06 18 03.7**	**+0.7**
	comp=Z,2.8nm,0.7s,mb4.0						
SONM	**Songino Array**	**41.55**	**339**	P	**P**	**06 18 05.1**	**+0.5**
	comp=Z,2.4nm,0.6s,mb4.0,baz=156,slow=9.8,SNR=19						
KLBR	**Kellerberrin**	**42.03**	**191**	*eP*	**P**	**06 18 08.7**	**0.0**
	comp=Z,25nm,0.9s,mb4.8						
MUN	**Mundaring**	**42.72**	**193**	*eP*	**P**	**06 18 14.6**	**+0.1**
	comp=Z,44nm,0.7s,mb5.3						
NWAO	**Narrogin (SRO)**	**43.42**	**191**	P	**P**	**06 18 20.4**	**+0.3**
	comp=Z,38nm,0.8s,mb5.2,baz=14,slow=11,SNR=13						
NWAO	**Narrogin (SRO)**	**43.42**	**191**	*eP*	**P**	**06 18 20.4**	**+0.2**
	comp=Z,53nm,0.9s,mb5.3						
STKA	**Stephens Creek**	**43.88**	**161**	*eP*	**P**	**06 18 23.6**	**-0.2**
	comp=Z,4.1nm,0.8s,mb4.2						
STKA	**Stephens Creek**	**43.88**	**161**	P	**P**	**06 18 23.5**	**-0.4**
	comp=Z,7.0nm,0.9s,mb4.4,baz=356,slow=5.7,SNR=8.0						
WMQ	**Urumqi**	**47.76**	**322**	*eP*	**P**	**06 18 54.9**	**+0.4**
MKAR	**Makanchi Array**	**52.57**	**323**	P	**P**	**06 19 29.3**	**-1.7**
	comp=Z,3.1nm,0.6s,mb4.4,baz=118,slow=8.1,SNR=31						
MKAR				LR	LR	06 43 17.0	
	comp=Z,73nm,20.8s,MS3.7,baz=258,slow=38						
KURK	**Kurchatov**	**56.61**	**326**	*eP*	**P**	**06 19 58.8**	**-1.7**
BVAR	**Borovoye Array**	**62.21**	**325**	P	**P**	**06 20 37.5**	**-1.5**
	comp=Z,1.5nm,0.7s,mb4.2,baz=146,slow=5.2,SNR=5.0						
ZRNK	**Zerenda**	**62.96**	**325**	*eP*	**P**	**06 20 42.1**	**-1.9**
DAWY	**Dawson**	**83.02**	**26**	*eP*	**P**	**06 22 43.8**	**+2.4**
INK	**Inuvik**	**84.60**	**22**	P	**P**	**06 22 50.6**	**+1.4**
	comp=Z,4.6nm,1.0s,mb4.6,baz=269,slow=5.0,SNR=13						
INK	**Inuvik**	**84.60**	**22**	*eP*	**P**	**06 22 50.4**	**+1.2**
ARCES	**ARCESS Array B**	**84.72**	**340**	P	**P**	**06 22 49.9**	**+0.1**
	comp=Z,2.2nm,0.6s,mb4.5,baz=77,slow=5.9,SNR=9.2						
ARCES	**ARCESS Array B**	**84.72**	**340**	P	**P**	**06 22 49.9**	**+0.1**
BRTR	**Keskin Array B**	**86.05**	**309**	P	**P**	**06 22 56.6**	**-0.4**
	comp=Z,0.3nm,0.4s,mb3.9,baz=68,slow=7.8,SNR=2.5						
FINES	**FINESS Array B**	**86.43**	**332**	P	**P**	**06 22 58.3**	**-0.1**
	comp=Z,1.0nm,0.5s,mb4.3,baz=76,slow=6.0,SNR=14						
VNDA	**Vanda**	**89.44**	**173**	P	**P**	**06 23 13.2**	**+0.6**
	comp=Z,1.6nm,0.8s,mb4.4,baz=308,slow=6.8,SNR=7.1						
KMBO	**Kilima Mbogo**	**89.52**	**269**	P	**P**	**06 23 14.6**	**+0.2**
	comp=Z,1.6nm,1.0s,mb4.3,baz=56,slow=8.7,SNR=3.5						
RES	**Resolute Bay**	**91.89**	**10**	*eP*	**P**	**06 23 25.5**	**+1.5**
YKA	**Yellowknife Ar**	**94.05**	**24**	P	**P**	**06 23 35.4**	**+1.4**
	comp=Z,2.2nm,0.7s,mb4.7,baz=300,slow=4.5,SNR=49						
PV10	**Paradox Valley**	**109.44**	**43**	*ePKP*	Pdif	06 24 48.0	+4.6
TXAR	**Lajitas Array**	**117.89**	**49**	PKP	PKPdf	06 29 04.8	+2.8
	comp=Z,0.4nm,0.7s,baz=88,slow=0.7,SNR=4.7						
OTAV	**Otavalo**	**153.17**	**70**	*ePKPab*	PKPab	06 30 30.4	+2.8

*NEIC **21** 06:15:32.1±1.0, 24.41N×94.69E, h106km±11km, Error ellipse: s-maj=36.5km s-min=8.0km az=59.0*
*IDC **21** 06:15:33.5±3.6, 24.43N×94.82E, h118km±35km, mb3.6/7, mb1 3.7/8, mb1mx3.4/23, Error ellipse: s-maj=49.9km s-min=14.7km az=62.0*

ISC 21 06:15:31.0±0.9, 24.2N±0.1×94.27E±0.08, h122km±10km, n19, σ0s86/26, mb3.9/7, 1C, Myanmar-India border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHL	**Shillong**	**2.56**	**303**	⇑*iP*	**P**	**06 16 12.7**	**+0.3**
SHL				*eS*	**S**	**06 16 43.0**	**-0.7**
LSA	**Lhasa**	**6.15**	**334**	*ePn*	**P**	**06 16 59.9**	**-0.8**
	19nm,0.1s						
CMAR	**Chiang Mai Arr**	**7.18**	**142**	P	**P**	**06 17 14.5**	**-0.2**
	baz=331,slow=11,SNR=5.1						
GUN	**Gumba**	**8.40**	**298**	*ePn*	**P**	**06 17 32.5**	**+1.3**
GUN				*eSn*	**S**	**06 19 04.0**	**-0.9**
	69nm,0.4s						
PKI	**Pulchoki**	**8.66**	**295**	*ePn*	**P**	**06 17 35.5**	**+0.9**
PKI				*eSn*	**S**	**06 19 10.9**	**-0.1**
	32nm,0.5s						
KKN	**Kakani**	**8.84**	**296**	*ePn*	**P**	**06 17 37.6**	**+0.5**
KKN				*eSn*	**S**	**06 19 15.5**	**0.0**
	40nm,0.4s						
DMN	**Daman**	**8.92**	**294**	*ePn*	**P**	**06 17 39.2**	**+1.1**
DMN				*eSn*	**S**	**06 19 16.6**	**-0.8**
	29nm,0.4s						
GKN	**Gorkha**	**9.45**	**296**	*ePn*	**P**	**06 17 45.6**	**+0.4**
GKN				*eSn*	**S**	**06 19 28.8**	**-1.3**
	66nm,0.3s						
KOLN	**Koldanda**	**10.24**	**293**	*ePn*	**P**	**06 17 56.5**	**+0.8**
KOLN				*eSn*	**S**	**06 19 48.4**	**-0.5**
	27nm,0.5s						
MKAR	**Makanchi Array**	**24.51**	**340**	P	**P**	**06 20 41.5**	**+1.3**
	7.4nm,0.4s,mb4.4,baz=147,slow=9.5,SNR=48						
SONM	**Songino Array**	**25.49**	**19**	P	**P**	**06 20 47.3**	**-2.1**
	1.8nm,0.7s,mb3.6,baz=203,slow=9.9,SNR=7.6						
BVAR	**Borovoye Array**	**33.99**	**334**	P	**P**	**06 22 05.7**	**+1.0**
	1.0nm,0.5s,mb3.9,baz=138,slow=12,SNR=4.2						
ZRNK	**Zerenda**	**34.50**	**333**	*eP*	**P**	**06 22 09.8**	**+0.6**
FINES	**FINESS Array B**	**58.64**	**329**	P	**P**	**06 25 18.4**	**+0.9**
	0.4nm,0.3s,mb3.9,baz=78,slow=5.7,SNR=8.7						
WRA	**Warramunga Arr**	**58.72**	**135**	P	**P**	**06 25 17.4**	**-1.1**
	1.3nm,0.5s,mb4.2,baz=323,slow=7.2,SNR=8.6						
WRAB	**Tennant Creek**	**58.72**	**135**	*eP*	**P**	**06 25 17.9**	**-0.7**
ASAR	**Alice Springs**	**61.17**	**138**	P	**P**	**06 25 35.1**	**-0.2**
	0.9nm,0.5s,mb4.0,baz=324,slow=7.0,SNR=10						
INK	**Inuvik**	**81.36**	**16**	P	**P**	**06 27 34.8**	**-0.3**
	0.2nm,0.4s,mb3.3,baz=342,slow=3.2,SNR=5.9						
INK	**Inuvik**	**81.36**	**16**	*eP*	**P**	**06 27 34.8**	**-0.3**

*IDC **21** 06:33:00.4±2.8, 35.46S×179.51E, mb3.9/2, mb1 4.2/3, mb1mx3.9/11, ML3.8/1, Error ellipse: s-maj=61.4km s-min=34.2km az=113.0*

ISC 21 06:32:59.1±2.5, 36.5S±0.2×178.9W±0.3, h105km±18km, n12, σ1s23/15, mb3.8/2, East of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**2.76**	**234**	P	**P**	**06 33 43.2**	**+0.5**
PUZ				S	**S**	**06 34 16.9**	**+1.4**
URZ	**Urewera**	**3.64**	**240**	Pn	**P**	**06 33 53.8**	**-0.8**
	8.9nm,0.3s,baz=29,slow=18,SNR=41						
URZ				Sn	**S**	**06 34 36.2**	**-0.6**
	20nm,0.3s,baz=159,slow=20,SNR=12						
URZ	**Urewera**	**3.64**	**240**	P	**P**	**06 33 53.6**	**-1.0**
KNZ	**Kokohu**	**3.71**	**226**	*eP*	**P**	**06 33 57.4**	**+1.9**
KNZ				*eS*	**S**	**06 34 41.4**	**+2.9**
MGZ	**Maungaku**	**5.07**	**239**	*eP*	**P**	**06 34 11.6**	**-2.5**
NGZ	**Ngauruhoe**	**5.11**	**237**	*eP*	**P**	**06 34 14.1**	**-0.6**
CNZ	**Chateau**	**5.16**	**237**	*eP*	**P**	**06 34 14.3**	**-1.0**
BFZ	**Birch Farm**	**5.65**	**221**	*eS*	**S**	**06 35 26.0**	**-0.1**
MRZ	**Mangatainoka R**	**6.00**	**224**	P	**P**	**06 34 26.5**	**-0.2**
MRZ				S	**S**	**06 35 33.6**	**-1.1**
ASAR	**Alice Springs**	**42.41**	**274**	P	**P**	**06 40 46.4**	**+1.6**
	0.7nm,0.5s,mb3.6,baz=114,slow=7.5,SNR=9.1						
WRA	**Warramunga Arr**	**43.94**	**279**	P	**P**	**06 40 57.2**	**-0.1**
	1.5nm,0.5s,mb4.0,baz=119,slow=7.7,SNR=20						
FINES	**FINESS Array B**	**150.50**	**336**	PKPbc	PKPdf	06 52 48.9	+17
	4.8nm,1.2s,baz=45,slow=2.7,SNR=6.0						

CASC 21 07:08:04.5±2.4, 8.37N×82.83W, h3km±6km, MD3.6, 2C-2D, Panama-Costa Rica border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DVD	**David**	**0.38**	**79**	⇓*iP*	Pg	07 08 12.5	+0.4
DVD				*iS*	Sg	07 08 18.4	+1.3
PTP1	**Petroterminal**	**0.42**	**112**	⇑*iP*	Pg	07 08 09.1	-3.9
PTP1				*iS*	Sg	07 08 12.3	-6.4

EMIN				Lg			07 11 09.2		
PTOM	**Tomar**	**1.44**	**355**	*e*Pg	**Pg**		**07 10 53.5**	**-0.8**
PTOM				*e*S	**Sb**		**07 11 12.0**	**+0.6**
	42nm,0.1s								
PTOM	**Tomar**	**1.44**	**355**	Pg	**Pg**		**07 10 53.5**	**-0.8**
PTOM				S	**Sb**		**07 11 12.0**	**+0.6**
	21nm,0.1s								
PCBR	**Castelo Branco**	**1.77**	**20**	*e*Sn	**Sn**		**07 11 21.3**	**+0.7**
	10nm,0.2s								
PCBR	**Castelo Branco**	**1.77**	**20**	Sn	**Sn**		**07 11 21.3**	**+0.7**
	5.2nm,0.2s								
ECAB	**El Cabril**	**2.24**	**92**	Pn	**Pn**		**07 11 04.2**	**+0.2**
	0.5nm,0.1s,SNR=12								
ECAB				Pg	**Pg**		**07 11 08.5**	**-1.6**
	0.5nm,0.1s,SNR=4.0								
ECAB				Sn	**Sn**		**07 11 31.4**	**-1.1**
	1.8nm,0.2s,SNR=4.0								
ECAB				Lg			07 11 38.8		
	4.2nm,0.3s,SNR=7.9								
MTE	**Manteigas**	**2.29**	**14**	*e*Sg	**Sg**		**07 11 39.5**	**-2.1**
	12nm,0.5s								
MTE	**Manteigas**	**2.29**	**14**	Lg			07 11 39.5		
	6.1nm,0.5s								
ESPR	**Espera**	**2.31**	**124**	Lg			07 11 42.2		
	8.4nm,0.3s,SNR=7.9								
ELIJ	**Sierra de Lija**	**2.61**	**118**	Sn	**Sn**		**07 11 43.3**	**+1.4**
	1.7nm,0.4s,SNR=7.9								
ELIJ				Lg			07 11 49.8		
	1.1nm,0.3s,SNR=4.0								
ELIJ	**Sierra de Lija**	**2.61**	**118**	Pn	**Pn**		**07 11 09.8**	**+0.5**
ELIJ				Sn	**Sn**		**07 11 40.5**	**-1.4**
ELIJ				Lg			07 11 50.3		
EADA	**Adamuz**	**2.90**	**89**	Sn	**Sn**		**07 11 48.8**	**-0.5**
	1.3nm,0.1s,SNR=4.9								
EADA				Lg			07 11 59.7		
	2.6nm,0.1s,SNR=7.9								

IDC ***21*** *07:56:37.0±0.7,30.76N×142.10E,mb3.9/11,mb1 4.1/11, mb1mx3.9/22,MS3.1/3,Ms1 3.1/3,ms1mx2.9/25,Error ellipse: s-maj=27.1km s-min=17.9km az=98.0*
JMA ***21*** *07:56:41.7±0.9,31.08N×142.70E,h117km,M3.7*
NEIC ***21*** *07:56:42.6±0.5,30.76N×142.06E,h35km,Error ellipse: s-maj=14.5km s-min=9.5km az=69.0*
ISC 21 07:56:40.0±2.5,30.81N±0.07×142.1E±0.1,h31km±18km**, n32,σ1♦14/35,mb3.9/11,Southeast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
JHJ	**Hachijo jima 2**	**3.00**	**321**	LR		LR	07 58 06.8	
	comp=Z,347nm,21.1s,baz=83,slow=29							
BSO1	**Boso 1**	**3.94**	**347**	P		**Pn**	**07 57 39.2**	**-0.8**
BSO3	**Boso 3**	**4.18**	**342**	P		**Pn**	**07 57 44.7**	**+1.2**
BSO4	**Boso 4**	**4.41**	**341**	P		**Pn**	**07 57 48.5**	**+1.8**
JOD2	**Odawara 2**	**5.09**	**332**	P		**Pn**	**07 57 58.2**	**+1.9**
JHU	**Hanno**	**5.53**	**336**	P		**Pn**	**07 58 03.0**	**+0.4**
JYT	**Yasato**	**5.62**	**345**	P		**Pn**	**07 58 04.1**	**+0.3**
JRY	**Ryogami san**	**5.82**	**334**	P		**Pn**	**07 58 07.0**	**+0.4**
JRY				*e*S		**Sn**	**07 59 13.5**	**+0.4**
JHO	**Hitachi**	**5.91**	**348**	P		**Pn**	**07 58 06.6**	**-1.3**
JHO				*e*S		**Sn**	**07 59 12.0**	**-3.4**
JAG	**Ashikaga**	**6.00**	**340**	P		**Pn**	**07 58 08.6**	**-0.6**
JAG				*e*S		**Sn**	**07 59 15.9**	**-1.7**
MAJO	**Matsushiro**	**6.55**	**332**	*e*Pn		**Pn**	**07 58 16.9**	**0.0**
	29nm,0.8s							
MAT	**Matsushiro**	**6.55**	**332**	P		**Pn**	**07 58 16.1**	**-0.8**
MAT				*e*S		**Sn**	**07 59 36.2**	**+4.9**
MAT	**Matsushiro**	**6.55**	**332**	*e*P		**Pn**	**07 58 16.0**	**-0.9**
	17nm,0.7s							
MAT				S		**Sn**	**07 59 36.0**	**+4.7**
JFK	**Kawauchi**	**6.61**	**352**	P		**Pn**	**07 58 15.6**	**-2.2**
JFK				*e*S		**Sn**	**07 59 25.5**	**-7.3**
JNU	**Nakatsue**	**9.76**	**287**	LR		LR	08 02 14.6	
	comp=Z,98nm,19.4s,baz=151,slow=34							
ASAJ	**Asahikawa**	**13.29**	**2**	LR		LR	08 06 13.8	
	comp=Z,60nm,18.8s,baz=177,slow=43							
ULN	**Ulaanbaatar**	**31.64**	**313**	P		**P**	**08 03 03.9**	**+1.4**
SONM	**Songino Array**	**32.04**	**312**	P		**P**	**08 03 06.9**	**+0.8**
	2.0nm,0.9s,mb4.0,baz=113,slow=9.4,SNR=8.2							
MKAR	**Makanchi Array**	**48.08**	**307**	P		**P**	**08 05 18.5**	**-0.1**
	1.3nm,0.6s,mb4.1,baz=86,slow=9.6,SNR=15							
MKAR				pP		pP	08 05 31.0	+3.0
	1.2nm,0.6s,baz=96,slow=9.5,SNR=7.9							
MKAR	**Makanchi Array**	**48.08**	**307**	P		**P**	**08 05 18.5**	**-0.1**
MKAR				pP		pP	08 05 31.0	+3.0
WRA	**Warramunga Arr**	**51.00**	**189**	P		**P**	**08 05 39.9**	**-1.5**
	1.3nm,0.5s,mb4.2,baz=6.6,slow=7.7,SNR=41							
ILAR	**Eielson Array**	**54.54**	**30**	P		**P**	**08 06 05.9**	**-1.2**
	0.9nm,0.8s,mb3.8,baz=251,slow=6.1,SNR=9.8							
ASAR	**Alice Springs**	**54.73**	**189**	P		**P**	**08 06 07.9**	**-1.2**
	1.3nm,1.1s,mb3.9,baz=16,slow=13,SNR=8.9							
INK	**Inuvik**	**59.72**	**25**	P		**P**	**08 06 43.8**	**-0.1**
	0.8nm,0.9s,mb3.7,baz=316,slow=5.3,SNR=4.4							
INK	**Inuvik**	**59.72**	**25**	*e*P		**P**	**08 06 43.5**	**-0.3**
STKA	**Stephens Creek**	**62.35**	**180**	P		**P**	**08 07 01.5**	**-0.6**
	2.0nm,1.1s,mb4.2,baz=57,slow=14,SNR=3.0							
YKA	**Yellowknife Ar**	**68.95**	**29**	P		**P**	**08 07 43.9**	**0.0**
	0.3nm,0.9s,mb3.2,baz=291,slow=5.3,SNR=5.1							
YKA	**Yellowknife Ar**	**68.95**	**29**	P		**P**	**08 07 43.9**	**0.0**
FINES	**FINESS Array B**	**74.58**	**333**	P		**P**	**08 08 17.4**	**0.0**
	2.3nm,1.1s,mb4.0,baz=39,slow=12,SNR=4.8							
WVOR	**Wild Horse Val**	**76.14**	**49**	P		**P**	**08 08 28.4**	**+1.7**
NVAR	**Mina Array Bea**	**78.33**	**52**	P		**P**	**08 08 39.6**	**+0.6**
	0.4nm,0.7s,mb3.5,baz=288,slow=7.2,SNR=5.7							
TXAR	**Lajitas Array**	**93.47**	**53**	P		**P**	**08 09 55.8**	**+1.7**
	0.5nm,0.9s,mb3.9,baz=330,slow=5.0,SNR=5.4							

IDC ***21*** *08:11:29.6±0.5,4.31N×84.78W,mb4.9/16,mb1 5.1/20, mb1mx4.9/25,ML4.3/3,MS4.4/21,Ms1 4.4/21, ms1mx4.4/28,Error ellipse: s-maj=21.5km s-min=11.4km az=61.0*
NEIC ***21*** *08:11:35.4±0.6,4.28N×84.70W,h39km±5km,mb5.1/77, MS4.4/20,Error ellipse: s-maj=4.7km s-min=2.7km az=223.0*
HRVD ***21*** *08:11:35.4±0.2,4.16N×84.85W,h12km,MW5.2/59, Centroid moment Tensor Solution. LP body waves: s48,c79;Mantle waves: s59,c112; Half duration: 1♦0 Moment tensor: Scale 10¹⁶Nm; Mrr0.14±.13; Mθθ3.38±.13; Mφφ-3.52±.16; Mrθ0.87±.33; Mrφ6.00±.12; Mθφ1.93±.37; Best double couple: M₀7.24×10¹⁶ NP1:♢s105°,δ73°,λ3°. NP2:♢s15°,δ87°,λ163°. Principal axes: T 7.27, Plg14°, Azm329°; N -.07, Plg73°, Azm186°; P -7.21, Plg10°, Azm61°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
BJI ***21*** *08:11:35.4,4.30N×84.70W,h38km,mB5.0,Ms4.4,Msz4.8*
CASC ***21*** *08:11:40.5±2.1,4.65N×84.78W,h39km,MD4.7,ML4.2, MW4.5,mb5.1(NEIC)*
ISC 21 08:11:36.3±0.7,4.42N±0.04×84.71W±0.03,h55km±5km**, h51**km±.2km**:pP-P,n293,σ0♦96/262,mb5.0/91,MS4.4/36, 21C-9D,Off coast of central America**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
PTP1	**Petroterminal**	**4.39**	**311**	*e*P		**P**	**08 12 41.1**	**-1.0**
PTP1				*e*S		**S**	**08 13 30.1**	**-2.4**
ACR	**Cerro Adams**	**4.48**	**20**	*e*P		**P**	**08 12 43.5**	**+0.1**
DVD	**David**	**4.58**	**29**	*e*P		**P**	**08 12 45.0**	**+0.2**
DVD				*e*S		**S**	**08 13 36.0**	**-1.2**
BRU2	**Volcan**	**4.79**	**25**	*i*P		**P**	**08 12 48.1**	**+0.4**
BUS	**Buena Vista**	**5.19**	**10**	*e*P		**P**	**08 12 53.3**	**0.0**
BUS				*e*S		**S**	**08 13 51.2**	**-1.4**
LCR2	**La Lucha 2**	**5.33**	**7**	*e*P		**P**	**08 12 54.4**	**-0.9**
LCR2				*e*S		**S**	**08 13 53.7**	**-2.5**
CNI	**Changuinola**	**5.42**	**24**	*e*P		**P**	**08 12 59.4**	**+2.9**
CNI				*e*S		**S**	**08 14 01.1**	**+2.8**
LAJ	**Bijagual**	**5.44**	**6**	*e*P		**P**	**08 12 51.9**	**-4.8**
LAJ				*e*S		**S**	**08 13 48.0**	**-11**
URSC	**Urasca**	**5.46**	**10**	*e*P		**P**	**08 12 58.2**	**+1.1**
SJS	**Escuela Geolog**	**5.52**	**7**	*e*P		**P**	**08 12 56.5**	**-1.4**
SJS				*e*S		**S**	**08 13 59.5**	**-1.4**
AZU	**Azuero**	**5.54**	**53**	*e*P		**P**	**08 12 59.5**	**+1.4**
CGA2	**Cerro Gallo 2**	**5.57**	**2**	*e*P		**P**	**08 12 57.6**	**-0.9**
CGA2				*e*S		**S**	**08 13 57.3**	**-4.7**
ICR	**Volcan Irazu**	**5.59**	**9**	*e*P		**P**	**08 13 00.7**	**+1.8**
ICR				*e*S		**S**	**08 13 59.7**	**-3.0**
VCR	**Vista de Mar**	**5.75**	**351**	*e*P		**P**	**08 12 59.2**	**-1.8**
VCR				*e*S		**S**	**08 14 02.4**	**-4.1**
JTS	**JuntasAbangare**	**5.84**	**358**	Pn		**P**	**08 12 59.2**	**-3.1**
	17nm,0.3s,baz=226,slow=6.4,SNR=76							
JTS				Sn		**S**	**08 14 05.4**	**-3.4**
	48nm,0.3s,slow=20,SNR=7.9							
JTS				LR		LR	08 14 53.2	
	comp=Z,7μm,20.7s,baz=179,slow=34							
JTS	**JuntasAbangare**	**5.84**	**358**	*e*Pn		**P**	**08 12 59.3**	**-3.0**
	18nm,1.0s							
JTS				*e*Sn		**S**	**08 14 08.7**	**-0.1**
FORC	**Fortuna**	**6.01**	**0**	*e*P		**P**	**08 13 06.0**	**+1.2**
TRTC	**Tortuguero**	**6.20**	**9**	*e*P		**P**	**08 13 07.0**	**-0.3**
ACH	**Altos**	**6.35**	**48**	*i*P		**P**	**08 13 12.8**	**+3.3**
UPA	**Univ. de Panam**	**6.85**	**48**	*i*P		**P**	**08 13 18.7**	**+2.1**
JEF	**Cerro Jefe**	**7.12**	**48**	*e*P		**P**	**08 13 21.8**	**+1.4**
CONN	**Concepcion**	**7.16**	**353**	*e*P		**P**	**08 13 20.7**	**-0.1**
OTAV	**Otavalo**	**7.50**	**123**	*e*Pn		**P**	**08 13 20.7**	**-4.8**
	73nm,0.8s							
APON	**Apoyo**	**7.57**	**350**	*e*P		**P**	**08 13 27.2**	**+0.7**
APON				*e*S		**S**	**08 14 52.1**	**+0.4**
CRUN	**El Crucero**	**7.68**	**348**	*e*P		**P**	**08 13 29.4**	**+1.3**
COFN	**Cofrada**	**7.81**	**350**	*i*P		**P**	**08 13 30.1**	**+0.4**
MGAN	**Managua**	**7.83**	**349**	*i*P		**P**	**08 13 29.7**	**-0.3**
MGAN				*e*S		**S**	**08 14 55.5**	**-2.6**
MGAN				*i*			08 15 10.2	
	comp=E,206nm,0.7s							
WILN	**Americas 2**	**7.83**	**349**	*e*P		**P**	**08 13 29.9**	**-0.2**
XAVN	**Gruta Xavier**	**7.85**	**348**	*i*P		**P**	**08 13 31.8**	**+1.5**
XAVN				*e*S		**S**	**08 15 01.9**	**+3.3**
COPN	**Copaltepe**	**7.94**	**347**	*i*P		**P**	**08 13 31.7**	**+0.2**
MOMJ	**Momotombo**	**8.14**	**347**	*i*P		**P**	**08 13 35.3**	**+0.9**
PYTN	**Playitas**	**8.18**	**351**	*i*P		**P**	**08 13 35.2**	**+0.3**
PYTN				*e*S		**S**	**08 15 07.7**	**+0.8**
LEON	**Leon**	**8.24**	**345**	*i*P		**P**	**08 13 36.6**	**+0.9**
PYN	**Poneloya**	**8.24**	**344**	*i*P		**P**	**08 13 36.8**	**+1.1**
CNGN	**Cerro Negro**	**8.27**	**346**	*e*P		**P**	**08 13 36.6**	**+0.5**
TEL3	**Telica 3**	**8.37**	**346**	*i*P		**P**	**08 13 37.6**	**+0.1**
ROSC	**El Rosal**	**10.35**	**87**	Pn		**P**	**08 14 06.0**	**+1.2**
	comp=E,1.3nm,0.3s,baz=244,slow=3.4,SNR=56							
CCIG	**Comitan**	**13.87**	**329**	*i*P		**P**	**08 14 50.8**	**-1.0**
SDV	**Santo Domingo**	**14.66**	**72**	Pn		**P**	**08 15 00.8**	**-1.5**
	comp=E,0.8nm,0.3s,baz=208,slow=4.1,SNR=10							
SDV				LR		LR	08 20 15.5	
	comp=E,4μm,21.9s,baz=246,slow=36							
SDV	**Santo Domingo**	**14.66**	**72**	Pn		**P**	**08 15 00.8**	**-1.5**
SDV				LR		LR	08 20 15.5	
CMIG	**Matias Romero**	**16.07**	**322**	*i*P		**P**	**08 15 21.1**	**+0.9**
TEIG	**Tepich**	**16.09**	**348**	Pn		**P**	**08 15 20.8**	**+0.3**
	comp=E,1.0nm,0.3s,baz=154,slow=14,SNR=5.4							
OXX	**Oaxaca**	**17.24**	**318**	*i*P		**P**	**08 15 44.0**	**+9.1**
EVV	**El Vigia**	**17.41**	**324**	*e*P		**P**	**08 15 35.0**	**-2.0**
ACX	**Acapulco**	**19.38**	**311**	*i*P		**P**	**08 15 56.5**	**-4.0**
CAIG	**El Cayaco**	**19.76**	**311**	*i*P		**P**	**08 16 03.9**	**-0.7**
PPM	**Popocatepetl**	**19.92**	**318**	*i*P		**P**	**08 16 07.0**	**+0.7**
YAIG	**Yautepec**	**20.07**	**317**	*i*P		**P**	**08 16 08.1**	**+0.1**
UNM	**Universidad Na**	**20.47**	**318**	*i*P		**P**	**08 16 13.2**	**+1.1**
PCRV	**Puerto La Cruz**	**20.70**	**73**	P		**P**	**08 16 13.7**	**-0.8**
	comp=E,67nm,0.9s,baz=236,slow=4.3,SNR=16							
ZIIG	**Zihuatanejo**	**21.00**	**310**	*i*P		**P**	**08 16 16.8**	**-0.8**
MOIG	**Morelia**	**22.10**	**315**	*i*P		**P**	**08 16 29.7**	**+1.3**
SJG	**San Juan**	**22.69**	**52**	P		**P**	**08 16 35.6**	**+1.3**
	comp=E,78nm,1.1s,mb5.0,baz=252,slow=6.0,SNR=7.5							
SJG				LR		LR	08 25 49.0	
	comp=E,1μm,19.1s,MS4.3,baz=70,slow=38							
SJG	**San Juan**	**22.69**	**52**	*e*P		**P**	**08 16 36.1**	**+1.8**
	comp=E,160nm,1.3s,mb5.3							
DWPF	**Disney**	**23.77**	**7**	*e*P		**P**	**08 16 47.0**	**+2.3**
SFJM	**Santa Fe**	**23.94**	**313**	*e*P		**P**	**08 16 43.0**	**-3.5**
ARE	**Arequipa**	**24.52**	**148**	*e*P		**P**	**08 16 53.0**	**+0.9**
ZAIG	**Zacatecas**	**25.13**	**318**	*e*P		**P**	**08 16 59.6**	**+1.7**
LPAZ	**La Paz**	**26.31**	**142**	P		**P**	**08 17 08.2**	**-0.7**
	comp=E,88nm,1.2s,mb5.2,baz=339,slow=9.9,SNR=75							
LPAZ				LR		LR	08 27 45.2	
	comp=E,1μm,19.6s,MS4.5,baz=141,slow=37							
LPAZ	**La Paz**	**26.31**	**142**	*e*P		**P**	**08 17 07.8**	**-1.2**
	comp=E,54nm,1.2s,mb5.0							
LPAZ				LR		LR		
	comp=Z,744nm,22.0s,MS4.2							
HKT	**Hockley**	**27.49**	**339**	*e*P		**P**	**08 17 19.6**	**-0.1**
	comp=Z,89nm,1.8s,mb5.0							
HKT				LR		LR		
	comp=Z,315nm,22.0s,MS3.8							
LRAL	**Lakeview Retre**	**28.55**	**356**	*e*P		**P**	**08 17 29.3**	**+0.1**
	comp=Z,37nm,1.0s,mb5.1							
JCT	**Junction City**	**29.58**	**333**	*e*P		**P**	**08 17 38.3**	**-0.1**
	comp=Z,83nm,1.7s,mb5.2							
JSC	**Jenkinsville**	**29.89**	**6**	*e*P		**P**	**08 17 40.6**	**-0.5**
TXAR	**Lajitas Array**	**30.61**	**326**	P		**P**	**08 17 47.3**	**-0.2**
	comp=Z,33nm,1.3s,mb5.0,baz=146,slow=9.0,SNR=38							
TXAR				PcP		PcP	08 20 44.8	-0.2
	comp=Z,2.4nm,0.8s,baz=162,slow=5.8,SNR=7.6							
TXAR				LR		LR	08 30 22.1	
	comp=Z,363nm,19.1s,MS4.0,baz=60,slow=37							
SWET	**Sewanee**	**30.67**	**358**	*e*P		**P**	**08 17 47.4**	**-0.6**
CPCT	**Cooper Cave**	**30.88**	**0**	*e*P		**P**	**08 17 49.5**	**-0.3**
LVC	**Limon Verde**	**30.99**	**151**	P		**P**	**08 17 50.3**	**-0.6**
	comp=Z,69nm,1.0s,mb5.4,baz=311,slow=6.8,SNR=39							
LVC				PcP		PcP	08 20 45.7	-0.3
	comp=Z,4.0nm,0.8s,baz=322,slow=1.4,SNR=4.2							
LVC	**Limon Verde**	**30.99**	**151**	*e*P		**P**	**08 17 49.1**	**-1.9**
	comp=Z,101nm,1.1s,mb5.6							
LVC				*e*PcP		PcP	08 20 44.5	-1.5
LVC				LR		LR		
	comp=Z,1μm,19.0s,MS4.6							
UALR	**University of**	**31.02**	**348**	*e*P		**P**	**08 17 50.3**	**-0.9**
	comp=Z,58nm,1.6s,mb5.2							
MIAR	**Monte Ida**	**31.09**	**346**	*e*P		**P**	**08 17 50.3**	**-1.4**
	comp=Z,11nm,0.9s,mb4.7							
WVT	**Waverly**	**31.69**	**355**	*e*P		**P**	**08 17 55.5**	**-1.5**
	comp=Z,35nm,1.4s,mb5.0							
WVT				*e*PcP		PcP	08 20 46.2	-1.6
WVT				LR		LR		
	comp=Z,384nm,20.0s,MS4.1							
ELN	**Prospectdale**	**32.85**	**6**	P		**P**	**08 18 07.5**	**+0.3**
WMOK	**Wichita Mounta**	**32.87**	**338**	*e*P		**P**	**08 18 06.4**	**-0.9**
	comp=Z,38nm,1.7s,mb5.0							
WMOK				LR		LR		
	comp=Z,329nm,20.0s,MS4.0							
CLNB	**Carlsbad**	**33.02**	**329**	*e*P		**P**	**08 18 09.0**	**+0.4**
FWV	**Forest Hill**	**33.20**	**6**	*e*P		**P**	**08 18 09.7**	**-0.5**
GDL2	**Guadalupe Moun**	**33.22**	**329**	*e*P		**P**	**08 18 10.4**	**+0.1**
MNTX	**Cornudas Mount**	**33.37**	**327**	*e*P		**P**	**08 18 11.0**	**-0.7**
	comp=Z,145nm,1.8s,mb5.6							
MNTX				LR		LR		
	comp=Z,678nm,19.0s,MS4.4							
SIUC	**Southern Illin**	**33.40**	**353**	*e*P		**P**	**08 18 11.0**	**-0.8**
	comp=Z,35nm,1.0s,mb5.2							
USIN	**University of**	**33.50**	**356**	P		**P**	**08 18 11.9**	**-0.8**
	comp=Z,90nm,1.4s,mb5.5							
CPRX	**Cap Rock**	**33.62**	**330**	*e*P		**P**	**08 18 14.1**	**+0.3**
WCI	**Wyandotte Cave**	**33.68**	**358**	*e*P		**P**	**08 18 13.5**	**-0.8**
	comp=Z,64nm,1.2s,mb5.4							
FVM	**French Village**	**33.81**	**352**	*e*P		**P**	**08 18 14.5**	**-0.9**
	comp=Z,36nm,1.5s,mb5.1							
CCM	**Cathedral Cave**	**34.01**	**351**	*e*P		**P**	**08 18 16.0**	**-1.0**
	comp=Z,49nm,1.3s,mb5.3							
CCM				LR		LR		
	comp=Z,263nm,20.0s,MS4.0							
BLO	**Bloomington**	**34.63**	**358**	*e*P		**P**	**08 18 21.3**	**-1.1**
	comp=Z,18nm,0.8s,mb5.1							
BLO				*e*PcP		PcP	08 20 54.4	-1.5
MCWV	**Mont Chateau**	**35.35**	**6**	*e*P		**P**	**08 18 28.6**	**+0.1**
	comp=Z,41nm,0.8s,mb5.4							
ACSO	**Alum Creek Sta**	**35.69**	**2**	*e*P		**P**	**08 18 30.9**	**-0.5**
	comp=Z,119nm,1.5s,mb5.6							
BNM	**Barren Site**	**35.92**	**328**	*e*P		**P**	**08 18 34.5**	**+1.1**
LENM	**Lemitar**	**36.11**	**328**	*e*P		**P**	**08 18 36.3**	**+1.2**
KSU1	**Kansas State U**	**36.18**	**344**	*e*P		**P**	**08 18 34.6**	**-0.9**
MVL	**Millersville**	**36.22**	**11**	*e*P		**P**	**08 18 36.1**	**+0.2**
ANMO	**Albuquerque**	**36.45**	**329**	*e*P		**P**	**08 18 38.7**	**+0.8**
	comp=Z,80nm,1.8s,mb5.3							
ANMO				LR		LR		
	comp=Z,178nm,20.0s,MS3.8							
SSPA	**Standing Stone**	**36.58**	**9**	*e*P		**P**	**08 18 38.7**	**-0.2**
	comp=Z,17nm,1.0s,mb4.8							
TUC	**Tucson**	**36.96**	**322**	*e*P		**P**	**08 18 42.4**	**+0.2**
	comp=Z,5.4nm,0.8s,mb4.4							
TUC				*e*PcP		PcP	08 21 02.1	-0.8
TUC				LR		LR		
	comp=Z,2μm,19.0s,MS5.0							
ERPA	**Erie**	**37.77**	**6**	*e*P		**P**	**08 18 48.6**	**-0.3**
	comp=Z,17nm,0.7s,mb4.9							
SDCO	**Great Sand Dun**	**38.23**	**333**	*e*P		**P**	**08 18 54.1**	**+1.5**
	comp=Z,76nm,1.8s,mb5.1							
BINY	**Binghamton**	**38.41**	**10**	*e*P		**P**	**08 18 54.2**	**0.0**
	comp=Z,69nm,1.7s,mb5.1							
JFWS	**Jewell Farm**	**38.65**	**353**	P		**P**	**08 18 55.5**	**-0.6**
	comp=Z,34nm,1.3s,mb4.9							
WUAZ	**Wupatki**	**39.55**	**325**	*e*P		**P**	**08 19 05.0**	**+1.3**
	comp=Z,20nm,0.9s,mb4.8							
WUAZ				*e*PcP		PcP	08 21 10.6	-0.3
FCH	**Farellones**	**39.95**	**161**	*i*P		**P**	**08 19 05.6**	**-1.4**
ISCO	**Idaho Springs**	**39.97**	**335**	*e*P		**P**	**08 19 08.4**	**+1.3**
	comp=Z,18nm,1.0s,mb4.8							
ISCO				LR		LR		
	comp=Z,696nm,22.0s,MS4.5							
PV01	**Paradox Valley**	**39.99**	**330**	*e*P		**P**	**08 19 08.6**	**+1.3**
PV10	**Paradox Valley**	**40.42**	**330**	*e*P		**P**	**08 19 11.2**	**+0.3**
CPUP	**Villa Florida**	**40.46**	**141**	P		**P**	**08 19 09.4**	**-1.9**
	comp=Z,6.4nm,0.9s,mb4.3,baz=351,slow=7.0,SNR=10							
CPUP				PcP		PcP	08 21 12.3	-1.6
	comp=Z,6.7nm,0.9s,baz=316,slow=5.1,SNR=5.8							
CPUP				LR		LR	08 37 19.3	
	comp=Z,936nm,22.0s,MS4.6,baz=346,slow=38							
CPUP	**Villa Florida**	**40.46**	**141**	*e*P		**P**	**08 19 09.1**	**-2.3**
	comp=Z,5.4nm,1.0s,mb4.2							
CPUP				LR		LR		
	comp=Z,633nm,20.0s,MS4.5							
NCB	**Newcomb**	**40.46**	**12**	*e*P		**P**	**08 19 11.5**	**+0.3**
	comp=Z,79nm,2.1s,mb5.1							
BAR	**Barrett**	**41.02**	**317**	*e*P		**P**	**08 19 16.4**	**+0.5**
MSNY	**Massena**	**41.33**	**11**	*e*P		**P**	**08 19 17.9**	**-0.3**
BDFB	**Brasilia**	**41.43**	**120**	P		**P**	**08 19 18.1**	**-1.3**
	comp=Z,12nm,0.9s,mb4.5,baz=285,slow=6.6,SNR=14							
BDFB				LR		LR	08 38 28.6	
	comp=Z,685nm,19.2s,MS4.5,baz=298,slow=39							
PFO	**Pinyon Flat Ob**	**41.43**	**318**	*e*P		**P**	**08 19 20.2**	**+0.9**
	comp=Z,167nm,1.8s,mb5.4							
NEN	**Nelson**	**41.70**	**322**	*e*P		**P**	**08 19 22.4**	**+0.9**
SRU	**San Rafael**	**41.72**	**329**	*e*P		**P**	**08 19 22.5**	**+0.8**
WVL	**Waterville**	**42.12**	**16**	*e*P		**P**	**08 19 26.2**	**+1.4**
WVL				LR		LR		
	comp=Z,4μm,22.0s,MS5.3							
MSU	**Marysvale**	**42.14**	**327**	*e*P		**P**	**08 19 25.9**	**+0.8**
MVU	**Marysvale**	**42.16**	**327**	*e*P		**P**	**08 19 26.5**	**+1.3**
	comp=Z,53nm,1.8s,mb4.9							
MWC	**Mount Wilson**	**42.87**	**318**	*e*P		**P**	**08 19 31.7**	**+0.6**
MPU	**Maple Canyon**	**42.97**	**329**	*e*P		**P**	**08 19 32.4**	**+0.6**
RSSD	**Black Hills**	**43.05**	**340**	*e*P		**P**	**08 19 33.7**	**+1.2**
	comp=Z,21nm,0.9s,mb4.9							
DAU	**Daniels Canyon**	**43.08**	**330**	*e*P		**P**	**08 19 33.0**	**+0.3**
NLU	**North Lily Min**	**43.15**	**329**	*e*P		**P**	**08 19 33.7**	**+0.4**
JLU	**Jordanelle**	**43.32**	**330**	*e*P		**P**	**08 19 35.0**	**+0.3**
CTU	**Camp Tracy**	**43.53**	**330**	*e*P		**P**	**08 19 36.7**	**+0.3**
TCUT	**Toone Canyon**	**43.69**	**331**	*e*P		**P**	**08 19 38.4**	**+0.7**
PDAR	**Pinedale Array**	**44.11**	**334**	P		**P**	**08 19 40.5**	**-0.5**
	comp=Z,5.0nm,0.8s,mb4.3,baz=130,slow=8.7,SNR=33							
PDAR				PcP		PcP	08 21 25.0	-0.9
	comp=Z,2.4nm,0.7s,baz=146

PMR	Palmer	74.16	333	*e*P	P	08 23 08.2	-0.4	
PMS	Palmer South	74.23	333	*e*P	P	08 23 08.8	-0.2	
ILAR	Eielson Array	74.42	337	P	P	08 23 09.7	-0.4	
	comp=Z,18nm,0.9s,mb5.0,baz=121,slow=3.8,SNR=122							
ILAR				PP	PP	08 26 00.7	+2.0	
	comp=Z,0.7nm,0.5s,baz=107,slow=7.4,SNR=4.2							
ILAR				LR	LR	08 58 01.5		
	comp=Z,516nm,20.0s,MS4.8,baz=131,slow=38							
COLA	College	74.84	337	*e*P	P	08 23 11.6	-0.9	
MCK	McKinley	74.85	335	*e*P	P	08 23 12.2	-0.3	
	comp=Z,20nm,1.0s,mb5.0							
EVO	Evora	76.85	52	*e*P	P	08 23 24.1	-0.4	
	comp=Z,8.1nm,0.6s,mb4.5							
EVO				*e*R				
	comp=Z,204nm,18.0s							
SVW	Sparrevohn	76.98	332	*e*P	P	08 23 23.5	-1.2	
IMA	Indian Mountai	77.54	337	*e*P	P	08 23 27.4	-0.3	
RAR	Rarotonga	77.75	247	LR	LR	08 49 35.5		
	comp=Z,104nm,19.0s,MS4.2,baz=58,slow=29							
TIC	Toumodi	79.27	84	*e*PKP1	P	08 23 39.1	+0.8	
	comp=Z,444nm,1.9s,mb6.1							
LIC	Lamto	79.29	85	*e*P	P	08 23 38.3	0.0	
	comp=Z,60nm,1.3s,mb5.1							
LIC				*e*R				
	comp=Z,198nm,19.5s							
LIC	Lamto	79.29	85	*e*PKP1	P	08 23 38.2	-0.1	
	comp=Z,60nm,1.3s,mb5.4							
LIC	Lamto	79.29	85	*e*P	P	08 23 38.3	0.0	
	comp=Z,30nm,1.3s,mb5.1							
LIC				LR	LR			
	comp=Z,100nm,19.5s,MS4.2							
DBIC	Dimbokro	79.43	84	LR	LR	08 56 59.7		
	comp=Z,126nm,19.4s,MS4.3,baz=244,slow=34							
KIC	Kosan Boka	79.56	84	*e*PKP1	P	08 23 39.3	-0.5	
	comp=Z,122nm,1.2s,mb5.7							
ESDC	Sonseca Array	80.07	51	P	P	08 23 42.9	+0.8	
	comp=Z,2.7nm,0.7s,mb4.3,baz=276,slow=5.1,SNR=14							
ESDC				LR	LR	08 53 13.3		
	comp=Z,124nm,19.9s,MS4.2,baz=250,slow=31							
ESLA	Sonseca Array	80.07	51	*e*P	P	08 23 42.7	+0.7	
	comp=Z,7.5nm,1.4s,mb4.4							
ROSF	Rostrenen	81.02	42	*e*P	P	08 23 46.9	0.0	
	comp=Z,60nm,1.2s,mb5.1							
QUIF	Quistinic	81.07	42	*e*P	P	08 23 47.0	-0.1	
	comp=Z,41nm,1.3s,mb4.9							
SGMF	Saint Gilles	81.49	42	*e*P	P	08 23 49.2	-0.2	
ANM	Nome	82.02	335	*e*P	P	08 23 52.2	+0.5	
GRR	Gorron	82.63	42	*e*P	P	08 23 55.4	+0.2	
	comp=Z,22nm,0.8s,mb4.9							
ETSF	Etsaut	82.72	47	*e*P	P	08 23 56.6	+0.8	
	comp=Z,14nm,0.9s,mb4.7							
FLN	La Foliniere	82.89	42	*e*P	P	08 23 56.8	+0.3	
	comp=Z,31nm,0.9s,mb5.0							
FLN				*e*R				
	comp=Z,285nm,22.0s							
MFF	Saint Martin d	83.07	44	*e*P	P	08 23 57.7	+0.2	
	comp=Z,30nm,1.1s,mb4.9							
LDF	La Druitiere	83.12	42	*e*P	P	08 23 57.9	+0.2	
	comp=Z,34nm,0.9s,mb5.0							
EPF	Esparros	83.39	47	*e*P	P	08 23 59.9	+0.7	
	comp=Z,17nm,0.9s,mb4.8							
LFF	La Frestale	83.68	45	*e*P	P	08 24 00.9	+0.3	
RJF	Les Rejaudoux	84.23	45	*e*P	P	08 24 03.7	+0.3	
RJF				*e*R				
	comp=Z,178nm,22.2s							
CAF	Calviac	84.62	45	*e*P	P	08 24 05.7	+0.3	
TCF	Toulx Ste Croi	84.70	44	*e*P	P	08 24 05.7	0.0	
MTLF	Montolieu	84.76	47	*e*P	P	08 24 06.5	+0.4	
	comp=Z,14nm,0.9s,mb4.8							
BGF	Bois d'Agland	85.14	44	*e*P	P	08 24 08.1	+0.2	
	comp=Z,30nm,1.1s,mb5.0							
AVF	Avril sur Loir	85.48	44	*e*P	P	08 24 09.2	-0.4	
	comp=Z,13nm,0.9s,mb4.7							
SSF	Saint Saulge	85.58	43	*e*P	P	08 24 09.6	-0.4	
	comp=Z,17nm,1.1s,mb4.9							
SMF	Signal de Mont	85.82	44	*e*P	P	08 24 11.0	-0.2	
	comp=Z,14nm,0.9s,mb4.9							
LASF	Ste Croix	85.92	46	*e*P	P	08 24 12.7	+0.9	
BAIF	Baives	85.95	40	*e*P	P	08 24 12.7	+0.9	
GIVF	Givet	86.34	40	*e*P	P	08 24 14.1	+0.4	
	comp=Z,32nm,1.0s,mb5.2							
VIVF	Saint-Julien-l	86.47	45	*e*P	P	08 24 15.6	+1.1	
	comp=Z,37nm,1.0s,mb5.3							
MEZF	Maizieres J'vi	86.56	42	*e*P	P	08 24 15.1	+0.3	
	comp=Z,30nm,0.9s,mb5.2							
HGN	Heimansgroeve	87.02	39⇑	*e*P	P	08 24 17.4	+0.4	
	comp=Z,17nm,1.0s,mb5.2							
HGN				*ex*	x	08 24 24.9		
SMRF	Simiane la Rot	87.17	46	*e*P	P	08 24 19.0	+1.1	
WLF	Walferdange	87.22	41	*e*P	P	08 24 19.1	+1.1	
	comp=Z,20nm,0.8s,mb5.4							
ORIF	Oris-en-Rattie	87.33	45	*e*P	P	08 24 19.8	+1.2	
	comp=Z,18nm,1.0s,mb5.0							
ORIF				*e*R				
	comp=Z,86nm,19.8s							
CABF	La Chapelle	87.37	44	*e*P	P	08 24 19.2	+0.4	
	comp=Z,20nm,0.9s,mb5.0							
HAU	Haudompre	87.46	42	*e*P	P	08 24 19.2	0.0	
HAU				*e*R				
	comp=Z,166nm,21.2s							
WTSB	Winterswijk	87.48	38⇑	*e*P	P	08 24 19.9	+0.7	
	comp=Z,26nm,0.9s,mb5.5							
HINF	Hinteralfeld	87.81	42	*e*P	P	08 24 20.7	-0.2	
LMR	La Mourre	87.89	47	*e*P	P	08 24 21.9	+0.5	
LPL	La Plagne	87.89	45	*e*P	P	08 24 22.5	+1.2	
LPG	La Plagne	87.90	45	*e*P	P	08 24 22.8	+1.4	
SPITS	Spitsbergen Ar	87.97	12	LR	LR	09 04 25.2		
	comp=Z,27nm,19.6s,MS3.7,baz=298,slow=36							
MBDF	Montbardon	87.97	45	*e*P	P	08 24 22.8	+1.1	
SBF	Sospel	88.52	46	*e*P	P	08 24 24.9	+0.6	
NOA	NORSAR Array B	89.04	29	LR	LR	09 01 43.4		
	comp=Z,92nm,18.2s,MS4.2,baz=295,slow=34							
VNA3	Neumayer Olymp	89.38	162	*e*	P	08 24 28.7	+0.9	
VNA3	Neumayer Olymp	89.38	162	*e*	P	08 24 37.4	+10	
VNA3	Neumayer Olymp	89.38	162	*e*	P	08 24 42.5	+15	
VNA3	Neumayer Olymp	89.38	162	⇓*i*P	P	08 24 27.6	-0.2	
VNA3				*e*		08 24 37.4		
VNA3				*e*	pP	08 24 42.5	-1.2	
VNA3				*e*		08 27 55.6		
VNA1	Neumayer--Stat	89.67	161	*e*	P	08 24 30.4	+1.2	
VNA1	Neumayer--Stat	89.67	161	*e*	P	08 24 39.5	+10	
VNA1	Neumayer--Stat	89.67	161	*e*	pP	08 24 44.6	-0.5	
VNA1	Neumayer--Stat	89.67	161	⇓*i*P	P	08 24 29.5	+0.3	
VNA1				*e*		08 24 39.5		
VNA1				*e*	pP	08 24 44.6	-0.5	
VNA2	Neumayer--Watz	90.02	161	*e*	P	08 24 30.6	-0.2	
VNA2	Neumayer--Watz	90.02	161	*e*	P	08 24 39.9	+9.1	
VNA2	Neumayer--Watz	90.02	161	*e*	pP	08 24 44.7	-2.0	
VNA2	Neumayer--Watz	90.02	161	⇓*i*P	P	08 24 29.7	-1.1	
VNA2				*e*		08 24 39.9		
VNA2				*e*	pP	08 24 44.7	-2.0	
VNA2				*e*		08 27 57.7		
MOX	Moxa	90.62	39	*e*P	P	08 24 42.0	+7.9	
MOX				L		09 02 14.0		
SNAA	Sanae	91.60	162	*e*P	P	08 24 36.6	-1.6	
BRG	Berggiesshubel	92.05	39	*e*P	P	08 24 41.3	+0.6	
	comp=Z,4.0nm,0.8s,mb4.8							
GERES	GERESS Array B	92.23	41	P	P	08 24 41.5	-0.1	
	comp=Z,1.0nm,0.7s,mb4.3,baz=270,slow=2.7,SNR=7.7							
BILL	Bilibino	92.34	339	*e*P	P	08 24 44.7	+0.3	
	comp=Z,45nm,1.6s,mb5.7							
QSPA	South Pole Qui	94.44	180	*e*P	P	08 24 50.5	-0.4	
	comp=Z,35nm,0.9s,mb5.8							
QSPA				LR	LR			
	comp=Z,160nm,21.1s,MS4.5							
FINES	FINESS Array B	95.91	27	LR	LR	09 02 48.6		
	comp=Z,152nm,19.1s,MS4.5,baz=340,slow=32							
ZRNK	Zerenda	118.68	18	*e*PKPdf	PKPdf	08 30 19.1	+0.7	
MDJ	Mudanjiang	122.33	332	PKP	PKPdf	08 30 25.8	+0.2	
KURK	Kurchatov	123.24	13	*e*PKPdf	PKPdf	08 30 28.8	+1.6	
CN2	Changchun	124.85	334	*e*PKP	PKPdf	08 30 31.6	+1.0	
CN2				LR	LR			
	comp=Z,300nm,22.0s,MS4.9							
ULN	Ulaanbaatar	126.92	350	*e*PKPdf	PKPdf	08 30 35.1	+0.7	
SONM	Songino Array	127.06	351	PKP	PKPdf	08 30 34.9	+0.2	
	comp=Z,3.4nm,0.8s,baz=8.3,slow=1.6,SNR=16							
MKAR	Makanchi Array	127.73	11	PKP	PKPdf	08 30 35.7	-0.3	
	comp=Z,12nm,1.2s,baz=354,slow=1.6,SNR=19							
CTAO	Charters Tower	128.06	248	*e*PKPdf	PKPdf	08 30 37.8	+0.5	
KS15	Wonju Array Si	128.49	327	*e*PKPdf	PKPdf	08 30 38.5	+0.7	
STKA	Stephens Creek	128.78	232	*e*P	PKPdf	08 30 38.5	0.0	
	comp=Z,6.1nm,0.8s							
STKA	Stephens Creek	128.78	232	PKP	PKPdf	08 30 38.7	+0.2	
	comp=Z,7.0nm,0.8s,baz=87,slow=1.8,SNR=15							
WMQ	Urumqi	131.50	7	PKP	PKPdf	08 30 43.6	+0.3	
WMQ				XPKP		08 30 58.0		
WMQ				PP	PP	08 33 07.6	+0.5	
WMQ				PKS	PKS	08 34 18.5	-0.2	
WMQ				SKS	SKS	08 37 49.8	+3.6	
WMQ				SKKS		08 39 54.5		
WMQ				SS	SS	08 50 36.6	+3.1	
WMQ				PP	PP			
	comp=Z,70nm,12.0s							
BJI	Beijing	131.77	338	PKP	PKPdf	08 30 44.8	+0.9	
BJI				LR	LR			
	comp=Z,214nm,36.4s,MS4.6							
GTA	Gaotai	136.19	355	*e*PKP	PKPdf	08 30 53.3	+1.2	
NJ2	Nanjing	137.37	330	*e*PKP	PKPdf	08 30 54.4	-0.1	
NJ2				XPKP		08 31 09.5		
NJ2				PP	PP	08 33 42.0	-1.9	
NJ2				PP	PP			
	comp=Z,40nm,3.6s							
AS12	Alice Springs	138.15	239	*e*P	PKPdf	08 30 55.8	-0.4	
	comp=Z,9.1nm,1.0s							
ASAR	Alice Springs	138.15	239	PKhKP		08 30 48.3		
	comp=Z,1.2nm,0.8s,baz=112,slow=3.1,SNR=6.8							
ASAR				PKP	PKPdf	08 30 55.8	-0.4	
	comp=Z,3.4nm,0.7s,baz=110,slow=2.0,SNR=20							
WB2	Warramunga Arr	138.97	245	*e*P	PKPdf	08 30 57.3	-0.4	
WRAB	Tennant Creek	138.97	245	*e*PKPdf	PKPdf	08 30 58.0	+0.3	
WRA	Warramunga Arr	138.98	245	PKhKP		08 30 48.7		
	comp=Z,0.4nm,0.6s,baz=105,slow=2.9,SNR=8.5							
WRA				PKP	PKPdf	08 30 57.7	0.0	
	comp=Z,3.8nm,0.8s,baz=97,slow=2.6,SNR=7.3							
NDI	New Delhi	142.78	27	*e*	PKPdf	08 30 50.0	-14	
DANN	Dangsing	145.58	18	*e*P	PKPdf	08 31 10.5	+1.3	
KLBR	Kellerberrin	145.71	215	*e*P	PKPdf	08 31 09.3	0.0	
	comp=Z,32nm,0.9s							
LSA	Lhasa	145.84	6	PKP	PKPdf	08 31 11.8	+2.2	
KOLN	Koldanda	146.07	19	*e*P	PKPdf	08 31 11.0	+1.0	
	comp=Z,113nm,1.3s							
GKN	Gorkha	146.17	17	*e*P	PKPdf	08 31 12.5	+2.3	
	comp=Z,136nm,0.9s							
MUN	Mundaring	146.29	213	*e*P	PKPdf	08 31 11.5	+1.2	
	comp=Z,27nm,0.9s							
KKN	Kakani	146.55	16	*e*P	PKPdf	08 31 14.0	+3.1	
	comp=Z,94nm,0.7s							
GUN	Gumba	146.60	15	*e*P	PKPdf	08 31 14.0	+3.1	
	comp=Z,165nm,0.9s							
DMN	Daman	146.68	17	*e*P	PKPdf	08 31 14.2	+3.1	
	comp=Z,131nm,0.9s							
PKI	Pulchoki	146.80	16	*e*P	PKPdf	08 31 14.3	+3.0	
	comp=Z,107nm,1.1s							
FITZ	Fitzroy Crossi	147.36	243	*e*P	PKPdf	08 31 12.7	+0.3	
	comp=Z,17nm,0.9s							
GYA	Guiyang	147.39	341	PKP	PKPdf	08 31 15.8	+3.5	
GYA				APKP		08 31 27.8		
POO	Poona	148.91	42	*e*PKP	PKPdf	08 31 18.0	+3.1	
KMI	Kunming	149.76	347	*e*PKP	PKPdf	08 31 16.4	+0.3	
KAD	Karad	149.99	43	*e*PKP	PKPdf	08 31 20.5	+3.9	
SHL	Shillong	150.01	6	*e*PKP	PKPdf	08 31 17.0	+0.5	
CMAR	Chiang Mai Arr	156.99	351	PKP	PKPdf	08 31 27.5	+1.1	
	comp=Z,1.3nm,0.5s,baz=308,slow=2.9,SNR=5.5							
CMAR				PKPab	PKPab	08 31 58.0	-1.2	
	comp=Z,4.8nm,1.0s,baz=352,slow=5.3,SNR=5.8							

*HEL **21** 08:36:03.3ᵗ0.2, 61.01N×30.02E, ML1.7, ML2.1(NAO), Explosion*
*NAO **21** 08:36:05.6ᵗ3.6, 61.33N×29.69E, ML2.1*
*BER **21** 08:36:06.9ᵗ2.4, 61.22N×29.62E, ML2.1(NAO), Suspected explosion*

ISC 21 08:36:02.4±1.1, 61.04N±0.05×30.0E±0.1, n15, σ0$89/26, Finland-Karelia border region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
VJF	Virojoki	1.29	248	*e*P		P*b*		08 36 26.3	-1.0
FIA0	FINESS Array S	1.93	284	*e*P		P*n*		08 36 36.7	-0.1
FIA0				*e*S		S*n*		08 37 03.0	+0.9
FIA0	FINESS Array S	1.93	284	Pn		P*n*		08 36 36.7	-0.1
	baz=109,slow=16								
FIA0				Lg				08 37 00.7	
	baz=92,slow=37								
FIA0				Rg				08 37 10.4	
	baz=95,slow=37								
JOF	Joensuu	1.99	18	*e*P		P*n*		08 36 38.4	+0.7
JOF				*e*S		S*n*		08 37 03.4	-0.2
KAF	Kangasniemi	2.06	303	*e*P		P*n*		08 36 39.1	+0.4
KAF				*e*S		S*n*		08 37 05.2	-0.2
PVF	Pernaja	2.08	258	*e*P		P*n*		08 36 39.2	+0.3
PVF				*e*S		S*n*		08 37 06.0	+0.1
SUF	Sumiainen	2.48	315	*e*P		P*n*		08 36 45.6	+1.0
SUF				*e*S		S*n*		08 37 16.1	+0.1
SUF				*e*SB		S*b*		08 37 18.7	0.0
SUF				MSG				08 37 20.0	
	comp=Z,2.3nm,0.2s								
KEF	Keuruu	2.69	297	*e*P		P*n*		08 36 48.4	+0.7
KEF				*e*S		S*n*		08 37 21.5	0.0
MEF	Metsahovi	2.87	256	*e*P		P*n*		08 36 51.2	+0.9
MEF				*e*S		S*n*		08 37 24.7	-1.4
KJN	Kajaani	3.23	342	*e*P		P*n*		08 36 56.1	+0.6
KJN				*e*S		S*n*		08 37 34.1	-1.1
VAF	Ylistaro	3.98	303	*e*P		P*n*		08 37 06.8	+0.7
HFS	Hagfors	8.07	271	Pn		P		08 38 00.2	-3.4
	baz=76,slow=11								
HFS	Hagfors	8.07	271	*e*P		P		08 38 00.2	-3.4
ARA0	ARCESS Array S	8.73	350	Pn		P		08 38 10.4	-2.5
	baz=172,slow=12								
ARA0				Sn		S*n*		08 39 42.0	-11
	baz=166,slow=28								
ARA0				Lg				08 40 28.4	
	baz=161,slow=37								
ARA0	ARCESS Array S	8.73	350	*e*P		P		08 38 10.4	-2.5
ARA0				*e*S		S*n*		08 39 42.0	-11
ARA0				*e*				08 40 28.4	

*IDC **21** 08:36:31.5ᵗ2.0, 22.24S×169.69E, mb4.2/7, mb1 4.4/7, mb1mx4.3/11, MS3.7/5, Ms1 3.7/5, ms1mx3.6/14, Error ellipse: s-maj=89.6km s-min=24.5km az=153.0*
*NEIC **21** 08:36:33.2ᵗ0.5, 22.18S×169.69E, h10km, mb4.6/4, Error ellipse: s-maj=17.0km s-min=9.6km az=164.0*

ISC 21 08:36:35.7±2.1, 22.14S±0.08×169.56E±0.10, h36km±17km, n40, σ0$81/24, mb4.2/11, MS3.7/5, 2D, Southeast of Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	2.89	271	*e*P		P		08 37 20.7	+0.3
DZM				*e*S		S		08 37 54.3	0.0
NOUC	Port Laguerre	3.02	270	*e*P		P		08 37 22.2	-0.1
NOUC				*e*S		S		08 37 56.9	-0.7
NOUC	Port Laguerre	3.02	270	*e*P		P		08 37 22.2	-0.1
NOUC				*e*S		S		08 37 56.9	-0.7
BKM	Butte a Klehm	4.62	344	*i* P		P		08 37 45.0	0.0
BKM				S		S		08 38 38.1	-0.1
ARMA	Armidale	18.05	239	*e*P		P		08 40 47.1	+1.6
CTA	Charters Tower	21.83	271	LR		LR		08 48 26.7	
	comp=Z,116nm,21.9s,MS3.2,baz=46,slow=33								
STKA	Stephens Creek	26.67	243	*e*P		P		08 42 13.1	-0.3
	2.7nm,0.7s,mb3.9								
STKA	Stephens Creek	26.67	243	P		P		08 42 13.3	-0.1
	5.5nm,1.3s,mb3.9,baz=98,slow=11,SNR=3.2								
STKA				LR		LR		08 52 24.3	
	comp=Z,194nm,21.0s,MS3.6,baz=28,slow=36								
ASAR	Alice Springs	32.83	260	P		P		08 43 07.6	-0.7
	2.0nm,0.7s,mb4.1,baz=83,slow=9.2,SNR=23								
ASAR				LR		LR		08 54 55.3	
	comp=Z,81nm,19.0s,MS3.5,baz=24,slow=34								
WRA	Warramunga Arr	32.90	267	P		P		08 43 07.5	-1.4
	0.5nm,0.6s,mb3.7,baz=99,slow=8.2,SNR=11								
FITZ	Fitzroy Crossi	41.33	267	*e*P		P		08 44 20.6	+0.7
	5.9nm,0.7s,mb4.3								
QSPA	South Pole Qui	67.93	180	*e*P		P		08 47 31.6	-0.7
	2.3nm,0.7s,mb4.3								
CMAR	Chiang Mai Arr	79.97	295	P		P		08 48 45.0	+1.6
	1.5nm,0.8s,mb4.0,baz=145,slow=5.4,SNR=4.3								
VNA3	Neumayer Olymp	86.87	180	⇓*i*P		P		08 49 16.9	-0.4
VNA3				*e*		pP		08 49 27.3	-1.2
VNA2	Neumayer--Watz	87.16	181	⇓*i*P		P		08 49 18.7	0.0
VNA2				*e*		pP		08 49 29.2	-0.8
SONM	Songino Array	89.71	323	P		P		08 49 32.8	+1.4
	1.6nm,1.0s,mb4.3,baz=146,slow=4.5,SNR=6.2								
NVAR	Mina Array Bea	90.50	48	P		P		08 49 35.5	+0.1
	2.0nm,0.7s,mb4.5,baz=213,slow=6.1,SNR=18								
NVAR	Mina Array Bea	90.50	48	P		P		08 49 35.5	+0.1
TPH	Tonopah	91.08	49	*e*P		P		08 49 38.2	+0.1
	3.6nm,1.2s,mb4.6								
WVOR	Wild Horse Val	92.16	45	*e*P		P		08 49 43.0	0.0
	1.2nm,0.5s,mb4.5								
ILAR	Eielson Array	92.90	17	P		P		08 49 44.4	-1.5
	0.7nm,0.7s,mb4.2,baz=241,slow=4.9,SNR=13								
TXAR	Lajitas Array	97.88	62	LR		LR		09 27 28.8	
	comp=Z,70nm,21.8s,MS4.1,baz=345,slow=31								
PDAR	Pinedale Array	98.36	47	LR		LR		09 31 12.7	
	comp=Z,46nm,18.1s,MS4.0,baz=262,slow=33								
YKA	Yellowknife Ar	103.10	28	Pdiff	Pdif			08 50 31.3	-0.6
	0.2nm,0.7s,baz=249,slow=4.1,SNR=5.6								
YKA	Yellowknife Ar	103.10	28	Pdif	Pdif			08 50 31.3	-0.6
RZN	Rozhen	144.69	312	*i* P	PKPbc			08 56 10.5	+1.8
VTS	Vitosha	145.35	314	*e*P	PKPdf			08 56 13.5	+3.6
MMB	Musomiste	145.41	312	*i* P	PKPdf			08 56 12.5	+2.5
BRG	Berggiesshubel	145.58	332	*i* P	PKPdf			08 56 12.6	+2.6
BRG				*i*				08 56 26.5	
CLL	Collm	145.65	334	*e*PKP1	PKPbc			08 56 12.0	+1.1
CLL				*e*				08 56 26.0	
CLL	Collm	145.65	334	P	PKPdf			08 56 08.0	-2.1
SKO	Skopje	146.80	314	*e*Pn	PKPdf			08 56 16.5	+4.1
SKO				*i*				08 56 27.0	
KHC	Kasperske Hory	147.01	331	*e*PKP	PKPdf			08 56 16.5	+4.0
GERES	GERESS Array B	147.16	330	PKPbc	PKPdf			08 56 17.3	+4.6
	2.7nm,0.6s,baz=27,slow=3.0,SNR=21								
CDF	Champ du Feu	150.21	336	*e*PKP1	PKPdf			08 56 24.2	+6.6
	4.1nm,0.6s								
HINF	Hinteralfeld	150.86	336	*e*PKP1	PKPdf			08 56 25.6	+7.0
	6.3nm,0.8s								
HAU	Haudompre	150.90	336	*e*PKP1	PKPdf			08 56 25.9	+7.2
MEZF	Maizieres J'vi	150.93	339	*e*PKP1	PKPdf			08 56 26.4	+7.7
CABF	La Chapelle	152.15	335	*e*PKP1	PKPdf			08 56 29.1	+8.5
	5.7nm,0.7s								
LPG	La Plagne	152.79	333	*e*PKP1	PKPdf			08 56 30.8	+9.3

*IDC **21** 09:14:32.6ᵗ4.6, 16.95S×14.61W, mb3.9/4, mb1 4.1/4, mb1mx3.8/18, MS3.6/8, Ms1 3.6/8, ms1mx3.3/28, Error ellipse: s-maj=263.0km s-min=32.1km az=143.0*

ISC 21 09:14:31.6±0.8, 17.3S±0.2×14.4W±0.3, h10km, n14, σ1$03/7, mb3.8/4, MS3.6/8, 1C-2D, Southern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
DBIC	Dimbokro	25.59	22	LR		LR		09 27 28.8	
	comp=Z,67nm,19.8s,MS3.2,baz=13,slow=31								
TSUM	Tsumeb	30.38	99	LR		LR		09 29 29.2	
	comp=Z,105nm,21.8s,MS3.4,baz=141,slow=29								
BDFB	Brasilia	32.30	268	LR		LR		09 31 40.9	
	comp=Z,148nm,21.8s,MS3.6,baz=114,slow=32								
CPUP	Villa Florida	40.74	250	P		P		09 22 14.6	0.0
	2.3nm,1.0s,mb3.8,baz=84,slow=9.2,SNR=4.4								
CPUP				LR		LR		09 35 26.1	
	comp=Z,87nm,20.7s,MS3.6,baz=263,slow=31								
LPAZ	La Paz	51.35	263	LR		LR		09 44 33.9	
	comp=Z,66nm,19.7s,MS3.7,baz=107,slow=35								
VNA1	Neumayer--Stat	53.48	177	⇑*i*		P		09 23 56.1	+2.1
VNA2	Neumayer--Watz	53.79	177	⇓*i*		P		09 23 55.0	-1.3
VNA3	Neumayer Olymp	54.02	178	⇓*i*		P		09 23 52.8	-5.1
ROSC	El Rosal	63.16	285	LR		LR		09 52 10.1	
	comp=Z,159nm,21.1s,MS4.2,baz=42,slow=36								
EIL	Elat	66.63	46	LR		LR		09 53 17.8	
	comp=Z,54nm,20.2s,MS3.8,baz=118,slow=35								
ASF	Jabal al Asfar	69.48	45	LR		LR		09 55 53.4	
	comp=Z,26nm,19.4s,MS3.5,baz=236,slow=36								
BRTR	Keskin Array B	72.24	37	P		P		09 25 59.6	+0.6
	0.6nm,0.6s,mb3.7,baz=207,slow=6.6,SNR=4.2								
AKASG	Malin Array Be	77.75	27	P		P		09 26 29.6	-0.8
	0.8nm,0.6s,mb3.9,baz=225,slow=6.1,SNR=7.9								
NOA	NORSAR Array B	80.71	12	P		P		09 26 46.4	+

WB2	**Warramunga Arr**	**35.93**	**57**	⇑*iP*		**P**		**10 48 05.2**	**-0.1**
WRAB	**Tennant Creek**	**35.93**	**57**	*eP*		**P**		**10 48 05.0**	**-0.4**
	9.4nm,0.5s,mb5.0								
VNDA	**Vanda**	**40.20**	**163**	LR		LR		11 04 31.8	
	comp=Z,87nm,18.6s,MS3.6,baz=302,slow=35								
KAKA	**Kakadu**	**40.66**	**48**	⇑*iP*		**P**		**10 48 44.9**	**0.0**
	8.1nm,0.6s,mb4.5								
CTAO	**Charters Tower**	**43.42**	**70**	*eP*		**P**		**10 49 07.9**	**+0.4**
	9.7nm,0.8s,mb4.6								
QSPA	**South Pole Qui**	**45.46**	**180**	*eP*		**P**		**10 49 22.7**	**-0.5**
	30nm,0.9s,mb5.1								
VNA2	**Neumayer--Watz**	**54.50**	**202**	*e*		**P**		**10 50 37.8**	**+5.4**
VNA2	**Neumayer--Watz**	**54.50**	**202**	⇓*iP*		**P**		**10 50 32.4**	**0.0**
VNA2				*e*				10 50 37.8	
VNA3	**Neumayer Olymp**	**54.92**	**201**	*e*		**P**		**10 50 36.2**	**+0.7**
VNA3	**Neumayer Olymp**	**54.92**	**201**	⇑*iP*		**P**		**10 50 30.5**	**-5.0**
VNA3				*e*				10 50 36.2	
YBH	**Yreka Blue Hor**	**147.00**	**79**	PKPbc		PKPbc		11 00 46.3	+1.5
	1.2nm,0.8s,baz=122,slow=3.1,SNR=4.6								
NVAR	**Mina Array Bea**	**148.84**	**87**	PKPbc		PKPdf		11 00 52.0	+2.6
	4.8nm,1.1s,baz=207,slow=4.0,SNR=20								
YKA	**Yellowknife Ar**	**152.08**	**37**	PKPbc		PKPdf		11 00 56.7	+3.2
	0.2nm,0.6s,baz=295,slow=1.8,SNR=6.5								
YKA				PKPab		PKPab		11 01 06.8	-2.2
	0.4nm,0.6s,baz=284,slow=2.5,SNR=6.9								
YKA	**Yellowknife Ar**	**152.08**	**37**	PKPbc		PKPdf		11 00 56.7	+3.2
YKA				PKPab		PKPab		11 01 06.8	-2.2
TXAR	**Lajitas Array**	**154.03**	**117**	PKPbc		PKPdf		11 01 03.0	+5.7
	0.2nm,0.7s,baz=204,slow=4.8,SNR=3.5								
TXAR				PKPab		PKPab		11 01 16.8	-1.4
	1.2nm,1.1s,baz=207,slow=5.6,SNR=7.0								
TXAR	**Lajitas Array**	**154.03**	**117**	PKPbc		PKPdf		11 01 03.0	+5.7
TXAR				PKPab		PKPab		11 01 16.8	-1.4

*PRU **21** 11:04:36.1,51.33N×16.14E*
*NEIC **21** 11:04:38.4±3.1,51.18N×15.89E,h5km,MG2.2(WAR), Error ellipse: s-maj=34.4km s-min=10.7km az=216.0*
*WAR **21** 11:04:39.2,51.47N×16.14E,h1km,Location given by Lubin mine, origin time based upon OJC*

ISC 21 11:04:34.5±1.2,51.36N±0.05×15.97E±0.06,n10,σ0°84/16, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.56**	**158**	*e*PG	**Pg**	**11 04 45.0**	**-0.6**
KSP				*e*SG	**Sg**	**11 04 54.0**	**+0.9**
UPC	**Upice**	**0.86**	**178**	*e*PG	**Pg**	**11 04 52.3**	**+0.7**
DPC	**Dobruska-Polom**	**1.04**	**167**	*e*PG	**Pg**	**11 04 54.3**	**-0.9**
DPC				*e*SG	**Sg**	**11 05 08.8**	**-0.2**
PVCC	**Panska Ves**	**1.22**	**227**	*e*PG	**Pg**	**11 04 59.3**	**+0.6**
BRG	**Berggiesshubel**	**1.37**	**250**	*e*Pg	**Pg**	**11 05 01.5**	**-0.2**
BRG				*e*Sg	**Sg**	**11 05 21.6**	**+1.7**
PRU	**Pruhonice**	**1.65**	**214**	*i* x	x	11 05 22.7	
PRU				*e*SG	**Sg**	**11 05 29.5**	**+0.2**
	7.6nm,0.4s						
CLL	**Collm**	**1.86**	**269**	*e*PG	**Pg**	**11 05 11.0**	**-0.6**
CLL				*e*SG	**Sg**	**11 05 36.0**	**-0.4**
OKC	**Ostrava-Krasne**	**2.06**	**137**	*e*SG	**Sg**	**11 05 37.2**	**-6.0**
OJC	**Ojcow**	**2.69**	**114**	*e*Pg	**Pg**	**11 05 28.4**	**+0.3**
OJC				*e*Sg	**Sg**	**11 05 58.8**	**-5.2**
KHC	**Kasperske Hory**	**2.71**	**215**	*e*SN	**Sn**	**11 05 54.4**	**+0.4**
KHC				*e*SG	**Sg**	**11 06 02.7**	**-1.9**

IDC 21 11:11:30.6±4.2,2.83S×132.18E,mb3.9/3,mb1 3.9/4, mb1mx3.7/16,ML3.3/1,MS3.7/1,Ms1 3.7/1,ms1mx2.7/23, Error ellipse: s-maj=289.0km s-min=26.4km az=75.0, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAKA	**Kakadu**	**9.81**	**179**	*e*P	P	11 13 52.5	-3.6
	8.2nm,0.8s						
KAKA				*e*S	Sn	11 15 36.4	-12
WRA	**Warramunga Arr**	**17.14**	**173**	P	P	11 15 30.8	-2.5
	0.1nm,0.3s,baz=353,slow=11,SNR=12						
WB2	**Warramunga Arr**	**17.14**	**173**	*e*P	P	11 15 30.4	-2.9
AS12	**Alice Springs**	**20.78**	**176**	*e*P	P	11 16 15.1	-0.9
	8.3nm,1.0s						
ASAR	**Alice Springs**	**20.78**	**176**	P	P	11 16 13.8	-2.2
	4.8nm,1.0s,baz=350,slow=9.8,SNR=18						
URZ	**Urewera**	**54.06**	**137**	LR	LR	11 42 25.3	
	comp=Z,73nm,19.5s,baz=219,slow=34						
MKAR	**Makanchi Array**	**66.02**	**325**	P	P	11 22 19.9	-1.3
	1.3nm,0.9s,baz=130,slow=11,SNR=4.1						
BVAR	**Borovoye Array**	**75.75**	**327**	P	P	11 23 17.6	-2.4
	1.7nm,1.1s,baz=153,slow=6.6,SNR=4.8						

*IDC **21** 11:19:51.6±2.4,18.70N×146.31E,mb4.0/6,mb1 4.1/6, mb1mx3.7/21,Error ellipse: s-maj=99.0km s-min=26.6km az=84.0*

ISC 21 11:19:54.6±2.3,18.7N±0.2×146.4E±0.7,h33km,n6, σ0°77/6,mb4.0/6,Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**40.16**	**198**	P	**P**	**11 27 29.6**	**+0.1**
	0.6nm,0.9s,mb3.3,baz=8.7,slow=8.0,SNR=12						
SONM	**Songino Array**	**43.58**	**321**	P	**P**	**11 27 57.8**	**+0.6**
	0.5nm,0.5s,mb3.5,baz=130,slow=7.0,SNR=7.0						
MKAR	**Makanchi Array**	**58.96**	**314**	P	**P**	**11 29 52.6**	**-0.5**
	0.7nm,0.7s,mb3.8,baz=100,slow=7.4,SNR=4.3						
BVAR	**Borovoye Array**	**66.92**	**320**	P	**P**	**11 30 45.5**	**-0.1**
	3.5nm,0.5s,mb4.6,baz=101,slow=7.6,SNR=21						
ARCES	**ARCESS Array B**	**82.72**	**342**	P	**P**	**11 32 16.6**	**+0.7**
	1.8nm,0.6s,mb4.3,baz=69,slow=7.7,SNR=10						
FINES	**FINESS Array B**	**87.18**	**335**	P	**P**	**11 32 37.5**	**-0.8**
	1.3nm,0.8s,mb4.2,baz=45,slow=5.9,SNR=3.7						

*NEIC **21** 12:04:50.3,44.43N×7.27E,h13km,ML2.1(GEN), ML1.9(STR),ML1.8(LDG),After GEN.*
*LDG **21** 12:04:50.5±0.1,44.44N×7.27E,h2km,Md2.0/1,Ml1.8/6, Error ellipse: s-maj=2.8km s-min=1.1km az=71.0*
*STR **21** 12:04:50.1±0.2,44.44N×7.29E,h10km±1km,Ml1.9,Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*

ISC 21 12:04:49.7±0.3,44.43N±0.02×7.25E±0.03,h14km±3km, n27,σ0°57/48,Northern Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PZZ	**Prazzo**	**0.13**	**306**	P	**Pb**	**12 04 54.0**	**+0.6**
PZZ				S	**Sb**	**12 04 56.4**	**+0.5**
STV2	**Anna di Valdie**	**0.19**	**164**	P	**Pg**	**12 04 54.5**	**+0.3**
STV2				S	**Sg**	**12 04 56.9**	**-0.4**
STV	**Sta Anna Valdi**	**0.19**	**164**	P	**Pg**	**12 04 54.6**	**+0.4**
STV				S	**Sg**	**12 04 57.3**	**0.0**
ENR	**Entracque**	**0.23**	**149**	P	**Pg**	**12 04 55.3**	**+0.2**
ENR				S	**Sg**	**12 04 58.4**	**-0.1**
SURF	**Saint Ours**	**0.32**	**280**	Pg	**Pg**	**12 04 57.1**	**+0.5**
SURF				Sg	**Sg**	**12 05 02.7**	**+1.5**
BHB	**Bricherasio**	**0.41**	**1**	P	**Pb**	**12 04 58.2**	**0.0**
BHB				S	**Sb**	**12 05 03.7**	**-0.4**
AUTN	**L'Aution**	**0.45**	**164**	Pg	**Pg**	**12 04 59.4**	**+0.4**
AUTN				Sg	**Sg**	**12 05 05.5**	**+0.3**
MBDF	**Montbardon**	**0.46**	**311**	*e*Pg	**Pg**	**12 04 59.5**	**+0.3**
MBDF				*e*Sg	**Sg**	**12 05 05.8**	**+0.3**
	8.0nm,0.2s						
ROB	**Roburent**	**0.46**	**106**	P	**Pb**	**12 04 59.2**	**+0.1**
ROB				S	**Sb**	**12 05 05.2**	**-0.3**
MONE	**Monesi**	**0.50**	**134**	P	**Pb**	**12 04 59.8**	**+0.1**
MONE				S	**Sb**	**12 05 06.1**	**-0.5**
MVIF	**Mont Vial**	**0.54**	**188**	Pg	**Pg**	**12 05 00.9**	**+0.2**
MVIF				Sg	**Sg**	**12 05 08.8**	**+0.8**
AURF	**Auriere**	**0.54**	**174**	Pg	**Pg**	**12 05 01.0**	**+0.2**
AURF				Sg	**Sg**	**12 05 08.5**	**+0.3**
SBF	**Sospel**	**0.58**	**167**	*e*Pg	**Pg**	**12 05 01.7**	**+0.2**
SBF				*e*Sg	**Sg**	**12 05 09.1**	**-0.3**
	5.3nm,0.2s						
RRL	**Cesana Torines**	**0.60**	**326**	P	**Pb**	**12 05 02.0**	**+0.6**
RRL				S	**Sb**	**12 05 09.9**	**+0.6**
NEGI	**Negi**	**0.66**	**150**	P	**Pb**	**12 05 02.7**	**+0.2**
NEGI				S	**Sb**	**12 05 11.3**	**0.0**
RORO		**0.66**	**118**	P	**Pb**	**12 05 02.6**	**+0.1**
RORO				S	**Sb**	**12 05 11.0**	**-0.3**
IMI	**Imperia**	**0.69**	**138**	P	**Pb**	**12 05 03.4**	**+0.4**
IMI				S	**Sb**	**12 05 11.9**	**-0.2**
FIN	**Finale Ligure**	**0.72**	**107**	P	**Pb**	**12 05 03.6**	**+0.1**
FIN				S	**Sb**	**12 05 12.6**	**-0.4**
RSP	**Reno Superiore**	**0.72**	**0**	P	**Pb**	**12 05 03.8**	**+0.2**
RSP				S	**Sb**	**12 05 12.9**	**-0.2**
PCP	**Pian Castagno**	**0.93**	**82**	P	**Pb**	**12 05 07.5**	**+0.3**
FRF	**La Foret Royal**	**0.97**	**207**	*e*Pg	**Pg**	**12 05 09.0**	**-0.2**
FRF				*e*Sg	**Sg**	**12 05 21.9**	**-0.4**
	4.4nm,0.3s						
LSD	**Ceresole Reale**	**1.03**	**356**	P	**Pb**	**12 05 09.6**	**+0.7**
ORIF	**Oris-en-Rattie**	**1.09**	**297**	*e*Pg	**Pg**	**12 05 11.2**	**-0.5**
ORIF				*e*Sg	**Sg**	**12 05 25.0**	**-1.4**
	2.2nm,0.3s						
LPG	**La Plagne**	**1.13**	**342**	*e*Sg	**Sg**	**12 05 26.6**	**-0.9**
	1.3nm,0.3s						
LPL	**La Plagne**	**1.15**	**341**	*e*Sg	**Sg**	**12 05 26.9**	**-1.4**
	1.5nm,0.3s						
LMR	**La Mourre**	**1.22**	**206**	*e*Sg	**Sg**	**12 05 28.8**	**-1.7**
	3.8nm,0.2s						
SMRF	**Simiane la Rot**	**1.29**	**250**	*e*Sg	**Sg**	**12 05 32.0**	**-0.8**
	3.3nm,0.4s						

*RSPR **21** 12:19:18.7,13.34N×72.66W,h76km±31km,M4.1*
*NEIC **21** 12:19:18.3±1.4,20.11N×74.15W,h10km,Error ellipse: s-maj=54.5km s-min=8.1km az=27.0*
*JSN **21** 12:19:20.3±1.0,19.56N×74.67W,MD4.7*
*IDC **21** 12:19:22.6±1.8,21.10N×74.24W,mb3.9/6,mb1 4.2/6, mb1mx3.9/18,MS3.4/10,Ms1 3.4/10,ms1mx3.2/32,Error ellipse: s-maj=47.7km s-min=34.5km az=174.0*

ISC 21 12:19:18.8±1.2,19.3N±0.2×74.28W±0.03,h62km±21km, n38,σ1°22/36,mb3.9/6,13C-3D,Cuba region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GWJ	**Greenwich**	**2.61**	**243**	⇓*eP*	**P**	**12 19 60.0**	**+0.4**
STH	**Stony Hill**	**2.68**	**244**	⇓*iP*	**P**	**12 20 00.8**	**+0.2**
STH				*e*S	**S**	**12 20 31.0**	**-0.9**
BNJ	**Bonny Gate**	**2.71**	**250**	⇓*eP*	**P**	**12 20 00.6**	**-0.3**
PCJ	**Portland Cotta**	**3.13**	**241**	⇓*eP*	**P**	**12 20 08.4**	**+1.5**
PCJ				*e*S	**S**	**12 20 43.7**	**+0.4**
CVJ	**Coleyville**	**3.26**	**252**	⇑*eP*	**P**	**12 20 08.0**	**-0.7**
MCJ	**Malvern**	**3.50**	**248**	⇑*eP*	**P**	**12 20 12.7**	**+0.6**
MCJ				*e*S	**S**	**12 20 51.5**	**-1.2**
LSP	**Las Mesas**	**6.90**	**98**	⇑*eP*	**P**	**12 21 02.1**	**+2.5**
LSP				*e*S	**S**	**12 22 18.8**	**+1.4**
MGP	**Maguayo**	**6.93**	**99**	⇑*eP*	**P**	**12 21 01.5**	**+1.5**
LRS	**Lares**	**7.11**	**97**	⇑*eP*	**P**	**12 21 05.5**	**+3.1**
LRS				*e*S	**S**	**12 22 21.7**	**-0.8**
AOPR	**Arecibo Observ**	**7.19**	**96**	⇑*eP*	**P**	**12 21 06.8**	**+3.3**
AOPR	**Arecibo Observ**	**7.19**	**96**	S	**S**	**12 22 22.3**	**-2.2**
PORP	**Portuguez**	**7.34**	**98**	⇑*eP*	**P**	**12 21 05.8**	**+0.1**
PORP				S	**S**	**12 22 31.1**	**+2.7**
CELP	**Cerrillos**	**7.39**	**98**	⇑*eP*	**P**	**12 21 06.3**	**0.0**
CELP				S	**S**	**12 22 30.1**	**+0.4**
CSB	**Colonia Sabana**	**7.75**	**96**	⇑*eP*	**P**	**12 21 10.7**	**-0.6**
CSB				S	**S**	**12 22 37.6**	**-1.0**
SJG	**San Juan**	**7.79**	**97**	P	**P**	**12 21 11.7**	**-0.2**
CBYP	**Canovanas**	**8.04**	**96**	⇑*eP*	**P**	**12 21 14.2**	**-1.0**
CBYP				S	**S**	**12 22 44.1**	**-1.5**
HUMP	**Col San Antoni**	**8.07**	**97**	⇑*eP*	**P**	**12 21 14.8**	**-0.8**
HUMP				S	**S**	**12 22 41.3**	**-4.9**
MTP	**Monte Pirata**	**8.35**	**97**	⇑*eP*	**P**	**12 21 18.3**	**-1.2**
MTP				S	**S**	**12 22 46.9**	**-6.3**
PCRV	**Puerto La Cruz**	**12.99**	**133**	LR	LR	12 27 25.2	
	comp=Z,42nm,22.0s,baz=55,slow=34						
JTS	**JuntasAbangare**	**13.64**	**231**	LR	LR	12 28 21.3	
	comp=Z,187nm,19.7s,baz=68,slow=36						
SADO	**Sadowa**	**25.74**	**352**	LR	LR	12 33 52.0	
	comp=Z,66nm,18.9s,baz=248,slow=36						
TXAR	**Lajitas Array**	**28.52**	**296**	P	**P**	**12 25 12.7**	**+2.0**
	0.4nm,0.3s,mb3.7,baz=100,slow=10,SNR=2.8						
LPAZ	**La Paz**	**35.86**	**170**	LR	LR	12 41 10.2	
	comp=Z,56nm,21.3s,baz=122,slow=35						
SCHQ	**Schefferville**	**35.94**	**7**	LR	LR	12 39 02.3	
	comp=Z,79nm,21.9s,baz=126,slow=35						
PDAR	**Pinedale Array**	**37.83**	**316**	P	**P**	**12 26 30.1**	**-0.8**
	0.3nm,0.8s,mb3.1,baz=124,slow=11,SNR=3.9						
PDAR				pP	pP	12 26 45.0	-1.7
	0.6nm,0.7s,baz=114,slow=9.2,SNR=5.3						
NVAR	**Mina Array Bea**	**42.56**	**306**	pP	pP	12 27 25.8	-0.2
	0.3nm,0.5s,baz=102,slow=8.3,SNR=3.0						
BDFB	**Brasilia**	**43.26**	**142**	LR	LR	12 46 12.9	
	comp=Z,47nm,18.5s,baz=106,slow=36						
NEW	**Newport**	**45.01**	**320**	LR	LR	12 47 28.6	
	comp=Z,105nm,19.4s,baz=237,slow=39						
YKA	**Yellowknife Ar**	**51.32**	**337**	P	**P**	**12 28 17.3**	**-1.2**
	1.9nm,0.7s,mb4.1,baz=129,slow=8.3,SNR=51						
YKA				LR	LR	12 48 41.3	
	comp=Z,36nm,19.9s,baz=260,slow=35						
YKA	**Yellowknife Ar**	**51.32**	**337**	P	**P**	**12 28 17.3**	**-1.2**
YKA				LR	LR	12 48 41.3	
ESDC	**Sonseca Array**	**62.98**	**55**	LR	LR	12 54 20.1	
	comp=Z,42nm,18.0s,baz=130,slow=34						
ILAR	**Eielson Array**	**65.32**	**333**	P	**P**	**12 29 55.0**	**-1.2**
	0.9nm,0.8s,mb3.8,baz=114,slow=4.1,SNR=11						
ARCES	**ARCESS Array B**	**75.48**	**21**	P	**P**	**12 30 58.1**	**+0.6**
	2.7nm,0.8s,mb4.2,baz=297,slow=2.7,SNR=8.5						
FINES	**FINESS Array B**	**78.10**	**29**	P	**P**	**12 31 13.9**	**+1.6**
	1.4nm,0.5s,mb4.1,baz=243,slow=4.3,SNR=9.2						
MLR	**Muntele Rosu**	**83.38**	**44**	LR	LR	13 04 38.5	
	comp=Z,28nm,19.2s,baz=68,slow=33						
WRA	**Warramunga Arr**	**153.05**	**264**	PKPbc	PKPab	12 39 22.8	-1.1
	1.3nm,1.2s,baz=84,slow=2.2,SNR=4.6						
ASAR	**Alice Springs**	**153.44**	**256**	PKPbc	PKPab	12 39 26.0	+0.6
	0.9nm,1.0s,baz=80,slow=2.4,SNR=3.8						
ASAR	**Alice Springs**	**153.44**	**256**	*e*PKPbc	PKPab	12 39 26.0	+0.6

*MOS **21** 12:27:54.8±1.0,35.78N×70.27E,h166km,mb3.9/4,Error ellipse: s-maj=39.0km s-min=14.8km az=91.9*
*NEIC **21** 12:28:02.7±1.7,36.37N×70.33E,h190km,Error ellipse: s-maj=28.7km s-min=16.7km az=171.0*
*IDC **21** 12:28:04.5±14.0,36.46N×70.31E,h202km±96km,mb3.3/7, mb1 3.4/9,mb1mx3.2/22,Error ellipse: s-maj=124.0km s-min=24.8km az=9.0*
*NNC **21** 12:28:11.4±5.6,37.10N×70.23E,h220km±42km,mpv4.3, Error ellipse: s-maj=56.1km s-min=33.0km az=37.0*

ISC 21 12:28:03.5±1.6,36.53N±0.09×70.3E±0.1,h206km±13km, n41,σ0°88/43,mb3.4/6,5C-3D,Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AML	**Almayashu**	**6.18**	**24**	P	**P**	**12 29 34.4**	**+0.4**
	SNR=466						
UCH	**Uchtor**	**6.56**	**29**	P	**P**	**12 29 38.9**	**+0.1**
	SNR=239						
KK31	**Karatay Array**	**6.57**	**1**	⇑P	**P**	**12 29 39.0**	**+0.1**
	11nm,0.3s,baz=195,slow=14,SNR=208						
KK31				⇓S	**S**	**12 30 49.3**	**-4.1**
	8.4nm,0.5s,baz=191,slow=15,SNR=4.1						
KKAR	**Karatay Array**	**6.57**	**1**	PN	**P**	**12 29 39.0**	**+0.1**
KKAR				pmax	pmax		
	comp=Z,4.0nm,0.2s						
EKS2	**Erkin-Say**	**6.69**	**23**	P	**P**	**12 29 41.0**	**+0.5**
	SNR=15						
KZA	**Kyzart**	**6.74**	**33**	P	**P**	**12 29 41.0**	**-0.2**
	SNR=33						
AAK	**Ala-Archa**	**6.90**	**27**	P	**P**	**12 29 43.7**	**+0.5**
	SNR=55						
KBK	**Karagaybulak**	**7.09**	**29**	P	**P**	**12 29 46.4**	**+0.7**
	SNR=26						
CHMS	**Chumysh**	**7.31**	**27**	P	**P**	**12 29 48.4**	**-0.2**
	SNR=18						
ULHL	**Ulahol**	**7.33**	**37**	P	**P**	**12 29 48.5**	**-0.3**
	SNR=23						
USP	**Ospenovka**	**7.46**	**24**	P	**P**	**12 29 50.2**	**-0.4**
	SNR=44						
TKM2	**Tokmak 2**	**7.58**	**31**	P	**P**	**12 29 52.2**	**+0.2**
	SNR=136						
MK31	**Makanchi Array**	**13.60**	**37**	⇑P	**P**	**12 31 08.8**	**-0.3**
	0.3mp=Z,1.0nm,0.5s,baz=218,slow=15,SNR=16						
MKAR	**Makanchi Array**	**13.60**	**37**	P	**P**	**12 31 08.7**	**-0.4**
	comp=Z,0.3nm,0.3s,baz=219,slow=17,SNR=9.9						
MKAR	**Makanchi Array**	**13.60**	**37**	P	**P**	**12 31 08.8**	**-0.3**
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.5s						
KOLN	**Koldanda**	**14.24**	**124**	*e*P	**P**	**12 31 13.4**	**-3.7**
AB31	**Akbulak array**	**14.79**	**333**	⇑P	**P**	**12 31 23.4**	**-0.4**
	comp=Z,1.1nm,0.4s,baz=158,slow=10,SNR=62						
AB31				⇓S	**S**	**12 34 00.5**	**-2.0**
	comp=Z,0.6nm,0.5s,baz=154,slow=24,SNR=3.8						
AB31	**Akbulak array**	**14.79**	**333**	P	**P**	**12 31 26.3**	**+2.4**
GKN	**Gorkha**	**14.79**	**121**	*e*P	**P**	**12 31 26.5**	**+2.5**
	comp=Z,13nm,0.3s						
DMN	**Daman**	**15.37**	**121**	*e*P	**P**	**12 31 28.5**	**-2.5**
	comp=Z,8.8nm,0.4s						
KKN	**Kakani**	**15.37**	**120**	*e*P	**P**	**12 31 31.4**	**+0.3**
	comp=Z,14nm,0.5s						
KURK	**Kurchatov**	**15.39**	**20**	⇑P	**P**	**12 31 30.4**	**-0.9**
	comp=Z,1.5nm,1.3s,baz=205,slow=11,SNR=3.3						
KURK	**Kurchatov**	**15.39**	**20**	*e*P	**P**	**12 31 30.4**	**-0.8**
PKI	**Pulchoki**	**15.60**	**121**	*e*P	**P**	**12 31 31.7**	**-2.2**
	comp=Z,7.0nm,0.4s						
VOSK	**Vostochnaya**	**16.20**	**1**	⇑P	**P**	**12 31 40.3**	**-0.7**
	comp=Z,1.5nm,0.7s						
ZRNK	**Zerenda**	**16.45**	**357**	⇓P	**P**	**12 31 44.1**	**0.0**
	comp=Z,1.0nm,0.6s						
ZRNK	**Zerenda**	**16.45**	**357**	*e*P	**P**	**12 31 44.0**	**-0.1**
BVA0	**Borovoye Array**	**16.50**	**0**	P	**P**	**12 31 45.0**	**+0.4**
	comp=Z,0.2nm,0.7s,baz=171,slow=12,SNR=8.7						
BVAR	**Borovoye Array**	**16.50**	**0**	P	**P**	**12 31 44.6**	**0.0**
	comp=Z,0.4nm,0.3s,baz=171,slow=12,SNR=7.2						
BRVK	**Borovoye**	**16.53**	**360**	*e*P	**P**	**12 31 46.2**	**+1.2**
ZAL	**Zalesovo**	**20.11**	**25**	P	**P**	**12 32 23.1**	**+0.3**
	comp=Z,3.0nm,0.3s,baz=154,slow=6.0,SNR=3.6						
ZAL	**Zalesovo**	**20.11**	**25**	P	**P**	**12 32 23.1**	**+0.4**
ZAL				pmax	pmax		
	comp=Z,3.0nm,0.3s						
SONM	**Songino Array**	**28.78**	**56**	P	**P**	**12 33 44.4**	**+0.3**
	comp=Z,0.6nm,0.6s,mb3.4,baz=263,slow=9.9,SNR=5.5						
FINES	**FINESS Array B**	**37.15**	**326**	P	**P**	**12 34 56.1**	**+0.4**
	comp=Z,2.8nm,0.9s,mb3.8,baz=121,slow=11,SNR=4.7						
FINES	**FINESS Array B**	**37.15**	**326**	P	**P**	**12 34 56.1**	**+0.3**
FINES				pmax	pmax		
	comp=Z,3.0nm,0.9s						
ARCES	**ARCESS Array B**	**40.91**	**338**	P	**P**	**12 35 27.3**	**+0.6**
	comp=Z,1.2nm,0.4s,mb3.6,baz=108,slow=7.7,SNR=13						
ARCES	**ARCESS Array B**	**40.91**	**338**	P	**P**	**12 35 27.3**	**+0.6**
ARCES				pmax	pmax		
	comp=Z,1.0nm,0.4s						
NOA	**NORSAR Array B**	**44.02**	**323**	P	**P**	**12 35 51.8**	**-0.1**
	comp=Z,1.0nm,0.8s,mb3.2,baz=107,slow=7.4,SNR=2.7						
NOA	**NORSAR Array B**	**44.02**	**323**	P	**P**	**12 35 51.8**	**-0.1**
NOA				pmax	pmax		
	comp=Z,1.0nm,0.8s						
INK	**Inuvik**	**73.97**	**9**	P	**P**	**12 39 17.4**	**+0.1**
	comp=Z,0.4nm,0.7s,mb3.1,baz=322,slow=3.4,SNR=3.8						
YKA	**Yellowknife Ar**	**81.24**	**2**	P	**P**	**12 39 57.4**	**+0.2**
	comp=Z,0.2nm,0.4s,mb3.1,baz=349,slow=5.1,SNR=9.6						

*IDC **21** 12:28:30.3±12.0,23.23S×176.01W,h98km±157km, mb4.3/5,mb1 4.3/7,mb1mx3.9/18,ML4.2/2,MS3.1/1, Ms1 3.1/1,ms1mx2.8/22,Error ellipse: s-maj=103.0km s-min=44.4km az=141.0*

ISC 21 12:28:42.0±2.9,23.8S±0.1×175.4W±0.1,h280km±37km, n13,σ1°08/16,mb4.1/6,Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**14.62**	**83**	P	**P**	**12 31 59.6**	**+1.5**
	0.9nm,0.3s,baz=57,slow=20,SNR=10						
RAR				S	**S**	**12 34 32.3**	**-1.1**
	2.0nm,0.3s,baz=69,slow=13,SNR=6.3						
RAR				LR	LR	12 36 05.2	
	comp=Z,77nm,20.6s,baz=3.5,slow=30						
URZ	**Urewera**	**15.79**	**202**	P	**P**	**12 32 10.0**	**-1.3**
	1.1nm,0.3s,baz=191,slow=13,SNR=7.2						
URZ				S	**S**	**12 34 53.7**	**-5.0**
	0.2nm,0.3s,baz=6.5,slow=22,SNR=4.3						
MRZ	**Mangatainoka R**	**18.47**	**202**	*e*P	**P**	**12 32 40.0**	**+0.7**
MRZ				*e*S	**S**	**12 35 50.9**	**+0.1**
THZ	**Tophouse**	**20.42**	**206**	*e*P	**P**	**12 33 06.2**	**+7.4**
CTA	**Charters Tower**	**35.73**	**268**	P	**P**	**12 35 15.4**	**-0.7**
	13nm,0.4s,mb4.8,baz=95,slow=10,SNR=24						
STKA	**Stephens Creek**	**38.72**	**248**	P	**P**	**12 35 42.7**	**+1.9**
	2.3nm,0.5s,mb3.9,baz=99,slow=10,SNR=8.0						
AS12	**Alice Springs**	**46.25**	**259**	*e*P	**P**	**12 36 41.9**	**+0.5**
	5.3nm,1.2s,mb3.8						
ASAR	**Alice Springs**	**46.25**	**259**	P	**P**	**12 36 41.8**	**+0.3**
	2.0nm,0.5s,mb3.7,baz=91,slow=7.3,SNR=48						
WB2	**Warramunga Arr**	**46.65**	**265**	*e*P	**P**	**12 36 44.0**

INK	**Inuvik**	**8.11**	**48**	*e*P		**P**	**12 40 08.5**	**-2.3**
YKA	**Yellowknife Ar**	**15.90**	**78**	Pn		**P**	**12 41 53.0**	**-2.2**
	0.1nm,0.3s,baz=293,slow=12,SNR=9.1							
YKA				PcP		PcP	12 46 51.8	-2.5
	0.0nm,0.3s,baz=295,slow=1.4,SNR=4.6							
NEW	**Newport**	**23.60**	**115**	P		**P**	**12 43 23.5**	**+2.1**
	2.2nm,0.9s,mb3.6,baz=319,slow=9.3,SNR=3.5							
PDAR	**Pinedale Array**	**31.15**	**113**	P		**P**	**12 44 31.0**	**+0.1**
	0.7nm,0.7s,mb3.6,baz=342,slow=4.7,SNR=5.0							
NVAR	**Mina Array Bea**	**31.54**	**128**	P		**P**	**12 44 34.8**	**+0.4**
	0.7nm,0.8s,mb3.5,baz=325,slow=7.4,SNR=5.6							
TXAR	**Lajitas Array**	**45.13**	**117**	P		**P**	**12 46 28.5**	**+0.4**
	0.4nm,0.3s,mb3.8,baz=342,slow=5.7,SNR=2.3							
SONM	**Songino Array**	**53.82**	**306**	P		**P**	**12 47 34.8**	**+0.2**
	0.8nm,0.9s,mb3.6,baz=45,slow=6.1,SNR=3.9							
BVAR	**Borovoye Array**	**59.46**	**333**	P		**P**	**12 48 12.9**	**-1.9**
	0.3nm,0.4s,mb3.7,baz=27,slow=13,SNR=4.0							
MKAR	**Makanchi Array**	**62.44**	**322**	P		**P**	**12 48 32.7**	**-2.4**
	0.4nm,0.4s,mb3.9,baz=59,slow=8.4,SNR=2.9							
MKAR	**Makanchi Array**	**62.44**	**322**	P		**P**	**12 48 32.7**	**-2.4**

*IDC **21** 12:43:04.3±7.6, 7.72S×129.71E, h62km±59km, mb3.5/1, mb1 4.0/4, mb1mx3.5/15, ML4.0/3, Error ellipse: s-maj=58.7km s-min=50.7km az=165.0*

ISC 21 12:43:02.2±4.3, 7.7S±0.2×129.8E±0.2, h54km±52km, n4, σ0§70/7, mb3.4/1, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**11.05**	**201**	P	**P**	**12 45 40.7**	**+0.5**
	2.9nm,0.3s,baz=18,slow=11,SNR=62						
FITZ				S	**S**	**12 47 42.9**	**-0.3**
	3.4nm,0.3s,baz=181,slow=14,SNR=5.5						
WRA	**Warramunga Arr**	**12.92**	**160**	P	**P**	**12 46 04.6**	**-0.6**
	0.7nm,0.3s,baz=339,slow=13,SNR=49						
WRA				S	**S**	**12 48 28.3**	**+0.1**
	2.8nm,0.3s,baz=337,slow=22,SNR=14						
ASAR	**Alice Springs**	**16.33**	**166**	P	**P**	**12 46 49.6**	**+0.3**
	0.3nm,0.3s,baz=335,slow=9.0,SNR=36						
ASAR				S	**S**	**12 49 52.6**	**+4.4**
	0.8nm,0.3s,baz=341,slow=25,SNR=8.4						
STKA	**Stephens Creek**	**26.43**	**157**	P	**P**	**12 48 35.8**	**-0.1**
	0.4nm,0.3s,mb3.4,baz=333,slow=6.8,SNR=2.8						

*NEIC **21** 12:55:38.1, 16.22N×98.91W, h21km, MD3.9(MEX), After MEX.*
*MEX **21** 12:55:38.3±0.8, 16.25N×98.91W, h20km±11km, MD3.9*

ISC 21 12:55:35.3±1.0, 16.27N±0.08×98.90W±0.03, h20km, n12, σ1§21/22, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	**Pinotepa**	**0.75**	**80**	*i* P	**Pb**	**12 55 50.7**	**+1.2**
PNIG				*i* S	**Sb**	**12 56 00.1**	**+0.8**
ACX	**Acapulco**	**1.15**	**302**	*i* P	**Pb**	**12 55 55.5**	**-0.8**
ACX				*i* S	**Sb**	**12 56 10.0**	**-0.7**
CAIG	**El Cayaco**	**1.53**	**301**	*i* P	**Pn**	**12 56 03.2**	**+1.4**
CAIG				*i* S	**Sn**	**12 56 20.1**	**-1.2**
VHO	**Vista Hermosa**	**2.22**	**69**	*i* P	**Pn**	**12 56 12.5**	**+0.7**
VHO				*i* S	**Sn**	**12 56 37.6**	**-1.4**
OXX	**Oaxaca**	**2.24**	**68**	*e*P	**Pn**	**12 56 10.0**	**-2.0**
OXX				*i* S	**Sn**	**12 56 40.0**	**+0.7**
YAIG	**Yautepec**	**2.59**	**356**	*e*P	**Pn**	**12 56 18.4**	**+1.4**
YAIG				*i* S	**Sn**	**12 56 46.7**	**-1.5**
ZIIG	**Zihuatanejo**	**2.80**	**299**	*e*P	**Pn**	**12 56 29.0**	**+9.1**
ZIIG				*i* S	**Sn**	**12 56 54.2**	**+0.8**
PPM	**Popocatepetl**	**2.80**	**5**	*e*P	**Pn**	**12 56 21.0**	**+1.0**
PPM				*i* P		12 56 23.2	
PPM				*i* S	**Sn**	**12 56 54.5**	**+0.9**
PPM	**Popocatepetl**	**2.80**	**5**	*e*P	**Pn**	**12 56 21.0**	**+1.0**
PPM				*i* S	**Sn**	**12 56 54.5**	**+0.9**
IISM	**Ciudad Serdan**	**3.07**	**28**	*e*P	**Pn**	**12 56 28.0**	**+4.1**
POHV	**Veracruz**	**3.19**	**29**	*e*P	**Pn**	**12 56 26.0**	**+0.5**
CMIG	**Matias Romero**	**3.93**	**77**	*e*P	**Pn**	**12 56 35.2**	**-0.9**
CMIG				*i* S	**Sn**	**12 57 19.3**	**-3.0**

*INMG **21** 12:58:05.3±1.3, 35.02N×3.96W, h8km±21km, ML3.0, Error ellipse: s-maj=17.7km s-min=4.3km az=169.0*
*NEIC **21** 12:58:05.4, 35.08N×3.99W, MG4.0(MDD), After MDD.*
*MDD **21** 12:58:06.0±0.8, 35.32N×4.05W, mb4.0/21, Error ellipse: s-maj=6.7km s-min=2.6km az=23.0, PRXIMO AftershockPLICA*

ISC 21 12:58:05.1±0.6, 35.24N±0.04×4.05W±0.03, h8km, n80, σ1§21/132, 1C, Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EMEL	**Melilla**	**0.90**	**86**	P	**Pb**	**12 58 21.1**	**-1.4**
	380nm,0.2s,SNR=48						
EMEL				S	**Sb**	**12 58 34.0**	**-0.3**
	1µm,0.2s,SNR=7.9						
MELI	**Melilla**	**0.92**	**86**	⇑P	**Pb**	**12 58 21.2**	**-1.6**
MELI				S	**Sb**	**12 58 34.8**	**-0.1**
REAL	**Reales**	**1.56**	**323**	P	**Pn**	**12 58 32.5**	**-0.7**
REAL				S	**Sb**	**12 58 52.5**	**-1.0**
EJIF	**Jimena Fronter**	**1.67**	**317**	P	**Pn**	**12 58 36.1**	**+1.3**
	3.1nm,0.2s,SNR=7.9						
EJIF	**Jimena Fronter**	**1.67**	**317**	P	**Pn**	**12 58 36.1**	**+1.2**
EJIF				S	**Sn**	**12 59 00.0**	**+3.4**
ERON	**Agron**	**1.79**	**6**	P	**Pn**	**12 58 36.6**	**+0.1**
	3.9nm,0.2s,SNR=19						
ERON	**Agron**	**1.79**	**6**	P	**Pn**	**12 58 38.4**	**+1.9**
ERON				S	**Sn**	**12 59 03.9**	**+4.3**
EBER	**Berja**	**1.90**	**29**	P	**Pn**	**12 58 37.5**	**-0.7**
	18nm,0.2s,SNR=7.9						
EBER				S	**Sn**	**12 59 02.7**	**+0.1**
	206nm,0.5s,SNR=7.9						
EBER	**Berja**	**1.90**	**29**	P	**Pn**	**12 58 37.6**	**-0.5**
EBER				S	**Sn**	**12 59 03.7**	**+1.2**
ELOJ	**Sierra Loja**	**1.91**	**358**	P	**Pn**	**12 58 39.1**	**+0.9**
	1.6nm,0.2s,SNR=7.9						
ELOJ				S	**Sn**	**12 59 02.4**	**-0.3**
	21nm,0.3s,SNR=7.9						
ELOJ	**Sierra Loja**	**1.91**	**358**	P	**Pn**	**12 58 40.2**	**+1.9**
ELOJ				S	**Sn**	**12 59 05.7**	**+3.1**
ELIJ	**Sierra de Lija**	**1.99**	**328**	S	**Sn**	**12 59 04.6**	**-0.2**
	35nm,0.4s,SNR=7.9						
ELIJ	**Sierra de Lija**	**1.99**	**328**	P	**Pn**	**12 58 41.9**	**+2.5**
ELIJ				S	**Sn**	**12 59 08.5**	**+3.7**
EQUE	**Quentar**	**2.02**	**14**	P	**Pn**	**12 58 40.8**	**+0.9**
	7.3nm,0.2s,SNR=7.9						
EQUE				S	**Sn**	**12 59 05.5**	**-0.1**
	59nm,0.3s,SNR=7.9						
ECOG	**Cogollos-Vega**	**2.07**	**11**	P	**Pn**	**12 58 41.2**	**+0.6**
	18nm,0.3s,SNR=14						
ECOG				S	**Sn**	**12 59 06.5**	**-0.3**
	58nm,0.5s,SNR=7.9						
ECOG	**Cogollos-Vega**	**2.07**	**11**	S	**Pn**	**12 58 42.8**	**+2.2**
ECOG				S	**Sn**	**12 59 09.7**	**+2.9**
ESPR	**Espera**	**2.19**	**319**	P	**Pn**	**12 58 44.0**	**+1.8**
	14nm,0.4s,SNR=13						
ESPR				S	**Sn**	**12 59 10.8**	**+1.0**
	45nm,0.5s,SNR=7.9						
ESPR	**Espera**	**2.19**	**319**	P	**Pn**	**12 58 43.9**	**+1.7**
ESPR				S	**Sn**	**12 59 13.0**	**+3.3**
ELUQ	**Luque**	**2.32**	**356**	P	**Pn**	**12 58 46.9**	**+2.8**
ELUQ				S	**Sn**	**12 59 17.4**	**+4.1**
EQES	**Quesada**	**2.68**	**17**	P	**Pn**	**12 58 51.1**	**+1.8**
	22nm,0.3s,SNR=7.9						
EQES				S	**Sn**	**12 59 21.1**	**-1.2**
	132nm,0.5s,SNR=7.9						
EQES	**Quesada**	**2.68**	**17**	P	**Pn**	**12 58 51.3**	**+2.0**
EQES				S	**Sn**	**12 59 23.7**	**+1.5**
EHUE	**Huescar**	**2.83**	**24**	S	**Sn**	**12 59 27.3**	**+1.3**
	7.7nm,0.2s,SNR=7.9						
EHUE	**Huescar**	**2.83**	**24**	P	**Pn**	**12 58 53.4**	**+2.0**
EHUE				S	**Sn**	**12 59 27.3**	**+1.3**
EBAN	**Banos Encina**	**2.93**	**4**	S	**Sn**	**12 59 29.0**	**+0.4**
	28nm,0.4s,SNR=7.9						
EADA	**Adamuz**	**2.95**	**352**	P	**Pn**	**12 58 54.2**	**+1.0**
	1.9nm,0.1s,SNR=23						
EADA				S	**Sn**	**12 59 29.5**	**+0.3**
	44nm,0.4s,SNR=7.9						
EADA	**Adamuz**	**2.95**	**352**	P	**Pn**	**12 58 54.6**	**+1.5**
EADA				S	**Sn**	**12 59 30.9**	**+1.7**
ECAB	**El Cabril**	**3.04**	**339**	P	**Pn**	**12 58 55.3**	**+1.0**
	0.6nm,0.1s,SNR=17						
ECAB				S	**Sn**	**12 59 32.3**	**+1.0**
	28nm,0.4s,SNR=7.9						
EMIN	**Mina Concepcio**	**3.29**	**321**	P	**Pn**	**12 58 58.0**	**0.0**
	0.7nm,0.1s,SNR=42						
EMIN				S	**Sn**	**12 59 37.3**	**-0.4**
	8.1nm,0.2s,SNR=7.9						
EMIN	**Mina Concepcio**	**3.29**	**321**	P	**Pn**	**12 58 58.1**	**+0.1**
EMIN				S	**Sn**	**12 59 37.7**	**0.0**
ERIP	**Rio Piedras**	**3.35**	**310**	P	**Pn**	**12 58 58.5**	**-0.3**
	13nm,0.3s,SNR=7.9						
ERIP				S	**Sn**	**12 59 38.6**	**-0.7**
	30nm,0.3s,SNR=7.9						
EMUR	**La Murta**	**3.45**	**40**	P	**Pn**	**12 58 59.3**	**-0.8**
	7.4nm,0.4s,SNR=4.7						
EMUR				S	**Sn**	**12 59 40.2**	**-1.4**
	42nm,0.6s,SNR=7.9						
EMUR	**La Murta**	**3.45**	**40**	P	**Pn**	**12 58 59.7**	**-0.5**
EMUR				S	**Sn**	**12 59 40.0**	**-1.7**
EGRO	**El Granado**	**3.59**	**311**	P	**Pn**	**12 59 02.1**	**-0.2**
	9.7nm,0.4s,SNR=17						
EGRO				S	**Sn**	**12 59 44.0**	**-1.4**
	50nm,0.4s,SNR=7.9						
EGRO	**El Granado**	**3.59**	**311**	P	**Pn**	**12 59 02.2**	**-0.1**
EGRO				S	**Sn**	**12 59 43.9**	**-1.5**
ETOB	**Tobarra**	**3.95**	**30**	P	**Pn**	**12 59 08.0**	**+0.7**
	10nm,0.2s,SNR=44						
ETOB				S	**Sn**	**12 59 54.7**	**+0.3**
	7.9nm,0.3s,SNR=7.9						
ETOB	**Tobarra**	**3.95**	**30**	P	**Pn**	**12 59 08.0**	**+0.7**
ETOB				S	**Sn**	**12 59 53.6**	**-0.7**
PBEJ	**Beja**	**4.14**	**313**	*e*Pn	**Pn**	**12 59 11.2**	**+1.1**
PBEJ				*e*Sn	**Sn**	**12 59 58.0**	**-1.3**
	18nm,0.6s						
PBEJ	**Beja**	**4.14**	**313**	Pn	**Pn**	**12 59 11.2**	**+1.1**
PBEJ				Sn	**Sn**	**12 59 58.0**	**-1.3**
	8.8nm,0.6s						
EBAD	**Badajoz**	**4.24**	**327**	P	**Pn**	**12 59 11.7**	**+0.3**
	10nm,0.2s,SNR=4.0						
EBAD				S	**Sn**	**13 00 00.1**	**-1.6**
	41nm,0.4s,SNR=7.9						
EBAD	**Badajoz**	**4.24**	**327**	P	**Pn**	**12 59 11.7**	**+0.3**
EBAD				S	**Sn**	**13 00 00.3**	**-1.3**
PTEO	**Sao Teotonio**	**4.42**	**303**	*e*Pn	**Pn**	**12 59 14.0**	**0.0**
PTEO				*e*Sn	**Sn**	**13 00 05.2**	**-1.1**
	32nm,0.6s						
PTEO	**Sao Teotonio**	**4.42**	**303**	Pn	**Pn**	**12 59 14.0**	**0.0**
PTEO				Sn	**Sn**	**13 00 05.2**	**-1.1**
	16nm,0.6s						
ESDC	**Sonseca Array**	**4.43**	**1**	P	**Pn**	**12 59 14.9**	**+0.8**
	4.0nm,0.1s,baz=180,slow=12,SNR=19						
ESDC				S	**Sn**	**13 00 06.0**	**-0.6**
	1.6nm,0.2s,SNR=7.9						
ESLA	**Sonseca Array**	**4.43**	**1**	*e*Pn	**Pn**	**12 59 14.9**	**+0.8**
EVO	**Evora**	**4.57**	**317**	*e*Pn	**Pn**	**12 59 17.1**	**+1.0**
EVO				*e*Sn	**Sn**	**13 00 07.1**	**-3.0**
	27nm,0.4s						
EBEN	**Beniarda**	**4.62**	**40**	P	**Pn**	**12 59 17.3**	**+0.5**
	1.9nm,0.3s,SNR=4.0						
MOE	**Montemor**	**4.75**	**315**	*e*Pn	**Pn**	**12 59 19.1**	**+0.3**
MOE				*e*Sn	**Sn**	**13 00 12.3**	**-2.5**
PCBR	**Castelo Branco**	**5.34**	**330**	*e*Pn	**Pn**	**12 59 26.8**	**-0.2**
PCBR				*e*Sn	**Sn**	**13 00 26.3**	**-3.2**
	15nm,0.4s						
GUD	**Guadarrama**	**5.40**	**359**	P	**Pn**	**12 59 28.0**	**+0.2**
	5.0nm,0.4s,SNR=7.9						
GUD				S	**Sn**	**13 00 28.7**	**-2.2**
	3.2nm,0.3s,SNR=7.9						
EIBI	**Ibiza**	**5.73**	**47**	P	**Pn**	**12 59 31.5**	**-1.1**
	1.2nm,0.1s,SNR=9.5						
EIBI	**Ibiza**	**5.73**	**47**	P	**Pn**	**12 59 31.8**	**-0.8**
EIBI				S	**Sn**	**13 00 33.2**	**-6.2**
ETOR	**Torete**	**5.79**	**15**	P	**Pn**	**12 59 33.5**	**+0.1**
	2.5nm,0.3s,SNR=12						
ETOR				S	**Sn**	**13 00 41.1**	**+0.3**
	0.7nm,0.2s,SNR=4.0						
ETOR	**Torete**	**5.79**	**15**	P	**Pn**	**12 59 33.5**	**+0.1**
ETOR				S	**Sn**	**13 00 36.5**	**-4.3**
MTE	**Manteigas**	**5.85**	**333**	*e*Pn	**Pn**	**12 59 34.1**	**-0.1**
MTE				*e*Sn	**Sn**	**13 00 40.8**	**-1.4**
	14nm,0.4s						
MTE	**Manteigas**	**5.85**	**333**	Pn	**Pn**	**12 59 34.1**	**-0.1**
MTE				Sn	**Sn**	**13 00 40.8**	**-1.4**
	7.1nm,0.4s						
EMOS	**Mosqueruela**	**5.85**	**28**	P	**Pn**	**12 59 34.3**	**+0.1**
	0.1nm,0.1s,SNR=7.9						
EMOS				S	**Sn**	**13 00 41.7**	**-0.6**
	0.8nm,0.3s,SNR=4.0						
EMOS	**Mosqueruela**	**5.85**	**28**	P	**Pn**	**12 59 33.7**	**-0.5**
EMOS				S	**Sn**	**13 00 37.5**	**-4.8**
PVRL	**Vila Real**	**6.68**	**336**	*e*Pn	**Pn**	**12 59 46.2**	**+0.3**
PBRG	**Braganca**	**6.89**	**343**	*e*Pn	**Pn**	**12 59 49.1**	**+0.3**
PBRG				*e*Sn	**Sn**	**13 01 05.9**	**-2.3**
	7.4nm,0.5s						
PBRG	**Braganca**	**6.89**	**343**	Pn	**Pn**	**12 59 49.1**	**+0.3**
PBRG				Sn	**Sn**	**13 01 05.9**	**-2.3**
	3.7nm,0.5s						
ECAL	**Calabor**	**7.01**	**343**	P	**Pn**	**12 59 51.1**	**+0.4**
	7.1nm,0.3s,SNR=14						
ECAL	**Calabor**	**7.01**	**343**	P	**Pn**	**12 59 51.0**	**+0.4**
ECAL				S	**Sn**	**13 01 08.9**	**-2.5**
ELOB	**Lobios**	**7.33**	**336**	P	**Pn**	**12 59 54.8**	**-0.2**
	1.5nm,0.2s,SNR=7.9						
SET	**Setif**	**7.75**	**80**	P	**Pn**	**12 59 54.0**	**-6.9**
ELAN	**Lanestosa**	**8.00**	**3**	P	**P**	**13 00 04.2**	**-0.1**
	0.2nm,0.1s,SNR=7.9						
ELAN	**Lanestosa**	**8.00**	**3**	P	**P**	**13 00 04.4**	**0.0**
EARI	**Arriondas**	**8.10**	**354**	P	**P**	**13 00 05.9**	**+0.1**
	0.3nm,0.2s,SNR=7.9						
EARI	**Arriondas**	**8.10**	**354**	P	**P**	**13 00 06.8**	**+0.9**
ETSF	**Etsaut**	**8.12**	**18**	*e*Pn	**P**	**13 00 06.0**	**0.0**
CMER	**Merouana**	**8.13**	**84**	P	**P**	**13 00 03.5**	**-2.8**
DFRA	**Djebel Bou Aff**	**8.16**	**78**	P	**P**	**13 00 07.5**	**+0.8**
EALK	**Alkurruntz**	**8.21**	**13**	P	**P**	**13 00 07.7**	**+0.4**
	6.0nm,0.3s,SNR=7.9						
EALK	**Alkurruntz**	**8.21**	**13**	P	**P**	**13 00 07.4**	**+0.1**
EPON	**Pontenova**	**8.43**	**344**	P	**P**	**13 00 10.0**	**-0.4**
	0.7nm,0.2s,SNR=7.9						
EPON	**Pontenova**	**8.43**	**344**	P	**P**	**13 00 10.2**	**-0.1**
EPF	**Esparros**	**8.49**	**22**	*e*Pn	**P**	**13 00 09.0**	**-2.3**
CTEI	**Djebel Teioual**	**8.55**	**81**	P	**P**	**13 00 05.0**	**-7.1**
CASM	**Ain Smara**	**8.63**	**80**	P	**P**	**13 00 06.0**	**-7.2**
PGF	**Pioggiola**	**12.51**	**50**	*e*Pn	**P**	**13 01 04.2**	**-2.0**
ROSF	**Rostrenen**	**13.10**	**2**	*e*Pn	**P**	**13 01 12.9**	**-1.1**

IDC 21 13:05:33.8±12.0, 13.50N×103.79W, mb3.4/3, mb1 3.9/4, mb1mx3.8/18, ML4.1/1, Error ellipse: s-maj=377.0km s-min=119.7km az=113.0, Off coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TXAR	**Lajitas Array**	**15.76**	**0**	Pn	P	13 09 18.4	-0.4
	0.2nm,0.3s,baz=187,slow=15,SNR=3.8						
PDAR	**Pinedale Array**	**29.58**	**351**	P	P	13 11 41.6	-1.1
	0.7nm,1.1s,baz=157,slow=6.9,SNR=3.4						
YKA	**Yellowknife Ar**	**49.53**	**353**	P	P	13 14 25.5	-2.6
	0.3nm,0.8s,baz=169,slow=7.1,SNR=6.2						
ILAR	**Eielson Array**	**59.07**	**340**	P	P	13 15 35.5	-2.4
	0.6nm,0.9s,baz=155,slow=6.0,SNR=5.4						

MAN 21 13:40:55.1, 8.91N×122.32E, h44km, mb3.9, ML2.7, MS2.3, 4C-1D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DCPH	**Dipolog City**	**1.07**	**108**	*e*P	P	13 41 14.0	+0.2
PAGZ	**Pagadian**	**1.49**	**135**	*e*P	P	13 41 19.8	-0.1
PAGZ				*e*S	S	13 41 39.3	+1.0
CUYO	**Cuyo Island**	**2.32**	**326**	*e*P	P	13 41 32.4	+0.8
CUYO				*e*S	S	13 41 59.2	+0.2
ENPP	**El Nido**	**3.65**	**309**	*e*P	P	13 41 50.4	-0.2
BUSP	**Coron**	**3.71**	**326**	*e*P	P	13 41 51.5	0.0
BUSP				*e*S	S	13 42 30.3	-4.2

*BJI **21** 13:57:09.1, 2.05S×139.04E, h70km, mb4.8, Ms4.6, Msz4.3*
*IDC **21** 13:57:09.7±3.9, 2.07S×138.83E, h46km±35km, mb4.3/12, mb1 4.6/15, mb1mx4.5/18, ML4.7/2, MS3.7/4, Ms1 3.7/4, ms1mx3.3/23, Error ellipse: s-maj=26.4km s-min=11.3km az=82.0*
*NEIC **21** 13:57:11.8±1.5, 2.08S×138.64E, h63km±13km, mb4.6/15, Error ellipse: s-maj=11.5km s-min=7.5km az=71.0*

ISC 21 13:57:04.7±2.9, 2.06S±0.05×138.64E±0.09, h15km±21km, n70, σ0§87/70, mb4.8/29, MS3.8/5, 1D, Irian Jaya

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

PMG	**Port Moresby**	**11.18**	**131**	P		**P**	**13 59 49.7**	**+2.5**
	0.8nm,0.3s,baz=302,slow=4.4,SNR=3.8							
KAKA	**Kakadu**	**12.24**	**210**	*e*P		**P**	**14 00 01.6**	**0.0**
	36nm,0.4s							
KAKA				*e*S		**S**	**14 02 13.3**	**-5.5**
WRAB	**Tennant Creek**	**18.25**	**193**	*e*P		**P**	**14 01 18.9**	**-0.4**
	79nm,0.6s							
WB2	**Warramunga Arr**	**18.26**	**193**	*e*P		**P**	**14 01 18.4**	**-1.0**
WB2				*e*S		**S**	**14 04 33.6**	**-6.2**
WRA	**Warramunga Arr**	**18.26**	**193**	P		**P**	**14 01 18.4**	**-1.0**
	2.5nm,0.3s,baz=14,slow=12,SNR=90							
WRA				S		**S**	**14 04 32.3**	**-7.6**
	0.3nm,0.3s,baz=13,slow=22,SNR=4.9							
WRA				LR	LR		14 09 04.1	
	comp=Z,323nm,20.1s,baz=15,slow=39							
CTA	**Charters Tower**	**19.40**	**158**	*e*P		**P**	**14 01 34.1**	**+1.0**
	12nm,0.6s							
CTA	**Charters Tower**	**19.40**	**158**	P		**P**	**14 01 31.9**	**-1.2**
	1.5nm,0.3s,baz=335,slow=12,SNR=24							
CTAO	**Charters Tower**	**19.40**	**158**	*e*P		**P**	**14 01 33.6**	**+0.5**
	15nm,0.7s							
FITZ	**Fitzroy Crossi**	**20.42**	**218**	*e*P		**P**	**14 01 44.6**	**+0.5**
	12nm,0.7s							
FITZ				*e*S		**S**	**14 05 22.5**	**-4.6**
FITZ	**Fitzroy Crossi**	**20.42**	**218**	P		**P**	**14 01 43.7**	**-0.4**
	12nm,0.6s,baz=26,slow=13,SNR=29							
FITZ				S		**S**	**14 05 26.4**	**-0.7**
	13nm,0.8s,baz=191,slow=15,SNR=8.5							
FITZ				LR	LR		14 10 42.2	
	comp=Z,83nm,20.7s,MS3.1,baz=67,slow=40							
AS12	**Alice Springs**	**21.96**	**192**	*e*P		**P**	**14 02 00.5**	**+0.7**
	102nm,0.9s,mb5.2							
AS12				*e*S		**S**	**14 06 02.9**	**+6.3**
ASAR	**Alice Springs**	**21.96**	**192**	P		**P**	**14 02 00.5**	**+0.7**
	104nm,0.9s,mb5.2,baz=24,slow=10,SNR=312							
ASAR				S		**S**	**14 06 00.6**	**+3.9**
	2.3nm,0.8s,baz=74,slow=32,SNR=5.6							
STKA	**Stephens Creek**	**29.79**	**175**	*e*P		**P**	**14 03 12.5**	**-0.8**
	13nm,0.6s,mb4.8							
STKA	**Stephens Creek**	**29.79**	**175**	P		**P**	**14 03 12.6**	**-0.7**
	14nm,0.6s,mb4.8,baz=340,slow=8.1,SNR=39							
STKA				LR	LR		14 16 12.7	
	comp=Z,221nm,20.3s,MS3.8,baz=14,slow=38							
FORT	**Forrest**	**30.27**	**198**	*e*P		**P**	**14 03 18.3**	**+0.8**
	142nm,0.7s,mb5.8							
ARMA	**Armidale**	**30.77**	**158**	*e*P		**P**	**14 03 21.0**	**-1.0**
CNB	**Canberra Magne**	**34.55**	**164**	*e*P		**P**	**14 03 55.5**	**+0.6**
	26nm,0.8s,mb5.2							
KLBR	**Kellerberrin**	**35.37**	**212**	*e*P		**P**	**14 04 02.0**	**+0.1**
	22nm,0.9s,mb5.1							
JNU	**Nakatsue**	**35.75**	**349**	LR	LR		14 17 00.8	
	comp=Z,129nm,18.0s,MS3.7,baz=238,slow=33							
TOO	**Toolangi**	**35.89**	**171**	*e*P		**P**	**14 04 07.7**	**+1.4**
	9.9nm,1.3s,mb4.6							
NWAO	**Narrogin (SRO)**	**36.69**	**211**	*e*P		**P**	**14 04 13.1**	**0.0**
SSE	**Sheshan**	**36.92**	**335**	P		**P**	**14 04 16.3**	**+1.3**
NJ2	**Nanjing**	**38.77**	**333**	*e*P		**P**	**14 04 30.8**	**+0.3**
NJ2				PP		PP	14 06 05.1	+1.9
NJ2				S		**S**	**14 10 28.0**	**+1.1**
NJ2				LR	LR			
	comp=N,1µm,13.6s							
NJ2				LR	LR			
	comp=E,310nm,21.4s							
NJ2				LR	LR			
	comp=Z,390nm,17.4s,MS4.3							
ENH	**Enshi**	**42.51**	**321**	P		**P**	**14 05 01.4**	**0.0**
CM31	**Chiang Mai Arr**	**44.06**	**299**	*e*P		**P**	**14 05 14.6**	**+0.5**
	comp=Z,12nm,1.0s,mb4.6							
CMAR	**Chiang Mai Arr**	**44.06**	**299**	P		**P**	**14 05 14.7**	**+0.5**
	comp=Z,6.1nm,0.8s,mb4.4,baz=116,slow=6.0,SNR=19							
CMAR				PcP	PcP		14 07 00.2	+0.1
	comp=Z,3.8nm,0.9s,baz=125,slow=0.8,SNR=8.7							
XAN	**Xi'an**	**45.51**	**325**	P		**P**	**14 05 24.8**	**-0.8**
XAN				AMB	AMB			
	comp=Z,9.0nm,1.4s,mb4.5							
CD2	**Chengdu**	**46.66**	**317**	⇓*i*P		**P**	**14 05 35.3**	**+0.6**
BJI	**Beijing**	**46.68**	**336**	*e*P		**P**	**14 05 33.9**	**-0.8**
BJI				AMB	AMB			
	comp=Z,14nm,1.5s,mb4.7							
BJI				LR	LR			
	comp=N,198nm,21.3s,MS4.1							
BJI				LR	LR			
	comp=E,149nm,21.6s,MS4.1							
LZH	**Lanzhou**	**49.93**	**323**	*e*P		**P**	**14 05

GSPH *e*S **S** **14 07 33.3 -0.3**
KCP **Kidapawan** **2.11 332** ⇓*e*P **P** **14 07 24.3 +0.1**
KCP *i* S **S** **14 07 49.5 +0.1**
FITZ **Fitzroy Crossi** **23.09 181** P **P** **14 11 55.3 +1.0**
1.3nm,0.5s,mb3.6,baz=5.0,slow=10.0,SNR=9.3
WRA **Warramunga Arr** **26.21 162** P **P** **14 12 24.2 +0.1**
0.2nm,0.3s,mb3.1,baz=339,slow=10.0,SNR=12
ASAR **Alice Springs** **29.62 165** P **P** **14 12 53.5 -1.4**
0.3nm,0.4s,mb3.4,baz=356,slow=7.7,SNR=6.5
STKA **Stephens Creek** **39.66 159** P **P** **14 14 21.1 +0.2**
1.8nm,0.8s,mb3.8,baz=329,slow=5.9,SNR=3.8
ARCES **ARCESS Array B** **88.92 340** LR LR 15 07 01.1
comp=Z,75nm,18.9s,MS4.1,baz=108,slow=41
KMBO **Kilima Mbogo** **88.95 269** LR LR 14 59 35.0
comp=Z,38nm,18.2s,MS3.9,baz=89,slow=36

IDC ***21*** *14:19:36.3±2.0, 4.03N×126.71E, mb3.5/4, mb1 3.7/4, mb1mx3.5/20, Error ellipse: s-maj=111.0km s-min=25.6km az=69.0*
ISC 21 14:19:38.9±2.3**, 4.1N**±0.4×**126.8E**±0.9**, h33**km**, n4,** σ**0**§**73**/4**, mb3.4**/4**, Talaud Islands**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**22.08**	**183**	P		**P**	**14 24 32.8**	**-0.1**
	1.7nm,0.7s,mb3.6,baz=15,slow=12,SNR=5.0							
WRA	**Warramunga Arr**	**25.00**	**163**	P		**P**	**14 25 00.9**	**-0.5**
	0.9nm,0.5s,mb3.6,baz=342,slow=10,SNR=15							
ASAR	**Alice Springs**	**28.44**	**166**	P		**P**	**14 25 33.5**	**+0.6**
	0.4nm,0.8s,mb3.1,baz=337,slow=7.3,SNR=5.8							
MKAR	**Makanchi Array**	**57.32**	**325**	P		**P**	**14 29 26.0**	**0.0**
	0.1nm,0.3s,mb3.3,baz=127,slow=6.6,SNR=4.6							

NIED ***21*** *14:27:00, 43.70N×144.70E, h5*km*, Mw4.4 Best double couple: M*o*5.02×10*15* NP1:*ϕ*s64°, δ81°, λ-160°. NP2: ϕs330°, δ70°, λ-10°.*
IDC ***21*** *14:27:09.1±0.5, 43.67N×144.77E, mb4.3/22, mb1 4.5/22, mb1mx4.5/25, MS3.7/7, Ms1 3.7/7, ms1mx3.4/22, Error ellipse: s-maj=13.7km s-min=10.8km az=171.0*
JMA ***21*** *14:27:10.8, 43.74N×144.70E, M4.8*
JMA Felt IV J1.
BJI ***21*** *14:27:10.0, 43.93N×144.93E, h24*km*, mB5.0, mb4.6, Ms4.2, Msz4.1*
SKHL ***21*** *14:27:10.2±1.9, 43.80N×144.67E, h28*km*±3*km*, mb5.7/1, Ms4.3/4, msh5.4/2*
NEIC ***21*** *14:27:11.5±2.4, 43.68N×144.72E, h13*km*±15*km*, mb4.6/16, Error ellipse: s-maj=6.6km s-min=4.4km az=134.0*
NEIC Recorded [4 JMA] in the Shari area and [2 JMA] in other parts of eastern Hokkaido.
MOS ***21*** *14:27:12.6±1.5, 43.75N×144.76E, h33*km*, mb4.6/15, Error ellipse: s-maj=13.4km s-min=7.6km az=102.3*
ISC 21 14:27:10.4±0.5**, 43.70N**±0.03×**144.72E**±0.03**, h17**km±3km**, h22**km±2.2km**:pP-P, n152,** σ**1**§**06**/153**, mb4.4**/50**, MS4.0**/15**, 11C-8D, Hokkaido region**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JNK	**Nakash**	**0.12**	**178**	⇑P		**Pb**	**14 27 14.0**	**-0.2**
JNK				*e*S		**Sb**	**14 27 16.2**	**-0.5**
JRA	**Rausu**	**0.38**	**51**	⇑P		**Pb**	**14 27 18.1**	**-0.2**
JRA				*e*S		**Sb**	**14 27 23.3**	**-0.3**
JTKR	**Abashiri--Toko**	**0.64**	**295**	⇓P		**Pb**	**14 27 22.6**	**-0.2**
JAK	**Akkeshi**	**0.70**	**181**	⇑P		**Pb**	**14 27 24.5**	**+0.6**
JAK				*e*S		**Sb**	**14 27 35.1**	**+2.1**
JAR	**Ashorobuto**	**0.80**	**240**	P		**Pb**	**14 27 26.0**	**+0.6**
NEM2	**Nemuro 2**	**0.82**	**114**	⇓P		**Pb**	**14 27 26.1**	**+0.3**
YUK	**Yuzh-Kuril'sk**	**0.89**	**68**	⇓*i*P		**Pb**	**14 27 26.5**	**-0.6**
YUK				AMB	AMB		14 27 28.1	
	2μm,0.8s							
YUK				AMB	AMB		14 27 28.1	
	7μm,0.6s							
YUK				AMB	AMB		14 27 28.1	
	3μm,0.7s							
YUK				AMB	AMB		14 27 28.1	
	970nm,0.3s							
YUK				AMB	AMB		14 27 28.1	
	2μm,0.2s							
YUK				AMB	AMB		14 27 28.1	
	5μm,0.2s							
YUK				*i* S		**Sb**	**14 27 38.7**	**+0.1**
YUK				A			14 27 39.2	
	28μm,0.5s							
YUK				A			14 27 39.2	
	9μm,0.5s							
YUK				A			14 27 42.1	
	28μm,1.5s							
YUK				A			14 27 42.1	
	25μm,1.0s							
YUK	**Yuzh-Kuril'sk**	**0.89**	**68**	⇓*i*PN		**Pb**	**14 27 26.5**	**-0.6**
YUK				*i* S		**Sb**	**14 27 38.7**	**+0.1**
YUK				pmax	pmax			
	comp=Z,5μm,0.3s							
YUK				pmax	pmax			
	comp=N,970nm,0.4s							
YUK				pmax	pmax			
	comp=E,2μm,0.3s							
YUK				pmax	pmax			
	comp=Z,7μm,0.6s							
YUK				pmax	pmax			
	comp=N,3μm,0.7s							
YUK				pmax	pmax			
	comp=E,2μm,0.8s							
YUK				smax				
	comp=N,28μm,0.5s							
YUK				smax				
	comp=E,9μm,0.5s							
YUK				smax				
	comp=N,28μm,1.5s							
YUK				smax				
	comp=E,25μm,1.0s							
ASAJ	**Asahikawa**	**1.59**	**286**	Pn		**Pn**	**14 27 39.5**	**+1.4**
	comp=E,530nm,0.3s,baz=97,slow=16,SNR=1348							
ASAJ				Lg			14 28 00.7	
	comp=E,613nm,0.3s,baz=359,slow=24,SNR=8.2							
ASAJ				LR		LR	14 28 22.9	
	comp=E,2μm,18.0s,baz=40,slow=45							
ASAJ	**Asahikawa**	**1.59**	**286**	PN		**Pn**	**14 27 39.5**	**+1.4**
ASAJ							14 28 00.7	
ASAJ				pmax	pmax			
	comp=Z,530nm,0.3s							
ASAJ				smax				
	comp=Z,1.0nm,0.3s							
KUR	**Kuril'sk**	**2.73**	**55**	*i* S		**Sn**	**14 28 34.0**	**+6.7**
KUR				A			14 28 39.2	
	comp=Z,6μm,2.0s							
KUR				A			14 28 39.2	
	comp=Z,11μm,2.0s							
YSS	**Yuzh-Sakhalins**	**3.54**	**338**	⇑*i*P		**Pn**	**14 28 04.0**	**-1.9**
YSS				AMB	AMB		14 28 05.0	
	comp=Z,60nm,0.9s							
YSS				AMB	AMB		14 28 05.0	
	comp=Z,30nm,0.9s							
YSS				AMB	AMB		14 28 05.0	
	comp=Z,50nm,0.9s							
YSS				*i* pP			14 28 12.0	
YSS				*e*sP			14 28 14.7	
YSS				*e*S		**Sn**	**14 28 42.0**	**-5.7**
YSS				A			14 28 44.0	
	comp=Z,250nm,0.8s							
YSS				A			14 28 44.0	
	comp=Z,130nm,0.8s							
YSS				*e*LQ			14 29 05.0	
YSS				AMS	AMS		14 29 39.0	
	comp=Z,4μm,13.0s							
YSS				AMS	AMS		14 29 39.0	
	comp=Z,2μm,13.0s							
YSS				AMS	AMS		14 29 39.0	
	comp=Z,2μm,14.0s							
YSS	**Yuzh-Sakhalins**	**3.54**	**338**	⇑*i*PN		**Pn**	**14 28 04.0**	**-1.9**
YSS				pmax	pmax			
	comp=N,60nm,0.9s							
YSS				pmax	pmax			
	comp=E,30nm,0.9s							
YSS				pmax	pmax			
	comp=Z,50nm,0.9s							
YSS				pmax	pmax			
	comp=Z,110nm,0.8s							
YSS				pmax	pmax			
	comp=N,140nm,0.9s							
YSS				MLR	MLR			
	comp=Z,2μm,13.0s							
YSS				MLR	MLR			
	comp=N,2μm,14.0s							
YSS				MLR	MLR			
	comp=E,4μm,13.0s							
YSS	**Yuzh-Sakhalins**	**3.54**	**338**	*e*Pn		**Pn**	**14 28 04.3**	**-1.5**
UGL	**Uglegorsk**	**5.68**	**342**	*e*P		**Pn**	**14 28 39.0**	**+2.7**
UGL				AMB	AMB		14 28 43.0	
	comp=E,90nm,0.9s							
UGL				AMS	AMS		14 31 14.0	
	comp=E,2μm,14.0s							
UGL				AMS	AMS		14 31 14.0	
	comp=E,2μm,14.0s							
UGL				AMS	AMS		14 31 14.0	
	comp=E,1μm,14.0s							
TYV	**Tymovskoe**	**7.30**	**350**	*e*PN		**Pn**	**14 28 56.0**	**-3.1**
TYV				pmax	pmax			
	comp=Z,31nm,0.8s							
TYV				MLR	MLR			
	comp=E,1μm,15.0s							
TYV				MLR	MLR			
	comp=Z,1μm,15.0s							
MAJO	**Matsushiro**	**8.71**	**217**	*e*Pn		**P**	**14 29 16.8**	**-2.0**
	comp=Z,29nm,0.9s							
MAT	**Matsushiro**	**8.71**	**217**	P		**P**	**14 29 16.7**	**-2.0**
MAT	**Matsushiro**	**8.71**	**217**	*e*P		**P**	**14 29 17.0**	**-1.7**
	comp=Z,16nm,0.8s							
NKL	**Nikolayevsk**	**9.83**	**346**	*e*P		**P**	**14 29 29.2**	**-4.8**
NKL				AMB	AMB		14 29 31.3	
	comp=Z,20nm,0.7s							
NKL				sP			14 29 43.0	
NKL				*e*L			14 32 22.0	
NKL				AMS	AMS		14 34 11.0	
	comp=Z,1μm,14.0s							
NKL				AMS	AMS		14 34 11.0	
	comp=Z,800nm,14.0s							
OKH	**Okha**	**9.93**	**354**	*e*L			14 32 42.0	
OKH				AMS	AMS		14 34 23.8	
	comp=Z,2μm,14.0s							
OKH				AMS	AMS		14 34 23.8	
	comp=Z,2μm,16.0s							
SKR	**Severo-Kuril's**	**10.43**	**44**	*e*P		**P**	**14 29 43.5**	**+1.2**
SKR				AMB	AMB		14 29 46.0	
	comp=Z,40nm,0.5s							
SKR				AMB	AMB		14 29 46.0	
	comp=Z,800nm,4.0s							
SKR				A			14 32 06.0	
	comp=Z,1μm,8.0s							
SKR				A			14 32 06.0	
	comp=Z,800nm,8.0s							
SKR				AMS	AMS		14 34 16.0	
	comp=Z,2μm,12.0s							
SKR				AMS	AMS		14 34 16.0	
	comp=Z,2μm,12.0s							
SKR				AMS	AMS		14 34 16.0	
	comp=Z,1μm,12.0s							
SKR	**Severo-Kuril's**	**10.43**	**44**	*e*PN		**P**	**14 29 43.9**	**+1.6**
SKR				pmax	pmax			
	comp=Z,40nm,0.5s							
SKR				pmax	pmax			
	comp=N,800nm,4.0s							
SKR				MLR	MLR			
	comp=N,1μm,12.0s							
SKR				MLR	MLR			
	comp=E,1μm,12.0s							
SKR				MLR	MLR			
	comp=Z,2μm,12.0s							
MDJ	**Mudanjiang**	**10.91**	**280**	P		**P**	**14 29 50.6**	**+1.8**
MDJ				AP			14 29 55.9	
MDJ				PP	PP		14 29 59.9	+2.9
MDJ				XP			14 30 00.3	
MDJ				PPP	PPP		14 30 06.8	+1.9
MDJ				S	**S**		**14 31 56.0**	**+4.5**
MDJ				PCP	PcP		14 35 46.0	-1.5
MDJ				SCP			14 39 16.5	
MDJ				PCS			14 39 20.5	
MDJ				SCS	ScS		14 42 50.3	-1.7
MDJ				AMB	AMB			
	comp=Z,11nm,1.8s							
MDJ				AMB	AMB			
	comp=Z,62nm,3.5s							
MDJ				LR	LR			
	comp=N,476nm,17.0s							
MDJ				LR	LR			
	comp=E,239nm,24.3s							
MDJ	**Mudanjiang**	**10.91**	**280**	*e*Pn		**P**	**14 29 51.1**	**+2.3**
	comp=E,10nm,0.8s							
PET	**Petropavlovsk**	**13.13**	**40**	⇓*e*PN		**P**	**14 30 13.1**	**-5.6**
PET				*e*S		**S**	**14 32 56.0**	**+11**
PET				pmax	pmax			
	comp=Z,15μm,1.1s							
PET	**Petropavlovsk**	**13.13**	**40**	P		**P**	**14 30 18.3**	**-0.3**
CN2	**Changchun**	**13.93**	**277**	*e*P		**P**	**14 30 30.8**	**+1.5**
CN2				*e*S		**S**	**14 33 04.5**	**+0.1**
CN2				AMB	AMB			
	comp=Z,10.0nm,0.8s							
CN2				LR	LR			
	comp=N,720nm,15.0s							
CN2				LR	LR			
	comp=E,390nm,15.0s							
CN2				LR	LR			
	comp=Z,510nm,15.0s							
JNU	**Nakatsue**	**15.12**	**230**	LR		LR	14 37 34.8	
	comp=Z,110nm,19.3s,baz=50,slow=41							
ZEA	**Zeya**	**15.25**	**317**	*e*P		**P**	**14 30 46.4**	**0.0**
ZEA				AMB	AMB		14 30 52.8	
	comp=Z,71nm,1.2s							
ZEA				AMB	AMB		14 30 52.8	
	comp=Z,59nm,1.4s							
ZEA				AMB	AMB		14 30 52.8	
	comp=Z,56nm,1.4s							
ZEA				pP			14 30 55.3	
MA2	**Magadan**	**16.32**	**11**	*e*P		**P**	**14 31 01.5**	**+1.3**
HIA	**Hailar**	**18.04**	**297**	*e*P		**P**	**14 31 22.9**	**+1.1**
CLNS	**Chul'man**	**18.17**	**323**	*e*P		**P**	**14 31 22.3**	**-1.1**
CLNS				pmax	pmax			
	comp=Z,10.0nm,1.0s							
CLNS				pmax	pmax			
	comp=N,10.0nm,1.0s							
CLNS				pmax	pmax			
	comp=E,9.0nm,0.8s							
CLNS				pmax	pmax			
	comp=Z,7.0nm,1.0s							
CLNS				pmax	pmax			
	comp=N,5.0nm,0.9s							
CLNS				pmax	pmax			
	comp=E,6.0nm,0.9s							
SEY	**Seymchan**	**19.78**	**10**	*e*P		**P**	**14 31 43.2**	**+0.8**
SEY				*e*S		**S**	**14 35 23.5**	**+4.8**
SEY				pmax	pmax			
	comp=N,40nm,1.2s							
SEY				pmax	pmax			
	comp=Z,70nm,1.2s							
SEY				smax				
	comp=N,180nm,5.8s							
SEY				smax				
	comp=E,180nm,5.8s							
YAK	**Yakutsk**	**20.39**	**339**	⇓*e*P		**P**	**14 31 46.7**	**-2.1**
YAK				pmax	pmax			
	comp=Z,25nm,0.7s							
YAK				MLR	MLR			
	comp=Z,300nm,13.0s,MS3.8							
YAK	**Yakutsk**	**20.39**	**339**	*e*P		**P**	**14 31 46.7**	**-2.1**
	comp=Z,24nm,0.8s							
JOW	**Kunigami**	**21.46**	**224**	P		**P**	**14 31 59.0**	**-1.1**
	comp=Z,26nm,0.9s,mb4.6,baz=35,slow=9.3,SNR=8.8							
JOW				LR	LR		14 40 56.8	
	comp=Z,263nm,20.6s,MS3.6,baz=51,slow=39							
BJI	**Beijing**	**21.52**	**270**	*e*P		**P**	**14 31 58.9**	**-1.7**
BJI				S		**S**	**14 35 54.5**	**+1.1**
BJI				AMB	AMB			
	comp=Z,10.0nm,1.2s,mb4.1							
BJI				LR	LR			
	comp=N,217nm,12.2s,MS3.9							
BJI				LR	LR			
	comp=E,240nm,13.1s,MS3.9							
SSE	**Sheshan**	**22.44**	**244**	P		**P**	**14 32 11.5**	**+1.6**
SSE				AMB	AMB			
	comp=Z,35nm,0.7s,mb4.9							
NJ2	**Nanjing**	**23.39**	**249**	*e*P		**P**	**14 32 17.1**	**-2.0**
NJ2				AP			14 32 26.3	
NJ2				XP			14 32 30.4	
NJ2				PP	PP		14 32 48.6	-2.2
NJ2				AMB	AMB			
	comp=Z,20nm,0.6s,mb4.7							
NJ2				AMB	AMB			
	comp=Z,560nm,8.6s							
NJ2				LR	LR			
	comp=N,930nm,13.0s,MS4.5							
NJ2				LR	LR			
	comp=E,820nm,16.1s,MS4.5							
NJ2				LR	LR			
	comp=Z,490nm,13.7s,MS4.1							
BOD	**Bodaibo**	**23.75**	**317**	*e*P		**P**	**14 32 22.0**	**-0.4**
BOD				*e*			14 36 04.7	
HHC	**Hu-ho-hao-te**	**24.60**	**275**	*e*P		**P**	**14 32 30.9**	**+0.1**
HHC				AMB	AMB			
	comp=Z,11nm,1.2s,mb4.3							
HHC				AMB	AMB			
	comp=Z,139nm,5.2s							
ULN	**Ulaanbaatar**	**26.41**	**292**	*c i*P		**P**	**14 32 48.6**	**+0.9**
ULN	**Ulaanbaatar**	**26.41**	**292**	*e*P		**P**	**14 32 48.4**	**+0.6**
	comp=Z,14nm,1.1s,mb4.4							
SONM	**Songino Array**	**26.86**	**292**	P		**P**	**14 32 52.0**	**+0.1**
	comp=Z,7.2nm,0.7s,mb4.3,baz=86,slow=8.1,SNR=35							
SONM				PcP	PcP		14 36 13.6	-1.0
	comp=Z,0.9nm,0.6s,baz=143,slow=2.0,SNR=4.9							
BILL	**Bilibino**	**26.92**	**18**	⇑*e*P		**P**	**14 32 50.2**	**-2.0**
BILL				pmax	pmax			
	comp=Z,4.0nm,1.2s,mb3.8							
BILL				MLR	MLR			
	comp=Z,200nm,16.0s,MS3.8							
BILL	**Bilibino**	**26.92**	**18**	*e*P		**P**	**14 32 50.8**	**-1.3**
ZAK	**Zakamensk**	**28.72**	**298**	*e*P		**P**	**14 33 08.6**	**0.0**
ZAK				*e*			14 36 18.9	
TIXI	**Tiksi**	**29.07**	**350**	*e*P		**P**	**14 33 15.7**	**+4.1**
TIXI				pmax	pmax			
	comp=Z,17nm,1.0s,mb4.7							
TIXI				MLR	MLR			
	comp=Z,2μm,16.0s,MS4.8							
LZH	**Lanzhou**	**32.01**	**270**	*e*P		**P**	**14 33 39.0**	**+1.0**
LZH				AP	pP		14 33 47.0	+4.0
LZH				XP	sP		14 33 52.0	+6.9
LZH				AMB	AMB			
	comp=Z,26nm,1.0s,mb5.0							
GYA	**Guiyang**	**35.21**	**253**	P		**P**	**14 34 08.6**	**+2.9**
GYA				S		**S**	**14 39 35.4**	**-2.0**
GYA				AMB	AMB			
	comp=Z,10.0nm,0.9s,mb4.8							
GYA				LR	LR			
	comp=N,80nm,3.7s							
GYA				LR	LR			
	comp=E,90nm,3.6s							
GYA				LR	LR			
	comp=Z,210nm,4.2s							
KMI	**Kunming**	**38.79**	**255**	*e*P		**P**	**14 34 35.8**	**-0.1**
KMI				AP	pP		14 34 41.4	+0.4
KMI				XP	sP		14 34 45.4	+2.3
KMI				PP	PP		14 36 07.0	-1.6
KMI				S	**S**		**14 40 35.0**	**+2.8**
KMI				SS	SS		14 43 13.6	-1.1
KMI				AMB	AMB			
	comp=Z,15nm,0.9s,mb4.7							
KMI				LR	LR			
	comp=N,144nm,13.0s,MS4.1							
KMI				LR	LR			
	comp=E,145nm,14.5s,MS4.1							
KMI				LR	LR			
	comp=Z,135nm,13.5s,MS3.9							
ZAL	**Zalesovo**	**39.63**	**307**	P		**P**	**14 34 43.0**	**+0.4**
	comp=Z,0.9nm,0.5s,mb3.8,baz=282,slow=8.7,SNR=5.9							
ZAL				PcP	PcP		14 36 49.6	-0.6
	comp=Z,2.3nm,0.8s,baz=242,slow=3.1,SNR=10							
ZAL				LR	LR		14 52 52.5	
	comp=Z,108nm,18.1s,MS3.7,baz=300,slow=39							
ZAL	**Zalesovo**	**39.63**	**307**	P		**P**	**14 34 43.0**	**+0.4**
ZAL							14 36 49.6	
ZAL				pmax	pmax			
	comp=Z,1.0nm,0.5s							
ZAL				pmax	pmax			
	comp=Z,2.0nm,0.8s							
ZAL				MLR	MLR			
	comp=Z,108nm,18.2s							
ZAL	**Zalesovo**	**39.63**	**307**	P		**P**	**14 34 43.0**	**+0.4**
ZAL				PcP	PcP		14 36 49.6	-0.6
ZAL				LR	LR		14 52 52.5	
WMQ	**Urumqi**	**40.47**	**291**	*e*P		**P**	**14 34 50.4**	**+0.8**
WMQ				AP	pP		14 34 56.4	+1.7
WMQ				XP	sP		14 34 59.5	+2.7
WMQ				PP	PP		14 36 27.5	+1.2
WMQ				PCP	PcP		14 36 53.9	+1.0
WMQ				SCP			14 40 40.9	
WMQ				PCS			14 40 43.3	
WMQ				S	**S**		**14 40 57.5**	**+0.2**
WMQ				XS			14 41 07.3	
WMQ				SS	SS		14 43 51.0	-0.3
WMQ				SCS	ScS		14 44 53.4	+0.5
WMQ				AMB	AMB			
	comp=Z,11nm,1.0s,mb4.5							
WMQ				AMB	AMB			
	comp=Z,71nm,5.2s							
WMQ				LR	LR			
	comp=N,177nm,17.2s,MS4.1							
WMQ				LR	LR			
	comp=E,187nm,17.3s,MS4.1							
WMQ				LR	LR			
	comp=Z,294nm,18.4s,MS4.2							
MCK	**McKinley**	**41.76**	**38**	*e*P		**P**	**14 35 00.2**	**+0.4**
	comp=Z,6.0nm,1.1s,mb4.1							
COLA	**College**	**42.15**	**36**	*c i*P		**P**	**14 35 03.4**	**+0.3**
COLA	**College**	**42.15**	**36**	*e*P		**P**	**14 35 03.6**	**+0.6**
	comp=Z,15nm,0.8s,mb4.7							
SML	**Sawmill**	**42.21**	**41**	*e*P		**P**	**14 35 04.1**	**+0.5**
ILAR	**Eielson Array**	**42.57**	**36**	P		**P**	**14 35 06.5**	**-0.1**
	comp=Z,9.4nm,0.8s,mb4.6,baz=263,slow=6.5,SNR=50							
ILAR	**Eielson Array**	**42.57**	**36**	P		**P**	**14 35 06.5**	**0.0**
ILAR				pmax	pmax			
	comp=Z,9.0nm,0.8s							
MKAR	**Makanchi Array**	**43.04**	**297**	P		**P**	**14 35 10.3**	**-0.2**
	comp=Z,1.9nm,0.7s,mb3.9,baz=81,slow=9.7,SNR=15							
MKAR				PcP	PcP		14 36 59.8	-1.5
	comp=Z,1.4nm,0.7s,baz=72,slow=3.8,SNR=4.4							
MKAR				LR	LR		14 53 46.2	
	comp=Z,66nm,20.4s,MS3.5,baz=290,slow=37							
MKAR	**Makanchi Array**	**43.04**	**297**	P		**P**	**14 35 10.3**	**-0.3**
MKAR							14 36 59.8	
MKAR				pmax	pmax			
	comp=Z,2.0nm,0.7s							
MKAR				pmax	pmax			
	comp=Z,1.0nm,0.7s							
MKAR				MLR	MLR			
	comp=Z,66nm,20.4s							
MKAR	**Makanchi Array**	**43.04**	**297**	P		**P**	**14 35 10.3**	**-0.2**
MKAR				PcP	PcP		14 36 59.8	-1.5
MKAR				LR	LR		14 53 46.2	
KURK	**Kurchatov**	**44.09**	**303**	*e*P		**P**	**14 35 18.6**	**-0.4**
CMAR	**Chiang Mai Arr**	**45.83**	**252**	P		**P**	**14 35 33.5**	**+0.2**
	comp=Z,2.2nm,0.8s,mb4.2,baz=43,slow=7.7,SNR=8.2							
CMAR				PcP	PcP		14 37 10.1	-1.1
	comp=Z,0.8nm,0.5s,baz=316,slow=1.2,SNR=4.8							
CMAR				LR	LR		14 56 24.9	
	comp=Z,78nm,18.1s,MS3.7,baz=226,slow=38							
CMAR	**Chiang Mai Arr**	**45.83**	**252**	P		**P**	**14 35 33.5**	**+0.2**
CMAR							14 37 10.1	
CMAR				pmax	pmax			
	comp=Z,2.0nm,0.8s							
CMAR				pmax	pmax			
	comp=Z,1.0nm,0.5s							
CMAR				MLR	MLR			
	comp=Z,78nm,18.1s							
DAWY	**Dawson**	**45.89**	**36**	*e*P		**P**	**14 35 34.8**	**+1.6**
INK	**Inuvik**	**47.33**	**30**	P		**P**	**14 35 42.9**	**-1.7**
	comp=Z,2.6nm,0.7s,mb4.3,baz=325,slow=5.4,SNR=20							
INK	**Inuvik**	**47.33**	**30**	P		**P**	**14 35 42.9**	**-1.7**
INK				pmax	pmax			
	comp=Z,3.0nm,0.7s							
INK	**Inuvik**	**47.33**	**30**	*e*P		**P**	**14 35 43.8**	**-0.8**
	comp=Z,3.0nm,0.7s,mb4.3							
ZRNK	**Zerenda**	**48.97**	**309**	*e*P		**P**	**14 35 56.9**	**-0.6**
KKN	**Kakani**	**49.76**	**272**	*e*P		**P**	**14 36 03.4**	**-0.5**
	comp=Z,18nm,1.0s,mb5.0							
PKI	**Pulchoki**	**49.79**	**272**	*e*P		**P**	**14 36 03.5**	**-0.7**
	comp=Z,40nm,1.5s,mb5.2							
GKN	**Gorkha**	**50.10**	**273**	*e*P		**P**	**14 36 05.6**	**-1.0**
	comp=Z,9.8nm,0.7s,mb4.9							
KOLN	**Koldanda**	**50.98**	**273**	*e*P		**P**	**14 36 11.2**	**-2.1**
	comp=Z,11nm,0.7s,mb4.9							
ARU	**Arti**	**53.17**	**316**	⇓*e*P		**P**	**14 36 28.9**	**-0.4**
ARU				pmax	pmax			
	comp=Z,10.0nm,1.4s,mb4.5							
ARU				MLR	MLR			
	comp=Z,100nm,16.0s,MS4.0							

ARU	**Arti**	**53.17**	**316**	*e*P		**P**	**14 36 27.3**	**-2.0**
	comp=Z,9.2nm,1.2s,mb4.6							
RES	**Resolute Bay**	**55.52**	**16**	*e*P		**P**	**14 36 44.1**	**-2.2**
	comp=Z,9.3nm,0.7s,mb4.9							
YKW3	**Yellowknife Ar**	**56.78**	**33**	*e*P		**P**	**14 36 55.6**	**+0.1**
YKA	**Yellowknife Ar**	**56.82**	**33**	P		**P**	**14 36 54.9**	**-0.9**
	comp=Z,4.7nm,0.8s,mb4.6,baz=303,slow=6.8,SNR=53							
YKA				PcP		PcP	14 37 49.6	-1.7
	comp=Z,1.0nm,0.9s,baz=305,slow=4.4,SNR=3.8							
YKA	**Yellowknife Ar**	**56.82**	**33**	P		**P**	**14 36 54.9**	**-0.8**
YKA							14 37 49.6	
YKA				pmax	pmax			
	comp=Z,5.0nm,0.8s							
YKA				pmax	pmax			
	comp=Z,1.0nm,0.9s							
NLW	**Nelson Butte**	**62.05**	**49**	*e*P		**P**	**14 37 31.8**	**-0.3**
DPW	**Davenport**	**63.33**	**48**	*e*P		**P**	**14 37 39.7**	**-0.8**
NEW	**Newport**	**63.68**	**48**	*e*P		**P**	**14 37 41.7**	**-1.1**
FITZ	**Fitzroy Crossi**	**63.94**	**200**	P		**P**	**14 37 44.8**	**-0.1**
	comp=Z,3.5nm,0.8s,mb4.4,baz=83,slow=3.6,SNR=3.9							
WRAB	**Tennant Creek**	**64.03**	**191**	P		**P**	**14 37 45.0**	**-0.6**
WRA	**Warramunga Arr**	**64.04**	**191**	P		**P**	**14 37 43.6**	**-2.0**
	comp=Z,1.8nm,0.8s,mb4.2,baz=8.4,slow=6.9,SNR=13							
WRA	**Warramunga Arr**	**64.04**	**191**	P		**P**	**14 37 43.6**	**-2.0**
WRA				pmax	pmax			
	comp=Z,2.0nm,0.8s							
FINES	**FINESS Array B**	**64.11**	**332**	P		**P**	**14 37 43.6**	**-1.7**
	comp=Z,3.8nm,0.8s,mb4.5,baz=45,slow=8.1,SNR=8.7							
FINES	**FINESS Array B**	**64.11**	**332**	P		**P**	**14 37 43.7**	**-1.6**
FINES				pmax	pmax			
	comp=Z,4.0nm,0.8s							
WVOR	**Wild Horse Val**	**66.38**	**53**	*e*P		**P**	**14 38 00.2**	**-0.1**
CHMT	**Chamberlain Mo**	**66.58**	**47**	*e*P		**P**	**14 38 01.3**	**-0.1**
FFC	**Flin Flon**	**66.78**	**35**	*e*P		**P**	**14 38 01.7**	**-0.9**
	comp=Z,4.4nm,0.9s,mb4.5							
FCC	**Fort Churchill**	**66.94**	**29**	*e*P		**P**	**14 38 02.8**	**-0.7**
ASAR	**Alice Springs**	**67.76**	**191**	P		**P**	**14 38 08.5**	**-0.9**
	comp=Z,2.0nm,0.8s,mb4.2,baz=10,slow=6.8,SNR=14							
HLID	**Hailey**	**68.08**	**50**	*e*P		**P**	**14 38 11.4**	**+0.4**
	comp=Z,2.0nm,1.0s,mb4.1							
MCMT	**McKenzie Canyo**	**68.13**	**48**	*e*P		**P**	**14 38 11.6**	**+0.3**
BOZ	**Bozeman (W)**	**68.25**	**47**	*e*P		**P**	**14 38 11.9**	**-0.1**
	comp=Z,3.4nm,0.8s,mb4.4							
KIV	**Kislovodsk**	**68.47**	**311⇑**	*e*P		**P**	**14 38 14.4**	**+1.0**
KIV				pmax	pmax			
	comp=Z,24nm,1.0s,mb5.2							
KIV				MLR	MLR			
	comp=Z,100nm,20.0s,MS4.0							
KIV	**Kislovodsk**	**68.47**	**311**	*e*P		**P**	**14 38 13.8**	**+0.4**
	comp=Z,20nm,0.9s,mb5.2							
ZEI	**Tsey**	**68.56**	**309**	*e*P		**P**	**14 38 12.6**	**-1.4**
ZEI				*e*			14 38 40.0	
ZEI				pmax	pmax			
	comp=Z,50nm,5.0s							
THR	**Tehran**	**68.58**	**300**	P		**P**	**14 38 15.8**	**+1.5**
	comp=Z,1.4nm,1.0s,mb3.8,baz=331,slow=10,SNR=3.0							
THR	**Tehran**	**68.58**	**300**	P		**P**	**14 38 15.8**	**+1.5**
THR				pmax	pmax			
	comp=Z,1.0nm,1.0s							
THR	**Tehran**	**68.58**	**300**	P		**P**	**14 38 15.8**	**+1.5**
NB2	**NORSAR Subarra**	**69.00**	**338**	P		**P**	**14 38 14.8**	**-1.6**
	comp=Z,7.8nm,1.1s,mb4.5,baz=32,slow=6.5							
NOA	**NORSAR Array B**	**69.00**	**338**	P		**P**	**14 38 16.8**	**+0.4**
	comp=Z,3.2nm,0.8s,mb4.3,baz=34,slow=6.1,SNR=7.6							
NOA	**NORSAR Array B**	**69.00**	**338**	P		**P**	**14 38 16.8**	**+0.4**
NOA				pmax	pmax			
	comp=Z,3.0nm,0.8s							
NVAR	**Mina Array Bea**	**69.09**	**57**	P		**P**	**14 38 18.1**	**+0.8**
	comp=Z,3.2nm,0.7s,mb4.4,baz=307,slow=4.7,SNR=28							
HWUT	**Hardware Ranch**	**70.95**	**50**	*e*P		**P**	**14 38 29.1**	**+0.5**
	comp=Z,5.2nm,1.0s,mb4.4							
BW06	**Boulder Array**	**71.28**	**48**	*e*P		**P**	**14 38 30.2**	**-0.4**
	comp=Z,4.1nm,1.0s,mb4.3							
PDAR	**Pinedale Array**	**71.28**	**48**	P		**P**	**14 38 30.9**	**+0.2**
	comp=Z,2.6nm,0.7s,mb4.2,baz=298,slow=2.1,SNR=20							
TCUT	**Toone Canyon**	**71.36**	**51**	*e*P		**P**	**14 38 31.0**	**-0.1**
NLU	**North Lily Min**	**71.76**	**52**	P		**P**	**14 38 33.7**	**+0.1**
ULM	**Lac du Bonnet**	**72.59**	**36**	P		**P**	**14 38 37.7**	**-0.5**
	comp=Z,1.9nm,0.5s,mb4.3,baz=311,slow=8.0,SNR=3.5							
ULM	**Lac du Bonnet**	**72.59**	**36**	P		**P**	**14 38 37.7**	**-0.5**
NEN	**Nelson**	**73.00**	**57**	*e*P		**P**	**14 38 41.4**	**+0.5**
RSSD	**Black Hills**	**73.25**	**45**	*e*P		**P**	**14 38 42.2**	**0.0**
PV10	**Paradox Valley**	**74.56**	**52**	*e*P		**P**	**14 38 51.0**	**+1.1**
PV01	**Paradox Valley**	**75.00**	**51**	*e*P		**P**	**14 38 53.0**	**+0.5**
WUAZ	**Wupatki**	**75.17**	**55**	*e*P		**P**	**14 38 54.9**	**+1.4**
STKA	**Stephens Creek**	**75.27**	**183**	P		**P**	**14 38 53.4**	**-0.7**
	comp=Z,3.6nm,1.0s,mb4.2,baz=358,slow=14,SNR=2.9							
RW3	**Ridgway**	**75.42**	**51**	*e*P		**P**	**14 38 55.1**	**+0.2**
MORC	**Moravsky Berou**	**76.11**	**328**	*e*P		**P**	**14 38 59.0**	**+0.5**
BRTR	**Keskin Array B**	**76.28**	**312**	P		**P**	**14 38 59.5**	**-0.2**
	comp=Z,0.5nm,0.4s,mb3.8,baz=63,slow=2.8,SNR=6.3							
BRTR				LR	LR		15 19 46.0	
	comp=Z,50nm,18.5s,MS3.9,baz=145,slow=41							
CLL	**Collm**	**76.53**	**331**	P		**P**	**14 39 03.5**	**+2.7**
	comp=Z,logA/T=1.0,mb4.7							
CLL				*e**SP		sP	14 39 11.0	+3.0
CLL	**Collm**	**76.53**	**331**	*i* P		**P**	**14 39 03.5**	**+2.7**
CLL				*e*			14 39 11.0	
CLL				pmax	pmax			
	comp=Z,9.0nm,1.0s,mb4.7							
CLL	**Collm**	**76.53**	**331**	*i* P		**P**	**14 39 03.5**	**+2.7**
	comp=Z,9.0nm,1.0s,mb4.7							
CLL				*e*			14 39 11.0	
BRG	**Berggiesshubel**	**76.55**	**330**	*i* P		**P**	**14 39 03.5**	**+2.5**
BRG				pmax	pmax			
	comp=Z,2.0nm,1.0s,mb4.0							
BRG	**Berggiesshubel**	**76.55**	**330**	*i* P		**P**	**14 39 03.5**	**+2.5**
	comp=Z,2.1nm,1.0s,mb4.0							
KHC	**Kasperske Hory**	**78.13**	**330**	*e*P		**P**	**14 39 11.0**	**+1.3**
SCHQ	**Schefferville**	**78.23**	**18**	P		**P**	**14 39 09.9**	**-0.2**
	comp=Z,2.9nm,0.6s,mb4.4,baz=296,slow=16,SNR=4.2							
SCHQ				LR	LR		15 14 51.8	
	comp=Z,71nm,20.7s,MS4.0,baz=86,slow=37							
GERES	**GERESS Array B**	**78.32**	**329**	P		**P**	**14 39 11.4**	**+0.6**
	comp=Z,0.3nm,0.3s,mb3.7,baz=45,slow=3.8,SNR=4.7							
MNTX	**Cornudas Mount**	**81.40**	**54**	*e*P		**P**	**14 39 28.2**	**+0.5**
	comp=Z,3.0nm,1.0s,mb4.4							
GDL2	**Guadalupe Moun**	**81.63**	**53**	*e*P		**P**	**14 39 29.5**	**+0.7**
WMOK	**Wichita Mounta**	**82.88**	**48**	*e*P		**P**	**14 39 35.4**	**+0.1**
TXAR	**Lajitas Array**	**84.13**	**55**	P		**P**	**14 39 42.9**	**+1.1**
	comp=Z,4.9nm,0.7s,mb4.7,baz=296,slow=3.7,SNR=21							
JCT	**Junction City**	**85.52**	**51**	*e*P		**P**	**14 39 49.1**	**+0.4**
MIAR	**Mount Ida**	**85.76**	**45**	*e*P		**P**	**14 39 50.1**	**+0.3**
WVT	**Waverly**	**87.30**	**40**	*e*P		**P**	**14 39 57.2**	**0.0**
VNDA	**Vanda**	**121.41**	**176**	PKP		PKPdf	14 46 01.8	-3.9
	comp=Z,0.9nm,0.7s,baz=317,slow=2.8,SNR=7.9							
VNDA	**Vanda**	**121.41**	**176**	*e*PKPdf		PKPdf	14 46 01.5	-4.2
SBA	**Scott Base**	**122.03**	**175**	*e*PKPdf		PKPdf	14 46 04.5	-2.4
DBIC	**Dimbokro**	**122.80**	**323**	PKP		PKPdf	14 46 06.3	-3.4
	comp=Z,3.5nm,0.6s,baz=24,slow=10.0,SNR=3.6							
DBIC	**Dimbokro**	**122.80**	**323**	PKP		PKPdf	14 46 06.3	-3.4
MAIT	**Maitri**	**144.43**	**205**	*e*PKPdf		PKPdf	14 46 44.9	-3.3
MAIT				*e*PP		PP	14 49 59.0	-5.1
SNAA	**Sanae**	**147.86**	**199**	*e*PKPbc		PKPdf	14 46 54.5	+0.5
VNA2	**Neumayer--Watz**	**149.42**	**198**	⇑*i*		PKPdf	14 47 00.8	+4.3
VNA3	**Neumayer Olymp**	**149.66**	**196**	⇑*i*		PKPdf	14 47 00.7	+3.8
VNA1	**Neumayer--Stat**	**149.82**	**198**	⇓*i*		PKPdf	14 47 02.3	+5.1
BDFB	**Brasilia**	**150.00**	**25**	PKPbc		PKPdf	14 47 01.1	+2.1
	comp=Z,2.9nm,0.4s,baz=134,slow=5.3,SNR=4.0							

CASC 21 15:11:36.5±2.6, 11.02N×86.34W, h6km±14km, MD3.7, ML2.7, 3C-2D, Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CRZC	**La Cruz**	**0.73**	**95**	*e*P	Pg	15 11 51.8	+0.7
CRZC				*e*S	Sg	15 12 02.0	+1.1
CONN	**Concepcion**	**0.89**	**52⇓**	*e*P	Pb	15 11 53.8	-0.1
APON	**Apoyo**	**0.93**	**16⇑**	*e*P	Pb	15 11 54.5	-0.2
CRUN	**El Crucero**	**0.96**	**2⇑**	*e*P	Pb	15 11 55.2	0.0
VCR	**Vista de Mar**	**1.12**	**142⇓**	*e*P	Pb	15 11 56.4	-1.5
COPN	**Copaltepe**	**1.18**	**348⇑**	*e*P	Pb	15 11 57.6	-1.3
COPN				*e*S	Sb	15 12 14.4	0.0
COPN				*i*		15 12 15.9	
	comp=Z,136nm,0.6s						
PYTN	**Playitas**	**1.54**	**10**	*e*P	Pn	15 12 02.9	-1.8
CGA2	**Cerro Gallo 2**	**2.09**	**118**	*e*P	Pn	15 12 13.4	+0.9
CGA2				*e*S	Sn	15 12 39.3	+0.1
LAJ	**Bijagual**	**2.46**	**118**	*e*P	Pn	15 12 13.6	-4.2
TRTC	**Tortuguero**	**2.62**	**99**	*e*P	Pn	15 12 21.3	+1.3
URSC	**Urasca**	**2.78**	**115**	*e*P	Pn	15 12 23.1	+0.7

IDC 21 15:14:29.8±5.1, 16.58S×175.48W, mb4.2/3, mb1 4.4/3, mb1mx3.8/14, 2D, Error ellipse: s-maj=164.0km s-min=100.6km az=153.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**41.72**	**241**	P	P	15 22 21.7	-0.5
	2.0nm,0.6s,baz=78,slow=10,SNR=7.9						
WB2	**Warramunga Arr**	**47.62**	**258**	⇓*i* P	P	15 23 07.3	-2.5
WRA	**Warramunga Arr**	**47.63**	**258**	P	P	15 23 07.6	-2.3
	0.7nm,0.5s,baz=96,slow=8.2,SNR=30						
AS12	**Alice Springs**	**47.85**	**253**	⇓*i* P	P	15 23 08.9	-2.6
	3.9nm,0.6s						
ASAR	**Alice Springs**	**47.85**	**253**	P	P	15 23 09.1	-2.5
	6.1nm,0.5s,baz=89,slow=7.8,SNR=188						
ASAR				PcP	PcP	15 24 38.4	-2.3
	0.4nm,0.5s,baz=105,slow=4.1,SNR=4.4						

IDC 21 15:29:01.6±1.1, 30.60N×85.29E, mb3.8/10, mb1 4.0/12, mb1mx3.9/23, ML3.6/2, MS3.1/4, Ms1 3.1/4, ms1mx2.8/40, Error ellipse: s-maj=44.8km s-min=16.4km az=59.0
NEIC 21 15:29:04.2±4.7, 30.62N×85.12E, h16km±29km, mb4.2/5, Error ellipse: s-maj=18.2km s-min=6.5km az=55.0
MOS 21 15:29:04.0±1.6, 30.50N×84.95E, h33km, mb4.2/7, Error ellipse: s-maj=26.7km s-min=12.9km az=94.3
BJI 21 15:29:06.7, 30.71N×85.61E, h24km, mB4.2, mb4.1, Ms4.2

ISC 21 15:29:04.4±1.3, 30.59N±0.07×85.15E±0.07, h33km±14km, n47, σ1º11/48, mb3.9/14, MS3.1/3, 2C, Xizang

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LSA	**Lhasa**	**5.27**	**98**	*e*Pn	P	15 30 24.7	**+1.9**
	43nm,0.8s						
NDI	**New Delhi**	**7.16**	**257**	*e*	P	15 30 50.5	**+1.0**
SHL	**Shillong**	**7.77**	**128**	*e*P	P	15 30 55.2	**-2.7**
SHL				*e*S	S	15 32 20.0	**-5.7**
CHCP	**Chirah Chowk**	**10.53**	**290**	P	P	15 31 33.9	**-2.3**
THW	**Thamme Wali**	**11.63**	**284**	P	P	15 31 47.1	**-4.0**
CEP	**Cherat**	**11.67**	**289**	P	P	15 31 47.0	**-4.6**
ULHL	**Ulahol**	**13.65**	**331**	P	P	15 32 28.3	**+10**
	SNR=7.3						
KZA	**Kyzart**	**13.96**	**328**	P	P	15 32 29.9	**+8.0**
	SNR=8.9						
TKM2	**Tokmak 2**	**14.48**	**331**	P	P	15 32 37.8	**+9.0**
	SNR=5.4						
KBK	**Karagaybulak**	**14.55**	**329**	P	P	15 32 37.5	**+7.8**
	SNR=11						
USP	**Ospenovka**	**15.23**	**329**	P	P	15 32 44.6	**+6.0**
	SNR=5.8						
MKAR	**Makanchi Array**	**16.33**	**353**	Pn	P	15 32 50.8	**-1.9**
	0.1nm,0.3s,baz=175,slow=13,SNR=14						
KMI	**Kunming**	**16.47**	**105**	*e*P	P	15 32 56.1	**+1.5**
KMI				AP		15 33 01.8	
KMI				XP		15 33 05.8	
KMI				AMB	AMB		
	comp=Z,12nm,1.0s						
KMI				LR	LR		
	comp=N,177nm,18.4s						
KMI				LR	LR		
	comp=E,188nm,15.0s						
CM31	**Chiang Mai Arr**	**17.39**	**131**	*e*P	P	15 33 06.9	**+0.7**
CMAR	**Chiang Mai Arr**	**17.39**	**131**	P	P	15 33 06.3	**+0.1**
	comp=E,0.1nm,0.3s,baz=308,slow=12,SNR=13						
CMAR				LR	LR	15 40 59.3	
	comp=E,28nm,20.5s,baz=131,slow=42						
GYA	**Guiyang**	**19.34**	**97**	P	P	15 33 28.1	**-1.7**
GYA				AMB	AMB		
	comp=Z,10.0nm,0.6s						
XAN	**Xi'an**	**20.37**	**74**	P	P	15 33 39.5	**-1.3**
XAN				AMB	AMB		
	comp=Z,9.0nm,1.1s						
KURK	**Kurchatov**	**20.69**	**348**	*e*P	P	15 33 41.9	**-2.1**
ENH	**Enshi**	**20.98**	**85**	*e*P	P	15 33 48.0	**+0.8**
	comp=Z,7.3nm,0.8s						
ZAL	**Zalesovo**	**23.33**	**359**	P	P	15 34 10.8	**+0.5**
	comp=Z,1.0nm,0.6s,mb3.5,baz=180,slow=9.2,SNR=5.9						
ZAL				LR	LR	15 45 23.5	
	comp=Z,54nm,20.9s,MS3.0,baz=102,slow=42						
ZAL	**Zalesovo**	**23.33**	**359**	P	P	15 34 10.8	**+0.5**
ZAL				pmax	pmax		
	comp=Z,1.0nm,0.6s						
ZAL				MLR	MLR		
	comp=Z,54nm,20.9s						
ZAL	**Zalesovo**	**23.33**	**359**	P	P	15 34 10.8	**+0.5**
ZAL				LR	LR	15 45 23.5	
SONM	**Songino Array**	**23.70**	**37**	P	P	15 34 14.9	**+1.0**
	comp=Z,0.5nm,0.8s,mb3.0,baz=225,slow=11,SNR=3.2						
ZAK	**Zakamensk**	**23.98**	**29**	*e*P	P	15 34 17.2	**+0.6**
ULN	**Ulaanbaatar**	**24.06**	**38⇑**	*e*P	P	15 34 20.0	**+2.6**
ULN				pmax	pmax		
	comp=Z,2.0nm,0.9s,mb3.5						
ULN	**Ulaanbaatar**	**24.06**	**38**	*e*P	P	15 34 18.4	**+1.0**
	comp=Z,2.0nm,0.8s,mb3.6						
BVAR	**Borovoye Array**	**24.88**	**339**	P	P	15 34 25.3	**+0.1**
	comp=Z,2.6nm,0.8s,mb3.8,baz=149,slow=8.6,SNR=15						
BVAR				LR	LR	15 45 07.2	
	comp=Z,52nm,19.0s,MS3.0,baz=265,slow=39						
BRVK	**Borovoye**	**24.94**	**338**	*e*P	P	15 34 26.6	**+0.8**
ZRNK	**Zerenda**	**25.27**	**337**	*e*P	P	15 34 30.2	**+1.2**
TIXI	**Tiksi**	**47.34**	**17**	*e*P	P	15 37 36.3	**-0.2**
TIXI				pmax	pmax		
	comp=Z,23nm,1.3s,mb5.0						
TIXI	**Tiksi**	**47.34**	**17**	*e*P	P	15 37 36.3	**-0.1**
	comp=Z,1.1nm,0.5s,mb4.0						
FINES	**FINESS Array B**	**48.93**	**327**	P	P	15 37 50.3	**+1.4**
	comp=Z,1.2nm,0.9s,mb3.9,baz=127,slow=9.5,SNR=7.7						
FINES				LR	LR	15 58 36.2	
	comp=Z,24nm,19.3s,MS3.2,baz=154,slow=36						
FINES	**FINESS Array B**	**48.93**	**327**	P	P	15 37 50.3	**+1.4**
FINES				pmax	pmax		
	comp=Z,1.0nm,0.9s						
FINES				MLR	MLR		
	comp=Z,24nm,19.3s						
ARCES	**ARCESS Array B**	**51.15**	**337**	P	P	15 38 06.8	**+0.9**
	comp=Z,1.4nm,0.6s,mb4.1,baz=76,slow=10.0,SNR=5.1						
ARCES	**ARCESS Array B**	**51.15**	**337**	P	P	15 38 06.8	**+1.0**
ARCES				pmax	pmax		
	comp=Z,1.0nm,0.6s						
NOA	**NORSAR Array B**	**56.05**	**326**	P	P	15 38 42.4	**+0.3**
	comp=Z,0.6nm,0.7s,mb3.7,baz=72,slow=5.9,SNR=2.8						
NOA	**NORSAR Array B**	**56.05**	**326**	P	P	15 38 42.4	**+0.3**
NOA				pmax	pmax		
	comp=Z,1.0nm,0.7s						
BILL	**Bilibino**	**58.72**	**26**	*e*P	P	15 39 00.2	**-0.6**
BILL				pmax	pmax		
	comp=Z,5.0nm,1.8s,mb4.2						
BILL	**Bilibino**	**58.72**	**26**	*e*P	P	15 39 01.2	**+0.4**
	comp=Z,3.5nm,1.2s,mb4.3						
WRA	**Warramunga Arr**	**68.99**	**130**	P	P	15 40 07.9	**-0.9**
	comp=Z,2.3nm,0.6s,mb4.3,baz=324,slow=6.5,SNR=60						
WRA	**Warramunga Arr**	**68.99**	**130**	P	P	15 40 07.9	**-0.9**
WRA				pmax	pmax		
	comp=Z,2.0nm,0.6s						
WRAB	**Tennant Creek**	**68.99**	**130**	*e*P	P	15 40 09.5	**+0.7**
	comp=Z,6.1nm,0.6s,mb4.7						
WB2	**Warramunga Arr**	**69.00**	**130⇑**	*i* P	P	15 40 09.4	**+0.6**
ASAR	**Alice Springs**	**71.39**	**133**	P	P	15 40 23.6	**+0.4**
	comp=Z,0.5nm,0.7s,mb3.5,baz=324,slow=5.7,SNR=11						
ILAR	**Eielson Array**	**76.69**	**20**	P	P	15 40 54.1	**+0.8**
	comp=Z,1.3nm,0.9s,mb3.9,baz=314,slow=5.0,SNR=15						
ILAR	**Eielson Array**	**76.69**	**20**	P	P	15 40 54.2	**+0.9**
ILAR				pmax	pmax		
	comp=Z,1.0nm,0.9s						
YKA	**Yellowknife Ar**	**85.89**	**9**	P	P	15 41 42.4	**+0.9**
	comp=Z,0.4nm,0.6s,mb3.8,baz=336,slow=5.2,SNR=9.3						

TIF 21 15:32:55.8, 40.96N×44.08E, h6km, Mpv4.2, 1C-2D, Turkey-Georgia-Armenia border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AKH	**Akhalkalaki**	**0.63**	**316⇑**	*i* P	Pg	15 33 08.1	-0.4
AKH				*i* S	Sg	15 33 17.8	+0.9
MTA	**Mtatsminda**	**0.91**	**36⇓**	*i* P	Pb	15 33 15.0	+1.5
MTA				*i* S	Sb	15 33 28.8	+3.1
TBLG	**Delisi**	**0.92**	**33**	*i* P	Pb	15 33 14.5	+0.8
TBLG				*i* S	Sb	15 33 28.2	+2.3
DGRG	**David-gareji**	**1.09**	**63⇓**	*i* P	Pb	15 33 19.4	+2.7
DGRG				*i* S	Sb	15 33 34.7	+3.7

ISK 21 15:35:04.7, 39.17N×25.80E, h7km, MD3.0
NEIC 21 15:35:05.2, 39.13N×25.88E, h10km, MD3.1(ATH),
MD3.0(ISK), After ATH.
ATH 21 15:35:05.2, 39.10N×25.82E, h14km±5km, MD3.1/4

ISC 21 15:35:05.7±0.9, 39.16N±0.03×25.90E±0.04, h3km±6km, n22, σ1º02/34, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PRK	**Paraskevi**	**0.30**	**74**	*e*Pb	**Pb**	**15 35 12.8**	**-0.4**
PRK				*e*Sb	**Sb**	**15 35 16.0**	**-2.2**
BOZC	**Bozcaada**	**0.69**	**10**	*e*P	**Pg**	**15 35 19.1**	**-0.3**
BOZC				*e*S	**Sg**	**15 35 29.6**	**+1.0**
EZN	**Ezine**	**0.74**	**26**	*i* PG	**Pg**	**15 35 20.4**	**0.0**
EZN				*i* SG	**Sg**	**15 35 30.8**	**+0.6**
LIA	**Limnos Island**	**0.92**	**323**	*e*PN	**Pn**	**15 35 23.7**	**-1.5**
LIA				*e*SB	**Sb**	**15 35 35.5**	**-0.8**
LOS	**Limnos**	**1.00**	**321**	*e*P	**Pb**	**15 35 25.6**	**+0.5**
LOS				*e*S	**Sb**	**15 35 39.1**	**+0.6**
KDAG	**Bornova**	**1.31**	**125**	*e*P	**Pb**	**15 35 31.6**	**+1.0**
KDAG				*e*S	**Sb**	**15 35 50.5**	**+2.9**
LPK	**Lapseki**	**1.38**	**28**	*i* PN	**Pn**	**15 35 31.2**	**-0.6**
LPK				*i* SN	**Sn**	**15 35 51.2**	**+0.5**
AKS	**Akhisar**	**1.52**	**100**	*e*PN	**Pn**	**15 35 34.4**	**+0.7**
AOS	**Alonnisos**	**1.57**	**271**	*e*P	**Pn**	**15 35 33.9**	**-0.7**
AOS				*e*S	**Sb**	**15 35 57.1**	**+1.9**
BALB	**Balikesir**	**1.60**	**72**	*e*PN	**Pn**	**15 35 34.8**	**-0.2**
BALB				*e*SN	**Sn**	**15 35 57.8**	**+1.3**
SMG	**Samos**	**1.63**	**153**	*e*PG	**Pg**	**15 35 35.1**	**-3.1**
KGT	**Karabiga**	**1.68**	**40**	*e*PN	**Pn**	**15 35 36.1**	**0.0**
ALN	**Alexandroupoli**	**1.73**	**4**	*e*P	**Pn**	**15 35 37.6**	**+0.7**
ALN				*e*S	**Sn**	**15 35 58.3**	**-1.5**
EDC	**Edincik**	**1.92**	**51**	*e*PN	**Pn**	**15 35 39.8**	**+0.3**
MRMT	**Marmara Adasi**	**1.94**	**42**	*e*PN	**Pn**	**15 35 39.3**	**-0.5**
BNT	**Bandirma**	**1.96**	**52**	*e*PN	**Pn**	**15 35 39.7**	**-0.4**
BNT				*e*SN	**Sn**	**15 36 05.2**	**-0.3**
RDO	**Rodhopi**	**2.00**	**352**	*e*PN	**Pn**	**15 35 41.7**	**+1.0**
APE	**Apeiranthos**	**2.11**	**188**	*e*PN	**Pn**	**15 35 40.9**	**-1.4**
DST	**Dursunbey**	**2.16**	**77**	*e*PN	**Pn**	**15 35 43.0**	**+0.1**
MANT	**Manisa**	**2.18**	**107**	*e*P	**Pn**	**15 35 48.3**	**+5.1**
MANT				*e*S	**Sn**	**15 36 17.9**	**+6.8**
KCT	**Karacabey**	**2.19**	**59**	*e*PN	**Pn**	**15 35 42.9**	**-0.5**
ULDT	**Uludag**	**2.68**	**68**	*e*P	**Pn**	**15 35 56.3**	**+5.9**

MAN 21 15:42:46.6, 10.00N×124.02E, h5km, mb4.6, ML3.5, MS3.3

ISC 21 15:42:47.0±0.6, 10.00N±0.04×124.01E±0.08, h11km, n7, σ0º92/14, 4C-1D, Mindanao

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LLP	**Lapu-Lapu**	**0.32**	**353**	⇓*i* P	**Pg**	**15 42 53.4**	**-0.4**
LLP				*i* S	**Sg**	**15 42 58.6**	**+0.3**
TBP	**Tagbilaran**	**0.34**	**205**	*i* P	**Pg**	**15 42 53.6**	**-0.5**
TBP				*i* S	**Sg**	**15 42 57.1**	**-1.6**
OCLP	**Ormoc**	**1.20**	**29⇑**	*e*P	**Pb**	**15 43 09.4**	**0.0**
OCLP				*e*S	**Sb**	**15 43 28.3**	**+3.5**
PLP	**Palo**	**1.50**	**39**	*e*P	**Pn**	**15 43 13.9**	**-0.2**
PLP				*e*S	**Sb**	**15 43 31.8**	**-1.6**
DCPH	**Dipolog City**	**1.55**	**205⇑**	*i* P	**Pn**	**15 43 14.7**	**0.0**
DCPH				*i* S	**Sb**	**15 43 35.7**	**+1.0**
BESP	**Borongan**	**2.13**	**41⇑**	*e*P	**Pn**	**15 43 22.9**	**-0.1**
BESP				*e*S	**Sn**	**15 43 50.7**	**+1.1**
PAGZ	**Pagadian**	**2.22**	**196⇑**	*e*P	**Pn**	**15 43 24.5**	**+0.1**

MAW	Mawson	69.95	201	*e*P		P		15 54 47.9	+1.7
	8.8nm,1.1s,mb4.6								
MAW	Mawson	69.95	201	P		P		15 54 47.9	+1.7
	6.4nm,0.8s,mb4.6,baz=129,slow=7.2,SNR=6.4								
MAW	Mawson	69.95	201	*e*P		P		15 54 47.7	+1.5
	46nm,1.4s,mb5.2								
SYO	Syowa Base	74.72	193	⇓P		P		15 55 16.4	+2.1
SYO	Syowa Base	74.72	193	⇓pP		pP		15 55 19.3	-6.5
SYO	Syowa Base	74.72	193	⇑sP		sP		15 55 22.6	-7.5
SYO	Syowa Base	74.72	193	⇑PcP		PcP		15 55 29.0	+0.3
SNAA	Sanae	75.81	179	⇑*e*P		P		15 55 21.6	+1.1
VNA3	Neumayer Olymp	75.98	176	⇓*i*		P		15 55 24.8	+3.3
VNA3	Neumayer Olymp	75.98	176	⇑*i*		P		15 55 27.1	+5.6
VNA3	Neumayer Olymp	75.98	176	⇑*i*		P		15 55 28.8	+7.3
VNA3	Neumayer Olymp	75.98	176	⇓*i*		P		15 55 36.7	+15
VNA2	Neumayer--Watz	76.41	177	⇓*i*		P		15 55 27.5	+3.6
VNA2	Neumayer--Watz	76.41	177	⇑*i*		P		15 55 29.8	+5.9
VNA2	Neumayer--Watz	76.41	177	⇑*i*		P		15 55 31.5	+7.6
VNA2	Neumayer--Watz	76.41	177	⇑*i*		P		15 55 39.4	+15
MAIT	Maitri	76.49	183	*e*P		P		15 55 25.0	+0.6
VNA1	Neumayer--Stat	76.64	177	⇑*i*		P		15 55 29.0	+3.8
VNA1	Neumayer--Stat	76.64	177	⇓*i*		P		15 55 31.2	+6.0
VNA1	Neumayer--Stat	76.64	177	⇓*i*		P		15 55 34.1	+8.9
VNA1	Neumayer--Stat	76.64	177	⇓*i*		P		15 55 40.5	+15
ASAJ	Asahikawa	84.34	333	P		P		15 56 04.2	-2.5
ASAJ				LR		LR		16 29 41.3	
	comp=Z,160nm,20.1s,MS4.4,baz=152,slow=33								
SSE	Sheshan	85.35	312	P		P		15 56 10.9	-1.1
SSE				AMB		AMB			
	comp=Z,26nm,0.7s,mb5.5								
NJ2	Nanjing	87.47	311	*e*P		P		15 56 19.4	-2.9
NJ2				AMB		AMB			
	comp=Z,10.0nm,0.5s,mb5.3								
YBH	Yreka Blue Hor	90.14	38	P		P		15 56 30.0	-4.7
	comp=Z,2.6nm,0.9s,mb4.5,baz=170,slow=5.0,SNR=4.1								
NVAR	Mina Array Bea	90.25	43	P		P		15 56 30.5	-4.8
	comp=Z,2.8nm,0.8s,mb4.6,baz=207,slow=5.8,SNR=17								
NVAR	Mina Array Bea	90.25	43	P		P		15 56 30.5	-4.8
GYA	Guiyang	92.36	300	P		P		15 56 44.8	-0.6
GYA				AMB		AMB			
	comp=Z,10.0nm,0.8s,mb5.2								
ENH	Enshi	92.59	305	*e*P		P		15 56 44.9	-1.5
	comp=Z,28nm,1.4s,mb5.5								
MKAR	Makanchi Array	118.96	309	PKP		PKPdf		16 02 19.4	-2.3
	comp=Z,0.9nm,0.6s,baz=71,slow=3.5,SNR=11								
BVAR	Borovoye Array	127.78	315	PKP		PKPdf		16 02 36.9	-1.7
	comp=Z,2.1nm,0.5s,baz=127,slow=1.3,SNR=13								
BRVK	Borovoye	127.85	315	*e*PKP		PKPdf		16 02 36.2	-2.6
SPITS	Spitsbergen Ar	134.03	356	PKP		PKPdf		16 02 50.2	+0.3
	comp=Z,13nm,1.0s,slow=2.7,SNR=5.5								
ARU	Arti	134.62	319	⇑*e*PKP		PKPdf		16 02 50.4	-1.1
KEV	Kevo	140.32	346	*e*pkp		PKPdf		16 02 56.1	-5.4
JOF	Joensuu	144.44	337	*e*pkp		PKPdf		16 03 02.5	-6.2
KIV	Kislovodsk	146.16	301	⇑*i*PKP		PKPdf		16 03 12.8	+0.5
KAF	Kangasniemi	146.62	339	*e*pkp		PKPdf		16 03 11.5	-1.0
OBN	Obninsk	146.84	323	⇑*e*PKP		PKPdf		16 03 13.6	+0.5
FINES	FINESS Array B	147.20	338	PKPbc		PKPdf		16 03 13.6	+0.1
	comp=Z,19nm,0.8s,baz=63,slow=2.7,SNR=54								
ERZM	Erzurum	147.32	294	*i* P		PKPdf		16 03 17.4	+3.0
KELT	Kelkit	148.94	295	*i* P		PKPdf		16 03 21.9	+5.0
ELZG	Elazig	149.16	291	*i* P		PKPdf		16 03 22.7	+5.4
ASF	Jabal al Asfar	150.22	279	PKPbc		PKPdf		16 03 25.6	+6.4
	comp=Z,15nm,0.9s,baz=329,slow=1.4,SNR=25								
GZT	Gaziantep	150.25	289	*i* P		PKPdf		16 03 25.2	+6.1
SVST	Sivas	150.72	294	*i* P		PKPdf		16 03 26.6	+6.9
NB2	NORSAR Subarra	151.01	350	PKP				16 03 23.2	
	comp=Z,2.0nm,0.7s,baz=17,slow=2.6								
NOA	NORSAR Array B	151.01	350	PKPbc		PKPdf		16 03 22.6	+3.1
	comp=Z,18nm,1.3s,baz=15,slow=4.1,SNR=8.7								
MKRJ	Makawir	151.15	277	P		PKPdf		16 03 27.3	+6.7
AQBJ	Aqaba	151.23	273	P		PKPdf		16 03 27.6	+6.8
KSHT	Keshet	151.26	280	P		PKPdf		16 03 27.6	+6.8
COBT	Iskenderun	151.26	287	*i* P		PKPdf		16 03 27.6	+6.9
EIL	Elat	151.30	273	P		PKPdf		16 03 27.7	+6.8
ZFRI	Zfri	151.32	275	P		PKPdf		16 03 27.8	+6.9
MBH	Mount Berech	151.36	273	P		PKPdf		16 03 27.9	+6.9
DRGI	Dragot	151.37	277	P		PKPdf		16 03 27.6	+6.6
HMDT	Nahal Hemdat	151.38	278	P		PKPdf		16 03 28.0	+7.0
HMDT	Nahal Hemdat	151.38	278	⇑P		PKPdf		16 03 28.0	+7.0
PRNI	Paran	151.42	274	P		PKPdf		16 03 28.0	+6.9
PRNI	Paran	151.42	274	⇑P		PKPdf		16 03 28.0	+6.9
HFS	Hagfors	151.46	347	PKPbc		PKPdf		16 03 24.1	+4.0
	comp=Z,7.8nm,0.9s,baz=90,slow=3.0,SNR=9.8								
KMTI	Karmit	151.60	274	P		PKPdf		16 03 28.1	+6.8
SLTI	Sal'it	151.78	278	P		PKPdf		16 03 28.7	+7.1
SVTA	Shivta	151.88	275	P		PKPdf		16 03 28.8	+7.1
BOYT	Boyabat	152.14	290	*i* P		PKPdf		16 03 29.0	+7.2
CTKT	Corum	152.31	296	*i* P		PKPdf		16 03 29.1	+7.0
AVNT	Avonos	152.39	292	*i* P		PKPdf		16 03 29.0	+6.7
AKASG	Malin Array Be	152.88	320	PKPbc		PKPdf		16 03 28.6	+6.0
	comp=Z,6.9nm,0.6s,baz=46,slow=2.6,SNR=17								
LIC	Lamto	152.90	166	*e*PKIKP		PKPdf		16 03 29.3	+5.6
	comp=Z,31nm,0.8s								
LIC	Lamto	152.90	166	*e*P		PKPab		16 03 42.0	-2.5
	comp=Z,70nm,1.2s								
KIC	Kosan Boka	153.09	166	*e*P		PKPab		16 03 43.4	-1.9
	comp=Z,81nm,1.1s								
BALT	Daday	153.25	298	*i* P		PKPdf		16 03 30.6	+7.3
BRTR	Keskin Array B	153.27	294	PKPbc		PKPdf		16 03 30.9	+7.5
	comp=Z,1.9nm,0.6s,baz=162,slow=3.9,SNR=9.6								
BRTR				PKPab		PKPab		16 03 43.0	-2.4
	comp=Z,6.6nm,0.9s,baz=79,slow=6.3,SNR=7.3								
TIC	Toumodi	153.31	165	*e*P		PKPab		16 03 45.3	-0.9
	comp=Z,488nm,2.2s								
KWP	Kalwaria	156.93	323	*e*PKP		PKPab		16 03 56.8	-3.7
MLR	Muntele Rosu	157.28	311	PKPab		PKPab		16 03 59.8	-2.4
	comp=Z,2.9nm,0.7s,baz=69,slow=6.8,SNR=4.6								
CRVS	Cervenica-Dubn	158.02	323	*e*		PKPdf		16 03 42.4	+13
CRVS	Cervenica-Dubn	158.02	323	*e*PKP		PKPab		16 04 01.8	-3.5
KSP	Ksiaz	158.91	333	*e*PKP		PKPab		16 04 05.2	-3.8
KSP				*e*				16 04 16.9	
UPC	Upice	159.29	333	*e*PKP		PKPab		16 04 05.5	-5.2
UPC				*ex*		x		16 04 18.4	
DPC	Dobruska-Polom	159.30	332	*e*PKP		PKPab		16 04 07.0	-3.7
DPC				*ex*		x		16 04 18.8	
VYHS	Vyhne	159.59	325	*i* PKP		PKPab		16 04 08.7	-3.3
CLL	Collm	159.65	339	*i* PKP2		PKPab		16 04 07.5	-4.7
CLL				*i* *PPKP2				16 04 19.0	
BRG	Berggiesshubel	159.72	337	*e*P		PKPab		16 04 08.2	-4.3
BRG				*e*				16 04 20.4	
PVCC	Panska Ves	159.80	335	*e*PKP		PKPab		16 04 09.3	-3.6
PVCC				*ex*		x		16 04 20.8	
PRU	Pruhonice	160.26	334	*e*PKP		PKPab		16 04 11.3	-3.6
PRU				*ex*		x		16 04 21.0	
MOX	Moxa	160.64	340	*i* P		PKPab		16 04 13.0	-3.5
MOX				PKP2		PKPab		16 04 26.0	+10
MOX	Moxa	160.64	340	*e*PKP		PKPab		16 04 13.0	-3.5
NKC	Novy Kostel	160.76	338	*e*PKP		PKPab		16 04 13.4	-3.6
NKC				*ex*		x		16 04 24.7	
KHC	Kasperske Hory	161.32	335	*e*PKP		PKPab		16 04 15.7	-3.8
KHC				*ex*		x		16 04 27.4	
GERES	GERESS Array B	161.52	334	PKPab		PKPab		16 04 15.8	-4.6
	comp=Z,0.9nm,0.7s,baz=90,slow=1.3,SNR=8.8								
DAVOX	Davos	164.61	338	PKPab		PKPab		16 04 29.9	-4.0
	comp=Z,3.3nm,0.8s,baz=329,slow=15,SNR=5.7								
SSF	Saint Saulge	165.64	354	*e*PKP2		PKPab		16 04 44.3	+5.9
SMF	Signal de Mont	166.02	353	*e*PKP2		PKPab		16 04 45.9	+5.8
	comp=Z,28nm,1.2s								

NIED ***21*** *15:58:00,28.10N×139.70E,h500km,Mw4.5 Best double couple: M0 6.8×10^15 NP1:φs309°,δ80°,λ-31°. NP2:φs45°, δ59°,λ-168°.*

BJI ***21*** *15:58:11.9,27.69N×139.73E,h526km,mB4.8,mb4.4*

IDC ***21*** *15:58:16.0±0.5,28.01N×139.38E,h516km±6km,mb3.5/20, mb1 3.6/21,mb1mx3.5/29,Error ellipse: s-maj=11.3km s-min=8.7km az=90.0*

NEIC ***21*** *15:58:16.8±0.5,28.04N×139.32E,h526km±6km,mb4.3/9, Error ellipse: s-maj=7.9km s-min=5.4km az=87.0*

MOS ***21*** *15:58:16.2±1.1,28.04N×139.35E,h534km,mb4.0/12, Error ellipse: s-maj=20.1km s-min=11.5km az=103.9*

JMA ***21*** *15:58:16.0±0.1,28.11N×139.73E,h537km,M4.4*

ISC 21 15:58:15.7±0.3,28.00N±0.04×139.42E±0.05,h529km±3km, n108,σ0ᵗ95/121,mb4.1/38,3C-3D,Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CBIJ	Chichi jima	2.61	110	P	P	15 59 26.5	-0.7
CBIJ				S	S	16 00 22.4	-1.4
CBIJ	Chichi jima	2.61	110	P	P	15 59 27.1	-0.1
CBIJ				*e*S	S	16 00 22.6	-1.2
JHHJ	Haha-jima-NKT	2.81	118	P	P	15 59 28.7	+0.3
JHHJ				S	P	16 00 26.3	+0.4
JHJ2	Mitsune	5.11	4	P	P	15 59 46.1	+0.2
JHJ	Hachijo jima 2	5.11	3	P	P	15 59 46.2	+0.3
JHJ				S	S	16 00 56.6	-0.9
	33nm,0.3s,baz=247,slow=23,SNR=4.7						
JWZ	Kozaga	6.37	331	P	P	15 59 58.5	+0.9
JWZ				*e*S	S	16 01 19.2	+0.7
BSO1	Boso 1	6.77	11	P	P	16 00 01.0	-0.4
BSO1				*e*S	S	16 01 26.4	+0.9
JIE	Ise	6.78	341	P	P	16 00 03.1	+1.5
JIE				*e*S	S	16 01 27.8	+2.0
JAA	Atsumi	6.89	344	P	P	16 00 03.7	+1.0
TATJ	Tateyama 2	7.02	3	P	P	16 00 03.0	-0.4
TATJ				*e*S	S	16 01 28.6	-1.4
JOD2	Odawara 2	7.25	358	P	P	16 00 06.9	+0.7
JTO	Tosashimizu	7.49	312	P	P	16 00 09.7	+1.1
JRY	Ryogami san	8.01	357	P	P	16 00 13.2	-0.6
JRY				*e*S	S	16 01 46.6	-1.2
MAJO	Matsushiro	8.58	353	*e*P	P	16 00 18.2	-1.5
	92nm,0.8s						
MAT	Matsushiro	8.58	353	P	P	16 00 17.8	-1.9
MAT				S	S	16 01 56.2	-2.2
MAT	Matsushiro	8.58	353	*e*P	P	16 00 18.0	-1.7
	56nm,0.7s						
MAT				*e*S	S	16 01 56.0	-2.4
JHS	Saijyo	8.81	324	P	P	16 00 23.0	+1.0
JNU	Nakatsue	8.96	307	P	P	16 00 23.4	-0.2
JMM	Marumori	9.91	6	P	P	16 00 33.5	+0.2
JMM				*e*S	S	16 02 24.1	+0.9
JOW	Kunigami	9.97	266	P	P	16 00 34.5	+0.4
JMK	Ichinoseki	11.03	7	P	P	16 00 45.3	+0.5
GUMO	Guam	15.21	159	*e*P	P	16 01 30.2	+2.8
	270nm,1.0s						
SSE	Sheshan	16.17	285	P	P	16 01 40.1	+3.4
SSE				S	S	16 04 21.0	+1.8
SSE				PCP	PcP	16 05 53.6	-5.9
ASAJ	Asahikawa	16.29	8	P	P	16 01 40.0	+2.3
	0.9nm,0.3s,baz=228,slow=12,SNR=7.0						
NJ2	Nanjing	18.26	288	*e*P	P	16 01 58.1	+1.0
WHN	Wuhan	22.01	283	*e*P	P	16 02 32.0	-0.1
ENH	Enshi	26.21	282	*e*P	P	16 03 08.6	-1.1
	44nm,0.8s,mb5.1						
XAN	Xi'an	26.76	291	P	P	16 03 13.1	-1.4
XAN				AMB	AMB		
	comp=Z,10.0nm,0.9s,mb4.5						
PET	Petropavlovsk	28.78	24	*c i*P	P	16 03 32.5	+0.7
PET				pmax	pmax		
	comp=Z,12nm,0.9s,mb4.5						
GYA	Guiyang	29.12	275	⇓*i*P	P	16 03 34.8	-0.3
GYA				AMB	AMB		
	comp=Z,20nm,1.0s,mb4.7						
CD2	Chengdu	31.11	284	⇓*i*P	P	16 03 51.3	-0.8
ULN	Ulaanbaatar	31.99	317	⇓*e*P	P	16 03 59.2	-0.2
ULN	Ulaanbaatar	31.99	317	*e*P	P	16 03 58.9	-0.4
	comp=Z,5.0nm,1.1s,mb4.0						
SONM	Songino Array	32.37	317	P	P	16 04 01.6	-0.9
	comp=Z,1.1nm,0.6s,mb3.6,baz=126,slow=9.7,SNR=8.5						
SONM				ScP		16 09 28.3	
	comp=Z,0.9nm,0.7s,baz=118,slow=1.4,SNR=6.4						
KMI	Kunming	32.86	274	*e*P	P	16 04 07.5	+0.6
KMI				AMB	AMB		
	comp=Z,14nm,1.2s,mb4.4						
GTA	Gaotai	34.61	300	P	P	16 04 21.1	-0.3
GTA				AMB	AMB		
	comp=Z,13nm,1.1s,mb4.4						
YAK	Yakutsk	34.64	352	*c i*P	P	16 04 20.7	-0.8
YAK				pmax	pmax		
	comp=Z,19nm,0.9s,mb4.6						
YAK	Yakutsk	34.64	352	*e*P	P	16 04 20.8	-0.7
ZAK	Zakamensk	35.32	319	*e*P	P	16 04 26.9	-0.3
CMAR	Chiang Mai Arr	38.24	265	P	P	16 04 51.6	+0.1
	comp=Z,4.2nm,0.7s,mb4.1,baz=74,slow=4.0,SNR=22						
CMAR	Chiang Mai Arr	38.24	265	P	P	16 04 51.6	+0.1
CMAR				pmax	pmax		
	comp=Z,4.0nm,0.7s						
LSA	Lhasa	42.07	284	P	P	16 05 23.6	+1.3
BILL	Bilibino	43.16	14	*c i*P	P	16 05 30.9	+0.6
BILL				pmax	pmax		
	comp=Z,20nm,0.9s,mb4.7						
BILL	Bilibino	43.16	14	*e*P	P	16 05 30.9	+0.6
	comp=Z,18nm,0.9s,mb4.6						
WMQ	Urumqi	44.06	305	P	P	16 05 38.4	+0.8
TIXI	Tiksi	44.09	355	*e*P	P	16 05 37.0	-0.5
TIXI				pmax	pmax		
	comp=Z,19nm,0.8s,mb4.7						
TIXI				MLR	MLR		
	comp=Z,1μm,13.0s						
TIXI	Tiksi	44.09	355	*e*P	P	16 05 36.7	-0.8
	comp=Z,2.6nm,0.6s,mb3.9						
ZAL	Zalesovo	47.21	319	P	P	16 06 00.6	-1.2
	comp=Z,1.5nm,0.3s,mb3.9,baz=273,slow=7.4,SNR=7.9						
ZAL				ScP		16 10 24.7	
	comp=Z,1.2nm,1.0s,baz=263,slow=4.9,SNR=4.0						
ZAL	Zalesovo	47.21	319	P	P	16 06 00.6	-1.2
ZAL				pmax	pmax		
	comp=Z,2.0nm,0.4s						
ZAL				pmax	pmax		
	comp=Z,1.0nm,1.0s						
PKI	Pulchoki	47.45	283	*e*P	P	16 06 03.4	-0.6
	comp=Z,13nm,0.7s,mb4.5						
KKN	Kakani	47.51	283	*e*P	P	16 06 04.2	-0.2
	comp=Z,32nm,0.9s,mb4.9						
DMN	Daman	47.70	283	*e*P	P	16 06 05.6	-0.3
	comp=Z,32nm,0.9s,mb4.9						
FITZ	Fitzroy Crossi	47.73	198	*e*P	P	16 06 06.3	+0.1
	comp=Z,3.4nm,0.6s,mb4.0						
FITZ	Fitzroy Crossi	47.73	198	P	P	16 06 06.1	-0.1
	comp=Z,3.8nm,0.5s,mb4.2,baz=16,slow=6.2,SNR=13						
WRAB	Tennant Creek	47.90	186	*e*P	P	16 06 06.8	-0.7
WB2	Warramunga Arr	47.91	186	*e*P	P	16 06 06.6	-0.9
WRA	Warramunga Arr	47.91	186	P	P	16 06 06.9	-0.6
	comp=Z,4.7nm,0.5s,mb4.3,baz=2.1,slow=7.7,SNR=176						
WRA	Warramunga Arr	47.91	186	P	P	16 06 06.9	-0.7
WRA				pmax	pmax		
	comp=Z,5.0nm,0.5s						
MKAR	Makanchi Array	48.01	309	P	P	16 06 07.3	-0.6
	comp=Z,1.5nm,0.3s,mb4.0,baz=93,slow=10,SNR=41						
MKAR				PcP	PcP	16 07 25.1	-0.8
	comp=Z,1.0nm,0.8s,baz=90,slow=3.6,SNR=4.1						
MKAR				ScP		16 10 28.3	
	comp=Z,0.9nm,0.7s,baz=72,slow=4.6,SNR=6.4						
MKAR	Makanchi Array	48.01	309	P	P	16 06 07.4	-0.5
MKAR						16 07 25.2	
MKAR				pmax	pmax		
	comp=Z,2.0nm,0.3s						
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.8s						
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.7s						
GKN	Gorkha	48.01	284	*e*P	P	16 06 07.8	-0.4
	comp=Z,51nm,1.1s,mb5.0						
KOLN	Koldanda	48.96	284	*e*P	P	16 06 15.1	-0.2
	comp=Z,28nm,0.8s,mb4.8						
KURK	Kurchatov	50.60	314	*e*P	P	16 06 25.7	-1.4
AS12	Alice Springs	51.64	186	*e*P	P	16 06 34.3	-0.8
	comp=Z,4.0nm,0.4s,mb4.1						
ASAR	Alice Springs	51.64	186	P	P	16 06 34.4	-0.7
	comp=Z,1.8nm,0.5s,mb3.7,baz=5.0,slow=7.5,SNR=91						
ASAR				PcP	PcP	16 07 39.6	-0.1
	comp=Z,0.8nm,0.8s,baz=18,slow=2.8,SNR=5.4						
ULHL	Ulahol	52.48	303	P	P	16 06 41.0	+0.1
	SNR=5.4						
TKM2	Tokmak 2	52.89	304	P	P	16 06 43.9	+0.1
	SNR=11						
KZA	Kyzart	53.23	303	P	P	16 06 47.4	+1.2
	SNR=6.6						
KBK	Karagaybulak	53.39	304	P	P	16 06 47.0	-0.3
	SNR=10.0						
UCH	Uchtor	53.76	303	P	P	16 06 50.9	+0.9
	SNR=10						
EKS2	Erkin-Say	54.25	304	P	P	16 06 53.3	-0.1
	SNR=5.2						
AML	Almayashu	54.37	303	P	P	16 06 55.0	+0.6
	SNR=9.2						
BVAR	Borovoye Array	55.72	317	P	P	16 07 02.8	-0.7
	comp=Z,7.8nm,0.4s,mb4.3,baz=93,slow=8.2,SNR=54						
BRVK	Borovoye	55.78	317	*e*P	P	16 07 03.1	-0.9
ZRNK	Zerenda	56.56	317	*e*P	P	16 07 08.2	-1.1
MCK	McKinley	57.17	30	*e*P	P	16 07 13.5	+0.1
	comp=Z,6.6nm,0.8s,mb3.9						
ILAR	Eielson Array	58.11	29	P	P	16 07 18.9	-0.9
	comp=Z,1.4nm,0.6s,mb3.4,baz=242,slow=6.0,SNR=16						
ILAR	Eielson Array	58.11	29	P	P	16 07 18.9	-0.8
ILAR				pmax	pmax		
	comp=Z,1.0nm,0.6s						
ARU	Arti	62.20	322	*e*P	P	16 07 45.8	-1.1
ARU				pmax	pmax		
	comp=Z,9.0nm,1.3s,mb4.0						
INK	Inuvik	63.23	25	P	P	16 07 53.2	-0.1
	comp=Z,1.8nm,0.5s,mb3.7,baz=292,slow=5.8,SNR=15						
INK	Inuvik	63.23	25	P	P	16 07 53.2	-0.1
INK				pmax	pmax		
	comp=Z,2.0nm,0.5s						
INK	Inuvik	63.23	25	*e*P	P	16 07 53.1	-0.2
	comp=Z,1.6nm,0.6s,mb3.6						
SPITS	Spitsbergen Ar	69.05	349	P	P	16 08 29.5	+0.3
	comp=Z,5.8nm,1.1s,mb4.0,baz=104,slow=1.7,SNR=13						
ARCES	ARCESS Array B	71.88	340	P	P	16 08 46.2	+0.4
	comp=Z,2.4nm,0.5s,mb3.9,baz=70,slow=8.1,SNR=15						
ARCES	ARCESS Array B	71.88	340	P	P	16 08 46.2	+0.4
ARCES				pmax	pmax		
	comp=Z,2.0nm,0.5s						
ARCES	ARCESS Array B	71.88	340	P	P	16 08 46.2	+0.4
YKA	Yellowknife Ar	72.50	28	P	P	16 08 49.8	+0.3
	comp=Z,2.2nm,0.6s,mb3.7,baz=295,slow=5.8,SNR=46						
YKA	Yellowknife Ar	72.50	28	P	P	16 08 49.8	+0.3
YKA				pmax	pmax		
	comp=Z,2.0nm,0.6s						
YKA	Yellowknife Ar	72.50	28	P	P	16 08 49.8	+0.3
THR	Tehran	72.90	302	P	P	16 08 53.2	+0.9
	comp=Z,1.4nm,0.8s,mb3.5,baz=54,slow=2.5,SNR=6.1						
THR	Tehran	72.90	302	P	P	16 08 53.2	+0.9
THR				pmax	pmax		
	comp=Z,1.0nm,0.8s						
THR	Tehran	72.90	302	P	P	16 08 53.2	+0.9
JOF	Joensuu	73.18	333	*ep*	P	16 08 52.5	-0.8
KAF	Kangasniemi	75.59	333	*ep*	P	16 09 06.0	-0.7
	baz=55,slow=5.2						
KIV	Kislovodsk	75.64	312	P	P	16 09 08.0	+0.6
KIV				pmax	pmax		
	comp=Z,4.0nm,1.0s,mb3.8						
FINES	FINESS Array B	76.05	333	P	P	16 09 09.0	-0.3
	comp=Z,3.3nm,0.3s,mb4.3,baz=74,slow=5.7,SNR=83						
FINES	FINESS Array B	76.05	333	P	P	16 09 09.0	-0.2
FINES				pmax	pmax		
	comp=Z,3.0nm,0.3s						
YBH	Yreka Blue Hor	77.34	49	P	P	16 09 19.1	+2.4
	comp=Z,1.8nm,0.8s,mb3.5,baz=268,slow=0.4,SNR=6.0						
YBH	Yreka Blue Hor	77.34	49	P	P	16 09 19.1	+2.4
YBH				pmax	pmax		
	comp=Z,2.0nm,0.8s						
HFS	Hagfors	81.61	336	P	P	16 09 38.0	-0.6
	comp=Z,3.0nm,0.9s,mb3.7,baz=108,slow=4.7,SNR=7.3						
HFS	Hagfors	81.61	336	P	P	16 09 38.0	-0.6
HFS				pmax	pmax		
	comp=Z,3.0nm,0.9s						
NB2	NORSAR Subarra	81.85	337	P	P	16 09 39.2	-0.6
	comp=Z,0.6nm,0.5s,mb3.3,baz=56,slow=5.0						
NOA	NORSAR Array B	81.85	337	P	P	16 09 39.5	-0.4
	comp=Z,0.8nm,0.6s,mb3.4,baz=43,slow=5.4,SNR=4.0						
NOA	NORSAR Array B	81.85	337	P	P	16 09 39.5	-0.3
NOA				pmax	pmax		
	comp=Z,1.0nm,0.6s						
NVAR	Mina Array Bea	81.87	51	P	P	16 09 42.6	+2.2
	comp=Z,1.3nm,0.7s,mb3.5,baz=303,slow=5.4,SNR=8.9						
BOZ	Bozeman (W)	82.45	42	*e*P	P	16 09 44.8	+1.7
BRTR	Keskin Array B	83.58	312	P	P	16 09 49.1	+0.2
	comp=Z,0.8nm,0.7s,mb3.4,baz=135,slow=1.7,SNR=3.8						
HWUT	Hardware Ranch	84.67	45	*e*P	P	16 09 55.1	+0.8

**IDC 21 15:59:15.8±3.2,32.30S×178.04W,mb3.7/2,mb1 4.0/3, mb1mx3.8/14,ML3.4/1,Error ellipse: s-maj=76.5km s-

STKA LR LR 16 19 28.5
comp=Z,3µm,18.4s,MS5.0,baz=97,slow=35
CTA Charters Tower 34.08 282 ⇑*i* P **P 16 06 35.9 +1.6**
comp=Z,42nm,0.6s,mb5.5
CTA *e*S **S 16 12 07.0 +8.2**
CTA Charters Tower 34.08 282 P **P 16 06 35.8 +1.5**
comp=Z,42nm,0.6s,mb5.6,baz=106,slow=9.7,SNR=23
CTA LR LR 16 19 41.7
comp=Z,3µm,18.3s,MS5.1,baz=120,slow=35
CTA Charters Tower 34.08 282 P **P 16 06 35.8 +1.5**
CTA pmax pmax
comp=Z,42nm,0.6s
CTA MLR MLR
comp=Z,3µm,18.3s
CTAO Charters Tower 34.08 282 *e*P **P 16 06 35.2 +1.0**
comp=Z,52nm,0.8s,mb5.5
CTAO LR LR
comp=Z,2µm,19.0s,MS4.8
PMG Port Moresby 39.44 298 P **P 16 07 20.5 +0.8**
comp=Z,20nm,0.8s,mb4.9,baz=137,slow=8.1,SNR=4.4
PMG Port Moresby 39.44 298 P **P 16 07 20.5 +0.8**
PMG LR LR
comp=Z,2µm,19.0s,MS4.9
AS12 Alice Springs 42.92 269 ⇑*i* P **P 16 07 48.2 0.0**
comp=Z,30nm,0.7s,mb5.1
ASAR Alice Springs 42.92 269 P **P 16 07 48.1 0.0**
comp=Z,22nm,0.6s,mb5.1,baz=106,slow=7.5,SNR=53
ASAR LR LR 16 26 16.8
comp=Z,2µm,18.3s,MS5.1,baz=119,slow=37
KWAJ Kwajalein Atol 43.27 339 PFAKE 16 08 00.0 +8.9
KWAJ LR LR
comp=Z,2µm,19.0s,MS5.1
WB2 Warramunga Arr 44.09 274 ⇓*i* P **P 16 07 57.3 -0.4**
WRAB Tennant Creek 44.09 274 *e*P **P 16 07 57.0 -0.7**
comp=Z,92nm,0.6s,mb5.7
WRAB LR LR
comp=Z,2µm,19.0s,MS5.0
WRA Warramunga Arr 44.10 274 P **P 16 07 57.2 -0.5**
comp=Z,29nm,0.5s,mb5.3,baz=115,slow=7.5,SNR=47
WRA ScP 16 13 36.2
comp=Z,4.3nm,1.0s,baz=118,slow=4.0,SNR=8.3
WRA LR LR 16 25 14.1
comp=Z,2µm,18.5s,MS5.0,baz=110,slow=35
WRA Warramunga Arr 44.10 274 P **P 16 07 57.2 -0.6**
WRA pmax pmax
comp=Z,29nm,0.5s
WRA pmax pmax
comp=Z,4.0nm,1.0s
WRA MLR MLR
comp=Z,2µm,18.5s
FORT Forrest 45.43 257 ⇓*i* P **P 16 08 08.3 0.0**
comp=Z,405nm,0.6s
SBA Scott Base 45.93 184 *e*P **P 16 08 15.3 +3.6**
comp=Z,32nm,1.3s,mb5.1
SBA LR LR
comp=Z,2µm,20.0s,MS5.2
VNDA Vanda 45.99 186 P **P 16 08 14.5 +2.3**
comp=Z,1.9nm,0.7s,mb4.1,baz=343,slow=4.3,SNR=16
VNDA Vanda 45.99 186 P **P 16 08 14.5 +2.3**
VNDA pmax pmax
comp=Z,2.0nm,0.7s
VNDA Vanda 45.99 186 *e*P **P 16 08 13.9 +1.8**
comp=Z,1.3nm,0.6s,mb4.0
VNDA LR LR
comp=Z,1µm,19.0s,MS4.9
KAKA Kakadu 49.25 282 *e*P **P 16 08 39.1 +0.7**
comp=Z,18nm,0.6s,mb5.3
FITZ Fitzroy Crossi 52.27 272 ⇓*i* P **P 16 09 00.8 -0.6**
FITZ Fitzroy Crossi 52.27 272 P **P 16 09 00.7 -0.7**
comp=Z,14nm,0.6s,mb5.0,baz=170,slow=8.5,SNR=25
FITZ LR LR 16 31 35.5
comp=Z,2µm,18.5s,MS5.2,baz=103,slow=36
NWAO Narrogin (SRO) 53.57 251 PFAKE 16 09 20.0 +9.2
NWAO LR LR
comp=Z,2µm,19.0s,MS5.2
KLBR Kellerberrin 53.58 253 ⇓*i* P **P 16 09 10.5 -0.4**
comp=Z,104nm,1.6s,mb5.5
MUN Mundaring 54.70 252 *e*P **P 16 09 18.7 -0.4**
comp=Z,35nm,1.8s,mb5.1
POHA Pohakuloa 56.29 26 PFAKE 16 09 40.0 +9.2
POHA LR LR
comp=Z,2µm,20.0s,MS5.1
QSPA South Pole Qui 57.61 180 *e*P **P 16 09 41.6 +2.2**
comp=Z,65nm,1.1s,mb5.6
QSPA LR LR
comp=Z,2µm,20.1s,MS5.1
RPN Rapa Nui 59.02 104 PFAKE 16 10 00.0 +10
RPN LR LR
comp=Z,12µm,19.0s,MS6.0
MIR Mirnyy 60.20 207 ⇑*e*P **P 16 09 59.5 +1.9**
MIR *e*S **S 16 18 12.0 +2.5**
MIR pmax pmax
comp=Z,75nm,1.4s,mb5.5
MIR smax
comp=N,1µm,10.0s
MIR smax
comp=E,800nm,8.0s
MIR MLR MLR
comp=Z,2µm,16.0s,MS5.3
MAW Mawson 70.30 201 *e*P **P 16 11 05.2 +2.6**
comp=Z,12nm,0.9s,mb4.8
MAW Mawson 70.30 201 P **P 16 11 06.0 +3.4**
comp=Z,5.0nm,0.6s,mb4.6,baz=117,slow=7.2,SNR=9.8
MAW LR LR 16 43 15.2
comp=Z,2µm,18.8s,MS5.5,baz=118,slow=37
MAW Mawson 70.30 201 P **P 16 11 06.0 +3.4**
MAW pmax pmax
comp=Z,5.0nm,0.6s
MAW MLR MLR
comp=Z,2µm,18.8s
USHA Ushuaia 74.25 146 LR LR 16 37 51.3
comp=Z,588nm,18.9s,MS4.9,baz=189,slow=31
TGY Tagaytay City 74.40 298 LR LR 16 40 55.8
comp=Z,515nm,19.1s,MS4.8,baz=122,slow=33
SYO Syowa Base 75.04 193 ⇓P **P 16 11 32.5 +2.0**
SYO **Syowa Base 75.04 193** ⇓pP pP 16 11 35.1 +1.5
SYO **Syowa Base 75.04 193** ⇓sP sP 16 11 39.0 +4.3
SYO **Syowa Base 75.04 193** ⇓*e*P **P 16 11 32.5 +2.0**
SYO ⇓*e*PP pP 16 11 35.1 +1.5
SYO ⇓*e*SP sP 16 11 39.0 +4.3
SNAA Sanae 76.06 178 *e*P **P 16 11 36.8 +0.6**
VNA3 Neumayer Olymp 76.22 176 ⇑*i* **P 16 11 41.3 +4.2**
VNA3 Neumayer Olymp 76.22 176 ⇑*i* **P 16 11 45.1 +8.0**
VNA3 Neumayer Olymp 76.22 176 **P 16 11 46.4 +9.3**
VNA3 Neumayer Olymp 76.22 176 ⇑*i* **P 16 11 52.7 +16**
JHJ Hachijo jima 2 76.38 325 LR LR 16 42 47.1
comp=Z,750nm,19.0s,MS5.0,baz=77,slow=34
VNA2 Neumayer--Watz 76.65 177 ⇓*i* **P 16 11 44.0 +4.5**
VNA2 Neumayer--Watz 76.65 177 ⇑*i* **P 16 11 47.3 +7.8**
VNA2 Neumayer--Watz 76.65 177 ⇑*i* **P 16 11 48.8 +9.3**
VNA2 Neumayer--Watz 76.65 177 ⇑*i* **P 16 11 56.6 +17**
MAIT Maitri 76.77 183 *e*P **P 16 11 42.7 +2.5**
VNA1 Neumayer--Stat 76.88 177 **P 16 11 45.7 +4.9**
VNA1 Neumayer--Stat 76.88 177 ⇑*i* **P 16 11 46.7 +5.9**
VNA1 Neumayer--Stat 76.88 177 ⇑*i* **P 16 11 48.8 +8.0**
VNA1 Neumayer--Stat 76.88 177 ⇓*i* **P 16 11 49.4 +8.6**
VNA1 Neumayer--Stat 76.88 177 **P 16 11 57.2 +16**
COCO West Island 79.41 262 PFAKE 16 12 10.0 +14
COCO LR LR
comp=Z,2µm,19.0s,MS5.4
MAJO Matsushiro 79.90 326 *e*P **P 16 11 57.3 -0.7**
MAJO LR LR
comp=Z,986nm,20.0s,MS5.2
MAT Matsushiro 79.90 326 P **P 16 11 56.6 -1.4**
MAT *e*S S 16 22 00.6 +0.4
MAT Matsushiro 79.90 326 *e*P **P 16 11 57.0 -1.0**
MAT *e*S S 16 22 01.0 +0.8
JNU Nakatsue 81.05 319 P **P 16 12 05.0 +0.8**
comp=Z,8.5nm,0.8s,mb4.7,baz=107,slow=4.1,SNR=4.2
JNU LR LR 16 44 33.6
comp=Z,453nm,19.5s,MS4.8,baz=316,slow=33
EFI East Falkland 81.09 147 PFAKE 16 12 20.0 +16
EFI LR LR
comp=Z,747nm,19.0s,MS5.1
TATO Taipei 81.11 307 PFAKE 16 12 20.0 +15
TATO LR LR
comp=Z,467nm,19.0s,MS4.9
ASAJ Asahikawa 84.25 333 P **P 16 12 20.5 +0.1**
comp=Z,20nm,1.0s,mb5.2,baz=213,slow=3.9,SNR=6.2
ASAJ Asahikawa 84.25 333 P **P 16 12 20.5 +0.1**
ASAJ pmax pmax
comp=Z,20nm,1.0s
SMY Shemya 85.14 355 PFAKE 16 12 30.0 +5.3
SMY LR LR
comp=Z,4µm,20.0s,MS5.8
SSE Sheshan 85.40 311 P **P 16 12 27.4 +0.9**
SSE PP PP 16 15 41.1 -5.2
SSE S S 16 22 58.6 +2.6
SSE XS 16 23 04.4
SSE AMB AMB
comp=Z,44nm,0.7s,mb5.7
QIZ Qiongzhong 85.79 296 P **P 16 12 30.8 +2.1**
QIZ S S 16 23 00.0 0.0
SKR Severo-Kuril's 85.90 344 *e*P **P 16 12 26.4 -2.1**
SKR *e* pP 16 12 28.0 -3.7
SKR *e* 16 15 46.0
SKR *e*PPP PPP 16 17 42.0 -4.7
SKR *e* 16 22 54.0
SKR pmax pmax
comp=Z,60nm,1.0s,mb5.8
SKR pmax pmax
comp=N,1µm,12.0s
SKR pmax pmax
comp=E,1µm,12.0s
SKR MLR MLR
comp=N,1µm,18.0s,MS5.5
SKR MLR MLR
comp=E,1µm,18.0s,MS5.5
SKR MLR MLR
comp=Z,1µm,18.0s,MS5.3
UNV Unalaska Valle 86.58 7 PFAKE 16 12 40.0 +8.2
UNV LR LR
comp=Z,4µm,20.0s,MS5.9
YSS Yuzh-Sakhalins 86.59 334 ⇑*e*P **P 16 12 32.8 +0.8**
YSS *e*S S 16 23 08.0 +1.0
YSS pmax pmax
comp=Z,30nm,1.0s,mb5.5
YSS MLR MLR
comp=Z,2µm,18.0s,MS5.4
YSS Yuzh-Sakhalins 86.59 334 *e*P **P 16 12 30.1 -1.8**
YSS LR LR
comp=Z,1µm,20.0s,MS5.3
INCN Inchon 86.60 319 PFAKE 16 12 40.0 +7.7
INCN LR LR
comp=Z,437nm,20.0s,MS4.9
SAO San Andreas Ge 86.91 42 PFAKE 16 12 40.0 +6.2
SAO LR LR
comp=Z,2µm,19.0s,MS5.5
NJ2 Nanjing 87.52 311 *e*P **P 16 12 36.5 -0.4**
NJ2 AP pP 16 12 41.3 +1.2
NJ2 XP sP 16 12 43.5 +2.4
NJ2 PP PP 16 16 04.3 0.0
NJ2 S S 16 23 10.0 -6.3
NJ2 AMB AMB
comp=Z,20nm,0.6s,mb5.5
NJ2 AMB AMB
comp=Z,560nm,8.6s
NJ2 LR LR
comp=N,810nm,22.9s
NJ2 LR LR
comp=E,580nm,17.4s
NJ2 LR LR
comp=Z,870nm,17.8s
PET Petropavlovsk 87.54 346 *e*P **P 16 12 34.8 -1.6**
PET *e*S S 16 23 11.7 -4.2
PET pmax pmax
comp=Z,18nm,1.6s,mb5.0
PET pmax pmax
comp=Z,130nm,13.7s
PET smax
comp=E,439nm,15.6s
PET smax
comp=N,503nm,15.1s
PET MLR MLR
comp=E,694nm,16.0s,MS5.3
PET MLR MLR
comp=N,763nm,18.0s,MS5.3
PET MLR MLR
comp=E,663nm,18.0s
PET MLR MLR
comp=N,895nm,16.0s
PET MLR MLR
comp=Z,1µm,15.0s,MS5.3
PET MLR MLR
comp=Z,995nm,18.0s
PET Petropavlovsk 87.54 346 *e*P **P 16 12 35.6 -0.8**
PET LR LR
comp=Z,945nm,19.0s,MS5.2
HOPS Hopland 87.60 40 PFAKE 16 12 50.0 +13
HOPS LR LR
comp=Z,3µm,20.0s,MS5.7
PFO Pinyon Flat Ob 87.72 47 PFAKE 16 12 50.0 +12
PFO LR LR
comp=Z,3µm,19.0s,MS5.7
TRQA Tornquist 88.04 135 P **P 16 12 39.8 +0.6**
CMB Columbia Colle 88.40 42 *e*P **P 16 12 40.3 -0.6**
comp=Z,31nm,1.5s,mb5.3
CMB LR LR
comp=Z,2µm,19.0s,MS5.5
DAC Darwin (Calif) 88.81 45 PFAKE 16 12 50.0 +7.0
DAC LR LR
comp=Z,2µm,19.0s,MS5.4
MTUM Tungsten Hills 88.98 43 *e*P **P 16 12 43.3 -0.4**
WDC Whiskeytown Da 89.02 39 *e*P **P 16 12 43.5 -0.3**
comp=Z,9.1nm,1.0s,mb5.1
WDC LR LR
comp=Z,2µm,19.0s,MS5.5
YBH Yreka Blue Hor 89.76 38 P **P 16 12 48.7 +1.4**
comp=Z,3.2nm,1.0s,mb4.6,baz=134,slow=4.4,SNR=5.3
YBH Yreka Blue Hor 89.76 38 P **P 16 12 48.7 +1.4**
YBH pmax pmax
comp=Z,3.0nm,1.0s
YBH Yreka Blue Hor 89.76 38 *e*P **P 16 12 47.0 -0.3**
comp=Z,5.3nm,1.1s,mb4.8
YBH LR LR
comp=Z,1µm,19.0s,MS5.4
NVAR Mina Array Bea 89.86 43 P **P 16 12 47.0 -0.9**
comp=Z,4.0nm,0.8s,mb4.8,baz=225,slow=6.4,SNR=19
NVAR LR 16 50 22.2
comp=Z,1µm,18.2s,MS5.3,baz=270,slow=34
NEN Nelson 90.06 47 *e*P **P 16 12 49.4 +0.6**
TPH Tonopah 90.25 44 *e*P **P 16 12 48.5 -1.1**
comp=Z,16nm,1.3s,mb5.2
TPH LR LR
comp=Z,959nm,19.0s,MS5.2
HUMO Hull Mountain 90.26 37 *e*P **P 16 12 47.7 -1.9**
MDJ Mudanjiang 90.29 326 P **P 16 12 49.4 -0.3**
MDJ AP pP 16 12 52.8 -0.1
MDJ XP sP 16 12 53.8 -0.1
MDJ PP PP 16 16 19.8 -6.3
MDJ SKS SKS 16 23 22.1 -1.8
MDJ S S 16 23 43.1 +1.6
MDJ XS 16 23 49.8
MDJ SS SS 16 29 42.5 -2.4
MDJ AMB AMB
comp=Z,18nm,1.7s,mb5.1
MDJ LR LR
comp=N,374nm,20.9s,MS5.0
MDJ LR LR
comp=E,364nm,20.4s,MS5.0
MDJ LR LR
comp=Z,633nm,19.2s,MS5.1
MDJ Mudanjiang 90.29 326 *e*P **P 16 12 50.0 +0.3**
DL2 Dalian 90.41 317 P **P 16 12 49.6 -0.8**
DL2 SKS SKS 16 23 20.3 -4.5
DL2 S S 16 23 48.8 +6.0
DL2 AMB AMB
comp=Z,110nm,5.8s
DL2 LR LR
comp=N,150nm,16.3s,MS4.7
DL2 LR LR
comp=E,190nm,16.9s,MS4.7
TUC Tucson 90.52 51 *e*P **P 16 12 50.6 -0.5**
comp=E,12nm,1.4s,mb5.0
TUC LR LR
comp=Z,897nm,19.0s,MS5.2
SNY Shenyang 91.34 321 ⇑P **P 16 12 59.8 +5.2**
SNY SKS SKS 16 23 26.5 -3.6
SNY LR LR
comp=N,350nm,16.7s
SNY LR LR
comp=Z,400nm,19.6s,MS4.9
CN2 Changchun 91.74 323 *e*P **P 16 12 55.9 -0.5**
CN2 XP sP 16 13 01.3 +0.7
CN2 SKS SKS 16 23 26.3 -6.1
CN2 *e*S S 16 23 53.8 -0.6
CN2 AMB AMB
comp=Z,20nm,1.2s,mb5.3
CN2 LR LR
comp=N,330nm,19.0s,MS5.1
CN2 LR LR
comp=E,610nm,19.0s,MS5.1
CN2 LR LR
comp=Z,600nm,21.0s,MS5.0
BMN Battle Mountai 91.83 42 *e*P **P 16 12 56.6 -0.3**
BMN LR LR
comp=Z,2µm,20.0s,MS5.5
WUAZ Wupatki 92.14 49 *e*P **P 16 12 59.2 +0.7**
WUAZ LR LR
comp=Z,2µm,19.0s,MS5.5
WVOR Wild Horse Val 92.41 40 *e*P **P 16 13 00.1 +0.6**
comp=Z,32nm,1.8s,mb5.4
WVOR LR LR
comp=Z,3µm,20.0s,MS5.8
KDAK Kodiak Island 92.48 13 PFAKE 16 13 10.0 +11
KDAK LR LR
comp=Z,2µm,20.0s,MS5.5
GYA Guiyang 92.49 300 P **P 16 13 02.5 +2.3**
GYA S S 16 24 10.5 +9.1
GYA AMB AMB
comp=Z,10.0nm,1.0s,mb5.1
GYA AMB AMB
comp=Z,100nm,4.0s
GYA LR LR
comp=N,160nm,3.8s
GYA LR LR
comp=E,210nm,4.5s
GYA LR LR
comp=Z,320nm,3.9s
ENH Enshi 92.69 304 *e*P **P 16 13 02.0 +1.0**
comp=Z,77nm,1.6s,mb5.9
KLR Kul'dur 92.79 330 *e*P **P 16 13 00.0 -1.0**
KLR *e*S S 16 23 34.5 -29
KLR *e*PS ScS 16 24 12.5 +7.2
KLR smax
comp=N,900nm,10.5s
KLR smax
comp=E,600nm,10.5s
KLR MLR MLR
comp=N,1µm,17.0s,MS5.5
KLR MLR MLR
comp=E,900nm,17.0s,MS5.5
LVC Limon Verde 93.02 119 PFAKE 16 13 20.0 +17
LVC LR LR
comp=Z,1µm,19.0s,MS5.4
OCWA Octopus Mounta 93.39 33 PFAKE 16 13 10.0 +6.1
OCWA LR LR
comp=Z,1µm,19.0s,MS5.5
MVU Marysvale 93.51 46 PFAKE 16 13 20.0 +15
MVU LR LR
comp=Z,1µm,19.0s,MS5.4
TXAR Lajitas Array 93.62 57 LR LR 16 49 43.9
comp=Z,2µm,18.4s,MS5.5,baz=225,slow=32
MNTX Cornudas Mount 93.79 55 PFAKE 16 13 20.0 +14
MNTX LR LR
comp=Z,944nm,19.0s,MS5.3
BJI Beijing 94.34 315 *e*P **P 16 13 06.4 -2.0**
BJI PP PP 16 16 54.9 -3.4
BJI SKS SKS 16 23 44.3 -2.7
BJI XS 16 24 22.3
BJI SS SS 16 30 45.8 +3.1
BJI AMB AMB
comp=Z,7.0nm,1.4s,mb4.9
BJI LR LR
comp=N,433nm,20.4s,MS5.1
BJI LR LR
comp=E,457nm,19.8s,MS5.1
BJI LR LR
comp=Z,408nm,19.8s,MS4.9
KMI Kunming 94.66 297 *e*P **P 16 13 08.9 -1.3**
KMI XP sP 16 13 18.9 +4.4
KMI PP PP 16 16 59.1 -1.8
KMI AMB AMB
comp=Z,5.0nm,1.0s,mb4.9
KMI AMB AMB
comp=Z,143nm,5.3s
KMI LR LR
comp=N,303nm,18.9s,MS4.9
KMI LR LR
comp=E,277nm,21.8s,MS4.9
HAWA Hanford 94.67 36 PFAKE 16 13 20.0 +10
HAWA LR LR
comp=Z,2µm,19.0s,MS5.6
ANMO Albuquerque 94.98 52 P **P 16 13 10.9 -0.6**
ANMO LR LR
comp=Z,2µm,19.0s,MS5.5
BBB Bella Bella 95.00 28 LR LR 16 48 28.4
comp=Z,801nm,20.1s,MS5.2,baz=230,slow=31
MA2 Magadan 95.28 345 PFAKE 16 13 20.0 +7.7
MA2 LR LR
comp=Z,817nm,20.0s,MS5.2
HLID Hailey 95.47 41 *e*P **P 16 13 12.8 -0.8**
comp=Z,5.1nm,1.2s,mb4.8
HLID LR LR
comp=Z,977nm,19.0s,MS5.3
HWUT Hardware Ranch 95.85 44 PFAKE 16 13 30.0 +15
HWUT LR LR
comp=Z,2µm,19.0s,MS5.6
FIB Fire Island 96.08 13 PFAKE 16 13 30.0 +14
FIB LR LR
comp=Z,2µm,20.0s,MS5.7
SIT Sitka 96.27 22 PFAKE 16 13 30.0 +13
SIT LR LR
comp=Z,1µm,20.0s,MS5.4
PMR Palmer 96.68 14 PFAKE 16 13 30.0 +11
PMR LR LR
comp=Z,716nm,19.0s,MS5.2
AHID Auburn Hatcher 96.84 43 PFAKE 16 13 30.0 +10
AHID LR LR
comp=Z,1µm,20.0s,MS5.3
JCT Junction City 97.03 58 PFAKE 16 13 30.0 +9.1
JCT LR LR
comp=Z,2µm,19.0s,MS5.6
NEW Newport 97.14 36 PFAKE 16 13 30.0 +9.0
NEW LR LR
comp=Z,2µm,20.0s,MS5.7
SDCO Great Sand Dun 97.25 50 PFAKE 16 13 30.0 +8.3
SDCO LR LR
comp=Z,1µm,20.0s,MS5.3
LPAZ La Paz 97.39 114 P **P 16 13 25.6 +2.8**
comp=Z,1.2nm,1.0s,mb4.3,baz=226,slow=5.0,SNR=4.6
LPAZ LR LR 16 52 46.7
comp=Z,379nm,18.1s,MS4.9,baz=217,slow=33
LPAZ La Paz 97.39 114 P **P 16 13 25.6 +2.8**
LPAZ pmax pmax
comp=Z,1.0nm,1.0s
LPAZ MLR MLR
comp=Z,379nm,18.1s
LPAZ La Paz 97.39 114 P **P 16 13 25.6 +2.8**
LPAZ LR LR 16 52 46.6
BW06 Boulder Array 97.73 44 P **P 16 13 22.4 -1.4**
BW06 LR LR
comp=Z,1µm,19.0s,MS5.5
PDAR Pinedale Array 97.73 44 P **P 16 13 24.4 +0.6**
comp=Z,0.7nm,0.8s,mb4.2,baz=243,slow=3.3,SNR=5.6
PDAR PKKPbc 16 30 02.9
comp=Z,1.2nm,1.2s,baz=90,slow=4.4,SNR=3.9
PDAR LR LR 16 55 28.7
comp=Z,1µm,18.1s,MS5.4,baz=252,slow=34
MSO Missoula 97.83 39 PFAKE 16 13 30.0 +5.9
MSO LR LR
comp=Z,3µm,19.0s,MS5.8
TNA Tin City 98.07 4 PFAKE 16 13 40.0 +15
TNA LR LR
comp=Z,550nm,20.0s,MS5.0
JTS JuntasAbangare 98.11 83 PFAKE 16 13 40.0 +14
JTS LR LR
comp=Z,166nm,19.0s,MS4.5
BOZ Bozeman (W) 98.33 41 PFAKE 16 13 40.0 +14
BOZ LR LR
comp=Z,1µm,19.0s,MS5.4
ISCO Idaho Springs 98.37 48 PFAKE 16 13 40.0 +13
ISCO LR LR
comp=Z,1µm,19.0s,MS5.5
MCK McKinley 98.67 13 PFAKE 16 13 40.0 +13
MCK LR LR
comp=Z,793nm,20.0s,MS5.2
CPUP Villa Florida 98.77 129 LR LR 16 55 02.7
comp=Z,664nm,18.0s,MS5.2,baz=241,slow=34
CPUP Villa Florida 98.77 129 PFAKE 16 13 40.0 +11
CPUP LR LR
comp=Z,353nm,20.0s,MS4.9
DLBC Dease Lake 99.10 23 LR LR 16 50 57.8
comp=Z,607nm,19.6s,MS5.1,baz=217,slow=31
HKT Hockley 99.64 61 PFAKE 16 13 40.0 +7.3
HKT LR LR
comp=Z,220nm,19.0s,MS4.7
COLA College 99.91 13 PFAKE 16 13 40.0 +6.9

COLA LR LR
comp=Z,1µm,20.0s,MS5.5
ILAR Eielson Array 100.00 13 PP PP 16 17 42.5 +1.2
comp=Z,0.4nm,0.8s,baz=225,slow=7.7,SNR=4.5
ILAR LR LR 16 57 33.0
comp=Z,621nm,19.1s,MS5.1,baz=350,slow=35
WMOK Wichita Mounta 100.07 55 PFAKE 16 13 50.0 +15
WMOK LR LR
comp=Z,1µm,20.0s,MS5.4
CBKS Cedar Bluff 101.60 51 PFAKE 16 13 50.0 +8.6
CBKS LR LR
comp=Z,901nm,19.0s,MS5.3
RSSD Black Hills 101.79 45 PFAKE 16 13 50.0 +7.9
RSSD LR LR
comp=Z,540nm,19.0s,MS5.1
YAK Yakutsk 103.14 338 PFAKE 16 14 00.0 +12
YAK LR LR
comp=Z,679nm,20.0s,MS5.2
MIAR Mount Ida 103.64 58 PFAKE 16 14 00.0 +9.4
MIAR LR LR
comp=Z,984nm,20.0s,MS5.3
ULN Ulaanbaatar 104.26 318 PFAKE 16 14 00.0 +7.1
ULN LR LR
comp=Z,467nm,19.0s,MS5.0
OXF Oxford 106.63 59 PFAKE 16 18 30.0
OXF LR LR
comp=Z,2µm,20.0s,MS5.6
CCM Cathedral Cave 106.99 56 PFAKE 16 18 30.0
CCM LR LR
comp=Z,251nm,20.0s,MS4.8
YKA Yellowknife Ar 107.39 26 PKiKP 16 18 16.7
comp=Z,0.1nm,0.7s,baz=243,slow=1.5,SNR=4.1
YKA PKKPbc 16 29 31.7
comp=Z,0.5nm,0.7s,baz=38,slow=3.2,SNR=8.3
YKA Yellowknife Ar 107.39 26 PKPdf 16 18 16.8
YKA PKKPbc 16 29 31.7
LRAL Lakeview Retre 107.72 62 PFAKE 16 18 30.0
LRAL LR LR
comp=Z,784nm,19.0s,MS5.3
PLAL Pickwick Lake 107.82 60 PFAKE 16 18 30.0
PLAL LR LR
comp=Z,1µm,19.0s,MS5.6
WVT Waverly 108.52 59 PFAKE 16 18 30.0
WVT LR LR
comp=Z,1µm,20.0s,MS5.4
FFC Flin Flon 108.56 36 PFAKE 16 18 30.0
FFC LR LR
comp=Z,1µm,20.0s,MS5.5
ULM Lac du Bonnet 109.70 43 PFAKE 16 18 30.0
ULM LR LR
comp=Z,2µm,20.0s,MS5.6
JFWS Jewell Farm 109.88 51 PFAKE 16 18 30.0
JFWS LR LR
comp=Z,1µm,19.0s,MS5.6
TIXI Tiksi 110.25 344 PFAKE 16 18 30.0 +8.3
TIXI LR LR
comp=Z,1µm,19.0s,MS5.4
WCI Wyandotte Cave 110.55 57 PFAKE 16 18 30.0 +6.9
WCI LR LR
comp=Z,2µm,19.0s,MS5.7
SUR Sutherland 113.03 197 PFAKE 16 18 40.0 +12
SUR LR LR
comp=Z,2µm,20.0s,MS5.7
ACSO Alum Creek Sta 113.72 56 PFAKE 16 18 40.0 +11
ACSO LR LR
comp=Z,2µm,20.0s,MS5.7
AAM Ann Arbor 114.06 54 PFAKE 16 18 40.0 +10
AAM LR LR
comp=Z,992nm,19.0s,MS5.4
BLA Blacksburg 114.37 60 PFAKE 16 18 40.0 +9.4
BLA LR LR
comp=Z,1µm,19.0s,MS5.5
WMQ Urumqi 114.42 308 PKP PKPdf 16 18 28.8 -1.7
WMQ PP PP 16 19 28.5 -0.3
WMQ PP PP
comp=Z,32nm,10.1s
WMQ LR LR
comp=N,611nm,28.1s,MS5.2
WMQ LR LR
comp=E,658nm,29.0s,MS5.2
WMQ LR LR
comp=Z,1µm,28.7s,MS5.3
MCWV Mont Chateau 115.72 58 PFAKE 16 18 40.0 +6.8
MCWV LR LR
comp=Z,2µm,20.0s,MS5.7
ERPA Erie 116.52 55 PFAKE 16 18 40.0 +5.3
ERPA LR LR
comp=Z,1µm,19.0s,MS5.6
CBN Corbin 116.98 60 PFAKE 16 18 50.0 +14
CBN LR LR
comp=Z,1µm,19.0s,MS5.6
SSPA Standing Stone 117.48 58 *e*PKP PKPdf 16 18 36.9 +0.4
SSPA LR LR
comp=Z,1µm,20.0s,MS5.6
SJG San Juan 117.78 85 PFAKE 16 18 50.0 +12
SJG LR LR
comp=Z,514nm,19.0s,MS5.2
LBTB Lobatse 118.48 205 PFAKE 16 18 50.0 +11
LBTB LR LR
comp=Z,512nm,19.0s,MS5.2
MKAR Makanchi Array 119.02 309 PKP PKPdf 16 18 36.2 -3.2
comp=Z,5.9nm,1.1s,baz=72,slow=2.0,SNR=16
MKAR Makanchi Array 119.02 309 PKIKP PKPdf 16 18 36.2 -3.2
MKAR pmax pmax
comp=Z,6.0nm,1.1s
MKAR Makanchi Array 119.02 309 PKP PKPdf 16 18 36.2 -3.2
BINY Binghamton 119.35 56 PFAKE 16 18 50.0 +10
BINY LR LR
comp=Z,2µm,20.0s,MS5.8
ZAL Zalesovo 119.52 318 PKP PKPdf 16 18 38.2 -1.9
comp=Z,1.0nm,0.4s,baz=351,slow=3.9,SNR=4.0
ZAL Zalesovo 119.52 318 PKIKP PKPdf 16 18 38.2 -1.9
ZAL pmax pmax
comp=Z,1.0nm,0.4s
ZAL Zalesovo 119.52 318 PKP PKPdf 16 18 38.2 -1.9
NCB Newcomb 121.11 55 PFAKE 16 18 50.0 +6.4
NCB LR LR
comp=Z,1µm,19.0s,MS5.6
KURK Kurchatov 122.40 313 *e*PKPdf PKPdf 16 18 42.6 -3.1
HRV Harvard--Oak R 122.57 57 PFAKE 16 19 00.0 +14
HRV LR LR
comp=Z,401nm,20.0s,MS5.1
BBSR BB Station 124.71 71 PFAKE 16 19 00.0 +9.2
BBSR LR LR
comp=Z,2µm,19.0s,MS5.9
BVAR Borovoye Array 127.81 315 PKP PKPdf 16 18 53.9 -2.2
comp=Z,6.5nm,0.9s,baz=144,slow=1.7,SNR=21
SCHQ Schefferville 127.87 43 PKP PKPdf 16 18 54.4 -1.8
comp=Z,3.4nm,0.8s,baz=255,slow=2.2,SNR=4.7
SCHQ Schefferville 127.87 43 PKP PKPdf 16 18 54.4 -1.8
SCHQ LR LR
comp=Z,2µm,20.0s,MS5.9
BRVK Borovoye 127.88 315 *e*PKPdf PKPdf 16 18 53.4 -2.9
ZRNK Zerenda 128.64 314 *e*PKPdf PKPdf 16 18 54.8 -3.0
KMBO Kilima Mbogo 132.71 232 PFAKE 16 19 20.0 +13
KMBO LR LR
comp=Z,337nm,20.0s,MS5.0
KBS Kingsbay 133.28 357 PFAKE 16 19 20.0 +14
KBS LR LR
comp=Z,476nm,21.0s,MS5.2
ARU Arti 134.62 319 ⇓*i* PKIKP PKPdf 16 19 08.8 -0.1
ARU *e* 16 21 39.7
ARU pmax pmax
comp=Z,7.0nm,1.0s
ARU Arti 134.62 319 *e*PKPdf PKPdf 16 19 06.6 -2.3
ARU LR LR
comp=Z,608nm,20.0s,MS5.3
ARCES ARCESS Array B 140.61 347 PKhKP 16 19 11.8
comp=Z,0.8nm,0.6s,baz=14,slow=3.7,SNR=5.6
ARCES PKP PKPdf 16 19 17.3 -2.1
comp=Z,1.2nm,0.5s,baz=27,slow=2.0,SNR=9.0
ARCES SKPbc 16 22 55.8
comp=Z,2.6nm,0.7s,baz=27,slow=2.7,SNR=4.4
ARCES ARCESS Array B 140.61 347 PKHKP 16 19 11.8
ARCES 16 19 17.3
ARCES pmax pmax
comp=Z,1.0nm,0.6s
ARCES pmax pmax
comp=Z,1.0nm,0.5s
ARCES pmax pmax
comp=Z,3.0nm,0.7s
ARCES ARCESS Array B 140.61 347 PKP PKPdf 16 19 17.3 -2.1
ARCES SKPbc 16 22 55.8
JOF Joensuu 144.32 337 *e*pkp PKPdf 16 19 20.0 -6.0
TI2 Plekhanov 144.89 298 *i* PKHKP 16 19 21.2

ZEI Tsey 145.48 300 *e*PKP2 PKPab 16 19 26.9 -1.0
ZEI *e* 16 42 10.0
ZEI pmax pmax
comp=Z,500nm,11.0s
VANB Van 145.89 292 *e*P PKPbc 16 19 28.3 +0.9
GOF Gofitskoye 145.90 304 ⇑*i* PKIKP PKPdf 16 19 28.5 -0.8
GOF pmax pmax
comp=Z,100nm,1.4s
MOS Moscow 145.98 324 *i* PKP2 PKPab 16 19 28.0 -1.4
MOS pmax pmax
comp=Z,1µm,1.6s
MOS pmax pmax
comp=Z,760nm,1.7s
PYA Pyatigorsk 146.00 302 *c i* PKIKP PKPdf 16 19 27.0 -2.5
KIV Kislovodsk 146.27 302 *c i* PKP2 PKPab 16 19 29.2 -1.7
KIV pmax pmax
comp=Z,62nm,1.5s
KIV Kislovodsk 146.27 302 *e*PKPbc PKPbc 16 19 28.8 +0.7
KIV LR LR
comp=Z,487nm,20.0s,MS5.3
KAF Kangasniemi 146.48 339 *e*pkp PKPdf 16 19 27.8 -1.9
baz=48,slow=3.4
VOR Voronezh 146.78 316 *e*PKP2 PKPab 16 19 30.0 -2.7
VOR pmax pmax
comp=Z,320nm,1.8s
VOR pmax pmax
comp=N,60nm,1.7s
VOR pmax pmax
comp=E,60nm,1.6s
OBN Obninsk 146.81 323 *c i* PKIKP PKPdf 16 19 29.6 -0.9
OBN *e* 16 26 42.8
OBN *e*PS PS 16 35 39.4 0.0
OBN *e*SS SS 16 41 53.8 0.0
OBN pmax pmax
comp=Z,189nm,1.5s
OBN Obninsk 146.81 323 *e*PKPbc PKPbc 16 19 30.0 +1.1
OBN LR LR
comp=Z,606nm,20.0s,MS5.4
PUL Pulkovo 146.85 334 *e*PKHKP 16 19 27.1
PUL pmax pmax
comp=Z,70nm,4.9s
PUL MLR MLR
comp=Z,620nm,17.0s,MS5.5
FINES FINESS Array B 147.07 339 PKPbc PKPdf 16 19 29.9 -0.8
comp=Z,25nm,0.7s,baz=53,slow=3.1,SNR=38
FINES FINESS Array B 147.07 339 PKIKP PKPdf 16 19 29.9 -0.8
FINES pmax pmax
comp=Z,25nm,0.7s
BCA Borcka 147.24 297 *e*P PKPdf 16 19 30.1 -1.6
YNBS Yanbu' al Bahr 147.32 265 P PKPdf 16 19 36.0 +3.7
ERZM Erzurum 147.48 294 *i* P PKPdf 16 19 34.2 +2.1
EZM Erzurum 147.59 294 *i* P PKPdf 16 19 34.9 +2.6
SOC Sochi 148.45 302 *i* PKP2 PKPab 16 19 35.0 -4.5
SOC *e* 16 23 02.6
SOC *e*SS SS 16 42 15.0 +2.5
SOC pmax pmax
comp=Z,40nm,0.9s
SOC pmax pmax
comp=N,10.0nm,1.0s
SOC pmax pmax
comp=E,20nm,0.9s
EZC Erzincan 148.68 294 *e*P PKPdf 16 19 37.1 +3.1
GUMT Gumushane 148.91 296 *e*P PKPdf 16 19 36.2 +1.8
ELZG Elazig 149.34 292 *i* P PKPdf 16 19 39.5 +4.4
MYA Malatya 149.78 291 *e*P PKPdf 16 19 39.8 +4.0
TBKS Tabuk 149.85 271 P PKPdf 16 19 40.8 +4.5
ANN Anapa 149.87 304 *e*PKP2 PKPab 16 19 41.0 -4.3
ANN pmax pmax
comp=Z,80nm,1.9s
QURS Qurayyt al Mil 149.97 278 P PKPdf 16 19 42.6 +6.3
GZT Gaziantep 150.45 289 *i* P PKPdf 16 19 41.2 +4.3
ASF Jabal al Asfar 150.47 279 PKPbc PKPdf 16 19 41.6 +4.5
comp=Z,23nm,0.9s,baz=8.6,slow=1.5,SNR=28
JMQS Jabal Moqyreh 150.60 272 P PKPdf 16 19 42.2 +4.9
GAZ Gaziantep 150.72 289 *e*P PKPdf 16 19 43.3 +6.0
NB2 NORSAR Subarra 150.81 351 PKP 16 19 38.8
comp=Z,37nm,1.7s,baz=16,slow=4.0
NOA NORSAR Array B 150.81 351 PKPbc PKPdf 16 19 39.2 +2.6
baz=50,slow=4.4
SVSK Karacayir 150.84 295 *e*P PKPdf 16 19 41.9 +4.5
SACV Santiago Islan 151.00 121 *e*PKPbc PKPdf 16 19 43.5 +5.2
NAO01 NORSAR Array S 151.04 351 PKP PKPdf 16 19 34.1 -2.9
BDAS Al Bad' 151.13 271 P PKPdf 16 19 43.5 +5.3
HFS Hagfors 151.28 348 PKPbc PKPdf 16 19 41.0 +3.7
comp=Z,12nm,0.7s,baz=90,slow=1.5,SNR=12
HFS Hagfors 151.28 348 PKIKP PKPdf 16 19 41.0 +3.6
HFS pmax pmax
comp=Z,12nm,0.7s
HFS Hagfors 151.28 348 PKPbc PKPdf 16 19 41.0 +3.7
JMOS Jabal al Moall 151.32 272 P PKPdf 16 19 44.1 +5.7
MNK Minsk 151.34 328 *e*PKIKP PKPdf 16 19 43.0 +5.3
ALWS Ilw as Safayha 151.40 272 P PKPdf 16 19 44.2 +5.7
MKRJ Makawir 151.41 277 P PKPdf 16 19 44.0 +5.5
HAQS Haql 151.44 272 P PKPdf 16 19 44.3 +5.6
COBT Iskenderun 151.47 288 *i* P PKPdf 16 19 43.8 +5.4
KSHT Keshet 151.51 280 P PKPdf 16 19 44.4 +5.8
KSHT Keshet 151.51 280 ⇓P PKPdf 16 19 44.4 +5.8
AQBJ Aqaba 151.51 273 P PKPdf 16 19 44.1 +5.4
EIL Elat 151.58 273 P PKPdf 16 19 44.3 +5.5
EIL Elat 151.58 273 ⇓P PKPdf 16 19 44.3 +5.5
ZFRI Zfri 151.60 275 P PKPdf 16 19 44.4 +5.6
MZDA Masada 151.60 277 P PKPdf 16 19 44.2 +5.4
DRGI Dragot 151.63 277 P PKPdf 16 19 44.2 +5.4
HMDT Nahal Hemdat 151.63 279 P PKPdf 16 19 44.6 +5.8
MBH Mount Berech 151.64 273 P PKPdf 16 19 44.5 +5.6
PRNI Paran 151.70 275 P PKPdf 16 19 44.6 +5.6
PRNI Paran 151.70 275 ⇓P PKPdf 16 19 44.6 +5.6
BNN Bunyan 151.79 293 *e*P PKPdf 16 19 38.0 -0.8
KMTI Karmit 151.88 274 P PKPdf 16 19 44.8 +5.5
KMTI Karmit 151.88 274 ⇓P PKPdf 16 19 44.8 +5.5
SLTI Sal'it 152.04 278 P PKPdf 16 19 45.3 +5.9
SLTI Sal'it 152.04 278 ⇓P PKPdf 16 19 45.3 +5.9
SIM Simferopol' 152.13 306 *e*PKIKP PKPdf 16 19 45.1 +6.0
SIM *i* 16 19 54.7
OFRI 'Ofer 152.14 279 P PKPdf 16 19 43.8 +4.2
SVTA Shivta 152.15 276 P PKPdf 16 19 45.5 +5.9
BOYT Boyabat 152.27 298 *i* P PKPdf 16 19 44.7 +5.3
KZIT Kziot 152.33 275 P PKPdf 16 19 45.8 +5.9
KZIT Kziot 152.33 275 ⇓P PKPdf 16 19 45.8 +5.9
CTKT Corum 152.46 297 *i* P PKPdf 16 19 45.8 +6.0
AVNT Avonos 152.56 293 *i* P PKPdf 16 19 50.3 +10
NIG Nigde 152.78 291 *e*P PKPdf 16 19 47.2 +6.9
BZK Bozkurt 152.86 300 *e*P PKPdf 16 19 47.2 +6.9
AKASG Malin Array Be 152.87 320 PKPbc PKPdf 16 19 44.9 +4.9
comp=Z,6.7nm,0.5s,baz=53,slow=2.2,SNR=21
LIC Lamto 153.07 165 *e*PKIKP PKPdf 16 19 48.9 +7.5
comp=Z,20nm,0.7s
LIC Lamto 153.07 165 *e*P PKPdf 16 19 49.1 +7.7
comp=Z,146nm,2.0s
KIC Kosan Boka 153.27 165 *e*P PKPdf 16 19 47.1 +5.4
comp=Z,139nm,1.4s
BALT Daday 153.38 299 *i* P PKPdf 16 19 48.1 +7.1
KAMT Kaman 153.41 294 *e*P PKPdf 16 19 48.1 +7.0
BRTR Keskin Array B 153.43 295 PKPbc PKPdf 16 19 46.9 +5.8
comp=Z,7.0nm,1.1s,baz=119,slow=2.1,SNR=22
TIC Toumodi 153.48 165 *e*P PKPdf 16 19 50.0 +8.0
comp=Z,36nm,0.6s
DBIC Dimbokro 153.54 165 PKPbc PKPdf 16 19 49.9 +7.9
comp=Z,4.5nm,0.7s,baz=155,slow=3.2,SNR=5.8
DBIC Dimbokro 153.54 165 PKIKP PKPdf 16 19 49.9 +7.9
DBIC pmax pmax
comp=Z,5.0nm,0.7s
DBIC Dimbokro 153.54 165 *e*PKPbc PKPdf 16 19 49.4 +7.4
DBIC LR LR
comp=Z,579nm,20.0s,MS5.4
SUW Suwalki 153.68 331 *e*PKP PKPdf 16 19 48.6 +7.6
CSS Prodromos 153.77 284 *e*PKPbc PKPdf 16 19 48.4 +6.6
KIZT Kizilcal 154.87 293 *e*P PKPdf 16 19 50.3 +7.2
KIS Kishinev 154.88 313 *e*PKIKP PKPdf 16 19 38.0 -4.8
KIS *e* 16 20 03.0
KIS *e* 16 27 20.0
KIS MLR MLR
comp=Z,400nm,20.0s,MS5.2
KIS MLR MLR
comp=Z,400nm,20.0s
KWP Kalwaria 156.89 324 *e*PKP PKPab 16 20 13.3 -1.5
ESK Eskdalemuir 156.92 7 PFAKE 16 20 00.0 +15
ESK LR LR
comp=Z,1µm,20.0s,MS5.8
MLR Muntele Rosu 157.33 312 PKPbc PKPdf 16 19 56.3 +10
comp=Z,1.8nm,0.7s,baz=344,slow=5.4,SNR=3.1
MLR PKPab PKPab 16 20 16.9 +0.1
comp=Z,38nm,1.4s,baz=61,slow=3.5,SNR=8.2

OJC Ojcow 157.86 328 *e*PKP PKPab 16 20 17.4 -1.6
CRVS Cervenica-Dubn 157.99 324 *i* PKP PKPab 16 20 18.5 -1.1
NIE Niedzica 158.20 326 *e*PKP PKPab 16 20 20.2 -0.2
KSP Ksiaz 158.81 334 *e*PKP PKPab 16 20 21.8 -1.2
KSP Ksiaz 158.81 334 *e*PKP2 PKPab 16 20 21.3 -1.7
KSP MLR MLR
comp=Z,1µm,21.0s,MS5.8
OKC Ostrava-Krasne 158.86 330 *e*PKP PKPab 16 20 21.7 -1.6
UPC Upice 159.19 334 *e*PKP PKPab 16 20 22.9 -1.8
DPC Dobruska-Polom 159.20 333 *e*PKP PKPab 16 20 22.8 -1.9
DPC L 17 46 20.0
comp=Z,0.5nm,15.5s
CLL Collm 159.51 340 ⇑*i* PKP2 PKPab 16 20 24.6 -1.4
CLL *i* *PPKP2 16 20 37.0
CLL Collm 159.51 340 *i* PKP2 PKPab 16 20 24.6 -1.4
CLL pmax pmax
comp=Z,60nm,1.6s
CLL MLR MLR
comp=Z,800nm,20.7s,MS5.5
VYHS Vyhne 159.54 326 *i* PKP PKPab 16 20 24.8 -1.4
BRG Berggiesshubel 159.60 338 *e*PKIKP PKPdf 16 19 47.2 -1.5
BRG *i* 16 20 24.2
BRG pmax pmax
comp=Z,39nm,1.4s
BRG MLR MLR
comp=N,420nm,23.7s,MS5.3
BRG MLR MLR
comp=E,320nm,23.7s,MS5.3
BRG MLR MLR
comp=Z,450nm,23.7s,MS5.2
BRG Berggiesshubel 159.60 338 *e*PKP PKPdf 16 19 47.2 -1.5
BRG *i* 16 20 24.2
BRG *e*PP PP 16 23 55.0 -14
BRG LR LR
comp=Z,450nm,23.7s,MS5.2
PVCC Panska Ves 159.69 336 *e*PKP PKPab 16 20 25.1 -1.7
PVCC L 17 40 10.0
comp=Z,0.6nm,18.1s
VRAC Vranov 159.92 331 PKPab PKPab 16 20 26.5 -1.3
comp=Z,2.5nm,0.4s,baz=43,slow=4.1,SNR=11
PRU Pruhonice 160.15 335 *e*PKP PKPab 16 20 27.5 -1.3
PRU L 17 40 20.0
SMOL Smolenice 160.17 328 *e*PKP PKPab 16 20 29.2 +0.3
MOX Moxa 160.49 341 *i* P PKPab 16 20 25.2 -5.1
comp=Z,logA/T=1.2
MOX L 16 44 25.0
MOX Moxa 160.49 341 *e*PKP2 PKPab 16 20 25.2 -5.1
MOX pmax pmax
comp=Z,25nm,1.6s
MOX MLR MLR
comp=Z,600nm,18.0s
ZST Bratislava 160.55 328 *e*PKP PKPab 16 20 28.2 -2.4
NKC Novy Kostel 160.62 339 *e*PKP PKPab 16 20 29.9 -0.9
NKC L 17 43 40.0
comp=Z,0.7nm,17.8s
KHC Kasperske Hory 161.21 336 *e*PKP PKPab 16 20 31.7 -1.7
KHC L 17 40 30.0
comp=Z,0.8nm,20.2s
GEC2 GERESS Array S 161.41 335 *e*PKP2 PKPab 16 20 33.6 -0.7
GERES GERESS Array B 161.41 335 PKPab PKPab 16 20 32.8 -1.5
comp=Z,2.6nm,0.8s,baz=45,slow=3.8,SNR=14
GERES GERESS Array B 161.41 335 PKP2 PKPab 16 20 32.8 -1.5
GERES pmax pmax
comp=Z,3.0nm,0.8s
GRF Grafenberg Arr 161.46 341 *e*PKP2 PKPab 16 20 34.7 +0.2
GRF MLR MLR
comp=Z,700nm,18.2s
HINF Hinteralfeld 164.25 348 *e*PKP2 PKPab 16 20 44.3 -2.4
comp=Z,3.8nm,0.6s
DAVOX Davos 164.48 339 PKPab PKPab 16 20 46.8 -1.0
comp=Z,6.6nm,0.7s,baz=255,slow=1.1,SNR=8.9
SSF Saint Saulge 165.41 356 *e*PKP2 PKPab 16 20 50.3 -1.5
comp=Z,11nm,0.8s
AVF Avril sur Loir 165.69 356 *e*PKP2 PKPab 16 20 51.5 -1.5
SMF Signal de Mont 165.80 354 *e*PKP2 PKPab 16 20 52.0 -1.5
comp=Z,18nm,0.9s

*DJA **21** 16:11:24.8±1.0, 1.60N×126.56E, h33km, mb4.9/4, Error ellipse: s-maj=166.8km s-min=25.3km az=139.0*
*NEIC **21** 16:11:54.9±0.8, 3.79N×122.71E, h554km±10km, mb4.7/15, Error ellipse: s-maj=11.3km s-min=5.0km az=55.0*
*BJI **21** 16:11:54.9, 3.80N×122.70E, h553km, mb4.8, mb4.7*
*IDC **21** 16:11:55.1±1.0, 3.84N×122.77E, h556km±12km, mb3.7/27, mb1 3.7/27, mb1mx3.7/31, Error ellipse: s-maj=17.4km s-min=6.7km az=62.0*

ISC 21 16:11:54.0±0.4, 3.78N±0.04×122.77E±0.06, h558km±5km, n97, σ0°90°/109, mb4.4/49, 25C-5D, Celebes Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
GSPH	**General Santos**	**3.16**	**43**	⇑*e*P		**P**		**16 13 11.3**	**+0.1**
KCP	**Kidapawan**	**3.95**	**36**	⇓*e*P		**P**		**16 13 16.7**	**0.0**
PAGZ	**Pagadian**	**4.09**	**9**	⇑*e*P		**P**		**16 13 17.6**	**-0.1**
MSLP	**Maasin**	**6.64**	**18**	⇑*e*P		**P**		**16 13 39.0**	**-0.7**
KKM	**Kota Kinabalu**	**6.91**	**289**	⇑*i*P		**P**		**16 13 41.7**	**-0.5**
	126nm,0.5s								
BATP	**Bataraza**	**7.02**	**316**	⇑*e*P		**P**		**16 13 42.7**	**-0.5**
CUYO	**Cuyo Island**	**7.24**	**346**	⇑*e*P		**P**		**16 13 45.4**	**0.0**
OCLP	**Ormoc**	**7.45**	**14**	⇑*e*P		**P**		**16 13 46.8**	**-0.6**
ENPP	**El Nido**	**8.09**	**336**	⇑*e*P		**P**		**16 13 53.5**	**-0.1**
BESP	**Borongan**	**8.21**	**19**	⇑*e*P		**P**		**16 13 55.6**	**+0.8**
KEDI	**Kedomdong**	**13.88**	**209**	⇑*e*P		**P**		**16 14 50.5**	**-1.5**
	79nm,0.5s								
KEDI				⇓*e*S		**S**		**16 17 29.1**	**+14**
KEDI	**Kedomdong**	**13.88**	**209**	⇑*e*P		**P**		**16 14 48.4**	**-3.6**
KEDI				*e*S		**S**		**16 17 08.0**	**-7.0**
RATI	**Rata**	**14.37**	**210**	⇑*e*P		**P**		**16 14 55.6**	**-1.2**
	88nm,0.2s								
KELI	**Kelakatan**	**14.50**	**215**	⇑*i*P		**P**		**16 15 02.7**	**+4.5**
	263nm,0.4s								
KELI				⇓*e*S		S		16 17 53.3	+27
KELI	**Kelakatan**	**14.50**	**215**	⇑*e*P		**P**		**16 15 02.9**	**+4.8**
KELI				*e*S		**S**		**16 17 39.0**	**+13**
INGI	**Ingas**	**14.64**	**211**	⇑*e*P		**P**		**16 15 00.2**	**+0.6**
	179nm,0.3s								
INGI	**Ingas**	**14.64**	**211**	⇑*e*P		**P**		**16 15 00.2**	**+0.6**
INGI				*e*S		**S**		**16 17 33.4**	**+4.5**
KAKA	**Kakadu**	**18.96**	**150**	⇑*i*P		**P**		**16 15 41.8**	**+0.7**
	113nm,0.5s								
KAKA				*i* S		**S**		**16 18 55.9**	**+12**
FITZ	**Fitzroy Crossi**	**21.93**	**173**	⇑*i*P		**P**		**16 16 08.3**	**-0.2**
	5.9nm,0.8s,mb4.3								
FITZ				*e*S		**S**		**16 19 30.9**	**-1.7**
FITZ	**Fitzroy Crossi**	**21.93**	**173**	P		**P**		**16 16 08.5**	**0.0**
	2.7nm,0.7s,mb4.0,baz=2.8,slow=8.4,SNR=10.0								
FITZ				ScP				16 22 30.6	
	5.6nm,0.6s,baz=325,slow=1.5,SNR=9.0								
WRAB	**Tennant Creek**	**26.17**	**155**	*e*P		**P**		**16 16 45.6**	**-0.8**
	60nm,0.5s,mb5.5								
WRA	**Warramunga Arr**	**26.17**	**155**	P		**P**		**16 16 45.6**	**-0.8**
	23nm,0.4s,mb5.2,baz=336,slow=9.6,SNR=348								
WRA				S		**S**		**16 20 35.4**	**-4.7**
	3.3nm,0.6s,baz=335,slow=15,SNR=6.4								
WRA				ScP				16 22 42.2	
	4.5nm,0.5s,baz=340,slow=3.0,SNR=20								
WB2	**Warramunga Arr**	**26.18**	**155**	⇑*i*P		**P**		**16 16 45.6**	**-0.8**
WB2				*i* S		**S**		**16 20 37.0**	**-3.2**
WAU	**Wau**	**26.33**	**115**	*e*P		**P**		**16 16 47.5**	**-0.3**
CMAR	**Chiang Mai Arr**	**27.50**	**304**	P		**P**		**16 16 58.0**	**0.0**
	3.2nm,0.9s,mb4.0,baz=117,slow=8.1,SNR=10								
PMG	**Port Moresby**	**27.61**	**118**	*e*P		**P**		**16 16 58.5**	**-0.5**
	34nm,0.6s,mb5.1,baz=306,slow=9.3,SNR=17								
PMG	**Port Moresby**	**27.61**	**118**	*e*P		**P**		**16 16 58.5**	**-0.6**
	35nm,0.7s,mb5.1								
KMI	**Kunming**	**28.66**	**320**	*e*P		**P**		**16 17 09.8**	**+1.7**
KMI				AMB		AMB			
	comp=Z,10.0nm,1.6s,mb4.2								
ENH	**Enshi**	**29.19**	**336**	*e*P		**P**		**16 17 12.7**	**+0.1**
	comp=Z,19nm,0.8s,mb4.8								
AS12	**Alice Springs**	**29.36**	**159**	⇑*i*P		**P**		**16 17 14.2**	**+0.1**
	comp=Z,13nm,0.6s,mb4.7								
AS12				*i* S		**S**		**16 21 28.2**	**-1.4**
ASAR	**Alice Springs**	**29.36**	**159**	P		**P**		**16 17 14.2**	**+0.2**
	comp=Z,15nm,0.6s,mb4.8,baz=345,slow=7.2,SNR=332								
ASAR				PcP		PcP		16 20 02.6	-0.1
	comp=Z,0.7nm,0.4s,baz=348,slow=2.4,SNR=4.7								
ASAR				S		**S**		**16 21 27.8**	**-1.9**
	comp=Z,5.6nm,0.7s,baz=330,slow=15,SNR=16								
ASAR				ScP				16 22 51.9	
	comp=Z,6.9nm,0.6s,baz=344,slow=2.8,SNR=20								
RAB	**Rabaul**	**30.42**	**105**	*e*P		**P**		**16 17 24.2**	**+1.0**
CD2	**Chengdu**	**32.40**	**328**	⇑*i*P		**P**		**16 17 40.0**	**+0.2**
CD2				PP		PP		16 19 16.4	+7.0

CD2				AMB	AMB			
	comp=Z,20nm,0.9s,mb4.7							
XAN	**Xi'an**	**32.75**	**338**	P	**P**	**16**	**17**	**42.8 0.0**
XAN				AMB	AMB			
	comp=Z,11nm,1.0s,mb4.3							
CTA	**Charters Tower**	**33.09**	**137**⇑	*i*P	**P**	**16**	**17**	**46.8 +1.1**
	comp=Z,6.9nm,0.8s,mb4.2							
CTA	**Charters Tower**	**33.09**	**137**	P	**P**	**16**	**17**	**46.9 +1.2**
	comp=Z,7.9nm,0.6s,mb4.5,baz=320,slow=7.3,SNR=7.6							
CTA				ScP		16	23	04.4
	comp=Z,3.5nm,0.5s,baz=270,slow=3.0,SNR=3.1							
CTAO	**Charters Tower**	**33.09**	**137**	*e*P	**P**	**16**	**17**	**46.7 +1.0**
	comp=Z,13nm,0.8s,mb4.5							
FORT	**Forrest**	**34.73**	**172**⇑	*i*P	**P**	**16**	**18**	**00.0 +0.7**
	comp=Z,101nm,0.6s,mb5.5							
FORT				*e*S	**S**	**16**	**22**	**51.2 -0.6**
KLBR	**Kellerberrin**	**35.50**	**187**⇓	*i*P	**P**	**16**	**18**	**05.7 +0.1**
	comp=Z,8.7nm,0.4s,mb4.6							
MUN	**Mundaring**	**36.10**	**189**	*e*P	**P**	**16**	**18**	**11.1 +0.5**
	comp=Z,20nm,1.2s,mb4.5							
LZH	**Lanzhou**	**36.59**	**334**	P	**P**	**16**	**18**	**16.4 +1.9**
LZH				AMB	AMB			
	comp=Z,37nm,1.3s,mb4.8							
LZH				AMB	AMB			
	comp=Z,140nm,4.0s							
SHL	**Shillong**	**36.72**	**309**	*e*P	**P**	**16**	**18**	**24.0 +8.2**
NWAO	**Narrogin (SRO)**	**36.88**	**188**	P	**P**	**16**	**18**	**17.8 +0.8**
	comp=Z,12nm,0.4s,mb4.7,baz=24,slow=8.6,SNR=17							
NWAO	**Narrogin (SRO)**	**36.88**	**188**	*e*P	**P**	**16**	**18**	**17.5 +0.5**
	comp=Z,11nm,0.6s,mb4.6							
LSA	**Lhasa**	**39.51**	**314**	P	**P**	**16**	**18**	**40.4 +2.1**
LSA	**Lhasa**	**39.51**	**314**	*e*P	**P**	**16**	**18**	**40.6 +2.2**
	comp=Z,18nm,0.6s,mb4.8							
STKA	**Stephens Creek**	**39.72**	**155**⇑	*i*P	**P**	**16**	**18**	**41.3 +1.2**
	comp=Z,19nm,0.7s,mb4.7							
STKA	**Stephens Creek**	**39.72**	**155**	P	**P**	**16**	**18**	**41.3 +1.2**
	comp=Z,24nm,0.7s,mb4.9,baz=330,slow=7.8,SNR=68							
STKA				S		**16**	**24**	**04.9 -0.4**
	comp=Z,5.0nm,0.8s,baz=324,slow=13,SNR=8.1							
GTA	**Gaotai**	**41.13**	**333**	P	**P**	**16**	**18**	**52.5 +1.2**
GTA				AMB	AMB			
	comp=Z,21nm,1.0s,mb4.6							
GTA				AMB	AMB			
	comp=Z,72nm,5.4s							
PKI	**Pulchoki**	**42.76**	**307**	*e*P	**P**	**16**	**19**	**04.6 +0.2**
	comp=Z,22nm,0.3s,mb5.2							
KKN	**Kakani**	**42.96**	**308**	*e*P	**P**	**16**	**19**	**06.3 +0.3**
	comp=Z,20nm,0.3s,mb5.1							
DMN	**Daman**	**43.02**	**307**	*e*P	**P**	**16**	**19**	**06.8 +0.4**
	comp=Z,96nm,1.0s,mb5.3							
GKN	**Gorkha**	**43.56**	**308**	*e*P	**P**	**16**	**19**	**10.6 -0.1**
	comp=Z,59nm,0.8s,mb5.2							
ASAJ	**Asahikawa**	**43.82**	**21**	P	**P**	**16**	**19**	**12.2 -0.2**
	comp=Z,5.6nm,0.6s,mb4.2,baz=256,slow=8.3,SNR=5.4							
KOLN	**Koldanda**	**44.29**	**307**	*e*P	**P**	**16**	**19**	**14.7 -1.6**
	comp=Z,156nm,0.7s							
DANN	**Dangsing**	**44.41**	**308**	*e*P	**P**	**16**	**19**	**17.7 +0.4**
HYB	**Hyderabad**	**45.39**	**291**⇓	*i*P	**P**	**16**	**19**	**25.0 0.0**
	comp=Z,80nm,1.0s,mb5.2							
ULN	**Ulaanbaatar**	**45.96**	**345**	*e*P	**P**	**16**	**19**	**28.8 -0.1**
SONM	**Songino Array**	**46.10**	**345**	P	**P**	**16**	**19**	**29.9 0.0**
	comp=Z,1.7nm,0.9s,mb3.6,baz=169,slow=6.3,SNR=9.3							
SONM				PcP	PcP			
	comp=Z,0.4nm,0.3s,baz=170,slow=4.6,SNR=4.2							
SONM				ScP		16	23	55.3
	comp=Z,1.2nm,0.7s,baz=157,slow=4.3,SNR=7.9							
CNB	**Canberra Magne**	**46.21**	**150**⇑	*i*P	**P**	**16**	**19**	**32.3 +1.3**
	comp=Z,12nm,0.5s,mb4.7							
TOO	**Toolangi**	**46.24**	**155**	*e*P	**P**	**16**	**19**	**33.0 +1.8**
	comp=Z,5.6nm,1.0s,mb4.0							
NDI	**New Delhi**	**49.82**	**305**	*e*P	**P**	**16**	**19**	**55.5 -2.7**
	comp=Z,43nm,0.5s,mb5.1							
WMQ	**Urumqi**	**50.48**	**327**	P	**P**	**16**	**20**	**03.0 +0.1**
MKAR	**Makanchi Array**	**55.32**	**327**	P	**P**	**16**	**20**	**37.1 -0.1**
	comp=Z,4.0nm,0.3s,mb4.1,baz=126,slow=8.0,SNR=69							
MKAR				PcP	PcP			
	comp=Z,5.1nm,0.7s,baz=125,slow=4.5,SNR=12							
MKAR				ScP		16	24	34.7
	comp=Z,4.0nm,0.7s,baz=124,slow=4.7,SNR=15							
MKAR	**Makanchi Array**	**55.32**	**327**	P	**P**	**16**	**20**	**37.1 -0.1**
MKAR				PcP	PcP	16	21	28.8 -0.6
MKAR				ScP		16	24	34.7
KZA	**Kyzart**	**56.95**	**319**	P	**P**	**16**	**20**	**49.4 +0.9**
	SNR=6.8							
TKM2	**Tokmak 2**	**57.13**	**320**	P	**P**	**16**	**20**	**50.3 +0.6**
	SNR=7.8							
UCH	**Uchtor**	**57.50**	**319**	P	**P**	**16**	**20**	**53.6 +1.4**
	SNR=8.5							
AML	**Almayashu**	**58.00**	**318**	P	**P**	**16**	**20**	**57.1 +1.4**
	SNR=8.7							
EKS2	**Erkin-Say**	**58.19**	**319**	P	**P**	**16**	**20**	**57.5 +0.6**
	SNR=6.5							
ZAL	**Zalesovo**	**58.81**	**335**	P	**P**	**16**	**20**	**59.8 -1.1**
	comp=Z,1.9nm,0.4s,mb3.7,baz=263,slow=5.1,SNR=7.5							
KURK	**Kurchatov**	**59.62**	**329**	*e*P	**P**	**16**	**21**	**05.6 -0.7**
RPZ	**Rata Peaks**	**64.13**	**143**	P	**P**	**16**	**21**	**36.3 +0.7**
	comp=Z,10nm,0.7s,mb5.4,baz=332,slow=5.7,SNR=6.7							
BVAR	**Borovoye Array**	**65.16**	**328**	P	**P**	**16**	**21**	**41.3 -0.6**
	comp=Z,1.0nm,0.3s,mb3.7,baz=127,slow=7.4,SNR=8.5							
BRVK	**Borovoye**	**65.23**	**328**	*e*P	**P**	**16**	**21**	**41.7 -0.7**
URZ	**Urewera**	**65.32**	**135**	P	**P**	**16**	**21**	**43.0 -0.2**
	comp=Z,8.4nm,0.5s,mb4.5,baz=264,slow=4.3,SNR=15							
ZRNK	**Zerenda**	**65.86**	**328**	*e*P	**P**	**16**	**21**	**45.5 -0.8**
TIXI	**Tiksi**	**67.89**	**2**	*e*P	**P**	**16**	**21**	**57.2 -1.2**
	comp=Z,3.0nm,0.4s,mb4.2							
ARU	**Arti**	**72.80**	**328**	*e*P	**P**	**16**	**22**	**26.1 -1.3**
	comp=Z,9.5nm,1.1s,mb4.1							
THR	**Tehran**	**72.94**	**306**	P	**P**	**16**	**22**	**28.6 -0.1**
	comp=Z,1.3nm,0.7s,mb3.5,baz=100,slow=5.6,SNR=5.7							
VNDA	**Vanda**	**84.00**	**172**	P	**P**	**16**	**23**	**26.5 +0.2**
	comp=Z,0.5nm,0.4s,mb3.4,baz=324,slow=6.0,SNR=7.1							
VNDA	**Vanda**	**84.00**	**172**	*e*P	**P**	**16**	**23**	**27.1 +0.8**
ASF	**Jabal al Asfar**	**84.52**	**302**	P	**P**	**16**	**23**	**31.0 +1.1**
	comp=Z,7.3nm,0.9s,mb4.2,baz=108,slow=2.7,SNR=7.1							
KMBO	**Kilima Mbogo**	**85.60**	**269**	P	**P**	**16**	**23**	**35.9 +0.3**
	comp=Z,5.0nm,0.8s,mb4.2,baz=62,slow=7.5,SNR=9.4							
MCK	**McKinley**	**85.88**	**26**	*e*P	**P**	**16**	**23**	**36.2 +0.5**
ILAR	**Eielson Array**	**86.76**	**25**	P	**P**	**16**	**23**	**38.9 -0.9**
	comp=Z,0.9nm,0.7s,mb3.5,baz=240,slow=5.2,SNR=15							
BRTR	**Keskin Array B**	**86.94**	**309**	P	**P**	**16**	**23**	**40.5 -0.8**
	comp=Z,0.4nm,0.3s,mb3.5,baz=101,slow=7.3,SNR=3.9							
ARCES	**ARCESS Array B**	**89.03**	**340**	P	**P**	**16**	**23**	**49.3 -1.1**
	comp=Z,2.6nm,0.7s,mb4.2,baz=80,slow=5.4,SNR=8.9							
AKASG	**Malin Array Be**	**89.35**	**321**	P	**P**	**16**	**23**	**50.5 -1.8**
	comp=Z,0.2nm,0.2s,mb3.5,baz=70,slow=4.4,SNR=4.0							
SPITS	**Spitsbergen Ar**	**89.66**	**349**	P	**P**	**16**	**23**	**53.2 0.0**
	comp=Z,3.3nm,0.4s,mb4.5,baz=95,slow=6.7,SNR=54							
FINES	**FINESS Array B**	**89.91**	**331**	P	**P**	**16**	**23**	**53.5 -1.2**
	comp=Z,1.5nm,0.7s,mb4.0,baz=70,slow=3.9,SNR=6.1							
FINES	**FINESS Array B**	**89.91**	**331**	P	**P**	**16**	**23**	**53.5 -1.2**
INK	**Inuvik**	**91.56**	**21**	P	**P**	**16**	**24**	**02.4 +0.4**
	comp=Z,0.5nm,0.3s,mb4.0,baz=310,slow=4.7,SNR=5.2							
INK	**Inuvik**	**91.56**	**21**	P	**P**	**16**	**24**	**02.4 +0.4**
MLR	**Muntele Rosu**	**92.11**	**316**	P	**P**	**16**	**24**	**05.5 +0.4**
	comp=Z,1.2nm,0.6s,mb4.1,baz=280,slow=3.4,SNR=3.1							
MLR	**Muntele Rosu**	**92.11**	**316**	P	**P**	**16**	**24**	**05.5 +0.4**
HFS	**Hagfors**	**96.12**	**332**	P	**P**	**16**	**24**	**21.7 -1.2**
	comp=Z,3.0nm,0.9s,mb4.5,baz=111,slow=4.7,SNR=14							

*IDC **21** 16:25:54.2±2.8,32.48S×177.92W,mb4.2/4,mb1 4.3/6, mb1mx4.1/16,ML3.8/2,Error ellipse: s-maj=59.4km s-min=32.3km az=114.0*
*NEIC **21** 16:25:56.4±1.1,32.40S×178.22W,h10km,Error ellipse: s-maj=22.9km s-min=17.4km az=74.0*
ISC 21 16:26:09.3±3.3,33.0S±0.1×178.8W±0.2,h97km±26km,n15, σ1§06/16,mb4.2/4,3C,South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
URZ	**Urewera**	**6.19**	**211**	Pn		**P**	**16**	**27**	**39.9 +0.3**
	1.7nm,0.3s,baz=180,slow=22,SNR=10							
URZ				Sn		**S**	**16**	**28**	**59.4 +10**
	7.6nm,0.3s,baz=353,slow=20,SNR=11							
RPZ	**Rata Peaks**	**13.30**	**214**	Pn		**P**	**16**	**29**	**14.4 -0.7**
	0.5nm,0.3s,baz=82,slow=13,SNR=3.4							
RPZ				Sn		**S**	**16**	**31**	**41.0 +0.1**
	0.3nm,0.3s,baz=6.0,slow=19,SNR=4.9							
STKA	**Stephens Creek**	**33.28**	**261**	P		**P**	**16**	**32**	**42.5 +2.9**
	1.4nm,0.8s,mb3.9,baz=107,slow=11,SNR=3.3							
STKA	**Stephens Creek**	**33.28**	**261**	P		**P**	**16**	**32**	**42.5 +2.9**
CTA	**Charters Tower**	**33.62**	**284**	P		**P**	**16**	**32**	**43.7 +1.1**
	2.2nm,0.5s,mb4.3,baz=108,slow=13,SNR=3.7							
CTA	**Charters Tower**	**33.62**	**284**	P		**P**	**16**	**32**	**43.7 +1.1**
AS12	**Alice Springs**	**42.34**	**270**	*e*P		**P**	**16**	**33**	**54.9 -0.4**
	22nm,1.7s,mb4.6							
ASAR	**Alice Springs**	**42.34**	**270**	P		**P**	**16**	**33**	**55.4 +0.1**
	1.5nm,0.6s,mb3.9,baz=108,slow=7.5,SNR=37							
WB2	**Warramunga Arr**	**43.55**	**275**	*e*P		**P**	**16**	**34**	**04.5 -0.7**
WRAB	**Tennant Creek**	**43.56**	**275**	*e*P		**P**	**16**	**34**	**04.5 -0.8**
WRA	**Warramunga Arr**	**43.56**	**275**	P		**P**	**16**	**34**	**04.6 -0.7**
	2.2nm,0.3s,mb4.4,baz=112,slow=8.0,SNR=33							
VNA3	**Neumayer Olymp**	**75.75**	**176**⇑	*i*		**P**	**16**	**37**	**45.7 +0.4**
VNA2	**Neumayer--Watz**	**76.17**	**177**⇑	*i*		**P**	**16**	**37**	**45.9 -1.8**
VNA1	**Neumayer--Stat**	**76.41**	**177**⇑	*i*		**P**	**16**	**37**	**50.5 +1.4**
FINES	**FINESS Array B**	**147.33**	**308**	PKPbc	PKPdf		**16**	**45**	**37.7 -0.5**
	1.2nm,0.6s,baz=46,slow=4.2,SNR=10.0							

*NEIC **21** 16:32:54.7±0.9,3.84N×122.99E,h555km,Error ellipse: s-maj=44.9km s-min=14.3km az=62.0*
*IDC **21** 16:32:54.7±2.0,3.94N×123.20E,h556km±18km,mb3.0/5, mb1 3.2/5,mb1mx2.8/20,Error ellipse: s-maj=99.6km s-min=13.6km az=65.0*
ISC 21 16:32:56.0±2.6,3.8N±0.2×123.1E±0.4,h605km±44km,n10, σ0§71/12,mb3.8/5,1D,Celebes Sea

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
KAKA	**Kakadu**	**18.85**	**151**	*e*P		**P**	**16**	**36**	**40.8 +0.3**
	9.9nm,0.6s							
FITZ	**Fitzroy Crossi**	**21.95**	**174**	P		**P**	**16**	**37**	**08.9 +0.2**
	3.5nm,1.1s,mb3.9,baz=328,slow=9.5,SNR=3.3							
WRAB	**Tennant Creek**	**26.09**	**155**	*e*P		**P**	**16**	**37**	**44.8 -0.7**
WRA	**Warramunga Arr**	**26.09**	**155**	P		**P**	**16**	**37**	**44.9 -0.6**
	2.3nm,0.3s,mb4.3,baz=336,slow=9.6,SNR=44							
WRA				S		**S**	**16**	**41**	**35.2 -1.4**
	1.4nm,1.3s,baz=335,slow=15,SNR=3.2							
WRA				ScP			16	43	41.4
	0.4nm,0.5s,baz=339,slow=2.9,SNR=12							
WB2	**Warramunga Arr**	**26.09**	**155**⇓	*i*P		**P**	**16**	**37**	**45.0 -0.5**
AS12	**Alice Springs**	**29.30**	**159**	*e*P		**P**	**16**	**38**	**13.3 +0.2**
	8.0nm,1.4s,mb4.2							
ASAR	**Alice Springs**	**29.30**	**159**	P		**P**	**16**	**38**	**13.5 +0.4**
	0.8nm,0.3s,mb3.8,baz=334,slow=8.3,SNR=30							
ASAR				S		**S**	**16**	**42**	**27.2 +0.9**
	0.8nm,0.9s,baz=347,slow=18,SNR=3.8							
ASAR				ScP			16	43	51.4
	0.4nm,0.6s,baz=342,slow=3.3,SNR=8.7							
NWAO	**Narrogin (SRO)**	**36.99**	**188**	P		**P**	**16**	**39**	**17.0 -0.2**
STKA	**Stephens Creek**	**39.64**	**155**	P		**P**	**16**	**39**	**40.3 +1.6**
	1.5nm,0.5s,mb3.8,baz=330,slow=9.7,SNR=4.5							
MKAR	**Makanchi Array**	**55.44**	**327**	P		**P**	**16**	**41**	**36.5 -0.1**
	0.3nm,0.4s,mb3.0,baz=128,slow=8.0,SNR=6.9							
MKAR				PcP	PcP		16	42	28.2 +0.6
	0.5nm,0.7s,baz=123,slow=4.4,SNR=4.9							
MKAR				ScP			16	45	34.5
	0.5nm,0.6s,baz=119,slow=3.4,SNR=5.4							

*CASC **21** 16:52:14.1±1.9,12.87N×88.85W,h45km±51km,MD4.4, ML4.4,mb4.3(NEIC)*
*NEIC **21** 16:52:16.2±0.9,12.84N×88.72W,h79km±8km,mb4.3/14, MD4.6(SNET),Error ellipse: s-maj=13.3km s-min=6.5km az=46.0*
NEIC Felt [II] at San Salvador.
*IDC **21** 16:52:17.8±2.3,13.03N×88.49W,h91km±21km,mb4.0/11, mb1 4.2/14,mb1mx4.0/23,MS4.1/2,Ms1 4.1/2, ms1mx3.6/25,Error ellipse: s-maj=33.4km s-min=11.7km az=56.0*
ISC 21 16:52:13.4±0.4,12.84N±0.04×88.84W±0.04,h62km±3km, n101,σ1§07/108,mb4.3/22,4C-5D,Off coast of central America

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
SNVI	**San Vicente**	**0.77**	**360**	*e*P		**P**	**16**	**52**	**28.6 -0.1**
SNVI				*e*S		**S**	**16**	**52**	**39.9 -0.2**
VSM	**San Miguel**	**0.80**	**43**	*e*P		**P**	**16**	**52**	**29.7 +0.6**
LFRS	**El Faro**	**0.81**	**344**⇓	*i*P		**P**	**16**	**52**	**28.7 -0.5**
LCBS	**La Ceiba**	**0.82**	**350**⇓	*i*P		**P**	**16**	**52**	**29.0 -0.4**
BLLM	**Bellamira**	**0.84**	**44**	*e*P		**P**	**16**	**52**	**30.3 +0.7**
LBRS	**Las Brisas**	**0.92**	**347**	*e*P		**P**	**16**	**52**	**30.5 -0.1**
SNET	**Serv Nac Est T**	**0.93**	**336**	*e*P		**P**	**16**	**52**	**30.3 -0.5**
SNET				*e*S		**S**	**16**	**52**	**42.0 -1.6**
SNET				*i*			16	52	46.7
	comp=Z,15μm,0.7s							
LFU	**La Fuente**	**0.94**	**343**	*e*P		**P**	**16**	**52**	**30.8 -0.2**
PICS	**Picacho**	**0.98**	**336**⇓	*i*P		**P**	**16**	**52**	**31.6 +0.1**
BOQS	**Boqueron**	**0.99**	**334**	*i* P		**P**	**16**	**52**	**31.5 -0.1**
CNCH	**Conchagua**	**1.07**	**66**	*e*P		**P**	**16**	**52**	**33.2 +0.5**
CNCH				*e*S		**S**	**16**	**52**	**48.5 +1.5**
CAHU	**Cacacuatique**	**1.11**	**33**	*e*P		**P**	**16**	**52**	**34.7 +1.4**
SBLS	**San Blas**	**1.25**	**322**	*i* P		**P**	**16**	**52**	**34.9 -0.3**
SNJE	**San Jose**	**1.27**	**324**	*i* P		**P**	**16**	**52**	**35.2 -0.3**
RTR	**El Retiro**	**1.31**	**323**⇓	*i*P		**P**	**16**	**52**	**36.0 -0.2**
RBDL	**Robledal**	**1.51**	**327**⇓	*i*P		**P**	**16**	**52**	**39.1 +0.2**
CUSS	**Cusmapa**	**1.52**	**315**	*e*P		**P**	**16**	**52**	**37.8 -1.1**
CUSS				*e*S		**S**	**16**	**52**	**56.9 -0.8**
MTO2	**Montecristo 2**	**1.63**	**342**	*e*P		**P**	**16**	**52**	**41.0 +0.5**
CRIN	**San Cristobal**	**1.75**	**94**	*e*P		**P**	**16**	**52**	**42.9 +0.8**
PYN	**Poneloya**	**1.83**	**104**	*e*P		**P**	**16**	**52**	**42.5 -0.7**
TEL3	**Telica 3**	**1.96**	**98**	*e*P		**P**	**16**	**52**	**44.9 -0.1**
TEL3				*e*S		**S**	**16**	**53**	**08.0 -0.5**
TELN	**Telica**	**1.97**	**97**	*e*P		**P**	**16**	**52**	**45.1 -0.1**
CNGN	**Cerro Negro**	**2.12**	**99**	*e*P		**P**	**16**	**52**	**46.9 -0.4**
SOMN	**Somoto**	**2.24**	**75**	*e*P		**P**	**16**	**52**	**51.2 +2.2**
MOMJ	**Momotombo**	**2.28**	**101**	*e*P		**P**	**16**	**52**	**49.1 -0.5**
COPN	**Copaltepe**	**2.29**	**106**	*e*P		**P**	**16**	**52**	**48.8 -0.9**
QUIN	**Quiabu**	**2.38**	**83**	*e*P		**P**	**16**	**52**	**51.1 +0.2**
XAVN	**Gruta Xavier**	**2.55**	**105**	*e*P		**P**	**16**	**52**	**52.7 -0.6**
MGAN	**Managua**	**2.62**	**105**	*e*P		**P**	**16**	**52**	**53.8 -0.6**
MGAN				*e*S		**S**	**16**	**53**	**23.7 -1.4**
MGAN				*i*			16	53	32.2
	comp=E,2μm,0.6s							
MGAN				*i*			16	53	35.3
	comp=N,3μm,0.6s							
TICN	**Ticuantepe**	**2.67**	**107**	*e*P		**P**	**16**	**52**	**54.6 -0.5**
WILN	**Americas 2**	**2.67**	**104**	*e*S		**S**	**16**	**53**	**25.5 -0.9**
PYTN	**Playitas**	**2.73**	**96**	*e*P		**P**	**16**	**52**	**59.9 -0.8**
COFN	**Cofrada**	**2.75**	**104**	*e*P		**P**	**16**	**52**	**55.5 -0.8**
APON	**Apoyo**	**2.86**	**108**	*e*P		**P**	**16**	**52**	**57.7 0.0**
CONN	**Concepcion**	**3.39**	**112**	*e*P		**P**	**16**	**53**	**04.5 -0.7**
CRZC	**La Cruz**	**3.69**	**120**⇑	*e*P		**P**	**16**	**53**	**09.8 +0.4**
TPX	**Tapachula**	**3.91**	**302**	*e*P		**P**	**16**	**53**	**04.0 -8.5**
VCR	**Vista de Mar**	**4.14**	**130**	*e*P		**P**	**16**	**53**	**15.6 -0.1**
JTS	**JuntasAbangare**	**4.57**	**123**	P		**P**	**16**	**53**	**21.8 0.0**
	comp=N,15nm,0.3s,baz=323,slow=15,SNR=33							
JTS				S		**S**	**16**	**54**	**12.6 -1.6**
	comp=N,6.9nm,0.3s,baz=283,slow=22,SNR=2.0							
JTS				Lg			16	54	32.7
	comp=N,15nm,0.3s,baz=140,slow=19,SNR=15							
JTS				LR		LR	16	55	41.3
	comp=N,838nm,18.2s,baz=46,slow=46							
JCR	**Jicaral**	**4.71**	**129**	*e*P		**P**	**16**	**53**	**24.1 +0.4**
CGA2	**Cerro Gallo 2**	**5.12**	**123**	*e*P		**P**	**16**	**53**	**31.1 +1.7**
LAJ	**Bijagual**	**5.49**	**122**⇑	*e*P		**P**	**16**	**53**	**31.6 -2.9**
TRTC	**Tortuguero**	**5.50**	**114**	*e*P		**P**	**16**	**53**	**34.1 -0.5**
SJS	**Escuela Geolog**	**5.50**	**121**	*e*P		**P**	**16**	**53**	**37.6 +2.9**
SJS				*e*S		**S**	**16**	**54**	**38.4 +0.9**
LCR2	**La Lucha 2**	**5.65**	**123**	*e*P		**P**	**16**	**53**	**38.0 +1.2**
LCR2				*e*S		**S**	**16**	**54**	**42.4 +1.3**
ICR	**Volcan Irazu**	**5.67**	**120**⇑	*e*P		**P**	**16**	**53**	**38.4 +1.4**
ICR				*e*S		**S**	**16**	**54**	**48.4 +6.8**
URSC	**Urasca**	**5.79**	**121**	*e*P		**P**	**16**	**53**	**39.8 +1.1**
BUS	**Buena Vista**	**5.96**	**123**⇑	*e*P		**P**	**16**	**53**	**43.3 +2.3**
BUS				*e*S		**S**	**16**	**54**	**46.1 -2.6**
ACR	**Cerro Adams**	**6.95**	**126**	*e*P		**P**	**16**	**53**	**55.8 +0.8**
CMIG	**Matias Romero**	**7.21**	**307**	*e*P		**P**	**16**	**53**	**53.3 -5.2**
CMIG				*i* S		**S**	**16**	**55**	**00.8 -19**
CMIG				*i* S		**S**	**16**	**55**	**10.1 -10**
TEIG	**Tepich**	**7.36**	**4**	P		**P**	**16**	**54**	**00.9 +0.3**
	comp=N,6.0nm,0.3s,baz=176,slow=14,SNR=5.7							
TEIG				LR		LR	16	57	14.4
	comp=N,3μm,19.9s,baz=167,slow=41							
EVV	**El Vigia**	**8.40**	**313**	*e*P		**P**	**16**	**54**	**15.0 +0.2**
OXX	**Oaxaca**	**8.71**	**300**	*e*P		**P**	**16**	**54**	**06.0 -13**
PPM	**Popocatepetl**	**11.26**	**305**	*e*P		**P**	**16**	**54**	**55.0 +1.0**
SDV	**Santo Domingo**	**18.30**	**101**	P		**P**	**16**	**56**	**23.7 -1.1**
	baz=318,slow=7.6,SNR=7.1							
LRAL	**Lakeview Retre**	**20.17**	**4**	*e*P		**P**	**16**	**56**	**46.4 +0.9**
	comp=N,7.8nm,0.8s							
JCT	**Junction City**	**20.27**	**332**	*e*P		**P**	**16**	**56**	**45.7 -0.7**
	comp=N,20nm,0.8s							
TXAR	**Lajitas Array**	**21.43**	**322**	P		**P**	**16**	**56**	**59.3 +1.1**
	comp=N,6.2nm,0.6s,mb4.1,baz=142,slow=11,SNR=32							
COW	**Cow Castle Cre**	**21.75**	**19**	*e*P		**P**	**16**	**57**	**04.0 +2.5**
MIAR	**Mount Ida**	**22.03**	**350**	*e*P		**P**	**16**	**57**	**04.8 +0.7**
	comp=N,25nm,0.9s,mb4.6							
PLAL	**Pickwick Lake**	**22.05**	**2**	P		**P**	**16**	**57**	**04.8 +0.4**
UALR	**University of**	**22.07**	**352**	*e*P		**P**	**16**	**57**	**06.7 +2.2**
	comp=N,12nm,0.8s,mb4.4							
WVT	**Waverly**	**23.21**	**2**	*e*P		**P**	**16**	**57**	**16.1 +0.4**
WMOK	**Wichita Mounta**	**23.59**	**339**	*e*P		**P**	**16**	**57**	**20.0 +0.6**
	comp=N,18nm,1.0s,mb4.4							
GDL2	**Guadalupe Moun**	**23.96**	**326**	*e*P		**P**	**16**	**57**	**24.3 +1.3**
CPRX	**Cap Rock**	**24.34**	**328**	*e*P		**P**	**16**	**57**	**27.4 +0.6**
CCM	**Cathedral Cave**	**25.20**	**356**	*e*P		**P**	**16**	**57**	**34.2 -0.8**
	comp=N,11nm,0.7s,mb4.5							
WCI	**Wyandotte Cave**	**25.39**	**5**	*e*P		**P**	**16**	**57**	**35.1 -1.6**
	comp=N,6.6nm,0.6s,mb4.3							
BNM	**Barren Site**	**26.68**	**326**	*e*P		**P**	**16**	**57**	**49.4 +0.7**
ANMO	**Albuquerque**	**27.19**	**327**	*e*P		**P**	**16**	**57**	**55.2 +1.8**
TUC	**Tucson**	**27.93**	**317**	P		**P**	**16**	**57**	**59.2 -1.0**
SDCO	**Great Sand Dun**	**28.92**	**332**	P		**P**	**16**	**58**	**10.3 +1.4**
WUAZ	**Wupatki**	**30.39**	**322**	*e*P		**P**	**16**	**58**	**22.8 +0.8**
ISCO	**Idaho Springs**	**30.66**	**334**	*e*P		**P**	**16**	**58**	**23.9 -0.4**
	comp=N,5.6nm,0.8s,mb4.5							
PV10	**Paradox Valley**	**31.14**	**328**	*e*P		**P**	**16**	**58**	**28.4 -0.1**
SADO	**Sadowa**	**32.88**	**13**	P		**P**	**16**	**58**	**41.3 -2.4**
	comp=N,7.2nm,0.6s,mb4.8,baz=210,slow=9.0,SNR=9.2							
RSSD	**Black Hills**	**33.79**	**340**	*e*P		**P**	**16**	**58**	**51.7 +0.1**
	comp=N,5.0nm,0.6s,mb4.6							
DAU	**Daniels Canyon**	**33.80**	**328**	*e*P		**P**	**16**	**58**	**52.7 +1.0**
BW06	**Boulder Array**	**34.80**	**333**	*e*P		**P**	**16**	**58**	**59.4 -0.8**
	comp=N,3.0nm,1.0s,mb4.2							
PDAR	**Pinedale Array**	**34.80**	**333**	P		**P**	**16**	**58**	**59.6 -0.6**
	comp=N,1.6nm,0.

EIBI				Pg		Pg	16 59 53.3	-4.1
EIBI				Sn		Sn	17 00 14.9	-4.9
EIBI				Lg			17 00 23.7	
GUD	**Guadarrama**	**2.69**	**319**	Pn		Pn	16 59 53.3	+2.2
GUD				Pg		Pg	16 59 59.2	-1.6
GUD				Lg			17 00 34.9	
EBR	**Ebro Roquetas**	**2.83**	**39**	*eS*[4]		Sb	17 00 34.2	+2.0
ESAC	**San Caprasio**	**3.26**	**18**	Pn		Pn	17 00 00.8	+1.5
ESAC				Pg		Pg	17 00 08.0	-4.2
ESAC				Sn		Sn	17 00 35.3	-3.3
ESAC				Lg			17 00 49.8	
ELIJ	**Sierra de Lija**	**3.28**	**240**	Pn		Pn	17 00 00.8	+1.2
ELIJ				Pg		Pg	17 00 11.1	-1.5
ELIJ				Lg			17 00 53.8	
EPOB	**Poblet**	**3.53**	**39**	Pn		Pn	17 00 02.5	-0.5
EPOB				Pg		Pg	17 00 12.0	-5.4
EPOB				Sn		Sn	17 00 42.1	-3.1
EPOB				Lg			17 00 55.2	
EJIF	**Jimena Fronter**	**3.61**	**234**	Pn		Pn	17 00 04.7	+0.5
ESPR	**Espera**	**3.63**	**242**	Pn		Pn	17 00 05.2	+0.7
ESPR				Pg		Pg	17 00 16.1	-3.5
ESPR				Sn		Sn	17 00 47.4	-0.5
ESPR				Lg			17 01 03.2	
EMIN	**Mina Concepcio**	**3.90**	**259**	Pn		Pn	17 00 07.3	-1.0
EMIN				Pg		Pg	17 00 18.9	-6.0
EMIN				Sn		Sn	17 00 52.4	-2.2
EMIN				Lg			17 01 11.9	
EBAD	**Badajoz**	**4.05**	**273**	Pn		Pn	17 00 09.4	-1.0
EBAD				Pg		Pg	17 00 22.4	-5.4
EBAD				Sn		Sn	17 01 02.5	+4.1
EBAD				Lg			17 01 16.4	
EMIR	**Miracle**	**4.17**	**37**	Pn		Pn	17 00 12.0	-0.2
EMIR				Pg		Pg	17 00 25.1	-5.3
EMIR				Lg			17 01 17.1	
ETSF	**Etsaut**	**4.38**	**12**	*e*Pn		Pn	17 00 17.2	+2.1
ETSF				*e*Sn		Sn	17 01 01.9	-4.8
ETSF				*e*Sg		Sg	17 01 24.6	-8.1
EGRO	**El Granado**	**4.58**	**258**	Pn		Pn	17 00 16.9	-1.2
EGRO				Lg			17 01 32.4	
EALK	**Alkurruntz**	**4.59**	**3**	Pn		Pn	17 00 18.8	+0.7
EALK				Sn		Sn	17 01 09.5	-2.7
EALK				Lg			17 01 31.4	
EPF	**Esparros**	**4.70**	**20**	*e*Pn		Pn	17 00 20.5	+0.8
EPF				*e*Sn		Sn	17 01 10.3	-4.6
EPF				*e*Sg		Sg	17 01 31.7	-12
	41nm,0.6s							
ELAN	**Lanestosa**	**4.75**	**346**	Pn		Pn	17 00 21.6	+1.1
ELAN				Pg		Pg	17 00 36.1	-5.8
ELAN				Lg			17 01 34.8	
ECAL	**Calabor**	**5.00**	**313**	Pn		Pn	17 00 23.3	-0.6
ECAL				Pg		Pg	17 00 42.5	-4.2
ECAL				Lg			17 01 43.5	
EARI	**Arriondas**	**5.32**	**332**	Pn		Pn	17 00 29.1	+0.7
EARI				Pg		Pg	17 00 48.9	-4.3
EARI				Lg			17 01 56.6	
MTLF	**Montolieu**	**5.62**	**32**	*e*Pn		Pn	17 00 33.8	+1.1
MTLF				*e*Sg		Sg	17 02 02.0	-12
	6.3nm,0.3s							
ELOB	**Lobios**	**5.75**	**306**	Pn		Pn	17 00 35.0	+0.4
ELOB				Pg		Pg	17 00 57.1	-4.8
ELOB				Lg			17 02 09.4	
LASF	**Ste Croix**	**6.93**	**36**	*e*Pn		Pn	17 00 51.7	+0.6
CAF	**Calviac**	**6.94**	**24**	*e*Pn		Pn	17 01 51.6	+0.4
SMRF	**Simiane la Rot**	**7.72**	**44**	*e*Pn		Pn	17 01 01.4	-0.9
PGF	**Pioggiola**	**9.13**	**61**	*e*Pn		P	17 01 20.9	-0.9
QUIF	**Quistinic**	**9.33**	**355**	*e*Pn		P	17 01 26.3	+1.7
ROSF	**Rostrenen**	**9.76**	**354**	*e*Pn		P	17 01 31.5	+1.1

*WAR **21** 17:04:05.8,51.50N×16.09E,ML2.6,Mining Induced PRU **21** 17:04:07.6,51.40N×16.05E*
ISC 21 17:04:05.2±1.6,51.41N±0.07×15.96E±0.07,n8,σ1§03/13, Poland

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KSP	**Ksiaz**	**0.60**	**160**	*e*PG	**Pg**	**17 04 18.0**	**+0.8**
KSP				*e*SG	**Sg**	**17 04 27.0**	**+1.8**
UPC	**Upice**	**0.90**	**178**	*e*PG	**Pg**	**17 04 24.1**	**+1.0**
DPC	**Dobruska-Polom**	**1.08**	**168**	*e*PG	**Pg**	**17 04 26.9**	**+0.1**
DPC				*e*SG	**Sg**	**17 04 41.2**	**0.0**
PRU	**Pruhonice**	**1.68**	**213**	*e*PG	**Pg**	**17 04 37.9**	**-0.9**
PRU				SG	**Sg**	**17 05 02.0**	**+0.8**
	8.3nm,0.4s						
CLL	**Collm**	**1.86**	**268**	*e*PG	**Pg**	**17 04 42.0**	**-0.3**
CLL				*e*SG	**Sg**	**17 05 08.0**	**+0.9**
OKC	**Ostrava-Krasne**	**2.10**	**138**	*e*SG	**Sg**	**17 05 12.6**	**-2.4**
NKC	**Novy Kostel**	**2.52**	**244**	*e*SG	**Sg**	**17 05 28.7**	**-0.4**
KHC	**Kasperske Hory**	**2.74**	**215**	*e*SN	**Sn**	**17 05 24.5**	**-1.1**
KHC				*e*SG	**Sg**	**17 05 35.6**	**-0.9**

TRN 21 17:26:10.0,12.48N×59.96W,h180km,MD3.7,1C, Windward Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GRCU	**Cariacou**	**1.46**	**270**	⇑*i*P	P	17 26 41.8	-0.2
GRCU				*e*S	S	17 27 05.5	-1.2
SSV	**Crater Summit**	**1.47**	**305**	*e*P	P	17 26 43.4	+1.3
SSV				*e*S	S	17 27 07.3	+0.4
SVV	**Soufriere Volc**	**1.48**	**304**	*e*P	P	17 26 42.8	+0.5
SVV	**Soufriere Volc**	**1.48**	**304**	*e*P	P	17 26 43.4	+1.1
SVV				*e*S	S	17 27 08.2	+1.1
SVB	**Belmont**	**1.49**	**302**	*e*P	P	17 26 43.1	+0.8
SVB				*e*S	S	17 27 07.8	+0.7
MCLT	**Moule a Chique**	**1.55**	**322**	*e*P	P	17 26 43.7	+0.7
MCLT				*e*S	S	17 27 07.5	-0.8
GRIC	**Isle de Caille**	**1.60**	**263**	*e*P	P	17 26 42.9	-0.5
GRIC				*e*S	S	17 27 07.1	-2.0
GRSS	**Sisters**	**1.62**	**264**	*e*P	P	17 26 44.8	+1.2
GRSS				*e*S	S	17 27 09.7	+0.2
GRHS	**Sauteurs**	**1.66**	**261**	*e*P	P	17 26 41.6	-2.4
SLPE	**Piton Saint Es**	**1.69**	**323**	*e*P	P	17 26 45.1	+0.8
SLPE				*e*S	S	17 27 09.5	-1.2
GRW	**Mount Saint Ca**	**1.69**	**259**	*e*P	P	17 26 44.6	+0.4
GRW				*e*S	S	17 27 10.0	-0.1
MVM	**Montagne Vaucl**	**2.26**	**336**	*e*P	P	17 26 50.2	-0.2
BIM	**Bigot**	**2.30**	**332**	*e*P	P	17 26 51.1	+0.2
BIM				*e*S	S	17 27 20.9	-1.4
CRM	**Caravelle**	**2.44**	**338**	*e*P	P	17 26 52.5	-0.1
CRM				*e*S	S	17 27 23.0	-2.4
FDF	**Fort de France**	**2.52**	**333**	*e*P	P	17 26 54.3	+0.7
FDF				*e*S	S	17 27 26.3	-0.8
DEG	**La Desirade**	**3.96**	**345**	*e*P	P	17 27 12.2	+0.8
DEG				*e*S	S	17 27 56.4	-2.2
SEG	**Port Louis**	**4.18**	**339**	*e*P	P	17 27 17.0	+2.8

*IDC **21** 17:42:30.8±1.8,9.18S×122.89E,mb3.9/2,mb1 4.0/4, mb1mx3.7/14,ML3.7/2,Error ellipse: s-maj=215.0km s-min=27.2km az=56.0*
*NEIC **21** 17:42:41.1±1.3,9.11S×123.48E,h90km,Error ellipse: s-maj=27.6km s-min=15.8km az=69.0*
ISC 21 17:42:45.6±2.0,9.5S±0.1×123.5E±0.1,h169km±21km,n10, σ1§19/16,mb3.7/2,1D,Timor region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**8.86**	**166**	*e*P	**P**	**17 44 50.0**	**-1.2**
	4.8nm,0.4s						
FITZ				*e*S	**S**	**17 46 25.6**	**-3.7**
KAKA	**Kakadu**	**9.35**	**111**	*e*P	**P**	**17 44 58.3**	**+0.7**
	19nm,1.1s						
KAKA				*e*S	**S**	**17 46 41.0**	**+0.2**
WRA	**Warramunga Arr**	**14.81**	**136**	Pn	**P**	**17 46 08.3**	**+0.4**
	0.5nm,0.3s,baz=308,slow=14,SNR=32						
WRA				Sn	**S**	**17 48 46.1**	**-1.5**
	0.9nm,0.3s,baz=35,slow=29,SNR=11						
WRAB	**Tennant Creek**	**14.81**	**136**	*e*P	**P**	**17 46 08.1**	**+0.1**
WB2	**Warramunga Arr**	**14.81**	**136**	*e*P	**P**	**17 46 08.7**	**+0.7**
WB2				*e*S	**S**	**17 48 46.4**	**-1.4**
AS12	**Alice Springs**	**17.31**	**146**	*e*P	**P**	**17 46 42.6**	**+4.1**
	6.2nm,1.3s						
AS12				*e*S	**S**	**17 49 46.3**	**+2.7**
ASAR	**Alice Springs**	**17.31**	**146**	P	**P**	**17 46 40.6**	**+2.1**
	0.4nm,0.3s,baz=320,slow=12,SNR=34						
ASAR				S	**S**	**17 49 46.6**	**+3.0**
	0.2nm,0.3s,baz=320,slow=23,SNR=14						
PIAM	**Paiam**	**19.91**	**80**	⇓*i*P	**P**	**17 47 05.4**	**-0.7**
STKA	**Stephens Creek**	**27.95**	**146**	P	**P**	**17 48 28.3**	**+5.9**
	2.9nm,0.9s,mb4.0,baz=329,slow=12,SNR=2.9						
MKAR	**Makanchi Array**	**66.93**	**331**	P	**P**	**17 53 21.8**	**-0.2**
	0.4nm,0.6s,mb3.4,baz=141,slow=7.4,SNR=4.2						

*NEIC **21** 17:47:41.2±1.4,4.26S×143.14E,h82km±15km,mb4.2/2, Error ellipse: s-maj=13.7km s-min=10.1km az=133.0*
*IDC **21** 17:47:41.6±4.1,4.24S×143.25E,h88km±42km,mb3.6/9, mb1 3.8/11,mb1mx3.7/17,MS2.7/1,Ms1 2.7/1, ms1mx2.6/15,Error ellipse: s-maj=25.7km s-min=24.1km az=105.0*
ISC 21 17:47:37.0±2.0,4.12S±0.08×143.16E±0.08,h56km±20km, n22,σ1§00/27,mb4.0/10,New Guinea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WAU	**Wau**	**4.77**	**132**	*e*P	**P**	**17 48 50.4**	**+2.2**
PMG	**Port Moresby**	**6.58**	**143**	P	**P**	**17 49 13.9**	**+0.4**
	3.4nm,0.3s,baz=272,slow=12,SNR=14						
PMG				S	**S**	**17 50 27.2**	**-0.7**
	2.4nm,0.3s,baz=311,slow=20,SNR=2.8						
PMG				LR	LR	17 51 35.6	
	comp=Z,60nm,18.5s,baz=252,slow=36						
KAKA	**Kakadu**	**13.63**	**231**	*e*P	**P**	**17 50 48.3**	**-1.2**
	13nm,0.4s						
KAKA				*e*S	**S**	**17 53 13.0**	**-7.1**
WRAB	**Tennant Creek**	**17.91**	**208**	*e*P	**P**	**17 51 42.8**	**-1.2**
WB2	**Warramunga Arr**	**17.92**	**208**	*e*P	**P**	**17 51 44.1**	**0.0**
WB2				*e*S	**S**	**17 55 09.7**	**+11**
WRA	**Warramunga Arr**	**17.93**	**208**	P	**P**	**17 51 42.9**	**-1.3**
	0.6nm,0.3s,baz=31,slow=13,SNR=7.6						
WRA				S	**S**	**17 55 01.2**	**+2.0**
	0.2nm,0.3s,baz=26,slow=21,SNR=3.5						
AS12	**Alice Springs**	**21.39**	**204**	*e*P	**P**	**17 52 24.9**	**+2.8**
	4.2nm,0.9s,mb3.8						
ASAR	**Alice Springs**	**21.39**	**204**	P	**P**	**17 52 20.4**	**-1.7**
	1.4nm,0.6s,mb3.5,baz=30,slow=12,SNR=6.7						
ASAR				S	**S**	**17 56 19.1**	**+7.9**
	0.6nm,0.7s,baz=15,slow=27,SNR=3.3						
FITZ	**Fitzroy Crossi**	**22.08**	**230**	*e*P	**P**	**17 52 29.7**	**+0.8**
	3.6nm,0.5s,mb4.1						
FITZ	**Fitzroy Crossi**	**22.08**	**230**	P	**P**	**17 52 29.6**	**+0.7**
	2.7nm,0.3s,mb4.1,baz=28,slow=12,SNR=15						
CMAR	**Chiang Mai Arr**	**49.00**	**299**	P	**P**	**17 56 21.1**	**+0.7**
	1.3nm,0.7s,mb4.1,baz=123,slow=5.6,SNR=9.5						
SONM	**Songino Array**	**60.95**	**333**	P	**P**	**17 57 46.9**	**+0.2**
	0.3nm,0.7s,mb3.5,baz=143,slow=7.2,SNR=3.1						
MKAR	**Makanchi Array**	**73.63**	**321**	P	**P**	**17 59 06.8**	**+0.3**
	1.8nm,0.7s,mb4.1,baz=109,slow=7.4,SNR=19						
VNDA	**Vanda**	**74.03**	**176**	P	**P**	**17 59 07.5**	**-0.8**
	0.3nm,0.6s,mb3.4,baz=351,slow=7.0,SNR=4.0						
VNDA	**Vanda**	**74.03**	**176**	*e*P	**P**	**17 59 07.1**	**-1.1**
ZAL	**Zalesovo**	**75.41**	**329**	P	**P**	**17 59 16.2**	**-0.4**
	0.7nm,0.6s,mb3.8,baz=239,slow=4.1,SNR=4.4						
KURK	**Kurchatov**	**77.44**	**324**	*e*P	**P**	**17 59 28.0**	**-0.1**
BVAR	**Borovoye Array**	**83.02**	**324**	P	**P**	**17 59 58.1**	**+0.5**
	3.4nm,0.6s,mb4.5,baz=101,slow=7.3,SNR=18						
BRVK	**Borovoye**	**83.09**	**324**	P	**P**	**17 59 58.7**	**+0.6**
ZRNK	**Zerenda**	**83.80**	**324**	*e*P	**P**	**18 00 02.0**	**+0.4**
ILAR	**Eielson Array**	**85.29**	**24**	P	**P**	**18 00 07.5**	**-1.3**
	0.5nm,0.7s,mb3.7,baz=269,slow=5.3,SNR=4.4						
QSPA	**South Pole Qui**	**85.84**	**180**	*e*P	**P**	**18 00 10.9**	**-0.3**
	2.7nm,0.7s,mb4.6						
QSPA				*e*	pP	18 00 29.3	+2.1

*NEIC **21** 18:20:00.6,37.85N×20.68E,h15km,MD3.5(ATH),After ATH.*
*ATH **21** 18:20:00.6,37.85N×20.68E,h15km±1km,MD3.5/5*
ISC 21 18:20:00.4±1.3,37.79N±0.07×20.68E±0.08,h5km,n10, σ0§69/14,1C,Ionian Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
VLS	**Valsamata**	**0.39**	**350**	⇑*i*PB	**Pg**	**18 20 07.6**	**-0.7**
VLS				*e*SB	**Sg**	**18 20 12.9**	**-0.6**
RLS	**Riolos of Patr**	**0.68**	**67**	*e*PB	**Pg**	**18 20 13.0**	**-1.0**
RLS				*e*SN	**Sg**	**18 20 22.8**	**-0.3**
ITM	**Ithomi**	**1.17**	**121**	*e*PN	**Pn**	**18 20 23.5**	**+0.2**
EVR	**Evrytania**	**1.43**	**38**	*e*PN	**Pn**	**18 20 26.3**	**-0.8**
IGT	**Igoumenitsa**	**1.76**	**351**	*e*P	**Pn**	**18 20 31.6**	**-0.2**
IGT				*e*S	**Sn**	**18 20 56.1**	**+1.3**
AGG	**Agios Georgios**	**1.79**	**46**	*e*P	**Pn**	**18 20 33.4**	**+1.2**
AGG				*e*S	**Sn**	**18 20 56.2**	**+0.6**
LKR	**Lokris**	**2.02**	**64**	*e*PN	**Pn**	**18 20 36.2**	**+0.7**
KEK	**Kerkira**	**2.04**	**341**	*e*PN	**Pn**	**18 20 35.7**	**-0.1**
XOR	**Xorichti**	**2.52**	**51**	*e*P	**Pn**	**18 20 43.0**	**+0.3**
AOS	**Alonnisos**	**2.87**	**60**	*e*P	**Pn**	**18 20 47.2**	**-0.5**

*NEIC **21** 18:53:20.7±3.5,18.12S×178.31W,h493km±38km,mb4.1/3, Error ellipse: s-maj=17.5km s-min=12.2km az=77.0*
*IDC **21** 18:53:23.1±2.2,18.21S×178.35W,h519km±24km, mb3.6/16,mb1 3.8/16,mb1mx3.7/19,Error ellipse: s-maj=17.2km s-min=10.1km az=151.0*
ISC 21 18:53:20.0±2.5,18.25S±0.09×178.35W±0.10, h494km±28km,n66,σ1§10/36,mb4.0/19,5C,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**20.32**	**190**	P	**P**	**18 57 19.7**	**-2.8**
	7.0nm,0.4s,baz=14,slow=7.1,SNR=12						
URZ				S	**S**	**19 00 36.1**	**-1.8**
	8.6nm,0.8s,baz=183,slow=16,SNR=3.6						
RPZ	**Rata Peaks**	**26.91**	**197**	P	**P**	**18 58 21.3**	**-0.8**
	3.7nm,0.4s,mb4.1,baz=74,slow=13,SNR=6.3						
ARMA	**Armidale**	**29.82**	**240**	⇑*i*P	**P**	**18 58 48.7**	**+1.1**
PMG	**Port Moresby**	**34.58**	**280**	P	**P**	**18 59 28.2**	**+0.3**
	9.3nm,0.7s,mb4.3,baz=110,slow=7.0,SNR=2.2						
TOO	**Toamgi**	**37.00**	**231**	*e*P	**P**	**18 59 48.7**	**+0.9**
	8.1nm,0.7s,mb4.3						
STKA	**Stephens Creek**	**38.52**	**242**	*e*P	**P**	**19 00 01.5**	**+1.2**
	6.7nm,0.5s,mb4.3						
STKA	**Stephens Creek**	**38.52**	**242**	P	**P**	**19 00 01.6**	**+1.3**
	9.6nm,0.6s,mb4.4,baz=90,slow=9.8,SNR=44						
WB2	**Warramunga Arr**	**44.62**	**260**	*e*P	**P**	**19 00 48.4**	**-0.8**
WRA	**Warramunga Arr**	**44.63**	**260**	P	**P**	**19 00 48.8**	**-0.5**
	3.5nm,0.8s,mb3.9,baz=98,slow=6.7,SNR=58						
WRA				PcP	PcP	19 02 21.4	-0.6
	1.2nm,0.9s,baz=89,slow=3.5,SNR=4.8						
WRA				S	**S**	**19 06 45.9**	**-3.2**
	1.0nm,1.0s,baz=92,slow=14,SNR=5.3						
AS12	**Alice Springs**	**44.75**	**255**	⇑*i*P	**P**	**19 00 50.3**	**+0.1**
	10nm,0.6s,mb4.4						
ASAR	**Alice Springs**	**44.75**	**255**	P	**P**	**19 00 50.5**	**+0.2**
	16nm,0.5s,mb4.7,baz=90,slow=8.4,SNR=621						
ASAR				PcP	PcP	19 02 21.8	-0.7
	2.2nm,0.6s,baz=92,slow=4.5,SNR=4.7						
ASAR				S	**S**	**19 06 50.5**	**-0.3**
	1.7nm,0.8s,baz=88,slow=16,SNR=18						
KAKA	**Kakadu**	**47.68**	**269**	*e*P	**P**	**19 01 12.3**	**-0.5**
	10nm,0.5s,mb4.4						
NWAO	**Narrogin (SRO)**	**59.10**	**242**	P	**P**	**19 02 33.6**	**-0.4**
SBA	**Scott Base**	**60.08**	**184**	*e*P	**P**	**19 02 40.6**	**+0.6**
	12nm,1.2s,mb4.2						
VNDA	**Vanda**	**60.11**	**185**	P	**P**	**19 02 40.0**	**-0.1**
	2.3nm,0.6s,mb3.8,baz=353,slow=7.0,SNR=40						
VNDA	**Vanda**	**60.11**	**185**	*e*P	**P**	**19 02 39.9**	**-0.3**
	1.3nm,0.6s,mb3.5						
CASY	**Casey**	**65.85**	**205**	⇑*i*P	**P**	**19 03 16.3**	**-0.8**
QSPA	**South Pole Qui**	**71.80**	**180**	*e*P	**P**	**19 03 52.7**	**0.0**
	14nm,0.7s,mb4.6						
YBH	**Yreka Blue Hor**	**78.75**	**39**	P	**P**	**19 04 31.7**	**-0.1**
	0.5nm,0.3s,mb3.5,baz=198,slow=3.5,SNR=3.2						
NVAR	**Mina Array Bea**	**79.63**	**44**	P	**P**	**19 04 36.1**	**-0.4**
	2.7nm,1.2s,mb3.7,baz=230,slow=10.0,SNR=4.3						
MAW	**Mawson**	**85.56**	**200**	P	**P**	**19 04 56.1**	**+0.2**
	1.8nm,0.5s,mb3.9,baz=97,slow=8.1,SNR=6.5						
TXAR	**Lajitas Array**	**86.13**	**58**	P	**P**	**19 05 09.8**	**+0.5**
	2.9nm,0.7s,mb4.0,baz=225,slow=7.1,SNR=6.5						
TXAR	**Lajitas Array**	**86.13**	**58**	P	**P**	**19 05 09.8**	**+0.5**
USHA	**Ushuaia**	**86.18**	**147**	P	**P**	**19 05 09.3**	**+0.5**
	12nm,1.3s,mb4.4,baz=238,slow=5.7,SNR=4.1						
ILAR	**Eielson Array**	**86.21**	**13**	P	**P**	**19 05 07.3**	**-1.4**
	0.9nm,0.4s,mb3.7,baz=228,slow=5.1,SNR=16						
PDAR	**Pinedale Array**	**87.56**	**43**	P	**P**	**19 05 15.3**	**-0.4**
	0.7nm,0.6s,mb3.6,baz=217,slow=2.1,SNR=7.7						
SNAA	**Sanae**	**90.25**	**179**	*e*P	**P**	**19 05 26.5**	**-1.1**
VNA3	**Neumayer Olymp**	**90.39**	**176**		**P**	**19 05 30.6**	**+2.4**
VNA2	**Neumayer--Watz**	**90.83**	**177**	⇑*i*	**P**	**19 05 32.8**	**+2.5**
VNA1	**Neumayer--Stat**	**91.06**	**177**	⇑*i*	**P**	**19 05 34.7**	**+3.4**
INK	**Inuvik**	**92.20**	**15**	P	**P**	**19 05 34.8**	**-1.8**
	0.4nm,0.3s,mb3.8,baz=237,slow=5.2,SNR=4.8						
ULN	**Ulaanbaatar**	**93.45**	**319**	*e*P	**P**	**19 05 43.9**	**+1.1**
SONM	**Songino Array**	**93.85**	**319**	P	**P**	**19 05 45.9**	**+1.2**
	0.3nm,0.6s,mb3.5,baz=132,slow=5.8,SNR=3.9						
ZRNK	**Zerenda**	**117.99**	**321**	*e*PKP	PKPdf	19 11 10.0	+0.3
ARCES	**ARCESS Array B**	**126.66**	**350**	PKP	PKPdf	19 11 25.7	-0.3
	1.2nm,0.5s,baz=75,slow=0.6,SNR=7.9						
ARCES	**ARCESS Array B**	**126.66**	**350**	PKP	PKPdf	19 11 25.7	-0.3
FINES	**FINESS Array B**	**133.53**	**344**	PKhKP		19 11 34.6	
	2.3nm,0.9s,baz=117,slow=4.3,SNR=4.7						
FINES				PKP	PKPdf	19 11 39.1	0.0
	5.6nm,1.2s,baz=90,slow=2.8,SNR=4.1						
AKASG	**Malin Array Be**	**140.89**	**332**	SKPbc		19 14 41.2	
	0.7nm,0.6s,baz=45,slow=4.0,SNR=4.8						
BRTR	**Keskin Array B**	**145.06**	**314**	PKPbc	PKPbc	19 12 02.8	+1.5
	1.6nm,0.6s,baz=128,slow=4.5,SNR=9.6						
CRVS	**Cervenica-Dubn**	**145.48**	**337**	*e*PKP	PKPdf	19 12 03.7	+2.9
CLZ	**Clausthal**	**145.78**	**350**	*e*PKPab	PKPab	19 12 04.6	-2.2
CLL	**Collm**	**145.81**	**347**	*i* PKP1	PKPbc	19 12 04.5	+1.8
UPC	**Upice**	**145.84**	**344**	*e*PKP	PKPdf	19 12 06.5	+5.1
DPC	**Dobruska-Polom**	**145.90**	**343**	*e*PKP	PKPdf	19 12 05.0	+3.5
BRG	**Berggiesshubel**	**146.01**	**346**	*e*P	PKPdf	19 12 00.9	-0.7
BRG				*e*		19 12 06.5	
PVCC	**Panska Ves**	**146.19**	**345**	*e*PKP	PKPdf	19 12 07.2	+5.3
PRU	**Pruhonice**	**146.69**	**345**	*e*PKP	PKPdf	19 12 08.8	+6.1
	4.5nm,0.6s						
VYHS	**Vyhne**	**146.76**	**339**	*e*PKP	PKPdf	19 12 07.8	+4.9
VYHS				*e*		19 12 10.2	
VYHS				*e*		19 14 04.9	
NKC	**Novy Kostel**	**146.94**	**347**	*e*PKP	PKPdf	19 12 09.5	+6.4
GRA1	**Grafenberg Arr**	**147.71**	**348**	*e*PKPab	PKPab	19 12 13.1	-1.3
KHC	**Kasperske Hory**	**147.72**	**345**	*e*PKP	PKPdf	19 12 09.3	+4.9
KHC				*ex*	x	19 12 13.5	
GERES	**GERESS Array B**	**147.96**	**345**	PKPbc	PKPdf	19 12 10.2	+5.4
	1.1nm,0.4s,baz=24,slow=2.8,SNR=17						
GIVF	**Givet**	**148.13**	**356**	*e*PKP1	PKPdf	19 12 09.8	+4.8
FLN	**La Foliniere**	**149.52**	**3**	*e*PKP1	PKPdf	19 12 13.0	+5.7
CDF	**Champ du Feu**	**149.57**	**353**	*e*PKP1	PKPdf	19 12 13.4	+6.0
	2.4nm,0.4s						
LDF	**La Druitiere**	**149.70**	**2**	*e*PKP1	PKPdf	19 12 13.4	+5.8
MEZF	**Maizieres J'vi**	**149.70**	**356**	*e*PKP1	PKPdf	19 12 14.2	+6.6
GRR	**Gorron**	**149.87**	**3**	*e*PKP1	PKPdf	19 12 14.0	+6.1
HAU	**Haudompre**	**150.08**	**354**	*e*PKP1	PKPdf	19 12 14.5	+6.3
HINF	**Hinteralfeld**	**150.21**	**353**	*e*PKP1	PKPdf	19 12 14.7	+6.3
SSF	**Saint Saulge**	**151.23**	**357**	*e*PKP1	PKPdf	19 12 17.3	+7.3
	7.5nm,0.7s						
CABF	**La Chapelle**	**151.49**	**354**	*e*PKP1	PKPdf	19 12 18.5	+8.2
AVF	**Avril sur Loir**	**151.51**	**358**	*e*PKP1	PKPdf	19 12 17.5	+7.1
SMF	**Signal de Mont**	**151.63**	**357**	*e*PKP1	PKPdf	19 12 17.8	+7.3
MFF	**Saint Martin d**	**151.69**	**3**	*e*PKP1	PKPdf	19 12 18.0	+7.4
	7.3nm,0.6s						
BGF	**Bois d'Agland**	**151.76**	**358**	*e*PKP1	PKPdf	19 12 16.8	+6.1

IDC 21 19:05:47.3±2.3,5.89S×130.28E,mb3.7/1,mb1 4.0/4, mb1mx3.7/14,ML3.6/3,Error ellipse: s-maj=92.2km s-min=28.6km az=77.0,Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**12.95**	**200**	Pn	P	19 08 53.6	-1.8
	0.3nm,0.3s,baz=6.5,slow=9.7,SNR=32						
FITZ				Sn	S	19 11 06.5	-15
	0.4nm,0.3s,baz=191,slow=16,SNR=3.8						
WRA	**Warramunga Arr**	**14.51**	**165**	Pn	P	19 09 13.1	-3.1
	0.3nm,0.3s,baz=347,slow=13,SNR=27						
WRA				Sn	S	19 11 44.1	-15
	0.6nm,0.3s,baz=343,slow=22,SNR=7.5						
ASAR	**Alice Springs**

*NEIC **21** 19:33:01.2, 15.60N×97.51W, h22km, MD4.3(MEX), After MEX.*

*MEX **21** 19:33:01.2±0.6, 15.60N×97.51W, h23km±14km, MD4.3*
ISC 21 19:32:59.5±1.4, 15.64N±0.09×97.55W±0.04, h51km±27km, n10, σ0°59/18, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
PNIG	**Pinotepa**	**0.93**	**323**	*i* P		**P**	**19 33 16.4**	**0.0**
PNIG				*i* S		**S**	**19 33 29.1**	**0.0**
VHO	**Vista Hermosa**	**1.62**	**29**	*i* P		**P**	**19 33 26.3**	**0.0**
VHO				*i* S		**S**	**19 33 46.5**	**+0.5**
OXX	**Oaxaca**	**1.63**	**29**	*i* P		**P**	**19 33 26.0**	**-0.4**
OXX				*i* S		**S**	**19 33 45.5**	**-0.9**
ACX	**Acapulco**	**2.58**	**298**	*eP*		**P**	**19 33 40.0**	**+0.2**
ACX				*eS*		**S**	**19 34 18.0**	**+7.9**
CMIG	**Matias Romero**	**2.93**	**60**	*i* P		**P**	**19 33 44.7**	**-0.2**
CMIG				*i* S		**S**	**19 34 18.7**	**-0.4**
CAIG	**El Cayaco**	**2.96**	**299**	*i* P		**P**	**19 33 44.7**	**-0.5**
CAIG				*i* S		**S**	**19 34 18.9**	**-0.8**
IISM	**Ciudad Serdan**	**3.33**	**3**	*eP*		**P**	**19 33 52.0**	**+1.6**
POHV	**Veracruz**	**3.42**	**4**	*eP*		**P**	**19 33 56.5**	**+4.9**
YAIG	**Yautepec**	**3.51**	**336**	*i* P		**P**	**19 33 53.9**	**+0.9**
YAIG				*i* S		**S**	**19 34 33.8**	**+0.1**
PPM	**Popocatepetl**	**3.56**	**343**	*eP*		**P**	**19 33 53.7**	**+0.1**
PPM				*i* S		**S**	**19 34 34.5**	**-0.3**

*MAN **21** 19:34:28.4, 7.69N×126.06E, h1km, mb4.8, ML3.7, MS3.7*
*IDC **21** 19:34:34.8±6.8, 7.64N×126.23E, h76km±64km, mb3.9/11, mb1 4.0/12, mb1mx3.8/22, ML4.1/1, MS3.2/1, Ms1 3.2/1, ms1mx2.5/30, Error ellipse: s-maj=46.0km s-min=13.4km az=76.0*
*NEIC **21** 19:34:35.8±3.0, 7.63N×126.21E, h88km±29km, mb4.3/3, Error ellipse: s-maj=21.4km s-min=5.6km az=78.0*
ISC 21 19:34:25.4±0.4, 7.55N±0.03×126.42E±0.04, h10km, n35, σ1°9°20/42, mb4.2/12, 7C-5D, Mindanao

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
BIPH	**Bislig**	**0.63**	**355**	⇓*eP*		**Pb**	**19 34 38.5**	**+0.6**
BIPH				*i* S		**Sg**	**19 34 47.4**	**+1.0**
KCP	**Kidapawan**	**1.43**	**248**	⇓*iP*		**Pn**	**19 34 51.6**	**+0.3**
KCP				*i* S		**Sb**	**19 35 10.4**	**+0.7**
BUTP	**Butuan**	**1.61**	**331**	⇑*eP*		**Pn**	**19 34 54.6**	**+0.5**
BUTP				*eS*		**Sn**	**19 35 16.1**	**+1.1**
CGP	**Cagayan de Oro**	**1.93**	**298**	⇓*eP*		**Pn**	**19 34 58.3**	**-0.3**
CTBH	**Cotabato--PC H**	**2.18**	**261**	⇑*eP*		**Pn**	**19 35 01.8**	**-0.4**
CTBH				*i* S		**Sn**	**19 35 30.1**	**+0.6**
MSLP	**Maasin**	**2.99**	**329**	⇑*eP*		**Pn**	**19 35 14.3**	**+0.5**
PAGZ	**Pagadian**	**3.02**	**276**	⇑*eP*		**Pn**	**19 35 13.3**	**-0.9**
DCPH	**Dipolog City**	**3.20**	**289**	⇓*eP*		**Pn**	**19 35 17.9**	**+1.1**
TBP	**Tagbilaran**	**3.30**	**310**	*eP*		**Pn**	**19 35 17.2**	**-1.0**
TBP				*eS*		**Sn**	**19 35 54.5**	**-3.4**
LLP	**Lapu-Lapu**	**3.66**	**319**	⇓*eP*		**Pn**	**19 35 22.9**	**-0.4**
LLP				*eS*		**Sn**	**19 36 06.6**	**-0.4**
PLP	**Palo**	**3.86**	**339**	*i* P		**Pn**	**19 35 27.3**	**+1.2**
OCLP	**Ormoc**	**3.91**	**333**	⇑*eP*		**Pn**	**19 35 27.5**	**+0.7**
BESP	**Borongan**	**4.13**	**347**	⇑*eP*		**Pn**	**19 35 31.6**	**+1.5**
BESP				*eS*		**Sn**	**19 36 24.6**	**+5.6**
CNP	**Catarman**	**5.22**	**341**	⇑*eP*		**Pn**	**19 35 46.8**	**+1.4**
CNP				*eS*		**Sn**	**19 36 50.6**	**+4.2**
JOW	**Kunigami**	**19.25**	**5**	P		**P**	**19 38 52.8**	**+0.1**
	1.0nm,0.3s,baz=207,slow=9.8,SNR=5.0							
KAKA	**Kakadu**	**20.98**	**164**	*eP*		**P**	**19 39 10.1**	**-1.3**
	14nm,0.6s							
FITZ	**Fitzroy Crossi**	**25.50**	**182**	*eP*		**P**	**19 39 56.7**	**+0.9**
	9.5nm,1.1s,mb4.2							
FITZ	**Fitzroy Crossi**	**25.50**	**182**	P		**P**	**19 39 56.8**	**+1.1**
	5.5nm,0.6s,mb4.2,baz=9.3,slow=9.8,SNR=9.0							
JNU	**Nakatsue**	**25.77**	**9**	LR		LR	19 48 47.6	
	comp=Z,56nm,21.9s,baz=55,slow=33							
WRA	**Warramunga Arr**	**28.41**	**164**	P		**P**	**19 40 23.4**	**+0.9**
	1.4nm,0.6s,mb3.8,baz=343,slow=10,SNR=8.3							
WB2	**Warramunga Arr**	**28.42**	**164**	*eP*		**P**	**19 40 23.6**	**+1.2**
ASAR	**Alice Springs**	**31.88**	**167**	P		**P**	**19 40 54.0**	**+0.8**
	1.0nm,0.4s,mb4.0,baz=341,slow=7.2,SNR=13							
FORT	**Forrest**	**38.15**	**178**	*eP*		**P**	**19 41 47.4**	**+0.7**
	51nm,0.7s,mb5.4							
NWAO	**Narrogin (SRO)**	**41.19**	**192**	P		**P**	**19 42 12.6**	**+0.6**
	18nm,1.0s,mb4.7,baz=45,slow=8.6,SNR=3.6							
STKA	**Stephens Creek**	**41.80**	**160**	*eP*		**P**	**19 42 17.9**	**+0.9**
	8.1nm,1.9s,mb4.0							
STKA	**Stephens Creek**	**41.80**	**160**	P		**P**	**19 42 17.9**	**+0.9**
	1.9nm,0.5s,mb4.0,baz=341,slow=9.9,SNR=8.2							
MKAR	**Makanchi Array**	**54.28**	**324**	P		**P**	**19 43 51.5**	**-2.4**
	6.2nm,0.9s,mb4.5,baz=125,slow=8.4,SNR=31							
MKAR				PcP		PcP	19 44 56.3	-1.8
	2.5nm,0.8s,baz=125,slow=4.2,SNR=6.8							
ZAL	**Zalesovo**	**57.07**	**332**	P		**P**	**19 44 11.4**	**-2.6**
	0.8nm,0.6s,mb3.9,baz=330,slow=4.6,SNR=5.8							
KURK	**Kurchatov**	**58.38**	**326**	*eP*		**P**	**19 44 20.8**	**-2.5**
BVAR	**Borovoye Array**	**63.98**	**326**	P		**P**	**19 44 59.2**	**-1.9**
	2.0nm,0.9s,mb4.2,baz=121,slow=8.4,SNR=7.1							
BRVK	**Borovoye**	**64.05**	**326**	*eP*		**P**	**19 44 58.9**	**-2.6**
ZRNK	**Zerenda**	**64.72**	**326**	*eP*		**P**	**19 45 03.0**	**-2.9**
ILAR	**Eielson Array**	**81.81**	**26**	P		**P**	**19 46 45.2**	**-0.4**
	0.5nm,1.0s,mb3.4,baz=251,slow=5.0,SNR=4.3							
VNDA	**Vanda**	**87.23**	**173**	P		**P**	**19 47 12.4**	**-0.3**
	0.7nm,0.7s,mb4.0,baz=318,slow=7.6,SNR=6.6							
FINES	**FINESS Array B**	**88.34**	**332**	P		**P**	**19 47 16.7**	**-1.6**
	1.7nm,0.8s,mb4.3,baz=76,slow=5.1,SNR=4.7							

*MAN **21** 19:46:56.6, 7.66N×126.07E, h5km, mb4.8, ML3.7, MS3.7*
*BJI **21** 19:46:58.4, 8.00N×126.92E, h64km, mb4.7*
*IDC **21** 19:46:59.8±5.8, 7.59N×126.30E, h55km±54km, mb4.2/17, mb1 4.3/18, mb1mx4.2/25, ML4.2/1, MS3.8/9, Ms1 3.8/9, ms1mx3.4/28, Error ellipse: s-maj=34.3km s-min=11.7km az=79.0*
*NEIC **21** 19:47:01.8±3.0, 7.59N×126.39E, h74km±28km, mb4.7/6, Error ellipse: s-maj=20.7km s-min=7.1km az=76.0*
ISC 21 19:46:56.2±0.9, 7.54N±0.03×126.38E±0.06, h39km±8km, n56, σ1°9°22/63, mb4.4/21, MS3.8/7, 7C-4D, Mindanao

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
KCP	**Kidapawan**	**1.39**	**248**	⇓*eP*		**P**	**19 47 18.1**	**-1.4**
KCP				*i* S		**S**	**19 47 37.8**	**+1.0**
BUTP	**Butuan**	**1.61**	**332**	⇑*eP*		**P**	**19 47 21.8**	**-0.8**
BUTP				*eS*		**S**	**19 47 44.3**	**+2.0**
CGP	**Cagayan de Oro**	**1.90**	**299**	⇓*eP*		**P**	**19 47 25.8**	**-1.0**
CGP				*i* S		**S**	**19 47 50.1**	**+0.4**
GSPH	**General Santos**	**2.03**	**225**	*eP*		**P**	**19 47 26.6**	**-1.9**
GSPH				*eS*		**S**	**19 47 54.1**	**+1.2**
CTBH	**Cotabato--PC H**	**2.14**	**262**	⇓*iP*		**P**	**19 47 29.1**	**-1.1**
CTBH				*i* S		**S**	**19 47 56.4**	**+0.7**
MSLP	**Maasin**	**2.98**	**330**	⇑*eP*		**P**	**19 47 41.4**	**-0.9**
MSLP				*eS*		**S**	**19 48 22.5**	**+5.4**
PAGZ	**Pagadian**	**2.99**	**276**	⇑*eP*		**P**	**19 47 40.7**	**-1.6**
PAGZ				*eS*		**S**	**19 48 21.3**	**+4.0**
DCPH	**Dipolog City**	**3.17**	**289**	⇓*eP*		**P**	**19 47 45.5**	**+0.6**
DCPH							19 48 23.4	
TBP	**Tagbilaran**	**3.28**	**311**	*eP*		**P**	**19 47 44.0**	**-2.4**
TBP				*eS*		**S**	**19 48 21.2**	**-3.5**
PLP	**Palo**	**3.86**	**339**	*eP*		**P**	**19 47 54.9**	**+0.2**
OCLP	**Ormoc**	**3.90**	**334**	⇑*eP*		**P**	**19 47 55.2**	**-0.1**
OCLP				*eS*		**S**	**19 48 42.2**	**+1.7**
BESP	**Borongan**	**4.14**	**347**	⇑*eP*		**P**	**19 48 00.1**	**+1.5**
BESP				*eS*		**S**	**19 48 50.5**	**+4.0**
CNP	**Catarman**	**5.22**	**341**	⇑*eP*		**P**	**19 48 14.1**	**+0.2**
CNP				*eS*		**S**	**19 49 18.7**	**+5.0**
PVCP	**Virac**	**6.40**	**340**	⇑*eP*		**P**	**19 48 32.9**	**+2.4**
PVCP				*eS*		**S**	**19 49 46.9**	**+3.6**
TGY	**Tagaytay City**	**8.43**	**321**	LR		LR	19 52 55.0	
	comp=Z,508nm,20.2s,baz=104,slow=43							
JOW	**Kunigami**	**19.27**	**5**	P		**P**	**19 51 20.6**	**+0.1**
	1.1nm,0.3s,baz=168,slow=11,SNR=8.2							
JOW				LR		LR	19 58 27.3	
	comp=Z,112nm,20.3s,baz=211,slow=36							
JOW	**Kunigami**	**19.27**	**5**	P		**P**	**19 51 20.6**	**+0.1**
JOW				LR		LR	19 58 27.3	
KAKA	**Kakadu**	**20.98**	**163**	*eP*		**P**	**19 51 39.6**	**+1.0**
	23nm,0.6s							
CBIJ	**Chichi jima**	**24.56**	**36**	LR		LR	19 59 43.4	
	comp=Z,230nm,20.3s,MS3.7,baz=290,slow=31							
FITZ	**Fitzroy Crossi**	**25.49**	**182**	*eP*		**P**	**19 52 23.6**	**+0.8**
	8.8nm,1.0s,mb4.2							
FITZ	**Fitzroy Crossi**	**25.49**	**182**	P		**P**	**19 52 24.0**	**+1.2**
	24nm,1.2s,mb4.6,baz=360,slow=8.7,SNR=19							
JNU	**Nakatsue**	**25.80**	**9**	LR		LR	20 01 35.9	
	comp=Z,131nm,19.8s,MS3.5,baz=223,slow=34							
JHJ	**Hachijo jima 2**	**28.32**	**24**	LR		LR	20 01 35.6	
	comp=Z,494nm,19.8s,MS4.1,baz=314,slow=31							
WRAB	**Tennant Creek**	**28.40**	**164**	*eP*		**P**	**19 52 49.9**	**+0.4**
WRA	**Warramunga Arr**	**28.41**	**164**	P		**P**	**19 52 49.8**	**+0.3**
	1.2nm,1.0s,mb3.5,baz=332,slow=11,SNR=13							
WB2	**Warramunga Arr**	**28.41**	**164**	*eP*		**P**	**19 52 50.1**	**+0.6**
ASAR	**Alice Springs**	**31.87**	**167**	P		**P**	**19 53 20.1**	**-0.1**
	1.6nm,0.5s,mb4.1,baz=343,slow=7.2,SNR=35							
LZH	**Lanzhou**	**35.09**	**327**	*eP*		**P**	**19 53 47.5**	**-0.4**
LZH					AMB	AMB		
	comp=Z,42nm,1.5s,mb5.2							
ASAJ	**Asahikawa**	**39.09**	**19**	P		**P**	**19 54 20.6**	**-0.8**
	comp=Z,12nm,0.8s,mb4.6,baz=240,slow=8.1,SNR=4.7							
ASAJ					LR	LR	20 08 28.0	
	comp=Z,278nm,19.2s,MS4.1,baz=192,slow=33							
LSA	**Lhasa**	**39.75**	**308**	P		**P**	**19 54 29.8**	**+2.9**
LSA	**Lhasa**	**39.75**	**308**	*eP*		**P**	**19 54 29.9**	**+2.9**
	comp=Z,15nm,1.4s,mb4.5							
NWAO	**Narrogin (SRO)**	**41.17**	**192**	P		**P**	**19 54 38.1**	**-0.6**
	comp=Z,19nm,1.0s,mb4.7,baz=27,slow=6.8,SNR=4.4							
NWAO	**Narrogin (SRO)**	**41.17**	**192**	P		**P**	**19 54 38.9**	**+0.2**
STKA	**Stephens Creek**	**41.80**	**160**	*eP*		**P**	**19 54 44.9**	**+0.9**
	comp=Z,2.9nm,0.4s,mb4.3							
STKA	**Stephens Creek**	**41.80**	**160**	P		**P**	**19 54 45.0**	**+1.0**
	comp=Z,3.8nm,0.5s,mb4.3,baz=329,slow=7.2,SNR=22							
SONM	**Songino Array**	**43.61**	**340**	P		**P**	**19 54 58.3**	**-0.2**
	comp=Z,1.5nm,1.1s,mb3.6,baz=164,slow=9.0,SNR=5.8							
WMQ	**Urumqi**	**49.45**	**323**	P		**P**	**19 55 44.3**	**-0.3**
MKAR	**Makanchi Array**	**54.27**	**324**	P		**P**	**19 56 19.8**	**-1.0**
	comp=Z,30nm,1.2s,mb5.1,baz=116,slow=7.0,SNR=52							
MKAR					PcP	PcP	19 57 23.3	-1.2
	comp=Z,3.9nm,0.8s,baz=124,slow=4.4,SNR=7.7							
MKAR					LR	LR	20 20 52.1	
	comp=Z,84nm,20.2s,MS3.8,baz=238,slow=38							
MKAR	**Makanchi Array**	**54.27**	**324**	P		**P**	**19 56 19.8**	**-1.0**
MKAR					PcP	PcP	19 57 23.3	-1.2
MKAR					LR	LR	20 20 52.1	
ZAL	**Zalesovo**	**57.07**	**332**	P		**P**	**19 56 39.3**	**-1.5**
	comp=Z,1.8nm,0.9s,mb4.1,baz=250,slow=8.3,SNR=12							
ZAL					LR	LR	20 24 06.6	
	comp=Z,76nm,19.2s,MS3.8,baz=94,slow=39							
KURK	**Kurchatov**	**58.38**	**326**	*eP*		**P**	**19 56 48.2**	**-1.9**
BVAR	**Borovoye Array**	**63.97**	**326**	P		**P**	**19 57 26.5**	**-1.3**
	comp=Z,3.5nm,1.0s,mb4.3,baz=135,slow=6.3,SNR=17							
BVAR					LR	LR	20 25 27.3	
	comp=Z,63nm,21.4s,MS3.8,baz=65,slow=36							
BRVK	**Borovoye**	**64.04**	**326**	*eP*		**P**	**19 57 26.0**	**-2.2**
TIXI	**Tiksi**	**64.06**	**1**	P		**P**	**19 57 25.7**	**-2.3**
	comp=Z,0.8nm,0.3s,mb4.2							
ZRNK	**Zerenda**	**64.71**	**326**	*eP*		**P**	**19 57 30.7**	**-1.9**
ILAR	**Eielson Array**	**81.84**	**26**	P		**P**	**19 59 12.8**	**+0.3**
	comp=Z,0.7nm,0.8s,mb3.7,baz=242,slow=5.9,SNR=6.2							
INK	**Inuvik**	**86.77**	**22**	*eP*		**P**	**19 59 38.0**	**+0.9**
VNDA	**Vanda**	**87.22**	**173**	P		**P**	**19 59 40.5**	**+1.2**
	comp=Z,1.3nm,0.8s,mb4.2,baz=317,slow=4.7,SNR=9.7							
VNDA	**Vanda**	**87.22**	**173**	P		**P**	**19 59 39.8**	**+0.6**
	comp=Z,1.1nm,0.8s,mb4.1							
FINES	**FINESS Array B**	**88.33**	**332**	P		**P**	**19 59 44.5**	**-0.3**
	comp=Z,1.4nm,0.6s,mb4.4,baz=108,slow=6.0,SNR=9.8							
AKASG	**Malin Array Be**	**88.74**	**321**	P		**P**	**19 59 46.6**	**-0.4**
	comp=Z,1.7nm,0.6s,mb4.5,baz=68,slow=4.0,SNR=13							
YKA	**Yellowknife Ar**	**96.19**	**24**	P		**P**	**20 00 21.1**	**0.0**
	comp=Z,1.1nm,1.1s,mb4.2,baz=302,slow=5.3,SNR=5.4							
VRAC	**Vranov**	**96.96**	**322**	P		**P**	**20 00 26.4**	**+1.5**
	comp=Z,2.7nm,0.3s,mb5.1,baz=97,slow=7.6,SNR=4.8							
BRG	**Berggiesshubel**	**97.99**	**324**	*eP*		**P**	**20 00 31.0**	**+1.5**
	comp=Z,6.0nm,1.2s,mb5.0							
GERES	**GERESS Array**	**98.90**	**322**	P		**P**	**20 00 34.5**	**+0.8**
	comp=Z,1.3nm,1.1s,mb4.4,baz=72,slow=4.2,SNR=8.4							
GRA1	**Grafenberg Arr**	**100.06**	**323**	*eP*		P	20 00 39.0	+0.1
	comp=Z,4.0nm,1.3s							

*IDC **21** 19:50:54.2±1.8, 59.17N×30.89W, mb3.8/7, mb1 3.9/8, mb1mx3.6/25, ML3.4/1, MS3.4/7, Ms1 3.4/7, ms1mx3.1/34, Error ellipse: s-maj=40.5km s-min=25.8km az=30.0*
*NEIC **21** 19:50:55.5±0.9, 59.12N×30.91W, h10km, mb4.3/3, Error ellipse: s-maj=21.0km s-min=10.3km az=218.0*
ISC 21 19:50:54.2±1.3, 59.2N±0.2×30.9W±0.3, h10km, n19, σ0°71/14, mb3.8/9, MS3.3/6, Reykjanes Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
EKA	**Eskdalemuir Ar**	**15.45**	**93**	Pn		**P**	**19 54 33.9**	**+0.4**
	0.1nm,0.3s,baz=293,slow=13,SNR=2.6							
SCHQ	**Schefferville**	**19.87**	**273**	LR		LR	20 01 35.2	
	comp=Z,117nm,20.4s,baz=305,slow=32							
FLN	**La Foliniere**	**20.54**	**107**	*eP*		**P**	**19 55 37.1**	**+2.0**
	50nm,1.2s							
NOA	**NORSAR Array B**	**20.80**	**67**	LR		LR	20 02 40.8	
	comp=Z,51nm,19.7s,MS2.9,baz=220,slow=34							
BAIF	**Baives**	**22.06**	**99**	*eP*		**P**	**19 55 50.2**	**-0.3**
	18nm,0.9s,mb4.2							
GIVF	**Givet**	**22.34**	**98**	*eP*		**P**	**19 55 51.9**	**-1.5**
AVF	**Avril sur Loir**	**23.78**	**106**	*eP*		**P**	**19 56 07.0**	**-0.3**
	24nm,1.3s,mb4.2							
SMF	**Signal de Mont**	**24.12**	**106**	*eP*		**P**	**19 56 10.9**	**+0.3**
CDF	**Champ du Feu**	**24.66**	**99**	*eP*		**P**	**19 56 16.0**	**+0.2**
ARCES	**ARCESS Array B**	**25.46**	**43**	P		**P**	**19 56 23.2**	**0.0**
	2.9nm,0.8s,mb3.9,baz=278,slow=8.6,SNR=5.8							
ESDC	**Sonseca Array**	**25.96**	**127**	P		**P**	**19 56 27.6**	**-0.6**
	0.2nm,0.5s,mb2.9,baz=322,slow=11,SNR=2.7							
FINES	**FINESS Array B**	**27.53**	**61**	P		**P**	**19 56 42.8**	**+0.4**
	6.7nm,1.1s,mb4.2,baz=323,slow=9.5,SNR=5.3							
FINES					LR	LR	20 07 07.3	
	comp=Z,37nm,19.6s,MS3.0,baz=358,slow=35							
SADO	**Sadowa**	**32.22**	**265**	LR		LR	20 09 04.1	
	comp=Z,128nm,18.6s,MS3.6,baz=300,slow=34							
ULM	**Lac du Bonnet**	**37.12**	**285**	LR		LR	20 11 16.8	
	comp=Z,65nm,21.9s,MS3.4,baz=297,slow=33							
YKA	**Yellowknife Ar**	**38.20**	**312**	P		**P**	**19 58 15.5**	**+0.4**
	0.5nm,0.9s,mb3.2,baz=57,slow=9.0,SNR=7.2							
YKA					LR	LR	20 13 20.5	
	comp=Z,60nm,19.4s,MS3.4,baz=230,slow=35							
PDAR	**Pinedale Array**	**49.09**	**287**	LR		LR	20 19 43.4	
	comp=Z,84nm,18.6s,MS3.8,baz=14,slow=35							
BVAR	**Borovoye Array**	**51.49**	**49**	P		**P**	**20 00 01.3**	**-0.1**
	0.8nm,0.7s,mb3.8,baz=288,slow=4.6,SNR=4.9							
MKAR	**Makanchi Array**	**61.06**	**46**	P		**P**	**20 01 09.2**	**-0.7**
	3.1nm,1.2s,mb4.3,baz=338,slow=6.5,SNR=6.7							
SONM	**Songino Array**	**67.72**	**30**	P		**P**	**20 01 53.3**	**+0.1**
	0.4nm,0.8s,mb3.5,baz=297,slow=6.4,SNR=4.8							

*MOS **21** 19:55:48.6±0.8, 10.37S×161.37E, h50km, mb5.5/18, Error ellipse: s-maj=19.4km s-min=10.9km az=88.8*
*BJI **21** 19:55:51.1, 10.58S×161.86E, h103km, mB5.2, mb5.2*
*NEIC **21** 19:55:52.9±0.1, 10.39S×161.31E, mb5.2/48, Error ellipse: s-maj=5.9km s-min=4.1km az=117.0*
*IDC **21** 19:55:52.7±0.6, 10.45S×161.38E, h73km±4km, mb4.9/27, mb1 4.9/29, mb1mx4.9/32, MS4.0/15, Ms1 4.0/15, ms1mx3.9/22, Error ellipse: s-maj=14.9km s-min=10.5km az=109.0*
*SYO **21** 19:55:52.9, 10.39S×161.31E, h75km, MB5.2*
*HRVD **21** 19:55:52.9±0.3, 10.41S×161.37E, h85km±2km, MW5.1/69, Centroid moment Tensor Solution. LP body waves: s49,c78;Mantle waves: s69,c120; Half duration: 0 Moment tensor: Scale 10^16 Nm; Mrr-3.79±. 17; Mθθ-0.09±. 16; Mϕϕ3.88±. 17; Mrθ-1.79±. 11; Mϕθ3.17±. 17; Mϕr1.74±. 12; Best double couple: Mo5.56×10^16 NP1:ϕs58°, δ50°, λ-44°. NP2:ϕs180°, δ58°, λ-131°. Principal axes: T 5.68, Plg4°, Azm298°; N -.24, Plg34°, Azm205°; P -5.44, Plg56°, Azm34°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
ISC 21 19:55:51.7±0.2, 10.40S±0.03×161.28E±0.04, h76km, h76km±.8km: pP-P, n211, σ0s85/192, mb5.1/85, 6C-8D, Bougainville - Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**9.89**	**138**	⇑*iP*		**P**	**19 58 11.0**	**-2.2**
BKM				*i* S		**S**	**19 59 54.1**	**-9.3**
RAB	**Rabaul**	**10.94**	**304**	*eP*		**P**	**19 58 34.1**	**+6.8**
NOUC	**Port Laguerre**	**12.60**	**158**	*eP*		**P**	**19 58 49.5**	**+0.1**
NOUC	**Port Laguerre**	**12.60**	**158**	*eS*		**S**	**20 00 59.9**	**-8.5**
NOUC	**Port Laguerre**	**12.60**	**158**	*eP*		**P**	**19 58 49.5**	**+0.1**
NOUC				*eS*		**S**	**20 00 59.9**	**-8.5**
DZM	**Mont Dzumac**	**12.62**	**158**	*eP*		**P**	**19 58 49.9**	**+0.2**
DZM				*eS*		**S**	**20 00 57.0**	**-12**
DZM	**Mont Dzumac**	**12.62**	**158**	*eP*		**P**	**19 58 49.9**	**+0.2**
DZM				*eS*		**S**	**20 00 57.0**	**-12**
PMG	**Port Moresby**	**13.94**	**273**	P		**P**	**19 59 12.9**	**+5.7**
	0.6nm,0.3s,baz=100,slow=7.9,SNR=6.3							
WAU	**Wau**	**14.70**	**281**	*eP*		**P**	**19 59 22.8**	**+5.8**
CTA	**Charters Tower**	**17.39**	**235**	*eP*		**P**	**19 59 55.1**	**+4.2**
	40nm,0.9s							
CTA				*eS*		**S**	**20 03 12.0**	**+12**
CTA	**Charters Tower**	**17.39**	**235**	P		**P**	**19 59 54.4**	**+3.5**
	2.0nm,0.3s,baz=59,slow=12,SNR=27							
CTA				S		**S**	**20 03 03.2**	**+3.5**
	1.0nm,0.3s,baz=289,slow=18,SNR=4.4							
CTAO	**Charters Tower**	**17.39**	**235**	*eP*		**P**	**19 59 54.5**	**+3.5**
	72nm,1.1s							
KWAJ	**Kwajalein Atol**	**20.09**	**19**	P		**P**	**20 00 21.4**	**-0.3**
	295nm,1.1s							
ARMA	**Armidale**	**21.85**	**203**	*eP*		**P**	**20 00 40.1**	**+0.7**
CNB	**Canberra Magne**	**27.07**	**202**	*eP*		**P**	**20 01 29.8**	**+0.6**
	23nm,0.8s,mb4.8							
WRAB	**Tennant Creek**	**27.62**	**247**	*eP*		**P**	**20 01 34.1**	**-0.3**
	37nm,0.8s,mb5.0							
WB2	**Warramunga Arr**	**27.63**	**247**	*eP*		**P**	**20 01 34.3**	**-0.1**
WRA	**Warramunga Arr**	**27.64**	**247**	P		**P**	**20 01 34.8**	**+0.3**
	16nm,0.6s,mb4.7,baz=77,slow=9.1,SNR=124							
WRA				S		**S**	**20 06 10.1**	**+1.0**
	3.0nm,1.0s,baz=74,slow=15,SNR=3.3							
WRA				LR		LR	20 11 54.9	
	comp=Z,477nm,20.1s,baz=80,slow=35							
WRA	**Warramunga Arr**	**27.64**	**247**	P		**P**	**20 01 34.8**	**+0.3**
WRA				S		**S**	**20 06 10.1**	**+1.0**
WRA				pmax		pmax		
	comp=Z,16nm,0.6s							
WRA				smax				
	comp=Z,3.0nm,1.0s							
WRA				MLR		MLR		
	comp=Z,477nm,20.1s							
STKA	**Stephens Creek**	**28.08**	**218**	*eP*		**P**	**20 01 38.5**	**+0.2**
	comp=Z,6.7nm,0.6s,mb4.3							
STKA	**Stephens Creek**	**28.08**	**218**	P		**P**	**20 01 38.8**	**+0.4**
	comp=Z,6.3nm,0.6s,mb4.3,baz=35,slow=10,SNR=14							
KAKA	**Kakadu**	**28.38**	**263**	*eP*		**P**	**20 01 40.8**	**-0.4**
	comp=Z,31nm,0.6s,mb5.0							
AS12	**Alice Springs**	**29.24**	**240**	*eP*		**P**	**20 01 47.7**	**-1.1**
	comp=Z,12nm,1.0s,mb4.5							
ASAR	**Alice Springs**	**29.24**	**240**	P		**P**	**20 01 48.0**	**-0.7**
	comp=Z,11nm,0.9s,mb4.5,baz=71,slow=9.2,SNR=51							
ASAR					pP	pP	20 02 09.6	+3.0
	comp=Z,22nm,1.0s,baz=63,slow=10,SNR=10							
ASAR					LR	LR	20 12 38.2	
	comp=Z,642nm,19.7s,baz=56,slow=34							
TOO	**Toolangi**	**30.56**	**205**	*eP*		**P**	**20 02 00.2**	**-0.2**
	comp=Z,28nm,0.8s,mb5.0							
URZ	**Urewera**	**31.17**	**155**	P		**P**	**20 02 04.1**	**-1.6**
	comp=Z,10nm,0.8s,mb4.6,baz=77,slow=4.5,SNR=6.0							

KMI AMB AMB
comp=Z,14nm,1.1s,mb4.7
KMI AMB AMB
comp=Z,86nm,4.0s
VNDA Vanda 67.11 180 P **P** **20 06 38.1 -0.7**
comp=Z,13nm,0.9s,mb4.8,baz=346,slow=7.0,SNR=67
VNDA LR LR 20 29 05.8
comp=Z,136nm,19.8s,baz=8.4,slow=30
VNDA Vanda 67.11 180 P **P** **20 06 38.2 -0.7**
VNDA pmax pmax
comp=Z,13nm,0.9s
VNDA MLR MLR
comp=Z,136nm,19.8s
VNDA Vanda 67.11 180 *e*P **P** **20 06 37.6 -1.2**
comp=Z,9.1nm,1.0s,mb4.6
VNDA LR LR
comp=Z,116nm,20.0s
SBA Scott Base 67.50 179 *e*P **P** **20 06 41.0 -0.3**
comp=Z,15nm,1.0s,mb4.8
CM31 Chiang Mai Arr 67.84 295 *e*P **P** **20 06 44.1 -0.2**
comp=Z,3.8nm,0.6s,mb4.4
HHC Hu-ho-hao-te 68.55 322 *e*P **P** **20 06 45.3 -3.1**
HHC AMB AMB
comp=Z,14nm,1.3s,mb4.6
HHC AMB AMB
comp=Z,125nm,4.5s
BTO Baotou 69.36 321 *e*P **P** **20 06 53.1 -0.3**
BTO AMB AMB
comp=Z,38nm,1.0s,mb5.2
HIA Hailar 69.70 332 *e*P **P** **20 06 55.4 +0.1**
comp=Z,74nm,1.1s,mb5.4
HIA *e* pP 20 07 15.3 -0.1
MA2 Magadan 70.25 354 *de*P **P** **20 06 57.5 -1.0**
MA2 pmax pmax
comp=Z,34nm,0.9s,mb5.2
MA2 Magadan 70.25 354 *e*P **P** **20 06 57.6 -0.8**
comp=Z,26nm,0.8s,mb5.1
LZH Lanzhou 71.11 314 *e*P **P** **20 07 05.0 +1.0**
LZH AP pP 20 07 27.5 +3.3
LZH XP sP 20 07 42.5 +10
LZH AMB AMB
comp=Z,40nm,1.2s,mb5.1
MIR Mirnyy 71.93 203⇓ *e*P **P** **20 07 08.4 -0.1**
MIR pmax pmax
comp=Z,80nm,1.1s,mb5.5
SDN Sand Point 72.88 22 *e*P **P** **20 07 12.7 -1.5**
SEY Seymchan 73.43 356 *e*P **P** **20 07 17.3 +0.1**
SEY *e* pP 20 07 37.3 -0.2
SEY *e* 20 11 46.6
SEY pmax pmax
comp=Z,30nm,1.3s,mb5.0
ULN Ulaanbaatar 75.24 326 *i* P **P** **20 07 29.0 +1.0**
ULN Ulaanbaatar 75.24 326 *e*P **P** **20 07 28.8 +0.8**
comp=Z,48nm,0.9s,mb5.2
SONM Songino Array 75.59 325 P **P** **20 07 30.9 +0.8**
comp=Z,37nm,0.8s,mb5.1,baz=141,slow=5.7,SNR=224
SONM pP pP 20 07 50.8 +0.4
comp=Z,12nm,0.6s,baz=144,slow=6.1,SNR=6.2
YAK Yakutsk 76.29 345 *e*P **P** **20 07 33.5 -0.2**
YAK *e* pP 20 07 53.4 -0.7
YAK pmax pmax
comp=Z,67nm,0.9s,mb5.4
YAK pmax pmax
comp=N,14nm,1.1s
YAK pmax pmax
comp=E,7.0nm,1.0s
YAK pmax pmax
comp=Z,35nm,1.0s,mb5.0
YAK pmax pmax
comp=N,10.0nm,0.9s
YAK pmax pmax
comp=E,5.0nm,1.0s
YAK Yakutsk 76.29 345 *e*P **P** **20 07 33.3 -0.4**
comp=E,135nm,0.8s,mb5.7
YAK *e*pP pP 20 07 53.4 -0.7
KDAK Kodiak Island 77.66 23 *e*P **P** **20 07 41.1 -0.3**
comp=E,113nm,0.8s,mb5.7
BOD Bodaibo 78.12 336 *e*P **P** **20 07 43.1 -0.9**
BOD *e* pP 20 08 03.7 -0.7
BILL Bilibino 78.32 2 *di*P **P** **20 07 44.9 +0.1**
BILL pmax pmax
comp=Z,85nm,1.1s,mb5.4
BILL Bilibino 78.32 2 *e*P **P** **20 07 44.5 -0.3**
comp=Z,99nm,1.2s,mb5.4
BILL *e*pP pP 20 08 04.7 -0.5
ZAK Zakamensk 78.69 326 *e*P **P** **20 07 47.1 -0.1**
ZAK *e* pP 20 08 07.6 -0.1
SVW Sparrevohn 78.92 20 *e*P **P** **20 07 49.4 +1.1**
TNA Tin City 79.13 13 *e*P **P** **20 07 48.6 -0.7**
comp=Z,28nm,1.0s,mb5.0
TLY Talaya 79.19 328 *e*P **P** **20 07 49.9 0.0**
TLY pmax pmax
comp=Z,322nm,0.9s,mb6.2
TLY MLR MLR
comp=Z,600nm,18.0s
QSPA South Pole Qui 79.60 180 *e*P **P** **20 07 51.5 -0.2**
comp=Z,25nm,0.9s,mb5.0
QSPA *e* pP 20 08 11.6 -0.5
QSPA LR LR
comp=Z,60nm,21.7s
MOY Mondy 80.59 327 *e*P **P** **20 07 57.7 +0.2**
FIB Fire Island 80.86 22 *e*P **P** **20 07 58.3 -0.3**
PMS Palmer South 81.13 22 *e*P **P** **20 08 00.0 -0.1**
PMR Palmer 81.52 22 *e*P **P** **20 08 01.6 -0.5**
comp=Z,29nm,0.8s,mb5.2
PMR LR LR
comp=Z,202nm,21.0s
SML Sawmill 81.95 22 *e*P **P** **20 08 04.2 -0.2**
EYAK Cordova Ski Ar 82.13 23 *e*P **P** **20 08 04.9 -0.4**
PKI Pulchoki 82.49 300 *e*P **P** **20 08 07.6 -0.2**
comp=Z,11nm,0.6s,mb4.9
KKN Kakani 82.66 300 *e*P **P** **20 08 08.3 -0.4**
comp=Z,53nm,1.6s,mb5.1
DMN Daman 82.76 300 *e*P **P** **20 08 09.6 +0.4**
comp=Z,47nm,0.9s,mb5.3
MCK McKinley 82.99 20 *e*P **P** **20 08 08.9 -0.7**
comp=Z,74nm,1.0s,mb5.5
MCK *e*pP pP 20 08 29.5 -0.7
GKN Gorkha 83.27 300 *e*P **P** **20 08 11.3 -0.4**
comp=Z,66nm,1.0s,mb5.4
MAW Mawson 83.66 202⇓ *i*P **P** **20 08 13.0 +0.2**
comp=Z,22nm,0.9s,mb5.0
MAW Mawson 83.66 202 P **P** **20 08 13.3 +0.5**
comp=Z,27nm,0.9s,mb5.1,baz=101,slow=5.9,SNR=23
MAW pP pP 20 08 32.4 -1.1
comp=Z,12nm,0.8s,baz=76,slow=7.6,SNR=3.9
MAW LR LR 20 39 01.8
comp=Z,136nm,21.4s,baz=310,slow=31
MAW Mawson 83.66 202 P **P** **20 08 13.3 +0.5**
MAW *PP pP 20 08 32.4 -1.1
MAW pmax pmax
comp=Z,27nm,0.9s
MAW pmax pmax
comp=Z,12nm,0.8s
MAW MLR MLR
comp=Z,137nm,21.4s
KOLN Koldanda 84.09 300 *e*P **P** **20 08 15.6 -0.4**
comp=Z,65nm,0.7s,mb5.6
COLA College 84.09 19 *e*P **P** **20 08 14.6 -0.5**
ILAR Eielson Array 84.35 20 P **P** **20 08 15.7 -0.7**
comp=Z,21nm,0.9s,mb5.0,baz=256,slow=4.0,SNR=86
ILAR LR LR 20 38 54.8
comp=Z,77nm,21.6s,baz=80,slow=31
ILAR Eielson Array 84.35 20 P **P** **20 08 15.7 -0.7**
ILAR pmax pmax
comp=Z,21nm,0.9s
ILAR MLR MLR
comp=Z,77nm,21.6s
TIXI Tiksi 84.66 350 *e*P **P** **20 08 17.3 -0.5**
TIXI *e* pP 20 08 38.0 -0.5
TIXI *e*S S 20 18 34.0 -3.5
TIXI pmax pmax
comp=Z,182nm,1.2s,mb5.9
TIXI Tiksi 84.66 350 *e*P **P** **20 08 16.2 -1.7**
comp=Z,24nm,1.1s,mb5.0
TIXI *e*pP pP 20 08 37.5 -1.1
WMQ Urumqi 85.55 316 P **P** **20 08 23.5 +0.7**
WMQ PP PP 20 11 44.8 +1.2
WMQ SKS SKS 20 18 38.8 +0.8
WMQ S S 20 18 47.8 +1.0
WMQ SS SS 20 24 28.3 +1.2
WMQ AMB AMB
comp=Z,85nm,1.6s,mb5.4
WMQ AMB AMB
comp=Z,529nm,7.6s
KRMB Red Mountain 85.69 47 *e*P **P** **20 08 24.2 +0.6**

SAO San Andreas Ge 86.15 52 *e*P **P** **20 08 26.3 +0.3**
comp=Z,36nm,1.2s,mb5.2
SAO *e*pP pP 20 08 47.4 +0.7
WDC Whiskeytown Da 86.40 48 *e*P **P** **20 08 27.2 +0.2**
comp=Z,37nm,1.4s,mb5.1
BBB Bella Bella 86.57 36 P **P** **20 08 27.9 +0.2**
comp=Z,10.0nm,1.0s,mb4.7,baz=258,slow=12,SNR=2.6
DAWY Dawson 86.58 22 *e*P **P** **20 08 28.4 +1.0**
DAWY *e*pP pP 20 08 48.5 +0.4
YBH Yreka Blue Hor 86.61 47 P **P** **20 08 29.3 +1.2**
comp=Z,20nm,0.8s,mb5.1,baz=230,slow=0.6,SNR=63
YBH Yreka Blue Hor 86.61 47 P **P** **20 08 29.3 +1.2**
YBH pmax pmax
comp=Z,20nm,0.8s
YBH Yreka Blue Hor 86.61 47 *e*P **P** **20 08 28.7 +0.6**
comp=Z,25nm,0.9s,mb5.1
HUMO Hull Mountain 86.70 46 *e*P **P** **20 08 29.2 +0.7**
OHCM Honcut 86.83 49 *e*P **P** **20 08 29.2 0.0**
HSO Harness Mounta 86.88 45 *e*P **P** **20 08 30.0 +0.7**
CMB Columbia Colle 87.31 51 *e*P **P** **20 08 31.4 -0.2**
comp=Z,14nm,1.0s,mb4.9
OCWA Octopus Mounta 87.44 41 *e*P **P** **20 08 32.6 +0.7**
comp=Z,21nm,0.9s,mb5.1
BEKR Beckwourth 87.81 49 *e*P **P** **20 08 34.1 +0.2**
comp=Z,7.6nm,0.7s,mb4.8
DLBC Dease Lake 87.97 29 P **P** **20 08 34.3 +0.1**
comp=Z,9.3nm,1.1s,mb4.7,baz=301,slow=5.1,SNR=5.7
WCN Washoe City 88.11 50 *e*P **P** **20 08 36.1 +0.7**
MWC Mount Wilson 88.18 55 *e*P **P** **20 08 36.1 +0.2**
MWC *e*pP pP 20 08 57.0 +0.3
MTUM Tungsten Hills 88.53 52 *e*P **P** **20 08 37.6 +0.2**
MTUM *e*pP pP 20 08 58.6 +0.3
LON Longmire 88.68 42 *e*P **P** **20 08 37.7 -0.2**
NVAR Mina Array Bea 88.99 51 P **P** **20 08 40.5 +0.9**
comp=Z,19nm,0.8s,mb5.2,baz=229,slow=4.7,SNR=72
NVAR pP pP 20 09 01.2 +0.7
comp=Z,3.9nm,0.8s,baz=221,slow=5.8,SNR=2.5
NVAR LR LR 20 40 29.1
comp=Z,61nm,19.1s,baz=35,slow=30
DAC Darwin (Calif) 89.03 53 *e*P **P** **20 08 40.6 +0.8**
DAC *e*pP pP 20 09 01.3 +0.6
PFO Pinyon Flat Ob 89.33 56 *e*P **P** **20 08 41.3 0.0**
comp=Z,11nm,0.8s,mb5.0
RPW Roxport 89.36 40 *e*P **P** **20 08 41.0 -0.1**
WVOR Wild Horse Val 89.72 47 *e*P **P** **20 08 43.6 +0.7**
comp=Z,87nm,1.3s,mb5.7
TPH Tonopah 89.73 51 *e*P **P** **20 08 43.6 +0.5**
comp=Z,27nm,1.0s,mb5.3
TPH *e*pP pP 20 09 03.9 -0.1
MKAR Makanchi Array 90.06 318 P **P** **20 08 44.2 -0.2**
comp=Z,6.8nm,0.4s,mb5.1,baz=90,slow=6.8,SNR=165
MKAR pP pP 20 09 04.3 -1.1
comp=Z,2.2nm,0.5s,baz=102,slow=5.1,SNR=4.1
MKAR Makanchi Array 90.06 318 P **P** **20 08 44.2 -0.2**
MKAR *PP pP 20 09 04.3 -1.1
MKAR pmax pmax
comp=Z,7.0nm,0.4s
MKAR pmax pmax
comp=Z,2.0nm,0.5s
HAWA Hanford 90.10 43 *e*P **P** **20 08 45.3 +0.7**
comp=Z,17nm,0.8s,mb5.2
BMN Battle Mountai 90.28 49 *e*P **P** **20 08 46.0 +0.4**
comp=Z,50nm,1.2s,mb5.5
ZAL Zalesovo 90.49 325 P **P** **20 08 45.3 -0.9**
comp=Z,2.3nm,0.5s,mb4.6,baz=262,slow=6.7,SNR=19
ZAL pP pP 20 09 05.9 -1.3
comp=Z,1.1nm,0.5s,baz=200,slow=4.8,SNR=2.1
ZAL LR LR 20 49 52.0
comp=Z,73nm,20.3s,baz=281,slow=36
ZAL Zalesovo 90.49 325 P **P** **20 08 45.3 -0.9**
ZAL *PP pP 20 09 05.9 -1.3
ZAL pmax pmax
comp=Z,2.0nm,0.5s
ZAL pmax pmax
comp=Z,1.0nm,0.5s
ZAL MLR MLR
comp=Z,73nm,20.3s
ZAL Zalesovo 90.49 325 P **P** **20 08 45.3 -0.9**
ZAL pP pP 20 09 05.9 -1.3
ZAL LR LR 20 49 52.0
INK Inuvik 90.75 20 P **P** **20 08 47.1 0.0**
comp=Z,9.3nm,1.1s,mb4.8,baz=220,slow=5.4,SNR=22
INK Inuvik 90.75 20 P **P** **20 08 47.1 0.0**
INK pmax pmax
comp=Z,9.0nm,1.1s
INK Inuvik 90.75 20 *e*P **P** **20 08 46.3 -0.8**
comp=Z,23nm,1.3s,mb5.1
NEN Nelson 91.07 54 *e*P **P** **20 08 49.4 0.0**
SYO Syowa Base 91.08 198⇑ P **P** **20 08 51.4 +2.7**
SYO Syowa Base 91.08 198⇑ *e*P **P** **20 08 51.4 +2.7**
DPW Davenport 91.35 42 *e*P **P** **20 08 50.4 0.0**
NVS Novosibirsk 91.62 326 *e*P **P** **20 08 48.9 -2.6**
NVS *i* pP 20 09 10.0 -2.5
NVS pmax pmax
comp=Z,17nm,1.6s,mb5.0
NVS pmax pmax
comp=E,9.0nm,1.5s
NEW Newport 92.14 41 P **P** **20 08 54.4 +0.4**
comp=E,41nm,1.1s,mb5.5,baz=263,slow=2.7,SNR=9.5
NEW Newport 92.14 41 P **P** **20 08 54.4 +0.4**
NEW pmax pmax
comp=Z,41nm,1.2s
NEW Newport 92.14 41 *e*P **P** **20 08 53.3 -0.8**
HLID Hailey 92.99 46 *e*P **P** **20 08 59.1 +1.0**
comp=Z,25nm,1.0s,mb5.5
HLID *e*pP pP 20 09 19.6 +0.6
KURK Kurchatov 93.35 321 *e*P **P** **20 08 57.7 -1.7**
KURK *e*pP pP 20 09 18.4 -2.1
MVU Marysvale 93.68 52 *e*P **P** **20 09 02.3 +1.0**
TUC Tucson 93.75 58 *e*P **P** **20 09 02.4 +0.7**
comp=Z,6.6nm,0.9s,mb5.0
HVU Hansel Valley 93.84 48 *e*P **P** **20 09 03.1 +1.1**
MCMT McKenzie Canyo 94.34 45 *e*P **P** **20 09 05.2 +1.1**
CHMT Chamberlain Mo 94.43 43 *e*P **P** **20 09 04.7 +0.2**
BOZ Bozeman (W) 95.33 45 *e*P **P** **20 09 09.3 +0.7**
comp=Z,8.7nm,0.7s,mb5.3
YMR Madison River 95.63 46 *e*P **P** **20 09 11.6 +1.5**
PV10 Paradox Valley 96.12 52 *e*P **P** **20 09 12.6 +0.3**
PDAR Pinedale Array 96.36 48 P **P** **20 09 14.3 +1.0**
comp=Z,3.2nm,0.8s,mb4.8,baz=271,slow=2.5,SNR=8.1
YKA Yellowknife Ar 96.43 28 P **P** **20 09 12.6 -0.5**
comp=Z,13nm,0.8s,mb5.4,baz=258,slow=4.7,SNR=160
YKA pP pP 20 09 33.2 -1.0
comp=Z,1.0nm,0.6s,baz=261,slow=4.6,SNR=2.9
YKA LR LR 20 48 32.1
comp=Z,48nm,20.6s,baz=270,slow=33
YKA Yellowknife Ar 96.43 28 P **P** **20 09 12.6 -0.6**
YKA *PP pP 20 09 33.2 -1.0
YKA pmax pmax
comp=Z,13nm,0.8s
YKA pmax pmax
comp=Z,1.0nm,0.6s
YKA MLR MLR
comp=Z,48nm,20.6s
YKA Yellowknife Ar 96.43 28 P **P** **20 09 12.7 -0.5**
YKA pP pP 20 09 33.2 -1.0
YKA LR LR 20 48 32.1
YKW3 Yellowknife Ar 96.44 28 *e*P **P** **20 09 12.2 -1.0**
SNAA Sanae 97.43 185 *e*P **P** **20 09 16.5 -1.0**
ANMO Albuquerque 97.71 56⇑ *e*P **P** **20 09 17.6 -2.1**
ANMO Albuquerque 97.71 56 *e*P **P** **20 09 20.0 +0.3**
VNA3 Neumayer Olymp 98.32 183⇑ *i*P **P** **20 09 23.4 +1.8**
VNA3 *e* pP 20 09 43.9 +1.3
VNA2 Neumayer--Watz 98.50 184 P **P** **20 09 24.0 +1.6**
BVAR Borovoye Array 98.75 322 P **P** **20 09 22.7 -1.2**
comp=Z,1.6nm,0.5s,mb4.8,baz=108,slow=4.7,SNR=19
BVAR pP pP 20 09 43.4 -1.6
comp=Z,1.3nm,0.8s,baz=90,slow=5.9,SNR=3.8
BRVK Borovoye 98.81 322 *e*P **P** **20 09 23.0 -1.3**
VNA1 Neumayer--Stat 98.83 184⇓ *i* **P** **20 09 27.4 +3.5**
TXAR Lajitas Array 99.39 62 LR LR 20 44 28.3
comp=Z,103nm,21.5s,baz=315,slow=29
ZRNK Zerenda 99.58 322 *e*P **P** **20 09 26.0 -1.7**
ARCES ARCESS Array B 114.57 344 PKP PKPdf 20 14 23.1 +0.3
comp=Z,0.9nm,0.3s,baz=82,slow=1.2,SNR=41
ARCES ARCESS Array B 114.57 344 PKIKP PKPdf 20 14 23.1 +0.4
ARCES pmax pmax
comp=Z,1.0nm,0.3s
OBN Obninsk 117.94 328 *i* PKIKP PKPdf 20 14 12.7 -17
OBN *e* 20 21 20.4
OBN *e*SS SS 20 32 05.5 +12
OBN pmax pmax
comp=Z,8.0nm,0.6s
OBN MLR MLR
comp=Z,100nm,16.0s

FINES FINESS Array B 119.52 337 PKP PKPdf 20 14 32.6 +0.2
comp=Z,1.0nm,0.8s,baz=108,slow=6.0,SNR=3.9
FINES FINESS Array B 119.52 337 PKIKP PKPdf 20 14 32.6 +0.2
FINES pmax pmax
comp=Z,1.0nm,0.8s
AKASG Malin Array Be 123.88 325 PKP PKPdf 20 14 41.1 -0.1
comp=Z,1.4nm,0.6s,baz=62,slow=1.7,SNR=6.2
AKASG PKKPbc 20 24 27.9
comp=Z,0.4nm,0.5s,baz=252,slow=4.0,SNR=4.4
LPAZ La Paz 124.39 118 PKP PKPdf 20 14 44.2 +1.3
comp=Z,1.6nm,0.8s,baz=348,slow=3.8,SNR=6.7
LPAZ La Paz 124.39 118 PKIKP PKPdf 20 14 44.3 +1.4
LPAZ pmax pmax
comp=Z,2.0nm,0.8s
LPAZ La Paz 124.39 118 *e*PKPdf PKPdf 20 14 44.1 +1.2
HFS Hagfors 124.81 341 PKP PKPdf 20 14 43.3 +0.6
comp=Z,3.7nm,0.8s,baz=45,slow=2.1,SNR=4.5
HFS Hagfors 124.81 341 PKIKP PKPdf 20 14 43.3 +0.6
HFS pmax pmax
comp=Z,4.0nm,0.8s
NOA NORSAR Array B 124.86 343 PKP PKPdf 20 14 43.6 +0.8
comp=Z,0.7nm,0.7s,baz=37,slow=2.1,SNR=3.4
NOA NORSAR Array B 124.86 343 PKIKP PKPdf 20 14 43.6 +0.8
NOA pmax pmax
comp=Z,1.0nm,0.7s
BRTR Keskin Array B 125.27 312 PKP PKPdf 20 14 44.3 +0.1
comp=Z,0.8nm,0.9s,baz=90,slow=2.5,SNR=5.3
CPUP Villa Florida 127.65 135 PKP PKPdf 20 14 49.1 0.0
comp=Z,2.2nm,0.7s,baz=256,slow=6.6,SNR=6.0
CPUP pPKP 20 15 10.4
comp=Z,2.6nm,0.9s,baz=347,slow=4.0,SNR=3.5
CPUP Villa Florida 127.65 135 PKIKP PKPdf 20 14 49.2 +0.1
CPUP 20 15 10.4
CPUP pmax pmax
comp=Z,2.0nm,0.7s
CPUP pmax pmax
comp=Z,3.0nm,1.0s
CPUP Villa Florida 127.65 135 *e*PKPdf PKPdf 20 14 49.1 0.0
GERES GERESS Array B 133.09 331 PKP PKPdf 20 15 00.4 +1.6
comp=Z,0.2nm,0.4s,baz=194,slow=5.5,SNR=4.3
ORIF Oris-en-Rattie 139.61 333 *e*PKIKP PKPdf 20 15 08.4 -2.5
comp=Z,6.4nm,0.7s
PGF Pioggiola 139.85 328 *e*PKIKP PKPdf 20 15 10.2 -1.2
comp=Z,34nm,1.2s
RJF Les Rejaudoux 141.12 337 *e*PKIKP PKPdf 20 15 11.8 -1.8
comp=Z,12nm,1.0s
LASF Ste Croix 141.17 334 *e*PKIKP PKPdf 20 15 11.4 -2.3
comp=Z,9.0nm,1.0s
CAF Calviac 141.22 336 *e*PKIKP PKPdf 20 15 11.5 -2.3
comp=Z,12nm,1.1s
LFF La Frestale 141.72 338 *e*PKIKP PKPdf 20 15 13.6 -1.1
comp=Z,40nm,1.1s
MTLF Montolieu 142.47 335 *e*PKIKP PKPdf 20 15 14.3 -1.7
ETSF Etsaut 143.95 337 *e*PKIKP PKPdf 20 15 17.7 -0.8
comp=Z,28nm,0.9s
ESDC Sonseca Array 148.02 338 PKPbc PKPdf 20 15 29.7 +4.2
comp=Z,3.2nm,0.8s,baz=20,slow=2.4,SNR=15
MTE Manteigas 148.52 344 *e*PKPbc PKPdf 20 15 31.5 +5.2
EVO Evora 150.39 343 *e*PKIKP PKPdf 20 15 30.7 +1.4
comp=Z,63nm,1.4s

*NEIC **21** 20:01:24.3±0.5, 71.06N×6.82W, h10km, ML3.5(BER), Error ellipse: s-maj=9.5km s-min=5.4km az=183.0*
*NAO **21** 20:01:24.7±1.9, 70.87N×6.85W*
*BER **21** 20:01:27.1±1.0, 71.24N×7.29W, h10km, MD3.1, ML3.5*
ISC 21 20:01:22.2±0.5, **71.13N**±0.06×**6.69W**±0.09, **h10km, n18, σ0s97/20, 6C, Jan Mayen Island region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time h m s	Res ISC
JNE	**Jan Mayen East**	**0.55**	**256**	⇑ *i*P	**Pg**	**20 01 34.3**	**+1.0**
JNW	**Jan Mayen West**	**0.58**	**261**	⇑ *i*P	**Pg**	**20 01 34.7**	**+0.8**
JNW				AML	AML	20 01 43.6	
	comp=Z,1μm,0.3s						
JMIC	**Jan Mayen**	**0.61**	**257**	Pg	**Pg**	**20 01 35.1**	**+0.5**
JMIC				Lg		20 01 42.1	
JMIC	**Jan Mayen**	**0.61**	**257**	⇑ *i*P	**Pb**	**20 01 35.0**	**+0.4**
JMIC				*e*S	**Sg**	**20 01 42.0**	**-1.0**
JMI	**Jan Mayen**	**0.70**	**254**	⇑ *i*P	**Pb**	**20 01 36.8**	**+0.7**
JMI				*e*S	**Sb**	**20 01 44.5**	**-0.9**
JMI				AML	AML	20 01 47.6	
	comp=Z,5μm,0.3s						
DAG	**Danmarks Havn**	**6.55**	**335**	⇑ *i*P	**Pn**	**20 03 00.0**	**-1.1**
	comp=Z,2.7nm,0.6s						
DAG	**Danmarks Havn**	**6.55**	**335**	⇑ *e*P	**Pn**	**20 03 00.0**	**-1.1**
	comp=Z,2.7nm,0.6s						
LOF	**Lofoten**	**7.65**	**103**	*e*P	**Pn**	**20 03 18.1**	**+1.6**
STOK	**Stokkvaagen**	**8.59**	**114**	*e*P	**P**	**20 03 26.2**	**-3.5**
KBS	**Kingsbay**	**9.12**	**23**	*e*Pn	**P**	**20 03 36.5**	**-0.4**
MOR8	**Moi Rana**	**9.13**	**113**	*e*P	**P**	**20 03 36.5**	**-0.5**
SPB4	**Spitsbergen Ar**	**9.25**	**30**	Pn	**P**	**20 03 37.8**	**-0.9**
SPA0	**Spitsbergen Ar**	**9.25**	**30**	Pn	**P**	**20 03 40.4**	**+1.7**
	baz=227,slow=18						
NSS	**Namsos**	**9.63**	**124**	*e*P	**P**	**20 03 42.1**	**-1.5**
ARA0	**ARCESS Array S**	**10.88**	**83**	Pn	**P**	**20 04 00.7**	**-0.2**
	baz=288,slow=12						
HFS	**Hagfors**	**13.77**	**133**	P	**P**	**20 04 39.3**	**-0.1**
	baz=331,slow=14						
KAF	**Kangasniemi**	**15.66**	**109**	*e*p	**P**	**20 05 04.3**	**+0.1**
FIA0	**FINESS Array S**	**16.11**	**110**	P	**P**	**20 05 10.6**	**+0.7**
	baz=314,slow=10						

*LDG **21** 20:02:55.9±0.0, 44.95N×3.35E, h3km, Md2.7/4, Ml2.6/27, Error ellipse: s-maj=0.6km s-min=0.5km az=45.0*
*NEIC **21** 20:02:56.6, 45.00N×3.34E, h8km, ML2.7(STR), ML2.6(LDG), After STR.*
*STR **21** 20:02:56.6±0.3, 45.00N×3.34E, h8km±1km, Ml2.7, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
ISC 21 20:02:53.2±0.3, **44.93N**±0.01×**3.35E**±0.02, **h7km**±3km, **n38, σ1s23/83, France**

Code	Station Name	Δ°	AZ°	Phase	ID	Time h m s	Res ISC
				Op	ISC		
LBL	**Lubilhac**	**0.32**	**346**	Pg	**Pg**	**20 03 01.8**	**+2.2**
LBL				Sg	**Sg**	**20 03 05.9**	**+2.0**
COLF	**Collangettes**	**0.64**	**22**	Pg	**Pg**	**20 03 07.3**	**+1.3**
COLF				Sg	**Sg**	**20 03 15.5**	**+1.0**
FRNF	**Fournols**	**0.72**	**310**	Pg	**Pg**	**20 03 09.2**	**+1.5**
PYM	**Petit Puy Mans**	**0.86**	**344**	Pg	**Pg**	**20 03 11.9**	**+1.5**
PYM				Sg	**Sg**	**20 03 22.7**	**+0.8**
CAF	**Calviac**	**0.92**	**270**	*e*Pg	**Pg**	**20 03 13.1**	**+1.6**
CAF				*e*Sg	**Sg**	**20 03 24.3**	**+0.5**
	28nm,0.2s						
LASF	**Ste Croix**	**0.92**	**157**	*e*Pg	**Pg**	**20 03 13.9**	**+2.2**
LASF				*e*Sg	**Sg**	**20 03 26.7**	**+2.7**
	16nm,0.2s						
VIVF	**Saint-Julien-l**	**0.94**	**94**	*e*Pg	**Pg**	**20 03 13.9**	**+1.9**
VIVF				*e*Sg	**Sg**	**20 03 26.1**	**+1.5**
	33nm,0.2s						
VERF	**Verneugheol**	**1.03**	**324**	Pg	**Pg**	**20 03 14.8**	**+1.1**
VERF				Sg	**Sg**	**20 03 27.9**	**+0.5**
PLDF	**La Plantade**	**1.06**	**10**	Pg	**Pg**	**20 03 15.4**	**+1.0**
PLDF				Sg	**Sg**	**20 03 28.7**	**+0.2**
AGO	**Saint Agoulin**	**1.14**	**352**	Pg	**Pg**	**20 03 17.0**	**+1.1**
AGO				Sg	**Sg**	**20 03 31.5**	**+0.4**
RJF	**Les Rejaudoux**	**1.35**	**287**	*e*Pn	**Pn**	**20 03 19.8**	**+1.2**
RJF				*e*Pg	**Pg**	**20 03 21.2**	**+0.9**
RJF				*e*Sg	**Sg**	**20 03 38.0**	**-0.4**
	20nm,0.3s						
TCF	**Toulx Ste Croi**	**1.58**	**330**	*e*Pn	**Pn**	**20 03 22.9**	**+1.0**
TCF				*e*Pg	**Pg**	**20 03 24.9**	**+0.1**
TCF				*e*Sn	**Sn**	**20 03 42.7**	**-0.1**
TCF				*e*Sg	**Sg**	**20 03 45.3**	**-0.6**
	6.7nm,0.2s						
BGF	**Bois d'Agland**	**1.67**	**348**	*e*Pn	**Pn**	**20 03 23.7**	**+0.6**
BGF				*e*Sn	**Sn**	**20 03 44.7**	**-0.3**
BGF				*e*Sg	**Sg**	**20 03 47.2**	**-1.6**
	46nm,0.3s						
SMF	**Signal de Mont**	**1.75**	**11**	*e*Pn	**Pn**	**20 03 25.1**	**+0.8**
SMF				*e*Sg	**Sg**	**20 03 49.4**	**-2.2**
	13nm,0.2s						
MTLF	**Montolieu**	**1.78**	**208**	*e*Pn	**Pn**	**20 03 25.4**	**+0.6**
MTLF				*e*Pg	**Pg**	**20 03 29.1**	**+0.2**
MTLF				*e*Sn	**Sn**	**20 03 47.6**	**-0.4**
MTLF				*e*Sg	**Sg**	**20 03 52.2**	**-0.4**
	22nm,0.2s						
ORIF	**Oris-en-Rattie**	**1.79**	**89**	*e*Pg	**Pg**	**20 03 29.3**	**+0.2**
ORIF				*e*Sg	**Sg**	**20 03 52.7**	**-0.3**
	7.6nm,0.6s						
SMRF	**Simiane la Rot**	**1.85**	**120**	*e*Pn	**Pn**	**20 03 26.9**	**+1.1**
SMRF				*e*Pg	**Pg**	**20 03 29.9**	**-0.3**
SMRF				*e*Sn	**Sn**	**20 03 49.2**	**-0.5**

SMRF				*e*Sg		**Sg**	**20 03 55.0**	**+0.1**
	3.1nm,0.3s								
LFF	**La Frestale**	**1.86**	**271**	*e*Pg		**Pg**	**20 03 30.2**	**-0.1**
LFF				*e*Sn		**Sn**	**20 03 48.8**	**-1.0**
LFF				*e*Sg		**Sg**	**20 03 54.3**	**-0.8**
	14nm,0.2s								
AVF	**Avril sur Loir**	**1.86**	**360**	*e*Pn		**Pn**	**20 03 26.7**	**+0.8**
AVF				*e*Pg		**Pg**	**20 03 29.9**	**-0.5**
AVF				*e*Sg		**Sg**	**20 03 53.6**	**-1.7**
	5.3nm,0.2s								
SSF	**Saint Saulge**	**2.14**	**3**	*e*Pn		**Pn**	**20 03 30.7**	**+0.9**
SSF				*e*Pg		**Pg**	**20 03 35.4**	**-0.5**
SSF				*e*Sg		**Sg**	**20 04 01.4**	**-3.0**
	5.1nm,0.2s								
HYF	**Humbligny**	**2.39**	**348**	*e*Pn		**Pn**	**20 03 34.1**	**+0.6**
HYF				*e*Sg		**Sg**	**20 04 10.6**	**-2.3**
MBDF	**Montbardon**	**2.44**	**94**	*e*Sg		**Sg**	**20 04 12.8**	**-1.7**
	1.2nm,0.2s								
LPL	**La Plagne**	**2.46**	**75**	*e*Pn		**Pn**	**20 03 35.6**	**+1.1**
LPG	**La Plagne**	**2.47**	**75**	*e*Pn		**Pn**	**20 03 35.6**	**+1.0**
LPG				*e*Sg		**Sg**	**20 04 13.3**	**-2.1**
	2.5nm,0.3s								
CABF	**La Chapelle**	**2.55**	**48**	*e*Pn		**Pn**	**20 03 36.3**	**+0.6**
CABF				*e*Pg		**Pg**	**20 03 44.2**	**+0.1**
CABF				*e*Sg		**Sg**	**20 04 15.5**	**-2.6**
	2.5nm,0.3s								
FRF	**La Foret Royal**	**2.73**	**119**	*e*Pn		**Pn**	**20 03 39.0**	**+0.6**
FRF				*e*Pg		**Pg**	**20 03 46.5**	**-1.3**
FRF				*e*Sg		**Sg**	**20 04 22.3**	**-1.9**
	0.8nm,0.2s								
LMR	**La Mourre**	**2.77**	**124**	*e*Pn		**Pn**	**20 03 39.7**	**+0.7**
LMR				*e*Pg		**Pg**	**20 03 47.5**	**-1.1**
LMR				*e*Sg		**Sg**	**20 04 23.3**	**-2.3**
	1.3nm,0.3s								
EPF	**Esparros**	**2.88**	**230**	*e*Pn		**Pn**	**20 03 40.9**	**+0.4**
EPF				*e*Pg		**Pg**	**20 03 49.5**	**-1.3**
EPF				*e*Sn		**Sn**	**20 04 14.1**	**-1.8**
EPF				*e*Sg		**Sg**	**20 04 27.3**	**-2.0**
	3.2nm,0.2s								
MFF	**Saint Martin d**	**2.97**	**306**	*e*Pn		**Pn**	**20 03 41.9**	**+0.2**
MFF				*e*Pg		**Pg**	**20 03 50.7**	**-1.8**
MFF				*e*Sn		**Sn**	**20 04 15.5**	**-2.5**
MFF				*e*Sg		**Sg**	**20 04 28.8**	**-3.2**
	3.1nm,0.3s								
SBF	**Sospel**	**3.11**	**109**	*e*Pn		**Pn**	**20 03 44.3**	**+0.5**
ETSF	**Etsaut**	**3.48**	**236**	*e*Pn		**Pn**	**20 03 49.1**	**+0.1**
ETSF				*e*Sg		**Sg**	**20 04 45.2**	**-3.9**
	1.1nm,0.2s								
SFTF	**Sexfontaines**	**3.48**	**19**	*e*Sg		**Sg**	**20 04 44.5**	**-4.5**
	4.1nm,0.3s								
HAU	**Haudompre**	**3.71**	**33**	*e*Sg		**Sg**	**20 04 52.0**	**-4.7**
	1.7nm,0.3s								
MEZF	**Maizieres J'vi**	**3.76**	**17**	*e*Sg		**Sg**	**20 04 53.5**	**-5.0**
	4.1nm,0.3s								
HINF	**Hinteralfeld**	**3.77**	**39**	*e*Sg		**Sg**	**20 04 54.1**	**-4.7**
	1.3nm,0.3s								
RFYF	**Reffroy**	**3.98**	**21**	*e*Sg		**Sg**	**20 05 00.3**	**-5.4**
	4.2nm,0.2s								
LDF	**La Druitiere**	**4.38**	**328**	*e*Pn		**Pn**	**20 04 00.8**	**-0.9**
PGF	**Pioggiola**	**4.73**	**118**	*e*Pn		**Pn**	**20 04 06.3**	**-0.5**

*IDC **21** 20:03:22.6±2.6,43.04N×105.10W,mb3.6/2,mb1 4.0/4, mb1mx3.6/22,ML3.5/2,MS3.4/1,Ms1 3.4/1,ms1mx2.5/31, Error ellipse: s-maj=51.9km s-min=9.2km az=158.0*
*NEIC **21** 20:03:25.3±0.8,43.58N×105.19W,ML3.1,Error ellipse: s-maj=12.0km s-min=7.4km az=158.0,Suspected Mining explosion.*
NEIC 85 km [50 miles] SSE of Gillette.
ISC 21 20:03:24.1±0.7,43.63N±0.07×105.15W±0.08,n20, σ1§00/19,MS3.2/1,Wyoming

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RSSD	**Black Hills**	**0.94**	**58**	*e*Pn	**Pn**	**20 03 45.3**	**+0.9**
BW06	**Boulder Array**	**3.34**	**257**	*e*Pn	**Pn**	**20 04 19.8**	**+1.1**
PDAR	**Pinedale Array**	**3.34**	**257**	Pn	**Pn**	**20 04 19.1**	**+0.4**
	2.9nm,0.3s,baz=75,slow=14,SNR=26						
PDAR				Lg		20 05 04.9	
	8.5nm,0.3s,baz=70,slow=30,SNR=17						
ISCO	**Idaho Springs**	**3.84**	**185**	*e*P	**Pn**	**20 04 25.7**	**0.0**
KSWY	**Kelly School**	**3.98**	**272**	*e*Pb	**Pb**	**20 04 34.6**	**-0.4**
WUWY	**Wally Ulrich**	**4.07**	**271**	*e*Pb	**Pb**	**20 04 36.3**	**-0.2**
AHID	**Auburn Hatcher**	**4.44**	**261**	*e*Pg	**Pg**	**20 04 47.1**	**-5.6**
QLMT	**Earthquake Lak**	**4.67**	**287**	*e*Pb	**Pb**	**20 04 49.2**	**+2.3**
BOZ	**Bozeman (W)**	**5.05**	**296**	*e*Pn	**Pn**	**20 04 42.5**	**-0.5**
	1.9nm,0.3s						
DAU	**Daniels Canyon**	**5.57**	**237**	*e*Pb	**Pb**	**20 05 02.2**	**0.0**
HRY	**Holter Researc**	**5.64**	**305**	*e*Pn	**Pn**	**20 04 50.8**	**-0.5**
MCMT	**McKenzie Canyo**	**5.67**	**285**	*e*Pn	**Pn**	**20 04 51.7**	**+0.1**
HVU	**Hansel Valley**	**5.92**	**254**	Pn	**Pn**	**20 04 54.2**	**-0.9**
CHMT	**Chamberlain Mo**	**6.60**	**303**	*e*Pn	**Pn**	**20 05 03.3**	**-1.5**
ULM	**Lac du Bonnet**	**9.17**	**40**	Pn	**P**	**20 05 40.1**	**-0.5**
	1.7nm,0.3s,baz=239,slow=10,SNR=7.4						
ULM				Lg		20 08 17.5	
	0.5nm,0.3s,baz=145,slow=20,SNR=3.0						
ULM	**Lac du Bonnet**	**9.17**	**40**	Pn	**P**	**20 05 40.1**	**-0.5**
ULM				Lg		20 08 17.5	
YKA	**Yellowknife Ar**	**19.70**	**347**	P	**P**	**20 07 59.4**	**+1.9**
	0.2nm,0.3s,baz=156,slow=11,SNR=4.6						
YKA	**Yellowknife Ar**	**19.70**	**347**	P	**P**	**20 07 59.4**	**+1.9**
DLBC	**Dease Lake**	**21.37**	**323**	LR	LR	20 17 26.3	
	comp=Z,102nm,18.5s,MS3.2,baz=22,slow=39						
ARCES	**ARCESS Array B**	**61.50**	**18**	P	**P**	**20 13 43.0**	**-1.5**
	6.1nm,1.2s,baz=339,slow=7.7,SNR=6.3						

*IDC **21** 20:06:24.0±0.8,7.60N×126.17E,mb4.0/10,mb1 4.2/10, mb1mx4.0/21,Error ellipse: s-maj=62.2km s-min=14.9km az=71.0*
*MAN **21** 20:06:27.6,7.74N×126.02E,h1km,mb4.7,ML3.5,MS3.4*
*NEIC **21** 20:06:34.1±0.5,7.51N×126.09E,h80km,Error ellipse: s-maj=37.9km s-min=8.7km az=70.0*
ISC 21 20:06:26.5±1.1,7.58N±0.05×126.42E±0.06,h30km±8km, n24,σ1§21/33,mb3.9/10,5C-3D,Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BIPH	**Bislig**	**0.61**	**354**	⇓*i*P	**Pb**	**20 06 37.6**	**-1.1**
BIPH				*i* S	**Sb**	**20 06 46.5**	**-0.5**
KCP	**Kidapawan**	**1.44**	**247**	⇓*e*P	**Pn**	**20 06 50.4**	**-0.6**
KCP				*i* S	**Sn**	**20 07 09.8**	**+0.9**
BUTP	**Butuan**	**1.60**	**330**	⇑*e*P	**Pn**	**20 06 54.1**	**+0.9**
BUTP				*e*S	**Sn**	**20 07 14.9**	**+1.9**
CGP	**Cagayan de Oro**	**1.92**	**297**	⇓*i*P	**Pn**	**20 06 57.5**	**-0.3**
CGP				*e*S	**Sn**	**20 07 21.9**	**+0.6**
MSLP	**Maasin**	**2.98**	**329**	⇑*e*P	**Pb**	**20 07 20.8**	**+2.1**
MSLP				*e*S	**Sb**	**20 08 04.7**	**+10**
PAGZ	**Pagadian**	**3.03**	**275**	⇓*e*P	**Pn**	**20 07 12.7**	**-0.9**
PAGZ				*e*S	**Sn**	**20 07 45.0**	**-4.3**
TBP	**Tagbilaran**	**3.29**	**310**	*e*P	**Pn**	**20 07 15.1**	**-2.2**
TBP				*e*S	**Sn**	**20 07 51.9**	**-4.1**
BESP	**Borongan**	**4.12**	**346**	⇑*e*P	**Pn**	**20 07 30.3**	**+1.2**
BESP				*e*S	**Sn**	**20 08 26.2**	**+9.4**
CNP	**Catarman**	**5.20**	**341**	⇑*e*P	**Pn**	**20 07 45.8**	**+1.4**
CNP				*e*S	**Sn**	**20 08 53.4**	**+9.3**
FITZ	**Fitzroy Crossi**	**25.52**	**182**	*e*P	**P**	**20 11 55.0**	**+0.6**
	5.7nm,0.9s,mb4.1						
FITZ	**Fitzroy Crossi**	**25.52**	**182**	P	**P**	**20 11 55.1**	**+0.6**
	7.9nm,0.9s,mb4.2,baz=5.2,slow=8.8,SNR=5.8						
WRA	**Warramunga Arr**	**28.43**	**164**	P	**P**	**20 12 21.5**	**+0.5**
	0.9nm,0.9s,mb3.4,baz=341,slow=9.5,SNR=7.0						
ASAR	**Alice Springs**	**31.90**	**167**	P	**P**	**20 12 51.9**	**+0.1**
	0.7nm,0.5s,mb3.7,baz=344,slow=7.1,SNR=17						
STKA	**Stephens Creek**	**41.82**	**160**	P	**P**	**20 14 16.4**	**+0.9**
	1.3nm,0.5s,mb3.8,baz=325,slow=22,SNR=10.0						
MKAR	**Makanchi Array**	**54.27**	**324**	P	**P**	**20 15 51.8**	**-0.3**
	4.8nm,0.9s,mb4.4,baz=124,slow=8.2,SNR=25						
MKAR				PcP	PcP	20 16 55.5	-0.5
	3.3nm,0.9s,baz=124,slow=4.4,SNR=9.0						
MKAR	**Makanchi Array**	**54.27**	**324**	P	**P**	**20 15 51.8**	**-0.3**
MKAR				PcP	PcP	20 16 55.5	-0.5
ZAL	**Zalesovo**	**57.06**	**332**	P	**P**	**20 16 10.9**	**-1.3**
	0.9nm,0.8s,mb3.9,baz=276,slow=6.4,SNR=7.0						
KURK	**Kurchatov**	**58.37**	**326**	*e*P	**P**	**20 16 20.4**	**-1.0**
BVAR	**Borovoye Array**	**63.96**	**326**	P	**P**	**20 16 57.0**	**-2.2**
	1.5nm,0.9s,mb4.0,baz=135,slow=4.2,SNR=8.0						
BRVK	**Borovoye**	**64.04**	**326**	*e*P	**P**	**20 16 58.3**	**-1.4**
ZRNK	**Zerenda**	**64.70**	**326**	*e*P	**P**	**20 17 02.6**	**-1.4**
ILAR	**Eielson Array**	**81.79**	**26**	P	**P**	**20 18 45.4**	**+1.7**
	1.3nm,1.1s,mb3.8,baz=254,slow=5.5,SNR=4.8						
VNDA	**Vanda**	**87.25**	**173**	P	**P**	**20 19 12.1**	**+1.1**
	1.3nm,1.1s,mb4.1,baz=360,slow=4.5,SNR=4.6						
AKASG	**Malin Array Be**	**88.74**	**321**	P	**P**	**20 19 17.8**	**-0.8**
	0.3nm,0.3s,mb4.0,baz=69,slow=3.1,SNR=6.0						

*MAN **21** 20:41:35.3,6.77N×123.66E,h2km,mb5.2,ML4.1,MS4.3*
*MOS **21** 20:41:37.5±1.0,6.86N×123.87E,h33km,mb5.0/13,Error ellipse: s-maj=25.4km s-min=9.5km az=105.1*
*BJI **21** 20:41:42.2,6.81N×123.87E,h76km,mB4.8,mb4.9,Ms4.2*
*NEIC **21** 20:41:44.2±1.4,6.78N×123.86E,h78km±13km,mb4.7/10, Error ellipse: s-maj=13.4km s-min=5.7km az=69.0*
*IDC **21** 20:41:48.2±3.3,6.81N×123.95E,h115km±30km,mb4.0/19, mb1 4.1/19,mb1mx4.0/24,MS3.8/2,Ms1 3.9/2, ms1mx3.0/29,Error ellipse: s-maj=29.5km s-min=9.3km az=74.0*
ISC 21 20:41:38.6±0.6,6.78N±0.04×123.72E±0.04,h37km±5km, n107,σ1§14/123,mb4.5/39,MS4.0/4,17C-8D,Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTBH	**Cotabato--PC H**	**0.69**	**50**	⇓*i*P	**P**	**20 41 49.5**	**-2.3**
CTBH				*i* S	**S**	**20 41 57.7**	**-3.7**
PAGZ	**Pagadian**	**1.12**	**343**	⇑*e*P	**P**	**20 41 57.6**	**-0.3**
PAGZ				*e*S	**S**	**20 42 12.1**	**-0.2**
KCP	**Kidapawan**	**1.38**	**80**	⇓*e*P	**P**	**20 42 01.4**	**-0.4**
GSPH	**General Santos**	**1.40**	**119**	⇓*e*P	**P**	**20 42 06.2**	**+4.2**
GSPH				*i* S	**S**	**20 42 27.7**	**+8.1**
DCPH	**Dipolog City**	**1.83**	**349**	⇑*i*P	**P**	**20 42 08.5**	**+0.4**
DCPH				*e*S	**S**	**20 42 28.8**	**-1.5**
CGP	**Cagayan de Oro**	**1.93**	**30**	⇓*e*P	**P**	**20 42 10.4**	**+0.9**
CGP				*e*S	**S**	**20 42 34.8**	**+2.0**
SNPH	**Sibulan**	**2.59**	**349**	⇓*i*P	**P**	**20 42 20.5**	**+1.4**
SNPH				*i* S	**S**	**20 42 54.0**	**+4.3**
BUTP	**Butuan**	**2.88**	**41**	⇑*e*P	**P**	**20 42 28.2**	**+5.0**
BUTP				*e*S	**S**	**20 42 57.2**	**+0.2**
TBP	**Tagbilaran**	**2.90**	**3**	*e*P	**P**	**20 42 24.4**	**+1.0**
BIPH	**Bislig**	**2.97**	**62**	*e*P	**P**	**20 42 26.4**	**+2.0**
BIPH				*i* S	**S**	**20 43 05.0**	**+5.8**
MSLP	**Maasin**	**3.52**	**19**	⇑*e*P	**P**	**20 42 32.5**	**+0.2**
LLP	**Lapu-Lapu**	**3.53**	**4**	*e*P	**P**	**20 42 31.6**	**-0.8**
LLP				*e*S	**S**	**20 43 10.8**	**-2.5**
AAP	**Anini-y**	**4.02**	**334**	*e*P	**P**	**20 42 40.0**	**+0.6**
OCLP	**Ormoc**	**4.34**	**12**	⇑*e*P	**P**	**20 42 44.0**	**+0.2**
CUYO	**Cuyo Island**	**4.85**	**327**	⇑*e*P	**P**	**20 42 50.6**	**-0.4**
CUYO				*e*S	**S**	**20 43 43.7**	**-3.0**
RCP	**Roxas**	**4.85**	**349**	⇑*e*P	**P**	**20 42 53.0**	**+2.0**
BESP	**Borongan**	**5.09**	**19**	⇑*e*P	**P**	**20 42 54.2**	**-0.2**
CNP	**Catarman**	**5.77**	**9**	⇑*e*P	**P**	**20 43 11.8**	**+7.8**
ENPP	**El Nido**	**6.11**	**316**	⇑*e*P	**P**	**20 43 08.2**	**-0.6**
BATP	**Bataraza**	**6.20**	**289**	⇑*e*P	**P**	**20 43 08.9**	**-1.1**
BATP				*e*S	**S**	**20 44 20.1**	**-0.4**
SJMP	**San Jose**	**6.20**	**336**	⇑*e*P	**P**	**20 43 09.7**	**-0.3**
BUSP	**Coron**	**6.25**	**327**	⇑*e*P	**P**	**20 43 09.5**	**-1.2**
KKM	**Kota Kinabalu**	**7.49**	**265**	*e*P	**P**	**20 43 32.0**	**+3.9**
JOW	**Kunigami**	**20.41**	**12**	P	**P**	**20 46 15.4**	**+0.2**
	27nm,0.7s,baz=213,slow=7.5,SNR=11						
JOW				S	**S**	**20 49 48.6**	**-8.3**
	15nm,1.1s,baz=204,slow=18,SNR=4.1						
KAKA	**Kakadu**	**21.19**	**156**	*e*P	**P**	**20 46 22.4**	**-0.9**
	27nm,0.6s,mb4.8						
SSE	**Sheshan**	**24.31**	**355**	P	**P**	**20 46 54.3**	**+0.3**
SSE				S	**S**	**20 51 09.6**	**+1.8**
SSE				AMB	AMB		
	comp=Z,46nm,0.7s,mb5.0						
FITZ	**Fitzroy Crossi**	**24.79**	**176**	P	**P**	**20 46 58.5**	**-0.3**
	comp=Z,3.1nm,0.5s,mb4.1,baz=349,slow=9.9,SNR=9.1						
WHN	**Wuhan**	**25.23**	**341**	*e*P	**P**	**20 47 04.0**	**+1.2**
NJ2	**Nanjing**	**25.55**	**350**	*e*P	**P**	**20 47 05.1**	**-0.8**
NJ2				PP	PP	20 47 45.8	0.0
NJ2				S	**S**	**20 51 31.0**	**+2.4**
NJ2				AMB	AMB		
	comp=Z,10.0nm,0.5s,mb4.6						
NJ2				LR	LR		
	comp=N,260nm,11.2s						
NJ2				LR	LR		
	comp=E,330nm,19.1s						
ENH	**Enshi**	**26.93**	**332**	*e*P	**P**	**20 47 19.4**	**+0.8**
	comp=E,6.8nm,0.8s,mb4.2						
KMI	**Kunming**	**27.12**	**315**	*e*P	**P**	**20 47 21.8**	**+1.4**
KMI				AMB	AMB		
	comp=Z,11nm,1.5s,mb4.2						
WRAB	**Tennant Creek**	**28.53**	**159**	*e*P	**P**	**20 47 32.2**	**-1.0**
	comp=Z,11nm,0.7s,mb4.7						
WRA	**Warramunga Arr**	**28.53**	**159**	P	**P**	**20 47 31.9**	**-1.3**
	comp=Z,1.9nm,0.6s,mb4.0,baz=333,slow=11,SNR=20						
WRA				S	**S**	**20 52 12.8**	**-4.3**
	comp=Z,75nm,0.9s,baz=313,slow=17,SNR=5.4						
WRA	**Warramunga Arr**	**28.53**	**159**	P	**P**	**20 47 31.9**	**-1.3**
WRA				S	**S**	**20 52 12.8**	**-4.3**
WRA				pmax	pmax		
	comp=Z,2.0nm,0.6s						
WRA				smax			
	comp=Z,75nm,0.9s						
ASAR	**Alice Springs**	**31.85**	**162**	P	**P**	**20 48 02.0**	**-0.5**
	comp=Z,2.1nm,0.8s,mb4.0,baz=337,slow=6.8,SNR=13						
LZH	**Lanzhou**	**34.39**	**331**	*e*P	**P**	**20 48 25.0**	**+0.6**
LZH				AMB	AMB		
	comp=Z,29nm,1.6s,mb5.0						
SHL	**Shillong**	**35.67**	**305**	*e*P	**P**	**20 48 36.0**	**+0.5**
SHL				*e*P		20 53 22.0	
MDJ	**Mudanjiang**	**38.04**	**7**	P	**P**	**20 48 55.3**	**+0.1**
MDJ				AMB	AMB		
	comp=Z,23nm,0.8s,mb5.0						
MDJ				AMB	AMB		
	comp=Z,158nm,4.0s						
MDJ	**Mudanjiang**	**38.04**	**7**	*e*P	**P**	**20 48 55.4**	**+0.2**
	comp=Z,23nm,1.0s,mb4.9						
LSA	**Lhasa**	**38.19**	**311**	P	**P**	**20 48 59.0**	**+2.4**
LSA	**Lhasa**	**38.19**	**311**	*e*P	**P**	**20 48 58.9**	**+2.2**
	comp=Z,5.0nm,0.9s,mb4.2						
NWAO	**Narrogin (SRO)**	**39.96**	**189**	P	**P**	**20 49 12.9**	**+1.6**
	comp=Z,20nm,1.1s,mb4.8,baz=61,slow=10,SNR=2.3						
NWAO	**Narrogin (SRO)**	**39.96**	**189**	P	**P**	**20 49 12.9**	**+1.6**
NWAO				pmax	pmax		
	comp=Z,20μm,1.1s						
ASAJ	**Asahikawa**	**40.70**	**21**	P	**P**	**20 49 17.4**	**+0.1**
	comp=Z,8.5nm,0.8s,mb4.4,baz=217,slow=5.1,SNR=3.3						
ASAJ	**Asahikawa**	**40.70**	**21**	P	**P**	**20 49 17.4**	**+0.1**
ASAJ				pmax	pmax		
	comp=Z,9.0nm,0.8s						
STKA	**Stephens Creek**	**42.05**	**157**	*e*P	**P**	**20 49 28.7**	**+0.1**
	comp=Z,9.3nm,0.8s,mb4.5						
STKA	**Stephens Creek**	**42.05**	**157**	P	**P**	**20 49 28.9**	**+0.2**
	comp=Z,6.5nm,0.6s,mb4.5,baz=324,slow=8.9,SNR=18						
HIA	**Hailar**	**42.48**	**356**	*e*P	**P**	**20 49 32.0**	**+0.2**
	comp=Z,29nm,1.4s,mb4.7						
KLR	**Kul'dur**	**42.85**	**8**	*e*P	**P**	**20 49 34.0**	**-0.9**
ULN	**Ulaanbaatar**	**43.34**	**344**	*e*P	**P**	**20 49 39.5**	**+0.6**
ULN	**Ulaanbaatar**	**43.34**	**344**	*e*P	**P**	**20 49 39.5**	**+0.5**
	comp=Z,13nm,1.4s,mb4.5						
SONM	**Songino Array**	**43.50**	**343**	P	**P**	**20 49 40.3**	**+0.1**
	comp=Z,3.1nm,0.9s,mb4.0,baz=164,slow=9.0,SNR=20						
SONM				PcP	PcP	20 51 26.4	-1.9
	comp=Z,1.2nm,0.9s,baz=142,slow=3.0,SNR=3.7						
SONM	**Songino Array**	**43.50**	**343**	P	**P**	**20 49 40.3**	**+0.1**
SONM				PcP	PcP	20 51 26.4	-1.9
ZAK	**Zakamensk**	**46.70**	**342**	*e*P	**P**	**20 50 05.4**	**-0.3**
ZAK				*e*		20 51 37.8	
TLY	**Talaya**	**47.74**	**343**	⇓*i*P	**P**	**20 50 14.4**	**+0.5**
TLY				pmax	pmax		
	comp=Z,92nm,1.4s,mb5.6						
WMQ	**Urumqi**	**48.53**	**325**	P	**P**	**20 50 20.8**	**+0.7**
MOY	**Mondy**	**48.53**	**341**	*e*P	**P**	**20 50 20.9**	**+0.9**
BOD	**Bodaibo**	**51.47**	**353**	*e*P	**P**	**20 50 41.5**	**-0.9**
MKAR	**Makanchi Array**	**53.36**	**325**	P	**P**	**20 50 56.9**	**+0.2**
	comp=Z,5.5nm,0.6s,mb4.7,baz=126,slow=8.5,SNR=55						
MKAR				LR	LR	21 14 58.5	
	comp=Z,112nm,19.6s,MS3.9,baz=150,slow=37						
MKAR	**Makanchi Array**	**53.36**	**325**	P	**P**	**20 50 56.9**	**+0.2**
MKAR				pmax	pmax		
	comp=Z,6.0nm,0.6s						
MKAR				MLR	MLR		
	comp=Z,112nm,19.6s						
ULHL	**Ulahol**	**54.77**	**318**	P	**P**	**20 51 08.3**	**+1.3**
	SNR=6.3						
YAK	**Yakutsk**	**55.32**	**3**	⇑*e*P	**P**	**20 51 09.3**	**-1.5**
YAK				pmax	pmax		
	comp=Z,14nm,0.7s,mb5.1						
YAK				MLR	MLR		
	comp=Z,100nm,19.0s,MS3.9						
KZA	**Kyzart**	**55.36**	**317**	P	**P**	**20 51 12.9**	**+1.6**
	SNR=5.3						
UCH	**Uchtor**	**55.92**	**317**	P	**P**	**20 51 17.0**	**+1.7**
	SNR=7.7						
AML	**Almayashu**	**56.43**	**317**	P	**P**	**20 51 20.3**	**+1.3**
	SNR=8.0						
ZAL	**Zalesovo**	**56.54**	**334**	P	**P**	**20 51 18.1**	**-1.5**
	comp=Z,2.0nm,0.7s,mb4.3,baz=265,slow=7.4,SNR=7.5						
ZAL	**Zalesovo**	**56.54**	**334**	P	**P**	**20 51 18.1**	**-1.5**
ZAL				pmax	pmax		
	comp=Z,2.0nm,0.7s						
EKS2	**Erkin-Say**	**56.59**	**317**	P	**P**	**20 51 21.4**	**+1.2**
	SNR=6.0						
KURK	**Kurchatov**	**57.58**	**328**	*e*P	**P**	**20 51 26.4**	**-0.6**
NVS	**Novosibirsk**	**57.82**	**334**	*e*P	**P**	**20 51 26.6**	**-2.1**
NVS				pmax	pmax		
	comp=Z,12nm,0.9s,mb4.9						
NVS				pmax	pmax		
	comp=N,7.0nm,0.8s						
BRVK	**Borovoye**	**63.22**	**327**	*e*P	**P**	**20 52 05.1**	**-0.4**
ZRNK	**Zerenda**	**63.87**	**327**	*e*P	**P**	**20 52 09.3**	**-0.4**
TIXI	**Tiksi**	**64.88**	**2**	*e*P	**P**	**20 52 13.5**	**-2.5**
TIXI				pmax	pmax		
	comp=Z,21nm,0.8s,mb5.2						
BILL	**Bilibino**	**67.43**	**16**	⇓*e*P	**P**	**20 52 30.4**	**-1.9**
BILL				pmax	pmax		
	comp=Z,7.0nm,1.3s,mb4.5						
AB31	**Akbulak array**	**67.91**	**321**	P	**P**	**20 52 35.3**	**-0.3**
AB31				pmax	pmax		
	comp=Z,2.0nm,0.6s,mb4.3						
ARU	**Arti**	**70.78**	**328**	⇑*i*P	**P**	**20 52 52.3**	**-0.7**
ARU				*e*		20 53 10.8	
ARU				*e*		20 55 28.9	
ARU				*e*S	S	21 02 08.0	+4.2
ARU				pmax	pmax		
	comp=Z,11nm,0.7s,mb4.9						
ARU	**Arti**	**70.78**	**328**	*e*P	**P**	**20 52 52.2**	**-0.8**
	comp=Z,11nm,0.6s,mb5.0						
THR	**Tehran**	**71.96**	**305**	P	**P**	**20 53 01.4**	**+1.0**
	comp=Z,0.5nm,0.5s,mb3.7,baz=164,slow=2.3,SNR=4.1						
THR	**Tehran**	**71.96**	**305**	P	**P**	**20 53 01.4**	**+0.9**
THR				pmax	pmax		
	comp=Z,1.0nm,0.5s						
THR	**Tehran**	**71.96**	**305**	P	**P**	**20 53 01.4**	**+1.0**
ZEI	**Tsey**	**77.96**	**312**	*e*P	**P**	**20 53 32.7**	**-2.2**
ZEI				*e*S	S	21 03 22.0	-2.3
ZEI				pmax	pmax		
	comp=Z,250nm,5.0s						
KIV	**Kislovodsk**	**78.88**	**313**	*d*P	**P**	**20 53 40.7**	**+0.8**
KIV				pmax	pmax		
	comp=Z,11nm,0.9s,mb4.8						
KIV	**Kislovodsk**	**78.88**	**313**	*e*P	**P**	**20 53 41.0**	**+1.1**
	comp=Z,4.9nm,0.7s,mb4.5						
OBN	**Obninsk**	**82.86**	**325**	*e*P	**P**	**20 54 04.5**	**+3.9**
OBN				pmax	pmax		
	comp=Z,8.0nm,1.1s,mb4.7						
OBN				MLR	MLR		
	comp=Z,100nm,20.0s,MS4.2						
GZT	**Gaziantep**	**82.88**	**307**	*i*P	**P**	**20 54 02.4**	**+1.2**
ILAR	**Eielson Array**	**83.66**	**26**	P	**P**	**20 54 03.0**	**-1.5**
	comp=Z,0.4nm,0.6s,mb3.7,baz=245,slow=6.2,SNR=6.2						
BOYT	**Boyabat**	**84.68**	**311**	*i*P	**P**	**20 54 11.1**	**+0.9**
CTKT	**Corum**	**84.83**	**310**	*i*P	**P**	**20 54 12.2**	**+1.3**
AVNT	**Avonos**	**84.92**	**308**	*i*P	**P**	**20 54 12.0**	**+0.5**
SIM	**Simferopol'**	**84.98**	**315**	*c*P	**P**	**20 54 11.8**	**+0.2**
SIM				pmax	pmax		
	comp=Z,17nm,0.8s,mb5.2						
JOF	**Joensuu**	**85.12**	**333**	*e*p	**P**	**20 54 11.2**	**-0.6**
BRTR	**Keskin Array B**	**85.78**	**309**	P	**P**	**20 54 16.0**	**+0.4**
	comp=Z,2.4nm,0.8s,mb4.5,baz=117,slow=5.5,SNR=14						
BALT	**Daday**	**85.81**	**311**	*i*P	**P**	**20 54 16.9**

FITZ S **S** **20 49 56.1 +1.7**
52nm,0.3s,baz=177,slow=4.3,SNR=10.0
KKM Kota Kinabalu 15.23 334⇑ *e*P **P** **20 48 56.2 +2.1**
96nm,0.9s
WRA Warramunga Arr 16.41 139 P **P** **20 49 06.0 -1.1**
16nm,0.3s,baz=316,slow=12,SNR=288
WRA S **S** **20 51 59.0 -1.3**
3.6nm,0.3s,baz=316,slow=21,SNR=19
WRA Warramunga Arr 16.41 139 P **P** **20 49 06.0 -1.1**
WRA S **S** **20 51 59.0 -1.3**
comp=Z,16nm,0.3s
WRA pmax pmax
comp=Z,4.0nm,0.3s
WRAB Tennant Creek 16.41 139 *e*P **P** **20 49 05.8 -1.3**
comp=Z,584nm,1.0s
WRAB *e*S **S** **20 51 59.6 -0.7**
WB2 Warramunga Arr 16.42 139⇓ *i*P **P** **20 49 06.0 -1.2**
WB2 *e*S **S** **20 51 55.5 -4.9**
AS12 Alice Springs 19.02 148⇓ *i*P **P** **20 49 34.6 +0.6**
comp=Z,109nm,0.4s
AS12 *e*S **S** **20 52 49.7 -0.4**
ASAR Alice Springs 19.02 148 P **P** **20 49 35.1 +1.1**
comp=Z,17nm,0.3s,baz=337,slow=14,SNR=247
ASAR S **S** **20 52 51.4 +1.3**
comp=Z,4.5nm,0.3s,baz=327,slow=21,SNR=18
TGY Tagaytay City 21.76 355 P **P** **20 50 03.3 +2.4**
comp=Z,308nm,0.5s,baz=174,slow=4.2,SNR=9.0
TGY Tagaytay City 21.76 355 P **P** **20 50 03.3 +2.4**
TGY pmax pmax
comp=Z,308nm,0.5s
FORT Forrest 23.44 169⇓ *i*P **P** **20 50 16.8 -0.1**
comp=Z,429nm,0.6s
PMG Port Moresby 23.98 96 P **P** **20 50 21.1 -0.8**
comp=Z,60nm,0.8s,mb5.0,baz=295,slow=1.9,SNR=12
PMG Port Moresby 23.98 96 P **P** **20 50 21.1 -0.9**
PMG pmax pmax
comp=Z,60nm,0.8s
PMG Port Moresby 23.98 96 *e*P **P** **20 50 19.1 -2.9**
comp=Z,59nm,0.8s,mb5.0
KLBR Kellerberrin 24.26 191⇓ *i*P **P** **20 50 24.0 -0.4**
comp=Z,165nm,0.6s,mb5.5
KLBR *e*S S 20 55 17.5 +57
MUN Mundaring 24.96 194 *e*P **P** **20 50 30.4 -0.4**
comp=Z,35nm,0.7s,mb4.9
MUN *e*S S 20 55 26.3 +54
NWAO Narrogin (SRO) 25.66 191 P **P** **20 50 36.8 -0.3**
comp=Z,62nm,0.6s,mb5.2,baz=20,slow=8.9,SNR=66
NWAO Narrogin (SRO) 25.66 191 P **P** **20 50 36.8 -0.3**
NWAO pmax pmax
comp=Z,62nm,0.6s
NWAO Narrogin (SRO) 25.66 191 *e*P **P** **20 50 35.5 -1.6**
comp=Z,41nm,0.6s,mb5.0
CTA Charters Tower 25.69 121 *e*P **P** **20 50 37.5 0.0**
comp=Z,19nm,1.2s,mb4.4
CTA Charters Tower 25.69 121 P **P** **20 50 37.7 +0.2**
comp=Z,39nm,1.2s,mb4.7,baz=292,slow=11,SNR=6.3
CTA Charters Tower 25.69 121 P **P** **20 50 37.7 +0.2**
CTA pmax pmax
comp=Z,39nm,1.2s
CTAO Charters Tower 25.69 121 *e*P **P** **20 50 37.0 -0.6**
STKA Stephens Creek 29.65 147 *e*P **P** **20 51 12.8 -0.1**
comp=Z,19nm,0.6s,mb4.8
STKA *e*S **S** **20 55 45.3 -1.3**
STKA Stephens Creek 29.65 147 P **P** **20 51 13.1 +0.2**
comp=Z,18nm,0.4s,mb5.0,baz=318,slow=8.7,SNR=46
JOW Kunigami 34.72 8 P **P** **20 51 56.0 -0.4**
comp=Z,13nm,0.9s,mb4.5,baz=207,slow=5.5,SNR=4.3
ARMA Armidale 35.08 134⇑ *i*P **P** **20 52 01.5 +2.1**
TOO Toolangi 36.07 149 *e*P **P** **20 52 09.4 +1.7**
comp=Z,3.6nm,0.6s,mb4.1
CNB Canberra Magne 36.61 142⇑ *i*P **P** **20 52 13.7 +1.4**
comp=Z,21nm,0.9s,mb4.6
GYA Guiyang 37.47 336 *i*P **P** **20 52 20.5 +1.0**
GYA AP pP 20 53 16.8 +0.2
GYA S **S** **20 57 46.4 -0.5**
GYA AMB AMB
comp=Z,20nm,0.9s,mb4.5
KMI Kunming 38.12 329 *e*P **P** **20 52 25.4 +0.5**
SSE Sheshan 38.62 358 P **P** **20 52 29.3 +0.4**
SSE AMB AMB
comp=Z,36nm,0.7s,mb4.9
WHN Wuhan 38.92 348 *e*P **P** **20 52 32.8 +1.4**
NJ2 Nanjing 39.73 355 *e*P **P** **20 52 38.5 +0.5**
NJ2 PP PP 20 54 15.9 -0.9
NJ2 AMB AMB
comp=Z,60nm,1.0s,mb4.9
NJ2 AMB AMB
comp=Z,560nm,4.6s
TAU Tasmania Unive 41.08 153 P **P** **20 52 49.5 +0.5**
JNU Nakatsue 41.29 10 P **P** **20 52 49.6 -1.2**
comp=Z,5.7nm,1.0s,mb3.7,baz=234,slow=8.7,SNR=3.7
XAN Xi'an 43.60 343 P **P** **20 53 08.9 -0.5**
XAN AMB AMB
comp=Z,19nm,1.4s,mb4.1
MAJO Matsushiro 46.28 17 *e*P **P** **20 53 29.0 -1.5**
comp=Z,70nm,1.5s,mb4.8
MAT Matsushiro 46.28 17 P **P** **20 53 29.3 -1.2**
MAT Matsushiro 46.28 17 *e*P **P** **20 53 29.0 -1.5**
comp=Z,83nm,1.6s,mb4.8
LZH Lanzhou 47.13 339⇓P **P** **20 53 38.0 +0.9**
LZH AMB AMB
comp=Z,42nm,1.5s,mb4.5
LSA Lhasa 48.16 322 P **P** **20 53 46.4 +1.3**
LSA Lhasa 48.16 322 *e*P **P** **20 53 46.9 +1.7**
comp=Z,6.8nm,0.7s,mb4.1
HYB Hyderabad 50.49 300 *i*P **P** **20 54 02.5 -0.3**
HYB Hyderabad 50.49 300 *e*P **P** **20 54 02.5 -0.3**
PKI Pulchoki 50.50 315 *e*P **P** **20 54 02.5 -0.2**
comp=Z,28nm,0.6s,mb4.8
KKN Kakani 50.73 316 *e*P **P** **20 54 04.1 -0.3**
comp=Z,25nm,0.8s,mb4.6
DMN Daman 50.73 315 *e*P **P** **20 54 05.1 +0.6**
comp=Z,43nm,0.8s,mb4.8
GKN Gorkha 51.30 315 *e*P **P** **20 54 08.3 -0.4**
comp=Z,20nm,0.4s,mb4.8
CN2 Changchun 51.31 2 *e*P **P** **20 54 10.0 +1.5**
CN2 LR LR
comp=N,300nm,17.0s
CN2 LR LR
comp=E,350nm,17.0s
CN2 LR LR
comp=Z,240nm,17.0s
KOLN Koldanda 51.89 314 *e*P **P** **20 54 14.5 +1.5**
comp=Z,66nm,0.7s,mb5.0
DANN Dangsing 52.13 315 *e*P **P** **20 54 14.5 -0.3**
MDJ Mudanjiang 52.42 6 P **P** **20 54 16.3 -0.4**
MDJ AP pP 20 55 14.3 -3.3
MDJ PCP PcP 20 55 22.9 -0.8
MDJ XP sP 20 55 43.9 -4.9
MDJ PP PP 20 56 18.3 -1.1
MDJ SCP 20 58 53.3
MDJ PCS 20 59 21.8
MDJ S **S** **21 01 19.4 -0.1**
MDJ XS 21 03 05.6
MDJ SCS ScS 21 03 37.0 +3.1
MDJ SS SS 21 05 04.8 +3.4
MDJ AMB AMB
comp=Z,37nm,1.3s,mb4.5
MDJ AMB AMB
comp=Z,114nm,4.2s
ASAJ Asahikawa 54.55 17 P **P** **20 54 32.0 0.0**
comp=Z,16nm,0.8s,mb4.5,baz=228,slow=9.7,SNR=4.5
ASAJ Asahikawa 54.55 17 P **P** **20 54 32.1 0.0**
ASAJ pmax pmax
comp=Z,16nm,0.8s
RPZ Rata Peaks 55.12 139 P **P** **20 54 36.9 +0.7**
comp=Z,72nm,0.8s,mb5.1,baz=276,slow=0.8,SNR=19
ULN Ulaanbaatar 57.09 347 *c i*P **P** **20 54 49.8 -0.2**
ULN Ulaanbaatar 57.09 347 *e*P **P** **20 54 48.7 -1.3**
comp=Z,3.3nm,0.6s,mb3.9
SONM Songino Array 57.21 347 P **P** **20 54 50.2 -0.6**
comp=Z,2.0nm,0.5s,mb3.9,baz=170,slow=7.5,SNR=15
URZ Urewera 57.37 131 P **P** **20 54 51.3 -0.8**
comp=Z,17nm,0.9s,mb4.5,baz=38,slow=6.8,SNR=7.0
CASY Casey 59.11 186⇓ *i*P **P** **20 55 03.4 -0.4**
ZAK Zakamensk 60.33 346 *e*P **P** **20 55 11.4 -0.8**
ZAK *e* 20 55 55.4
WMQ Urumqi 60.41 331 *e*P **P** **20 55 13.8 +0.9**
TLY Talaya 61.44 346 *e*P **P** **20 55 19.5 -0.1**
TLY pmax pmax
comp=Z,34nm,1.4s,mb4.7
KSH Kashi 63.99 321 *e*P **P** **20 55 33.1 -3.4**
KSH *e*PCP PcP 20 56 07.0 -2.6
KSH *e*AP pP 20 56 37.8 -2.8
KSH *e*SCP 20 59 40.1
KSH *e*PCS 21 00 08.8
MKAR Makanchi Array 65.19 330 P **P** **20 55 44.0 0.0**
comp=Z,6.1nm,0.5s,mb4.5,baz=139,slow=7.1,SNR=50
MKAR Makanchi Array 65.19 330 P **P** **20 55 44.0 0.0**
MKAR pmax pmax
comp=Z,6.0nm,0.5s
MKAR Makanchi Array 65.19 330 P **P** **20 55 44.0 -0.1**
BOD Bodaibo 65.71 355 *e*P **P** **20 55 46.2 -0.9**
PET Petropavlovsk 67.66 22 *c i*P **P** **20 55 59.8 +0.4**
PET pmax pmax
comp=Z,40nm,1.1s,mb5.1
PET Petropavlovsk 67.66 22 *e*P **P** **20 55 59.0 -0.4**
comp=Z,15nm,0.8s,mb4.8
ZAL Zalesovo 69.31 337 P **P** **20 56 08.1 -1.4**
comp=Z,3.7nm,0.5s,mb4.4,baz=254,slow=5.4,SNR=16
ZAL Zalesovo 69.31 337 P **P** **20 56 08.1 -1.4**
ZAL pmax pmax
comp=Z,4.0nm,0.5s
KURK Kurchatov 69.65 332 *e*P **P** **20 56 10.9 -0.7**
YAK Yakutsk 69.72 3 *e*P **P** **20 56 11.0 -0.9**
YAK *e*S S 21 05 41.0 +44
YAK pmax pmax
comp=Z,16nm,1.0s,mb4.7
YAK pmax pmax
comp=N,5.0nm,1.1s
YAK smax
comp=N,5.0nm,1.1s
YAK smax
comp=E,4.0nm,1.3s
YAK Yakutsk 69.72 3 *e*P **P** **20 56 11.7 -0.2**
comp=E,29nm,0.8s,mb5.1
MA2 Magadan 70.64 15 *e*P **P** **20 56 17.7 +0.3**
MAW Mawson 71.80 200 *e*P **P** **20 56 24.3 0.0**
comp=E,7.5nm,0.7s,mb4.4
MAW Mawson 71.80 200 P **P** **20 56 25.0 +0.8**
comp=E,7.9nm,0.6s,mb4.5,baz=80,slow=7.0,SNR=16
MAW Mawson 71.80 200 P **P** **20 56 25.0 +0.7**
MAW pmax pmax
comp=Z,8.0nm,0.6s
VNDA Vanda 72.67 172 P **P** **20 56 30.0 +0.7**
comp=Z,3.8nm,0.5s,mb4.3,baz=318,slow=6.8,SNR=34
VNDA Vanda 72.67 172 P **P** **20 56 30.0 +0.7**
VNDA pmax pmax
comp=Z,4.0nm,0.5s
VNDA Vanda 72.67 172 *e*P **P** **20 56 29.4 +0.1**
comp=Z,2.1nm,0.6s,mb3.9
SBA Scott Base 73.64 171 *e*P **P** **20 56 35.9 +1.0**
FX1 Attu Island--F 73.82 29 *e*P **P** **20 56 36.1 -0.3**
BRVK Borovoye 75.14 330 P **P** **20 56 43.7 -0.3**
ZRNK Zerenda 75.72 330 *e*P **P** **20 56 46.4 -0.8**
TIXI Tiksi 79.28 2 *e*P **P** **20 57 05.6 -0.6**
TIXI *e* pP 20 58 10.5 -2.1
TIXI pmax pmax
comp=Z,92nm,1.2s,mb5.4
TIXI Tiksi 79.28 2 *e*P **P** **20 57 05.5 -0.7**
comp=Z,8.6nm,0.3s,mb5.0
TIXI *e*pP pP 20 58 08.6 -4.0
THR Tehran 80.04 308 P **P** **20 57 12.9 +2.0**
comp=Z,3.2nm,1.0s,mb4.0,baz=125,slow=3.1,SNR=9.6
THR Tehran 80.04 308 P **P** **20 57 12.9 +2.0**
THR pmax pmax
comp=Z,3.0nm,1.0s
SYO Syowa Base 80.48 201 ⇑P **P** **20 57 13.2 +0.7**
SYO Syowa Base 80.48 201 ⇓PcP PcP 20 57 16.2 -2.8
SYO Syowa Base 80.48 201 ⇓pP pP 20 58 20.9 +1.8
SYO Syowa Base 80.48 201 ⇑*e*P **P** **20 57 13.2 +0.7**
SYO ⇓*e*PcP PcP 20 57 16.2 -2.8
SYO ⇓*e*PP pP 20 58 20.9 +1.8
BILL Bilibino 81.50 15 ⇓*e*P **P** **20 57 18.4 +0.6**
BILL pmax pmax
comp=Z,7.0nm,1.4s,mb4.2
QSPA South Pole Qui 82.28 180 *e*P **P** **20 57 23.1 +1.4**
comp=Z,10.0nm,0.7s,mb4.7
QSPA LR LR
comp=Z,50nm,21.1s
ARU Arti 82.70 330 ⇑*i*P **P** **20 57 24.7 +0.5**
ARU *e* 21 00 36.7
ARU pmax pmax
comp=Z,8.0nm,0.9s,mb4.5
ARU Arti 82.70 330 *e*P **P** **20 57 24.3 +0.1**
ZEI Tsey 87.24 314 *e*P **P** **20 57 48.6 +1.7**
KIV Kislovodsk 88.36 315 *e*P **P** **20 57 50.4 -1.8**
KIV *e* 21 01 21.0
KIV *e* 21 08 02.8
KIV pmax pmax
comp=Z,3.0nm,1.1s,mb4.0
SNAA Sanae 93.27 195 *e*P **P** **20 58 15.1 +0.7**
SNAA *e*pP pP 20 59 22.1 -0.3
LBTB Lobatse 93.41 244 *e*P **P** **20 58 16.8 +0.8**
BRTR Keskin Array B 94.35 309 P **P** **20 58 20.7 +0.7**
comp=Z,1.8nm,0.9s,mb4.1,baz=130,slow=5.0,SNR=8.4
VNA2 Neumayer--Watz 94.89 195 ⇑*i* **P** **20 58 25.3 +3.6**
VNA2 Neumayer--Watz 94.89 195 **P** **20 58 34.3 +13**
VNA3 Neumayer Olymp 95.23 194 **P** **20 58 36.3 +13**
VNA3 Neumayer Olymp 95.23 194 P **P** **20 58 27.2 +3.9**
VNA3 *e* 20 58 36.3
VNA1 Neumayer--Stat 95.29 195 **P** **20 58 30.3 +6.7**
MCK McKinley 96.00 27 *e*P **P** **20 58 26.0 -0.9**
comp=Z,15nm,1.5s,mb4.9
SML Sawmill 96.11 29 *e*P **P** **20 58 26.1 -1.3**
COLA College 96.57 25 P **P** **20 58 29.4 -0.1**
ILAR Eielson Array 96.97 26 P **P** **20 58 29.7 -1.6**
comp=Z,2.4nm,0.9s,mb4.5,baz=272,slow=4.0,SNR=18
ILAR PP PP 21 02 29.9 -2.4
comp=Z,1.0nm,1.1s,baz=266,slow=6.8,SNR=5.4
ILAR PKKPbc 21 15 11.3
comp=Z,0.5nm,0.8s,baz=84,slow=2.2,SNR=5.7
ILAR Eielson Array 96.97 26 P **P** **20 58 29.7 -1.6**
ILAR 21 02 29.9
ILAR pmax pmax
comp=Z,2.0nm,0.9s
ILAR pmax pmax
comp=Z,1.0nm,1.1s
ILAR pmax pmax
comp=Z,1.0nm,0.8s
ARCES ARCESS Array B 99.79 339 P **P** **20 58 43.9 -0.1**
comp=Z,1.3nm,0.7s,mb4.5,baz=63,slow=2.7,SNR=4.3
ARCES ARCESS Array B 99.79 339 P **P** **20 58 43.9 -0.1**
ARCES pmax pmax
comp=Z,1.0nm,0.7s
DAWY Dawson 100.23 26 *e*Pdif P 20 58 45.9 -0.2
GERES GERESS Array B 108.43 319 PKKPab 21 14 52.3
comp=Z,2.0nm,0.5s,baz=281,slow=6.8,SNR=3.6
YKA Yellowknife Ar 111.39 25 PKiKP 21 03 32.1
comp=Z,1.1nm,0.9s,baz=296,slow=1.7,SNR=11
YKA PKKPbc 21 14 26.1
comp=Z,0.4nm,0.8s,baz=106,slow=2.7,SNR=5.8
YKA Yellowknife Ar 111.39 25 *i* PKiKP PKPdf 21 03 32.1 +1.1
YKA 21 14 26.1
YKA pmax pmax
comp=Z,1.0nm,0.9s
WVOR Wild Horse Val 116.00 46 *e*PKPdf PKPdf 21 03 42.1 +1.6
NVAR Mina Array Bea 117.17 51 PKP PKPdf 21 03 44.9 +2.0
comp=Z,1.4nm,0.8s,baz=273,slow=1.2,SNR=9.0
NVAR PP PP 21 04 57.6 -3.6
comp=Z,1.4nm,0.8s,baz=273,slow=6.2,SNR=8.1
CHMT Chamberlain Mo 118.34 40 *e*PKPdf PKPdf 21 03 46.1 +1.2
HLID Hailey 118.67 44 *e*PKPdf PKPdf 21 03 48.0 +2.3
BOZ Bozeman (W) 119.84 41 PKPdf PKPdf 21 03 50.0 +2.2
HWUT Hardware Ranch 121.29 46 *e*PKPdf PKPdf 21 03 52.4 +1.6
MSU Marysvale 121.80 49 *e*PKPdf PKPdf 21 03 54.8 +3.0
BW06 Boulder Array 122.28 44 *e*PKPdf PKPdf 21 03 54.5 +1.9
PDAR Pinedale Array 122.28 44 PKP PKPdf 21 03 53.9 +1.2
comp=Z,0.8nm,0.5s,baz=274,slow=1.2,SNR=11
PDAR PKKPbc 21 13 51.9
comp=Z,0.7nm,0.6s,baz=104,slow=6.1,SNR=6.1
ESDC Sonseca Array 122.98 313 PKP PKPdf 21 03 55.9 +1.8
comp=Z,1.0nm,0.7s,baz=26,slow=3.8,SNR=5.9
PV01 Paradox Valley 124.61 49 *e*PKPdf PKPdf 21 03 58.8 +1.4
RSSD Black Hills 125.39 40 *e*PKPdf PKPdf 21 04 00.1 +1.4
ULM Lac du Bonnet 126.70 30 PKP PKPdf 21 04 01.7 +0.7
comp=Z,2.3nm,0.5s,baz=348,slow=5.7,SNR=3.6
ULM Lac du Bonnet 126.70 30 PKP PKPdf 21 04 01.7 +0.7
ANMO Albuquerque 127.26 52 *e*PKPdf PKPdf 21 04 05.5 +2.9
DBIC Dimbokro 128.25 272 PKP PKPdf 21 04 06.9 +1.9
comp=Z,2.0nm,0.5s,baz=212,slow=3.7,SNR=4.1
DBIC Dimbokro 128.25 272 PKiKP PKPdf 21 04 06.9 +1.9
DBIC pmax pmax
comp=Z,2.0nm,0.5s
MNTX Cornudas Mount 129.13 55 *e*PKPdf PKPdf 21 04 08.7 +2.5
TXAR Lajitas Array 131.23 58 PKP PKPdf 21 04 12.0 +1.7
comp=Z,1.0nm,0.3s,slow=1.3,SNR=4.3
TXAR SKPbc 21 07 10.1
comp=Z,1.0nm,0.3s,baz=252,slow=4.0,SNR=6.6
WMOK Wichita Mounta 133.19 49 *e*PKPdf PKPdf 21 04 15.3 +1.5
JCT Junction City 134.05 55 *e*PKPdf PKPdf 21 04 18.1 +2.6
TRQA Tornquist 134.24 175 *e*PKPdf PKPdf 21 04 17.8 +2.2
ELN Prospectdale 143.56 33 *e*PKPdf PKPdf 21 04 31.5 -0.8
PAL Palisades 143.59 22 *e*PKPdf PKPdf 21 04 32.2 -0.1
JSC Jenkinsville 145.39 37 *e*PKPdf PKPdf 21 04 37.9 +2.3
CPUP Villa Florida 146.17 180 PKPbc PKPbc 21 04 40.6 +2.0
comp=Z,13nm,0.8s,baz=208,slow=2.6,SNR=28
CPUP Villa Florida 146.17 180 PKP2 PKPab 21 04 40.7 -1.7
CPUP pmax pmax
comp=Z,13nm,0.8s
CPUP Villa Florida 146.17 180 *e*PKPdf PKPdf 21 04 40.0 +2.7
LVC Limon Verde 147.70 159 PKPbc PKPdf 21 04 45.4 +5.5
comp=Z,19nm,0.8s,baz=244,slow=3.0,SNR=15
LVC Limon Verde 147.70 159 *e*PKPbc PKPdf 21 04 45.6 +5.7
LPAZ La Paz 153.75 155 PKP PKPdf 21 04 52.2 +3.2
comp=Z,4.9nm,1.3s,baz=42,slow=4.4,SNR=5.4
LPAZ PKPbc PKPdf 21 05 00.3 +11
comp=Z,2.5nm,0.9s,baz=219,slow=1.3,SNR=8.4
LPAZ PKPab PKPab 21 05 14.2 +0.6
comp=Z,7.2nm,0.5s,baz=196,slow=4.7,SNR=4.0
LPAZ La Paz 153.75 155 PKIKP PKPdf 21 04 52.2 +3.2
LPAZ 21 05 14.3
LPAZ pmax pmax
comp=Z,5.0nm,1.3s
LPAZ pmax pmax
comp=Z,3.0nm,0.9s
LPAZ pmax pmax
comp=Z,7.0nm,0.5s
LPAZ La Paz 153.75 155 *e*PKPdf PKPdf 21 04 52.1 +3.1
LPAZ *e*PKPbc PKPdf 21 04 59.7 +11
LPAZ *e*PKPab PKPab 21 05 13.5 -0.2
BDFB Brasilia 155.15 201 PKPab PKPab 21 05 19.8 +0.2
comp=Z,4.6nm,0.6s,baz=124,slow=4.2,SNR=5.7

*LDG **21** 20:48:28.5±0.1,46.27N×7.24E,h2km,Md1.9/2,Ml1.9/4, Error ellipse: s-maj=1.6km s-min=1.5km az=97.0*
*ZUR **21** 20:48:28.5,46.28N×7.19E,h8km,ML1.2/6*
ISC 21 20:48:28.1±0.6,**46.28N**±0.03×**7.17E**±0.04,**h13**km±5km,
n13,σ0s77/23,3C-4D,Switzerland

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GRYON	**Gryon**	**0.06**	**232**	↓*i*	Pg	**20 48 30.8**	**+0.2**
	5.6nm,0.1s						
GRYON				*i*	Sg	**Sg**	**20 48 32.2**	**0.0**
	5.6nm,0.1s						
SENIN	**Lac Senin**	**0.12**	**48**	↑*i*	Pg	**20 48 31.5**	**+0.2**
	3.8nm,0.2s						
SENIN				*i*	Sg	**Sg**	**20 48 33.5**	**0.0**
	3.8nm,0.2s						
AIGLE	**Aigle**	**0.16**	**291**	↓*i*	Pg	**20 48 32.3**	**+0.3**
	0.6nm,0.1s						
AIGLE				*i*	Sg	**Sg**	**20 48 35.1**	**+0.5**
	0.6nm,0.1s						
SALAN	**Lac Salanfe**	**0.20**	**225**	↑*i*	Pg	**20 48 33.1**	**+0.5**
	3.1nm,0.3s						
SALAN				*e*	Sg	**Sg**	**20 48 35.9**	**+0.3**
	3.1nm,0.3s						
DIX	**Grande Dixence**	**0.26**	**141**	↓*i*	Pg	**20 48 34.2**	**+0.4**
	1.1nm,0.4s						
DIX				*e*	Sg	**Sg**	**20 48 37.7**	**+0.1**
	1.1nm,0.4s						
EMV	**Vieux Emosson**	**0.29**	**221**	↑*i*	Pg	**20 48 34.7**	**+0.4**
	1.0nm,0.2s						
LKBD	**Leukerbad**	**0.33**	**72**	↓*i*	Pg	**20 48 35.1**	**+0.1**
	2.9nm,0.5s						
LKBD				*i*	Sg	**Sg**	**20 48 39.8**	**+0.1**
	2.9nm,0.5s						
CABF	**La Chapelle**	**0.82**	**294**	*e*	Pg	**Pg**	**20 48 45.1**	**+0.5**
CABF				*e*	Sg	**Sg**	**20 48 55.8**	**+0.2**
CABF				*e*	Sn	**Sn**	**20 48 58.4**	**+1.3**
	2.0nm,0.2s						
LPL	**La Plagne**	**0.83**	**202**	*e*	Pg	**Pg**	**20 48 44.4**	**-0.3**
LPL				*e*	Sg	**Sg**	**20 48 55.4**	**-0.5**
	1.6nm,0.3s						
LPG	**La Plagne**	**0.84**	**201**	*e*	Pg	**Pg**	**20 48 44.7**	**-0.3**
LPG				*e*	Sg	**Sg**	**20 48 55.8**	**-0.5**
	0.9nm,0.3s						
HINF	**Hinteralfeld**	**1.55**	**352**	*e*	Sg	**Sg**	**20 49 17.8**	**-1.9**
	2.2nm,0.2s						
HAU	**Haudompre**	**1.81**	**342**	*e*	Sg	**Sg**	**20 49 24.9**	**-3.6**
	1.2nm,0.2s						
VIVF	**Saint-Julien-l**	**2.26**	**232**	*e*	Sg	**Sg**	**20 49 40.6**	**-2.9**
	1.4nm,0.3s						

*IDC **21** 21:16:13.5±1.7,1.64N×127.84E,mb3.9/4,mb1 4.0/5, mb1mx3.7/18,ML3.7/1,MS3.2/2,Ms1 3.4/2,ms1mx2.8/26, Error ellipse: s-maj=93.3km s-min=23.5km az=68.0*
ISC 21 21:16:17.3±1.5,**1.4N**±0.2×**127.2E**±0.5,**h33**km,**n9,σ0s17/7,**
mb4.0/4,MS3.1/2,Halmahera

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**19.40**	**184**	P	**P**	**21 20 43.6**	**+0.1**
	0.2nm,0.3s,baz=4.3,slow=9.1,SNR=4.6						
WRA	**Warramunga Arr**	**22.31**	**162**	P	**P**	**21 21 13.6**	**+0.1**
	2.5nm,0.4s,mb4.0,baz=345,slow=11,SNR=34						
WB2	**Warramunga Arr**	**22.32**	**162**	*e*P	**P**	**21 21 13.6**	**0.0**
PMG	**Port Moresby**	**22.60**	**119**	LR	LR	21 28 59.8	
	comp=Z,52nm,19.5s,MS3.0,baz=35,slow=35						
AS12	**Alice Springs**	**25.73**	**166**	*e*P	**P**	**21 21 46.7**	**0.0**
	15nm,1.5s,mb4.3						
ASAR	**Alice Springs**	**25.73**	**166**	P	**P**	**21 21 46.2**	**-0.5**
	1.1nm,0.5s,mb3.7,baz=348,slow=7.5,SNR=20						
CMAR	**Chiang Mai Arr**	**32.48**	**303**	LR	LR	21 38 24.8	
	comp=Z,53nm,18.0s,MS3.3,baz=75,slow=40						
STKA	**Stephens Creek**	**35.78**	**159**	P	**P**	**21 23 15.7**	**+0.2**
	2.1nm,0.9s,mb4.1,baz=328,slow=11,SNR=3.3						
MKAR	**Makanchi Array**	**59.74**	**326**	P	**P**	**21 26 21.4**	**0.0**
	0.5nm,0.5s,mb3.8,baz=122,slow=8.5,SNR=5.7						

*INMG **21** 21:23:10.2±1.0,38.16N×8.29W,h9km±2km,ML2.3,Error ellipse: s-maj=2.2km s-min=1.7km az=68.0*
*NEIC **21** 21:23:10.3,38.19N×8.27W,h2km,MN2.4(MDD),After MDD.*
*MDD **21** 21:23:10.3±0.4,38.18N×8.28W,h5km±4km,mbLg2.3/16, Error ellipse: s-maj=3.9km s-min=2.3km az=64.0,PRXIMO*
ISC 21 21:23:09.0±0.5,**38.21N**±0.02×**8.24W**±0.05,**h14**km±3km,
n39,σ1s02/65,Portugal

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MOE	**Montemor**	**0.33**	**345**	*e*Pg	**Pg**	**21 23 17.2**	**+1.2**
MOE				*e*Sg	**Sg**	**21 23 22.1**	**+1.4**
PBEJ	**Beja**	**0.35**	**121**	*e*Pg	**Pg**	**21 23 16.9**	**+0.5**
PBEJ				*e*Sg	**Sg**	**21 23 22.0**	**+0.6**
	300nm,0.1s						
PBEJ	**Beja**	**0.35**	**121**	Pg	**Pg**	**21 23 16.9**	**+0.5**
PBEJ				Lg		21 23 22.0	
	150nm,0.1s						
EVO	**Evora**	**0.37**	**29**	*e*Pg	**Pg**	**21 23 17.2**	**+0.3**
EVO				*e*Sg	**Sg**	**21 23 21.8**	**-0.4**
	98nm,0.2s						
PTEO	**Sao Teotonio**	**0.76**	**210**	*e*Pg	**Pg**	**21 23 24.1**	**-0.3**
PTEO				*e*Sg	**Sg**	**21 23 32.8**	**-1.9**
	68nm,0.3s						
PTEO	**Sao Teotonio**	**0.76**	**210**	Pg	**Pg**	**21 23 24.1**	**-0.3**
PTEO				Lg		21 23 32.8	
	34nm,0.3s						
EGRO	**El Granado**	**0.90**	**138**	Pg	**Pg**	**21 23 26.3**	**-0.9**
	0.6nm,0.0s,SNR=31						
EGRO				Lg		21 23 39.9	
	40nm,0.1s,SNR=7.9						
EGRO	**El Granado**	**0.90**	**138**	Pg	**Pg**	**21 23 26.6**	**-0.6**
EGRO				Lg		21 23 39.7	
PALC	**Alcoutim**	**0.96**	**140**	*e*P	**Pb**	**21 23 27.4**	**+0.5**
PALC				*e*S	**Sb**	**21 23 40.6**	**+1.4**
	63nm,0.2s						
PALC	**Alcoutim**	**0.96**	**140**	P	**Pb**	**21 23 27.4**	**+0.5**
PALC				S	**Sb**	**21 23 40.6**	**+1.4**
	31nm,0.2s						
EBAD	**Badajoz**	**1.11**	**60**	Pg	**Pg**	**21 23 31.7**	**+0.4**
	7.3nm,0.1s,SNR=7.9						
EBAD				Lg		21 23 47.8	
	35nm,0.1s,SNR=7.9						
ERIP	**Rio Piedras**	**1.14**	**136**	Pg	**Pg**	**21 23 30.4**	**-1.6**
	0.9nm,0.1s,SNR=7.9						
ERIP				Lg		21 23 47.7	
	38nm,0.1s,SNR=7.9						
ERIP	**Rio Piedras**	**1.14**	**136**	Pg	**Pg**	**21 23 31.0**	**-1.0**
ERIP				Lg		21 23 47.6	

EMIN	**Mina Concepcio**	**1.32**	**109**	Pg		**Pg**	**21 23 34.3**	**-1.1**
	3.2nm,0.1s,SNR=7.9								
EMIN				Lg			21 23 52.6		
	22nm,0.2s,SNR=7.9								
EMIN	**Mina Concepcio**	**1.32**	**109**	Pg		**Pg**	**21 23 34.2**	**-1.2**
EMIN				Lg			21 23 52.7		
PTOM	**Tomar**	**1.42**	**355**	*e*Pg		**Pg**	**21 23 37.0**	**-0.4**
PTOM				*e*Sg		**Sg**	**21 23 55.6**	**-0.8**
	40nm,0.2s								
PTOM	**Tomar**	**1.42**	**355**	Pg		**Pg**	**21 23 37.0**	**-0.4**
PTOM				Lg			21 23 55.6		
	20nm,0.2s								
PCBR	**Castelo Branco**	**1.74**	**20**	*e*Pn		**Pn**	**21 23 40.1**	**+1.0**
PCBR				*e*Sn		**Sn**	**21 24 01.9**	**+0.8**
	14nm,0.3s								
PCBR	**Castelo Branco**	**1.74**	**20**	Pn		**Pn**	**21 23 40.1**	**+1.0**
PCBR				Sn		**Sn**	**21 24 01.9**	**+0.8**
	6.8nm,0.3s								
MTE	**Manteigas**	**2.26**	**14**	*e*Sn		**Sn**	**21 24 14.9**	**+0.6**
	16nm,0.4s								
MTE	**Manteigas**	**2.26**	**14**	Sn		**Sn**	**21 24 14.9**	**+0.6**
	8.1nm,0.4s								
ESPR	**Espera**	**2.32**	**124**	Pn		**Pn**	**21 23 49.3**	**+1.9**
	0.2nm,0.1s,SNR=7.9								
ESPR				Pg		**Pg**	**21 23 53.4**	**-2.0**
	1.2nm,0.1s,SNR=4.0								
ESPR				Sn		**Sn**	**21 24 16.7**	**+0.8**
	2.8nm,0.4s,SNR=7.9								
ESPR				Lg			21 24 24.9		
	6.1nm,0.4s,SNR=7.9								
ESPR	**Espera**	**2.32**	**124**	Pn		**Pn**	**21 23 48.5**	**+1.0**
ESPR				Sn		**Sn**	**21 24 16.8**	**+0.8**
ESPR				Lg			21 24 24.3		
ELIJ	**Sierra de Lija**	**2.61**	**119**	Pn		**Pn**	**21 23 53.1**	**+1.5**
	0.2nm,0.1s,SNR=5.5								
ELIJ				Sn		**Sn**	**21 24 23.8**	**+0.5**
	1.5nm,0.4s,SNR=5.0								
ELIJ				Lg			21 24 35.4		
	0.6nm,0.2s,SNR=7.9								
ELIJ	**Sierra de Lija**	**2.61**	**119**	Pn		**Pn**	**21 23 52.9**	**+1.3**
ELIJ				Sn		**Sn**	**21 24 23.8**	**+0.5**
ELIJ				Lg			21 24 32.8		
EADA	**Adamuz**	**2.89**	**90**	Pn		**Pn**	**21 23 56.4**	**+0.8**
	1.0nm,0.2s,SNR=7.9								
EADA				Sn		**Sn**	**21 24 30.7**	**+0.4**
	1.5nm,0.1s,SNR=7.9								
EADA				Lg			21 24 43.0		
	4.1nm,0.2s,SNR=8.0								
EADA	**Adamuz**	**2.89**	**90**	Pn		**Pn**	**21 23 55.8**	**+0.3**
EADA				Sn		**Sn**	**21 24 30.1**	**-0.3**
EADA				Lg			21 24 40.2		
EBAN	**Banos Encina**	**3.51**	**89**	Sn		**Sn**	**21 24 44.9**	**-1.3**
	2.2nm,0.2s,SNR=7.9								
EBAN				Lg			21 25 02.2		
	2.2nm,0.2s,SNR=7.9								
ESDC	**Sonseca Array**	**3.65**	**65**	Pn		**Pn**	**21 24 07.3**	**+1.0**
	0.2nm,0.2s,baz=31,slow=46,SNR=5.7								
ESDC				Sn		**Sn**	**21 24 48.5**	**-1.0**
	0.6nm,0.2s,baz=318,slow=47,SNR=3.8								
ESDC				Lg			21 25 06.3		
	1.7nm,0.6s,baz=9.9,slow=42,SNR=4.7								
ELOB	**Lobios**	**3.66**	**2**	Pn		**Pn**	**21 24 07.1**	**+0.6**
	0.2nm,0.1s,SNR=7.9								
ELOB				Sn		**Sn**	**21 24 48.1**	**-1.7**
	1.7nm,0.2s,SNR=7.9								
ELOB				Lg			21 25 07.0		
	1.2nm,0.2s,SNR=7.9								
ELOB	**Lobios**	**3.66**	**2**	Pn		**Pn**	**21 24 07.3**	**+0.9**
ELOB				Sn		**Sn**	**21 24 47.4**	**-2.5**
ELOB				Lg			21 25 06.6		
ECAL	**Calabor**	**3.91**	**17**	Pn		**Pn**	**21 24 09.9**	**0.0**
	0.4nm,0.2s,SNR=7.9								
ECAL				Sn		**Sn**	**21 24 54.4**	**-1.7**
	1.0nm,0.2s,SNR=7.9								
ECAL				Lg			21 25 16.1		
	4.6nm,0.4s,SNR=4.0								
ECAL	**Calabor**	**3.91**	**17**	Pn		**Pn**	**21 24 10.2**	**+0.2**
ECAL				Sn		**Sn**	**21 24 55.1**	**-1.0**
ECAL				Lg			21 25 15.3		
GUD	**Guadarrama**	**3.99**	**51**	Sn		**Sn**	**21 24 56.2**	**-2.1**
	0.4nm,0.1s,SNR=7.9								
GUD				Lg			21 25 18.6		
	1.5nm,0.2s,SNR=7.9								
GUD	**Guadarrama**	**3.99**	**51**	Pn		**Pn**	**21 24 12.0**	**+0.8**
GUD				Sn		**Sn**	**21 24 57.4**	**-0.9**
EQES	**Quesada**	**4.11**	**94**	Pn		**Pn**	**21 24 12.9**	**+0.1**
	0.1nm,0.1s,SNR=7.9								
EQES				Sn		**Sn**	**21 25 00.3**	**-0.8**
	0.2nm,0.1s,SNR=4.0								
EQES				Lg			21 25 23.2		
	1.0nm,0.3s,SNR=7.9								
EQES	**Quesada**	**4.11**	**94**	Pn		**Pn**	**21 24 13.3**	**+0.4**
EQES				Sn		**Sn**	**21 25 00.5**	**-0.6**
EQES				Lg			21 25 22.1		
ETOR	**Torete**	**5.45**	**59**	Pn		**Pn**	**21 24 31.4**	**-0.4**
	0.6nm,0.2s,SNR=7.0								
ETOR				Sn		**Sn**	**21 25 31.4**	**-3.6**
	0.7nm,0.4s								
ETOR				Lg			21 26 07.4		
	0.6nm,0.4s,SNR=7.9								
ETOR	**Torete**	**5.45**	**59**	Pn		**Pn**	**21 24 32.3**	**+0.4**
ETOR				Sn		**Sn**	**21 25 31.0**	**-4.1**

*TAP **21** 21:23:09.8,23.04N×120.88E,h4km,ML4.2*
TAP Felt III J at Tauyuan, II J at Lidau, I J at Jiashian, II J at Pinlang, I J at Dapu, I J at Sandimen, I J at Taitung, I J at Chenggung, I J at Jiouru.
*IDC **21** 21:23:09.5±0.8,22.92N×121.27E,mb3.7/8,mb1 3.9/9, mb1mx3.7/21,ML3.5/1,MS3.0/1,Ms1 3.0/1,ms1mx2.7/27, Error ellipse: s-maj=37.1km s-min=19.6km az=66.0*
*NEIC **21** 21:23:11.2±0.8,22.85N×121.23E,h10km,ML4.3(TAP), Error ellipse: s-maj=21.3km s-min=16.1km az=83.0*
NEIC Recorded [3 TAP] in Kao-hsiung; [2 TAP] in T'ai-tung; [1 TAP] in Chia-i and P'ing-tung Counties.
*JMA **21** 21:23:11.4±0.4,23.05N×120.92E,h119km,M3.2*
ISC 21 21:23:10.3±0.3,22.99N±0.01×120.95E±0.02,h4km±2km, n82,σ1§26/125,mb3.6/8,7C-18D,Taiwan

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
TWG	**Pinlang**	**0.21**	**145**	⇑*i*P	**Pg**	**21 23 16.0**	**+1.6**
TWG				S	**Sg**	**21 23 20.1**	**+2.9**
ELDTW	**Lidau**	**0.21**	**19**	⇓*i*P	**Pg**	**21 23 14.2**	**-0.2**
ELDTW				S	**Sg**	**21 23 17.0**	**-0.3**
STYT	**Tauyuan**	**0.24**	**315**	⇑*i*P	**Pg**	**21 23 13.8**	**-1.3**
STYT				S	**Sg**	**21 23 16.5**	**-2.0**
TTN	**Taitung**	**0.30**	**142**	⇑*i*P	**Pg**	**21 23 18.5**	**+2.2**
TTN				S	**Sg**	**21 23 24.9**	**+4.5**
SGST	**Jiashian**	**0.35**	**285**	⇓*i*P	**Pg**	**21 23 16.4**	**-0.8**
SGST				S	**Sg**	**21 23 20.9**	**-1.0**
SSD	**Sandimen**	**0.38**	**230**	⇓*i*P	**Pg**	**21 23 17.1**	**-0.7**
SSD				S	**Sg**	**21 23 21.4**	**-1.5**
ECL	**Taimali**	**0.39**	**179**	⇑*i*P	**Pg**	**21 23 18.6**	**+0.5**
ECL				S	**Sg**	**21 23 24.1**	**+0.7**
WTP	**Ta-pu**	**0.40**	**310**	⇓*i*P	**Pg**	**21 23 17.6**	**-0.7**
WTP				S	**Sg**	**21 23 22.7**	**-0.9**
CHKT	**Chengkung**	**0.40**	**74**	⇓*i*P	**Pg**	**21 23 20.1**	**+1.8**
CHKT				S	**Sg**	**21 23 27.4**	**+3.7**
CHN1	**Nanshi**	**0.43**	**297**	⇓*i*P	**Pg**	**21 23 18.4**	**-0.5**
CHN1				S	**Sg**	**21 23 24.8**	**+0.2**
CHN4	**Tsaushan**	**0.48**	**318**	⇓*i*P	**Pg**	**21 23 19.4**	**-0.6**
CHN4				S	**Sg**	**21 23 26.7**	**+0.3**
TWF1	**Yuli**	**0.48**	**42**	⇓*i*P	**Pg**	**21 23 19.7**	**-0.2**
TWF1				S	**Sg**	**21 23 26.1**	**-0.3**
SGLT	**Jiouru**	**0.49**	**238**	P	**Pg**	**21 23 20.5**	**+0.3**
YUS	**Yu-Shan**	**0.50**	**1**	⇓*i*P	**Pg**	**21 23 19.3**	**-0.9**
YUS				S	**Sg**	**21 23 26.1**	**-0.8**
TWK	**Hsinying**	**0.50**	**303**	⇓*i*P	**Pg**	**21 23 20.0**	**-0.3**
TWK				S	**Sg**	**21 23 26.9**	**-0.2**
ALS	**Alishan**	**0.53**	**346**	⇓*i*P	**Pg**	**21 23 20.1**	**-0.9**
ALS				S	**Sg**	**21 23 27.2**	**-0.8**
CHN3	**Shinhua**	**0.54**	**279**	⇓*i*P	**Pg**	**21 23 22.1**	**+1.0**
CHN3				S	**Sg**	**21 23 32.3**	**+4.0**
EAST	**Anshuo**	**0.61**	**188**	⇑*i*P	**Pg**	**21 23 22.7**	**+0.2**
EAST				S	**Sg**	**21 23 31.0**	**+0.4**
EHY	**Hungye**	**0.62**	**34**	⇓*i*P	**Pg**	**21 23 21.9**	**-0.8**
EHY				S	**Sg**	**21 23 29.6**	**-1.4**
TAW	**Tawu**	**0.63**	**184**	⇑*i*P	**Pg**	**21 23 23.0**	**+0.1**
TAW				S	**Sg**	**21 23 31.7**	**+0.3**
CHN5	**Tsauling**	**0.65**	**338**	⇓*i*P	**Pg**	**21 23 22.5**	**-0.8**
CHN5				S	**Sg**	**21 23 32.2**	**+0.3**
TAI1	**Yung-k'ang**	**0.66**	**274**	*e*P	**Pg**	**21 23 24.9**	**+1.4**
TAI1				S	**Sg**	**21 23 36.1**	**+3.8**
SCZT	**Fangliau**	**0.69**	**206**	⇑*i*P	**Pg**	**21 23 23.4**	**-0.5**
SCZT				S	**Sg**	**21 23 32.2**	**-0.9**
CHN2	**Minshiung**	**0.69**	**321**	*e*P	**Pg**	**21 23 24.1**	**0.0**
CHN2				S	**Sg**	**21 23 35.0**	**+1.7**
CHY	**Chiayi**	**0.70**	**317**	*e*P	**Pg**	**21 23 23.8**	**-0.4**
CHY				S	**Sg**	**21 23 34.1**	**+0.6**
SCLT	**Jiali**	**0.71**	**285**	*e*P	**Pg**	**21 23 24.8**	**+0.2**
SCLT				S	**Sg**	**21 23 37.3**	**+3.2**
KAU	**Kaohsiung**	**0.72**	**235**	*e*P	**Pg**	**21 23 27.1**	**+2.4**
CHN8	**Yiju**	**0.76**	**298**	*e*P	**Pg**	**21 23 25.1**	**-0.4**
CHN8				S	**Sg**	**21 23 37.3**	**+1.6**
WGK	**Gukeng**	**0.78**	**333**	*e*P	**Pg**	**21 23 25.9**	**+0.2**
WGK				S	**Sg**	**21 23 37.3**	**+1.2**
TWP	**Hsiaoliuchiu**	**0.84**	**220**	*e*P	**Pb**	**21 23 29.6**	**+2.7**
SMLT	**Sun Moon Lake**	**0.89**	**357**	⇓*i*P	**Pb**	**21 23 26.6**	**-1.3**
SMLT				S	**Sb**	**21 23 41.6**	**+1.7**
TYC	**Yuchr**	**0.91**	**355**	⇓*i*P	**Pb**	**21 23 27.2**	**-1.0**
TYC				S	**Sb**	**21 23 41.9**	**+1.3**
WNT	**Mingjian**	**0.92**	**345**	⇓*i*P	**Pb**	**21 23 28.2**	**-0.1**
WNT				S	**Sb**	**21 23 42.0**	**+1.4**
WSF	**Szhu**	**0.93**	**314**	*e*P	**Pb**	**21 23 27.7**	**-0.8**
WSF				S	**Sb**	**21 23 41.3**	**+0.3**
ESL	**Shilin**	**0.93**	**29**	⇓P	**Pb**	**21 23 27.2**	**-1.4**
HEN	**Hengchun**	**1.00**	**191**	*e*P	**Pb**	**21 23 30.8**	**+1.1**
TWK1	**Hengchun**	**1.05**	**187**	*e*P	**Pb**	**21 23 30.8**	**+0.2**
TWK1				S	**Sb**	**21 23 49.6**	**+5.1**
WTCT	**Ta-ch'eng**	**1.06**	**325**	*e*P	**Pb**	**21 23 30.1**	**-0.8**
WTCT				S	**Sb**	**21 23 45.2**	**+0.3**
LAY	**Lan-yu**	**1.10**	**149**	*e*P	**Pb**	**21 23 30.3**	**-1.2**
HWA	**Hwalien**	**1.15**	**32**	*e*P	**Pb**	**21 23 31.7**	**-0.7**
TCU	**Taichung**	**1.18**	**348**	*e*P	**Pb**	**21 23 33.2**	**+0.4**
WHF	**Hehuan Shan**	**1.19**	**14**	*e*P	**Pb**	**21 23 31.1**	**-1.8**
WDGT	**Dungji**	**1.21**	**283**	*e*P	**Pb**	**21 23 32.4**	**-1.1**
WDGT				S	**Sb**	**21 23 48.7**	**-0.6**
TWD	**Chiawan**	**1.24**	**29**	*e*P	**Pb**	**21 23 32.6**	**-1.2**
TWD				S	**Sb**	**21 23 51.6**	**+1.6**
TWT	**Tachien**	**1.27**	**10**	*e*P	**Pb**	**21 23 32.8**	**-1.6**
TWQ1	**Liyutan**	**1.36**	**353**	*e*P	**Pb**	**21 23 36.2**	**+0.3**
TWQ1				S	**Sb**	**21 23 56.0**	**+2.5**
PNG	**Penghu**	**1.40**	**294**	P	**Pb**	**21 23 34.7**	**-2.0**
PNG				S	**Sb**	**21 23 53.4**	**-1.3**
NSY	**Sanyi**	**1.43**	**353**	*e*P	**Pn**	**21 23 36.9**	**-0.1**
NSY				S	**Sb**	**21 23 57.6**	**+2.1**
NNS	**Nan Shan**	**1.50**	**15**	*e*P	**Pn**	**21 23 37.2**	**-0.8**
ENA	**Nanau**	**1.61**	**27**	*e*P	**Pn**	**21 23 39.3**	**-0.3**
NSTT	**Nanjuang**	**1.63**	**2**	*e*P	**Pn**	**21 23 40.5**	**+0.5**
NSTT				S	**Sb**	**21 24 03.3**	**+1.8**
NSK	**Sanguang**	**1.72**	**13**	*e*P	**Pn**	**21 23 40.9**	**-0.3**
ENTT	**Nioudou**	**1.74**	**19**	*e*P	**Pn**	**21 23 41.4**	**-0.1**
ENTT				S	**Sn**	**21 24 07.8**	**+3.5**
HSN	**Hsinchu**	**1.80**	**1**	*e*P	**Pn**	**21 23 45.9**	**+3.5**
TWC	**Suao**	**1.81**	**27**	*e*P	**Pn**	**21 23 43.2**	**+0.7**
TWC				S	**Sn**	**21 24 07.4**	**+1.2**
TWE	**Neicheng**	**1.84**	**21**	*e*P	**Pn**	**21 23 44.1**	**+1.1**
ILA	**Ilan**	**1.91**	**22**	*e*P	**Pn**	**21 23 45.2**	**+1.2**
TATO	**Taipei**	**2.04**	**14**	*e*P	**Pn**	**21 23 48.0**	**+2.3**
TATO				*e*S	**Sn**	**21 24 18.7**	**+6.8**
TAP	**Taipei**	**2.10**	**14**	*e*P	**Pn**	**21 23 49.0**	**+2.3**
TAP1	**Taipei**	**2.11**	**14**	*e*P	**Pn**	**21 23 49.2**	**+2.5**
TWS1	**Kuangyinshan**	**2.15**	**12**	*e*P	**Pn**	**21 23 48.3**	**+1.1**
NWF	**Wu-fen Shan**	**2.21**	**20**	*e*P	**Pn**	**21 23 49.5**	**+1.3**
TWB1	**Santiao Chiao**	**2.22**	**25**	*e*P	**Pn**	**21 23 49.1**	**+0.7**
TWY	**Chenhua**	**2.35**	**15**	*e*P	**Pn**	**21 23 52.9**	**+2.6**
YOJ	**Yonaguni jima**	**2.39**	**52**	P	**Pn**	**21 23 50.0**	**-0.8**
KNM	**Kinmen**	**2.71**	**302**	*e*P	**Pn**	**21 23 52.9**	**-2.4**
HATJ	**Hateruma jima**	**2.83**	**67**	S	**Sn**	**21 24 30.0**	**-2.1**
IRIF	**Iriomote-Funau**	**2.88**	**62**	P	**Pn**	**21 23 56.6**	**-1.2**
IRIF				S	**Sn**	**21 24 31.5**	**-1.9**
JKRS	**Kuro-shima**	**3.07**	**66**	P	**Pn**	**21 23 59.5**	**-1.0**
JIJ	**Ishigaki jima**	**3.23**	**64**	P	**Pn**	**21 24 01.0**	**-1.8**
JIJ				S	**Sn**	**21 24 38.8**	**-3.5**
JTJ	**Tarama**	**3.81**	**64**	P	**Pn**	**21 24 09.3**	**-1.7**
JOW	**Kunigami**	**7.67**	**59**	Pn	**Pn**	**21 25 00.9**	**-4.6**
	1.7nm,0.3s,baz=124,slow=20,SNR=6.2						
JNU	**Nakatsue**	**13.36**	**39**	LR	LR	21 32 12.2	
	comp=Z,66nm,20.3s,baz=227,slow=41						
SONM	**Songino Array**	**27.39**	**338**	P	**P**	**21 28 57.7**	**-0.8**
	0.5nm,0.7s,mb3.2,baz=157,slow=9.4,SNR=5.4						
MKAR	**Makanchi Array**	**39.05**	**317**	P	**P**	**21 30 39.3**	**-0.6**
	1.4nm,1.0s,mb3.7,baz=114,slow=12,SNR=7.1						
MKAR				PcP	PcP	21 32 48.0	-2.4
	0.5nm,0.7s,baz=90,slow=2.9,SNR=3.9						
WRA	**Warramunga Arr**	**44.63**	**162**	P	**P**	**21 31 21.6**	**-4.3**
	0.6nm,0.6s,mb3.6,baz=332,slow=10.0,SNR=12						
ASAR	**Alice Springs**	**48.06**	**164**	P	**P**	**21 31 50.6**	**-2.4**
	1.7nm,1.1s,mb4.0,baz=354,slow=14,SNR=5.9						
BRTR	**Keskin Array B**	**73.70**	**307**	P	**P**	**21 34 49.3**	**+2.0**
	0.3nm,0.4s,mb3.6,baz=90,slow=6.2,SNR=3.9						
NOA	**NORSAR Array B**	**79.17**	**332**	P	**P**	**21 35 19.0**	**+1.5**
	1.3nm,0.8s,mb3.9,baz=40,slow=8.1,SNR=3.9						
NOA	**NORSAR Array B**	**79.17**	**332**	P	**P**	**21 35 19.0**	**+1.5**
GERES	**GERESS Array B**	**83.62**	**321**	P	**P**	**21 35 39.8**	**-1.3**
	0.4nm,0.7s,mb3.6,baz=27,slow=3.0,SNR=4.0						
YKA	**Yellowknife Ar**	**84.15**	**23**	P	**P**	**21 35 41.4**	**-2.0**
	0.2nm,0.5s,mb3.5,baz=310,slow=4.8,SNR=4.7						

*NEIC **21** 21:53:39.0, 19.73S×133.97E,h5km,ML3.5(AUST),After AUST.*
AUST 21 21:53:39.5,19.73S×133.97E,h5km,ML3.5,Northern Territory

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRAB	**Tennant Creek**	**0.41**	**120**	*e*Pg	Pg	21 53 47.4	-0.3
WRAB				*e*Sg	Sg	21 53 52.0	-1.2
WB2	**Warramunga Arr**	**0.41**	**121**	*e*P	Pg	21 53 47.2	-0.7
WB2				*e*S	Sg	21 53 52.2	-1.2
AS12	**Alice Springs**	**3.92**	**181**	*e*P	Pn	21 54 41.0	-0.7
AS12				*e*S	Sn	21 55 27.3	-1.4
	5.2nm,0.2s						
KAKA	**Kakadu**	**7.15**	**348**	*e*P	Pn	21 55 24.8	-2.6
	27nm,1.2s						
KAKA				*e*S	Sn	21 56 43.9	-6.0
FITZ	**Fitzroy Crossi**	**8.05**	**280**	*e*P	P	21 55 36.2	-3.8
	2.7nm,0.9s						
FITZ				*e*S	Sn	21 57 01.6	-11

*NEIC **21** 22:04:22.9±0.8,39.72N×74.31E,h10km,Error ellipse: s-maj=15.3km s-min=12.7km az=109.0*
*NNC **21** 22:04:23.7±1.5,39.84N×74.28E,h17km±7km,mpv3.4, Error ellipse: s-maj=22.3km s-min=9.1km az=36.0*
*BJI **21** 22:04:23.7,39.71N×74.24E,h22km,ML3.9*
*MOS **21** 22:04:25.7±1.8,39.76N×74.18E,h33km,mb4.0/6,Error ellipse: s-maj=16.5km s-min=12.2km az=108.4*
*IDC **21** 22:04:26.3±4.7,39.68N×74.33E,h34km±37km,mb3.7/10, mb1 3.7/13,mb1mx3.6/22,ML3.3/3,MS3.0/1,Ms1 3.0/1, ms1mx2.2/29,Error ellipse: s-maj=26.5km s-min=19.4km az=9.0*
ISC 21 22:04:20.8±0.6,39.48N±0.06×74.23E±0.05,h10km,n45, σ1§07/48,mb3.8/11,7C-1D,Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KSH	**Kashi**	**1.35**	**88**	PG	**Pg**	**22 04 47.1**	**-0.7**
KSH				SG	**Sg**	**22 05 05.3**	**-0.5**
KSH				S	Sb		
	comp=N,2μm,1.0s						
KSH				S	Sb		
	comp=E,2μm,1.1s						
AML	**Almayashu**	**2.68**	**351**	P	**Pn**	**22 05 05.5**	**+0.7**
	SNR=268						
KZA	**Kyzart**	**2.71**	**16**	P	**Pn**	**22 05 06.2**	**+1.0**
	SNR=204						
UCH	**Uchtor**	**2.75**	**4**	P	**Pn**	**22 05 06.8**	**+1.0**
	SNR=610						
ULHL	**Ulahol**	**3.15**	**28**	P	**Pn**	**22 05 12.1**	**+0.6**
	SNR=39						
AAK	**Ala-Archa**	**3.16**	**4**	P	**Pn**	**22 05 12.3**	**+0.7**
	SNR=384						
EKS2	**Erkin-Say**	**3.20**	**354**	P	**Pn**	**22 05 12.9**	**+0.7**
	SNR=58						
KBK	**Karagaybulak**	**3.22**	**9**	P	**Pn**	**22 05 13.5**	**+1.0**
	SNR=117						
CHMS	**Chumysh**	**3.54**	**6**	P	**Pn**	**22 05 17.8**	**+0.8**
	SNR=19						
TKM2	**Tokmak 2**	**3.59**	**16**	P	**Pn**	**22 05 18.4**	**+0.7**
	SNR=109						
USP	**Ospenovka**	**3.79**	**3**	P	**Pn**	**22 05 21.0**	**+0.4**
	SNR=19						
AAA	**Alma-Ata**	**4.30**	**27**	*e*PN	**Pn**	**22 05 27.5**	**-0.4**
AAA				*e*		22 06 26.0	
AAA				pmax	pmax		
	comp=Z,50nm,0.5s						
AAA				smax			
	comp=N,500nm,2.0s						
KK31	**Karatay Array**	**4.58**	**323**	⇑Pn	**Pn**	**22 05 31.7**	**-0.1**
	comp=N,2.0nm,0.2s,baz=121,slow=12,SNR=82						
KK31				⇑Sn	**Sn**	**22 06 24.6**	**-1.1**
	comp=N,11nm,0.3s,baz=134,slow=23,SNR=5.1						
KK31				⇑Lg		22 06 41.2	
	comp=N,60nm,0.7s,baz=127,slow=29,SNR=4.2						
KKAR	**Karatay Array**	**4.58**	**323**	PN	**Pn**	**22 05 31.8**	**0.0**
KKAR				pmax	pmax		
	comp=Z,2.0nm,0.3s						
MK31	**Makanchi Array**	**9.38**	**36**	⇑Pn	**P**	**22 06 36.5**	**-2.6**
	comp=Z,0.4nm,0.5s,baz=198,slow=12,SNR=6.9						
MKAR	**Makanchi Array**	**9.38**	**36**	Pn	**P**	**22 06 37.1**	**-2.0**
	comp=Z,0.2nm,0.3s,baz=226,slow=15,SNR=10.0						
VOSK	**Vostochnaya**	**13.44**	**351**	⇓Pn	**P**	**22 07 28.2**	**-5.8**
	comp=Z,5.5nm,1.8s						
BVAR	**Borovoye Array**	**13.80**	**350**	Pn	**P**	**22 07 33.8**	**-4.9**
	comp=Z,0.3nm,0.3s,baz=156,slow=13,SNR=7.8						
BVAR				LR	LR	22 12 57.2	
	comp=Z,70nm,21.2s,baz=305,slow=38						
BRVK	**Borovoye**	**13.85**	**350**	P	**P**	**22 07 34.6**	**-4.7**
ZRNK	**Zerenda**	**13.95**	**347**	⇑Pn	**P**	**22 07 36.0**	**-4.6**
	comp=Z,0.8nm,0.5s						
ZRNK	**Zerenda**	**13.95**	**347**	*e*P	**P**	**22 07 38.2**	**-2.4**
AB31	**Akbulak array**	**14.12**	**318**	⇑Pn	**P**	**22 07 39.2**	**-3.7**
	comp=Z,4.9nm,0.8s						
AB31				⇑Sn	**S**	**22 10 10.5**	**-10**
	comp=Z,0.3nm,0.3s,baz=107,slow=23,SNR=4.9						
AB31	**Akbulak array**	**14.12**	**318**	P	**P**	**22 07 39.6**	**-3.3**
AB31				pmax	pmax		
	comp=Z,1.0nm,0.4s						
THR	**Tehran**	**18.62**	**266**	P	**P**	**22 08 43.9**	**+3.5**
	comp=Z,0.1nm,0.3s,baz=152,slow=3.3,SNR=3.6						
ZEI	**Tsey**	**23.02**	**288**	*e*P	**P**	**22 09 31.0**	**+4.1**
ZAK	**Zakamensk**	**23.13**	**52**	*e*P	**P**	**22 09 30.0**	**+2.2**
KIV	**Kislovodsk**	**23.89**	**291**	*e*P	**P**	**22 09 35.1**	**-0.1**
KIV				pmax	pmax		
	comp=Z,2.0nm,1.0s,mb3.5						
BRTR	**Keskin Array B**	**31.09**	**284**	P	**P**	**22 10 41.8**	**+0.5**
	comp=Z,0.9nm,0.5s,mb3.9,baz=82,slow=8.1,SNR=7.8						
FINES	**FINESS Array B**	**36.54**	**323**	P	**P**	**22 11 26.9**	**-1.2**
	comp=Z,0.8nm,0.3s,mb4.0,baz=115,slow=10,SNR=23						
FINES	**FINESS Array B**	**36.54**	**323**	P	**P**	**22 11 26.9**	**-1.2**
FINES				pmax	pmax		
	comp=Z,1.0nm,0.3s						
FINES	**FINESS Array B**	**36.54**	**323**	P	**P**	**22 11 26.9**	**-1.2**
ARCES	**ARCESS Array B**	**39.43**	**335**	P	**P**	**22 11 51.1**	**-1.2**
	comp=Z,5.1nm,1.1s,mb4.2,baz=100,slow=7.4,SNR=6.5						
ARCES	**ARCESS Array B**	**39.43**	**335**	P	**P**	**22 11 51.1**	**-1.2**
ARCES				pmax	pmax		
	comp=Z,5.0nm,1.1s						
GERES	**GERESS Array B**	**43.37**	**303**	P	**P**	**22 12 25.2**	**+0.5**
	comp=Z,0.6nm,0.4s,mb3.6,baz=63,slow=8.6,SNR=12						
GERES	**GERESS Array B**	**43.37**	**303**	P	**P**	**22 12 25.2**	**+0.5**
GERES				pmax	pmax		
	comp=Z,1.0nm,0.4s						
NB2	**NORSAR Subarra**	**43.61**	**321**	P	**P**	**22 12 25.2**	**-1.3**
	comp=Z,0.5nm,0.5s,mb3.5,baz=91,slow=7.9						
NOA	**NORSAR Array B**	**43.61**	**321**	P	**P**	**22 12 25.4**	**-1.1**
	comp=Z,0.5nm,0.7s,mb3.4,baz=95,slow=6.1,SNR=3.1						
NOA	**NORSAR Array B**	**43.61**	**321**	P	**P**	**22 12 25.4**	**-1.1**
NOA				pmax	pmax		
	comp=Z,1.0nm,0.7s						
DAVOX	**Davos**	**46.35**	**301**	P	**P**	**22 12 48.0**	**-0.

292nm,0.2s
KELI ⇑eSn S 23 24 38.5 -1.6
KEDI Kedomdong 1.73 45⇓ePn P 23 24 22.6 -1.2
438nm,0.2s
KEDI ⇑eSn S 23 24 42.2 -2.7

*IDC **21** 23:31:47.0±8.9, 15.72S×177.66W, h445km±97km, mb2.9/5, mb1 3.3/5, mb1mx3.2/14, Error ellipse: s-maj=42.4km s-min=29.3km az=158.0*
ISC 21 23:31:46.2±1.0, 15.8S±0.3×177.7W±0.2, h450km, n8, σ0$29/5, mb3.2/5, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**45.72**	**257**	P		**P**	**23 39 27.1**	**-0.2**
	0.3nm,0.5s,mb3.0,baz=88,slow=6.7,SNR=14							
ASAR	**Alice Springs**	**46.05**	**252**	P		**P**	**23 39 30.1**	**+0.3**
	3.7nm,0.6s,mb4.0,baz=86,slow=7.8,SNR=38							
VNDA	**Vanda**	**62.59**	**185**	P		**P**	**23 41 26.4**	**-0.1**
	0.1nm,0.5s,mb2.6,baz=321,slow=8.8,SNR=2.7							
NVAR	**Mina Array Bea**	**77.44**	**44**	P		**P**	**23 42 55.0**	**-0.2**
	0.8nm,0.8s,mb3.3,baz=234,slow=13,SNR=4.7							
TXAR	**Lajitas Array**	**84.29**	**58**	P		**P**	**23 43 31.0**	**+0.2**
	0.5nm,0.7s,mb3.1,baz=226,slow=6.7,SNR=7.4							
ARCES	**ARCESS Array B**	**124.37**	**350**	PKP		PKPdf	23 49 53.1	+0.6
	1.7nm,1.0s,baz=63,slow=2.0,SNR=3.7							
BRTR	**Keskin Array B**	**143.75**	**317**	PKP		PKPdf	23 50 29.7	+0.8
	0.9nm,0.6s,baz=90,slow=1.2,SNR=7.6							
GERES	**GERESS Array B**	**145.75**	**347**	PKPbc		PKPbc	23 50 35.0	+1.5
	0.4nm,0.5s,slow=5.3,SNR=4.3							

*IDC **22** 00:09:12.2±0.9, 9.22S×107.66E, mb3.9/7, mb1 4.0/8, mb1mx3.9/17, ML3.6/1, Error ellipse: s-maj=47.3km s-min=17.9km az=47.0*
*DJA **22** 00:09:13.9±0.9, 11.17S×107.89E, h240km, MD4.8/3, ML5.8/3, Error ellipse: s-maj=100.4km s-min=19.2km az=161.0*
*NEIC **22** 00:09:16.5±0.6, 9.39S×107.53E, mb4.7/4, Error ellipse: s-maj=17.1km s-min=7.9km az=207.0*
ISC 22 00:09:15.1±0.6, 9.2S±0.1×107.78E±0.05, h31km, h31km±.9km:pP-P, n22, σ1$23/24, mb4.2/11, 4C-4D, South of Jawa

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
KELI	**Kelakatan**	**6.70**	**82**	⇑ePn		**Pn**	**00 10 59.2**	**+5.1**
	348nm,0.2s							
KELI				⇓eSn		**Sn**	**00 12 16.5**	**+6.4**
INGI	**Ingas**	**7.28**	**88**	⇓ePn		**Pn**	**00 11 04.0**	**+1.8**
INGI				⇓eSn		**Sn**	**00 12 25.3**	**+0.6**
RATI	**Rata**	**7.67**	**87**	⇑ePn		**Pn**	**00 11 10.0**	**+2.4**
	886nm,0.3s							
RATI				⇑eSn		**Sn**	**00 12 32.9**	**-1.4**
KEDI	**Kedomdong**	**8.26**	**86**	⇓ePn		**P**	**00 11 17.0**	**+1.1**
	208nm,0.3s							
KEDI				⇓eSn		**Sn**	**00 12 47.9**	**-1.2**
FITZ	**Fitzroy Crossi**	**19.47**	**119**	P		**P**	**00 13 40.7**	**-1.9**
	0.1nm,0.3s,baz=258,slow=9.3,SNR=2.2							
FITZ				S		**S**	**00 17 06.5**	**-8.5**
	0.1nm,0.3s,baz=3.6,slow=19,SNR=2.9							
WRA	**Warramunga Arr**	**27.80**	**116**	P		**P**	**00 15 03.9**	**+0.1**
	2.7nm,1.0s,mb3.8,baz=287,slow=11,SNR=6.5							
WRAB	**Tennant Creek**	**27.80**	**116**	*e*P		**P**	**00 15 04.2**	**+0.4**
	48nm,1.5s,mb4.9							
WRAB				*e*pP		pP	00 15 12.6	-0.2
ASAR	**Alice Springs**	**28.83**	**123**	P		**P**	**00 15 13.8**	**+0.7**
	0.7nm,0.7s,mb3.5,baz=305,slow=8.9,SNR=4.2							
STKA	**Stephens Creek**	**38.63**	**131**	P		**P**	**00 16 38.1**	**+0.5**
	0.7nm,0.4s,mb3.7,baz=312,slow=12,SNR=3.2							
PMG	**Port Moresby**	**38.84**	**94**	*e*P		**P**	**00 16 37.4**	**-2.2**
	14nm,0.8s,mb4.8							
LSA	**Lhasa**	**41.84**	**338**	*e*P		**P**	**00 17 05.6**	**+1.5**
	11nm,0.8s,mb4.5							
LSA				*e*pP		pP	00 17 14.7	+1.4
SONM	**Songino Array**	**56.77**	**359**	P		**P**	**00 18 58.9**	**+0.2**
	1.6nm,0.7s,mb4.2,baz=175,slow=8.2,SNR=13							
ULN	**Ulaanbaatar**	**56.79**	**359**	*e*P		**P**	**00 18 59.5**	**+0.6**
	3.5nm,0.8s,mb4.4							
ULN				*e*pP		pP	00 19 08.6	+0.3
MKAR	**Makanchi Array**	**60.18**	**340**	P		**P**	**00 19 21.5**	**-1.0**
	2.7nm,0.7s,mb4.4,baz=148,slow=7.6,SNR=17							
KURK	**Kurchatov**	**64.79**	**340**	*e*P		**P**	**00 19 52.4**	**-0.8**
KURK				*e*pP		pP	00 20 01.2	-1.5
THR	**Tehran**	**69.63**	**314**	P		**P**	**00 20 22.5**	**-1.4**
	0.6nm,0.8s,mb3.6,baz=84,slow=9.2,SNR=2.9							
BRVK	**Borovoye**	**69.72**	**337**	*e*P		**P**	**00 20 24.6**	**+0.4**
BRVK				*e*pP		pP	00 20 35.2	+1.5
ZRNK	**Zerenda**	**70.14**	**336**	*e*P		**P**	**00 20 25.0**	**-1.7**
ZRNK				*e*pP		pP	00 20 35.1	-1.1
BRTR	**Keskin Array B**	**83.84**	**312**	P		**P**	**00 21 44.6**	**+1.3**
	0.6nm,0.9s,mb3.7,baz=121,slow=7.2,SNR=4.0							
TXAR	**Lajitas Array**	**144.36**	**51**	PKP		PKPdf	00 28 51.1	-3.0
	0.6nm,0.7s,baz=286,slow=1.7,SNR=9.2							
BDFB	**Brasilia**	**145.61**	**224**	PKPbc		PKPbc	00 28 52.8	+0.7
	1.7nm,0.6s,baz=168,slow=11,SNR=3.1							
LPAZ	**La Paz**	**154.38**	**189**	PKPbc		PKPdf	00 29 16.6	+6.6
	0.6nm,0.8s,baz=136,slow=9.6,SNR=2.7							

*NEIC **22** 00:13:34.5±1.6, 15.26S×173.72W, h10km, mb4.6/5, Error ellipse: s-maj=39.3km s-min=23.2km az=223.0*
*IDC **22** 00:13:34.1±2.3, 15.40S×173.66W, mb4.2/5, mb1 4.4/5, mb1mx4.0/14, MS3.6/1, Ms1 3.6/1, ms1mx3.1/15, Error ellipse: s-maj=53.3km s-min=38.6km az=66.0*
ISC 22 00:13:31.3±3.0, 15.0S±0.4×173.6W±0.3, h10km, n12, σ0$84/11, mb4.4/9, MS3.6/1, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**24.57**	**198**	P		**P**	**00 18 51.9**	**-0.7**
	9.8nm,0.7s,mb4.5,baz=64,slow=8.4,SNR=8.1							
CTAO	**Charters Tower**	**38.58**	**257**	*e*P		**P**	**00 20 56.2**	**-0.1**
	14nm,1.2s,mb4.5							
PMG	**Port Moresby**	**38.76**	**274**	*e*P		**P**	**00 20 55.5**	**-2.3**
	15nm,0.9s,mb4.7							
STKA	**Stephens Creek**	**44.09**	**240**	P		**P**	**00 21 41.9**	**+0.3**
	3.0nm,0.8s,mb4.0,baz=66,slow=10.0,SNR=3.1							
WRAB	**Tennant Creek**	**49.77**	**256**	P		**P**	**00 22 26.4**	**0.0**
WRA	**Warramunga Arr**	**49.78**	**256**	P		**P**	**00 22 27.6**	**+1.1**
	1.5nm,0.5s,mb4.3,baz=92,slow=6.7,SNR=50							
ASAR	**Alice Springs**	**50.08**	**252**	P		**P**	**00 22 29.6**	**+0.9**
	3.5nm,0.5s,mb4.7,baz=86,slow=8.1,SNR=38							
ASAR				LR		LR	00 41 51.5	
	comp=Z,62nm,21.1s,MS3.6,baz=195,slow=34							
VNDA	**Vanda**	**63.73**	**186**	P		**P**	**00 24 05.0**	**0.0**
	1.2nm,1.1s,mb3.9,baz=28,slow=4.0,SNR=4.4							
VNDA	**Vanda**	**63.73**	**186**	*e*P		**P**	**00 24 04.5**	**-0.5**
	0.7nm,1.0s,mb3.6							
QSPA	**South Pole Qui**	**75.02**	**180**	*e*P		**P**	**00 25 14.5**	**+0.3**
	4.0nm,0.9s,mb4.3							
MAW	**Mawson**	**88.10**	**199**	*e*P		**P**	**00 26 23.1**	**+0.2**
	6.4nm,1.1s,mb4.8							
BRTR	**Keskin Array B**	**145.77**	**321**	PKPbc		PKPbc	00 33 15.5	+4.2
	3.1nm,1.1s,baz=40,slow=2.8,SNR=8.3							

*NEIC **22** 00:24:30.6±0.7, 34.48S×179.80W, h30km, mb4.6/2, Error ellipse: s-maj=18.5km s-min=14.4km az=131.0*
*IDC **22** 00:24:38.9±8.1, 35.22S×179.77E, h86km±72km, mb3.8/2, mb1 4.1/3, mb1mx3.8/11, ML4.0/1, Error ellipse: s-maj=66.7km s-min=46.4km az=8.0*
ISC 22 00:24:40.3±2.5, 35.6S±0.2×179.9E±0.2, h129km±20km, n30, σ1$23/29, mb4.1/4, 2C-1D, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**2.80**	**207**	*e*P		**P**	**00 25 26.8**	**+1.7**
URZ	**Urewera**	**3.47**	**219**	P		**P**	**00 25 34.7**	**+0.8**
	11nm,0.3s,baz=308,slow=2.8,SNR=56							
URZ				S		**S**	**00 26 16.7**	**+1.8**
	16nm,0.3s,baz=279,slow=23,SNR=4.1							
URZ	**Urewera**	**3.47**	**219**	*e*P		**P**	**00 25 34.6**	**+0.6**
KNZ	**Kokohu**	**3.85**	**207**	*e*P		**P**	**00 25 39.9**	**+0.9**
MGZ	**Maungaku**	**4.86**	**224**	*e*P		**P**	**00 25 57.8**	**+5.3**
NGZ	**Ngauruhoe**	**4.94**	**222**	*e*P		**P**	**00 25 59.7**	**+6.0**
TUVZ	**Tukino**	**4.98**	**221**	*e*P		**P**	**00 26 00.2**	**+6.0**
CNZ	**Chateau**	**4.99**	**223**	*e*P		**P**	**00 26 00.9**	**+6.6**
FWVZ	**Far West T-bar**	**5.03**	**222**	*e*P		**P**	**00 26 00.7**	**+5.9**
PWZ	**Pawanui**	**5.04**	**208**	*e*P		**P**	**00 25 54.7**	**-0.2**
PWZ				S		**S**	**00 26 52.8**	**+0.4**
BFZ	**Birch Farm**	**5.83**	**208**	*e*P		**P**	**00 26 04.9**	**-0.7**
MRZ	**Mangatainoka R**	**6.09**	**213**	*e*P		**P**	**00 26 07.0**	**-2.1**
MRZ				S		**S**	**00 27 13.6**	**-4.5**
KIW	**Kapiti Island**	**6.56**	**215**	*e*P		**P**	**00 26 13.2**	**-2.3**
SNZO	**South Karori**	**7.01**	**214**	*e*P		**P**	**00 26 25.9**	**+4.3**
THZ	**Tophouse**	**8.23**	**219**	*e*P		**P**	**00 26 32.5**	**-5.5**
KHZ	**Kahutara**	**8.41**	**214**	*e*P		**P**	**00 26 38.7**	**-1.8**
MQZ	**McQueen's Vall**	**9.83**	**212**	*e*P		**P**	**00 26 58.0**	**-1.4**
RAR	**Rarotonga**	**22.86**	**57**	*e*P		**P**	**00 29 21.6**	**-11**
ASAR	**Alice Springs**	**41.36**	**274**	P		**P**	**00 32 15.7**	**+0.6**
	1.0nm,0.6s,mb3.6,baz=114,slow=7.6,SNR=11							
WB2	**Warramunga Arr**	**42.82**	**279**	*e*P		**P**	**00 32 27.1**	**+0.1**
WRAB	**Tennant Creek**	**42.82**	**279**	*e*P		**P**	**00 32 26.9**	**-0.1**
	25nm,1.2s,mb4.7							
WRA	**Warramunga Arr**	**42.83**	**279**	P		**P**	**00 32 27.1**	**0.0**
	2.3nm,0.5s,mb4.1,baz=118,slow=7.7,SNR=38							
QSPA	**South Pole Qui**	**54.53**	**180**	*e*P		**P**	**00 34 05.1**	**+8.7**
	1.7nm,0.5s,mb4.0							
VNA3	**Neumayer Olymp**	**73.25**	**177**	⇓*i*		**P**	**00 36 04.5**	**+6.2**
VNA2	**Neumayer--Watz**	**73.66**	**178**	⇓*i*		**P**	**00 36 09.0**	**+8.3**
VNA1	**Neumayer--Stat**	**73.90**	**177**	⇓*i*		**P**	**00 36 03.7**	**+1.6**
ARCES	**ARCESS Array B**	**143.22**	**345**	PKP		PKPdf	00 43 58.6	+0.7
	3.3nm,1.0s,baz=45,slow=1.3,SNR=3.6							
KAF	**Kangasniemi**	**148.71**	**336**	*ep*		PKPdf	00 44 12.8	+5.5
	1.7nm,0.5s,mb4.0							
FINES	**FINESS Array B**	**149.27**	**335**	PKPbc		PKPdf	00 44 15.4	+7.2
	0.8nm,0.4s,baz=45,slow=3.9,SNR=9.0							
AKASG	**Malin Array Be**	**154.03**	**315**	PKPbc		PKPdf	00 44 27.2	+12
	0.5nm,0.4s,baz=44,slow=2.8,SNR=6.8							

*TAP **22** 00:53:52.2, 24.41N×121.93E, h33km, ML3.4*
*JMA **22** 00:53:52.0±0.4, 24.45N×122.02E, h72km, M2.5*
ISC 22 00:53:50.9±2.5, 24.6N±0.4×122.0E±0.2, h65km±31km, n6, σ0$50/10, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**0.97**	**99**	P		**P**	**00 54 09.6**	**+0.5**
YOJ				S		**S**	**00 54 22.4**	**-0.1**
IRIF	**Iriomote-Funau**	**1.64**	**100**	P		**P**	**00 54 18.6**	**+0.4**
IRIF				*e*S		**S**	**00 54 37.3**	**-1.0**
HATJ	**Hateruma jima**	**1.77**	**108**	P		**P**	**00 54 19.4**	**-0.6**
HATJ				*e*S		**S**	**00 54 41.7**	**+0.2**
JKRS	**Kuro-shima**	**1.91**	**101**	P		**P**	**00 54 21.6**	**-0.2**
JKRS				*e*S		**S**	**00 54 45.4**	**+0.7**
JIJ	**Ishigaki jima**	**2.00**	**97**	*e*S		**S**	**00 54 47.1**	**+0.1**
JTJ	**Tarama**	**2.50**	**89**	P		**P**	**00 54 30.1**	**-0.1**

*IDC **22** 01:14:25.8±2.8, 32.29S×178.04W, mb4.3/3, mb1 4.4/4, mb1mx4.0/14, ML3.9/1, MS3.7/3, Ms1 3.6/3, ms1mx3.4/15, Error ellipse: s-maj=60.1km s-min=35.1km az=116.0*
ISC 22 01:14:31.7±1.8, 32.32S±0.10×178.5W±0.3, h33km, n13, σ1$07/10, mb4.2/3, MS3.6/3, 1C-1D, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**6.94**	**210**	Pn		**Pn**	**01 16 11.8**	**-2.0**
	2.2nm,0.3s,baz=135,slow=3.6,SNR=11							
URZ				Sn		**Sn**	**01 17 33.1**	**+0.8**
	9.2nm,0.3s,baz=253,slow=23,SNR=20							
RAR	**Rarotonga**	**20.00**	**61**	LR	LR		01 24 38.9	
	comp=Z,148nm,18.5s,MS3.4,baz=272,slow=31							
STKA	**Stephens Creek**	**33.69**	**260**	LR	LR		01 34 23.4	
	comp=Z,138nm,18.8s,MS3.7,baz=192,slow=35							
CTA	**Charters Tower**	**33.75**	**282**	P		**P**	**01 21 13.7**	**+1.2**
	3.7nm,0.5s,mb4.6,baz=111,slow=11,SNR=3.6							
ASAR	**Alice Springs**	**42.63**	**269**	P		**P**	**01 22 26.9**	**+0.2**
	1.7nm,0.7s,mb3.9,baz=106,slow=7.7,SNR=10.0							
ASAR				LR	LR		01 40 45.9	
	comp=Z,78nm,18.4s,MS3.6,baz=199,slow=37							
WB2	**Warramunga Arr**	**43.78**	**274**	*e*P		**P**	**01 22 35.5**	**-0.7**
WRA	**Warramunga Arr**	**43.79**	**274**	P		**P**	**01 22 35.7**	**-0.5**
	1.8nm,0.3s,mb4.2,baz=113,slow=7.9,SNR=69							
VNA3	**Neumayer Olymp**	**76.42**	**176**	⇑*i*		**P**	**01 26 18.7**	**-0.3**
VNA3	**Neumayer Olymp**	**76.42**	**176**	*e*		**P**	**01 26 28.8**	**+10**
VNA2	**Neumayer--Watz**	**76.85**	**177**	⇓*i*		**P**	**01 26 23.1**	**+1.7**
VNA2	**Neumayer--Watz**	**76.85**	**177**	*e*		**P**	**01 26 33.5**	**+12**
KAF	**Kangasniemi**	**146.20**	**339**	*ep*		PKPdf	01 34 06.4	-0.4
FINES	**FINESS Array B**	**146.79**	**339**	PKPbc		PKPbc	01 34 08.5	-0.8
	1.0nm,0.5s,baz=45,slow=3.9,SNR=12							

IDC 22 01:28:30.6±2.0, 6.97S×128.91E, mb3.6/1, mb1 3.6/3, mb1mx3.4/12, ML3.1/2, Error ellipse: s-maj=111.0km s-min=31.9km az=67.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**13.93**	**158**	Pn		P	01 31 49.0	-2.8
	0.1nm,0.3s,baz=337,slow=12,SNR=11							
WRA				Sn		S	01 34 09.8	-18
	0.4nm,0.3s,baz=338,slow=20,SNR=9.5							
ASAR	**Alice Springs**	**17.28**	**164**	P		P	01 32 33.9	-1.1
	0.1nm,0.3s,baz=344,slow=9.1,SNR=5.1							
ASAR				S		S	01 35 38.7	-7.9
	0.1nm,0.3s,baz=356,slow=27,SNR=4.2							
MKAR	**Makanchi Array**	**67.61**	**327**	P		P	01 39 29.3	-2.1
	0.4nm,0.5s,baz=127,slow=7.8,SNR=6.9							

PGC 22 01:39:22.9, 67.23N×136.22W, h20km, ML2.8/2, Richardson Mountains, Yukon Territory, Northern Yukon Territory

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
INK	**Inuvik**	**1.50**	**42**	Pn	Pn		01 39 48.5	-0.4
INK				Sn	Sn		01 40 07.5	-0.5
INK				Trac			01 40 11.9	
	comp=Z,62nm,0.2s							
DAWY	**Dawson**	**3.44**	**204**	Pn	Pn		01 40 16.5	-0.2
DAWY				Pg	Pn		01 40 25.5	+8.9
DAWY				Sg	Sn		01 41 09.3	+12
DAWY				Trac			01 41 17.8	
	comp=Z,13nm,0.3s							
YKW3	**Yellowknife Ar**	**10.27**	**107**	Pn	P		01 41 46.0	-6.2
YKW3				Sn	S		01 43 34.5	-13
YKW3				Trac			01 43 48.6	

*TAP **22** 02:16:17.7, 24.45N×122.80E, h72km±1km, ML3.8*
*JMA **22** 02:16:17.3±0.1, 24.60N×122.79E, h89km±1km, M2.4*
ISC 22 02:16:17.5±2.5, 24.6N±0.2×122.8E±0.1, h89km±16km, n7, σ0$38/12, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**0.21**	**115**	P		**P**	**02 16 30.4**	**0.0**
YOJ				S		**S**	**02 16 40.2**	**+0.1**
IRIF	**Iriomote-Funau**	**0.88**	**104**	P		**P**	**02 16 35.8**	**-0.1**
IRIF				*e*S		**S**	**02 16 49.7**	**0.0**
HATJ	**Hateruma jima**	**1.04**	**118**	*e*S		**S**	**02 16 53.3**	**+0.2**
JKRS	**Kuro-shima**	**1.15**	**106**	P		**P**	**02 16 39.3**	**+0.1**
JKRS				S		**S**	**02 16 55.8**	**+0.4**
JIJ	**Ishigaki jima**	**1.24**	**98**	P		**P**	**02 16 40.0**	**-0.3**
JIJ				S		**S**	**02 16 56.3**	**-1.1**
JTJ	**Tarama**	**1.73**	**87**	P		**P**	**02 16 46.7**	**0.0**
JTJ				*e*S		**S**	**02 17 08.5**	**+0.3**
JOGS	**Gusukube**	**2.38**	**84**	*e*S		**S**	**02 17 24.0**	**+0.2**

IDC 22 02:16:56.9±1.5, 13.14N×143.83E, mb3.9/5, mb1 4.1/5, mb1mx3.8/19, MS3.5/1, Ms1 3.5/1, ms1mx2.5/28, Error ellipse: s-maj=67.2km s-min=21.7km az=80.0, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**33.10**	**176**	LR	LR		02 35 00.8	
	comp=Z,81nm,21.1s,baz=228,slow=33							
WB2	**Warramunga Arr**	**34.17**	**196**	*e*P		P	02 23 44.1	-2.1
WRA	**Warramunga Arr**	**34.17**	**196**	P		P	02 23 44.4	-1.9
	2.9nm,0.6s,baz=17,slow=9.4,SNR=32							
ASAR	**Alice Springs**	**37.84**	**195**	P		P	02 24 15.6	-1.7
	1.6nm,0.5s,baz=18,slow=13,SNR=17							
STKA	**Stephens Creek**	**44.81**	**183**	P		P	02 25 12.2	-2.4
	1.3nm,0.4s,baz=350,slow=8.8,SNR=7.1							
SONM	**Songino Array**	**46.52**	**326**	P		P	02 25 27.0	-0.9
	0.2nm,0.4s,baz=135,slow=6.1,SNR=1.6							
MKAR	**Makanchi Array**	**61.12**	**316**	P		P	02 27 12.0	-3.3
	0.5nm,0.8s,baz=98,slow=8.6,SNR=3.6							
LPAZ	**La Paz**	**148.95**	**100**	PKPbc		PKPdf	02 36 48.1	+2.6
	0.2nm,0.5s,baz=252,slow=6.4,SNR=3.7							

*ISK **22** 02:21:00.1, 36.60N×27.33E, h5km, MD3.2*
*NEIC **22** 02:21:03.5, 36.74N×27.39E, h25km, MD3.2(ISK), MD3.0(ATH), After ATH.*
*ATH **22** 02:21:03.5, 36.74N×27.39E, h25km±2km, MD3.0/5*
ISC 22 02:21:04.2±0.6, 36.71N±0.04×27.37E±0.05, h16km±7km, n17, σ1$23/24, 1C, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
NISR	**Nisiros**	**0.22**	**243**	*e*Pb		**Pb**	**02 21 09.3**	**-0.1**
NISR				*e*SB		**Sb**	**02 21 14.6**	**+1.7**
BDRM	**Kayabasi**	**0.36**	**9**	*i* P		**Pb**	**02 21 10.3**	**-1.5**
BDRM				*i* S		**Sb**	**02 21 15.7**	**-1.1**
MLSB	**Milas**	**0.67**	**29**	PG		**Pb**	**02 21 15.8**	**-1.2**
ARG	**Arkhangelos**	**0.78**	**129**	*e*PB		**Pb**	**02 21 18.4**	**-0.6**
ARG				*e*SN		**Sn**	**02 21 30.7**	**-1.1**
YER	**Yerkesik**	**0.84**	**60**	*i* PG		**Pb**	**02 21 19.1**	**-0.9**
YER				*i* SG		**Sb**	**02 21 33.4**	**+2.5**
AYDN	**Tasoluk**	**1.03**	**23**	⇑*i*P		**Pb**	**02 21 22.7**	**-0.6**
AYDN				*i* S		**Sb**	**02 21 37.6**	**+1.2**
SMG	**Samos**	**1.08**	**337**	*e*PN		**Pn**	**02 21 24.0**	**-0.8**
KARP	**Karpathos**	**1.17**	**188**	*e*PN		**Pn**	**02 21 26.6**	**+0.5**
APE	**Apeiranthos**	**1.52**	**284**	PN		**Pn**	**02 21 29.7**	**-1.3**
APE	**Apeiranthos**	**1.52**	**284**	*e*PN		**Pn**	**02 21 31.0**	**0.0**
DNZL	**Cakiroluk**	**1.66**	**53**	*i* P		**Pn**	**02 21 34.6**	**+1.7**
DNZL				*i* S		**Sn**	**02 21 56.2**	**+2.2**
IZM	**Izmir**	**1.69**	**357**	*e*PN		**Pn**	**02 21 34.3**	**+0.9**
KDAG	**Bornova**	**1.69**	**357**	*i* P		**Pn**	**02 21 33.5**	**0.0**
KDAG				*i* S		**Sn**	**02 22 01.2**	**+6.3**
MANT	**Manisa**	**2.01**	**28**	*i* P		**Pn**	**02 21 40.2**	**+2.1**
MANT				*i* S		**Sn**	**02 22 02.0**	**-1.0**
ELL	**Elmali**	**2.04**	**88**	*e*PN		**Pn**	**02 21 37.1**	**-1.3**
AKS	**Akhisar**	**2.19**	**9**	*e*PN		**Pn**	**02 21 40.3**	**-0.3**
ULDT	**Uludag**	**3.70**	**21**	*i* P		Px	02 22 14.2	
ULDT				*i* S		Sx	02 23 07.8	

*NEIC **22** 02:23:06.7±4.1, 20.73S×177.97W, h423km±43km, mb4.2/4, Error ellipse: s-maj=29.3km s-min=18.7km az=211.0*
*IDC **22** 02:23:10.2±3.9, 20.93S×178.02W, h458km±39km, mb3.4/8, mb1 3.6/9, mb1mx3.4/17, Error ellipse: s-maj=25.6km s-min=16.9km az=70.0*
ISC 22 02:23:09.2±4.3, 20.9S±0.1×178.1W±0.2, h459km±49km, n26, σ0$83/15, mb3.9/9, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**17.83**	**192**	P		**P**	**02 26 48.6**	**-0.9**
	4.5nm,0.3s,baz=295,slow=5.4,SNR=13							
URZ				S		**S**	**02 29 47.4**	**-0.2**
	0.4nm,0.3s,baz=252,slow=20,SNR=3.9							
RPZ	**Rata Peaks**	**24.52**	**199**	P		**P**	**02 27 52.9**	**+0.8**
	4.3nm,0.5s,mb4.1,slow=1.0,SNR=4.2							
CTA	**Charters Tower**	**33.38**	**265**	P		**P**	**02 29 09.8**	**+0.5**
	4.4nm,0.6s,mb4.1,baz=87,slow=11,SNR=7.1							
CTAO	**Charters Tower**	**33.38**	**265**	P		**P**	**02 29 10.0**	**+0.7**
	4.0nm,0.5s,mb4.1							
PMG	**Port Moresby**	**35.35**	**284**	P		**P**	**02 29 25.6**	**-0.3**
	8.3nm,0.6s,mb4.4,baz=139,slow=0.5,SNR=3.8							
PMG	**Port Moresby**	**35.35**	**284**	*e*P		**P**	**02 29 26.7**	**+0.8**
	19nm,0.8s,mb4.6							
STKA	**Stephens Creek**	**37.56**	**245**	P		**P**	**02 29 45.0**	**+0.9**
	2.7nm,1.0s,mb3.6,baz=95,slow=12,SNR=2.8							
ASAR	**Alice Springs**	**44.36**	**257**	P		**P**	**02 30 39.2**	**+0.3**
	2.8nm,0.5s,mb3.9,baz=95,slow=8.5,SNR=31							
ASAR				PcP		PcP	02 32 14.3	+0.5
	1.4nm,0.7s,baz=105,slow=3.9,SNR=7.1							
WRAB	**Tennant Creek**	**44.47**	**262**	*e*P		**P**	**02 30 37.0**	**-2.9**
	16nm,1.1s,mb4.4							
WRA	**Warramunga Arr**	**44.47**	**262**	P		**P**	**02 30 39.5**	**-0.4**
	1.7nm,0.3s,mb3.9,baz=97,slow=7.6,SNR=84							
VNDA	**Vanda**	**57.54**	**185**	P		**P**	**02 32 15.3**	**+0.3**
	0.3nm,0.4s,mb3.0,baz=11,slow=8.6,SNR=6.3							
VNDA	**Vanda**	**57.54**	**185**	P		**P**	**02 32 15.4**	**+0.4**
	7.2nm,2.0s,mb3.7							
RW3	**Ridgway**	**88.35**	**48**	P		**P**	**02 35 12.6**	**+0.5**
ILAR	**Eielson Array**	**88.68**	**13**	P		**P**	**02 35 12.3**	**-0.7**
	0.4nm,0.

s-maj=117.0km s-min=15.9km az=108.0
ISC 22 02:40:56.0±0.5, 29.32N±0.06×129.8E±0.2, h56km±8km, n13, σ0§71/18, mb3.4/3, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JNN	**Nakanoshima**	**0.52**	**3**	P	**P**	**02 41 07.6**	**-0.3**
JNN				*e*S	**S**	**02 41 16.3**	**-0.3**
JAM	**Amami Oshima**	**0.93**	**193**	P	**P**	**02 41 13.1**	**-0.1**
JAM				*e*S	**S**	**02 41 25.1**	**-0.9**
JZK	**Kikaishima**	**1.01**	**174**	P	**P**	**02 41 15.3**	**+1.0**
JKC	**Kuchinoerabu**	**1.18**	**15**	P	**P**	**02 41 16.2**	**-0.3**
JKC				*e*S	**S**	**02 41 30.8**	**-1.0**
JTN	**Tanegashima 3**	**1.65**	**36**	P	**P**	**02 41 23.7**	**+0.4**
JTK	**Tokunoshima**	**1.72**	**207**	P	**P**	**02 41 24.5**	**+0.3**
JTK				*e*S	**S**	**02 41 44.8**	**-0.3**
JSJ	**Shimokoshiki**	**2.35**	**357**	P	**P**	**02 41 33.4**	**+0.3**
JOW	**Kunigami**	**2.84**	**210**	P	**P**	**02 41 40.5**	**+0.5**
	5.7nm,0.3s,baz=95,slow=19,SNR=17						
JOW				S	**S**	**02 42 13.6**	**+0.3**
	8.8nm,0.3s,baz=118,slow=26,SNR=4.9						
JOW	**Kunigami**	**2.84**	**210**	P	**P**	**02 41 40.4**	**+0.3**
JNU	**Nakatsue**	**3.89**	**13**	P	**P**	**02 41 56.8**	**+2.0**
	1.9nm,0.3s,baz=316,slow=15,SNR=4.3						
WRA	**Warramunga Arr**	**49.17**	**174**	P	**P**	**02 49 39.4**	**-1.2**
	0.2nm,0.6s,mb3.3,baz=356,slow=8.3,SNR=5.9						
ASAR	**Alice Springs**	**52.83**	**175**	P	**P**	**02 50 08.3**	**0.0**
	0.3nm,0.5s,mb3.5,baz=11,slow=12,SNR=4.6						
YKA	**Yellowknife Ar**	**75.13**	**26**	P	**P**	**02 52 33.3**	**-0.2**
	0.2nm,0.5s,mb3.3,baz=305,slow=5.4,SNR=6.5						

SKHL 22 02:41:18.3±0.1, 52.43N×132.48E, h13km±2km, mb3.7/4, 1D, Southeastern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EKMR	**Ekimchan**	**0.70**	**24**	⇓*i*Pg	Pg	02 41 30.8	-1.7
EKMR				AMB	AMB	02 41 31.5	
	140nm,0.5s						
EKMR				AMB	AMB	02 41 31.5	
	98nm,0.5s						
EKMR				AMB	AMB	02 41 31.5	
	206nm,0.5s						
EKMR				pPg		02 41 34.2	
EKMR				*i* Sg	Sg	02 41 40.0	-2.0
EKMR				A		02 41 40.5	
	475nm,0.5s						
EKMR				A		02 41 40.5	
	686nm,0.5s						
YASR	**Yasnyy**	**2.86**	**289**	*e*Pn	Pn	02 42 03.5	-1.0
YASR				*e*Pg	Pg	02 42 09.1	-6.4
YASR				AMB	AMB	02 42 12.4	
	4.0nm,0.5s						
YASR				AMB	AMB	02 42 12.4	
	10.0nm,0.5s						
YASR				*e*Sg	Sg	02 42 46.5	-7.1
YASR				A		02 42 54.2	
	30nm,0.5s						
YASR				A		02 42 54.2	
	80nm,0.5s						
GRNR	**Gornyy**	**2.97**	**123**	*e*rx	rx	02 42 26.0	
GRNR				*e*Sg	Sg	02 42 50.0	-7.2
BMKR	**Bomnak**	**3.15**	**318**	*e*Pn	Pn	02 42 07.8	-0.9
BMKR				*e*Pg	Pg	02 42 14.5	-6.7
BMKR				AMB	AMB	02 42 15.7	
	23nm,0.4s						
BMKR				*e*Sg	Sg	02 42 56.0	-7.3
BMKR				A		02 43 03.2	
	56nm,0.5s						
ZEA	**Zeya**	**3.42**	**295**	*e*rx	rx	02 42 44.2	
ZEA				*e*Sg	Sg	02 43 03.5	-8.6
ZEA				A		02 43 07.1	
	62nm,0.8s						
ZEA				A		02 43 07.1	
	47nm,0.8s						
KROS	**Kirovskiy**	**3.86**	**304**	*e*Pn	Pn	02 42 17.1	-1.6
KROS				*e*Pg	Pg	02 42 26.4	-8.9
KROS				AMB	AMB	02 42 27.6	
	2.0nm,0.6s						
KROS				AMB	AMB	02 42 27.6	
	3.0nm,0.6s						
KROS				AMB	AMB	02 42 27.6	
	4.0nm,0.6s						
KROS				sPg		02 42 32.6	
KROS				*e*Sg	Sg	02 43 16.9	-10
KROS				A		02 43 24.0	
	14nm,0.5s						
KROS				A		02 43 24.0	
	18nm,0.5s						
NKL	**Nikolayevsk**	**5.03**	**79**	*e*Sg	Sg	02 43 54.0	-12
TUP	**Tupik**	**7.75**	**290**	*e*Sg	Sg	02 45 18.0	-18
TUP				A		02 45 18.8	
	17nm,1.2s						

*NEIC **22** 02:58:28.7, 35.21N×4.00W, MG3.5(MDD), After MDD.*
MDD 22 02:58:28.4±1.2, 35.18N×4.01W, mb3.5/5, Error ellipse: s-maj=13.5km s-min=5.6km az=17.0, AftershockPLICA PRXIMO, Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EMEL	**Melilla**	**0.87**	**82**	P	Pg	02 58 44.5	-1.3
	195nm,0.1s,SNR=26						
EMEL				S	Sg	02 58 55.6	-1.8
	145nm,0.1s,SNR=6.0						
EJIF	**Jimena Fronter**	**1.74**	**317**	P	Pn	02 58 58.3	-1.7
	1.2nm,0.1s,SNR=13						
EJIF	**Jimena Fronter**	**1.74**	**317**	P	Pn	02 58 58.7	-1.3
EJIF				S	Sn	02 59 21.4	-1.8
ERON	**Agron**	**1.84**	**5**	P	Pn	02 58 59.5	-2.0
	1.4nm,0.2s,SNR=4.0						
ERON	**Agron**	**1.84**	**5**	P	Pn	02 58 59.8	-1.7
ERON				S	Sn	02 59 22.4	-3.4
ELOJ	**Sierra Loja**	**1.97**	**357**	P	Pn	02 59 00.9	-2.4
	0.4nm,0.2s,SNR=7.4						
ELOJ				S	Sn	02 59 25.2	-3.9
	2.8nm,0.3s						
ELOJ	**Sierra Loja**	**1.97**	**357**	P	Pn	02 59 00.9	-2.4
ELOJ				S	Sn	02 59 25.4	-3.6
ELIJ	**Sierra de Lija**	**2.06**	**328**	P	Pn	02 59 03.3	-1.3
	1.0nm,0.2s,SNR=9.3						
ELIJ				S	Sn	02 59 28.8	-2.6
	2.7nm,0.3s						
ELIJ	**Sierra de Lija**	**2.06**	**328**	P	Pn	02 59 03.3	-1.3
ELIJ				S	Sn	02 59 28.4	-2.9
ECOG	**Cogollos-Vega**	**2.12**	**10**	P	Pn	02 59 03.5	-2.0
	1.0nm,0.2s,SNR=7.9						
ECOG				S	Sn	02 59 28.6	-4.4
	1.9nm,0.2s,SNR=7.9						
ECOG	**Cogollos-Vega**	**2.12**	**10**	P	Pn	02 59 03.2	-2.4
ECOG				S	Sn	02 59 28.5	-4.5
ESPR	**Espera**	**2.25**	**319**	P	Pn	02 59 06.6	-0.8
	0.2nm,0.1s,SNR=5.0						
ESPR				S	Sn	02 59 35.3	-1.0
	4.6nm,0.3s						
ESPR	**Espera**	**2.25**	**319**	P	Pn	02 59 06.6	-0.8
ESPR				S	Sn	02 59 33.8	-2.5
ELUQ	**Luque**	**2.38**	**355**	P	Pn	02 59 08.3	-1.0
	2.9nm,0.3s,SNR=7.9						
ELUQ	**Luque**	**2.38**	**355**	P	Pn	02 59 07.8	-1.5
ELUQ				S	Sn	02 59 39.1	-0.5
EQES	**Quesada**	**2.73**	**16**	P	Pn	02 59 13.2	-0.9
	2.9nm,0.2s,SNR=42						
EQES				S	Sn	02 59 44.0	-4.2
	7.0nm,0.3s						
EHUE	**Huescar**	**2.87**	**23**	P	Pn	02 59 15.0	-1.2
	0.7nm,0.2s,SNR=7.9						
EHUE				S	Sn	02 59 48.8	-3.1
	0.8nm,0.2s,SNR=7.9						
EHUE	**Huescar**	**2.87**	**23**	P	Pn	02 59 15.6	-0.6
EHUE				S	Sn	02 59 48.7	-3.2
EADA	**Adamuz**	**3.02**	**351**	P	Pn	02 59 16.2	-2.0
	0.3nm,0.2s,SNR=8.7						
EADA				S	Sn	02 59 52.6	-3.0
	1.0nm,0.1s						
EADA	**Adamuz**	**3.02**	**351**	P	Pn	02 59 15.9	-2.4
EADA				S	Sn	02 59 51.4	-4.3
EMIN	**Mina Concepcio**	**3.36**	**321**	P	Pn	02 59 19.5	-3.6
	0.2nm,0.1s,SNR=10						
EMIN	**Mina Concepcio**	**3.36**	**321**	P	Pn	02 59 19.2	-3.9
EMIN				S	Sn	02 59 57.1	-7.1
EGRO	**El Granado**	**3.66**	**311**	P	Pn	02 59 23.2	-4.2
	0.2nm,0.1s,SNR=9.1						
EGRO	**El Granado**	**3.66**	**311**	P	Pn	02 59 23.7	-3.7
EGRO				S	Sn	03 00 04.6	-7.3
ETOB	**Tobarra**	**3.98**	**29**	P	Pn	02 59 30.5	-1.5
	1.1nm,0.1s,SNR=28						
ETOB				S	Sn	03 00 16.1	-4.0
	3.1nm,0.4s						
ETOB	**Tobarra**	**3.98**	**29**	P	Pn	02 59 30.4	-1.6
ETOB				S	Sn	03 00 14.4	-5.6
EBAD	**Badajoz**	**4.30**	**327**	P	Pn	02 59 33.4	-3.2
	0.6nm,0.1s,SNR=8.7						
EBAD				S	Sn	03 00 20.9	-7.3
	3.1nm,0.2s,SNR=5.6						
EBAD	**Badajoz**	**4.30**	**327**	P	Pn	02 59 33.1	-3.4
EBAD				S	Sn	03 00 21.1	-7.2
EIBI	**Ibiza**	**5.75**	**47**	P	Pn	02 59 52.4	-4.6
	0.3nm,0.1s,SNR=7.9						
EIBI	**Ibiza**	**5.75**	**47**	P	Pn	02 59 52.4	-4.6
EIBI				S	Sn	03 00 56.5	-8.1
ETOR	**Torete**	**5.84**	**15**	P	Pn	02 59 55.5	-2.7
	0.2nm,0.2s,SNR=7.9						
ETOR	**Torete**	**5.84**	**15**	P	Pn	02 59 54.4	-3.9
ECAL	**Calabor**	**7.08**	**343**	P	Pn	03 00 11.3	-4.4
	0.1nm,0.1s,SNR=7.9						
ECAL				S	Sn	03 01 28.7	-9.3
	0.6nm,0.3s,SNR=7.9						
ECAL	**Calabor**	**7.08**	**343**	P	Pn	03 00 11.8	-4.0
ECAL				S	Sn	03 01 28.6	-9.4

*NEIC **22** 03:02:55.8, 30.68S×71.23W, h51km, MD4.0(GUC), After GUC.*
GUC 22 03:02:55.8±0.6, 30.68S×71.23W, h51km±3km, MD4.0, ML3.5, 2C, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OVCH	**Ovalle**	**0.08**	**18**	⇑*i*P	P	03 03 03.8	+0.3
OVCH				*i* S	S	03 03 09.8	+0.5
OVCH				AMP		03 03 10.1	
	comp=E,21μm,0.1s						
CMCH	**Combarbala**	**0.53**	**158**	⇑*i*P	P	03 03 07.9	+0.4
CMCH				*i* S	S	03 03 16.8	+0.9
CMCH				AMP		03 03 17.1	
	comp=N,11μm,0.3s						
TLL	**Tololo Astrono**	**0.63**	**36**	*i* P	P	03 03 09.6	+0.9
TLL				*i* S	S	03 03 19.9	+1.7
TLL				AMP		03 03 20.9	
	comp=N,1μm,0.1s						
ILCH	**Illapel**	**0.95**	**177**	*i* P	P	03 03 12.9	-0.2
ILCH				*i* S	S	03 03 25.3	-0.6
ILCH				AMP		03 03 28.9	
	comp=N,2μm,0.2s						
PTCH	**Petorca**	**1.60**	**171**	*e*P	P	03 03 22.0	-0.2
PTCH				*i* S	S	03 03 42.3	+0.5
PTCH				AMP		03 03 45.6	
	comp=E,1μm,0.2s						
JACH	**Jahuel**	**2.07**	**165**	*e*P	P	03 03 29.7	+0.9
JACH				*i* S	S	03 03 54.9	+1.5
VACH	**Vallenar**	**2.14**	**11**	*e*P	P	03 03 29.5	-0.3
VACH				*i* S	S	03 03 55.4	+0.2
FCH	**Farellones**	**2.76**	**163**	*e*P	P	03 03 39.8	+1.2
FCH				*i* S	S	03 04 12.6	+1.7
FCH				AMP		03 04 22.6	
	comp=E,128nm,0.2s						

*BJI **22** 03:23:04.9, 3.52N×123.75E, h618km, mb4.5*
*NEIC **22** 03:23:14.7±1.4, 4.25N×122.81E, h618km±19km, mb4.6/15, Error ellipse: s-maj=16.6km s-min=6.6km az=58.0*
*IDC **22** 03:23:14.0±1.1, 4.18N×122.75E, h607km±14km, mb3.6/22, mb1 3.7/22, mb1mx3.6/25, Error ellipse: s-maj=19.7km s-min=6.9km az=63.0*
ISC 22 03:23:13.0±1.3, 4.23N±0.07×122.8E±0.1, h613km±20km, n65, σ0§85/68, mb4.4/36, 8C-1D, Celebes Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAKA	**Kakadu**	**19.32**	**151**	*e*P	**P**	**03 27 01.2**	**-0.3**
	69nm,0.6s						
FITZ	**Fitzroy Crossi**	**22.36**	**173**	⇑*i*P	**P**	**03 27 28.1**	**-0.9**
	4.9nm,0.8s,mb4.2						
FITZ				*e*		03 33 42.7	
FITZ	**Fitzroy Crossi**	**22.36**	**173**	P	**P**	**03 27 28.2**	**-0.8**
	3.7nm,0.4s,mb4.4,baz=18,slow=10,SNR=41						
FITZ				ScP		03 33 43.0	
	6.9nm,0.8s,baz=189,slow=21,SNR=6.8						
WRAB	**Tennant Creek**	**26.55**	**155**	⇑*i*P	**P**	**03 28 05.2**	**-0.9**
	112nm,0.4s						
WRA	**Warramunga Arr**	**26.55**	**155**	P	**P**	**03 28 05.1**	**-1.0**
	40nm,0.3s,mb5.5,baz=335,slow=9.6,SNR=758						
WRA				S	**S**	**03 31 55.7**	**-4.4**
	2.1nm,0.9s,baz=335,slow=16,SNR=7.3						
WRA				ScP		03 33 54.1	
	4.2nm,0.7s,baz=340,slow=3.1,SNR=16						
WB2	**Warramunga Arr**	**26.55**	**155**	⇑*i*P	**P**	**03 28 05.1**	**-1.0**
WB2				*e*S	**S**	**03 31 55.8**	**-4.3**
WB2				*e*		03 33 54.1	
CMAR	**Chiang Mai Arr**	**27.30**	**303**	P	**P**	**03 28 11.9**	**-0.7**
	2.3nm,0.6s,mb4.0,baz=124,slow=6.5,SNR=11						
PMG	**Port Moresby**	**27.78**	**119**	P	**P**	**03 28 16.2**	**-0.5**
	22nm,0.8s,mb4.9,baz=357,slow=6.7,SNR=6.6						
PMG	**Port Moresby**	**27.78**	**119**	*e*P	**P**	**03 28 15.4**	**-1.3**
	19nm,0.7s,mb4.8						
ENH	**Enshi**	**28.81**	**336**	⇑*e*P	**P**	**03 28 24.7**	**-0.8**
	10.0nm,0.8s,mb4.5						
AS12	**Alice Springs**	**29.75**	**159**	⇑*i*P	**P**	**03 28 33.6**	**+0.1**
	14nm,0.3s,mb5.1						
AS12				*e*S	**S**	**03 32 47.8**	**-1.9**
ASAR	**Alice Springs**	**29.75**	**159**	P	**P**	**03 28 33.7**	**+0.2**
	19nm,0.6s,mb4.9,baz=340,slow=6.9,SNR=218						
ASAR				S	**S**	**03 32 47.8**	**-1.9**
	5.4nm,0.8s,baz=346,slow=17,SNR=16						
ASAR				ScP		03 34 04.2	
	3.5nm,0.7s,baz=343,slow=2.7,SNR=16						
CTA	**Charters Tower**	**33.37**	**137**	*e*P	**P**	**03 29 05.4**	**+1.4**
	8.0nm,0.6s,mb4.5						
CTA	**Charters Tower**	**33.37**	**137**	P	**P**	**03 29 05.7**	**+1.6**
	6.6nm,0.4s,mb4.6,baz=305,slow=8.6,SNR=17						
CTAO	**Charters Tower**	**33.37**	**137**	⇑*e*P	**P**	**03 29 05.5**	**+1.5**
	8.6nm,0.5s,mb4.6						
FORT	**Forrest**	**35.16**	**172**	*e*P	**P**	**03 29 18.9**	**+0.1**
	86nm,0.6s						
NWAO	**Narrogin (SRO)**	**37.33**	**188**	P	**P**	**03 29 35.9**	**-0.6**
	6.9nm,0.9s,mb4.2,baz=315,slow=1.4,SNR=3.9						
NWAO	**Narrogin (SRO)**	**37.33**	**188**	P	**P**	**03 29 35.9**	**-0.6**
LSA	**Lhasa**	**39.24**	**314**	P	**P**	**03 29 53.8**	**+1.8**
LSA	**Lhasa**	**39.24**	**314**	*e*P	**P**	**03 29 53.8**	**+1.8**
	10nm,0.7s,mb4.5						
STKA	**Stephens Creek**	**40.10**	**155**	⇑*i*P	**P**	**03 29 59.9**	**+1.0**
	7.6nm,0.3s,mb4.7						
STKA	**Stephens Creek**	**40.10**	**155**	P	**P**	**03 29 59.9**	**+1.0**
	10nm,0.4s,mb4.7,baz=332,slow=7.6,SNR=37						
GTA	**Gaotai**	**40.76**	**332**	P	**P**	**03 30 05.0**	**+0.9**
GTA				AMB	AMB		
	comp=Z,13nm,0.9s,mb4.5						
GUN	**Gumba**	**42.31**	**308**	*e*P	**P**	**03 30 16.7**	**+0.1**
	comp=Z,80nm,0.7s,mb5.4						
PKI	**Pulchoki**	**42.53**	**307**	*e*P	**P**	**03 30 17.7**	**-0.6**
	comp=Z,10nm,0.3s,mb4.9						
KKN	**Kakani**	**42.73**	**307**	*e*P	**P**	**03 30 19.3**	**-0.5**
	comp=Z,12nm,0.3s,mb4.8						
DMN	**Daman**	**42.79**	**307**	*e*P	**P**	**03 30 20.3**	**0.0**
	comp=Z,50nm,0.9s,mb5.0						
GKN	**Gorkha**	**43.34**	**307**	*e*P	**P**	**03 30 24.1**	**-0.5**
	comp=Z,39nm,0.8s,mb5.0						
ASAJ	**Asahikawa**	**43.38**	**21**	P	**P**	**03 30 25.4**	**+0.7**
	comp=Z,9.5nm,0.8s,mb4.3,baz=194,slow=18,SNR=4.3						
KOLN	**Koldanda**	**44.07**	**306**	*e*P	**P**	**03 30 30.2**	**0.0**
	comp=Z,45nm,0.5s,mb5.3						
ARMA	**Armidale**	**44.11**	**143**	⇓*i*P	**P**	**03 30 33.1**	**+2.6**
DANN	**Dangsing**	**44.19**	**307**	*e*P	**P**	**03 30 30.8**	**-0.3**
HYB	**Hyderabad**	**45.29**	**290**	*i* P	**P**	**03 30 39.5**	**-0.2**
HYB	**Hyderabad**	**45.29**	**290**	*e*P	**P**	**03 30 39.5**	**-0.2**
ULN	**Ulaanbaatar**	**45.54**	**345**	*e*P	**P**	**03 30 41.2**	**0.0**
	comp=Z,5.7nm,0.7s,mb4.2						
ULN				*e*PcP	PcP	03 32 06.0	-0.8
SONM	**Songino Array**	**45.69**	**345**	P	**P**	**03 30 42.5**	**+0.1**
	comp=Z,6.3nm,0.9s,mb4.2,baz=159,slow=9.0,SNR=26						
SONM				PcP	PcP	03 32 07.2	-0.2
	comp=Z,0.6nm,0.7s,baz=172,slow=4.8,SNR=4.5						
CNB	**Canberra Magne**	**46.56**	**150**	*e*P	**P**	**03 30 50.4**	**+1.2**
	comp=Z,7.3nm,0.4s,mb4.6						
TOO	**Toolangi**	**46.62**	**155**	*e*P	**P**	**03 30 51.0**	**+1.4**
	comp=Z,1.3nm,0.4s,mb3.8						
MKAR	**Makanchi Array**	**54.97**	**327**	P	**P**	**03 31 49.9**	**0.0**
	comp=Z,13nm,0.3s,mb4.7,baz=125,slow=7.6,SNR=107						
MKAR				PcP	PcP	03 32 41.9	-0.2
	comp=Z,6.6nm,0.6s,baz=126,slow=4.0,SNR=17						
TKM2	**Tokmak 2**	**56.83**	**320**	P	**P**	**03 32 03.2**	**+0.6**
	SNR=6.2						
UCH	**Uchtor**	**57.20**	**319**	P	**P**	**03 32 06.8**	**+1.7**
	SNR=8.8						
USP	**Ospenovka**	**57.70**	**320**	P	**P**	**03 32 08.7**	**+0.2**
	SNR=5.5						
AML	**Almayashu**	**57.70**	**318**	P	**P**	**03 32 09.7**	**+1.2**
	SNR=12						
EKS2	**Erkin-Say**	**57.89**	**319**	P	**P**	**03 32 10.6**	**+0.8**
	SNR=6.6						
KURK	**Kurchatov**	**59.27**	**329**	*e*P	**P**	**03 32 18.3**	**-0.7**
BRVK	**Borovoye**	**64.88**	**328**	⇑*e*P	**P**	**03 32 54.4**	**-0.6**
ZRNK	**Zerenda**	**65.51**	**328**	*e*P	**P**	**03 32 58.3**	**-0.6**
URZ	**Urewera**	**65.59**	**135**	P	**P**	**03 32 59.8**	**+0.1**
	comp=Z,8.0nm,1.0s,mb4.1,baz=206,slow=4.4,SNR=5.9						
TIXI	**Tiksi**	**67.44**	**2**	*e*P	**P**	**03 33 09.6**	**-0.8**
THR	**Tehran**	**72.72**	**306**	P	**P**	**03 33 42.2**	**+0.2**
	comp=Z,0.8nm,0.4s,mb3.6,baz=101,slow=6.6,SNR=4.6						
VNDA	**Vanda**	**84.43**	**172**	P	**P**	**03 34 43.7**	**+0.9**
	comp=Z,0.2nm,0.4s,baz=350,slow=6.4,SNR=2.9						
VNDA	**Vanda**	**84.43**	**172**	*e*P	**P**	**03 34 43.1**	**+0.3**
	comp=Z,10nm,2.4s,mb3.9						
KMBO	**Kilima Mbogo**	**85.67**	**269**	P	**P**	**03 34 51.7**	**+1.5**
	comp=Z,2.2nm,0.8s,mb3.9,baz=284,slow=24,SNR=6.1						
ILAR	**Eielson Array**	**86.33**	**25**	P	**P**	**03 34 51.9**	**-0.2**
	comp=Z,0.4nm,0.5s,baz=254,slow=4.6,SNR=16						
BRTR	**Keskin Array B**	**86.70**	**309**	P	**P**	**03 34 54.2**	**-0.3**
	comp=Z,0.9nm,0.7s,mb3.6,baz=121,slow=4.5,SNR=6.1						
JOF	**Joensuu**	**86.96**	**333**	*e*P	**P**	**03 34 54.3**	**-0.8**
ARCES	**ARCESS Array B**	**88.63**	**340**	P	**P**	**03 35 02.4**	**-0.4**
	comp=Z,0.6nm,0.3s,mb3.8,baz=89,slow=4.0,SNR=15						
KAF	**Kangasniemi**	**89.35**	**332**	*e*P	**P**	**03 35 04.8**	**-1.5**
	comp=Z,3.0nm,0.4s,mb4.5,baz=78,slow=4.2						
FINES	**FINESS Array B**	**89.55**	**331**	P	**P**	**03 35 06.7**	**-0.6**
	comp=Z,2.4nm,0.6s,mb4.2,baz=56,slow=5.5,SNR=27						
INK	**Inuvik**	**91.12**	**21**	P	**P**	**03 35 14.2**	**-0.1**
	comp=Z,33nm,2.5s,mb4.8						
MLR	**Muntele Rosu**	**91.83**	**316**	P	**P**	**03 35 18.6**	**+0.6**
	comp=Z,1.0nm,0.5s,mb4.1,baz=45,slow=14,SNR=3.7						
HFS	**Hagfors**	**95.75**	**332**	P	**P**	**03 35 34.3**	**-1.1**
	comp=Z,0.8nm,0.4s,mb4.3,baz=114,slow=3.8,SNR=14						
NOA	**NORSAR Array B**	**96.59**	**333**	P	**P**	**03 35 38.7**	**-0.5**
	comp=Z,1.2nm,0.9s,mb4.1,baz=84,slow=18,SNR=3.0						
GERES	**GERESS Array B**	**99.26**	**321**	P	**P**	**03 35 52.0**	**+0.4**
	comp=Z,0.3nm,0.7s,mb3.8,baz=63,slow=6.6,SNR=3.0						
YKA	**Yellowknife Ar**	**100.63**	**23**	PKKPbc		03 52 08.1	
	comp=Z,0.1nm,0.5s,baz=126,slow=3.1,SNR=5.9						

*IDC **22** 03:41:21.8±1.0, 17.09S×174.66W, mb4.1/7, mb1 4.3/7, mb1mx4.1/14, MS4.0/1, Ms1 4.0/1, ms1mx3.2/16, Error ellipse: s-maj=37.2km s-min=22.5km az=127.0*
ISC 22 03:41:43.8±1.0, 17.4S±0.2×174.8W±0.2, h200km, n10, σ0§44/9, mb3.7/7, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**21.98**	**197**	P	**P**	**03 46 21.6**	**-0.4**
	12nm,0.6s,mb4.6,baz=354,slow=4.5,SNR=13						
PMG	**Port Moresby**	**37.75**	**277**	LR	LR	03 59 43.7	
	comp=Z,250nm,21.1s,baz=24,slow=29						
STKA	**Stephens Creek**	**41.88**	**241**	P	**P**	**03 49 17.0**	**+1.0**
	6.6nm,0.9s,mb4.0,baz=84,slow=9.2,SNR=4.7						
WB2	**Warramunga Arr**	**48.07**	**259**	*e*P	**P**	**03 50 04.9**	**-0.2**
WRA	**Warramunga Arr**	**48.08**	**259**	P	**P**	**03 50 04.7**	**-0.5**
	1.9nm,0.5s,mb3.7,baz=97,slow=6.9,SNR=31						
AS12	**Alice Springs**	**48.21**	**254**	*e*P	**P**	**03 50 06.2**	**0.0**
	13nm,0.9s,mb4.2						
ASAR	**Alice Springs**	**48.21**	**254**	P	**P**	**03 50 06.1**	**-0.1**
	11nm,0.6s,mb4.4,baz=89,slow=8.3,SNR=133						
VNDA	**Vanda**	**61.29**	**186**	P	**P**	**03 51 39.8**	**+0.2**
	0.4nm,0.9s,mb3.0,baz=8.1,slow=7.1,SNR=2.4						
ILAR	**Eielson Array**	**84.64**	**12**	P	**P**	**03 53 55.5**	**0.0**
	0.3nm,0.5s,mb3.3,baz=228,slow=5.5,SNR=11						
PDAR	**Pinedale Array**	**84.64**	**42**	P	**P**	**03 53 56.2**	**0.0**
	0.2nm,0.5s,mb3.1,baz=238,slow=8.5,SNR=2.6						

*IDC **22** 04:06:27.7±3.6, 2.69S×138.88E, mb3.5/3, mb1 3.8/4, mb1mx3.7/12, ML3.7/1, Error ellipse: s-maj=116.0km s-min=28.8km az=90.0*
ISC 22 04:06:31.9±3.2, 2.8S±0.2×138.6E±0.7, h33km, n4, σ0§02/4, mb3.5/2, Irian Jaya

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**17.56**	**193**	P	**P**	**04 10 35.9**	**0.0**
	0.3nm,0.3s,baz=17,slow=13,SNR=16						
FITZ	**Fitzroy Crossi**	**19.81**	**219**	P	**P**	**04 11 02.6**	**0.0**
	1.2nm,0.4s,baz=31,slow=5.9,SNR=4.6						
ASAR	**Alice Springs**	**21.26**	**192**	P	**P**	**04 11 17.6**	**0.0**
	2.8nm,1.2s,mb3.5,baz=13,slow=12,SNR=4.7						
MKAR	**Makanchi Array**	**69.73**	**322**	P	**P**	**04 17 40.6**	**0.0**
	0.4nm,0.6s,mb3.5,baz=117,slow=8.1,SNR=4.6						

*IDC **22** 04:33:32.7±0.9, 35.28N×141.56E, mb3.6/9, mb1 3.8/12, mb1mx3.7/24, ML3.7/3, MS3.2/4, Ms1 3.2/4, ms1mx2.9/37, Error ellipse: s-maj=26.5km s-min

KURK	**Kurchatov**	47.35	310	P		P	04 42 05.6	+1.3
ILAR	**Eielson Array**	50.91	32	P		P	04 42 34.6	+3.1
	0.2nm,0.8s,mb3.1,baz=219,slow=12,SNR=3.3							
BVAR	**Borovoye Array**	52.08	313	P		P	04 42 43.1	+2.7
	0.2nm,0.3s,mb3.5,baz=100,slow=8.8,SNR=2.5							
BRVK	**Borovoye**	52.13	314	*eP*		P	04 42 45.2	+4.3
ZRNK	**Zerenda**	52.91	314	P		P	04 42 49.1	+2.4
WRA	**Warramunga Arr**	55.26	189	P		P	04 43 06.9	+2.5
	0.6nm,0.4s,mb4.0,baz=6.9,slow=7.6,SNR=7.6							
ASAR	**Alice Springs**	58.99	188	P		P	04 43 35.5	+4.9
	0.4nm,0.6s,mb3.6,slow=6.3,SNR=3.2							
FINES	**FINESS Array B**	70.62	333	P		P	04 44 48.0	+2.8
	1.8nm,1.1s,mb3.9,baz=236,slow=6.9,SNR=3.7							
FINES	**FINESS Array B**	70.62	333	P		P	04 44 48.0	+2.8
BRTR	**Keskin Array B**	80.33	312	P		P	04 45 45.5	+4.6
	0.4nm,0.6s,mb3.6,baz=30,slow=10.0,SNR=3.2							
PV10	**Paradox Valley**	81.76	49	*eP*		P	04 45 55.6	+7.2
GERES	**GERESS Array B**	84.47	329	P		P	04 46 06.3	+4.5
	0.3nm,0.5s,mb3.7,baz=34,slow=4.8,SNR=4.0							
LPAZ	**La Paz**	147.31	63	PKPbc		PKPdf	04 53 19.8	+10
	0.8nm,0.9s,baz=3.9,slow=8.8,SNR=4.8							

NEIC ***22*** *04:35:27.4, 33.37S×72.47W, h35km, ML4.1(GUC), After GUC.*

GUC 22 04:35:27.4±0.9, 33.37S×72.47W, h35km±2km, MD4.1, ML4.1, 8C, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LCCH	**Las Cruces**	0.76	99	*eP*	P	04 35 41.5	-0.1
LCCH				*i* S	S	04 35 52.0	0.0
IHA	**Instituto Hidr**	0.77	64	*i* P	P	04 35 42.2	+0.4
IHA				*i* S	S	04 35 53.1	+0.8
LNV	**Longovilo**	1.06	124	⇑*i* P	P	04 35 46.5	+0.5
ROCH	**El Roble**	1.28	73	*i* P	P	04 35 49.9	+0.8
TACH	**Talagante**	1.31	103	⇑*i* P	P	04 35 50.2	+0.7
TACH				*i* S	S	04 36 07.6	+1.6
PUEX	**Pudahuel**	1.43	94	⇑*i* P	P	04 35 54.4	+3.1
PUEX				*i* S	S	04 36 13.0	+3.9
PUEX				AMP		04 36 20.9	
	comp=E,6μm,0.6s						
PEL	**Peldehue**	1.51	82	*eP*	P	04 35 53.8	+1.4
PEL				*i* S	S	04 36 13.3	+2.2
PEL				AMP		04 36 19.2	
	comp=E,6μm,0.5s						
ANTU	**Antumapu**	1.54	98	*eP*	P	04 35 54.2	+1.3
ANTU				*i* S	S	04 36 14.4	+2.5
ANTU				AMP		04 36 23.5	
	comp=E,3μm,0.6s						
LLCH	**Lloileo**	1.56	100	*i* P	P	04 35 41.0	-12
LLCH				*i* S	S	04 35 52.3	-20
CLCH	**Cerro Calan**	1.61	92	⇑*i* P	P	04 35 54.4	+0.5
CLCH				*i* S	S	04 36 16.0	+2.3
CLCH				AMP		04 36 26.3	
	comp=E,5μm,0.6s						
CHCH	**Chadas Angostu**	1.61	111	⇑*i* P	P	04 35 54.8	+0.9
FSR	**Penalolen**	1.62	95	*eP*	P	04 35 55.6	+1.6
FSR				*i* S	S	04 36 16.5	+2.5
FSR				AMP		04 36 28.1	
	comp=E,3μm,0.5s						
PCH	**Pirque**	1.65	99	*i* P	P	04 35 55.7	+1.3
PTCH	**Petorca**	1.70	50	*i* P	P	04 35 55.6	+0.6
PTCH				AMP		04 36 31.0	
	comp=E,2μm,0.3s						
JACH	**Jahuel**	1.71	67	*i* P	P	04 35 56.1	+0.8
CACH	**El Canelo**	1.73	116	*i* P	P	04 35 57.5	+2.0
CACH				*i* S	S	04 36 19.9	+3.3
SFDO	**San Fernando**	1.73	136	*eP*	P	04 35 56.6	+1.1
FCH	**Farellones**	1.82	89	⇑*i* P	P	04 35 58.5	+1.6
FCH				*i* S	S	04 36 22.3	+3.4
FCH				AMP		04 36 33.0	
	comp=E,2μm,0.4s						
LMEL	**Las Melosas**	1.95	105	⇑*i* P	P	04 35 59.9	+1.2
LMEL				*i* S	S	04 36 23.9	+1.8
LMEL				AMP		04 36 33.7	
	comp=N,2μm,0.3s						
CICH	**Cipreses**	1.95	120	*eP*	P	04 35 60.0	+1.3
CMCH	**Combarbala**	2.51	30	⇑*i* P	P	04 36 07.4	+0.7
CMCH				AMP		04 36 58.5	
	comp=E,2μm,0.7s						
TLL	**Tololo Astrono**	3.49	24	*eP*	P	04 36 21.3	+0.7

IDC ***22*** *04:47:35.7±0.8, 8.13N×123.04E, mb4.1/10, mb1 4.3/10, mb1mx4.1/21, Error ellipse: s-maj=58.6km s-min=15.1km az=71.0*
MAN ***22*** *04:47:36.5, 8.16N×123.18E, h2km, mb4.8, ML3.7, MS3.7*
NEIC ***22*** *04:47:40.6±0.5, 8.12N×123.01E, h35km, mb4.6/6, Error ellipse: s-maj=26.7km s-min=8.2km az=68.0*

ISC 22 04:47:37.9±1.0, 8.09N±0.03×123.16E±0.04, h15km±7km, n37, σ1°§40/45, mb4.3/19, 8C-4D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PAGZ	**Pagadian**	0.33	138	⇑*eP*	Pg	04 47 44.3	-0.6
PAGZ				*eS*	Sg	04 47 50.9	+1.2
DCPH	**Dipolog City**	0.52	21	⇑*iP*	Pb	04 47 45.3	-3.0
DCPH				*i* S	Sb	04 47 52.6	-2.7
CTBH	**Cotabato--PC H**	1.38	129	⇓*eP*	Pn	04 48 01.7	-1.1
CTBH				*i* S	Sb	04 48 19.2	-1.0
TBP	**Tagbilaran**	1.73	24	⇓*eP*	Pn	04 48 06.0	-1.8
TBP				*eS*	Sn	04 48 29.7	0.0
KCP	**Kidapawan**	2.19	119	*eP*	Pn	04 48 14.3	-0.1
KCP				*i* S	Sn	04 48 49.0	+7.6
LLP	**Lapu-Lapu**	2.35	20	⇑*eP*	Pn	04 48 16.0	-0.6
LLP				*eS*	Sn	04 48 43.6	-1.7
BUTP	**Butuan**	2.58	70	⇑*eP*	Pn	04 48 21.6	+1.6
BUTP				*eS*	Sn	04 48 55.4	+4.1
AAP	**Anini-y**	2.61	333	⇓*iP*	Pn	04 48 21.0	+0.7
	3μm,1.0s						
CUYO	**Cuyo Island**	3.46	323	⇑*eP*	Pn	04 48 31.9	-0.6
RCP	**Roxas**	3.47	353	⇓*eP*	Pn	04 48 33.4	+0.9
RCP				*eS*	Sn	04 49 18.6	+4.8
KALP	**Kalibo**	3.65	347	⇑*eP*	Pn	04 48 36.7	+1.5
KALP						06 56 31.3	
OTRP	**Odiongan**	4.39	345	⇑*eP*	Pn	04 48 46.7	+1.0
ENPP	**El Nido**	4.81	310	⇑*eP*	Pn	04 48 50.2	-1.4
JOW	**Kunigami**	19.26	14	P	P	04 52 02.8	-1.9
	baz=168,slow=9.3						
KAKA	**Kakadu**	22.61	156	*eP*	P	04 52 38.6	-1.0
	22nm,1.0s,mb4.5						
ENH	**Enshi**	25.51	332	*eP*	P	04 53 03.5	-4.0
	13nm,1.3s,mb4.3						
CM31	**Chiang Mai Arr**	25.69	296	*eP*	P	04 53 05.9	-3.4
	22nm,1.3s,mb4.5						
FITZ	**Fitzroy Crossi**	26.14	175	*eP*	P	04 53 13.2	-0.3
	11nm,0.9s,mb4.4						
FITZ	**Fitzroy Crossi**	26.14	175	P	P	04 53 13.1	-0.5
	14nm,0.9s,mb4.5,baz=6.0,slow=10,SNR=8.6						
WRAB	**Tennant Creek**	29.95	159	*eP*	P	04 53 46.7	-1.3
	31nm,1.4s,mb4.8						
WRA	**Warramunga Arr**	29.95	159	P	P	04 53 46.0	-2.0
	4.3nm,1.3s,mb4.0,baz=340,slow=9.4,SNR=4.0						
ASAR	**Alice Springs**	33.26	162	P	P	04 54 15.4	-1.7
	2.5nm,0.7s,mb4.3,baz=341,slow=6.7,SNR=15						
GUN	**Gumba**	40.33	304	*eP*	P	04 55 17.2	+0.5
	19nm,0.7s,mb4.9						
PKI	**Pulchoki**	40.59	303	*eP*	P	04 55 19.0	+0.2
KKN	**Kakani**	40.78	304	*eP*	P	04 55 21.1	+0.8
	4.1nm,0.2s,mb4.7						
DMN	**Daman**	40.86	303	*eP*	P	04 55 21.9	+0.9
	10nm,0.5s,mb4.7						
SONM	**Songino Array**	42.09	343	P	P	04 55 28.2	-2.8
	0.6nm,0.4s,mb3.5,baz=135,slow=18,SNR=4.7						
KOLN	**Koldanda**	42.16	303	*eP*	P	04 55 31.4	-0.4
	34nm,1.3s,mb4.8						
STKA	**Stephens Creek**	43.47	157	P	P	04 55 41.0	-1.4
	5.3nm,1.0s,mb4.2,baz=26,slow=9.6,SNR=3.1						
MKAR	**Makanchi Array**	51.97	325	P	P	04 56 45.6	-3.0
	0.8nm,0.7s,mb3.8,baz=123,slow=8.0,SNR=7.6						
KURK	**Kurchatov**	56.18	328	*eP*	P	04 57 17.5	-2.0
BVAR	**Borovoye Array**	61.75	327	P	P	04 57 55.3	-2.9
	0.4nm,0.5s,mb3.9,baz=117,slow=6.6,SNR=5.9						
ZRNK	**Zerenda**	62.47	326	*eP*	P	04 58 00.4	-2.6
ARU	**Arti**	69.38	328	*eP*	P	04 58 41.7	-5.4
	9.2nm,1.0s,mb4.7						
BRTR	**Keskin Array B**	84.53	309	P	P	05 00 11.2	-0.8
	1.0nm,0.8s,mb4.0,baz=90,slow=3.7,SNR=6.3						
ARCES	**ARCESS Array B**	85.15	340	P	P	05 00 13.3	-1.0
	1.7nm,0.9s,mb4.2,baz=90,slow=7.2,SNR=2.8						
AKASG	**Malin Array Be**	86.29	321	P	P	05 00 18.7	-1.8
	0.9nm,0.6s,mb4.2,baz=80,slow=3.7,SNR=7.0						

IDC ***22*** *04:54:33.8±0.6, 51.65N×176.61E, mb4.2/21, mb1 4.4/22, mb1mx4.3/28, ML4.5/1, MS3.4/10, Ms1 3.4/10, ms1mx3.2/35, Error ellipse: s-maj=16.6km s-min=10.0km az=8.0*
MOS ***22*** *04:54:39.6±1.0, 51.78N×176.40E, h53km, mb4.7/16, Error ellipse: s-maj=15.3km s-min=8.7km az=110.1*
NEIC ***22*** *04:54:41.3±0.6, 51.75N×176.41E, h53km±5km, mb4.2/10, ML4.4(PMR), ML4.2(AEIC), Error ellipse: s-maj=8.2km s-min=4.5km az=186.0*
BJI ***22*** *04:54:41.2, 51.70N×176.40E, h53km, mb4.6*

ISC 22 04:54:40.3±0.7, 51.78N±0.07×176.48E±0.05, h59km±5km, n112, σ0§98/107, mb4.4/44, MS3.5/9, 3C-2D, Rat Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SMY	**Shemya**	1.74	304	P	P	04 55 08.3	-0.6
SMY				S	S	04 55 30.3	+0.3
FX1	**Attu Island--F**	2.31	300	Pn	P	04 55 14.9	-1.9
	329nm,0.3s,baz=354,slow=23,SNR=166						
FX1				Sn	S	04 55 44.2	+0.1
	232nm,0.3s,baz=234,slow=23,SNR=8.3						
FX1	**Attu Island--F**	2.31	300	P	P	04 55 14.9	-2.0
FX1						04 55 44.2	
FX1				pmax	pmax		
	comp=Z,329nm,0.3s						
FX1				smax			
	comp=Z,232nm,0.3s						
FX1	**Attu Island--F**	2.31	300	P	P	04 55 15.7	-1.2
KIMD	**Kanaga Island**	3.91	88	P	P	04 55 39.4	0.0
KIWB	**Kanaga Island**	3.96	86	P	P	04 55 40.3	+0.2
ADK	**Adak**	4.24	86	P	P	04 55 43.9	-0.2
ADK				S	S	04 56 30.2	-2.6
ADK	**Adak**	4.24	86	P	P	04 55 43.9	-0.2
ADK				S	S	04 56 30.3	-2.5
GSMY	**Great Sitkin M**	4.63	84	P	P	04 55 49.7	+0.2
ATKA	**Atka Island**	5.78	82	P	P	04 56 05.4	0.0
PET	**Petropavlovsk**	10.96	284	*eP*	P	04 57 22.1	+5.4
TNA	**Tin City**	15.94	24	*eP*	P	04 58 22.7	+0.9
	comp=Z,2.2nm,0.7s						
MA2	**Magadan**	16.38	308	*eP*	P	04 58 28.4	+1.1
MA2				pmax	pmax		
	comp=Z,40nm,1.8s						
BILL	**Bilibino**	17.05	347	*eP*	P	04 58 37.2	+1.5
BILL				pmax	pmax		
	comp=Z,5.0nm,1.2s						
BILL				MLR	MLR		
	comp=Z,200nm,19.0s						
BILL	**Bilibino**	17.05	347	*eP*	P	04 58 36.6	+1.0
	comp=Z,9.5nm,1.4s						
SVW	**Sparrevohn**	17.89	48	*eP*	P	04 58 49.1	+2.8
KDAK	**Kodiak Island**	18.71	59	*eP*	P	04 58 54.4	-1.8
	comp=Z,11nm,0.6s						
IMA	**Indian Mountai**	20.73	35	*eP*	P	04 59 18.3	+0.5
PMS	**Palmer South**	20.76	50	*eP*	P	04 59 19.1	+1.0
SML	**Sawmill**	21.45	48	P	P	04 59 25.6	+0.5
MCK	**McKinley**	21.67	43	*eP*	P	04 59 26.4	-0.9
	comp=Z,1.5nm,0.8s,mb3.5						
COLA	**College**	22.47	41	*eP*	P	04 59 36.5	+1.4
TOA	**Tolsona**	22.51	48	*eP*	P	04 59 37.4	+2.0
ILAR	**Eielson Array**	22.83	41	P	P	04 59 37.9	-0.6
	comp=Z,2.5nm,0.7s,mb3.8,baz=242,slow=8.4,SNR=21						
ILAR				LR	LR	05 08 25.4	
	comp=Z,57nm,19.2s,MS3.0,baz=17,slow=36						
ILAR	**Eielson Array**	22.83	41	P	P	04 59 37.9	-0.6
ILAR				pmax	pmax		
	comp=Z,3.0nm,0.7s						
ILAR				MLR	MLR		
	comp=Z,57nm,19.3s						
ASAJ	**Asahikawa**	23.78	265	P	P	04 59 49.4	+1.4
	comp=Z,23nm,0.8s,mb4.7,baz=64,slow=9.5,SNR=7.0						
ASAJ	**Asahikawa**	23.78	265	P	P	04 59 49.4	+1.5
ASAJ				pmax	pmax		
	comp=Z,23nm,0.8s						
DAWY	**Dawson**	25.86	45	*eP*	P	05 00 07.8	+0.3
YAK	**Yakutsk**	26.93	311	*eP*	P	05 00 15.5	-2.0
YAK				pmax	pmax		
	comp=N,2.0nm,0.9s						
YAK				pmax	pmax		
	comp=Z,11nm,0.9s,mb4.4						
YAK				pmax	pmax		
	comp=E,3.0nm,1.0s						
KLR	**Kul'dur**	28.23	283	*eP*	P	05 00 28.2	-1.2
TIXI	**Tiksi**	28.84	331	*eP*	P	05 00 33.9	-0.8
TIXI				pmax	pmax		
	comp=Z,3.0nm,1.4s,mb3.8						
INK	**Inuvik**	28.85	36	P	P	05 00 35.0	+0.3
	comp=Z,0.3nm,0.3s,mb3.5,baz=274,slow=12,SNR=10						
INK				LR	LR	05 14 43.5	
	comp=Z,57nm,18.3s,MS3.2,baz=291,slow=42						
INK	**Inuvik**	28.85	36	*eP*	P	05 00 35.2	+0.5
CN2	**Changchun**	34.57	277	*eP*	P	05 01 26.8	+1.7
BOD	**Bodaibo**	35.35	305	*eP*	P	05 01 30.2	-1.3
YKA	**Yellowknife Ar**	37.08	46	P	P	05 01 46.5	+0.4
	comp=Z,1.2nm,0.4s,mb4.1,baz=279,slow=9.5,SNR=37						
YKA				PcP	PcP	05 04 05.8	-0.3
	comp=Z,0.4nm,0.8s,baz=287,slow=2.9,SNR=4.6						
YKA	**Yellowknife Ar**	37.08	46	P	P	05 01 46.5	+0.4
YKA						05 04 05.8	
YKA				pmax	pmax		
	comp=Z,1.0nm,0.4s						
YKA	**Yellowknife Ar**	37.08	46	P	P	05 01 46.5	+0.4
YKA				PcP	PcP	05 04 05.8	-0.3
YBH	**Yreka Blue Hor**	41.72	79	P	P	05 02 24.7	+0.1
	comp=Z,0.3nm,0.4s,mb3.2,baz=270,slow=8.1,SNR=2.1						
TLY	**Talaya**	43.33	300	⇑*iP*	P	05 02 37.6	-0.1
TLY				*e*		05 04 20.2	
TLY				pmax	pmax		
	comp=Z,33nm,0.9s,mb5.1						
TLY				MLR	MLR		
	comp=Z,1μm,21.0s						
ULN	**Ulaanbaatar**	43.42	293	*deP*	P	05 02 39.4	+0.9
ULN	**Ulaanbaatar**	43.42	293	*eP*	P	05 02 38.9	+0.4
	comp=Z,4.6nm,0.8s,mb4.3						
SONM	**Songino Array**	43.81	294	P	P	05 02 42.3	+0.7
	comp=Z,4.1nm,0.5s,mb4.4,baz=58,slow=7.5,SNR=27						
ZAK	**Zakamensk**	44.20	298	*eP*	P	05 02 44.4	-0.3
SSE	**Sheshan**	45.08	265	P	P	05 02 52.8	+0.8
SSE				S	S	05 09 24.3	-1.8
HLID	**Hailey**	45.64	72	P	P	05 02 57.4	+1.1
HLID				*e*	pP	05 03 15.5	+3.9
NJ2	**Nanjing**	45.87	268	*eP*	P	05 02 58.0	-0.3
NJ2				S	S	05 09 31.0	-6.4
NVAR	**Mina Array Bea**	46.41	80	P	P	05 03 02.6	+0.2
	comp=Z,0.6nm,0.7s,mb3.6,baz=309,slow=5.8,SNR=3.9						
NVAR				LR	LR	05 19 04.8	
	comp=Z,28nm,21.9s,MS3.2,baz=250,slow=32						
BW06	**Boulder Array**	48.96	70	*eP*	P	05 03 22.5	+0.1
PDAR	**Pinedale Array**	48.96	70	P	P	05 03 21.5	-0.8
	comp=Z,0.5nm,0.6s,mb3.7,baz=320,slow=1.5,SNR=5.8						
SPB4	**Spitsbergen Ar**	49.73	355	*eP*	P	05 03 27.4	-0.5
SPITS	**Spitsbergen Ar**	49.73	355	LR	LR	05 24 11.6	
	comp=Z,37nm,20.6s,baz=57,slow=36						
ULM	**Lac du Bonnet**	51.89	55	LR	LR	05 25 06.9	
	comp=Z,58nm,20.7s,MS3.6,baz=18,slow=35						
GTA	**Gaotai**	52.66	289	*eP*	P	05 03 50.8	+0.4
GTA				AMB	AMB		
	comp=Z,8.0nm,1.0s,mb4.6						
KURK	**Kurchatov**	56.57	311	*i* P	P	05 04 18.3	-0.4
KURK				pmax	pmax		
	comp=Z,10.0nm,0.9s,mb4.8						
KURK	**Kurchatov**	56.57	311	*eP*	P	05 04 17.8	-0.9
KEV	**Kevo**	56.74	348	*ep*	P	05 04 18.7	-1.1
	comp=Z,1.3nm,0.5s,mb4.2						
KEV	**Kevo**	56.74	348	*eP*	P	05 04 18.7	-1.1
KEV				pmax	pmax		
	comp=Z,1.0nm,0.5s,mb4.1						
ARCES	**ARCESS Array B**	57.14	348	P	P	05 04 21.6	-1.0
	comp=Z,2.2nm,0.5s,mb4.4,baz=22,slow=8.7,SNR=23						
ARCES				LR	LR	05 29 18.3	
	comp=Z,51nm,19.6s,MS3.6,baz=71,slow=36						
ARCES	**ARCESS Array B**	57.14	348	P	P	05 04 21.6	-1.0
ARCES				pmax	pmax		
	comp=Z,2.0nm,0.5s						
ARCES				MLR	MLR		
	comp=Z,51nm,19.6s						
MKAR	**Makanchi Array**	57.44	306	P	P	05 04 23.9	-1.0
	comp=Z,5.0nm,0.7s,mb4.7,baz=52,slow=6.9,SNR=33						
MKAR	**Makanchi Array**	57.44	306	P	P	05 04 23.9	-1.1
MKAR				pmax	pmax		
	comp=Z,5.0nm,0.7s						
MKAR	**Makanchi Array**	57.44	306	P	P	05 04 23.9	-1.0
VOSK	**Vostochnaya**	58.60	317	P	P	05 04 32.5	-0.4
VOSK				pmax	pmax		
	comp=Z,6.0nm,0.9s,mb4.6						
BVA0	**Borovoye Array**	58.63	317	*i* P	P	05 04 33.1	-0.1
BVA0				pmax	pmax		
	comp=Z,1.0nm,0.8s,mb3.9						
BVAR	**Borovoye Array**	58.63	317	P	P	05 04 32.8	-0.4
	comp=Z,9.5nm,0.4s,mb5.1,baz=49,slow=7.0,SNR=75						
BRVK	**Borovoye**	58.65	317	*eP*	P	05 04 32.6	-0.7
MNTX	**Cornudas Mount**	58.76	77	*eP*	P	05 04 33.1	-1.3
	comp=Z,2.4nm,0.9s,mb4.2						
ZRNK	**Zerenda**	59.27	318	P	P	05 04 37.4	-0.2
ZRNK				pmax	pmax		
	comp=Z,4.0nm,0.6s,mb4.6						
ZRNK	**Zerenda**	59.27	318	*eP*	P	05 04 37.1	-0.5
ARU	**Arti**	60.66	326	⇑*iP*	P	05 04 46.2	-0.9
ARU				*e*		05 05 25.7	
ARU				*e*		05 07 00.3	
ARU				*eS*	S	05 12 54.8	-2.5
ARU				pmax	pmax		
	comp=Z,12nm,0.9s,mb5.0						
SCHQ	**Schefferville**	61.46	36	P	P	05 04 51.8	-0.7
	comp=Z,4.0nm,1.1s,mb4.5,baz=334,slow=7.4,SNR=3.7						
TXAR	**Lajitas Array**	61.48	78	P	P	05 04 52.6	-0.4
	comp=Z,0.5nm,0.5s,mb4.0,baz=305,slow=5.3,SNR=22						
JOF	**Joensuu**	62.40	343	*ep*	P	05 04 57.7	-1.0
KAF	**Kangasniemi**	64.01	345	*ep*	P	05 05 08.1	-1.0
	comp=Z,1.8nm,0.4s,mb4.5,baz=16,slow=5.8						
KAF	**Kangasniemi**	64.01	345	*eP*	P	05 05 08.1	-1.0
KAF				pmax	pmax		
	comp=Z,2.0nm,0.4s,mb4.5						
FINES	**FINESS Array B**	64.68	345	P	P	05 05 12.7	-0.8
	comp=Z,2.8nm,0.6s,mb4.5,baz=24,slow=6.1,SNR=19						
FINES				LR	LR	05 37 52.0	
	comp=Z,34nm,18.3s,MS3.6,baz=359,slow=40						
FINES	**FINESS Array B**	64.68	345	P	P	05 05 12.7	-0.8
FINES				pmax	pmax		
	comp=Z,3.0nm,0.6s						
FINES				MLR	MLR		
	comp=Z,35nm,18.3s						
AB31	**Akbulak array**	65.78	320	P	P	05 05 21.4	+0.6
AB31				pmax	pmax		
	comp=Z,2.0nm,0.5s,mb4.4						
KKAR	**Karatay Array**	65.90	310	*i* P	P	05 05 21.7	+0.1
KKAR				pmax	pmax		
	comp=Z,5.0nm,0.6s,mb4.7						
NB2	**NORSAR Subarra**	66.91	352	P	P	05 05 27.6	-0.1
	comp=Z,5.9nm,0.8s,mb4.7,baz=9.0,slow=6.5						
NOA	**NORSAR Array B**	66.91	352	P	P	05 05 27.7	0.0
	comp=Z,12nm,1.1s,mb4.8,baz=10,slow=6.4,SNR=13						
NOA	**NORSAR Array B**	66.91	352	P	P	05 05 27.7	0.0
NOA				pmax	pmax		
	comp=Z,12nm,1.1s						
SSPA	**Standing Stone**	67.61	52	*eP*	P	05 05 31.8	-0.6
	comp=Z,2.5nm,0.4s,mb4.6						
KKN	**Kakani**	69.39	289	*eP*	P	05 05 44.6	+0.8
	comp=Z,19nm,0.5s,mb5.3						
PKI	**Pulchoki**	69.48	289	*eP*	P	05 05 44.8	+0.5
	comp=Z,16nm,0.5s,mb5.2						
GKN	**Gorkha**	69.61	289	*eP*	P	05 05 45.3	+0.2
	comp=Z,33nm,0.9s,mb5.3						
DMN	**Daman**	69.63	289	*eP*	P	05 05 45.8	+0.6
	comp=Z,33nm,1.0s,mb5.2						
KOLN	**Koldanda**	70.39	290	*eP*	P	05 05 50.3	+0.5
	comp=Z,11nm,0.7s,mb4.9						
AKASG	**Malin Array Be**	74.19	339	P	P	05 06 11.9	+0.2
	comp=Z,4.2nm,0.4s,mb4.7,baz=20,slow=5.7,SNR=29						
KWP	**Kalwaria**	76.53	343	*eP*	P	05 06 26.8	+1.7
GERES	**GERESS Array B**	78.68	348	P	P	05 06 38.2	+1.2
	comp=Z,0.5nm,0.7s,mb3.6,slow=6.7,SNR=3.6						
GERES	**GERESS Array B**	78.68	348	P	P	05 06 38.2	+1.2
GERES				pmax	pmax		
	comp=Z,1.0nm,0.7s						
GNI	**Garni**	79.26	324	LR	LR	05 46 34.4	
	comp=Z,59nm,20.4s,MS3.9,baz=160,slow=39						
MLR	**Muntele Rosu**	79.83	339	LR	LR	05 45 43.7	
	comp=Z,49nm,18.0s,MS3.9,baz=197,slow=38						
WRA	**Warramunga Arr**	80.35	220	P	P	05 06 45.7	-0.9
	comp=Z,0.8nm,0.5s,mb3.9,baz=31,slow=5.8,SNR=10						
WRA	**Warramunga Arr**	80.35	220	P	P	05 06 45.7	-1.0
WRA				pmax	pmax		
	comp=Z,1.0nm,0.5s						
THR	**Tehran**	80.46	318	LR	LR	05 43 36.3	
	comp=Z,23nm,19.1s,MS3.5,baz=314,slow=36						
FITZ	**Fitzroy Crossi**	82.47	228	P	P	05 06 58.1	+0.4
	comp=Z,5.1nm,0.7s,mb4.6,baz=35,slow=3.6,SNR=8.7						
LPL	**La Plagne**	82.68	353	*eP*	P	05 07 02.5	+4.2
LPG	**La Plagne**	82.70	353	*eP*	P	05 07 01.8	+3.4
	comp=Z,8.9nm,1.0s,mb4.5						
BRTR	**Keskin Array B**	83.28	332	P	P	05 07 03.1	+1.7
	comp=Z,1.1nm,0.5s,mb4.2,baz=37,slow=2.8,SNR=8.7						
ORIF	**Oris-en-Rattie**	83.34	353	*eP*	P	05 07 05.3

3.1nm,1.0s,baz=65,slow=3.6,SNR=8.9

NEIC ***22*** *05:19:03.0,50.42N×7.36E,h10km,ML4.2(LDG), ML4.1(VIE),ML4.0(SZGRF),ML4.0(CLL),ML3.9(STR), ML3.9(LEDBW),ML3.6(FUR),After LEDBW.*
NEIC Felt at Hohr-Grenzhausen and Ochtendung.
BGR ***22*** *05:19:03.6±0.2,50.39N×7.39E,h10km,ML3.9/6,Error ellipse: s-maj=3.3km s-min=1.1km az=86.0*
LEDBW ***22*** *05:19:03.8±1.5,50.38N×7.36E,h10km,ML3.9,Error ellipse: s-maj=34.0km s-min=12.0km az=154.0*
IDC ***22*** *05:19:03.4±1.5,50.43N×7.41E,mb3.3/1,mb1 3.7/10, mb1mx3.5/29,ML3.8/9,MS3.6/1,Ms1 3.5/1,ms1mx2.4/17, Error ellipse: s-maj=19.2km s-min=10.3km az=58.0*
LDG ***22*** *05:19:03.9±0.1,50.38N×7.38E,h8km,Md4.3/5,Ml4.2/43, Error ellipse: s-maj=1.5km s-min=1.1km az=37.0*
BNS ***22*** *05:19:04.2±1.7,50.41N×7.39E,h3km±34km,ML3.7,felt at Bonn, Rodenkirchen, Simmern, Overath, Duesseldorf, Diez*
PRU ***22*** *05:19:04.5,50.17N×7.52E*
ZUR_RM ***22*** *05:19:04,50.41N×7.39E,h15km,Mw3.6/25,Moment Tensor Solution. s25 Moment tensor: Scale 10¹⁴Nm; Mrr-0.76; Mθθ2.92; Mϕϕ-2.16; Mrθ-0.37; Mθϕ-1.08; Mϕr-0.07; Best double couple: M₀2.78×10¹⁴ NP1:ϕ₁237°, δ90°,λ173°. NP2:ϕ₂327°,δ83°,λ0°. Principal axes: T 3.167, Plg5°, Azm191°; N -.775, Plg83°, Azm56°; P -2.393, Plg5°, Azm282°;*
STR ***22*** *05:19:04.7±0.3,50.29N×7.22E,h5km±1km,Ml3.9 Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
NAO ***22*** *05:19:08.3±6.2,50.87N×7.61E,ML3.3*

ISC 22 05:19:01.3±0.2,50.33N±0.01×7.23E±0.02,h10km±1km, n216,σ1ϕ48/423,mb3.3/1,MS3.5/1,21C-18D,Germany

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op		h m s	ISC
BGG	**Burgeitz**	**0.15**	**150**	⇑*i*Pg	**Pg**	**05 19 08.4**	**+3.7**
BGG				*i* Sg	**Sg**	**05 19 11.1**	**+4.0**
STB	**Steinbach**	**0.36**	**317**	⇓*e*Pg	**Pg**	**05 19 12.2**	**+3.5**
STB				*e*Sg	**Sg**	**05 19 17.2**	**+3.6**
	4µm,0.4s						
FACH	**Fachingen**	**0.49**	**87**	⇓*i*Pg	**Pg**	**05 19 11.6**	**+0.3**
ABH	**Alteburg**	**0.50**	**155**	⇑*i*Pg	**Pg**	**05 19 14.3**	**+2.9**
BIW	**Bindweide**	**0.56**	**44**	⇑*i*Pg	**Pg**	**05 19 12.3**	**-0.3**
BNS	**Bensberg**	**0.63**	**357**	⇑*i*Pg	**Pg**	**05 19 15.4**	**+1.4**
BNS				*e*Sg	**Sg**	**05 19 22.8**	**+0.2**
	9µm,0.3s						
RUP	**Ruppelstein**	**0.64**	**190**	⇑*i*Pg	**Pg**	**05 19 17.3**	**+3.1**
RUP	**Ruppelstein**	**0.64**	**190**	⇑*i*P	**Pb**	**05 19 17.3**	**+3.3**
KLL	**Kalltalsperre**	**0.66**	**299**	⇓*e*Pg	**Pg**	**05 19 17.7**	**+3.0**
KLL				*i* Sg	**Sg**	**05 19 28.4**	**+4.9**
MEM	**Membach**	**0.83**	**290**	⇓*i*Pg	**Pg**	**05 19 21.1**	**+3.2**
IMS	**Imsbach**	**0.86**	**149**	⇑*e*Pg	**Pg**	**05 19 20.2**	**+1.7**
HGN	**Heimansgroeve**	**0.93**	**298**	⇓*e*Pg	**Pg**	**05 19 22.5**	**+2.6**
HGN				*e*Sg	**Sg**	**05 19 35.6**	**+3.2**
	SNR=7.9						
HGN	**Heimansgroeve**	**0.93**	**298**	⇓*i*Pg	**Pg**	**05 19 22.5**	**+2.6**
	74nm,0.4s,baz=100						
HGN				*e*Sg	**Sg**	**05 19 34.8**	**+2.4**
WLF	**Walferdange**	**0.96**	**226**	⇑*e*Pg	**Pg**	**05 19 22.8**	**+2.3**
WLF				*e*Sg	**Sg**	**05 19 38.1**	**+4.6**
	SNR=6.9						
WLF	**Walferdange**	**0.96**	**226**	*e*P	**Pb**	**05 19 22.8**	**+3.2**
WLF				*e*S	**Sb**	**05 19 38.1**	**+6.0**
BUG	**Bochum--Univer**	**1.11**	**1**	⇑*e*Pg	**Pg**	**05 19 23.4**	**-0.1**
BUG				*e*Sg	**Sg**	**05 19 37.6**	**-0.8**
	SNR=5.9						
BUG	**Bochum--Univer**	**1.11**	**1**	*e*Pg	**Pg**	**05 19 22.8**	**-0.7**
BUG				*e*Sg	**Sg**	**05 19 37.9**	**-0.5**
KTD	**Kalmit**	**1.16**	**151**	⇑*e*Pn	**Pn**	**05 19 25.6**	**+2.2**
KTD				*e*Pg	**Pg**	**05 19 25.6**	**+1.2**
	SNR=80						
TOD	**Tromm**	**1.25**	**125**	*e*Pn	**Pn**	**05 19 24.9**	**+0.1**
	SNR=92						
TOD				⇑*e*Pg	**Pg**	**05 19 26.2**	**-0.1**
TOD	**Tromm**	**1.25**	**125**	*e*P	**Pb**	**05 19 24.9**	**+0.4**
TOD				⇑*e*P		05 19 26.2	
SWS	**Schriesheim**	**1.28**	**131**	Pn	**Pn**	**05 19 26.5**	**+1.3**
SWS				Sg	**Sg**	**05 19 42.0**	**-1.9**
PEB	**Petersbachel**	**1.31**	**166**	⇓*i*Pg	**Pg**	**05 19 28.5**	**+1.1**
HEI	**Heidelberg**	**1.35**	**133**	*e*P	**Pb**	**05 19 28.4**	**+2.3**
HEI				*e*S	**Sb**	**05 19 45.0**	**+1.7**
LANF	**Langenberg**	**1.41**	**164**	⇓*e*Pn	**Pn**	**05 19 28.4**	**+1.4**
LANF				*e*Pg	**Pg**	**05 19 30.4**	**+1.0**
	SNR=874						
LANF	**Langenberg**	**1.41**	**164**	⇓*e*P	**Pn**	**05 19 28.4**	**+1.4**
LANF				⇑*e*P		05 19 30.5	
LANF	**Langenberg**	**1.41**	**164**	Pg	**Pg**	**05 19 30.3**	**+0.9**
GIVF	**Givet**	**1.56**	**262**	*e*Pn	**Pn**	**05 19 32.3**	**+3.1**
	SNR=1.0						
GIVF				*e*Pg	**Pg**	**05 19 35.1**	**+2.6**
GIVF				*e*Sn	**Sn**	**05 19 51.9**	**+2.3**
	SNR=1.0						
GIVF				*e*Sg	**Sg**	**05 19 56.3**	**+3.0**
	2µm,0.4s						
WTSB	**Winterswijk**	**1.66**	**351**	*e*Pn	**Pn**	**05 19 31.6**	**+1.0**
	SNR=111						
WTSB				*e*Sg	**Sg**	**05 19 54.2**	**-2.4**
	SNR=5.8						
WTSB	**Winterswijk**	**1.66**	**351**	*e*Pn	**Pn**	**05 19 32.9**	**+2.3**
	baz=170						
WTSB				*i* Pg	**Pg**	**05 19 35.9**	**+1.5**
WTSB				*e*Sg	**Sg**	**05 19 53.7**	**-2.9**
STR	**Strasbourg**	**1.79**	**168**	*e*Pg	**Pg**	**05 19 38.0**	**+1.0**
	SNR=31						
SIND	**Sindeldorf**	**1.83**	**122**	Pn	**Pn**	**05 19 33.5**	**+0.5**
SIND				*e*Pg	**Pg**	**05 19 36.9**	**-0.9**
CDF	**Champ du Feu**	**1.92**	**179**	*e*Pn	**Pn**	**05 19 35.2**	**+0.8**
	SNR=1.0						
CDF				*e*Pg	**Pg**	**05 19 40.9**	**+1.2**
CDF				*e*Sn	**Sn**	**05 19 58.6**	**-0.2**
CDF				*e*Sg	**Sg**	**05 20 05.3**	**0.0**
	885nm,0.4s,SNR=1.0						
WLS	**Welschbruch**	**1.92**	**177**	Pn	**Pn**	**05 19 35.6**	**+1.2**
LBG	**Lerchenberg**	**1.96**	**148**	⇓*e*Pn	**Pn**	**05 19 35.7**	**+0.8**
LBG				*e*Pg	**Pg**	**05 19 40.4**	**0.0**
BAIF	**Baives**	**1.96**	**263**	*e*Pn	**Pn**	**05 19 38.0**	**+3.1**
	SNR=1.0						
BAIF				*e*Pg	**Pg**	**05 19 42.1**	**+1.7**
BAIF				*e*Sn	**Sn**	**05 20 01.1**	**+1.4**
	SNR=1.0						
BAIF				*e*Sg	**Sg**	**05 20 07.7**	**+1.2**
	1µm,0.3s						
IBBN	**Ibbenburen**	**2.01**	**9**	*e*Pn	**Pn**	**05 19 35.5**	**-0.1**
	SNR=4.0						
IBBN				*e*Pg	**Pg**	**05 19 35.5**	**-5.8**
IBBN				*e*Sg	**Sg**	**05 20 05.3**	**-2.9**
	SNR=4.4						
IBBN	**Ibbenburen**	**2.01**	**9**	*e*Pn	**Pn**	**05 19 35.5**	**-0.1**
IBBN				*e*Sg	**Sg**	**05 20 05.3**	**-2.8**
STU	**Stuttgart**	**2.02**	**140**	*e*Pn	**Pn**	**05 19 37.1**	**+1.3**
	SNR=4.2						
STU				*e*Sg	**Sg**	**05 20 06.0**	**-2.6**
STU	**Stuttgart**	**2.02**	**140**	*e*Pn	**Pn**	**05 19 37.1**	**+1.3**
STU				*e*Sg	**Sg**	**05 20 06.0**	**-2.6**
RFYF	**Reffroy**	**2.05**	**214**	*e*Pn	**Pn**	**05 19 38.2**	**+2.0**
	baz=35						
RFYF				*e*Pg	**Pg**	**05 19 43.9**	**+1.6**
	baz=31						
RFYF				*e*Sg	**Sg**	**05 20 11.7**	**+2.0**
	585nm,0.3s						
ECH	**Echery**	**2.12**	**181**	*e*Pn	**Pn**	**05 19 39.4**	**+2.2**
	SNR=12						
ECH				*e*Pg	**Pg**	**05 19 44.3**	**+0.7**
	SNR=20						
ECH	**Echery**	**2.12**	**181**	Pn	**Pn**	**05 19 39.6**	**+2.4**
ECH				Pg	**Pg**	**05 19 43.0**	**-0.6**
ECH				Sg	**Sg**	**05 20 12.0**	**+0.1**
BFO	**Black Forest**	**2.13**	**160**	*e*Pn	**Pn**	**05 19 38.8**	**+1.4**
	SNR=10						
BFO				*e*Pg	**Pg**	**05 19 43.3**	**-0.5**
	SNR=16						
BFO				*e*Sg	**Sg**	**05 20 12.1**	**-0.1**
	SNR=3.9						
BFO	**Black Forest**	**2.13**	**160**	*e*Pn	**Pn**	**05 19 37.5**	**+0.1**
TUBL	**Tuebingen Lnz**	**2.18**	**145**	Pn	**Pn**	**05 19 39.3**	**+1.2**
LIBD	**Limburg**	**2.20**	**173**	*e*Pn	**Pn**	**05 19 40.3**	**+1.9**
	SNR=5.9						
LIBD				*e*Pg	**Pg**	**05 19 45.8**	**+0.6**
	SNR=15						
LIBD	**Limburg**	**2.20**	**173**	Pn	**Pn**	**05 19 40.2**	**+1.9**
LIBD				Pg	**Pg**	**05 19 45.6**	**+0.4**
THEF	**They Montfort**	**2.26**	**202**	Pn	**Pn**	**05 19 40.9**	**+1.7**
THEF	**They Montfort**	**2.26**	**202**	Pg	**Pg**	**05 19 46.0**	**-0.4**
MEZF	**Maizieres J'vi**	**2.32**	**219**	*e*Pn	**Pn**	**05 19 42.1**	**+2.1**
	baz=39,SNR=1.0						
MEZF				*e*Pg	**Pg**	**05 19 48.6**	**+1.0**
	baz=42						
MEZF				*e*Sn	**Sn**	**05 20 09.1**	**+0.3**
	SNR=1.0						
MEZF				*e*Sg	**Sg**	**05 20 19.8**	**+1.3**
	438nm,0.4s,SNR=1.0						
BUCH	**Bad Urach**	**2.34**	**143**	⇓*e*Pn	**Pn**	**05 19 41.2**	**+0.8**
BUCH				Pg	**Pg**	**05 19 49.4**	**+1.3**
BUCH				Sg	**Sg**	**05 20 15.7**	**-3.6**
FBB	**Freiburg**	**2.37**	**170**	Pg	**Pg**	**05 19 48.4**	**-0.2**
HAU	**Haudompre**	**2.40**	**194**	*e*Pn	**Pn**	**05 19 42.5**	**+1.3**
	SNR=1.0						
HAU				*e*Pg	**Pg**	**05 19 49.4**	**+0.2**
HAU				*e*Sg	**Sg**	**05 20 21.0**	**-0.2**
	503nm,0.4s,SNR=1.0						
KIZ	**Kirchzarten**	**2.42**	**169**	⇓*e*Pn	**Pn**	**05 19 42.5**	**+1.0**
KIZ				*e*Pg	**Pg**	**05 19 49.2**	**-0.5**
KIZ	**Kirchzarten**	**2.42**	**169**	*e*P	**Pn**	**05 19 42.5**	**+1.0**
KIZ				*e*Pg	**Pg**	**05 19 49.2**	**-0.4**
SPAK	**Spaichingen**	**2.46**	**155**	Pn	**Pn**	**05 19 43.1**	**+1.1**
SPAK	**Spaichingen**	**2.46**	**155**	Pn	**Pn**	**05 19 43.4**	**+1.4**
MOF	**Molkenrain**	**2.48**	**181**	*e*Pn	**Pn**	**05 19 44.6**	**+2.2**
	SNR=12						
MOF	**Molkenrain**	**2.48**	**181**	Pn	**Pn**	**05 19 44.6**	**+2.2**
MOF				Pg	**Pg**	**05 19 49.8**	**-1.1**
CLZ	**Clausthal**	**2.49**	**52**	*e*Pn	**Pn**	**05 19 40.9**	**-1.7**
	SNR=150						
CLZ				*e*Sg	**Sg**	**05 20 17.9**	**-6.5**
CLZ	**Clausthal**	**2.49**	**52**	*e*Pn	**Pn**	**05 19 40.9**	**-1.7**
CLZ				*e*Sg	**Sg**	**05 20 17.9**	**-6.5**
WIT	**Witteveen**	**2.51**	**352**	*e*Pn	**Pn**	**05 19 46.8**	**+4.1**
WIT				*e*Pg	**Pg**	**05 19 52.5**	**+1.1**
	287nm,0.4s						
WIT				*e*Sg	**Sg**	**05 20 21.1**	**-3.7**
FELD	**Feldberg**	**2.51**	**168**	Pn	**Pn**	**05 19 43.6**	**+0.8**
FELD				*e*Pg	**Pg**	**05 19 51.4**	**0.0**
	SNR=13						
FELD	**Feldberg**	**2.51**	**168**	P	**Pn**	**05 19 51.0**	**+8.2**
FELD				*e*P		05 19 51.4	
FELD	**Feldberg**	**2.51**	**168**	Pn	**Pn**	**05 19 43.8**	**+1.0**
FELD				Pg	**Pg**	**05 19 51.0**	**-0.4**
FELD				Sg	**Sg**	**05 20 25.7**	**+0.8**
HINF	**Hinteralfeld**	**2.53**	**186**	*e*Pn	**Pn**	**05 19 43.8**	**+0.7**
	SNR=1.0						
HINF				*e*Pg	**Pg**	**05 19 51.2**	**-0.6**
HINF				*e*Sn	**Sn**	**05 20 13.9**	**-0.3**
HINF				*e*Sg	**Sg**	**05 20 25.9**	**+0.4**
	546nm,0.5s						
SFTF	**Sexfontaines**	**2.57**	**215**	*e*Pn	**Pn**	**05 19 45.0**	**+1.4**
	baz=40						
SFTF				*e*Pg	**Pg**	**05 19 52.8**	**+0.3**
	baz=39						
SFTF				*e*Sn	**Sn**	**05 20 15.6**	**+0.5**
SFTF				*e*Sg	**Sg**	**05 20 28.0**	**+1.2**
	441nm,0.4s						
GUT	**Gutenstein**	**2.58**	**151**	⇓*e*Pn	**Pn**	**05 19 44.4**	**+0.6**
GUT				Sn	**Sn**	**05 20 14.3**	**-1.2**
HDH	**Heidenheim**	**2.62**	**131**	Pn	**Pn**	**05 19 44.6**	**+0.3**
HDH				Sn	**Sn**	**05 20 13.4**	**-3.0**
GRFO	**Grafenberg**	**2.66**	**102**	*e*Pg	**Pg**	**05 19 51.4**	**-2.9**
	SNR=28						
GRA1	**Grafenberg Arr**	**2.66**	**102**	*e*Pn	**Pn**	**05 19 44.7**	**-0.2**
GRA1				*e*Sg	**Sg**	**05 20 26.0**	**-3.8**
GRF	**Grafenberg Arr**	**2.66**	**102**	*e*Pn	**Pn**	**05 19 44.7**	**-0.2**
GRF				*e*Sg	**Sg**	**05 20 26.0**	**-3.8**
NRDL	**Niedersach Rie**	**2.82**	**39**	*e*Pn	**Pn**	**05 19 46.7**	**-0.5**
	SNR=6.3						
NRDL				*e*Pg	**Pg**	**05 19 53.9**	**-3.7**
	SNR=11						
MOX	**Moxa**	**2.82**	**82**	*e*Pn	**Pn**	**05 19 46.7**	**-0.5**
	SNR=75						
MOX				*e*Pg	**Pg**	**05 19 52.9**	**-4.7**
MOX				*e*Sg	**Sg**	**05 20 26.2**	**-9.0**
MOX	**Moxa**	**2.82**	**82**	*i* P	**Pn**	**05 19 46.7**	**-0.5**
MOX				Pg	**Pg**	**05 19 53.0**	**-4.6**
MOX				Sg	**Sg**	**05 20 26.0**	**-9.2**
MOX	**Moxa**	**2.82**	**82**	*e*Pn	**Pn**	**05 19 46.7**	**-0.5**
MOX				*e*Pg	**Pg**	**05 19 52.9**	**-4.7**
MOX				*e*Sg	**Sg**	**05 20 26.2**	**-9.0**
BBS	**Basel-Blauen**	**2.88**	**176**	Pn	**Pn**	**05 19 50.1**	**+2.1**
SISB	**Singen-Sch Ber**	**2.88**	**156**	⇓*e*Pn	**Pn**	**05 19 49.4**	**+1.2**
LOMF	**Lomont**	**3.00**	**185**	*e*Pn	**Pn**	**05 19 51.1**	**+1.4**
	SNR=10						
LOMF				*e*Pg	**Pg**	**05 20 00.7**	**-0.4**
	SNR=6.0						
LOMF	**Lomont**	**3.00**	**185**	Pn	**Pn**	**05 19 50.8**	**+1.1**
LOMF				Pg	**Pg**	**05 20 00.3**	**-0.8**
LOMF				Sg	**Sg**	**05 20 42.0**	**+1.0**
MENF	**Mencas**	**3.25**	**276**	Pg	**Pg**	**05 20 05.7**	**-0.4**
UBR	**Uberruh**	**3.26**	**143**	⇓*e*Pn	**Pn**	**05 19 54.7**	**+1.2**
GUNZ	**Gunzen**	**3.27**	**87**	*e*Pn	**Pn**	**05 19 52.8**	**-0.9**
NKC	**Novy Kostel**	**3.35**	**90**	*e*PN	**Pn**	**05 19 53.9**	**-0.9**
NKC				*ex*	x	05 20 04.3	
NKC				*e*SG	**Sg**	**05 20 44.9**	**-8.0**
TANN	**Tannenbergstha**	**3.35**	**87**	*e*Pn	**Pn**	**05 19 50.7**	**-4.1**
	SNR=29						
FUR	**Furstenfeldbru**	**3.43**	**128**	*e*Pn	**Pn**	**05 19 56.3**	**+0.4**
FUR				*e*Sg	**Sg**	**05 20 52.8**	**-2.6**
FUR	**Furstenfeldbru**	**3.43**	**128**	*e*Pn	**Pn**	**05 19 56.3**	**+0.5**
FUR				*e*Sg	**Sg**	**05 20 52.8**	**-2.6**
DAVA	**Damuels**	**3.52**	**149**	⇑*i*PN	**Pn**	**05 19 58.3**	**+1.2**
DAVA				*i* SN	**Sn**	**05 20 36.1**	**-3.1**
DAVA				*i* SG	**Sg**	**05 20 53.9**	**-4.5**
	210nm,0.7s						
CLL	**Collm**	**3.79**	**73**	*e*Pn	**Pn**	**05 19 59.8**	**-1.3**
	SNR=11						
CLL				*i* Pg	**Pg**	**05 20 12.3**	**-4.7**
CLL				*e*Sg	**Sg**	**05 20 58.1**	**-9.4**
CLL	**Collm**	**3.79**	**73**	*i* PN	**Pn**	**05 19 59.8**	**-1.2**
CLL				*i*		05 20 02.5	
CLL				*i* PG	**Pg**	**05 20 12.3**	**-4.7**
CLL				*e*SN	**Sn**	**05 20 41.0**	**-5.2**
CLL				*i* SG	**Sg**	**05 20 58.2**	**-9.3**
CLL				*i* L		05 21 07.2	
CLL	**Collm**	**3.79**	**73**	*i* Pn	**Pn**	**05 19 59.8**	**-1.2**
CLL				*i* Pg	**Pg**	**05 20 12.3**	**-4.7**
CLL				*i* Sg	**Sg**	**05 20 58.2**	**-9.3**
CABF	**La Chapelle**	**3.80**	**192**	*e*Pn	**Pn**	**05 20 01.4**	**+0.3**
	SNR=1.0						
CABF				*e*Pg	**Pg**	**05 20 15.1**	**-2.1**
CABF				*e*Sn	**Sn**	**05 20 44.4**	**-2.0**
CABF				*e*Sg	**Sg**	**05 21 05.0**	**-2.8**
	265nm,0.6s						
MOTA	**Moosalm**	**3.94**	**138**	⇑*i*PN	**Pn**	**05 20 03.6**	**+0.5**
MOTA				*i* SN	**Sn**	**05 20 47.1**	**-2.7**
DAVOX	**Davos**	**3.97**	**153**	Pn	**Pn**	**05 20 04.6**	**+1.1**
	10nm,0.3s,baz=164,slow=6.5,SNR=38						
DAVOX				Pg	**Pg**	**05 20 21.4**	**+0.9**
	9.7nm,0.3s,baz=326,slow=16,SNR=20						
DAVOX				Sn	**Sn**	**05 20 51.5**	**+0.9**
	10nm,0.3s,baz=173,slow=18,SNR=5.6						
DAVOX				Lg		05 21 10.2	
	9.2nm,0.3s,baz=335,slow=22,SNR=3.5						
SQTA	**Sankt Quirin**	**4.08**	**138**	⇓*i*PN	**Pn**	**05 20 06.0**	**+0.9**
SQTA				*i* SN	**Sn**	**05 20 50.9**	**-2.5**
SSF	**Saint Saulge**	**4.10**	**218**	*e*Pn	**Pn**	**05 20 05.3**	**-0.1**
	SNR=1.0						
SSF				*e*Pg	**Pg**	**05 20 21.3**	**-1.8**
SSF				*e*Sn	**Sn**	**05 20 52.6**	**-1.3**
SSF				*e*Sg	**Sg**	**05 21 14.6**	**-3.1**
	200nm,0.4s						
WATA	**Walderalm**	**4.15**	**135**	⇑*i*PN	**Pn**	**05 20 06.8**	**+0.6**
WATA				*i* SN	**Sn**	**05 20 53.2**	**-2.1**
WTTA	**Wattenberg**	**4.23**	**135**	⇑*i*PN	**Pn**	**05 20 08.0**	**+0.7**
WTTA				*i* SN	**Sn**	**05 20 54.5**	**-2.9**
WTTA				*i* SG	**Sg**	**05 21 15.0**	**-7.3**
	105nm,0.7s						
OGA	**Obergurgl**	**4.29**	**143**	⇓*i*Pn	**Pn**	**05 20 09.5**	**+1.4**
KHC	**Kasperske Hory**	**4.29**	**104**	*e*PN	**Pn**	**05 20 07.8**	**-0.3**
KHC				*ex*	x	05 20 11.7	
KHC				x	x	05 20 20.5	
KHC				*ex*	x	05 20 58.0	
KHC				*e*SG	**Sg**	**05 21 14.2**	**-10**
KHC	**Kasperske Hory**	**4.29**	**104**	*e*Pn	**Pn**	**05 20 07.8**	**-0.3**
KHC				*e*		05 20 11.7	
KHC				*e*		05 20 20.5	
KHC				*e*		05 20 58.0	
KHC				*e*Sg	**Sg**	**05 21 14.2**	**-10**
HYF	**Humbligny**	**4.31**	**226**	*e*Pn	**Pn**	**05 20 09.8**	**+1.4**
HYF				*e*Pg	**Pg**	**05 20 25.8**	**-1.5**
HYF				*e*Sn	**Sn**	**05 20 57.8**	**-1.5**
HYF				*e*Sg	**Sg**	**05 21 22.3**	**-2.5**
BRG	**Berggiesshubel**	**4.31**	**80**	*e*Pn	**Pn**	**05 20 07.7**	**-0.7**
	SNR=5.1						
BRG				*i* Pg	**Pg**	**05 20 21.6**	**-5.8**
BRG				*i* Sn	**Sn**	**05 20 57.0**	**-2.4**
BRG				*i* Sg	**Sg**	**05 21 14.3**	**-11**
BRG	**Berggiesshubel**	**4.31**	**80**	*e*Pn	**Pn**	**05 20 07.5**	**-0.9**
BRG				*i* Pg	**Pg**	**05 20 21.6**	**-5.8**
BRG				*i* Sn	**Sn**	**05 20 57.0**	**-2.4**
BRG				*i* Sg	**Sg**	**05 21 14.3**	**-11**
SMF	**Signal de Mont**	**4.32**	**213**	*e*Pn	**Pn**	**05 20 07.8**	**-0.8**
	SNR=1.0						
SMF				*e*Pg	**Pg**	**05 20 25.7**	**-1.9**
SMF				*e*Sn	**Sn**	**05 20 57.8**	**-1.8**
SMF				*e*Sg	**Sg**	**05 21 22.2**	**-3.0**
AVF	**Avril sur Loir**	**4.38**	**217**	*e*Pn	**Pn**	**05 20 08.9**	**-0.5**
	SNR=1.0						
AVF				*e*Pg	**Pg**	**05 20 26.9**	**-1.8**
AVF				*e*Sn	**Sn**	**05 20 57.5**	**-3.5**
	43nm,0.4s,SNR=1.0						
AVF				*e*Sg	**Sg**	**05 21 23.7**	**-3.4**
	137nm,0.7s						
BRMO	**Bormio**	**4.39**	**150**	*e*Pn	**Pn**	**05 20 11.0**	**+1.4**
MCGN	**Macugnaga**	**4.41**	**173**	*e*Pn	**Pn**	**05 20 11.2**	**+1.4**
MCGN				*e*Sn	Sn	05 21 26.2	+24
SCE	**Schlegeis**	**4.44**	**136**	⇓*i*Pn	**Pn**	**05 20 11.2**	**+1.0**
SCE				*i* Sn	**Sn**	**05 21 00.4**	**-2.1**
GEC2	**GERESS Array S**	**4.47**	**107**	*e*Pn	**Pn**	**05 20 10.4**	**-0.2**
	SNR=36						
GEC2	**GERESS Array S**	**4.47**	**107**	*e*Pn	**Pn**	**05 20 10.6**	**0.0**
GERES	**GERESS Array B**	**4.47**	**107**	Pn	**Pn**	**05 20 10.3**	**-0.3**
	8.5nm,0.3s,baz=295,slow=14,SNR=72						
GERES				Pg	**Pg**	**05 20 26.3**	**-4.2**
	16nm,0.3s,baz=303,slow=16,SNR=14						
GERES				Sn	**Sn**	**05 20 58.9**	**-4.4**
	10nm,0.3s,baz=298,slow=29,SNR=7.6						
GERES				Lg		05 21 22.3	
	17nm,0.3s,baz=304,slow=29,SNR=6.2						
BGLD	**Berchtesgaden**	**4.66**	**123**	⇑*i*Pn	**Pn**	**05 20 13.8**	**+0.5**
PVCC	**Panska Ves**	**4.70**	**85**	*e*Pn	**Pn**	**05 20 14.1**	**+0.2**
PRU	**Pruhonice**	**4.72**	**91**	*e*PN	**Pn**	**05 20 13.0**	**-1.2**
PRU				PG	**Pg**	**05 20 29.4**	**-6.0**
PRU				*e*SG	**Sg**	**05 21 27.3**	**-11**
	54nm,0.4s						
PRU	**Pruhonice**	**4.72**	**91**	*e*Pn	**Pn**	**05 20 13.0**	**-1.2**
PRU				Pg	**Pg**	**05 20 29.4**	**-6.0**
PRU				*e*Sg	**Sg**	**05 21 27.3**	**-11**
ORO	**Oropa**	**4.74**	**174**	*e*Pn	**Pn**	**05 20 15.5**	**+1.0**
BGF	**Bois d'Agland**	**4.77**	**219**	*e*Pn	**Pn**	**05 20 14.6**	**-0.3**
	SNR=1.0						
BGF				*e*Pg	**Pg**	**05 20 33.4**	**-3.1**
BGF				*e*Sn	**Sn**	**05 21 09.0**	**-1.9**
BGF				*e*Sg	**Sg**	**05 21 36.3**	**-3.8**
	426nm,0.4s						
MABI	**Malga Bissina**	**4.81**	**152**	*e*Pn	**Pn**	**05 20 20.3**	**+4.8**
LPL	**La Plagne**	**4.83**	**184**	*e*Pn	**Pn**	**05 20 15.8**	**0.0**
	SNR=1.0						
LPL				*e*Pg	**Pg**	**05 20 34.4**	**-3.3**
	SNR=1.0						
LPL				*e*Sn	**Sn**	**05 21 09.5**	**-3.0**
	19nm,0.4s,SNR=1.0						
LPL				*e*Sg	**Sg**	**05 21 35.8**	**-6.3**
	108nm,1.0s						
LPG	**La Plagne**	**4.85**	**184**	*e*Pn	**Pn**	**05 20 16.6**	**+0.6**
	SNR=1.0						
LPG				*e*Pg	**Pg**	**05 20 34.3**	**-3.8**
LPG				*e*Sg	**Sg**	**05 21 38.2**	**-4.5**
	36nm,0.5s,SNR=1.0						
LSD	**Ceresole Reale**	**4.88**	**181**	P	**Pn**	**05 20 17.5**	**+1.0**
LDF	**La Druitiere**	**5.10**	**253**	*e*Pn	**Pn**	**05 20 20.5**	**+1.0**
	SNR=1.0						
LDF				*e*Pg	**Pg**	**05 20 40.2**	**-2.8**
LDF				*e*Sn	**Sn**	**05 21 15.9**	**-3.3**
	36nm,0.3s,SNR=1.0						
LDF				*e*Sg	**Sg**	**05 21 44.6**	**-6.4**
	163nm,0.6s						
RSP	**Reno Superiore**	**5.18**	**180**	P	**Pn**	**05 20 21.7**	**+0.9**
KBA	**Koeln

CODM		**6.21**	**162**	P		**Pn**	**05 20 37.6**	**+2.4**
RORO		**6.25**	**174**	P		**Pn**	**05 20 39.3**	**+3.5**
MONE	**Monesi**	**6.27**	**176**	P		**Pn**	**05 20 36.7**	**+0.6**
ARSA	**Arzberg**	**6.29**	**116**	⇑*i*	PN	**Pn**	**05 20 36.7**	**+0.3**
ARSA				*i*	SN	**Sn**	**05 21 42.3**	**-6.7**
VKA	**Vienna**	**6.30**	**106**	*i*	(PN)	**Pn**	**05 20 40.6**	**+4.1**
VKA				*i*			05 21 39.8	
VKA				*i*			05 22 24.7	
RJF	**Les Rejaudoux**	**6.33**	**220**	*e*	Pn	**Pn**	**05 20 36.0**	**-0.9**
RJF				*e*	Sn	**Sn**	**05 21 45.9**	**-4.1**
RJF				*e*	Sg	**Sg**	**05 22 25.0**	**-7.0**
	78nm,0.6s							
BACM		**6.36**	**161**	P		**Pn**	**05 20 40.8**	**+3.5**
JAVS	**Javornik**	**6.38**	**132**	*i*	Pn	**Pn**	**05 20 38.8**	**+1.1**
CAF	**Calviac**	**6.43**	**215**	*e*	Pn	**Pn**	**05 20 36.7**	**-1.7**
	SNR=1.0							
CAF				*e*	Pg	**Pg**	**05 21 07.0**	**-2.7**
	SNR=1.0							
CAF				*e*	Sg	**Sg**	**05 22 27.8**	**-7.7**
	91nm,0.7s							
IMI	**Imperia**	**6.44**	**176**	P		**Pn**	**05 20 38.9**	**+0.4**
IMI				*e*	Pn	**Pn**	**05 20 43.0**	**+4.5**
SMRF	**Simiane la Rot**	**6.46**	**191**	*e*	Pn	**Pn**	**05 20 37.9**	**-0.8**
	SNR=1.0							
SMRF				*e*	Pg	**Pg**	**05 21 04.0**	**-6.2**
	SNR=1.0							
SMRF				*e*	Sg	**Sg**	**05 22 28.7**	**-7.6**
	22nm,0.7s							
LHO	**Holmfirth**	**6.47**	**303**	*e*	P	**Pn**	**05 20 49.0**	**+10**
LHO				*i*			05 21 51.3	
SBF	**Sospel**	**6.47**	**179**	*e*	Sg	**Sg**	**05 22 28.9**	**-7.9**
	31nm,0.7s							
NEGI	**Negi**	**6.50**	**177**	P		**Pn**	**05 20 42.8**	**+3.5**
ZCCA	**Zocca**	**6.50**	**156**	*e*	Pn	**Pn**	**05 20 43.8**	**+4.4**
SARO	**Sassorosso**	**6.52**	**159**	P		**Pn**	**05 20 43.0**	**+3.4**
LASF	**Ste Croix**	**6.67**	**201**	*e*	Pn	**Pn**	**05 20 41.0**	**-0.7**
LASF				*e*	Pg	**Pg**	**05 21 09.3**	**-5.0**
	SNR=1.0							
LASF				*e*	Sg	**Sg**	**05 22 36.8**	**-6.4**
	58nm,0.7s							
MORC	**Moravsky Berou**	**6.67**	**91**	*e*	P	**Pn**	**05 20 42.0**	**+0.3**
	4.3nm,0.4s							
MORC				*e*	S	Sn	05 22 34.4	+36
BDI	**Bagni Di Lucca**	**6.68**	**159**	*e*	Pn	**Pn**	**05 20 46.5**	**+4.7**
SGMF	**Saint Gilles**	**6.73**	**256**	*e*	Pn	**Pn**	**05 20 42.3**	**-0.2**
	SNR=1.0							
SGMF				*e*	Sn	**Sn**	**05 21 54.8**	**-5.2**
	36nm,0.5s,SNR=1.0							
SGMF				*e*	Sg	**Sg**	**05 22 37.3**	**-8.0**
	135nm,0.6s							
FRF	**La Foret Royal**	**6.79**	**184**	*e*	Pn	**Pn**	**05 20 43.6**	**+0.2**
	SNR=1.0							
FRF				*e*	Pg	**Pg**	**05 21 10.6**	**-6.1**
KNDS	**Knezji Dol**	**6.79**	**132**	*e*	Pn	**Pn**	**05 20 44.5**	**+1.0**
MAIM		**6.80**	**160**	P		**Pn**	**05 20 45.1**	**+1.6**
ZST	**Bratislava**	**6.81**	**105**	*e*	PN	**Pn**	**05 20 44.4**	**+0.7**
ZST				*e*	SG	**Sg**	**05 22 32.1**	**-16**
LFF	**La Frestale**	**6.95**	**222**	*e*	Pn	**Pn**	**05 20 44.6**	**-1.0**
LFF				*e*	Sg	**Sg**	**05 22 44.5**	**-8.1**
	137nm,0.7s							
PII	**Pisa**	**6.99**	**160**	*e*	Pn	**Pn**	**05 20 49.2**	**+3.1**
LMR	**La Mourre**	**7.02**	**184**	*e*	Pn	**Pn**	**05 20 46.0**	**-0.6**
ROSF	**Rostrenen**	**7.15**	**258**	*e*	Pn	**Pn**	**05 20 47.9**	**-0.5**
ROSF				*e*	Sn	**Sn**	**05 22 05.2**	**-5.3**
	22nm,0.4s,SNR=1.0							
ROSF				*e*	Sg	**Sg**	**05 22 50.3**	**-8.9**
	81nm,0.7s							
SFI	**Santa Sofia**	**7.16**	**152**	*e*	Pn	**Pn**	**05 20 49.8**	**+1.2**
QUIF	**Quistinic**	**7.23**	**254**	*e*	Pn	**Pn**	**05 20 48.7**	**-0.9**
QUIF				*e*	Sn	**Sn**	**05 22 08.2**	**-4.5**
	SNR=1.0							
QUIF				*e*	Sg	**Sg**	**05 22 54.4**	**-7.7**
	55nm,0.5s,SNR=1.0							
MTLF	**Montolieu**	**7.79**	**208**	*e*	Pn	**Pn**	**05 20 56.5**	**-0.9**
MTLF				*e*	Pg	**Pg**	**05 21 29.6**	**-7.2**
	SNR=1.0							
MTLF				*e*	Sn	**Sn**	**05 22 21.0**	**-5.5**
	SNR=1.0							
MTLF				*e*	Sg	**Sg**	**05 23 09.3**	**-11**
	33nm,0.8s							
VYHS	**Vyhne**	**7.79**	**99**	*e*	Pn	**Pn**	**05 20 56.8**	**-0.7**
VYHS				*e*	Sg	**Sg**	**05 23 06.6**	**-14**
PGF	**Pioggiola**	**7.88**	**170**	*e*	Pn	**Pn**	**05 20 57.3**	**-1.4**
EKA	**Eskdalemuir Ar**	**8.04**	**313**	P		**Pn**	**05 20 59.6**	**-1.2**
	1.8nm,0.3s,baz=130,slow=13,SNR=23							
EKA					Sn	**Sn**	**05 22 27.2**	**-5.4**
	1.9nm,0.3s,baz=126,slow=24,SNR=4.5							
OJC	**Ojcow**	**8.06**	**86**	*e*	P	**P**	**05 21 05.4**	**+4.2**
RHK1	**Bakonya**	**8.39**	**116**	*e*	P	**P**	**05 21 04.5**	**-1.3**
EPF	**Esparros**	**8.70**	**216**	*e*	Pn	**P**	**05 21 08.5**	**-1.6**
EPF				*e*	Sn	**Sn**	**05 22 42.8**	**-6.4**
	SNR=1.0							
EPF				*e*	Sg	**Sg**	**05 23 39.2**	**-12**
	36nm,1.0s							
ETSF	**Etsaut**	**9.16**	**219**	*e*	Pn	**P**	**05 21 15.6**	**-0.8**
ETSF				*e*	Sg	**Sg**	**05 23 54.4**	**-12**
	41nm,0.9s							
EALK	**Alkurruntz**	**9.30**	**223**	P		**P**	**05 21 18.6**	**+0.3**
EALK				S		**Sn**	**05 22 56.6**	**-7.4**
EMIR	**Miracle**	**9.30**	**207**	P		**P**	**05 21 19.5**	**+1.1**
EPOB	**Poblet**	**9.95**	**208**	P		**P**	**05 21 28.3**	**+1.0**
	1.4nm,0.5s							
ELAN	**Lanestosa**	**10.19**	**230**	P		**P**	**05 21 29.6**	**-0.9**
	2.2nm,0.4s							
ELAN				S		**S**	**05 23 15.4**	**-10**
HFS	**Hagfors**	**10.49**	**18**	Pn		**P**	**05 21 29.3**	**-5.2**
	baz=204,slow=12							
HFS				Sn		**S**	**05 23 18.9**	**-14**
	baz=206,slow=28							
HFS	**Hagfors**	**10.49**	**18**	Pn		**P**	**05 21 28.8**	**-5.8**
	0.1nm,0.3s,baz=202,slow=12,SNR=14							
HFS				Sn		**S**	**05 23 19.0**	**-14**
	0.2nm,0.3s,baz=204,slow=26,SNR=7.7							
NC6	**NORSAR Subarra**	**10.71**	**11**	Pn		**P**	**05 21 32.5**	**-5.1**
NC6				Sn		**S**	**05 23 25.2**	**-13**
NAO01	**NORSAR Array S**	**10.74**	**10**	*e*	P	**P**	**05 21 33.3**	**-4.7**
NAO01				*e*	S	**S**	**05 23 24.0**	**-15**
NOA	**NORSAR Array B**	**10.96**	**10**	Pn		**P**	**05 21 35.9**	**-5.2**
	0.3nm,0.3s,baz=190,slow=14,SNR=2.9							
NOA				Sn		**S**	**05 23 28.0**	**-17**
	0.5nm,0.3s,baz=149,slow=25,SNR=3.2							
EARI	**Arriondas**	**11.04**	**235**	P		**P**	**05 21 41.2**	**-1.0**
	1.3nm,0.3s							
EARI				S		**S**	**05 23 35.5**	**-11**
ETOR	**Torete**	**11.51**	**218**	P		**P**	**05 21 49.0**	**+0.4**
	2.5nm,0.6s							
ETOR				S		**S**	**05 23 50.4**	**-7.9**
EPON	**Pontenova**	**12.07**	**240**	P		**P**	**05 21 53.8**	**-2.4**
	0.5nm,0.3s							
EPON				S		**S**	**05 24 00.3**	**-12**
EINC	**Incio**	**12.62**	**238**	P		**P**	**05 22 02.5**	**-1.1**
	1.6nm,0.9s							
ERUA	**La Rua**	**12.69**	**237**	P		**P**	**05 22 03.7**	**-0.8**
EBEN	**Beniarda**	**12.78**	**207**	P		**P**	**05 22 07.4**	**+1.8**
ECAL	**Calabor**	**12.80**	**234**	P		**P**	**05 22 04.3**	**-1.6**
	0.8nm,0.3s							
ECAL				S		**S**	**05 24 19.4**	**-10**
ESDC	**Sonseca Array**	**13.26**	**221**	Pn		**P**	**05 22 15.8**	**+3.8**
	0.3nm,0.3s,baz=32,slow=13,SNR=3.0							
EMAZ	**Mazaricos**	**13.34**	**243**	P		**P**	**05 22 12.1**	**-1.0**
	3.0nm,0.7s							
VSU	**Vasula**	**13.94**	**47**	Pn		**P**	**05 22 18.4**	**-2.4**
AKASG	**Malin Array Be**	**14.00**	**80**	Pn		**P**	**05 22 18.8**	**-2.8**
	0.4nm,0.3s,baz=273,slow=13,SNR=2.9							
FIA0	**FINESS Array S**	**15.28**	**36**	P		**P**	**05 22 34.5**	**-3.9**
	baz=212,slow=10							
FINES	**FINESS Array B**	**15.28**	**36**	Pn		**P**	**05 22 34.4**	**-4.0**
	0.1nm,0.3s,baz=270,slow=11,SNR=3.1							
ARA0	**ARCESS Array S**	**21.15**	**18**	P		**P**	**05 23 49.4**	**+1.0**
	baz=202,slow=11							
ARCES	**ARCESS Array B**	**21.15**	**18**	P		**P**	**05 23 49.7**	**+1.3**
	1.2nm,0.8s,mb3.3,baz=201,slow=10,SNR=6.3							
DBIC	**Dimbokro**	**44.68**	**197**	LR		LR	05 47 39.3	
	comp=Z,64nm,20.2s,MS3.5,baz=90,slow=38							

*WAR **22** 05:26:22.2,50.25N×18.88E,h1km,Location given by Central Institute of Mining, origin time based upon OJC*
*PRU **22** 05:26:22.3,50.31N×18.80E*
ISC 22 05:26:20.6±0.6,50.28N±0.06×18.80E±0.05,n12,σ0≤90/21,1C,Poland

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
OKC	**Ostrava-Krasne**	**0.61**	**224**	*e*	PG	**Pg**	**05 26 34.6**	**+1.8**
OJC	**Ojcow**	**0.64**	**95**	*e*	Pg	**Pg**	**05 26 33.6**	**+0.1**
OJC				*e*	Sg	**Sg**	**05 26 41.8**	**-0.3**
OJC	**Ojcow**	**0.64**	**95**	*e*	PG	**Pg**	**05 26 34.0**	**+0.5**
OJC				*e*	SG	**Sg**	**05 26 42.0**	**-0.1**
NIE	**Niedzica**	**1.30**	**131**	⇑*e*	Pg	**Pg**	**05 26 45.7**	**-1.0**
NIE				*e*	Sg	**Sg**	**05 27 03.7**	**-0.4**
NIE	**Niedzica**	**1.30**	**131**	*e*	PG	**Pg**	**05 26 46.0**	**-0.7**
NIE				*e*	SG	**Sg**	**05 27 04.0**	**-0.1**
DPC	**Dobruska-Polom**	**1.59**	**274**	*e*	PG	**Pg**	**05 26 50.9**	**-1.5**
DPC				*e*	SG	**Sg**	**05 27 12.4**	**-1.1**
	19nm,0.6s							
KSP	**Ksiaz**	**1.69**	**290**	*e*	PN	**Pn**	**05 26 53.0**	**+1.3**
KSP				*e*	PG	**Pg**	**05 26 55.0**	**+0.5**
KSP				*e*	SG	**Sg**	**05 27 17.0**	**-0.1**
VYHS	**Vyhne**	**1.79**	**179**	*e*	PN	**Pn**	**05 26 52.9**	**-0.1**
VYHS				*e*	SN	**Sn**	**05 27 17.0**	**+0.3**
UPC	**Upice**	**1.80**	**278**	*e*	PG	**Pg**	**05 26 56.1**	**-0.4**
UPC				*e*	SG	**Sg**	**05 27 19.7**	**-0.8**
PRU	**Pruhonice**	**2.75**	**266**	*e*	SG	**Sg**	**05 27 48.0**	**-4.3**
	5.5nm,0.5s							
KHC	**Kasperske Hory**	**3.58**	**253**	*e*	SG	**Sg**	**05 28 13.9**	**-5.9**
CLL	**Collm**	**3.82**	**288**	*e*	SG	**Sg**	**05 28 29.0**	**+1.2**

MAN 22 05:35:14.7,18.31N×120.94E,h21km,mb3.7,ML2.4,MS1.9,3C,Luzon

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
APYP	**Conner**	**0.53**	**147**	⇑*e*	P	Pb	05 35 26.1	+0.8
APYP				*e*	S	Sb	05 35 35.9	+3.4
ABRA	**Dolores**	**0.69**	**198**	⇑*e*	P	Pb	05 35 28.1	+0.2
ABRA				*e*	S	Sb	05 35 39.9	+2.8
CVP	**Callao Caves**	**1.04**	**126**	*e*	P	Pb	05 35 33.5	-0.2
CVP				*e*	S	Sb	05 35 48.6	+1.7
SGCP	**Mt. Cagua**	**1.05**	**94**	⇑*e*	P	Pb	05 35 33.0	-1.1
SGCP				*e*	S	Sb	05 35 48.0	+0.5

*IDC **22** 05:55:02.4±0.8,34.67S×107.70W,mb4.3/13,mb1 4.5/13,mb1mx4.4/20,MS4.1/8,Ms1 4.1/8,ms1mx3.9/26,Error ellipse: s-maj=23.4km s-min=20.1km az=64.0*
*NEIC **22** 05:55:03.4±0.4,34.89S×107.68W,h10km,mb4.6/10,Error ellipse: s-maj=14.6km s-min=8.6km az=76.0*
*SYO **22** 05:55:03.3,34.89S×107.68W,h10km,MB4.6*
ISC 22 05:55:01.6±0.4,34.92S±0.07×107.7W±0.1,h10km,n62,σ1≤20/50,mb4.4/22,MS4.1/8,3C-2D,Southern East Pacific Rise

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
USHA	**Ushuaia**	**33.59**	**139**	P		**P**	**06 01 45.1**	**+1.3**
	5.3nm,0.9s,mb4.5,baz=270,slow=10,SNR=3.0							
USHA				LR		LR	06 12 07.0	
	comp=Z,840nm,19.3s,MS4.5,baz=204,slow=30							
USHA	**Ushuaia**	**33.59**	**139**	P		**P**	**06 01 45.1**	**+1.3**
USHA				LR		LR	06 12 07.0	
LVC	**Limon Verde**	**35.91**	**81**	P		**P**	**06 02 04.8**	**+0.7**
	2.6nm,0.7s,mb4.3,baz=228,slow=5.3,SNR=4.2							
LVC	**Limon Verde**	**35.91**	**81**	P		**P**	**06 02 04.2**	**+0.2**
TRQA	**Tornquist**	**36.59**	**109**	P		**P**	**06 02 09.0**	**-0.7**
ARE	**Arequipa**	**37.17**	**70**	*e*	P	**P**	**06 02 16.0**	**+1.4**
PMSA	**Palmer Station**	**39.67**	**152**	*e*	P	**P**	**06 02 33.4**	**-1.7**
LPAZ	**La Paz**	**39.88**	**72**	P		**P**	**06 02 39.0**	**+1.7**
	5.8nm,1.1s,mb4.2,baz=230,slow=7.6,SNR=13							
LPAZ				LR		LR	06 15 24.7	
	comp=Z,118nm,20.0s,MS3.7,baz=100,slow=31							
LPAZ	**La Paz**	**39.88**	**72**	*e*	P	**P**	**06 02 38.5**	**+1.1**
	6.0nm,1.2s,mb4.2							
CPUP	**Villa Florida**	**43.78**	**93**	P		**P**	**06 03 09.1**	**-0.2**
	1.5nm,0.9s,mb3.7,baz=77,slow=15,SNR=3.8							
CPUP				LR		LR	06 18 47.1	
	comp=Z,112nm,18.6s,MS3.8,baz=267,slow=32							
CPUP	**Villa Florida**	**43.78**	**93**	P		**P**	**06 03 09.8**	**+0.6**
JTS	**JuntasAbangare**	**49.85**	**30**	LR		LR	06 20 14.7	
	comp=Z,285nm,18.2s,MS4.3,baz=180,slow=30							
ROSC	**El Rosal**	**50.50**	**45**	P		**P**	**06 04 01.6**	**-0.5**
	12nm,0.8s,mb5.0,baz=178,slow=18,SNR=7.3							
ROSC				LR		LR	06 21 32.8	
	comp=Z,294nm,18.4s,MS4.3,baz=218,slow=32							
SBA	**Scott Base**	**55.23**	**195**	P		**P**	**06 04 35.9**	**-0.6**
QSPA	**South Pole Qui**	**55.29**	**180**	*e*	P	**P**	**06 04 36.2**	**-0.8**
SDV	**Santo Domingo**	**55.90**	**46**	P		**P**	**06 04 40.2**	**-1.9**
	4.7nm,0.2s,mb5.1,baz=210,slow=3.3,SNR=3.6							
VNDA	**Vanda**	**56.31**	**195**	P		**P**	**06 04 46.6**	**+2.3**
	1.6nm,1.1s,mb4.0,baz=88,slow=14,SNR=2.7							
VNDA	**Vanda**	**56.31**	**195**	*e*	P	**P**	**06 04 43.5**	**-0.8**
BDFB	**Brasilia**	**56.46**	**86**	LR		LR	06 25 07.5	
	comp=Z,146nm,21.0s,MS4.0,baz=346,slow=32							
VNA3	**Neumayer Olymp**	**59.86**	**158**	*e*		**P**	**06 05 19.1**	**+10**
VNA3	**Neumayer Olymp**	**59.86**	**158**	⇑*i*	P	**P**	**06 05 11.0**	**+1.7**
VNA3				*e*			06 05 19.1	
VNA1	**Neumayer--Stat**	**60.50**	**158**	*e*		**P**	**06 05 14.8**	**+1.1**
VNA1	**Neumayer--Stat**	**60.50**	**158**	⇓*i*	P	**P**	**06 05 08.6**	**-5.1**
VNA1				*e*			06 05 14.8	
PCRV	**Puerto La Cruz**	**60.58**	**50**	P		**P**	**06 05 13.9**	**-1.0**
	3.6nm,0.7s,mb4.6,baz=145,slow=2.0,SNR=3.2							
PCRV				LR		LR	06 28 07.5	
	comp=Z,253nm,18.9s,MS4.4,baz=147,slow=33							
VNA2	**Neumayer--Watz**	**60.67**	**158**	*e*		**P**	**06 05 22.6**	**+7.8**
VNA2	**Neumayer--Watz**	**60.67**	**158**	⇑*i*	P	**P**	**06 05 15.3**	**+0.5**
VNA2				*e*			06 05 22.6	
SNAA	**Sanae**	**61.71**	**160**	*e*	P	**P**	**06 05 20.9**	**-0.9**
TXAR	**Lajitas Array**	**64.02**	**4**	P		**P**	**06 05 36.1**	**-1.6**
	0.5nm,0.6s,mb3.7,baz=191,slow=6.4,SNR=6.8							
JCT	**Junction City**	**65.47**	**7**	*e*	P	**P**	**06 05 47.6**	**+0.5**
	2.9nm,0.4s,mb4.7							
SJG	**San Juan**	**65.85**	**44**	LR		LR	06 31 16.4	
	comp=Z,55nm,19.5s,MS3.8,baz=80,slow=33							
MNTX	**Cornudas Mount**	**66.30**	**2**	*e*	P	**P**	**06 05 51.1**	**-1.3**
	1.9nm,0.8s,mb4.2							
ANMO	**Albuquerque**	**69.51**	**1**	P		**P**	**06 06 09.8**	**-2.6**
	30nm,2.8s,mb4.7							
WMOK	**Wichita Mounta**	**69.79**	**8**	P		**P**	**06 06 12.1**	**-2.1**
PV01	**Paradox Valley**	**72.69**	**359**	*e*	P	**P**	**06 06 29.5**	**-2.0**
PV10	**Paradox Valley**	**72.94**	**359**	*e*	P	**P**	**06 06 31.0**	**-2.0**
TPH	**Tonopah**	**73.16**	**352**	*e*	P	**P**	**06 06 35.1**	**+0.8**
	5.3nm,1.1s,mb4.4							
MSU	**Marysvale**	**73.18**	**356**	*e*	P	**P**	**06 06 34.9**	**+0.5**
CMB	**Columbia Colle**	**73.53**	**350**	*e*	P	**P**	**06 06 37.8**	**+1.3**
	5.0nm,1.3s,mb4.3							
SYO	**Syowa Base**	**73.60**	**168**	⇑	pP	pP	06 06 40.3	+1.0
SYO	**Syowa Base**	**73.60**	**168**	⇓	PcP	PcP	06 06 54.0	+1.6
NVAR	**Mina Array Bea**	**73.64**	**351**	P		**P**	**06 06 36.9**	**-0.1**
	5.6nm,1.1s,mb4.4,baz=167,slow=8.6,SNR=12							
NVAR	**Mina Array Bea**	**73.64**	**351**	P		**P**	**06 06 36.9**	**-0.1**
SRU	**San Rafael**	**73.70**	**358**	*e*	P	**P**	**06 06 37.4**	**0.0**
DAU	**Daniels Canyon**	**75.03**	**357**	*e*	P	**P**	**06 06 45.9**	**+0.8**
HWUT	**Hardware Ranch**	**76.23**	**357**	*e*	P	**P**	**06 06 53.5**	**+1.7**
BW06	**Boulder Array**	**77.33**	**359**	*e*	P	**P**	**06 06 57.6**	**-0.3**
	5.8nm,1.0s,mb4.5							
PDAR	**Pinedale Array**	**77.33**	**359**	P		**P**	**06 06 57.1**	**-0.8**
	2.1nm,0.7s,mb4.2,baz=162,slow=4.7,SNR=16							
WVOR	**Wild Horse Val**	**77.63**	**352**	*e*	P	**P**	**06 07 00.6**	**+1.0**
	4.9nm,0.9s,mb4.4							
HLID	**Hailey**	**78.35**	**355**	*e*	P	**P**	**06 07 04.2**	**+0.7**
	9.4nm,0.9s,mb4.7							
MCMT	**McKenzie Canyo**	**79.51**	**356**	*e*	P	**P**	**06 07 10.5**	**+0.7**
CHMT	**Chamberlain Mo**	**81.61**	**356**	P		**P**	**06 07 22.7**	**+1.8**
NEW	**Newport**	**83.24**	**354**	P		**P**	**06 07 30.9**	**+1.6**
	4.9nm,1.0s,mb4.5							
ULM	**Lac du Bonnet**	**85.44**	**8**	P		**P**	**06 07 40.1**	**-0.1**
	1.9nm,0.6s,mb4.4,baz=82,slow=1.2,SNR=2.8							
YKA	**Yellowknife Ar**	**97.23**	**357**	P		**P**	**06 08 36.2**	**+1.1**
	0.8nm,0.8s,mb4.2,baz=168,slow=4.4,SNR=4.3							
YKA	**Yellowknife Ar**	**97.23**	**357**	P		**P**	**06 08 36.2**	**+1.1**
TIXI	**Tiksi**	**133.15**	**339**	*e*	PKPdf	PKPdf	06 14 18.6	-1.4
AKASG	**Malin Array Be**	**145.22**	**50**	PKP		PKPdf	06 14 39.1	-2.9
	0.3nm,0.3s,baz=285,slow=3.8,SNR=7.1							
BRTR	**Keskin Array B**	**149.03**	**70**	PKPbc		PKPdf	06 14 54.0	+5.3
	0.5nm,0.5s,baz=166,slow=5.1,SNR=3.1							
ULN	**Ulaanbaatar**	**151.17**	**307**	*e*	PKP	PKPdf	06 14 56.0	+4.3
SONM	**Songino Array**	**151.60**	**307**	PKPbc		PKPdf	06 14 55.8	+3.4
	1.6nm,0.8s,baz=90,slow=1.2,SNR=10							
MALT	**Malatya**	**152.67**	**73**	PKP		PKPdf	06 14 49.5	-4.8
MKAR	**Makanchi Array**	**165.96**	**331**	PKPab		PKPab	06 16 08.2	0.0
	0.3nm,0.7s,slow=5.8,SNR=2.7							

IDC 22 05:59:47.0±3.3,30.30S×138.43E,mb1 3.1/3,mb1mx3.1/11,ML2.6/3,Error ellipse: s-maj=79.2km s-min=15.1km az=44.0,South Australia

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
STKA	**Stephens Creek**	**3.14**	**121**	Pn		Pn	06 00 37.2	-1.4
	0.3nm,0.3s,baz=306,slow=14,SNR=3.5							
STKA				Pg		Pg	06 00 43.9	-5.8
	1.8nm,0.3s,baz=306,slow=13,SNR=16							
STKA				Sn		Sn	06 01 15.6	-1.9
	1.1nm,0.3s,baz=292,slow=18,SNR=4.4							
STKA				Lg			06 01 27.9	
	2.5nm,0.3s,baz=203,slow=21,SNR=6.0							
ASAR	**Alice Springs**	**7.74**	**328**	Pn		Pn	06 01 42.5	-1.3
	0.1nm,0.3s,baz=150,slow=12,SNR=7.3							
ASAR				Sn		Sn	06 03 09.3	-3.9
	0.1nm,0.3s,baz=154,slow=22,SNR=3.4							
WRA	**Warramunga Arr**	**10.96**	**339**	Pn		P	06 02 25.2	-3.0
	0.1nm,0.3s,baz=155,slow=14,SNR=5.0							
WRA				Sn		S	06 04 27.8	-4.9
	0.0nm,0.3s,baz=174,slow=24,SNR=2.9							

*BJI **22** 06:28:06.8,20.68S×173.76W,h10km,mB5.6,mb5.5,Ms5.4,Ms≥5.1*
*IDC **22** 06:28:07.0±0.4,20.77S×174.54W,mb5.0/24,mb1 5.2/26,mb1mx5.2/26,ML5.1/2,MS5.0/14,Ms1 5.0/14,ms1mx5.0/17,Error ellipse: s-maj=17.9km s-min=10.8km az=150.0*
*NEIC **22** 06:28:08.3±0.1,20.90S×174.22W,h10km,mb5.4/60,MS5.2/110,Error ellipse: s-maj=6.3km s-min=3.5km az=144.0*
*MOS **22** 06:28:08.1±1.1,20.72S×174.48W,h10km,mb5.5/29,MS5.2/21,Error ellipse: s-maj=17.0km s-min=12.4km az=103.2*
*SYO **22** 06:28:08.3,20.90S×174.22W,h10km,MB5.4,MS5.2*
*HRVD **22** 06:28:08.3±0.1,21.07S×173.64W,h12km,MW5.5/78,Centroid moment Tensor Solution. LP body waves: s69,c138;Mantle waves: s78,c163; Half duration: 1s4 Moment tensor: Scale 10¹⁷Nm; Mrr 1.30±.02; Mθθ 0.02±.02; Mφφ -1.32±.02; Mrθ 0.60±.05; Mrφ -0.58±.02; Mθφ 1.35±.05; Best double couple: M₀2.05×10¹⁷ NP1:φ₁197°, δ22°, λ84°. NP2:φ₂23°, δ68°, λ92°. Principal axes: T 1.93, Plg67°, Azm297°; N .24, Plg2°, Azm202°; P -2.17, Plg23°, Azm111°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*CSEM **22** 06:28:15.1,20.01S×174.06W,h33km,mb5.5*
ISC 22 06:28:06.8±0.2,21.00S±0.04×174.10W±0.04,h10km,(h10km±1.0km:pP-P),n574,σ1≤03/220,mb5.4/95,MS5.2/142,49C-24D,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
RAR	**Rarotonga**	**13.38**	**93**	Pn		**P**	**06 31 09.7**	**-10**
	22nm,0.3s,baz=246,slow=6.4,SNR=31							
RAR				Sn		**S**	**06 33 43.1**	**-6.0**
	8.0nm,0.3s,baz=234,slow=23,SNR=3.1							
RAR	**Rarotonga**	**13.38**	**93**	*e*	P	**P**	**06 31 09.3**	**-10**
BKM	**Butte a Klehm**	**16.99**	**278**	⇑*i*	P	**P**	**06 32 10.2**	**+3.9**
DZM	**Mont Dzumac**	**18.13**	**263**	*e*	P	**P**	**06 32 19.6**	**-1.0**
DZM	**Mont Dzumac**	**18.13**	**263**	*e*	P	**P**	**06 32 19.6**	**-1.0**
NOUC	**Port Laguerre**	**18.26**	**263**	*e*	P	**P**	**06 32 24.0**	**+1.8**
URZ	**Urewera**	**18.80**	**202**	P		**P**	**06 32 27.2**	**-1.4**
	2.4nm,0.3s,baz=7.2,slow=6.1,SNR=28							
URZ				S		**S**	**06 35 42.1**	**-13**
	0.1nm,0.3s,baz=311,slow=2.8,SNR=3.1							
SNZO	**South Karori**	**22.36**	**203**	PFAKE			06 33 20.0	+14
SNZO				LR		LR		
	comp=Z,4μm,20.0s,MS4.8							
TBI	**Tubuai**	**22.93**

comp=Z,28nm,1.0s
WRA pmax pmax
comp=Z,12nm,1.0s
WRA smax
comp=Z,1.0nm,1.1s
WRA MLR MLR
comp=Z,3μm,18.2s
KAKA Kakadu 51.67 270 *e*P **P 06 37 13.9 -2.5**
comp=Z,32nm,0.6s,mb5.4
FORT Forrest 52.45 247 *e*P **P 06 37 19.9 -2.2**
comp=Z,186nm,0.6s,mb6.2
GUMO Guam 52.97 307 PFAKE 06 37 40.0 +14
GUMO LR LR
comp=Z,937nm,19.0s,MS4.8
FITZ Fitzroy Crossi 56.57 262 *e*P **P 06 37 50.2 -2.2**
comp=Z,21nm,1.6s,mb4.9
FITZ Fitzroy Crossi 56.57 262 P **P 06 37 50.1 -2.2**
comp=Z,14nm,1.0s,mb5.0,baz=110,slow=3.0,SNR=12
FITZ PcP PcP 06 38 47.4 -1.4
comp=Z,17nm,1.2s,baz=157,slow=10,SNR=2.4
SBA Scott Base 57.64 185 *e*P **P 06 38 01.1 +1.9**
comp=Z,231nm,1.9s,mb5.9
SBA LR LR
comp=Z,1μm,19.0s,MS5.1
VNDA Vanda 57.76 186 P **P 06 38 01.8 +1.8**
comp=Z,6.0nm,0.9s,mb4.6,baz=3.0,slow=6.3,SNR=32
VNDA LR LR 06 58 55.1
comp=Z,641nm,18.2s,MS4.8,baz=20,slow=32
VNDA Vanda 57.76 186 *e*P **P 06 38 01.7 +1.6**
comp=Z,28nm,1.6s,mb5.0
VNDA LR LR
comp=Z,470nm,19.0s,MS4.6
KLBR Kellerberrin 61.15 245 *e*P **P 06 38 23.0 -1.0**
comp=Z,218nm,1.0s,mb6.2
NWAO Narrogin (SRO) 61.40 243 PFAKE 06 38 40.0 +14
NWAO LR LR
comp=Z,2μm,19.0s,MS5.2
MUN Mundaring 62.39 244 *e*P **P 06 38 32.5 +0.1**
comp=Z,93nm,0.9s,mb5.9
QSPA South Pole Qui 69.07 180 *e*P **P 06 39 16.0 +1.5**
QSPA LR LR
comp=Z,10μm,20.0s,MS6.1
MIR Mirnyy 72.08 205⇑*e*P **P 06 39 34.0 +1.2**
MIR *e* 06 40 00.0
MIR pmax pmax
comp=Z,120nm,1.6s,mb5.6
MAJO Matsushiro 72.83 321 *e*P **P 06 39 36.8 -1.0**
comp=Z,53nm,1.0s,mb5.4
MAJO LR LR
comp=Z,694nm,20.0s,MS4.9
MAT Matsushiro 72.83 321 P **P 06 39 36.8 -1.0**
MAT S S 06 49 05.0 +2.5
MAT Matsushiro 72.83 321 *e*P **P 06 39 37.0 -0.8**
comp=Z,62nm,1.1s,mb5.5
MAT *e*S S 06 49 05.0 +2.5
MAT LR LR
comp=Z,1μm,18.0s,MS5.2
KKM Kota Kinabalu 73.42 283⇓*e*P **P 06 39 41.5 -0.2**
SMY Shemya 74.14 353 PFAKE 06 40 00.0 +15
SMY LR LR
comp=Z,3μm,20.0s,MS5.6
UNV Unalaska Valle 74.83 5 PFAKE 06 40 00.0 +11
UNV LR LR
comp=Z,3μm,20.0s,MS5.5
SAO San Andreas Ge 75.95 41 *e*P **P 06 39 55.4 -0.4**
comp=Z,70nm,1.4s,mb5.4
SAO LR LR
comp=Z,2μm,19.0s,MS5.4
LRV Little Rabbit 76.00 42 *e*P **P 06 39 55.8 -0.3**
SKR Severo-Kuril's 76.06 341 *e*P **P 06 39 53.0 -3.2**
SKR *e*S S 06 49 43.0 +4.8
SKR *e* 06 49 54.0
SKR *e*PS PS 06 50 18.0 +0.8
SKR *e*SS SS 06 54 30.0 -4.2
SKR pmax pmax
comp=Z,110nm,1.0s,mb5.7
SKR pmax pmax
comp=Z,1μm,10.0s
SKR pmax pmax
comp=E,1μm,6.0s
SKR smax
comp=N,1μm,12.0s
SKR smax
comp=E,1μm,12.0s
SKR MLR MLR
comp=N,1μm,18.0s,MS5.4
SKR MLR MLR
comp=E,1μm,18.0s,MS5.4
SKR MLR MLR
comp=Z,1μm,18.0s,MS5.2
LKC Lake Chabot 76.20 40 *e*P **P 06 39 57.5 +0.2**
NSHM Saint Helena R 76.39 39 *e*P **P 06 39 58.7 +0.4**
HOPS Hopland 76.43 39 PFAKE 06 40 10.0 +11
HOPS LR LR
comp=Z,2μm,19.0s,MS5.3
MWC Mount Wilson 76.53 45 *e*P **P 06 39 58.9 -0.2**
SDN Sand Point 76.92 8 *e*P **P 06 39 59.3 -1.6**
PFO Pinyon Flat Ob 77.23 46 *e*P **P 06 40 02.6 -0.5**
comp=Z,37nm,1.2s,mb5.2
PFO LR LR
comp=Z,917nm,20.0s,MS5.1
CMB Columbia Colle 77.41 41 *e*P **P 06 40 03.5 -0.5**
comp=Z,23nm,1.0s,mb5.0
CMB LR LR
comp=Z,1μm,19.0s,MS5.3
PET Petropavlovsk 77.42 344*c i*P **P 06 40 02.3 -1.4**
PET *e* 06 40 10.2
PET *i*S S 06 49 53.3 +0.4
PET *e* 06 50 12.5
PET *e**SS 06 50 34.3
PET *e*PS PS 06 50 45.8 +12
PET pmax pmax
comp=Z,559nm,4.7s
PET pmax pmax
comp=Z,506nm,13.5s
PET pmax pmax
comp=Z,304nm,12.3s
PET smax
comp=N,635nm,13.8s
PET MLR MLR
comp=Z,909nm,19.0s,MS5.1
PET MLR MLR
comp=Z,788nm,18.0s
PET Petropavlovsk 77.42 344 *e*P **P 06 40 03.6 -0.1**
PET LR LR
comp=Z,878nm,20.0s,MS5.1
TATO Taipei 77.49 303 PFAKE 06 40 20.0 +15
TATO LR LR
comp=Z,1μm,19.0s,MS5.3
OHCM Honcut 77.58 39 *e*P **P 06 40 05.1 +0.2**
WDC Whiskeytown Da 77.79 38 *e*P **P 06 40 05.8 -0.2**
comp=Z,46nm,1.5s,mb5.2
WDC LR LR
comp=Z,2μm,20.0s,MS5.4
YSS Yuzh-Sakhalins 78.03 331*a i*P **P 06 40 06.3 -0.9**
YSS S S 06 50 02.0 +2.4
YSS pmax pmax
comp=Z,90nm,1.0s,mb5.7
YSS pmax pmax
comp=E,110nm,1.3s
YSS MLR MLR
comp=Z,500nm,17.0s,MS4.9
YSS Yuzh-Sakhalins 78.03 331 *e*P **P 06 40 06.8 -0.3**
comp=Z,87nm,1.0s,mb5.6
YSS LR LR
comp=Z,1μm,19.0s,MS5.2
MTUM Tungsten Hills 78.11 42 *e*P **P 06 40 08.2 +0.4**
YBH Yreka Blue Hor 78.46 37 P **P 06 40 09.8 +0.1**
comp=Z,7.0nm,1.0s,mb4.6,baz=190,slow=3.2,SNR=18
YBH Yreka Blue Hor 78.46 37 P **P 06 40 09.8 +0.2**
YBH pmax pmax
comp=Z,7.0nm,1.0s
YBH Yreka Blue Hor 78.46 37 *e*P **P 06 40 09.6 0.0**
comp=Z,61nm,1.7s,mb5.2
YBH LR LR
comp=Z,1μm,20.0s,MS5.3
BEKR Beckwourth 78.59 39 *e*P **P 06 40 10.4 0.0**
comp=Z,69nm,1.6s,mb5.3
WCN Washoe City 78.59 40 *e*P **P 06 40 10.5 +0.1**
comp=Z,48nm,1.1s,mb5.3
HUMO Hull Mountain 78.91 36 *e*P **P 06 40 12.0 -0.1**
NVAR Mina Array Bea 78.93 41 P **P 06 40 12.9 +0.5**
comp=Z,17nm,0.7s,mb5.1,baz=214,slow=6.9,SNR=94
PAHR Pah Rah Range 79.07 40 P **P 06 40 13.7 +0.6**
TPH Tonopah 79.39 42 *e*P **P 06 40 14.8 0.0**
comp=Z,88nm,1.4s,mb5.5
TPH LR LR
comp=Z,1μm,19.0s,MS5.2
HSO Harness Mounta 79.45 35 *e*P **P 06 40 15.3 +0.2**
NEN Nelson 79.50 45 *e*P **P 06 40 15.8 +0.3**
KS15 Wonju Array Si 79.73 317 *e*P **P 06 40 16.9 +0.2**
TUC Tucson 80.46 50 *e*P **P 06 40 20.6 -0.1**
comp=Z,44nm,1.5s,mb5.2
TUC LR LR
comp=Z,1μm,19.0s,MS5.3
KDAK Kodiak Island 80.52 11 *e*P **P 06 40 19.5 -0.9**
comp=Z,78nm,1.5s,mb5.4
KDAK LR LR
comp=Z,1μm,20.0s,MS5.2
INCN Inchon 80.56 316 *e*P **P 06 40 21.0 -0.1**
comp=Z,93nm,1.0s,mb5.7
INCN LR LR
comp=Z,607nm,20.0s,MS5.0
BMN Battle Mountai 80.82 40 *e*P **P 06 40 22.7 +0.3**
comp=Z,37nm,1.3s,mb5.2
BMN LR LR
comp=Z,1μm,19.0s,MS5.2
SSE Sheshan 80.83 308 P **P 06 40 23.9 +1.2**
SSE S S 06 50 26.1 -3.4
SSE XS 06 50 44.0
SSE AMB AMB
comp=Z,42nm,0.7s,mb5.5
SSE LR LR
comp=N,246nm,35.4s,MS4.5
SSE LR LR
comp=E,337nm,35.4s,MS4.5
WVOR Wild Horse Val 81.22 38 *e*P **P 06 40 24.5 +0.1**
comp=E,84nm,1.4s,mb5.5
WVOR LR LR
comp=Z,2μm,20.0s,MS5.5
USHA Ushuaia 81.68 146 P **P 06 40 28.0 +1.4**
comp=Z,14nm,0.9s,mb4.9,baz=252,slow=7.8,SNR=6.1
SHW Mount Saint He 81.69 34 *e*P **P 06 40 27.3 +0.5**
WUAZ Wupatki 81.77 47 *e*P **P 06 40 27.6 +0.1**
comp=Z,12nm,1.1s,mb4.7
WUAZ LR LR
comp=Z,655nm,19.0s,MS5.0
OCWA Octopus Mounta 81.78 31 PFAKE 06 40 40.0 +13
OCWA LR LR
comp=Z,1μm,20.0s,MS5.2
VGB Gordon Butte 82.01 35 P **P 06 40 28.6 +0.1**
LON Longmire 82.28 33 *e*P **P 06 40 28.8 -1.1**
MAW Mawson 82.30 199 P **P 06 40 30.8 +1.3**
comp=Z,18nm,0.9s,mb5.0,baz=107,slow=5.8,SNR=15
MAW LR LR 07 16 53.2
comp=Z,2μm,18.2s,MS5.5,baz=107,slow=36
MAW Mawson 82.30 199 P **P 06 40 30.8 +1.2**
MAW pmax pmax
comp=Z,18nm,0.9s
MAW MLR MLR
comp=Z,2μm,18.2s
MAW Mawson 82.30 199 *e*P **P 06 40 31.0 +1.5**
comp=Z,52nm,1.1s,mb5.4
GNW Green Mountain 82.32 32 *e*P **P 06 40 29.1 -0.9**
RMW Rattlesnake Mo 82.76 33 *e*P **P 06 40 32.4 0.0**
MVU Marysvale 82.85 44 *e*P **P 06 40 33.6 +0.6**
comp=Z,58nm,1.5s,mb5.4
MVU LR LR
comp=Z,752nm,19.0s,MS5.1
MSU Marysvale 82.88 44 *e*P **P 06 40 34.1 +0.9**
NJ2 Nanjing 83.03 308 *e*P **P 06 40 35.6 +1.5**
NJ2 S S 06 50 44.0 -8.1
NJ2 SKS SKS 06 50 50.0 -6.8
NJ2 AMB AMB
comp=Z,800nm,10.5s
NJ2 LR LR
comp=N,290nm,20.7s,MS4.9
NJ2 LR LR
comp=E,500nm,21.6s,MS4.9
NJ2 LR LR
comp=Z,460nm,22.9s,MS4.8
MDJ Mudanjiang 83.06 323 P **P 06 40 34.5 +0.5**
MDJ AP pP 06 40 37.5 +0.3
MDJ PP PP 06 43 44.3 -2.6
MDJ S S 06 50 54.5 +2.4
MDJ XS 06 51 01.4
MDJ SS SS 06 56 21.3 +1.9
MDJ AMB AMB
comp=Z,67nm,1.0s,mb5.6
MDJ AMB AMB
comp=Z,697nm,6.5s
MDJ LR LR
comp=N,393nm,17.8s,MS5.0
MDJ LR LR
comp=E,353nm,18.5s,MS5.0
MDJ LR LR
comp=Z,642nm,20.1s,MS5.0
MDJ Mudanjiang 83.06 323 *e*P **P 06 40 34.8 +0.8**
comp=Z,45nm,0.9s,mb5.5
MDJ LR LR
comp=Z,700nm,19.0s,MS5.0
SVW Sparrevohn 83.17 9 *e*P **P 06 40 33.7 -0.5**
SNIWA Snively Ranch 83.22 34 P **P 06 40 35.6 +0.9**
HAWA Hanford 83.24 35 *e*P **P 06 40 34.7 -0.1**
comp=Z,65nm,1.4s,mb5.5
HAWA LR LR
comp=Z,3μm,19.0s,MS5.7
RPW Rockport 83.56 32 *e*P **P 06 40 36.2 -0.2**
LNOR Lincton Mounta 83.58 36 *e*P **P 06 40 36.9 +0.3**
KGM Kluang 83.79 275⇓*e*P **P 06 40 39.5 +1.1**
comp=Z,194nm,1.0s,mb6.2
WTV Waterville 83.86 33 P **P 06 40 38.4 +0.5**
NLW Nelson Butte 83.91 33 *e*P **P 06 40 38.1 -0.1**
MPU Maple Canyon 84.06 43 *e*P **P 06 40 39.2 0.0**
MNTX Cornudas Mount 84.10 53 *e*P **P 06 40 39.5 -0.1**
comp=Z,21nm,1.5s,mb5.0
MNTX LR LR
comp=Z,740nm,19.0s,MS5.1
LENM Lemitar 84.15 50 *e*P **P 06 40 41.1 +1.3**
SRU San Rafael 84.28 44 *e*P **P 06 40 40.9 +0.5**
SIT Sitka 84.28 20 PFAKE 06 40 50.0 +10
SIT LR LR
comp=Z,688nm,19.0s,MS5.1
TXAR Lajitas Array 84.29 56 P **P 06 40 40.8 +0.2**
comp=Z,5.2nm,0.9s,mb4.6,baz=215,slow=7.5,SNR=19
TXAR LR LR 07 12 13.8
comp=Z,777nm,18.7s,MS5.1,baz=205,slow=31
PMS Palmer South 84.31 12 *e*P **P 06 40 39.8 -0.1**
HVU Hansel Valley 84.33 41 *e*P **P 06 40 40.7 +0.2**
CTU Camp Tracy 84.36 43 *e*P **P 06 40 41.0 +0.4**
HLID Hailey 84.37 39 *e*P **P 06 40 41.0 +0.4**
comp=Z,31nm,1.0s,mb5.4
HLID LR LR
comp=Z,572nm,19.0s,MS5.0
BNM Barren Site 84.39 50 *e*P **P 06 40 41.5 +0.5**
QIZ Qiongzhong 84.40 293 P **P 06 40 38.9 -2.5**
QIZ PP PP 06 43 56.8 -1.4
QIZ S S 06 51 02.1 -3.9
QIZ PS PS 06 52 04.0 +1.9
QIZ SS SS 06 56 41.5 +2.4
QIZ LR LR
comp=Z,367nm,19.3s,MS4.8
EYAK Cordova Ski Ar 84.46 14 P **P 06 40 38.9 -1.7**
JLU Jordanelle 84.50 43 *e*P **P 06 40 41.4 0.0**
DAU Daniels Canyon 84.52 43 *e*P **P 06 40 42.3 +0.8**
DL2 Dalian 84.63 315 P **P 06 40 43.1 +1.0**
DL2 S S 06 51 08.0 +0.2
DL2 AMB AMB
comp=Z,30nm,1.4s,mb5.2
DL2 AMB AMB
comp=Z,430nm,8.8s
DL2 LR LR
comp=N,260nm,26.3s,MS4.7
DL2 LR LR
comp=E,330nm,23.9s,MS4.7
DL2 LR LR
comp=Z,280nm,18.4s
PMR Palmer 84.71 12 *e*P **P 06 40 40.9 -1.0**
comp=Z,222nm,2.0s,mb5.9
PMR LR LR
comp=Z,775nm,19.0s,MS5.1
TCUT Toone Canyon 84.81 42 *e*P **P 06 40 43.6 +0.7**
COCO West Island 84.85 259 PFAKE 06 40 50.0 +6.3
COCO LR LR
comp=Z,1μm,19.0s,MS5.4
KLR Kul'dur 84.86 328 *e*P **P 06 40 43.2 +0.3**
KLR *e*S S 06 51 09.5 -0.3
KLR *e*PS PS 06 51 55.5 -11
KLR smax
comp=N,1μm,14.0s
KLR smax
comp=E,500nm,14.0s
PV10 Paradox Valley 84.87 46 *e*P **P 06 40 43.3 0.0**
DPW Davenport 84.88 34 *e*P **P 06 40 43.0 -0.1**
ANMO Albuquerque 84.91 50*ce*P **P 06 40 44.7 +1.1**
ANMO Albuquerque 84.91 50 *e*P **P 06 40 44.0 +0.5**
comp=E,21nm,1.0s,mb5.2
ANMO LR LR
comp=Z,972nm,19.0s,MS5.2
CN2 Changchun 84.96 321 *e*P **P 06 40 43.1 -0.5**
CN2 *e*XP sP 06 40 52.0 +4.2
CN2 *e*S S 06 51 11.4 +0.4
CN2 AMB AMB
comp=Z,50nm,1.2s,mb5.5
CN2 LR LR
comp=N,700nm,19.0s,MS5.1
CN2 LR LR
comp=E,310nm,19.0s,MS5.1
CN2 LR LR
comp=Z,640nm,17.0s,MS5.1
SNY Shenyang 84.97 318⇑P **P 06 40 44.6 +0.9**
SNY AMB AMB
comp=Z,40nm,2.5s,mb5.1
HWUT Hardware Ranch 84.98 42 *e*P **P 06 40 43.6 -0.1**
comp=Z,2.6nm,0.4s,mb4.7
HWUT LR LR
comp=Z,1μm,19.0s,MS5.3
PV01 Paradox Valley 85.06 46 *e*P **P 06 40 44.5 +0.2**
SML Sawmill 85.06 12 *e*P **P 06 40 43.1 -0.6**
PNT Penticton 85.08 32 P **P 06 40 44.5 +0.4**
GDL2 Guadalupe Moun 85.10 53 *e*P **P 06 40 45.2 +0.6**
MA2 Magadan 85.29 343 *e*P **P 06 40 45.0 +0.2**
MA2 pmax pmax
comp=Z,80nm,2.1s,mb5.5
MA2 Magadan 85.29 343 *e*P **P 06 40 45.1 +0.3**
MA2 LR LR
comp=Z,555nm,19.0s,MS5.0
CLNB Carlsbad 85.50 53 *e*P **P 06 40 46.2 -0.4**
NEW Newport 85.69 34 P **P 06 40 46.3 -0.8**
comp=Z,2.4nm,0.8s,mb4.5,baz=356,slow=3.3,SNR=5.6
NEW Newport 85.69 34 P **P 06 40 46.3 -0.8**
NEW pmax pmax
comp=Z,2.0nm,0.8s
NEW Newport 85.69 34 *e*P **P 06 40 45.8 -1.3**
comp=Z,14nm,1.3s,mb5.0
NEW LR LR
comp=Z,3μm,19.0s,MS5.7
WHN Wuhan 85.70 305⇑P **P 06 40 48.8 +1.2**
WHN S S 06 51 18.0 -0.5
WHN AMB AMB
comp=Z,466nm,10.0s
WHN LR LR
comp=N,860nm,19.6s,MS5.3
WHN LR LR
comp=E,780nm,19.0s,MS5.3
WHN LR LR
comp=Z,1μm,25.0s
TOA Tolsona 85.77 13 *e*P **P 06 40 47.5 +0.3**
CPRX Cap Rock 85.86 52 *e*P **P 06 40 48.3 0.0**
AHID Auburn Hatcher 85.91 41 *e*P **P 06 40 48.5 +0.1**
comp=Z,23nm,1.2s,mb5.3
AHID LR LR
comp=Z,1μm,19.0s,MS5.3
MCMT McKenzie Canyo 86.02 39 *e*P **P 06 40 49.3 +0.4**
TIA Tai'an 86.33 311 *e*P **P 06 40 50.8 +0.2**
TIA AMB AMB
comp=Z,65nm,1.4s,mb5.7
TNA Tin City 86.42 3 *e*P **P 06 40 50.6 +0.3**
comp=Z,21nm,1.1s,mb5.3
TNA LR LR
comp=Z,438nm,20.0s,MS4.9
MSO Missoula 86.55 37 *e*P **P 06 40 50.4 -1.0**
comp=Z,13nm,1.3s,mb5.0
MSO LR LR
comp=Z,2μm,19.0s,MS5.6
WUWY Wally Ulrich 86.56 41 *e*P **P 06 40 51.8 +0.3**
KSWY Kelly School 86.67 41 *e*P **P 06 40 52.6 +0.5**
MCK McKinley 86.72 11 *e*P **P 06 40 51.2 -0.6**
comp=Z,29nm,1.2s,mb5.4
MCK LR LR
comp=Z,518nm,20.0s,MS4.9
IPM Ipoh 86.85 276⇑*e*P **P 06 40 54.1 +0.4**
comp=Z,61nm,0.7s,mb5.9
QLMT Earthquake Lak 86.86 39 *e*P **P 06 40 53.5 +0.5**
BW06 Boulder Array 86.87 42 *e*P **P 06 40 52.6 -0.4**
comp=Z,9.2nm,1.0s,mb5.0
BW06 LR LR
comp=Z,804nm,19.0s,MS5.1
PDAR Pinedale Array 86.87 42 P **P 06 40 53.0 -0.1**
comp=Z,7.7nm,0.9s,mb4.9,baz=215,slow=3.2,SNR=41
PDAR LR LR 07 15 48.9
comp=Z,663nm,18.3s,MS5.1,baz=246,slow=33
SDCO Great Sand Dun 86.96 48 PFAKE 06 41 10.0 +16
SDCO LR LR
comp=Z,818nm,22.0s,MS5.1
CHMT Chamberlain Mo 86.98 37 *e*P **P 06 40 52.8 -0.8**
SYO Syowa Base 87.00 192⇓P **P 06 40 53.7 +0.6**
SYO Syowa Base 87.00 192⇓PcP PcP 06 40 54.8 -1.0
SYO Syowa Base 87.00 192⇓pP pP 06 41 00.2 +3.9
SYO Syowa Base 87.00 192⇓*e*P **P 06 40 53.7 +0.6**
SYO ⇓*e*PcP PcP 06 40 54.8 -1.0
SYO ⇓*e*PP sP 06 41 00.2 +2.8
DLBC Dease Lake 87.13 21 *e*P **P 06 40 54.6 +0.6**
BOZ Bozeman (W) 87.19 39 *e*P **P 06 40 54.1 -0.4**
comp=Z,9.0nm,0.9s,mb5.0
BOZ LR LR
comp=Z,1μm,20.0s,MS5.3
VNA3 Neumayer Olymp 87.36 175 *e* **P 06 40 57.8 +3.0**
VNA3 Neumayer Olymp 87.36 175⇓*i*P **P 06 40 54.6 -0.2**
VNA3 *e* pP 06 40 57.8 -0.2
VNA3 *e* 06 41 19.4
SNAA Sanae 87.37 177 *e*P **P 06 40 55.5 +0.6**
HRY Holter Researc 87.67 38 *e*P **P 06 40 56.5 -0.4**
SEY Seymchan 87.73 345 *e*P **P 06 40 57.6 +0.9**
SEY 06 44 22.7
SEY *e*PPP PPP 06 46 23.8 +1.2
SEY *e**SP Sx 06 51 29.5
SEY pmax pmax
comp=N,40nm,1.1s
SEY pmax pmax
comp=E,20nm,1.1s
SEY pmax pmax
comp=Z,70nm,1.1s,mb5.8
SEY MLR MLR
comp=Z,4μm,18.0s,MS5.8
SEY MLR MLR
comp=N,3μm,19.0s,MS5.7
SEY MLR MLR
comp=E,500nm,17.0s,MS5.7
JCT Junction City 87.80 56 *e*P **P 06 40 58.2 +0.4**
comp=E,9.8nm,1.1s,mb5.0
JCT LR LR
comp=Z,796nm,20.0s,MS5.1
VNA2 Neumayer--Watz 87.85 176 *e* **P 06 41 01.0 +3.9**
VNA2 Neumayer--Watz 87.85 176⇓*i*P **P 06 40 57.8 +0.7**
VNA2 *e* pP 06 41 01.0 +0.7
VNA2 *e* 06 41 22.7
VNA2 *e* 06 46 04.9
WALA Waterton Lakes 87.87 35 *e*P **P 06 40 57.4 -0.3**
comp=Z,23nm,1.2s,mb5.3
ISCO Idaho Springs 87.89 46 PFAKE 06 41 10.0 +12
ISCO LR LR
comp=Z,690nm,19.0s,MS5.1
COLA College 87.96 11 *e*P **P 06 40 57.4 -0.4**
COLA College 87.96 11 *e*P **P 06 40 57.1 -0.6**
comp=Z,42nm,1.2s,mb5.5
COLA LR LR
comp=Z,891nm,20.0s,MS5.2
ILAR Eielson Array 88.04 11 P **P 06 40 57.7 -0.5**
comp=Z,3.2nm,0.9s,mb4.6,baz=221,slow=3.1,SNR=28
ILAR PP PP 06 44 21.9 -5.4
comp=Z,1.8nm,0.9s,baz=220,slow=7.0,SNR=4.6
ILAR PKKPbc 06 58 44.5
comp=Z,0.3nm,0.9s,baz=315,slow=1.3,SNR=2.9
ILAR PKPPKP 07 06 50.0
comp=Z,0.2nm,0.8s,baz=135,slow=1.3,SNR=3.2
ILAR LR LR 07 20 07.7
comp=Z,563nm,18.4s,MS5.0,baz=224,slow=36
VNA1 Neumayer--Stat 88.05 175 *e* **P 06 41 02.2 +4.1**
VNA1 Neumayer--Stat 88.05 175⇑*i*P **P 06 40 58.9 +0.8**
VNA1 *e* pP 06 41 02.2 +0.9
VNA1 *e* 06 41 23.8
VNA1 *e* 06 46 09.8
SNG Songkhla 88.16 278 P **P 06 41 01.5 +1.5**
comp=Z,208nm,0.9s,mb6.4
IMA Indian Mountai 88.17 8 *e*P **P 06 40 59.1 +0.3**

EFI East Falkland 88.66 146 *e*P P 06 41 02.6 +1.1
comp=Z,200nm,1.4s,mb6.3
EFI LR LR
comp=Z,738nm,20.0s,MS5.1
BJT Baijiatuau 88.83 314 *e*P P 06 41 02.6 0.0
comp=Z,364nm,2.0s,mb6.4
BJT LR LR
comp=Z,629nm,20.0s,MS5.0
BJI Beijing 88.84 314 *e*P P 06 41 03.3 +0.7
BJI SKS SKS 06 51 32.1 -2.8
BJI S S 06 51 55.5 +7.5
BJI AMB AMB
comp=Z,50nm,1.8s,mb5.5
BJI LR LR
comp=N,241nm,21.9s
BJI LR LR
comp=E,577nm,16.4s
BJI LR LR
comp=Z,431nm,19.9s,MS4.9
DAWY Dawson 88.98 15 *e*P P 06 41 02.6 -0.1
ENH Enshi 89.36 303 *e*P P 06 41 05.8 +0.5
comp=Z,188nm,1.3s,mb6.3
ENH LR LR
comp=Z,720nm,19.0s,MS5.1
KKTK Khon Kaen 89.51 288 P P 06 41 08.0 +1.7
comp=Z,494nm,0.8s
BILL Bilibino 89.95 353*c i*P P 06 41 07.1 -0.1
BILL pmax pmax
comp=Z,27nm,1.2s,mb5.5
BILL MLR MLR
comp=Z,800nm,19.0s,MS5.2
BILL Bilibino 89.95 353 *e*P P 06 41 07.0 -0.2
comp=Z,25nm,1.1s,mb5.5
GYA Guiyang 90.08 298⇑ *i*P P 06 41 10.3 +1.5
GYA SKS SKS 06 51 40.9 -1.9
GYA S S 06 52 02.8 +3.1
GYA AMB AMB
comp=Z,50nm,1.5s,mb5.6
GYA AMB AMB
comp=Z,460nm,6.3s
GYA LR LR
comp=N,260nm,17.4s,MS5.0
GYA LR LR
comp=E,380nm,16.5s,MS5.0
GYA LR LR
comp=Z,650nm,20.1s,MS5.0
WMOK Wichita Mounta 90.41 53 PFAKE 06 41 20.0 +10
WMOK LR LR
comp=Z,712nm,19.0s,MS5.1
HKT Hockley 90.69 58 PFAKE 06 41 20.0 +8.5
HKT LR LR
comp=Z,650nm,20.0s,MS5.1
RSSD Black Hills 91.02 43 PFAKE 06 41 20.0 +7.3
RSSD LR LR
comp=Z,1μm,21.0s,MS5.2
HIA Hailar 91.25 323 PFAKE 06 41 20.0 +6.4
HIA LR LR
comp=Z,999nm,20.0s,MS5.2
XAN Xi'an 91.36 306 P P 06 41 15.5 +1.0
XAN SKS SKS 06 51 46.4 -3.6
XAN SS SS 06 58 18.6 -1.2
XAN AMB AMB
comp=Z,54nm,1.6s,mb5.6
XAN AMB AMB
comp=Z,422nm,8.3s
XAN LR LR
comp=E,280nm,16.5s
XAN LR LR
comp=Z,481nm,18.1s,MS5.0
CBKS Cedar Bluff 91.47 49 PFAKE 06 41 30.0 +15
CBKS LR LR
comp=Z,699nm,20.0s,MS5.1
NST Nakhon Sawan 91.67 286 P P 06 41 18.3 +2.0
HHC Hu-ho-hao-te 92.34 313⇑ P P 06 41 20.3 +1.5
HHC AP pP 06 41 30.6 +8.6
HHC SKS SKS 06 51 53.8 -1.7
HHC AMB AMB
comp=Z,27nm,1.8s,mb5.3
HHC AMB AMB
comp=Z,322nm,9.8s
HHC LR LR
comp=N,605nm,18.6s,MS5.3
HHC LR LR
comp=E,879nm,19.6s,MS5.3
HHC LR LR
comp=Z,427nm,18.7s,MS4.9
CLNS Chul'man 92.80 331 *e*P P 06 41 21.2 +0.7
CLNS *e*S S 06 51 49.1 -34
CLNS *e*'SS 06 52 27.1
CLNS pmax pmax
comp=Z,10.0nm,1.1s,mb5.2
CLNS pmax pmax
comp=N,10.0nm,1.4s
CLNS pmax pmax
comp=E,5.0nm,0.8s
CLNS pmax pmax
comp=N,8.0nm,0.8s
CLNS pmax pmax
comp=E,10.0nm,0.8s
CLNS pmax pmax
comp=Z,10.0nm,0.8s,mb5.3
CLNS smax
comp=N,250nm,12.3s
CLNS smax
comp=Z,70nm,14.4s
CLNS smax
comp=E,90nm,12.0s
KMI Kunming 92.84 296 *e*P P 06 41 23.3 +1.8
KMI PP PP 06 45 09.9 +3.3
KMI SKS SKS 06 51 57.4 -1.3
KMI S S 06 52 25.9 +1.8
KMI XS 06 52 42.1
KMI PS PS 06 53 47.5 +5.1
KMI AMB AMB
comp=Z,61nm,1.4s,mb5.8
KMI LR LR
comp=N,572nm,19.5s,MS5.3
KMI LR LR
comp=E,933nm,19.5s,MS5.3
KMI LR LR
comp=Z,1μm,18.4s,MS5.4
BTO Baotou 93.29 312 *e*P P 06 41 22.1 -1.1
CM31 Chiang Mai Arr 93.73 288 *e*P P 06 41 26.3 +0.6
comp=Z,9.2nm,0.4s,mb5.6
CM31 LR LR
comp=Z,463nm,20.0s,MS4.9
CMAR Chiang Mai Arr 93.73 288 P P 06 41 26.8 +1.1
comp=Z,36nm,1.0s,mb5.8,baz=114,slow=2.9,SNR=107
CMAR LR LR 07 18 28.8
comp=Z,355nm,20.1s,MS4.8,baz=105,slow=32
INK Inuvik 93.84 14 P P 06 41 24.6 -0.4
comp=Z,6.0nm,1.0s,mb5.0,baz=211,slow=6.9,SNR=22
INK Inuvik 93.84 14 P P 06 41 24.6 -0.5
INK pmax pmax
comp=Z,6.0nm,1.0s
INK Inuvik 93.84 14 *e*P P 06 41 24.8 -0.3
comp=Z,48nm,1.6s,mb5.7
YAK Yakutsk 93.97 337 *e*P P 06 41 25.9 +0.1
YAK pmax pmax
comp=Z,31nm,0.5s,mb6.0
YAK MLR MLR
comp=Z,600nm,20.0s,MS5.0
YAK Yakutsk 93.97 337 *e*P P 06 41 25.0 -0.8
YAK LR LR
comp=Z,604nm,20.0s,MS5.1
CD2 Chengdu 94.15 301 P P 06 41 29.8 +2.4
MIAR Mount Ida 94.26 55 PFAKE 06 41 40.0 +12
MIAR LR LR
comp=Z,896nm,19.0s,MS5.2
LVC Limon Verde 95.16 116 P P 06 41 35.2 +3.0
comp=Z,11nm,1.2s,mb5.2,baz=59,slow=2.4,SNR=3.9
LVC Limon Verde 95.16 116 P P 06 41 35.2 +3.0
LVC LR LR
comp=Z,1μm,19.0s,MS5.3
YKA Yellowknife Ar 95.47 24 P P 06 41 32.5 -0.1
comp=Z,3.3nm,0.9s,mb4.8,baz=235,slow=4.2,SNR=48
YKA PP PP 06 45 23.5 -2.3
comp=Z,2.4nm,1.4s,baz=233,slow=6.2,SNR=3.4
YKA PKKPbc 06 58 25.3
comp=Z,0.6nm,0.9s,baz=38,slow=2.4,SNR=7.2
YKA LR LR 07 22 20.4
comp=Z,417nm,18.6s,MS4.9,baz=270,slow=34
YKA Yellowknife Ar 95.47 24 P P 06 41 32.5 -0.2
YKA 06 45 23.5
YKA pmax pmax
comp=Z,3.0nm,0.9s
YKA pmax pmax
comp=Z,2.0nm,1.4s
YKA pmax pmax
comp=Z,1.0nm,0.9s
YKA Yellowknife Ar 95.47 24 P P 06 41 32.5 -0.2
YKA PP PP 06 45 23.5 -2.2
YKA PKKPbc 06 58 25.3
YKA LR LR 07 22 20.4
LZH Lanzhou 95.99 306⇑ P P 06 41 38.8 +3.1
LZH SKS SKS 06 52 13.0 -2.7
LZH LR LR
comp=Z,2μm,18.2s,MS5.6
FFC Flin Flon 97.11 34 PFAKE 06 41 50.0 +10
FFC LR LR
comp=Z,1μm,20.0s,MS5.4
CCM Cathedral Cave 97.30 52 PFAKE 06 41 50.0 +8.4
CCM LR LR
comp=Z,1μm,19.0s,MS5.4
OXF Oxford 97.45 56 PFAKE 06 41 50.0 +7.7
OXF LR LR
comp=Z,2μm,19.0s,MS5.5
ULN Ulaanbaatar 98.15 318⇑ *i*P P 06 41 44.4 -0.7
ULN Ulaanbaatar 98.15 318 *e*P P 06 41 45.3 +0.1
comp=Z,8.7nm,1.1s,mb5.2
ULN LR LR
comp=Z,457nm,19.0s,MS5.0
LPAZ La Paz 98.49 111 P P 06 41 51.4 +4.0
comp=Z,0.7nm,0.8s,baz=340,slow=4.7,SNR=2.6
LPAZ LR LR 07 19 30.3
comp=Z,986nm,18.2s,MS5.3,baz=306,slow=31
SONM Songino Array 98.55 318 P P 06 41 46.3 -0.7
comp=Z,2.9nm,1.2s,mb4.7,baz=135,slow=3.5,SNR=8.8
SONM PP PP 06 45 45.3 -4.8
comp=Z,2.2nm,1.1s,baz=108,slow=9.1,SNR=2.9
PLAL Pickwick Lake 98.64 56 PFAKE 06 42 00.0 +12
PLAL LR LR
comp=Z,812nm,19.0s,MS5.2
ULM Lac du Bonnet 98.67 39 P P 06 41 49.0 +1.6
comp=Z,2.2nm,0.8s,mb4.8,baz=298,slow=4.6,SNR=3.8
ULM LR LR 07 23 09.4
comp=Z,1μm,18.4s,MS5.5,baz=58,slow=33
LRAL Lakeview Retre 98.84 58 PFAKE 06 42 00.0 +11
LRAL LR LR
comp=Z,710nm,20.0s,MS5.2
WVT Waverly 99.21 55 PFAKE 06 42 00.0 +10
WVT LR LR
comp=Z,1μm,20.0s,MS5.4
JFWS Jewell Farm 99.69 48 PFAKE 06 42 00.0 +7.8
JFWS LR LR
comp=Z,718nm,19.0s,MS5.2
GTA Gaotai 100.13 308 *e*P P 06 41 56.4 +2.0
GTA AP 06 42 02.3
GTA XP 06 42 05.3
GTA XS 06 53 42.4
GTA AMB AMB
comp=Z,5.0nm,1.0s
GTA AMB AMB
comp=Z,147nm,8.0s
GTA LR LR
comp=N,149nm,16.4s,MS4.8
GTA LR LR
comp=E,256nm,19.9s,MS4.8
GTA LR LR
comp=Z,217nm,16.4s,MS4.7
TIXI Tiksi 100.19 344 *e*P P 06 41 53.7 -0.2
TIXI *e* 06 45 55.0
TIXI *e* 06 53 31.6
TIXI pmax pmax
comp=Z,42nm,1.3s
TIXI Tiksi 100.19 344⇑ *e*P P 06 41 54.1 +0.2
TIXI LR LR
comp=Z,660nm,22.0s,MS5.1
WCI Wyandotte Cave 101.04 53 PFAKE 06 42 10.0 +12
WCI LR LR
comp=Z,5μm,19.0s,MS6.0
TLY Talaya 101.56 321 *e*P P 06 41 59.1 -1.4
TLY *e* 06 46 10.4
TLY pmax pmax
comp=Z,34nm,1.5s
TLY MLR MLR
comp=Z,4μm,19.0s,MS6.0
DWPF Disney 101.86 64 PFAKE 06 42 10.0 +7.6
DWPF LR LR
comp=Z,419nm,19.0s,MS5.0
CPUP Villa Florida 102.74 125 PFAKE 06 42 20.0 +14
CPUP LR LR
comp=Z,411nm,20.0s,MS5.0
LSA Lhasa 104.06 297 PFAKE 06 42 20.0 +7.9
LSA LR LR
comp=Z,224nm,20.0s,MS4.7
ACSO Alum Creek Sta 104.08 52 PFAKE 06 42 20.0 +8.0
ACSO LR LR
comp=Z,1μm,20.0s,MS5.4
AAM Ann Arbor 104.14 50 PFAKE 06 42 20.0 +7.8
AAM LR LR
comp=Z,1μm,19.0s,MS5.4
BLA Blacksburg 105.22 56 PFAKE 06 46 40.0
BLA LR LR
comp=Z,632nm,20.0s,MS5.2
MCWV Mont Chateau 106.26 53 PFAKE 06 46 40.0
MCWV LR LR
comp=Z,1μm,20.0s,MS5.5
ERPA Erie 106.73 51 PFAKE 06 46 50.0
ERPA LR LR
comp=Z,899nm,19.0s,MS5.3
CBN Corbin 107.80 55 PFAKE 06 46 50.0
CBN LR LR
comp=Z,1μm,20.0s,MS5.4
SSPA Standing Stone 107.95 53 PFAKE 06 46 50.0
SSPA LR LR
comp=Z,4μm,19.0s,MS6.0
BINY Binghamton 109.66 51 PFAKE 06 46 50.0
BINY LR LR
comp=Z,1μm,21.0s,MS5.4
WMQ Urumqi 110.02 310 PDIF Pdif 06 42 38.1 +0.1
WMQ PP PP 06 47 16.3 -0.3
WMQ SKS SKS 06 53 46.5 +25
WMQ S 06 54 44.8
WMQ PS PS 06 56 38.8 -0.8
WMQ SS SS 07 02 34.9 -3.9
WMQ PP PP
comp=Z,91nm,9.0s
WMQ LR LR
comp=N,711nm,28.0s,MS5.3
WMQ LR LR
comp=E,788nm,27.2s,MS5.3
WMQ LR LR
comp=Z,964nm,27.4s,MS5.2
SJG San Juan 112.58 78 PFAKE 06 47 00.0 +13
SJG LR LR
comp=Z,308nm,19.0s,MS4.9
LBNH Lisbon 112.92 50 PFAKE 06 47 00.0 +13
LBNH LR LR
comp=Z,1μm,19.0s,MS5.6
HRV Harvard--Oak R 112.95 52 PFAKE 06 47 00.0 +13
HRV LR LR
comp=Z,247nm,19.0s,MS4.8
WES Weston 113.11 52 PFAKE 06 47 00.0 +12
WES LR LR
comp=Z,3μm,19.0s,MS5.9
ZAL Zalesovo 113.19 321 PKiKP 06 46 45.2
comp=Z,1.8nm,0.6s,baz=167,slow=2.1,SNR=10
ZAL Zalesovo 113.19 321 *i* PKIKP PKPdf 06 46 45.2 -2.3
ZAL pmax pmax
comp=Z,2.0nm,0.6s
ZAL Zalesovo 113.19 321 PKPdf PKPdf 06 46 45.2 -2.3
NVS Novosibirsk 114.15 322⇓ *i*PKIKP PKPdf 06 46 46.3 -3.0
NVS *i* 06 47 37.4
NVS pmax pmax
comp=Z,11nm,1.2s
NVS pmax pmax
comp=N,8.0nm,0.4s
NVS pmax pmax
comp=E,2.0nm,0.4s
MKAR Makanchi Array 114.20 313 PKiKP 06 46 47.1
comp=E,8.1nm,0.8s,baz=72,slow=3.8,SNR=44
MKAR PKKPbc 06 57 31.4
comp=E,0.7nm,0.8s,baz=283,slow=3.0,SNR=4.9
MKAR Makanchi Array 114.20 313 *i* PKIKP PKPdf 06 46 47.2 -2.4
MKAR pmax pmax
comp=Z,8.0nm,0.9s
MKAR pmax pmax
comp=Z,1.0nm,0.8s
MKAR Makanchi Array 114.20 313 *i* P PKPdf 06 46 47.5 -2.1
BDFB Brasilia 115.77 120 PKKPab 06 57 28.1
comp=Z,3.1nm,1.0s,baz=185,slow=3.6,SNR=3.2
SCHQ Schefferville 116.81 38 PFAKE 06 47 00.0 +5.5
SCHQ LR LR
comp=Z,1μm,20.0s,MS5.4
KURK Kurchatov 116.84 317 *i* PKIKP PKPdf 06 46 52.3 -2.4
KURK pmax pmax
comp=Z,7.0nm,0.9s
KURK Kurchatov 116.84 317 *e*PKP PKPdf 06 46 52.0 -2.7
BBSR BB Station 116.91 64 PFAKE 06 47 10.0 +15
BBSR LR LR
comp=Z,1μm,19.0s,MS5.6
ULHL Ulahol 118.17 308 P PKPdf 06 46 55.2 -2.2
SNR=9.7
KZA Kyzart 118.89 307 P PKPdf 06 46 58.5 -0.4
SNR=6.0
CHMS Chumysh 119.30 308 P PKPdf 06 46 58.3 -1.3
SNR=6.4
FRU Bishkek 119.40 308 *e*PKIKP PKPdf 06 46 59.0 -0.8
UCH Uchtor 119.45 307 P PKPdf 06 46 59.7 -0.2
SNR=14
USP Ospenovka 119.50 309 P PKPdf 06 46 58.5 -1.4
SNR=6.1
EKS2 Erkin-Say 120.01 308 P PKPdf 06 46 60.0 -1.0
SNR=6.6
AML Almayashu 120.05 307 P PKPdf 06 47 00.2 -0.8
SNR=7.4
VOSK Vostochnaya 121.49 320 PKIKP PKPdf 06 47 01.0 -2.7
VOSK pmax pmax
comp=Z,19nm,1.0s
VOSK Vostochnaya 121.49 320 *i* P PKPdf 06 47 01.1 -2.6
BVA0 Borovoye Array 121.81 320 *i* PKIKP PKPdf 06 47 02.2 -2.1
BVA0 pmax pmax
comp=Z,2.0nm,1.0s
BRVK Borovoye 121.86 320 *e*PKP PKPdf 06 47 02.2 -2.2
KBS Kingsbay 121.95 359 *e*PKP PKPdf 06 47 00.5 -3.5
KBS LR LR
comp=Z,432nm,19.0s,MS5.1
KKAR Karatay Array 122.41 308 *i* PKIKP PKPdf 06 47 03.7 -1.9
KKAR pmax pmax
comp=Z,1.0nm,0.2s
SPB4 Spitsbergen Ar 122.56 357 *e*PKP PKPdf 06 47 02.8 -2.3
ZRNK Zerenda 122.64 320 PKIKP PKPdf 06 47 03.7 -2.1
ZRNK pmax pmax
comp=Z,20nm,0.9s
ZRNK Zerenda 122.64 320 *e*PKP PKPdf 06 47 03.4 -2.4
SUMG Summit 122.76 15 *e*PKP PKPdf 06 47 04.1 -1.5
DAG Danmarks Havn 122.85 7⇑ *i*P PKPdf 06 47 02.9 -2.8
comp=Z,5.0nm,1.0s
DAG Danmarks Havn 122.85 7⇑ *i*PKIKP PKPdf 06 47 02.9 -2.8
DAG pmax pmax
comp=Z,5.0nm,1.0s
SUR Sutherland 125.03 195 PKP PKPdf 06 47 10.3 -0.7
comp=Z,7.2nm,0.9s,baz=185,slow=6.6,SNR=5.2
SUR Sutherland 125.03 195 PKP PKPdf 06 47 10.3 -0.7
SUR LR LR
comp=Z,1μm,19.0s,MS5.6
SOKR Solikamsk 127.35 330⇓ *i*PKIKP PKPdf 06 47 11.6 -3.1
SOKR pmax pmax
comp=Z,30nm,1.0s
SOKR MLR MLR
comp=Z,600nm,19.0s,MS5.3
ARU Arti 127.67 326⇑ *i*PKIKP PKPdf 06 47 13.2 -2.2
ARU *i* 06 49 13.8
ARU pmax pmax
comp=Z,34nm,1.0s
ARU MLR MLR
comp=Z,1μm,19.0s,MS5.5
ARU MLR MLR
comp=N,600nm,21.0s,MS5.6
ARU MLR MLR
comp=E,1μm,20.0s,MS5.6
ARU Arti 127.67 326 PFAKE 06 47 20.0 +4.6
ARU LR LR
comp=Z,1μm,20.0s,MS5.5
AB31 Akbulak array 128.95 317 *i* PKIKP PKPdf 06 47 15.9 -2.2
AB31 pmax pmax
comp=Z,13nm,1.1s
KEV Kevo 129.60 351 *ep* PKPdf 06 47 15.2 -3.6
LVZ Lovozero 129.78 346 *e*PKIKP PKPdf 06 47 24.9 +5.7
LVZ *e* 06 49 28.3
LVZ *e*PS PS 06 59 32.6 -4.4
LVZ *e*SP SP 06 59 40.1 +4.3
LVZ *e*SS SS 07 06 45.7 -6.5
LVZ MLR MLR
comp=Z,220nm,10.0s,MS5.2
LVZ MLR MLR
comp=N,190nm,11.0s
ARCES ARCESS Array B 130.03 351 PKP PKPdf 06 47 15.8 -3.8
comp=N,6.1nm,0.9s,SNR=14
ARCES ARCESS Array B 130.03 351 PKIKP PKPdf 06 47 15.8 -3.8
ARCES pmax pmax
comp=Z,6.0nm,0.9s
LBTB Lobatse 130.41 204 PFAKE 06 47 30.0 +8.4
LBTB LR LR
comp=Z,423nm,19.0s,MS5.2
JOF Joensuu 134.68 344 *ep* PKPdf 06 47 26.0 -2.5
KAF Kangasniemi 136.57 346 *ep* PKPdf 06 47 26.5 -5.4
FINES FINESS Array B 137.22 346 PKP PKPdf 06 47 28.8 -4.3
comp=Z,3.9nm,0.8s,baz=63,slow=4.3,SNR=8.4
FINES FINESS Array B 137.22 346 PKIKP PKPdf 06 47 28.8 -4.3
FINES pmax pmax
comp=Z,4.0nm,0.9s
FINES FINESS Array B 137.22 346 PKP PKPdf 06 47 28.8 -4.4
PUL Pulkovo 137.55 342 *e*PKIKP PKPdf 06 47 35.0 +1.2
PUL MLR MLR
comp=Z,610nm,20.0s,MS5.3
THR Tehran 137.93 301 PKP PKPdf 06 47 33.8 -1.5
comp=Z,1.1nm,0.6s,baz=70,slow=0.8,SNR=5.1
THR PP PP 06 50 23.0 -1.2
comp=Z,2.6nm,1.1s,baz=186,slow=3.6,SNR=3.7
THR Tehran 137.93 301 PKIKP PKPdf 06 47 33.8 -1.5
THR 06 50 23.0
THR pmax pmax
comp=Z,1.0nm,0.6s
THR pmax pmax
comp=Z,3.0nm,1.1s
MOS Moscow 138.02 334 *e*PKHKP 06 47 20.6
MOS *e* 06 50 24.2
TSUM Tsumeb 138.44 197 PKP PKPdf 06 47 35.4 -1.2
comp=Z,5.0nm,0.9s,baz=121,slow=3.2,SNR=6.6
OBN Obninsk 138.88 334*d i*PKIKP PKPdf 06 47 34.1 -2.3
OBN *e* 06 50 25.4
OBN *e*SS SS 07 08 33.6 -8.1
OBN pmax pmax
comp=Z,58nm,1.8s
OBN MLR MLR
comp=Z,300nm,20.0s,MS5.0
OBN Obninsk 138.88 334 *e*PKP PKPdf 06 47 33.2 -3.2
OBN LR LR
comp=Z,613nm,20.0s,MS5.3
MAK Makhachkala 139.01 312 *e*PKIKP PKPdf 06 47 37.0 0.0
NB2 NORSAR Subarra139.82 356 PKP 06 47 28.8
comp=Z,6.0nm,0.9s,baz=4.0,slow=2.5
NOA NORSAR Array B139.82 356 PKhKP 06 47 29.8
comp=Z,3.1nm,0.9s,baz=16,slow=2.4,SNR=6.2
NOA NORSAR Array B139.82 356 PKHKP 06 47 29.8
NOA pmax pmax
comp=Z,3.0nm,0.9s
NOA NORSAR Array B139.82 356 PKP PKPdf 06 47 29.8 -8.2
VOR Voronezh 139.88 328 PKIKP PKPdf 06 47 35.0 -3.3
VOR pmax pmax
comp=Z,50nm,1.5s
KONO Kongsberg 141.30 357 PFAKE 06 47 50.0 +9.4
KONO LR LR
comp=Z,428nm,20.0s,MS5.2
ZEI Tsey 141.56 313 *e*PKHKP 06 47 33.0
ZEI *e* 06 50 46.0
ZEI *i* 07 03 00.0
ZEI pmax pmax
comp=Z,200nm,6.0s
KIV Kislovodsk 141.90 316*d i*PKIKP PKPdf 06 47 40.2 -1.9
KIV pmax pmax
comp=Z,12nm,0.7s
KIV Kislovodsk 141.90 316 PFAKE 06 47 50.0 +7.9
KIV LR LR
comp=Z,436nm,19.0s,MS5.2
KMBO Kilima Mbogo 142.26 238 PKhKP 06 47 38.5
comp=Z,4.1nm,0.9s,baz=50,slow=3.5,SNR=8.4
KMBO Kilima Mbogo 142.26 238 *e*PKP PKPdf 06 47 39.1 -4.5
KMBO LR LR
comp=Z,346nm,20.0s,MS5.1
MNK Minsk 142.65 339 *e*PKHKP 06 47 33.0
BCA Borcka 143.63 312 P PKPbc 06 47 41.0 +0.1
SOC Sochi 143.99 317*ce*P Pdif 06 45 07.1 -0.4
SOC *i* 06 47 42.0

SOC				*e*			06 50 55.4		
SOC				*e*PPP	PPP		06 54 45.2	+32	
SOC				*e*SSS	SSS		07 14 58.5	-7.9	
SOC				pmax	pmax				
	comp=Z,40nm,1.6s								
SOC				pmax	pmax				
	comp=N,5.0nm,0.3s								
SOC				pmax	pmax				
	comp=E,10.0nm,0.4s								
ERZM	**Erzurum**	**144.40**	**310**	*i* P	PKPbc		06 47 44.7	+1.6	
SUW	**Suwalki**	**144.51**	**342**	*e*PKP	PKPdf		06 47 43.3	-3.0	
SUW	**Suwalki**	**144.51**	**342**	*e*PKP	PKPdf		06 47 43.9	-2.4	
MUD	**Monsted U'grnd**	**144.51**	**357**⇑	*i*P	PKPbc		06 47 43.4	+0.5	
	comp=E,68nm,1.0s								
MUD				*i*			06 52 17.5		
MUD				*i*			06 54 09.2		
	comp=Z,320nm,20.0s								
MUD	**Monsted U'grnd**	**144.51**	**357**⇑	*i*PKIKP	PKPdf		06 47 43.4	-2.8	
MUD				pmax	pmax				
	comp=Z,68nm,1.0s								
MUD				MLR	MLR				
	comp=Z,330nm,20.0s,MS5.1								
ANN	**Anapa**	**144.81**	**320**	*c e*PKIKP	PKPdf		06 47 45.0	-2.1	
ANN				pmax	pmax				
	comp=Z,100nm,1.1s								
COP	**Copenhagen**	**145.03**	**354**	*i* P	PKPbc		06 47 44.9	+0.6	
	comp=Z,32nm,1.0s								
COP	**Copenhagen**	**145.03**	**354**	*e*PKIKP	PKPdf		06 47 44.9	-2.2	
COP				pmax	pmax				
	comp=Z,32nm,1.0s								
ESK	**Eskdalemuir**	**145.06**	**9**	PFAKE			06 48 00.0	+16	
ESK				LR	LR				
	comp=Z,558nm,19.0s,MS5.4								
BWH	**Wardlaw**	**145.13**	**10**⇑	*e*P	PKPbc		06 47 44.6	0.0	
BWH				AMB	AMB		06 47 52.6		
	comp=Z,106nm,1.7s								
BEST	**Besiri**	**145.16**	**307**	*i* P	PKPbc		06 47 46.7	+1.5	
BSD	**Bornholm Skovb**	**145.27**	**351**⇑	*i*P	PKPbc		06 47 45.3	+0.3	
	comp=Z,96nm,0.9s								
BSD				*i*			06 47 52.4		
BSD	**Bornholm Skovb**	**145.27**	**351**⇑	*i*PKIKP	PKPdf		06 47 45.3	-2.3	
BSD				*i*			06 47 52.4		
BSD				pmax	pmax				
	comp=Z,96nm,0.9s								
BHH	**Howats Hill**	**145.28**	**9**⇑	*e*P	PKPbc		06 47 45.5	+0.5	
BHH				AMB	AMB		06 47 52.4		
	comp=Z,123nm,1.7s								
BBH	**Bruntsheil**	**145.28**	**9**⇑	*e*P	PKPbc		06 47 45.2	+0.2	
BBH				AMB	AMB		06 47 52.6		
	comp=Z,82nm,1.7s								
BINT	**Bingol**	**145.40**	**309**	P	PKPbc		06 47 48.1	+2.3	
GUMT	**Gumushane**	**145.51**	**312**	P	PKPbc		06 47 48.7	+2.6	
BTA	**Talkin**	**145.53**	**9**⇑	*e*P	PKPbc		06 47 46.4	+0.8	
BTA				AMB	AMB		06 47 59.7		
	comp=Z,201nm,1.4s								
EZC	**Erzincan**	**145.56**	**310**	P	PKPbc		06 47 49.6	+3.4	
BDL	**Dobcross Hall**	**145.60**	**9**	*e*P	PKPbc		06 47 46.7	+0.9	
BBO1	**Bothel**	**145.62**	**9**⇑	*e*P	PKPbc		06 47 46.7	+0.9	
BBO1				AMB	AMB		06 47 59.7		
	comp=Z,132nm,1.7s								
DMUB	**Kingscourt**	**145.73**	**13**	*e*P	PKPbc		06 47 44.0	-2.2	
DMUB	**Kingscourt**	**145.73**	**13**⇑	*i*P	PKPbc		06 47 47.3	+1.1	
KELT	**Kelkit**	**145.80**	**311**	*i* P	PKPbc		06 47 49.7	+3.0	
DIY	**Diyarbakir**	**145.94**	**307**	P	PKPbc		06 47 49.6	+2.4	
RGN	**Rugen**	**146.04**	**352**	*e*PKP	PKPdf		06 47 47.0	-1.8	
DCN	**Croghan**	**146.17**	**14**	*e*P	PKPbc		06 47 44.6	-2.6	
DCN	**Croghan**	**146.17**	**14**⇑	*i*P	PKPbc		06 47 48.6	+1.4	
DLF	**Lyons Farm**	**146.38**	**13**	*e*P	PKPbc		06 47 45.5	-2.2	
DLF	**Lyons Farm**	**146.38**	**13**⇑	*i*P	PKPbc		06 47 49.2	+1.5	
BLJS	**Baljurashi**	**146.57**	**275**	P	PKPbc		06 47 53.0	+3.8	
ELZG	**Elazig**	**146.63**	**309**	*i* P	PKPbc		06 47 52.5	+3.7	
SIM	**Simferopol'**	**146.67**	**322**	*c i*PKP2	PKPab		06 47 51.4	-0.7	
SIM				*e*			06 51 15.0		
SIM				pmax	pmax				
	comp=Z,60nm,8.7s								
SIM	**Simferopol'**	**146.67**	**322**⇑	*i*P	PKPbc		06 47 50.0	+1.3	
WAR	**Warsaw**	**146.68**	**343**	*e*PKP	PKPdf		06 47 51.4	+1.3	
BSEG	**Bad Segeberg**	**146.95**	**355**	*e*PKP2	PKPab		06 47 51.4	-1.5	
LHO	**Holmfirth**	**146.97**	**8**	*i* P	PKPbc		06 47 50.6	+1.5	
MYA	**Malataya**	**147.11**	**309**	P	PKPdf		06 47 53.1	+1.9	
SVST	**Sivas**	**147.56**	**312**	*i* P	PKPdf		06 47 54.8	+2.8	
TOKT	**Tokat**	**147.59**	**313**	P	PKPdf		06 47 54.4	+2.4	
KIS	**Kishinev**	**148.09**	**330**	*e*PKP2	PKPab		06 47 54.0	-3.6	
KIS				*e*			06 51 30.0		
KIS				pmax	pmax				
	comp=Z,33nm,1.2s								
KIS				pmax	pmax				
	comp=Z,800nm,10.0s								
KIS				pmax	pmax				
	comp=Z,700nm,10.0s								
KIS				MLR	MLR				
	comp=N,600nm,20.0s								
KIS				MLR	MLR				
	comp=Z,600nm,20.0s,MS5.4								
GZT	**Gaziantep**	**148.10**	**308**	*i* P	PKPdf		06 47 56.4	+3.5	
BOYT	**Boyabat**	**148.15**	**316**	*i* P	PKPdf		06 47 56.0	+3.2	
BYBT	**Boyabat**	**148.21**	**316**	P	PKPdf		06 47 56.1	+3.2	
WIT	**Witteveen**	**148.24**	**359**	*e*P	PKPdf		06 47 55.9	+3.3	
	comp=Z,252nm,0.7s								
GAZ	**Gaziantep**	**148.43**	**308**	P	PKPdf		06 47 56.5	+3.1	
BZK	**Bozkurt**	**148.44**	**318**	P	PKPdf		06 47 56.0	+2.8	
KWP	**Kalwaria**	**148.46**	**339**	*e*PKP	PKPdf		06 47 55.7	+2.7	
CTKT	**Corum**	**148.63**	**315**	*i* P	PKPdf		06 47 55.5	+1.9	
YOZ	**Yozgat**	**148.74**	**313**	P	PKPdf		06 47 56.9	+3.0	
OJC	**Ojcow**	**148.84**	**343**	*e*PKP	PKPdf		06 47 51.4	-2.2	
TOS	**Tosya**	**148.92**	**316**	P	PKPdf		06 47 52.8	-1.2	
CLZ	**Clausthal**	**149.02**	**355**	*e*PKPbc	PKPdf		06 47 57.0	+3.1	
BALT	**Daday**	**149.06**	**318**	*i* P	PKPdf		06 47 57.6	+3.3	
KBRS	**Khaybar**	**149.06**	**285**	P	PKPdf		06 47 58.9	+4.2	
WTSB	**Winterswijk**	**149.09**	**359**⇑	*e*P	PKPdf		06 47 56.9	+3.0	
	comp=Z,39nm,1.2s								
WTSB				*ex*	x		06 48 06.9		
KSP	**Ksiaz**	**149.12**	**347**	*e*PKP	PKPdf		06 47 57.7	+3.7	
KSP	**Ksiaz**	**149.12**	**347**	*i* PKP2	PKPab		06 47 57.7	-4.0	
KSP				*e*SS	SS		07 10 31.0	-8.3	
KSP				MLR	MLR				
	comp=Z,1μm,19.8s,MS5.7								
KSP	**Ksiaz**	**149.12**	**347**	*e*PKP	PKPdf		06 47 53.1	-0.9	
KSP				*i* PKPdf	PKPdf		06 47 57.7	+3.7	
KSP				*e*			06 48 01.7		
KSP				*e*			06 48 08.1		
KSP				*e*SS	SS		07 10 31.0	-8.3	
KSP				LR	LR				
	comp=Z,1μm,19.8s,MS5.7								
CLL	**Collm**	**149.25**	**351**	*i* PKP1	PKPdf		06 47 57.4	+3.2	
CLL				*i* PKP2	PKPab		06 48 00.5	-1.7	
CLL				*i* *PPKP			06 48 07.8		
CLL				*i*			06 48 49.5		
CLL	**Collm**	**149.25**	**351**	*i* PKP2	PKPab		06 47 57.4	-4.8	
CLL				pmax	pmax				
	comp=Z,88nm,1.1s								
CLL	**Collm**	**149.25**	**351**	*i* PKP	PKPdf		06 47 57.4	+3.2	
CLL				*i*			06 48 07.8		
COBT	**Iskenderun**	**149.39**	**307**	*i* P	PKPdf		06 47 59.3	+4.3	
RAC	**Raciborz**	**149.39**	**344**	*e*PKP(df)			06 47 58.6		
RAC				MLR	MLR		07 50 21.9		
	comp=Z,600nm,22.5s,MS5.3								
CANT	**Cankiri**	**149.40**	**316**	P	PKPdf		06 47 58.8	+3.9	
NIE	**Niedzica**	**149.41**	**341**⇑	*e*PKP	PKPdf		06 47 58.1	+3.5	
AVNT	**Avonos**	**149.46**	**312**	*i* P	PKPdf		06 47 58.0	+3.0	
UPC	**Upice**	**149.49**	**347**	*e*PKP	PKPdf		06 47 58.5	+3.8	
CRVS	**Cervenica-Dubn**	**149.51**	**340**	*i* PKP	PKPdf		06 47 54.8	+0.1	
CRVS				*e*			06 47 58.7		
BRG	**Berggiesshubel**	**149.53**	**350**	*e*PKIKP	PKPdf		06 47 53.9	-0.8	
BRG				*i*			06 47 58.7		
BRG				pmax	pmax				
	comp=Z,72nm,1.1s								
BRG	**Berggiesshubel**	**149.53**	**350**	*e*PKP	PKPdf		06 47 53.9	-0.8	
BRG				*i*			06 47 58.7		
BRG				*i*			06 48 09.1		
CEYT	**Ceyhan**	**149.57**	**308**	P	PKPdf		06 47 59.5	+4.3	
DPC	**Dobruska-Polom**	**149.58**	**347**	*e*PKP	PKPdf		06 47 58.8	+4.0	
DPC				*L*			08 03 50.0		
	comp=Z,0.5nm,16.8s								
HTY	**Hatay**	**149.62**	**306**	P	PKPdf		06 47 59.6	+4.3	
OKC	**Ostrava-Krasne**	**149.63**	**344**	*e*PKP	PKPdf		06 47 58.6	+3.7	
SAFT	**Safranbolu**	**149.66**	**318**	P	PKPdf		06 47 59.0	+3.8	
CFR	**Carcaliu**	**149.72**	**328**⇑	*i*P	PKPdf		06 47 59.0	+3.8	
CFR	**Carcaliu**	**149.72**	**328**⇓	*i*P	PKPdf		06 47 59.2	+4.0	
PVCC	**Panska Ves**	**149.75**	**349**	*e*PKP	PKPdf		06 47 59.0	+3.9	
PVCC				*L*			08 04 40.0		
	comp=Z,0.6nm,17.9s								
MORC	**Moravsky Berou**	**149.84**	**345**	*e*PKPdf	PKPdf		06 47 54.1	-1.1	
MORC				*e*PKPbc	PKPdf		06 47 59.1	+3.9	
BRTR	**Keskin Array B**	**149.84**	**314**	PKP	PKPdf		06 47 54.2	-1.4	
	comp=Z,36nm,0.9s,baz=90,slow=2.5,SNR=34								
BRTR				PKPbc	PKPdf		06 47 59.6	+4.1	
	comp=Z,35nm,0.9s,baz=132,slow=2.3,SNR=109								
VRI	**Vrincioaia**	**149.90**	**330**⇓	*i*P	PKPdf		06 47 59.6	+4.1	
VRI	**Vrincioaia**	**149.90**	**330**⇓	*i*P	PKPdf		06 47 59.6	+4.1	
NIG	**Nigde**	**149.93**	**311**	P	PKPdf		06 48 00.2	+4.4	
KAMT	**Kaman**	**149.97**	**314**	P	PKPdf		06 47 59.7	+3.9	
BRD	**Bordesti**	**149.99**	**330**⇑	*i*P	PKPdf		06 48 00.9	+5.3	
QURS	**Qurayyt al Mil**	**150.06**	**297**	P	PKPdf		06 48 02.6	+6.4	
MOX	**Moxa**	**150.08**	**353**	*i* P	PKPdf		06 47 54.8	-0.8	
MOX				PP2			06 48 00.0		
MOX	**Moxa**	**150.08**	**353**	*e*PKHKP			06 47 54.8		
MOX				*e*			06 48 00.0		
MOX				pmax	pmax				
	comp=Z,168nm,1.7s								
MOX				MLR	MLR				
	comp=Z,400nm,21.0s,MS5.2								
LIKS	**Likavka**	**150.09**	**342**	*e*PKP	PKPdf		06 48 01.2	+5.6	
HARR	**Harsova**	**150.17**	**327**⇓	*i*P	PKPdf		06 48 00.7	+4.8	
HARR	**Harsova**	**150.17**	**327**⇓	*i*P	PKPdf		06 48 00.7	+4.8	
KECS	**Kecovo**	**150.19**	**340**	*e*PKP	PKPdf		06 48 00.0	+4.2	
PRA	**Prague**	**150.22**	**349**⇑	PKP	PKPdf		06 48 00.0	+4.2	
ASF	**Jabal al Asfar**	**150.23**	**298**	PKPbc	PKPdf		06 48 00.8	+4.4	
	comp=Z,36nm,0.9s,baz=341,slow=0.7,SNR=34								
YNBS	**Yanbu' al Bahr**	**150.24**	**283**	P	PKPdf		06 48 01.9	+5.2	
PRU	**Pruhonice**	**150.28**	**349**	*e*PKP	PKPdf		06 48 00.1	+4.2	
PRU				*ex*	x		06 48 05.5		
PRU				*L*			08 03 00.0		
HGN	**Heimansgroeve**	**150.30**	**360**⇓	*e*P	PKPdf		06 48 00.2	+4.3	
	comp=Z,21nm,0.7s								
ANTO	**Ankara**	**150.32**	**315**	P	PKPdf		06 47 58.8	+2.5	
NKC	**Novy Kostel**	**150.38**	**351**	*e*PKP	PKPdf		06 48 00.6	+4.6	
NKC				*L*			08 02 50.0		
	comp=Z,0.5nm,18.1s								
ISR	**Istrita**	**150.54**	**329**⇓	*i*P	PKPdf		06 48 01.5	+5.0	
ISR	**Istrita**	**150.54**	**329**⇓	*i*P	PKPdf		06 48 01.5	+5.0	
VYHS	**Vyhne**	**150.67**	**342**	*e*PKP	PKPdf		06 47 55.2	-1.3	
VYHS				*i*			06 48 01.5		
VYHS				*e*			06 48 12.5		
KOLL	**Kolacno**	**150.72**	**343**	*e*PKP	PKPdf		06 48 01.7	+5.1	
KOLL				*e*			06 48 12.3		
PSN	**Preselentsi**	**150.75**	**326**	*e*P	PKPdf		06 48 02.0	+5.2	
PSZ	**Piszkesteto**	**150.87**	**340**⇑	*i*PKP/F			06 48 01.7		
PSZ	**Piszkesteto**	**150.87**	**340**	*e*PKPbc	PKPdf		06 48 01.0	+4.1	
HRI	**Mount Hermon**	**150.88**	**301**	P	PKPdf		06 48 02.4	+5.0	
KSHT	**Keshet**	**150.90**	**300**	P	PKPdf		06 48 02.4	+5.0	
KSHT	**Keshet**	**150.90**	**300**⇑	P	PKPdf		06 48 02.4	+5.0	
GIVF	**Givet**	**150.95**	**1**	*e*PKP1	PKPdf		06 48 01.6	+4.7	
	comp=Z,298nm,1.2s								
BAIF	**Baives**	**150.97**	**2**	*e*PKP1	PKPdf		06 48 01.9	+5.0	
	comp=Z,273nm,1.3s								
HENT	**Hendek**	**151.01**	**319**	*i* P	PKPdf		06 48 01.6	+4.3	
MDU	**Mudurnu**	**151.02**	**318**	P	PKPdf		06 48 02.1	+4.7	
GRA1	**Grafenberg Arr**	**151.06**	**353**	*e*PKPbc	PKPdf		06 48 02.0	+4.9	
GRA1				LR	LR				
	comp=Z,600nm,19.8s,MS5.4								
GRF	**Grafenberg Arr**	**151.06**	**353**	*e*PKIKP	PKPdf		06 48 02.0	+4.9	
KHC	**Kasperske Hory**	**151.27**	**349**	*e*PKP	PKPdf		06 47 56.5	-0.9	
KHC				*ex*	x		06 48 03.0		
KHC				x	x		06 48 13.0		
KHC				*L*			08 05 10.0		
	comp=Z,0.7nm,18.4s								
KHC	**Kasperske Hory**	**151.27**	**349**	*e*PKIKP	PKPdf		06 47 56.5	-0.9	
KHC				*e*			06 48 03.0		
KHC				MLR	MLR				
	comp=Z,700nm,18.4s,MS5.5								
KHC	**Kasperske Hory**	**151.27**	**349**	*e*PKP	PKPdf		06 47 56.5	-0.9	
KHC				*e*			06 48 03.0		
KHC				*e*			06 48 13.0		
KHC				LR	LR				
	comp=Z,700nm,18.4s,MS5.5								
TBKS	**Tabuk**	**151.28**	**291**	P	PKPdf		06 48 04.1	+6.0	
HMDT	**Nahal Hemdat**	**151.33**	**299**	P	PKPdf		06 48 03.4	+5.3	
HMDT	**Nahal Hemdat**	**151.33**	**299**⇑	P	PKPdf		06 48 03.4	+5.3	
RUP	**Ruppelstein**	**151.35**	**358**	PKP	PKPdf		06 48 02.7	+5.2	
TOD	**Tromm**	**151.37**	**359**	PKP	PKPdf		06 48 02.2	+4.7	
WLF	**Walferdange**	**151.40**	**360**	*e*PKPbc	PKPdf		06 48 02.9	+5.3	
IKL	**Isiki**	**151.40**	**308**	P	PKPdf		06 48 03.0	+4.9	
ZST	**Bratislava**	**151.41**	**344**	*i* PKIKP	PKPdf		06 48 03.2	+5.5	
ZST				*e*SS	SS		07 11 01.2	-3.4	
ZST	**Bratislava**	**151.41**	**344**	*i* PKP	PKPdf		06 48 03.2	+5.5	
ZST				*e*SKSdf			06 56 48.7		
ZST				*e*SS	SS		07 11 01.2	-3.4	
MKRJ	**Makawir**	**151.42**	**298**	P	PKPdf		06 48 03.5	+5.3	
KIZT	**Kizilcal**	**151.44**	**314**	P	PKPdf		06 48 02.9	+4.9	
PRD	**Provadia**	**151.49**	**326**	*e*P	PKPdf		06 48 03.0	+5.1	
GEC2	**GERESS Array S**	**151.53**	**349**	*e*PKIKP	PKPdf		06 48 03.0	+5.2	
GERES	**GERESS Array B**	**151.53**	**349**	PKP	PKPdf		06 47 56.8	-1.0	
	comp=Z,1.0nm,0.8s,baz=72,slow=4.2,SNR=5.3								
GERES				PKPbc	PKPdf		06 48 03.0	+5.2	
	comp=Z,15nm,0.8s,slow=1.3,SNR=51								
GERES	**GERESS Array B**	**151.53**	**349**	PKIKP	PKPdf		06 47 56.8	-1.0	
GERES							06 48 03.0		
GERES				pmax	pmax				
	comp=Z,1.0nm,0.8s								
GERES				pmax	pmax				
	comp=Z,15nm,0.8s								
KONT	**Konya--Tatoy**	**151.58**	**312**	P	PKPdf		06 48 02.6	+4.4	
DRGI	**Dragot**	**151.62**	**298**	P	PKPdf		06 48 03.8	+5.3	
EYL	**Eskiyayla**	**151.62**	**319**	P	PKPdf		06 48 02.6	+4.4	
OFRI	**'Ofer**	**151.67**	**300**	P	PKPdf		06 48 03.3	+4.7	
MZDA	**Masada**	**151.71**	**297**	P	PKPdf		06 48 03.8	+5.1	
SLTI	**Sal'it**	**151.73**	**299**	P	PKPdf		06 48 04.1	+5.4	
ROSF	**Rostrenen**	**151.75**	**13**	*e*PKP1	PKPdf		06 48 02.8	+4.6	
	comp=Z,132nm,1.3s								
HRT	**Hereke**	**151.76**	**320**	P	PKPdf		06 48 03.7	+5.2	
JMQS	**Jabal Moqyreh**	**151.76**	**292**	P	PKPdf		06 48 05.1	+6.3	
ESKT	**Eskisehir**	**151.78**	**316**	*i* P	PKPdf		06 48 03.4	+4.9	
ESKT	**Eskisehir**	**151.78**	**316**	P	PKPdf		06 48 02.8	+4.3	
FLN	**La Foliniere**	**151.84**	**9**	*e*PKP1	PKPdf		06 48 03.2	+4.9	
	comp=Z,364nm,1.4s								
FLN				*e*R					
	comp=Z,584nm,20.5s								
HDMB	**Hadim**	**151.96**	**310**	P	PKPdf		06 48 00.2	+1.4	
SGMF	**Saint Gilles**	**151.97**	**12**	*e*PKP1	PKPdf		06 48 03.3	+4.8	
	comp=Z,220nm,1.3s								
ZFRI	**Zfri**	**152.04**	**296**	P	PKPdf		06 48 04.8	+5.6	
LANF	**Langenberg**	**152.04**	**357**	PKP	PKPdf		06 48 04.2	+5.6	
LDF	**La Druitiere**	**152.05**	**9**	*e*PKP1	PKPdf		06 48 03.6	+5.0	
	comp=Z,252nm,1.3s								
GRR	**Gorron**	**152.14**	**10**	*e*PKP1	PKPdf		06 48 04.0	+5.3	
	comp=Z,122nm,1.1s								
STU	**Stuttgart**	**152.17**	**355**	*e*PKPbc	PKPdf		06 48 04.3	+5.5	
QUIF	**Quistinic**	**152.17**	**13**	*e*PKP1	PKPdf		06 48 03.8	+5.0	
	comp=Z,153nm,1.5s								
CSS	**Prodhromos**	**152.18**	**306**	*e*PKPbc	PKPdf		06 48 04.6	+5.4	
SZH	**Strazhica**	**152.20**	**328**	*e*P	PKPdf		06 47 59.0	0.0	
PRNI	**Paran**	**152.23**	**296**	P	PKPdf		06 48 05.2	+5.8	
PRNI	**Paran**	**152.23**	**296**⇑	P	PKPdf		06 48 05.2	+5.8	
CTT	**Catalca**	**152.29**	**322**	P	PKPdf		06 48 04.7	+5.5	
MOA	**Molln**	**152.38**	**348**⇑	*i*PKP	PKPdf		06 48 05.1	+6.0	
JMOS	**Jabal al Moall**	**152.38**	**293**	P	PKPdf		06 48 06.5	+6.8	
ALWS	**Ilw as Safayha**	**152.39**	**293**	P	PKPdf		06 48 06.4	+6.7	
AYUS	**'Aynunah**	**152.40**	**291**	P	PKPdf		06 48 06.1	+6.4	
EIL	**Elat**	**152.42**	**294**	P	PKPdf		06 48 05.6	+5.9	
SVTA	**Shivta**	**152.42**	**297**	P	PKPdf		06 48 05.5	+5.8	
MBH	**Mount Berech**	**152.43**	**294**	P	PKPdf		06 48 05.6	+5.9	
LEF	**Lefka**	**152.45**	**306**	P	PKPdf		06 48 03.9	+4.3	
ULDT	**Uludag**	**152.50**	**319**	*i* P	PKPdf		06 48 04.8	+5.3	
BDAS	**Al Bad'**	**152.51**	**291**	P	PKPdf		06 48 06.7	+6.8	
ALT	**Altintas**	**152.51**	**316**	P	PKPdf		06 48 05.5	+5.9	
KMTI	**Karmit**	**152.52**	**295**	P	PKPdf		06 48 05.5	+5.6	
HAQS	**Haql**	**152.55**	**293**	P	PKPdf		06 48 06.5	+6.5	
FUR	**Furstenfeldbru**	**152.56**	**352**	*e*PKIKP	PKPdf		06 48 05.5	+6.2	
MEZF	**Maizieres J'vi**	**152.56**	**1**	*e*PKP1	PKPdf		06 48 05.5	+6.2	
	comp=Z,178nm,1.2s								
KZIT	**Kziot**	**152.61**	**297**	P	PKPdf		06 48 06.0	+6.0	
WLS	**Welschbruch**	**152.63**	**358**	PKP	PKPdf		06 48 05.5	+6.1	
CDF	**Champ du Feu**	**152.63**	**358**	*e*PKP1	PKPdf		06 48 05.5	+6.1	
	comp=Z,182nm,1.4s								
BFO	**Black Forest**	**152.67**	**356**	*e*PKIKP	PKPdf		06 48 05.1	+5.6	
ARSA	**Arzberg**	**152.68**	**346**⇓	*i*PKP	PKPdf		06 48 03.2	+3.7	
ECH	**Echery**	**152.83**	**358**	PKP	PKPdf		06 48 05.5	+5.8	
THEF	**They Montfort**	**152.84**	**360**	PKP	PKPdf		06 48 05.7	+6.0	
SPAK	**Spaichingen**	**152.87**	**356**	PKP	PKPdf		06 48 05.5	+5.7	
HAU	**Haudompre**	**153.06**	**359**	*e*PKP1	PKPdf		06 48 06.3	+6.3	
	comp=Z,36nm,0.8s								
HAU				*e*R					
	comp=Z,720nm,19.0s								
RHK1	**Bakonya**	**153.06**	**341**	*e*P	PKPdf		06 48 06.7	+6.6	
BNT	**Bandirma**	**153.10**	**321**	P	PKPdf		06 48 06.3	+6.0	
FELD	**Feldberg**	**153.14**	**357**	PKP	PKPdf		06 48 05.9	+5.8	
HINF	**Hinteralfeld**	**153.24**	**359**	*e*PKP1	PKPdf		06 48 06.5	+6.2	
	comp=Z,48nm,1.1s								
DIM	**Dimitrovgrad**	**153.28**	**326**	*e*P	PKPdf		06 48 07.0	+6.5	
KBA	**Koelnbreinsper**	**153.29**	**349**⇑	*i*PKP	PKPdf		06 48 02.8	+2.4	
WATA	**Walderalm**	**153.33**	**351**⇓	*i*PKP	PKPdf		06 48 07.2	+6.8	
MOTA	**Moosalm**	**153.39**	**352**⇑	*i*PKP	PKPdf		06 48 07.0	+6.5	
MOTA				*i*			06 48 17.7		
WTTA	**Wattenberg**	**153.39**	**351**⇑	*i*PKP	PKPdf		06 48 07.2	+6.7	
DAVA	**Damuels**	**153.58**	**354**⇑	*i*PKP	PKPdf		06 48 05.5	+4.7	
KDZ	**Kurdzhali**	**153.63**	**326**	*e*P	PKPdf		06 48 07.0	+6.0	
HYF	**Humbligny**	**153.67**	**5**	*e*PKP1	PKPdf		06 48 07.0	+6.1	
SSF	**Saint Saulge**	**153.93**	**4**	*e*PKP1	PKPdf		06 48 08.3	+7.0	
	comp=Z,136nm,1.3s								
DNZL	**Cakiroluk**	**153.96**	**315**	*i* P	PKPdf		06 48 09.9	+8.3	
RZN	**Rozhen**	**153.97**	**327**	*e*P	PKPdf		06 48 00.0	-1.5	
MFF	**Saint Martin d**	**153.99**	**10**	*e*PKP1	PKPdf		06 48 08.1	+6.7	
VTS	**Vitosha**	**154.03**	**330**	*e*P	PKPdf		06 47 59.0	-2.5	
LJU	**Ljubljana**	**154.04**	**346**	*e*PKPbc	PKPdf		06 48 08.4	+6.9	
LJU				*e*			06 48 19.0		
LJU				*e*			06 48 25.5		
ROBS	**Robic**	**154.06**	**348**	*e*PKPbc	PKPdf		06 48 10.1	+8.6	
AKS	**Akhisar**	**154.07**	**318**	P	PKPdf		06 48 19.3	+18	
DAVOX	**Davos**	**154.08**	**354**	PKPbc	PKPdf		06 48 09.0	+7.5	
	comp=Z,10nm,0.9s,baz=2.5,slow=5.4,SNR=6.4								
GMNA	**Gemona**	**154.09**	**348**	*e*PKP	PKPdf		06 48 08.5	+7.0	
SISC	**Sisak**	**154.12**	**343**	*i* PKP	PKPdf		06 48 01.6	0.0	
VOY	**Vojsko**	**154.19**	**347**	*e*PKPbc	PKPdf		06 48 08.5	+6.9	
AVF	**Avril sur Loir**	**154.19**	**4**	*e*PKP1	PKPdf		06 48 08.4	+6.8	
	comp=Z

MS1.5,3C,Samar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CNP	**Catarman**	**0.58**	**307**⇑	*e*P	Pb	07 03 34.3	+0.5
CNP				*e*S	Sb	07 03 44.0	+2.3
BESP	**Borongan**	**0.63**	**152**⇑	*e*P	Pb	07 03 35.2	+0.7
BESP				*e*S	Sb	07 03 45.1	+2.1
PLP	**Palo**	**1.00**	**189**	*e*P	Pn	07 03 40.0	-0.6
PLP				*i* S	Sb	07 03 54.6	+1.0
PVCP	**Virac**	**1.72**	**326**⇑	*e*P	Pn	07 03 52.5	+1.6

WEL 22 07:21:41.2±0.2,37.31S×177.43E,h126km±1km,ML4.1/6, 4C,Error ellipse: s-maj=1.5km s-min=1.4km az=0.0,Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WIZ	**White Island**	**0.29**	**221**	PN	P	07 21 58.4	-0.5
MXZ	**Matakaoa Point**	**0.74**	**110**	⇑PN	P	07 22 01.5	-0.1
MXZ				SN	S	07 22 17.3	+0.1
MARZ	**Manawahe**	**0.90**	**221**	PN	P	07 22 03.0	0.0
EDRZ	**Edgecumbe**	**0.96**	**214**	PN	P	07 22 03.4	-0.2
URZ	**Urewera**	**0.98**	**195**	⇑PN	P	07 22 03.5	-0.3
URZ				SN	S	07 22 20.3	-0.5
PUZ	**Puketiti**	**1.00**	**139**	⇑PN	P	07 22 03.9	-0.2
PUZ				SN	S	07 22 20.5	-0.8
MWZ	**Matawai**	**1.02**	**176**	⇑PN	P	07 22 04.0	-0.2
MWZ				SN	S	07 22 21.6	0.0
LIRZ	**Lichensteins R**	**1.08**	**230**	PN	P	07 22 04.8	0.0
TAZ	**Tarawera**	**1.17**	**218**	PN	P	07 22 06.2	+0.4
PATZ	**Paeroa**	**1.41**	**221**	PN	P	07 22 08.9	+0.4
KUZ	**Kuaotunu**	**1.48**	**292**	PN	P	07 22 08.1	-1.1
KNZ	**Kokohu**	**1.72**	**174**	PN	P	07 22 11.1	-0.9
BKZ	**Black Stump Fm**	**1.99**	**201**	*e*PN	P	07 22 13.9	-1.3
BKZ				SN	S	07 22 39.8	-1.4
MGZ	**Maungaku**	**2.25**	**221**	PN	P	07 22 18.6	-0.1
KAVZ	**Karewarewa**	**2.27**	**218**	PN	P	07 22 18.6	-0.3
NGZ	**Ngauruhoe**	**2.35**	**217**	PN	P	07 22 19.5	-0.5
NGZ				PN	P	07 22 19.7	-0.3
TWVZ	**Taurewa**	**2.35**	**221**	PN	P	07 22 19.8	-0.2
HIZ	**Hauiti**	**2.36**	**239**	PN	P	07 22 20.6	+0.4
CNZ	**Chateau**	**2.40**	**218**	PN	P	07 22 20.1	-0.5
TUVZ	**Tukino**	**2.40**	**215**	PN	P	07 22 19.6	-1.0
FWVZ	**Far West T-bar**	**2.44**	**217**	PN	P	07 22 20.3	-0.8
WNVZ	**Wahianoa**	**2.47**	**215**	*e*PN	P	07 22 20.4	-1.2
PWZ	**Pawanui**	**2.75**	**189**	PN	P	07 22 22.7	-2.6
PWZ				SN	S	07 22 50.3	-8.3
TSZ	**Takapari Road**	**2.97**	**202**	PN	P	07 22 25.1	-3.1
TSZ				SN	S	07 23 00.1	-3.8
WAZ	**Wanganui**	**3.10**	**217**	PN	P	07 22 28.5	-1.4
BFZ	**Birch Farm**	**3.49**	**195**	PN	P	07 22 31.4	-3.6
MRZ	**Mangatainoka R**	**3.64**	**203**	PN	P	07 22 33.1	-4.0
MRZ				SN	S	07 23 14.1	-5.7
KIW	**Kapiti Island**	**4.05**	**208**	PN	P	07 22 38.1	-4.4
MTW	**Mount Morrison**	**4.12**	**201**	PN	P	07 22 38.6	-4.9
MTW				SN	S	07 23 23.9	-7.4
CAW	**Cannon Point**	**4.21**	**205**	PN	P	07 22 39.7	-5.0
CAW				SN	S	07 23 26.2	-7.2
OTW	**Orongorongo Tu**	**4.38**	**205**	*e*PN	P	07 22 41.7	-5.3
MSWZ	**Moikau Station**	**4.43**	**202**	*e*PN	P	07 22 42.1	-5.6
MRW	**Makara Radio**	**4.45**	**208**	PN	P	07 22 43.0	-4.9
MRW				SN	S	07 23 32.5	-6.6
SNZO	**South Karori**	**4.51**	**207**	PN	P	07 22 43.6	-5.2
BHW	**Baring Head**	**4.54**	**205**	PN	P	07 22 43.9	-5.3
TUWZ	**Tuamarina**	**4.92**	**212**	PN	P	07 22 48.9	-5.3
TUWZ				SN	S	07 23 42.9	-7.6
NNZ	**Nelson**	**5.01**	**218**	*e*PN	P	07 22 50.4	-5.0
QRZ	**Quartz Range**	**5.18**	**226**	PN	P	07 22 53.3	-4.5
BSWZ	**Blackbirch Sta**	**5.18**	**211**	*e*PN	P	07 22 53.1	-4.7
THZ	**Tophouse**	**5.65**	**217**	PN	P	07 22 58.8	-5.3
THZ				SN	S	07 24 00.4	-7.9
KHZ	**Kahutara**	**5.91**	**209**	*e*PN	P	07 23 01.7	-5.8
LTZ	**Lake Taylor**	**6.74**	**214**	*e*PN	P	07 23 11.9	-7.0
MQZ	**McQueen's Vall**	**7.35**	**208**	*e*PN	P	07 23 19.2	-7.9
WVZ	**Waitaha Valley**	**7.70**	**220**	SN	S	07 24 46.2	-12
RPZ	**Rata Peaks**	**8.03**	**215**	SN	S	07 24 53.8	-12
ODZ	**Otahua Downs**	**9.26**	**211**	*e*PN	P	07 23 45.0	-7.7
TUZ	**Tuapeka**	**10.42**	**212**	*e*PN	P	07 24 01.2	-6.8

*MOS **22** 07:36:53.2±1.3,20.40S×174.52W,h10km,mb5.4/30, MS5.0/11,Error ellipse: s-maj=20.7km s-min=11.8km az=103.7*

*BJI **22** 07:36:56.3,20.23S×174.11W,h28km,mB5.5,mb5.4, Ms5.3,Msz5.0*

*NEIC **22** 07:36:57.0±0.1,20.52S×174.25W,mb5.2/56,MS5.0/100, Error ellipse: s-maj=7.6km s-min=4.0km az=142.0*

*IDC **22** 07:36:57.2±3.2,20.58S×174.36W,h29km±22km,mb5.0/20, mb1 5.1/22,mb1mx5.1/24,ML5.2/2,MS4.8/20,Ms1 4.8/20, ms1mx4.7/26,Error ellipse: s-maj=18.5km s-min=11.6km az=134.0*

*SYO **22** 07:36:57.0,20.52S×174.25W,h33km,MB5.2,MS5.0*

*HRVD **22** 07:36:57.0±0.2,20.60S×173.68W,h15km,MW5.4/72, Centroid moment Tensor Solution. LP body waves: s57,c113;Mantle waves: s72,c146; Half duration: 1s2 Moment tensor: Scale 10^17^Nm; Mrr0.82±.02; Mθθ-0.01±.01; Mϕϕ-0.81±.01; Mrθ0.42±.05; Mrϕ-0.42±.01; Mθϕ0.94±.05; Best double couple: M◎1.37×10^17^ NP1: ϕs202°,δ21°,λ88°. NP2:ϕs24°,δ69°,λ91°. Principal axes: T 1.29, Plg66°, Azm295°; N .17, Plg1°, Azm204°; P -1.46, Plg24°, Azm113°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 22 07:36:55.0±0.2,20.68S±0.04×174.13W±0.04,h32km, h32km±.9km:pP-P,n511,σ1s02/216,mb5.3/93,MS5.0/124, 46C-14D,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**13.43**	**95**	Pn	**P**	**07 39 56.4**	**-10**
	11nm,0.3s,baz=245,slow=5.8,SNR=18						
RAR				Sn	S	07 42 12.5	-23
	2.9nm,0.3s,baz=77,slow=23,SNR=3.1						
RAR	**Rarotonga**	**13.43**	**95**	*e*P	**P**	**07 39 55.1**	**-11**
BKM	**Butte a Klehm**	**16.92**	**277**	*i* P	**P**	**07 40 52.0**	**+0.8**
OUZ	**Omahuta**	**18.07**	**214**	P	**P**	**07 41 06.1**	**+0.5**
DZM	**Mont Dzumac**	**18.15**	**262**	*e*P	**P**	**07 41 08.8**	**+2.2**
DZM	**Mont Dzumac**	**18.15**	**262**	*e*P	**P**	**07 41 08.8**	**+2.2**
NOUC	**Port Laguerre**	**18.28**	**262**	*e*P	**P**	**07 41 09.9**	**+1.6**
NOUC	**Port Laguerre**	**18.28**	**262**	*e*P	**P**	**07 41 09.9**	**+1.6**
URZ	**Urewera**	**19.09**	**202**	P	**P**	**07 41 16.8**	**-1.1**
	8.7nm,0.3s,baz=344,slow=3.3,SNR=55						
URZ				S	**S**	**07 44 40.2**	**-6.0**
	1.0nm,0.3s,baz=312,slow=18,SNR=4.7						
URZ				LR	LR	07 47 00.5	
	comp=Z,2μm,18.2s,baz=221,slow=32						
MRZ	**Mangatainoka R**	**21.77**	**201**	*e*P	**P**	**07 41 45.0**	**-1.0**
SNZO	**South Karori**	**22.65**	**202**	PFAKE		07 42 10.0	+15
SNZO				LR	LR		
	comp=Z,3μm,19.0s,MS4.7						
TBI	**Tubuai**	**23.02**	**101**	*e*P	**P**	**07 41 58.3**	**-0.2**
	comp=Z,245nm,1.1s,mb5.5						
TBI				*e*L		07 46 08.3	
TBI				*e*R		07 47 15.2	
	comp=Z,5μm,28.0s,baz=271						
QRZ	**Quartz Range**	**23.07**	**207**	*e*P	**P**	**07 42 00.6**	**+1.7**
PAE	**Paea**	**23.38**	**87**	*e*P	**P**	**07 42 00.6**	**-1.4**
	comp=Z,117nm,1.1s,mb5.2						
PPT	**Papeete**	**23.40**	**87**	*e*P	**P**	**07 42 01.3**	**-1.0**
	comp=Z,65nm,1.1s,mb5.0						
PPT	**Papeete**	**23.40**	**87**	*e*L		07 46 11.6	
PPT				*e*R		07 47 22.5	
	comp=Z,5μm,26.2s,baz=258						
TVO	**Taravao**	**23.66**	**87**	*e*P	**P**	**07 42 03.4**	**-1.4**
	comp=Z,122nm,1.0s,mb5.3						
THZ	**Tophouse**	**23.71**	**205**	*e*P	**P**	**07 42 04.4**	**-0.7**
KHZ	**Kahutara**	**24.04**	**203**	*e*P	**P**	**07 42 07.9**	**-0.4**
LTZ	**Lake Taylor**	**24.83**	**204**	*e*P	**P**	**07 42 15.6**	**-0.3**
PMOR	**Pomariorio Ree**	**25.59**	**82**	*e*P	**P**	**07 42 21.9**	**-1.4**
	comp=Z,153nm,1.2s,mb5.4						
WVZ	**Waitaha Valley**	**25.69**	**206**	*e*P	**P**	**07 42 23.3**	**-0.7**
RPZ	**Rata Peaks**	**26.09**	**205**	P	**P**	**07 42 27.7**	**0.0**
	comp=Z,40nm,0.5s,mb5.2,baz=259,slow=1.8,SNR=35						
RPZ	**Rata Peaks**	**26.09**	**205**	*e*P	**P**	**07 42 27.2**	**-0.5**
BWZ	**Berwen**	**27.24**	**205**	*e*P	**P**	**07 42 36.8**	**-1.4**
ODZ	**Otahua Downs**	**27.37**	**204**	*e*P	**P**	**07 42 39.3**	**-0.1**
AXZ	**Alexandra**	**28.07**	**205**	*e*P	**P**	**07 42 50.5**	**+4.8**
ARMA	**Armidale**	**32.28**	**246**	*e*P	**P**	**07 43 22.6**	**-0.6**
KWAJ	**Kwajalein Atol**	**34.36**	**327**	PFAKE		07 43 50.0	+8.6
KWAJ				LR	LR		
	comp=Z,3μm,20.0s,MS5.0						
CNB	**Canberra Magne**	**35.16**	**238**	*e*P	**P**	**07 43 47.4**	**-0.7**
	comp=Z,58nm,0.7s,mb5.6						
CTA	**Charters Tower**	**37.08**	**264**	*e*P	**P**	**07 44 03.2**	**-1.2**
	comp=Z,31nm,0.6s,mb5.3						
CTAO	**Charters Tower**	**37.08**	**264**	*e*P	**P**	**07 44 02.2**	**-2.2**
	comp=Z,39nm,0.6s,mb5.4						
CTAO				LR	LR		
	comp=Z,2μm,19.0s,MS4.9						
TOO	**Toolangi**	**38.75**	**235**	*e*P	**P**	**07 44 17.7**	**-0.6**
	comp=Z,25nm,0.5s,mb5.2						
PMG	**Port Moresby**	**38.93**	**281**	P	**P**	**07 44 17.7**	**-2.3**
	comp=Z,45nm,0.8s,mb5.2,baz=78,slow=3.0,SNR=9.4						
PMG				LR	LR	07 57 28.5	
	comp=Z,1μm,21.5s,MS4.7,baz=152,slow=32						
PMG	**Port Moresby**	**38.93**	**281**	*e*P	**P**	**07 44 18.1**	**-1.9**
	comp=Z,53nm,0.8s,mb5.3						
PMG				LR	LR		
	comp=Z,1μm,19.0s,MS4.8						
TAU	**Tasmania Unive**	**39.09**	**227**	*e*P	**P**	**07 44 21.0**	**-0.1**
	comp=Z,15nm,0.6s,mb4.9						
TAU				LR	LR		
	comp=Z,2μm,19.0s,MS5.0						
STKA	**Stephens Creek**	**40.99**	**245**	*e*P	**P**	**07 44 36.3**	**-0.5**
	comp=Z,26nm,0.6s,mb5.0						
STKA	**Stephens Creek**	**40.99**	**245**	P	**P**	**07 44 36.5**	**-0.4**
	comp=Z,28nm,0.6s,mb5.1,baz=91,slow=9.3,SNR=77						
STKA				LR	LR	07 59 59.1	
	comp=Z,2μm,18.3s,MS4.9,baz=74,slow=34						
WAKE	**Wake Island**	**43.95**	**333**	PFAKE		07 45 10.0	+8.8
WAKE				LR	LR		
	comp=Z,624nm,22.0s,MS4.5						
KIP	**Kipapa**	**44.71**	**22**	*e*P	**P**	**07 45 04.6**	**-2.8**
AS12	**Alice Springs**	**48.00**	**256**	*e*P	**P**	**07 45 31.8**	**-1.6**
	comp=Z,38nm,0.9s,mb5.4						
ASAR	**Alice Springs**	**48.00**	**256**	P	**P**	**07 45 31.2**	**-2.1**
	comp=Z,39nm,0.8s,mb5.5,baz=100,slow=7.8,SNR=255						
ASAR				PcP	PcP	07 47 01.8	+0.3
	comp=Z,10nm,0.7s,baz=102,slow=3.8,SNR=6.3						
ASAR				S	**S**	**07 52 25.8**	**-2.3**
	comp=Z,1.8nm,1.0s,baz=96,slow=16,SNR=3.2						
ASAR				LR	LR	08 05 43.0	
	comp=Z,1μm,18.8s,MS4.8,baz=96,slow=36						
WB2	**Warramunga Arr**	**48.15**	**261**	*e*P	**P**	**07 45 31.8**	**-2.7**
WB2				*e*		07 47 02.2	
WRAB	**Tennant Creek**	**48.16**	**261**	*e*P	**P**	**07 45 31.4**	**-3.2**
	comp=Z,30nm,0.6s,mb5.5						
WRAB				LR	LR		
	comp=Z,1μm,21.0s,MS4.8						
WRA	**Warramunga Arr**	**48.16**	**261**	P	**P**	**07 45 31.9**	**-2.8**
	comp=Z,8.5nm,0.5s,mb5.0,baz=96,slow=7.8,SNR=125						
WRA				PcP	PcP	07 47 02.9	+0.9
	comp=Z,7.6nm,0.6s,baz=99,slow=3.5,SNR=5.7						
WRA				S	**S**	**07 52 31.5**	**+1.0**
	comp=Z,0.8nm,0.8s,baz=94,slow=14,SNR=3.5						
WRA				LR	LR	08 05 05.2	
	comp=Z,844nm,18.6s,MS4.8,baz=100,slow=35						
WRA	**Warramunga Arr**	**48.16**	**261**	P	**P**	**07 45 31.9**	**-2.7**
WRA						07 47 02.9	
WRA				S	**S**	**07 52 31.5**	**+1.1**
WRA				pmax	pmax		
	comp=Z,9.0nm,0.5s						
WRA				pmax	pmax		
	comp=Z,8.0nm,0.6s						
WRA				smax			
	comp=Z,1.0nm,0.8s						
WRA				MLR	MLR		
	comp=Z,844nm,18.6s						
KAKA	**Kakadu**	**51.64**	**270**	*e*P	**P**	**07 45 58.9**	**-2.4**
	comp=Z,44nm,0.6s,mb5.6						
FORT	**Forrest**	**52.55**	**247**	*e*P	**P**	**07 46 06.0**	**-2.0**
	comp=Z,190nm,0.6s,mb6.2						
FITZ	**Fitzroy Crossi**	**56.59**	**261**	*e*P	**P**	**07 46 36.2**	**-1.4**
	comp=Z,5.1nm,0.5s,mb4.8						
SBA	**Scott Base**	**57.96**	**185**	*e*P	**P**	**07 46 48.5**	**+2.0**
	comp=Z,35nm,0.9s,mb5.4						
SBA				LR	LR		
	comp=Z,764nm,19.0s,MS4.8						
VNDA	**Vanda**	**58.09**	**186**	P	**P**	**07 46 48.2**	**+0.9**
	comp=Z,8.8nm,0.8s,mb4.8,baz=5.1,slow=7.5,SNR=52						
VNDA				LR	LR	08 07 44.7	
	comp=Z,428nm,19.6s,MS4.6,baz=12,slow=32						
VNDA	**Vanda**	**58.09**	**186**	*e*P	**P**	**07 46 48.5**	**+1.1**
	comp=Z,6.8nm,0.9s,mb4.7						
VNDA				LR	LR		
	comp=Z,318nm,20.0s,MS4.4						
KLBR	**Kellerberrin**	**61.26**	**245**	*e*P	**P**	**07 47 08.8**	**-1.0**
	comp=Z,71nm,0.9s,mb5.8						
NWAO	**Narrogin (SRO)**	**61.52**	**243**	PFAKE		07 47 20.0	+8.4
NWAO				LR	LR		
	comp=Z,1μm,19.0s,MS5.1						
MUN	**Mundaring**	**62.51**	**244**	*e*P	**P**	**07 47 17.0**	**-1.2**
	comp=Z,54nm,1.1s,mb5.6						
CBIJ	**Chichi jima**	**63.60**	**317**	LR	LR	08 09 18.8	
	comp=Z,646nm,21.2s,MS4.8,baz=120,slow=31						
JHJ	**Hachijo jima 2**	**69.26**	**320**	P	**P**	**07 48 00.8**	**-0.5**
	comp=Z,324nm,1.0s,mb6.2,baz=171,slow=10,SNR=4.7						
QSPA	**South Pole Qui**	**69.40**	**180**	*e*P	**P**	**07 48 03.2**	**+1.7**
	comp=Z,330nm,0.9s,mb6.3						
QSPA				LR	LR		
	comp=Z,6μm,19.0s,MS5.9						
ADK	**Adak**	**72.28**	**358**	*e*P	**P**	**07 48 17.8**	**-1.5**
MIR	**Mirnyy**	**72.36**	**205**⇑	*e*P	**P**	**07 48 21.0**	**+1.5**
MIR				pmax	pmax		
	comp=Z,100nm,2.0s,mb5.4						
MAJO	**Matsushiro**	**72.56**	**321**	*e*P	**P**	**07 48 20.3**	**-0.9**
	comp=Z,46nm,0.8s,mb5.5						
MAJO				*e*pP	pP	07 48 29.9	-1.2
MAT	**Matsushiro**	**72.56**	**321**	P	**P**	**07 48 20.3**	**-0.9**
MAT				*e*S	S	07 57 57.6	+15
MAT	**Matsushiro**	**72.56**	**321**	*e*P	**P**	**07 48 20.0**	**-1.2**
	comp=Z,45nm,0.9s,mb5.4						
MAT				*e*S	S	07 57 58.0	+16
JOW	**Kunigami**	**73.09**	**308**	P	**P**	**07 48 24.1**	**-0.5**
	comp=Z,93nm,1.2s,mb5.6,baz=155,slow=6.7,SNR=11						
JOW				LR	LR	08 14 36.7	
	comp=Z,385nm,20.8s,MS4.7,baz=112,slow=31						
SMY	**Shemya**	**73.81**	**353**	PFAKE		07 48 40.0	+12
SMY				LR	LR		
	comp=Z,3μm,20.0s,MS5.5						
FX1	**Attu Island--F**	**74.07**	**352**	P	**P**	**07 48 29.4**	**-0.2**
	comp=Z,39nm,0.6s,mb5.5,baz=153,slow=7.6,SNR=8.5						
FX1	**Attu Island--F**	**74.07**	**352**	P	**P**	**07 48 29.4**	**-0.3**
FX1				pmax	pmax		
	comp=Z,39nm,0.6s						
FX1	**Attu Island--F**	**74.07**	**352**	*e*P	**P**	**07 48 27.9**	**-1.8**
UNV	**Unalaska Valle**	**74.50**	**5**	PFAKE		07 48 40.0	+7.9
UNV				LR	LR		
	comp=Z,1μm,22.0s,MS5.2						
JNU	**Nakatsue**	**74.94**	**315**	P	**P**	**07 48 34.8**	**-0.3**
	comp=Z,52nm,0.9s,mb5.5,baz=76,slow=5.5,SNR=26						
JNU				LR	LR	08 18 18.6	
	comp=Z,284nm,19.8s,MS4.6,baz=66,slow=33						
ASAJ	**Asahikawa**	**75.67**	**329**	P	**P**	**07 48 39.4**	**+0.3**
	comp=Z,32nm,0.8s,mb5.3,baz=172,slow=8.8,SNR=9.2						
ASAJ				LR	LR	08 19 58.7	
	comp=Z,895nm,18.9s,MS5.1,baz=160,slow=34						
SAO	**San Andreas Ge**	**75.72**	**41**	PFAKE		07 48 50.0	+10
SAO				LR	LR		
	comp=Z,1μm,20.0s,MS5.2						
SKR	**Severo-Kuril's**	**75.74**	**341**	*e*P	**P**	**07 48 38.0**	**-1.3**
HOPS	**Hopland**	**76.19**	**39**	PFAKE		07 48 50.0	+7.9
HOPS				LR	LR		
	comp=Z,956nm,19.0s,MS5.1						
MWC	**Mount Wilson**	**76.32**	**45**	*e*P	**P**	**07 48 42.6**	**-0.3**
PFO	**Pinyon Flat Ob**	**77.03**	**46**	*e*P	**P**	**07 48 46.0**	**-0.9**
	comp=Z,10nm,0.9s,mb4.8						
PFO				LR	LR		
	comp=Z,678nm,20.0s,MS5.0						
PET	**Petropavlovsk**	**77.10**	**344**	*e*P	**P**	**07 48 46.9**	**0.0**
PET				*e*	pP	07 48 57.1	+0.3
PET				*e*S	S	07 58 26.5	-5.7
PET				*e**SS		07 59 07.9	
PET				*e*SS	SS	08 03 27.4	-5.3
PET				pmax	pmax		
	comp=Z,254nm,15.4s						
PET				MLR	MLR		
	comp=Z,503nm,16.0s,MS4.9						
PET	**Petropavlovsk**	**77.10**	**344**	*e*P	**P**	**07 48 45.6**	**-1.3**
PET				LR	LR		
	comp=Z,657nm,21.0s,MS4.9						
CMB	**Columbia Colle**	**77.18**	**41**	*e*P	**P**	**07 48 47.3**	**-0.4**
	comp=Z,12nm,1.0s,mb4.8						
CMB				LR	LR		
	comp=Z,1μm,19.0s,MS5.2						
TATO	**Taipei**	**77.29**	**303**	PFAKE		07 49 00.0	+11
TATO				LR	LR		
	comp=Z,650nm,21.0s,MS4.9						
OHCM	**Honcut**	**77.35**	**39**	*e*P	**P**	**07 48 47.5**	**-1.1**
WDC	**Whiskeytown Da**	**77.55**	**38**	*e*P	**P**	**07 48 49.1**	**-0.5**
	comp=Z,9.7nm,1.0s,mb4.7						
WDC				LR	LR		
	comp=Z,682nm,19.0s,MS5.0						
YSS	**Yuzh-Sakhalins**	**77.73**	**331**⇑	*i*P	**P**	**07 48 50.4**	**-0.1**
YSS				*e*	pP	07 49 00.0	-0.5
YSS				pmax	pmax		
	comp=Z,90nm,1.0s,mb5.7						
YSS	**Yuzh-Sakhalins**	**77.73**	**331**	*e*P	**P**	**07 48 50.0**	**-0.5**
	comp=Z,76nm,1.0s,mb5.6						
YSS				*e*pP	pP	07 49 00.7	+0.2
YSS				LR	LR		
	comp=Z,870nm,20.0s,MS5.1						
MTUM	**Tungsten Hills**	**77.89**	**42**	*e*P	**P**	**07 48 51.7**	**+0.2**
YBH	**Yreka Blue Hor**	**78.21**	**37**	*e*P	**P**	**07 48 53.2**	**-0.1**
	comp=Z,8.4nm,0.8s,mb4.7						
YBH				LR	LR		
	comp=Z,622nm,20.0s,MS4.9						
BEKR	**Beckwourth**	**78.36**	**39**	*e*P	**P**	**07 48 51.8**	**-2.2**
	comp=Z,10.0nm,1.0s,mb4.7						
WCN	**Washoe City**	**78.36**	**40**	*e*P	**P**	**07 48 54.0**	**-0.1**
	comp=Z,20nm,1.2s,mb4.9						
HUMO	**Hull Mountain**	**78.66**	**36**	*e*P	**P**	**07 48 55.9**	**+0.2**
NVAR	**Mina Array Bea**	**78.71**	**42**	P	**P**	**07 48 56.6**	**+0.6**
	comp=Z,22nm,1.0s,mb5.1,baz=213,slow=6.6,SNR=83						
NVAR				LR	LR	08 19 58.7	
	comp=Z,1μm,18.3s,MS5.2,baz=105,slow=33						
PAHR	**Pah Rah Range**	**78.84**	**40**	P	**P**	**07 48 58.0**	**+1.3**
TPH	**Tonopah**	**79.17**	**42**	*e*P	**P**	**07 48 58.6**	**+0.1**
	comp=Z,25nm,1.0s,mb5.1						
TPH				LR	LR		
	comp=Z,750nm,19.0s,MS5.0						
NEN	**Nelson**	**79.29**	**45**	*e*P	**P**	**07 48 59.6**	**+0.4**
KS15	**Wonju Array Si**	**79.48**	**317**	*e*P	**P**	**07 49 00.9**	**+0.6**
KS15				*e*pP	pP	07 49 09.9	-0.4
COR	**Corvallis**	**79.80**	**34**	PFAKE		07 49 10.0	+8.2
COR				LR	LR		
	comp=Z,3μm,19.0s,MS5.7						
KDAK	**Kodiak Island**	**80.20**	**12**	*e*P	**P**	**07 49 02.5**	**-1.2**
	comp=Z,36nm,1.3s,mb5.1						
KDAK				LR	LR		
	comp=Z,844nm,21.0s,MS5.1						
TUC	**Tucson**	**80.27**	**50**	*e*P	**P**	**07 49 04.9**	**+0.3**
	comp=Z,14nm,1.2s,mb4.8						
TUC				LR	LR		
	comp=Z,655nm,20.0s,MS5.0						
INCN	**Inchon**	**80.31**	**316**	*e*P	**P**	**07 49 05.0**	**+0.3**
	comp=Z,82nm,1.0s,mb5.6						
INCN				*e*pP	pP	07 49 15.1	+0.4
INCN				LR	LR		
	comp=Z,497nm,20.0s,MS4.9						
BMN	**Battle Mountai**	**80.59**	**40**	*e*P	**P**	**07 49 06.1**	**0.0**
	comp=Z,19nm,1.2s,mb4.9						
BMN				LR	LR		
	comp=Z,753nm,19.0s,MS5.1						
WVOR	**Wild Horse Val**	**80.98**	**38**	*e*P	**P**	**07 49 07.7**	**-0.5**
	comp=Z,21nm,1.0s,mb5.0						
WVOR				LR	LR		
	comp=Z,1μm,19.0s,MS5.2						
OCWA	**Octopus Mounta**	**81.51**	**31**	PFAKE		07 49 20.0	+9.2
OCWA				LR	LR		
	comp=Z,333nm,21.0s,MS4.7						
WUAZ	**Wupatki**	**81.56**	**47**	*e*P	**P**	**07 49 12.0**	**+0.7**
	comp=Z,19nm,1.2s,mb4.9						
WUAZ				LR	LR		
	comp=Z,426nm,19.0s,MS4.8						
LON	**Longmire**	**82.03**	**33**	*e*P	**P**	**07 49 13.0**	**-0.5**
RMW	**Rattlesnake Mo**	**82.50**	**33**	P	**P**	**07 49 15.7**	**-0.2**
MAW	**Mawson**	**82.60**	**199**⇑	*i*P	**P**	**07 49 18.2**	**+2.2**
	comp=Z,16nm,0.8s,mb5.1						
MAW	**Mawson**	**82.60**	**199**	P	**P**	**07 49 18.3**	**+2.2**
	comp=Z,17nm,0.8s,mb5.2,baz=130,slow=7.1,SNR=24						
MAW				LR	LR	08 25 11.9	
	comp=Z,624nm,18.1s,MS5.0,baz=105,slow=35						
MAW	**Mawson**	**82.60**	**199**	P	**P**	**07 49 18.3**	**+2.3**
MAW				pmax	pmax		
	comp=Z,17nm,0.8s						
MAW				MLR	MLR		
	comp=Z,624nm,18.1s						
MAW	**Mawson**	**82.60**	**199**	*e*P	**P**	**07 49 17.5**	**+1.5**
	comp=Z,10nm,0.6s,mb5.0						
MAW				*e*pP	pP	07 49 26.9	+0.8
MVU	**Marysvale**	**82.63**	**44**	*e*P	**P**	**07 49 17.9**	**+1.0**
	comp=Z,22nm,1.0s,mb5.1						
MVU				LR	LR		
	comp=Z,486nm,19.0s,MS4.9						
MSU	**Marysvale**	**82.66**	**44**	*e*P	**P**	**07 49 18.0**	**+1.0**
MDJ	**Mudanjiang**	**82.79**	**323**	P	**P**	**07 49 18.3**	**+0

DAU **Daniels Canyon 84.30 43** *e*P P 07 49 25.9 +0.6
DL2 **Dalian 84.38 315** P P 07 49 27.3 +1.6
DL2 AMB AMB
comp=Z,50nm,1.1s,mb5.6
DL2 AMB AMB
comp=Z,390nm,5.6s
PMR Palmer 84.40 12 *e*P P 07 49 24.7 -0.6
comp=Z,19nm,1.3s,mb5.1
PMR LR LR
comp=Z,463nm,20.0s,MS4.9
KLR Kul'dur 84.57 328 *e*P P 07 49 27.0 +0.6
TCUT Toone Canyon 84.59 42 *e*P P 07 49 27.3 +0.6
DPW Davenport 84.62 34 *e*P P 07 49 26.6 -0.1
DIV Divide 84.66 13 PFAKE 07 49 40.0 +13
DIV LR LR
comp=Z,25µm,22.0s,MS6.5
PV10 Paradox Valley 84.67 46 *e*P P 07 49 27.4 +0.3
CN2 Changchun 84.69 321 *e*P P 07 49 27.9 +0.8
CN2 *e*AP pP 07 49 38.1 +0.8
CN2 *e*S S 07 59 51.6 +0.6
CN2 AMB AMB
comp=Z,60nm,1.2s,mb5.6
CN2 LR LR
comp=N,310nm,18.0s,MS4.9
CN2 LR LR
comp=E,380nm,18.0s,MS4.9
CN2 LR LR
comp=Z,420nm,17.0s,MS4.9
SNY Shenyang 84.71 318 ⇓P P 07 49 29.0 +1.7
SNY AMB AMB
comp=Z,30nm,2.1s,mb5.0
ANMO Albuquerque 84.72 50 *e*P P 07 49 29.1 +1.6
ANMO Albuquerque 84.72 50 *e*P P 07 49 28.0 +0.5
comp=Z,22nm,1.1s,mb5.2
ANMO LR LR
comp=Z,429nm,20.0s,MS4.8
SML Sawmill 84.75 12 *e*P P 07 49 26.6 -0.4
HWUT Hardware Ranch 84.76 42 *e*P P 07 49 27.1 -0.4
comp=Z,12nm,0.9s,mb5.0
HWUT LR LR
comp=Z,893nm,19.0s,MS5.2
PNT Penticton 84.82 32 P P 07 49 28.0 +0.4
PV01 Paradox Valley 84.86 46 *e*P P 07 49 28.7 +0.6
GDL2 Guadalupe Moun 84.93 53 *e*P P 07 49 29.1 +0.5
MA2 Magadan 84.97 343 *e*P P 07 49 27.1 -1.0
MA2 LR LR
comp=Z,721nm,20.0s,MS5.1
ANM Nome 85.23 4 *e*P P 07 49 29.7 +0.3
NEW Newport 85.44 34 *e*P P 07 49 29.8 -1.0
comp=Z,6.0nm,0.9s,mb4.7
NEW LR LR
comp=Z,734nm,19.0s,MS5.1
TOA Tolsona 85.45 13 *e*P P 07 49 31.2 +0.7
WHN Wuhan 85.49 305 ⇑P P 07 49 32.5 +1.0
WHN AMB AMB
comp=Z,107nm,1.4s,mb5.8
AHID Auburn Hatcher 85.68 41 *e*P P 07 49 32.2 +0.1
comp=Z,22nm,1.0s,mb5.3
AHID LR LR
comp=Z,767nm,19.0s,MS5.1
CPRX Cap Rock 85.69 52 P P 07 49 32.1 -0.3
MCMT McKenzie Canyo 85.78 39 *e*P P 07 49 32.9 +0.3
TNA Tin City 86.09 3 *e*P P 07 49 33.4 -0.2
comp=Z,8.6nm,0.7s,mb5.1
TNA *e*pP pP 07 49 44.2 +0.5
TNA LR LR
comp=Z,203nm,21.0s,MS4.5
MSO Missoula 86.30 37 *e*P P 07 49 34.0 -1.1
comp=Z,11nm,1.1s,mb5.0
MSO LR LR
comp=Z,706nm,20.0s,MS5.1
MCK McKinley 86.41 11 *e*P P 07 49 34.8 -0.4
comp=Z,35nm,0.8s,mb5.6
MCK *e*pP pP 07 49 46.2 +0.9
MCK LR LR
comp=Z,350nm,22.0s,MS4.7
KSWY Kelly School 86.44 41 *e*P P 07 49 36.7 +0.8
QLMT Earthquake Lak 86.62 39 *e*P P 07 49 37.6 +0.9
BW06 Boulder Array 86.64 42 *e*P P 07 49 36.4 -0.5
comp=Z,8.4nm,0.9s,mb5.0
BW06 LR LR
comp=Z,660nm,19.0s,MS5.1
PDAR Pinedale Array 86.64 42 P P 07 49 37.1 +0.2
comp=Z,10.0nm,1.0s,mb5.0,baz=222,slow=2.0,SNR=39
PDAR LR LR 08 24 10.8
comp=Z,608nm,18.1s,MS5.0,baz=247,slow=33
CHMT Chamberlain Mo 86.74 37 *e*P P 07 49 36.6 -0.6
SDCO Great Sand Dun 86.76 48 PFAKE 07 49 50.0 +12
SDCO LR LR
comp=Z,505nm,21.0s,MS4.9
IPM Ipoh 86.79 276 ⇓*e*P P 07 49 39.0 +0.7
comp=Z,46nm,0.8s,mb5.8
DLBC Dease Lake 86.84 22 *e*P P 07 49 37.1 -0.4
DLBC *e*pP pP 07 49 49.8 +2.2
LCCM Lewis and Clar 86.92 38 P P 07 49 38.9 +0.8
BOZ Bozeman (W) 86.95 39 *e*P P 07 49 38.1 -0.2
comp=Z,6.3nm,0.9s,mb4.8
BOZ LR LR
comp=Z,507nm,19.0s,MS5.0
SYO Syowa Base 87.32 192 ⇓P P 07 49 40.6 +1.1
SYO Syowa Base 87.32 192 ⇑PcP PcP 07 49 46.0 +4.1
SYO Syowa Base 87.32 192 ⇓pP pP 07 49 48.1 -1.6
SYO Syowa Base 87.32 192 ⇓*e*P P 07 49 40.6 +1.1
SYO ⇑*e*PcP PcP 07 49 46.0 +4.1
SYO ⇓*e*PP Px 07 49 48.1
SEY Seymchan 87.41 345 *e*P P 07 49 41.0 +0.9
SEY *e* 07 52 59.2
SEY *e*S S 08 00 09.8 -6.9
SEY SS SS 08 05 56.5 -8.7
SEY SSS SSS 08 09 35.9 -0.7
SEY pmax pmax
comp=N,30nm,0.9s
SEY pmax pmax
comp=Z,50nm,0.9s,mb5.7
SEY MLR MLR
comp=N,800nm,19.0s,MS5.2
SEY MLR MLR
comp=Z,1µm,19.0s,MS5.4
SEY MLR MLR
comp=E,300nm,17.0s,MS5.2
HRY Holter Researc 87.43 38 *e*P P 07 49 40.0 -0.6
WALA Waterton Lakes 87.62 35 *e*P P 07 49 41.0 -0.4
comp=E,15nm,1.1s,mb5.1
JCT Junction City 87.64 56 *e*P P 07 49 42.1 +0.1
comp=E,3.6nm,0.6s,mb4.8
JCT LR LR
comp=Z,492nm,21.0s,MS4.9
COLA College 87.64 11 ⇑*i*P P 07 49 40.0 -1.2
COLA College 87.64 11 *e*P P 07 49 40.4 -0.8
comp=Z,45nm,1.0s,mb5.7
COLA LR LR
comp=Z,573nm,19.0s,MS5.0
ISCO Idaho Springs 87.68 46 PFAKE 07 49 50.0 +8.0
ISCO LR LR
comp=Z,327nm,19.0s,MS4.8
VNA3 Neumayer Olymp 87.69 175 *e* P 07 49 48.6 +7.3
VNA3 Neumayer Olymp 87.69 175 ⇓*i*P P 07 49 44.5 +3.2
VNA3 *e* 07 49 48.6
SNAA Sanae 87.70 177 *e*P P 07 49 42.1 +0.8
ILAR Eielson Array 87.73 11 P P 07 49 41.3 -0.3
comp=Z,9.8nm,0.8s,mb5.1,baz=219,slow=5.2,SNR=110
PKKPbc
ILAR 08 07 29.1
comp=Z,0.2nm,0.6s,baz=326,slow=2.6,SNR=6.8
IMA Indian Mountai 87.85 8 *e*P P 07 49 42.7 +0.6
VNA2 Neumayer--Watz 88.18 176 *e* P 07 49 50.6 +7.0
VNA2 Neumayer--Watz 88.18 176 ⇓*i*P P 07 49 46.3 +2.7
VNA2 *e* 07 49 50.6
VNA1 Neumayer--Stat 88.38 175 *e* P 07 49 52.6 +8.0
VNA1 Neumayer--Stat 88.38 175 ⇑*i*P P 07 49 48.3 +3.7
VNA1 *e* 07 49 52.6
BJT Baijiatuau 88.59 314 *e*P P 07 49 46.3 0.0
comp=Z,22nm,0.8s,mb5.5
BJT LR LR
comp=Z,490nm,19.0s,MS4.9
BJI Beijing 88.59 314 *e*P P 07 49 47.3 +1.0
BJI S S 08 00 23.3 -5.0
BJI AMB AMB
comp=Z,57nm,1.6s,mb5.7
BJI LR LR
comp=N,243nm,17.2s,MS5.0
BJI LR LR
comp=E,497nm,19.9s,MS5.0
BJI LR LR
comp=Z,375nm,22.5s,MS4.8
DAWY Dawson 88.67 15 *e*P P 07 49 46.3 +0.2

DAWY *e*pP pP 07 49 58.4 +2.2
MAIT Maitri 88.70 182 *e*P P 07 49 47.2 +1.1
EFI East Falkland 88.94 146 PFAKE 07 50 00.0 +12
EFI LR LR
comp=Z,520nm,22.0s,MS4.9
ENH Enshi 89.16 303 *e*P P 07 49 50.1 +0.8
comp=Z,226nm,1.4s,mb6.3
ENH *e*pP pP 07 49 59.9 +0.5
ENH LR LR
comp=Z,351nm,19.0s,MS4.8
KKTK Khon Kaen 89.39 288 P P 07 49 52.0 +1.4
BILL Bilibino 89.62 353 *c i*P P 07 49 50.6 +0.1
BILL pmax pmax
comp=Z,54nm,2.6s,mb5.4
BILL Bilibino 89.62 353 *e*P P 07 49 50.2 -0.3
comp=Z,13nm,0.8s,mb5.3
BILL *e*pP pP 07 49 59.8 -0.9
GYA Guiyang 89.91 298 ⇑*i*P P 07 49 54.4 +1.6
GYA AP pP 07 50 04.9 +1.9
GYA XP sP 07 50 09.3 +3.1
GYA PP PP 07 53 30.3 +2.3
GYA SKS SKS 08 00 19.8 -8.1
GYA S S 08 00 46.6 +5.9
GYA AMB AMB
comp=Z,30nm,1.4s,mb5.4
GYA AMB AMB
comp=Z,280nm,5.4s
WMOK Wichita Mounta 90.23 53 PFAKE 07 50 10.0 +16
WMOK LR LR
comp=Z,332nm,19.0s,MS4.8
HKT Hockley 90.54 58 PFAKE 07 50 10.0 +14
HKT LR LR
comp=Z,472nm,19.0s,MS4.9
RSSD Black Hills 90.80 43 *e*P P 07 49 56.2 -0.3
comp=Z,12nm,1.0s,mb5.2
RSSD LR LR
comp=Z,787nm,19.0s,MS5.2
HIA Hailar 90.97 323 PFAKE 07 50 10.0 +13
HIA LR LR
comp=Z,1µm,21.0s,MS5.2
XAN Xi'an 91.14 306 P P 07 49 59.5 +1.1
XAN XP sP 07 50 09.8 -2.0
XAN AMB AMB
comp=Z,51nm,1.5s,mb5.6
CBKS Cedar Bluff 91.28 49 PFAKE 07 50 10.0 +11
CBKS LR LR
comp=Z,456nm,19.0s,MS4.9
NST Nakhon Sawan 91.56 286 P P 07 50 01.0 +0.4
HHC Hu-ho-hao-te 92.09 313 *e*P P 07 50 03.0 +0.4
HHC AMB AMB
comp=Z,20nm,1.7s,mb5.2
HHC AMB AMB
comp=Z,164nm,5.6s
CLNS Chul'man 92.50 331 *e*P P 07 50 03.3 -0.7
CLNS pmax pmax
comp=Z,20nm,1.3s,mb5.3
CLNS pmax pmax
comp=N,2.0nm,0.5s
CLNS pmax pmax
comp=E,6.0nm,0.7s
CLNS pmax pmax
comp=E,10.0nm,1.0s
CLNS pmax pmax
comp=Z,3.0nm,0.5s,mb4.9
CLNS pmax pmax
comp=N,10.0nm,0.6s
KMI Kunming 92.67 296 *e*P P 07 50 08.1 +2.5
KMI AP pP 07 50 18.0 +2.3
KMI XP sP 07 50 22.1 +3.1
KMI SKS SKS 08 00 32.4 -12
KMI LR LR
comp=N,355nm,19.6s,MS5.0
KMI LR LR
comp=E,482nm,21.1s,MS5.0
KMI AMB AMB
comp=Z,21nm,1.5s,mb5.3
JTS JuntasAbangare 92.81 80 LR LR 08 23 20.1
comp=Z,495nm,21.9s,MS4.9,baz=354,slow=30
JTS JuntasAbangare 92.81 80 PFAKE 07 50 20.0 +14
JTS LR LR
comp=Z,71nm,21.0s,MS4.1
INK Inuvik 93.53 14 P P 07 50 08.8 +0.2
comp=Z,8.9nm,0.8s,mb5.3,baz=213,slow=4.8,SNR=46
INK LR LR 08 25 19.0
comp=Z,435nm,20.8s,MS4.9,baz=26,slow=31
INK Inuvik 93.53 14 *e*P P 07 50 08.1 -0.4
INK *e*pP pP 07 50 19.3 +0.6
CM31 Chiang Mai Arr 93.60 288 *e*P P 07 50 11.0 +1.0
comp=Z,20nm,0.8s,mb5.6
CMAR Chiang Mai Arr 93.60 288 P P 07 50 11.2 +1.2
comp=Z,22nm,0.8s,mb5.6,baz=119,slow=2.9,SNR=73
CMAR LR LR 08 33 19.9
comp=Z,288nm,18.6s,MS4.8,baz=115,slow=36
CMAR Chiang Mai Arr 93.60 288 P P 07 50 11.2 +1.2
CMAR pmax pmax
comp=Z,22nm,0.8s
CMAR MLR MLR
comp=Z,289nm,18.6s
YAK Yakutsk 93.66 337 *ce*P P 07 50 08.2 -1.1
YAK pmax pmax
comp=Z,28nm,0.7s,mb5.8
YAK Yakutsk 93.66 337 ⇑*e*P P 07 50 08.3 -1.0
YAK LR LR
comp=Z,332nm,20.0s,MS4.8
MIAR Mount Ida 94.09 55 PFAKE 07 50 20.0 +8.1
MIAR LR LR
comp=Z,501nm,19.0s,MS5.0
YKA Yellowknife Ar 95.19 24 P P 07 50 16.3 +0.1
comp=Z,4.3nm,0.7s,mb5.0,baz=236,slow=4.3,SNR=114
YKA PP PP 07 54 06.5 -1.8
comp=Z,0.4nm,0.9s,baz=242,slow=7.9,SNR=3.1
YKA PKKPbc 08 07 10.4
comp=Z,0.2nm,0.7s,baz=53,slow=2.9,SNR=6.1
YKA LR LR 08 26 36.1
comp=Z,350nm,20.2s,MS4.8,baz=250,slow=31
YKA Yellowknife Ar 95.19 24 P P 07 50 16.3 +0.1
YKA PP PP 07 54 06.5 -1.8
YKA PKKPbc 08 07 10.4
YKA LR LR 08 26 36.1
YKW3 Yellowknife Ar 95.22 24 *e*P P 07 50 15.4 -1.1
LVC Limon Verde 95.33 116 P P 07 50 14.7 -3.2
LVC LR LR
comp=Z,550nm,21.0s,MS5.0
LZH Lanzhou 95.78 306 *e*P P 07 50 22.5 +2.9
LZH AP pP 07 50 31.4 +1.6
LZH XP sP 07 50 39.3 +6.3
FFC Flin Flon 96.86 34 PFAKE 07 50 40.0 +16
FFC LR LR
comp=Z,348nm,19.0s,MS4.9
CCM Cathedral Cave 97.12 52 PFAKE 07 50 40.0 +14
CCM LR LR
comp=Z,695nm,19.0s,MS5.2
OXF Oxford 97.28 56 PFAKE 07 50 40.0 +14
OXF LR LR
comp=Z,918nm,20.0s,MS5.3
ULN Ulaanbaatar 97.89 318 *e*P P 07 50 26.0 -2.8
ULN Ulaanbaatar 97.89 318 *e*P P 07 50 29.3 +0.5
comp=Z,4.9nm,1.0s,mb5.0
ULN LR LR
comp=Z,252nm,19.0s,MS4.7
SONM Songino Array 98.29 318 P P 07 50 31.3 +0.7
comp=Z,2.9nm,1.2s,mb4.7,baz=90,slow=1.2,SNR=6.3
SONM PP PP 07 54 24.3 -8.9
comp=Z,1.1nm,0.9s,baz=121,slow=6.3,SNR=3.3
ULM Lac du Bonnet 98.44 39 P P 07 50 33.4 +2.1
comp=Z,2.3nm,0.6s,mb4.9,baz=253,slow=5.6,SNR=2.9
ULM LR LR 08 32 58.2
comp=Z,535nm,18.1s,MS5.1,baz=265,slow=34
ULM Lac du Bonnet 98.44 39 P P 07 50 33.4 +2.1
ULM LR LR 08 32 58.2
PLAL Pickwick Lake 98.48 56 PFAKE 07 50 40.0 +8.2
PLAL LR LR
comp=Z,526nm,19.0s,MS5.0
LPAZ La Paz 98.63 111 LR LR 08 24 54.0
comp=Z,373nm,21.8s,MS4.8,baz=306,slow=29
LPAZ La Paz 98.63 111 P P 07 50 31.8 -1.1
LPAZ LR LR
comp=Z,114nm,19.0s,MS4.4
LRAL Lakeview Retre 98.69 58 PFAKE 07 50 40.0 +7.2
LRAL LR LR
comp=Z,431nm,19.0s,MS5.0
WVT Waverly 99.04 55 PFAKE 07 50 50.0 +16
WVT LR LR
comp=Z,821nm,19.0s,MS5.2

JFWS Jewell Farm 99.49 48 PFAKE 07 50 50.0 +14
JFWS LR LR
comp=Z,491nm,19.0s,MS5.0
TIXI Tiksi 99.87 344 *e*P P 07 50 36.3 -1.0
TIXI Tiksi 99.87 344 *e*P P 07 50 36.4 -0.9
TIXI LR LR
comp=Z,431nm,20.0s,MS5.0
GTA Gaotai 99.91 308 *e*P P 07 50 41.9 +3.6
GTA AP pP 07 50 48.3 -0.2
GTA XP sP 07 50 52.4 +0.8
GTA AMB AMB
comp=Z,3.0nm,0.7s,mb4.8
WCI Wyandotte Cave 100.86 53 PFAKE 07 50 50.0 +7.4
WCI LR LR
comp=Z,2µm,19.0s,MS5.7
TLY Talaya 101.29 321 *e*P P 07 50 42.4 -1.8
TLY *e* 07 54 52.2
TLY pmax pmax
comp=Z,42nm,2.2s
DWPF Disney 101.74 64 PFAKE 07 51 00.0 +13
DWPF LR LR
comp=Z,260nm,20.0s,MS4.8
CPUP Villa Florida 102.95 125 PFAKE 07 51 00.0 +7.9
CPUP LR LR
comp=Z,302nm,19.0s,MS4.8
LSA Lhasa 103.89 297 PFAKE 07 51 10.0 +14
LSA LR LR
comp=Z,233nm,22.0s,MS4.7
ACSO Alum Creek Sta 103.90 52 PFAKE 07 51 10.0 +14
ACSO LR LR
comp=Z,1µm,19.0s,MS5.4
AAM Ann Arbor 103.95 50 PFAKE 07 51 10.0 +14
AAM LR LR
comp=Z,481nm,20.0s,MS5.0
BLA Blacksburg 105.05 56 PFAKE 07 55 30.0
BLA LR LR
comp=Z,443nm,19.0s,MS5.0
MCWV Mont Chateau 106.09 53 PFAKE 07 55 30.0
MCWV LR LR
comp=Z,752nm,19.0s,MS5.3
ERPA Erie 106.55 51 PFAKE 07 55 30.0
ERPA LR LR
comp=Z,509nm,19.0s,MS5.1
CBN Corbin 107.64 55 PFAKE 07 55 30.0
CBN LR LR
comp=Z,686nm,19.0s,MS5.2
SSPA Standing Stone 107.77 53 PFAKE 07 55 30.0
SSPA LR LR
comp=Z,1µm,19.0s,MS5.5
NCB Newcomb 111.05 50 PFAKE 07 55 40.0 +9.5
NCB LR LR
comp=Z,437nm,21.0s,MS5.0
SJG San Juan 112.54 78 PFAKE 07 55 40.0 +6.0
SJG LR LR
comp=Z,271nm,20.0s,MS4.8
LBNH Lisbon 112.72 50 PFAKE 07 55 40.0 +6.2
LBNH LR LR
comp=Z,749nm,19.0s,MS5.3
HRV Harvard--Oak R 112.77 52 PFAKE 07 55 40.0 +6.1
HRV LR LR
comp=Z,173nm,19.0s,MS4.7
ZAL Zalesovo 112.92 321 PKiKP 07 55 30.0
comp=Z,1.8nm,0.5s,baz=181,slow=1.1,SNR=6.7
ZAL Zalesovo 112.92 321 *i* PKIKP PKPdf 07 55 30.0 -3.9
ZAL pmax pmax
comp=Z,2.0nm,0.5s
WES Weston 112.92 52 PFAKE 07 55 40.0 +5.8
WES LR LR
comp=Z,2µm,19.0s,MS5.7
MKAR Makanchi Array 113.96 313 Pdiff Pdif 07 51 44.0 +4.0
comp=Z,0.7nm,0.8s,baz=79,slow=6.2,SNR=4.1
MKAR PKiKP 07 55 31.9
comp=Z,3.5nm,0.7s,baz=77,slow=1.8,SNR=28
MKAR PP PP 07 56 22.1 -7.9
comp=Z,1.1nm,0.8s,baz=80,slow=6.3,SNR=1.7
MKAR PKKPab 08 06 21.4
comp=Z,0.4nm,0.7s,baz=270,slow=1.4,SNR=3.7
MKAR Makanchi Array 113.96 313 P Pdif 07 51 44.0 +4.0
MKAR *i* 07 55 31.9
MKAR pmax pmax
comp=Z,1.0nm,0.8s
MKAR pmax pmax
comp=Z,4.0nm,0.7s
MKAR pmax pmax
comp=Z,1.0nm,0.8s
MKAR Makanchi Array 113.96 313 Pdif Pdif 07 51 44.0 +4.0
MKAR *i* P 07 55 31.9
SCHQ Schefferville 116.57 38 PFAKE 07 55 50.0 +9.0
SCHQ LR LR
comp=Z,952nm,19.0s,MS5.4
KURK Kurchatov 116.58 317 *i* PKIKP PKPdf 07 55 36.4 -4.7
KURK pmax pmax
comp=Z,3.0nm,0.7s
BBSR BB Station 116.79 63 PFAKE 07 55 50.0 +8.0
BBSR LR LR
comp=Z,939nm,19.0s,MS5.4
VOSK Vostochnaya 121.22 320 PKIKP PKPdf 07 55 45.4 -4.7
VOSK pmax pmax
comp=Z,21nm,1.6s
VOSK Vostochnaya 121.22 320 *i* P PKPdf 07 55 45.5 -4.6
BVA0 Borovoye Array 121.54 320 *i* PKIKP PKPdf 07 55 46.5 -4.2
BVAR Borovoye Array 121.54 320 PKP PKPdf 07 55 46.9 -3.8
comp=Z,5.9nm,0.5s,baz=128,slow=2.0,SNR=43
BRVK Borovoye 121.60 320 *e*PKP PKPdf 07 55 43.0 -7.8
BRVK *e*PKP PKPdf 07 55 46.4 -4.4
KBS Kingsbay 121.63 359 PFAKE 07 56 00.0 +10
KBS LR LR
comp=Z,246nm,20.0s,MS4.8
KKAR Karatay Array 122.19 309 *i* PKIKP PKPdf 07 55 47.8 -4.4
KKAR pmax pmax
comp=Z,4.0nm,0.6s
ZRNK Zerenda 122.38 320 PKIKP PKPdf 07 55 47.8 -4.5
ZRNK pmax pmax
comp=Z,6.0nm,0.8s
ZRNK Zerenda 122.38 320 *e*PKP PKPdf 07 55 47.4 -4.9
SOKR Solikamsk 127.06 330 ⇑*i* PKIKP PKPdf 07 55 56.8 -4.3
SOKR pmax pmax
comp=Z,10.0nm,1.0s
SOKR MLR MLR
comp=Z,420nm,20.0s,MS5.1
ARU Arti 127.38 326 *i* PKIKP PKPdf 07 55 56.1 -5.7
ARU pmax pmax
comp=Z,27nm,1.7s
ARU Arti 127.38 326 *e*PKP PKPdf 07 55 56.1 -5.7
ARU LR LR
comp=Z,643nm,21.0s,MS5.3
AB31 Akbulak array 128.69 317 PKIKP PKPdf 07 56 00.3 -4.3
AB31 pmax pmax
comp=Z,1.0nm,0.5s
KEV Kevo 129.28 351 *ep* PKPdf 07 56 01.1 -4.1
ARCES ARCESS Array B 129.70 351 PKP PKPdf 07 56 02.0 -3.9
comp=Z,8.8nm,0.6s,baz=13,slow=1.2,SNR=55
ARCES ARCESS Array B 129.70 351 PKIKP PKPdf 07 56 02.1 -3.9
ARCES pmax pmax
comp=Z,9.0nm,0.6s
LBTB Lobatse 130.70 204 PFAKE 07 56 20.0 +11
LBTB LR LR
comp=Z,149nm,21.0s,MS4.7
JOF Joensuu 134.35 344 *ep* PKPdf 07 56 09.9 -5.0
KAF Kangasniemi 136.25 346 *ep* PKPdf 07 56 11.3 -7.1
FINES FINESS Array B 136.89 346 PKhKP 07 56 10.9
comp=Z,2.9nm,0.8s,baz=72,slow=6.0,SNR=7.6
FINES PKP PKPdf 07 56 16.7 -2.8
comp=Z,3.4nm,0.6s,baz=117,slow=8.5,SNR=11
FINES FINESS Array B 136.89 346 PKIKP PKPdf 07 56 10.9 -8.6
FINES 07 56 16.7
FINES pmax pmax
comp=Z,3.0nm,0.8s
FINES pmax pmax
comp=Z,3.0nm,0.6s
THR Tehran 137.74 301 PKP PKPdf 07 56 19.5 -2.4
comp=Z,1.4nm,0.9s,baz=108,slow=8.5,SNR=3.8
THR Tehran 137.74 301 PKIKP PKPdf 07 56 19.5 -2.4
THR pmax pmax
comp=Z,1.0nm,0.9s
OBN Obninsk 138.58 334 *i* PKIKP PKPdf 07 56 19.0 -3.8
OBN *e* 07 59 06.2
OBN pmax pmax
comp=Z,20nm,1.3s
OBN MLR MLR
comp=Z,300nm,19.0s,MS5.0
OBN Obninsk 138.58 334 *e*PKP PKPdf 07 56 19.0 -3.8
OBN LR LR
comp=Z,295nm,21.0s,MS5.0
NB2 NORSAR Subarra 139.50 356 PKPbc PKPdf 07 56 10.3 -14

	comp=Z,2.1nm,0.8s,baz=9.0,slow=2.3							
NOA	**NORSAR Array B**	**139.50**	**356**	PKhKP			07 56 12.2	
	comp=Z,1.1nm,0.8s,baz=25,slow=4.0,SNR=4.8							
NOA	**NORSAR Array B**	**139.50**	**356**	PKHKP			07 56 12.2	
NOA				pmax	pmax			
	comp=Z,1.0nm,0.8s							
VOR	**Voronezh**	**139.59**	**328**	PKIKP	PKPdf		07 56 19.0	-5.8
VOR				pmax	pmax			
	comp=Z,50nm,1.7s							
HFS	**Hagfors**	**140.19**	**354**	PKhKP			07 56 13.3	
	comp=Z,2.8nm,0.6s,baz=297,slow=3.3,SNR=10							
HFS	**Hagfors**	**140.19**	**354**	PKHKP			07 56 13.3	
HFS				pmax	pmax			
	comp=Z,3.0nm,0.6s							
ZEI	**Tsey**	**141.32**	**313**	*e*PKIKP	PKPdf		07 56 26.0	-2.1
KIV	**Kislovodsk**	**141.64**	**316**	*i* PKIKP	PKPdf		07 56 22.9	-5.7
KIV				pmax	pmax			
	comp=Z,20nm,1.6s							
KIV	**Kislovodsk**	**141.64**	**316**	*e*PKP	PKPdf		07 56 22.0	-6.6
KIV				LR	LR			
	comp=Z,273nm,21.0s,MS5.0							
GNI	**Garni**	**141.65**	**309**	PKhKP			07 56 16.1	
	comp=Z,4.9nm,0.3s,baz=122,slow=22,SNR=4.4							
GNI	**Garni**	**141.65**	**309**	PKHKP			07 56 16.1	
GNI				pmax	pmax			
	comp=Z,5.0nm,0.4s							
MNK	**Minsk**	**142.34**	**339**	*e*PKIKP	PKPdf		07 56 22.0	-7.5
KMBO	**Kilima Mbogo**	**142.41**	**239**	PKP	PKPdf		07 56 25.6	-5.2
	comp=Z,4.0nm,0.9s,baz=79,slow=2.8,SNR=6.9							
KMBO	**Kilima Mbogo**	**142.41**	**239**	*e*PKP	PKPdf		07 56 25.2	-5.7
SOC	**Sochi**	**143.73**	**317**	*e*P	Pdif		07 53 49.9	-1.2
SOC				*i*			07 56 30.3	
SOC				*e*			07 59 44.9	
SOC				pmax	pmax			
	comp=Z,9.0nm,0.5s							
SOC				pmax	pmax			
	comp=N,4.0nm,0.3s							
SOC				pmax	pmax			
	comp=E,10.0nm,0.3s							
ERZM	**Erzurum**	**144.16**	**310**	*i* P		PKPbc	07 56 28.8	+1.6
MUD	**Monsted U'grnd**	**144.19**	**357**	*i* P		PKPbc	07 56 26.6	-0.1
	comp=E,37nm,0.9s							
	comp=Z,370nm,18.0s							
MUD	**Monsted U'grnd**	**144.19**	**357**	*i* PKIKP	PKPdf		07 56 26.6	-6.0
MUD				pmax	pmax			
	comp=Z,37nm,0.9s							
MUD				MLR	MLR			
	comp=Z,380nm,18.0s,MS5.2							
SUW	**Suwalki**	**144.19**	**343**	*e*PKP	PKPdf		07 56 26.9	-5.8
ANN	**Anapa**	**144.54**	**320**	*e*PKIKP	PKPdf		07 56 29.0	-4.6
ANN				pmax	pmax			
	comp=Z,50nm,2.9s							
TATS	**Tathlith**	**144.72**	**275**	P		PKPbc	07 56 31.7	+2.4
ESK	**Eskdalemuir**	**144.74**	**9**	*e*PKP	PKPdf		07 56 28.4	-5.2
ESK				LR	LR			
	comp=Z,477nm,20.0s,MS5.3							
BWH	**Wardlaw**	**144.81**	**9**⇑	*e*P		PKPbc	07 56 28.7	+0.2
BWH				AMB	AMB		07 56 43.1	
	comp=Z,88nm,1.6s							
BEST	**Besiri**	**144.94**	**307**	*i* P		PKPbc	07 56 31.1	+1.6
BSD	**Bornholm Skovb**	**144.94**	**351**⇑	*i*P		PKPbc	07 56 28.9	0.0
	comp=Z,21nm,0.5s							
	comp=Z,360nm,18.0s							
BSD	**Bornholm Skovb**	**144.94**	**351**⇑	*i*PKIKP	PKPdf		07 56 28.9	-5.1
BSD				pmax	pmax			
	comp=Z,21nm,0.5s							
BSD				MLR	MLR			
	comp=Z,360nm,18.0s,MS5.2							
BHH	**Howats Hill**	**144.96**	**9**⇑	*e*P		PKPbc	07 56 29.3	+0.4
BHH				AMB	AMB		07 56 43.8	
	comp=Z,91nm,1.6s							
BBH	**Bruntsheil**	**144.96**	**9**⇑	*e*P		PKPbc	07 56 29.2	+0.3
BBH				AMB	AMB		07 56 46.7	
	comp=Z,70nm,1.6s							
BTA	**Talkin**	**145.22**	**9**⇑	*e*P		PKPbc	07 56 30.6	+1.0
BTA				AMB	AMB		07 56 48.8	
	comp=Z,157nm,2.0s							
GUMT	**Gumushane**	**145.28**	**312**	P		PKPbc	07 56 32.2	+2.0
BDL	**Dobcross Hall**	**145.28**	**9**	*e*P		PKPbc	07 56 29.5	-0.3
BBO1	**Bothel**	**145.30**	**9**⇑	*e*P		PKPbc	07 56 30.4	+0.6
BBO1				AMB	AMB		07 56 45.1	
	comp=Z,111nm,1.7s							
EZC	**Erzincan**	**145.33**	**311**	P		PKPbc	07 56 34.1	+3.8
DMUB	**Kingscourt**	**145.42**	**13**	*e*P		PKPbc	07 56 31.1	+1.0
KELT	**Kelkit**	**145.56**	**312**	*i* P		PKPbc	07 56 33.5	+2.5
DCN	**Croghan**	**145.86**	**14**	*e*P		PKPbc	07 56 28.7	-2.5
DCN	**Croghan**	**145.86**	**14**⇑	*i*P		PKPbc	07 56 32.7	+1.5
DLF	**Lyons Farm**	**146.07**	**13**	*e*P		PKPbc	07 56 29.1	-2.6
DLF	**Lyons Farm**	**146.07**	**13**⇑	*i*P		PKPbc	07 56 33.2	+1.5
WAR	**Warsaw**	**146.36**	**343**	*e*PKP		PKPdf	07 56 35.1	-1.4
SIM	**Simferopol'**	**146.40**	**323**	*c i*PKP2		PKPab	07 56 35.0	-0.8
SIM				pmax	pmax			
	comp=Z,37nm,0.8s							
ELZG	**Elazig**	**146.41**	**309**	*i* P		PKPbc	07 56 36.6	+3.6
BLJS	**Baljurashi**	**146.52**	**275**	P		PKPbc	07 56 36.2	+2.5
BSEG	**Bad Segeberg**	**146.62**	**355**	*e*PKP2		PKPab	07 56 35.4	-1.0
LHO	**Holmfirth**	**146.66**	**8**	*i* P		PKPbc	07 56 35.4	+2.3
MYA	**Malataya**	**146.88**	**309**	P		PKPbc	07 56 37.2	+3.2
SVSK	**Karacayir**	**147.23**	**313**	P		PKPdf	07 56 38.4	+0.1
SVST	**Sivas**	**147.32**	**313**	*i* P		PKPdf	07 56 38.6	+0.1
KIS	**Kishinev**	**147.79**	**330**	*e*PKP2		PKPab	07 56 38.0	-3.2
KIS				pmax	pmax			
	comp=Z,150nm,1.6s							
KIS				MLR	MLR			
	comp=N,500nm,22.0s							
KIS				MLR	MLR			
	comp=Z,600nm,22.0s,MS5.3							
KIS				MLR	MLR			
	comp=Z,600nm,22.0s							
GZT	**Gaziantep**	**147.88**	**308**	*i* P		PKPdf	07 56 40.1	+0.6
KWP	**Kalwaria**	**148.15**	**339**	*e*PKP		PKPdf	07 56 39.6	+0.1
KWP				*e*			07 56 53.2	
KWP	**Kalwaria**	**148.15**	**339**	*e*PKPbc		PKPdf	07 56 39.2	-0.3
BZK	**Bozkurt**	**148.18**	**318**	P		PKPdf	07 56 40.4	+0.6
GAZ	**Gaziantep**	**148.21**	**308**	P		PKPdf	07 56 40.6	+0.6
CTKT	**Corum**	**148.38**	**315**	*i* P		PKPdf	07 56 40.9	+0.7
YOZ	**Yozgat**	**148.50**	**313**	P		PKPdf	07 56 41.2	+0.8
OJC	**Ojcow**	**148.52**	**343**	*e*PKP		PKPdf	07 56 40.1	0.0
CLZ	**Clausthal**	**148.70**	**355**	*e*PKPbc		PKPdf	07 56 41.4	+1.1
CLZ				*e*PKPab		PKPab	07 56 44.8	+0.1
WTSB	**Winterswijk**	**148.76**	**359**⇑	*i*P		PKPdf	07 56 41.0	+0.6
	comp=Z,40nm,0.9s							
KSP	**Ksiaz**	**148.79**	**347**⇑	*i*PKP		PKPdf	07 56 41.8	+1.3
KSP				*e*			07 56 51.1	
KSP	**Ksiaz**	**148.79**	**347**	*e*PKP		PKPdf	07 56 37.5	-3.0
KSP				*i* PKPdf		PKPdf	07 56 41.6	+1.1
KSP				*e*			07 56 50.5	
BALT	**Daday**	**148.80**	**318**	*i* P		PKPdf	07 56 37.4	-3.4
CLL	**Collm**	**148.92**	**351**	*e*		PKPdf	07 56 37.0	-3.7
CLL				*i* PKP1		PKPdf	07 56 41.5	+0.8
CLL				*i* PKP2		PKPab	07 56 45.1	-0.5
CLL				*i* *PPKP			07 56 51.1	
CLL				*i*			07 56 56.0	
CLL				*e*SKSP			08 10 36.0	
CLL	**Collm**	**148.92**	**351**	*e*PKIKP		PKPdf	07 56 37.0	-3.7
CLL				*i*			07 56 41.5	
CLL				pmax	pmax			
	comp=Z,15nm,1.6s							
CLL				MLR	MLR			
	comp=Z,300nm,18.3s,MS5.1							
CLL	**Collm**	**148.92**	**351**	*e*PKP		PKPdf	07 56 37.0	-3.7
CLL				*i* PKP		PKPdf	07 56 41.5	+0.8
CLL				*i*			07 56 51.1	
CLL				LR	LR			
	comp=Z,300nm,18.3s,MS5.1							
NIE	**Niedzica**	**149.09**	**342**	*e*PKP		PKPdf	07 56 42.3	+1.3
COBT	**Iskenderun**	**149.17**	**307**	*i* P		PKPdf	07 56 43.0	+1.5
UPC	**Upice**	**149.17**	**347**⇑	*e*PKPB			07 56 42.6	
CRVS	**Cervenica-Dubn**	**149.19**	**340**	*e*PKP		PKPdf	07 56 39.9	-1.3
CRVS				*i*			07 56 42.7	
BRG	**Berggiesshubel**	**149.20**	**350**	*e*PKIKP		PKPdf	07 56 38.2	-2.9
BRG				pmax	pmax			
	comp=Z,45nm,0.8s							
AVNT	**Avonos**	**149.22**	**312**	*i* P		PKPdf	07 56 42.5	+0.9
DPC	**Dobruska-Polom**	**149.25**	**347**⇑	*e*PKPB			07 56 43.0	
OKC	**Ostrava-Krasne**	**149.31**	**344**⇑	*e*PKPB			07 56 42.8	
CEYT	**Ceyhan**	**149.35**	**309**	P		PKPdf	07 56 43.4	+1.5
SAFT	**Safranbolu**	**149.40**	**318**	P		PKPdf	07 56 41.0	-0.8
PVCC	**Panska Ves**	**149.43**	**349**⇑	*e*PKPB			07 56 43.2	
CFR	**Carcaliu**	**149.43**	**328**⇑	*i*P		PKPdf	07 56 43.0	+1.3
CFR	**Carcaliu**	**149.43**	**328**⇑	*i*P		PKPdf	07 56 43.0	+1.3
MORC	**Moravsky Berou**	**149.51**	**345**	*e*PKPdf		PKPdf	07 56 38.3	-3.4
MORC				*e*PKPbc		PKPdf	07 56 43.2	+1.5
BRTR	**Keskin Array B**	**149.59**	**315**	PKP		PKPdf	07 56 39.1	-3.0
	comp=Z,11nm,0.6s,baz=98,slow=2.6,SNR=15							
BRTR				PKPbc	PKPdf		07 56 43.5	+1.4
	comp=Z,11nm,0.6s,baz=144,slow=2.3,SNR=34							
BRTR				PP	PP		08 00 17.3	-0.8
	comp=Z,5.2nm,1.1s,baz=90,slow=3.7,SNR=6.8							
VRI	**Vrincioaia**	**149.60**	**331**⇑	*i*P		PKPdf	07 56 43.6	+1.6
VRI	**Vrincioaia**	**149.60**	**331**⇑	*i*P		PKPdf	07 56 43.6	+1.7
BRD	**Bordesti**	**149.69**	**330**⇓	*i*P		PKPdf	07 56 45.2	+3.1
BRD	**Bordesti**	**149.69**	**330**⇓	*e*P		PKPdf	07 56 45.2	+3.1
NIG	**Nigde**	**149.70**	**311**	P		PKPdf	07 56 44.1	+1.7
KAMT	**Kaman**	**149.72**	**314**	P		PKPdf	07 56 43.5	+1.1
MOX	**Moxa**	**149.75**	**353**	*e*PKP2		PKPab	07 56 43.6	-5.4
MOX				pmax	pmax			
	comp=Z,73nm,1.6s							
MOX	**Moxa**	**149.75**	**353**	*e*PKP		PKPdf	07 56 43.6	+1.6
MOX				*e*			07 56 53.7	
HARR	**Harsova**	**149.88**	**328**⇑	*i*P		PKPdf	07 56 44.7	+2.3
HARR	**Harsova**	**149.88**	**328**⇑	*i*P		PKPdf	07 56 44.8	+2.4
PRU	**Pruhonice**	**149.95**	**349**⇑	*e*PKPB			07 56 44.2	
HGN	**Heimansgroeve**	**149.97**	**360**	*e*P		PKPdf	07 56 44.1	+1.8
	comp=Z,13nm,1.2s							
HGN				*ex*		x	07 56 54.7	
NKC	**Novy Kostel**	**150.05**	**352**⇑	*e*PKPB			07 56 44.4	
ASF	**Jabal al Asfar**	**150.05**	**299**	PKP		PKPdf	07 56 40.7	-2.4
	comp=Z,25nm,0.9s,baz=172,slow=6.9,SNR=3.9							
ASF				PKPbc	PKPdf		07 56 45.2	+2.1
	comp=Z,22nm,0.8s,baz=341,slow=1.6,SNR=20							
ANTO	**Ankara**	**150.07**	**316**	P		PKPdf	07 56 44.0	+1.1
VRAC	**Vranov**	**150.17**	**346**	PKP		PKPdf	07 56 39.5	-3.3
	comp=Z,11nm,0.9s,baz=66,slow=13,SNR=3.3							
VRAC				PKPbc	PKPdf		07 56 45.2	+2.4
	comp=Z,14nm,0.8s,baz=52,slow=1.1,SNR=21							
MLR	**Muntele Rosu**	**150.24**	**331**	PKP		PKPdf	07 56 40.0	-3.0
	comp=Z,24nm,0.9s,baz=216,slow=2.7,SNR=12							
MLR				PKPbc	PKPdf		07 56 45.2	+2.2
	comp=Z,33nm,1.1s,baz=273,slow=2.8,SNR=26							
MLR	**Muntele Rosu**	**150.24**	**331**	PKHKP			07 56 40.0	
MLR				pmax	pmax			
	comp=Z,24nm,0.9s							
MLR				pmax	pmax			
	comp=Z,33nm,1.1s							
ISR	**Istrita**	**150.25**	**330**⇓	*i*P		PKPdf	07 56 45.7	+2.7
ISR	**Istrita**	**150.25**	**330**⇓	*i*P		PKPdf	07 56 45.8	+2.8
VYHS	**Vyhne**	**150.35**	**342**	*e*PKP		PKPdf	07 56 40.3	-2.7
VYHS				*i*			07 56 45.4	
VYHS				*e*			07 56 57.4	
KOLL	**Kolacno**	**150.40**	**343**	*e*PKP		PKPdf	07 56 41.0	-2.1
KOLL				*i*			07 56 46.1	
KOLL				*e*			07 56 56.8	
PSZ	**Piszkesteto**	**150.55**	**341**	*e*		PKPdf	07 56 45.7	+2.3
PSZ	**Piszkesteto**	**150.55**	**341**	*e*PKPbc		PKPdf	07 56 45.4	+2.1
GIVF	**Givet**	**150.62**	**1**	*e*PKP1		PKPdf	07 56 45.9	+2.5
	comp=Z,81nm,0.8s							
BAIF	**Baives**	**150.65**	**2**	*e*PKP1		PKPdf	07 56 46.1	+2.7
	comp=Z,126nm,1.2s							
HRI	**Mount Hermon**	**150.69**	**302**	P		PKPdf	07 56 41.0	-3.0
KSHT	**Keshet**	**150.71**	**301**	P		PKPdf	07 56 41.1	-3.0
GRA1	**Grafenberg Arr**	**150.74**	**353**	*e*PKPbc		PKPdf	07 56 46.4	+2.8
GRA1				*e*PKPab		PKPab	07 56 52.9	-0.3
HENT	**Hendek**	**150.75**	**319**	*i* P		PKPdf	07 56 45.4	+1.6
MDU	**Mudurnu**	**150.76**	**318**	P		PKPdf	07 56 46.5	+2.6
KHC	**Kasperske Hory**	**150.95**	**350**	*e*PKPDF		PKPdf	07 56 41.1	-2.8
KHC				⇑*e*PKPB			07 56 46.4	
RUP	**Ruppelstein**	**151.02**	**358**	PKP		PKPdf	07 56 47.3	+3.3
TOD	**Tromm**	**151.04**	**356**	PKP		PKPdf	07 56 46.9	+2.9
WLF	**Walferdange**	**151.07**	**360**	*e*PKPbc		PKPdf	07 56 47.1	+3.0
ZST	**Bratislava**	**151.09**	**344**	*i* PKP		PKPdf	07 56 47.8	+3.7
ZST				*e*			07 56 55.3	
SRO	**Srobarova**	**151.12**	**343**	*e*PKP		PKPdf	07 56 47.6	+3.4
TBKS	**Tabuk**	**151.14**	**291**	P		PKPdf	07 56 48.5	+3.6
HMDT	**Nahal Hemdat**	**151.15**	**300**	P		PKPdf	07 56 42.1	-2.7
IKL	**Isikli**	**151.18**	**309**	P		PKPdf	07 56 45.8	+1.1
HNTI	**Hanita**	**151.19**	**301**	P		PKPdf	07 56 41.6	-3.2
KIZT	**Kizilcal**	**151.19**	**315**	P		PKPdf	07 56 47.6	+3.0
GEC2	**GERESS Array S**	**151.20**	**349**	*e*PKIKP		PKPdf	07 56 47.3	+3.0
GERES	**GERESS Array B**	**151.20**	**349**	PKP		PKPdf	07 56 41.5	-2.8
	comp=Z,1.4nm,0.8s,SNR=8.8							
GERES				PKPbc	PKPdf		07 56 47.5	+3.2
	comp=Z,13nm,0.7s,baz=45,slow=1.9,SNR=69							
GERES	**GERESS Array B**	**151.20**	**349**	PKIKP		PKPdf	07 56 41.5	-2.8
GERES							07 56 47.5	
GERES				pmax	pmax			
	comp=Z,1.0nm,0.8s							
GERES				pmax	pmax			
	comp=Z,13nm,0.7s							
MKRJ	**Makawir**	**151.24**	**298**	P		PKPdf	07 56 42.3	-2.6
KONT	**Konya--Tatoy**	**151.34**	**313**	P		PKPdf	07 56 47.5	+2.7
EYL	**Eskiyayla**	**151.35**	**319**	P		PKPdf	07 56 47.5	+2.7
GPA	**Golpazari**	**151.42**	**319**	P		PKPdf	07 56 48.2	+3.3
ROSF	**Rostrenen**	**151.44**	**13**	*e*PKP1		PKPdf	07 56 47.0	+2.3
DRGI	**Dragot**	**151.44**	**298**	P		PKPdf	07 56 42.5	-2.7
HRT	**Hereke**	**151.50**	**320**	P		PKPdf	07 56 47.7	+2.7
FLN	**La Foliniere**	**151.52**	**9**	*e*PKP1		PKPdf	07 56 47.5	+2.7
	comp=Z,70nm,0.8s							
ESKT	**Eskisehir**	**151.52**	**317**	*i* P		PKPdf	07 56 47.8	+2.7
ESKT	**Eskisehir**	**151.52**	**317**	P		PKPdf	07 56 47.7	+2.7
SLTI	**Sal'it**	**151.55**	**300**	P		PKPdf	07 56 42.7	-2.6
JMQS	**Jabal Moqyreh**	**151.62**	**293**	P		PKPdf	07 56 49.8	+4.3
SGMF	**Saint Gilles**	**151.66**	**12**	*e*PKP1		PKPdf	07 56 47.6	+2.6
	comp=Z,51nm,0.9s							
LANF	**Langenberg**	**151.72**	**357**	PKP		PKPdf	07 56 48.6	+3.5
HDMB	**Hadim**	**151.72**	**311**	P		PKPdf	07 56 48.8	+3.3
LDF	**La Druitiere**	**151.73**	**8**	*e*PKP1		PKPdf	07 56 47.9	+2.8
	comp=Z,64nm,0.9s							
GRR	**Gorron**	**151.83**	**10**	*e*PKP1		PKPdf	07 56 48.3	+3.1
	comp=Z,69nm,0.7s							
QUIF	**Quistinic**	**151.86**	**13**	*e*PKP1		PKPdf	07 56 48.0	+2.7
CSS	**Prodhromos**	**151.96**	**306**	*e*PKPbc		PKPdf	07 56 49.0	+3.1
CTT	**Catalca**	**152.02**	**322**	P		PKPdf	07 56 48.3	+2.5
MOA	**Molln**	**152.05**	**348**⇑	*i*PKP		PKPdf	07 56 48.1	+2.5
MOA				*i*			07 57 00.8	
PRNI	**Paran**	**152.07**	**296**	P		PKPdf	07 56 44.0	-2.2
JMOS	**Jabal al Moall**	**152.22**	**294**	P		PKPdf	07 56 50.9	+4.5
FUR	**Furstenfeldbru**	**152.23**	**352**	*e*PKIKP		PKPdf	07 56 49.5	+3.7
MEZF	**Maizieres J'vi**	**152.23**	**1**	*e*PKP1		PKPdf	07 56 49.8	+4.0
	comp=Z,48nm,0.9s							
ULDT	**Uludag**	**152.23**	**319**	*i* P		PKPdf	07 56 49.9	+3.8
LEF	**Lefka**	**152.23**	**307**	P		PKPdf	07 56 50.4	+4.1
ALWS	**Ilw as Safayha**	**152.24**	**294**	P		PKPdf	07 56 50.9	+4.5
AYUS	**'Aynunah**	**152.26**	**291**	P		PKPdf	07 56 50.7	+4.1
EIL	**Elat**	**152.26**	**295**	P		PKPdf	07 56 44.2	-2.3
MBH	**Mount Berech**	**152.26**	**295**	P		PKPdf	07 56 44.5	-2.0
WLS	**Welschbruch**	**152.30**	**358**	PKP		PKPdf	07 56 49.5	+3.6
CDF	**Champ du Feu**	**152.31**	**358**	*e*PKP1		PKPdf	07 56 49.7	+3.8
	comp=Z,58nm,0.9s							
BFO	**Black Forest**	**152.34**	**356**	*e*PKIKP		PKPdf	07 56 49.7	+3.7
ARSA	**Arzberg**	**152.35**	**346**⇑	*i*PKP		PKPdf	07 56 49.5	+3.5
ARSA				*i*			07 56 59.9	
ARSA				*i*			07 57 10.6	
BDAS	**Al Bad'**	**152.36**	**292**	P		PKPdf	07 56 51.2	+4.5
HAQS	**Haql**	**152.40**	**293**	P		PKPdf	07 56 51.3	+4.6
THEF	**They Montfort**	**152.51**	**360**	PKP		PKPdf	07 56 50.1	+3.9
SPAK	**Spaichingen**	**152.54**	**356**	PKP		PKPdf	07 56 50.1	+3.8
HAU	**Haudompre**	**152.73**	**359**	*e*PKP1		PKPdf	07 56 50.6	+4.1
	comp=Z,34nm,0.7s							
RHK1	**Bakonya**	**152.74**	**341**⇑	*e*PKP		PKPdf	07 56 50.7	+4.1
BNT	**Bandirma**	**152.83**	**321**	P		PKPdf	07 56 50.2	+3.2
HINF	**Hinteralfeld**	**152.91**	**359**	*e*PKP1		PKPdf	07 56 50.8	+4.0
	comp=Z,19nm,0.8s							
KBA	**Koelnbreinsper**	**152.97**	**349**⇑	*i*PKP		PKPdf	07 56 50.8	+3.9
WATA	**Walderalm**	**153.00**	**351**⇑	*i*PKP		PKPdf	07 56 51.2	+4.3
PERS	**Pernice**	**153.03**	**346**	*e*PKPbc		PKPdf	07 56 50.4	+3.4
MOTA	**Moosalm**	**153.06**	**352**⇓	*i*PKP		PKPdf	07 56 51.5	+4.5
WTTA	**Wattenberg**	**153.07**	**351**⇑	*i*PKP		PKPdf	07 56 50.9	+3.9
KGT	**Karabiga**	**153.12**	**322**	P		PKPab	07 57 03.9	+0.4
SQTA	**Sankt Quirin**	**153.17**	**352**⇑	*i*PKP		PKPdf	07 56 51.8	+4.6
DAVA	**Damuels**	**153.25**	**354**⇑	*i*PKP		PKPdf	07 56 51.8	+4.5
OBKA	**Obir**	**153.27**	**347**⇓	*i*PKP		PKPdf	07 56 50.3	+3.0
HYF	**Humbligny**	**153.34**	**5**	*e*PKP1		PKPdf	07 56 52.3	+4.9
LOMF	**Lomont**	**153.38**	**359**	PKP		PKPdf	07 56 52.3	+4.8
SSF	**Saint Saulge**	**153.61**	**4**	*e*PKP1		PKPdf	07 56 52.7	+4.9
	comp=Z,43nm,1.0s							
ELL	**Elmali**	**153.63**	**313**	P		PKPdf	07 56 49.4	+1.3
MFF	**Saint Martin d**	**153.68**	**9**	*e*PKP1		PKPdf	07 56 52.4	+4.5
	comp=Z,9.7nm,0.7s							
LJU	**Ljubljana**	**153.72**	**346**	*e*PKPdf		PKPdf	07 56 45.0	-3.0
LJU				*e*PKPbc		PKPdf	07 56 52.5	+4.6
ROBS	**Robic**	**153.74**	**348**	*e*PKPab		PKPab	07 57 10.8	+4.9
DAVOX	**Davos**	**153.76**	**354**	PKPbc		PKPdf	07 56 53.2	+5.2
	comp=Z,14nm,0.6s,baz=228,slow=6.5,SNR=16							
DAVOX				PKPab	PKPab		07 57 06.1	+0.1
	comp=Z,11nm,0.7s,baz=348,slow=2.8,SNR=5.6							
VOY	**Vojsko**	**153.87**	**347**	*e*PKPdf		PKPdf	07 56 46.0	-2.2
VOY				*e*PKPbc		PKPdf	07 56 52.3	+4.1
AVF	**Avril sur Loir**	**153.87**	**4**	*e*PKP1		PKPdf	07 56 52.8	+4.6
	comp=Z,14nm,0.9s							
SMF	**Signal de Mont**	**154.04**	**3**	*e*PKP1		PKPdf	07 56 53.4	+5.0
BOJS	**Bojanci**	**154.06**	**345**	*e*PKPbc		PKPdf	07 56 53.6	+5.1
BGF	**Bois d'Agland**	**154.06**	**5**	*e*PKP1		PKPdf	07 56 53.4	+5.0
	comp=Z,17nm,0.6s							
TCF	**Toulx Ste Croi**	**154.28**	**6**	*e*PKP1		PKPdf	07 56 53.8	+5.1
	comp=Z,21nm,0.9s							
KDAG	**Bornova**	**154.44**	**318**	*i* P		PKPab	07 57 09.6	+0.5
IZM	**Izmir**	**154.45**	**318**	P		PKPab	07 57 08.2	-1.0
AGO	**Saint Agoulin**	**154.59**	**4**	PKP		PKPdf	07 56 54.6	+5.4
PLDF	**La Plantade**	**154.70**	**4**	PKP		PKPdf	07 56 55.1	+5.8
MLSB	**Milas**	**154.77**	**316**	P		PKPdf	07 56 54.6	+4.9
PYM	**Petit Puy Mans**	**154.88**	**5**	PKP		PKPdf	07 56 55.6	+6.1
SKO	**Skopje**	**155.03**	**332**	*e*PKP		PKPdf	07 56 55.5	+5.7
RJF	**Les Rejaudoux**	**155.18**	**7**	*e*PKP1		PKPdf	07 56 57.3	+7.4
LPL	**La Plagne**	**155.22**	**359**	*e*PKP1		PKPdf	07 56 57.0	+7.0
LPG	**La Plagne**	**155.23**	**359**	*e*PKP1		PKPdf	07 56 57.2	+7.2
	comp=Z,14nm,0.9s							
VIVF	**Saint-Julien-l**	**155.87**	**2**	*e*PKP1		PKPdf	07 56 57.7	+6.9
MBDF	**Montbardon**	**156.00**	**358**	*e*PKP1		PKPdf	07 56 58.1	+7.1
LASF	**Ste Croix**	**156.60**	**4**	*e*PKP1		PKPdf	07 56 59.5	+7.6
	comp=Z,26nm,1.2s							
SANT	**Santorini**	**156.82**	**317**	*e*PKPab		PKPab	07 57 18.3	-1.0
MTE	**Manteigas**	**157.25**	**27**	*e*PKP		PKPdf	07 56 49.0	-3.9
IDI	**Anoyia**	**157.83**	**315**	PKP		PKPdf	07 56 51.3	-2.5
	comp=Z,4.8nm,0.8s,baz=104,slow=2.5,SNR=5.0							
EVO	**Evora**	**158.54**	**31**	*e*PKIKP		PKPdf	07 56 52.1	-2.5
	comp=Z,20nm,1.0s							
ESDC	**Sonseca Array**	**159.27**	**22**	PKP		PKPdf

BVAR	**Borovoye Array**	**70.41**	**322**	P	**P**	**08**	**27**	**35.1**	**0.0**
	1.8nm,0.4s,mb4.3,baz=108,slow=7.2,SNR=15								
ILAR	**Eielson Array**	**70.46**	**25**	P	**P**	**08**	**27**	**33.1**	**-2.1**
	0.9nm,0.5s,mb4.0,baz=251,slow=6.0,SNR=23								
BRVK	**Borovoye**	**70.47**	**322**	*eP*	**P**	**08**	**27**	**35.3**	**-0.2**
ZRNK	**Zerenda**	**71.23**	**322**	*eP*	**P**	**08**	**27**	**40.1**	**-0.1**
ZRNK				*ePP*	PP	08	30	19.6	-0.5
INK	**Inuvik**	**76.24**	**22**	P	**P**	**08**	**28**	**08.6**	**-0.3**
	2.9nm,0.8s,mb4.3,baz=255,slow=5.1,SNR=12								
INK	**Inuvik**	**76.24**	**22**	*eP*	**P**	**08**	**28**	**08.5**	**-0.5**
	5.1nm,1.0s,mb4.4								
YKA	**Yellowknife Ar**	**84.77**	**27**	P	**P**	**08**	**28**	**54.6**	**+0.4**
	0.6nm,0.4s,mb4.1,baz=286,slow=5.0,SNR=25								
YBH	**Yreka Blue Hor**	**84.77**	**49**	P	**P**	**08**	**28**	**56.7**	**+1.9**
	1.1nm,0.6s,mb4.1,baz=359,slow=1.6,SNR=7.4								
THR	**Tehran**	**85.07**	**306**	P	**P**	**08**	**28**	**59.0**	**+2.5**
	1.1nm,0.9s,mb4.0,baz=90,slow=5.1,SNR=3.6								
ARCES	**ARCESS Array B**	**88.18**	**342**	P	**P**	**08**	**29**	**11.6**	**+0.7**
	1.3nm,0.7s,mb4.2,baz=63,slow=8.1,SNR=9.0								
NVAR	**Mina Array Bea**	**88.80**	**51**	P	**P**	**08**	**29**	**16.1**	**+1.5**
	1.0nm,0.6s,mb4.3,baz=261,slow=4.3,SNR=14								
JOF	**Joensuu**	**89.19**	**335**	*ep*	**P**	**08**	**29**	**14.5**	**-1.3**
KAF	**Kangasniemi**	**91.63**	**335**	*ep*	**P**	**08**	**29**	**26.0**	**-1.1**
	baz=73,slow=4.8								
FINES	**FINESS Array B**	**92.05**	**335**	P	**P**	**08**	**29**	**28.7**	**-0.4**
	4.5nm,1.0s,mb4.8,baz=117,slow=4.3,SNR=9.6								
HWUT	**Hardware Ranch**	**92.86**	**47**	P	**P**	**08**	**29**	**32.8**	**-0.5**
	3.0nm,1.6s,mb4.5								
NLU	**North Lily Min**	**93.02**	**48**	*eP*	**P**	**08**	**29**	**35.4**	**+1.3**

CASC 22 08:16:24.2±1.9, 13.76N×91.34W, h84km±30km, MD3.8, ML3.7, 2C-1D, Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
JAT	**Jato**	**0.63**	**333**	*eP*		P	08 16 39.9	+0.1
JAT				*eS*		S	08 16 52.3	+1.1
JAT				AML		AML	08 16 56.2	
	comp=N,2μm,0.2s							
IXG	**Ixpaco**	**0.95**	**64**	*eP*		P	08 16 42.4	-0.8
RBDL	**Robledal**	**1.65**	**77**	*eP*		P	08 16 52.4	+0.3
RBDL				*eS*		S	08 17 14.0	+1.4
RTR	**El Retiro**	**1.65**	**85**	*eP*		P	08 16 51.5	-0.6
RTR				*eS*		S	08 17 14.0	+1.2
SBLS	**San Blas**	**1.67**	**87**	*eP*		P	08 16 51.7	-0.7
SBLS				*eS*		S	08 17 14.0	+0.8
SNJE	**San Jose**	**1.69**	**86**	*eP*		P	08 16 52.7	+0.1
BOQS	**Boqueron**	**2.00**	**90**	*eP*		P	08 16 57.3	+0.5
BOQS				*eS*		S	08 17 23.5	+2.7
LFRS	**El Faro**	**2.22**	**93**	*eP*		P	08 16 59.6	-0.3
LFRS				*eS*		S	08 17 28.1	+1.8
LCBS	**La Ceiba**	**2.30**	**92**	*eP*		P	08 17 01.4	+0.4
LCBS				*eS*		S	08 17 28.5	+0.3
SNVI	**San Vicente**	**2.44**	**93**	*eP*		P	08 17 05.5	+2.6

*NEIC **22** 08:19:27.3±1.0, 19.83S×69.01W, h120km±9km, Error ellipse: s-maj=21.9km s-min=10.3km az=86.0*
*IDC **22** 08:19:27.3±1.7, 19.83S×69.02W, h120km±17km, mb3.9/2, mb1 3.8/5, mb1mx3.4/16, Error ellipse: s-maj=39.6km s-min=16.5km az=94.0*

ISC 22 08:19:24.9±0.9, 19.80S±0.07×69.3W±0.2, h133km±14km, n9, σ1§14/11, mb4.0/2, Northern Chile

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
LVC	**Limon Verde**	**2.82**	**172**	P		**P**	**08**	**20**	**11.1**	**+1.1**
	21nm,0.3s,baz=340,slow=8.4,SNR=194									
LVC				S		**S**	**08**	**20**	**44.9**	**+0.5**
	31nm,0.3s,baz=177,slow=22,SNR=16									
LVC	**Limon Verde**	**2.82**	**172**	*ePn*		**P**	**08**	**20**	**10.8**	**+0.8**
LVC				P			08	20	11.1	
LVC				*eSn*		**S**	**08**	**20**	**43.6**	**-0.8**
LVC				S		**S**	**08**	**20**	**44.9**	**+0.5**
LPAZ	**La Paz**	**3.68**	**18**	P		**P**	**08**	**20**	**22.5**	**+1.1**
	4.2nm,0.3s,baz=211,slow=6.9,SNR=152									
ARE	**Arequipa**	**3.91**	**328**	*eP*		**P**	**08**	**20**	**23.0**	**-1.5**
ARE				*eS*		S	08	20	42.0	-28
CPUP	**Villa Florida**	**12.80**	**123**	P		**P**	**08**	**22**	**21.7**	**-1.3**
	0.1nm,0.3s,baz=309,slow=14,SNR=4.4									
TRQA	**Tornquist**	**19.28**	**162**	*eP*		**P**	**08**	**23**	**41.3**	**-0.2**
	0.3nm,0.7s									
DBIC	**Dimbokro**	**68.64**	**74**	P		**P**	**08**	**30**	**16.1**	**-0.1**
	5.3nm,1.1s,mb4.2,baz=56,slow=5.0,SNR=3.5									
YKA	**Yellowknife Ar**	**89.47**	**341**	P		**P**	**08**	**32**	**10.8**	**+3.3**
	1.2nm,0.9s,mb3.8,baz=134,slow=4.8,SNR=24									
ASAR	**Alice Springs**	**131.22**	**209**	PKP		PKPdf	08	38	26.3	+4.4
	0.2nm,0.4s,baz=120,slow=1.8,SNR=4.0									

*NEIC **22** 08:26:48.7, 30.96S×71.71W, h16km, ML4.0(GUC), After GUC.*

GUC 22 08:26:48.7±0.8, 30.96S×71.71W, h16km±4km, MD4.1, ML4.0, 5C-2D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
OVCH	**Ovalle**	**0.56**	**52**	*iP*		Pb	08	26	59.8	+0.2
OVCH				*iS*		Sb	08	27	07.6	+0.5
OVCH				AMP			08	27	08.0	
	comp=E,7μm,0.3s									
CMCH	**Combarbala**	**0.65**	**110**	*iP*		Pb	08	27	01.5	+0.4
CMCH				*iS*		Sb	08	27	10.1	+0.5
CMCH				AMP			08	27	10.6	
	comp=N,19μm,0.2s									
ILCH	**Illapel**	**0.82**	**146**	*iP*		Pb	08	27	03.7	-0.4
ILCH				*iS*		Sb	08	27	14.5	-0.2
ILCH				AMP			08	27	14.8	
	comp=N,7μm,0.2s									
TLL	**Tololo Astrono**	**1.11**	**45**	*eP*		Pb	08	27	08.6	-0.4
TLL				*iS*		Sb	08	27	23.2	+0.1
TLL				AMP			08	27	29.9	
	comp=E,3μm,0.5s									
PTCH	**Petorca**	**1.46**	**153**	*eP*		Pn	08	27	13.7	-1.0
PTCH				*iS*		Sb	08	27	32.5	-0.8
PTCH				AMP			08	27	36.9	
	comp=E,6μm,0.3s									
JACH	**Jahuel**	**1.96**	**151**	*eP*		Pn	08	27	21.7	-0.1
JACH				*iS*		Sn	08	27	47.0	+0.8
ROCH	**El Roble**	**2.10**	**164**	*eP*		Pn	08	27	23.4	-0.2
ROCH				*iS*		Sn	08	27	51.3	+1.8
PEL	**Peldehue**	**2.35**	**159**	*eP*		Pn	08	27	27.5	+0.2
PEL				*iS*		Sn	08	27	57.4	+1.5
PEL				AMP			08	28	05.2	
	comp=E,2μm,0.4s									
VACH	**Vallenar**	**2.51**	**19**	*eP*		Pn	08	27	28.4	-1.3
VACH				*iS*		Sn	08	27	59.8	-0.4
CLCH	**Cerro Calan**	**2.63**	**158**	*iP*		Pn	08	27	31.4	+0.1
CLCH				*iS*		Sn	08	28	04.2	+1.1
CLCH				AMP			08	28	13.1	
	comp=E,859nm,0.6s									
FCH	**Farellones**	**2.65**	**153**	*iP*		Pn	08	27	32.5	+0.8
FCH				*iS*		Sn	08	28	05.7	+2.0
FCH				AMP			08	28	17.1	
	comp=E,441nm,0.3s									
FSR	**Penalolen**	**2.71**	**159**	*eP*		Pn	08	27	32.8	+0.4
FSR				AMP			08	28	17.1	
	comp=E,880nm,0.4s									
ANTU	**Antumapu**	**2.76**	**161**	*eP*		Pn	08	27	33.5	+0.4
ANTU				AMP			08	28	18.7	
	comp=E,812nm,0.4s									
TACH	**Talagante**	**2.77**	**167**	*iP*		Pn	08	27	33.2	-0.1
PCH	**Pirque**	**2.84**	**159**	*eP*		Pn	08	27	34.3	0.0
CHCH	**Chadas Angostu**	**3.10**	**164**	*eP*		Pn	08	27	37.6	-0.4
MDZ	**Mendoza**	**3.10**	**129**	*eP*		Pn	08	27	38.8	+0.8
MDZ				S		Sn	08	27	43.8	-31
LMEL	**Las Melosas**	**3.15**	**157**	*eP*		Pn	08	27	39.0	+0.3
LMEL				AMP			08	28	29.8	
	comp=N,535nm,0.3s									
CICH	**Cipreses**	**3.52**	**162**	*iP*		Pn	08	27	44.0	-0.1
SFDO	**San Fernando**	**3.69**	**171**	*eP*		Pn	08	27	45.8	-0.6
TRQA	**Tornquist**	**10.70**	**134**	*eP*		P	08	29	23.1	-1.2

*GUC **22** 08:33:48.3±0.7, 24.49S×69.57W, h65km, ML4.6*
*NEIC **22** 08:33:49.1±0.3, 24.46S×69.55W, mb4.1/8, Error ellipse: s-maj=11.9km s-min=6.4km az=85.0*
*IDC **22** 08:33:49.9±0.6, 24.44S×69.56W, h79km±4km, mb4.0/9, mb1 4.2/11, mb1mx4.0/17, MS3.0/1, Ms1 3.1/1, ms1mx3.0/15, Error ellipse: s-maj=17.6km s-min=9.3km az=105.0*

ISC 22 08:33:48.0±0.5, 24.48S±0.04×69.55W±0.07, h78km±5km, h78km±1.1km: pP-P, n50, σ1§12/50, mb4.3/18, 5C-2D, Northern Chile

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
CPN1	**Cerro Paranal**	**0.79**	**259**	*iP*		**P**	**08**	**34**	**05.8**	**+1.1**
CPN1				*iS*		**S**	**08**	**34**	**18.1**	**+0.9**
CPN1				AMP			08	34	20.2	
	comp=N,31μm,0.5s									
ANCH	**Antofagasta**	**1.12**	**315**	*iP*		**P**	**08**	**34**	**08.6**	**0.0**
ANCH				*iS*		**S**	**08**	**34**	**23.2**	**-0.9**
LVC	**Limon Verde**	**1.95**	**18**	*eP*		**P**	**08**	**34**	**20.3**	**+0.6**
LVC				*iS*		**S**	**08**	**34**	**44.9**	**+1.8**
LVC				AMP			08	34	47.7	
	comp=N,9μm,0.6s									
LVC	**Limon Verde**	**1.95**	**18**	P		**P**	**08**	**34**	**21.1**	**+1.3**
	comp=N,415nm,0.3s,baz=204,slow=9.1,SNR=1837									
LVC				S		**S**	**08**	**34**	**45.3**	**+2.2**
	comp=N,960nm,0.3s,baz=211,slow=22,SNR=30									
LVC	**Limon Verde**	**1.95**	**18**	*ePn*		**P**	**08**	**34**	**20.3**	**+0.6**
LVC				*eSn*		**S**	**08**	**34**	**44.7**	**+1.6**
LVC				S		**S**	**08**	**34**	**45.3**	**+2.2**
CPCH	**Copiapo**	**2.96**	**194**	*iP*		**P**	**08**	**34**	**33.4**	**-0.5**
VACH	**Vallenar**	**4.22**	**195**	*eP*		**P**	**08**	**34**	**50.2**	**-1.2**
TLL	**Tololo Astrono**	**5.77**	**191**	*eP*		**P**	**08**	**35**	**12.0**	**-0.8**
CMCH	**Combarbala**	**6.79**	**191**	*iP*		**P**	**08**	**35**	**24.2**	**-2.8**
ARE	**Arequipa**	**8.18**	**347**	*eP*		**P**	**08**	**35**	**42.0**	**-4.1**
LPAZ	**La Paz**	**8.26**	**10**	P		**P**	**08**	**35**	**46.2**	**-0.9**
	comp=N,9.1nm,0.3s,baz=206,slow=6.5,SNR=300									
LPAZ				LR		LR	08	39	04.2	
	comp=N,105nm,20.6s,baz=251,slow=38									
CPUP	**Villa Florida**	**11.20**	**102**	P		**P**	**08**	**36**	**28.5**	**+1.5**
	comp=N,0.1nm,0.3s,baz=307,slow=11,SNR=4.4									
CPUP	**Villa Florida**	**11.20**	**102**	*eP*		**P**	**08**	**36**	**25.2**	**-1.8**
	comp=N,1.4nm,0.7s									
TRQA	**Tornquist**	**14.99**	**156**	*ePn*		**P**	**08**	**37**	**16.4**	**-0.4**
	comp=N,2.1nm,0.7s									
BDFB	**Brasilia**	**22.03**	**71**	P		**P**	**08**	**38**	**36.6**	**-0.8**
	comp=N,9.1nm,0.4s,mb4.4,baz=248,slow=9.4,SNR=24									
SJG	**San Juan**	**42.46**	**5**	P		**P**	**08**	**41**	**35.5**	**-1.7**
	comp=N,14nm,0.8s,mb4.7,baz=198,slow=6.4,SNR=3.6									
VNA3	**Neumayer Olymp**	**57.46**	**161**	*iP*		**P**	**08**	**43**	**32.2**	**+1.3**
VNA3				*e*		pP	08	43	53.8	+3.1
VNA3				*e*			08	44	01.3	
VNA1	**Neumayer--Stat**	**57.70**	**160**	*iP*		**P**	**08**	**43**	**34.9**	**+2.4**
VNA1				*e*		pP	08	43	56.1	+3.7
VNA1				*e*			08	44	03.9	
VNA2	**Neumayer--Watz**	**58.06**	**160**	*iP*		**P**	**08**	**43**	**37.2**	**+2.2**
VNA2				*e*		pP	08	43	58.7	+3.8
VNA2				*e*			08	44	06.3	
SNAA	**Sanae**	**59.68**	**160**	*eP*		**P**	**08**	**43**	**45.7**	**-0.5**
MET	**Memphis--Engin**	**62.35**	**341**	P		**P**	**08**	**44**	**05.3**	**+0.6**
WVT	**Waverly**	**62.71**	**343**	P		**P**	**08**	**44**	**03.9**	**-3.2**
	comp=N,2.4nm,0.8s,mb4.2									
WVT				*epP*		pP	08	44	23.6	-3.7
TXAR	**Lajitas Array**	**62.75**	**327**	P		**P**	**08**	**44**	**06.6**	**-1.0**
	comp=N,0.4nm,0.6s,mb3.6,baz=146,slow=7.7,SNR=8.1									
TXAR				pP		pP	08	44	26.7	-1.0
	comp=N,0.3nm,0.5s,baz=149,slow=8.9,SNR=3.6									
TXAR	**Lajitas Array**	**62.75**	**327**	P		**P**	**08**	**44**	**06.6**	**-1.0**
TXAR				pP		pP	08	44	26.7	-1.0
MIAR	**Mount Ida**	**62.98**	**338**	*eP*		**P**	**08**	**44**	**05.8**	**-3.2**
	comp=N,1.9nm,0.8s,mb4.1									
MIAR				*epP*		pP	08	44	25.8	-3.4
QSPA	**South Pole Qui**	**65.72**	**180**	*iP*		**P**	**08**	**44**	**26.9**	**+0.8**
	comp=N,20nm,0.5s,mb5.2									
ANMO	**Albuquerque**	**68.69**	**328**	*eP*		**P**	**08**	**44**	**45.4**	**0.0**
	comp=N,1.2nm,0.8s,mb3.8									
ANMO				*epP*		pP	08	45	04.0	-1.8
LIC	**Lamto**	**69.80**	**73**	*eP*		**P**	**08**	**44**	**51.7**	**-0.8**
	comp=N,59nm,1.6s,mb5.2									
TIC	**Toumodi**	**70.01**	**73**	*eP*		**P**	**08**	**44**	**53.7**	**-0.1**
	comp=N,27nm,0.2s									
KIC	**Kosan Boka**	**70.11**	**73**	*eP*		**P**	**08**	**44**	**53.8**	**-0.6**
	comp=N,30nm,0.5s,mb5.3									
DBIC	**Dimbokro**	**70.16**	**73**	P		**P**	**08**	**44**	**54.2**	**-0.5**
	comp=N,5.5nm,0.5s,mb4.6,baz=207,slow=6.7,SNR=15									
DBIC				pP		pP	08	45	14.8	-0.5
	comp=N,8.9nm,0.8s,baz=223,slow=6.5,SNR=4.8									
DBIC	**Dimbokro**	**70.16**	**73**	P		**P**	**08**	**44**	**54.2**	**-0.5**
DBIC				pP		pP	08	45	14.8	-0.5
VNDA	**Vanda**	**73.83**	**190**	P		**P**	**08**	**45**	**16.6**	**+1.3**
	comp=N,0.8nm,0.5s,mb3.7,baz=17,slow=0.7,SNR=9.0									
VNDA	**Vanda**	**73.83**	**190**	*eP*		**P**	**08**	**45**	**15.8**	**+0.5**
	comp=N,0.7nm,0.8s,mb3.4									
VNDA				*epP*		pP	08	45	36.2	+0.1
SRU	**San Rafael**	**73.96**	**328**	*eP*		**P**	**08**	**45**	**16.5**	**-0.4**
SRU				*epP*		pP	08	45	36.9	-0.7
HWUT	**Hardware Ranch**	**76.40**	**329**	*eP*		**P**	**08**	**45**	**30.4**	**-0.3**
	comp=N,3.1nm,0.7s,mb4.2									
HWUT				*epP*		pP	08	45	51.2	-0.4
TPH	**Tonopah**	**76.64**	**323**	*eP*		**P**	**08**	**45**	**32.7**	**+0.6**
	comp=N,4.0nm,1.5s,mb3.9									
NVAR	**Mina Array Bea**	**77.48**	**323**	P		**P**	**08**	**45**	**37.6**	**+0.8**
	comp=N,0.7nm,0.7s,mb3.5,baz=133,slow=5.5,SNR=7.1									
NVAR				pP		pP	08	45	59.0	+1.3
	comp=N,0.9nm,1.0s,baz=150,slow=6.2,SNR=3.0									
HLID	**Hailey**	**79.25**	**329**	*eP*		**P**	**08**	**45**	**47.4**	**+1.0**
	comp=N,2.8nm,0.8s,mb4.1									
HLID				*epP*		pP	08	46	08.0	+0.6
MCMT	**McKenzie Canyo**	**79.49**	**330**	*eP*		**P**	**08**	**45**	**48.7**	**+1.0**
MCMT				*epP*		pP	08	46	08.8	+0.2
MAW	**Mawson**	**81.66**	**163**	P		**P**	**08**	**45**	**59.7**	**+1.0**
	comp=N,6.7nm,0.6s,mb4.7,baz=202,slow=5.3,SNR=15									
YBH	**Yreka Blue Hor**	**82.20**	**323**	P		**P**	**08**	**46**	**01.4**	**-0.6**
	comp=N,1.1nm,0.7s,mb3.8,baz=66,slow=9.7,SNR=5.4									
YKA	**Yellowknife Ar**	**93.79**	**341**	P		**P**	**08**	**46**	**56.5**	**-0.5**
	comp=N,0.5nm,0.6s,mb4.0,baz=138,slow=4.5,SNR=11									
YKA				pP		pP	08	47	17.6	-1.0
	comp=N,2.2nm,0.9s,baz=136,slow=4.6,SNR=13									
YKA	**Yellowknife Ar**	**93.79**	**341**	P		**P**	**08**	**46**	**56.5**	**-0.5**
YKA				pP		pP	08	47	17.6	-1.0
ASAR	**Alice Springs**	**127.01**	**207**	PKP		PKPdf	08	52	45.0	+1.3
	comp=N,1.7nm,0.6s,baz=139,slow=2.1,SNR=25									
WRA	**Warramunga Arr**	**130.09**	**210**	PKP		PKPdf	08	52	51.0	+1.2
	comp=N,1.0nm,0.5s,baz=161,slow=1.8,SNR=32									
ZRNK	**Zerenda**	**137.84**	**37**	*ePKPdf*		PKPdf	08	53	04.2	+0.8
ZAL	**Zalesovo**	**144.88**	**26**	PKP		PKPdf	08	53	17.6	+1.9
	comp=N,2.6nm,0.5s,baz=106,slow=4.5,SNR=12									
ZAL				*pPKP*			08	53	38.5	
	comp=N,8.8nm,0.7s,baz=72,slow=3.2,SNR=14									
MKAR	**Makanchi Array**	**148.35**	**38**	PKPbc		PKPdf	08	53	27.3	+5.6
	comp=N,3.3nm,0.7s,SNR=26									
MKAR				*pPKPbc*			08	53	48.6	
	comp=N,7.4nm,0.8s,baz=316,slow=2.8,SNR=19									
MKAR	**Makanchi Array**	**148.35**	**38**	PKPbc		PKPdf	08	53	27.3	+5.6
MKAR				*pPKPbc*			08	53	48.6	

*NEIC **22** 08:40:43.2, 38.84N×23.21E, h37km, MD2.6(ATH), After ATH.*
*THE **22** 08:40:43.6, 38.80N×23.44E, h8km, ML2.4*
*ATH **22** 08:40:43.2, 38.84N×23.21E, h37km±1km, MD2.6/5*

ISC 22 08:40:43.1±0.9, 38.81N±0.04×23.43E±0.05, h11km±8km, n9, σ0§38/13, 1D, Greece

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
LKR	**Lokris**	**0.37**	**245**	*iPB*		**Pb**	**08**	**40**	**50.8**	**-0.4**
LKR				*eSB*		**Sb**	**08**	**40**	**56.7**	**0.0**
AOS	**Alonnisos**	**0.50**	**44**	*ePg*		**Pg**	**08**	**40**	**53.4**	**0.0**
AOS				*eSg*		**Sg**	**08**	**41**	**00.5**	**+0.3**
NEO	**Neokhori**	**0.52**	**342**	*ePB*		**Pb**	**08**	**40**	**53.7**	**-0.1**
NEO				*eSB*		**Sb**	**08**	**41**	**01.5**	**+0.4**
XOR	**Xorichti**	**0.59**	**342**	*ePg*		**Pg**	**08**	**40**	**54.9**	**-0.1**
PTL	**Penteli**	**0.83**	**156**	*ePN*		**Pn**	**08**	**41**	**01.0**	**+0.4**
AGG	**Agios Georgios**	**0.88**	**284**	*ePg*		**Pg**	**08**	**41**	**00.3**	**-0.5**
	comp=Z,2.1nm,0.2s									
AGG				*eSg*		**Sg**	**08**	**41**	**13.3**	**+0.6**
NSAL	**Nisos Salamina**	**0.90**	**178**	*ePN*		**Pn**	**08**	**41**	**01.5**	**-0.1**
NAIG	**Nisos Aigina**	**1.05**	**177**	*ePN*		**Pn**	**08**	**41**	**04.0**	**+0.3**
OUR	**Ouranopolis**	**1.58**	**16**	*ePb*		**Pb**	**08**	**41**	**11.2**	**-0.7**

*IDC **22** 08:42:16.5±1.6, 63.60N×148.54W, mb3.7/5, mb1 3.9/8, mb1mx3.7/21, ML3.5/3, Error ellipse: s-maj=24.4km s-min=13.1km az=91.0*
*NEIC **22** 08:42:17.1, 63.46N×148.25W, h8km, ML3.9(PMR), ML3.5(AEIC), After AEIC.*
NEIC Felt at Fairbanks.

ISC 22 08:42:16.5±0.6, 63.49N±0.02×148.26W±0.04, h6km±5km, n61, σ0§92/70, mb3.5/5, Central Alaska

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
RND	**Reindeer**	**0.28**	**253**	P		**Pg**	**08**	**42**	**22.7**	**+0.4**
MCK	**McKinley**	**0.39**	**309**	P		**Pg**	**08**	**42**	**25.1**	**+0.7**
MCK				S		**Sg**	**08**	**42**	**30.7**	**+1.2**
DHY	**Denali Highway**	**0.58**	**136**	P		**Pg**	**08**	**42**	**27.6**	**-0.5**
DHY				S		**Sg**	**08**	**42**	**35.7**	**-0.2**
HUR	**Hurricane**	**0.81**	**231**	P		**Pb**	**08**	**42**	**31.8**	**-0.8**
HUR				S		**Sb**	**08**	**42**	**43.2**	**-0.3**
BWN	**Browne**	**0.87**	**322**	P		**Pb**	**08**	**42**	**33.5**	**-0.1**
TRF	**Thorofare Moun**	**0.91**	**268**	P		**Pb**	**08**	**42**	**34.0**	**-0.3**
TRF				S		**Sb**	**08**	**42**	**46.4**	**-0.1**
HDA	**Harding Lake**	**1.08**	**31**	P		**Pb**	**08**	**42**	**37.9**	**+0.6**
NEA	**Nenana**	**1.15**	**342**	P		**Pb**	**08**	**42**	**39.1**	**+0.7**
CCB	**Clear Creek Bu**	**1.18**	**10**	P		**Pb**	**08**	**42**	**39.4**	**+0.5**
KTH	**Kantishna Hill**	**1.20**	**274**	P		**Pb**	**08**	**42**	**38.9**	**-0.3**
KTH				S		**Sb**	**08**	**42**	**55.3**	**+0.5**
PAX	**Paxson**	**1.37**	**111**	P		**Pb**	**08**	**42**	**41.0**	**-1.1**
PAX				S		**Sb**	**08**	**42**	**58.3**	**-1.4**
COLA	**College**	**1.40**	**7**	P		**Pn**	**08**	**42**	**42.9**	**+0.2**
COLA				S		**Sb**	**08**	**43**	**00.5**	**-0.2**
IL1	**Eielson Array**	**1.42**	**24**	P		**Pn**	**08**	**42**	**43.0**	**+0.1**
ILAR	**Eielson Array**	**1.42**	**24**	Pg		**Pg**	**08**	**42**	**43.0**	**-1.9**
	54nm,0.3s,baz=209,slow=17,SNR=1043									
ILAR				Lg			08	43	01.9	
	373nm,0.3s,baz=206,slow=28,SNR=68									
CUT	**Chulitna**	**1.43**	**221**	P		**Pn**	**08**	**42**	**42.8**	**-0.2**
MDM	**Murphy Dome**	**1.47**	**0**	P		**Pn**	**08**	**42**	**44.1**	**+0.4**
GLM	**Gilmore Dome**	**1.55**	**14**	P		**Pn**	**08**	**42**	**45.1**	**+0.3**
SML	**Sawmill**	**1.69**	**181**	P		**Pn**	**08**	**42**	**45.9**	**-0.9**
TOA	**Tolsona**	**1.69**	**144**	P		**Pn**	**08**	**42**	**47.6**	**+0.8**
SCM	**Sheep Creek Mo**	**1.72**	**165**	P		**Pn**	**08**	**42**	**46.7**	**-0.5**
GHO	**Glory Hole Cre**	**1.75**	**190**	P		**Pn**	**08**	**42**	**47.2**	**-0.5**
DOT	**Dot Lake**	**1.88**	**83**	P		**Pn**	**08**	**42**	**50.0**	**+0.4**
DOT				S		**Sn**	**08**	**43**	**14.4**	**+0.5**
MLY	**Manley**	**1.89**	**326**	P		**Pn**	**08**	**42**	**49.6**	**0.0**
PMR	**Palmer**	**1.95**	**192**	P		**Pn**	**08**	**42**	**49.9**	**-0.7**
TZL	**Tazlina**	**1.95**	**137**	P		**Pn**	**08**	**42**	**52.0**	**+1.4**
PWA	**Palmer West**	**1.99**	**203**	P		**Pn**	**08**	**42**	**51.2**	**+0.1**
KNK	**Knik Glacier**	**2.09**	**183**	P		**Pn**	**08**	**42**	**52.2**	**-0.3**
KLU	**Klutina**	**2.28**	**151**	P		**Pn**	**08**	**42**	**53.3**	**-1.9**
PMS	**Palmer South**	**2.33**	**196**	P		**Pn**	**08**	**42**	**56.6**	**+0.6**
PRP	**Porcupine Dome**	**2.35**	**29**	P		**Pn**	**08**	**42**	**56.8**	**+0.5**
WANC	**Wrangell North**	**2.44**	**126**	P		**Pn**	**08**	**42**	**59.4**	**+1.9**
RC01	**Rabbit Creek A**	**2.51**	**197**	P		**Pn**	**08**	**42**	**58.8**	**+0.3**
VLZ	**Valdez**	**2.53**	**158

JEW	Eniwo	1.68	12	P		P	09 25 47.9	+0.9
JEW				eS		S	09 26 09.5	+0.1
JNBK	Urakawa-nobuka	1.72	51	P		P	09 25 48.1	+0.6
JNBK				eS		S	09 26 11.3	+1.0
JOM	Ohasama	1.74	172	P		P	09 25 48.3	+0.5
JOM				eS		S	09 26 10.4	-0.4
ASAJ	Asahikawa	3.15	22	P		P	09 26 06.2	-0.2
	1.8nm,0.3s,baz=71,slow=27,SNR=12							
ASAJ				S		S	09 26 41.2	-2.5
	1.5nm,0.3s,baz=75,slow=20,SNR=3.8							
YSS	Yuzh-Sakhalins	5.89	12	P		P	09 26 43.8	+0.4
	42nm,1.3s							
ZAL	Zalesovo	38.96	309	P		P	09 32 32.6	-0.5
	1.4nm,0.5s,mb4.1,baz=293,slow=8.5,SNR=3.7							
MKAR	Makanchi Array	41.73	298	P		P	09 32 56.0	+0.1
	1.4nm,0.5s,mb3.9,baz=85,slow=9.2,SNR=17							
KURK	Kurchatov	43.18	305	eP		P	09 33 07.8	0.0
ILAR	Eielson Array	46.21	34	P		P	09 33 32.2	+0.5
	0.8nm,0.6s,mb3.6,baz=276,slow=7.9,SNR=12							
ZRNK	Zerenda	48.41	310	eP		P	09 33 48.8	-0.3
INK	Inuvik	50.87	29	eP		P	09 34 06.7	-1.0
	2.4nm,0.9s,mb4.2							
INK				e		pP	09 34 32.9	-2.2
RES	Resolute Bay	58.66	15	P		P	09 35 01.4	-2.7
	2.6nm,0.6s,mb4.4							
YKA	Yellowknife Ar	60.41	31	P		P	09 35 15.4	-0.7
	0.2nm,0.6s,mb3.3,baz=310,slow=5.7,SNR=7.2							
WRA	Warramunga Arr	61.14	187	P		P	09 35 19.2	-2.5
	0.3nm,0.9s,mb3.3,baz=4.8,slow=6.9,SNR=9.0							
ASAR	Alice Springs	64.87	187	P		P	09 35 44.9	-1.3
	baz=7.1,slow=7.3							
NVAR	Mina Array Bea	72.80	54	P		P	09 36 36.0	+1.4
	0.3nm,0.5s,mb3.4,baz=308,slow=4.2,SNR=4.7							
PDAR	Pinedale Array	75.01	46	P		P	09 36 48.0	+0.7
	0.8nm,0.8s,mb3.5,baz=296,slow=1.8,SNR=6.7							
PV10	Paradox Valley	78.30	49	eP		P	09 37 08.0	+2.3
SCHQ	Schefferville	81.43	16	P		P	09 37 22.0	-0.2
	1.4nm,0.4s,mb4.1,baz=190,slow=17,SNR=6.2							
TXAR	Lajitas Array	87.85	52	P		P	09 37 55.6	+1.0
	0.4nm,0.9s,mb3.5,baz=315,slow=5.3,SNR=4.1							

IDC ***22*** *09:37:54.4±2.5,34.82N×24.06E,mb3.6/4,mb1 3.7/6, mb1mx3.5/23,ML3.4/2,Error ellipse: s-maj=49.5km s-min=12.6km az=161.0*

NEIC ***22*** *09:37:58.9,34.83N×24.24E,h19km,MD3.5(ATH),After ATH.*

ATH ***22*** *09:37:58.9,34.83N×24.24E,h19km±2km,MD3.5/7*

ISC 22 09:37:57.9±1.2,34.84N±0.10×24.1E±0.1,h28km±7km,n15, σ1§16/16,mb3.5/4,Crete

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
GVD	Gavdhos	0.00	354	eP	B	Pb	09 38 03.0	+0.4
VAM	Vamos	0.58	9	eP	N	Pn	09 38 09.5	-0.6
VAM				eS	N	Sn	09 38 19.3	+0.6
IDI	Anoyia	0.80	55	Pg		Pb	09 38 11.3	-1.8
	38nm,0.3s,baz=227,slow=17,SNR=7.2							
IDI				Lg			09 38 21.4	
	219nm,0.3s,baz=323,slow=19,SNR=23							
NPS	Neapolis	1.32	71	eP	N	Pn	09 38 21.3	+0.5
XRY	Khrisi	1.32	88	eP	N	Pn	09 38 21.9	+1.1
KYTH	Kithira	1.68	330	eP	N	Pn	09 38 30.8	+4.9
SANT	Santorini	1.90	36	eP		Pn	09 38 30.2	+1.2
VLI	Veliai	2.10	334	eP	N	Pn	09 38 36.2	+4.3
KARP	Karpathos	2.62	73	eP	N	Pn	09 38 40.7	+1.4
BRTR	Keskin Array B	9.04	55	Pn		P	09 40 08.1	-1.6
	0.2nm,0.3s,baz=229,slow=12,SNR=6.0							
GERES	GERESS Array B	15.97	334	Pn		P	09 41 43.5	+1.3
	0.1nm,0.3s,baz=165,slow=11,SNR=3.7							
NOA	NORSAR Array B	27.50	346	P		P	09 43 43.2	-0.4
	0.2nm,0.4s,mb3.0,baz=148,slow=10,SNR=2.7							
ARCES	ARCESS Array B	34.76	1	P		P	09 44 44.3	-3.3
	2.4nm,1.1s,mb4.0,baz=197,slow=9.4,SNR=3.6							
MKAR	Makanchi Array	44.69	56	P		P	09 46 09.0	-0.9
	0.9nm,0.4s,mb3.9,baz=297,slow=6.4,SNR=1.3							
YKA	Yellowknife Ar	77.48	342	P		P	09 49 51.1	-0.7
	0.1nm,0.4s,mb3.1,baz=32,slow=5.1,SNR=7.8							

CASC 22 09:48:18.3±1.9,11.41N×87.28W,h39km±438km,MD3.9, ML3.0,3C-2D,Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
PYN	Poneloya	1.00	14	eP		P	09 48 36.0	0.0
COPN	Copaltepe	1.02	41	eP		P	09 48 36.2	-0.1
LEON	Leon	1.07	20	eP		P	09 48 36.9	-0.1
LEON				iP			09 48 36.9	
CRUN	El Crucero	1.11	59	eP		P	09 48 37.5	-0.1
CNGN	Cerro Negro	1.23	27	eP		P	09 48 39.1	-0.1
MOMJ	Momotombo	1.23	36	eP		P	09 48 38.5	-0.7
TEL3	Telica 3	1.23	20	eP		P	09 48 36.8	-2.6
MGAN	Managua	1.25	54	eP		P	09 48 38.6	-0.9
MGAN				eS		S	09 48 56.8	+1.4
MGAN				i			09 49 01.4	
	comp=N,239nm,0.3s							
APON	Apoyo	1.29	67	eP		P	09 48 39.9	-0.3
JCR	Jicaral	2.63	126	eP		P	09 48 58.9	-0.4
CGA2	Cerro Gallo 2	3.09	116	eS		S	09 49 40.0	-1.9
LAJ	Bijagual	3.46	116	eP		P	09 49 06.5	-4.6
LAJ				eS		S	09 49 42.5	-8.8
LCR2	La Lucha 2	3.62	117	eP		P	09 49 12.6	-0.7
LCR2				eS		S	09 49 54.8	-0.5
URSC	Urasca	3.77	114	eP		P	09 49 16.3	+0.7

NEIC ***22*** *10:32:59.2±0.5,0.09N×126.86E,h10km,mb4.4/2,Error ellipse: s-maj=20.9km s-min=7.3km az=67.0*

IDC ***22*** *10:33:05.3±3.5,0.04N×126.90E,h62km±30km,mb3.9/5, mb1 4.0/6,mb1mx3.7/18,ML3.7/1,Error ellipse: s-maj=89.8km s-min=16.9km az=69.0*

ISC 22 10:33:03.3±0.7,0.1N±0.1×126.9E±0.2,h62km,n15, σ0§50/15,mb4.0/8,Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
FITZ	Fitzroy Crossi	18.08	184	P		P	10 37 11.7	-0.2
	0.2nm,0.3s,baz=355,slow=19,SNR=4.4							
WRAB	Tennant Creek	21.17	160	eP		P	10 37 45.0	-0.6
	9.4nm,0.5s,mb4.4							
WRA	Warramunga Arr	21.18	160	P		P	10 37 45.3	-0.3
	2.5nm,0.3s,mb4.0,baz=340,slow=11,SNR=186							
WB2	Warramunga Arr	21.18	160	eP		P	10 37 45.4	-0.2
MBWA	Marble Bar	22.20	198	eP		P	10 37 56.3	+0.5
	0.1nm,0.7s,mb2.4							
AS12	Alice Springs	24.55	164	eP		P	10 38 19.6	+0.9
	7.2nm,0.7s,mb4.3							
ASAR	Alice Springs	24.55	164	P		P	10 38 19.6	+0.9
	5.0nm,0.5s,mb4.3,baz=341,slow=11,SNR=75							
ASAR				PcP		PcP	10 41 55.3	-1.3
	0.3nm,0.5s,baz=358,slow=2.5,SNR=4.7							
ASAR				ScP			10 45 29.7	
	0.2nm,0.5s,baz=338,slow=2.5,SNR=5.0							
CTAO	Charters Tower	27.59	138	eP		P	10 38 47.3	+0.3
	11nm,1.2s,mb4.4							
STKA	Stephens Creek	34.68	158	P		P	10 39 48.9	-0.3
	1.6nm,0.3s,mb4.5,baz=324,slow=8.4,SNR=14							
HYB	Hyderabad	50.56	293	*i* P		P	10 41 58.0	-0.1
HYB	Hyderabad	50.56	293	eP		P	10 41 58.0	-0.1
SONM	Songino Array	50.81	342	P		P	10 42 00.4	+0.9
	0.6nm,0.6s,mb3.7,baz=153,slow=8.3,SNR=4.7							
MKAR	Makanchi Array	60.65	326	P		P	10 43 09.8	-0.5
	1.3nm,0.4s,mb4.4,baz=122,slow=7.8,SNR=31							
MKAR	Makanchi Array	60.65	326	P		P	10 43 09.8	-0.5
KURK	Kurchatov	64.91	328	P		P	10 43 38.0	-0.5

IDC ***22*** *10:46:03.6±0.9,18.39S×172.83W,mb4.1/10,mb1 4.4/11, mb1mx4.3/19,ML4.1/1,Error ellipse: s-maj=49.1km s-min=16.2km az=145.0*

NEIC ***22*** *10:46:04.9±0.3,18.32S×172.90W,h10km,mb4.6/7,Error ellipse: s-maj=16.7km s-min=7.3km az=144.0*

ISC 22 10:46:06.8±0.5,18.4S±0.1×173.0W±0.1,h33km,n36, σ0§60/28,mb4.3/16,Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
RAR	Rarotonga	12.72	105	Pn		P	10 48 54.2	-14
	1.1nm,0.3s,baz=264,slow=10,SNR=6.2							
URZ	Urewera	21.64	202	P		P	10 50 56.0	-0.3
	10.0nm,0.8s,mb4.3,baz=308,slow=11,SNR=4.3							
RPZ	Rata Peaks	28.65	205	P		P	10 52 10.2	+7.7
	27nm,0.7s,mb5.1,baz=45,slow=19,SNR=20							
CTA	Charters Tower	38.50	261	eP		P	10 53 28.3	+0.5
	5.1nm,0.6s,mb4.4							
CTA	Charters Tower	38.50	261	P		P	10 53 28.2	+0.3
	10nm,0.9s,mb4.6,baz=86,slow=11,SNR=13							
CTAO	Charters Tower	38.50	261	eP		P	10 53 28.2	+0.3
	7.9nm,0.6s,mb4.6							
STKA	Stephens Creek	43.01	243	eP		P	10 54 05.5	+0.5
	5.1nm,1.6s,mb4.0							
STKA	Stephens Creek	43.01	243	P		P	10 54 05.7	+0.7
	6.0nm,1.1s,mb4.2,baz=135,slow=16,SNR=4.2							
WB2	Warramunga Arr	49.64	259	eP		P	10 54 57.9	+0.3
WRAB	Tennant Creek	49.64	259	eP		P	10 54 57.2	-0.3
	28nm,0.9s,mb5.3							
WRA	Warramunga Arr	49.65	259	P		P	10 54 57.6	-0.1
	6.9nm,0.8s,mb4.7,baz=97,slow=7.5,SNR=63							
AS12	Alice Springs	49.67	254	eP		P	10 54 58.5	+0.8
	19nm,1.0s,mb5.1							
ASAR	Alice Springs	49.67	254	P		P	10 54 58.1	+0.4
	0.0nm,0.3s,baz=276,slow=31,SNR=7.6							
ASAR	Alice Springs	49.67	254	P		P	10 54 58.1	+0.4
KAKA	Kakadu	52.80	268	eP		P	10 55 18.8	-2.7
	11nm,0.7s,mb4.9							
QSPA	South Pole Qui	71.70	180	eP		P	10 57 27.0	+0.2
	3.8nm,1.0s,mb4.3							
YBH	Yreka Blue Hor	75.70	36	P		P	10 57 51.6	+0.8
	1.4nm,1.0s,mb3.9,baz=207,slow=9.0,SNR=2.5							
NVAR	Mina Array Bea	76.24	41	P		P	10 57 53.4	-0.5
	0.6nm,0.6s,mb3.7,baz=220,slow=7.0,SNR=5.6							
MSU	Marysvale	80.23	44	eP		P	10 58 15.9	0.0
TXAR	Lajitas Array	81.91	56	P		P	10 58 24.6	-0.3
	1.3nm,1.0s,mb3.8,baz=217,slow=6.3,SNR=12							
GDL2	Guadalupe Moun	82.65	53	eP		P	10 58 28.0	-0.6
PDAR	Pinedale Array	84.18	41	P		P	10 58 36.4	+0.2
	0.7nm,0.8s,mb3.8,baz=228,slow=2.1,SNR=6.5							
PDAR	Pinedale Array	84.18	41	P		P	10 58 36.4	+0.2
COLA	College	85.17	10	eP		P	10 58 40.9	+0.3
	5.4nm,1.0s,mb4.6							
ILAR	Eielson Array	85.25	11	P		P	10 58 41.2	+0.3
	0.6nm,0.8s,mb3.8,baz=228,slow=6.1,SNR=6.4							
DAWY	Dawson	86.17	14	eP		P	10 58 45.3	-0.1
YKA	Yellowknife Ar	92.63	23	P		P	10 59 16.2	+0.1
	0.2nm,1.0s,mb3.5,baz=233,slow=3.5,SNR=4.5							
YKA	Yellowknife Ar	92.63	23	P		P	10 59 16.2	+0.1
KMBO	Kilima Mbogo	144.54	240	PKP		PKPdf	11 05 42.8	+1.9
	0.7nm,0.3s,baz=56,slow=19,SNR=6.5							
CLL	Collm	146.79	353	*i* PKP1		PKPbc	11 05 47.2	+2.1
CLL				*i* *PKP			11 05 58.4	
CLL				*e*			11 06 30.0	
VYHS	Vyhne	148.45	345	ePKP		PKPdf	11 05 53.5	+7.1
VYHS				*e*			11 06 03.7	
BRTR	Keskin Array B	148.68	318	PKPbc		PKPdf	11 05 54.6	+7.6
	3.4nm,0.9s,baz=135,slow=1.7,SNR=19							
KHC	Kasperske Hory	148.85	352	eP		PKPdf	11 05 54.5	+7.5
GERES	GERESS Array B	149.12	351	PKPbc		PKPdf	11 05 54.2	+6.7
	0.2nm,0.3s,baz=45,slow=1.9,SNR=6.9							
SSF	Saint Saulge	151.23	5	ePKP1		PKPdf	11 06 00.0	+9.3
	15nm,0.9s							
TCF	Toulx Ste Croi	151.86	7	ePKP1		PKPdf	11 06 00.8	+9.1

MOS ***22*** *10:48:33.4±1.9,18.36S×173.01W,h10km,mb5.1/14, MS4.6/9,Error ellipse: s-maj=21.4km s-min=15.3km az=90.3*

NEIC ***22*** *10:48:35.5±0.2,18.58S×172.66W,mb5.2/42,MS4.8/93, Error ellipse: s-maj=10.3km s-min=4.4km az=144.0*

HRVD ***22*** *10:48:35.5±0.2,18.49S×172.18W,h12km,MW5.2/74, Centroid moment Tensor Solution. LP body waves: s51,c84;Mantle waves: s74,c149; Half duration: 1§0 Moment tensor: Scale 10¹⁷Nm; Mrr-0.79±.01; Mθθ0.04±.01; Mφφ0.75±.01; Mrθ-0.07±.04; Mφθ0.15±.01; Mφr-0.14±.04; Best double couple: M₀.8×10¹⁷ NP1:φs188°, δ40°,λ-94°. NP2:φs14°,δ50°,λ-86°. Principal axes: T.79, Plg5°, Azm102°; N .01, Plg3°, Azm192°; P -.81, Plg84°, Azm310°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

BJI ***22*** *10:48:35.3,18.18S×172.41W,h26km,mB5.5,mb5.2, Ms4.9,Mse4.8*

SYO ***22*** *10:48:35.4,18.58S×172.66W,h30km,MB5.2,MS4.8*

IDC ***22*** *10:48:36.3±3.0,18.40S×172.84W,h34km±22km,mb4.6/18, mb1 4.8/19,mb1mx4.8/22,ML5.4/1,MS4.7/10,Ms1 4.7/10, ms1mx4.4/17,Error ellipse: s-maj=25.5km s-min=11.1km az=141.0*

ORF ***22*** *10:48:47.4,15.77S×172.71W,h30km,mb5.9*

ISC 22 10:48:32.1±3.0,18.63S±0.06×172.59W±0.05, h17km±21km,h31km±.8km:pP-P,n347,σ1§05/167,mb5.1/71, MS4.8/111,30C-8D,Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
RAR	Rarotonga	12.33	104	Pn		P	10 51 21.7	-8.2
	21nm,0.3s,baz=256,slow=6.1,SNR=34							
RAR				Sn		S	10 53 26.7	-21
	baz=71,slow=12,SNR=2.3							
RAR				LR		LR	10 54 57.8	
	comp=Z,4μm,18.7s,baz=1.8,slow=30							
RAR	Rarotonga	12.33	104	eP		P	10 51 21.6	-8.3
	815nm,1.5s							
DZM	Mont Dzumac	19.95	257	eP		P	10 53 05.7	-0.7
NOUC	Port Laguerre	20.08	257	eP		P	10 53 05.7	-2.0
NOUC	Port Laguerre	20.08	257	eP		P	10 53 05.7	-2.1
OUZ	Omahuta	20.57	214	P		P	10 53 14.3	+1.5
URZ	Urewera	21.52	203	P		P	10 53 22.7	+0.3
	20nm,0.4s,mb4.9,baz=346,slow=5.7,SNR=16							
URZ				S		S	10 57 07.7	-7.7
	9.2nm,1.1s,baz=112,slow=19,SNR=3.6							
PAE	Paea	21.89	91	eP		P	10 53 25.5	-0.8
	247nm,1.3s,mb5.5							
PPT	Papeete	21.90	91	eP		P	10 53 26.1	-0.3
	96nm,1.3s,mb5.1							
PPT	Papeete	21.90	91	eL			10 57 21.5	
PPT				eR			10 58 14.3	
	8μm,26.2s,baz=259							
TBI	Tubuai	22.09	106	eP		P	10 53 26.9	-1.4
	125nm,1.0s,mb5.3							
TBI				eL			10 57 24.0	
TBI				eR			10 58 11.5	
	6μm,29.8s,baz=278							
TVO	Taravao	22.19	92	eP		P	10 53 28.9	-0.3
	284nm,1.3s,mb5.5							
MGZ	Maungaku	22.77	204	eP		P	10 53 37.3	+2.4
TUVZ	Tukino	22.95	204	eP		P	10 53 39.9	+3.2
PMOR	Pomariorio Ree	23.91	85	eP		P	10 53 46.3	+0.1
	93nm,1.1s,mb5.2							
QRZ	Quartz Range	25.55	207	P		P	10 54 06.3	+4.6
THZ	Tophouse	26.17	205	eP		P	10 54 12.9	+5.5
LTZ	Lake Taylor	27.28	205	eP		P	10 54 24.2	+6.6
WVZ	Waitaha Valley	28.15	206	eP		P	10 54 31.3	+5.8
RPZ	Rata Peaks	28.55	205	P		P	10 54 30.7	+1.6
	4.0nm,0.4s,mb4.5,baz=37,slow=15,SNR=6.1							
RPZ				LR		LR	11 05 13.3	
	comp=Z,896nm,20.3s,MS4.4,baz=263,slow=35							
KWAJ	Kwajalein Atol	33.53	323	PFAKE			10 55 20.0	+6.7
KWAJ				LR		LR		
	comp=Z,869nm,19.0s,MS4.5							
ARMA	Armidale	34.46	243	eP		P	10 55 20.5	-0.7
CNB	Canberra Magne	37.49	236	eP		P	10 55 47.1	+0.3
	comp=Z,50nm,1.1s,mb5.3							
CTA	Charters Tower	38.79	261	eP		P	10 55 55.8	-2.0
	comp=Z,28nm,0.6s,mb5.2							
CTA	Charters Tower	38.79	261	P		P	10 55 56.4	-1.5
	comp=Z,33nm,0.5s,mb5.3,baz=95,slow=10,SNR=66							
CTA				LR		LR	11 10 17.4	
	comp=Z,2μm,19.6s,MS5.0,baz=91,slow=34							
CTAO	Charters Tower	38.79	261	eP		P	10 55 55.7	-2.1
	comp=Z,30nm,0.6s,mb5.2							
CTAO				LR		LR		
	comp=Z,2μm,20.0s,MS4.9							
PMG	Port Moresby	40.03	278	PFAKE			10 56 20.0	+12
PMG				LR		LR		
	comp=Z,1μm,20.0s,MS4.8							
TOO	Toolangi	41.11	234	eP		P	10 56 16.7	-0.2
	comp=Z,20nm,1.2s,mb4.6							
WAKE	Wake Island	42.83	331	PFAKE			10 56 40.0	+8.8
WAKE				LR		LR		
	comp=Z,231nm,22.0s,MS4.0							
STKA	Stephens Creek	43.18	243	eP		P	10 56 33.9	0.0
	comp=Z,29nm,1.2s,mb4.9							
STKA	Stephens Creek	43.18	243	P		P	10 56 33.0	-1.0
	comp=Z,33nm,1.1s,mb5.0,baz=84,slow=6.0,SNR=17							
STKA				LR		LR	11 11 36.7	
	comp=Z,2μm,20.8s,MS4.9,baz=65,slow=32							
AS12	Alice Springs	49.92	254	eP		P	10 57 25.2	-2.0
	comp=Z,96nm,1.2s,mb5.7							
ASAR	Alice Springs	49.92	254	P		P	10 57 25.4	-1.8
	comp=Z,27nm,0.6s,mb5.5,baz=91,slow=7.2,SNR=90							
ASAR				S		S	11 04 33.2	-2.2
	comp=Z,2.9nm,0.9s,baz=87,slow=15,SNR=9.1							
WB2	Warramunga Arr	49.92	259	eP		P	10 57 24.7	-2.6
WRAB	Tennant Creek	49.92	259	eP		P	10 57 24.9	-2.4
	comp=Z,558nm,1.6s							
WRAB				LR		LR		
	comp=Z,2μm,19.0s,MS5.0							
WRA	Warramunga Arr	49.93	259	P		P	10 57 25.2	-2.2
	comp=Z,22nm,0.7s,mb5.3,baz=97,slow=7.1,SNR=127							
WRA				S		S	11 04 33.2	-2.5
	comp=Z,2.0nm,0.9s,baz=94,slow=14,SNR=5.6							
WRA				LR		LR	11 17 59.4	
	comp=Z,1μm,18.3s,MS4.9,baz=100,slow=35							
WRA	Warramunga Arr	49.93	259	P		P	10 57 25.2	-2.2
WRA				S		S	11 04 33.2	-2.4
WRA				pmax		pmax		
	comp=Z,22nm,0.7s							
WRA				smax				
	comp=Z,2.0nm,1.0s							
WRA				MLR		MLR		
	comp=Z,1μm,18.3s							
KAKA	Kakadu	53.13	268	eP		P	10 57 48.0	-3.6
	comp=Z,24nm,0.5s,mb5.4							
FORT	Forrest	54.71	245	eP		P	10 58 01.5	-1.5
	comp=Z,103nm,0.7s,mb6.0							
FITZ	Fitzroy Crossi	58.35	260	eP		P	10 58 27.5	-1.6
	comp=Z,7.9nm,1.1s,mb4.7							
FITZ	Fitzroy Crossi	58.35	260	P		P	10 58 26.7	-2.5
	comp=Z,4.2nm,0.6s,mb4.7,baz=152,slow=3.7,SNR=12							
FITZ				LR		LR	11 22 10.7	
	comp=Z,673nm,19.4s,MS4.8,baz=98,slow=35							
SBA	Scott Base	60.12	185	eP		P	10 58 39.6	-1.0
	comp=Z,24nm,1.5s,mb5.0							
VNDA	Vanda	60.26	186	P		P	10 58 42.4	+0.8
	comp=Z,1.1nm,0.7s,mb4.0,baz=9.8,slow=6.1,SNR=9.6							
VNDA				LR		LR	11 19 01.4	
	comp=Z,93nm,18.1s,MS4.0,baz=354,slow=30							
VNDA	Vanda	60.26	186	eP		P	10 58 41.4	-0.2
	comp=Z,27nm,2.2s,mb4.9							
KLBR	Kellerberrin	63.46	243	eP		P	10 59 03.4	-0.2
	comp=Z,116nm,1.4s,mb5.8							
NWAO	Narrogin (SRO)	63.75	242	PFAKE			10 59 20.0	+14
NWAO				LR		LR		
	comp=Z,893nm,20.0s,MS5.0							
MUN	Mundaring	64.72	243	eP		P	10 59 12.7	+0.8
	comp=Z,26nm,1.2s,mb5.1							
QSPA	South Pole Qui	71.43	180	eP		P	10 59 51.0	-2.0
	comp=Z,70nm,1.0s,mb5.5							
QSPA				eP			10 59 54.2	
QSPA				LR		LR		
	comp=Z,210nm,18.6s,MS4.4							
MAJO	Matsushiro	71.90	320	eP		P	10 59 55.2	-1.3
	comp=Z,57nm,1.4s,mb5.3							
MAJO				LR		LR		
	comp=Z,570nm,21.0s,MS4.8							
MAT	Matsushiro	71.90	320	P		P	10 59 55.9	-0.6
MAT				eS		S	11 09 28.6	+13
MAT	Matsushiro	71.90	320	eP		P	10 59 56.0	-0.5
	comp=Z,67nm,1.4s,mb5.4							
MAT				eS		S	11 09 29.0	+14
SMY	Shemya	71.99	352	PFAKE			11 00 10.0	+13
SMY				LR		LR		
	comp=Z,855nm,19.0s,MS5.0							
SAO	San Andreas Ge	73.23	41	PFAKE			11 00 20.0	+16
SAO				LR		LR		
	comp=Z,600nm,20.0s,MS4.9							
HOPS	Hopland	73.69	38	PFAKE			11 00 20.0	+13
HOPS				LR		LR		
	comp=Z,378nm,19.0s,MS4.7							
KKM	Kota Kinabalu	74.29	282	eP		P	11 00 12.0	+1.0
PFO	Pinyon Flat Ob	74.57	46	PFAKE			11 00 20.0	+7.8
PFO				LR		LR		
	comp=Z,507nm,19.0s,MS4.8							
CMB	Columbia Colle	74.69	40	eP		P	11 00 11.2	-1.6
	comp=Z,16nm,1.3s,mb4.8							
CMB				LR		LR		
	comp=Z,379nm,19.0s,MS4.7							
WDC	Whiskeytown Da	75.05	37	eP		P	11 00 14.6	-0.2
	comp=Z,34nm,1.5s,mb5.1							
WDC				LR		LR		
	comp=Z,504nm,21.0s,MS4.8							
MTUM	Tungsten Hills	75.40	42	eP		P	11 00 18.1	+1.2
PET	Petropavlovsk	75.57	343	eP		P	11 00 17.1	-0.5
PET				*e*			11 00 31.1	
PET				eS		S	11 09 53.0	-3.2
PET				eSSS		SSS	11 18 04.4	-0.3
PET				pmax		pmax		
	comp=Z,28nm,1.4s,mb5.0							
PET				pmax		pmax		
	comp=Z,435nm,6.6s							
PET				pmax		pmax		
	comp=Z,169nm,13.0s							
PET				MLR		MLR		
	comp=Z,281nm,22.0s,MS4.5							
PET	Petropavlovsk	75.57	343	PFAKE			11 00 30.0	+12
PET				LR		LR		
	comp=Z,360nm,20.0s,MS4.7							
YBH	Yreka Blue Hor	75.71	36	P		P	11 00 18.1	-0.5
	comp=

SSE	**Sheshan**	**80.51**	**307**	P	**P**	**11 00 45.8 +0.6**					
SSE				S	S	11 10 48.1 -1.5					
SSE				XS		11 11 03.8					
SSE				AMB	AMB						
	comp=Z,33nm,0.7s,mb5.4										
SSE				LR	LR						
	comp=N,193nm,34.8s,MS4.4										
SSE				LR	LR						
	comp=E,234nm,34.4s,MS4.4										
SSE				LR	LR						
	comp=Z,422nm,35.7s,MS4.5										
NLW	**Nelson Butte**	**81.16**	**32**	*e*P	**P**	**11 00 47.1 -1.1**					
MPU	**Maple Canyon**	**81.36**	**43**	*e*P	**P**	**11 00 50.3 +0.8**					
MNTX	**Cornudas Mount**	**81.54**	**53**	*e*P	**P**	**11 00 50.2 -0.3**					
	comp=Z,22nm,1.2s,mb5.0										
MNTX				LR	LR						
	comp=Z,295nm,22.0s,MS4.6										
SRU	**San Rafael**	**81.60**	**44**	*e*P	**P**	**11 00 51.1 +0.4**					
HVU	**Hansel Valley**	**81.61**	**41**	*e*P	**P**	**11 00 50.4 -0.4**					
HLID	**Hailey**	**81.64**	**39**	*e*P	**P**	**11 00 50.6 -0.2**					
	comp=Z,44nm,1.8s,mb5.1										
HLID				LR	LR						
	comp=Z,267nm,20.0s,MS4.6										
CTU	**Camp Tracy**	**81.66**	**42**	P	**P**	**11 00 50.8 -0.2**					
PMS	**Palmer South**	**81.72**	**11**	*e*P	**P**	**11 00 49.9 -0.9**					
TXAR	**Lajitas Array**	**81.78**	**55**	P	**P**	**11 00 52.2 +0.4**					
	comp=Z,12nm,1.0s,mb4.8,baz=225,slow=3.5,SNR=57										
BNM	**Barren Site**	**81.78**	**50**	*e*P	**P**	**11 00 51.8 0.0**					
JLU	**Jordanelle**	**81.80**	**42**	*e*P	**P**	**11 00 52.4 +0.7**					
JLU				*e*pP	pP	11 01 01.2 +4.1					
DAU	**Daniels Canyon**	**81.82**	**43**	*e*P	**P**	**11 00 52.9 +1.1**					
MDJ	**Mudanjiang**	**82.04**	**322**	P	**P**	**11 00 53.8 +1.0**					
MDJ				AP	pP	11 01 02.8 +4.5					
MDJ				XP	sP	11 01 06.8 +6.8					
MDJ				PP	PP	11 04 04.8 +1.8					
MDJ				AMB	AMB						
	comp=Z,556nm,6.4s										
MDJ				LR	LR						
	comp=N,141nm,33.0s,MS4.3										
MDJ				LR	LR						
	comp=E,177nm,36.2s,MS4.3										
MDJ				LR	LR						
	comp=Z,283nm,36.2s,MS4.4										
MDJ	**Mudanjiang**	**82.04**	**322**	PFAKE		11 01 00.0 +7.2					
MDJ				LR	LR						
	comp=Z,422nm,19.0s,MS4.8										
TCUT	**Toone Canyon**	**82.11**	**42**	*e*P	**P**	**11 00 54.2 +1.0**					
PMR	**Palmer**	**82.12**	**11**	*e*P	**P**	**11 00 51.1 -1.7**					
PMR				LR	LR						
	comp=Z,385nm,19.0s,MS4.8										
DPW	**Davenport**	**82.13**	**34**	*e*P	**P**	**11 00 52.7 -0.5**					
DPW				*e*pP	pP	11 01 02.5 +3.8					
PV10	**Paradox Valley**	**82.20**	**45**	*e*P	**P**	**11 00 54.5 +0.7**					
HWUT	**Hardware Ranch**	**82.27**	**41**	*e*P	**P**	**11 00 53.2 -1.0**					
	comp=Z,12nm,1.4s,mb4.7										
HWUT				LR	LR						
	comp=Z,462nm,19.0s,MS4.9										
ANMO	**Albuquerque**	**82.29**	**49**⇓	*e*P	**P**	**11 00 55.3 +0.9**					
ANMO	**Albuquerque**	**82.29**	**49**	*e*P	**P**	**11 00 54.5 +0.1**					
	comp=Z,14nm,1.3s,mb4.7										
ANMO				LR	LR						
	comp=Z,319nm,20.0s,MS4.7										
PV01	**Paradox Valley**	**82.40**	**46**	*e*P	**P**	**11 00 56.3 +1.4**					
GDL2	**Guadalupe Moun**	**82.54**	**53**	*e*P	**P**	**11 00 56.2 +0.5**					
GDL2				*e*pP	pP	11 01 06.1 +5.0					
NJ2	**Nanjing**	**82.72**	**307**	*e*P	**P**	**11 00 57.5 +0.8**					
NJ2				AP	pP	11 01 08.8 +6.7					
NJ2				XP	sP	11 01 10.5 +6.7					
NJ2				AMB	AMB						
	comp=Z,30nm,1.0s,mb5.3										
NJ2				LR	LR						
	comp=N,420nm,19.4s,MS5.0										
NJ2				LR	LR						
	comp=E,530nm,23.7s,MS5.0										
NJ2				LR	LR						
	comp=Z,750nm,24.3s,MS5.0										
CLNB	**Carlsbad**	**82.94**	**53**	*e*P	**P**	**11 00 58.9 +1.1**					
NEW	**Newport**	**82.94**	**34**	LR	LR	11 31 54.5					
	comp=Z,605nm,19.0s,MS5.0,baz=60,slow=31										
NEW	**Newport**	**82.94**	**34**	*e*P	**P**	**11 00 57.0 -0.5**					
	comp=Z,4.6nm,1.1s,mb4.4										
NEW				LR	LR						
	comp=Z,654nm,20.0s,MS5.0										
AHID	**Auburn Hatcher**	**83.19**	**41**	*e*P	**P**	**11 00 59.2 +0.3**					
AHID				LR	LR						
	comp=Z,396nm,20.0s,MS4.8										
MCMT	**McKenzie Canyo**	**83.28**	**38**	*e*P	**P**	**11 00 59.3 0.0**					
CPRX	**Cap Rock**	**83.29**	**52**	*e*P	**P**	**11 01 00.7 +1.1**					
MA2	**Magadan**	**83.46**	**342**	*e*P	**P**	**11 01 00.1 +0.2**					
MA2				pmax	pmax						
	comp=Z,51nm,1.7s,mb5.3										
MA2				MLR	MLR						
	comp=Z,100nm,18.0s,MS4.2										
MSO	**Missoula**	**83.81**	**36**	*e*P	**P**	**11 01 01.1 -0.8**					
	comp=Z,35nm,1.7s,mb5.2										
MSO				LR	LR						
	comp=Z,624nm,21.0s,MS5.0										
WUWY	**Wally Ulrich**	**83.83**	**40**	*e*P	**P**	**11 01 00.9 -1.2**					
KSWY	**Kelly School**	**83.95**	**40**	*e*P	**P**	**11 01 02.5 -0.2**					
TNA	**Tin City**	**84.00**	**2**	PFAKE		11 01 10.0 +7.5					
TNA				LR	LR						
	comp=Z,194nm,20.0s,MS4.5										
CN2	**Changchun**	**84.04**	**320**	*e*P	**P**	**11 01 04.8 +1.6**					
CN2				*e*AP	pP	11 01 15.0 +6.4					
CN2				*e*S	S	11 11 31.0 +5.7					
CN2				AMB	AMB						
	comp=Z,20nm,1.2s,mb5.1										
CN2				LR	LR						
	comp=N,350nm,19.0s,MS5.0										
CN2				LR	LR						
	comp=E,410nm,19.0s,MS5.0										
CN2				LR	LR						
	comp=Z,310nm,21.0s,MS4.7										
QLMT	**Earthquake Lak**	**84.12**	**39**	*e*P	**P**	**11 01 04.1 +0.5**					
MCK	**McKinley**	**84.14**	**10**	*e*P	**P**	**11 01 03.2 0.0**					
	comp=Z,38nm,1.7s,mb5.2										
MCK				LR	LR						
	comp=Z,121nm,19.0s,MS4.3										
BW06	**Boulder Array**	**84.16**	**41**	*e*P	**P**	**11 01 03.0 -0.8**					
	comp=Z,18nm,1.2s,mb5.1										
BW06				LR	LR						
	comp=Z,332nm,19.0s,MS4.7										
PDAR	**Pinedale Array**	**84.16**	**41**	P	**P**	**11 01 03.3 -0.5**					
	comp=Z,7.6nm,0.9s,mb4.8,baz=232,slow=1.6,SNR=41										
CHMT	**Chamberlain Mo**	**84.24**	**36**	*e*P	**P**	**11 01 03.9 -0.2**					
YMR	**Madison River**	**84.31**	**39**	*e*P	**P**	**11 01 03.4 -1.2**					
SDCO	**Great Sand Dun**	**84.31**	**47**	*e*P	**P**	**11 01 05.6 +0.9**					
	comp=Z,15nm,1.5s,mb4.9										
SDCO				LR	LR						
	comp=Z,182nm,21.0s,MS4.4										
BOZ	**Bozeman (W)**	**84.46**	**38**	*e*P	**P**	**11 01 04.3 -1.0**					
	comp=Z,32nm,1.3s,mb5.3										
BOZ				LR	LR						
	comp=Z,366nm,21.0s,MS4.7										
QIZ	**Qiongzhong**	**84.82**	**292**	P	**P**	**11 01 08.3 +0.7**					
QIZ				S	S	11 11 32.6 -1.0					
QIZ				AMB	AMB						
	comp=Z,399nm,8.0s										
QIZ				LR	LR						
	comp=Z,434nm,23.0s,MS4.8										
HRY	**Holter Researc**	**84.93**	**37**	*e*P	**P**	**11 01 07.2 -0.4**					
MAW	**Mawson**	**84.99**	**198**	P	**P**	**11 01 08.7 +1.3**					
	comp=Z,2.4nm,0.5s,mb4.5,baz=155,slow=9.1,SNR=9.1										
MAW	**Mawson**	**84.99**	**198**	P	**P**	**11 01 08.7 +1.3**					
MAW				pmax	pmax						
	comp=Z,2.0nm,0.5s										
MAW	**Mawson**	**84.99**	**198**	*e*P	**P**	**11 01 08.4 +1.0**					
MAW				LR	LR						
	comp=Z,1μm,20.0s,MS5.3										
ISCO	**Idaho Springs**	**85.22**	**45**	PFAKE		11 01 20.0 +11					
ISCO				LR	LR						
	comp=Z,224nm,19.0s,MS4.6										
JCT	**Junction City**	**85.30**	**56**	*e*P	**P**	**11 01 09.3 -0.5**					
	comp=Z,9.5nm,1.1s,mb4.8										
JCT				LR	LR						
	comp=Z,324nm,21.0s,MS4.7										
COLA	**College**	**85.38**	**10**	*e*P	**P**	**11 01 08.8 -0.5**					
COLA	**College**	**85.38**	**10**	*e*P	**P**	**11 01 08.2 -1.1**					
ILAR	**Eielson Array**	**85.45**	**11**	P	**P**	**11 01 08.5 -1.2**					
	comp=Z,6.1nm,1.1s,mb4.6,baz=218,slow=4.6,SNR=18										
ILAR				LR	LR	11 37 52.0					
	comp=Z,169nm,18.4s,MS4.5,baz=232,slow=35										
ILAR	**Eielson Array**	**85.45**	**11**	P	**P**	**11 01 08.5 -1.2**					
ILAR				pmax	pmax						
	comp=Z,6.0nm,1.1s										
ILAR				MLR	MLR						
	comp=Z,169nm,18.4s										
WHN	**Wuhan**	**85.53**	**304**	⇑P	**P**	**11 01 13.5 +2.5**					
WHN				AMB	AMB						
	comp=Z,72nm,1.7s,mb5.6										
IMA	**Indian Mountai**	**85.64**	**8**	*e*P	**P**	**11 01 11.0 +0.4**					
SEY	**Seymchan**	**85.82**	**345**	*e*P	**P**	**11 01 11.8 +0.2**					
SEY				pmax	pmax						
	comp=Z,30nm,1.1s,mb5.4										
SEY				pmax	pmax						
	comp=N,30nm,1.3s										
SEY				MLR	MLR						
	comp=Z,240nm,17.0s,MS4.7										
SEY				MLR	MLR						
	comp=N,340nm,23.0s										
SEY				MLR	MLR						
	comp=E,340nm,19.0s										
DAWY	**Dawson**	**86.35**	**14**	*e*P	**P**	**11 01 13.7 -0.5**					
BILL	**Bilibino**	**87.79**	**352**	*e*P	**P**	**11 01 21.3 +0.2**					
BILL				*e*		11 04 54.6					
BILL				*e*		11 12 04.4					
BILL				pmax	pmax						
	comp=Z,25nm,1.3s,mb5.3										
BILL				MLR	MLR						
	comp=Z,200nm,19.0s,MS4.5										
BILL	**Bilibino**	**87.79**	**352**	*e*P	**P**	**11 01 20.2 -0.9**					
	comp=Z,22nm,1.3s,mb5.2										
WMOK	**Wichita Mounta**	**87.84**	**52**	*e*P	**P**	**11 01 22.1 0.0**					
	comp=Z,13nm,1.3s,mb5.0										
WMOK				LR	LR						
	comp=Z,260nm,21.0s,MS4.6										
BJT	**Baijiatuau**	**88.23**	**313**	*e*P	**P**	**11 01 25.5 +1.7**					
BJT				LR	LR						
	comp=Z,368nm,20.0s,MS4.8										
HKT	**Hockley**	**88.23**	**58**	*e*P	**P**	**11 01 24.2 0.0**					
HKT				*e*pP	pP	11 01 34.9 +5.4					
HKT				LR	LR						
	comp=Z,363nm,20.0s,MS4.8										
BJI	**Beijing**	**88.24**	**313**	*e*P	**P**	**11 01 25.3 +1.4**					
BJI				AMB	AMB						
	comp=Z,34nm,2.0s,mb5.2										
BJI				LR	LR						
	comp=N,181nm,19.0s,MS4.8										
BJI				LR	LR						
	comp=E,298nm,20.3s,MS4.8										
BJI				LR	LR						
	comp=Z,252nm,20.5s,MS4.6										
RSSD	**Black Hills**	**88.31**	**42**	*e*P	**P**	**11 01 23.7 -0.5**					
CBKS	**Cedar Bluff**	**88.84**	**48**	PFAKE		11 01 40.0 +13					
CBKS				LR	LR						
	comp=Z,296nm,20.0s,MS4.7										
ENH	**Enshi**	**89.29**	**302**	*e*P	**P**	**11 01 31.4 +2.3**					
	comp=Z,121nm,1.5s,mb6.0										
ENH				LR	LR						
	comp=Z,289nm,21.0s,MS4.7										
VNA3	**Neumayer Olymp**	**89.59**	**175**⇑	*i*	**P**	**11 01 35.8 +6.2**					
VNA3	**Neumayer Olymp**	**89.59**	**175**		**P**	**11 01 45.5 +16**					
VNA3	**Neumayer Olymp**	**89.59**	**175**⇑	*i*	**P**	**11 01 48.7 +19**					
VNA3	**Neumayer Olymp**	**89.59**	**175**⇓	*i*P	**P**	**11 01 34.4 +4.8**					
VNA3				⇑	*i*P	11 01 35.8					
VNA3					P	11 01 45.5					
VNA3				⇑	*i*P	11 01 48.7					
SYO	**Syowa Base**	**89.60**	**191**	⇓P	**P**	**11 01 30.4 +0.7**					
SYO	**Syowa Base**	**89.60**	**191**	⇑	sP	11 01 45.7 +8.8					
SNAA	**Sanae**	**89.66**	**177**	*e*P	**P**	**11 01 30.1 +0.2**					
EFI	**East Falkland**	**89.81**	**145**	PFAKE		11 01 40.0 +8.9					
EFI				LR	LR						
	comp=Z,310nm,20.0s,MS4.7										
VNA2	**Neumayer--Watz**	**90.09**	**175**⇑	*i*	**P**	**11 01 38.2 +6.3**					
VNA2	**Neumayer--Watz**	**90.09**	**175**⇑	*i*	**P**	**11 01 48.4 +16**					
VNA2	**Neumayer--Watz**	**90.09**	**175**⇑	*i*P	**P**	**11 01 37.1 +5.2**					
VNA2				⇑	*i*P	11 01 38.2					
VNA2				⇑	*i*P	11 01 48.4					
VNA2				⇓	*i*P	11 01 53.1					
HIA	**Hailar**	**90.22**	**323**	PFAKE		11 01 40.0 +7.0					
HIA				LR	LR						
	comp=Z,370nm,20.0s,MS4.8										
GYA	**Guiyang**	**90.23**	**298**⇓	*i*P	**P**	**11 01 36.5 +2.9**					
GYA				AP	pP	11 01 47.3 +8.2					
GYA				XP	sP	11 01 51.6 +11					
GYA				S	S	11 12 28.6 +4.2					
GYA				AMB	AMB						
	comp=Z,30nm,1.5s,mb5.4										
VNA1	**Neumayer--Stat**	**90.28**	**175**⇑	*i*	**P**	**11 01 38.9 +6.0**					
VNA1	**Neumayer--Stat**	**90.28**	**175**		**P**	**11 01 48.3 +15**					
VNA1	**Neumayer--Stat**	**90.28**	**175**⇑	*i*	**P**	**11 01 51.5 +19**					
VNA1	**Neumayer--Stat**	**90.28**	**175**⇑	*i*P	**P**	**11 01 37.4 +4.5**					
VNA1				⇑	*i*P	11 01 38.9					
VNA1					P	11 01 48.3					
VNA1				⇑	*i*P	11 01 51.5					
JTS	**JuntasAbangare**	**91.03**	**80**	PFAKE		11 01 50.0 +12					
JTS				LR	LR						
	comp=Z,60nm,21.0s,MS4.0										
XAN	**Xi'an**	**91.13**	**306**	P	**P**	**11 01 39.8 +2.2**					
XAN				AMB	AMB						
	comp=Z,15nm,2.5s,mb4.9										
XAN				LR	LR						
	comp=E,167nm,19.0s										
XAN				LR	LR						
	comp=Z,246nm,22.8s,MS4.6										
INK	**Inuvik**	**91.21**	**14**	*e*P	**P**	**11 01 36.1 -1.0**					
	comp=Z,51nm,1.8s,mb5.5										
INK				*e*pP	pP	11 01 46.3 +3.7					
MIAR	**Mount Ida**	**91.73**	**54**	*e*P	**P**	**11 01 41.5 +1.1**					
	comp=Z,24nm,1.5s,mb5.3										
MIAR				*e*pP	pP	11 01 49.9 +4.1					
MIAR				LR	LR						
	comp=Z,197nm,19.0s,MS4.6										
HHC	**Hu-ho-hao-te**	**91.77**	**313**	*e*P	**P**	**11 01 41.9 +1.5**					
HHC				AP	pP	11 01 52.6 +6.8					
HHC				XP	sP	11 01 57.3 +10					
HHC				S	S	11 12 43.3 +5.5					
HHC				XS		11 12 57.0					
HHC				AMB	AMB						
	comp=Z,9.0nm,1.2s,mb5.0										
HHC				AMB	AMB						
	comp=Z,298nm,6.7s										
HHC				LR	LR						
	comp=N,121nm,20.6s,MS4.5										
HHC				LR	LR						
	comp=E,106nm,20.0s,MS4.5										
YAK	**Yakutsk**	**92.37**	**336**	PFAKE		11 01 50.0 +7.4					
YAK				LR	LR						
	comp=Z,163nm,20.0s,MS4.5										
YKA	**Yellowknife Ar**	**92.74**	**23**	P	**P**	**11 01 44.1 -0.2**					
	comp=Z,1.8nm,1.0s,mb4.4,baz=235,slow=4.2,SNR=20										
YKA	**Yellowknife Ar**	**92.74**	**23**	P	**P**	**11 01 44.1 -0.2**					
YKA				pmax	pmax						
	comp=Z,2.0nm,1.0s										
KMI	**Kunming**	**93.11**	**295**	AP	pP	11 02 00.6 +8.3					
KMI				XP	sP	11 02 04.5 +10					
KMI				LR	LR						
	comp=N,207nm,25.0s										
KMI				LR	LR						
	comp=E,228nm,19.8s										
KMI				LR	LR						
	comp=Z,349nm,30.2s										
CMAR	**Chiang Mai Arr**	**94.35**	**288**	P	**P**	**11 01 52.2 -0.5**					
	comp=Z,5.1nm,0.9s,mb4.9,baz=105,slow=3.0,SNR=18										
CMAR	**Chiang Mai Arr**	**94.35**	**288**	P	**P**	**11 01 52.2 -0.5**					
CMAR				pmax	pmax						
	comp=Z,5.0nm,1.0s										
FFC	**Flin Flon**	**94.36**	**33**	*e*P	**P**	**11 01 51.6 -0.3**					
CCM	**Cathedral Cave**	**94.72**	**52**	*e*P	**P**	**11 01 52.6 -1.4**					
CCM				LR	LR						
	comp=Z,273nm,19.0s,MS4.7										
OXF	**Oxford**	**94.94**	**55**	PFAKE		11 02 10.0 +15					
OXF				LR	LR						
	comp=Z,456nm,21.0s,MS4.9										
FVM	**French Village**	**95.31**	**52**	*e*P	**P**	**11 01 57.3 +0.6**					
ULM	**Lac du Bonnet**	**95.94**	**39**	P	**P**	**11 01 58.4 -0.9**					
	comp=Z,2.9nm,0.7s,mb4.8,baz=26,slow=1.5,SNR=3.8										
ULM	**Lac du Bonnet**	**95.94**	**39**	P	**P**	**11 01 58.4 -0.9**					
ULM				LR	LR						
	comp=Z,527nm,21.0s,MS5.0										
PLAL	**Pickwick Lake**	**96.13**	**55**	PFAKE		11 02 10.0 +9.4					
PLAL				LR	LR						
	comp=Z,408nm,21.0s,MS4.9										
LRAL	**Lakeview Retre**	**96.38**	**57**	PFAKE		11 02 10.0 +8.3					
LRAL				LR	LR						
	comp=Z,265nm,20.0s,MS4.7										
WVT	**Waverly**	**96.68**	**54**	PFAKE		11 02 10.0 +7.0					
WVT				LR	LR						
	comp=Z,426nm,21.0s,MS4.9										
ULN	**Ulaanbaatar**	**97.34**	**318**	*e*P	**P**	**11 02 06.5 +0.8**					
ULN	**Ulaanbaatar**	**97.34**	**318**	PFAKE		11 02 20.0 +14					
ULN				LR	LR						
	comp=Z,203nm,21.0s,MS4.6										
SONM	**Songino Array**	**97.75**	**318**	P	**P**	**11 02 07.3 -0.2**					
	comp=Z,0.2nm,0.4s,mb4.0,baz=135,slow=6.1,SNR=2.8										
LPAZ	**La Paz**	**97.98**	**110**	PFAKE		11 02 20.0 +11					
LPAZ				LR	LR						
	comp=Z,346nm,22.0s,MS4.8										
TIXI	**Tiksi**	**98.30**	**344**	*e*P	**P**	**11 02 09.9 +0.4**					
TIXI				pmax	pmax						
	comp=Z,41nm,1.5s,mb5.7										
TIXI				MLR	MLR						
	comp=Z,2μm,19.0s,MS5.6										
TIXI	**Tiksi**	**98.30**	**344**	PFAKE		11 02 20.0 +11					
TIXI				LR	LR						
	comp=Z,228nm,19.0s,MS4.7										
WCI	**Wyandotte Cave**	**98.48**	**53**	PFAKE		11 02 20.0 +9.0					
WCI				LR	LR						
	comp=Z,1μm,19.0s,MS5.4										
DWPF	**Disney**	**99.54**	**64**	PFAKE		11 02 30.0 +14					
DWPF				LR	LR						
	comp=Z,183nm,20.0s,MS4.6										
TLY	**Talaya**	**100.62**	**321**	*e*P	P	11 02 19.9 -0.6					
TLY				pmax	pmax						
	comp=Z,16nm,0.9s										
ACSO	**Alum Creek Sta**	**101.50**	**51**	PFAKE		11 02 40.0 +15					
ACSO				LR	LR						
	comp=Z,517nm,21.0s,MS5.0										
AAM	**Ann Arbor**	**101.53**	**49**	PFAKE		11 02 40.0 +15					
AAM				LR	LR						
	comp=Z,355nm,20.0s,MS4.9										
BLA	**Blacksburg**	**102.70**	**55**	PFAKE		11 02 40.0 +10					
BLA				LR	LR						
	comp=Z,360nm,21.0s,MS4.9										
CPUP	**Villa Florida**	**102.89**	**124**	PFAKE		11 02 40.0 +8.7					
CPUP				LR	LR						
	comp=Z,213nm,21.0s,MS4.7										
MCWV	**Mont Chateau**	**103.70**	**53**	PFAKE		11 02 50.0 +15					
MCWV				LR	LR						
	comp=Z,342nm,20.0s,MS4.9										
ERPA	**Erie**	**104.13**	**50**	PFAKE		11 02 50.0 +14					
ERPA				LR	LR						
	comp=Z,278nm,20.0s,MS4.8										
LSA	**Lhasa**	**104.27**	**297**	PFAKE		11 02 50.0 +13					
LSA				LR	LR						
	comp=Z,145nm,21.0s,MS4.5										
CBN	**Corbin**	**105.28**	**54**	PFAKE		11 07 10.0					
CBN				LR	LR						
	comp=Z,433nm,20.0s,MS5.0										
SSPA	**Standing Stone**	**105.38**	**52**	PFAKE		11 07 10.0					
SSPA				LR	LR						
	comp=Z,1μm,20.0s,MS5.4										
BINY	**Binghamton**	**107.07**	**51**	PFAKE		11 07 10.0					
BINY				LR	LR						
	comp=Z,532nm,22.0s,MS5.0										
NCB	**Newcomb**	**108.62**	**49**	PFAKE		11 07 10.0					
NCB				LR	LR						
	comp=Z,206nm,21.0s,MS4.7										
WMQ	**Urumqi**	**109.56**	**311**	PDIF	Pdif	11 03 00.5 +0.3					
WMQ				PP	PP	11 07 38.3 +0.7					
WMQ				S		11 15 06.3					
WMQ				SS	SS	11 22 55.4 -0.6					
WMQ				PP	PP						
	comp=Z,23nm,10.2s										
WMQ				LR	LR						
	comp=N,287nm,28.2s,MS4.8										
WMQ				LR	LR						
	comp=E,255nm,29.1s,MS4.8										
WMQ				LR	LR						
	comp=Z,451nm,28.6s,MS4.9										
LBNH	**Lisbon**	**110.30**	**49**	PFAKE		11 07 20.0 +13					
LBNH				LR	LR						
	comp=Z,359nm,22.0s,MS4.9										
HRV	**Harvard--Oak R**	**110.36**	**51**	PFAKE		11 07 20.0 +13					
HRV				LR	LR						
	comp=Z,90nm,19.0s,MS4.4										
SJG	**San Juan**	**110.69**	**77**	PFAKE		11 07 20.0 +12					
SJG				LR	LR						
	comp=Z,231nm,20.0s,MS4.8										
MKAR	**Makanchi Array**	**113.62**	**314**	PKiKP		11 07 10.8					
	comp=Z,0.6nm,0.6s,baz=45,slow=1.7,SNR=6.8										
MKAR	**Makanchi Array**	**113.62**	**314**	*i* PKIKP	PKPdf	11 07 10.8 -2.7					
MKAR				pmax	pmax						
	comp=Z,1.0nm,0.6s										
MKAR	**Makanchi Array**	**113.62**	**314**	PKPdf	PKPdf	11 07 10.8 -2.7					
SCHQ	**

WTSB				*ex*	x	11 08 25.7	
CLZ	**Clausthal**	**146.78**	**357**	*e*PKPbc	PKPbc	11 08 15.5	+2.6
SVST	**Sivas**	**146.94**	**316**	*i* P	PKPbc	11 08 17.4	+3.8
OJC	**Ojcow**	**146.96**	**345**	*e*PKP	PKPdf	11 08 13.6	-1.9
KSP	**Ksiaz**	**147.09**	**350**	*e*PKP	PKPdf	11 08 16.2	+0.5
KSP	**Ksiaz**	**147.09**	**350**	*e*PKP	PKPdf	11 08 15.3	-0.4
KSP				*ep*PKP		11 08 24.4	
KSP				*e*		11 08 44.0	
CLL	**Collm**	**147.09**	**354**	*i*	PKPdf	11 08 14.8	-0.9
CLL				*i* PKP1	PKPdf	11 08 16.9	+1.2
CLL				*i* *PPKP		11 08 24.2	
CLL				*i*		11 08 44.6	
CLL				*i*		11 09 04.8	
HILS	**Ha'il**	**147.26**	**292**	*i* P	PKPdf	11 08 18.7	+1.9
BOYT	**Boyabat**	**147.34**	**320**	*i* P	PKPdf	11 08 18.3	+1.8
BRG	**Berggiesshubel**	**147.41**	**352**	*e*PKIKP	PKPdf	11 08 14.8	-1.4
BRG				*i*		11 08 18.7	
BRG				pmax	pmax		
	comp=Z,68nm,1.5s						
BRG	**Berggiesshubel**	**147.41**	**352**	*e*PKP	PKPdf	11 08 14.8	-1.4
BRG				*i*		11 08 18.7	
BRG				*i*		11 08 27.5	
RAC	**Raciborz**	**147.45**	**347**	*e*PKP(df)		11 08 18.0	
UPC	**Upice**	**147.46**	**350**⇑	*e*PKPB		11 08 15.3	
UPC	**Upice**	**147.46**	**350**	*e*PKP	PKPdf	11 08 15.3	-1.0
DPC	**Dobruska-Polom**	**147.56**	**349**⇑	*e*PKPB		11 08 16.7	
NIE	**Niedzica**	**147.57**	**344**⇑	*e*PKP	PKPdf	11 08 18.4	+1.8
PVCC	**Panska Ves**	**147.66**	**351**⇑	*e*PKPB		11 08 16.9	
GZT	**Gaziantep**	**147.69**	**311**	*i* P	PKPdf	11 08 19.0	+1.9
OKC	**Ostrava-Krasne**	**147.69**	**347**⇑	*e*PKPB		11 08 18.7	
CRVS	**Cervenica-Dubn**	**147.73**	**343**	*e*PKP	PKPdf	11 08 17.3	+0.5
CRVS				*e*		11 08 44.5	
CTKT	**Corum**	**147.87**	**319**	*i* P	PKPdf	11 08 19.4	+2.0
MORC	**Moravsky Berou**	**147.88**	**348**	*e*PKPbc	PKPdf	11 08 16.6	-0.4
MOX	**Moxa**	**147.88**	**355**	*i* P	PKPdf	11 08 16.4	-0.6
	comp=Z,logA/T=1.7						
MOX				L		11 22 21.0	
MOX	**Moxa**	**147.88**	**355**	*e*PKIKP	PKPdf	11 08 16.4	-0.6
MOX				pmax	pmax		
	comp=Z,81nm,1.7s						
MOX				MLR	MLR		
	comp=Z,200nm,20.0s,MS4.9						
HGN	**Heimansgroeve**	**147.92**	**2**⇑	*e*P	PKPdf	11 08 19.2	+2.1
	comp=Z,19nm,1.5s						
HGN				*ex*	x	11 08 28.4	
BALT	**Daday**	**148.18**	**321**	*i* P	PKPdf	11 08 20.8	+3.0
PRU	**Pruhonice**	**148.20**	**351**⇑	*e*PKPB		11 08 19.2	
GIVF	**Givet**	**148.53**	**3**	*e*PKP1	PKPdf	11 08 19.3	+1.2
BAIF	**Baives**	**148.54**	**4**	*e*PKP1	PKPdf	11 08 19.6	+1.5
	comp=Z,175nm,1.7s						
VYHS	**Vyhne**	**148.80**	**345**	*e*PKP	PKPdf	11 08 17.7	-0.8
VYHS				*e*		11 08 22.0	
VYHS				*e*		11 08 31.2	
VYHS				*e*		11 08 45.9	
AVNT	**Avonos**	**148.85**	**316**	*i* P	PKPdf	11 08 20.7	+1.8
GRA1	**Grafenberg Arr**	**148.86**	**355**	*e*PKPbc	PKPdf	11 08 22.0	+3.4
GRA1				*ep*PKPbc		11 08 30.5	
GRF	**Grafenberg Arr**	**148.86**	**355**	*e*PKP2	PKPab	11 08 22.0	-2.9
RUP	**Ruppelstein**	**149.00**	**0**	PKP	PKPdf	11 08 18.0	-0.8
COBT	**Iskenderun**	**149.01**	**311**	*i* P	PKPdf	11 08 22.7	+3.5
WLF	**Walferdange**	**149.02**	**2**	*e*PKPdf	PKPdf	11 08 16.7	-2.1
WLF				*e*PKPbc	PKPdf	11 08 22.3	+3.5
PSZ	**Piszkesteto**	**149.06**	**344**⇑	*i*PKP/p		11 08 22.7	
PSZ	**Piszkesteto**	**149.06**	**344**	*e*PKPbc	PKPdf	11 08 21.3	+2.3
TOD	**Tromm**	**149.08**	**358**	PKP	PKPdf	11 08 17.2	-1.8
BRTR	**Keskin Array B**	**149.11**	**318**	PKPbc	PKPdf	11 08 21.8	+2.5
	comp=Z,11nm,0.9s,baz=128,slow=1.6,SNR=33						
ROSF	**Rostrenen**	**149.12**	**14**	*e*PKP1	PKPdf	11 08 20.3	+1.2
KHC	**Kasperske Hory**	**149.17**	**352**⇑	*e*PKPB		11 08 18.5	
KHC				*x*	x	11 08 21.8	
KHC	**Kasperske Hory**	**149.17**	**352**	*e*PKP	PKPdf	11 08 18.5	-0.6
KHC				*e*		11 08 21.8	
FLN	**La Foliniere**	**149.27**	**10**	*e*PKP1	PKPdf	11 08 20.8	+1.5
	comp=Z,65nm,1.0s						
FLN				*e*R		11 08 22.1	
	comp=Z,213nm,21.0s						
SGMF	**Saint Gilles**	**149.36**	**13**	*e*PKP1	PKPdf	11 08 20.9	+1.4
GEC2	**GERESS Array S**	**149.43**	**352**	*e*PKP2	PKPab	11 08 22.7	-4.5
GERES	**GERESS Array B**	**149.43**	**352**	PKPbc	PKPdf	11 08 22.1	+2.5
	comp=Z,7.6nm,1.0s,slow=1.3,SNR=32						
GERES	**GERESS Array B**	**149.43**	**352**	PKP2	PKPab	11 08 22.1	-5.1
GERES				pmax	pmax		
	comp=Z,8.0nm,1.0s						
ZST	**Bratislava**	**149.47**	**347**	*e*PKP	PKPdf	11 08 21.0	+1.4
LDF	**La Druitiere**	**149.49**	**10**	*e*PKP1	PKPdf	11 08 21.4	+1.7
QUIF	**Quistinic**	**149.54**	**14**	*e*PKP1	PKPdf	11 08 21.5	+1.7
SRO	**Srobarova**	**149.56**	**345**	*e*PKP	PKPdf	11 08 23.5	+3.7
GRR	**Gorron**	**149.56**	**11**	*e*PKP1	PKPdf	11 08 21.8	+2.0
LANF	**Langenberg**	**149.72**	**359**	PKP	PKPdf	11 08 19.5	-0.5
HENT	**Hendek**	**150.08**	**323**	*i* P	PKPdf	11 08 23.6	+2.7
MEZF	**Maizieres J'vi**	**150.14**	**3**	*e*PKP1	PKPdf	11 08 23.8	+3.1
	comp=Z,156nm,1.4s						
MBAR	**Mbarara**	**150.15**	**233**	PFAKE		11 08 30.0	+8.2
MBAR				LR	LR		
	comp=Z,85nm,22.0s,MS4.5						
WLS	**Welschbruch**	**150.29**	**0**	PKP	PKPdf	11 08 20.0	-0.9
CDF	**Champ du Feu**	**150.29**	**0**	*e*PKP1	PKPdf	11 08 23.9	+3.0
	comp=Z,143nm,1.5s						
MOA	**Molln**	**150.32**	**351**⇑	*i*PKP	PKPdf	11 08 21.1	+0.1
BFO	**Black Forest**	**150.37**	**359**	*e*PKIKP	PKPdf	11 08 25.1	+4.1
FUR	**Furstenfeldbru**	**150.37**	**355**	*e*PKIKP	PKPdf	11 08 25.6	+4.6
THEF	**They Montfort**	**150.46**	**2**	PKP	PKPdf	11 08 20.8	-0.4
ECH	**Echery**	**150.49**	**0**	PKP	PKPdf	11 08 19.8	-1.4
HAU	**Haudompre**	**150.69**	**1**	*e*PKP1	PKPdf	11 08 24.8	+3.3
	comp=Z,43nm,0.9s						
HAU				*e*R		11 08 25.2	
	comp=Z,181nm,19.5s						
HRI	**Mount Hermon**	**150.77**	**305**	P	PKPdf	11 08 27.3	+5.2
KSHT	**Keshet**	**150.82**	**305**	P	PKPdf	11 08 27.4	+5.2
MOF	**Molkenrain**	**150.85**	**0**	PKP	PKPdf	11 08 20.4	-1.4
HINF	**Hinteralfeld**	**150.88**	**1**	*e*PKP1	PKPdf	11 08 25.0	+3.2
KBA	**Koelnbreinsper**	**151.21**	**352**⇑	*i*PKP	PKPdf	11 08 27.1	+4.8
WTTA	**Wattenberg**	**151.23**	**354**⇓	*i*PKP	PKPdf	11 08 24.3	+1.9
HNTI	**Hanita**	**151.28**	**306**	P	PKPdf	11 08 28.1	+5.2
HMDT	**Nahal Hemdat**	**151.31**	**304**	P	PKPdf	11 08 28.5	+5.5
DAVA	**Damuels**	**151.35**	**356**⇑	*i*PKP	PKPdf	11 08 27.8	+5.3
MFF	**Saint Martin d**	**151.42**	**11**	*e*PKP1	PKPdf	11 08 26.1	+3.4
	comp=Z,144nm,1.4s						
SSF	**Saint Saulge**	**151.46**	**6**	*e*PKP1	PKPdf	11 08 26.7	+4.0
	comp=Z,128nm,1.2s						
ULDT	**Uludag**	**151.54**	**323**	*i* P	PKPdf	11 08 27.4	+4.4
DRGI	**Dragot**	**151.66**	**302**	P	PKPdf	11 08 29.0	+5.5
SLTI	**Sal'it**	**151.70**	**304**	P	PKPdf	11 08 29.2	+5.6
AVF	**Avril sur Loir**	**151.72**	**6**	*e*PKP1	PKPdf	11 08 26.8	+3.7
	comp=Z,88nm,1.5s						
CSS	**Prodhromos**	**151.84**	**310**	*e*PKPbc	PKPdf	11 08 28.9	+5.2
PTCC	**Patocco-Chiusa**	**151.87**	**351**	*e*PKP	PKPdf	11 08 27.4	+4.0
BGF	**Bois d'Agland**	**151.90**	**7**	*e*PKP1	PKPdf	11 08 27.4	+4.0
	comp=Z,47nm,0.9s						
SMF	**Signal de Mont**	**151.91**	**5**	*e*PKP1	PKPdf	11 08 27.3	+3.9
	comp=Z,48nm,1.2s						
CABF	**La Chapelle**	**152.07**	**2**	*e*PKP1	PKPdf	11 08 28.6	+5.0
	comp=Z,163nm,1.5s						
JMQS	**Jabal Moqyreh**	**152.08**	**297**	P	PKPdf	11 08 28.8	+4.6
TCF	**Toulx Ste Croi**	**152.09**	**8**	*e*PKP1	PKPdf	11 08 27.7	+4.0
	comp=Z,97nm,1.4s						
BRMO	**Bormio**	**152.12**	**356**	*e*PKP	PKPdf	11 08 29.9	+6.2
ALWS	**Ilw as Safayha**	**152.65**	**298**	P	PKPdf	11 08 29.3	+4.3
JMOS	**Jabal al Moall**	**152.65**	**298**	P	PKPdf	11 08 30.4	+5.4
MCGN	**Macugnaga**	**152.74**	**359**	*e*PKP	PKPdf	11 08 31.5	+6.9
HAQS	**Haql**	**152.83**	**298**	P	PKPdf	11 08 33.5	+8.3
BDAS	**Al Bad'**	**152.86**	**296**	P	PKPdf	11 08 39.0	+14
RJF	**Les Rejaudoux**	**152.95**	**9**	*e*PKP1	PKPdf	11 08 29.7	+4.8
RJF				*e*R		11 08 30.0	
	comp=Z,214nm,22.2s						
LFF	**La Frestale**	**153.18**	**11**	*e*PKP1	PKPdf	11 08 30.0	+4.8
	comp=Z,62nm,1.2s						
LPL	**La Plagne**	**153.18**	**1**	*e*PKP1	PKPdf	11 08 30.1	+4.9
CAF	**Calviac**	**153.40**	**8**	*e*PKP1	PKPdf	11 08 30.9	+5.4
	comp=Z,16nm,0.9s						
VIVF	**Saint-Julien-l**	**153.75**	**4**	*e*PKP1	PKPdf	11 08 32.1	+6.1
ORIF	**Oris-en-Rattie**	**153.76**	**2**	*e*PKP1	PKPdf	11 08 32.1	+6.1
ORIF				*e*R		11 08 32.4	
	comp=Z,182nm,23.0s						
ETSF	**Etsaut**	**154.88**	**14**	*e*PKP1	PKPdf	11 08 32.5	+4.9
EVO	**Evora**	**156.05**	**31**	*e*PKIKP	PKPdf	11 08 25.9	-3.4
	comp=Z,96nm,1.8s						
EVO				*e*R		11 08 26.2	
	comp=Z,185nm,19.5s						
DBIC	**Dimbokro**	**163.15**	**133**	PFAKE		11 08 50.0	+12
DBIC				LR	LR		
	comp=Z,140nm,19.0s						

NEIC ***22*** *10:50:21.9, 42.87N×0.97W, h2km, ML2.2(STR), ML1.9(LDG), After LDG.*
LDG ***22*** *10:50:21.9±0.4, 42.87N×0.97W, h2km, Md2.0/2, Ml1.9/1, Error ellipse: s-maj=8.3km s-min=2.3km az=41.0*
STR ***22*** *10:50:22.4±0.1, 42.91N×0.99W, h5km±1km, Ml2.2, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
MDD ***22*** *10:50:23.1±1.7, 42.89N×0.93W, mbLg1.1/3, Error ellipse: s-maj=27.3km s-min=2.9km az=17.0, PRXIMO SIN SOLUCIN*

ISC 22 10:50:21.9±1.8, 42.9N±0.1×0.92W±0.08, h14km±15km, n5, σ0$38/9, Pyrenees

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LARF	**Larrau**	**0.14**	**340**	Pg	**Pg**	**10 50 25.5**	**-0.1**
LARF				Sg	**Sg**	**10 50 27.6**	**-0.4**
ETSF	**Etsaut**	**0.27**	**92**	*e*Pg	**Pg**	**10 50 28.2**	**+0.4**
ETSF				*e*Sg	**Sg**	**10 50 32.0**	**+0.3**
	33nm,0.3s						
ORDF	**Ordiarp**	**0.30**	**358**	Pg	**Pg**	**10 50 28.5**	**+0.1**
ORDF				Sg	**Sg**	**10 50 33.1**	**+0.3**
EALK	**Alkurruntz**	**0.53**	**306**	Pg	**Pg**	**10 50 33.0**	**+0.3**
	0.3nm,0.1s,SNR=7.9						
EALK				Lg		10 50 40.3	
	10nm,0.4s,SNR=7.9						
EPF	**Esparros**	**0.94**	**82**	*e*Pg	**Pg**	**10 50 39.9**	**-0.8**
EPF				*e*Sg	**Sg**	**10 50 53.3**	**0.0**
	2.7nm,0.2s						

IDC ***22*** *10:53:42.1±0.9, 18.05S×172.92W, mb4.2/11, mb1 4.5/12, mb1mx4.3/21, ML4.3/1, Error ellipse: s-maj=45.3km s-min=17.3km az=146.0*
NEIC ***22*** *10:53:43.9±0.5, 17.89S×173.17W, h10km, mb4.6/3, Error ellipse: s-maj=19.9km s-min=11.6km az=144.0*

ISC 22 10:53:42.2±0.5, 18.0S±0.1×173.1W±0.1, h10km, n39, σ1$26/24, mb4.2/12, 2C-1D, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAR	**Rarotonga**	**12.92**	**106**	Pn	**P**	**10 56 32.4**	**-16**
	1.6nm,0.3s,baz=245,slow=9.4,SNR=9.4						
RAR				Sn	S	10 58 38.8	-35
	0.4nm,0.3s,baz=135,slow=11,SNR=2.6						
RAR	**Rarotonga**	**12.92**	**106**	*e*P	**P**	**10 56 31.1**	**-18**
RAR				Pn	**P**	**10 56 32.4**	**-16**
RAR				Sn	S	10 58 38.8	-35
URZ	**Urewera**	**21.91**	**201**	P	**P**	**10 58 37.3**	**-0.1**
	5.1nm,0.4s,mb4.3,baz=173,slow=18,SNR=5.8						
RPZ	**Rata Peaks**	**28.91**	**204**	P	**P**	**10 59 47.3**	**+4.0**
	12nm,0.6s,mb4.8,baz=48,slow=5.5,SNR=7.9						
CTA	**Charters Tower**	**38.44**	**260**	*e*P	**P**	**11 01 05.2**	**-0.8**
	3.2nm,0.4s,mb4.4						
CTA	**Charters Tower**	**38.44**	**260**	P	**P**	**11 01 06.9**	**+0.8**
	5.1nm,0.5s,mb4.5,baz=73,slow=7.5,SNR=15						
CTAO	**Charters Tower**	**38.44**	**260**	P	**P**	**11 01 05.2**	**-0.9**
	8.5nm,0.8s,mb4.5						
CTAO				*e*		11 01 17.4	
WB2	**Warramunga Arr**	**49.60**	**259**	*e*P	**P**	**11 02 35.3**	**-0.6**
WRAB	**Tennant Creek**	**49.60**	**259**	*e*P	**P**	**11 02 32.4**	**-3.5**
	17nm,1.3s,mb4.9						
WRA	**Warramunga Arr**	**49.61**	**259**	P	**P**	**11 02 35.9**	**-0.1**
	3.1nm,0.7s,mb4.4,baz=96,slow=7.5,SNR=80						
AS12	**Alice Springs**	**49.65**	**254**	*e*P	**P**	**11 02 36.4**	**+0.1**
	21nm,1.8s,mb4.9						
ASAR	**Alice Springs**	**49.65**	**254**	P	**P**	**11 02 36.5**	**+0.2**
	5.7nm,0.6s,mb4.8,baz=93,slow=7.2,SNR=31						
QSPA	**South Pole Qui**	**72.03**	**180**	*e*P	**P**	**11 05 04.8**	**-3.0**
YBH	**Yreka Blue Hor**	**75.50**	**37**	P	**P**	**11 05 28.3**	**-0.2**
	0.6nm,0.7s,mb3.6,baz=186,slow=1.7,SNR=3.6						
NVAR	**Mina Array Bea**	**76.06**	**41**	P	**P**	**11 05 31.6**	**-0.3**
	0.9nm,0.9s,mb3.7,baz=217,slow=8.1,SNR=5.3						
TXAR	**Lajitas Array**	**81.81**	**56**	P	**P**	**11 06 02.8**	**-0.4**
	1.3nm,0.9s,mb3.9,baz=225,slow=8.8,SNR=10						
PDAR	**Pinedale Array**	**84.00**	**42**	P	**P**	**11 06 13.8**	**-0.4**
	1.2nm,0.9s,mb4.0,baz=207,slow=3.3,SNR=7.4						
ILAR	**Eielson Array**	**84.95**	**11**	P	**P**	**11 06 17.7**	**-0.7**
	0.6nm,0.8s,mb3.8,baz=214,slow=6.5,SNR=5.5						
DAWY	**Dawson**	**85.87**	**14**	*e*P	**P**	**11 06 23.8**	**+0.8**
VNA3	**Neumayer Olymp**	**90.23**	**175**⇓	*i*	**P**	**11 06 45.5**	**+1.7**
VNA2	**Neumayer--Watz**	**90.72**	**175**⇓	*i*	**P**	**11 06 47.8**	**+1.7**
VNA1	**Neumayer--Stat**	**90.92**	**175**⇓	*i*	**P**	**11 06 49.4**	**+2.4**
CMAR	**Chiang Mai Arr**	**93.74**	**288**	P	**P**	**11 07 02.9**	**+1.8**
	0.5nm,0.4s,mb4.3,baz=117,slow=2.0,SNR=3.2						
AKASG	**Malin Array Be**	**142.87**	**336**	PKP	PKPdf	11 13 18.2	-0.7
	0.2nm,0.3s,baz=37,slow=4.6,SNR=8						
KMBO	**Kilima Mbogo**	**144.61**	**241**	PKP	PKPdf	11 13 21.8	-1.3
	4.0nm,0.8s,baz=261,slow=24,SNR=8.7						
CLL	**Collm**	**146.45**	**353**	*i* PKP1	PKPbc	11 13 25.9	+2.6
BRTR	**Keskin Array B**	**148.36**	**319**	PKPbc	PKPdf	11 13 31.5	+2.9
	3.0nm,0.8s,baz=135,slow=1.7,SNR=14						
FLN	**La Foliniere**	**148.76**	**9**	*e*PKP1	PKPdf	11 13 31.3	+2.4
	13nm,0.8s						
GERES	**GERESS Array B**	**148.77**	**351**	PKPbc	PKPdf	11 13 32.2	+3.3
	1.0nm,0.8s,baz=90,slow=1.3,SNR=6.9						
SGMF	**Saint Gilles**	**148.87**	**12**	*e*PKP1	PKPdf	11 13 31.4	+2.3
LDF	**La Druitiere**	**148.98**	**9**	*e*PKP1	PKPdf	11 13 31.8	+2.5
CDF	**Champ du Feu**	**149.69**	**360**	*e*PKP1	PKPdf	11 13 34.4	+4.0
	24nm,1.3s						
HAU	**Haudompre**	**150.10**	**1**	*e*PKP1	PKPdf	11 13 35.3	+4.2
SSF	**Saint Saulge**	**150.91**	**5**	*e*PKP1	PKPdf	11 13 37.2	+4.9
	14nm,0.9s						
AVF	**Avril sur Loir**	**151.16**	**5**	*e*PKP1	PKPdf	11 13 37.3	+4.6
	12nm,1.0s						
SMF	**Signal de Mont**	**151.35**	**4**	*e*PKP1	PKPdf	11 13 37.9	+4.9
	9.1nm,1.0s						
CABF	**La Chapelle**	**151.49**	**1**	*e*PKP1	PKPdf	11 13 39.0	+5.8
	17nm,1.1s						
TCF	**Toulx Ste Croi**	**151.55**	**7**	*e*PKP1	PKPdf	11 13 38.1	+4.8
VIVF	**Saint-Julien-l**	**153.18**	**4**	*e*PKP1	PKPdf	11 13 42.4	+6.7

IDC ***22*** *11:00:28.4±1.8, 18.01S×173.27W, mb4.2/3, mb1 4.5/4, mb1mx4.0/18, ML4.9/1, Error ellipse: s-maj=97.1km s-min=34.5km az=178.0*
NEIC ***22*** *11:00:30.1±0.8, 18.30S×173.25W, h10km, mb4.5/3, Error ellipse: s-maj=32.3km s-min=15.3km az=184.0*

ISC 22 11:00:29.1±0.9, 18.5S±0.2×173.3W±0.1, h10km, n14, σ0$96/14, mb4.5/5, 1C-2D, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAR	**Rarotonga**	**13.00**	**104**	Pn	**P**	**11 03 36.0**	**-0.6**
	6.5nm,0.3s,baz=164,slow=12,SNR=8.6						
RAR	**Rarotonga**	**13.00**	**104**	P	**P**	**11 03 34.7**	**-1.9**
RAR				Pn	**P**	**11 03 36.0**	**-0.6**
CTA	**Charters Tower**	**38.18**	**261**	P	**P**	**11 07 51.0**	**+0.3**
	5.3nm,0.8s,mb4.3,baz=90,slow=13,SNR=8.7						
CTA	**Charters Tower**	**38.18**	**261**	P	**P**	**11 07 51.0**	**+0.3**
CTAO	**Charters Tower**	**38.18**	**261**	*e*P	**P**	**11 07 43.0**	**-7.8**
	8.2nm,1.0s,mb4.4						
WRAB	**Tennant Creek**	**49.32**	**259**	*e*P	**P**	**11 09 20.0**	**-0.7**
	68nm,1.8s,mb5.4						
WRA	**Warramunga Arr**	**49.33**	**259**	P	**P**	**11 09 20.1**	**-0.7**
	1.7nm,0.8s,mb4.1,baz=97,slow=7.6,SNR=29						
ASAR	**Alice Springs**	**49.34**	**254**	P	**P**	**11 09 20.7**	**-0.1**
	2.1nm,0.5s,mb4.4,baz=90,slow=7.9,SNR=26						
VNDA	**Vanda**	**60.37**	**186**	P	**P**	**11 10 42.6**	**+2.2**
	2.0nm,1.4s,mb4.0						
PV01	**Paradox Valley**	**82.74**	**46**	P	**P**	**11 12 55.8**	**+1.1**
VNA3	**Neumayer Olymp**	**89.83**	**175**⇓	*i*	**P**	**11 13 29.3**	**+0.5**
VNA2	**Neumayer--Watz**	**90.32**	**175**⇓	*i*	**P**	**11 13 31.0**	**-0.1**
VNA1	**Neumayer--Stat**	**90.52**	**175**⇓	*i*	**P**	**11 13 31.0**	**-1.0**
BRTR	**Keskin Array B**	**148.54**	**318**	PKPbc	PKPdf	11 20 16.1	+0.4
	0.9nm,0.7s,baz=63,slow=3.2,SNR=4.5						

IDC 22 11:03:14.8±4.2, 18.10S×172.95W, mb4.1/4, Error ellipse: s-maj=274.0km s-min=30.2km az=153.0, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAR	**Rarotonga**	**12.79**	**106**	Pn	P	11 06 07.5	-13
RPZ	**Rata Peaks**	**28.88**	**204**	P	P	11 09 21.8	+4.5
CTA	**Charters Tower**	**38.54**	**260**	P	P	11 10 39.5	-1.6
	3.6nm,0.5s,baz=80,slow=9.2,SNR=10.0						
WRA	**Warramunga Arr**	**49.70**	**259**	P	P	11 12 08.8	-2.1
	0.8nm,0.4s,baz=97,slow=7.8,SNR=12						
ASAR	**Alice Springs**	**49.74**	**254**	P	P	11 12 09.3	-1.8
	1.9nm,0.6s,baz=92,slow=7.2,SNR=13						
NVAR	**Mina Array Bea**	**76.05**	**41**	P	P	11 15 04.6	-1.5
	0.7nm,1.0s,baz=240,slow=10,SNR=3.9						

IDC 22 11:10:46.5±17.0, 20.87S×174.73W, mb4.2/5, mb1 4.4/5, mb1mx3.9/17, Error ellipse: s-maj=321.0km s-min=143.9km az=80.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CTA	**Charters Tower**	**36.50**	**264**	P	P	11 17 55.1	-0.4
	4.3nm,0.5s,baz=109,slow=11,SNR=11						
STKA	**Stephens Creek**	**40.40**	**245**	P	P	11 18 25.7	-2.3
	3.6nm,0.7s,baz=108,slow=9.4,SNR=5.7						
ASAR	**Alice Springs**	**47.41**	**257**	P	P	11 19 22.1	-2.8
	2.0nm,0.6s,baz=82,slow=8.2,SNR=21						
WRA	**Warramunga Arr**	**47.58**	**262**	P	P	11 19 23.6	-2.6
	0.6nm,0.3s,baz=96,slow=8.3,SNR=49						
FITZ	**Fitzroy Crossi**	**56.01**	**262**	P	P	11 20 28.2	-1.4
	1.5nm,0.6s,baz=111,slow=8.6,SNR=6.7						

NEIC ***22*** *11:35:00.1±0.3, 47.32N×11.81E, h5km±3km, ML3.2(FUR), ML2.9(LDG), ML2.8(STR), ML2.6(SZGRF), ML2.4(VIE), Error ellipse: s-maj=3.1km s-min=2.5km az=138.0*
NEIC Felt [III] at Schwaz.
BGR ***22*** *11:35:00.8±0.3, 47.30N×11.80E, h10km, ML2.6/9, Error ellipse: s-maj=3.3km s-min=2.2km az=166.0*
LDG ***22*** *11:35:02.1±0.3, 47.37N×11.82E, h10km, Ml2.9/7, Error ellipse: s-maj=6.0km s-min=3.7km az=40.0*
STR ***22*** *11:35:07.3±0.3, 47.14N×11.20E, h10km±1km, Ml2.8, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*

ISC 22 11:34:58.5±0.2, 47.34N±0.01×11.80E±0.02, h6km±2km, n85, σ1$23/156, 11C-3D, Austria

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WTTA	**Wattenberg**	**0.13**	**234**⇑	*i*PG	**Pg**	**11 35 03.9**	**+2.6**
WTTA				*i* SG	**Sg**	**11 35 04.9**	**+1.6**
	363nm,0.1s						
WTTA	**Wattenberg**	**0.13**	**234**	*e*Pg	**Pg**	**11 35 03.9**	**+2.5**
	SNR=714						
WTTA				*e*Sg	**Sg**	**11 35 06.2**	**+2.9**
	SNR=50						
WATA	**Walderalm**	**0.15**	**268**⇑	*i*PG	**Pg**	**11 35 04.2**	**+2.6**
WATA				*i* SG	**Sg**	**11 35 05.4**	**+1.6**
	385nm,0.1s						
SQTA	**Sankt Quirin**	**0.42**	**253**⇓	*i*PG	**Pg**	**11 35 08.4**	**+1.5**
SQTA				*i* SG	**Sg**	**11 35 13.4**	**+0.9**
	261nm,0.3s						
MOTA	**Moosalm**	**0.47**	**271**⇑	*i*PG	**Pg**	**11 35 09.2**	**+1.3**
MOTA				*i* SG	**Sg**	**11 35 15.1**	**+0.9**
	47nm,0.2s						
OGA	**Obergurgl**	**0.71**	**228**⇑	*i*Pg	**Pg**	**11 35 13.3**	**+0.7**
OGA				*i* Sg	**Sg**	**11 35 22.0**	**-0.1**
AFL	**Alpe Faloria**	**0.85**	**162**⇓	*e*Pg	**Pg**	**11 35 16.4**	**+0.9**
AFL				*e*Sg	**Sg**	**11 35 27.5**	**+0.5**
FUR	**Furstenfeldbru**	**0.90**	**337**	*e*Pg	**Pg**	**11 35 19.3**	**+2.9**
	SNR=20						
FUR				*e*Sg	**Sg**	**11 35 32.7**	**+4.3**
	SNR=5.6						
FUR	**Furstenfeldbru**	**0.90**	**337**	*e*Pg	**

BOURR	**Bourrignon**	3.10	273	*e*Pn		**Pn**	11 35 49.9	+1.0
	SNR=1.7							
MOF	**Molkenrain**	3.20	281	Pn		**Pn**	11 35 51.4	+1.1
PRU	**Pruhonice**	3.21	33	*e*PN		**Pn**	11 35 51.4	+0.9
PRU				*e*PG		**Pg**	11 35 59.6	-3.0
PRU				SG		**Sg**	11 36 41.6	-3.8
	8.2nm,0.3s							
CDF	**Champ du Feu**	3.23	291	*e*Pn		**Pn**	11 35 51.5	+0.8
CDF				*e*Sg		**Sg**	11 36 41.3	-4.6
	9.3nm,0.3s							
ECH	**Echery**	3.25	287	Pn		**Pn**	11 35 52.2	+1.2
ECH				Sg		**Sg**	11 36 43.3	-3.3
MOX	**Moxa**	3.31	358	*e*Pn		**Pn**	11 35 51.6	-0.2
MOX				*e*Pg		**Pg**	11 36 03.6	-0.9
	SNR=2.2							
MOX				*e*Sn		**Sn**	11 36 31.3	-0.7
MOX				*e*Sg		**Sg**	11 36 46.5	-2.1
	SNR=2.0							
MOX	**Moxa**	3.31	358	*i* P		**Pn**	11 35 51.6	-0.2
MOX				Pg		**Pg**	11 36 04.0	-0.5
MOX				S		**Sn**	11 36 31.0	-1.0
MOX				Sg		**Sg**	11 36 47.0	-1.6
MOX	**Moxa**	3.31	358	*e*Pn		**Pn**	11 35 51.6	-0.2
MOX				*e*Pg		**Pg**	11 36 03.7	-0.8
MOX				*e*Sn		**Sn**	11 36 31.3	-0.7
MOX				*e*Sg		**Sg**	11 36 47.4	-1.2
HINF	**Hinteralfeld**	3.38	280	*e*Pn		**Pn**	11 35 53.4	+0.5
HINF				*e*Sn		**Sn**	11 36 30.6	-3.2
HINF				*e*Sg		**Sg**	11 36 46.4	-4.6
	12nm,0.4s							
HAU	**Haudompre**	3.74	282	*e*Pn		**Pn**	11 35 58.5	+0.5
HAU				*e*Sg		**Sg**	11 36 58.0	-5.0
	12nm,0.3s							
BRG	**Berggiesshubel**	3.81	21	*e*Pg		**Pg**	11 36 12.4	-2.0
	SNR=1.7							
BRG				*e*Sg		**Sg**	11 37 01.0	-4.2
BRG	**Berggiesshubel**	3.81	21	*e*Pg		**Pg**	11 36 13.3	-1.1
BRG				*e*Sg		**Sg**	11 37 01.0	-4.2
LPG	**La Plagne**	3.95	244	*e*Pn		**Pn**	11 36 02.9	+2.0
LPG				*e*Sn		**Sn**	11 36 46.3	-1.8
LPL	**La Plagne**	3.95	244	*e*Pn		**Pn**	11 36 02.7	+1.8
LPL				*e*Sn		**Sn**	11 36 46.3	-1.9
CABF	**La Chapelle**	3.98	261	*e*Pn		**Pn**	11 36 01.8	+0.5
CABF				*e*Sn		**Sn**	11 36 46.2	-2.7
CABF				*e*Sg		**Sg**	11 37 06.8	-4.0
	2.4nm,0.3s							
CLL	**Collm**	4.05	11	*e*Pg		**Pg**	11 36 17.0	-2.3
CLL				*e*Sg		**Sg**	11 37 11.0	-2.2
DPC	**Dobruska-Polom**	4.24	43	*e*SG		**Sg**	11 37 13.3	-6.4
MBDF	**Montbardon**	4.37	235	*e*Pn		**Pn**	11 36 07.3	+0.4
RFYF	**Reffroy**	4.44	289	*e*Pn		**Pn**	11 36 08.0	+0.1
RFYF				*e*Sg		**Sg**	11 37 20.9	-5.3
	8.3nm,0.3s							
SFTF	**Sexfontaines**	4.64	283	*e*Sg		**Sg**	11 37 27.3	-5.6
	3.0nm,0.3s							
ORIF	**Oris-en-Rattie**	4.77	242	*e*Pn		**Pn**	11 36 13.6	+0.9
FRF	**La Foret Royal**	5.24	226	*e*Pn		**Pn**	11 36 19.1	-0.1
SMF	**Signal de Mont**	5.49	266	*e*Pn		**Pn**	11 36 22.3	-0.4
SMF				*e*Sn		**Sn**	11 37 20.2	-6.8
	0.7nm,0.2s							
SMRF	**Simiane la Rot**	5.51	235	*e*Pn		**Pn**	11 36 21.9	-1.1
VIVF	**Saint-Julien-l**	5.54	246	*e*Pn		**Pn**	11 36 22.9	-0.6
SSF	**Saint Saulge**	5.66	270	*e*Pn		**Pn**	11 36 24.5	-0.6
AVF	**Avril sur Loir**	5.80	268	*e*Pn		**Pn**	11 36 26.7	-0.4
BGF	**Bois d'Agland**	6.18	266	*e*Pn		**Pn**	11 36 31.4	-1.1
HYF	**Humbligny**	6.23	273	*e*Pn		**Pn**	11 36 32.7	-0.5
LASF	**Ste Croix**	6.45	242	*e*Pn		**Pn**	11 36 34.8	-1.5
LASF				*e*Sn		**Sn**	11 37 44.3	-6.7
TCF	**Toulx Ste Croi**	6.66	264	*e*Pn		**Pn**	11 36 38.0	-1.3
CAF	**Calviac**	7.18	254	*e*Pn		**Pn**	11 36 45.5	-1.1
MTLF	**Montolieu**	7.84	243	*e*Pn		**Pn**	11 36 54.4	-1.5
MFF	**Saint Martin d**	8.20	269	*e*Pn		**P**	11 36 58.9	-2.0

NEIC ***22*** *11:37:18.4±0.3, 47.32N×11.78E, h5km, ML3.1(LDG), ML2.9(FUR), ML2.6(VIE), ML2.6(STR), ML2.5(SZGRF), Error ellipse: s-maj=3.8km s-min=2.9km az=170.0*
NEIC Felt [III] at Schwaz.
BGR ***22*** *11:37:18.8±0.2, 47.31N×11.81E, h10km, ML2.5/8, Error ellipse: s-maj=2.2km s-min=1.1km az=177.0*
LDG ***22*** *11:37:20.7±0.4, 47.39N×11.77E, h10km, Ml3.1/9, Error ellipse: s-maj=7.7km s-min=4.4km az=52.0*
STR ***22*** *11:37:29.5±2.3, 46.87N×10.57E, h10km±1km, Ml2.6, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*

ISC 22 11:37:16.5±0.2, 47.35N±0.01×11.78E±0.02, h8km±2km, n78, σ1§28/145, 7C-2D, Austria

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WTTA	**Wattenberg**	0.13	231	⇑*i*PG	**Pg**	11 37 22.0	+2.5
WTTA				*i* SG	**Sg**	11 37 23.1	+1.7
	422nm,0.1s						
WTTA	**Wattenberg**	0.13	231	*e*Pg	**Pg**	11 37 22.0	+2.5
	SNR=102						
WTTA				*e*Sg	**Sg**	11 37 23.9	+2.5
	SNR=12						
WATA	**Walderalm**	0.14	266	⇑*i*PG	**Pg**	11 37 22.4	+2.7
WATA				*i* SG	**Sg**	11 37 23.7	+1.9
	439nm,0.1s						
SQTA	**Sankt Quirin**	0.41	253	⇑*i*PG	**Pg**	11 37 26.4	+1.6
SQTA				*i* SG	**Sg**	11 37 31.0	+0.6
	295nm,0.3s						
MOTA	**Moosalm**	0.46	270	⇑*i*PG	**Pg**	11 37 27.1	+1.3
MOTA				*i* SG	**Sg**	11 37 32.0	0.0
	116nm,0.2s						
FUR	**Furstenfeldbru**	0.89	338	*e*Pg	**Pg**	11 37 37.0	+2.7
	SNR=26						
FUR				*e*Sg	**Sg**	11 37 50.4	+4.2
FUR	**Furstenfeldbru**	0.89	338	*e*Pg	**Pg**	11 37 37.3	+3.0
FUR				*e*Sg	**Sg**	11 37 51.1	+4.9
BGLD	**Berchtesgaden**	0.89	69	⇓*i*Pg	**Pg**	11 37 36.1	+1.8
BGLD				*i* Sg	**Sg**	11 37 49.2	+3.0
FVI	**Forni Avoltri**	1.01	137	*e*Pg	**Pg**	11 37 38.1	+1.3
FVI				*e*Sg	**Sg**	11 37 49.8	-0.6
KBA	**Koelnbreinsper**	1.10	103	⇑*i*PG	**Pg**	11 37 39.0	+0.5
KBA				*i* SG	**Sg**	11 37 52.9	-0.3
	23nm,0.3s						
KBA	**Koelnbreinsper**	1.10	103	*e*Pg	**Pg**	11 37 38.7	+0.2
	SNR=15						
KBA				*e*Sg	**Sg**	11 37 52.8	-0.4
	SNR=4.0						
ZOU	**Zoufplan**	1.14	134	*e*Pg	**Pg**	11 37 39.3	+0.1
ZOU				*e*Sg	**Sg**	11 37 53.8	-0.6
PLRO	**Paularo**	1.23	130	*e*Pg	**Pg**	11 37 41.7	+0.6
PLRO				*e*Sg	**Sg**	11 37 56.5	-1.0
DAVA	**Damuels**	1.29	268	⇑*i*PG	**Pg**	11 37 43.4	+1.0
DAVA				*i* SG	**Sg**	11 37 59.8	+0.1
	63nm,0.2s						
DAVA	**Damuels**	1.29	268	*e*Pg	**Pg**	11 37 43.5	+1.1
	SNR=36						
DAVA				*e*Sg	**Sg**	11 38 01.9	+2.3
	SNR=5.7						
BRMO	**Bormio**	1.30	229	*e*Pg	**Pg**	11 37 42.3	-0.2
BRMO				*e*Sg	**Sg**	11 37 58.9	-0.9
PTCC	**Patocco-Chiusa**	1.43	130	*e*Pg	**Pg**	11 37 45.1	-0.1
PTCC				*e*Sg	**Sg**	11 38 04.3	+0.1
CGRP	**Cima Grappa**	1.47	179	*e*Pg	**Pg**	11 37 44.8	-1.0
CGRP				*e*Sg	**Sg**	11 38 04.8	-0.5
GMNA	**Gemona**	1.47	136	*e*Pg	**Pg**	11 37 45.9	+0.1
MABI	**Malga Bissina**	1.56	215	*e*Pg	**Pg**	11 37 46.5	-1.1
MABI				*e*Sg	**Sg**	11 38 06.6	-1.8
KAMOR	**Kamor**	1.56	269	*e*Pg	**Pg**	11 37 48.2	+0.5
	SNR=14						
KAMOR				*e*Sg	**Sg**	11 38 09.4	+0.8
	SNR=9.5						
MOA	**Molln**	1.76	72	⇓*i*PN	**Pn**	11 37 51.5	+4.0
MOA				*i* SN	**Sn**	11 38 15.6	+5.4
MOA	**Molln**	1.76	72	*e*Pg	**Pg**	11 37 51.6	0.0
	SNR=16						
MOA				*e*Sg	**Sg**	11 38 15.5	+0.5
	SNR=6.4						
WILA	**Wila**	1.95	273	*e*Pn	**Pn**	11 37 51.2	+0.9
	SNR=4.0						
WILA				*e*Pg	**Pg**	11 37 55.2	-0.3
	SNR=12						
WILA				*e*Sg	**Sg**	11 38 21.5	-0.1
	SNR=11						
VOY	**Vojsko**	1.96	131	*e*Pn	**Pn**	11 37 53.0	+2.6
VOY				*e*Sn	**Sn**	11 38 16.3	+0.9
GEC2	**GERESS Array S**	1.98	40	*e*Pn	**Pn**	11 37 52.4	+1.8
	SNR=8.8						
GEC2				*e*Pg	**Pg**	11 37 55.8	-0.2
	SNR=4.0						
GEC2				*e*Sn	**Sn**	11 38 17.8	+1.9
	SNR=7.6						
GEC2				*e*Sg	**Sg**	11 38 21.8	-0.6
	SNR=1.5						
GEC2	**GERESS Array S**	1.98	40	*e*Pn	**Pn**	11 37 52.6	+1.9
GEC2				*e*Sn	**Sn**	11 38 17.9	+2.1
TEOL	**Teolo**	1.99	182	*e*Pg	**Pg**	11 37 54.9	-1.3
TEOL				*e*Sg	**Sg**	11 38 19.3	-3.4
OBKA	**Obir**	2.07	113	*e*Pg	**Pg**	11 37 57.3	-0.6
	SNR=4.8						
OBKA				*e*Sg	**Sg**	11 38 23.8	-1.7
	SNR=2.2						
KHC	**Kasperske Hory**	2.15	33	*e*PG	**Pg**	11 37 59.2	-0.3
KHC				*ex*	x	11 38 27.0	
KHC				*e*SG	**Sg**	11 38 27.4	-0.9
SPAK	**Spaichingen**	2.16	292	Pn	**Pn**	11 38 00.5	+7.2
ZUR	**Zurich**	2.18	272	*e*Sg	**Sg**	11 38 27.8	-1.2
	SNR=6.0						
SLE	**Schleitheim**	2.27	282	*e*Pg	**Pg**	11 38 01.9	+0.2
	SNR=3.6						
SLE				*e*Sg	**Sg**	11 38 30.0	-2.0
	SNR=5.3						
GRFO	**Grafenberg**	2.38	351	*e*Pg	**Pg**	11 38 05.1	+1.1
	SNR=4.4						
GRFO				*e*Sg	**Sg**	11 38 35.6	-0.1
	SNR=2.7						
GRA1	**Grafenberg Arr**	2.38	351	*e*Pg	**Pg**	11 38 05.2	+1.2
GRA1				*e*Sg	**Sg**	11 38 36.3	+0.6
GRF	**Grafenberg Arr**	2.38	351	*e*Sg	**Sg**	11 38 36.3	+0.5
BFO	**Black Forest**	2.52	294	*e*Pn	**Pn**	11 37 59.9	+1.4
	SNR=7.1						
BFO	**Black Forest**	2.52	294	*e*Pn	**Pn**	11 38 00.9	+2.4
ARSA	**Arzberg**	2.55	91	⇑*i*PN	**Pn**	11 38 04.7	+5.9
ARSA				*i* SN	**Sn**	11 38 38.2	+7.9
ARSA	**Arzberg**	2.55	91	*e*Pg	**Pg**	11 38 05.8	-1.6
	SNR=5.5						
ARSA				*e*Sg	**Sg**	11 38 39.1	-2.3
	SNR=3.7						
BBS	**Basel-Blauen**	2.90	274	Pn	**Pn**	11 38 05.6	+1.7
NKC	**Novy Kostel**	2.92	8	*e*SG	**Sg**	11 38 52.2	-1.7
GUNZ	**Gunzen**	3.04	7	*e*Pn	**Pn**	11 38 06.6	+0.7
	SNR=2.1						
GUNZ				*e*Pg	**Pg**	11 38 16.7	-0.6
	SNR=3.2						
BOURR	**Bourrignon**	3.09	273	*e*Pn	**Pn**	11 38 08.1	+1.5
	SNR=2.4						
WLS	**Welschbruch**	3.17	291	Pn	**Pn**	11 38 08.8	+1.2
WLS				Sn	**Sn**	11 38 45.1	-0.9
MOF	**Molkenrain**	3.19	281	Pn	**Pn**	11 38 09.0	+1.1
CDF	**Champ du Feu**	3.21	291	*e*Pn	**Pn**	11 38 09.8	+1.5
	SNR=1.0						
CDF				*e*Pg	**Pg**	11 38 19.1	-1.6
	SNR=1.0						
CDF				*e*Sn	**Sn**	11 38 45.0	-2.2
CDF				*e*Sg	**Sg**	11 38 59.6	-4.0
	10nm,0.3s,SNR=1.0						
PRU	**Pruhonice**	3.22	34	*e*PG	**Pg**	11 38 14.7	-6.0
PRU				*e*SG	**Sg**	11 38 59.5	-4.1
	10nm,0.4s						
ECH	**Echery**	3.24	287	Pn	**Pn**	11 38 09.9	+1.3
ECH				Sn	**Sn**	11 38 46.1	-1.7
MOX	**Moxa**	3.31	358	*e*Pn	**Pn**	11 38 09.9	+0.3
	SNR=2.0						
MOX				*e*Pg	**Pg**	11 38 21.9	-0.6
	SNR=3.1						
MOX				*e*Sn	**Sn**	11 38 49.3	-0.2
MOX				*e*Sg	**Sg**	11 39 04.8	-1.7
	SNR=1.8						
MOX	**Moxa**	3.31	358	*i* P	**Pn**	11 38 10.0	+0.4
MOX				Pg	**Pg**	11 38 22.0	-0.5
MOX				S	**Sn**	11 38 49.0	-0.5
MOX				Sg	**Sg**	11 39 06.0	-0.6
MOX	**Moxa**	3.31	358	*e*Pn	**Pn**	11 38 10.0	+0.4
MOX				*e*Pg	**Pg**	11 38 22.0	-0.5
MOX				*e*Sn	**Sn**	11 38 49.3	-0.2
MOX				*e*Sg	**Sg**	11 39 06.1	-0.5
HINF	**Hinteralfeld**	3.37	280	*e*Pn	**Pn**	11 38 11.8	+1.3
	SNR=1.0						
HINF				*e*Sn	**Sn**	11 38 48.6	-2.5
HINF				*e*Sg	**Sg**	11 39 04.9	-3.8
	9.0nm,0.2s,SNR=1.0						
HAU	**Haudompre**	3.73	282	*e*Pn	**Pn**	11 38 16.7	+1.1
	SNR=1.0						
HAU				*e*Sn	**Sn**	11 38 55.8	-4.5
HAU				*e*Sg	**Sg**	11 39 15.8	-4.9
	16nm,0.3s,SNR=1.0						
BRG	**Berggiesshubel**	3.81	21	*e*Pg	**Pg**	11 38 30.8	-1.8
	SNR=1.6						
BRG				*e*Sg	**Sg**	11 39 19.5	-3.8
	SNR=2.6						
LPG	**La Plagne**	3.94	244	*e*Pn	**Pn**	11 38 20.9	+2.3
	SNR=1.0						
LPG				*e*Sn	**Sn**	11 39 04.2	-1.3
LPL	**La Plagne**	3.94	244	*e*Sn	**Sn**	11 39 04.1	-1.5
CABF	**La Chapelle**	3.97	261	*e*Pn	**Pn**	11 38 19.9	+0.9
	SNR=1.0						
CABF				*e*Sn	**Sn**	11 39 04.4	-1.8
CABF				*e*Sg	**Sg**	11 39 26.3	-2.3
	1.3nm,0.2s						
CLL	**Collm**	4.05	11	*e*Pn	**Pn**	11 38 20.0	-0.1
CLL				*i* Pg	**Pg**	11 38 36.7	-0.6
CLL				*e*Sg	**Sg**	11 39 29.0	-2.2
DPC	**Dobruska-Polom**	4.25	43	*e*SG	**Sg**	11 39 32.7	-5.2
MBDF	**Montbardon**	4.36	235	*e*Pn	**Pn**	11 38 25.7	+1.1
	SNR=1.0						
RFYF	**Reffroy**	4.43	289	*e*Pn	**Pn**	11 38 26.1	+0.6
RFYF				*e*Sg	**Sg**	11 39 39.6	-4.3
	8.9nm,0.3s						
SFTF	**Sexfontaines**	4.63	283	*e*Sg	**Sg**	11 39 44.7	-5.9
	5.4nm,0.3s						
SBF	**Sospel**	4.63	223	*e*Pn	**Pn**	11 38 29.6	+1.2
MEZF	**Maizieres J'vi**	4.67	287	*e*Pn	**Pn**	11 38 29.6	+0.6
MEZF				*e*Sg	**Sg**	11 39 48.0	-4.0
	7.1nm,0.4s						
ORIF	**Oris-en-Rattie**	4.77	242	*e*Pn	**Pn**	11 38 31.8	+1.5
	SNR=1.0						
FRF	**La Foret Royal**	5.23	226	*e*Pn	**Pn**	11 38 37.5	+0.6
SMF	**Signal de Mont**	5.48	266	*e*Pn	**Pn**	11 38 40.2	-0.2
	SNR=1.0						
SMF				*e*Sn	**Sn**	11 39 37.3	-7.1
SMRF	**Simiane la Rot**	5.50	235	*e*Pn	**Pn**	11 38 40.8	+0.1
VIVF	**Saint-Julien-l**	5.53	246	*e*Pn	**Pn**	11 38 40.7	-0.5
SSF	**Saint Saulge**	5.65	270	*e*Pn	**Pn**	11 38 43.0	+0.2
	SNR=1.0						
SSF				*e*Sn	**Sn**	11 39 43.3	-5.3
AVF	**Avril sur Loir**	5.79	268	*e*Pn	**Pn**	11 38 44.7	0.0
	SNR=1.0						
BGF	**Bois d'Agland**	6.17	266	*e*Pn	**Pn**	11 38 49.6	-0.5
HYF	**Humbligny**	6.22	273	*e*Pn	**Pn**	11 38 48.1	-2.7
LASF	**Ste Croix**	6.44	242	*e*Pn	**Pn**	11 38 52.9	-1.1
TCF	**Toulx Ste Croi**	6.65	264	*e*Pn	**Pn**	11 38 56.1	-0.9
CAF	**Calviac**	7.17	254	*e*Pn	**Pn**	11 39 03.7	-0.6
MFF	**Saint Martin d**	8.19	269	*e*Pn	**P**	11 39 16.9	-1.6

LDG ***22*** *11:54:06.8±0.6, 17.76S×168.27E, h10km, Error ellipse: s-maj=107.2km s-min=4.2km az=105.0*
NEIC ***22*** *11:54:07.8±0.6, 17.66S×167.40E, h10km, mb4.6/3, Error ellipse: s-maj=13.9km s-min=11.6km az=79.0*
IDC ***22*** *11:54:07.0±1.3, 17.68S×167.36E, mb4.1/9, mb1 4.3/9, mb1mx4.2/17, MS3.6/2, Ms1 3.6/2, ms1mx3.1/22, Error ellipse: s-maj=31.0km s-min=26.4km az=39.0*

ISC 22 11:54:08.8±0.8, 17.90S±0.06×167.1E±0.1, h10km, n31, σ1§03/19, mb4.2/10, MS3.5/2, 1C, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BKM	**Butte a Klehm**	1.12	78	⇑*i*P	**Pb**	11 54 18.8	-11
DZM	**Mont Dzumac**	4.20	188	*e*P	**Pn**	11 55 15.0	+0.7
DZM				*e*S	**Sn**	11 56 03.7	-0.2
DZM	**Mont Dzumac**	4.20	188	*e*P	**Pn**	11 55 15.0	+0.7
DZM				*e*S	**Sn**	11 56 03.7	-0.3
NOUC	**Port Laguerre**	4.25	190	*e*P	**Pn**	11 55 16.3	+1.3
NOUC				*e*S	**Sn**	11 56 05.2	-0.1
CTA	**Charters Tower**	19.83	260	P	**P**	11 58 43.8	+1.1
	5.7nm,0.8s,baz=104,slow=10.0,SNR=3.7						
CTAO	**Charters Tower**	19.83	260	P	**P**	11 58 41.1	-1.6
	13nm,1.0s						
URZ	**Urewera**	22.09	159	P	**P**	11 59 05.9	+0.1
	17nm,1.2s,mb4.4,baz=315,slow=8.7,SNR=2.8						
STKA	**Stephens Creek**	26.91	234	P	**P**	11 59 51.8	-0.2
	4.3nm,0.8s,mb4.0,baz=97,slow=6.9,SNR=6.0						
STKA				LR	LR	12 10 42.7	
	comp=Z,193nm,20.1s,MS3.7,baz=24,slow=36						
WRAB	**Tennant Creek**	31.02	261	*e*P	**P**	12 00 28.5	-0.5
	19nm,1.2s,mb4.8						
WRA	**Warramunga Arr**	31.03	261	P	**P**	12 00 28.8	-0.3
	1.0nm,0.8s,mb4.7,baz=90,slow=6.7,SNR=11						
ASAR	**Alice Springs**	31.51	254	P	**P**	12 00 33.6	+0.3
	3.5nm,0.7s,mb4.3,baz=80,slow=8.3,SNR=45						
FITZ	**Fitzroy Crossi**	39.37	263	P	**P**	12 01 42.2	+1.8
	3.9nm,0.8s,mb4.2,baz=129,slow=9.7,SNR=3.9						
FITZ				LR	LR	12 17 20.6	
	comp=Z,65nm,21.4s,MS3.4,baz=130,slow=35						
VNDA	**Vanda**	59.71	181	P	**P**	12 04 14.4	-1.1
	0.6nm,0.8s,mb3.7,baz=281,slow=6.1,SNR=3.6						
QSPA	**South Pole Qui**	72.15	180	*e*P	**P**	12 05 33.1	-2.0
	6.8nm,1.2s,mb4.5						
QSPA				*e*P		12 05 33.5	
SONM	**Songino Array**	84.94	324	P	**P**	12 06 44.4	-0.9
	1.9nm,1.1s,mb4.1,baz=90,slow=1.4,SNR=6.3						
NVAR	**Mina Array Bea**	89.45	49	P	**P**	12 07 09.3	+1.7
	0.7nm,1.0s,mb4.0,baz=225,slow=7.7,SNR=3.4						
ARCES	**ARCESS Array B**	123.26	345	PKP	PKPdf	12 13 04.4	-4.2
	0.9nm,0.7s,baz=45,slow=1.3,SNR=3.3						
ARCES	**ARCESS Array B**	123.26	345	PKP	PKPdf	12 13 04.4	-4.2
GERES	**GERESS Array B**	142.35	331	PKP	PKPdf	12 13 38.7	-6.0
	0.2nm,0.3s,slow=2.0,SNR=3.0						
CDF	**Champ du Feu**	145.41	336	*e*PKP1	PKPbc	12 13 45.1	-2.4
	7.2nm,0.6s						
DAVOX	**Davos**	145.61	332	PKPbc	PKPbc	12 13 46.5	-1.6
	4.9nm,0.7s,baz=153,slow=6.8,SNR=3.4						
HINF	**Hinteralfeld**	146.06	336	*e*PKP1	PKPbc	12 13 47.2	-2.0
HAU	**Haudompre**	146.10	337	*e*PKP1	PKPbc	12 13 47.6	-1.7
	7.9nm,0.6s						
MEZF	**Maizieres J'vi**	146.16	338	*e*PKP1	PKPbc	12 13 47.7	-1.7
	11nm,0.6s						
SSF	**Saint Saulge**	147.93	339	*e*PKP1	PKPdf	12 13 52.3	-2.0
	5.2nm,0.7s						
LPL	**La Plagne**	147.97	334	*e*PKP1	PKPdf	12 13 53.1	-1.3
LPG	**La Plagne**	147.98	334	*e*PKP1	PKPdf	12 13 53.2	-1.2
ORIF	**Oris-en-Rattie**	148.81	334	*e*PKP1	PKPdf	12 13 54.1	-1.6
TCF	**Toulx Ste Croi**	149.04	339	*e*PKP1	PKPdf	12 13 55.0	-1.1
PGF	**Pioggiola**	149.17	327	*e*PKP1	PKPdf	12 13 56.5	+0.1
FRF	**La Foret Royal**	149.55	331	*e*PKP1	PKPdf	12 13 56.9	-0.1

NEIC ***22*** *11:58:02.5±0.8, 2.39N×126.87E, h10km, mb4.7/2, Error ellipse: s-maj=51.7km s-min=11.6km az=69.0*
IDC ***22*** *11:58:03.2±1.8, 1.95N×125.91E, mb3.4/3, mb1 3.7/4, mb1mx3.6/18, ML3.8/1, Error ellipse: s-maj=124.0km s-min=23.4km az=68.0*

ISC 22 11:58:01.1±1.0, 2.3N±0.2×126.7E±0.4, h10km, n7, σ1§13/7, mb3.8/5, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	20.31	183	P	**P**	12 02 38.5	-1.6
	0.2nm,0.3s,baz=24,slow=11,SNR=3.1						
WRAB	**Tennant Creek**	23.34	162	*e*P	**P**	12 03 12.0	+1.3
	27nm,1.3s,mb4.5						
WRA	**Warramunga Arr**	23.35	162	P	**P**	12 03 12.1	+1.4
	1.1nm,0.7s,mb3.4,baz=336,slow=10,SNR=24						
ASAR	**Alice Springs**	26.75	165	P	**P**	12 03 43.3	+0.2
	0.3nm,0.5s,mb3.1,baz=340,slow=7.3,SNR=7.1						
CTAO	**Charters Tower**	29.39	140	*e*P	**P**	12 04 05.3	-1.6
ENH	**Enshi**	32.25	331	P	**P**	12 04 31.8	-0.3
	12nm,1.1s,mb4.6						
MKAR	**Makanchi Array**	58.70	326	P	**P**	12 08 01.7	+0.4
	0.3nm,0.7s,mb3.4,baz=135,slow=2.0,SNR=2.5						

IDC ***22*** *12:12:24.5±1.4, 17.51S×173.29W, mb4.3/7, mb1 4.5/7, mb1mx4.1/19, Error ellipse: s-maj=51.8km s-min=27.3km az=143.0*

ISC 22 12:12:26.4±1.2, 18.0S±0.2×173.1W±0.2, h33km, n11, σ1§24/10, mb4.3/7, 2C-1D, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	21.98	201	P	**P**	12 17 19.6	+0.5
	18nm,1.2s,mb4.4,baz=133,slow=12,SNR=5.0						
RPZ	**Rata Peaks**	28.97	204	P	**P**	12

	SNR=93							
DAVA				*e*Sg		**Sg**	12 19 27.9	+0.5
	SNR=6.5							
BOO	**Bordano**	1.35	140⇑	*e*Pg		**Pg**	12 19 09.3	-0.4
MPRI	**Monte Prat**	1.36	144	*e*Pg		**Pg**	12 19 09.0	-1.1
MPRI				*e*Sg		**Sg**	12 19 27.2	-1.1
PTCC	**Patocco-Chiusa**	1.41	132	*e*Pn		**Pn**	12 19 10.0	+1.4
CAE	**Caneva**	1.41	163	*e*Pg		**Pg**	12 19 10.5	-0.4
CAE				*e*Sg		**Sg**	12 19 29.1	-0.6
BUA	**Buia**	1.44	142	*e*Pg		**Pg**	12 19 11.6	+0.1
GMNA	**Gemona**	1.44	138	*e*Pn		**Pn**	12 19 10.2	+1.1
GMNA				*e*Sn		**Sn**	12 19 27.4	-0.8
LSR	**Lussari**	1.45	127⇓	*e*Pg		**Pg**	12 19 10.9	-0.9
LSR				*e*Sg		**Sg**	12 19 30.5	-0.7
DAVOX	**Davos**	1.46	248	*eP**		**Pb**	12 19 10.2	+0.6
	19nm,0.5s							
BAD	**Bernadia**	1.48	139⇑	*e*Pg		**Pg**	12 19 11.0	-1.2
BAD				*e*Sg		**Sg**	12 19 31.7	-0.2
CGRP	**Cima Grappa**	1.48	181	*e*Pg		**Pg**	12 19 10.4	-1.9
CGRP				*e*Sg		**Sg**	12 19 30.3	-1.7
BERNI	**Berninapass**	1.56	234	*eP**		**Pb**	12 19 12.0	+0.6
	12nm,0.5s							
MABI	**Malga Bissina**	1.59	216	*e*Pn		**Pn**	12 19 12.1	+1.0
MABI				*e*Sn		**Sn**	12 19 31.9	0.0
ROBS	**Robic**	1.59	133	*i* Pn		**Pn**	12 19 14.0	+2.7
ROBS				*e*Sg		**Sg**	12 19 34.5	-1.4
	comp=Z,52nm,0.4s							
KAMOR	**Kamor**	1.60	269⇓	*i* Pn		**Pn**	12 19 14.1	+2.7
	comp=Z,44nm,0.5s							
KAMOR	**Kamor**	1.60	269	*e*Pg		**Pg**	12 19 14.1	-0.7
	SNR=25							
KAMOR				*e*Sg		**Sg**	12 19 35.5	-0.8
	SNR=7.6							
COLI	**Coloredo**	1.61	139	*e*Pg		**Pg**	12 19 14.1	-0.9
COLI				*e*Sg		**Sg**	12 19 36.8	+0.2
HDH	**Heidenheim**	1.65	319	Pn		**Pn**	12 19 13.0	+1.0
HDH				*i* Pg		**Pg**	12 19 15.6	-0.2
HDH				Sn		**Sn**	12 19 33.8	+0.4
TLI	**Talmassons**	1.68	148⇑	*i*Pg		**Pg**	12 19 15.6	-0.7
PLONS	**Plons**	1.71	261⇑	*i*Pn		**Pn**	12 19 15.9	+3.1
	comp=Z,21nm,0.8s							
DRE	**Drenchia**	1.71	133	*e*Pg		**Pg**	12 19 15.1	-1.8
DRE				*e*Sg		**Sg**	12 19 39.5	-0.2
MOA	**Molln**	1.71	72⇑	*i*PG		**Pg**	12 19 15.5	-1.5
MOA				*i* SG		**Sg**	12 19 39.1	-0.8
	comp=Z,107nm,0.3s							
MOA	**Molln**	1.71	72	*e*Pg		**Pg**	12 19 17.2	+0.2
	SNR=33							
MOA				*e*Sg		**Sg**	12 19 40.9	+1.0
	SNR=4.9							
CADS	**Cadrg**	1.72	130	*i* Pg		**Pg**	12 19 15.9	-1.2
CADS				*i* Sg		**Sg**	12 19 38.4	-1.7
	comp=Z,90nm,0.3s							
VDL	**Val di Lei**	1.84	243	*e*Pn		**Pn**	12 19 18.3	+3.5
	comp=Z,11nm,0.8s							
VOY	**Vojsko**	1.93	132	*e*Pn		**Pn**	12 19 18.5	+2.4
VOY				*e*Sn		**Sn**	12 19 44.2	+3.5
GEC2	**GERESS Array S**	1.94	39	*e*Pn		**Pn**	12 19 18.1	+1.9
GEC2				*e*Sn		**Sn**	12 19 43.5	+2.6
GEC2	**GERESS Array S**	1.94	39	*e*Pn		**Pn**	12 19 18.1	+1.9
GEC2				*e*Sn		**Sn**	12 19 43.5	+2.6
GUT	**Gutenstein**	1.98	292	Pn		**Pn**	12 19 18.4	+1.7
GUT				Sg		**Sg**	12 19 46.4	-2.2
SISB	**Singen-Sch Ber**	1.98	281	Pn		**Pn**	12 19 18.9	+2.2
SISB				Sn		**Sn**	12 19 43.5	+1.7
WILA	**Wila**	2.00	273⇑	*i*Pn		**Pn**	12 19 19.7	+2.7
	comp=Z,28nm,0.2s							
WILA	**Wila**	2.00	273	*e*Pg		**Pg**	12 19 21.3	-1.4
	SNR=11							
WILA				*e*Sg		**Sg**	12 19 47.3	-2.0
	SNR=12							
TEOL	**Teolo**	2.00	183	*e*Pg		**Pg**	12 19 19.0	-3.6
TEOL				*e*Sg		**Sg**	12 19 45.7	-3.6
LLS	**Linth-Limmern**	2.00	256⇓	*i*Pn		**Pn**	12 19 19.2	+2.1
	comp=Z,8.0nm,0.4s							
BUCH	**Bad Urach**	2.00	304⇓	*e*Pn		**Pn**	12 19 18.0	+0.9
BUCH				Sg		**Sg**	12 19 48.4	-1.1
OBKA	**Obir**	2.04	114⇑	*i*PG		**Pg**	12 19 21.2	-2.3
OBKA				*i* SG		**Sg**	12 19 49.2	-1.5
	comp=Z,91nm,0.7s							
OBKA	**Obir**	2.04	114	*e*Pg		**Pg**	12 19 22.7	-0.8
	SNR=24							
OBKA				*e*Sg		**Sg**	12 19 50.0	-0.7
JAVS	**Javornik**	2.12	133	*i* Pn		**Pn**	12 19 20.9	+2.2
JAVS				*i* Sn		**Sn**	12 19 48.7	+3.4
	comp=Z,120nm,0.7s							
KHC	**Kasperske Hory**	2.12	32	*e*PN		**Pn**	12 19 20.2	+1.4
KHC				*e*PG		**Pg**	12 19 24.9	-0.3
KHC				*e*SN		**Sn**	12 19 47.4	+1.9
KHC				*e*SG		**Sg**	12 19 52.8	-0.7
	comp=Z,79nm,0.3s							
TUBL	**Tuebingen Lnz**	2.19	303	Sn		**Sn**	12 19 46.3	-0.9
SPAK	**Spaichingen**	2.19	291	Pn		**Pn**	12 19 21.4	+1.6
SPAK				Sg		**Sg**	12 19 53.7	-2.2
ZUR	**Zurich**	2.22	272	*e*Pn		**Pn**	12 19 22.2	+2.0
	comp=Z,21nm,0.3s							
STU	**Stuttgart**	2.27	310	*e*Pn		**Pn**	12 19 22.0	+1.0
	SNR=6.9							
STU				*e*Pg		**Pg**	12 19 28.1	-0.1
	SNR=6.5							
STU				*e*Sg		**Sg**	12 20 01.7	+3.2
SLE	**Schleitheim**	2.31	282	*e*Pn		**Pn**	12 19 23.0	+1.6
	comp=Z,11nm,0.3s							
SLE	**Schleitheim**	2.31	282	*e*Pn		**Pn**	12 19 22.7	+1.3
	SNR=7.2							
SLE				*e*Pg		**Pg**	12 19 28.0	-0.9
	SNR=3.3							
SLE				*e*Sg		**Sg**	12 19 56.4	-3.2
	SNR=5.9							
FUSIO	**Fusio**	2.36	249	*e*Pn		**Pn**	12 19 24.6	+2.4
	comp=Z,7.1nm,0.4s							
GRFO	**Grafenberg**	2.38	350	*e*Pg		**Pg**	12 19 30.6	+0.4
	SNR=18							
GRA1	**Grafenberg Arr**	2.38	350	*e*Pg		**Pg**	12 19 30.7	+0.5
GRF	**Grafenberg Arr**	2.38	350	*e*Pg		**Pg**	12 19 30.7	+0.5
BNALP	**Bannalp**	2.38	260	*e*Pn		**Pn**	12 19 24.4	+1.9
	comp=Z,7.5nm,0.4s							
MUGIO	**Muggio**	2.40	234	*e*Pn		**Pn**	12 19 25.3	+2.5
	comp=Z,7.2nm,0.6s							
MUGIO	**Muggio**	2.40	234	*e*P		**Pn**	12 19 25.4	+2.6
ROTZ	**Rotzenmuhle**	2.43	6⇓	*i*Pn		**Pn**	12 19 23.4	+0.2
LBG	**Lerchenberg**	2.43	304	Pn		**Pn**	12 19 23.9	+0.7
LBG				Sn		**Sn**	12 19 51.8	-1.5
LBG	**Lerchenberg**	2.43	304	S		**Sn**	12 19 51.8	-1.5
SIND	**Sindeldorf**	2.49	324	Pn		**Pn**	12 19 24.4	+0.3
SIND				*e*Pg		**Pg**	12 19 32.1	-0.5
ARSA	**Arzberg**	2.51	91⇑	*i*PN		**Pn**	12 19 27.8	+3.5
ARSA				*i* SN		**Sn**	12 20 01.4	+6.2
SULZ	**Sulz-Cheisache**	2.54	275	*e*Pn		**Pn**	12 19 26.2	+1.5
	comp=Z,21nm,0.9s							
BFO	**Black Forest**	2.56	294	*e*Pn		**Pn**	12 19 25.6	+0.5
	SNR=5.7							
BFO				*e*Pg		**Pg**	12 19 32.4	-1.5
	SNR=1.4							
BFO				*e*Sn		**Sn**	12 19 55.8	-0.7
	SNR=4.8							
BFO	**Black Forest**	2.56	294	*e*Pn		**Pn**	12 19 26.4	+1.3
BFO				*e*Sn		**Sn**	12 19 55.7	-0.9
HASLI	**Hasliberg**	2.59	258	*e*Pn		**Pn**	12 19 27.1	+1.6
	comp=Z,6.8nm,0.4s							
FELD	**Feldberg**	2.65	283	Pn		**Pn**	12 19 27.6	+1.3
KIZ	**Kirchzarten**	2.72	284	Pn		**Pn**	12 19 27.9	+0.6
KIZ				Sn		**Sn**	12 19 58.5	-2.1
KIZ				Sg		**Sg**	12 20 09.1	-4.3
BALST	**Balsthal**	2.82	271	*e*Pn		**Pn**	12 19 29.9	+1.1
	comp=Z,12nm,0.7s							
NKC	**Novy Kostel**	2.91	8	*e*Pn		**Pn**	12 19 30.2	+0.2
NKC				*e*Pg		**Pg**	12 19 35.8	-5.1
NKC				*e*Sn		**Sn**	12 20 04.9	-0.5
NKC				*e*Sg		**Sg**	12 20 18.5	-1.2
BBS	**Basel-Blauen**	2.94	274	Pn		**Pn**	12 19 31.1	+0.6
MMK	**Mattmark**	2.97	245	*e*Pn		**Pn**	12 19 31.9	+1.0
	comp=Z,3.6nm,0.8s							
SWS	**Schriesheim**	2.99	317	Pn		**Pn**	12 19 31.6	+0.4
SWS				Sn		**Sn**	12 20 04.4	-3.0
SWS	**Schriesheim**	2.99	317	S		**Sn**	12 20 04.4	-3.0
SWS	**Schriesheim**	2.99	317	Pn		**Pn**	12 19 31.6	+0.4
SWS				S		**Sn**	12 20 04.4	-3.0
TOD	**Tromm**	3.03	319	Pn		**Pn**	12 19 32.8	+1.0
TOD	**Tromm**	3.03	319	Pn		**Pn**	12 19 32.8	+1.1
GUNZ	**Gunzen**	3.03	6	*e*Pn		**Pn**	12 19 31.7	-0.1
	SNR=2.5							
GUNZ				*e*Pg		**Pg**	12 19 42.5	-0.7
	SNR=2.5							
GUNZ				*e*Sg		**Sg**	12 20 25.4	+1.7
GRAM		3.12	204	P		**Pn**	12 19 33.5	+0.5
GRAM				S		**Sn**	12 20 04.1	-6.6
BOURR	**Bourrignon**	3.13	272	*e*Pn		**Pn**	12 19 34.2	+0.9
BOURR				*e*Sg		**Sg**	12 20 23.1	-4.1
	SNR=3.4							
LANF	**Langenberg**	3.15	303	Pn		**Pn**	12 19 34.2	+0.7
PRU	**Pruhonice**	3.19	33	PN		**Pn**	12 19 35.4	+1.4
PRU				*e*PG		**Pg**	12 19 44.3	-2.1
PRU				*e*SN		**Sn**	12 20 12.5	+0.1
PRU				*e*SG		**Sg**	12 20 25.3	-3.6
	comp=Z,38nm,0.4s							
WLS	**Welschbruch**	3.20	291	Pn		**Pn**	12 19 34.9	+0.7
WLS	**Welschbruch**	3.20	291	Pn		**Pn**	12 19 35.0	+0.8
VALM		3.21	201	P		**Pn**	12 19 34.9	+0.7
VALM				S		**Sn**	12 20 06.2	-6.7
MOF	**Molkenrain**	3.23	281	P		**Pn**	12 19 35.7	+1.2
MOF	**Molkenrain**	3.23	281	Pn		**Pn**	12 19 35.3	+0.8
MOF				Sg		**Sg**	12 20 26.0	-4.2
CDF	**Champ du Feu**	3.25	291	*e*Pn		**Pn**	12 19 35.6	+0.7
	SNR=1.0							
CDF				*e*Pg		**Pg**	12 19 44.8	-2.9
	SNR=1.0							
CDF				*e*Sn		**Sn**	12 20 10.7	-3.4
	SNR=1.0							
CDF				*e*Sg		**Sg**	12 20 25.8	-5.2
	comp=Z,46nm,0.3s,SNR=1.0							
SENIN	**Lac Senin**	3.27	254	*e*Pn		**Pn**	12 19 36.4	+1.2
CODM		3.27	206	P		**Pn**	12 19 35.7	+0.5
CODM				S		**Sn**	12 20 07.5	-7.1
ECH	**Echery**	3.27	287	Pn		**Pn**	12 19 35.9	+0.6
ECH	**Echery**	3.27	287	Pn		**Pn**	12 19 35.5	+0.3
MOX	**Moxa**	3.30	357	*e*Pn		**Pn**	12 19 35.1	-0.5
	SNR=3.3							
MOX				*e*Pg		**Pg**	12 19 48.0	-0.7
	SNR=3.3							
MOX				*e*Sn		**Sn**	12 20 14.2	-1.0
	SNR=2.3							
MOX				*e*Sg		**Sg**	12 20 30.2	-2.4
MOX	**Moxa**	3.30	357	*i* P		**Pn**	12 19 34.9	-0.7
MOX				Pg		**Pg**	12 19 48.0	-0.6
MOX				S		**Sn**	12 20 14.0	-1.2
MOX				Sg		**Sg**	12 20 30.0	-2.6
MOX	**Moxa**	3.30	357	*e*Pn		**Pn**	12 19 34.9	-0.7
MOX				*e*Pg		**Pg**	12 19 48.1	-0.5
MOX				*e*Sn		**Sn**	12 20 14.5	-0.7
MOX				*e*Sg		**Sg**	12 20 30.2	-2.4
BACM		3.32	203	P		**Pn**	12 19 36.6	+0.8
SARO	**Sassorosso**	3.33	198	P		**Pn**	12 19 36.7	+0.7
TORNY	**Torny**	3.39	262	*e*Pn		**Pn**	12 19 37.6	+0.8
HINF	**Hinteralfeld**	3.41	280	*e*Pn		**Pn**	12 19 37.3	+0.2
	SNR=1.0							
HINF				*e*Sn		**Sn**	12 20 14.6	-3.5
HINF				*e*Sg		**Sg**	12 20 31.0	-5.3
	comp=Z,36nm,0.2s,SNR=1.0							
LOMF	**Lomont**	3.41	272	Pn		**Pn**	12 19 37.9	+0.8
LOMF	**Lomont**	3.41	272	Pn		**Pn**	12 19 37.6	+0.5
VINC	**Vinca**	3.42	201	P		**Pn**	12 19 38.4	+1.0
SFI	**Santa Sofia**	3.45	180	*e*Pn		**Pn**	12 19 39.6	+1.9
AIGLE	**Aigle**	3.50	255	*e*Pn		**Pn**	12 19 39.1	+0.6
MAIM		3.57	196	P		**Pn**	12 19 39.5	+0.1
PCP	**Pian Castagno**	3.63	220	P		**Pn**	12 19 41.7	+1.4
ZST	**Bratislava**	3.65	75	*e*SB		**Sb**	12 20 38.8	+7.3
BRANT	**Les Verrieres**	3.69	265	*e*Pn		**Pn**	12 19 41.7	+0.6
FSSB	**Fossombrone**	3.72	169	*e*Pn		**Pn**	12 19 43.3	+1.7
PII	**Pisa**	3.75	195	*e*Pn		**Pn**	12 19 43.4	+1.4
LSD	**Ceresole Reale**	3.76	241	P		**Pn**	12 19 43.0	+0.9
HAU	**Haudompre**	3.77	282	*e*Pn		**Pn**	12 19 42.3	+0.1
	SNR=1.0							
HAU				*e*Sn		**Sn**	12 20 21.9	-5.3
	SNR=1.0							
HAU				*e*Sg		**Sg**	12 20 41.9	-6.4
	comp=Z,54nm,0.3s,SNR=1.0							
BRG	**Berggiesshubel**	3.78	21	*e*Pn		**Pn**	12 19 43.4	+0.9
	SNR=2.2							
BRG				*e*Pg		**Pg**	12 19 56.6	-1.8
	SNR=2.1							
BRG				*i* Sn		**Sn**	12 20 27.9	+0.4
BRG				*i* Sg		**Sg**	12 20 45.1	-3.6
BRG	**Berggiesshubel**	3.78	21	*e*Pn		**Pn**	12 19 43.4	+1.0
BRG				*i* Pg		**Pg**	12 19 56.3	-2.0
BRG				*i* Sn		**Sn**	12 20 27.9	+0.4
BRG				*i* Sg		**Sg**	12 20 45.1	-3.6
ABH	**Alteburg**	3.81	313	Pn		**Pn**	12 19 43.7	+0.9
RSP	**Reno Superiore**	3.87	237	P		**Pn**	12 19 42.0	-1.6
CSNT	**Castellina Chi**	3.90	186	*e*Pn		**Pn**	12 19 44.9	+0.8
ARV	**Arcevia**	3.93	168	*e*Pn		**Pn**	12 19 45.9	+1.3
LPG	**La Plagne**	3.98	244	*e*Sn		**Sn**	12 20 29.9	-2.6
	comp=Z,19nm,0.4s,SNR=1.0							
LPG	**La Plagne**	3.98	244	*e*Pn		**Pn**	12 19 46.8	+1.6
LPG				*e*Sn		**Sn**	12 20 29.9	-2.6
LPL	**La Plagne**	3.98	244	*e*Sn		**Sn**	12 20 30.1	-2.5
	comp=Z,16nm,0.5s							
LPL	**La Plagne**	3.98	244	*e*Pn		**Pn**	12 19 46.8	+1.5
LPL				*e*Sn		**Sn**	12 20 30.1	-2.5
CABF	**La Chapelle**	4.01	261	*e*Pn		**Pn**	12 19 45.8	+0.1
	SNR=1.0							
CABF				*e*Sn		**Sn**	12 20 30.5	-2.8
	SNR=1.0							
CABF				*e*Sg		**Sg**	12 20 51.6	-4.7
	comp=Z,23nm,0.5s,SNR=1.0							
CLL	**Collm**	4.03	10	*e*Pn		**Pn**	12 19 45.8	-0.1
CLL				*i* Pg		**Pg**	12 20 02.0	-1.2
CLL				*i* Sg		**Sg**	12 20 53.7	-3.3
CLL	**Collm**	4.03	10	*i* PN		**Pn**	12 19 45.9	-0.1
	comp=Z,logA/T=0.9							
CLL				*i*			12 19 51.2	
CLL				*i* PG		**Pg**	12 20 02.0	-1.2
CLL				*e*SN		**Sn**	12 20 33.0	-0.8
CLL				*i* SG		**Sg**	12 20 53.7	-3.3
CLL	**Collm**	4.03	10	*i* Pn		**Pn**	12 19 45.9	-0.1
CLL				*i* Pg		**Pg**	12 20 02.0	-1.2
CLL				*i* Sg		**Sg**	12 20 53.7	-3.3
THEF	**They Montfort**	4.04	285	Pn		**Pn**	12 19 46.8	+0.6
THEF				Sg		**Sg**	12 20 52.0	-5.4
FIN	**Finale Ligure**	4.04	220	P		**Pn**	12 19 46.0	-0.2
ROB	**Roburent**	4.13	224	P		**Pn**	12 19 48.1	+0.7
SNTG	**Esanatoglia**	4.17	169	*e*Pn		**Pn**	12 19 49.0	+1.0
UPC	**Upice**	4.18	40	*e*PN		**Pn**	12 19 48.2	0.0
UPC				*e*PG		**Pg**	12 20 00.9	-5.4
UPC				*e*SN		**Sn**	12 20 35.1	-2.6
UPC				*e*SG		**Sg**	12 20 56.7	-5.4
DPC	**Dobruska-Polom**	4.21	43	*e*SG		**Sg**	12 20 57.6	-5.4
	comp=Z,35nm,0.5s							
RRL	**Cesana Torines**	4.28	237	P		**Pn**	12 19 50.7	+1.2
MONE	**Monesi**	4.35	223	P		**Pn**	12 19 50.6	+0.1
PZZ	**Prazzo**	4.37	231	P		**Pn**	12 19 50.4	-0.3
ENR	**Entracque**	4.40	226	P		**Pn**	12 19 51.0	-0.2
MBDF	**Montbardon**	4.40	235	*e*Pn		**Pn**	12 19 51.3	+0.1
	SNR=1.0							
MBDF				*e*Sn		**Sn**	12 20 40.0	-3.2
	comp=Z,22nm,0.6s							
IMI	**Imperia**	4.42	220	P		**Pn**	12 19 51.6	+0.1
WLF	**Walferdange**	4.43	304	*e*Pn		**Pn**	12 19 53.0	+1.3
WLF				*e*Sn		**Sn**	12 20 43.7	-0.2
RFYF	**Reffroy**	4.46	289	*e*Pn		**Pn**	12 19 52.0	-0.1
	baz=107							
RFYF				*e*Sn		**Sn**	12 20 40.1	-4.6
RFYF				*e*Sg		**Sg**	12 21 05.4	-6.0
	comp=Z,35nm,0.2s							
KSP	**Ksiaz**	4.55	38	*e*Pn		**Pn**	12 19 54.5	+1.1
KSP				*e*Sn		**Sn**	12 20 44.2	-2.9
KSP				*e*Sg		**Sg**	12 21 07.6	-6.8
CLZ	**Clausthal**	4.59	349	*e*Pn		**Pn**	12 19 53.8	-0.2
	SNR=5.1							
CLZ				*e*Pg		**Pg**	12 20 13.1	-1.4
	SNR=5.1							
CLZ	**Clausthal**	4.59	349	*e*Pn		**Pn**	12 19 53.7	-0.3
SBF	**Sospel**	4.66	223	*e*Pn		**Pn**	12 19 55.3	+0.3
	SNR=1.0							
SBF				*e*Sn		**Sn**	12 20 46.3	-3.5
	comp=Z,22nm,0.4s,SNR=1.0							
SFTF	**Sexfontaines**	4.67	283	*e*Pn		**Pn**	12 19 57.6	+2.6
	baz=118							
SFTF				*e*Sg		**Sg**	12 21 11.5	-6.6
	comp=Z,24nm,0.4s							
MEZF	**Maizieres J'vi**	4.71	287	*e*Pn		**Pn**	12 19 55.2	-0.4
	baz=107							
MEZF				*e*Sg		**Sg**	12 21 13.6	-5.9
	comp=Z,17nm,0.3s,baz=110							
ORIF	**Oris-en-Rattie**	4.81	242	*e*Pn		**Pn**	12 19 57.5	+0.5
	SNR=1.0							
ORIF				*e*Sn		**Sn**	12 20 49.1	-4.3
	comp=Z,7.5nm,0.2s,SNR=1.0							
VYHS	**Vyhne**	4.84	74	*e*PN		**Pn**	12 19 58.8	+1.4
OKC	**Ostrava-Krasne**	4.87	57	*e*SG		**Sg**	12 21 18.0	-6.8
FRF	**La Foret Royal**	5.27	226	*e*Pn		**Pn**	12 20 02.9	-0.6
	SNR=1.0							
FRF				*e*Sn		**Sn**	12 21 01.3	-3.7
	comp=Z,12nm,0.6s,SNR=1.0							
GIVF	**Givet**	5.40	303	*e*Pn		**Pn**	12 20 02.1	-3.2
GIVF				*e*Sn		**Sn**	12 21 02.1	-6.2
	comp=Z,18nm,0.2s							
LMR	**La Mourre**	5.50	225	*e*Pn		**Pn**	12 20 06.1	-0.7
	SNR=1.0							
LMR				*e*Sn		**Sn**	12 21 06.6	-4.3
	comp=Z,6.8nm,0.5s							
SMF	**Signal de Mont**	5.52	266	*e*Pn		**Pn**	12 20 06.4	-0.6
	SNR=1.0							
SMF				*e*Sn		**Sn**	12 21 04.1	-7.3
	comp=Z,13nm,0.5s,SNR=1.0							
SMRF	**Simiane la Rot**	5.54	235	*e*Pn		**Pn**	12 20 05.9	-1.4
	SNR=1.0							
SMRF				*e*Sn		**Sn**	12 21 07.5	-4.4
	comp=Z,2.9nm,0.3s,SNR=1.0							
VIVF	**Saint-Julien-l**	5.58	246	*e*Pn		**Pn**	12 20 06.9	-0.9
	SNR=1.0							
VIVF				*e*Sn		**Sn**	12 21 05.8	-7.0
	comp=Z,10.0nm,0.3s							
SSF	**Saint Saulge**	5.69	270	*e*Pn		**Pn**	12 20 08.4	-1.0
	SNR=1.0							
SSF				*e*Sn		**Sn**	12 21 09.0	-6.6
SSF				*e*Sg		**Sg**	12 21 43.5	-8.7
	comp=Z,8.7nm,0.4s,SNR=1.0							
BAIF	**Baives**	5.73	301	*e*Pn		**Pn**	12 20 08.6	-1.5
BAIF				*e*Sg		**Sg**	12 21 45.3	-8.3
	comp=Z,7.2nm,0.5s							
PLDF	**La Plantade**	5.83	259	Pn		**Pn**	12 20 10.3	-1.1
AVF	**Avril sur Loir**	5.83	268	*e*Pn		**Pn**	12 20 10.9	-0.5
	SNR=1.0							
AVF				*e*Sn		**Sn**	12 21 13.7	-5.4
	comp=Z,2.4nm,0.3s,SNR=1.0							
OJC	**Ojcow**	5.99	58	*e*Pg		x	12 21 27.5	
OJC				*e*Sg		**Sg**	12 21 54.0	-8.2
AGO	**Saint Agoulin**	6.13	261	Pn		**Pn**	12 20 14.3	-1.4
BGF	**Bois d'Agland**	6.21	266	*e*Pn		**Pn**	12 20 15.5	-1.3
	SNR=1.0							
BGF				*e*Sn		**Sn**	12 21 22.2	-6.4
	comp=Z,13nm,0.2s,SNR=1.0							
LBL	**Lubilhac**	6.32	254	Pn		**Pn**	12 20 16.7	-1.7
LASF	**Ste Croix**	6.48	243	*e*Pn		**Pn**	12 20 18.9	-1.7
	SNR=1.0							
LASF				*e*Sn		**Sn**	12 21 28.7	-6.7
	comp=Z,8.9nm,0.3s,SNR=1.0							
TCF	**Toulx Ste Croi**	6.70	264	*e*Pn		**Pn**	12 20 21.9	-1.7
	SNR=1.0							
TCF				*e*Sn		**Sn**	12 21 33.3	-7.5
	comp=Z,8.1nm,0.3s,SNR=1.0							
CAF

GERES **GERESS Array B 148.70 351** PKPbc PKPdf 12 56 17.4 +1.1
0.3nm,0.3s,baz=63,slow=4.4,SNR=2.9

IDC 22 12:53:16.3±2.4, 20.26S×179.96E, mb3.7/2, mb1 4.3/3, mb1mx3.8/14, ML5.2/1, Error ellipse: s-maj=55.7km s-min=47.0km az=105.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**18.11**	**187**	P	P	12 57 29.0	-1.9
	7.8nm,0.3s,baz=270,slow=11,SNR=34						
ASAR	**Alice Springs**	**42.71**	**257**	P	P	13 01 15.8	-1.1
	0.8nm,0.6s,baz=91,slow=6.8,SNR=3.9						
WRA	**Warramunga Arr**	**42.74**	**262**	P	P	13 01 15.2	-2.0
	0.4nm,0.3s,baz=98,slow=8.0,SNR=14						
GERES	**GERESS Array B**	**149.42**	**342**	PKPbc	PKPdf	13 13 07.0	+2.4
	0.9nm,0.7s,baz=79,slow=5.0,SNR=6.0						

NIED 22 12:55:00.22.60N×121.40E,h5km,Mw4.0 Best double couple: M0 1.24×10^15 NP1:φs230°, δ47°, λ96°. NP2:φs41°, δ43°, λ84°.
IDC 22 12:55:25.2±0.9,22.85N×121.35E,mb3.5/7,mb1 3.7/8, mb1mx3.6/24,ML3.7/1,MS2.6/1,Ms1 2.6/1,ms1mx2.2/24, Error ellipse: s-maj=27.2km s-min=17.0km az=59.0
TAP 22 12:55:26.6,22.87N×121.22E,h22km,ML4.2
TAP Felt II J at Taitung, I J at Pinlang, I J at Chenggung.
JMA 22 12:55:27.1±0.3,22.61N×121.39E,h82km,M3.7
NEIC 22 12:55:31.0±1.9,22.95N×121.56E,h60km±19km,mb4.1/3, Error ellipse: s-maj=19.8km s-min=14.7km az=48.0
ISC 22 12:55:26.2±0.3, 22.79N±0.02×121.30E±0.02, h19km±3km, n84, σ1§08/116, mb3.7/10, 12C-2D, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TTN	**Taitung**	**0.15**	**256**	*ǁiP*	**Pb**	**12 55 31.1**	**+0.6**
TTN				S	**Sb**	**12 55 34.8**	**+1.4**
TWG	**Pinlang**	**0.21**	**278**	*ĵiP*	**Pb**	**12 55 30.8**	**-0.7**
TWG				S	**Sb**	**12 55 33.2**	**-1.7**
CHKT	**Chengkung**	**0.31**	**11**	*ĵiP*	**Pb**	**12 55 32.9**	**-0.2**
CHKT				S	**Sb**	**12 55 37.7**	**0.0**
ECL	**Taimali**	**0.37**	**239**	*ĵiP*	**Pb**	**12 55 33.9**	**-0.1**
ECL				S	**Sb**	**12 55 39.2**	**-0.1**
ELDTW	**Lidau**	**0.47**	**327**	*ĵiP*	**Pb**	**12 55 34.2**	**-1.6**
TWF1	**Yuli**	**0.56**	**360**	*eP*	**Pb**	**12 55 35.9**	**-1.3**
TAW	**Tawu**	**0.57**	**221**	P	**Pb**	**12 55 37.7**	**+0.3**
TAW				S	**Sb**	**12 55 45.5**	**+0.5**
EAST	**Anshuo**	**0.58**	**226**	*ǁiP*	**Pb**	**12 55 37.8**	**+0.2**
SSD	**Sandimen**	**0.62**	**266**	*ĵiP*	**Pb**	**12 55 37.3**	**-0.9**
SSD				S	**Sb**	**12 55 44.2**	**-2.2**
STYT	**Tauyuan**	**0.62**	**307**	*ĵiP*	**Pb**	**12 55 37.0**	**-1.3**
STYT				S	**Sb**	**12 55 44.3**	**-2.2**
EHY	**Hungye**	**0.71**	**2**	*eP*	**Pb**	**12 55 38.3**	**-1.5**
SGST	**Jiashian**	**0.72**	**294**	P	**Pb**	**12 55 39.5**	**-0.4**
SGST				S	**Sb**	**12 55 49.0**	**-0.3**
SGLT	**Jiouru**	**0.75**	**265**	*eP*	**Pb**	**12 55 40.7**	**+0.3**
SCZT	**Fangliau**	**0.75**	**237**	*ĵiP*	**Pb**	**12 55 40.7**	**+0.2**
YUS	**Yu-Shan**	**0.77**	**335**	P	**Pb**	**12 55 39.5**	**-1.2**
YUS				S	**Sb**	**12 55 48.2**	**-2.5**
WTP	**Ta-pu**	**0.78**	**306**	*ĵiP*	**Pb**	**12 55 40.3**	**-0.7**
WTP				S	**Sb**	**12 55 50.0**	**-1.0**
LAY	**Lan-yu**	**0.78**	**163**	*eP*	**Pb**	**12 55 42.5**	**+1.5**
LAY				S	**Sb**	**12 55 55.4**	**+4.3**
CHN1	**Nanshi**	**0.81**	**299**	*ĵiP*	**Pb**	**12 55 41.5**	**-0.1**
CHN1				S	**Sb**	**12 55 53.1**	**+1.1**
ALS	**Alishan**	**0.85**	**328**	*ĵiP*	**Pb**	**12 55 41.5**	**-0.7**
ALS				S	**Sb**	**12 55 51.9**	**-1.1**
TWK	**Hsinying**	**0.89**	**303**	*ĵiP*	**Pb**	**12 55 42.5**	**-0.2**
CHN3	**Shinhua**	**0.91**	**288**	*eP*	**Pb**	**12 55 44.5**	**+1.4**
CHN3				S	**Sb**	**12 55 59.7**	**+4.9**
HEN	**Hengchun**	**0.94**	**214**	*eP*	**Pb**	**12 55 45.9**	**+2.3**
KAU	**Kaohsiung**	**0.94**	**257**	*eP*	**Pb**	**12 55 42.1**	**-1.6**
TWK1	**Hengchun**	**0.96**	**209**	*eP*	**Pb**	**12 55 47.2**	**+3.2**
TWP	**Hsiaoliuchiu**	**0.97**	**243**	*eP*	**Pb**	**12 55 47.8**	**+3.6**
CHN5	**Tsauling**	**0.99**	**325**	*ĵiP*	**Pb**	**12 55 44.1**	**-0.4**
CHN5				S	**Sb**	**12 55 57.3**	**+0.3**
TAI1	**Yung-k'ang**	**1.02**	**284**	*eP*	**Pb**	**12 55 47.0**	**+1.9**
ESL	**Shilin**	**1.03**	**7**	*eP*	**Pb**	**12 55 43.9**	**-1.3**
CHN2	**Minshiung**	**1.06**	**314**	*eP*	**Pb**	**12 55 45.9**	**+0.2**
CHN2				S	**Sb**	**12 55 59.8**	**+0.7**
CHY	**Chiayi**	**1.07**	**311**	*eP*	**Pb**	**12 55 45.9**	**0.0**
CHY				S	**Sb**	**12 56 00.2**	**+0.7**
SCLT	**Jiali**	**1.09**	**291**	*eP*	**Pb**	**12 55 46.3**	**+0.1**
SCLT				S	**Sb**	**12 56 02.0**	**+2.0**
WGK	**Gukeng**	**1.12**	**323**	*eP*	**Pb**	**12 55 47.0**	**+0.2**
WGK				S	**Sb**	**12 56 01.7**	**+0.8**
CHN8	**Yiju**	**1.15**	**299**	*eP*	**Pb**	**12 55 47.1**	**0.0**
CHN8				S	**Sb**	**12 56 03.0**	**+1.4**
SMLT	**Sun Moon Lake**	**1.15**	**341**	*eP*	**Pb**	**12 55 46.6**	**-0.6**
SMLT				S	**Sb**	**12 56 02.9**	**+1.1**
TYC	**Yuchr**	**1.18**	**340**	*eP*	**Pb**	**12 55 47.2**	**-0.6**
TYC				S	**Sb**	**12 56 03.7**	**+1.1**
HWA	**Hwalien**	**1.21**	**13**	*eP*	**Pb**	**12 55 49.9**	**+1.5**
WNT	**Mingjian**	**1.22**	**333**	*eP*	**Pb**	**12 55 48.8**	**+0.3**
WNT				S	**Sb**	**12 56 05.3**	**+1.4**
WSF	**Szhu**	**1.30**	**311**	*eP*	**Pn**	**12 55 49.3**	**-0.4**
WSF				S	**Sb**	**12 56 06.6**	**+0.5**
TWD	**Chiawan**	**1.31**	**12**	*eP*	**Pn**	**12 55 49.5**	**-0.3**
WHF	**Hehuan Shan**	**1.35**	**359**	*eP*	**Pn**	**12 55 49.3**	**-1.0**
TWT	**Tachien**	**1.46**	**356**	*eP*	**Pn**	**12 55 51.8**	**-0.1**
TCU	**Taichung**	**1.47**	**337**	*eP*	**Pn**	**12 55 52.5**	**+0.5**
TCU				S	**Sn**	**12 56 11.5**	**+0.6**
WDGT	**Dungji**	**1.58**	**288**	*eP*	**Pn**	**12 55 52.7**	**-1.0**
TWQ1	**Liyutan**	**1.62**	**343**	*eP*	**Pn**	**12 55 55.6**	**+1.4**
TWQ1				S	**Sn**	**12 56 16.6**	**+1.7**
NNS	**Nan Shan**	**1.64**	**2**	*eP*	**Pn**	**12 55 56.0**	**+1.4**
ENA	**Nanau**	**1.68**	**14**	*eP*	**Pn**	**12 55 54.6**	**-0.5**
NSY	**Sanyi**	**1.69**	**343**	*eP*	**Pn**	**12 55 56.4**	**+1.1**
NSY				S	**Sn**	**12 56 18.2**	**+1.6**
PNG	**Penghu**	**1.78**	**296**	*eP*	**Pn**	**12 55 54.2**	**-2.3**
NSTT	**Nanjuang**	**1.85**	**352**	*eP*	**Pn**	**12 55 57.5**	**0.0**
ENTT	**Nioudou**	**1.86**	**7**	*eP*	**Pn**	**12 55 57.2**	**-0.4**
NSK	**Sanguang**	**1.88**	**2**	*eP*	**Pn**	**12 55 57.2**	**-0.7**
TWC	**Suao**	**1.88**	**15**	*eP*	**Pn**	**12 55 58.9**	**+1.0**
TWE	**Neicheng**	**1.95**	**10**	*eP*	**Pn**	**12 56 00.1**	**+1.1**
TATO	**Taipei**	**2.18**	**4**	*eP*	**Pn**	**12 56 02.4**	**+0.2**
TATO				eS	**Sn**	**12 56 32.6**	**+3.5**
YOJ	**Yonaguni jima**	**2.29**	**43**	P	**Pn**	**12 56 04.9**	**+1.1**
YOJ				S	**Sn**	**12 56 32.8**	**+1.1**
TWB1	**Santiao Chiao**	**2.30**	**16**	*eP*	**Pn**	**12 56 04.5**	**+0.6**
NWF	**Wu-fen Shan**	**2.31**	**11**	*eP*	**Pn**	**12 56 05.2**	**+1.0**
HATJ	**Hateruma jima**	**2.62**	**61**	P	**Pn**	**12 56 08.5**	**-0.1**
HATJ				eS	**Sn**	**12 56 40.2**	**0.0**
IRIF	**Iriomote-Funau**	**2.71**	**55**	P	**Pn**	**12 56 09.8**	**0.0**
IRIF				S	**Sn**	**12 56 42.8**	**+0.4**
JKRS	**Kuro-shima**	**2.87**	**59**	P	**Pn**	**12 56 12.3**	**+0.2**
JKRS				eS	**Sn**	**12 56 46.5**	**-0.1**
JIJ	**Ishigaki jima**	**3.04**	**58**	P	**Pn**	**12 56 14.2**	**-0.3**
JIJ				S	**Sn**	**12 56 49.9**	**-0.9**
JTJ	**Tarama**	**3.62**	**59**	P	**Pn**	**12 56 22.5**	**-0.2**
JTJ				eS	**Sn**	**12 57 04.6**	**-0.9**
JMJ	**Miyako jima 2**	**4.18**	**60**	eS	**Sn**	**12 57 08.1**	**-0.8**
JOGS	**Gusukube**	**4.24**	**62**	P	**Pn**	**12 56 31.1**	**-0.5**
JOW	**Kunigami**	**7.51**	**56**	Pn	**Pn**	**12 57 14.2**	**-3.4**
	2.8nm,0.3s,baz=132,slow=12,SNR=13						
JOW				Sn	**Sn**	**12 58 44.0**	**+0.9**
	0.6nm,0.3s,baz=114,slow=28,SNR=2.1						
JNU	**Nakatsue**	**13.32**	**37**	LR	LR	13 03 42.5	
	comp=Z,28nm,20.1s,baz=233,slow=38						
MAJO	**Matsushiro**	**20.05**	**43**	*eP*	**P**	**12 59 49.4**	**-12**
	30nm,2.0s						
CMAR	**Chiang Mai Arr**	**21.36**	**262**	P	**P**	**13 00 15.8**	**+0.9**
	0.9nm,0.7s,mb3.2,baz=62,slow=9.2,SNR=5.2						
SONM	**Songino Array**	**27.69**	**338**	P	**P**	**13 01 13.4**	**-1.8**
	0.3nm,0.3s,mb3.4,baz=141,slow=9.2,SNR=3.2						
LSA	**Lhasa**	**27.85**	**291**	*eP*	**P**	**13 01 15.3**	**-1.5**
	2.8nm,0.6s,mb4.1						
MKAR	**Makanchi Array**	**39.42**	**317**	P	**P**	**13 02 56.5**	**-0.2**
	1.0nm,0.7s,mb3.7,baz=116,slow=9.8,SNR=11						
MKAR	**Makanchi Array**	**39.42**	**317**	P	**P**	**13 02 56.5**	**-0.2**
ZAL	**Zalesovo**	**41.48**	**328**	P	**P**	**13 03 15.2**	**+1.6**
	1.2nm,0.8s,mb3.6,baz=35,slow=6.4,SNR=4.4						
KURK	**Kurchatov**	**43.23**	**321**	P	**P**	**13 03 24.2**	**-3.7**
WRA	**Warramunga Arr**	**44.34**	**162**	P	**P**	**13 03 36.7**	**-0.6**
	0.5nm,0.8s,mb3.3,baz=343,slow=8.6,SNR=3.1						
ASAR	**Alice Springs**	**47.77**	**164**	P	**P**	**13 04 03.2**	**-1.3**
	0.2nm,0.4s,mb3.5,baz=344,slow=7.2,SNR=4.1						
BVAR	**Borovoye Array**	**48.82**	**321**	P	**P**	**13 04 11.2**	**-1.0**
	0.2nm,0.3s,mb3.6,baz=121,slow=8.4,SNR=2.4						
BVAR	**Borovoye Array**	**48.82**	**321**	P	**P**	**13 04 11.2**	**-1.0**
BRVK	**Borovoye**	**48.89**	**321**	P	**P**	**13 04 11.0**	**-1.7**
ZRNK	**Zerenda**	**49.60**	**321**	P	**P**	**13 04 17.1**	**-1.1**
INK	**Inuvik**	**74.47**	**22**	*eP*	**P**	**13 06 58.7**	**-6.1**
	4.0nm,1.5s,mb4.1						
RPZ	**Rata Peaks**	**80.38**	**146**	P	**P**	**13 07 40.1**	**+2.1**
	10nm,0.6s,mb4.9,baz=326,slow=2.9,SNR=12						
VNA2	**Neumayer--Watz**	**123.60**	**198**	P	PKPdf	13 14 25.2	-1.0
VNA1	**Neumayer--Stat**	**123.99**	**198**		PKPdf	13 14 24.5	-2.5

NEIC 22 13:01:32.1±0.6, 18.92S×172.37W,h10km,mb4.5/5, Error ellipse: s-maj=27.0km s-min=13.2km az=166.0
IDC 22 13:01:33.5±1.1, 18.01S×172.94W,mb4.0/8,mb1 4.3/9, mb1mx4.1/19,ML4.5/1,MS3.2/1,Ms1 3.2/1,ms1mx3.0/19, Error ellipse: s-maj=53.3km s-min=19.8km az=140.0
ISC 22 13:01:30.1±0.6, 19.1S±0.2×172.34W±0.09, h10km, n19, σ1§37/20, mb4.2/12, 1C, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**11.99**	**102**	Pn	**P**	**13 04 23.2**	**-1.0**
	2.5nm,0.3s,baz=295,slow=7.1,SNR=6.9						
RAR				Sn	**S**	**13 06 27.4**	**-12**
	0.5nm,0.3s,baz=349,slow=19,SNR=2.1						
RAR				LR	LR	13 07 49.0	
	comp=Z,114nm,21.8s,baz=296,slow=29						
RAR	**Rarotonga**	**11.99**	**102**	Pn	**P**	**13 04 23.2**	**-1.0**
RAR				Sn	**S**	**13 06 27.4**	**-12**
RAR				LR	LR	13 07 49.0	
URZ	**Urewera**	**21.23**	**203**	P	**P**	**13 06 29.1**	**+11**
	6.7nm,0.9s,mb4.0,baz=39,slow=22,SNR=5.7						
CTA	**Charters Tower**	**38.96**	**261**	*eP*	**P**	**13 08 58.2**	**-0.1**
	4.3nm,0.4s,mb4.5						
CTAO	**Charters Tower**	**38.96**	**261**	*eP*	**P**	**13 08 58.0**	**-0.4**
	5.9nm,0.6s,mb4.5						
STKA	**Stephens Creek**	**43.21**	**243**	P	**P**	**13 09 36.1**	**+2.9**
	15nm,1.4s,mb4.5,baz=105,slow=12,SNR=2.6						
ASAR	**Alice Springs**	**50.04**	**255**	P	**P**	**13 10 27.7**	**+0.5**
	2.9nm,0.6s,mb4.5,baz=92,slow=7.1,SNR=58						
WB2	**Warramunga Arr**	**50.09**	**260**	*eP*	**P**	**13 10 26.9**	**-0.7**
WRAB	**Tennant Creek**	**50.09**	**260**	*eP*	**P**	**13 10 25.6**	**-2.0**
	3.3nm,0.4s,mb4.7						
WRA	**Warramunga Arr**	**50.10**	**260**	P	**P**	**13 10 27.1**	**-0.6**
	1.1nm,0.3s,mb4.3,baz=97,slow=7.4,SNR=26						
FITZ	**Fitzroy Crossi**	**58.52**	**260**	P	**P**	**13 11 30.3**	**+0.9**
	1.9nm,1.0s,mb4.1,baz=55,slow=10,SNR=3.1						
VNDA	**Vanda**	**59.87**	**186**	*eP*	**P**	**13 11 38.1**	**+0.1**
	1.8nm,1.3s,mb3.9						
NVAR	**Mina Array Bea**	**76.38**	**41**	P	**P**	**13 13 22.7**	**+1.2**
	0.5nm,0.7s,mb3.5,baz=230,slow=9.8,SNR=4.8						
PV10	**Paradox Valley**	**82.33**	**45**	P	**P**	**13 13 55.6**	**+2.0**
PDAR	**Pinedale Array**	**84.31**	**41**	P	**P**	**13 14 05.2**	**+1.5**
	0.7nm,0.7s,mb3.9,baz=180,slow=4.4,SNR=6.1						
ILAR	**Eielson Array**	**85.82**	**11**	P	**P**	**13 14 09.5**	**-1.1**
	0.4nm,0.7s,mb3.8,baz=228,slow=6.2,SNR=7.1						
VNA2	**Neumayer--Watz**	**89.65**	**175**	*ǁi*	**P**	**13 14 38.5**	**+9.5**
INK	**Inuvik**	**91.56**	**13**	*eP*	**P**	**13 14 35.5**	**-2.4**
	14nm,2.1s,mb4.9						
BRTR	**Keskin Array B**	**149.58**	**318**	PKPbc	PKPdf	13 21 23.6	+5.1
	1.4nm,0.7s,baz=116,slow=2.3,SNR=9.3						

IDC 22 13:03:32.2±8.5, 33.93N×89.15E,h64km±108km,mb3.1/2, mb1 3.2/5,mb1mx3.0/22,ML3.9/2, Error ellipse: s-maj=59.0km s-min=29.7km az=61.0
ISC 22 13:03:28.7±1.4, 34.0N±0.1×89.3E±0.3, h33km, n5, σ1§15/5, mb3.1/1, Xizang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MKAR	**Makanchi Array**	**13.85**	**340**	P	**P**	**13 06 45.6**	**+0.9**
	baz=148,slow=14,SNR=2.1						
CMAR	**Chiang Mai Arr**	**17.71**	**148**	P	**P**	**13 07 34.4**	**0.0**
	0.1nm,0.3s,baz=334,slow=12,SNR=4.1						
SONM	**Songino Array**	**18.89**	**38**	P	**P**	**13 07 49.1**	**+0.4**
	0.1nm,0.3s,baz=229,slow=13,SNR=4.6						
ZAL	**Zalesovo**	**20.20**	**352**	P	**P**	**13 08 01.6**	**-1.6**
	1.6nm,0.8s,baz=250,slow=12,SNR=7.3						
BVAR	**Borovoye Array**	**23.33**	**330**	P	**P**	**13 08 34.6**	**+0.2**
	0.8nm,0.9s,mb3.1,baz=140,slow=12,SNR=4.6						

NEIC 22 13:15:10.4±0.4,9.20S×75.52W,mb4.0/3,Error ellipse: s-maj=16.8km s-min=7.6km az=79.0
IDC 22 13:15:10.3±0.9,9.17S×75.60W,h132km±7km,mb3.5/4, mb1 3.7/8,mb1mx3.5/20,Error ellipse: s-maj=34.7km s-min=18.2km az=84.0
ISC 22 13:15:09.0±0.6, 9.19S±0.08×75.6W±0.2, h132km, h132km±.2km: pP-P, n31, σ1§17/21, mb3.7/7, 10C, Central Peru

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LPAZ	**La Paz**	**10.16**	**135**	P	**P**	**13 17 32.0**	**-0.4**
	0.1nm,0.3s,baz=302,slow=14,SNR=3.9						
LPAZ	**La Paz**	**10.16**	**135**	*eP*	**P**	**13 17 30.9**	**-1.5**
LPAZ				P		13 17 32.0	
ROSC	**El Rosal**	**14.01**	**5**	P	**P**	**13 18 24.1**	**+1.3**
	2.1nm,0.3s,baz=214,slow=6.9,SNR=1.8						
LVC	**Limon Verde**	**14.82**	**155**	P	**P**	**13 18 35.1**	**+2.0**
	0.2nm,0.3s,baz=270,slow=20,SNR=2.2						
LVC	**Limon Verde**	**14.82**	**155**	P	**P**	**13 18 35.1**	**+2.0**
SDV	**Santo Domingo**	**18.64**	**16**	P	**P**	**13 19 18.6**	**-0.4**
	1.6nm,0.3s,baz=212,slow=8.4,SNR=19						
PCRV	**Puerto La Cruz**	**22.13**	**30**	P	**P**	**13 19 54.8**	**+0.2**
	8.3nm,0.5s,mb4.4,baz=148,slow=3.7,SNR=6.1						
TRQA	**Tornquist**	**31.26**	**159**	P	**P**	**13 21 16.4**	**-2.1**
	0.8nm,1.3s,mb3.3						
PDAR	**Pinedale Array**	**60.27**	**332**	P	**P**	**13 25 04.7**	**-1.1**
	0.5nm,0.7s,mb3.5,baz=127,slow=7.4,SNR=3.6						
PDAR				pP	pP	13 25 36.5	-1.1
	0.5nm,0.8s,baz=162,slow=4.7,SNR=3.6						
HWUT	**Hardware Ranch**	**60.36**	**330**	*eP*	**P**	**13 25 06.8**	**+0.3**
	1.5nm,0.6s,mb4.0						
HWUT				*epP*	pP	13 25 38.5	+0.3
VNA3	**Neumayer Olymp**	**73.73**	**162**	*ĵi*	**P**	**13 26 33.8**	**+4.0**
VNA1	**Neumayer--Stat**	**73.97**	**161**	*ĵi*	**P**	**13 26 35.7**	**+4.5**
VNA1	**Neumayer--Stat**	**73.97**	**161**	*ĵiP*	**P**	**13 26 30.2**	**-1.0**
VNA1				*ĵiP*		13 26 35.7	
VNA2	**Neumayer--Watz**	**74.32**	**162**	*ĵi*	**P**	**13 26 29.4**	**-3.9**
VNA2	**Neumayer--Watz**	**74.32**	**162**	*ĵi*	**P**	**13 26 35.6**	**+2.3**
VNA2	**Neumayer--Watz**	**74.32**	**162**	*ĵi*	**P**	**13 26 37.0**	**+3.7**
VNA2	**Neumayer--Watz**	**74.32**	**162**	P	**P**	**13 26 27.7**	**-5.6**
VNA2				*ĵiP*		13 26 29.4	
VNA2				*ĵiP*		13 26 35.6	
VNA2				*ĵiP*		13 26 37.0	
YKA	**Yellowknife Ar**	**77.53**	**343**	P	**P**	**13 26 50.7**	**-0.7**
	0.2nm,0.5s,mb3.0,baz=140,slow=6.6,SNR=7.2						
YKA				pP	pP	13 27 24.1	-0.6
	1.1nm,0.9s,baz=135,slow=6.3,SNR=6.3						
YKA	**Yellowknife Ar**	**77.53**	**343**	P	**P**	**13 26 50.7**	**-0.7**
YKA				pP	pP	13 27 24.1	-0.6
QSPA	**South Pole Qui**	**80.92**	**180**	*eP*	**P**	**13 27 10.2**	**+0.7**
	8.8nm,1.2s,mb4.3						
ESDC	**Sonseca Array**	**82.02**	**48**	pP	pP	13 27 47.7	-1.8
	1.8nm,0.9s,baz=249,slow=4.9,SNR=5.6						
VNDA	**Vanda**	**87.74**	**191**	P	**P**	**13 27 43.8**	**+0.4**
	1.0nm,0.9s,mb3.7,baz=110,slow=2.0,SNR=5.4						
STKA	**Stephens Creek**	**125.83**	**219**	PKP	PKPdf	13 33 56.7	+1.0
	3.0nm,1.0s,baz=282,slow=9.3,SNR=3.2						
STKA	**Stephens Creek**	**125.83**	**219**	PKP	PKPdf	13 33 56.7	+1.0
ZAL	**Zalesovo**	**132.69**	**16**	PKP	PKPdf	13 34 09.7	+1.5
	1.3nm,0.4s,baz=18,slow=4.5,SNR=3.7						
ASAR	**Alice Springs**	**136.41**	**221**	PKP	PKPdf	13 34 17.5	+1.6
	0.9nm,0.6s,baz=111,slow=1.8,SNR=9.3						
ASAR				pPKP		13 34 52.6	
	0.9nm,0.7s,baz=104,slow=1.8,SNR=5.1						
MKAR	**Makanchi Array**	**138.07**	**23**	PKP	PKPdf	13 34 19.9	+1.5
	0.4nm,0.6s,baz=315,slow=3.4,SNR=4.1						
WRA	**Warramunga Arr**	**138.66**	**225**	PKP	PKPdf	13 34 22.0	+1.9
	1.1nm,0.5s,baz=128,slow=1.6,SNR=19						
WRA				pPKP		13 34 56.9	
	1.0nm,0.6s,baz=136,slow=2.0,SNR=4.9						
SONM	**Songino Array**	**141.45**	**358**	PKhKP		13 34 22.4	
	0.5nm,0.5s,baz=14,slow=5.9,SNR=2.7						
KAKA	**Kakadu**	**144.66**	**232**	*eP*	PKPbc	13 34 31.3	+0.4
	8.3nm,0.6s						
FITZ	**Fitzroy Crossi**	**145.70**	**218**	*eP*	PKPdf	13 34 34.8	+2.2
	7.1nm,0.8s						

FUNV 22 13:38:22.7,6.69N×73.09W,MW3.1
IDC 22 13:38:26.0±0.5,6.77N×72.94W,h162km±4km,mb3.6/12, mb1 3.9/16,mb1mx3.8/23,Error ellipse: s-maj=13.3km s-min=7.1km az=132.0
NEIC 22 13:38:26.6±0.5,6.79N×72.98W,h168km±5km,mb4.0/8, Error ellipse: s-maj=6.9km s-min=6.1km az=89.0
ISC 22 13:38:25.2±0.5, 6.81N±0.03×72.93W±0.04, h170km±4km, n48, σ0§74/57, mb4.0/21, 4C-4D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ROSC	**El Rosal**	**2.40**	**216**	P	**P**	**13 39 07.0**	**+0.4**
	227nm,0.3s,baz=313,slow=20,SNR=119						
ROSC				S	**S**	**13 39 38.1**	**-0.3**
	975nm,0.3s,baz=160,slow=18,SNR=18						
SDV	**Santo Domingo**	**3.06**	**48**	P	**P**	**13 39 16.5**	**+1.7**
	97nm,0.3s,baz=240,slow=5.4,SNR=276						
SDV				S	**S**	**13 39 53.7**	**+0.7**
	101nm,0.3s,baz=304,slow=7.9,SNR=30						
VIRV	**Villa del Rosa**	**3.70**	**8**	*ǁiP*		**13 39 22.2**	**-0.7**
VIRV				eS	**S**	**13 40 06.4**	**-0.9**
QARV	**Quebrada Arrib**	**4.12**	**35**	*eP*	**P**	**13 39 28.6**	**+0.3**
QARV				eS	**S**	**13 40 16.9**	**-0.1**
CURV	**Curarigua**	**4.33**	**42**	*ĵeP*	**P**	**13 39 31.5**	**+0.6**
CURV				eS	**S**	**13 40 21.8**	**+0.1**
DABV	**Dabajuro**	**4.67**	**29**	*eP*	**P**	**13 39 35.6**	**+0.2**
DABV				eS	**S**	**13 40 29.3**	**-0.3**
SIQV	**Siquisique**	**4.90**	**39**	*ǁeP*	**P**	**13 39 38.2**	**-0.3**
SIQV				eS	**S**	**13 40 34.9**	**-0.1**
BAUV	**El Baul**	**5.28**	**66**	*ǁiP*	**P**	**13 39 43.2**	**-0.2**
BAUV				eS	**S**	**13 40 43.8**	**-0.2**
PAYV	**Puerto Ayacuch**	**5.42**	**105**	*ǁeP*	**P**	**13 39 45.3**	**0.0**
PAYV				eS	**S**	**13 40 45.8**	**-1.5**
IMOV	**Isla Los Monje**	**5.86**	**20**	*eP*	**P**	**13 39 50.9**	**-0.2**
IMOV				eS	**S**	**13 40 56.9**	**-0.9**
JACV	**Jacura**	**5.87**	**43**	*ĵeP*	**P**	**13 39 51.9**	**+0.8**
JACV				eS	**S**	**13 40 57.6**	**-0.2**
MONV	**Montecano**	**5.88**	**29**	*ĵeP*	**P**	**13 39 51.2**	**-0.1**
MONV				eS	**S**	**13 40 57.8**	**-0.4**
CAOV	**Caicara del Or**	**6.57**	**85**	*ĵiP*	**P**	**13 40 00.5**	**0.0**
CAOV				eS	**S**	**13 41 13.3**	**-1.3**
PCRV	**Puerto La Cruz**	**8.85**	**67**	P	**P**	**13 40 32.4**	**+1.8**
	2.1nm,0.3s,baz=263,slow=7.6,SNR=10						
PCRV				S	**S**	**13 42 10.8**	**+2.1**
	1.6nm,0.3s,baz=108,slow=20,SNR=3.3						
SJG	**San Juan**	**13.03**	**30**	P	**P**	**13 41 25.5**	**+0.6**
	1.3nm,0.3s,baz=177,slow=18,SNR=2.3						
SJG	**San Juan**	**13.03**	**30**	P	**P**	**13 41 25.5**	**+0.6**
LPAZ	**La Paz**	**23.44**	**168**	P	**P**	**13 43 21.0**	**+0.7**
	2.9nm,0.3s,mb3.4,baz=2.4,slow=10,SNR=3.9						
LPAZ	**La Paz**	**23.44**	**168**	*eP*	**P**	**13 43 21.9**	**+1.6**
	2.0nm,0.8s,mb3.6						
LPAZ				*e*		13 43 53.9	
LVC	**Limon Verde**	**29.51**	**172**	P	**P**	**13 44 15.5**	**-0.4**
	18nm,1.7s,mb4.5						
PLAL	**Pickwick Lake**	**31.31**	**336**	P	**P**	**13 44 31.7**	**+0.1**
	2.5nm,0.8s,mb4.0						
WVT	**Waverly**	**32.21**	**337**	*eP*	**P**	**13 44 39.0**	**-0.4**
	2.4nm,0.5s,mb4.2						
BDFB	**Brasilia**	**33.27

KURK	**Kurchatov**	**42.70**	**50**	*e*P		**P**	**14 12 25.4**	**+0.1**
MKAR	**Makanchi Array**	**45.28**	**56**	P		**P**	**14 12 46.9**	**+0.8**
	4.1nm,0.4s,mb4.6,baz=272,slow=8.1,SNR=74							
MKAR	**Makanchi Array**	**45.28**	**56**	P		**P**	**14 12 46.9**	**+0.8**
ZAL	**Zalesovo**	**46.50**	**45**	P		**P**	**14 12 55.4**	**-0.3**
	1.9nm,0.5s,mb4.3,baz=100,slow=8.4,SNR=6.8							
SONM	**Songino Array**	**61.00**	**50**	P		**P**	**14 14 42.6**	**+0.2**
	0.8nm,0.5s,mb4.1,baz=293,slow=9.4,SNR=4.4							
YKA	**Yellowknife Ar**	**78.03 342**		P		**P**	**14 16 28.3**	**+2.0**
	0.2nm,0.5s,mb3.3,baz=32,slow=5.7,SNR=5.1							

WEL 22 14:13:05.4±0.8, 45.14S×166.81E, h12km, ML3.5/5, Error ellipse: s-maj=7.2km s-min=3.5km az=90.0, Off west coast of South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DCZ	**Deep Cove**	**0.42**	**144**	P*	Pb	14 13 13.5	-0.8
DCZ				S*	Sb	14 13 20.0	-0.2
DCZ				S*	Sb	14 13 20.3	+0.1
MLZ	**Mavora Lakes**	**0.99**	**103**	P*	Pb	14 13 23.0	-1.0
MLZ				S*	Sb	14 13 36.4	-0.3
WHZ	**Wether Hill Ro**	**1.10**	**134**	P*	Pb	14 13 25.0	-0.9
WHZ				S*	Sb	14 13 40.4	+0.3
AXZ	**Alexandra**	**1.79**	**95**	PN	Pn	14 13 36.8	+0.3
AXZ				SN	Sn	14 13 59.8	+0.5
TUZ	**Tuapeka**	**2.15**	**113**	*e*PN	Pn	14 13 41.5	-0.1
TUZ				SN	Sn	14 14 09.4	+1.1
BWZ	**Berwen**	**2.27**	**76**	*e*PN	Pn	14 13 43.2	-0.2
ODZ	**Otahua Downs**	**2.72**	**89**	*e*PN	Pn	14 13 48.6	-1.1
WVZ	**Waitaha Valley**	**3.50**	**55**	*e*PN	Pn	14 13 57.1	-3.8
DSZ	**Denniston Nort**	**4.97**	**49**	*e*PN	Pn	14 14 18.0	-3.8

*NEIC **22** 14:33:52.4±0.2, 23.48S×179.97E, mb5.0/14, Error ellipse: s-maj=9.3km s-min=6.3km az=157.0*
*BJI **22** 14:33:52.4, 23.50S×180.00E, h527km, mB4.8, mb5.1*
*IDC **22** 14:33:54.1±1.0, 23.49S×179.88E, h540km±10km, mb3.7/14, mb1 3.9/15, mb1mx3.9/16, Error ellipse: s-maj=15.5km s-min=9.3km az=164.0*
ISC 22 14:33:51.2±1.7, 23.59S±0.08×179.93E±0.07, h523km±22km, h519km±5.9km: pP-P, n73, σ0s96/42, mb4.6/21, 4C-5D, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**14.82**	**189**	P	**P**	**14 36 57.1**	**-2.0**
	3.2nm,0.3s,baz=1.0,slow=4.8,SNR=16						
URZ				S	**S**	**14 39 30.0**	**-0.8**
	2.7nm,0.3s,baz=21,slow=23,SNR=13						
SNZO	**South Karori**	**18.20**	**193**	*e*P	**P**	**14 37 33.9**	**+1.6**
	150nm,1.3s						
RAR	**Rarotonga**	**18.92**	**87**	*e*P	**P**	**14 37 37.7**	**-1.5**
RPZ	**Rata Peaks**	**21.36**	**198**	P	**P**	**14 38 04.2**	**+2.3**
	5.8nm,0.5s,mb4.5,baz=105,slow=21,SNR=8.0						
ARMA	**Armidale**	**26.07**	**249**	*e*P	**P**	**14 38 44.0**	**-0.4**
PPT	**Papeete**	**29.14**	**84**	P	**P**	**14 39 11.0**	**-0.3**
	18nm,0.5s,mb5.0,baz=208,slow=20,SNR=7.8						
CTA	**Charters Tower**	**31.41**	**270**	*i*P	**P**	**14 39 31.8**	**+1.1**
	68nm,0.3s						
CTA	**Charters Tower**	**31.41**	**270**	P	**P**	**14 39 31.8**	**+1.1**
	80nm,0.3s,baz=95,slow=11,SNR=342						
CTAO	**Charters Tower**	**31.41**	**270**	*e*P	**P**	**14 39 31.7**	**+1.0**
	84nm,0.4s,mb5.6						
PMG	**Port Moresby**	**34.33**	**289**	P	**P**	**14 39 56.1**	**+0.7**
	68nm,0.7s,mb5.3,baz=112,slow=4.6,SNR=20						
PMG	**Port Moresby**	**34.33**	**289**	*e*P	**P**	**14 39 55.4**	**0.0**
	72nm,0.8s,mb5.2						
STKA	**Stephens Creek**	**34.78**	**248**	*i*P	**P**	**14 39 59.7**	**+0.8**
	2.8nm,0.4s,mb4.2						
STKA	**Stephens Creek**	**34.78**	**248**	P	**P**	**14 39 59.8**	**+0.9**
	4.0nm,0.5s,mb4.2,baz=102,slow=11,SNR=20						
WAU	**Wau**	**35.72**	**291**	*e*P	**P**	**14 40 07.7**	**+0.8**
AS12	**Alice Springs**	**42.02**	**260**	*i*P	**P**	**14 40 58.2**	**+0.3**
	16nm,0.5s,mb4.8						
AS12				*e*		14 45 42.3	
ASAR	**Alice Springs**	**42.02**	**260**	P	**P**	**14 40 58.4**	**+0.4**
	18nm,0.5s,mb4.8,baz=95,slow=7.3,SNR=402						
ASAR				pP	pP	14 42 35.2	+1.7
	2.4nm,0.8s,baz=88,slow=8.3,SNR=3.5						
ASAR				ScP		14 45 42.4	
	6.3nm,0.7s,baz=112,slow=4.2,SNR=24						
ASAR				S	**S**	**14 46 37.5**	**-2.3**
	1.3nm,0.7s,baz=94,slow=16,SNR=8.9						
WB2	**Warramunga Arr**	**42.35**	**266**	*i*P	**P**	**14 41 00.1**	**-0.5**
WB2				*e*		14 45 43.7	
WB2				*e*S	**S**	**14 46 39.7**	**-4.8**
WRAB	**Tennant Creek**	**42.35**	**266**	*e*P	**P**	**14 41 00.2**	**-0.4**
	66nm,0.5s,mb5.4						
WRA	**Warramunga Arr**	**42.36**	**266**	P	**P**	**14 41 00.6**	**-0.1**
	16nm,0.3s,mb5.0,baz=90,slow=6.0,SNR=924						
WRA				ScP		14 45 43.1	
	3.9nm,0.9s,baz=100,slow=4.2,SNR=11						
WRA				S	**S**	**14 46 39.9**	**-4.7**
	2.7nm,0.7s,baz=100,slow=13,SNR=11						
KAKA	**Kakadu**	**46.26**	**275**	*i*P	**P**	**14 41 29.9**	**-1.2**
	21nm,0.4s,mb5.0						
FORT	**Forrest**	**46.36**	**249**	*e*P	**P**	**14 41 30.7**	**-1.0**
	120nm,0.6s,mb5.6						
FITZ	**Fitzroy Crossi**	**50.79**	**265**	*e*P	**P**	**14 42 04.8**	**-0.2**
	17nm,0.6s,mb4.5						
VNDA	**Vanda**	**54.68**	**185**	P	**P**	**14 42 32.3**	**+0.2**
	1.5nm,0.6s,baz=0.5,slow=7.4,SNR=5.1						
VNDA				ScP		14 46 32.7	
	1.3nm,0.7s,baz=339,slow=4.6,SNR=9.0						
VNDA	**Vanda**	**54.68**	**185**	*e*P	**P**	**14 42 32.0**	**-0.1**
	1.1nm,0.8s						
VNDA				*e*PcP	PcP	14 43 25.8	-1.1
VNDA				ScP		14 46 32.7	
QSPA	**South Pole Qui**	**66.49**	**180**	*e*P	**P**	**14 43 50.2**	**+0.5**
	21nm,0.7s,mb4.8						
QSPA				*e*		14 45 44.2	
MAT	**Matsushiro**	**71.61**	**326**	P	**P**	**14 44 20.3**	**-0.7**
MAT	**Matsushiro**	**71.61**	**326**	*e*P	**P**	**14 44 20.0**	**-1.0**
	8.9nm,0.7s,mb4.3						
MAW	**Mawson**	**78.02**	**200**	P	**P**	**14 44 56.5**	**+0.5**
	3.4nm,0.8s,mb3.8,baz=135,slow=10.0,SNR=6.8						
MAW	**Mawson**	**78.02**	**200**	*e*P	**P**	**14 44 55.6**	**-0.4**
YBH	**Yreka Blue Hor**	**83.89**	**39**	P	**P**	**14 45 27.2**	**+0.5**
	0.7nm,0.6s,baz=144,slow=9.2,SNR=4.1						
NVAR	**Mina Array Bea**	**84.58**	**44**	P	**P**	**14 45 30.6**	**+0.5**
	0.5nm,0.5s,baz=205,slow=7.0,SNR=7.7						
ENH	**Enshi**	**86.21**	**305**	*e*P	**P**	**14 45 37.8**	**-0.3**
	13nm,0.8s,mb4.6						
ENH				*e*pP	pP	14 47 33.3	-0.4
ENH				*e*		14 48 47.6	
CMAR	**Chiang Mai Arr**	**89.36**	**290**	P	**P**	**14 45 54.9**	**+1.7**
	3.4nm,0.9s,mb4.2,baz=132,slow=3.2,SNR=16						
MNTX	**Cornudas Mount**	**90.09**	**55**	*e*P	**P**	**14 45 56.8**	**+0.5**
	2.5nm,0.8s,mb4.1						
MNTX				*e*pP	pP	14 47 50.6	-2.2
MNTX				*e*sP	sP	14 48 37.6	-7.0
TXAR	**Lajitas Array**	**90.32**	**58**	P	**P**	**14 45 58.2**	**+0.9**
	2.7nm,0.7s,mb4.2,baz=217,slow=6.3,SNR=6.6						
ILAR	**Eielson Array**	**91.75**	**14**	P	**P**	**14 46 01.9**	**-1.1**
	0.5nm,0.5s,mb3.8,baz=221,slow=5.3,SNR=8.4						
BILL	**Bilibino**	**91.91**	**355**	*e*P	**P**	**14 46 03.6**	**-0.2**
	7.2nm,1.1s,mb4.6						
PDAR	**Pinedale Array**	**92.51**	**44**	P	**P**	**14 46 07.0**	**-0.2**
	1.3nm,0.9s,mb4.0,baz=205,slow=2.2,SNR=6.0						
POO	**Poona**	**111.52**	**281**	*e*P	PKPdf	14 51 24.0	-2.1
MKAR	**Makanchi Array**	**111.89**	**313**	PKiKP		14 51 25.9	
	0.7nm,0.8s,baz=198,slow=0.5,SNR=7.6						
MKAR				SKP		14 54 11.6	
	0.7nm,0.8s,baz=98,slow=2.2,SNR=5.3						
BVAR	**Borovoye Array**	**120.16**	**319**	PKP	PKPdf	14 51 42.1	0.0
	1.2nm,0.4s,SNR=8.7						
ARCES	**ARCESS Array B**	**131.57**	**348**	PKP	PKPdf	14 52 04.1	+0.6
	1.9nm,1.0s,baz=45,slow=1.7,SNR=5.9						
ARCES				SKPbc		14 54 38.9	
	4.1nm,0.9s,baz=45,slow=1.7,SNR=5.0						
THR	**Tehran**	**134.35**	**298**	SKPbc		14 54 52.2	
	1.1nm,0.7s,baz=162,slow=3.8,SNR=4.0						
FINES	**FINESS Array B**	**138.13**	**342**	PKhKP		14 52 07.8	
	0.5nm,0.4s,baz=47,slow=4.4,SNR=9.0						
FINES				PKP	PKPdf	14 52 16.9	+1.0
	1.2nm,0.3s,baz=109,slow=2.7,SNR=14						
FINES				SKPbc		14 55 00.2	
	2.8nm,0.7s,baz=90,slow=5.7,SNR=8.9						
FINES	**FINESS Array B**	**138.13**	**342**	PKP	PKPdf	14 52 07.8	-8.0
FINES				PKP	PKPdf	14 52 16.9	+1.0
FINES				SKPbc		14 55 00.2	
NOA	**NORSAR Array B**	**141.77**	**351**	PKhKP		14 52 18.6	
	2.1nm,0.7s,baz=16,slow=4.5,SNR=7.2						

HFS	**Hagfors**	**142.23**	**349**	PKhKP			14 52 19.7		
	8.0nm,0.4s,baz=61,slow=3.4,SNR=92								
HFS				SKPbc			14 55 10.4		
	2.4nm,0.7s,baz=190,slow=9.0,SNR=3.6								
AKASG	**Malin Array Be**	**144.68**	**327**	PKP	PKPdf		14 52 28.0	+0.5	
	4.8nm,0.4s,baz=42,slow=3.9,SNR=32								
AKASG				SKPbc			14 55 17.1		
	4.9nm,0.8s,baz=42,slow=2.1,SNR=17								
SUW	**Suwalki**	**144.96**	**336**	*e*PKP	PKPdf		14 52 29.8	+1.9	
ASF	**Jabal al Asfar**	**146.35**	**293**	PKPbc	PKPbc		14 52 34.8	+2.0	
	4.1nm,0.7s,baz=45,slow=1.8,SNR=5.3								
BRTR	**Keskin Array B**	**147.34**	**308**	PKPbc	PKPdf		14 52 36.6	+4.3	
	3.5nm,0.5s,baz=147,slow=3.9,SNR=5.9								
EKA	**Eskdalemuir Ar**	**148.21**	**3**	PKPbc	PKPdf		14 52 37.7	+4.5	
	1.6nm,0.9s,baz=346,slow=3.0,SNR=4.3								
KWP	**Kalwaria**	**148.47**	**331**	*e*PKP	PKPdf		14 52 39.4	+5.6	
OJC	**Ojcow**	**149.23**	**335**	*e*PKP	PKPdf		14 52 41.0	+6.0	
CRVS	**Cervenica-Dubn**	**149.56**	**331**	*e*PKP	PKPdf		14 52 41.3	+5.7	
NIE	**Niedzica**	**149.65**	**333**	*e*PKP	PKPdf		14 52 43.0	+7.3	
OKC	**Ostrava-Krasne**	**150.17**	**336**	*e*PKPB			14 52 43.4		
OKC				*e*PKPAB	PKPab		14 52 52.4	-0.4	
UPC	**Upice**	**150.36**	**339**	*e*PKPB			14 52 43.8		
UPC				*e*PKPAB	PKPab		14 52 53.3	-0.3	
DPC	**Dobruska-Polom**	**150.39**	**339**	*e*PKPB			14 52 44.2		
DPC				*e*PKPAB	PKPab		14 52 53.4	-0.3	
CLL	**Collm**	**150.54**	**343**	*i* PKP1	PKPdf		14 52 44.3	+7.3	
CLL				*i* PKP2	PKPab		14 52 52.9	-1.5	
BRG	**Berggiesshubel**	**150.67**	**342**	*i* PKP	PKPdf		14 52 44.7	+7.5	
BRG				*e*			14 52 52.1		
BRG				*e*			14 52 54.0		
VYHS	**Vyhne**	**150.98**	**334**	*e*PKP	PKPdf		14 52 44.9	+7.1	
VYHS				*e*			14 52 55.8		
PRU	**Pruhonice**	**151.28**	**340**	*e*PKPAB	PKPab		14 52 57.1	-0.4	
KHC	**Kasperske Hory**	**152.33**	**340**	*e*PKPB			14 52 48.3		
KHC				*e*PKPAB	PKPab		14 53 01.4	-0.5	
GRA1	**Grafenberg Arr**	**152.48**	**344**	*e*P	PKPdf		14 52 02.0	-0.6	
GERES	**GERESS Array B**	**152.54**	**340**	PKPbc	PKPdf		14 52 48.5	+8.6	
	0.7nm,0.6s,baz=270,slow=1.3,SNR=5.5								
GERES				PKPab	PKPdf		14 53 01.8	-1.0	
	1.5nm,0.9s,baz=45,slow=3.8,SNR=6.1								
BAIF	**Baives**	**153.37**	**354**	*e*PKP2	PKPab		14 53 04.4	-1.9	
CDF	**Champ du Feu**	**154.55**	**349**	*e*PKP2	PKPab		14 53 09.6	-1.7	
	3.1nm,0.5s								
MEZF	**Maizieres J'vi**	**154.81**	**352**	*e*PKP2	PKPab		14 53 11.3	-1.1	
HAU	**Haudompre**	**155.10**	**350**	*e*PKP2	PKPab		14 53 11.9	-1.7	
	3.8nm,0.3s								
HINF	**Hinteralfeld**	**155.20**	**349**	*e*PKP2	PKPab		14 53 12.0	-2.1	
	3.5nm,0.5s								
DBIC	**Dimbokro**	**162.56**	**164**	PKPab	PKPab		14 53 46.0	-0.8	
	3.8nm,0.9s,baz=234,slow=19,SNR=3.2								
ESDC	**Sonseca Array**	**163.63**	**11**	PKPab	PKPab		14 53 49.9	-0.9	
	0.2nm,0.4s,baz=355,slow=4.8,SNR=4.4								

*NEIC **22** 14:38:37.9, 46.71N×0.31E, h3km, ML3.0(STR), ML2.9(LDG), After LDG.*
*LDG **22** 14:38:37.9±0.1, 46.71N×0.31E, h3km, Md3.0/1, Ml2.9/22, Error ellipse: s-maj=1.3km s-min=0.8km az=39.0*
*STR **22** 14:38:41.5±0.7, 46.57N×0.55E, h10km±1km, Ml3.0, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
ISC 22 14:38:35.0±0.3, 46.72N±0.02×0.33E±0.02, h7km±2km, n28, σ1s31/78, France

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MFF	**Saint Martin d**	**0.35**	**250**	*e*Pg	**Pg**	**14 38 44.5**	**+2.4**
	SNR=1.0						
MFF				*e*Sg	**Sg**	**14 38 48.1**	**+1.3**
	185nm,0.3s,SNR=1.0						
TCF	**Toulx Ste Croi**	**1.37**	**108**	*e*Pn	**Pn**	**14 39 02.5**	**+1.9**
TCF				*e*Pg	**Pg**	**14 39 04.0**	**+1.6**
	SNR=1.0						
TCF				*e*Sn	**Sn**	**14 39 19.8**	**+0.6**
	SNR=1.0						
TCF				*e*Sg	**Sg**	**14 39 21.6**	**+0.9**
	29nm,0.2s,SNR=1.0						
RJF	**Les Rejaudoux**	**1.64**	**149**	*e*Pn	**Pn**	**14 39 06.3**	**+1.8**
RJF				*e*Pg	**Pg**	**14 39 08.6**	**+0.8**
	SNR=1.0						
RJF				*e*Sn	**Sn**	**14 39 26.5**	**+0.4**
	33nm,0.2s,SNR=1.0						
HYF	**Humbligny**	**1.67**	**70**	*e*Pn	**Pn**	**14 39 06.5**	**+1.5**
HYF				*e*Pg	**Pg**	**14 39 09.6**	**+1.2**
HYF				*e*Sg	**Sg**	**14 39 30.8**	**0.0**
BGF	**Bois d'Agland**	**1.74**	**95**	*e*Pn	**Pn**	**14 39 07.7**	**+1.7**
	SNR=1.0						
BGF				*e*Pg	**Pg**	**14 39 10.8**	**+1.0**
BGF				*e*Sn	**Sn**	**14 39 27.9**	**-0.7**
	55nm,0.3s,SNR=1.0						
BGF				*e*Sg	**Sg**	**14 39 33.1**	**0.0**
	56nm,0.3s						
VERF	**Verneugheol**	**1.78**	**122**	Pn	**Pn**	**14 39 08.1**	**+1.5**
VERF				Pg	**Pg**	**14 39 11.7**	**+1.0**
LFF	**La Frestale**	**1.81**	**171**	*e*Pn	**Pn**	**14 39 08.0**	**+1.1**
LFF				*e*Pg	**Pg**	**14 39 11.7**	**+0.6**
	SNR=1.0						
LFF				*e*Sn	**Sn**	**14 39 29.9**	**-0.4**
	33nm,0.3s,SNR=1.0						
GRR	**Gorron**	**1.85**	**335**	*e*Pn	**Pn**	**14 39 08.8**	**+1.3**
GRR				*e*Pg	**Pg**	**14 39 12.2**	**+0.2**
	SNR=1.0						
GRR				*e*Sn	**Sn**	**14 39 31.1**	**-0.3**
GRR				*e*Sg	**Sg**	**14 39 36.3**	**-0.4**
	11nm,0.2s,SNR=1.0						
LDF	**La Druitiere**	**1.90**	**351**	*e*Pn	**Pn**	**14 39 09.9**	**+1.7**
LDF				*e*Sn	**Sn**	**14 39 32.5**	**-0.1**
LDF				*e*Sg	**Sg**	**14 39 37.8**	**-0.4**
	16nm,0.3s,SNR=1.0						
AGO	**Saint Agoulin**	**2.05**	**108**	Pg	**Pg**	**14 39 16.1**	**+0.1**
AGO				Sg	**Sg**	**14 39 43.4**	**0.0**
AVF	**Avril sur Loir**	**2.08**	**87**	*e*Pn	**Pn**	**14 39 12.6**	**+1.8**
	SNR=1.0						
AVF				*e*Pg	**Pg**	**14 39 16.8**	**+0.2**
AVF				*e*Sg	**Sg**	**14 39 43.2**	**-1.1**
	7.4nm,0.3s,SNR=1.0						
PYM	**Petit Puy Mans**	**2.10**	**117**	Pg	**Pg**	**14 39 17.4**	**+0.5**
PYM				Sg	**Sg**	**14 39 43.3**	**-1.6**
FLN	**La Foliniere**	**2.11**	**345**	*e*Pn	**Pn**	**14 39 12.8**	**+1.5**
FLN				*e*Pg	**Pg**	**14 39 17.9**	**+0.7**
	SNR=1.0						
FLN				*e*Sn	**Sn**	**14 39 37.6**	**-0.5**
FLN				*e*Sg	**Sg**	**14 39 44.4**	**-1.0**
	8.6nm,0.2s,SNR=1.0						
CAF	**Calviac**	**2.17**	**145**	*e*Pn	**Pn**	**14 39 13.7**	**+1.6**
CAF				*e*Pg	**Pg**	**14 39 17.7**	**-0.6**
	SNR=1.0						
CAF				*e*Sn	**Sn**	**14 39 38.3**	**-1.2**
	SNR=1.0						
CAF				*e*Sg	**Sg**	**14 39 45.5**	**-1.7**
	15nm,0.2s,SNR=1.0						
SSF	**Saint Saulge**	**2.20**	**80**	*e*Pn	**Pn**	**14 39 14.3**	**+1.7**
	SNR=1.0						
SSF				*e*Pg	**Pg**	**14 39 18.0**	**-1.1**
SSF				*e*Sn	**Sn**	**14 39 39.8**	**-0.6**
SSF				*e*Sg	**Sg**	**14 39 47.8**	**-0.6**
	7.1nm,0.3s						
PLDF	**La Plantade**	**2.40**	**107**	Pg	**Pg**	**14 39 23.5**	**+0.5**
PLDF				Sg	**Sg**	**14 39 53.5**	**-1.5**
SMF	**Signal de Mont**	**2.42**	**91**	*e*Pn	**Pn**	**14 39 16.8**	**+1.1**
SMF				*e*Pg	**Pg**	**14 39 22.0**	**-1.3**
	SNR=1.0						
SMF				*e*Sn	**Sn**	**14 39 45.4**	**-0.4**
SMF				*e*Sg	**Sg**	**14 39 52.0**	**-3.6**
	5.6nm,0.2s,SNR=1.0						
SGMF	**Saint Gilles**	**2.49**	**309**	*e*Pn	**Pn**	**14 39 17.9**	**+1.3**
SGMF				*e*Sn	**Sn**	**14 39 45.5**	**-2.1**
	SNR=1.0						
SGMF				*e*Sg	**Sg**	**14 39 55.2**	**-2.6**
	9.0nm,0.3s,SNR=1.0						
LBL	**Lubilhac**	**2.52**	**125**	Pg	**Pg**	**14 39 24.9**	**-0.5**
QUIF	**Quistinic**	**2.66**	**298**	*e*Pn	**Pn**	**14 39 21.1**	**+2.0**
QUIF				*e*Pg	**Pg**	**14 39 26.9**	**-1.3**
	SNR=1.0						
QUIF				*e*Sn	**Sn**	**14 39 50.2**	**-1.8**
QUIF				*e*Sg	**Sg**	**14 40 00.5**	**-3.1**
	8.7nm,0.2s,SNR=1.0						
ROSF	**Rostrenen**	**2.93**	**305**	*e*Sn	**Sn**	**14 39 56.3**	**-2.4**
ROSF				*e*Sg	**Sg**	**14 40 06.9**	**-5.6**
	4.4nm,0.2s,SNR=1.0						
VIVF	**Saint-Julien-l**	**3.57**	**120**	*e*Pn	**Pn**	**14 39 32.3**	**+0.3**
VIVF				*e*Pg	**Pg**	**14 39 45.0**	**-1.2**
	SNR=1.0						
VIVF				*e*Sn	**Sn**	**14 40 12.4**	**-2.5**
VIVF				*e*Sg	**Sg**	**14 40 29.6**	**-4.2**

	4.5nm,0.3s,SNR=1.0								
LASF	**Ste Croix**	**3.63**	**136**	*e*Pg	**Pg**		**14 39 45.0**	**-2.5**	
	SNR=1.0								
LASF				*e*Sn	**Sn**		**14 40 14.0**	**-2.5**	
LASF				*e*Sg	**Sg**		**14 40 32.1**	**-3.8**	
	5.4nm,0.4s								
MTLF	**Montolieu**	**3.64**	**158**	*e*Sn	**Sn**		**14 40 12.8**	**-3.9**	
	5.1nm,0.4s,SNR=1.0								
MTLF				*e*Sg	**Sg**		**14 40 32.1**	**-4.0**	
	3.6nm,0.2s								
EPF	**Esparros**	**3.69**	**180**	*e*Pn	**Pn**		**14 39 33.5**	**-0.3**	
EPF				*e*Sn	**Sn**		**14 40 12.7**	**-5.4**	
EPF				*e*Sg	**Sg**		**14 40 34.4**	**-3.5**	
	4.8nm,0.3s								
ETSF	**Etsaut**	**3.88**	**190**	*e*Pn	**Pn**		**14 39 36.2**	**-0.2**	
HAU	**Haudompre**	**4.29**	**70**	*e*Pn	**Pn**		**14 39 42.0**	**-0.2**	
HINF	**Hinteralfeld**	**4.57**	**74**	*e*Sg	**Sg**		**14 41 01.7**	**-5.6**	
	3.0nm,0.4s,SNR=1.0								

*LDG **22** 14:42:54.8±0.3, 13.90S×167.31E, h10km, Mb5.3/4, Error ellipse: s-maj=41.3km s-min=12.8km az=90.0*
*BJI **22** 14:43:06.8, 14.31S×167.42E, h117km, mB4.9, mb5.1*
*IDC **22** 14:43:08.3±1.1, 14.85S×167.39E, h129km±8km, mb5.0/22, mb1 5.1/22, mb1mx5.0/23, MS3.7/9, Ms1 3.7/9, ms1mx3.6/22, Error ellipse: s-maj=11.1km s-min=10.8km az=101.0*
*NEIC **22** 14:43:09.1±0.2, 14.80S×167.38E, mb5.2/29, Error ellipse: s-maj=6.6km s-min=5.2km az=118.0*
*HRVD **22** 14:43:09.1±0.3, 14.79S×167.16E, h144km±2km, MW5.0/59, Centroid moment Tensor Solution. LP body waves: s23,c28; Mantle waves: s59,c88; Half duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-0.95±.17; $M_{\theta\theta}$0.53±.20; $M_{\phi\phi}$0.42±.22; $M_{r\theta}$1.08±.11; $M_{\theta\phi}$2.72±.18; $M_{\phi r}$-3.63±.12; Best double couple: M_w4.65×10^{16} NP1: ϕ_{s}261°, δ38°, λ-13°. NP2: ϕ_{s}1°, δ82°, λ-128°. Principal axes: T 4.14, Plg27°, Azm120°; N 1.03, Plg37°, Azm7°; P -5.16, Plg41°, Azm236°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*MOS **22** 14:43:12.4±0.9, 14.86S×167.32E, h179km, mb5.3/14 Error ellipse: s-maj=13.5km s-min=11.5km az=128.1*
ISC 22 14:43:08.9±0.9, 14.91S±0.04×167.32E±0.05, h149km±8km, h139km±1.3km: pP-P, n287, σ0s96/133, mb5.1/61, 6C-19D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**2.88**	**162**	*i*P	**P**	**14 43 55.0**	**-0.4**
BKM				S	**S**	**14 44 29.6**	**-1.4**
DZM	**Mont Dzumac**	**7.17**	**187**	*e*P	**P**	**14 44 53.1**	**+0.9**
DZM				*e*S	**S**	**14 46 12.5**	**-0.2**
DZM	**Mont Dzumac**	**7.17**	**187**	*e*P	**P**	**14 44 53.1**	**+0.9**
DZM				*e*S	**S**	**14 46 12.4**	**-0.2**
NOUC	**Port Laguerre**	**7.22**	**188**	*e*P	**P**	**14 44 53.7**	**+0.9**
NOUC				*e*S	**S**	**14 46 12.6**	**-1.1**
NOUC	**Port Laguerre**	**7.22**	**188**	*e*P	**P**	**14 44 53.7**	**+0.9**
NOUC				*e*S	**S**	**14 46 12.6**	**-1.1**
PMG	**Port Moresby**	**20.45**	**283**	P	**P**	**14 47 37.9**	**+1.6**
	118nm,0.8s,baz=77,slow=5.6,SNR=20						
PMG	**Port Moresby**	**20.45**	**283**	P	**P**	**14 47 37.9**	**+1.5**
PMG				pmax	pmax		
	comp=Z,118nm,0.8s						
PMG	**Port Moresby**	**20.45**	**283**	*e*P	**P**	**14 47 37.2**	**+0.8**
	comp=Z,127nm,0.8s						
CTA	**Charters Tower**	**20.73**	**253**	*i*P	**P**	**14 47 41.2**	**+2.0**
	comp=Z,116nm,0.8s						
CTA	**Charters Tower**	**20.73**	**253**	P	**P**	**14 47 41.2**	**+2.0**
	comp=Z,152nm,0.8s,baz=80,slow=11,SNR=103						
CTA				LR	LR	14 54 52.5	
	comp=Z,228nm,19.5s,baz=68,slow=34						
CTA	**Charters Tower**	**20.73**	**253**	P	**P**	**14 47 41.2**	**+2.0**
CTA				pmax	pmax		
	comp=Z,153nm,0.8s						
CTA				MLR	M

PPT **Papeete** 41.41 100 P **P** 14 50 43.5 +1.2
PPT pmax pmax
comp=Z,30nm,0.6s
TVO **Taravao** 41.71 100 *e*P **P** 14 50 45.8 +1.0
comp=Z,187nm,0.7s,mb5.8
PMOR **Pomariorio Ree** 43.21 96 *e*P **P** 14 50 57.9 +0.8
comp=Z,139nm,0.9s,mb5.6
KLBR **Kellerberrin** 48.06 241 *e*P **P** 14 51 33.7 -1.5
comp=Z,31nm,0.6s,mb5.1
KLBR *e* 14 53 30.8
CBIJ **Chichi jima** 48.36 330 P **P** 14 51 36.3 -1.3
comp=Z,75nm,0.6s,mb5.5,baz=271,slow=22,SNR=3.4
NWAO **Narrogin (SRO)** 48.70 239 P **P** 14 51 39.8 -0.3
comp=Z,56nm,0.7s,mb5.3,baz=81,slow=6.0,SNR=30
NWAO **Narrogin (SRO)** 48.70 239 P **P** 14 51 39.8 -0.3
NWAO pmax pmax
comp=Z,56nm,0.7s
MUN **Mundaring** 49.42 241⇑ *i*P **P** 14 51 45.5 -0.1
comp=Z,61nm,0.9s,mb5.2
MUN *e* 14 53 42.6
TGY **Tagaytay City** 54.19 300 P **P** 14 52 21.9 +0.5
comp=Z,119nm,0.3s,mb6.0,baz=208,slow=8.9,SNR=2.8
TGY **Tagaytay City** 54.19 300 P **P** 14 52 21.9 +0.5
TGY pmax pmax
comp=Z,119nm,0.3s
KKM **Kota Kinabalu** 54.76 289⇓ *e*P **P** 14 52 25.8 +0.1
comp=Z,112nm,1.2s,mb5.5
MAJO **Matsushiro** 58.09 333 *e*P **P** 14 52 46.1 -2.9
comp=Z,16nm,0.7s,mb5.0
MAT **Matsushiro** 58.09 333 P **P** 14 52 47.1 -1.8
MAT **Matsushiro** 58.09 333 *e*P **P** 14 52 47.0 -1.9
comp=Z,30nm,1.2s,mb5.0
VNDA **Vanda** 62.68 181 P **P** 14 53 18.9 -0.7
comp=Z,5.5nm,0.7s,mb4.5,slow=7.1,SNR=48
VNDA LR LR 15 14 21.0
comp=Z,76nm,20.5s,baz=96,slow=30
VNDA **Vanda** 62.68 181 *e*P **P** 14 53 18.6 -1.0
comp=Z,7.8nm,1.2s,mb4.4
VNDA LR LR 15 14 21.0
ASAJ **Asahikawa** 62.92 340 P **P** 14 53 21.7 +0.1
comp=Z,34nm,0.8s,mb5.2,baz=214,slow=13,SNR=12
ASAJ **Asahikawa** 62.92 340 P **P** 14 53 21.7 +0.1
ASAJ pmax pmax
comp=Z,34nm,0.8s
SBA **Scott Base** 62.96 180 *e*P **P** 14 53 21.5 +0.1
comp=Z,21nm,0.8s,mb5.0
YSS **Yuzh-Sakhalins** 65.41 342 *d i*P **P** 14 53 37.6 -0.2
YSS pmax pmax
comp=Z,46nm,1.0s,mb5.3
YSS **Yuzh-Sakhalins** 65.41 342 *e*P **P** 14 53 37.5 -0.2
comp=Z,35nm,0.8s,mb5.2
YSS *e*PP PP 14 56 04.7 -0.6
KGM **Kluang** 65.50 279 *e*P **P** 14 53 39.0 +0.1
QIZ **Qiongzhong** 65.87 299 P **P** 14 53 41.8 +0.7
FX1 **Attu Island--F** 67.70 4 P **P** 14 53 51.9 -0.1
comp=Z,13nm,0.5s,mb4.9,baz=15,slow=10,SNR=4.2
FX1 **Attu Island--F** 67.70 4 P **P** 14 53 51.9 -0.1
FX1 pmax pmax
comp=Z,13nm,0.5s
PET **Petropavlovsk** 68.06 354 *e*P **P** 14 53 54.0 -0.3
PET *e* 15 03 11.3
PET MLR MLR
comp=Z,101nm,16.0s
WHN **Wuhan** 68.10 312 ⇑P **P** 14 53 54.0 -0.9
MDJ **Mudanjiang** 68.46 332 P **P** 14 53 56.8 -0.1
MDJ AMB AMB
comp=Z,24nm,1.1s,mb4.8
MDJ AMB AMB
comp=Z,57nm,3.6s
MDJ **Mudanjiang** 68.46 332 *e*P **P** 14 53 56.6 -0.3
comp=Z,22nm,0.8s,mb4.9
CN2 **Changchun** 69.82 329 *e*P **P** 14 54 04.9 -0.3
CN2 AMB AMB
comp=Z,30nm,0.7s,mb5.1
MIR **Mirnyy** 70.19 204⇓ *e*P **P** 14 54 07.3 +0.3
MIR *e* 14 54 28.0
MIR pmax pmax
comp=Z,50nm,1.2s,mb5.1
KLR **Kul'dur** 71.19 336 *e*P **P** 14 54 13.0 -0.3
ENH **Enshi** 71.52 309 *e*P **P** 14 54 14.8 -0.8
comp=Z,36nm,0.8s,mb5.2
ENH *e*pP pP 14 54 49.5 -2.5
GYA **Guiyang** 71.86 305⇓ *i*P **P** 14 54 18.1 +0.5
GYA AMB AMB
comp=Z,40nm,0.7s,mb5.3
GYA AMB AMB
comp=Z,130nm,5.7s
BJT **Baijiatuan** 72.42 321 *e*P **P** 14 54 20.4 -0.3
comp=Z,36nm,1.5s,mb4.9
BJT *e*pP pP 14 54 55.1 -2.2
BJI **Beijing** 72.43 321 *e*P **P** 14 54 20.6 -0.2
BJI AMB AMB
comp=Z,19nm,1.0s,mb4.8
XAN **Xi'an** 73.84 313 P **P** 14 54 29.4 +0.2
XAN AMB AMB
comp=Z,29nm,0.9s,mb5.0
KMI **Kunming** 74.44 302 *e*P **P** 14 54 34.4 +1.6
KMI AP pP 14 55 07.8 -1.8
KMI LR LR
comp=Z,44nm,38.3s
CM31 **Chiang Mai Arr** 75.07 294 *e*P **P** 14 54 36.9 +0.4
comp=Z,22nm,0.8s,mb4.8
CM31 *e*pP pP 14 55 11.2 -2.1
CM31 *es*P sP 14 55 25.6 -3.8
CMAR **Chiang Mai Arr** 75.07 294 P **P** 14 54 37.6 +1.1
comp=Z,16nm,0.8s,mb4.7,baz=127,slow=4.7,SNR=76
CMAR **Chiang Mai Arr** 75.07 294 P **P** 14 54 37.6 +1.1
CMAR pmax pmax
comp=Z,16nm,0.8s
QSPA **South Pole Qui** 75.12 180 *e*P **P** 14 54 35.8 +0.2
comp=Z,15nm,0.7s,mb4.7
QSPA *e* 14 55 36.7
HHC **Hu-ho-hao-te** 75.75 320 *e*P **P** 14 54 40.6 +0.7
HHC AMB AMB
comp=Z,22nm,1.2s,mb4.7
CD2 **Chengdu** 76.16 308 P **P** 14 54 42.6 +0.2
CD2 AMB AMB
comp=Z,30nm,0.8s,mb5.0
HIA **Hailar** 76.47 330 *e*P **P** 14 54 43.4 -0.4
comp=Z,11nm,0.7s,mb4.6
LZH **Lanzhou** 78.47 312 P **P** 14 54 56.4 +1.3
LZH AMB AMB
comp=Z,40nm,1.2s,mb4.9
MAW **Mawson** 81.74 202 P **P** 14 55 12.5 +0.7
comp=Z,14nm,0.7s,mb4.7,baz=99,slow=5.9,SNR=15
MAW **Mawson** 81.74 202 P **P** 14 55 12.5 +0.7
MAW pmax pmax
comp=Z,14nm,0.7s
MAW **Mawson** 81.74 202 *e*P **P** 14 55 12.0 +0.2
comp=Z,18nm,0.8s,mb4.8
YAK **Yakutsk** 82.21 343 *d i*P **P** 14 55 14.0 -0.4
YAK pmax pmax
comp=Z,68nm,0.7s,mb5.4
YAK **Yakutsk** 82.21 343 *e*P **P** 14 55 14.1 -0.3
comp=Z,78nm,0.8s,mb5.4
ULN **Ulaanbaatar** 82.31 324 *d i*P **P** 14 55 15.8 +0.7
ULN **Ulaanbaatar** 82.31 324 *e*P **P** 14 55 15.7 +0.6
comp=Z,58nm,1.2s,mb5.1
ULN *e*pP pP 14 55 51.6 -0.9
SONM **Songino Array** 82.67 324 P **P** 14 55 17.5 +0.5
comp=Z,9.7nm,0.6s,mb4.7,baz=147,slow=6.0,SNR=43
BILL **Bilibino** 82.72 360 *c i*P **P** 14 55 16.4 -0.5
BILL pmax pmax
comp=Z,10.0nm,1.1s,mb4.5
BILL **Bilibino** 82.72 360 *e*P **P** 14 55 16.5 -0.4
comp=Z,9.7nm,0.9s,mb4.5
BILL *e*pP pP 14 55 51.1 -3.2
GTA **Gaotai** 82.83 314 P **P** 14 55 19.3 +1.3
GTA AMB AMB
comp=Z,25nm,1.3s,mb4.8
SHL **Shillong** 83.69 298⇓ *i*P **P** 14 55 23.5 +0.8
BOD **Bodaibo** 84.66 334 *e*P **P** 14 55 25.5 -1.2
MCK **McKinley** 85.31 18 *e*P **P** 14 55 29.2 -0.6
comp=Z,3.3nm,1.0s,mb4.0
YBH **Yreka Blue Hor** 85.51 45 P **P** 14 55 31.8 +0.4
comp=Z,2.0nm,0.9s,baz=222,slow=1.3,SNR=4.4
YBH **Yreka Blue Hor** 85.51 45 P **P** 14 55 31.8 +0.5
YBH pmax pmax
comp=Z,2.0nm,0.9s
LSA **Lhasa** 85.70 302 P **P** 14 55 34.0 +1.5
LSA AMB AMB
comp=Z,30nm,0.7s,mb5.1
LSA **Lhasa** 85.70 302 *e*P **P** 14 55 33.9 +1.4
comp=Z,16nm,0.7s,mb4.8
ZAK **Zakamensk** 85.72 325⇓ *i*P **P** 14 55 32.3 +0.1
TLY **Talaya** 86.17 326 *e*P **P** 14 55 33.6 -0.7
TLY *e* 14 58 56.9
TLY *e*S S 15 05 50.2 -4.2
TLY pmax pmax
comp=Z,135nm,0.8s,mb5.7
TLY MLR MLR
comp=Z,200nm,16.0s
COLA **College** 86.47 18 *e*P **P** 14 55 34.8 -0.6
ILAR **Eielson Array** 86.68 18 P **P** 14 55 34.8 -1.7
comp=Z,2.2nm,0.6s,mb4.2,baz=238,slow=5.0,SNR=59
ILAR PKKP PKKP 15 13 29.9 +26
comp=Z,1.2nm,1.1s,baz=348,slow=2.0,SNR=5.7
ILAR LR LR 15 28 35.8
comp=Z,38nm,19.1s,baz=45,slow=32
NVAR **Mina Array Bea** 87.35 49 P **P** 14 55 40.6 +0.3
comp=Z,1.4nm,0.8s,baz=212,slow=6.3,SNR=8.5
NVAR PKKPbc 15 13 34.0
comp=Z,0.6nm,0.8s,baz=134,slow=3.6,SNR=4.5
NVAR LR LR 15 33 14.3
comp=Z,33nm,18.3s,baz=135,slow=34
PKI **Pulchoki** 89.82 298 *e*P **P** 14 55 52.3 0.0
comp=Z,46nm,0.9s,mb5.4
KKN **Kakani** 90.00 299 *e*P **P** 14 55 53.2 +0.1
comp=Z,34nm,0.8s,mb5.3
DMN **Daman** 90.09 298 *e*P **P** 14 55 54.0 +0.5
comp=Z,78nm,1.0s,mb5.6
TIXI **Tiksi** 90.15 349⇑ *e*P **P** 14 55 52.3 -0.5
TIXI pmax pmax
comp=Z,4.0nm,1.0s,mb4.3
TIXI **Tiksi** 90.15 349 *e*P **P** 14 55 51.3 -1.5
comp=Z,4.8nm,1.0s,mb4.4
GKN **Gorkha** 90.60 299 *e*P **P** 14 55 55.3 -0.6
comp=Z,38nm,0.8s,mb5.5
KOLN **Koldanda** 91.42 298 *e*P **P** 14 55 58.7 -1.0
WMQ **Urumqi** 92.89 315 P **P** 14 56 06.8 +0.7
INK **Inuvik** 93.04 19 PKKPbc 15 13 14.9
comp=Z,0.7nm,0.6s,baz=294,slow=4.2,SNR=4.4
SNAA **Sanae** 93.37 183 *e*P **P** 14 56 06.6 -1.1
PDAR **Pinedale Array** 95.03 47 PKKPbc 15 13 10.7
comp=Z,0.6nm,0.7s,baz=90,slow=3.0,SNR=6.0
PDAR LR LR 15 28 36.9
comp=Z,39nm,21.5s,baz=77,slow=29
ACX **Acapulco** 96.80 74 *i* P **P** 14 56 27.0 +2.5
MKAR **Makanchi Array** 97.37 316 P **P** 14 56 26.8 +0.4
comp=Z,9.7nm,0.6s,mb5.3,baz=92,slow=6.4,SNR=110
MKAR **Makanchi Array** 97.37 316 P **P** 14 56 26.8 +0.4
MKAR pmax pmax
comp=Z,10.0nm,0.6s
ZAL **Zalesovo** 97.57 324 P **P** 14 56 26.6 -0.5
comp=Z,4.2nm,0.8s,mb4.9,baz=273,slow=4.9,SNR=22
ZAL **Zalesovo** 97.57 324 P **P** 14 56 26.7 -0.4
ZAL pmax pmax
comp=Z,4.0nm,0.8s
YKA **Yellowknife Ar** 97.68 27 P **P** 14 56 25.9 -1.5
comp=Z,0.3nm,0.5s,mb4.0,baz=254,slow=4.6,SNR=9.9
YKA PKKPbc 15 13 02.3
comp=Z,0.3nm,0.5s,baz=72,slow=2.5,SNR=10.0
YKA LR LR 15 32 11.3
comp=Z,43nm,20.4s,baz=210,slow=30
YKA **Yellowknife Ar** 97.68 27 P **P** 14 56 25.9 -1.5
YKA PKKPbc 15 13 02.3
YKA LR LR 15 32 11.3
KURK **Kurchatov** 100.57 320 *e*Pdif P 14 56 40.0 -0.7
ARU **Arti** 112.66 325 *i* PKIKP PKPdf 15 01 26.7 -0.6
ARU *e* 15 02 11.7
ARU *e* 15 07 59.7
ARU *e*PS PS 15 11 33.8 -19
ARU *e*SS SS 15 17 45.9 -1.9
SPITS **Spitsbergen Ar** 115.12 354 PKP PKPdf 15 01 32.1 +0.3
SPITS PKKPbc 15 12 08.6
comp=Z,3.4nm,0.9s,baz=135,slow=2.8,SNR=3.8
KEV **Kevo** 119.91 345 *e*pkp PKPdf 15 01 41.2 +0.1
ARCES **ARCESS Array B** 120.44 345 PKP PKPdf 15 01 42.8 +0.6
comp=Z,6.7nm,0.4s,baz=70,slow=1.3,SNR=92
ARCES PKKPbc 15 11 49.2
comp=Z,0.8nm,0.6s,baz=225,slow=3.8,SNR=5.8
ARCES **ARCESS Array B** 120.44 345 PKIKP PKPdf 15 01 42.8 +0.6
ARCES pmax pmax
comp=Z,7.0nm,0.4s
ARCES pmax pmax
comp=Z,1.0nm,0.6s
JOF **Joensuu** 123.07 338 *e*pkp PKPdf 15 01 47.3 0.0
ZEI **Tsey** 124.41 312 PKIKP PKPdf 15 01 50.8 +0.3
OBN **Obninsk** 124.88 328 *i* PKIKP PKPdf 15 01 51.6 +0.6
OBN pmax pmax
comp=Z,6.0nm,1.0s
KIV **Kislovodsk** 125.00 313 *c i* PKIKP PKPdf 15 01 53.6 +2.0
KIV pmax pmax
comp=Z,4.0nm,0.6s
KAF **Kangasniemi** 125.38 339 *e*pkp PKPdf 15 01 52.5 +0.7
baz=18,slow=2.2
FINES **FINESS Array B** 125.91 338 PKP PKPdf 15 01 53.8 +1.0
comp=Z,2.7nm,0.7s,baz=37,slow=3.0,SNR=18
FINES SKPbc 15 04 59.1
comp=Z,1.9nm,0.9s,baz=72,slow=6.0,SNR=5.5
FINES **FINESS Array B** 125.91 338 PKIKP PKPdf 15 01 53.8 +1.0
FINES pmax pmax
comp=Z,3.0nm,0.7s
FINES pmax pmax
comp=Z,2.0nm,0.9s
KMBO **Kilima Mbogo** 128.11 257 PKP PKPdf 15 02 01.0 +2.6
comp=Z,1.8nm,0.8s,baz=97,slow=3.6,SNR=5.1
NB2 **NORSAR Subarra** 130.81 345 PKPdf PKPdf 15 02 03.4 +1.2
comp=Z,1.8nm,0.6s,baz=31,slow=1.8
NOA **NORSAR Array B** 130.81 345 PKP PKPdf 15 02 03.7 +1.4
comp=Z,2.2nm,0.7s,baz=33,slow=2.0,SNR=7.8
NOA SKPbc 15 05 15.4
comp=Z,6.9nm,0.7s,baz=30,slow=3.1,SNR=15
NOA **NORSAR Array B** 130.81 345 PKIKP PKPdf 15 02 03.7 +1.5
NOA pmax pmax
comp=Z,2.0nm,0.7s
NOA pmax pmax
comp=Z,7.0nm,0.7s
NOA **NORSAR Array B** 130.81 345 PKP PKPdf 15 02 03.7 +1.4
NOA SKPbc 15 05 15.4
HFS **Hagfors** 130.91 343 PKP PKPdf 15 02 02.7 +0.2
comp=Z,2.4nm,0.6s,baz=127,slow=7.4,SNR=7.7
HFS SKPbc 15 05 15.5
comp=Z,6.3nm,0.7s,baz=63,slow=3.3,SNR=13
HFS **Hagfors** 130.91 343 PKIKP PKPdf 15 02 02.7 +0.3
HFS pmax pmax
comp=Z,2.0nm,0.6s
HFS pmax pmax
comp=Z,6.0nm,0.7s
AKASG **Malin Array Be** 130.91 326 PKP PKPdf 15 02 02.8 +0.1
comp=Z,0.6nm,0.3s,baz=42,slow=1.7,SNR=6.0
AKASG SKPbc 15 05 15.8
comp=Z,8.0nm,0.8s,baz=46,slow=4.3,SNR=31
ASF **Jabal al Asfar** 131.84 300 SKPbc 15 05 21.4
comp=Z,2.8nm,0.6s,baz=242,slow=5.2,SNR=4.9
BRTR **Keskin Array B** 132.66 311 PKP PKPdf 15 02 08.3 +2.0
comp=Z,1.5nm,0.8s,baz=117,slow=2.8,SNR=7.1
BRTR SKPbc 15 05 23.3
comp=Z,2.1nm,1.0s,baz=112,slow=6.7,SNR=6.7
BRTR SKP 15 05 29.9
comp=Z,2.1nm,0.7s,baz=80,slow=4.5,SNR=6.2
MLR **Muntele Rosu** 135.48 321 PKP PKPdf 15 02 12.4 +1.0
comp=Z,1.1nm,0.4s,baz=338,slow=19,SNR=3.2
MLR **Muntele Rosu** 135.48 321 PKIKP PKPdf 15 02 12.4 +1.0
MLR pmax pmax
comp=Z,1.0nm,0.4s
CLL **Collm** 138.24 336 *e* PKPdf 15 02 17.0 +0.7
EKA **Eskdalemuir Ar** 138.99 352 PKP PKPdf 15 02 18.9 +1.3
comp=Z,1.1nm,0.6s,baz=15,slow=2.1,SNR=4.4
EKA SKPbc 15 05 44.1
comp=Z,1.4nm,0.6s,baz=18,slow=2.6,SNR=5.0
EKA **Eskdalemuir Ar** 138.99 352 PKIKP PKPdf 15 02 18.9 +1.4
EKA pmax pmax
comp=Z,1.0nm,0.6s
EKA pmax pmax
comp=Z,1.0nm,0.6s
GERES **GERESS Array B** 139.82 333 PKhKP 15 02 14.0
comp=Z,1.0nm,0.6s,baz=16,slow=3.0,SNR=10
GERES PKP PKPdf 15 02 22.7 +3.4
comp=Z,2.0nm,0.6s,baz=90,slow=1.3,SNR=12
GERES SKPbc 15 05 43.7
comp=Z,1.0nm,0.6s,baz=315,slow=1.9,SNR=6.4
GERES **GERESS Array B** 139.82 333 PKHKP 15 02 14.0
GERES pmax pmax
comp=Z,1.0nm,0.6s
GERES pmax pmax
comp=Z,2.0nm,0.6s
GERES pmax pmax
comp=Z,1.0nm,0.6s
GRA1 **Grafenberg Arr** 140.21 336 *e*PKPdf PKPdf 15 02 16.6 -3.3
GRF **Grafenberg Arr** 140.21 336 *e*PKIKP PKPdf 15 02 16.6 -3.3
CDF **Champ du Feu** 142.76 338 *e*PKP1 PKPdf 15 02 22.3 -2.1
comp=Z,13nm,0.6s
DAVOX **Davos** 143.06 334 PKP PKPdf 15 02 24.3 -0.7
comp=Z,16nm,0.6s,baz=126,slow=0.9,SNR=9.8
BRMO **Bormio** 143.09 333 *e*P PKPbc 15 02 24.5 +1.4
HINF **Hinteralfeld** 143.41 338 *e*PKP1 PKPbc 15 02 24.4 +0.4
comp=Z,8.2nm,0.6s
HAU **Haudompre** 143.44 338 *e*PKP1 PKPbc 15 02 24.3 +0.2
comp=Z,25nm,0.8s
MEZF **Maizieres J'vi** 143.45 340 *e*PKP1 PKPbc 15 02 24.5 +0.4
comp=Z,12nm,0.6s
BBS **Basel-Blauen** 143.46 337 PKP PKPdf 15 02 25.6 0.0
LOMF **Lomont** 143.81 337 PKP PKPdf 15 02 26.5 +0.3
CING **Cingoli** 144.02 327 *e*P PKPbc 15 02 27.1 +1.1
ARV **Arcevia** 144.07 328 *e*P PKPbc 15 02 27.4 +1.2
SNTG **Esanatoglia** 144.24 327 *e*P PKPbc 15 02 28.1 +1.4
ORI **Oriolo Calabro** 144.29 320 *e*P PKPbc 15 02 28.3 +1.4
TERO **Teramo** 144.32 326 *e*P PKPbc 15 02 27.6 +0.7
SFI **Santa Sofia** 144.33 329 *e*P PKPbc 15 02 28.8 +2.0
PGD **Poggio Sodo** 144.42 329 *e*P PKPbc 15 02 29.1 +2.0
ZCCA **Zocca** 144.43 330 *e*P PKPbc 15 02 29.5 +2.4
VMG **Vicchio** 144.44 329 *e*P PKPbc 15 02 29.2 +2.1
MURB **Monte Urbino** 144.45 328 *e*P PKPbc 15 02 28.5 +1.3
MRLC **Muro Lucano** 144.46 322 *e*P PKPbc 15 02 28.4 +1.1
CRE **Capresе Michel** 144.49 329 *e*P PKPbc 15 02 28.8 +1.5
FNVD **Fontana Vidola** 144.50 330 *e*P PKPbc 15 02 29.1 +1.8
CII **Carovilli** 144.53 324 *e*P PKPbc 15 02 28.9 +1.5
TDS **Terranova Siba** 144.60 320 *e*P PKPbc 15 02 29.1 +1.4
AQU **L'Aquila** 144.61 326 *e*P PKPbc 15 02 29.5 +1.8
GSCL **Gusciola** 144.62 331 *e*P PKPbc 15 02 29.4 +1.7
RNI2 **Rionero Sannit** 144.63 324 *e*P PKPbc 15 02 29.2 +1.5
ERBM **Eremo** 144.65 331 *e*P PKPbc 15 02 29.6 +1.9
CABF **La Chapelle** 144.71 337 *e*PKP1 PKPbc 15 02 29.3 +1.5
comp=Z,107nm,0.8s
GRAM 144.75 331 P PKPdf 15 02 29.3 +1.3
FLN **La Foliniere** 144.78 346 *e*PKP1 PKPbc 15 02 28.3 +0.3
comp=Z,56nm,0.5s
MGR **Morigerati** 144.80 321 *e*P PKPdf 15 02 28.3 +0.1
SDI **San Donato** 144.82 325 *e*P PKPdf 15 02 29.1 +1.0
BOB **Bobbio (Coli)** 144.82 332 *e*P PKPdf 15 02 29.6 +1.5
BDI **Bagni Di Lucca** 144.83 330 *e*P PKPdf 15 02 28.5 +0.4
SARO **Sassorosso** 144.83 331 P PKPdf 15 02 28.6 +0.5
PTQR **Pietraquaria** 144.84 325 *e*P PKPdf 15 02 29.4 +1.2
LDF **La Druitiere** 144.85 345 *e*PKP1 PKPbc 15 02 28.5 +0.3
comp=Z,30nm,0.6s
BACM 144.91 331 P PKPdf 15 02 29.1 +0.8
CODM 144.93 331 P PKPdf 15 02 29.2 +1.0
VINC **Vinca** 144.98 331 P PKPdf 15 02 28.9 +0.5
MNS **Montasola** 144.98 326 *e*P PKPdf 15 02 29.2 +0.8
MAIM 144.99 330 P PKPdf 15 02 28.7 +0.3
SSF **Saint Saulge** 145.22 340 *e*PKP1 PKPbc 15 02 30.6 +1.4
comp=Z,171nm,0.6s
GRR **Gorron** 145.22 346 *e*PKP1 PKPbc 15 02 30.1 +1.0
comp=Z,113nm,0.6s
LSD **Ceresole Reale** 145.25 335 P PKPdf 15 02 31.6 +2.7
HYF **Humbligny** 145.31 342 *e*PKP1 PKPbc 15 02 31.1 +1.7
GENL **Genova Univers** 145.32 332 P PKPdf 15 02 29.8 +0.9
LPL **La Plagne** 145.38 336 *e*PKP1 PKPbc 15 02 31.6 +2.0
comp=Z,107nm,0.7s
LPG **La Plagne** 145.38 336 *e*PKP1 PKPbc 15 02 31.8 +2.2
comp=Z,128nm,0.7s
PCP **Pian Castagno** 145.40 333 P PKPdf 15 02 30.5 +1.4
RSP **Reno Superiore** 145.46 335 P PKPdf 15 02 31.1 +1.9
SMF **Signal de Mont** 145.47 340 *e*PKP1 PKPbc 15 02 31.1 +1.3
comp=Z,76nm,1.0s
AVF **Avril sur Loir** 145.51 340 *e*PKP1 PKPbc 15 02 31.1 +1.2
comp=Z,19nm,0.5s
FENE **Fenestrelle** 145.64 335 P PKPdf 15 02 32.0 +2.5
SOI **Samo** 145.69 318 *e*P PKPdf 15 02 32.4 +2.6
BHB **Bricherasio** 145.71 334 P PKPdf 15 02 30.8 +1.2
SGMF **Saint Gilles** 145.71 348 *e*PKP1 PKPbc 15 02 31.6 +1.2
comp=Z,39nm,0.6s
ROSF **Rostrenen** 145.78 349 *e*PKP1 PKPbc 15 02 31.9 +1.4
comp=Z,42nm,0.8s
FIN **Finale Ligure** 145.81 333 P PKPdf 15 02 31.4 +1.6
RRL **Cesana Torines** 145.84 335 P PKPdf 15 02 33.0 +3.2
OG22 **Abries** 145.86 335 PKP PKPdf 15 02 32.3 +2.4
BGF **Bois d'Agland** 145.88 341 *e*PKP1 PKPbc 15 02 32.5 +1.7
comp=Z,84nm,0.6s
GDM **Grand'Maison** 145.88 336 PKP PKPdf 15 02 33.0 +3.1
ROB **Roburent** 145.89 333 P PKPdf 15 02 31.8 +1.9
RORO 145.95 333 P PKPdf 15 02 32.0 +2.0
MTTG **Motta San Giov** 145.97 318 *e*P PKPdf 15 02 32.8 +2.5
GRN **Grenoble** 145.99 336 PKP PKPdf 15 02 33.6 +3.5
DOI **San Damiano** 145.99 334 *e*P PKPdf 15 02 31.3 +1.2
MBDF **Montbardon** 146.01 335 *e*PKP1 PKPbc 15 02 32.9 +1.7
comp=Z,54nm,0.6s
PZZ **Prazzo** 146.05 334 P PKPdf 15 02 31.7 +1.6
MONE **Monesi** 146.11 333 P PKPdf 15 02 32.7 +2.4
PLDF **La Plantade** 146.14 339 PKP PKPdf 15 02 33.8 +3.5
ENR **Entracque** 146.14 334 P PKPdf 15 02 31.6 +1.3
QUIF **Quistinic** 146.16 348 *e*PKP1 PKPbc 15 02 32.6 +1.1
STV **Sta Anna Valdi** 146.17 334 P PKPdf 15 02 31.7 +1.4
SURF **Saint Ours** 146.19 335 PKP PKPdf 15 02 34.0 +3.6
ORIF **Oris-en-Rattie** 146.21 336 *e*PKP1 PKPbc 15 02 33.9 +2.2
comp=Z,129nm,0.7s
AGO **Saint Agoulin** 146.23 340 PKP PKPdf 15 02 33.8 +3.4
TCF **Toulx Ste Croi** 146.32 341 *e*PKP1 PKPbc 15 02 33.7 +1.8
comp=Z,38nm,0.7s
SBF **Sospel** 146.43 333 *e*PKP1 PKPbc 15 02 33.8 +1.6
comp=Z,97nm,0.6s
COLF **Collangettes** 146.51 339 PKP PKPdf 15 02 34.9 +4.0
PYM **Petit Puy Mans** 146.54 340 PKP PKPdf 15 02 35.0 +4.1
MFF **Saint Martin d** 146.71 344 *e*PKP1 PKPbc 15 02 34.7 +1.9
comp=Z,105nm,0.7s
OCF **Saint Nazaire** 146.72 336 PKP PKPdf 15 02 35.3 +4.1
OG26 **St.-Nazaire-De** 146.72 336 PKP PKPdf 15 02 35.3 +4.1
VIVF **Saint-Julien-l** 146.72 337 *e*PKP1 PKPbc 15 02 34.9 +2.0
comp=Z,22nm,0.8s
PGF **Pioggiola** 146.73 330 *e*PKP1 PKPbc 15 02 34.8 +1.8
comp=Z,88nm,0.8s
LCHF **La Chataignera** 146.80 345 PKP PKPdf 15 02 33.5 +2.2
LBL **Lubilhac** 146.91 339 PKP PKPdf 15 02 36.4 +4.9
FRF **La Foret Royal** 147.01 334 *e*PKP1 PKPdf 15 02 35.5 +3.7
comp=Z,49nm,0.7s
SMRF **Simiane la Rot** 147.11 335 *e*PKP1 PKPdf 15 02 36.3 +4.4
comp=Z,33nm,0.6s
LMR **La Mourre** 147.25 334 *e*PKP1 PKPdf 15 02 36.3 +4.1
comp=Z,47nm,0.8s
RJF **Les Rejaudoux** 147.41 341 *e*PKP1 PKPdf 15 02 36.8 +4.4
comp=Z,52nm,0.6s
CAF **Calviac** 147.58 340 *e*PKP1 PKPdf 15 02 37.5 +4.8
comp=Z,26nm,0.6s
LASF **Ste Croix** 147.69 337 *e*PKP1 PKPdf 15 02 37.8 +4.9
comp=Z,52nm,0.7s
LFF **La Frestale** 147.98 342 *e*PKP1 PKPdf 15 02 38.4 +5.0
comp=Z,80nm,0.6s
MTLF **Montolieu** 148.92 339 *e*PKP1 PKPdf 15 02 40.9 +6.0
comp=Z,58nm,0.7s
LRDF **Laroque-de-Fa** 149.16 338 PKP PKPdf 15 02 41.6 +6.3
LPEF **Le Peyrat** 149.38 339 PKP PKPdf 15 02 41.9 +6.3
SJAF **Saint Jean de** 149.43 337 PKP PKPdf 15 02 41.7 +6.0
EJON **La Jonquera** 149.45 337 PKP PKPdf 15 02 41.2 +5.5
FILF **Fillols** 149.48 338 PKP PKPdf 15 02 42.2 +6.4
MLS **Moulis** 149.65 340 PKP PKPdf 15 02 42.4 +6.4
VALF **Valcebollere** 149.82 338 PKP PKPdf 15 02 43.4 +7.1
EPF **Esparros** 149.83 341 *e*PKP1 PKPdf 15 02 43.3 +7.0
comp=Z,20nm,0.7s
VIEF **Viey** 150.06 341 PKP PKPdf 15 02 44.5 +7.8
EALK **Alkurruntz** 150.20 343 PKP PKPdf 15 02 43.5 +6.7
LARF **Larrau** 150.22 343 PKP PKPdf 15 02 44.5 +7.6
ETSF **Etsaut** 150.22 342 *e*PKP1 PKPdf 15 02 44.5 +7.6
comp=Z,37nm,0.6s
EMIR **Miracle** 150.42 338 PKP PKPdf 15 02 44.3 +7.0
EGRA **Graus** 150.59 340 PKP PKPdf 15 02 44.6 +7.2
ELAN **Lanestosa** 150.68 346 PKP PKPdf 15 02 44.3 +6.7
EPOB **Poblet** 151.07 338 PKP PKPdf 15 02 46.0 +7.8
ESAC **San Caprasio** 151.27 341 PKP PKPdf 15 02 47.1 +8.6
EPON **Pontenova** 151.28 352 PKP PKPdf 15 02 46.9 +8.5
EMAZ **Mazaricos** 151.88 354 PKP PKPdf 15 02 45.8 +6.4
STS **Santiago** 151.90 354 PKP PKPdf 15 02 48.1 +8.7
EINC **Incio** 151.97 352 PKP PKPdf 15 02 48.2 +8.7
EMOS **Mosqueruela** 152.49 340 PKP PKPdf 15 02 45.9 +5.6
ETOR **Torete** 152.58 342 PKP PKPdf 15 02 49.8 +9.4
GUD **Guadarrama** 153.31 345 PKP PKPdf 15 02 51.8 +10
ESDC **Sonseca Array** 154.17 344 PKPbc PKPdf 15 02 52.8 +10
comp=Z,0.4nm,0.4s,baz=17,slow=4.2,SNR=4.3
ESDC PKPab PKPab 15 03 07.1 -0.8
comp=Z,0.8nm,0.5s,baz=9.4,slow=4.5,SNR=8.0
EVO **Evora** 156.11 351 *e*PKIKP PKPdf 15 02 46.3 +1.0
comp=Z,1.3nm,0.4s
KIC **Kosan Boka** 168.47 223 *e*PKIKP PKPdf 15 02 59.3 +1.0
comp=Z,32nm,0.8s
LIC **Lamto** 168.56 222 *e*PKIKP PKPdf 15 02 59.1 +0.7

	comp=Z,40nm,0.9s						
DBIC	**Dimbokro**	**168.77**	**224**	PKP	PKPdf	15 02 59.4	+0.8
	comp=Z,3.1nm,0.7s,baz=120,slow=1.3,SNR=6.5						
DBIC				PKPab	PKPab	15 04 10.9	-0.9
	comp=Z,1.7nm,0.5s,baz=102,slow=6.5,SNR=5.7						
DBIC	**Dimbokro**	**168.77**	**224**	PKIKP	PKPdf	15 02 59.4	+0.9
DBIC						15 04 10.9	
DBIC				pmax	pmax		
	comp=Z,3.0nm,0.7s						
DBIC				pmax	pmax		
	comp=Z,2.0nm,0.5s						
TIC	**Toumodi**	**168.86**	**223**	*e*PKIKP	PKPdf	15 02 59.8	+1.2
	comp=Z,40nm,0.2s						

IDC 22 14:51:23.4±15.0, 23.08S×178.33E, h212km±171km, mb3.7/5, mb1 3.8/6, mb1mx3.5/15, ML4.0/1, Error ellipse: s-maj=229.0km s-min=53.3km az=62.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**15.17**	**184**	P	P	14 54 45.3	-3.1
	0.7nm,0.3s,baz=346,slow=4.2,SNR=4.9						
RPZ	**Rata Peaks**	**21.44**	**195**	P	P	14 55 56.0	+0.6
	6.3nm,0.6s,baz=167,slow=3.8,SNR=5.8						
CTA	**Charters Tower**	**29.94**	**270**	P	P	14 57 14.1	0.0
	4.4nm,0.9s,baz=74,slow=11,SNR=7.2						
STKA	**Stephens Creek**	**33.62**	**247**	P	P	14 57 42.5	-3.3
	2.4nm,0.8s,baz=106,slow=7.4,SNR=3.1						
ASAR	**Alice Springs**	**40.66**	**260**	P	P	14 58 44.4	-0.3
	3.0nm,0.6s,baz=90,slow=7.6,SNR=21						
ASAR				pP	pP	14 59 36.1	+6.5
	0.9nm,0.7s,baz=117,slow=1.8,SNR=6.6						
WRA	**Warramunga Arr**	**40.93**	**266**	P	P	14 58 43.9	-3.1
	1.5nm,0.6s,baz=98,slow=6.0,SNR=18						
WRA				pP	pP	14 59 35.4	+3.4
	1.1nm,0.7s,baz=8.4,slow=0.1,SNR=9.2						

IDC 22 15:28:00.9±0.7,24.58S×175.81W,mb4.3/13,mb1 4.5/15, mb1mx4.4/20,ML4.2/2,MS3.6/3,Ms1 3.5/3,ms1mx3.2/19, Error ellipse: s-maj=33.6km s-min=17.5km az=151.0
NEIC 22 15:28:05.2±6.4,24.64S×175.87W,h29km±43km,mb4.7/7, Error ellipse: s-maj=17.2km s-min=13.9km az=207.0

ISC 22 15:28:03.9±0.5, 24.66S±0.10×176.0W±0.1, h29km, n40, σ0°93/28, mb4.4/16, MS3.5/3, 2C-2D, South of Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**14.79**	**202**	Pn	P	**15 31 32.7**	**-0.3**
	0.3nm,0.3s,baz=348,slow=22,SNR=3.0						
RAR	**Rarotonga**	**15.29**	**80**	Pn	P	**15 31 26.5**	**-13**
	3.1nm,0.3s,baz=228,slow=9.3,SNR=5.7						
RAR	**Rarotonga**	**15.29**	**80**	*e*P	P	**15 31 25.3**	**-14**
RAR				Pn	P	**15 31 26.5**	**-13**
CTA	**Charters Tower**	**35.17**	**270**	P	P	**15 34 59.5**	**+2.0**
	2.8nm,0.5s,mb4.5,baz=101,slow=13,SNR=4.6						
CTA				LR	LR	15 46 04.4	
	comp=Z,59nm,20.0s,MS3.3,baz=40,slow=31						
CTAO	**Charters Tower**	**35.17**	**270**	P	P	**15 34 58.3**	**+0.7**
	4.7nm,0.8s,mb4.5						
STKA	**Stephens Creek**	**37.90**	**249**	P	P	**15 35 20.1**	**-0.2**
	4.6nm,0.9s,mb4.2,baz=100,slow=7.9,SNR=6.4						
STKA				LR	LR	15 47 38.5	
	comp=Z,98nm,18.8s,MS3.6,baz=205,slow=31						
PMG	**Port Moresby**	**38.24**	**287**	P	P	**15 35 23.9**	**+0.5**
	14nm,0.8s,mb4.8,baz=14,slow=18,SNR=3.8						
PMG	**Port Moresby**	**38.24**	**287**	*e*P	P	**15 35 22.3**	**-1.2**
	24nm,0.9s,mb4.9						
ASAR	**Alice Springs**	**45.56**	**260**	P	P	**15 36 23.1**	**-0.1**
	2.5nm,1.0s,mb4.1,baz=104,slow=9.2,SNR=12						
ASAR				LR	LR	15 54 04.0	
	comp=Z,66nm,18.0s,MS3.6,baz=202,slow=34						
WB2	**Warramunga Arr**	**46.03**	**266**	*e*P	P	**15 36 26.4**	**-0.6**
WRAB	**Tennant Creek**	**46.03**	**266**	*e*P	P	**15 36 26.8**	**-0.2**
	18nm,1.0s,mb4.9						
WRA	**Warramunga Arr**	**46.04**	**266**	P	P	**15 36 27.0**	**-0.1**
	2.2nm,0.6s,mb4.3,baz=98,slow=6.7,SNR=31						
VNDA	**Vanda**	**53.97**	**186**	P	P	**15 37 27.1**	**+0.2**
	0.9nm,1.0s,mb3.6,baz=23,slow=7.9,SNR=5.2						
VNDA	**Vanda**	**53.97**	**186**	*e*P	P	**15 37 26.7**	**-0.2**
	1.2nm,1.0s,mb3.8						
FITZ	**Fitzroy Crossi**	**54.45**	**265**	P	P	**15 37 30.3**	**-0.9**
	5.1nm,1.0s,mb4.4						
FITZ	**Fitzroy Crossi**	**54.45**	**265**	*e*P	P	**15 37 31.8**	**+0.6**
	6.5nm,1.0s,mb4.5,baz=68,slow=5.4,SNR=4.6						
NWAO	**Narrogin (SRO)**	**58.29**	**245**	P	P	**15 38 02.8**	**+4.3**
	28nm,1.2s,mb5.2,baz=145,slow=7.8,SNR=3.5						
QSPA	**South Pole Qui**	**65.43**	**180**	*e*P	P	**15 38 45.1**	**-0.6**
	13nm,1.0s,mb4.9						
CMB	**Columbia Colle**	**81.27**	**41**	*e*P	P	**15 40 19.2**	**+0.3**
	5.6nm,1.1s,mb4.4						
YBH	**Yreka Blue Hor**	**82.39**	**37**	P	P	**15 40 25.0**	**+0.4**
	1.7nm,0.8s,mb4.0,baz=232,slow=2.1,SNR=4.2						
NVAR	**Mina Array Bea**	**82.78**	**42**	P	P	**15 40 27.2**	**+0.5**
	1.8nm,0.8s,mb4.1,baz=209,slow=7.1,SNR=13						
VNA3	**Neumayer Olymp**	**83.88**	**176**	*i*	P	**15 40 33.4**	**+1.8**
VNA2	**Neumayer--Watz**	**84.34**	**176**	*i*	P	**15 40 35.3**	**+1.4**
VNA1	**Neumayer--Stat**	**84.56**	**176**	*i*	P	**15 40 32.7**	**-2.3**
PDAR	**Pinedale Array**	**90.70**	**42**	P	P	**15 41 04.5**	**-0.8**
	0.5nm,1.0s,mb3.8,baz=198,slow=4.1,SNR=3.4						
ILAR	**Eielson Array**	**91.95**	**12**	P	P	**15 41 09.2**	**-1.3**
	0.8nm,0.9s,mb4.1,baz=222,slow=5.8,SNR=6.0						
CMAR	**Chiang Mai Arr**	**93.26**	**289**	P	P	**15 41 18.6**	**+1.0**
	2.1nm,0.8s,mb4.6,baz=148,slow=2.3,SNR=8.8						
MKAR	**Makanchi Array**	**115.40**	**312**	PKiKP		15 46 43.8	
	0.9nm,1.1s,baz=76,slow=5.0,SNR=3.4						
SPITS	**Spitsbergen Ar**	**126.10**	**357**	PKP	PKPdf	15 47 02.9	-4.9
	4.0nm,0.9s,baz=236,slow=7.2,SNR=3.4						
ARCES	**ARCESS Array B**	**133.33**	**350**	PKP	PKPdf	15 47 16.4	-5.4
	1.6nm,0.7s,baz=297,slow=2.7,SNR=4.7						
NOA	**NORSAR Array B**	**143.30**	**354**	PKP	PKPdf	15 47 34.4	-5.4
	1.9nm,0.9s,baz=11,slow=4.5,SNR=3.9						
NOA	**NORSAR Array B**	**143.30**	**354**	PKP	PKPdf	15 47 34.4	-5.4
AKASG	**Malin Array Be**	**147.55**	**330**	PKPbc	PKPdf	15 47 46.2	-1.2
	0.5nm,0.3s,baz=40,slow=3.3,SNR=10						
EKA	**Eskdalemuir Ar**	**148.90**	**8**	PKPbc	PKPdf	15 47 49.3	-0.1
	3.4nm,0.9s,baz=90,slow=1.7,SNR=5.0						
ASF	**Jabal al Asfar**	**150.24**	**292**	PKPbc	PKPdf	15 47 55.5	+3.2
	3.2nm,0.9s,baz=203,slow=5.6,SNR=2.8						
BRTR	**Keskin Array B**	**150.96**	**308**	PKPbc	PKPdf	15 47 55.9	+2.7
	3.0nm,0.9s,baz=117,slow=2.8,SNR=14						
CLL	**Collm**	**152.51**	**348**	*i*	PKP1	15 47 59.4	+4.3
MLR	**Muntele Rosu**	**152.72**	**325**	PKPbc	PKPdf	15 48 00.4	+4.9
	0.9nm,0.3s,baz=172,slow=8.4,SNR=4.0						
MLR	**Muntele Rosu**	**152.72**	**325**	PKPbc	PKPdf	15 48 00.4	+4.9
BRG	**Berggiesshubel**	**152.74**	**346**	*e*P	PKPdf	15 47 58.3	+2.9
BRG				*e*		15 48 00.4	

CASC 22 15:28:51.4±2.3, 11.89N×87.95W, h27km±16km, MD3.9, 6C-3D, Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PYN	**Poneloya**	**1.03**	**61**	*i*	Pn	15 29 09.9	-0.4
LEON	**Leon**	**1.16**	**63**	*i*	Pn	15 29 11.3	-0.8
LEON				*e*S	Sn	15 29 20.1	-7.0
TEL3	**Telica 3**	**1.28**	**58**	*e*	Pn	15 29 12.9	-0.9
MIRN	**Miramar**	**1.33**	**65**	*e*P	Pn	15 29 14.0	-0.5
COPN	**Copaltepe**	**1.36**	**77**	*e*P	Pn	15 29 14.4	-0.6
COPN				*e*S	Sn	15 29 33.2	+1.0
CNGN	**Cerro Negro**	**1.37**	**63**	*e*P	Pn	15 29 14.4	-0.7
CNCH	**Conchagua**	**1.39**	**5**	*e*P	Pn	15 29 14.8	-0.5
CNCH				*e*S	Sn	15 29 34.3	+1.4
MOMJ	**Momotombo**	**1.48**	**69**	*e*P	Pn	15 29 15.8	-0.7
MOMJ				*e*S	Sn	15 29 35.9	+0.8
MGAN	**Managua**	**1.69**	**81**	*e*S	Sn	15 29 41.0	+0.5
TICN	**Ticuantepe**	**1.69**	**85**	*e*P	Pn	15 29 18.9	-0.7
WILN	**Americas 2**	**1.75**	**81**	*e*P	Pn	15 29 19.3	-1.2
SOMN	**Somoto**	**2.01**	**40**	*e*P	Pn	15 29 25.3	+1.1
LCBS	**La Ceiba**	**2.02**	**330**	*e*P	Pn	15 29 23.1	-1.3
LFRS	**El Faro**	**2.04**	**328**	*e*P	Pn	15 29 23.4	-1.3
LFRS				*e*S	Sn	15 29 50.2	+0.8
JCR	**Jicaral**	**3.45**	**126**	*e*P	Pn	15 29 44.1	-0.5
JCR				*e*S	Sn	15 30 23.1	-1.9
CGA2	**Cerro Gallo 2**	**3.90**	**118**	*e*P	Pn	15 29 53.8	+2.7
CGA2				*e*S	Sn	15 30 34.4	-2.0
LAJ	**Bijagual**	**4.26**	**118**	*e*P	Pn	15 29 52.4	-3.9
LAJ				*e*S	Sn	15 30 36.5	-9.3
LCR2	**La Lucha 2**	**4.43**	**118**	*e*P	Pn	15 29 59.0	+0.5
LCR2				*e*S	Sn	15 30 46.7	-3.1
URSC	**Urasca**	**4.58**	**116**	*e*P	Pn	15 30 02.2	+1.5
URSC				*e*S	Sn	15 30 53.4	-0.4

IDC 22 15:30:33.8±6.4, 18.03N×103.38W, mb3.7/6, mb1 4.0/7, mb1mx3.8/21, MS3.1/1, Ms1 3.1/1, ms1mx2.7/18, Error ellipse: s-maj=132.0km s-min=88.3km az=118.0
NEIC 22 15:30:45.5, 18.77N×104.26W, h6km, MD4.3(MEX), After MEX.
MEX 22 15:30:45.5±1.5, 18.77N×104.26W, h6km±25km, MD4.3

ISC 22 15:30:44.0±1.3, 18.73N±0.05×104.24W±0.05, h29km±9km, n19, σ1°33/26, mb3.6/6, 1D, Near coast of Jacksonville

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
COLM	**Colima**	**0.69**	**49**	*i*	P	**15 30 56.3**	**-1.2**
COLM				*i*	S	**15 31 06.9**	**+0.2**
CJM	**Chamela**	**1.08**	**315**	*i*	P	**15 31 02.4**	**-0.9**
CJM				*i*	S	**15 31 17.5**	**+0.2**
CGX	**Ciudad Guzman**	**1.18**	**36**	*i*	P	**15 31 05.5**	**+0.7**
SFJM	**Santa Fe**	**2.08**	**33**	*i*	P	**15 31 18.2**	**+0.5**
SFJM				*i*	S	**15 31 42.5**	**-0.4**
ZIIG	**Zihuatanejo**	**2.87**	**112**	*i*	P	**15 31 30.1**	**+1.2**
ZIIG				*i*	S	**15 32 03.5**	**+0.7**
MOIG	**Morelia**	**3.04**	**71**	*i*	P	**15 31 33.5**	**+2.2**
MOIG				*e*S	S	**15 32 07.0**	**0.0**
CAIG	**El Cayaco**	**4.14**	**113**	*i*	P	**15 31 46.7**	**-0.3**
ZAIG	**Zacatecas**	**4.31**	**21**	*e*P	P	**15 31 51.4**	**+1.9**
ZAIG				*i*	S	**15 32 37.6**	**-1.8**
ACX	**Acapulco**	**4.52**	**114**	*e*P	P	**15 31 50.0**	**-2.4**
UNM	**Universidad Na**	**4.83**	**82**	*e*P	P	**15 31 45.0**	**-12**
PPM	**Popocatepetl**	**5.33**	**85**	*e*P	P	**15 32 03.5**	**-0.3**
PPM				*e*P		15 32 04.0	
PPM				*i*	S	**15 33 09.1**	**+4.2**
OXX	**Oaxaca**	**7.34**	**102**	*e*P	P	**15 32 29.0**	**-3.1**
TXAR	**Lajitas Array**	**10.57**	**3**	Pn	P	**15 33 18.9**	**+2.1**
	baz=187,slow=14,SNR=2.0						
TXAR				LR	LR	15 37 54.1	
	comp=Z,95nm,20.4s,baz=185,slow=39						
NVAR	**Mina Array Bea**	**23.14**	**331**	P	P	**15 35 51.1**	**+2.3**
	1.3nm,0.8s,mb3.4,baz=139,slow=9.3,SNR=12						
PDAR	**Pinedale Array**	**24.38**	**350**	P	P	**15 36 01.2**	**+0.3**
	0.5nm,0.9s,mb2.9,baz=172,slow=6.4,SNR=3.5						
DLBC	**Dease Lake**	**43.92**	**341**	P	P	**15 38 50.7**	**+0.9**
	1.2nm,0.7s,mb3.7,baz=174,slow=7.2,SNR=6.9						
YKA	**Yellowknife Ar**	**44.31**	**353**	P	P	**15 38 50.4**	**-2.5**
	0.3nm,0.6s,mb3.2,baz=163,slow=7.0,SNR=4.8						
INK	**Inuvik**	**52.87**	**347**	P	P	**15 39 57.9**	**-1.3**
	2.4nm,0.7s,mb4.2,baz=134,slow=7.5,SNR=25						
ILAR	**Eielson Array**	**54.05**	**339**	P	P	**15 40 06.7**	**-1.1**
	1.6nm,0.9s,mb3.9,baz=154,slow=5.4,SNR=14						

WAR 22 15:32:58.4,51.51N×16.13E,h1km, Location given by Rudna mine, origin time based upon KSP
PRU 22 15:33:00.3,51.40N×16.16E
NEIC 22 15:33:01.8±1.4,51.27N×15.92E,h5km,ML2.6(VIE), ML2.5(CLL), Error ellipse: s-maj=17.3km s-min=8.9km az=195.0

ISC 22 15:32:55.7±0.9, 51.50N±0.04×16.14E±0.04, n18, σ1°31/37, 1C, Poland

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KSP	**Ksiaz**	**0.66**	**171**	*e*Pg	Pg	**15 33 10.8**	**+1.9**
KSP				*e*Sg	Sg	**15 33 18.3**	**+0.5**
KSP	**Ksiaz**	**0.66**	**171**	*e*PG	Pg	**15 33 11.0**	**+2.1**
KSP				*e*SG	Sg	**15 33 20.0**	**+2.2**
UPC	**Upice**	**1.00**	**185**	*e*PG	Pg	**15 33 16.9**	**+1.4**
DPC	**Dobruska-Polom**	**1.16**	**174**	*e*PG	Pg	**15 33 19.7**	**+0.9**
DPC				*e*SG	Sg	**15 33 34.6**	**+0.4**
PVCC	**Panska Ves**	**1.39**	**226**	*e*PG	Pg	**15 33 23.8**	**+0.4**
PVCC				*e*SG	Sg	**15 33 43.2**	**+1.4**
BRG	**Berggiesshubel**	**1.52**	**246**	*e*Pn	Pn	**15 33 25.1**	**+1.0**
BRG				*i* Pg	Pg	**15 33 26.2**	**+0.3**
BRG				*i* Sg	Sg	**15 33 46.8**	**+0.7**
PRU	**Pruhonice**	**1.82**	**214**	*e*PG	Pg	**15 33 31.2**	**-0.8**
PRU				*i* x	x	15 33 35.5	
PRU				*i* x	x	15 33 48.4	
PRU				SG	Sg	**15 33 55.5**	**-0.8**
	16nm,0.3s						
MORC	**Moravsky Berou**	**1.94**	**152**	*e*P	Pn	**15 33 30.9**	**+0.7**
MORC				*e*S	Sn	**15 33 56.7**	**+1.0**
CLL	**Collm**	**1.97**	**266**	*i* PG	Pg	**15 33 34.3**	**-0.7**
CLL				*i*		15 33 37.2	
CLL				*i* SG	Sg	**15 34 00.8**	**-0.5**
CLL	**Collm**	**1.97**	**266**	*i* Pg	Pg	**15 33 34.3**	**-0.7**
CLL				*i* Sg	Sg	**15 34 00.8**	**-0.5**
OKC	**Ostrava-Krasne**	**2.10**	**142**	*e*PG	Pg	**15 33 36.6**	**-1.0**
OKC				*e*SG	Sg	**15 34 03.5**	**-2.0**
OJC	**Ojcow**	**2.65**	**117**	*e*Pg	Pg	**15 33 47.3**	**-1.3**
OJC				*e*Sg	Sg	**15 34 21.4**	**-2.5**
NKC	**Novy Kostel**	**2.66**	**243**	*e*PN	Pn	**15 33 41.7**	**+1.2**
NKC				*e*PG	Pg	**15 33 49.4**	**+0.7**
NKC				*e*SG	Sg	**15 34 24.0**	**-0.2**
KHC	**Kasperske Hory**	**2.88**	**216**	*e*PN	Pn	**15 33 45.3**	**+1.6**
KHC				*e*PG	Pg	**15 33 50.6**	**-2.6**
KHC				*e*SG	Sg	**15 34 28.5**	**-3.1**
MOX	**Moxa**	**2.98**	**255**	*e*Pg	Pg	**15 33 53.4**	**-1.7**
MOX				*e*Sg	Sg	**15 34 33.5**	**-1.3**
ZST	**Bratislava**	**3.37**	**169**	*e*SB	Sb	**15 34 43.6**	**+5.8**
NIE	**Niedzica**	**3.38**	**126**	*e*P	Pn	**15 34 01.8**	**+11**
NIE				*e*S	Sn	**15 34 47.6**	**+15**
MOA	**Molln**	**3.85**	**199**	*i* PN	Pn	**15 33 58.3**	**+0.9**
MOA				*i* SG	Sg	**15 35 01.2**	**-2.6**
	2.1nm,0.4s						

NEIC 22 15:39:45.9±0.9, 32.30S×176.91W, h10km, Error ellipse: s-maj=29.7km s-min=14.8km az=148.0
IDC 22 15:39:48.9±2.2, 32.38S×177.61W, mb3.9/3, mb1 4.0/4, mb1mx3.8/15, ML3.3/1, Error ellipse: s-maj=55.7km s-min=35.1km az=126.0

ISC 22 15:39:43.4±1.1, 32.4S±0.2×176.8W±0.2, h10km, n9, σ0°88/7, mb4.1/4, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**7.64**	**219**	Pn	Pn	**15 41 38.1**	**+0.5**
	0.5nm,0.3s,baz=175,slow=21,SNR=5.0						
URZ				Sn	Sn	**15 42 59.4**	**-5.7**
	2.3nm,0.3s,baz=108,slow=17,SNR=13						
RAR	**Rarotonga**	**18.85**	**58**	*e*P	P	**15 44 05.8**	**0.0**
	105nm,1.6s						
CTA	**Charters Tower**	**35.15**	**281**	P	P	**15 46 40.6**	**+1.2**
	3.1nm,0.6s,mb4.4,baz=90,slow=7.1,SNR=4.9						
ASAR	**Alice Springs**	**44.03**	**268**	P	P	**15 47 52.7**	**-0.4**
	0.3nm,0.5s,mb3.3,baz=104,slow=7.5,SNR=7.0						
WRAB	**Tennant Creek**	**45.20**	**274**	*e*P	P	**15 48 02.4**	**-0.2**
	15nm,1.1s,mb4.7						
WRA	**Warramunga Arr**	**45.20**	**274**	P	P	**15 48 01.8**	**-0.8**
	0.8nm,0.4s,mb3.9,baz=113,slow=7.9,SNR=20						
FINES	**FINESS Array B**	**147.39**	**340**	PKPbc	PKPdf	15 59 34.3	+7.1
	1.2nm,0.8s,baz=135,slow=5.9,SNR=3.2						
FINES	**FINESS Array B**	**147.39**	**340**	PKPbc	PKPdf	15 59 34.3	+7.1
ASF	**Jabal al Asfar**	**151.56**	**279**	PKPbc	PKPdf	15 59 41.2	+6.5

MEX 22 15:58:35.9±0.3, 18.50N×104.12W, h7km±6km, MD3.8, 2D, Near coast of Jalisco

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
COLM	**Colima**	**0.79**	**31**	*e*P	Pb	15 58 49.6	-2.1
COLM				*e*S	Sb	15 59 00.3	-2.1
CJM	**Chamela**	**1.33**	**319**	*e*P	Pb	15 58 57.2	-3.5
CJM				*e*S	Sb	15 59 13.8	-4.1
SFJM	**Santa Fe**	**2.23**	**27**	*e*P	Pn	15 59 14.5	+0.7
ZIIG	**Zihuatanejo**	**2.67**	**109**	*i* S	Sn	15 59 48.2	-5.1
ZAIG	**Zacatecas**	**4.49**	**19**	*i* S	Sn	16 00 33.5	-5.9

IDC 22 16:21:54.7±2.8, 1.61S×134.42E, mb3.6/2, mb1 3.9/3, mb1mx3.6/15, ML3.9/1, Error ellipse: s-maj=129.0km s-min=27.6km az=77.0

ISC 22 16:22:06.8±4.6, 2.0S±0.2×134.0E±0.5, h110km±43km, n7, σ1°76/8, mb3.6/2, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KAKA	**Kakadu**	**10.72**	**189**	*e*P	P	**16 24 36.8**	**-1.5**
	6.0nm,0.7s						
WB2	**Warramunga Arr**	**17.80**	**179**	*e*P	P	**16 26 09.5**	**+0.4**
WRA	**Warramunga Arr**	**17.80**	**179**	P	P	**16 26 09.6**	**+0.5**
	0.4nm,0.3s,baz=359,slow=11,SNR=24						
WRA				S	S	**16 29 19.6**	**-1.3**
	0.0nm,0.3s,baz=355,slow=24,SNR=3.2						
FITZ	**Fitzroy Crossi**	**17.96**	**207**	*e*P	P	**16 26 12.3**	**+1.3**
	3.0nm,0.9s						
AS12	**Alice Springs**	**21.50**	**180**	*e*P	P	**16 26 50.2**	**+2.1**
	8.6nm,1.3s,mb3.9						
ASAR	**Alice Springs**	**21.50**	**180**	P	P	**16 26 49.8**	**+1.7**
	1.6nm,0.6s,mb3.5,baz=5.5,slow=11,SNR=40						
MKAR	**Makanchi Array**	**66.44**	**324**	P	P	**16 32 45.4**	**-1.2**
	0.8nm,0.9s,mb3.5,baz=121,slow=7.1,SNR=5.5						

IDC 22 16:33:32.1±2.7,5.25S×146.75E,h55km±25km,mb3.8/8, mb1 4.0/11,mb1mx3.9/17,ML4.0/3,MS3.4/2,Ms1 3.4/2, ms1mx2.9/17,Error ellipse: s-maj=20.9km s-min=10.7km az=115.0
NEIC 22 16:33:33.2±1.4,5.28S×146.70E,h64km±13km,mb4.6/4, Error ellipse: s-maj=11.7km s-min=11.2km az=165.0

ISC 22 16:33:31.2±1.6, 5.25S±0.07×146.71E±0.09, h64km±15km, n22, σ0°90/29, mb4.1/9, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WAU	**Wau**	**2.08**	**180**	*e*P	P	**16 34 05.4**	**+0.9**
WAU				*e*S	S	**16 34 40.3**	**+11**
PMG	**Port Moresby**	**4.15**	**174**	P	P	**16 34 33.1**	**-0.6**
	17nm,0.3s,baz=21,slow=4.5,SNR=71						
PMG				S	S	**16 35 21.1**	**-0.3**
	14nm,0.3s,baz=156,slow=23,SNR=4.7						
PMG	**Port Moresby**	**4.15**	**174**	*e*P	P	**16 34 32.8**	**-0.8**
PMG				*e*S	S	**16 35 21.4**	**0.0**
CTA	**Charters Tower**	**14.76**	**182**	P	P	**16 36 59.3**	**+1.4**
	0.7nm,0.3s,baz=354,slow=15,SNR=10						
CTA				S	S	**16 39 40.5**	**+0.4**
	0.1nm,0.3s,baz=190,slow=4.9,SNR=2.6						
CTA				LR	LR	16 42 12.6	
	comp=Z,86nm,18.9s,baz=224,slow=35						
CTAO	**Charters Tower**	**14.76**	**182**	*e*P	P	**16 36 59.5**	**+1.6**
KAKA	**Kakadu**	**15.95**	**241**	*e*P	P	**16 37 13.5**	**+0.4**
	32nm,0.6s						
WRAB	**Tennant Creek**	**18.91**	**218**	*e*P	P	**16 37 48.1**	**-1.5**
	24nm,0.8s						
WRAB				*e*S	S	**16 41 15.4**	**+0.7**
WB2	**Warramunga Arr**	**18.92**	**218**	*e*P	P	**16 37 48.1**	**-1.5**
WRA	**Warramunga Arr**	**18.93**	**218**	P	P	**16 37 48.2**	**-1.5**
	1.1nm,0.3s,baz=42,slow=12,SNR=53						
WRA				S	S	**16 41 21.3**	**+6.3**
	0.1nm,0.3s,baz=48,slow=26,SNR=4.4						
AS12	**Alice Springs**	**22.08**	**213**	*e*P	P	**16 38 22.8**	**+0.5**
	7.4nm,0.6s,mb4.3						
ASAR	**Alice Springs**	**22.08**	**213**	P	P	**16 38 22.8**	**+0.5**
	8.0nm,0.7s,mb4.3,baz=45,slow=8.5,SNR=92						
ASAR				S	S	**16 42 25.4**	**+8.7**
	0.4nm,0.7s,baz=28,slow=21,SNR=2.8						
FITZ	**Fitzroy Crossi**	**24.23**	**236**	*e*P	P	**16 38 43.5**	**+0.1**
	35nm,0.6s,mb5.0						
FITZ	**Fitzroy Crossi**	**24.23**	**236**	P	P	**16 38 44.2**	**+0.8**
	40nm,0.7s,mb5.0,baz=38,slow=6.8,SNR=99						
ARMA	**Armidale**	**25.46**	**170**	*e*P	P	**16 38 55.8**	**+0.7**
STKA	**Stephens Creek**	**26.92**	**190**	P	P	**16 39 08.1**	**-0.4**
	2.7nm,0.7s,mb3.9,baz=19,slow=9.5,SNR=9.2						
STKA				LR	LR	16 51 02.6	
	comp=Z,133nm,19.1s,baz=26,slow=39						
RAR	**Rarotonga**	**54.18**	**112**	P	P	**16 42 51.6**	**-1.2**
	14nm,0.8s,mb5.0,baz=286,slow=18,SNR=2.8						
SONM	**Songino Array**	**63.61**	**331**	P	P	**16 43 57.2**	**-0.6**
	0.5nm,0.6s,mb3.7,baz=141,slow=9.2,SNR=2.9						
VNDA	**Vanda**	**72.67**	**177**	P	P	**16 44 53.1**	**-0.4**
	0.4nm,0.5s,mb3.6,baz=339,slow=5.9,SNR=9.1						
VNDA	**Vanda**	**72.67**	**177**	*e*P	P	**16 44 53.1**	**-0.4**
	0.9nm,1.0s,mb3.6						
MKAR	**Makanchi Array**	**76.74**	**320**	P	P	**16 45 17.7**	**+0.2**
	0.4nm,0.8s,mb3.4,baz=124,slow=5.2,SNR=3.2						
ZAL	**Zalesovo**	**78.23**	**328**	P	P	**16 45 26.8**	**+1.2**
	0.7nm,0.5s,mb3.8,baz=253,slow=14,SNR=2.2						
ILAR	**Eielson Array**	**84.91**	**23**	P	P	**16 46 01.0**	**+0.8**
	0.6nm,0.7s,mb3.9,baz=256,slow=5.2,SNR=8.2						

*IDC 22 16:38:27.9±8.4, 27.55S×179.14E, h282km±79km, mb3.5/4, mb1 3.7/6, mb1mx3.5/15,

ORDF	**Ordiarp**	**0.36**	**223**	Pg		**Pg**		**17 09 58.8**	**0.0**
ORDF				Sg		**Sg**		**17 10 04.5**	**+0.7**
LARF	**Larrau**	**0.53**	**213**	Pg		**Pg**		**17 10 01.6**	**-0.4**
LARF				Sg		**Sg**		**17 10 10.0**	**+0.9**
ETSF	**Etsaut**	**0.58**	**177**	*e*Pg		**Pg**		**17 10 03.0**	**-0.2**
ETSF				*e*Sg		**Sg**		**17 10 10.0**	**-1.0**
	14nm,0.2s								
LABF	**Labassere**	**0.66**	**131**	Pg		**Pg**		**17 10 05.9**	**+1.3**
EALK	**Alkurruntz**	**0.71**	**249**	Pg		**Pg**		**17 10 05.4**	**-0.3**
	2.7nm,0.2s,SNR=7.9								
EALK				Lg				17 10 14.9	
	34nm,0.5s,SNR=7.9								
EPF	**Esparros**	**0.82**	**123**	*e*Pg		**Pg**		**17 10 09.3**	**+1.4**
EPF				*e*Sg		**Sg**		**17 10 19.2**	**+0.3**
	12nm,0.2s								
EGRA	**Graus**	**1.45**	**152**	Pg		**Pg**		**17 10 20.9**	**+0.5**
	0.9nm,0.2s,SNR=4.0								
EGRA				Lg				17 10 40.0	
	1.1nm,0.2s,SNR=4.0								
LFF	**La Frestale**	**1.75**	**33**	*e*Pn		**Pn**		**17 10 23.2**	**+1.2**
LFF				*e*Sn		**Sn**		**17 10 44.4**	**0.0**
LFF				*e*Sg		**Sg**		**17 10 49.6**	**-0.1**
	6.8nm,0.2s								
ESAC	**San Caprasio**	**1.76**	**177**	Pg		**Pg**		**17 10 25.1**	**-1.5**
	4.3nm,0.2s,SNR=7.9								
ESAC				Lg				17 10 49.3	
	24nm,0.6s,SNR=7.9								
MTLF	**Montolieu**	**2.06**	**93**	*e*Pn		**Pn**		**17 10 27.0**	**+0.6**
MTLF				*e*Sn		**Sn**		**17 10 51.7**	**-0.6**
MTLF				*e*Sg		**Sg**		**17 11 00.5**	**+0.5**
	3.4nm,0.3s								
ELAN	**Lanestosa**	**2.08**	**264**	Lg				17 10 57.1	
	1.3nm,0.3s,SNR=7.9								
RJF	**Les Rejaudoux**	**2.37**	**39**	*e*Pn		**Pn**		**17 10 31.5**	**+0.6**
RJF				*e*Pg		**Pg**		**17 10 37.9**	**-0.9**
RJF				*e*Sn		**Sn**		**17 10 59.4**	**-0.9**
RJF				*e*Sg		**Sg**		**17 11 10.7**	**+0.3**
	6.9nm,0.3s								
CAF	**Calviac**	**2.40**	**52**	*e*Sn		**Sn**		**17 11 01.5**	**+0.5**
CAF				*e*Sg		**Sg**		**17 11 10.4**	**-1.0**
	2.8nm,0.2s								
EPOB	**Poblet**	**2.46**	**149**	Pg		**Pg**		**17 10 38.3**	**-2.3**
	0.1nm,0.1s,SNR=7.9								
EPOB				Lg				17 11 09.9	
	0.9nm,0.2s,SNR=7.9								
LASF	**Ste Croix**	**3.28**	**78**	*e*Pn		**Pn**		**17 10 43.8**	**-0.1**

*MOS **22** 17:13:29.7±2.0,37.35N×72.90E,h33km,mb4.1/2,Error ellipse: s-maj=34.1km s-min=10.4km az=94.0*
*NNC **22** 17:13:50.0±3.4,38.35N×71.56E,h98km±40km,mpv4.0, Error ellipse: s-maj=47.1km s-min=26.6km az=67.0*
*IDC **22** 17:13:53.5±15.0,38.91N×73.18E,h150km±89km,mb3.2/5, mb1 3.4/7,mb1mx3.2/21,Error ellipse: s-maj=149.0km s-min=27.5km az=11.0*

ISC 22 17:13:40.8±1.4,38.04N±0.09×72.9E±0.1,h95km±12km, n33,σt1s05/35,mb3.4/5,3C-1D,Tajikistan

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
AML	**Almayashu**	**4.13**	**8**	P	**P**	**17 14 43.3**	**+0.3**
	SNR=196						
UCH	**Uchtor**	**4.36**	**16**	P	**P**	**17 14 46.6**	**+0.4**
	SNR=70						
KZA	**Kyzart**	**4.42**	**23**	P	**P**	**17 14 46.9**	**0.0**
	SNR=20						
EKS2	**Erkin-Say**	**4.67**	**8**	P	**P**	**17 14 50.6**	**+0.3**
	SNR=83						
AAK	**Ala-Archa**	**4.75**	**14**	P	**P**	**17 14 52.0**	**+0.5**
	SNR=17						
KBK	**Karagaybulak**	**4.87**	**18**	P	**P**	**17 14 53.5**	**+0.4**
	SNR=12						
ULHL	**Ulahol**	**4.92**	**30**	P	**P**	**17 14 53.5**	**-0.4**
	SNR=20						
CHMS	**Chumysh**	**5.15**	**15**	P	**P**	**17 14 57.1**	**+0.1**
	SNR=7.0						
TKM2	**Tokmak 2**	**5.29**	**22**	P	**P**	**17 14 58.8**	**0.0**
	SNR=8.2						
USP	**Ospenovka**	**5.36**	**13**	P	**P**	**17 14 59.8**	**0.0**
	SNR=21						
KK31	**Karatay Array**	**5.37**	**341**	⇑P	**P**	**17 15 00.0**	**+0.1**
	6.8nm,0.3s,baz=158,slow=13,SNR=108						
KK31				⇓S	**S**	**17 15 55.5**	**-5.5**
	29nm,0.6s,baz=155,slow=24,SNR=21						
KKAR	**Karatay Array**	**5.37**	**341**	PN	**P**	**17 15 00.0**	**+0.1**
KKAR				pmax	pmax		
	comp=Z,2.0nm,0.2s						
MKAR	**Makanchi Array**	**11.16**	**35**	P	**P**	**17 16 17.6**	**-0.9**
	comp=Z,0.1nm,0.3s,baz=219,slow=9.2,SNR=3.5						
DANN	**Dangsing**	**13.27**	**134**	*e*P	**P**	**17 16 46.9**	**+0.5**
KOLN	**Koldanda**	**13.62**	**136**	*e*P	**P**	**17 16 50.4**	**-0.6**
	comp=Z,3.5nm,0.3s						
AB31	**Akbulak array**	**14.59**	**324**	P	**P**	**17 17 01.4**	**-1.9**
	comp=Z,1.5nm,0.4s,baz=130,slow=14,SNR=56						
AB31				S	**S**	**17 19 31.1**	**-12**
	comp=Z,3.2nm,0.7s,baz=154,slow=22,SNR=6.5						
AB31	**Akbulak array**	**14.59**	**324**	*e*P	**P**	**17 17 01.4**	**-1.9**
AB31				pmax	pmax		
	comp=Z,1.0nm,0.4s						
VOSK	**Vostochnaya**	**14.74**	**355**	⇑P	**P**	**17 17 08.1**	**+2.8**
	comp=Z,2.5nm,0.8s						
VOSK	**Vostochnaya**	**14.74**	**355**	P	**P**	**17 17 08.1**	**+2.8**
VOSK				pmax	pmax		
	comp=Z,2.0nm,0.8s						
BVA0	**Borovoye Array**	**15.09**	**354**	P	**P**	**17 17 12.7**	**+3.0**
	comp=Z,1.1nm,0.8s,baz=165,slow=10,SNR=24						
BVA0	**Borovoye Array**	**15.09**	**354**	*i* P	**P**	**17 17 12.7**	**+3.0**
BVAR	**Borovoye Array**	**15.09**	**354**	P	**P**	**17 17 07.6**	**-2.1**
	comp=Z,0.1nm,0.3s,baz=162,slow=12,SNR=6.7						
ZRNK	**Zerenda**	**15.15**	**351**	⇑P	**P**	**17 17 13.2**	**+2.6**
	comp=Z,4.9nm,0.8s						
ZRNK	**Zerenda**	**15.15**	**351**	P	**P**	**17 17 08.5**	**-2.1**
ZRNK				pmax	pmax		
	comp=Z,4.0nm,0.8s						
ZAL	**Zalesovo**	**17.88**	**23**	P	**P**	**17 17 41.7**	**-2.8**
	comp=Z,1.6nm,0.3s,baz=168,slow=9.2,SNR=18						
ZAL	**Zalesovo**	**17.88**	**23**	P	**P**	**17 17 41.7**	**-2.8**
ZAL				pmax	pmax		
	comp=Z,2.0nm,0.3s						
SONM	**Songino Array**	**26.23**	**57**	P	**P**	**17 19 09.1**	**+0.7**
	comp=Z,0.3nm,0.8s,mb2.8,baz=270,slow=8.6,SNR=4.0						
SONM				pP	sP	17 19 49.9	+9.0
	comp=Z,0.7nm,0.8s,baz=270,slow=8.6,SNR=3.7						
FINES	**FINESS Array B**	**37.08**	**324**	P	**P**	**17 20 43.6**	**+0.6**
	comp=Z,0.6nm,0.5s,mb3.8,baz=117,slow=9.3,SNR=7.8						
FINES	**FINESS Array B**	**37.08**	**324**	P	**P**	**17 20 43.6**	**+0.6**
FINES				pmax	pmax		
	comp=Z,1.0nm,0.5s						
ARCES	**ARCESS Array B**	**40.32**	**336**	P	**P**	**17 21 10.6**	**+0.8**
	comp=Z,1.0nm,0.5s,mb3.9,baz=108,slow=7.7,SNR=11						
ARCES	**ARCESS Array B**	**40.32**	**336**	P	**P**	**17 21 10.6**	**+0.8**
ARCES				pmax	pmax		
	comp=Z,1.0nm,0.5s						
ILAR	**Eielson Array**	**72.88**	**17**	P	**P**	**17 25 00.1**	**-0.4**
	comp=Z,0.4nm,0.8s,mb3.3,baz=323,slow=7.1,SNR=6.5						
YKA	**Yellowknife Ar**	**79.63**	**4**	P	**P**	**17 25 38.8**	**+0.3**
	comp=Z,0.3nm,0.4s,mb3.5,baz=350,slow=5.5,SNR=11						

*NEIC **22** 17:16:07.5±1.5,18.41N×146.52E,h66km±14km,Error ellipse: s-maj=27.6km s-min=11.2km az=92.0*
*IDC **22** 17:16:21.8±14.0,18.35N×146.37E,h198km±136km, mb3.4/11,mb1 3.6/11,mb1mx3.4/23,MS3.5/6,Ms1 3.6/6, ms1mx3.2/19,Error ellipse: s-maj=31.3km s-min=19.5km az=77.0*

ISC 22 17:16:06.2±1.7,18.44N±0.08×146.5E±0.2,h69km±15km, n25,σt0s76/20,mb3.8/12,2C-1D,Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SARN	**Sarigan**	**1.87**	**203**	*e*P	**P**	**17 16 36.2**	**-0.4**
SARN				S	**S**	**17 16 60.0**	**+0.9**
SAPN	**Saipan**	**3.29**	**193**	*e*P	**P**	**17 16 55.4**	**-1.1**
GUMO	**Guam**	**5.07**	**198**	P	**P**	**17 17 21.8**	**+0.4**
JOW	**Kunigami**	**18.78**	**300**	LR	LR	17 26 49.1	
	comp=Z,66nm,18.6s,baz=90,slow=34						
MAJO	**Matsushiro**	**19.47**	**340**	P	**P**	**17 20 30.1**	**+0.1**
ASAJ	**Asahikawa**	**25.81**	**354**	LR	LR	17 33 46.7	
	comp=Z,64nm,18.1s,baz=152,slow=40						
CTA	**Charters Tower**	**38.28**	**180**	LR	LR	17 36 59.2	
	comp=Z,92nm,19.4s,baz=44,slow=32						
WRAB	**Tennant Creek**	**39.95**	**198**	P	**P**	**17 23 35.3**	**-0.2**
	10.0nm,0.9s,mb4.7						
WRA	**Warramunga Arr**	**39.97**	**198**	P	**P**	**17 23 35.5**	**-0.1**
	3.5nm,1.1s,mb4.1,baz=23,slow=8.9,SNR=27						

FITZ	**Fitzroy Crossi**	**41.71**	**211**	P		**P**		**17 23 50.2**	**+0.2**
	2.5nm,0.8s,mb4.0,baz=22,slow=5.6,SNR=15								
ASAR	**Alice Springs**	**43.62**	**197**	P		**P**		**17 24 05.4**	**-0.2**
	0.7nm,0.7s,mb3.5,baz=37,slow=7.2,SNR=6.1								
ASAR				LR		LR		17 40 49.3	
	comp=Z,70nm,20.9s,baz=34,slow=34								
SONM	**Songino Array**	**43.83**	**321**	P		**P**		**17 24 07.9**	**+0.9**
	0.7nm,0.7s,mb3.5,baz=101,slow=7.3,SNR=4.3								
STKA	**Stephens Creek**	**50.25**	**185**	P		**P**		**17 24 57.5**	**0.0**
	2.8nm,0.9s,mb4.2,baz=9.5,slow=6.1,SNR=2.9								
ILAR	**Eielson Array**	**63.54**	**26**	P		**P**		**17 26 30.9**	**-0.4**
	0.5nm,1.0s,mb3.3,baz=248,slow=4.9,SNR=4.7								
ILAR				LR		LR		17 53 22.4	
	comp=Z,46nm,19.6s,baz=272,slow=35								
BVAR	**Borovoye Array**	**67.17**	**320**	P		**P**		**17 26 55.1**	**+0.4**
	1.0nm,0.5s,mb3.9,baz=92,slow=7.9,SNR=12								
YKA	**Yellowknife Ar**	**77.86**	**28**	P		**P**		**17 27 58.3**	**+0.8**
	0.5nm,0.8s,mb3.3,baz=287,slow=5.4,SNR=8.5								
YKA				LR		LR		18 00 03.3	
	comp=Z,64nm,19.7s,baz=270,slow=34								
YKA	**Yellowknife Ar**	**77.86**	**28**	P		**P**		**17 27 58.3**	**+0.8**
YKA				LR		LR		18 00 03.3	
NVAR	**Mina Array Bea**	**82.69**	**52**	P		**P**		**17 28 25.2**	**+1.4**
	0.2nm,0.5s,mb3.2,baz=260,slow=5.5,SNR=2.6								
NVAR	**Mina Array Bea**	**82.69**	**52**	P		**P**		**17 28 25.2**	**+1.4**
ARCES	**ARCESS Array B**	**82.98**	**342**	P		**P**		**17 28 23.0**	**-1.6**
	2.5nm,0.7s,mb4.2,baz=63,slow=6.0,SNR=6.5								
FINES	**FINESS Array B**	**87.45**	**336**	P		**P**		**17 28 45.7**	**-1.1**
	0.6nm,0.7s,mb3.6,baz=76,slow=5.7,SNR=3.9								
FINES	**FINESS Array B**	**87.45**	**336**	P		**P**		**17 28 45.7**	**-1.1**
VNA2	**Neumayer--Watz**	**125.25**	**190**	⇑*i*		PKPdf		17 35 03.2	+4.7
VNA3	**Neumayer Olymp**	**125.34**	**189**	⇓*i*		PKPdf		17 34 59.7	+1.1
VNA1	**Neumayer--Stat**	**125.64**	**190**	⇑*i*		PKPdf		17 35 03.3	+4.1

CASC 22 17:20:21.9±2.0,12.07N×86.86W,h94km±6km,MD3.9, 11C-12D,Nicaragua

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
COPN	**Copaltepe**	**0.29**	**67**	*e*P	P	17 20 36.3	+0.5
LEON	**Leon**	**0.35**	**355**	*e*P	P	17 20 36.5	+0.3
LEON				*e*S	S	17 20 45.7	-1.3
PYN	**Poneloya**	**0.35**	**333**	*e*P	P	17 20 36.8	+0.6
PYN				*e*S	S	17 20 46.1	-0.9
CNGN	**Cerro Negro**	**0.46**	**20**	*e*P	P	17 20 36.9	0.0
CNGN				*e*S	S	17 20 48.4	+0.2
MOMJ	**Momotombo**	**0.46**	**43**	*e*P	P	17 20 36.9	-0.1
MOMJ				*e*S	S	17 20 49.5	+1.2
TEL3	**Telica 3**	**0.50**	**2**	*e*P	P	17 20 37.7	+0.4
TEL3				*e*S	S	17 20 50.5	+1.8
XAVN	**Gruta Xavier**	**0.53**	**81**	⇓*i*P	P	17 20 37.5	0.0
XAVN				*e*S	S	17 20 49.2	0.0
CRUN	**El Crucero**	**0.55**	**98**	⇑*i*P	P	17 20 38.0	+0.3
MGAN	**Managua**	**0.60**	**82**	⇓*i*P	P	17 20 37.9	-0.2
MGAN				*e*S	S	17 20 50.6	+0.4
TICN	**Ticuantepe**	**0.61**	**93**	*e*P	P	17 20 38.4	+0.1
TICN				*e*S	S	17 20 51.0	+0.6
CRIN	**San Cristobal**	**0.66**	**344**	*e*P	P	17 20 39.1	+0.4
CRIN				*e*S	S	17 20 51.4	+0.3
WILN	**Americas 2**	**0.66**	**82**	*e*P	P	17 20 38.3	-0.4
WILN				*e*S	S	17 20 52.4	+1.2
COFN	**Cofrada**	**0.74**	**83**	*e*P	P	17 20 39.0	-0.4
APON	**Apoyo**	**0.79**	**101**	*e*P	P	17 20 39.5	-0.5
PYTN	**Playitas**	**0.91**	**59**	*e*P	P	17 20 40.9	-0.3
PYTN				*e*S	S	17 20 55.4	-0.2
QUIN	**Quiabu**	**1.14**	**22**	*e*P	P	17 20 43.4	-0.5
CONN	**Concepcion**	**1.31**	**112**	*e*P	P	17 20 45.2	-0.7
CONN				*e*S	S	17 21 03.9	+0.1
SOMN	**Somoto**	**1.37**	**10**	*e*P	P	17 20 47.6	+1.0
CNCH	**Conchagua**	**1.53**	**322**	*e*P	P	17 20 48.7	-0.1
CNCH				*e*S	S	17 21 08.9	+0.4
CRZC	**La Cruz**	**1.66**	**132**	*e*P	P	17 20 51.1	+0.8
CRZC				*e*S	S	17 21 12.3	+1.0
BLLM	**Bellamira**	**1.92**	**316**	*e*P	P	17 20 54.7	+1.0
BLLM				*e*S	S	17 21 22.2	+5.1
VSM	**San Miguel**	**1.93**	**315**	*e*P	P	17 20 54.3	+0.4
VSM				*e*S	S	17 21 18.7	+1.3
VCR	**Vista de Mar**	**2.27**	**148**	*e*P	P	17 20 59.5	+1.0
VCR				*e*S	S	17 21 25.2	-0.5
SNVI	**San Vicente**	**2.47**	**309**	*e*P	P	17 21 07.7	+6.5
SNVI				*e*S	S	17 21 31.5	+1.0
LCBS	**La Ceiba**	**2.60**	**308**	*e*P	P	17 21 02.8	-0.3
LCBS				*e*S	S	17 21 34.0	+0.2
LFRS	**El Faro**	**2.65**	**306**	*e*P	P	17 21 03.5	-0.2
LFRS				*e*S	S	17 21 34.8	-0.1
JCR	**Jicaral**	**2.79**	**142**	*e*P	P	17 21 06.3	+0.6
PICS	**Picacho**	**2.87**	**306**	*e*P	P	17 21 06.5	+0.3
PICS				*e*S	S	17 21 40.7	+0.3
BOQS	**Boqueron**	**2.88**	**305**	⇓*e*P	P	17 21 07.3	+0.4
BOQS				*e*S	S	17 21 40.9	+0.1
CGA2	**Cerro Gallo 2**	**3.11**	**131**	*e*P	P	17 21 10.2	+0.1
CGA2				*e*S	S	17 21 46.3	0.0
SBLS	**San Blas**	**3.22**	**304**	*e*P	P	17 21 11.7	+0.2
SBLS				*e*S	S	17 21 49.8	+0.8
SNJE	**San Jose**	**3.22**	**304**	*e*P	P	17 21 11.7	+0.1
SNJE				*e*S	S	17 21 50.3	+1.3
RTR	**El Retiro**	**3.27**	**304**	*e*P	P	17 21 12.5	+0.3
RTR				*e*S	S	17 21 51.1	+0.9
TRTC	**Tortuguero**	**3.42**	**115**	⇓*e*P	P	17 21 15.8	+1.5
RBDL	**Robledal**	**3.42**	**307**	*e*P	P	17 21 13.7	-0.7
LAJ	**Bijagual**	**3.47**	**129**	⇑*e*P	P	17 21 12.6	-2.4
LCR2	**La Lucha 2**	**3.63**	**129**	*e*P	P	17 21 17.1	-0.2
LCR2				*e*S	S	17 21 59.6	+0.3
URSC	**Urasca**	**3.75**	**126**	*e*P	P	17 21 19.5	+0.3
URSC				*e*S	S	17 22 02.5	+0.4
BUS	**Buena Vista**	**3.94**	**129**	*e*P	P	17 21 22.6	+1.2
BUS				*e*S	S	17 22 06.8	0.0

*IDC **22** 17:21:59.8±2.5,18.46N×146.64E,mb3.9/6,mb1 4.0/6, mb1mx3.6/23,Error ellipse: s-maj=120.0km s-min=22.6km az=91.0*

ISC 22 17:22:05.0±2.6,18.4N±0.1×146.0E±1.0,h33km,n6, σt0s93/6,mb3.8/6,Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**39.80**	**197**	P	**P**	**17 29 36.9**	**+0.1**
	0.5nm,1.0s,mb3.2,baz=23,slow=8.3,SNR=5.6						
FITZ	**Fitzroy Crossi**	**41.44**	**210**	P	**P**	**17 29 49.8**	**-0.6**
	2.5nm,1.0s,mb3.8,slow=9.1,SNR=3.4						
ASAR	**Alice Springs**	**43.46**	**196**	P	**P**	**17 30 07.5**	**+0.5**
	0.4nm,0.7s,mb3.3,baz=17,slow=14,SNR=3.7						
BVAR	**Borovoye Array**	**66.85**	**320**	P	**P**	**17 32 56.2**	**+0.6**
	1.0nm,0.5s,mb4.1,baz=95,slow=7.3,SNR=10.0						
ARCES	**ARCESS Array B**	**82.83**	**342**	P	**P**	**17 34 27.4**	**+0.5**
	1.6nm,0.5s,mb4.3,baz=53,slow=6.1,SNR=14						
FINES	**FINESS Array B**	**87.24**	**335**	P	**P**	**17 34 47.7**	**-1.2**
	0.8nm,0.8s,mb4.0,baz=56,slow=5.0,SNR=4.9						

*NEIC **22** 17:24:33.2,9.61S×115.07E,h23km,ML3.6(DJA),After DJA.*

DJA 22 17:24:33.2±0.9,9.61S×115.07E,h23km±39km,MD5.7/3, ML3.6/3,4C-4D,Error ellipse: s-maj=30.4km s-min=10.9km az=8.0,South of Bali

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
INGI	**Ingas**	**0.79**	**5**	⇑*i*Pn	Pn	17 24 46.6	-2.3
	351nm,0.2s						
INGI				⇓*i*Sn	Sn	17 24 56.6	-3.4
RATI	**Rata**	**0.99**	**27**	⇑*i*Pn	Pn	17 24 49.1	-2.7
	227nm,0.2s						
RATI				⇓*i*Sn	Sn	17 25 01.2	-3.9
KELI	**Kelakatan**	**1.50**	**337**	⇑*i*Pn	Pn	17 24 56.7	-2.3
	58nm,0.2s						
KELI				⇓*i*Sn	Sn	17 25 13.7	-4.3
KEDI	**Kedomdong**	**1.52**	**43**	⇑*i*Pn	Pn	17 24 57.0	-2.3
	21nm,0.2s						
KEDI				⇓*i*Sn	Sn	17 25 13.9	-4.6

*IDC **22** 17:50:11.9±1.0,49.22S×116.94E,mb3.8/5,mb1 4.1/6, mb1mx4.0/11,ML2.6/1,MS3.9/8,Ms1 3.9/8,ms1mx3.8/14, Error ellipse: s-maj=42.0km s-min=24.6km az=102.0*
*NEIC **22** 17:50:14.0±0.5,49.23S×117.01E,h10km,mb4.1/2,Error ellipse: s-maj=29.3km s-min=11.6km az=103.0*

ISC 22 17:50:11.3±0.7,49.29S±0.1×117.2E±0.3,h10km,n21, σt0s81/14,mb3.7/5,MS3.8/8,2C-2D,Western Indian-Antarctic Ridge

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
NWAO	**Narrogin (SRO)**	**16.35**	**0**	Pn	**P**	**17 54 04.0**	**+1.7**
	1.1nm,0.3s,baz=190,slow=13,SNR=14						
NWAO	**Narrogin (SRO)**	**16.35**	**0**	*e*P	**P**	**17 54 02.5**	**+0.2**
	26nm,1.0s						
STKA	**Stephens Creek**	**25.24**	**56**	LR	LR	18 04 01.8	
	comp=Z,196nm,21.3s,MS3.6,baz=205,slow=33						
ASAR	**Alice Springs**	**28.75**	**33**	P	**P**	**17 56 10.7**	**-0.3**
	0.6nm,0.8s,mb3.4,baz=197,slow=9.2,SNR=4.5						
ASAR				LR	LR	18 06 41.1	
	comp=Z,188nm,18.1s,MS3.7,baz=216,slow=34						
WRA	**Warramunga Arr**	**32.34**	**31**	P	**P**	**17 56 42.3**	**-0.5**
	0.9nm,0.9s,mb3.6,baz=201,slow=11,SNR=6.0						
WRA				LR	LR	18 08 44.8	
	comp=Z,176nm,20.1s,MS3.8,baz=305,slow=34						
MAW	**Mawson**	**32.39**	**216**	LR	LR	18 08 09.0	
	comp=Z,276nm,18.3s,MS4.0,baz=157,slow=33						
VNDA	**Vanda**	**32.96**	**164**	P	**P**	**17 56 48.4**	**+0.8**
	1.7nm,1.1s,mb3.9,baz=310,slow=9.2,SNR=5.3						
VNDA				LR	LR	18 08 55.8	
	comp=Z,148nm,19.6s,MS3.7,baz=288,slow=34						
VNDA	**Vanda**	**32.96**	**164**	*e*P	**P**	**17 56 48.1**	**+0.5**
	1.5nm,1.2s,mb3.8						
VNDA				LR	LR	18 08 55.8	
CTA	**Charters Tower**	**37.25**	**49**	LR	LR	18 12 14.4	
	comp=Z,208nm,19.7s,MS3.9,baz=219,slow=35						
URZ	**Urewera**	**43.58**	**99**	LR	LR	18 13 05.1	
	comp=Z,110nm,21.0s,MS3.7,baz=215,slow=31						
SNAA	**Sanae**	**52.17**	**200**	*e*P	**P**	**17 59 22.1**	**-1.3**
VNA2	**Neumayer--Watz**	**53.73**	**200**	⇑*i*	**P**	**17 59 36.4**	**+1.4**
VNA2	**Neumayer--Watz**	**53.73**	**200**	⇑*i*	**P**	**17 59 43.5**	**+8.5**
VNA2	**Neumayer Olymp**	**53.98**	**199**	⇓*i*	**P**	**17 59 37.5**	**+0.7**
VNA3	**Neumayer Olymp**	**53.98**	**199**		**P**	**17 59 44.0**	**+7.2**
VNA1	**Neumayer--Stat**	**54.13**	**200**	⇓*i*	**P**	**17 59 31.3**	**-6.6**
CMAR	**Chiang Mai Arr**	**69.36**	**341**	P	**P**	**18 01 20.7**	**-0.5**
	0.9nm,0.9s,mb3.7,baz=191,slow=4.6,SNR=4.5						
CMAR				LR	LR	18 27 35.1	
	comp=Z,64nm,18.3s,MS3.9,baz=195,slow=32						
TSUM	**Tsumeb**	**81.73**	**250**	P	**P**	**18 02 31.4**	**0.0**
	0.6nm,0.5s,mb3.8,baz=138,slow=7.4,SNR=4.2						
ANMO	**Albuquerque**	**145.10**	**98**	*e*PKPdf	PKPdf	18 09 51.9	+0.3
PDAR	**Pinedale Array**	**147.32**	**83**	PKPbc	PKPdf	18 09 58.2	+3.3
	0.2nm,0.6s,baz=225,slow=3.8,SNR=3.7						
YKA	**Yellowknife Ar**	**149.03**	**45**	PKPbc	PKPdf	18 10 00.5	+3.4
	0.4nm,0.6s,baz=283,slow=2.1,SNR=11						

*IDC **22** 18:23:49.8±2.1,22.93N×121.74E,mb3.3/3,mb1 3.4/3, mb1mx3.2/22,MS3.0/1,Ms1 3.2/1,ms1mx2.8/12,Error ellipse: s-maj=166.0km s-min=27.9km az=65.0*
*TAP **22** 18:23:53.0,22.89N×121.22E,h19km,ML3.9*
TAP Felt III J at Taitung, I J at Chenggung.
*JMA **22** 18:23:52.3±0.4,22.64N×121.32E,h65km,M3.7*

ISC 22 18:23:52.3±0.4,22.80N±0.02×121.32E±0.02,h18km±4km, n67,σt1s13/102,mb3.1/3,MS2.9/1,18C,Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
TTN	**Taitung**	**0.17**	**254**	⇑*i*P	**Pb**	**18 23 57.3**	**+0.5**
TTN				S	**Sb**	**18 24 01.0**	**+1.1**
TWG	**Pinlang**	**0.23**	**275**	⇑*i*P	**Pb**	**18 23 57.1**	**-0.7**
TWG				S	**Sb**	**18 23 59.7**	**-1.8**
CHKT	**Chengkung**	**0.30**	**8**	⇑*i*P	**Pb**	**18 23 59.0**	**+0.1**
CHKT				S	**Sb**	**18 24 03.6**	**+0.3**
ECL	**Taimali**	**0.40**	**239**	⇑*i*P	**Pb**	**18 24 00.2**	**-0.4**
ECL				S	**Sb**	**18 24 05.5**	**-0.5**
ELDTW	**Lidau**	**0.48**	**324**	⇑*i*P	**Pb**	**18 24 00.4**	**-1.5**
TWF1	**Yuli**	**0.55**	**358**	⇑*i*P	**Pb**	**18 24 02.1**	**-1.0**
TWF1				S	**Sb**	**18 24 08.6**	**-1.9**
TAW	**Tawu**	**0.59**	**222**	*e*P	**Pb**	**18 24 03.9**	**0.0**
TAW				S	**Sb**	**18 24 12.2**	**+0.6**
EAST	**Anshuo**	**0.60**	**227**	⇑P	**Pb**	**18 24 04.1**	**+0.1**
STYT	**Tauyuan**	**0.63**	**305**	⇑*i*P	**Pb**	**18 24 03.3**	**-1.2**
STYT	

0.2nm,0.4s,mb3.1,baz=162,slow=9.1,SNR=4.0
MKAR Makanchi Array 39.42 317 P P 18 31 23.0 0.0
0.3nm,0.7s,mb3.1,baz=130,slow=9.5,SNR=4.0
WRA Warramunga Arr 44.34 162 P P 18 32 01.8 -1.7
0.4nm,1.0s,mb3.1,baz=344,slow=8.7,SNR=4.9

IGQ 22 18:29:32.3, 0.09N×78.85W, h20km±2km, mb4.1, 3C-16D, Error ellipse: s-maj=1.3km s-min=1.1km az=99.0, Colombia-Ecuador border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOR1	**San Jorge 1**	**0.23**	**112**	⇓P	Pb	18 29 40.2	+2.3
PINO	**Pino**	**0.34**	**135**	⇓P	Pb	18 29 40.3	+0.6
YANA	**Yana**	**0.35**	**126**	⇓P	Pb	18 29 40.4	+0.6
CGGP	**Crater GGP**	**0.36**	**137**	⇓P	Pb	18 29 40.5	+0.6
GGP	**Refugio Guagua**	**0.36**	**135**	⇓P	Pb	18 29 40.6	+0.5
JUAJ	**San Juan 2**	**0.39**	**140**	⇓P	Pb	18 29 40.9	+0.5
COTA	**Cotacachi**	**0.57**	**64**	⇑P	Pb	18 29 44.2	+0.8
CUPA	**Cupa**	**0.70**	**293**	⇑P	Pb	18 29 45.8	0.0
NAS1	**Nasa**	**0.81**	**152**	⇓P	Pb	18 29 48.5	+1.0
CAYR	**Refugio Cayamb**	**0.85**	**95**	⇓P	Pb	18 29 49.7	+1.5
CAYR				S	Sb	18 30 00.0	+0.8
VC1	**Cotopaxi 1**	**0.85**	**148**	⇓P	Pb	18 29 49.3	+1.0
CAYA	**Cayambe**	**0.86**	**91**	⇓P	Pb	18 29 49.7	+1.2
CAYA				S	Sb	18 30 00.0	+0.5
ANTI	**Antisana**	**0.87**	**128**	⇓P	Pb	18 29 49.5	+0.9
MARY	**Rancho Maria**	**0.89**	**156**	⇑P	Pb	18 29 50.1	+1.2
TAMB	**Tambo**	**0.91**	**148**	⇓P	Pb	18 29 50.4	+1.0
TAMB				S	Sb	18 30 04.1	+3.0
MAGD	**Magdalena**	**0.94**	**261**	P	Pb	18 29 49.1	-0.6
CONE	**Cono NE Rev Vo**	**1.22**	**97**	⇓P	Pn	18 29 56.0	+1.6
PISA	**Pisayambo**	**1.23**	**158**	P	Pn	18 29 55.7	+1.1
AZU1	**Azuela**	**1.27**	**98**	⇓P	Pn	18 29 56.8	+1.6
CUSU	**Cusua**	**1.56**	**166**	P	Pn	18 30 01.4	+2.0
IGUA	**Igualata**	**1.58**	**172**	P	Pn	18 30 01.4	+1.8
IGUA				S	Sn	18 30 24.1	+4.4
RETU	**Refugio**	**1.58**	**165**	P	Pn	18 30 01.8	+2.2
RETU				S	Sn	18 30 24.4	+4.8
ULBA	**Ulba**	**1.59**	**164**	⇓P	Pn	18 30 01.3	+1.6
ARRY	**Arrayan**	**1.63**	**166**	⇓P	Pn	18 30 02.0	+1.6
ARRY				S	Sn	18 30 23.7	+2.8
PATA	**Patacocha**	**1.63**	**165**	P	Pn	18 30 02.4	+2.0
PATA				S	Sn	18 30 25.1	+4.1

*NEIC **22** 18:39:40.1, 44.44N×7.13E, h8km, ML2.7(GEN), ML2.5(LDG), ML2.2(STR), After GEN.*
*LDG **22** 18:39:40.0±0.1, 44.49N×7.21E, h2km, Md2.5/1, Ml2.5/7, Error ellipse: s-maj=2.9km s-min=1.3km az=67.0*
*STR **22** 18:39:40.0±0.2, 44.48N×7.19E, h10km±1km, Ml2.2, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
ISC 22 18:39:39.7±0.2, 44.46N±0.01×7.16E±0.03, h11km±2km, n37, σ0s72/70, 1D, Northern Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PZZ	**Prazzo**	**0.06**	**318**	P	**Pg**	**18 39 42.4**	**+0.4**
PZZ				S	**Sg**	**18 39 43.8**	**+0.2**
DOI	**San Damiano**	**0.08**	**55**	⇓*i*Pg	**Pg**	**18 39 42.5**	**+0.3**
DOI				*e*Sg	**Sg**	**18 39 43.8**	**-0.1**
STV2	**Anna di Valdie**	**0.25**	**151**	P	**Pg**	**18 39 45.1**	**+0.1**
STV2				S	**Sg**	**18 39 48.3**	**-0.2**
STV	**Sta Anna Valdi**	**0.25**	**151**	P	**Pg**	**18 39 45.1**	**+0.1**
STV				S	**Sg**	**18 39 48.4**	**-0.2**
SURF	**Saint Ours**	**0.25**	**275**	Pg	**Pg**	**18 39 45.6**	**+0.6**
ENR	**Entracque**	**0.30**	**141**	P	**Pg**	**18 39 46.0**	**0.0**
ENR				S	**Sg**	**18 39 49.9**	**-0.3**
MBDF	**Montbardon** SNR=1.0	**0.38**	**314**	*e*Pg	**Pg**	**18 39 47.8**	**+0.2**
MBDF				*e*Sg	**Sg**	**18 39 53.8**	**+0.9**
	36nm,0.2s						
BHB	**Bricherasio**	**0.39**	**11**	P	**Pg**	**18 39 48.0**	**+0.3**
BHB				S	**Sg**	**18 39 53.5**	**+0.4**
OG22	**Abries**	**0.39**	**337**	Pg	**Pg**	**18 39 48.0**	**+0.2**
TOUF	**Mont Tournerai**	**0.45**	**172**	Pg	**Pg**	**18 39 49.1**	**+0.2**
RRL	**Cesana Torines**	**0.53**	**330**	P	**Pg**	**18 39 50.7**	**+0.2**
RRL				S	**Sg**	**18 39 58.0**	**+0.3**
ROB	**Roburent**	**0.54**	**108**	P	**Pg**	**18 39 50.7**	**+0.1**
ROB				S	**Sg**	**18 39 57.9**	**0.0**
SAOF	**Saorge**	**0.55**	**149**	Pg	**Pg**	**18 39 50.8**	**-0.1**
SAOF				Sg	**Sg**	**18 39 58.5**	**+0.1**
MVIF	**Mont Vial**	**0.56**	**180**	Pg	**Pg**	**18 39 51.4**	**+0.3**
MVIF				Sg	**Sg**	**18 39 59.6**	**+0.9**
FENE	**Fenestrelle**	**0.57**	**353**	P	**Pb**	**18 39 51.5**	**+0.2**
FENE				S	**Sg**	**18 39 59.3**	**+0.2**
MONE	**Monesi**	**0.57**	**131**	P	**Pb**	**18 39 51.2**	**0.0**
MONE				S	**Sg**	**18 39 58.6**	**-0.5**
AURF	**Auriere**	**0.58**	**168**	Pg	**Pg**	**18 39 51.6**	**+0.1**
AURF				Sg	**Sg**	**18 39 59.8**	**+0.3**
SBF	**Sospel** SNR=1.0	**0.63**	**161**	*e*Pg	**Pg**	**18 39 52.1**	**-0.3**
SBF				*e*Sg	**Sg**	**18 40 00.0**	**-0.9**
	27nm,0.2s,SNR=1.0						
RSP	**Reno Superiore**	**0.69**	**6**	P	**Pb**	**18 39 53.4**	**+0.1**
RSP				S	**Sb**	**18 40 02.5**	**-0.1**
NEGI	**Negi**	**0.73**	**147**	P	**Pb**	**18 39 53.8**	**-0.1**
NEGI				S	**Sb**	**18 40 03.1**	**-0.4**
CALN	**Calern**	**0.73**	**195**	Pg	**Pg**	**18 39 54.8**	**+0.3**
REVF	**Revere**	**0.74**	**168**	Pg	**Pg**	**18 39 55.2**	**+0.7**
REVF				Sg	**Sg**	**18 40 05.9**	**+1.5**
RORO		**0.74**	**118**	P	**Pb**	**18 39 54.2**	**+0.1**
RORO				S	**Sb**	**18 40 03.8**	**-0.1**
IMI	**Imperia**	**0.76**	**136**	P	**Pb**	**18 39 54.7**	**+0.2**
IMI				S	**Sb**	**18 40 04.3**	**-0.2**
FIN	**Finale Ligure**	**0.80**	**108**	P	**Pb**	**18 39 55.5**	**+0.4**
FIN				S	**Sb**	**18 40 05.8**	**+0.3**
FRF	**La Foret Royal** SNR=1.0	**0.97**	**202**	*e*Pg	**Pg**	**18 39 58.7**	**-0.5**
FRF				*e*Sg	**Sg**	**18 40 11.5**	**-0.7**
	16nm,0.2s,SNR=1.0						
FRF				*e*Sn	**Sn**	**18 40 14.2**	**+1.3**
	SNR=1.0						
PCP	**Pian Castagno**	**1.00**	**85**	P	**Pb**	**18 39 58.9**	**+0.4**
PCP				S	**Sb**	**18 40 11.5**	**+0.1**
LSD	**Ceresole Reale**	**1.00**	**360**	P	**Pb**	**18 39 58.9**	**+0.4**
LSD				S	**Sb**	**18 40 12.0**	**+0.6**
ORIF	**Oris-en-Rattie**	**1.02**	**297**	*e*Pg	**Pg**	**18 39 59.8**	**-0.3**
ORIF				*e*Sg	**Sg**	**18 40 13.4**	**-0.4**
	8.9nm,0.2s						
LPG	**La Plagne**	**1.08**	**345**	*e*Sg	**Sg**	**18 40 13.8**	**-1.9**
	15nm,0.2s,SNR=1.0						
LPG	**La Plagne**	**1.08**	**345**	*e*Pg	**Pg**	**18 40 00.0**	**-1.3**
LPG				*e*Sg	**Sg**	**18 40 13.8**	**-1.9**
LPL	**La Plagne**	**1.10**	**344**	*e*Pg	**Pg**	**18 40 00.0**	**-1.7**
	19nm,0.3s,SNR=1.0						
LPL	**La Plagne**	**1.10**	**344**	*e*Pg	**Pg**	**18 40 00.0**	**-1.7**
LPL				*e*Sn	**Sn**	**18 40 15.5**	**-0.6**
LMR	**La Mourre**	**1.22**	**203**	*e*Pn	**Pn**	**18 40 03.2**	**+0.5**
LMR				*e*Pg	**Pg**	**18 40 03.7**	**-0.4**
	SNR=1.0						
LMR				*e*Sg	**Sg**	**18 40 19.0**	**-1.4**
	11nm,0.2s,SNR=1.0						
SMRF	**Simiane la Rot** SNR=1.0	**1.24**	**248**	*e*Pg	**Pg**	**18 40 05.4**	**+1.0**
SMRF				*e*Sg	**Sg**	**18 40 21.0**	**0.0**
	21nm,0.5s,SNR=1.0						
VIVF	**Saint-Julien-l** SNR=1.0	**1.82**	**283**	*e*Pn	**Pn**	**18 40 13.1**	**+1.9**
VIVF				*e*Sg	**Sg**	**18 40 37.4**	**-2.9**
	2.0nm,0.3s						
PGF	**Pioggiola**	**2.33**	**144**	*e*Pn	**Pn**	**18 40 17.8**	**-0.8**
PGF				*e*Sn	**Sn**	**18 40 44.7**	**-2.8**

*NEIC **22** 18:52:03.1±0.6, 48.51N×89.22E, h10km, mb4.1/2, Error ellipse: s-maj=14.5km s-min=8.7km az=201.0*
*MOS **22** 18:52:03.7±1.5, 48.33N×88.99E, h33km, mb4.0/8, Error ellipse: s-maj=14.4km s-min=8.5km az=114.5*
*BJI **22** 18:52:04.5, 48.33N×89.08E, h10km, mb4.0, ML4.3, Ms3.9, Msz3.8*
*IDC **22** 18:52:06.0±2.1, 48.52N×89.23E, h31km±16km, mb3.6/9, mb1 3.8/13, mb1mx3.7/24, ML3.7/4, MS3.2/5, Ms1 3.2/5, ms1mx2.9/27, Error ellipse: s-maj=13.6km s-min=12.4km az=63.0*
*NNC **22** 18:52:09.8±5.7, 48.37N×88.73E, h126km±38km, mpv4.4, Error ellipse: s-maj=61.0km s-min=21.3km az=65.0*
ISC 22 18:52:01.9±0.4, 48.40N±0.03×88.80E±0.07, h10km, n63, σ1s38/83, mb4.0/14, MS3.7/5, 6C-3D, Mongolia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKAR	**Aktash**	**2.07**	**339**	*e*PN	**Pg**	**18 52 42.6**	**-0.7**
AKAR				*e*S	**Sg**	**18 53 09.7**	**-1.2**
KTNR	**Kaitanak**	**2.80**	**310**	*e*PN	**Pg**	**18 53 00.9**	**+3.1**
KTNR				*e*S	**Sg**	**18 53 34.9**	**-0.2**
ELDR	**Elanda**	**3.32**	**329**	*e*PN	**Pg**	**18 53 05.4**	**-2.8**
ELDR				*e*S	**Sg**	**18 53 47.6**	**-4.9**
ARTR	**Artybash**	**3.54**	**345**	*e*PN	**Pn**	**18 53 01.0**	**+2.9**
ARTR				*e*S	**Sb**	**18 53 53.7**	**+6.1**
UKR	**Ust'-Kan**	**3.65**	**316**	*e*PN	**Pb**	**18 53 06.0**	**-0.1**
UKR				*e*		18 53 13.5	
UKR				*e*S	**Sb**	**18 53 57.3**	**+6.6**
TASR	**Tashtagol**	**4.41**	**353**	*e*PN	**Pb**	**18 53 22.4**	**+3.3**
TASR				*e*S	**Sb**	**18 54 18.9**	**+6.2**
WMQ	**Urumqi**	**4.64**	**190**	P	**Pn**	**18 53 18.3**	**+4.5**
WMQ				SG	**Sg**	**18 54 34.0**	**-2.5**
WMQ				S	Sn		
	comp=N,319nm,1.0s						
WMQ				S	Sn		
	comp=E,398nm,1.0s						
MK31	**Makanchi Array**	**4.69**	**252**	⇑Pn	**Pn**	**18 53 19.4**	**+5.0**
	comp=E,74nm,0.8s,baz=81,slow=13,SNR=250						
MK31				Lg		18 54 39.4	
	comp=E,41nm,0.4s,baz=90,slow=23,SNR=6.4						
MKAR	**Makanchi Array**	**4.69**	**252**	Pn	**Pn**	**18 53 19.6**	**+5.1**
	comp=E,3.6nm,0.3s,baz=69,slow=15,SNR=92						
MKAR				Pg	**Pg**	**18 53 33.4**	**-2.1**
	comp=E,7.2nm,0.3s,baz=76,slow=15,SNR=28						
MKAR				Lg		18 54 36.5	
	comp=E,23nm,0.3s,baz=61,slow=35,SNR=4.1						
MKAR				LR	LR	18 55 28.5	
	comp=E,141nm,20.7s,baz=291,slow=41						
MKAR	**Makanchi Array**	**4.69**	**252**	PN	**Pn**	**18 53 19.3**	**+4.9**
MKAR						18 54 39.4	
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.2s						
MKAR				smax			
	comp=Z,62nm,0.5s						
MKAR	**Makanchi Array**	**4.69**	**252**	Pn	**Pn**	**18 53 19.6**	**+5.1**
MKAR				Pg	**Pg**	**18 53 33.4**	**-2.1**
MKAR				Lg		18 54 36.5	
MKAR				LR	LR	18 55 28.5	
ELT	**Yel'tsovka**	**5.13**	**343**	*e*PN	**Pn**	**18 53 23.1**	**+2.4**
ELT				*e*		18 53 38.2	
ELT				*e*S	Sn	18 54 44.6	+24
ZAL	**Zalesovo**	**6.09**	**337**	Pn	**Pn**	**18 53 34.6**	**+0.4**
	comp=Z,4.0nm,0.3s,baz=239,slow=9.3,SNR=24						
ZAL				Pg	**Pg**	**18 53 52.6**	**-11**
	comp=Z,3.9nm,0.3s,baz=218,slow=7.1,SNR=7.0						
ZAL				Lg		18 55 09.9	
	comp=Z,11nm,0.3s,baz=277,slow=15,SNR=7.0						
KURK	**Kurchatov**	**7.02**	**293**	⇑Pn	**Pn**	**18 53 48.9**	**+1.7**
	comp=Z,9.1nm,0.5s,baz=102,slow=8.5,SNR=174						
KURK				⇑Sn	**Sn**	**18 55 09.5**	**+1.6**
	comp=Z,9.7nm,0.5s						
KURK				⇑Lg		18 55 54.0	
	comp=Z,122nm,1.1s						
KURK	**Kurchatov**	**7.02**	**293**	*i* PN	**Pn**	**18 53 48.9**	**+1.6**
KURK				pmax	pmax		
	comp=Z,9.0nm,0.5s						
KURK	**Kurchatov**	**7.02**	**293**	*e*P	**Pn**	**18 53 48.8**	**+1.6**
KURK				*e*S	**Sn**	**18 55 08.7**	**+0.8**
NVS	**Novosibirsk**	**7.32**	**334**	*e*P	**Pn**	**18 53 55.4**	**+3.9**
TLY	**Talaya**	**10.10**	**65**	*e*P	**P**	**18 54 36.0**	**+6.1**
TLY				*e*S	**S**	**18 56 29.6**	**+5.2**
TLY				pmax	pmax		
	comp=Z,19nm,0.7s						
SONM	**Songino Array**	**11.78**	**86**	Pn	**P**	**18 54 47.9**	**-5.0**
	comp=Z,0.1nm,0.3s,baz=297,slow=17,SNR=4.4						
SONM				Pg	P	18 55 35.2	+42
	comp=Z,0.2nm,0.3s,baz=274,slow=17,SNR=4.5						
SONM				Lg		18 57 59.2	
	comp=Z,0.3nm,0.3s,baz=301,slow=32,SNR=3.5						
GTA	**Gaotai**	**11.98**	**135**	*e*P	**P**	**18 54 57.3**	**+1.6**
GTA				AP		18 55 01.6	
GTA				XP		18 55 04.8	
GTA				S	**S**	**18 57 02.8**	**-7.6**
GTA				LG2		18 58 14.5	
GTA				AMB	AMB		
	comp=Z,4.0nm,1.0s						
GTA				LR	LR		
	comp=N,273nm,8.4s						
GTA				LR	LR		
	comp=E,253nm,13.0s						
GTA				LR	LR		
	comp=Z,335nm,10.3s						
VOSK	**Vostochnaya**	**12.12**	**298**	⇓Pn	**P**	**18 54 57.1**	**-0.4**
	comp=Z,1.5nm,0.5s						
VOSK				⇑Sn	**S**	**18 57 09.6**	**-4.3**
	comp=Z,3.5nm,0.6s						
VOSK	**Vostochnaya**	**12.12**	**298**	P	**P**	**18 54 57.1**	**-0.4**
VOSK						18 57 09.5	
VOSK				pmax	pmax		
	comp=Z,1.0nm,0.5s						
VOSK				smax			
	comp=Z,2.0nm,0.6s						
VOSK				smax			
	comp=Z,58nm,1.5s						
BVA0	**Borovoye Array**	**12.54**	**299**	Pn	**P**	**18 55 02.3**	**-0.9**
	comp=Z,1.1nm,1.4s,baz=102,slow=13,SNR=27						
BVA0				Sn	**S**	**18 57 20.0**	**-4.0**
	comp=Z,0.5nm,0.5s,baz=102,slow=23,SNR=10						
BVA0	**Borovoye Array**	**12.54**	**299**	*i* P	**P**	**18 55 02.2**	**-1.0**
BVA0				*e*		18 57 19.9	
BVA0				smax			
	comp=Z,1.0nm,1.0s						
BVAR	**Borovoye Array**	**12.54**	**299**	Pn	**P**	**18 55 02.9**	**-0.3**
	comp=Z,0.9nm,0.3s,baz=106,slow=14,SNR=18						
BVAR				Sn	**S**	**18 57 19.0**	**-5.0**
	comp=Z,2.0nm,0.3s,baz=99,slow=23,SNR=8.7						
BVAR				Lg		18 58 42.2	
	comp=Z,0.1nm,0.3s,baz=90,slow=24,SNR=3.6						
BVAR				LR	LR	19 00 13.2	
	comp=Z,62nm,21.8s,baz=230,slow=38						
BRVK	**Borovoye**	**12.62**	**299**	*e*P	**P**	**18 55 03.2**	**-0.9**
ZRNK	**Zerenda**	**13.34**	**297**	⇓Pn	**P**	**18 55 13.4**	**-0.3**
	comp=Z,2.0nm,0.7s						
ZRNK				⇓Sn	**S**	**18 57 40.5**	**-2.7**
	comp=Z,8.6nm,1.2s						
ZRNK	**Zerenda**	**13.34**	**297**	P	**P**	**18 55 13.4**	**-0.4**
ZRNK						18 57 36.3	
ZRNK				pmax	pmax		
	comp=Z,1.0nm,0.7s						
ZRNK				smax			
	comp=Z,11nm,1.3s						
ZRNK				smax			
	comp=Z,32nm,1.2s						
ZRNK	**Zerenda**	**13.34**	**297**	*e*P	**P**	**18 55 13.9**	**+0.1**
ZRNK				*e*S	**S**	**18 57 37.6**	**-5.6**
KK31	**Karatay Array**	**13.81**	**254**	Pn	**P**	**18 55 19.8**	**-0.2**
	comp=Z,0.8nm,0.4s,baz=57,slow=13,SNR=28						
KK31				⇑Lg		18 59 27.5	
	comp=Z,20nm,1.2s,baz=58,slow=30						
KKAR	**Karatay Array**	**13.81**	**254**	*i* P	**P**	**18 55 19.7**	**-0.2**
BOD	**Bodaibo**	**17.73**	**48**	*e*P	**P**	**18 56 05.9**	**-4.3**
AB31	**Akbulak array**	**18.97**	**283**	Pn	**P**	**18 56 26.2**	**+0.6**
	comp=Z,0.6nm,0.4s,baz=78,slow=11,SNR=21						
AB31	**Akbulak array**	**18.97**	**283**	P	**P**	**18 56 26.1**	**+0.6**
ARU	**Arti**	**19.98**	**305**	*e*P	**P**	**18 56 38.7**	**+1.6**
ARU				pmax	pmax		
	comp=Z,4.0nm,0.8s						
ARU	**Arti**	**19.98**	**305**	*e*P	**P**	**18 56 39.9**	**+2.8**
	comp=Z,3.7nm,0.6s						
GKN	**Gorkha**	**20.62**	**191**	*e*P	**P**	**18 56 44.6**	**+0.7**
	comp=Z,97nm,0.9s						
KKN	**Kakani**	**20.76**	**189**	*e*P	**P**	**18 56 46.4**	**+1.1**
	comp=Z,17nm,0.7s						
DMN	**Daman**	**20.95**	**189**	*e*P	**P**	**18 56 47.9**	**+0.6**
	comp=Z,31nm,1.1s						
PKI	**Pulchoki**	**20.96**	**188**	*e*P	**P**	**18 56 48.3**	**+0.9**
KOLN	**Koldanda**	**20.99**	**193**	*e*P	**P**	**18 56 48.8**	**+1.1**
	comp=Z,44nm,1.0s						
GYA	**Guiyang**	**25.97**	**141**	P	**P**	**18 57 36.4**	**+0.1**
GYA				AMB	AMB		
	comp=Z,10.0nm,0.6s,mb4.5						
YAK	**Yakutsk**	**26.48**	**44**	*e*P	**P**	**18 57 46.5**	**+5.9**
YAK				pmax	pmax		
	comp=Z,5.0nm,0.8s,mb4.1						
TIXI	**Tiksi**	**29.69**	**24**	*e*P	**P**	**18 58 08.9**	**-0.7**
TIXI				*e*S	**S**	**19 03 07.1**	**+3.1**
TIXI				pmax	pmax		
	comp=Z,9.0nm,1.2s,mb4.4						
TIXI				MLR	MLR		
	comp=Z,1μm,12.0s,MS4.7						

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**30.98**	**161**	P	**P**	**18 58 20.9**	**-0.7**
	comp=Z,0.8nm,0.8s,mb3.6,baz=342,slow=11,SNR=4.9						
CMAR	**Chiang Mai Arr**	**30.98**	**161**	P	**P**	**18 58 20.9**	**-0.6**
CMAR				pmax	pmax		
	comp=Z,1.0nm,0.9s						
SOC	**Sochi**	**33.97**	**281**	*e*P	**P**	**18 58 47.2**	**-0.1**
SOC				*e*S	**S**	**19 04 16.2**	**+5.0**
SOC				pmax	pmax		
	comp=Z,9.0nm,0.8s,mb4.8						
SOC				pmax	pmax		
	comp=N,10.0nm,1.5s						
SOC				pmax	pmax		
	comp=E,20nm,1.0s						
SOC				MLR	MLR		
	comp=Z,360nm,38.0s,MS3.8						
SOC				MLR	MLR		
	comp=N,100nm,22.0s						
SOC				MLR	MLR		
	comp=E,50nm,16.0s						
FINES	**FINESS Array B**	**36.81**	**315**	P	**P**	**18 59 11.8**	**+0.5**
	comp=E,1.9nm,1.0s,mb3.9,baz=72,slow=6.0,SNR=6.3						
FINES				LR	LR	19 15 29.7	
	comp=E,55nm,19.1s,MS3.4,baz=196,slow=38						
FINES	**FINESS Array B**	**36.81**	**315**	P	**P**	**18 59 11.8**	**+0.5**
FINES				pmax	pmax		
	comp=Z,2.0nm,1.0s						
FINES				MLR	MLR		
	comp=Z,55nm,19.1s						
AKASG	**Malin Array Be**	**37.81**	**297**	P	**P**	**18 59 20.6**	**+0.7**
	comp=Z,0.4nm,0.4s,mb3.5,baz=62,slow=8.1,SNR=2.9						
BRTR	**Keskin Array B**	**39.81**	**279**	P	**P**	**18 59 38.5**	**+1.8**
	comp=Z,0.9nm,1.0s,mb3.5,baz=63,slow=6.4,SNR=3.3						
NOA	**NORSAR Array B**	**43.86**	**317**	P	**P**	**19 00 09.7**	**+0.3**
	comp=Z,1.6nm,1.0s,mb3.7,baz=129,slow=19,SNR=2.4						
NOA				LR	LR	19 19 10.7	
	comp=Z,27nm,18.2s,MS3.2,baz=325,slow=37						
NOA	**NORSAR Array B**	**43.86**	**317**	P	**P**	**19 00 09.7**	**+0.3**
NOA				pmax	pmax		
	comp=Z,2.0nm,1.0s						
NOA				MLR	MLR		
	comp=Z,27nm,18.2s						
ILAR	**Eielson Array**	**59.16**	**24**	P	**P**	**19 02 02.2**	**-2.4**
	comp=Z,0.5nm,0.8s,mb3.6,baz=325,slow=5.0,SNR=6.3						
ILAR	**Eielson Array**	**59.16**	**24**	P	**P**	**19 02 02.2**	**-2.4**
ILAR				pmax	pmax		
	comp=Z,1.0nm,0.8s						
INK	**Inuvik**	**59.41**	**17**	*e*P	**P**	**19 02 03.1**	**-3.1**
	comp=Z,2.3nm,0.8s,mb4.3						
ESDC	**Sonseca Array**	**63.30**	**300**	LR	LR	19 30 07.1	
	comp=Z,28nm,18.6s,MS3.5,baz=270,slow=36						
YKA	**Yellowknife Ar**	**67.89**	**11**	P	**P**	**19 02 59.8**	**-2.2**
	comp=Z,1.5nm,0.9s,mb4.0,baz=340,slow=6.6,SNR=16						
YKA	**Yellowknife Ar**	**67.89**	**11**	P	**P**	**19 02 59.8**	**-2.2**
YKA				pmax	pmax		
	comp=Z,2.0nm,0.9s						
YKA	**Yellowknife Ar**	**67.89**	**11**	P	**P**	**19 02 59.8**	**-2.2**
WRA	**Warramunga Arr**	**79.26**	**137**	P	**P**	**19 04 07.2**	**-1.8**
	comp=Z,0.7nm,0.7s,mb3.7,baz=342,slow=5.9,SNR=6.0						
WRA	**Warramunga Arr**	**79.26**	**137**	P	**P**	**19 04 07.2**	**-1.7**
WRA				pmax	pmax		
	comp=Z,1.0nm,0.7s						
ASAR	**Alice Springs**	**82.32**	**139**	P	**P**	**19 04 23.7**	**-1.3**
	comp=Z,0.8nm,0.6s,mb3.8,baz=338,slow=5.4,SNR=10.0						

*NEIC **22** 19:05:27.9, 34.96N×33.11E, h46km, After NIC.*
*NIC **22** 19:05:27.9±0.2, 34.96N×33.11E, h46km, ML3.3, MW3.0*
*GII **22** 19:05:31.0±0.6, 34.74N×33.18E, h25km±30km, ML2.0/7*
ISC 22 19:05:27.7±0.8, 34.80N±0.05×33.05E±0.06, h51km±8km, n26, σ0s87/39, 3C-8D, Cyprus region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SZAC	**Souni-Zanaja**	**0.15**	**252**	⇓P	**P**	**19 05 36.5**	**+0.8**
SZAC				S	**S**	**19 05 43.3**	**+1.8**
SZAC	**Souni-Zanaja**	**0.15**	**252**	⇓*i*P	**P**	**19 05 36.5**	**+0.8**
SZAC				S	**S**	**19 05 43.3**	**+1.8**
CSS	**Prodhromos** 31nm,0.2s	**0.28**	**55**	⇓P	**P**	**19 05 35.8**	**-0.9**
CSS				S	**S**	**19 05 41.5**	**-1.7**
CSS	**Prodhromos**	**0.28**	**55**	⇓*i*P	**P**	**19 05 35.8**	**-0.9**
CSS				S	**S**	**19 05 41.5**	**-1.7**
MAMC	**Mammari**	**0.39**	**20**	⇑P	**P**	**19 05 36.6**	**-1.2**
MAMC	**Mammari**	**0.39**	**20**	⇑*i*P	**P**	**19 05 36.6**	**-1.2**
ALFC	**Alevga** 48nm,0.2s	**0.51**	**314**	⇓P	**P**	**19 05 38.5**	**-0.6**
ALFC				S	**S**	**19 05 46.3**	**-1.1**
ALFC	**Alevga**	**0.51**	**314**	⇓*e*P	**P**	**19 05 38.5**	**-0.6**
ALFC				S	**S**	**19 05 46.3**	**-1.1**
PPCY	**Paphos**	**0.59**	**278**	⇓P	**P**	**19 05 40.6**	**+0.6**
PPCY	**Paphos**	**0.59**	**278**	⇓*i*P	**P**	**19 05 40.6**	**+0.6**
AKMC	**Akamas**	**0.63**	**291**	P	**P**	**19 05 40.6**	**0.0**
PHNC	**Paralimni**	**0.83**	**76**	⇑P	**P**	**19 05 43.7**	**+0.5**
PHNC				S	**S**	**19 05 56.9**	**+2.1**
HNTI	**Hanita**	**2.46**	**134**	Pn	**P**	**19 06 06.7**	**+0.5**
HNTI				Sn	**S**	**19 06 34.6**	**-0.6**
HAF	**Haifa**	**2.60**	**140**	Pn	**P**	**19 06 08.3**	**0.0**
KSDI	**Kefar Szold**	**2.70**	**126**	Pn	**P**	**19 06 09.5**	**-0.1**
HRI	**Mount Hermon**	**2.70**	**124**	Pn	**P**	**19 06 09.6**	**-0.

Msz4.4

MOS ***22*** *19:54:06.8±1.0,29.83N×68.50E,h33km,mb4.6/17,Error ellipse: s-maj=14.6km s-min=7.5km az=95.3*

ISC 22 19:54:03.6±0.9,**29.69N**±0.004×**68.51E**±0.03,**h18**km±7km, **n120,**σ1°**42**/141,**mb4.3**/35,**MS3.8**/12,**3C-4D,Pakistan**

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
QUE	**Quetta**	**1.44**	**291**	*eP*	**Pn**		**19 54 27.5**	**-1.6**
QUE				*eS*	**Sb**		**19 54 49.0**	**+1.4**
DRP	**Derazinda**	**2.52**	**35**	P	**Pn**		**19 54 49.1**	**+4.6**
SBDP	**Sheikh Budin**	**3.27**	**37**	⇓P	**Pn**		**19 54 59.7**	**+4.5**
JASL	**Jaisalmer**	**3.47**	**142**	*eP*	**Pn**		**19 54 59.8**	**+1.8**
THW	**Thamme Wali**	**4.16**	**41**	⇓P	**Pn**		**19 55 10.5**	**+2.7**
SARP	**Sargodha**	**4.22**	**57**	P	**Pn**		**19 55 11.0**	**+2.3**
CEP	**Cherat**	**5.04**	**34**	P	**Pn**		**19 55 23.2**	**+2.9**
CEP				S	**Sn**		**19 56 23.0**	**+4.2**
CHCP	**Chirah Chowk**	**5.67**	**44**	P	**Pn**		**19 55 31.3**	**+2.2**
AJM	**Ajmer**	**6.29**	**119**	⇑*iP*	**Pn**		**19 55 38.0**	**0.0**
AJM				*i* S	**Sn**		**19 56 47.0**	**-3.1**
KHET	**Khetri**	**6.60**	**102**	*eP*	**Pn**		**19 55 43.5**	**+1.2**
KHET				*eS*	**Sn**		**19 56 56.9**	**-0.9**
RTK	**Rohtak**	**6.93**	**93**	*eP*	**Pn**		**19 55 47.3**	**+0.3**
RTK				*eS*	**Sn**		**19 57 04.2**	**-1.9**
RTK				*e*			19 58 17.8	
	comp=Z,404nm,0.8s							
KUDL	**Kundal**	**7.16**	**100**	*eP*	**Pn**		**19 55 50.4**	**+0.2**
KUDL				*eS*	**Sn**		**19 57 09.1**	**-2.8**
KKR	**Kurukshetra**	**7.23**	**86**	*eP*	**Pn**		**19 55 50.3**	**-0.8**
AYAN	**Aya Nagar**	**7.64**	**97**	*eP*	**Pn**		**19 55 57.1**	**+0.3**
AYAN				*eS*	**Sn**		**19 57 20.5**	**-3.3**
AYAN				*e*			19 58 50.2	
	comp=Z,126nm,1.1s							
SONA	**Sohna**	**7.65**	**99**	*eP*	**Pn**		**19 55 57.0**	**0.0**
SONA				*eS*	**Sn**		**19 57 19.7**	**-4.4**
SONA				*e*			19 58 30.0	
	comp=N,130nm,0.8s							
SONA				*e*			19 58 30.1	
	comp=E,149nm,0.8s							
NDI	**New Delhi**	**7.68**	**95**	*eP*	**Pn**		**19 55 58.5**	**+1.1**
NDI				*eS*	**Sn**		**19 57 20.0**	**-4.8**
ASOR	**Ausora**	**8.15**	**94**	*eP*	**P**		**19 56 05.6**	**+1.6**
AGRA	**Agra**	**8.66**	**104**	*eP*	**P**		**19 56 09.8**	**-1.3**
AGRA				*eS*	**Sn**		**19 57 44.7**	**-4.5**
AGRA				*e*			19 59 18.3	
	comp=E,440nm,0.7s							
AGRA				*e*			19 59 18.6	
	comp=N,494nm,0.9s							
KALG	**Kalgarh**	**8.92**	**89**	*eP*	**P**		**19 56 14.5**	**-0.2**
KALG				*eS*	**Sn**		**19 57 49.0**	**-6.8**
PTH	**Pithoragarh**	**10.19**	**88**	*eP*	**P**		**19 56 32.0**	**-0.3**
PTH				*e*			19 58 35.0	
BHPL	**Bhopal**	**10.24**	**127**	*eP*	**P**		**19 56 31.2**	**-1.8**
BHPL				*eS*	**S**		**19 58 21.7**	**-6.7**
AKL	**Akola**	**11.80**	**137**	*e*	**P**		**19 56 43.9**	**-10**
AKL				*e*			19 58 36.1	
POO	**Poona**	**12.13**	**155**	*e*	**P**		**19 56 53.0**	**-5.6**
POO				*i*			19 59 22.0	
AML	**Almayashu**	**13.11**	**17**	P	**P**		**19 57 10.5**	**-1.1**
	SNR=71							
KOLN	**Koldanda**	**13.38**	**95**	*eP*	**P**		**19 57 14.5**	**-0.8**
	comp=N,119nm,1.2s							
DANN	**Dangsing**	**13.41**	**92**	*eP*	**P**		**19 57 15.0**	**-0.7**
UCH	**Uchtor**	**13.42**	**20**	P	**P**		**19 57 15.1**	**-0.6**
	SNR=18							
KKAR	**Karatay Array**	**13.49**	**6**	*i* P	**P**		**19 57 14.6**	**-2.0**
KKAR				*i* S	**S**		**19 59 40.2**	**-6.8**
KKAR				pmax	pmax			
	comp=Z,4.0nm,0.3s							
KKAR				smax				
	comp=Z,4.0nm,0.5s							
KZA	**Kyzart**	**13.51**	**22**	P	**P**		**19 57 15.5**	**-1.5**
	SNR=9.9							
EKS2	**Erkin-Say**	**13.62**	**17**	P	**P**		**19 57 17.9**	**-0.6**
	SNR=32							
AAK	**Ala-Archa**	**13.79**	**19**	P	**P**		**19 57 19.9**	**-0.7**
	SNR=23							
KBK	**Karagaybulak**	**13.94**	**20**	P	**P**		**19 57 22.4**	**-0.3**
	SNR=11							
FRU	**Bishkek**	**14.01**	**19**	*eP*	**P**		**19 57 24.0**	**+0.5**
FRU				*e*			19 59 59.0	
FRU				pmax	pmax			
	comp=Z,60nm,1.8s							
CHMS	**Chumysh**	**14.20**	**19**	P	**P**		**19 57 24.9**	**-1.1**
	SNR=20							
GKN	**Gorkha**	**14.24**	**93**	*eP*	**P**		**19 57 24.1**	**-2.5**
USP	**Ospenovka**	**14.38**	**18**	P	**P**		**19 57 27.2**	**-1.2**
	SNR=12							
TKM2	**Tokmak 2**	**14.38**	**21**	P	**P**		**19 57 27.2**	**-1.1**
	SNR=46							
DMN	**Daman**	**14.72**	**94**	*eP*	**P**		**19 57 30.3**	**-2.6**
	comp=Z,59nm,0.8s							
KKN	**Kakani**	**14.84**	**93**	*eP*	**P**		**19 57 31.6**	**-2.8**
	comp=Z,33nm,0.6s							
PKI	**Pulchoki**	**14.99**	**94**	*eP*	**P**		**19 57 33.4**	**-3.1**
	comp=Z,62nm,0.9s							
HYB	**Hyderabad**	**15.28**	**141**	*i* P	**P**		**19 57 37.0**	**-3.3**
HYB				*eS*	**S**		**20 00 34.0**	**+4.2**
HYB	**Hyderabad**	**15.28**	**141**	*eP*	**P**		**19 57 37.0**	**-3.3**
HYB				*eS*	**S**		**20 00 34.0**	**+4.2**
CUD	**Cuddapah**	**17.86**	**146**	*eP*	**P**		**19 58 12.9**	**0.0**
CUD				*eS*	**S**		**20 01 41.6**	**+13**
LSA	**Lhasa**	**19.67**	**84**	P	**P**		**19 58 37.6**	**+3.0**
LSA				AP			19 58 45.1	
LSA				XP			19 58 49.0	
LSA				S	**S**		**20 02 12.1**	**+2.3**
LSA				SCS	ScS		20 10 08.9	+0.9
LSA				LR	LR			
	comp=N,330nm,14.0s							
LSA				LR	LR			
	comp=E,290nm,12.2s							
LSA				LR	LR			
	comp=Z,380nm,12.2s							
LSA	**Lhasa**	**19.67**	**84**	*eP*	**P**		**19 58 36.1**	**+1.5**
	comp=Z,6.2nm,0.7s							
MKAR	**Makanchi Array**	**20.17**	**28**	P	**P**		**19 58 39.4**	**-0.5**
	comp=Z,6.2nm,0.5s,baz=212,slow=10.0,SNR=60							
MKAR				LR	LR		20 07 55.7	
	comp=Z,176nm,18.6s,MS3.4,baz=42,slow=41							
MKAR	**Makanchi Array**	**20.17**	**28**	*i* P	**P**		**19 58 39.3**	**-0.6**
MKAR				pmax	pmax			
	comp=Z,10.0nm,0.6s							
AB31	**Akbulak array**	**20.61**	**344**	*i* P	**P**		**19 58 43.6**	**-0.8**
AB31				pmax	pmax			
	comp=Z,1.0nm,0.4s							
WMQ	**Urumqi**	**20.80**	**42**	P	**P**		**19 58 48.8**	**+2.4**
SHL	**Shillong**	**21.10**	**96**	*eP*	**P**		**19 58 52.2**	**+2.5**
SHL				*e*			20 02 37.2	
GNI	**Garni**	**22.05**	**305**	LR	LR		20 07 43.1	
	comp=Z,135nm,18.3s,MS3.4,baz=163,slow=38							
KURK	**Kurchatov**	**22.34**	**17**	*eP*	**P**		**19 59 01.7**	**-0.2**
VOSK	**Vostochnaya**	**23.09**	**4**	P	**P**		**19 59 09.4**	**+0.2**
VOSK				pmax	pmax			
	comp=Z,13nm,0.8s,mb4.4							
ZRNK	**Zerenda**	**23.25**	**1**	*eP*	**P**		**19 59 11.8**	**+1.0**
BVA0	**Borovoye Array**	**23.36**	**3**	*i* P	**P**		**19 59 13.0**	**+1.2**
BVAR	**Borovoye Array**	**23.36**	**3**	P	**P**		**19 59 12.9**	**+1.0**
	comp=Z,10nm,0.6s,mb4.5,baz=176,slow=8.4,SNR=86							
BVAR				LR	LR		20 10 04.2	
	comp=Z,425nm,18.4s,MS3.9,baz=105,slow=41							
BRVK	**Borovoye**	**23.39**	**3**	*eP*	**P**		**19 59 12.8**	**+0.7**
ZEI	**Tsey**	**23.66**	**310**	*eP*	**P**		**19 59 15.0**	**+0.1**
ZEI				*eS*	**S**		**20 03 22.0**	**-3.2**
ZEI				*e*			20 03 40.0	
ZEI				pmax	pmax			
	comp=Z,50nm,3.0s							
KIV	**Kislovodsk**	**24.97**	**312**	*eP*	**P**		**19 59 29.5**	**+1.9**
KIV				pmax	pmax			
	comp=Z,11nm,0.8s,mb4.4							
KIV				MLR	MLR			
	comp=Z,100nm,17.0s,MS3.4							
KIV	**Kislovodsk**	**24.97**	**312**	*eP*	**P**		**19 59 28.5**	**+0.9**
	comp=Z,7.1nm,0.7s,mb4.3							
GOF	**Gofitskoye**	**25.26**	**314**	*eP*	**P**		**19 59 24.0**	**-6.3**
SOC	**Sochi**	**26.79**	**309**	*eP*	**P**		**19 59 44.7**	**+0.2**
SOC				*e*			20 00 40.9	
SOC				*eS*	**S**		**20 04 12.0**	**-5.8**
SOC				*e*SSS	SSS		20 05 46.2	-2.1
SOC				pmax	pmax			
	comp=Z,8.0nm,0.9s,mb4.2							
SOC				pmax	pmax			
	comp=N,3.0nm,0.5s							
SOC				pmax	pmax			
	comp=E,3.0nm,0.3s							
SOC					MLR	MLR		
	comp=N,160nm,14.0s,MS3.9							
SOC					MLR	MLR		
	comp=Z,170nm,14.0s,MS3.8							
SOC					MLR	MLR		
	comp=E,130nm,13.0s,MS3.9							
NVS	**Novosibirsk**	**27.28**	**19**	*eP*	**P**		**19 59 47.6**	**-1.2**
NVS				pmax	pmax			
	comp=N,3.0nm,0.6s							
NVS				pmax	pmax			
	comp=E,2.0nm,0.6s							
NVS				pmax	pmax			
	comp=Z,4.0nm,0.6s,mb4.1							
ARU	**Arti**	**27.64**	**348**	*eP*	**P**		**19 59 50.9**	**-1.2**
ARU				pmax	pmax			
	comp=Z,22nm,2.3s,mb4.4							
ARU	**Arti**	**27.64**	**348**	*eP*	**P**		**19 59 52.0**	**0.0**
	comp=Z,3.6nm,0.6s,mb4.2							
CMAR	**Chiang Mai Arr**	**29.86**	**105**	P	**P**		**20 00 13.8**	**+1.3**
	comp=Z,0.9nm,0.6s,mb3.7,baz=284,slow=10,SNR=10							
CMAR	**Chiang Mai Arr**	**29.86**	**105**	P	**P**		**20 00 13.8**	**+1.3**
CMAR				pmax	pmax			
	comp=Z,1.0nm,0.6s							
BRTR	**Keskin Array B**	**30.20**	**299**	P	**P**		**20 00 13.8**	**-1.4**
	comp=Z,0.4nm,0.7s,mb3.3,baz=114,slow=9.1,SNR=3.3							
KMI	**Kunming**	**30.66**	**90**	*eP*	**P**		**20 00 22.1**	**+2.7**
KMI				AMB	AMB			
	comp=Z,17nm,1.0s,mb4.8							
KMI				LR	LR			
	comp=N,287nm,15.0s,MS4.1							
KMI				LR	LR			
	comp=E,187nm,16.0s,MS4.1							
ZAK	**Zakamensk**	**33.27**	**42**	*eP*	**P**		**20 00 43.9**	**+1.9**
GYA	**Guiyang**	**33.72**	**86**	⇓*iP*	**P**		**20 00 48.6**	**+2.4**
GYA				AMB	AMB			
	comp=Z,20nm,1.0s,mb5.0							
MOS	**Moscow**	**34.03**	**329**	*eP*	**P**		**20 00 49.6**	**+1.0**
TLY	**Talaya**	**34.04**	**40**	*eP*	**P**		**20 00 49.1**	**+0.4**
TLY				*e*			20 03 23.0	
TLY				*eS*	**S**		**20 06 07.9**	**-4.3**
TLY				pmax	pmax			
	comp=Z,43nm,1.4s,mb5.2							
TLY				MLR	MLR			
	comp=Z,900nm,16.0s,MS4.6							
OBN	**Obninsk**	**34.15**	**327**	*deP*	**P**		**20 00 49.2**	**-0.4**
OBN				*eS*	**S**		**20 06 18.6**	**+4.7**
OBN				pmax	pmax			
	comp=Z,26nm,1.7s,mb4.9							
OBN				MLR	MLR			
	comp=Z,100nm,16.0s,MS3.6							
OBN	**Obninsk**	**34.15**	**327**	*eP*	**P**		**20 00 47.2**	**-2.5**
	comp=Z,7.9nm,0.6s,mb4.8							
SONM	**Songino Array**	**34.23**	**47**	P	**P**		**20 00 53.0**	**+2.6**
	comp=Z,3.2nm,0.7s,mb4.4,baz=255,slow=8.7,SNR=22							
ULN	**Ulaanbaatar**	**34.66**	**48**	*eP*	**P**		**20 00 56.6**	**+2.6**
ULN	**Ulaanbaatar**	**34.66**	**48**	*eP*	**P**		**20 00 56.1**	**+2.1**
	comp=Z,4.8nm,0.9s,mb4.4							
ENH	**Enshi**	**35.37**	**79**	*eP*	**P**		**20 01 02.3**	**+2.0**
	comp=Z,8.9nm,0.8s,mb4.8							
AKASG	**Malin Array Be**	**36.04**	**317**	P	**P**		**20 01 04.7**	**-1.2**
	comp=Z,2.1nm,0.7s,mb4.2,baz=111,slow=6.6,SNR=14							
WHN	**Wuhan**	**39.45**	**77**	P	**P**		**20 01 37.5**	**+2.9**
BJI	**Beijing**	**40.04**	**62**	*eP*	**P**		**20 01 37.1**	**-2.2**
BJI				AMB	AMB			
	comp=Z,3.0nm,0.7s,mb4.1							
BJI				LR	LR			
	comp=N,240nm,17.5s							
JOF	**Joensuu**	**40.94**	**335**	*ep*	**P**		**20 01 44.6**	**-1.9**
PSZ	**Piszkesteto**	**41.27**	**310**	*eP*	**P**		**20 01 49.4**	**0.0**
	comp=N,4.4nm,0.6s,mb4.3							
FINES	**FINESS Array B**	**42.21**	**331**	P	**P**		**20 01 56.3**	**-0.5**
	comp=N,2.1nm,0.7s,mb3.9,baz=121,slow=10,SNR=17							
FINES				LR	LR		20 22 58.4	
	comp=N,212nm,18.1s,MS4.1,baz=152,slow=41							
FINES	**FINESS Array B**	**42.21**	**331**	P	**P**		**20 01 56.3**	**-0.5**
FINES				pmax	pmax			
	comp=Z,2.0nm,0.7s							
FINES				MLR	MLR			
	comp=Z,212nm,18.1s							
KAF	**Kangasniemi**	**42.44**	**332**	*ep*	**P**		**20 01 58.0**	**-0.8**
	comp=Z,3.3nm,0.5s,mb4.2,baz=119,slow=8.0							
KAF	**Kangasniemi**	**42.44**	**332**	*eP*	**P**		**20 01 58.0**	**-0.8**
KAF				pmax	pmax			
	comp=Z,3.0nm,0.5s,mb4.2							
KMBO	**Kilima Mbogo**	**42.77**	**230**	LR	LR		20 20 28.1	
	comp=Z,64nm,21.1s,MS3.5,baz=94,slow=37							
NJ2	**Nanjing**	**42.96**	**74**	*eP*	**P**		**20 02 05.0**	**+1.5**
NJ2				S	**S**		**20 08 26.0**	**-1.5**
NJ2				SS	SS		20 11 32.0	-1.2
NJ2				LR	LR			
	comp=N,290nm,10.4s,MS4.6							
NJ2				LR	LR			
	comp=E,310nm,13.4s,MS4.6							
NJ2				LR	LR			
	comp=Z,330nm,13.5s,MS4.4							
SSE	**Sheshan**	**45.10**	**74**	P	**P**		**20 02 24.0**	**+3.2**
SSE				S	**S**		**20 08 58.1**	**-0.4**
GERES	**GERESS Array B**	**45.48**	**311**	P	**P**		**20 02 23.0**	**-0.4**
	comp=Z,0.8nm,0.6s,mb3.7,baz=101,slow=6.8,SNR=11							
GERES	**GERESS Array B**	**45.48**	**311**	P	**P**		**20 02 23.0**	**-0.5**
GERES				pmax	pmax			
	comp=Z,1.0nm,0.6s							
BRG	**Berggiesshubel**	**45.50**	**314**	*eP*	**P**		**20 02 24.1**	**+0.5**
BRG				pmax	pmax			
	comp=Z,5.0nm,1.0s,mb4.4							
BRG	**Berggiesshubel**	**45.50**	**314**	P	**P**		**20 02 24.1**	**+0.5**
	comp=Z,5.0nm,1.0s,mb4.4							
ARCES	**ARCESS Array B**	**46.76**	**341**	P	**P**		**20 02 33.3**	**0.0**
	comp=Z,3.7nm,0.6s,mb4.5,baz=134,slow=7.6,SNR=30							
ARCES				LR	LR		20 22 59.4	
	comp=Z,80nm,18.0s,MS3.7,baz=15,slow=37							
ARCES	**ARCESS Array B**	**46.76**	**341**	P	**P**		**20 02 33.3**	**0.0**
ARCES				pmax	pmax			
	comp=Z,4.0nm,0.6s							
ARCES				MLR	MLR			
	comp=Z,80nm,18.0s							
NB2	**NORSAR Subarra**	**48.76**	**327**	P	**P**		**20 02 47.0**	**-2.0**
	comp=Z,3.2nm,0.8s,mb4.4,baz=106,slow=7.4							
NOA	**NORSAR Array B**	**48.76**	**327**	P	**P**		**20 02 47.2**	**-1.9**
	comp=Z,1.8nm,0.6s,mb4.3,baz=107,slow=7.6,SNR=12							
NOA	**NORSAR Array B**	**48.76**	**327**	P	**P**		**20 02 47.2**	**-1.8**
NOA				pmax	pmax			
	comp=Z,2.0nm,0.6s							
NOA	**NORSAR Array B**	**48.76**	**327**	P	**P**		**20 02 47.2**	**-1.9**
YAK	**Yakutsk**	**50.78**	**32**	*eP*	**P**		**20 03 04.7**	**+0.2**
YAK				pmax	pmax			
	comp=Z,6.0nm,0.8s,mb4.6							
YAK	**Yakutsk**	**50.78**	**32**	*eP*	**P**		**20 03 04.8**	**+0.3**
	comp=Z,7.6nm,0.7s,mb4.7							
JNU	**Nakatsue**	**52.65**	**69**	P	**P**		**20 03 20.1**	**+0.9**
	comp=Z,6.2nm,1.0s,mb4.5,baz=270,slow=4.0,SNR=2.5							
TIXI	**Tiksi**	**52.87**	**20**	*eP*	**P**		**20 03 20.3**	**+0.1**
TIXI				pmax	pmax			
	comp=Z,4.0nm,1.1s,mb4.3							
TIXI	**Tiksi**	**52.87**	**20**	*eP*	**P**		**20 03 19.9**	**-0.3**
	comp=Z,4.2nm,0.6s,mb4.5							
YSS	**Yuzh-Sakhalins**	**58.61**	**51**	P	**P**		**20 04 00.0**	**-1.9**
ESDC	**Sonseca Array**	**58.96**	**301**	P	**P**		**20 04 02.8**	**-1.7**
	comp=Z,1.0nm,0.6s,mb4.0,baz=67,slow=7.2,SNR=7.2							
DAG	**Danmarks Havn**	**60.70**	**345**	⇑*iP*	**P**		**20 04 15.7**	**-0.1**
	comp=Z,3.3nm,0.6s,mb4.6							
DAG	**Danmarks Havn**	**60.70**	**345**	⇑*iP*	**P**		**20 04 15.7**	**-0.1**
DAG				pmax	pmax			
	comp=Z,3.0nm,0.6s,mb4.6							
BILL	**Bilibino**	**65.65**	**24**	*eP*	**P**		**20 04 49.0**	**+0.5**
BILL				pmax	pmax			
	comp=Z,8.0nm,2.1s,mb4.4							
WRA	**Warramunga Arr**	**80.32**	**119**	P	**P**		**20 06 16.6**	**+1.0**
	comp=Z,2.8nm,0.8s,mb4.3,baz=319,slow=5.1,SNR=21							
WRA	**Warramunga Arr**	**80.32**	**119**	P	**P**		**20 06 16.6**	**+1.0**
WRA				pmax	pmax			
	comp=Z,3.0nm,0.8s							
INK	**Inuvik**	**80.94**	**8**	*eP*	**P**		**20 06 19.2**	**+1.3**
	comp=Z,6.1nm,0.8s,mb4.6							
ILAR	**Eielson Array**	**81.89**	**15**	P	**P**		**20 06 23.1**	**+0.2**
	comp=Z,0.8nm,0.7s,mb3.8,baz=322,slow=4.3,SNR=12							
ILAR	**Eielson Array**	**81.89**	**15**	P	**P**		**20 06 23.1**	**+0.2**
ILAR				pmax	pmax			
	comp=Z,1.0nm,0.7s							
ASAR	**Alice Springs**	**82.21**	**123**	P	**P**		**20 06 26.4**	**+1.1**
	comp=Z,3.0nm,0.6s,mb4.4,baz=306,slow=5.2,SNR=57							
SML	**Sawmill**	**84.09**	**17**	*eP*	**P**		**20 06 33.0**	**-1.2**
YKA	**Yellowknife Ar**	**88.11**	**1**	P	**P**		**20 06 55.1**	**+1.2**
	comp=Z,0.9nm,0.5s,mb4.2,baz=350,slow=5.0,SNR=31							
YKA	**Yellowknife Ar**	**88.11**	**1**	P	**P**		**20 06 55.1**	**+1.2**
YKA				pmax	pmax			
	comp=Z,1.0nm,0.5s							

IDC ***22*** *20:01:00.0±1.4, 18.08S×172.99W,mb4.3/5,mb1 4.5/6, mb1mx4.1/19,ML4.3/1,MS3.3/2,Ms1 3.3/2,ms1mx3.2/19, Error ellipse: s-maj=51.8km s-min=27.2km az=140.0*

NEIC ***22*** *20:01:01.0±0.6, 18.16S×172.95W,h10km,mb4.6/4,Error ellipse: s-maj=18.6km s-min=15.7km az=174.0*

ISC 22 20:00:59.5±1.0,**18.1S**±0.2×**173.0W**±0.1,**h10**km,**n19, σ0°81**/17,**mb4.5/8,MS3.5**/1,**2C-1D,Tonga Islands**

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**12.86**	**106**	Pn	**P**		**20 03 48.0**	**-17**
	1.6nm,0.3s,baz=333,slow=18,SNR=3.1							
RAR				LR	LR		20 07 50.3	
	comp=Z,93nm,19.7s,baz=86,slow=32							
RAR	**Rarotonga**	**12.86**	**106**	Pn	**P**		**20 03 48.0**	**-17**
RAR				LR	LR		20 07 50.3	
URZ	**Urewera**	**21.87**	**201**	P	**P**		**20 05 54.9**	**+0.6**
	4.3nm,0.5s,mb4.2,baz=21,slow=15,SNR=4.8							
RPZ	**Rata Peaks**	**28.86**	**204**	P	**P**		**20 07 05.8**	**+5.5**
	12nm,0.8s,mb4.7,baz=68,slow=19,SNR=8.3							
CTA	**Charters Tower**	**38.47**	**260**	*eP*	**P**		**20 08 24.3**	**+0.7**
	5.7nm,0.5s,mb4.6							
CTA	**Charters Tower**	**38.47**	**260**	P	**P**		**20 08 24.5**	**+0.9**
	baz=92,slow=12							
CTA				LR	LR		20 22 27.7	
	comp=Z,64nm,19.1s,MS3.5,baz=273,slow=33							
CTAO	**Charters Tower**	**38.47**	**260**	*eP*	**P**		**20 08 24.0**	**+0.3**
	6.0nm,0.5s,mb4.6							
WB2	**Warramunga Arr**	**49.62**	**259**	*eP*	**P**		**20 09 53.1**	**-0.3**
WRAB	**Tennant Creek**	**49.63**	**259**	*eP*	**P**		**20 09 53.0**	**-0.4**
	6.0nm,0.5s,mb4.9							
WRA	**Warramunga Arr**	**49.64**	**259**	P	**P**		**20 09 53.4**	**-0.1**
	5.4nm,1.1s,mb4.5,baz=97,slow=7.0,SNR=99							
AS12	**Alice Springs**	**49.67**	**254**	*eP*	**P**		**20 09 53.5**	**-0.3**
	37nm,1.9s,mb5.1							
ASAR	**Alice Springs**	**49.67**	**254**	P	**P**		**20 09 54.0**	**+0.2**
	3.7nm,0.6s,mb4.6,baz=93,slow=7.4,SNR=117							
QSPA	**South Pole Qui**	**71.97**	**180**	*eP*	**P**		**20 12 22.0**	**-2.7**
	3.9nm,1.0s,mb4.3							
QSPA				*e*			20 19 06.2	
PDAR	**Pinedale Array**	**84.02**	**41**	P	**P**		**20 13 31.8**	**+0.1**
	0.4nm,0.7s,mb3.7,baz=214,slow=3.3,SNR=3.9							
VNA3	**Neumayer Olymp**	**90.16**	**175**	⇑*i*	**P**		**20 14 00.7**	**-0.1**
VNA2	**Neumayer--Watz**	**90.66**	**175**	⇑*i*	**P**		**20 14 03.2**	**+0.1**
VNA1	**Neumayer--Stat**	**90.86**	**175**	⇓*i*	**P**		**20 14 05.1**	**+1.1**
BRTR	**Keskin Array B**	**148.44**	**319**	PKPbc	PKPdf		20 20 48.8	+2.8
	1.1nm,0.8s,baz=90,slow=1.4,SNR=6.5							
GERES	**GERESS Array B**	**148.84**	**351**	PKPbc	PKPdf		20 20 50.4	+4.0
	1.6nm,1.1s,slow=2.0,SNR=3.5							

NIED ***22*** *20:06:00, 38.40N×141.10E, h5km, Mw3.6 Best double couple: M0 2.49×10¹⁴ NP1:φs 11°, δ54°, λ 72°. NP2:φs 221°, δ40°, λ 113°.*

JMA ***22*** *20:06:04.0, 38.37N×141.12E, h13km±1km, M3.7 Broadband fault plane solution: P waves. NP1:φs 30°, δ33°, λ 73°. NP2:φs 230°, δ59°, λ 100°. Principal axes: T Plg74°, Azm167°; N Plg9°, Azm44°; P Plg13°, Azm312°;*

JMA Felt III J1.

NEIC ***22*** *20:06:08.9±2.1, 38.38N×141.07E, h45km±19km Error ellipse: s-maj=20.0km s-min=14.8km az=74.0*

IDC ***22*** *20:06:11.9±4.4, 38.40N×141.05E, h73km±41km, mb3.2/8, mb1 3.3/9, mb1mx3.3/24, ML3.3/1, Error ellipse: s-maj=26.8km s-min=19.7km az=87.0*

ISC 22 20:06:03.6±0.6,**38.40N**±0.06×**141.16E**±0.07,**h19**km±4km, **n18,**σ0°**85**/23,**mb3.5**/8,**3D,Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.16**	**69**	⇓P	**Pb**		**20 06 08.3**	**+0.2**
JIO				S	**Sb**		**20 06 11.3**	**+0.1**
JOU	**Okura**	**0.39**	**266**	⇓P	**Pb**		**20 06 11.5**	**-0.2**
JOU				S	**Sb**		**20 06 16.8**	**-0.3**
JMM	**Marumori**	**0.60**	**209**	⇓P	**Pb**		**20 06 14.9**	**-0.4**
JMM				*eS*	**Sb**		**20 06 22.7**	**-0.6**
MAJO	**Matsushiro**	**2.99**	**233**	*eP*	**Pn**		**20 06 52.6**	**+1.6**
MAT	**Matsushiro**	**2.99**	**233**	P	**Pn**		**20 06 53.1**	**+2.1**
MAT				*eS*	**Sn**		**20 07 34.3**	**+7.6**
MAT	**Matsushiro**	**2.99**	**233**	*eP*	**Pn**		**20 06 53.0**	**+2.0**
MAT				S	**Sn**		**20 07 43.0**	**+16**
ASAJ	**Asahikawa**	**5.82**	**10**	P	**Pn**		**20 07 35.5**	**+4.3**
	0.8nm,0.3s,baz=273,slow=18,SNR=5.6							
SONM	**Songino Array**

WRA				PKP		PKPdf	20 25 46.7	+4.5	
	0.4nm,0.7s,baz=110,slow=2.4,SNR=10								

*IDC **22** 20:09:56.0±1.4, 17.52S×173.30W, mb4.0/4, mb1 4.2/4, mb1mx3.8/17, Error ellipse: s-maj=57.8km s-min=29.6km az=135.0*
ISC 22 20:09:58.9±1.4, 17.5S±0.3×173.4W±0.3, h33km, n6, σ0.8/18/4, mb4.0/4, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
RPZ	**Rata Peaks**	**29.30**	**203**	P		**P**	**20 16 00.4**	**0.0**
	7.0nm,0.6s,mb4.6,baz=49,slow=1.6,SNR=5.8							
WRA	**Warramunga Arr**	**49.44**	**258**	P		**P**	**20 18 47.9**	**-0.1**
	1.1nm,0.9s,mb3.9,baz=97,slow=7.3,SNR=13							
ASAR	**Alice Springs**	**49.53**	**254**	P		**P**	**20 18 48.9**	**+0.1**
	1.6nm,0.9s,mb4.0,baz=90,slow=8.1,SNR=6.4							
PDAR	**Pinedale Array**	**83.77**	**42**	P		**P**	**20 22 26.2**	**0.0**
	0.5nm,0.8s,mb3.7,baz=180,slow=3.0,SNR=4.1							
BRTR	**Keskin Array B**	**147.75**	**319**	PKPbc		PKPdf	20 29 44.2	+6.6
	0.5nm,0.6s,baz=108,slow=4.6,SNR=3.7							
GERES	**GERESS Array B**	**148.18**	**351**	PKPbc		PKPdf	20 29 44.7	+6.7
	0.3nm,0.7s,SNR=3.5							

*IDC **22** 20:13:57.5±0.7, 35.87S×102.07W, mb4.5/13, mb1 4.7/13, mb1mx4.6/19, MS4.4/2, Ms1 4.4/2, ms1mx4.3/5, Error ellipse: s-maj=27.8km s-min=21.6km az=130.0*
*NEIC **22** 20:13:60.0±0.4, 35.91S×101.70W, h10km, mb4.8/19, Error ellipse: s-maj=19.0km s-min=10.5km az=81.0*
*BJI **22** 20:13:59.9, 35.90S×101.70W, h10km, mB5.0, Ms5.0, Msz4.9*
ISC 22 20:13:58.3±0.4, 35.94S±0.07×101.9W±0.1, h10km, n74, σ1.1/39/56, mb4.5/30, MS4.7/5, 6C-2D, Southeast of Easter Island

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
LVC	**Limon Verde**	**31.50**	**74**	P		**P**	**20 20 26.9**	**+4.3**
	5.8nm,0.9s,mb4.4,baz=255,slow=9.6,SNR=6.2							
LVC	**Limon Verde**	**31.50**	**74**	P		**P**	**20 20 20.7**	**-1.9**
TRQA	**Tornquist**	**31.76**	**106**	P		**P**	**20 20 27.1**	**+2.4**
	1.0nm,1.0s,mb3.6							
ARE	**Arequipa**	**33.24**	**62**	*e*P		**P**	**20 20 43.0**	**+5.1**
LPAZ	**La Paz**	**35.81**	**66**	P		**P**	**20 21 00.8**	**+0.9**
	20nm,1.0s,mb5.0,baz=228,slow=8.3,SNR=20							
LPAZ				LR		LR	20 31 08.9	
	comp=Z,284nm,21.2s,MS4.0,baz=250,slow=29							
LPAZ	**La Paz**	**35.81**	**66**	*e*P		**P**	**20 21 00.5**	**+0.6**
	30nm,1.4s,mb5.0							
ROSC	**El Rosal**	**48.09**	**38**	P		**P**	**20 22 40.7**	**+0.4**
	14nm,0.8s,mb5.0,baz=131,slow=19,SNR=5.4							
BDFB	**Brasilia**	**51.85**	**82**	P		**P**	**20 23 07.2**	**-1.8**
	2.8nm,0.7s,mb4.3,baz=307,slow=5.1,SNR=4.1							
SDV	**Santo Domingo**	**53.42**	**40**	P		**P**	**20 23 20.5**	**-0.2**
	3.7nm,0.2s,mb4.9,baz=222,slow=5.6,SNR=7.2							
QSPA	**South Pole Qui**	**54.27**	**180**	*e*P		**P**	**20 23 28.0**	**+1.9**
	3.5nm,0.7s,mb4.4							
QSPA				*e*			20 24 15.9	
SBA	**Scott Base**	**55.46**	**195**	*e*P		**P**	**20 23 33.6**	**-1.4**
	7.9nm,1.1s,mb4.7							
VNDA	**Vanda**	**56.56**	**195**	P		**P**	**20 23 41.2**	**-1.6**
	2.4nm,1.3s,mb4.1,baz=81,slow=7.7,SNR=3.1							
VNDA	**Vanda**	**56.56**	**195**	*e*P		**P**	**20 23 41.0**	**-1.8**
	9.4nm,1.7s,mb4.5							
VNA3	**Neumayer Olymp**	**57.12**	**157**	⇑*i*P		**P**	**20 23 46.6**	**-0.3**
VNA3	**Neumayer Olymp**	**57.12**	**157**	⇑*i*		**P**	**20 23 58.3**	**+11**
VNA3	**Neumayer Olymp**	**57.12**	**157**	⇑*i*		**P**	**20 24 01.3**	**+14**
VNA1	**Neumayer--Stat**	**57.73**	**157**	⇑*i*P		**P**	**20 23 50.2**	**-0.9**
VNA1	**Neumayer--Stat**	**57.73**	**157**	⇑*i*		**P**	**20 23 59.0**	**+7.9**
VNA1	**Neumayer--Stat**	**57.73**	**157**	⇑*i*		**P**	**20 24 04.8**	**+14**
VNA2	**Neumayer--Watz**	**57.92**	**157**	P		**P**	**20 23 52.5**	**0.0**
VNA2	**Neumayer--Watz**	**57.92**	**157**			**P**	**20 24 03.9**	**+11**
VNA2	**Neumayer--Watz**	**57.92**	**157**	⇑*i*		**P**	**20 24 07.1**	**+15**
SNAA	**Sanae**	**59.07**	**159**	*e*P		**P**	**20 24 00.4**	**-0.1**
TXAR	**Lajitas Array**	**64.95**	**358**	P		**P**	**20 24 45.4**	**+4.9**
	0.6nm,0.3s,mb4.0,baz=180,slow=9.9,SNR=3.2							
TUC	**Tucson**	**68.41**	**352**	*e*P		**P**	**20 25 04.5**	**+2.1**
	2.2nm,0.7s,mb4.3							
LRAL	**Lakeview Retre**	**70.01**	**13**	*e*P		**P**	**20 25 07.9**	**-4.3**
	6.0nm,0.8s,mb4.6							
LRAL				*e*			20 25 14.9	
ANMO	**Albuquerque**	**70.66**	**356**	*e*P		**P**	**20 25 17.1**	**+1.1**
	5.6nm,1.3s,mb4.3							
SYO	**Syowa Base**	**71.56**	**166**	⇓P		**P**	**20 25 21.9**	**+1.0**
SYO	**Syowa Base**	**71.56**	**166**	⇓pP		pP	20 25 23.8	-0.3
WUAZ	**Wupatki**	**71.64**	**352**	P		**P**	**20 25 21.5**	**-0.5**
	16nm,1.9s,mb4.6							
MSU	**Marysvale**	**74.69**	**352**	P		**P**	**20 25 40.0**	**+0.2**
TPH	**Tonopah**	**75.01**	**348**	*e*P		**P**	**20 25 39.8**	**-1.8**
	7.6nm,1.0s,mb4.6							
ISCO	**Idaho Springs**	**75.45**	**357**	*e*P		**P**	**20 25 49.7**	**+5.6**
	5.3nm,0.7s,mb4.6							
NVAR	**Mina Array Bea**	**75.55**	**347**	P		**P**	**20 25 41.9**	**-2.8**
	4.0nm,0.8s,mb4.4,baz=198,slow=5.7,SNR=12							
NVAR	**Mina Array Bea**	**75.55**	**347**	P		**P**	**20 25 41.9**	**-2.8**
CMB	**Columbia Colle**	**75.58**	**345**	*e*P		**P**	**20 25 44.8**	**-0.1**
	7.2nm,1.1s,mb4.5							
DAU	**Daniels Canyon**	**76.47**	**353**	*e*P		**P**	**20 25 50.5**	**+0.7**
HWUT	**Hardware Ranch**	**77.68**	**353**	*e*P		**P**	**20 25 56.8**	**+0.3**
	7.7nm,1.3s,mb4.5							
ACSO	**Alum Creek Sta**	**77.77**	**15**	P		**P**	**20 25 55.6**	**-1.4**
	16nm,1.0s,mb4.9							
WDC	**Whiskeytown Da**	**78.48**	**344**	P		**P**	**20 26 02.7**	**+1.7**
	12nm,1.0s,mb4.8							
PDAR	**Pinedale Array**	**78.65**	**354**	P		**P**	**20 26 01.1**	**-0.7**
	5.6nm,0.7s,mb4.6,baz=153,slow=6.6,SNR=13							
YBH	**Yreka Blue Hor**	**79.62**	**344**	P		**P**	**20 26 04.3**	**-2.9**
	1.4nm,0.9s,mb3.9,baz=37,slow=10,SNR=2.5							
YBH	**Yreka Blue Hor**	**79.62**	**344**	*e*P		**P**	**20 26 09.0**	**+1.8**
	5.7nm,0.9s,mb4.5							
HLID	**Hailey**	**79.95**	**351**	*e*P		**P**	**20 26 06.5**	**-2.4**
	18nm,1.1s,mb4.9							
HUMO	**Hull Mountain**	**80.51**	**344**	P		**P**	**20 26 13.8**	**+1.9**
QLMT	**Earthquake Lak**	**80.86**	**353**	*e*P		**P**	**20 26 14.2**	**+0.5**
MCMT	**McKenzie Canyo**	**81.01**	**352**	P		**P**	**20 26 14.5**	**+0.1**
SSOR	**Sweet Springs**	**82.56**	**345**	*e*P		**P**	**20 26 21.7**	**-0.8**
SADO	**Sadowa**	**82.93**	**16**	P		**P**	**20 26 23.8**	**-0.7**
	3.3nm,0.6s,mb4.6,baz=122,slow=3.0,SNR=3.3							
CHMT	**Chamberlain Mo**	**83.11**	**352**	P		**P**	**20 26 23.8**	**-1.6**
NCB	**Newcomb**	**83.41**	**20**	*e*P		**P**	**20 26 24.9**	**-2.1**
	6.8nm,0.8s,mb4.7							
HAWA	**Hanford**	**83.49**	**348**	*e*P		**P**	**20 26 28.3**	**+1.0**
	28nm,1.8s,mb5.0							
LON	**Longmire**	**84.25**	**346**	*e*P		**P**	**20 26 33.1**	**+2.0**
NEW	**Newport**	**84.93**	**350**	P		**P**	**20 26 33.5**	**-0.9**
NEW	**Newport**	**84.93**	**350**	*e*P		**P**	**20 26 36.1**	**+1.6**
	25nm,1.9s,mb5.0							
DLBC	**Dease Lake**	**96.93**	**346**	P		**P**	**20 27 32.7**	**+2.2**
	2.2nm,0.8s,mb4.6,baz=180,slow=8.5,SNR=5.9							
YKA	**Yellowknife Ar**	**98.63**	**354**	P		**P**	**20 27 36.8**	**-1.3**
	0.4nm,0.7s,mb4.1,baz=166,slow=4.7,SNR=6.7							
DBIC	**Dimbokro**	**99.54**	**89**	LR		LR	21 10 07.5	
	comp=Z,276nm,19.1s,MS4.8,baz=214,slow=34							
ASAR	**Alice Springs**	**100.68**	**230**	P		P	20 27 47.1	-1.2
	0.6nm,0.8s,baz=121,slow=5.3,SNR=2.9							
GERES	**GERESS Array B**	**132.07**	**53**	PKP		PKPdf	20 33 12.7	-2.5
	0.5nm,0.7s,baz=180,slow=3.9,SNR=5.1							
TIXI	**Tiksi**	**135.80**	**339**	*e*PKPdf		PKPdf	20 33 20.1	-1.4
MDJ	**Mudanjiang**	**140.37**	**299**	PKP		PKPdf	20 33 28.0	-2.5
MDJ				PP		PP	20 36 34.6	+4.9
MDJ				PKS		PKS	20 37 02.5	+0.4
MDJ				SKS		SKS	20 40 36.6	-3.2
MDJ				LR		LR		
	comp=N,91nm,28.2s,MS4.7							
MDJ				LR		LR		
	comp=E,143nm,24.7s,MS4.7							
MDJ				LR		LR		
	comp=Z,263nm,23.5s,MS4.9							
CN2	**Changchun**	**143.27**	**297**	*e*PKP		PKPdf	20 33 30.1	-5.4
CN2				PP		PP	20 36 45.1	-2.0
CN2				LR		LR		
	comp=Z,190nm,18.0s,MS4.9							
BRTR	**Keskin Array B**	**144.92**	**70**	PKPbc		PKPbc	20 33 34.5	-1.2
	comp=Z,2.1nm,0.8s,baz=219,slow=1.3,SNR=7.2							
OBN	**Obninsk**	**145.80**	**43**	*e*PKPdf		PKPdf	20 33 36.3	-3.2
ASF	**Jabal al Asfar**	**145.81**	**84**	PKPbc		PKPbc	20 33 37.7	-0.4
	comp=Z,3.7nm,0.9s,baz=304,slow=14,SNR=6.1							
BJI	**Beijing**	**149.90**	**289**	PKP		PKPdf	20 33 47.8	+1.1
BJI				SS		SS	20 56 39.3	+0.1
BJI				LR		LR		
	comp=N,136nm,18.4s							
BJI				LR		LR		
	comp=Z,155nm,22.4s,MS4.8							
BJT	**Baijiatuao**	**149.90**	**289**	*e*PKP		PKPdf	20 33 48.4	+1.7
ENH	**Enshi**	**153.21**	**267**	*e*PKP		PKPdf	20 33 58.3	+6.4
CMAR	**Chiang Mai Arr**	**154.68**	**232**	PKPbc		PKPdf	20 34 02.2	+8.1
	comp=Z,1.5nm,0.8s,baz=180,slow=0.9,SNR=7.1							
CMAR				PKPab		PKPab	20 34 13.8	-3.2
	comp=Z,3.0nm,0.8s,baz=178,slow=2.6,SNR=8.1							
SONM	**Songino Array**	**155.98**	**308**	PKP		PKPdf	20 33 54.0	-1.0
	comp=Z,0.5nm,0.7s,baz=90,slow=1.4,SNR=4.4							
BVAR	**Borovoye Array**	**162.07**	**15**	PKP		PKPdf	20 34 01.4	-0.5
	comp=Z,0.4nm,0.8s,baz=225,slow=4.1,SNR=3.1							
MKAR	**Makanchi Array**	**168.72**	**345**	PKP		PKPdf	20 34 07.5	-0.1
	comp=Z,2.5nm,1.4s,baz=225,slow=1.7,SNR=3.2							
MKAR				PKPab		PKPab	20 35 16.9	0.0
	comp=Z,0.6nm,0.8s,baz=349,slow=5.7,SNR=5.0							
WMQ	**Urumqi**	**169.24**	**320**	PKP		PKPdf	20 34 06.1	-1.9
WMQ				APKP			20 34 10.1	
WMQ				XPKP			20 34 11.1	
WMQ				PKS		PKS	20 37 37.3	+0.9
WMQ				PP		PP	20 39 10.4	+0.7
WMQ				SKS		SKS	20 41 08.5	-2.7
WMQ				SKKS			20 45 56.4	
WMQ				SS		SS	21 00 04.4	+1.7
WMQ				PP		PP		
	comp=Z,86nm,9.9s							
WMQ				LR		LR		
	comp=N,245nm,30.2s							
WMQ				LR		LR		
	comp=E,325nm,29.0s							

*IDC **22** 20:14:45.9±0.8, 36.07S×102.60W, mb4.9/10, mb1 4.9/10, mb1mx4.7/16, Error ellipse: s-maj=35.1km s-min=24.1km az=105.0*
*NEIC **22** 20:14:48.3±0.3, 35.74S×102.54W, h10km, mb4.9/16, MS4.9/94, Error ellipse: s-maj=20.5km s-min=9.7km az=79.0*
*HRVD **22** 20:14:48.3±0.2, 36.12S×102.23W, h12km, MW5.4/62, Centroid moment Tensor Solution. LP body waves: s62,c107;Mantle waves: s56,c94; Half duration: 1s2 Moment tensor: Scale 10^17Nm; Mrr-0.28±.04; Mθθ-0.14±.04; Mφφ0.42±.04; Mrθ0.19±.09; Mrφ-1.41±.03; Mθφ-0.32±.09; Best double couple: M0 1.48×10^17 NP1: φs95°, δ80°, λ175°. NP2:φs186°, δ85°, λ10°. Principal axes: T 1.65, Plg11°, Azm51°; N -.35, Plg79°, Azm213°; P -1.3, Plg3°, Azm320°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*SYO **22** 20:14:48.2, 35.74S×102.54W, h10km, MB4.9, MS4.9*
ISC 22 20:14:46.6±0.4, 35.80S±0.07×102.6W±0.2, h10km, n131, σ1.1/11/44, mb4.7/25, MS4.9/94, 2C, Southeast of Easter Island

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
LVC	**Limon Verde**	**32.06**	**75**	*e*P		**P**	**20 21 08.2**	**-7.6**
	11nm,1.2s,mb4.6							
LVC				LR		LR		
	comp=Z,3μm,20.0s,MS4.9							
TRQA	**Tornquist**	**32.39**	**106**	*e*P		**P**	**20 21 18.6**	**0.0**
	comp=Z,0.8nm,1.1s,mb3.5							
EFI	**East Falkland**	**35.28**	**131**	PFAKE			20 21 50.0	+6.6
EFI				LR		LR		
	comp=Z,3μm,21.0s,MS5.1							
LPAZ	**La Paz**	**36.32**	**67**	*e*P		**P**	**20 21 45.2**	**-7.3**
	comp=Z,14nm,1.3s,mb4.7							
LPAZ				LR		LR		
	comp=Z,554nm,21.0s,MS4.3							
PPT	**Papeete**	**45.25**	**281**	P		**P**	**20 23 05.7**	**-0.4**
	comp=Z,56nm,0.7s,mb5.5,baz=35,slow=9.2,SNR=4.4							
ROSC	**El Rosal**	**48.37**	**39**	P		**P**	**20 23 32.8**	**+2.0**
	comp=Z,7.2nm,0.4s,mb5.1,baz=126,slow=19,SNR=4.1							
JTS	**JuntasAbangare**	**48.78**	**23**	PFAKE			20 23 40.0	+6.1
JTS				LR		LR		
	comp=Z,229nm,19.0s,MS4.2							
QSPA	**South Pole Qui**	**54.41**	**180**	PFAKE			20 24 30.0	+15
QSPA				LR		LR		
	comp=Z,6μm,20.0s,MS5.7							
SBA	**Scott Base**	**55.44**	**195**	*e*P		**P**	**20 24 24.0**	**+0.9**
	comp=Z,17nm,1.2s,mb5.0							
SBA				LR		LR		
	comp=Z,1μm,20.0s,MS4.9							
VNDA	**Vanda**	**56.54**	**195**	P		**P**	**20 24 32.0**	**+1.0**
	comp=Z,3.8nm,0.9s,mb4.4,baz=88,slow=8.0,SNR=5.4							
VNDA	**Vanda**	**56.54**	**195**	*e*P		**P**	**20 24 31.4**	**+0.4**
VNDA				LR		LR		
	comp=Z,564nm,21.0s,MS4.6							
VNA3	**Neumayer Olymp**	**57.49**	**157**	⇑*i*		**P**	**20 24 37.7**	**-0.1**
VNA1	**Neumayer--Stat**	**58.10**	**157**	⇑*i*		**P**	**20 24 42.7**	**+0.7**
VNA2	**Neumayer--Watz**	**58.29**	**157**			**P**	**20 24 43.5**	**+0.1**
SNAA	**Sanae**	**59.42**	**159**	P		**P**	**20 24 49.5**	**-1.8**
SNZO	**South Karori**	**62.54**	**237**	PFAKE			20 25 20.0	+7.2
SNZO				LR		LR		
	comp=Z,2μm,22.0s,MS5.3							
SJG	**San Juan**	**63.78**	**39**	PFAKE			20 25 30.0	+8.7
SJG				LR		LR		
	comp=Z,488nm,20.0s,MS4.7							
HKT	**Hockley**	**65.71**	**6**	PFAKE			20 25 40.0	+6.3
HKT				LR		LR		
	comp=Z,317nm,20.0s,MS4.5							
JCT	**Junction City**	**65.98**	**3**	PFAKE			20 25 50.0	+15
JCT				LR		LR		
	comp=Z,329nm,20.0s,MS4.5							
DWPF	**Disney**	**66.64**	**20**	PFAKE			20 25 50.0	+10
DWPF				LR		LR		
	comp=Z,830nm,22.0s,MS4.9							
MNTX	**Cornudas Mount**	**67.19**	**357**	PFAKE			20 25 50.0	+6.9
MNTX				LR		LR		
	comp=Z,402nm,22.0s,MS4.6							
TUC	**Tucson**	**68.18**	**353**	*e*P		**P**	**20 25 48.3**	**-1.0**
	comp=Z,5.0nm,1.0s,mb4.5							
TUC				LR		LR		
	comp=Z,128nm,19.0s,MS4.2							
CPRX	**Cap Rock**	**68.48**	**359**	P		**P**	**20 25 52.3**	**+1.2**
LRAL	**Lakeview Retre**	**70.02**	**14**	P		**P**	**20 25 57.6**	**-3.0**
	comp=Z,11nm,0.9s,mb4.8							
LRAL				LR		LR		
	comp=Z,883nm,22.0s,MS5.0							
PFO	**Pinyon Flat Ob**	**70.25**	**348**	PFAKE			20 26 10.0	+8.0
PFO				LR		LR		
	comp=Z,687nm,19.0s,MS4.9							
ANMO	**Albuquerque**	**70.48**	**357**	*e*P		**P**	**20 26 04.7**	**+1.4**
	comp=Z,3.9nm,1.1s,mb4.2							
ANMO				LR		LR		
	comp=Z,417nm,20.0s,MS4.7							
MIAR	**Mount Ida**	**70.49**	**8**	PFAKE			20 26 10.0	+6.6
MIAR				LR		LR		
	comp=Z,331nm,22.0s,MS4.5							
OXF	**Oxford**	**71.03**	**12**	PFAKE			20 26 20.0	+13
OXF				LR		LR		
	comp=Z,303nm,20.0s,MS4.5							
WUAZ	**Wupatki**	**71.42**	**352**	P		**P**	**20 26 06.3**	**-2.7**
	comp=Z,6.7nm,0.9s,mb4.6							
PLAL	**Pickwick Lake**	**71.72**	**13**	PFAKE			20 26 20.0	+9.2
PLAL				LR		LR		
	comp=Z,363nm,21.0s,MS4.6							
WVT	**Waverly**	**72.88**	**12**	PFAKE			20 26 30.0	+12
WVT				LR		LR		
	comp=Z,693nm,22.0s,MS4.9							
DAC	**Darwin (Calif)**	**73.05**	**347**	PFAKE			20 26 30.0	+11
DAC				LR		LR		
	comp=Z,114nm,20.0s,MS4.2							
PV10	**Paradox Valley**	**74.05**	**355**	P		**P**	**20 26 24.6**	**+0.2**
CCM	**Cathedral Cave**	**74.24**	**9**	PFAKE			20 26 40.0	+14
CCM				LR		LR		
	comp=Z,279nm,21.0s,MS4.5							
SAO	**San Andreas Ge**	**74.29**	**344**	PFAKE			20 26 40.0	+14
SAO				LR		LR		
	comp=Z,392nm,19.0s,MS4.7							
CBKS	**Cedar Bluff**	**74.29**	**2**	PFAKE			20 26 40.0	+14
CBKS				LR		LR		
	comp=Z,228nm,19.0s,MS4.5							
MVU	**Marysvale**	**74.46**	**352**	PFAKE			20 26 40.0	+13
MVU				LR		LR		
	comp=Z,431nm,20.0s,MS4.7							
MSU	**Marysvale**	**74.47**	**352**	*e*P		**P**	**20 26 28.2**	**+1.4**
POHA	**Pohakuloa**	**74.57**	**309**	PFAKE			20 26 40.0	+12
POHA				LR		LR		
	comp=Z,1μm,21.0s,MS5.1							
TPH	**Tonopah**	**74.74**	**348**	*e*P		**P**	**20 26 28.7**	**+0.3**
	comp=Z,16nm,1.0s,mb4.9							
TPH				LR		LR		
	comp=Z,339nm,20.0s,MS4.6							
WCI	**Wyandotte Cave**	**75.20**	**13**	PFAKE			20 26 40.0	+9.0
WCI				LR		LR		
	comp=Z,2μm,22.0s,MS5.4							
NVAR	**Mina Array Bea**	**75.27**	**347**	P		**P**	**20 26 31.4**	**0.0**
	comp=Z,11nm,0.9s,mb4.8,baz=160,slow=6.1,SNR=7.6							
ISCO	**Idaho Springs**	**75.28**	**358**	PFAKE			20 26 40.0	+8.5
ISCO				LR		LR		
	comp=Z,381nm,22.0s,MS4.7							
CMB	**Columbia Colle**	**75.29**	**346**	*e*P		**P**	**20 26 31.5**	**0.0**
	comp=Z,7.6nm,0.8s,mb4.7							
CMB				LR		LR		
	comp=Z,648nm,20.0s,MS4.9							
BLA	**Blacksburg**	**75.51**	**18**	PFAKE			20 26 40.0	+7.1
BLA				LR		LR		
	comp=Z,556nm,22.0s,MS4.8							
DAU	**Daniels Canyon**	**76.25**	**353**	*e*P		**P**	**20 26 36.8**	**-0.3**
MAW	**Mawson**	**76.33**	**174**	P		**P**	**20 26 33.1**	**-3.8**
	comp=Z,9.8nm,0.9s,mb4.7,baz=190,slow=11,SNR=2.7							
MAW	**Mawson**	**76.33**	**174**	*e*P		**P**	**20 26 35.6**	**-1.3**
	comp=Z,11nm,0.9s,mb4.8							
BBSR	**BB Station**	**76.57**	**32**	PFAKE			20 26 50.0	+11
BBSR				LR		LR		
	comp=Z,1μm,20.0s,MS5.2							
HOPS	**Hopland**	**76.78**	**344**	PFAKE			20 26 50.0	+10
HOPS				LR		LR		
	comp=Z,605nm,22.0s,MS4.9							
BMN	**Battle Mountai**	**77.04**	**349**	PFAKE			20 26 50.0	+8.6
BMN				LR		LR		
	comp=Z,225nm,20.0s,MS4.5							
CBN	**Corbin**	**77.26**	**20**	PFAKE			20 26 50.0	+7.4
CBN				LR		LR		
	comp=Z,1μm,21.0s,MS5.2							
KIP	**Kipapa**	**77.36**	**308**	PFAKE			20 27 00.0	+16
KIP				LR		LR		
	comp=Z,1μm,21.0s,MS5.1							
HWUT	**Hardware Ranch**	**77.47**	**353**	PFAKE			20 27 00.0	+16
HWUT				LR		LR		
	comp=Z,467nm,20.0s,MS4.8							
ACSO	**Alum Creek Sta**	**77.79**	**15**	PFAKE			20 27 00.0	+14
ACSO				LR		LR		
	comp=Z,208nm,21.0s,MS4.4							
MCWV	**Mont Chateau**	**77.97**	**18**	PFAKE			20 27 00.0	+13
MCWV				LR		LR		
	comp=Z,477nm,19.0s,MS4.8							
WDC	**Whiskeytown Da**	**78.18**	**345**	*e*P		**P**	**20 26 48.9**	**+1.2**
WDC				LR		LR		
	comp=Z,424nm,22.0s,MS4.7							
BW06	**Boulder Array**	**78.45**	**355**	PFAKE			20 27 00.0	+11
BW06				LR		LR		
	comp=Z,228nm,20.0s,MS4.5							
PDAR	**Pinedale Array**	**78.45**	**355**	P		**P**	**20 26 48.6**	**-0.4**
	comp=Z,7.8nm,0.8s,mb4.7,baz=158,slow=4.9,SNR=5.5							
AHID	**Auburn Hatcher**	**78.57**	**354**	PFAKE			20 27 00.0	+10
AHID				LR		LR		
	comp=Z,345nm,19.0s,MS4.7							
TAU	**Tasmania Unive**	**79.03**	**225**	PFAKE			20 27 00.0	+7.7
TAU				LR		LR		
	comp=Z,2μm,19.0s,MS5.4							
JFWS	**Jewell Farm**	**79.15**	**9**	PFAKE			20 27 00.0	+7.1
JFWS				LR		LR		
	comp=Z,246nm,21.0s,MS4.5							
WVOR	**Wild Horse Val**	**79.22**	**348**	PFAKE			20 27 00.0	+6.7
WVOR				LR		LR		
	comp=Z,408nm,21.0s,MS4.7							
YBH	**Yreka Blue Hor**	**79.32**	**345**	P		**P**	**20 26 55.1**	**+1.2**
	comp=Z,6.9nm,0.8s,mb4.6,baz=93,slow=5.7,SNR=6.9							
YBH	**Yreka Blue Hor**	**79.32**	**345**	*e*P		**P**	**20 26 54.6**	**+0.8**
	comp=Z,8.5nm,1.0s,mb4.6							
YBH				LR		LR		
	comp=Z,490nm,21.0s,MS4.8							
SSPA	**Standing Stone**	**79.39**	**19**	PFAKE			20 27 10.0	+16
SSPA				LR		LR		
	comp=Z,3μm,22.0s,MS5.6							
AAM	**Ann Arbor**	**79.64**	**14**	PFAKE			20 27 10.0	+14
AAM				LR		LR		
	comp=Z,476nm,20.0s,MS4.8							
HLID	**Hailey**	**79.71**	**351**	*e*P		**P**	**20 26 55.1**	**-0.9**
	comp=Z,25nm,1.0s,mb5.1							
HLID				LR		LR		
	comp=Z,310nm,21.0s,MS4.6							
HUMO	**Hull Mountain**	**80.21**	**345**	*e*P		**P**	**20 27 00.5**	**+1.8**
ERPA	**Erie**	**80.26**	**17**	PFAKE			20 27 10.0	+11
ERPA				LR		LR		
	comp=Z,549nm,22.0s,MS4.9							
QLMT	**Earthquake Lak**	**80.65**	**354**	P		**P**	**20 26 58.9**	**-2.0**
MCMT	**McKenzie Canyo**	**80.79**	**353**	*e*P		**P**	**20 27 03.1**	**+1.5**
BOZ	**Bozeman (W)**

comp=Z,486nm,21.0s,MS5.0
UNV Unalaska Valle 104.89 327 PFAKE 20 29 10.0 +15
UNV LR LR
comp=Z,2µm,20.0s,MS5.7
MCK McKinley 105.77 340 PFAKE 20 33 20.0
MCK LR LR
comp=Z,127nm,20.0s,MS4.5
COLA College 106.39 342 PFAKE 20 33 20.0
COLA LR LR
comp=Z,213nm,21.0s,MS4.7
TNA Tin City 112.85 336 PFAKE 20 33 40.0 +14
TNA LR LR
comp=Z,204nm,20.0s,MS4.7
PET Petropavlovsk 122.59 315 PFAKE 20 33 50.0 +4.9
PET LR LR
comp=Z,306nm,22.0s,MS4.9
ESK Eskdalemuir 123.64 43 PFAKE 20 34 00.0 +13
ESK LR LR
comp=Z,281nm,21.0s,MS4.9
KMBO Kilima Mbogo 127.60 126 PFAKE 20 34 10.0 +14
KMBO LR LR
comp=Z,374nm,21.0s,MS5.0
MA2 Magadan 128.28 322 PFAKE 20 34 10.0 +14
MA2 LR LR
comp=Z,364nm,21.0s,MS5.0
COCO West Island 128.85 205 PFAKE 20 34 10.0 +12
COCO LR LR
comp=Z,540nm,20.0s,MS5.2
KBS Kingsbay 129.55 13 PFAKE 20 34 10.0 +12
KBS LR LR
comp=Z,442nm,22.0s,MS5.1
GERES GERESS Array B 132.48 53 PKP PKPdf 20 34 03.9 -0.3
comp=Z,1.0nm,0.8s,baz=207,slow=2.2,SNR=3.5
TIXI Tiksi 135.46 339 *e*PKPdf PKPdf 20 34 07.5 -1.7
TIXI LR LR
comp=Z,213nm,21.0s,MS4.8
YAK Yakutsk 138.41 326 PFAKE 20 34 20.0 +5.2
YAK LR LR
comp=Z,276nm,22.0s,MS5.0
MDJ Mudanjiang 139.76 299 PFAKE 20 34 30.0 +12
MDJ LR LR
comp=Z,306nm,22.0s,MS5.0
INCN Inchon 140.80 288 PFAKE 20 34 30.0 +10
INCN LR LR
comp=Z,137nm,20.0s,MS4.7
AKASG Malin Array Be 142.59 51 PKP PKPdf 20 34 21.9 -0.5
comp=Z,1.1nm,0.7s,baz=280,slow=2.7,SNR=4.5
BRTR Keskin Array B 145.46 70 PKPbc PKPbc 20 34 25.9 +0.7
comp=Z,7.3nm,1.1s,baz=208,slow=1.4,SNR=4.0
OBN Obninsk 146.12 42 *e*PKPdf PKPdf 20 34 24.1 -4.2
OBN LR LR
comp=Z,478nm,22.0s,MS5.2
HIA Hailar 146.46 307 PFAKE 20 34 40.0 +13
HIA LR LR
comp=Z,229nm,20.0s,MS5.0
BJT Baijiatuan 149.27 290 *e*PKPbc PKPdf 20 34 36.0 +2.0
BJT LR LR
comp=Z,266nm,22.0s,MS5.0
KIV Kislovodsk 152.32 62 PFAKE 20 34 50.0 +12
KIV LR LR
comp=Z,145nm,21.0s,MS4.8
ENH Enshi 152.60 268 *e*PKPbc PKPdf 20 34 46.0 +6.7
ENH *e*PKPab PKPab 20 34 55.7 -0.6
ENH LR LR
comp=Z,238nm,20.0s,MS5.0
CM31 Chiang Mai Arr 154.27 233 *e*P PKPdf 20 34 47.9 +6.0
CMAR Chiang Mai Arr 154.27 233 PKPab PKPab 20 35 03.5 -0.1
comp=Z,7.4nm,0.8s,baz=155,slow=3.2,SNR=13
ULN Ulaanbaatar 154.98 308 PFAKE 20 34 50.0 +8.0
ULN LR LR
comp=Z,220nm,21.0s,MS5.0
ARU Arti 155.75 26 PFAKE 20 34 50.0 +7.3
ARU LR LR
comp=Z,262nm,20.0s,MS5.1
BVAR Borovoye Array 162.09 14 PKP PKPdf 20 34 48.4 -1.8
comp=Z,0.8nm,0.8s,baz=34,slow=5.2,SNR=2.6
LSA Lhasa 166.91 246 PFAKE 20 35 10.0 +15
LSA LR LR
comp=Z,161nm,20.0s

*IDC **22** 20:17:46.4±2.7, 17.58S×173.67W, mb4.4/5, mb1 4.6/6, mb1mx4.1/19, ML4.3/1, Error ellipse: s-maj=57.7km s-min=37.4km az=81.0*
ISC 22 20:17:32.2±1.8, 16.6S±0.3×172.0W±0.1, h10km, n7, σ0§24/6, mb4.4/5, Samoa Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**12.44**	**113**	Pn	**P**	**20 20 32.3**	**0.0**
	1.4nm,0.3s,baz=246,slow=12,SNR=3.6						
URZ	**Urewera**	**23.58**	**202**	P	**P**	**20 22 43.8**	**-0.1**
	7.3nm,0.7s,mb4.2,baz=16,slow=3.8,SNR=3.2						
RPZ	**Rata Peaks**	**30.60**	**205**	P	**P**	**20 23 48.7**	**+0.2**
	10nm,0.9s,mb4.6,baz=10,slow=6.5,SNR=7.2						
CTA	**Charters Tower**	**39.70**	**258**	P	**P**	**20 25 06.3**	**-0.3**
	4.5nm,0.5s,mb4.5,baz=92,slow=11,SNR=12						
WRA	**Warramunga Arr**	**50.89**	**258**	P	**P**	**20 26 36.0**	**+0.2**
	1.5nm,0.5s,mb4.2,baz=97,slow=7.2,SNR=44						
ASAR	**Alice Springs**	**51.02**	**253**	P	**P**	**20 26 36.9**	**+0.1**
	3.6nm,0.7s,mb4.4,baz=92,slow=7.7,SNR=55						
BRTR	**Keskin Array B**	**147.95**	**321**	PKPbc	PKPdf	20 37 32.6	+15
	1.3nm,0.8s,baz=100,slow=2.9,SNR=4.8						

*JMA **22** 20:25:38.8±0.3, 24.26N×121.53E, h86km, M2.6*
*TAP **22** 20:25:38.8, 24.06N×121.51E, h18km, ML3.5*
TAP Felt III J at Chiawan, III J at Hualien, II J at Hehuanshan, III J at Shilin, I J at Tachien, I J at Nanshan, I J at Nanau, I J at Hungye.
ISC 22 20:25:38.8±0.2, 24.04N±0.02×121.59E±0.02, h20km±3km, n56, σ0§81/90, 7C-4D, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWD	**Chiawan**	**0.04**	**6**	⇓*i* P	**Pb**	**20 25 42.6**	**+0.3**
TWD				S	**Sb**	**20 25 45.1**	**+0.4**
HWA	**Hwalien**	**0.07**	**169**	⇑*i* P	**Pb**	**20 25 43.2**	**+0.7**
HWA				S	**Sb**	**20 25 46.4**	**+1.4**
ESL	**Shilin**	**0.27**	**213**	⇑*i* P	**Pb**	**20 25 44.3**	**-0.7**
ESL				S	**Sb**	**20 25 48.3**	**-0.9**
WHF	**Hehuan Shan**	**0.32**	**289**	⇓*i* P	**Pb**	**20 25 45.0**	**-0.8**
WHF				S	**Sb**	**20 25 49.1**	**-1.4**
ENA	**Nanau**	**0.41**	**19**	⇓*i* P	**Pb**	**20 25 47.2**	**0.0**
TWT	**Tachien**	**0.43**	**299**	*i* P	**Pb**	**20 25 47.4**	**-0.3**
TWT				S	**Sb**	**20 25 52.8**	**-0.9**
NNS	**Nan Shan**	**0.44**	**333**	⇑*i* P	**Pb**	**20 25 47.5**	**-0.4**
NNS				S	**Sb**	**20 25 53.1**	**-1.0**
EHY	**Hungye**	**0.59**	**205**	*e*P	**Pb**	**20 25 49.1**	**-1.2**
ENTT	**Nioudou**	**0.60**	**358**	*i* P	**Pb**	**20 25 50.3**	**-0.1**
ENTT				S	**Sb**	**20 25 58.3**	**0.0**
TWC	**Suao**	**0.61**	**22**	P	**Pb**	**20 25 50.7**	**0.0**
TWC				S	**Sb**	**20 25 59.3**	**+0.5**
SMLT	**Sun Moon Lake**	**0.65**	**256**	*i* P	**Pb**	**20 25 50.6**	**-0.8**
SMLT				S	**Sb**	**20 25 58.3**	**-1.6**
NSK	**Sanguang**	**0.67**	**341**	P	**Pb**	**20 25 51.3**	**-0.3**
NSK				S	**Sb**	**20 25 59.9**	**-0.5**
TWE	**Neicheng**	**0.68**	**6**	P	**Pb**	**20 25 51.7**	**-0.2**
TWE				S	**Sb**	**20 26 00.5**	**-0.3**
TYC	**Yuchr**	**0.69**	**259**	⇑*i* P	**Pb**	**20 25 51.0**	**-0.9**
TYC				S	**Sb**	**20 25 58.9**	**-2.1**
TWF1	**Yuli**	**0.74**	**202**	*e*P	**Pb**	**20 25 50.7**	**-2.1**
TWF1				S	**Sb**	**20 26 01.8**	**-0.6**
NSTT	**Nanjuang**	**0.80**	**318**	⇑*i* P	**Pb**	**20 25 53.6**	**-0.3**
NSTT				S	**Sb**	**20 26 02.6**	**-1.5**
YUS	**Yu-Shan**	**0.80**	**227**	⇑*i* P	**Pb**	**20 25 53.7**	**-0.2**
YUS				S	**Sb**	**20 26 04.4**	**+0.1**
TWQ1	**Liyutan**	**0.81**	**292**	*e*P	**Pb**	**20 25 53.4**	**-0.6**
TWQ1				S	**Sb**	**20 26 05.4**	**+1.0**
TCU	**Taichung**	**0.84**	**277**	*e*P	**Pb**	**20 25 54.8**	**+0.2**
TCU				S	**Sb**	**20 26 06.5**	**+1.0**
NSY	**Sanyi**	**0.84**	**296**	⇑*i* P	**Pb**	**20 25 55.1**	**+0.5**
NSY				S	**Sb**	**20 26 06.3**	**+0.8**
WNT	**Mingjian**	**0.85**	**259**	*e*P	**Pb**	**20 25 54.8**	**+0.1**
WNT				S	**Sb**	**20 26 06.5**	**+1.0**
ALS	**Alishan**	**0.89**	**234**	⇓*i* P	**Pb**	**20 25 55.5**	**0.0**
ALS				S	**Sb**	**20 26 06.5**	**-0.4**
CHN5	**Tsauling**	**0.95**	**242**	*e*P	**Pb**	**20 25 56.6**	**+0.2**
CHN5				S	**Sb**	**20 26 09.5**	**+1.0**
CHKT	**Chengkung**	**0.96**	**193**	*e*P	**Pb**	**20 25 55.7**	**-0.9**
TAP1	**Taipei**	**0.99**	**356**	*e*P	**Pb**	**20 25 57.5**	**+0.3**
TAP1				S	**Sb**	**20 26 09.8**	**0.0**
TAP	**Taipei**	**1.00**	**356**	*e*P	**Pb**	**20 25 57.7**	**+0.5**
TAP				S	**Sb**	**20 26 10.8**	**+0.8**
ELDTW	**Lidau**	**1.00**	**212**	*e*P	**Pb**	**20 25 54.9**	**-2.3**
WGK	**Gukeng**	**1.01**	**250**	*e*P	**Pb**	**20 25 57.5**	**+0.1**
WGK				S	**Sb**	**20 26 11.4**	**+1.2**
TWB1	**Santiao Chiao**	**1.03**	**20**	*e*P	**Pb**	**20 25 58.1**	**+0.4**
NWF	**Wu-fen Shan**	**1.04**	**10**	*e*P	**Pb**	**20 25 57.7**	**-0.2**
NWF				S	**Sb**	**20 26 11.8**	**+0.6**
TWS1	**Kuangyinshan**	**1.07**	**351**	*e*P	**Pb**	**20 25 58.9**	**+0.5**
TWS1				S	**Sb**	**20 26 14.2**	**+2.2**
CHN2	**Minshiung**	**1.14**	**244**	*e*P	**Pb**	**20 25 59.6**	**-0.1**
STYT	**Tauyuan**	**1.16**	**221**	*e*P	**Pb**	**20 25 59.8**	**-0.3**
WTP	**Ta-pu**	**1.20**	**229**	*e*P	**Pn**	**20 26 00.7**	**+0.1**
WTP				S	**Sb**	**20 26 16.7**	**+1.1**
CHY	**Chiayi**	**1.20**	**243**	*e*P	**Pn**	**20 26 01.2**	**+0.6**
WTCT	**Ta-ch'eng**	**1.21**	**262**	*e*P	**Pn**	**20 26 00.8**	**0.0**
TWY	**Chenhua**	**1.23**	**0**	*e*P	**Pn**	**20 26 01.4**	**+0.3**
TWK	**Hsinying**	**1.27**	**233**	*e*P	**Pn**	**20 26 02.3**	**+0.7**
TWK				S	**Sb**	**20 26 19.0**	**+1.1**
CHN1	**Nanshi**	**1.30**	**229**	*e*P	**Pn**	**20 26 02.2**	**+0.2**
CHN1				S	**Sb**	**20 26 19.6**	**+1.0**
TWG	**Pinlang**	**1.30**	**202**	*e*P	**Pn**	**20 26 02.3**	**+0.1**
SGST	**Jiashian**	**1.33**	**224**	*e*P	**Pn**	**20 26 03.4**	**+0.9**
SGST				S	**Sb**	**20 26 21.3**	**+1.7**
YOJ	**Yonaguni jima**	**1.36**	**72**	P	**Pn**	**20 26 02.9**	**0.0**
YOJ				S	**Sb**	**20 26 21.2**	**+0.8**
CHN8	**Yiju**	**1.44**	**242**	*e*P	**Pn**	**20 26 04.1**	**0.0**
CHN3	**Shinhua**	**1.48**	**230**	*e*P	**Pn**	**20 26 06.1**	**+1.5**
ECL	**Taimali**	**1.55**	**202**	*e*P	**Pn**	**20 26 05.4**	**-0.2**
SSD	**Sandimen**	**1.56**	**215**	*e*P	**Pn**	**20 26 06.1**	**+0.3**
PCYT	**Pengchaiyu**	**1.64**	**15**	*e*P	**Pn**	**20 26 06.5**	**-0.4**
EAST	**Anshuo**	**1.79**	**203**	*e*P	**Pn**	**20 26 10.1**	**+1.0**
SCZT	**Fangliau**	**1.89**	**208**	*e*P	**Pn**	**20 26 11.2**	**+0.7**
PNG	**Penghu**	**1.92**	**256**	*e*P	**Pn**	**20 26 10.1**	**-0.9**
WDGT	**Dungji**	**1.94**	**247**	*e*P	**Pn**	**20 26 10.1**	**-1.0**
IRIF	**Iriomote-Funau**	**1.97**	**81**	P	**Pn**	**20 26 11.5**	**-0.2**
IRIF				*e*S	**Sn**	**20 26 36.1**	**0.0**
HATJ	**Hateruma jima**	**2.02**	**89**	*e*S	**Sn**	**20 26 37.6**	**+0.3**
JKRS	**Kuro-shima**	**2.22**	**84**	P	**Pn**	**20 26 15.3**	**+0.1**
JKRS				*e*S	**Sn**	**20 26 42.2**	**-0.1**
JIJ	**Ishigaki jima**	**2.35**	**82**	P	**Pn**	**20 26 16.4**	**-0.7**
JIJ				S	**Sn**	**20 26 44.7**	**-1.0**
JTJ	**Tarama**	**2.90**	**77**	P	**Pn**	**20 26 24.3**	**-0.6**

*IDC **22** 20:46:35.4±5.8, 36.50N×71.12E, h203km±54km, mb3.3/6, mb1 3.2/9, mb1mx3.0/18, Error ellipse: s-maj=35.1km s-min=22.6km az=28.0*
*NEIC **22** 20:46:40.9±2.5, 36.77N×71.09E, h256km±27km, mb4.0/3, Error ellipse: s-maj=19.7km s-min=14.3km az=211.0*
ISC 22 20:46:34.8±1.1, 36.58N±0.07×71.1E±0.1, h212km±13km, n32, σ0§87/33, mb3.5/8, 2D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AML	**Almayashu**	**5.90**	**19**	P	**P**	**20 48 01.5**	**-0.1**
	SNR=149						
UCH	**Uchtor**	**6.23**	**24**	P	**P**	**20 48 06.2**	**+0.2**
	SNR=36						
KZA	**Kyzart**	**6.37**	**29**	P	**P**	**20 48 10.2**	**+2.5**
	SNR=6.9						
EKS2	**Erkin-Say**	**6.42**	**18**	P	**P**	**20 48 08.2**	**-0.1**
	SNR=76						
KK31	**Karatay Array**	**6.53**	**356**	⇓P	**P**	**20 48 08.5**	**-1.2**
	6.3nm,0.4s,baz=180,slow=13,SNR=456						
KK31				⇓S	**S**	**20 49 17.9**	**-5.8**
	18nm,0.5s,baz=190,slow=26,SNR=14						
AAK	**Ala-Archa**	**6.59**	**23**	P	**P**	**20 48 10.8**	**+0.2**
	SNR=15						
KBK	**Karagaybulak**	**6.76**	**25**	P	**P**	**20 48 13.1**	**+0.4**
	SNR=8.8						
CHMS	**Chumysh**	**7.00**	**23**	P	**P**	**20 48 15.4**	**-0.4**
	SNR=8.8						
USP	**Ospenovka**	**7.17**	**20**	P	**P**	**20 48 17.1**	**-1.0**
	SNR=15						
TKM2	**Tokmak 2**	**7.22**	**27**	P	**P**	**20 48 19.2**	**+0.5**
	SNR=8.9						
MKAR	**Makanchi Array**	**13.19**	**36**	P	**P**	**20 49 35.9**	**+0.9**
	0.1nm,0.3s,baz=229,slow=15,SNR=3.7						
KOLN	**Koldanda**	**13.77**	**126**	*e*P	**P**	**20 49 42.0**	**-0.3**
	4.6nm,0.2s						
GKN	**Gorkha**	**14.30**	**123**	*e*P	**P**	**20 49 48.4**	**-0.5**
	11nm,0.2s						
DMN	**Daman**	**14.87**	**123**	*e*P	**P**	**20 49 55.6**	**-0.3**
KKN	**Kakani**	**14.87**	**122**	*e*P	**P**	**20 49 55.8**	**-0.2**
	20nm,0.5s						
PKI	**Pulchoki**	**15.10**	**122**	*e*P	**P**	**20 49 58.2**	**-0.6**
	34nm,0.8s						
KURK	**Kurchatov**	**15.13**	**19**	*e*P	**P**	**20 49 59.6**	**+0.6**
THR	**Tehran**	**16.11**	**274**	P	**P**	**20 50 12.1**	**+1.1**
	0.1nm,0.3s,baz=72,slow=11,SNR=3.1						
ZRNK	**Zerenda**	**16.43**	**356**	*e*P	**P**	**20 50 14.6**	**-0.1**
BVAR	**Borovoye Array**	**16.45**	**359**	P	**P**	**20 50 13.9**	**-1.1**
	0.3nm,0.3s,baz=159,slow=12,SNR=9.0						
BRVK	**Borovoye**	**16.48**	**358**	P	**P**	**20 50 14.4**	**-0.9**
LSA	**Lhasa**	**18.14**	**106**	P	**P**	**20 50 36.5**	**+3.0**
	1.1nm,0.5s						
ARU	**Arti**	**21.57**	**341**	P	**P**	**20 51 06.5**	**-1.3**
	12nm,1.9s,mb4.1						
AKASG	**Malin Array Be**	**32.94**	**309**	P	**P**	**20 52 50.9**	**0.0**
	0.6nm,0.4s,mb3.5,baz=82,slow=6.7,SNR=4.3						
FINES	**FINESS Array B**	**37.45**	**326**	P	**P**	**20 53 29.4**	**+0.5**
	0.9nm,0.5s,mb3.5,baz=122,slow=10,SNR=16						
ARCES	**ARCESS Array B**	**41.09**	**338**	P	**P**	**20 53 59.7**	**+0.9**
	1.4nm,0.7s,mb3.5,baz=114,slow=7.9,SNR=12						
ARCES	**ARCESS Array B**	**41.09**	**338**	P	**P**	**20 53 59.7**	**+0.9**
HFS	**Hagfors**	**43.04**	**322**	P	**P**	**20 54 14.7**	**+0.1**
	1.4nm,0.5s,mb3.7,baz=106,slow=11,SNR=8.8						
NB2	**NORSAR Subarra**	**44.35**	**323**	P	**P**	**20 54 25.0**	**-0.1**
	0.8nm,0.5s,mb3.3,baz=95,slow=7.4						
INK	**Inuvik**	**73.81**	**9**	P	**P**	**20 57 48.1**	**+1.2**
	0.8nm,0.8s,mb3.4,baz=324,slow=6.6,SNR=3.7						
INK	**Inuvik**	**73.81**	**9**	*e*P	**P**	**20 57 44.5**	**-2.5**
	7.9nm,1.7s,mb4.1						
WRA	**Warramunga Arr**	**81.98**	**122**	P	**P**	**20 58 32.2**	**-0.2**
	0.2nm,0.7s,mb2.8,baz=326,slow=5.0,SNR=6.7						

*ZUR **22** 21:18:53.1, 45.98N×7.53E, h4km, ML1.3/4*
*NEIC **22** 21:18:54.5, 45.92N×7.40E, h2km, ML1.8(LDG), ML1.3(ZUR), After LDG.*
*LDG **22** 21:18:54.5±0.5, 45.92N×7.40E, h2km, Md1.9/2, Ml1.8/2, Error ellipse: s-maj=13.9km s-min=6.2km az=120.0*
ISC 22 21:18:52.2±1.1, 45.93N±0.03×7.51E±0.07, h12km±14km, n10, σ0§85/16, 2C-1D, Northern Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DIX	**Grande Dixence**	**0.17**	**336**	⇑*i* Pg	**Pg**	**21 18 56.4**	**+0.2**
	1.7nm,0.1s						
DIX				*e*Sg	**Sg**	**21 18 58.2**	**-0.6**
	1.7nm,0.1s						
MMK	**Mattmark**	**0.34**	**69**	*e*Pg	**Pg**	**21 18 59.4**	**0.0**
	0.4nm,0.2s						
SALAN	**Lac Salanfe**	**0.43**	**300**	⇑*i* Pg	**Pg**	**21 19 02.1**	**+1.0**
EMV	**Vieux Emosson**	**0.45**	**288**	⇓*i* Pg	**Pg**	**21 19 02.4**	**+1.0**
	0.4nm,0.2s						
EMV				*e*Sg	**Sg**	**21 19 08.3**	**+0.8**
	0.4nm,0.2s						
SENIN	**Lac Senin**	**0.46**	**342**	*e*Pg	**Pg**	**21 19 01.9**	**+0.3**
LPL	**La Plagne**	**0.68**	**233**	*e*Pg	**Pg**	**21 19 06.9**	**+0.9**
LPL				*e*Sg	**Sg**	**21 19 14.1**	**-1.1**
	1.4nm,0.2s						
LPG	**La Plagne**	**0.68**	**231**	*e*Pg	**Pg**	**21 19 07.0**	**+1.0**
LPG				*e*Sg	**Sg**	**21 19 15.1**	**-0.2**
	2.2nm,0.2s						
CABF	**La Chapelle**	**1.20**	**305**	*e*Pg	**Pg**	**21 19 17.0**	**+0.7**
CABF				*e*Sg	**Sg**	**21 19 31.2**	**-1.1**
	2.8nm,0.3s						
MBDF	**Montbardon**	**1.31**	**204**	*e*Sg	**Sg**	**21 19 34.6**	**-1.4**
	1.4nm,0.2s						
HINF	**Hinteralfeld**	**1.94**	**347**	*e*Pg	**Pg**	**21 19 30.6**	**-0.5**
HINF				*e*Sg	**Sg**	**21 19 55.7**	**-1.3**

*IDC **22** 21:28:17.6±0.7, 12.85N×70.30W, mb4.1/14, mb1 4.3/18, mb1mx4.2/23, ML4.4/4, MS4.3/11, Ms1 4.3/11, ms1mx4.1/17, Error ellipse: s-maj=21.9km s-min=13.0km az=75.0*
*NEIC **22** 21:28:20.6±3.5, 12.88N×70.34W, h17km±23km, mb4.4/11, Error ellipse: s-maj=11.5km s-min=6.8km az=67.0*
*FUNV **22** 21:28:21.3, 12.74N×70.55W, h1km, MW3.5*

ISC 22 21:28:19.3±0.9, 12.87N±0.03×70.51W±0.04, h18km±7km, n71, σ1§19/94, mb4.2/25, MS4.2/8, 6C-5D, Near coast of Venezuela

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IMOV	**Isla Los Monje**	**0.63**	**217**	*i* P	**Pb**	**21 28 31.5**	**0.0**
IMOV				*e*S	**Sb**	**21 28 39.2**	**-0.6**
MONV	**Montecano**	**1.05**	**150**	⇓*i* P	**Pb**	**21 28 38.7**	**+0.1**
MONV				*i* S	**Sb**	**21 28 53.0**	**+1.0**
DABV	**Dabajuro**	**1.93**	**184**	⇑*i* P	**Pn**	**21 28 53.8**	**+1.9**
SIQV	**Siquisique**	**2.31**	**163**	*e*P	**Pn**	**21 28 58.9**	**+1.7**
SIQV				*e*S	**Sn**	**21 29 25.5**	**+0.1**
JACV	**Jacura**	**2.41**	**137**	*e*P	**Pn**	**21 28 59.9**	**+1.2**
JACV				*e*S	**Sn**	**21 29 29.6**	**+1.6**
QARV	**Quebrada Arrib**	**2.64**	**180**	⇑*i* P	**Pn**	**21 29 03.5**	**+1.6**
QARV				*e*S	**Sn**	**21 29 33.0**	**-0.9**
CURV	**Curarigua**	**2.88**	**169**	⇑*i* P	**Pn**	**21 29 06.0**	**+0.6**
CURV				*e*S	**Sn**	**21 29 39.6**	**-0.4**
VIRV	**Villa del Rosa**	**2.99**	**219**	⇑*i* P	**Pn**	**21 29 06.8**	**-0.1**
VIRV				*e*S	**Sn**	**21 29 40.9**	**-1.8**
TURV	**Turiamo**	**3.55**	**132**	*e*P	**Pn**	**21 29 15.3**	**+0.4**
TURV				*e*S	**Sn**	**21 29 56.1**	**-0.7**
SDV	**Santo Domingo**	**3.96**	**182**	Pn	**Pn**	**21 29 21.6**	**+1.0**
	28nm,0.3s,baz=62,slow=4.5,SNR=274						
SDV				Sn	**Sn**	**21 30 09.9**	**+2.9**
	34nm,0.3s,baz=321,slow=19,SNR=5.7						
SDV				LR	LR	21 31 20.0	
	comp=Z,7µm,18.4s,baz=25,slow=46						
FUNV	**FUNVISIS**	**4.34**	**123**	*e*P	**Pn**	**21 29 26.5**	**+0.4**
VIGV	**El Vigia**	**4.44**	**196**	*e*P	**Pn**	**21 29 22.8**	**-4.7**
VIGV				*e*S	**Sn**	**21 30 07.0**	**-12**
BAUV	**El Baul**	**4.59**	**148**	*e*P	**Pn**	**21 29 29.1**	**-0.5**
BAUV				*e*S	**Sn**	**21 30 20.2**	**-3.0**
CAPV	**Capacho**	**5.28**	**200**	*e*P	**Pn**	**21 29 38.9**	**-0.4**
CAPV				*e*S	**Sn**	**21 30 35.0**	**-5.4**
MERV	**Las Mercedes**	**5.48**	**131**	*e*P	**Pn**	**21 29 41.6**	**-0.6**
MERV				*e*S	**Sn**	**21 30 41.2**	**-4.3**
PCRV	**Puerto La Cruz**	**6.35**	**114**	Pn	**Pn**	**21 29 54.3**	**-0.1**
	3.9nm,0.3s,baz=277,slow=5.3,SNR=12						
PCRV				Sn	**Sn**	**21 31 02.4**	**-4.9**
	4.8nm,0.3s,baz=186,slow=7.4,SNR=4.3						
SJG	**San Juan**	**6.70**	**38**	Pn	**Pn**	**21 29 54.1**	**-5.3**
	17nm,0.3s,baz=214,slow=10,SNR=26						
SJG				Sn	**Sn**	**21 31 10.5**	**-5.6**
	29nm,0.3s,baz=253,slow=22,SNR=11						
SJG				LR	LR	21 32 40.5	
	comp=Z,2µm,19.2s,baz=253,slow=40						
SJG	**San Juan**	**6.70**	**38**	Pn	**Pn**	**21 29 54.1**	**-5.3**
SJG				*e*Pn	**Pn**	**21 29 54.1**	**-5.3**
SJG				*e*Sn	**Sn**	**21 31 08.8**	**-7.3**
SJG				Sn	**Sn**	**21 31 10.5**	**-5.6**
SJG				LR	LR	21 32 40.5	
PARV	**Pariaguan**	**6.82**	**124**	*e*P	**Pn**	**21 30 00.4**	**-0.7**
PARV				*e*S	**Sn**	**21 31 13.4**	**-5.7**
CAOV	**Caicara del Or**	**6.88**	**143**	*e*P	**Pn**	**21 29 59.8**	**-2.1**
CAOV				*e*S	**Sn**	**21 31 13.7**	**-6.8**
GWJ	**Greenwich**	**7.92**	**312**	⇓*e*P	**Pn**	**21 30 15.6**	**-0.8**
STH	**Stony Hill**	**7.98**	**311**	⇑*e*P	**Pn**	**21 30 16.2**	**-1.1**
STH				*e*S	**Sn**	**21 31 39.3**	**-6.8**
PCJ	**Portland Cotta**	**8.04**	**308**	⇑*e*P	**P**	**21 30 17.1**	**-1.0**
MASC	**Masc**	**8.10**	**334**	*e*P	**P**	**21 30 18.8**	**-0.1**
MASC				*e*S	**Sn**	**21 31 44.8**	**-6.1**
	comp=N,741nm,0.1s						
	comp=E,830nm,0.1s						
BNJ	**Bonny Gate**	**8.24**	**312**	⇓*e*P	**P**	**21 30 20.0**	**-0.9**
BBJ	**Bamboo Saint A**	**8.51**	**311**	⇓*e*P	**P**	**21 30 23.6**	**-1.1**
ROSC	**El Rosal**	**8.80**	**206**	Pn	**P**	**21 30 29.3**	**+0.5**
	comp=E,6.9nm,0.3s,baz=42,slow=16,SNR=19						
ROSC				Sn	**Sn**	**21 32 15.3**	**+6.7**
	comp=E,7.1nm,0.3s,slow=20,SNR=4.4						
ROSC				LR	LR	21 34 29.6	
	comp=E,4µm,19.2s,baz=21,slow=42						
LMGC	**Las Mercedes**	**9.49**	**320**	⇓*i* P	**P**	**21 30 35.8**	**-2.4**
LMGC				*i* S	**Sn**	**21 32 13.8**	**-12**
	comp=N,3µm,0.1s						
	comp=E,2µm,0.3s						
CCCC	**Cccc**	**10.80**	**321**	*i* P	**P**	**21 30 52.8**	**-3.6**
CCCC				*i* S	**S**	**21 32 45.3**	**-13**
	comp=N,22nm,0.1s						
	comp=E,24nm,0.1s						
LRAL	**Lakeview Retre**	**25.10**	**326**	*e*P	**P**	**21 33 46.4**	**+1.8**
	comp=E,13nm,0.9s,mb4.5						
CPCT	**Cooper Cave**	**25.80**	**333**	*e*P	**P**	**21 33 52.8**	**+1.5**
PLAL	**Pickwick Lake**	**27.16**	**327**	*e*P	**P**	**21 34 07.3**	**+3.6**
	comp=E,12nm,0.8s,mb4.5						
WVT	**Waverly**	**27.92**	**329**	*e*P	**P**	**21 34 11.2**	**+0.5**
	comp=E,5.0nm,0.9s,mb4.1						
HKT	**Hockley**	**28.96**	**310**	*e*P	**P**	**21 34 22.0**	**+2.0**
	comp=E,3.8nm,0.9s,mb4.1						
LPAZ	**La Paz**	**29.06**	**175**	P	**P**	**21 34 19.4**	**-1.7**
	comp=E,2.8nm,0.5s,mb4.2,baz=224,slow=2.4,SNR=18						
LPAZ				LR	LR	21 47 05.3	
	comp=E,1µm,18.4s,MS4.6,baz=20,slow=39						
MIAR	**Mount Ida**	**30.05**	**320**	P	**P**	**21 34 28.3**	**-1.5**
ACCN	**Adirondack Com**	**30.53**	**355**	*e*P	**P**	**21 34 32.1**	**-1.8**
CCM	**Cathedral Cave**	**31.15**	**327**	*e*P	**P**	**21 34 39.9**	**+0.5**
	comp=E,5.3nm,0.6s,mb4.5						
SADO	**Sadowa**	**32.64**	**349**	P	**P**	**21 34 52.3**	**-0.1**
	comp=E,1.9nm,0.4s,mb4.3,baz=180,slow=

BRTR	**Keskin Array B**	**92.47**	**48**	P	**P**		**21 41 35.5**	**+4.8**
	comp=E,1.6nm,1.1s,mb4.3,baz=297,slow=3.2,SNR=4.5							
WRA	**Warramunga Arr**	**155.16**	**250**	PKPbc	PKPdf		21 48 21.4	+5.5
	comp=E,0.6nm,0.6s,baz=94,slow=2.9,SNR=10.0							

IDC ***22*** *21:36:46.6±2.9, 43.37N×20.89E, mb3.2/1, mb1 3.3/3, mb1mx3.2/15, ML3.4/2, Error ellipse: s-maj=38.5km s-min=16.3km az=15.0*
BEO ***22*** *21:36:48.2±0.5, 43.49N×21.07E, h18km±1km*
SOF ***22*** *21:36:48.3, 43.33N×21.36E, h2km, MD3.7*
PRU ***22*** *21:36:51.3, 43.76N×20.94E*
NEIC ***22*** *21:36:52.8, 43.40N×20.75E, h11km, ML3.6(BUD), ML3.5(ROM), ML3.4(PDG), After PDG.*

ISC 22 21:36:48.3±0.2, 43.60N±0.02×21.13E±0.02, h18km, n118, σ1$20/163, mb3.0/1, 26C-14D, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GRUS	**Gruza**	**0.42**	**315**	*i* Pg	**Pb**	**21 36 57.2**	**+0.4**
GRUS				Sg	**Sb**	21 37 03.9	+1.2
BOLS	**Boljevac**	**0.65**	**68**	⇓*i* Pg	**Pb**	**21 37 02.0**	**+1.2**
BOLS				Sg	**Sb**	21 37 11.2	+1.9
SVIS	**Svilajnac**	**0.70**	**6**	⇑*i* Pg	**Pb**	**21 37 02.2**	**+0.5**
SVIS				Sg	**Sb**	21 37 14.8	+3.9
DIVS	**Divcibare**	**0.96**	**302**	⇑*i* Pg	**Pb**	**21 37 06.5**	**+0.4**
DIVS				Sg	**Sb**	21 37 20.7	+2.4
NVSS	**Nova Varos 2**	**1.04**	**266**	⇑*i* Pn	**Pn**	**21 37 05.8**	**-2.2**
NVSS				Sn	**Sn**	21 37 18.1	-4.1
IVA	**Berane**	**1.15**	**232**	*e*Pg	**Pb**	**21 37 08.0**	**-1.3**
IVA				*e*Sg	**Sb**	21 37 21.2	-2.7
PLE	**Pljevlja**	**1.29**	**259**	⇑*i* Pg	**Pn**	**21 37 11.2**	**-0.5**
PLE				*e*Sg	**Sb**	21 37 27.1	-0.7
PVY	**Plav**	**1.31**	**221**	⇑*i* Pg	**Pn**	**21 37 11.1**	**-0.8**
PVY				*e*Sg	**Sb**	21 37 26.6	-1.9
BEO	**Belgrade**	**1.32**	**339**	⇑*i* Pg	**Pn**	**21 37 14.2**	**+2.2**
BEO				Sg	**Sb**	21 37 32.8	+4.1
BCI	**Bajram Curri**	**1.45**	**213**	*e*Pg	**Pn**	**21 37 15.0**	**+1.0**
SKO	**Skopje**	**1.64**	**172**	⇑*i* Pn	**Pn**	**21 37 16.3**	**-0.3**
SKO				⇑*i*		21 37 18.3	
	comp=Z,0.1nm,0.7s						
SKO				*i*		21 37 43.0	
SKO				Lg		21 37 58.0	
	comp=Z,0.2nm,0.7s						
UPM	**Unac-Piva**	**1.66**	**257**	⇓*i* Pg	**Pn**	**21 37 18.1**	**+1.1**
UPM				*e*Sg	**Sn**	21 37 39.2	+1.3
NKY	**Niksic**	**1.74**	**244**	⇓*i* Pg	**Pn**	**21 37 18.6**	**+0.5**
NKY				*e*Sg	**Sn**	21 37 40.5	+0.5
TTG	**Podgorica**	**1.80**	**230**	⇓*i* Pg	**Pn**	**21 37 19.2**	**+0.3**
TTG				*e*Sg	**Sn**	21 37 41.7	+0.3
PUK	**Puka**	**1.80**	**211**	*i* Pn	**Pn**	**21 37 19.2**	**+0.3**
PUK				*i* Sn	**Sn**	21 37 43.2	+1.8
VTS	**Vitosha**	**1.83**	**123**	*i* Pg	**Pn**	**21 37 20.0**	**+0.7**
SDA	**Shkodra**	**1.95**	**218**	*e*Pn	**Pn**	**21 37 21.0**	**-0.1**
BRY	**Bratogost**	**2.01**	**251**	⇓*i* Pn	**Pn**	**21 37 23.1**	**+1.1**
BRY				*e*Sn	**Sn**	21 37 47.7	+0.9
BUM	**Brajici-Budva**	**2.08**	**232**	⇑*i* Pn	**Pn**	**21 37 24.4**	**+1.4**
BUM				*e*Sn	**Sn**	21 37 48.9	+0.1
ULC	**Ulcinj**	**2.14**	**221**	⇑*i* Pn	**Pn**	**21 37 25.1**	**+1.3**
ULC				*e*Sn	**Sn**	21 37 50.4	+0.3
HCY	**Herceg Novi**	**2.24**	**240**	*e*Pn	**Pn**	**21 37 26.6**	**+1.3**
HCY				*e*Sn	**Sn**	21 37 52.7	0.0
KKB	**Krupnik**	**2.25**	**139**	*i* Pg	**Pn**	**21 37 26.0**	**+0.6**
OHR	**Ohrid**	**2.49**	**186**	*i* Sg	**Sn**	**21 38 06.8**	**+7.6**
VAY	**Valandovo**	**2.51**	**154**	⇓*i* Pn	**Pn**	**21 37 28.9**	**-0.2**
VAY				*i*		21 37 36.0	
VAY				*i* Sg	**Sn**	21 38 01.7	+7.5
BIA	**Bitola**	**2.58**	**177**	*i* Pn	**Pn**	**21 37 28.8**	**-1.3**
BIA				*i*		21 37 34.8	
BIA				*i* Sg	**Sn**	21 38 08.9	+7.6
BIA				*i*		21 38 12.0	
STON	**Ston**	**2.61**	**255**	*i* Pn	**Pn**	**21 37 32.1**	**+1.7**
STON				*i* Sn	**Sn**	21 38 04.1	+2.2
KNT	**Kendrikon**	**2.76**	**151**	*e*P	**Pn**	**21 37 32.0**	**-0.7**
KNT	**Kendrikon**	**2.76**	**151**	P	**Pn**	**21 37 32.0**	**-0.7**
KNT				S	**Sn**	21 38 17.1	+11
GRG	**Griva**	**2.80**	**160**	*e*P	**Pn**	**21 37 33.1**	**-0.2**
FNA	**Florina**	**2.82**	**176**	*e*P	**Pn**	**21 37 33.5**	**0.0**
FNA	**Florina**	**2.82**	**176**	P	**Pn**	**21 37 33.5**	**0.0**
FNA				S	**Sn**	21 38 18.5	+11
PLD	**Plovdiv**	**3.02**	**118**	*i* Pg	**Pn**	**21 37 42.5**	**+6.1**
RHK3	**Tenkes**	**3.07**	**319**	⇑*e*P	**Pn**	**21 37 37.7**	**+0.6**
RHK3				*e*S	**Sn**	21 38 12.1	-1.7
SRS	**Serrai**	**3.08**	**143**	*e*P	**Pn**	**21 37 36.4**	**-0.8**
SRS	**Serrai**	**3.08**	**143**	P	**Pn**	**21 37 36.4**	**-0.8**
SRS				S	**Sn**	21 38 25.9	+12
SOH	**Sokhos**	**3.23**	**148**	*e*P	**Pn**	**21 37 38.3**	**-1.0**
SOH	**Sokhos**	**3.23**	**148**	P	**Pn**	**21 37 38.3**	**-1.0**
SOH				S	**Sn**	21 38 33.4	+16
THE	**Thessaloniki**	**3.26**	**155**	*e*P	**Pn**	**21 37 38.8**	**-1.0**
THE	**Thessaloniki**	**3.26**	**155**	P	**Pn**	**21 37 38.8**	**-1.0**
THE				S	**Sn**	21 38 33.1	+15
RZN	**Rozhen**	**3.26**	**125**	*i* P	**Pn**	**21 37 40.0**	**+0.2**
RHK1	**Bakonya**	**3.31**	**320**	⇑*i* P	**Pn**	**21 37 40.9**	**+0.4**
RHK1				*e*S	**Sn**	21 38 18.4	-1.4
PKSN	**Nyarlorinc**	**3.42**	**345**	⇓*e*P	**Pn**	**21 37 43.4**	**+1.4**
BUC1	**Bucharest**	**3.62**	**76**	⇑*i* P	**Pn**	**21 38 01.5**	**+17**
BUC1	**Bucharest**	**3.62**	**76**	⇓*e*P	**Pn**	**21 38 01.4**	**+17**
LIT	**Litokhoron**	**3.64**	**163**	*e*P	**Pn**	**21 37 44.4**	**-0.8**
KDZ	**Kurdzhali**	**3.72**	**120**	*i* P	**Pn**	**21 37 46.0**	**-0.3**
PKS7	**Kunszentmiklos**	**3.72**	**339**	*e*P	**Pn**	**21 37 47.3**	**+1.0**
OUR	**Ouranopolis**	**3.89**	**146**	*e*P	**Pn**	**21 37 47.7**	**-1.1**
OUR	**Ouranopolis**	**3.89**	**146**	P	**Pn**	**21 37 47.7**	**-1.1**
OUR				S	**Sn**	21 38 49.1	+15
PAIG	**Paliouri**	**4.13**	**152**	*e*P	**Pn**	**21 37 50.9**	**-1.3**
JMB	**Yambol**	**4.16**	**104**	*i* P	**Pn**	**21 37 52.5**	**0.0**
BUD	**Budapest**	**4.16**	**340**	*e*Sn	**Sn**	**21 38 43.4**	**+2.1**
ISR	**Istrita**	**4.17**	**67**	⇑*i* P	**Pn**	**21 37 54.0**	**+1.2**
ISR	**Istrita**	**4.17**	**67**	⇓*e*P	**Pn**	**21 37 54.0**	**+1.2**
PKSG		**4.25**	**334**	⇑*i* P	**Pn**	**21 37 54.4**	**+0.5**
PKSG				*e*S	**Sn**	21 38 41.9	-1.9
PENC	**Penc**	**4.39**	**344**	⇓*e*P	**Pn**	**21 37 56.3**	**+0.5**
PSZ	**Piszkesteto**	**4.41**	**349**	⇑*e*P	**Pn**	**21 37 56.3**	**+0.2**
PSZ				*e*S	**Sn**	21 38 44.5	-3.1
XOR	**Xorichti**	**4.50**	**159**	*e*P	**Pn**	**21 37 56.0**	**-1.4**
ALN	**Alexandroupoli**	**4.54**	**125**	*e*P	**Pn**	**21 37 57.5**	**-0.5**
ALN	**Alexandroupoli**	**4.54**	**125**	P	**Pn**	**21 37 57.5**	**-0.5**
ALN				S	**Sn**	21 39 11.8	+21
PRD	**Provadia**	**4.59**	**93**	*i* P	**Pn**	**21 37 59.0**	**+0.3**
VRI	**Vrincioaia**	**4.59**	**58**	⇑*i* P	**Pn**	**21 38 00.3**	**+1.6**
VRI	**Vrincioaia**	**4.59**	**58**	⇓*i* P	**Pn**	**21 38 00.3**	**+1.6**
CRES	**Cresnjevec ost**	**4.62**	**301**	*i* Pn	**Pn**	**21 37 59.2**	**+0.2**
CRES				*e*Sn	**Sn**	21 38 48.6	-4.2
AGG	**Agios Georgios**	**4.66**	**168**	*e*P	**Pn**	**21 37 58.3**	**-1.3**
AOS	**Alonnisos**	**4.88**	**154**	*e*P	**Pn**	**21 38 00.9**	**-1.9**
FG5	**Orsara di Pugl**	**4.91**	**244**	*e*Pn	**Pn**	**21 38 05.0**	**+1.8**
VISS	**Visnje**	**5.00**	**298**	*e*Pn	**Pn**	**21 38 05.1**	**+0.7**
HARR	**Harsova**	**5.02**	**75**	⇑*i* P	**Pn**	**21 38 05.1**	**+0.4**
HARR	**Harsova**	**5.02**	**75**	⇓*e*P	**Pn**	**21 38 04.5**	**-0.2**
MRLC	**Muro Lucano**	**5.06**	**238**	*e*Pn	**Pn**	**21 38 06.1**	**+0.8**
PSN	**Preselentsi**	**5.12**	**87**	*i* P	**Pn**	**21 38 05.0**	**-1.2**
VYHS	**Vyhne**	**5.15**	**343**	*e*PN	**Pn**	**21 38 07.0**	**+0.4**
VYHS				*e*SN	**Sn**	21 39 02.4	-3.9
SLCN	**Sala Consilina**	**5.20**	**234**	*e*Pn	**Pn**	**21 38 07.0**	**-0.3**
SLCN				*e*Sn	**Sn**	21 39 02.5	-4.9
PERS	**Pernice**	**5.23**	**308**	*e*Pn	**Pn**	**21 38 07.3**	**-0.3**
CFR	**Carcaliu**	**5.27**	**70**	⇑*i* P	**Pn**	**21 38 09.8**	**+1.5**
CFR	**Carcaliu**	**5.27**	**70**	⇑*i* P	**Pn**	**21 38 09.8**	**+1.5**
SGO	**Sicignano**	**5.29**	**237**	*e*Pn	**Pn**	**21 38 07.4**	**-1.1**
CSSN	**Cassano Irpino**	**5.29**	**241**	*e*Pn	**Pn**	**21 38 09.3**	**+0.7**
CRVS	**Cervenica-Dubn**	**5.31**	**2**	*e*SN	**Sn**	**21 39 07.7**	**-2.7**
CII	**Carovilli**	**5.37**	**252**	*e*Pn	**Pn**	**21 38 11.7**	**+2.1**
ARSA	**Arzberg**	**5.38**	**315**	⇑*i* PN	**Pn**	**21 38 09.5**	**-0.3**
ARSA				*i* SN	**Sn**	21 39 05.9	-6.1
ZST	**Bratislava**	**5.39**	**330**	*e*PN	**Pn**	**21 38 09.2**	**-0.8**
ZST				*e*SN	**Sn**	21 39 07.1	-5.2
MGR	**Morigerati**	**5.41**	**232**	*e*Pg	**Pn**	**21 38 09.2**	**-1.0**
SGG	**Gregorio Mates**	**5.45**	**248**	*e*Pn	**Pn**	**21 38 12.2**	**+1.3**
RNI2	**Rionero Sannit**	**5.48**	**252**	*e*Pn	**Pn**	**21 38 13.2**	**+2.0**
OBKA	**Obir**	**5.50**	**304**	⇓*i* PN	**Pn**	**21 38 11.5**	**+0.1**
OBKA				*i* SN	**Sn**	21 39 10.3	-4.6
JAVS	**Javornik**	**5.53**	**297**	*i* Pn	**Pn**	**21 38 12.3**	**+0.3**
SMOL	**Smolenice**	**5.55**	**334**	*e*SN	**Sn**	**21 39 11.5**	**-4.9**
VOY	**Vojsko**	**5.69**	**298**	*e*Pn	**Pn**	**21 38 14.1**	**-0.1**
VOY				*e*Sn	**Sn**	21 39 18.5	-1.4
SDI	**San Donato**	**5.71**	**253**	*e*Pn	**Pn**	**21 38 16.0**	**+1.5**
PTQR	**Pietraquaria**	**5.90**	**257**	*e*Pn	**Pn**	**21 38 19.4**	**+2.3**
ARV	**Arcevia**	**5.95**	**272**	*e*Pn	**Pn**	**21 38 17.4**	**-0.5**
SNTG	**Esanatoglia**	**5.97**	**270**	*e*Pn	**Pn**	**21 38 17.4**	**-0.7**
PTCC	**Patocco-Chiusa**	**6.18**	**300**	*e*Pn	**Pn**	**21 38 21.0**	**-0.1**
GMNA	**Gemona**	**6.21**	**298**	*e*Pn	**Pn**	**21 38 23.1**	**+1.6**
MNS	**Montasola**	**6.31**	**262**	*e*Pn	**Pn**	**21 38 22.9**	**0.0**
MOA	**Molln**	**6.41**	**314**	⇑*i* PN	**Pn**	**21 38 23.9**	**-0.5**
MOA				*i* SN	**Sn**	21 39 32.7	-5.2
SFI	**Santa Sofia**	**6.73**	**276**	*e*Pn	**Pn**	**21 38 29.9**	**+1.1**
CSNT	**Castellina Chi**	**7.15**	**272**	*e*Pn	**Pn**	**21 38 34.2**	**-0.6**
GERES	**GERESS Array B**	**7.35**	**318**	Pn	**Pn**	**21 38 37.1**	**-0.5**
	comp=Z,0.3nm,0.3s,baz=133,slow=13,SNR=12						
GERES				Sn	**Sn**	**21 39 59.8**	**-1.6**
	comp=Z,0.5nm,0.3s,baz=130,slow=23,SNR=3.5						
KHC	**Kasperske Hory**	**7.61**	**319**	*e*PN	**Pn**	**21 38 40.3**	**-0.9**
KHC				*e*SG	**Sn**	21 40 04.1	-3.7
WTTA	**Wattenberg**	**7.62**	**302**	⇑*i* PN	**Pn**	**21 38 40.9**	**-0.4**
WTTA				*i* SN	**Sn**	21 40 02.5	-5.5
WATA	**Walderalm**	**7.68**	**302**	⇑*i* PN	**Pn**	**21 38 41.6**	**-0.6**
WATA				*i* SN	**Sn**	21 40 03.7	-6.0
SQTA	**Sankt Quirin**	**7.86**	**301**	⇑*i* PN	**Pn**	**21 38 45.5**	**+0.8**
SQTA				*i* SN	**Sn**	21 40 09.0	-5.2
MOTA	**Moosalm**	**7.98**	**302**	⇑*i* PN	**Pn**	**21 38 46.6**	**+0.3**
MOTA				*i* SN	**Sn**	21 40 11.6	-5.5
PGF	**Pioggiola**	**8.94**	**267**	*e*Pn	**P**	**21 38 57.5**	**-2.2**
AKASG	**Malin Array Be**	**8.99**	**35**	Pn	**P**	**21 39 00.6**	**+0.2**
	comp=Z,0.3nm,0.3s,baz=222,slow=13,SNR=4.0						
AKASG				Lg		21 41 42.0	
	comp=Z,0.4nm,0.3s,baz=220,slow=29,SNR=5.9						
SBF	**Sospel**	**9.92**	**276**	*e*Pn	**P**	**21 39 08.3**	**-4.8**
LPG	**La Plagne**	**10.44**	**285**	*e*Pn	**P**	**21 39 18.5**	**-1.7**
FRF	**La Foret Royal**	**10.51**	**275**	*e*Pn	**P**	**21 39 17.7**	**-3.5**
LMR	**La Mourre**	**10.63**	**274**	*e*Pn	**P**	**21 39 18.6**	**-4.3**
CDF	**Champ du Feu**	**10.77**	**301**	*e*Pn	**P**	**21 39 23.9**	**-0.8**
HINF	**Hinteralfeld**	**10.84**	**298**	*e*Pn	**P**	**21 39 23.5**	**-2.2**
CABF	**La Chapelle**	**11.05**	**291**	*e*Pn	**P**	**21 39 25.4**	**-3.2**
HAU	**Haudompre**	**11.22**	**298**	*e*Pn	**P**	**21 39 27.9**	**-3.0**
MKAR	**Makanchi Array**	**42.27**	**63**	P	**P**	**21 44 43.0**	**+0.9**
	comp=Z,0.2nm,0.5s,mb3.0,baz=282,slow=6.2,SNR=5.1						
MKAR	**Makanchi Array**	**42.27**	**63**	P	**P**	**21 44 43.0**	**+0.9**

IDC ***22*** *21:53:03.1±3.1, 4.83S×102.22E, mb3.6/4, mb1 3.7/4, mb1mx3.5/12, Error ellipse: s-maj=140.0km s-min=23.0km az=56.0*

ISC 22 21:53:03.3±3.9, 5.3S±0.6×101.5E±1.0, h33km, n4, σ0$78/4, mb3.6/4, Southwest of Sumatera

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CMAR	**Chiang Mai Arr**	**23.78**	**354**	P	**P**	**21 58 13.7**	**-0.3**
	0.2nm,0.4s,mb2.9,baz=184,slow=9.3,SNR=5.1						
WRA	**Warramunga Arr**	**35.09**	**117**	P	**P**	**21 59 56.1**	**+0.4**
	0.4nm,0.9s,mb3.3,baz=293,slow=11,SNR=3.3						
STKA	**Stephens Creek**	**45.85**	**130**	P	**P**	**22 01 24.0**	**-0.4**
	2.3nm,0.8s,mb4.2,baz=307,slow=15,SNR=4.2						
MKAR	**Makanchi Array**	**54.63**	**344**	P	**P**	**22 02 31.4**	**+0.4**
	0.7nm,0.5s,mb4.0,baz=151,slow=9.1,SNR=12						

DJA 22 21:59:23.9±0.9, 8.99S×114.53E, h98km±7km, MD5.7/4, ML3.8/2, 4C-3D, Error ellipse: s-maj=29.9km s-min=11.1km az=23.0, Bali region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
INGI	**Ingas**	**0.63**	**74**	⇑*i* Pn	P	21 59 40.5	-0.2
	274nm,0.2s						
INGI				⇑*i* Sn	S	21 59 51.2	-2.0
KELI	**Kelakatan**	**0.77**	**357**	⇓*e*Pn	P	21 59 41.5	-0.5
	532nm,0.2s						
KELI				⇓*i* Sn	S	21 59 55.2	-0.2
RATI	**Rata**	**1.02**	**75**	*e*Pn	P	21 59 44.7	0.0
	236nm,0.2s						
RATI				⇓*i* Sn	S	21 59 59.2	-1.0
KEDI	**Kedomdong**	**1.64**	**72**	⇑*i* Pn	P	21 59 51.0	-1.2
	38nm,0.2s						
KEDI				⇑*i* Sn	S	22 00 11.8	-1.4

JMA ***22*** *22:05:59.9±0.2, 24.83N×122.01E, h53km, M2.7*
TAP ***22*** *22:06:00.5, 24.42N×121.95E, h22km, ML3.5*

ISC 22 22:06:00.3±3.0, 24.8N±0.5×122.0E±0.3, h56km±41km, n5, σ0$27/9, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
YOJ	**Yonaguni jima**	**0.95**	**110**	P	**P**	**22 06 17.5**	**-0.2**
YOJ				S	**S**	**22 06 30.7**	**+0.1**
IRIF	**Iriomote-Funau**	**1.61**	**106**	P	**P**	**22 06 26.8**	**-0.2**
IRIF				S	**S**	**22 06 46.8**	**+0.1**
HATJ	**Hateruma jima**	**1.77**	**114**	S	**S**	**22 06 50.4**	**-0.2**
JKRS	**Kuro-shima**	**1.88**	**107**	P	**S**	**22 06 31.2**	**+0.5**
JKRS				S	**S**	**22 06 53.7**	**+0.4**
JIJ	**Ishigaki jima**	**1.97**	**102**	P	**S**	**22 06 31.8**	**-0.1**
JIJ				S	**S**	**22 06 55.0**	**-0.3**

NEIC ***22*** *22:13:35.9, 51.57N×173.43W, h34km, ML3.1(AEIC), After AEIC.*
IDC ***22*** *22:13:37.0±1.9, 51.70N×173.48W, h42km±9km, mb3.5/7, mb1 3.8/8, mb1mx3.6/18, ML4.4/1, Error ellipse: s-maj=57.9km s-min=22.7km az=19.0*

ISC 22 22:13:34.9±0.7, 51.7N±0.1×173.39W±0.07, h44km, h44km±.6km: pP-P, n20, σ0$97/22, mb3.7/8, Andreanof Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ATKA	**Atka Island**	**0.74**	**318**	P	**P**	**22 13 49.7**	**+0.7**
ATKA				S	**S**	22 13 59.5	+0.2
GSIG	**Igitkin Island**	**1.61**	**283**	P	**P**	**22 14 00.5**	**-0.8**
GSTR	**Great Sitkin T**	**1.71**	**286**	P	**P**	**22 14 03.4**	**+0.6**
GSTD	**Great Sitkin T**	**1.76**	**284**	P	**P**	**22 14 02.9**	**-0.5**
GSTD				S	**S**	**22 14 26.3**	**+1.6**
ETKA	**Kagalaska Isla**	**1.89**	**278**	P	**P**	**22 14 04.4**	**-0.8**
ADAG	**Mount Adagdak**	**2.02**	**281**	P	**P**	**22 14 07.4**	**+0.2**
ADK	**Adak**	**2.06**	**278**	P	**P**	**22 14 07.3**	**-0.5**
KIMD	**Kanaga Island**	**2.40**	**274**	P	**P**	**22 14 11.8**	**-0.7**
ILAR	**Eielson Array**	**18.97**	**36**	P	**P**	**22 17 54.2**	**-0.5**
	0.6nm,0.3s,baz=228,slow=9.1,SNR=40						
DAWY	**Dawson**	**21.62**	**42**	*e*P	**P**	**22 18 21.5**	**-1.1**
INK	**Inuvik**	**25.32**	**34**	*e*P	**P**	**22 18 58.3**	**-0.2**
	4.6nm,1.0s,mb4.0						
NVAR	**Mina Array Bea**	**40.16**	**87**	P	**P**	**22 21 09.5**	**+1.5**
	0.8nm,0.8s,mb3.5,baz=312,slow=7.6,SNR=4.5						
NVAR				pP	pP	22 21 21.6	+1.5
	0.8nm,0.8s,baz=274,slow=11,SNR=3.4						
NVAR	**Mina Array Bea**	**40.16**	**87**	P	**P**	**22 21 09.5**	**+1.5**
NVAR				pP	pP	22 21 21.6	+1.5
PDAR	**Pinedale Array**	**42.98**	**76**	P	**P**	**22 21 32.2**	**+1.1**
	0.8nm,0.7s,mb3.6,baz=311,slow=3.4,SNR=6.2						
PDAR				pP	pP	22 21 44.5	+1.3
	1.1nm,0.6s,baz=315,slow=6.3,SNR=5.2						
TXAR	**Lajitas Array**	**55.27**	**85**	P	**P**	**22 23 05.5**	**-0.4**
	0.5nm,0.8s,mb3.6,baz=286,slow=5.8,SNR=5.0						
TXAR				pP	pP	22 23 17.8	-0.6
	0.9nm,0.6s,baz=295,slow=5.1,SNR=9.1						
TXAR	**Lajitas Array**	**55.27**	**85**	P	**P**	**22 23 05.5**	**-0.4**
TXAR				pP	pP	22 23 17.8	-0.6
ARCES	**ARCESS Array B**	**58.34**	**352**	P	**P**	**22 23 25.7**	**-1.4**
	1.2nm,0.7s,mb4.0,baz=27,slow=6.0,SNR=3.8						
ARCES				PcP	PcP	22 24 17.4	-0.1
	1.4nm,0.7s,baz=18,slow=5.7,SNR=4.1						
MKAR	**Makanchi Array**	**62.45**	**311**	P	**P**	**22 23 54.5**	**-1.0**
	0.6nm,0.4s,mb4.0,baz=54,slow=5.9,SNR=8.9						
GERES	**GERESS Array B**	**79.70**	**355**	P	**P**	**22 25 39.6**	**+0.7**
	0.1nm,0.5s,mb3.0,baz=11,slow=6.8,SNR=3.8						
BRTR	**Keskin Array B**	**85.99**	**339**	P	**P**	**22 26 14.0**	**+2.8**
	0.9nm,0.9s,mb4.0,baz=8.7,slow=3.3,SNR=4.7						

WEL ***22*** *22:25:53.3±0.4, 35.28S×178.65E, h204km±10km, ML4.0/3, Error ellipse: s-maj=9.9km s-min=6.5km az=90.0*

ISC 22 22:25:53.0±1.4, 35.8S±0.2×179.2E±0.3, h258km±13km, n16, σ0$70/21, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MXZ	**Matakaoa Point**	**1.89**	**201**	PN	**P**	**22 26 35.3**	**-0.2**
MXZ				SN	**S**	**22 27 07.0**	**-1.4**
PUZ	**Puketiti**	**2.38**	**197**	PN	**P**	**22 26 41.0**	**+0.9**
PUZ				SN	**S**	**22 27 17.3**	**+0.7**
MWZ	**Matawai**	**2.85**	**207**	PN	**P**	**22 26 45.5**	**+0.8**
URZ	**Urewera**	**2.95**	**213**	PN	**P**	**22 26 45.7**	**-0.1**
URZ				SN	**S**	**22 27 27.4**	**+0.5**
BKZ	**Black Stump Fm**	**3.98**	**211**	*e*PN	**P**	**22 26 58.0**	**+0.6**
TSZ	**Takapari Road**	**4.95**	**210**	*e*PN	**P**	**22 27 08.4**	**-0.5**
BFZ	**Birch Farm**	**5.39**	**204**	*e*PN	**P**	**22 27 15.6**	**+1.3**
KIW	**Kapiti Island**	**6.06**	**212**	*e*PN	**P**	**22 27 22.4**	**-0.2**
MTW	**Mount Morrison**	**6.07**	**207**	*e*PN	**P**	**22 27 22.7**	**-0.1**
CAW	**Cannon Point**	**6.20**	**210**	*e*PN	**P**	**22 27 23.8**	**-0.6**
NNZ	**Nelson**	**7.06**	**218**	*e*PN	**P**	**22 27 34.2**	**-0.9**
NNZ				SN	**S**	**22 28 54.8**	**-0.3**
THZ	**Tophouse**	**7.70**	**217**	*e*PN	**P**	**22 27 42.9**	**-0.3**
THZ				SN	**S**	**22 29 10.7**	**+1.0**
KHZ	**Kahutara**	**7.92**	**212**	*e*PN	**P**	**22 27 45.3**	**-0.7**
LTZ	**Lake Taylor**	**8.78**	**215**	*e*PN	**P**	**22 27 56.1**	**-0.8**
MQZ	**McQueen's Vall**	**9.35**	**210**	SN	**S**	**22 29 47.0**	**-0.1**
WB2	**Warramunga Arr**	**42.26**	**280**	*e*P	**P**	**22 33 23.4**	**+0.6**

JMA ***22*** *23:02:47.6±0.2, 23.61N×122.04E, h30km, M2.9*
TAP ***22*** *23:02:47.5, 23.71N×121.92E, h26km, ML3.4*

ISC 22 23:02:47.9±2.3, 23.6N±0.2×122.1E±0.1, h26km, n6, σ0$41/11, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
YOJ	**Yonaguni jima**	**1.20**	**46**	P	**Pn**	**23 03 09.1**	**-0.1**
YOJ				S	**Sn**	**23 03 24.7**	**0.0**
HATJ	**Hateruma jima**	**1.65**	**75**	P	**Pn**	**23 03 15.7**	**0.0**
HATJ				S	**Sn**	**23 03 36.3**	**+0.1**
IRIF	**Iriomote-Funau**	**1.68**	**65**	P	**Pn**	**23 03 16.3**	**+0.2**
IRIF				S	**Sn**	**23 03 37.6**	**+0.7**
JKRS	**Kuro-shima**	**1.88**	**71**	P	**Pn**	**23 03 19.2**	**+0.2**
JKRS				S	**Sn**	**23 03 42.5**	**+0.5**
JIJ	**Ishigaki jima**	**2.04**	**69**	P	**Pn**	**23 03 20.8**	**-0.4**
JIJ				S	**Sn**	**23 03 45.3**	**-0.7**
JTJ	**Tarama**	**2.61**	**67**	S	**Sn**	**23 04 00.1**	**-0.5**

IDC ***22*** *23:08:00.3±1.9, 2.98S×136.45E, mb3.5/2, mb1 3.9/3, mb1mx3.7/10, ML3.8/1, Error ellipse: s-maj=74.6km s-min=44.0km az=89.0*
NEIC ***22*** *23:08:01.7±0.9, 2.96S×136.92E, h10km, mb4.2/1, Error ellipse: s-maj=19.6km s-min=13.5km az=100.0*

ISC 22 23:08:06.4±2.8, 3.18S±0.09×136.8E±0.2, h64km±29km, n8, σ1$29/11, mb3.5/2, Irian Jaya

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KAKA	**Kakadu**	**10.43**	**205**	*e*P	**P**	**23 10 35.5**	**-0.2**
	16nm,0.4s						
KAKA				*e*S	**S**	**23 12 27.8**	**-4.0**
PMG	**Port Moresby**

WEL 22 23:51:38.6±0.2, 37.95S×178.10E, h69km±1km, ML3.5/2, 2C-2D, Error ellipse: s-maj=1.4km s-min=1.1km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PUZ	**Puketiti**	**0.17**	**136**	⇑PN	P	23 51 48.9	0.0
PUZ				SN	S	23 51 56.3	-0.4
MXZ	**Matakaoa Point**	**0.42**	**23**	⇑PN	P	23 51 50.3	-0.4
MXZ				SN	S	23 51 59.2	-0.4
MWZ	**Matawai**	**0.60**	**229**	⇓PN	P	23 51 52.4	-0.1
MWZ				SN	S	23 52 02.1	-0.5
URZ	**Urewera**	**0.84**	**248**	⇓PN	P	23 51 54.8	-0.5
URZ				SN	S	23 52 07.1	-0.5
KNZ	**Kokohu**	**1.12**	**197**	PN	P	23 51 58.4	-0.5
BKZ	**Black Stump Fm**	**1.75**	**226**	PN	P	23 52 06.7	-0.7
WNVZ	**Wahianoa**	**2.40**	**234**	PN	P	23 52 15.1	-1.4
WNVZ				SN	S	23 52 42.9	-1.8
TSZ	**Takapari Road**	**2.69**	**218**	PN	P	23 52 17.8	-2.7
BFZ	**Birch Farm**	**3.09**	**207**	PN	P	23 52 22.8	-3.4
MRZ	**Mangatainoka R**	**3.34**	**215**	*e*PN	P	23 52 25.6	-4.2
TUWZ	**Tuamarina**	**4.73**	**221**	SN	S	23 53 36.1	-7.1
THZ	**Tophouse**	**5.53**	**225**	*e*PN	P	23 52 54.3	-5.7
THZ				SN	S	23 53 55.8	-7.1
LTZ	**Lake Taylor**	**6.57**	**221**	*e*PN	P	23 53 08.1	-6.5
LTZ				SN	S	23 54 17.1	-12
MQZ	**McQueen's Vall**	**7.08**	**214**	SN	S	23 54 29.1	-12
ODZ	**Otahua Downs**	**9.03**	**216**	SN	S	23 55 15.2	-14

*IDC **23** 00:02:37.4±1.4, 0.61N×29.11W, mb3.9/6, mb1 4.1/6, mb1mx3.9/17, MS3.5/2, Ms1 3.6/2, ms1mx3.2/17, Error ellipse: s-maj=67.7km s-min=26.1km az=148.0*
*NEIC **23** 00:02:39.1±1.0, 0.77N×29.18W, h10km, mb4.4/1, Error ellipse: s-maj=34.3km s-min=17.2km az=137.0*
ISC 23 00:02:37.7±1.1, 0.8N±0.2×29.2W±0.2, h10km, n10, σ0§47/9, mb3.9/6, MS3.5/2, Central Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SACV	**Santiago Islan**	**15.09**	**21**	*e*P	**P**	**00 06 12.4**	**-0.5**
DBIC	**Dimbokro**	**24.93**	**76**	P	**P**	**00 08 02.7**	**-0.1**
	9.8nm,0.9s,mb4.3,baz=236,slow=10,SNR=6.6						
DBIC	**Dimbokro**	**24.93**	**76**	*e*P	**P**	**00 08 02.5**	**-0.3**
	9.5nm,1.1s,mb4.2						
CPUP	**Villa Florida**	**38.30**	**223**	LR	LR	00 25 18.5	
	comp=Z,118nm,20.6s,MS3.7,baz=140,slow=36						
LPAZ	**La Paz**	**42.04**	**244**	P	**P**	**00 10 31.4**	**-0.1**
	1.0nm,0.8s,mb3.5,baz=78,slow=8.4,SNR=5.3						
LPAZ				LR	LR	00 26 14.7	
	comp=Z,45nm,20.4s,MS3.3,baz=39,slow=34						
LPAZ	**La Paz**	**42.04**	**244**	P	**P**	**00 10 31.4**	**-0.1**
LPAZ				LR	LR	00 26 14.7	
ESDC	**Sonseca Array**	**44.98**	**28**	P	**P**	**00 10 56.2**	**+1.1**
	1.2nm,0.8s,mb3.8,baz=227,slow=9.1,SNR=6.4						
GERES	**GERESS Array B**	**60.34**	**31**	P	**P**	**00 12 49.1**	**-0.2**
	0.7nm,0.8s,mb3.7,baz=239,slow=7.8,SNR=6.0						
BRTR	**Keskin Array B**	**68.81**	**47**	P	**P**	**00 13 44.6**	**+0.2**
	0.6nm,0.7s,mb3.6,baz=236,slow=8.9,SNR=4.2						
AKASG	**Malin Array Be**	**69.86**	**35**	P	**P**	**00 13 50.6**	**-0.1**
	2.3nm,0.7s,mb4.2,baz=244,slow=7.2,SNR=8.5						

*CASC **23** 00:18:08.7±2.3, 12.70N×90.26W, h32km±21km, MD3.8, ML4.1, mb3.8(NEIC)*
*NEIC **23** 00:18:13.6±2.5, 13.13N×89.88W, h49km±24km, mb3.8/4, Error ellipse: s-maj=36.0km s-min=13.4km az=56.0*
*IDC **23** 00:18:18.9±6.4, 13.31N×89.70W, h90km±61km, mb3.5/4, mb1 3.9/5, mb1mx3.5/15, ML3.0/1, Error ellipse: s-maj=63.6km s-min=28.7km az=32.0*
ISC 23 00:18:07.8±0.7, 12.62N±0.04×90.29W±0.04, h42km±9km, n42, σ1§17/53, mb3.9/6, 10C-5D, Off coast of central America

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SBLS	**San Blas**	**1.37**	**28**	*e*P	**P**	**00 18 31.1**	**+0.1**
SBLS				*e*S	**S**	**00 18 48.6**	**+0.5**
SNJE	**San Jose**	**1.41**	**28**	*e*P	**P**	**00 18 31.4**	**0.0**
SNJE				*e*S	**S**	**00 18 49.6**	**+0.7**
RTR	**El Retiro**	**1.42**	**26**	*e*P	**P**	**00 18 31.8**	**+0.3**
RTR				*e*S	**S**	**00 18 49.4**	**+0.3**
BOQS	**Boqueron**	**1.48**	**41**	⇑*e*P	**P**	**00 18 32.5**	**+0.1**
BOQS				*e*S	**S**	**00 18 49.9**	**-0.9**
IXG	**Ixpaco**	**1.55**	**354**	*e*P	**P**	**00 18 32.6**	**-0.9**
IXG				*e*S	**S**	**00 18 52.4**	**-0.2**
IXG				AML	AML	00 18 56.5	
	comp=N,6μm,0.5s						
LFRS	**El Faro**	**1.56**	**50**	⇑*e*P	**P**	**00 18 33.3**	**-0.2**
RBDL	**Robledal**	**1.59**	**22**	⇑*e*P	**P**	**00 18 34.5**	**+0.5**
LFU	**La Fuente**	**1.60**	**45**	⇓*e*P	**P**	**00 18 34.4**	**+0.2**
LCBS	**La Ceiba**	**1.64**	**51**	⇑*e*P	**P**	**00 18 34.4**	**-0.3**
LCBS				*e*S	**S**	**00 18 53.2**	**-1.6**
LBRS	**Las Brisas**	**1.65**	**47**	*e*P	**P**	**00 18 34.8**	**0.0**
LBRS				*e*S	**S**	**00 18 54.1**	**-0.8**
SNVI	**San Vicente**	**1.72**	**55**	*e*P	**P**	**00 18 36.1**	**+0.3**
SNVI				*e*S	**S**	**00 18 58.6**	**+1.8**
MTO2	**Montecristo 2**	**1.98**	**27**	*e*P	**P**	**00 18 40.5**	**+0.9**
MTO2				*e*S	**S**	**00 19 03.5**	**+0.2**
VSM	**San Miguel**	**2.12**	**68**	⇑*e*P	**P**	**00 18 41.7**	**+0.1**
JAT	**Jato**	**2.14**	**322**	*e*P	**P**	**00 18 41.6**	**-0.1**
JAT				*e*S	**S**	**00 19 07.2**	**+0.1**
JAT				AML	AML	00 19 09.3	
	comp=N,1μm,0.3s						
BLLM	**Bellamira**	**2.16**	**68**	⇑*i*P	**P**	**00 18 42.8**	**+0.7**
BLLM				*e*S	**S**	**00 19 09.0**	**+1.2**
CNCH	**Conchagua**	**2.48**	**75**	⇑*e*P	**P**	**00 18 46.1**	**-0.5**
CNCH				*e*S	**S**	**00 19 17.5**	**+1.6**
PYN	**Poneloya**	**3.20**	**94**	⇓*e*P	**P**	**00 18 55.7**	**-1.2**
LEON	**Leon**	**3.32**	**93**	*e*P	**P**	**00 18 57.0**	**-1.6**
TEL3	**Telica 3**	**3.36**	**90**	⇓*e*P	**P**	**00 18 58.1**	**-1.1**
CNGN	**Cerro Negro**	**3.51**	**92**	*e*P	**P**	**00 18 59.4**	**-1.9**
COPN	**Copaltepe**	**3.64**	**97**	⇓*e*P	**P**	**00 19 01.6**	**-1.5**
CONN	**Concepcion**	**4.68**	**102**	⇓*e*P	**P**	**00 19 16.6**	**-1.3**
CRZC	**La Cruz**	**4.88**	**109**	*e*P	**P**	**00 19 22.3**	**+1.6**
VCR	**Vista de Mar**	**5.20**	**118**	*e*P	**P**	**00 19 26.1**	**+1.0**
JTS	**JuntasAbangare**	**5.72**	**113**	*e*Pn	**P**	**00 19 32.6**	**+0.2**
	comp=N,2.0nm,1.0s						
JCR	**Jicaral**	**5.78**	**118**	*e*P	**P**	**00 19 34.6**	**+1.4**
LAJ	**Bijagual**	**6.64**	**114**	*e*P	**P**	**00 19 42.7**	**-2.7**
LCR2	**La Lucha 2**	**6.80**	**114**	*e*P	**P**	**00 19 48.4**	**+0.9**
URSC	**Urasca**	**6.96**	**113**	*e*P	**P**	**00 19 52.5**	**+2.7**
TEIG	**Tepich**	**7.80**	**14**	*e*P	**P**	**00 19 56.9**	**-4.7**
ROSC	**El Rosal**	**17.55**	**115**	P	**P**	**00 22 15.7**	**+4.6**
	comp=N,1.1nm,0.3s,baz=287,slow=18,SNR=10						
LRAL	**Lakeview Retre**	**20.54**	**8**	P	**P**	**00 22 43.2**	**-2.1**
	comp=N,2.1nm,0.5s						
TXAR	**Lajitas Array**	**20.77**	**325**	P	**P**	**00 22 50.1**	**+2.5**
	comp=N,2.1nm,0.5s,baz=145,slow=11,SNR=38						
MIAR	**Mount Ida**	**22.03**	**353**	*e*P	**P**	**00 22 59.3**	**-1.0**
	comp=N,4.1nm,0.7s,mb4.0						
WMOK	**Wichita Mounta**	**23.33**	**342**	P	**P**	**00 23 12.1**	**-1.0**
	comp=N,3.4nm,1.2s,mb3.6						
MNTX	**Cornudas Mount**	**23.52**	**326**	*e*P	**P**	**00 23 16.8**	**+1.7**
CCM	**Cathedral Cave**	**25.34**	**358**	*e*P	**P**	**00 23 31.0**	**-1.5**
	comp=N,6.1nm,1.0s,mb4.1						
NVAR	**Mina Array Bea**	**35.78**	**321**	P	**P**	**00 25 08.5**	**+3.5**
	comp=N,1.4nm,0.7s,mb4.0,baz=130,slow=9.1,SNR=6.9						
NVAR	**Mina Array Bea**	**35.78**	**321**	P	**P**	**00 25 08.5**	**+3.5**
SCHQ	**Schefferville**	**45.96**	**19**	P	**P**	**00 26 26.1**	**-2.3**
	comp=N,3.0nm,0.5s,mb4.5,baz=170,slow=11,SNR=8.5						
ILAR	**Eielson Array**	**64.76**	**337**	P	**P**	**00 28 44.7**	**+0.8**
	comp=N,0.3nm,0.9s,mb3.3,baz=149,slow=4.7,SNR=4.7						
CMAR	**Chiang Mai Arr**	**147.81**	**343**	PKPbc	PKPdf	00 37 52.1	+6.0
	comp=N,2.3nm,1.1s,slow=1.4,SNR=4.5						

*BJI **23** 00:18:44.4, 7.95S×128.95E, h129km, mB5.0, mb5.2*
*MOS **23** 00:18:47.3±0.9, 7.29S×128.37E, h104km, mb5.1/18, Error ellipse: s-maj=19.4km s-min=8.6km az=105.9*
*NEIC **23** 00:18:51.4±0.9, 7.32S×128.36E, h129km±8km, mb4.9/22, Error ellipse: s-maj=8.8km s-min=5.1km az=77.0*
*HRVD **23** 00:18:51.4±0.2, 7.51S×128.46E, h170km±1km, MW5.2/73, Centroid moment Tensor Solution. LP body waves: s49,c70;Mantle waves: s73,c135; Half duration: 1§0 Moment tensor: Scale 10^{17}Nm; M_{rr}0.75±.02; $M_{\theta\theta}$-0.54±.02; $M_{\phi\phi}$-0.22±.02; $M_{r\theta}$-0.03±.02; $M_{\theta\phi}$-0.40±.02; $M_{\phi r}$0.23±.02; Best double couple: M_o.81×10^{17} NP1:∅s250°, δ43°,λ112° NP2:∅s41°, δ51°,λ70°. Principal axes: T .82,*

Plg74°, Azm249°; N 0, Plg15°, Azm54°; P -.81, Plg4°, Azm145°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.
*SYO **23** 00:18:51.4, 7.32S×128.36E, h129km, MB4.9*
*IDC **23** 00:18:52.1±2.8, 7.37S×128.30E, h132km±24km, mb4.7/17, mb1 4.8/19, mb1mx4.7/20, MS4.1/5, Ms1 4.1/5, ms1mx3.6/21, Error ellipse: s-maj=18.9km s-min=9.4km az=72.0*
ISC 23 00:18:49.7±1.0, 7.36S±0.04×128.51E±0.06, h127km±9km, h115km±3.0km: pP-P, n253, σ1§00/171, mb5.1/65, 17C-16D, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KAKA	**Kakadu**	**6.54**	**144**	⇓*i*P	**P**	**00 20 29.0**	**+4.3**
KAKA				*e*S	**S**	**00 21 37.7**	**-0.7**
FITZ	**Fitzroy Crossi**	**11.04**	**194**	*e*P	**P**	**00 21 24.1**	**-0.8**
	162nm,0.3s						
FITZ				*e*S	**S**	**00 23 21.8**	**-4.5**
FITZ	**Fitzroy Crossi**	**11.04**	**194**	P	**P**	**00 21 23.9**	**-1.0**
	85nm,0.3s,baz=17,slow=9.1,SNR=960						
FITZ				S	**S**	**00 23 19.3**	**-7.0**
	78nm,0.3s,baz=160,slow=17,SNR=16						
FITZ				LR	LR	00 26 31.5	
	comp=Z,552nm,18.1s,baz=59,slow=42						
WRAB	**Tennant Creek**	**13.72**	**156**	⇓*i*Pn	**P**	**00 21 59.3**	**-0.6**
	410nm,0.4s						
WRAB				*e*P		00 22 07.1	
WRAB				*e*Sn	**S**	**00 24 20.9**	**-8.6**
WRAB				*e*S	**S**	**00 24 42.2**	**+13**
WRA	**Warramunga Arr**	**13.72**	**156**	P	**P**	**00 21 59.4**	**-0.7**
	86nm,0.3s,baz=334,slow=14,SNR=1173						
WRA				S	**S**	**00 24 21.2**	**-8.4**
	80nm,0.3s,baz=327,slow=23,SNR=7.8						
WRA				LR	LR	00 27 32.3	
	comp=Z,383nm,21.4s,baz=330,slow=38						
WB2	**Warramunga Arr**	**13.73**	**156**	⇓*i*P	**P**	**00 21 59.2**	**-0.9**
WB2				*e*S	**S**	**00 24 22.5**	**-7.3**
BUTP	**Butuan**	**16.48**	**350**	*e*P	**P**	**00 22 41.3**	**+6.5**
AS12	**Alice Springs**	**17.02**	**163**	*e*P	**P**	**00 22 40.3**	**-1.1**
	173nm,0.4s						
AS12				*e*S	**S**	**00 25 35.8**	**-9.1**
TBP	**Tagbilaran**	**17.56**	**345**	*e*P	**P**	**00 22 50.1**	**+2.0**
MSLP	**Maasin**	**17.76**	**348**	*i* P	**P**	**00 22 54.1**	**+3.7**
KKM	**Kota Kinabalu**	**18.11**	**317**	⇓*e*P	**P**	**00 22 57.0**	**+2.6**
PMG	**Port Moresby**	**18.56**	**98**	P	**P**	**00 23 05.3**	**+5.9**
	9.6nm,0.3s,baz=280,slow=4.7,SNR=87						
PMG	**Port Moresby**	**18.56**	**98**	P	**P**	**00 23 05.3**	**+5.9**
PMG				pmax	pmax		
	comp=Z,10.0nm,0.3s						
PMG	**Port Moresby**	**18.56**	**98**	*e*P	**P**	**00 23 05.4**	**+6.0**
BESP	**Borongan**	**19.08**	**351**	*e*P	**P**	**00 23 08.4**	**+3.4**
PVCP	**Virac**	**21.27**	**348**	*e*P	**P**	**00 23 30.6**	**+3.4**
CTA	**Charters Tower**	**21.35**	**128**	⇓*i*P	**P**	**00 23 31.2**	**+3.2**
	comp=Z,18nm,0.4s,mb4.8						
CTA				*e*S	**S**	**00 27 19.8**	**+7.5**
CTA	**Charters Tower**	**21.35**	**128**	P	**P**	**00 23 30.8**	**+2.7**
	comp=Z,29nm,0.6s,mb4.8,baz=304,slow=12,SNR=38						
CTA				LR	LR	00 32 48.5	
	comp=Z,1μm,18.5s,baz=245,slow=39						
CTA	**Charters Tower**	**21.35**	**128**	P	**P**	**00 23 30.8**	**+2.8**
CTA				pmax	pmax		
	comp=Z,29nm,0.6s						
CTA				MLR	MLR		
	comp=Z,1μm,18.5s						
CTAO	**Charters Tower**	**21.35**	**128**	⇓*i*P	**P**	**00 23 31.2**	**+3.1**
	comp=Z,67nm,1.0s,mb4.9						
CTAO				*e*S	**S**	**00 27 12.2**	**-0.1**
TGY	**Tagaytay City**	**22.61**	**341**	P	**P**	**00 23 41.7**	**+1.2**
	comp=Z,272nm,0.6s,mb5.8,baz=133,slow=3.1,SNR=9.4						
TGY	**Tagaytay City**	**22.61**	**341**	P	**P**	**00 23 41.7**	**+1.2**
TGY				pmax	pmax		
	comp=Z,272nm,0.6s						
FORT	**Forrest**	**23.30**	**181**	*e*P	**P**	**00 23 49.4**	**+2.4**
	comp=Z,221nm,0.5s,mb5.8						
FORT				*e*S	S	00 28 07.5	+21
KLBR	**Kellerberrin**	**26.11**	**201**	*e*P	**P**	**00 24 13.2**	**-0.4**
	comp=Z,32nm,0.8s,mb4.8						
KLBR				*e*S	S	00 29 10.3	+37
MUN	**Mundaring**	**27.04**	**203**	*e*P	**P**	**00 24 21.8**	**-0.3**
	comp=Z,11nm,0.7s,mb4.5						
MUN				*e*S	S	00 29 33.0	+44
STKA	**Stephens Creek**	**27.27**	**155**	⇓*i*P	**P**	**00 24 25.1**	**+0.9**
	comp=Z,21nm,0.6s,mb4.8						
STKA	**Stephens Creek**	**27.27**	**155**	P	**P**	**00 24 24.6**	**+0.4**
	comp=Z,21nm,0.4s,mb5.0,baz=322,slow=8.2,SNR=35						
STKA				LR	LR	00 36 40.4	
	comp=Z,647nm,18.9s,baz=300,slow=39						
NWAO	**Narrogin (SRO)**	**27.51**	**201**	P	**P**	**00 24 25.6**	**-0.8**
	comp=Z,18nm,0.6s,mb4.8,baz=41,slow=9.3,SNR=15						
NWAO	**Narrogin (SRO)**	**27.51**	**201**	P	**P**	**00 24 25.6**	**-0.8**
NWAO				pmax	pmax		
	comp=Z,18nm,0.6s						
NWAO	**Narrogin (SRO)**	**27.51**	**201**	*e*P	**P**	**00 24 26.6**	**+0.2**
ARMA	**Armidale**	**31.56**	**140**	*e*P	**P**	**00 25 04.0**	**+1.7**
QIZ	**Qiongzhong**	**32.04**	**325**	P	**P**	**00 25 04.8**	**-1.8**
CNB	**Canberra Magne**	**33.77**	**148**	*e*P	**P**	**00 25 22.8**	**+1.5**
	comp=Z,32nm,1.7s,mb4.9						
TOO	**Toolangi**	**33.79**	**155**	*e*P	**P**	**00 25 24.1**	**+2.6**
	comp=Z,10nm,1.2s,mb4.5						
JOW	**Kunigami**	**33.99**	**360**	P	**P**	**00 25 23.0**	**-0.3**
	comp=Z,46nm,0.8s,mb5.4,baz=182,slow=7.9,SNR=11						
CMAR	**Chiang Mai Arr**	**38.85**	**312**	P	**P**	**00 26 03.8**	**-0.5**
	comp=Z,12nm,0.9s,mb4.7,baz=144,slow=5.7,SNR=42						
CMAR				PcP	PcP	00 28 13.3	0.0
	comp=Z,5.0nm,0.7s,baz=160,slow=2.2,SNR=6.1						
CMAR	**Chiang Mai Arr**	**38.85**	**312**	P	**P**	**00 26 03.8**	**-0.4**
CMAR						00 28 13.4	
CMAR				pmax	pmax		
	comp=Z,12nm,0.9s						
CMAR				pmax	pmax		
	comp=Z,5.0nm,0.7s						
SSE	**Sheshan**	**38.88**	**350**	P	**P**	**00 26 05.5**	**+1.2**
SSE				PP	PP	00 27 35.8	-3.0
SSE				S	**S**	**00 31 49.1**	**-3.4**
SSE				XS		00 32 48.4	
SSE				SS	SS	00 34 45.8	+3.6
SSE				AMB	AMB		
	comp=Z,54nm,1.0s,mb5.3						
SSE				AMB	AMB		
	comp=Z,62nm,3.6s						
GYA	**Guiyang**	**39.75**	**329**	⇑*i*P	**P**	**00 26 12.9**	**+1.3**
GYA				AP	pP	00 26 37.8	-2.5
GYA				XP	sP	00 26 51.4	-4.0
GYA				PP	PP	00 27 47.6	-0.7
GYA				PCP	PcP	00 28 16.5	+0.4
GYA				S	**S**	**00 32 06.9**	**+1.3**
GYA				AMB	AMB		
	comp=Z,40nm,1.0s,mb5.2						
GYA				AMB	AMB		
	comp=Z,340nm,4.5s						
WHN	**Wuhan**	**40.06**	**341**	⇑P	**P**	**00 26 15.5**	**+1.4**
NJ2	**Nanjing**	**40.26**	**347**	*e*P	**P**	**00 26 16.8**	**+1.1**
NJ2				PP	PP	00 27 54.4	+0.8
NJ2				S	**S**	**00 32 10.0**	**-3.2**
NJ2				XS		00 33 11.0	
NJ2				AMB	AMB		
	comp=Z,350nm,5.7s						
JNU	**Nakatsue**	**40.32**	**3**	P	**P**	**00 26 16.4**	**+0.2**
	comp=Z,18nm,1.0s,mb4.9,baz=38,slow=6.4,SNR=7.8						
KMI	**Kunming**	**40.89**	**323**	*e*P	**P**	**00 26 22.8**	**+1.8**
KMI				PP	PP	00 28 01.1	+1.1
KMI				S	**S**	**00 32 30.0**	**+7.4**
KMI				AMB	AMB		
	comp=Z,26nm,1.5s,mb4.8						
KMI				LR	LR		
	comp=Z,220nm,33.9s						
ENH	**Enshi**	**41.64**	**335**	*e*P	**P**	**00 26 26.6**	**-0.5**
	comp=Z,0.7nm,0.5s						
KS15	**Wonju Array Si**	**44.57**	**359**	*e*P	**P**	**00 26 51.3**	**+0.5**
MAJO	**Matsushiro**	**44.61**	**11**	*e*P	**P**	**00 26 49.4**	**-1.7**
	comp=Z,35nm,0.9s,mb5.1						
MAT	**Matsushiro**	**44.61**	**11**	P	**P**	**00 26 50.1**	**-1.0**
MAT	**Matsushiro**	**44.61**	**11**	*e*P	**P**	**00 26 50.0**	**-1.1**
	comp=Z,25nm,0.9s,mb5.0						
TIA	**Tai'an**	**44.64**	**347**	*e*P	**P**	**00 26 50.3**	**-1.1**
TIA				AMB	AMB		
	comp=Z,29nm,1.1s,mb4.9						
XAN	**Xi'an**	**45.17**	**337**	P	**P**	**00 26 55.0**	**-0.6**
BJI	**Beijing**	**48.52**	**347**	P	**P**	**00 27 21.5**	**-0.3**
BJI				S	**S**	**00 34 07.4**	**-4.6**
BJI				LR	LR		
	comp=N,181nm,13.9s						
BJI				LR	LR		
	comp=E,184nm,12.9s						
BJI				LR	LR		
	comp=Z,130nm,24.9s						
HHC	**Hu-ho-hao-te**	**50.44**	**343**	⇑P	**P**	**00 27 36.8**	**+0.4**
HHC				AMB	AMB		
	comp=Z,48nm,1.1s,mb5.3						
HHC				AMB	AMB		
	comp=Z,106nm,5.2s						
BTO	**Baotou**	**50.68**	**342**	*e*P	**P**	**00 27 34.8**	**-3.4**
CN2	**Changchun**	**51.00**	**357**	*e*P	**P**	**00 27 41.1**	**+0.5**
CN2				*e*AP	pP	00 28 07.6	-2.8
CN2				PCP	PcP	00 28 56.6	+1.5
CN2				*e*S	**S**	**00 34 49.1**	**+2.9**
CN2				AMB	AMB		
	comp=Z,10.0nm,1.2s,mb4.7						
LSA	**Lhasa**	**51.45**	**318**	P	**P**	**00 27 45.0**	**+0.8**
LSA	**Lhasa**	**51.45**	**318**	*e*P	**P**	**00 27 45.0**	**+0.8**
	comp=Z,15nm,0.9s,mb5.0						
LSA				*e*pP	pP	00 28 12.9	-1.2
LSA				*e*sP	sP	00 28 24.4	-3.6
MDJ	**Mudanjiang**	**51.74**	**1**	P	**P**	**00 27 46.5**	**+0.3**
MDJ				AP	pP	00 28 13.0	-3.0
MDJ				PP	PP	00 29 44.5	-1.1
MDJ				S	**S**	**00 35 01.6**	**+5.2**
MDJ				SS	SS	00 38 34.3	+1.5
MDJ				AMB	AMB		
	comp=Z,24nm,1.7s,mb5.0						
MDJ				AMB	AMB		
	comp=Z,56nm,3.7s						
RPZ	**Rata Peaks**	**51.86**	**141**	P	**P**	**00 27 48.2**	**+1.1**
	comp=Z,23nm,0.7s,mb5.3,baz=275,slow=4.2,SNR=19						
ASAJ	**Asahikawa**	**52.80**	**13**	P	**P**	**00 27 53.9**	**-0.2**
	comp=Z,24nm,0.7s,mb5.4,baz=197,slow=4.4,SNR=10						
ASAJ	**Asahikawa**	**52.80**	**13**	P	**P**	**00 27 53.9**	**-0.2**
ASAJ				pmax	pmax		
	comp=Z,24nm,0.7s						
GTA	**Gaotai**	**53.59**	**332**	⇑P	**P**	**00 28 00.5**	**+0.5**
GTA				AMB	AMB		
	comp=Z,60nm,1.0s,mb5.6						
PKI	**Pulchoki**	**54.25**	**312**	*e*P	**P**	**00 28 04.1**	**-0.8**
	comp=Z,41nm,0.7s,mb5.6						
KKN	**Kakani**	**54.46**	**312**	*e*P	**P**	**00 28 05.7**	**-0.8**
	comp=Z,36nm,0.7s,mb5.5						
DMN	**Daman**	**54.49**	**311**	*e*P	**P**	**00 28 06.1**	**-0.6**
	comp=Z,42nm,0.7s,mb5.6						
GKN	**Gorkha**	**55.06**	**312**	*e*P	**P**	**00 28 10.1**	**-0.7**
	comp=Z,34nm,0.3s,mb5.8						
HYB	**Hyderabad**	**55.16**	**297**	*i* P	**P**	**00 28 10.0**	**-1.7**
HYB	**Hyderabad**	**55.16**	**297**	*e*P	**P**	**00 28 10.0**	**-1.7**
YSS	**Yuzh-Sakhalins**	**55.54**	**12**	⇓*e*P	**P**	**00 28 12.9**	**-1.1**
YSS				pmax	pmax		
	comp=Z,30nm,0.8s,mb5.4						
YSS	**Yuzh-Sakhalins**	**55.54**	**12**	*e*P	**P**	**00 28 13.3**	**-0.7**
KOLN	**Koldanda**	**55.70**	**311**	*e*P	**P**	**00 28 14.5**	**-1.0**
	comp=Z,117nm,0.8s,mb6.0						
DANN	**Dangsing**	**55.89**	**311**	*e*P	**P**	**00 28 16.0**	**-0.9**
KLR	**Kul'dur**	**56.42**	**3**	*e*P	**P**	**00 28 19.5**	**-0.8**
HIA	**Hailar**	**56.91**	**353**	*e*P	**P**	**00 28 22.6**	**-1.1**
	comp=Z,28nm,1.8s,mb5.0						
ULN	**Ulaanbaatar**	**58.16**	**343**	*c i*P	**P**	**00 28 33.0**	**+0.5**
ULN	**Ulaanbaatar**	**58.16**	**343**	*e*P	**P**	**00 28 32.8**	**+0.3**
	comp=Z,60nm,1.2s,mb5.5						
CASY	**Casey**	**60.13**	**188**	*e*P	**P**	**00 28 45.7**	**-0.1**
ZAK	**Zakamensk**	**61.53**	**342**	⇓*i*P	**P**	**00 28 54.9**	**-0.6**
TLY	**Talaya**	**62.57**	**343**	⇑*i*P	**P**	**00 29 02.2**	**-0.2**
TLY				*e*S	**S**	**00 37 15.6**	**-2.5**
TLY				pmax	pmax		
	comp=Z,184nm,0.9s,mb6.0						
TLY				MLR	MLR		
	comp=Z,300nm,15.0s						
WMQ	**Urumqi**	**62.90**	**328**	P	**P**	**00 29 05.3**	**+0.6**
WMQ				AP	pP	00 29 35.8	+0.1
WMQ				PCP	PcP	00 29 42.1	+0.7
WMQ				XP	sP	00 29 49.8	+0.1
WMQ				PP	PP	00 31 26.6	+0.6
WMQ				SCP		00 33 30.8	
WMQ				S	**S**	**00 37 23.3**	**+0.9**
WMQ				PS	PS	00 38 00.5	+0.2
WMQ				SCS	ScS	00 38 41.8	+0.8
WMQ				SS	SS	00 41 32.6	+0.7
MOY	**Mondy**	**63.37**	**341**	*e*P	**P**	**00 29 08.3**	**+0.6**
PET	**Petropavlovsk**	**65.37**	**19**	⇑*i*P	**P**	**00 29 20.6**	**-0.1**
PET				*e*S	S	00 37 51.7	-1.1
PET				pmax	pmax		
	comp=Z,73nm,0.9s,mb5.5						
PET				MLR	MLR		
	comp=Z,94nm,19.0s						
PET	**Petropavlovsk**	**65.37**	**19**	*e*P	**P**	**00 29 20.5**	**-0.2**
	comp=

SBA Scott Base 73.18 172 *e*P P **00 30 06.3 -1.6**
comp=Z,9.1nm,0.8s,mb4.7
MAW Mawson 74.08 201 *e*P P **00 30 13.8 +0.6**
comp=Z,6.6nm,0.7s,mb4.5
MAW Mawson 74.08 201 P P **00 30 13.3 +0.1**
comp=Z,7.8nm,0.9s,mb4.5,baz=90,slow=7.4,SNR=10
MAW Mawson 74.08 201 P P **00 30 13.3 +0.1**
MAW pmax pmax
comp=Z,8.0nm,0.9s
VOSK Vostochnaya 77.12 328 P P **00 30 30.3 -0.4**
VOSK pmax pmax
comp=Z,20nm,0.8s,mb4.9
BVA0 Borovoye Array 77.59 328 *i*P P **00 30 33.0 -0.2**
BVA0 pmax pmax
comp=Z,3.0nm,0.9s,mb4.0
BVAR Borovoye Array 77.59 328 P P **00 30 33.1 -0.1**
comp=Z,56nm,1.2s,mb5.2,baz=135,slow=6.3,SNR=94
BVAR LR LR 01 06 19.0
comp=Z,69nm,18.6s,baz=90,slow=37
BRVK Borovoye 77.66 328⇑*i*P P **00 30 33.5 -0.1**
ZRNK Zerenda 78.28 328 P P **00 30 36.8 -0.2**
ZRNK pmax pmax
comp=Z,54nm,1.1s,mb5.2
ZRNK Zerenda 78.28 328⇑*i*P P **00 30 36.6 -0.4**
TIXI Tiksi 78.85 0 *e*P P **00 30 38.6 -1.2**
TIXI *e*S S 00 40 19.3 -6.4
TIXI pmax pmax
comp=Z,174nm,0.9s,mb5.9
BILL Bilibino 79.80 14*d i*P P **00 30 45.6 +0.6**
BILL *e**PP pP 00 31 23.8 +6.6
BILL pmax pmax
comp=Z,4.0nm,0.8s,mb4.3
BILL Bilibino 79.80 14 *e*P P **00 30 44.5 -0.5**
comp=Z,2.0nm,0.7s,mb4.1
TBI Tubuai 79.83 112 *e*P P **00 30 47.0 +1.0**
comp=Z,142nm,1.1s,mb5.7
TBI *e*S S 00 40 34.1 -2.9
TBI *e*L 00 52 30.6
TBI *e*R 00 56 02.0
comp=Z,127nm,29.2s
TVO Taravao 80.43 107 *e*P P **00 30 48.7 -0.6**
comp=Z,113nm,1.0s,mb5.6
AB31 Akbulak array 81.88 322 *i*P P **00 30 55.9 -0.4**
AB31 pmax pmax
comp=Z,16nm,0.8s,mb4.9
PMOR Pomariorio Ree 81.97 104 *e*P P **00 30 57.4 0.0**
comp=Z,178nm,1.4s,mb5.7
QSPA South Pole Qui 82.62 180 *e*P P **00 30 59.7 +0.2**
comp=Z,23nm,0.8s,mb5.1
QSPA *e* 00 31 40.1
SYO Syowa Base 82.79 201⇓P P **00 31 00.9 +0.3**
SYO Syowa Base 82.79 201⇓*e*P P **00 31 00.9 +0.3**
HASS Wahat al Ahsa' 83.08 296 P P **00 31 02.5 -0.5**
THR Tehran 84.17 307 P P **00 31 08.4 +0.1**
comp=Z,1.7nm,0.7s,mb4.0,baz=102,slow=5.8,SNR=5.6
THR Tehran 84.17 307 P P **00 31 08.4 +0.1**
THR pmax pmax
comp=Z,2.0nm,0.7s
ARU Arti 85.23 328⇓*i*P P **00 31 12.6 -0.4**
ARU *e* 00 34 31.2
ARU *e*PPP PPP 00 36 24.3 -6.5
ARU *e*S S 00 41 20.8 -10
ARU *e*SS SS 00 47 06.1 -4.7
ARU pmax pmax
comp=Z,49nm,1.1s,mb5.3
ARU Arti 85.23 328 *e*P P **00 31 12.6 -0.4**
comp=Z,58nm,1.1s,mb5.4
KAMS Al Khamasin 86.88 291 P P **00 31 21.1 -0.8**
MZLS Mizel 86.89 295 P P **00 31 22.1 +0.2**
TATS Tathlith 87.78 290 P P **00 31 27.2 +0.9**
ARSS Ar Rass 88.95 296 P P **00 31 31.9 +0.2**
HILS Ha'il 90.44 297 P P **00 31 39.3 +0.7**
ZEI Tsey 91.00 313 *e*P P **00 31 40.5 -0.4**
KMBO Kilima Mbogo 91.11 269 P P **00 31 41.4 -0.7**
comp=Z,2.0nm,0.8s,mb4.3,baz=38,slow=8.2,SNR=4.9
MAIT Maitri 91.60 197 *e*P P **00 31 44.3 +1.3**
KIV Kislovodsk 92.06 314 *e*P P **00 31 45.3 -0.4**
KIV pmax pmax
comp=Z,9.0nm,3.0s
SML Sawmill 93.20 28⇑*i*P P **00 31 50.1 -0.4**
MCK McKinley 93.26 26⇑*e*P P **00 31 49.8 -0.9**
comp=Z,15nm,1.2s,mb5.2
COLA College 93.91 25 *e*P P **00 31 53.6 0.0**
SOC Sochi 94.14 313 *e*P P **00 31 59.4 +4.2**
SOC *e* 00 42 20.2
SOC *e*S S 00 42 51.7 -0.3
SOC *e*SS SS 00 49 12.0 -7.5
SOC *e*SSS SSS 00 52 58.0 -3.8
SOC pmax pmax
comp=Z,3.0nm,0.8s,mb4.7
SOC pmax pmax
comp=N,10.0nm,1.0s
SOC pmax pmax
comp=E,6.0nm,0.5s
SOC smax
comp=N,10.0nm,1.1s
SOC smax
comp=E,9.0nm,1.0s
ILAR Eielson Array 94.30 25 P P **00 31 53.4 -2.0**
comp=E,5.0nm,0.9s,mb4.8,baz=266,slow=4.3,SNR=41
ILAR PP PP 00 35 40.6 -5.8
comp=E,1.7nm,1.0s,baz=260,slow=6.7,SNR=6.7
ILAR PKKPbc 00 48 54.9
comp=E,2.2nm,1.1s,baz=13,slow=1.8,SNR=14
ILAR Eielson Array 94.30 25 P P **00 31 53.4 -2.0**
ILAR 00 35 40.6
ILAR pmax pmax
comp=E,5.0nm,0.9s
ILAR pmax pmax
comp=E,2.0nm,1.0s
ILAR pmax pmax
comp=E,2.0nm,1.1s
SNAA Sanae 94.97 194 *e*P P **00 31 59.4 +1.1**
VNA2 Neumayer--Watz 96.55 193⇑*i*P P **00 32 08.8 +3.3**
VNA2 *e* 00 32 47.6
VNA3 Neumayer Olymp 96.82 193⇑*i*P P **00 32 10.1 +3.3**
VNA3 *e* 00 32 49.0
OBN Obninsk 97.09 325κ *i*P P **00 32 07.5 -0.9**
OBN 00 36 04.0
OBN *e* 00 38 11.9
OBN *e*PS PS 00 44 39.5 -21
OBN SS SS 00 49 57.0 -3.3
OBN *e* 00 53 45.8
OBN pmax pmax
comp=Z,29nm,1.8s,mb5.4
OBN MLR MLR
comp=Z,100nm,22.0s
DAWY Dawson 97.49 26⇑*e*P P **00 32 10.1 +0.2**
BRTR Keskin Array B 98.39 309 P P **00 32 14.2 -0.5**
comp=Z,0.9nm,0.9s,mb4.3,baz=135,slow=7.0,SNR=5.2
ARCES ARCESS Array B 101.40 340 P P 00 32 26.4 -1.1
comp=Z,4.2nm,0.8s,baz=63,slow=8.1,SNR=7.9
ARCES PKiKP 00 36 50.1
comp=Z,2.7nm,1.0s,baz=90,slow=4.5,SNR=4.8
ARCES PKKPbc 00 48 35.2
comp=Z,2.0nm,0.9s,baz=243,slow=2.0,SNR=3.8
ARCES ARCESS Array B 101.40 340 P P 00 32 26.4 -1.1
ARCES pmax pmax
comp=Z,4.0nm,0.8s
ARCES pmax pmax
comp=Z,3.0nm,1.0s
ARCES pmax pmax
comp=Z,2.0nm,0.9s
AKASG Malin Array Be 101.54 320 P P 00 32 26.8 -1.8
comp=Z,0.6nm,0.5s,baz=78,slow=3.9,SNR=6.3
AKASG PKiKP 00 36 50.9
comp=Z,0.6nm,0.6s,baz=79,slow=4.7,SNR=4.3
NB2 NORSAR Subarra109.42 333 PKPdf 00 37 05.1
comp=Z,1.4nm,0.8s,baz=68,slow=1.9
CLL Collm 111.54 322 *e* PKPdf 00 37 10.0 +1.2
GERES GERESS Array B 111.75 320 PKiKP 00 37 10.1
comp=Z,2.5nm,0.6s,baz=45,slow=1.4,SNR=30
GERES GERESS Array B 111.75 320 *i*PKiKP PKPdf 00 37 10.1 +0.9
GERES pmax pmax
comp=Z,3.0nm,0.6s
NVAR Mina Array Bea 112.67 51 PKiKP 00 37 13.6
comp=Z,3.3nm,1.1s,baz=259,slow=0.9,SNR=8.3
NVAR PKKPbc 00 48 10.0
comp=Z,0.4nm,0.3s,baz=99,slow=6.2,SNR=4.4
NVAR Mina Array Bea 112.67 51 PKPdf PKPdf 00 37 13.6 +2.3
NVAR PKKPbc 00 48 10.0
GRA1 Grafenberg Arr 113.09 321 *e*PKP PKPdf 00 37 12.7 +0.8
GRF Grafenberg Arr 113.09 321 *e*PKiKP PKPdf 00 37 12.7 +0.8
CHMT Chamberlain Mo 114.48 42 *e*PKPdf PKPdf 00 37 16.1 +1.4
HLID Hailey 114.56 45 *e*PKPdf PKPdf 00 37 17.7 +2.7

BOZ Bozeman (W) 115.92 43 *e*PKPdf PKPdf 00 37 19.6 +2.1
CDF Champ du Feu 115.95 321 *e*PKP1 PKPdf 00 37 17.9 +0.4
QLMT Earthquake Lak 116.29 43 *e*PKPdf PKPdf 00 37 19.8 +1.5
HINF Hinteralfeld 116.42 320 *e*PKP1 PKPdf 00 37 18.8 +0.4
comp=Z,15nm,0.8s
HAU Haudompre 116.67 320 *e*PKP1 PKPdf 00 37 19.1 +0.2
comp=Z,10nm,0.8s
GIVF Givet 116.85 323 *e*PKP1 PKPdf 00 37 20.3 +1.1
HWUT Hardware Ranch 117.08 47 *e*PKPdf PKPdf 00 37 21.9 +2.1
WUWY Wally Ulrich 117.14 45 *e*PKPdf PKPdf 00 37 22.5 +2.6
KSWY Kelly School 117.19 44 *e*PKPdf PKPdf 00 37 22.9 +2.9
BAIF Baives 117.23 323 *e*PKP1 PKPdf 00 37 21.3 +1.4
LPG La Plagne 117.24 318 *e*PKP1 PKPdf 00 37 21.4 +1.4
comp=Z,10nm,0.8s
LPL La Plagne 117.24 318 *e*PKP1 PKPdf 00 37 21.4 +1.3
comp=Z,9.3nm,0.6s
SBF Sospel 117.27 316 *e*PKP1 PKPdf 00 37 20.9 +0.7
comp=Z,97nm,1.2s
MEZF Maizieres J'vi 117.31 321 *e*PKP1 PKPdf 00 37 21.1 +1.0
CABF La Chapelle 117.31 319 *e*PKP1 PKPdf 00 37 21.5 +1.3
comp=Z,18nm,0.7s
MVU Marysvale 117.35 50 *e*PKPdf PKPdf 00 37 22.8 +2.4
MSU Marysvale 117.38 50 *e*PKPdf PKPdf 00 37 23.5 +3.0
MBDF Montbardon 117.47 317 *e*PKP1 PKPdf 00 37 21.9 +1.4
comp=Z,9.3nm,0.8s
FRF La Foret Royal 117.91 316 *e*PKP1 PKPdf 00 37 22.3 +0.9
comp=Z,18nm,1.0s
ORIF Oris-en-Rattie 118.01 317 *e*PKP1 PKPdf 00 37 22.5 +1.0
comp=Z,9.1nm,0.8s
FFC Flin Flon 118.02 30 *e*PKPdf PKPdf 00 37 22.7 +1.4
PDAR Pinedale Array 118.19 45 PKP PKPdf 00 37 23.4 +1.5
comp=Z,3.9nm,0.7s,baz=328,slow=0.5,SNR=33
PDAR PKKPbc 00 47 42.4
comp=Z,1.6nm,0.8s,baz=110,slow=5.9,SNR=13
SMRF Simiane la Rot 118.52 316 *e*PKP1 PKPdf 00 37 23.2 +0.6
comp=Z,12nm,0.9s
SMF Signal de Mont 118.75 320 *e*PKP1 PKPdf 00 37 23.7 +0.7
SSF Saint Saulge 118.81 320 *e*PKP1 PKPdf 00 37 24.1 +1.0
comp=Z,16nm,0.7s
VIVF Saint-Julien-l 118.84 318 *e*PKP1 PKPdf 00 37 24.1 +0.9
comp=Z,18nm,0.9s
AVF Avril sur Loir 119.01 320 *e*PKP1 PKPdf 00 37 24.1 +0.6
comp=Z,12nm,0.9s
HYF Humbligny 119.28 321 *e*PKP1 PKPdf 00 37 25.3 +1.3
BGF Bois d'Agland 119.42 320 *e*PKP1 PKPdf 00 37 25.5 +1.2
comp=Z,26nm,0.8s
LASF Ste Croix 119.65 317 *e*PKP1 PKPdf 00 37 25.9 +1.1
comp=Z,26nm,1.1s
PV10 Paradox Valley 119.80 50 *e*PKPdf PKPdf 00 37 27.7 +2.5
PV01 Paradox Valley 120.22 50 *e*PKPdf PKPdf 00 37 28.5 +2.5
LDF La Druitiere 120.42 323 *e*PKP1 PKPdf 00 37 27.8 +1.6
comp=Z,15nm,0.9s
CAF Calviac 120.54 318 *e*PKP1 PKPdf 00 37 28.0 +1.5
comp=Z,18nm,0.9s
GRR Gorron 120.95 323 *e*PKP1 PKPdf 00 37 28.1 +0.9
MTLF Montolieu 121.02 317 *e*PKP1 PKPdf 00 37 28.4 +0.9
comp=Z,20nm,1.0s
MFF Saint Martin d 121.29 321 *e*PKP1 PKPdf 00 37 28.8 +0.9
comp=Z,22nm,0.8s
LFF La Frestale 121.41 319 *e*PKP1 PKPdf 00 37 29.7 +1.5
comp=Z,25nm,0.9s
ISCO Idaho Springs 121.94 47 *e*PKPdf PKPdf 00 37 31.6 +2.3
LAZ Ladron 122.30 54 *e*PKPdf PKPdf 00 37 32.6 +2.5
EPF Esparros 122.41 317 *e*PKP1 PKPdf 00 37 31.3 +1.2
comp=Z,6.3nm,0.7s
SDCO Great Sand Dun 122.66 50 *e*PKPdf PKPdf 00 37 33.6 +2.8
ANMO Albuquerque 122.70 53*d i*PKIKP PKPdf 00 37 33.9 +3.0
ANMO Albuquerque 122.70 53 *e*PKPdf PKPdf 00 37 33.4 +2.5
LPM Los Pinos Moun 122.73 54 *e*PKPdf PKPdf 00 37 33.4 +2.4
BNM Barren Site 122.77 54 *e*PKPdf PKPdf 00 37 32.0 +1.0
ETSF Etsaut 123.07 317 *e*PKP1 PKPdf 00 37 33.2 +1.8
comp=Z,21nm,0.9s
MNTX Cornudas Mount 124.39 57 *e*PKPdf PKPdf 00 37 36.0 +1.7
TXAR Lajitas Array 126.38 59 PKP PKPdf 00 37 40.1 +1.9
comp=Z,2.0nm,0.7s,baz=238,slow=1.4,SNR=26
ESDC Sonseca Array 126.72 315 PKP PKPdf 00 37 40.2 +1.6
comp=Z,1.6nm,0.8s,baz=8.2,slow=3.3,SNR=7.5
WMOK Wichita Mounta 128.77 51 *e*PKPdf PKPdf 00 37 44.4 +1.7
EVO Evora 130.05 315 *e*PKIKP PKPdf 00 37 45.4 +0.4
comp=Z,15nm,1.0s
SCHQ Schefferville 131.09 12 PKP PKPdf 00 37 47.1 +0.6
baz=90,slow=20
MIAR Mount Ida 132.80 49 *e*PKPdf PKPdf 00 37 52.6 +2.3
FVM French Village 133.44 43 *e*PKPdf PKPdf 00 37 52.5 +1.1
KIC Kosan Boka 133.59 272 *e*PKP1 PKPdf 00 37 54.4 +2.1
comp=Z,36nm,0.9s
DBIC Dimbokro 133.73 272 PKP PKPdf 00 37 53.7 +1.1
comp=Z,5.7nm,0.6s,baz=128,slow=4.5,SNR=11
DBIC Dimbokro 133.73 272 PKIKP PKPdf 00 37 53.7 +1.1
DBIC pmax pmax
comp=Z,6.0nm,0.6s
DBIC Dimbokro 133.73 272 PKP PKPdf 00 37 53.7 +1.1
TRQA Tornquist 133.77 169 *e*PKPdf PKPdf 00 37 54.2 +2.1
LIC Lamto 133.87 272 *e*PKIKP PKPdf 00 37 52.2 -0.6
comp=Z,24nm,0.8s
LIC Lamto 133.87 272 *e*PKP1 PKPdf 00 37 54.8 +2.0
comp=Z,28nm,0.9s
TIC Toumodi 133.89 272 *e*PKP1 PKPdf 00 37 53.8 +0.9
comp=Z,25nm,0.7s
BLO Bloomington 135.35 39 *e*PKPdf PKPdf 00 37 57.5 +2.6
WCI Wyandotte Cave 136.04 40 *e*PKPpre 00 37 48.9
WCI *e*PKPdf PKPdf 00 37 58.6 +2.4
WVT Waverly 136.18 44 *e*PKPdf PKPdf 00 37 57.1 +0.5
PLAL Pickwick Lake 136.60 45 *e*PKPdf PKPdf 00 37 57.3 0.0
LRAL Lakeview Retre 138.36 47 *e*PKPpre 00 37 50.1
LRAL *e*PKPdf PKPdf 00 38 01.7 +1.1
CPCT Cooper Cave 138.80 43 *e*PKPdf PKPdf 00 38 04.5 +3.2
BINY Binghamton 139.10 28 *e*PKPpre 00 37 57.0
BINY *e*PKPdf PKPdf 00 38 02.7 +1.0
SSPA Standing Stone 139.35 31 *e*PKPdf PKPdf 00 38 03.5 +1.3
FWV Forest Hill 139.85 37 *e*PKPpre 00 37 56.5
FWV *e*PKPdf PKPdf 00 38 06.0 +2.8
PWV Princeton 139.87 38 *e*PKPpre 00 37 56.7
ELN Prospectdale 140.12 37 *e*PKPpre 00 37 56.9
MVL Millersville 140.61 31 *e*PKPdf PKPdf 00 38 06.1 +1.5
JSC Jenkinsville 141.65 42 *e*PKPdf PKPdf 00 38 08.9 +2.3
LVC Limon Verde 145.67 151 *e*PKPdf PKPdf 00 38 17.4 +3.6
CPUP Villa Florida 146.03 171 PKPbc PKPbc 00 38 16.2 +0.8
comp=Z,18nm,0.8s,baz=208,slow=2.0,SNR=41
CPUP Villa Florida 146.03 171 *e*PKPdf PKPdf 00 38 15.9 +1.6
JTS JuntasAbangare 146.81 82 *e*PKPbc PKPbc 00 38 20.2 +2.6
ARE Arequipa 149.14 140 *e*P PKPdf 00 38 27.0 +7.4
CAM4 Nova Friburgo 149.20 196⇑*i*P PKPdf 00 38 26.3 +6.7
CAM4 *i* 00 38 27.9
CAM4 *i* 00 38 30.5
CAM4 *i* 00 38 41.3
CAM4 *i* 00 39 01.3
CAM3 Guarapari 150.08 201 (P) PKPdf 00 38 34.4 +13
LPAZ La Paz 151.30 145 PKP PKPdf 00 38 26.1 +3.2
comp=Z,3.0nm,0.9s,baz=347,slow=1.6,SNR=11
LPAZ PKPbc PKPdf 00 38 32.1 +9.2
comp=Z,30nm,1.0s,baz=22,slow=1.1,SNR=53
LPAZ PKPab PKPab 00 38 41.0 +1.1
comp=Z,16nm,0.7s,baz=173,slow=3.3,SNR=18
LPAZ La Paz 151.30 145 *e*PKPdf PKPdf 00 38 26.0 +3.1
LPAZ *e*PKPbc PKPdf 00 38 32.1 +9.2
LPAZ *e*PKPab PKPab 00 38 40.9 +1.0
BBSR BB Station 152.25 25 PKPdf PKPdf 00 38 26.3 +2.4
BBSR *e*PKPbc PKPdf 00 38 32.2 +8.3
BDFB Brasilia 156.89 189 PKP PKPdf 00 38 32.1 +1.5
comp=Z,5.6nm,0.9s,baz=193,slow=7.2,SNR=6.0
BDFB PKPab PKPab 00 39 01.4 -2.2
comp=Z,4.3nm,0.9s,baz=194,slow=7.1,SNR=3.9
ROSC El Rosal 157.16 95 PKP PKPdf 00 38 33.5 +2.4
comp=Z,2.3nm,0.3s,baz=104,slow=20,SNR=4.3
ROSC PKPab PKPab 00 39 05.9 +1.0
comp=Z,2.8nm,0.4s,baz=33,slow=22,SNR=5.2

MDD ***23*** *00:29:44.8±0.8, 35.13N×4.02W, mb4.2/26, Error ellipse: s-maj=9.1km s-min=3.8km az=12.0, AftershockPLICA PRXIMO*
INMG ***23*** *00:29:45.0±1.1, 35.08N×4.02W, h10km±13km, ML3.1, Error ellipse: s-maj=10.5km s-min=3.0km az=170.0*
NEIC ***23*** *00:29:45.0, 35.16N×4.02W, MG4.4(MDD), After MDD.*
LDG ***23*** *00:29:49.6±0.7, 35.45N×4.04W, h2km, Md4.1/1, Ml3.4/2, Error ellipse: s-maj=15.9km s-min=6.4km az=173.0*
ISC 23 00:29:45.9±0.5,**35.42N**±0.04×**4.01W**±0.02,**h10**km,**n106,**
σ1$**35**/190,**4C-3D,Strait of Gibraltar**

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
EMEL	**Melilla** 844nm,0.2s,SNR=18	**0.87**	**98**	⇑P		**Pb**	**00 30 01.0**	**-1.6**
EMEL	3μm,0.2s				S		**Sb**	**00 30 13.6**	**-0.4**
MELI	**Melilla**	**0.89**	**98**	⇑P		**Pb**	**00 30 01.3**	**-1.7**
MELI					S		**Sb**	**00 30 13.2**	**-1.3**
REAL	**Reales**	**1.44**	**318**	⇑P		**Pn**	**00 30 11.9**	**-0.3**
EJIF	**Jimena Fronter** 6.0nm,0.2s,SNR=45	**1.57**	**311**	P		**Pn**	**00 30 14.1**	**+0.1**
EJIF	**Jimena Fronter**	**1.57**	**311**	P		**Pn**	**00 30 14.5**	**+0.6**
EJIF					S		**Sb**	**00 30 37.1**	**+2.8**
ERON	**Agron** 6.4nm,0.2s,SNR=22	**1.60**	**6**	P		**Pn**	**00 30 16.4**	**+1.9**
ERON	69nm,0.4s,SNR=7.8				S		**Sn**	**00 30 40.0**	**+4.7**
ERON	**Agron**	**1.60**	**6**	P		**Pn**	**00 30 17.2**	**+2.8**
ERON					S		**Sn**	**00 30 39.7**	**+4.4**
ELOJ	**Sierra Loja** 6.3nm,0.3s,SNR=26	**1.73**	**356**	P		**Pn**	**00 30 18.2**	**+1.9**
ELOJ	**Sierra Loja**	**1.73**	**356**	P		**Pn**	**00 30 18.0**	**+1.8**
ELOJ					S		**Sn**	**00 30 44.0**	**+5.5**
EQUE	**Quentar** 1.0nm,0.1s,SNR=7.9	**1.84**	**14**	P		**Pn**	**00 30 20.0**	**+2.2**
EQUE	36nm,0.3s,SNR=7.9				S		**Sn**	**00 30 45.6**	**+4.3**
ELIJ	**Sierra de Lija** 41nm,0.3s,SNR=163	**1.86**	**324**	P		**Pn**	**00 30 20.8**	**+2.7**
ELIJ	39nm,0.3s,SNR=4.0				S		**Sn**	**00 30 46.8**	**+5.0**
ELIJ	**Sierra de Lija**	**1.86**	**324**	P		**Pn**	**00 30 20.6**	**+2.5**
ELIJ					S		**Sn**	**00 30 45.7**	**+3.9**
LIJA	**Lijar**	**1.86**	**323**	⇑P		**Pn**	**00 30 21.2**	**+3.0**
ECOG	**Cogollos-Vega** 2.5nm,0.2s,SNR=36	**1.89**	**11**	P		**Pn**	**00 30 21.0**	**+2.5**
ECOG	52nm,0.4s				S		**Sn**	**00 30 48.7**	**+6.2**
ECOG	**Cogollos-Vega**	**1.89**	**11**	P		**Pn**	**00 30 21.1**	**+2.6**
ECOG					S		**Sn**	**00 30 47.0**	**+4.5**
SFS	**San Fernando**	**2.06**	**301**		S		**Sn**	**00 30 48.2**	**+1.2**
ESPR	**Espera** 8.8nm,0.2s,SNR=18	**2.08**	**315**	⇓P		**Pn**	**00 30 23.5**	**+2.2**
ESPR	63nm,0.3s,SNR=4.0				S		**Sn**	**00 30 51.7**	**+4.3**
ESPR	**Espera**	**2.08**	**315**	P		**Pn**	**00 30 23.1**	**+1.9**
ESPR					S		**Sn**	**00 30 51.2**	**+3.8**
SCRT	**Cerro San Cris**	**2.13**	**305**	P		**Pn**	**00 30 23.1**	**+1.1**
ELUQ	**Luque** 13nm,0.2s,SNR=20	**2.15**	**355**	P		**Pn**	**00 30 25.1**	**+2.9**
ELUQ	31nm,0.2s,SNR=4.0				S		**Sn**	**00 30 55.2**	**+6.1**
ELUQ	**Luque**	**2.15**	**355**	P		**Pn**	**00 30 25.6**	**+3.4**
ELUQ					S		**Sn**	**00 30 55.6**	**+6.5**
EQES	**Quesada** 17nm,0.2s,SNR=106	**2.49**	**17**	P		**Pn**	**00 30 30.3**	**+3.1**
EQES	67nm,0.2s,SNR=7.0				S		**Sn**	**00 31 02.4**	**+4.5**
EQES	**Quesada**	**2.49**	**17**	P		**Pn**	**00 30 30.1**	**+2.9**
EQES					S		**Sn**	**00 31 02.0**	**+4.0**
EHUE	**Huescar** 4.4nm,0.2s,SNR=50	**2.65**	**25**	P		**Pn**	**00 30 31.8**	**+2.4**
EHUE	16nm,0.3s,SNR=4.0				S		**Sn**	**00 31 05.0**	**+3.2**
EHUE	**Huescar**	**2.65**	**25**	P		**Pn**	**00 30 31.8**	**+2.4**
EHUE					S		**Sn**	**00 31 05.5**	**+3.7**
EBAN	**Banos Encina** 2.6nm,0.2s,SNR=4.0	**2.74**	**4**	P		**Pn**	**00 30 32.4**	**+1.6**
EBAN	38nm,0.4s,SNR=7.9				S		**Sn**	**00 31 08.5**	**+4.3**
EBAN	**Banos Encina**	**2.74**	**4**	P		**Pn**	**00 30 33.3**	**+2.6**
EBAN					S		**Sn**	**00 31 08.7**	**+4.4**
EADA	**Adamuz** 2.3nm,0.1s,SNR=38	**2.78**	**351**	P		**Pn**	**00 30 33.1**	**+1.8**
EADA	28nm,0.3s,SNR=4.9				S		**Sn**	**00 31 10.8**	**+5.6**
EADA	**Adamuz**	**2.78**	**351**	P		**Pn**	**00 30 33.3**	**+2.0**
EADA					S		**Sn**	**00 31 08.6**	**+3.4**
EMIN	**Mina Concepcio** 6.9nm,0.2s,SNR=118	**3.17**	**318**	P		**Pn**	**00 30 37.0**	**+0.1**
EMIN	24nm,0.4s				S		**Sn**	**00 31 15.2**	**0.0**
EMIN	**Mina Concepcio**	**3.17**	**318**	P		**Pn**	**00 30 37.3**	**+0.4**
EMIN					S		**Sn**	**00 31 15.1**	**-0.1**
ERIP	**Rio Piedras** 12nm,0.1s,SNR=7.9	**3.26**	**308**	P		**Pn**	**00 30 38.2**	**+0.1**
ERIP	70nm,0.3s,SNR=7.9				S		**Sn**	**00 31 16.9**	**-0.6**
EMUR	**La Murta** 4.4nm,0.3s,SNR=15	**3.29**	**42**	P		**Pn**	**00 30 39.4**	**+0.9**
EMUR	**La Murta**	**3.29**	**42**	P		**Pn**	**00 30 37.8**	**-0.7**
EMUR					S		**Sn**	**00 31 16.1**	**-1.9**
EVIA	**Vianos** 21nm,0.5s,SNR=4.0	**3.43**	**20**	P		**Pn**	**00 30 43.4**	**+2.9**
EVIA	**Vianos**	**3.43**	**20**	P		**Pn**	**00 30 45.3**	**+4.8**
EVIA					S		**Sn**	**00 31 26.6**	**+4.9**
PALC	**Alcoutim**	**3.46**	**307**	*e*Pn		**Pn**	**00 30 40.9**	**-0.1**
PALC	48nm,0.4s			*e*Sn		**Sn**	**00 31 22.5**	**+0.1**
PALC	**Alcoutim**	**3.46**	**307**	Pn		**Pn**	**00 30 40.9**	**-0.1**
PALC	24nm,0.4s			Sn		**Sn**	**00 31 22.5**	**+0.1**
EGRO	**El Granado** 4.4nm,0.1s,SNR=18	**3.50**	**308**	⇓P		**Pn**	**00 30 41.4**	**-0.2**
EGRO	52nm,0.3s,SNR=5.9				S		**Sn**	**00 31 22.7**	**-0.8**
EGRO	**El Granado**	**3.50**	**308**	⇓P		**Pn**	**00 30 41.2**	**-0.4**
EGRO					S		**Sn**	**00 31 22.6**	**-0.9**
ETOB	**Tobarra** 7.9nm,0.2s,SNR=85	**3.77**	**31**	P		**Pn**	**00 30 46.4**	**+1.0**
ETOB	26nm,0.4s				S		**Sn**	**00 31 31.4**	**+1.1**
ETOB	**Tobarra**	**3.77**	**31**	P		**Pn**	**00 30 46.4**	**+1.0**
ETOB					S		**Sn**	**00 31 31.2**	**+0.9**
PBEJ	**Beja**	**4.04**	**311**	*e*Pn		**Pn**	**00 30 48.9**	**-0.4**
PBEJ	27nm,0.4s			*e*Sn		**Sn**	**00 31 37.0**	**-0.2**
PBEJ	**Beja**	**4.04**	**311**	Pn		**Pn**	**00 30 48.9**	**-0.4**
PBEJ	14nm,0.4s			Sn		**Sn**	**00 31 37.0**	**-0.2**
EBAD	**Badajoz** 3.6nm,0.1s,SNR=78	**4.10**	**325**	P		**Pn**	**00 30 50.5**	**+0.3**
EBAD	45nm,0.3s,SNR=6.3				S		**Sn**	**00 31 38.2**	**-0.5**
EBAD	**Badajoz**	**4.10**	**325**	P		**Pn**	**00 30 50.5**	**+0.4**
EBAD					S		**Sn**	**00 31 38.8**	**+0.1**
ESDC	**Sonseca Array** 4.0nm,0.3s,baz=178,slow=12,SNR=28	**4.25**	**0**	P		**Pn**	**00 30 53.5**	**+1.4**
ESDC	5.6nm,0.4s,baz=183,slow=22,SNR=4.6				S		**Sn**	**00 31 43.1**	**+0.8**
ESLA	**Sonseca Array**	**4.25**	**0**	*e*P		**Pn**	**00 30 53.5**	**+1.4**
PTEO	**Sao Teotonio**	**4.35**	**301**	*e*Pn		**Pn**	**00 30 52.9**	**-0.7**
PTEO	33nm,0.4s			*e*Sn		**Sn**	**00 31 43.5**	**-1.5**
PTEO	**Sao Teotonio**	**4.35**	**301**	Pn		**Pn**	**00 30 52.9**	**-0.7**
PTEO	16nm,0.4s			Sn		**Sn**	**00 31 43.5**	**-1.5**
EBEN	**Beniarda** 1.3nm,0.2s,SNR=4.0	**4.46**	**42**	P		**Pn**	**00 30 54.6**	**-0.6**
EBEN	**Beniarda**	**4.46**	**42**	P		**Pn**	**00 30 54.0**	**-1.2**
EBEN					S		**Sn**	**00 31 43.6**	**-4.1**
EVO	**Evora**	**4.46**	**315**	*e*Pn		**Pn**	**00 30 55.8**	**+0.6**
EVO	44nm,0.4s			*e*Sn		**Sn**	**00 31 45.7**	**-2.1**
MOE	**Montemor**	**4.65**	**313**	*e*Pn		**Pn**	**00 30 58.4**	**+0.5**
MOE				*e*Sn		**Sn**	**00 31 51.9**	**-0.7**
PCBR	**Castelo Branco** 17nm,0.5s	**5.20**	**329**	*e*Pn		**Pn**	**00 31 05.9**	**+0.3**
PCBR				*e*Sn		**Sn**	**00 32 04.2**	**-2.2**
PCBR	**Castelo Branco** 8.5nm,0.5s	**5.20**	**329**	Pn		**Pn**	**00 31 05.9**	**+0.3**
PCBR				Sn		**Sn**	**00 32 04.2**	**-2.2**
GUD	**Guadarrama** 0.6nm,0.2s,SNR=9.1	**5.21**	**359**	P		**Pn**	**00 31 07.1**	**+1.2**
GUD	6.2nm,0.4s				S		**Sn**	**00 32 07.1**	**+0.4**
GUD	**Guadarrama**	**5.21**	**359**	P		**Pn**	**00 31 06.5**	**+0.7**
GUD					S		**Sn**	**00 32 06.8**	**0.0**
PLOU	**Loures**	**5.37**	**312**	*e*Pn		**Pn**	**00 31 07.5**	**-0.5**
PLOU	23nm,0.4s			*e*Sn		**Sn**	**00 32 08.3**	**-2.3**
PLOU	**Loures**	**5.37**	**312**	Pn		**Pn**	**00 31 07.5**	**-0.5**
PLOU	11nm,0.4s			Sn		**Sn**	**00 32 08.3**	**-2.3**
PTOM	**Tomar**	**5.46**	**321**	*e*Pn		**Pn**	**00 31 09.2**	**-0.1**
PTOM	25nm,0.4s			*e*Sn		**Sn**	**00 32 09.9**	**-2

	12nm,0.4s							
EIBI	**Ibiza**	**5.58**	**48**	P		**Pn**	**00 31 09.4**	**-1.6**
	1.7nm,0.1s,SNR=20							
EIBI	**Ibiza**	**5.58**	**48**	P		**Pn**	**00 31 09.2**	**-1.9**
EIBI				S		**Sn**	**00 32 09.9**	**-6.1**
ETOR	**Torete**	**5.61**	**15**	P		**Pn**	**00 31 12.3**	**+0.9**
	0.6nm,0.1s,SNR=8.5							
ETOR				S		**Sn**	**00 32 15.6**	**-1.0**
	2.6nm,0.3s,SNR=4.0							
ETOR	**Torete**	**5.61**	**15**	P		**Pn**	**00 31 12.2**	**+0.9**
ETOR				S		**Sn**	**00 32 14.1**	**-2.4**
EMOS	**Mosqueruela**	**5.67**	**28**	P		**Pn**	**00 31 12.9**	**+0.6**
	0.4nm,0.2s,SNR=4.0							
EMOS				S		**Sn**	**00 32 18.6**	**+0.4**
	1.1nm,0.3s,SNR=4.0							
EMOS	**Mosqueruela**	**5.67**	**28**	P		**Pn**	**00 31 12.7**	**+0.4**
EMOS				S		**Sn**	**00 32 16.4**	**-1.8**
MTE	**Manteigas**	**5.70**	**332**	*e*Pn		**Pn**	**00 31 12.9**	**+0.2**
MTE				*e*Sn		**Sn**	**00 32 16.9**	**-2.1**
	16nm,0.6s							
MTE	**Manteigas**	**5.70**	**332**	Pn		**Pn**	**00 31 12.9**	**+0.2**
MTE				Sn		**Sn**	**00 32 16.9**	**-2.1**
	8.2nm,0.6s							
MTE	**Manteigas**	**5.70**	**332**	*e*Pn		**Pn**	**00 31 12.8**	**+0.1**
PVIS	**Viseu**	**6.11**	**331**	*e*Pn		**Pn**	**00 31 18.6**	**+0.1**
PVIS				*e*Sn		**Sn**	**00 32 27.8**	**-1.4**
	15nm,0.5s							
PVIS	**Viseu**	**6.11**	**331**	Pn		**Pn**	**00 31 18.6**	**+0.1**
PVIS				Sn		**Sn**	**00 32 27.8**	**-1.4**
	7.4nm,0.5s							
PVRL	**Vila Real**	**6.53**	**335**	*e*Pn		**Pn**	**00 31 24.5**	**+0.1**
PVRL				*e*Sn		**Sn**	**00 32 36.8**	**-2.9**
	18nm,0.3s							
PVRL	**Vila Real**	**6.53**	**335**	Pn		**Pn**	**00 31 24.5**	**+0.1**
PVRL				Sn		**Sn**	**00 32 36.8**	**-2.9**
	8.9nm,0.3s							
PBRG	**Braganca**	**6.72**	**342**	*e*Pn		**Pn**	**00 31 27.8**	**+0.7**
PBRG				*e*Sn		**Sn**	**00 32 43.8**	**-0.7**
	8.2nm,0.6s							
PBRG	**Braganca**	**6.72**	**342**	Pn		**Pn**	**00 31 27.8**	**+0.7**
PBRG				Sn		**Sn**	**00 32 43.8**	**-0.7**
	4.1nm,0.6s							
ECAL	**Calabor**	**6.85**	**343**	P		**Pn**	**00 31 29.8**	**+0.8**
	4.5nm,0.2s,SNR=23							
ECAL				S		**Sn**	**00 32 47.4**	**-0.3**
	20nm,0.6s							
ECAL	**Calabor**	**6.85**	**343**	P		**Pn**	**00 31 29.4**	**+0.5**
ECAL				S		**Sn**	**00 32 45.6**	**-2.1**
ESAC	**San Caprasio**	**6.87**	**23**	P		**Pn**	**00 31 30.9**	**+1.7**
ESAC				S		**Sn**	**00 32 48.8**	**+0.5**
EPOB	**Poblet**	**7.14**	**32**	P		**Pn**	**00 31 32.7**	**-0.3**
	0.4nm,0.3s,SNR=4.0							
EPOB	**Poblet**	**7.14**	**32**	P		**Pn**	**00 31 32.6**	**-0.4**
EPOB				S		**Sn**	**00 32 49.1**	**-5.9**
ELOB	**Lobios**	**7.17**	**335**	P		**Pn**	**00 31 32.9**	**-0.5**
	4.1nm,0.3s,SNR=4.9							
ELOB				S		**Sn**	**00 32 52.1**	**-3.7**
	8.0nm,0.4s,SNR=4.9							
ELOB	**Lobios**	**7.17**	**335**	P		**Pn**	**00 31 32.9**	**-0.5**
ELOB				S		**Sn**	**00 32 51.9**	**-3.9**
EINC	**Incio**	**7.68**	**341**	P		**Pn**	**00 31 40.6**	**+0.1**
	2.3nm,0.4s,SNR=8.2							
EINC				S		**Sn**	**00 33 06.9**	**-1.6**
	1.2nm,0.2s							
EINC	**Incio**	**7.68**	**341**	P		**Pn**	**00 31 40.5**	**-0.1**
EINC				S		**Sn**	**00 33 05.4**	**-3.0**
EMIR	**Miracle**	**7.79**	**32**	P		**Pn**	**00 31 41.9**	**-0.3**
	0.6nm,0.2s,SNR=4.0							
EMIR	**Miracle**	**7.79**	**32**	P		**Pn**	**00 31 42.0**	**-0.1**
ELAN	**Lanestosa**	**7.81**	**3**	P		**Pn**	**00 31 43.5**	**+1.1**
	0.7nm,0.2s,SNR=9.2							
ELAN				S		**Sn**	**00 33 09.4**	**-2.4**
	0.8nm,0.6s,SNR=4.0							
ELAN	**Lanestosa**	**7.81**	**3**	P		**Pn**	**00 31 43.0**	**+0.6**
ELAN				S		**Sn**	**00 33 09.4**	**-2.4**
EARI	**Arriondas**	**7.92**	**354**	P		**Pn**	**00 31 45.1**	**+1.2**
	0.4nm,0.1s,SNR=8.6							
EARI				S		**Sn**	**00 33 11.7**	**-2.8**
	0.5nm,0.3s,SNR=4.0							
EARI	**Arriondas**	**7.92**	**354**	P		**Pn**	**00 31 45.1**	**+1.2**
EARI				S		**Sn**	**00 33 10.4**	**-4.1**
ETSF	**Etsaut**	**7.93**	**19**	*e*Pn		**Pn**	**00 31 42.7**	**-1.4**
ETSF				*e*Sn		**Sn**	**00 33 08.4**	**-6.3**
	1.1nm,0.3s							
EALK	**Alkurruntz**	**8.03**	**13**	P		**P**	**00 31 46.8**	**+1.4**
	4.9nm,0.3s,SNR=20							
EALK				S		**Sn**	**00 33 13.1**	**-4.0**
	5.9nm,0.4s							
EALK	**Alkurruntz**	**8.03**	**13**	P		**P**	**00 31 45.5**	**+0.1**
EALK				S		**Sn**	**00 33 12.8**	**-4.3**
EPON	**Pontenova**	**8.26**	**344**	P		**P**	**00 31 48.5**	**-0.2**
	1.3nm,0.3s,SNR=6.1							
EPON				S		**Sn**	**00 33 18.2**	**-4.8**
	1.5nm,0.3s,SNR=7.9							
EPON	**Pontenova**	**8.26**	**344**	P		**P**	**00 31 48.3**	**-0.4**
EPON				S		**Sn**	**00 33 17.1**	**-5.8**
EPF	**Esparros**	**8.31**	**23**	*e*Pn		**P**	**00 31 48.1**	**-1.3**
EMAZ	**Mazaricos**	**8.45**	**334**	P		**P**	**00 31 50.8**	**-0.5**
	0.7nm,0.2s,SNR=7.9							
EMAZ				S		**Sn**	**00 33 21.7**	**-5.9**
	0.9nm,0.2s,SNR=7.9							
EMAZ	**Mazaricos**	**8.45**	**334**	P		**P**	**00 31 50.1**	**-1.1**
EMAZ				S		**Sn**	**00 33 19.1**	**-8.4**
LFF	**La Frestale**	**10.18**	**19**	*e*Pn		**P**	**00 32 13.8**	**-1.3**
CAF	**Calviac**	**10.56**	**24**	*e*Pn		**P**	**00 32 19.2**	**-1.2**
PGF	**Pioggiola**	**12.36**	**51**	*e*Pn		**P**	**00 32 43.5**	**-1.3**
QUIF	**Quistinic**	**12.50**	**3**	*e*Pn		**P**	**00 32 45.8**	**-0.8**
SGMF	**Saint Gilles**	**12.87**	**4**	*e*Pn		**P**	**00 32 49.7**	**-1.8**
ROSF	**Rostrenen**	**12.92**	**2**	*e*Pn		**P**	**00 32 51.0**	**-1.2**

TAP ***23*** *00:44:25.3,21.95N×121.43E,h5km±1km,ML3.5*
TAP Felt III J at Lanyu.
JMA ***23*** *00:44:26.3±0.3,21.97N×121.62E,h80km,M3.3*

ISC 23 00:44:23.2±0.9,21.96N±0.06×121.62E±0.03,h5km,n35, σ1§20/46,1D,Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LAY	**Lan-yu**	**0.10**	**319**	⇓*i* P	**Pg**	**00 44 29.1**	**+3.7**
TWK1	**Hengchun**	**0.76**	**269**	*i* P	**Pg**	**00 44 37.3**	**-1.0**
TWK1				S	**Sg**	**00 44 45.7**	**-2.8**
HEN	**Hengchun**	**0.82**	**273**	*e*P	**Pb**	**00 44 38.5**	**-1.0**
HEN				S	**Sg**	**00 44 47.4**	**-3.2**
EAST	**Anshuo**	**0.83**	**301**	P	**Pb**	**00 44 38.8**	**-0.9**
ECL	**Taimali**	**0.89**	**316**	*e*P	**Pb**	**00 44 39.7**	**-0.9**
ECL				S	**Sb**	**00 44 50.3**	**-2.2**
TTN	**Taitung**	**0.91**	**331**	*e*P	**Pb**	**00 44 42.5**	**+1.6**
TWG	**Pinlang**	**1.00**	**329**	*e*P	**Pb**	**00 44 42.2**	**-0.3**
SCZT	**Fangliau**	**1.02**	**294**	*e*P	**Pb**	**00 44 42.4**	**-0.4**
CHKT	**Chengkung**	**1.16**	**348**	*e*P	**Pb**	**00 44 44.3**	**-0.9**
CHKT				S	**Sb**	**00 44 59.6**	**-0.8**
SSD	**Sandimen**	**1.21**	**311**	*e*P	**Pb**	**00 44 45.7**	**-0.4**
ELDTW	**Lidau**	**1.35**	**335**	*e*P	**Pb**	**00 44 48.5**	**0.0**
TWF1	**Yuli**	**1.42**	**348**	*e*P	**Pn**	**00 44 48.5**	**-1.2**
STYT	**Tauyuan**	**1.44**	**326**	P	**Pn**	**00 44 49.9**	**0.0**
SGST	**Jiashian**	**1.48**	**319**	*e*P	**Pn**	**00 44 51.3**	**+0.9**
SGST				S	**Sb**	**00 45 10.2**	**+0.6**
WTP	**Ta-pu**	**1.58**	**324**	*e*P	**Pn**	**00 44 53.0**	**+0.9**
CHN1	**Nanshi**	**1.59**	**321**	*e*P	**Pn**	**00 44 53.3**	**+1.3**
YUS	**Yu-Shan**	**1.65**	**338**	*e*P	**Pn**	**00 44 53.8**	**+0.9**
TWK	**Hsinying**	**1.67**	**321**	*e*P	**Pn**	**00 44 54.2**	**+1.0**
ALS	**Alishan**	**1.72**	**334**	*e*P	**Pn**	**00 44 55.9**	**+2.0**
CHN5	**Tsauling**	**1.85**	**332**	*e*P	**Pn**	**00 44 57.3**	**+1.5**
SMLT	**Sun Moon Lake**	**2.03**	**341**	*e*P	**Pn**	**00 44 59.8**	**+1.4**
TYC	**Yuchr**	**2.06**	**340**	*e*P	**Pn**	**00 45 00.5**	**+1.7**
WHF	**Hehuan Shan**	**2.20**	**351**	*e*P	**Pn**	**00 45 01.1**	**+0.3**
WDGT	**Dungji**	**2.23**	**306**	*e*P	**Pn**	**00 45 01.3**	**0.0**
TWT	**Tachien**	**2.32**	**350**	*e*P	**Pn**	**00 45 03.1**	**+0.6**
NNS	**Nan Shan**	**2.48**	**355**	*e*P	**Pn**	**00 45 07.3**	**+2.5**
TWQ1	**Liyutan**	**2.50**	**342**	*e*P	**Pn**	**00 45 06.0**	**+0.9**
NSY	**Sanyi**	**2.57**	**342**	*e*P	**Pn**	**00 45 07.6**	**+1.5**
NSK	**Sanguang**	**2.71**	**355**	*e*P	**Pn**	**00 45 08.5**	**+0.3**
YOJ	**Yonaguni jima**	**2.80**	**27**	P	**Pn**	**00 45 09.6**	**+0.2**
YOJ				S	**Sn**	**00 45 42.8**	**-1.1**
HATJ	**Hateruma jima**	**2.90**	**43**	P	**Pn**	**00 45 10.9**	**+0.1**
HATJ				S	**Sn**	**00 45 45.1**	**-1.3**
IRIF	**Iriomote-Funau**	**3.06**	**39**	P	**Pn**	**00 45 13.6**	**+0.5**
IRIF				S	**Sn**	**00 45 49.9**	**-0.6**
JKRS	**Kuro-shima**	**3.16**	**44**	P	**Pn**	**00 45 15.0**	**+0.5**
JKRS				S	**Sn**	**00 45 51.4**	**-1.6**
JIJ	**Ishigaki jima**	**3.33**	**44**	P	**Pn**	**00 45 16.9**	**-0.1**
JIJ				S	**Sn**	**00 45 55.0**	**-2.4**
JTJ	**Tarama**	**3.89**	**46**	P	**Pn**	**00 45 24.9**	**0.0**
JTJ				S	**Sn**	**00 46 08.8**	**-2.7**

WEL 23 00:45:46.6±0.3,40.29S×173.40E,h155km±3km,ML3.7/4, 1C,Error ellipse: s-maj=2.1km s-min=1.2km az=90.0, Cook Strait

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
QRZ	**Quartz Range**	**0.86**	**231**	⇑PN	P	00 46 10.7	-0.2
QRZ				SN	S	00 46 27.9	-1.7
NNZ	**Nelson**	**0.93**	**181**	PN	P	00 46 11.1	-0.3
NNZ				SN	S	00 46 29.5	-1.0
PKE	**Pukeiti**	**1.18**	**23**	PN	P	00 46 13.5	-0.1
PKE				SN	S	00 46 33.9	-0.6
TUWZ	**Tuamarina**	**1.21**	**160**	PN	P	00 46 14.0	+0.1
TUWZ				SN	S	00 46 33.4	-1.6
KIW	**Kapiti Island**	**1.28**	**117**	PN	P	00 46 14.5	-0.1
WAZ	**Wanganui**	**1.33**	**67**	PN	P	00 46 14.9	-0.1
MRW	**Makara Radio**	**1.36**	**134**	PN	P	00 46 15.3	-0.1
MRW				SN	S	00 46 36.4	-1.2
SNZO	**South Karori**	**1.42**	**136**	PN	P	00 46 15.7	-0.3
SNZO				SN	S	00 46 36.3	-2.4
WEL	**Wellington**	**1.44**	**134**	PN	P	00 46 15.9	-0.2
BSWZ	**Blackbirch Sta**	**1.47**	**166**	PN	P	00 46 16.8	+0.3
CAW	**Cannon Point**	**1.51**	**123**	PN	P	00 46 16.5	-0.4
THZ	**Tophouse**	**1.52**	**194**	PN	P	00 46 16.4	-0.7
THZ				SN	S	00 46 38.5	-2.1
VRZ	**Vera Road**	**1.56**	**42**	PN	P	00 46 16.6	-0.8
BHW	**Baring Head**	**1.58**	**136**	PN	P	00 46 17.0	-0.7
BHW				SN	S	00 46 38.3	-3.3
MRZ	**Mangatainoka R**	**1.70**	**103**	PN	P	00 46 18.2	-0.8
MSWZ	**Moikau Station**	**1.80**	**129**	PN	P	00 46 19.4	-0.6
MTW	**Mount Morrison**	**1.82**	**119**	PN	P	00 46 19.6	-0.6
DSZ	**Denniston Nort**	**1.89**	**219**	PN	P	00 46 20.4	-0.7
WNVZ	**Wahianoa**	**1.94**	**61**	PN	P	00 46 20.6	-1.0
FWVZ	**Far West T-bar**	**1.95**	**59**	PN	P	00 46 20.5	-1.2
TSZ	**Takapari Road**	**1.97**	**84**	PN	P	00 46 21.0	-1.0
WPVZ	**Whakapapa**	**1.97**	**57**	PN	P	00 46 21.0	-1.0
CNZ	**Chateau**	**1.98**	**57**	PN	P	00 46 20.9	-1.1
TUVZ	**Tukino**	**2.01**	**60**	PN	P	00 46 21.4	-1.0
MGZ	**Maungaku**	**2.09**	**53**	PN	P	00 46 22.2	-1.2
HIZ	**Hauiti**	**2.10**	**33**	PN	P	00 46 22.3	-1.2
KHZ	**Kahutara**	**2.13**	**177**	PN	P	00 46 22.7	-1.2
BFZ	**Birch Farm**	**2.20**	**101**	PN	P	00 46 23.6	-1.1
BKZ	**Black Stump Fm**	**2.63**	**66**	PN	P	00 46 27.7	-2.4
LTZ	**Lake Taylor**	**2.63**	**199**	PN	P	00 46 28.6	-1.5
CRLZ	**Canterbury Las**	**3.34**	**190**	SN	S	00 47 11.4	-8.1
WVZ	**Waitaha Valley**	**3.43**	**215**	PN	P	00 46 37.7	-2.7
MQZ	**McQueen's Vall**	**3.46**	**189**	PN	P	00 46 37.4	-3.4
URZ	**Urewera**	**3.52**	**56**	PN	P	00 46 37.7	-3.8
MWZ	**Matawai**	**3.75**	**60**	PN	P	00 46 40.5	-3.9
PUZ	**Puketiti**	**4.37**	**61**	PN	P	00 46 48.2	-4.5
MXZ	**Matakaoa Point**	**4.69**	**56**	PN	P	00 46 53.0	-3.8
ODZ	**Otahua Downs**	**5.17**	**202**	PN	P	00 46 59.5	-3.7

TAP 23 00:58:10.9,21.87N×121.49E,h21km,ML3.2,Taiwan region

IDC ***23*** *00:58:25.4±4.2,5.86S×128.76E,h286km±42km,mb3.2/1, mb1 3.3/4,mb1mx3.1/13,Error ellipse: s-maj=65.1km s-min=14.1km az=71.0*

ISC 23 00:58:23.9±1.5,7.57S±0.1×128.8E±0.2,h286km,n4, σ1§05/7,mb3.6/1,Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**12.70**	**194**	P	**P**	**01 01 15.4**	**-1.0**
	0.3nm,0.3s,baz=18,slow=8.6,SNR=9.6						
FITZ				S	**S**	**01 03 33.1**	**+0.3**
	0.1nm,0.3s,baz=195,slow=18,SNR=3.3						
WRA	**Warramunga Arr**	**15.15**	**160**	P	**P**	**01 01 41.8**	**-4.2**
	0.3nm,0.3s,baz=341,slow=12,SNR=32						
WRA				S	**S**	**01 04 26.2**	**-0.4**
	0.2nm,0.3s,baz=337,slow=21,SNR=5.4						
ASAR	**Alice Springs**	**18.52**	**165**	P	**P**	**01 02 21.1**	**-0.6**
	0.4nm,0.3s,baz=348,slow=11,SNR=33						
ASAR				S	**S**	**01 05 36.2**	**+2.8**
	0.1nm,0.3s,baz=348,slow=17,SNR=3.1						
MKAR	**Makanchi Array**	**66.49**	**327**	P	**P**	**01 08 45.4**	**+0.5**
	0.5nm,0.4s,mb3.6,baz=116,slow=8.9,SNR=7.4						

NIED ***23*** *00:58:00,21.90N×121.80E,h8km,Mw4.3 Best double couple: M₀2.88×10¹⁵ NP1:ϕs169°,δ85°,λ-85°. NP2: ϕs307°,δ7°,λ-132°.*
IDC ***23*** *00:58:26.0±0.7,21.81N×121.62E,mb3.9/13,mb1 4.1/14, mb1mx4.0/20,ML3.4/1,MS3.3/4,Ms1 3.4/4,ms1mx3.1/23, Error ellipse: s-maj=28.6km s-min=15.5km az=66.0*
NEIC ***23*** *00:58:27.4±0.5,21.83N×121.61E,h10km,Error ellipse: s-maj=12.7km s-min=9.9km az=79.0*
TAP ***23*** *00:58:28.1,21.99N×121.52E,h26km,ML4.1*
TAP Felt IV J at Lanyu, I J at Mingjian.
JMA ***23*** *00:58:30.0±0.3,21.86N×121.77E,h50km,M3.8*

ISC 23 00:58:28.4±0.9,21.91N±0.03×121.60E±0.03,h15km±6km, n65,σ1§27/77,mb3.8/13,MS3.1/1,Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LAY	**Lan-yu**	**0.14**	**340**	*i* P	**Pg**	**00 58 32.5**	**+0.2**
TWK1	**Hengchun**	**0.74**	**273**	P	**Pb**	**00 58 40.7**	**-1.8**
TWK1				S	**Sb**	**00 58 49.4**	**-2.8**
TAW	**Tawu**	**0.79**	**304**	*e*P	**Pb**	**00 58 41.0**	**-2.4**
TAW				S	**Sb**	**00 58 50.6**	**-3.1**
HEN	**Hengchun**	**0.81**	**277**	*e*P	**Pb**	**00 58 42.1**	**-1.5**
HEN				S	**Sb**	**00 58 49.9**	**-4.2**
EAST	**Anshuo**	**0.84**	**304**	*e*P	**Pb**	**00 58 42.5**	**-1.7**
EAST				S	**Sb**	**00 58 51.9**	**-3.3**
ECL	**Taimali**	**0.91**	**319**	*e*P	**Pb**	**00 58 44.0**	**-1.4**
TTN	**Taitung**	**0.94**	**333**	*e*P	**Pb**	**00 58 44.0**	**-1.9**
SCZT	**Fangliau**	**1.02**	**297**	*e*P	**Pb**	**00 58 45.6**	**-1.6**
TWG	**Pinlang**	**1.03**	**332**	*e*P	**Pb**	**00 58 44.2**	**-3.3**
TWG				S	**Sb**	**00 58 57.3**	**-3.3**
CHKT	**Chengkung**	**1.21**	**350**	P	**Pb**	**00 58 47.7**	**-2.7**
CHKT				S	**Sb**	**00 59 02.4**	**-3.2**
SSD	**Sandimen**	**1.23**	**313**	*e*P	**Pb**	**00 58 49.2**	**-1.6**
TWP	**Hsiaoliuchiu**	**1.23**	**291**	*e*P	**Pb**	**00 58 50.0**	**-0.9**
SGLT	**Jiouru**	**1.31**	**309**	*e*P	**Pn**	**00 58 52.0**	**-0.3**
TWF1	**Yuli**	**1.47**	**349**	*e*P	**Pn**	**00 58 53.3**	**-1.2**
STYT	**Tauyuan**	**1.47**	**328**	*e*P	**Pn**	**00 58 54.7**	**+0.1**
SGST	**Jiashian**	**1.50**	**321**	*e*P	**Pn**	**00 58 55.0**	**0.0**
SGST				S	**Sb**	**00 59 12.8**	**-1.4**
CHN1	**Nanshi**	**1.61**	**322**	*e*P	**Pn**	**00 58 56.6**	**0.0**
WTP	**Ta-pu**	**1.61**	**326**	*e*P	**Pn**	**00 58 55.7**	**-0.9**
CHN3	**Shinhua**	**1.63**	**316**	*e*P	**Pn**	**00 58 57.1**	**+0.2**
YUS	**Yu-Shan**	**1.69**	**339**	*e*P	**Pn**	**00 58 57.2**	**-0.4**
TWK	**Hsinying**	**1.70**	**323**	*e*P	**Pn**	**00 58 58.0**	**+0.1**
ALS	**Alishan**	**1.76**	**335**	*e*P	**Pn**	**00 58 58.9**	**+0.2**
CHN5	**Tsauling**	**1.89**	**333**	*e*P	**Pn**	**00 59 01.3**	**+0.8**
ESL	**Shilin**	**1.90**	**355**	*e*P	**Pn**	**00 58 58.9**	**-1.9**
SMLT	**Sun Moon Lake**	**2.07**	**342**	*e*P	**Pn**	**00 59 04.0**	**+0.9**
TYC	**Yuchr**	**2.10**	**341**	*e*P	**Pn**	**00 59 03.6**	**0.0**
WNT	**Mingjian**	**2.14**	**337**	*e*P	**Pn**	**00 59 03.7**	**-0.4**
TWD	**Chiawan**	**2.16**	**360**	*e*P	**Pn**	**00 59 00.4**	**-4.1**
WHF	**Hehuan Shan**	**2.25**	**352**	*e*P	**Pn**	**00 59 06.5**	**+0.8**
TWT	**Tachien**	**2.37**	**351**	*e*P	**Pn**	**00 59 07.4**	**0.0**
PNG	**Penghu**	**2.51**	**312**	*e*P	**Pn**	**00 59 06.8**	**-2.6**
TWQ1	**Liyutan**	**2.55**	**343**	*e*P	**Pn**	**00 59 10.2**	**+0.3**
TWC	**Suao**	**2.70**	**5**	*e*P	**Pn**	**00 59 10.6**	**-1.5**
NSK	**Sanguang**	**2.76**	**355**	*e*P	**Pn**	**00 59 13.0**	**-0.1**
TWE	**Neicheng**	**2.80**	**1**	*e*P	**Pn**	**00 59 14.0**	**+0.4**
YOJ	**Yonaguni jima**	**2.85**	**27**	P	**Pn**	**00 59 14.0**	**-0.3**
YOJ				S	**Sn**	**00 59 46.9**	**-1.8**
HATJ	**Hateruma jima**	**2.95**	**43**	P	**Pn**	**00 59 14.6**	**-1.1**
HATJ				S	**Sn**	**00 59 48.7**	**-2.4**
TATO	**Taipei**	**3.06**	**358**	Pn	**Pn**	**00 59 14.2**	**-3.0**
IRIF	**Iriomote-Funau**	**3.11**	**39**	P	**Pn**	**00 59 17.7**	**-0.8**
IRIF				S	**Sn**	**00 59 52.4**	**-2.8**
NWF	**Wu-fen Shan**	**3.15**	**3**	*e*P	**Pn**	**00 59 17.9**	**-0.7**
JKRS	**Kuro-shima**	**3.21**	**43**	P	**Pn**	**00 59 18.6**	**-0.8**
JKRS				S	**Sn**	**00 59 54.6**	**-3.0**
JIJ	**Ishigaki jima**	**3.38**	**43**	P	**Pn**	**00 59 20.4**	**-1.4**
JIJ				S	**Sn**	**00 59 58.1**	**-4.0**
JTJ	**Tarama**	**3.94**	**46**	P	**Pn**	**00 59 28.4**	**-1.4**
JTJ				S	**Sn**	**01 00 13.0**	**-3.2**
CVP	**Callao Caves**	**4.19**	**177**	*e*P	**Pn**	**00 59 34.5**	**+1.2**
JOW	**Kunigami**	**7.81**	**50**	Pn	**Pn**	**01 00 21.4**	**-2.9**
	1.1nm,0.3s,baz=257,slow=18,SNR=3.4						
JOW				Sn	**Sn**	**01 01 46.1**	**-7.2**
	0.3nm,0.3s,baz=300,slow=16,SNR=3.0						
JOW				LR	LR	01 03 23.5	
	comp=Z,294nm,21.0s,baz=304,slow=38						
QIZ	**Qiongzhong**	**11.39**	**258**	*e*Pn	**P**	**01 01 08.5**	**-5.2**
JNU	**Nakatsue**	**13.86**	**34**	LR	LR	01 07 14.3	
	comp=Z,118nm,18.6s,baz=63,slow=38						
JHJ	**Hachijo jima 2**	**19.58**	**51**	LR	LR	01 09 41.9	
	comp=Z,89nm,18.6s,baz=82,slow=34						
CMAR	**Chiang Mai Arr**	**21.54**	**265**	P	**P**	**01 03 18.0**	**-1.4**
	2.3nm,0.8s,mb3.7,baz=66,slow=8.9,SNR=5.2						
CMAR				LR	LR	01 12 28.9	
	comp=Z,66nm,18.5s,MS3.1,baz=95,slow=39						
ULN	**Ulaanbaatar**	**28.42**	**339**	*e*P	**P**	**01 04 25.7**	**+1.3**
FITZ	**Fitzroy Crossi**	**39.96**	**174**	P	**P**	**01 06 00.9**	**-3.3**
	2.8nm,0.7s,mb4.1,baz=355,slow=15,SNR=4.1						
MKAR	**Makanchi Array**	**40.25**	**318**	P	**P**	**01 06 04.4**	**-1.9**
	1.4nm,0.6s,mb3.9,baz=111,slow=8.1,SNR=9.0						
WRAB	**Tennant Creek**	**43.41**	**162**	*e*P	**P**	**01 06 30.0**	**-2.5**
WRA	**Warramunga Arr**	**43.42**	**162**	P	**P**	**01 06 29.1**	**-3.4**
	1.7nm,0.6s,mb4.0,baz=344,slow=8.9,SNR=10						
KURK	**Kurchatov**	**44.09**	**321**	*e*P	**P**	**01 06 35.7**	**-1.9**
ASAR	**Alice Springs**	**46.85**	**164**	P	**P**	**01 06 57.9**	**-2.1**
	1.1nm,0.7s,mb3.9,baz=348,slow=8.6,SNR=6.5						
BVAR	**Borovoye Array**	**49.68**	**322**	P	**P**	**01 07 20.0**	**-1.5**
	0.8nm,0.7s,mb3.9,baz=100,slow=10,SNR=6.5						
BVAR				PcP	PcP	01 08 40.9	-2.2
	0.9nm,0.7s,baz=103,slow=3.2,SNR=5.4						
BRVK	**Borovoye**	**49.75**	**322**	*e*P	**P**	**01 07 21.6**	**-0.5**
STKA	**Stephens Creek**	**56.80**	**160**	P	**P**	**01 08 11.4**	**-3.3**
	2.3nm,0.8s,mb4.3,baz=21,slow=13,SNR=3.1						
ILAR	**Eielson Array**	**71.06**	**27**	P	**P**	**01 09 47.1**	**-0.4**
	0.4nm,0.8s,mb3.4,baz=259,slow=5.5,SNR=4.2						
FINES	**FINESS Array B**	**73.60**	**330**	P	**P**	**01 10 01.2**	**-1.4**
	1.7nm,0.7s,mb4.1,baz=63,slow=3.1,SNR=5.8						
AKASG	**Malin Array Be**	**74.83**	**319**	P	**P**	**01 10 08.8**	**-1.1**
	0.3nm,0.3s,mb3.6,baz=60,slow=5.7,SNR=4.8						
BRTR	**Keskin Array B**	**74.84**	**307**	P	**P**	**01 10 09.8**	**-0.4**
	1.2nm,0.9s,mb3.8,baz=96,slow=5.9,SNR=6.5						
NOA	**NORSAR Array B**	**80.41**	**332**	P	**P**	**01 10 39.6**	**-1.0**
	0.4nm,0.6s,mb3.5,baz=59,slow=5.3,SNR=3.2						
GERES	**GERESS Array B**	**84.84**	**321**	P	**P**	**01 11 02.8**	**-0.8**
	0.7nm,0.7s,mb3.9,baz=56,slow=4.8,SNR=7.4						

NIED ***23*** *01:07:00,21.90N×121.80E,h8km,Mw4.4 Best double couple: M₀5.23×10¹⁵ NP1:ϕs181°,δ86°,λ-88°. NP2: ϕs339°,δ4°,λ-112°.*
MAN ***23*** *01:07:17.3,21.84N×121.47E,h5km,mb4.1,ML2.9,MS2.6*
JMA ***23*** *01:07:18.6±0.3,21.94N×121.84E,h12km,M4.2*
TAP ***23*** *01:07:18.3,21.99N×121.40E,h8km±2km,ML4.2*
TAP Felt IV J at Lanyu.
NEIC ***23*** *01:07:20.8±3.0,21.72N×121.39E,h34km±22km,mb4.5/2, Error ellipse: s-maj=10.9km s-min=7.7km az=85.0*
BJI ***23*** *01:

FITZ	**Fitzroy Crossi**	**39.94**	**174**	P	**P**	**01 14 50.6**	**-1.5**
	baz=4.7,slow=12							
MKAR	**Makanchi Array**	**40.27**	**318**	P	**P**	**01 14 54.5**	**0.0**
	2.6nm,0.8s,mb4.0,baz=117,slow=11,SNR=14							
WRAB	**Tennant Creek**	**43.39**	**162**	*eP*	**P**	**01 15 19.3**	**-1.1**
	6.8nm,0.7s,mb4.5							
WRA	**Warramunga Arr**	**43.40**	**162**	P	**P**	**01 15 18.2**	**-2.2**
	1.6nm,0.4s,mb4.1,baz=343,slow=9.1,SNR=32							
WB2	**Warramunga Arr**	**43.40**	**162**	*eP*	**P**	**01 15 19.2**	**-1.3**
KURK	**Kurchatov**	**44.11**	**321**	*eP*	**P**	**01 15 24.5**	**-1.4**
ASAR	**Alice Springs**	**46.83**	**164**	P	**P**	**01 15 46.6**	**-1.3**
	0.6nm,0.4s,mb3.8,baz=347,slow=8.1,SNR=12							
BVAR	**Borovoye Array**	**49.70**	**322**	P	**P**	**01 16 09.2**	**-0.6**
	0.8nm,0.5s,mb4.0,baz=109,slow=9.7,SNR=7.6							
BVAR				PcP	PcP	01 17 30.5	-0.7	
	1.7nm,0.7s,baz=117,slow=3.3,SNR=6.8							
ZRNK	**Zerenda**	**50.48**	**321**	*eP*	**P**	**01 16 14.8**	**-0.9**
NWAO	**Narrogin (SRO)**	**54.66**	**185**	P	**P**	**01 16 44.8**	**-2.4**
	13nm,1.1s,mb4.9,baz=51,slow=14,SNR=2.6							
STKA	**Stephens Creek**	**56.78**	**160**	*eP*	**P**	**01 17 01.7**	**-0.9**
	2.9nm,0.6s,mb4.5							
STKA	**Stephens Creek**	**56.78**	**160**	P	**P**	**01 17 00.8**	**-1.8**
	5.9nm,1.0s,mb4.6,baz=354,slow=7.0,SNR=5.2							
ILAR	**Eielson Array**	**71.08**	**27**	P	**P**	**01 18 37.7**	**+2.0**
	0.4nm,0.8s,mb3.4,baz=275,slow=5.3,SNR=6.3							
ARCES	**ARCESS Array B**	**71.81**	**338**	P	**P**	**01 18 40.1**	**0.0**
	4.0nm,1.1s,mb4.2,baz=49,slow=11,SNR=3.9							
FINES	**FINESS Array B**	**73.62**	**330**	P	**P**	**01 18 50.9**	**+0.1**
	3.3nm,0.9s,mb4.3,baz=45,slow=4.5,SNR=11							
AKASG	**Malin Array Be**	**74.84**	**319**	P	**P**	**01 18 56.9**	**-1.2**
	1.7nm,0.8s,mb4.0,baz=60,slow=5.4,SNR=7.6							
BRTR	**Keskin Array B**	**74.85**	**307**	P	**P**	**01 18 58.7**	**+0.3**
	1.2nm,0.8s,mb3.9,baz=118,slow=5.7,SNR=6.5							
NB2	**NORSAR Subarra**	**80.43**	**332**	P	**P**	**01 19 28.3**	**-0.4**
	1.3nm,0.8s,mb3.9,baz=59,slow=5.6							
NOA	**NORSAR Array B**	**80.43**	**332**	P	**P**	**01 19 28.7**	**-0.1**
	1.3nm,1.1s,mb3.8,baz=75,slow=6.4,SNR=3.6							
NOA				LR	LR	01 58 30.5		
	comp=Z,69nm,20.0s,MS4.0,baz=35,slow=38							
GERES	**GERESS Array B**	**84.86**	**321**	P	**P**	**01 19 51.8**	**0.0**
	0.8nm,0.6s,mb4.0,baz=56,slow=4.8,SNR=11							

WEL 23 01:07:59.3±0.2, 42.03S×172.83E, h80km±3km, ML3.6/4, 3C-2D, Error ellipse: s-maj=1.7km s-min=1.2km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
THZ	**Tophouse**	**0.27**	**12**	⇓P	N	P	01 08 11.1	-0.4
THZ				S	N	S	01 08 19.3	-1.3
KHZ	**Kahutara**	**0.66**	**127**	⇑P	N	P	01 08 14.4	-0.3
KHZ				S	N	S	01 08 25.0	-1.2
DSZ	**Denniston Nort**	**0.82**	**290**	⇓P	N	P	01 08 16.2	-0.3
DSZ				S	N	S	01 08 28.4	-0.8
BSWZ	**Blackbirch Sta**	**0.84**	**69**	PN	P	P	01 08 16.5	-0.2
BSWZ				S	N	S	01 08 29.5	-0.2
LTZ	**Lake Taylor**	**0.86**	**209**	⇑PN	P	P	01 08 17.2	+0.2
LTZ				S	N	S	01 08 29.4	-0.8
NNZ	**Nelson**	**0.90**	**27**	⇑PN	P	P	01 08 17.0	-0.4
TUWZ	**Tuamarina**	**1.02**	**55**	PN	P	S	01 08 18.4	-0.5
TUWZ				S	N	S	01 08 32.0	-1.6
CMWZ	**Cape Campbell**	**1.07**	**76**	PN	P	P	01 08 19.5	+0.1
QRZ	**Quartz Range**	**1.22**	**349**	PN	P	P	01 08 20.6	-0.7
QRZ				S	N	S	01 08 35.3	-2.5
CRLZ	**Canterbury Las**	**1.56**	**186**	PN	P	P	01 08 24.7	-1.2
SNZO	**South Karori**	**1.57**	**64**	PN	P	P	01 08 24.9	-1.2
SNZO				S	N	S	01 08 44.3	-1.5
MRW	**Makara Radio**	**1.61**	**61**	PN	P	P	01 08 25.3	-1.3
WEL	**Wellington**	**1.63**	**64**	PN	P	P	01 08 25.6	-1.2
BHW	**Baring Head**	**1.65**	**69**	PN	P	P	01 08 25.5	-1.5
MQZ	**McQueen's Vall**	**1.69**	**184**	PN	P	P	01 08 26.1	-1.5
MQZ				S	N	S	01 08 45.5	-2.9
WVZ	**Waitaha Valley**	**1.87**	**235**	PN	P	P	01 08 29.5	-0.5
MSWZ	**Moikau Station**	**1.91**	**72**	PN	P	P	01 08 28.6	-1.9
CAW	**Cannon Point**	**1.91**	**62**	PN	P	P	01 08 29.0	-1.6
KIW	**Kapiti Island**	**1.95**	**54**	PN	P	P	01 08 30.0	-1.0
RPZ	**Rata Peaks**	**2.14**	**217**	PN	P	P	01 08 32.1	-1.6
MTW	**Mount Morrison**	**2.18**	**68**	PN	P	P	01 08 31.9	-2.4
MRZ	**Mangatainoka R**	**2.48**	**58**	PN	P	P	01 08 35.9	-2.5
WAZ	**Wanganui**	**2.79**	**36**	PN	P	P	01 08 42.9	0.0
BFZ	**Birch Farm**	**2.90**	**64**	PN	P	P	01 08 40.8	-3.6
PKE	**Pukeiti**	**2.96**	**18**	PN	P	P	01 08 44.8	-0.4
TSZ	**Takapari Road**	**3.08**	**51**	PN	P	P	01 08 43.7	-3.1
VRZ	**Vera Road**	**3.25**	**28**	*e*PN	P	P	01 08 48.4	-0.8
BWZ	**Berwen**	**3.30**	**220**	PN	P	P	01 08 47.5	-2.5
ODZ	**Otahua Downs**	**3.41**	**207**	PN	P	P	01 08 49.3	-2.2
WNVZ	**Wahianoa**	**3.42**	**39**	PN	P	P	01 08 49.9	-1.6
TUVZ	**Tukino**	**3.49**	**39**	PN	P	P	01 08 50.6	-2.0
WPVZ	**Whakapapa**	**3.49**	**37**	PN	P	P	01 08 50.8	-1.7
MGZ	**Maungaku**	**3.66**	**35**	*e*PN	P	P	01 08 55.1	+0.2
HIZ	**Hauiti**	**3.83**	**24**	PN	P	P	01 08 55.7	-1.6
TUZ	**Tuapeka**	**4.56**	**209**	PN	P	P	01 09 05.4	-1.9

DJA 23 01:58:33.5±0.9, 9.60S×115.19E, h38km±35km, MD4.9/4, ML4.7/3, 8D, Error ellipse: s-maj=29.4km s-min=10.9km az=5.0, South of Bali

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
INGI	**Ingas**	**0.78**	**357**	⇓*i*Pn		P	01 58 47.1	-1.0
	2μm,0.2s							
INGI				⇓*i*Sn		S	01 58 57.8	-0.9
RATI	**Rata**	**0.94**	**21**	⇓*i*Pn		P	01 58 49.1	-1.2
	2μm,0.2s							
RATI				⇓*i*Sn		S	01 59 00.3	-2.4
KEDI	**Kedomdong**	**1.44**	**40**	⇓*i*Pn		P	01 58 56.5	-1.0
	466nm,0.2s							
KEDI				⇓*i*Sn		S	01 59 12.6	-2.7
KELI	**Kelakatan**	**1.54**	**333**	⇓*i*Pn		P	01 58 57.8	-1.1
	529nm,0.2s							
KELI				⇓*i*Sn		S	01 59 15.6	-2.3

*NEIC **23** 02:09:30.9, 37.14N×10.98W, h25km, After MDD.*
*MDD **23** 02:09:30.2±2.2, 37.18N×10.80W, mb2.8/5, Error ellipse: s-maj=20.4km s-min=14.6km az=37.0, PRXIMO*
*INMG **23** 02:09:32.1±0.9, 37.07N×10.96W, h31km, ML1.5, Error ellipse: s-maj=7.0km s-min=4.3km az=61.0*
ISC 23 02:09:31.0±1.4, 37.29N±0.06×10.81W±0.08, h31km, n23, σ1s26/40, Azores-Cape St. Vincent Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
PTEO	**Sao Teotonio**	**1.68**	**80**	*e*Pn		**Pn**	**02 09 59.8**	**+0.9**
PTEO				*e*Sn		**Sn**	**02 10 20.8**	**+1.2**
MOE	**Montemor**	**2.31**	**57**	*e*Sn		**Sn**	**02 10 38.0**	**+2.6**
PBEJ	**Beja**	**2.45**	**72**	*e*Sn		**Sn**	**02 10 40.1**	**+1.0**
	0.8nm,0.2s							
PBEJ	**Beja**	**2.45**	**72**	Sn		**Sn**	**02 10 40.1**	**+1.0**
	0.4nm,0.2s							
EGRO	**El Granado**	**2.66**	**84**	Pn		**Pn**	**02 10 12.2**	**-0.7**
	0.1nm,0.1s,SNR=7.9							
EGRO				Sn		**Sn**	**02 10 45.1**	**+0.7**
	1.0nm,0.1s,SNR=7.9							
EGRO	**El Granado**	**2.66**	**84**	P		**Pn**	**02 10 14.0**	**+1.1**
EGRO				S		**Sn**	**02 10 43.8**	**-0.6**
PALC	**Alcoutim**	**2.67**	**85**	*e*Pn		**Pn**	**02 10 13.7**	**+0.8**
PALC				*e*Sn		**Sn**	**02 10 44.5**	**0.0**
EMIN	**Mina Concepcio**	**3.33**	**80**	Pn		**Pn**	**02 10 22.2**	**-0.1**
	0.1nm,0.0s,SNR=7.9							
EMIN				Sn		**Sn**	**02 10 59.4**	**-1.9**
	0.6nm,0.2s,SNR=7.3							
EMIN	**Mina Concepcio**	**3.33**	**80**	P		**Pn**	**02 10 22.8**	**+0.5**
EMIN				S		**Sn**	**02 10 59.8**	**-1.4**
EBAD	**Badajoz**	**3.34**	**63**	Pn		**Pn**	**02 10 22.9**	**+0.4**
	0.6nm,0.3s,SNR=7.9							
EBAD				Sn		**Sn**	**02 11 03.0**	**+1.4**
	0.5nm,0.1s,SNR=7.9							
EBAD	**Badajoz**	**3.34**	**63**	P		**Pn**	**02 10 23.2**	**+0.8**
EBAD				S		**Sn**	**02 11 02.3**	**+0.8**
PCBR	**Castelo Branco**	**3.65**	**45**	*e*Pn		**Pn**	**02 10 28.6**	**+1.7**
PCBR				*e*Sn		**Sn**	**02 11 11.3**	**+1.8**
ESPR	**Espera**	**3.99**	**94**	Sn		**Sn**	**02 11 16.8**	**-1.1**
	3.4nm,0.3s,SNR=7.9							
ELIJ	**Sierra de Lija**	**4.36**	**93**	P		**Pn**	**02 10 36.7**	**-0.3**
ELIJ				S		**Sn**	**02 11 25.3**	**-2.1**
EADA	**Adamuz**	**5.02**	**78**	Pn		**Pn**	**02 10 46.1**	**-0.2**
	0.1nm,0.1s,SNR=7.9							
EADA				Sn		**Sn**	**02 11 41.3**	**-2.7**
	0.4nm,0.1s,SNR=7.9							
EADA	**Adamuz**	**5.02**	**78**	P		**Pn**	**02 10 45.5**	**-0.8**
EADA				S		**Sn**	**02 11 40.3**	**-3.8**
ELOB	**Lobios**	**5.05**	**24**	Pn		**Pn**	**02 10 46.5**	**-0.1**
	0.4nm,0.1s,SNR=4.0							
ELOB				Sn		**Sn**	**02 11 43.4**	**-1.3**
	0.5nm,0.1s,SNR=7.9							
ELOB	**Lobios**	**5.05**	**24**	P		**Pn**	**02 10 46.6**	**-0.1**
ELOB				S		**Sn**	**02 11 43.2**	**-1.4**
ECAL	**Calabor**	**5.62**	**33**	Pn		**Pn**	**02 10 54.2**	**-0.5**
	0.0nm,0.1s,SNR=4.0							
ECAL				Sn		**Sn**	**02 11 57.2**	**-1.7**
	0.5nm,0.2s,SNR=4.0							
ECAL	**Calabor**	**5.62**	**33**	P		**Pn**	**02 10 54.5**	**-0.2**
ECAL				S		**Sn**	**02 11 57.0**	**-2.0**
EINC	**Incio**	**5.99**	**25**	Pn		**Pn**	**02 10 59.7**	**-0.3**
	0.1nm,0.0s,SNR=7.9							
EINC	**Incio**	**5.99**	**25**	P		**Pn**	**02 10 59.2**	**-0.8**
EINC				S		**Sn**	**02 12 05.2**	**-3.2**
EQES	**Quesada**	**6.17**	**83**	Sn		**Sn**	**02 12 08.5**	**-4.3**
	0.1nm,0.1s,SNR=7.9							

*IDC **23** 02:12:41.1±1.7, 4.43N×123.91E, mb4.0/4, mb1 4.2/4, mb1mx3.8/16, Error ellipse: s-maj=139.0km s-min=21.9km az=66.0*
ISC 23 02:12:43.8±2.0, 4.5N±0.4×124.0E±1.0, h33km, n4, σ0s44/4, mb3.9/4, Celebes Sea

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op		ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**22.49**	**176**	P		**P**	**02 17 41.9**	**+0.1**
	2.6nm,0.8s,mb3.7,baz=4.8,slow=12,SNR=4.2							
WRA	**Warramunga Arr**	**26.32**	**158**	P		**P**	**02 18 18.9**	**+0.3**
	1.2nm,0.3s,mb3.9,baz=335,slow=9.6,SNR=42							
ASAR	**Alice Springs**	**29.60**	**161**	P		**P**	**02 18 47.9**	**-0.3**
	0.6nm,0.4s,mb3.7,baz=339,slow=7.2,SNR=18							
MKAR	**Makanchi Array**	**55.40**	**326**	P		**P**	**02 22 17.1**	**0.0**
	1.3nm,0.3s,mb4.4,baz=126,slow=7.9,SNR=28							

*BJI **23** 02:20:54.5, 33.98N×89.11E, h6km, mB4.8, mb4.8, Ms4.6, Msz4.5*
*IDC **23** 02:20:56.0±0.6, 34.04N×89.30E, mb4.5/16, mb1 4.6/18, mb1mx4.5/21, ML3.3/2, MS4.1/4, Ms1 4.1/4, ms1mx3.5/21, Error ellipse: s-maj=27.0km s-min=13.5km az=46.0*
*NEIC **23** 02:20:57.9±0.2, 34.03N×89.22E, h10km, mb5.0/30, MS4.2/2, Error ellipse: s-maj=6.1km s-min=4.3km az=221.0*
*HRVD **23** 02:20:57.9±0.5, 34.05N×89.36E, h12km, MW4.8/50, Centroid moment Tensor Solution. LP body waves: s15,c17;Mantle waves: s50,c91; Half duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-1.70±.12; $M_{\theta\theta}$-0.42±.11; $M_{\phi\phi}$2.12±.09; $M_{r\theta}$0.81±.46; $M_{r\phi}$0.71±.09; $M_{\theta\phi}$-0.10±.33; Best double couple: $M_0$2.22×10^{16} NP1:φs349°, δ50°, λ-128°. NP2:φs220°, δ53°,λ-54°. Principal axes: T 2.31, Plg2°, Azm285°; N -.17, Plg28°, Azm16°; P -2.13, Plg62°, Azm192°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*LDG **23** 02:20:58.3±0.4, 34.31N×88.73E, h10km, Mb5.1/23, Ms3.9/5 Error ellipse: s-maj=18.0km s-min=6.3km az=114.0*
*MOS **23** 02:20:59.2±0.9, 34.00N×89.29E, h33km, mb4.8/12, Error ellipse: s-maj=18.4km s-min=9.1km az=116.0*
ISC 23 02:20:56.5±0.2, 34.12N±0.03×89.24E±0.03, h10km, n174, σ1s12/169, mb4.8/49, MS4.3/9, 2C-5D, Xizang

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op		ISC	h m s	ISC
LSA	**Lhasa**	**4.70**	**159**	PG		**Pn**	**02 22 14.3**	**+5.1**
LSA				SG		**Sg**	**02 23 26.4**	**-6.6**
LSA	**Lhasa**	**4.70**	**159**	*e*P		**Pn**	**02 22 13.1**	**+3.9**
GUN	**Gumba**	**6.83**	**206**	*e*P		**Pn**	**02 22 40.7**	**+1.4**
	154nm,0.9s							
KKN	**Kakani**	**7.17**	**209**	*e*P		**Pn**	**02 22 44.7**	**+0.6**
	54nm,0.7s							
GKN	**Gorkha**	**7.27**	**214**	*e*P		**Pn**	**02 22 46.1**	**+0.7**
PKI	**Pulchoki**	**7.32**	**208**	*e*P		**Pn**	**02 22 47.4**	**+1.3**
	95nm,0.9s							
DMN	**Daman**	**7.40**	**210**	*e*P		**Pn**	**02 22 48.1**	**+0.8**
	65nm,0.6s							
KOLN	**Koldanda**	**7.97**	**219**	*e*P		**Pn**	**02 22 54.5**	**-0.8**
	35nm,0.7s							
SHL	**Shillong**	**8.83**	**164**	*e*P		**P**	**02 23 05.8**	**-1.4**
SHL				*i*			02 24 28.8	
SHL				*e*S		Sx	02 25 37.8	
WMQ	**Urumqi**	**9.76**	**353**	P		**P**	**02 23 20.9**	**+0.9**
GTA	**Gaotai**	**9.99**	**55**	P		**P**	**02 23 21.8**	**-1.3**
GTA				AP			02 23 25.3	
GTA				XP			02 23 28.4	
GTA				LR		LR		
	comp=N,3μm,16.7s							
GTA				LR		LR		
	comp=E,1μm,13.7s							
GTA				LR		LR		
	comp=Z,2μm,8.4s							
LZH	**Lanzhou**	**12.12**	**77**	*e*P		**P**	**02 23 54.1**	**+1.9**
LZH				*e*S		**S**	**02 26 13.0**	**+4.5**
LZH				XS			02 26 21.0	
LZH				SS		SS	02 26 27.0	+4.1
LZH				AMB		AMB		
	comp=Z,35nm,1.0s							
LZH				LR		LR		
	comp=Z,5μm,13.1s							
CD2	**Chengdu**	**12.66**	**101**	*e*P		**P**	**02 24 00.6**	**+1.1**
CD2				AMB		AMB		
	comp=Z,20nm,0.8s							
CD2				AMB		AMB		
	comp=Z,250nm,4.8s							
MKAR	**Makanchi Array**	**13.71**	**339**	Pn		**P**	**02 24 10.7**	**-2.5**
	comp=Z,0.1nm,0.3s,baz=163,slow=13,SNR=6.3							
KBK	**Karagaybulak**	**14.06**	**311**	P		**P**	**02 24 29.0**	**+11**
	SNR=12							
UCH	**Uchtor**	**14.12**	**309**	P		**P**	**02 24 29.0**	**+10**
	SNR=17							
AAK	**Ala-Archa**	**14.34**	**311**	P		**P**	**02 24 32.4**	**+11**
	SNR=11							
FRU	**Bishkek**	**14.37**	**312**	*e*P		**P**	**02 24 32.0**	**+10**
FRU				pmax		pmax		
	comp=Z,40nm,1.5s							
CHMS	**Chumysh**	**14.37**	**312**	P		**P**	**02 24 31.5**	**+10**
	SNR=10							
USP	**Ospenovka**	**14.67**	**313**	P		**P**	**02 24 35.1**	**+9.1**
	SNR=11							
EKS2	**Erkin-Say**	**14.80**	**310**	P		**P**	**02 24 37.2**	**+10**
	SNR=7.9							
XAN	**Xi'an**	**16.31**	**85**	P		**P**	**02 24 50.3**	**+3.1**
XAN				LR		LR		
	comp=N,2μm,15.9s							
XAN				LR		LR		
	comp=Z,2μm,12.8s							
GYA	**Guiyang**	**16.86**	**112**	⇓P		**P**	**02 24 54.6**	**+0.3**
GYA				AMB		AMB		
	comp=Z,260nm,4.2s							
GYA				LR		LR		
	comp=N,990nm,10.2s							
GYA				LR		LR		
	comp=E,1μm,8.4s							
GYA				LR		LR		
	comp=Z,680nm,7.5s							
ENH	**Enshi**	**17.56**	**97**	*e*P		**P**	**02 25 03.5**	**+0.5**
	comp=Z,29nm,1.3s							
CM31	**Chiang Mai Arr**	**17.84**	**149**	*e*P		**P**	**02 25 05.2**	**-1.4**
	comp=Z,22nm,1.1s							
CMAR	**Chiang Mai Arr**	**17.84**	**149**	P		**P**	**02 25 04.8**	**-1.9**
	comp=Z,0.1nm,0.3s,baz=331,slow=11,SNR=22							
CMAR				PcP		PcP	02 29 43.0	-1.2
	comp=Z,0.2nm,0.3s,baz=300,slow=3.0,SNR=6.0							
KURK	**Kurchatov**	**18.31**	**338**	*e*P		**P**	**02 25 11.8**	**-0.3**
HHC	**Hu-ho-hao-te**	**18.92**	**63**	*e*P		**P**	**02 25 20.4**	**+0.7**
HHC				XP			02 25 28.0	
HHC				PP		PP	02 25 39.1	+3.0
HHC				AMB		AMB		
	comp=Z,199nm,5.0s							
HHC				LR		LR		
	comp=N,580nm,12.9s							
HHC				LR		LR		
	comp=E,595nm,12.4s							
HHC				LR		LR		
	comp=Z,548nm,14.3s							
TIY	**Taiyuan**	**19.11**	**73**	*e*P		**P**	**02 25 21.6**	**-0.4**
TIY				LR		LR		
	comp=E,1μm,14.0s							
TIY				LR		LR		
	comp=Z,752nm,8.0s							
ULN	**Ulaanbaatar**	**19.15**	**39**	*e*P		**P**	**02 25 23.0**	**+0.6**
	comp=Z,8.0nm,0.8s							
HYB	**Hyderabad**	**19.20**	**213**	*i* P		**P**	**02 25 21.0**	**-2.1**
HYB	**Hyderabad**	**19.20**	**213**	*e*P		**P**	**02 25 21.0**	**-2.1**
ZAK	**Zakamensk**	**19.23**	**28**	*e*P		**P**	**02 25 23.3**	**0.0**
MOY	**Mondy**	**19.49**	**22**	*e*P		**P**	**02 25 28.1**	**+1.8**
NVS	**Novosibirsk**	**21.14**	**350**	*i* P		**P**	**02 25 41.9**	**-1.8**
NVS				*e*			02 26 05.3	
NVS				pmax		pmax		
	comp=N,57nm,1.4s							
NVS				pmax		pmax		
	comp=E,24nm,1.4s							
NVS				pmax		pmax		
	comp=Z,63nm,1.4s,mb4.8							
BJI	**Beijing**	**22.24**	**67**	P		**P**	**02 25 56.4**	**+1.5**
BJI				LR		LR		
	comp=N,1μm,14.7s,MS4.6							
BJI				LR		LR		
	comp=E,354nm,10.4s,MS4.6							
BJI				LR		LR		
	comp=Z,441nm,16.7s							
TIA	**Tai'an**	**22.86**	**77**	*e*P		**P**	**02 26 01.3**	**+0.2**
BVAR	**Borovoye Array**	**23.19**	**330**	P		**P**	**02 26 05.9**	**+1.9**
	comp=Z,12nm,1.1s,mb4.2,baz=143,slow=7.4,SNR=36							
BVAR				LR		LR	02 36 12.3	
	comp=Z,252nm,19.3s,MS3.7,baz=90,slow=39							
BRVK	**Borovoye**	**23.25**	**330**	*e*P		**P**	**02 26 06.4**	**+1.7**
ZRNK	**Zerenda**	**23.72**	**329**	*e*P		**P**	**02 26 10.6**	**+1.4**
SNY	**Shenyang**	**28.00**	**64**	⇑P		**P**	**02 26 51.3**	**+1.9**
SNY				AMB		AMB		
	comp=Z,90nm,9.6s							
SNY				LR		LR		
	comp=Z,620nm,11.0s,MS4.5							
CN2	**Changchun**	**29.56**	**60**	*e*P		**P**	**02 27 02.3**	**-1.2**
CN2				LR		LR		
	comp=Z,840nm,14.0s,MS4.5							
KS15	**Wonju Array Si**	**31.38**	**73**	*e*P		**P**	**02 27 19.2**	**-0.4**
JNU	**Nakatsue**	**34.52**	**80**	LR		LR	02 42 48.3	
	comp=Z,332nm,21.3s,MS4.0,baz=104,slow=38							
KIV	**Kislovodsk**	**37.04**	**299**	*e*P		**P**	**02 28 08.3**	**+0.1**
KIV				pmax		pmax		
	comp=Z,3.0nm,0.7s,mb4.2							
KIV				MLR		MLR		
	comp=Z,130nm,20.0s,MS3.7							
ERZM	**Erzurum**	**38.30**	**293**	*i* P		**P**	**02 28 22.5**	**+3.7**
MZLS	**Mizel**	**39.52**	**267**	P		**P**	**02 28 30.3**	**+1.1**
KELT	**Kelkit**	**39.87**	**294**	*i* P		**P**	**02 28 34.8**	**+2.8**
ARSS	**Ar Rass**	**40.40**	**271**	P		**P**	**02 28 37.4**	**+0.9**
HILS	**Ha'il**	**41.03**	**274**	P		**P**	**02 28 42.9**	**+1.2**
AFFS	**'Afif**	**41.39**	**268**	P		**P**	**02 28 45.7**	**+1.1**
OBN	**Obninsk**	**41.75**	**317**	P		**P**	**02 28 48.0**	**+0.8**
COBT	**Iskenderun**	**42.85**	**289**	*i* P		**P**	**02 28 58.5**	**+2.1**
TIXI	**Tiksi**	**42.94**	**17**	*e*P		**P**	**02 28 56.8**	**+0.1**
TIXI				*e*			02 30 38.1	
TIXI				pmax		pmax		
	comp=Z,34nm,0.9s,mb5.1							
TIXI				MLR		MLR		
	comp=Z,2μm,11.0s,MS5.3							
TIXI	**Tiksi**	**42.94**	**17**	*e*P		**P**	**02 28 56.7**	**-0.1**
	comp=Z,9.0nm,0.9s,mb4.5							
TATS	**Tathlith**	**42.99**	**262**	P		**P**	**02 28 58.9**	**+1.1**
CTKT	**Corum**	**43.17**	**295**	*i* P		**P**	**02 29 00.9**	**+1.9**
AVNT	**Avonos**	**43.46**	**293**	*i* P		**P**	**02 29 02.9**	**+1.6**
ASF	**Jabal al Asfar**	**43.47**	**283**	P		**P**	**02 29 02.9**	**+1.4**
	comp=Z,6.8nm,1.0s,mb4.3,baz=212,slow=1.2,SNR=9.7							
KBRS	**Khaybar**	**43.73**	**273**	P		**P**	**02 29 05.7**	**+2.0**
BRTR	**Keskin Array B**	**44.20**	**294**	P		**P**	**02 29 07.4**	**0.0**
	comp=Z,1.5nm,0.9s,mb4.4,baz=101,slow=6.3,SNR=28							
BLJS	**Baljurashi**	**44.37**	**264**	P		**P**	**02 29 10.7**	**+1.7**
HMDT	**Nahal Hemdat**	**44.56**	**283**	P		**P**	**02 29 11.9**	**+1.5**
TBKS	**Tabuk**	**45.06**	**277**	P		**P**	**02 29 16.6**	**+2.1**
PRNI	**Paran**	**45.59**	**281**	P		**P**	**02 29 20.1**	**+1.5**
MBH	**Mount Berech**	**45.85**	**280**	P		**P**	**02 29 22.0**	**+1.4**
EIL	**Elat**	**45.86**	**280**	P		**P**	**02 29 21.8**	**+1.1**
KZIT	**Kziot**	**45.90**	**282**	P		**P**	**02 29 22.4**	**+1.4**
AKASG	**Malin Array Be**	**46.01**	**310**	P		**P**	**02 29 21.3**	**-0.3**
	comp=Z,1.5nm,0.6s,mb4.1,baz=81,slow=6.0,SNR=9.3							
HENT	**Hendek**	**46.05**	**296**	*i* P		**P**	**02 29 19.2**	**-2.9**
BDAS	**Al Bad'**	**46.17**	**278**	P		**P**	**02 29 24.4**	**+1.1**
FINES	**FINESS Array B**	**47.96**	**325**	P		**P**	**02 29 37.2**	**+0.3**
	comp=Z,2.5nm,0.8s,mb4.3,baz=104,slow=7.9,SNR=9.2							
FINES	**FINESS Array B**	**47.96**	**325**	P		**P**	**02 29 37.2**	**+0.3**
FINES				pmax		pmax		
	comp=Z,3.0nm,0.8s							
ARCES	**ARCESS Array B**	**49.32**	**335**	P		**P**	**02 29 46.1**	**-1.2**
	comp=Z,1.8nm,0.8s,mb4.1,baz=86,slow=13,SNR=3.1							
ARCES				LR		LR	02 51 08.4	

HAU				*e*R					
	comp=Z,156nm,19.0s								
GIVF	**Givet**	**61.37**	**313**	*e*P		**P**		**02 31 14.1**	**-0.6**
LSD	**Ceresole Reale**	**61.51**	**308**	P		**P**		**02 31 16.0**	**+0.2**
RSP	**Reno Superiore**	**61.55**	**307**	P		**P**		**02 31 14.9**	**-1.1**
IMI	**Imperia**	**61.57**	**306**	P		**P**		**02 31 16.0**	**-0.2**
MONE	**Monesi**	**61.60**	**306**	P		**P**		**02 31 15.5**	**-0.9**
BAIF	**Baives**	**61.76**	**313**	*e*P		**P**		**02 31 16.9**	**-0.5**
	comp=Z,33nm,1.2s,mb5.0								
LPG	**La Plagne**	**61.76**	**308**	*e*P		**P**		**02 31 17.3**	**-0.1**
	comp=Z,57nm,1.2s,mb5.3								
LPL	**La Plagne**	**61.76**	**308**	*e*P		**P**		**02 31 17.1**	**-0.4**
	comp=Z,45nm,1.0s,mb5.2								
ENR	**Entracque**	**61.77**	**306**	P		**P**		**02 31 16.3**	**-1.2**
MEZF	**Maizieres J'vi**	**61.78**	**311**	*e*P		**P**		**02 31 16.9**	**-0.6**
PZZ	**Prazzo**	**61.88**	**307**	P		**P**		**02 31 18.0**	**-0.3**
SBF	**Sospel**	**61.89**	**306**	*e*P		**P**		**02 31 17.4**	**-1.0**
	comp=Z,169nm,1.4s,mb5.7								
RRL	**Cesana Torines**	**61.94**	**307**	P		**P**		**02 31 18.2**	**-0.5**
MBDF	**Montbardon**	**62.02**	**307**	*e*P		**P**		**02 31 18.6**	**-0.6**
FRF	**La Foret Royal**	**62.54**	**306**	*e*P		**P**		**02 31 21.4**	**-1.3**
ORIF	**Oris-en-Rattie**	**62.54**	**307**	*e*P		**P**		**02 31 21.4**	**-1.3**
	comp=Z,8.9nm,0.8s,mb4.6								
ORIF				*e*R					
	comp=Z,244nm,20.5s								
SMF	**Signal de Mont**	**63.22**	**310**	*e*P		**P**		**02 31 25.9**	**-1.2**
	comp=Z,36nm,1.2s,mb5.1								
SSF	**Saint Saulge**	**63.28**	**310**	*e*P		**P**		**02 31 26.4**	**-1.1**
	comp=Z,40nm,1.5s,mb5.0								
VIVF	**Saint-Julien-l**	**63.36**	**308**	*e*P		**P**		**02 31 27.4**	**-0.7**
	comp=Z,26nm,1.3s,mb4.9								
AVF	**Avril sur Loir**	**63.48**	**310**	*e*P		**P**		**02 31 27.7**	**-1.1**
	comp=Z,40nm,1.3s,mb5.1								
BGF	**Bois d'Agland**	**63.89**	**310**	*e*P		**P**		**02 31 29.0**	**-2.5**
	comp=Z,33nm,1.3s,mb4.9								
LASF	**Ste Croix**	**64.20**	**307**	*e*P		**P**		**02 31 32.5**	**-1.1**
	comp=Z,20nm,1.1s,mb4.8								
LDF	**La Druitiere**	**64.93**	**313**	*e*P		**P**		**02 31 37.2**	**-1.0**
	comp=Z,38nm,1.1s,mb5.0								
CAF	**Calviac**	**65.04**	**308**	*e*P		**P**		**02 31 38.2**	**-0.8**
	comp=Z,88nm,1.5s,mb5.3								
RJF	**Les Rejaudoux**	**65.24**	**309**	*e*P		**P**		**02 31 39.1**	**-1.2**
RJF				*e*R					
	comp=Z,143nm,21.2s								
MTLF	**Montolieu**	**65.59**	**307**	*e*P		**P**		**02 31 41.6**	**-0.9**
	comp=Z,20nm,1.3s,mb4.7								
MFF	**Saint Martin d**	**65.76**	**311**	*e*P		**P**		**02 31 42.4**	**-1.2**
	comp=Z,32nm,1.3s,mb4.9								
ANM	**Nome**	**65.88**	**27**	*e*P		**P**		**02 31 44.6**	**+0.5**
LFF	**La Frestale**	**65.89**	**309**	*e*P		**P**		**02 31 43.9**	**-0.5**
	comp=Z,68nm,1.3s,mb5.2								
SGMF	**Saint Gilles**	**66.55**	**313**	*e*P		**P**		**02 31 47.8**	**-0.8**
	comp=Z,88nm,1.4s,mb5.3								
EPF	**Esparros**	**66.96**	**307**	*e*P		**P**		**02 31 50.2**	**-1.1**
ETSF	**Etsaut**	**67.61**	**307**	*e*P		**P**		**02 31 54.9**	**-0.6**
	comp=Z,32nm,1.0s,mb5.0								
WRA	**Warramunga Arr**	**68.80**	**134**	P		**P**		**02 32 01.7**	**-1.5**
	comp=Z,13nm,1.2s,mb4.7,baz=327,slow=6.6,SNR=21								
WRA	**Warramunga Arr**	**68.80**	**134**	P		**P**		**02 32 01.7**	**-1.5**
WRA				pmax		pmax			
	comp=Z,13nm,1.2s								
WB2	**Warramunga Arr**	**68.81**	**134**	*e*P		**P**		**02 32 02.2**	**-1.1**
WB2				*e*				02 33 22.6	
IMA	**Indian Mountai**	**69.16**	**23**	*e*P		**P**		**02 32 05.6**	**+0.9**
ESDC	**Sonseca Array**	**71.38**	**306**	P		**P**		**02 32 18.6**	**0.0**
	comp=Z,4.7nm,0.8s,mb4.4,baz=59,slow=6.1,SNR=14								
ASAR	**Alice Springs**	**71.45**	**137**	P		**P**		**02 32 18.5**	**-0.8**
	comp=Z,5.6nm,1.1s,mb4.4,baz=322,slow=5.8,SNR=11								
COLA	**College**	**71.79**	**22**	*e*P		**P**		**02 32 21.3**	**+0.7**
ILAR	**Eielson Array**	**72.16**	**22**	P		**P**		**02 32 22.5**	**-0.3**
	comp=Z,6.5nm,0.9s,mb4.5,baz=305,slow=5.9,SNR=51								
ILAR				LR		LR		03 07 52.1	
	comp=Z,83nm,18.4s,MS4.0,baz=345,slow=39								
ILAR	**Eielson Array**	**72.16**	**22**	P		**P**		**02 32 22.5**	**-0.3**
ILAR				pmax		pmax			
	comp=Z,7.0nm,0.9s								
ILAR				MLR		MLR			
	comp=Z,83nm,18.4s								
MCK	**McKinley**	**72.22**	**23**	*e*P		**P**		**02 32 23.9**	**+0.7**
	comp=Z,28nm,0.8s,mb4.2								
INK	**Inuvik**	**73.03**	**15**	*e*P		**P**		**02 32 27.3**	**-0.5**
	comp=Z,14nm,1.0s,mb4.8								
PMR	**Palmer**	**73.60**	**25**	*e*P		**P**		**02 32 31.8**	**+0.6**
PCBR	**Castelo Branco**	**73.64**	**307**	*e*P		**P**		**02 32 32.7**	**+0.7**
	comp=Z,12nm,1.1s,mb4.8								
PMS	**Palmer South**	**73.68**	**26**	*e*P		**P**		**02 32 32.5**	**+0.8**
SML	**Sawmill**	**73.73**	**25**	*e*P		**P**		**02 32 32.0**	**0.0**
TOA	**Tolsona**	**74.26**	**24**	*e*P		**P**		**02 32 35.9**	**+0.9**
PTOM	**Tomar**	**74.38**	**307**	*e*P		**P**		**02 32 35.5**	**-0.7**
EVO	**Evora**	**74.68**	**306**	*e*P		**P**		**02 32 38.3**	**+0.3**
	comp=Z,22nm,1.1s,mb4.7								
EVO				*e*R					
	comp=Z,124nm,19.8s								
PBEJ	**Beja**	**74.84**	**306**	*e*P		**P**		**02 32 39.7**	**+0.8**
	comp=Z,16nm,1.4s,mb4.8								
DAWY	**Dawson**	**74.91**	**20**	*e*P		**P**		**02 32 39.2**	**+0.4**
STKA	**Stephens Creek**	**82.09**	**137**	P		**P**		**02 33 17.6**	**-1.0**
	comp=Z,4.9nm,0.9s,mb4.4,baz=344,slow=12,SNR=3.7								
SCHQ	**Schefferville**	**89.04**	**346**	P		**P**		**02 33 52.3**	**-0.3**
	comp=Z,4.1nm,1.1s,mb4.7,baz=122,slow=18,SNR=3.7								
QSPA	**South Pole Qui**	**123.90**	**180**	*e*P		PKPdf		02 39 54.6	-2.6
VNA2	**Neumayer--Watz**	**123.98**	**203**	‖*i*		PKPdf		02 39 57.3	-0.2
VNA1	**Neumayer--Stat**	**124.23**	**204**	‖*i*		PKPdf		02 39 57.1	-0.9
VNA3	**Neumayer Olymp**	**124.75**	**203**	‖*i*		PKPdf		02 39 58.5	-0.3
CPUP	**Villa Florida**	**150.19**	**276**	PKPbc		PKPdf		02 40 47.6	+1.8
	comp=Z,4.2nm,0.9s,baz=50,slow=3.9,SNR=10								
CPUP	**Villa Florida**	**150.19**	**276**	PKIKP		PKPdf		02 40 47.7	+1.9
CPUP				pmax		pmax			
	comp=Z,4.0nm,0.9s								

*IDC **23** 02:22:16.9±0.6,34.02N×89.29E,mb4.3/16,mb1 4.4/18, mb1mx4.4/22,ML3.7/2,MS4.1/1,Ms1 4.1/1,ms1mx3.2/21, Error ellipse: s-maj=28.2km s-min=13.1km az=47.0*

*NEIC **23** 02:22:18.7±0.2,34.02N×89.28E,h10km,mb5.1/20,Error ellipse: s-maj=6.5km s-min=4.4km az=51.0*

*HRVD **23** 02:22:18.7±0.4,34.10N×89.42E,h12km,MW4.9/54, Centroid moment Tensor Solution. LP body waves: s15,c17;Mantle waves: s54,c99; Half duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-1.94±.12; M_{tt}0.56±.11; M_{pp}2.50±.09; M_{rt}0.49±.42; M_{rp}1.02±.10; M_{tp}0.40±.34; Best double couple: M_o2.48×10^{16} NP1:ϕ_s0°, δ41°, λ-114°. NP2:ϕ_s211°, δ53°, λ-70°. Principal axes: T 2.87, Plg6°, Azm287°; N -.77, Plg16°, Azm19°; P -2.1, Plg73°, Azm177°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*BJI **23** 02:22:18.6,34.00N×89.30E,h10km,mB5.0,mb5.0,Ms5.1, Msz5.0*

*LDG **23** 02:22:21.3±2.0,34.51N×88.45E,h10km,Mb5.1/18,Error ellipse: s-maj=86.9km s-min=8.1km az=128.0*

ISC 23 02:22:22.1±1.1,**34.05N**±0.06×**89.22E**±0.05,**h51**km±11km, **n84**,σ0°**88**/80,**mb4.7**/39,**MS4.5**/3,**1C-2D**,**Xizang**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC		Time h m s	Res ISC
LSA	**Lhasa**	**4.63**	**159**	Pn		**P**	**02 23 32.2**	**+0.8**
LSA				*e*			02 23 46.1	
LSA				*e*			02 23 51.6	
GUN	**Gumba**	**6.75**	**206**	*e*P		**P**	**02 24 01.2**	**+0.1**
	79nm,0.6s							
KKN	**Kakani**	**7.09**	**210**	*e*P		**P**	**02 24 06.8**	**+0.9**
	99nm,0.7s							
GKN	**Gorkha**	**7.19**	**214**	*e*P		**P**	**02 24 07.3**	**+0.1**
	70nm,0.7s							
PKI	**Pulchoki**	**7.24**	**208**	*e*P		**P**	**02 24 08.5**	**+0.7**
	92nm,0.6s							
DMN	**Daman**	**7.33**	**210**	*e*P		**P**	**02 24 10.0**	**+0.9**
	78nm,0.5s							
KOLN	**Koldanda**	**7.90**	**219**	*e*P		**P**	**02 24 16.4**	**-0.6**
	44nm,0.7s							
MKAR	**Makanchi Array**	**13.78**	**340**	Pn		**P**	**02 25 33.4**	**-3.0**
	0.2nm,0.3s,baz=143,slow=14,SNR=3.3							
GYA	**Guiyang**	**16.85**	**112**	P		**P**	**02 26 16.0**	**+0.1**
GYA				AMB		AMB		
	comp=Z,330nm,3.6s							
GYA				LR		LR		
	comp=N,660nm,7.5s							
GYA				LR		LR		
	comp=E,970nm,6.6s							
GYA				LR		LR		
	comp=Z,1μm,6.9s							
ENH	**Enshi**	**17.56**	**97**	*e*P		**P**	**02 26 24.3**	**-0.6**
CM31	**Chiang Mai Arr**	**17.79**	**148**	*e*P		**P**	**02 26 26.3**	**-1.4**
	comp=Z,19nm,0.9s							
CMAR	**Chiang Mai Arr**	**17.79**	**148**	P		**P**	**02 26 24.8**	**-2.9**
	comp=Z,0.2nm,0.3s,baz=332,slow=10,SNR=2.1							
CMAR				PcP		PcP	02 31 04.7	+0.9
	comp=Z,0.5nm,0.3s,baz=333,slow=2.0,SNR=3.8							
KURK	**Kurchatov**	**18.38**	**338**	P		**P**	**02 26 32.4**	**-2.4**
HHC	**Hu-ho-hao-te**	**18.97**	**63**	*e*P		**P**	**02 26 43.4**	**+1.6**
HYB	**Hyderabad**	**19.12**	**213**	*i*P		**P**	**02 26 42.0**	**-1.7**
HYB	**Hyderabad**	**19.12**	**213**	*e*P		**P**	**02 26 42.0**	**-1.7**
ULN	**Ulaanbaatar**	**19.22**	**39**	*e*P		**P**	**02 26 42.6**	**-1.9**
	comp=Z,4.9nm,0.6s							
WHN	**Wuhan**	**21.51**	**92**	P		**P**	**02 27 14.5**	**+5.9**
WHN				LR		LR		
	comp=N,3μm,8.7s							
WHN				LR		LR		
	comp=E,2μm,8.8s							
WHN				LR		LR		
	comp=Z,3μm,9.6s							
BJI	**Beijing**	**22.29**	**67**	P		**P**	**02 27 19.0**	**+2.8**
BJI				S		**S**	**02 31 24.5**	**+11**
BJI				LR		LR		
	comp=N,2μm,12.9s,MS4.8							
BJI				LR		LR		
	comp=E,512nm,10.6s,MS4.8							
BVAR	**Borovoye Array**	**23.25**	**330**	P		**P**	**02 27 27.4**	**+2.0**
	comp=E,5.3nm,0.6s,mb4.1,baz=141,slow=9.5,SNR=11							
BRVK	**Borovoye**	**23.31**	**330**	*e*P		**P**	**02 27 27.2**	**+1.2**
ZRNK	**Zerenda**	**23.77**	**329**	*e*P		**P**	**02 27 31.6**	**+1.0**
NJ2	**Nanjing**	**24.88**	**86**	*e*P		**P**	**02 27 46.3**	**+4.8**
NJ2				AMB		AMB		
	comp=Z,40nm,1.0s,mb4.9							
NJ2				LR		LR		
	comp=N,3μm,17.9s							
NJ2				LR		LR		
	comp=E,2μm,10.4s							
NJ2				LR		LR		
	comp=Z,2μm,17.4s,MS4.6							
HIA	**Hailar**	**27.18**	**47**	P		**P**	**02 28 02.5**	**-0.1**
	comp=Z,13nm,1.7s,mb4.2							
TIXI	**Tiksi**	**43.02**	**17**	*e*P		**P**	**02 30 17.6**	**-0.2**
	comp=Z,3.8nm,0.8s,mb4.2							
ASF	**Jabal al Asfar**	**43.48**	**283**	P		**P**	**02 30 22.7**	**+0.7**
	comp=Z,2.8nm,0.7s,mb4.1,baz=4.5,slow=5.5,SNR=6.1							
ASF				LR		LR	02 51 13.9	
	comp=Z,259nm,21.1s,MS4.1,baz=130,slow=40							
BRTR	**Keskin Array B**	**44.22**	**294**	P		**P**	**02 30 28.6**	**+0.7**
	comp=Z,4.0nm,0.8s,mb4.2,baz=98,slow=8.7,SNR=14							
EIL	**Elat**	**45.86**	**280**	*e*P		**P**	**02 30 44.2**	**+3.1**
	comp=Z,35nm,1.3s,mb5.1							
AKASG	**Malin Array Be**	**46.05**	**310**	P		**P**	**02 30 41.5**	**-0.9**
	comp=Z,1.9nm,0.7s,mb4.2,baz=79,slow=7.0,SNR=6.0							
FINES	**FINESS Array B**	**48.02**	**325**	P		**P**	**02 30 57.5**	**-0.2**
	comp=Z,2.7nm,0.9s,mb4.3,baz=106,slow=7.6,SNR=7.8							
ARCES	**ARCESS Array B**	**49.39**	**335**	P		**P**	**02 31 07.5**	**-0.6**
	comp=Z,2.4nm,0.8s,mb4.3,baz=79,slow=4.6,SNR=4.2							
IDI	**Anoyia**	**52.07**	**291**	P		**P**	**02 31 29.2**	**+0.3**
	comp=Z,8.8nm,1.0s,mb4.7,baz=63,slow=18,SNR=3.7							
VYHS	**Vyhne**	**53.02**	**308**	*e*P		**P**	**02 31 37.6**	**+1.7**
BILL	**Bilibino**	**54.10**	**27**	*e*P		**P**	**02 31 44.1**	**+0.5**
NB2	**NORSAR Subarra**	**55.20**	**325**	P		**P**	**02 31 51.2**	**-0.5**
	comp=Z,6.0nm,0.8s,mb4.7,baz=82,slow=7.0							
NOA	**NORSAR Array B**	**55.20**	**325**	P		**P**	**02 31 51.6**	**-0.1**
	comp=Z,4.2nm,0.8s,mb4.5,baz=82,slow=7.2,SNR=12							
CLL	**Collm**	**56.09**	**313**	P		**P**	**02 31 58.0**	**-0.2**
GERES	**GERESS Array B**	**56.26**	**310**	P		**P**	**02 31 59.7**	**+0.2**
	comp=Z,2.6nm,0.8s,mb4.3,baz=71,slow=5.6,SNR=12							
KMBO	**Kilima Mbogo**	**59.96**	**245**	P		**P**	**02 32 26.0**	**+0.2**
	comp=Z,1.0nm,0.6s,mb4.0,baz=27,slow=14,SNR=3.4							
CDF	**Champ du Feu**	**60.46**	**311**	*e*P		**P**	**02 32 28.3**	**-0.5**
HINF	**Hinteralfeld**	**60.92**	**310**	*e*P		**P**	**02 32 31.6**	**-0.3**
HAU	**Haudompre**	**61.18**	**310**	*e*P		**P**	**02 32 33.0**	**-0.7**
PGF	**Pioggiola**	**61.34**	**304**	*e*P		**P**	**02 32 34.3**	**-0.5**
	comp=Z,42nm,1.2s,mb5.2							
LPG	**La Plagne**	**61.79**	**308**	*e*P		**P**	**02 32 38.3**	**+0.5**
	comp=Z,41nm,1.1s,mb5.2							
LPL	**La Plagne**	**61.80**	**308**	*e*P		**P**	**02 32 38.2**	**+0.4**
	comp=Z,73nm,1.5s,mb5.3							
SBF	**Sospel**	**61.93**	**306**	*e*P		**P**	**02 32 38.4**	**-0.3**
	comp=Z,66nm,0.9s,mb5.5							
MBDF	**Montbardon**	**62.06**	**307**	*e*P		**P**	**02 32 38.6**	**-1.0**
FITZ	**Fitzroy Crossi**	**62.39**	**140**	P		**P**	**02 32 41.6**	**-0.6**
	comp=Z,2.1nm,0.6s,mb4.4,baz=348,slow=5.4,SNR=5.2							
FRF	**La Foret Royal**	**62.57**	**306**	*e*P		**P**	**02 32 42.2**	**-0.8**
	comp=Z,46nm,1.3s,mb5.1							
ORIF	**Oris-en-Rattie**	**62.58**	**307**	*e*P		**P**	**02 32 42.4**	**-0.7**
	comp=Z,16nm,0.9s,mb4.8							
SMRF	**Simiane la Rot**	**63.13**	**306**	*e*P		**P**	**02 32 46.8**	**0.0**
SMF	**Signal de Mont**	**63.26**	**310**	*e*P		**P**	**02 32 47.0**	**-0.6**
	comp=Z,16nm,1.0s,mb4.8							
SSF	**Saint Saulge**	**63.32**	**310**	*e*P		**P**	**02 32 47.2**	**-0.7**
	comp=Z,27nm,1.3s,mb4.9							
VIVF	**Saint-Julien-l**	**63.40**	**308**	*e*P		**P**	**02 32 48.2**	**-0.3**
	comp=Z,27nm,1.1s,mb5.0							
AVF	**Avril sur Loir**	**63.52**	**310**	*e*P		**P**	**02 32 48.8**	**-0.4**
	comp=Z,29nm,1.2s,mb4.9							
LASF	**Ste Croix**	**64.24**	**307**	*e*P		**P**	**02 32 54.0**	**+0.1**
	comp=Z,33nm,1.3s,mb4.9							
LDF	**La Druitiere**	**64.97**	**313**	*e*P		**P**	**02 32 58.0**	**-0.6**
	comp=Z,43nm,1.3s,mb5.0							
CAF	**Calviac**	**65.08**	**309**	*e*P		**P**	**02 32 59.6**	**+0.2**
	comp=Z,24nm,1.1s,mb4.8							
FLN	**La Foliniere**	**65.12**	**313**	*e*P		**P**	**02 32 59.1**	**-0.5**
RJF	**Les Rejaudoux**	**65.28**	**309**	*e*P		**P**	**02 33 00.9**	**+0.3**
GRR	**Gorron**	**65.50**	**313**	*e*P		**P**	**02 33 01.4**	**-0.7**
MTLF	**Montolieu**	**65.62**	**307**	*e*P		**P**	**02 33 02.8**	**-0.1**
MFF	**Saint Martin d**	**65.80**	**311**	*e*P		**P**	**02 33 03.7**	**-0.3**
LFF	**La Frestale**	**65.93**	**309**	*e*P		**P**	**02 33 05.1**	**+0.3**
SGMF	**Saint Gilles**	**66.59**	**313**	*e*P		**P**	**02 33 08.9**	**0.0**
	comp=Z,29nm,1.0s,mb5.0							
ETSF	**Etsaut**	**67.65**	**307**	*e*P		**P**	**02 33 16.1**	**+0.4**
	comp=Z,14nm,0.7s,mb4.8							
WRA	**Warramunga Arr**	**68.76**	**134**	P		**P**	**02 33 22.4**	**-0.6**
	comp=Z,6.2nm,1.1s,mb4.4,baz=323,slow=6.3,SNR=7.1							
ASAR	**Alice Springs**	**71.40**	**137**	P		**P**	**02 33 39.1**	**+0.2**
	comp=Z,5.8nm,1.2s,mb4.4,baz=325,slow=6.5,SNR=6.0							
ESDC	**Sonseca Array**	**71.41**	**306**	P		**P**	**02 33 39.3**	**+0.5**
	comp=Z,3.2nm,0.7s,mb4.3,baz=51,slow=7.4,SNR=13							
COLA	**College**	**71.87**	**22**	*e*P		**P**	**02 33 41.8**	**+0.8**
	comp=Z,27nm,1.2s,mb5.0							
ILAR	**Eielson Array**	**72.24**	**22**	P		**P**	**02 33 43.3**	**+0.1**
	comp=Z,4.9nm,0.9s,mb4.5,baz=311,slow=5.4,SNR=13							
MCK	**McKinley**	**72.30**	**23**	P		**P**	**02 33 44.1**	**+0.5**
INK	**Inuvik**	**73.11**	**15**	*e*P		**P**	**02 33 48.7**	**+0.5**
	comp=Z,14nm,1.1s,mb4.8							
PMR	**Palmer**	**73.68**	**25**	*e*P		**P**	**02 33 51.5**	**-0.1**
	comp=Z,28nm,1.1s,mb5.1							
SML	**Sawmill**	**73.81**	**25**	*e*P		**P**	**02 33 53.3**	**+0.9**
EVO	**Evora**	**74.71**	**306**	*e*P		**P**	**02 33 59.0**	**+0.9**
	comp=Z,22nm,1.1s,mb4.7							
DAWY	**Dawson**	**74.98**	**20**	*e*P		**P**	**02 33 59.7**	**+0.5**
STKA	**Stephens Creek**	**82.04**	**137**	P		**P**	**02 34 38.5**	**+0.1**
	comp=Z,3.7nm,0.8s,mb4.4,baz=19,slow=4.9,SNR=3.4							
STKA	**Stephens Creek**	**82.04**	**137**	P		**P**	**02 34 38.5**	**0.0**
VNA2	**Neumayer--Watz**	**123.90**	**203**	‖*i*		PKPdf	02 41 18.2	+4.3
VNA1	**Neumayer--Stat**	**124.16**	**204**	‖*i*		PKPdf	02 41 18.0	+3.6
VNA3	**Neumayer Olymp**	**124.67**	**203**	‖*i*		PKPdf	02 41 19.5	+4.2
CPUP	**Villa Florida**	**150.18**	**276**	PKPbc		PKPdf	02 42 08.5	+6.1
	comp=Z,3.0nm,0.6s,baz=76,slow=2.1,SNR=12							
CPUP	**Villa Florida**	**150.18**	**276**	PKPbc		PKPdf	02 42 08.5	+6.1

*DJA **23** 02:23:37.2±1.3,9.46S×115.19E,h43km±28km,MD4.8/4, ML4.7/2,Error ellipse: s-maj=35.3km s-min=11.1km az=6.0*

ISC 23 02:23:34.2±1.5,**9.55S**±0.09×**115.21E**±0.10,**h43**km,**n5**, σ1°**01**/8,**6D**,**South of Bali**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC		Time h m s	Res ISC
INGI	**Ingas**	**0.73**	**355**	‖*i*Pg		**P**	**02 23 49.2**	**+1.0**
RATI	**Rata**	**0.88**	**21**	‖*i*Pg		**P**	**02 23 51.1**	**+0.8**
KEDI	**Kedomdong**	**1.38**	**40**	‖*i*Pn		**P**	**02 23 58.5**	**+0.9**
	854nm,0.2s							
KEDI				‖*i*Sn		**S**	**02 24 13.9**	**-1.0**
KELI	**Kelakatan**	**1.50**	**332**	‖*i*Pn		**P**	**02 23 59.8**	**+0.6**
	756nm,0.1s							
KELI				‖*i*Sn		**S**	**02 24 16.2**	**-1.6**
FITZ	**Fitzroy Crossi**	**13.22**	**131**	*e*P		**P**	**02 26 40.8**	**-0.9**
	3.4nm,0.7s							
FITZ				*e*S		**S**	**02 28 59.0**	**-9.2**

*IDC **23** 02:31:27.3±1.6,34.01N×89.00E,mb3.8/7,mb1 4.0/8, mb1mx3.7/20,ML3.8/1,Error ellipse: s-maj=46.1km s-min=30.2km az=38.0*

*NEIC **23** 02:31:28.1±0.6,33.76N×88.79E,h10km,Error ellipse: s-maj=34.6km s-min=9.9km az=56.0*

ISC 23 02:31:27.4±0.7,**34.0N**±0.2×**89.0E**±0.3,**h10**km,**n10**, σ1°**27**/10,**mb3.8**/7,**Xizang**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC		Time h m s	Res ISC
LSA	**Lhasa**	**4.69**	**156**	*e*P		**Pn**	**02 32 41.5**	**+1.5**
CMAR	**Chiang Mai Arr**	**17.87**	**148**	P		**P**	**02 35 36.5**	**-1.4**
	0.1nm,0.3s,baz=333,slow=12,SNR=6.0							
BVAR	**Borovoye Array**	**23.17**	**331**	P		**P**	**02 36 35.3**	**+0.5**
	1.6nm,0.7s,mb3.5,baz=141,slow=9.5,SNR=11							
ZRNK	**Zerenda**	**23.69**	**329**	*e*P		**P**	**02 36 42.2**	**+2.3**
BRTR	**Keskin Array B**	**44.05**	**294**	P		**P**	**02 39 37.0**	**-0.1**
	1.1nm,0.9s,mb3.6,baz=90,slow=8.6,SNR=6.8							
MLR	**Muntele Rosu**	**48.65**	**303**	P		**P**	**02 40 14.3**	**+1.0**
	3.8nm,0.8s,mb4.5,baz=90,slow=10,SNR=10							
HFS	**Hagfors**	**54.01**	**323**	P		**P**	**02 40 52.0**	**-1.5**
	1.3nm,0.7s,mb4.0,baz=90,slow=12,SNR=3.4							
NOA	**NORSAR Array B**	**55.10**	**325**	P		**P**	**02 40 59.8**	**-1.9**
	0.8nm,0.9s,mb3.8,baz=81,slow=8.1,SNR=3.3							
GERES	**GERESS Array B**	**56.12**	**310**	P		**P**	**02 41 08.4**	**-0.7**
	0.3nm,0.8s,mb3.4,baz=84,slow=9.9,SNR=3.7							
ILAR	**Eielson Array**	**72.33**	**22**	P		**P**	**02 42 55.2**	**+0.4**
	0.8nm,0.9s,mb3.6,baz=317,slow=5.5,SNR=6.6							

*NEIC **23** 02:36:44.6±0.6, 12.95N×88.60W,mb3.9/11, MD4.3(SNET),Error ellipse: s-maj=20.0km s-min=7.6km az=51.0*

NEIC Felt [II] at San Salvador.

*IDC **23** 02:36:45.6±1.1, 13.01N×88.47W,h73km±9km,mb3.8/13, mb1 3.9/14,mb1mx3.8/22,MS3.0/1,Ms1 3.0/1, ms1mx2.6/26,Error ellipse: s-maj=30.1km s-min=13.2km az=50.0*

*CASC **23** 02:36:45.7±1.7, 12.87N×88.68W,h56km±21km,MD4.2, ML4.5,mb3.9(NEIC)*

ISC 23 02:36:44.8±0.3,**12.95N**±0.04×**88.64W**±0.03,**h85**km±2km, **n79**,σ0°**89**/112,**mb4.0**/21,**16C-15D**,**Off coast of central America**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC		Time h m s	Res ISC
VSM	**San Miguel**	**0.60**	**37**	‖*i*P		**P**	**02 37 00.1**	**-0.1**
VSM				*e*S		**S**	**02 37 11.7**	**+0.2**
BLLM	**Bellamira**	**0.63**	**38**	‖*e*P		**P**	**02 37 00.1**	**-0.3**
BLLM				*e*S		**S**	**02 37 10.3**	**-1.7**
SNVI	**San Vicente**	**0.69**	**344**	*e*P		**P**	**02 37 00.8**	**-0.2**
SNVI				*e*S		**S**	**02 37 13.8**	**+0.7**
LCBS	**La Ceiba**	**0.78**	**335**	‖*e*P		**P**	**02 37 01.5**	**-0.5**
LCBS				*e*S		**S**	**02 37 14.1**	**-0.5**
LFRS	**El Faro**	**0.79**	**329**	↑‖*i*P		**P**	**02 37 01.5**	**-0.6**
CNCH	**Conchagua**	**0.85**	**67**	‖*e*P		**P**	**02 37 02.3**	**-0.5**
CNCH				*e*S		**S**	**02 37 16.1**	**0.0**
LBRS	**

ISCO	**Idaho Springs**	**30.65**	**334**	*e*P	**P**		**02 42 53.2**	**-0.1**
	comp=E,0.9nm,0.8s,mb3.5							
SADO	**Sadowa**	**32.74**	**13**	P	**P**		**02 43 10.4**	**-1.0**
	comp=E,4.6nm,0.7s,mb4.4,baz=213,slow=7.2,SNR=5.7							
PDAR	**Pinedale Array**	**34.79**	**333**	P	**P**		**02 43 29.9**	**+0.8**
	comp=E,0.4nm,0.5s,mb3.5,baz=127,slow=10,SNR=4.8							
PDAR				PcP	PcP		02 46 01.0	0.0
	comp=E,0.3nm,0.3s,baz=127,slow=4.5,SNR=4.3							
LPAZ	**La Paz**	**35.42**	**145**	P	**P**		**02 43 35.4**	**+0.6**
	comp=E,1.6nm,1.1s,mb3.8,baz=311,slow=9.3,SNR=2.9							
NVAR	**Mina Array Bea**	**36.57**	**319**	PcP	PcP		02 46 07.8	+1.6
	comp=E,0.9nm,0.9s,baz=113,slow=4.5,SNR=3.8							
NVAR				pPcP			02 46 26.0	
	comp=E,0.8nm,0.6s,baz=122,slow=4.5,SNR=4.9							
ULM	**Lac du Bonnet**	**37.67**	**352**	P	**P**		**02 43 52.4**	**-0.8**
	comp=E,3.5nm,0.5s,mb4.5,baz=175,slow=8.7,SNR=5.8							
ULM	**Lac du Bonnet**	**37.67**	**352**	P	**P**		**02 43 52.4**	**-0.8**
MCMT	**McKenzie Canyo**	**37.90**	**332**	*e*P	**P**		**02 43 57.9**	**+2.7**
MCMT				*e*pP	pP		02 44 13.4	-2.2
YBH	**Yreka Blue Hor**	**41.23**	**320**	P	**P**		**02 44 22.3**	**-0.5**
	comp=E,1.0nm,0.3s,mb4.2,baz=97,slow=17,SNR=3.0							
FFC	**Flin Flon**	**42.98**	**349**	*e*P	**P**		**02 44 37.3**	**+0.3**
	comp=E,2.0nm,0.5s,mb4.1							
SCHQ	**Schefferville**	**45.15**	**18**	P	**P**		**02 44 53.6**	**-0.8**
	comp=E,2.0nm,0.4s,mb4.2,baz=210,slow=14,SNR=3.3							
SCHQ				pP	pP		02 45 12.1	-3.0
	comp=E,1.6nm,0.3s,baz=180,slow=19,SNR=2.0							
FCC	**Fort Churchill**	**45.91**	**356**	*e*P	**P**		**02 44 59.8**	**-0.6**
	comp=E,4.8nm,0.4s,mb4.6							
BDFB	**Brasilia**	**49.22**	**124**	P	**P**		**02 45 25.9**	**-0.9**
	comp=E,1.4nm,0.5s,mb4.2,baz=275,slow=8.2,SNR=8.0							
CPUP	**Villa Florida**	**49.51**	**142**	P	**P**		**02 45 28.3**	**-0.7**
	comp=E,0.7nm,0.6s,mb3.8,baz=10,slow=6.0,SNR=3.2							
CPUP	**Villa Florida**	**49.51**	**142**	*e*P	**P**		**02 45 28.0**	**-1.0**
	comp=E,3.0nm,1.2s,mb4.1							
CPUP				P			02 45 28.3	
DLBC	**Dease Lake**	**54.97**	**335**	P	**P**		**02 46 09.2**	**0.0**
	comp=E,2.3nm,0.9s,mb4.2,baz=119,slow=9.0,SNR=5.0							
INK	**Inuvik**	**62.39**	**343**	*e*P	**P**		**02 46 59.5**	**-1.1**
ILAR	**Eielson Array**	**65.10**	**336**	P	**P**		**02 47 17.6**	**-0.7**
	comp=E,1.0nm,0.8s,mb3.7,baz=154,slow=4.2,SNR=10							
SPITS	**Spitsbergen Ar**	**80.46**	**12**	P	**P**		**02 48 48.9**	**+0.6**
	comp=E,2.5nm,1.0s,mb4.0,baz=280,slow=5.5,SNR=5.0							
WRA	**Warramunga Arr**	**138.28**	**255**	PKP	PKPdf		02 56 03.5	+2.5
	comp=E,0.6nm,0.5s,baz=89,slow=2.6,SNR=17							
WRA				pPKP			02 56 23.1	
	comp=E,0.7nm,0.7s,baz=88,slow=1.8,SNR=3.0							
CMAR	**Chiang Mai Arr**	**147.91**	**346**	PKPbc	PKPdf		02 56 22.9	+5.1
	comp=E,1.1nm,0.6s,baz=342,slow=4.2,SNR=5.7							

DJA 23 02:37:28.8±0.9, 9.57S×115.22E, h10km±4km, MD5.0/3, ML3.9/3, 2C-6D, Error ellipse: s-maj=16.5km s-min=10.3km az=4.0, South of Bali

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
INGI	**Ingas**	**0.75**	**355**	⇓*i*Pg	Pg	02 37 42.4	-1.5
INGI				⇓*e*Sg	Sg	02 37 52.2	-1.8
RATI	**Rata**	**0.90**	**20**	⇓*i*Pg	Pg	02 37 44.2	-2.6
	397nm,0.2s						
RATI				⇓*e*Sg	Sg	02 37 55.3	-3.5
KEDI	**Kedomdong**	**1.40**	**40**	⇓*e*Pn	Pn	02 37 51.8	-2.6
	67nm,0.2s						
KEDI				⇓*e*Sn	Sn	02 38 08.2	-4.8
KELI	**Kelakatan**	**1.52**	**332**	⇓*e*Pn	Pn	02 37 53.3	-2.9
	98nm,0.2s						
KELI				⇓*e*Sn	Sn	02 38 11.7	-4.5

*HEL **23** 02:45:05.9±0.3, 67.63N×33.82E, ML2.4, ML2.2(BER), ML2.3(NAO), Explosion*
*NAO **23** 02:45:06.6±2.5, 67.69N×33.66E, ML2.3*
ISC 23 02:45:04.1±1.2, 67.53N±0.04×33.7E±0.2, n14, σ1§70/26, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
APA0	**Apatity Array**	**0.29**	**285**	*i*P	**Pg**	**02 45 11.7**	**+1.9**
APA0				*i*S	**Sg**	**02 45 15.8**	**+2.2**
APA0	**Apatity Array**	**0.29**	**285**	Pg	**Pg**	**02 45 11.7**	**+1.9**
	baz=104,slow=18						
APA0				Lg		02 45 15.8	
	baz=88,slow=28						
MSF	**Maaselka**	**2.47**	**231**	*e*PB	**Pb**	**02 45 50.1**	**+1.0**
MSF				*e*SG	**Sg**	**02 46 24.3**	**-2.1**
MSF				MSG		02 46 25.6	
	comp=Z,21nm,0.6s						
SGF	**Sodankyl**	**2.77**	**271**	*e*P	**Pn**	**02 45 52.3**	**+1.8**
SGF				*e*S	**Sn**	**02 46 25.5**	**+0.4**
SGF				MSG		02 46 32.3	
	comp=Z,17nm,0.5s						
KEV	**Kevo**	**3.32**	**315**	*e*P	**Pn**	**02 45 58.8**	**+0.5**
KEV				*e*S	**Sn**	**02 46 36.5**	**-2.5**
KEV				MSG		02 46 46.9	
	comp=Z,11nm,0.3s						
ARA0	**ARCESS Array S**	**3.63**	**307**	Pn	**Pn**	**02 46 02.5**	**-0.1**
	baz=122,slow=16						
ARA0				Sn	**Sn**	**02 46 43.2**	**-3.6**
	baz=125,slow=28						
ARA0				Lg		02 46 55.4	
	baz=126,slow=28						
ARA0	**ARCESS Array S**	**3.63**	**307**	*e*P	**Pn**	**02 46 02.5**	**-0.1**
ARA0				*e*S	**Sn**	**02 46 43.2**	**-3.6**
ARA0				*e*SG	**Sg**	**02 46 55.4**	**-9.4**
KTK1	**Kautokeino**	**4.17**	**296**	*e*P	**Pn**	**02 46 11.5**	**+1.1**
KTK1				AML	AML	02 47 18.4	
	comp=Z,12nm,0.6s						
KJN	**Kajaani**	**4.25**	**218**	*e*P	**Pn**	**02 46 14.1**	**+2.5**
KJN				*e*S	**Sn**	**02 47 03.8**	**+1.2**
KJN				MSG		02 47 27.1	
	comp=Z,13nm,0.5s						
JOF	**Joensuu**	**4.74**	**193**	*e*P	**Pn**	**02 46 18.8**	**+0.3**
JOF				*e*S	**Sn**	**02 47 14.5**	**-0.6**
JOF				MSG		02 47 41.1	
	comp=Z,4.1nm,0.5s						
FIA0	**FINESS Array S**	**6.94**	**212**	Pn	**Pn**	**02 46 48.3**	**-1.2**
	baz=41,slow=12						
FIA0				Sn	**Sn**	**02 48 07.9**	**-2.3**
	baz=17,slow=28						
FIA0				Lg		02 48 42.2	
	baz=22,slow=28						
FIA0	**FINESS Array S**	**6.94**	**212**	*e*P	**Pn**	**02 46 48.3**	**-1.2**
FIA0				*e*S	**Sn**	**02 48 07.9**	**-2.3**
FIA0				*e*SG	**Sg**	**02 48 42.2**	**-13**
SPA0	**Spitsbergen Ar**	**11.76**	**342**	Pn	**P**	**02 47 50.9**	**-5.0**
	baz=135,slow=12						
SPA0	**Spitsbergen Ar**	**11.76**	**342**	*e*P	**P**	**02 47 50.9**	**-5.0**

*MOS **23** 02:49:08.2±2.4, 40.38N×47.97E, h10km, mb4.3/6, Error ellipse: s-maj=29.1km s-min=8.6km az=102.9*
*IDC **23** 02:49:08.8±1.4, 40.80N×48.51E, mb3.9/8, mb1 3.9/13, mb1mx3.9/22, ML3.9/4, Error ellipse: s-maj=29.1km s-min=20.2km az=15.0, Station GNI timing error*
*NEIC **23** 02:49:13.1±3.7, 40.77N×48.56E, h32km±31km, mb4.1/1, Error ellipse: s-maj=12.8km s-min=9.1km az=195.0*
*NNC **23** 02:49:16.9±15.0, 40.37N×50.59E, Error ellipse: s-maj=475.8km s-min=158.1km az=118.0*
ISC 23 02:49:08.0±0.6, 40.32N±0.05×47.8E±0.1, h10km, n33, σ1§37/30, mb3.8/10, 2D, Eastern Caucasus

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KSMR	**Kasumkent**	**1.30**	**11**	*i*PG	**Pg**	**02 49 34.5**	**+0.4**
KSMR				*e*S	**Sb**	**02 49 49.5**	**+0.7**
URKR	**Urkarakh**	**1.84**	**356**	*i*PN	**Pn**	**02 49 39.0**	**-1.0**
KMKR	**Kumukh**	**1.88**	**344**	*i*PN	**Pg**	**02 49 44.5**	**-1.0**
KMKR				*i*S	**Sg**	**02 50 11.5**	**+0.9**
KMKR				pmax	pmax		
	comp=Z,281nm,0.3s						
MAK	**Makhachkala**	**2.64**	**356**	*e*PN	**Pn**	**02 49 53.8**	**+2.3**
MAK				*i*		02 50 26.8	
MAK				smax			
	comp=N,360nm,1.0s						
MAK				smax			
	comp=E,1μm,1.0s						
ZEI	**Tsey**	**3.81**	**311**	*e*PN	**Pb**	**02 50 17.5**	**+2.5**
THR	**Tehran**	**5.14**	**148**	Pn	**Pn**	**02 50 29.9**	**+3.0**
	comp=E,3.6nm,0.3s,baz=328,slow=13,SNR=58						
THR				Sn	**Sn**	**02 51 27.6**	**+0.6**
	comp=E,0.8nm,0.3s,baz=99,slow=7.3,SNR=5.4						
THR	**Tehran**	**5.14**	**148**	PN	**Pn**	**02 50 29.9**	**+3.0**
THR						02 51 27.6	
THR				pmax	pmax		
	comp=Z,4.0nm,0.3s						
THR				smax			
	comp=Z,1.0nm,0.3s						
KIV	**Kislovodsk**	**5.25**	**315**	*e*PN	Px	02 50 46.5	
KIV				pmax	pmax		
	comp=N,4.0nm,0.8s						
KIV				pmax	pmax		
	comp=Z,7.0nm,0.8s						
KIV				pmax	pmax		
	comp=E,3.0nm,0.6s						
KIV	**Kislovodsk**	**5.25**	**315**	*e*Pn	**Pn**	**02 50 31.9**	**+3.4**
	comp=E,7.1nm,0.7s						
KIV				*e*Pg	**Pg**	**02 50 46.9**	**-5.9**
AB31	**Akbulak array**	**12.41**	**40**	P	Px	02 51 56.2	
	comp=E,0.8nm,0.5s,baz=220,slow=12,SNR=22						
AB31				⇓S	Sx	02 54 02.7	
	comp=E,2.4nm,0.7s,baz=214,slow=25,SNR=3.6						
AKASG	**Malin Array Be**	**16.59**	**315**	Pn	Px	02 53 00.1	
	comp=E,0.5nm,0.3s,baz=121,slow=11,SNR=4.0						
IDI	**Anoyia**	**18.76**	**262**	P	Px	02 53 36.2	
	comp=E,0.4nm,0.3s,baz=138,slow=18,SNR=5.3						
BRVK	**Borovoye**	**19.90**	**43**	*e*P	Px	02 53 33.2	
BVA0	**Borovoye Array**	**19.94**	**43**	⇓P	Px	02 53 34.4	
	comp=E,0.4nm,0.8s,baz=186,slow=7.0,SNR=12						
BVAR	**Borovoye Array**	**19.94**	**43**	P	Px	02 53 33.7	
	comp=E,0.3nm,0.3s,baz=225,slow=13,SNR=10.0						
JOF	**Joensuu**	**24.68**	**342**	*e*p	**P**	**02 54 28.2**	**-1.7**
	comp=E,2.1nm,0.3s,mb4.2						
JOF	**Joensuu**	**24.68**	**342**	*e*P	**P**	**02 54 28.2**	**-1.7**
JOF				pmax	pmax		
	comp=Z,2.0nm,0.3s,mb4.1						
FINES	**FINESS Array B**	**24.96**	**335**	P	**P**	**02 54 32.0**	**-0.6**
	comp=Z,4.6nm,0.6s,mb4.2,baz=137,slow=11,SNR=51						
FINES	**FINESS Array B**	**24.96**	**335**	P	**P**	**02 54 32.0**	**-0.6**
FINES				pmax	pmax		
	comp=Z,5.0nm,0.6s						
KAF	**Kangasniemi**	**25.39**	**336**	*e*p	**P**	**02 54 36.1**	**-0.6**
	comp=Z,2.0nm,0.4s,mb4.0,baz=136,slow=11						
KAF	**Kangasniemi**	**25.39**	**336**	*e*P	**P**	**02 54 36.1**	**-0.6**
KAF				pmax	pmax		
	comp=Z,2.0nm,0.4s,mb4.0						
GERES	**GERESS Array B**	**25.55**	**301**	P	**P**	**02 54 41.8**	**+3.4**
	comp=Z,0.3nm,0.5s,mb3.1,baz=90,slow=8.0,SNR=3.8						
MKAR	**Makanchi Array**	**25.68**	**64**	P	**P**	**02 54 33.8**	**-5.8**
	comp=Z,1.2nm,0.8s,mb3.5,baz=262,slow=8.6,SNR=6.0						
MKAR	**Makanchi Array**	**25.68**	**64**	P	**P**	**02 54 33.8**	**-5.8**
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.8s						
HFS	**Hagfors**	**28.96**	**325**	P	**P**	**02 55 08.8**	**-0.6**
	comp=Z,1.9nm,0.4s,mb4.2,baz=113,slow=11,SNR=13						
HFS	**Hagfors**	**28.96**	**325**	P	**P**	**02 55 08.8**	**-0.6**
HFS				pmax	pmax		
	comp=Z,2.0nm,0.4s						
NB2	**NORSAR Subarra**	**30.47**	**325**	P	**P**	**02 55 21.9**	**-0.9**
	comp=Z,1.1nm,0.5s,mb3.8,baz=115,slow=8.6						
NOA	**NORSAR Array B**	**30.47**	**325**	P	**P**	**02 55 21.8**	**-0.9**
	comp=Z,4.9nm,1.1s,mb4.2,baz=118,slow=8.4,SNR=7.0						
NOA	**NORSAR Array B**	**30.47**	**325**	P	**P**	**02 55 21.8**	**-1.0**
NOA				pmax	pmax		
	comp=Z,5.0nm,1.1s						
EKA	**Eskdalemuir Ar**	**36.46**	**312**	P	**P**	**02 56 15.1**	**+0.4**
	comp=Z,1.2nm,0.8s,mb3.9,baz=101,slow=8.5,SNR=4.0						
EKA	**Eskdalemuir Ar**	**36.46**	**312**	P	**P**	**02 56 15.1**	**+0.4**
EKA				pmax	pmax		
	comp=Z,1.0nm,0.8s						
SPITS	**Spitsbergen Ar**	**40.07**	**350**	P	**P**	**02 56 43.9**	**-0.8**
	comp=Z,6.0nm,1.1s,mb4.2,baz=140,slow=7.0,SNR=3.6						
ILAR	**Eielson Array**	**74.61**	**6**	P	**P**	**03 00 46.1**	**-2.3**
	comp=Z,0.3nm,0.9s,mb3.2,baz=313,slow=3.0,SNR=5.3						

IDC 23 02:59:54.5±6.7, 4.63S×149.24E, mb3.6/3, mb1 3.9/3, mb1mx3.7/11, Error ellipse: s-maj=216.0km s-min=32.7km az=104.0, Bismarck Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WB2	**Warramunga Arr**	**21.02**	**222**	*e*P	P	03 04 38.6	-3.8
WRA	**Warramunga Arr**	**21.03**	**222**	P	P	03 04 38.6	-4.0
	3.0nm,0.7s,baz=61,slow=8.6,SNR=35						
ASAR	**Alice Springs**	**24.02**	**217**	P	P	03 05 12.9	+0.7
	0.4nm,0.6s,baz=56,slow=9.5,SNR=8.6						
MKAR	**Makanchi Array**	**77.88**	**320**	P	P	03 11 54.2	-1.7
	0.7nm,0.6s,baz=117,slow=6.4,SNR=7.7						

*BJI **23** 03:06:51.7, 51.94N×158.91E, h115km, mB4.7, mb4.6*
*MOS **23** 03:06:52.3±1.2, 51.78N×158.53E, h97km, mb4.1/15, Error ellipse: s-maj=15.4km s-min=6.7km az=83.9*
*KRSC **23** 03:06:52.7±0.8, 51.66N×158.96E, h48km±18km, ML4.7*
*NEIC **23** 03:06:54.2±0.3, 51.95N×158.36E, mb4.5/16, Error ellipse: s-maj=8.9km s-min=5.8km az=154.0*
*IDC **23** 03:06:54.2±0.8, 51.92N×158.42E, h86km±7km, mb4.0/22, mb1 4.1/23, mb1mx4.0/30, Error ellipse: s-maj=14.8km s-min=10.8km az=147.0*
ISC 23 03:06:52.4±0.3, 51.74N±0.02×158.68E±0.05, h88km, h88km±2.2km: pP-P, n129, σ1§25/168, mb4.4/43, 2D, Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RUS	**Russkaya**	**0.70**	**352**	P	**P**	**03 07 09.4**	**+0.4**
RUS	**Russkaya**	**0.70**	**352**	*i*P	**P**	**03 07 09.5**	**+0.5**
RUS				*e*S	**S**	**03 07 20.8**	**-0.5**
GRL	**Gorelyy**	**0.90**	**336**	*i*P	**P**	**03 07 12.3**	**+1.3**
GRL				*i*S	**S**	**03 07 26.1**	**+1.2**
KRMR	**Karymshinskiy**	**1.15**	**343**	*i*P	**P**	**03 07 14.0**	**0.0**
KRMR				*i*S	**S**	**03 07 29.9**	**-0.2**
PAU	**Pauzhetka**	**1.20**	**258**	*i*P	**P**	**03 07 16.6**	**+2.0**
PAU				*i*S	**S**	**03 07 33.6**	**+2.3**
PAU				Smax			
	4μm,0.3s						
PET	**Petropavlovsk**	**1.29**	**359**	P	**P**	**03 07 16.2**	**+0.4**
PET				S	**S**	**03 07 32.1**	**-1.2**
PET	**Petropavlovsk**	**1.29**	**359**	*i*P	**P**	**03 07 16.1**	**+0.3**
PET				*i*S	**S**	**03 07 32.1**	**-1.2**
PET	**Petropavlovsk**	**1.29**	**359**	⇓*i*PN	**P**	**03 07 16.2**	**+0.4**
PET				*e*S	**S**	**03 07 32.3**	**-1.0**
PET				pmax	pmax		
	comp=Z,293nm,0.4s						
PET				smax			
	comp=N,4μm,0.6s						
PET				smax			
	comp=E,2μm,0.5s						
PET	**Petropavlovsk**	**1.29**	**359**	*e*Pn	**P**	**03 07 16.0**	**+0.2**
PET				*e*Sn	**S**	**03 07 32.3**	**-1.0**
MIPR	**Malaya Ipel'ka**	**1.31**	**295**	*e*P	**P**	**03 07 17.5**	**+1.5**
MIPR				*i*S	**S**	**03 07 35.4**	**+1.8**
UGLR	**Uglovaya**	**1.48**	**3**	*e*P	**P**	**03 07 19.1**	**+0.9**
UGLR				*i*S	**S**	**03 07 37.1**	**-0.2**
NLC	**Nalytchevo**	**1.49**	**15**	P	**P**	**03 07 17.8**	**-0.6**
NLC				S	**S**	**03 07 35.6**	**-2.0**
NLC	**Nalytchevo**	**1.49**	**15**	*i*P	**P**	**03 07 17.9**	**-0.5**
NLC				*i*S	**S**	**03 07 35.4**	**-2.2**
AVH	**Avacha**	**1.53**	**1**	*i*P	**P**	**03 07 20.1**	**+1.2**
AVH				*i*S	**S**	**03 07 39.0**	**+0.5**
SMAR	**Somma**	**1.53**	**3**	*e*P	**P**	**03 07 19.6**	**+0.7**
SMAR				*e*S	**S**	**03 07 38.2**	**-0.3**
SDLR	**Sedlovina**	**1.55**	**4**	*i*P	**P**	**03 07 19.6**	**+0.5**
SDLR				*i*S	**S**	**03 07 37.5**	**-1.4**
KOK	**Koryaka**	**1.56**	**359**	*e*P	**P**	**03 07 20.6**	**+1.4**
KOK				*i*S	**S**	**03 07 39.7**	**+0.6**
SPN	**Mys Shipunski**	**1.59**	**31**	P	**P**	**03 07 19.8**	**+0.1**
SPN				S	**S**	**03 07 38.3**	**-1.5**
SPN	**Mys Shipunski**	**1.59**	**31**	*i*P	**P**	**03 07 19.9**	**+0.2**
SPN				*i*S	**S**	**03 07 38.5**	**-1.3**
SKR	**Severo-Kuril's**	**1.93**	**238**	*i*P	**P**	**03 07 24.5**	**+0.4**
SKR				*i*S	**S**	**03 07 47.5**	**+0.1**
SKR	**Severo-Kuril's**	**1.93**	**238**	⇓*i*PN	**P**	**03 07 24.5**	**+0.4**
SKR				*i*S	**S**	**03 07 47.5**	**+0.1**
SKR				pmax	pmax		
	comp=Z,290nm,0.3s						
SKR				pmax	pmax		
	comp=N,130nm,0.2s						
SKR				pmax	pmax		
	comp=E,310nm,0.2s						
SKR				smax			
	comp=N,4μm,0.4s						
SKR				smax			
	comp=E,4μm,0.4s						
SKR				smax			
	comp=N,3μm,2.0s						
SKR				smax			
	comp=E,4μm,2.0s						
GNL	**Ganaly**	**2.01**	**347**	*i*P	**P**	**03 07 26.4**	**+1.2**
GNL				*e*S	**S**	**03 07 49.3**	**-0.1**
ALID	**Alaid**	**2.15**	**247**	*i*P	**P**	**03 07 28.9**	**+1.8**
ALID				*e*S	**S**	**03 07 54.7**	**+1.9**
KII	**Karymskiy**	**2.35**	**11**	P	**S**	**03 07 31.3**	**+1.4**
KII				S	**S**	**03 07 59.0**	**+1.2**
KII	**Karymskiy**	**2.35**	**11**	*e*P	**S**	**03 07 31.2**	**+1.3**
KII				*i*S	**S**	**03 07 58.9**	**+1.1**
MKZ	**Mys Kozlova**	**3.37**	**32**	P	**S**	**03 07 43.0**	**-1.0**
MKZ				S	**S**	**03 08 17.9**	**-5.1**
MKZ	**Mys Kozlova**	**3.37**	**32**	*i*P	**S**	**03 07 43.0**	**-1.0**
MKZ				*i*S	**S**	**03 08 18.7**	**-4.3**
TUMR	**Tumrok**	**3.66**	**13**	*i*P	**S**	**03 07 49.5**	**+1.5**
TUMR				*e*S	**S**	**03 08 30.0**	**-0.2**
KMNR	**Kamenistaya**	**4.13**	**12**	*i*P	**S**	**03 07 56.5**	**+2.0**
KMNR				*e*S	**S**	**03 08 41.8**	**-0.1**
ESO	**Esso**	**4.20**	**0**	*e*P	**S**	**03 07 56.2**	**+0.8**
ESO				*e*S	**S**	**03 08 42.9**	**-0.7**
ESO				Smax			
	comp=E,50nm,0.8s						
KPT	**Kopyto**	**4.33**	**12**	*i*P	**P**	**03 07 58.7**	**+1.4**
KPT				*e*S	**S**	**03 08 45.8**	**-1.2**
KOZ	**Kozyrevsk**	**4.39**	**9**	P	**P**	**03 07 59.9**	**+1.8**
KOZ	**Kozyrevsk**	**4.39**	**9**	*e*P	**P**	**03 08 00.0**	**+1.9**
KOZ				*e*S	**S**	**03 08 48.1**	**-0.2**
ZLN	**Zelenaya**	**4.47**	**15**	*e*P	**P**	**03 08 01.0**	**+1.8**
ZLN				*e*S	**S**	**03 08 50.1**	**-0.2**
LGNR	**Loginova**	**4.51**	**14**	*e*P	**P**	**03 08 01.5**	**+1.7**
LGNR				*e*S	**S**	**03 08 51.0**	**-0.4**
CIRR	**Tsirk**	**4.55**	**15**	*e*P	**P**	**03 08 01.0**	**+0.6**
CIRR				*e*S	**S**	**03 08 49.0**	**-3.4**
KRSR	**Krestovskiy**	**4.62**	**13**	*e*P	**P**	**03 08 03.1**	**+1.8**
KRSR				*e*S	**S**	**03 08 53.7**	**-0.5**
SRDR	**Sredinnyy**	**4.63**	**7**	*e*P	**P**	**03 08 02.0**	**+0.6**
KLY	**Klyuchi**	**4.73**	**13**	*e*P	**P**	**03 08 06.2**	**+3.4**
KLY				*e*S	**S**	**03 08 58.7**	**+1.9**
KBTR	**Krutoberegovo**	**5.10**	**27**	P	**P**	**03 08 07.0**	**-0.9**
KBTR	**Krutoberegovo**	**5.10**	**27**	*e*P	**P**	**03 08 07.1**	**-0.8**
KBTR				*e*S	**S**	**03 09 00.1**	**-5.9**
BKI	**Bering**	**5.57**	**49**	*i*P	**P**	**03 08 12.7**	**-1.5**
BKI				*i*S	**S**	**03 09 08.8**	**-8.7**
BKI				Smax			
	comp=E,360nm,0.6s						
FX1	**Attu Island--F**	**8.95**	**77**	P	**P**	**03 09 00.1**	**-0.5**
	comp=E,30nm,0.3s,baz=292,slow=5.2,SNR=88						
FX1				S	**S**	**03 10 31.9**	**-8.6**
	comp=E,9.7nm,0.3s,baz=229,slow=19,SNR=5.8						
FX1	**Attu Island--F**	**8.95**	**77**	*e*Pn	**P**	**03 08 59.6**	**-0.9**
MA2	**Magadan**	**9.03**	**333**	*e*PN	**P**	**03 09 08.7**	**+7.0**
MA2				pmax	pmax		
	comp=Z,10.0nm,1.5s						
ASAJ	**Asahikawa**	**13.19**	**241**	P	**P**	**03 09 56.9**	**-0.3**
	comp=Z,2.3nm,0.3s,baz=85,slow=9.6,SNR=13						
ASAJ	**Asahikawa**	**13.19**	**241**	PN	**P**	**03 09 56.9**	**-0.3**
ASAJ				pmax	pmax		
	comp=Z,2.0nm,0.3s						
BILL	**Bilibino**	**16.77**	**10**	*e*P	**P**	**03 10 43.4**	**+0.9**
BILL				pmax	pmax		
	comp=Z,4.0nm,0.5s						
BILL	**Bilibino**	**16.77**	**10**	*e*P	**P**	**03 10 43.1**	**+0.6**
	comp=Z,5.4nm,0.4s						
BILL				*e*pP		03 10 57.8	
YAK	**Yakutsk**	**18.73**	**315**	*e*P	**P**	**03 11 03.1**	**-3.1**
YAK				pmax	pmax		
	comp=Z,35nm,0.7s						
YAK	**Yakutsk**	**18.73**	**315**	*e*P	**P**	**03 11 02.4**	**-3.7**
	comp=Z,41nm,0.8s						
YAK				*e*pP		03 11 22.4	
MAJO	**Matsushiro**	**21.03**	**232**	*e*P	**P**	**03 11 31.6**	**+1.1**
	comp=Z,12nm,0.4s,mb4.6						
MAT	**Matsushiro**	**21.03**	**232**	P	**P**	**03 11 31.7**	**+1.2**
MAT	**Matsushiro**	**21.03**	**232**	*e*P	**P**	**03 11 32.0**	**+1.5**
TIXI	**Tiksi**	**23.98**	**337**	*e*P	**P**	**03 11 58.1**	**-0.7**
TIXI				pmax	pmax		
	comp=Z,6.0nm,0.5s,mb4.2						
TIXI				MLR	MLR		
	comp=Z,100nm,17.0s						
TIXI	**Tiksi**	**23.98**	**337**	*e*P	**P**	**03 11 57.8**	**-1.1**
	comp=Z,7.0nm,0.4s,mb4.3						
HIA	**Hailar**	**24.69**	**280**	*e*P	**P**	**03 12 04.8**	**-1.2**
	comp=Z,13nm,0.6s,mb4.5						
KS15	**Wonju Array Si**	**25.94**	**249**	P	**P**	**03 12 16.8**	**-1.1**
BOD	**Bodaibo**	**26.08**	**301**	*e*P	**P**	**03 12 15.5**	**-3.5**
BOD				*e*	pP	03 12 37.2	-1.5
JNU	**Nakatsue**	**27.44**	**238**	P	**P**	**03 12 33.4**	**+1.7**
	comp=Z,5.7nm,0.6s,mb4.3,baz=192,slow=4.5,SNR=7.5						
SML	**Sawmill**	**29.89**	**50**	*e*P	P	**03 12 52.6**	**-0.7**
ILAR	**Eielson Array**	**30.39**	**44**	P	**P**	**03 12 56.3**	**-1.4**
	comp=Z,4.8nm,0.7s,mb4.2,baz=270,slow=7.6,SNR=46						
ILAR				PcP	PcP	03 15 52.9	-2.7
	comp=Z,0.3nm,

DMN	**Daman**	**58.87**	**276**	*eP*		**P**	**03 16 42.0**	**-2.0**
	comp=Z,14nm,0.5s,mb5.2								
GKN	**Gorkha**	**58.88**	**277**	*eP*		**P**	**03 16 42.8**	**-1.3**
BW06	**Boulder Array**	**58.95**	**59**	*eP*		**P**	**03 16 45.0**	**+0.6**
	comp=Z,4.4nm,0.8s,mb4.5								
PDAR	**Pinedale Array**	**58.95**	**59**	P		**P**	**03 16 45.1**	**+0.7**
	comp=Z,4.0nm,0.6s,mb4.6,baz=322,slow=3.1,SNR=35								
NLU	**North Lily Min**	**59.52**	**63**	*eP*		**P**	**03 16 49.5**	**+1.1**
KOLN	**Koldanda**	**59.68**	**277**	*eP*		**P**	**03 16 48.2**	**-1.4**
	comp=Z,4.5nm,0.5s,mb4.8								
KAF	**Kangasniemi**	**60.39**	**336**	*ep*		**P**	**03 16 50.9**	**-3.1**
	comp=Z,0.9nm,0.4s,mb4.2,baz=48,slow=6.2								
KAF	**Kangasniemi**	**60.39**	**336**	*eP*		**P**	**03 16 50.9**	**-3.1**
KAF				pmax	pmax				
	comp=Z,1.0nm,0.4s,mb4.2								
RSSD	**Black Hills**	**60.89**	**55**	*eP*		**P**	**03 16 57.9**	**+0.3**
	comp=Z,5.6nm,0.7s,mb4.7								
SRU	**San Rafael**	**60.97**	**63**	*eP*		**P**	**03 16 58.8**	**+0.6**
FINES	**FINESS Array B**	**61.02**	**336**	P		**P**	**03 16 56.2**	**-2.1**
	comp=Z,0.8nm,0.4s,mb4.1,baz=46,slow=7.0,SNR=21								
FINES	**FINESS Array B**	**61.02**	**336**	P		**P**	**03 16 56.2**	**-2.1**
FINES				pmax	pmax				
	comp=Z,1.0nm,0.4s								
PV10	**Paradox Valley**	**62.31**	**62**	*eP*		**P**	**03 17 08.5**	**+1.3**
ISCO	**Idaho Springs**	**63.15**	**59**	*eP*		**P**	**03 17 13.7**	**+0.8**
	comp=Z,5.9nm,1.2s,mb4.4								
NB2	**NORSAR Subarra**	**64.60**	**343**	P		**P**	**03 17 20.5**	**-1.3**
	comp=Z,1.5nm,0.9s,mb3.8,baz=22,slow=6.5								
NOA	**NORSAR Array B**	**64.60**	**343**	P		**P**	**03 17 20.6**	**-1.2**
	comp=Z,1.4nm,0.8s,mb3.8,baz=23,slow=6.6,SNR=5.0								
NOA	**NORSAR Array B**	**64.60**	**343**	P		**P**	**03 17 20.7**	**-1.1**
NOA				pmax	pmax				
	comp=Z,1.0nm,0.8s								
HFS	**Hagfors**	**64.97**	**342**	P		**P**	**03 17 22.8**	**-1.4**
	comp=Z,1.6nm,0.6s,mb4.0,baz=34,slow=7.5,SNR=17								
HFS	**Hagfors**	**64.97**	**342**	P		**P**	**03 17 22.8**	**-1.4**
HFS				pmax	pmax				
	comp=Z,2.0nm,0.6s								
AKASG	**Malin Array Be**	**69.33**	**328**	P		**P**	**03 17 49.3**	**-2.4**
	comp=Z,0.5nm,0.3s,mb3.9,baz=32,slow=6.8,SNR=4.6								
TXAR	**Lajitas Array**	**71.98**	**66**	P		**P**	**03 18 08.8**	**+0.8**
	comp=Z,19nm,1.2s,mb4.8,baz=298,slow=4.6,SNR=61								
TXAR				pP	pP		03 18 31.8	+0.7	
	comp=Z,1.1nm,0.5s,baz=296,slow=5.1,SNR=5.0								
TXAR	**Lajitas Array**	**71.98**	**66**	P		**P**	**03 18 08.8**	**+0.8**
TXAR				pP	pP		03 18 31.8	+0.7	
EKA	**Eskdalemuir Ar**	**72.24**	**349**	P		**P**	**03 18 08.2**	**-1.0**
	comp=Z,1.0nm,0.5s,mb3.9,baz=17,slow=4.9,SNR=11								
EKA	**Eskdalemuir Ar**	**72.24**	**349**	P		**P**	**03 18 08.2**	**-0.9**
EKA				pmax	pmax				
	comp=Z,1.0nm,0.5s								
CLL	**Collm**	**73.31**	**338**	P		**P**	**03 18 15.0**	**-0.3**
CLL				*e**PP	pP		03 18 38.0	-0.4	
VRAC	**Vranov**	**74.28**	**335**	P		**P**	**03 18 20.8**	**-0.2**
	comp=Z,1.0nm,0.4s,mb3.9,baz=130,slow=8.4,SNR=3.5								
WRA	**Warramunga Arr**	**74.49**	**204**	P		**P**	**03 18 23.0**	**+0.2**
	comp=Z,1.3nm,0.6s,mb3.9,baz=18,slow=6.0,SNR=18								
WRA				pP	pP		03 18 45.7	-0.3	
	comp=Z,0.6nm,0.8s,baz=21,slow=6.2,SNR=2.8								
WRA	**Warramunga Arr**	**74.49**	**204**	P		**P**	**03 18 23.0**	**+0.2**
WRA				*PP	pP		03 18 45.7	-0.3	
WRA				pmax	pmax				
	comp=Z,1.0nm,0.6s								
WRA				pmax	pmax				
	comp=Z,1.0nm,0.8s								
MLR	**Muntele Rosu**	**74.94**	**328**	P		**P**	**03 18 25.1**	**+0.2**
	comp=Z,1.2nm,0.6s,mb3.8,baz=299,slow=23,SNR=4.9								
MLR	**Muntele Rosu**	**74.94**	**328**	P		**P**	**03 18 25.1**	**+0.2**
MLR				pmax	pmax				
	comp=Z,1.0nm,0.6s								
GERES	**GERESS Array B**	**75.43**	**337**	P		**P**	**03 18 27.8**	**+0.2**
	comp=Z,3.0nm,1.1s,mb3.9,baz=45,slow=5.7,SNR=10								
GERES	**GERESS Array B**	**75.43**	**337**	P		**P**	**03 18 27.8**	**+0.2**
GERES				pmax	pmax				
	comp=Z,3.0nm,1.1s								
ASAR	**Alice Springs**	**78.17**	**203**	P		**P**	**03 18 44.7**	**+1.3**
	comp=Z,0.8nm,0.4s,mb3.8,baz=17,slow=5.0,SNR=18								
DAVOX	**Davos**	**78.27**	**339**	P		**P**	**03 18 43.3**	**-0.2**
	comp=Z,2.4nm,0.5s,mb4.2,baz=162,slow=0.5,SNR=5.6								

CASC ***23*** *03:08:00.6±1.9, 12.63N×88.22W, h45km±54km, MD4.1, ML4.3, mb3.9(NEIC)*
NEIC ***23*** *03:08:03.0±1.4, 12.68N×88.03W, h83km±13km, mb3.9/6, Error ellipse: s-maj=18.6km s-min=9.9km az=54.0*
IDC ***23*** *03:08:04.6±5.2, 12.76N×87.90W, h98km±39km, mb3.9/10, mb1 4.1/12, mb1mx3.8/23, MS3.3/1, Ms1 3.4/1, ms1mx2.5/29, Error ellipse: s-maj=39.2km s-min=26.0km az=26.0*

ISC 23 03:07:59.9±0.4, 12.61N±0.04×88.21W±0.03, h68km±3km, n68, σ0§98/92, mb4.0/16, 15C-11D, Off coast of central America

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CNCH	**Conchagua**	**0.76**	**29**	*i*	*P*	**P**	**03 08 14.9**	**-0.5**
CNCH				*eS*		**S**	**03 08 28.3**	**+1.3**
VSM	**San Miguel**	**0.81**	**356**	*e*	*P*	**P**	**03 08 16.1**	**0.0**
VSM				*eS*		**S**	**03 08 29.1**	**+0.9**
BLLM	**Bellamira**	**0.82**	**358**	*e*	*P*	**P**	**03 08 16.2**	**-0.1**
BLLM				*eS*		**S**	**03 08 27.8**	**-0.7**
CRIN	**San Cristobal**	**1.14**	**86**	*e*	*P*	**P**	**03 08 20.9**	**+0.6**
CRIN				*eS*		**S**	**03 08 35.5**	**-0.1**
CAHU	**Cacacuatique**	**1.15**	**0**	*e*	*P*	**P**	**03 08 20.9**	**+0.5**
CAHU				*eS*		**S**	**03 08 36.9**	**+1.0**
SNVI	**San Vicente**	**1.17**	**328**	*e*	*P*	**P**	**03 08 20.2**	**-0.5**
SNVI				*eS*		**S**	**03 08 35.3**	**-0.9**
PYN	**Poneloya**	**1.19**	**101**	*i*	*P*	**P**	**03 08 20.7**	**-0.3**
LCBS	**La Ceiba**	**1.28**	**324**	*i*	*P*	**P**	**03 08 22.0**	**-0.2**
LCBS				*eS*		**S**	**03 08 38.1**	**-0.7**
LFRS	**El Faro**	**1.30**	**321**	*e*	*P*	**P**	**03 08 22.3**	**-0.4**
LEON	**Leon**	**1.30**	**99**	*e*	*P*	**P**	**03 08 21.9**	**-0.8**
LEON				*eS*		**S**	**03 08 37.5**	**-2.1**
TEL3	**Telica 3**	**1.34**	**92**	*e*	*P*	**P**	**03 08 23.0**	**-0.2**
LBRS	**Las Brisas**	**1.38**	**324**	*e*	*P*	**P**	**03 08 23.9**	**+0.2**
LBRS				*eS*		**S**	**03 08 39.7**	**-1.7**
LFU	**La Fuente**	**1.43**	**322**	*e*	*P*	**P**	**03 08 24.4**	**0.0**
SNET	**Serv Nac Est T**	**1.46**	**317**	*e*	*P*	**P**	**03 08 24.6**	**-0.2**
SNET				*eS*		**S**	**03 08 41.9**	**-1.2**
MIRN	**Miramar**	**1.48**	**97**	*e*	*P*	**P**	**03 08 24.8**	**-0.2**
CNGN	**Cerro Negro**	**1.48**	**94**	*e*	*P*	**P**	**03 08 25.0**	**-0.1**
CNGN				*eS*		**S**	**03 08 44.4**	**+0.7**
PICS	**Picacho**	**1.51**	**318**	*e*	*P*	**P**	**03 08 25.8**	**+0.3**
PICS				*eS*		**S**	**03 08 44.5**	**+0.1**
BOQS	**Boqueron**	**1.52**	**317**	*e*	*P*	**P**	**03 08 25.6**	**-0.1**
BOQS				*eS*		**S**	**03 08 44.1**	**-0.6**
COPN	**Copaltepe**	**1.64**	**105**	*e*	*P*	**P**	**03 08 26.8**	**-0.4**
COPN				*eS*		**S**	**03 08 46.4**	**-1.0**
MOMJ	**Momotombo**	**1.65**	**97**	*e*	*P*	**P**	**03 08 27.1**	**-0.1**
MOMJ				*eS*		**S**	**03 08 48.0**	**+0.5**
SBLS	**San Blas**	**1.84**	**312**	*e*	*P*	**P**	**03 08 30.0**	**+0.1**
SBLS				*eS*		**S**	**03 08 53.1**	**+1.1**
SNJE	**San Jose**	**1.84**	**313**	*e*	*P*	**P**	**03 08 30.3**	**+0.3**
RTR	**El Retiro**	**1.89**	**313**	*e*	*P*	**P**	**03 08 30.9**	**+0.3**
XAVN	**Gruta Xavier**	**1.90**	**104**	*e*	*P*	**P**	**03 08 30.9**	**+0.1**
XAVN				*eS*		**S**	**03 08 51.4**	**-2.1**
CRUN	**El Crucero**	**1.97**	**108**	*e*	*P*	**P**	**03 08 32.0**	**+0.3**
MGAN	**Managua**	**1.98**	**103**	*e*	*P*	**P**	**03 08 31.2**	**-0.6**
MGAN				*eS*		**S**	**03 08 57.6**	**+2.3**
RBDL	**Robledal**	**2.07**	**316**	*e*	*P*	**P**	**03 08 33.5**	**+0.4**
MTO2	**Montecristo 2**	**2.10**	**328**	*e*	*P*	**P**	**03 08 33.7**	**+0.2**
MTO2				*eS*		**S**	**03 08 59.7**	**+1.3**
COFN	**Cofrada**	**2.10**	**102**	*e*	*P*	**P**	**03 08 33.5**	**-0.1**
PYTN	**Playitas**	**2.10**	**92**	*e*	*P*	**P**	**03 08 33.1**	**-0.5**
PYTN				*eS*		**S**	**03 08 58.6**	**0.0**
CUSS	**Cusmapa**	**2.12**	**308**	*e*	*P*	**P**	**03 08 33.7**	**-0.1**
CUSS				*eS*		**S**	**03 08 59.0**	**0.0**
APON	**Apoyo**	**2.21**	**108**	*e*	*P*	**P**	**03 08 35.4**	**+0.3**
CONN	**Concepcion**	**2.74**	**112**	*e*	*P*	**P**	**03 08 42.0**	**-0.6**
CONN				*eS*		**S**	**03 09 14.9**	**+0.4**
VCR	**Vista de Mar**	**3.54**	**134**	*e*	*P*	**P**	**03 08 54.8**	**+1.0**
JTS	**JuntasAbangare**	**3.94**	**126**	*e*	*Pn*	**P**	**03 08 59.8**	**+0.4**
JTS				*e*			03 09 07.0		
JTS				*eSn*		**S**	**03 09 40.2**	**-4.5**
JCR	**Jicaral**	**4.10**	**132**	*e*	*P*	**P**	**03 09 02.3**	**+0.7**
LAJ	**Bijagual**	**4.86**	**124**	*e*	*P*	**P**	**03 09 10.4**	**-1.7**
LCR2	**La Lucha 2**	**5.02**	**124**	*e*	*P*	**P**	**03 09 17.0**	**+2.6**
LCR2				*eS*		**S**	**03 10 10.9**	**-0.9**
URSC	**Urasca**	**5.15**	**122**	*e*	*P*	**P**	**03 09 20.0**	**+3.8**
URSC				*eS*		**S**	**03 10 16.9**	**+1.9**
BUS	**Buena Vista**	**5.32**	**124**	*e*	*P*	**P**	**03 09 21.4**	**+2.8**
BUS				*eS*		**S**	**03 10 19.6**	**+0.3**
TEIG	**Tepich**		**7.57**	**360**	P	**P**	**03 09 49.4**	**-0.4**
	4.9nm,0.3s,baz=168,slow=9.9,SNR=5.2							
TEIG					S	**S**	**03 11 15.7**	**+0.9**
	1.8nm,0.3s,baz=177,slow=15,SNR=1.8							
TEIG	**Tepich**		**7.57**	**360**	*eP*	**P**	**03 09 49.4**	**-0.4**
TEIG					S	**S**	**03 11 15.7**	**+0.9**
SDV	**Santo Domingo**		**17.66**	**100**	P	**P**	**03 12 01.3**	**-1.7**
	0.2nm,0.3s,baz=305,slow=11,SNR=3.6							
JCT	**Junction City**		**20.78**	**331**	*eP*	**P**	**03 12 36.9**	**-0.6**
TXAR	**Lajitas Array**		**21.98**	**322**	P	**P**	**03 12 51.2**	**+1.6**
	1.9nm,0.4s,mb3.8,baz=140,slow=9.8,SNR=66							
MIAR	**Mount Ida**		**22.37**	**348**	*eP*	**P**	**03 12 54.9**	**+1.5**
	3.5nm,0.7s,mb3.8							
MIAR					*e*		03 13 08.8		
JSC	**Jenkinsville**		**22.48**	**15**	*eP*	**P**	**03 12 56.5**	**+2.1**
WVT	**Waverly**		**23.42**	**1**	*eP*	**P**	**03 13 04.2**	**+0.7**
MNTX	**Cornudas Mount**		**24.71**	**323**	*eP*	**P**	**03 13 16.5**	**+0.3**
	1.2nm,0.8s,mb3.4							
ELN	**Prospectdale**		**25.41**	**14**	*eP*	**P**	**03 13 23.6**	**+0.8**
CCM	**Cathedral Cave**		**25.48**	**354**	*eP*	**P**	**03 13 22.8**	**-0.6**
	2.8nm,0.5s,mb4.0							
WCI	**Wyandotte Cave**		**25.57**	**4**	*eP*	**P**	**03 13 23.1**	**-1.1**
	4.3nm,0.6s,mb4.1							
ISCO	**Idaho Springs**		**31.13**	**334**	*eP*	**P**	**03 14 14.6**	**+0.3**
	0.9nm,0.7s,mb3.6							
SADO	**Sadowa**		**32.97**	**12**	P	**P**	**03 14 28.8**	**-1.5**
	2.9nm,0.5s,mb4.4,baz=216,slow=8.7,SNR=2.9							
LPAZ	**La Paz**		**34.91**	**145**	LR	LR	03 27 31.6		
	comp=Z,49nm,19.8s,baz=257,slow=34								
PDAR	**Pinedale Array**		**35.28**	**332**	P	**P**	**03 14 50.4**	**+0.3**
	1.2nm,0.5s,mb4.0,baz=124,slow=11,SNR=11								
HWUT	**Hardware Ranch**		**35.35**	**329**	*eP*	**P**	**03 14 51.7**	**+0.9**
	3.1nm,0.6s,mb4.3								
NVAR	**Mina Array Bea**		**37.09**	**319**	P	**P**	**03 15 07.2**	**+1.7**
	0.5nm,0.5s,mb3.7,baz=118,slow=7.8,SNR=4.1								
NVAR					PcP	PcP	03 17 26.1	+0.9	
	0.3nm,0.3s,baz=123,slow=4.9,SNR=5.3								
ULM	**Lac du Bonnet**		**38.05**	**352**	P	**P**	**03 15 11.5**	**-1.8**
	4.1nm,0.6s,mb4.4,baz=166,slow=7.3,SNR=4.3								
YBH	**Yreka Blue Hor**		**41.75**	**320**	P	**P**	**03 15 44.2**	**+0.1**
	6.0nm,0.3s,mb4.8,baz=118,slow=18,SNR=4.3								
SCHQ	**Schefferville**		**45.34**	**17**	P	**P**	**03 16 10.6**	**-2.3**
	3.8nm,0.5s,mb4.4,baz=236,slow=8.0,SNR=7.6								
DLBC	**Dease Lake**		**55.44**	**335**	P	**P**	**03 17 30.1**	**+0.4**
	3.7nm,0.6s,mb4.6,baz=160,slow=6.3,SNR=15								
DLBC	**Dease Lake**		**55.44**	**335**	*eP*	**P**	**03 17 29.7**	**+0.1**
DLBC					*e*	pP	03 17 44.6	-2.7	
INK	**Inuvik**		**62.83**	**343**	P	**P**	**03 18 19.1**	**-1.4**
	0.9nm,0.7s,mb3.8,baz=131,slow=8.7,SNR=4.0								
ILAR	**Eielson Array**		**65.57**	**336**	P	**P**	**03 18 36.5**	**-1.9**
	0.6nm,0.5s,mb3.7,baz=148,slow=4.0,SNR=11								
WRA	**Warramunga Arr**		**138.60**	**254**	PKP	PKPdf	03 27 21.9	+3.0	
	0.5nm,0.5s,baz=91,slow=2.2,SNR=14								
ASAR	**Alice Springs**		**138.64**	**249**	PKP	PKPdf	03 27 21.8	+2.8	
	0.4nm,0.6s,baz=91,slow=1.6,SNR=7.9								
CMAR	**Chiang Mai Arr**		**148.33**	**347**	PKPbc	PKPdf	03 27 38.5	+2.7	
	1.1nm,0.6s,baz=342,slow=5.2,SNR=5.5								

NIED ***23*** *03:14:00, 39.30N×143.70E, h14km, Mw3.6 Best double couple: M0 2.45×10^14 NP1:φs41°, δ69°, λ121°. NP2:φs162°, δ37°, λ37°.*
JMA ***23*** *03:14:40.9±0.2, 39.35N×143.74E, h39km, M3.6*

ISC 23 03:14:40.5±1.2, 39.36N±0.06×143.8E±0.1, h49km±41km, n13, σ0§95/22, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
MIYJ	**Miyako 2**	**1.55**	**279**	P		**P**	**03 15 06.2**	**-0.1**
MIYJ				*eS*		**S**	**03 15 25.2**	**-0.2**
JTH	**Tanohata**	**1.61**	**292**	P		**P**	**03 15 06.9**	**-0.2**
OFUJ	**Ofunato**	**1.69**	**261**	P		**P**	**03 15 08.0**	**-0.1**
OFUJ				*eS*		**S**	**03 15 28.0**	**-0.6**
JOM	**Ohasama**	**1.95**	**274**	P		**P**	**03 15 12.2**	**+0.3**
JOM				*eS*		**S**	**03 15 34.6**	**-0.6**
JANG	**Nango**	**2.04**	**301**	P		**P**	**03 15 13.0**	**0.0**
JMK	**Ichinoseki**	**2.05**	**259**	P		**P**	**03 15 13.4**	**+0.1**
JYK	**Kaneyama**	**2.72**	**262**	P		**P**	**03 15 23.1**	**+0.3**
JMM	**Marumori**	**2.79**	**239**	P		**P**	**03 15 23.3**	**-0.5**
JMM				*eS*		**S**	**03 15 54.8**	**-1.7**
JNBK	**Urakawa-nobuka**	**3.03**	**345**	P		**P**	**03 15 28.7**	**+1.5**
JNBK				*eS*		**S**	**03 16 04.1**	**+1.6**
JCH	**Churui**	**3.27**	**354**	P		**P**	**03 15 31.4**	**+0.8**
JCH				*eS*		**S**	**03 16 08.6**	**0.0**
NEM2	**Nemuro 2**	**4.26**	**19**	P		**P**	**03 15 44.3**	**-0.3**
NEM2				*eS*		**S**	**03 16 30.8**	**-2.8**
JTKR	**Abashiri--Toko**	**4.61**	**1**	P		**P**	**03 15 50.1**	**+0.6**
JTKR				*eS*		**S**	**03 16 40.5**	**-1.9**
MAT	**Matsushiro**	**5.24**	**239**	P		**P**	**03 15 58.9**	**+0.6**
MAT				S		**S**	**03 16 59.7**	**+1.4**

TAP 23 03:35:43.0, 21.06N×121.63E, h200km±1km, ML3.7, Taiwan region

IDC ***23*** *04:01:45.7±1.1, 34.11N×89.38E, mb3.6/5, mb1 3.8/7, mb1mx3.6/19, ML3.8/2, MS2.9/1, Ms1 3.1/1, ms1mx2.7/19, Error ellipse: s-maj=48.4km s-min=21.8km az=50.0*
NEIC ***23*** *04:01:47.6±0.6, 34.37N×89.88E, h10km, Error ellipse: s-maj=21.0km s-min=9.2km az=63.0*

ISC 23 04:01:55.7±1.8, 34.2N±0.1×89.7E±0.2, h104km±22km, n10, σ1§06/10, mb3.5/5, Xizang

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
LSA	**Lhasa**	**4.63**	**164**	*eP*		**P**	**04 03 05.0**	**+0.3**
MKAR	**Makanchi Array**	**13.80**	**338**	Pn		**P**	**04 05 08.3**	**+0.7**
	0.1nm,0.3s,baz=150,slow=11,SNR=3.9							
CMAR	**Chiang Mai Arr**	**17.70**	**150**	P		**P**	**04 05 56.6**	**-0.4**
	0.4nm,0.3s,baz=329,slow=10,SNR=8.7							
CMAR					LR	LR	04 13 54.0		
	comp=Z,44nm,20.8s,baz=327,slow=41								
BJT	**Baijiatuau**	**21.91**	**67**	*eP*		**P**	**04 06 39.5**	**-1.8**
BVAR	**Borovoye Array**	**23.32**	**330**	P		**P**	**04 06 55.1**	**+0.2**
	2.8nm,1.0s,mb3.6,baz=141,slow=9.5,SNR=10							
BRVK	**Borovoye**	**23.39**	**330**	P		**P**	**04 06 55.3**	**-0.2**
BRTR	**Keskin Array B**	**44.49**	**294**	P		**P**	**04 09 57.1**	**-1.2**
	0.9nm,0.7s,mb3.6,baz=90,slow=7.4,SNR=6.7							
FINES	**FINESS Array B**	**48.12**	**325**	P		**P**	**04 10 26.0**	**-0.6**
	0.7nm,0.8s,mb3.5,baz=76,slow=12,SNR=3.2							
WRA	**Warramunga Arr**	**68.59**	**135**	P		**P**	**04 12 50.7**	**+1.1**
	0.4nm,0.9s,mb3.2,baz=329,slow=6.7,SNR=6.0							
ILAR	**Eielson Array**	**72.00**	**22**	P		**P**	**04 13 11.9**	**+2.4**
	0.7nm,0.9s,mb3.5,baz=304,slow=6.9,SNR=9.1							

BJI ***23*** *04:07:54.8, 34.47N×89.48E, h15km, ML4.1*

ISC 23 04:07:53.3±1.6, 34.3N±0.1×88.5E±0.2, h15km, n8, σ0§78/8, mb3.8/1, Xizang

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
LSA	**Lhasa**	**5.12**	**153**	P		**Pn**	**04 09 11.4**	**+0.1**
GUN	**Gumba**	**6.77**	**200**	*eP*		**Pn**	**04 09 34.6**	**0.0**
	29nm,0.8s							
KKN	**Kakani**	**7.07**	**204**	*eP*		**Pn**	**04 09 38.9**	**+0.1**
	13nm,0.5s							
GKN	**Gorkha**	**7.12**	**209**	*eP*		**Pn**	**04 09 41.3**	**+1.9**
	8.4nm,0.3s							
PKI	**Pulchoki**	**7.23**	**202**	*eP*		**Pn**	**04 09 39.8**	**-1.3**
	17nm,0.6s							
DMN	**Daman**	**7.30**	**205**	*eP*		**Pn**	**04 09 41.8**	**-0.2**
	11nm,0.4s							
KOLN	**Koldanda**	**7.77**	**214**	*eP*		**Pn**	**04 09 48.2**	**-0.4**
	3.2nm,0.3s							
NB2	**NORSAR Subarra**	**54.64**	**324**	P		**P**	**04 17 23.2**	**0.0**
	0.6nm,0.6s,mb3.8,baz=81,slow=7.4							

MDD ***23*** *04:38:45.8±1.2, 35.18N×4.23W, mb3.0/2, Error ellipse: s-maj=13.0km s-min=4.9km az=17.0, PRXIMO AftershockPLICA*
NEIC ***23*** *04:38:46.3, 34.95N×4.27W, h40km, MG3.6(MDD), After MDD.*

ISC 23 04:38:44.8±0.9, 35.23N±0.06×4.30W±0.04, h10km, n35, σ1§29/65, Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
EMEL	**Melilla**	**1.10**	**86**	P		**Pb**	**04 39 04.5**	**-1.0**
	15nm,0.1s,SNR=10.0							
EMEL				S		**Sb**	**04 39 20.3**	**+0.5**
	117nm,0.2s							
MELI	**Melilla**	**1.12**	**87**	P		**Pb**	**04 39 05.2**	**-0.6**
MELI				S		**Sb**	**04 39 19.4**	**-0.9**
EJIF	**Jimena Fronter**	**1.54**	**322**	P		**Pn**	**04 39 14.0**	**+1.5**
	1.0nm,0.1s,SNR=6.3							
EJIF	**Jimena Fronter**	**1.54**	**322**	Pn		**Pn**	**04 39 13.9**	**+1.3**
EJIF				Sn		**Sn**	**04 39 32.9**	**+0.2**
ERON	**Agron**	**1.83**	**13**	P		**Pn**	**04 39 17.5**	**+0.9**
	1.9nm,0.3s,SNR=7.9							
ERON				S		**Sn**	**04 39 41.4**	**+1.5**
	3.7nm,0.2s,SNR=11							
ERON	**Agron**	**1.83**	**13**	Pn		**Pn**	**04 39 18.2**	**+1.6**
ERON				Sn		**Sn**	**04 39 41.4**	**+1.4**
ELIJ	**Sierra de Lija**	**1.89**	**333**	P		**Pn**	**04 39 20.3**	**+2.7**
	0.7nm,0.2s,SNR=11							
ELIJ	**Sierra de Lija**	**1.89**	**333**	Pn		**Pn**	**04 39 20.1**	**+2.5**
ELIJ				Sn		**Sn**	**04 39 44.7**	**+3.0**
ELOJ	**Sierra Loja**	**1.91**	**4**	P		**Pn**	**04 39 20.0**	**+2.1**
	0.3nm,0.2s,SNR=6.1							
ELOJ				S		**Sn**	**04 39 44.2**	**+2.0**
	2.4nm,0.2s,SNR=7.2							
ELOJ	**Sierra Loja**	**1.91**	**4**	Pn		**Pn**	**04 39 19.9**	**+2.0**
ELOJ				Sn		**Sn**	**04 39 45.3**	**+3.1**
EQES	**Quesada**	**2.75**	**21**	P		**Pn**	**04 39 31.4**	**+1.6**
	2.2nm,0.1s,SNR=7.5							
EQES				S		**Sn**	**04 40 02.7**	**-0.8**
	1.8nm,0.1s							
EQES	**Quesada**	**2.75**	**21**	Pn		**Pn**	**04 39 31.8**	**+1.9**
EQES				Sn		**Sn**	**04 40 03.3**	**-0.1**
EHUE	**Huescar**	**2.92**	**28**	P		**Pn**	**04 39 32.8**	**+0.5**
	0.4nm,0.2s,SNR=10							
EHUE				S		**Sn**	**04 40 06.3**	**-1.5**
	0.8nm,0.2s							
EHUE	**Huescar**	**2.92**	**28**	Pn		**Pn**	**04 39 33.1**	**+0.9**
EHUE				Sn		**Sn**	**04 40 07.6**	**-0.2**
EADA	**Adamuz**	**2.94**	**356**	P		**Pn**	**04 39 33.7**	**+1.2**
	0.6nm,0.2s,SNR=8.4							
EADA				S		**Sn**	**04 40 08.4**	**+0.2**
	1.5nm,0.2s							
EADA	**Adamuz**	**2.94**	**356**	Pn		**Pn**	**04 39 34.0**	**+1.5**
EADA				Sn		**Sn**	**04 40 08.2**	**0.0**
EMIN	**Mina Concepcio**	**3.17**	**324**	P		**Pn**	**04 39 36.1**	**+0.3**
	0.2nm,0.1s,SNR=24							
EMIN				S		**Sn**	**04 40 13.1**	**-0.9**
	0.3nm,0.1s							
EMIN	**Mina Concepcio**	**3.17**	**324**	Pn		**Pn**	**04 39 36.8**	**+1.0**
EMIN				Sn		**Sn**	**04 40 12.9**	**-1.1**
PALC	**Alcoutim**	**3.39**	**312**	*eP*		**Pn**	**04 39 39.6**	**+0.6**
PALC				S		**Sn**	**04 40 19.3**	**-0.4**
	1.3nm,0.2s							
PALC	**Alcoutim**	**3.39**	**312**	P		**Pn**	**04 39 39.6**	**+0.6**
PALC				S		**Sn**	**04 40 19.3**	**-0.4**
	0.6nm,0.2s							
EGRO	**El Granado**	**3.44**	**313**	P		**Pn**	**04 39 40.1**	**+0.4**
	0.4nm,0.1s,SNR=7.9							
EGRO				S		**Sn**	**04 40 19.9**	**-1.1**
	0.4nm,0.1s,SNR=7.9							
EGRO	**El Granado**	**3.44**	**313**	Pn		**Pn**	**04 39 40.1**	**+0.5**
EGRO				Sn		**Sn**	**04

s-maj=53.2km s-min=13.5km az=213.0
*WAR **23** 04:47:07.3,51.50N×16.09E,ML2.7,Mining Induced*
*PRU **23** 04:47:08.5,51.40N×16.18E*
ISC 23 04:47:06.7±1.6,51.43N±0.07×15.98E±0.08,n10,σ0§96/16,
Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.62**	**161**	*e*PG	**Pg**	**04 47 20.0**	**+0.9**
KSP				*e*SG	**Sg**	**04 47 28.0**	**+0.7**
UPC	**Upice**	**0.92**	**179**	*e*PG	**Pg**	**04 47 26.0**	**+0.8**
DPC	**Dobruska-Polom**	**1.10**	**169**	*e*PG	**Pg**	**04 47 28.0**	**-0.7**
DPC				*e*SG	**Sg**	**04 47 43.0**	**-0.4**
PVCC	**Panska Ves**	**1.27**	**225**	*e*PG	**Pg**	**04 47 32.3**	**+0.2**
BRG	**Berggiesshubel**	**1.40**	**247**	*e*Pg	**Pg**	**04 47 34.5**	**-0.2**
BRG				*e*Sg	**Sg**	**04 47 54.2**	**+0.8**
PRU	**Pruhonice**	**1.71**	**213**	*e*PG	**Pg**	**04 47 39.7**	**-1.2**
PRU				*e*SG	**Sg**	**04 48 04.5**	**+0.9**
	3.7nm,0.4s						
CLL	**Collm**	**1.87**	**267**	*e*PG	**Pg**	**04 47 43.0**	**-1.1**
CLL				*i*		04 48 02.9	
CLL				*e*SG	**Sg**	**04 48 10.0**	**+0.9**
CLL	**Collm**	**1.87**	**267**	*e*Pg	**Pg**	**04 47 43.0**	**-1.1**
CLL				*e*Sg	**Sg**	**04 48 10.0**	**+0.9**
OKC	**Ostrava-Krasne**	**2.11**	**138**	*e*SG	**Sg**	**04 48 10.6**	**-6.3**
KHC	**Kasperske Hory**	**2.77**	**215**	*e*SG	**Sg**	**04 48 36.6**	**-2.3**

DJA 23 05:17:01.1±0.9,9.52S×115.20E,h15km,MD5.7/4,
ML3.8/2,4C-4D,Error ellipse: s-maj=18.8km
s-min=10.2km az=4.0,South of Bali

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
INGI	**Ingas**	**0.70**	**355**	⇓*i*P	Pn	05 17 14.0	-2.3
	711nm,0.2s						
INGI				⇑*i*Sn	Sn	05 17 23.2	-3.5
RATI	**Rata**	**0.86**	**22**	⇓*i*Pn	Pn	05 17 15.6	-2.9
	450nm,0.1s						
RATI				⇑*i*Sn	Sn	05 17 25.7	-5.0
KEDI	**Kedomdong**	**1.37**	**41**	⇑*i*Pn	Pn	05 17 23.1	-2.7
	70nm,0.2s						
KEDI				⇓*i*Sn	Sn	05 17 40.1	-3.5
KELI	**Kelakatan**	**1.48**	**332**	⇑*i*Pn	Pn	05 17 24.8	-2.5
	150nm,0.2s						
KELI				⇓*i*Sn	Sn	05 17 42.2	-4.2

*NAO **23** 05:48:09.7±2.4,67.17N×20.88E,ML2.0*
*HEL **23** 05:48:09.9±0.2,67.18N×20.70E,ML2.1,ML2.3(UPP),*
ML1.9(BER),Explosion
*BER **23** 05:48:11.7±3.8,67.12N×20.73E,ML1.9,ML2.0(NAO),*
Suspected explosion
ISC 23 05:48:07.2±0.5,67.16N±0.03×20.54E±0.08,n18,σ1§16/30,
Sweden

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KIF	**Kilpisjarvi**	**1.86**	**3**	*e*P	**Pn**	**05 48 41.7**	**+1.1**
KIF				*e*SG	**Sg**	**05 49 07.7**	**-1.4**
KTK1	**Kautokeino**	**2.12**	**27**	*e*P	**Pn**	**05 48 45.4**	**+1.1**
KTK1				*e*S	**Sn**	**05 49 13.2**	**+1.4**
KTK1				AML	AML	05 49 14.4	
	comp=Z,25nm,0.4s						
SGF	**Sodankyl**	**2.34**	**80**	*e*P	**Pn**	**05 48 48.7**	**+1.3**
SGF				*e*S	**Sn**	**05 49 18.4**	**+1.1**
SGF				MSG		05 49 20.2	
	comp=Z,15nm,0.3s						
MOR8	**Moi Rana**	**2.62**	**251**	*e*P	**Pn**	**05 48 52.4**	**+1.0**
MOR8				*e*S	**Sn**	**05 49 24.2**	**-0.2**
MOR8				AML	AML	05 49 28.9	
	comp=Z,14nm,0.4s						
LOF	**Lofoten**	**2.85**	**293**	*e*	**Sg**	**05 49 43.4**	**+1.4**
LOF				AML	AML	05 49 50.7	
	comp=Z,7.8nm,0.6s						
LOF	**Lofoten**	**2.85**	**293**	*e*Sg	**Sg**	**05 49 43.4**	**+1.4**
LOF				AML	AML	05 49 50.7	
	comp=Z,7.8nm,0.6s						
OUL	**Oulu**	**3.01**	**131**	*e*PB	**Pb**	**05 49 00.5**	**-1.0**
OUL				*e*SB	**Sb**	**05 49 38.5**	**-0.4**
OUL				MSG		05 49 42.2	
	comp=Z,3.9nm,0.3s						
ARA0	**ARCESS Array S**	**3.02**	**35**	Pn	**Pn**	**05 48 56.7**	**-0.4**
	baz=210,slow=16						
ARA0				Sn	**Sn**	**05 49 33.3**	**-1.2**
	baz=212,slow=28						
ARA0	**ARCESS Array S**	**3.02**	**35**	*e*P	**Pn**	**05 48 56.7**	**-0.4**
ARA0				*e*S	**Sn**	**05 49 33.3**	**-1.2**
KEV	**Kevo**	**3.54**	**39**	*e*PG	**Pg**	**05 49 12.0**	**-5.8**
KEV				*e*S	**Sn**	**05 49 46.4**	**-1.2**
KEV				MSG		05 50 01.5	
	comp=Z,5.6nm,0.4s						
MSF	**Maaselka**	**3.62**	**106**	*e*P	**Pn**	**05 49 06.2**	**+0.5**
MSF				*e*SB	**Sb**	**05 49 57.6**	**+0.9**
MSF				MSG		05 50 01.2	
	comp=Z,4.7nm,0.4s						
NSS	**Namsos**	**4.40**	**237**	*e*SG	**Sg**	**05 50 28.1**	**-5.5**
NSS				AML	AML	05 50 28.4	
	comp=Z,4.2nm,0.4s						
FIA0	**FINESS Array S**	**6.22**	**155**	Pn	**Pn**	**05 49 42.1**	**-0.3**
	baz=342,slow=14						
FIA0				Sn	**Sn**	**05 50 48.7**	**-6.5**
	baz=347,slow=28						
FIA0				Lg		05 51 23.4	
	baz=341,slow=37						
FIA0	**FINESS Array S**	**6.22**	**155**	*e*P	**Pn**	**05 49 42.1**	**-0.3**
FIA0				*e*S	**Sn**	**05 50 48.7**	**-6.5**
FIA0				*e*SG	**Sg**	**05 51 23.4**	**-11**
HFS	**Hagfors**	**7.67**	**207**	Pn	**Pn**	**05 50 00.8**	**-2.1**
	baz=28,slow=16						
HFS	**Hagfors**	**7.67**	**207**	*e*P	**Pn**	**05 50 00.8**	**-2.1**
SPA0	**Spitsbergen Ar**	**11.15**	**356**	Pn	**P**	**05 50 48.5**	**-2.1**
	baz=153,slow=16						
SPA0	**Spitsbergen Ar**	**11.15**	**356**	*e*P	**P**	**05 50 48.5**	**-2.1**

IDC 23 06:05:20.6±6.7,17.26S×170.42W,mb3.8/4,mb1 4.0/4,
mb1mx3.7/14,Error ellipse: s-maj=281.0km
s-min=37.0km az=141.0,Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**41.07**	**259**	P	P	06 13 05.6	-2.1
	1.5nm,0.4s,baz=80,slow=6.1,SNR=3.7						
WRA	**Warramunga Arr**	**52.24**	**258**	P	P	06 14 34.1	-1.9
	0.5nm,0.6s,baz=97,slow=7.2,SNR=12						
ASAR	**Alice Springs**	**52.29**	**253**	P	P	06 14 34.6	-1.7
	0.8nm,0.5s,baz=98,slow=7.5,SNR=12						
ILAR	**Eielson Array**	**83.73**	**10**	P	P	06 17 51.0	-1.4
	0.5nm,1.0s,baz=211,slow=5.5,SNR=4.4						

*PRU **23** 06:05:49.6,51.36N×16.09E*
WAR 23 06:05:47.0,51.48N×16.10E,h1km,Location given by
Rudna mine, origin time based upon KSP,Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.65**	**169**	*e*Pg	Pg	06 05 58.9	-1.2
KSP				*e*Sg	Sg	06 06 08.2	-0.6
KSP	**Ksiaz**	**0.65**	**169**	*e*PG	Pg	06 05 59.0	-1.1
KSP				*e*SG	Sg	06 06 08.0	-0.8
UPC	**Upice**	**0.98**	**183**	*e*PG	Pg	06 06 05.2	-1.4
DPC	**Dobruska-Polom**	**1.14**	**173**	*e*PG	Pg	06 06 07.5	-2.3
DPC				*e*SG	Sg	06 06 22.3	-2.8
PVCC	**Panska Ves**	**1.36**	**226**	*e*PG	Pg	06 06 11.9	-2.2
PRU	**Pruhonice**	**1.79**	**214**	*e*PG	Pg	06 06 19.6	-3.2
PRU				*e*SG	Sg	06 06 42.9	-3.8
	7.0nm,0.3s						
CLL	**Collm**	**1.95**	**266**	*e*PN	Pn	06 06 20.0	-1.5
CLL				*i* PG	Pg	06 06 22.5	-3.4
CLL				*e*SG	Sg	06 06 49.0	-2.8
NKC	**Novy Kostel**	**2.63**	**243**	*e*SG	Sg	06 07 12.1	-2.5
OJC	**Ojcow**	**2.67**	**117**	*e*Pg	Pg	06 06 36.0	-4.2
OJC				*e*Sg	Sg	06 07 11.9	-3.9
OJC	**Ojcow**	**2.67**	**117**	*e*PG	Pg	06 06 36.0	-4.2
OJC				*e*SG	Sg	06 07 12.0	-3.8
KHC	**Kasperske Hory**	**2.85**	**215**	*e*SG	Sg	06 07 16.2	-5.9

*IDC **23** 06:06:11.7±0.7,18.32S×172.83W,mb4.2/11,mb1 4.5/12,*
mb1mx4.4/18,ML4.4/1,MS3.5/1,Ms1 3.5/1,ms1mx3.0/24,
Error ellipse: s-maj=33.7km s-min=17.1km az=141.0

*NEIC **23** 06:06:19.7±4.4,18.36S×172.89W,h60km±38km,mb4.9/4,*
Error ellipse: s-maj=12.1km s-min=10.9km az=151.0
ISC 23 06:06:18.3±0.5,18.4S±0.1×173.0W±0.1,h60km,n33,
σ0§63/29,mb4.3/13,5C-2D,Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**12.71**	**105**	Pn	**P**	**06 09 02.5**	**-16**
	2.3nm,0.3s,baz=256,slow=9.9,SNR=6.0						
RAR				LR	LR	06 13 10.1	
	comp=Z,210nm,19.7s,baz=264,slow=33						
RAR	**Rarotonga**	**12.71**	**105**	*e*P	**P**	**06 09 01.2**	**-17**
RAR				LR	LR	06 13 10.1	
URZ	**Urewera**	**21.62**	**202**	P	**P**	**06 11 04.8**	**-0.3**
	6.6nm,0.6s,mb4.2,baz=346,slow=12,SNR=4.6						
RPZ	**Rata Peaks**	**28.62**	**205**	P	**P**	**06 12 19.4**	**+8.2**
	16nm,0.6s,mb5.0,baz=6.4,slow=0.8,SNR=20						
CTA	**Charters Tower**	**38.49**	**261**	⇓*i*P	**P**	**06 13 37.4**	**+0.9**
	8.6nm,0.5s,mb4.7						
CTA	**Charters Tower**	**38.49**	**261**	P	**P**	**06 13 37.4**	**+0.9**
	8.6nm,0.5s,mb4.8,baz=93,slow=11,SNR=24						
CTAO	**Charters Tower**	**38.49**	**261**	*e*P	**P**	**06 13 37.1**	**+0.6**
	9.0nm,0.5s,mb4.8						
STKA	**Stephens Creek**	**42.99**	**243**	P	**P**	**06 14 13.0**	**-0.6**
	4.0nm,0.9s,mb4.1,baz=76,slow=8.3,SNR=2.2						
WB2	**Warramunga Arr**	**49.64**	**259**	⇑*i*P	**P**	**06 15 06.0**	**-0.2**
WRAB	**Tennant Creek**	**49.64**	**259**	*e*P	**P**	**06 15 05.4**	**-0.8**
	7.2nm,0.5s,mb5.0						
WRA	**Warramunga Arr**	**49.65**	**259**	P	**P**	**06 15 06.3**	**0.0**
	2.7nm,0.4s,mb4.6,baz=97,slow=5.6,SNR=49						
AS12	**Alice Springs**	**49.66**	**254**	⇓*i*P	**P**	**06 15 06.8**	**+0.5**
	8.9nm,1.0s,mb4.8						
ASAR	**Alice Springs**	**49.66**	**254**	P	**P**	**06 15 06.9**	**+0.6**
	6.5nm,0.6s,mb4.8,baz=95,slow=7.4,SNR=44						
KAKA	**Kakadu**	**52.80**	**268**	*e*P	**P**	**06 15 30.1**	**0.0**
	120nm,27.4s						
SBA	**Scott Base**	**60.33**	**185**	*e*P	**P**	**06 16 23.2**	**+0.3**
VNDA	**Vanda**	**60.47**	**186**	P	**P**	**06 16 23.4**	**-0.4**
	0.6nm,0.8s,mb3.7,baz=10.0,slow=7.2,SNR=4.2						
VNDA	**Vanda**	**60.47**	**186**	P	**P**	**06 16 22.6**	**-1.3**
	0.6nm,0.9s,mb3.6						
QSPA	**South Pole Qui**	**71.67**	**180**	*e*P	**P**	**06 17 34.8**	**-0.3**
	4.3nm,1.0s,mb4.3						
NVAR	**Mina Array Bea**	**76.26**	**41**	P	**P**	**06 18 02.0**	**-0.4**
	0.8nm,0.8s,mb3.7,baz=225,slow=5.7,SNR=4.8						
TXAR	**Lajitas Array**	**81.92**	**56**	P	**P**	**06 18 33.3**	**0.0**
	1.1nm,0.8s,mb3.8,baz=219,slow=8.9,SNR=13						
GDL2	**Guadalupe Moun**	**82.66**	**53**	*e*P	**P**	**06 18 37.3**	**+0.2**
MCMT	**McKenzie Canyo**	**83.31**	**38**	*e*P	**P**	**06 18 40.4**	**+0.4**
PDAR	**Pinedale Array**	**84.20**	**41**	P	**P**	**06 18 44.3**	**-0.3**
	0.5nm,0.6s,mb3.8,baz=225,slow=4.2,SNR=4.9						
BOZ	**Bozeman (W)**	**84.48**	**38**	*e*P	**P**	**06 18 45.0**	**-0.9**
ILAR	**Eielson Array**	**85.28**	**11**	P	**P**	**06 18 49.9**	**+0.5**
	0.5nm,0.8s,mb3.7,baz=235,slow=5.9,SNR=5.4						
VNA3	**Neumayer Olymp**	**89.86**	**175**	⇑*i*	**P**	**06 19 11.3**	**0.0**
VNA3	**Neumayer Olymp**	**89.86**	**175**	⇑*i*	**P**	**06 19 11.3**	**0.0**
VNA2	**Neumayer--Watz**	**90.36**	**175**	⇑*i*	**P**	**06 19 15.6**	**+1.9**
VNA2	**Neumayer--Watz**	**90.36**	**175**	⇑*i*	**P**	**06 19 15.6**	**+1.9**
KMBO	**Kilima Mbogo**	**144.53**	**240**	PKP	PKPdf	06 25 50.1	+1.2
	2.0nm,0.8s,baz=135,slow=1.6,SNR=4.0						
KMBO	**Kilima Mbogo**	**144.53**	**240**	PKP	PKPdf	06 25 50.1	+1.2
KMBO				*e*PKPdf	PKPdf	06 25 52.0	+3.0
BRTR	**Keskin Array B**	**148.70**	**318**	PKPbc	PKPdf	06 26 00.9	+5.8
	1.4nm,0.8s,baz=135,slow=1.7,SNR=7.7						
GERES	**GERESS Array B**	**149.14**	**351**	PKPbc	PKPdf	06 26 00.6	+5.0
	0.5nm,0.8s,baz=45,slow=3.8,SNR=5.0						

*IDC **23** 06:06:46.5±2.4,18.40S×172.76W,mb4.1/8,mb1 4.4/8,*
mb1mx4.2/16,Error ellipse: s-maj=150.0km s-min=22.8km
az=154.0
*NEIC **23** 06:06:54.0±0.5,18.20S×172.99W,h50km,mb4.5/3,Error*
ellipse: s-maj=24.6km s-min=11.0km az=155.0
ISC 23 06:07:14.9±0.6,17.9S±0.2×173.4W±0.1,h250km,n20,
σ0§77/19,mb3.7/9,2C-2D,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RPZ	**Rata Peaks**	**28.91**	**204**	P	**P**	**06 12 53.9**	**+1.0**
	7.9nm,0.5s,mb4.6,baz=350,slow=4.0,SNR=3.2						
RPZ	**Rata Peaks**	**28.91**	**204**	P	**P**	**06 12 53.9**	**+1.0**
CTA	**Charters Tower**	**38.14**	**260**	*e*P	**P**	**06 14 12.1**	**+0.1**
	6.1nm,1.1s,mb4.0						
CTA	**Charters Tower**	**38.14**	**260**	P	**P**	**06 14 12.1**	**+0.1**
	3.8nm,0.5s,mb4.2,baz=84,slow=10,SNR=3.7						
CTAO	**Charters Tower**	**38.14**	**260**	*e*P	**P**	**06 14 11.1**	**-0.9**
	3.5nm,0.5s,mb4.2						
WB2	**Warramunga Arr**	**49.30**	**259**	*e*P	**P**	**06 15 40.6**	**-0.2**
WRAB	**Tennant Creek**	**49.30**	**259**	*e*P	**P**	**06 15 40.0**	**-0.8**
	8.1nm,0.8s,mb4.1						
WRA	**Warramunga Arr**	**49.31**	**259**	P	**P**	**06 15 41.1**	**+0.2**
	2.3nm,0.7s,mb3.6,baz=97,slow=7.5,SNR=3.2						
AS12	**Alice Springs**	**49.38**	**254**	*e*P	**P**	**06 15 41.4**	**0.0**
	6.2nm,0.9s,mb3.9						
ASAR	**Alice Springs**	**49.38**	**254**	P	**P**	**06 15 41.6**	**+0.2**
	3.9nm,0.6s,mb3.9,baz=96,slow=8.0,SNR=4.0						
NVAR	**Mina Array Bea**	**76.17**	**42**	P	**P**	**06 18 36.6**	**-0.7**
	0.5nm,0.6s,mb3.3,baz=221,slow=8.3,SNR=3.1						
TXAR	**Lajitas Array**	**82.00**	**56**	P	**P**	**06 19 08.1**	**-0.5**
	0.8nm,0.8s,mb3.4,baz=224,slow=7.9,SNR=4.0						
TXAR	**Lajitas Array**	**82.00**	**56**	P	**P**	**06 19 08.1**	**-0.5**
PDAR	**Pinedale Array**	**84.11**	**42**	P	**P**	**06 19 19.1**	**0.0**
	0.5nm,0.6s,mb3.4,baz=225,slow=3.8,SNR=2.6						
ILAR	**Eielson Array**	**84.87**	**11**	P	**P**	**06 19 24.5**	**+2.2**
	0.3nm,0.9s,mb3.0,baz=222,slow=6.6,SNR=1.7						
VNA3	**Neumayer Olymp**	**90.40**	**175**	⇑*i*	**P**	**06 19 47.9**	**-0.6**
VNA3	**Neumayer Olymp**	**90.40**	**175**	⇑*i*	**P**	**06 19 47.9**	**-0.6**
VNA2	**Neumayer--Watz**	**90.90**	**175**	⇓*i*	**P**	**06 19 50.8**	**0.0**
VNA2	**Neumayer--Watz**	**90.90**	**175**	⇓*i*	**P**	**06 19 50.8**	**0.0**
BRTR	**Keskin Array B**	**148.03**	**319**	PKPbc	PKPdf	06 26 37.5	+10
	1.2nm,0.9s,baz=64,slow=1.3,SNR=2.7						

*IDC **23** 06:18:09.9±1.0,18.30S×172.83W,mb4.2/9,mb1 4.5/9,*
mb1mx4.2/18,Error ellipse: s-maj=54.4km s-min=18.6km
az=150.0
*NEIC **23** 06:18:17.1±0.4,18.27S×172.97W,h50km,mb4.6/3,Error*
ellipse: s-maj=15.8km s-min=11.1km az=155.0
ISC 23 06:18:15.3±0.6,18.2S±0.1×173.0W±0.1,h50km,n23,
σ0§76/20,mb4.2/11,1C-5D,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**12.83**	**106**	P	Px	06 21 00.3	
URZ	**Urewera**	**21.75**	**201**	P	**P**	**06 23 03.4**	**-0.9**
	4.4nm,0.4s,mb4.3,baz=76,slow=15,SNR=2.8						
RPZ	**Rata Peaks**	**28.75**	**204**	P	**P**	**06 24 15.5**	**+5.2**
	7.0nm,0.5s,mb4.7,baz=153,slow=3.7,SNR=8.4						
RPZ	**Rata Peaks**	**28.75**	**204**	P	**P**	**06 24 15.5**	**+5.2**
CTA	**Charters Tower**	**38.45**	**260**	⇓*i*P	**P**	**06 25 34.8**	**+0.6**
	4.9nm,0.4s,mb4.6						
CTA	**Charters Tower**	**38.45**	**260**	P	**P**	**06 25 34.9**	**+0.7**
	5.1nm,0.4s,mb4.6,baz=86,slow=9.9,SNR=18						
CTAO	**Charters Tower**	**38.45**	**260**	*e*P	**P**	**06 25 34.4**	**+0.2**
WB2	**Warramunga Arr**	**49.60**	**259**	⇓*i*P	**P**	**06 27 03.6**	**-0.3**
WRAB	**Tennant Creek**	**49.60**	**259**	*e*P	**P**	**06 27 03.5**	**-0.5**
WRA	**Warramunga Arr**	**49.61**	**259**	P	**P**	**06 27 03.7**	**-0.3**
	1.6nm,0.3s,mb4.5,baz=97,slow=6.9,SNR=98						
AS12	**Alice Springs**	**49.64**	**254**	⇓*i*P	**P**	**06 27 04.3**	**+0.1**
	7.1nm,1.1s,mb4.6						
ASAR	**Alice Springs**	**49.64**	**254**	P	**P**	**06 27 04.3**	**+0.1**
	3.0nm,0.5s,mb4.6,baz=92,slow=7.5,SNR=72						
KAKA	**Kakadu**	**52.74**	**268**	*e*P	**P**	**06 27 27.4**	**-0.3**
	13nm,1.2s,mb4.7						
FITZ	**Fitzroy Crossi**	**58.03**	**260**	P	**P**	**06 28 07.0**	**+1.2**
	3.3nm,1.0s,mb4.3,baz=90,slow=6.1,SNR=5.5						
SBA	**Scott Base**	**60.49**	**185**	*e*P	**P**	**06 28 20.7**	**-1.4**
	0.2nm,0.5s,mb3.4						
NVAR	**Mina Array Bea**	**76.18**	**41**	P	**P**	**06 30 00.0**	**-0.1**
	0.8nm,0.8s,mb3.6,baz=239,slow=5.3,SNR=2.8						
TXAR	**Lajitas Array**	**81.88**	**56**	P	**P**	**06 30 30.8**	**-0.5**
	0.7nm,0.9s,mb3.6,baz=207,slow=5.6,SNR=6.6						
PDAR	**Pinedale Array**	**84.12**	**41**	P	**P**	**06 30 42.0**	**-0.3**
	0.3nm,0.6s,mb3.6,baz=259,slow=4.6,SNR=4.1						
VNA3	**Neumayer Olymp**	**90.03**	**175**	⇓*i*	**P**	**06 31 11.9**	**+1.6**
VNA2	**Neumayer--Watz**	**90.53**	**175**	⇑*i*	**P**	**06 31 13.5**	**+0.8**
VNA1	**Neumayer--Stat**	**90.73**	**175**	⇓*i*	**P**	**06 31 14.2**	**+0.6**
BRTR	**Keskin Array B**	**148.53**	**318**	PKPbc	PKPdf	06 38 01.1	+8.0
	1.1nm,0.8s,baz=162,slow=3.9,SNR=6.2						
GERES	**GERESS Array B**	**148.97**	**351**	PKPbc	PKPdf	06 38 00.3	+6.8
	0.1nm,0.3s,baz=56,slow=3.5,SNR=4.1						

*NEIC **23** 06:25:40.9±4.8,18.46S×172.84W,h45km±43km,mb4.5/7,*
Error ellipse: s-maj=14.5km s-min=10.2km az=141.0

*IDC **23** 06:25:40.4±6.6,18.46S×172.87W,h39km±55km,mb4.0/12,*
mb1 4.3/13,mb1mx4.2/19,ML4.5/1,MS4.1/11,Ms1 4.1/11,
ms1mx3.9/23,Error ellipse: s-maj=27.3km s-min=12.4km
az=124.0
*SYO **23** 06:25:41.5,18.34S×172.97W,h50km,MB4.5*
ISC 23 06:25:39.3±0.3,18.5S±0.1×172.9W±0.1,h45km,n54,
σ0§72/39,mb4.3/17,MS4.1/10,1C-4D,Tonga Islands
region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**12.65**	**105**	Pn	**P**	**06 28 25.2**	**-14**
	2.6nm,0.3s,baz=289,slow=7.7,SNR=6.6						
RAR				LR	LR	06 31 58.4	
	comp=Z,975nm,18.3s,baz=300,slow=30						
RAR	**Rarotonga**	**12.65**	**105**	*e*P	**P**	**06 28 24.1**	**-15**
URZ	**Urewera**	**21.55**	**202**	P	**P**	**06 30 27.7**	**+1.0**
	5.6nm,0.3s,mb4.4,baz=320,slow=6.0,SNR=10						
URZ				S	**S**	**06 34 23.9**	**+6.0**
	18nm,1.0s,baz=223,slow=18,SNR=5.5						
RPZ	**Rata Peaks**	**28.56**	**205**	P	**P**	**06 31 37.4**	**+4.3**
	12nm,0.5s,mb4.9,baz=5.1,slow=12,SNR=19						
CTA	**Charters Tower**	**38.52**	**261**	*e*P	**P**	**06 33 01.2**	**+1.9**
	3.8nm,0.5s,mb4.4						
CTA	**Charters Tower**	**38.52**	**261**	P	**P**	**06 32 58.9**	**-0.4**
	4.9nm,0.5s,mb4.5,baz=119,slow=8.7,SNR=9.6						
CTA				LR	LR	06 46 58.7	
	comp=Z,272nm,21.3s,MS4.0,baz=304,slow=33						
CTAO	**Charters Tower**	**38.52**	**261**	*e*P	**P**	**06 32 58.6**	**-0.7**
STKA	**Stephens Creek**	**42.99**	**243**	P	**P**	**06 33 35.7**	**-0.4**
	3.2nm,0.9s,mb4.0,baz=96,slow=9.2,SNR=2.5						
STKA				LR	LR	06 48 14.8	
	comp=Z,224nm,18.7s,MS4.1,baz=27,slow=32						
STKA	**Stephens Creek**	**42.99**	**243**	P	**P**	**06 33 35.7**	**-0.4**
STKA				LR	LR	06 48 14.8	
WB2	**Warramunga Arr**	**49.66**	**259**	⇓*i*P	**P**	**06 34 28.4**	**-0.5**
WRAB	**Tennant Creek**	**49.67**	**259**	*e*P	**P**	**06 34 28.4**	**-0.6**
	7.9nm,0.6s,mb4.9						
WRA	**Warramunga Arr**	**49.67**	**259**	P	**P**	**06 34 28.0**	**-1.0**
	2.8nm,0.5s,mb4.5,baz=97,slow=8.5,SNR=42						
WRA				LR	LR	06 54 03.8	
	comp=Z,134nm,20.6s,MS3.9,baz=240,slow=34						
AS12	**Alice Springs**	**49.68**	**254**	*e*P	**P**	**06 34 30.6**	**+1.6**
	11nm,1.0s,mb4.8						
ASAR	**Alice Springs**	**49.68**	**254**	P	**P**	**06 34 28.4**	**-0.6**
	7.7nm,0.8s,mb4.8,baz=90,slow=7.9,SNR=33						
ASAR				LR	LR	06 54 10.9	
	comp=Z,99nm,19.2s,MS3.8,baz=55,slow=34						
FITZ	**Fitzroy Crossi**	**58.09**	**260**	P	**P**	**06 35 32.0**	**+1.1**
	1.5nm,0.7s,mb4.1,baz=121,slow=5.9,SNR=4.0						
FITZ				LR	LR	06 58 17.3	
	comp=Z,112nm,20.0s,MS4.0,baz=95,slow=34						
SBA	**Scott Base**	**60.24**	**185**	*e*P	**P**	**06 35 44.8**	**-0.2**
	3.0nm,0.9s,mb4.3						
VNDA	**Vanda**	**60.38**	**186**	P	**P**	**06 35 46.2**	**+0.3**
	0.8nm,0.9s,mb3.7,baz=15,slow=6.4,SNR=4.4						
VNDA	**Vanda**	**60.38**	**186**	*e*P	**P**	**06 35 45.9**	**0.0**
	0.7nm,1.0s,mb3.6						
NVAR	**Mina Array Bea**	**76.30**	**41**	P	**P**	**06 37 24.8**	**-0.6**
	1.5nm,0.8s,mb4.0,baz=217,slow=7.0,SNR=8.1						
NVAR				LR	LR	07 05 50.6	
	comp=Z,112nm,19.0s,MS4.2,baz=295,slow=32						
TPH	**Tonopah**	**76.77**	**42**	*e*P	**P**	**06 37 28.0**	**0.0**
	4.6nm,1.2s,mb4.3						
MSU	**Marysvale**	**80.28**	**44**	*e*P	**P**	**06 37 45.9**	**-1.4**
LENM	**Lemitar**	**81.67**	**50**	*e*P	**P**	**06 37 49.4**	**-5.2**
MNTX	**Cornudas Mount**	**81.69**	**53**	*e*P	**P**	**06 37 54.2**	**-0.6**
	9.1nm,1.4s,mb4.5						
HLID	**Hailey**	**81.70**	**39**	*e*P	**P**	**06 37 55.0**	**+0.4**
TXAR	**Lajitas Array**	**81.94**	**56**	P	**P**	**06 37 55.7**	**-0.4**
	2.0nm,1.0s,mb4.0,baz=211,slow=7.3,SNR=12						
TXAR				LR	LR	07 09 26.6	
	comp=Z,73nm,18.4s,MS4.1,baz=195,slow=32						
PV10	**Paradox Valley**	**82.31**	**45**	*e*P	**P**	**06 37 57.5**	**-0.3**
PV01	**Paradox Val

σ0§56/7, **mb4.1**/5, **Tonga Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**20.88**	**200**	P	**P**	**07 05 01.4**	**-0.1**
	8.5nm,1.1s,baz=338,slow=19,SNR=5.0						
RPZ	**Rata Peaks**	**27.84**	**204**	P	**P**	**07 06 13.7**	**+5.4**
	5.8nm,0.6s,mb4.4,baz=193,slow=3.4,SNR=7.1						
CTA	**Charters Tower**	**37.46**	**261**	P	**P**	**07 07 33.1**	**+0.9**
	3.0nm,0.6s,mb4.3,baz=85,slow=12,SNR=3.6						
WB2	**Warramunga Arr**	**48.60**	**260**	*e*P	**P**	**07 09 01.9**	**-0.6**
ASAR	**Alice Springs**	**48.61**	**255**	P	**P**	**07 09 02.9**	**+0.3**
	2.5nm,0.7s,mb4.3,baz=87,slow=8.2,SNR=22						
WRA	**Warramunga Arr**	**48.61**	**260**	P	**P**	**07 09 01.9**	**-0.7**
	0.4nm,0.3s,mb3.9,baz=97,slow=7.7,SNR=12						
VNDA	**Vanda**	**59.95**	**186**	P	**P**	**07 10 24.9**	**+0.2**
	0.4nm,0.6s,mb3.7,baz=35,slow=11,SNR=5.9						
GERES	**GERESS Array B**	**149.40**	**350**	PKPbc	PKPdf	07 20 06.2	+5.4
	0.3nm,0.4s,baz=11,slow=5.0,SNR=3.5						

DJA 23 07:06:29.1±1.0, **10.48S**×**116.42E**, **h96**km±17km, **MD5.1**/3, **ML4.5**/3, **4C-4D, Error ellipse: s-maj=31.8km s-min=21.1km az=174.0, South of Sumbawa**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RATI	**Rata**	**1.95**	**333**	⇓*i*Pn	P	07 07 00.7	-0.6
	262nm,0.2s						
RATI	**Rata**	**1.95**	**333**	⇑*e*P	P	07 07 01.1	-0.2
RATI				⇓*i*Sn	S	07 07 24.4	-0.7
KEDI	**Kedomdong**	**2.00**	**351**	⇓*i*Pn	P	07 07 01.6	-0.4
	602nm,0.2s						
KEDI	**Kedomdong**	**2.00**	**351**	⇑*i*P	P	07 07 02.4	+0.4
KEDI				⇑*e*Sn	S	07 07 25.9	-0.3
KELI	**Kelakatan**	**2.94**	**320**	⇓*i*Pn	P	07 07 14.8	-0.2
	97nm,0.2s						
KELI				⇑*i*Sn	S	07 07 47.0	-2.5

*NEIC **23** 07:18:46.5, 46.30N×7.20E, h8km, ML2.1(LDG), ML2.0(STR), ML1.5(ZUR), After ZUR.*
*LDG **23** 07:18:46.4±0.1, 46.28N×7.27E, h2km, Md2.1/2, Ml2.1/9, Error ellipse: s-maj=1.9km s-min=0.9km az=93.0*
*ZUR **23** 07:18:46.5, 46.28N×7.20E, h8km, ML1.5/8*
*STR **23** 07:18:49.0±0.7, 46.37N×7.24E, h5km±1km, Ml2.0, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
ISC 23 07:18:45.6±0.4, **46.29N**±0.02×**7.14E**±0.03, **h14**km±3km, **n21**, σ0§95/43, **6C-2D, Switzerland**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GRYON	**Gryon**	**0.04**	**208**	⇑*i*Pg	**Pg**	**07 18 48.8**	**+0.5**
	7.9nm,0.1s						
GRYON				*i* Sg	**Sg**	**07 18 50.1**	**-0.1**
	7.9nm,0.1s						
SENIN	**Lac Senin**	**0.13**	**56**	⇑*i*Pg	**Pg**	**07 18 49.4**	**+0.1**
	8.0nm,0.1s						
SENIN				*i* Sg	**Sg**	**07 18 51.3**	**-0.5**
	8.0nm,0.1s						
AIGLE	**Aigle**	**0.14**	**292**	⇓*i*Pg	**Pg**	**07 18 50.3**	**+0.9**
	5.7nm,0.5s						
AIGLE				*e*Sg	**Sg**	**07 18 53.0**	**+1.1**
	5.7nm,0.5s						
SALAN	**Lac Salanfe**	**0.19**	**219**	⇑*i*Pg	**Pg**	**07 18 51.1**	**+1.0**
	5.0nm,0.3s						
SALAN				*e*Sg	**Sg**	**07 18 54.0**	**+0.8**
	5.0nm,0.3s						
DIX	**Grande Dixence**	**0.28**	**138**	⇓*i*Pg	**Pg**	**07 18 52.2**	**+0.4**
	2.2nm,0.4s						
DIX				*e*Sg	**Sg**	**07 18 55.7**	**-0.2**
	2.2nm,0.4s						
EMV	**Vieux Emosson**	**0.28**	**217**	⇑*i*Pg	**Pg**	**07 18 52.7**	**+0.9**
	10.0nm,1.1s						
LKBD	**Leukerbad**	**0.35**	**74**	⇑*i*Pg	**Pg**	**07 18 53.0**	**-0.1**
	5.7nm,0.4s						
LKBD				*i* Sg	**Sg**	**07 18 57.5**	**-0.6**
	5.7nm,0.4s						
WIMIS	**Wimmis**	**0.50**	**42**	⇑*i*Pg	**Pg**	**07 18 56.0**	**0.0**
	0.7nm,0.4s						
CABF	**La Chapelle**	**0.80**	**294**	*e*Pg	**Pg**	**07 19 03.2**	**+1.5**
CABF				*e*Sg	**Sg**	**07 19 14.9**	**+2.4**
	6.5nm,0.2s						
LPL	**La Plagne**	**0.82**	**200**	*e*Pg	**Pg**	**07 19 02.6**	**+0.3**
LPL				*e*Sg	**Sg**	**07 19 13.5**	**+0.1**
	1.8nm,0.2s						
LPG	**La Plagne**	**0.84**	**199**	*e*Pg	**Pg**	**07 19 02.8**	**+0.3**
LPG				*e*Sg	**Sg**	**07 19 14.1**	**+0.3**
	3.9nm,0.3s						
LOMF	**Lomont**	**1.08**	**349**	Pg	**Pg**	**07 19 08.7**	**+1.3**
LOMF				Sg	**Sg**	**07 19 22.6**	**+0.7**
BBS	**Basel-Blauen**	**1.20**	**12**	Pg	**Pg**	**07 19 09.9**	**+0.2**
BBS				Sg	**Sg**	**07 19 25.8**	**-0.1**
HINF	**Hinteralfeld**	**1.54**	**353**	*e*Pn	**Pn**	**07 19 13.5**	**+0.7**
HINF				*e*Pg	**Pg**	**07 19 15.8**	**-0.7**
HINF				*e*Sg	**Sg**	**07 19 35.6**	**-1.5**
	7.6nm,0.2s						
MOF	**Molkenrain**	**1.56**	**360**	Pg	**Pg**	**07 19 16.6**	**-0.3**
MOF				Sg	**Sg**	**07 19 37.2**	**-0.6**
MBDF	**Montbardon**	**1.58**	**190**	*e*Pn	**Pn**	**07 19 13.9**	**+0.5**
MBDF				*e*Sg	**Sg**	**07 19 36.6**	**-1.9**
	1.6nm,0.2s						
ORIF	**Oris-en-Rattie**	**1.63**	**213**	*e*Pg	**Pg**	**07 19 17.7**	**-0.6**
ORIF				*e*Sg	**Sg**	**07 19 39.2**	**-0.9**
	2.1nm,0.3s						
HAU	**Haudompre**	**1.80**	**343**	*e*Pn	**Pn**	**07 19 17.2**	**+0.7**
HAU				*e*Sg	**Sg**	**07 19 43.7**	**-2.0**
	5.7nm,0.2s						
VIVF	**Saint-Julien-l**	**2.25**	**231**	*e*Pn	**Pn**	**07 19 23.5**	**+0.5**
VIVF				*e*Pg	**Pg**	**07 19 29.6**	**-1.0**
VIVF				*e*Sn	**Sn**	**07 19 51.2**	**+0.5**
VIVF				*e*Sg	**Sg**	**07 19 58.6**	**-2.0**
	2.1nm,0.3s						
SMF	**Signal de Mont**	**2.31**	**280**	*e*Pg	**Pg**	**07 19 30.7**	**-1.1**
SMF				*e*Sg	**Sg**	**07 20 01.5**	**-1.1**
	1.6nm,0.2s						
AVF	**Avril sur Loir**	**2.66**	**282**	*e*Pn	**Pn**	**07 19 29.9**	**+1.0**
AVF				*e*Sg	**Sg**	**07 20 12.4**	**-1.9**
	0.6nm,0.2s						

*NEIC **23** 07:21:12.1, 46.30N×7.20E, h8km, ML2.4(GEN), ML2.4(LDG), ML2.1(STR), ML1.6(ZUR), After ZUR.*
*LDG **23** 07:21:12.2±0.1, 46.29N×7.23E, h4km, Md2.4/2, Ml2.4/12, Error ellipse: s-maj=2.1km s-min=0.9km az=86.0*
*ZUR **23** 07:21:12.1, 46.28N×7.20E, h8km, ML1.6/8*
*STR **23** 07:21:13.2±0.6, 46.30N×7.14E, h5km±1km, Ml2.1, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
ISC 23 07:21:11.5±0.3, **46.31N**±0.01×**7.08E**±0.03, **h9**km±2km, **n30**, σ1§13/54, **5C-2D, Switzerland**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GRYON	**Gryon**	**0.07**	**160**	⇑*i*Pg	**Pg**	**07 21 14.4**	**+0.8**
	10nm,0.1s						
GRYON				*i* Sg	**Sg**	**07 21 15.8**	**+0.7**
	10nm,0.1s						
AIGLE	**Aigle**	**0.09**	**288**	⇓*i*Pg	**Pg**	**07 21 15.9**	**+1.9**
	9.9nm,0.5s						
AIGLE				*e*Sg	**Sg**	**07 21 18.6**	**+3.0**
	9.9nm,0.5s						
SENIN	**Lac Senin**	**0.16**	**72**	⇑*i*Pg	**Pg**	**07 21 15.0**	**-0.1**
	18nm,0.3s						
SENIN				*i* Sg	**Sg**	**07 21 17.0**	**-0.5**
	18nm,0.3s						
SALAN	**Lac Salanfe**	**0.18**	**203**	⇑*i*Pg	**Pg**	**07 21 16.7**	**+1.2**
	5.5nm,0.3s						
EMV	**Vieux Emosson**	**0.28**	**206**	⇑*i*Pg	**Pg**	**07 21 18.3**	**+1.0**
	5.7nm,0.4s						
DIX	**Grande Dixence**	**0.33**	**135**	⇓*i*Pg	**Pg**	**07 21 17.8**	**-0.5**
	1.7nm,0.4s						
LKBD	**Leukerbad**	**0.39**	**79**	*e*Pg	**Pg**	**07 21 18.6**	**-0.8**
	9.6nm,0.5s						
LKBD				*i* Sg	**Sg**	**07 21 23.2**	**-1.5**
	9.6nm,0.5s						
WIMIS	**Wimmis**	**0.52**	**47**	⇑*i*Pg	**Pg**	**07 21 21.6**	**-0.3**
	1.8nm,0.6s						
CABF	**La Chapelle**	**0.75**	**294**	*e*Pg	**Pg**	**07 21 28.8**	**+2.3**
	SNR=1.0						
CABF				*e*Sg	**Sg**	**07 21 39.4**	**+2.9**
	14nm,0.2s,SNR=1.0						
CABF				*e*Sn	**Sn**	**07 21 41.3**	**+2.0**
	SNR=1.0						
LPL	**La Plagne**	**0.83**	**197**	*e*Pg	**Pg**	**07 21 28.3**	**+0.1**
	SNR=1.0						
LPL				*e*Sg	**Sg**	**07 21 39.4**	**0.0**
	6.1nm,0.3s,SNR=1.0						
LPG	**La Plagne**	**0.85**	**196**	*e*Pg	**Pg**	**07 21 28.4**	**-0.1**
	SNR=1.0						
LPG				*e*Sg	**Sg**	**07 21 39.9**	**+0.1**
	5.2nm,0.3s,SNR=1.0						
LSD	**Ceresole Reale**	**0.86**	**176**	P	**Pb**	**07 21 28.6**	**+0.6**
LSD				S	**Sb**	**07 21 39.5**	**+0.1**
LOMF	**Lomont**	**1.05**	**351**	Pg	**Pg**	**07 21 33.7**	**+1.2**
LOMF				Sg	**Sg**	**07 21 48.4**	**+1.8**
RSP	**Reno Superiore**	**1.17**	**174**	P	**Pb**	**07 21 34.6**	**+1.2**
RSP				S	**Sb**	**07 21 48.3**	**-0.2**
BBS	**Basel-Blauen**	**1.19**	**14**	Pg	**Pg**	**07 21 35.5**	**+0.2**
BBS				Sg	**Sg**	**07 21 52.5**	**+1.4**
RRL	**Cesana Torines**	**1.41**	**189**	P	**Pn**	**07 21 39.0**	**+1.6**
RRL				S	**Sb**	**07 21 56.0**	**+0.6**
BHB	**Bricherasio**	**1.48**	**175**	P	**Pn**	**07 21 39.2**	**+0.8**
BHB				S	**Sb**	**07 21 56.6**	**-0.7**
HINF	**Hinteralfeld**	**1.51**	**354**	*e*Pg	**Pg**	**07 21 41.4**	**-0.3**
	SNR=1.0						
HINF				*e*Sn	**Sn**	**07 21 58.4**	**-0.3**
	SNR=1.0						
HINF				*e*Sg	**Sg**	**07 22 01.4**	**-0.5**
	11nm,0.2s,SNR=1.0						
MBDF	**Montbardon**	**1.60**	**188**	*e*Pg	**Pg**	**07 21 41.9**	**-1.6**
	SNR=1.0						
MBDF				*e*Sg	**Sg**	**07 22 02.7**	**-2.2**
	9.1nm,0.5s						
ORIF	**Oris-en-Rattie**	**1.63**	**211**	*e*Pg	**Pg**	**07 21 43.4**	**-0.7**
	SNR=1.0						
ORIF				*e*Sg	**Sg**	**07 22 05.5**	**-0.3**
	3.6nm,0.3s,SNR=1.0						
HAU	**Haudompre**	**1.76**	**344**	*e*Pg	**Pg**	**07 21 46.2**	**-0.5**
	SNR=1.0						
HAU				*e*Sg	**Sg**	**07 22 09.5**	**-0.8**
	8.7nm,0.2s,SNR=1.0						
PZZ	**Prazzo**	**1.81**	**179**	P	**Pn**	**07 21 44.5**	**+1.5**
VIVF	**Saint-Julien-l**	**2.23**	**230**	*e*Pg	**Pg**	**07 21 55.5**	**-0.5**
	SNR=1.0						
VIVF				*e*Sn	**Sn**	**07 22 16.6**	**-0.4**
	SNR=1.0						
VIVF				*e*Sg	**Sg**	**07 22 24.6**	**-1.2**
	2.3nm,0.2s,SNR=1.0						
SMF	**Signal de Mont**	**2.26**	**280**	*e*Sg	**Sg**	**07 22 26.2**	**-0.6**
	3.8nm,0.2s,SNR=1.0						
SFTF	**Sexfontaines**	**2.35**	**324**	*e*Sg	**Sg**	**07 22 29.2**	**-0.5**
	2.9nm,0.3s						
RFYF	**Reffroy**	**2.56**	**335**	*e*Sg	**Sg**	**07 22 34.7**	**-2.0**
	9.2nm,0.5s						
SSF	**Saint Saulge**	**2.57**	**288**	*e*Pg	**Pg**	**07 22 01.5**	**-1.3**
	SNR=1.0						
SSF				*e*Sn	**Sn**	**07 22 25.1**	**-0.5**
	1.5nm,0.3s,SNR=1.0						
SSF				*e*Sg	**Sg**	**07 22 36.1**	**-1.0**
MEZF	**Maizieres J'vi**	**2.58**	**329**	*e*Sg	**Sg**	**07 22 35.4**	**-2.2**
	2.6nm,0.4s						
AVF	**Avril sur Loir**	**2.62**	**282**	*e*Pn	**Pn**	**07 21 55.0**	**+0.4**
	SNR=1.0						
AVF				*e*Sg	**Sg**	**07 22 37.9**	**-0.7**
	1.0nm,0.2s						
LASF	**Ste Croix**	**3.19**	**227**	*e*Pg	**Pg**	**07 22 13.1**	**-2.1**
	SNR=1.0						

*NEIC **23** 07:36:36.6±0.9, 50.31N×18.91E, h5km, MG2.5(WAR), Error ellipse: s-maj=15.2km s-min=7.6km az=189.0*
*PRU **23** 07:36:37.9, 50.31N×18.90E*
WAR 23 07:36:37.1, 50.26N×**18.96E, h1**km, **Location given by Central Institute of Mining, origin time based upon RAC, Poland**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAC	**Raciborz**	**0.52**	**250**	*e*Pg	Pg	07 36 48.0	+0.5
RAC				*e*Sg	Sg	07 36 55.8	+1.3
RAC	**Raciborz**	**0.52**	**250**	*e*PG	Pg	07 36 48.0	+0.5
RAC				*e*SG	Sg	07 36 56.0	+1.5
OJC	**Ojcow**	**0.54**	**94**	*i* Pg	Pg	07 36 48.5	+0.6
OJC				*i* Sg	Sg	07 36 56.2	+1.0
OKC	**Ostrava-Krasne**	**0.67**	**231**	*e*PG	Pg	07 36 50.2	-0.3
OKC				*e*SG	Sg	07 36 59.9	+0.4
MORC	**Moravsky Berou**	**1.03**	**243**	*e*Pn	Pn	07 36 56.2	-2.4
MORC				*e*S	Sb	07 37 10.1	-1.3
LIKS	**Likavka**	**1.22**	**175**	*e*SN	Sn	07 37 18.4	-0.1
NIE	**Niedzica**	**1.22**	**133**	*e*Pg	Pg	07 37 00.7	-0.7
NIE				*e*		07 37 01.2	
NIE				*e*Sg	Sg	07 37 18.2	+0.6
NIE	**Niedzica**	**1.22**	**133**	*e*PG	Pg	07 37 01.0	-0.4
NIE				*e*SG	Sg	07 37 18.0	+0.4
DPC	**Dobruska-Polom**	**1.69**	**274**	*e*PG	Pg	07 37 07.2	-3.7
DPC				*e*SG	Sg	07 37 29.6	-3.8
	32nm,0.7s						
KOLL	**Kolacno**	**1.72**	**192**	*e*SN	Sn	07 37 33.9	+2.5
VYHS	**Vyhne**	**1.77**	**183**	*e*PN	Pn	07 37 08.5	-0.6
VYHS				*e*PG	Pg	07 37 11.4	-1.0
VYHS				*e*SN	Sn	07 37 32.1	-0.5
KSP	**Ksiaz**	**1.80**	**290**	*e*Pn	Pn	07 37 10.8	+1.3
KSP				*e*Sn	Sn	07 37 34.8	+1.5
KSP	**Ksiaz**	**1.80**	**290**	*i* PG	Pg	07 37 10.8	-2.2
KSP				*e*SG	Sg	07 37 35.8	-1.1
KSP	**Ksiaz**	**1.80**	**290**	*e*Pn	Pn	07 37 09.1	-0.4
KSP				*i* Pg	Pg	07 37 10.8	-2.2
KSP				*e*Sg	Sg	07 37 34.8	-2.1
UPC	**Upice**	**1.90**	**279**	*e*PG	Pg	07 37 11.9	-3.2
UPC				*e*SG	Sg	07 37 37.8	-2.6
CRVS	**Cervenica-Dubn**	**2.12**	**129**	*e*PB	Pb	07 37 17.4	+1.3
CRVS				*e*SN	Sn	07 37 42.4	+0.9
KWP	**Kalwaria**	**2.50**	**103**	*e*Pn	Pn	07 37 17.6	-2.0
KWP				*e*Pg	Pg	07 37 27.2	+0.1
KWP				*e*Sn	Sn	07 37 57.6	+6.4
KWP				*e*Sg	Sg	07 38 06.9	+6.4
KWP	**Kalwaria**	**2.50**	**103**	*e*PN	Pn	07 37 18.0	-1.6
KWP				*e*PG	Pg	07 37 27.0	-0.1
KWP				*e*SG	Sg	07 37 58.0	-2.5
PRU	**Pruhonice**	**2.85**	**266**	*e*PN	Pn	07 37 20.5	-4.1
PRU				*e*PG	Pg	07 37 28.6	-5.5
PRU				*e*SG	Sg	07 38 06.7	-5.5
	3.3nm,0.3s						
BRG	**Berggiesshubel**	**3.25**	**283**	*e*Pg	Pg	07 37 36.3	-5.8
BRG				*e*Sg	Sg	07 38 19.7	-5.8
KHC	**Kasperske Hory**	**3.67**	**254**	*e*PN	Pn	07 37 34.3	-1.9
KHC				*e*PG	Pg	07 37 43.7	-6.7
KHC				*e*SN	Sn	07 38 12.8	-8.0
KHC				*e*SG	Sg	07 38 33.3	-6.0
CLL	**Collm**	**3.92**	**288**	*e*PG	Pg	07 37 52.0	-3.4
CLL				*e*SG	Sg	07 38 46.0	-1.7

*LDG **23** 07:38:04.6±1.0, 34.10N×89.33E, h10km, Mb5.4/34, Ms4.6/8, Error ellipse: s-maj=51.4km s-min=3.6km az=98.0*
*BJI **23** 07:38:05.3, 34.08N×89.28E, h9km, mB5.3, mb5.0, ML5.3, Ms5.3, Ms2.5.1*
*IDC **23** 07:38:06.0±0.5, 34.07N×89.22E, mb4.9/19, mb1 5.0/21, mb1mx5.0/21, ML4.0/2, MS4.6/20, Ms1 4.6/20, ms1mx4.5/24, Error ellipse: s-maj=22.0km s-min=12.8km az=49.0*
*NEIC **23** 07:38:07.7±0.1, 34.08N×89.29E, h10km, mb5.2/98, MS4.9/94, Error ellipse: s-maj=4.6km s-min=3.1km az=206.0*
*SYO **23** 07:38:07.6, 34.08N×89.29E, h10km, MB5.2, MS4.9*
*HRVD **23** 07:38:07.7±0.2, 34.04N×89.42E, h12km, MW5.3/65, Centroid moment Tensor Solution. LP body waves: s39,c58;Mantle waves: s65,c124; Half duration: 1§1 Moment tensor: Scale 10^{17}Nm; M_{rr}-0.54±.03; $M_{\theta\theta}$-0.69±.03; $M_{\phi\phi}$1.23±.02; $M_{r\theta}$-0.25±.08; $M_{\theta\phi}$0.46±.02; $M_{\phi r}$-0.09±.07; Best double couple: $M_0$1.14×10^{17} NP1: ϕ_s152°,δ65°,λ-160° NP2:ϕ_b53°,δ72°,λ-26°. Principal axes: T 1.35, Plg4°, Azm103°; N -.41, Plg58°, Azm200°; P -.93, Plg31°, Azm11°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*MOS **23** 07:38:10.6±0.9, 34.05N×89.28E, h46km, mb5.2/35, MS4.8/33 Error ellipse: s-maj=9.8km s-min=5.5km az=117.8*
*NDI **23** 07:38:17.0±5.1, 33.34N×88.70E, h15km±37km, mb5.2, mb5.2(NEIC)*
ISC 23 07:38:06.9±0.9, **34.06N**±0.02×**89.25E**±0.02, **h17**km±6km, **h16**km±3.7km:**pP-P, n505**, σ1§05/462, **mb5.1**/142, **MS4.9**/133, **49C-13D, Xizang**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LSA	**Lhasa**	**4.64**	**159**	PG	**Pn**	**07 39 23.4**	**+5.3**
LSA				SG	Sn	07 40 34.5	+22
LSA				S	Sn		
	comp=N,2μm,1.3s						
LSA				S	Sn		
	comp=E,4μm,1.2s						
LSA	**Lhasa**	**4.64**	**159**	*e*Pn	**Pn**	**07 39 21.9**	**+3.9**
KKN	**Kakani**	**7.12**	**210**	*e*P	**Pn**	**07 39 54.1**	**+1.1**
	comp=E,106nm,0.5s						
GKN	**Gorkha**	**7.22**	**214**	*e*P	**Pn**	**07 39 55.4**	**+1.0**
	comp=E,249nm,0.9s						
PKI	**Pulchoki**	**7.26**	**208**	*e*P	**Pn**	**07 39 56.2**	**+1.2**
	comp=E,238nm,0.8s						
DMN	**Daman**	**7.35**	**210**	*e*P	**Pn**	**07 39 58.4**	**+2.1**
	comp=E,165nm,0.7s						
KOLN	**Koldanda**	**7.93**	**219**	*e*P	**Pn**	**07 40 05.1**	**+0.8**
	comp=E,68nm,0.7s						
SHL	**Shillong**	**8.77**	**164**	⇑*i*P	**P**	**07 40 15.7**	**-0.3**
SHL				*e*		07 40 55.7	
WMQ	**Urumqi**	**9.82**	**353**	⇑*i*P	**P**	**07 40 30.8**	**+0.3**
WMQ				AP		07 40 32.8	
WMQ				XP		07 40 34.8	
WMQ				S	**Sn**	**07 42 21.8**	**+0.4**
WMQ				XS		07 42 26.8	
WMQ				PCP	PcP	07 46 43.5	+0.5
WMQ				SCP		07 50 13.9	
WMQ				PCS		07 50 15.6	
WMQ				SCS	ScS	07 53 47.3	+0.7
WMQ				AMB	AMB		
	comp=Z,89nm,1.1s						
WMQ				AMB	AMB		
	comp=Z,489nm,4.8s						
WMQ				LR	LR		
	comp=N,10μm,15.2s						
WMQ				LR	LR		
	comp=E,10μm,16.3s						
WMQ				LR	LR		
	comp=Z,10μm,15.8s						
GTA	**Gaotai**	**10.02**	**55**	*e*P	**P**	**07 40 31.6**	**-1.6**
GTA				AP		07 40 38.5	
GTA				XP		07 40 43.8	
GTA				S	**S**	**07 42 24.5**	**-1.7**
GTA				XS		07 42 34.8	
GTA				AMB	AMB		
	comp=Z,262nm,5.3s						
GTA				LR	LR		
	comp=N,15μm,17.5s						
GTA				LR	LR		
	comp=E,6μm,14.8s						
GTA				LR	LR		
	comp=Z,7μm,9.1s						
KKR	**Kurukshetra**	**11.31**	**252**	*e*P	**P**	**07 40 50.7**	**-0.3**
NDI	**New Delhi**	**11.59**	**246**	*e*P	**P**	**07 40 52.5**	**-2.3**
NDI				*e*		07 44 20.5	
AYAN	**Aya Nagar**	**11.76**	**245**	*e*P	**P**	**07 40 54.1**	**-3.0**
AYAN				AMb	AMB	07 41 01.8	
	comp=Z,22nm,0.9s						
BHGR	**Bahadurgarh**	**11.80**	**246**	*e*P	**P**	**07 40 51.9**	**-5.7**
SONA	**Sohna**	**11.92**	**244**	*e*P	**P**	**07 40 56.6**	**-2.6**
KSH	**Kashi**	**11.95**	**301**	⇑*i*P	**P**	**07 41 01.5**	**+1.9**
KSH				AP		07 41 04.4	
KSH				XP		07 41 08.0	
KSH				S	**S**	**07 43 17.1**	**+3.6**
KSH				XS		07 43 21.6	
KSH				SS	SS	07 43 31.4	+3.4
KSH				PCP	PcP	07 46 46.3	+1.1
KSH				AMB	AMB		
	comp=Z,20nm,0.4s						
KSH				AMB	AMB		
	comp=Z,480nm,4.2s						
RTK	**Rohtak**	**12.04**	**249**	*e*P	**P**	**07 40 59.2**	**-1.5**
LZH	**Lanzhou**	**12.13**	**76**	*e*P	**P**	**07 41 03.9**	**+1.9**
LZH				S	**S**	**07 43 19.0**	**+1.1**
LZH				XS		07 43 28.0	
LZH				SS	SS	07 43 33.0	+0.5
LZH				AMB	AMB		
	comp=Z,75nm,1.0s						
LZH				LR	LR		
	comp=E,10μm,9.5s						
LZH				LR	LR		
	comp=Z,14μm,11.5s						
KUDL	**Kundal**	**12.42**	**245**	*e*P	**P**	**07 41 02.3**	**-3.6**
CD2	**Chengdu**	**12.65**	**100**	*e*P	**P**	**07 41 07.8**	**-1.2**
CD2				AP		07 41 14.8	
CD2				XP		07 41 20.4	
CD2				S	**S**	**07 43 27.5**	**-2.9**
CD2				XS		07 43 36.1	
CD2				SS	SS	07 43 45.8	+0.3
CD2				AMB	AMB		
	comp=Z,30nm,1.0s						
CD2				AMB	AMB		
	comp=Z,500nm,6.6s						
KHET	**Khetri**	**12.97**	**246**	*e*P	**P**	**07 41 10.3**	**-3.0**
KHET				*e*		07 45 43.7	
AAA	**Alma-Ata**	**13.29**	**317**	*i* P	**P**	**07 41 19.0**	**+1.6**
AAA				*e*S	**S**	**07 43 48.0**	**+2.3**
AAA				pmax	pmax		
	comp=Z,1μm,8.0s						
AAA				smax			
	comp=N,1μm,6.0s						
KZA	**Kyzart**	**13.61**	**310**	P	**P**	**07 41 32.3**	**+11**
	SNR=11						
MKAR	**Makanchi Array**	**13.77**	**340**	Pn	**P**	**07 41 21.0**	**-2.7**
	comp=N,0.4nm,0.3s,baz=149,slow=14,SNR=21						
MKAR				LR	LR	07 47 18.4	
	comp=N,3μm,19.8s,baz=156,slow=40						
TKM2	**Tokmak 2**	**13.86**	**314**	P	**P**	**07 41 27.0**	**+2.1**
	SNR=10						
KBK	**Karagaybulak**	**14.11**	**312**	P	**P**	**07 41 38.5**	**+10**
	SNR=18						
UCH	**Uchtor**	**14.16**	**309**	P	**P**	**07 41 38.8**	**+10**
	SNR=43						
AAK	**Ala-Archa**	**14.38**	**311**	P	**P**	**07 41 41.4**	**+10**
	SNR=18						
FRU	**Bishkek**	**14.41**	**312**	*e*P	**P**	**07 41 35.0**	**+2.9**
CHMS	**Chumysh**	**14.42**	**312**	P	**P**	**07 41 40.9**	**+8.7**
	SNR=22						
AML	**Almayashu**	**14.64**	**308**	P	**P**	**07 41 40.1**	**+4.9**
	SNR=14						
AJM	**Ajmer**	**14.70**	**243**	*e*P	**P**	**07 41 32.5**	**-3.5**
USP	**Ospenovka**	**14.72**	**313**	P	**P**	**07 41 43.2**	**+7.0**
	SNR=18						
KMI	**Kunming**	**14.72**	**124**	*e*P	**P**	**07 41 35.1**	**-1.2**
KMI				AP		07 41 37.6	
KMI				PP	PP	07 41 48.3	+0.2
KMI				PPP	PPP	07 41 56.0	+

BTO AMB AMB
comp=Z,34nm,0.8s
CM31 Chiang Mai Arr 17.79 148 *e*P **P 07 42 17.8 +2.3**
comp=Z,46nm,0.9s
CMAR Chiang Mai Arr 17.79 148 P **P 07 42 15.2 -0.4**
comp=Z,0.3nm,0.3s,baz=330,slow=12,SNR=41
CMAR PcP PcP 07 46 53.5 +0.1
comp=Z,0.1nm,0.3s,baz=313,slow=3.9,SNR=9.7
CMAR LR LR 07 49 42.6
comp=Z,2µm,18.1s,baz=320,slow=39
KGD Kothagudem 18.13 207 *e*P **P 07 42 17.1 -2.7**
KGD *e* 07 42 47.8
KGD *e*S **S 07 45 47.8 +9.0**
KGD *e* 07 47 55.4
KURK Kurchatov 18.37 338 *e*P **P 07 42 20.5 -2.0**
BDT Bhumibol Dam 18.90 150 P **P 07 42 29.0 -0.1**
HHC Hu-ho-hao-te 18.94 63 ⇑P **P 07 42 29.8 +0.3**
HHC XP 07 42 38.3
HHC PP PP 07 42 48.4 +2.3
HHC S **S 07 46 05.6 +8.7**
HHC XS 07 46 08.8
HHC AMB AMB
comp=Z,624nm,6.5s
HHC LR LR
comp=N,3µm,12.7s
HHC LR LR
comp=E,2µm,12.6s
HHC LR LR
comp=Z,3µm,13.3s
TIY Taiyuan 19.13 72 ⇑P **P 07 42 30.0 -1.7**
TIY S **S 07 46 07.0 +5.8**
TIY LR LR
comp=E,8µm,12.0s
TIY LR LR
comp=Z,3µm,9.0s
HYB Hyderabad 19.15 213 ⇑*i*P **P 07 42 32.0 -0.1**
comp=Z,80nm,1.0s
HYB *e*S **S 07 46 16.0 +14**
HYB LR LR 07 50 08.0
comp=Z,7.0nm,12.0s
HYB Hyderabad 19.15 213 ⇑*e*P **P 07 42 32.0 -0.1**
comp=Z,80nm,1.0s
HYB *e*S **S 07 46 16.0 +14**
ULN Ulaanbaatar 19.20 39 *c i*P **P 07 42 31.6 -0.9**
ULN Ulaanbaatar 19.20 39 *e*P **P 07 42 31.2 -1.3**
comp=Z,28nm,0.9s
LATR Latur 19.27 219 *e*P **P 07 42 32.4 -1.1**
QUE Quetta 19.27 265 *e*P **P 07 42 32.5 -1.0**
QUE *e*S **S 07 46 18.0 +14**
ZAK Zakamensk 19.28 28 ⇓*i*P **P 07 42 33.5 0.0**
MOY Mondy 19.54 22 *e*P **P 07 42 37.5 +1.1**
ZAL Zalesovo 20.12 352 P **P 07 42 41.3 -1.4**
comp=Z,44nm,0.9s,baz=213,slow=11,SNR=142
ZAL LR LR 07 51 26.7
comp=Z,5µm,18.4s,MS4.9,baz=206,slow=40
ZAL Zalesovo 20.12 352 P **P 07 42 41.3 -1.4**
ZAL pmax pmax
comp=Z,44nm,0.9s
ZAL MLR MLR
comp=Z,5µm,18.4s
BHUJ Bhuj 20.25 243 *e*P **P 07 42 43.4 -0.9**
BHUJ *e* 07 42 47.7
comp=Z,227nm,1.4s
TLY Talaya 20.46 26 ⇓*i*P **P 07 42 46.1 -0.2**
TLY *e* 07 43 01.7
TLY *e*S **S 07 46 31.2 +1.6**
TLY pmax pmax
comp=Z,252nm,0.9s
TLY MLR MLR
comp=Z,16µm,10.0s,MS5.7
POO Poona 20.69 225 *e*P **P 07 42 47.5 -1.4**
POO *e* 07 42 55.1
comp=Z,151nm,1.8s
NST Nakhon Sawan 20.78 149 P **P 07 42 49.0 -0.8**
IRK Irkutsk 21.14 26 *e*P **P 07 42 54.4 +1.1**
NVS Novosibirsk 21.20 350 *i*P **P 07 42 51.3 -2.5**
NVS *i*S **S 07 46 49.7 +5.8**
NVS pmax pmax
comp=N,106nm,1.2s
NVS pmax pmax
comp=E,34nm,1.2s
NVS pmax pmax
comp=Z,141nm,1.2s,mb5.2
NVS smax
comp=N,68nm,1.7s
NVS smax
comp=E,59nm,1.7s
KAD Karad 21.46 223 ⇑*i*P **P 07 42 57.0 +0.2**
WHN Wuhan 21.49 92 ⇑P **P 07 42 57.3 +0.3**
WHN S **S 07 46 56.0 +6.4**
WHN AMB AMB
comp=Z,1µm,11.2s
WHN LR LR
comp=Z,9µm,12.1s,MS5.4
CUD Cuddapah 21.69 208 *e*P **P 07 42 59.1 +0.1**
CUD *e*PnPn 07 43 17.0
CUD *e*S **S 07 46 33.5 -20**
CUD *e*sS 07 47 04.0
BJT Baijiatuau 22.25 67 *e*P **P 07 43 04.3 -0.2**
comp=Z,21nm,0.9s,mb4.6
BJI Beijing 22.26 67 P **P 07 43 04.8 +0.2**
BJI S **S 07 47 10.9 +7.1**
BJI LR LR
comp=Z,4µm,17.0s,MS4.9
GOA Goa 23.14 221 *e*P **P 07 43 11.5 -1.9**
BVA0 Borovoye Array 23.24 330 P **P 07 43 14.7 +0.6**
BVAR Borovoye Array 23.24 330 P **P 07 43 15.3 +1.2**
comp=Z,23nm,0.8s,mb4.7,baz=135,slow=8.4,SNR=64
BVAR PP PP 07 43 43.7 -1.4
comp=Z,21nm,1.1s,baz=168,slow=14,SNR=3.8
BVAR LR LR 07 53 45.3
comp=Z,2µm,18.2s,MS4.5,baz=85,slow=40
BRVK Borovoye 23.31 330 *e*P **P 07 43 14.9 +0.2**
NNT Nongplab 23.41 153 P **P 07 43 18.5 +2.4**
QIZ Qiongzhong 23.67 124 ⇑P **P 07 43 20.3 +1.7**
QIZ PP PP 07 43 52.6 +1.1
QIZ S **S 07 47 32.3 +3.2**
QIZ SS SS 07 48 16.5 -1.7
QIZ AMB AMB
comp=Z,766nm,6.6s
QIZ LR LR
comp=Z,3µm,16.5s,MS4.9
GZH Guangzhou 23.76 111 P **P 07 43 22.3 +2.9**
GZH LR LR
comp=N,4µm,19.1s,MS5.0
GZH LR LR
comp=E,3µm,19.1s,MS5.0
GZH LR LR
comp=Z,5µm,12.8s
ZRNK Zerenda 23.77 329 *e*P **P 07 43 19.3 +0.1**
NJ2 Nanjing 24.86 86 *e*P **P 07 43 30.6 +0.6**
NJ2 AP 07 43 34.8
NJ2 XP 07 43 37.9
NJ2 PP PP 07 44 07.3 +0.2
NJ2 S **S 07 47 50.0 +0.7**
NJ2 XS 07 47 56.0
NJ2 SS SS 07 48 47.0 -0.4
NJ2 AMB AMB
comp=Z,70nm,0.8s,mb5.2
NJ2 AMB AMB
comp=Z,690nm,11.8s
VAN Vannovskaya 25.43 288 P **P 07 43 38.7 +3.4**
VAN S **S 07 48 02.5 +3.8**
DL2 Dalian 26.40 70 P **P 07 43 44.8 +0.5**
DL2 S **S 07 48 17.3 +2.4**
DL2 LR LR
comp=N,2µm,21.1s
DL2 LR LR
comp=Z,2µm,13.1s
AB31 Akbulak array 26.43 314 P **P 07 43 45.0 +0.5**
AB31 pmax pmax
comp=Z,54nm,1.4s,mb4.9
SSE Sheshan 27.02 87 P **P 07 43 52.3 +2.2**
SSE S **S 07 48 25.4 +0.3**
SSE XS 07 48 40.4
SSE AMB AMB
comp=Z,29nm,1.2s,mb4.7
SSE AMB AMB
comp=Z,248nm,10.7s
SSE LR LR
comp=N,2µm,18.7s,MS5.0
SSE LR LR
comp=E,4µm,18.7s,MS5.0
SSE LR LR
comp=Z,5µm,19.8s,MS5.1

HIA Hailar 27.15 47 *e*P **P 07 43 51.2 +0.2**
comp=Z,34nm,1.7s,mb4.6
SNY Shenyang 28.02 64 ⇑P **P 07 43 58.1 -1.0**
SNY AP pP 07 44 04.8 +0.9
SNY XP sP 07 44 07.8 +1.7
SNY S **S 07 48 38.3 -2.8**
SNY XS 07 48 49.1
SNY AMB AMB
comp=Z,190nm,8.8s
SNY LR LR
comp=E,2µm,11.8s
SNY LR LR
comp=Z,3µm,19.6s
TATO Taipei 29.38 99 PFAKE 07 44 20.0 +8.5
TATO LR LR
comp=Z,3µm,20.0s,MS4.8
CN2 Changchun 29.59 60 *e*P **P 07 44 13.1 -0.1**
CN2 *e*AP pP 07 44 18.1 0.0
CN2 *e*S **S 07 49 02.3 -3.9**
CN2 *e*SS SS 07 50 38.6 -1.3
CN2 AMB AMB
comp=Z,30nm,1.0s,mb5.0
CN2 AMB AMB
comp=Z,230nm,4.0s
CN2 LR LR
comp=Z,4µm,15.0s,MS5.2
INCN Inchon 30.39 73 *e*P **P 07 44 21.9 +1.5**
comp=Z,19nm,0.6s,mb5.0
INCN LR LR
comp=Z,1µm,20.0s,MS4.5
ARU Arti 30.66 326 *e*P **P 07 44 22.0 -0.5**
ARU pmax pmax
comp=Z,30nm,0.8s,mb5.2
ARU MLR MLR
comp=Z,2µm,15.0s,MS4.9
ARU Arti 30.66 326 PFAKE 07 44 30.0 +7.5
ARU LR LR
comp=Z,2µm,21.0s,MS4.7
THR Tehran 31.16 284 P **P 07 44 30.8 +3.7**
comp=Z,3.0nm,1.0s,mb4.1,baz=104,slow=13,SNR=7.2
THR LR LR 07 59 27.7
comp=Z,2µm,21.5s,MS4.7,baz=124,slow=41
THR Tehran 31.16 284 P **P 07 44 30.8 +3.6**
THR pmax pmax
comp=Z,3.0nm,1.0s
THR MLR MLR
comp=Z,2µm,21.5s
KS15 Wonju Array Si 31.39 73 *e*P **P 07 44 29.1 0.0**
MDJ Mudanjiang 32.63 59 P **P 07 44 38.9 -1.1**
MDJ AP pP 07 44 41.3 -3.6
MDJ PP PP 07 45 51.4 +2.3
MDJ S **S 07 49 55.9 +1.9**
MDJ XS 07 50 02.5
MDJ PCS 07 51 09.5
MDJ SS SS 07 51 55.4 +4.0
MDJ AMB AMB
comp=Z,17nm,1.2s,mb4.8
MDJ AMB AMB
comp=Z,147nm,3.8s
MDJ LR LR
comp=N,5µm,16.3s
MDJ LR LR
comp=Z,3µm,16.3s,MS5.1
MDJ Mudanjiang 32.63 59 PFAKE 07 44 50.0 +10
MDJ LR LR
comp=Z,3µm,21.0s,MS4.9
CLNS Chul'man 33.22 36 *e*P **P 07 44 45.6 +0.6**
CLNS pmax pmax
comp=Z,10.0nm,1.2s,mb4.6
CLNS pmax pmax
comp=N,10.0nm,1.0s
CLNS pmax pmax
comp=E,10.0nm,1.0s
CLNS MLR MLR
comp=N,700nm,11.0s,MS4.7
CLNS MLR MLR
comp=Z,1µm,11.0s,MS4.8
CLNS MLR MLR
comp=E,600nm,12.0s,MS4.7
SOKR Solikamsk 33.23 330 ⇓*i*P **P 07 44 44.3 -0.7**
SOKR pmax pmax
comp=Z,30nm,0.9s,mb5.2
SOKR MLR MLR
comp=Z,990nm,20.0s,MS4.5
KLR Kul'dur 34.69 51 *e*P **P 07 44 57.7 0.0**
KLR MLR MLR
comp=E,4µm,11.5s
KLR MLR MLR
comp=Z,6µm,11.5s,MS5.6
HASS Wahat al Ahsa' 35.32 266 D 07 45 04.6
TI2 Plekhanov 35.62 296 *e*P **P 07 44 56.0 -10**
TI2 *e* 07 50 40.0
ZEI Tsey 36.21 298 *e*P **P 07 45 11.0 +0.3**
ZEI *e* 07 46 34.0
ZEI pmax pmax
comp=Z,100nm,6.0s
GOF Gofitskoye 36.83 301 *e*P **P 07 45 17.5 +1.6**
GOF pmax pmax
comp=Z,50nm,1.2s,mb5.2
GOF MLR MLR
comp=E,2µm,16.0s
GOF MLR MLR
comp=Z,2µm,16.0s,MS4.9
KIV Kislovodsk 37.07 300 *e*P **P 07 45 18.0 +0.1**
KIV *e* 07 46 43.3
KIV *e*S **S 07 51 01.1 -1.5**
KIV pmax pmax
comp=Z,10.0nm,0.9s,mb4.7
KIV pmax pmax
comp=N,7.0nm,0.6s
KIV pmax pmax
comp=E,9.0nm,0.7s
KIV MLR MLR
comp=Z,700nm,18.0s,MS4.5
KIV Kislovodsk 37.07 300 PFAKE 07 45 30.0 +12
KIV LR LR
comp=Z,865nm,21.0s,MS4.5
YAK Yakutsk 37.85 30 *e*P **P 07 45 24.2 -0.1**
YAK *e* 07 45 34.5
YAK pmax pmax
comp=Z,13nm,0.9s,mb4.7
YAK pmax pmax
comp=N,4.0nm,1.1s
YAK pmax pmax
comp=E,10.0nm,1.1s
YAK pmax pmax
comp=Z,13nm,1.0s,mb4.6
YAK pmax pmax
comp=E,6.0nm,1.2s
YAK Yakutsk 37.85 30 *e*P **P 07 45 24.6 +0.3**
YAK LR LR
comp=Z,2µm,20.0s,MS4.8
ERZM Erzurum 38.33 293 *i*P **P 07 45 31.2 +2.7**
SOC Sochi 39.24 299 *d i*P **P 07 45 36.6 +0.5**
SOC *e* 07 47 10.4
SOC *e* 07 47 47.5
SOC *e*S **S 07 51 33.2 -2.3**
SOC *e*SS SS 07 54 13.8 -7.2
SOC pmax pmax
comp=Z,10.0nm,1.1s,mb4.5
SOC pmax pmax
comp=N,5.0nm,0.6s
SOC pmax pmax
comp=E,10.0nm,1.0s
SOC smax
comp=N,8.0nm,0.4s
SOC smax
comp=E,2.0nm,0.2s
SOC MLR MLR
comp=N,900nm,19.0s,MS4.9
SOC MLR MLR
comp=Z,1µm,19.0s,MS4.7
SOC MLR MLR
comp=E,2µm,18.0s,MS4.9
MZLS Mizel 39.52 267 P **P 07 45 38.9 +0.3**
MAJO Matsushiro 39.69 72 P **P 07 45 39.8 -0.2**
MAJO LR LR
comp=Z,1µm,19.0s,MS4.7
MAT Matsushiro 39.69 72 P **P 07 45 39.3 -0.7**
MAT S **S 07 51 44.0 +1.6**
MAT Matsushiro 39.69 72 *e*P **P 07 45 39.0 -0.9**
comp=Z,31nm,1.7s,mb4.8
MAT *e*S **S 07 51 44.0 +1.6**
MAT LR LR
comp=Z,1µm,20.0s,MS4.7
VOR Voronezh 39.81 312 P **P 07 45 40.0 -0.8**

VOR 07 47 11.0
VOR pmax pmax
comp=Z,50nm,1.3s,mb5.1
ARSS Ar Rass 40.41 271 P **P 07 45 45.9 0.0**
ANN Anapa 40.81 301 *e*P **P 07 45 49.3 +0.3**
ANN *e*S **S 07 51 58.0 -1.0**
ANN pmax pmax
comp=Z,10.0nm,1.0s,mb4.4
ANN MLR MLR
comp=Z,550nm,21.0s,MS4.4
ANN MLR MLR
comp=N,990nm,35.0s
ANN MLR MLR
comp=E,1µm,21.0s
HILS Ha'il 41.05 274 P **P 07 45 51.9 +0.8**
MOS Moscow 41.30 318 *e*P **P 07 45 51.9 -1.0**
MOS *e*PPP PPP 07 47 47.5 -14
MOS *e*S **S 07 52 01.5 -4.7**
MOS pmax pmax
comp=Z,200nm,1.5s,mb5.5
MOS pmax pmax
comp=Z,70nm,0.6s,mb5.5
MOS MLR MLR
comp=E,1µm,15.0s
MOS MLR MLR
comp=Z,2µm,15.0s,MS5.0
AFFS 'Afif 41.39 268 P **P 07 45 55.6 +1.6**
GZT Gaziantep 41.67 290 *i* P **P 07 45 58.2 +2.0**
KAMS Al Khamasin 41.71 263 P **P 07 45 57.7 +1.0**
OBN Obninsk 41.80 317 ⇓*i*P **P 07 45 56.7 -0.3**
OBN 07 47 33.0
OBN *e*S **S 07 52 18.2 +4.7**
OBN *e*SSS SSS 07 55 57.8 +1.0
OBN pmax pmax
comp=Z,18nm,1.1s,mb4.6
OBN MLR MLR
comp=Z,800nm,18.0s,MS4.6
OBN Obninsk 41.80 317 PFAKE 07 46 10.0 +13
OBN LR LR
comp=Z,1µm,21.0s,MS4.7
YSS Yuzh-Sakhalins 41.90 56 P **P 07 45 57.8 -0.1**
YSS LR LR
comp=Z,1µm,19.0s,MS4.7
ASAJ Asahikawa 41.95 60 P **P 07 45 59.5 +1.2**
comp=Z,49nm,1.4s,mb4.9,baz=280,slow=12,SNR=3.7
ASAJ LR LR 08 03 33.8
comp=Z,1µm,21.6s,MS4.7,baz=276,slow=36
ASAJ Asahikawa 41.95 60 P **P 07 45 59.6 +1.2**
ASAJ pmax pmax
comp=Z,49nm,1.4s
ASAJ MLR MLR
comp=Z,1µm,21.6s
TATS Tathlith 42.99 262 P **P 07 46 09.0 +1.9**
TIXI Tiksi 43.00 17 *e*P **P 07 46 06.1 -0.5**
TIXI *e* 07 47 46.7
TIXI *e*S **S 07 52 32.8 +1.9**
TIXI pmax pmax
comp=Z,197nm,1.2s,mb5.7
TIXI MLR MLR
comp=Z,10µm,12.0s,MS5.9
TIXI Tiksi 43.00 17 *e*P **P 07 46 06.4 -0.2**
comp=Z,16nm,0.8s,mb4.8
TIXI LR LR
comp=Z,186nm,19.0s,MS4.0
SIM Simferopol' 43.15 302 ⇓*e*P **P 07 46 10.1 +1.9**
SIM *e* 07 47 51.0
SIM *e*S **S 07 52 40.0 +6.5**
SIM *e*SS SS 07 55 41.0 +1.1
SIM pmax pmax
comp=Z,23nm,1.1s,mb4.8
SIM MLR MLR
comp=Z,1µm,21.5s,MS4.8
DJNS Zahran al Janu 43.85 260 P **P 07 46 15.8 +1.6**
BRTR Keskin Array B 44.23 294 P **P 07 46 17.2 +0.2**
comp=Z,24nm,0.9s,mb4.9,baz=101,slow=6.3,SNR=66
BRTR PcP PcP 07 48 02.2 +0.1
comp=Z,4.9nm,1.1s,baz=90,slow=2.9,SNR=3.8
BRTR LR LR 08 07 35.9
comp=Z,671nm,20.3s,MS4.5,baz=230,slow=40
BLJS Baljurashi 44.37 264 P **P 07 46 20.0 +1.5**
HMDT Nahal Hemdat 44.58 283 P **P 07 46 20.4 +0.5**
DRGI Dragot 44.89 282 P **P 07 46 23.0 +0.6**
TBKS Tabuk 45.07 278 P **P 07 46 26.8 +2.9**
LTHS Al Lith 45.17 265 P **P 07 46 26.6 +1.8**
JMQS Jabal Moqyreh 45.39 279 P **P 07 46 28.3 +1.9**
FRSS Farasan al Kab 45.52 260 P **P 07 46 27.7 +0.1**
PRNI Paran 45.60 281 P **P 07 46 28.6 +0.5**
LVZ Lovozero 45.73 334 *e*P **P 07 46 17.5 -11**
LVZ *e*S **S 07 52 58.8 -12**
LVZ pmax pmax
comp=Z,330nm,2.8s,mb5.8
LVZ pmax pmax
comp=N,300nm,3.6s
LVZ pmax pmax
comp=E,230nm,3.6s
LVZ smax
comp=N,210nm,2.6s
LVZ smax
comp=Z,360nm,3.1s
LVZ smax
comp=E,60nm,2.0s
LVZ MLR MLR
comp=Z,1µm,13.0s,MS5.0
LVZ MLR MLR
comp=N,210nm,9.0s
PUL Pulkovo 45.76 323 *e*P **P 07 46 10.7 -18**
PUL *e*S **S 07 53 04.5 -6.4**
PUL pmax pmax
comp=Z,30nm,0.5s,mb5.5
PUL smax
comp=N,70nm,0.7s
PUL smax
comp=Z,30nm,0.5s
PUL smax
comp=E,150nm,0.8s
PUL MLR MLR
comp=Z,2µm,16.0s,MS5.2
PUL MLR MLR
comp=N,670nm,13.0s,MS5.1
PUL MLR MLR
comp=E,2µm,16.0s,MS5.1
JOF Joensuu 45.78 327 *ep* **P 07 46 28.3 -0.8**
comp=E,13nm,0.7s,mb5.0
JOF Joensuu 45.78 327 *e*P **P 07 46 28.3 -0.8**
JOF pmax pmax
comp=Z,13nm,0.7s,mb5.0
MBH Mount Berech 45.86 280 P **P 07 46 30.4 +0.2**
EIL Elat 45.88 280 P **P 07 46 30.4 +0.1**
ALWS Ilw as Safayha 45.91 280 P **P 07 46 30.9 +0.4**
KMTI Karmit 45.91 281 P **P 07 46 30.8 +0.2**
KZIT Kziot 45.91 282 P **P 07 46 30.8 +0.2**
JMOS Jabal al Moall 45.92 279 P **P 07 46 32.9 +2.2**
AKASG Malin Array Be 46.05 310 P **P 07 46 30.1 -1.3**
comp=Z,8.9nm,0.9s,mb4.7,baz=82,slow=6.2,SNR=22
AKASG PcP PcP 07 48 08.4 +0.2
comp=Z,0.9nm,0.5s,baz=70,slow=3.0,SNR=4.8
AKASG PP PP 07 48 22.6 +2.9
comp=Z,0.2nm,0.3s,baz=79,slow=9.4,SNR=2.8
HAQS Haql 46.11 279 P **P 07 46 34.0 +1.9**
BDAS Al Bad' 46.19 278 P **P 07 46 33.4 +0.6**
KIS Kishinev 46.62 305 *e*P **P 07 46 34.0 -1.9**
KIS *e* 07 48 10.0
KIS *e* 07 48 28.0
KIS *e*S **S 07 53 26.0 +2.6**
KIS MLR MLR
comp=N,2µm,16.0s,MS5.1
KIS MLR MLR
comp=Z,2µm,16.0s,MS5.0
KIS MLR MLR
comp=E,700nm,17.0s,MS5.1
KIS MLR MLR
comp=Z,1µm,16.0s
MA2 Magadan 47.05 38 *e*P **P 07 46 40.0 +0.9**
MA2 pmax pmax
comp=Z,25nm,1.0s,mb5.1
MA2 MLR MLR
comp=Z,1µm,17.0s,MS5.0
MA2 Magadan 47.05 38 PFAKE 07 46 50.0 +11
MA2 LR LR
comp=Z,786nm,20.0s,MS4.7
CFR Carcaliu 47.33 303 ⇑*i*P **P 07 46 42.3 +0.7**
KAF Kangasniemi 47.96 326 *ep* **P 07 46 46.4 +0.1**
comp=Z,14nm,1.0s,mb5.0,baz=96,slow=7.8
KAF Kangasniemi 47.96 326 *e*P **P 07 46 46.4 +0.1**
KAF pmax pmax

comp=Z,14nm,1.0s,mb5.0
FINES FINESS Array B 48.01 325 P **P** **07 46 46.3 -0.3**
comp=Z,5.5nm,0.6s,mb4.8,baz=98,slow=8.6,SNR=26
FINES PP PP 07 48 40.2 +2.1
comp=Z,3.4nm,0.8s,baz=101,slow=9.7,SNR=4.4
FINES LR LR 08 07 42.6
comp=Z,807nm,18.7s,MS4.7,baz=267,slow=37
FINES FINESS Array B 48.01 325 P **P** **07 46 46.3 -0.4**
FINES 07 48 40.2
FINES pmax pmax
comp=Z,6.0nm,0.6s
FINES pmax pmax
comp=Z,3.0nm,0.8s
FINES MLR MLR
comp=Z,807nm,18.7s
SEY Seymchan 48.13 33 *eP* **P** **07 46 48.7 +1.1**
SEY pmax pmax
comp=E,10.0nm,1.2s
SEY pmax pmax
comp=Z,30nm,1.2s,mb5.2
PRD Provadia 48.19 300 *eP* **P** **07 46 49.0 +0.7**
VRI Vrincioaia 48.20 304⇑*iP* **P** **07 46 49.9 +1.5**
ISR Istrita 48.45 303⇑*iP* **P** **07 46 52.7 +2.4**
KEV Kevo 48.91 336 *eP* **P** **07 46 55.6 +2.1**
JMB Yambol 48.92 299 *eP* **P** **07 46 54.0 0.0**
BUC1 Bucharest 48.95 302⇑*iP* **P** **07 46 56.1 +2.0**
ARCES ARCESS Array B 49.38 335 P **P** **07 46 57.0 -0.1**
comp=Z,9.0nm,0.9s,mb4.8,baz=90,slow=8.5,SNR=12
ARCES LR LR 08 08 49.0
comp=Z,1μm,19.7s,MS4.8,baz=101,slow=37
ARCES ARCESS Array B 49.38 335 P **P** **07 46 57.1 0.0**
ARCES pmax pmax
comp=Z,9.0nm,0.9s
ARCES MLR MLR
comp=Z,1μm,19.7s
SUW Suwalki 49.55 315 *eP* **P** **07 46 58.0 -0.6**
SUW MLR MLR 08 07 37.7
comp=Z,1μm,23.0s,MS4.8
KWP Kalwaria 50.32 309 *eP* **P** **07 47 05.4 +0.8**
KWP MLR MLR 08 09 39.8
comp=Z,2μm,24.7s,MS4.9
RZN Rozhen 50.45 299 *eP* **P** **07 47 05.0 -0.7**
MMB Musomiste 51.19 299 *eP* **P** **07 47 10.0 -1.3**
CRVS Cervenica-Dubn 51.24 308 *eP* **P** **07 47 12.6 +1.0**
VTS Vitosha 51.33 300 *eP* **P** **07 47 12.0 -0.3**
KKB Krupnik 51.59 299 *eP* **P** **07 47 14.0 -0.4**
PET Petropavlovsk 51.63 46 PFAKE 07 47 30.0 +15
PET LR LR
comp=Z,595nm,19.0s,MS4.6
NIE Niedzica 51.90 309⇑*eP* **P** **07 47 17.4 +0.8**
BOLS Boljevac 51.92 302⇑*iP* **P** **07 47 16.0 -0.9**
OJC Ojcow 52.09 310 *eP* **P** **07 47 17.3 -0.7**
OJC *eS* **S** **07 54 33.9 -5.7**
OJC MLR MLR 08 10 47.1
comp=Z,900nm,22.7s,MS4.8
PSZ Piszkesteto 52.45 307 *eP* **P** **07 47 21.1 +0.3**
SKO Skopje 52.75 300 *iP* **P** **07 47 23.4 +0.3**
GRUS Gruza 52.78 302⇑*iP* **P** **07 47 23.4 0.0**
VYHS Vyhne 53.03 308 *iP* **P** **07 47 23.9 -1.2**
VYHS *e* 07 48 33.4
OKC Ostrava-Krasne 53.20 310 *eP* **P** **07 47 27.0 +0.7**
SPB4 Spitsbergen Ar 53.43 346 *eP* **P** **07 47 28.3 +0.7**
MORC Moravsky Berou 53.60 310 *eP* **P** **07 47 28.6 -0.6**
comp=Z,14nm,1.1s,mb4.8
BILL Bilibino 54.08 27*c iP* **P** **07 47 32.2 -0.3**
BILL pmax pmax
comp=Z,39nm,1.1s,mb5.2
BILL MLR MLR
comp=Z,1μm,17.0s,MS5.0
BILL Bilibino 54.08 27 *eP* **P** **07 47 33.1 +0.6**
comp=Z,47nm,1.3s,mb5.3
KSP Ksiaz 54.17 312 *eP* **P** **07 47 34.1 +0.8**
KSP MLR MLR 08 10 28.9
comp=Z,2μm,25.0s,MS5.1
KSP Ksiaz 54.17 312 *eP* **P** **07 47 34.1 +0.8**
KSP *eS* **S** **07 55 11.0 +3.1**
KSP *eSS* SS 07 58 55.0 +5.6
KSP LR LR
comp=Z,3μm,19.9s,MS5.3
ZST Bratislava 54.22 308 *eP* **P** **07 47 30.6 -3.2**
DPC Dobruska-Polom 54.25 311 *eP* **P** **07 47 34.1 +0.1**
DPC *eS* **S** **07 55 12.2 +3.2**
DPC *eSS* SS 07 58 51.0 +0.3
DPC L 08 15 00.0
comp=Z,1.2nm,16.5s
KBS Kingsbay 54.39 347 *e* **P** **07 47 34.1 -0.6**
KBS *eS* **S** **07 55 13.6 +3.0**
KBS AMS AMS 08 13 29.3
comp=Z,450nm,18.0s,MS4.6
KBS Kingsbay 54.39 347 PFAKE 07 47 50.0 +15
KBS LR LR
comp=Z,641nm,19.0s,MS4.7
UPC Upice 54.41 311 *eP* **P** **07 47 36.1 +0.9**
NSS Namsos 54.43 329 AMS AMS 08 12 53.3
comp=Z,1μm,18.8s,MS5.0
NB2 NORSAR Subarra 55.19 325 P **P** **07 47 39.5 -1.3**
comp=Z,22nm,0.8s,mb5.2,baz=82,slow=7.4
NB2 NORSAR Subarra 55.19 325 P **P** **07 47 39.5 -1.3**
baz=82,slow=7.4
NOA NORSAR Array B 55.19 325 P **P** **07 47 39.5 -1.3**
comp=Z,18nm,0.7s,mb5.2,baz=82,slow=7.2,SNR=43
NOA LR LR 08 11 51.7
comp=Z,770nm,18.1s,MS4.8,baz=90,slow=37
NOA NORSAR Array B 55.19 325 P **P** **07 47 39.5 -1.3**
NOA pmax pmax
comp=Z,18nm,0.7s
NOA MLR MLR
comp=Z,770nm,18.1s
NAO01 NORSAR Array S 55.38 324 *eP* **P** **07 47 40.8 -1.3**
comp=Z,18nm,0.8s,mb5.2
PRU Pruhonice 55.45 311 *eP* **P** **07 47 43.5 +0.7**
comp=Z,20nm,1.1s,mb5.0
PRU *eS* **S** **07 55 29.9 +4.9**
PRU *eSS* SS 07 59 45.1 +35
PRU L 08 11 10.0
comp=Z,1.1nm,18.0s
PRU Pruhonice 55.45 311 *eP* **P** **07 47 43.5 +0.7**
PRU *eS* **S** **07 55 29.9 +4.9**
PRU pmax pmax
comp=Z,20nm,1.1s,mb5.1
PRU MLR MLR
comp=Z,1μm,18.0s,MS5.0
ARSA Arzberg 55.48 307⇑*iP* **P** **07 47 43.1 0.0**
comp=Z,18nm,1.5s,mb4.9
BRG Berggiesshubel 55.62 312 *eP* **P** **07 47 43.8 -0.2**
BRG *e* 07 48 44.9
BRG pmax pmax
comp=Z,10.0nm,0.7s,mb5.0
BRG Berggiesshubel 55.62 312 *eP* **P** **07 47 43.8 -0.2**
comp=Z,10.0nm,0.7s,mb5.0
BRG *i* 07 47 46.2
BRG *e* 07 48 44.9
CRES Cresnjevec ost 55.90 306 *eP* **P** **07 47 45.8 -0.2**
CLL Collm 56.09 313 P **P** **07 47 48.7 +1.4**
CLL *e* 07 48 13.0
CLL *e* 07 48 30.0
CLL *e*PP PP 07 50 06.0 +12
CLL Collm 56.09 313 *iP* **P** **07 47 48.7 +1.4**
CLL *e* 07 48 13.0
MOA Molln 56.15 308⇑*iP* **P** **07 47 46.2 -1.7**
comp=Z,32nm,1.6s,mb5.1
KONO Kongsberg 56.22 323 *eS* **S** **07 55 38.2 +3.0**
KONO *eSS* SS 07 59 22.4 +0.2
KONO AMS AMS 08 13 39.7
comp=Z,943nm,18.0s,MS4.9
KONO Kongsberg 56.22 323 *eP* **P** **07 47 45.9 -2.3**
KONO Kongsberg 56.22 323 PFAKE 07 48 00.0 +12
KONO LR LR
comp=Z,1μm,22.0s,MS4.9
GEC2 GERESS Array S 56.26 310 *eP* **P** **07 47 49.2 +0.6**
GEC2 pmax pmax
comp=Z,108nm,2.2s,mb5.5
GEC2 GERESS Array S 56.26 310 *eP* **P** **07 47 49.2 +0.6**
comp=Z,108nm,2.2s,mb5.5
GERES GERESS Array B 56.26 310 P **P** **07 47 49.2 +0.6**
comp=Z,6.1nm,0.6s,mb4.8,baz=76,slow=5.5,SNR=17
GERES GERESS Array B 56.26 310 P **P** **07 47 49.2 +0.6**
GERES pmax pmax
comp=Z,6.0nm,0.6s
KHC Kasperske Hory 56.27 310 *eP* **P** **07 47 48.7 +0.1**
KHC *eS* **S** **07 55 41.9 +5.9**
KHC *eSS* SS 08 00 09.4 +46
KHC L 08 16 30.0
comp=Z,0.9nm,15.4s
KHC Kasperske Hory 56.27 310 *eP* **P** **07 47 48.7 +0.1**
KHC *eS* **S** **07 55 41.9 +5.9**
KHC MLR MLR
comp=Z,900nm,15.4s,MS5.0
VISS Visnje 56.33 306 *eP* **P** **07 47 49.1 -0.1**
VISS *i* 07 48 48.9
CEY Cerknica 56.62 306 *eP* **P** **07 47 51.1 -0.1**
NKC Novy Kostel 56.70 312 *eP* **P** **07 47 52.4 +0.7**
NKC *eS* **S** **07 55 46.5 +4.9**
NKC *eSS* SS 07 59 52.9 +22
NKC L 08 13 30.0
comp=Z,1.3nm,19.1s
NKC Novy Kostel 56.70 312 *eP* **P** **07 47 52.4 +0.7**
NKC *eS* **S** **07 55 46.5 +4.9**
NKC MLR MLR
comp=Z,1μm,19.1s,MS5.0
ORI Oriolo Calabro 56.92 299 *eP* **P** **07 47 53.9 +0.5**
KBA Koelnbreinsper 56.96 308⇑*iP* **P** **07 47 53.9 +0.2**
comp=Z,20nm,1.7s,mb4.9
BSEG Bad Segeberg 57.05 316 *eP* **P** **07 47 54.7 +0.5**
BSEG pmax pmax
comp=Z,21nm,1.3s,mb5.0
MOX Moxa 57.10 312 *iP* **P** **07 47 54.9 +0.3**
comp=Z,logA/T=1.4,mb5.2
MOX L 08 14 56.0
MOX Moxa 57.10 312 *eP* **P** **07 47 54.9 +0.3**
MOX pmax pmax
comp=Z,48nm,1.9s,mb5.2
MOX MLR MLR
comp=Z,1μm,18.0s,MS5.0
MOX Moxa 57.10 312 *eP* **P** **07 47 54.9 +0.3**
comp=Z,48nm,1.9s,mb5.2
MOX LR LR
comp=Z,1μm,18.0s,MS5.0
TDS Terranova Siba 57.13 299 *eP* **P** **07 47 55.4 +0.4**
MRLC Muro Lucano 57.39 300 *eP* **P** **07 48 00.3 +3.5**
SLCN Sala Consilina 57.40 300 *eP* **P** **07 47 57.5 +0.6**
MGR Morigerati 57.54 299 *eP* **P** **07 47 57.2 -0.7**
CLZ Clausthal 57.55 314 *eP* **P** **07 47 58.4 +0.7**
comp=Z,29nm,0.8s,mb5.4
SGO Sicignano 57.58 300 *eP* **P** **07 47 58.3 +0.1**
GRA1 Grafenberg Arr 57.60 311 *eP* **P** **07 47 59.1 +1.0**
comp=Z,32nm,0.9s,mb5.3
GRA1 LR LR
comp=Z,1μm,21.3s,MS5.0
GRF Grafenberg Arr 57.60 311 *eP* **P** **07 47 59.1 +1.0**
GRF pmax pmax
comp=Z,32nm,0.9s,mb5.3
GRF MLR MLR
comp=Z,1μm,21.3s,MS5.0
CSSN Cassano Irpino 57.69 300 *eP* **P** **07 47 58.6 -0.2**
SOI Samo 57.87 297 *eP* **P** **07 47 60.0 -0.2**
SGG Gregorio Mates 57.98 301 *eP* **P** **07 48 01.8 +1.0**
FUR Furstenfeldbru 58.00 309 *eP* **P** **07 48 01.7 +0.8**
FUR pmax pmax
comp=Z,107nm,1.5s,mb5.7
FUR Furstenfeldbru 58.00 309 *eP* **P** **07 48 01.7 +0.8**
comp=Z,107nm,1.5s,mb5.7
WTTA Wattenberg 58.03 308⇓*iP* **P** **07 48 00.6 -0.5**
comp=Z,28nm,1.1s,mb5.2
WATA Walderalm 58.05 308⇑*iP* **P** **07 48 00.1 -1.2**
comp=Z,24nm,1.4s,mb5.0
MTTG Motta San Giov 58.16 297 *eP* **P** **07 48 02.3 +0.1**
SDI San Donato 58.28 302 *eP* **P** **07 48 02.6 -0.4**
SQTA Sankt Quirin 58.32 308⇑*iP* **P** **07 48 03.0 -0.2**
comp=Z,48nm,1.6s,mb5.3
MOTA Moosalm 58.35 309⇑*iP* **P** **07 48 03.2 -0.2**
comp=Z,26nm,1.2s,mb5.1
AQU L'Aquila 58.35 302 *eP* **P** **07 48 04.1 +0.6**
CERT Cerreto 58.78 302 *eP* **P** **07 48 00.6 -5.9**
MNS Montasola 58.85 303 *eP* **P** **07 48 06.1 -0.9**
SFI Santa Sofia 58.93 305 *eP* **P** **07 48 08.4 +0.9**
PGD Poggio Sodo 59.02 305 *eP* **P** **07 48 09.5 +1.3**
VMG Vicchio 59.11 305 *eP* **P** **07 48 09.9 +1.2**
STU Stuttgart 59.14 311 *eP* **P** **07 48 09.0 +0.1**
DAVA Damuels 59.16 309⇑*iP* **P** **07 48 09.0 -0.1**
comp=Z,28nm,1.3s,mb5.1
FNVD Fontana Vidola 59.33 305 *eP* **P** **07 48 10.9 +0.6**
CSNT Castellina Chi 59.45 304 *eP* **P** **07 48 10.6 -0.5**
SPAK Spaichingen 59.61 310⇑*eP* **P** **07 48 12.4 +0.3**
GSCL Gusciola 59.64 305 *eP* **P** **07 48 13.8 +1.4**
ERBM Eremo 59.73 306 *eP* **P** **07 48 14.2 +1.1**
SARO Sassorosso 59.82 305 P **P** **07 48 14.1 +0.4**
BFO Black Forest 59.82 310 *eP* **P** **07 48 13.0 -0.6**
BFO pmax pmax
comp=Z,24nm,1.3s,mb5.1
BFO Black Forest 59.82 310 *eP* **P** **07 48 13.0 -0.6**
comp=Z,24nm,1.3s,mb5.1
MAIM 59.85 305 P **P** **07 48 13.5 -0.3**
GRAM 59.94 306 P **P** **07 48 14.4 -0.1**
LANF Langenberg 59.95 311⇑*eP* **P** **07 48 14.6 +0.1**
KMBO Kilima Mbogo 59.99 245 P **P** **07 48 15.2 -0.1**
comp=Z,4.7nm,0.9s,mb4.5,baz=45,slow=11,SNR=9.9
KMBO LR LR 08 17 12.2
comp=Z,284nm,18.4s,MS4.4,baz=240,slow=39
KMBO Kilima Mbogo 59.99 245 *eP* **P** **07 48 14.0 -1.3**
comp=Z,5.2nm,1.0s,mb4.5
KMBO LR LR
comp=Z,248nm,22.0s,MS4.3
CODM 60.12 306 P **P** **07 48 15.8 +0.1**
BOB Bobbio (Coli) 60.27 306 *eP* **P** **07 48 17.6 +0.9**
WLS Welschbruch 60.41 311⇑*eP* **P** **07 48 17.8 +0.2**
ECH Echery 60.60 311⇑*eP* **P** **07 48 18.9 0.0**
JMIC Jan Mayen 60.66 338 AMS AMS 08 18 34.6
comp=Z,377nm,21.6s,MS4.5
MOF Molkenrain 60.74 310⇑*eP* **P** **07 48 20.2 +0.3**
SMY Shemya 60.80 44 PFAKE 07 48 30.0 +10
SMY LR LR
comp=Z,1μm,19.0s,MS5.1
HINF Hinteralfeld 60.93 310 *eP* **P** **07 48 20.4 -0.7**
comp=Z,18nm,0.6s,mb5.1
PCP Pian Castagno 60.95 306 P **P** **07 48 21.1 -0.2**
DAG Danmarks Havn 61.07 345⇓*iP* **P** **07 48 21.4 -0.4**
comp=Z,9.0nm,1.0s,mb4.8
DAG Danmarks Havn 61.07 345⇓*iP* **P** **07 48 21.4 -0.4**
DAG pmax pmax
comp=Z,9.0nm,1.0s,mb4.8
LOMF Lomont 61.10 310⇑*eP* **P** **07 48 22.3 0.0**
HAU Haudompre 61.18 310 *eP* **P** **07 48 22.1 -0.8**
comp=Z,11nm,0.6s,mb4.8
HAU *eR*
comp=Z,524nm,18.2s
FIN Finale Ligure 61.29 306 P **P** **07 48 21.9 -1.7**
PGF Pioggiola 61.35 304 *eP* **P** **07 48 23.2 -0.9**
comp=Z,48nm,0.9s,mb5.3
GIVF Givet 61.41 313 *eP* **P** **07 48 23.7 -0.7**
RORO 61.42 306 P **P** **07 48 23.8 -0.7**
ROB Roburent 61.49 306 P **P** **07 48 24.7 -0.3**
LSD Ceresole Reale 61.55 308 P **P** **07 48 24.9 -0.4**
RSP Reno Superiore 61.59 307 P **P** **07 48 23.7 -1.9**
IMI Imperia 61.61 306 *eP* **P** **07 48 25.6 -0.2**
MONE Monesi 61.64 306 P **P** **07 48 25.2 -0.9**
BHB Bricherasio 61.70 307 P **P** **07 48 24.7 -1.7**
LPG La Plagne 61.80 308 *eP* **P** **07 48 26.9 -0.2**
comp=Z,147nm,1.1s,mb5.7
BAIF Baives 61.80 313 *eP* **P** **07 48 26.5 -0.5**
LPL La Plagne 61.80 308 *eP* **P** **07 48 26.5 -0.6**
comp=Z,124nm,1.0s,mb5.7
SAOF Saorge 61.81 306⇑*eP* **P** **07 48 27.4 +0.2**
ENR Entracque 61.81 306 P **P** **07 48 25.3 -1.9**
MEZF Maizieres J'vi 61.83 311 *eP* **P** **07 48 26.9 -0.3**
comp=Z,23nm,0.6s,mb5.2
DOI San Damiano 61.83 307 *eP* **P** **07 48 26.8 -0.5**
CABF La Chapelle 61.84 309 *eP* **P** **07 48 26.3 -1.0**
comp=Z,18nm,0.8s,mb4.9
STV Sta Anna Valdi 61.87 306 P **P** **07 48 26.3 -1.3**
AUTN L'Aution 61.89 306⇑*eP* **P** **07 48 28.4 +0.7**
PZZ Prazzo 61.92 307 P **P** **07 48 26.3 -1.7**
SBF Sospel 61.94 306 *eP* **P** **07 48 27.4 -0.6**
comp=Z,123nm,0.9s,mb5.7
RRL Cesana Torines 61.99 307 P **P** **07 48 27.1 -1.3**
AURF Auriere 62.00 306⇑*eP* **P** **07 48 28.7 +0.2**
TOUF Mont Tournerai 62.01 306⇑*eP* **P** **07 48 28.9 +0.4**
MBDF Montbardon 62.06 307 *eP* **P** **07 48 28.4 -0.5**
comp=Z,36nm,0.9s,mb5.2
SURF Saint Ours 62.13 307⇑*eP* **P** **07 48 29.5 +0.2**
GDM Grand'Maison 62.32 308⇑*eP* **P** **07 48 30.8 +0.2**
FITZ Fitzroy Crossi 62.39 140 *eP* **P** **07 48 30.5 -0.9**
comp=Z,8.3nm,1.5s,mb4.6
FITZ Fitzroy Crossi 62.39 140 LR LR 08 17 19.9
comp=Z,163nm,18.0s,MS4.2,baz=204,slow=38
GRN Grenoble 62.55 308⇑*eP* **P** **07 48 32.5 +0.4**
FRF La Foret Royal 62.58 306 *eP* **P** **07 48 31.2 -1.1**
comp=Z,76nm,1.2s,mb5.4
ORIF Oris-en-Rattie 62.58 307 *eP* **P** **07 48 31.4 -0.9**
comp=Z,65nm,1.0s,mb5.4
ORIF *eR*
comp=Z,2μm,22.0s
LMR La Mourre 62.76 305 *eP* **P** **07 48 32.6 -0.9**
comp=Z,103nm,1.2s,mb5.5
SMRF Simiane la Rot 63.14 306 *eP* **P** **07 48 35.5 -0.5**
comp=Z,61nm,1.2s,mb5.3
PUYF Puyloubier 63.23 306⇑*eP* **P** **07 48 36.4 -0.2**
SMF Signal de Mont 63.26 310 *eP* **P** **07 48 35.8 -1.0**
comp=Z,82nm,1.2s,mb5.4
BERF Bertagne 63.32 306⇑*eP* **P** **07 48 37.7 +0.5**
SSF Saint Saulge 63.32 310 *eP* **P** **07 48 36.1 -1.0**
comp=Z,50nm,1.2s,mb5.2
VIVF Saint-Julien-l 63.40 308 *eP* **P** **07 48 37.0 -0.7**
comp=Z,86nm,1.1s,mb5.5
AVF Avril sur Loir 63.52 310 *eP* **P** **07 48 37.6 -0.8**
comp=Z,77nm,1.2s,mb5.3
BGF Bois d'Agland 63.93 310 *eP* **P** **07 48 40.2 -0.9**
comp=Z,22nm,0.9s,mb4.9
ESK Eskdalemuir 64.08 321 PFAKE 07 48 50.0 +8.0
ESK LR LR
comp=Z,1μm,20.0s,MS5.2
PYM Petit Puy Mans 64.14 309⇑*eP* **P** **07 48 42.7 +0.2**
LBL Lubilhac 64.19 308⇑*eP* **P** **07 48 43.3 +0.4**
LASF Ste Croix 64.24 307 *eP* **P** **07 48 42.9 -0.3**
comp=Z,61nm,1.1s,mb5.2
TNA Tin City 64.52 27 PFAKE 07 49 00.0 +15
TNA LR LR
comp=Z,326nm,20.0s,MS4.5
MBAR Mbarara 64.67 251 PFAKE 07 49 00.0 +13
MBAR LR LR
comp=Z,330nm,22.0s,MS4.5
LDF La Druitiere 64.98 313 *eP* **P** **07 48 46.9 -1.0**
comp=Z,59nm,1.2s,mb5.2
CAF Calviac 65.08 309 *eP* **P** **07 48 48.3 -0.3**
comp=Z,49nm,1.0s,mb5.2
FLN La Foliniere 65.13 313 *eP* **P** **07 48 47.7 -1.2**
FLN *eR*
comp=Z,815nm,19.2s
RJF Les Rejaudoux 65.28 309 *eP* **P** **07 48 49.9 0.0**
comp=Z,82nm,1.1s,mb5.4
RJF *eR*
comp=Z,614nm,18.5s
GRR Gorron 65.51 313 *eP* **P** **07 48 50.2 -1.1**
comp=Z,31nm,0.7s,mb5.1
MTLF Montolieu 65.63 307 *eP* **P** **07 48 51.8 -0.4**
comp=Z,70nm,1.4s,mb5.2
MFF Saint Martin d 65.81 311 *eP* **P** **07 48 52.3 -0.9**
comp=Z,73nm,1.3s,mb5.3
LFF La Frestale 65.93 309 *eP* **P** **07 48 53.8 -0.3**
comp=Z,71nm,1.1s,mb5.3
ANM Nome 65.94 27 *eP* **P** **07 48 54.7 +0.9**
LPEF Le Peyrat 66.00 307⇑*eP* **P** **07 48 54.9 +0.4**
VALF Valcebollere 66.16 306⇑*eP* **P** **07 48 56.0 +0.4**
MLS Moulis 66.53 307⇑*eP* **P** **07 48 57.6 -0.4**
SGMF Saint Gilles 66.59 313 *eP* **P** **07 48 57.6 -0.7**
comp=Z,85nm,1.3s,mb5.3
DMUB Kingscourt 66.63 320 *eP* **P** **07 48 58.8 +0.4**
DLF Lyons Farm 66.69 319 *eP* **P** **07 48 59.0 +0.2**
EMIR Miracle 66.69 306 P **P** **07 48 57.4 -1.6**
comp=Z,25nm,0.7s,mb5.3
ROSF Rostrenen 66.99 314 *eP* **P** **07 48 59.6 -1.2**
comp=Z,52nm,1.1s,mb5.2
EPF Esparros 67.00 307 *eP* **P** **07 48 59.9 -1.1**
DCN Croghan 67.07 320 *eP* **P** **07 49 01.7 +0.5**
QUIF Quistinic 67.11 313 *eP* **P** **07 49 00.7 -0.8**
comp=Z,92nm,1.5s,mb5.3
EPOB Poblet 67.24 305 P **P** **07 49 02.4 -0.1**
comp=Z,23nm,0.9s,mb5.2
ETSF Etsaut 67.66 307 *eP* **P** **07 49 04.8 -0.3**
comp=Z,46nm,0.8s,mb5.3
SUMG Summit 67.75 345 *eP* **P** **07 49 05.2 0.0**
EBR Ebro Roquetas 67.87 305 *eP* **P** **07 49 07.0 +0.5**
ESAC San Caprasio 68.12 306 P **P** **07 49 08.2 +0.2**
comp=Z,38nm,1.0s,mb5.4
EMOS Mosqueruela 68.73 305 P **P** **07 49 11.6 -0.3**
comp=Z,17nm,0.8s,mb5.0
WRAB Tennant Creek 68.75 134 *eP* **P** **07 49 11.6 -0.7**
comp=Z,95nm,1.2s,mb5.6
WRAB LR LR
comp=Z,334nm,22.0s,MS4.5
WRA Warramunga Arr 68.76 134 P **P** **07 49 12.4 +0.1**
comp=Z,13nm,0.9s,mb4.8,baz=330,slow=6.3,SNR=25
WRA LR LR 08 23 23.8
comp=Z,126nm,19.9s,MS4.2,baz=315,slow=40
WRA Warramunga Arr 68.76 134 P **P** **07 49 12.4 +0.1**
WRA pmax pmax
comp=Z,13nm,0.9s
WRA MLR MLR
comp=Z,126nm,20.0s
WB2 Warramunga Arr 68.76 134⇑*iP* **P** **07 49 11.7 -0.7**
IMA Indian Mountai 69.21 23 *eP* **P** **07 49 15.0 +0.6**
WAKE Wake Island 69.27 80 PFAKE 07 49 30.0 +15
WAKE LR LR
comp=Z,501nm,21.0s,MS4.7
EBEN Beniarda 69.32 303 P **P** **07 49 14.4 -1.1**
comp=Z,14nm,0.9s,mb4.9
ELAN Lanestosa 69.38 309 P **P** **07 49 14.4 -1.4**
comp=Z,46nm,1.0s,mb5.4
ETOR Torete 69.59 306 P **P** **07 49 16.8 -0.3**
comp=Z,9.5nm,0.8s,mb4.8
PMG Port Moresby 69.84 117 PFAKE 07 49 30.0 +11
PMG LR LR
comp=Z,275nm,19.0s,MS4.5
ETOB Tobarra 70.26 304 P **P** **07 49 20.6 -0.6**
comp=Z,11nm,0.7s,mb4.9
EMUR La Murta 70.43 303 P **P** **07 49 20.8 -1.5**
comp=Z,22nm,1.1s,mb5.0
EVIA Vianos 70.92 304 P **P** **07 49 25.1 -0.2**
comp=Z,7.4nm,0.7s,mb4.7
GUD Guadarrama 71.08 307 P **P** **07 49 26.3 +0.1**
comp=Z,18nm,0.8s,mb5.1
EHUE Huescar 71.38 303 P **P** **07 49 27.5 -0.5**
comp=Z,6.4nm,1.0s,mb4.5
AS12 Alice Springs 71.40 137 *eP* **P** **07 49 28.6 +0.2**
comp=Z,16nm,1.1s,mb4.8
ASAR Alice Springs 71.40 137 P **P** **07 49 28.1 -0.2**
comp=Z,11nm,1.1s,mb4.7,baz=322,slow=5.2,SNR=18
ASAR LR LR 08 23 30.3
comp=Z,198nm,19.4s,MS4.4,baz=316,slow=38
ESDC Sonseca Array 71.42 306 P **P** **07 49 26.9 -1.4**
comp=Z,19nm,0.9s,mb5.0,baz=52,slow=6.4,SNR=27
ESDC LR LR 08 23 43.0
comp=Z,375nm,20.7s,MS4.6,baz=10.0,slow=38
ESDC Sonseca Array 71.42 306 P **P** **07 49 25.8 -2.4**
comp=Z,11nm,0.9s,mb4.8
ESLA Sonseca Array 71.42 306 *eP* **P** **07 49 27.3 -0.9**
comp=Z,4.4nm,0.9s,mb4.4
ESLA LR LR
comp=Z,3μm,20.0s,MS5.5
SVW Sparrevohn 71.57 28 *eP* **P** **07 49 29.9 +1.2**
EQES Quesada 71.72 304 P **P** **07 49 28.6 -1.5**
comp=Z,20nm,0.9s,mb5.0
COLA College 71.84 22⇓*iP* **P** **07 49 29.9 -0.4**
COLA College 71.84 22 *eP* **P** **07 49 30.7 +0.4**
EBAN Banos Encina 72.04 304 P **P** **07 49 31.3 -0.6**
comp=Z,29nm,0.8s,mb5.3
EINC Incio 72.18 310 P **P** **07 49 32.7 0.0**
comp=Z,32nm,0.8s,mb5.3
PBRG Braganca 72.21 309 *eP* **P** **07 49 33.5 +0.6**
comp=Z,28nm,1.9s,mb4.9
ILAR Eielson Array 72.22 22 P **P** **07 49 31.6 -0.9**
comp=Z,24nm,0.9s,mb5.1,baz=301,slow=4.8,SNR=104
ILAR PP PP 07 52 10.5 -4.4
comp=Z,1.4nm,0.9s,baz=309,slow=5.8,SNR=6.4
ILAR Eielson Array 72.22 22 P **P** **07 49 31.6 -0.9**
ILAR 07 52 10.5
ILAR pmax pmax
comp=Z,24nm,0.9s
ILAR pmax pmax
comp=Z,1.0nm,0.9s
MCK McKinley 72.27 23 *eP* **P** **07 49 32.3 -0.6**
comp=Z,12nm,1.1s,mb4.8
MCK LR LR
comp=Z,184nm,20.0s,MS4.3
EADA Adamuz 72.58 304 P **P** **07 49 34.1 -1.0**
comp=Z,11nm,0.8s,mb4.8
ERON Agron 72.61 303 P **P** **07 49 35.3 -0.1**
comp=Z,2.9nm,0.4s,mb4.6
ELUQ Luque 72.66 304 P **P** **07 49 34.7 -1.0**
comp=Z,25nm,0.8s,mb5.2
ELOJ Sierra Loja 72.79 303 P **P** **07 49 34.8 -1.6**
comp=Z,2.7nm,0.9s,mb4.2
INK Inuvik 73.08 15 *eP* **P** **07 49 36.5 -1.0**
comp=Z,32nm,0.9s,mb5.2
PWA Palmer West 73.35 25 *eP* **P** **07 49 38.8 -0.3**
MTE Manteigas 73.44 308 *eP* **P** **07 49 40.6 +0.4**

	comp=Z,53nm,1.0s,mb5.4								
MTE					*e*LR	LR	08 14 57.2		
MTE	**Manteigas**	**73.44**	**308**	*e*P	**P**	**P**	**07 49 40.2**	**+0.1**	
PVIS	**Viseu**	**73.51**	**308**	*e*P	**P**	**P**	**07 49 41.6**	**+1.1**	
	comp=Z,54nm,1.3s,mb5.3								
PMR	**Palmer**	**73.65**	**25**	*e*P	**P**		**07 49 41.3**	**+0.4**	
PCBR	**Castelo Branco**	**73.69**	**307**	*e*P	**P**		**07 49 42.6**	**+1.0**	
	comp=Z,31nm,1.1s,mb5.2								
PMS	**Palmer South**	**73.73**	**26**	*e*P	**P**		**07 49 41.9**	**+0.5**	
ELIJ	**Sierra de Lija**	**73.75**	**304**	P	**P**		**07 49 41.5**	**-0.5**	
	comp=Z,16nm,1.0s,mb4.9								
SML	**Sawmill**	**73.78**	**25**	*e*P	**P**		**07 49 41.6**	**0.0**	
EBAD	**Badajoz**	**73.93**	**306**	P	**P**		**07 49 41.7**	**-1.3**	
	comp=Z,10nm,0.8s,mb4.8								
ESPR	**Espera**	**74.11**	**304**	P	**P**		**07 49 42.5**	**-1.6**	
	comp=Z,12nm,1.0s,mb4.8								
EMIN	**Mina Concepcio**	**74.21**	**305**	P	**P**		**07 49 43.5**	**-1.2**	
	comp=Z,18nm,0.8s,mb5.1								
TOA	**Tolsona**	**74.31**	**24**	*e*P	**P**		**07 49 46.7**	**+2.0**	
PTOM	**Tomar**	**74.42**	**307**	*e*P	**P**		**07 49 46.7**	**+0.9**	
	comp=Z,49nm,1.4s,mb5.2								
EVO	**Evora**	**74.72**	**306**	*e*P	**P**		**07 49 47.8**	**+0.2**	
	comp=Z,61nm,1.1s,mb5.2								
EVO				*e*R					
	comp=Z,495nm,20.8s								
EGRO	**El Granado**	**74.88**	**305**	P	**P**		**07 49 47.6**	**-0.9**	
	comp=Z,13nm,0.8s,mb4.9								
KDAK	**Kodiak Island**	**74.88**	**29**	*e*P	**P**		**07 49 48.2**	**+0.2**	
	comp=Z,74nm,1.1s,mb5.5								
KDAK				LR	LR				
	comp=Z,742nm,20.0s,MS5.0								
PBEJ	**Beja**	**74.88**	**306**	*e*P	**P**		**07 49 49.3**	**+0.8**	
	comp=Z,36nm,1.4s,mb5.1								
PALC	**Alcoutim**	**74.91**	**305**	*e*P	**P**		**07 49 49.4**	**+0.7**	
	comp=Z,29nm,1.2s,mb5.1								
MOE	**Montemor**	**74.95**	**306**	*e*P	**P**		**07 49 50.6**	**+1.7**	
DAWY	**Dawson**	**74.96**	**20**	*e*P	**P**		**07 49 48.5**	**+0.1**	
KWAJ	**Kwajalein Atol**	**75.51**	**89**	PFAKE			07 50 00.0	+7.4	
KWAJ				LR	LR				
	comp=Z,758nm,20.0s,MS5.0								
EYAK	**Cordova Ski Ar**	**75.56**	**25**	*e*P	**P**		**07 49 52.6**	**+0.7**	
PTEO	**Sao Teotonio**	**75.71**	**306**	*e*P	**P**		**07 49 54.3**	**+1.0**	
	comp=Z,32nm,0.9s,mb5.2								
CTA	**Charters Tower**	**76.44**	**126**	⇓*i*P	**P**		**07 49 58.0**	**+0.3**	
	comp=Z,16nm,0.9s,mb5.0								
CTA	**Charters Tower**	**76.44**	**126**	LR	LR		08 24 27.3		
	comp=Z,189nm,20.5s,MS4.4,baz=182,slow=36								
CTAO	**Charters Tower**	**76.44**	**126**	*e*P	**P**		**07 49 57.6**	**-0.1**	
CTAO				LR	LR				
	comp=Z,387nm,20.0s,MS4.7								
SIT	**Sitka**	**81.73**	**23**	PFAKE			07 50 40.0	+14	
SIT				LR	LR				
	comp=Z,633nm,22.0s,MS4.9								
YKW3	**Yellowknife Ar**	**81.81**	**11**	*e*P	**P**		**07 50 25.9**	**0.0**	
STKA	**Stephens Creek**	**82.04**	**137**	⇓*i*P	**P**		**07 50 27.4**	**-0.3**	
	comp=Z,12nm,0.9s,mb4.8								
STKA	**Stephens Creek**	**82.04**	**137**	P	**P**		**07 50 27.6**	**-0.1**	
	comp=Z,14nm,0.9s,mb4.9,baz=348,slow=6.4,SNR=7.2								
STKA				LR	LR		08 28 45.2		
	comp=Z,320nm,21.2s,MS4.7,baz=318,slow=37								
DLBC	**Dease Lake**	**82.18**	**20**	*e*P	**P**		**07 50 29.3**	**+1.4**	
LBTB	**Lobatse**	**84.27**	**235**	*e*P	**P**		**07 50 39.7**	**+0.4**	
	comp=Z,13nm,1.1s,mb5.0								
LBTB				LR	LR				
	comp=Z,278nm,21.0s,MS4.6								
EOSO	**Osorio**	**85.78**	**301**	P	**P**		**07 50 47.2**	**+0.4**	
	comp=Z,41nm,1.2s,mb5.5								
TSUM	**Tsumeb**	**86.30**	**244**	LR	LR		08 27 12.5		
	comp=Z,393nm,20.1s,MS4.8,baz=83,slow=34								
CCAN	**Las Canadas**	**86.44**	**302**	P	**P**		**07 50 51.5**	**+1.4**	
	comp=Z,15nm,0.9s,mb5.2								
TOO	**Toolangi**	**88.39**	**139**	*e*P	**P**		**07 51 02.2**	**+2.9**	
	comp=Z,6.6nm,1.0s,mb4.8								
SCHQ	**Schefferville**	**89.10**	**346**	P	**P**		**07 51 02.0**	**-0.2**	
	comp=Z,10nm,0.8s,mb5.2,baz=32,slow=6.6,SNR=10								
SCHQ				LR	LR		08 36 32.0		
	comp=Z,391nm,18.4s,MS4.9,baz=268,slow=39								
DBIC	**Dimbokro**	**89.70**	**278**	P	**P**		**07 51 05.2**	**-0.8**	
	comp=Z,10nm,1.2s,mb5.0,baz=349,slow=4.9,SNR=4.3								
DBIC				LR	LR		08 35 04.1		
	comp=Z,373nm,19.4s,MS4.8,baz=39,slow=38								
DBIC	**Dimbokro**	**89.70**	**278**	P	**P**		**07 51 05.2**	**-0.8**	
DBIC				pmax	pmax				
	comp=Z,10.0nm,1.2s								
DBIC				MLR	MLR				
	comp=Z,373nm,19.4s								
DBIC	**Dimbokro**	**89.70**	**278**	P	**P**		**07 51 05.2**	**-0.8**	
DBIC				LR	LR		08 35 04.1		
FFC	**Flin Flon**	**91.05**	**6**	*e*P	**P**		**07 51 10.6**	**-0.6**	
	comp=Z,19nm,1.2s,mb5.3								
FFC				LR	LR				
	comp=Z,453nm,19.0s,MS4.9								
OCWA	**Octopus Mounta**	**93.22**	**22**	PFAKE			07 51 30.0	+8.6	
OCWA				LR	LR				
	comp=Z,503nm,19.0s,MS5.0								
NEW	**Newport**	**94.72**	**17**	PFAKE			07 51 40.0	+12	
NEW				LR	LR				
	comp=Z,439nm,19.0s,MS4.9								
HAWA	**Hanford**	**95.81**	**20**	PFAKE			07 51 50.0	+17	
HAWA				LR	LR				
	comp=Z,380nm,21.0s,MS4.8								
ULM	**Lac du Bonnet**	**95.93**	**3**	P	**P**		**07 51 34.4**	**+0.5**	
	comp=Z,2.7nm,0.7s,mb4.8,baz=325,slow=4.1,SNR=4.2								
MSO	**Missoula**	**96.81**	**16**	PFAKE			07 51 50.0	+12	
MSO				LR	LR				
	comp=Z,564nm,20.0s,MS5.0								
PQI	**Presque Isle**	**97.07**	**344**	PFAKE			07 51 50.0	+11	
PQI				LR	LR				
	comp=Z,1μm,22.0s,MS5.3								
BOZ	**Bozeman (W)**	**98.44**	**15**	PFAKE			07 52 00.0	+15	
BOZ				LR	LR				
	comp=Z,389nm,22.0s,MS4.9								
EMMW	**East Machias**	**98.79**	**343**	PFAKE			07 52 00.0	+13	
EMMW				LR	LR				
	comp=Z,2μm,19.0s,MS5.6								
YBH	**Yreka Blue Hor**	**99.06**	**24**	PFAKE			07 52 00.0	+12	
YBH				LR	LR				
	comp=Z,330nm,21.0s,MS4.8								
WVL	**Waterville**	**99.43**	**345**	PFAKE			07 52 00.0	+10	
WVL				LR	LR				
	comp=Z,4μm,20.0s,MS5.9								
WVOR	**Wild Horse Val**	**99.70**	**21**	PFAKE			07 52 00.0	+9.0	
WVOR				LR	LR				
	comp=Z,553nm,19.0s,MS5.1								
HLID	**Hailey**	**99.78**	**17**	PFAKE			07 52 00.0	+8.6	
HLID				LR	LR				
	comp=Z,378nm,19.0s,MS4.9								
WDC	**Whiskeytown Da**	**100.15**	**24**	PFAKE			07 52 00.0	+6.8	
WDC				LR	LR				
	comp=Z,271nm,19.0s,MS4.8								
RSSD	**Black Hills**	**101.25**	**10**	PFAKE			07 52 10.0	+12	
RSSD				LR	LR				
	comp=Z,598nm,19.0s,MS5.1								
AHID	**Auburn Hatcher**	**101.31**	**15**	PFAKE			07 52 10.0	+12	
AHID				LR	LR				
	comp=Z,357nm,21.0s,MS4.9								
HOPS	**Hopland**	**101.38**	**25**	PFAKE			07 52 10.0	+11	
HOPS				LR	LR				
	comp=Z,450nm,20.0s,MS5.0								
BW06	**Boulder Array**	**101.63**	**14**	PFAKE			07 52 10.0	+10	
BW06				LR	LR				
	comp=Z,415nm,21.0s,MS4.9								
HRV	**Harvard--Oak R**	**101.80**	**346**	PFAKE			07 52 10.0	+9.5	
HRV				LR	LR				
	comp=Z,115nm,21.0s,MS4.4								
WES	**Weston**	**101.86**	**345**	PFAKE			07 52 10.0	+9.2	
WES				LR	LR				
	comp=Z,834nm,20.0s,MS5.2								
BMN	**Battle Mountai**	**101.95**	**20**	PFAKE			07 52 10.0	+8.7	
BMN				LR	LR				
	comp=Z,322nm,19.0s,MS4.9								
HWUT	**Hardware Ranch**	**102.31**	**16**	PFAKE			07 52 10.0	+7.1	
HWUT				LR	LR				
	comp=Z,365nm,20.0s,MS4.9								
CMB	**Columbia Colle**	**103.16**	**24**	PFAKE			07 52 20.0	+13	
CMB				LR	LR				
	comp=Z,424nm,20.0s,MS5.0								
JFWS	**Jewell Farm**	**103.39**	**360**	PFAKE			07 52 20.0	+12	
JFWS				LR	LR				
	comp=Z,756nm,22.0s,MS5.2								
NVAR	**Mina Array Bea**	**103.47**	**22**	PKiKP			07 56 28.3		
	comp=Z,0.2nm,0.5s,baz=326,slow=3.3,SNR=4.5								
ERPA	**Erie**	**103.55**	**352**	PFAKE			07 52 20.0	+12	
ERPA				LR	LR				
	comp=Z,337nm,19.0s,MS4.9								
AAM	**Ann Arbor**	**103.73**	**355**	PFAKE			07 52 20.0	+11	
AAM				LR	LR				
	comp=Z,394nm,21.0s,MS4.9								
SAO	**San Andreas Ge**	**103.95**	**25**	PFAKE			07 52 20.0	+10	
SAO				LR	LR				
	comp=Z,490nm,20.0s,MS5.0								
TPH	**Tonopah**	**104.13**	**21**	PFAKE			07 52 20.0	+9.0	
TPH				LR	LR				
	comp=Z,247nm,20.0s,MS4.7								
SSPA	**Standing Stone**	**104.73**	**350**	PFAKE			07 52 30.0	+16	
SSPA				LR	LR				
	comp=Z,2μm,22.0s,MS5.6								
MVU	**Marysvale**	**105.10**	**17**	PFAKE			07 56 40.0		
MVU				LR	LR				
	comp=Z,342nm,19.0s,MS4.9								
ISCO	**Idaho Springs**	**105.23**	**12**	PFAKE			07 56 40.0		
ISCO				LR	LR				
	comp=Z,496nm,19.0s,MS5.1								
DAC	**Darwin (Calif)**	**105.67**	**22**	PFAKE			07 56 40.0		
DAC				LR	LR				
	comp=Z,357nm,22.0s,MS4.9								
ACSO	**Alum Creek Sta**	**105.73**	**354**	PFAKE			07 56 40.0		
ACSO				LR	LR				
	comp=Z,246nm,20.0s,MS4.8								
PV01	**Paradox Valley**	**106.29**	**15**	*e*PKiKP			07 56 34.9		
CBKS	**Cedar Bluff**	**107.01**	**7**	PFAKE			07 56 50.0		
CBKS				LR	LR				
	comp=Z,402nm,19.0s,MS5.0								
CBN	**Corbin**	**107.03**	**349**	PFAKE			07 56 50.0		
CBN				LR	LR				
	comp=Z,747nm,22.0s,MS5.2								
SDCO	**Great Sand Dun**	**107.25**	**12**	PFAKE			07 56 50.0		
SDCO				LR	LR				
	comp=Z,843nm,19.0s,MS5.3								
WCI	**Wyandotte Cave**	**107.96**	**356**	PFAKE			07 56 50.0		
WCI				LR	LR				
	comp=Z,2μm,21.0s,MS5.6								
WUAZ	**Wupatki**	**108.14**	**18**	PFAKE			07 56 50.0		
WUAZ				LR	LR				
	comp=Z,373nm,20.0s,MS5.0								
CCM	**Cathedral Cave**	**108.25**	**0**	PFAKE			07 56 50.0		
CCM				LR	LR				
	comp=Z,594nm,22.0s,MS5.1								
BLA	**Blacksburg**	**108.44**	**351**	PFAKE			07 56 50.0		
BLA				LR	LR				
	comp=Z,485nm,21.0s,MS5.0								
PFO	**Pinyon Flat Ob**	**108.49**	**22**	PFAKE			07 56 50.0		
PFO				LR	LR				
	comp=Z,531nm,20.0s,MS5.1								
SYO	**Syowa Base**	**109.05**	**197**	⇑Pdiff	Pdif		07 52 34.8	+2.9	
SYO	**Syowa Base**	**109.05**	**197**	⇑*e*Pdif	Pdif		07 52 34.8	+2.9	
BBSR	**BB Station**	**109.52**	**337**	PFAKE			07 56 50.0		
BBSR				LR	LR				
	comp=Z,1μm,21.0s,MS5.5								
ANMO	**Albuquerque**	**109.79**	**14**	PFAKE			07 56 50.0		
ANMO				LR	LR				
	comp=Z,1μm,19.0s,MS5.5								
WVT	**Waverly**	**110.12**	**357**	PFAKE			07 56 50.0	+8.7	
WVT				LR	LR				
	comp=Z,335nm,20.0s,MS4.9								
MYNC	**Murphy**	**110.94**	**354**	PFAKE			07 56 50.0	+7.0	
MYNC				LR	LR				
	comp=Z,567nm,22.0s,MS5.1								
WMOK	**Wichita Mounta**	**111.15**	**7**	PFAKE			07 56 50.0	+6.6	
WMOK				LR	LR				
	comp=Z,324nm,21.0s,MS4.9								
PLAL	**Pickwick Lake**	**111.27**	**358**	PFAKE			07 56 50.0	+6.4	
PLAL				LR	LR				
	comp=Z,357nm,20.0s,MS5.0								
TUC	**Tucson**	**111.34**	**18**	PFAKE			07 56 50.0	+6.2	
TUC				LR	LR				
	comp=Z,278nm,19.0s,MS4.9								
MIAR	**Mount Ida**	**111.70**	**3**	PFAKE			07 56 50.0	+5.6	
MIAR				LR	LR				
	comp=Z,440nm,20.0s,MS5.0								
OXF	**Oxford**	**111.77**	**359**	PFAKE			07 56 50.0	+5.5	
OXF				LR	LR				
	comp=Z,336nm,19.0s,MS5.0								
MNTX	**Cornudas Mount**	**113.15**	**14**	PFAKE			07 57 00.0	+13	
MNTX				LR	LR				
	comp=Z,917nm,19.0s,MS5.4								
LRAL	**Lakeview Retre**	**113.17**	**357**	PFAKE			07 57 00.0	+13	
LRAL				LR	LR				
	comp=Z,475nm,21.0s,MS5.1								
JCT	**Junction City**	**115.24**	**9**	PFAKE			07 57 00.0	+8.5	
JCT				LR	LR				
	comp=Z,511nm,19.0s,MS5.2								
TXAR	**Lajitas Array**	**115.78**	**13**	PKP	PKPdf		07 56 52.0	-0.6	
	comp=Z,0.4nm,0.8s,baz=323,slow=1.8,SNR=2.9								
TXAR				PP	PP		07 57 53.3	-3.7	
	comp=Z,1.4nm,1.0s,slow=3.8,SNR=3.6								
TXAR				PKKPbc			08 07 26.7		
	comp=Z,0.9nm,0.9s,baz=169,slow=6.4,SNR=8.0								
HKT	**Hockley**	**116.15**	**5**	PFAKE			07 57 00.0	+6.7	
HKT				LR	LR				
	comp=Z,522nm,21.0s,MS5.1								
DWPF	**Disney**	**117.54**	**351**	PFAKE			07 57 10.0	+14	
DWPF				LR	LR				
	comp=Z,375nm,20.0s,MS5.0								
SNAA	**Sanae**	**122.58**	**202**	*e*PKPdf	PKPdf		07 57 01.2	-3.5	
SJG	**San Juan**	**123.07**	**332**	PFAKE			07 57 20.0	+13	
SJG				LR	LR				
	comp=Z,294nm,19.0s,MS5.0								
QSPA	**South Pole Qui**	**123.84**	**180**	*e*PKPdf	PKPdf		07 57 03.6	-3.5	
VNA2	**Neumayer--Watz**	**123.92**	**203**	⇑*i*P	PKPdf		07 57 06.5	-0.9	
VNA1	**Neumayer--Stat**	**124.18**	**204**	⇑*i*P	PKPdf		07 57 07.7	-0.2	
VNA3	**Neumayer Olymp**	**124.69**	**203**	⇑*i*P	PKPdf		07 57 07.7	-1.1	
CPUP	**Villa Florida**	**150.20**	**276**	PKPbc	PKPdf		07 57 58.0	+2.1	
	comp=Z,9.4nm,0.7s,baz=60,slow=1.0,SNR=12								
CPUP	**Villa Florida**	**150.20**	**276**	PKIKP	PKPdf		07 57 58.0	+2.1	
CPUP				pmax	pmax				
	comp=Z,9.0nm,0.7s								
CPUP	**Villa Florida**	**150.20**	**276**	PKPdf	PKPdf		07 57 52.3	-3.6	
CPUP				*e*PKPbc	PKPdf		07 57 58.0	+2.1	
CPUP				LR	LR				
	comp=Z,116nm,20.0s,MS4.7								
LPAZ	**La Paz**	**153.04**	**305**	PKP	PKPdf		07 57 59.6	-0.7	
	comp=Z,1.5nm,0.9s,baz=4.9,slow=4.3,SNR=5.9								
LPAZ				PKPbc	PKPdf		07 58 06.1	+5.8	
	comp=Z,1.7nm,1.0s,baz=356,slow=7.7,SNR=5.0								
LPAZ				PKPab	PKPab		07 58 18.6	+0.8	
	comp=Z,1.7nm,0.8s,baz=36,slow=7.2,SNR=6.0								
LPAZ	**La Paz**	**153.04**	**305**	PKIKP	PKPdf		07 57 59.6	-0.7	
LPAZ							07 58 18.6		
LPAZ				pmax	pmax				
	comp=Z,2.0nm,1.0s								
LPAZ				pmax	pmax				
	comp=Z,2.0nm,1.0s								
LPAZ				pmax	pmax				
	comp=Z,2.0nm,0.8s								
LPAZ	**La Paz**	**153.04**	**305**	PKP	PKPdf		07 57 59.6	-0.7	
LPAZ				PKPbc	PKPdf		07 58 06.1	+5.8	
LPAZ				PKPab	PKPab		07 58 18.6	+0.8	
LPAZ				LR	LR				
	comp=Z,134nm,20.0s,MS4.8								

*IDC **23** 07:41:20.0±2.8, 1.65N×98.25W, mb3.8/5, mb1 4.2/5, mb1mx3.9/15, MS3.7/6, Ms1 3.7/6, ms1mx3.5/19, Error ellipse: s-maj=219.0km s-min=32.2km az=85.0*
*NEIC **23** 07:41:21.6±0.9, 1.66N×98.30W, h10km, mb4.3/2, Error ellipse: s-maj=44.5km s-min=15.7km az=88.0*
ISC 23 07:41:20.1±1.4, 1.7N±0.2×98.2W±0.5, h10km, n16, σ0≋41/13, mb3.8/7, MS3.7/6, West of Galapagos Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
TXAR	**Lajitas Array**	**27.96**	**350**			P	**P**	**07 47 13.4**	**+0.4**
	0.8nm,0.9s,mb3.4,baz=169,slow=13,SNR=10								
TXAR				LR	LR			07 56 56.7	
	comp=Z,242nm,20.3s,MS3.8,baz=255,slow=33								
MNTX	**Cornudas Mount**	**30.59**	**348**	*e*P			**P**	**07 47 35.4**	**-1.1**
CPRX	**Cap Rock**	**31.61**	**351**	*e*P			**P**	**07 47 45.3**	**-0.1**
ANMO	**Albuquerque**	**33.95**	**348**	*e*P			**P**	**07 48 05.8**	**0.0**
LPAZ	**La Paz**	**34.67**	**122**	LR		LR		07 58 55.4	
	comp=Z,42nm,20.1s,MS3.2,baz=242,slow=30								
WVT	**Waverly**	**35.57**	**15**	*e*P			**P**	**07 48 19.8**	**+0.1**
	10nm,1.1s,mb4.7								
NVAR	**Mina Array Bea**	**40.92**	**336**	P			**P**	**07 49 04.5**	**+0.2**
	0.6nm,0.9s,mb3.2,baz=144,slow=12,SNR=3.1								
NVAR				LR		LR		08 02 48.2	
	comp=Z,113nm,20.0s,MS3.7,baz=190,slow=32								
BW06	**Boulder Array**	**42.12**	**348**	*e*P			**P**	**07 49 14.3**	**+0.1**
	3.0nm,1.0s,mb3.9								
PDAR	**Pinedale Array**	**42.12**	**348**	P			**P**	**07 49 14.1**	**-0.1**
	1.4nm,0.8s,mb3.6,baz=148,slow=7.9,SNR=13								
PDAR				LR		LR		08 06 38.6	
	comp=Z,57nm,20.4s,MS3.4,baz=328,slow=36								
HLID	**Hailey**	**44.10**	**343**	*e*P			**P**	**07 49 30.1**	**-0.2**
MCMT	**McKenzie Canyo**	**44.84**	**345**	*e*P			**P**	**07 49 37.1**	**+0.7**
NEW	**Newport**	**49.16**	**343**	LR		LR		08 10 44.1	
	comp=Z,82nm,19.2s,MS3.7,baz=106,slow=36								
USHA	**Ushuaia**	**61.46**	**161**	LR		LR		08 13 20.4	
	comp=Z,173nm,19.1s,MS4.2,baz=305,slow=31								
ILAR	**Eielson Array**	**71.96**	**340**	P			**P**	**07 52 45.6**	**0.0**
	1.1nm,0.9s,mb3.8,baz=146,slow=5.1,SNR=8.7								
VNDA	**Vanda**	**93.81**	**192**	P			**P**	**07 54 38.2**	**0.0**
	0.5nm,0.8s,mb4.0,baz=73,slow=4.9,SNR=5.2								
VNDA	**Vanda**	**93.81**	**192**	P			**P**	**07 54 38.2**	**-0.1**

*GUC **23** 07:52:51.0±0.9, 32.10S×68.52W, h150km, MD3.4, ML3.5*
*NEIC **23** 07:52:52.6±4.5, 32.12S×68.47W, h119km±41km, MD3.4(GUC), Error ellipse: s-maj=40.9km s-min=11.2km az=85.0*
ISC 23 07:52:51.0±1.2, 32.09S±0.06×68.39W±0.10, h126km±13km, n16, σ0≋83/26, 4C-3D, Mendoza Province

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
MDZ	**Mendoza**	**0.88**	**206**	⇑*i*P			**P**	**07 53 12.7**	**+0.1**
MDZ						S	**S**	**07 53 27.9**	**-1.1**
JACH	**Jahuel**	**1.96**	**252**	*e*P			**P**	**07 53 25.6**	**+1.0**
JACH				*i* S			**S**	**07 53 51.6**	**+1.5**
FCH	**Farellones**	**2.02**	**232**	⇓*i*P			**P**	**07 53 26.5**	**+1.0**
FCH				*e*S			**S**	**07 53 53.1**	**+1.5**
FCH				AMP				07 54 05.8	
	comp=N,103nm,0.2s								
PTCH	**Petorca**	**2.16**	**265**	*e*P			**P**	**07 53 27.1**	**-0.2**
PTCH				*i* S			**S**	**07 53 54.6**	**-0.2**
PTCH				AMP				07 53 57.9	
	comp=N,745nm,0.2s								
PEL	**Peldehue**	**2.20**	**241**	*i* S			**S**	**07 53 55.8**	**0.0**
PEL				AMP				07 53 59.4	
	comp=E,240nm,0.2s								
CLCH	**Cerro Calan**	**2.23**	**234**	*e*P			**P**	**07 53 28.4**	**+0.2**
CLCH				*e*S			**S**	**07 53 57.3**	**+0.9**
CLCH				AMP				07 53 59.2	
	comp=N,253nm,0.7s								
FSR	**Penalolen**	**2.27**	**232**	⇓*i*P			**P**	**07 53 28.3**	**-0.4**
FSR				AMP				07 54 04.9	
	comp=N,131nm,0.3s								
PCH	**Pirque**	**2.35**	**229**	⇑*i*P			**P**	**07 53 30.0**	**+0.2**
ROCH	**El Roble**	**2.38**	**248**	*i* S			**S**	**07 53 59.6**	**-0.3**
ANTU	**Antumapu**	**2.40**	**231**	*e*P			**P**	**07 53 30.0**	**-0.4**
ANTU				AMP				07 54 07.1	
	comp=N,122nm,0.2s								
CMCH	**Combarbala**	**2.41**	**292**	⇓*i*P			**P**	**07 53 30.9**	**+0.4**
CMCH				*i* S			**S**	**07 54 00.5**	**0.0**
CMCH				AMP				07 54 01.9	
	comp=N,766nm,0.4s								
ILCH	**Illapel**	**2.41**	**280**	⇑*i*P			**P**	**07 53 30.2**	**-0.3**
ILCH				*i* S			**S**	**07 53 59.6**	**-0.9**
ILCH				AMP				07 54 01.2	
	comp=E,266nm,0.3s								
PACH	**Papudo**	**2.62**	**259**	*i* P			**P**	**07 53 32.1**	**-1.2**
PACH				*i* S			**S**	**07 54 02.2**	**-3.1**
CHCH	**Chadas Angostu**	**2.65**	**225**	*e*P			**P**	**07 53 34.0**	**+0.4**
TACH	**Talagante**	**2.65**	**233**	*e*P			**P**	**07 53 32.5**	**-1.2**
TACH				*i* S			**S**	**07 54 05.5**	**-0.6**
TLL	**Tololo Astrono**	**2.82**	**312**	⇑*i*P			**P**	**07 53 36.4**	**+0.4**
TLL				*i* S			**S**	**07 54 10.6**	**+0.5**
TLL				AMP				07 54 12.3	
	comp=N,174nm,0.4s								

IDC 23 08:02:26.8±3.9, 6.36S×128.28E, h409km±47km, mb3.1/1, mb1 3.1/3, mb1mx2.9/13, Error ellipse: s-maj=107.0km s-min=14.5km az=69.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
WRA	**Warramunga Arr**	**14.73**	**157**	P		P		08 05 35.8	-2.6
	0.3nm,0.3s,baz=335,slow=11,SNR=24								
WRA				S		S		08 08 12.0	-0.3
	0.1nm,0.3s,baz=337,slow=21,SNR=5.3								
WB2	**Warramunga Arr**	**14.74**	**157**	*e*P		P		08 05 38.6	+0.1
ASAR	**Alice Springs**	**18.04**	**163**	P		P		08 06 11.7	-0.3
	0.2nm,0.3s,baz=344,slow=12,SNR=9.2								
ASAR				S		S		08 09 18.0	+4.1
	0.1nm,0.3s,baz=341,slow=19,SNR=5.1								
MKAR	**Makanchi Array**	**66.76**	**327**	P		P		08 12 35.8

*NEIC **23** 08:12:47.3±0.5,2.25N×99.29W,h10km,mb4.7/16,Error ellipse: s-maj=17.4km s-min=9.2km az=66.0*
*BJI **23** 08:12:47.2,2.20N×99.30W,h10km,Ms4.6,Msz4.7*
ISC 23 08:12:46.4±0.7,2.36N±0.10×99.3W±0.1,h10km,n62, σ0≧93/50,mb4.5/24,MS4.1/13,West of Galapagos Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ROSC	**El Rosal**	**25.00**	**84**	LR	LR	08 26 43.2	
	comp=Z,134nm,19.4s,MS3.5,baz=244,slow=33						
TXAR	**Lajitas Array**	**27.15**	**352**	P	**P**	**08 18 31.7**	**-0.2**
	2.9nm,0.9s,mb3.8,baz=177,slow=12,SNR=24						
TXAR				LR	LR	08 28 25.3	
	comp=Z,931nm,18.4s,MS4.4,baz=115,slow=34						
TXAR	**Lajitas Array**	**27.15**	**352**	P	**P**	**08 18 31.7**	**-0.2**
TXAR				LR	LR	08 28 25.3	
JCT	**Junction City**	**27.98**	**359**	*e*P	**P**	**08 18 40.4**	**+1.0**
	49nm,1.9s,mb4.8						
SDV	**Santo Domingo**	**29.20**	**76**	LR	LR	08 28 38.3	
	comp=Z,134nm,20.2s,MS3.5,baz=220,slow=32						
MNTX	**Cornudas Mount**	**29.75**	**349**	*e*P	**P**	**08 18 54.6**	**-0.7**
	3.0nm,1.0s,mb4.0						
GDL2	**Guadalupe Moun**	**30.07**	**351**	P	**P**	**08 18 58.9**	**+0.6**
CPRX	**Cap Rock**	**30.82**	**352**	*e*P	**P**	**08 19 06.0**	**+1.3**
WMOK	**Wichita Mounta**	**32.22**	**1**	*e*P	**P**	**08 19 17.1**	**+0.1**
	2.5nm,1.0s,mb4.0						
WMOK				LR	LR		
	comp=Z,273nm,20.0s,MS3.9						
BNM	**Barren Site**	**32.37**	**349**	*e*P	**P**	**08 19 18.3**	**0.0**
PLAL	**Pickwick Lake**	**34.09**	**17**	*e*P	**P**	**08 19 33.0**	**-0.3**
	comp=Z,36nm,1.8s,mb5.0						
WUAZ	**Wupatki**	**34.86**	**343**	*e*P	**P**	**08 19 41.2**	**+1.3**
	comp=Z,5.0nm,1.0s,mb4.4						
WVT	**Waverly**	**35.23**	**16**	*e*P	**P**	**08 19 43.5**	**+0.4**
	comp=Z,16nm,1.1s,mb4.9						
WVT				LR	LR		
	comp=Z,230nm,22.0s,MS3.9						
LPAZ	**La Paz**	**35.91**	**122**	P	**P**	**08 19 49.9**	**+0.9**
	comp=Z,0.8nm,0.7s,mb3.8,baz=296,slow=10,SNR=4.5						
LPAZ				LR	LR	08 32 42.1	
	comp=Z,193nm,20.9s,MS3.9,baz=92,slow=33						
LPAZ	**La Paz**	**35.91**	**122**	*e*P	**P**	**08 19 49.5**	**+0.5**
NEN	**Nelson**	**36.14**	**338**	*e*P	**P**	**08 19 50.7**	**-0.1**
SIUC	**Southern Illin**	**36.38**	**13**	*e*P	**P**	**08 19 53.6**	**+0.8**
	comp=Z,27nm,1.0s,mb5.1						
SIUC				*e*		08 19 59.4	
PV01	**Paradox Valley**	**36.62**	**348**	P	**P**	**08 19 55.1**	**+0.3**
KSU1	**Kansas State U**	**36.65**	**3**	*e*P	**P**	**08 19 55.2**	**+0.1**
PV10	**Paradox Valley**	**36.95**	**347**	*e*P	**P**	**08 19 57.8**	**+0.2**
WCI	**Wyandotte Cave**	**37.63**	**17**	*e*P	**P**	**08 20 01.0**	**-2.3**
	comp=Z,68nm,1.9s,mb5.0						
PWV	**Princeton**	**38.63**	**24**	*e*P	**P**	**08 20 12.4**	**+0.7**
NVAR	**Mina Array Bea**	**39.91**	**336**	P	**P**	**08 20 23.6**	**+1.3**
	comp=Z,1.3nm,0.8s,mb3.7,baz=162,slow=10,SNR=11						
NVAR				LR	LR	08 34 30.8	
	comp=Z,252nm,21.7s,MS4.0,baz=125,slow=33						
TCUT	**Toone Canyon**	**40.11**	**346**	*e*P	**P**	**08 20 25.6**	**+1.6**
HWUT	**Hardware Ranch**	**40.61**	**346**	*e*P	**P**	**08 20 28.7**	**+0.6**
	comp=Z,30nm,1.5s,mb4.7						
HVU	**Hansel Valley**	**41.09**	**345**	*e*P	**P**	**08 20 32.0**	**0.0**
PDAR	**Pinedale Array**	**41.27**	**348**	P	**P**	**08 20 34.5**	**+1.1**
	comp=Z,5.3nm,0.8s,mb4.2,baz=158,slow=8.0,SNR=43						
RSSD	**Black Hills**	**41.80**	**355**	*e*P	**P**	**08 20 35.6**	**-2.2**
	comp=Z,23nm,1.6s,mb4.6						
RSSD				LR	LR		
	comp=Z,598nm,19.0s,MS4.5						
KSWY	**Kelly School**	**42.31**	**348**	*e*P	**P**	**08 20 42.4**	**+0.3**
HLID	**Hailey**	**43.19**	**344**	*e*P	**P**	**08 20 48.9**	**-0.3**
	comp=Z,4.0nm,1.0s,mb4.1						
YMR	**Madison River**	**43.39**	**348**	*e*P	**P**	**08 20 51.5**	**+0.7**
WVOR	**Wild Horse Val**	**43.51**	**339**	*e*P	**P**	**08 20 51.9**	**0.0**
	comp=Z,7.1nm,1.2s,mb4.3						
QLMT	**Earthquake Lak**	**43.64**	**347**	*e*P	**P**	**08 20 54.3**	**+1.5**
QLMT				*e*		08 21 00.2	
MCMT	**McKenzie Canyo**	**43.96**	**346**	*e*P	**P**	**08 20 54.4**	**-1.0**
MCMT				*e*		08 21 02.4	
YBH	**Yreka Blue Hor**	**44.51**	**335**	P	**P**	**08 20 59.8**	**-0.2**
	comp=Z,2.0nm,0.9s,mb3.9,baz=126,slow=6.9,SNR=4.9						
ULM	**Lac du Bonnet**	**47.81**	**3**	P	**P**	**08 21 25.4**	**-0.6**
	comp=Z,4.9nm,0.9s,mb4.5,baz=197,slow=8.4,SNR=5.4						
DPW	**Davenport**	**48.20**	**343**	*e*P	**P**	**08 21 29.4**	**+0.4**
NEW	**Newport**	**48.25**	**344**	P	**P**	**08 21 29.3**	**-0.2**
	comp=Z,2.7nm,0.8s,mb4.4,baz=156,slow=7.7,SNR=7.8						
NEW	**Newport**	**48.25**	**344**	P	**P**	**08 21 27.2**	**-2.2**
	comp=Z,3.3nm,0.8s,mb4.4						
NEW				LR	LR		
	comp=Z,439nm,19.0s,MS4.5						
LON	**Longmire**	**48.38**	**339**	*e*P	**P**	**08 21 30.3**	**-0.2**
LON				*e*		08 21 35.4	
NLW	**Nelson Butte**	**49.04**	**341**	*e*P	**P**	**08 21 34.2**	**-1.3**
TRQA	**Tornquist**	**52.95**	**143**	P	**P**	**08 22 01.8**	**-3.5**
	comp=Z,0.1nm,0.6s						
BDFB	**Brasilia**	**53.73**	**111**	P	**P**	**08 22 11.7**	**+0.3**
	comp=Z,2.8nm,0.8s,mb4.2,baz=227,slow=6.3,SNR=3.7						
SCHQ	**Schefferville**	**58.58**	**21**	LR	LR	08 47 25.7	
	comp=Z,486nm,20.6s,MS4.6,baz=286,slow=35						
KIP	**Kipapa**	**60.15**	**293**	*e*P	**P**	**08 22 57.8**	**+0.9**
	comp=Z,20nm,0.4s,mb5.5						
DLBC	**Dease Lake**	**60.90**	**342**	*e*P	**P**	**08 23 01.3**	**-0.3**
YKW3	**Yellowknife Ar**	**61.15**	**352**	*e*P	**P**	**08 23 01.9**	**-1.3**
YKW3				*e*		08 23 07.2	
DAWY	**Dawson**	**68.12**	**342**	*e*P	**P**	**08 23 47.5**	**-1.0**
SML	**Sawmill**	**69.71**	**338**	*e*P	**P**	**08 23 57.1**	**-1.1**
INK	**Inuvik**	**69.82**	**347**	LR	LR	08 56 05.1	
	comp=Z,164nm,18.1s,MS4.3,baz=284,slow=37						
INK	**Inuvik**	**69.82**	**347**	*e*P	**P**	**08 23 58.2**	**-0.6**
	comp=Z,31nm,1.5s,mb5.0						
INK				*e*		08 24 03.8	
PMR	**Palmer**	**69.89**	**337**	*e*P	**P**	**08 23 58.7**	**-0.7**
ILAR	**Eielson Array**	**71.00**	**340**	P	**P**	**08 24 04.5**	**-1.6**
	comp=Z,2.5nm,0.7s,mb4.2,baz=153,slow=4.2,SNR=36						
ILAR				LR	LR	08 56 15.0	
	comp=Z,126nm,18.7s,MS4.2,baz=101,slow=37						
QSPA	**South Pole Qui**	**92.37**	**180**	*e*P	**P**	**08 25 58.4**	**+0.6**
	comp=Z,3.4nm,1.0s,mb4.6						
ARCES	**ARCESS Array B**	**99.33**	**17**	LR	LR	09 09 53.6	
	comp=Z,119nm,20.3s,MS4.4,baz=280,slow=34						
MDJ	**Mudanjiang**	**116.16**	**323**	PKP	PKPdf	08 31 29.3	-4.0
CN2	**Changchun**	**119.08**	**324**	*e*PKP	PKPdf	08 31 32.8	-6.1
WRA	**Warramunga Arr**	**124.86**	**247**	PKP	PKPdf	08 31 47.7	-3.1
	comp=Z,0.5nm,0.8s,baz=100,slow=1.2,SNR=4.4						
NJ2	**Nanjing**	**130.24**	**317**	*e*PKP	PKPdf	08 32 00.3	-0.5
WMQ	**Urumqi**	**133.61**	**353**	*e*PKP	PKPdf	08 32 04.4	-2.3
KMI	**Kunming**	**145.34**	**323**	*e*PKP	PKPdf	08 32 26.6	-1.8
CMAR	**Chiang Mai Arr**	**152.63**	**320**	PKPbc	PKPdf	08 32 43.8	+3.7
	comp=Z,0.7nm,0.4s,baz=27,slow=2.0,SNR=5.1						

SVSA 23 08:12:56.8±1.6,39.51N×29.64W,h10km,MD3.8,ML3.0, Error ellipse: s-maj=13.8km s-min=12.0km az=55.0, Azores Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCED	**Cedros**	**1.14**	**140**	*e*P	Pb	08 13 13.5	-4.7
PCED				*e*S	Sb	08 13 26.7	-6.2
	85nm,0.4s						
STGR	**Santa Cruz**	**1.34**	**108**	*e*S	Sb	08 13 31.9	-6.7
ROSA	**Rosais**	**1.34**	**125**	*e*S	Sb	08 13 32.0	-6.7
PGRA	**Graciosa**	**1.37**	**110**	*e*S	Sb	08 13 31.9	-7.7
	118nm,0.4s						
PICO	**Pico**	**1.38**	**136**	*i* P	Pn	08 13 17.8	-4.4
PICO				*e*S	Sb	08 13 33.4	-6.4
PMAN	**Manadas**	**1.49**	**125**	*e*S	Sb	08 13 35.4	-7.6
	37nm,0.1s						
PID	**Ribeirinha**	**1.59**	**131**	*e*P	Pn	08 13 20.5	-4.8
PID				*e*S	Sb	08 13 38.6	-7.4
TOPO	**Topo**	**1.62**	**124**	*e*P	Pn	08 13 21.3	-4.4
TOPO				*e*S	Sn	08 13 39.4	-7.4
PSBA	**Serra de Santa**	**1.95**	**112**	*e*P	Pn	08 13 25.5	-4.8
PSBA				*e*S	Sn	08 13 47.2	-7.8
	23nm,0.3s						

IDC 23 09:05:46.4±8.4,17.58S×173.81W,mb3.4/3,mb1 3.7/3, mb1mx3.6/14,Error ellipse: s-maj=369.0km s-min=39.3km az=141.0,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**49.00**	**259**	P	P	09 14 34.3	-2.9
	0.2nm,0.8s,baz=96,slow=8.1,SNR=6.1						
ASAR	**Alice Springs**	**49.10**	**254**	P	P	09 14 36.8	-1.1
	0.4nm,0.4s,baz=87,slow=7.8,SNR=11						
ILAR	**Eielson Array**	**84.64**	**11**	P	P	09 18 21.5	-1.3
	0.4nm,1.0s,baz=217,slow=5.1,SNR=4.6						

*BJI **23** 09:22:02.2,32.50N×104.60W,h5km,mB4.4,mb4.4,Ms4.3, Msz4.2*
*NEIC **23** 09:22:05.3±0.3,32.53N×104.57W,h5km,mb4.0/2,MN4.0, Error ellipse: s-maj=5.7km s-min=4.8km az=46.0*
NEIC Felt [III] at Artesia. Also felt at Carlsbad and Roswell.
*IDC **23** 09:22:07.4±2.3,32.52N×104.47W,h16km±17km,mb4.0/4, mb1 4.1/10,mb1mx3.9/22,ML3.5/6,Error ellipse: s-maj=31.1km s-min=9.7km az=62.0*
ISC 23 09:22:05.1±0.7,32.55N±0.05×104.48W±0.04,h19km±8km, n56,σ1≧34/57,mb4.1/5,3C,New Mexico

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDL2	**Guadalupe Moun**	**0.36**	**164**	*e*P	**Pb**	**09 22 13.0**	**+0.3**
CLNB	**Carlsbad**	**0.58**	**119⇑**	*e*P	**Pb**	**09 22 17.9**	**+1.4**
CPRX	**Cap Rock**	**0.71**	**47⇑**	*e*P	**Pb**	**09 22 18.7**	**+0.1**
MNTX	**Cornudas Mount**	**1.14**	**222⇑**	*i*P	**Pb**	**09 22 25.2**	**-0.8**
BNM	**Barren Site**	**2.41**	**312**	*e*P	**Pn**	**09 22 45.4**	**+1.1**
LENM	**Lemitar**	**2.64**	**308**	*e*P	**Pn**	**09 22 47.9**	**+0.2**
ANMO	**Albuquerque**	**2.91**	**326**	*e*Pn	**Pn**	**09 22 52.6**	**+1.1**
ANMO				*e*S	**Sn**	**09 23 30.4**	**+4.0**
TXAR	**Lajitas Array**	**3.28**	**167**	Pn	**Pn**	**09 22 59.6**	**+2.9**
	7.8nm,0.3s,baz=348,slow=11,SNR=276						
TXAR				Pg	**Pn**	**09 23 05.4**	**+8.7**
	33nm,0.3s,baz=339,slow=15,SNR=61						
TXAR				Lg		09 23 49.1	
	127nm,0.3s,baz=338,slow=28,SNR=12						
JCT	**Junction City**	**4.50**	**116**	*e*Pn	**Pn**	**09 23 15.3**	**+1.3**
WMOK	**Wichita Mounta**	**5.23**	**64**	*e*Pn	**Pn**	**09 23 24.9**	**+0.4**
SDCO	**Great Sand Dun**	**5.25**	**351**	Pn	**Pn**	**09 23 25.3**	**+0.5**
TUC	**Tucson**	**5.33**	**269**	*e*Pn	**Pn**	**09 23 24.5**	**-1.4**
WUAZ	**Wupatki**	**6.44**	**299**	*e*Pn	**Pn**	**09 23 41.4**	**-0.2**
PV01	**Paradox Valley**	**6.50**	**330**	Pn	**Pn**	**09 23 43.0**	**+0.7**
PV10	**Paradox Valley**	**6.90**	**329**	Pn	**Pn**	**09 23 47.7**	**-0.3**
ISCO	**Idaho Springs**	**7.29**	**353**	*e*Pn	**Pn**	**09 23 53.1**	**-0.4**
CBKS	**Cedar Bluff**	**7.35**	**30**	*e*Pn	**Pn**	**09 23 54.1**	**-0.1**
HKT	**Hockley**	**7.84**	**107**	*e*Pn	**Pn**	**09 24 00.5**	**-0.6**
SRU	**San Rafael**	**8.18**	**325**	*e*Pn	**P**	**09 24 04.9**	**-1.0**
MSU	**Marysvale**	**8.64**	**316**	*e*Pn	**P**	**09 24 13.6**	**+1.3**
MVU	**Marysvale**	**8.66**	**315**	Pn	**P**	**09 24 13.5**	**+1.0**
NEN	**Nelson**	**9.13**	**293**	*e*Pn	**P**	**09 24 17.0**	**-2.0**
KSU1	**Kansas State U**	**9.14**	**42**	*e*Pn	**P**	**09 24 17.3**	**-1.8**
LDFC	**Landfair**	**9.20**	**289**	*e*Pn	**P**	**09 24 20.2**	**+0.3**
MIAR	**Mount Ida**	**9.32**	**75**	*e*Pn	**P**	**09 24 20.6**	**-1.0**
MPU	**Maple Canyon**	**9.42**	**324**	Pn	**P**	**09 24 27.0**	**+3.9**
DAU	**Daniels Canyon**	**9.55**	**327**	Pn	**P**	**09 24 24.9**	**0.0**
NLU	**North Lily Min**	**9.60**	**322**	Pn	**P**	**09 24 24.1**	**-1.4**
PFO	**Pinyon Flat Ob**	**10.10**	**279**	*e*P	**P**	**09 24 30.1**	**-2.4**
UALR	**University of**	**10.36**	**74**	*e*Pn	**P**	**09 24 35.0**	**-0.9**
BW06	**Boulder Array**	**10.96**	**340**	*e*Pn	**P**	**09 24 43.3**	**-0.9**
PDAR	**Pinedale Array**	**10.96**	**340**	Pn	**P**	**09 24 46.6**	**+2.4**
	0.0nm,0.3s,baz=153,slow=9.9,SNR=8.6						
PDAR				Pg	P	09 25 32.8	+49
	0.1nm,0.3s,baz=157,slow=11,SNR=3.8						
TPH	**Tonopah**	**11.78**	**301**	*e*P	**P**	**09 24 59.7**	**+4.5**
CCM	**Cathedral Cave**	**12.13**	**59**	*e*Pn	**P**	**09 24 56.7**	**-3.3**
NVAR	**Mina Array Bea**	**12.70**	**301**	Pn	**P**	**09 25 11.6**	**+4.0**
	0.1nm,0.3s,baz=119,slow=14,SNR=6						
NVAR				Pg	P	09 26 06.3	+59
	0.1nm,0.3s,baz=137,slow=17,SNR=3.2						
HLID	**Hailey**	**13.48**	**327**	Pn	**P**	**09 25 15.4**	**-2.5**
MCMT	**McKenzie Canyo**	**13.88**	**334**	Pn	**P**	**09 25 23.9**	**+0.7**
CMB	**Columbia Colle**	**14.09**	**297**	Pn	**P**	**09 25 24.9**	**-1.1**
	5.6nm,1.1s						
CHMT	**Chamberlain Mo**	**15.84**	**337**	Pn	**P**	**09 25 48.9**	**+0.2**
WCI	**Wyandotte Cave**	**15.87**	**64**	*e*Pn	**P**	**09 25 46.2**	**-2.9**
	2.4nm,0.5s						
BLO	**Bloomington**	**15.98**	**61**	*e*Pn	**P**	**09 25 47.2**	**-3.4**
	15nm,0.5s						
MSO	**Missoula**	**15.99**	**336**	Pn	**P**	**09 25 49.1**	**-1.7**
YBH	**Yreka Blue Hor**	**17.16**	**307**	P	**P**	**09 26 08.2**	**+2.7**
	0.1nm,0.3s,baz=70,slow=6.8,SNR=7.7						
NEW	**Newport**	**18.37**	**332**	P	**P**	**09 26 22.5**	**+1.9**
	0.1nm,0.3s,baz=150,slow=12,SNR=5.5						
NEW	**Newport**	**18.37**	**332**	P	**P**	**09 26 22.5**	**+1.9**
ULM	**Lac du Bonnet**	**18.80**	**17**	P	**P**	**09 26 29.3**	**+3.5**
	0.3nm,0.3s,baz=199,slow=12,SNR=2.9						
LON	**Longmire**	**19.41**	**322**	*e*P	**P**	**09 26 33.4**	**+0.5**
RPW	**Rockport**	**20.42**	**326**	*e*P	**P**	**09 26 41.1**	**-2.7**
FFC	**Flin Flon**	**22.24**	**4**	*e*P	**P**	**09 27 03.9**	**+1.6**
SDV	**Santo Domingo**	**39.17**	**119**	P	**P**	**09 29 36.0**	**+2.2**
	1.1nm,0.3s,mb4.1,baz=332,slow=11,SNR=4.4						
ILAR	**Eielson Array**	**41.32**	**334**	P	**P**	**09 29 52.2**	**+1.3**
	0.3nm,0.6s,mb3.1,baz=96,slow=7.0,SNR=7.7						
CPUP	**Villa Florida**	**73.78**	**137**	P	**P**	**09 33 39.9**	**-0.4**
	2.3nm,0.6s,mb4.3,baz=352,slow=4.9,SNR=7.8						
FINES	**FINESS Array B**	**78.13**	**22**	P	**P**	**09 34 04.8**	**+0.7**
	3.7nm,0.9s,mb4.3,baz=281,slow=9.7,SNR=6.6						
MDJ	**Mudanjiang**	**88.81**	**325**	P	**P**	**09 34 58.3**	**-0.7**
MDJ				AMB	AMB		
	comp=Z,9.0nm,1.7s,mb4.8						
CN2	**Changchun**	**91.40**	**326**	*e*P	**P**	**09 35 11.0**	**-0.1**
WRA	**Warramunga Arr**	**126.36**	**268**	PKP	PKPdf	09 41 08.6	-2.8
	comp=Z,0.3nm,0.6s,baz=64,slow=2.0,SNR=4.8						

*IDC **23** 09:29:28.9±1.6,44.80N×28.03W,mb3.7/7,mb1 3.9/9, mb1mx3.8/23,ML3.6/2,MS3.6/13,Ms1 3.6/13, ms1mx3.4/29,Error ellipse: s-maj=58.2km s-min=18.7km az=2.0*
*NEIC **23** 09:29:30.3±0.7,44.76N×28.07W,h10km,mb4.3/11,Error ellipse: s-maj=25.2km s-min=6.9km az=182.0*
ISC 23 09:29:29.0±0.9,44.9N±0.2×28.10W±0.09,h10km,n37, σ0≧87/27,mb4.0/17,MS3.6/12,Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ROSF	**Rostrenen**	**17.39**	**70**	*e*P	**P**	**09 33 27.4**	**-5.7**
	22nm,1.0s						
ESDC	**Sonseca Array**	**18.57**	**98**	P	**P**	**09 33 46.8**	**-1.1**
	0.1nm,0.3s,baz=299,slow=13,SNR=4.7						
ESDC				LR	LR	09 39 26.8	
	comp=Z,100nm,20.7s,baz=290,slow=32						
EKA	**Eskdalemuir Ar**	**19.02**	**48**	P	**P**	**09 33 52.2**	**-1.0**
	0.1nm,0.3s,baz=201,slow=8.3,SNR=2.7						
TCF	**Toulx Ste Croi**	**21.20**	**75**	*e*P	**P**	**09 34 15.9**	**-1.0**
	53nm,1.1s,mb4.5						
BGF	**Bois d'Agland**	**21.61**	**74**	*e*P	**P**	**09 34 20.0**	**-1.0**
MTLF	**Montolieu**	**21.77**	**83**	*e*P	**P**	**09 34 21.7**	**-0.9**
	31nm,1.2s,mb4.3						
AVF	**Avril sur Loir**	**21.93**	**74**	*e*P	**P**	**09 34 23.1**	**-1.1**
	23nm,1.1s,mb4.2						
SSF	**Saint Saulge**	**22.00**	**73**	*e*P	**P**	**09 34 24.0**	**-0.9**
	33nm,1.2s,mb4.3						
BAIF	**Baives**	**22.34**	**65**	*e*P	**P**	**09 34 29.4**	**+1.1**
	58nm,1.4s,mb4.5						
GIVF	**Givet**	**22.74**	**65**	*e*P	**P**	**09 34 33.2**	**+1.1**
	26nm,1.0s,mb4.3						
MEZF	**Maizieres J'vi**	**22.93**	**69**	*e*P	**P**	**09 34 35.6**	**+1.6**
VIVF	**Saint-Julien-l**	**23.15**	**78**	*e*P	**P**	**09 34 36.1**	**-0.1**
	11nm,0.9s,mb4.0						
CABF	**La Chapelle**	**23.82**	**74**	*e*P	**P**	**09 34 43.6**	**+1.0**
	68nm,1.6s,mb4.5						
SMRF	**Simiane la Rot**	**23.97**	**80**	*e*P	**P**	**09 34 45.4**	**+1.2**
HINF	**Hinteralfeld**	**24.19**	**70**	*e*P	**P**	**09 34 46.9**	**+0.7**
	8.8nm,0.9s,mb3.9						
CDF	**Champ du Feu**	**24.41**	**69**	*e*P	**P**	**09 34 48.9**	**+0.5**
LPG	**La Plagne**	**24.46**	**76**	*e*P	**P**	**09 34 49.5**	**+0.6**
	23nm,1.4s,mb4.1						
SCHQ	**Schefferville**	**26.58**	**306**	LR	LR	09 43 53.2	
	comp=Z,158nm,19.7s,MS3.6,baz=258,slow=32						
NOA	**NORSAR Array B**	**28.13**	**41**	LR	LR	09 45 14.4	
	comp=Z,39nm,18.7s,MS3.0,baz=180,slow=34						
GERES	**GERESS Array B**	**28.60**	**67**	P	**P**	**09 35 26.6**	**-0.5**
	0.5nm,0.9s,mb3.3,baz=301,slow=7.8,SNR=4.0						
FINES	**FINESS Array B**	**35.26**	**42**	LR	LR	09 49 05.7	
	comp=Z,39nm,18.8s,MS3.2,baz=341,slow=33						
ARCES	**ARCESS Array B**	**36.25**	**29**	LR	LR	09 48 21.2	
	comp=Z,34nm,19.3s,MS3.1,baz=299,slow=31						
SJG	**San Juan**	**41.42**	**242**	LR	LR	09 49 54.8	
	comp=Z,89nm,18.2s,MS3.7,baz=201,slow=30						
DBIC	**Dimbokro**	**43.09**	**145**	LR	LR	09 53 16.6	
	comp=Z,87nm,20.7s,MS3.6,baz=260,slow=33						
ULM	**Lac du Bonnet**	**44.63**	**302**	LR	LR	09 54 41.3	
	comp=Z,167nm,18.4s,MS4.0,baz=26,slow=34						
BRTR	**Keskin Array B**	**44.99**	**74**	P	**P**	**09 37 46.5**	**+0.4**
	0.6nm,0.6s,mb3.6,baz=307,slow=6.2,SNR=5.3						
BRTR				LR	LR	09 56 29.0	
	comp=Z,38nm,19.5s,MS3.3,baz=210,slow=36						
PDAR	**Pinedale Array**	**56.41**	**299**	P	**P**	**09 39 12.1**	**-0.6**
	0.4nm,0.9s,mb3.5,baz=45,slow=4.2,SNR=3.9						
PDAR				LR	LR	10 02 11.1	
	comp=Z,101nm,18.1s,MS4.0,baz=122,slow=35						
NEW	**Newport**	**57.92**	**308**	P	**P**	**09 39 23.4**	**0.0**
	2.0nm,0.8s,mb4.2,baz=12,slow=4.2,SNR=4.3						
NEW	**Newport**	**57.92**	**308**	*e*P	**P**	**09 39 21.8**	**-1.6**
GDL2	**Guadalupe Moun**	**58.94**	**286**	*e*P	**P**	**09 39 31.4**	**+0.7**
TXAR	**Lajitas Array**	**60.18**	**283**	P	**P**	**09 39 39.7**	**+0.5**
	1.2nm,0.7s,mb4.0,baz=68,slow=7.1,SNR=15						
TXAR				LR	LR	10 04 38.1	
	comp=Z,95nm,22.0s,MS3.9,baz=65,slow=35						
TXAR	**Lajitas Array**	**60.18**	**283**	P	**P**	**09 39 39.7**	**+0.5**
TXAR				LR	LR	10 04 38.1	
ILAR	**Eielson Array**	**60.77**	**335**	P	**P**	**09 39 42.5**	**-0.3**
	0.5nm,0.7s,mb3.8,baz=30,slow=6.8,SNR=7.4						
NVAR	**Mina Array Bea**	**64.34**	**299**	LR	LR	10 07 09.2	
	comp=Z,49nm,19.6s,MS3.7,baz=190,slow=35						
MKAR	**Makanchi Array**	**70.09**	**43**	P	**P**	**09 40 43.0**	**0.0**
	0.6nm,0.8s,mb3.6,slow=5.8,SNR=4.2						
TSUM	**Tsumeb**	**76.12**	**136**	LR	LR	10 11 53.3	
	comp=Z,101nm,18.3s,MS4.2,baz=149,slow=34						
WRA	**Warramunga Arr**	**151.19**	**36**	PKPbc	PKPdf	09 49 22.1	+2.5
	0.9nm,0.9s,baz=325,slow=2.1,SNR=4.5						

*TRN **23** 09:50:28.3, 10.78N×62.75W,h18km,MD3.2*
*FUNV **23** 09:50:28.3, 10.69N×62.71W,h88km,MW2.9*
*IDC **23** 09:50:30.8±1.7, 11.12N×63.22W,h99km±9km,mb3.6/3, mb1 3.8/4,mb1mx3.4/18,Error ellipse: s-maj=45.0km s-min=7.5km az=135.0*
ISC 23 09:50:26.9±0.4,10.67N±0.04×62.80W±0.03,h96km±4km, n31,σ1≧11/56,mb3.8/3,4C-3D,Near coast of Venezuela

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRUV	**Carupano**	**0.43**	**270⇑**	*i*P	**P**	**09 50 42.2**	**+0.3**
CRUV				*i* S	**S**	**09 50 52.2**	**-1.1**
GUNV	**Guanoco**	**0.53**	**196⇑**	*i*P	**P**	**09 50 43.4**	**+0.7**
GUNV				*i* S	**S**	**09 50 55.2**	**+0.7**
GUIV	**Guiria**	**0.56**	**93⇓**	*i*P	**P**	**09 50 42.7**	**-0.3**
GUIV				*e*S	**S**	**09 50 53.2**	**-1.7**
ITEV	**Isla Los Testi**	**0.75**	**334⇓**	*i*P	**P**	**09 50 45.2**	**+0.4**
ITEV				*e*S	**S**	**09 50 57.4**	**-0.6**
TCE	**Chacachacare**	**1.02**	**89**	*e*P	**P**	**09 50 48.0**	**+0.5**
TCE				*e*S	**S**	**09 51 01.0**	**-2.1**
TPP	**Pointe-a-Pierr**	**1.37**	**105**	*e*P	**P**	**09 50 52.2**	**+0.5**
TPP				*e*S	**S**	**09 51 11.8**	**+1.6**
TRN	**Trinidad (W)**	**1.37**	**91⇑**	*e*P	**P**	**09 50 52.1**	**+0.4**
TRN				*e*S	**S**	**09 51 08.4**	**-1.8**
TBH	**Brigand Hill**	**1.71**	**96**	*e*P	**P**	**09 50 58.2**	**+2.1**
GRW	**Mount Saint Ca**	**1.85**	**37**	*e*P	**P**	**09 50 58.7**	**+0.9**
GRW				*e*S	**S**	**09 51 19.0**	**-1.7**
PCRV	**Puerto La Cruz**	**1.88**	**255**	P	**P**	**09 50 59.6**	**+1.5**
	43nm,0.3s,baz=59,slow=4.6,SNR=286						
PCRV				S	**S**	**09 51 20.5**

INGI	**Ingas**	**1.25**	**313**	⇓*i*Pn	**P**	**10 14 35.9**	**-0.6**
	666nm,0.2s							
INGI				⇓*i*Sn	**S**	**10 14 53.7**	**+0.4**
KELI	**Kelakatan**	**2.13**	**313**	⇑*i*Pn	**P**	**10 14 48.8**	**+0.4**
	92nm,0.2s							
KELI				⇑*i*Sn	**S**	**10 15 13.1**	**-0.6**

*IDC **23** 10:49:15.3±1.6,2.23N×99.56W, mb4.2/12, mb1 4.4/12, mb1mx4.3/18, MS4.1/18, Ms1 4.1/18, ms1mx4.1/22, Error ellipse: s-maj=53.3km s-min=15.5km az=45.0*
*NEIC **23** 10:49:17.2±0.6,2.34N×99.38W, h10km, mb4.5/16, Error ellipse: s-maj=17.9km s-min=7.6km az=53.0*
*BJI **23** 10:49:17.2,2.30N×99.40W, h10km, Ms4.7, Msz4.7*

ISC 23 10:49:16.0±0.7,2.42N±0.10×99.3W±0.1, h10km, n63, σ0§92/49, mb4.3/27, MS4.2/19, West of Galapagos Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ROSC	**El Rosal**	**25.01**	**84**	P	**P**	**10 54 45.6**	**+3.8**
	4.7nm,0.5s,mb4.3,baz=220,slow=8.5,SNR=8.9						
ROSC				LR	LR	11 01 15.5	
	comp=Z,81nm,21.3s,MS3.2,baz=42,slow=28						
TXAR	**Lajitas Array**	**27.09**	**352**	P	**P**	**10 55 02.0**	**+1.0**
	4.3nm,1.0s,mb3.9,baz=177,slow=9.8,SNR=28						
TXAR				LR	LR	11 04 54.2	
	comp=Z,1μm,18.1s,MS4.4,baz=115,slow=34						
JCT	**Junction City**	**27.91**	**359**	*e*P	**P**	**10 55 09.0**	**+0.5**
	22nm,1.5s,mb4.6						
SDV	**Santo Domingo**	**29.20**	**76**	P	**P**	**10 55 20.2**	**0.0**
	1.0nm,0.3s,mb4.0,baz=335,slow=2.4,SNR=4.1						
MNTX	**Cornudas Mount**	**29.68**	**349**	*e*P	**P**	**10 55 23.9**	**-0.5**
	6.0nm,1.2s,mb4.2						
GDL2	**Guadalupe Moun**	**30.00**	**351**	*e*P	**P**	**10 55 28.4**	**+1.1**
BNM	**Barren Site**	**32.30**	**349**	*e*P	**P**	**10 55 48.3**	**+0.9**
MIAR	**Mount Ida**	**32.40**	**9**	*e*P	**P**	**10 55 48.2**	**-0.1**
ANMO	**Albuquerque**	**33.05**	**349**	*e*P	**P**	**10 55 52.7**	**-1.2**
	12nm,2.1s,mb4.5						
PLAL	**Pickwick Lake**	**34.03**	**17**	*e*P	**P**	**10 56 02.0**	**-0.5**
	53nm,1.9s,mb5.2						
WUAZ	**Wupatki**	**34.79**	**343**	*e*P	**P**	**10 56 09.6**	**+0.6**
	7.0nm,1.2s,mb4.5						
WVT	**Waverly**	**35.17**	**16**	*e*P	**P**	**10 56 10.6**	**-1.7**
	15nm,1.3s,mb4.8						
LPAZ	**La Paz**	**35.95**	**122**	P	**P**	**10 56 20.2**	**+1.2**
	2.0nm,0.9s,mb4.0,baz=327,slow=8.5,SNR=6.3						
LPAZ				LR	LR	11 09 10.2	
	comp=Z,227nm,19.0s,MS4.0,baz=279,slow=33						
LPAZ	**La Paz**	**35.95**	**122**	P	**P**	**10 56 17.8**	**-1.2**
LPAZ				*e*		10 56 26.8	
NEN	**Nelson**	**36.08**	**338**	*e*P	**P**	**10 56 21.1**	**+1.1**
CCM	**Cathedral Cave**	**36.22**	**11**	*e*P	**P**	**10 56 21.2**	**+0.1**
	9.0nm,1.2s,mb4.6						
SIUC	**Southern Illin**	**36.32**	**14**	*e*P	**P**	**10 56 22.1**	**+0.2**
PV01	**Paradox Valley**	**36.55**	**348**	*e*P	**P**	**10 56 25.0**	**+1.2**
PV10	**Paradox Valley**	**36.88**	**347**	*e*P	**P**	**10 56 26.8**	**+0.2**
WCI	**Wyandotte Cave**	**37.57**	**17**	P	**P**	**10 56 31.5**	**-0.9**
	11nm,1.5s,mb4.5						
ISCO	**Idaho Springs**	**37.65**	**352**	*e*P	**P**	**10 56 33.5**	**+0.4**
ELN	**Prospectdale**	**38.60**	**24**	*e*P	**P**	**10 56 41.2**	**0.0**
LVC	**Limon Verde**	**38.69**	**132**	P	**P**	**10 56 43.2**	**+1.2**
	25nm,1.7s,mb4.7						
NVAR	**Mina Array Bea**	**39.84**	**336**	P	**P**	**10 56 52.2**	**+0.7**
	0.9nm,0.8s,mb3.5,baz=155,slow=8.3,SNR=9.3						
NVAR				LR	LR	11 10 58.7	
	comp=Z,228nm,20.9s,MS4.0,baz=245,slow=33						
NVAR	**Mina Array Bea**	**39.84**	**336**	P	**P**	**10 56 52.2**	**+0.7**
NVAR				LR	LR	11 10 58.6	
HWUT	**Hardware Ranch**	**40.55**	**346**	*e*P	**P**	**10 56 57.7**	**+0.5**
	11nm,1.3s,mb4.3						
HVU	**Hansel Valley**	**41.02**	**345**	*e*P	**P**	**10 57 02.0**	**+0.9**
PDAR	**Pinedale Array**	**41.21**	**348**	P	**P**	**10 57 03.3**	**+0.7**
	4.6nm,0.8s,mb4.2,baz=153,slow=6.6,SNR=36						
PDAR				LR	LR	11 14 20.0	
	comp=Z,310nm,18.2s,MS4.2,baz=182,slow=36						
RSSD	**Black Hills**	**41.73**	**355**	*e*P	**P**	**10 57 07.5**	**+0.5**
	5.0nm,0.9s,mb4.1						
KSWY	**Kelly School**	**42.25**	**348**	*e*P	**P**	**10 57 11.4**	**+0.2**
HLID	**Hailey**	**43.12**	**344**	*e*P	**P**	**10 57 18.8**	**+0.5**
	3.0nm,1.1s,mb3.9						
WVOR	**Wild Horse Val**	**43.44**	**339**	*e*P	**P**	**10 57 21.3**	**+0.4**
	6.5nm,1.2s,mb4.2						
QLMT	**Earthquake Lak**	**43.57**	**347**	*e*P	**P**	**10 57 23.2**	**+1.3**
MCMT	**McKenzie Canyo**	**43.89**	**346**	*e*P	**P**	**10 57 25.4**	**+0.9**
MCMT				*e*		10 57 31.6	
BOZ	**Bozeman (W)**	**44.39**	**348**	*e*P	**P**	**10 57 27.4**	**-1.2**
YBH	**Yreka Blue Hor**	**44.44**	**335**	P	**P**	**10 57 28.6**	**-0.5**
	1.9nm,0.9s,mb3.8,baz=148,slow=5.6,SNR=2.9						
CHMT	**Chamberlain Mo**	**45.95**	**347**	P	**P**	**10 57 38.4**	**-2.6**
ULM	**Lac du Bonnet**	**47.74**	**3**	P	**P**	**10 57 54.6**	**-0.5**
	9.4nm,1.2s,mb4.7,baz=198,slow=9.0,SNR=5.0						
ULM				LR	LR	11 17 54.3	
	comp=Z,177nm,19.2s,MS4.0,baz=126,slow=36						
DPW	**Davenport**	**48.14**	**343**	*e*P	**P**	**10 57 57.3**	**-0.9**
NEW	**Newport**	**48.18**	**344**	P	**P**	**10 57 58.2**	**-0.3**
	2.4nm,0.8s,mb4.3,baz=138,slow=9.9,SNR=4.7						
NEW				LR	LR	11 16 48.1	
	comp=Z,248nm,20.8s,MS4.2,baz=135,slow=34						
NEW	**Newport**	**48.18**	**344**	P	**P**	**10 57 57.0**	**-1.5**
	3.9nm,1.0s,mb4.4						
NLW	**Nelson Butte**	**48.97**	**341**	*e*P	**P**	**10 58 04.8**	**+0.1**
CPUP	**Villa Florida**	**49.58**	**128**	P	**P**	**10 58 08.6**	**-1.0**
	2.0nm,0.9s,mb4.1,baz=351,slow=7.2,SNR=3.1						
CPUP				LR	LR	11 15 17.2	
	comp=Z,139nm,21.9s,MS3.9,baz=334,slow=31						
BDFB	**Brasilia**	**53.76**	**111**	P	**P**	**10 58 42.1**	**+0.9**
	3.7nm,0.9s,mb4.3,baz=272,slow=15,SNR=3.1						
BDFB				LR	LR	11 19 23.3	
	comp=Z,131nm,20.8s,MS4.0,baz=115,slow=34						
SCHQ	**Schefferville**	**58.53**	**21**	LR	LR	11 24 05.0	
	comp=Z,500nm,21.0s,MS4.6,baz=146,slow=36						
DLBC	**Dease Lake**	**60.83**	**342**	LR	LR	11 25 59.3	
	comp=Z,297nm,20.9s,MS4.4,baz=146,slow=36						
DLBC	**Dease Lake**	**60.83**	**342**	*e*P	**P**	**10 59 30.1**	**-0.6**
DLBC				*e*		10 59 36.5	
RAR	**Rarotonga**	**63.64**	**245**	LR	LR	11 20 16.9	
	comp=Z,97nm,20.8s,MS4.0,baz=83,slow=29						
SML	**Sawmill**	**69.64**	**338**	*e*P	**P**	**11 00 25.8**	**-1.7**
SML				*e*		11 00 32.7	
INK	**Inuvik**	**69.75**	**347**	LR	LR	11 30 47.5	
	comp=Z,170nm,18.6s,MS4.3,baz=287,slow=36						
INK	**Inuvik**	**69.75**	**347**	*e*P	**P**	**11 00 27.0**	**-1.1**
	9.4nm,1.1s,mb4.6						
INK				*e*		11 00 33.4	
ILAR	**Eielson Array**	**70.94**	**340**	P	**P**	**11 00 33.8**	**-1.6**
	2.0nm,0.8s,mb4.1,baz=163,slow=4.4,SNR=21						
ILAR				LR	LR	11 32 33.9	
	comp=Z,158nm,19.3s,MS4.3,baz=144,slow=37						
QSPA	**South Pole Qui**	**92.44**	**180**	*e*P	**P**	**11 02 27.7**	**-0.1**
	2.7nm,0.9s,mb4.6						
QSPA				LR	LR		
	comp=Z,100nm,22.0s,MS4.2						
DBIC	**Dimbokro**	**94.11**	**83**	LR	LR	11 43 17.4	
	comp=Z,70nm,18.8s,MS4.2,baz=201,slow=34						
VNDA	**Vanda**	**94.27**	**192**	LR	LR	11 35 06.2	
	comp=Z,180nm,20.6s,MS4.5,baz=71,slow=29						
NOA	**NORSAR Array B**	**97.67**	**27**	LR	LR	11 43 45.4	
	comp=Z,57nm,20.6s,MS4.0,baz=130,slow=33						
ARCES	**ARCESS Array B**	**99.27**	**17**	LR	LR	11 47 13.8	
	comp=Z,102nm,19.0s,MS4.3,baz=269,slow=35						
MDJ	**Mudanjiang**	**116.10**	**323**	PKP	PKPdf	11 08 01.5	-1.3
CN2	**Changchun**	**119.02**	**324**	*e*PKP	PKPdf	11 08 02.4	-6.0
NJ2	**Nanjing**	**130.18**	**317**	*e*PKP	PKPdf	11 08 29.4	-0.9
WMQ	**Urumqi**	**133.54**	**353**	*e*PKP	PKPdf	11 08 34.3	-1.9
KMI	**Kunming**	**145.28**	**323**	*e*PKP	PKPdf	11 08 55.8	-2.1
LSA	**Lhasa**	**146.54**	**343**	PKP	PKPdf	11 09 00.6	+0.6

IDC 23 11:29:00.3±31.0, 0.30N×101.54W, mb3.4/3, mb1 3.9/3, mb1mx3.6/14, MS3.2/2, Ms1 3.3/2, ms1mx3.1/11, Error ellipse: s-maj=1157.0km s-min=131.5km az=111.0, Galapagos Triple Junction region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TXAR	**Lajitas Array**	**28.94**	**356**	P	P	11 35 00.6	-2.9
	0.6nm,1.0s,baz=180,slow=12,SNR=4.5						
TXAR				LR	LR	11 44 53.2	
	comp=Z,57nm,20.8s,baz=145,slow=33						
NVAR	**Mina Array Bea**	**40.95**	**340**	LR	LR	11 53 08.5	
	comp=Z,29nm,18.1s,baz=350,slow=35						
PDAR	**Pinedale Array**	**42.88**	**351**	P	P	11 37 01.8	-0.5
	1.4nm,1.1s,baz=159,slow=7.7,SNR=5.4						
ILAR	**Eielson Array**	**72.18**	**341**	P	P	11 40 26.6	-2.1
	0.1nm,0.7s,baz=146,slow=3.3,SNR=2.4						

*IDC **23** 11:44:19.6±0.8,6.55N×126.58E, mb4.3/10, mb1 4.4/10, mb1mx4.3/18, Error ellipse: s-maj=52.7km s-min=15.1km az=75.0*
*NEIC **23** 11:44:30.6±5.7,6.47N×126.43E, h90km±53km, mb4.6/4, Error ellipse: s-maj=29.3km s-min=11.4km az=69.0*
*MAN **23** 11:44:36.2,6.81N×125.75E, h14km, mb4.8, ML3.7, MS3.6*

ISC 23 11:44:30.0±1.0,6.37N±0.04×126.2E±0.1, h99km±9km, n30, σ1§17/37, mb4.2/11, 1D, Mindanao

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GSPH	**General Santos**	**1.22**	**257**	*i*P	**P**	**11 44 52.0**	**-1.3**
GSPH				*i*S	**S**	**11 45 10.0**	**-0.8**
KCP	**Kidapawan**	**1.23**	**301**	⇓*e*P	**P**	**11 44 44.6**	**-8.8**
KCP				*i*S	**S**	**11 45 12.5**	**+1.6**
CTBH	**Cotabato--PC H**	**2.07**	**294**	*e*P	**P**	**11 45 02.2**	**-1.8**
CTBH				*i*S	**S**	**11 45 35.3**	**+6.1**
BUTP	**Butuan**	**2.64**	**349**	*e*P	**P**	**11 45 14.1**	**+2.3**
BUTP				*e*S	**S**	**11 45 47.0**	**+3.9**
PAGZ	**Pagadian**	**3.11**	**298**	*e*P	**P**	**11 45 19.5**	**+1.1**
MSLP	**Maasin**	**3.95**	**341**	*e*P	**P**	**11 45 30.4**	**+0.6**
MSLP				*e*S	**S**	**11 46 17.2**	**+1.9**
TBP	**Tagbilaran**	**4.00**	**326**	*e*P	**P**	**11 45 29.8**	**-0.7**
PLP	**Palo**	**4.91**	**346**	*e*P	**P**	**11 45 43.3**	**+0.5**
PLP				*e*S	**S**	**11 46 36.2**	**-2.6**
CNP	**Catarman**	**6.28**	**347**	*e*P	**P**	**11 46 01.1**	**-0.5**
CNP				*e*S	**S**	**11 47 11.3**	**-1.2**
KAKA	**Kakadu**	**19.93**	**162**	*e*P	**P**	**11 48 56.5**	**0.0**
	10nm,0.6s						
FITZ	**Fitzroy Crossi**	**24.32**	**181**	*e*P	**P**	**11 49 40.7**	**+0.9**
	4.6nm,0.6s,mb4.0						
FITZ	**Fitzroy Crossi**	**24.32**	**181**	P	**P**	**11 49 40.5**	**+0.7**
	8.2nm,0.8s,mb4.1,baz=7.2,slow=5.7,SNR=25						
WRAB	**Tennant Creek**	**27.35**	**163**	*e*P	**P**	**11 50 06.9**	**-1.1**
WRA	**Warramunga Arr**	**27.36**	**163**	P	**P**	**11 50 07.3**	**-0.8**
	3.0nm,1.0s,mb3.8,baz=341,slow=10,SNR=31						
WB2	**Warramunga Arr**	**27.36**	**163**	*e*P	**P**	**11 50 06.8**	**-1.3**
AS12	**Alice Springs**	**30.80**	**166**	*e*P	**P**	**11 50 38.7**	**0.0**
	20nm,1.9s,mb4.5						
ASAR	**Alice Springs**	**30.80**	**166**	P	**P**	**11 50 38.0**	**-0.7**
	1.4nm,0.4s,mb4.1,baz=343,slow=7.6,SNR=32						
ASAR				PcP	PcP	11 53 34.5	+0.9
	0.5nm,0.5s,baz=348,slow=2.2,SNR=7.8						
MUN	**Mundaring**	**39.29**	**193**	*e*P	**P**	**11 51 51.9**	**+1.1**
	10nm,0.5s,mb4.9						
NWAO	**Narrogin (SRO)**	**39.98**	**192**	P	**P**	**11 51 57.9**	**+1.3**
	16nm,0.7s,mb5.0,baz=18,slow=8.1,SNR=26						
NWAO	**Narrogin (SRO)**	**39.98**	**192**	*e*P	**P**	**11 51 57.8**	**+1.2**
	10nm,0.6s,mb4.8						
STKA	**Stephens Creek**	**40.78**	**160**	P	**P**	**11 52 03.9**	**+0.7**
	4.1nm,0.8s,mb4.3,baz=327,slow=15,SNR=6.5						
MKAR	**Makanchi Array**	**55.08**	**325**	P	**P**	**11 53 53.6**	**-0.4**
	4.6nm,0.5s,mb4.8,baz=121,slow=7.5,SNR=53						
KURK	**Kurchatov**	**59.22**	**327**	*e*P	**P**	**11 54 22.1**	**-1.0**
BVAR	**Borovoye Array**	**64.81**	**327**	P	**P**	**11 55 01.9**	**+1.5**
	2.2nm,0.7s,mb4.1,baz=135,slow=8.4,SNR=16						
BRVK	**Borovoye**	**64.88**	**327**	*e*P	**P**	**11 55 01.1**	**+0.2**
ZRNK	**Zerenda**	**65.54**	**326**	*e*P	**P**	**11 55 04.4**	**-0.8**
ILAR	**Eielson Array**	**82.99**	**26**	P	**P**	**11 56 44.2**	**-1.0**
	0.3nm,0.8s,mb3.2,baz=269,slow=4.9,SNR=4.8						
VNDA	**Vanda**	**86.10**	**173**	P	**P**	**11 57 02.2**	**+1.7**
	1.0nm,1.0s,mb3.7,baz=352,slow=4.8,SNR=4.3						
VNDA	**Vanda**	**86.10**	**173**	P	**P**	**11 57 02.2**	**+1.7**
ARCES	**ARCESS Array B**	**87.79**	**340**	P	**P**	**11 57 09.0**	**+0.2**
	4.0nm,1.1s,mb4.4,baz=72,slow=3.8,SNR=3.9						

IDC 23 11:56:52.1±27.0, 1.38N×102.62W, mb3.5/3, mb1 4.0/3, mb1mx3.7/14, Error ellipse: s-maj=910.0km s-min=133.4km az=115.0, Galapagos Triple Junction region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TXAR	**Lajitas Array**	**27.82**	**358**	P	P	12 02 42.9	-2.3
	0.5nm,0.9s,baz=186,slow=11,SNR=4.3						
PDAR	**Pinedale Array**	**41.67**	**352**	P	P	12 04 43.2	-0.9
	0.8nm,0.7s,baz=153,slow=6.0,SNR=7.5						
ILAR	**Eielson Array**	**70.83**	**342**	P	P	12 08 10.2	-2.2
	0.3nm,0.7s,baz=132,slow=4.9,SNR=5.4						

*NEIC **23** 12:03:43.9±0.6, 17.73N×145.74E, h223km±5km, mb4.2/4, Error ellipse: s-maj=11.3km s-min=7.1km az=92.0*
*IDC **23** 12:03:46.7±2.5, 17.73N×145.71E, h249km±24km, mb3.8/13, mb1 3.9/14, mb1mx3.8/23, Error ellipse: s-maj=17.3km s-min=9.0km az=103.0*

ISC 23 12:03:43.2±0.7, 17.71N±0.06×145.7E±0.1, h230km±6km, n28, σ0§69/30, mb4.0/15, 2D, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SARN	**Sarigan**	**1.01**	**174**	⇓*i*P	**P**	**12 04 16.4**	**+0.2**
SAPN	**Saipan**	**2.48**	**178**	⇓*e*P	**P**	**12 04 29.9**	**+0.6**
SAPN				*e*S	**S**	**12 05 04.7**	**-0.3**
GUMO	**Guam**	**4.17**	**191**	*e*Pn	**P**	**12 04 48.0**	**-0.8**
JOW	**Kunigami**	**18.46**	**302**	P	**P**	**12 07 44.8**	**+0.7**
	2.0nm,0.3s,baz=120,slow=14,SNR=6.4						
PMG	**Port Moresby**	**26.98**	**177**	P	**P**	**12 09 05.2**	**-0.8**
	12nm,0.8s,mb4.6,baz=342,slow=6.4,SNR=2.5						
CTAO	**Charters Tower**	**37.57**	**179**	*e*P	**P**	**12 10 38.0**	**+0.7**
	1.5nm,0.5s,mb3.8						
WRAB	**Tennant Creek**	**39.02**	**197**	*e*P	**P**	**12 10 49.4**	**0.0**
	15nm,0.5s,mb4.8						
WB2	**Warramunga Arr**	**39.03**	**197**	*e*P	**P**	**12 10 49.4**	**-0.1**
WRA	**Warramunga Arr**	**39.04**	**197**	P	**P**	**12 10 49.5**	**0.0**
	4.1nm,0.4s,mb4.3,baz=19,slow=8.3,SNR=115						
WRA				S	**S**	**12 16 30.1**	**-1.0**
	0.5nm,1.0s,baz=13,slow=15,SNR=3.7						
FITZ	**Fitzroy Crossi**	**40.68**	**210**	*e*P	**P**	**12 11 03.5**	**+0.5**
	4.3nm,0.3s,mb4.4						
FITZ	**Fitzroy Crossi**	**40.68**	**210**	P	**P**	**12 11 03.8**	**+0.8**
	5.8nm,0.3s,mb4.5,baz=16,slow=8.0,SNR=78						
AS12	**Alice Springs**	**42.70**	**196**	*e*P	**P**	**12 11 19.5**	**+0.1**
	4.3nm,0.5s,mb4.1						
ASAR	**Alice Springs**	**42.70**	**196**	P	**P**	**12 11 19.5**	**+0.1**
	2.3nm,0.3s,mb4.1,baz=17,slow=6.2,SNR=80						
ASAR				S	**S**	**12 17 25.4**	**+0.5**
	0.4nm,0.8s,baz=17,slow=15,SNR=4.0						
CMAR	**Chiang Mai Arr**	**44.32**	**278**	P	**P**	**12 11 33.2**	**+0.8**
	3.4nm,0.8s,mb3.7,baz=68,slow=7.1,SNR=14						
STKA	**Stephens Creek**	**49.46**	**185**	*e*P	**P**	**12 12 12.0**	**-0.1**
	2.0nm,0.3s,mb3.9						
STKA	**Stephens Creek**	**49.46**	**185**	P	**P**	**12 12 12.1**	**0.0**
	2.5nm,0.3s,mb4.0,baz=353,slow=9.2,SNR=22						
MKAR	**Makanchi Array**	**59.12**	**314**	P	**P**	**12 13 21.7**	**+0.1**
	0.5nm,0.6s,mb3.4,baz=88,slow=8.8,SNR=3.6						
KURK	**Kurchatov**	**61.98**	**318**	*e*P	**P**	**12 13 40.2**	**-0.6**
ILAR	**Eielson Array**	**64.54**	**26**	P	**P**	**12 13 55.9**	**-1.4**
	1.1nm,0.5s,mb3.8,baz=257,slow=5.7,SNR=16						
BVAR	**Borovoye Array**	**67.21**	**321**	P	**P**	**12 14 13.5**	**-1.0**
	0.8nm,0.5s,mb3.6,baz=101,slow=4.9,SNR=4.7						
INK	**Inuvik**	**70.29**	**23**	P	**P**	**12 14 32.8**	**-0.2**
	2.7nm,0.8s,mb4.0,baz=279,slow=6.0,SNR=25						
INK	**Inuvik**	**70.29**	**23**	*e*P	**P**	**12 14 32.5**	**-0.5**
NVAR	**Mina Array Bea**	**83.77**	**52**	P	**P**	**12 15 49.4**	**+1.3**
	1.4nm,0.5s,mb4.0,baz=266,slow=4.2,SNR=19						
HLID	**Hailey**	**84.94**	**46**	*e*P	**P**	**12 15 54.0**	**+0.3**
MCMT	**McKenzie Canyo**	**85.56**	**44**	*e*P	**P**	**12 15 57.9**	**+1.1**
FINES	**FINESS Array B**	**87.76**	**335**	P	**P**	**12 16 05.9**	**-1.0**
	3.8nm,1.1s,mb4.1,baz=57,slow=4.7,SNR=3.9						
PDAR	**Pinedale Array**	**88.54**	**45**	P	**P**	**12 16 10.9**	**-0.1**
	0.3nm,0.4s,mb3.5,baz=151,slow=1.9,SNR=4.6						
LPAZ	**La Paz**	**147.68**	**93**	PKPbc	PKPdf	12 23 04.2	+6.0
	0.8nm,0.6s,baz=3.5,slow=6.9,SNR=6.5						

*NEIC **23** 12:18:34.3, 18.66N×64.09W, h25km, MD3.7(RSPR), After RSPR.*
*RSPR **23** 12:18:34.3, 18.66N×64.09W, h25km±31km, M3.7*

ISC 23 12:18:34.0±1.4, 18.4N±0.4×64.25W±0.05, h91km±24km, n16, σ0§32/24, 12C, Virgin Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STMA	**St. Maarten, A**	**1.13**	**107**	*e*	**S**	**12 19 11.8**	**+0.1**
MTP	**Monte Pirata**	**1.27**	**258**	⇑*e*P	**P**	**12 18 57.4**	**-0.1**
MTP				S	**S**	**12 19 14.3**	**-0.7**
CBYP	**Canovanas**	**1.53**	**267**	⇑*e*P	**P**	**12 19 00.7**	**+0.1**
CBYP				S	**S**	**12 19 20.4**	**0.0**
CPD	**Cerro la Pandu**	**1.62**	**259**	⇑*e*P	**P**	**12 19 01.6**	**-0.1**
CPD				S	**S**	**12 19 22.5**	**+0.2**
CSB	**Colonia Sabana**	**1.81**	**268**	⇑*e*P	**P**	**12 19 04.1**	**-0.2**
CSB				S	**S**	**12 19 27.2**	**+0.6**
SJG	**San Juan**	**1.83**	**262**	⇑*e*P	**P**	**12 19 04.8**	**+0.3**
SJG	**San Juan**	**1.83**	**262**	⇑*e*P	**P**	**12 19 04.6**	**+0.2**
SJG	**San Juan**	**1.83**	**262**	S	**S**	**12 19 27.5**	**+0.6**
SJG	**San Juan**	**1.83**	**262**	⇑*e*P	**P**	**12 19 04.6**	**+0.2**
SJG				S	**S**	**12 19 27.5**	**+0.6**
OBIP	**Obispado Ponce**	**2.27**	**262**	⇑*e*P	**P**	**12 19 10.5**	**0.0**
OBIP	**Obispado Ponce**	**2.27**	**262**	S	**S**	**12 19 37.6**	**+0.1**
AOPR	**Arecibo Observ**	**2.38**	**270**	⇑*e*P	**P**	**12 19 12.5**	**+0.5**
AOPR	**Arecibo Observ**	**2.38**	**270**	S	**S**	**12 19 40.0**	**-0.2**
LRS	**Lares**	**2.47**	**269**	⇑*e*P	**P**	**12 19 13.0**	**-0.3**
LRS				S	**S**	**12 19 41.9**	**-0.6**
LSP	**Las Mesas**	**2.70**	**266**	⇑*e*P	**P**	**12 19 16.3**	**-0.2**
LSP				S	**S**	**12 19 48.5**	**+0.2**
MGP	**Maguayo**	**2.73**	**263**	⇑*e*P	**P**	**12 19 16.5**	**-0.3**
MGP				S	**S**	**12 19 48.9**	**0.0**

IDC 23 12:43:07.6±8.2, 7.21S×120.13E, h434km±115km, mb2.8/2, mb1 2.9/4, mb1mx2.8/16, Error ellipse: s-maj=146.0km s-min=33.8km az=49.0, Flores Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**12.09**	**154**	P	P	12 45 48.1	-1.7
	0.3nm,0.3s,baz=349,slow=13,SNR=12						
WRA	**Warramunga Arr**	**18.71**	**134**	P	P	12 46 57.7	-0.3
	0.3nm,0.3s,baz=314,slow=11,SNR=31						
ASAR	**Alice Springs**	**21.04**	**143**	P	P	12 47 19.5	-0.8
	0.7nm,0.5s,baz=318,slow=8.7,SNR=39						
MKAR	**Makanchi Array**	**63.40**	**332**	P	P	12 52 53.1	-1.7
	0.3nm,0.5s,baz=148,slow=8.4,SNR=6.2						

WEL 23 12:46:36.6±0.9, 36.94S×175.44E, h33km, ML3.5/1, Error ellipse: s-maj=6.9km s-min=6.9km az=0.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**1.87**	**135**	PN	Pn	12 47 05.6	-1.3
URZ				SN	Sn	12 47 27.2	-2.5
BKZ	**Black Stump Fm**	**2.38**	**160**	PN	Pn	12 47 13.3	-0.9
BKZ				SN	Sn	12 47 39.9	-2.6
TSZ	**Takapari Road**	**3.15**	**173**	PN	Pn	12 47 23.6	-1.5
MRZ	**Mangatainoka R**	**3.72**	**178**	PN	Pn	12 47 30.5	-2.8
MRZ				SN	Sn	12 48 12.1	-4.5
NNZ	**Nelson**	**4.57**	**200**	SN	Sn	12 48 38.9	+1.0

*NEIC **23** 12:58:05.9±2.4, 51.09N×158.08E, h23km±16km, mb4.5/20, Error ellipse: s-maj=8.4km s-min=6.4km az=170.0*
*MOS **23** 12:58:05.2±1.0, 50.77N×158.39E, h57km, mb4.3/10, Error ellipse: s-maj=18.3km s-min=6.7km az=81.0*
*IDC **23** 12:58:06.9±4.9, 51.18N×158.01E, h29km±36km, mb3.9/19, mb1 4.2/21, mb1mx4.1/27, ML3.9/2, MS3.0/1, Ms1 3.2/1, ms1mx2.2/29, Error ellipse: s-maj=18.7km s-min=13.3km az=156.0*
*KRSC **23** 12:58:06.9±1.4, 50.95N×158.35E, h24km±4km, ML4.9*

ISC 23 12:58:07.9±0.6, 50.98N±0.04×158.33E±0.06, h57km±4km, n123, σ1§13/168, mb4.3/36, MS3.5/2, 2C-4D, East of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PAU	**Pauzhetka**	**1.07**	**298**	*i*P	**P**	**12 58 27.4**	**+0.3**
PAU				*i*S	**S**	**12 58 41.9**	**+0.7**
PAU				Smax			
	6μm,0.6s						
SKR	**Severo-Kuril's**	**

KOZ	Kozyrevsk	5.17	10	P		P		12 59 26.9	+2.2
KOZ				S		S		13 00 25.3	+1.6
KOZ	Kozyrevsk	5.17	10	*e*P		P		12 59 24.9	+0.2
KOZ				*e*S		S		13 00 25.2	+1.5
ZLN	Zelenaya	5.26	15	*e*P		P		12 59 26.7	+0.8
ZLN				*e*S		S		13 00 24.6	-1.3
LGNR	Loginova	5.30	14	*e*P		P		12 59 25.5	-1.0
LGNR				*e*S		S		13 00 24.9	-2.1
CIRR	Tsirk	5.34	15	*e*P		P		12 59 28.0	+1.0
CIRR				*e*S		S		13 00 26.8	-1.2
SRDR	Sredinnyy	5.41	8	*e*P		P		12 59 28.4	+0.4
SRDR				*e*S		S		13 00 26.8	-2.9
KRSR	Krestovskiy	5.42	13	*e*P		P		12 59 29.5	+1.5
KRSR				*e*S		S		13 00 29.4	-0.4
KLY	Klyuchi	5.52	14	P		P		12 59 30.9	+1.4
KLY				S		S		13 00 31.6	-0.8
KLY	Klyuchi	5.52	14	*e*P		P		12 59 30.9	+1.4
KLY				*i* S		S		13 00 32.4	0.0
SVLR	Shiveluch	5.87	16	*e*P		P		12 59 34.2	-0.1
SVLR				*e*S		S		13 00 38.5	-2.5
KBTR	Krutoberegovo	5.88	25	P		P		12 59 33.3	-1.2
KBTR				S		S		13 00 36.2	-5.2
KBTR	Krutoberegovo	5.88	25	*e*P		P		12 59 33.2	-1.3
KBTR				*e*S		S		13 00 38.8	-2.6
KBG	Krutoberegovo	5.89	25	*e*P		P		12 59 35.1	+0.5
KBG				Smax					
	comp=N,2μm,0.8s								
BKI	Bering	6.25	44	*e*P		P		12 59 36.4	-3.3
BKI				*i* S		S		13 00 40.3	-10
BKI				Smax					
	comp=N,70nm,0.5s								
KUR	Kuril'sk	9.05	235	*e*PN		P		13 00 22.4	+4.0
KUR				*e*S		S		13 01 59.0	-0.9
KUR				pmax	pmax				
	comp=Z,90nm,0.7s								
KUR				smax					
	comp=N,40nm,0.7s								
FX1	Attu Island--F	9.37	73	Pn		P		13 00 20.0	-2.7
	comp=N,9.5nm,0.3s,baz=291,slow=2.2,SNR=44								
FX1				Sn		S		13 01 57.2	-10
	comp=N,33nm,0.3s,baz=212,slow=23,SNR=14								
FX1	Attu Island--F	9.37	73	*e*Pn		P		13 00 20.0	-2.7
FX1				*e*Sn		S		13 01 53.6	-14
ASAJ	Asahikawa	12.64	243	Pn		P		13 01 02.5	-4.4
	comp=N,0.4nm,0.3s,baz=252,slow=19,SNR=3.2								
BILL	Bilibino	17.55	10	*e*P		P		13 02 10.1	+0.3
BILL				pmax	pmax				
	comp=Z,3.0nm,0.6s								
BILL	Bilibino	17.55	10	*e*P		P		13 02 06.5	-3.2
	comp=Z,4.0nm,0.5s								
MAJO	Matsushiro	20.38	233	P		P		13 02 40.7	-1.4
	comp=Z,4.5nm,0.5s								
TIXI	Tiksi	24.59	338	*e*P		P		13 03 22.2	-1.1
TIXI				pmax	pmax				
	comp=Z,28nm,0.9s,mb4.8								
TIXI				MLR	MLR				
	comp=Z,400nm,12.0s,MS4.1								
TIXI	Tiksi	24.59	338	*e*P		P		13 03 22.1	-1.2
	comp=Z,5.1nm,0.6s,mb4.2								
SML	Sawmill	30.56	49	*e*P		P		13 04 17.6	-0.2
SML				*e*		pP		13 04 28.3	-3.8
ILAR	Eielson Array	31.10	43	P		P		13 04 21.0	-1.5
	comp=Z,0.9nm,0.6s,mb3.8,baz=271,slow=6.7,SNR=9.8								
ILAR				LR		LR		13 17 33.0	
	comp=Z,31nm,20.4s,MS3.0,baz=22,slow=38								
ILAR	Eielson Array	31.10	43	P		P		13 04 21.0	-1.5
ILAR				pmax	pmax				
	comp=Z,1.0nm,0.6s								
ILAR				MLR	MLR				
	comp=Z,31nm,20.4s								
INK	Inuvik	36.22	36	P		P		13 05 06.4	-0.2
	comp=Z,2.0nm,0.7s,mb4.2,baz=293,slow=6.8,SNR=20								
INK	Inuvik	36.22	36	P		P		13 05 06.4	-0.2
INK				pmax	pmax				
	comp=Z,2.0nm,0.7s								
INK	Inuvik	36.22	36	*e*P		P		13 05 06.7	+0.1
	comp=Z,2.1nm,0.6s,mb4.2								
DLBC	Dease Lake	40.21	51	P		P		13 05 40.5	+0.6
	comp=Z,2.3nm,1.0s,mb3.9,baz=274,slow=8.1,SNR=4.2								
KURK	Kurchatov	47.94	303	*e*P		P		13 06 39.9	-2.2
MKAR	Makanchi Array	48.10	296	P		P		13 06 41.6	-1.8
	comp=Z,0.9nm,0.4s,mb4.2,baz=61,slow=7.1,SNR=19								
MKAR	Makanchi Array	48.10	296	P		P		13 06 41.6	-1.8
MKAR				pmax	pmax				
	comp=Z,1.0nm,0.4s								
BVAR	Borovoye Array	50.86	309	P		P		13 07 02.1	-2.4
	comp=Z,2.4nm,0.4s,mb4.5,baz=53,slow=7.4,SNR=23								
BRVK	Borovoye	50.89	309	*e*P		P		13 07 02.2	-2.5
BRVK				*e*				13 07 11.2	
DAG	Danmarks Havn	52.51	359	⇓*i*P		P		13 07 15.7	-0.9
	comp=Z,4.7nm,0.6s,mb4.6								
DAG	Danmarks Havn	52.51	359	⇓*e*P		P		13 07 15.7	-0.9
DAG				pmax	pmax				
	comp=Z,5.0nm,0.6s,mb4.6								
DAG	Danmarks Havn	52.51	359	⇓*e*P		P		13 07 15.7	-0.9
	comp=Z,4.7nm,0.6s,mb4.6								
ARCES	ARCESS Array B	54.96	342	P		P		13 07 33.4	-1.3
	comp=Z,1.6nm,0.8s,mb4.1,baz=353,slow=0.4,SNR=3.7								
ARCES	ARCESS Array B	54.96	342	P		P		13 07 33.4	-1.3
ARCES				pmax	pmax				
	comp=Z,2.0nm,0.8s								
SUMG	Summit	56.19	6	*e*P		P		13 07 43.3	-0.2
HLID	Hailey	56.36	61	*e*P		P		13 07 46.0	+0.9
BOZ	Bozeman (W)	56.51	57	*e*P		P		13 07 46.7	+0.6
	comp=Z,1.2nm,0.7s,mb4.0								
CMAR	Chiang Mai Arr	56.67	258	P		P		13 07 47.1	-0.6
	comp=Z,1.8nm,0.7s,mb4.2,baz=29,slow=7.4,SNR=10								
CMAR	Chiang Mai Arr	56.67	258	P		P		13 07 47.1	-0.6
CMAR				pmax	pmax				
	comp=Z,2.0nm,0.7s								
NVAR	Mina Array Bea	57.53	68	P		P		13 07 54.5	+1.1
	comp=Z,0.9nm,0.7s,mb3.9,baz=293,slow=7.8,SNR=6.7								
JOF	Joensuu	59.02	335	*e*p		P		13 08 01.7	-1.8
PDAR	Pinedale Array	59.54	59	P		P		13 08 08.0	+0.6
	comp=Z,1.8nm,0.7s,mb4.2,baz=323,slow=4.0,SNR=19								
KAF	Kangasniemi	61.00	336	*e*p		P		13 08 15.2	-1.9
	baz=32,slow=6.4								
SRU	San Rafael	61.52	62	*e*P		P		13 08 21.0	+0.2
FINES	FINESS Array B	61.62	336	P		P		13 08 19.1	-2.2
	comp=Z,0.7nm,0.4s,mb4.2,baz=34,slow=6.7,SNR=17								
FINES	FINESS Array B	61.62	336	P		P		13 08 19.1	-2.2
FINES				pmax	pmax				
	comp=Z,1.0nm,0.4s								
NB2	NORSAR Subarra	65.26	343	P		P		13 08 43.8	-1.2
	comp=Z,1.4nm,0.6s,mb4.2,baz=24,slow=6.5								
NOA	NORSAR Array B	65.26	343	P		P		13 08 43.9	-1.1
	comp=Z,1.7nm,0.6s,mb4.2,baz=21,slow=6.6,SNR=8.8								
NOA	NORSAR Array B	65.26	343	P		P		13 08 43.9	-1.1
NOA				pmax	pmax				
	comp=Z,2.0nm,0.6s								
SCHQ	Schefferville	68.03	26	P		P		13 09 02.3	-0.3
	comp=Z,1.1nm,0.6s,mb4.1,baz=31,slow=19,SNR=3.6								
CPRX	Cap Rock	69.62	63	*e*P		P		13 09 14.0	+1.1
MNTX	Cornudas Mount	69.75	65	*e*P		P		13 09 14.7	+1.1
TXAR	Lajitas Array	72.50	65	P		P		13 09 31.6	+1.4
	comp=Z,2.7nm,0.6s,mb4.4,baz=297,slow=4.6,SNR=51								
WRA	Warramunga Arr	73.70	203	P		P		13 09 37.7	+0.4
	comp=Z,1.5nm,0.7s,mb4.0,baz=15,slow=5.8,SNR=10								
WRA	Warramunga Arr	73.70	203	P		P		13 09 37.7	+0.4
WRA				pmax	pmax				
	comp=Z,2.0nm,0.7s								
CLL	Collm	73.93	338	P		P		13 09 39.0	+1.0
MLR	Muntele Rosu	75.46	328	P		P		13 09 46.7	-0.2
	comp=Z,1.7nm,0.8s,mb4.0,baz=283,slow=14,SNR=3.7								
MLR	Muntele Rosu	75.46	328	P		P		13 09 46.7	-0.3
MLR				pmax	pmax				
	comp=Z,2.0nm,0.8s								
GERES	GERESS Array B	76.04	337	P		P		13 09 49.3	-0.9
	comp=Z,0.6nm,0.5s,mb3.8,baz=18,slow=4.2,SNR=5.0								
GERES	GERESS Array B	76.04	337	P		P		13 09 49.3	-0.9
GERES				pmax	pmax				
	comp=Z,1.0nm,0.5s								
GIVF	Givet	76.79	343	*e*P		P		13 09 54.5	+0.1
BAIF	Baives	76.95	343	*e*P		P		13 09 55.6	+0.3
	comp=Z,3.7nm,0.5s,mb4.2								
ASAR	Alice Springs	77.38	203	P		P		13 09 59.7	+1.5
	comp=Z,0.8nm,0.6s,mb3.8,baz=13,slow=5.3,SNR=16								
CDF	Champ du Feu	77.92	341	*e*P		P		13 10 01.1	+0.4
	comp=Z,4.3nm,0.6s,mb4.3								
MEZF	Maizieres J'vi	78.28	342	*e*P		P		13 10 03.3	+0.6
	comp=Z,8.5nm,0.5s,mb4.6								
HAU	Haudompre	78.50	341	*e*P		P		13 10 04.1	+0.2
HINF	Hinteralfeld	78.58	341	*e*P		P		13 10 04.7	+0.4
	comp=Z,3.1nm,0.5s,mb4.2								
FLN	La Foliniere	78.99	346	*e*P		P		13 10 06.7	+0.1
LDF	La Druitiere	79.10	346	*e*P		P		13 10 07.3	+0.1
GRR	Gorron	79.42	346	*e*P		P		13 10 09.3	+0.4
SGMF	Saint Gilles	79.80	347	*e*P		P		13 10 11.4	+0.5
	comp=Z,14nm,0.7s,mb4.7								
ROSF	Rostrenen	79.81	348	*e*P		P		13 10 11.2	+0.2
SSF	Saint Saulge	79.96	343	*e*P		P		13 10 12.2	+0.4
	comp=Z,5.5nm,0.6s,mb4.4								
AVF	Avril sur Loir	80.25	343	*e*P		P		13 10 13.9	+0.5
	comp=Z,9.6nm,0.6s,mb4.6								
SMF	Signal de Mont	80.30	342	*e*P		P		13 10 15.5	+1.8
	comp=Z,6.7nm,0.6s,mb4.4								
BGF	Bois d'Agland	80.57	343	*e*P		P		13 10 16.1	+1.0
	comp=Z,9.4nm,0.6s,mb4.6								
LPL	La Plagne	80.79	340	*e*P		P		13 10 17.8	+1.5
	comp=Z,6.4nm,0.6s,mb4.5								
LPG	La Plagne	80.81	340	*e*P		P		13 10 18.0	+1.6
	comp=Z,7.7nm,0.6s,mb4.5								
TCF	Toulx Ste Croi	80.94	343	*e*P		P		13 10 17.9	+0.8
MFF	Saint Martin d	81.04	345	*e*P		P		13 10 18.0	+0.4
	comp=Z,3.5nm,0.5s,mb4.2								
ORIF	Oris-en-Rattie	81.54	341	*e*P		P		13 10 21.5	+1.3
	comp=Z,13nm,0.9s,mb4.5								
VIVF	Saint-Julien-l	81.85	341	*e*P		P		13 10 22.4	+0.6
RJF	Les Rejaudoux	82.02	344	*e*P		P		13 10 23.9	+1.2
PGF	Pioggiola	83.09	338	*e*P		P		13 10 28.6	+0.4
	comp=Z,6.4nm,0.7s,mb4.5								
MTLF	Montolieu	83.79	343	*e*P		P		13 10 31.6	0.0
IDI	Anoyia	84.83	323	P		P		13 10 35.5	-1.6
	comp=Z,6.1nm,0.7s,mb4.8,baz=34,slow=6.0,SNR=5.3								
ESDC	Sonseca Array	88.40	346	P		P		13 10 53.7	-0.6
	comp=Z,0.8nm,0.7s,mb4.1,baz=0.6,slow=3.5,SNR=4.8								

*NEIC **23** 13:05:31.5, 32.23S×71.74W, h28km, ML2.7(GUC), After GUC.*

GUC 23 13:05:31.5±0.9, 32.23S×71.74W, h28km±7km, MD3.6, ML2.7, 3C-2D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
PACH	**Papudo**	**0.40**	**140**	⇓*i*P	P	Pb	13 05 40.1	-0.2
PACH				*i* S	S	Sb	13 05 46.3	0.0
PTCH	**Petorca**	**0.69**	**93**	⇑*i*P	P	Pb	13 05 45.0	0.0
PTCH				*i* S	S	Sb	13 05 54.5	+0.3
PTCH				AMP			13 05 55.3	
	comp=N,1μm,0.1s							
ILCH	**Illapel**	**0.77**	**40**	⇑*i*P	P	Pb	13 05 46.1	0.0
ILCH				*i* S	S	Sb	13 05 56.8	+0.6
ILCH				AMP			13 05 59.0	
	comp=E,285nm,0.2s							
JACH	**Jahuel**	**1.07**	**115**	⇑*i*P	P	Pn	13 05 50.6	-0.2
JACH				*i* S	S	Sn	13 06 05.1	+0.3
CMCH	**Combarbala**	**1.23**	**31**	⇓*i*P	P	Pn	13 05 53.5	+0.5
CMCH				*i* S	S	Sn	13 06 09.0	+0.2
CMCH				AMP			13 06 16.1	
	comp=N,607nm,0.6s							
LCCH	**Las Cruces**	**1.25**	**173**	*e*P	P	Pn	13 05 53.4	0.0
PEL	**Peldehue**	**1.28**	**136**	*i* S	S	Sn	13 06 10.7	+0.7
PEL				AMP			13 06 15.1	
	comp=E,259nm,0.3s							
CLCH	**Cerro Calan**	**1.54**	**139**	*e*P	P	Pn	13 05 58.5	+0.9
CLCH				*i* S	S	Sn	13 06 18.7	+1.8
CLCH				AMP			13 06 27.3	
	comp=N,87nm,0.6s							
FCH	**Farellones**	**1.64**	**132**	*e*P	P	Pn	13 05 59.5	+0.5
FCH				*i* S	S	Sn	13 06 21.2	+1.9
FCH				AMP			13 06 22.2	
	comp=E,79nm,0.2s							
PCH	**Pirque**	**1.73**	**144**	*e*P	P	Pn	13 06 00.7	+0.5
LMEL	**Las Melosas**	**2.07**	**142**	*e*P	P	Pn	13 06 06.1	+1.0
LMEL				AMP			13 06 40.6	
	comp=N,95nm,0.3s							
TLL	**Tololo Astrono**	**2.21**	**22**	*e*P	P	Pn	13 06 07.6	+0.5
TLL				AMP			13 06 43.4	
	comp=E,110nm,0.4s							

*MOS **23** 13:09:39.8±1.4, 5.07S×102.88E, h33km, mb4.7/13, Error ellipse: s-maj=29.4km s-min=10.4km az=105.8*
*NEIC **23** 13:09:43.5±0.3, 5.33S×102.57E, mb4.6/14, Error ellipse: s-maj=12.7km s-min=5.6km az=59.0*
*BJI **23** 13:09:43.4, 5.30S×102.60E, h47km, mB4.9, mb4.8, Ms4.7, Msz4.5*
*IDC **23** 13:09:43.8±0.6, 5.26S×102.58E, h44km±4km, mb4.3/17, mb1 4.4/17, mb1mx4.2/22, MS3.7/11, Ms1 3.7/11, ms1mx3.5/24, Error ellipse: s-maj=24.0km s-min=9.8km az=51.0*

ISC 23 13:09:42.4±1.9, 5.29S±0.07×102.60E±0.08, h55km±16km, h45km±1.3km:pP-P, n91, σ1911/85, mb4.7/43, MS3.8/13, 5C-2D, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
KGM	**Kluang**	**7.29**	**6**	⇓*e*P	P		13 11 30.9	+2.1
IPM	**Ipoh**	**9.93**	**351**	⇓*e*P	P		13 12 09.9	+4.8
KELI	**Kelakatan**	**12.16**	**104**	⇑*i*P	P		13 12 34.4	-0.9
CM31	**Chiang Mai Arr**	**23.87**	**351**	*e*P	P		13 15 06.0	+14
CMAR	**Chiang Mai Arr**	**23.87**	**351**	P	P		13 14 51.6	-0.2
	4.4nm,0.5s,mb4.1,baz=181,slow=8.6,SNR=27							
CMAR				pP			13 15 05.0	
	12nm,0.6s,baz=182,slow=9.3,SNR=15							
CMAR				LR	LR		13 24 35.9	
	comp=Z,147nm,19.0s,MS3.5,baz=175,slow=37							
CMAR	**Chiang Mai Arr**	**23.87**	**351**	P	P		13 14 51.7	-0.1
CMAR				*PP			13 15 05.0	
CMAR				pmax	pmax			
	comp=Z,4.0nm,0.5s							
CMAR				pmax	pmax			
	comp=Z,12nm,0.6s							
CMAR				MLR	MLR			
	comp=Z,147nm,19.0s							
CMAR	**Chiang Mai Arr**	**23.87**	**351**	P	P		13 14 51.6	-0.2
CMAR				pP			13 15 05.0	
CMAR				LR	LR		13 24 35.9	
FITZ	**Fitzroy Crossi**	**25.86**	**121**	*e*P	P		13 15 11.0	+0.1
	comp=Z,8.5nm,0.8s,mb4.3							
FITZ	**Fitzroy Crossi**	**25.86**	**121**	P	P		13 15 11.2	+0.3
	comp=Z,9.3nm,0.8s,mb4.4,baz=317,slow=2.6,SNR=18							
TGY	**Tagaytay City**	**26.50**	**43**	LR	LR		13 26 05.9	
	comp=Z,103nm,21.6s,MS3.3,baz=158,slow=37							
MUN	**Mundaring**	**29.45**	**156**	*e*P	P		13 15 43.5	+0.2
	comp=Z,11nm,0.8s,mb4.6							
KLBR	**Kellerberrin**	**29.78**	**153**	*e*P	P		13 15 45.9	-0.3
	comp=Z,20nm,1.1s,mb4.8							
KAKA	**Kakadu**	**30.32**	**106**	*e*P	P		13 15 49.8	-1.4
	comp=Z,5.0nm,0.6s,mb4.4							
NWAO	**Narrogin (SRO)**	**30.70**	**155**	P	P		13 15 54.2	-0.1
	comp=Z,12nm,0.9s,mb4.7,baz=330,slow=12,SNR=5.4							
NWAO	**Narrogin (SRO)**	**30.70**	**155**	P	P		13 15 54.2	-0.1
NWAO				pmax	pmax			
	comp=Z,12nm,0.9s							
NWAO	**Narrogin (SRO)**	**30.70**	**155**	P	P		13 15 54.2	-0.1
SHL	**Shillong**	**32.39**	**342**	*e*P	P		13 16 08.4	-0.8
WRA	**Warramunga Arr**	**34.13**	**118**	P	P		13 16 24.0	-0.4
	comp=Z,4.7nm,0.7s,mb4.5,baz=289,slow=12,SNR=38							
WRA				S	S		13 21 48.8	+3.3
	comp=Z,4.5nm,1.2s,baz=294,slow=16,SNR=5.3							
WRA	**Warramunga Arr**	**34.13**	**118**	P	P		13 16 24.0	-0.3
WRA				S	S		13 21 48.8	+3.3
WRA				pmax	pmax			
	comp=Z,5.0nm,0.7s							
WRA				smax				
	comp=Z,5.0nm,1.2s							
WRAB	**Tennant Creek**	**34.14**	**118**	*e*P	P		13 16 24.3	-0.1
	comp=Z,18nm,0.7s,mb5.1							
WB2	**Warramunga Arr**	**34.14**	**118**	*e*P	P		13 16 23.6	-0.8
WB2				*e*S	S		13 21 47.7	+2.0
AS12	**Alice Springs**	**35.25**	**124**	*e*P	P		13 16 34.1	+0.2
	comp=Z,4.0nm,0.4s,mb4.7							
ASAR	**Alice Springs**	**35.25**	**124**	P	P		13 16 34.5	+0.6
	comp=Z,6.6nm,1.0s,mb4.5,baz=301,slow=7.9,SNR=34							
ASAR				S	S		13 22 08.1	+5.4
	comp=Z,1.2nm,0.8s,baz=294,slow=16,SNR=4.3							
ASAR				LR	LR		13 32 02.6	
	comp=Z,115nm,19.5s,MS3.6,baz=348,slow=38							
LSA	**Lhasa**	**36.48**	**343**	P	P		13 16 45.3	+1.1
LSA	**Lhasa**	**36.48**	**343**	*e*P	P		13 16 45.2	+1.0
	comp=Z,7.6nm,0.7s,mb4.7							
PKI	**Pulchoki**	**36.65**	**334**	*e*P	P		13 16 45.9	+0.3
	comp=Z,24nm,0.8s,mb5.1							
DMN	**Daman**	**36.81**	**334**	*e*P	P		13 16 47.9	+0.9
KKN	**Kakani**	**36.89**	**334**	*e*P	P		13 16 48.4	+0.7
	comp=Z,37nm,0.7s,mb5.3							
GKN	**Gorkha**	**37.36**	**333**	*e*P	P		13 16 52.6	+1.0
	comp=Z,64nm,0.9s,mb5.5							
KOLN	**Koldanda**	**37.64**	**332**	*e*P	P		13 16 55.0	+1.1
	comp=Z,20nm,0.5s,mb5.1							
SSE	**Sheshan**	**40.31**	**25**	P	P		13 17 19.8	+3.7
SSE				AMB	AMB			
	comp=Z,69nm,3.8s							
JOW	**Kunigami**	**40.47**	**37**	P	P		13 17 17.9	+0.5
	comp=Z,9.5nm,0.9s,mb4.5,baz=247,slow=16,SNR=2.6							
NDI	**New Delhi**	**41.69**	**326**	*e*P	P		13 17 27.5	0.0
GTA	**Gaotai**	**44.55**	**357**	P	P		13 17 52.0	+1.3
GTA				AMB	AMB			
	comp=Z,8.0nm,1.0s,mb4.5							
GTA				AMB	AMB			
	comp=Z,28nm,5.0s							
CTAO	**Charters Tower**	**44.90**	**113**	P	P		13 17 54.5	+0.8
	comp=Z,33nm,1.5s,mb5.0							
STKA	**Stephens Creek**	**45.05**	**131**	⇓*i*P	P		13 17 56.0	+1.3
	comp=Z,14nm,0.6s,mb5.0							
STKA	**Stephens Creek**	**45.05**	**131**	P	P		13 17 55.9	+1.1
	comp=Z,18nm,0.7s,mb5.0,baz=304,slow=8.2,SNR=30							
STKA				LR	LR		13 38 53.9	
	comp=Z,124nm,18.8s,MS3.9,baz=320,slow=39							
JNU	**Nakatsue**	**46.68**	**33**	P	P		13 18 08.2	+0.6
	comp=Z,3.5nm,0.5s,mb4.5,baz=138,slow=12,SNR=3.9							
BJI	**Beijing**	**46.81**	**14**	P	P		13 18 09.1	+0.5
BJI				AMB	AMB			
	comp=Z,10.0nm,0.6s,mb4.9							
CBIJ	**Chichi jima**	**50.01**	**48**	P	P		13 18 34.0	+0.5
	comp=Z,56nm,0.7s,mb5.7,baz=262,slow=21,SNR=2.1							
WMQ	**Urumqi**	**50.70**	**346**	⇑*i*P	P		13 18 39.8	+1.2
CN2	**Changchun**	**53.04**	**21**	*e*P	P		13 18 55.3	-0.9
CN2				*e*AP	pP		13 19 06.8	-4.2
CN2				AMB	AMB			
	comp=Z,10.0nm,0.6s,mb4.9							
ULN	**Ulaanbaatar**	**53.07**	**4**	*d i*P	P		13 18 57.4	+1.0
ULN	**Ulaanbaatar**	**53.07**	**4**	*e*P	P		13 18 56.5	+0.2
	comp=Z,4.8nm,0.8s,mb4.5							
ULN				*e*	pP		13 19 09.4	-1.9
MKAR	**Makanchi Array**	**54.89**	**343**	P	P		13 19 09.4	-0.3
	comp=Z,7.5nm,0.5s,mb5.0,baz=146,slow=8.4,SNR=80							
MKAR				pP	pP		13 19 22.1	-2.5
	comp=Z,14nm,0.6s,baz=153,slow=8.0,SNR=19							
MKAR				LR	LR		13 46 54.3	
	comp=Z,35nm,19.9s,MS3.4,baz=326,slow=41							
MKAR	**Makanchi Array**	**54.89**	**343**	P	P		13 19 09.4	-0.3
MKAR				*PP	pP		13 19 22.1	-2.6
MKAR				pmax	pmax			
	comp=Z,8.0nm,0.5s							
MKAR				pmax	pmax			
	comp=Z,14nm,0.6s							
MKAR				MLR	MLR			
	comp=Z,35nm,19.9s							
ZAK	**Zakamensk**	**55.45**	**1**	*e*P	P		13 19 13.9	+0.2
ZAK				*e*	pP		13 19 27.6	-1.1
HIA	**Hailar**	**56.35**	**13**	*e*P	P		13 19 18.9	-1.3
	comp=Z,16nm,1.2s,mb4.9							
TLY	**Talaya**	**56.76**	**1**	*e*P	P		13 19 18.9	-4.1
TLY				pmax	pmax			
	comp=Z,56nm,0.8s,mb5.7							
TLY				MLR	MLR			
	comp=Z,700nm,18.0s,MS4.8							
KURK	**Kurchatov**	**59.49**	**343**	*i* P	P		13 19 41.5	-0.6
KURK				pmax	pmax			
	comp=Z,6.0nm,1.4s,mb4.4							
KURK	**Kurchatov**	**59.49**	**343**	*e*P	P		13 19 41.4	-0.7
KLR	**Kul'dur**	**59.94**	**22**	*e*P	P		13 19 41.2	-4.1
ZAL	**Zalesovo**	**60.87**	**348**	P	P		13 19 50.9	-0.6
	comp=Z,6.7nm,0.6s,mb5.0,baz=198,slow=4.1,SNR=38							
ZAL				pP	pP		13 20 04.2	-2.5
	comp=Z,11nm,0.5s,baz=224,slow=4.3,SNR=14							
ZAL				LR	LR		13 50 02.5	
	comp=Z,120nm,19.6s,MS4.0,baz=194,slow=40							
ZAL	**Zalesovo**	**60.87**	**348**	P	P		13 19 50.9	-0.6
ZAL				*PP	pP		13 20 04.2	-2.5
ZAL				pmax	pmax			
	comp=Z,7.0nm,0.6s							
ZAL				pmax	pmax			
	comp=Z,11nm,0.5s							
ZAL				MLR	MLR			
	comp=Z,121nm,19.6s							
ZAL	**Zalesovo**	**60.87**	**348**	P	P		13 19 50.9	-0.6
ZAL				pP	pP		13 20 04.2	-2.5
ZAL				LR	LR		13 50 02.5	
BOD	**Bodaibo**	**63.58**	**7**	*e*P	P		13 20 07.3	-2.2
BOD				*e*	pP	

ARCES	**ARCESS Array B**	**90.43**	**340**	P	**P**	**13 22 40.0**	**+1.2**
ARCES				pmax	pmax		
	comp=Z,2.0nm,1.1s						
SPITS	**Spitsbergen Ar**	**94.36**	**348**	LR	LR	14 11 09.7	
	comp=Z,3.1nm,18.1s,MS2.8,baz=297,slow=39						
PDAR	**Pinedale Array**	**133.06**	**32**	PKP	PKPdf	13 28 54.4	+2.1
	comp=Z,0.2nm,0.4s,baz=288,slow=8.6,SNR=2.4						
PDAR				SKPbc		13 32 20.3	
	comp=Z,0.2nm,0.6s,slow=2.7,SNR=3.4						
WMOK	**Wichita Mounta**	**144.65**	**31**	*e*PKPdf	PKPdf	13 29 11.6	-1.8
CCM	**Cathedral Cave**	**145.04**	**19**	*e*PKPdf	PKPdf	13 29 15.0	+1.0
CCM				*e*		13 29 29.0	
TXAR	**Lajitas Array**	**145.53**	**43**	PKPbc	PKPbc	13 29 18.5	+2.7
	comp=Z,2.4nm,0.4s,baz=278,slow=0.9,SNR=87						
TXAR				pPKPbc		13 29 31.3	
	comp=Z,6.8nm,0.9s,baz=278,slow=1.7,SNR=13						
WCI	**Wyandotte Cave**	**146.23**	**13**	*e*P	PKPdf	13 29 19.1	+3.1
JCT	**Junction City**	**147.25**	**37**	*e*PKPbc	PKPdf	13 29 22.6	+4.6
JCT				*e*		13 29 35.2	
WVT	**Waverly**	**147.85**	**16**	*e*PKPbc	PKPdf	13 29 23.2	+4.5

NEIC ***23*** *13:12:28.3, 8.18S×114.49E, h33km, ML4.3(DJA), After DJA.*

DJA 23 13:12:28.3±0.4, 8.19S×114.48E, h33km, MD5.3/4, ML4.3/3, 6C-3D, Error ellipse: s-maj=22.1km s-min=10.3km az=21.0, Bali region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
KELI	**Kelakatan**	**0.03**	**164**	⇓*i*	Pg	Pn	13 12 33.5	+1.3
	80nm,0.2s							
KELI				⇑*e*	Sg	Sn	13 12 37.1	+2.7
INGI	**Ingas**	**0.90**	**134**	⇑*i*	Pn	Pn	13 12 43.8	-1.0
	302nm,0.2s							
INGI				⇓*i*	Sn	Sn	13 12 54.7	-2.0
INGI	**Ingas**	**0.90**	**134**	⇑*i*	Pn	Pn	13 12 43.8	-1.0
INGI				*i*	Sn	Sn	13 12 55.9	-0.8
RATI	**Rata**	**1.16**	**117**	⇓*e*	Pn	Pn	13 12 46.8	-1.7
	975nm,0.2s							
RATI				⇑*e*	Sn	Sn	13 13 01.2	-2.1
KEDI	**Kedomdong**	**1.64**	**100**	⇑*i*	Pn	Pn	13 12 53.7	-1.6
	157nm,0.2s							
KEDI				⇑*e*	Sn	Sn	13 13 11.8	-3.6

DJA 23 13:14:55.7±0.3, 8.55S×115.86E, h80km, MD5.0/4, ML4.2/1, 8C, Error ellipse: s-maj=21.5km s-min=9.4km az=175.0, Bali region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
KEDI	**Kedomdong**	**0.26**	**75**	⇑*i*	Pn	P	13 15 07.7	-0.1
	604nm,0.2s							
KEDI				⇑*i*	Sn	S	13 15 15.9	-1.0
RATI	**Rata**	**0.37**	**242**	⇑*i*	Pn	P	13 15 07.2	-1.3
	1μm,0.2s							
RATI				⇑*e*	Sn	S	13 15 17.5	-0.6
INGI	**Ingas**	**0.76**	**249**	⇑*e*	Pn	P	13 15 12.0	-0.2
	2μm,0.2s							
INGI				⇑*i*	Sn	S	13 15 24.3	-0.1
KELI	**Kelakatan**	**1.40**	**284**	⇑*e*	Pn	P	13 15 19.8	-0.4
	256nm,0.2s							
KELI				⇑*i*	Sn	S	13 15 36.0	-2.3

NIED ***23*** *13:42:00, 27.30N×129.60E, h20km, Mw4.3 Best double couple: M0 2.88×10^15 NP1:φs 38°, δ71°, λ105°. NP2:φs 179°, δ24°, λ53°.*
IDC ***23*** *13:42:22.9±0.8, 27.39N×129.45E, mb3.9/10, mb1 4.0/11, mb1mx3.9/23, ML3.8/1, MS3.6/4, Ms1 3.7/4, ms1mx3.2/26, Error ellipse: s-maj=23.5km s-min=16.3km az=110.0*
JMA ***23*** *13:42:25.3±0.2, 27.27N×129.57E, h20km, M3.9*
NEIC ***23*** *13:42:27.7±3.5, 27.37N×129.35E, h31km±24km, mb3.9/1, Error ellipse: s-maj=18.2km s-min=11.1km az=103.0*

ISC 23 13:42:25.5±1.1, 27.29N±0.04×129.58E±0.04, h29km±8km, n30, σ0s93/36, mb4.0/11, MS3.8/2, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
JTK	**Tokunoshima**	**0.75**	**312**	P		**Pb**	**13 42 39.5**	**-0.5**
JTK				S		**Sb**	**13 42 50.1**	**+0.2**
JZK	**Kikaishima**	**1.08**	**18**	P		**Pn**	**13 42 45.8**	**+0.8**
JZK				*e*S		**Sn**	**13 43 00.5**	**+1.4**
JAM	**Amami Oshima**	**1.12**	**1**	P		**Pn**	**13 42 45.3**	**-0.2**
JAM				*e*S		**Sn**	**13 43 00.9**	**+0.8**
JOW	**Kunigami**	**1.25**	**249**	Pn		**Pn**	**13 42 47.5**	**+0.2**
	53nm,0.3s,baz=98,slow=22,SNR=177							
JOW				Sn		**Sn**	**13 43 04.5**	**+1.1**
	173nm,0.3s,baz=61,slow=26,SNR=14							
JOW	**Kunigami**	**1.25**	**249**	P		**Pn**	**13 42 47.9**	**+0.5**
JOW				*e*S		**Sn**	**13 43 04.4**	**+1.0**
JIH	**Iheya**	**1.46**	**261**	P		**Pn**	**13 42 50.8**	**+0.4**
JIH				*e*S		**Sn**	**13 43 09.2**	**+0.5**
JJT2	**Tamagusuku 2**	**2.00**	**236**	P		**Pn**	**13 42 58.6**	**+0.5**
NAH1	**Naha**	**2.01**	**238**	*e*S		**Sn**	**13 43 23.6**	**+1.0**
JMZ	**Minamidaito 2**	**2.07**	**135**	P		**Pn**	**13 42 59.4**	**+0.3**
JMZ				*e*S		**Sn**	**13 43 24.1**	**-0.1**
JAGN	**Aguni-jima**	**2.20**	**252**	P		**Pn**	**13 43 00.8**	**-0.2**
JAGN				*e*S		**Sn**	**13 43 27.1**	**-0.5**
JKE	**Kume jima 2**	**2.68**	**250**	P		**Pn**	**13 43 07.0**	**-0.8**
JKE				*e*S		**Sn**	**13 43 39.0**	**-0.6**
JNU	**Nakatsue**	**5.92**	**11**	Pn		**Pn**	**13 43 52.8**	**-1.0**
	2.6nm,0.3s,baz=300,slow=17,SNR=14							
JHJ	**Hachijo jima 2**	**10.56**	**54**	LR		LR	13 48 37.3	
	comp=Z,267nm,18.9s,baz=104,slow=35							
ASAJ	**Asahikawa**	**19.80**	**29**	LR		LR	13 54 50.1	
	comp=Z,133nm,20.8s,baz=275,slow=38							
CMAR	**Chiang Mai Arr**	**29.50**	**259**	LR		LR	14 01 54.7	
	comp=Z,78nm,18.0s,MS3.4,baz=80,slow=40							
MKAR	**Makanchi Array**	**41.75**	**311**	P		**P**	**13 50 10.7**	**-3.1**
	0.3nm,0.5s,mb3.2,baz=97,slow=9.9,SNR=4.1							
KURK	**Kurchatov**	**44.90**	**316**	*e*P		**P**	**13 50 36.4**	**-2.9**
WRA	**Warramunga Arr**	**47.17**	**174**	P		**P**	**13 50 57.4**	**-0.3**
	1.2nm,0.8s,mb3.9,baz=354,slow=8.4,SNR=8.0							
BVAR	**Borovoye Array**	**50.30**	**318**	P		**P**	**13 51 20.5**	**-1.0**
	0.6nm,0.6s,mb3.8,baz=91,slow=13,SNR=3.7							
BVAR				LR		LR	14 14 37.3	
	comp=Z,196nm,19.5s,MS4.1,baz=50,slow=39							
ASAR	**Alice Springs**	**50.82**	**175**	P		**P**	**13 51 26.5**	**+0.7**
	0.8nm,0.8s,mb3.7,baz=7.5,slow=10,SNR=10							
INK	**Inuvik**	**67.44**	**24**	P		**P**	**13 53 19.7**	**-0.6**
	0.5nm,0.6s,mb3.7,baz=253,slow=6.4,SNR=9.2							
INK	**Inuvik**	**67.44**	**24**	*e*P		**P**	**13 53 20.0**	**-0.3**
	0.5nm,0.5s,mb3.8							
FINES	**FINESS Array B**	**72.54**	**331**	P		**P**	**13 53 50.4**	**-1.0**
	1.2nm,0.8s,mb3.9,baz=63,slow=4.3,SNR=6.1							
BRTR	**Keskin Array B**	**77.34**	**308**	P		**P**	**13 54 18.7**	**-0.6**
	0.9nm,0.6s,mb3.9,baz=101,slow=3.6,SNR=5.9							
NB2	**NORSAR Subarra**	**78.90**	**334**	P		**P**	**13 54 26.5**	**-0.9**
	1.9nm,0.7s,mb4.1,baz=53,slow=5.8							
NOA	**NORSAR Array B**	**78.90**	**334**	P		**P**	**13 54 26.8**	**-0.6**
	1.5nm,0.7s,mb4.0,baz=51,slow=5.6,SNR=5.2							
CLL	**Collm**	**83.97**	**326**	P		**P**	**13 54 57.5**	**+3.3**
GERES	**GERESS Array B**	**85.08**	**323**	P		**P**	**13 54 59.3**	**-0.5**
	1.1nm,0.7s,mb4.1,baz=100,slow=8.1,SNR=5.1							
BORG	**Borgarnes**	**85.51**	**348**	P		**P**	**13 55 02.1**	**+0.6**
	12nm,0.8s,mb5.2,baz=296,slow=7.1,SNR=3.3							
DAVOX	**Davos**	**88.39**	**323**	P		**P**	**13 55 17.6**	**+1.6**
	1.5nm,0.5s,mb4.5,baz=17,slow=11,SNR=4.1							

NEIC ***23*** *13:47:29.4±0.8, 15.09N×92.99W, mb4.0/13, MD4.5(MEX), Error ellipse: s-maj=13.3km s-min=8.0km az=194.0*
MEX ***23*** *13:47:30.7±1.1, 15.12N×93.13W, h73km±27km, MD4.5*
IDC ***23*** *13:47:30.2±1.3, 15.20N×92.92W, h86km±8km, mb3.8/6, mb1 4.2/8, mb1mx3.8/21, MS3.4/3, Ms1 3.4/3, ms1mx3.0/21, Error ellipse: s-maj=24.9km s-min=17.4km az=13.0*
CASC ***23*** *13:47:30.6±1.4, 15.26N×93.14W, h35km±441km, MD4.5, ML4.7, mb4.0(NEIC)*

ISC 23 13:47:30.3±0.3, 15.30N±0.04×93.10W±0.03, h85km±4km, h81km±5.2km:pP-P, n73, σ1s14/101, mb4.0/12, 5C, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
TPX	**Tapachula**	**0.90**	**115**	*i*	P	**P**	**13 47 45.5**	**-3.3**
TPX				*i*	S	**S**	**13 47 59.5**	**-3.1**
CCIG	**Comitan**	**1.35**	**43**	*e*	P	**P**	**13 47 55.7**	**+1.2**
CCIG				*e*	S	**S**	**13 48 12.2**	**-0.2**
SCX	**San Cristobal**	**1.50**	**17**	*i*	P	**P**	**13 47 57.7**	**+1.3**
SCX				*i*	S	**S**	**13 48 17.5**	**+1.9**
JAT	**Jato**	**1.72**	**124**	*e*	P	**P**	**13 47 57.6**	**-1.6**
JAT				*e*	S	**S**	**13 48 19.2**	**-1.3**
JAT				AML	AML		13 48 22.6	
	comp=E,26μm,0.2s							
TP2	**Tecpan 2**	**2.08**	**104**	*e*	P	**P**	**13 48 04.0**	**0.0**
TP2				*e*	S	**S**	**13 48 30.5**	**+1.7**
TP2				AML	AML		13 48 34.2	
	comp=E,3μm,0.4s							
CMIG	**Matias Romero**	**2.47**	**316**	*e*	P	**P**	**13 48 08.7**	**-0.8**
CMIG				*e*	S	**S**	**13 48 39.5**	**+0.8**
IXG	**Ixpaco**	**2.79**	**113**	*e*	P	**P**	**13 48 13.6**	**-0.4**
IXG				*e*	S	**S**	**13 48 47.6**	**+0.9**
IXG				AML	AML		13 49 00.8	
	comp=N,28μm,0.4s							
HUIG	**Huatulco**	**2.94**	**280**	*i*	P	**P**	**13 48 12.2**	**-3.8**
HUIG				*i*	S	**S**	**13 48 45.5**	**-4.7**
TUIG	**Tuzandepetl**	**3.00**	**335**	*i*	P	**P**	**13 48 16.2**	**-0.7**
TUIG				*i*	S	**S**	**13 48 50.7**	**-1.2**
TUIG	**Tuzandepetl**	**3.00**	**335**	*e*	P	**P**	**13 48 16.1**	**-0.8**
TUIG				*e*	S	**S**	**13 48 50.8**	**-1.1**
CUSS	**Cusmapa**	**3.35**	**114**	⇑*e*	P	**P**	**13 48 21.1**	**-0.6**
CUSS				*e*	S	**S**	**13 49 01.2**	**+0.7**
RBDL	**Robledal**	**3.51**	**109**	⇑*e*	P	**P**	**13 48 22.5**	**-1.4**
RTR	**El Retiro**	**3.62**	**112**	*e*	P	**P**	**13 48 24.7**	**-0.8**
RTR				*e*	S	**S**	**13 49 08.4**	**+1.1**
SBLS	**San Blas**	**3.67**	**113**	*e*	P	**P**	**13 48 25.5**	**-0.6**
SBLS				*e*	S	**S**	**13 49 08.9**	**+0.5**
SNJE	**San Jose**	**3.67**	**112**	*e*	P	**P**	**13 48 25.9**	**-0.2**
SNJE				*e*	S	**S**	**13 49 09.1**	**+0.6**
MTO2	**Montecristo 2**	**3.73**	**103**	*e*	P	**P**	**13 48 26.6**	**-0.3**
EVV	**El Vigia**	**3.81**	**326**	*i*	P	**P**	**13 48 27.8**	**-0.2**
OXX	**Oaxaca**	**3.91**	**298**	*i*	P	**P**	**13 48 29.5**	**+0.1**
OXX				*i*	S	**S**	**13 49 13.8**	**-0.5**
VHO	**Vista Hermosa**	**3.91**	**297**	*i*	P	**P**	**13 48 29.1**	**-0.4**
VHO				*i*	S	**S**	**13 49 13.9**	**-0.5**
BOQS	**Boqueron**	**4.01**	**112**	⇑*e*	P	**P**	**13 48 31.3**	**+0.4**
BOQS				*e*	S	**S**	**13 49 17.4**	**+0.5**
PICS	**Picacho**	**4.04**	**112**	⇑*e*	P	**P**	**13 48 31.9**	**+0.7**
PICS				*e*	S	**S**	**13 49 18.5**	**+1.0**
LFU	**La Fuente**	**4.16**	**111**	*e*	P	**P**	**13 48 33.4**	**+0.6**
LFU				*e*	S	**S**	**13 49 20.1**	**-0.5**
LBRS	**Las Brisas**	**4.22**	**111**	*e*	P	**P**	**13 48 33.8**	**0.0**
LBRS				*e*	S	**S**	**13 49 21.9**	**-0.3**
LFRS	**El Faro**	**4.25**	**112**	*e*	P	**P**	**13 48 33.9**	**-0.3**
LFRS				*e*	S	**S**	**13 49 23.2**	**+0.3**
LCBS	**La Ceiba**	**4.32**	**112**	*e*	P	**P**	**13 48 34.0**	**-1.1**
LCBS				*e*	S	**S**	**13 49 24.9**	**+0.4**
SNVI	**San Vicente**	**4.46**	**112**	*e*	P	**P**	**13 48 37.2**	**+0.2**
SNVI				*e*	S	**S**	**13 49 28.5**	**+0.5**
VSM	**San Miguel**	**5.03**	**111**	*e*	P	**P**	**13 48 45.9**	**+1.0**
VSM				*e*	S	**S**	**13 49 43.3**	**+0.9**
BLLM	**Bellamira**	**5.06**	**111**	*e*	S	**S**	**13 49 43.3**	**+0.3**
CNCH	**Conchagua**	**5.49**	**111**	*e*	P	**P**	**13 48 50.0**	**-1.1**
CNCH				*e*	S	**S**	**13 49 53.9**	**+0.3**
IISM	**Ciudad Serdan**	**5.49**	**313**	*i*	P	**P**	**13 48 52.5**	**+1.3**
PPM	**Popocatepetl**	**6.47**	**306**	*e*	P	**P**	**13 49 03.0**	**-1.8**
PPM				*e*			13 49 05.9	
PPM				*e*	S	**S**	**13 50 18.9**	**+1.0**
PPM	**Popocatepetl**	**6.47**	**306**	*e*	P	**P**	**13 49 05.9**	**+1.1**
PPM				*e*	S	**S**	**13 50 18.9**	**+1.0**
YAIG	**Yautepec**	**6.72**	**303**	*i*	P	**P**	**13 49 08.7**	**+0.6**
TEIG	**Tepich**	**6.72**	**42**	P		**P**	**13 49 06.6**	**-1.7**
	comp=N,28nm,0.3s,baz=184,slow=13,SNR=43							
TEIG				S		**S**	**13 50 20.2**	**-3.8**
	comp=N,52nm,0.3s,baz=327,slow=22,SNR=10							
TEIG	**Tepich**	**6.72**	**42**	*e*Pn		**P**	**13 49 06.3**	**-1.9**
JCT	**Junction City**	**16.32**	**339**	*e*Pn		**P**	**13 51 18.4**	**+2.9**
	comp=N,12nm,1.0s							
JCT				Sn		**S**	**13 53 58.1**	**-15**
TXAR	**Lajitas Array**	**17.03**	**327**	P		**P**	**13 51 25.9**	**+1.4**
	comp=N,0.3nm,0.3s,baz=151,slow=13,SNR=47							
TXAR	**Lajitas Array**	**17.03**	**327**	P		**P**	**13 51 25.9**	**+1.4**
LRAL	**Lakeview Retre**	**18.51**	**16**	*e*P		**P**	**13 51 41.9**	**-0.4**
	comp=N,5.7nm,0.5s							
LRAL				*e*S		**S**	**13 54 54.0**	**-8.5**
MIAR	**Mount Ida**	**19.17**	**359**	*e*P		**P**	**13 51 47.4**	**-2.3**
	comp=N,22nm,1.0s							
MIAR				*e*S		**S**	**13 55 09.6**	**-7.2**
CLNB	**Carlsbad**	**19.54**	**332**	*e*P		**P**	**13 51 53.9**	**+0.3**
GDL2	**Guadalupe Moun**	**19.71**	**331**	*e*P		**P**	**13 51 56.2**	**+0.7**
MNTX	**Cornudas Mount**	**19.81**	**328**	*e*P		**P**	**13 51 56.5**	**0.0**
	comp=N,2.6nm,0.7s							
WMOK	**Wichita Mounta**	**20.02**	**346**	*e*P		**P**	**13 51 56.6**	**-2.1**
	comp=N,1.8nm,0.8s							
WMOK				*e*S		**S**	**13 55 30.6**	**-3.5**
PLAL	**Pickwick Lake**	**20.12**	**12**	*e*P		**P**	**13 51 58.3**	**-1.4**
	comp=N,5.3nm,0.6s							
PLAL				*e*S		**S**	**13 55 34.4**	**-1.5**
CPRX	**Cap Rock**	**20.18**	**333**	*e*P		**P**	**13 52 00.6**	**+0.2**
WVT	**Waverly**	**21.28**	**12**	*e*P		**P**	**13 52 10.2**	**-1.3**
	comp=N,4.8nm,0.5s,mb4.1							
BNM	**Barren Site**	**22.39**	**329**	*e*P		**P**	**13 52 25.9**	**+3.4**
CCM	**Cathedral Cave**	**22.73**	**4**	*e*P		**P**	**13 52 24.5**	**-1.3**
SDV	**Santo Domingo**	**22.86**	**104**	P		**P**	**13 52 25.7**	**-1.6**
	comp=N,2.7nm,0.5s,mb3.8,baz=270,slow=20,SNR=2.6							
SDV				pP			13 52 42.2	
	comp=N,3.8nm,0.6s,baz=311,slow=11,SNR=2.4							
ANMO	**Albuquerque**	**22.96**	**331**	*e*P		**P**	**13 52 29.6**	**+1.5**
	comp=N,3.6nm,0.9s,mb3.7							
TUC	**Tucson**	**23.36**	**320**	*e*P		**P**	**13 52 35.1**	**+3.2**
	comp=N,2.3nm,0.9s,mb3.5							
WCI	**Wyandotte Cave**	**23.62**	**13**	P		**P**	**13 52 34.2**	**-0.1**
	comp=N,5.9nm,0.8s,mb4.0							
WUAZ	**Wupatki**	**25.95**	**324**	P		**P**	**13 52 58.6**	**+2.0**
	comp=N,4.8nm,1.0s,mb3.9							
RW3	**Ridgeway**	**26.24**	**333**	*e*P		**P**	**13 53 01.5**	**+2.2**
PV10	**Paradox Valley**	**26.95**	**332**	*e*P		**P**	**13 53 06.4**	**+0.6**
NEN	**Nelson**	**28.09**	**320**	*e*P		**P**	**13 53 15.3**	**-0.9**
PCRV	**Puerto La Cruz**	**28.21**	**97**	LR		LR	14 03 28.4	
	comp=N,83nm,20.8s,baz=292,slow=34							
PDAR	**Pinedale Array**	**30.81**	**336**	P		**P**	**13 53 38.7**	**-1.5**
	comp=N,1.1nm,0.8s,mb3.6,baz=143,slow=7.4,SNR=8.6							
PDAR				pP		pP	13 54 00.4	+0.4
	comp=N,0.7nm,0.8s,baz=180,slow=5.9,SNR=3.1							
PDAR	**Pinedale Array**	**30.81**	**336**	P		**P**	**13 53 38.7**	**-1.5**
PDAR				pP		pP	13 54 00.4	+0.4
SADO	**Sadowa**	**31.67**	**19**	LR		LR	14 08 22.9	
	comp=N,48nm,18.2s,baz=70,slow=40							
NVAR	**Mina Array Bea**	**32.00**	**321**	P		**P**	**13 53 51.9**	**+1.2**
	comp=N,1.3nm,0.7s,mb3.8,baz=126,slow=9.0,SNR=13							
NVAR				pP		pP	13 54 10.0	-0.6
	comp=N,2.6nm,0.8s,baz=128,slow=9.7,SNR=8.3							
QLMT	**Earthquake Lak**	**33.28**	**336**	*e*P		**P**	**13 54 03.1**	**+1.4**
HLID	**Hailey**	**33.53**	**331**	*e*P		**P**	**13 54 04.4**	**+0.5**
	comp=N,1.8nm,0.9s,mb3.9							
MCMT	**McKenzie Canyo**	**33.85**	**334**	*e*P		**P**	**13 54 08.0**	**+1.3**
YBH	**Yreka Blue Hor**	**36.69**	**322**	P		**P**	**13 54 30.3**	**-0.5**
	comp=N,2.7nm,1.1s,mb4.1,baz=170,slow=11,SNR=2.3							
SCHQ	**Schefferville**	**44.40**	**21**	LR		LR	14 17 46.8	
	comp=N,51nm,19.6s,baz=62,slow=41							
DLBC	**Dease Lake**	**51.04**	**336**	*e*P		**P**	**13 56 26.7**	**+1.0**
DLBC				*e*		pP	13 56 45.9	-0.9
INK	**Inuvik**	**58.90**	**344**	P		**P**	**13 57 20.4**	**-2.1**
	comp=N,7.4nm,1.0s,mb4.7,baz=136,slow=6.3,SNR=41							
INK	**Inuvik**	**58.90**	**344**	⇑*e*	P	**P**	**13 57 20.6**	**-1.8**
	comp=N,12nm,1.1s,mb4.8							
ILAR	**Eielson Array**	**61.23**	**337**	P		**P**	**13 57 36.9**	**-1.6**
	comp=N,5.5nm,1.2s,mb4.5,baz=117,slow=3.5,SNR=16							
ILAR				pP		pP	13 57 57.5	-2.7
	comp=N,1.5nm,1.0s,baz=117,slow=3.2,SNR=4.5							
WRA	**Warramunga Arr**	**134.66**	**257**	PKP		PKPdf	14 06 38.9	-1.0
	comp=N,0.5nm,1.1s,baz=84,slow=2.1,SNR=5.1							
ASAR	**Alice Springs**	**135.07**	**252**	PKP		PKPdf	14 06 39.2	-1.5
	comp=N,0.3nm,1.0s,baz=96,slow=3.2,SNR=5.0							

NEIC ***23*** *14:03:28.4, 40.29S×174.00E, h13km, ML3.9(WEL), After WEL.*

WEL 23 14:03:28.2±0.1, 40.29S×174.01E, h12km±1km, ML3.7/8, 1C-1D, Error ellipse: s-maj=0.9km s-min=0.4km az=90.0, Cook Strait

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
KIW	**Kapiti Island**	**0.90**	**130**	⇓P*		Pb	14 03 44.7	-0.4
KIW	**Kapiti Island**	**0.90**	**130**	P		Pb	14 03 44.7	-0.4
WAZ	**Wanganui**	**0.92**	**55**	P*		Pb	14 03 44.7	-0.8
WAZ				S*		Sb	14 03 57.6	+0.2
WAZ	**Wanganui**	**0.92**	**55**	P		Pb	14 03 44.8	-0.7
WAZ				S		Sb	14 03 57.6	+0.2
NRZ	**Ngariki Road**	**0.95**	**356**	P*		Pb	14 03 45.5	-0.6
NRZ	**Ngariki Road**	**0.95**	**356**	P		Pb	14 03 46.1	+0.1
DFE	**Dawson Falls**	**0.96**	**4**	P*		Pb	14 03 46.4	+0.2
NEZ	**North Egmont**	**1.02**	**4**	P*		Pb	14 03 47.0	-0.2
NEZ	**North Egmont**	**1.02**	**4**	P		Pb	14 03 47.1	-0.1
NWEZ	**Newall Road**	**1.02**	**354**	P*		Pb	14 03 46.9	-0.3
NWEZ	**Newall Road**	**1.02**	**354**	P		Pb	14 03 47.0	-0.2
RAEZ	**Rainy Point**	**1.04**	**17**	P*		Pb	14 03 47.5	-0.1
RAEZ	**Rainy Point**	**1.04**	**17**	P		Pb	14 03 48.1	+0.5
NNZ	**Nelson**	**1.05**	**207**	⇑P*		Pb	14 03 47.4	-0.3
NNZ				S*		Sb	14 04 01.4	+0.3
NNZ	**Nelson**	**1.05**	**207**	P		Pb	14 03 47.4	-0.3
NNZ				S		Sb	14 04 02.2	+1.1
MRW	**Makara Radio**	**1.08**	**151**	P*		Pb	14 03 47.9	-0.4
MRW				S*		Sb	14 04 01.7	-0.3
MRW	**Makara Radio**	**1.08**	**151**	P		Pb	14 03 48.1	-0.1
MRW				S		Sb	14 04 02.0	-0.1
PKE	**Pukeiti**	**1.09**	**359**	P*		Pb	14 03 47.8	-0.6
PKE	**Pukeiti**	**1.09**	**359**	P		Pb	14 03 48.0	-0.4
TUWZ	**Tuamarina**	**1.14**	**182**	P*		Pb	14 03 48.7	-0.7
TUWZ				S*		Sb	14 04 03.2	-0.8
CAW	**Cannon Point**	**1.15**	**136**	P*		Pb	14 03 49.0	-0.5
CAW				S*		Sb	14 04 03.8	-0.3
CAW	**Cannon Point**	**1.15**	**136**	P		Pb	14 03 49.1	-0.4
CAW				S		Sb	14 04 04.2	+0.1
SNZO	**South Karori**	**1.15**	**153**	P*		Pb	14 03 49.0	-0.4
SNZO				S*		Sb	14 04 03.7	-0.5
SNZO	**South Karori**	**1.15**	**153**	P		Pb	14 03 49.1	-0.4
WEL	**Wellington**	**1.15**	**150**	P*		Pb	14 03 49.3	-0.3
WEL				S*		Sb	14 04 04.3	+0.1
WEL	**Wellington**	**1.15**	**150**	P		Pb	14 03 49.6	+0.1
QRZ	**Quartz Range**	**1.25**	**244**	PN		Pn	14 03 49.8	-1.6
QRZ	**Quartz Range**	**1.25**	**244**	*e*P		Pb	14 03 50.3	-0.9
MRZ	**Mangatainoka R**	**1.26**	**108**	PN		Pn	14 03 50.7	-0.9
VRZ	**Vera Road**	**1.30**	**27**	PN		Pn	14 03 50.7	-1.4
VRZ	**Vera Road**	**1.30**	**27**	P		Pn	14 03 51.0	-1.0
BHW	**Baring Head**	**1.30**	**150**	PN		Pn	14 03 51.6	-0.6
BHW	**Baring Head**	**1.30**	**150**	P		Pb	14 03 51.6	-0.4
BSWZ	**Blackbirch Sta**	**1.43**	**184**	PN		Pn	14 03 53.8	-0.2
MTW	**Mount Morrison**	**1.43**	**128**	PN		Pn	14 03 53.0	-1.0
MTW	**Mount Morrison**	**1.43**	**128**	P		Pn	14 03 53.2	-0.8
MSWZ	**Moikau Station**	**1.47**	**141**	PN		Pn	14 03 53.7	-0.9
TSZ	**Takapari Road**	**1.51**	**82**	PN		Pn	14 03 54.6	-0.6
TSZ				SN		Sn	14 04 14.4	-0.5
TSZ	**Takapari Road**	**1.51**	**82**	P		Pn	14 03 55.4	+0.2
TSZ				S		Sb	14 04 14.5	-0.2
WNVZ	**Wahianoa**	**1.55**	**52**	PN		Pn	14 03 55.0	-0.8
WNVZ				SN		Sn	14 04 14.3	-1.6
FWVZ	**Far West T-bar**	**1.57**	**50**	PN		Pn	14 03 55.1	-0.9
FWVZ	**Far West T-bar**	**1.57**	**50**	P		Pn	14 03 55.3	-0.8
WPVZ	**Whakapapa**	**1.60**	**48**	PN		Pn	14 03 55.6	-0.9
CNZ	**Chateau**	**1.61**	**48**	PN		Pn	14 03 55.5	-1.1
CNZ	**Chateau**	**1.61**	**48**	P		Pn	14 03 55.8	-0.8
TWVZ	**Taurewa**	**1.64**	**43**	PN		Pn	14 03 55.9	-1.1
NGZ	**Ngauruhoe**	**1.66**	**48**	PN		Pn	14 03 56.4	-0.8
NGZ	**Ngauruhoe**	**1.66**	**48**	P		P

IDC ***23*** *14:28:22.4±0.5,6.24S×151.56E,mb4.9/15,mb1 5.0/17, mb1mx5.0/18,ML3.8/2,MS4.3/16,Ms1 4.3/16, ms1mx4.3/18,Error ellipse: s-maj=17.5km s-min=10.8km az=123.0*

BJI ***23*** *14:28:25.8,6.57S×151.85E,h47km,mB5.1,mb4.8,Ms5.0, Msz4.8*

MOS ***23*** *14:28:26.6±1.2,6.27S×151.49E,h33km,mb5.0/12,Error ellipse: s-maj=17.5km s-min=12.0km az=77.7*

NEIC ***23*** *14:28:27.8±0.2,6.26S×151.59E,mb5.0/19,MS4.8/85, Error ellipse: s-maj=6.8km s-min=4.3km az=117.0*

SYO ***23*** *14:28:27.7,6.26S×151.59E,h33km,MB5.0,MS4.8*

HRVD ***23*** *14:28:27.8±0.2,6.45S×151.76E,h12km,MW5.1/66, Centroid moment Tensor Solution. LP body waves: s44,c66;Mantle waves: s66,c128; Half duration: 0 Moment tensor: Scale 10^16^Nm; Mrr-5.57±.13; Mθθ5.42±.11; Mφφ0.15±.13; Mrθ0.43±.34; Mφθ-0.25±.11; Mφr-2.26±.41; Best double couple: M○5.91×10^16^ NP1: φs75°,δ45°,λ-117°. NP2:φs291°,δ51°,λ-65°. Principal axes: T 5.46, Plg3°, Azm4°; N .91, Plg19°, Azm95°; P -6.36, Plg71°, Azm265°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 23 14:28:22.3±1.4,**6.31S**±0.03×**151.64E**±0.04,**h6**km±8km, **h36**km±1.9km;**pP-P,n230,**σ1§**19**/139,**mb5.0**/48,**MS4.8**/105, **4C-6D,New Britain region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KMBE	**Kimbe**	**1.66**	**297**	*eP*	**Pn**	**14 28 52.2**	**+0.1**
KMBE				*eS*	**Sb**	**14 29 15.4**	**+1.5**
RAB	**Rabaul**	**2.17**	**14**	*eP*	**Pn**	**14 29 00.0**	**+0.6**
WAU	**Wau**	**5.00**	**258**	*eP*	**Pn**	**14 29 42.1**	**+2.5**
PMG	**Port Moresby**	**5.40**	**235**	Pn	**Pn**	**14 29 46.0**	**+0.7**
	27nm,0.3s,baz=43,slow=3.4,SNR=106						
PMG				Sn	**Sn**	**14 30 48.1**	**-0.4**
	44nm,0.3s,baz=27,slow=1.8,SNR=7.4						
PMG				LR	LR	14 31 54.6	
	comp=Z,3μm,21.8s,baz=68,slow=39						
PMG	**Port Moresby**	**5.40**	**235**	P	**Pn**	**14 29 46.0**	**+0.7**
PMG						14 30 48.1	
PMG				pmax	pmax		
	comp=Z,27nm,0.3s						
PMG				smax			
	comp=Z,44nm,0.3s						
PMG				MLR	MLR		
	comp=Z,3μm,21.8s						
PMG	**Port Moresby**	**5.40**	**235**	*eP*	**Pn**	**14 29 47.2**	**+1.9**
PMG				*eS*	**Sn**	**14 30 48.1**	**-0.4**
CTA	**Charters Tower**	**14.66**	**200**	*eP*	**P**	**14 31 58.7**	**+6.5**
	comp=Z,16nm,1.2s						
CTA				*eS*	**S**	**14 34 44.6**	**+8.6**
CTA	**Charters Tower**	**14.66**	**200**	Pn	**P**	**14 31 53.1**	**+0.9**
	comp=Z,0.2nm,0.3s,baz=14,slow=11,SNR=3.2						
CTA				LR	LR	14 36 58.3	
	comp=Z,2μm,20.2s,baz=19,slow=35						
CTA	**Charters Tower**	**14.66**	**200**	Pn	**P**	**14 31 53.1**	**+0.9**
CTA				*eS*	**S**	**14 34 44.6**	**+8.6**
CTA				LR	LR	14 36 58.3	
CTAO	**Charters Tower**	**14.66**	**200**	*eP*	**P**	**14 31 55.8**	**+3.5**
	comp=Z,49nm,1.4s						
KAKA	**Kakadu**	**20.00**	**250**	⇓*iP*	**P**	**14 32 57.0**	**-1.6**
	comp=Z,130nm,0.9s						
KAKA				*eS*	**S**	**14 36 41.7**	**+3.6**
GUMO	**Guam**	**20.89**	**341**	*eP*	**P**	**14 33 07.4**	**-0.4**
	comp=Z,125nm,1.2s						
WRAB	**Tennant Creek**	**21.57**	**230**	*eP*	**P**	**14 33 14.2**	**-0.5**
	comp=Z,110nm,0.8s,mb5.3						
WRAB				LR	LR		
	comp=Z,953nm,20.0s,MS4.2						
WB2	**Warramunga Arr**	**21.58**	**229**	*eP*	**P**	**14 33 14.3**	**-0.5**
WB2				*eS*	**S**	**14 37 11.6**	**+2.4**
WB2				*i*		14 41 01.6	
WRA	**Warramunga Arr**	**21.59**	**230**	P	**P**	**14 33 14.3**	**-0.6**
	comp=Z,42nm,0.8s,mb4.9,baz=55,slow=10,SNR=139						
WRA				S	**S**	**14 37 12.3**	**+2.9**
	comp=Z,12nm,1.1s,baz=57,slow=20,SNR=7.7						
WRA				PcP	PcP	14 37 17.5	0.0
	comp=Z,7.3nm,0.8s,baz=45,slow=2.1,SNR=12						
WRA				ScP		14 41 00.9	
	comp=Z,8.5nm,0.8s,baz=49,slow=2.6,SNR=21						
WRA				LR	LR	14 41 06.6	
	comp=Z,924nm,21.7s,MS4.1,baz=55,slow=35						
WRA	**Warramunga Arr**	**21.59**	**230**	P	**P**	**14 33 14.3**	**-0.6**
WRA				S	**S**	**14 37 12.3**	**+2.9**
WRA						14 37 17.5	
WRA				pmax	pmax		
	comp=Z,42nm,0.8s						
WRA				smax			
	comp=Z,12nm,1.2s						
WRA				pmax	pmax		
	comp=Z,7.0nm,0.8s						
WRA				pmax	pmax		
	comp=Z,9.0nm,0.8s						
WRA				MLR	MLR		
	comp=Z,924nm,21.7s						
WRA	**Warramunga Arr**	**21.59**	**230**	P	**P**	**14 33 14.3**	**-0.6**
WRA				S	**S**	**14 37 12.3**	**+2.9**
WRA				PcP	PcP	14 37 17.5	0.0
WRA				ScP		14 41 00.9	
WRA				LR	LR	14 41 06.6	
KWAJ	**Kwajalein Atol**	**21.89**	**47**	PFAKE		14 33 30.0	+12
KWAJ				LR	LR		
	comp=Z,1μm,20.0s,MS4.3						
ARMA	**Armidale**	**23.98**	**180**	⇑*iP*	**P**	**14 33 39.8**	**+1.3**
AS12	**Alice Springs**	**24.26**	**223**	*eP*	**P**	**14 33 42.0**	**+0.7**
	comp=Z,109nm,0.6s,mb5.5						
AS12				*eS*	**S**	**14 38 04.3**	**+7.0**
ASAR	**Alice Springs**	**24.26**	**223**	P	**P**	**14 33 42.0**	**+0.7**
	comp=Z,109nm,0.6s,mb5.5,baz=56,slow=9.0,SNR=340						
ASAR				S	**S**	**14 38 05.0**	**+7.6**
	comp=Z,9.2nm,1.0s,baz=51,slow=17,SNR=7.7						
ASAR				ScP		14 41 09.1	
	comp=Z,5.4nm,0.9s,baz=53,slow=3.2,SNR=16						
ASAR				LR	LR	14 42 50.1	
	comp=Z,614nm,18.2s,MS4.1,baz=55,slow=36						
STKA	**Stephens Creek**	**27.11**	**199**	*eP*	**P**	**14 34 06.6**	**-1.4**
	comp=Z,43nm,0.9s,mb5.0						
STKA				*e*		14 34 20.8	
STKA				*eS*	**S**	**14 38 45.3**	**+0.6**
STKA	**Stephens Creek**	**27.11**	**199**	P	**P**	**14 34 07.0**	**-1.0**
	comp=Z,42nm,0.7s,mb5.1,baz=12,slow=9.4,SNR=46						
STKA				LR	LR	14 45 09.7	
	comp=Z,973nm,19.2s,MS4.4,baz=36,slow=37						
FITZ	**Fitzroy Crossi**	**27.94**	**243**	*eP*	**P**	**14 34 14.9**	**-0.7**
	comp=Z,12nm,0.5s,mb4.8						
FITZ				*i*		14 34 23.4	
FITZ	**Fitzroy Crossi**	**27.94**	**243**	P	**P**	**14 34 15.0**	**-0.6**
	comp=Z,21nm,0.5s,mb5.0,baz=52,slow=5.2,SNR=142						
FITZ				LR	LR	14 46 27.5	
	comp=Z,223nm,19.4s,MS3.8,baz=86,slow=39						
FORT	**Forrest**	**32.89**	**219**	*eP*	**P**	**14 34 58.2**	**-1.2**
	comp=Z,183nm,0.6s						
TAU	**Tasmania Unive**	**36.65**	**185**	PFAKE		14 35 40.0	+8.6
TAU				LR	LR		
	comp=Z,1μm,19.0s,MS4.7						
URZ	**Urewera**	**39.30**	**148**	P	**P**	**14 35 53.2**	**-0.6**
	comp=Z,14nm,1.0s,mb4.7,baz=24,slow=15,SNR=3.9						
KLBR	**Kellerberrin**	**40.44**	**227**	*eP*	**P**	**14 36 02.4**	**-0.8**
	comp=Z,21nm,0.7s,mb5.0						
SNZO	**South Karori**	**40.46**	**153**	PFAKE		14 36 20.0	+17
SNZO				LR	LR		
	comp=Z,1μm,21.0s,MS4.8						
JHJ	**Hachijo jima 2**	**40.80**	**345**	LR	LR	14 49 58.9	
	comp=Z,459nm,18.8s,MS4.4,baz=29,slow=32						
RPZ	**Rata Peaks**	**40.97**	**158**	P	**P**	**14 36 07.5**	**0.0**
	comp=Z,8.2nm,0.9s,mb4.4,baz=301,slow=9.2,SNR=3.0						
NWAO	**Narrogin (SRO)**	**41.51**	**226**	PFAKE		14 36 20.0	+7.9
NWAO				LR	LR		
	comp=Z,788nm,20.0s,MS4.6						
MUN	**Mundaring**	**41.77**	**228**	*eP*	**P**	**14 36 13.9**	**-0.3**
	comp=Z,31nm,1.0s,mb4.9						
TATO	**Taipei**	**42.76**	**318**	PFAKE		14 36 30.0	+7.6
TATO				LR	LR		
	comp=Z,616nm,21.0s,MS4.5						
JNU	**Nakatsue**	**43.90**	**335**	P	**P**	**14 36 30.6**	**-0.9**
	comp=Z,9.9nm,0.9s,mb4.5,baz=42,slow=12,SNR=4.8						
JNU				LR	LR	14 52 37.7	
	comp=Z,230nm,21.2s,MS4.1,baz=206,slow=33						
MAJO	**Matsushiro**	**44.45**	**345**	PFAKE		14 36 50.0	+14
MAJO				LR	LR		
	comp=Z,534nm,22.0s,MS4.4						
MAT	**Matsushiro**	**44.45**	**345**	P	**P**	**14 36 35.6**	**-0.4**
MAT				*eS*	**S**	**14 43 15.0**	**+4.2**
SSE	**Sheshan**	**47.24**	**324**	P	**P**	**14 36 58.8**	**+0.6**
SSE				AMB	AMB		
	comp=Z,37nm,0.7s,mb5.4						
SSE				AMB	AMB		
	comp=Z,63nm,9.6s						
SSE				LR	LR		
	comp=N,233nm,22.6s,MS4.2						
SSE				LR	LR		
	comp=E,229nm,22.6s,MS4.2						
QIZ	**Qiongzhong**	**48.27**	**302**	*eP*	**P**	**14 37 07.0**	**+0.6**
QIZ				S	**S**	**14 44 03.0**	**-2.4**
QIZ				LR	LR		
	comp=N,762nm,12.2s						
QIZ				LR	LR		
	comp=E,440nm,9.9s						
QIZ				LR	LR		
	comp=Z,637nm,14.9s,MS4.7						
KGM	**Kluang**	**48.95**	**278**	⇓*eP*	**P**	**14 37 11.8**	**+0.1**
NJ2	**Nanjing**	**49.31**	**323**	*eP*	**P**	**14 37 16.9**	**+2.6**
NJ2				PP	PP	14 39 14.8	+6.1
NJ2				AMB	AMB		
	comp=Z,30nm,0.6s,mb5.5						
NJ2				LR	LR		
	comp=N,810nm,28.7s,MS4.9						
NJ2				LR	LR		
	comp=E,1μm,26.2s,MS4.9						
NJ2				LR	LR		
	comp=Z,1μm,21.4s,MS4.8						
INCN	**Inchon**	**49.43**	**334**	PFAKE		14 37 30.0	+15
INCN				LR	LR		
	comp=Z,486nm,21.0s,MS4.5						
ASAJ	**Asahikawa**	**50.85**	**352**	LR	LR	14 57 07.1	
	comp=Z,128nm,19.4s,MS4.0,baz=185,slow=34						
WHN	**Wuhan**	**51.17**	**318**	*eP*	**P**	**14 37 28.5**	**0.0**
YSS	**Yuzh-Sakhalins**	**53.62**	**352**	PFAKE		14 38 00.0	+13
YSS				LR	LR		
	comp=Z,256nm,20.0s,MS4.3						
ENH	**Enshi**	**54.36**	**314**	*eP*	**P**	**14 37 49.3**	**-2.9**
	comp=Z,20nm,1.1s,mb5.0						
ENH				LR	LR		
	comp=Z,1μm,19.0s,MS5.1						
MDJ	**Mudanjiang**	**54.44**	**341**	P	**P**	**14 37 51.8**	**-0.9**
MDJ				PP	PP	14 39 55.3	-1.1
MDJ				SCP		14 42 50.0	
MDJ				S	**S**	**14 45 30.4**	**+0.4**
MDJ				SS	SS	14 49 13.8	+1.9
MDJ				AMB	AMB		
	comp=Z,5.0nm,0.9s,mb4.4						
MDJ				AMB	AMB		
	comp=Z,100nm,4.4s						
MDJ				LR	LR		
	comp=N,264nm,26.5s,MS4.3						
MDJ				LR	LR		
	comp=E,243nm,23.9s,MS4.3						
MDJ				LR	LR		
	comp=Z,461nm,24.3s,MS4.5						
MDJ	**Mudanjiang**	**54.44**	**341**	PFAKE		14 38 00.0	+7.3
MDJ				LR	LR		
	comp=Z,396nm,19.0s,MS4.5						
CN2	**Changchun**	**55.22**	**337**	*eP*	**P**	**14 38 00.4**	**+2.0**
CN2				*eAP*	pP	14 38 10.0	+10
CN2				PCP	PcP	14 38 58.6	-0.6
CN2				*eS*	**S**	**14 45 40.8**	**+0.4**
CN2				*eSS*	SS	14 49 26.4	+2.1
CN2				AMB	AMB		
	comp=Z,10.0nm,0.8s,mb4.9						
CN2				LR	LR		
	comp=N,1μm,19.0s,MS5.0						
CN2				LR	LR		
	comp=E,250nm,19.0s,MS5.0						
CN2				LR	LR		
	comp=Z,770nm,18.0s,MS4.8						
BJT	**Baijiatuau**	**56.52**	**328**	PFAKE		14 38 20.0	+12
BJT				LR	LR		
	comp=Z,933nm,20.0s,MS4.9						
BJI	**Beijing**	**56.53**	**328**	P	**P**	**14 38 08.4**	**+0.5**
BJI				S	**S**	**14 45 54.9**	**-3.0**
BJI				AMB	AMB		
	comp=Z,7.0nm,0.9s,mb4.7						
BJI				LR	LR		
	comp=N,190nm,18.7s,MS4.8						
BJI				LR	LR		
	comp=E,598nm,14.6s,MS4.8						
KMI	**Kunming**	**56.89**	**305**	*eP*	**P**	**14 38 10.9**	**+0.2**
KMI				AP	pP	14 38 24.5	+12
KMI				PCP	PcP	14 39 06.6	+0.6
KMI				S	**S**	**14 46 01.3**	**-1.6**
KMI				SS	SS	14 49 54.9	+2.6
KMI				AMB	AMB		
	comp=Z,8.0nm,1.0s,mb4.7						
KMI				LR	LR		
	comp=Z,748nm,9.5s						
XAN	**Xi'an**	**56.94**	**318**	P	**P**	**14 38 09.6**	**-1.3**
XAN				AMB	AMB		
	comp=Z,12nm,1.1s,mb4.8						
CM31	**Chiang Mai Arr**	**57.49**	**296**	PFAKE		14 38 30.0	+15
CM31				LR	LR		
	comp=Z,605nm,20.0s,MS4.7						
CMAR	**Chiang Mai Arr**	**57.49**	**296**	P	**P**	**14 38 13.4**	**-1.5**
	comp=Z,2.8nm,0.8s,mb4.3,baz=115,slow=5.4,SNR=13						
CMAR	**Chiang Mai Arr**	**57.49**	**296**	P	**P**	**14 38 13.5**	**-1.5**
CMAR				pmax	pmax		
	comp=Z,3.0nm,0.8s						
CD2	**Chengdu**	**58.86**	**312**	*eP*	**P**	**14 38 24.3**	**-0.1**
PET	**Petropavlovsk**	**59.41**	**5**	*eP*	**P**	**14 38 33.3**	**+5.4**
PET				*eS*	**S**	**14 46 51.0**	**+15**
PET	**Petropavlovsk**	**59.41**	**5**	PFAKE		14 38 40.0	+12
PET				LR	LR		
	comp=Z,346nm,20.0s,MS4.5						
LZH	**Lanzhou**	**61.52**	**317**	*eP*	**P**	**14 38 42.8**	**+0.2**
LZH				AP	pP	14 38 53.8	+9.2
LZH				XP	sP	14 39 00.1	+15
LZH				AMB	AMB		
	comp=Z,40nm,1.0s,mb5.5						
SMY	**Shemya**	**61.84**	**15**	PFAKE		14 39 00.0	+16
SMY				LR	LR		
	comp=Z,1μm,20.0s,MS5.0						
HIA	**Hailar**	**61.95**	**337**	PFAKE		14 39 00.0	+15
HIA				LR	LR		
	comp=Z,394nm,19.0s,MS4.6						
MA2	**Magadan**	**65.68**	**360**	PFAKE		14 39 20.0	+10
MA2				LR	LR		
	comp=Z,297nm,22.0s,MS4.5						
GTA	**Gaotai**	**65.99**	**318**	*eP*	**P**	**14 39 12.4**	**+0.5**
GTA				AMB	AMB		
	comp=Z,5.0nm,0.8s,mb4.6						
GTA				AMB	AMB		
	comp=Z,119nm,6.1s						
CASY	**Casey**	**66.24**	**197**	*eP*	**P**	**14 39 12.0**	**-1.0**
ULN	**Ulaanbaatar**	**66.68**	**329**	*eP*	**P**	**14 39 15.7**	**-0.4**
ULN	**Ulaanbaatar**	**66.68**	**329**	*eP*	**P**	**14 39 15.4**	**-0.7**
	comp=Z,7.7nm,1.0s,mb4.7						
ULN				*e*		14 39 25.6	
ULN				LR	LR		
	comp=Z,218nm,21.0s,MS4.3						
LSA	**Lhasa**	**68.15**	**305**	P	**P**	**14 39 25.8**	**+0.1**
LSA	**Lhasa**	**68.15**	**305**	*eP*	**P**	**14 39 25.4**	**-0.3**
	comp=Z,6.5nm,0.8s,mb4.7						
LSA				LR	LR		
	comp=Z,130nm,19.0s,MS4.2						
UNV	**Unalaska Valle**	**69.47**	**25**	PFAKE		14 39 40.0	+6.6
UNV				LR	LR		
	comp=Z,877nm,21.0s,MS5.0						
ZAK	**Zakamensk**	**70.19**	**329**	*eP*	**P**	**14 39 35.9**	**-1.9**
YAK	**Yakutsk**	**70.23**	**349**	*eP*	**P**	**14 39 37.8**	**-0.1**
YAK				pmax	pmax		
	comp=Z,14nm,1.0s,mb4.8						
YAK				MLR	MLR		
	comp=Z,100nm,16.0s,MS4.2						
YAK	**Yakutsk**	**70.23**	**349**	*eP*	**P**	**14 39 37.2**	**-0.7**
YAK				LR	LR		
	comp=Z,264nm,19.0s,MS4.5						
BOD	**Bodaibo**	**70.79**	**340**	*eP*	**P**	**14 39 39.7**	**-1.7**
BOD				*e*		14 39 51.2	
TLY	**Talaya**	**70.81**	**331**	*eP*	**P**	**14 39 42.2**	**+0.6**
TLY				*i*		14 42 20.4	
TLY				*eS*	S	14 48 56.0	+0.4
TLY				pmax	pmax		
	comp=Z,36nm,0.9s,mb5.3						
VNDA	**Vanda**	**71.37**	**178**	P	**P**	**14 39 44.5**	**-0.2**
	comp=Z,13nm,0.8s,mb4.9,baz=332,slow=6.7,SNR=68						
VNDA				LR	LR	15 10 00.9	
	comp=Z,235nm,18.0s,MS4.5,baz=281,slow=35						
VNDA	**Vanda**	**71.37**	**178**	*eP*	**P**	**14 39 44.0**	**-0.6**
	comp=Z,10nm,1.0s,mb4.7						
VNDA				*epP*	pP	14 39 53.1	+6.4
SBA	**Scott Base**	**71.94**	**177**	*eP*	**P**	**14 39 48.6**	**+0.5**
	comp=Z,496nm,2.8s,mb6.0						
MOY	**Mondy**	**72.12**	**330**	*eP*	**P**	**14 39 52.9**	**+3.4**
PKI	**Pulchoki**	**72.22**	**301**	*eP*	**P**	**14 39 48.8**	**-1.7**
	comp=Z,21nm,0.9s,mb5.1						
KKN	**Kakani**	**72.39**	**302**	*eP*	**P**	**14 39 49.0**	**-2.5**
	comp=Z,30nm,0.7s,mb5.3						
DMN	**Daman**	**72.49**	**301**	*eP*	**P**	**14 39 51.2**	**-0.9**
	comp=Z,82nm,1.2s,mb5.5						
GKN	**Gorkha**	**73.00**	**302**	*eP*	**P**	**14 39 53.3**	**-1.9**
	comp=Z,45nm,1.1s,mb5.3						
KOLN	**Koldanda**	**73.81**	**301**	*eP*	**P**	**14 39 57.8**	**-2.1**
	comp=Z,24nm,0.8s,mb5.2						
BILL	**Bilibino**	**74.90**	**6**	*eP*	**P**	**14 40 06.4**	**+1.0**
BILL				pmax	pmax		
	comp=Z,19nm,0.8s,mb5.1						
HYB	**Hyderabad**	**75.90**	**290**	*iP*	**P**	**14 40 11.5**	**-0.6**
HYB	**Hyderabad**	**75.90**	**290**	*eP*	**P**	**14 40 11.5**	**-0.6**
WMQ	**Urumqi**	**76.08**	**318**	*eP*	**P**	**14 40 13.0**	**+0.4**
WMQ				AP	pP	14 40 23.3	+8.7
WMQ				PCP	PcP	14 40 25.8	+0.6
WMQ				XP	sP	14 40 27.3	+12
WMQ				PP	PP	14 43 05.0	-0.1
WMQ				AMB	AMB		
	comp=Z,38nm,1.8s,mb5.0						
WMQ				AMB	AMB		
	comp=Z,108nm,6.5s						
WMQ				LR	LR		
	comp=N,579nm,21.3s,MS5.0						
WMQ				LR	LR		
	comp=E,428nm,21.5s,MS5.0						
WMQ				LR	LR		
	comp=Z,787nm,22.0s,MS5.0						
TNA	**Tin City**	**77.56**	**16**	PFAKE		14 40 30.0	+10
TNA				LR	LR		
	comp=Z,179nm,19.0s,MS4.4						
KDAK	**Kodiak Island**	**78.04**	**27**	PFAKE		14 40 30.0	+6.8
KDAK				LR	LR		
	comp=Z,356nm,21.0s,MS4.7						
SVW	**Sparrevohn**	**78.65**	**23**	*eP*	**P**	**14 40 30.1**	**+3.6**
TIXI	**Tiksi**	**79.24**	**353**	*eP*	**P**	**14 40 28.7**	**-0.8**
TIXI				*eS*	S	14 50 29.0	+0.3
TIXI				pmax	pmax		
	comp=Z,48nm,1.2s,mb5.3						
TIXI	**Tiksi**	**79.24**	**353**	*eP*	**P**	**14 40 28.3**	**-1.2**
	comp=Z,9.7nm,1.3s,mb4.6						
TIXI				LR	LR		
	comp=Z,302nm,22.0s,MS4.6						
MKAR	**Makanchi Array**	**80.71**	**319**	P	**P**	**14 40 37.5**	**-0.4**
	comp=Z,5.3nm,1.0s,mb4.4,baz=104,slow=5.4,SNR=20						
MKAR				PKKPbc		14 59 18.1	
	comp=Z,0.9nm,0.7s,baz=325,slow=3.3,SNR=6.5						
MKAR				LR	LR	15 14 57.0	
	comp=Z,128nm,20.5s,MS4.3,baz=198,slow=35						
MKAR	**Makanchi Array**	**80.71**	**319**	P	**P**	**14 40 37.4**	**-0.4**
MKAR				*e*		14 59 18.1	
MKAR	**Makanchi Array**	**80.71**	**319**	P	**P**	**14 40 37.5**	**-0.4**
MKAR				PKKPbc		14 59 18.1	
MKAR				LR	LR	15 14 57.0	
FIB	**Fire Island**	**80.88**	**25**	PFAKE		14 40 50.0	+12
FIB				LR	LR		
	comp=Z,2μm,21.0s,MS5.4						
PMS	**Palmer South**	**81.18**	**25**	*eP*	**P**	**14 40 40.9**	**+0.9**
PMR	**Palmer**	**81.53**	**25**	*eP*	**P**	**14 40 40.7**	**-1.1**
ZAL	**Zalesovo**	**81.78**	**327**	P	**P**	**14 40 41.4**	**-1.9**
	comp=Z,3.1nm,0.7s,mb4.3,baz=274,slow=6.8,SNR=14						
ZAL				LR	LR	15 16 31.7	
	comp=Z,208nm,19.7s,MS4.5,baz=263,slow=35						
ZAL	**Zalesovo**	**81.78**	**327**	P	**P**	**14 40 41.4**	**-1.9**
ZAL				pmax	pmax		
	comp=Z,3.0nm,0.7s						
ZAL				MLR	MLR		
	comp=Z,208nm,19.7s						
SML	**Sawmill**	**81.97**	**25**	*eP*	**P**	**14 40 44.4**	**+0.3**
IMA	**Indian Mountai**	**82.26**	**20**	*eP*	**P**	**14 40 46.6**	**+1.1**
EYAK	**Cordova Ski Ar**	**82.47**	**26**	*eP*	**P**	**14 40 45.0**	**-1.7**
MCK	**McKinley**	**82.69**	**23**	*eP*	**P**	**14 40 47.1**	**-0.7**
	comp=Z,28nm,1.2s,mb5.2						
MCK				LR	LR		
	comp=Z,102nm,19.0s,MS4.2						
TOA	**Tolsona**	**83.01**	**25**	*eP*	**P**	**14 40 50.7**	**+1.2**
KSH	**Kashi**	**83.04**	**311**	P	**P**	**14 40 50.9**	**+0.7**
KSH				*eAP*	pP	14 41 01.8	+10
KSH				*eXP*	sP	14 41 05.5	+13
KSH				*ePP*	PP	14 44 03.4	+0.4
KSH				AMB	AMB		
	comp=Z,20nm,0.4s,mb5.5						
KSH				AMB	AMB		
	comp=Z,150nm,5.5s						
KSH				LR	LR		
	comp=N,120nm,4.3s						
KSH				LR	LR		
	comp=E,110nm,6.2s						
QSPA	**South Pole Qui**	**83.66**	**180**	*eP*	**P**	**14 40 52.9**	**+0.4**
	comp=E,49nm,1.0s,mb5.6						
QSPA				*e*		15 05 20.6	
QSPA				LR	LR		
	comp=Z,130nm,18.3s,MS4.3						
COLA	**College**	**83.68**	**22**	*eP*	**P**	**14 40 52.8**	**0.0**
MAW	**Mawson**	**83.74**	**203**	*eP*	**P**	**14 40 53.5**	**+0.4**
	comp=Z,8.4nm,1.4s,mb4.7						
MAW	**Mawson**	**83.74**	**203**	P	**P**	**14 40 52.8**	**-0.3**
	comp=Z,3.8nm,0.6s,mb4.7,baz=98,slow=8.9,SNR=8.5						
MAW				LR	LR	15 14 03.2	
	comp=Z,359nm,21.3s,MS4.7,baz=75,slow=33						
ILAR	**Eielson Array**	**83.99**	**22**	P	**P**	**14 40 53.7**	**-0.7**
	comp=Z,9.5nm,0.7s,mb5.0,baz=264,slow=5.8,SNR=72						
ILAR				LR	LR	15 18 21.2	
	comp=Z,141nm,19.3s,MS4.4,baz=263,slow=36						
ILAR	**Eielson Array**	**83.99**	**22**	P	**P**	**14 40 53.7**	**-0.7**
ILAR				pmax	pmax		
	comp=Z,10.0nm,0.7s						
ILAR				MLR	MLR		
	comp=Z,141nm,19.3s						
TKM2	**Tokmak 2**	**84.15**	**314**	P	**P**	**14 40 56.2**	**+0.5**
	SNR=14						
KZA	**Kyzart**	**84.19**	**313**	P	**P**	**14 40 58.1**	**+2.1**
	SNR=14						
KURK	**Kurchatov**	**84.25**	**322**	*eP*	**P**	**14 40 55.0**	**-1.0**
UCH	**Uchtor**	**84.76**	**313**	P	**P**	**14 41 01.4**	**+2.6**
	SNR=16						
CHMS	**Chumysh**	**84.77**	**314**	P	**P**	**14 41 00.1**	**+1.2**
	SNR=7.1						
FRU	**Bishkek**	**84.83**	**314**	*eP*	**P**	**14 41 00.0**	**+0.9**
AAK	**Ala-Archa**	**84.87**	**314**	P	**P**	**14 41 01.2**	**+1.9**
	SNR=7.4						
USP	**Ospenovka**	**85.01**	**314**	P	**P**	**14 41 01.2**	**+1.2**
	SNR=7.8						
AML	**Almayashu**	**85.33**	**313**	P	**P**	**14 41 03.9**	**+2.2**
	SNR=21						
EKS2	**Erkin-Say**	**85.39**	**314**	P	**P**

SYO				*e*pP		pP		14 41 47.1 +13
CMB	**Columbia Colle**	**92.25**	**52**	*e*P		**P**		**14 41 34.2 -0.5**
	comp=Z,4.8nm,1.1s,mb4.7							
CMB				*e*pP		pP		14 41 45.9 +9.1
CMB				LR		LR		
	comp=Z,469nm,19.0s,MS5.0							
MTUM	**Tungsten Hills**	**93.62**	**53**	*e*P		**P**		**14 41 42.8 +1.8**
HAWA	**Hanford**	**93.71**	**44**	PFAKE				14 41 50.0 +8.8
HAWA				LR		LR		
	comp=Z,463nm,20.0s,MS4.9							
NVAR	**Mina Array Bea**	**93.92**	**52**	P		**P**		**14 41 43.9 +1.5**
	comp=Z,6.1nm,0.8s,mb5.1,baz=255,slow=4.1,SNR=41							
NVAR				LR		LR		15 20 42.6
	comp=Z,264nm,18.4s,MS4.7,baz=50,slow=33							
WVOR	**Wild Horse Val**	**94.01**	**48**	P		**P**		**14 41 43.7 +1.0**
WVOR				LR		LR		
	comp=Z,644nm,19.0s,MS5.1							
DAC	**Darwin (Calif)**	**94.31**	**54**	PFAKE				14 42 00.0 +16
DAC				LR		LR		
	comp=Z,227nm,19.0s,MS4.7							
TPH	**Tonopah**	**94.74**	**52**	*e*P		**P**		**14 41 46.6 +0.5**
	comp=Z,7.0nm,1.1s,mb5.0							
TPH				LR		LR		
	comp=Z,362nm,19.0s,MS4.9							
BMN	**Battle Mountai**	**94.91**	**50**	PFAKE				14 42 00.0 +13
BMN				LR		LR		
	comp=Z,421nm,20.0s,MS4.9							
PFO	**Pinyon Flat Ob**	**95.03**	**57**	PFAKE				14 42 00.0 +12
PFO				LR		LR		
	comp=Z,399nm,19.0s,MS4.9							
NEW	**Newport**	**95.49**	**42**	P		**P**		**14 41 48.8 -0.5**
NEW				LR		LR		
	comp=Z,266nm,19.0s,MS4.7							
ARU	**Arti**	**96.92**	**326**	*i*P		**P**		**14 41 54.7 -0.9**
ARU				*e*				14 45 54.4
ARU				pmax		pmax		
	comp=Z,3.0nm,0.9s,mb4.7							
ARU	**Arti**	**96.92**	**326**	PFAKE				14 42 10.0 +14
ARU				LR		LR		
	comp=Z,335nm,22.0s,MS4.8							
HLID	**Hailey**	**97.17**	**47**	PFAKE				14 42 10.0 +13
HLID				LR		LR		
	comp=Z,246nm,21.0s,MS4.7							
MSO	**Missoula**	**97.58**	**44**	PFAKE				14 42 10.0 +11
MSO				LR		LR		
	comp=Z,421nm,20.0s,MS4.9							
MVU	**Marysvale**	**98.70**	**52**	PFAKE				14 42 20.0 +16
MVU				LR		LR		
	comp=Z,379nm,19.0s,MS4.9							
NLU	**North Lily Min**	**98.83**	**51**	P		**P**		**14 42 05.5 +0.9**
BOZ	**Bozeman (W)**	**99.18**	**45**	PFAKE				14 42 20.0 +14
BOZ				LR		LR		
	comp=Z,286nm,19.0s,MS4.8							
HWUT	**Hardware Ranch**	**99.23**	**49**	PFAKE				14 42 20.0 +14
HWUT				LR		LR		
	comp=Z,275nm,20.0s,MS4.8							
AHID	**Auburn Hatcher**	**99.58**	**48**	PFAKE				14 42 20.0 +12
AHID				LR		LR		
	comp=Z,471nm,20.0s,MS5.0							
TUC	**Tucson**	**99.73**	**58**	PFAKE				14 42 20.0 +11
TUC				LR		LR		
	comp=Z,257nm,20.0s,MS4.7							
BW06	**Boulder Array**	**100.71**	**48**	PFAKE				14 42 20.0 +6.9
BW06				LR		LR		
	comp=Z,433nm,19.0s,MS5.0							
PDAR	**Pinedale Array**	**100.71**	**48**	P		P		14 42 12.3 -0.8
	comp=Z,1.4nm,0.8s,baz=297,slow=3.3,SNR=12							
VNA3	**Neumayer Olymp**	**101.61**	**186**	*i*		P		14 42 18.4 +1.9
VNA2	**Neumayer--Watz**	**101.65**	**187**	*i*		P		14 42 14.4 -2.3
VNA1	**Neumayer--Stat**	**102.02**	**187**	*i*		Pdif		14 42 15.7 -2.7
ANMO	**Albuquerque**	**103.34**	**56**	PFAKE				14 42 40.0 +15
ANMO				LR		LR		
	comp=Z,134nm,20.0s,MS4.5							
ISCO	**Idaho Springs**	**103.80**	**51**	PFAKE				14 42 40.0 +13
ISCO				LR		LR		
	comp=Z,297nm,20.0s,MS4.8							
MNTX	**Cornudas Mount**	**104.32**	**59**	PFAKE				14 42 40.0 +11
MNTX				LR		LR		
	comp=Z,235nm,19.0s,MS4.7							
FFC	**Flin Flon**	**104.57**	**35**	PFAKE				14 42 40.0 +10
FFC				LR		LR		
	comp=Z,145nm,20.0s,MS4.5							
KBS	**Kingsbay**	**104.70**	**353**	PFAKE				14 42 40.0 +10
KBS				LR		LR		
	comp=Z,280nm,19.0s,MS4.8							
KIV	**Kislovodsk**	**107.98**	**314**	PFAKE				14 47 00.0
KIV				LR		LR		
	comp=Z,671nm,21.0s,MS5.2							
CBKS	**Cedar Bluff**	**108.43**	**51**	PFAKE				14 47 10.0
CBKS				LR		LR		14 47 10.0
	comp=Z,325nm,19.0s,MS4.9							
JCT	**Junction City**	**109.16**	**60**	PFAKE				14 47 10.0
JCT				LR		LR		
	comp=Z,390nm,19.0s,MS5.0							
OBN	**Obninsk**	**109.36**	**327**	PFAKE				14 47 10.0
OBN				LR		LR		
	comp=Z,2μm,20.0s,MS5.7							
WMOK	**Wichita Mounta**	**109.65**	**55**	PFAKE				14 47 10.0
WMOK				LR		LR		
	comp=Z,159nm,21.0s,MS4.6							
HKT	**Hockley**	**112.63**	**60**	PFAKE				14 47 10.0 +7.3
HKT				LR		LR		
	comp=Z,568nm,19.0s,MS5.2							
MIAR	**Mount Ida**	**113.93**	**55**	PFAKE				14 47 20.0 +15
MIAR				LR		LR		
	comp=Z,238nm,20.0s,MS4.8							
KMBO	**Kilima Mbogo**	**114.09**	**266**	PFAKE				14 47 20.0 +14
KMBO				LR		LR		
	comp=Z,164nm,19.0s,MS4.7							
JFWS	**Jewell Farm**	**114.72**	**46**	PFAKE				14 47 20.0 +14
JFWS				LR		LR		
	comp=Z,335nm,20.0s,MS4.9							
CCM	**Cathedral Cave**	**115.13**	**51**	PFAKE				14 47 20.0 +13
CCM				LR		LR		
	comp=Z,150nm,20.0s,MS4.6							
OXF	**Oxford**	**117.32**	**54**	PFAKE				14 47 20.0 +8.2
OXF				LR		LR		
	comp=Z,222nm,20.0s,MS4.8							
WVT	**Waverly**	**118.22**	**52**	PFAKE				14 47 20.0 +6.5
WVT				LR		LR		
	comp=Z,347nm,20.0s,MS5.0							
PLAL	**Pickwick Lake**	**118.29**	**54**	PFAKE				14 47 20.0 +6.3
PLAL				LR		LR		
	comp=Z,169nm,19.0s,MS4.7							
WCI	**Wyandotte Cave**	**118.88**	**50**	PFAKE				14 47 20.0 +5.3
WCI				LR		LR		
	comp=Z,1μm,20.0s,MS5.5							
LBTB	**Lobatse**	**118.99**	**237**	PFAKE				14 47 30.0 +15
LBTB				LR		LR		
	comp=Z,321nm,20.0s,MS5.0							
KONO	**Kongsberg**	**119.48**	**339**	PFAKE				14 47 30.0 +15
KONO				LR		LR		
	comp=Z,673nm,19.0s,MS5.3							
AAM	**Ann Arbor**	**119.54**	**45**	PFAKE				14 47 30.0 +14
AAM				LR		LR		
	comp=Z,405nm,20.0s,MS5.1							
LRAL	**Lakeview Retre**	**119.59**	**56**	PFAKE				14 47 30.0 +14
LRAL				LR		LR		
	comp=Z,188nm,21.0s,MS4.7							
MBAR	**Mbarara**	**120.62**	**266**	PFAKE				14 47 30.0 +11
MBAR				LR		LR		
	comp=Z,252nm,20.0s,MS4.9							
ACSO	**Alum Creek Sta**	**120.72**	**47**	PFAKE				14 47 30.0 +12
ACSO				LR		LR		
	comp=Z,361nm,22.0s,MS5.0							
MYNC	**Murphy**	**121.41**	**53**	PFAKE				14 47 30.0 +10
MYNC				LR		LR		
	comp=Z,311nm,20.0s,MS5.0							
ERPA	**Erie**	**122.14**	**44**	PFAKE				14 47 30.0 +9.1
ERPA				LR		LR		
	comp=Z,386nm,19.0s,MS5.1							
BRG	**Berggiesshubel**	**123.39**	**329**	*e*PKIKP		PKPdf		14 47 22.7 -0.4
BRG				pmax		pmax		
	comp=Z,8.0nm,1.2s							
CLL	**Collm**	**123.60**	**330**	*e*		PKPdf		14 47 23.0 -0.5
CLL				*e**PPKP				14 47 36.0
BLA	**Blacksburg**	**123.62**	**49**	PFAKE				14 47 30.0 +6.1
BLA				LR		LR		
	comp=Z,205nm,20.0s,MS4.8							
SSPA	**Standing Stone**	**124.19**	**44**	PFAKE				14 47 30.0 +5.0
SSPA				LR		LR		
	comp=Z,1μm,20.0s,MS5.7							
KHC	**Kasperske Hory**	**124.61**	**328**	*e*PKP		PKPdf		14 47 25.0 -0.6
GERES	**GERESS Array B**	**124.72**	**327**	PKP		PKPdf		14 47 24.4 -1.3
	comp=Z,1.5nm,0.7s,slow=1.3,SNR=11							
GERES	**GERESS Array B**	**124.72**	**327**	PKIKP		PKPdf		14 47 24.4 -1.4
GERES				pmax		pmax		
	comp=Z,2.0nm,0.7s							
BINY	**Binghamton**	**124.81**	**42**	PFAKE				14 47 40.0 +14
BINY				LR		LR		
	comp=Z,759nm,19.0s,MS5.4							
DWPF	**Disney**	**125.36**	**60**	PFAKE				14 47 40.0 +12
DWPF				LR		LR		
	comp=Z,147nm,21.0s,MS4.6							
GRA1	**Grafenberg Arr**	**125.49**	**329**	*e*PKPdf		PKPdf		14 47 25.8 -1.4
GRF	**Grafenberg Array**	**125.49**	**329**	*e*PKIKP		PKPdf		14 47 25.8 -1.4
CBN	**Corbin**	**125.52**	**47**	PFAKE				14 47 40.0 +12
CBN				LR		LR		
	comp=Z,362nm,19.0s,MS5.1							
ESK	**Eskdalemuir**	**127.15**	**342**	PFAKE				14 47 40.0 +10
ESK				LR		LR		
	comp=Z,584nm,19.0s,MS5.3							
GIVF	**Givet**	**128.26**	**333**	*e*PKIKP		PKPdf		14 47 30.9 -1.7
CDF	**Champ du Feu**	**128.30**	**330**	*e*PKIKP		PKPdf		14 47 31.6 -1.1
	comp=Z,11nm,1.2s							
HINF	**Hinteralfeld**	**128.91**	**330**	*e*PKIKP		PKPdf		14 47 32.3 -1.6
HAU	**Haudompre**	**129.03**	**331**	*e*PKIKP		PKPdf		14 47 32.4 -1.7
LPL	**La Plagne**	**130.51**	**328**	*e*PKIKP		PKPdf		14 47 35.9 -1.1
LPG	**La Plagne**	**130.51**	**328**	*e*PKIKP		PKPdf		14 47 36.2 -0.8
	comp=Z,5.5nm,0.8s							
SSF	**Saint Saulge**	**131.06**	**331**	*e*PKIKP		PKPdf		14 47 36.2 -1.8
	comp=Z,30nm,1.5s							
SMF	**Signal de Mont**	**131.20**	**331**	*e*PKIKP		PKPdf		14 47 36.1 -2.2
LDF	**La Druitiere**	**131.54**	**335**	*e*PKIKP		PKPdf		14 47 37.3 -1.5
VIVF	**Saint-Julien-l**	**132.03**	**329**	*e*PKIKP		PKPdf		14 47 38.0 -1.9
TCF	**Toulx Ste Croi**	**132.24**	**332**	*e*PKIKP		PKPdf		14 47 38.4 -1.9
LASF	**Ste Croix**	**132.99**	**328**	*e*PKIKP		PKPdf		14 47 40.0 -1.7
MTLF	**Montolieu**	**134.35**	**329**	*e*PKIKP		PKPdf		14 47 43.1 -1.1
	comp=Z,14nm,1.2s							
LPAZ	**La Paz**	**134.69**	**120**	PKP		PKPdf		14 47 42.3 -3.3
	comp=Z,2.3nm,0.8s,baz=123,slow=0.7,SNR=5.9							
LPAZ	**La Paz**	**134.69**	**120**	PKIKP		PKPdf		14 47 42.3 -3.3
LPAZ				pmax		pmax		
	comp=Z,2.0nm,0.9s							
ETSF	**Etsaut**	**136.07**	**330**	*e*PKIKP		PKPdf		14 47 45.9 -1.5
	comp=Z,35nm,1.3s							
CPUP	**Villa Florida**	**137.08**	**140**	PKP		PKPdf		14 47 47.7 -1.9
	comp=Z,3.4nm,0.8s,baz=339,slow=0.2,SNR=7.6							
CPUP	**Villa Florida**	**137.08**	**140**	PKIKP		PKPdf		14 47 47.7 -1.9
CPUP				pmax		pmax		
	comp=Z,3.0nm,0.8s							
BBSR	**BB Station**	**137.38**	**48**	PFAKE				14 48 00.0 +10
BBSR				LR		LR		
	comp=Z,877nm,20.0s,MS5.5							
DEG	**La Desirade**	**146.48**	**70**	*e*P		PKPbc		14 48 09.8 +4.5
BDFB	**Brasilia**	**150.76**	**138**	PKP		PKPdf		14 48 12.1 -1.3
	comp=Z,4.2nm,0.8s,baz=223,slow=4.0,SNR=5.5							
BDFB				PKPbc		PKPdf		14 48 18.0 +4.6
	comp=Z,24nm,0.8s,baz=238,slow=2.0,SNR=24							
KIC	**Kean Boka**	**156.53**	**271**	*e*PKIKP		PKPdf		14 48 30.6 +9.1
	comp=Z,75nm,1.2s							
DBIC	**Dimbokro**	**156.65**	**272**	PKP		PKPdf		14 48 20.2 -1.5
	comp=Z,1.5nm,0.9s,baz=120,slow=16,SNR=2.0							
DBIC				PKPbc		PKPdf		14 48 30.3 +8.6
	comp=Z,3.1nm,0.8s,baz=138,slow=5.6,SNR=3.7							
DBIC				PKPab		PKPab		14 48 46.6 -4.1
	comp=Z,5.2nm,0.9s,baz=81,slow=1.1,SNR=4.0							
DBIC	**Dimbokro**	**156.65**	**272**	PKP		PKPdf		14 48 20.2 -1.4
DBIC				PKPbc		PKPdf		14 48 30.3 +8.6
DBIC				PKPab		PKPab		14 48 46.6 -4.1
DBIC				LR		LR		
	comp=Z,106nm,21.0s,MS4.7							
TIC	**Toumodi**	**156.81**	**272**	*e*PKIKP		PKPdf		14 48 31.1 +9.2
	comp=Z,36nm,0.8s							
LIC	**Lamto**	**156.81**	**271**	*e*PKIKP		PKPdf		14 48 30.5 +8.6
	comp=Z,8.5nm,0.3s							

*NAO **23** 14:30:07.5±3.3, 67.71N×20.56E, ML2.1*
*HEL **23** 14:30:08.6±0.3, 67.84N×20.37E, ML2.0, ML1.9(BER), ML2.1(NAO), Explosion*
*BER **23** 14:30:08.8±3.0, 67.76N×20.25E, ML1.9, ML2.1(NAO), Suspected explosion*

ISC 23 14:30:05.4±0.7, 67.75N±0.05×20.14E±0.09, n12, σ0^{s}66/16, Sweden

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KIF	**Kilpisjarvi**	**1.29**	**11**	*e*P	**Pb**	**14 30 29.9**	**-0.3**
KIF				*e*SB	**Sb**	**14 30 47.5**	**+0.3**
KTK1	**Kautokeino**	**1.71**	**41**	*e*P	**Pn**	**14 30 37.3**	**+0.6**
KTK1				*e*SN	**Sn**	**14 30 59.5**	**0.0**
KTK1				AML	AML	14 31 06.0	
	comp=Z,13nm,0.4s						
SGF	**Sodankyl**	**2.47**	**94**	*e*PB	**Pb**	**14 30 50.7**	**+0.4**
SGF				*e*SB	**Sb**	**14 31 21.1**	**-0.3**
SGF				MSG		14 31 26.1	
	comp=Z,7.9nm,0.4s						
LOF	**Lofoten**	**2.52**	**282**	*e*SG	**Sg**	**14 31 29.1**	**-0.2**
LOF				AML	AML	14 31 33.8	
	comp=Z,12nm,0.4s						
ARA0	**ARCESS Array S**	**2.66**	**45**	Pn	**Pn**	**14 30 49.2**	**-1.0**
	baz=230,slow=16						
ARA0				Sn	**Sn**	**14 31 23.8**	**0.0**
	baz=226,slow=28						
ARA0	**ARCESS Array S**	**2.66**	**45**	*e*P	**Pn**	**14 30 49.2**	**-1.0**
ARA0				*e*SB	**Sn**	**14 31 23.8**	**0.0**
MOR8	**Moi Rana**	**2.74**	**237**	*e*SB	**Sb**	**14 31 29.5**	**0.0**
MOR8				AML	AML	14 31 35.9	
	comp=Z,16nm,0.5s						
KEV	**Kevo**	**3.21**	**48**	*e*P	**Pn**	**14 30 59.5**	**+1.4**
KEV				*e*S	**Sn**	**14 31 36.8**	**-0.9**
KEV				MSG		14 31 44.2	
	comp=Z,3.6nm,0.4s						
MSF	**Maaselka**	**3.97**	**113**	*e*PG	**Pg**	**14 31 18.2**	**-6.4**
NSS	**Namsos**	**4.63**	**230**	*e*SG	**Sg**	**14 32 34.7**	**-4.8**
NSS				AML	AML	14 32 43.4	
	comp=Z,5.8nm,0.5s						
FIA0	**FINESS Array S**	**6.82**	**155**	Lg		14 33 39.2	
	baz=348,slow=28						
FIA0	**FINESS Array S**	**6.82**	**155**	Lg		14 33 39.2	
	baz=348,slow=28						

*JMA **23** 14:39:59.1±0.4, 22.94N×121.27E, h148km, M2.6*
*TAP **23** 14:39:59.1, 22.84N×121.23E, h21km±1km, ML3.2*

ISC 23 14:39:57.9±2.1, 22.6N±0.2×121.4E±0.2, h21km, n6, σ0^{s}47/12, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
YOJ	**Yonaguni jima**	**2.40**	**39**	P	**Pn**	**14 40 36.8**	**0.0**
YOJ				*e*S	**Sn**	**14 41 05.9**	**0.0**
HATJ	**Hateruma jima**	**2.68**	**57**	P	**Pn**	**14 40 41.9**	**+1.1**
HATJ				*e*S	**Sn**	**14 41 12.8**	**-0.1**
IRIF	**Iriomote-Funau**	**2.78**	**51**	P	**Pn**	**14 40 42.2**	**-0.1**
IRIF				*e*S	**Sn**	**14 41 15.8**	**+0.2**
JKRS	**Kuro-shima**	**2.93**	**56**	P	**Pn**	**14 40 44.7**	**+0.3**
JKRS				*e*S	**Sn**	**14 41 19.9**	**+0.5**
JIJ	**Ishigaki jima**	**3.10**	**55**	P	**Pn**	**14 40 46.4**	**-0.5**
JIJ				*e*S	**Sn**	**14 41 23.2**	**-0.5**
JTJ	**Tarama**	**3.68**	**56**	P	**Pn**	**14 40 54.3**	**-0.7**
JTJ				*e*S	**Sn**	**14 41 38.2**	**-0.1**

*TAP **23** 14:42:41.7, 22.84N×121.22E, h20km±1km, ML3.1*
*JMA **23** 14:42:42.0±0.2, 22.57N×121.31E, h85km*

ISC 23 14:42:41.5±2.6, 22.6N±0.2×121.4E±0.2, h20km, n6, σ0^{s}40/10, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
YOJ	**Yonaguni jima**	**2.41**	**38**	P	**Pn**	**14 43 20.8**	**0.0**
YOJ				*e*S	**Sn**	**14 43 49.9**	**-0.1**
HATJ	**Hateruma jima**	**2.67**	**55**	*e*S	**Sn**	**14 43 57.1**	**+0.4**
IRIF	**Iriomote-Funau**	**2.78**	**50**	P	**Pn**	**14 43 26.2**	**+0.1**
IRIF				*e*S	**Sn**	**14 44 00.1**	**+0.6**
JKRS	**Kuro-shima**	**2.93**	**54**	P	**Pn**	**14 43 28.0**	**-0.2**
JKRS				*e*S	**Sn**	**14 44 03.1**	**-0.1**
JIJ	**Ishigaki jima**	**3.10**	**54**	P	**Pn**	**14 43 30.6**	**0.0**
JIJ				*e*S	**Sn**	**14 44 06.5**	**-1.0**
JTJ	**Tarama**	**3.68**	**55**	*e*S	**Sn**	**14 44 22.2**	**+0.1**

*IDC **23** 14:45:20.6±1.4, 52.76N×167.22W, mb3.9/10, mb1 4.1/11, mb1mx3.9/24, ML3.5/1, Error ellipse: s-maj=33.5km s-min=18.5km az=18.0*
*NEIC **23** 14:45:27.1±1.4, 52.79N×167.12W, h46km±10km, mb3.8/1, ML3.2(AEIC), Error ellipse: s-maj=17.8km s-min=9.7km az=169.0*

ISC 23 14:45:26.3±1.5, 52.7N±0.1×167.2W±0.1, h61km±10km, n20, σ0^{s}90/21, mb4.0/10, Fox Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OKER	**East Rim**	**0.89**	**324**	P	**P**	**14 45 43.9**	**+0.8**
NIKO	**Nikolski**	**1.04**	**284**	P	**P**	**14 45 44.5**	**-0.6**
MGOD	**Makushin Gods**	**1.07**	**10**	P	**P**	**14 45 45.2**	**-0.4**
UNV	**Unalaska Valle**	**1.18**	**20**	P	**P**	**14 45 45.9**	**-1.1**
UNV				S	**S**	**14 46 04.2**	**+1.8**
MCIR	**Makushin Cirqu**	**1.23**	**8**	P	**P**	**14 45 47.8**	**+0.2**
MTBL	**Makushin Table**	**1.27**	**14**	P	**P**	**14 45 48.4**	**+0.1**
ILAR	**Eielson Array**	**15.91**	**33**	Pn	**P**	**14 49 04.7**	**-2.5**
	0.1nm,0.3s,baz=224,slow=11,SNR=9.0						
DAWY	**Dawson**	**18.27**	**41**	*e*P	**P**	**14 49 36.1**	**-0.6**
DLBC	**Dease Lake**	**21.55**	**60**	P	**P**	**14 50 12.2**	**+0.3**
	2.3nm,1.1s,mb3.5,baz=200,slow=23,SNR=1.9						
INK	**Inuvik**	**22.31**	**33**	P	**P**	**14 50 17.6**	**-1.8**
	1.4nm,0.6s,mb3.6,baz=228,slow=13,SNR=12						
INK	**Inuvik**	**22.31**	**33**	*e*P	**P**	**14 50 17.7**	**-1.6**
	1.9nm,0.5s,mb3.8						
NVAR	**Mina Array Bea**	**36.34**	**93**	P	**P**	**14 52 27.0**	**+1.1**
	1.0nm,0.8s,mb3.8,baz=299,slow=7.1,SNR=7.5						
PDAR	**Pinedale Array**	**39.02**	**81**	P	**P**	**14 52 49.0**	**+0.7**
	0.4nm,0.5s,mb3.4,baz=315,slow=4.2,SNR=5.5						
SPITS	**Spitsbergen Ar**	**49.33**	**359**	P	**P**	**14 54 10.8**	**+0.3**
	6.2nm,1.1s,mb4.5,baz=342,slow=6.3,SNR=2.9						
TXAR	**Lajitas Array**	**51.41**	**91**	P	**P**	**14 54 26.9**	**0.0**
	1.0nm,0.6s,mb3.9,baz=304,slow=5.2,SNR=18						
ARCES	**ARCESS Array B**	**57.69**	**355**	P	**P**	**14 55 12.1**	**-0.1**
	2.4nm,0.9s,mb4.2,baz=18,slow=5.7,SNR=6.8						
BVAR	**Borovoye Array**	**64.17**	**325**	P	**P**	**14 55 56.4**	**+0.4**
	0.9nm,0.6s,mb4.0,baz=53,slow=7.4,SNR=6.4						
BVAR				PcP	PcP	14 56 30.6	+0.2
	0.8nm,0.7s,baz=45,slow=4.2,SNR=4.2						
MKAR	**Makanchi Array**	**64.51**	**315**	P	**P**	**14 55 58.5**	**+0.1**
	2.6nm,0.8s,mb4.3,baz=53,slow=6.1,SNR=15						
FINES	**FINESS Array B**	**65.68**	**353**	P	**P**	**14 56 06.3**	**+0.6**
	3.9nm,0.7s,mb4.5,baz=28,slow=8.2,SNR=18						
FINES	**FINESS Array B**	**65.68**	**353**	P	**P**	**14 56 06.3**	**+0.6**

*LDG **23** 14:46:21.3±0.5, 34.12N×89.18E, h10km, Mb5.1/30, Ms4.7/6, Error ellipse: s-maj=24.3km s-min=5.2km az=101.0*
*BJI **23** 14:46:21.2, 33.98N×89.25E, h3km, mB5.0, mb4.9, Ms4.8, Msz4.6*
*IDC **23** 14:46:22.0±0.6, 34.12N×89.39E, mb4.5/18, mb1 4.7/20, mb1mx4.6/26, ML3.7/2, MS4.0/8, Ms1 4.0/8, ms1mx3.7/24, Error ellipse: s-maj=24.3km s-min=13.7km az=45.0, Station GNI timing error*
*NEIC **23** 14:46:22.6±2.8, 34.08N×89.32E, h4km±18km, mb5.1/35, Error ellipse: s-maj=7.9km s-min=4.9km az=48.0*
*HRVD **23** 14:46:22.6±0.5, 33.87N×89.29E, h12km±2km, MW4.8/46, Centroid moment Tensor Solution. LP body waves: s10,c11;Mantle waves: s46,c78; Half duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-0.93±.22; $M_{\theta\theta}$-0.94±.12; $M_{\phi\phi}$1.87±.15; $M_{r\theta}$-1.01±.53; $M_{\theta\phi}$0.96±.10; $M_{\phi r}$0.70±.36; Best double couple: $M_0$2.25×10^{16} NP1:ϕ_s54°, δ56°, λ-27°. NP2:ϕ_s160°, δ68°, λ-143°. Principal axes: T 2.22, Plg8°, Azm285°; N .06, Plg47°, Azm186°; P -2.28, Plg42°, Azm21°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*MOS **23** 14:46:25.5±1.2, 34.12N×89.35E, h33km, mb4.8/17 Error ellipse: s-maj=14.2km s-min=8.0km az=106.5*
*NDI **23** 14:46:35.6±3.3, 33.45N×88.69E, h41km±278km, mb5.1, mb5.1(NEIC)*

ISC 23 14:46:24.7±0.9, 34.09N±0.04×89.37E±0.04, h33km±9km, n165, σ1^{s}05/164, mb4.8/58, MS4.2/18, 4C-4D, Xizang

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
LSA	**Lhasa**	**4.63**	**160**	PG	**P**	**14 47 39.4**	**+5.2**
LSA				SG	S	14 48 48.0	+20
LSA	**Lhasa**	**4.63**	**160**	*e*Pn	**P**	**14 47 39.0**	**+4.7**
LSA				*e*Pg	**P**	**14 47 50.5**	**+16**
KKN	**Kakani**	**7.20**	**210**	*e*P	**P**	**14 48 11.1**	**+0.9**
	41nm,0.6s						
GKN	**Gorkha**	**7.30**	**215**	*e*P	**P**	**14 48 11.9**	**+0.2**
	60nm,0.8s						
PKI	**Pulchoki**	**7.34**	**209**	*e*P	**P**	**14 48 12.3**	**+0.1**
	49nm,0.5s						
DMN	**Daman**	**7.43**	**211**	*e*P	**P**	**14 48 13.7**	**+0.3**
	87nm,0.8s						
KOLN	**Koldanda**	**8.01**	**220**	*e*P	**P**	**14 48 21.2**	**-0.4**
	26nm,0.7s						
SHL	**Shillong**	**8.77**	**165**	*e*P	**P**	**14 48 33.0**	**+0.9**
	50nm,1.0s						
SHL				*e*		14 51 01.0	
WMQ	**Urumqi**	**9.80**	**353**	P	**P**	**14 48 46.3**	**0.0**
AYAN	**Aya Nagar**	**11.87**	**245**	*e*P	**P**	**14 49 11.2**	**-3.3**
KSH	**Kashi**	**12.02**	**301**	*e*P	**P**	**14 49 18.1**	**+1.6**
KSH				*e*AP		14 49 23.8	
KSH				*e*XP		14 49 27.5	
KSH				*e*S	**S**	**14 51 39.1**	**+8.7**
KSH				LR	LR		
	comp=N,990nm,7.9s						
KSH				LR	LR		
	comp=E,2μm,7.6s						
SONA	**Sohna**	**12.02**	**244**	*e*P	**P**	**14 49 11.1**	**-5.4**
KUDL

	comp=Z,16nm,1.0s								
ZAL						MLR	MLR		
	comp=Z,669nm,18.1s								
NVS	**Novosibirsk**	**21.18**	**350**	*i*	P	**P**		**14 51 07.7**	**-1.6**
NVS					pmax	pmax			
	comp=Z,18nm,1.2s,mb4.3								
NVS					pmax	pmax			
	comp=N,15nm,1.0s								
NVS					pmax	pmax			
	comp=E,15nm,1.1s								
WHN	**Wuhan**	**21.39**	**93**	*e*	P	**P**		**14 51 18.0**	**+6.4**
WHN					S	**S**		**14 55 15.8**	**+14**
WHN					LR	LR			
	comp=N,2μm,8.4s								
WHN					LR	LR			
	comp=E,590nm,8.0s								
WHN					LR	LR			
	comp=Z,2μm,12.7s,MS4.6								
BVAR	**Borovoye Array**	**23.26**	**330**		P	**P**		**14 51 31.6**	**+1.7**
	comp=Z,21nm,1.1s,mb4.5,baz=135,slow=10,SNR=47								
BVAR					LR	LR		15 01 46.4	
	comp=Z,252nm,19.0s,MS3.7,baz=85,slow=40								
BRVK	**Borovoye**	**23.33**	**330**	*e*	P	**P**		**14 51 32.1**	**+1.6**
ZRNK	**Zerenda**	**23.80**	**329**	*e*	P	**P**		**14 51 36.4**	**+1.3**
NJ2	**Nanjing**	**24.76**	**86**	*e*	P	**P**		**14 51 45.0**	**+0.4**
NJ2					AP			14 51 54.5	
NJ2					XP			14 51 58.6	
NJ2					PP	PP		14 52 22.8	+1.2
NJ2					SS	SS		14 57 02.0	+2.3
NJ2					AMB	AMB			
	comp=Z,20nm,0.5s,mb4.9								
NJ2					AMB	AMB			
	comp=Z,400nm,4.9s								
SSE	**Sheshan**	**26.92**	**87**		P	**P**		**14 52 04.4**	**-0.4**
SSE					AP	pP		14 52 11.9	-2.4
SSE					XP	sP		14 52 19.3	+1.0
SSE					S	**S**		**14 56 36.5**	**-1.2**
SSE					XS			14 56 52.0	
SSE					AMB	AMB			
	comp=Z,17nm,0.7s,mb4.7								
BOD	**Bodaibo**	**28.95**	**27**	*e*	P	**P**		**14 52 22.8**	**-0.1**
ARU	**Arti**	**30.69**	**326**	⇓*i*	P	**P**		**14 52 38.5**	**+0.1**
ARU				*e*				14 53 38.5	
ARU				*e*	PPP	PPP		14 53 49.6	-4.6
ARU				*e*				14 55 33.4	
ARU				*e*	S	**S**		**14 57 40.4**	**+2.8**
ARU				*e*	SS	SS		14 59 20.1	-0.3
ARU					pmax	pmax			
	comp=Z,8.0nm,1.0s,mb4.5								
ARU					MLR	MLR			
	comp=N,200nm,15.0s,MS4.0								
ARU					MLR	MLR			
	comp=Z,300nm,15.0s,MS4.1								
ARU					MLR	MLR			
	comp=E,200nm,16.0s,MS4.0								
THR	**Tehran**	**31.25**	**284**		LR	LR		15 07 43.4	
	comp=E,261nm,21.2s,MS3.9,baz=16,slow=41								
SOKR	**Solikamsk**	**33.26**	**330**	⇑*i*	P	**P**		**14 53 00.5**	**-0.2**
SOKR					pmax	pmax			
	comp=Z,10.0nm,1.0s,mb4.7								
SOKR					MLR	MLR			
	comp=Z,250nm,20.0s,MS3.9								
KLR	**Kul'dur**	**34.60**	**51**	*e*	P	**P**		**14 53 13.8**	**+1.4**
KLR					MLR	MLR			
	comp=E,600nm,15.0s								
KLR					MLR	MLR			
	comp=E,700nm,12.0s								
KLR					MLR	MLR			
	comp=Z,1μm,12.0s,MS4.8								
ZEI	**Tsey**	**36.29**	**298**	*e*	P	**P**		**14 53 30.1**	**+3.3**
ZEI				*e*	S	**S**		**14 59 07.0**	**+2.3**
KIV	**Kislovodsk**	**37.15**	**300**	*e*	P	**P**		**14 53 29.0**	**-5.0**
KIV					pmax	pmax			
	comp=Z,3.0nm,0.6s,mb4.3								
KIV					MLR	MLR			
	comp=Z,100nm,19.0s,MS3.6								
KIV					MLR	MLR			
	comp=N,30nm,16.0s								
YAK	**Yakutsk**	**37.78**	**30**	*e*	P	**P**		**14 53 39.9**	**+0.7**
YAK					pmax	pmax			
	comp=Z,19nm,1.6s,mb4.6								
YAK					MLR	MLR			
	comp=Z,200nm,20.0s,MS3.9								
YAK	**Yakutsk**	**37.78**	**30**	*e*	P	**P**		**14 53 40.3**	**+1.1**
	comp=Z,6.0nm,0.8s,mb4.4								
YAK					LR	LR			
	comp=Z,264nm,19.0s,MS4.1								
SOC	**Sochi**	**39.31**	**299**	*e*	P	**P**		**14 53 56.7**	**+4.6**
SOC				*e*	PPP	PPP		14 55 56.5	+5.9
SOC				*e*	S	**S**		**14 59 43.7**	**-7.0**
SOC					pmax	pmax			
	comp=Z,6.0nm,0.6s,mb4.5								
SOC					pmax	pmax			
	comp=N,4.0nm,0.8s								
SOC					pmax	pmax			
	comp=E,3.0nm,0.3s								
SOC					MLR	MLR			
	comp=Z,210nm,21.0s,MS4.0								
SOC					MLR	MLR			
	comp=N,200nm,22.0s,MS4.1								
SOC					MLR	MLR			
	comp=E,200nm,22.0s,MS4.1								
MZLS	**Mizel**	**39.62**	**267**		P	**P**		**14 53 56.0**	**+1.1**
ARSS	**Ar Rass**	**40.51**	**271**		P	**P**		**14 54 03.6**	**+1.4**
HILS	**Ha'il**	**41.14**	**274**		P	**P**		**14 54 08.5**	**+1.1**
MOS	**Moscow**	**41.34**	**318**	*e*	P	**P**		**14 54 10.0**	**+1.2**
AFFS	**'Afif**	**41.49**	**268**		P	**P**		**14 54 11.8**	**+1.4**
KAMS	**Al Khamasin**	**41.81**	**263**		P	**P**		**14 54 13.7**	**+0.6**
OBN	**Obninsk**	**41.84**	**317**	*e*	P	**P**		**14 54 13.9**	**+1.0**
OBN					pmax	pmax			
	comp=Z,17nm,1.5s,mb4.5								
TIXI	**Tiksi**	**42.94**	**17**	*e*	P	**P**		**14 54 22.6**	**+0.9**
TIXI				*e*				14 56 03.3	
TIXI					pmax	pmax			
	comp=Z,42nm,1.0s,mb5.1								
TIXI					MLR	MLR			
	comp=Z,1μm,12.0s,MS5.0								
TIXI	**Tiksi**	**42.94**	**17**	*e*	P	**P**		**14 54 22.5**	**+0.8**
	comp=Z,4.4nm,0.8s,mb4.2								
TATS	**Tathlith**	**43.09**	**262**		P	**P**		**14 54 23.0**	**-0.5**
ASF	**Jabal al Asfar**	**43.58**	**283**		P	**P**		**14 54 29.2**	**+1.9**
	comp=Z,21nm,1.2s,mb4.7,baz=113,slow=2.4,SNR=9.5								
ASF					LR	LR		15 15 18.0	
	comp=Z,165nm,19.7s,MS4.0,baz=140,slow=40								
KBRS	**Khaybar**	**43.84**	**273**		P	**P**		**14 54 31.8**	**+2.3**
DJNS	**Zahran al Janu**	**43.95**	**260**		P	**P**		**14 54 31.7**	**+1.2**
BRTR	**Keskin Array B**	**44.31**	**294**		P	**P**		**14 54 34.1**	**+1.0**
	comp=Z,8.5nm,0.9s,mb4.5,baz=90,slow=6.2,SNR=40								
BRTR					PcP	PcP		14 56 17.2	-0.3
	comp=Z,1.2nm,0.9s,baz=76,slow=5.1,SNR=4.7								
BLJS	**Baljurashi**	**44.47**	**264**		P	**P**		**14 54 35.2**	**+0.6**
TBKS	**Tabuk**	**45.16**	**278**		P	**P**		**14 54 42.8**	**+2.7**
HAQS	**Haql**	**46.20**	**279**		P	**P**		**14 54 49.8**	**+1.4**
AYUS	**'Aynunah**	**46.23**	**278**		P	**P**		**14 54 49.5**	**+0.9**
BDAS	**Al Bad'**	**46.28**	**278**		P	**P**		**14 54 50.6**	**+1.6**
FINES	**FINESS Array B**	**48.05**	**325**		P	**P**		**14 55 01.9**	**-0.5**
	comp=Z,3.2nm,0.9s,mb4.3,baz=108,slow=12,SNR=6.2								
FINES	**FINESS Array B**	**48.05**	**325**		P	**P**		**14 55 01.9**	**-0.5**
FINES					pmax	pmax			
	comp=Z,3.0nm,1.0s								
MLR	**Muntele Rosu**	**48.87**	**303**		P	**P**		**14 55 10.5**	**+1.6**
	comp=Z,25nm,0.9s,mb5.2,baz=115,slow=0.5,SNR=34								
MLR	**Muntele Rosu**	**48.87**	**303**		P	**P**		**14 55 10.5**	**+1.5**
MLR					pmax	pmax			
	comp=Z,25nm,0.9s								
CRVS	**Cervenica-Dubn**	**51.30**	**308**	*e*	P	**P**		**14 55 30.2**	**+2.7**
IDI	**Anoyia**	**52.16**	**291**		P	**P**		**14 55 34.0**	**-0.2**
	comp=Z,10nm,0.9s,mb4.8,baz=16,slow=1.7,SNR=4.3								
VYHS	**Vyhne**	**53.09**	**308**	*i*	P	**P**		**14 55 41.2**	**+0.3**
BILL	**Bilibino**	**54.01**	**27**	*e*	P	**P**		**14 55 48.6**	**+1.2**
BILL					pmax	pmax			
	comp=Z,6.0nm,0.9s,mb4.5								
BILL					MLR	MLR			
	comp=Z,200nm,18.0s,MS4.2								
BILL	**Bilibino**	**54.01**	**27**	*e*	P	**P**		**14 55 48.7**	**+1.3**
	comp=Z,12nm,1.3s,mb4.7								
DPC	**Dobruska-Polom**	**54.30**	**311**	*e*	P	**P**		**14 55 50.7**	**+0.9**
VRAC	**Vranov**	**54.36**	**310**		P	**P**		**14 55 51.5**	**+1.3**
	comp=Z,1.0nm,0.3s,mb4.2,baz=18,slow=15,SNR=6.0								
UPC	**Upice**	**54.47**	**311**	*e*	P	**P**		**14 55 52.7**	**+1.7**
NB2	**NORSAR Subarra**	**55.23**	**325**		P	**P**		**14 55 55.9**	**-0.5**
	comp=Z,8.4nm,0.8s,mb4.8,baz=82,slow=7.4								
NOA	**NORSAR Array B**	**55.23**	**325**		P	**P**		**14 55 56.3**	**-0.1**
	comp=Z,5.9nm,0.8s,mb4.7,baz=82,slow=7.2,SNR=15								
NOA	**NORSAR Array B**	**55.23**	**325**		P	**P**		**14 55 56.3**	**-0.1**
NOA					pmax	pmax			
	comp=Z,6.0nm,0.8s								
PRU	**Pruhonice**	**55.50**	**311**	*e*	P	**P**		**14 56 00.0**	**+1.5**
BRG	**Berggiesshubel**	**55.67**	**312**	*e*	P	**P**		**14 56 00.1**	**+0.4**
BRG					pmax	pmax			
	comp=Z,6.0nm,1.0s,mb4.6								
BRG	**Berggiesshubel**	**55.67**	**312**	*e*	P	**P**		**14 56 00.1**	**+0.4**
	comp=Z,5.5nm,1.0s,mb4.5								
GOLS	**Golise**	**55.80**	**306**	*e*	P	**P**		**14 56 00.9**	**+0.2**
PERS	**Pernice**	**55.97**	**307**	*e*	P	**P**		**14 56 02.2**	**+0.2**
CLL	**Collm**	**56.14**	**313**		P	**P**		**14 56 06.0**	**+2.9**
GERES	**GERESS Array B**	**56.32**	**310**		P	**P**		**14 56 04.0**	**-0.4**
	comp=Z,3.0nm,0.8s,mb4.3,baz=79,slow=6.8,SNR=26								
GERES	**GERESS Array B**	**56.32**	**310**		P	**P**		**14 56 04.0**	**-0.4**
GERES					pmax	pmax			
	comp=Z,3.0nm,0.9s								
KHC	**Kasperske Hory**	**56.32**	**310**	*e*	P	**P**		**14 56 05.9**	**+1.5**
NKC	**Novy Kostel**	**56.75**	**312**	*e*	P	**P**		**14 56 06.0**	**-1.5**
CADS	**Cadrg**	**57.00**	**307**	*e*	P	**P**		**14 56 09.4**	**0.0**
GRA1	**Grafenberg Arr**	**57.66**	**311**	*e*	P	**P**		**14 56 14.8**	**+0.9**
	comp=Z,20nm,1.5s,mb4.9								
GRF	**Grafenberg Arr**	**57.66**	**311**	*e*	P	**P**		**14 56 14.8**	**+0.9**
GRF					pmax	pmax			
	comp=Z,20nm,1.5s,mb4.9								
CDF	**Champ du Feu**	**60.52**	**311**	*e*	P	**P**		**14 56 33.5**	**-0.3**
	comp=Z,27nm,1.2s,mb5.0								
HINF	**Hinteralfeld**	**60.98**	**310**	*e*	P	**P**		**14 56 36.5**	**-0.4**
DAG	**Danmarks Havn**	**61.06**	**346**	*i*	P	**P**		**14 56 37.2**	**+0.1**
	comp=Z,3.4nm,0.4s,mb4.8								
DAG	**Danmarks Havn**	**61.06**	**346**	⇓*e*	P	**P**		**14 56 37.2**	**+0.1**
DAG					pmax	pmax			
	comp=Z,3.0nm,0.4s,mb4.8								
DAG	**Danmarks Havn**	**61.06**	**346**	⇓*e*	P	**P**		**14 56 37.2**	**+0.1**
	comp=Z,3.4nm,0.4s,mb4.8								
PGF	**Pioggiola**	**61.41**	**304**	*e*	P	**P**		**14 56 38.3**	**-1.6**
	comp=Z,25nm,1.0s,mb5.0								
GIVF	**Givet**	**61.47**	**313**	*e*	P	**P**		**14 56 39.2**	**-0.9**
LPG	**La Plagne**	**61.86**	**308**	*e*	P	**P**		**14 56 43.2**	**+0.4**
	comp=Z,57nm,1.1s,mb5.3								
LPL	**La Plagne**	**61.87**	**308**	*e*	P	**P**		**14 56 43.1**	**+0.2**
	comp=Z,56nm,1.0s,mb5.3								
MEZF	**Maizieres J'vi**	**61.88**	**311**	*e*	P	**P**		**14 56 42.8**	**-0.1**
CABF	**La Chapelle**	**61.89**	**309**	*e*	P	**P**		**14 56 42.7**	**-0.3**
	comp=Z,26nm,1.2s,mb4.9								
SBF	**Sospel**	**62.00**	**306**	*e*	P	**P**		**14 56 43.5**	**-0.3**
	comp=Z,58nm,1.0s,mb5.4								
MBDF	**Montbardon**	**62.12**	**307**	*e*	P	**P**		**14 56 44.6**	**0.0**
FRF	**La Foret Royal**	**62.64**	**306**	*e*	P	**P**		**14 56 47.1**	**-1.0**
	comp=Z,32nm,1.3s,mb5.0								
ORIF	**Oris-en-Rattie**	**62.64**	**307**	*e*	P	**P**		**14 56 47.8**	**-0.3**
	comp=Z,30nm,1.1s,mb5.0								
ORIF					eR				
	comp=Z,2μm,19.0s								
SMRF	**Simiane la Rot**	**63.20**	**306**	*e*	P	**P**		**14 56 51.7**	**-0.1**
	comp=Z,15nm,1.0s,mb4.8								
SMF	**Signal de Mont**	**63.32**	**310**	*e*	P	**P**		**14 56 51.9**	**-0.7**
	comp=Z,98nm,1.5s,mb5.4								
SSF	**Saint Saulge**	**63.38**	**310**	*e*	P	**P**		**14 56 52.2**	**-0.7**
	comp=Z,27nm,1.1s,mb5.0								
VIVF	**Saint-Julien-l**	**63.46**	**308**	*e*	P	**P**		**14 56 53.0**	**-0.5**
	comp=Z,28nm,1.2s,mb5.0								
AVF	**Avril sur Loir**	**63.58**	**310**	*e*	P	**P**		**14 56 53.6**	**-0.6**
	comp=Z,39nm,1.2s,mb5.0								
BGF	**Bois d'Agland**	**63.99**	**310**	*e*	P	**P**		**14 56 56.3**	**-0.5**
LASF	**Ste Croix**	**64.30**	**307**	*e*	P	**P**		**14 56 58.8**	**-0.1**
	comp=Z,33nm,1.2s,mb5.0								
TCF	**Toulx Ste Croi**	**64.50**	**310**	*e*	P	**P**		**14 57 00.1**	**-0.1**
	comp=Z,34nm,1.0s,mb5.0								
LDF	**La Druitiere**	**65.03**	**313**	*e*	P	**P**		**14 57 02.8**	**-0.8**
	comp=Z,22nm,1.0s,mb4.8								
CAF	**Calviac**	**65.14**	**309**	*e*	P	**P**		**14 57 03.8**	**-0.5**
	comp=Z,41nm,1.2s,mb5.0								
RJF	**Les Rejaudoux**	**65.34**	**309**	*e*	P	**P**		**14 57 05.8**	**+0.2**
	comp=Z,57nm,1.2s,mb5.2								
RJF					eR				
	comp=Z,1μm,20.2s								
GRR	**Gorron**	**65.56**	**313**	*e*	P	**P**		**14 57 06.1**	**-0.9**
MTLF	**Montolieu**	**65.69**	**307**	*e*	P	**P**		**14 57 07.8**	**-0.1**
	comp=Z,31nm,1.3s,mb4.9								
MFF	**Saint Martin d**	**65.86**	**311**	*e*	P	**P**		**14 57 07.5**	**-1.4**
	comp=Z,23nm,1.2s,mb4.8								
LFF	**La Frestale**	**65.99**	**309**	*e*	P	**P**		**14 57 09.9**	**+0.1**
	comp=Z,26nm,1.0s,mb4.9								
SGMF	**Saint Gilles**	**66.64**	**313**	*e*	P	**P**		**14 57 13.0**	**-0.9**
ROSF	**Rostrenen**	**67.04**	**314**	*e*	P	**P**		**14 57 15.3**	**-1.0**
	comp=Z,64nm,1.3s,mb5.2								
EPF	**Esparros**	**67.06**	**307**	*e*	P	**P**		**14 57 16.2**	**-0.4**
	comp=Z,12nm,1.0s,mb4.6								
QUIF	**Quistinic**	**67.16**	**313**	*e*	P	**P**		**14 57 16.0**	**-1.1**
	comp=Z,86nm,1.4s,mb5.3								
ETSF	**Etsaut**	**67.72**	**307**	*e*	P	**P**		**14 57 20.6**	**-0.1**
	comp=Z,26nm,1.1s,mb4.9								
SUMG	**Summit**	**67.75**	**345**	*e*	P	**P**		**14 57 21.6**	**+1.1**
WRAB	**Tennant Creek**	**68.71**	**134**	*e*	P	**P**		**14 57 27.9**	**+0.7**
	comp=Z,28nm,1.1s,mb5.1								
WRA	**Warramunga Arr**	**68.71**	**134**		P	**P**		**14 57 28.3**	**+1.1**
	comp=Z,6.7nm,1.1s,mb4.5,baz=327,slow=6.1,SNR=9.1								
WRA	**Warramunga Arr**	**68.71**	**134**		P	**P**		**14 57 28.3**	**+1.1**
WRA					pmax	pmax			
	comp=Z,7.0nm,1.1s								
AS12	**Alice Springs**	**71.36**	**137**	*e*	P	**P**		**14 57 36.8**	**-6.5**
	comp=Z,5.3nm,0.6s,mb4.7								
ASAR	**Alice Springs**	**71.36**	**137**		P	**P**		**14 57 44.6**	**+1.3**
	comp=Z,4.7nm,1.2s,mb4.3,baz=320,slow=8.1,SNR=16								
ASAR					LR	LR		15 29 22.0	
	comp=Z,72nm,21.4s,MS3.9,baz=166,slow=36								
ESDC	**Sonseca Array**	**71.48**	**306**		P	**P**		**14 57 43.2**	**-0.6**
	comp=Z,4.8nm,0.9s,mb4.4,baz=53,slow=6.7,SNR=11								
COLA	**College**	**71.78**	**22**	*e*	P	**P**		**14 57 46.4**	**+1.3**
COLA	**College**	**71.78**	**22**	*e*	P	**P**		**14 57 46.3**	**+1.2**
ILAR	**Eielson Array**	**72.15**	**22**		P	**P**		**14 57 47.2**	**-0.1**
	comp=Z,6.7nm,1.0s,mb4.5,baz=301,slow=5.4,SNR=31								
ILAR	**Eielson Array**	**72.15**	**22**		P	**P**		**14 57 47.3**	**0.0**
ILAR					pmax	pmax			
	comp=Z,7.0nm,1.0s								
INK	**Inuvik**	**73.03**	**15**		P	**P**		**14 57 53.4**	**+1.0**
	comp=Z,8.9nm,1.0s,mb4.7,baz=298,slow=7.5,SNR=21								
INK	**Inuvik**	**73.03**	**15**		P	**P**		**14 57 53.4**	**+1.0**
INK					pmax	pmax			
	comp=Z,9.0nm,1.0s								
INK	**Inuvik**	**73.03**	**15**	*e*	P	**P**		**14 57 53.2**	**+0.8**
	comp=Z,11nm,1.0s,mb4.8								
PMR	**Palmer**	**73.58**	**25**	*e*	P	**P**		**14 57 57.1**	**+1.3**
	comp=Z,18nm,1.0s,mb5.0								
PMR					LR	LR			
	comp=Z,161nm,20.0s,MS4.3								
SML	**Sawmill**	**73.72**	**25**	*e*	P	**P**		**14 57 58.2**	**+1.7**
EVO	**Evora**	**74.78**	**306**	*e*	P	**P**		**14 58 02.4**	**-0.8**
	comp=Z,30nm,1.3s,mb4.8								
EVO					eR				
	comp=Z,290nm,22.8s								
DAWY	**Dawson**	**74.90**	**20**	*e*	P	**P**		**14 58 04.7**	**+1.4**
STKA	**Stephens Creek**	**82.00**	**137**		P	**P**		**14 58 42.9**	**0.0**
	comp=Z,3.7nm,0.8s,mb4.3,baz=273,slow=6.1,SNR=3.1								
DLBC	**Dease Lake**	**82.12**	**20**		P	**P**		**14 58 44.8**	**+1.9**
	comp=Z,0.9nm,0.8s,mb3.8,baz=324,slow=18,SNR=4.1								
TSUM	**Tsumeb**	**86.40**	**244**		LR	LR		15 38 12.3	
	comp=Z,184nm,18.7s,MS4.5,baz=140,slow=36								
NEW	**Newport**	**94.66**	**17**		PFAKE			15 00 00.0	+17
NEW					LR	LR			
	comp=Z,92nm,19.0s,MS4.3								
CMB	**Columbia Colle**	**103.10**	**24**		PFAKE			15 00 30.0	+8.4
CMB					LR	LR			
	comp=Z,110nm,19.0s,MS4.4								
VNA2	**Neumayer--Watz**	**123.99**	**203**	⇑*i*			PKPdf	15 05 23.2	+4.2
VNA1	**Neumayer--Stat**	**124.25**	**204**	⇑*i*			PKPdf	15 05 21.6	+2.1
VNA3	**Neumayer Olymp**	**124.76**	**203**	⇑*i*			PKPdf	15 05 24.9	+4.6
CPUP	**Villa Florida**	**150.29**	**276**		PKPbc		PKPdf	15 06 13.2	+5.8
	comp=Z,5.2nm,0.9s,baz=43,slow=5.0,SNR=7.5								
CPUP	**Villa Florida**	**150.29**	**276**		PKIKP		PKPdf	15 06 13.3	+5.8
CPUP					pmax	pmax			
	comp=Z,5.0nm,0.9s								
	70nm,0.1s,SNR=18								
ELOB					Lg			15 04 39.8	
	100nm,0.1s								
ELOB	**Lobios**	**0.42**	**178**	⇓Pg		**Pb**		**15 04 35.0**	**-0.4**
ELOB					Lg			15 04 39.8	
EZAM	**Zamans**	**0.48**	**254**	⇑Pg		**Pb**		**15 04 36.9**	**+0.4**
	20nm,0.1s,SNR=18								
EZAM					Lg			15 04 41.8	
	70nm,0.1s								
EZAM	**Zamans**	**0.48**	**254**	⇑Pg		**Pb**		**15 04 36.9**	**+0.4**
EZAM					Lg			15 04 43.5	
EINC	**Incio**	**0.66**	**55**	Pg		**Pb**		**15 04 41.1**	**+1.6**
	5.5nm,0.1s,SNR=53								
EINC					Lg			15 04 50.1	
	36nm,0.1s								
STS	**Santiago**	**0.70**	**330**	⇓Pg		**Pb**		**15 04 41.3**	**+1.1**
	99nm,0.1s,SNR=18								
STS					Lg			15 04 51.1	
	61nm,0.2s,SNR=7.9								
STS	**Santiago**	**0.70**	**330**	⇓Pg		**Pb**		**15 04 42.3**	**+2.1**
STS					Lg			15 04 52.0	
EMAZ	**Mazaricos**	**0.94**	**315**	⇓Pg		**Pb**		**15 04 44.8**	**+0.5**
	4.9nm,0.1s,SNR=18								
EMAZ					Sn	**Sn**		**15 04 57.1**	**-1.4**
	12nm,0.1s,SNR=7.9								
EMAZ					Lg			15 04 59.2	
	40nm,0.1s,SNR=7.9								
EMAZ	**Mazaricos**	**0.94**	**315**	Pg		**Pb**		**15 04 44.8**	**+0.5**
EMAZ					Sn	**Sn**		**15 04 57.0**	**-1.5**
EMAZ					Lg			15 04 59.2	
PVRL	**Vila Real**	**1.04**	**165**	*e*	P	**Pb**		**15 04 45.5**	**-0.6**
PVRL				*e*	S	**Sb**		**15 04 58.3**	**-1.1**
	165nm,0.1s								
PVRL	**Vila Real**	**1.04**	**165**		P	**Pb**		**15 04 45.5**	**-0.6**
PVRL					S	**Sb**		**15 04 58.3**	**-1.1**
	83nm,0.1s								
ECAL	**Calabor**	**1.05**	**109**		Pg	**Pb**		**15 04 45.7**	**-0.6**
	1.1nm,0.1s,SNR=7.9								
ECAL					Pg	**Pb**		**15 04 47.7**	**+1.4**
	3.2nm,0.1s,SNR=7.9								
ECAL					Lg			15 05 01.0	
	93nm,0.2s,SNR=7.9								
ECAL	**Calabor**	**1.05**	**109**		Pg	**Pb**		**15 04 45.9**	**-0.4**
ECAL					Pg	**Pb**		**15 04 47.6**	**+1.3**
ECAL					Lg			15 05 00.9	
PBRG	**Braganca**	**1.10**	**115**	*e*	P	**Pb**		**15 04 47.1**	**-0.1**
PBRG				*e*	S	**Sb**		**15 05 02.1**	**+1.0**
	46nm,0.3s								
PBRG	**Braganca**	**1.10**	**115**		P	**Pb**		**15 04 47.1**	**-0.1**
PBRG					S	**Sb**		**15 05 02.1**	**+1.0**
	23nm,0.3s								
EPON	**Pontenova**	**1.25**	**33**	⇑Pn		**Pn**		**15 04 49.3**	**-0.5**
	1.3nm,0.1s,SNR=18								
EPON					Pg	**Pb**		**15 04 52.9**	**+3.3**
	2.1nm,0.1s,SNR=7.9								
EPON					Sn	**Sn**		**15 05 05.2**	**-1.1**
	3.1nm,0.1s,SNR=7.9								
EPON					Lg			15 05 09.0	
	23nm,0.1s,SNR=5.0								
EPON	**Pontenova**	**1.25**	**33**	Pn		**Pn**		**15 04 49.3**	**-0.5**
EPON					Pg	**Pb**		**15 04 52.6**	**+3.0**
EPON					Sn	**Sn**		**15 05 04.9**	**-1.4**
EPON					Lg			15 05 08.8	
PVIS	**Viseu**	**1.57**	**175**	*e*	P	**Pn**		**15 04 53.9**	**-0.6**
PVIS				*e*	S	**Sn**		**15 05 13.3**	**-1.3**
	42nm,0.1s								
MTE	**Manteigas**	**1.93**	**168**	*e*	Pg	**Pn**		**15 05 00.9**	**+1.4**
MTE				*e*	Sg	**Sn**		**15 05 25.3**	**+1.8**
	15nm,0.6s								
MTE	**Manteigas**	**1.93**	**168**		Pg	**Pn**		**15 05 00.9**	**+1.4**
MTE					Lg			15 05 25.3	
	7.4nm,0.6s								
EARI	**Arriondas**	**2.34**	**63**	Pn		**Pn**		**15 05 05.0**	**-0.5**
	0.3nm,0.1s,SNR=7.9								
EARI					Pg	**Pn**		**15 05 10.9**	**+5.4**
	1.0nm,0.2s,SNR=4.0								
EARI					Sn	**Sn**		**15 05 33.5**	**-0.7**
	3.3nm,0.3s,SNR=7.9								
EARI					Lg			15 05 40.5	
	0.6nm,0.1s,SNR=7.9								
EARI	**Arriondas**	**2.34**	**63**	Pn		**Pn**		**15 05 05.0**	**-0.5**
EARI					Pg	**Pn**		**15 05 11.4**	**+5.9**
EARI					Sn	**Sn**		**15 05 33.0**	**-1.2**
EARI					Lg			15

axes: T 2.9, Plg88°, Azm34°; N .19, Plg1°, Azm285°; P -3.09, Plg2°, Azm195°; nsta1 refers to waves, cutoff=35s.
HRVD ***23*** *15:19:08.0±0.5, 43.34N×17.18E, h12km, MW5.0/58, Centroid moment Tensor Solution. LP body waves: s19,c36;Mantle waves: s58,c105; Half duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}2.24±.10; $M_{\theta\theta}$-2.66±.08; $M_{\phi\phi}$0.42±.09; $M_{r\theta}$1.29±.28; $M_{\theta\phi}$0.90±.07; $M_{r\phi}$-2.54±.34; Best double couple: M0 3.86×10^{16} NP1: ϕ_s259°, δ33°, λ38°. NP2:ϕ_s136°, δ71°, λ117°. Principal axes: T 4.07, Plg56°, Azm81°; N -.42, Plg25°, Azm307°; P -3.65, Plg21°, Azm206°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
CSEM ***23*** *15:19:09.4, 43.39N×17.38E, h40km, mb4.9*
STR ***23*** *15:19:22.4±4.4, 43.77N×16.24E, h10km±1km, MI5.4, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*

ISC 23 15:19:06.3±0.1, 43.434N±0.008×17.400E±0.010, h10km, (h24km±2.4km:pP-P), n715, σ1932/884, mb4.8/85, MS4.5/33, 67C-44D, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
STON	**Ston**	**0.60**	**159**	*i*	Pg		**Pg**	**15 19 17.4**	**-1.0**
STON				*i*	Sg		**Sg**	**15 19 27.2**	**+0.7**
BRY	**Bratogost**	**0.99**	**122**	⇑ *i*	Pg		**Pg**	**15 19 24.2**	**-2.0**
BRY				*e*	Sg		**Sg**	**15 19 40.0**	**+0.6**
UPM	**Unac-Piva**	**1.13**	**101**	⇓ *i*	Pg		**Pg**	**15 19 27.2**	**-1.6**
UPM				*e*	Sg		**Sg**	**15 19 45.4**	**+1.6**
HCY	**Herceg Novi**	**1.27**	**140**	⇑ *i*	Pg		**Pg**	**15 19 29.2**	**-2.6**
HCY				*e*	Sg		**Sg**	**15 19 48.9**	**+0.2**
NKY	**Niksic**	**1.32**	**117**	⇑ *i*	Pg		**Pg**	**15 19 30.7**	**-2.1**
NKY				*e*	Sg		**Sg**	**15 19 51.7**	**+1.2**
PLE	**Pljevlja**	**1.46**	**93**	⇓ *i*	Pg		**Pg**	**15 19 34.0**	**-1.5**
PLE				*e*	Sg		**Sg**	**15 19 56.4**	**+1.5**
BUM	**Brajici-Budva**	**1.58**	**135**	⇓ *i*	Pg		**Pg**	**15 19 35.1**	**-2.8**
BUM				*e*	Sg		**Sg**	**15 19 58.3**	**-0.6**
NVSS	**Nova Varos 2**	**1.68**	**87**	⇑ *i*	Pn		**Pn**	**15 19 39.7**	**+3.8**
NVSS					Sn		**Sn**	**15 20 01.5**	**+3.9**
TTG	**Podgorica**	**1.69**	**126**	⇑ *i*	Pn		**Pn**	**15 19 36.9**	**+0.7**
TTG				*e*	Sn		**Sn**	**15 20 01.6**	**+3.5**
IVA	**Berane**	**1.91**	**106**	⇑ *i*	Pn		**Pn**	**15 19 41.5**	**+2.3**
IVA				*e*	Sn		**Sn**	**15 20 07.3**	**+3.7**
DIVS	**Divcibare**	**1.99**	**70**	⇓ *i*	Pn		**Pn**	**15 19 41.5**	**+1.1**
DIVS					Sn		**Sn**	**15 20 06.3**	**+0.7**
ULC	**Ulcinj**	**2.00**	**137**	⇓ *i*	Pn		**Pn**	**15 19 42.0**	**+1.4**
ULC				*e*	Sn		**Sn**	**15 20 09.0**	**+3.0**
FGMS	**Monte Sant'Ang**	**2.03**	**212**	*e*	Pn		**Pn**	**15 19 41.2**	**+0.2**
PVY	**Plav**	**2.06**	**113**	*e*	Pn		**Pn**	**15 19 44.6**	**+3.2**
PVY				*e*	Sn		**Sn**	**15 20 11.1**	**+3.6**
SDA	**Shkodra**	**2.07**	**131**	*i*	Pn		**Pn**	**15 19 44.5**	**+2.9**
SDA				*i*	Sn		**Sn**	**15 20 09.4**	**+1.7**
NVLJ	**Novalja**	**2.15**	**303**	⇓ *i*	Pn		**Pn**	**15 19 45.3**	**+2.7**
NVLJ				*i*	Sn		**Sn**	**15 20 12.9**	**+3.4**
SISC	**Sisak**	**2.17**	**340**	*i*	Pn		**Pn**	**15 19 44.5**	**+1.6**
SISC				*i*	Sn		**Sn**	**15 20 12.4**	**+2.4**
SISC				*i*	Sg		**Sg**	**15 20 17.5**	**-0.9**
RGNG	**Rignano Grg**	**2.21**	**218**	*e*	Pn		**Pn**	**15 19 43.5**	**-0.1**
PUK	**Puka**	**2.30**	**126**	*i*	Pn		**Pn**	**15 19 49.1**	**+4.2**
PUK				*i*	Sn		**Sn**	**15 20 18.5**	**+5.0**
FG2	**Serracapriola**	**2.32**	**226**	*e*	Pn		**Pn**	**15 19 46.1**	**+1.0**
GRUS	**Gruza**	**2.45**	**78**	⇓ *i*	Pn		**Pn**	**15 19 47.9**	**+1.0**
GRUS					Sn		**Sn**	**15 20 20.9**	**+3.6**
LACI	**Lac**	**2.48**	**136**	*i*	Pn		**Pn**	**15 19 49.5**	**+2.1**
LACI				*i*	Sn		**Sn**	**15 20 20.9**	**+2.9**
RHK3	**Tenkes**	**2.53**	**14**	⇓ *e*	P		**Pn**	**15 19 48.5**	**+0.4**
RHK3				*e*	S		**Sn**	**15 20 20.8**	**+1.5**
BRT	**Bari-Castellan**	**2.56**	**183**	*e*	Pn		**Pn**	**15 19 48.2**	**-0.3**
BOJS	**Bojanci**	**2.58**	**324**	*e*	Pn		**Pn**	**15 19 51.3**	**+2.5**
BOJS					*e*Sn		**Sn**	**15 20 24.4**	**+3.9**
	comp=Z,8μm,0.5s								
BEO	**Belgrade**	**2.60**	**57**	⇓ *i*	Pn		**Pn**	**15 19 49.4**	**+0.3**
BEO					Sn		**Sn**	**15 20 23.4**	**+2.3**
FG5	**Orsara di Pugl**	**2.67**	**217**	*e*	Pn		**Pn**	**15 19 50.6**	**+0.5**
FG4	**Candela**	**2.69**	**212**	*e*	Pn		**Pn**	**15 19 50.6**	**+0.1**
RHK1	**Bakonya**	**2.70**	**10**	⇑ *e*	P		**Pn**	**15 19 51.3**	**+0.7**
RHK1				*e*	S		**Sn**	**15 20 24.1**	**+0.4**
GCIS	**Gornji Cirnik**	**2.75**	**333**	*i*	Pn		**Pn**	**15 19 52.8**	**+1.6**
GCIS				*e*	Sn		**Sn**	**15 20 26.9**	**+2.2**
	comp=Z,10μm,1.3s								
CRES	**Cresnjevec ost**	**2.77**	**331**	*e*	Pn		**Pn**	**15 19 53.4**	**+2.0**
CRES				*e*	Sn		**Sn**	**15 20 28.6**	**+3.3**
	comp=Z,10μm,0.9s								
CRES	**Cresnjevec ost**	**2.77**	**331**		P		**Pn**	**15 19 53.4**	**+1.9**
TIR	**Tirane**	**2.77**	**138**	*i*	Pn		**Pn**	**15 19 53.0**	**+1.4**
TIR				*i*	Sn		**Sn**	**15 20 36.0**	**+11**
PHP	**Peshkopia**	**2.85**	**127**	*e*	Pn		**Pn**	**15 19 55.0**	**+2.4**
CII	**Carovilli**	**2.85**	**234**	*e*	Pn		**Pn**	**15 19 53.8**	**+1.1**
LTRZ	**Laterza**	**2.86**	**189**		P		**Pn**	**15 19 52.7**	**-0.2**
GOLS	**Golise**	**2.87**	**334**	*e*	Pn		**Pn**	**15 19 54.5**	**+1.5**
GOLS				*e*	Sn		**Sn**	**15 20 30.1**	**+2.1**
GOLS	**Golise**	**2.87**	**334**		P		**Pn**	**15 19 54.6**	**+1.6**
CESS	**Cesta pri Krsk**	**2.89**	**332**	*i*	Pn		**Pn**	**15 19 55.2**	**+1.9**
CESS				*e*	Sn		**Sn**	**15 20 32.3**	**+3.8**
SVIS	**Svilajnac**	**2.90**	**71**	⇑ *i*	Pn		**Pn**	**15 19 53.6**	**+0.3**
SVIS					Sn		**Sn**	**15 20 29.9**	**+1.4**
TERO	**Teramo**	**2.90**	**255**	*e*	Pn		**Pn**	**15 19 55.0**	**+1.6**
PKSM	**Moragy**	**2.92**	**17**		P		**Pn**	**15 19 53.5**	**-0.5**
LEGS	**Legarje**	**2.92**	**330**		P		**Pn**	**15 19 55.5**	**+1.8**
MRB1	**Monte Rocchett**	**2.93**	**219**	*e*	Pn		**Pn**	**15 19 56.8**	**+3.0**
CPI2	**Carpinone**	**2.93**	**232**	*e*	Pn		**Pn**	**15 19 55.0**	**+1.1**
RNI2	**Rionero Sannit**	**2.96**	**235**	*e*	Pn		**Pn**	**15 19 55.2**	**+0.9**
VISS	**Visnje**	**2.99**	**323**	*e*	Pn		**Pn**	**15 19 57.1**	**+2.4**
VISS				*e*	Sn		**Sn**	**15 20 35.2**	**+4.2**
	comp=Z,5μm,0.5s								
KNDS	**Knezji Dol**	**3.01**	**315**	*e*	Pn		**Pn**	**15 19 57.6**	**+2.6**
	comp=Z,30μm,1.5s								
MRLC	**Muro Lucano**	**3.03**	**209**	*e*	Pn		**Pn**	**15 19 55.2**	**-0.1**
SGG	**Gregorio Mates**	**3.03**	**229**	*e*	Pn		**Pn**	**15 19 56.4**	**+1.2**
DOBS	**Dobrina**	**3.04**	**334**	*i*	Pn		**Pn**	**15 19 57.0**	**+1.5**
DOBS	**Dobrina**	**3.04**	**334**		P		**Pn**	**15 19 57.2**	**+1.8**
CING	**Cingoli**	**3.06**	**270**	*e*	Pn		**Pn**	**15 19 57.0**	**+1.8**
CSSN	**Cassano Irpino**	**3.12**	**215**	*e*	Pn		**Pn**	**15 19 56.8**	**+0.3**
AQU	**L'Aquila**	**3.13**	**251**	*e*	Pn		**Pn**	**15 19 58.2**	**+1.6**
CEY	**Cerknica**	**3.13**	**318**	*i*	Pn		**Pn**	**15 19 59.4**	**+2.7**
	comp=Z,10μm,0.6s								
CEY	**Cerknica**	**3.13**	**318**		P		**Pn**	**15 19 59.2**	**+2.5**
LCI	**Lecce**	**3.14**	**170**	*e*	Pn		**Pn**	**15 19 56.4**	**-0.5**
PDKS	**Podkum**	**3.15**	**328**		P		**Pn**	**15 19 58.8**	**+1.8**
SDI	**San Donato**	**3.16**	**238**	*e*	Pn		**Pn**	**15 19 57.8**	**+0.7**
PKS9	**Tamasi**	**3.21**	**11**	⇓ *e*	P		**Pn**	**15 19 58.3**	**+0.4**
PKS9				*e*	S		Sn	15 20 57.4	+21
ARV	**Arcevia**	**3.25**	**273**	*e*	Pn		**Pn**	**15 19 59.9**	**+1.5**
SNTG	**Esanatoglia**	**3.26**	**268**	*e*	Pn		**Pn**	**15 19 59.6**	**+1.1**
PTQR	**Pietraquaria**	**3.27**	**246**		P		**Pn**	**15 20 00.3**	**+1.7**
SGO	**Sicignano**	**3.27**	**209**	*e*	Pn		**Pn**	**15 19 57.6**	**-1.1**
GROS	**Grobnik**	**3.31**	**337**	*e*	Pn		**Pn**	**15 20 00.4**	**+1.1**
GROS				*e*	Sn		**Sn**	**15 20 39.9**	**+0.7**
	comp=Z,8μm,1.5s								
GROS	**Grobnik**	**3.31**	**337**		P		**Pn**	**15 20 00.4**	**+1.1**
SKO	**Skopje**	**3.32**	**115**	⇑ *i*	Pn		**Pn**	**15 20 02.0**	**+2.7**
SKO				*i*	Pb		**Pb**	**15 20 06.0**	**+1.2**
SKO				*i*	Pg		**Pg**	**15 20 10.6**	**-1.9**
SKO				*i*	Sn		**Sn**	**15 20 39.9**	**+0.7**
SKO				*i*	Sb		**Sb**	**15 20 48.8**	**+3.3**
SKO				*i*	Sg		**Sg**	**15 20 52.2**	**-4.5**
SKO					Lg			15 21 01.0	
	comp=Z,0.7nm,0.6s								
SKO					Lg			15 21 01.0	
	comp=N,0.0nm,2.5s								
SKO					Lg			15 21 01.0	
	comp=N,32nm,3.0s								
SKO					Lg			15 21 01.0	
	comp=E,17nm,2.5s								
LJU	**Ljubljana**	**3.32**	**323**	*e*	Pn		**Pn**	**15 20 01.4**	**+2.1**
LJU				*e*	Pg		**Pg**	**15 20 11.0**	**-1.5**
LJU				*e*	Sn		**Sn**	**15 20 41.3**	**+2.1**
	comp=Z,12μm,1.1s								
LJU	**Ljubljana**	**3.32**	**323**		P		**Pn**	**15 20 01.5**	**+2.2**
BOLS	**Boljevac**	**3.33**	**82**	⇑ *i*	Pn		**Pn**	**15 19 60.0**	**+0.4**
BOLS					Sn		**Sn**	**15 20 41.0**	**+1.3**
PESA	**Pesaro**	**3.35**	**280**		P		**Pn**	**15 20 02.8**	**+3.1**
FSSB	**Fossombrone**	**3.37**	**276**	*e*	Pn		**Pn**	**15 20 01.9**	**+1.8**
MSC	**Monte Massico**	**3.39**	**230**	*e*	Pn		**Pn**	**15 20 01.4**	**+1.0**
JAVS	**Javornik**	**3.42**	**317**	*e*	Pn		**Pn**	**15 20 03.1**	**+2.3**
JAVS				*e*	Sn		**Sn**	**15 20 46.9**	**+5.0**
	comp=Z,16μm,1.0s								
OHR	**Ohrid**	**3.43**	**131**	⇓ *i*	Pn		**Pn**	**15 20 03.2**	**+2.3**
OHR				*i*	Pb		**Pb**	**15 20 07.3**	**+0.6**
OHR				*i*	Pg		**Pg**	**15 20 11.5**	**-3.2**
OHR				*i*	Sn		**Sn**	**15 20 42.2**	**+0.2**
OHR				*i*	Sb		**Sb**	**15 20 50.2**	**+1.5**
OHR				*i*	Sg		**Sg**	**15 20 55.7**	**-4.7**
OVO	**Vesuviano**	**3.43**	**222**	*e*	Pn		**Pn**	**15 20 01.1**	**+0.2**
GUAR	**Guarcino**	**3.43**	**243**		P		**Pn**	**15 20 02.1**	**+1.1**
ORI	**Oriolo Calabro**	**3.44**	**192**	*e*	Pn		**Pn**	**15 20 01.1**	**0.0**
TRI	**Trieste**	**3.45**	**312**		P		**Pn**	**15 20 02.9**	**+1.6**
MURB	**Monte Urbino**	**3.56**	**269**	*e*	Pn		**Pn**	**15 20 04.2**	**+1.4**
PKS8	**Sarbogard**	**3.56**	**14**	⇓ *e*	P		**Pn**	**15 20 02.8**	**0.0**
MGR	**Morigerati**	**3.57**	**203**	*e*	Pn		**Pn**	**15 20 03.5**	**+0.5**
PERS	**Pernice**	**3.59**	**334**	*i*	Pn		**Pn**	**15 20 04.6**	**+1.4**
PERS				*e*	Sn		**Sn**	**15 20 46.5**	**+0.5**
	comp=Z,3μm,0.6s								
PERS	**Pernice**	**3.59**	**334**		P		**Pn**	**15 20 04.5**	**+1.3**
BISS	**Bistriski jare**	**3.59**	**334**	*i*	Pn		**Pn**	**15 20 04.6**	**+1.3**
BISS				*i*	Sn		**Sn**	**15 20 47.1**	**+0.8**
VOY	**Vojsko**	**3.60**	**317**	*e*	Pn		**Pn**	**15 20 05.3**	**+1.9**
MNS	**Montasola**	**3.62**	**255**	*e*	Pn		**Pn**	**15 20 04.2**	**+0.6**
RSM	**Repubblica di**	**3.62**	**280**	*e*	Pn		**Pn**	**15 20 05.5**	**+1.8**
OBKA	**Obir**	**3.68**	**328**	⇑ *i*	PN		**Pn**	**15 20 06.1**	**+1.6**
OBKA				*i*	SN		**Sn**	**15 20 45.8**	**-2.6**
MTCE	**Montecelio**	**3.71**	**249**		P		**Pn**	**15 20 04.9**	**0.0**
CSM	**Casamicciola**	**3.74**	**225**	⇑ *e*	Pn		**Pg**	**15 20 17.7**	**-3.2**
BIA	**Bitola**	**3.78**	**128**	⇑ *i*	Pn		**Pn**	**15 20 06.6**	**+0.7**
BIA				*i*	Pb		**Pb**	**15 20 10.5**	**-2.3**
BIA				*i*	Pg		**Pg**	**15 20 13.1**	**-8.7**
BIA				*i*	Sb		**Sb**	**15 20 54.1**	**-4.9**
BIA				*i*	Sg		**Sg**	**15 20 59.9**	**-12**
CADS	**Cadrg**	**3.82**	**318**	*i*	Pn		**Pn**	**15 20 08.5**	**+2.0**
	comp=Z,25μm,1.4s								
DRE	**Drenchia**	**3.83**	**317**	⇑ *e*	Pn		**Pn**	**15 20 08.4**	**+1.8**
DRE	**Drenchia**	**3.83**	**317**	⇓ *i*	P		**Pn**	**15 20 08.5**	**+1.9**
TDS	**Terranova Siba**	**3.85**	**192**	*e*	Pn		**Pn**	**15 20 06.3**	**-0.7**
MA9	**Marino**	**3.87**	**246**	*e*	Pn		**Pn**	**15 20 08.0**	**+0.8**
PKSN	**Nyarlorinc**	**3.88**	**26**	*e*	Pn		**Pn**	**15 20 07.8**	**+0.5**
LAV9	**Lanuvio**	**3.89**	**245**	*e*	Pn		**Pn**	**15 20 08.0**	**+0.5**
COLI	**Coloredo**	**3.94**	**315**	⇑ *e*	Pn		**Pn**	**15 20 09.5**	**+1.4**
COLI	**Coloredo**	**3.94**	**315**	⇑ *i*	P		**Pn**	**15 20 09.5**	**+1.4**
BRSN	**Barisano**	**3.94**	**284**	*e*	Pn		**Pn**	**15 20 14.1**	**+5.9**
ROBS	**Robic**	**3.94**	**317**	*i*	Pn		**Pn**	**15 20 09.7**	**+1.5**
ROBS				*e*	Sn		**Sn**	**15 20 57.5**	**+2.4**
	comp=Z,11μm,1.0s								
ROBS	**Robic**	**3.94**	**317**		P		**Pn**	**15 20 09.8**	**+1.6**
TLI	**Talmassons**	**3.95**	**311**	⇑ *e*	Pn		**Pn**	**15 20 09.4**	**+1.1**
TLI	**Talmassons**	**3.95**	**311**	⇓ *i*	P		**Pn**	**15 20 09.5**	**+1.2**
VENT	**Ventotene**	**3.96**	**230**		P		**Pn**	**15 20 09.1**	**+0.6**
CRE	**Caprese Michel**	**3.97**	**275**	*e*	Pn		**Pn**	**15 20 10.6**	**+2.1**
FNA	**Florina**	**3.97**	**130**	*e*	Pn		**Pn**	**15 20 09.8**	**+1.2**
FNA	**Florina**	**3.97**	**130**		P		**Pn**	**15 20 09.8**	**+1.2**
FNA					S		**Sn**	**15 20 57.9**	**+2.1**
PKSG		**4.02**	**10**	⇑ *e*	P		**Pn**	**15 20 09.6**	**+0.3**
PKSG				*e*	S		**Sn**	**15 20 58.9**	**+1.9**
ARSA	**Arzberg**	**4.04**	**342**	⇑ *i*	PN		**Pn**	**15 20 10.3**	**+0.7**
ARSA				*i*	SN		**Sn**	**15 20 56.2**	**-1.3**
IESO	**Jesolo**	**4.05**	**303**	*e*	Pn		**Pn**	**15 20 10.9**	**+1.1**
IESO	**Jesolo**	**4.05**	**303**	⇓ *i*	P		**Pn**	**15 20 11.5**	**+1.8**
SRN	**Sarande**	**4.05**	**150**	*e*	Pn		**Pn**	**15 20 09.7**	**0.0**
SRN				*i*	Sn		**Sn**	**15 20 56.5**	**-1.3**
SFI	**Santa Sofia**	**4.06**	**279**	*e*	Pn		**Pn**	**15 20 12.9**	**+3.1**
SFI				*e*	Sn		**Sn**	**15 20 58.2**	**+0.3**
LSK	**Leskovik**	**4.06**	**143**	*e*	Pn		**Pn**	**15 20 09.5**	**-0.4**
BAD	**Bernadia**	**4.07**	**315**	⇑ *e*	Pn		**Pn**	**15 20 11.0**	**+0.9**
LSR	**Lussari**	**4.10**	**319**	⇑ *e*	Pn		**Pn**	**15 20 12.4**	**+1.9**
GMNA	**Gemona**	**4.10**	**315**		P		**Pn**	**15 20 12.2**	**+1.7**
BUIA	**Buia**	**4.12**	**314**	*e*	Pn		**Pn**	**15 20 11.8**	**+1.0**
KEK	**Kerkira**	**4.13**	**153**	*e*	P		**Pn**	**15 20 10.1**	**-0.8**
KEK	**Kerkira**	**4.13**	**153**		P		**Pn**	**15 20 11.3**	**+0.4**
PGD	**Poggio Sodo**	**4.14**	**278**	*e*	Pn		**Pn**	**15 20 13.0**	**+1.9**
PGD				*e*	Sn		**Sn**	**15 20 59.0**	**-1.2**
BOO	**Bordano**	**4.20**	**315**	⇑ *e*	Pn		**Pn**	**15 20 12.6**	**+0.7**
TOLF	**Tolfa**	**4.21**	**253**		P		**Pn**	**15 20 12.8**	**+0.8**
BUD	**Budapest**	**4.21**	**15**	⇑ *e*	Pn		**Pn**	**15 20 11.9**	**-0.1**
BUD				*e*	Sn		**Sn**	**15 21 03.1**	**+1.3**
MPRI	**Monte Prat**	**4.21**	**313**	⇑ *e*	Pn		**Pn**	**15 20 12.9**	**+0.9**
MPRI	**Monte Prat**	**4.21**	**313**	⇑ *i*	P		**Pn**	**15 20 13.0**	**+1.0**
VMG	**Vicchio**	**4.28**	**279**	*e*	Pn		**Pn**	**15 20 15.2**	**+2.2**
PLRO	**Paularo**	**4.34**	**317**	⇑ *e*	Pn		**Pn**	**15 20 15.5**	**+1.6**
PLRO	**Paularo**	**4.34**	**317**	⇑ *i*	P		**Pn**	**15 20 15.7**	**+1.9**
VTS	**Vitosha**	**4.34**	**99**		P		**Pn**	**15 20 15.5**	**+1.6**
VAY	**Valandovo**	**4.37**	**117**	*i*	Pn		**Pn**	**15 20 15.9**	**+1.6**
VAY				*i*	Pb		**Pb**	**15 20 27.0**	**+4.1**
VAY				*i*	Pg		**Pg**	**15 20 31.1**	**-2.5**
VAY				*i*	Sn		**Sn**	**15 21 06.7**	**+0.7**
VAY				*i*	Sb		**Sb**	**15 21 18.5**	**+2.4**
VAY				*i*	Sg		**Sg**	**15 21 26.4**	**-5.5**
CAE	**Caneva**	**4.37**	**308**	⇑ *e*	Pn		**Pn**	**15 20 15.1**	**+0.8**
CAE	**Caneva**	**4.37**	**308**	⇑ *i*	P		**Pn**	**15 20 15.2**	**+0.9**
SEI	**Scarperia**	**4.42**	**280**	*e*	Pn		**Pn**	**15 20 17.8**	**+2.7**
SRO	**Srobarova**	**4.43**	**8**	*i*	PN		**Pn**	**15 20 16.2**	**+1.1**
ZOU	**Zoufplan**	**4.43**	**316**	⇑ *e*	Pn		**Pn**	**15 20 16.4**	**+1.3**
CSNT	**Castellina Chi**	**4.45**	**273**	*e*	Pn		**Pn**	**15 20 16.5**	**+1.1**
GRG	**Griva**	**4.46**	**122**	*e*	P		**Pn**	**15 20 17.1**	**+1.5**
GRG	**Griva**	**4.46**	**122**		P		**Pn**	**15 20 17.1**	**+1.5**
GRG					S		**Sn**	**15 21 09.3**	**+1.0**
IGT	**Igoumenitsa**	**4.48**	**150**	*e*	P		**Pn**	**15 20 14.7**	**-1.1**
IGT	**Igoumenitsa**	**4.48**	**150**		P		**Pn**	**15 20 14.7**	**-1.1**
IGT					S		**Sn**	**15 21 04.0**	**-4.6**
KZN	**Kozani**	**4.52**	**132**	*e*	P		**Pn**	**15 20 17.2**	**+0.8**
TEOL	**Teolo**	**4.54**	**297**	*e*	Pn		**Pn**	**15 20 18.1**	**0.0**
FVI	**Forni Avoltri**	**4.55**	**316**	*e*	Pn		**Pn**	**15 20 16.5**	**-0.4**
JAN	**Janina**	**4.58**	**144**	*e*	P		**Pn**	**15 20 17.4**	**+0.2**
CSO	**Casso**	**4.59**	**310**	⇓ *e*	Pn		**Pn**	**15 20 17.5**	**+0.1**
FNVD	**Fontana Vidola**	**4.60**	**281**	*e*	Pn		**Pn**	**15 20 19.6**	**+2.0**
KBA	**Koelnbreinsper**	**4.63**	**323**	⇓ *i*	PN		**Pn**	**15 20 20.0**	**+2.0**
KBA				*i*	SN		**Sn**	**15 21 11.6**	**-1.0**
MEV	**Metsovon**	**4.64**	**140**	*e*	P		**Pn**	**15 20 19.1**	**+1.0**
GRI	**Girifalco**	**4.67**	**189**	*e*	Pn		**Pn**	**15 20 18.0**	**-0.5**
KNT	**Kendrikon**	**4.67**	**117**	*e*	P		**Pn**	**15 20 19.2**	**+0.7**
CGRP	**Cima Grappa**	**4.68**	**303**	⇓ *e*	Pn		**Pn**	**15 20 18.9**	**+0.1**
CGRP	**Cima Grappa**	**4.68**	**303**	⇓ *i*	P		**Pn**	**15 20 19.0**	**+0.2**
GRFL	**Gerfalco**	**4.70**	**269**	*e*	Pn		**Pn**	**15 20 20.1**	**+1.1**
GRFL				*e*	Sn		**Sn**	**15 21 12.6**	**-1.6**
MAON	**Monte Argentar**	**4.71**	**260**	*e*	Pn		**Pn**	**15 20 19.2**	**+0.1**
ZCCA	**Zocca**	**4.73**	**283**	*e*	Pn		**Pn**	**15 20 22.6**	**+3.1**
ZCCA				*e*	Sn		**Sn**	**15 21 14.3**	**-0.7**
FAU	**Forcella Aurin**	**4.76**	**308**	⇓ *e*	Pn		**Pn**	**15 20 20.5**	**+0.7**
ZST	**Bratislava**	**4.77**	**358**	*i*	PN		**Pn**	**15 20 19.6**	**-0.3**
ZST				*i*	SN		**Sn**	**15 21 16.2**	**+0.2**
PSZ	**Piszkesteto**	**4.81**	**20**	⇑ *i*	PN		**Pn**	**15 20 20.1**	**-0.5**
PSZ				*e*	Sn		**Sn**	**15 21 24.5**	**+7.4**
PSZ	**Piszkesteto**	**4.81**	**20**	⇑ *i*	P		**Pn**	**15 20 20.1**	**-0.5**
PSZ				*e*	S		**Sn**	**15 21 14.5**	**-2.6**
AFL	**Alpe Faloria**	**4.83**	**312**	*e*	Pn		**Pn**	**15 20 21.7**	**+0.9**
CTI	**Castel Tesino**	**4.86**	**305**	*e*	Pn		**Pn**	**15 20 21.6**	**+0.4**
CTI				*e*	Sn		**Sn**	**15 21 17.9**	**-0.4**
VKA	**Vienna**	**4.89**	**351**	⇓ *i*	PN		**Pn**	**15 20 22.1**	**+0.4**
VKA				*i*	SN		**Sn**	**15 21 14.2**	**-4.9**
MOA	**Molln**	**4.93**	**335**	⇑ *i*	PN		**Pn**	**15 20 23.8**	**+1.5**
MOA				*i*	SN		**Sn**	**15 21 18.0**	**-2.1**
BDI	**Bagni Di Lucca**	**4.97**	**280**	*e*	Pn		**Pn**	**15 20 23.2**	**+0.4**
THE	**Thessaloniki**	**5.00**	**122**	*e*	P		**Pn**	**15 20 24.7**	**+1.4**
PII	**Pisa**	**5.00**	**276**	*e*	Pn		**Pn**	**15 20 24.7**	**+1.4**
PII				*e*	Sn		**Sn**	**15 21 22.2**	**+0.3**
GSCL	**Gusciola**	**5.01**	**283**	*e*	Pn		**Pn**	**15 20 26.6**	**+3.2**
GSCL				*e*	Sn		**Sn**	**15 21 20.5**	**-1.5**
MMB	**Musomiste**	**5.03**	**109**		P		**Pn**	**15 20 25.0**	**+1.4**
MAIM		**5.04**	**278**		P		**Pn**	**15 20 25.0**	**+1.3**
PGB	**Panagyurishte**	**5.04**	**98**		P		**Pn**	**15 20 25.0**	**+1.2**
LIT	**Litokhoron**	**5.06**	**129**	*e*	Pn		**Pn**	**15 20 24.0**	**0.0**
LIT	**Litokhoron**	**5.06**	**129**		P		**Pn**	**15 20 24.0**	**0.0**
LIT					S		**Sn**	**15 21 23.0**	**-0.2**
SMOL	**Smolenice**	**5.08**	**0**	*i*	PN		**Pn**	**15 20 25.1**	**+0.7**
SMOL				*e*	SN		**Sn**	**15 21 24.2**	**+0.4**
SARO	**Sassorosso**	**5.12**	**281**		P		**Pn**	**15 20 26.2**	**+1.3**
VLC	**Villacollemand**	**5.13**	**281**	*e*	Pn		**Pn**	**15 20 26.0**	**+0.9**
VLC				*e*	Sn		**Sn**	**15 21 24.8**	**-0.2**
SOH	**Sokhos**	**5.14**	**118**	*e*	P		**Pn**	**15 20 26.3**	**+1.1**
ERBM	**Eremo**	**5.14**	**283**		P		**Pn**	**15 20 28.3**	**+3.1**
SRS	**Serrai**	**5.14**	**115**	*e*	P		**Pn**	**15 20 26.1**	**+0.8**
SRS	**Serrai**	**5.14**	**115**		P		**Pn**	**15 20 26.1**	**+0.8**
SRS					S		**Sn**	**15 21 26.7**	**+1.3**
VYHS	**Vyhne**	**5.16**	**11**	*e*	PN		**Pn**	**15 20 25.7**	**+0.2**
VYHS				*e*	SN		**Sn**	**15 21 24.4**	**-1.4**
KOLL	**Kolacno**	**5.19**	**7**	*i*	PN		**Pn**	**15 20 25.4**	**-0.5**
KOLL				*e*	SN		**Sn**	**15 21 24.8**	**-1.9**
NVR	**Nevrokopi**	**5.22**	**111**	*e*	P		**Pn**	**15 20 27.8**	**+1.5**
BGLD	**Berchtesgaden**	**5.22**	**325**	⇑ *i*	PN		**Pn**	**15 20 28.4**	**+2.0**
SLNA	**Salina**	**5.24**	**203**		P		**Pn**	**15 20 25.5**	**-1.1**
VALM		**5.25**	**282**		P		**Pn**	**15 20 26.6**	**-0.1**
**V

DPC	**Dobruska-Polom**	6.96	354	*e*PN		**Pn**	15 20 51.6	+0.8
DPC				*e*SN		**Sn**	15 22 08.2	-2.6
	comp=Z,493nm,1.5s							
DPC				L			15 24 00.0	
	comp=Z,8.3nm,9.0s							
OJC	**Ojcow**	**6.98**	**13**	*e*Pn		**Pn**	**15 20 51.1**	**-0.1**
OJC				*e*PP		PP	15 20 57.8	-1.1
OJC				*e*Pg		**Pg**	**15 21 22.6**	**-3.1**
OJC				*e*Sn		**Sn**	**15 22 09.0**	**-2.5**
OJC				*e*Sg		**Sg**	**15 22 48.4**	**-10**
MONE	**Monesi**	**7.01**	**279**	P		**Pn**	**15 20 49.7**	**-1.9**
NEGI	**Negi**	**7.05**	**277**	P		**Pn**	**15 20 50.8**	**-1.3**
VRI	**Vrincioaia**	**7.08**	**67**⇑	*i*P		**Pn**	**15 20 54.3**	**+1.7**
VRI	**Vrincioaia**	**7.08**	**67**⇑	*i*P		**Pn**	**15 20 54.4**	**+1.8**
MUO	**Muotathal**	**7.13**	**303**	⇑P		**Pn**	**15 20 54.3**	**+1.1**
ITM	**Ithomi**	**7.14**	**150**	*e*P		**Pn**	**15 20 51.0**	**-2.4**
ITM	**Ithomi**	**7.14**	**150**	P		**Pn**	**15 20 51.9**	**-1.5**
UPC	**Upice**	**7.14**	**353**	*e*PN		**Pn**	**15 20 54.5**	**+1.1**
UPC				*e*SN		**Sn**	**15 22 12.7**	**-2.7**
SAOF	**Saorge**	**7.16**	**278**	Pn		**Pn**	**15 20 52.8**	**-0.8**
MCGN	**Macugnaga**	**7.17**	**294**	*e*P		**Pn**	**15 20 52.4**	**-1.4**
WILA	**Wila**	**7.18**	**307**	⇓P		**Pn**	**15 20 54.6**	**+0.7**
HDH	**Heidenheim**	**7.18**	**318**	P		**Pn**	**15 20 53.8**	**-0.2**
KWP	**Kalwaria**	**7.20**	**29**	*e*Pn		**Pn**	**15 20 56.5**	**+2.3**
KWP				*e*Sn		**Sn**	**15 22 15.4**	**-1.4**
SBF	**Sospel**	**7.24**	**277**	*e*Pn		**Pn**	**15 20 53.6**	**-1.2**
	SNR=1.0							
SBF				*e*Sn		**Sn**	**15 22 13.7**	**-4.2**
	comp=Z,338nm,0.3s							
AUTN	**L'Aution**	**7.25**	**278**	Pn		**Pn**	**15 20 55.3**	**+0.4**
ENR	**Entracque**	**7.26**	**280**	P		**Pn**	**15 20 53.1**	**-2.0**
ATH	**Athens Observa**	**7.26**	**137**	*e*P		**Pn**	**15 20 49.0**	**-6.1**
SISB	**Singen-Sch Ber**	**7.29**	**309**	P		**Pn**	**15 20 56.7**	**+1.2**
REVF	**Revere**	**7.29**	**276**	Pn		**Pn**	**15 20 55.0**	**-0.5**
AURF	**Auriere**	**7.32**	**277**	Pn		**Pn**	**15 20 55.8**	**-0.1**
STV2	**Anna di Valdie**	**7.33**	**280**	P		**Pn**	**15 20 53.6**	**-2.5**
STV	**Sta Anna Valdi**	**7.33**	**280**	P		**Pn**	**15 20 55.5**	**-0.6**
ZUR	**Zurich**	**7.35**	**305**	⇓P		**Pn**	**15 20 57.0**	**+0.7**
TOUF	**Mont Tournerai**	**7.38**	**278**	Pn		**Pn**	**15 20 56.4**	**-0.3**
DOI	**San Damiano**	**7.40**	**282**	*e*P		**Pn**	**15 20 55.4**	**-1.7**
GUT	**Gutenstein**	**7.42**	**312**	P		**Pn**	**15 20 56.6**	**-0.7**
BHB	**Bricherasio**	**7.43**	**284**	P		**Pn**	**15 20 54.4**	**-3.0**
MVIF	**Mont Vial**	**7.45**	**277**	Pn		**Pn**	**15 20 56.7**	**-1.0**
KSP	**Ksiaz**	**7.45**	**355**	*e*Pn		**Pn**	**15 20 58.7**	**+1.0**
KSP				*e*PP		PP	15 21 05.9	+0.5
KSP				*e*Sn		**Sn**	**15 22 24.3**	**+1.1**
KSP	**Ksiaz**	**7.45**	**355**	*e*P		**Pn**	**15 20 58.9**	**+1.2**
KSP				*e*			15 22 21.2	
KSP	**Ksiaz**	**7.45**	**355**	*e*Pn		**Pn**	**15 20 58.9**	**+1.2**
KSP				*e*			15 21 01.9	
KSP				*e*Sn		**Sn**	**15 22 07.5**	**-16**
KSP				*e*Sg		Sg	15 22 21.2	-53
RSP	**Reno Superiore**	**7.48**	**287**	P		**Pn**	**15 20 54.9**	**-3.2**
PZZ	**Prazzo**	**7.51**	**282**	P		**Pn**	**15 20 56.3**	**-2.2**
BUCH	**Bad Urach**	**7.52**	**315**	P		**Pn**	**15 20 58.3**	**-0.4**
LKBD	**Leukerbad**	**7.54**	**296**	⇓P		**Pn**	**15 20 58.6**	**-0.4**
GRA1	**Grafenberg Arr**	**7.57**	**328**	*e*Pn		**Pn**	**15 20 59.3**	**-0.1**
GRF	**Grafenberg Arr**	**7.57**	**328**	*e*P		**Pn**	**15 20 59.3**	**-0.1**
GRF				MLR		MLR		
	comp=Z,12μm,12.9s							
DIX	**Grande Dixence**	**7.59**	**294**	⇓P		**Pn**	**15 20 58.3**	**-1.3**
FENE	**Fenestrelle**	**7.59**	**286**	P		**Pn**	**15 20 55.8**	**-4.0**
NKC	**Novy Kostel**	**7.60**	**335**	*e*PN		**Pn**	**15 20 59.4**	**-0.4**
NKC				*e*SN		**Sn**	**15 22 21.2**	**-5.7**
NKC				L			15 23 50.0	
	comp=Z,17nm,8.3s							
SLE	**Schleitheim**	**7.60**	**308**	⇑P		**Pn**	**15 20 59.0**	**-0.8**
LSD	**Ceresole Reale**	**7.61**	**289**	P		**Pn**	**15 20 57.4**	**-2.5**
CALF	**Calern**	**7.62**	**276**	P		**Pn**	**15 21 01.0**	**+1.0**
SPAK	**Spaichingen**	**7.62**	**311**	Pn		**Pn**	**15 20 59.2**	**-0.9**
CALN	**Calern**	**7.64**	**276**	Pn		**Pn**	**15 21 00.0**	**-0.4**
HARR	**Harsova**	**7.69**	**77**⇓	*i*P		**Pn**	**15 20 59.9**	**-1.2**
HARR	**Harsova**	**7.69**	**77**⇓	*i*P		**Pn**	**15 20 59.9**	**-1.2**
SULZ	**Sulz-Cheisache**	**7.70**	**305**	⇑P		**Pn**	**15 21 00.7**	**-0.5**
TUBL	**Tuebingen Lnz**	**7.71**	**314**	P		**Pn**	**15 21 01.6**	**+0.3**
MBDF	**Montbardon**	**7.76**	**283**	*e*Pn		**Pn**	**15 20 59.5**	**-2.6**
	SNR=1.0							
MBDF				*e*Sn		**Sn**	**15 22 26.1**	**-4.9**
	comp=Z,604nm,0.6s							
MBDF	**Montbardon**	**7.76**	**283**	*e*P		**Pn**	**15 21 03.6**	**+1.5**
MBDF				*e*Sn		**Sn**	**15 22 26.1**	**-4.9**
RRL	**Cesana Torines**	**7.78**	**285**	P		**Pn**	**15 20 59.6**	**-2.7**
PTS	**Pantelleria**	**7.80**	**214**	P		**Pn**	**15 21 04.0**	**+1.4**
STU	**Stuttgart**	**7.81**	**316**	*e*P		**Pn**	**15 21 02.0**	**-0.7**
FRF	**La Foret Royal**	**7.82**	**275**	*e*Pn		**Pn**	**15 21 01.6**	**-1.3**
	SNR=1.0							
FRF				*e*Sn		**Sn**	**15 22 27.2**	**-5.2**
	comp=Z,178nm,0.5s,SNR=1.0							
LVV	**L'vov**	**7.85**	**33**	*e*P		**Pn**	**15 21 08.0**	**+4.7**
WDD	**Wield Dalam**	**7.88**	**197**	P		**Pn**	**15 21 03.3**	**-0.4**
PRK	**Paraskevi**	**7.88**	**119**	*e*P		**Pn**	**15 21 04.4**	**+0.7**
LPG	**La Plagne**	**7.89**	**289**	*e*Pn		**Pn**	**15 21 02.3**	**-1.6**
	SNR=1.0							
LPG				*e*Sn		**Sn**	**15 22 30.6**	**-3.6**
	comp=Z,792nm,0.6s							
CFR	**Carcaliu**	**7.90**	**74**⇓	*i*P		**Pn**	**15 21 05.0**	**+1.0**
CFR	**Carcaliu**	**7.90**	**74**⇓	*i*P		**Pn**	**15 21 05.0**	**+1.0**
LPL	**La Plagne**	**7.91**	**289**	*e*Pn		**Pn**	**15 21 02.6**	**-1.5**
	SNR=1.0							
LPL				*e*Sn		**Sn**	**15 22 30.8**	**-3.8**
	comp=Z,872nm,0.7s							
EMV	**Vieux Emosson**	**7.92**	**293**	⇓P		**Pn**	**15 21 04.4**	**+0.1**
LMR	**La Mourre**	**7.94**	**273**	*e*Pn		**Pn**	**15 21 03.2**	**-1.3**
	SNR=1.0							
LMR				*e*Sn		**Sn**	**15 22 30.9**	**-4.4**
	comp=Z,118nm,0.5s,SNR=1.0							
FELD	**Feldberg**	**7.94**	**307**	Pn		**Pn**	**15 21 03.8**	**-0.8**
LBG	**Lerchenberg**	**7.95**	**314**	P		**Pn**	**15 21 04.3**	**-0.4**
BFO	**Black Forest**	**8.00**	**311**	*e*P		**Pn**	**15 21 04.4**	**-1.0**
SIND	**Sindeldorf**	**8.00**	**320**	P		**Pn**	**15 21 04.5**	**-0.9**
KIZ	**Kirchzarten**	**8.03**	**308**	P		**P**	**15 21 05.1**	**-0.7**
BBS	**Basel-Blauen**	**8.04**	**304**	Pn		**P**	**15 21 05.1**	**-0.8**
OG01	**Vacheresse**	**8.14**	**295**	Pn		**P**	**15 21 07.5**	**+0.1**
MOX	**Moxa**	**8.22**	**333**	*i*P		**P**	**15 21 08.5**	**0.0**
MOX				S		**Sn**	**15 22 38.0**	**-4.4**
MOX				L			15 23 59.0	
MOX	**Moxa**	**8.22**	**333**	*e*P		**P**	**15 21 08.5**	**0.0**
MOX				*e*			15 22 38.5	
MOX				MLR		MLR		
	comp=Z,5μm,14.0s							
TAVF	**Tavernes**	**8.25**	**275**	Pn		**P**	**15 21 08.1**	**-0.7**
LIBD	**Limburg**	**8.31**	**308**	Pn		**P**	**15 21 09.8**	**+0.1**
LOMF	**Lomont**	**8.41**	**301**	Pn		**P**	**15 21 10.0**	**-1.1**
ORIF	**Oris-en-Rattie**	**8.41**	**284**	*e*Pn		**P**	**15 21 09.7**	**-1.5**
	SNR=1.0							
ORIF				*e*Sn		**Sn**	**15 22 42.2**	**-5.0**
	comp=Z,546nm,0.6s							
ORIF				*e*R				
	comp=Z,2μm,19.0s							
CLL	**Collm**	**8.42**	**341**	*e*PN		**P**	**15 21 11.0**	**-0.3**
CLL				*e*SN		**Sn**	**15 22 46.0**	**-1.4**
CLL				*i*			15 23 13.1	
CLL				*e*SG		**Sg**	**15 23 44.0**	**-2.7**
MOF	**Molkenrain**	**8.44**	**305**	Pn		**P**	**15 21 10.6**	**-0.9**
VILF	**Villemus**	**8.49**	**277**	Pn		**P**	**15 21 12.0**	**-0.2**
PUYF	**Puyloubier**	**8.51**	**275**	Pn		**P**	**15 21 11.8**	**-0.7**
SWS	**Schriesheim**	**8.52**	**318**	P		**P**	**15 21 12.5**	**-0.2**
BERF	**Bertagne**	**8.53**	**273**	Pn		**P**	**15 21 11.8**	**-1.0**
TOD	**Tromm**	**8.55**	**319**	Pn		**P**	**15 21 11.9**	**-1.2**
SMRF	**Simiane la Rot**	**8.59**	**278**	*e*Pn		**P**	**15 21 12.9**	**-0.7**
	SNR=1.0							
SMRF				*e*Sn		**Sn**	**15 22 44.6**	**-6.9**
	comp=Z,68nm,0.5s,SNR=1.0							
WLS	**Welschbruch**	**8.59**	**309**	Pn		**P**	**15 21 12.4**	**-1.2**
HINF	**Hinteralfeld**	**8.59**	**304**	*e*Pn		**P**	**15 21 12.5**	**-1.1**
	SNR=1.0							
HINF				*e*Sn		**Sn**	**15 22 45.7**	**-5.9**
	comp=Z,405nm,0.6s							
ECH	**Echery**	**8.60**	**307**	Pn		**P**	**15 21 12.4**	**-1.4**
CABF	**La Chapelle**	**8.62**	**296**	*e*Pn		**P**	**15 21 12.3**	**-1.7**
CABF				*e*Sn		**Sn**	**15 22 47.7**	**-4.6**
	comp=Z,743nm,0.8s							
CDF	**Champ du Feu**	**8.63**	**309**	*e*Pn		**P**	**15 21 13.4**	**-0.8**
	SNR=1.0							
CDF				*e*Sn		**Sn**	**15 22 47.6**	**-5.1**
	SNR=1.0							
CDF				*e*Sg		**Sg**	**15 23 41.5**	**-12**
	comp=Z,220nm,0.6s,SNR=1.0							
LANF	**Langenberg**	**8.66**	**313**	Pn		**P**	**15 21 13.4**	**-1.2**
GELF	**Grande-Etoile**	**8.72**	**274**	Pn		**P**	**15 21 15.0**	**-0.4**
KTD	**Kalmit**	**8.72**	**316**	Pn		**P**	**15 21 17.6**	**+2.2**
ARBF	**Arbois**	**8.78**	**275**	P		**P**	**15 21 15.5**	**-0.7**
OG26	**St.-Nazaire-De**	**8.80**	**282**	Pn		**P**	**15 21 15.1**	**-1.4**
OCF	**Saint Nazaire**	**8.80**	**282**	Pn		**P**	**15 21 15.1**	**-1.4**
KIS	**Kishinev**	**8.81**	**62**x	*i*P		**P**	**15 21 20.0**	**+3.3**
KIS				*e*S		**Sn**	**15 23 00.0**	**+2.9**
KIS				pmax	pmax			
	comp=Z,400nm,1.0s							
KIS				pmax	pmax			
	comp=N,200μm,1.0s							
KIS				pmax	pmax			
	comp=E,300nm,1.5s							
KIS				pmax	pmax			
	comp=Z,500nm,2.0s							
KIS				MLR	MLR			
	comp=Z,4μm,8.0s							
KIS				MLR	MLR			
	comp=Z,3μm,8.0s							
PRAF	**Pradon**	**8.88**	**277**	P		**P**	**15 21 18.4**	**+0.7**
OG05	**Jujurieux**	**8.89**	**291**	Pn		**P**	**15 21 15.8**	**-2.0**
HAU	**Haudompre**	**8.98**	**304**	*e*Pn		**P**	**15 21 17.6**	**-1.4**
	SNR=1.0							
HAU				*e*Sn		**Sn**	**15 22 55.0**	**-6.3**
	comp=Z,394nm,0.6s,SNR=1.0							
HAU				*e*R				
	comp=Z,1μm,14.8s							
WAR	**Warsaw**	**9.14**	**14**	*e*P		**P**	**15 21 27.0**	**+5.7**
WAR				*e*Sg		**Sg**	**15 24 18.6**	**+8.0**
VIVF	**Saint-Julien-l**	**9.26**	**283**	*e*Pn		**P**	**15 21 19.9**	**-3.0**
	SNR=1.0							
VIVF				*e*Sn		**Sn**	**15 23 02.4**	**-5.9**
	comp=Z,154nm,0.6s							
THEF	**They Montfort**	**9.30**	**305**	Pn		**P**	**15 21 21.9**	**-1.5**
THR3	**Thira Island,**	**9.32**	**136**	*e*P		**P**	**15 21 21.7**	**-2.0**
ABH	**Alteburg**	**9.35**	**317**	P		**P**	**15 21 24.7**	**+0.6**
SANT	**Santorini**	**9.38**	**136**	Pn		**P**	**15 21 21.4**	**-3.2**
SANT				*e*Sn		**Sn**	**15 23 04.7**	**-6.6**
RUP	**Ruppelstein**	**9.48**	**315**	P		**P**	**15 21 27.0**	**+1.0**
CLZ	**Clausthal**	**9.65**	**333**	*e*Pn		**P**	**15 21 29.5**	**+1.3**
RFYF	**Reffroy**	**9.78**	**306**	*e*Pn		**P**	**15 21 30.3**	**+0.3**
	baz=118							
RFYF				*e*Sn		**Sn**	**15 23 14.6**	**-6.4**
	comp=Z,261nm,0.8s							
LASF	**Ste Croix**	**9.82**	**278**	*e*Pn		**P**	**15 21 28.0**	**-2.6**
	SNR=1.0							
LASF				*e*Sn		**Sn**	**15 23 16.2**	**-5.8**
	comp=Z,77nm,0.6s,SNR=1.0							
SFTF	**Sexfontaines**	**9.86**	**303**	*e*Pn		**P**	**15 21 30.8**	**-0.3**
	baz=126							
SFTF				*e*Sn		**Sn**	**15 23 16.7**	**-6.2**
	comp=Z,667nm,1.0s							
WLF	**Walferdange**	**9.94**	**313**	*e*Pn		**P**	**15 21 32.3**	**+0.2**
	comp=Z,24nm,0.6s							
MEZF	**Maizieres J'vi**	**9.98**	**305**	*e*Pn		**P**	**15 21 31.7**	**-1.0**
	baz=123,SNR=1.0							
MEZF				*e*Sn		**Sn**	**15 23 18.6**	**-7.2**
	comp=Z,378nm,0.8s							
IDI	**Anoyia**	**9.98**	**142**	Pn		**P**	**15 21 28.0**	**-4.8**
	comp=Z,1.6nm,0.3s,baz=312,slow=16,SNR=12							
IDI				Sn		**Sn**	**15 23 14.8**	**-11**
	comp=Z,3.7nm,0.3s,baz=101,slow=21,SNR=5.0							
IDI				Lg			15 24 27.4	
	baz=351,slow=20,SNR=1.5							
COLF	**Collangettes**	**10.02**	**287**	Pn		**P**	**15 21 29.4**	**-3.9**
SMF	**Signal de Mont**	**10.12**	**293**	*e*Pn		**P**	**15 21 31.8**	**-2.9**
	SNR=1.0							
SMF				*e*Sn		**S**	**15 23 19.5**	**-10**
	comp=Z,565nm,0.7s							
PLDF	**La Plantade**	**10.13**	**289**	Pn		**P**	**15 21 31.2**	**-3.7**
CMAH	**Djebel Manchou**	**10.23**	**232**	P		**P**	**15 21 38.0**	**+1.8**
LBL	**Lubilhac**	**10.30**	**285**	Pn		**P**	**15 21 33.7**	**-3.5**
CGMA	**Guelma**	**10.36**	**231**	P		**P**	**15 21 39.5**	**+1.5**
SSF	**Saint Saulge**	**10.45**	**295**	*e*Pn		**P**	**15 21 36.4**	**-2.7**
	SNR=1.0							
SSF				*e*Sn		**S**	**15 23 29.6**	**-7.7**
	comp=Z,290nm,0.7s							
CAEH	**'Ain El Ouahch**	**10.46**	**234**	P		**P**	**15 21 38.0**	**-1.3**
AVF	**Avril sur Loir**	**10.48**	**294**	*e*Pn		**P**	**15 21 36.9**	**-2.7**
	SNR=1.0							
AVF				*e*Sn		**S**	**15 23 29.3**	**-8.9**
	comp=Z,432nm,0.9s							
AGO	**Saint Agoulin**	**10.48**	**289**	Pn		**P**	**15 21 36.3**	**-3.4**
EJON	**La Jonquera**	**10.69**	**270**	P		**P**	**15 21 40.5**	**-2.0**
	comp=Z,85nm,1.6s							
HGN	**Heimansgroeve**	**10.71**	**317**⇑	*e*Pn		**P**	**15 21 43.7**	**+1.0**
	comp=Z,17nm,0.7s							
HGN				*ex*		x	15 21 47.1	
HGN				*e*Sn		**S**	**15 23 42.4**	**-1.3**
HGN	**Heimansgroeve**	**10.71**	**317**	P		**P**	**15 21 43.9**	**+1.2**
BGF	**Bois d'Agland**	**10.77**	**292**	*e*Pn		**P**	**15 21 41.2**	**-2.4**
	SNR=1.0							
BGF				*e*Sn		**S**	**15 23 35.6**	**-10**
	comp=Z,274nm,0.4s,SNR=1.0							
LRDF	**Laroque-de-Fa**	**10.87**	**272**	Pn		**P**	**15 21 43.5**	**-1.4**
GIVF	**Givet**	**10.90**	**312**	*e*Pn		**P**	**15 21 45.8**	**+0.5**
	SNR=1.0							
GIVF				*e*Sn		**S**	**15 23 40.0**	**-8.3**
	comp=Z,52nm,0.5s,SNR=1.0							
FILF	**Fillols**	**10.91**	**270**	Pn		**P**	**15 21 44.4**	**-1.1**
CASM	**Ain Smara**	**11.02**	**233**	P		**P**	**15 21 48.0**	**+0.9**
MTLF	**Montolieu**	**11.05**	**275**	*e*Pn		**P**	**15 21 45.3**	**-2.2**
	SNR=1.0							
MTLF				*e*Sn		**S**	**15 23 45.5**	**-6.7**
	comp=Z,33nm,0.7s							
HYF	**Humbligny**	**11.07**	**295**	*e*Pn		**P**	**15 21 45.0**	**-2.7**
HYF				*e*Sn		**S**	**15 23 45.1**	**-7.5**
CAF	**Calviac**	**11.12**	**283**	*e*Pn		**P**	**15 21 47.4**	**-0.9**
	SNR=1.0							
CAF				*e*Sn		**S**	**15 23 49.0**	**-4.7**
	comp=Z,72nm,0.7s							
WTSB	**Winterswijk**	**11.12**	**324**	*e*Pn		**P**	**15 21 49.1**	**+0.8**
	comp=Z,7.6nm,1.1s							
WTSB				*e*Sn		**S**	**15 23 50.0**	**-3.8**
TCF	**Toulx Ste Croi**	**11.15**	**290**	*e*Pn		**P**	**15 21 48.3**	**-0.5**
	SNR=1.0							
TCF				*e*Sn		**S**	**15 23 46.3**	**-8.3**
	comp=Z,142nm,0.6s,SNR=1.0							
DFRA	**Djebel Bou Aff**	**11.20**	**236**	P		**P**	**15 21 55.0**	**+5.6**
BAIF	**Baives**	**11.21**	**311**	*e*Pn		**P**	**15 21 49.7**	**+0.1**
	SNR=1.0							
BAIF				*e*Sn		**S**	**15 23 46.9**	**-9.1**
BAIF				*e*Sg		S	15 25 02.5	+67
	comp=Z,382nm,1.2s							
CTEI	**Djebel Teioual**	**11.21**	**233**	P		**P**	**15 21 51.0**	**+1.4**
SUW	**Suwalki**	**11.25**	**18**	*e*P		**P**	**15 21 49.5**	**-0.6**
SUW				*e*PP		PP	15 21 54.9	-3.8
SUW				*e*S		**S**	**15 23 46.9**	**-10**
SUW	**Suwalki**	**11.25**	**18**	*e*P		**P**	**15 21 49.5**	**-0.6**
SUW				*e*S		**S**	**15 23 46.9**	**-10**
LPEF	**Le Peyrat**	**11.32**	**273**	Pn		**P**	**15 21 48.6**	**-2.6**
VALF	**Valcebollere**	**11.33**	**270**	Pn		**P**	**15 21 49.9**	**-1.3**
RJF	**Les Rejaudoux**	**11.53**	**285**	*e*Pn		**P**	**15 21 52.9**	**-1.0**
	SNR=1.0							
RJF				*e*Sn		**S**	**15 23 54.4**	**-9.3**
	comp=Z,66nm,0.6s							
RJF				*e*R				
	comp=Z,1μm,20.2s							
EMIR	**Miracle**	**11.79**	**268**	P		**P**	**15 21 57.1**	**-0.4**
	comp=Z,186nm,3.3s							
CMER	**Merouana**	**11.81**	**233**	P		**P**	**15 22 01.0**	**+3.2**
MLS	**Moulis**	**11.91**	**273**	Pn		**P**	**15 21 59.4**	**+0.2**
LFF	**La Frestale**	**12.06**	**283**	*e*Pn		**P**	**15 21 59.3**	**-1.8**
LFF				*e*Sn		**S**	**15 24 09.2**	**-7.5**
	comp=Z,130nm,0.8s							
SIM	**Simferopol'**	**12.10**	**77**⇑	*e*P		**P**	**15 22 01.1**	**-0.5**
SIM				*e*S		**S**	**15 24 22.0**	**+4.4**
SIM				pmax	pmax			
	comp=Z,93nm,1.8s							
SIM				MLR	MLR			
	comp=Z,2μm,11.0s							
EPOB	**Poblet**	**12.25**	**266**	P		**P**	**15 22 03.8**	**+0.1**
	comp=Z,71nm,1.7s							
EPF	**Esparros**	**12.45**	**274**	*e*Pn		**P**	**15 22 05.7**	**-0.7**
BRTR	**Keskin Array B**	**12.71**	**101**	Pn		**P**	**15 22 08.9**	**-0.9**
	comp=Z,0.1nm,0.3s,baz=291,slow=11,SNR=25							
BRTR				Lg			15 25 54.2	
	comp=Z,0.1nm,0.3s,baz=330,slow=28,SNR=1.9							
MFF	**Saint Martin d**	**12.81**	**290**	*e*Pn		**P**	**15 22 09.6**	**-1.6**
	SNR=1.0							
MFF				*e*Sn		**S**	**15 24 26.5**	**-8.4**
	comp=Z,57nm,0.6s							
EBR	**Ebro Roquetas**	**12.82**	**264**	*e*P		**P**	**15 22 13.2**	**+1.9**
ABA	**Alger-Bouzarea**	**12.83**	**244**	P		**P**	**15 22 10.0**	**-1.4**
EIBI	**Ibiza**	**12.86**	**255**	P		**P**	**15 22 11.5**	**-0.4**
	comp=Z,213nm,3.3s							
MNK	**Minsk**	**13.01**	**28**	*e*P		**P**	**15 22 13.0**	**-0.7**
MNK				MLR		MLR		
	comp=Z,8μm,12.0s							
ETSF	**Etsaut**	**13.13**	**274**	*e*Pn		**P**	**15 22 14.3**	**-1.1**
LDF	**La Druitiere**	**13.22**	**299**	*e*Pn		**P**	**15 22 14.7**	**-1.9**
LDF				*e*Sn		**S**	**15 24 36.8**	**-7.8**
	comp=Z,130nm,0.9s							
EMHD	**Djebel Mahouad**	**13.24**	**242**	P		**P**	**15 22 23.0**	**+6.2**
ESAC	**San Caprasio**	**13.28**	**269**	P		**P**	**15 22 15.4**	**-2.0**
	comp=Z,194nm,2.1s							
FLN	**La Foliniere**	**13.49**	**299**	*e*Pn		**P**	**15 22 19.2**	**-1.0**
FLN				*e*Sn		**S**	**15 24 41.3**	**-10**
	comp=Z,171nm,1.0s							
FLN				*e*R				
	comp=Z,1μm,16.5s							
GRR	**Gorron**	**13.64**	**298**	*e*Pn		**P**	**15 22 21.5**	**-0.5**
	SNR=1.0							
GRR				*e*Sn		**S**	**15 24 47.5**	**-7.0**
	comp=Z,99nm,0.8s							
EMOS	**Mosqueruela**	**13.66**	**263**	P		**P**	**15 22 20.7**	**-1.7**
	comp=Z,131nm,2.4s							
MUD	**Monsted U'grnd**	**14.05**	**341**	*i*P		**P**	**15 22 35.2**	**+7.8**
	comp=Z,25nm,0.8s							
	comp=Z,390nm,16.0s							
MUD	**Monsted U'grnd**	**14.05**	**341**	*i*P		**P**	**15 22 35.2**	**+7.8**
MUD				pmax	pmax			
	comp=Z,25nm,0.8s							
MUD				MLR	MLR			
	comp=Z,390nm,16.0s							
EBEN	**Beniarda**	**14.11**	**256**	P		**P**	**15 22 28.7**	**+0.4**
	comp=Z,112nm,2.6s							
ECHF	**Ech Chlef**	**14.31**	**245**	P		**P**	**15 22 27.5**	**-3.5**
ANN	**Anapa**	**14.46**	**78**	*e*P		**P**	**15 22 30.0**	**-2.8**
ANN				*e*S		**S**	**15 25 07.0**	**-7.1**
ANN				pmax	pmax			
	comp=Z,40nm,1.0s							
ANN				MLR	MLR			
	comp=Z,390nm,10.0s							
ANN				MLR	MLR			
	comp=N,310nm,11.0s							
EANR	**'Ain N'Sour**	**14.59**	**245**	P		**P**	**15 22 44.0**	**+9.4**
ETOR	**Torete**	**14.67**	**266**	P		**P**	**15 22 34.4**	**-1.2**
	comp=N,181nm,2.3s							
SGMF	**Saint Gilles**	**14.71**	**296**	*e*Pn		**P**	**15 22 35.5**	**-0.6**
	SNR=1.0							
SGMF				*e*Pg		P	15 23 42.3	+66
	SNR=1.0							
SGMF				*e*Sn		**S**	**15 25 09.9**	**-10**
	comp=N,56nm,0.6s							
ETRT	**Tiaret**	**14.80**	**243**	P		**P**	**15 22 48.0**	**+11**
CSS	**Prodhromos**	**14.95**	**119**	P		**P**	**15 22 40.3**	**+0.9**
QUIF	**Quistinic**	**15.05**	**294**	*e*Pn		**P**	**15 22 39.7**	**-0.8**
QUIF				*e*Sn		**S**	**15 25 19.2**	**-8.8**
	comp=N,70nm,0.7s							
ETOB	**Tobarra**	**15.07**	**258**	P		**P**	**15 22 39.1**	**-1.8**
	comp=N,127nm,2.6s							
ROSF	**Rostrenen**	**15.20**	**296**	*e*Pn		**P**	**15 22 42.5**	**+0.1**
ROSF				*e*Sn		**S**	**15 25 23.3**	**-8.2**
	comp=N,40nm,0.6s							
EMUR	**La Murta**	**15.20**	**255**	P		**P**	**15 22 41.7**	**-0.9**
	comp=N,123nm,2.9s							
EVIA	**Vianos**	**15.76**	**259**	P		**P**	**15 22 52.1**	**+2.4**
	comp=N,18nm,1.1s							
EHUE	**Huescar**	**16.17**	**256**	P		**P**	**15 22 56.0**	**+0.8**
	com

NOA NORSAR Array B 18.02 350 P P 15 23 16.4 -1.8
NOA pmax pmax
comp=Z,1.0nm,0.3s
NOA MLR MLR
comp=Z,275nm,21.3s
PUL Pulkovo 18.16 21 eP P 15 23 19.5 -0.5
PUL pmax pmax
comp=N,60nm,0.6s
PUL pmax pmax
comp=Z,50nm,0.6s
PUL pmax pmax
comp=E,10.0nm,0.4s
PUL pmax pmax
comp=Z,30nm,0.5s
PUL pmax pmax
comp=N,50nm,0.6s
PUL pmax pmax
comp=E,10.0nm,0.5s
PUL MLR MLR
PUL comp=Z,1μm,10.0s MLR MLR
PUL comp=N,700nm,9.0s MLR MLR
PUL comp=E,610nm,11.0s MLR MLR
KIV Kislovodsk 18.28 80⇑ iP P 15 23 20.7 -0.8
KIV eS S 15 26 45.1 +2.5
KIV pmax pmax
comp=Z,30nm,0.7s
KIV MLR MLR
comp=Z,580nm,21.0s
KIV MLR MLR
comp=N,250nm,18.0s
KIV Kislovodsk 18.28 80 eP P 15 23 20.2 -1.3
comp=N,41nm,0.8s
GOF Gofitskoye 18.42 76⇓ iP P 15 23 22.0 -1.3
GOF pmax pmax
comp=Z,50nm,1.2s
GOF MLR MLR
comp=E,4μm,14.0s
GOF MLR MLR
comp=Z,2μm,14.0s
PYA Pyatigorsk 18.53 79c iP P 15 23 24.0 -0.7
PYA MLR MLR
comp=E,1μm,12.0s
PYA MLR MLR
comp=Z,900nm,12.0s
ELIJ Sierra de Lija 18.56 257 P P 15 23 26.5 +1.5
PVRL Vila Real 18.67 272 eP P 15 23 28.3 +1.9
comp=Z,33nm,0.9s
FINES FINESS Array B 18.77 13 P P 15 23 26.5 -0.9
comp=Z,1.4nm,0.3s,baz=184,slow=5.6,SNR=48
FINES LR LR 15 31 15.5
comp=Z,748nm,19.1s,baz=11,slow=39
FINES FINESS Array B 18.77 13 P P 15 23 26.5 -0.9
FINES pmax pmax
comp=Z,1.0nm,0.3s
FINES MLR MLR
comp=Z,749nm,19.1s
ELOB Lobios 18.78 274 P P 15 23 29.8 +2.2
MTE Manteigas 18.79 269 eP P 15 23 27.8 0.0
MTE eS S 15 27 02.8 +8.6
MTE eLR LR 15 29 56.5
comp=Z,1μm,16.0s
MTE Manteigas 18.79 269 eP P 15 23 27.5 -0.3
ESPR Espera 18.92 258 P P 15 23 30.8 +1.4
comp=Z,7.9nm,0.7s
PCBR Castelo Branco 18.92 268 eP P 15 23 29.5 +0.1
PVIS Viseu 18.95 270 eP P 15 23 30.4 +0.6
EBAD Badajoz 18.96 264 P P 15 23 29.6 -0.3
ASF Jabal al Asfar 19.02 120 P P 15 23 29.7 -1.0
comp=Z,0.5nm,0.3s,baz=222,slow=2.2,SNR=11
ASF LR LR 15 32 36.6
comp=Z,350nm,19.1s,baz=334,slow=43
EMIN Mina Concepcio 19.11 261 P P 15 23 32.5 +0.9
DOMB Dombas 19.28 348 eP P 15 23 35.0 +1.5
DOMB AMB AMB 15 23 41.0
comp=Z,9.3nm,0.6s
DOMB Dombas 19.28 348 eP P 15 23 35.0 +1.5
comp=Z,9.3nm,0.6s
ZEI Tsey 19.34 83⇑ iP P 15 23 34.0 -0.3
ZEI eS S 15 27 05.0 -1.6
ZEI pmax pmax
comp=Z,300nm,4.0s
KAF Kangasniemi 19.44 13 ep P 15 23 32.8 -2.5
comp=Z,4.8nm,0.5s,baz=196,slow=12
KAF Kangasniemi 19.44 13 eP P 15 23 32.8 -2.5
KAF pmax pmax
comp=Z,5.0nm,0.5s
PTOM Tomar 19.67 268 eP P 15 23 37.8 -0.3
comp=Z,50nm,1.6s
EVO Evora 19.77 264 eP P 15 23 38.3 -0.9
comp=Z,24nm,1.1s
EVO eR
comp=Z,763nm,13.8s
EGRO El Granado 19.79 261 P P 15 23 40.2 +0.8
comp=Z,17nm,1.1s
PBEJ Beja 19.86 263 eP P 15 23 40.4 +0.1
ALWS Ilw as Safayha 19.97 129 P P 15 23 32.6 -8.9
MOL Molde 20.02 347 eP P 15 23 42.9 +1.1
MOL AMB AMB 15 23 47.8
comp=Z,7.7nm,0.7s
MOL Molde 20.02 347 eP P 15 23 42.9 +1.1
comp=Z,7.7nm,0.7s
HAQS Haql 20.09 130 P P 15 23 42.5 -0.2
JMOS Jabal al Moall 20.10 129 P P 15 23 46.8 +4.0
TI2 Plekhanov 20.18 85⇑ iP P 15 23 32.8 -11
TI2 eS S 15 27 25.0 +0.3
TI2 MLR MLR
comp=Z,500nm,10.0s,MS4.2
BDAS Al Bad' 20.66 131 P P 15 23 48.8 0.0
JMQS Jabal Moqyreh 20.75 128 P P 15 23 48.9 -0.8
AYUS 'Aynunah 20.94 131 P P 15 23 50.5 -1.2
JOF Joensuu 21.13 18 ep P 15 23 51.8 -1.5
comp=Z,18nm,0.7s,mb4.5
JOF Joensuu 21.13 18 eP P 15 23 51.8 -1.5
JOF pmax pmax
comp=Z,18nm,0.7s,mb4.5
PECR Pechory 21.32 43⇑ iP P 15 23 55.0 -0.3
PECR eS S 15 27 55.0 +7.9
PECR eSS SS 15 28 25.0 +3.7
PECR pmax pmax
comp=Z,700nm,2.8s,mb5.5
PECR MLR MLR
comp=Z,2μm,11.0s,MS4.6
NSS Namsos 21.36 354 eP P 15 23 53.8 -1.8
NSS AMB AMB 15 23 57.4
comp=Z,15nm,0.6s,mb4.5
NSS eS S 15 27 55.0 +7.2
NSS AMS AMS 15 33 19.0
comp=Z,883nm,15.5s,MS4.3
NSS Namsos 21.36 354 eP P 15 23 53.8 -1.8
comp=Z,15nm,0.6s,mb4.5
MAK Makhachkala 21.90 81 P P 15 24 08.0 +6.8
MAK e 15 24 42.0
MAK MLR MLR
comp=N,2μm,12.0s
MAK MLR MLR
comp=Z,2μm,12.0s,MS4.8
MOR8 Moi Rana 22.85 357 eP P 15 24 11.9 +1.6
MOR8 AMB AMB 15 24 21.6
comp=Z,10.0nm,0.6s,mb4.4
MOR8 Moi Rana 22.85 357 eP P 15 24 11.9 +1.6
comp=Z,10.0nm,0.6s,mb4.4
LOF Lofoten 24.84 357 eP P 15 24 31.6 +1.9
LOF AMB AMB 15 24 34.3
comp=Z,5.3nm,0.7s,mb4.2
LOF Lofoten 24.84 357 eP P 15 24 31.6 +1.9
comp=Z,5.3nm,0.7s,mb4.2
APA Apatity 25.66 14⇓ iP P 15 24 37.0 -0.4
APA pmax pmax
comp=Z,73nm,1.3s,mb5.0
APA MLR MLR
comp=Z,2μm,11.0s,MS5.0
KTK1 Kautokeino 25.82 5 eP P 15 24 39.5 +0.7
KTK1 AMB AMB 15 24 44.6
comp=Z,21nm,0.6s,mb4.9
KTK1 Kautokeino 25.82 5 eP P 15 24 39.5 +0.7
comp=Z,21nm,0.6s,mb4.8
TRO Tromso 26.28 1 eP P 15 24 42.5 -0.6
ARCES ARCESS Array B 26.50 6 P P 15 24 43.6 -1.5
comp=Z,13nm,0.5s,mb4.7,baz=186,slow=9.2,SNR=56
ARCES LR LR 15 35 58.3
comp=Z,600nm,21.4s,MS4.1,baz=2.5,slow=38
ARCES ARCESS Array B 26.50 6 P P 15 24 43.6 -1.5
ARCES pmax pmax
comp=Z,13nm,0.5s
ARCES MLR MLR
comp=Z,600nm,21.4s
ARE0 ARCESS Array S 26.50 6 eP P 15 24 44.1 -1.0
KEV Kevo 26.84 7 ep P 15 24 47.0 -1.3
comp=Z,5.6nm,0.6s,mb4.3
KEV Kevo 26.84 7 eP P 15 24 47.0 -1.3
KEV pmax pmax
comp=Z,6.0nm,0.6s,mb4.3
THR Tehran 26.89 95 P P 15 24 48.3 -0.8
comp=Z,7.8nm,0.8s,mb4.3,baz=278,slow=4.7,SNR=24
THR LR LR 15 36 48.0
comp=Z,176nm,18.4s,MS3.6,baz=91,slow=40
THR Tehran 26.89 95 P P 15 24 48.3 -0.8
THR pmax pmax
comp=Z,8.0nm,0.8s
THR MLR MLR
comp=Z,176nm,18.4s
ARU Arti 29.04 49⇑ iP P 15 25 06.4 -1.9
ARU i PPP PPP 15 26 00.7 -15
ARU e 15 28 14.8
ARU eS S 15 29 57.0 -1.2
ARU eSS SS 15 31 22.6 -4.4
ARU eSSS SSS 15 31 38.2 -8.9
ARU pmax pmax
comp=Z,21nm,1.0s,mb4.8
ARU MLR MLR
comp=N,400nm,16.0s,MS4.5
ARU MLR MLR
comp=E,900nm,16.0s,MS4.5
ARU MLR MLR
comp=Z,1μm,16.0s,MS4.6
ARU Arti 29.04 49 eP P 15 25 06.2 -2.1
comp=Z,34nm,1.2s,mb5.0
AB31 Akbulak array 29.63 64 i P P 15 25 11.6 -2.1
JMIC Jan Mayen 30.46 344 AMS AMS 15 43 44.7
comp=Z,105nm,13.5s,MS3.7
SPITS Spitsbergen Ar 34.86 360 P P 15 25 59.2 0.0
comp=Z,4.6nm,0.6s,mb4.6,baz=146,slow=7.2,SNR=14
SPITS PcP PcP 15 28 31.4 -1.0
comp=Z,4.5nm,0.6s,baz=153,slow=4.5,SNR=8.0
ZRNK Zerenda 35.00 56 P P 15 25 59.4 -1.1
ZRNK pmax pmax
comp=Z,10.0nm,0.9s,mb4.8
ZRNK Zerenda 35.00 56 eP P 15 25 59.0 -1.5
ZRNK ePP PP 15 27 17.0 -1.7
KBS Kingsbay 35.67 358 eS S 15 31 41.9 +0.1
KBS AMS AMS 15 42 56.4
comp=Z,208nm,16.0s,MS4.0
BRVK Borovoye 35.75 55 P P 15 26 06.2 -0.8
BRVK pmax pmax
comp=Z,16nm,0.8s,mb5.0
BRVK Borovoye 35.75 55 eP P 15 26 06.0 -1.0
BVAR Borovoye Array 35.82 56 P P 15 26 06.4 -1.1
comp=Z,15nm,0.7s,mb5.0,baz=270,slow=7.4,SNR=111
VOSK Vostochnaya 36.21 56 P P 15 26 09.4 -1.4
VOSK pmax pmax
comp=Z,10.0nm,0.8s,mb4.8
DAG Danmarks Havn 36.65 347⇓ iP P 15 26 13.8 -0.5
comp=Z,3.4nm,0.4s,mb4.5
DAG Danmarks Havn 36.65 347⇓ eP P 15 26 13.8 -0.5
DAG pmax pmax
comp=Z,3.0nm,0.4s,mb4.5
DAG Danmarks Havn 36.65 347⇓ eP P 15 26 13.8 -0.5
comp=Z,3.4nm,0.4s,mb4.5
KKAR Karatay Array 38.12 72 i P P 15 26 26.6 -0.4
KKAR pmax pmax
comp=Z,3.0nm,0.5s,mb4.3
SUMG Summit 39.06 337 eP P 15 26 34.3 -0.3
FRU Bishkek 41.04 70 eP P 15 26 51.0 -0.2
FRU MLR MLR
comp=Z,700nm,16.0s,MS4.6
KURK Kurchatov 41.26 58 i P P 15 26 51.2 -1.7
KURK pmax pmax
comp=Z,6.0nm,1.0s,mb4.2
KURK Kurchatov 41.26 58 eP P 15 26 50.6 -2.3
DBIC Dimbokro 41.52 215 P P 15 26 54.8 -0.6
comp=Z,6.8nm,0.5s,mb4.5,baz=3.1,slow=9.2,SNR=15
DBIC Dimbokro 41.52 215 P P 15 26 54.8 -0.6
DBIC pmax pmax
comp=Z,7.0nm,0.5s
DBIC Dimbokro 41.52 215 eP P 15 26 54.2 -1.2
comp=Z,5.0nm,0.7s,mb4.2
TIC Toumodi 41.61 215 eP P 15 26 54.8 -1.4
comp=Z,11nm,0.2s,mb5.1
KIC Kosan Boka 41.75 214 eP P 15 26 56.4 -0.9
comp=Z,67nm,1.0s,mb5.2
LIC Lamto 41.99 215 eP P 15 26 58.1 -1.2
comp=Z,33nm,0.9s,mb4.7
LIC eR
comp=Z,437nm,17.2s
LIC Lamto 41.99 215 eP P 15 26 58.2 -1.1
comp=Z,60nm,1.1s,mb5.1
NVS Novosibirsk 43.00 51⇑ iP P 15 27 05.8 -1.2
NVS pmax pmax
comp=Z,43nm,1.5s,mb5.0
NVS pmax pmax
comp=N,8.0nm,1.0s
NVS pmax pmax
comp=E,14nm,1.0s
KSH Kashi 43.28 74 eP P 15 27 10.3 +0.8
KSH eAP pP 15 27 17.5 +5.0
KSH eXP sP 15 27 20.3 +6.5
KSH ePP PP 15 28 52.4 0.0
KSH ePCP PcP 15 28 59.8 +0.7
KSH eSCP 15 32 48.0
KSH ePCS 15 32 50.5
KSH eS S 15 33 35.0 -1.4
KSH eXS 15 33 47.6
KSH eSS SS 15 36 41.0 -2.0
KSH eSCS ScS 15 37 06.1 -1.6
KSH LR LR
comp=N,350nm,12.7s,MS4.7
KSH LR LR
comp=E,560nm,13.6s,MS4.7
ZAL Zalesovo 44.11 52 P P 15 27 14.7 -1.3
comp=E,6.3nm,0.7s,mb4.5,baz=94,slow=7.4,SNR=30
ZAL Zalesovo 44.11 52 P P 15 27 14.7 -1.3
ZAL pmax pmax
comp=Z,6.0nm,0.7s
MKAR Makanchi Array 44.75 62 P P 15 27 19.9 -1.4
comp=Z,7.8nm,0.7s,mb4.6,baz=283,slow=7.0,SNR=61
MKAR PcP PcP 15 29 01.7 -2.4
comp=Z,4.5nm,0.8s,baz=290,slow=3.8,SNR=4.2
MKAR LR LR 15 49 47.2
comp=Z,287nm,19.0s,MS4.2,baz=288,slow=41
MKAR Makanchi Array 44.75 62 P P 15 27 19.9 -1.4
MKAR 15 29 01.7
MKAR pmax pmax
comp=Z,8.0nm,0.7s
MKAR pmax pmax
comp=Z,5.0nm,0.8s
MKAR MLR MLR
comp=Z,287nm,19.0s
MKAR Makanchi Array 44.75 62 P P 15 27 19.9 -1.4
MKAR PcP PcP 15 29 01.7 -2.4
JASL Jaisalmer 45.94 93 eP P 15 27 30.7 -0.3
KMBO Kilima Mbogo 47.80 153 P P 15 27 44.3 -1.6
comp=Z,0.9nm,0.6s,mb4.0,baz=49,slow=19,SNR=3.1
RTK Rohtak 48.76 87 eP P 15 27 48.5 -4.7
KHET Khetri 48.86 88 eP P 15 27 51.4 -2.5
AJM Ajmer 48.92 91 eP P 15 27 52.3 -2.1
AJM e pP 15 27 56.0 -1.5
comp=Z,31nm,2.0s
KUDL Kundal 49.31 88 eP P 15 27 55.5 -1.9
KUDL e pP 15 27 58.9 -1.6
comp=Z,14nm,0.7s
BHGR Bahadurgarh 49.34 87 eP P 15 27 55.4 -2.2
WMQ Urumqi 49.42 64 eP P 15 27 59.3 +1.3
WMQ AP pP 15 28 09.1 +8.0
WMQ XP sP 15 28 13.0 +11
WMQ PCP PcP 15 29 22.1 +1.5
WMQ PP PP 15 29 53.5 +0.8
WMQ SCP 15 33 12.9
WMQ PCS 15 33 16.8
WMQ S S 15 35 02.8 -1.1
WMQ XS 15 35 19.3
WMQ SCS ScS 15 37 45.4 -1.8
WMQ SS SS 15 38 30.8 -1.0
WMQ AMB AMB
comp=Z,11nm,1.3s,mb4.7
WMQ AMB AMB
comp=Z,93nm,6.3s
AYAN Aya Nagar 49.59 87 eP P 15 27 58.2 -1.3
AYAN e pP 15 28 00.1 -2.5
comp=Z,21nm,1.0s
SONA Sohna 49.69 87 eP P 15 27 58.7 -1.5
KALG Kalgarh 50.20 85 e P 15 27 57.7 -6.5
BHPL Bhopal 52.87 92 eP P 15 28 22.2 -2.3
SCHQ Schefferville 53.05 314 P P 15 28 23.6 -1.7
comp=Z,5.6nm,0.8s,mb4.5,baz=62,slow=7.3,SNR=8.8
KOLN Koldanda 54.69 83 eP P 15 28 36.4 -1.4
comp=Z,47nm,0.9s,mb5.5
GKN Gorkha 55.31 83 eP P 15 28 40.5 -1.8
comp=Z,53nm,0.9s,mb5.6
TLY Talaya 55.54 49⇓ iP P 15 28 42.8 -0.9
TLY pmax pmax
comp=Z,326nm,1.9s
TLY MLR MLR
comp=Z,7μm,17.0s
TIXI Tiksi 55.57 21 eP P 15 28 42.3 -1.3
TIXI pmax pmax
comp=Z,7.0nm,0.7s,mb4.8
TIXI MLR MLR
comp=Z,700nm,15.0s,MS4.9
TIXI Tiksi 55.57 21 eP P 15 28 42.2 -1.4
comp=Z,26nm,1.4s,mb5.1
DMN Daman 55.87 83 eP P 15 28 44.9 -1.5
comp=Z,64nm,1.2s,mb5.5
KKN Kakani 55.89 82 eP P 15 28 44.5 -2.0
comp=Z,28nm,0.9s,mb5.3
ZAK Zakamensk 55.96 50 eP P 15 28 45.0 -1.7
PKI Pulchoki 56.11 83 eP P 15 28 46.2 -1.9
comp=Z,32nm,1.1s,mb5.3
HYB Hyderabad 57.36 97 i P P 15 28 54.0 -3.1
HYB Hyderabad 57.36 97 eP P 15 28 54.0 -3.1
BOD Bodaibo 57.73 39 eP P 15 28 54.9 -4.3
LSA Lhasa 59.00 77 P P 15 29 07.6 -0.8
LSA Lhasa 59.00 77 eP P 15 29 07.6 -0.8
comp=Z,12nm,1.1s,mb4.8
ULN Ulaanbaatar 59.37 51 eP P 15 29 09.7 -1.1
ULN Ulaanbaatar 59.37 51 eP P 15 29 07.5 -3.3
comp=Z,8.2nm,1.3s,mb4.6
GTA Gaotai 59.49 63 eP P 15 29 10.4 -1.3
GTA AMB AMB
comp=Z,8.0nm,1.1s,mb4.7
GTA AMB AMB
comp=Z,61nm,6.1s
GTA LR LR
comp=N,138nm,14.5s,MS4.5
GTA LR LR
comp=E,181nm,10.7s,MS4.5
GTA LR LR
comp=Z,203nm,13.0s,MS4.4
YAK Yakutsk 61.71 30 eP P 15 29 24.0 -2.5
YAK pmax pmax
comp=Z,17nm,0.7s,mb5.3
YAK MLR MLR
comp=Z,600nm,16.0s,MS4.8
YAK Yakutsk 61.71 30 eP P 15 29 23.8 -2.7
comp=Z,24nm,0.9s,mb5.3
SHL Shillong 61.96 80⇑ iP P 15 29 26.1 -2.6
TSUM Tsumeb 62.32 180 P P 15 29 30.3 -0.9
comp=Z,2.3nm,0.8s,mb4.3,baz=10,slow=11,SNR=3.3
ACCN Adirondack Com 62.68 305 eP P 15 29 32.8 -0.4
FCC Fort Churchill 63.54 327 eP P 15 29 37.1 -1.4
comp=Z,15nm,0.9s,mb5.0
LZH Lanzhou 64.00 64 eP P 15 29 41.1 -0.9
LZH AP pP 15 29 50.8 +5.7
LZH XP sP 15 29 54.3 +8.0
LZH LR LR
comp=N,1μm,16.0s
LZH LR LR
comp=Z,630nm,20.0s,MS4.8
BINY Binghamton 64.75 305 eP P 15 29 46.6 -0.2
comp=Z,16nm,1.1s,mb5.0
BILL Bilibino 66.41 12 eP P 15 29 55.8 -1.2
BILL pmax pmax
comp=Z,10.0nm,1.4s,mb4.7
BILL MLR MLR
comp=Z,200nm,17.0s,MS4.4
INK Inuvik 66.47 349 eP P 15 29 55.5 -1.9
comp=Z,18nm,1.4s,mb4.9
CD2 Chengdu 67.05 69⇑ iP P 15 30 00.5 -1.2
YKW3 Yellowknife Ar 67.59 338 eP P 15 30 03.1 -1.5
LBTB Lobatse 68.52 172 eP P 15 30 10.9 -0.2
comp=Z,6.1nm,1.1s,mb4.4
XAN Xi'an 68.55 63 P P 15 30 09.8 -1.3
XAN AP pP 15 30 15.1 +0.9
XAN AMB AMB
comp=Z,12nm,0.9s,mb4.8
BJI Beijing 69.29 54 P P 15 30 14.3 -1.2
BJI AMB AMB
comp=Z,7.0nm,0.8s,mb4.6
BJI LR LR
comp=N,426nm,13.5s,MS5.0
BJI LR LR
comp=E,387nm,12.6s,MS5.0
BJI LR LR
comp=Z,362nm,22.2s
FFC Flin Flon 69.47 327 eP P 15 30 15.5 -0.8
comp=Z,24nm,1.0s,mb5.1
KMI Kunming 69.95 74 eP P 15 30 18.4 -1.3
KMI S S 15 39 23.9 -4.5
KMI AMB AMB
comp=Z,15nm,1.2s,mb4.8
ULM Lac du Bonnet 70.10 321 P P 15 30 18.7 -1.5
comp=Z,6.5nm,0.8s,mb4.6,baz=33,slow=5.5,SNR=5.8
ULM LR LR 16 00 17.3
comp=Z,161nm,18.5s,MS4.3,baz=24,slow=35
FWV Forest Hill 70.53 303 eP P 15 30 22.7 -0.4
PWV Princeton 70.83 303 eP P 15 30 24.3 -0.6
DAWY Dawson 71.28 349 eP P 15 30 26.7 -0.5
ENH Enshi 71.30 66 eP P 15 30 26.0 -1.8
comp=Z,29nm,1.3s,mb5.0
KLR Kul'dur 71.31 39 eP P 15 30 26.5 -1.1
KLR MLR MLR
comp=E,500nm,12.0s
KLR MLR MLR
comp=Z,1μm,12.0s,MS5.3
COLA College 71.42 353 eP P 15 30 27.7 -0.3
COLA College 71.42 353 eP P 15 30 27.4 -0.6
comp=Z,8.6nm,1.0s,mb4.6
ILAR Eielson Array 71.43 353 P P 15 30 27.3 -0.8
comp=Z,4.0nm,0.6s,mb4.5,baz=1.6,slow=6.0,SNR=98
ILAR Eielson Array 71.43 353 P P 15 30 27.3 -0.8
ILAR pmax pmax
comp=Z,4.0nm,0.6s
CM31 Chiang Mai Arr 71.50 82 eP P 15 30 27.6 -1.7
comp=Z,2.9nm,0.3s,mb4.7
CMAR Chiang Mai Arr 71.50 82 P P 15 30 27.8 -1.5
CMAR LR LR 16 08 37.0
comp=Z,86nm,18.6s,MS4.0,baz=315,slow=42
GYA Guiyang 71.82 71 P P 15 30 30.6 -0.5
GYA AP pP 15 30 40.8 +6.6
GYA XP sP 15 30 45.6 +10
GYA S S 15 39 49.8 -0.4
GYA AMB AMB
comp=Z,10.0nm,1.0s,mb4.7
CN2 Changchun 72.00 46 eP P 15 30 31.8 0.0
CN2 eAP pP 15 30 39.9 +5.0
CN2 eS S 15 39 47.1 -4.8
CN2 AMB AMB
comp=Z,30nm,0.7s,mb5.3
CN2 AMB AMB
comp=Z,130nm,3.0s
CN2 LR LR
comp=N,290nm,16.0s,MS4.8
CN2 LR LR
comp=E,340nm,16.0s,MS4.8
CN2 LR LR
comp=Z,500nm,16.0s,MS4.9
SNY Shenyang 72.33 49 ⇑P P 15 30 32.6 -1.3
SNY AMB AMB
comp=Z,10.0nm,1.3s,mb4.6
MCK McKinley 72.63 354 eP P 15 30 34.6 -0.5
comp=Z,32nm,1.4s,mb5.0
MDJ Mudanjiang 73.56 44 P P 15 30 38.6 -2.3
MDJ AP pP 15 30 45.8 +1.7
MDJ XP sP 15 30 49.3 +4.1
MDJ S S 15 40 06.3 -3.3
MDJ XS 15 40 20.3
MDJ SS SS 15 44 48.9 -6.0
MDJ AMB AMB
comp=Z,3.0nm,0.7s,mb4.3
MDJ AMB AMB
comp=Z,85nm,5.5s
MDJ LR LR
comp=N,357nm,22.1s,MS4.7
MDJ LR LR
comp=E,273nm,23.0s,MS4.7
MDJ LR LR

comp=Z,512nm,16.6s
CPCT Cooper Cave 74.18 304 *e*P P **15 30 44.3 -0.3**
SML Sawmill 74.48 353 *e*P P **15 30 45.3 -0.6**
PMR Palmer 74.76 353 *e*P P **15 30 46.6 -0.9**
comp=Z,7.3nm,0.8s,mb4.7
DLBC Dease Lake 74.95 343 *e*P P **15 30 49.6 +1.0**
WVT Waverly 75.69 306 *e*P P **15 30 51.6 -1.8**
comp=Z,11nm,1.2s,mb4.7
FVM French Village 75.90 309 *e*P P **15 30 53.6 -0.9**
comp=Z,4.7nm,0.8s,mb4.5
NJ2 Nanjing 76.17 59 *e*P P **15 30 54.6 -1.6**
NJ2 AP pP **15 31 02.5 +3.1**
NJ2 XP sP **15 31 05.8 +5.3**
NJ2 PP PP **15 33 46.8 -2.2**
NJ2 S S **15 40 34.0 -4.8**
NJ2 SKS SKS **15 40 59.0 -8.0**
NJ2 AMB AMB
comp=Z,20nm,0.6s,mb5.2
NJ2 LR LR
comp=N,400nm,19.6s,MS4.8
NJ2 LR LR
comp=E,290nm,19.4s,MS4.8
NJ2 LR LR
comp=Z,340nm,18.9s,MS4.7
CCM Cathedral Cave 76.31 310⇑ *i*P P **15 30 56.0 -0.8**
comp=Z,6.2nm,0.8s,mb4.6
LRAL Lakeview Retre 77.32 303⇑ *e*P P **15 31 02.3 -0.3**
comp=Z,18nm,0.8s,mb5.0
YSS Yuzh-Sakhalins 77.86 35⇓ *e*P P **15 31 03.7 -1.5**
YSS pmax pmax
comp=Z,30nm,0.9s,mb5.2
YSS MLR MLR
comp=Z,700nm,15.0s,MS5.1
YSS MLR MLR
comp=N,400nm,16.0s,MS5.0
YSS MLR MLR
comp=E,400nm,15.0s,MS5.0
SSE Sheshan 78.28 58 P P **15 31 05.6 -2.3**
SSE AP pP **15 31 15.1 +4.1**
SSE S S **15 40 56.0 -5.6**
SSE SCS ScS **15 41 22.1 -2.8**
SSE AMB AMB
comp=Z,24nm,0.8s,mb5.2
SSE AMB AMB
comp=Z,80nm,3.7s
SSE LR LR
comp=N,121nm,20.3s,MS4.4
SSE LR LR
comp=E,152nm,20.3s,MS4.4
PET Petropavlovsk 78.30 23 *e*P P **15 31 05.2 -2.3**
PET MLR MLR
comp=Z,100nm,20.0s,MS4.1
RSSD Black Hills 78.37 321 *e*P P **15 31 08.2 +0.1**
comp=Z,5.5nm,1.0s,mb4.4
KSU1 Kansas State U 78.48 313 *e*P P **15 31 08.3 -0.6**
CHMT Chamberlain Mo 80.01 328 *e*P P **15 31 15.2 -1.7**
MIAR Mount Ida 80.13 309⇑ *e*P P **15 31 18.1 +0.2**
comp=Z,34nm,1.4s,mb5.1
NEW Newport 80.31 331 *e*P P **15 31 18.8 +0.3**
comp=Z,4.1nm,1.0s,mb4.3
MSO Missoula 80.35 328 *e*P P **15 31 18.4 -0.4**
comp=Z,14nm,1.4s,mb4.7
LCCM Lewis and Clar 80.36 327 P P **15 31 20.1 +1.3**
BOZ Bozeman (W) 80.42 326 *e*P P **15 31 19.9 +0.8**
comp=Z,15nm,1.3s,mb4.8
YMR Madison River 80.95 325 P P **15 31 24.1 +2.1**
QLMT Earthquake Lak 81.01 326 *e*P P **15 31 23.5 +1.2**
DPW Davenport 81.02 332 *e*P P **15 31 21.1 -1.1**
NLW Nelson Butte 81.57 333 *e*P P **15 31 24.9 -0.2**
MCMT McKenzie Canyo 81.58 327 *e*P P **15 31 26.4 +1.1**
OD2 Odessa Site #2 81.61 332 P P **15 31 26.3 +1.0**
WTV Waterville 81.77 332 P P **15 31 26.7 +0.5**
PDAR Pinedale Array 81.90 324 P P **15 31 27.1 +0.1**
comp=Z,2.9nm,0.8s,mb4.2,baz=56,slow=5.3,SNR=24
PDAR LR LR 16 08 52.1
comp=Z,168nm,19.4s,MS4.4,baz=37,slow=36
HTW Haystack Looko 82.28 334 P P **15 31 28.6 -0.2**
ISCO Idaho Springs 82.47 319 *e*P P **15 31 31.0 +1.0**
comp=Z,9.8nm,0.9s,mb4.7
RMW Rattlesnake Mo 82.59 333 *e*P P **15 31 30.6 +0.1**
GNW Green Mountain 82.83 334 *e*P P **15 31 32.6 +0.9**
WMOK Wichita Mounta 82.88 312 *e*P P **15 31 33.0 +0.7**
comp=Z,12nm,1.0s,mb4.9
HLID Hailey 83.26 327 *e*P P **15 31 34.9 +0.9**
comp=Z,7.3nm,1.4s,mb4.5
HWUT Hardware Ranch 83.71 324 *e*P P **15 31 36.9 +0.7**
comp=Z,6.6nm,0.9s,mb4.8
BDFB Brasilia 83.77 242 P P **15 31 37.5 +0.3**
comp=Z,6.0nm,0.8s,mb4.8,baz=84,slow=5.4,SNR=8.1
BDFB Brasilia 83.77 242 P P **15 31 37.5 +0.3**
BDFB pmax pmax
comp=Z,6.0nm,0.8s
MAJO Matsushiro 83.93 44 *e*P P **15 31 36.4 -1.1**
MAT Matsushiro 83.93 44 P P **15 31 36.8 -0.8**
MAT Matsushiro 83.93 44 *e*P P **15 31 37.0 -0.6**
comp=Z,8.0nm,1.0s,mb4.8
SDCO Great Sand Dun 84.04 318 *e*P P **15 31 39.0 +0.9**
comp=Z,12nm,1.1s,mb4.9
RW3 Ridgway 84.68 320 P P **15 31 41.8 +0.5**
SRU San Rafael 85.29 322 *e*P P **15 31 44.0 -0.3**
JCT Junction City 86.66 310 *e*P P **15 31 52.3 +1.0**
comp=Z,20nm,1.1s,mb5.3
ANMO Albuquerque 86.72 317 *e*P P **15 31 52.3 +0.8**
CPRX Cap Rock 86.90 314 *e*P P **15 31 52.9 +0.5**
BNM Barren Site 87.44 317 *e*P P **15 31 55.4 +0.5**
LAZ Ladron 87.49 317 *e*P P **15 31 55.8 +0.6**
GDL2 Guadalupe Moun 87.81 314 *e*P P **15 31 56.5 -0.3**
ROSC El Rosal 87.95 275 LR LR 16 09 43.3
comp=Z,154nm,18.1s,MS4.5,baz=58,slow=34
MNTX Cornudas Mount 88.74 314 *e*P P **15 32 01.1 -0.1**
comp=Z,6.3nm,1.0s,mb4.9
NVAR Mina Array Bea 89.17 327 P P **15 32 03.0 -0.1**
comp=Z,1.5nm,1.0s,mb4.3,baz=41,slow=6.1,SNR=6.6
NVAR LR LR 16 10 56.7
comp=Z,152nm,21.2s,MS4.4,slow=35
NVAR Mina Array Bea 89.17 327 P P **15 32 03.0 -0.2**
TXAR Lajitas Array 89.68 312 P P **15 32 06.4 +0.6**
comp=Z,4.9nm,0.8s,mb4.9,baz=72,slow=4.5,SNR=41
TGY Tagaytay City 89.98 71 LR LR 16 17 24.3
comp=Z,98nm,18.1s,MS4.3,baz=74,slow=39
NEN Nelson 90.08 323 *e*P P **15 32 08.7 +1.2**
TUC Tucson 90.97 318 *e*P P **15 32 12.2 +0.5**
comp=Z,2.5nm,0.9s,mb4.5
CPUP Villa Florida 97.47 241 LR LR 16 16 37.1
comp=Z,109nm,18.3s,MS4.4,baz=69,slow=35
VNA1 Neumayer--Stat 115.28 189⇓ *i* Pdif **15 33 55.4 -4.0**
VNA2 Neumayer--Watz 115.44 189⇓ *i* Pdif **15 33 56.5 -3.6**
VNA3 Neumayer Olymp 116.00 189⇓ *i* Pdif **15 33 58.6 -4.0**
WRA Warramunga Arr 122.87 87 PKP PKPdf **15 38 02.4 -3.5**
comp=Z,3.5nm,1.1s,baz=316,slow=1.7,SNR=28
WRA PKKPbc **15 47 56.5**
comp=Z,0.7nm,1.1s,baz=125,slow=3.7,SNR=5.3
WRA Warramunga Arr 122.87 87 PKIKP PKPdf **15 38 02.4 -3.5**
WRA pmax pmax
comp=Z,4.0nm,1.1s
WRA pmax pmax
comp=Z,1.0nm,1.2s
ASAR Alice Springs 124.86 91 PKP PKPdf **15 38 06.4 -3.4**
comp=Z,15nm,1.3s,baz=307,slow=1.6,SNR=43
QSPA South Pole Qui 133.28 180 *e*PKP PKPdf **15 38 20.2 -4.2**
STKA Stephens Creek 135.10 94 PKP PKPdf **15 38 26.1 -2.9**
comp=Z,3.9nm,0.8s,baz=149,slow=8.1,SNR=3.8

NEIC ***23*** *15:51:57.0±4.5,6.39S×151.93E,h37km±31km,Error ellipse: s-maj=105.2km s-min=11.1km az=124.0*
IDC ***23*** *15:51:59.4±6.7,6.28S×151.67E,h54km±56km,mb3.4/4, mb1 3.7/5,mb1mx3.5/13,ML2.7/1,MS3.5/1,Ms1 3.5/1, ms1mx2.8/9,Error ellipse: s-maj=98.0km s-min=31.5km az=130.0*
ISC 23 15:51:58.6±3.4,**6.1S**±0.5×**151.4E**±0.6,**h53**km±25km,**n8,**
σ0s59/9,mb3.5/4,MS3.5/1,New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAB	**Rabaul**	**2.02**	**22**	*e*P		**P**		**15 52 30.9**	**-0.1**
PMG	**Port Moresby**	**5.35**	**232**	P		**P**		**15 53 18.8**	**+0.9**
	1.6nm,0.3s,baz=356,slow=4.7,SNR=8.9								
PMG				S		**S**		**15 54 19.4**	**+0.5**
	4.8nm,0.3s,baz=202,slow=18,SNR=7.7								
PMG	**Port Moresby**	**5.35**	**232**	*e*Pn		**P**		**15 53 17.9**	**0.0**
PMG				*e*Sn		**S**		**15 54 17.3**	**-1.7**
WRA	**Warramunga Arr**	**21.56**	**229**	P		**P**		**15 56 45.7**	**+0.2**
	0.3nm,0.4s,mb3.1,baz=55,slow=10.0,SNR=10.0								
ASAR	**Alice Springs**	**24.27**	**222**	P		**P**		**15 57 11.8**	**-0.3**
	0.9nm,0.5s,mb3.5,baz=56,slow=9.2,SNR=25								
FITZ	**Fitzroy Crossi**	**27.84**	**242**	P		**P**		**15 57 46.0**	**+0.6**
	0.7nm,0.5s,mb3.6,baz=53,slow=6.7,SNR=5.7								
RAR	**Rarotonga**	**49.54**	**113**	LR		LR		16 17 35.2	
	comp=Z,53nm,21.7s,MS3.5,baz=302,slow=31								
ILAR	**Eielson Array**	**83.86**	**22**	P		**P**		**16 04 23.2**	**-0.3**
	0.8nm,0.6s,mb4.0,baz=248,slow=5.3,SNR=13								

IDC ***23*** *16:03:31.9±7.2,6.09S×151.52E,mb4.2/1,mb1 3.6/4, mb1mx3.5/14,ML3.1/3,Error ellipse: s-maj=99.1km s-min=62.9km az=140.0*
ISC 23 16:03:32.2±5.2,**6.1S**±0.2×**131.5E**±0.2,**h17**km±58km,**n4,**
σ1s08/6,mb3.8/1,Tanimbar Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**13.24**	**205**	Pn		**P**		**16 06 42.3**	**+0.1**
	0.3nm,0.3s,baz=17,slow=10,SNR=24								
FITZ				Sn		**S**		**16 09 09.9**	**-0.1**
	0.1nm,0.3s,slow=19,SNR=3.2								
WRA	**Warramunga Arr**	**14.04**	**169**	Pn		**P**		**16 06 51.9**	**-1.0**
	0.1nm,0.3s,baz=352,slow=12,SNR=13								
WRA				Sn		**S**		**16 09 29.2**	**+0.1**
	0.3nm,0.3s,baz=358,slow=23,SNR=9.0								
ASAR	**Alice Springs**	**17.62**	**173**	Pn		**P**		**16 07 40.0**	**+1.2**
	0.1nm,0.3s,baz=353,slow=9.4,SNR=10								
STKA	**Stephens Creek**	**27.33**	**161**	P		**P**		**16 09 18.2**	**-0.2**
	3.1nm,0.9s,mb3.8,baz=345,slow=13,SNR=2.9								

IDC ***23*** *16:05:41.2±2.0,6.52S×150.15E,mb3.7/4,mb1 4.1/4, mb1mx3.8/12,MS3.5/1,Ms1 3.7/1,ms1mx2.9/15,Error ellipse: s-maj=104.0km s-min=27.3km az=130.0*
NEIC ***23*** *16:05:50.0±1.1,6.13S×149.37E,h61km±13km,mb4.0/1, Error ellipse: s-maj=52.7km s-min=11.0km az=133.0*
ISC 23 16:05:49.2±1.4,**6.1S**±0.3×**149.3E**±0.3,**h70**km±14km,**n9,**
σ0s73/9,mb3.4/4,1C,New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
KMBE	**Kimbe**	**0.98**	**57**⇑	*i*P		**P**		**16 06 07.6**	**-0.1**
PMG	**Port Moresby**	**3.93**	**213**	*e*Pn		**P**		**16 06 48.1**	**-0.5**
PMG				*e*Sn		**S**		**16 07 34.8**	**+1.0**
WRAB	**Tennant Creek**	**20.03**	**225**	*e*P		**P**		**16 10 18.2**	**-0.8**
	6.4nm,0.8s								
WRA	**Warramunga Arr**	**20.04**	**225**	P		**P**		**16 10 18.9**	**-0.4**
	2.0nm,0.7s,baz=52,slow=11,SNR=15								
ASAR	**Alice Springs**	**22.92**	**219**	P		**P**		**16 10 47.9**	**-0.3**
	0.6nm,0.7s,mb3.0,baz=52,slow=9.1,SNR=19								
FITZ	**Fitzroy Crossi**	**26.02**	**241**	P		**P**		**16 11 21.8**	**+4.1**
	2.5nm,0.5s,mb3.9,baz=96,slow=5.3,SNR=8.3								
CMAR	**Chiang Mai Arr**	**55.34**	**297**	LR		LR		16 37 44.7	
	comp=Z,39nm,19.4s,baz=60,slow=34								
VNDA	**Vanda**	**71.69**	**177**	*e*P		**P**		**16 17 05.0**	**-0.1**
	0.1nm,0.5s,mb2.9								
ILAR	**Eielson Array**	**84.66**	**23**	P		**P**		**16 18 17.1**	**+0.9**
	0.6nm,0.8s,mb3.6,baz=247,slow=6.9,SNR=6.5								

NEIC ***23*** *16:18:25.6±2.8,21.18S×178.34W,h470km±32km, mb4.1/10,Error ellipse: s-maj=17.3km s-min=11.7km az=189.0*
IDC ***23*** *16:18:29.6±1.8,21.20S×178.45W,h513km±20km, mb3.6/13,mb1 3.8/14,mb1mx3.7/16,Error ellipse: s-maj=19.3km s-min=10.2km az=157.0*
ISC 23 16:18:28.3±2.1,**21.36S**±0.09×**178.45W**±0.08,
h512km±25km,**n38,**σ0s**80**/32,**mb4.0**/21,**1C-1D,Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**17.28**	**192**	P		**P**		**16 21 59.9**	**-0.9**
	3.1nm,0.3s,baz=20,slow=4.1,SNR=17								
URZ				S		**S**		**16 24 51.3**	**-1.3**
	0.3nm,0.3s,baz=179,slow=16,SNR=3.2								
SNZO	**South Karori**	**20.72**	**195**	*e*P		**P**		**16 22 33.5**	**-0.1**
	23nm,0.7s								
RPZ	**Rata Peaks**	**23.95**	**199**	P		**P**		**16 23 03.9**	**+0.9**
	16nm,0.6s,mb4.8,baz=350,slow=3.1,SNR=14								
CTA	**Charters Tower**	**33.00**	**266**	P		**P**		**16 24 22.8**	**+0.9**
	6.2nm,0.5s,mb4.4,baz=96,slow=10,SNR=15								
CTAO	**Charters Tower**	**33.00**	**266**	*e*P		**P**		**16 24 22.5**	**+0.6**
	6.2nm,0.5s,mb4.4								
PMG	**Port Moresby**	**35.14**	**284**	P		**P**		**16 24 39.8**	**0.0**
	7.8nm,0.5s,mb4.5,baz=38,slow=3.6,SNR=8.9								
STKA	**Stephens Creek**	**37.05**	**245**	P		**P**		**16 24 55.6**	**+0.2**
	1.3nm,0.5s,mb3.8,baz=97,slow=12,SNR=5.4								
AS12	**Alice Springs**	**43.92**	**258**	*e*P		**P**		**16 25 51.2**	**+0.4**
	6.7nm,1.0s,mb4.1								
ASAR	**Alice Springs**	**43.92**	**258**	P		**P**		**16 25 51.1**	**+0.3**
	5.8nm,0.5s,mb4.3,baz=92,slow=8.3,SNR=141								
ASAR				ScP				16 30 30.9	
	0.4nm,0.6s,baz=106,slow=4.1,SNR=5.7								
ASAR				S		**S**		**16 31 45.2**	**0.0**
	4.7nm,1.2s,baz=92,slow=16,SNR=15								
WB2	**Warramunga Arr**	**44.06**	**263**	*e*P		**P**		**16 25 51.5**	**-0.4**
WRAB	**Tennant Creek**	**44.07**	**263**	*e*P		**P**		**16 25 51.5**	**-0.5**
	20nm,0.9s,mb4.7								
WRA	**Warramunga Arr**	**44.08**	**263**	P		**P**		**16 25 51.8**	**-0.2**
	2.6nm,0.3s,mb4.2,baz=96,slow=7.7,SNR=128								
WRA				S		**S**		**16 31 46.9**	**-0.4**
	0.8nm,0.9s,baz=100,slow=13,SNR=3.1								
KAKA	**Kakadu**	**47.62**	**272**	*e*P		**P**		**16 26 18.5**	**-0.9**
	7.3nm,0.5s,mb4.5								
FITZ	**Fitzroy Crossi**	**52.51**	**263**	*e*P		**P**		**16 26 55.3**	**-0.1**
	2.3nm,0.3s,mb4.0								
SBA	**Scott Base**	**56.99**	**184**	*e*P		**P**		**16 27 27.9**	**+1.8**
	2.5nm,0.9s,mb3.4								
VNDA	**Vanda**	**57.02**	**185**	P		**P**		**16 27 27.0**	**+0.7**
	0.4nm,0.5s,mb3.0,baz=349,slow=6.1,SNR=5.8								
VNDA	**Vanda**	**57.02**	**185**	*e*P		**P**		**16 27 27.2**	**+0.9**
	0.7nm,0.9s,mb2.9								
YBH	**Yreka Blue Hor**	**81.22**	**39**	P		**P**		**16 29 51.8**	**+0.5**
	0.9nm,0.5s,mb3.5,baz=227,slow=18,SNR=7.2								
NVAR	**Mina Array Bea**	**81.93**	**43**	P		**P**		**16 29 55.2**	**+0.3**
	1.8nm,0.7s,mb3.6,baz=214,slow=6.8,SNR=14								
TPH	**Tonopah**	**82.43**	**44**	*e*P		**P**		**16 29 57.7**	**+0.2**
	1.9nm,0.7s,mb3.6								
HLID	**Hailey**	**87.25**	**41**	*e*P		**P**		**16 30 21.1**	**+0.3**
	1.4nm,0.9s,mb3.6								
MNTX	**Cornudas Mount**	**87.58**	**55**	*e*P		**P**		**16 30 22.5**	**-0.2**
	4.6nm,1.1s,mb4.1								
TXAR	**Lajitas Array**	**87.87**	**57**	P		**P**		**16 30 24.4**	**+0.3**
	1.7nm,0.9s,mb3.8,baz=217,slow=6.3,SNR=17								
GDL2	**Guadalupe Moun**	**88.58**	**55**	*e*P		**P**		**16 30 27.6**	**+0.2**
ILAR	**Eielson Array**	**89.24**	**13**	P		**P**		**16 30 28.2**	**-1.5**
	1.1nm,0.6s,mb3.9,baz=224,slow=5.4,SNR=16								
BW06	**Boulder Array**	**89.87**	**43**	*e*P		**P**		**16 30 31.6**	**-1.5**
	2.1nm,0.8s,mb4.0								
PDAR	**Pinedale Array**	**89.87**	**43**	P		**P**		**16 30 32.6**	**-0.4**
	1.7nm,0.6s,mb4.0,baz=219,slow=1.9,SNR=18								
CMAR	**Chiang Mai Arr**	**90.01**	**290**	P		**P**		**16 30 36.4**	**+2.1**
	2.9nm,0.7s,mb4.2,baz=130,slow=3.3,SNR=17								
DAWY	**Dawson**	**90.39**	**16**	*e*P		**P**		**16 30 34.6**	**-0.3**
MKAR	**Makanchi Array**	**111.48**	**313**	PKiKP				16 36 03.8	
	0.2nm,0.4s,baz=19,slow=0.6,SNR=4.7								
ARCES	**ARCESS Array B**	**129.68**	**349**	PKP		PKPdf		16 36 38.3	0.0
	1.0nm,0.5s,baz=45,slow=1.3,SNR=12								
BRTR	**Keskin Array B**	**147.09**	**311**	PKPbc		PKPdf		16 37 14.1	+3.9
	1.6nm,0.7s,baz=136,slow=4.4,SNR=9.6								
CLL	**Collm**	**148.80**	**346**⇓	*i*PKP1		PKPdf		16 37 18.3	+5.8
BRG	**Berggiesshubel**	**148.98**	**345**	*i* P		PKPdf		16 37 19.2	+6.4
MOX	**Moxa**	**149.72**	**347**	P		PKPdf		16 37 19.0	+5.0
KHC	**Kasperske Hory**	**150.68**	**344**⇑	*e*PKPB				16 37 23.0	
GRA1	**Grafenberg Arr**	**150.70**	**347**	*e*PKP		PKPdf		16 37 22.2	+6.6
GERES	**GERESS Array B**	**150.91**	**343**	PKPbc		PKPdf		16 37 23.0	+7.2
	2.0nm,0.7s,slow=1.3,SNR=14								

NEIC ***23*** *16:22:15.9,37.94N×20.76E,h14km,MD3.5(ATH),After ATH.*
ATH ***23*** *16:22:15.9,37.94N×20.76E,h14km±3km,MD3.5/5*
ISC 23 16:22:16.9±1.2,**37.96N**±0.07×**20.76E**±0.09,**h14**km,**n9,**
σ1s18/12,1C,Ionian Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
VLS	**Valsamata**	**0.26**	**329**⇑	*i*PG		**Pg**		**16 22 21.8**	**-0.8**
VLS				*e*SG		**Sg**		**16 22 26.6**	**+0.2**
RLS	**Riolos of Patr**	**0.57**	**80**	*e*PB		**Pb**		**16 22 27.2**	**-0.9**
RLS				*e*SB		**Sb**		**16 22 35.2**	**-0.6**
ITM	**Ithomi**	**1.21**	**130**	*e*PB		**Pb**		**16 22 37.3**	**-1.8**
ITM				*e*SB		**Sb**		**16 22 55.5**	**+1.1**
EVR	**Evrytania**	**1.26**	**40**	*e*PG		**Pg**		**16 22 39.8**	**-2.5**
IGT	**Igoumenitsa**	**1.61**	**348**	*e*P		**Pn**		**16 22 45.6**	**+0.4**
AGG	**Agios Georgios**	**1.63**	**49**	*e*P		**Pn**		**16 22 46.9**	**+1.5**
LKR	**Lokris**	**1.89**	**68**	*e*PN		**Pn**		**16 22 50.4**	**+1.2**
XOR	**Xorichti**	**2.37**	**53**	*e*P		**Pn**		**16 22 57.4**	**+1.4**
AOS	**Alonnisos**	**2.73**	**63**	*e*P		**Pn**		**16 23 01.4**	**+0.2**

NEIC ***23*** *16:31:51.9±2.6,50.55N×18.71E,h5km,MG2.1(WAR), Error ellipse: s-maj=33.7km s-min=9.6km az=177.0*
PRU ***23*** *16:31:57.7,50.23N×18.73E*
WAR 23 16:31:54.6,50.24N±**18.92E,h1**km,**Location given by Central Institute of Mining, origin time based upon OJC,Poland**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAC	**Raciborz**	**0.49**	**252**	*e*PG		**Pg**		**16 32 06.0**	**+1.5**
RAC				*e*(SG)		**Sg**		**16 32 14.0**	**+2.9**
OJC	**Ojcow**	**0.56**	**92**	*e*Pg		**Pg**		**16 32 05.5**	**-0.4**
OJC				*e*Sg		**Sg**		**16 32 13.9**	**+0.5**
OJC	**Ojcow**	**0.56**	**92**	*e*PG		**Pg**		**16 32 05.0**	**-0.9**
OJC				*e*SG		**Sg**		**16 32 14.0**	**+0.6**
OKC	**Ostrava-Krasne**	**0.64**	**231**	*e*PG		**Pg**		**16 32 07.2**	**-0.2**
OKC				*e*SG		**Sg**		**16 32 15.2**	**-0.8**
MORC	**Moravsky Berou**	**1.00**	**243**	*e*Pn		**Pn**		**16 32 13.3**	**-2.4**
MORC				*e*S		Sb		**16 32 26.4**	**-1.6**
NIE	**Niedzica**	**1.22**	**132**	*e*Pg		**Pg**		**16 32 18.0**	**-1.0**
NIE				*e*Sg		**Sg**		**16 32 36.3**	**+1.1**
DPC	**Dobruska-Polom**	**1.67**	**275**	*e*PG		**Pg**		**16 32 25.0**	**-3.0**
DPC				*e*SG		**Sg**		**16 32 46.4**	**-3.9**
	7.1nm,0.3s								
VYHS	**Vyhne**	**1.75**	**182**	*i* PN		**Pn**		**16 32 26.8**	**+0.5**
VYHS				*e*SN		**Sn**		**16 32 47.2**	**-2.3**
KSP	**Ksiaz**	**1.78**	**291**	*e*PG		**Pg**		**16 32 28.0**	**-2.2**
KSP				*e*SG		**Sg**		**16 32 51.0**	**-3.0**
UPC	**Upice**	**1.88**	**279**	*e*PG		**Pg**		**16 32 29.8**	**-2.4**
UPC				*e*SG		**Sg**		**16 32 54.4**	**-2.9**
CRVS	**Cervenica-Dubn**	**2.13**	**128**	*e*PN		**Pn**		**16 32 34.0**	**+2.2**
CRVS				*e*SN		Sn		**16 33 04.5**	**+5.3**
PRU	**Pruhonice**	**2.83**	**267**	*e*SG		**Sg**		**16 33 22.9**	**-6.0**
	2.8nm,0.4s								
KHC	**Kasperske Hory**	**3.64**	**254**	*e*PG		**Pg**		**16 33 01.1**	**-6.3**
KHC				*e*SG		**Sg**		**16 33 49.4**	**-6.5**
CLL	**Collm**	**3.91**	**288**	*e*SG		**Sg**		**16 34 00.0**	**-4.7**

NNC ***23*** *16:47:10.3±6.2,37.12N×68.13E,mpv3.6,Error ellipse: s-maj=82.8km s-min=40.1km az=125.0*
ISC 23 16:46:56.7±1.7,**36.20N**±0.08×**68.7E**±0.2,**h10**km,**n15,**
σ0s67/16,1C-3D,Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
KK31	**Karatay Array**	**7.04**	**11**	⇓P		**Pn**		**16 48 43.0**	**+0.5**
	1.7nm,0.3s,baz=200,slow=14,SNR=149								
KK31				⇓Sn		**Sn**		**16 49 57.3**	**-6.1**
	2.5nm,0.4s,baz=199,slow=22,SNR=4.7								
KK31				⇓Lg				16 50 28.6	
	11nm,0.6s,baz=189,slow=28,SNR=6.2								
AML	**Almayashu**	**7.09**	**32**	P		**Pn**		**16 48 43.2**	**0.0**
	SNR=14								
UCH	**Uchtor**	**7.54**	**35**	P		**Pn**		**16 48 49.3**	**-0.1**
	SNR=20								
EKS2	**Erkin-Say**	**7.57**	**30**	P		**Pn**		**16 48 50.2**	**+0.4**
	SNR=7.6								
KZA	**Kyzart**	**7.78**	**39**	P		**Pn**		**16 48 54.2**	**+1.3**
	SNR=7.1								
AAK	**Ala-Archa**	**7.85**	**33**	P		**Pn**		**16 48 53.7**	**-0.1**
	SNR=7.4								
CHMS	**Chumysh**	**8.25**	**33**	P		**P**		**16 48 58.4**	**-1.0**
	SNR=7.4								
USP	**Ospenovka**	**8.37**	**31**	P		**P**		**16 48 59.7**	**-1.2**
	SNR=8.2								
AB31	**Akbulak array**	**14.53**	**337**⇑	P		**P**		**16 50 24.0**	**-0.2**
	3.3nm,0.6s,baz=151,slow=12,SNR=35								
KOLN	**Koldanda**	**15.18**	**119**	*e*P		**P**		**16 50 33.0**	**+0.1**
	2.8nm,0.3s								
GKN	**Gorkha**	**15.79**	**117**	*e*P		**P**		**16 50 40.2**	**-0.6**
	7.6nm,0.3s								
DMN	**Daman**	**16.35**	**117**	*e*P		**P**		**16 50 48.3**	**+0.3**
	8.5nm,0.3s								
KKN	**Kakani**	**16.37**	**116**	*e*P		**P**		**16 50 48.1**	**-0.2**
	10nm,0.6s								
PKI	**Pulchoki**	**16.59**	**116**	*e*P		**P**		**16 50 51.4**	**+0.3**
	7.7nm,0.5s								
BVA0	**Borovoye Array**	**16.87**	**4**	P		**P**		**16 50 58.2**	**+3.8**
	0.2nm,0.5s,baz=157,slow=11,SNR=6.3								

NEIC ***23*** *17:07:01.1±4.2,20.28S×177.84W,h452km±47km,mb4.0/9, Error ellipse: s-maj=17.3km s-min=12.5km az=86.0*
IDC ***23*** *17:07:10.2±3.0,20.65S×177.91W,h565km±38km,mb3.4/9, mb1 3.7/10,mb1mx3.5/14,Error ellipse: s-maj=36.9km s-min=12.9km az=158.0*
ISC 23 17:07:01.7±4.6,**20.3S**±0.1×**178.0W**±0.2,**h468**km±51km,
n27,σ0s**75**/28,**mb3.9**/16,**2C-2D,Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**18.44**	**192**	P		**P**		**17 10 47.2**	**-0.3**
	0.9nm,0.3s,baz=24,slow=19,SNR=4.2								
CTA	**Charters Tower**	**33.55**	**264**	*e*P		**P**		**17 13 04.2**	**+1.6**
	12nm,0.4s,mb4.7								
CTA	**Charters Tower**	**33.55**	**264**	P		**P**		**17 13 04.5**	**+1.8**
	17nm,0.5s,mb4.8,baz=91,slow=10,SNR=22								
CTAO	**Charters Tower**	**33.55**	**264**	*e*P		**P**		**17 13 04.4**	**+1.7**
	15nm,0.5s,mb4.7								
STKA	**Stephens Creek**	**37.92**	**244**	P		**P**		**17 13 38.8**	**-0.1**

BKM				S	S	17 08 56.7	-0.7		
DZM	**Mont Dzumac**	**6.69**	**190**	*e*P	P	17 09 20.2	-0.4		
DZM				*e*S	S	17 10 36.1	-0.1		
NOUC	**Port Laguerre**	**6.75**	**191**	*e*P	P	17 09 22.4	+1.1		
NOUC				*e*S	S	17 10 37.9	+0.4		
NOUC	**Port Laguerre**	**6.75**	**191**	*e*P	P	17 09 22.4	+1.1		
NOUC				*e*S	S	17 10 37.9	+0.4		
CTA	**Charters Tower**	**20.93**	**254**	*e*P	P	17 12 12.5	+0.6		
	9.4nm,0.8s								
CTA	**Charters Tower**	**20.93**	**254**	P	P	17 12 13.5	+1.6		
	16nm,0.9s,baz=89,slow=12,SNR=10								
ARMA	**Armidale**	**20.96**	**222**	*e*P	P	17 12 14.2	+2.0		
URZ	**Urewera**	**24.20**	**162**	P	P	17 12 42.6	-0.7		
	12nm,0.3s,mb5.0,baz=31,slow=2.9,SNR=20								
URZ				S	S	17 16 46.2	+1.8		
	3.9nm,0.9s,baz=325,slow=16,SNR=2.1								
RPZ	**Rata Peaks**	**28.32**	**175**	P	P	17 13 19.7	-1.3		
	15nm,0.6s,mb4.8,baz=332,slow=0.6,SNR=16								
STKA	**Stephens Creek**	**28.85**	**231**	*e*P	P	17 13 25.9	+0.1		
	4.7nm,0.6s,mb4.3								
STKA	**Stephens Creek**	**28.85**	**231**	P	P	17 13 25.8	0.0		
	5.5nm,0.6s,mb4.3,baz=48,slow=8.1,SNR=19								
STKA				pP	pP	17 14 04.9	-1.1		
	3.7nm,0.9s,baz=22,slow=11,SNR=1.4								
STKA				PcP	PcP	17 16 29.1	-1.1		
	2.5nm,0.5s,baz=76,slow=4.7,SNR=5.2								
WRA	**Warramunga Arr**	**32.05**	**257**	P	P	17 13 52.4	-1.6		
	1.1nm,0.4s,mb3.7,baz=83,slow=7.7,SNR=11								
WRA				S	S	17 18 46.5	-3.7		
	2.0nm,1.1s,baz=86,slow=15,SNR=4.9								
WRA				ScP		17 20 03.7			
	0.6nm,0.7s,baz=87,slow=3.5,SNR=4.3								
WRA				PKiKP		17 24 04.3			
	0.6nm,1.0s,baz=74,slow=0.9,SNR=8.1								
WRA	**Warramunga Arr**	**32.05**	**257**	P	P	17 13 52.4	-1.6		
WRA				S	S	17 18 46.5	-3.7		
WRA				ScP		17 20 03.7			
AS12	**Alice Springs**	**32.81**	**250**	*e*P	P	17 13 59.4	-1.1		
	7.9nm,0.5s,mb4.5								
ASAR	**Alice Springs**	**32.81**	**250**	P	P	17 13 59.3	-1.2		
	3.9nm,0.7s,mb4.1,baz=78,slow=9.3,SNR=26								
ASAR				PcP	PcP	17 16 40.0	-0.8		
	1.6nm,0.5s,baz=87,slow=2.9,SNR=7.5								
ASAR				S	S	17 19 00.5	-1.4		
	0.6nm,0.8s,baz=83,slow=17,SNR=4.8								
ASAR				ScP		17 20 05.3			
	2.8nm,1.0s,baz=99,slow=3.0,SNR=8.6								
FITZ	**Fitzroy Crossi**	**40.29**	**260**	*e*P	P	17 15 02.8	-0.4		
	3.2nm,0.4s,mb4.1								
FITZ	**Fitzroy Crossi**	**40.29**	**260**	P	P	17 15 03.2	0.0		
	3.0nm,0.4s,mb4.1,baz=102,slow=5.2,SNR=8.7								
FITZ				PcP	PcP	17 17 03.4	+0.1		
	2.1nm,0.4s,baz=125,slow=3.9,SNR=2.5								
PPT	**Papeete**	**40.96**	**99**	P	P	17 15 09.0	+0.2		
	27nm,0.8s,mb4.7,baz=254,slow=18,SNR=4.2								
MAJO	**Matsushiro**	**58.73**	**332**	*e*P	P	17 17 22.4	-0.5		
	6.9nm,1.0s,mb4.2								
MAT	**Matsushiro**	**58.73**	**332**	P	P	17 17 22.3	-0.6		
MAT	**Matsushiro**	**58.73**	**332**	*e*P	P	17 17 22.0	-0.9		
	5.0nm,1.0s,mb4.1								
JNU	**Nakatsue**	**59.74**	**324**	P	P	17 17 29.9	0.0		
	4.1nm,0.8s,mb4.1,baz=216,slow=14,SNR=4.0								
VNDA	**Vanda**	**62.16**	**181**	P	P	17 17 44.5	-1.1		
	5.2nm,0.6s,mb4.3,baz=357,slow=7.3,SNR=44								
VNDA	**Vanda**	**62.16**	**181**	*e*P	P	17 17 44.1	-1.5		
	5.2nm,0.9s,mb4.2								
SBA	**Scott Base**	**62.42**	**180**	*e*P	P	17 17 47.1	-0.3		
	20nm,0.8s,mb4.8								
ASAJ	**Asahikawa**	**63.55**	**340**	P	P	17 17 56.4	+1.2		
	7.9nm,0.5s,mb4.6,baz=204,slow=6.3,SNR=12								
QSPA	**South Pole Qui**	**74.58**	**180**	*e*P	P	17 19 01.3	-0.7		
	22nm,0.8s,mb4.8								
CMAR	**Chiang Mai Arr**	**75.61**	**294**	P	P	17 19 10.4	+1.5		
	0.7nm,0.6s,mb3.5,baz=137,slow=5.3,SNR=5.4								
CMAR				pP	pP	17 19 59.6	+3.1		
	2.1nm,0.8s,baz=121,slow=3.4,SNR=7.5								
MAW	**Mawson**	**81.38**	**202**	P	P	17 19 39.3	+0.2		
	4.7nm,0.7s,mb4.2,baz=163,slow=6.3,SNR=7.4								
ULN	**Ulaanbaatar**	**82.95**	**324**	*e*P	P	17 19 48.6	+1.0		
	4.1nm,0.8s,mb4.2								
COLA	**College**	**86.88**	**17**	P	P	17 20 06.2	-0.4		
	1.7nm,0.4s,mb4.1								
ILAR	**Eielson Array**	**87.08**	**18**	P	P	17 20 06.9	-0.7		
	1.0nm,0.6s,mb3.7,baz=244,slow=3.9,SNR=16								
ILAR				pP	pP	17 20 59.5	+3.0		
	3.0nm,0.7s,baz=237,slow=5.5,SNR=13								
NVAR	**Mina Array Bea**	**87.43**	**49**	P	P	17 20 09.6	-0.3		
	0.4nm,0.5s,mb3.4,baz=231,slow=11,SNR=3.9								
NVAR				pP	pP	17 21 02.6	+3.8		
	0.4nm,0.6s,baz=224,slow=6.1,SNR=3.7								
SNAA	**Sanae**	**92.86**	**183**	*e*P	P	17 20 32.8	-1.7		
VNA3	**Neumayer Olymp**	**93.51**	**181**	*i*	P	17 20 37.3	-0.1		
VNA3	**Neumayer Olymp**	**93.51**	**181**	*i*	P	17 20 39.4	+2.0		
VNA2	**Neumayer--Watz**	**93.78**	**182**	*i*	P	17 20 39.9	+1.3		
VNA2	**Neumayer--Watz**	**93.78**	**182**	*i*	P	17 20 41.0	+2.4		
VNA1	**Neumayer--Stat**	**94.08**	**181**	*i*	P	17 20 40.9	+0.9		
VNA1	**Neumayer--Stat**	**94.08**	**181**	*i*	P	17 20 42.4	+2.4		
MKAR	**Makanchi Array**	**98.00**	**316**	P	P	17 20 58.6	+0.2		
	0.6nm,0.9s,mb3.9,baz=90,slow=9.7,SNR=4.3								
MKAR				pP	pP	17 21 49.7	+2.1		
	1.1nm,0.7s,baz=100,slow=7.4,SNR=6.3								
MKAR				PKiKP		17 25 30.1			
	0.4nm,0.6s,baz=246,slow=1.8,SNR=6.3								
MKAR	**Makanchi Array**	**98.00**	**316**	P	P	17 20 58.6	+0.2		
MKAR				pP	pP	17 21 49.7	+2.1		
BVAR	**Borovoye Array**	**106.56**	**321**	PKiKP		17 25 45.9			
	0.7nm,0.6s,baz=90,slow=1.4,SNR=4.9								
ZRNK	**Zerenda**	**107.39**	**321**	*e*P		17 25 45.7			
ARCES	**ARCESS Array B**	**121.05**	**345**	PKP	PKPdf	17 26 12.7	+0.5		
	3.9nm,0.5s,baz=71,slow=1.7,SNR=44								
JOF	**Joensuu**	**123.70**	**338**	*e*p	PKPdf	17 26 17.0	-0.4		
	4.4nm,0.6s								
KAF	**Kangasniemi**	**126.01**	**339**	*e*p	PKPdf	17 26 22.2	+0.4		
	3.1nm,0.5s								
FINES	**FINESS Array B**	**126.54**	**338**	PKP	PKPdf	17 26 24.0	+1.1		
	1.1nm,0.5s,baz=54,slow=1.9,SNR=18								
NB2	**NORSAR Subarra**	**131.42**	**345**	PKPdf	PKPdf	17 26 33.3	+1.1		
	0.7nm,0.6s,baz=31,slow=1.9								
NOA	**NORSAR Array B**	**131.42**	**345**	PKP	PKPdf	17 26 34.0	+1.8		
	1.3nm,0.6s,baz=35,slow=2.0,SNR=6.5								
NOA				SKPbc		17 29 40.1			
	3.2nm,0.9s,baz=31,slow=2.9,SNR=7.7								
BRTR	**Keskin Array B**	**133.29**	**310**	PKP	PKPdf	17 26 38.0	+1.7		
	1.4nm,0.7s,baz=132,slow=3.0,SNR=8.6								
BRTR				SKPbc		17 29 46.6			
	0.3nm,0.5s,baz=90,slow=4.1,SNR=3.0								
GERES	**GERESS Array B**	**140.47**	**333**	PKP	PKPdf	17 26 51.3	+2.1		
	1.2nm,0.6s,baz=90,slow=1.3,SNR=8.7								
GERES				SKPbc		17 30 08.7			
	0.4nm,0.5s,slow=1.3,SNR=3.7								
GIVF	**Givet**	**142.75**	**342**	*e*PKP1	PKPdf	17 26 51.7	-1.3		
BAIF	**Baives**	**142.97**	**342**	*e*PKP1	PKPdf	17 26 51.8	-1.6		
CDF	**Champ du Feu**	**143.39**	**338**	*e*PKP1	PKPbc	17 26 54.6	+1.7		
	4.9nm,0.6s								
HINF	**Hinteralfeld**	**144.05**	**338**	*e*PKP1	PKPbc	17 26 55.0	+0.2		
	6.7nm,0.6s								
HAU	**Haudompre**	**144.07**	**339**	*e*PKP1	PKPbc	17 26 55.4	+0.5		
	12nm,0.6s								
MEZF	**Maizieres J'vi**	**144.08**	**340**	*e*PKP1	PKPbc	17 26 55.7	+0.8		
	8.3nm,0.5s								
CABF	**La Chapelle**	**145.34**	**338**	*e*PKP1	PKPbc	17 27 00.2	+1.8		
	44nm,1.0s								
FLN	**La Foliniere**	**145.39**	**346**	*e*PKP1	PKPbc	17 26 59.5	+1.1		
	20nm,0.7s								
LDF	**La Druitiere**	**145.46**	**346**	*e*PKP1	PKPbc	17 26 59.6	+1.0		
	13nm,0.6s								
GRR	**Gorron**	**145.83**	**346**	*e*PKP1	PKPbc	17 27 00.8	+1.2		
	22nm,0.6s								
SSF	**Saint Saulge**	**145.84**	**341**	*e*PKP1	PKPbc	17 27 01.3	+1.7		
	30nm,0.6s								
HYF	**Humbligny**	**145.93**	**342**	*e*PKP1	PKPbc	17 27 01.8	+2.0		
LPL	**La Plagne**	**146.01**	**336**	*e*PKP1	PKPbc	17 27 02.3	+2.2		
	11nm,0.7s								
LPG	**La Plagne**	**146.02**	**336**	*e*PKP1	PKPbc	17 27 02.3	+2.2		
	11nm,0.6s								
SMF	**Signal de Mont**	**146.10**	**340**	*e*PKP1	PKPbc	17 27 01.8	+1.5		
AVF	**Avril sur Loir**	**146.13**	**341**	*e*PKP1	PKPbc	17 27 01.7	+1.4		
	5.2nm,0.5s								
SGMF	**Saint Gilles**	**146.31**	**348**	*e*PKP1	PKPbc	17 27 02.1	+1.4		
	24nm,0.6s								
ROSF	**Rostrenen**	**146.37**	**349**	*e*PKP1	PKPbc	17 27 02.2	+1.4		
BGF	**Bois d'Agland**	**146.50**	**341**	*e*PKP1	PKPbc	17 27 03.0	+1.8		
	30nm,0.6s								
MBDF	**Montbardon**	**146.65**	**335**	*e*PKP1	PKPbc	17 27 03.4	+1.8		
QUIF	**Quistinic**	**146.75**	**349**	*e*PKP1	PKPbc	17 27 03.1	+1.4		
	10nm,0.7s								
ORIF	**Oris-en-Rattie**	**146.84**	**336**	*e*PKP1	PKPbc	17 27 04.2	+2.2		
	15nm,0.7s								
TCF	**Toulx Ste Croi**	**146.94**	**341**	*e*PKP1	PKPbc	17 27 04.2	+2.0		
	21nm,0.8s								
SBF	**Sospel**	**147.07**	**333**	*e*PKP1	PKPdf	17 27 04.8	+4.2		
	29nm,0.9s								
MFF	**Saint Martin d**	**147.32**	**344**	*e*PKP1	PKPdf	17 27 05.2	+4.2		
	32nm,0.7s								
VIVF	**Saint-Julien-l**	**147.36**	**337**	*e*PKP1	PKPdf	17 27 05.5	+4.4		
	12nm,0.8s								
PGF	**Pioggiola**	**147.38**	**330**	*e*PKP1	PKPdf	17 27 05.5	+4.3		
	30nm,0.7s								
FRF	**La Foret Royal**	**147.65**	**334**	*e*PKP1	PKPdf	17 27 06.0	+4.4		
	24nm,0.9s								
SMRF	**Simiane la Rot**	**147.75**	**335**	*e*PKP1	PKPdf	17 27 06.8	+5.0		
	24nm,1.0s								
LMR	**La Mourre**	**147.89**	**334**	*e*PKP1	PKPdf	17 27 06.7	+4.7		
	22nm,0.9s								
RJF	**Les Rejaudoux**	**148.04**	**341**	*e*PKP1	PKPdf	17 27 07.3	+5.1		
	12nm,0.7s								
CAF	**Calviac**	**148.20**	**340**	*e*PKP1	PKPdf	17 27 07.5	+5.0		
LASF	**Ste Croix**	**148.33**	**338**	*e*PKP1	PKPdf	17 27 08.3	+5.6		
	20nm,0.7s								
LFF	**La Frestale**	**148.60**	**342**	*e*PKP1	PKPdf	17 27 08.8	+5.7		
	29nm,0.9s								
MTLF	**Montolieu**	**149.55**	**339**	*e*PKP1	PKPdf	17 27 11.1	+6.4		
	20nm,0.8s								
EPF	**Esparros**	**150.45**	**341**	*e*PKP1	PKPdf	17 27 13.8	+7.7		
	7.1nm,0.6s								
ETSF	**Etsaut**	**150.85**	**342**	*e*PKP1	PKPdf	17 27 14.8	+8.1		
	23nm,0.6s								
KIC	**Kosan Boka**	**168.31**	**220**	*e*P	PKPab	17 28 38.2	-0.6		
	24nm,0.8s								
LIC	**Lamto**	**168.38**	**219**	*e*P	PKPab	17 28 37.8	-1.3		
	47nm,1.1s								
DBIC	**Dimbokro**	**168.62**	**221**	PKPab	PKPab	17 28 39.1	-1.1		
	3.9nm,0.7s,baz=147,slow=5.4,SNR=5.1								
TIC	**Toumodi**	**168.70**	**220**	*e*P	PKPab	17 28 39.7	-0.8		
	14nm,0.3s								

*IDC **23** 17:21:52.5±1.1,5.57S×131.06E,mb3.9/5,mb1 4.2/8, mb1mx4.0/16,ML4.2/3,Error ellipse: s-maj=54.5km s-min=17.9km az=63.0*
*NEIC **23** 17:21:55.7±0.6,5.65S×131.06E,h20km,mb3.8/2,Error ellipse: s-maj=19.7km s-min=8.2km az=64.0*
ISC 23 17:21:59.5±3.0,5.9S±0.1×130.9E±0.2,h74km±28km,n17, σ1§04/20,mb4.3/9,Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**13.20**	**202**	Pn		**P**	**17 25 06.0**	**+0.7**
	1.2nm,0.3s,baz=27,slow=12,SNR=50							
FITZ				Sn		**S**	**17 27 23.7**	**-7.1**
	2.4nm,0.3s,baz=165,slow=11,SNR=8.6							
WRAB	**Tennant Creek**	**14.38**	**167**	*e*Pn		**P**	**17 25 19.7**	**-1.0**
	6.9nm,0.7s							
WRA	**Warramunga Arr**	**14.38**	**167**	Pn		**P**	**17 25 19.7**	**-1.1**
	1.0nm,0.3s,baz=349,slow=13,SNR=43							
WRA				Sn		**S**	**17 27 51.6**	**-7.2**
	1.5nm,0.3s,baz=346,slow=22,SNR=7.6							
ASAR	**Alice Springs**	**17.93**	**171**	P		**P**	**17 26 07.4**	**+1.9**
	1.7nm,0.3s,baz=352,slow=9.0,SNR=128							
ASAR				S		**S**	**17 29 18.4**	**-1.3**
	0.5nm,0.3s,baz=352,slow=25,SNR=8.8							
CTA	**Charters Tower**	**20.55**	**135**	P		**P**	**17 26 34.6**	**+0.2**
	3.1nm,0.8s,baz=315,slow=13,SNR=2.9							
CTAO	**Charters Tower**	**20.55**	**135**	*e*P		**P**	**17 26 33.6**	**-0.8**
	1.8nm,0.6s							
STKA	**Stephens Creek**	**27.74**	**160**	P		**P**	**17 27 44.9**	**+1.6**
	2.6nm,0.7s,mb3.9,baz=3.3,slow=11,SNR=6.3							
CMAR	**Chiang Mai Arr**	**39.72**	**308**	P		**P**	**17 29 27.5**	**+1.0**
	0.9nm,0.5s,mb3.9,baz=135,slow=7.1,SNR=12							
LSA	**Lhasa**	**52.02**	**315**	*e*P		**P**	**17 31 04.6**	**+0.8**
	1.3nm,0.6s,mb4.1							
PKI	**Pulchoki**	**55.09**	**309**	*e*P		**P**	**17 31 26.0**	**-0.5**
KKN	**Kakani**	**55.30**	**310**	*e*P		**P**	**17 31 27.3**	**-0.7**
	5.1nm,0.6s,mb4.7							
DMN	**Daman**	**55.34**	**309**	*e*P		**P**	**17 31 27.8**	**-0.5**
	14nm,0.9s,mb5.0							
GKN	**Gorkha**	**55.90**	**310**	*e*P		**P**	**17 31 31.8**	**-0.5**
	8.3nm,0.5s,mb5.0							
KOLN	**Koldanda**	**56.59**	**309**	*e*P		**P**	**17 31 36.8**	**-0.4**
	4.3nm,0.4s,mb4.8							
MKAR	**Makanchi Array**	**67.78**	**326**	P		**P**	**17 32 51.5**	**-0.1**
	1.0nm,0.4s,mb4.0,baz=116,slow=8.0,SNR=17							
SBA	**Scott Base**	**74.33**	**173**	*e*P		**P**	**17 33 32.6**	**+2.3**
	0.1nm,0.5s							
BVAR	**Borovoye Array**	**77.59**	**327**	P		**P**	**17 33 48.5**	**-0.7**
	0.3nm,0.4s,mb3.4,baz=135,slow=12,SNR=2.3							

*NEIC **23** 18:06:57.1±0.4,43.75N×105.27W,ML3.2,Error ellipse: s-maj=8.2km s-min=5.1km az=144.0,Suspected Mining explosion.*
NEIC 60 km [40 miles] SSE of Gillette.
*IDC **23** 18:06:57.8±0.9,43.99N×105.74W,mb3.9/3,mb1 3.9/7, mb1mx3.7/21,ML3.5/4,MS2.9/1,Ms1 2.9/1,ms1mx2.4/23, Error ellipse: s-maj=24.0km s-min=7.7km az=146.0*
ISC 23 18:06:55.3±0.6,43.80N±0.06×105.26W±0.07,n25, σ1§06/33,mb4.0/3,MS2.7/1,Wyoming

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
RSSD	**Black Hills**	**0.94**	**70**	*e*Pg		**Pg**	**18 07 16.2**	**+2.1**
BW06	**Boulder Array**	**3.31**	**253**	*e*Pn		**Pn**	**18 07 49.6**	**+0.2**
BW06				*e*Sg		**Sn**	**18 08 33.0**	**+3.1**
PDAR	**Pinedale Array**	**3.31**	**253**	Pn		**Pn**	**18 07 50.5**	**+1.1**
	4.4nm,0.3s,baz=72,slow=16,SNR=36							
PDAR				Pg		**Pg**	**18 07 55.9**	**-5.4**
	9.2nm,0.3s,baz=73,slow=19,SNR=34							
PDAR				Lg			18 08 32.4	
	8.2nm,0.3s,baz=73,slow=35,SNR=5.3							
WUWY	**Wally Ulrich**	**3.99**	**268**	*e*Pn		**Pn**	**18 07 50.2**	**-8.9**
ISCO	**Idaho Springs**	**4.01**	**184**	*e*Pn		**Pn**	**18 07 59.8**	**+0.5**
ISCO				*e*S		**Sn**	**18 08 58.4**	**+11**
BOZ	**Bozeman (W)**	**4.90**	**294**	*e*Pn		**Pn**	**18 08 11.6**	**-0.4**
BOZ				*e*Pg		**Pg**	**18 08 22.8**	**-10**
HWUT	**Hardware Ranch**	**5.14**	**247**	*e*Pn		**Pn**	**18 08 14.9**	**-0.5**
	6.3nm,0.5s							
TCUT	**Toone Canyon**	**5.28**	**242**	*e*Pn		**Pn**	**18 08 16.7**	**-0.7**
TCUT				*e*Sg		**Sb**	**18 09 35.2**	**+2.2**
MCMT	**McKenzie Canyo**	**5.54**	**283**	*e*Pn		**Pn**	**18 08 21.1**	**0.0**
MCMT				*e*Pg		**Pg**	**18 08 38.7**	**-7.3**
DAU	**Daniels Canyon**	**5.60**	**235**	*e*Pn		**Pn**	**18 08 22.1**	**+0.2**
HVU	**Hansel Valley**	**5.89**	**253**	*e*Pn		**Pn**	**18 08 26.3**	**+0.3**
SRU	**San Rafael**	**6.13**	**222**	*e*Pn		**Pn**	**18 08 28.1**	**-1.3**
SRU				*e*Pb		**Pb**	**18 08 41.9**	**-1.1**
SRU				*e*Sg		**Sg**	**18 10 02.3**	**-17**
PV01	**Paradox Valley**	**6.19**	**205**	*e*Pn		**Pn**	**18 08 30.5**	**+0.3**
PV01				*e*			18 08 48.3	
PV01				*e*S		**Sb**	**18 10 03.6**	**+4.1**
CHMT	**Chamberlain Mo**	**6.43**	**302**	*e*Pn		**Pn**	**18 08 33.7**	**0.0**
HLID	**Hailey**	**6.64**	**271**	P		**Pn**	**18 08 36.6**	**0.0**
	3.9nm,0.8s							
MVU	**Marysvale**	**7.45**	**227**	*e*Pn		**Pn**	**18 08 45.8**	**-2.2**
	1.5nm,0.5s							
ULM	**Lac du Bonnet**	**9.09**	**42**	Pn		**P**	**18 09 09.1**	**-1.7**
	1.5nm,0.3s,baz=232,slow=12,SNR=7.6							
ULM				Lg			18 11 42.7	
	0.5nm,0.3s,baz=311,slow=20,SNR=2.4							
ULM	**Lac du Bonnet**	**9.09**	**42**	Pn		**P**	**18 09 09.1**	**-1.7**
ULM				Lg			18 11 42.7	
WUAZ	**Wupatki**	**9.52**	**212**	*e*Pn		**P**	**18 09 12.9**	**-3.8**
	2.8nm,0.5s							
NVAR	**Mina Array Bea**	**11.20**	**246**	Pn		**P**	**18 09 39.8**	**0.0**
	0.3nm,0.3s,baz=48,slow=12,SNR=3.5							
TXAR	**Lajitas Array**	**14.49**	**174**	Pn		**P**	**18 10 28.7**	**+5.0**
	0.0nm,0.3s,slow=9.0,SNR=3.5							
TXAR				Lg			18 14 32.4	
	0.0nm,0.3s,baz=358,slow=23,SNR=3.7							
DLBC	**Dease Lake**	**21.18**	**322**	LR		LR	18 20 31.6	
	comp=Z,31nn,18.6s,MS2.7,baz=124,slow=39							
ARCES	**ARCESS Array B**	**61.36**	**18**	P		**P**	**18 17 14.1**	**-0.6**
	1.7nm,0.8s,mb4.2,baz=326,slow=6.5,SNR=11							
NOA	**NORSAR Array B**	**63.55**	**29**	P		**P**	**18 17 29.9**	**+0.7**
	0.7nm,0.8s,mb4.0,baz=297,slow=7.3,SNR=3.3							
MKAR	**Makanchi Array**	**89.55**	**355**	P		**P**	**18 19 55.9**	**+0.5**
	0.3nm,0.6s,mb3.7,baz=16,slow=4.9,SNR=4.2							

*NEIC **23** 18:25:21.0±1.3,4.76S×152.89E,h74km±9km,mb4.8/4, Error ellipse: s-maj=18.0km s-min=7.5km az=93.0*
*IDC **23** 18:25:22.2±6.5,4.84S×152.92E,h83km±51km,mb4.0/7, mb1 4.2/9,mb1mx4.0/15,ML3.8/2,MS3.5/8,Ms1 3.5/8, ms1mx3.3/21,Error ellipse: s-maj=45.2km s-min=24.5km az=80.0*
ISC 23 18:25:19.5±1.9,4.78S±0.08×153.0E±0.1,h75km±14km, n27,σ0§56/26,mb4.2/11,1D,New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
RAB	**Rabaul**	**0.98**	**306**	*i*	*e*P	**P**	**18 25 38.2**	**-0.1**
PMG	**Port Moresby**	**7.37**	**231**	P		**P**	**18 27 06.2**	**-0.3**
	8.2nm,0.3s,baz=41,slow=14,SNR=37							
PMG				S		**S**	**18 28 29.2**	**0.0**
	8.0nm,0.3s,baz=128,slow=22,SNR=7.6							
PMG				LR		LR	18 29 09.1	
	comp=Z,161nm,19.6s,baz=290,slow=31							
PMG	**Port Moresby**	**7.37**	**231**	*e*P		**P**	**18 27 06.9**	**+0.5**
PMG				*e*S		**S**	**18 28 29.9**	**+0.7**
CTA	**Charters Tower**	**16.56**	**203**	P		**P**	**18 29 08.3**	**0.0**
	0.3nm,0.3s,baz=40,slow=14,SNR=4.3							
CTA				LR		LR	18 34 40.1	
	comp=Z,132nm,20.0s,baz=42,slow=34							
CTA	**Charters Tower**	**16.56**	**203**	P		**P**	**18 29 08.3**	**0.0**
CTA				LR		LR	18 34 40.1	
CTAO	**Charters Tower**	**16.56**	**203**	*e*P		**P**	**18 29 08.6**	**+0.2**
	1.4nm,0.5s							
KAKA	**Kakadu**	**21.77**	**247**	*e*P		**P**	**18 30 05.7**	**-0.9**
	24nm,0.4s,mb4.9							
WRAB	**Tennant Creek**	**23.56**	**229**	*e*P		**P**	**18 30 24.6**	**+0.5**
	66nm,1.1s,mb4.9							
WB2	**Warramunga Arr**	**23.57**	**229**	*e*P		**P**	**18 30 24.8**	**+0.7**
WRA	**Warramunga Arr**	**23.58**	**229**	P		**P**	**18 30 24.8**	**+0.5**
	5.8nm,0.5s,mb4.2,baz=53,slow=10.0,SNR=90							
AS12	**Alice Springs**	**26.27**	**223**	*e*P		**P**	**18 30 49.2**	**-0.6**
	3.3nm,0.4s,mb4.1							
ASAR	**Alice Springs**	**26.27**	**223**	P		**P**	**18 30 49.0**	**-0.8**
	2.0nm,0.6s,mb3.8,baz=56,slow=9.1,SNR=56							
ASAR				LR		LR	18 42 04.9	
	comp=Z,59nm,18.0s,baz=36,slow=38							
STKA	**Stephens Creek**	**28.99**	**200**	P		**P**	**18 31 13.5**	**-0.8**
	1.2nm,0.5s,mb3.8,baz=12,slow=11,SNR=6.6							
STKA				LR		LR	18 41 58.7	
	comp=Z,98nm,18.8s,baz=24,slow=34							
STKA	**Stephens Creek**	**28.99**	**200**	P		**P**	**18 31 13.5**	**-0.8**
STKA				LR		LR	18 41 58.7	
FITZ	**Fitzroy Crossi**	**29.81**	**241**	*e*P		**P**	**18 31 20.7**	**-1.1**
	7.8nm,0.6s,mb4.5							
FITZ	**Fitzroy Crossi**	**29.81**	**241**	P		**P**	**18 31 21.0**	**-0.8**
	10nm,0.6s,mb4.6,baz=42,slow=6.9,SNR=48							
FITZ				LR		LR	18 44 11.7	
	comp=Z,58nm,20.3s,baz=77,slow=38							
TGY	**Tagaytay City**	**36.89**	**301**	LR		LR	18 45 08.9	
	comp=Z,131nm,20.1s,baz=84,slow=32

BDFB					LR	LR	18 54 34.2		
	comp=Z,67nm,18.9s,MS3.2,baz=280,slow=37								
SJG	**San Juan**	**35.00**	**15**	P	**P**		**18 44 59.8**	**-1.4**	
	9.2nm,0.7s,mb4.8,baz=36,slow=23,SNR=2.4								
SJG	**San Juan**	**35.00**	**15**	P	**P**		**18 44 59.8**	**-1.4**	
TXAR	**Lajitas Array**	**52.65**	**329**	P	**P**		**18 47 22.8**	**-0.1**	
	0.2nm,0.5s,mb3.3,baz=149,slow=10,SNR=3.2								
TXAR				pP	pP		18 47 35.7	-0.9	
	0.7nm,0.9s,baz=150,slow=10,SNR=8.6								
TXAR	**Lajitas Array**	**52.65**	**329**	P	**P**		**18 47 22.8**	**-0.1**	
TXAR				pP	pP		18 47 35.7	-0.9	
PDAR	**Pinedale Array**	**66.33**	**333**	LR	LR		19 18 42.4		
	comp=Z,55nm,18.8s,MS3.8,baz=69,slow=37								
VNA3	**Neumayer Olymp**	**67.28**	**161**		**P**		**18 49 21.0**	**+19**	
VNA1	**Neumayer--Stat**	**67.55**	**161**	⇑*i*	**P**		**18 49 23.5**	**+19**	
VNA2	**Neumayer--Watz**	**67.90**	**161**	⇑*i*	**P**		**18 49 24.6**	**+18**	
ULM	**Lac du Bonnet**	**68.32**	**346**	LR	LR		19 18 30.7		
	comp=Z,45nm,21.1s,MS3.7,baz=342,slow=35								
LIC	**Lamto**	**72.96**	**78**	*e*P	**P**		**18 49 38.4**	**+0.4**	
	32nm,1.3s,mb5.1								
TIC	**Toumodi**	**73.10**	**78**	*e*P	**P**		**18 49 38.2**	**-0.7**	
	16nm,0.2s								
DBIC	**Dimbokro**	**73.27**	**78**	P	**P**		**18 49 39.8**	**0.0**	
	2.1nm,0.8s,mb4.2,baz=247,slow=4.9,SNR=3.4								
KIC	**Kosan Boka**	**73.28**	**78**	*e*P	**P**		**18 49 39.8**	**-0.1**	
	88nm,1.6s								
QSPA	**South Pole Qui**	**74.24**	**180**	*e*P	**P**		**18 49 46.6**	**+2.4**	
	1.6nm,0.5s,mb4.2								
VNDA	**Vanda**	**81.22**	**191**	P	**P**		**18 50 22.1**	**-0.8**	
	0.3nm,0.6s,mb3.4,baz=90,slow=1.0,SNR=2.1								
VNDA				pP	pP		18 50 38.6	+1.2	
	1.1nm,1.1s,baz=124,slow=3.6,SNR=5.0								
WRA	**Warramunga Arr**	**133.95**	**220**	PKP	PKPdf		18 57 26.7	+2.7	
	0.6nm,0.8s,baz=139,slow=1.5,SNR=17								
WRA				pPKP			18 57 40.7		
	0.7nm,0.8s,baz=152,slow=1.8,SNR=3.4								
ZAL	**Zalesovo**	**139.01**	**18**	PKP	PKPdf		18 57 34.5	+2.2	
	1.1nm,0.6s,baz=225,slow=7.1,SNR=7.3								
ZAL				pPKP			18 57 49.2		
	0.6nm,0.3s,baz=191,slow=7.2,SNR=2.2								
FITZ	**Fitzroy Crossi**	**140.38**	**212**	PKP	PKPdf		18 57 37.7	+1.9	
	1.5nm,0.9s,baz=145,slow=14,SNR=3.1								
FITZ				pPKP			18 57 51.2		
	0.7nm,0.6s,baz=154,slow=3.8,SNR=1.5								
MKAR	**Makanchi Array**	**144.03**	**26**	PKP	PKPdf		18 57 42.3	+1.0	
	0.3nm,0.5s,baz=304,slow=4.4,SNR=4.0								

*IDC **23** 19:01:24.4±5.2,24.81S×176.58W,mb3.8/5,mb1 4.0/6, mb1mx3.9/14,ML4.0/1,Error ellipse: s-maj=109.0km s-min=37.7km az=50.0*

ISC 23 19:01:32.4±2.0,25.2S±0.2×177.2W±0.3,h33km,n8, σ1%02/8,mb3.8/5,1D,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**13.87**	**199**	Pn	**P**			**19 04 49.5**	**+0.6**
	0.6nm,0.3s,baz=54,slow=19,SNR=5.2								
STKA	**Stephens Creek**	**36.62**	**250**	P	**P**			**19 08 36.9**	**-0.7**
	1.2nm,0.7s,mb3.8,baz=72,slow=16,SNR=2.5								
ASAR	**Alice Springs**	**44.33**	**261**	P	**P**			**19 09 41.5**	**+0.2**
	0.5nm,0.4s,mb3.6,baz=95,slow=7.3,SNR=29								
WRA	**Warramunga Arr**	**44.85**	**267**	P	**P**			**19 09 46.1**	**+0.6**
	1.1nm,0.4s,mb4.1,baz=103,slow=7.7,SNR=49								
FITZ	**Fitzroy Crossi**	**53.25**	**266**	P	**P**			**19 10 50.0**	**-0.3**
	0.8nm,0.6s,mb3.8,baz=117,slow=6.8,SNR=7.3								
VNDA	**Vanda**	**53.31**	**186**	P	**P**			**19 10 48.0**	**-2.0**
	1.0nm,1.1s,mb3.7,baz=1.7,slow=7.4,SNR=5.1								
VNA3	**Neumayer Olymp**	**83.42**	**176**		**P**			**19 13 59.0**	**+1.8**
VNA2	**Neumayer--Watz**	**83.86**	**177**	⇓*i*	**P**			**19 13 59.0**	**-0.4**

DJA 23 19:10:28.4±1.0,7.97S×116.16E,h280km±12km,MD4.5/4, ML3.9/2,1C-2D,Error ellipse: s-maj=67.3km s-min=24.8km az=12.0,Bali Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
KEDI	**Kedomdong**	**0.51**	**185**	⇓*e*Pn	P			19 11 05.1	0.0
	47nm,0.2s								
RATI	**Rata**	**0.97**	**220**	*e*Pn	P			19 11 06.6	-0.1
RATI				*e*Sn	S			19 11 35.2	-1.5
INGI	**Ingas**	**1.30**	**230**	⇑*e*	P			19 11 08.8	+0.1
	175nm,0.2s								
INGI				*e*Sn	S			19 11 38.5	-1.6
KELI	**Kelakatan**	**1.67**	**262**	⇓*i*Pn	P			19 11 11.6	+0.5
	80nm,0.2s								
KELI				*e*Sn	S			19 11 42.3	-2.1

IDC 23 19:10:54.9±5.4,8.45S×156.07E,mb3.9/3,mb1 4.1/3, mb1mx3.8/12,MS3.3/4,Ms1 3.3/4,ms1mx3.0/18,Error ellipse: s-maj=94.8km s-min=73.6km az=179.0, Bougainville - Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**8.86**	**263**	LR	LR			19 15 21.0	
	comp=Z,65nm,21.0s,baz=191,slow=30								
CTA	**Charters Tower**	**14.97**	**218**	LR	LR			19 19 01.5	
	comp=Z,96nm,21.3s,baz=52,slow=32								
WRA	**Warramunga Arr**	**23.93**	**239**	P	P			19 16 10.9	-0.7
	2.0nm,0.9s,baz=65,slow=9.6,SNR=12								
ASAR	**Alice Springs**	**26.06**	**232**	P	P			19 16 30.5	-1.5
	1.2nm,0.8s,baz=63,slow=9.7,SNR=9.1								
STKA	**Stephens Creek**	**26.91**	**208**	P	P			19 16 37.5	-2.2
	3.3nm,0.8s,baz=28,slow=11,SNR=4.6								
STKA				LR	LR			19 26 16.5	
	comp=Z,92nm,18.7s,baz=25,slow=34								
RPZ	**Rata Peaks**	**37.49**	**162**	LR	LR			19 29 52.5	
	comp=Z,157nm,21.0s,baz=183,slow=30								

*IDC **23** 19:10:58.8±0.6,15.17S×173.11W,mb4.3/10,mb1 4.5/11, mb1mx4.4/17,ML4.1/1,MS3.9/6,Ms1 3.9/6,ms1mx3.7/17, Error ellipse: s-maj=34.2km s-min=16.8km az=128.0*
*NEIC **23** 19:11:06.7±4.5,15.28S×173.04W,h58km±38km,mb4.4/10, Error ellipse: s-maj=14.8km s-min=9.7km az=123.0*
*SYO **23** 19:11:06.7,15.28S×173.04W,h58km,MB4.4*

ISC 23 19:11:02.4±0.4,15.2S±0.1×173.1W±0.1,h33km,n70, σ0°81/37,mb4.3/19,MS3.9/6,3C-4D,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**13.97**	**117**	Pn	**P**			**19 14 13.4**	**-6.8**
	0.8nm,0.3s,baz=312,slow=14,SNR=2.8								
RAR				Sn	**S**			**19 16 31.2**	**-24**
	0.6nm,0.3s,baz=277,slow=12,SNR=2.7								
RAR	**Rarotonga**	**13.97**	**117**	P	**P**			**19 14 12.7**	**-7.5**
	4.3nm,0.5s								
URZ	**Urewera**	**24.53**	**199**	P	**P**			**19 16 20.3**	**+0.1**
	30nm,0.6s,mb5.0,baz=19,slow=5.1,SNR=23								
CTA	**Charters Tower**	**38.99**	**257**	LR	LR			19 31 34.9	
	comp=Z,122nm,18.5s,MS3.8,baz=51,slow=32								
STKA	**Stephens Creek**	**44.40**	**240**	P	**P**			**19 19 11.9**	**+0.1**
	1.2nm,0.5s,mb3.9,baz=108,slow=14,SNR=3.8								
WB2	**Warramunga Arr**	**50.18**	**257**	*e*P	**P**			**19 19 58.7**	**+1.5**
WRAB	**Tennant Creek**	**50.18**	**257**	*e*P	**P**			**19 19 57.0**	**-0.3**
	14nm,1.0s,mb5.0								
WRA	**Warramunga Arr**	**50.19**	**257**	P	**P**			**19 19 56.6**	**-0.8**
	1.0nm,1.0s,mb3.8,baz=81,slow=5.9,SNR=15								
AS12	**Alice Springs**	**50.46**	**252**	*e*P	**P**			**19 20 00.1**	**+0.7**
	6.6nm,0.7s,mb4.8								
ASAR	**Alice Springs**	**50.46**	**252**	P	**P**			**19 19 57.9**	**-1.5**
	2.3nm,0.6s,mb4.4,baz=90,slow=7.1,SNR=37								
ASAR				LR	LR			19 39 49.9	
	comp=Z,121nm,18.6s,MS3.9,baz=276,slow=34								
SBA	**Scott Base**	**63.45**	**185**	*e*P	**P**			**19 21 30.8**	**-0.1**
	4.0nm,1.1s,mb4.5								
VNDA	**Vanda**	**63.59**	**186**	P	**P**			**19 21 31.6**	**-0.1**
	3.0nm,1.2s,mb4.2,baz=33,slow=4.5,SNR=4.7								
VNDA	**Vanda**	**63.59**	**186**	*e*P	**P**			**19 21 31.6**	**-0.1**
	1.4nm,1.1s,mb3.9								
NVAR	**Mina Array Bea**	**73.99**	**42**	P	**P**			**19 22 36.8**	**+0.2**
	1.8nm,0.8s,mb4.0,baz=221,slow=8.3,SNR=4.8								
NVAR				LR	LR			19 48 32.7	
	comp=Z,55nm,18.6s,MS3.9,baz=270,slow=30								
TPH	**Tonopah**	**74.49**	**43**	*e*P	**P**			**19 22 39.1**	**-0.4**
	2.0nm,0.8s,mb4.1								
QSPA	**South Pole Qui**	**74.82**	**180**	*e*P	**P**			**19 22 40.5**	**-0.1**
	6.1nm,1.0s,mb4.5								
RMW	**Rattlesnake Mo**	**77.40**	**33**	*e*P	**P**			**19 22 55.7**	**-0.2**
HLID	**Hailey**	**79.29**	**39**	*e*P	**P**			**19 23 06.3**	**0.0**
	2.1nm,0.8s,mb4.1								
HWUT	**Hardware Ranch**	**80.05**	**42**	*e*P	**P**			**19 23 12.9**	**+2.4**
	6.7nm,1.1s,mb4.5								
TXAR	**Lajitas Array**	**80.25**	**56**	P	**P**			**19 23 11.8**	**+0.1**
	1.1nm,0.8s,mb3.9,baz=225,slow=7.1,SNR=16								
TXAR				LR	LR			19 50 22.2	
	comp=Z,50nm,20.3s,MS3.9,baz=180,slow=30								
TXAR	**Lajitas Array**	**80.25**	**56**	P	**P**			**19 23 11.8**	**0.0**
TXAR				LR	LR			19 50 22.2	
GDL2	**Guadalupe Moun**	**80.86**	**53**	*e*P	**P**			**19 23 15.0**	**+0.1**
MCK	**McKinley**	**80.89**	**11**	*e*P	**P**			**19 23 14.2**	**-0.2**
	4.5nm,0.8s,mb4.5								
CHMT	**Chamberlain Mo**	**81.79**	**37**	*e*P	**P**			**19 23 18.6**	**-0.8**
PDAR	**Pinedale Array**	**81.92**	**42**	LR	LR			19 53 17.2	
	comp=Z,51nm,19.9s,MS3.9,baz=355,slow=31								
BOZ	**Bozeman (W)**	**82.08**	**38**	P	**P**			**19 23 16.7**	**-4.3**
	3.9nm,0.9s,mb4.3								
COLA	**College**	**82.13**	**11**	*e*P	**P**			**19 23 20.7**	**-0.2**
	11nm,0.9s,mb4.8								
ILAR	**Eielson Array**	**82.21**	**11**	P	**P**			**19 23 20.9**	**-0.3**
	2.2nm,0.7s,mb4.2,baz=223,slow=6.2,SNR=38								
USHA	**Ushuaia**	**85.89**	**146**	LR	LR			19 54 26.7	
	comp=Z,116nm,20.5s,MS4.3,baz=35,slow=30								
INK	**Inuvik**	**88.02**	**14**	P	**P**			**19 23 50.1**	**+0.2**
	2.1nm,0.7s,mb4.5,baz=211,slow=6.4,SNR=10								
INK	**Inuvik**	**88.02**	**14**	*e*P	**P**			**19 23 50.3**	**+0.4**
MAW	**Mawson**	**88.06**	**199**	P	**P**			**19 23 50.7**	**+0.5**
	4.3nm,0.9s,mb4.7,baz=45,slow=4.3,SNR=3.8								
SYO	**Syowa Base**	**92.83**	**191**	⇑pP		pP		19 24 19.3	-3.8
VNA3	**Neumayer Olymp**	**93.00**	**175**	⇓*i*	**P**			**19 24 10.6**	**-2.6**
VNA3	**Neumayer Olymp**	**93.00**	**175**		**P**			**19 24 16.1**	**+2.9**
VNA2	**Neumayer--Watz**	**93.50**	**175**	⇓*i*	**P**			**19 24 15.8**	**+0.3**
VNA2	**Neumayer--Watz**	**93.50**	**175**	⇑*i*	**P**			**19 24 19.0**	**+3.5**
VNA1	**Neumayer--Stat**	**93.70**	**175**	⇑*i*	**P**			**19 24 09.8**	**-6.6**
VNA1	**Neumayer--Stat**	**93.70**	**175**	⇓*i*	**P**			**19 24 15.8**	**-0.6**
VNA1	**Neumayer--Stat**	**93.70**	**175**	⇓*i*P	**P**			**19 24 15.8**	**-0.6**
ARCES	**ARCESS Array B**	**124.48**	**352**	PKP	PKPdf			19 29 58.4	+0.5
	0.7nm,0.5s,baz=349,slow=4.6,SNR=6.3								
ARCES	**ARCESS Array B**	**124.48**	**352**	PKP	PKPdf			19 29 58.4	+0.5
FINES	**FINESS Array B**	**131.84**	**348**	PKP	PKPdf			19 30 12.3	+0.1
	0.3nm,0.3s,baz=335,slow=37,SNR=4.0								
DPC	**Dobruska-Polom**	**144.14**	**350**	*e*PKP	PKPdf			19 30 41.6	+7.0
OKC	**Ostrava-Krasne**	**144.29**	**348**	*e*PKP	PKPdf			19 30 50.6	+16
MOX	**Moxa**	**144.47**	**355**	*e*P	PKPbc			19 30 34.0	-0.9
PRU	**Pruhonice**	**144.78**	**351**	*e*PKP	PKPdf			19 30 36.0	+0.2
PRU				*ep*PKP				19 30 55.0	
BAIF	**Baives**	**145.18**	**3**	*e*PKP1	PKPbc			19 30 36.7	-0.1
	15nm,0.9s								
VYHS	**Vyhne**	**145.40**	**346**	*e*PKP	PKPdf			19 30 39.3	+2.4
VYHS				*e*				19 30 57.6	
GRA1	**Grafenberg Arr**	**145.44**	**355**	*e*PKPbc	PKPbc			19 30 38.8	+1.3
KHC	**Kasperske Hory**	**145.75**	**352**	*e*PKP	PKPdf			19 30 39.5	+2.0
KHC				*ep*PKP				19 30 57.8	
ROSF	**Rostrenen**	**145.92**	**12**	*e*PKP1	PKPbc			19 30 39.2	+0.4
FLN	**La Foliniere**	**146.00**	**9**	*e*PKP1	PKPbc			19 30 39.0	+0.1
	9.6nm,0.7s								
GERES	**GERESS Array B**	**146.01**	**352**	PKPbc	PKPbc			19 30 40.1	+1.1
	1.7nm,0.7s,baz=27,slow=3.0,SNR=15								
SGMF	**Saint Gilles**	**146.14**	**11**	*e*PKP1	PKPbc			19 30 39.9	+0.6
	22nm,0.9s								
BRTR	**Keskin Array B**	**146.22**	**321**	PKPbc	PKPbc			19 30 42.1	+2.4
	1.9nm,0.5s,baz=105,slow=2.8,SNR=22								
LDF	**La Druitiere**	**146.22**	**8**	*e*PKP1	PKPbc			19 30 39.9	+0.5
QUIF	**Quistinic**	**146.35**	**12**	*e*PKP1	PKPbc			19 30 40.5	+0.7
	70nm,1.4s								
CDF	**Champ du Feu**	**146.90**	**360**	*e*PKP1	PKPbc			19 30 41.9	+0.9
	8.2nm,0.8s								
HAU	**Haudompre**	**147.31**	**1**	*e*PKP1	PKPdf			19 30 42.9	+2.8
SSF	**Saint Saulge**	**148.13**	**4**	*e*PKP1	PKPdf			19 30 45.2	+3.7
AVF	**Avril sur Loir**	**148.38**	**5**	*e*PKP1	PKPdf			19 30 45.5	+3.6
	2.5nm,0.6s								
LPL	**La Plagne**	**149.80**	**0**	*e*PKP1	PKPdf			19 30 50.4	+6.2
LPG	**La Plagne**	**149.82**	**0**	*e*PKP1	PKPdf			19 30 50.8	+6.5
LFF	**La Frestale**	**149.92**	**9**	*e*PKP1	PKPdf			19 30 50.5	+6.1
SMRF	**Simiane la Rot**	**151.32**	**2**	*e*PKP1	PKPdf			19 30 53.8	+7.2
	2.0nm,0.5s								
ETSF	**Etsaut**	**151.68**	**12**	*e*PKP1	PKPdf			19 30 55.0	+7.9
	10nm,0.7s								
EPF	**Esparros**	**151.72**	**10**	*e*PKP1	PKPdf			19 30 55.1	+7.9
EVO	**Evora**	**153.31**	**27**	*e*PKP2	PKPab			19 31 09.9	-1.7
	9.4nm,0.9s								
ESDC	**Sonseca Array**	**153.84**	**19**	PKPbc	PKPdf			19 30 59.3	+9.0
	0.8nm,0.7s,baz=308,slow=2.5,SNR=4.5								
ESDC				PKPab	PKPab			19 31 13.2	-0.6
	0.4nm,0.6s,baz=335,slow=3.9,SNR=4.1								

*NEIC **23** 19:30:16.4±2.4,7.84S×74.29W,h154km±23km,mb4.2/1, Error ellipse: s-maj=35.1km s-min=18.3km az=53.0*
*IDC **23** 19:30:17.2±1.0,7.81S×74.30W,h157km±9km,mb3.2/4, mb1 3.5/5,mb1mx3.3/15,Error ellipse: s-maj=41.7km s-min=21.6km az=44.0*

ISC 23 19:30:15.3±1.1,7.7S±0.3×74.2W±0.3,h154km,n12, σ0°27/8,mb3.4/4,Peru-Brazil border region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
LPAZ	**La Paz**	**10.40**	**146**	P	**P**			**19 32 41.5**	**+0.1**
	0.2nm,0.3s,baz=319,slow=11,SNR=6.3								
LPAZ	**La Paz**	**10.40**	**146**	*e*P	**P**			**19 32 41.4**	**-0.1**
TXAR	**Lajitas Array**	**46.47**	**324**	P	**P**			**19 38 29.0**	**+0.2**
	0.3nm,0.7s,mb3.1,baz=139,slow=8.3,SNR=3.9								
TXAR	**Lajitas Array**	**46.47**	**324**	P	**P**			**19 38 29.0**	**+0.2**
PDAR	**Pinedale Array**	**59.65**	**330**	P	**P**			**19 40 05.3**	**-0.4**
	0.2nm,0.6s,mb3.1,baz=130,slow=7.0,SNR=2.7								
DBIC	**Dimbokro**	**70.64**	**80**	P	**P**			**19 41 17.0**	**+0.4**
	1.0nm,0.3s,mb4.0,baz=243,slow=5.4,SNR=9.5								
DBIC	**Dimbokro**	**70.64**	**80**	*e*P	**P**			**19 41 16.2**	**-0.4**
	4.4nm,1.0s,mb4.1								
ILAR	**Eielson Array**	**89.64**	**336**	P	**P**			**19 42 56.6**	**+0.2**
	0.2nm,0.5s,mb3.3,baz=114,slow=4.1,SNR=4.2								
ZAL	**Zalesovo**	**130.89**	**16**	PKP	PKPdf			19 49 10.4	+1.9
	0.6nm,0.2s,baz=74,slow=13,SNR=3.6								
ZAL				pPKP				19 49 51.7	
	1.1nm,1.0s,baz=28,slow=8.8,SNR=2.1								
ASAR	**Alice Springs**	**138.43**	**221**	PKP	PKPdf			19 49 24.0	+0.7
	0.2nm,0.4s,baz=114,slow=2.0,SNR=8.4								
ASAR				pPKP				19 50 06.1	
	0.3nm,0.6s,baz=121,slow=2.0,SNR=2.3								
WRA	**Warramunga Arr**	**140.69**	**225**	PKhKP				19 49 22.3	
	0.7nm,1.2s,baz=128,slow=2.8,SNR=12								
WRA				PKP	PKPdf			19 49 28.3	+0.7
	0.5nm,0.5s,baz=128,slow=1.7,SNR=13								
WRA				pPKP				19 50 09.9	
	0.3nm,0.5s,baz=112,slow=5.1,SNR=2.3								
FITZ	**Fitzroy Crossi**	**147.71**	**217**	PKPbc	PKPdf			19 49 43.7	+4.1
	2.1nm,0.7s,baz=182,slow=5.5,SNR=6.3								

*IDC **23** 19:50:28.1±1.4,1.76S×128.73E,mb4.1/3,mb1 4.1/5, mb1mx3.8/17,ML3.6/2,Error ellipse: s-maj=91.3km s-min=20.8km az=71.0*
*NEIC **23** 19:50:29.6±0.6,1.83S×128.69E,h10km,mb4.1/3,Error ellipse: s-maj=34.7km s-min=7.9km az=72.0*

ISC 23 19:50:27.4±0.8,1.8S±0.1×128.6E±0.2,h10km,n15, σ0°88/15,mb4.4/8,Halmahera

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**16.43**	**190**	Pn	**P**			**19 54 21.3**	**+1.4**
	0.1nm,0.3s,baz=45,slow=10.0,SNR=3.9								
WRAB	**Tennant Creek**	**18.85**	**163**	*e*P	**P**			**19 54 49.9**	**-0.1**
	8.6nm,0.8s								
WRA	**Warramunga Arr**	**18.85**	**163**	P	**P**			**19 54 49.1**	**-1.0**
	0.3nm,0.3s,baz=344,slow=12,SNR=26								
WB2	**Warramunga Arr**	**18.86**	**163**	*e*P	**P**			**19 54 49.0**	**-1.1**
AS12	**Alice Springs**	**22.30**	**167**	*e*P	**P**			**19 55 27.6**	**+0.9**
	3.3nm,0.4s,mb4.1								
ASAR	**Alice Springs**	**22.30**	**167**	P	**P**			**19 55 27.8**	**+1.1**
	3.6nm,0.4s,mb4.1,baz=344,slow=11,SNR=93								
ASAR				PcP	PcP			19 59 24.5	+1.1
	0.2nm,0.6s,baz=7.4,slow=2.0,SNR=4.0								
LSA	**Lhasa**	**47.57**	**314**	*e*P	**P**			**19 59 06.5**	**+1.0**
	1.5nm,0.6s,mb4.2								
KKN	**Kakani**	**50.99**	**309**	*e*P	**P**			**19 59 30.5**	**-1.3**
	11nm,0.9s,mb4.8								
DMN	**Daman**	**51.04**	**308**	*e*P	**P**			**19 59 32.0**	**-0.2**
	24nm,1.4s,mb4.9								
GKN	**Gorkha**	**51.59**	**308**	*e*P	**P**			**19 59 35.5**	**-0.9**
KOLN	**Koldanda**	**52.30**	**308**	*e*P	**P**			**19 59 41.7**	**0.0**
	14nm,0.8s,mb5.0								
MKAR	**Makanchi Array**	**63.18**	**326**	P	**P**			**20 00 58.1**	**+0.1**
	3.8nm,1.0s,mb4.5,baz=127,slow=7.2,SNR=12								
KURK	**Kurchatov**	**67.42**	**328**	*e*P	**P**			**20 01 24.9**	**-0.5**
BVAR	**Borovoye Array**	**72.98**	**328**	P	**P**			**20 01 59.3**	**+0.1**
	0.4nm,0.5s,mb3.6,baz=127,slow=7.2,SNR=6.2								
TIXI	**Tiksi**	**73.35**	**0**	*e*P	**P**			**20 02 02.4**	**+1.4**
	0.8nm,0.5s,mb3.9								

*WAR **23** 19:57:32.2,51.52N×16.07E,h1km,Location given by Rudna mine, origin time based upon KSP*
*PRU **23** 19:57:34.2,51.41N×16.10E*
*NEIC **23** 19:57:36.1±2.4,51.22N×15.80E,h2km±13km, MG2.6(WAR),Error ellipse: s-maj=24.6km s-min=8.2km az=199.0*

ISC 23 19:57:29.0±0.9,51.54N±0.05×16.09E±0.04,n14,σ1%16/29, Poland

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.71**	**169**	*e*Pg	**Pg**			**19 57 44.8**	**+1.7**
KSP				*e*Sg	**Sg**			**19 57 53.9**	**+1.4**
KSP	**Ksiaz**	**0.71**	**169**	*e*PG	**Pg**			**19 57 45.0**	**+1.9**
KSP				*e*SG	**Sg**			**19 57 54.0**	**+1.5**
UPC	**Upice**	**1.03**	**183**	*e*PG	**Pg**			**19 57 50.9**	**+1.3**
UPC				*e*SG	**Sg**			**19 58 04.2**	**+0.8**
DPC	**Dobruska-Polom**	**1.20**	**173**	*e*PG	**Pg**			**19 57 53.7**	**+0.8**
DPC				*e*SG	**Sg**			**19 58 08.6**	**-0.3**
	7.1nm,0.2s								
BRG	**Berggiesshubel**	**1.50**	**245**	*i* Pg	**Pg**			**19 57 59.5**	**+0.4**
BRG				*i* Sg	**Sg**			**19 58 19.7**	**+0.6**
PRU	**Pruhonice**	**1.83**	**213**	*e*PG	**Pg**			**19 58 04.8**	**-0.9**
PRU				*i* x	x			19 58 21.8	
PRU				*e*SG	**Sg**			**19 58 28.4**	**-1.7**
	12nm,0.4s								
CLL	**Collm**	**1.95**	**264**	*e*PG	**Pg**			**19 58 08.0**	**+0.1**
MORC	**Moravsky Berou**	**1.99**	**152**	*e*P	**Pn**			**19 58 05.5**	**+1.2**
OKC	**Ostrava-Krasne**	**2.15**	**142**	*e*PG	**Pg**			**19 58 11.1**	**-0.8**
OKC				*e*SG	**Sg**			**19 58 38.0**	**-2.5**
NKC	**Novy Kostel**	**2.65**	**242**	*e*PN	**Pn**			**19 58 15.0**	**+1.3**
NKC				*e*PG	**Pg**			**19 58 21.2**	**-0.7**
NKC				*e*SG	**Sg**			**19 58 57.4**	**+0.2**
OJC	**Ojcow**	**2.69**	**118**	*e*Pg	**Pg**			**19 58 22.5**	**-0.3**
OJC				*e*Sg	**Sg**			**19 58 57.9**	**-0.8**
OJC	**Ojcow**	**2.69**	**118**	*e*PG	**Pg**			**19 58 22.0**	**-0.8**
OJC				*e*SG	**Sg**			**19 58 58.0**	**-0.7**
KHC	**Kasperske Hory**	**2.90**	**215**	*e*PN	**Pn**			**19 58 18.5**	**+1.3**
KHC				*e*PG	**Pg**			**19 58 24.0**	**-2.8**
KHC				*e*SN	**Sn**			**19 58 53.8**	**+0.5**
KHC				*e*SG	**Sg**			**19 59 02.1**	**-3.3**
MOX	**Moxa**	**2.96**	**254**	*e*Pg	**Pg**			**19 58 27.2**	**-0.9**
MOX				*e*Sg	**Sg**			**19 59 06.6**	**-0.9**

IDC 23 20:07:44.4±2.4,5.80S×130.27E,mb3.9/1,mb1 4.1/3, mb1mx3.7/13,ML3.8/2,MS3.3/1,Ms1 3.3/1,ms1mx2.6/18, Error ellipse: s-maj=148.0km s-min=30.6km az=70.0, Banda Sea

| Code | Station Name

41nm,0.7s,baz=182,slow=8.5,SNR=21
CMAR PcP PcP 20 33 16.1 +0.7
3.2nm,0.7s,baz=208,slow=3.4,SNR=6.4
CMAR LR LR 20 39 12.0
comp=Z,433nm,19.6s,MS3.9,baz=185,slow=37
CMAR Chiang Mai Arr 23.79 351 P **P** **20 29 31.6 +0.6**
CMAR *SP 20 29 44.3
CMAR 20 33 16.2
CMAR pmax pmax
comp=Z,25nm,0.5s
CMAR pmax pmax
comp=Z,41nm,0.7s
CMAR pmax pmax
comp=Z,3.0nm,0.7s
CMAR MLR MLR
comp=Z,433nm,19.6s
QIZ Qiongzhong 25.06 16 P **P** **20 29 44.8 +1.5**
QIZ *eS* **S** **20 34 05.8 +3.4**
QIZ LR LR
comp=N,397nm,16.2s
QIZ LR LR
comp=Z,361nm,18.4s,MS3.9
FITZ Fitzroy Crossi 25.79 122 *eP* **P** **20 29 50.3 +0.1**
comp=Z,24nm,0.9s,mb4.7
FITZ Fitzroy Crossi 25.79 122 P **P** **20 29 50.5 +0.3**
comp=Z,13nm,0.7s,mb4.5,baz=318,slow=4.2,SNR=34
FITZ LR LR 20 40 28.2
comp=Z,136nm,18.9s,MS3.5,baz=295,slow=37
TGY Tagaytay City 26.33 43 P **P** **20 29 56.9 +1.8**
comp=Z,121nm,0.4s,mb5.8,baz=135,slow=10.0,SNR=3.0
TGY LR LR 20 41 04.3
comp=Z,409nm,21.7s,MS3.9,baz=262,slow=38
TGY Tagaytay City 26.33 43 P **P** **20 29 56.9 +1.8**
TGY pmax pmax
comp=Z,121nm,0.4s
TGY MLR MLR
comp=Z,409nm,21.7s
KMI Kunming 30.13 360 *eP* **P** **20 30 30.3 +1.0**
KMI AP pP 20 30 42.9 +3.0
KMI S **S** **20 35 32.3 +8.1**
KMI AMB AMB
comp=Z,18nm,0.7s,mb4.9
KMI LR LR
comp=N,1μm,15.7s,MS4.6
KMI LR LR
comp=E,264nm,16.7s,MS4.6
KMI LR LR
comp=Z,1μm,14.3s,MS4.6
KAKA Kakadu 30.21 106 *eP* **P** **20 30 29.3 -0.8**
comp=Z,27nm,0.6s,mb5.2
NWAO Narrogin (SRO) 30.73 156 P **P** **20 30 33.4 -1.2**
comp=Z,4.9nm,0.9s,mb4.3,baz=354,slow=10.0,SNR=3.7
NWAO Narrogin (SRO) 30.73 156 P **P** **20 30 33.4 -1.2**
NWAO pmax pmax
comp=Z,5.0nm,0.9s
GYA Guiyang 31.68 7⇑ *iP* **P** **20 30 42.9 -0.2**
GYA AP pP 20 30 55.4 +1.7
GYA XP sP 20 31 01.6 +3.0
GYA PP PP 20 31 46.8 -1.7
GYA S **S** **20 35 48.6 -0.1**
GYA SS SS 20 37 41.3 +1.4
GYA AMB AMB
comp=Z,20nm,0.8s,mb5.0
GYA LR LR
comp=N,430nm,15.0s,MS4.3
GYA LR LR
comp=E,210nm,12.6s,MS4.3
GYA LR LR
comp=Z,630nm,15.6s,MS4.4
HYB Hyderabad 32.79 314 *i* P **P** **20 30 52.5 -0.3**
HYB Hyderabad 32.79 314 *eP* **P** **20 30 52.5 -0.3**
WRA Warramunga Arr 34.05 118 P **P** **20 31 03.5 -0.2**
comp=Z,8.8nm,0.4s,mb5.0,baz=304,slow=9.0,SNR=70
WRA pP pP 20 31 13.9 -0.4
comp=Z,36nm,1.1s,baz=303,slow=9.0,SNR=21
WRA PcP PcP 20 33 41.1 +0.2
comp=Z,1.8nm,0.5s,baz=296,slow=3.3,SNR=3.3
WRA pPcP 20 33 52.1
comp=Z,2.1nm,0.3s,baz=314,slow=2.2,SNR=4.9
WRA S **S** **20 36 29.1 +3.5**
comp=Z,3.8nm,0.8s,baz=295,slow=16,SNR=6.0
WRA Warramunga Arr 34.05 118 P **P** **20 31 03.5 -0.1**
WRA *PP pP 20 31 13.9 -0.4
WRA 20 33 41.1
WRA S **S** **20 36 29.1 +3.5**
WRA pmax pmax
comp=Z,9.0nm,0.4s
WRA pmax pmax
comp=Z,36nm,1.1s
WRA pmax pmax
comp=Z,2.0nm,0.5s
WRA pmax pmax
comp=Z,2.0nm,0.3s
WRA smax
comp=Z,4.0nm,0.8s
WRAB Tennant Creek 34.06 118 *eP* **P** **20 31 03.5 -0.2**
comp=Z,153nm,1.0s,mb5.9
WB2 Warramunga Arr 34.06 118 *eP* **P** **20 31 03.6 -0.1**
WB2 *eS* **S** **20 36 27.8 +2.0**
AS12 Alice Springs 35.19 125 *eP* **P** **20 31 13.5 +0.2**
comp=Z,20nm,0.5s,mb5.3
ASAR Alice Springs 35.19 125 P **P** **20 31 13.8 +0.4**
comp=Z,12nm,0.6s,mb5.0,baz=295,slow=7.9,SNR=160
ASAR pP pP 20 31 24.0 -0.1
comp=Z,17nm,0.4s,baz=302,slow=7.8,SNR=22
ASAR PcP PcP 20 33 44.3 +0.1
comp=Z,2.0nm,0.6s,baz=307,slow=1.8,SNR=3.8
ASAR pPcP 20 33 56.8
comp=Z,2.8nm,0.5s,baz=310,slow=2.4,SNR=4.0
ASAR S **S** **20 36 48.4 +5.2**
comp=Z,2.0nm,0.8s,baz=293,slow=15,SNR=4.5
ASAR LR LR 20 46 22.8
comp=Z,219nm,18.4s,MS3.9,baz=296,slow=37
ENH Enshi 35.84 10 *eP* **P** **20 31 17.6 -1.2**
comp=Z,26nm,0.6s,mb5.3
CD2 Chengdu 35.91 1 *eP* **P** **20 31 18.8 -0.6**
CD2 *eS* **S** **20 36 50.8 -3.3**
CD2 AMB AMB
comp=Z,70nm,0.7s,mb5.7
CD2 AMB AMB
comp=Z,80nm,4.5s
CD2 LR LR
comp=Z,1μm,19.2s,MS4.6
LSA Lhasa 36.43 343 P **P** **20 31 24.6 +0.8**
LSA Lhasa 36.43 343 *eP* **P** **20 31 24.4 +0.7**
comp=Z,43nm,0.8s,mb5.4
PKI Pulchoki 36.62 334 *eP* **P** **20 31 25.5 +0.1**
comp=Z,37nm,0.7s,mb5.3
DMN Daman 36.78 333 *eP* **P** **20 31 27.2 +0.4**
comp=Z,97nm,1.0s,mb5.6
KKN Kakani 36.86 334 *eP* **P** **20 31 27.9 +0.5**
comp=Z,47nm,0.5s,mb5.6
WHN Wuhan 37.22 17 ⇓P **P** **20 31 32.0 +1.5**
GKN Gorkha 37.33 333 *eP* **P** **20 31 31.9 +0.5**
comp=Z,82nm,0.7s,mb5.7
KOLN Koldanda 37.62 332 *eP* **P** **20 31 34.5 +0.7**
comp=Z,92nm,0.7s,mb5.6
XAN Xi'an 39.45 8 P **P** **20 31 48.8 -0.1**
XAN AMB AMB
comp=Z,28nm,0.5s,mb5.2
XAN LR LR
comp=N,361nm,18.2s
XAN LR LR
comp=Z,647nm,17.5s,MS4.5
NJ2 Nanjing 40.08 21 *eP* **P** **20 31 56.1 +1.9**
NJ2 AP pP 20 32 09.8 +4.7
NJ2 XP sP 20 32 15.1 +5.3
NJ2 S **S** **20 38 03.0 +5.4**
NJ2 XS 20 38 23.0
NJ2 SS SS 20 40 58.0 +8.0
NJ2 AMB AMB
comp=Z,40nm,0.6s,mb5.3
NJ2 AMB AMB
comp=Z,420nm,5.2s
NJ2 LR LR
comp=N,500nm,18.8s
NJ2 LR LR
comp=E,520nm,25.1s
NJ2 LR LR
comp=Z,990nm,25.1s
SSE Sheshan 40.15 25 P **P** **20 31 55.0 +0.2**
SSE PP PP 20 33 29.3 -1.7
SSE AMB AMB
comp=Z,15nm,0.7s,mb4.8
SSE AMB AMB
comp=Z,46nm,4.8s
SSE LR LR
comp=N,60nm,21.4s,MS3.8
SSE LR LR
comp=E,128nm,21.4s,MS3.8
SSE LR LR
comp=Z,197nm,17.6s,MS4.0
JOW Kunigami 40.30 37 P **P** **20 31 57.4 +1.3**
comp=Z,23nm,0.5s,mb5.2,baz=217,slow=4.8,SNR=10
LZH Lanzhou 41.07 1⇑P **P** **20 32 02.9 +0.6**
LZH AMB AMB
comp=Z,30nm,1.2s,mb4.8
LZH LR LR
comp=Z,860nm,16.0s,MS4.7
TIA Tai'an 43.33 17 *eP* **P** **20 32 20.9 0.0**
PMG Port Moresby 44.23 98 P **P** **20 32 29.0 +0.5**
comp=Z,65nm,1.0s,mb5.3,baz=274,slow=3.9,SNR=12
PMG Port Moresby 44.23 98 P **P** **20 32 29.0 +0.5**
PMG pmax pmax
comp=Z,65nm,1.0s
PMG Port Moresby 44.23 98 *eP* **P** **20 32 28.5 0.0**
comp=Z,84nm,1.0s,mb5.4
GTA Gaotai 44.45 357 P **P** **20 32 30.3 +0.3**
GTA AP pP 20 32 43.0 +2.1
GTA XP sP 20 32 48.3 +2.7
GTA PP PP 20 34 13.4 -1.6
GTA AMB AMB
comp=Z,34nm,1.2s,mb5.0
GTA AMB AMB
comp=Z,112nm,4.9s
GTA LR LR
comp=N,280nm,20.5s,MS4.3
GTA LR LR
comp=E,159nm,17.5s,MS4.3
GTA LR LR
comp=Z,372nm,19.4s,MS4.3
CTA Charters Tower 44.80 113 *eP* **P** **20 32 34.0 +1.0**
comp=Z,31nm,0.8s,mb5.2
CTA Charters Tower 44.80 113 P **P** **20 32 34.3 +1.3**
comp=Z,16nm,0.8s,mb4.9,baz=287,slow=12,SNR=13
CTA Charters Tower 44.80 113 P **P** **20 32 34.3 +1.3**
CTA pmax pmax
comp=Z,16nm,0.8s
CTAO Charters Tower 44.80 113 *eP* **P** **20 32 32.6 -0.3**
comp=Z,8.9nm,0.6s,mb4.8
CTAO LR LR
comp=Z,378nm,20.0s,MS4.3
STKA Stephens Creek 45.00 131 *eP* **P** **20 32 35.2 +0.7**
comp=Z,29nm,0.6s,mb5.3
STKA Stephens Creek 45.00 131 P **P** **20 32 35.6 +1.1**
comp=Z,28nm,0.6s,mb5.2,baz=307,slow=7.7,SNR=50
STKA pP pP 20 32 45.0 -0.4
comp=Z,24nm,0.5s,baz=303,slow=9.1,SNR=11
STKA LR LR 20 52 15.2
comp=Z,312nm,19.3s,MS4.2,baz=248,slow=37
BTO Baotou 46.05 8 *eP* **P** **20 32 43.3 +0.6**
JNU Nakatsue 46.51 33 P **P** **20 32 46.5 +0.1**
comp=Z,29nm,0.9s,mb5.2,baz=259,slow=6.5,SNR=15
HHC Hu-ho-hao-te 46.52 9⇑P **P** **20 32 47.5 +1.2**
HHC AP pP 20 32 57.5 +0.2
HHC PCP PcP 20 34 20.3 -0.4
HHC PP PP 20 34 34.1 -1.5
HHC SCP 20 38 08.5
HHC PCS 20 38 13.6
HHC S **S** **20 39 35.8 +4.5**
HHC SCS ScS 20 42 36.4 +0.9
HHC SS SS 20 42 54.5 +4.7
HHC AMB AMB
comp=Z,28nm,1.1s,mb5.1
HHC AMB AMB
comp=Z,115nm,5.6s
HHC LR LR
comp=N,279nm,19.0s,MS4.3
HHC LR LR
comp=E,82nm,16.3s,MS4.3
HHC LR LR
comp=Z,253nm,17.7s,MS4.2
BJT Baijiatuan 46.65 14 *eP* **P** **20 32 47.3 0.0**
comp=Z,33nm,0.6s,mb5.4
BJI Beijing 46.67 14 P **P** **20 32 47.6 +0.1**
BJI AMB AMB
comp=Z,46nm,0.6s,mb5.6
BJI LR LR
comp=Z,542nm,19.4s,MS4.5
CBIJ Chichi jima 49.83 48 P **P** **20 33 11.0 -1.3**
comp=Z,66nm,0.4s,mb6.0,baz=293,slow=20,SNR=5.6
SNY Shenyang 50.50 20⇑P **P** **20 33 15.3 -1.9**
SNY AMB AMB
comp=Z,10.0nm,1.1s,mb4.7
SNY LR LR
comp=N,250nm,18.2s,MS4.4
SNY LR LR
comp=E,270nm,17.7s,MS4.4
SNY LR LR
comp=Z,220nm,20.6s,MS4.2
WMQ Urumqi 50.64 346 *eP* **P** **20 33 18.4 +0.2**
WMQ AP pP 20 33 28.3 -0.9
WMQ PCP PcP 20 34 34.8 -0.7
WMQ PP PP 20 35 15.5 +0.5
WMQ SCP 20 38 27.0
WMQ PCS 20 38 30.8
WMQ S **S** **20 40 29.9 +1.0**
WMQ PS PS 20 40 44.0 +1.3
WMQ SCS ScS 20 43 03.4 +0.7
WMQ SS SS 20 44 03.8 +3.1
WMQ AMB AMB
comp=Z,65nm,1.3s,mb5.4
WMQ AMB AMB
comp=Z,394nm,6.3s
KSH Kashi 50.88 333 P **P** **20 33 20.1 0.0**
KSH *eAP pP 20 33 32.9 +1.8
KSH *eXP sP 20 33 37.5 +1.8
KSH *ePCP PcP 20 34 36.5 0.0
KSH *ePP PP 20 35 17.0 -0.3
KSH *eSCP 20 38 27.3
KSH *ePCS 20 38 32.5
KSH *eS **S** **20 40 31.1 -1.2**
KSH *ePS PS 20 40 46.0 -0.2
KSH *eSCS ScS 20 43 03.4 -1.0
KSH *eSS SS 20 44 03.4 -1.5
KSH AMB AMB
comp=Z,30nm,0.8s,mb5.3
KSH AMB AMB
comp=Z,170nm,3.8s
ARMA Armidale 52.34 125 *eP* **P** **20 33 33.5 +2.3**
CN2 Changchun 52.89 21 *eP* **P** **20 33 34.6 -0.5**
CN2 *eAP pP 20 33 46.0 -0.2
CN2 PCP PcP 20 34 43.6 -0.3
CN2 *eS **S** **20 41 01.3 +1.5**
CN2 AMB AMB
comp=Z,50nm,0.7s,mb5.5
CN2 LR LR
comp=N,280nm,18.0s,MS4.5
CN2 LR LR
comp=E,210nm,18.0s,MS4.5
CN2 LR LR
comp=Z,280nm,20.0s,MS4.3
ULN Ulaanbaatar 52.96 4⇑ *iP* **P** **20 33 35.9 +0.3**
ULN Ulaanbaatar 52.96 4 *eP* **P** **20 33 36.0 +0.4**
comp=Z,43nm,1.0s,mb5.3
MAJO Matsushiro 53.13 36 *eP* **P** **20 33 35.4 -1.6**
comp=Z,8.8nm,0.7s,mb4.8
MAT Matsushiro 53.13 36 P **P** **20 33 35.5 -1.5**
MAT Matsushiro 53.13 36 *eP* **P** **20 33 36.0 -1.0**
comp=Z,10.0nm,1.0s,mb4.7
KZA Kyzart 53.29 335 P **P** **20 33 38.4 +0.2**
SNR=18
UCH Uchtor 53.73 334 P **P** **20 33 41.5 +0.2**
SNR=12
TKM2 Tokmak 2 53.84 335 P **P** **20 33 42.4 +0.2**
SNR=18
KBK Karagaybulak 53.89 335 P **P** **20 33 42.8 +0.3**
SNR=22
AML Almayashu 54.01 333 P **P** **20 33 43.5 +0.1**
SNR=20
AAK Ala-Archa 54.06 334 P **P** **20 33 43.8 0.0**
SNR=8.9
FRU Bishkek 54.17 335 *eP* **P** **20 33 44.0 -0.6**
CHMS Chumysh 54.25 335 P **P** **20 33 44.7 -0.5**
SNR=9.2
EKS2 Erkin-Say 54.40 334 P **P** **20 33 46.3 0.0**
SNR=32
USP Ospenovka 54.58 335 P **P** **20 33 47.8 +0.3**
SNR=8.7
MKAR Makanchi Array 54.84 343 P **P** **20 33 48.6 -0.8**
comp=Z,27nm,0.4s,mb5.6,baz=149,slow=8.3,SNR=241
MKAR LR LR 21 02 49.0
comp=Z,98nm,18.3s,MS3.9,baz=157,slow=42
MKAR Makanchi Array 54.84 343 P **P** **20 33 48.6 -0.8**
MKAR pmax pmax
comp=Z,27nm,0.4s
MKAR MLR MLR
comp=Z,98nm,18.3s
MDJ Mudanjiang 55.13 23 P **P** **20 33 51.3 -0.2**
MDJ AP pP 20 34 01.6 -1.1
MDJ AMB AMB
comp=Z,10.0nm,0.8s,mb4.9
MDJ AMB AMB
comp=Z,85nm,4.0s
MDJ LR LR
comp=N,64nm,21.8s,MS3.7
MDJ LR LR
comp=E,48nm,23.2s,MS3.7
MDJ LR LR
comp=Z,89nm,19.6s,MS3.9
MDJ Mudanjiang 55.13 23 *eP* **P** **20 33 51.0 -0.6**
comp=Z,19nm,1.1s,mb5.0
ZAK Zakamensk 55.34 0⇑ *iP* **P** **20 33 53.2 +0.2**
HIA Hailar 56.22 13 *eP* **P** **20 33 58.1 -1.2**
comp=Z,15nm,0.6s,mb5.2
KKAR Karatay Array 56.23 332 *i* P **P** **20 33 57.8 -1.7**
KKAR pmax pmax
comp=Z,2.0nm,0.5s,mb4.4
TLY Talaya 56.65 1⇑ *eP* **P** **20 34 02.5 +0.1**
TLY *i* pP 20 34 15.6 +2.0
TLY pmax pmax
comp=Z,314nm,0.8s
TLY MLR MLR
comp=Z,2μm,17.0s
MOY Mondy 56.65 359 *eP* **P** **20 34 02.4 0.0**
IRK Irkutsk 57.22 1 *eP* **P** **20 34 03.2 -3.3**
IRK *e* 20 34 17.5
KURK Kurchatov 59.43 342 *i* P **P** **20 34 20.7 -1.2**
KURK pmax pmax
comp=Z,6.0nm,0.6s,mb4.8
KURK Kurchatov 59.43 342 *eP* **P** **20 34 20.7 -1.2**
KLR Kul'dur 59.79 22 *eP* **P** **20 34 23.2 -1.2**
KLR *e* pP 20 34 35.0 -0.6
ASAJ Asahikawa 60.76 32 P **P** **20 34 30.7 -0.4**
comp=Z,14nm,0.5s,mb5.4,baz=245,slow=10.0,SNR=19
ASAJ Asahikawa 60.76 32 P **P** **20 34 30.7 -0.4**
ASAJ pmax pmax
comp=Z,14nm,0.5s
ZAL Zalesovo 60.80 348 P **P** **20 34 30.1 -1.1**
comp=Z,28nm,0.5s,mb5.6,baz=220,slow=4.4,SNR=136
ZAL LR LR 21 04 49.1
comp=Z,444nm,18.8s,MS4.6,baz=227,slow=40
ZAL Zalesovo 60.80 348 P **P** **20 34 30.1 -1.1**
ZAL pmax pmax
comp=Z,28nm,0.5s
ZAL MLR MLR
comp=Z,444nm,18.8s
DJNS Zahran al Janu 62.68 293 P **P** **20 34 54.6 +10**
YSS Yuzh-Sakhalins 62.80 30⇑ *eP* **P** **20 34 43.2 -1.5**
YSS pmax pmax
comp=Z,40nm,1.0s,mb5.5
YSS Yuzh-Sakhalins 62.80 30 *eP* **P** **20 34 44.2 -0.5**
comp=Z,35nm,0.8s,mb5.5
MZLS Mizel 63.10 300 P **P** **20 34 46.8 -0.2**
TATS Tathlith 63.24 295 P **P** **20 34 48.1 0.0**
THR Tehran 63.28 315 P **P** **20 34 47.6 -0.4**
comp=Z,5.0nm,1.2s,mb4.5,baz=102,slow=6.3,SNR=7.1
THR Tehran 63.28 315 P **P** **20 34 47.7 -0.4**
THR pmax pmax
comp=Z,5.0nm,1.2s
BOD Bodaibo 63.45 7 *eP* **P** **20 34 47.5 -1.4**
VOSK Vostochnaya 63.65 339 P **P** **20 34 48.7 -1.6**
VOSK pmax pmax
comp=Z,6.0nm,0.5s,mb4.9
BRVK Borovoye 64.17 339 P **P** **20 34 52.1 -1.5**
BRVK pmax pmax
comp=Z,5.0nm,0.6s,mb4.7
BRVK Borovoye 64.17 339 *eP* **P** **20 34 52.3 -1.3**
CLNS Chul'man 64.41 13 *eP* **P** **20 34 53.7 -1.4**
CLNS pmax pmax
comp=N,10.0nm,0.9s
CLNS pmax pmax
comp=E,10.0nm,0.9s
CLNS pmax pmax
comp=Z,10.0nm,0.9s,mb4.8
ZRNK Zerenda 64.55 338 P **P** **20 34 54.6 -1.5**
ZRNK pmax pmax
comp=Z,12nm,0.7s,mb5.0
ZRNK Zerenda 64.55 338 *eP* **P** **20 34 54.6 -1.5**
AFFS 'Afif 64.97 299 P **P** **20 34 59.0 -0.3**
BLJS Baljurashi 65.04 295 P **P** **20 35 00.6 +0.8**
ARSS Ar Rass 65.40 301 P **P** **20 35 01.4 -0.6**
KMBO Kilima Mbogo 65.49 271 LR LR 20 58 33.9
comp=Z,140nm,19.2s,MS4.2,baz=96,slow=31
KMBO Kilima Mbogo 65.49 271 P **P** **20 35 01.3 -1.5**
KMBO LR LR
comp=Z,113nm,20.0s,MS4.1
AB31 Akbulak array 65.73 331 P **P** **20 35 02.6 -1.2**
AB31 pmax pmax
comp=Z,10.0nm,0.5s,mb5.1
HILS Ha'il 67.11 302 P **P** **20 35 13.4 +0.5**
MAW Mawson 67.92 195 LR LR 20 58 03.4
comp=Z,343nm,19.2s,MS4.6,baz=183,slow=30
KBRS Khaybar 68.77 300 P **P** **20 35 23.8 +0.5**
YAK Yakutsk 70.16 13 *eP* **P** **20 35 29.2 -1.9**
YAK *e* pP 20 35 40.8 -1.8
YAK pmax pmax
comp=Z,35nm,0.9s,mb5.3
YAK pmax pmax
comp=N,16nm,1.1s
YAK pmax pmax
comp=E,7.0nm,1.2s
YAK pmax pmax
comp=Z,21nm,0.9s,mb5.1
YAK pmax pmax
comp=N,13nm,1.1s
YAK pmax pmax
comp=E,10.0nm,1.2s
YAK Yakutsk 70.16 13 *eP* **P** **20 35 29.9 -1.1**
comp=E,74nm,0.6s,mb5.8
RPZ Rata Peaks 70.81 134 P **P** **20 35 35.8 +0.4**
comp=E,8.7nm,0.7s,mb4.8,baz=8.7,slow=23,SNR=6.1
RPZ Rata Peaks 70.81 134 P **P** **20 35 35.8 +0.4**
ARU Arti 71.21 336⇑ *iP* **P** **20 35 37.0 -0.6**
ARU *e* 20 35 54.3
ARU *i* 20 38 16.0
ARU *i* PPP PPP 20 39 57.3 -1.7
ARU *eS* S 20 44 43.0 -7.6
ARU pmax pmax
comp=Z,32nm,0.8s,mb5.3
ARU Arti 71.21 336 *eP* **P** **20 35 36.7 -0.8**
comp=Z,31nm,0.8s,mb5.3
ARU LR LR
comp=Z,136nm,21.0s,MS4.2
ZEI Tsey 71.42 318 *eP* **P** **20 35 39.1 +0.1**
TBKS Tabuk 71.79 302 P **P** **20 35 42.2 +0.7**
QURS Qurayyt al Mil 72.07 305 P **P** **20 35 43.5 +0.4**
JMQS Jabal Moqyreh 72.54 302 P **P** **20 35 46.5 +0.5**
KIV Kislovodsk 72.73 319 *eP* **P** **20 35 46.5 -0.3**
KIV pmax pmax
comp=E,6.0nm,0.9s
KIV pmax pmax
comp=Z,10.0nm,0.9s,mb4.8
KIV Kislovodsk 72.73 319 *eP* **P** **20 35 46.4 -0.5**
comp=Z,28nm,1.2s,mb5.1
KIV LR LR
comp=Z,56nm,19.0s,MS3.9
AYUS 'Aynunah 72.86 301 P **P** **20 35 48.1 +0.2**
GOF Gofitskoye 72.98 320⇑ *iP* **P** **20 35 47.5 -0.8**
GOF pmax pmax
comp=Z,20nm,1.3s,mb4.9
BDAS Al Bad' 73.07 302 P **P** **20 35 49.5 +0.3**
JMQS Jabal al Moall 73.27 302 P **P** **20 35 50.5 +0.2**
SOKR Solikamsk 74.03 338⇓ *iP* **P** **20 35 53.3 -0.8**
SOKR *i* pP 20 36 07.3 +1.7
SOKR pmax pmax
comp=Z,30nm,0.9s,mb5.2
SOKR MLR MLR
comp=Z,140nm,21.0s,MS4.2
URZ Urewera 74.54 128 P **P** **20 35 59.4 +1.9**
comp=Z,6.8nm,0.8s,mb4.6,baz=318,slow=15,SNR=2.5
SOC Sochi 74.54 318 *eP* **P** **20 35 56.4 -1.0**
SOC *e* pP 20 36 09.2 +0.3
SOC *ePPP PPP 20 40 34.7 +3.5
SOC *eS S 20 45 19.4 -9.2
SOC *ePS PS 20 46 11.4 +2.8
SOC *eSS SS 20 50 12.3 -5.7

SOC pmax pmax
comp=Z,20nm,0.9s,mb5.0
SOC pmax pmax
comp=N,8.0nm,0.8s
SOC pmax pmax
comp=E,10.0nm,0.7s
SOC smax
comp=N,6.0nm,0.5s
SOC smax
comp=E,7.0nm,0.7s
PET Petropavlovsk 74.59 31 *e*P **P 20 35 56.6 -0.9**
PET pmax pmax
comp=Z,33nm,0.7s,mb5.4
PET Petropavlovsk 74.59 31 *e*P **P 20 35 57.4 -0.2**
comp=Z,39nm,0.8s,mb5.4
MA2 Magadan 74.83 23 *c i*P **P 20 35 59.0 +0.3**
MA2 *e* pP 20 36 10.1 -0.1
MA2 pmax pmax
comp=Z,10.0nm,0.7s,mb4.8
MA2 Magadan 74.83 23 *e*P **P 20 35 58.8 +0.1**
comp=Z,25nm,0.7s,mb5.2
MA2 *e*pP pP 20 36 07.8 -2.5
LBTB Lobatse 76.18 246 *e*P **P 20 36 05.4 -1.8**
CSS Prodhromos 76.32 308 *e*P **P 20 36 07.7 -0.2**
BRTR Keskin Array B 77.48 312 P **P 20 36 13.3 -0.9**
comp=Z,8.2nm,0.8s,mb4.7,baz=131,slow=7.1,SNR=69
BRTR pP pP 20 36 22.9 -2.8
comp=Z,6.4nm,0.9s,baz=117,slow=8.3,SNR=7.4
BRTR LR LR 21 13 41.3
comp=Z,66nm,19.6s,MS4.0,baz=185,slow=38
BRTR Keskin Array B 77.48 312 P **P 20 36 13.3 -0.9**
BRTR pP pP 20 36 22.9 -2.8
BRTR LR LR 21 13 41.3
SEY Seymchan 77.57 21 *e*P **P 20 36 15.9 +1.7**
SEY *e* 20 46 10.0
SEY *e* 20 51 06.8
SEY pmax pmax
comp=N,110nm,0.9s
SEY pmax pmax
comp=E,10.0nm,0.9s
SEY pmax pmax
comp=Z,40nm,0.9s,mb5.3
VNDA Vanda 78.53 169 P **P 20 36 19.3 0.0**
comp=Z,0.7nm,0.7s,baz=314,slow=5.9,SNR=7.5
VNDA pP pP 20 36 28.9 -2.0
comp=Z,2.0nm,0.8s,baz=307,slow=4.8,SNR=7.5
VNDA LR LR 21 06 19.7
comp=Z,177nm,20.4s,baz=339,slow=32
VNDA Vanda 78.53 169 P **P 20 36 19.3 0.0**
VNDA *PP pP 20 36 28.9 -1.9
VNDA pmax pmax
comp=Z,1.0nm,0.7s
VNDA pmax pmax
comp=Z,2.0nm,0.8s
VNDA MLR MLR
comp=Z,177nm,20.4s
VNDA Vanda 78.53 169 *e*P **P 20 36 17.8 -1.5**
VNDA *e*pP pP 20 36 28.4 -2.4
TIXI Tiksi 78.58 8 *e*P **P 20 36 18.3 -1.3**
TIXI pmax pmax
comp=Z,185nm,0.9s
TIXI MLR MLR
comp=Z,3µm,17.0s
TIXI Tiksi 78.58 8 *e*P **P 20 36 18.3 -1.3**
comp=Z,15nm,0.6s,mb5.1
SIM Simferopol' 78.78 318 *ce*P **P 20 36 21.2 0.0**
SIM *e**SP sP 20 36 32.0 -5.0
SIM S S 20 46 06.0 -8.8
SIM pmax pmax
comp=Z,19nm,1.0s,mb5.0
SIM MLR MLR
comp=Z,500nm,18.0s,MS4.9
SBA Scott Base 79.62 169 *e*P **P 20 36 23.1 -2.1**
MOS Moscow 80.62 329 *e*P **P 20 36 29.0 -1.9**
MOS pmax pmax
comp=Z,60nm,0.6s,mb5.7
OBN Obninsk 80.93 328 *α i*P **P 20 36 32.6 +0.1**
OBN *e* pP 20 36 42.8 -1.4
OBN 20 39 40.0
OBN pmax pmax
comp=Z,23nm,0.8s,mb5.2
OBN Obninsk 80.93 328 *e*P **P 20 36 32.5 0.0**
comp=Z,30nm,0.9s,mb5.2
QSPA South Pole Qui 84.80 180 *e*P **P 20 36 58.9 +7.1**
comp=Z,3.6nm,0.9s,mb4.5
QSPA LR LR
comp=Z,120nm,20.1s,MS4.3
BILL Bilibino 85.19 20 *e*P **P 20 36 53.1 -0.9**
BILL pmax pmax
comp=Z,9.0nm,1.0s,mb4.8
BILL Bilibino 85.19 20 *e*P **P 20 36 54.4 +0.4**
comp=Z,5.4nm,0.8s,mb4.7
JOF Joensuu 86.25 334 *ep* **P 20 36 59.1 -0.2**
comp=Z,5.5nm,0.7s,mb4.9
JOF Joensuu 86.25 334 *e*P **P 20 36 59.1 -0.2**
JOF pmax pmax
comp=Z,6.0nm,0.7s,mb4.9
APA Apatity 87.02 339 *ĥ e*P **P 20 37 09.9 +7.0**
APA MLR MLR
comp=Z,600nm,18.0s,MS5.0
KWP Kalwaria 87.49 320 *e*P **P 20 37 06.4 +0.8**
SUW Suwalki 88.05 324 *e*P **P 20 37 08.5 +0.3**
CRVS Cervenica-Dubn 88.16 319 *i*P **P 20 37 10.0 +1.2**
FINES FINESS Array B 88.19 332 P **P 20 37 09.4 +0.7**
comp=Z,3.7nm,0.6s,mb4.8,baz=104,slow=5.7,SNR=34
FINES pP pP 20 37 19.1 -1.3
comp=Z,5.0nm,0.9s,baz=82,slow=4.2,SNR=4.6
FINES LR LR 21 26 49.9
comp=Z,46nm,18.0s,MS3.9,baz=157,slow=42
FINES FINESS Array B 88.19 332 P **P 20 37 09.4 +0.7**
FINES *PP pP 20 37 19.1 -1.4
FINES pmax pmax
comp=Z,4.0nm,0.6s
FINES pmax pmax
comp=Z,5.0nm,0.9s
FINES MLR MLR
comp=Z,46nm,18.0s
KAF Kangasniemi 88.25 333 *ep* **P 20 37 08.6 -0.3**
comp=Z,9.2nm,0.6s,mb5.2,baz=98,slow=4.2
KAF Kangasniemi 88.25 333 *e*P **P 20 37 08.6 -0.3**
KAF pmax pmax
comp=Z,9.0nm,0.6s,mb5.2
NIE Niedzica 88.99 320 *e*P **P 20 37 14.5 +1.7**
PSZ Piszkesteto 89.03 318 *e*P **P 20 37 13.7 +0.7**
OJC Ojcow 89.44 320 *e*P **P 20 37 13.5 -1.4**
VYHS Vyhne 89.81 319 *i*P **P 20 37 17.5 +0.8**
VYHS epP pP 20 37 28.0 -0.5
SNAA Sanae 89.97 198 *e*P **P 20 37 16.4 -0.5**
SNAA *e*pP pP 20 37 26.9 -1.9
RHK1 Bakonya 90.01 316 *e*P **P 20 37 18.7 +1.0**
SRO Srobarova 90.07 318 *e*P **P 20 37 19.3 +1.4**
SRO *es*P sP 20 37 33.1 -0.5
ARCES ARCESS Array B 90.38 340 P **P 20 37 19.6 +0.7**
comp=Z,4.7nm,0.8s,mb4.9,baz=100,slow=3.8,SNR=18
ARCES LR LR 21 22 34.5
comp=Z,110nm,19.5s,MS4.3,baz=90,slow=39
ARCES ARCESS Array B 90.38 340 P **P 20 37 19.6 +0.7**
ARCES pmax pmax
comp=Z,5.0nm,0.8s
ARCES MLR MLR
comp=Z,110nm,19.5s
OKC Ostrava-Krasne 90.44 320 *e*P **P 20 37 20.3 +0.7**
MORC Moravsky Berou 90.82 320 *e*P **P 20 37 21.5 +0.1**
comp=Z,12nm,1.0s,mb5.2
MORC *ep*P pP 20 37 33.0 -0.3
VNA2 Neumayer--Watz 91.60 198 **P 20 37 22.1 -2.4**
VNA2 Neumayer--Watz 91.60 198 *‖ i* **P 20 37 31.8 +7.3**
VNA2 Neumayer--Watz 91.60 198 *‖ i* pP 20 37 38.4 +2.0
DPC Dobruska-Polom 91.67 320 *e*P **P 20 37 26.2 +0.9**
GOLS Golise 91.69 316 *i*P **P 20 37 26.6 +1.1**
UPC Upice 91.88 320 *e*P **P 20 37 27.6 +1.3**
VNA1 Neumayer--Stat 91.97 198 *‖ i* **P 20 37 35.4 +9.2**
VNA1 Neumayer--Stat 91.97 198 *‖ i* **P 20 37 42.7 +16**
PERS Pernice 92.10 316 *e*P **P 20 37 28.6 +1.2**
VNA3 Neumayer Olymp 92.17 197 *‖ i* **P 20 37 19.7 -7.4**
VNA3 Neumayer Olymp 92.17 197 *‖ i* **P 20 37 29.1 +2.0**
VNA3 Neumayer Olymp 92.17 197 *‖ i* pP 20 37 40.5 +1.5
VISS Visnje 92.22 316 *i*P **P 20 37 29.0 +1.1**
BRG Berggiesshubel 93.22 321 *i*P **P 20 37 33.7 +1.3**
BRG *i* pP 20 37 47.1 +2.8
BRG pmax pmax
comp=Z,4.0nm,0.7s,mb5.0
BRG Berggiesshubel 93.22 321 *i*P **P 20 37 33.7 +1.3**
comp=Z,4.3nm,0.7s,mb5.0
BRG *i* pP 20 37 47.1 +2.8

GERES GERESS Array B 93.23 319 P **P 20 37 33.5 +0.9**
comp=Z,1.8nm,0.6s,mb4.7,baz=90,slow=4.0,SNR=22
GERES sP sP 20 37 46.6 -1.7
comp=Z,3.9nm,1.1s,baz=90,slow=5.3,SNR=5.6
GERES GERESS Array B 93.23 319 P **P 20 37 33.5 +1.0**
GERES *SP sP 20 37 46.6 -1.7
GERES pmax pmax
comp=Z,2.0nm,0.6s
GERES pmax pmax
comp=Z,4.0nm,1.1s
KHC Kasperske Hory 93.33 319 *e*P **P 20 37 33.9 +0.9**
KHC *ex* x 20 37 46.8
CLL Collm 93.84 321 P **P 20 37 36.0 +0.8**
CLL Collm 93.84 321 *e*P **P 20 37 36.0 +0.8**
MOX Moxa 94.69 320 *e*P **P 20 37 40.0 +0.9**
GRA1 Grafenberg Arr 94.90 319 *e*P **P 20 37 40.8 +0.7**
comp=Z,4.0nm,1.1s,mb4.8
GRF Grafenberg Arr 94.90 319 *e*P **P 20 37 40.8 +0.7**
GRF pmax pmax
comp=Z,4.0nm,1.1s,mb4.8
NB2 NORSAR Subarra 95.24 331 P **P 20 37 41.1 -0.3**
comp=Z,2.9nm,1.1s,mb4.6,baz=87,slow=5.6
NOA NORSAR Array B 95.24 331 P **P 20 37 41.5 +0.1**
comp=Z,1.4nm,0.9s,mb4.4,baz=94,slow=4.5,SNR=3.4
NOA LR LR 21 27 26.6
comp=Z,52nm,18.9s,MS4.0,baz=65,slow=40
NOA NORSAR Array B 95.24 331 P **P 20 37 41.5 +0.1**
NOA pmax pmax
comp=Z,1.0nm,0.9s
NOA MLR MLR
comp=Z,52nm,18.9s
ILAR Eielson Array 103.28 24 Pdiff Pdif 20 38 18.8 +1.2
comp=Z,0.2nm,0.7s,baz=302,slow=4.2,SNR=4.2
FFC Flin Flon 126.72 18 *e*PKP PKPdf 20 43 21.3 +0.9
SCHQ Schefferville 129.79 352 PKP PKPdf 20 43 27.8 +1.6
comp=Z,4.6nm,0.7s,baz=339,slow=2.9,SNR=8.4
SCHQ Schefferville 129.79 352 PKP PKPdf 20 43 27.8 +1.6
NVAR Mina Array Bea 130.21 42 PKP PKPdf 20 43 30.8 +3.3
comp=Z,0.9nm,0.7s,baz=342,slow=2.9,SNR=3.6
NVAR SKPbc 20 46 51.6
comp=Z,0.5nm,0.5s,baz=235,slow=6.9,SNR=3.6
ULM Lac du Bonnet 132.44 16 PKP PKPdf 20 43 30.9 -0.4
comp=Z,2.8nm,0.7s,baz=318,slow=1.6,SNR=3.9
MNTX Cornudas Mount 142.72 42 *e*PKP PKPdf 20 43 51.7 +1.1
CLNB Carlsbad 143.33 39 *e*PKP PKPdf 20 43 51.1 -0.5
BDFB Brasilia 144.41 234 PKP PKPdf 20 43 56.5 +2.7
comp=Z,4.3nm,0.9s,baz=188,slow=2.8,SNR=4.0
WMOK Wichita Mounta 144.49 31 *e*PKP PKPdf 20 43 53.3 -0.2
SSPA Standing Stone 144.70 1 *e*PKP PKPdf 20 43 53.4 -0.3
ACSO Alum Creek Sta 144.73 8 *e*PKP PKPdf 20 43 53.8 0.0
ACSO *e* 20 44 05.1
CCM Cathedral Cave 144.89 19 *e*PKP PKPdf 20 43 54.2 0.0
BLO Bloomington 145.14 13 *e*PKP PKPdf 20 43 55.1 +0.5
FVM French Village 145.22 18 *e*PKP PKPdf 20 43 54.8 +0.1
MVL Millersville 145.33 359 *e*PKP PKPdf 20 43 56.0 +1.2
TXAR Lajitas Array 145.35 43 PKPbc PKPbc 20 43 58.3 +2.6
comp=Z,42nm,0.6s,baz=281,slow=1.0,SNR=724
TXAR pPKPbc 20 44 08.1
comp=Z,24nm,0.7s,baz=295,slow=1.8,SNR=13
SIUC Southern Illin 145.83 17 *e*PKP PKPdf 20 43 57.5 +1.8
WCI Wyandotte Cave 146.10 13 *e*PKP PKPdf 20 43 58.0 +1.8
JCT Junction City 147.08 38 *e*PKPbc PKPdf 20 44 02.0 +3.9
MIAR Mount Ida 147.11 25 *e*PKPbc PKPdf 20 44 01.4 +3.4
UALR University of 147.41 23 *e*PKPdf PKPdf 20 43 58.7 +0.2
UALR *e*PKPbc PKPdf 20 44 02.0 +3.5
WVT Waverly 147.71 16 *e*PKPbc PKPdf 20 44 03.1 +4.2
PWV Princeton 147.81 6 *e*PKPdf PKPdf 20 44 00.3 +1.2
PLAL Pickwick Lake 148.71 17 *e*PKPbc PKPdf 20 44 04.7 +4.2
PLAL *e*PKPab PKPab 20 44 08.6 -1.6
SWET Sewanee 149.06 14 *e*PKPbc PKPdf 20 44 06.0 +4.9
CPCT Cooper Cave 149.15 12 *e*PKPdf PKPdf 20 44 03.2 +1.9
CPCT *e*PKPbc PKPdf 20 44 06.7 +5.5
MYNC Murphy 149.59 11 *e*PKPbc PKPdf 20 44 08.0 +6.0
BBSR BB Station 150.51 338 *e*PKPbc PKPdf 20 44 10.2 +6.8
LRAL Lakeview Retre 150.84 17 *e*PKPbc PKPdf 20 44 10.6 +6.6
LVC Limon Verde 151.19 196 PKPbc PKPdf 20 44 13.8 +9.0
comp=Z,4.4nm,0.8s,baz=268,slow=5.3,SNR=7.5

*NEIC **23** 20:38:48.8, 16.38N×96.38W, h82km, MD3.8(MEX), After MEX.*
MEX 23 20:38:49.5±0.8, 16.22N×96.34W, h25km±33km, MD3.8, Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
					Op ISC	h m s	ISC
HUIG	**Huatulco**	**0.50**	**154**	*i* P	Pb	20 38 57.7	-1.9
HUIG				*i* S	Sb	20 39 05.1	-1.4
VHO	**Vista Hermosa**	**0.93**	**336**	*e*P	Pb	20 39 04.0	-2.9
VHO				*e*S	Sb	20 39 15.9	-3.0
OXX	**Oaxaca**	**0.94**	**337**	*i* P	Pb	20 39 04.6	-2.4
OXX				*i* S	Sb	20 39 15.7	-3.3
CMIG	**Matias Romero**	**1.64**	**58**	*e*P	Pn	20 39 13.9	-3.3
CMIG				*i* S	Sn	20 39 34.2	-3.5
PNIG	**Pinotepa**	**1.73**	**276**	*i* P	Pn	20 39 14.8	-3.7
PNIG				*i* S	Sn	20 39 36.3	-3.6

MEX 23 20:49:06.4±0.9, 17.32N×101.24W, h15km±23km, MD3.6, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
					Op ISC	h m s	ISC
ZIIG	**Zihuatanejo**	**0.36**	**322**	*i* P	Pb	20 49 12.9	-1.0
ZIIG				*i* S	Sb	20 49 17.4	-1.5
CAIG	**El Cayaco**	**0.96**	**106**	*i* P	Pb	20 49 20.8	-3.5
CAIG				*i* S	Sb	20 49 31.8	-4.8
ACX	**Acapulco**	**1.34**	**110**	*i* P	Pb	20 49 27.7	-3.0
PLIG	**Platanillo**	**1.96**	**57**	*i* P	Pn	20 50 34.0	+54
PLIG				*i* S	Sn	20 50 57.4	+53
PPM	**Popocatepetl**	**3.02**	**55**	*e*P	Pn	20 49 51.0	-3.7

*IDC **23** 21:29:27.8±2.3, 30.60N×142.01E, mb3.7/4, mb1 3.9/5, mb1mx3.6/19, ML3.2/1, MS2.6/1, Ms1 2.6/1, ms1mx2.4/25, Error ellipse: s-maj=99.0km s-min=20.4km az=72.0*
*JMA **23** 21:29:30.2±0.2, 30.62N×142.06E, h34km, M3.8*
ISC 23 21:29:31.0±1.6, 30.67N±0.09×142.1E±0.2, h38km±16km, n16, σ0§93/21, mb3.8/4, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
					Op ISC	h m s	ISC
JHJ2	**Mitsune**	**3.11**	**322**	P	**P**	**21 30 18.7**	**-0.1**
JHJ	**Hachijo jima 2**	**3.13**	**322**	Pn	**P**	**21 30 18.5**	**-0.6**
	7.4nm,0.3s,baz=255,slow=17,SNR=3.7						
JHJ				Sn	**S**	**21 30 56.2**	**+0.5**
	16nm,0.3s,baz=252,slow=20,SNR=3.4						
BSO1	**Boso 1**	**4.08**	**347**	P	**P**	**21 30 32.2**	**-0.4**
BSO1				*e*S	**S**	**21 31 20.0**	**+0.2**
BSO3	**Boso 3**	**4.33**	**343**	P	**P**	**21 30 37.1**	**+1.0**
BSO4	**Boso 4**	**4.55**	**342**	P	**P**	**21 30 41.6**	**+2.3**
JOD2	**Odawara 2**	**5.23**	**332**	P	**P**	**21 30 50.0**	**+1.2**
JHU	**Hanno**	**5.67**	**336**	P	**P**	**21 30 54.9**	**-0.1**
JHU				*e*S	**S**	**21 31 57.8**	**-2.1**
JRY	**Ryogami san**	**5.96**	**334**	P	**P**	**21 30 59.2**	**+0.2**
JRY				*e*S	**S**	**21 32 07.4**	**+0.4**
JHO	**Hitachi**	**6.06**	**348**	P	**P**	**21 30 58.8**	**-1.6**
JHO				*e*S	**S**	**21 32 04.1**	**-5.3**
JAG	**Ashikaga**	**6.14**	**340**	P	**P**	**21 31 01.2**	**-0.4**
MAT	**Matsushiro**	**6.69**	**332**	P	**P**	**21 31 09.5**	**+0.2**
MAT				S	**S**	**21 32 24.5**	**-0.7**
JOW	**Kunigami**	**12.71**	**256**	LR	LR	21 36 34.8	
	comp=Z,28nm,19.8s,baz=330,slow=34						
MKAR	**Makanchi Array**	**48.20**	**307**	P	**P**	**21 38 10.5**	**+0.9**
	0.5nm,0.6s,mb3.8,baz=95,slow=9.7,SNR=6.9						
WRA	**Warramunga Arr**	**50.87**	**189**	P	**P**	**21 38 29.7**	**-0.8**
	0.8nm,0.4s,mb4.0,baz=5.5,slow=7.5,SNR=25						
ASAR	**Alice Springs**	**54.60**	**189**	P	**P**	**21 38 57.5**	**-0.6**
	0.3nm,0.7s,mb3.5,baz=7.8,slow=7.1,SNR=5.8						
FINES	**FINESS Array B**	**74.72**	**333**	P	**P**	**21 41 08.9**	**+0.8**
	1.2nm,0.9s,mb3.8,baz=90,slow=2.8,SNR=3.3						

*IDC **23** 21:42:50.6±0.8, 53.28N×35.33W, mb4.0/7, mb1 4.2/9, mb1mx3.9/22, ML2.9/2, Error ellipse: s-maj=37.9km s-min=16.5km az=176.0*
*NEIC **23** 21:42:52.1±0.6, 53.49N×35.33W, h10km, Error ellipse: s-maj=19.2km s-min=10.5km az=170.0*
ISC 23 21:42:50.4±0.7, 53.5N±0.2×35.3W±0.1, h10km, n12, σ0§94/10, mb4.0/7, Reykjanes Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
					Op ISC	h m s	ISC
BORG	**Borgarnes**	**13.38**	**27**	P	**P**	**21 45 59.9**	**-2.8**
SCHQ	**Schefferville**	**18.43**	**287**	P	**P**	**21 47 07.4**	**0.0**
	0.1nm,0.3s,baz=113,slow=13,SNR=5.3						
EKA	**Eskdalemuir Ar**	**18.74**	**71**	P	**P**	**21 47 11.4**	**+0.2**
	0.1nm,0.3s,baz=282,slow=12,SNR=4.3						
ESDC	**Sonseca Array**	**25.35**	**110**	P	**P**	**21 48 17.9**	**-0.9**
	8.4nm,1.2s,mb4.1,baz=310,slow=9.3,SNR=11						
GERES	**GERESS Array B**	**30.61**	**78**	P	**P**	**21 49 06.8**	**+0.4**
	1.0nm,0.9s,mb3.6,baz=309,slow=8.5,SNR=6.6						
BRTR	**Keskin Array B**	**47.50**	**78**	P	**P**	**21 51 28.2**	**+1.1**
	1.6nm,1.0s,mb3.9,baz=307,slow=6.2,SNR=9.4						
PDAR	**Pinedale Array**	**48.55**	**289**	P	**P**	**21 51 36.7**	**+1.4**
	0.8nm,1.0s,mb3.7,baz=61,slow=9.3,SNR=4.4						
TXAR	**Lajitas Array**	**54.31**	**272**	P	**P**	**21 52 18.1**	**-0.7**
	2.5nm,1.3s,mb4.0,baz=76,slow=5.2,SNR=5.0						
ROSC	**El Rosal**	**57.95**	**228**	P	**P**	**21 52 44.7**	**-0.6**
	9.2nm,0.4s,mb4.7,baz=61,slow=19,SNR=2.5						
MKAR	**Makanchi Array**	**66.94**	**41**	P	**P**	**21 53 45.0**	**+0.3**
	1.7nm,1.1s,mb4.0,baz=346,slow=5.0,SNR=3.6						
WRA	**Warramunga Arr**	**145.62**	**17**	PKPbc	PKPbc	22 02 30.3	+0.9
	1.1nm,0.9s,baz=357,slow=3.6,SNR=5.5						
ASAR	**Alice Springs**	**149.17**	**20**	PKPbc	PKPdf	22 02 40.0	+2.5
	1.0nm,0.8s,baz=341,slow=2.3,SNR=5.2						

*IDC **23** 21:45:18.3±1.5, 53.27N×34.86W, mb3.1/4, mb1 3.4/4, mb1mx3.3/21, Error ellipse: s-maj=67.8km s-min=27.8km az=16.0*
ISC 23 21:45:18.6±1.3, 53.2N±0.4×35.0W±0.3, h10km, n5, σ0§31/4, mb3.2/4, Reykjanes Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
					Op ISC	h m s	ISC
ESDC	**Sonseca Array**	**25.05**	**110**	P	**P**	**21 50 44.0**	**-0.2**
	0.1nm,0.3s,mb2.8,baz=348,slow=12,SNR=2.7						
BRTR	**Keskin Array B**	**47.32**	**78**	P	**P**	**21 53 54.1**	**+0.2**
	0.5nm,0.8s,mb3.5,baz=297,slow=6.4,SNR=3.6						
ILAR	**Eielson Array**	**51.27**	**329**	P	**P**	**21 54 23.9**	**-0.1**
	0.9nm,1.0s,mb3.2,baz=41,slow=8.3,SNR=3.1						
TXAR	**Lajitas Array**	**54.55**	**273**	P	**P**	**21 54 49.0**	**+0.1**
	0.2nm,0.8s,mb3.2,baz=55,slow=11,SNR=3.1						
ASAR	**Alice Springs**	**149.30**	**20**	PKPbc	PKPdf	22 05 05.8	-0.1
	0.5nm,0.7s,baz=346,slow=2.3,SNR=5.1						

*IDC **23** 21:45:29.9±1.3, 53.48N×34.75W, mb3.6/5, mb1 3.9/5, mb1mx3.6/21, Error ellipse: s-maj=58.3km s-min=23.2km az=13.0*
ISC 23 21:45:30.0±1.2, 53.5N±0.3×34.8W±0.3, h10km, n7, σ0§09/5, mb3.5/5, Reykjanes Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
					Op ISC	h m s	ISC
ESDC	**Sonseca Array**	**25.05**	**111**	P	**P**	**21 50 55.6**	**+0.1**
	1.3nm,0.8s,mb3.5,baz=313,slow=9.7,SNR=5.9						
GERES	**GERESS Array B**	**30.28**	**79**	P	**P**	**21 51 43.1**	**-0.1**
	0.4nm,0.8s,mb3.2,baz=263,slow=7.9,SNR=3.0						
BRTR	**Keskin Array B**	**47.17**	**78**	P	**P**	**21 54 04.2**	**0.0**
	1.0nm,0.8s,mb3.8,baz=315,slow=7.0,SNR=5.1						
ILAR	**Eielson Array**	**51.11**	**329**	P	**P**	**21 54 34.2**	**+0.1**
	0.5nm,0.9s,mb3.4,baz=50,slow=5.4,SNR=4.2						
TXAR	**Lajitas Array**	**54.63**	**273**	P	**P**	**21 55 00.9**	**-0.1**
	0.5nm,0.8s,mb3.6,baz=59,slow=5.3,SNR=5.6						
WRA	**Warramunga Arr**	**145.50**	**18**	PKPbc	PKPbc	22 05 08.8	0.0
	0.4nm,0.7s,baz=344,slow=3.6,SNR=4.9						
ASAR	**Alice Springs**	**149.03**	**20**	PKPbc	PKPdf	22 05 17.2	+0.3
	1.0nm,0.8s,baz=350,slow=2.6,SNR=5.9						

*IDC **23** 21:47:32.2±0.7, 53.34N×35.27W, mb4.0/14, mb1 4.1/16, mb1mx4.1/24, ML3.2/2, MS4.1/10, Ms1 4.1/10, ms1mx3.8/28, Error ellipse: s-maj=22.2km s-min=14.0km az=180.0*
*NEIC **23** 21:47:33.1±0.5, 53.31N×35.11W, h10km, mb4.3/14, MS4.3/1, Error ellipse: s-maj=15.7km s-min=7.5km az=188.0*
ISC 23 21:47:31.4±0.5, 53.33N±0.10×35.12W±0.08, h10km, n47, σ1§08/38, mb4.0/27, MS4.2/11, Reykjanes Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
					Op ISC	h m s	ISC
SCHQ	**Schefferville**	**18.59**	**287**	P	**P**	**21 51 48.2**	**-2.1**
	0.3nm,0.3s,baz=86,slow=11,SNR=7.2						
EKA	**Eskdalemuir Ar**	**18.66**	**71**	P	**P**	**21 51 51.7**	**+0.5**
	0.1nm,0.3s,baz=280,slow=10,SNR=4.5						
SUMG	**Summit**	**19.37**	**357**	P	**P**	**21 51 58.9**	**-0.6**
QUIF	**Quistinic**	**20.87**	**92**	*e*P	**P**	**21 52 14.4**	**-1.4**
	98nm,1.5s						
SGMF	**Saint Gilles**	**21.08**	**91**	*e*P	**P**	**21 52 16.9**	**-1.1**
	18nm,0.9s,mb4.1						
GRR	**Gorron**	**22.04**	**89**	*e*P	**P**	**21 52 27.2**	**-0.4**
	18nm,1.0s,mb4.2						
FLN	**La Foliniere**	**22.11**	**88**	*e*P	**P**	**21 52 27.8**	**-0.5**
	33nm,1.2s,mb4.3						
LDF	**La Druitiere**	**22.40**	**88**	*e*P	**P**	**21 52 31.2**	**0.0**
	8.7nm,0.7s,mb4.0						
MFF	**Saint Martin d**	**23.30**	**93**	*e*P	**P**	**21 52 38.9**	**-1.1**
	70nm,1.5s,mb4.6						
BAIF	**Baives**	**24.38**	**82**	*e*P	**P**	**21 52 49.8**	**-0.6**
	26nm,1.2s,mb4.2						
TCF	**Toulx Ste Croi**	**24.87**	**91**	*e*P	**P**	**21 52 54.3**	**-0.9**
BGF	**Bois d'Agland**	**25.12**	**90**	*e*P	**P**	**21 52 57.1**	**-0.4**
	16nm,0.8s,mb4.3						
ESDC	**Sonseca Array**	**25.19**	**110**	P	**P**	**21 52 59.3**	**+1.1**
	2.1nm,0.8s,mb3.7,baz=315,slow=8.7,SNR=8.0						
SSF	**Saint Saulge**	**25.27**	**89**	*e*P	**P**	**21 52 57.7**	**-1.2**
	6.6nm,0.8s,mb3.9						
AVF	**Avril sur Loir**	**25.31**	**89**	*e*P	**P**	**21 52 59.5**	**+0.2**
	12nm,1.0s,mb4.1						
MEZF	**Maizieres J'vi**	**25.53**	**85**	*e*P	**P**	**21 53 02.6**	**+1.2**
	20nm,0.8s,mb4.4						
SMF	**Signal de Mont**	**25.67**	**89**	*e*P	**P**	**21 53 02.2**	**-0.5**
	21nm,1.1s,mb4.3						
NOA	**NORSAR Array B**	**25.77**	**54**	P	**P**	**21 53 04.4**	**+1.0**
	2.0nm,0.9s,mb3.7,baz=276,slow=10,SNR=4.4						
HAU	**Haudompre**	**26.53**	**85**	*e*P	**P**	**21 53 09.8**	**-0.8**
CDF	**Champ du Feu**	**26.90**	**83**	*e*P	**P**	**21 53 13.4**	**-0.6**
	2.4nm,0.7s,mb3.5						
VIVF	**Saint-Julien-l**	**27.09**	**92**	*e*P	**P**	**21 53 13.7**	**-2.2**
	1.8nm,0.6s,mb3.5						
GERES	**GERESS Array B**	**30.50**	**78**	P	**P**	**21 53 48.2**	**+1.7**
	1.5nm,1.0s,mb3.8,baz=292,slow=7.2,SNR=7.1						
MORC	**Moravsky Berou**	**32.32**	**75**	*e*P	**P**	**21 54 02.6**	**+0.2**
FINES	**FINESS Array B**	**32.80**	**51**	P	**P**	**21 54 08.1**	**+1.6**
	1.3nm,0.7s,mb4.0,baz=326,slow=10.0,SNR=4.2						
OJC	**Ojcow**	**33.42**	**73**	*e*P	**P**	**21 54 14.4**	**+2.4**
OJC				*e*S	x	21 57 22.1	
OJC				MLR	MLR	22 07 05.3	
	comp=Z,600nm,20.3s,MS4.3						
ULM	**Lac du Bonnet**	**36.72**	**290**	P	**P**	**21 54 40.8**	**+0.7**
	5.0nm,0.8s,mb4.4,baz=58,slow=5.6,SNR=3.6						
INK	**Inuvik**	**44.74**	**329**	P	**P**	**21 55 45.0**	**-1.0**
	1.2nm,1.0s,mb3.7,baz=27,slow=2.3,SNR=2.4						
BRTR	**Keskin Array B**	**47.39**	**78**	P	**P**	**21 56 09.3**	**+2.0**
	2.8nm,0.8s,mb4.2,baz=307,slow=4.5,SNR=15						
PDAR	**Pinedale Array**	**48.71**	**289**	P	**P**	**21 56 16.8**	**-0.8**
	0.8nm,0.5s,mb4.0,baz=59,slow=8.8,SNR=3.6						
PDAR				LR	LR	22 15 14.5	
	comp=Z,406nm,21.5s,MS4.4,baz=54,slow=34						
PCRV	**Puerto La Cruz**	**49.14**	**220**	LR	LR	22 15 14.7	
	comp=Z,141nm,18.6s,MS4.0,baz=191,slow=34						
NEW	**Newport**	**49.38**	**299**	LR	LR	22 15 31.4	
	comp=Z,470nm,21.5s,MS4.5,baz=143,slow=34						
ILAR	**Eielson Array**	**51.12**	**329**	P	**P**	**21 56 36.6**	**+0.9**
	1.0nm,0.8s,mb3.8,baz=24,slow=5.7,SNR=8.9						
BBB	**Bella Bella**	**52.32**	**309**	LR	LR	22 19 35.7	
	comp=Z,232nm,18.9s,MS4.2,baz=358,slow=37						
DBIC

BDFB	**Brasilia**	**69.58**	**193**	LR	LR	22 23 27.8			
	comp=Z,84nm,20.1s,MS4.0,baz=321,slow=31								
LPAZ	**La Paz**	**74.93**	**213**	P	**P**	**21 59 14.0**	**-0.3**		
	0.8nm,0.9s,mb3.7,baz=343,slow=11,SNR=1.9								
LPAZ	**La Paz**	**74.93**	**213**	P	**P**	**21 59 15.2**	**+0.8**		
CPUP	**Villa Florida**	**81.65**	**200**	LR	LR	22 30 37.2			
	comp=Z,62nm,19.0s,MS4.0,baz=231,slow=32								
WRA	**Warramunga Arr**	**145.69**	**18**	PKPbc	PKPbc	22 07 11.9	+1.2		
	1.4nm,0.9s,baz=350,slow=3.5,SNR=7.7								
ASAR	**Alice Springs**	**149.23**	**20**	PKPbc	PKPdf	22 07 21.1	+2.5		
	1.7nm,0.6s,baz=352,slow=2.3,SNR=12								

*IDC **23** 21:49:53.9±0.8,53.24N×35.40W,mb3.9/12,mb1 4.1/14, mb1mx4.0/24,ML3.0/2,MS4.1/9,Ms1 4.1/9,ms1mx3.8/28, Error ellipse: s-maj=25.0km s-min=15.2km az=5.0*
*NEIC **23** 21:49:55.2±0.3,53.21N×35.37W,h10km,mb4.5/23,Error ellipse: s-maj=10.1km s-min=4.1km az=190.0*
*ZUR_RM **23** 21:49:55,53.21N×35.37W,h9km,Mw4.8/7,Moment Tensor Solution. s7 Moment tensor: Scale 1016Nm; Mrr-2.27; Mθθ0.63; Mφφ1.64; Mrθ-0.31; Mθφ-0.24; Mφr-0.52; Best double couple: M0:2.06×1016 NP1:φs357°,δ52°,λ-80°. NP2:φs161°,δ39°,λ-102°. Principal axes: T 1.74, Plg6°, Azm80°; N .636, Plg8°, Azm171°; P -2.376, Plg80°, Azm310°:*

ISC 23 21:49:53.5±0.4,53.22N±0.10×35.37W±0.07,h10km,n55, σ0=72/48,mb4.2/34,MS4.1/7,Reykjanes Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
BORG	**Borgarnes**	**13.59**	**26**	LR		LR	LR	21 56 36.1	
	comp=Z,436nm,21.4s,baz=21,slow=30								
SCHQ	**Schefferville**	**18.48**	**288**	P		**P**	**P**	**21 54 09.8**	**-1.3**
	0.2nm,0.3s,baz=79,slow=9.2,SNR=5.0								
SCHQ				LR		LR	LR	22 00 19.0	
	comp=Z,429nm,21.1s,baz=100,slow=34								
SCHQ	**Schefferville**	**18.48**	**288**	P		**P**	**P**	**21 54 09.8**	**-1.4**
SCHQ				LR		LR	LR	22 00 19.0	
EKA	**Eskdalemuir Ar**	**18.84**	**71**	P		**P**	**P**	**21 54 13.4**	**-2.1**
	0.1nm,0.3s,baz=270,slow=12,SNR=3.7								
SUMG	**Summit**	**19.48**	**357**	*eP*		**P**	**P**	**21 54 22.9**	**0.0**
ROSF	**Rostrenen**	**20.77**	**91**	*eP*		**P**	**P**	**21 54 36.7**	**-0.2**
	32nm,1.1s								
QUIF	**Quistinic**	**21.02**	**92**	*eP*		**P**	**P**	**21 54 39.1**	**-0.4**
	76nm,1.4s,mb4.5								
SGMF	**Saint Gilles**	**21.23**	**90**	*eP*		**P**	**P**	**21 54 41.3**	**-0.4**
	23nm,1.0s,mb4.2								
JMIC	**Jan Mayen**	**21.46**	**24**	LR		LR	LR	22 00 38.8	
	comp=Z,555nm,21.2s,MS3.9,baz=215,slow=30								
GRR	**Gorron**	**22.20**	**89**	*eP*		**P**	**P**	**21 54 51.3**	**0.0**
	26nm,1.1s,mb4.3								
FLN	**La Foliniere**	**22.27**	**87**	*eP*		**P**	**P**	**21 54 52.5**	**+0.5**
	98nm,1.5s,mb4.7								
LDF	**La Druitiere**	**22.55**	**88**	*eP*		**P**	**P**	**21 54 55.2**	**+0.5**
	115nm,1.6s,mb4.7								
MFF	**Saint Martin d**	**23.45**	**92**	*eP*		**P**	**P**	**21 55 03.6**	**+0.1**
	51nm,1.4s,mb4.5								
EVO	**Evora**	**23.86**	**117**	*eP*		**P**	**P**	**21 55 06.3**	**-1.3**
	10nm,1.0s,mb3.9								
BAIF	**Baives**	**24.55**	**81**	*eP*		**P**	**P**	**21 55 14.3**	**+0.1**
	26nm,1.2s,mb4.3								
TCF	**Toulx Ste Croi**	**25.02**	**91**	*eP*		**P**	**P**	**21 55 19.1**	**+0.3**
	70nm,1.7s,mb4.6								
BGF	**Bois d'Agland**	**25.27**	**90**	*eP*		**P**	**P**	**21 55 21.3**	**+0.2**
	22nm,0.8s,mb4.4								
ESDC	**Sonseca Array**	**25.29**	**110**	P		**P**	**P**	**21 55 21.5**	**+0.1**
	1.6nm,0.7s,mb3.6,baz=316,slow=8.4,SNR=8.1								
ESDC				LR		LR	LR	22 03 18.9	
	comp=Z,596nm,18.2s,MS4.1,baz=315,slow=32								
SSF	**Saint Saulge**	**25.43**	**88**	*eP*		**P**	**P**	**21 55 22.5**	**-0.1**
	21nm,1.1s,mb4.3								
AVF	**Avril sur Loir**	**25.46**	**89**	*eP*		**P**	**P**	**21 55 22.8**	**-0.1**
	47nm,1.3s,mb4.6								
EPF	**Esparros**	**25.67**	**99**	*eP*		**P**	**P**	**21 55 24.5**	**-0.4**
MEZF	**Maizieres J'vi**	**25.69**	**84**	*eP*		**P**	**P**	**21 55 24.9**	**-0.2**
	20nm,0.8s,mb4.4								
SMF	**Signal de Mont**	**25.83**	**89**	*eP*		**P**	**P**	**21 55 26.7**	**+0.4**
	67nm,1.8s,mb4.6								
NOA	**NORSAR Array B**	**25.96**	**54**	P		**P**	**P**	**21 55 27.7**	**+0.3**
	1.9nm,0.8s,mb3.7,baz=276,slow=9.9,SNR=3.3								
NOA				LR		LR	LR	22 03 45.9	
	comp=Z,364nm,18.0s,MS4.0,baz=285,slow=32								
MTLF	**Montolieu**	**26.61**	**96**	*eP*		**P**	**P**	**21 55 33.6**	**0.0**
	23nm,1.2s,mb4.3								
HAU	**Haudompre**	**26.69**	**84**	*eP*		**P**	**P**	**21 55 34.1**	**-0.2**
	21nm,1.0s,mb4.3								
CDF	**Champ du Feu**	**27.06**	**83**	*eP*		**P**	**P**	**21 55 37.9**	**+0.2**
HINF	**Hinteralfeld**	**27.08**	**84**	*eP*		**P**	**P**	**21 55 38.0**	**+0.2**
CABF	**La Chapelle**	**27.20**	**87**	*eP*		**P**	**P**	**21 55 38.9**	**0.0**
	37nm,1.4s,mb4.4								
MOX	**Moxa**	**28.68**	**76**	*i P*		**P**	**P**	**21 55 52.4**	**+0.1**
MOX				L				22 06 49.0	
GRA1	**Grafenberg Arr**	**28.84**	**78**	*eP*		**P**	**P**	**21 55 54.1**	**+0.3**
	84nm,3.5s								
CLL	**Collm**	**29.23**	**74**	P		**P**	**P**	**21 55 57.2**	**0.0**
SADO	**Sadowa**	**29.53**	**271**	LR		LR	LR	22 06 50.6	
	comp=Z,850nm,19.9s,MS4.4,baz=75,slow=34								
GERES	**GERESS Array B**	**30.68**	**78**	P		**P**	**P**	**21 56 10.6**	**+0.5**
	0.9nm,0.8s,mb3.7,baz=315,slow=7.5,SNR=9.7								
FINES	**FINESS Array B**	**32.98**	**51**	P		**P**	**P**	**21 56 29.2**	**-1.0**
	1.6nm,0.8s,mb4.0,baz=297,slow=3.1,SNR=4.7								
FINES	**FINESS Array B**	**32.98**	**51**	P		**P**	**P**	**21 56 29.2**	**-1.0**
MIAR	**Mount Ida**	**44.55**	**269**	*eP*		**P**	**P**	**21 58 07.5**	**+0.4**
	8.3nm,1.1s,mb4.5								
INK	**Inuvik**	**44.76**	**328**	P		**P**	**P**	**21 58 07.5**	**-0.7**
	3.3nm,1.1s,mb4.1,baz=67,slow=14,SNR=3.2								
INK	**Inuvik**	**44.76**	**328**	*eP*		**P**	**P**	**21 58 08.1**	**-0.1**
	9.9nm,1.4s,mb4.5								
BRTR	**Keskin Array B**	**47.57**	**77**	P		**P**	**P**	**21 58 32.2**	**+1.4**
	2.4nm,0.8s,mb4.3,baz=307,slow=6.2,SNR=15								
BRTR				LR		LR	LR	22 17 37.4	
	comp=Z,194nm,18.4s,MS4.1,baz=245,slow=35								
BW06	**Boulder Array**	**48.61**	**289**	*eP*		**P**	**P**	**21 58 37.8**	**-1.1**
	2.8nm,1.0s,mb4.2								
PDAR	**Pinedale Array**	**48.61**	**289**	P		**P**	**P**	**21 58 39.2**	**+0.3**
	0.8nm,0.5s,mb4.0,baz=60,slow=7.6,SNR=5.7								
DAWY	**Dawson**	**49.19**	**326**	*eP*		**P**	**P**	**21 58 43.6**	**+0.5**
HWUT	**Hardware Ranch**	**50.49**	**289**	*eP*		**P**	**P**	**21 58 52.5**	**-0.9**
	4.5nm,0.8s,mb4.5								
HLID	**Hailey**	**50.82**	**293**	*eP*		**P**	**P**	**21 58 57.6**	**+1.7**
	2.7nm,1.0s,mb4.1								
ILAR	**Eielson Array**	**51.14**	**329**	P		**P**	**P**	**21 58 59.3**	**+1.3**
	0.9nm,0.9s,mb3.7,baz=34,slow=6.5,SNR=7.1								
DBIC	**Dimbokro**	**52.64**	**141**	P		**P**	**P**	**21 59 09.8**	**-0.2**
	3.0nm,0.8s,mb4.3,baz=277,slow=8.7,SNR=4.0								
TXAR	**Lajitas Array**	**54.30**	**272**	P		**P**	**P**	**21 59 20.8**	**-1.2**
	0.1nm,0.3s,mb3.2,baz=27,slow=6.0,SNR=5.1								
ROSC	**El Rosal**	**57.78**	**228**	LR		LR	LR	22 18 40.1	
	comp=Z,111nm,21.7s,MS3.9,baz=57,slow=30								
ZAL	**Zalesovo**	**62.25**	**35**	LR		LR	LR	22 26 09.7	
	comp=Z,102nm,19.7s,MS4.0,baz=74,slow=35								
MKAR	**Makanchi Array**	**67.12**	**41**	P		**P**	**P**	**22 00 48.7**	**-0.3**
	1.7nm,0.8s,mb4.2,baz=332,slow=5.6,SNR=12								
ULN	**Ulaanbaatar**	**74.35**	**25**	*eP*		**P**	**P**	**22 01 33.3**	**+0.9**
	10nm,1.5s,mb4.5								
LPAZ	**La Paz**	**74.75**	**213**	P		**P**	**P**	**22 01 36.9**	**+1.4**
	0.6nm,0.9s,mb3.5,baz=82,slow=7.1,SNR=2.3								
WRA	**Warramunga Arr**	**145.84**	**17**	PKPbc	PKPbc	22 09 34.1	+0.9		
	1.7nm,0.9s,baz=346,slow=3.6,SNR=8.9								
ASAR	**Alice Springs**	**149.39**	**20**	PKPbc	PKPdf	22 09 43.9	+2.9		
	1.8nm,0.6s,baz=350,slow=2.5,SNR=18								

*IDC **23** 21:51:34.1±0.8,53.52N×34.87W,mb3.6/6,mb1 3.9/6, mb1mx3.7/20,Error ellipse: s-maj=31.7km s-min=22.9km az=0.0*
*NEIC **23** 21:51:35.6±0.7,53.42N×34.78W,h10km,mb4.2/6,Error ellipse: s-maj=25.5km s-min=12.1km az=192.0*

ISC 23 21:51:34.4±0.8,53.5N±0.2×34.8W±0.2,h10km,n16, σ0=84/14,mb3.8/12,Reykjanes Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
BAIF	**Baives**	**24.17**	**82**	*eP*		**P**	**P**	**21 56 51.4**	**0.0**
	7.1nm,0.9s,mb3.8								
TCF	**Toulx Ste Croi**	**24.68**	**92**	*eP*		**P**	**P**	**21 56 56.8**	**+0.4**
	32nm,1.5s,mb4.3								
ESDC	**Sonseca Array**	**25.05**	**111**	P		**P**	**P**	**21 56 59.7**	**-0.2**
	1.0nm,0.9s,mb3.4,baz=344,slow=9.3,SNR=4.1								
SSF	**Saint Saulge**	**25.07**	**89**	*eP*		**P**	**P**	**21 57 00.0**	**-0.1**
	12nm,1.1s,mb4.0								
AVF	**Avril sur Loir**	**25.12**	**90**	*eP*		**P**	**P**	**21 57 00.4**	**-0.1**
	7.3nm,1.0s,mb3.9								
MEZF	**Maizieres J'vi**	**25.33**	**85**	*eP*		**P**	**P**	**21 57 02.1**	**-0.4**
	12nm,0.9s,mb4.2								
HAU	**Haudompre**	**26.33**	**85**	*eP*		**P**	**P**	**21 57 11.1**	**-0.7**
INK	**Inuvik**	**44.74**	**329**	P		**P**	**P**	**21 59 51.0**	**+2.0**
	5.5nm,1.3s,mb4.2								
BRTR	**Keskin Array B**	**47.18**	**78**	P		**P**		**22 00 09.9**	**+1.3**
	1.0nm,0.9s,mb3.8,baz=315,slow=3.5,SNR=4.6								
ILAR	**Eielson Array**	**51.12**	**329**	P		**P**		**22 00 37.6**	**-1.1**
	0.6nm,1.0s,mb3.5,baz=30,slow=7.3,SNR=3.6								
TXAR	**Lajitas Array**	**54.63**	**273**	P		**P**		**22 01 04.2**	**-1.1**
	0.5nm,0.8s,mb3.6,baz=59,slow=10,SNR=3.9								
MKAR	**Makanchi Array**	**66.72**	**42**	P		**P**		**22 02 26.9**	**-0.4**
	0.7nm,0.8s,mb3.8,baz=333,slow=5.2,SNR=4.5								
MKAR	**Makanchi Array**	**66.72**	**42**	P		**P**		**22 02 26.9**	**-0.4**
LPAZ	**La Paz**	**75.14**	**213**	P		**P**		**22 03 19.4**	**+0.8**
	0.6nm,0.8s,mb3.5,baz=28,slow=17,SNR=2.6								
WRA	**Warramunga Arr**	**145.52**	**18**	PKPbc	PKPbc	22 11 12.1	-1.2		
	0.8nm,0.7s,baz=343,slow=3.0,SNR=7.4								
ASAR	**Alice Springs**	**149.05**	**20**	PKPbc	PKPdf	22 11 22.1	+0.8		
	1.6nm,0.6s,baz=352,slow=2.5,SNR=15								

*IDC **23** 21:51:46.3±0.8,53.33N×35.18W,mb3.8/9,mb1 4.1/10, mb1mx3.9/23,ML2.4/1,Error ellipse: s-maj=32.3km s-min=17.7km az=8.0*
*NEIC **23** 21:51:47.7±0.6,53.36N×35.21W,h10km,mb4.4/2,Error ellipse: s-maj=23.3km s-min=11.2km az=184.0*

ISC 23 21:51:46.2±0.6,53.4N±0.2×35.2W±0.1,h10km,n16, σ0=86/14,mb3.9/11,Reykjanes Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
SCHQ	**Schefferville**	**18.51**	**287**	P		**P**		**21 56 02.3**	**-1.9**
	0.1nm,0.3s,baz=88,slow=16,SNR=3.0								
ESDC	**Sonseca Array**	**25.26**	**110**	P		**P**		**21 57 13.4**	**-0.4**
	4.0nm,1.0s,mb3.9,baz=312,slow=9.6,SNR=7.0								
CLL	**Collm**	**29.09**	**74**	P		**P**		**21 57 48.0**	**-0.6**
GERES	**GERESS Array B**	**30.55**	**78**	P		**P**		**21 58 01.2**	**-0.5**
	0.9nm,0.8s,mb3.6,baz=281,slow=6.8,SNR=5.7								
MIAR	**Mount Ida**	**44.65**	**269**	P		**P**		**22 00 01.1**	**+0.7**
	12nm,1.2s,mb4.6								
INK	**Inuvik**	**44.67**	**328**	P		**P**		**22 00 00.7**	**+0.5**
	2.0nm,0.9s,mb3.9,baz=70,slow=12,SNR=3.4								
INK	**Inuvik**	**44.67**	**328**	P		**P**		**22 00 00.7**	**+0.5**
BRTR	**Keskin Array B**	**47.44**	**78**	P		**P**		**22 00 23.4**	**+0.9**
	2.0nm,0.9s,mb4.0,baz=307,slow=6.2,SNR=6.8								
PDAR	**Pinedale Array**	**48.64**	**289**	P		**P**		**22 00 31.4**	**-0.4**
	0.9nm,0.8s,mb3.9,baz=63,slow=9.9,SNR=3.7								
ILAR	**Eielson Array**	**51.05**	**329**	P		**P**		**22 00 51.0**	**+1.1**
	0.8nm,0.8s,mb3.7,baz=39,slow=6.5,SNR=4.4								
MNTX	**Cornudas Mount**	**53.70**	**276**	P		**P**		**22 01 09.3**	**-0.9**
	1.8nm,0.8s,mb4.0								
TXAR	**Lajitas Array**	**54.38**	**272**	P		**P**		**22 01 16.5**	**+1.3**
	1.0nm,0.9s,mb3.7,baz=83,slow=7.3,SNR=5.0								
MKAR	**Makanchi Array**	**66.94**	**41**	P		**P**		**22 02 40.1**	**-0.3**
	0.7nm,0.7s,mb3.8,baz=333,slow=5.4,SNR=4.5								
LPAZ	**La Paz**	**74.94**	**213**	P		**P**		**22 03 29.5**	**+0.4**
	0.9nm,0.8s,mb3.8,baz=37,slow=12,SNR=3.8								
WRA	**Warramunga Arr**	**145.66**	**18**	PKPbc	PKPbc	22 11 25.2	-0.2		
	1.5nm,1.0s,baz=346,slow=2.9,SNR=6.3								
ASAR	**Alice Springs**	**149.20**	**20**	PKPbc	PKPdf	22 11 35.2	+1.9		
	1.4nm,0.6s,baz=352,slow=2.5,SNR=7.8								

*BJI **23** 22:06:25.8,53.40N×35.30W,h10km,mB4.2,mb4.4,Ms4.4, Msz4.1*
*IDC **23** 22:06:27.2±0.6,53.32N×35.22W,mb4.0/13,mb1 4.1/15, mb1mx4.0/24,ML3.2/2,MS3.4/6,Ms1 3.4/6,ms1mx3.1/32, Error ellipse: s-maj=20.4km s-min=13.7km az=175.0*
*NEIC **23** 22:06:28.9±0.3,53.38N×35.27W,h10km,mb4.3/21,Error ellipse: s-maj=11.3km s-min=4.4km az=184.0*

ISC 23 22:06:27.2±0.3,53.40N±0.09×35.28W±0.06,h10km,n58, σ0=83/53,mb4.2/35,MS3.5/6,Reykjanes Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
SCHQ	**Schefferville**	**18.48**	**287**	P		**P**		**22 10 43.5**	**-1.3**
	0.4nm,0.3s,baz=91,slow=8.9,SNR=9.5								
SCHQ				LR		LR		22 16 28.4	
	comp=Z,103nm,21.3s,baz=158,slow=32								
EKA	**Eskdalemuir Ar**	**18.73**	**71**	P		**P**		**22 10 47.7**	**-0.2**
	0.1nm,0.3s,baz=274,slow=11,SNR=5.2								
ROSF	**Rostrenen**	**20.71**	**91**	*eP*		**P**		**22 11 10.2**	**+0.2**
	42nm,1.1s								
JMIC	**Jan Mayen**	**21.27**	**24**	LR		LR		22 17 11.0	
	comp=Z,96nm,20.9s,MS3.2,baz=245,slow=30								
FLN	**La Foliniere**	**22.20**	**88**	*eP*		**P**		**22 11 25.7**	**+0.7**
	37nm,1.2s,mb4.4								
FLN				*eR*					
	128nm,22.8s								
LDF	**La Druitiere**	**22.49**	**88**	*eP*		**P**		**22 11 28.3**	**+0.4**
	38nm,1.2s,mb4.4								
MFF	**Saint Martin d**	**23.40**	**93**	*eP*		**P**		**22 11 36.8**	**+0.1**
	21nm,1.1s,mb4.2								
EVO	**Evora**	**23.89**	**117**	*eP*		**P**		**22 11 39.6**	**-1.9**
	31nm,1.5s,mb4.2								
EVO				*eR*					
	116nm,21.2s								
BAIF	**Baives**	**24.47**	**82**	*eP*		**P**		**22 11 47.7**	**+0.7**
	13nm,0.9s,mb4.0								
TCF	**Toulx Ste Croi**	**24.97**	**91**	*eP*		**P**		**22 11 51.4**	**-0.5**
	15nm,1.2s,mb4.1								
BGF	**Bois d'Agland**	**25.22**	**90**	*eP*		**P**		**22 11 54.5**	**+0.2**
	8.8nm,0.7s,mb4.1								
ESDC	**Sonseca Array**	**25.30**	**110**	P		**P**		**22 11 54.7**	**-0.4**
	1.0nm,0.6s,mb3.5,baz=314,slow=8.7,SNR=12								
ESLA	**Sonseca Array**	**25.30**	**110**	P		**P**		**22 11 56.2**	**+1.1**
SSF	**Saint Saulge**	**25.36**	**89**	*eP*		**P**		**22 11 55.8**	**+0.1**
	12nm,1.0s,mb4.1								
AVF	**Avril sur Loir**	**25.41**	**89**	*eP*		**P**		**22 11 56.1**	**+0.1**
	26nm,1.1s,mb4.4								
MEZF	**Maizieres J'vi**	**25.62**	**85**	*eP*		**P**		**22 11 58.2**	**+0.2**
	16nm,0.7s,mb4.4								
SMF	**Signal de Mont**	**25.77**	**89**	*eP*		**P**		**22 11 59.8**	**+0.4**
	13nm,0.9s,mb4.1								
NB2	**NORSAR Subarra**	**25.81**	**54**	P		**P**		**22 11 59.6**	**-0.1**
	2.9nm,0.9s,mb3.8,baz=276,slow=10								
NOA	**NORSAR Array B**	**25.81**	**54**	P		**P**		**22 11 59.9**	**+0.2**
	1.4nm,0.8s,mb3.5,baz=277,slow=9.8,SNR=3.7								
NOA				LR		LR		22 21 08.9	
	comp=Z,58nm,18.2s,MS3.1,baz=270,slow=34								
MTLF	**Montolieu**	**26.58**	**97**	*eP*		**P**		**22 12 07.1**	**+0.2**
	8.0nm,0.9s,mb4.0								
HAU	**Haudompre**	**26.62**	**85**	*eP*		**P**		**22 12 07.3**	**0.0**
HAU				*eR*					
	137nm,18.8s								
HINF	**Hinteralfeld**	**27.01**	**85**	*eP*		**P**		**22 12 10.9**	**+0.1**
CLL	**Collm**	**29.12**	**74**	P		**P**		**22 12 30.0**	**0.0**
SADO	**Sadowa**	**29.58**	**271**	LR		LR		22 23 22.3	
	comp=Z,134nm,19.6s,MS3.6,baz=221,slow=34								
GERES	**GERESS Array B**	**30.59**	**78**	P		**P**		**22 12 43.0**	**0.0**
	1.2nm,0.8s,mb3.8,baz=281,slow=6.8,SNR=8.7								
FCC	**Fort Churchill**	**32.31**	**303**	P		**P**		**22 12 56.3**	**-1.8**
	4.1nm,0.8s,mb4.3								
FINES	**FINESS Array B**	**32.83**	**51**	P		**P**		**22 13 00.8**	**-1.7**
	2.7nm,1.0s,mb4.1,baz=225,slow=5.4,SNR=5.3								
FINES				LR		LR		22 24 06.3	
	comp=Z,76nm,18.5s,MS3.4,baz=297,slow=32								
ULM	**Lac du Bonnet**	**36.60**	**290**	LR		LR		22 27 12.9	
	comp=Z,67nm,19.6s,MS3.4,baz=27,slow=34								
KSU1	**Kansas State U**	**43.40**	**276**	*eP*		**P**		**22 14 32.2**	**+0.9**
MIAR	**Mount Ida**	**44.61**	**269**	*eP*		**P**		**22 14 41.3**	**+0.1**
	6.3nm,1.0s,mb4.4								
INK	**Inuvik**	**44.64**	**328**	P		**P**		**22 14 41.0**	**0.0**
	2.4nm,0.9s,mb4.0,baz=108,slow=2.7,SNR=5.5								
INK	**Inuvik**	**44.64**	**328**	*eP*		**P**		**22 14 40.6**	**-0.4**
	3.2nm,0.9s,mb4.2								
WALA	**Waterton Lakes**	**47.09**	**298**	*eP*		**P**		**22 15 00.7**	**+0.1**
	5.2nm,1.5s,mb4.4								
BRTR	**Keskin Array B**	**47.48**	**78**	P		**P**		**22 15 04.7**	**+0.9**
	2.3nm,0.8s,mb4.2,baz=314,slow=5.3,SNR=18								
WMOK	**Wichita Mounta**	**47.60**	**274**	*eP*		**P**		**22 15 04.5**	**-0.3**
BOZ	**Bozeman (W)**	**47.94**	**293**	*eP*		**P**		**22 15 07.6**	**+0.2**
	2.7nm,0.8s,mb4.3								
ISCO	**Idaho Springs**	**48.25**	**284**	*eP*		**P**		**22 15 11.9**	**+2.1**
	2.2nm,0.7s,mb4.3								
PDAR	**Pinedale Array**	**48.60**	**289**	P		**P**		**22 15 12.1**	**-0.4**
	1.6nm,0.6s,mb4.2,baz=53,slow=8.2,SNR=9.3								
ARU	**Arti**	**49.94**	**46**	*eP*		**P**		**22 15 22.5**	**-0.1**
	1.8nm,0.8s,mb4.2								
HWUT	**Hardware Ranch**	**50.49**	**289**	*eP*		**P**		**22 15 26.9**	**-0.1**
	8.4nm,0.8s,mb4.8								
HWUT				*e*			pP	22 15 31.1	+1.0
ILAR	**Eielson Array**	**51.02**	**329**	P		**P**		**22 15 31.1**	**+0.4**
	0.7nm,0.7s,mb3.7,baz=44,slow=5.1,SNR=10.0								
DBIC	**Dimbokro**	**52.74**	**141**	P		**P**		**22 15 41.7**	**-2.7**
	2.4nm,0.9s,mb4.1,baz=293,slow=7.7,SNR=3.4								
MNTX	**Cornudas Mount**	**53.67**	**276**	P		**P**		**22 15 51.4**	**+0.4**
	2.0nm,1.0s,mb4.0								
TXAR	**Lajitas Array**	**54.34**	**272**	P		**P**		**22 15 57.2**	**+1.2**
	0.8nm,0.8s,mb3.7,baz=50,slow=7.0,SNR=6.4								
TXAR	**Lajitas Array**	**54.34**	**272**	P		**P**		**22 15 57.2**	**+1.2**
ZRNK	**Zerenda**	**56.76**	**45**	*eP*		**P**		**22 16 12.9**	**-0.2**
BVAR	**Borovoye Array**	**57.28**	**44**	P		**P**		**22 16 16.9**	**0.0**
	2.5nm,0.7s,mb4.4,baz=297,slow=6.6,SNR=18								
ROSC	**El Rosal**	**57.94**	**228**	P		**P**		**22 16 23.2**	**+1.2**
	14nm,0.6s,mb5.1,baz=96,slow=17,SNR=8.2								
MKAR	**Makanchi Array**	**66.96**	**41**	P		**P**		**22 17 21.2**	**-0.4**
	1.9nm,0.7s,mb4.2,baz=328,slow=5.6,SNR=18								
WMQ	**Urumqi**	**71.54**	**40**	*eP*		**P**		**22 17 52.0**	**+2.1**
LPAZ	**La Paz**	**74.93**	**213**	P		**P**		**22 18 08.8**	**-1.4**
	0.4nm,0.6s,mb3.5,baz=27,slow=17,SNR=2.4								
LPAZ	**La Paz**	**74.93**	**213**	P		**P**		**22 18 08.8**	**-1.4**
MDJ	**Mudanjiang**	**81.51**	**11**	P		**P**		**22 18 45.1**	**-0.5**
MDJ					AMB	AMB			
	comp=Z,4.0nm,0.5s,mb4.6								
CN2	**Changchun**	**81.78**	**14**	*eP*		**P**		**22 18 46.3**	**-0.7**
NJ2	**Nanjing**	**91.99**	**22**	*eP*		**P**		**22 19 36.4**	**-0.6**
SSE	**Sheshan**	**93.41**	**20**	P		**P**		**22 19 43.9**	**+0.3**
SSE					AP	pP		22 19 47.1	+0.3
SSE					S	S		22 30 48.8	+0.3
SSE					XS			22 30 55.1	
SSE					LR	LR			
	comp=N,58nm,24.4s,MS4.0								
SSE					LR	LR			
	comp=E,23nm,24.4s,MS4.0								
SSE					LR	LR			
	comp=Z,56nm,23.1s,MS4.0								
WRA	**Warramunga Arr**	**145.66**	**17**	PKPbc	PKPbc	22 26 06.9	+0.6		
	comp=Z,2.1nm,0.7s,baz=347,slow=3.4,SNR=21								
ASAR	**Alice Springs**	**149.20**	**20**	PKPbc	PKPdf	22 26 16.8	+2.4		
	comp=Z,3.1nm,0.6s,baz=351,slow=2.4,SNR=46								

*IDC **23** 22:41:04.9±1.3,39.83N×39.04E,mb3.6/6,mb1 3.7/9, mb1mx3.6/21,ML3.1/1,MS3.0/3,Ms1 3.0/3,ms1mx2.6/21, Error ellipse: s-maj=23.8km s-min=16.4km az=161.0,GNI timing error*
*NEIC **23** 22:41:05.1,39.93

CLL	**Collm**	**21.37**	**311**	*i*	**P**		**22 46 03.0**	**+7.3**
FINES	**FINESS Array B**	**22.98**	**344**	P	**P**		**22 46 11.8**	**+0.4**
	comp=Z,1.4nm,0.7s,mb3.5,baz=158,slow=10,SNR=10							
FINES	**FINESS Array B**	**22.98**	**344**	P	**P**		**22 46 11.9**	**+0.4**
FINES				pmax	pmax			
	comp=Z,1.0nm,0.7s							
ZRNK	**Zerenda**	**24.20**	**47**	*eP*	**P**		**22 46 22.0**	**-1.4**
BVAR	**Borovoye Array**	**25.01**	**48**	P	**P**		**22 46 31.5**	**+0.3**
	comp=Z,2.0nm,1.1s,mb3.6,baz=239,slow=8.6,SNR=7.0							
HFS	**Hagfors**	**25.69**	**330**	P	**P**		**22 46 36.7**	**-0.9**
	comp=Z,2.2nm,0.7s,mb3.8,baz=117,slow=13,SNR=4.0							
HFS	**Hagfors**	**25.69**	**330**	P	**P**		**22 46 36.7**	**-0.9**
HFS				pmax	pmax			
	comp=Z,2.0nm,0.7s							
NOA	**NORSAR Array B**	**27.21**	**330**	LR	LR		23 00 08.7	
	comp=Z,20nm,19.6s,MS2.7,baz=275,slow=42							
ARCES	**ARCESS Array B**	**30.54**	**351**	LR	LR		23 00 15.1	
	comp=Z,61nm,19.7s,MS3.3,baz=86,slow=38							
MKAR	**Makanchi Array**	**31.85**	**63**	P	**P**		**22 47 32.0**	**-1.2**
	comp=Z,1.0nm,0.9s,mb3.6,baz=294,slow=7.8,SNR=2.9							
MKAR	**Makanchi Array**	**31.85**	**63**	P	**P**		**22 47 32.0**	**-1.2**
MKAR				pmax	pmax			
	comp=Z,1.0nm,0.9s							
ESDC	**Sonseca Array**	**32.83**	**284**	P	**P**		**22 47 38.7**	**-3.0**
	comp=Z,0.8nm,0.7s,mb3.8,baz=67,slow=8.9,SNR=7.6							
BOD	**Bodaibo**	**49.69**	**43**	*eP*	**P**		**22 49 56.2**	**-3.6**

NEIC ***23*** *22:42:35.0±0.6, 6.72N×72.98W, h172km±6km, mb3.6/4, Error ellipse: s-maj=11.0km s-min=9.1km az=131.0*
IDC ***23*** *22:42:34.4±0.6, 6.73N×72.92W, h164km±6km, mb3.4/6, mb1 3.7/9, mb1mx3.5/20, Error ellipse: s-maj=17.8km s-min=6.9km az=133.0*
FUNV ***23*** *22:42:34.8, 6.82N×73.11W, h163km, MW3.4*

ISC 23 22:42:33.7±0.5, 6.81N±0.06×72.93W±0.05, h171km±5km, n27, σ1§06/31, mb3.6/9, 5C-1D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CAPV	**Capacho**	**1.21**	**30**	*i*↑*eP*		**P**	**22 43 03.5**	**+1.0**
CAPV				*e*S		**S**	**22 43 24.5**	**-0.3**
VIGV	**El Vigia**	**2.10**	**34**	*e*P		**P**	**22 43 17.8**	**+6.2**
VIGV				*e*S		**S**	**22 43 47.7**	**+6.9**
ROSC	**El Rosal**	**2.39**	**216**	P		**P**	**22 43 15.3**	**+0.2**
	142nm,0.3s,baz=299,slow=12,SNR=139							
ROSC				S		**S**	**22 43 46.2**	**-0.7**
	433nm,0.3s,baz=114,slow=19,SNR=16							
SOCV	**Socops**	**2.53**	**54**	*i*↑*eP*		**P**	**22 43 18.3**	**+1.5**
SOCV				*e*S		**S**	**22 43 48.1**	**-1.8**
SDV	**Santo Domingo**	**3.07**	**48**	P		**P**	**22 43 25.0**	**+1.5**
	60nm,0.3s,baz=223,slow=3.0,SNR=100							
SDV				S		**S**	**22 44 02.3**	**+0.6**
	58nm,0.3s,baz=273,slow=23,SNR=31							
ELOV	**Elorza**	**3.43**	**87**	*i*↑*eP*		**P**	**22 43 29.6**	**+1.6**
ELOV				*e*S		**S**	**22 44 09.0**	**-0.8**
VIRV	**Villa del Rosa**	**3.71**	**8**	*e*P		**P**	**22 43 30.2**	**-1.4**
VIRV				*e*S		**S**	**22 44 11.2**	**-4.9**
SIQV	**Siquisique**	**4.91**	**39**	↓*eP*		**P**	**22 43 47.3**	**+0.3**
BAUV	**El Baul**	**5.29**	**66**	*i*↑*eP*		**P**	**22 43 51.4**	**-0.6**
BAUV				*e*S		**S**	**22 44 50.0**	**-2.8**
CAOV	**Caicara del Or**	**6.58**	**85**	*i*↑*eP*		**P**	**22 44 08.4**	**-0.7**
PCRV	**Puerto La Cruz**	**8.86**	**67**	P		**P**	**22 44 41.6**	**+2.3**
	0.8nm,0.3s,baz=272,slow=9.8,SNR=15							
PCRV				S		**S**	**22 46 17.9**	**+0.5**
	0.5nm,0.3s,baz=241,slow=19,SNR=2.5							
LPAZ	**La Paz**	**23.44**	**168**	P		**P**	**22 47 29.2**	**+0.4**
	1.7nm,0.9s,mb3.5,baz=322,slow=17,SNR=4.8							
LPAZ	**La Paz**	**23.44**	**168**	*e*P		**P**	**22 47 28.7**	**-0.1**
	0.8nm,0.8s,mb3.2							
CCM	**Cathedral Cave**	**35.26**	**335**	*e*P		**P**	**22 49 12.2**	**-1.7**
	5.9nm,0.7s,mb4.3							
TXAR	**Lajitas Array**	**36.61**	**312**	P		**P**	**22 49 25.3**	**0.0**
	0.4nm,0.5s,mb3.3,baz=129,slow=8.7,SNR=9.7							
TXAR				PcP		PcP	22 51 46.0	+0.9
	0.6nm,0.8s,baz=143,slow=6.3,SNR=6.0							
TXAR	**Lajitas Array**	**36.61**	**312**	P		**P**	**22 49 25.3**	**0.0**
TXAR				PcP		PcP	22 51 46.0	+0.9
MNTX	**Cornudas Mount**	**39.11**	**314**	*e*P		**P**	**22 49 46.7**	**+0.6**
	1.5nm,0.7s,mb3.7							
SCHQ	**Schefferville**	**48.13**	**5**	P		**P**	**22 50 58.8**	**+0.6**
	5.3nm,0.7s,mb4.3,baz=182,slow=5.5,SNR=11							
PDAR	**Pinedale Array**	**48.20**	**324**	P		**P**	**22 50 58.8**	**-0.1**
	0.6nm,0.7s,mb3.3,baz=117,slow=6.6,SNR=4.2							
HLID	**Hailey**	**51.56**	**322**	*e*P		**P**	**22 51 24.4**	**+0.1**
	0.6nm,0.6s,mb3.4							
DBIC	**Dimbokro**	**67.55**	**86**	P		**P**	**22 53 13.4**	**-1.0**
	3.9nm,1.0s,mb4.1,baz=244,slow=9.6,SNR=6.9							
ILAR	**Eielson Array**	**77.05**	**335**	P		**P**	**22 54 09.2**	**0.0**
	0.3nm,0.6s,mb3.1,baz=110,slow=4.6,SNR=6.7							
MKAR	**Makanchi Array**	**122.27**	**20**	PKP	PKPdf		23 01 09.8	+1.3
	0.4nm,0.5s,baz=303,slow=2.8,SNR=7.6							
MKAR	**Makanchi Array**	**122.27**	**20**	PKP	PKPdf		23 01 09.8	+1.3
ASAR	**Alice Springs**	**149.26**	**234**	PKPbc	PKPdf		23 02 03.8	+5.5
	1.4nm,0.7s,baz=120,slow=3.5,SNR=15							
WRA	**Warramunga Arr**	**150.50**	**241**	PKPbc	PKPdf		23 02 07.0	+6.7
	1.1nm,0.4s,baz=110,slow=2.5,SNR=20							
WRA				pPKPbc			23 02 47.9	
	0.5nm,0.5s,baz=113,slow=2.5,SNR=2.2							
CMAR	**Chiang Mai Arr**	**153.64**	**18**	PKPbc	PKPdf		23 02 15.3	+10
	0.9nm,0.7s,baz=323,slow=3.6,SNR=4.4							

TRN ***23*** *23:04:48.7, 10.18N×63.90W, h54km, MD3.8*
FUNV ***23*** *23:04:54.2, 10.55N×63.31W, h9km, MW3.6*

ISC 23 23:04:53.0±0.4, 10.50N±0.03×63.39W±0.02, h9km, n19, σ1§18/35, 1C-5D, Near coast of Venezuela

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CRUV	**Carupano**	**0.23**	**41**	*i*↑*eP*		**Pg**	**23 04 57.3**	**-0.6**
CRUV				*e*S		**Sg**	**23 05 00.4**	**-0.7**
GUNV	**Guanoco**	**0.55**	**128**	↓*eP*		**Pg**	**23 05 04.3**	**+0.1**
GUNV				*e*S		**Sg**	**23 05 11.1**	**-0.6**
ITEV	**Isla Los Testi**	**0.89**	**16**	↓*eP*		**Pb**	**23 05 09.2**	**-0.9**
ITEV				*e*S		**Sb**	**23 05 20.7**	**-1.1**
GUIV	**Guiria**	**1.16**	**83**	↓*eP*		**Pb**	**23 05 14.0**	**-0.7**
GUIV				*e*S		**Sb**	**23 05 29.4**	**-0.2**
PCRV	**Puerto La Cruz**	**1.27**	**255**	↓*eP*		**Pb**	**23 05 17.9**	**+1.2**
PCRV				*e*S		**Sb**	**23 05 36.0**	**+3.0**
TCE	**Chacachacare**	**1.62**	**83**	*e*P		**Pn**	**23 05 22.9**	**+0.9**
TCE				*e*S		**Sn**	**23 05 46.0**	**+2.9**
IBAV	**Isla La Blanqu**	**1.76**	**318**	↓*eP*		**Pn**	**23 05 23.8**	**-0.1**
IBAV				*e*S		**Sn**	**23 05 46.8**	**+0.2**
TPP	**Pointe-a-Pierr**	**1.91**	**95**	*e*P		**Pn**	**23 05 31.1**	**+5.0**
TPP				*e*S		**Sn**	**23 05 58.9**	**+8.3**
TRN	**Trinidad (W)**	**1.96**	**86**	*e*P		**Pn**	**23 05 27.8**	**+1.0**
TRN				*e*S		**Sn**	**23 05 56.9**	**+5.2**
GRW	**Mount Saint Ca**	**2.36**	**46**	*e*P		**Pn**	**23 05 33.9**	**+1.3**
GRW				*e*S		**Sn**	**23 06 07.7**	**+5.7**
CUPV	**Cœpira**	**2.40**	**260**	*e*P		**Pn**	**23 05 34.1**	**+0.9**
CUPV				*e*S		**Sn**	**23 06 03.7**	**+0.7**
TPR	**Prospect**	**2.65**	**75**	*e*P		**Pn**	**23 05 38.4**	**+1.7**
TPR				*e*S		**Sn**	**23 06 13.0**	**+3.6**
BIRV	**Birongo**	**2.83**	**270**	*e*P		**Pn**	**23 05 39.6**	**+0.3**
BIRV				*e*S		**Sn**	**23 06 13.3**	**-0.6**
RIOV	**Rio Grande**	**2.87**	**147**	*e*P		**Pn**	**23 05 39.9**	**0.0**
RIOV				*e*S		**Sn**	**23 06 12.4**	**-2.6**
MERV	**Las Mercedes**	**3.12**	**247**	*e*P		**Pn**	**23 05 43.5**	**+0.1**
FUNV	**FUNVISIS**	**3.37**	**270**	*e*P		**Pn**	**23 05 46.8**	**-0.1**
CAOV	**Caicara del Or**	**4.28**	**223**	*e*P		**Pn**	**23 05 59.3**	**-0.6**
CAOV				*e*S		**Sn**	**23 06 47.6**	**-3.1**
FDF	**Fort de France**	**4.74**	**27**	*e*P		**Pn**	**23 06 04.5**	**-1.9**
BAUV	**El Baul**	**4.84**	**252**	*e*P		**Pn**	**23 06 06.9**	**-0.9**
BAUV				*e*S		**Sn**	**23 07 01.1**	**-3.7**

IDC ***23*** *23:46:46.9±2.6, 3.03S×130.04E, mb4.2/2, mb1 4.4/4, mb1mx4.0/16, ML3.9/2, MS3.5/1, Ms1 3.4/1, ms1mx2.8/19, Error ellipse: s-maj=143.0km s-min=27.4km az=74.0*
NEIC ***23*** *23:46:48.8±1.0, 3.07S×129.81E, h10km, mb4.3/4, Error ellipse: s-maj=53.1km s-min=11.7km az=74.0*

ISC 23 23:46:46.6±0.8, 3.12S±0.07×129.8E±0.2, h10km, n13, σ1§33/15, mb4.1/3, MS3.4/1, Seram

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
KAKA	**Kakadu**	**9.87**	**165**	*e*P		**P**	**23 49 10.0**	**-1.7**
	4.7nm,0.3s							
KAKA				*e*S		**Sn**	**23 50 55.8**	**-7.8**
FITZ	**Fitzroy Crossi**	**15.44**	**195**	*e*P		**P**	**23 50 27.0**	**+0.6**
	2.4nm,0.6s							
FITZ	**Fitzroy Crossi**	**15.44**	**195**	Pn		**P**	**23 50 26.8**	**+0.4**
	0.4nm,0.3s,baz=11,slow=10,SNR=5.5							
FITZ				Sn		**S**	**23 53 17.6**	**-0.5**
	0.1nm,0.3s,baz=165,slow=16,SNR=2.8							
WRAB	**Tennant Creek**	**17.30**	**165**	*e*P		**P**	**23 50 52.8**	**+2.8**
	14nm,0.3s							
WRA	**Warramunga Arr**	**17.30**	**166**	P		**P**	**23 50 48.5**	**-1.6**
	0.4nm,0.3s,baz=350,slow=13,SNR=21							
WRA				S		**S**	**23 53 51.3**	**-10**
	0.2nm,0.3s,baz=342,slow=21,SNR=3.6							
WB2	**Warramunga Arr**	**17.30**	**165**	*e*P		**P**	**23 50 52.5**	**+2.4**
AS12	**Alice Springs**	**20.81**	**169**	*e*P		**P**	**23 51 31.4**	**+0.5**
	28nm,0.8s							
ASAR	**Alice Springs**	**20.81**	**169**	P		**P**	**23 51 31.7**	**+0.9**
	19nm,0.5s,baz=350,slow=11,SNR=174							
STKA	**Stephens Creek**	**30.69**	**160**	LR	LR		00 06 10.2	
	comp=Z,87nm,19.2s,MS3.4,baz=26,slow=38							
ULN	**Ulaanbaatar**	**54.54**	**341**	P		**P**	**23 56 15.8**	**-1.3**
	1.7nm,0.8s,mb4.1							
MKAR	**Makanchi Array**	**64.90**	**326**	P		**P**	**23 57 28.6**	**0.0**
	0.5nm,0.6s,mb3.7,baz=119,slow=8.8,SNR=4.2							
KURK	**Kurchatov**	**69.13**	**328**	*e*P		**P**	**23 57 55.4**	**+0.2**
QSPA	**South Pole Qui**	**86.84**	**180**	*e*P		**P**	**23 59 34.0**	**+1.9**
	2.2nm,0.8s,mb4.4							

NEIC ***23*** *23:46:54.7, 9.16S×115.30E, h98km, After DJA.*
DJA ***23*** *23:46:54.7±0.9, 9.16S×115.30E, h98km±6km, MD5.2/4, ML3.1/2, Error ellipse: s-maj=29.3km s-min=10.4km az=4.0*

ISC 23 23:46:55.2±3.0, 9.0S±0.2×115.33E±0.08, h100km±16km, n4, σ0§94/8, 5C-3D, Bali region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
INGI	**Ingas**	**0.24**	**311**	↓*iPn*		**P**	**23 47 08.4**	**-1.2**
	327nm,0.2s							
INGI				↓*iSn*		**S**	**23 47 20.4**	**-0.1**
RATI	**Rata**	**0.32**	**38**	*i*↑*ePn*		**P**	**23 47 10.8**	**+0.8**
	145nm,0.2s							
RATI				↑*iSn*		**S**	**23 47 21.9**	**+0.8**
KEDI	**Kedomdong**	**0.92**	**58**	*i*↑*eP*		**P**	**23 47 15.0**	**0.0**
	23nm,0.2s							
KEDI				↓*iSn*		**S**	**23 47 29.1**	**-0.6**
KELI	**Kelakatan**	**1.12**	**312**	*i*↑*ePn*		**P**	**23 47 17.9**	**+0.5**
	24nm,0.2s							
KELI				↑*eSn*		**S**	**23 47 33.7**	**-0.3**

IDC ***23*** *23:48:03.8±3.9, 25.23S×179.31W, h431km±30km, mb3.7/6, mb1 3.8/7, mb1mx3.5/15, Error ellipse: s-maj=39.0km s-min=24.6km az=51.0*
NEIC ***23*** *23:48:04.8±4.9, 25.25S×179.33W, h448km±49km, mb4.6/4, Error ellipse: s-maj=49.3km s-min=17.6km az=208.0*

ISC 23 23:47:58.7±3.9, 24.9S±0.2×178.7W±0.5, h448km, n21, σ0§43/15, mb4.2/6, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
URZ	**Urewera**	**13.78**	**194**	P		**P**	**23 50 58.0**	**-0.4**
	5.3nm,0.3s,baz=292,slow=4.1,SNR=34							
URZ				S		**S**	**23 53 23.1**	**+0.1**
	1.1nm,0.3s,baz=89,slow=22,SNR=7.8							
SNZO	**South Karori**	**17.26**	**197**	*e*P		**P**	**23 51 28.0**	**-5.8**
RPZ	**Rata Peaks**	**20.56**	**202**	P		**P**	**23 52 06.4**	**+0.5**
	5.1nm,0.7s,baz=45,slow=1.4,SNR=4.2							
CTA	**Charters Tower**	**32.69**	**271**	*e*P		**P**	**23 53 54.5**	**+0.8**
	8.1nm,0.3s,mb4.6							
CTA	**Charters Tower**	**32.69**	**271**	P		**P**	**23 53 54.7**	**+1.0**
	12nm,0.4s,mb4.7,baz=103,slow=11,SNR=17							
CTAO	**Charters Tower**	**32.69**	**271**	*e*P		**P**	**23 53 54.3**	**+0.6**
	12nm,0.5s,mb4.6							
STKA	**Stephens Creek**	**35.48**	**250**	P		**P**	**23 54 16.9**	**-0.2**
	1.8nm,0.5s,mb3.8,baz=120,slow=11,SNR=5.6							
AS12	**Alice Springs**	**43.06**	**261**	*e*P		**P**	**23 55 18.4**	**-0.6**
	7.0nm,1.1s,mb4.0							
ASAR	**Alice Springs**	**43.06**	**261**	P		**P**	**23 55 19.1**	**+0.1**
	2.0nm,0.4s,mb3.9,baz=95,slow=7.4,SNR=20							
WB2	**Warramunga Arr**	**43.53**	**267**	*e*P		**P**	**23 55 22.4**	**-0.3**
WRAB	**Tennant Creek**	**43.53**	**267**	*e*P		**P**	**23 55 22.4**	**-0.4**
	34nm,1.0s,mb4.7							
WRA	**Warramunga Arr**	**43.54**	**267**	P		**P**	**23 55 22.6**	**-0.3**
	3.3nm,0.4s,mb4.1,baz=99,slow=6.7,SNR=21							
FITZ	**Fitzroy Crossi**	**51.95**	**266**	*e*P		**P**	**23 56 27.3**	**+0.5**
	4.6nm,0.8s,mb3.9							
FITZ	**Fitzroy Crossi**	**51.95**	**266**	P		**P**	**23 56 27.3**	**+0.5**
	5.2nm,0.7s,mb4.0,baz=206,slow=3.5,SNR=8.7							
ARCES	**ARCESS Array B**	**133.11**	**349**	PKP	PKPdf		00 06 28.4	+6.8
	1.5nm,0.9s,baz=80,slow=1.2,SNR=6.9							
FINES	**FINESS Array B**	**139.77**	**342**	PKhKP			00 06 33.0	
	1.7nm,0.9s,baz=90,slow=1.9,SNR=4.2							
FINES				PKP	PKPdf		00 06 41.5	+7.5
	4.0nm,1.1s,baz=90,slow=5.6,SNR=3.3							
NB2	**NORSAR Subarra**	**143.25**	**352**	PKPdf	PKPdf		00 06 44.8	+4.9
	0.9nm,0.7s,baz=31,slow=1.9							
NOA	**NORSAR Array B**	**143.25**	**352**	PKP	PKPdf		00 06 45.5	+5.6
	0.8nm,0.6s,baz=3.3,slow=2.3,SNR=4.0							
ASF	**Jabal al Asfar**	**148.02**	**291**	PKPbc	PKPdf		00 06 59.6	+11
	1.5nm,0.4s,baz=143,slow=2.8,SNR=4.4							
BRTR	**Keskin Array B**	**149.14**	**306**	PKPbc	PKPdf		00 07 01.8	+11
	0.5nm,0.4s,baz=138,slow=4.1,SNR=4.9							
BRTR				SKPbc			00 09 57.6	
	0.8nm,1.1s,slow=3.7,SNR=4.3							

BJI 23 23:53:02.6, 26.50N×103.11E, h10km, ML3.4, Ms3.5, Msz3.2, 1D, Yunnan

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
KMI	**Kunming**	**1.41**	**194**	*e*PG		Pg	23 53 28.3	-2.5
KMI				SG		Sg	23 53 48.5	-1.2
KMI				S		Sb		
	comp=N,233nm,0.6s							
KMI				S		Sb		
	comp=E,290nm,1.0s							
GYA	**Guiyang**	**3.19**	**90**	*e*P		Pn	23 53 55.0	+1.2
GYA				PG		Pg	23 54 03.5	-2.7
GYA				SG		Sg	23 54 47.1	-1.6
GYA				S		Sn		
	comp=N,80nm,0.7s							
GYA				S		Sn		
	comp=E,70nm,0.7s							
CD2	**Chengdu**	**4.43**	**7**	↓*iP*		Pn	23 54 10.1	-1.4
CD2				*i*PG		Pg	23 54 22.1	-9.0
CD2				S		Sn	23 55 02.3	-1.5
CD2				SG		Sg	23 55 19.6	-11
CD2				S		Sn		
	comp=N,90nm,0.6s							
CD2				S		Sn		
	comp=E,120nm,1.0s							
CD2				LR		LR		
	comp=N,410nm,5.9s							
CD2				LR		LR		
	comp=Z,200nm,7.1s							

NEIC ***24*** *00:03:01.9, 38.35N×22.24E, h24km, MD3.7(ATH), ML3.8(THE), After ATH.*
ATH ***24*** *00:03:01.8, 38.34N×22.24E, h24km±1km, MD3.6/15, ML3.5*
THE ***24*** *00:03:04.2, 38.45N×22.44E, h5km, ML3.8*

ISC 24 00:03:01.5±0.3, 38.37N±0.02×22.31E±0.03, h5km, n61, σ1§00/77, Greece

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
LKR	**Lokris**	**0.61**	**63**	*e*PN		**Pn**	**00 03 15.1**	**-1.4**
LKR				*e*SN		**Sn**	**00 03 24.4**	**-2.3**
AGG	**Agios Georgios**	**0.65**	**1**	*e*Pg		**Pg**	**00 03 14.7**	**+0.1**
AGG				*e*Sg		**Sg**	**00 03 24.1**	**+0.8**
EVR	**Evrytania**	**0.67**	**324**	*e*PB		**Pb**	**00 03 14.3**	**-1.0**
EVR				*e*SN		**Sn**	**00 03 25.0**	**-3.3**
RLS	**Riolos of Patr**	**0.73**	**245**	*e*PN		**Pn**	**00 03 14.9**	**-3.4**
RLS				*e*SN		**Sn**	**00 03 25.8**	**-4.1**
NEO	**Neokhori**	**1.18**	**37**	*e*PN		**Pn**	**00 03 24.9**	**+0.3**
NEO				*e*SN		**Sn**	**00 03 42.4**	**+1.3**
ATH	**Athens Observa**	**1.18**	**109**	*e*PN		**Pn**	**00 03 25.8**	**+1.2**
ATH	**Athens Observa**	**1.18**	**109**	Pn		**Pn**	**00 03 25.8**	**+1.2**
ATH				Sn		**Sn**	**00 03 43.1**	**+1.9**
XOR	**Xorichti**	**1.21**	**34**	*e*Pg		**Pg**	**00 03 25.0**	**-0.7**
XOR	**Xorichti**	**1.21**	**34**	P		**Pb**	**00 03 25.4**	**+0.8**
XOR				S		**Sb**	**00 03 39.9**	**-0.4**
ITM	**Ithomi**	**1.23**	**194**	*e*PN		**Pn**	**00 03 24.1**	**-1.2**
PTL	**Penteli**	**1.27**	**104**	*e*PN		**Pn**	**00 03 27.0**	**+1.1**
VLS	**Valsamata**	**1.37**	**262**	*e*PB		**Pb**	**00 03 25.4**	**-1.8**
VLS				*e*SN		**Sn**	**00 03 45.1**	**-0.9**
AOS	**Alonnisos**	**1.46**	**56**	*e*Pb		**Pb**	**00 03 29.4**	**+0.5**
AOS				*e*Sb		**Sb**	**00 03 47.0**	**-0.8**
MEV	**Metsovon**	**1.64**	**330**	*e*Pb		**Pb**	**00 03 33.0**	**+1.0**
	comp=Z,38nm,0.2s							
MEV				*e*Sb		**Sb**	**00 03 55.1**	**+2.2**
JAN	**Janina**	**1.71**	**319**	*e*PN		**Pn**	**00 03 33.7**	**+1.4**
VLI	**Veliai**	**1.72**	**163**	*e*PN		**Pn**	**00 03 32.0**	**-0.4**
VLI				*e*SN		**Sn**	**00 03 54.6**	**-0.4**
PAIG	**Paliouri**	**1.88**	**34**	*e*Pb		**Pn**	**00 03 34.8**	**+0.1**
PAIG	**Paliouri**	**1.88**	**34**	P		**Pn**	**00 03 34.8**	**+0.1**
PAIG				S		**Sn**	**00 03 56.4**	**-2.7**
IGT	**Igoumenitsa**	**1.93**	**308**	*e*Pb		**Pb**	**00 03 37.5**	**+0.6**
IGT	**Igoumenitsa**	**1.93**	**308**	P		**Pb**	**00 03 37.5**	**+0.6**
IGT				S		**Sn**	**00 04 02.9**	**+2.7**
KZN	**Kozani**	**1.98**	**348**	*e*PN		**Pn**	**00 03 36.5**	**+0.4**
PLG	**Polygyros**	**2.19**	**23**	*e*PN		**Pn**	**00 03 38.7**	**-0.3**
THE	**Thessaloniki**	**2.31**	**12**	*e*Pn		**Pn**	**00 03 40.3**	**-0.6**
THE	**Thessaloniki**	**2.31**	**12**	P		**Pn**	**00 03 40.6**	**-0.3**
OUR	**Ouranopolis**	**2.35**	**33**	*e*Pn		**Pn**	**00 03 41.3**	**-0.1**
KEK	**Kerkira**	**2.37**	**305**	Pb		**Pb**	**00 03 43.5**	**-0.9**
FNA	**Florina**	**2.52**	**344**	*e*Pn		**Pn**	**00 03 44.0**	**+0.3**
	comp=Z,3.8nm,0.4s							
FNA				*e*Sn		**Sn**	**00 04 14.8**	**-0.4**
FNA	**Florina**	**2.52**	**344**	P		**Pn**	**00 03 44.6**	**+0.9**
FNA				S		**Sn**	**00 04 14.8**	**-0.4**
SOH	**Sokhos**	**2.58**	**18**	*e*Pn		**Pn**	**00 03 44.9**	**+0.3**
GRG	**Griva**	**2.58**	**2**	*e*Pn		**Pn**	**00 03 44.3**	**-0.5**
GRG	**Griva**	**2.58**	**2**	P		**Pn**	**00 03 44.6**	**-0.1**
KNT	**Kendrikon**	**2.82**	**9**	*e*Pn		**Pn**	**00 03 48.2**	**+0.1**
KNT				*e*Sn		**Sn**	**00 04 21.5**	**-1.5**
APE	**Apeiranthos**	**2.87**	**116**	*e*PN		**Pn**	**00 03 49.5**	**+0.7**
SRS	**Serrai**	**2.92**	**19**	*e*Pn		**Pn**	**00 03 49.2**	**-0.3**
THR4	**Thira Island,**	**3.11**	**127**	P		**Pn**	**00 03 52.5**	**+0.3**
THR3	**Thira Island,**	**3.15**	**128**	*e*Pn		**Pn**	**00 03 54.2**	**+1.5**
THR3	**Thira Island,**	**3.15**	**128**	P		**Pn**	**00 03 54.4**	**+1.7**
NVR	**Nevrokopi**	**3.21**	**21**	*e*PN		**Pn**	**00 03 53.2**	**-0.4**
VAM	**Vamos**	**3.32**	**152**	*e*PN		**Pn**	**00 03 55.4**	**+0.1**
MMB	**Musomiste**	**3.39**	**18**	*i* P		**Pn**	**00 03 55.5**	**-0.8**
KKB	**Krupnik**	**3.54**	**9**	*i* P		**Pn**	**00 03 58.0**	**-0.4**
SKO	**Skopje**	**3.66**	**350**	*e*Pn		**Pn**	**00 04 02.0**	**+2.0**
RZN	**Rozhen**	**3.79**	**28**	*i* P		**Pn**	**00 04 01.5**	**-0.4**
LCI	**Lecce**	**3.80**	**302**	*e*Pn		**Pn**	**00 04 01.8**	**-0.2**
ALN	**Alexandroupoli**	**3.83**	**48**	*e*Pn		**Pn**	**00 04 01.4**	**-1.1**
ALN	**Alexandroupoli**	**3.83**	**48**	P		**Pn**	**00 04 02.0**	**-0.5**
VTS	**Vitosha**	**4.27**	**9**	*i* P		**Pn**	**00 04 09.0**	**+0.3**
BRT	**Bari-Castellan**	**4.67**	**304**	*e*Pn		**Pn**	**00 04 14.4**	**0.0**
TDS	**Terranova Siba**	**4.83**	**287**	*e*Pn		**Pn**	**00 04 17.9**	**+1.3**
ORI	**Oriolo Calabro**	**4.86**	**292**	*e*Pn		**Pn**	**00 04 17.1**	**+0.1**
MGR	**Morigerati**	**5.53**	**291**	*e*Pn		**Pn**	**00 04 26.2**	**-0.4**
SLCN	**Sala Consilina**	**5.55**	**293**	*e*Pn		**Pn**	**00 04 27.1**	**+0.3**
MRLC	**Muro Lucano**	**5.78**	**296**	*e*Pn		**Pn**	**00 04 29.3**	**-0.8**
SGO	**Sicignano**	**5.84**	**294**	*e*Pn		**Pn**	**00 04 31.9**	**+1.0**
SLNA	**Salina**	**5.87**	**274**	*e*Pn		**Pn**	**00 04 30.4**	**-1.0**
RGNG	**Rignano Grg**	**6.12**	**305**	*e*Pn		**Pn**	**00 04 33.7**	**

ERZM Erzurum 7.33 326 *i* P **Pn** **00 16 48.6 +3.9**
ELZG Elazig 7.72 308 *i* P **Pn** **00 16 49.3 -0.9**
HILS Ha'il 7.80 214 P **Pn** **00 16 50.9 -0.3**
TI2 Plekhanov 7.93 349 *e*P **Pn** **00 16 49.0 -4.0**
TI2 MLR MLR
comp=N,4μm,7.0s
TI2 MLR MLR
comp=E,2μm,7.0s
TI2 MLR MLR
comp=Z,4μm,7.0s
MYA Malataya 8.01 305 Pn **P** **00 16 53.4 -0.7**
GZT Gaziantep 8.19 297 *i* P **P** **00 16 56.6 -0.1**
GAZ Gaziantep 8.39 295 Pn **P** **00 16 57.9 -1.5**
ASF Jabal al Asfar 8.43 261 Pn **P** **00 16 58.8 -1.2**
comp=Z,1.4nm,0.3s,baz=310,slow=10,SNR=11
ASF Pg P 00 17 42.2 +42
comp=Z,3.4nm,0.3s,baz=286,slow=17,SNR=9.6
ASF Lg 00 19 31.8
comp=Z,3.1nm,0.3s,baz=114,slow=22,SNR=5.1
ASF LR LR 00 20 48.3
comp=Z,118nm,20.8s,baz=316,slow=41
ARSS Ar Rass 8.59 202 P **P** **00 17 01.3 -0.9**
COBT Iskenderun 8.94 290 *i* P **P** **00 17 06.5 -0.5**
HTY Hatay 8.95 287 Pn **P** **00 17 05.1 -2.0**
ZEI Tsey 9.08 347 *e*P **P** **00 17 13.0 +4.0**
ZEI *e*S **Sn** **00 18 52.0 +0.8**
ZEI pmax pmax
comp=Z,50nm,2.0s
ZEI MLR MLR
comp=Z,800nm,6.0s
HASS Wahat al Ahsa' 9.10 163 P **P** **00 17 08.9 -0.4**
SVSK Karacayir 9.80 310 Pn **P** **00 17 18.2 -0.6**
MZLS Mizel 9.97 188 P **P** **00 17 19.3 -2.0**
VAN Vannovskaya 10.06 63 P **P** **00 17 22.3 -0.1**
KBRS Khaybar 10.39 220 P **P** **00 17 25.5 -1.5**
TBKS Tabuk 10.42 240 P **P** **00 17 27.3 -0.1**
KIV Kislovodsk 10.47 344 *i* P **P** **00 17 31.7 +3.6**
KIV *e*S **S** **00 19 24.9 -0.4**
KIV pmax pmax
comp=Z,10.0nm,1.2s
KIV MLR MLR
comp=Z,180nm,17.0s
KIV MLR MLR
comp=N,50nm,14.0s
KIV Kislovodsk 10.47 344 P **P** **00 17 28.4 +0.3**
comp=N,55nm,1.4s
AFFS 'Afif 10.50 199 P **P** **00 17 26.4 -2.1**
JMQS Jabal Moqyreh 10.54 244 P **P** **00 17 29.4 +0.2**
NIG Nigde 10.65 296 Pn **P** **00 17 28.6 -1.9**
ALWS Ilw as Safayha 10.96 248 P **P** **00 17 35.2 +0.5**
JMOS Jabal al Moall 10.99 247 P **P** **00 17 35.1 0.0**
SOC Sochi 11.06 332*c* *i*P **P** **00 17 36.9 +0.8**
SOC *e*S **S** **00 19 35.1 -4.6**
SOC pmax pmax
comp=Z,50nm,1.4s
SOC pmax pmax
comp=N,50nm,1.2s
SOC pmax pmax
comp=E,30nm,1.3s
SOC pmax pmax
comp=N,90nm,1.5s
SOC pmax pmax
comp=Z,80nm,1.5s
SOC pmax pmax
comp=E,100nm,1.8s
SOC MLR MLR
comp=Z,860nm,15.0s
SOC MLR MLR
comp=N,860nm,13.0s
SOC MLR MLR
comp=E,710nm,15.0s
CSS Prodhromos 11.10 279 *e*P **P** **00 17 38.4 +1.7**
HAQS Haql 11.18 247 P **P** **00 17 38.0 +0.2**
BDAS Al Bad' 11.36 244 P **P** **00 17 40.2 -0.1**
AYUS 'Aynunah 11.37 243 P **P** **00 17 40.7 +0.3**
GOF Gofitskoye 11.45 347 *e*P **P** **00 17 45.0 +3.5**
GOF pmax pmax
comp=Z,40nm,1.6s
KAMT Kaman 11.76 301 Pn **P** **00 17 43.1 -2.5**
BRTR Keskin Array B 11.96 303 Pn **P** **00 17 50.0 +1.7**
comp=Z,0.1nm,0.3s,baz=119,slow=13,SNR=13
BRTR Lg 00 21 19.5
comp=Z,0.0nm,0.3s,baz=124,slow=28,SNR=2.6
BRTR Keskin Array B 11.96 303 Pn **P** **00 17 50.0 +1.7**
BRTR Lg 00 21 19.5
BOYT Boyabat 11.96 312 *i* P **P** **00 17 51.4 +3.1**
ANTO Ankara 12.61 302 Pn **P** **00 17 55.3 -1.7**
ZHSF Zahedan 12.71 106 *e*PN **P** **00 17 58.9 +0.5**
ZHSF SN **S** **00 20 13.3 -6.5**
KIZT Kizilcal 12.92 297 Pn **P** **00 17 59.3 -1.9**
BALT Daday 12.98 310 *i* P **P** **00 18 04.8 +2.9**
ANN Anapa 12.99 329 *e*P **P** **00 18 05.0 +3.0**
ANN *e*S **S** **00 20 23.0 -3.5**
ANN pmax pmax
comp=Z,9.0nm,1.0s
KAMS Al Khamasin 13.72 189 P **P** **00 18 11.7 0.0**
ESKT Eskisehir 13.88 298 *e*P **P** **00 18 15.8 +2.0**
SIM Simferopol' 14.66 322*c* *i*P **P** **00 18 30.0 +6.1**
SIM pmax pmax
comp=Z,14nm,1.2s
SIM MLR MLR
comp=Z,200nm,18.5s
LTHS Al Lith 14.72 204 P **P** **00 18 25.6 +0.7**
DJNS Zahran al Janu 16.42 191 P **P** **00 18 47.5 +0.7**
SANT Santorini 17.55 284 *e*P **P** **00 19 01.2 +0.4**
IDI Anoyia 18.02 280 P **P** **00 19 07.9 +1.1**
comp=Z,3.1nm,0.3s,baz=84,slow=11,SNR=51
AB31 Akbulak array 18.17 29 P **P** **00 19 07.4 -1.1**
AB31 pmax pmax
comp=Z,11nm,0.9s
VOR Voronezh 18.59 345 *e*P **P** **00 19 11.0 -2.6**
VOR pmax pmax
comp=Z,180nm,1.5s
KIS Kishinev 18.80 319 *e*P **P** **00 19 15.0 -1.1**
KIS *e*S **S** **00 22 46.0 +4.9**
KIS MLR MLR
comp=Z,300nm,15.0s
KIS MLR MLR
comp=Z,300nm,14.0s
MLR Muntele Rosu 19.64 312 P **P** **00 19 29.1 +3.2**
comp=Z,2.1nm,0.3s,baz=346,slow=3.1,SNR=17
MLR Muntele Rosu 19.64 312 P **P** **00 19 29.1 +3.2**
MLR pmax pmax
comp=Z,2.0nm,0.3s
SRS Serrai 19.66 298 *e*P **P** **00 19 26.1 0.0**
SOH Sokhos 19.76 297 *e*P **P** **00 19 27.6 +0.3**
DRP Derazinda 19.85 90 P **P** **00 19 30.1 +1.9**
SBDP Sheikh Budin 20.23 88 P **P** **00 19 30.5 -1.8**
GRG Griva 20.50 297 *e*P **P** **00 19 35.1 +0.2**
KKAR Karatay Array 20.68 57 *i* P **P** **00 19 37.3 +0.5**
KKAR pmax pmax
comp=Z,8.0nm,0.6s
CEP Cherat 20.90 83 P **P** **00 19 38.5 -0.6**
FNA Florina 21.23 296 *e*P **P** **00 19 43.2 +0.8**
BOLS Boljevac 21.58 305⇑ *i*P **P** **00 19 46.0 0.0**
OBN Obninsk 22.32 345 *e*P **P** **00 19 50.9 -2.3**
comp=Z,24nm,0.6s,mb4.8
MOS Moscow 22.68 347 *e*P **P** **00 19 57.7 +1.0**
MOS *e*'PP 00 20 14.3
MOS *e*S **S** **00 23 51.0 -7.3**
MOS *e*SS SS 00 24 35.1 -6.3
MOS pmax pmax
comp=Z,80nm,1.1s,mb5.1
AML Almayashu 22.69 61 P **P** **00 19 58.9 +2.0**
SNR=7.5
EKS2 Erkin-Say 22.87 60 P **P** **00 20 00.9 +2.2**
SNR=7.4
UCH Uchtor 23.31 61 P **P** **00 20 04.6 +1.6**
SNR=5.7
FRU Bishkek 23.51 60 *e*P **P** **00 20 08.0 +3.1**
FRU pmax pmax
comp=Z,80nm,2.5s,mb4.7
USP Ospenovka 23.53 59 P **P** **00 20 07.7 +2.6**
SNR=12
KWP Kalwaria 23.65 319 *e*P **P** **00 20 07.3 +1.2**
KWP *e* 00 20 08.6
KZA Kyzart 23.82 62 P **P** **00 20 12.0 +4.2**
SNR=7.9
ARU Arti 23.91 16⇑ *i*P **P** **00 20 09.3 +0.6**
ARU *e*S **S** **00 24 16.8 -3.0**
ARU pmax pmax
comp=Z,12nm,1.0s,mb4.3
ARU MLR MLR
comp=N,100nm,16.0s,MS3.5
ARU MLR MLR
comp=E,100nm,16.0s,MS3.5
ARU MLR MLR
comp=Z,200nm,16.0s,MS3.7
ARU Arti 23.91 16 *e*P **P** **00 20 08.3 -0.4**
comp=Z,34nm,1.4s,mb4.6
CRVS Cervenica-Dubn 23.97 316 *e*P **P** **00 20 09.1 -0.2**
KSH Kashi 24.04 68 *e*P **P** **00 20 11.1 +1.0**
KSH *e*PP PP 00 20 45.3 +0.8
KSH *e*PCP PcP 00 23 54.8 +2.0
KSH *e*S **S** **00 24 23.8 +1.8**
KSH *e*SS SS 00 25 15.1 +1.0
KSH *e*PCS 00 27 32.5
KSH AMB AMB
comp=Z,10.0nm,0.4s,mb4.6
KSH LR LR
comp=N,930nm,16.4s
KSH LR LR
comp=E,200nm,6.6s
TKM2 Tokmak 2 24.23 60 P **P** **00 20 13.5 +1.5**
SNR=5.6
PSZ Piszkesteto 24.45 313 *e*P **P** **00 20 14.0 -0.1**
comp=E,5.8nm,0.8s,mb4.1
MNK Minsk 24.46 333 *e*P **P** **00 20 13.0 -1.0**
ZRNK Zerenda 24.77 33 P **P** **00 20 18.3 +1.3**
ZRNK pmax pmax
comp=Z,19nm,1.6s,mb4.4
ZRNK Zerenda 24.77 33 *e*P **P** **00 20 17.2 +0.2**
NIE Niedzica 24.88 316 *e*P **P** **00 20 21.3 +3.2**
TDS Terranova Siba 24.92 292 *e*P **P** **00 20 20.6 +2.1**
SOI Samo 25.09 288 *e*P **P** **00 20 21.9 +1.8**
VYHS Vyhne 25.34 313 *e*P **P** **00 20 23.3 +0.9**
VYHS *e* 00 20 45.1
SCLL Scilla 25.36 289 *e*P **P** **00 20 24.9 +2.2**
MTTG Motta San Giov 25.37 288 *e*P **P** **00 20 26.0 +3.1**
SRO Srobarova 25.39 312 *e*pP pP 00 20 32.0 0.0
BRVK Borovoye 25.43 34 P **P** **00 20 23.6 +0.3**
BRVK pmax pmax
comp=Z,21nm,1.2s,mb4.5
BRVK Borovoye 25.43 34 *e*P **P** **00 20 22.9 -0.3**
BVAR Borovoye Array 25.46 34 P **P** **00 20 24.1 +0.6**
comp=Z,11nm,0.8s,mb4.5,baz=225,slow=8.6,SNR=65
BVAR LR LR 00 32 58.8
comp=Z,136nm,18.5s,MS3.5,baz=270,slow=43
MSI Messina ING 25.48 289 *e*P **P** **00 20 27.2 +3.3**
SLCN Sala Comsilina 25.51 294 *e*P **P** **00 20 26.5 +2.4**
MGR Morigerati 25.55 293 *e*P **P** **00 20 27.1 +2.6**
VOSK Vostochnaya 25.55 35 P **P** **00 20 24.5 +0.1**
VOSK pmax pmax
comp=Z,19nm,1.1s,mb4.5
OJC Ojcow 25.56 318 *e*P **P** **00 20 24.8 +0.3**
AGST Augusta-Monte 25.76 286 *e*P **P** **00 20 28.3 +1.8**
SGO Sicignano 25.77 294 *e*P **P** **00 20 27.6 +1.0**
SUW Suwalki 26.04 328 *e*P **P** **00 20 28.0 -0.9**
SLNA Salina 26.05 289 *e*P **P** **00 20 34.3 +5.1**
ZST Bratislava 26.28 312 *e*P **P** **00 20 34.1 +2.9**
OKC Ostrava-Krasne 26.33 316 *e*P **P** **00 20 31.5 -0.1**
VAE Valguarnera 26.40 287 P **P** **00 20 36.0 +3.6**
comp=Z,17nm,1.1s,mb4.5,baz=69,slow=8.5,SNR=7.3
SOKR Solikamsk 26.48 12⇓ *e*P **P** **00 20 33.3 +0.4**
SOKR pmax pmax
comp=Z,10.0nm,0.9s,mb4.3
SOKR MLR MLR
comp=Z,180nm,19.0s,MS3.6
CII Carovilli 26.64 296 *e*P **P** **00 20 37.1 +2.6**
MORC Moravsky Berou 26.65 315 *e*P **P** **00 20 33.9 -0.7**
comp=Z,3.3nm,0.7s,mb4.0
RNI2 Rionero Sannit 26.75 296 *e*P **P** **00 20 38.9 +3.3**
SDI San Donato 27.00 296 *e*P **P** **00 20 39.4 +1.5**
VRAC Vranov 27.02 314 P **P** **00 20 38.4 +0.4**
comp=Z,5.6nm,0.9s,mb4.1,baz=107,slow=9.8,SNR=5.2
PTQR Pietraquaria 27.34 297 *e*P **P** **00 20 42.8 +1.8**
DPC Dobruska-Polom 27.61 316 *e*P **P** **00 20 43.1 -0.2**
comp=Z,16nm,0.3s,mb5.1
KSP Ksiaz 27.84 317 *e*P **P** **00 20 46.0 +0.7**
UPC Upice 27.85 316 *e*P **P** **00 20 45.7 +0.2**
MNS Montasola 27.91 298 *e*P **P** **00 20 47.2 +1.1**
MOA Molln 27.96 310⇑ *i*P **P** **00 20 49.6 +3.1**
comp=Z,14nm,1.1s,mb4.5
KBA Koelnbreinsper 28.33 308⇓ *i*P **P** **00 20 52.1 +2.2**
comp=Z,12nm,1.1s,mb4.5
PRU Pruhonice 28.52 314 *e*P **P** **00 20 51.5 0.0**
comp=Z,5.9nm,0.3s,mb4.8
PRU *e* 00 22 22.6
GERES GERESS Array B 28.63 311 P **P** **00 20 54.0 +1.5**
comp=Z,0.8nm,0.5s,mb3.8,baz=116,slow=8.1,SNR=10
GERES ScP 00 27 43.7
comp=Z,0.7nm,0.8s,baz=135,slow=5.6,SNR=5.5
GERES GERESS Array B 28.63 311 P **P** **00 20 54.0 +1.5**
GERES pmax pmax
comp=Z,1.0nm,0.5s
GERES pmax pmax
comp=Z,1.0nm,0.8s
KURK Kurchatov 28.63 45 *e*P **P** **00 20 51.9 -0.6**
PGD Poggio Sodo 28.80 301 *e*P **P** **00 20 56.6 +2.5**
KHC Kasperske Hory 28.80 312 *e*P **P** **00 20 57.0 +3.0**
VMG Vicchio 28.93 301 *e*P **P** **00 20 57.9 +2.6**
FNVD Fontana Vidola 29.26 301 *e*P **P** **00 21 00.9 +2.6**
ZCCA Zocca 29.39 301 *e*P **P** **00 21 09.1 +10**
WTTA Wattenberg 29.51 307⇓ *i*P **P** **00 21 00.4 -0.1**
comp=Z,13nm,1.2s,mb4.5
WATA Walderalm 29.56 307⇑ *i*P **P** **00 21 00.4 -0.6**
comp=Z,19nm,1.6s,mb4.6
GSCL Gusciola 29.67 301 *e*P **P** **00 21 05.7 +3.7**
MKAR Makanchi Array 29.72 54 P **P** **00 21 02.8 +0.4**
comp=Z,14nm,0.7s,mb4.8,baz=248,slow=7.4,SNR=38
MKAR LR LR 00 36 23.6
comp=Z,135nm,18.1s,MS3.6,baz=260,slow=43
MKAR Makanchi Array 29.72 54 *i* P **P** **00 21 02.7 +0.3**
MKAR pmax pmax
comp=Z,11nm,0.6s
SQTA Sankt Quirin 29.78 307⇓ *i*P **P** **00 21 02.4 -0.5**
comp=Z,6.6nm,1.2s,mb4.2
NKC Novy Kostel 29.86 313 *e*P **P** **00 21 09.9 +6.3**
MOTA Moosalm 29.88 307⇓ *i*P **P** **00 21 02.3 -1.5**
comp=Z,6.6nm,1.1s,mb4.3
CLL Collm 29.92 316 P **P** **00 21 03.0 -1.1**
GRA1 Grafenberg Arr 30.44 312 *e*P **P** **00 21 08.7 0.0**
comp=Z,6.0nm,1.2s,mb4.2
GRF Grafenberg Arr 30.44 312 *e*P **P** **00 21 08.7 0.0**
GRF pmax pmax
comp=Z,6.0nm,1.2s,mb4.2
BOB Bobbio (Coli) 30.53 302 *e*P **P** **00 21 14.8 +5.3**
FINES FINESS Array B 30.54 341 P **P** **00 21 08.2 -1.2**
comp=Z,1.5nm,0.5s,mb4.1,baz=137,slow=12,SNR=14
FINES PcP PcP 00 24 07.4 -0.5
comp=Z,3.2nm,1.0s,baz=135,slow=2.7,SNR=3.8
FINES LR LR 00 33 53.2
comp=Z,81nm,19.3s,MS3.4,baz=336,slow=37
FINES FINESS Array B 30.54 341 P **P** **00 21 08.2 -1.3**
FINES 00 24 07.4
FINES pmax pmax
comp=Z,2.0nm,0.5s
FINES pmax pmax
comp=Z,3.0nm,1.0s
FINES MLR MLR
comp=Z,81nm,19.3s
JOF Joensuu 30.57 346 *ep* P **P** **00 21 07.2 -2.5**
comp=Z,1.1nm,0.3s,mb4.2
JOF Joensuu 30.57 346 *e*P **P** **00 21 07.2 -2.5**
JOF pmax pmax
comp=Z,1.0nm,0.3s,mb4.1
PGF Pioggiola 30.64 297 *e*P **P** **00 21 09.1 -1.4**
comp=Z,49nm,1.3s,mb4.9
DAVA Damuels 30.68 307⇑ *i*P **P** **00 21 10.5 -0.3**
comp=Z,9.0nm,0.5s,mb4.9
KAF Kangasniemi 31.03 341 *ep* P **P** **00 21 12.0 -1.8**
comp=Z,1.6nm,0.4s,mb4.2,baz=144,slow=9.3
KAF Kangasniemi 31.03 341 *e*P **P** **00 21 12.0 -1.8**
KAF pmax pmax
comp=Z,2.0nm,0.4s,mb4.3
IMI Imperia 31.55 300 *e*P **P** **00 21 24.1 +5.6**
SBF Sospel 31.87 300 *e*P **P** **00 21 21.7 +0.3**
comp=Z,78nm,0.9s,mb5.3
DOI San Damiano 32.06 301 *e*P **P** **00 21 22.6 -0.4**
KOLN Koldanda 32.13 91 *e*P **P** **00 21 23.6 -0.2**
comp=Z,14nm,0.9s,mb4.8
FRF La Foret Royal 32.42 299 *e*P **P** **00 21 25.7 -0.4**
comp=Z,39nm,1.3s,mb4.8
MBDF Montbardon 32.42 301 *e*P **P** **00 21 25.4 -0.7**
comp=Z,35nm,0.7s,mb5.0
LMR La Mourre 32.51 299 *e*P **P** **00 21 26.6 -0.3**
LPG La Plagne 32.52 303 *e*P **P** **00 21 27.0 0.0**
comp=Z,14nm,0.6s,mb4.7
LPL La Plagne 32.53 303 *e*P **P** **00 21 26.9 -0.2**
comp=Z,21nm,0.7s,mb4.9
NVS Novosibirsk 32.87 39⇑ *i*P **P** **00 21 28.7 -1.2**
NVS pmax pmax
comp=E,7.0nm,1.2s
NVS pmax pmax
comp=Z,12nm,1.2s,mb4.7
GKN Gorkha 32.91 90 *e*P **P** **00 21 29.9 -0.7**
comp=Z,20nm,0.6s,mb5.2
ORIF Oris-en-Rattie 33.07 302 *e*P **P** **00 21 31.6 -0.2**
comp=Z,11nm,0.7s,mb4.6
ORIF *e*R
comp=Z,158nm,21.0s
WMQ Urumqi 33.09 60 *e*P **P** **00 21 33.8 +1.8**
WMQ AP pP 00 21 48.8 +7.5
WMQ XP sP 00 21 55.9 +11
WMQ PP PP 00 22 46.3 +3.2
WMQ PCP PcP 00 24 16.0 +1.1
WMQ S **S** **00 26 47.5 -0.3**
WMQ XS 00 27 13.1
WMQ SCP 00 27 54.8
WMQ PCS 00 28 00.4
WMQ SS SS 00 28 50.8 +1.6
WMQ SCS ScS 00 31 52.8 -1.7
WMQ AMB AMB
comp=Z,7.0nm,0.9s,mb4.6
WMQ AMB AMB
comp=Z,57nm,5.6s
WMQ LR LR
comp=N,381nm,16.0s,MS4.3
WMQ LR LR
comp=E,387nm,17.1s,MS4.3
WMQ LR LR
comp=Z,613nm,17.9s,MS4.4
CABF La Chapelle 33.12 305 *e*P **P** **00 21 32.1 -0.1**
comp=Z,5.3nm,0.4s,mb4.5
SMRF Simiane la Rot 33.22 305 *e*P **P** **00 21 32.7 -0.4**
comp=Z,11nm,0.9s,mb4.5
ZAL Zalesovo 33.37 42 P **P** **00 21 34.0 -0.2**
comp=Z,3.0nm,0.5s,mb4.5,baz=123,slow=7.0,SNR=19
ZAL Zalesovo 33.37 42 P **P** **00 21 34.0 -0.2**
ZAL pmax pmax
comp=Z,3.0nm,0.5s
DMN Daman 33.44 90 *e*P **P** **00 21 35.2 0.0**
KKN Kakani 33.52 90 *e*P **P** **00 21 35.9 0.0**
comp=Z,13nm,0.4s,mb5.2
PKI Pulchoki 33.70 90 *e*P **P** **00 21 37.1 -0.4**
comp=Z,9.7nm,0.4s,mb5.0
VIVF Saint-Julien-l 33.92 301 *e*P **P** **00 21 38.9 -0.3**
MEZF Maizieres J'vi 34.10 308 *e*P **P** **00 21 40.0 -0.6**
comp=Z,7.8nm,0.6s,mb4.5
LASF Ste Croix 34.47 300 *e*P **P** **00 21 43.5 -0.4**
comp=Z,8.1nm,0.8s,mb4.4
SMF Signal de Mont 34.66 304 *e*P **P** **00 21 44.6 -0.9**
comp=Z,10nm,0.5s,mb4.7
BAIF Baives 34.92 310 *e*P **P** **00 21 47.2 -0.5**
comp=Z,3.3nm,0.6s,mb4.2
SSF Saint Saulge 34.93 305 *e*P **P** **00 21 47.4 -0.4**
comp=Z,3.1nm,0.5s,mb4.2
AVF Avril sur Loir 35.01 305 *e*P **P** **00 21 47.8 -0.7**
comp=Z,28nm,1.3s,mb4.7
EJON La Jonquera 35.15 297 P **P** **00 21 41.9 -7.9**
comp=Z,35nm,2.2s,mb4.9
BGF Bois d'Agland 35.33 304 *e*P **P** **00 21 50.8 -0.4**
NB2 NORSAR Subarra 35.42 331 P **P** **00 21 49.5 -2.3**
comp=Z,4.4nm,0.8s,mb4.4,baz=125,slow=8.6
NOA NORSAR Array B 35.42 331 LR LR 00 37 33.8
comp=Z,98nm,21.8s,MS3.5,baz=120,slow=38
TCF Toulx Ste Croi 35.75 304 *e*P **P** **00 21 54.3 -0.5**
KMBO Kilima Mbogo 36.01 196 P **P** **00 22 00.5 +3.2**
comp=Z,3.1nm,0.8s,mb4.3,baz=22,slow=7.6,SNR=7.9
KMBO LR LR 00 37 31.6
comp=Z,117nm,18.9s,MS3.7,baz=111,slow=37
KMBO Kilima Mbogo 36.01 196 *e*P **P** **00 22 00.2 +2.9**
comp=Z,3.7nm,1.0s,mb4.3
EMIR Miracle 36.18 296 P **P** **00 21 51.3 -7.1**
comp=Z,24nm,1.6s,mb4.9
RJF Les Rejaudoux 36.18 302 *e*P **P** **00 21 57.8 -0.6**
RJF *e*R
comp=Z,97nm,18.1s
EIBI Ibiza 36.54 291 P **P** **00 21 58.1 -3.4**
comp=Z,57nm,2.1s,mb5.0
EPOB Poblet 36.54 295 P **P** **00 21 55.1 -6.4**
comp=Z,18nm,1.9s,mb4.6
LFF La Frestale 36.72 301 *e*P **P** **00 22 02.5 -0.5**
comp=Z,9.7nm,0.7s,mb4.5
EPF Esparros 37.02 298 *e*P **P** **00 22 05.4 -0.1**
MFF Saint Martin d 37.40 304 *e*P **P** **00 22 08.1 -0.5**
KEV Kevo 37.49 349 *ep* P **P** **00 22 07.0 -2.2**
LDF La Druitiere 37.52 307 *e*P **P** **00 22 09.1 -0.5**
comp=Z,2.7nm,0.4s,mb4.0
ARCES ARCESS Array B 37.54 348 P **P** **00 22 09.7 +0.1**
comp=Z,1.6nm,0.6s,mb3.9,baz=158,slow=6.5,SNR=12
ARCES PP PP 00 23 35.7 -2.6
comp=Z,3.0nm,0.9s,baz=160,slow=13,SNR=3.1
ARCES ScP 00 28 12.9
comp=Z,1.1nm,0.8s,baz=135,slow=1.3,SNR=3.9
ARCES ARCESS Array B 37.54 348 P **P** **00 22 09.7 +0.1**
ARCES 00 23 35.7
ARCES pmax pmax
comp=Z,2.0nm,0.6s
ARCES pmax pmax
comp=Z,3.0nm,0.9s
ARCES pmax pmax
comp=Z,1.0nm,0.8s
ARCES ARCESS Array B 37.54 348 P **P** **00 22 09.7 +0.1**
ARCES PP PP 00 23 35.7 -2.6
ARCES ScP 00 28 12.9
ESAC San Caprasio 37.68 296 P **P** **00 22 03.5 -7.6**
comp=Z,34nm,1.8s,mb4.8
LSA Lhasa 37.77 84 *e*P **P** **00 22 11.9 -0.1**
comp=Z,10nm,1.0s,mb4.5
FLN La Foliniere 37.77 308 *e*P **P** **00 22 10.9 -0.8**
comp=Z,4.8nm,0.5s,mb4.2
FLN *e*R
comp=Z,108nm,18.0s
EMOS Mosqueruela 37.80 294 P **P** **00 22 08.3 -3.8**
comp=Z,33nm,1.0s,mb5.0
EBEN Beniarda 37.80 291 P **P** **00 22 08.3 -3.8**
comp=Z,49nm,1.5s,mb5.0
GRR Gorron 37.99 307 *e*P **P** **00 22 12.9 -0.7**
comp=Z,6.4nm,0.5s,mb4.3
EMUR La Murta 38.71 290 P **P** **00 22 18.2 -1.6**
comp=Z,11nm,1.2s,mb4.5
ETOB Tobarra 38.83 291 P **P** **00 22 18.6 -2.1**
comp=Z,45nm,2.1s,mb4.8
ETOR Torete 38.95 295 P **P** **00 22 16.7 -5.0**
SGMF Saint Gilles 39.11 307 *e*P **P** **00 22 22.4 -0.6**
comp=Z,6.7nm,0.5s,mb4.3
QUIF Quistinic 39.50 306 *e*P **P** **00 22 25.6 -0.7**
comp=Z,9.0nm,0.5s,mb4.5
EVIA Vianos 39.57 291 P **P** **00 22 24.4 -2.5**
comp=Z,6.9nm,0.8s,mb4.4
ROSF Rostrenen 39.59 307 *e*P **P** **00 22 26.4 -0.6**
EHUE Huescar 39.77 290 P **P** **00 22 26.0 -2.6**
comp=Z,61nm,2.8s,mb4.8
EQES Quesada 40.15 290 P **P** **00 22 28.9 -2.8**
comp=Z,18nm,1.2s,mb4.7
ESDC Sonseca Array 40.54 293 P **P** **00 22 35.4 +0.6**
comp=Z,3.0nm,0.8s,mb4.0,baz=62,slow=8.4,SNR=12
ESLA Sonseca Array 40.54 293 *e*P **P** **00 22 32.8 -2.0**
comp=Z,4.2nm,1.2s,mb5.9
GUD Guadarrama 40.55 295 P **P** **00 22 28.4 -6.5**
comp=Z,15nm,1.2s,mb4.5
ECOG Cogollos-Vega 40.63 290 P **P** **00 22 34.4 -1.3**
comp=Z,4.1nm,0.8s,mb4.1
EBAN Banos Encina 40.64 291 P **P** **00 22 33.2 -2.5**
comp=Z,42nm,1.3s,mb4.9
ERON Agron 40.87 289 P **P** **00 22 36.5 -1.1**
ELOJ Sierra Loja 41.12 290 P **P** **00 22 38.2 -1.4**
ELUQ Luque 41.13 290 P **P** **00 22 37.7 -2.0**
EADA Adamuz 41.26 291 P **P** **00 22 37.9 -2.8**
comp=Z,30nm,1.6s,mb4.7
GTA Gaotai 42.42 67 *e*P **P** **00 22 53.4 +3.1**
GTA AMB AMB
comp=Z,4.0nm,0.4s,mb4.4
ESPR Espera 42.51 290 P **P** **00 22 48.9 -2.1**
comp=Z,15nm,1.4s,mb4.5
EMIN Mina Concepcio 42.96 291 P **P** **00 22 51.2 -3.5**
comp=Z,13nm,1.2s,mb4.5
EBAD Badajoz 43.03 293 P **P** **00 22 50.6 -4.7**
comp=Z,22nm,1.5s,mb4.7
PVRL Vila Real 43.14 296 *e*P **P** **00 22 57.9 +1.8**
MTE Manteigas 43.15 295 *e*P **P** **00 22 57.5 +1.3**
comp=Z,38nm,1.3s,mb5.0
PCBR Castelo Branco 43.19 294 *e*P **P** **00 22 57.8 +1.3**
comp=Z,31nm,1.3s,mb4.9
EGRO El Granado 43.64 291 P **P** **00 22 58.1 -2.1**

	comp=Z,21nm,1.3s,mb4.7								
EZAM	**Zamans**		**43.74**	**298**	P		**P**	**00 22 51.8**	**-9.1**
	comp=Z,13nm,0.8s,mb4.7								
PBEJ	**Beja**		**43.83**	**292**	*e*P		**P**	**00 23 03.0**	**+1.2**
	comp=Z,15nm,1.3s,mb4.5								
ZAK	**Zakamensk**		**43.92**	**50**	*e*P		**P**	**00 23 00.0**	**-2.3**
PTOM	**Tomar**		**43.94**	**294**	*e*P		**P**	**00 23 04.2**	**+1.6**
	comp=Z,51nm,1.4s,mb5.1								
SPB4	**Spitsbergen Ar**		**46.23**	**352**	*e*P		**P**	**00 23 20.9**	**+0.5**
ULN	**Ulaanbaatar**		**46.53**	**54**	*e*P		**P**	**00 23 23.9**	**+0.8**
ULN	**Ulaanbaatar**		**46.53**	**54**	*e*P		**P**	**00 23 23.0**	**-0.1**
	comp=Z,5.8nm,0.9s,mb4.5								
CD2	**Chengdu**		**47.71**	**77**	P		**P**	**00 23 33.1**	**+0.4**
CMAR	**Chiang Mai Arr**		**48.83**	**95**	P		**P**	**00 23 40.8**	**-0.7**
	comp=Z,1.8nm,0.4s,mb4.4,baz=298,slow=8.3,SNR=8.0								
CMAR					LR		LR	00 44 53.2	
	comp=Z,66nm,18.5s,MS3.7,baz=295,slow=37								
CMAR	**Chiang Mai Arr**		**48.83**	**95**	P		**P**	**00 23 40.8**	**-0.7**
CMAR					pmax		pmax		
	comp=Z,2.0nm,0.4s								
CMAR					MLR		MLR		
	comp=Z,66nm,18.5s								
BOD	**Bodaibo**		**50.11**	**40**	*e*P		**P**	**00 23 50.0**	**-0.8**
GYA	**Guiyang**		**51.72**	**81**	P		**P**	**00 24 03.0**	**-0.5**
GYA					AMB		AMB		
	comp=Z,10.0nm,0.8s,mb4.8								
BJI	**Beijing**		**54.54**	**62**	P		**P**	**00 24 29.3**	**+5.1**
BJI					AMB		AMB		
	comp=Z,3.0nm,0.7s,mb4.4								
BJI					LR		LR		
	comp=N,154nm,21.4s								
BJI					LR		LR		
	comp=Z,112nm,22.3s,MS3.9								
HIA	**Hailar**		**54.62**	**50**	*e*P		**P**	**00 24 24.4**	**-0.2**
	comp=Z,3.6nm,0.5s,mb4.7								
DBIC	**Dimbokro**		**54.74**	**252**	P		**P**	**00 24 26.9**	**+0.9**
	comp=Z,3.1nm,0.5s,mb4.6,baz=40,slow=8.3,SNR=12								
DBIC					LR		LR	00 48 21.1	
	comp=Z,54nm,19.1s,MS3.6,baz=29,slow=36								
DBIC	**Dimbokro**		**54.74**	**252**	P		**P**	**00 24 27.0**	**+1.0**
DBIC					pmax		pmax		
	comp=Z,3.0nm,0.5s								
DBIC					MLR		MLR		
	comp=Z,54nm,19.1s								
KIC	**Kosan Boka**		**54.83**	**252**	*e*P		**P**	**00 24 27.7**	**+1.0**
	comp=Z,92nm,1.2s								
TIC	**Toumodi**		**54.88**	**252**	*e*P		**P**	**00 24 27.8**	**+0.7**
	comp=Z,167nm,1.7s								
LIC	**Lamto**		**55.14**	**252**	*e*P		**P**	**00 24 29.8**	**+0.8**
	comp=Z,45nm,1.2s,mb5.4								
LIC	**Lamto**		**55.14**	**252**	*e*P		**P**	**00 24 29.5**	**+0.5**
	comp=Z,4.4nm,0.5s,mb4.7								
TIXI	**Tiksi**		**55.72**	**22**	*e*P		**P**	**00 24 31.4**	**-1.0**
TIXI					*e*			00 25 30.4	
TIXI					pmax		pmax		
	comp=Z,20nm,1.2s,mb5.0								
TIXI					MLR		MLR		
	comp=Z,700nm,19.0s,MS4.8								
SUMG	**Summit**		**56.56**	**339**	*e*P		**P**	**00 24 38.1**	**-0.3**
NJ2	**Nanjing**		**59.33**	**70**	*e*P		**P**	**00 24 58.0**	**-0.3**
NJ2					PP		PP	00 27 11.8	+0.6
NJ2					S		**S**	**00 32 54.0**	**-8.9**
NJ2					XS			00 33 37.0	
NJ2					AMB		AMB		
	comp=Z,30nm,0.8s,mb5.4								
NJ2					AMB		AMB		
	comp=Z,68nm,6.0s								
NJ2					LR		LR		
	comp=N,410nm,24.8s,MS4.5								
NJ2					LR		LR		
	comp=E,280nm,24.2s,MS4.5								
NJ2					LR		LR		
	comp=Z,340nm,24.6s,MS4.4								
TSUM	**Tsumeb**		**59.70**	**212**	P		**P**	**00 25 03.1**	**+2.0**
	comp=Z,9.5nm,1.2s,mb4.7,baz=56,slow=3.3,SNR=6.8								
CN2	**Changchun**		**59.93**	**55**	*e*P		**P**	**00 25 01.8**	**-0.5**
CN2					AMB		AMB		
	comp=Z,10.0nm,0.8s,mb4.9								
SSE	**Sheshan**		**61.53**	**70**	P		**P**	**00 25 14.6**	**+1.2**
SSE					S		**S**	**00 33 34.8**	**+3.7**
SSE					SS		SS	00 37 36.1	+2.2
SSE					AMB		AMB		
	comp=Z,22nm,0.7s,mb5.4								
SSE					AMB		AMB		
	comp=Z,38nm,4.4s								
SSE					LR		LR		
	comp=N,67nm,28.4s,MS3.8								
SSE					LR		LR		
	comp=E,64nm,28.4s,MS3.8								
LBTB	**Lobatse**		**61.98**	**202**	*e*P		**P**	**00 25 18.1**	**+1.7**
	comp=E,8.6nm,1.1s,mb4.8								
KLR	**Kul'dur**		**62.16**	**48**	*e*P		**P**	**00 25 16.2**	**-1.2**
MDJ	**Mudanjiang**		**62.44**	**53**	P		**P**	**00 25 17.3**	**-1.9**
MDJ					S		**S**	**00 33 43.3**	**+0.9**
MDJ					AMB		AMB		
	comp=Z,1.0nm,0.4s,mb4.3								
MDJ					AMB		AMB		
	comp=Z,94nm,4.9s								
MDJ					LR		LR		
	comp=N,137nm,16.6s,MS4.3								
MDJ					LR		LR		
	comp=E,94nm,16.6s,MS4.3								
MDJ					LR		LR		
	comp=Z,125nm,15.7s,MS4.2								
SEY	**Seymchan**		**66.95**	**29**	*e*P		**P**	**00 25 48.8**	**+0.7**
SEY								00 26 16.1	
SEY					*e*			00 28 14.8	
SEY					*e*S		S	00 34 35.3	-2.3
SEY					*e*			00 35 37.2	
SEY					pmax		pmax		
	comp=E,9.0nm,0.9s								
SEY					pmax		pmax		
	comp=Z,10.0nm,0.9s,mb4.8								
SEY					MLR		MLR		
	comp=Z,220nm,22.0s,MS4.3								
SEY					MLR		MLR		
	comp=N,640nm,27.0s								
BILL	**Bilibino**		**68.85**	**21**	*e*P		**P**	**00 25 59.7**	**-0.3**
BILL					pmax		pmax		
	comp=Z,8.0nm,1.4s,mb4.5								
BILL					MLR		MLR		
	comp=Z,100nm,19.0s,MS4.1								
SCHQ	**Schefferville**		**74.86**	**327**	P		**P**	**00 26 36.1**	**+0.2**
	comp=Z,2.6nm,0.6s,mb4.3,baz=74,slow=6.1,SNR=6.2								
INK	**Inuvik**		**78.06**	**0**	*e*P		**P**	**00 26 52.2**	**-1.3**
	comp=Z,4.6nm,1.0s,mb4.4								
COLA	**College**		**80.84**	**6**	*e*P		**P**	**00 27 09.2**	**+0.6**
COLA	**College**		**80.84**	**6**	*e*P		**P**	**00 27 08.6**	**0.0**
	comp=Z,5.3nm,0.9s,mb4.5								
ILAR	**Eielson Array**		**81.03**	**6**	P		**P**	**00 27 09.8**	**+0.2**
	comp=Z,2.2nm,1.1s,mb4.0,baz=326,slow=4.6,SNR=9.7								
ILAR					PP		PP	00 30 14.3	-2.5
	comp=Z,0.3nm,1.0s,baz=353,slow=7.3,SNR=3.2								
ILAR	**Eielson Array**		**81.03**	**6**	P		**P**	**00 27 09.8**	**+0.2**
ILAR								00 30 14.3	
ILAR					pmax		pmax		
	comp=Z,2.0nm,1.1s								
FCC	**Fort Churchill**		**82.03**	**341**	*e*P		**P**	**00 27 14.9**	**0.0**
	comp=Z,20nm,1.5s,mb4.8								
DAWY	**Dawson**		**82.20**	**3**	*e*P		**P**	**00 27 15.8**	**+0.1**
YKW3	**Yellowknife Ar**		**82.66**	**351**	*e*P		**P**	**00 27 18.0**	**-0.1**
PMR	**Palmer**		**83.93**	**8**	P		**P**	**00 27 24.9**	**+0.3**
	comp=Z,8.5nm,0.4s,mb5.2								
FFC	**Flin Flon**		**87.67**	**342**	*e*P		**P**	**00 27 43.7**	**+0.6**
	comp=Z,4.7nm,1.0s,mb4.7								
DLBC	**Dease Lake**		**87.93**	**358**	*e*P		**P**	**00 27 45.4**	**+1.1**
WRA	**Warramunga Arr**		**98.97**	**108**	P		**P**	**00 28 35.4**	**-0.6**
	comp=Z,0.4nm,0.6s,mb4.1,baz=315,slow=3.9,SNR=5.0								
WRAB	**Tennant Creek**		**98.98**	**108**	P		**P**	**00 28 36.7**	**+0.7**
VNA2	**Neumayer--Watz**		**111.39**	**197**	*e*		Pdif	00 29 31.8	+2.0
VNA1	**Neumayer--Stat**		**111.41**	**197**	*i*		Pdif	00 29 26.8	-3.1
VNA3	**Neumayer Olymp**		**112.15**	**197**	*i*		Pdif	00 29 38.3	+5.2
QSPA	**South Pole Qui**		**123.78**	**180**	*e*PKP		PKPdf	00 33 53.3	-2.8

*NEIC **24** 00:20:40.1, 15.97N×98.52W, h4km, MD3.9(MEX), After MEX.*
*MEX **24** 00:20:40.2±0.4, 15.97N×98.52W, h3km±5km, MD3.9*
ISC 24 00:20:39.1±2.7, **15.9N**±0.1×**98.50W**±0.09, **h26**km±10km, **n8, σ1§31/14, Off coast of Guerrero**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
PNIG	**Pinotepa**	**0.59**	**37**	*i* P		**Pb**	**00 20 50.7**	**-0.1**
PNIG				*e*S		**Sb**	**00 20 58.9**	**+0.1**
VHO	**Vista Hermosa**	**2.04**	**56**	*e*P		**Pn**	**00 21 12.2**	**-0.4**
VHO				*i* S		**Sn**	**00 21 36.7**	**-0.8**
VHO				*i* S		**Sn**	**00 21 38.5**	**+1.1**
OXX	**Oaxaca**	**2.06**	**55**	*i* P		**Pn**	**00 21 14.7**	**+2.0**
PLIG	**Platanillo**	**2.64**	**339**	*i* P		**Pn**	**00 21 26.4**	**+5.3**
PLIG				*i* S		**Sn**	**00 21 56.0**	**+3.4**
YAIG	**Yautepec**	**2.98**	**350**	*i* S		**Sn**	**00 21 59.4**	**-1.8**
PPM	**Popocatepetl**	**3.13**	**358**	*e*P		**Pn**	**00 21 26.6**	**-1.5**
PPM				*e*S		**Sn**	**00 22 04.8**	**-0.3**
IISM	**Ciudad Serdan**	**3.23**	**19**	*i* P		**Pn**	**00 21 38.5**	**+9.0**
CMIG	**Matias Romero**	**3.66**	**71**	*e*P		**Pn**	**00 21 34.9**	**-0.6**
CMIG				*i* S		**Sn**	**00 22 18.2**	**-0.1**

*NEIC **24** 00:21:31.8±2.8, 51.56N×16.11E, h5km, ML2.4(SZGRF), ML2.0(BRG), Error ellipse: s-maj=33.3km s-min=9.2km az=22.0*
*WAR **24** 00:21:33.8, 51.48N×16.07E, h1km, Location given by Polkowice mine, origin time based upon KSP*
*PRU **24** 00:21:35.7, 51.38N×16.08E*
ISC 24 00:21:32.3±1.0, **51.43N**±0.05×**15.99E**±0.05, **n18**, σ1§**11**/34, **Poland**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
KSP	**Ksiaz**	**0.61**	**162**	*e*Pg		**Pg**	**00 21 45.7**	**+1.1**
KSP				*e*Sg		**Sg**	**00 21 54.8**	**+2.1**
KSP	**Ksiaz**	**0.61**	**162**	*i* Pg		**Pg**	**00 21 45.6**	**+1.0**
KSP				*e*SG		**Sg**	**00 21 54.6**	**+1.9**
UPC	**Upice**	**0.92**	**179**	*e*PG		**Pg**	**00 21 51.5**	**+0.9**
UPC	**Upice**	**0.92**	**179**	*e*Pg		**Pg**	**00 21 51.5**	**+0.9**
DPC	**Dobruska-Polom**	**1.10**	**169**	*e*PG		**Pg**	**00 21 54.3**	**+0.1**
DPC				*e*SG		**Sg**	**00 22 08.7**	**-0.1**
	16nm,0.3s							
DPC	**Dobruska-Polom**	**1.10**	**169**	*e*Pg		**Pg**	**00 21 54.3**	**+0.1**
DPC				*e*Sg		**Sg**	**00 22 08.7**	**-0.1**
PVCC	**Panska Ves**	**1.27**	**226**	*e*PG		**Pg**	**00 21 58.4**	**+0.8**
BRG	**Berggiesshubel**	**1.40**	**248**	*i* Pn		**Pn**	**00 22 00.2**	**+1.1**
BRG				*i* Pg		**Pg**	**00 22 00.8**	**+0.5**
BRG				*i* Sg		**Sg**	**00 22 20.7**	**+1.8**
PRU	**Pruhonice**	**1.71**	**213**	*e*PG		**Pg**	**00 22 05.8**	**-0.6**
PRU				*i* x		x	00 22 09.7	
PRU				SG		**Sg**	**00 22 29.4**	**+0.3**
	5.9nm,0.3s							
PRU	**Pruhonice**	**1.71**	**213**	*e*Pg		**Pg**	**00 22 05.8**	**-0.6**
PRU				*i*			00 22 09.7	
CLL	**Collm**	**1.87**	**268**	*i* PG		**Pg**	**00 22 08.7**	**-1.0**
CLL				*i*			00 22 13.0	
CLL				*i* SG		**Sg**	**00 22 34.5**	**-0.2**
CLL	**Collm**	**1.87**	**268**	*i* Pg		**Pg**	**00 22 08.7**	**-1.0**
CLL				*i* Sg		**Sg**	**00 22 34.5**	**-0.2**
OKC	**Ostrava-Krasne**	**2.10**	**138**	*e*PG		**Pg**	**00 22 12.5**	**-1.8**
OKC				*e*SG		**Sg**	**00 22 39.0**	**-3.3**
NKC	**Novy Kostel**	**2.54**	**243**	*e*PN		**Pn**	**00 22 16.3**	**+0.8**
NKC				*e*PG		**Pg**	**00 22 23.4**	**+0.4**
NKC				*e*SG		**Sg**	**00 22 56.9**	**0.0**
KHC	**Kasperske Hory**	**2.77**	**215**	*e*PN		**Pn**	**00 22 18.8**	**+0.1**
KHC				*e*PG		**Pg**	**00 22 25.1**	**-2.5**
KHC				*e*SG		**Sg**	**00 23 04.1**	**-0.4**
MOX	**Moxa**	**2.87**	**256**	*e*Pg		**Pg**	**00 22 28.1**	**-1.5**
MOX				*e*Sg		**Sg**	**00 23 07.9**	**+0.1**
GEC2	**GERESS Array S**	**2.97**	**211**	*e*Pn		**Pn**	**00 22 23.0**	**+1.4**
GEC2				*e*Sg		**Sg**	**00 23 09.8**	**-1.4**
GRA1	**Grafenberg Arr**	**3.50**	**242**	*e*Sg		**Sg**	**00 23 27.6**	**-1.2**

*IDC **24** 00:26:43.3±2.6, 27.75N×52.15E, mb3.7/5, mb1 3.7/5, mb1mx3.6/17, Error ellipse: s-maj=64.2km s-min=30.1km az=145.0*
ISC 24 00:26:42.8±1.0, **27.8N**±0.1×**52.1E**±0.1, **h10**km, **n13, σ0§70/13, mb3.6/5, Southern Iran**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
HASS	**Wahat al Ahsa'**	**3.36**	**221**	P		**Pn**	**00 27 40.2**	**+3.7**
MZLS	**Mizel**	**7.26**	**241**	P		**Pn**	**00 28 32.8**	**+1.3**
ARSS	**Ar Rass**	**8.17**	**259**	P		**Pn**	**00 28 44.2**	**-0.1**
AFFS	**'Afif**	**9.07**	**247**	P		**P**	**00 28 57.2**	**+0.5**
HILS	**Ha'il**	**9.19**	**270**	P		**P**	**00 28 57.5**	**-0.9**
TATS	**Tathlith**	**11.39**	**226**	P		**P**	**00 29 28.2**	**-0.4**
KBRS	**Khaybar**	**11.67**	**263**	P		**P**	**00 29 32.4**	**-0.1**
DJNS	**Zahran al Janu**	**12.75**	**220**	P		**P**	**00 29 46.3**	**-0.8**
BVAR	**Borovoye Array**	**28.65**	**23**	P		**P**	**00 32 41.2**	**-0.3**
	0.2nm,0.5s,mb3.1,baz=180,slow=7.2,SNR=3.4							
MKAR	**Makanchi Array**	**30.34**	**43**	P		**P**	**00 32 56.7**	**0.0**
	0.2nm,0.4s,mb3.2,baz=251,slow=8.8,SNR=4.7							
FINES	**FINESS Array B**	**37.93**	**340**	P		**P**	**00 34 01.8**	**-0.1**
	0.6nm,0.5s,mb3.6,baz=156,slow=9.4,SNR=9.1							
ARCES	**ARCESS Array B**	**44.58**	**347**	P		**P**	**00 34 57.2**	**+0.8**
	1.4nm,0.9s,mb3.8,baz=141,slow=7.8,SNR=8.1							
DBIC	**Dimbokro**		**57.79**	**260**	P		**P**	**00 36 36.8**	**-0.2**
	2.7nm,1.1s,mb4.2,baz=45,slow=7.1,SNR=4.6							

*BJI **24** 00:28:53.8, 10.40N×86.20W, h47km, mB4.4*
*IDC **24** 00:28:55.8±2.7, 11.12N×85.78W, mb4.1/7, mb1 4.4/7, mb1mx4.1/17, MS3.6/6, Ms1 3.6/6, ms1mx3.3/20, Error ellipse: s-maj=56.8km s-min=44.6km az=165.0*
*CASC **24** 00:28:55.5±1.7, 10.32N×86.31W, h13km±11km, MD4.4, ML3.5, mb4.3(NEIC)*
*NEIC **24** 00:28:57.9±0.8, 10.43N×86.22W, h47km±7km, mb4.3/12, MD4.4(CASC), Error ellipse: s-maj=17.4km s-min=6.1km az=213.0*
ISC 24 00:28:51.6±0.6, **10.16N**±0.06×**86.51W**±0.04, **h13**km, **n87, σ1§47/87, mb4.2**/19, **MS3.7**/5, **15C-11D, Off coast of Costa Rica**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
VCR	**Vista de Mar**	**0.86**	**92**	*e*P		**Pb**	**00 29 08.6**	**+0.6**
CRZC	**La Cruz**	**1.19**	**49**↑	*e*P		**Pb**	**00 29 12.5**	**-1.1**
CRZC	**La Cruz**	**1.19**	**49**↑	*e*P		**Pb**	**00 29 12.6**	**-1.1**
CRZC				*e*S		**Sb**	**00 29 34.7**	**+6.0**
JCR	**Jicaral**	**1.41**	**103**↓	*e*P		**Pn**	**00 29 17.0**	**-0.2**
JCR				*e*S		**Sb**	**00 29 33.3**	**-1.8**
JCR	**Jicaral**	**1.41**	**103**	*e*P		**Pn**	**00 29 17.0**	**-0.2**
JTS	**JuntasAbangare**	**1.54**	**85**	*e*P		**Pn**	**00 29 18.1**	**-0.9**
CONN	**Concepcion**	**1.64**	**32**↑	*e*P		**Pn**	**00 29 20.4**	**0.0**
APON	**Apoyo**	**1.80**	**14**	*e*P		**Pn**	**00 29 24.5**	**+1.8**
CRUN	**El Crucero**	**1.82**	**6**	*e*P		**Pn**	**00 29 24.6**	**+1.6**
FORC	**Fortuna**	**1.84**	**80**↓	*e*P		**Pn**	**00 29 23.6**	**+0.3**
FORC	**Fortuna**	**1.84**	**80**	*e*P		**Pn**	**00 29 23.3**	**+0.1**
XAVN	**Gruta Xavier**	**1.98**	**5**↓	*e*P		**Pn**	**00 29 26.6**	**+1.3**
MGAN	**Managua**	**1.99**	**7**↓	*e*P		**Pn**	**00 29 26.4**	**+1.0**
MGAN				*i*			00 30 15.3	
	comp=E,555nm,0.6s							
COPN	**Copaltepe**	**2.01**	**358**↑	*e*P		**Pn**	**00 29 26.7**	**+1.0**
WILN	**Americas 2**	**2.01**	**9**↑	*e*P		**Pn**	**00 29 25.9**	**+0.1**
COFN	**Cofrada**	**2.01**	**11**	*e*P		**Pn**	**00 29 26.6**	**+0.8**
CGA2	**Cerro Gallo 2**	**2.02**	**94**↓	*e*P		**Pn**	**00 29 26.1**	**+0.3**
CGA2	**Cerro Gallo 2**	**2.02**	**94**	*e*P		**Pn**	**00 29 26.1**	**+0.3**
MOMJ	**Momotombo**	**2.23**	**359**↑	*e*P		**Pn**	**00 29 29.8**	**+0.9**
PYN	**Poneloya**	**2.26**	**347**↓	*e*P		**Pn**	**00 29 31.4**	**+2.0**
LEON	**Leon**	**2.27**	**350**↑	*e*P		**Pn**	**00 29 30.9**	**+1.4**
MIRN	**Miramar**	**2.27**	**355**↑	*e*P		**Pn**	**00 29 30.8**	**+1.4**
CNGN	**Cerro Negro**	**2.33**	**355**↑	*e*P		**Pn**	**00 29 31.0**	**+0.7**
LAJ	**Bijagual**	**2.37**	**97**	*e*P		**Pn**	**00 29 25.5**	**-5.4**
LAJ	**Bijagual**	**2.37**	**97**	*e*P		**Pn**	**00 29 25.5**	**-5.3**
PYTN	**Playitas**	**2.40**	**11**↑	*e*P		**Pn**	**00 29 31.4**	**0.0**
PYTN				*e*S		**Sn**	**00 29 59.2**	**-1.7**
TEL3	**Telica 3**	**2.42**	**352**↓	*e*P		**Pn**	**00 29 33.0**	**+1.4**
SJS	**Escuela Geolog**	**2.43**	**95**↑	*e*P		**Pn**	**00 29 33.6**	**+1.9**
SJS	**Escuela Geolog**	**2.43**	**95**	*e*P		**Pn**	**00 29 33.6**	**+2.0**
SJS				*e*S		**Sn**	**00 30 13.4**	**+12**
LCR2	**La Lucha 2**	**2.50**	**99**↑	*e*P		**Pn**	**00 29 33.7**	**+0.9**
LCR2	**La Lucha 2**	**2.50**	**99**	*e*P		**Pn**	**00 29 33.6**	**+0.9**
ICR	**Volcan Irazu**	**2.64**	**94**	*e*P		**Pn**	**00 29 37.4**	**+2.6**
URSC	**Urasca**	**2.71**	**97**↓	*e*P		**Pn**	**00 29 37.2**	**+1.5**
URSC	**Urasca**	**2.71**	**97**	*e*P		**Pn**	**00 29 37.2**	**+1.5**
BUS	**Buena Vista**	**2.78**	**102**	*e*P		**Pn**	**00 29 40.5**	**+3.8**
BUS	**Buena Vista**	**2.78**	**102**	*e*P		**Pn**	**00 29 37.9**	**+1.2**
TRTC	**Tortuguero**	**2.78**	**81**↑	*e*P		**Pn**	**00 29 35.7**	**-1.0**
TRTC	**Tortuguero**	**2.78**	**81**	*e*P		**Pn**	**00 29 35.7**	**-1.1**
SOMN	**Somoto**	**3.24**	**358**	*e*P		**Pn**	**00 29 44.4**	**+1.1**
CNCH	**Conchagua**	**3.36**	**337**↓	*e*P		**Pn**	**00 29 46.3**	**+1.4**
CNCH				*e*S		**Sn**	**00 30 24.5**	**-0.5**
CNCH	**Conchagua**	**3.36**	**337**	*e*P		**Pn**	**00 29 46.4**	**+1.5**
CNCH				*e*S		**Sn**	**00 30 22.6**	**-2.4**
BLLM	**Bellamira**	**3.67**	**333**↑	*e*P		**Pn**	**00 29 51.3**	**+1.8**
BLLM	**Bellamira**	**3.67**	**333**	*e*P		**Pn**	**00 29 51.2**	**+1.8**
LCBS	**La Ceiba**	**4.23**	**325**↓	*i*P		**Pn**	**00 29 59.0**	**+1.6**
LCBS				*e*S		**Sn**	**00 30 45.8**	**-1.3**
LCBS	**La Ceiba**	**4.23**	**325**	*e*P		**Pn**	**00 29 59.0**	**+1.7**
LCBS				*e*S		**Sn**	**00 30 44.0**	**-3.1**
LFRS	**El Faro**	**4.25**	**324**↓	*e*P		**Pn**	**00 29 59.6**	**+1.9**
LFRS	**El Faro**	**4.25**	**324**	*e*P		**Pn**	**00 29 59.6**	**+2.0**
LFRS				*e*S		**Sn**	**00 30 44.5**	**-3.2**
ROSC	**El Rosal**	**13.17**	**113**	LR		LR	00 37 30.9	
	comp=E,190nm,18.9s,baz=120,slow=40							
LRAL	**Lakeview Retre**	**22.77**	**359**	*e*P		**P**	**00 33 54.3**	**-0.8**
	comp=E,9.1nm,0.8s,mb4.3							
JSC	**Jenkinsville**	**24.48**	**11**	*e*P		**P**	**00 34 10.0**	**-1.8**
PLAL	**Pickwick Lake**	**24.75**	**357**	*e*P		**P**	**00 34 13.0**	**-1.3**
	comp=E,9.9nm,0.9s,mb4.3							
MYNC	**Murphy**	**24.89**	**5**	*e*P		**P**	**00 34 14.3**	**-1.4**
	comp=E,15nm,0.8s,mb4.6							
TXAR	**Lajitas Array**	**24.93**	**322**	P		**P**	**00 34 18.6**	**+2.5**
	comp=E,2.7nm,0.7s,mb3.9,baz=137,slow=10,SNR=40							
TXAR				PcP		PcP	00 37 55.5	+2.9
	comp=E,0.5nm,0.8s,baz=162,slow=4.0,SNR=4.4							
SWET	**Sewanee**	**24.95**	**1**	*e*P		**P**	**00 34 14.0**	**-2.2**
UALR	**University of**	**25.07**	**349**	*e*P		**P**	**00 34 15.7**	**-1.7**
	comp=E,4.9nm,0.5s,mb4.3							
MIAR	**Mount Ida**	**25.12**	**346**	*e*P		**P**	**00 34 16.6**	**-1.2**
	comp=E,6.1nm,0.9s,mb4.1							
MIAR				*e*			00 34 23.4	
CPCT	**Cooper Cave**	**25.24**	**4**	*e*P		**P**	**00 34 17.4**	**-1.5**
WMOK	**Wichita Mounta**	**26.91**	**337**	*e*P		**P**	**00 34 34.8**	**+0.3**
	comp=E,8.7nm,0.9s,mb4.3							
PWV	**Princeton**	**27.50**	**9**	*e*P		**P**	**00 34 37.5**	**-2.3**
MNTX	**Cornudas Mount**	**27.66**	**324**	*e*P		**P**	**00 34 40.5**	**-0.8**
WCI	**Wyandotte Cave**	**27.95**	**0**	*e*P		**P**	**00 34 41.0**	**-2.9**
	comp=E,14nm,0.8s,mb4.6							
CCM	**Cathedral Cave**	**28.10**	**352**	*e*P		**P**	**00 34 41.7**	**-3.5**
	comp=E,4.4nm,0.8s,mb4.1							
ACSO	**Alum Creek Sta**	**30.11**	**5**	*e*P		**P**	**00 34 60.0**	**-3.3**
	comp=E,9.9nm,0.7s,mb4.7							
ANMO	**Albuquerque**	**30.67**	**327**	*e*P		**P**	**00 35 09.6**	**+1.4**
	comp=E,1.6nm,0.8s,mb3.9							
BINY	**Binghamton**	**33.22**	**14**	*e*P		**P**	**00 35 27.8**	**-2.8**
	comp=E,10.0nm,0.9s,mb4.8							
SADO	**Sadowa**	**35.06**	**9**	P		**P**	**00 35 42.5**	**-3.8**
	comp=E,5.2nm,0.8s,mb4.5,baz=190,slow=7.3,SNR=4.5							
BW06	**Boulder Array**	**38.21**	**332**	*e*P		**P**	**00 36 12.8**	**-0.1**
	comp=E,0.9nm,0.6s,mb3.7							
PDAR	**Pinedale Array**	**38.21**	**332**	P		**P**	**00 36 12.6**	**-0.3**
	comp=E,0.8nm,0.7s,mb3.6,baz=139,slow=8.3,SNR=8.4							
HWUT	**Hardware Ranch**	**38.30**	**329**	*e*P		**P**	**00 36 14.2**	**+0.5**
NVAR	**Mina Array Bea**	**40.03**	**320**	P		**P**	**00 36 31.8**	**+3.6**
	comp=E,2.5nm,0.8s,mb4.0,baz=124,slow=8.2,SNR=14							
NVAR				PcP		PcP	00 38 37.9	+4.2
	comp=E,0.5nm,0.4s,baz=128,slow=3.9,SNR=4.1							
NVAR	**Mina Array Bea**	**40.03**	**320**	P		**P**	**00 36 31.8**	**+3.6**
NVAR				PcP		PcP	00 38 37.9	+4.2
ULM	**Lac du Bonnet**	**40.71**	**351**	P		**P**	**00 36 30.7**	**-2.9**
	comp=E,3.2nm,0.6s,mb4.1,baz=185,slow=3.3,SNR=3.5							
HLID	**Hailey**	**41.16**	**329**	P		**P**	**00 36 37.5**	**+0.1**
BOZ	**Bozeman (W)**

COPN	**Copaltepe**	**1.85**	**352**	⇑	*e*P	Pn	00 40 16.7	-1.9
MIRN	**Miramar**	**2.12**	**350**	⇑	*e*P	Pn	00 40 22.4	-0.1
LEON	**Leon**	**2.14**	**345**		*e*P	Pn	00 40 20.4	-2.3
LEON					*e*S	Sn	00 40 49.8	-0.2
PYN	**Poneloya**	**2.14**	**341**		*e*P	Pn	00 40 21.8	-1.0
PYN					*e*S	Sn	00 40 47.3	-2.8
CNGN	**Cerro Negro**	**2.18**	**350**	⇑	*e*P	Pn	00 40 24.2	+0.9
PYTN	**Playitas**	**2.20**	**7**		*e*P	Pn	00 40 24.1	+0.4
PYTN					*e*S	Sn	00 40 52.0	+0.5
LAJ	**Bijagual**	**2.22**	**102**	⇓	*e*P	Pn	00 40 18.6	-5.3
LCR2	**La Lucha 2**	**2.36**	**104**		*e*P	Pn	00 40 25.7	-0.2
ICR	**Volcan Irazu**	**2.48**	**98**		*e*P	Pn	00 40 28.2	+0.6
URSC	**Urasca**	**2.56**	**101**		*e*P	Pn	00 40 29.7	+1.0
TRTC	**Tortuguero**	**2.58**	**85**		*e*P	Pn	00 40 28.0	-1.0

*LDG **24** 00:40:38.6±0.4, 42.45N×7.81W, h10km, Md4.1/1, Ml3.6/22, Error ellipse: s-maj=13.1km s-min=4.6km az=116.0*
*INMG **24** 00:40:40.9±1.3, 42.45N×7.76W, h15km±3km, ML3.3, Error ellipse: s-maj=2.0km s-min=1.6km az=83.0*
*NEIC **24** 00:40:40.9, 42.46N×7.77W, h10km, ML3.6(LDG), MN3.0(MDD), After MDD.*
NEIC Felt [IV] at A Peroxa; [III] at Escairon, Luintra, Orense, Parada del Sil, Puebla del Brollon and Vilarchao; [II] at Incio, Lugo, Monforte de Lemos, Mos and Pereiro de Aguiar.
*MDD **24** 00:40:40.5±0.2, 42.45N×7.79W, h11km, mbLg3.2/33, Error ellipse: s-maj=2.6km s-min=2.0km az=133.0, PRXIMO III LUINTRA VILARCHAO OURENSE N III N PUEBLA DE N II-III PARADA DO SIL II GOMESENDE OR PUNXIN PEREIRO DE AGUIAR II MOS MONFORTE DE LEMOS O INCIO LUGO*
MDD EMS: III-IV PEROXA.
*STR **24** 00:40:48.8±0.9, 42.37N×6.83W, h10km±1km, Ml4.7, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*

ISC 24 00:40:37.0±0.3, 42.42N±0.02×7.60W±0.03, h11km, n109, σ1§64/211, 5C-4D, Spain

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EINC	**Incio**	**0.30**	**37**	⇑Pg	**Pg**	**00 40 48.0**	**+4.7**
	SNR=18						
EINC				Lg		00 40 52.6	
	630nm,0.2s,SNR=4.3						
ELOB	**Lobios**	**0.65**	**212**	⇑Pg	**Pg**	**00 40 52.6**	**+2.5**
	599nm,0.1s,SNR=18						
ELOB				Lg		00 41 00.9	
	490nm,0.1s,SNR=6.3						
ELOB	**Lobios**	**0.65**	**212**	⇑Pg	**Pg**	**00 40 52.6**	**+2.5**
ELOB				Lg		00 41 01.1	
ECAL	**Calabor**	**0.80**	**126**	⇓Pg	**Pg**	**00 40 57.3**	**+4.3**
	115nm,0.1s,SNR=18						
ECAL				Lg		00 41 09.7	
	1μm,0.2s,SNR=11						
ECAL	**Calabor**	**0.80**	**126**	⇓Pg	**Pg**	**00 40 57.3**	**+4.3**
ECAL				Lg		00 41 09.8	
STS	**Santiago**	**0.84**	**304**	Pg	**Pg**	**00 40 54.2**	**+0.3**
	86nm,0.1s,SNR=52						
STS				Lg		00 41 01.7	
	230nm,0.1s,SNR=26						
STS	**Santiago**	**0.84**	**304**	Pg	**Pg**	**00 40 54.4**	**+0.5**
STS				Lg		00 41 04.3	
EZAM	**Zamans**	**0.86**	**252**	Pg	**Pg**	**00 40 54.6**	**+0.5**
	117nm,0.1s,SNR=12						
EZAM	**Zamans**	**0.86**	**252**	Pg	**Pg**	**00 40 54.7**	**+0.5**
EZAM				Lg		00 41 05.3	
PBRG	**Braganca**	**0.88**	**134**	*e*P	**Pb**	**00 40 58.4**	**+4.5**
PBRG				*e*S	**Sb**	**00 41 11.6**	**+6.2**
	438nm,0.1s						
PBRG	**Braganca**	**0.88**	**134**	P	**Pb**	**00 40 58.4**	**+4.5**
PBRG				S	**Sb**	**00 41 11.6**	**+6.2**
	219nm,0.1s						
EPON	**Pontenova**	**0.97**	**20**	⇑Pg	**Pg**	**00 40 58.0**	**+1.6**
	352nm,0.2s,SNR=18						
EPON				Lg		00 41 11.8	
	456nm,0.2s,SNR=22						
EPON	**Pontenova**	**0.97**	**20**	⇑Pg	**Pg**	**00 40 58.0**	**+1.6**
EPON				Lg		00 41 12.1	
PVRL	**Vila Real**	**1.14**	**184**	*e*P	**Pb**	**00 41 00.7**	**+2.4**
PVRL				*e*S	**Sb**	**00 41 15.4**	**+2.4**
	1μm,0.1s						
EMAZ	**Mazaricos**	**1.15**	**298**	⇓Pg	**Pg**	**00 40 58.4**	**-1.5**
	8.3nm,0.1s,SNR=18						
EMAZ				Lg		00 41 13.2	
	358nm,0.1s,SNR=7.0						
EMAZ	**Mazaricos**	**1.15**	**298**	⇓Pg	**Pg**	**00 40 58.4**	**-1.5**
EMAZ				Pn	**Pn**	**00 40 59.9**	**+0.9**
EMAZ				Lg		00 41 13.4	
EARI	**Arriondas**	**1.96**	**62**	Pn	**Pn**	**00 41 14.0**	**+3.3**
	17nm,0.1s,SNR=6.6						
EARI				Pg	**Pg**	**00 41 19.1**	**+2.9**
	39nm,0.2s,SNR=33						
EARI				Sn	**Sn**	**00 41 38.5**	**+3.0**
	44nm,0.2s,SNR=7.7						
EARI				Lg		00 41 45.4	
	74nm,0.2s,SNR=7.3						
EARI	**Arriondas**	**1.96**	**62**	Pn	**Pn**	**00 41 14.1**	**+3.4**
EARI				Pg	**Pg**	**00 41 18.6**	**+2.3**
EARI				Sn	**Sn**	**00 41 38.5**	**+3.0**
EARI				Lg		00 41 45.5	
MTE	**Manteigas**	**2.02**	**179**	*e*Pn	**Pn**	**00 41 13.4**	**+2.0**
MTE				*e*Pg	**Pg**	**00 41 17.8**	**+0.5**
MTE				*e*Sn	**Sn**	**00 41 37.0**	**+0.2**
MTE				*e*Sg	**Sg**	**00 41 43.6**	**-0.6**
	228nm,0.6s						
MTE	**Manteigas**	**2.02**	**179**	*e*Pn	**Pn**	**00 41 13.3**	**+1.9**
MTE				*e*S	**Sn**	**00 41 42.9**	**+6.1**
PCBR	**Castelo Branco**	**2.58**	**178**	*e*Pn	**Pn**	**00 41 21.1**	**+1.7**
PCBR				*e*Pg	**Pg**	**00 41 25.9**	**-2.5**
PCBR				*e*Sn	**Sn**	**00 41 51.0**	**0.0**
PCBR				*e*Sg	**Sg**	**00 42 01.7**	**-1.1**
	87nm,0.3s						
PCBR	**Castelo Branco**	**2.58**	**178**	Pn	**Pn**	**00 41 21.1**	**+1.7**
PCBR				Pg	**Pg**	**00 41 25.9**	**-2.5**
PCBR				Sn	**Sn**	**00 41 51.0**	**0.0**
PCBR				Lg		00 42 01.7	
	43nm,0.3s						
PTOM	**Tomar**	**2.86**	**193**	*e*Pn	**Pn**	**00 41 24.4**	**+0.9**
PTOM				*e*Pg	**Pg**	**00 41 33.6**	**-0.6**
PTOM				*e*Sn	**Sn**	**00 41 56.5**	**-1.8**
PTOM				*e*Sg	**Sg**	**00 42 10.0**	**-2.4**
	122nm,0.7s						
PTOM	**Tomar**	**2.86**	**193**	Pn	**Pn**	**00 41 24.4**	**+0.9**
PTOM				Pg	**Pg**	**00 41 33.6**	**-0.6**
PTOM				Sn	**Sn**	**00 41 56.5**	**-1.8**
PTOM				Lg		00 42 10.0	
	61nm,0.7s						
GUD	**Guadarrama**	**3.13**	**123**	Pn	**Pn**	**00 41 30.6**	**+3.2**
	3.0nm,0.2s,SNR=15						
GUD				Lg		00 42 25.1	
	19nm,0.2s,SNR=4.0						
GUD	**Guadarrama**	**3.13**	**123**	Pn	**Pn**	**00 41 30.7**	**+3.3**
GUD				Lg		00 42 28.0	
ELAN	**Lanestosa**	**3.17**	**74**	Pn	**Pn**	**00 41 31.0**	**+3.2**
	8.9nm,0.1s,SNR=14						
ELAN				Sn	**Sn**	**00 42 09.2**	**+3.1**
	15nm,0.3s,SNR=6.1						
ELAN				Lg		00 42 24.9	
	65nm,0.2s,SNR=5.1						
ELAN	**Lanestosa**	**3.17**	**74**	Pn	**Pn**	**00 41 30.9**	**+3.1**
ELAN				Pg	**Pg**	**00 41 41.2**	**+0.9**
ELAN				Sn	**Sn**	**00 42 09.2**	**+3.2**
ELAN				Lg		00 42 25.1	
EBAD	**Badajoz**	**3.69**	**173**	Pn	**Pn**	**00 41 36.5**	**+1.3**
	2.8nm,0.1s,SNR=29						
EBAD				Sn	**Sn**	**00 42 18.4**	**-0.7**
	19nm,0.1s,SNR=10						
EBAD				Lg		00 42 38.6	
	41nm,0.2s,SNR=11						
EBAD	**Badajoz**	**3.69**	**173**	Pn	**Pn**	**00 41 36.4**	**+1.2**
EBAD				Pg	**Pg**	**00 41 49.2**	**-1.3**
EBAD				Sn	**Sn**	**00 42 19.1**	**0.0**
EBAD				Lg		00 42 38.5	
PLOU	**Loures**	**3.72**	**199**	*e*Pn	**Pn**	**00 41 35.5**	**-0.2**
PLOU				*e*Sn	**Sn**	**00 42 17.3**	**-2.7**
PLOU				*e*Sg	**Sg**	**00 42 35.7**	**-5.2**
	50nm,0.5s						
ESDC	**Sonseca Array**	**3.88**	**134**	Pn	**Pn**	**00 41 40.1**	**+2.1**
	6.4nm,0.1s,baz=315,slow=13,SNR=25						
ESDC				Pg	**Pg**	**00 41 53.9**	**-0.5**
	2.8nm,0.2s,baz=314,slow=16,SNR=9.2						
ESDC				Lg		00 42 47.8	
	5.1nm,0.2s,baz=315,slow=29,SNR=9.6						
ESLA	**Sonseca Array**	**3.88**	**134**	*e*Pn	**Pn**	**00 41 39.6**	**+1.7**
ESLA				*e*S	**Sn**	**00 42 38.5**	**+14**
EVO	**Evora**	**3.89**	**185**	*e*Pn	**Pn**	**00 41 38.9**	**+0.8**
EVO				*e*Pg	**Pg**	**00 41 52.3**	**-2.4**
EVO				*e*Sn	**Sn**	**00 42 20.4**	**-4.0**
EVO				*e*Sg	**Sg**	**00 42 43.1**	**-3.5**
	103nm,0.5s						
MOE	**Montemor**	**3.93**	**189**	*e*Pn	**Pn**	**00 41 39.4**	**+0.7**
MOE				*e*Sn	**Sn**	**00 42 21.3**	**-4.1**
MOE				*e*Sg	**Sg**	**00 42 43.0**	**-4.9**
MOE	**Montemor**	**3.93**	**189**	Pn	**Pn**	**00 41 39.4**	**+0.7**
MOE				Lg		00 42 43.0	
PBEJ	**Beja**	**4.39**	**183**	*e*Pn	**Pn**	**00 41 45.9**	**+0.7**
PBEJ				*e*Sn	**Sn**	**00 42 32.8**	**-4.2**
PBEJ				*e*Sg	**Sg**	**00 42 56.6**	**-6.6**
	33nm,0.4s						
ETOR	**Torete**	**4.45**	**109**	Pn	**Pn**	**00 41 49.1**	**+3.0**
	1.3nm,0.2s,SNR=14						
ETOR				Lg		00 43 06.3	
	32nm,0.5s,SNR=7.6						
ETOR	**Torete**	**4.45**	**109**	Pn	**Pn**	**00 41 49.1**	**+3.0**
ETOR				Pg	**Pg**	**00 42 06.2**	**+0.3**
ETOR				Lg		00 43 06.3	
EALK	**Alkurruntz**	**4.55**	**78**	Pn	**Pn**	**00 41 49.5**	**+2.0**
	0.5nm,0.1s,SNR=8.2						
EALK				Sn	**Sn**	**00 42 42.9**	**+1.9**
	7.4nm,0.3s,SNR=6.0						
EALK				Lg		00 43 08.4	
	28nm,0.5s,SNR=7.9						
EALK	**Alkurruntz**	**4.55**	**78**	Pn	**Pn**	**00 41 49.8**	**+2.3**
EALK				Sn	**Sn**	**00 42 41.8**	**+0.8**
EALK				Lg		00 43 10.8	
EMIN	**Mina Concepcio**	**4.70**	**171**	Pn	**Pn**	**00 41 50.6**	**+1.1**
	0.5nm,0.1s,SNR=6.7						
EMIN				Sn	**Sn**	**00 42 43.6**	**-1.1**
	4.1nm,0.2s,SNR=11						
EMIN				Lg		00 43 08.8	
	25nm,0.4s,SNR=7.9						
EMIN	**Mina Concepcio**	**4.70**	**171**	Pn	**Pn**	**00 41 50.5**	**+0.9**
EMIN				Sn	**Sn**	**00 42 43.2**	**-1.5**
EMIN				Lg		00 43 09.1	
EADA	**Adamuz**	**4.83**	**150**	Pn	**Pn**	**00 41 52.7**	**+1.2**
	2.0nm,0.1s,SNR=26						
EADA				Sn	**Sn**	**00 42 46.8**	**-1.4**
	4.4nm,0.1s,SNR=6.7						
EADA				Lg		00 43 15.6	
	7.5nm,0.1s,SNR=4.9						
EADA	**Adamuz**	**4.83**	**150**	Pn	**Pn**	**00 41 52.7**	**+1.2**
EADA				Sn	**Sn**	**00 42 47.4**	**-0.7**
EADA				Lg		00 43 17.4	
EGRO	**El Granado**	**4.88**	**179**	Pn	**Pn**	**00 41 53.2**	**+1.1**
	0.4nm,0.1s,SNR=6.3						
EGRO				Sn	**Sn**	**00 42 46.1**	**-3.2**
	2.5nm,0.1s,SNR=4.8						
EGRO				Lg		00 43 16.0	
	26nm,0.4s,SNR=7.9						
EGRO	**El Granado**	**4.88**	**179**	Pn	**Pn**	**00 41 53.2**	**+1.1**
EGRO				Sn	**Sn**	**00 42 46.2**	**-3.1**
EGRO				Lg		00 43 17.1	
LARF	**Larrau**	**4.91**	**81**	P	**Pn**	**00 41 54.6**	**+2.1**
LARF				S	**Sn**	**00 42 50.2**	**+0.1**
PTEO	**Sao Teotonio**	**4.94**	**190**	*e*Pn	**Pn**	**00 41 53.1**	**+0.1**
PTEO				*e*Sn	**Sn**	**00 42 45.8**	**-5.1**
PTEO				*e*Sg	**Sg**	**00 43 15.2**	**-6.3**
	48nm,0.7s						
PTEO	**Sao Teotonio**	**4.94**	**190**	Pn	**Pn**	**00 41 53.1**	**+0.1**
PTEO				Sn	**Sn**	**00 42 45.8**	**-5.1**
PTEO				Lg		00 43 15.2	
	24nm,0.7s						
PALC	**Alcoutim**	**4.95**	**179**	*e*Pn	**Pn**	**00 41 53.5**	**+0.4**
PALC				*e*Sn	**Sn**	**00 42 47.8**	**-3.3**
PALC				*e*Sg	**Sg**	**00 43 16.4**	**-5.3**
	33nm,0.5s						
PALC	**Alcoutim**	**4.95**	**179**	Pn	**Pn**	**00 41 53.5**	**+0.4**
PALC				Sn	**Sn**	**00 42 47.8**	**-3.3**
PALC				Lg		00 43 16.4	
	17nm,0.5s						
EBAN	**Banos Encina**	**5.15**	**144**	Pn	**Pn**	**00 41 59.4**	**+3.4**
	0.8nm,0.1s,SNR=7.9						
EBAN				Sn	**Sn**	**00 42 54.4**	**-1.8**
	1.8nm,0.1s,SNR=7.9						
EBAN				Lg		00 43 27.7	
	7.0nm,0.2s,SNR=7.9						
EBAN	**Banos Encina**	**5.15**	**144**	Pn	**Pn**	**00 41 59.8**	**+3.8**
EBAN				Sn	**Sn**	**00 42 54.4**	**-1.8**
EBAN				Lg		00 43 29.1	
ETSF	**Etsaut**	**5.21**	**82**	*e*Pn	**Pn**	**00 41 59.0**	**+2.2**
ETSF				*e*Sn	**Sn**	**00 42 55.0**	**-2.7**
	9.2nm,0.3s						
ESAC	**San Caprasio**	**5.35**	**95**	Pn	**Pn**	**00 42 01.4**	**+2.6**
	2.3nm,0.1s,SNR=7.0						
ESAC				Pg	**Pg**	**00 42 19.9**	**-3.9**
	21nm,0.4s,SNR=4.0						
ESAC				Sn	**Sn**	**00 43 02.1**	**+1.0**
	34nm,0.3s,SNR=4.0						
ESAC				Lg		00 43 35.0	
	56nm,0.3s,SNR=6.9						
ESAC	**San Caprasio**	**5.35**	**95**	Pn	**Pn**	**00 42 02.2**	**+3.4**
ESAC				Pg	**Pg**	**00 42 19.7**	**-4.1**
ESAC				Sn	**Sn**	**00 43 01.8**	**+0.6**
ESAC				Lg		00 43 35.4	
EVIA	**Vianos**	**5.41**	**133**	Lg		00 43 34.5	
	5.3nm,0.4s,SNR=7.1						
EVIA	**Vianos**	**5.41**	**133**	Pn	**Pn**	**00 42 02.5**	**+2.8**
EVIA				Pg	**Pg**	**00 42 22.2**	**-2.9**
EVIA				Sn	**Sn**	**00 43 02.9**	**+0.1**
EVIA				Lg		00 43 37.0	
ELUQ	**Luque**	**5.48**	**151**	Pn	**Pn**	**00 42 02.7**	**+2.1**
	1.0nm,0.2s,SNR=5.4						
ELUQ				Lg		00 43 37.4	
	4.5nm,0.2s,SNR=7.0						
ELUQ	**Luque**	**5.48**	**151**	Pn	**Pn**	**00 42 03.6**	**+2.9**
ELUQ				Lg		00 43 38.6	
LABF	**Labassere**	**5.69**	**81**	P	**Pn**	**00 42 05.8**	**+2.3**
LABF				S	**Sn**	**00 43 08.9**	**-0.7**
ESPR	**Espera**	**5.70**	**166**	Pn	**Pn**	**00 42 06.0**	**+2.3**
	0.1nm,0.0s,SNR=5.3						
ESPR				Sn	**Sn**	**00 43 08.3**	**-1.7**
	6.1nm,0.2s,SNR=5.6						
ESPR	**Espera**	**5.70**	**166**	Pn	**Pn**	**00 42 06.3**	**+2.6**
ESPR				Sn	**Sn**	**00 43 09.0**	**-1.0**
ESPR				Lg		00 43 44.4	
EMOS	**Mosqueruela**	**5.74**	**109**	Pn	**Pn**	**00 42 06.8**	**+2.6**
	0.2nm,0.1s,SNR=7.9						
EMOS				Sn	**Sn**	**00 43 11.2**	**+0.3**
	2.5nm,0.1s,SNR=7.9						
EMOS				Lg		00 43 47.9	
	1.9nm,0.2s,SNR=4.0						
EMOS	**Mosqueruela**	**5.74**	**109**	Pn	**Pn**	**00 42 07.2**	**+3.0**
EMOS				Sn	**Sn**	**00 43 11.4**	**+0.5**
EMOS				Lg		00 43 48.6	
ELIJ	**Sierra de Lija**	**5.75**	**162**	Pn	**Pn**	**00 42 07.5**	**+3.1**
	0.2nm,0.2s,SNR=4.0						
ELIJ				Pg	**Pg**	**00 42 24.3**	**-7.5**
	0.7nm,0.2s,SNR=7.9						
ELIJ				Sn	**Sn**	**00 43 09.1**	**-2.1**
	0.9nm,0.3s,SNR=7.9						
ELIJ				Lg		00 43 44.2	
	8.2nm,0.5s,SNR=7.3						
ELIJ	**Sierra de Lija**	**5.75**	**162**	Pn	**Pn**	**00 42 07.3**	**+2.9**
ELIJ				Sn	**Sn**	**00 43 10.2**	**-1.0**
ELIJ				Lg		00 43 46.2	
EQES	**Quesada**	**5.77**	**142**	Pn	**Pn**	**00 42 06.2**	**+1.5**
	0.4nm,0.2s,SNR=7.9						
EQES				Sn	**Sn**	**00 43 09.6**	**-2.1**
	1.5nm,0.2s,SNR=7.9						
EQES				Lg		00 43 46.1	
	3.2nm,0.3s,SNR=8.0						
EQES	**Quesada**	**5.77**	**142**	Pn	**Pn**	**00 42 08.2**	**+3.5**
EQES				Sn	**Sn**	**00 43 11.1**	**-0.5**
EQES				Lg		00 43 48.2	
RESF	**Ens**	**5.87**	**84**	P	**Pn**	**00 42 08.1**	**+2.0**
EPF	**Esparros**	**5.88**	**81**	*e*Pn	**Pn**	**00 42 08.9**	**+2.7**
	SNR=1.0						
EPF				*e*Sn	**Sn**	**00 43 12.0**	**-2.4**
	4.6nm,0.2s						
ELOJ	**Sierra Loja**	**5.89**	**152**	Pn	**Pn**	**00 42 10.1**	**+3.6**
	0.1nm,0.1s,SNR=7.9						
ELOJ				Sn	**Sn**	**00 43 14.4**	**-0.4**
	0.3nm,0.2s,SNR=4.0						
ELOJ	**Sierra Loja**	**5.89**	**152**	Pn	**Pn**	**00 42 10.2**	**+3.8**
ELOJ				Sn	**Sn**	**00 43 13.7**	**-1.1**
ELOJ				Lg		00 43 52.1	
ETOB	**Tobarra**	**5.95**	**127**	Pn	**Pn**	**00 42 08.3**	**+1.0**
	0.6nm,0.1s,SNR=7.8						
ETOB				Sn	**Sn**	**00 43 15.8**	**-0.5**
	1.8nm,0.3s,SNR=4.0						
ETOB				Lg		00 43 52.7	
	9.2nm,0.3s,SNR=5.1						
ETOB	**Tobarra**	**5.95**	**127**	Pn	**Pn**	**00 42 09.3**	**+2.0**
ETOB				Sn	**Sn**	**00 43 16.3**	**0.0**
ETOB				Lg		00 43 54.8	
EHUE	**Huescar**	**5.99**	**139**	Pn	**Pn**	**00 42 11.6**	**+3.8**
	0.1nm,0.1s,SNR=7.9						
EHUE				Lg		00 43 53.9	
	1.7nm,0.3s,SNR=7.9						
EHUE	**Huescar**	**5.99**	**139**	Pn	**Pn**	**00 42 11.4**	**+3.7**
EHUE				Lg		00 43 54.9	
QUIF	**Quistinic**	**6.33**	**28**	*e*Pn	**Pn**	**00 42 10.8**	**-1.8**
QUIF				*e*Sn	**Sn**	**00 43 14.7**	**-11**
	9.4nm,0.2s						
LFF	**La Frestale**	**6.55**	**65**	*e*Pn	**Pn**	**00 42 15.9**	**+0.2**
	SNR=1.0						
LFF				*e*Sn	**Sn**	**00 43 22.6**	**-8.6**
	6.3nm,0.3s,SNR=1.0						
EPOB	**Poblet**	**6.56**	**96**	Pn	**Pn**	**00 42 16.6**	**+0.7**
	1.1nm,0.2s,SNR=13						
EPOB				Sn	**Sn**	**00 43 30.3**	**-1.2**
	1.6nm,0.2s,SNR=6.8						
EPOB				Lg		00 44 12.9	
	7.1nm,0.4s,SNR=7.9						
EPOB	**Poblet**	**6.56**	**96**	Pn	**Pn**	**00 42 16.6**	**+0.7**
EPOB				Sn	**Sn**	**00 43 30.2**	**-1.3**
EPOB				Lg		00 44 13.4	
ROSF	**Rostrenen**	**6.66**	**26**	*e*Pn	**Pn**	**00 42 15.1**	**-2.1**
ROSF				*e*Sn	**Sn**	**00 43 23.5**	**-10**
	4.8nm,0.2s						
EMUR	**La Murta**	**6.68**	**131**	Pn	**Pn**	**00 42 20.1**	**+2.6**
	0.6nm,0.2s,SNR=4.0						
EMUR				Lg		00 44 14.3	
	8.9nm,0.5s,SNR=7.9						
EMUR	**La Murta**	**6.68**	**131**	Pn	**Pn**	**00 42 19.8**	**+2.3**
EMUR				Lg		00 44 18.4	
EBEN	**Beniarda**	**6.73**	**121**	Pn	**Pn**	**00 42 21.5**	**+3.3**
EBEN				Lg		00 44 19.2	
MFF	**Saint Martin d**	**6.77**	**49**	*e*Pn	**Pn**	**00 42 18.0**	**-0.8**
MFF				*e*Sn	**Sn**	**00 43 28.7**	**-8.0**
	8.7nm,0.3s						
EMIR	**Miracle**	**6.80**	**91**	Pn	**Pn**	**00 42 20.5**	**+1.3**
	1.7nm,0.7s,SNR=6.2						
EMIR				Sn	**Sn**	**00 43 36.4**	**-1.0**
	4.8nm,0.5s,SNR=7.9						
EMIR				Lg		00 44 19.5	
	8.1nm,0.4s,SNR=4.0						
SGMF	**Saint Gilles**	**6.83**	**30**	*e*Pn	**Pn**	**00 42 17.3**	**-2.4**
SGMF				*e*Sn	**Sn**	**00 43 27.3**	**-11**
	4.3nm,0.2s						
RJF	**Les Rejaudoux**	**7.19**	**63**	*e*Pn	**Pn**	**00 42 23.9**	**-0.8**
	SNR=1.0						
RJF				*e*Sn	**Sn**	**00 43 40.2**	**-7.0**
	13nm,0.3s,SNR=1.0						
MTLF	**Montolieu**	**7.27**	**79**	*e*Pn	**Pn**	**00 42 26.4**	**+0.6**
MTLF				*e*Sn	**Sn**	**00 43 44.7**	**-4.5**
	1.8nm,0.3s						
CAF	**Calviac**	**7.44**	**67**	*e*Pn	**Pn**	**00 42 27.2**	**-1.0**
	SNR=1.0						
CAF				*e*Sn	**Sn**	**00 43 44.9**	**-8.6**
	4.4nm,0.2s						
EIBI	**Ibiza**	**7.59**	**114**	Pn	**Pn**	**00 42 31.1**	**+0.8**
	0.5nm,0.2s,SNR=7.9						
EIBI				Sn	**Sn**	**00 43 51.9**	**-5.2**
	1.1nm,0.4s,SNR=7.9						
EIBI	**Ibiza**	**7.59**	**114**	Pn	**Pn**	**00 42 31.1**	**+0.9**
EIBI				Sn	**Sn**	**00 43 55.4**	**-1.8**
GRR	**Gorron**	**7.62**	**36**	*e*Pn	**Pn**	**00 42 27.2**	**-3.5**
GRR				*e*Sn	**Sn**	**00 43 48.4**	**-10**
	5.3nm,0.3s						
EJON	**La Jonquera**	**7.76**	**86**	Pn	**Pn**	**00 42 33.7**	**+1.0**
	0.2nm,0.1s,SNR=7.9						
EJON	**La Jonquera**	**7.76**	**86**	Pn	**Pn**	**00 42 35.2**	**+2.6**
EMEL	**Melilla**	**7.97**	**152**	Pn	**Pn**	**00 42 36.5**	**+0.8**
	25nm,0.1s,SNR=4.0						
TCF	**Toulx Ste Croi**	**8.02**	**58**	*e*Pn	**P**	**00 42 34.6**	**-1.7**
TCF				*e*Sn	**Sn**	**00 43 57.5**	**-10**
	9.7nm,0.3s						
FLN	**La Foliniere**	**8.07**	**36**	*e*Pn	**P**	**00 42 34.3**	**-2.7**
	SNR=1.0						
FLN				*e*Sn	**Sn**	**00 43 59.2**	**-10**
	7.5nm,0.5s,SNR=1.0						
LDF	**La Druitiere**	**8.10**	**38**	*e*Pn	**P**	**00 42 35.4**	**-2.1**
	SNR=1.0						
LDF				*e*Sn	**Sn**	**00 43 59.2**	**-11**
	3.8nm,0.4s,SNR=1.0						
LASF	**Ste Croix**	**8.53**	**75**	*e*Pn	**P**	**00 42 42.3**	**-1.0**
	SNR=1.0						
LASF				*e*Sn	**Sn**	**00 44 13.3**	**-7.2**
	0.9nm,0.2s						
BGF	**Bois d'Agland**	**8.54**	**57**	*e*Pn	**P**	**00 42 41.9**	**-1.6**
	SNR=1.0						
BGF				*e*Sn	**Sn**	**00 44 09.8**	**-11**
	7.8nm,0.3s,SNR=1.0						
HYF	**Humbligny**	**8.74**	**53**	*e*Pn	**P**	**00 42 45.4**	**-0.9**
HYF				*e*Sn	**Sn**	**00 44 14.5**	**-11**
AVF	**Avril sur Loir**	**8.95**	**57**	*e*Pn	**P**	**00 42 46.0**	**-3.2**
	SNR=1.0						
AVF				*e*Sn	**Sn**	**00 44 19.5**	**-12**
	5.4nm,0.5s,SNR=1.0						
SSF	**Saint Saulge**	**9.16**	**56**	*e*Pn	**P**	**00 42 50.2**	**-2.0**
SSF				*e*Sn	**Sn**	**00 44 23.7**	**-13**
	1.6nm,0.3s						
SMF	**Signal de Mont**	**9.

4.6nm,0.6s,mb4.4
ASAR Alice Springs 49.85 255 P **P 01 34 10.3 +1.1**
5.9nm,1.0s,mb4.6,baz=91,slow=7.8,SNR=30
WB2 Warramunga Arr 49.94 260 *eP* **P 01 34 09.5 -0.4**
WRAB Tennant Creek 49.94 260 *eP* **P 01 34 09.8 -0.1**
7.8nm,0.5s,mb5.0
WRA Warramunga Arr 49.95 260 P **P 01 34 09.7 -0.3**
2.9nm,0.5s,mb4.5,baz=97,slow=8.5,SNR=29
TXAR Lajitas Array 82.18 55 P **P 01 37 37.8 +1.2**
0.5nm,0.8s,mb3.5,baz=210,slow=7.3,SNR=5.1
PDAR Pinedale Array 84.77 41 P **P 01 37 48.5 -0.9**
0.7nm,0.8s,mb3.9,baz=225,slow=2.1,SNR=6.4
KMBO Kilima Mbogo 144.35 238 PKP PKPdf 01 44 56.1 +2.1
1.6nm,1.1s,baz=95,slow=2.7,SNR=4.7
KMBO Kilima Mbogo 144.35 238 *e*PKPdf PKPdf 01 44 55.3 +1.3
BRTR Keskin Array B 149.97 317 PKPbc PKPdf 01 45 07.0 +4.4
1.8nm,0.9s,baz=149,slow=3.0,SNR=13
GERES GERESS Array B 150.43 352 PKPbc PKPdf 01 45 06.7 +3.7
0.4nm,0.6s,baz=45,slow=1.9,SNR=5.1

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*IDC **24** 01:30:11.7±5.9, 13.08N×91.00W, mb3.6/3, mb1 4.0/4, mb1mx3.7/16, ML4.5/2, Error ellipse: s-maj=104.0km s-min=36.6km az=131.0*
*NEIC **24** 01:30:26.6, 13.72N×91.62W, h76km, mb3.8/3, MD4.3(MEX), After MEX.*
*MEX **24** 01:30:26.6±0.3, 13.72N×91.62W, h76km±13km, MD4.3*
*CASC **24** 01:30:26.9±2.4, 13.84N×91.22W, h21km±10km, MD3.9, ML4.7, mb3.8(NEIC)*
ISC 24 01:30:25.3±0.7, **13.94N**±0.08×**91.35W**±0.04, **h74**km±5km, **n33**, σ1**s05**/50, **mb3.6**/5, **1C-2D**, **Near coast of Guatemala**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
JAT	**Jato**	**0.47**	**323**			*eP*	**P**	**01 30 38.6**	**+0.4**
JAT						*eS*	**S**	**01 30 48.9**	**+0.9**
JAT				AML		AML	AML	01 30 49.5	
	comp=N,38μm,0.3s								
FUG	**Fuego 3**	**0.70**	**44**	*eP*		**P**	**P**	**01 30 41.9**	**+1.2**
FUG						*eS*	**S**	**01 30 52.5**	**+0.4**
PCG	**Pacaya**	**0.85**	**58**	*eP*		**P**	**P**	**01 30 41.8**	**-0.6**
PCG						*eS*	**S**	**01 30 53.8**	**-1.3**
IXG	**Ixpaco**	**0.90**	**75**	*eP*		**P**	**P**	**01 30 42.0**	**-1.0**
IXG						*eS*	**S**	**01 30 54.3**	**-1.9**
IXG				AML		AML	AML	01 31 03.0	
	comp=E,195μm,0.4s								
GCG	**Guatemala City**	**1.02**	**51**	*eP*		**P**	**P**	**01 30 45.2**	**+0.7**
GCG						*eS*	**S**	**01 30 58.9**	**+0.1**
GCG				AML		AML	AML	01 31 04.3	
	comp=N,4μm,0.5s								
TPX	**Tapachula**	**1.30**	**317**	*i* P		**P**	**P**	**01 30 48.3**	**0.0**
TPX				*i* S		**S**	**S**	**01 31 05.2**	**-0.2**
CUSS	**Cusmapa**	**1.36**	**91**⇓	*eP*		**P**	**P**	**01 30 48.5**	**-0.6**
CUSS				*eS*		**S**	**S**	**01 31 06.5**	**-0.2**
RBDL	**Robledal**	**1.62**	**84**	*eP*		**P**	**P**	**01 30 52.4**	**-0.2**
RBDL				*eS*		**S**	**S**	**01 31 13.4**	**+0.8**
RTR	**El Retiro**	**1.65**	**91**	*eP*		**P**	**P**	**01 30 53.5**	**+0.5**
RTR				*eS*		**S**	**S**	**01 31 13.8**	**+0.4**
SBLS	**San Blas**	**1.68**	**93**⇓	*eP*		**P**	**P**	**01 30 53.5**	**+0.1**
SBLS				*eS*		**S**	**S**	**01 31 14.9**	**+1.0**
SNJE	**San Jose**	**1.69**	**92**⇑	*eP*		**P**	**P**	**01 30 54.0**	**+0.5**
SNJE				*eS*		**S**	**S**	**01 31 14.6**	**+0.3**
BOQS	**Boqueron**	**2.02**	**96**	*eP*		**P**	**P**	**01 30 57.9**	**0.0**
BOQS				*eS*		**S**	**S**	**01 31 21.8**	**-0.2**
PICS	**Picacho**	**2.04**	**95**	*eP*		**P**	**P**	**01 30 57.0**	**-1.3**
PICS				*eS*		**S**	**S**	**01 31 24.8**	**+2.2**
LFU	**La Fuente**	**2.18**	**95**	*eP*		**P**	**P**	**01 30 57.4**	**-2.8**
LFRS	**El Faro**	**2.25**	**98**	*eP*		**P**	**P**	**01 31 01.5**	**+0.4**
LFRS				*eS*		**S**	**S**	**01 31 27.6**	**0.0**
LCBS	**La Ceiba**	**2.32**	**97**	*eP*		**P**	**P**	**01 31 02.7**	**+0.5**
LCBS				*eS*		**S**	**S**	**01 31 28.8**	**-0.8**
CCIG	**Comitan**	**2.45**	**342**	*i* P		**P**	**P**	**01 31 05.4**	**+1.4**
CCIG				*i* S		**S**	**S**	**01 31 35.7**	**+3.0**
SCX	**San Cristobal**	**3.04**	**336**	*i* P		**P**	**P**	**01 31 06.1**	**-6.2**
CMIG	**Matias Romero**	**4.63**	**313**	*eP*		**P**	**P**	**01 31 33.3**	**-1.1**
CMIG				*i* S		**S**	**S**	**01 32 24.7**	**-2.6**
EVV	**El Vigia**	**5.91**	**320**	*eP*		**P**	**P**	**01 32 02.5**	**+11**
OXX	**Oaxaca**	**6.05**	**302**	*eP*		**P**	**P**	**01 32 01.5**	**+7.6**
VHO	**Vista Hermosa**	**6.05**	**302**	*i* S		**S**	**S**	**01 32 58.8**	**-3.8**
TEIG	**Tepich**	**6.90**	**25**	Pn		**P**	**P**	**01 32 04.9**	**-1.0**
	comp=N,21nm,0.3s,baz=183,slow=14,SNR=28								
TEIG				Lg				01 34 11.2	
	comp=N,2.6nm,0.3s,baz=176,slow=13,SNR=2.3								
TXAR	**Lajitas Array**	**19.10**	**325**	P		**P**	**P**	**01 34 46.4**	**+1.7**
	comp=N,0.2nm,0.3s,baz=146,slow=10,SNR=14								
TXAR	**Lajitas Array**	**19.10**	**325**	P		**P**	**P**	**01 34 46.4**	**+1.7**
MIAR	**Mount Ida**	**20.61**	**355**	P		**P**	**P**	**01 34 59.8**	**-0.9**
	comp=N,4.3nm,1.0s								
MNTX	**Cornudas Mount**	**21.86**	**326**	*eP*		**P**	**P**	**01 35 12.8**	**-0.4**
	comp=N,2.7nm,0.7s,mb3.7								
CPRX	**Cap Rock**	**22.16**	**331**	*eP*		**P**	**P**	**01 35 08.2**	**-7.9**
WVT	**Waverly**	**22.32**	**8**	P		**P**	**P**	**01 35 21.2**	**+3.5**
CCM	**Cathedral Cave**	**24.02**	**0**	*eP*		**P**	**P**	**01 35 33.1**	**-1.0**
	comp=N,3.8nm,0.6s,mb3.9								
PDAR	**Pinedale Array**	**32.74**	**335**	P		**P**	**P**	**01 36 53.6**	**+0.5**
	comp=N,0.2nm,0.5s,mb3.2,baz=148,slow=8.5,SNR=2.6								
NVAR	**Mina Array Bea**	**34.11**	**321**	P		**P**	**P**	**01 37 06.7**	**+1.8**
	comp=N,1.7nm,0.6s,mb4.1,baz=126,slow=9.3,SNR=10								
ILAR	**Eielson Array**	**63.14**	**337**	P		**P**	**P**	**01 40 46.8**	**-0.6**
	comp=N,0.2nm,0.5s,mb3.3,baz=169,slow=5.0,SNR=0.2								

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*NEIC **24** 01:39:54.1±0.2, 24.69N×95.19E, mb4.6/86, Error ellipse: s-maj=7.0km s-min=4.0km az=220.0*
*BJI **24** 01:39:54.0, 24.70N×95.06E, h120km, mB4.8, mb4.9*
*LDG **24** 01:39:55.3±0.1, 24.61N×94.61E, h113km, Mb4.6/34, Ms3.7/5, Error ellipse: s-maj=9.8km s-min=4.2km az=8.0*
*IDC **24** 01:39:56.7±1.6, 24.66N×95.27E, h125km±14km, mb4.3/17, mb1 4.4/18, mb1mx4.4/22, MS3.8/6, Ms1 3.8/6, ms1mx3.5/19, Error ellipse: s-maj=17.5km s-min=9.3km az=50.0*
*MOS **24** 01:39:57.4±0.8, 24.62N×95.27E, h157km, mb4.6/29, Error ellipse: s-maj=17.5km s-min=5.9km az=118.5*
ISC 24 01:39:53.2±0.4, **24.63N**±0.03×**95.11E**±0.02, **h111**km, 3km, **h106**km, 1.1km: **pP-P, n273**, σ1**s11**/303, **mb4.6**/117, **18C-6D, Myanmar**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
IMP	**Imphal**	**1.08**	**278**	*i* P			**P**	**01 40 17.0**	**+1.4**
IMP				*i* S			**S**	**01 40 33.5**	**+1.0**
IMP				*e*				01 41 08.0	
LKP	**Lekhapani**	**2.83**	**18**	*eP*			**P**	**01 40 43.0**	**+5.2**
LKP				*eS*			**S**	**01 41 13.0**	**+1.5**
SHL	**Shillong**	**3.07**	**288**	*eP*			**P**	**01 40 40.9**	**-0.3**
SHL				*eS*			**S**	**01 41 14.3**	**-3.1**
LSA	**Lhasa**	**6.16**	**326**	P			**P**	**01 41 24.0**	**+1.0**
LSA	**Lhasa**	**6.16**	**326**	*eP*			**P**	**01 41 23.8**	**+0.8**
	110nm,0.4s								
SHBG	**Sahibganj**	**6.78**	**276**	*eP*			**P**	**01 41 30.5**	**-1.1**
SHBG				*eS*			**S**	**01 42 43.0**	**-4.8**
KMI	**Kunming**	**6.95**	**84**	*eP*			**P**	**01 41 37.9**	**+4.0**
CM31	**Chiang Mai Arr**	**7.10**	**149**	*eP*			**P**	**01 41 36.9**	**+1.0**
	90nm,0.6s								
CMAR	**Chiang Mai Arr**	**7.10**	**149**	P			**P**	**01 41 38.1**	**+2.2**
	8.7nm,0.3s,baz=326,slow=13,SNR=196								
CMAR	**Chiang Mai Arr**	**7.10**	**149**	P			**P**	**01 41 38.2**	**+2.2**
CMAR				pmax		pmax			
	comp=Z,9.0nm,0.3s								
BOK	**Bokaro**	**8.46**	**266**	*i*				01 43 06.0	
BOK				*i* S			**S**	**01 43 20.0**	**-8.7**
GUN	**Gumba**	**8.90**	**294**	*eP*n			**P**	**01 41 59.3**	**-1.0**
GUN	**Gumba**	**8.90**	**294**	*eS*n			**S**	**01 43 34.2**	**-5.3**
	comp=Z,357nm,0.4s								
PKI	**Pulchoki**	**9.20**	**291**	*eP*n			**P**	**01 42 02.8**	**-1.4**
PKI				*eS*n			**S**	**01 43 41.3**	**-5.2**
	comp=Z,1μm,0.7s								
KKN	**Kakani**	**9.37**	**292**	*eP*n			**P**	**01 42 05.2**	**-1.3**
KKN	**Kakani**	**9.37**	**292**	*eS*n			**S**	**01 43 45.0**	**-5.7**
	comp=Z,3μm,1.0s								
DMN	**Daman**	**9.47**	**290**	*eP*n			**P**	**01 42 06.4**	**-1.4**
DMN				*eS*n			**S**	**01 43 47.6**	**-5.4**
	comp=Z,1μm,0.6s								
CD2	**Chengdu**	**9.89**	**49**	⇑P			**P**	**01 42 13.5**	**0.0**
CD2				XP				01 42 41.3	
CD2				S			**S**	**01 44 03.3**	**+0.2**
CD2				SS		SS		01 44 21.0	+0.1
CD2				AMB		AMB			
	comp=Z,40nm,0.6s								
CD2				AMB		AMB			
	comp=Z,290nm,6.3s								
GKN	**Gorkha**	**9.98**	**292**	*eP*n			**P**	**01 42 13.0**	**-1.7**
GKN				*eS*n			**S**	**01 43 58.0**	**-7.3**
	comp=Z,715nm,0.4s								
GYA	**Guiyang**	**10.59**	**78**	⇑*i*P			**P**	**01 42 28.4**	**+5.5**
GYA				S			**S**	**01 44 20.3**	**+0.3**
GYA				AMB		AMB			
	comp=Z,110nm,0.9s								
GYA				AMB		AMB			
	comp=Z,190nm,3.0s								
KOLN	**Koldanda**	**10.80**	**289**	*eP*n			**P**	**01 42 23.2**	**-2.4**
KOLN				*eS*n			**S**	**01 44 18.5**	**-6.4**
DANN	**Dangsing**	**10.82**	**292**	*eP*n			**P**	**01 42 23.5**	**-2.4**
DANN				*eS*n			**S**	**01 44 19.8**	**-5.6**
BLSP	**Bilaspur**	**12.18**	**261**	*eP*			**P**	**01 42 43.5**	**-0.4**
BLSP				*e*				01 44 43.0	
VIS	**Vishakhapatnam**	**12.96**	**240**	*eP*			**P**	**01 42 55.0**	**+0.8**
VIS				*eS*			**S**	**01 45 05.0**	**-11**
LZH	**Lanzhou**	**13.68**	**31**	P			**P**	**01 43 01.4**	**-2.0**
LZH				AMB		AMB			
	comp=Z,80nm,1.0s								
LZH				AMB		AMB			
	comp=Z,260nm,4.0s								
JBP	**Jabalpur**	**13.91**	**267**⇑	*eP*			**P**	**01 43 10.2**	**+3.6**
JBP				*e*				01 45 38.2	
ENH	**Enshi**	**13.94**	**63**	*eP*			**P**	**01 43 05.8**	**-1.1**
	comp=Z,84nm,0.9s								
QIZ	**Qiongzhong**	**14.77**	**109**	P			**P**	**01 43 19.0**	**+1.4**
QIZ				XP				01 43 51.0	
QIZ				*eS*			**S**	**01 46 03.9**	**+5.4**
QIZ				AMB		AMB			
	comp=Z,133nm,1.3s								
QIZ	**Qiongzhong**	**14.77**	**109**	*eP*			**P**	**01 43 18.8**	**+1.2**
	comp=Z,198nm,1.3s								
KGD	**Kothagudem**	**15.20**	**245**	*eP*			**P**	**01 43 24.6**	**+1.6**
KGD				*eS*			**S**	**01 45 59.9**	**-8.5**
XAN	**Xi'an**	**15.25**	**49**	P			**P**	**01 43 20.1**	**-3.5**
XAN				S			**S**	**01 46 08.3**	**-1.2**
XAN				AMB		AMB			
	comp=Z,12nm,1.0s								
GTA	**Gaotai**	**15.26**	**14**	P			**P**	**01 43 27.1**	**+3.4**
GTA				XP				01 43 54.1	
GTA				S			**S**	**01 46 02.3**	**-7.5**
GTA				SCS		ScS		01 55 22.6	-0.1
GTA				AMB		AMB			
	comp=Z,37nm,0.8s								
GTA				AMB		AMB			
	comp=Z,70nm,5.7s								
GTA				LR		LR			
	comp=N,254nm,10.6s								
GTA				LR		LR			
	comp=E,456nm,10.3s								
GTA				LR		LR			
	comp=Z,252nm,15.2s								
KALG	**Kalgarh**	**15.36**	**292**	*e*			**P**	**01 43 17.3**	**-7.7**
KALG				*e*				01 45 58.1	
AGRA	**Agra**	**15.66**	**283**	*eP*			**P**	**01 43 26.9**	**-1.9**
BHPL	**Bhopal**	**16.23**	**269**	*eP*			**P**	**01 43 36.7**	**+0.8**
BHPL				*i*				01 46 23.4	
NDI	**New Delhi**	**16.50**	**288**	*eP*			**P**	**01 43 38.0**	**-1.2**
NDI				*e*				01 46 27.0	
AYAN	**Aya Nagar**	**16.54**	**287**	*eP*			**P**	**01 43 38.7**	**-1.0**
AYAN				AMb		AMB		01 43 43.8	
	comp=Z,34nm,1.2s								
SONA	**Sohna**	**16.54**	**286**	*eP*			**P**	**01 43 40.3**	**+0.5**
SONA				AMb		AMB		01 43 41.3	
	comp=Z,31nm,0.5s								
SONA				*e*				01 46 30.7	
GZH	**Guangzhou**	**16.75**	**92**	P			**P**	**01 43 47.5**	**+5.1**
GZH				S			**S**	**01 46 54.5**	**+11**
GZH				LR		LR			
	comp=N,697nm,15.1s								
HYB	**Hyderabad**	**17.03**	**248**⇑	*i*P			**P**	**01 43 49.0**	**+3.1**
	comp=N,130nm,1.0s								
HYB				*eS*			**S**	**01 46 44.0**	**-6.0**
HYB	**Hyderabad**	**17.03**	**248**⇑	*eP*			**P**	**01 43 49.0**	**+3.1**
	comp=N,130nm,1.0s								
HYB				*e*				01 44 01.0	
HYB				*eS*			**S**	**01 46 44.0**	**-6.0**
KUDL	**Kundal**	**17.05**	**286**	*eP*			**P**	**01 43 44.5**	**-1.5**
KUDL				AMb		AMB		01 43 51.0	
	comp=Z,20nm,0.3s								
AKL	**Akola**	**17.15**	**260**	*e*			**P**	**01 43 44.5**	**-2.8**
AKL				*e*				01 46 36.6	
KHET	**Khetri**	**17.64**	**285**	*eP*			**P**	**01 43 52.9**	**-0.4**
KHET				AMb		AMB		01 43 56.8	
	comp=Z,44nm,0.5s								
WHN	**Wuhan**	**18.04**	**67**	⇓P			**P**	**01 43 59.0**	**+1.0**
WHN				AP				01 44 10.3	
WHN				*eS*			**S**	**01 47 07.3**	**-4.9**
WHN				AMB		AMB			
	comp=Z,64nm,1.0s								
LATR	**Latur**	**18.32**	**254**	*eP*			**P**	**01 44 03.0**	**+1.7**
LATR				*e*				01 47 31.2	
CUD	**Cuddapah**	**18.40**	**240**⇓	*eP*			**P**	**01 44 02.7**	**+0.6**
CUD				*e*				01 44 09.1	
CUD				*e*PPn				01 44 17.0	
CUD				*e*PP				01 44 32.1	
CUD				*eS*			**S**	**01 47 18.7**	**-1.7**
AJM	**Ajmer**	**18.56**	**280**⇑	*i*P			**P**	**01 44 04.0**	**+0.1**
AJM				*i*				01 47 15.0	
WMQ	**Urumqi**	**20.09**	**344**	⇓P			**P**	**01 44 20.8**	**+0.9**
WMQ				AP				01 44 41.3	
WMQ				PP		PP		01 44 45.1	+2.4
WMQ				XP				01 44 54.0	
WMQ				S			**S**	**01 47 56.1**	**+1.8**
WMQ				XS				01 48 24.4	
WMQ				SS		SS		01 48 31.3	+0.3
WMQ				SCP				01 51 58.5	
WMQ				PCS				01 52 08.8	
WMQ				SCS		ScS		01 55 40.6	+3.5
WMQ				AMB		AMB			
	comp=Z,144nm,1.0s								
WMQ				AMB		AMB			
	comp=Z,778nm,4.3s								
BTO	**Baotou**	**20.24**	**34**	*eP*			**P**	**01 44 21.3**	**-0.2**
POO	**Poona**	**20.67**	**257**	*eP*			**P**	**01 44 28.7**	**+2.6**
POO				*e*				01 44 32.8	
	comp=Z,184nm,1.4s								
IPM	**Ipoh**	**20.73**	**163**⇓	*eP*			**P**	**01 44 19.0**	**-7.7**
KAD	**Karad**	**20.84**	**254**	*eP*			**P**	**01 44 30.0**	**+2.3**
KAD				*e*				01 44 34.6	
	comp=Z,147nm,1.4s								
HHC	**Hu-ho-hao-te**	**21.23**	**36**	*eP*			**P**	**01 44 31.6**	**+0.1**
HHC				AP				01 44 51.8	
HHC				PP		PP		01 45 00.4	+1.9
HHC				S			**S**	**01 48 21.3**	**+5.6**
HHC				PCP		PcP		01 48 29.3	-4.0
HHC				XS				01 48 55.0	
HHC				AMB		AMB			
	comp=Z,15nm,1.5s,mb4.1								
HHC				AMB		AMB			
	comp=Z,138nm,4.5s								
BOM	**Bombay**	**21.47**	**259**	*eP*			**P**	**01 44 29.1**	**-4.9**
BOM				*eS*			**S**	**01 48 21.7**	**+1.5**
JASL	**Jaisalmer**	**21.91**	**281**	*eP*			**P**	**01 44 40.6**	**+2.3**
KSH	**Kashi**	**21.92**	**317**	*eP*			**P**	**01 44 41.0**	**+2.7**
KSH				*e*AP				01 45 02.8	
KSH				*e*PP		PP		01 45 12.4	+5.0
KSH				*eS*			**S**	**01 48 34.0**	**+5.8**
KSH				*e*PCP		PcP		01 48 35.4	+0.7
KSH				*e*XS				01 49 10.3	
KSH				*e*SCP				01 52 02.3	
KSH				*e*PCS				01 52 13.0	
KSH				*e*SCS		ScS		01 55 45.0	+1.4
KSH				AMB		AMB			
	comp=Z,30nm,0.5s,mb4.9								
NJ2	**Nanjing**	**22.14**	**65**	*eP*			**P**	**01 44 41.5**	**+1.0**
NJ2				PP		PP		01 45 08.3	-2.2
NJ2				S			**S**	**01 48 27.0**	**-5.2**
NJ2				AMB		AMB			
	comp=Z,200nm,0.8s,mb5.5								
NJ2				AMB		AMB			
	comp=Z,1μm,5.6s								
TIA	**Tai'an**	**22.16**	**53**	*eP*			**P**	**01 44 41.6**	**+0.9**
BJI	**Beijing**	**23.43**	**44**	P			**P**	**01 44 53.8**	**+0.9**
BJI				AP				01 45 15.1	
BJI				XP				01 45 27.8	
BJI				S			**S**	**01 48 57.4**	**+2.9**
BJI				AMB		AMB			
	comp=Z,13nm,0.6s,mb4.4								
KZA	**Kyzart**	**23.95**	**321**	P			**P**	**01 45 02.5**	**+4.7**
	SNR=6.5								
TKM2	**Tokmak 2**	**24.31**	**323**	P			**P**	**01 45 04.3**	**+2.9**
	SNR=27								
MKAR	**Makanchi Array**	**24.38**	**338**	P			**P**	**01 45 03.8**	**+1.7**
	comp=Z,26nm,0.5s,mb4.8,baz=151,slow=9.5,SNR=315								
MKAR				S			**S**	**01 49 17.5**	**+6.9**
	comp=Z,4.0nm,1.0s,baz=139,slow=13,SNR=5.0								
MKAR				ScP				01 52 07.2	
	comp=Z,6.6nm,1.0s,baz=135,slow=3.4,SNR=7.7								
MKAR				LR		LR		01 55 46.4	
	comp=Z,210nm,20.5s,baz=257,slow=39								
MKAR	**Makanchi Array**	**24.38**	**338**	P			**P**	**01 45 03.8**	**+1.8**
MKAR				S			**S**	**01 49 17.5**	**+6.9**
MKAR				pmax		pmax			
	comp=Z,26nm,0.5s								
MKAR				smax					
	comp=Z,4.0nm,1.0s								
MKAR				pmax		pmax			
	comp=Z,7.0nm,1.0s								
MKAR				MLR		MLR			
	comp=Z,210nm,20.5s								
MKAR	**Makanchi Array**	**24.38**	**338**	P			**P**	**01 45 03.8**	**+1.7**
MKAR				S			**S**	**01 49 17.5**	**+6.9**
MKAR				ScP				01 52 07.2	
MKAR				LR		LR		01 55 46.4	
UCH	**Uchtor**	**24.46**	**321**	P			**P**	**01 45 05.8**	**+2.9**
	SNR=13								
KBK	**Karagaybulak**	**24.49**	**322**	P			**P**	**01 45 07.8**	**+4.6**
	SNR=6.7								
FRU	**Bishkek**	**24.79**	**322**	*eP*			**P**	**01 45 08.0**	**+2.0**
AML	**Almayashu**	**24.88**	**320**	P			**P**	**01 45 12.8**	**+6.0**
	SNR=11								
ULN	**Ulaanbaatar**	**25.05**	**19**	*eP*			**P**	**01 45 07.2**	**-1.2**
ULN	**Ulaanbaatar**	**25.05**	**19**	*eP*			**P**	**01 45 08.0**	**-0.5**
	comp=Z,12nm,0.7s,mb4.5								
USP	**Ospenovka**	**25.14**	**323**	P			**P**	**01 45 11.2**	**+1.8**
	SNR=10								
EKS2	**Erkin-Say**	**25.16**	**321**	P			**P**	**01 45 12.8**	**+3.3**
	SNR=8.5								
ZAK	**Zakamensk**	**26.48**	**12**	*eP*			**P**	**01 45 22.4**	**+0.8**
KKAR	**Karatay Array**	**27.35**	**318**	*i* P			**P**	**01 45 30.6**	**+0.9**
KKAR				pmax		pmax			
	comp=Z,3.0nm,0.5s,mb4.1								
KURK	**Kurchatov**	**28.99**	**338**	*i* P			**P**	**01 45 44.8**	**+0.4**
KURK				pmax		pmax			
	comp=Z,12nm,1.0s,mb4.5								
KURK	**Kurchatov**	**28.99**	**338**	*eP*			**P**	**01 45 44.1**	**-0.2**
JOW	**Kunigami**	**29.91**	**79**	P			**P**	**01 45 52.2**	**-0.5**
	comp=Z,11nm,0.3s,mb4.9,baz=213,slow=15,SNR=11								
ZAL	**Zalesovo**	**30.27**	**348**	P			**P**	**01 45 56.0**	**+0.3**
	comp=Z,2.4nm,0.3s,mb4.3,baz=232,slow=4.2,SNR=7.2								
ZAL	**Zalesovo**	**30.27**	**348**	P			**P**	**01 45 56.0**	**+0.3**
ZAL				pmax		pmax			
	comp=Z,2.0nm,0.3s								
CN2	**Changchun**	**31.29**	**45**	*eP*			**P**	**01 46 04.5**	**-0.2**
CN2				*e*AP		pP		01 46 29.0	-0.5
CN2				*eS*			**S**	**01 51 01.6**	**-0.4**
CN2				AMB		AMB			
	comp=Z,10.0nm,0.6s,mb4.7								
NVS	**Novosibirsk**	**31.43**	**347**	*eP*			**P**	**01 46 04.8**	**-1.1**
NVS				*eS*			**S**	**01 51 01.7**	**-2.5**
NVS				pmax		pmax			
	comp=N,24nm,1.5s								
NVS				pmax		pmax			
	comp=Z,23nm,1.5s,mb4.7								
NVS				smax					
	comp=N,33nm,1.7s								
JNU	**Nakatsue**	**32.32**	**67**	P			**P**	**01 46 13.2**	**-0.7**
	comp=N,11nm,0.9s,mb4.6,baz=252,slow=23,SNR=3.3								
VOSK	**Vostochnaya**	**33.47**	**333**	P			**P**	**01 46 24.2**	**+0.7**
VOSK				pmax		pmax			
	comp=Z,8.0nm,0.8s,mb4.6								
BVA0	**Borovoye Array**	**33.94**	**333**	*eP*			**P**	**01 46 28.6**	**+1.1**
BVAR	**Borovoye Array**	**33.94**	**333**	P			**P**	**01 46 28.2**	**+0.7**
	comp=Z,2.2nm,0.4s,mb4.4,baz=135,slow=11,SNR=14								
BVAR				S			**S**	**01 51 44.1**	**+1.0**
	comp=Z,1.3nm,0.8s,baz=132,slow=19,SNR=3.2								
BVAR				LR		LR		02 02 03.1	
	comp=Z,344nm,21.6s,baz=345,slow=39								
BRVK	**Borovoye**	**34.01**	**333**	*eP*			**P**	**01 46 28.4**	**+0.4**
MDJ	**Mudanjiang**	**34.33**	**46**	P			**P**	**01 46 28.8**	**-2.1**
MDJ				PCP		PcP		01 49 03.0	-1.8
MDJ				S			**S**	**01 51 42.1**	**-7.0**
MDJ				SCS		ScS		01 56 35.0	-4.6
MDJ				AMB		AMB			
	comp=Z,3.0nm,0.9s,mb4.1								
MDJ				AMB		AMB			
	comp=Z,64nm,5.7s								
ZRNK	**Zerenda**	**34.47**	**332**	P			**P**	**01 46 32.4**	**+0.4**
ZRNK				pmax		pmax			
	comp=Z,22nm,1.9s,mb4.7								
ZRNK	**Zerenda**	**34.47**	**332**	*eP*			**P**	**01 46 31.9**	**-0.1**
BOD	**Bodaibo**	**35.82**	**17**	*eP*			**P**	**01 46 42.8**	**-0.6**
AB31	**Akbulak array**	**36.82**	**321**	*eP*			**P**	**01 46 53.2**	**+1.3**
AB31				pmax		pmax			
	comp=Z,3.0nm,0.4s,mb4.6								
MAJO	**Matsushiro**	**38.66**	**62**	*eP*			**P**	**01 47 06.2**	**-1.2**
MAT	**Matsushiro**	**38.66**	**62**	P			**P**	**01 47 06.3**	**-

WRA pmax pmax
comp=Z,20nm,0.7s
WRAB Tennant Creek 58.49 136 *e*P **P 01 49 39.0 -1.2**
comp=Z,337nm,1.8s
WB2 Warramunga Arr 58.49 136⇑ *i*P **P 01 49 39.7 -0.5**
KAF Kangasniemi 58.63 329 *e*p **P 01 49 40.6 0.0**
comp=Z,1.1nm,0.3s,mb4.4,baz=93,slow=6.4
KAF Kangasniemi 58.63 329 *e*P **P 01 49 40.6 0.0**
KAF pmax pmax
comp=Z,1.0nm,0.3s,mb4.3
FINES FINESS Array B 58.67 328 P **P 01 49 41.1 +0.2**
comp=Z,20nm,1.0s,mb5.1,baz=85,slow=5.7,SNR=52
FINES FINESS Array B 58.67 328 P **P 01 49 41.2 +0.3**
FINES pmax pmax
comp=Z,21nm,1.0s
KEV Kevo 59.56 338 *e*p **P 01 49 46.9 0.0**
SUW Suwalki 59.92 320 *e*P **P 01 49 48.7 -0.9**
ARCES ARCESS Array B 60.03 338 P **P 01 49 50.4 +0.2**
comp=Z,4.3nm,0.7s,mb4.6,baz=91,slow=7.4,SNR=18
ARCES ARCESS Array B 60.03 338 P **P 01 49 50.4 +0.2**
ARCES pmax pmax
comp=Z,4.0nm,0.7s
BILL Bilibino 60.36 24 *e*P **P 01 49 50.3 -2.1**
BILL pmax pmax
comp=Z,5.0nm,1.4s,mb4.3
BILL MLR MLR
comp=Z,100nm,16.0s
KWP Kalwaria 60.41 315 *e*P **P 01 49 53.1 +0.1**
KWP *e*pP pP 01 50 18.3 -2.1
KTK1 Kautokeino 60.75 337 *e*P **P 01 49 56.3 +1.2**
KTK1 AMb AMB 01 50 00.7
comp=Z,25nm,1.6s,mb5.0
KTK1 Kautokeino 60.75 337 *e*P **P 01 49 56.3 +1.2**
comp=Z,25nm,1.6s,mb5.0
AS12 Alice Springs 60.99 139⇑ *i*P **P 01 49 57.0 -0.3**
comp=Z,12nm,0.6s,mb5.1
ASAR Alice Springs 60.99 139 P **P 01 49 57.0 -0.3**
comp=Z,15nm,0.7s,mb5.1,baz=321,slow=6.9,SNR=176
ASAR ScP 01 54 27.9
comp=Z,1.0nm,0.8s,baz=329,slow=4.0,SNR=3.8
ASAR LR LR 02 18 30.0
comp=Z,72nm,18.3s,baz=175,slow=38
CRVS Cervenica-Dubn 61.28 314 *i* P **P 01 49 59.0 +0.1**
CRVS *e* 01 50 38.9
KMBO Kilima Mbogo 61.58 254 P **P 01 50 02.7 +1.3**
comp=Z,4.9nm,1.0s,mb4.5,baz=31,slow=12,SNR=5.4
KMBO LR LR 02 17 58.9
comp=Z,48nm,18.7s,baz=280,slow=37
KMBO Kilima Mbogo 61.58 254 *e*P **P 01 50 02.5 +1.1**
KMBO *e*pP pP 01 50 26.9 -2.0
SKO Skopje 62.16 306 *e*P **P 01 50 04.0 -0.9**
VYHS Vyhne 63.06 314 *e*P **P 01 50 10.3 -0.5**
VYHS *e*pP pP 01 50 38.4 +0.1
OKC Ostrava-Krasne 63.34 315 *e*P **P 01 50 12.7 +0.1**
OKC *e*pP pP 01 50 38.8 -1.3
SRO Srobarova 63.50 313 *e*P **P 01 50 13.1 -0.6**
MORC Moravsky Berou 63.73 315 *e*P **P 01 50 14.8 -0.3**
MORC *e*pP pP 01 50 40.6 -2.1
SPB4 Spitsbergen Ar 63.76 347 P **P 01 50 15.2 +0.3**
MOR8 Moi Rana 63.98 334 *e*P **P 01 50 15.5 -1.0**
MOR8 AMb AMB 01 50 16.7
comp=Z,22nm,0.9s,mb5.0
MOR8 Moi Rana 63.98 334 *e*P **P 01 50 15.5 -1.0**
comp=Z,22nm,0.9s,mb5.0
LOF Lofoten 64.26 336 *e*P **P 01 50 19.6 +1.4**
LOF AMb AMB 01 50 34.9
comp=Z,66nm,1.6s,mb5.2
KSP Ksiaz 64.38 316 *e*P **P 01 50 19.5 +0.2**
KSP Ksiaz 64.38 316 *e*P **P 01 50 19.6 +0.3**
KSP *e*pP pP 01 50 45.9 -1.0
KSP *e* 01 51 06.1
DPC Dobruska-Polom 64.43 316 *e*P **P 01 50 20.3 +0.6**
DPC *e*pP pP 01 50 46.5 -0.8
UPC Upice 64.61 316 *e*P **P 01 50 20.5 -0.3**
UPC *e*pP pP 01 50 46.9 -1.5
NSS Namsos 65.12 332 *e*P **P 01 50 22.6 -1.3**
NSS AMb AMB 01 50 37.5
comp=Z,35nm,2.0s,mb4.8
NSS Namsos 65.12 332 *e*P **P 01 50 22.6 -1.3**
comp=Z,35nm,2.0s,mb4.8
ARSA Arzberg 65.45 313⇑ *i*P **P 01 50 26.3 0.0**
comp=Z,5.7nm,0.9s,mb4.4
ARSA *i* 01 50 43.6
PVCC Panska Ves 65.51 316 *e*P **P 01 50 27.2 +0.5**
PVCC *e*pP pP 01 50 53.5 -0.8
PRU Pruhonice 65.62 316 *e*P **P 01 50 27.3 0.0**
PRU *e*pP pP 01 50 53.6 -1.4
BRG Berggiesshubel 65.85 317 *e*P **P 01 50 29.1 +0.3**
BRG *e* pP 01 50 55.6 -0.9
BRG pmax pmax
comp=Z,7.0nm,0.9s,mb4.5
BRG Berggiesshubel 65.85 317 *e*P **P 01 50 29.1 +0.3**
comp=Z,7.1nm,0.9s,mb4.5
BRG *e* pP 01 50 55.6 -0.9
NB2 NORSAR Subarra 65.85 328 P **P 01 50 27.8 -0.8**
comp=Z,12nm,0.9s,mb4.7,baz=83,slow=6.2
NB2 NORSAR Subarra 65.85 328 P **P 01 50 27.8 -0.8**
baz=83,slow=6.2
NOA NORSAR Array B 65.85 328 P **P 01 50 28.2 -0.4**
comp=Z,9.7nm,0.9s,mb4.6,baz=83,slow=6.4,SNR=32
NOA NORSAR Array B 65.85 328 P **P 01 50 28.2 -0.4**
NOA pmax pmax
comp=Z,10.0nm,0.9s
NOA NORSAR Array B 65.85 328 P **P 01 50 28.2 -0.5**
MOA Molln 66.18 313⇑ *i*P **P 01 50 30.8 -0.2**
comp=Z,10.0nm,0.9s,mb4.7
MOA *i* pP 01 50 55.9 -2.8
CLL Collm 66.36 317 P **P 01 50 32.0 0.0**
CLL *i* *PP pP 01 50 58.7 -1.0
CLL *e* 01 51 18.0
CLL Collm 66.36 317 *e*P **P 01 50 32.0 0.0**
CLL *i* pP 01 50 58.7 -1.0
CLL *e* 01 51 18.0
GEC2 GERESS Array S 66.36 315 *e*P **P 01 50 32.5 +0.4**
GEC2 pmax pmax
comp=Z,12nm,1.2s,mb4.6
GEC2 GERESS Array S 66.36 315 *e*P **P 01 50 32.5 +0.4**
comp=Z,12nm,1.2s,mb4.6
GERES GERESS Array B 66.36 315 P **P 01 50 32.4 +0.3**
comp=Z,3.3nm,0.4s,mb4.5,baz=68,slow=6.2,SNR=48
GERES PcP PcP 01 50 58.7 -2.1
comp=Z,4.7nm,0.8s,baz=80,slow=6.0,SNR=11
GERES GERESS Array B 66.36 315 P **P 01 50 32.4 +0.3**
GERES pP 01 50 58.7 -1.1
GERES pmax pmax
comp=Z,3.0nm,0.4s
GERES pmax pmax
comp=Z,5.0nm,0.8s
KHC Kasperske Hory 66.39 315 *e*P **P 01 50 31.9 -0.3**
KHC *e*pP pP 01 50 58.4 -1.6
CTA Charters Tower 66.72 127 *e*P **P 01 50 34.7 -0.2**
comp=Z,8.7nm,1.0s,mb4.5
CTAO Charters Tower 66.72 127 *e*P **P 01 50 33.4 -1.5**
NKC Novy Kostel 66.90 316 *e*P **P 01 50 35.5 +0.1**
NKC *e*pP pP 01 51 02.3 -0.9
KBA Koelnbreinsper 66.94 313⇑ *i*P **P 01 50 35.1 -0.7**
comp=Z,4.4nm,0.8s,mb4.3
MOL Molde 67.34 330 *e*P **P 01 50 40.8 +2.8**
MOL AMb AMB 01 50 47.6
comp=Z,32nm,1.6s,mb4.9
MOL Molde 67.34 330 *e*P **P 01 50 40.8 +2.8**
comp=Z,32nm,1.6s,mb4.9
MOX Moxa 67.34 317 *i* P **P 01 50 38.7 +0.5**
comp=Z,logA/T=0.9,mb4.5
MOX pP pP 01 51 05.0 -1.0
MOX Moxa 67.34 317 *e*P **P 01 50 38.7 +0.5**
MOX *e* pP 01 51 05.2 -0.8
MOX pmax pmax
comp=Z,9.0nm,1.1s,mb4.5
MOX Moxa 67.34 317 *e*P **P 01 50 38.7 +0.5**
comp=Z,9.0nm,1.1s,mb4.5
MOX *e* pP 01 51 05.2 -0.8
BSEG Bad Segeberg 67.48 320 *e*P **P 01 50 39.8 +0.8**
BSEG *e**PP pP 01 51 06.7 -0.1
BSEG pmax pmax
comp=Z,18nm,0.8s,mb5.0
GRA1 Grafenberg Arr 67.79 316 *e*P **P 01 50 41.9 +0.9**
comp=Z,32nm,1.6s,mb4.9
GRA1 *e*pP pP 01 51 10.8 +2.0
GRF Grafenberg Arr 67.79 316 *e*P **P 01 50 41.9 +0.9**
GRF *e**PP pP 01 51 10.8 +2.0
GRF pmax pmax
comp=Z,32nm,1.6s,mb4.9
CLZ Clausthal 67.86 318 *e*P **P 01 50 42.0 +0.6**
comp=Z,13nm,1.0s,mb4.7
WTTA Wattenberg 68.04 313⇑ *i*P **P 01 50 42.2 -0.4**
comp=Z,8.2nm,1.2s,mb4.4
WTTA *i* 01 51 03.2
WATA Walderalm 68.07 313⇓ *i*P **P 01 50 42.4 -0.3**
comp=Z,5.4nm,1.1s,mb4.3
WATA *i* pP 01 51 07.9 -2.7
SQTA Sankt Quirin 68.34 313⇑ *i*P **P 01 50 43.8 -0.6**
comp=Z,6.3nm,1.0s,mb4.4
SQTA *i* pP 01 51 10.3 -2.0
MOTA Moosalm 68.38 313⇑ *i*P **P 01 50 44.2 -0.5**
comp=Z,6.4nm,1.0s,mb4.4
MOTA *i* pP 01 51 10.0 -2.6
DAVA Damuels 69.20 313⇑ *i*P **P 01 50 49.7 0.0**
comp=Z,13nm,1.2s,mb4.6
DAVA *i* 01 51 11.1
LANF Langenberg 70.12 316 *e*P **P 01 50 55.3 0.0**
FELD Feldberg 70.28 314 *e*P **P 01 50 56.4 +0.1**
WLS Welschbruch 70.56 315 *e*P **P 01 50 57.7 -0.3**
CDF Champ du Feu 70.61 315 *e*P **P 01 50 58.4 +0.1**
comp=Z,6.5nm,0.4s,mb4.5
MOF Molkenrain 70.85 315 *e*P **P 01 50 59.9 +0.2**
WLF Walferdange 70.99 317 *e*P **P 01 51 00.9 +0.4**
comp=Z,18nm,0.9s,mb4.9
WLF *e*pP pP 01 51 27.8 -0.8
PGF Pioggiola 71.04 309 *e*P **P 01 51 01.1 +0.2**
comp=Z,24nm,0.8s,mb4.8
HINF Hinteralfeld 71.05 315 *e*P **P 01 51 00.6 -0.2**
HAU Haudompre 71.32 315 *e*P **P 01 51 02.5 0.0**
comp=Z,6.9nm,0.6s,mb4.3
HAU *e*R
comp=Z,79nm,21.2s
DAG Danmarks Havn 71.41 347⇑ *i*P **P 01 51 02.3 -0.3**
comp=Z,13nm,1.0s,mb4.7
DAG Danmarks Havn 71.41 347⇑ *i*P **P 01 51 02.3 -0.3**
DAG pmax pmax
comp=Z,13nm,1.0s,mb4.7
STKA Stephens Creek 71.62 139 *e*P **P 01 51 02.5 -2.1**
comp=Z,3.2nm,0.6s,mb4.3
STKA Stephens Creek 71.62 139 P **P 01 51 04.0 -0.6**
comp=Z,5.6nm,0.7s,mb4.5,baz=326,slow=9.6,SNR=9.9
GIVF Givet 71.69 317 *e*P **P 01 51 05.0 +0.3**
LPG La Plagne 71.76 312 *e*P **P 01 51 06.0 +0.8**
comp=Z,13nm,0.6s,mb4.7
SBF Sospel 71.77 310 *e*P **P 01 51 05.2 0.0**
comp=Z,31nm,1.1s,mb4.8
LPL La Plagne 71.77 312 *e*P **P 01 51 05.9 +0.7**
comp=Z,20nm,0.6s,mb4.8
CABF La Chapelle 71.89 314 *e*P **P 01 51 06.3 +0.4**
comp=Z,17nm,0.9s,mb4.6
MBDF Montbardon 71.97 311 *e*P **P 01 51 06.8 +0.4**
comp=Z,9.5nm,0.6s,mb4.5
MEZF Maizieres J'vi 72.01 316 *e*P **P 01 51 07.0 +0.4**
comp=Z,13nm,0.3s,mb4.9
BAIF Baives 72.08 317 *e*P **P 01 51 07.0 0.0**
FRF La Foret Royal 72.40 310 *e*P **P 01 51 09.0 0.0**
comp=Z,21nm,1.0s,mb4.6
ORIF Oris-en-Rattie 72.52 312 *e*P **P 01 51 09.6 -0.1**
comp=Z,10nm,0.7s,mb4.5
ORIF *e*R
comp=Z,82nm,20.8s
LMR La Mourre 72.57 310 *e*P **P 01 51 10.0 +0.1**
comp=Z,24nm,1.0s,mb4.7
SMRF Simiane la Rot 73.02 311 *e*P **P 01 51 13.0 +0.5**
comp=Z,17nm,1.0s,mb4.5
SMF Signal de Mont 73.35 314 *e*P **P 01 51 14.6 +0.2**
comp=Z,26nm,0.9s,mb4.8
VIVF Saint-Julien-l 73.36 312 *e*P **P 01 51 14.7 +0.2**
comp=Z,18nm,1.0s,mb4.5
SSF Saint Saulge 73.44 315 *e*P **P 01 51 15.2 +0.3**
comp=Z,25nm,0.8s,mb4.8
AVF Avril sur Loir 73.62 314 *e*P **P 01 51 16.0 0.0**
comp=Z,21nm,0.9s,mb4.6
PLDF La Plantade 73.71 313 *e*P **P 01 51 16.9 +0.3**
AGO Saint Agoulin 74.01 314 *e*P **P 01 51 18.8 +0.5**
BGF Bois d'Agland 74.03 314 *e*P **P 01 51 18.5 +0.1**
comp=Z,5.3nm,0.6s,mb4.1
LASF Ste Croix 74.16 311 *e*P **P 01 51 19.4 +0.2**
comp=Z,20nm,0.9s,mb4.5
LBL Lulhac 74.20 313 *e*P **P 01 51 20.1 +0.7**
TCF Toulx Ste Croi 74.53 314 *e*P **P 01 51 21.9 +0.6**
comp=Z,23nm,0.8s,mb4.6
CAF Calviac 75.09 313 *e*P **P 01 51 25.2 +0.7**
comp=Z,20nm,1.0s,mb4.5
LDF La Druitiere 75.24 317 *e*P **P 01 51 25.5 +0.2**
comp=Z,6.6nm,0.4s,mb4.4
RJF Les Rejaudoux 75.32 313 *e*P **P 01 51 26.8 +1.0**
comp=Z,27nm,0.9s,mb4.7
RJF *e*R
comp=Z,104nm,23.0s
EJON La Jonquera 75.37 310 P **P 01 51 27.2 +1.1**
comp=Z,1.5nm,0.3s,mb4.2
FLN La Foliniere 75.40 317 *e*P **P 01 51 26.2 0.0**
comp=Z,2.7nm,0.4s,mb4.0
FLN *e*R
comp=Z,123nm,21.5s
MTLF Montolieu 75.53 311 *e*P **P 01 51 26.8 -0.2**
comp=Z,34nm,1.2s,mb4.7
GRR Gorron 75.77 317 *e*P **P 01 51 28.5 +0.2**
comp=Z,5.9nm,0.6s,mb4.2
MFF Saint Martin d 75.95 315 *e*P **P 01 51 29.6 +0.2**
LFF La Frestale 75.97 313 *e*P **P 01 51 30.4 +0.9**
comp=Z,14nm,0.8s,mb4.4
EMIR Miracle 76.50 310 P **P 01 51 31.0 -1.6**
comp=Z,9.9nm,0.7s,mb4.7
SGMF Saint Gilles 76.87 317 *e*P **P 01 51 34.9 +0.4**
comp=Z,19nm,0.8s,mb4.6
EPF Esparros 76.92 311 *e*P **P 01 51 35.3 +0.4**
ARMA Armidale 77.00 132 *e*P **P 01 51 37.1 +1.5**
EPOB Poblet 77.02 310 P **P 01 51 33.5 -2.0**
comp=Z,4.8nm,0.8s,mb4.3
ROSF Rostrenen 77.28 317 *e*P **P 01 51 37.1 +0.3**
comp=Z,12nm,0.6s,mb4.5
ETSF Etsaut 77.58 312 *e*P **P 01 51 39.0 +0.5**
comp=Z,12nm,0.7s,mb4.5
EIBI Ibiza 77.68 307 P **P 01 51 37.9 -1.2**
comp=Z,11nm,1.0s,mb4.5
ESAC San Caprasio 77.96 310 P **P 01 51 37.3 -3.3**
SUMG Summit 78.10 347 *e*P **P 01 51 41.2 +0.5**
SUMG *e*pP pP 01 52 11.0 +1.6
EMOS Mosqueruela 78.48 309 P **P 01 51 44.2 +0.7**
comp=Z,4.8nm,0.8s,mb4.3
ILAR Eielson Array 78.97 23 P **P 01 51 44.4 -1.2**
comp=Z,0.8nm,0.8s,mb3.6,baz=307,slow=6.4,SNR=6.8
ILAR Eielson Array 78.97 23 P **P 01 51 44.4 -1.3**
ILAR pmax pmax
comp=Z,1.0nm,0.8s
ELAN Lanestosa 79.40 313 P **P 01 51 49.9 +1.5**
comp=Z,7.9nm,0.8s,mb4.6
ETOR Torete 79.41 310 P **P 01 51 49.1 +0.5**
comp=Z,12nm,0.9s,mb4.7
ETOB Tobarra 79.91 308 P **P 01 51 49.9 -1.4**
comp=Z,5.6nm,0.7s,mb4.5
EMUR La Murta 80.01 307 P **P 01 51 49.3 -2.5**
comp=Z,5.9nm,1.0s,mb4.4
EVIA Vianos 80.60 308 P **P 01 51 54.1 -0.9**
comp=Z,8.8nm,0.9s,mb4.6
INK Inuvik 80.73 16 P **P 01 51 53.9 -1.2**
comp=Z,3.6nm,1.0s,mb4.2,baz=306,slow=6.8,SNR=12
INK Inuvik 80.73 16 P **P 01 51 53.9 -1.2**
INK pmax pmax
comp=Z,4.0nm,1.0s
INK Inuvik 80.73 16 *e*P **P 01 51 54.2 -0.9**
comp=Z,5.9nm,1.2s,mb4.3
GUD Guadarrama 80.94 310 P **P 01 51 58.2 +1.4**
comp=Z,7.6nm,0.8s,mb4.6
EHUE Huescar 81.00 307 P **P 01 51 55.4 -1.7**
comp=Z,3.3nm,1.0s,mb4.3
ESDC Sonseca Array 81.21 310 P **P 01 51 58.7 +0.5**
comp=Z,2.0nm,0.7s,mb4.1
ESLA Sonseca Array 81.21 310 *e*P **P 01 51 58.7 +0.5**
comp=Z,7.5nm,1.2s,mb4.4
EQES Quesada 81.35 308 P **P 01 51 55.9 -3.1**
comp=Z,4.6nm,0.8s,mb4.4
ELUQ Luque 82.31 308 P **P 01 52 01.5 -2.4**
comp=Z,1.1nm,0.3s,mb4.2
ELOB Lobios 83.07 313 P **P 01 52 04.5 -3.1**
ELIJ Sierra de Lija 83.39 308 P **P 01 52 08.3 -1.1**
comp=Z,5.0nm,0.8s,mb4.4
LBTB Lobatse 83.41 239 *e*P **P 01 52 09.8 0.0**
comp=Z,15nm,1.2s,mb4.7
LBTB *e*pP pP 01 52 40.4 +1.7
EBAD Badajoz 83.75 310 P **P 01 52 10.2 -0.9**
comp=Z,2.9nm,0.8s,mb4.2
ESPR Espera 83.76 308 P **P 01 52 09.6 -1.6**
comp=Z,8.5nm,0.9s,mb4.6
EMIN Mina Concepcio 83.94 309 P **P 01 52 11.1 -1.0**
comp=Z,3.2nm,0.7s,mb4.3
EVO Evora 84.55 310 *e*P **P 01 52 15.7 +0.6**
comp=Z,13nm,1.1s,mb4.5
EVO *e*R
comp=Z,83nm,21.5s
EGRO El Granado 84.62 309 P **P 01 52 12.6 -3.0**
comp=Z,9.5nm,1.1s,mb4.6
DBIC Dimbokro 96.24 280 LR LR 02 38 06.4
comp=Z,61nm,18.8s,baz=66,slow=36
QSPA South Pole Qui 114.44 180 *e*PKP PKPdf 01 58 19.6 +0.4
TXAR Lajitas Array 123.39 20 PKP PKPdf 01 58 38.5 +0.9
comp=Z,0.2nm,0.6s,baz=162,slow=4.0,SNR=3.5
TXAR Lajitas Array 123.39 20 PKP PKPdf 01 58 38.5 +0.9
SDV Santo Domingo 143.90 336 PKP PKPdf 01 59 15.7 -0.4
comp=Z,24nm,0.5s,baz=54,slow=2.3,SNR=52
BDFB Brasilia 144.33 277 PKP PKPdf 01 59 17.9 +1.1
comp=Z,18nm,0.8s,baz=99,slow=3.0,SNR=25
ROSC El Rosal 148.94 339 PKPbc PKPdf 01 59 32.1 +7.5
comp=Z,13nm,0.8s,baz=6.6,slow=6.2,SNR=15
TRQA Tornquist 156.37 230 *e*PKPab PKPab 02 00 04.1 -1.7

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*BJI **24** 01:42:34.6, 13.30N×49.70E, h10km, mb4.3*
*IDC **24** 01:42:35.4±0.7, 13.31N×49.77E, mb4.3/14, mb1 4.4/15, mb1mx4.4/19, ML3.1/1, MS4.0/11; Ms1 3.9/11, ms1mx3.8/21, Error ellipse: s-maj=18.4km s-min=17.7km az=96.0, putative timing error at EIL*
*NEIC **24** 01:42:36.6±0.4, 13.31N×49.70E, h10km, mb4.6/23, Error ellipse: s-maj=10.7km s-min=8.9km az=218.0*
*DHMR **24** 01:42:39.0±0.7, 13.52N×49.21E, h10km, ML4.4*
ISC 24 01:42:34.7±0.4, 13.25N±0.05×49.56E±0.04, h10km, (h17km±1.6km:pP-P), n66, σ1$24/62, mb4.5/34, MS3.9/10, 1C-2D, Eastern Gulf of Aden

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MUKL	**Al Mukalla**	**1.15**	**333**⇑	*e*P	**Pb**	**01 42 56.8**	**+0.7**
MUKL				*i* S	**Sb**	**01 43 10.8**	**-0.1**
MUKL				AML	AML	01 43 12.6	
	comp=N,11μm,0.3s						
LBOS		**4.24**	**279**⇓	*i*P	**Pn**	**01 43 41.2**	**+0.4**
LBOS				*i* S	**Sn**	**01 44 29.7**	**-1.2**
TRBA	**At Turbah**	**5.30**	**270**⇓	*e*P	**Pn**	**01 43 55.4**	**-0.4**
TRBA				*i* S	**Sn**	**01 44 55.9**	**-1.7**
UDYN	**Al 'Udayn**	**5.46**	**278**	*e*P	**Pn**	**01 43 58.1**	**0.0**
KMBO	**Kilima Mbogo**	**18.79**	**221**	P	**P**	**01 46 59.1**	**+2.5**
	comp=N,0.1nm,0.3s,baz=44,slow=13,SNR=12						
KMBO				LR	LR	01 54 11.4	
	comp=N,371nm,19.4s,baz=189,slow=37						
KMBO	**Kilima Mbogo**	**18.79**	**221**	*e*P	**P**	**01 46 59.2**	**+2.5**
	comp=N,12nm,1.3s						
ASF	**Jabal al Asfar**	**22.12**	**330**	P	**P**	**01 47 34.7**	**+2.7**
	comp=N,5.3nm,0.8s,mb4.0,baz=17,slow=7.2,SNR=11						
ASF				LR	LR	01 56 45.5	
	comp=N,456nm,18.9s,MS3.9,baz=157,slow=38						
THR	**Tehran**	**22.60**	**3**	P	**P**	**01 47 38.8**	**+2.0**
	comp=N,11nm,0.9s,mb4.3,baz=147,slow=8.5,SNR=27						
THR				LR	LR	01 57 54.0	
	comp=N,643nm,18.9s,MS4.1,baz=344,slow=41						
CSS	**Prodhromos**	**26.13**	**329**	P	**P**	**01 48 12.2**	**+1.5**
GZT	**Gaziantep**	**26.29**	**338**	*i* P	**P**	**01 48 14.0**	**+1.9**
GNI	**Garni**	**27.12**	**352**	LR	LR	02 00 50.1	
	comp=N,884nm,18.2s,MS4.4,baz=166,slow=40						
ERZM	**Erzurum**	**27.51**	**346**	*i* P	**P**	**01 48 19.5**	**-3.9**
BRTR	**Keskin Array B**	**29.87**	**335**	P	**P**	**01 48 45.5**	**+0.8**
	comp=N,1.2nm,0.8s,mb3.7,baz=159,slow=11,SNR=9.9						
BRTR				LR	LR	02 01 11.8	
	comp=N,152nm,21.3s,MS3.6,baz=115,slow=37						
CTKT	**Corum**	**30.18**	**337**	*i* P	**P**	**01 48 47.2**	**-0.2**
BOYT	**Boyabat**	**30.84**	**338**	*i* P	**P**	**01 48 54.0**	**+0.9**
ESKT	**Eskisehir**	**30.94**	**331**	*i* P	**P**	**01 48 55.5**	**+1.5**
BALT	**Daday**	**31.51**	**336**	*i* P	**P**	**01 48 59.2**	**+0.2**
VAE	**Valguarnera**	**39.52**	**314**	P	**P**	**01 50 09.9**	**+2.5**
	comp=N,10nm,1.1s,mb4.5,baz=187,slow=5.5,SNR=3.5						
PSZ	**Piszkesteto**	**42.47**	**330**	P	**P**	**01 50 33.9**	**+2.4**
	comp=N,20nm,1.4s,mb4.5						
ZRNK	**Zerenda**	**42.53**	**17**	*e*P	**P**	**01 50 31.9**	**-0.1**
BRVK	**Borovoye**	**43.00**	**18**	*e*P	**P**	**01 50 34.5**	**-1.3**
BVAR	**Borovoye Array**	**43.01**	**18**	P	**P**	**01 50 35.2**	**-0.6**
	comp=N,1.3nm,0.6s,mb3.8,baz=196,slow=10,SNR=3.6						
BVAR				PcP	PcP	01 52 25.6	-1.2
	comp=N,1.0nm,0.6s,baz=217,slow=7.2,SNR=3.3						
MKAR	**Makanchi Array**	**43.25**	**33**	P	**P**	**01 50 37.3**	**-0.6**
	comp=N,2.6nm,0.6s,mb4.1,baz=220,slow=7.9,SNR=8.1						
MKAR				LR	LR	02 10 14.1	
	comp=N,52nm,20.3s,MS3.4,baz=235,slow=38						
LBTB	**Lobatse**	**44.65**	**212**	*e*P	**P**	**01 50 51.2**	**+1.7**
	comp=N,11nm,1.3s,mb4.5						
TSUM	**Tsumeb**	**45.08**	**225**	P	**P**	**01 50 56.3**	**+3.2**
	comp=N,5.0nm,1.0s,mb4.3,baz=40,slow=6.7,SNR=7.0						
CM31	**Chiang Mai Arr**	**47.67**	**77**	*e*P	**P**	**01 51 12.2**	**-1.3**
	comp=N,13nm,0.8s,mb5.0						
CMAR	**Chiang Mai Arr**	**47.67**	**77**	P	**P**	**01 51 12.4**	**-1.1**
	comp=N,11nm,0.8s,mb4.9,baz=277,slow=8.8,SNR=20						
CMAR				LR	LR	02 09 53.5	
	comp=N,53nm,20.7s,MS3.5,baz=270,slow=34						
ZAL	**Zalesovo**	**49.16**	**27**	LR	LR	02 15 18.2	
	comp=N,98nm,18.4s,MS3.8,baz=180,slow=40						
EIBI	**Ibiza**	**49.59**	**310**	P	**P**	**01 51 34.7**	**+6.5**
	comp=N,11nm,1.0s,mb4.8						
FINES	**FINESS Array B**	**51.03**	**346**	P	**P**	**01 51 38.1**	**-0.6**
	comp=N,3.1nm,0.8s,mb4.3,baz=146,slow=11,SNR=4.2						
FINES				LR	LR	02 17 20.0	
	comp=N,138nm,19.1s,MS4.0,baz=233,slow=41						
EMUR	**La Murta**	**51.22**	**308**	P	**P**	**01 51 43.5**	**+3.0**
	comp=N,5.9nm,1.0s,mb4.5						
ETOB	**Tobarra**	**51.66**	**309**	P	**P**	**01 51 43.9**	**+0.1**
	comp=N,5.6nm,0.7s,mb4.6						
EHUE	**Huescar**	**52.25**	**308**	P	**P**	**01 51 48.4**	**+0.1**
	comp=N,5.3nm,1.0s,mb4.4						
EVIA	**Vianos**	**52.38**	**309**	P	**P**	**01 51 48.9**	**-0.5**
	comp=N,8.8nm,0.9s,mb4.7						
ETOR	**Torete**	**52.61**	**312**	P	**P**	**01 51 43.5**	**-7.6**
	comp=N,12nm,0.9s,mb4.8						
EQES	**Quesada**	**52.62**	**308**	P	**P**	**01 51 50.5**	**-0.6**
	comp=N,4.6nm,0.8s,mb4.5						
ECOG	**Cogollos-Vega**	**52.88**	**307**	P	**P**	**01 51 52.0**	**-1.1**
	comp=N,1.4nm,0.5s,mb4.2						
ECOG				P		01 51 57.6	
ERON	**Agron**	**53.02**	**306**	P	**P**	**01 51 54.7**	**+0.6**
	comp=N,2.1nm,0.4s,mb4.4						
EBAN	**Banos Encina**	**53.25**	**308**	P	**P**	**01 51 54.5**	**-1.3**
ELOJ	**Sierra Loja**	**53.32**	**307**	P	**P**	**01 51 56.0**	**-0.4**
	comp=N,3.4nm,0.9s,mb4.3						
ELUQ	**Luque**	**53.49**	**307**	P	**P**	**01 51 55.8**	**-1.8**
	comp=N,1.1nm,0.3s,mb4.3						
ESDC	**Sonseca Array**	**53.73**	**310**	P	**P**	**01 51 59.3**	**0.0**
	comp=N,2.1nm,0.7s,mb4.2,baz=108,slow=7.5,SNR=15						
ESDC	**Sonseca Array**	**53.73**	**310**	P	**P**	**01 51 53.3**	**-6.0**
	comp=N,2.0nm,0.7s,mb4.2						
EADA	**Adamuz**	**53.86**	**308**	P	**P**	**01 51 56.0**	**-4.2**
EADA				P	pP	01 51 59.5	-3.8
DBIC	**Dimbokro**	**53.91**	**269**	P	**P**	**01 52 01.6**	**+0.7**
	comp=N,6.6nm,1.3s,mb4.4,baz=90,slow=13,SNR=3.9						
GUD	**Guadarrama**	**54.11**	**311**	P	**P**	**01 51 52.4**	**-10**
ELIJ	**Sierra de Lija**	**54.23**	**306**	P	**P**	**01 52 00.9**	**-2.2**
	comp=N,5.0nm,0.8s,mb4.5						
ESPR	**Espera**	**54.60**	**306**	P	**P**	**01 52 02.8**	**-2.9**
	comp=N,8.5nm,0.9s,mb4.8						
EMIN	**Mina Concepcio**	**55.40**	**307**	P	**P**	**01 52 04.9**	**-6.7**
	comp=N,3.2nm,0.7s,mb4.5						
EBAD	**Badajoz**	**55.85**	**308**	P	**P**	**01 52 04.8**	**-10**
EGRO	**El Granado**	**55.99**	**306**	P	**P**	**01 52 06.4**	**-9.5**
	comp=N,9.5nm,1.1s,mb4.7						
ARCES	**ARCESS Array B**	**58.27**	**350**	P	**P**	**01 52 30.7**	**-0.8**
	comp=N,2.6nm,0.7s,mb4.3,baz=127,slow=6.1,SNR=4.6						
EGOM	**La Gomera**	**63.51**	**295**	P	**P**	**01 52 57.3**	**-10**
CN2	**Changchun**	**70.79**	**48**	*e*P	**P**	**01 53 51.5**	**-1.9**
NWAO	**Narrogin (SRO)**	**79.17**	**128**	*e*P	**P**	**01 54 41.3**	**-0.3**
	comp=N,9.8nm,0.9s,mb4.7						
MAW	**Mawson**	**81.22**	**175**	LR	LR	02 21 28.6	
	comp=N,145nm,21.9s,MS4.3,baz=57,slow=29						
FITZ	**Fitzroy Crossi**	**81.23**	**111**	*e*P	**P**	**01 54 52.3**	**-0.6**
	comp=N,8.5nm,1.0s,mb4.6						
FITZ				*e*pP	pP	01 54 58.6	+2.5
WRA	**Warramunga Arr**	**89.65**	**110**	P	**P**	**01 55 35.1**	**+0.3**
	comp=N,17nm,0.7s,mb5.5,baz=298,slow=3.7,SNR=73						
WRAB	**Tennant Creek**	**89.65**	**110**	*e*P	**P**	**01 55 35.1**	**+0.3**
	comp=N,63nm,0.8s						
WRAB				*e*		01 55

ASAR	**Alice Springs**	**90.17**	**114**	P	**P**	**01 55 37.5**	**+0.4**
	comp=N,111nm,0.8s,mb5.2,baz=288,slow=4.7,SNR=55						
STKA	**Stephens Creek**	**98.57**	**121**	LR	LR	02 36 27.5	
	comp=N,80nm,19.6s,MS4.2,baz=18,slow=33						
PDAR	**Pinedale Array**	**121.05**	**342**	PKP	PKPdf	02 01 28.9	-2.1
	comp=N,0.4nm,0.9s,baz=56,slow=3.3,SNR=2.8						
NVAR	**Mina Array Bea**	**127.35**	**348**	PKP	PKPdf	02 01 43.5	+0.3
	comp=N,0.4nm,0.3s,baz=117,slow=2.0,SNR=3.8						
TXAR	**Lajitas Array**	**130.40**	**329**	PKP	PKPdf	02 01 48.3	-1.1
	comp=N,0.9nm,0.9s,baz=45,slow=3.5,SNR=6.0						

*NNC **24** 02:18:19.2±2.5,43.35N×73.58E,mpv3.1,Error ellipse: s-maj=30.0km s-min=11.8km az=153.0*
*KNET **24** 02:18:22.9±0.6,43.45N×73.57E,h17km±3km,ml3.0,Error ellipse: s-maj=4.0km s-min=2.0km az=143.0*

ISC 24 02:18:21.4±0.8,**43.58N**±0.05×**73.47E**±0.06,**h10**km,**n16,**
σ0§**81**/23,**16C-8D,Central Kazakhstan**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
USP	**Ospenovka**	**0.81**	**112**	⇓P	**Pb**	**02 18 36.8**	**-0.3**
	46nm,0.1s,SNR=328						
USP				⇑S	**Sb**	**02 18 47.1**	**-0.7**
	921nm,0.3s						
EKS2	**Erkin-Say**	**0.94**	**166**	P	**Pb**	**02 18 39.2**	**-0.2**
	164nm,0.2s,SNR=697						
EKS2				⇑S	**Sb**	**02 18 51.0**	**-0.8**
	242nm,0.1s						
CHMS	**Chumysh**	**1.10**	**122**	P	**Pb**	**02 18 41.6**	**-0.5**
	49nm,0.1s,SNR=168						
CHMS				⇑S	**Sb**	**02 18 55.2**	**-1.1**
	361nm,0.1s						
AAK	**Ala-Archa**	**1.21**	**141**	P	**Pb**	**02 18 43.3**	**-0.6**
	30nm,0.2s,SNR=74						
AAK				⇑S	**Sb**	**02 18 59.0**	**-0.3**
	79nm,0.2s						
KBK	**Karagaybulak**	**1.42**	**130**	⇓P	**Pn**	**02 18 47.2**	**-0.2**
	118nm,0.2s,SNR=295						
KBK				⇓S	**Sb**	**02 19 05.5**	**-0.1**
	197nm,0.1s						
AML	**Almayashu**	**1.46**	**174**	⇓P	**Pn**	**02 18 47.9**	**0.0**
	34nm,0.1s,SNR=83						
AML				⇓S	**Sb**	**02 19 06.4**	**-0.3**
	198nm,0.2s						
UCH	**Uchtor**	**1.55**	**150**	P	**Pn**	**02 18 49.5**	**+0.2**
	42nm,0.1s,SNR=385						
UCH				⇑S	**Sb**	**02 19 09.4**	**-0.1**
	87nm,0.1s						
TKM2	**Tokmak 2**	**1.69**	**112**	⇑P	**Pn**	**02 18 51.5**	**+0.3**
	23nm,0.1s,SNR=141						
TKM2				⇑S	**Sn**	**02 19 13.7**	**+0.7**
	276nm,0.1s						
KZA	**Kyzart**	**1.99**	**138**	⇓P	**Pn**	**02 18 57.0**	**+1.5**
	44nm,0.2s,SNR=76						
KZA				⇓S	**Sn**	**02 19 23.3**	**+2.6**
	124nm,0.3s						
KK31	**Karatay Array**	**2.21**	**259**	⇑Pn	**Pn**	**02 18 59.2**	**+0.5**
	3.6nm,0.3s,baz=83,slow=14,SNR=85						
KK31				⇑Lg		02 19 30.9	
	76nm,0.6s,baz=78,slow=32,SNR=4.4						
ULHL	**Ulahol**	**2.43**	**122**	⇑P	**Pn**	**02 19 02.7**	**+0.8**
	14nm,0.2s,SNR=49						
ULHL				⇑S	**Sn**	**02 19 35.3**	**+3.4**
	51nm,0.2s						
MK31	**Makanchi Array**	**7.01**	**60**	⇑Pn	**Pn**	**02 20 06.0**	**-0.6**
	0.5nm,0.3s,baz=235,slow=13,SNR=86						
MK31				⇑Lg		02 22 02.9	
	1.7nm,0.5s						
KURK	**Kurchatov**	**7.95**	**24**	⇑Lg		02 22 38.0	
	3.5nm,0.8s,baz=125,slow=15,SNR=3.6						
VOSK	**Vostochnaya**	**9.30**	**351**	⇑Lg		02 23 15.9	
	2.8nm,0.8s						
BVA0	**Borovoye Array**	**9.67**	**349**	⇑Lg		02 23 32.2	
	1.0nm,1.1s,baz=154,slow=28,SNR=3.6						
AB31	**Akbulak array**	**10.92**	**306**	⇓Pn	**P**	**02 21 00.2**	**-0.6**
	0.3nm,0.4s						

*NEIC **24** 02:34:12.7±1.6,22.74N×93.58E,h163km±16km,mb4.5/4, Error ellipse: s-maj=20.2km s-min=10.3km az=49.0*
*IDC **24** 02:34:16.7±3.5,23.31N×94.66E,h186km±31km,mb3.7/7, mb1 3.8/8,mb1mx3.4/19,MS3.3/1,Ms1 3.3/1,ms1mx2.4/28, Error ellipse: s-maj=89.5km s-min=11.4km az=59.0*

ISC 24 02:34:09.0±1.1,**23.1N**±0.1×**94.19E**±0.09,**h138**km±11km,
n26,σ0§**94**/28,**mb4.1**/9,**Myanmar-India border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IMP	**Imphal**	**1.70**	**352**	*e*P	**P**	**02 34 40.0**	**-0.3**
IMP				*i* S	**S**	**02 34 57.0**	**-7.2**
SHL	**Shillong**	**3.24**	**320**	*i* P	**P**	**02 35 00.5**	**+0.7**
SHL				*i* S	**S**	**02 35 35.5**	**-3.1**
CMAR	**Chiang Mai Arr**	**6.41**	**135**	P	**P**	**02 35 47.7**	**+5.6**
	0.7nm,0.3s,baz=311,slow=14,SNR=8.4						
LSA	**Lhasa**	**7.12**	**338**	*e*Pn	**P**	**02 35 50.6**	**-1.1**
	21nm,0.2s						
GUN	**Gumba**	**8.90**	**304**	*e*Pn	**P**	**02 36 16.7**	**+1.2**
GUN				*e*Sn	**S**	**02 37 53.2**	**-1.2**
	150nm,0.5s						
PKI	**Pulchoki**	**9.10**	**301**	*e*Pn	**P**	**02 36 19.2**	**+1.0**
PKI				*e*Sn	**S**	**02 37 58.1**	**-1.1**
	22nm,0.2s						
KKN	**Kakani**	**9.31**	**302**	*e*Pn	**P**	**02 36 22.0**	**+1.1**
KKN				*e*Sn	**S**	**02 38 02.9**	**-1.1**
	41nm,0.2s						
DMN	**Daman**	**9.36**	**301**	*e*Pn	**P**	**02 36 22.7**	**+1.1**
GKN	**Gorkha**	**9.91**	**302**	*e*Pn	**P**	**02 36 29.7**	**+0.8**
KOLN	**Koldanda**	**10.64**	**298**	*e*Pn	**P**	**02 36 39.2**	**+0.7**
HYB	**Hyderabad**	**15.71**	**252**	*i* P	**P**	**02 37 37.0**	**-7.0**
HYB	**Hyderabad**	**15.71**	**252**	*e*P	**P**	**02 37 37.0**	**-7.0**
MKAR	**Makanchi Array**	**25.52**	**341**	P	**P**	**02 39 27.4**	**+1.2**
	5.0nm,0.5s,mb4.5,baz=145,slow=12,SNR=51						
ZAL	**Zalesovo**	**31.60**	**349**	P	**P**	**02 40 21.1**	**+0.4**
	0.9nm,0.3s,mb3.9,baz=200,slow=7.4,SNR=4.1						
BVAR	**Borovoye Array**	**34.94**	**335**	P	**P**	**02 40 49.7**	**+0.4**
	0.5nm,0.4s,mb3.5,baz=146,slow=11,SNR=4.3						
FITZ	**Fitzroy Crossi**	**51.20**	**140**	*e*P	**P**	**02 43 00.0**	**-0.4**
	3.0nm,1.1s,mb3.8						
FITZ	**Fitzroy Crossi**	**51.20**	**140**	P	**P**	**02 43 00.0**	**-0.4**
	2.7nm,0.7s,mb4.0,baz=3.1,slow=5.8,SNR=33						
WRA	**Warramunga Arr**	**58.00**	**134**	P	**P**	**02 43 49.1**	**-0.7**
	2.3nm,0.5s,mb4.3,baz=322,slow=7.5,SNR=29						
WRAB	**Tennant Creek**	**58.00**	**134**	*e*P	**P**	**02 43 49.0**	**-0.8**
	6.4nm,0.6s,mb4.6						
WB2	**Warramunga Arr**	**58.01**	**134**	*e*P	**P**	**02 43 48.8**	**-1.0**
FINES	**FINESS Array B**	**59.53**	**329**	LR	LR	03 15 37.4	
	comp=Z,22nm,19.8s,baz=204,slow=42						
NWAO	**Narrogin (SRO)**	**59.89**	**158**	*e*P	**P**	**02 44 02.8**	**+0.1**
	1.2nm,0.3s,mb4.2						
ASAR	**Alice Springs**	**60.41**	**138**	P	**P**	**02 44 06.0**	**-0.3**
	4.2nm,0.9s,mb4.2,baz=320,slow=6.6,SNR=39						
ARCES	**ARCESS Array B**	**61.13**	**338**	P	**P**	**02 44 11.1**	**+0.5**
	2.3nm,1.0s,mb4.0,baz=79,slow=6.2,SNR=5.3						
CPUP	**Villa Florida**	**153.95**	**257**	PKPbc	PKPdf	02 53 56.0	+12
	0.7nm,0.6s,baz=100,slow=6.1,SNR=4.5						
CPUP	**Villa Florida**	**153.95**	**257**	*e*PKPbc	PKPdf	02 53 55.4	+11

*IDC **24** 02:38:09.8±2.4,29.62N×87.29E,mb3.7/2,mb1 4.1/4, mb1mx3.7/16,ML3.8/2,MS3.0/1,Ms1 3.1/1,ms1mx2.4/26, Error ellipse: s-maj=92.3km s-min=39.6km az=56.0*

ISC 24 02:38:07.1±4.9,**29.1N**±0.1×**86.6E**±0.1,**h15**km±36km,**n8,**
σ0§**97**/9,**mb3.6**/2,**MS3.0**/1,**Xizang**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHL	**Shillong**	**5.91**	**126**	*e*P	**Pn**	**02 39 36.0**	**-0.3**
SHL				*e*S	**Sn**	**02 40 43.8**	**-0.7**
NDI	**New Delhi**	**8.22**	**269**	*e*P	**P**	**02 40 08.5**	**-0.1**
NDI				*e*S	**Sn**	**02 41 37.0**	**-5.1**
HYB	**Hyderabad**	**13.80**	**214**	*e*P	**P**	**02 41 24.0**	**-0.6**
CMAR	**Chiang Mai Arr**	**15.52**	**131**	Pn	**P**	**02 41 48.0**	**+1.0**
	0.3nm,0.3s,baz=309,slow=11,SNR=9.3						
MKAR	**Makanchi Array**	**17.94**	**350**	P	**P**	**02 42 15.8**	**-1.7**
	0.1nm,0.3s,baz=174,slow=12,SNR=10						
BVAR	**Borovoye Array**	**26.67**	**338**	P	**P**	**02 43 48.4**	**+1.3**
	0.4nm,0.5s,mb3.2,baz=100,slow=8.8,SNR=5.1						
GERES	**GERESS Array B**	**57.73**	**312**	P	**P**	**02 48 03.6**	**+4.1**
	0.7nm,0.4s,mb4.0,baz=68,slow=11,SNR=7.2						
NOA	**NORSAR Array B**	**57.94**	**326**	LR	LR	03 14 57.4	
	comp=Z,13nm,20.6s,MS3.0,baz=310,slow=38						

*NEIC **24** 02:41:41.9,42.80N×2.53E,h5km,ML2.4(LDG), MN1.9(MDD),After LDG.*
*LDG **24** 02:41:41.9±0.0,42.80N×2.53E,h5km,Md2.7/1,Ml2.4/14, Error ellipse: s-maj=0.9km s-min=0.7km az=127.0*
*MDD **24** 02:41:41.5±0.3,42.82N×2.55E,h12km±3km,mbLg1.8/20, Error ellipse: s-maj=2.3km s-min=2.1km az=74.0,PRXIMO*

ISC 24 02:41:39.4±0.3,**42.88N**±0.02×**2.58E**±0.02,**h3**km±2km,**n51,**
σ1§**16**/101,**Pyrenees**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LRDF	**Laroque-de-Fa**	**0.07**	**333**	P	**Pg**	**02 41 44.1**	**+3.3**
LRDF				S	**Sg**	**02 41 46.5**	**+4.6**
FILF	**Fillols**	**0.32**	**183**	P	**Pg**	**02 41 46.7**	**+1.1**
FILF				S	**Sg**	**02 41 50.5**	**+0.6**
SJAF	**Saint Jean de**	**0.45**	**150**	P	**Pg**	**02 41 49.7**	**+1.4**
SJAF				S	**Sg**	**02 41 55.5**	**+1.2**
EJON	**La Jonquera**	**0.48**	**152**	Pg	**Pg**	**02 41 50.3**	**+1.3**
	2.9nm,0.1s,SNR=7.9						
EJON				Lg		02 41 56.5	
	8.7nm,0.1s,SNR=7.9						
EJON	**La Jonquera**	**0.48**	**152**	Pg	**Pg**	**02 41 50.2**	**+1.2**
EJON				Lg		02 41 56.5	
LPEF	**Le Peyrat**	**0.50**	**279**	P	**Pg**	**02 41 50.7**	**+1.4**
LPEF				S	**Sg**	**02 41 57.1**	**+1.0**
MTLF	**Montolieu**	**0.54**	**330**	*e*Pg	**Pg**	**02 41 52.3**	**+2.2**
	SNR=1.0						
MTLF				*e*Pn	**Pn**	**02 41 55.2**	**+1.7**
MTLF				*e*Sg	**Sg**	**02 42 00.1**	**+2.8**
	7.2nm,0.2s						
MTLF				*e*Sn	**Sn**	**02 42 04.6**	**+1.5**
MTLF	**Montolieu**	**0.54**	**330**	Pg	**Pg**	**02 41 52.3**	**+2.2**
MTLF				Lg		02 42 00.1	
	3.6nm,0.2s						
CLLI	**Llivia**	**0.60**	**229**	Pg	**Pg**	**02 41 51.6**	**+0.3**
CLLI				Lg		02 41 58.6	
	3.5nm,0.1s						
VALF	**Valcebollere**	**0.63**	**222**	P	**Pg**	**02 41 52.3**	**+0.4**
VALF				S	**Sg**	**02 41 59.9**	**-0.5**
CBRU	**Bruguera**	**0.66**	**207**	Pg	**Pg**	**02 41 52.8**	**+0.2**
CBRU				Lg		02 42 00.9	
	13nm,0.2s						
PAND	**Andorre**	**0.84**	**246**	S	**Sg**	**02 42 06.9**	**-0.5**
SALF	**Salau**	**1.03**	**264**	P	**Pb**	**02 42 00.2**	**+0.7**
SALF				S	**Sb**	**02 42 13.6**	**+0.4**
MLS	**Moulis**	**1.10**	**275**	S	**Sb**	**02 42 16.3**	**+1.1**
CFON	**Fontmartina**	**1.12**	**186**	Pg	**Pg**	**02 42 01.5**	**-0.2**
CFON				Lg		02 42 15.3	
	27nm,0.2s						
CORG	**Organya**	**1.14**	**236**	Pg	**Pg**	**02 42 01.9**	**-0.1**
CORG				Lg		02 42 16.2	
	1.0nm,0.1s						
CSOR	**Sort**	**1.18**	**245**	Pg	**Pg**	**02 42 02.8**	**-0.1**
CSOR				Lg		02 42 17.1	
EMIR	**Miracle**	**1.24**	**220**	Pg	**Pg**	**02 42 03.5**	**-0.6**
	1.5nm,0.1s,SNR=7.9						
EMIR				Lg		02 42 18.9	
	14nm,0.2s,SNR=7.9						
MELF	**Melles**	**1.34**	**271**	S	**Sb**	**02 42 23.2**	**+1.0**
LASF	**Ste Croix**	**1.52**	**37**	*e*Pn	**Pn**	**02 42 08.7**	**+1.2**
	SNR=1.0						
LASF				*e*Pg	**Pg**	**02 42 11.8**	**+2.1**
LASF				*e*Sn	**Sn**	**02 42 28.8**	**+0.8**
LASF				*e*Sg	**Sg**	**02 42 32.3**	**+2.4**
	5.1nm,0.3s,SNR=1.0						
LASF	**Ste Croix**	**1.52**	**37**	Pn	**Pn**	**02 42 08.7**	**+1.2**
LASF				Pg	**Pg**	**02 42 11.8**	**+2.1**
LASF				Lg		02 42 32.3	
	2.5nm,0.3s						
EPF	**Esparros**	**1.65**	**276**	*e*Pn	**Pn**	**02 42 09.6**	**+0.1**
	SNR=1.0						
EPF				*e*Pg	**Pg**	**02 42 12.1**	**-0.3**
EPF				*e*Sn	**Sn**	**02 42 30.5**	**-1.0**
	13nm,0.3s,SNR=1.0						
EPF				*e*Sg	**Sg**	**02 42 33.8**	**-0.6**
EPF	**Esparros**	**1.65**	**276**	Pn	**Pn**	**02 42 09.6**	**+0.1**
EPF				Pg	**Pg**	**02 42 12.1**	**-0.3**
EPF				Lg		02 42 33.8	
CAVN	**Les Avellanes**	**1.68**	**234**	Pg	**Pg**	**02 42 12.0**	**-0.9**
CAVN				Lg		02 42 33.3	
	7.9nm,0.1s						
EPOB	**Poblet**	**1.89**	**217**	Pg	**Pg**	**02 42 14.8**	**-2.2**
	1.2nm,0.1s,SNR=7.9						
EPOB				Lg		02 42 38.8	
	3.9nm,0.2s,SNR=7.9						
EPOB	**Poblet**	**1.89**	**217**	Pg	**Pg**	**02 42 14.9**	**-2.2**
EPOB				Lg		02 42 39.5	
CGAR	**Garraf**	**1.91**	**215**	Pg	**Pg**	**02 42 11.0**	**-6.5**
CGAR				Lg		02 42 32.1	
	1.9nm,0.2s						
CAF	**Calviac**	**2.08**	**350**	*e*Pn	**Pn**	**02 42 16.9**	**+1.3**
	SNR=1.0						
CAF				*e*Pg	**Pg**	**02 42 21.6**	**+0.6**
CAF				*e*Sn	**Sn**	**02 42 42.2**	**-0.2**
CAF				*e*Sg	**Sg**	**02 42 49.4**	**+0.6**
	5.7nm,0.2s,SNR=1.0						
CAF	**Calviac**	**2.08**	**350**	Pn	**Pn**	**02 42 16.9**	**+1.3**
CAF				Pg	**Pg**	**02 42 21.6**	**+0.6**
CAF				Lg		02 42 49.4	
	2.8nm,0.2s						
ETSF	**Etsaut**	**2.31**	**272**	*e*Pn	**Pn**	**02 42 18.1**	**-0.8**
ETSF				*e*Pg	**Pg**	**02 42 24.4**	**-1.1**
ETSF				*e*Sn	**Sn**	**02 42 45.0**	**-3.2**
ETSF				*e*Sg	**Sg**	**02 42 53.4**	**-2.8**
	4.1nm,0.3s,SNR=1.0						
ETSF	**Etsaut**	**2.31**	**272**	Pn	**Pn**	**02 42 18.1**	**-0.8**
ETSF				Pg	**Pg**	**02 42 24.4**	**-1.1**
ETSF				Lg		02 42 53.4	
	2.0nm,0.3s						
SMRF	**Simiane la Rot**	**2.44**	**62**	*e*Pn	**Pn**	**02 42 21.4**	**+0.6**
SMRF				*e*Pg	**Pg**	**02 42 28.0**	**-0.1**
	SNR=1.0						
SMRF				*e*Sg	**Sg**	**02 43 00.7**	**0.0**
	4.3nm,0.4s,SNR=1.0						
LFF	**La Frestale**	**2.46**	**328**	*e*Pn	**Pn**	**02 42 22.0**	**+1.0**
LFF				*e*Pg	**Pg**	**02 42 28.1**	**-0.3**
LFF				*e*Sg	**Sg**	**02 43 00.0**	**-1.1**
	5.9nm,0.3s,SNR=1.0						
VIVF	**Saint-Julien-l**	**2.49**	**37**	*e*Pn	**Pn**	**02 42 22.0**	**+0.5**
	SNR=1.0						
VIVF				*e*Pg	**Pg**	**02 42 29.3**	**+0.2**
VIVF				*e*Sn	**Sn**	**02 42 52.1**	**-0.7**
VIVF				*e*Sg	**Sg**	**02 43 02.2**	**-0.1**
	2.5nm,0.2s,SNR=1.0						
VIVF	**Saint-Julien-l**	**2.49**	**37**	Pn	**Pn**	**02 42 22.0**	**+0.5**
VIVF				Pg	**Pg**	**02 42 29.3**	**+0.2**
VIVF				Lg		02 43 02.2	
	1.2nm,0.2s						
ESAC	**San Caprasio**	**2.54**	**244**	Pg	**Pg**	**02 42 26.5**	**-3.6**
	2.1nm,0.3s,SNR=4.0						
ESAC				Sn	**Sn**	**02 42 52.1**	**-1.9**
	2.4nm,0.1s,SNR=7.9						
ESAC				Lg		02 43 00.5	
	16nm,0.3s,SNR=7.9						
ESAC	**San Caprasio**	**2.54**	**244**	Pg	**Pg**	**02 42 26.5**	**-3.6**
ESAC				Sn	**Sn**	**02 42 51.8**	**-2.2**
ESAC				Lg		02 43 00.0	
RJF	**Les Rejaudoux**	**2.55**	**343**	*e*Pn	**Pn**	**02 42 22.9**	**+0.6**
RJF				*e*Pg	**Pg**	**02 42 30.2**	**0.0**
RJF				*e*Sg	**Sg**	**02 43 03.2**	**-1.0**
	2.5nm,0.2s,SNR=1.0						
LMR	**La Mourre**	**2.91**	**80**	*e*Pn	**Pn**	**02 42 27.4**	**-0.1**
LMR				*e*Pg	**Pg**	**02 42 36.5**	**-1.0**
LMR				*e*Sn	**Sn**	**02 43 02.7**	**-0.8**
	SNR=1.0						
LMR				*e*Sg	**Sg**	**02 43 14.8**	**-1.5**
	1.7nm,0.3s,SNR=1.0						
LMR	**La Mourre**	**2.91**	**80**	Pn	**Pn**	**02 42 27.4**	**-0.1**
LMR				Pg	**Pg**	**02 42 36.5**	**-1.0**
LMR				Lg		02 43 14.8	
	0.9nm,0.3s						
EALK	**Alkurruntz**	**3.02**	**278**	Sn	**Sn**	**02 43 07.3**	**+1.2**
	1.7nm,0.4s,SNR=4.0						
EALK				Lg		02 43 17.2	
	1.1nm,0.3s,SNR=7.9						
FRF	**La Foret Royal**	**3.05**	**76**	*e*Pn	**Pn**	**02 42 30.0**	**+0.6**
FRF				*e*Pg	**Pg**	**02 42 39.5**	**-0.7**
FRF				*e*Sn	**Sn**	**02 43 05.7**	**-1.2**
	SNR=1.0						
FRF				*e*Sg	**Sg**	**02 43 18.4**	**-2.5**
	3.3nm,0.3s,SNR=1.0						
FRF	**La Foret Royal**	**3.05**	**76**	Pn	**Pn**	**02 42 30.0**	**+0.6**
FRF				Pg	**Pg**	**02 42 39.5**	**-0.7**
FRF				Lg		02 43 18.4	
	1.6nm,0.3s						
EMOS	**Mosqueruela**	**3.40**	**223**	Lg		02 43 26.8	
	0.5nm,0.3s,SNR=7.9						
TCF	**Toulx Ste Croi**	**3.42**	**356**	*e*Pn	**Pn**	**02 42 35.0**	**+0.3**
TCF				*e*Pg	**Pg**	**02 42 46.5**	**-1.2**
TCF				*e*Sg	**Sg**	**02 43 31.7**	**-1.6**
	1.3nm,0.2s,SNR=1.0						
BGF	**Bois d'Agland**	**3.69**	**3**	*e*Pn	**Pn**	**02 42 38.8**	**+0.3**
BGF				*e*Pg	**Pg**	**02 42 51.5**	**-1.5**
	SNR=1.0						
BGF				*e*Sg	**Sg**	**02 43 39.7**	**-2.4**
	4.8nm,0.4s						
SMF	**Signal de Mont**	**3.88**	**13**	*e*Pn	**Pn**	**02 42 41.5**	**+0.3**
AVF	**Avril sur Loir**	**3.95**	**8**	*e*Pn	**Pn**	**02 42 42.3**	**0.0**
MFF	**Saint Martin d**	**4.20**	**333**	*e*Pn	**Pn**	**02 42 45.9**	**+0.1**
	SNR=1.0						
MFF				*e*Pg	**Pg**	**02 43 00.8**	**-2.5**
	SNR=1.0						
MFF				*e*Sg	**Sg**	**02 43 54.9**	**-4.4**
	1.1nm,0.3s						
PGF	**Pioggiola**	**4.74**	**92**	*e*Pn	**Pn**	**02 42 52.7**	**-0.7**
	SNR=1.0						
LDF	**La Druitiere**	**6.02**	**343**	*e*Pn	**Pn**	**02 43 10.0**	**-1.6**

*IDC **24** 02:42:33.3±1.5,5.89N×126.76E,mb3.9/4,mb1 4.0/4, mb1mx3.8/15,Error ellipse: s-maj=132.0km s-min=28.8km az=67.0*

ISC 24 02:42:36.8±4.7,**6.1N**±0.3×**127.4E**±0.3,**h41**km±39km,**n5,**
σ0§**90**/6,**mb3.9**/4,**1D,Philippine Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KCP	**Kidapawan**	**2.46**	**292**	⇓*e*P	**P**	**02 43 15.2**	**-0.2**
KCP				*i* S	**S**	**02 43 44.8**	**+0.2**
WRA	**Warramunga Arr**	**26.75**	**165**	P	**P**	**02 48 15.0**	**+0.1**
	0.8nm,0.5s,mb3.5,baz=344,slow=10,SNR=6.5						
MKAR	**Makanchi Array**	**56.02**	**324**	P	**P**	**02 52 13.4**	**-0.3**
	0.7nm,0.4s,mb4.0,baz=123,slow=8.4,SNR=5.3						
MKAR				PcP	PcP	02 53 11.2	-0.4
	0.7nm,0.6s,baz=126,slow=3.1,SNR=5.1						
ARCES	**ARCESS Array B**	**88.48**	**340**	P	**P**	**02 55 26.6**	**+0.9**
	0.7nm,0.6s,mb4.1,baz=83,slow=7.3,SNR=5.8						
BRTR	**Keskin Array B**	**89.03**	**310**	P	**P**	**02 55 28.3**	**-0.7**
	0.3nm,0.6s,mb3.8,baz=117,slow=6.4,SNR=3.6						

*NEIC **24** 02:55:18.4±3.5,17.83S×178.33W,h559km±38km,mb4.1/9, Error ellipse: s-maj=21.9km s-min=17.9km az=125.0*
*IDC **24** 02:55:23.7±2.8,17.82S×178.50W,h617km±32km,mb3.2/9, mb1 3.5/9,mb1mx3.3/14,Error ellipse: s-maj=64.5km s-min=14.7km az=153.0*

ISC 24 02:55:21.2±3.1,**17.8S**±0.2×**178.5W**±0.1,**h603**km±38km,
n59,σ0§**92**/24,**mb3.9**/16,**1C-7D,Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**33.37**	**260**	*e*P	**P**	**03 01 13.3**	**+0.7**
	6.2nm,1.4s,mb4.0						
CTA	**Charters Tower**	**33.37**	**260**	P	**P**	**03 01 13.6**	**+0.9**
	1.6nm,0.4s,mb4.0,baz=89,slow=11,SNR=6.6						
CNB	**Canberra Magne**	**33.41**	**232**	⇓*i*P	**P**	**03 01 13.0**	**+0.2**
	4.3nm,0.4s,mb4.4						
STKA	**Stephens Creek**	**38.59**	**241**	P	**P**	**03 01 55.9**	**+0.5**
	1.1nm,0.3s,mb3.9,baz=67,slow=7.7,SNR=4.3						
WB2	**Warramunga Arr**	**44.54**	**259**	⇓*i*P	**P**	**03 02 42.0**	**-0.6**
WRAB	**Tennant Creek**	**44.55**	**259**	*e*P	**P**	**03 02 42.1**	**-0.6**
	4.3nm,0.3s,mb4.5						
WRA	**Warramunga Arr**	**44.55**	**259**	P	**P**	**03 02 42.4**	**-0.4**
	1.7nm,0.3s,mb4.0,baz=96,slow=7.6,SNR=68						
WRA				PcP	PcP	03 04 12.0	-0.6
	1.0nm,0.9s,baz=79,slow=3.9,SNR=7.3						
AS12	**Alice Springs**	**44.72**	**254**	⇓*i*P	**P**	**03 02 43.9**	**-0.1**
	13nm,1.0s,mb4.4						
ASAR	**Alice Springs**	**44.72**	**254**	P	**P**	**03 02 44.0**	**0.0**
	6.6nm,0.5s,mb4.5,baz=89,slow=8.7,SNR=101						
ASAR				PcP	PcP	03 04 12.4	-0.8
	1.8nm,0.6s,baz=89,slow=4.1,SNR=9.3						
ASAR				S	**S**	**03 08 37.7**	**-0.7**
	3.0nm,1.1s,baz=88,slow=15,SNR=8.8						
KAKA	**Kakadu**	**47.53**	**269**	⇓*i*P	**P**	**03 03 04.7**	**-0.7**
	6.7nm,0.6s,mb4.3						
FITZ	**Fitzroy Crossi**	**52.95**	**260**	*e*P	**P**	**03 03 44.8**	**0.0**
	1.8nm,1.0s,mb3.4						
FITZ	**Fitzroy Crossi**	**52.95**	**260**	P	**P**	**03 03 44.7**	**-0.1**
	1.0nm,0.6s,mb3.3,baz=73,slow=3.6,SNR=7.6						
ENH	**Enshi**	**84.14**	**304**	*e*P	**P**	**03 06 52.8**	**+1.6**
	3.5nm,0.6s,mb4.1						
MCK	**McKinley**	**84.47**	**13**	P	**P**	**03 06 51.1**	**-0.9**
	3.5nm,1.0s,mb3.8						
HLID	**Hailey**	**84.62**	**41**	*e*P	**P**	**03 06 53.6**	**+0.3**
	0.5nm,0.7s,mb3.2						
COLA	**College**	**85.70**	**13**	*e*P	**P**	**03 06 56.8**	**-1.2**
	2

AML	**Almayashu**	**6.13**	**26**	P		**P**	**03 21 12.9**	**+1.1**
	SNR=55								
KK31	**Karatay Array**	**6.44**	**3**	⇓P		**P**	**03 21 19.9**	**+3.7**
	3.4nm,0.5s,baz=180,slow=12,SNR=63								
KK31				⇑S		**S**	**03 22 29.7**	**+0.2**
	5.2nm,0.5s,baz=186,slow=16,SNR=15								
UCH	**Uchtor**	**6.52**	**30**	P		**P**	**03 21 17.5**	**+0.1**
	SNR=12								
EKS2	**Erkin-Say**	**6.63**	**24**	P		**P**	**03 21 19.5**	**+0.6**
	SNR=12								
AAK	**Ala-Archa**	**6.86**	**28**	P		**P**	**03 21 22.0**	**-0.1**
	SNR=7.3								
USP	**Ospenovka**	**7.41**	**26**	P		**P**	**03 21 29.0**	**-0.8**
	SNR=14								
TKM2	**Tokmak 2**	**7.55**	**32**	P		**P**	**03 21 30.3**	**-1.4**
	SNR=16								
AB31	**Akbulak array**	**14.60**	**333**	P		**P**	**03 23 07.5**	**+0.3**
	0.7nm,0.4s,baz=146,slow=12,SNR=25								
AB31				⇓S		**S**	**03 25 48.1**	**-0.6**
	0.6nm,0.5s								

*IDC **24** 04:00:03.6±0.9,53.55N×35.13W,mb3.5/6,mb1 3.8/6, mb1mx3.6/20,MS3.3/3,Ms1 3.3/3,ms1mx2.7/32,Error ellipse: s-maj=41.8km s-min=19.4km az=174.0*

ISC 24 04:00:03.6±0.8,53.5N±0.2×35.1W±0.2,h10km,n10, σ0ᵗ58/7,mb3.6/7,MS3.5/2,Reykjanes Ridge

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
SCHQ	**Schefferville**	**18.53**	**287**	LR		LR	04 10 35.0	
	comp=Z,41nm,20.4s,baz=54,slow=34							
ESDC	**Sonseca Array**	**25.25**	**111**	P		**P**	**04 05 30.3**	**-0.8**
	0.8nm,0.7s,mb3.4,baz=315,slow=8.4,SNR=4.5							
GERES	**GERESS Array B**	**30.48**	**79**	P		**P**	**04 06 18.7**	**+0.3**
	0.4nm,0.7s,mb3.3,baz=252,slow=4.2,SNR=3.4							
VAE	**Valguarnera**	**37.42**	**95**	LR		LR	04 20 44.7	
	comp=Z,63nm,18.5s,MS3.4,baz=137,slow=33							
BRTR	**Keskin Array B**	**47.37**	**78**	P		**P**	**04 08 40.1**	**+0.9**
	1.0nm,1.0s,mb3.7,baz=292,slow=6.7,SNR=6.5							
PDAR	**Pinedale Array**	**48.65**	**289**	P		**P**	**04 08 48.6**	**-0.6**
	0.3nm,0.8s,mb3.4,baz=52,slow=10,SNR=3.1							
TXAR	**Lajitas Array**	**54.42**	**272**	P		**P**	**04 09 33.5**	**+0.5**
	0.3nm,0.8s,mb3.3,baz=83,slow=7.3,SNR=4.0							
TXAR				LR		LR	04 32 58.7	
	comp=Z,43nm,18.5s,MS3.5,baz=150,slow=36							
ROSC	**El Rosal**	**58.08**	**228**	P		**P**	**04 09 59.5**	**+0.2**
	3.3nm,0.3s,mb4.8,baz=123,slow=12,SNR=5.3							
MKAR	**Makanchi Array**	**66.81**	**42**	P		**P**	**04 10 56.5**	**-0.5**
	0.5nm,0.8s,mb3.6,baz=346,slow=5.0,SNR=5.6							
ASAR	**Alice Springs**	**149.07**	**20**	PKPbc		PKPdf	04 19 51.8	+1.3
	1.0nm,0.6s,baz=354,slow=2.5,SNR=11							

*NEIC **24** 04:02:58.1,28.08N×16.18W,h14km,MN2.6(MDD),After MDD.*
*MDD **24** 04:02:58.0±0.2,28.10N×16.21W,h18km±3km,mbLg2.6/6, Error ellipse: s-maj=1.8km s-min=0.6km az=2.0,PRXIMO TT-MODEL: Canary*

ISC 24 04:02:55.0±0.8,27.97N±0.06×16.23W±0.04,h18km,n14, σ1ᵗ36/27,4C-6D,Canary Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CCAN	**Las Canadas**	**0.42**	**308**	⇓P		**Pb**	**04 03 06.3**	**+2.8**
	148nm,0.2s,SNR=18							
CCAN				S		**Sb**	**04 03 09.2**	**-0.1**
	201nm,0.2s,SNR=39							
CCAN	**Las Canadas**	**0.42**	**308**	⇓P		**Pb**	**04 03 06.4**	**+2.9**
CCAN				S		**Sb**	**04 03 10.7**	**+1.4**
EBAJ	**Bajamar**	**0.58**	**350**	⇓P		**Pb**	**04 03 07.4**	**+1.1**
	38nm,0.1s,SNR=18							
EBAJ				S		**Sb**	**04 03 11.4**	**-2.6**
	141nm,0.2s,SNR=14							
EBAJ	**Bajamar**	**0.58**	**350**	⇓P		**Pb**	**04 03 07.5**	**+1.1**
EBAJ				S		**Sb**	**04 03 12.4**	**-1.7**
EOSO	**Osorio**	**0.61**	**80**	⇑P		**Pb**	**04 03 07.9**	**+1.0**
	232nm,0.2s,SNR=18							
EOSO				S		**Sb**	**04 03 15.2**	**+0.3**
	350nm,0.3s,SNR=28							
EOSO	**Osorio**	**0.61**	**80**	⇑P		**Pb**	**04 03 07.9**	**+1.0**
EOSO				S		**Sb**	**04 03 15.3**	**+0.4**
EGOM	**La Gomera**	**0.88**	**283**	⇓P		**Pb**	**04 03 12.9**	**+1.3**
	3.5nm,0.1s,SNR=18							
EGOM				S		**Sb**	**04 03 22.9**	**+0.1**
	97nm,0.1s,SNR=18							
EGOM	**La Gomera**	**0.88**	**283**	⇓P		**Pb**	**04 03 12.9**	**+1.4**
EGOM				S		**Sb**	**04 03 24.1**	**+1.3**
CHIE	**El Hierro**	**1.55**	**262**	P		**Pn**	**04 03 20.8**	**-1.3**
	0.5nm,0.2s,SNR=5.2							
CHIE				S		**Sn**	**04 03 40.4**	**-1.4**
	5.6nm,0.2s,SNR=9.4							
CHIE	**El Hierro**	**1.55**	**262**	P		**Pn**	**04 03 21.9**	**-0.1**
CHIE				S		**Sn**	**04 03 40.4**	**-1.4**
EHRO	**Hierro**	**1.68**	**263**	S		**Sn**	**04 03 44.1**	**-0.9**
	8.3nm,0.1s,SNR=7.9							
EHRO	**Hierro**	**1.68**	**263**	P		**Pn**	**04 03 24.3**	**+0.5**
EHRO				S		**Sn**	**04 03 43.6**	**-1.4**
EFAM	**Famara**	**2.65**	**63**	⇑P		**Pn**	**04 03 35.5**	**-2.3**
	1.9nm,0.1s,SNR=18							
EFAM				S		**Sn**	**04 04 03.2**	**-6.5**
	5.0nm,0.2s,SNR=8.8							
EFAM	**Famara**	**2.65**	**63**	⇑P		**Pn**	**04 03 35.5**	**-2.3**
EFAM				S		**Sn**	**04 04 03.4**	**-6.3**

*IDC **24** 04:13:01.1±1.0,0.18N×29.96E,mb3.9/12,mb1 4.1/13, mb1mx4.0/20,ML4.0/1,MS3.7/7,Ms1 3.7/7,ms1mx3.4/22, Error ellipse: s-maj=25.3km s-min=21.2km az=165.0*
*NEIC **24** 04:13:02.3±0.4,0.12N×30.05E,h10km,mb4.4/5,Error ellipse: s-maj=10.8km s-min=7.7km az=74.0*

ISC 24 04:13:00.2±0.4,0.12N±0.06×30.07E±0.06,h10km,n32, σ1ᵗ06/31,mb4.2/19,MS3.7/6,1C-2D,Uganda

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
MBAR	**Mbarara**	**0.98**	**137**	*e*Pg		**Pg**	**04 13 20.2**	**+0.3**
MBAR				*e*			04 13 25.1	
MBAR				*e*Sg		**Sg**	**04 13 31.6**	**-1.5**
KMBO	**Kilima Mbogo**	**7.29**	**100**	Pn		**Pn**	**04 14 49.3**	**-0.1**
	2.6nm,0.3s,baz=254,slow=17,SNR=24							
KMBO				Lg			04 16 47.3	
	8.5nm,0.3s,baz=254,slow=7.6,SNR=19							
KMBO				LR		LR	04 18 06.2	
	comp=Z,269nm,20.5s,baz=282,slow=41							
KMBO	**Kilima Mbogo**	**7.29**	**100**	*e*Pn		**Pn**	**04 14 48.6**	**-0.8**
KMBO				*e*Pg		**Pg**	**04 15 18.2**	**-7.6**
KMBO				*e*Sg		**Sg**	**04 16 46.1**	**-17**
KMBO				Lg			04 16 47.3	
KMBO				LR		LR	04 18 06.2	
TSUM	**Tsumeb**	**22.78**	**212**	P		**P**	**04 18 05.5**	**+1.2**
	2.5nm,0.9s,mb3.7,baz=3.4,slow=7.2,SNR=5.0							
LBTB	**Lobatse**	**25.36**	**190**	P		**P**	**04 18 30.8**	**+1.5**
	4.2nm,1.0s,mb3.9							
EIL	**Elat**	**29.75**	**9**	LR		LR	04 31 45.7	
	comp=Z,115nm,18.3s,MS3.5,baz=301,slow=38							
ASF	**Jabal al Asfar**	**32.52**	**11**	LR		LR	04 33 22.3	
	comp=Z,92nm,19.8s,MS3.5,baz=97,slow=38							
SUR	**Sutherland**	**33.49**	**194**	P		**P**	**04 19 40.9**	**-1.1**
	1.4nm,0.7s,mb4.0							
KIC	**Kosan Boka**	**35.28**	**281**	*e*P		**P**	**04 19 56.9**	**-0.7**
	94nm,1.7s,mb5.5							
DBIC	**Dimbokro**	**35.45**	**281**	P		**P**	**04 19 58.4**	**-0.6**
	2.4nm,0.7s,mb4.2,baz=76,slow=12,SNR=7.9							
DBIC				LR		LR	04 34 10.9	
	comp=Z,72nm,21.3s,MS3.4,baz=11,slow=36							
DBIC	**Dimbokro**	**35.45**	**281**	*e*P		**P**	**04 19 58.0**	**-1.0**
	12nm,1.4s,mb4.6							
DBIC				LR		LR	04 34 10.9	
LIC	**Lamto**	**35.55**	**281**	*e*P		**P**	**04 19 59.0**	**-0.9**
	38nm,1.3s,mb5.2							
TIC	**Toumodi**	**35.60**	**281**	*e*P		**P**	**04 19 59.7**	**-0.6**
	17nm,0.5s,mb5.2							
BRTR	**Keskin Array B**	**39.55**	**4**	P		**P**	**04 20 35.1**	**+1.9**
	1.3nm,1.1s,mb3.6,baz=175,slow=9.5,SNR=5.4							
MLR	**Muntele Rosu**	**45.32**	**356**	P		**P**	**04 21 20.7**	**+0.4**
	1.6nm,0.8s,mb3.9,baz=158,slow=20,SNR=1.7							
MLR				LR		LR	04 44 00.8	
	comp=Z,61nm,19.6s,MS3.5,baz=69,slow=41							
ESDC	**Sonseca Array**	**50.14**	**326**	P		**P**	**04 21 57.2**	**-0.7**
	1.5nm,0.8s,mb4.1,baz=126,slow=7.4,SNR=5.5							
GERES	**GERESS Array B**	**50.55**	**346**	P		**P**	**04 22 00.2**	**-0.7**
	0.3nm,0.7s,mb3.4,baz=157,slow=7.5,SNR=3.9							
KHC	**Kasperske Hory**	**50.84**	**346**	*e*P		**P**	**04 22 03.0**	**-0.1**
ARU	**Arti**	**60.66**	**18**	*e*P		**P**	**04 23 13.7**	**0.0**
	11nm,1.2s,mb4.9							
BRVK	**Borovoye**	**62.44**	**26**	*e*P		**P**	**04 23 25.6**	**-0.3**
NOA	**NORSAR Array B**	**62.45**	**350**	P		**P**	**04 23 24.9**	**-1.0**
	1.2nm,0.8s,mb4.1,baz=160,slow=6.6,SNR=3.7							
BVAR	**Borovoye Array**	**62.47**	**26**	P		**P**	**04 23 24.4**	**-1.6**
	1.7nm,0.8s,mb4.2,baz=211,slow=8.6,SNR=9.4							
MKAR	**Makanchi Array**	**65.01**	**37**	P		**P**	**04 23 43.5**	**+0.7**
	2.8nm,0.7s,mb4.4,baz=241,slow=5.5,SNR=27							
ARCES	**ARCESS Array B**	**69.35**	**358**	P		**P**	**04 24 09.8**	**0.0**
	1.1nm,0.7s,mb3.9,baz=162,slow=8.6,SNR=3.3							
ZAL	**Zalesovo**	**69.93**	**31**	P		**P**	**04 24 14.2**	**+0.6**
	1.4nm,0.9s,mb3.9,baz=130,slow=7.6,SNR=9.5							
CMAR	**Chiang Mai Arr**	**69.95**	**70**	P		**P**	**04 24 16.4**	**+2.0**
	0.6nm,0.4s,mb3.9,baz=252,slow=5.7,SNR=2.9							
VNA1	**Neumayer--Stat**	**74.96**	**192**	⇓*i*		**P**	**04 24 59.8**	**+17**
VNA2	**Neumayer--Watz**	**74.99**	**192**	⇑*i*		**P**	**04 24 43.9**	**+0.6**
VNA3	**Neumayer Olymp**	**75.72**	**192**	⇓*i*		**P**	**04 24 51.7**	**+4.3**
QSPA	**South Pole Qui**	**90.15**	**180**	*e*P		**P**	**04 26 04.1**	**+2.6**
	2.1nm,0.8s,mb4.5							
LPAZ	**La Paz**	**97.91**	**254**	LR		LR	05 04 37.5	
	comp=Z,39nm,21.1s,MS3.9,baz=347,slow=32							
VNDA	**Vanda**	**98.46**	**171**	LR		LR	05 12 00.4	
	comp=Z,121nm,20.9s,MS4.4,baz=13,slow=36							

MEX 24 04:18:38.2±1.6,15.23N×93.29W,h17km±999km,MD4.2, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CCIG	**Comitan**	**1.52**	**47**	*i* P		Pn	04 19 00.7	-4.3
CCIG				*i* S		Sn	04 19 19.4	-5.1
SCX	**San Cristobal**	**1.62**	**23**	*i* P		Pn	04 19 04.0	-2.4
SCX				*i* S		Sn	04 19 23.0	-4.0
CMIG	**Matias Romero**	**2.40**	**321**	*e*P		Pn	04 19 16.2	-1.4
CMIG				*i* S		Sn	04 19 41.1	-5.7

*NEIC **24** 04:29:35.5,34.28S×70.51W,h10km,ML2.2(GUC),After GUC.*

GUC 24 04:29:35.5±0.9,34.28S×70.51W,h10km±2km,MD3.8, ML2.2,4C-2D,Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CICH	**Cipreses**	**0.09**	**116**	⇑*i* P		Pg	04 29 38.9	+0.9
CICH				*i* S		Sg	04 29 40.4	+0.8
CACH	**El Canelo**	**0.18**	**336**	*i* P		Pg	04 29 39.9	+0.4
CACH				*i* S		Sg	04 29 42.3	+0.1
CHCH	**Chadas Angostu**	**0.37**	**342**	*i* P		Pg	04 29 43.5	+0.5
LMEL	**Las Melosas**	**0.50**	**31**	⇓*i* P		Pg	04 29 46.4	+0.7
LMEL				*i* S		Sg	04 29 53.6	+1.1
LMEL				AMP			04 29 53.9	
	comp=E,329nm,0.3s							
SFDO	**San Fernando**	**0.53**	**231**	⇑*i* P		Pg	04 29 46.0	-0.3
PCH	**Pirque**	**0.66**	**360**	*i* P		Pb	04 29 48.9	+0.3
PCH				*i* S		Sb	04 29 58.9	+1.3
ANTU	**Antumapu**	**0.72**	**352**	⇑*i* P		Pb	04 29 49.6	-0.1
ANTU				*i* S		Sb	04 30 00.0	+0.7
ANTU				AMP			04 30 00.7	
	comp=E,235nm,0.4s							
ANTU	**Antumapu**	**0.72**	**352**	⇑*i* P		Pb	04 29 49.6	-0.1
ANTU				*i* S		Sb	04 30 00.0	+0.7
TACH	**Talagante**	**0.72**	**331**	⇓*i* P		Pb	04 29 49.5	-0.2
TACH				*i* S		Sb	04 29 59.0	-0.4
LNV	**Longovilo**	**0.81**	**293**	*i* P		Pb	04 29 50.5	-0.8
LNV				*i* S		Sb	04 30 00.8	-1.2
LCCH	**Las Cruces**	**1.19**	**312**	*e*P		Pb	04 29 56.6	-1.1
LCCH				*i* S		Sb	04 30 12.8	-0.3
TALC	**Talca**	**1.45**	**219**	*i* S		Sb	04 30 20.2	-0.2

*JMA **24** 04:50:29.4±0.2,24.08N×122.57E,h37km,M1.8*
*TAP **24** 04:50:30.4,23.91N×122.53E,h10km±2km,ML2.5*

ISC 24 04:50:27.9±2.5,23.98N±0.10×122.6E±0.1,h10km,n5, σ0ᵗ74/9,Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
YOJ	**Yonaguni jima**	**0.61**	**39**	P		**Pb**	**04 50 40.6**	**+0.4**
YOJ				S		**Sg**	**04 50 48.5**	**0.0**
IRIF	**Iriomote-Funau**	**1.10**	**71**	P		**Pb**	**04 50 48.6**	**+0.1**
IRIF				*e*S		**Sb**	**04 51 03.3**	**+0.6**
HATJ	**Hateruma jima**	**1.11**	**86**	P		**Pb**	**04 50 49.0**	**+0.3**
HATJ				*e*S		**Sb**	**04 51 03.7**	**+0.6**
JKRS	**Kuro-shima**	**1.32**	**79**	*e*S		**Sb**	**04 51 09.5**	**+0.4**
JIJ	**Ishigaki jima**	**1.47**	**75**	P		**Pn**	**04 50 53.8**	**-0.7**
JIJ				*e*S		**Sb**	**04 51 11.5**	**-1.9**

*IDC **24** 05:00:25.1±32.0,9.97N×85.48W,mb3.4/3,mb1 3.9/3, mb1mx3.6/16,Error ellipse: s-maj=553.0km s-min=234.7km az=154.0*
*CASC **24** 05:00:33.7±2.8,10.23N×86.38W,h32km±19km,MD4.0*

ISC 24 05:00:31.0±3.2,10.22N±0.07×86.45W±0.06,h7km±24km, n22,σ1ᵗ14/24,mb3.2/3,5C-3D,Off coast of Costa Rica

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
VCR	**Vista de Mar**	**0.81**	**96**	⇑*e*P		**Pb**	**05 00 47.6**	**+0.6**
CRZC	**La Cruz**	**1.12**	**49**	⇑*e*P		**Pb**	**05 00 52.1**	**-0.1**
CRZC				*e*S		**Sb**	**05 01 07.9**	**+1.1**
JCR	**Jicaral**	**1.37**	**105**	⇑*e*P		**Pb**	**05 00 56.2**	**-0.4**
JCR				*e*S		**Sb**	**05 01 11.7**	**-2.4**
CONN	**Concepcion**	**1.57**	**31**	⇑*e*P		**Pn**	**05 00 58.0**	**-1.3**
APON	**Apoyo**	**1.73**	**13**	*e*P		**Pn**	**05 01 02.7**	**+0.9**
CRUN	**El Crucero**	**1.76**	**5**	*e*P		**Pn**	**05 01 04.1**	**+1.9**
FORC	**Fortuna**	**1.77**	**82**	*e*P		**Pn**	**05 01 02.7**	**+0.3**
XAVN	**Gruta Xavier**	**1.93**	**4**	*e*P		**Pn**	**05 01 03.5**	**-1.0**
MGAN	**Managua**	**1.93**	**6**	*e*P		**Pn**	**05 01 04.3**	**-0.3**
COFN	**Cofrada**	**1.95**	**10**	*e*P		**Pn**	**05 01 04.4**	**-0.5**
MOMJ	**Momotombo**	**2.18**	**358**	*e*P		**Pn**	**05 01 06.4**	**-1.8**
LEON	**Leon**	**2.23**	**349**	⇑*e*P		**Pn**	**05 01 08.5**	**-0.4**
LAJ	**Bijagual**	**2.32**	**98**	*e*P		**Pn**	**05 01 04.3**	**-5.9**
SJS	**Escuela Geolog**	**2.38**	**96**	*e*P		**Pn**	**05 01 12.2**	**+1.2**
LCR2	**La Lucha 2**	**2.46**	**101**	*e*P		**Pn**	**05 01 12.7**	**+0.5**
ICR	**Volcan Irazu**	**2.59**	**95**	*e*P		**Pn**	**05 01 15.3**	**+1.2**
URSC	**Urasca**	**2.66**	**98**	*e*P		**Pn**	**05 01 16.4**	**+1.4**
TRTC	**Tortuguero**	**2.72**	**82**	⇓*e*P		**Pn**	**05 01 14.5**	**-1.4**
BUS	**Buena Vista**	**2.73**	**104**	*e*P		**Pn**	**05 01 12.8**	**-3.2**
TXAR	**Lajitas Array**	**24.92**	**322**	P		**P**	**05 05 57.3**	**+1.1**
	0.5nm,0.7s,mb3.2,baz=137,slow=11,SNR=9.2							
PDAR	**Pinedale Array**	**38.19**	**332**	P		**P**	**05 07 52.1**	**-1.0**
	0.3nm,0.9s,mb3.0,baz=148,slow=14,SNR=2.6							
NVAR	**Mina Array Bea**	**40.02**	**320**	P		**P**	**05 08 08.9**	**+0.6**
	0.9nm,0.9s,mb3.5,baz=122,slow=8.2,SNR=5.5							

*IDC **24** 05:24:07.0±3.4,15.45S×177.27W,h203km±31km, mb3.9/11,mb1 4.2/11,mb1mx4.1/15,Error ellipse: s-maj=20.8km s-min=13.6km az=137.0*
*NEIC **24** 05:24:14.9±6.6,15.51S×177.36W,h282km±66km, mb4.1/17,Error ellipse: s-maj=15.5km s-min=12.6km az=204.0*

ISC 24 05:24:10.3±0.4,15.51S±0.09×177.37W±0.09,h250km, n37,σ0ᵗ83/36,mb4.1/27,1C-5D,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
URZ	**Urewera**	**23.18**	**191**	P		**P**	**05 28 55.3**	**-0.9**
	6.0nm,0.4s,mb4.5,baz=358,slow=16,SNR=8.1							
SNZO	**South Karori**	**26.61**	**193**	*e*P		**P**	**05 29 26.4**	**-1.4**
	11nm,0.6s,mb4.7							
RPZ	**Rata Peaks**	**29.80**	**197**	P		**P**	**05 29 56.4**	**+0.2**
	7.9nm,0.8s,mb4.4,baz=45,slow=18,SNR=2.7							
CTA	**Charters Tower**	**34.89**	**257**	P		**P**	**05 30 41.4**	**+1.3**
	3.6nm,0.9s,mb3.9,baz=62,slow=10.0,SNR=2.8							
CTAO	**Charters Tower**	**34.89**	**257**	P		**P**	**05 30 41.6**	**+1.4**
	0.8nm,0.3s,mb3.7							
CNB	**Canberra Magne**	**35.70**	**230**	⇓*i* P		**P**	**05 30 48.0**	**+1.2**
	7.2nm,0.6s,mb4.4							
TOO	**Toolangi**	**39.47**	**229**	*e*P		**P**	**05 31 18.9**	**+0.8**
	3.1nm,0.7s,mb4.0							
STKA	**Stephens Creek**	**40.68**	**239**	⇑*i* P		**P**	**05 31 29.3**	**+1.1**
	3.9nm,0.8s,mb3.9							
STKA	**Stephens Creek**	**40.68**	**239**	P		**P**	**05 31 29.3**	**+1.2**
	2.8nm,0.4s,mb4.0,baz=76,slow=8.2,SNR=6.4							
WB2	**Warramunga Arr**	**46.08**	**257**	⇓*i* P		**P**	**05 32 11.3**	**-0.1**
WRAB	**Tennant Creek**	**46.08**	**257**	*e*P		**P**	**05 32 11.1**	**-0.4**
	12nm,0.7s,mb4.3							
WRA	**Warramunga Arr**	**46.09**	**257**	P		**P**	**05 32 11.4**	**-0.1**
	3.1nm,0.4s,mb4.0,baz=90,slow=6.4,SNR=157							
AS12	**Alice Springs**	**46.44**	**252**	⇓*i* P		**P**	**05 32 14.6**	**+0.4**
	27nm,0.6s,mb4.8							
ASAR	**Alice Springs**	**46.44**	**252**	P		**P**	**05 32 14.6**	**+0.4**
	29nm,0.5s,mb4.9,baz=85,slow=7.5,SNR=514							
ASAR				ScP			05 37 19.7	
	0.4nm,0.7s,baz=97,slow=4.3,SNR=5.3							
KAKA	**Kakadu**	**48.71**	**267**	⇓*i* P		**P**	**05 32 32.0**	**+0.2**
	4.2nm,0.4s,mb4.1							
FORT	**Forrest**	**51.95**	**243**	*e*P		**P**	**05 32 55.0**	**-0.9**
	54nm,0.6s,mb5.2							
FITZ	**Fitzroy Crossi**	**54.44**	**259**	⇓*i* P		**P**	**05 33 13.9**	**-0.2**
	1.5nm,0.5s,mb3.8							
KLBR	**Kellerberrin**	**60.80**	**242**	*e*P		**P**	**05 33 56.4**	**-1.9**
	8.2nm,0.6s,mb4.5							
SBA	**Scott Base**	**62.87**	**184**	*e*P		**P**	**05 34 12.0**	**+0.6**
	4.1nm,0.6s,mb4.2							
VNDA	**Vanda**	**62.91**	**185**	P		**P**	**05 34 11.7**	**0.0**
	1.4nm,0.5s,mb3.9,baz=1.4,slow=5.2,SNR=25							
QSPA	**South Pole Qui**	**74.53**	**180**	*e*P		**P**	**05 35 22.6**	**-0.1**
	2.2nm,0.6s,mb4.0							
NVAR	**Mina Array Bea**	**77.01**	**44**	P		**P**	**05 35 38.1**	**+0.8**
	2.2nm,0.7s,mb3.9,baz=216,slow=7.6,SNR=19							
TPH	**Tonopah**	**77.55**	**45**	*e*P		**P**	**05 35 40.7**	**+0.3**
	1.9nm,0.5s,mb4.0							
MSU	**Marysvale**	**81.22**	**46**	*e*P		**P**	**05 36 01.1**	**+1.3**
MCK	**McKinley**	**81.99**	**12**	*e*P		**P**	**05 36 02.2**	**-1.0**
HLID	**Hailey**	**82.17**	**41**	*e*P		**P**	**05 36 04.9**	**+0.3**
	2.9nm,0.7s,mb4.0							
TCUT	**Toone Canyon**	**82.95**	**44**	*e*P		**P**	**05 36 09.1**	**+0.4**
COLA	**College**	**83.23**	**12**	*e*P		**P**	**05 36 08.1**	**-1.5**
	5.6nm,0.8s,mb4.3							
ILAR	**Eielson Array**	**83.34**	**13**	P		**P**	**05 36 08.9**	**-1.2**
	2.0nm,0.6s,mb4.0,baz=230,slow=5.3,SNR=30							
PV10	**Paradox Valley**	**83.37**	**47**	*e*P		**P**	**05 36 10.0**	**-0.8**
MNTX	**Cornudas Mount**	**83.39**	**55**	*e*P		**P**	**05 36 11.3**	**+0.2**
	0.9nm,0.5s,mb3.8							
ANMO	**Albuquerque**	**83.83**	**51**	*e*P		**P**	**05 36 13.7**	**+0.4**
	1.4nm,0.8s,mb3.7							
TXAR	**Lajitas Array**	**83.87**	**57**	P		**P**	**05 36 14.6**	**+0.9**
	1.3nm,0.6s,mb3.8,baz=220,slow=7.2,SNR=27							
TXAR	**Lajitas Array**	**83.87**	**57**	P		**P**	**05 36 14.6**	**+0.9**
BW06	**Boulder Array**	**84.93**	**43**	P		**P**	**05 36 18.2**	**-0.3**
	0.6nm,0.6s,mb3.5							
PDAR	**Pinedale Array**	**84.93**	**43**	P		**P**	**05 36 18.6**	**0.0**
	0.6nm,0.5s,mb3.6,baz=207,slow=3.4,SNR=7.1							
BRTR	**Keskin Array B**	**143.74**	**318**	PKhKP			05 43 13.9	
	3.6nm,1.3s,baz=124,slow=5.2,SNR=4.8							

*NEIC **24** 05:41:40.8,32.93S×71.60W,h42km,MD4.1(GUC),After GUC.*
NEIC Felt [II] at Olmue, Quillota, Valparaiso and Vina del Mar.

GUC 24 05:41:40.8±0.8,32.93S×71.60W,h42km±1km,MD4.1, ML3.5,9C-4D,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
IHA	**Instituto Hidr**	**0.11**	**200**	⇓*i* P		P	05 41 47.8	+0.2
IHA				*i* S		S	05 41 52.5	+0.2
PACH	**Papudo**	**0.41**	**19**	⇑*i* P		P	05 41 51.1	+0.6
PACH				*i* S		S	05 41 58.3	+1.0
ROCH	**El Roble**	**0.49**	**95**	⇑*i* P		P	05 41 51.9	+0.3
ROCH				*i* S		S	05 42 00.7	+1.6
LCCH	**Las Cruces**	**0.55**	**178**	⇑*i* P		P	05 41 52.3	0.0
LCCH				*i* S		S	05 41 59.5	-0.9
PEL	**Peldehue**	**0.80**	**106**	⇑*i* P		P	05 41 56.6	+1.0
PEL				*i* S		S	05 42 07.8	+1.3
PEL				AMP			05 42 09.6	
	comp=N,8μm,0.3s							
PTCH	**Petorca**	**0.87**	**41**	*i* P		P	05 41 57.4	+0.8
PTCH		

CTA	Charters Tower	34.10	282	*e*P	P		06 05 03.3	+1.2	
	9.9nm,1.1s,mb4.7								
CTA	Charters Tower	34.10	282	LR	LR		06 17 59.7		
	comp=Z,224nm,18.7s,MS3.9,baz=308,slow=35								
CTAO	Charters Tower	34.10	282	*e*P	P		06 05 03.8	+1.7	
	21nm,1.2s,mb5.0								
AS12	Alice Springs	42.98	269	*e*P	P		06 06 15.7	-0.5	
	11nm,1.1s,mb4.5								
ASAR	Alice Springs	42.98	269	P	P		06 06 16.2	+0.1	
	1.6nm,0.4s,mb4.1,baz=106,slow=7.1,SNR=22								
ASAR				LR	LR		06 24 51.8		
	comp=Z,213nm,18.0s,MS4.1,baz=41,slow=37								
WB2	Warramunga Arr	44.13	274	*e*P	P		06 06 25.4	-0.2	
WRAB	Tennant Creek	44.14	274	*e*P	P		06 06 25.2	-0.5	
	17nm,0.9s,mb4.8								
WRA	Warramunga Arr	44.14	274	P	P		06 06 25.4	-0.3	
	3.5nm,0.4s,mb4.5,baz=112,slow=8.1,SNR=78								
WRA				LR	LR		06 24 17.6		
	comp=Z,214nm,18.9s,MS4.1,baz=115,slow=35								
SBA	Scott Base	46.05	184	P	P		06 06 40.8	+0.6	
FITZ	Fitzroy Crossi	52.32	271	*e*P	P		06 07 28.1	-1.2	
	3.3nm,0.9s,mb4.3								
NWAO	Narrogin (SRO)	53.66	251	LR	LR		06 26 28.8		
	comp=Z,113nm,20.7s,MS3.9,baz=50,slow=32								
QSPA	South Pole Qui	57.72	180	*e*P	P		06 08 08.7	+0.9	
	15nm,1.1s,mb4.9								
QSPA				LR	LR				
	comp=Z,180nm,18.3s,MS4.2								
SNAA	Sanae	76.17	178	*e*P	P		06 10 03.9	-0.5	
VNA3	Neumayer Olymp	76.33	176	*e*	P		06 10 15.4	+10	
VNA3	Neumayer Olymp	76.33	176	⇑*i*P	P		06 10 06.4	+1.1	
VNA3				*e*			06 10 15.4		
VNA2	Neumayer--Watz	76.76	177	⇓*i*P	P		06 10 09.4	+1.7	
VNA2				*e*			06 10 19.4		
VNA1	Neumayer--Stat	76.99	177	⇓*i*P	P		06 10 08.0	-1.0	
VNA1				*e*			06 10 18.4		
NVAR	Mina Array Bea	89.74	43	P	P		06 11 14.9	0.0	
	comp=Z,1.9nm,1.0s,mb4.4,baz=208,slow=6.7,SNR=8.3								
NVAR				LR	LR		06 43 50.6		
	comp=Z,71nm,20.7s,MS4.1,baz=165,slow=30								
TPH	Tonopah	90.13	44	*e*P	P		06 11 16.4	-0.3	
	comp=Z,6.7nm,1.1s,mb4.9								
TXAR	Lajitas Array	93.52	57	P	P		06 11 32.0	-0.4	
	comp=Z,0.3nm,1.0s,mb3.7,baz=207,slow=6.0,SNR=2.7								
TXAR				LR	LR		06 48 19.8		
	comp=Z,114nm,18.2s,MS4.4,baz=295,slow=32								
PDAR	Pinedale Array	97.62	44	LR	LR		06 49 52.8		
	comp=Z,83nm,18.0s,MS4.3,baz=352,slow=32								
CPUP	Villa Florida	98.80	129	LR	LR		06 52 40.8		
	comp=Z,68nm,18.0s,MS4.2,baz=66,slow=33								
MKAR	Makanchi Array	118.99	309	PKP	PKPdf		06 17 04.2	-2.7	
	comp=Z,0.7nm,0.8s,baz=90,slow=1.2,SNR=5.3								
FINES	FINESS Array B	146.99	339	PKPbc	PKPbc		06 17 57.4	+0.7	
	comp=Z,2.2nm,0.7s,baz=68,slow=3.3,SNR=13								
FINES	FINESS Array B	146.99	339	PKPbc	PKPbc		06 17 57.4	+0.7	
NB2	NORSAR Subarra	150.71	351	PKP			06 18 06.8		
	comp=Z,14nm,1.4s,baz=17,slow=4.1								
BRTR	Keskin Array B	153.44	295	PKPbc	PKPdf		06 18 15.2	+6.5	
	comp=Z,1.5nm,1.0s,baz=146,slow=4.5,SNR=5.6								
DBIC	Dimbokro	153.64	165	PKPbc	PKPdf		06 18 17.8	+8.1	
	comp=Z,1.9nm,0.9s,baz=124,slow=7.3,SNR=2.5								

*IDC **24** 06:10:06.3±1.8,28.11S×73.29E,mb4.0/5,mb1 4.2/5, mb1mx3.9/17,MS3.2/1,Ms1 3.4/1,ms1mx2.8/18,Error ellipse: s-maj=47.3km s-min=34.3km az=77.0*

ISC 24 06:10:05.9±1.8,28.2S±0.3×73.3E±0.4,h10km,n6,σ0§10/5, mb4.0/5,MS3.2/1,Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FITZ	Fitzroy Crossi	48.85	90	P	P	06 18 53.9	+0.1
	4.1nm,1.1s,mb4.4,baz=215,slow=4.8,SNR=3.7						
CMAR	Chiang Mai Arr	52.57	31	LR	LR	06 38 14.6	
	comp=Z,26nm,21.1s,MS3.2,baz=149,slow=32						
ASAR	Alice Springs	54.22	100	P	P	06 19 34.0	-0.1
	2.4nm,0.7s,mb4.2,baz=250,slow=6.5,SNR=30						
WRA	Warramunga Arr	55.86	96	P	P	06 19 46.2	+0.1
	1.9nm,0.9s,mb4.1,baz=250,slow=7.2,SNR=6.6						
VNDA	Vanda	62.42	166	P	P	06 20 30.9	0.0
	0.7nm,1.0s,mb3.8,baz=256,slow=6.2,SNR=2.5						
MKAR	Makanchi Array	75.04	6	P	P	06 21 49.4	0.0
	0.7nm,0.7s,mb3.7,baz=180,slow=6.1,SNR=6.5						

*IDC **24** 06:48:33.0±0.9,18.14S×172.86W,mb4.3/9,mb1 4.6/10, mb1mx4.4/19,ML4.4/1,MS3.6/2,Ms1 3.6/2,ms1mx3.2/18, Error ellipse: s-maj=47.5km s-min=18.2km az=146.0*
*NEIC **24** 06:48:37.4±0.3,18.10S×172.96W,mb4.3/6,Error ellipse: s-maj=15.1km s-min=8.4km az=146.0*

ISC 24 06:48:35.8±0.4,18.1S±0.1×173.0W±0.1,h31km, h31km±.7km:pP-P,n28,σ0§61/25,mb4.3/14,MS3.6/2,1C-2D, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAR	Rarotonga	12.81	106	Pn	P	06 51 22.8	-16
	2.0nm,0.3s,baz=337,slow=8.6,SNR=4.7						
RAR	Rarotonga	12.81	106	*e*P	P	06 51 22.4	-16
URZ	Urewera	21.86	201	P	P	06 53 27.7	-0.1
	6.8nm,0.5s,mb4.3,baz=352,slow=14,SNR=8.4						
RPZ	Rata Peaks	28.85	204	P	P	06 54 37.5	+3.9
	10nm,0.6s,mb4.8,baz=81,slow=20,SNR=10						
CTA	Charters Tower	38.51	260	P	P	06 55 58.1	+0.8
	3.9nm,0.4s,mb4.5,baz=87,slow=8.8,SNR=9.0						
CTAO	Charters Tower	38.51	260	*e*P	P	06 55 58.0	+0.7
	3.7nm,0.4s,mb4.5						
PMG	Port Moresby	39.61	277	LR	LR	07 10 02.3	
	comp=Z,72nm,22.0s,MS3.5,baz=83,slow=32						
WB2	Warramunga Arr	49.66	259	*e*P	P	06 57 26.8	-0.2
WRAB	Tennant Creek	49.66	259	*e*P	P	06 57 26.6	-0.5
	15nm,1.0s,mb5.0						
WRA	Warramunga Arr	49.67	259	P	P	06 57 27.0	-0.1
	2.5nm,0.7s,mb4.3,baz=97,slow=7.5,SNR=39						
AS12	Alice Springs	49.71	254	*e*P	P	06 57 27.0	-0.3
	6.6nm,1.0s,mb4.6						
ASAR	Alice Springs	49.71	254	P	P	06 57 27.6	+0.2
	4.8nm,0.7s,mb4.7,baz=94,slow=7.2,SNR=43						
SBA	Scott Base	60.59	185	*e*P	P	06 58 43.9	-1.6
	2.3nm,0.9s,mb4.3						
NVAR	Mina Array Bea	76.08	41	P	P	07 00 22.3	-0.1
	1.7nm,1.0s,mb3.9,baz=231,slow=9.4,SNR=7.1						
NVAR				LR	LR	07 27 49.2	
	comp=Z,39nm,18.0s,MS3.8,baz=355,slow=31						
HLID	Hailey	81.47	39	*e*P	P	07 00 51.9	+0.4
	1.5nm,1.0s,mb3.9						
MNTX	Cornudas Mount	81.53	53	*e*P	P	07 00 51.9	-0.1
	3.9nm,1.1s,mb4.2						
MNTX				*e*	pP	07 01 02.3	+0.4
TXAR	Lajitas Array	81.79	56	P	P	07 00 53.8	+0.3
	1.3nm,0.9s,mb3.9,baz=215,slow=9.2,SNR=13						
GDL2	Guadalupe Moun	82.52	53	*e*P	P	07 00 57.6	+0.4
MCMT	McKenzie Canyo	83.11	38	*e*P	P	07 00 59.9	-0.2
MCMT				*e*	pP	07 01 09.4	-0.5
BW06	Boulder Array	84.02	41	*e*P	P	07 01 04.5	-0.2
	1.8nm,0.9s,mb4.2						
PDAR	Pinedale Array	84.02	41	P	P	07 01 04.7	0.0
	1.3nm,0.9s,mb4.1,baz=232,slow=2.9,SNR=8.2						
BOZ	Bozeman (W)	84.28	38	*e*P	P	07 01 05.0	-1.0
BOZ				*e*	pP	07 01 14.7	-1.2
ILAR	Eielson Array	85.02	11	P	P	07 01 09.4	+0.2
	0.4nm,0.6s,mb3.7,baz=242,slow=4.6,SNR=5.4						
VNA3	Neumayer Olymp	90.12	175	⇓*i*	P	07 01 34.3	+0.6
VNA2	Neumayer--Watz	90.62	175	⇑*i*	P	07 01 35.8	-0.2
VNA1	Neumayer--Stat	90.82	175	⇓*i*	P	07 01 38.1	+1.2
BRTR	Keskin Array B	148.49	319	PKPbc	PKPdf	07 08 23.5	+2.3
	2.0nm,0.8s,baz=135,slow=1.7,SNR=11						
GERES	GERESS Array B	148.88	351	PKPbc	PKPdf	07 08 23.3	+1.8
	0.5nm,0.7s,baz=315,slow=3.8,SNR=5.1						

IDC 24 06:50:19.2±3.3,18.66S×172.59W,mb3.8/6,mb1 4.2/6, mb1mx4.0/16,MS2.9/1,Ms1 2.9/1,ms1mx2.7/19,Error ellipse: s-maj=239.0km s-min=21.5km az=155.0,Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RAR	Rarotonga	12.32	104	LR	LR	06 56 03.0	
	comp=Z,51nm,19.7s,baz=252,slow=28						
CTA	Charters Tower	38.78	261	P	P	06 57 45.6	-1.8
	3.0nm,0.6s,baz=78,slow=10.0,SNR=3.7						
ASAR	Alice Springs	49.91	254	P	P	06 59 14.9	-1.9
	2.1nm,0.9s,baz=94,slow=7.2,SNR=4.8						
WRA	Warramunga Arr	49.93	259	P	P	06 59 14.5	-2.5
	0.5nm,0.3s,baz=96,slow=7.5,SNR=6.9						
NVAR	Mina Array Bea	76.24	41	P	P	07 02 09.5	-1.9
	0.4nm,0.7s,baz=225,slow=8.9,SNR=3.1						
TXAR	Lajitas Array	81.80	55	P	P	07 02 41.0	-0.7
	0.5nm,0.9s,baz=231,slow=8.0,SNR=3.6						
PDAR	Pinedale Array	84.18	41	P	P	07 02 52.2	-1.5
	0.4nm,0.7s,baz=243,slow=4.0,SNR=4.0						
BRTR	Keskin Array B	149.13	318	PKPbc	PKPdf	07 10 11.1	+3.8
	1.0nm,0.8s,baz=326,slow=4.5,SNR=3.5						

*IDC **24** 06:54:28.1±1.5,6.16S×147.20E,mb3.6/3,mb1 3.8/5, mb1mx3.7/15,ML2.6/2,Error ellipse: s-maj=45.6km s-min=26.2km az=109.0*
*NEIC **24** 06:54:35.4±4.5,6.30S×147.06E,h46km±39km,Error ellipse: s-maj=48.0km s-min=26.1km az=149.0*

ISC 24 06:54:31.9±4.7,6.1S±0.2×146.9E±0.2,h33km±42km,n8, σ1§36/11,mb3.5/3,Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PMG	Port Moresby	3.30	176	Pn	P	06 55 21.7	-0.8
	9.4nm,0.3s,baz=342,slow=3.6,SNR=18						
PMG				Sn	S	06 56 02.3	+1.2
	10nm,0.3s,baz=8.8,slow=23,SNR=4.5						
PMG	Port Moresby	3.30	176	*e*P	P	06 55 21.7	-0.8
PMG				*e*Pg	P	06 55 27.6	+5.1
PMG				*e*S	S	06 56 02.0	+0.9
WRAB	Tennant Creek	18.41	220	P	P	06 58 47.3	+0.8
	1.4nm,0.4s						
WRA	Warramunga Arr	18.42	220	P	P	06 58 44.6	-2.1
	0.0nm,0.3s,baz=48,slow=10,SNR=3.6						
FITZ	Fitzroy Crossi	23.96	238	P	P	06 59 46.0	+1.6
	1.6nm,0.8s,mb3.5,baz=40,slow=7.9,SNR=2.5						
VNDA	Vanda	71.83	177	P	P	07 05 50.8	-1.9
	0.6nm,0.9s,mb3.5,baz=328,slow=6.9,SNR=3.8						
VNDA	Vanda	71.83	177	*e*P	P	07 05 51.6	-1.2
	0.1nm,0.4s,mb3.1						
ILAR	Eielson Array	85.59	23	P	P	07 07 09.2	+1.4
	0.3nm,0.7s,mb3.6,baz=242,slow=5.3,SNR=4.9						

*BJI **24** 07:03:48.8,37.54N×114.74E,h21km,ML3.7*

ISC 24 07:03:41.6±0.8,37.49N±0.05×114.69E±0.05,h10km,n5, σ0§95/11,1D,Northeastern China

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
TIY	Taiyuan	1.80	278	⇓PG	Pg	07 04 18.4	+0.7
TIY				SG	Sg	07 04 41.6	-0.2
TIY				S	Sn		
	comp=N,543nm,0.5s						
TIY				S	Sn		
	comp=E,484nm,0.5s						
TIA	Tai'an	2.33	122	*e*P	Pn	07 04 24.6	+4.0
TIA				PG	Pg	07 04 28.8	+0.6
TIA				SG	Sg	07 04 57.9	-1.4
TIA				S	Sn		
	comp=N,335nm,0.7s						
TIA				S	Sn		
	comp=E,375nm,0.6s						
BJI	Beijing	2.80	24	P	Pn	07 04 31.9	+4.5
BJI				PG	Pg	07 04 38.8	+1.2
BJI				SG	Sg	07 05 14.9	-0.1
BJI				S	Sn		
	comp=N,193nm,0.5s						
BJI				S	Sn		
	comp=E,455nm,0.5s						
HHC	Hu-ho-hao-te	4.14	325	*e*PG	Pg	07 05 04.3	-0.1
HHC				SG	Sg	07 05 58.3	-1.3
HHC				S	Sn		
	comp=N,176nm,0.7s						
HHC				S	Sn		
	comp=E,124nm,0.8s						
XAN	Xi'an	5.81	235	PG	Pg	07 05 31.6	-6.1
XAN				S	Sn		
	comp=N,58nm,0.8s						
XAN				S	Sn		
	comp=E,22nm,1.0s						

*IDC **24** 07:09:14.3±0.6,40.80N×77.98E,mb4.2/16,mb1 4.4/19, mb1mx4.3/23,ML3.7/3,MS3.8/7,Ms1 3.9/7,ms1mx3.5/23, Error ellipse: s-maj=13.9km s-min=12.8km az=83.0*
*MOS **24** 07:09:16.2±1.5,40.94N×78.05E,h21km,mb4.5/11,Error ellipse: s-maj=12.7km s-min=7.1km az=112.8*
*BJI **24** 07:09:17.9,41.00N×78.01E,h25km,mB4.5,mb4.6,ML4.5, Ms4.3,Ms2.4.1*
*NEIC **24** 07:09:20.9±1.0,40.98N×77.98E,h47km±9km,mb4.3/11, Error ellipse: s-maj=9.6km s-min=6.2km az=221.0*
*NNC **24** 07:09:20.3±3.6,41.17N×77.77E,h20km±15km,mpv4.7, Error ellipse: s-maj=24.7km s-min=9.2km az=145.0*

ISC 24 07:09:18.4±0.5,40.79N±0.03×78.05E±0.04,h45km±4km, h48km±2.7km:pP-P,n126,σ1§29/143,mb4.4/39,MS4.0/17, 21C-8D,Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ULHL	Ulahol	1.99	318	P	P	07 09 49.5	-0.7
	SNR=606						
KSH	Kashi	2.04	232	P	P	07 09 53.8	+2.9
KSH				S	S	07 10 23.0	+7.9
KSH				S	S		
	comp=N,4μm,0.5s						
KSH				S	S		
	comp=E,4μm,0.6s						
KZA	Kyzart	2.47	302	P	P	07 09 57.7	+0.6
	SNR=1925						
TKM2	Tokmak 2	2.81	320	P	P	07 10 02.9	+1.0
	SNR=163						
KBK	Karagaybulak	2.98	310	P	P	07 10 05.4	+1.0
	SNR=338						
UCH	Uchtor	3.02	300	P	P	07 10 05.3	+0.4
	SNR=163						
AAK	Ala-Archa	3.24	306	P	P	07 10 09.0	+1.0
	SNR=217						
FRU	Bishkek	3.28	310	*e*PN	P	07 10 09.5	+0.9
FRU				*i*		07 10 14.0	
FRU				*i*		07 10 55.0	
FRU				pmax	pmax		
	comp=Z,1μm,1.6s						
FRU				smax			
	comp=E,2μm,1.6s						
CHMS	Chumysh	3.31	313	P	P	07 10 09.2	+0.1
	SNR=16						
AML	Almayashu	3.54	294	P	P	07 10 12.6	+0.3
	SNR=59						
USP	Ospenovka	3.62	314	P	P	07 10 15.1	+1.7
	SNR=6.4						
EKS2	Erkin-Say	3.71	302	P	P	07 10 15.4	+0.8
	SNR=22						
KK31	Karatay Array	6.08	295	⇑Pn	P	07 10 46.3	-1.6
	comp=E,34nm,0.5s,baz=305,slow=106,SNR=30						
KK31				⇑Pg	P	07 11 04.6	+17
	comp=E,95nm,0.7s,baz=111,slow=16,SNR=32						
KK31				⇑Lg		07 12 21.5	
	comp=E,58nm,0.5s,baz=107,slow=27,SNR=5.3						
KK31				⇓Rg		07 13 09.8	
	comp=E,468nm,7.3s						
KKAR	Karatay Array	6.08	295	*i* PN	P	07 10 46.2	-1.7
KKAR				pmax	pmax		
	comp=Z,52nm,0.5s						
MK31	Makanchi Array	6.74	26	⇑Pn	P	07 10 56.6	-0.6
	comp=Z,53nm,1.0s						
MK31				⇑Sn	S	07 12 12.5	-1.1
	comp=Z,38nm,0.6s						
MK31				⇑Lg		07 12 46.6	
	comp=Z,82nm,0.7s						
MK31				⇑Rg		07 13 26.4	
	comp=Z,1μm,10.9s						
MKAR	Makanchi Array	6.74	26	Pn	P	07 10 56.0	-1.2
	comp=Z,4.1nm,0.3s,baz=206,slow=15,SNR=84						
MKAR				Sn	S	07 12 14.4	+0.8
	comp=Z,7.1nm,0.3s,baz=207,slow=22,SNR=4.2						
MKAR				Lg		07 12 45.5	
	comp=Z,10nm,0.3s,baz=205,slow=23,SNR=5.1						
MKAR	Makanchi Array	6.74	26	PN	P	07 10 56.1	-1.2
MKAR						07 12 14.4	
MKAR				pmax	pmax		
	comp=Z,4.0nm,0.3s						
MKAR				smax			
	comp=Z,7.0nm,0.3s						
WMQ	Urumqi	7.76	64	⇑P	P	07 11 12.6	+1.1
WMQ				S	S	07 12 41.8	+2.8
WMQ				S	S		
	comp=N,91nm,1.0s						
WMQ				S	S		
	comp=E,186nm,1.0s						
WMQ				LR	LR		
	comp=N,353nm,5.0s						
CHCP	Chirah Chowk	8.07	210	P	P	07 11 17.6	+1.9
CEP	Cherat	8.50	217	P	P	07 11 22.2	+0.6
THW	Thamme Wali	9.44	214	P	P	07 11 33.3	-1.3
KURK	Kurchatov	9.94	2	⇓Pn	P	07 11 38.9	-2.4
	comp=N,12nm,0.9s,baz=236,slow=12,SNR=17						
KURK				⇑Lg		07 14 28.2	
	comp=N,204nm,1.5s,baz=60,slow=4.8,SNR=11						
KURK				⇑Rg		07 15 16.5	
	comp=N,664nm,10.3s,baz=340,slow=16,SNR=4.3						
KURK	Kurchatov	9.94	2	*e*P	P	07 11 38.8	-2.6
SBDP	Sheikh Budin	10.28	217	P	P	07 11 45.3	-0.7
KALG	Kalgarh	11.27	177	*e*	P	07 11 54.7	-4.9
KALG				*e*S	S	07 13 55.0	-10
AYAN	Aya Nagar	12.30	184	*e*P	P	07 12 11.7	-1.7
AYAN				*e*S	S	07 14 22.7	-7.3
SONA	Sohna	12.53	184	*e*P	P	07 12 13.8	-2.7
SONA				*e*S	S	07 14 26.7	-8.9
SONA				*e*		07 14 31.8	
	comp=N,25nm,0.9s						
SONA				*e*		07 14 33.0	
	comp=E,46nm,0.9s						
KUDL	Kundal	12.68	186	*e*S	S	07 14 27.6	-11
KHET	Khetri	12.81	189	*e*P	P	07 12 19.1	-1.2
KHET				*e*S	S	07 14 32.6	-10
KHET				*e*		07 14 37.9	
	comp=E,30nm,1.0s						
KHET				*e*		07 14 42.0	
	comp=N,29nm,0.8s						
VOSK	Vostochnaya	12.88	340	⇓Pn	P	07 12 16.6	-4.5
	comp=N,6.5nm,0.7s						
VOSK				⇑Lg		07 15 52.9	
	comp=N,159nm,2.0s						
VOSK				⇑Rg		07 16 53.7	
	comp=N,831nm,9.6s						
BVA0	Borovoye Array	13.30	340	⇓Pn	P	07 12 22.3	-4.4
	comp=N,2.1nm,0.7s						
BVA0				⇑Lg		07 16 06.1	
	comp=N,34nm,2.1s,baz=148,slow=31,SNR=7.1						
BVA0				⇑Rg		07 17 06.6	
	comp=N,169nm,9.4s,baz=166,slow=26,SNR=4.1						
BVA0	Borovoye Array	13.30	340	P	P	07 12 22.2	-4.5
BVAR	Borovoye Array	13.30	340	Pn	P	07 12 22.7	-4.0
	comp=N,1.7nm,0.3s,baz=154,slow=13,SNR=48						
BVAR				Lg		07 16 07.9	
	comp=N,0.9nm,0.3s,baz=146,slow=32,SNR=8.5						
BVAR				LR	LR	07 17 39.1	
	comp=N,466nm,18.8s,baz=120,slow=38						
BRVK	Borovoye	13.36	339	⇓Pn	P	07 12 23.4	-4.0
	comp=N,5.8nm,0.8s						
BRVK				⇑Lg		07 16 09.1	
	comp=N,93nm,1.7s						
BRVK				⇑Rg		07 17 08.9	
	comp=N,508nm,9.3s						
BRVK	Borovoye	13.36	339	*e*P	P	07 12 22.8	-4.6
ZRNK	Zerenda	13.64	336	⇑Pn	P	07 12 27.1	-3.8
	comp=N,6.1nm,0.8s						
ZRNK				⇑Lg		07 16 19.4	
	comp=N,124nm,1.6s						
ZRNK				⇑Rg		07 17 18.5	
	comp=N,797nm,10.3s						
ZRNK	Zerenda	13.64	336	P	P	07 12 27.0	-3.9
ZRNK				pmax	pmax		
	comp=Z,5.0nm,1.0s						
KOLN	Koldanda	13.77	159	*e*P	P	07 12 28.4	-4.4
	comp=Z,15nm,0.5s						
GKN	Gorkha	13.86	155	*e*P	P	07 12 32.9	-1.1
	comp=Z,17nm,0.5s						
ZAL	Zalesovo	13.92	17	Pn	P	07 12 31.9	-2.6
	comp=Z,0.4nm,0.3s,baz=168,slow=13,SNR=5.0						
KKN	Kakani	14.27	153	*e*P	P	07 12 36.0	-3.3
	comp=Z,17nm,0.6s						
GUN	Gumba	14.37	151	*e*P	P	07 12 38.4	-2.3
	comp=Z,118nm,0.9s						
DMN	Daman	14.37	154	*e*P	P	07 12 35.2	-5.6
	comp=Z,69nm,1.2s						
NVS	Novosibirsk	14.48	12	*e*P	P	07 12 46.0	+4.0
NVS				*e*S	S	07 15 18.4	-3.5
PKI	Pulchoki	14.51	153	*e*P	P	07 12 36.4	-6.2
	comp=Z,91nm,1.3s						
AJM	Ajmer	14.55	192	⇑*i*	P	07 12 37.0	-6.0
AJM				*i*		07 15 15.0	
AB31	Akbulak array	15.32	310	⇑Pn	P	07 12 50.2	-2.7
	comp=Z,7.5nm,0.8s,baz=141,slow=2.3,SNR=3.6						
AB31	Akbulak array	15.32	310	*i* P	P	07 12 50.2	-2.7
AB31				pmax	pmax		
	comp=Z,7.0nm,0.9s						
LSA	Lhasa	15.37	132	P	P	07 12 58.8	+5.1
LSA	Lhasa	15.37	132	*e*P	P	07 12 59.0	+5.3
	comp=Z,11nm,0.9s						
GTA	Gaotai	16.71	88	*e*P	P	07 13 10.3	-0.3
GTA				AP		07 13 18.4	
GTA				XP		07 13 25.3	
GTA				S	S	07 16 21.9	+8.2
GTA				AMB	AMB		
	comp=Z,7.0nm,1.0s						
GTA				AMB	AMB		
	comp=Z,91nm,4.6s						
GTA				LR	LR		
	comp=N,171nm,12.2s						
GTA				LR	LR		
	comp=E,205nm,15.2s						
GTA				LR	LR		
	comp=Z,193nm,16.0s						
BHPL	Bhopal	17.50	182	*e*P	P	07 13 23.0	+2.3
SHL	Shillong	19.05	139	*e*P	P	07 13 39.0	-0.5
ZAK	Zakamensk	20.01	53	*e*P	P	07 13 48.7	-1.1
ARU	Arti	20.16	327	*e*P	P	07 13 50.0	-1.3
ARU				*e*		07 14 07.1	
ARU				*e*S	S	07 17 33.3	+3.1
ARU				*e*SS	SS	07 17 51.8	-8.6
ARU	Arti	20.16	327	*e*P	P	07 13 50.9	-0.4
	comp=Z,10nm,0.6s						
LZH	Lanzhou	20.71	95	P	P	07 13 59.0	+1.8
LZH				AP		07 14 08.0	
LZH				XP		07 14 12.0	
LZH				AMB	AMB		
	comp=Z,42nm,1.5s						
SONM	Songino Array	21.39	61	P	P	07 14 05.4	+1.4
	comp=Z,7.1nm,0.8s,mb4.0,baz=252,slow=12,SNR=10						
THR	Tehran	21.63	266	P	P	07 14 07.3	+0.9
	comp=Z,3.3nm,0.8s,mb3.8,baz=17,slow=2.2,SNR=10						
THR	Tehran	21.63	266	P	P

SOC MLR MLR
comp=Z,160nm,15.0s,MS3.7
SOC MLR MLR
comp=E,220nm,13.0s,MS4.0
BOD Bodaibo 28.52 41 *e*P **P 07 15 09.7 -1.7**
CM31 Chiang Mai Arr 28.58 135 P **P 07 15 14.9 +2.6**
CMAR Chiang Mai Arr 28.58 135 P **P 07 15 14.1 +1.7**
comp=E,0.9nm,0.4s,mb3.8,baz=342,slow=8.6,SNR=3.2
CMAR Chiang Mai Arr 28.58 135 P **P 07 15 14.1 +1.8**
CMAR pmax pmax
comp=Z,1.0nm,0.4s
MOS Moscow 30.28 313 *e*P **P 07 15 29.8 +2.7**
MOS pmax pmax
comp=Z,90nm,0.7s,mb5.6
OBN Obninsk 30.75 312 *e*P **P 07 15 30.8 -0.4**
OBN *e*S **S 07 20 25.2 -4.7**
OBN pmax pmax
comp=Z,7.0nm,1.4s,mb4.3
OBN MLR MLR
comp=Z,200nm,17.0s,MS3.8
BRTR Keskin Array B 33.64 283 P **P 07 15 56.8 +0.1**
comp=Z,2.2nm,0.6s,mb4.3,baz=90,slow=8.9,SNR=11
NJ2 Nanjing 33.72 92 *e*P **P 07 16 04.5 +7.1**
NJ2 S **S 07 21 26.0 +9.4**
NJ2 AMB AMB
comp=Z,10.0nm,0.8s,mb4.8
NJ2 LR LR
comp=N,400nm,12.0s
NJ2 LR LR
comp=E,540nm,19.9s
NJ2 LR LR
comp=Z,390nm,14.6s,MS4.3
CN2 Changchun 34.82 69 *e*P **P 07 16 11.0 +4.3**
CN2 *e*S **S 07 21 30.3 -3.1**
CN2 AMB AMB
comp=Z,10.0nm,0.6s,mb4.9
CN2 LR LR
comp=N,200nm,14.0s,MS4.3
CN2 LR LR
comp=E,300nm,14.0s,MS4.3
CN2 LR LR
comp=Z,300nm,14.0s,MS4.2
SSE Sheshan 35.93 92 P **P 07 16 17.1 +0.8**
SSE PP PP 07 17 42.4 +3.7
SSE S **S 07 21 50.3 -0.4**
SSE AMB AMB
comp=Z,29nm,0.6s,mb5.4
SSE AMB AMB
comp=Z,51nm,4.4s
SSE LR LR
comp=N,49nm,23.7s,MS3.2
SSE LR LR
comp=E,20nm,23.7s,MS3.2
SSE LR LR
comp=Z,54nm,17.9s
APA Apatity 36.08 333⇓ *e*P **P 07 16 19.4 +2.2**
APA MLR MLR
comp=Z,1μm,12.0s,MS4.8
FINES FINESS Array B 37.30 321 P **P 07 16 27.4 -0.1**
comp=Z,5.5nm,0.9s,mb4.4,baz=97,slow=8.8,SNR=10
FINES LR LR 07 32 11.0
comp=Z,158nm,18.7s,MS3.8,baz=16,slow=37
FINES FINESS Array B 37.30 321 *e*P **P 07 16 27.7 +0.2**
FINES FINESS Array B 37.30 321 P **P 07 16 27.4 -0.1**
FINES LR LR 07 32 11.0
MDJ Mudanjiang 37.56 67 P **P 07 16 29.1 -0.7**
MDJ AP pP 07 16 42.1 0.0
MDJ XP sP 07 16 48.3 +0.6
MDJ PP PP 07 17 55.3 -3.5
MDJ PCP PcP 07 18 47.0 -0.6
MDJ S **S 07 22 14.5 -0.9**
MDJ AMB AMB
comp=Z,4.0nm,0.7s,mb4.3
MDJ AMB AMB
comp=Z,41nm,4.3s
MDJ LR LR
comp=N,99nm,10.8s,MS4.0
MDJ LR LR
comp=E,143nm,15.2s,MS4.0
MDJ LR LR
comp=Z,216nm,13.0s,MS4.1
ARCES ARCESS Array B 39.51 334 P **P 07 16 46.2 +0.4**
comp=Z,3.5nm,0.7s,mb4.2,baz=99,slow=8.6,SNR=17
ARCES PcP PcP 07 18 52.8 -0.7
comp=Z,2.4nm,0.9s,baz=90,slow=2.4,SNR=4.0
ARCES LR LR 07 33 46.7
comp=Z,240nm,18.4s,MS4.1,baz=75,slow=37
ARCES ARCESS Array B 39.51 334 P **P 07 16 46.2 +0.4**
ARCES 07 18 52.8
ARCES pmax pmax
comp=Z,4.0nm,0.7s
ARCES pmax pmax
comp=Z,2.0nm,0.9s
ARCES MLR MLR
comp=Z,240nm,18.4s
ARCES ARCESS Array B 39.51 334 P **P 07 16 46.2 +0.4**
ARCES PcP PcP 07 18 52.8 -0.7
ARCES LR LR 07 33 46.7
TIXI Tiksi 39.72 23 *e*P **P 07 16 48.1 +0.6**
TIXI *e* 07 18 17.4
TIXI pmax pmax
comp=Z,35nm,0.8s,mb5.1
TIXI MLR MLR
comp=Z,2μm,14.0s,MS5.2
NB2 NORSAR Array B 44.45 320 P **P 07 17 26.2 -0.1**
comp=Z,5.1nm,0.6s,mb4.4,baz=85,slow=7.9
NOA NORSAR Array B 44.45 320 P **P 07 17 26.5 +0.2**
comp=Z,3.5nm,0.6s,mb4.3,baz=87,slow=7.9,SNR=13
NOA LR LR 07 36 33.4
comp=Z,141nm,18.3s,MS3.9,baz=70,slow=37
NOA NORSAR Array B 44.45 320 P **P 07 17 26.5 +0.2**
NOA pmax pmax
comp=Z,4.0nm,0.6s
NOA MLR MLR
comp=Z,141nm,18.3s
CLL Collm 44.96 306 P **P 07 17 31.0 +0.6**
CLL *e**PP pP 07 17 45.0 +2.2
GERES GERESS Array B 45.12 303 P **P 07 17 32.6 +0.8**
comp=Z,2.0nm,0.8s,mb4.0,baz=76,slow=5.5,SNR=8.9
GERES GERESS Array B 45.12 303 P **P 07 17 32.6 +0.9**
GERES pmax pmax
comp=Z,2.0nm,0.9s
GRA1 Grafenberg Arr 46.46 305 *e*P **P 07 17 43.4 +1.0**
comp=Z,6.0nm,1.1s,mb4.4
GRF Grafenberg Arr 46.46 305 *e*P **P 07 17 43.4 +1.0**
GRF pmax pmax
comp=Z,6.0nm,1.1s,mb4.4
LPG La Plagne 50.67 301 *e*P **P 07 18 15.1 +0.1**
comp=Z,2.3nm,0.4s,mb4.2
LPL La Plagne 50.67 301 *e*P **P 07 18 15.0 -0.1**
comp=Z,3.6nm,0.6s,mb4.2
ORIF Oris-en-Rattie 51.46 300 *e*P **P 07 18 20.8 -0.2**
comp=Z,5.8nm,0.6s,mb4.4
SMF Signal de Mont 52.12 303 *e*P **P 07 18 24.6 -1.3**
VIVF Saint-Julien-l 52.27 300 *e*P **P 07 18 26.2 -0.9**
BILL Biiibino 52.28 28*d* *i*P **P 07 18 27.6 +0.8**
BILL pmax pmax
comp=Z,2.0nm,0.6s,mb4.2
BILL MLR MLR
comp=Z,100nm,16.0s,MS4.0
AVF Avril sur Loir 52.38 303 *e*P **P 07 18 26.6 -1.2**
comp=Z,12nm,0.8s,mb4.6
ESDC Sonseca Array 60.32 298 P **P 07 19 23.4 -1.3**
comp=Z,1.1nm,0.5s,mb4.2,baz=50,slow=8.2,SNR=7.1
INK Inuvik 68.68 12 *e*P **P 07 20 16.9 -1.6**
comp=Z,7.3nm,1.4s,mb4.4
COLA College 68.73 19 P **P 07 20 17.1 -1.7**
comp=Z,1.2nm,0.5s,mb4.1
ILAR Eielson Array 69.05 19 P **P 07 20 20.2 -0.6**
comp=Z,1.2nm,0.9s,mb3.8,baz=290,slow=4.8,SNR=9.3
ILAR LR LR 07 55 03.1
comp=Z,69nm,18.1s,MS3.9,baz=137,slow=40
ILAR Eielson Array 69.05 19 P **P 07 20 20.2 -0.6**
ILAR pmax pmax
comp=Z,1.0nm,0.9s
ILAR MLR MLR
comp=Z,69nm,18.1s
PMR Palmer 71.06 22 *e*P **P 07 20 31.8 -1.3**
comp=Z,2.6nm,0.6s,mb4.3
DAWY Dawson 71.38 16 P **P 07 20 34.3 -0.6**
FITZ Fitzroy Crossi 73.37 133 P **P 07 20 48.6 +1.1**
comp=Z,2.0nm,0.8s,mb4.1,baz=323,slow=5.4,SNR=4.4
YKW3 Yellowknife Ar 76.50 6 *e*P **P 07 21 04.5 -0.1**
WRA Warramunga Arr 79.87 127 P **P 07 21 25.3 +1.3**
comp=Z,2.5nm,0.7s,mb4.2,baz=324,slow=5.1,SNR=27
WRA Warramunga Arr 79.87 127 P **P 07 21 25.3 +1.3**
WRA pmax pmax
comp=Z,3.0nm,0.7s
WRAB Tennant Creek 79.87 127 *e*P **P 07 21 24.7 +0.7**
DBIC Dimbokro 80.31 270 P **P 07 21 26.1 -0.4**
comp=Z,2.9nm,0.7s,mb4.3,baz=38,slow=11,SNR=5.3
DBIC Dimbokro 80.31 270 P **P 07 21 26.1 -0.4**
DBIC pmax pmax
comp=Z,3.0nm,0.7s
KIC Kosan Boka 80.43 270 *e*P **P 07 21 26.5 -0.6**
comp=Z,14nm,0.6s,mb5.1
TIC Toumodi 80.46 271 *e*P **P 07 21 26.5 -0.8**
comp=Z,22nm,0.7s,mb5.2
LIC Lamto 80.73 270 *e*P **P 07 21 27.9 -0.8**
comp=Z,34nm,1.3s,mb5.1
LBTB Lobatse 81.59 227 *e*P **P 07 21 33.7 +0.7**
comp=Z,1.1nm,0.7s,mb3.9
ASAR Alice Springs 82.47 130 P **P 07 21 39.0 +1.4**
comp=Z,2.6nm,0.8s,mb4.2,baz=317,slow=5.1,SNR=28
ULM Lac du Bonnet 89.19 356 P **P 07 22 09.8 -0.2**
comp=Z,1.8nm,0.9s,mb4.4,baz=1.1,slow=6.4,SNR=3.5
PDAR Pinedale Array 96.55 6 P **P 07 22 45.5 +1.5**
comp=Z,0.2nm,0.4s,mb3.9,baz=18,slow=4.7,SNR=4.2
NVAR Mina Array Bea 99.76 13 LR LR 08 08 22.1
comp=Z,25nm,19.5s,MS3.7,baz=295,slow=36
TRQA Tornquist 149.19 262 *e*PKPbc PKPdf 07 29 02.8 +5.5

KRSC ***24*** *07:18:03.9±1.2, 49.23N×155.59E, h39km±7km, ML4.2*
ISC 24 07:18:06.2±1.1, 49.33N±0.06×155.9E±0.1, h39km, n24, σ1°23/44, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**1.36**	**5**	*e*P	**P**	**P**	**07 18 29.1**	**-0.1**
SKR				*i* S		**S**	**07 18 47.4**	**+1.2**
ALID	**Alaid**	**1.56**	**351**	*e*P	**P**	**P**	**07 18 31.1**	**-0.9**
ALID				*e*S		**S**	**07 18 50.1**	**-1.1**
PAU	**Pauzhetka**	**2.21**	**15**	*e*P	**P**	**P**	**07 18 41.7**	**+0.4**
PAU				*i* S		**S**	**07 19 09.0**	**+1.3**
PAU				Smax				
	800nm,0.4s							
MIPR	**Malaya Ipel'ka**	**3.00**	**10**	*i* P		**P**	**07 18 52.1**	**-0.4**
MIPR				*e*S		**S**	**07 19 26.9**	**-0.7**
GRL	**Gorelyy**	**3.50**	**22**	*e*P		**P**	**07 19 00.8**	**+1.2**
GRL				*e*S		**S**	**07 19 41.7**	**+1.3**
RUS	**Russkaya**	**3.51**	**27**	*e*P		**P**	**07 18 59.4**	**-0.4**
RUS				*e*S		**S**	**07 19 39.4**	**-1.3**
KRMR	**Karymshinskiy**	**3.77**	**21**	*e*P		**P**	**07 19 05.5**	**+2.1**
KRMR				*e*S		**S**	**07 19 49.4**	**+2.2**
PET	**Petropavlovsk**	**4.08**	**24**	*e*P		**P**	**07 19 08.0**	**+0.2**
PET				*e*S		**S**	**07 19 54.4**	**-0.6**
UGLR	**Uglovaya**	**4.29**	**24**	*e*P		**P**	**07 19 11.6**	**+0.8**
UGLR				*e*S		**S**	**07 20 01.7**	**+1.4**
KOK	**Koryaka**	**4.32**	**22**	*e*P		**P**	**07 19 12.3**	**+1.1**
KOK				*e*S		**S**	**07 20 02.4**	**-1.4**
AVH	**Avacha**	**4.32**	**23**	*e*P		**P**	**07 19 12.4**	**+1.2**
AVH				*e*S		**S**	**07 20 01.5**	**+0.5**
SMAR	**Somma**	**4.33**	**24**	*e*P		**P**	**07 19 11.1**	**-0.3**
SMAR				*e*S		**S**	**07 20 00.5**	**-0.9**
SDLR	**Sedlovina**	**4.37**	**24**	*i* P		**P**	**07 19 12.0**	**+0.1**
SDLR				*e*S		**S**	**07 20 01.4**	**-0.9**
NLC	**Nalytchevo**	**4.41**	**28**	*e*P		**P**	**07 19 11.0**	**-1.5**
NLC				*e*S		**S**	**07 20 00.9**	**-2.3**
GNL	**Ganaly**	**4.55**	**15**	*e*P		**P**	**07 19 14.7**	**+0.2**
GNL				*e*S		**S**	**07 20 07.9**	**+1.0**
SPN	**Mys Shipunski**	**4.57**	**33**	*i* P		**P**	**07 19 14.5**	**-0.3**
SPN				*e*S		**S**	**07 20 08.9**	**+1.6**
MKZ	**Mys Kozlova**	**6.35**	**32**	*e*P		**P**	**07 19 36.8**	**-2.9**
TUMR	**Tumrok**	**6.50**	**22**	*e*P		**P**	**07 19 43.4**	**+1.5**
KMNR	**Kamenistaya**	**6.95**	**21**	*e*P		**P**	**07 19 48.7**	**+0.5**
KMNR				*e*S		**S**	**07 21 04.0**	**-2.9**
ZLN	**Zelenaya**	**7.33**	**22**	*e*P		**P**	**07 19 52.7**	**-0.7**
ZLN				*e*S		**S**	**07 21 13.3**	**-2.9**
LGNR	**Loginova**	**7.36**	**21**	*e*P		**P**	**07 19 52.4**	**-1.4**
LGNR				*e*S		**S**	**07 21 12.2**	**-4.8**
CIRR	**Tsirk**	**7.40**	**21**	*e*P		**P**	**07 19 54.5**	**+0.1**
CIRR				*e*S		**S**	**07 21 15.8**	**-2.3**
KBTR	**Krutoberegovo**	**8.06**	**29**	*e*P		**P**	**07 20 02.7**	**-0.8**
BKI	**Bering**	**8.52**	**42**	*e*S		**S**	**07 21 38.4**	**-7.4**

MAN 24 07:34:09.6, 17.52N×121.16E, h16km, mb4.4, ML3.2, MS3.0, 1C, Luzon

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
APYP	**Conner**	**0.35**	**14**	*e*P		Pb	07 34 17.8	+0.9
APYP				*e*S		Sb	07 34 24.9	+3.0
ABRA	**Dolores**	**0.44**	**287**	*e*P		Pb	07 34 20.0	+1.4
ABRA				*i* S		Sb	07 34 27.4	+2.8
CVP	**Callao Caves**	**0.66**	**74**	⇑ *i*P		Pb	07 34 21.5	-0.7
CVP				*i* S		Sb	07 34 33.0	+2.1
CAUP	**Cauayan**	**0.86**	**132**	*e*P		Pb	07 34 25.6	0.0
CAUP				*i* S		Sb	07 34 41.2	+4.5
SGCP	**Mt. Cagua**	**1.11**	**50**	*e*P		Pb	07 34 30.2	+0.3
SGCP				*e*S		Sb	07 34 45.5	+1.6
BALP	**Baler**	**1.82**	**167**	*e*P		Pn	07 34 39.4	-1.2
BALP				*i* S		Sn	07 35 04.0	+0.6

MOS ***24*** *07:42:45.2±1.2, 55.49N×111.32E, h11km, mb4.2/1, Error ellipse: s-maj=17.0km s-min=9.0km az=75.2*
BYKL 24 07:42:46.3±0.2, 55.50N×111.32E, h19km±3km, 13C-8D, Lake Baykal region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
KMO	**Kumora**	**0.39**	**350**	⇑ *i*Pg		Pb	07 42 54.3	-0.2
KMO				*i* Sg		Sb	07 43 00.2	+0.2
KMO				Pmax				
	3μm,0.3s							
KMO				Smax				
	9μm,0.7s							
KMO	**Kumora**	**0.39**	**350**	*e*PG		Pb	07 42 54.3	-0.2
KMO				*e*			07 42 59.8	
KMO				pmax	pmax			
	comp=Z,3μm,0.3s							
KMO				smax				
	comp=E,9μm,0.4s							
YLYR	**Ulyunkhan**	**0.63**	**188**	⇓ *i*Pg		Pb	07 42 58.5	0.0
	comp=E,20nm,0.3s							
YLYR				⇓ *i*Pg		Pb	07 42 58.5	0.0
	comp=E,45nm,0.3s							
YLYR				⇑ *i*Pg		Pb	07 42 58.5	0.0
	comp=E,190nm,0.3s							
YLYR				*i* Sg		Sb	07 43 07.5	+0.6
YLYR				Pmax				
	comp=E,318nm,0.2s							
YLYR				Smax				
	comp=E,2μm,0.1s							
YLYR	**Ulyunkhan**	**0.63**	**188**	⇑ *i*PG		Pb	07 42 58.5	0.0
YLYR				*i*			07 43 07.5	
YLYR				pmax	pmax			
	comp=Z,321nm,0.2s							
YLYR				smax				
	comp=E,3μm,0.3s							
YOA	**Uoyan**	**0.67**	**20**	⇑ *i*Pg		Pb	07 42 59.2	0.0
YOA				*e*Sg		Sb	07 43 09.1	+1.0
YOA				Pmax				
	comp=E,665nm,0.3s							
YOA				Smax				
	comp=E,6μm,0.4s							
YOA	**Uoyan**	**0.67**	**20**	⇑ *i*PG		Pb	07 42 58.9	-0.3
YOA				*e*			07 43 08.8	
YOA				pmax	pmax			
	comp=Z,485nm,0.4s							
YOA				smax				
	comp=N,5μm,0.6s							
NIZ	**Nizh Angarsk**	**1.05**	**286**	⇑ *i*Pg		Pb	07 43 05.7	+0.1
	comp=N,20nm,0.5s							
NIZ				⇓ *i*Pg		Pb	07 43 05.7	+0.1
	comp=N,73nm,0.5s							
NIZ				⇑ *i*Pg		Pb	07 43 05.7	+0.1
	comp=N,190nm,0.5s							
NIZ				*e*Pb		Pb	07 43 07.9	+2.3
NIZ				*e*Sg		Sb	07 43 20.3	+1.5
NIZ				*e*Sb		Sb	07 43 24.3	+5.5
NIZ				max				
	comp=N,278nm,0.4s							
NIZ				max				
	comp=N,3μm,0.3s							
NIZ	**Nizh Angarsk**	**1.05**	**286**	*e*PG		Pb	07 43 05.6	0.0
NIZ				*e*			07 43 19.9	
NIZ				pmax	pmax			
	comp=Z,236nm,0.3s							
NIZ				smax				
	comp=N,2μm,0.3s							
UKT	**Uakit**	**1.31**	**90**	⇓ *i*Pg		Pn	07 43 09.8	0.0
	comp=N,40nm,0.6s							
UKT				⇑ *i*Pg		Pn	07 43 09.8	0.0
	comp=N,389nm,0.6s							
UKT				⇑ *i*Pg		Pn	07 43 09.8	0.0
	comp=N,339nm,0.6s							
UKT				*e*Sg		Sb	07 43 27.4	+0.9
UKT				Pmax				
	comp=N,401nm,0.3s							
UKT				Smax				
	comp=N,3μm,0.5s							
UKT	**Uakit**	**1.31**	**90**	*e*PG		Pn	07 43 09.8	0.0
UKT				*e*			07 43 27.4	
UKT				pmax	pmax			
	comp=Z,337nm,0.3s							
UKT				smax				
	comp=N,2μm,0.3s							
SVKR	**Severomuysk**	**1.41**	**63**	*e*Pg		Pn	07 43 12.0	+0.8
SVKR				*e*Sg		Sb	07 43 31.0	+1.7
SVKR				Pmax				
	comp=N,237nm,0.3s							
SVKR				Smax				
	comp=N,6μm,0.4s							
SVKR	**Severomuysk**	**1.41**	**63**	⇑ *i*PG		Pn	07 43 12.7	+1.5
SVKR				*e*			07 43 32.1	
SVKR				pmax	pmax			
	comp=Z,265nm,0.3s							
SVKR				smax				
	comp=N,6μm,0.3s							
SYVR	**Suvo**	**2.00**	**203**	⇓ *i*Pg		Pn	07 43 21.7	+2.0
SYVR				*e*			07 43 25.3	
SYVR				*e*			07 43 28.7	
SYVR				*e*Sg		Sn	07 43 48.9	+4.5
SYVR				*e*			07 43 55.6	
SYVR				max				
	comp=N,94nm,0.6s							
SYVR				max				
	comp=N,532nm,0.7s							
SYVR	**Suvo**	**2.00**	**203**	*e*PN		Pn	07 43 21.8	+2.1
SYVR				*e*			07 43 47.1	
SYVR				pmax	pmax			
	comp=Z,53nm,0.2s							
SYVR				smax				
	comp=N,325nm,0.3s							
NLYR	**Nelyaty**	**2.66**	**66**	*e*Pg		Pn	07 43 33.9	+4.9
NLYR				*e*Sg		Sn	07 44 07.5	+6.5
NLYR				Pmax				
	comp=N,37nm,0.4s							
NLYR				Smax				
	comp=N,567nm,1.0s							
BOD	**Bodaibo**	**2.76**	**31**	⇑ *i*Pn		Pn	07 43 29.8	-0.7
BOD				*e*Pg		Pn	07 43 35.0	+4.5
BOD				*e*Sn		Sn	07 44 02.8	-0.8
BOD				*e*Sg		Sn	07 44 10.1	+6.5
BOD				Pmax				
	comp=N,52nm,0.5s							
BOD				Smax				
	comp=N,246nm,0.6s							
OGRR	**Ongureny**	**2.86**	**231**	⇓ *i*Pn		Pn	07 43 32.6	+0.7
OGRR				*e*Pg		Pn	07 43 37.9	+6.0
OGRR				*e*Sn		Sn	07 44 08.8	+0.7
OGRR				*e*Sg		Sn	07 44 14.2	+8.1
OGRR				Pmax				
	comp=N,46nm,0.5s							
OGRR				Smax				
	comp=N,189nm,0.5s							
OGRR	**Ongureny**	**2.86**	**231**	*e*PN		Pn	07 43 32.7	+0.8
OGRR				*e*			07 43 37.4	
OGRR				*e*S		Sn	07 44 06.6	+0.5
OGRR				*e*			07 44 14.1	
OGRR				pmax	pmax			
	comp=Z,49nm,0.5s							
OGRR				smax				
	comp=E,178nm,0.4s							
CIT	**Chita**	**3.73**	**158**	*e*Pn		Pn	07 43 43.2	-1.1
CIT				⇑ *i*Pg		Pn	07 43 53.2	+8.9
CIT				*e*Sn		Sn	07 44 26.9	-1.3
CIT				*e*Sg		Sn	07 44 40.1	+12
CIT				Pmax				
	comp=E,82nm,0.7s							
CIT				Smax				
	comp=E,335nm,0.9s							
CIT	**Chita**	**3.73**	**158**	*e*PN		Pn	07 43 52.0	+7.7
CIT				*e*S		Sn	07 44 39.6	+11
CIT				smax				
	comp=E,337nm,0.9s							
TRTB	**Turuntaevo**	**3.94**	**215**	*e*Pn		Pn	07 43 46.0	-1.3
TRTB				*e*Pg		Pn	07 43 58.2	+11
TRTB				*e*Sg		Sn	07 44 48.3	+15
TRTB				Pmax				
	comp=E,23nm,1.0s							
TRTB				Smax				
	comp=E,138nm,1.3s							
TRG	**Tyrgan**	**4.01**	**229**	⇑ *i*Pn		Pn	07 43 48.4	+0.1
TRG				*e*Pg		Pn	07 43 57.9	+10
TRG				*e*Sn		Sn	07 44 34.7	-0.7
TRG				*e*Sg		Sn	07 44 50.5	+15
TRG				Pmax				
	comp=E,24nm,0.5s							
TRG				Smax				
	comp=E,112nm,1.2s							
CRS	**Chara**	**4.13**	**67**	*i* Pn		Pn	07 43 49.3	-0.7
CRS				⇓ *e*Pg		Pn	07 44 01.8	+12
CRS				*e*Sn		Sn	07 44 37.0	-1.3
CRS				*e*Sg		Sn	07 44 53.3	+15
CRS				Pmax				
	comp=E,77nm,1.1s							
CRS				Smax				
	comp=E,248nm,1.8s							
CRS	**Chara**	**4.13**	**67**	*e*PN		Pn	07 43 49.7	-0.3
CRS				*e*			07 44 01.4	
CRS				*e*			07 44 53.3	
CRS				pmax	pmax			
	comp=Z,77nm,1.0s							
CRS				smax				
	comp=E,246nm,1.4s							
FFNB	**Fofonovo**	**4.39**	**220**	*e*Sg		Sn	07 45 02.1	+17
FFNB				Smax				
	comp=E,185nm,1.1s							
HRMR	**Khuramsha**	**4.67**	**216**	*e*Pg		Pn	07 44 10.3	+13
HRMR				*e*Sg		Sn	07 45 10.8	+19
HRMR				Pmax				
	comp=E,37nm,0.3s							
HRMR				Smax				
	comp=E,293nm,1.4s							
TUP	**Tupik**	**5.09**	**99**	⇓ *i*Pn		Pn	07 44 02.1	-1.5
TUP				*e*Pg		Pn	07 44 17.7	+14
TUP				*e*Sn		Sn	07 44 57.3	-5.3
TUP				*e*Sg		Sn	07 45 24.3	+22
TUP				Pmax				
	comp=E,20nm,0.9s							
TUP				Smax				
	comp=E,327nm,0.8s							
TUP	**Tupik**	**5.09**	**99**	*e*PN		Pn	07 44 02.1	-1.5
TUP				*e*			07 44 16.7	
TUP				*e*			07 45 23.0	
TUP				pmax	pmax			
	comp=Z,17nm,0.5s							
TUP				smax				
	comp=N,327nm,0.6s							
LSTR	**Listvyanka**	**5.30**	**229**	*e*Pg		Pn	07 44 22.0	+15
LSTR				*e*Sg		Sn	07 45 29.9	+22
LSTR				Pmax				
	comp=N,15nm,1.5s							
LSTR				Smax				
	comp=N,52nm,1.1s							
KPC	**Khapcheranga**	**5.84**	**173**	*e*Pn		Pn	07 44 12.0	-2.2
KPC				*e*Pg		Pn	07 44 32.6	+18
KPC				*e*Sn		Sn	07 45 16.4	-5.0
KPC				*e*Sg		Sn	07 45 46.0	+25
KPC				Pmax				
	comp=N,6.0nm,0.9s							
KPC				Smax				
	comp=N,123nm,1.3s							
KPC	**Khapcheranga**	**5.84**	**173**	*e*PN		Pn	07 44 11.9	-2.3
TLY	**Talaya**	**5.96**	**233**	*e*Pg		Pn	07 44 34.8	+19
TLY				*e*Sg		Sn	07 45 49.5	+25
TLY				Pmax				
	comp=N,13nm,0.8s							
TLY				Smax				
	comp=N,48nm,0.9s							
TLY	**Talaya**	**5.96**	**233**	*e*PN		Pn	07 44 14.8	-1.1

TLY			*e*		07 44 32.8		
TLY			*e*		07 45 49.5		
TLY			pmax	pmax			
	comp=Z,13nm,0.8s						
TLY			smax				
	comp=E,48nm,1.0s						
ARS	**Arshan**	**6.38 239**	*e*Pn	Pn	07 44 19.7	-2.1	
ARS			*e*Sn	Sn	07 45 29.1	-5.9	
ARS			*e*Sg	Sn	07 46 02.7	+28	
ARS			max				
	comp=E,19nm,0.6s						
ARS			Smax				
	comp=E,185nm,1.0s						
ZAK	**Zakamensk**	**7.06 227**	*e*Sg	Sn	07 46 26.7	+35	
ZAK			Smax				
	comp=E,17nm,0.8s						
MOY	**Mondy**	**7.25 242**	*e*Pn	Pn	07 44 33.2	-0.8	
MOY			*e*Sn	Sn	07 45 49.6	-7.0	
MOY			*e*Sg	Sn	07 46 30.5	+34	
MOY			max				
	comp=E,10.0nm,1.0s						
MOY			Smax				
	comp=E,85nm,1.4s						
MOY	**Mondy**	**7.25 242**	*e*PG	Pn	07 44 57.2	+23	
MOY			*e*S	Sn	07 45 49.0	-7.6	
MOY			*e*		07 46 31.0		
MOY			pmax	pmax			
	comp=Z,5.0nm,0.5s						
MOY			smax				
	comp=N,84nm,1.4s						
ORL	**Orlik**	**7.40 251**	*e*Pn	Pn	07 44 35.1	-1.0	
ORL			*e*Sn	Sn	07 45 55.7	-4.7	
ORL			*e*Sg	Sn	07 46 34.3	+34	
ORL			max				
	comp=N,6.0nm,0.9s						
ORL			Smax				
	comp=N,56nm,1.3s						
ORL	**Orlik**	**7.40 251**	*e*PN	Pn	07 44 35.0	-1.1	
ORL			*e*		07 44 59.8		
ORL			*e*S	Sn	07 45 55.0	-5.4	
ORL			*e*		07 46 36.1		
ORL			pmax	pmax			
	comp=Z,7.0nm,0.7s						
ORL			smax				
	comp=N,56nm,1.4s						
TDJR	**Todzha**	**9.49 257**	*e*Sg	Sn	07 47 37.3	+45	
ARDR	**Aradan**	**10.92 262**	*e*Sg	S	07 48 23.7	+57	

*IDC **24** 08:01:20.1±3.5,24.53N×95.14E,h133km×35km,mb3.3/3, mb1 3.5/4,mb1mx3.2/19,Error ellipse: s-maj=91.1km s-min=19.5km az=60.0*

ISC 24 08:01:17.4±1.1,24.2N±0.3×94.6E±0.3,h132km±15km,n6, σ0º99/7,mb3.6/3,Myanmar-India border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
IMP	**Imphal**	**0.79 313**		*e*P	**P**	**08 01 38.0**	**-0.8**
SHL	**Shillong**	**2.77 299**		*e*P	**P**	**08 02 02.7**	**+0.8**
SHL				*e*S	**S**	**08 02 35.5**	**-0.3**
CMAR	**Chiang Mai Arr**	**7.05 144**		P	**P**	**08 03 00.2**	**+0.9**
	0.5nm,0.3s,baz=323,slow=13,SNR=15						
MKAR	**Makanchi Array**	**24.57 339**		P	**P**	**08 06 26.9**	**+0.7**
	1.5nm,0.5s,mb3.8,baz=145,slow=9.1,SNR=22						
WRA	**Warramunga Arr**	**58.56 135**		P	**P**	**08 11 01.9**	**-0.8**
	0.3nm,0.4s,mb3.5,baz=322,slow=7.5,SNR=12						
ASAR	**Alice Springs**	**61.02 138**		P	**P**	**08 11 19.1**	**-0.5**
	0.7nm,1.0s,mb3.5,baz=323,slow=6.8,SNR=5.0						

OTT 24 08:58:05.9±0.4,57.76N×90.80W,h18km,MN2.7/10, Western Hudson Bay. 200km east from Herchmer, Mb, Manitoba

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FCC	**Fort Churchill**	**2.01 301**		PN	Pn	08 58 38.9	-0.5
FCC				SN	Sn	08 59 03.7	-0.5
FCC				Trac		08 59 05.4	
	comp=Z,8.4nm,0.1s						
SILO	**Sutton Inlier**	**4.66 132**		PN	Pn	08 59 15.3	-1.8
SILO				PG	Pn	08 59 27.7	+11
SILO				SN	Sn	09 00 08.1	-3.3
SILO				LG		09 00 27.7	
SILO				Trac		09 00 32.6	
	comp=Z,4.1nm,0.1s						
VIMO	**Victor Mine**	**6.38 138**		PN	Pn	08 59 38.3	-3.3
VIMO				PG	Pn	08 59 58.1	+17
VIMO				SN	Sn	09 00 47.4	-7.3
VIMO				LG		09 01 20.8	
VIMO				Trac		09 01 24.2	
	comp=Z,2.6nm,0.2s						
SOLO	**Sioux Lookout**	**7.79 186**		PN	Pn	08 59 57.3	-4.0
SOLO				SN	Sn	09 01 19.5	-10
SOLO				Trac		09 01 23.5	
	comp=Z,1.1nm,0.1s						
SOLO				LG		09 02 00.2	
ULM	**Lac du Bonnet**	**8.10 204**		PN	P	08 59 60.0	-5.5
ULM				SN	Sn	09 01 25.6	-12
ULM				LG		09 02 07.5	
ULM				Trac		09 02 17.5	
	comp=Z,0.7nm,0.3s						
GTO	**Geraldton**	**8.35 163**		PN	P	09 00 04.5	-4.5
GTO				SN	Sn	09 01 34.1	-10
GTO				Trac		09 01 37.6	
	comp=Z,0.7nm,0.1s						
TBO	**Thunder Bay**	**9.17 174**		PN	P	09 00 16.5	-3.9
TBO				SN	Sn	09 01 52.4	-12
TBO				Trac		09 01 57.9	
	comp=Z,0.7nm,0.2s						
MALO	**McAlpine Lake**	**10.11 135**		PN	P	09 00 27.6	-5.7
MALO				SN	S	09 02 15.8	-11
MALO				LG		09 03 13.4	
LG4Q	**La Grande 4**	**10.29 107**		PN	P	09 00 33.9	-1.8
LG4Q				SN	S	09 02 21.4	-10
LG4Q				LG		09 03 29.9	
LG4Q				Trac		09 03 33.0	
	comp=Z,1.7nm,0.4s						
KNDN	**Kennady Lake**	**10.65 310**		PN	P	09 00 35.6	-5.0
KNDN				SN	S	09 02 25.3	-15
KNDN				LG		09 03 29.8	
KNDN				Trac		09 03 40.0	
	comp=Z,2.0nm,0.6s						
BOXN	**Box Lake**	**11.04 311**		PN	P	09 00 40.0	-5.9
BOXN				SN	S	09 02 35.1	-15
BOXN				LG		09 03 46.1	
BOXN				Trac		09 03 50.6	
	comp=Z,1.4nm,0.5s						
MLON	**Marlo Lake**	**11.16 312**		PN	P	09 00 42.0	-5.6
MLON				SN	S	09 02 34.7	-18
MLON				LG		09 03 46.2	
MLON				Trac		09 04 08.8	
	comp=Z,1.7nm,0.6s						
GLWN	**Glow Worm Lake**	**11.29 316**		PN	P	09 00 44.6	-4.7
GLWN				SN	S	09 02 44.0	-12
GLWN				LG		09 03 48.8	
GLWN				Trac		09 03 52.1	
	comp=Z,1.4nm,1.0s						
IHLN	**Indian Hill La**	**11.32 308**		PN	P	09 00 43.3	-6.4
IHLN				SN	S	09 02 41.1	-16
IHLN				LG		09 03 46.8	
IHLN				Trac		09 03 55.2	
	comp=Z,1.6nm,0.8s						
MCKN	**MacKay Lake No**	**11.39 313**		PN	P	09 00 46.0	-4.7
MCKN				SN	S	09 02 42.6	-16
KUQ	**Kuujjuuaa**	**11.89 79**		PN	P	09 01 00.2	+2.7
KUQ				SN	S	09 03 02.3	-8.5
KUQ				Trac		09 04 25.3	
	comp=Z,0.8nm,0.4s						
ACKN	**Achilles Lake**	**12.00 315**		PN	P	09 00 52.3	-6.6
ACKN				SN	S	09 02 59.6	-14
YMBN	**Yamba Lake**	**12.20 314**		PN	P	09 00 55.8	-5.8
YMBN				SN	S	09 03 04.2	-14
COWN	**Contwyoto Lake**	**12.25 316**		PN	P	09 00 57.0	-5.2
COWN				SN	S	09 03 05.1	-14
IGL	**Igloolik**	**12.31 15**		PN	P	09 00 58.5	-4.5
IGL				SN	S	09 03 06.1	-15
IGL				LG		09 04 28.9	
IGL				Trac		09 04 37.8	
	comp=Z,0.6nm,0.0s						
DSMN	**Discovery Mine**	**12.58 305**		PN	P	09 01 00.3	-6.3
DSMN				SN	S	09 03 09.8	-18
YKR9	**Yellowknife Ar**	**12.71 302**		PN	P	09 01 01.1	-7.3
YKR9				SN	S	09 03 10.7	-20
YKR9				LG		09 04 30.9	
YKR9				Trac		09 04 43.6	
	comp=Z,1.0nm,0.5s						
YKB1	**Yellowknife Ar**	**12.72 301**		PN	P	09 01 02.7	-5.9
YKB1				SN	S	09 03 14.7	-16
YKB1				LG		09 04 32.1	
YKB1				Trac		09 04 41.8	
	comp=Z,1.2nm,0.5s						
YKB2	**Yellowknife Ar**	**12.72 301**		PN	P	09 01 01.5	-7.1
YKB2				SN	S	09 03 13.6	-17
YKB2				LG		09 04 32.7	
YKB2				Trac		09 04 41.1	
	comp=Z,2.6nm,0.8s						
YKB3	**Yellowknife Ar**	**12.73 302**		PN	P	09 01 00.7	-8.0
YKB3				SN	S	09 03 12.9	-18
YKB3				LG		09 04 32.8	
YKB3				Trac		09 04 48.0	
	comp=Z,1.2nm,0.5s						
YKB4	**Yellowknife Ar**	**12.73 302**		PN	P	09 01 00.8	-7.9
YKB4				SN	S	09 03 12.6	-18
YKB4				LG		09 04 32.5	
YKB4				Trac		09 04 42.9	
	comp=Z,1.2nm,0.6s						
YKR8	**Yellowknife Ar**	**12.74 302**		PN	P	09 01 01.7	-7.1
YKR8				SN	S	09 03 13.8	-17
YKR8				LG		09 04 32.3	
YKR8				Trac		09 04 53.0	
	comp=Z,1.5nm,0.6s						
YKB6	**Yellowknife Ar**	**12.74 302**		PN	P	09 01 02.0	-6.8
YKB6				SN	S	09 03 13.0	-18
YKB6				LG		09 04 33.0	
YKB6				Trac		09 04 49.5	
	comp=Z,1.3nm,0.6s						
YKB7	**Yellowknife Ar**	**12.74 302**		PN	P	09 01 01.2	-7.7
YKB7				SN	S	09 03 13.5	-18
YKB7				LG		09 04 33.2	
YKB7				Trac		09 04 42.6	
	comp=Z,1.3nm,0.6s						
YKB8	**Yellowknife Ar**	**12.75 302**		PN	P	09 01 02.0	-6.9
YKB8				SN	S	09 03 12.2	-19
YKB8				LG		09 04 41.7	
YKB8				Trac		09 04 45.8	
	comp=Z,1.1nm,0.5s						
YKB9	**Yellowknife Ar**	**12.75 302**		PN	P	09 01 02.5	-6.6
YKB9				SN	S	09 03 13.8	-18
YKB9				LG		09 04 32.2	
YKB9				Trac		09 04 58.2	
	comp=Z,1.1nm,0.5s						
YKW3	**Yellowknife Ar**	**12.75 302**		PN	P	09 01 01.2	-7.8
YKW3				SN	S	09 03 14.3	-17
YKW3				LG		09 04 33.3	
YKW3				Trac		09 04 45.8	
	comp=Z,1.1nm,0.5s						
YKB0	**Yellowknife Ar**	**12.76 302**		PN	P	09 01 02.2	-6.9
YKB0				SN	S	09 03 13.1	-19
YKB0				LG		09 04 33.2	
YKB0				Trac		09 04 46.9	
	comp=Z,2.2nm,0.9s						
YKR7	**Yellowknife Ar**	**12.76 302**		PN	P	09 01 02.3	-6.8
YKR7				SN	S	09 03 11.8	-20
YKR7				Trac		09 03 19.2	
	comp=Z,0.4nm,0.2s						
YKR7				LG		09 04 31.1	
YKR6	**Yellowknife Ar**	**12.78 302**		PN	P	09 01 02.2	-7.1
YKR6				SN	S	09 03 14.5	-18
YKR6				LG		09 04 32.4	
YKR6				Trac		09 04 35.5	
	comp=Z,3.1nm,1.0s						
YKR5	**Yellowknife Ar**	**12.80 302**		PN	P	09 01 02.1	-7.5
YKR5				SN	S	09 03 15.6	-17
YKR5				LG		09 04 33.9	
YKR5				Trac		09 04 42.6	
	comp=Z,2.6nm,0.9s						
YKR4	**Yellowknife Ar**	**12.82 302**		PN	P	09 01 02.6	-7.3
YKR4				SN	S	09 03 14.7	-19
YKR4				LG		09 04 39.9	
YKR4				Trac		09 04 52.8	
	comp=Z,1.5nm,0.6s						
YKR3	**Yellowknife Ar**	**12.85 302**		PN	P	09 01 03.2	-7.1
YKR3				SN	S	09 03 15.2	-19
YKR3				LG		09 04 35.3	
YKR3				Trac		09 04 51.7	
	comp=Z,2.0nm,0.7s						
YKR2	**Yellowknife Ar**	**12.87 302**		PN	P	09 01 02.5	-8.0
YKR2				SN	S	09 03 16.4	-18
YKR2				LG		09 04 36.4	
YKR2				Trac		09 04 40.5	
	comp=Z,2.0nm,0.7s						
YKR1	**Yellowknife Ar**	**12.89 302**		PN	P	09 01 03.9	-7.0
YKR1				LG		09 04 36.8	
YKR1				Trac		09 04 47.8	
	comp=Z,1.5nm,0.6s						
ILKN	**Indian Lake**	**13.40 309**		PN	P	09 01 10.9	-6.6
ILKN				SN	S	09 03 30.4	-17

*NIED **24** 09:15:00,22.50N×121.10E,h32km,Mw4.3 Best double couple: M0 3.2×10^15 NP1:φs 63°,δ 71°,λ 71°. NP2:φs 289°, δ 26°,λ 133°.*
*IDC **24** 09:15:04.4±1.2,22.46N×121.47E,mb3.9/7,mb1 4.1/7, mb1mx3.8/21,MS3.5/8,Ms1 3.6/8,ms1mx3.1/31,Error ellipse: s-maj=49.7km s-min=18.8km az=64.0*
*NEIC **24** 09:15:05.8±8.8,22.47N×121.50E,h10km±57km,Error ellipse: s-maj=24.6km s-min=13.5km az=73.0*
*JMA **24** 09:15:06.7±0.4,22.49N×121.10E,h98km,M3.5*
*TAP **24** 09:15:06.3,22.58N×121.04E,h3km,ML4.6*
TAP Felt IV J at Taimali, II J at Taitung, II J at Tawa, I J at Sandimen, I J at Lanyu.
*BJI **24** 09:15:12.5,23.02N×120.68E,h10km,mB4.6,mb4.2, ML4.1,Ms4.4,Msz4.2*

ISC 24 09:15:04.7±0.5,22.51N±0.02×121.20E±0.02,h3km±3km, n90,σ1º20/120,mb3.9/9,MS3.7/10,8C-16D,Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ECL	**Taimali**	**0.25 292**		↑*i*P	**Pg**	**09 15 08.4**	**-1.3**
ECL				S	**Sg**	**09 15 09.6**	**-3.4**
TTN	**Taitung**	**0.25 348**		*i*P	**Pg**	**09 15 12.0**	**+2.2**
TTN				S	**Sg**	**09 15 17.0**	**+3.8**
TAW	**Tawu**	**0.32 243**		↑*i*P	**Pg**	**09 15 12.1**	**+0.9**
TAW				S	**Sg**	**09 15 16.1**	**+0.7**
TWG	**Pinlang**	**0.34 339**		↓*i*P	**Pg**	**09 15 11.7**	**+0.3**
TWG				S	**Sg**	**09 15 16.3**	**+0.3**
EAST	**Anshuo**	**0.35 250**		↑*i*P	**Pg**	**09 15 12.3**	**+0.6**
SCZT	**Fangliau**	**0.56 256**		↑*i*P	**Pg**	**09 15 15.6**	**-0.2**
SCZT				S	**Sg**	**09 15 21.7**	**-1.6**
LAY	**Lan-yu**	**0.56 145**		P	**Pg**	**09 15 19.8**	**+3.8**
LAY				S	**Sg**	**09 15 30.2**	**+6.6**
SSD	**Sandimen**	**0.58 295**		↓*i*P	**Pg**	**09 15 14.8**	**-1.5**
SSD				S	**Sg**	**09 15 20.2**	**-3.9**
CHKT	**Chengkung**	**0.61 14**		↓*i*P	**Pg**	**09 15 18.5**	**+1.6**
CHKT				S	**Sg**	**09 15 29.4**	**+4.3**
HEN	**Hengchun**	**0.66 221**		↑*i*P	**Pg**	**09 15 19.8**	**+1.9**
HEN				S	**Sg**	**09 15 30.6**	**+4.0**
TWK1	**Hengchun**	**0.67 213**		↑*i*P	**Pg**	**09 15 20.1**	**+2.0**
SGLT	**Jiouru**	**0.69 289**		*e*P	**Pg**	**09 15 17.8**	**-0.8**
ELDTW	**Lidau**	**0.70 346**		↓*i*P	**Pg**	**09 15 18.4**	**-0.3**
ELDTW				S	**Sg**	**09 15 25.9**	**-2.1**
STYT	**Tauyuan**	**0.77 328**		↓*i*P	**Pg**	**09 15 19.4**	**-0.8**
STYT				S	**Sg**	**09 15 27.7**	**-2.8**
TWP	**Hsiaoliuchiu**	**0.79 259**		*e*P	**Pg**	**09 15 22.9**	**+2.3**
SGST	**Jiashian**	**0.81 315**		↓*i*P	**Pg**	**09 15 20.0**	**-0.9**
KAU	**Kaohsiung**	**0.83 274**		*e*P	**Pg**	**09 15 23.4**	**+2.1**
TWF1	**Yuli**	**0.85 6**		*e*P	**Pg**	**09 15 20.4**	**-1.2**
TWF1				S	**Sg**	**09 15 33.9**	**+0.9**
WTP	**Ta-pu**	**0.92 324**		P	**Pb**	**09 15 22.5**	**-0.4**
WTP				S	**Sb**	**09 15 34.4**	**-0.9**
CHN1	**Nanshi**	**0.92 318**		↓*i*P	**Pb**	**09 15 22.6**	**-0.4**
CHN1				S	**Sb**	**09 15 34.6**	**-0.8**
CHN3	**Shinhua**	**0.96 306**		*e*P	**Pn**	**09 15 24.7**	**-0.2**
CHN3				S	**Sn**	**09 15 38.7**	**-0.5**
EHY	**Hungye**	**1.00 6**		*e*P	**Pb**	**09 15 22.9**	**-1.5**
TWK	**Hsinying**	**1.00 319**		↓*i*P	**Pb**	**09 15 24.4**	**0.0**
TWK				S	**Sb**	**09 15 38.0**	**+0.1**
YUS	**Yu-Shan**	**1.01 347**		↓*i*P	**Pb**	**09 15 23.9**	**-0.5**
CHN4	**Tsaushan**	**1.01 326**		↓*i*P	**Pb**	**09 15 24.7**	**+0.1**
CHN4				S	**Sb**	**09 15 38.3**	**+0.1**
TAI1	**Yung-k'ang**	**1.04 301**		*e*P	**Pn**	**09 15 26.1**	**-0.1**
ALS	**Alishan**	**1.06 340**		↓*i*P	**Pb**	**09 15 25.2**	**-0.3**
SCLT	**Jiali**	**1.15 306**		*e*P	**Pb**	**09 15 26.8**	**0.0**
SCLT				S	**Sb**	**09 15 44.8**	**+2.8**
CHN5	**Tsauling**	**1.19 336**		↓*i*P	**Pb**	**09 15 27.7**	**+0.1**
CHY	**Chiayi**	**1.22 324**		↓*i*P	**Pb**	**09 15 28.6**	**+0.5**
CHY				S	**Sb**	**09 15 44.6**	**+0.5**
CHN2	**Minshiung**	**1.22 327**		↓P	**Pb**	**09 15 28.7**	**+0.6**
CHN2				S	**Sb**	**09 15 45.2**	**+1.0**
WGK	**Gukeng**	**1.31 333**		*e*P	**Pb**	**09 15 30.2**	**+0.5**
WGK				S	**Sb**	**09 15 49.1**	**+2.2**
ESL	**Shilin**	**1.32 9**		*e*P	**Pb**	**09 15 28.6**	**-1.3**
ESL				S	**Sb**	**09 15 50.2**	**+3.2**
SMLT	**Sun Moon Lake**	**1.40 349**		↑P	**Pb**	**09 15 31.5**	**+0.3**
SMLT				S	**Sb**	**09 15 52.9**	**+3.6**
TYC	**Yuchr**	**1.43 347**		↓*i*P	**Pn**	**09 15 32.2**	**+0.5**
TYC				S	**Sb**	**09 15 52.5**	**+2.3**
WSF	**Szhu**	**1.45 321**		*e*P	**Pn**	**09 15 30.2**	**-1.6**
WSF				S	**Sb**	**09 15 50.7**	**0.0**
WNT	**Mingjian**	**1.45 341**		*e*P	**Pn**	**09 15 32.6**	**+0.7**
WNT				S	**Sb**	**09 15 52.5**	**+1.8**
HWA	**Hwalien**	**1.51 14**		*e*P	**Pn**	**09 15 35.9**	**+3.1**
WTCT	**Ta-ch'eng**	**1.60 328**		*e*P	**Pn**	**09 15 33.6**	**-0.4**
WTCT				S	**Sb**	**09 15 54.4**	**-0.7**
TWD	**Chiawan**	**1.61 13**		*e*P	**Pn**	**09 15 34.5**	**+0.2**
WDGT	**Dungji**	**1.61 298**		↓*i*P	**Pn**	**09 15 32.3**	**-1.9**
WDGT				S	**Sb**	**09 15 50.6**	**-4.8**
WHF	**Hehuan Shan**	**1.63 2**		*e*P	**Pn**	**09 15 33.1**	**-1.5**
TCU	**Taichung**	**1.71 344**		*e*P	**Pn**	**09 15 36.3**	**+0.7**
TCU				S	**Sn**	**09 15 59.5**	**+1.3**
TWT	**Tachien**	**1.74 359**		*e*P	**Pn**	**09 15 35.7**	**-0.4**
TWT				S	**Sn**	**09 16 02.1**	**+3.0**
PNG	**Penghu**	**1.85 305**		*e*P	**Pn**	**09 15 34.5**	**-3.2**
TWQ1	**Liyutan**	**1.88 348**		*e*P	**Pn**	**09 15 38.8**	**+0.8**
NNS	**Nan Shan**	**1.93 5**		*e*P	**Pn**	**09 15 37.7**	**-1.2**
NSY	**Sanyi**	**1.94 348**		*e*P	**Pn**	**09 15 39.7**	**+0.7**
NSY				S	**Sn**	**09 16 07.5**	**+3.2**
ENA	**Nanau**	**1.98 14**		*e*P	**Pn**	**09 15 40.6**	**+1.1**
NSTT	**Nanjuang**	**2.12 355**		*e*P	**Pn**	**09 15 42.5**	**+0.9**
NSTT				S	**Sn**	**09 16 12.4**	**+3.6**
ENTT	**Nioudou**	**2.15 9**		*e*P	**Pn**	**09 15 40.2**	**-1.7**
NSK	**Sanguang**	**2.17 4**		*e*P	**Pn**	**09 15 41.6**	**-0.6**
TWC	**Suao**	**2.18 16**		*e*P	**Pn**	**09 15 42.0**	**-0.3**
TWE	**Neicheng**	**2.25 11**		*e*P	**Pn**	**09 15 43.8**	**+0.4**
HSN	**Hsinchu**	**2.30 355**		*e*P	**Pg**	**09 15 49.2**	**-1.3**
TATO	**Taipei**	**2.47 6**		*e*Pn	**Pn**	**09 15 46.3**	**-0.3**
TATO				*e*Pg	**Pg**	**09 15 54.2**	**+0.1**
TAP1	**Taipei**	**2.54 7**		*e*P	**Pn**	**09 15 51.5**	**+4.0**
YOJ	**Yonaguni jima**	**2.56 40**		P	**Pn**	**09 15 48.2**	**+0.4**
YOJ				S	**Sn**	**09 16 19.0**	**-0.9**
TWB1	**Santiao Chiao**	**2.59 16**		*e*P	**Pn**	**09 15 47.9**	**-0.4**
NWF	**Wu-fen Shan**	**2.61 12**		*e*P	**Pn**	**09 15 48.9**	**+0.3**
HATJ	**Hateruma jima**	**2.85 57**		P	**Pn**	**09 15 52.2**	**+0.2**
HATJ				S	**Sn**	**09 16 26.8**	**-0.4**
IRIF	**Iriomote-Funau**	**2.95 51**		P	**Pn**	**09 15 53.6**	**+0.2**
IRIF				S	**Sn**	**09 16 30.7**	**+0.9**
KNM	**Kinmen**	**3.18 307**		*e*P	**Pn**	**09 15 53.6**	**-3.0**
JIJ	**Ishigaki jima**	**3.27 55**		P	**Pn**	**09 15 57.7**	**-0.3**
JIJ				S	**Sn**	**09 16 37.1**	**-0.9**
QZH	**Quanzhou**	**3.41 316**		P	**Pn**	**09 15 57.9**	**-2.0**
QZH				S	**Sn**	**09 16 36.0**	**-5.4**
QZH				S	Sn		
	comp=N,490nm,0.9s						
QZH				S	Sn		
	comp=E,880nm,1.2s						
JTJ	**Tarama**	**3.85 56**		S	**Sn**	**09 16 52.2**	**-0.4**
CVP	**Callao Caves**	**4.81 173**		*e*P	Px	09 16 19.5	
GZH	**Guangzhou**	**7.27 276**		P	Px	09 16 51.8	
GZH				S	Sn		
	comp=N,125nm,1.0s						
GZH				S	Sn		
	comp=E,96nm,1.1s						
NJ2	**Nanjing**	**9.73 348**		↑P	Px	09 17 25.3	
NJ2				AP		09 17 32.6	
NJ2				XP		09 17 37.1	
NJ2				S	Sx	09 19 11.1	
NJ2				XS		09 19 20.3	
NJ2				AMB	AMB		
	comp=Z,60nm,0.8s						
NJ2				AMB	AMB		
	comp=Z,56nm,3.9s						
NJ2				S	Sn		
	comp=N,270nm,0.6s						
NJ2				S	Sn		
	comp=E,210nm,1.0s						
NJ2				LR	LR		
	comp=N,2μm,8.0s						
NJ2				LR	LR		
	comp=E,2μm,8.6s						
NJ2				LR	LR		
	comp=Z,2μm,12.4s						
JNU	**Nakatsue**	**13.60 37**		LR	LR	09 24 40.9	
	comp=Z,40nm,18.3s,baz=53,slow=43						
GYA	**Guiyang**	**13.81 289**		P	**P**	**09 18 25.5**	**+1.6**
GYA				LR	LR		
	comp=N,600nm,7.8s						
GYA				LR	LR		
	comp=E,570nm,9.6s						
GYA				LR	LR		
	comp=Z,630nm,8.4s						
CD2	**Chengdu**	**17.68 302**		*e*P	**P**	**09 19 13.5**	**-0.2**
CD2				AMB	AMB		
	comp=Z,10.0nm,0.8s						
CD2				AMB	AMB		
	comp=Z,600nm,5.4s						
CD2				LR	LR		
	comp=N,850nm,3.9s						
CD2				LR	LR		
	comp=Z,730nm,10.8s						
BJI	**Beijing**	**18.00 347**		P	**P**	**09 19 18.9**	**+1.3**
BJI				AMB	AMB		
	comp=Z,8.0nm,0.8s						
BJI				AMB	AMB		
	comp=Z,152nm,4.2s						
BJI				LR	LR		
	comp=N,622nm,11.6s						
BJI				LR	LR		
	comp=E,157nm,12.4s						
BJI				LR	LR		
	comp=Z,258nm,13.1s						
HHC	**Hu-ho-hao-te**	**20.02 338**		*e*P	**P**	**09 19 41.3**	**-0.3**
HHC				AP		09 19 51.0	
HHC				AMB	AMB		
	comp=Z,21nm,1.3s						
HHC				AMB	AMB		
	comp=Z,143nm,5.6s						
HHC				LR	LR		
	comp=N,337nm,11.3s,MS4.0						
HHC				LR	LR		
	comp=E,149nm,11.6s,MS4.0						
HHC				LR	LR		
	comp=Z,277nm,12.8s,MS3.8						
LZH	**Lanzhou**	**20.26 316**		P	**P**	**09 19 44.0**	**-0.2**
LZH				AMB	AMB		
	comp=Z,56nm,1.2s						
LZH				LR	LR		
	comp=E,830nm,10.0s						
LZH				LR	LR		
	comp=Z,1μm,11.0s,MS4.4						
CMAR	**Chiang Mai Arr**	**21.23 263**		P	**P**	**09 19 55.2**	**+0.9**
	comp=Z,2.3nm,0.8s,mb3.5,baz=79,slow=9.2,SNR=8.6						
CMAR				LR	LR	09 30 16.7	
	comp=Z,114nm,18.1s,MS3.3,baz=80,slow=42						
GTA	**Gaotai**	**24.81 318**		*e*P	**P**	**09 20 30.5**	**+1.1**
GTA				AP		09 20 38.3	
GTA				XP		09 20 42.1	
GTA				S	**S**	**09 24 36.3**	**-13**
GTA				AMB	AMB		
	comp=Z,7.0nm,1.8s,mb3.9			

ZAL	**Zalesovo**	**41.67**	**328**	P		**P**	**09 22 54.8**	**-1.2**	
	comp=Z,2.2nm,0.6s,mb4.0,baz=266,slow=9.5,SNR=14								
ZAL				LR		LR	09 43 52.2		
	comp=Z,42nm,18.8s,MS3.3,baz=350,slow=41								
WRA	**Warramunga Arr**	**44.10**	**162**	P		**P**	**09 23 13.1**	**-3.1**	
	comp=Z,0.6nm,0.6s,mb3.5,baz=342,slow=8.7,SNR=7.4								
ASAR	**Alice Springs**	**47.53**	**164**	P		**P**	**09 23 41.1**	**-2.4**	
	comp=Z,0.7nm,0.9s,mb3.7,baz=341,slow=6.7,SNR=4.9								
CTA	**Charters Tower**	**48.89**	**148**	LR		LR	09 43 47.9		
	comp=Z,71nm,18.7s,MS3.7,baz=220,slow=35								
BVAR	**Borovoye Array**	**48.99**	**322**	P		**P**	**09 23 54.0**	**-0.4**	
	comp=Z,1.4nm,0.7s,mb4.1,baz=108,slow=9.4,SNR=6.1								
ZRNK	**Zerenda**	**49.76**	**321**	*eP*		**P**	**09 23 59.8**	**-0.6**	
FINES	**FINESS Array B**	**72.90**	**330**	LR		LR	10 02 29.6		
	comp=Z,46nm,18.6s,MS3.8,baz=52,slow=39								
NOA	**NORSAR Array B**	**79.71**	**332**	LR		LR	10 05 43.4		
	comp=Z,58nm,21.1s,MS3.9,baz=305,slow=38								
KMBO	**Kilima Mbogo**	**84.84**	**267**	LR		LR	10 10 08.9		
	comp=Z,58nm,19.0s,MS4.0,baz=78,slow=39								

OTT 24 09:20:48.4±0.5, 71.77N×96.31W, h18km, MN2.3/3, 77km west from Fort Ross, Nu Boothia Ungava Seismic Zone., Northwest Territories

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
RES	**Resolute Bay**	**2.97**	**7**	PN		Pn	09 21 33.1	-2.6
RES				SN		Sn	09 22 08.7	-2.5
RES				SG		Sn	09 22 19.2	+8.0
RES				Trac			09 22 23.8	
	comp=Z,4.5nm,0.2s							
IGL	**Igloolik**	**5.39**	**109**	PN		Pn	09 22 07.4	-2.8
IGL				SN		Sn	09 23 05.3	-7.2
IGL				LG			09 23 34.1	
IGL				Trac			09 23 37.2	
	comp=Z,0.7nm,0.1s							
PINU	**Pond Inlet**	**5.68**	**72**	PN		Pn	09 22 10.3	-3.9
PINU				SN		Sn	09 23 12.2	-7.5
PINU				LG			09 23 43.8	
LUPN	**Lupin Mine**	**8.10**	**229**	SN		Sn	09 24 09.2	-11
LUPN				LG			09 24 57.2	
YKW3	**Yellowknife Ar**	**11.59**	**226**	PN		P	09 23 30.3	-5.5
YKW3				SN		S	09 25 29.8	-16
YKW3				LG			09 26 41.2	
YKW3				Trac			09 26 51.6	
	comp=Z,0.5nm,0.5s							
INK	**Inuvik**	**13.01**	**273**	SN		S	09 26 05.7	-15
FCC	**Fort Churchill**	**13.09**	**175**	PN		P	09 23 53.5	-2.5
FCC				SN		S	09 26 10.7	-11

*NEIC **24** 09:26:02.0, 33.34S×72.39W, h35km, MD3.7(GUC), After GUC.*

GUC 24 09:26:02.0±0.6, 33.34S×72.39W, h35km±2km, MD3.7, ML2.6, 2C-1D, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
LCCH	**Las Cruces**	**0.70**	**101**	*eP*		P	09 26 15.2	-0.2
LCCH				*i* S		S	09 26 25.6	+0.5
LNV	**Longovilo**	**1.02**	**127**	⇑*i* P		P	09 26 20.1	+0.1
LNV				*i* S		S	09 26 34.2	+0.9
TACH	**Talagante**	**1.25**	**105**	*i* P		P	09 26 23.8	+0.5
TACH				*i* S		S	09 26 41.0	+1.7
PEL	**Peldehue**	**1.45**	**83**	*eP*		P	09 26 27.9	+1.8
PEL				*i* S		S	09 26 46.2	+2.2
PEL				AMP			09 26 54.4	
	comp=E,208nm,0.6s							
CLCH	**Cerro Calan**	**1.55**	**92**	*eP*		P	09 26 28.7	+1.1
CLCH				*i* S		S	09 26 49.2	+2.4
CLCH				AMP			09 26 59.7	
	comp=E,115nm,0.6s							
CHCH	**Chadas Angostu**	**1.57**	**113**	*i* P		P	09 26 28.7	+0.9
PCH	**Pirque**	**1.59**	**101**	⇓*i* P		P	09 26 29.2	+1.0
JACH	**Jahuel**	**1.65**	**67**	*eP*		P	09 26 30.0	+1.0
CACH	**El Canelo**	**1.68**	**118**	⇑*i* P		P	09 26 31.5	+2.1
CACH				*i* S		S	09 26 53.0	+3.0
SFDO	**San Fernando**	**1.71**	**138**	*eP*		P	09 26 31.2	+1.3
FCH	**Farellones**	**1.76**	**90**	*eP*		P	09 26 32.4	+1.9
FCH				*i* S		S	09 26 55.0	+3.1
FCH				AMP			09 27 04.8	
	comp=N,73nm,0.3s							
LMEL	**Las Melosas**	**1.90**	**106**	*eP*		P	09 26 33.6	+1.1
LMEL				*i* S		S	09 26 57.6	+2.2
LMEL				AMP			09 27 08.2	
	comp=N,63nm,0.2s							
CICH	**Cipreses**	**1.91**	**121**	*i* P		P	09 26 33.9	+1.2

*IDC **24** 09:31:19.7±1.1, 17.96S×172.92W, mb3.8/7, mb1 4.1/7, mb1mx3.9/17, Error ellipse: s-maj=54.2km s-min=21.7km az=147.0*

*NEIC **24** 09:31:26.5±0.6, 18.07S×172.92W, h50km, Error ellipse: s-maj=28.4km s-min=13.1km az=142.0*

ISC 24 09:31:23.2±0.9, 18.0S±0.2×173.0W±0.2, h33km, n7, σ0§33/7, mb3.8/7, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
URZ	**Urewera**	**21.94**	**201**	P		**P**	**09 36 15.6**	**0.0**
	4.4nm,0.7s,mb4.0,baz=299,slow=6.1,SNR=4.9							
CTA	**Charters Tower**	**38.54**	**260**	P		**P**	**09 38 45.1**	**+0.6**
	1.4nm,0.5s,mb4.0,baz=80,slow=11,SNR=3.7							
WRA	**Warramunga Arr**	**49.71**	**259**	P		**P**	**09 40 13.8**	**-0.7**
	0.9nm,0.8s,mb3.9,baz=92,slow=7.5,SNR=7.4							
ASAR	**Alice Springs**	**49.75**	**254**	P		**P**	**09 40 14.8**	**0.0**
	1.1nm,0.7s,mb4.0,baz=93,slow=7.6,SNR=15							
NVAR	**Mina Array Bea**	**76.00**	**41**	P		**P**	**09 43 08.9**	**0.0**
	0.2nm,0.4s,mb3.4,baz=225,slow=8.9,SNR=3.2							
TXAR	**Lajitas Array**	**81.73**	**56**	P		**P**	**09 43 40.4**	**+0.1**
	0.3nm,1.0s,mb3.2,baz=216,slow=7.8,SNR=3.4							
PDAR	**Pinedale Array**	**83.94**	**41**	P		**P**	**09 43 51.3**	**0.0**
	0.3nm,0.3s,mb3.9,baz=243,slow=2.0,SNR=3.5							

*IDC **24** 09:35:40.1±4.3, 7.77S×122.37E, h95km±36km, mb3.9/1, mb1 3.6/4, mb1mx3.3/17, Error ellipse: s-maj=103.0km s-min=40.7km az=54.0*

ISC 24 09:35:43.2±3.4, 8.3S±0.2×121.8E±0.1, h141km±34km, n8, σ1§08/13, mb4.0/1, 2C, Flores region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**10.44**	**160**	*eP*		**P**	**09 38 11.6**	**+1.4**
	3.0nm,1.0s							
FITZ				*eS*		**S**	**09 40 04.3**	**-1.0**
FITZ	**Fitzroy Crossi**	**10.44**	**160**	P		**P**	**09 38 10.8**	**+0.6**
	0.4nm,0.3s,baz=16,slow=8.6,SNR=8.1							
FITZ				S		**S**	**09 40 04.0**	**-1.2**
	0.3nm,0.3s,baz=170,slow=11,SNR=4.1							
KAKA	**Kakadu**	**11.29**	**114**	*eP*		**P**	**09 38 24.8**	**+3.5**
	3.6nm,0.6s							
KAKA				*eS*		**S**	**09 40 24.2**	**-1.0**
WRA	**Warramunga Arr**	**16.77**	**135**	P		**P**	**09 39 30.6**	**-0.6**
	0.2nm,0.3s,baz=309,slow=12,SNR=34							
WRA				S		**S**	**09 42 33.3**	**+1.7**
	0.3nm,0.3s,baz=318,slow=25,SNR=7.8							
WB2	**Warramunga Arr**	**16.78**	**135**	⇑*i* P		**P**	**09 39 31.9**	**+0.6**
AS12	**Alice Springs**	**19.18**	**144**	⇑*i* P		**P**	**09 39 58.3**	**-0.1**
	3.2nm,1.0s							
ASAR	**Alice Springs**	**19.18**	**144**	P		**P**	**09 39 58.6**	**+0.2**
	0.3nm,0.3s,baz=329,slow=11,SNR=16							
ASAR				S		**S**	**09 43 31.9**	**+8.7**
	0.1nm,0.3s,baz=313,slow=20,SNR=5.4							
STKA	**Stephens Creek**	**29.82**	**145**	P		**P**	**09 41 38.3**	**-1.0**
	4.1nm,1.2s,mb4.0,baz=333,slow=14,SNR=4.1							

*NEIC **24** 10:21:09.5±0.3, 36.09S×100.70W, h10km, mb4.2/9, Error ellipse: s-maj=16.2km s-min=8.0km az=74.0*

*IDC **24** 10:21:10.2±9.2, 35.70S×100.56W, mb4.1/5, mb1 4.5/5, mb1mx4.2/15, MS3.7/6, Ms1 3.7/6, ms1mx3.5/18, Error ellipse: s-maj=248.0km s-min=32.1km az=17.0*

ISC 24 10:21:07.7±0.5, 36.13S±0.09×100.7W±0.2, h10km, n28, σ0§74/24, mb4.2/14, MS3.7/6, 2C, Southeast of Easter Island

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
LVC	**Limon Verde**	**30.64**	**73**	P		**P**	**10 27 24.5**	**0.0**
	2.1nm,0.8s,mb4.0,baz=248,slow=11,SNR=3.5							
LVC				LR		LR	10 36 32.3	
	comp=Z,134nm,21.2s,MS3.6,baz=204,slow=30							

LPAZ	**La Paz**	**35.02**	**64**	P		**P**	**10 28 03.1**	**+0.5**	
	1.3nm,0.8s,mb3.9,baz=230,slow=7.5,SNR=4.6								
LPAZ				LR		LR	10 39 18.2		
	comp=Z,41nm,20.9s,MS3.2,baz=78,slow=31								
CPUP	**Villa Florida**	**38.07**	**88**	LR		LR	10 40 58.5		
	comp=Z,96nm,18.8s,MS3.6,baz=258,slow=31								
ROSC	**El Rosal**	**47.66**	**37**	LR		LR	10 45 47.2		
	comp=Z,101nm,20.9s,MS3.8,baz=194,slow=31								
BDFB	**Brasilia**	**50.93**	**81**	LR		LR	10 48 23.5		
	comp=Z,106nm,18.1s,MS3.9,baz=115,slow=32								
QSPA	**South Pole Qui**	**54.09**	**180**	*eP*		**P**	**10 30 34.2**	**0.0**	
	21nm,0.8s,mb5.1								
VNA3	**Neumayer Olymp**	**56.58**	**157**	⇑*i*		**P**	**10 30 53.2**	**+0.8**	
VNA2	**Neumayer--Watz**	**57.38**	**157**	⇑*i*		**P**	**10 30 57.9**	**-0.2**	
SNAA	**Sanae**	**58.54**	**158**	*eP*		**P**	**10 31 05.1**	**-1.1**	
TXAR	**Lajitas Array**	**65.17**	**357**	P		**P**	**10 31 50.4**	**-1.0**	
	1.2nm,0.8s,mb4.0,baz=181,slow=8.9,SNR=20								
JCT	**Junction City**	**66.26**	**1**	*eP*		**P**	**10 31 57.1**	**-1.1**	
	1.8nm,0.3s,mb4.6								
MNTX	**Cornudas Mount**	**67.61**	**356**	*eP*		**P**	**10 32 04.6**	**-2.2**	
	1.6nm,0.8s,mb4.1								
ANMO	**Albuquerque**	**70.92**	**355**	*eP*		**P**	**10 32 26.4**	**-0.7**	
	2.0nm,1.0s,mb4.0								
PV01	**Paradox Valley**	**74.25**	**354**	*eP*		**P**	**10 32 46.6**	**0.0**	
NVAR	**Mina Array Bea**	**75.95**	**346**	P		**P**	**10 32 57.2**	**+0.8**	
	3.0nm,0.9s,mb4.2,baz=160,slow=7.9,SNR=22								
NVAR	**Mina Array Bea**	**75.95**	**346**	P		**P**	**10 32 57.2**	**+0.8**	
NLU	**North Lily Min**	**76.43**	**351**	*eP*		**P**	**10 32 59.5**	**+0.5**	
DAU	**Daniels Canyon**	**76.78**	**352**	*eP*		**P**	**10 33 01.4**	**+0.3**	
DAU				*e*			10 33 11.0		
BW06	**Boulder Array**	**78.93**	**353**	*eP*		**P**	**10 33 12.3**	**-0.5**	
	2.9nm,1.0s,mb4.2								
PDAR	**Pinedale Array**	**78.93**	**353**	P		**P**	**10 33 12.8**	**0.0**	
	2.5nm,0.9s,mb4.2,baz=157,slow=5.9,SNR=18								
WVOR	**Wild Horse Val**	**79.89**	**347**	*eP*		**P**	**10 33 18.5**	**+0.5**	
	1.6nm,0.9s,mb4.0								
RSSD	**Black Hills**	**79.93**	**358**	*eP*		**P**	**10 33 18.0**	**-0.1**	
	1.3nm,0.6s,mb4.0								
HLID	**Hailey**	**80.29**	**350**	*eP*		**P**	**10 33 20.8**	**+0.7**	
	3.8nm,1.1s,mb4.2								
MCMT	**McKenzie Canyo**	**81.33**	**351**	*eP*		**P**	**10 33 26.4**	**+0.8**	
BOZ	**Bozeman (W)**	**82.00**	**352**	*eP*		**P**	**10 33 29.1**	**+0.1**	
	1.1nm,0.6s,mb4.0								
CHMT	**Chamberlain Mo**	**83.43**	**351**	*eP*		**P**	**10 33 37.3**	**+0.9**	
NEW	**Newport**	**85.29**	**349**	P		**P**	**10 33 46.2**	**+0.5**	
STKA	**Stephens Creek**	**90.68**	**229**	LR		LR	11 05 12.3		
	comp=Z,82nm,21.3s,MS4.1,baz=204,slow=29								

*NEIC **24** 10:36:36.3±0.6, 2.21N×122.82E, h476km±8km, mb4.1/8, Error ellipse: s-maj=12.8km s-min=4.5km az=69.0*

*IDC **24** 10:36:36.5±1.7, 2.23N×122.81E, h474km±22km, mb3.5/11, mb1 3.5/11, mb1mx3.4/21, Error ellipse: s-maj=33.2km s-min=9.3km az=73.0*

ISC 24 10:36:35.2±1.2, 2.25N±0.07×122.9E±0.1, h476km±15km, n35, σ0§68/35, mb4.1/20, 7C-1D, Celebes Sea

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
KKM	**Kota Kinabalu**	**7.62**	**300**	⇓*eP*		**P**	**10 38 28.0**	**-0.2**
TGY	**Tagaytay City**	**11.93**	**351**	P		**P**	**10 39 15.1**	**+0.6**
	32nm,0.3s,baz=171,slow=4.5,SNR=5.8							
KAKA	**Kakadu**	**17.62**	**148**	⇑*i* P		**P**	**10 40 14.1**	**+1.3**
	48nm,0.6s							
FITZ	**Fitzroy Crossi**	**20.41**	**172**	⇑*i* P		**P**	**10 40 39.9**	**+0.3**
	5.7nm,0.6s							
FITZ	**Fitzroy Crossi**	**20.41**	**172**	P		**P**	**10 40 40.3**	**+0.7**
	6.9nm,0.6s,baz=7.9,slow=7.7,SNR=43							
WRAB	**Tennant Creek**	**24.76**	**153**	*eP*		**P**	**10 41 18.5**	**-1.0**
	14nm,0.6s,mb4.6							
WRA	**Warramunga Arr**	**24.77**	**153**	P		**P**	**10 41 18.7**	**-0.9**
	5.7nm,0.5s,mb4.2,baz=337,slow=9.5,SNR=99							
WB2	**Warramunga Arr**	**24.77**	**153**	⇑*i* P		**P**	**10 41 18.6**	**-1.0**
JOW	**Kunigami**	**24.99**	**12**	P		**P**	**10 41 21.4**	**-0.1**
	5.5nm,0.4s,mb4.3,baz=233,slow=7.5,SNR=5.2							
AS12	**Alice Springs**	**27.91**	**158**	⇑*i* P		**P**	**10 41 47.0**	**-0.4**
	11nm,1.7s,mb4.0							
ASAR	**Alice Springs**	**27.91**	**158**	P		**P**	**10 41 47.1**	**-0.3**
	1.8nm,0.5s,mb3.7,baz=336,slow=7.3,SNR=46							
ASAR				PcP		PcP	10 44 47.9	-0.5
	0.5nm,0.6s,baz=337,slow=3.0,SNR=4.4							
ASAR				ScP			10 47 43.0	
	0.7nm,0.5s,baz=340,slow=3.2,SNR=11							
ENH	**Enshi**	**30.62**	**337**	P		**P**	**10 42 11.1**	**+0.3**
	8.3nm,0.8s,mb4.2							
FORT	**Forrest**	**33.22**	**172**	⇑*i* P		**P**	**10 42 33.1**	**+0.3**
	31nm,0.5s,mb5.0							
KLBR	**Kellerberrin**	**34.00**	**188**	⇑*i* P		**P**	**10 42 38.4**	**-1.0**
	3.7nm,0.6s,mb4.0							
NWAO	**Narrogin (SRO)**	**35.39**	**188**	P		**P**	**10 42 50.8**	**-0.1**
	6.0nm,0.8s,mb4.1,baz=20,slow=12,SNR=4.0							
STKA	**Stephens Creek**	**38.32**	**154**	⇑*i* P		**P**	**10 43 16.3**	**+1.1**
	4.5nm,0.7s,mb4.0							
STKA	**Stephens Creek**	**38.32**	**154**	P		**P**	**10 43 16.3**	**+1.2**
	3.5nm,0.4s,mb4.2,baz=316,slow=7.3,SNR=17							
GUN	**Gumba**	**43.56**	**309**	*eP*		**P**	**10 43 58.8**	**+1.3**
PKI	**Pulchoki**	**43.77**	**309**	*eP*		**P**	**10 43 59.1**	**0.0**
	4.9nm,0.2s,mb4.5							
KKN	**Kakani**	**43.97**	**309**	*eP*		**P**	**10 44 00.8**	**+0.1**
	9.0nm,0.6s,mb4.4							
GKN	**Gorkha**	**44.57**	**309**	*eP*		**P**	**10 44 05.3**	**-0.1**
	10.0nm,0.5s,mb4.5							
KOLN	**Kolkanda**	**45.28**	**308**	*eP*		**P**	**10 44 11.0**	**+0.2**
	22nm,0.7s,mb4.7							
HYB	**Hyderabad**	**46.03**	**292**	*i* P		**P**	**10 44 16.0**	**-0.7**
HYB	**Hyderabad**	**46.03**	**292**	*eP*		**P**	**10 44 16.0**	**-0.7**
ULN	**Ulaanbaatar**	**47.45**	**346**	*eP*		**P**	**10 44 27.2**	**-0.1**
	1.1nm,0.4s,mb3.6							
SONM	**Songino Array**	**47.59**	**345**	P		**P**	**10 44 28.6**	**+0.3**
	2.6nm,0.4s,mb3.9,baz=159,slow=9.2,SNR=11							
MKAR	**Makanchi Array**	**56.64**	**328**	P		**P**	**10 45 33.5**	**-0.5**
	3.5nm,0.5s,mb3.9,baz=121,slow=8.8,SNR=42							
KURK	**Kurchatov**	**60.97**	**330**	*eP*		**P**	**10 46 02.0**	**-0.9**
BVAR	**Borovoye Array**	**66.50**	**329**	P		**P**	**10 46 37.6**	**-0.5**
	0.2nm,0.3s,mb3.2,baz=141,slow=9.5,SNR=4.0							
ZRNK	**Zerenda**	**67.19**	**328**	*eP*		**P**	**10 46 41.7**	**-0.7**
VNDA	**Vanda**	**82.48**	**172**	P		**P**	**10 48 08.0**	**+0.7**
	0.6nm,0.6s,mb3.3,baz=317,slow=2.8,SNR=6.0							
VNDA	**Vanda**	**82.48**	**172**	*eP*		**P**	**10 48 07.6**	**+0.3**
	0.4nm,0.8s,mb3.0							
KMBO	**Kilima Mbogo**	**85.65**	**269**	P		**P**	**10 48 25.1**	**+0.8**
	2.1nm,0.8s,mb3.8,baz=53,slow=15,SNR=5.3							
QSPA	**South Pole Qui**	**92.17**	**180**	*eP*		**P**	**10 48 54.2**	**+1.0**
INK	**Inuik**	**92.94**	**21**	*eP*		**P**	**10 48 56.7**	**-0.3**
	1.6nm,1.1s,mb4.0							

MOS 24 10:37:42.0±1.4, 43.84N×42.38E, h16km, mb3.5/1, 4C, Error ellipse: s-maj=29.3km s-min=18.6km az=138.7, Western Caucasus

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
GUMR	**Gum-Bashi**	**0.11**	**236**	⇑*i*PG		Pb	10 37 46.2	+0.6
GUMR				*eS*		Sb	10 37 51.5	+3.5
SHAR	**Shatzhatmas**	**0.23**	**114**	*i* PG		Pb	10 37 50.4	+3.0
SHAR				*eS*		Sb	10 37 58.4	+7.4
KIV	**Kislovodsk**	**0.25**	**62**	⇑*i*PG		Pb	10 37 48.6	+0.9
KIV				*eS*		Sb	10 37 55.2	+3.6
KIV0	**Kislovodsk Ar**	**0.26**	**63**	⇑*i*PG		Pb	10 37 48.7	+0.9
KIV0				*eS*		Sb	10 37 55.3	+3.6
OBN	**Obninsk**	**11.89**	**344**	⇑*eP*		P	10 40 35.3	+1.4
OBN				pmax		pmax		
	comp=Z,26nm,0.9s							

*NEIC **24** 10:48:51.6, 32.55S×71.72W, h22km, ML3.4(GUC), After GUC.*

GUC 24 10:48:51.6±0.5, 32.55S×71.72W, h22km±2km, MD4.1, ML3.4, 8C-3D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
PACH	**Papudo**	**0.24**	**88**	⇑*i* P		Pb	10 48 58.0	+0.5
PACH				*i* S		Sb	10 49 02.4	+0.9
IHA	**Instituto Hidr**	**0.48**	**172**	*eP*		Pb	10 49 00.9	-0.5
PTCH	**Petorca**	**0.73**	**67**	*eP*		Pb	10 49 05.3	-0.2
PTCH				*i* S		Sb	10 49 15.4	+0.4
PTCH				AMP			10 49 20.9	
	comp=E,2μm,0.4s							
ROCH	**El Roble**	**0.73**	**125**	⇑*i* P		Pb	10 49 05.5	0.0
ROCH				*i* S		Sb	10 49 15.9	+0.8
LCCH	**Las Cruces**	**0.94**	**172**	⇑*i* P		Pb	10 49 08.2	-0.8
JACH	**Jahuel**	**0.96**	**98**	⇑*i* P		Pb	10 49 09.1	-0.4
JACH				*i* S		Sb	10 49 22.3	+0.5
ILCH	**Illapel**	**1.02**	**27**	⇑*i* P		Pb	10 49 10.1	-0.4
ILCH				*i* S		Sb	10 49 23.6	+0.1
ILCH				AMP			10 49 25.9	
	comp=E,1μm,0.2s							
PEL	**Peldehue**	**1.06**	**125**	*eP*		Pb	10 49 10.4	-0.6
PEL				*i* S		Sb	10 49 24.4	0.0
PEL				AMP			10 49 25.8	
	comp=E,4μm,0.4s							
TACH	**Talagante**	**1.28**	**149**	⇑*i* P		Pn	10 49 13.9	-0.6
CLCH	**Cerro Calan**	**1.31**	**131**	⇓*i* P		Pn	10 49 14.5	-0.3
CLCH				*i* S		Sn	10 49 31.7	0.0
CLCH				AMP			10 49 32.7	
	comp=E,2μm,0.2s							
ANTU	**Antumapu**	**1.37**	**138**	*i* P		Pn	10 49 15.4	-0.3
ANTU				*i* S		Sn	10 49 33.2	0.0
ANTU				AMP			10 49 39.6	
	comp=E,1μm,0.4s							
LNV	**Longovilo**	**1.43**	**170**	⇑*i* P		Pn	10 49 16.0	-0.5
LNV				*i* S		Sn	10 49 34.5	-0.3
FCH	**Farellones**	**1.43**	**123**	⇓*i* P		Pn	10 49 16.5	-0.1
FCH				*i* S		Sn	10 49 35.5	+0.6
FCH				AMP			10 49 37.0	
	comp=N,695nm,0.2s							
PCH	**Pirque**	**1.48**	**137**	⇑*i* P		Pn	10 49 17.2	0.0
PCH				*i* S		Sn	10 49 36.3	+0.4
CMCH	**Combarbala**	**1.50**	**24**	⇓*i* P		Pn	10 49 17.4	-0.1
CMCH				*i* S		Sn	10 49 36.7	+0.1
CMCH				AMP			10 49 41.4	
	comp=E,2μm,0.7s							
CHCH	**Chadas Angostu**	**1.65**	**147**	*eP*		Pn	10 49 19.9	+0.3
CHCH				*i* S		Sn	10 49 40.9	+0.6
LMEL	**Las Melosas**	**1.82**	**136**	*eP*		Pn	10 49 22.5	+0.4
LMEL				*i* S		Sn	10 49 46.1	+1.5
LMEL				AMP			10 49 52.0	
	comp=N,567nm,0.4s							
CACH	**El Canelo**	**1.83**	**149**	*i* P		Pn	10 49 23.7	+1.5
CACH				*i* S		Sn	10 49 47.6	+2.8
CICH	**Cipreses**	**2.08**	**149**	*i* P		Pn	10 49 27.2	+1.4
CICH				*i* S		Sn	10 49 53.6	+2.3
SFDO	**San Fernando**	**2.15**	**164**	*i* P		Pn	10 49 27.2	+0.4
SFDO				*i* S		Sn	10 49 54.7	+1.7
TLL	**Tololo Astrono**	**2.50**	**19**	*eP*		Pn	10 49 32.6	+0.8
TLL				*i* S		Sn	10 50 04.1	+2.2
TLL				AMP			10 50 14.7	
	comp=N,389nm,0.6s							

*IDC **24** 11:10:15.8±1.9, 54.28S×53.75W, mb4.1/2, mb1 4.2/2, mb1mx3.8/11, MS3.7/8, Ms1 3.7/8, ms1mx3.7/15, Error ellipse: s-maj=89.3km s-min=40.9km az=60.0*

*NEIC **24** 11:10:19.5±0.6, 54.04S×53.91W, h10km, mb4.7/1, Error ellipse: s-maj=27.3km s-min=10.7km az=63.0*

ISC 24 11:10:18.3±0.7, 54.0S±0.1×53.8W±0.3, h10km, n27, σ1§13/18, mb4.8/5, MS3.7/8, 2D, South Atlantic Ocean

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
EFI	**East Falkland**	**3.48**	**310**	*e*Pn		**Pn**	**11 11 14.2**	**+0.4**
EFI				*e*			11 11 33.9	
TRQA	**Tornquist**	**16.92**	**337**	*e*Pn		**P**	**11 14 16.1**	**-0.4**
	2.6nm,0.9s							
VNA3	**Neumayer Olymp**	**25.73**	**149**	*e*		**P**	**11 16 00.5**	**+11**
VNA3	**Neumayer Olymp**	**25.73**	**149**	*e*		**P**	**11 16 10.3**	**+20**
VNA3	**Neumayer Olymp**	**25.73**	**149**	⇓*i*P		**P**	**11 15 51.7**	**+1.8**
VNA3				*e*			11 16 00.5	
VNA1	**Neumayer--Stat**	**25.99**	**147**	*e*		**P**	**11 16 02.4**	**+10**
VNA1	**Neumayer--Stat**	**25.99**	**147**	*e*		**P**	**11 16 12.0**	**+20**
VNA1	**Neumayer--Stat**	**25.99**	**147**	⇓*i*P		**P**	**11 15 53.4**	**+1.1**
VNA1				*e*			11 16 02.4	
VNA2	**Neumayer--Watz**	**26.34**	**148**	*e*		**P**	**11 16 08.4**	**+13**
VNA2	**Neumayer--Watz**	**26.34**	**148**	P		**P**	**11 15 59.4**	**+3.8**
VNA2				*e*			11 16 08.4	
CPUP	**Villa Florida**	**27.77**	**353**	LR		LR	11 27 18.6	
	comp=Z,108nm,20.2s,MS3.4,baz=198,slow=36							
SNAA	**Sanae**	**27.95**	**148**	*eP*		**P**	**11 16 10.4**	**+0.2**
QSPA	**South Pole Qui**	**36.24**	**180**	*eP*		**P**	**11 17 20.3**	**-2.5**
	42nm,0.6s,m

FIN				*e*Sg		**Sg**	**11 15 11.9**	**-0.9**
RRL	**Cesana Torines**	**0.71**	**329**	P		**Pb**	**11 15 04.9**	**+0.8**
RRL				S		**Sb**	**11 15 14.2**	**+0.7**
FENE	**Fenestrelle**	**0.74**	**347**	P		**Pb**	**11 15 05.1**	**+0.5**
FENE				S		**Sb**	**11 15 14.4**	**+0.1**
RSP	**Reno Superiore**	**0.84**	**358**	P		**Pb**	**11 15 06.5**	**+0.2**
FRF	**La Foret Royal**	**0.89**	**212**	*e*Pg		**Pg**	**11 15 07.6**	**-0.7**
FRF				*e*Sg		**Sg**	**11 15 19.2**	**-1.1**
	21nm,0.2s							
PCP	**Pian Castagno**	**0.92**	**75**	P		**Pb**	**11 15 07.9**	**+0.2**
LMR	**La Mourre**	**1.13**	**211**	*e*Pg		**Pg**	**11 15 12.0**	**-1.2**
LMR				*e*Sg		**Sg**	**11 15 26.7**	**-1.7**
	36nm,0.3s							
LSD	**Ceresole Reale**	**1.15**	**355**	P		**Pb**	**11 15 12.0**	**+0.4**
ORIF	**Oris-en-Rattie**	**1.18**	**301**	*e*Pg		**Pg**	**11 15 13.6**	**-0.6**
ORIF				*e*Sg		**Sg**	**11 15 28.6**	**-1.4**
	4.8nm,0.2s							
LPG	**La Plagne**	**1.25**	**342**	*e*Pg		**Pg**	**11 15 14.7**	**-0.8**
LPG				*e*Sg		**Sg**	**11 15 31.1**	**-1.1**
	2.2nm,0.3s							
LPL	**La Plagne**	**1.27**	**342**	*e*Pg		**Pg**	**11 15 14.6**	**-1.3**
LPL				*e*Sg		**Sg**	**11 15 31.6**	**-1.4**
	2.4nm,0.3s							
SMRF	**Simiane la Rot**	**1.29**	**256**	*e*Pg		**Pg**	**11 15 15.8**	**-0.5**
SMRF				*e*Sg		**Sg**	**11 15 34.1**	**+0.6**
	11nm,0.3s							
VIVF	**Saint-Julien-l**	**1.96**	**287**	*e*Pn		**Pn**	**11 15 24.0**	**+0.3**
VIVF				*e*Pg		**Pg**	**11 15 26.3**	**-3.3**
VIVF				*e*Sn		**Sn**	**11 15 48.1**	**-0.1**
	1.5nm,0.2s							
PGF	**Pioggiola**	**2.15**	**144**	*e*Pn		**Pn**	**11 15 26.3**	**-0.2**
LASF	**Ste Croix**	**2.49**	**266**	*e*Pn		**Pn**	**11 15 31.3**	**0.0**

CASC 24 11:16:22.3±2.0, 9.89N×84.01W, h76km±8km, MD3.8, MW4.4, 6C-6D, Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SJS	**Escuela Geolog**	**0.07**	**319**	⇓*i*P	P	11 16 33.4	0.0
SJS				*e*S	S	11 16 42.3	+0.9
LAJ	**Bijagual**	**0.11**	**258**	⇓*e*P	P	11 16 37.0	+3.6
LCR2	**La Lucha 2**	**0.14**	**178**	⇑*i*P	P	11 16 33.4	0.0
ICR	**Volcan Irazu**	**0.20**	**62**	⇑*e*P	P	11 16 34.2	+0.6
URSC	**Urasca**	**0.23**	**103**	⇓*e*P	P	11 16 33.9	+0.1
BUS	**Buena Vista**	**0.41**	**143**	⇑*e*P	P	11 16 35.3	+0.3
CGA2	**Cerro Gallo 2**	**0.47**	**286**	⇑*e*P	P	11 16 35.3	-0.2
TRTC	**Tortuguero**	**0.74**	**23**	⇑*i*P	P	11 16 37.5	-0.9
FORC	**Fortuna**	**0.87**	**312**	⇓*e*P	P	11 16 39.5	-0.3
JCR	**Jicaral**	**1.09**	**268**	⇑*i*P	P	11 16 42.0	-0.4
JCR				*e*S	S	11 16 57.5	0.0
ACR	**Cerro Adams**	**1.48**	**146**	*e*P	P	11 16 47.2	-0.5
VCR	**Vista de Mar**	**1.61**	**279**	⇓*e*P	P	11 16 48.6	-0.9
BRU2	**Volcan**	**1.69**	**130**	*e*P	P	11 16 51.5	+0.9
	baz=297,slow=3.6						
BRU2				*i* S	S	11 17 13.2	+1.8
CRZC	**La Cruz**	**1.89**	**304**	⇓*e*P	P	11 16 52.6	-0.6

JMA ***24*** *11:33:26.0±0.5, 21.98N×121.87E, h75km, M3.0*
TAP 24 11:33:23.3, 22.00N×121.66E, h12km, ML2.7, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**2.75**	**27**	P	Pn	11 34 08.0	-0.1
HATJ	**Hateruma jima**	**2.84**	**44**	P	Pn	11 34 08.7	-0.8
IRIF	**Iriomote-Funau**	**3.00**	**39**	P	Pn	11 34 10.9	-0.8
IRIF				S	Sn	11 34 44.6	-3.4
JIJ	**Ishigaki jima**	**3.28**	**44**	P	Pn	11 34 12.2	-1.4
JIJ				S	Sn	11 34 51.6	-3.4
JTJ	**Tarama**	**3.84**	**46**	P	Pn	11 34 22.6	-0.9
JTJ				S	Sn	11 35 05.8	-3.3

NEIC ***24*** *11:37:53.0±0.8, 0.53S×97.95E, mb4.4/2, Error ellipse: s-maj=18.1km s-min=10.8km az=66.0*
IDC ***24*** *11:37:55.3±2.0, 0.18S×98.50E, h20km±4km, mb4.0/6, mb1 4.1/7, mb1mx3.9/17, ML4.3/1, MS3.2/1, Ms1 3.4/1, ms1mx2.8/19, Error ellipse: s-maj=87.1km s-min=13.9km az=61.0*
DJA ***24*** *11:38:01.4, 0.62N×98.23E, h43km, MB3.9, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*
ISC 24 11:37:51.4±0.9, 0.47S±0.09×98.00E±0.08, h20km, h20km±1.6km: pP-P, n22, σ0$83/19, mb4.2/8, 3C-4D, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GSI	**Gunungsitoli**	**1.81**	**346**	⇑*e*Pn	**Pn**	**11 38 21.0**	**-0.9**
PPI	**Padang Panjang**	**2.39**	**90**	⇓*e*Pn	**Pn**	**11 38 31.0**	**+0.7**
PPI	**Padang Panjang**	**2.39**	**90**	*e*Sn	**Sn**	**11 38 58.0**	**-1.3**
PSI	**Prapat**	**3.27**	**16**	⇓*e*Pn	**Pn**	**11 38 44.1**	**+1.3**
IPM	**Ipoh**	**5.85**	**31**	⇓*e*P	**Pn**	**11 39 20.0**	**+0.7**
KGM	**Kluang**	**5.86**	**65**	⇓*e*P	**Pn**	**11 39 20.4**	**+1.0**
	69nm,0.7s						
CMAR	**Chiang Mai Arr**	**18.83**	**3**	P	**P**	**11 42 11.4**	**-1.1**
	0.4nm,0.3s,baz=193,slow=11,SNR=7.7						
CMAR				LR	LR	11 50 18.4	
	comp=Z,82nm,21.9s,baz=180,slow=40						
ENH	**Enshi**	**32.47**	**19**	*e*P	**P**	**11 44 22.2**	**-0.6**
WRA	**Warramunga Arr**	**40.49**	**121**	P	**P**	**11 45 30.1**	**-0.7**
	0.9nm,0.6s,mb3.7,baz=300,slow=8.9,SNR=6.6						
WRA				pP	pP	11 45 36.3	-0.5
	1.2nm,0.7s,baz=300,slow=9.0,SNR=7.5						
WRAB	**Tennant Creek**	**40.49**	**121**	*e*P	**P**	**11 45 31.1**	**+0.3**
	7.3nm,0.9s,mb4.4						
WB2	**Warramunga Arr**	**40.50**	**121**	*e*P	pP	11 45 37.7	+0.8
WB2				*e*S	x	11 50 20.0	
ASAR	**Alice Springs**	**41.76**	**126**	P	**P**	**11 45 41.5**	**+0.2**
	0.9nm,0.6s,mb3.5,baz=296,slow=8.0,SNR=8.9						
ASAR				pP	pP	11 45 47.6	+0.2
	1.8nm,0.6s,baz=303,slow=8.2,SNR=10						
ASAR				pPcP		11 47 47.0	
	0.6nm,0.7s,baz=304,slow=2.6,SNR=4.9						
SONM	**Songino Array**	**48.66**	**8**	P	**P**	**11 46 35.4**	**-0.7**
	2.2nm,0.6s,mb4.4,baz=190,slow=10,SNR=6.9						
SONM				pP	pP	11 46 41.9	-0.4
	11nm,1.1s,baz=188,slow=9.6,SNR=22						
ULN	**Ulaanbaatar**	**48.78**	**8**	*e*P	**P**	**11 46 42.2**	**+5.2**
	4.0nm,0.9s,mb4.5						
MKAR	**Makanchi Array**	**49.04**	**346**	P	**P**	**11 46 39.8**	**+0.8**
	3.4nm,0.6s,mb4.6,baz=156,slow=8.0,SNR=25						
STKA	**Stephens Creek**	**51.65**	**132**	⇑*i*P	**P**	**11 47 06.4**	**+7.2**
	2.9nm,0.5s,mb4.5						
STKA	**Stephens Creek**	**51.65**	**132**	P	**P**	**11 47 00.5**	**+1.3**
	4.3nm,1.1s,mb4.3,baz=323,slow=15,SNR=2.5						
STKA				pP	pP	11 47 06.7	+1.3
	3.4nm,0.6s,baz=300,slow=6.3,SNR=4.4						
STKA	**Stephens Creek**	**51.65**	**132**	⇑*i*P	**P**	**11 47 06.4**	**+7.2**
STKA				pP	pP	11 47 06.7	+1.3
ZAL	**Zalesovo**	**55.31**	**351**	P	**P**	**11 47 25.9**	**-0.1**
	2.6nm,0.5s,mb4.5,baz=210,slow=4.9,SNR=7.8						
ZAL				pP	pP	11 47 31.9	-0.2
	1.6nm,0.4s,baz=212,slow=6.9,SNR=3.3						
ZAL	**Zalesovo**	**55.31**	**351**	P	**P**	**11 47 25.9**	**-0.1**
ZAL				pP	pP	11 47 31.9	-0.3
CPUP	**Villa Florida**	**144.28**	**220**	pPKP		11 57 37.2	
	3.8nm,0.6s,baz=92,slow=2.8,SNR=6.8						
TXAR	**Lajitas Array**	**144.63**	**34**	PKP	PKPdf	11 57 29.4	-2.1
	0.6nm,0.7s,baz=270,slow=2.5,SNR=7.0						
TXAR				pPKP		11 57 36.0	
	0.8nm,0.6s,baz=228,slow=2.0,SNR=7.4						

IDC ***24*** *12:23:59.4±0.8, 10.65S×166.00E, mb4.0/10, mb1 4.3/10, mb1mx4.2/17, MS3.1/4, Ms1 3.1/4, ms1mx3.0/17, Error ellipse: s-maj=43.9km s-min=18.2km az=143.0*
NEIC ***24*** *12:24:09.8±0.4, 10.68S×165.86E, h80km, mb4.3/5, Error ellipse: s-maj=18.8km s-min=8.7km az=146.0*
ISC 24 12:24:03.0±0.6, 10.8S±0.2×165.9E±0.1, h33km, n24, σ0$62/20, mb4.1/13, MS2.9/3, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**18.51**	**272**	LR	LR	12 34 17.4	
	comp=Z,105nm,19.8s,baz=298,slow=33						
CTA	**Charters Tower**	**21.07**	**242**	P	**P**	**12 28 47.5**	**+0.6**
	3.9nm,0.6s,mb3.9,baz=77,slow=11,SNR=5.3						
CTA				LR	LR	12 35 46.9	
	comp=Z,91nm,19.1s,MS3.2,baz=328,slow=33						
CTAO	**Charters Tower**	**21.07**	**242**	*e*P	**P**	**12 28 48.4**	**+1.5**
	4.2nm,0.6s,mb4.0						

STKA	**Stephens Creek**	**30.76**	**223**	LR	LR	12 40 15.8		
	comp=Z,68nm,19.3s,MS3.3,baz=25,slow=32							
WRAB	**Tennant Creek**	**31.72**	**249**	*e*P	**P**	**12 30 25.9**	**-0.4**
	45nm,1.4s,mb5.1							
WB2	**Warramunga Arr**	**31.72**	**249**	*e*P	**P**	**12 30 26.0**	**-0.3**
WRA	**Warramunga Arr**	**31.73**	**249**	P	**P**	**12 30 26.3**	**-0.1**
	2.9nm,0.9s,mb4.1,baz=82,slow=9.0,SNR=26							
WRA				PcP	PcP	12 33 17.9	+0.4	
	0.4nm,0.8s,baz=78,slow=3.5,SNR=5.4							
KAKA	**Kakadu**	**32.85**	**263**	*e*P	**P**	**12 30 35.7**	**-0.5**	
	2.8nm,0.5s,mb4.5							
ASAR	**Alice Springs**	**33.06**	**243**	P	**P**	**12 30 37.4**	**-0.6**	
	2.7nm,1.1s,mb4.1,baz=69,slow=10.0,SNR=16							
ASAR				LR	LR	12 44 11.9		
	comp=Z,6.5nm,20.9s,MS2.3,baz=26,slow=36							
FITZ	**Fitzroy Crossi**	**39.61**	**255**	*e*P	**P**	**12 31 33.8**	**+0.5**	
	2.5nm,0.6s,mb4.1							
FITZ	**Fitzroy Crossi**	**39.61**	**255**	P	**P**	**12 31 34.4**	**+1.0**	
	3.6nm,0.7s,mb4.2,baz=75,slow=6.6,SNR=15							
VNDA	**Vanda**	**66.78**	**181**	P	**P**	**12 34 53.0**	**+0.1**	
	0.2nm,0.4s,mb3.5,baz=2.5,slow=3.9,SNR=4.1							
VNDA	**Vanda**	**66.78**	**181**	P	**P**	**12 34 53.7**	**+0.8**	
SBA	**Scott Base**	**67.08**	**180**	*e*P	**P**	**12 34 54.2**	**-0.6**	
	3.0nm,1.0s,mb4.3							
ILAR	**Eielson Array**	**83.19**	**18**	P	**P**	**12 36 26.8**	**-0.2**	
	1.1nm,0.5s,mb4.2,baz=238,slow=5.9,SNR=26							
NVAR	**Mina Array Bea**	**85.72**	**50**	P	**P**	**12 36 40.7**	**+0.5**	
	0.8nm,0.5s,mb3.9,baz=227,slow=5.5,SNR=4.9							
NVAR	**Mina Array Bea**	**85.72**	**50**	P	**P**	**12 36 40.7**	**+0.5**	
PDAR	**Pinedale Array**	**93.24**	**47**	P	**P**	**12 37 16.1**	**+0.5**	
	1.0nm,1.2s,mb4.1,baz=270,slow=2.7,SNR=3.4							
MKAR	**Makanchi Array**	**93.42**	**317**	P	**P**	**12 37 17.0**	**+0.6**	
	0.8nm,0.9s,mb4.2,baz=92,slow=7.3,SNR=5.6							
MKAR	**Makanchi Array**	**93.42**	**317**	P	**P**	**12 37 17.0**	**+0.6**	
YKA	**Yellowknife Ar**	**94.65**	**27**	P	**P**	**12 37 20.6**	**-1.0**	
	0.2nm,0.6s,mb3.8,baz=259,slow=4.6,SNR=11							
YKA	**Yellowknife Ar**	**94.65**	**27**	P	**P**	**12 37 20.6**	**-1.0**	
ARCES	**ARCESS Array B**	**116.10**	**346**	PKP	PKPdf	12 42 42.2	-0.2	
	2.3nm,0.9s,baz=29,slow=1.4,SNR=5.2							
ARCES	**ARCESS Array B**	**116.10**	**346**	PKP	PKPdf	12 42 42.2	-0.2	

IDC ***24*** *12:26:26.5±1.1, 19.66N×122.46E, mb4.0/8, mb1 4.2/8, mb1mx3.9/22, MS3.5/1, Ms1 3.5/1, ms1mx2.7/21, Error ellipse: s-maj=98.4km s-min=15.4km az=65.0*
NEIC ***24*** *12:26:34.2±0.7, 19.62N×122.44E, h60km, Error ellipse: s-maj=66.6km s-min=9.4km az=65.0*
MAN ***24*** *12:26:55.0, 19.42N×122.50E, h1km, mb3.8, ML2.5, MS2.0*
ISC 24 12:26:47.6±0.9, 19.71N±0.08×122.5E±0.2, h215km±8km, n19, σ0$91/20, mb3.7/9, 1C, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BBP	**Basco**	**0.88**	**326**	*e*P	**P**	**12 27 16.9**	**-1.5**
SGCP	**Mt. Cagua**	**1.52**	**196**	*e*P	**P**	**12 27 23.5**	**+0.4**
CVP	**Callao Caves**	**2.09**	**198**	⇑*i*P	**P**	**12 27 28.8**	**+0.3**
	39µm,0.4s						
APYP	**Conner**	**2.18**	**213**	*e*P	**P**	**12 27 30.1**	**+0.7**
APYP				*e*S	**S**	**12 28 01.1**	**-0.7**
PALP	**Palanan**	**2.63**	**181**	*e*P	**P**	**12 27 35.0**	**+0.7**
ABRA	**Dolores**	**2.65**	**220**	*e*P	**P**	**12 27 35.3**	**+0.8**
ABRA				*e*S	**S**	**12 28 10.1**	**-0.8**
CAUP	**Cauayan**	**2.82**	**193**	*e*P	**P**	**12 27 39.1**	**+2.7**
BALP	**Baler**	**4.04**	**193**	*e*P	**P**	**12 27 50.2**	**-0.7**
CBIJ	**Chichi jima**	**19.50**	**64**	LR	LR	12 37 20.5	
	comp=Z,140nm,20.8s,baz=98,slow=34						
SONM	**Songino Array**	**30.95**	**339**	P	**P**	**12 32 45.8**	**-0.8**
	0.3nm,0.4s,mb3.3,baz=153,slow=6.4,SNR=3.1						
FITZ	**Fitzroy Crossi**	**37.70**	**175**	P	**P**	**12 33 43.5**	**-0.7**
	1.2nm,0.8s,mb3.5,baz=189,slow=6.8,SNR=4.3						
WRAB	**Tennant Creek**	**41.07**	**163**	*e*P	**P**	**12 34 11.0**	**-1.0**
	4.7nm,0.6s,mb4.1						
WRA	**Warramunga Arr**	**41.08**	**163**	P	**P**	**12 34 11.3**	**-0.7**
	1.8nm,0.6s,mb3.7,baz=339,slow=8.1,SNR=30						
MKAR	**Makanchi Array**	**42.44**	**319**	P	**P**	**12 34 23.9**	**+1.0**
	1.5nm,0.4s,mb3.8,baz=110,slow=9.1,SNR=26						
ASAR	**Alice Springs**	**44.52**	**165**	P	**P**	**12 34 40.0**	**+0.2**
	0.5nm,0.4s,mb3.2,baz=350,slow=7.4,SNR=29						
ZAL	**Zalesovo**	**44.67**	**329**	P	**P**	**12 34 40.1**	**-0.4**
	1.1nm,0.4s,mb3.6,baz=239,slow=4.0,SNR=5.4						
CTA	**Charters Tower**	**45.89**	**148**	P	**P**	**12 34 51.6**	**+0.9**
	5.9nm,1.0s,mb3.9,baz=203,slow=18,SNR=2.7						
KURK	**Kurchatov**	**46.33**	**322**	*e*P	**P**	**12 34 54.7**	**+1.1**
STKA	**Stephens Creek**	**54.46**	**160**	P	**P**	**12 35 54.5**	**-0.6**
	2.4nm,0.5s,mb4.0,baz=320,slow=16,SNR=4.0						

NIED ***24*** *12:36:00, 32.50N×130.60E, h5km, Mw3.7 Best double couple: M0 3.99×10^14 NP1:φ=296°, δ=86°, λ=47°. NP2:φ=202°, δ=43°, λ=174°.*
JMA ***24*** *12:36:58.7, 32.49N×130.58E, h8km±1km, M3.6 Broadband fault plane solution: P waves. NP1:φ=201°, δ=45°, λ=177°. NP2:φ=293°, δ=88°, λ=45°. Principal axes: T Plg32°, Azm167°; N Plg45°, Azm296°; P Plg28°, Azm58°; JMA Felt II J1.*
ISC 24 12:36:58.6±0.9, 32.49N±0.04×130.58E±0.06, h8km±15km, n5, σ0$16/9, 3C-2D, Kyushu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIU2	**Izumi 2**	**0.21**	**74**	⇓P	**Pg**	**12 37 02.7**	**-0.2**
JIU2				S	**Sg**	**12 37 06.0**	**+0.2**
JZO	**Okuchi**	**0.35**	**177**	⇑P	**Pg**	**12 37 05.6**	**0.0**
JZO				S	**Sg**	**12 37 10.6**	**+0.2**
JHD	**Hondo**	**0.37**	**266**	⇓P	**Pg**	**12 37 06.1**	**-0.1**
JTA	**Tamana**	**0.47**	**355**	⇑P	**Pg**	**12 37 08.0**	**-0.1**
JTA				S	**Sg**	**12 37 14.7**	**+0.2**
JTZ	**Takazaki**	**0.73**	**143**	⇑P	**Pb**	**12 37 13.2**	**+0.1**
JTZ				S	**Sg**	**12 37 22.7**	**-0.2**

IDC 24 12:58:37.6±3.1, 8.36S×109.60E, mb3.5/4, mb1 3.6/4, mb1mx3.5/15, Error ellipse: s-maj=140.0km s-min=23.5km az=51.0, Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**26.56**	**118**	P	P	13 04 17.4	-1.9
	0.4nm,0.6s,baz=291,slow=12,SNR=3.3						
ASAR	**Alice Springs**	**27.81**	**126**	P	P	13 04 29.0	-1.6
	0.2nm,0.7s,baz=304,slow=9.0,SNR=5.3						
SONM	**Songino Array**	**56.02**	**357**	P	P	13 08 18.5	-1.9
	0.3nm,0.4s,baz=173,slow=8.7,SNR=4.4						
MKAR	**Makanchi Array**	**60.05**	**339**	P	P	13 08 46.1	-2.7
	0.5nm,0.3s,baz=150,slow=8.3,SNR=9.6						

IDC ***24*** *13:38:13.7±52.0, 19.42S×179.89E, mb4.4/3, mb1 4.6/3, mb1mx3.9/12, Error ellipse: s-maj=939.0km s-min=152.8km az=80.0*
ISC 24 13:37:26.1±5.0, 18.7S±0.8×173.3W±0.7, h33km, n9, σ0$54/9, mb4.6/6, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**19.30**	**257**	*e*P	**P**	**13 41 51.4**	**+0.2**
CTA	**Charters Tower**	**38.14**	**261**	*e*P	**P**	**13 44 44.3**	**+0.2**
	12nm,0.4s,mb5.0						
STKA	**Stephens Creek**	**42.57**	**243**	P	**P**	**13 45 21.1**	**+0.3**
	1.3nm,0.8s,mb3.7,baz=80,slow=12,SNR=3.3						
WB2	**Warramunga Arr**	**49.27**	**259**	*e*P	**P**	**13 46 13.1**	**-0.9**
AS12	**Alice Springs**	**49.28**	**255**	*e*P	**P**	**13 46 13.6**	**-0.4**
	8.0nm,0.6s,mb4.9						
ASAR	**Alice Springs**	**49.28**	**255**	P	**P**	**13 46 13.6**	**-0.4**
	11nm,0.6s,mb5.0,baz=93,slow=8.5,SNR=203						
WRA	**Warramunga Arr**	**49.28**	**259**	P	**P**	**13 46 13.6**	**-0.6**
	2.9nm,0.4s,mb4.7,baz=96,slow=7.7,SNR=78						
KAKA	**Kakadu**	**52.48**	**268**	*e*P	**P**	**13 46 38.8**	**+0.4**
	7.5nm,0.4s,mb5.0						
FITZ	**Fitzroy Crossi**	**57.70**	**260**	*e*P	**P**	**13 47 17.1**	**+0.8**
	1.6nm,0.4s,mb4.4						

NEIC ***24*** *14:23:51.9, 40.62N×33.06E, h8km, MD3.5(ISK), After ISK.*
ISK ***24*** *14:23:51.9, 40.62N×33.06E, h8km, MD3.5*
ISC 24 14:23:52.6±0.5, 40.63N±0.04×33.06E±0.04, h8km, n26, σ0$84/41, 13C, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ELDT	**Eldivan**	**0.31**	**116**	⇑*i*P	**Pg**	**14 23 58.7**	**-0.3**
ELDT				*i* S	**Sg**	**14 24 03.3**	**+0.2**
ELDT	**Eldivan**	**0.31**	**116**	⇑*i*P	**Pg**	**14 23 58.7**	**-0.3**
ELDT				*i* S	**Sg**	**14 24 03.3**	**+0.2**
CANT	**Cankiri**	**0.42**	**93**	*e*PG	**Pg**	**14 24 01.3**	**+0.1**
SAFT	**Safranbolu**	**0.68**	**335**	*i* PG	**Pg**	**14 24 05.6**	**-0.6**
ANTO	**Ankara**	**0.78**	**195**	*i* PG	**Pg**	**14 24 07.3**	**-1.0**
TOS	**Tosya**	**0.84**	**60**	PG	**Pg**	**14 24 08.1**	**-1.2**
BALT	**Daday**	**0.94**	**15**	⇑*i*P	**Pb**	**14 24 10.2**	**-0.5**
BALT				*i* S	**Sb**	**14 24 22.4**	**-0.7**
CTKT	**Corum**	**1.31**	**90**	⇑*i*P	**Pb**	**14 24 16.8**	**-0.3**
CTKT				*i* S	**Sb**	**14 24 35.2**	**+1.2**
CTKT	**Corum**	**1.31**	**90**	⇑*i*P	**Pb**	**14 24 16.8**	**-0.3**
CTKT				*i* S	**Sb**	**14 24 35.2**	**+1.2**
KAMT	**Kaman**	**1.35**	**158**	*i* PN	**Pn**	**14 24 17.6**	**-0.2**
MDU	**Mudurnu**	**1.42**	**264**	*e*PN	**Pn**	**14 24 18.3**	**-0.5**
BZK	**Bozkurt**	**1.51**	**28**	*e*PN	**Pn**	**14 24 20.1**	**0.0**
BYBT	**Boyabat**	**1.54**	**56**	*i* PN	**Pn**	**14 24 20.6**	**+0.1**
BOYT	**Boyabat**	**1.60**	**60**	⇑*i*P	**Pn**	**14 24 21.6**	**+0.2**
BOYT				*i* S	**Sb**	**14 24 43.8**	**+1.4**
BOYT	**Boyabat**	**1.60**	**60**	⇑*i*P	**Pn**	**14 24 21.6**	**+0.2**
BOYT				*i* S	**Sb**	**14 24 43.8**	**+1.4**
HENT	**Hendek**	**1.66**	**278**	⇑*i*P	**Pn**	**14 24 23.2**	**+1.1**
HENT				*i* S	**Sn**	**14 24 48.6**	**+4.8**
HENT	**Hendek**	**1.66**	**278**	⇑*i*P	**Pn**	**14 24 23.2**	**+1.1**
HENT				*i* S	**Sn**	**14 24 48.6**	**+4.8**
KIZT	**Kizilcal**	**1.97**	**208**	*e*PN	**Pn**	**14 24 25.9**	**-0.7**
YOZ	**Yozgat**	**1.99**	**119**	*i* PN	**Pn**	**14 24 26.7**	**-0.3**
ESKT	**Eskisehir**	**2.02**	**238**	*e*PN	**Pn**	**14 24 27.3**	**-0.2**
ESKT	**Eskisehir**	**2.02**	**238**	⇑*i*P	**Pn**	**14 24 27.6**	**+0.2**
ESKT				*i* S	**Sn**	**14 24 57.4**	**+4.2**
ESKT	**Eskisehir**	**2.02**	**238**	⇑*i*P	**Pn**	**14 24 27.6**	**+0.2**
ESKT				*i* S	**Sn**	**14 24 57.4**	**+4.2**
ULDT	**Uludag**	**3.04**	**262**	⇑P	**Pn**	**14 24 42.5**	**+0.6**
ULDT				*i* S	**Sn**	**14 25 22.4**	**+3.5**
ULDT	**Uludag**	**3.04**	**262**	⇑P	**Pn**	**14 24 42.5**	**+0.6**
ULDT				*i* S	**Sn**	**14 25 22.4**	**+3.5**
SVST	**Sivas**	**3.10**	**105**	*i* P	**Pn**	**14 24 50.2**	**+7.4**
SVST				*i* S	**Sn**	**14 25 33.5**	**+13**
SVST	**Sivas**	**3.10**	**105**	*i* P	**Pn**	**14 24 50.2**	**+7.4**
SVST				*i* S	**Sn**	**14 25 33.5**	**+13**

LDG ***24*** *14:51:37.6±0.4, 51.86N×7.70E, h1km, Ml2.7/3, Error ellipse: s-maj=6.0km s-min=5.6km az=105.0, Suspected Mining induced.*
NEIC ***24*** *14:51:41.0±0.9, 51.55N×7.77E, h10km, ML2.7(LDG), ML2.2(SZGRF), Error ellipse: s-maj=15.2km s-min=10.2km az=122.0*
BUG ***24*** *14:51:40.6, 51.66N×7.76E, h1km, ML2.1*
BNS ***24*** *14:51:41.3±1.1, 51.70N×7.74E, h2km±9km, ML2.2*
BGR ***24*** *14:51:41.9±0.4, 51.61N×7.75E, h1km, ML2.2/3, Error ellipse: s-maj=4.4km s-min=3.3km az=147.0*
ISC 24 14:51:40.1±0.5, 51.57N±0.02×7.75E±0.05, n19, σ1$32/38, 1C-1D, Germany

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BAHL	**Ahlen**	**0.17**	**16**	Pg	**Pg**	**14 51 43.8**	**+0.3**
BAHL				Sg	**Sg**	**14 51 45.9**	**+0.1**
BUG	**Bochum--Univer**	**0.33**	**246**	⇑*i*Pg	**Pg**	**14 51 48.6**	**+2.0**
BUG				Sg	**Sg**	**14 51 54.5**	**+3.5**
BUG	**Bochum--Univer**	**0.33**	**246**	*e*Pg	**Pg**	**14 51 48.6**	**+2.0**
BUG				*e*Sg	**Sg**	**14 51 54.5**	**+3.5**
WTSB	**Winterswijk**	**0.71**	**304**	*e*Pg	**Pg**	**14 51 54.9**	**+0.7**
WTSB				*e*Sg	**Sg**	**14 52 04.4**	**+0.7**
	SNR=3.5						
WTSB	**Winterswijk**	**0.71**	**304**	⇓*i*Pg	**Pg**	**14 51 54.8**	**+0.5**
	13nm,0.4s						
WTSB				*e*Sg	**Sg**	**14 52 03.0**	**-0.7**
BNS	**Bensberg**	**0.71**	**211**	*e*Sg	**Sg**	**14 52 08.1**	**+4.4**
IBBN	**Ibbenburen**	**0.73**	**0**	*e*Pg	**Pg**	**14 51 55.1**	**+0.4**
IBBN				*e*Sg	**Sg**	**14 52 03.7**	**-0.9**
	SNR=3.4						
IBBN	**Ibbenburen**	**0.73**	**0**	*e*Pg	**Pg**	**

	6.3nm,1.6s,mb4.2							
MKAR	**Makanchi Array**	**80.41**	**319**	P	**P**	**15 12 52.3**	**-0.3**
	0.9nm,0.8s,mb3.6,baz=91,slow=9.6,SNR=6.6							
ZAL	**Zalesovo**	**81.50**	**327**	P	**P**	**15 12 58.1**	**0.0**
	0.9nm,0.6s,mb3.8,baz=278,slow=4.3,SNR=5.9							
MCK	**McKinley**	**82.68**	**23**	*e*P	**P**	**15 13 03.5**	**-0.5**
	7.1nm,1.0s,mb4.5							
COLA	**College**	**83.66**	**22**	*e*P	**P**	**15 13 09.0**	**+0.1**
	9.2nm,0.8s,mb4.7							
QSPA	**South Pole Qui**	**83.80**	**180**	*e*P	**P**	**15 13 09.2**	**-0.1**
	3.5nm,1.0s,mb4.1							
ILAR	**Eielson Array**	**83.97**	**22**	P	**P**	**15 13 09.6**	**-0.9**
	5.4nm,0.7s,mb4.5,baz=260,slow=5.3,SNR=45							
NVAR	**Mina Array Bea**	**94.06**	**52**	P	**P**	**15 13 59.6**	**+0.7**
	1.1nm,0.8s,mb4.2,baz=264,slow=4.1,SNR=6.1							
YKA	**Yellowknife Ar**	**97.31**	**28**	P	**P**	**15 14 13.3**	**+0.1**
	0.5nm,0.5s,mb4.2,baz=270,slow=4.7,SNR=19							
PDAR	**Pinedale Array**	**100.84**	**48**	P	P	15 14 29.5	-0.1
	0.3nm,0.7s,baz=270,slow=1.8,SNR=2.9							
GERES	**GERESS Array B**	**124.44**	**327**	PKP	PKPdf	15 19 39.7	+1.4
	0.4nm,0.6s,baz=31,slow=5.7,SNR=2.7							
BDFB	**Brasilia**	**151.06**	**139**	PKPbc	PKPdf	15 20 32.4	+5.4
	1.9nm,0.4s,baz=290,slow=3.9,SNR=4.2							

*JMA **24** 15:04:59.3±0.2,24.84N×122.13E,h112km,M2.3*
*TAP **24** 15:04:59.4,24.87N×122.04E,h105km,ML3.6*
ISC 24 15:04:59.1±2.3,24.9N±0.4×122.1E±0.2,h106km±34km,n6, σ0§29/11,Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
YOJ	**Yonaguni jima**	**0.94**	**118**	P	**P**		**15 05 19.7**	**+0.1**
YOJ				*e*S	**S**		**15 05 35.1**	**+0.1**
IRIF	**Iriomote-Funau**	**1.58**	**111**	P	**P**		**15 05 26.7**	**-0.5**
IRIF				S	**S**		**15 05 47.9**	**-0.2**
HATJ	**Hateruma jima**	**1.76**	**118**	*e*S	**S**		**15 05 52.3**	**+0.3**
JKRS	**Kuro-shima**	**1.86**	**111**	P	**P**		**15 05 30.7**	**+0.2**
JKRS				S	**S**		**15 05 54.1**	**+0.1**
JIJ	**Ishigaki jima**	**1.93**	**106**	P	**P**		**15 05 31.3**	**-0.2**
JIJ				S	**S**		**15 05 55.1**	**-0.6**
JTJ	**Tarama**	**2.38**	**96**	P	**P**		**15 05 37.8**	**+0.3**
JTJ				S	**S**		**15 06 06.5**	**+0.3**

*IDC **24** 15:25:57.3±1.5,59.72N×24.80E,mb3.1/1,mb1 3.5/5, mb1mx3.3/21,ML3.7/3,Error ellipse: s-maj=16.2km s-min=7.1km az=141.0*
*NAO **24** 15:25:59.8±2.8,59.95N×24.35E,ML2.7*
*HEL **24** 15:25:59.3±0.4,59.81N×24.59E,ML2.5,ML2.7(NAO), Explosion*
*BER **24** 15:25:59.3±2.6,59.82N×24.63E,ML2.7(NAO), Suspected explosion*
ISC 24 15:25:53.6±0.9,59.67N±0.05×24.54E±0.09,n23,σ1§32/37, mb3.1/1,Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
MEF	**Metsahovi**	**0.56**	**352**	*e*P	**Pg**		**15 26 06.3**	**+1.6**
MEF				*e*S	**Sg**		**15 26 12.4**	**+0.3**
PVF	**Pernaja**	**1.10**	**36**	*e*P	**Pb**		**15 26 16.1**	**+0.9**
PVF				*e*S	**Sb**		**15 26 29.2**	**-0.7**
FIA0	**FINESS Array S**	**1.94**	**22**	*e*P	**Pn**		**15 26 31.0**	**+2.9**
FIA0				*e*S	**Sn**		**15 26 54.0**	**+0.6**
FIA0	**FINESS Array S**	**1.94**	**22**	Pn	**Pg**		**15 26 30.9**	**-1.3**
	baz=200,slow=16							
FIA0				Lg			15 26 53.8	
	baz=202,slow=37							
FINES	**FINESS Array B**	**1.94**	**22**	Pg	**Pg**		**15 26 30.9**	**-1.3**
	14nm,0.3s,baz=200,slow=16,SNR=512							
FINES				Lg			15 26 54.2	
	16nm,0.3s,baz=197,slow=29,SNR=25							
KEF	**Keuruu**	**2.51**	**4**	*e*P	**Pn**		**15 26 40.3**	**+3.9**
KEF				MSG			15 27 13.6	
	comp=Z,30nm,0.2s							
KAF	**Kangasniemi**	**2.60**	**19**	*e*P	**Pn**		**15 26 41.2**	**+3.6**
KAF				*e*SB	**Sb**		**15 27 13.0**	**-0.5**
KAF				MSG			15 27 15.8	
	comp=Z,15nm,0.3s							
SUF	**Sumiainen**	**3.16**	**14**	*e*P	**Pn**		**15 26 48.6**	**+3.1**
VAF	**Ylistaro**	**3.50**	**346**	*e*P	**Pn**		**15 26 54.5**	**+4.0**
VAF				*e*SB	**Sb**		**15 27 40.3**	**+0.6**
JOF	**Joensuu**	**4.61**	**42**	*e*P	**Pn**		**15 27 07.0**	**+0.8**
JOF				*e*SG	**Sg**		**15 28 18.1**	**-9.1**
HFS	**Hagfors**	**5.48**	**280**	Pn	**Pn**		**15 27 19.9**	**+1.4**
	baz=83,slow=16							
HFS				Sn	**Sn**		**15 28 22.9**	**-0.3**
	baz=90,slow=37							
HFS				Lg			15 28 47.3	
	baz=82,slow=37							
HFS	**Hagfors**	**5.48**	**280**	*e*P	**Pn**		**15 27 19.9**	**+1.4**
HFS				*e*S	**Sn**		**15 28 22.9**	**-0.3**
HFS				*e*SG	**Sg**		**15 28 47.3**	**-8.7**
HFS	**Hagfors**	**5.48**	**280**	Pn	**Pn**		**15 27 19.7**	**+1.2**
	comp=Z,0.1nm,0.3s,baz=90,slow=16,SNR=11							
HFS				Sn	**Sn**		**15 28 23.3**	**+0.1**
	comp=Z,0.3nm,0.3s,baz=83,slow=24,SNR=7.2							
NOA	**NORSAR Array B**	**6.75**	**287**	Pn	**Pn**		**15 27 36.0**	**-0.4**
	comp=Z,0.8nm,0.3s,baz=97,slow=13,SNR=4.5							
NOA				Sn	**Sn**		**15 28 51.3**	**-3.7**
	comp=Z,0.7nm,0.3s,baz=162,slow=12,SNR=2.8							
NOA				Lg			15 29 23.9	
	comp=Z,1.5nm,0.3s,baz=142,slow=16,SNR=4.0							
APA0	**Apatity Array**	**8.80**	**22**	Pn	**P**		**15 28 03.5**	**-1.5**
	baz=214,slow=16							
APA0	**Apatity Array**	**8.80**	**22**	*e*P	**P**		**15 28 03.5**	**-1.5**
ARA0	**ARCESS Array S**	**9.92**	**2**	Pn	**P**		**15 28 18.1**	**-2.1**
	baz=174,slow=16							
ARA0				Sn	**Sn**		**15 30 04.0**	**-10**
	baz=176,slow=28							
ARA0	**ARCESS Array S**	**9.92**	**2**	*e*P	**P**		**15 28 18.1**	**-2.1**
ARA0				*e*S	**Sn**		**15 30 04.0**	**-10**
ARCES	**ARCESS Array B**	**9.92**	**2**	Pn	**P**		**15 28 18.1**	**-2.1**
	comp=Z,1.6nm,0.3s,baz=180,slow=15,SNR=63							
ARCES				Sn	**Sn**		**15 30 04.3**	**-9.2**
	comp=Z,0.3nm,0.3s,baz=184,slow=24,SNR=3.3							
SPA0	**Spitsbergen Ar**	**18.79**	**355**	P	**P**		**15 30 15.7**	**-0.4**
	baz=166,slow=11							
SPA0	**Spitsbergen Ar**	**18.79**	**355**	*e*P	**P**		**15 30 15.7**	**-0.4**
SPITS	**Spitsbergen Ar**	**18.79**	**355**	P	**P**		**15 30 15.7**	**-0.4**
	comp=Z,0.1nm,0.3s,baz=165,slow=14,SNR=9.4							
MKAR	**Makanchi Array**	**35.70**	**85**	P	**P**		**15 32 55.4**	**+0.1**
	comp=Z,0.1nm,0.3s,mb3.1,baz=314,slow=6.7,SNR=4.4							

*NEIC **24** 15:43:05.6±2.6,51.54N×16.35E,h5km,ML2.1(BRG), Error ellipse: s-maj=28.3km s-min=11.9km az=217.0*
*WAR **24** 15:43:07.3,51.51N×16.09E,h1km,Location given by Rudna mine, origin time based upon KSP*
*PRU **24** 15:43:10.3,51.36N×16.12E*
ISC 24 15:43:04.1±1.0,51.51N±0.05×16.12E±0.04,n13,σ1§20/27, Poland

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
KSP	**Ksiaz**	**0.68**	**171**	*e*Pg	**Pg**		**15 43 19.7**	**+2.0**
KSP				*e*Sg	**Sg**		**15 43 28.4**	**+1.7**
KSP	**Ksiaz**	**0.68**	**171**	*e*PG	**Pg**		**15 43 20.0**	**+2.3**
KSP				*e*SG	**Sg**		**15 43 28.0**	**+1.3**
UPC	**Upice**	**1.01**	**184**	*e*PG	**Pg**		**15 43 25.7**	**+1.5**
UPC				*e*SG	**Sg**		**15 43 38.6**	**+0.9**
DPC	**Dobruska-Polom**	**1.17**	**174**	*e*PG	**Pg**		**15 43 28.4**	**+0.9**
DPC				*e*SG	**Sg**		**15 43 42.8**	**-0.3**
BRG	**Berggiesshubel**	**1.51**	**246**	*i* Pg	**Pg**		**15 43 34.9**	**+0.5**
BRG				*i* Sg	**Sg**		**15 43 54.7**	**+0.2**
PRU	**Pruhonice**	**1.83**	**214**	*e*PG	**Pg**		**15 43 40.1**	**-0.5**
PRU				*e*SG	**Sg**		**15 44 04.4**	**-0.5**
	17nm,0.4s							
MORC	**Moravsky Berou**	**1.96**	**152**	*e*Pn	**Pn**		**15 43 39.0**	**+0.1**
CLL	**Collm**	**1.97**	**265**	*i* SG	**Sg**		**15 44 08.7**	**-0.9**
OKC	**Ostrava-Krasne**	**2.11**	**142**	*e*PG	**Pg**		**15 43 46.2**	**-0.1**
OKC				*e*SG	**Sg**		**15 44 12.9**	**-1.6**
NKC	**Novy Kostel**	**2.66**	**243**	*e*PN	**Pn**		**15 43 50.9**	**+2.0**
NKC				*e*PG	**Pg**		**15 43 57.5**	**+0.3**
NKC				*e*SG	**Sg**		**15 44 31.8**	**-0.8**
OJC	**Ojcow**	**2.66**	**118**	*e*Pg	**Pg**		**15 43 56.1**	**-1.2**
OJC				*e*Sg	**Sg**		**15 44 31.6**	**-1.2**
OJC	**Ojcow**	**2.66**	**118**	*e*PG	**Pg**		**15 43 56.0**	**-1.3**
OJC				*e*SG	**Sg**		**15 44 32.0**	**-0.8**
KHC	**Kasperske Hory**	**2.89**	**215**	*e*PN	**Pn**		**15 43 53.5**	**+1.3**
KHC				*e*PG	**Pg**		**15 43 59.2**	**-2.6**
KHC				*e*SN	**Sn**		**15 44 27.1**	**-1.1**
KHC				*e*SG	**Sg**		**15 44 37.1**	**-3.2**

*IDC **24** 15:58:32.3±2.3,22.45N×144.57E,mb3.8/7,mb1 3.9/7, mb1mx3.7/21,Error ellipse: s-maj=101.0km s-min=19.1km az=81.0*
*NEIC **24** 15:58:43.7±1.5,22.36N×144.31E,h85km,Error ellipse: s-maj=63.4km s-min=9.9km az=79.0*
ISC 24 15:58:42.1±2.1,22.4N±0.2×144.2E±0.7,h85km,n10, σ0§44/10,mb3.7/7,Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
WRAB	**Tennant Creek**	**43.11**	**194**	*e*P	**P**		**16 06 36.1**	**+0.4**
WRA	**Warramunga Arr**	**43.12**	**194**	P	**P**		**16 06 36.5**	**+0.6**
	0.4nm,0.3s,mb3.7,baz=11,slow=8.4,SNR=41							
FITZ	**Fitzroy Crossi**	**44.11**	**206**	P	**P**		**16 06 43.6**	**-0.3**
	0.4nm,0.3s,mb3.6,baz=27,slow=11,SNR=5.5							
ASAR	**Alice Springs**	**46.82**	**193**	P	**P**		**16 07 05.3**	**0.0**
	0.2nm,0.4s,mb3.2,baz=12,slow=7.7,SNR=9.7							
STKA	**Stephens Creek**	**53.98**	**183**	P	**P**		**16 07 58.9**	**-0.8**
	2.0nm,0.9s,mb4.2,baz=30,slow=8.1,SNR=3.0							
ZAL	**Zalesovo**	**54.29**	**321**	P	**P**		**16 08 01.2**	**-0.4**
	0.6nm,0.3s,mb4.1,baz=278,slow=11,SNR=3.7							
MKAR	**Makanchi Array**	**54.95**	**312**	P	**P**		**16 08 07.0**	**+0.4**
	0.5nm,0.5s,mb3.8,baz=89,slow=8.8,SNR=9.1							
MKAR				PcP	PcP		16 09 07.2	0.0
	0.6nm,0.5s,baz=79,slow=4.2,SNR=8.2							
KURK	**Kurchatov**	**57.64**	**317**	*e*P	**P**		**16 08 25.4**	**-0.3**
ZRNK	**Zerenda**	**63.62**	**319**	P	**P**		**16 09 06.0**	**-0.2**
FINES	**FINESS Array B**	**83.00**	**335**	P	**P**		**16 10 59.4**	**+0.5**
	0.5nm,0.4s,mb3.7,baz=56,slow=5.0,SNR=8.1							

*ISK **24** 16:15:04.6,35.82N×35.75E,h4km,MD2.9*
*NSSC **24** 16:15:12.8,36.13N×36.31E,h27km±3km*
ISC 24 16:15:07.8±1.4,36.28N±0.06×35.78E±0.06,h14km±9km, n7,σ0§99/12,7D,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
HTY	**Hatay**	**0.34**	**119**	*i* PG	**Pg**		**16 15 13.7**	**-1.2**
HTY				*i* SG	**Sg**		**16 15 20.5**	**+0.8**
ARNB	**Al Arnab**	**0.45**	**159**	⇓P	**Pg**		**16 15 21.8**	**+4.7**
ARNB				⇓S	**Sg**		**16 15 27.5**	**+4.2**
BTCH	**Batrach**	**0.60**	**114**	⇓P	**Pb**		**16 15 18.2**	**-1.4**
SLNF	**Slenfeh**	**0.78**	**152**	⇓P	**Pb**		**16 15 23.6**	**+1.1**
SLNF				⇓S	**Sb**		**16 15 32.3**	**-0.3**
DRWC	**Darouich**	**0.80**	**65**	⇓P	**Pb**		**16 15 23.9**	**+1.0**
DRWC				⇓S	**Sb**		**16 15 33.0**	**-0.2**
GAZ	**Gaziantep**	**1.46**	**52**	*e*PN	**Pn**		**16 15 37.9**	**+4.0**
IKL	**Isikli**	**1.69**	**269**	*e*PN	**Pn**		**16 15 36.5**	**-0.7**
IKL				*e*SN	**Sn**		**16 15 59.2**	**+0.5**

*NEIC **24** 16:19:58.5,37.53S×176.60E,h185km,After WEL.*
WEL 24 16:19:59.5±0.3,37.59S×176.66E,h177km±3km,ML4.1/6, 2C-1D,Error ellipse: s-maj=3.0km s-min=2.8km az=0.0, North Island

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
URZ	**Urewera**	**0.76**	**152**	⇓PN	P		16 20 25.3	-0.2
URZ				SN	S		16 20 45.1	-0.6
URZ	**Urewera**	**0.76**	**152**	P	P		16 20 25.3	-0.3
MWZ	**Matawai**	**1.01**	**137**	PN	P		16 20 27.1	-0.1
MWZ				SN	S		16 20 48.3	-0.3
MWZ	**Matawai**	**1.01**	**137**	P	P		16 20 27.1	-0.1
MWZ				S	S		16 20 49.6	+1.0
MXZ	**Matakaoa Point**	**1.31**	**89**	PN	P		16 20 29.7	-0.1
MXZ				SN	S		16 20 52.7	-0.5
MXZ	**Matakaoa Point**	**1.31**	**89**	*e*P	P		16 20 29.7	-0.1
PUZ	**Puketiti**	**1.36**	**111**	PN	P		16 20 29.4	-0.8
PUZ	**Puketiti**	**1.36**	**111**	P	P		16 20 30.0	-0.2
PUZ				S	S		16 20 56.8	+2.8
BKZ	**Black Stump Fm**	**1.58**	**185**	PN	P		16 20 31.8	-0.6
BKZ				SN	S		16 20 56.5	-1.3
BKZ	**Black Stump Fm**	**1.58**	**185**	*e*P	P		16 20 31.9	-0.5
KNZ	**Kokohu**	**1.64**	**151**	PN	P		16 20 33.1	+0.2
KNZ				SN	S		16 20 58.4	-0.3
KNZ	**Kokohu**	**1.64**	**151**	P	P		16 20 33.2	+0.3
KNZ				S	S		16 20 58.4	-0.3
MGZ	**Maungaku**	**1.66**	**212**	PN	P		16 20 33.4	+0.2
MGZ	**Maungaku**	**1.66**	**212**	P	P		16 20 33.6	+0.4
HIZ	**Hauiti**	**1.69**	**236**	⇑PN	P		16 20 33.3	-0.2
KAVZ	**Karewarewa**	**1.70**	**208**	PN	P		16 20 33.6	0.0
KAVZ	**Karewarewa**	**1.70**	**208**	P	P		16 20 34.1	+0.5
WTVZ	**West Tongariro**	**1.74**	**209**	PN	P		16 20 33.8	-0.2
NGZ	**Ngauruhoe**	**1.79**	**207**	*e*PN	P		16 20 34.6	+0.1
NGZ	**Ngauruhoe**	**1.79**	**207**	P	P		16 20 35.0	+0.5
CNZ	**Chateau**	**1.83**	**208**	*e*PN	P		16 20 34.3	-0.6
TUVZ	**Tukino**	**1.85**	**205**	PN	P		16 20 35.1	0.0
TUVZ	**Tukino**	**1.85**	**205**	P	P		16 20 35.2	+0.1
FWVZ	**Far West T-bar**	**1.88**	**207**	PN	P		16 20 35.1	-0.2
FWVZ				SN	S		16 20 53.4	+0.4
FWVZ	**Far West T-bar**	**1.88**	**207**	P	P		16 20 35.3	-0.1
FWVZ				S	S		16 20 54.7	-8.3
WNVZ	**Wahianoa**	**1.92**	**205**	PN	P		16 20 35.6	-0.3
WNVZ				SN	S		16 21 03.2	-0.8
VRZ	**Vera Road**	**2.14**	**224**	PN	P		16 20 38.3	0.0
VRZ	**Vera Road**	**2.14**	**224**	*e*P	P		16 20 38.3	0.0
PWZ	**Pawanui**	**2.44**	**176**	PN	P		16 20 41.0	-0.9
PWZ	**Pawanui**	**2.44**	**176**	P	P		16 20 41.0	-0.8
PWZ				S	S		16 21 13.1	-1.4
RAEZ	**Rainy Point**	**2.46**	**226**	*e*PN	P		16 20 42.5	+0.5
RAEZ	**Rainy Point**	**2.46**	**226**	P	P		16 20 42.5	+0.5
TSZ	**Takapari Road**	**2.52**	**192**	PN	P		16 20 41.4	-1.4
TSZ	**Takapari Road**	**2.52**	**192**	P	P		16 20 41.5	-1.4
WAZ	**Wanganui**	**2.53**	**211**	PN	P		16 20 41.6	-1.3
WAZ	**Wanganui**	**2.53**	**211**	*e*P	P		16 20 41.8	-1.1
NEZ	**North Egmont**	**2.62**	**229**	PN	P		16 20 44.4	+0.4
NEZ	**North Egmont**	**2.62**	**229**	P	P		16 20 44.8	+0.8
DFE	**Dawson Falls**	**2.65**	**228**	*e*PN	P		16 20 44.5	+0.2
DFE	**Dawson Falls**	**2.65**	**228**	P	P		16 20 44.6	+0.3
NWEZ	**Newall Road**	**2.76**	**232**	*e*PN	P		16 20 45.1	-0.5
NWEZ	**Newall Road**	**2.76**	**232**	*e*P	P		16 20 45.6	-0.1
BFZ	**Birch Farm**	**3.10**	**186**	PN	P		16 20 47.9	-2.0
BFZ				SN	S		16 21 24.7	-4.0
BFZ	**Birch Farm**	**3.10**	**186**	*e*P	P		16 20 47.9	-2.0
MRZ	**Mangatainoka R**	**3.18**	**195**	⇑PN	P		16 20 48.2	-2.7
MRZ				SN	S		16 21 25.6	-4.8
KIW	**Kapiti Island**	**3.54**	**202**	PN	P		16 20 52.0	-3.3
KIW	**Kapiti Island**	**3.54**	**202**	P	P		16 20 52.3	-3.0
MTW	**Mount Morrison**	**3.67**	**194**	PN	P		16 20 53.6	-3.4
MTW	**Mount Morrison**	**3.67**	**194**	P	P		16 20 53.7	-3.4
CAW	**Cannon Point**	**3.72**	**199**	PN	P		16 20 54.2	-3.4
CAW	**Cannon Point**	**3.72**	**199**	P	P		16 20 54.4	-3.3
MRW	**Makara Radio**	**3.94**	**202**	PN	P		16 20 56.6	-3.8
MRW	**Makara Radio**	**3.94**	**202**	P	P		16 20 56.8	-3.6
WEL	**Wellington**	**3.97**	**201**	PN	P		16 20 57.1	-3.7
WEL	**Wellington**	**3.97**	**201**	P	P		16 20 57.3	-3.5
MSWZ	**Moikau Station**	**3.97**	**195**	PN	P		16 20 56.9	-4.0
MSWZ				SN	S		16 21 41.9	-6.3
SNZO	**South Karori**	**4.01**	**202**	*e*PN	P		16 20 57.4	-3.9
SNZO	**South Karori**	**4.01**	**202**	P	P		16 20 57.3	-4.1
BHW	**Baring Head**	**4.06**	**199**	*e*PN	P		16 20 57.9	-4.1
BHW	**Baring Head**	**4.06**	**199**	P	P		16 20 58.2	-3.7
TUWZ	**Tuamarina**	**4.37**	**208**	*e*PN	P		16 21 01.7	-4.3
TUWZ				SN	S		16 21 50.3	-7.1
NNZ	**Nelson**	**4.42**	**214**	PN	P		16 21 02.0	-4.7
NNZ				SN	S		16 21 53.3	-5.3
NNZ	**Nelson**	**4.42**	**214**	*e*P	P		16 21 02.2	-4.5
QRZ	**Quartz Range**	**4.55**	**223**	*e*PN	P		16 21 03.3	-5.1
QRZ	**Quartz Range**	**4.55**	**223**	*e*P	P		16 21 03.5	-4.8
BSWZ	**Blackbirch Sta**	**4.64**	**207**	*e*PN	P		16 21 05.4	-4.1
THZ	**Tophouse**	**5.07**	**214**	*e*PN	P		16 21 09.9	-5.2
THZ	**Tophouse**	**5.07**	**214**	*e*P	P		16 21 09.6	-5.2
KHZ	**Kahutara**	**5.38**	**205**	PN	P		16 21 14.6	-4.6
KHZ				SN	S		16 22 15.2	-5.7
KHZ	**Kahutara**	**5.38**	**205**	P	P		16 21 14.6	-4.5
DSZ	**Denniston Nort**	**5.59**	**221**	*e*PN	P		16 21 17.4	-4.4
DSZ	**Denniston Nort**	**5.59**	**221**	*e*P	P		16 21 17.5	-4.3
DSZ				S	S		16 22 18.6	-7.2
LTZ	**Lake Taylor**	**6.18**	**212**	*e*PN	P		16 21 23.5	-6.1
LTZ	**Lake Taylor**	**6.18**	**212**	*e*P	P		16 21 23.6	-6.0
CRLZ	**Canterbury Las**	**6.72**	**206**	*e*PN	P		16 21 30.1	-6.7
CRLZ	**Canterbury Las**	**6.72**	**206**	*e*P	P		16 21 30.7	-6.1
MQZ	**McQueen's Vall**	**6.83**	**205**	PN	P		16 21 31.4	-6.8
MQZ	**McQueen's Vall**	**6.83**	**205**	*e*P	P		16 21 31.6	-6.6
WVZ	**Waitaha Valley**	**7.10**	**218**	*e*PN	P		16 21 35.9	-5.9
ODZ	**Otahua Downs**	**8.71**	**209**	*e*PN	P		16 21 56.7	-6.3

IDC 24 16:21:42.9±1.2,5.78S×129.88E,mb4.0/3,mb1 4.4/6, mb1mx4.0/15,ML4.2/3,Error ellipse: s-maj=61.5km s-min=22.6km az=75.0,Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
FITZ	**Fitzroy Crossi**	**12.93**	**198**	Pn	P		16 24 46.0	-4.8
	2.8nm,0.3s,baz=21,slow=9.6,SNR=88							
FITZ				Sn	S		16 26 50.6	-26
	2.5nm,0.3s,baz=39,slow=7.5,SNR=5.9							
WRA	**Warramunga Arr**	**14.73**	**163**	Pn	P		16 25 13.5	-1.2
	0.4nm,0.3s,baz=347,slow=12,SNR=42							
WRA				Sn	S		16 27 43.3	-16
	0.4nm,0.3s,baz=338,slow=22,SNR=6.2							
ASAR	**Alice Springs**	**18.20**	**168**	P	P		16 25 57.2	-1.6
	1.9nm,0.3s,baz=349,slow=14,SNR=123							
ASAR				S	S		16 29 03.9	-16
	0.2nm,0.3s,baz=345,slow=22,SNR=7.4							
STKA	**Stephens Creek**	**28.18**	**159**	P	P		16 27 38.0	-1.3
	1.0nm,0.7s,baz=322,slow=12,SNR=2.9							
MKAR	**Makanchi Array**	**67.15**	**327**	P	P		16 32 38.9	-1.9
	1.9nm,0.5s,baz=117,slow=8.3,SNR=36							
ILAR	**Eielson Array**	**92.30**	**25**	P	P		16 34 54.0	-2.0
	0.3nm,0.8s,baz=270,slow=4.5,SNR=4.1							

IDC 24 16:28:28.9±57.0,23.60S×179.82W,mb3.6/3,mb1 3.8/3, mb1mx3.6/12,Error ellipse: s-maj=1029.0km s-min=157.7km az=86.0,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
STKA	**Stephens Creek**	**34.99**	**248**	P	P		16 35 21.6	-3.4
	0.9nm,0.5s,baz=92,slow=12,SNR=4.3							
ASAR	**Alice Springs**	**42.25**	**260**	P	P		16 36 24.4	-1.4
	0.5nm,0.6s,baz=98,slow=8.8,SNR=15							
WRA	**Warramunga Arr**	**42.59**	**266**	P	P		16 36 27.8	-0.8
	0.4nm,0.6s,baz=100,slow=8.2,SNR=5.7							

*NAO **24** 16:32:43.0±3.0,59.66N×22.13E,ML2.5*
*HEL **24** 16:32:43.8±0.2,59.71N×22.32E,ML1.9,ML2.2(UPP), ML2.5(NAO),Explosion*
*IDC **24** 16:32:43.3±1.8,59.68N×22.26E,mb1 2.9/4, mb1mx2.8/21,ML2.9/3,Error ellipse: s-maj=22.6km s-min=7.4km az=164.0*
*BER **24** 16:32:45.0±4.0,59.72N×22.18E,ML2.5(NAO), Suspected explosion*
ISC 24 16:32:42.6±0.8,60.09N±0.06×22.02E±0.06,n19,σ1§43/34, Finland

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
MEF	**Metsahovi**	**1.20**	**83**	*e*P	**Pb**		**16 33 04.0**	**-1.8**
MEF				*e*S	**Sb**		**16 33 19.8**	**-1.9**
PVF	**Pernaja**	**1.97**	**75**	*e*P	**Pn**		**16 33 18.0**	**+0.5**
PVF				*e*S	**Sn**		**16 33 43.7**	**+0.5**
FIA0	**FINESS Array S**	**2.41**	**54**	Pn	**Pn**		**16 33 26.2**	**+2.4**
	baz=229,slow=14							
FIA0				Sn	**Sn**		**16 34 00.2**	**+5.7**
	baz=238,slow=22							
FIA0	**FINESS Array S**	**2.41**	**54**	*e*P	**Pn**		**16 33 27.0**	**+3.1**
FIA0				*e*SG	**Sg**		**16 34 02.0**	**-0.8**
FINES	**FINESS Array B**	**2.41**	**54**	Pn	**Pn**		**16 33 26.5**	**+2.6**
	0.6nm,0.3s,baz=230,slow=13,SNR=19							
FINES				Sn	**Sn**		**16 34 00.3**	**+5.8**
	3.1nm,0.3s,baz=225,slow=28,SNR=19							
KEF	**Keuruu**	**2.50**	**32**	*e*P	**Pn**		**16 33 30.5**	**+5.3**
KEF				*e*SG	**Sg**		**16 34 08.6**	**+2.7**
KEF				MSG			16 34 11.9	
	comp=Z,2.7nm,0.1s							
KAF	**Kangasniemi**	**2.91**	**44**	*e*P	**Pn**		**16 33

NOA	**NORSAR Array B**	**5.55**	**289**	Pn		**Pn**	**16 37 13.5**	**-0.2**
	comp=Z,0.2nm,0.3s,baz=95,slow=12,SNR=2.3							
NOA				Sn		**Sn**	**16 38 17.5**	**-1.8**
	comp=Z,0.2nm,0.3s,baz=283,slow=20,SNR=2.5							
BSD	**Bornholm Skovb**	**6.01**	**223**	*i* P		**Pn**	**16 37 17.9**	**-2.2**
BSD				*e*S		Sn	16 37 56.8	-34
APA0	**Apatity Array**	**9.29**	**27**	Pn		**P**	**16 38 04.9**	**-1.1**
	baz=220,slow=14							
APA0	**Apatity Array**	**9.29**	**27**	*e*P		**P**	**16 38 04.9**	**-1.1**
ARA0	**ARCESS Array S**	**9.98**	**7**	Pn		**P**	**16 38 13.3**	**-2.1**
	baz=187,slow=14							
ARA0	**ARCESS Array S**	**9.98**	**7**	*e*P		**P**	**16 38 13.3**	**-2.1**
ARCES	**ARCESS Array B**	**9.98**	**7**	Pn		**P**	**16 38 13.4**	**-2.0**
	comp=Z,0.3nm,0.3s,baz=186,slow=13,SNR=9.5							
SPA0	**Spitsbergen Ar**	**18.66**	**356**	P		**P**	**16 40 11.0**	**+2.2**
	baz=160,slow=11							
SPA0	**Spitsbergen Ar**	**18.66**	**356**	*e*P		**P**	**16 40 11.0**	**+2.2**

IDC 24 16:36:04.8±3.1,59.57N×22.32E,mb1 3.0/3, mb1mx2.9/20,ML2.9/3,Error ellipse: s-maj=44.9km s-min=11.1km az=160.0,Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
FINES	**FINESS Array B**	**2.64**	**43**	Pn		Pn	16 36 49.8	+0.3
	0.8nm,0.3s,baz=230,slow=14,SNR=5.6							
FINES				Sn		Sn	16 37 21.7	-1.0
	2.6nm,0.3s,baz=230,slow=23,SNR=9.3							
HFS	**Hagfors**	**4.39**	**281**	Pg		Pb	16 37 20.1	-2.5
	0.2nm,0.3s,baz=95,slow=18,SNR=7.9							
NOA	**NORSAR Array B**	**5.71**	**290**	Pn		Pn	16 37 29.4	-3.6
	0.3nm,0.3s,baz=106,slow=21,SNR=2.7							
ARCES	**ARCESS Array B**	**10.10**	**6**	Pn		P	16 38 28.0	-6.0
	0.3nm,0.3s,baz=185,slow=13,SNR=5.8							

*NEIC **24** 16:45:57.1,35.09N×26.69E,h11km,MD3.5(ATH),After ATH.*
*ATH **24** 16:45:57.1,35.09N×26.69E,h11km±8km,MD3.5/8*
*IDC **24** 16:45:59.4±5.8,34.50N×26.58E,h77km±40km,mb3.7/2, mb1 3.6/3,mb1mx3.1/19,ML2.9/1,Error ellipse: s-maj=90.9km s-min=28.3km az=4.0*
ISC 24 16:45:53.1±1.5,34.85N±0.09×26.83E±0.05,h6km±8km, n22,σ1§11/26,mb3.9/2,1D,Crete

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
KARP	**Karpathos**	**0.74**	**21**	⇓*i*PB		**Pb**	**16 46 08.0**	**-0.1**
KARP				*e*SB		**Sb**	**16 46 17.5**	**-0.8**
XRY	**Khrisi**	**0.93**	**272**	*e*PB		**Pb**	**16 46 12.5**	**+1.1**
NPS	**Neapolis**	**1.08**	**293**	*e*PG		**Pg**	**16 46 14.5**	**-0.2**
NPS				*e*SB		**Sb**	**16 46 26.5**	**-1.5**
IDI	**Anoyia**	**1.65**	**286**	P		**Pn**	**16 46 25.1**	**+2.2**
	15nm,0.3s,baz=111,slow=15,SNR=126							
IDI				S		**Sb**	**16 46 46.1**	**+1.5**
	28nm,0.3s,baz=358,slow=16,SNR=9.1							
ARG	**Arkhangelos**	**1.72**	**37**	*e*PG		**Pg**	**16 46 27.0**	**-0.5**
ARG				*e*SG		**Sg**	**16 46 52.0**	**+1.5**
NISR	**Nisiros**	**1.77**	**8**	*e*PN		**Pn**	**16 46 25.0**	**+0.4**
SANT	**Santorini**	**1.88**	**324**	*e*Pn		**Pn**	**16 46 25.6**	**-0.6**
THR1	**Thera Island**	**1.88**	**324**	*e*P		**Pn**	**16 46 25.9**	**-0.3**
THR6	**Thira Island,**	**1.90**	**323**	*e*P		**Pn**	**16 46 26.4**	**-0.1**
THR3	**Thira Island,**	**1.94**	**324**	*e*P		**Pn**	**16 46 26.7**	**-0.3**
THR5	**Thira Island,**	**1.97**	**323**	*e*P		**Pn**	**16 46 27.2**	**-0.3**
THR4	**Thira Island,**	**1.98**	**324**	*e*P		**Pn**	**16 46 28.1**	**+0.4**
VAM	**Vamos**	**2.23**	**285**	*e*PG		**Pg**	**16 46 35.5**	**-2.1**
BDRM	**Kayabasi**	**2.26**	**13**	*i* P		**Pn**	**16 46 31.8**	**+0.1**
APE	**Apeiranthos**	**2.45**	**335**	*e*PB		**Pb**	**16 46 33.5**	**-3.8**
AYDN	**Tasoluk**	**2.93**	**17**	*e*P		**Pn**	**16 46 42.0**	**+0.9**
DNZL	**Cakiroluk**	**3.35**	**32**	*e*P		**Pn**	**16 46 46.3**	**-0.9**
VLI	**Veliai**	**3.67**	**302**	*e*PN		**Pn**	**16 46 52.5**	**+0.8**
MANT	**Manisa**	**3.89**	**20**	*e*P		**Pn**	**16 46 57.8**	**+3.0**
BRTR	**Keskin Array B**	**7.29**	**46**	P		**Pn**	**16 47 48.8**	**+6.0**
	0.2nm,0.3s,baz=233,slow=14,SNR=3.7							
MKAR	**Makanchi Array**	**42.80**	**56**	P		**P**	**16 53 53.0**	**-0.2**
	1.1nm,0.6s,mb3.8,baz=267,slow=8.5,SNR=16							
ZAL	**Zalesovo**	**44.22**	**46**	P		**P**	**16 54 02.5**	**-2.1**
	0.9nm,0.3s,mb3.9,baz=113,slow=8.6,SNR=3.9							

*HEL **24** 16:48:28.1±0.4,59.64N×22.21E,ML1.6,ML2.0(NAO), ML2.1(UPP),Explosion*
*IDC **24** 16:48:28.4±2.0,59.65N×22.24E,mb1 2.8/4, mb1mx2.7/21,ML2.6/3,Error ellipse: s-maj=29.8km s-min=7.6km az=165.0*
*NAO **24** 16:48:29.6±3.2,59.83N×21.99E,ML2.0*
*BER **24** 16:48:31.1±4.0,59.77N×22.06E,ML2.0(NAO), Suspected explosion*
ISC 24 16:48:26.3±1.1,59.7N±0.1×22.07E±0.08,n14,σ1§25/28, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
MEF	**Metsahovi**	**1.29**	**64**	*e*P		**Pb**	**16 48 50.0**	**-1.2**
MEF				*e*S		**Sb**	**16 49 06.2**	**-2.0**
PVF	**Pernaja**	**2.09**	**64**	*e*P		**Pn**	**16 49 03.8**	**+0.8**
PVF				*e*S		**Sn**	**16 49 29.7**	**-0.3**
FIA0	**FINESS Array S**	**2.66**	**47**	Pn		**Pn**	**16 49 12.5**	**+1.4**
	baz=227,slow=14							
FIA0				Sn		**Sn**	**16 49 45.6**	**+1.2**
	baz=234,slow=22							
FIA0	**FINESS Array S**	**2.66**	**47**	*e*P		**Pn**	**16 49 12.7**	**+1.6**
FIA0				*e*SB		**Sb**	**16 49 46.9**	**-0.9**
FINES	**FINESS Array B**	**2.66**	**47**	Pn		**Pn**	**16 49 12.5**	**+1.4**
	0.6nm,0.3s,baz=224,slow=13,SNR=26							
FINES				Sn		**Sn**	**16 49 46.1**	**+1.7**
	1.1nm,0.3s,baz=233,slow=21,SNR=13							
KEF	**Keuruu**	**2.85**	**28**	*e*P		**Pn**	**16 49 16.4**	**+2.6**
KEF				*e*SB		**Sb**	**16 49 53.4**	**0.0**
KEF				MSG			16 49 57.1	
	comp=Z,1.7nm,0.2s							
SUF	**Sumiainen**	**3.63**	**31**	*e*P		**Pn**	**16 49 25.9**	**+0.9**
SUF				MSG			16 50 22.9	
	comp=Z,0.9nm,0.2s							
HFS	**Hagfors**	**4.24**	**280**	*e*P		**Pn**	**16 49 34.1**	**+0.5**
HFS				*e*S		**Sn**	**16 50 24.5**	**-0.1**
HFS				*e*SG		**Sg**	**16 50 41.2**	**-6.2**
HFS	**Hagfors**	**4.24**	**280**	Pn		**Pn**	**16 49 33.6**	**0.0**
	comp=Z,0.0nm,0.3s,baz=93,slow=11,SNR=7.4							
HFS				Pg		**Pg**	**16 49 43.6**	**-7.3**
	comp=Z,0.1nm,0.3s,baz=93,slow=17,SNR=11							
HFS				Sn		**Sn**	**16 50 25.9**	**+1.4**
	comp=Z,0.0nm,0.3s,baz=96,slow=28,SNR=2.8							
HFS				Lg			16 50 41.7	
	comp=Z,0.2nm,0.3s,baz=87,slow=31,SNR=11							
HFS	**Hagfors**	**4.24**	**280**	Pn		**Pn**	**16 49 34.1**	**+0.5**
	baz=107,slow=10							
HFS				Sn		**Sn**	**16 50 24.5**	**-0.1**
	baz=101,slow=28							
HFS				Lg			16 50 41.2	
	baz=89,slow=37							
NOA	**NORSAR Array B**	**5.56**	**289**	Pn		**Pn**	**16 49 51.9**	**-0.4**
	comp=Z,0.2nm,0.3s,baz=96,slow=17,SNR=2.6							
NOA				Sn		**Sn**	**16 50 56.2**	**-1.5**
	comp=Z,0.1nm,0.3s,baz=113,slow=12,SNR=2.9							
ARA0	**ARCESS Array S**	**10.00**	**7**	Pn		**P**	**16 50 49.9**	**-4.3**
	baz=189,slow=14							
ARA0				Sn		**Sn**	**16 52 38.1**	**-10**
	baz=195,slow=28							
ARA0	**ARCESS Array S**	**10.00**	**7**	*e*P		**P**	**16 50 49.9**	**-4.3**
ARA0				*e*S		**Sn**	**16 52 38.1**	**-10**
ARCES	**ARCESS Array B**	**10.00**	**7**	Pn		**P**	**16 50 50.4**	**-3.7**
	comp=Z,0.1nm,0.3s,baz=184,slow=13,SNR=8.0							

SKHL 24 17:09:35.5±0.1,55.09N×122.76E,h10km,mb3.5/4, Southeastern Siberia

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
TUP	**Tupik**	**1.76**	**249**	*e*Pn		Pn	17 10 05.9	-0.4
TUP				*e*Pg		Pg	17 10 07.8	-2.8
TUP				AMB		AMB	17 10 08.9	
	16nm,0.2s							
TUP				*e*Sn		Sn	17 10 29.9	+1.0
TUP				*e*Sg		Sg	17 10 31.4	-2.7
TUP				A			17 10 32.4	
	31nm,0.4s							
KROS	**Kirovskiy**	**2.53**	**103**	*e*Pn		Pn	17 10 16.6	-0.7
KROS				*e*Pg		Pg	17 10 21.0	-5.0
KROS				AMB		AMB	17 10 25.5	
	2.0nm,0.5s							
KROS				AMB		AMB	17 10 25.5	
	3.0nm,0.5s							
KROS				AMB		AMB	17 10 25.5	
	4.0nm,0.5s							
KROS				*e*rx		rx	17 10 30.2	
KROS				*i* rx		rx	17 10 44.7	
KROS				*e*Sn		Sn	17 10 49.2	+0.7
KROS				*e*Sg		Sg	17 10 54.0	-5.7
KROS				A			17 10 56.8	
	70nm,0.5s							
KROS				A			17 10 56.8	
	60nm,0.5s							
ZEA	**Zeya**	**2.95**	**115**	*e*Pg		Pg	17 10 29.3	-5.2
ZEA				AMB		AMB	17 10 32.4	
	14nm,0.5s							
ZEA				*e*Sn		Sn	17 10 57.1	-2.2
ZEA				*e*Sg		Sg	17 11 08.6	-5.3
ZEA				A			17 11 10.1	
	58nm,0.5s							
CRS	**Chara**	**3.11**	**308**	*e*Pg		Pg	17 10 30.7	-6.9
CRS				AMB		AMB	17 10 34.0	
	14nm,0.7s							
CRS				*e*Sg		Sg	17 11 13.4	-5.6
CRS				A			17 11 17.8	
	41nm,0.8s							
BMKR	**Bomnak**	**3.53**	**94**	*e*rx		rx	17 10 36.9	
BMKR				*e*Pg		Pg	17 10 40.0	-6.0
BMKR				*e*rx		rx	17 10 50.2	
BMKR				*e*rx		rx	17 10 53.6	
BMKR				*e*Sg		Sg	17 11 26.0	-7.1
BMKR				A			17 11 30.6	
	42nm,0.5s							
BMKR				A			17 11 30.6	
	35nm,0.5s							
YASR	**Yasnyy**	**3.56**	**118**	*e*rx		rx	17 10 43.8	
YASR				*e*Sg		Sg	17 11 26.1	-7.9
YASR				A			17 11 36.4	
	5.0nm,0.4s							
YASR				A			17 11 36.4	
	19nm,0.4s							
EKMR	**Ekimchan**	**6.33**	**104**	*e*rx		rx	17 13 26.5	

*HEL **24** 17:12:36.2±0.5,59.34N×27.82E,ML1.8,ML2.8(NAO), Explosion*
*NAO **24** 17:12:38.5±2.6,59.56N×27.74E,ML2.8*
*BER **24** 17:12:38.7±4.1,59.52N×27.75E,ML2.8(NAO)*
IDC 24 17:12:42.2±1.8,59.72N×27.43E,mb2.9/1,mb1 3.3/4, mb1mx3.1/21,ML3.0/3,Error ellipse: s-maj=16.7km s-min=11.2km az=130.0,Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
PVF	**Pernaja**	**1.14**	**317**	*e*P		Pb	17 13 03.2	-1.3
MEF	**Metsahovi**	**1.60**	**290**	*e*P		Pn	17 13 10.6	-1.3
MEF				*e*S		Sb	17 13 33.3	+0.1
FIA0	**FINESS Array S**	**1.86**	**340**	*e*P		Pn	17 13 14.1	-1.4
FIA0				*e*S		Sn	17 13 44.0	+4.0
FIA0	**FINESS Array S**	**1.86**	**340**	Pn		Pn	17 13 14.4	-1.2
	baz=159,slow=18							
FIA0				Lg			17 13 44.0	
	baz=157,slow=37							
FIA0				Rg			17 13 55.8	
	baz=154,slow=56							
FINES	**FINESS Array B**	**1.86**	**340**	Pg		Pg	17 13 14.5	-4.7
	2.8nm,0.3s,baz=158,slow=16,SNR=101							
FINES				Sn		Sn	17 13 41.8	+1.7
	3.8nm,0.3s,baz=160,slow=28,SNR=19							
KAF	**Kangasniemi**	**2.47**	**348**	*e*P		Pn	17 13 23.2	-1.0
KAF				MSG			17 14 03.5	
	comp=Z,3.9nm,0.2s							
KEF	**Keuruu**	**2.76**	**334**	*e*P		Pn	17 13 27.8	-0.7
KEF				*e*SG		Sg	17 14 14.3	+0.3
KEF				MSG			17 14 15.8	
	comp=Z,1.3nm,0.1s							
SUF	**Sumiainen**	**3.08**	**349**	*e*P		Pn	17 13 32.1	-0.8
HFS	**Hagfors**	**6.92**	**279**	Pn		Pn	17 14 21.8	-5.6
	baz=111,slow=11							
HFS				Sn		Sn	17 15 40.7	-7.0
	baz=74,slow=37							
HFS				Lg			17 16 16.7	
	baz=87,slow=28							
HFS	**Hagfors**	**6.92**	**279**	*e*P		Pn	17 14 21.8	-5.6
HFS				*e*S		Sn	17 15 40.7	-7.0
HFS				*e*SG		Sg	17 16 16.7	-16
HFS	**Hagfors**	**6.92**	**279**	Pn		Pn	17 14 21.9	-5.4
	comp=Z,0.0nm,0.3s,baz=90,slow=12,SNR=5.9							
HFS				Sn		Sn	17 15 40.0	-7.7
	comp=Z,0.0nm,0.3s,baz=98,slow=22,SNR=3.1							
NOA	**NORSAR Array B**	**8.14**	**286**	Pn		P	17 14 38.0	-6.4
	comp=Z,0.3nm,0.3s,baz=103,slow=20,SNR=2.6							
NOA				Sn		Sn	17 16 06.2	-12
	comp=Z,0.1nm,0.3s,baz=324,slow=22,SNR=2.6							
ARA0	**ARCESS Array S**	**9.89**	**356**	Pn		P	17 15 02.2	-6.3
	baz=174,slow=14							
ARA0				Sn		Sn	17 16 50.0	-12
	baz=173,slow=28							
ARA0				Lg			17 17 50.8	
	baz=165,slow=37							
ARA0	**ARCESS Array S**	**9.89**	**356**	*e*P		P	17 15 02.2	-6.3
ARA0				*e*S		Sn	17 16 50.0	-12
ARA0				*e*SG		Sg	17 17 50.8	-21
ARCES	**ARCESS Array B**	**9.89**	**356**	Pn		P	17 15 02.1	-6.4
	comp=Z,0.1nm,0.3s,baz=172,slow=13,SNR=12							
ARCES				Sn		Sn	17 16 50.4	-11
	comp=Z,0.2nm,0.3s,baz=178,slow=24,SNR=5.0							
BRTR	**Keskin Array B**	**20.39**	**166**	P		P	17 17 20.1	-3.0
	comp=Z,0.3nm,0.6s,baz=346,slow=12,SNR=3.7							

*BER **24** 17:16:54.9±1.1,59.79N×13.36E,ML2.3(NAO)*
NAO 24 17:16:52.9±2.3,59.74N×13.30E,ML2.3,Sweden

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
HFS	**Hagfors**	**0.44**	**26**	Pg		Pg	17 17 01.1	-0.6
	baz=209,slow=18							
HFS				Lg			17 17 06.5	
	baz=205,slow=37							
HFS				Rg			17 17 09.5	
	baz=208,slow=37							
NB2	**NORSAR Subarra**	**1.67**	**322**	Pn		Pn	17 17 23.3	-0.3
NB2				Lg			17 17 46.0	

*HEL **24** 17:38:58.4±0.5,59.39N×22.39E,ML2.2,ML2.1(UPP), ML2.3(NAO),Explosion*
*IDC **24** 17:38:58.3±1.9,59.48N×22.37E,mb1 3.1/2, mb1mx2.9/19,ML2.4/2,Error ellipse: s-maj=24.7km s-min=8.7km az=160.0*
*NAO **24** 17:38:59.9±3.0,59.61N×22.14E,ML2.3*
*BER **24** 17:39:01.1±4.0,59.57N×22.26E,ML2.3(NAO)*
ISC 24 17:38:59.4±0.9,60.02N±0.08×21.96E±0.06,n18,σ1§35/34, Finland

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
MEF	**Metsahovi**	**1.24**	**80**	*e*P		**Pb**	**17 39 21.1**	**-2.2**
MEF				*e*S		**Sb**	**17 39 38.6**	**-1.0**
PVF	**Pernaja**	**2.02**	**73**	*e*P		**Pn**	**17 39 34.8**	**-0.2**
PVF				*e*S		**Sn**	**17 40 01.1**	**-0.2**
FIA0	**FINESS Array S**	**2.48**	**53**	Pn		**Pn**	**17 39 43.5**	**+1.9**
	baz=219,slow=14							
FIA0				Pg		**Pg**	**17 39 48.8**	**-0.1**
	baz=231,slow=16							
FIA0				Sn		**Sn**	**17 40 17.9**	**+4.8**
	baz=225,slow=22							
FIA0				Lg			17 40 23.6	
	baz=224,slow=28							
FIA0	**FINESS Array S**	**2.48**	**53**	*e*P		**Pn**	**17 39 44.3**	**+2.6**
FIA0				*e*SG		**Sg**	**17 40 22.8**	**+0.9**
FINES	**FINESS Array B**	**2.48**	**53**	Pn		**Pn**	**17 39 43.6**	**+1.9**
	0.3nm,0.3s,baz=229,slow=13,SNR=22							
FINES				Sn		**Sn**	**17 40 16.9**	**+3.8**
	1.2nm,0.3s,baz=229,slow=26,SNR=14							
KEF	**Keuruu**	**2.58**	**32**	*e*P		**Pn**	**17 39 48.1**	**+5.0**
KEF				*e*SB		**Sb**	**17 40 28.8**	**+10**
KEF				MSG			17 40 31.9	
	comp=Z,5.7nm,0.1s							
KAF	**Kangasniemi**	**2.98**	**43**	*e*P		**Pn**	**17 39 52.7**	**+3.9**
KAF				*e*SB		**Sb**	**17 40 38.1**	**+7.8**
KAF				MSG			17 40 40.6	
	comp=Z,5.5nm,0.1s							
VAF	**Ylistaro**	**3.06**	**6**	*e*P		**Pn**	**17 39 58.0**	**+8.1**
SUF	**Sumiainen**	**3.38**	**35**	*e*P		**Pn**	**17 39 58.4**	**+3.9**
HFS	**Hagfors**	**4.14**	**275**	Pn		**Pn**	**17 40 05.9**	**+0.6**
	baz=98,slow=14							
HFS				Sn		**Sn**	**17 40 57.1**	**+2.0**
HFS				Lg			17 41 16.0	
	baz=89,slow=28							
HFS	**Hagfors**	**4.14**	**275**	*e*P		**Pn**	**17 40 05.9**	**+0.6**
HFS				*e*S		**Sn**	**17 40 57.1**	**+2.0**
HFS				*e*SG		**Sg**	**17 41 16.0**	**-1.3**
HFS	**Hagfors**	**4.14**	**275**	Pn		**Pn**	**17 40 05.1**	**-0.2**
	baz=97,slow=14							
HFS				Sn		**Sn**	**17 40 57.6**	**+2.5**
	baz=98,slow=22							
NOA	**NORSAR Array B**	**5.41**	**286**	Pn		**Pn**	**17 40 22.9**	**-0.3**
	baz=101,slow=18							
NOA				Sn		**Sn**	**17 41 26.8**	**-0.2**
	baz=275,slow=19							
APA0	**Apatity Array**	**9.03**	**28**	Pn		**P**	**17 41 14.5**	**+0.5**
	baz=222,slow=14							
APA0	**Apatity Array**	**9.03**	**28**	*e*P		**P**	**17 41 14.5**	**+0.5**
ARA0	**ARCESS Array S**	**9.68**	**7**	Pn		**P**	**17 41 22.2**	**-0.5**
	baz=186,slow=14							
ARA0				Sn		**Sn**	**17 43 12.4**	**-1.0**
	baz=196,slow=28							
ARA0	**ARCESS Array S**	**9.68**	**7**	*e*P		**P**	**17 41 22.2**	**-0.5**
ARA0				*e*S		**Sn**	**17 43 12.4**	**-1.0**
ARCES	**ARCESS Array B**	**9.68**	**7**	Pn		**P**	**17 41 22.7**	**0.0**
	comp=Z,0.1nm,0.3s,baz=185,slow=13,SNR=8.1							
ARCES				Sn		**Sn**	**17 43 12.2**	**-1.2**
	baz=190,slow=20							

IDC 24 17:39:01.5±3.1,59.26N×22.69E,mb1 3.4/2, mb1mx3.0/19,ML2.5/2,Error ellipse: s-maj=44.0km s-min=10.2km az=158.0,Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
FINES	**FINESS Array B**	**2.76**	**36**	Pn		Pn	17 39 48.4	+0.6
	baz=222,slow=17							
FINES				Sn		Sn	17 40 22.6	+0.2
	baz=229,slow=28							
HFS	**Hagfors**	**4.64**	**285**	Pn		Pn	17 40 11.6	-2.8
	0.0nm,0.3s,baz=98,slow=10,SNR=14							
HFS				Sn		Sn	17 41 05.4	-4.4
	baz=97,slow=25							
NOA	**NORSAR Array B**	**6.00**	**292**	Pn		Pn	17 40 28.4	-5.2
	baz=103,slow=9.7							
ARCES	**ARCESS Array B**	**10.39**	**6**	Pn		P	17 41 27.4	-7.2
	0.1nm,0.3s,baz=183,slow=14,SNR=6.0							

*NEIC **24** 17:49:44.8,33.16S×70.27W,h9km,ML2.1(GUC),After GUC.*
*GUC **24** 17:49:44.8±1.0,33.16S×70.27W,h9km±2km,MD3.6, ML2.1*
ISC 24 17:49:44.8±1.2,33.12S±0.04×70.24W±0.08,h10km±5km, n10,σ0§34/20,1C-1D,Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
FCH	**Farellones**	**0.21**	**191**	⇑*i*P		**Pg**	**17 49 49.6**	**+0.2**
FCH				*i* S		**Sg**	**17 49 52.2**	**-0.2**
FCH				AMP			17 49 52.6	
	comp=E,738nm,0.2s							
FCH				SN		**Sn**	**17 49 53.2**	**-5.8**
CLCH	**Cerro Calan**	**0.37**	**222**	*e*P		**Pg**	**17 49 52.2**	**-0.2**
CLCH				*i* S		**Sg**	**17 49 57.5**	**0.0**
CLCH				AMP			17 50 01.6	
	comp=E,576nm,0.5s							
PEL	**Peldehue**	**0.37**	**266**	*e*P		**Pg**	**17 49 52.0**	**-0.4**
PEL				*i* S		**Sg**	**17 49 57.7**	**+0.1**
PEL				AMP			17 50 07.0	
	comp=E,319nm,1.5s							
JACH	**Jahuel**	**0.53**	**326**	*i* P		**Pg**	**17 49 56.0**	**+0.5**
PCH	**Pirque**	**0.55**	**204**	*i* P		**Pg**	**17 49 55.8**	**-0.1**
PCH				*i* S		**Sg**	**17 50 03.5**	**+0.2**
LMEL	**Las Melosas**	**0.73**	**178**	⇓*i*P		**Pb**	**17 49 58.6**	**-0.5**
LMEL				*i* S		**Sb**	**17 50 08.7**	**-0.1**
LMEL				AMP			17 50 10.2	
	comp=N,102nm,0.1s							
CHCH	**Chadas Angostu**	**0.88**	**203**	*i* P		**Pb**	**17 50 01.4**	**-0.4**
CHCH				*i* S		**Sb**	**17 50 13.3**	**0.0**
CACH	**El Canelo**	**1.04**	**197**	*i* P		**Pb**	**17 50 04.4**	**-0.1**
CACH				*i* S		**Sb**	**17 50 18.4**	**+0.5**
CICH	**Cipreses**	**1.21**	**187**	*i* P		**Pb**	**17 50 07.7**	**+0.4**
CICH				*i* S		**Sb**	**17 50 23.5**	**+0.7**
SFDO	**San Fernando**	**1.62**	**203**	*i* P		**Pn**	**17 50 13.4**	**-0.3**
SFDO				*i* S		**Sn**	**17 50 34.5**	**-0.4**

*BUG **24** 17:49:47.6,51.68N×7.74E,h1km,ML2.2*
*NEIC **24** 17:49:48.9,51.65N×7.66E,h1km,ML2.6(LDG), ML2.2(SZGRF),After LDG.*
*BNS **24** 17:49:48.4±1.2,51.73N×7.69E,h1km,ML2.2*
*LDG **24** 17:49:48.9±0.2,51.65N×7.66E,h1km,ML2.6/5,Error ellipse: s-maj=4.6km s-min=3.9km az=104.0,Suspected Mining induced.*
*BGR **24** 17:49:48.9±0.4,51.58N×7.78E,h1km,ML2.2,Error ellipse: s-maj=7.8km s-min=4.4km az=137.0*
ISC 24 17:49:46.7±0.4,51.55N±0.02×7.78E±0.03,n25,σ1§29/47, 2C,Germany

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
BAHL	**Ahlen**	**0.19**	**8**	Pg		**Pg**	**17 49 50.8**	**+0.2**
BAHL				Sg		**Sg**	**17 49 53.1**	**-0.1**
BUG	**Bochum--Univer**	**0.34**	**252**	⇑*e*Pg		**Pg**	**17 49 55.7**	**+2.3**
BUG				Sg		**Sg**	**17 50 01.5**	**+3.6**
BUG	**Bochum--Univer**	**0.34**	**252**	*e*Pg		**Pg**	**17 49 55.6**	**+2.2**
BUG				*e*Sg		**Sg**	**17 50 01.4**	**+3.5**
BNS	**Bensberg**	**0.69**	**213**	*e*Sg		**Sg**	**17 50 16.1**	**+6.3**
WTSB	**Winterswijk**	**0.74**	**305**	*e*Pg		**Pg**	**17 50 02.3**	**+0.8**
	28nm,0.3s							
WTSB				*ex*		x	17 50 08.2	
WTSB				*e*Sg		**Sg**	**17 50 10.9**	**-0.5**
IBBN	**Ibbenburen**	**0.76**	**359**	*e*Pg		**Pg**	**17 50 02.2**	**+0.3**
IBBN				*e*Sg		**Sg**	**17 50 11

SSF	**Saint Saulge**	**5.29**	**214**	*e*Pn	**Pn**	**17 51 07.3**	**-1.5**
TCF	**Toulx Ste Croi**	**6.41**	**217**	*e*Pn	**Pn**	**17 51 22.9**	**-1.9**

*JMA **24** 17:55:24.7±0.5,23.25N×121.57E*
*TAP **24** 17:55:26.2,23.21N×121.45E,h21km,ML3.5*
ISC 24 17:55:25.9±3.0,**23.1N**±0.3×**121.5E**±0.2,**h21km,n5,** σ0**§41/8,Taiwan**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**1.90**	**46**	P	**Pn**	**17 55 57.1**	**-0.5**
YOJ				S	**Sn**	**17 56 21.3**	**+0.2**
HATJ	**Hateruma jima**	**2.29**	**66**	S	**Sn**	**17 56 30.2**	**-0.8**
IRIF	**Iriomote-Funau**	**2.35**	**59**	P	**Pn**	**17 56 04.1**	**0.0**
IRIF				S	**Sn**	**17 56 32.7**	**+0.1**
JKRS	**Kuro-shima**	**2.53**	**64**	P	**Pn**	**17 56 07.2**	**+0.5**
JKRS				S	**Sn**	**17 56 37.5**	**+0.3**
JIJ	**Ishigaki jima**	**2.69**	**62**	S	**Sn**	**17 56 41.5**	**+0.2**

*IDC **24** 17:59:36.7±1.8,59.62N×22.31E,mb1 3.1/3, mb1mx2.9/21,ML2.7/3,Error ellipse: s-maj=23.1km s-min=7.4km az=162.0*
*HEL **24** 17:59:37.9±0.4,59.66N×22.35E,ML1.9,ML2.2(UPP), ML2.2(NAO),Explosion*
*NAO **24** 17:59:39.9±3.2,59.91N×22.20E,ML2.2*
*BER **24** 17:59:39.7±5.4,59.77N×22.33E,ML2.2(NAO)*
ISC 24 17:59:36.1±1.2,**59.9N**±0.1×**21.95E**±0.07,**n17,**σ1**§69/31,**
Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MEF	**Metsahovi**	**1.28**	**73**	*e*S	**Sb**	**18 00 13.9**	**-3.6**
PVF	**Pernaja**	**2.07**	**69**	*e*P	**Pn**	**18 00 11.8**	**-0.6**
PVF				*e*S	**Sn**	**18 00 37.6**	**-1.7**
FIA0	**FINESS Array S**	**2.57**	**50**	*e*P	**Pn**	**18 00 20.4**	**+0.8**
FIA0				*e*SB	**Sb**	**18 00 54.6**	**-0.5**
FIA0	**FINESS Array S** baz=222,slow=14	**2.57**	**50**	Pn	**Pn**	**18 00 20.6**	**+1.0**
FIA0	baz=249,slow=28			Lg		18 00 55.0	
FINES	**FINESS Array B** 1.4nm,0.3s,baz=228,slow=13,SNR=38	**2.57**	**50**	Pn	**Pn**	**18 00 20.6**	**+0.9**
FINES	3.3nm,0.3s,baz=229,slow=26,SNR=24			Sn	**Sn**	**18 00 54.3**	**+2.2**
KEF	**Keuruu**	**2.71**	**30**	*e*P	**Pn**	**18 00 24.7**	**+3.1**
KEF				*e*SB	**Sb**	**18 01 01.2**	**+2.2**
KEF	comp=Z,2.8nm,0.1s			MSG		18 01 04.2	
KAF	**Kangasniemi**	**3.09**	**42**	*e*P	**Pn**	**18 00 29.4**	**+2.3**
KAF				*e*SB	**Sb**	**18 01 09.8**	**-0.4**
KAF	comp=Z,3.1nm,0.3s			MSG		18 01 10.8	
VAF	**Ylistaro**	**3.20**	**6**	*e*P	**Pn**	**18 00 33.7**	**+5.1**
HFS	**Hagfors**	**4.15**	**277**	*e*P	**Pn**	**18 00 45.4**	**+3.3**
HFS				*e*S	**Sn**	**18 01 35.1**	**+3.0**
HFS				*e*SG	**Sg**	**18 01 52.4**	**-1.9**
HFS	**Hagfors** comp=Z,0.0nm,0.3s,baz=98,slow=13,SNR=6.3	**4.15**	**277**	Pn	**Pn**	**18 00 43.8**	**+1.7**
HFS	comp=Z,0.2nm,0.3s,baz=94,slow=18,SNR=18			Pg	**Pg**	**18 00 52.4**	**-6.6**
HFS	comp=Z,0.2nm,0.3s,baz=97,slow=25,SNR=8.3			Sn	**Sn**	**18 01 33.5**	**+1.4**
HFS	comp=Z,0.4nm,0.3s,baz=93,slow=30,SNR=8.7			Lg		18 01 52.4	
HFS	**Hagfors** baz=104,slow=12	**4.15**	**277**	Pn	**Pn**	**18 00 45.4**	**+3.3**
HFS	baz=80,slow=28			Sn	**Sn**	**18 01 35.1**	**+3.0**
HFS	baz=88,slow=28			Lg		18 01 52.4	
NOA	**NORSAR Array B** baz=95,slow=5.6	**5.44**	**287**	Pn	**Pn**	**18 01 00.8**	**+0.4**
NOA	baz=311,slow=28			Sn	**Sn**	**18 02 04.4**	**-0.3**
NOA	baz=133,slow=24			Lg		18 02 30.2	
APA0	**Apatity Array** baz=231,slow=18	**9.16**	**27**	Pn	**P**	**18 01 52.2**	**-0.3**
APA0	**Apatity Array**	**9.16**	**27**	*e*P	**P**	**18 01 52.2**	**-0.3**
ARA0	**ARCESS Array S** baz=187,slow=16	**9.82**	**7**	Pn	**P**	**18 01 59.0**	**-2.4**
ARA0	baz=196,slow=22			Sn	**Sn**	**18 03 49.5**	**-4.1**
ARA0	**ARCESS Array S**	**9.82**	**7**	*e*P	**P**	**18 01 59.0**	**-2.4**
ARA0				*e*S	**Sn**	**18 03 49.5**	**-4.1**
ARCES	**ARCESS Array B** comp=Z,0.3nm,0.3s,baz=187,slow=13,SNR=16	**9.82**	**7**	Pn	**P**	**18 01 58.9**	**-2.4**
ARCES	baz=184,slow=24			Sn	**Sn**	**18 03 47.9**	**-5.7**

*HEL **24** 18:09:04.8±0.3,59.51N×22.51E,ML1.7,ML2.3(UPP), Explosion*
*IDC **24** 18:09:04.8±1.8,59.64N×22.30E,mb1 2.9/4, mb1mx2.8/22,ML2.5/3,Error ellipse: s-maj=23.4km s-min=7.5km az=162.0*
ISC 24 18:09:02.6±1.4,**59.7N**±0.2×**22.11E**±0.09,**n11,**σ1**§54/19,**
Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MEF	**Metsahovi**	**1.27**	**63**	*e*P	**Pb**	**18 09 25.8**	**-1.4**
MEF				*e*S	**Sb**	**18 09 41.5**	**-2.5**
PVF	**Pernaja**	**2.07**	**63**	*e*P	**Pn**	**18 09 39.5**	**+0.5**
PVF				*e*S	**Sn**	**18 10 05.3**	**-0.7**
FIA0	**FINESS Array S**	**2.65**	**46**	*e*P	**Pn**	**18 09 48.2**	**+0.9**
FIA0				*e*SB	**Sb**	**18 10 23.3**	**-0.5**
FINES	**FINESS Array B** 0.4nm,0.3s,baz=228,slow=12,SNR=21	**2.65**	**46**	Pn	**Pn**	**18 09 48.3**	**+1.0**
FINES	1.1nm,0.3s,baz=229,slow=26,SNR=18			Sn	**Sn**	**18 10 22.8**	**+2.2**
KEF	**Keuruu**	**2.85**	**27**	*e*P	**Pn**	**18 09 52.1**	**+2.0**
KEF	comp=Z,1.9nm,0.1s			MSG		18 10 32.3	
KAF	**Kangasniemi**	**3.20**	**38**	*e*P	**Pn**	**18 09 56.5**	**+1.4**
KAF	comp=Z,1.7nm,0.1s			MSG		18 10 40.8	
VAF	**Ylistaro**	**3.40**	**4**	*e*P	**Pn**	**18 10 01.4**	**+3.4**
SUF	**Sumiainen**	**3.63**	**31**	*e*P	**Pn**	**18 10 02.1**	**+0.8**
HFS	**Hagfors** comp=Z,0.0nm,0.3s,baz=99,slow=14,SNR=6.9	**4.27**	**280**	Pn	**Pn**	**18 10 11.6**	**+1.3**
HFS	comp=Z,0.1nm,0.3s,baz=96,slow=16,SNR=14			Pg	**Pg**	**18 10 20.7**	**-7.1**
HFS	comp=Z,0.0nm,0.3s,baz=98,slow=22,SNR=2.9			Sn	**Sn**	**18 11 01.6**	**+0.1**
HFS	comp=Z,0.1nm,0.3s,baz=93,slow=31,SNR=9.3			Lg		18 11 20.8	
NOA	**NORSAR Array B** comp=Z,0.1nm,0.3s,baz=87,slow=12,SNR=3.0	**5.58**	**289**	Pn	**Pn**	**18 10 28.5**	**-0.4**
NOA	comp=Z,0.1nm,0.3s,baz=173,slow=22,SNR=2.9			Sn	**Sn**	**18 11 31.4**	**-3.3**
ARCES	**ARCESS Array B** 10.01 comp=Z,0.1nm,0.3s,baz=183,slow=15,SNR=9.1		**7**	Pn	**P**	**18 11 27.6**	**-2.9**
ARCES	comp=Z,0.0nm,0.3s,baz=187,slow=22,SNR=2.0			Sn	**Sn**	**18 13 13.9**	**-11**

IDC 24 18:50:36.7±2.0,**14.71S**×**74.22W,mb3.9**/1,**mb1 4.1**/3, **mb1mx3.8**/16,**ML4.2**/2,**Error ellipse: s-maj=93.4km s-min=31.1km az=47.0,Central Peru**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LPAZ	**La Paz** 1.6nm,0.3s,baz=286,slow=11,SNR=29	**6.08**	**106**	Pn	Pn	18 52 08.7	-1.3
LVC	**Limon Verde** 0.6nm,0.3s,baz=339,slow=10.0,SNR=6.3	**9.33**	**148**	Pn	P	18 52 52.7	-2.8
YKA	**Yellowknife Ar** 0.9nm,0.8s,baz=135,slow=5.2,SNR=21	**83.18**	**342**	P	P	19 03 04.4	-1.3
SONM	**Songino Array** 1.9nm,0.9s,baz=336,slow=2.2,SNR=12	**146.97**	**359**	PKPbc	PKPbc	19 10 20.5	-0.3

*WAR **24** 18:53:25.9,50.36N×18.86E,h1km,Location given by Central Institute of Mining, origin time based upon OJC*
*PRU **24** 18:53:26.3,50.36N×18.81E*
ISC 24 18:53:23.9±0.8,**50.38N**±0.06×**18.77E**±0.04,**n8,** σ0**§93/14,**
Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OKC	**Ostrava-Krasne**	**0.68**	**216**	*e*Pg	**Pg**	**18 53 39.0**	**+1.6**
OKC				*e*SG	**Sg**	**18 53 47.3**	**+0.9**
OJC	**Ojcow**	**0.68**	**103**	*e*Pg	**Pg**	**18 53 37.7**	**+0.1**
OJC				*e*Sg	**Sg**	**18 53 46.4**	**-0.2**
OJC	**Ojcow**	**0.68**	**103**	*e*PG	**Pg**	**18 53 38.0**	**+0.4**
OJC				*e*SG	**Sg**	**18 53 46.0**	**-0.6**
NIE	**Niedzica**	**1.39**	**133**	*e*Pg	**Pg**	**18 53 52.1**	**+0.4**
NIE				*e*Sg	**Sg**	**18 54 09.3**	**-0.9**
DPC	**Dobruska-Polom**	**1.56**	**270**	*e*PG	**Pg**	**18 53 55.2**	**0.0**
DPC				*e*SG	**Sg**	**18 54 16.3**	**+0.2**
KSP	**Ksiaz**	**1.64**	**287**	*e*PG	**Pg**	**18 53 57.0**	**+0.3**
KSP				*e*(SG)	**Sg**	**18 54 19.0**	**+0.4**
PRU	**Pruhonice**	**2.74**	**263**	*e*SG	**Sg**	**18 54 54.2**	**-1.1**
KHC	**Kasperske Hory**	**3.59**	**252**	*e*SG	**Sg**	**18 55 20.8**	**-2.6**

*MAN **24** 19:07:31.4, 10.11N×123.33E,h16km,mb3.7,ML2.5, MS2.0*
ISC 24 19:07:33.8±2.1,**10.04N**±0.05×**123.6E**±0.1,**h16km,n5,** σ1**§13/9,1D,Cebu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TBP	**Tagbilaran**	**0.46**	**139**	*e*P	**Pb**	**19 07 44.1**	**+1.0**
TBP				*e*S	**Sb**	**19 07 48.6**	**-0.9**
LLP	**Lapu-Lapu**	**0.49**	**56**	*e*⇓*i*P	**Pb**	**19 07 44.0**	**+0.5**
LLP				*i* S	**Sb**	**19 07 48.7**	**-1.4**
MSLP	**Maasin**	**1.29**	**86**	*e*P	**Pb**	**19 07 57.4**	**+0.3**
MSLP				*e*S	**Sb**	**19 08 07.0**	**-6.3**
OCLP	**Ormoc**	**1.44**	**46**	*e*P	**Pn**	**19 08 00.2**	**+0.9**
OCLP				*i* S	**Sb**	**19 08 19.0**	**+1.3**
CNP	**Catarman**	**2.68**	**24**	*e*P	**Pn**	**19 08 15.1**	**-2.0**
CNP				*i* S	Sn	19 08 18.2	-31

*BJI **24** 19:10:08.8,32.36S×178.04W,h12km,mB5.7,mb5.5, Ms5.6,Msz5.4*
*NEIC **24** 19:10:10.5±0.2,32.61S×178.25W,h10km,mb5.4/30, MS5.6/94,MW5.7,Error ellipse: s-maj=9.8km s-min=5.6km az=136.0,Moment Tensor Solution. s17 Moment tensor: Scale 10^17Nm; Mrr1.62; Mθθ-1.08; Mϕϕ-0.54; Mrθ0.82; Mrϕ-1.60; Mθϕ3.26; Best double couple: Mo4×10^17 NP1: ϕs260°,δ25°,λ148°. NP2:ϕs20°,δ77°,λ69°. Principal axes: T 3.99, Plg53°, Azm264°; N -.01, Plg21°, Azm25°; P -3.98, Plg29°, Azm127°:*
*MOS **24** 19:10:10.1±1.2,32.31S×178.24W,h10km,mb5.6/22, MS5.6/43 Error ellipse: s-maj=14.3km s-min=10.8km az=75.4*
*HRVD **24** 19:10:10.5±0.1,32.44S×177.86W,h15km,MW5.7/77, Centroid moment Tensor Solution. LP body waves: s73,c152;Mantle waves: s77,c166; Half duration: 1s7 Moment tensor: Scale 10^17Nm; Mrr2.21±.03; Mθθ-0.02±.03; Mϕϕ-2.20±.03; Mrθ0.68±.11; Mrϕ-0.66±.03; Mθϕ4.22±.10; Best double couple: Mo4.85×10^17 NP1: ϕs202°,δ14°,λ102°. NP2:ϕs10°,δ76°,λ87°. Principal axes: T 4.78, Plg59°, Azm276°; N .14, Plg3°, Azm11°; P -4.93, Plg31°, Azm102°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*SYO **24** 19:10:10.5,32.61S×178.25W,h10km,MB5.4,MS5.6*
*IDC **24** 19:10:14.4±1.9,32.26S×178.30W,h28km±12km,mb4.9/14, mb1 4.9/17,mb1mx4.9/20,ML4.7/3,MS5.4/20,Ms1 5.4/20, ms1mx5.3/27,Error ellipse: s-maj=18.9km s-min=13.2km az=168.0*
ISC 24 19:10:09.1±0.2,**32.61S**±0.04×**178.36W**±0.06,**h10**km, **(h11**km±2.0km**:pP-P),n440,**σ1**§12/181,mb5.3/50, MS5.6/148,34C-12D,South of Kermadec Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MXZ	**Matakaoa Point**	**5.65**	**208**	*e*P	**Pn**	**19 11 34.6**	**-0.6**
MXZ				*e*S	**Sn**	**19 12 42.7**	**+1.7**
PUZ	**Puketiti**	**6.12**	**206**	*e*P	**Pn**	**19 11 40.8**	**-1.0**
PUZ				S	**Sn**	**19 12 53.2**	**+0.6**
PUZ	**Puketiti**	**6.12**	**206**	*e*P	**Pn**	**19 11 40.9**	**-0.9**
PUZ				*e*S	**Sn**	**19 12 53.2**	**+0.6**
KUZ	**Kuaotunu**	**6.39**	**228**	*e*P	**Pn**	**19 11 49.1**	**+3.4**
MWZ	**Matawai**	**6.63**	**209**	*e*P	**Pn**	**19 11 46.7**	**-2.3**
MWZ				*e*S	**Sn**	**19 13 05.4**	**0.0**
URZ	**Urewera** 11nm,0.3s,baz=18,slow=3.6,SNR=59	**6.75**	**212**	Pn	**Pn**	**19 11 50.3**	**-0.3**
URZ	55nm,0.3s,baz=134,slow=21,SNR=11			Sn	**Sn**	**19 13 09.3**	**+0.9**
URZ	**Urewera**	**6.75**	**212**	*e*P	**Pn**	**19 11 48.8**	**-1.9**
URZ				T		19 18 18.9	
URZ	**Urewera**	**6.75**	**212**	*e*P	**Pn**	**19 11 48.9**	**-1.8**
WCZ	**Waipu Caves**	**6.90**	**239**	*e*P	**Pn**	**19 11 56.9**	**+4.1**
KNZ	**Kokohu**	**7.17**	**206**	*e*P	**Pn**	**19 11 54.0**	**-2.6**
OUZ	**Omahuta**	**7.18**	**247**	P	**Pn**	**19 12 01.8**	**+5.0**
OUZ	**Omahuta**	**7.18**	**247**	*e*P	**Pn**	**19 12 02.1**	**+5.3**
BKZ	**Black Stump Fm**	**7.77**	**211**	*e*P	**Pn**	**19 12 03.5**	**-1.5**
BFZ	**Birch Farm**	**9.15**	**207**	*e*P	**P**	**19 12 18.7**	**-5.5**
MRZ	**Mangatainoka R**	**9.40**	**209**	*e*P	**P**	**19 12 22.5**	**-5.1**
CAW	**Cannon Point**	**9.98**	**210**	S	**Sn**	**19 14 21.9**	**-7.0**
MRW	**Makara Radio**	**10.24**	**211**	S	**S**	**19 14 26.9**	**-8.3**
QRZ	**Quartz Range**	**10.99**	**219**	*e*P	**P**	**19 12 47.8**	**-1.6**
THZ	**Tophouse**	**11.49**	**215**	S	**S**	**19 14 58.0**	**-7.7**
KHZ	**Kahutara**	**11.71**	**211**	*e*P	**P**	**19 12 53.5**	**-5.8**
KHZ				S	**S**	**19 15 00.1**	**-11**
DSZ	**Denniston Nort**	**12.03**	**218**	*e*P	**P**	**19 13 03.3**	**-0.2**
DSZ				S	**S**	**19 15 09.9**	**-8.9**
LTZ	**Lake Taylor**	**12.57**	**213**	S	**S**	**19 15 19.6**	**-12**
MQZ	**McQueen's Vall**	**13.14**	**210**	S	**S**	**19 15 32.5**	**-13**
WVZ	**Waitaha Valley**	**13.53**	**216**	S	**S**	**19 15 43.9**	**-11**
RPZ	**Rata Peaks** 3.7nm,0.3s,baz=52,slow=2.3,SNR=19	**13.86**	**214**	Pn	**P**	**19 13 23.2**	**-4.7**
RPZ	5.2nm,0.3s,baz=352,slow=20,SNR=12			Sn	**S**	**19 15 51.6**	**-11**
RPZ	**Rata Peaks**	**13.86**	**214**	*e*P	**P**	**19 13 21.4**	**-6.4**
BWZ	**Berwen**	**15.03**	**214**	*e*P	**P**	**19 13 40.4**	**-2.7**
ODZ	**Otahua Downs**	**15.07**	**211**	*e*P	**P**	**19 13 39.4**	**-4.3**
ODZ				S	**S**	**19 16 18.7**	**-13**
AXZ	**Alexandra**	**15.84**	**213**	*e*P	**P**	**19 13 52.7**	**-1.0**
DZM	**Mont Dzumac**	**17.08**	**304**	*i*⇑*i*P	**P**	**19 14 14.9**	**+5.3**
NOUC	**Port Laguerre**	**17.16**	**304**	*e*P	**P**	**19 14 14.8**	**+4.2**
RAR	**Rarotonga** 2.3nm,0.3s,baz=235,slow=11,SNR=4.4	**20.05**	**60**	P	**P**	**19 14 42.4**	**-2.9**
RAR	comp=Z,5μm,20.1s,MS4.9,baz=220,slow=33			LR	LR	19 21 00.3	
RAR	**Rarotonga**	**20.05**	**60**	P	**P**	**19 14 42.4**	**-2.9**
RAR	comp=Z,2.0nm,0.3s			pmax	pmax		
RAR	comp=Z,5μm,20.1s			MLR	MLR		
RAR	**Rarotonga** comp=Z,273nm,1.6s	**20.05**	**60**	*e*P	**P**	**19 14 37.2**	**-8.1**
RAR				LR	LR	19 21 00.3	
ARMA	**Armidale**	**25.64**	**267**	*e*P	**P**	**19 15 44.9**	**+4.3**
CNB	**Canberra Magne** comp=Z,83nm,1.3s,mb5.1	**26.85**	**255**	*e*P	**P**	**19 15 55.6**	**+4.0**
TAU	**Tasmania Unive**	**28.84**	**239**	PFAKE		19 16 20.0	+10
TAU	comp=Z,12μm,19.0s,MS5.5			LR	LR		
TOO	**Toolangi** comp=Z,8.1nm,0.8s,mb4.5	**29.87**	**250**	*e*P	**P**	**19 16 21.1**	**+2.1**
TOO				*e*S	**S**	**19 21 23.9**	**+9.2**
TOO				*e*SCP		19 23 02.7	
STKA	**Stephens Creek** comp=Z,21nm,0.9s,mb5.1	**33.74**	**260**	*e*P	**P**	**19 16 54.5**	**+1.6**
STKA				*e*S	**S**	**19 22 26.9**	**+12**
STKA	**Stephens Creek** comp=Z,19nm,0.8s,mb5.1,baz=103,slow=9.3,SNR=42	**33.74**	**260**	P	**P**	**19 16 55.2**	**+2.3**
STKA	comp=Z,19μm,18.2s,MS5.8,baz=93,slow=36			LR	LR	19 30 28.8	
CTA	**Charters Tower** comp=Z,71nm,0.9s,mb5.6	**33.92**	**283**	*e*P	**P**	**19 16 56.3**	**+1.8**
CTA				*e*S	**S**	**19 22 22.8**	**+4.8**
CTA	**Charters Tower** comp=Z,53nm,0.6s,mb5.6,baz=111,slow=9.7,SNR=65	**33.92**	**283**	P	**P**	**19 16 56.6**	**+2.1**
CTA	comp=Z,10μm,18.1s,MS5.6,baz=132,slow=35			LR	LR	19 29 58.8	
CTA	**Charters Tower**	**33.92**	**283**	P	**P**	**19 16 56.6**	**+2.1**
CTA	comp=Z,53nm,0.6s			pmax	pmax		
CTA	comp=Z,10μm,18.2s			MLR	MLR		
CTAO	**Charters Tower**	**33.92**	**283**	*e*P	**P**	**19 16 55.7**	**+1.2**
CTAO	comp=Z,110nm,1.0s,mb5.7			pmax	pmax		
CTAO	comp=Z,9μm,19.0s,MS5.5			MLR	MLR		

CTAO	**Charters Tower** comp=Z,110nm,0.9s,mb5.8	**33.92**	**283**	*e*P	**P**	**19 16 55.7**	**+1.2**
CTAO	comp=Z,9μm,19.0s,MS5.5			LR	LR		
PMG	**Port Moresby** comp=Z,37nm,0.9s,mb5.1,baz=133,slow=8.2,SNR=8.0	**39.33**	**298**	P	**P**	**19 17 41.7**	**+1.4**
PMG	**Port Moresby**	**39.33**	**298**	*e*P	**P**	**19 17 41.8**	**+1.5**
PMG	comp=Z,31nm,0.9s			pmax	pmax		
PMG	comp=Z,5μm,19.0s			MLR	MLR		
PMG	**Port Moresby** comp=Z,31nm,0.8s,mb5.1	**39.33**	**298**	*e*P	**P**	**19 17 41.8**	**+1.5**
PMG	comp=Z,5μm,19.0s,MS5.3			LR	LR		
AS12	**Alice Springs** comp=Z,96nm,1.0s,mb5.5	**42.74**	**269**	*e*P	**P**	**19 18 08.3**	**0.0**
AS12				*e*S	**S**	**19 24 30.4**	**-1.2**
ASAR	**Alice Springs** comp=Z,96nm,0.9s,mb5.5,baz=111,slow=7.5,SNR=206	**42.74**	**269**	P	**P**	**19 18 09.1**	**+0.8**
ASAR	comp=Z,4.0nm,0.9s,baz=113,slow=15,SNR=4.7			S	**S**	**19 24 32.4**	**+0.8**
ASAR	comp=Z,4μm,18.1s,MS5.3,baz=107,slow=36			LR	LR	19 35 40.4	
WB2	**Warramunga Arr**	**43.91**	**275**	*e*P	**P**	**19 18 17.3**	**-0.6**
WB2				*e*S	**S**	**19 24 47.2**	**-1.6**
WRAB	**Tennant Creek** comp=Z,274nm,0.8s,mb6.0	**43.92**	**275**	*e*P	**P**	**19 18 17.2**	**-0.7**
WRAB	comp=Z,8μm,19.0s,MS5.7			LR	LR		
WRA	**Warramunga Arr** comp=Z,152nm,0.9s,mb5.7,baz=113,slow=7.9,SNR=439	**43.92**	**275**	P	**P**	**19 18 18.2**	**+0.2**
WRA	comp=Z,5.4nm,1.0s,baz=126,slow=4.3,SNR=4.3			ScP		19 23 55.1	
WRA	comp=Z,7μm,18.1s,MS5.6,baz=110,slow=35			LR	LR	19 35 58.5	
WRA	**Warramunga Arr**	**43.92**	**275**	P	**P**	**19 18 18.2**	**+0.3**
WRA	comp=Z,152nm,0.9s			pmax	pmax		
WRA	comp=Z,5.0nm,1.0s			pmax	pmax		
WRA	comp=Z,7μm,18.1s			MLR	MLR		
FORT	**Forrest** comp=Z,712nm,0.7s	**45.23**	**257**	*e*P	**P**	**19 18 27.8**	**-0.5**
SBA	**Scott Base**	**45.82**	**184**	*e*P	**P**	**19 18 36.1**	**+3.7**
SBA	comp=Z,220nm,1.8s,mb5.8			pmax	pmax		
SBA	comp=Z,4μm,20.0s,MS5.4			MLR	MLR		
SBA	**Scott Base** comp=Z,223nm,1.8s,mb5.8	**45.82**	**184**	*e*P	**P**	**19 18 36.1**	**+3.6**
SBA	comp=Z,4μm,20.0s,MS5.4			LR	LR		
VNDA	**Vanda** comp=Z,1.8nm,0.8s,baz=24,slow=7.0,SNR=12	**45.88**	**186**	P	**P**	**19 18 36.9**	**+4.0**
VNDA	comp=Z,4μm,19.4s,baz=15,slow=31			LR	LR	19 34 18.8	
VNDA	**Vanda**	**45.88**	**186**	P	**P**	**19 18 36.9**	**+4.0**
VNDA	comp=Z,2.0nm,0.8s			pmax	pmax		
VNDA	comp=Z,4μm,19.4s			MLR	MLR		
VNDA	**Vanda** comp=Z,1.8nm,0.7s	**45.88**	**186**	*e*P	**P**	**19 18 36.0**	**+3.1**
VNDA	comp=Z,2μm,20.0s			LR	LR		
KAKA	**Kakadu** comp=Z,69nm,0.8s,mb5.7	**49.09**	**282**	⇑*i*P	**P**	**19 18 57.8**	**-1.0**
FITZ	**Fitzroy Crossi** comp=Z,41nm,0.8s,mb5.4	**52.09**	**272**	*e*P	**P**	**19 19 20.8**	**-0.8**
FITZ				*e*S	**S**	**19 26 44.4**	**+0.4**
FITZ	**Fitzroy Crossi** comp=Z,43nm,0.8s,mb5.4,baz=165,slow=7.2,SNR=73	**52.09**	**272**	P	**P**	**19 19 21.6**	**0.0**
FITZ	comp=Z,7μm,18.1s,MS5.8,baz=101,slow=36			LR	LR	19 41 43.1	
NWAO	**Narrogin (SRO)**	**53.36**	**251**	PFAKE		19 19 40.0	+9.0
NWAO	comp=Z,3μm,20.0s,MS5.3			LR	LR		
KLBR	**Kellerberrin** comp=Z,42nm,1.2s,mb5.2	**53.38**	**253**	*e*P	**P**	**19 19 29.8**	**-1.3**
MUN	**Mundaring** comp=Z,9.3nm,0.8s,mb4.8	**54.49**	**252**	*e*P	**P**	**19 19 39.3**	**+0.1**
POHA	**Pohakuloa**	**56.46**	**26**	PFAKE		19 20 10.0	+16
POHA	comp=Z,3μm,22.0s,MS5.4			LR	LR		
KIP	**Kipapa**	**57.14**	**23**	PFAKE		19 20 10.0	+12
KIP	comp=Z,2μm,19.0s,MS5.2			LR	LR		
QSPA	**South Pole Qui** comp=Z,47nm,1.2s,mb5.4	**57.51**	**180**	*e*P	**P**	**19 20 01.8**	**+1.4**
QSPA	comp=Z,6μm,19.0s,MS5.7			LR	LR		
GUMO	**Guam**	**57.85**	**317**	PFAKE		19 20 20.0	+16
GUMO	comp=Z,2μm,19.0s,MS5.2			LR	LR		
MIR	**Mirnyy**	**60.03**	**208**	*e*P	**P**	**19 20 19.5**	**+1.5**
MIR				*e*	pP	19 20 23.0	+1.9
MIR				*e*PPP	PPP	19 24 04.0	+5.5
MIR				*e*S	**S**	**19 28 35.0**	**+6.1**
MIR	comp=Z,180nm,1.6s,mb5.8			pmax	pmax		
MIR	comp=Z,1μm,10.0s			pmax	pmax		
MIR	comp=E,2μm,10.0s			smax			
MIR	comp=N,3μm,8.0s			smax			
MAW	**Mawson** comp=N,25nm,1.0s,mb5.1,baz=117,slow=7.9,SNR=14	**70.14**	**201**	P	**P**	**19 21 25.9**	**+2.6**
MAW	comp=N,5μm,20.2s,MS5.8,baz=119,slow=34			LR	LR	19 50 25.9	
MAW	**Mawson**	**70.14**	**201**	P	**P**	**19 21 25.9**	**+2.7**
MAW	comp=Z,25nm,1.0s			pmax	pmax		
MAW	comp=Z,5μm,20.2s			MLR	MLR		
USHA	**Ushuaia** comp=Z,849nm,19.6s,MS5.0,baz=240,slow=28	**74.28**	**146**	LR	LR	19 45 25.0	
TGY	**Tagaytay City** comp=Z,1μm,18.5s,MS5.1,baz=288,slow=35	**74.29**	**298**	LR	LR	19 53 29.3	
SYO	**Syowa Base**	**74.91**	**193**	⇓P	**P**	**19 21 51.8**	**+0.6**
SYO	**Syowa Base**	**74.91**	**193**	⇓pP	pP	19 21 55.0	+0.6
SYO	**Syowa Base**	**74.91**	**193**	⇓*e*P	**P**	**19 21 51.8**	**+0.5**
SYO				*e*pP	pP	19 21 55.0	+0.6
SYO				*e*PP	PP	19 24 36.7	-4.4
SNAA	**Sanae**	**75.97**	**179**	*e*P	**P**	**19 21 57.4**	**+0.1**
VNA3	**Neumayer Olymp**	**76.13**	**176**	⇑*i*	**P**	**19 22 02.2**	**+4.0**
VNA3	**Neumayer Olymp**	**76.13**	**176**	⇑*i*	**P**	**19 22 04.6**	**+6.4**
VNA3	**Neumayer Olymp**	**76.13**	**176**	⇓*i*	**P**	**19 22 06.6**	**+8.4**
VNA3	**Neumayer Olymp**	**76.13**	**176**		**P**	**19 22 14.0**	**+16**
JHJ	**Hachijo jima 2** comp=Z,1μm,18.9s,MS5.2,baz=151,slow=34	**76.36**	**325**	LR	LR	19 53 35.5	
VNA2	**Neumayer--Watz**	**76.56**	**177**	⇑*i*	**P**	**19 22 06.3**	**+5.7**
VNA2	**Neumayer--Watz**	**76.56**	**177**		**P**	**19 22 08.5**	**+7.9**
VNA2	**Neumayer--Watz**	**76.56**	**177**		**P**	**19 22 09.8**	**+9.2**
VNA2	**Neumayer--Watz**	**76.56**	**177**	⇑*i*	**P**	**19 22

MAT S S 19 32 21.0 -0.6
MAT Matsushiro 79.88 326 *e*P **P 19 22 16.0 -3.6**
comp=Z,10.0nm,1.0s,mb4.7
MAT *e*S S 19 32 21.0 -0.6
MAT LR LR
comp=Z,1μm,21.0s,MS5.3
JNU Nakatsue 81.00 319 P **P 19 22 24.9 -0.7**
comp=Z,32nm,0.9s,mb5.2,baz=83,slow=8.3,SNR=22
JNU LR LR 19 53 59.2
comp=Z,1μm,19.1s,MS5.3,baz=116,slow=32
TATO Taipei 81.02 307 PFAKE 19 22 40.0 +14
TATO LR LR
comp=Z,968nm,19.0s,MS5.2
EFI East Falkland 81.11 147 PFAKE 19 22 40.0 +14
EFI LR LR
comp=Z,2μm,19.0s,MS5.4
KGM Kluang 81.26 278⇑ *e*P **P 19 22 28.1 +0.8**
YUK Yuzh-Kuril'sk 82.97 335 P **P 19 22 34.0 -1.6**
YUK *e* 19 22 40.0
YUK *e* 19 32 45.0
YUK *e* 19 32 56.0
YUK pmax pmax
comp=Z,2μm,4.0s
SMY Shemya 85.23 355 PFAKE 19 23 00.0 +13
SMY LR LR
comp=Z,6μm,20.0s,MS6.0
SSE Sheshan 85.33 312 P **P 19 22 48.3 +0.5**
SSE AP pP 19 22 50.3 -0.7
SSE PP PP 19 26 03.3 -4.1
SSE S S 19 33 16.5 -0.4
SSE SS SS 19 38 51.8 -3.0
SSE AMB AMB
comp=Z,29nm,0.7s,mb5.5
SSE AMB AMB
comp=Z,517nm,10.7s
SSE LR LR
comp=N,440nm,20.9s,MS5.0
SSE LR LR
comp=E,394nm,20.9s,MS5.0
SSE LR LR
comp=Z,1μm,19.3s,MS5.3
GZH Guangzhou 85.51 301 P **P 19 22 44.8 -4.0**
GZH S S 19 33 11.8 -7.0
GZH LR LR
comp=N,758nm,15.1s,MS5.4
GZH LR LR
comp=E,740nm,14.8s,MS5.4
GZH LR LR
comp=Z,1μm,19.9s
QIZ Qiongzhong 85.67 296 ⇑P **P 19 22 49.3 -0.4**
QIZ XP sP 19 22 55.8 +1.9
QIZ PP PP 19 26 09.9 -0.4
QIZ S S 19 33 20.9 +0.5
QIZ AMB AMB
comp=Z,584nm,11.4s
FCH Farellones 85.75 127 *e*P **P 19 22 51.1 +1.3**
INCN Inchon 86.56 319 PFAKE 19 23 10.0 +16
INCN LR LR
comp=Z,755nm,19.0s,MS5.1
YSS Yuzh-Sakhalins 86.60 334α *i*P **P 19 22 52.8 -0.8**
YSS *e* pP 19 22 57.7 +0.8
YSS *e* 19 33 19.0
YSS *e*S S 19 33 24.0 -4.7
YSS *e*SS SS 19 39 06.0 -6.8
YSS pmax pmax
comp=Z,50nm,0.9s,mb5.7
YSS smax
comp=N,1μm,8.0s
YSS smax
comp=E,700nm,8.0s
YSS pmax pmax
comp=N,2μm,16.0s
YSS Yuzh-Sakhalins 86.60 334 *e*P **P 19 22 53.6 0.0**
comp=N,48nm,0.8s,mb5.8
YSS LR LR
comp=Z,2μm,19.0s,MS5.5
UNV Unalaska Valle 86.71 7 PFAKE 19 23 10.0 +16
UNV LR LR
comp=Z,6μm,20.0s,MS6.0
SAO San Andreas Ge 87.11 42 PFAKE 19 23 10.0 +14
SAO LR LR
comp=Z,3μm,20.0s,MS5.7
NJ2 Nanjing 87.45 311 *e*P **P 19 22 59.0 +0.9**
NJ2 AP pP 19 23 09.6 +8.2
NJ2 XP sP 19 23 13.3 +11
NJ2 S S 19 33 31.0 -6.2
NJ2 XS 19 33 54.0
NJ2 SS SS 19 39 21.0 -4.5
NJ2 AMB AMB
comp=Z,70nm,0.9s,mb5.9
NJ2 LR LR
comp=N,2μm,20.2s,MS5.5
NJ2 LR LR
comp=E,1μm,22.1s,MS5.5
NJ2 LR LR
comp=Z,2μm,19.2s,MS5.4
PET Petropavlovsk 87.59 346*c i*P **P 19 22 57.0 -1.3**
PET *e* 19 26 31.9
PET *i* 19 33 23.2
PET *e*S S 19 33 39.0 +1.0
PET *e*PS PS 19 34 32.5 -10
PET *e*SS SS 19 39 25.8 -1.4
PET pmax pmax
comp=Z,555nm,7.0s
PET pmax pmax
comp=N,433nm,4.2s
PET pmax pmax
comp=Z,468nm,11.3s
PET pmax pmax
comp=N,290nm,15.5s
PET pmax pmax
comp=Z,42nm,1.8s,mb5.4
PET pmax pmax
comp=Z,260nm,10.7s
PET pmax pmax
comp=N,575nm,13.6s
PET smax
comp=E,1μm,16.7s
PET smax
comp=N,986nm,15.7s
PET MLR MLR
comp=Z,3μm,18.0s,MS5.7
PET MLR MLR
comp=Z,3μm,17.0s
PET Petropavlovsk 87.59 346 PFAKE 19 23 10.0 +12
PET LR LR
comp=Z,3μm,19.0s,MS5.7
HOPS Hopland 87.79 40 PFAKE 19 23 10.0 +10
HOPS LR LR
comp=Z,7μm,19.0s,MS6.1
PFO Pinyon Flat Ob 87.92 47 *e*P **P 19 23 00.2 -0.2**
PFO pmax pmax
comp=Z,40nm,1.4s,mb5.5
PFO MLR MLR
comp=Z,4μm,19.0s,MS5.8
PFO Pinyon Flat Ob 87.92 47 *e*P **P 19 23 00.2 -0.1**
comp=Z,40nm,1.4s,mb5.5
PFO LR LR
comp=Z,4μm,19.0s,MS5.8
VLA Vladivostok 88.05 326⇑ *i*P **P 19 23 04.0 +3.3**
VLA *i* S S 19 33 27.0 -16
VLA *i* 19 34 48.0
VLA *i* 19 43 10.0
VLA pmax pmax
comp=Z,1μm,10.0s
VLA pmax pmax
comp=Z,2μm,9.0s
VLA smax
comp=N,1μm,12.0s
VLA smax
comp=E,500nm,10.0s
VLA MLR MLR
comp=Z,2μm,20.0s,MS5.4
VLA MLR MLR
comp=N,1μm,18.0s,MS5.5
VLA MLR MLR
comp=E,900nm,18.0s,MS5.5
TRQA Tornquist 88.10 135 P **P 19 23 01.5 +0.4**
CMB Columbia Colle 88.60 42 *e*P **P 19 23 02.8 -0.7**
CMB pmax pmax
comp=Z,29nm,1.3s,mb5.5
CMB MLR MLR
comp=Z,2μm,20.0s,MS5.6
CMB Columbia Colle 88.60 42 *e*P **P 19 23 02.8 -0.7**
comp=Z,29nm,1.4s,mb5.4
CMB LR LR
comp=Z,2μm,20.0s,MS5.6
OHCM Honcut 88.90 41 *e*P **P 19 23 04.7 -0.3**
DAC Darwin (Calif) 89.01 45 *e*P **P 19 23 01.6 -3.9**
DAC MLR MLR
comp=Z,2μm,19.0s,MS5.6
MTUM Tungsten Hills 89.17 44 *e*P **P 19 23 06.2 0.0**
WDC Whiskeytown Da 89.21 39 *e*P **P 19 23 05.0 -1.4**
WDC pmax pmax
comp=Z,82nm,1.9s,mb5.7
WDC MLR MLR
comp=Z,4μm,20.0s,MS5.8
WDC Whiskeytown Da 89.21 39 *e*P **P 19 23 05.0 -1.4**
comp=Z,82nm,1.9s,mb5.7
WDC LR LR
comp=Z,4μm,20.0s,MS5.8
WHN Wuhan 89.43 307 *e*P **P 19 23 08.0 +0.3**
WHN LR LR
comp=N,1μm,15.8s,MS5.7
WHN LR LR
comp=E,2μm,18.8s,MS5.7
WHN LR LR
comp=Z,2μm,19.5s,MS5.6
LDFC Landfair 89.72 47 P **P 19 23 09.3 +0.4**
WCN Washoe City 89.83 41 *e*P **P 19 23 10.2 +0.9**
WCN pmax pmax
comp=Z,27nm,1.2s,mb5.5
WCN Washoe City 89.83 41 *e*P **P 19 23 10.2 +0.9**
comp=Z,27nm,1.3s,mb5.4
BEKR Beckwourth 89.89 41 *e*P **P 19 23 08.7 -0.9**
comp=Z,48nm,1.8s,mb5.5
YBH Yreka Blue Hor 89.95 38 P **P 19 23 10.0 +0.2**
comp=Z,5.4nm,1.1s,mb4.8,baz=131,slow=7.7,SNR=4.5
YBH Yreka Blue Hor 89.95 38 P **P 19 23 10.0 +0.2**
YBH pmax pmax
comp=Z,5.0nm,1.1s
YBH Yreka Blue Hor 89.95 38 *e*P **P 19 23 08.6 -1.2**
comp=Z,21nm,1.3s,mb5.3
YBH LR LR
comp=Z,3μm,19.0s,MS5.8
NVAR Mina Array Bea 90.06 43 P **P 19 23 10.1 -0.3**
comp=Z,6.0nm,0.9s,mb4.9,baz=209,slow=6.2,SNR=24
NVAR PKKPbc 19 40 45.5
comp=Z,0.3nm,0.6s,baz=116,slow=2.4,SNR=3.5
NVAR LR LR 20 00 41.1
comp=Z,2μm,18.4s,MS5.7,baz=220,slow=34
NEN Nelson 90.26 47 *e*P **P 19 23 11.1 -0.3**
MDJ Mudanjiang 90.27 326 P **P 19 23 10.6 -0.6**
MDJ AP pP 19 23 13.9 -0.5
MDJ AMB AMB
comp=Z,15nm,1.2s,mb5.2
MDJ AMB AMB
comp=Z,473nm,10.4s
MDJ LR LR
comp=N,709nm,19.6s,MS5.2
MDJ LR LR
comp=E,563nm,18.2s,MS5.2
MDJ LR LR
comp=Z,893nm,21.7s,MS5.2
DL2 Dalian 90.36 317 P **P 19 23 12.3 +0.5**
DL2 PP PP 19 26 47.4 -1.0
DL2 PPP PPP 19 28 41.6 -6.2
DL2 SKS SKS 19 33 44.1 -2.0
DL2 AMB AMB
comp=Z,20nm,1.8s,mb5.2
DL2 AMB AMB
comp=Z,220nm,11.1s
DL2 LR LR
comp=E,770nm,18.8s
DL2 LR LR
comp=Z,590nm,18.7s,MS5.0
TPH Tonopah 90.44 44 *e*P **P 19 23 10.7 -1.5**
TPH pmax pmax
comp=Z,32nm,1.3s,mb5.5
TPH MLR MLR
comp=Z,1μm,20.0s,MS5.3
TPH Tonopah 90.44 44 *e*P **P 19 23 10.7 -1.5**
comp=Z,32nm,1.4s,mb5.5
TPH LR LR
comp=Z,1μm,20.0s,MS5.3
HUMO Hull Mountain 90.45 37 *e*P **P 19 23 09.9 -2.2**
TUC Tucson 90.72 52 *e*P **P 19 23 13.2 -0.4**
TUC pmax pmax
comp=Z,23nm,1.3s,mb5.3
TUC MLR MLR
comp=Z,1μm,19.0s,MS5.3
TUC Tucson 90.72 52 *e*P **P 19 23 13.2 -0.4**
comp=Z,23nm,1.4s,mb5.3
TUC LR LR
comp=Z,1μm,19.0s,MS5.3
HSO Harness Mounta 91.04 37 P **P 19 23 15.6 +0.8**
TIA Tai'an 91.25 313 *e*P **P 19 23 16.5 +0.6**
SNY Shenyang 91.30 321 ⇑P **P 19 23 16.3 +0.3**
SNY AMB AMB
comp=Z,10.0nm,0.9s,mb5.2
SNY AMB AMB
comp=Z,350nm,11.8s
SNY LR LR
comp=N,680nm,21.2s,MS5.2
SNY LR LR
comp=E,710nm,18.8s,MS5.2
SNY LR LR
comp=Z,1μm,21.6s,MS5.3
COR Corvallis 91.70 36 PFAKE 19 23 30.0 +12
COR LR LR
comp=Z,5μm,19.0s,MS6.0
CN2 Changchun 91.71 323 *e*P **P 19 23 17.8 -0.1**
CN2 *e*S S 19 34 15.5 -0.3
CN2 AMB AMB
comp=Z,10.0nm,1.0s,mb5.1
CN2 AMB AMB
comp=Z,400nm,8.0s
CN2 LR LR
comp=N,1μm,19.0s,MS5.4
CN2 LR LR
comp=E,900nm,19.0s,MS5.4
CN2 LR LR
comp=Z,1μm,19.0s,MS5.4
BMN Battle Mountai 92.03 42 *e*P **P 19 23 18.9 -0.5**
BMN pmax pmax
comp=Z,18nm,1.3s,mb5.2
BMN MLR MLR
comp=Z,3μm,20.0s,MS5.7
BMN Battle Mountai 92.03 42 *e*P **P 19 23 18.9 -0.5**
comp=Z,18nm,1.4s,mb5.2
BMN LR LR
comp=Z,3μm,20.0s,MS5.7
WUAZ Wupatki 92.34 49 *e*P **P 19 23 21.3 +0.3**
comp=Z,25nm,1.4s,mb5.4
WUAZ LR LR
comp=Z,2μm,19.0s,MS5.6
GYA Guiyang 92.38 300⇑ *i*P **P 19 23 23.3 +1.9**
GYA PP PP 19 27 06.8 +1.9
GYA SKS SKS 19 33 55.8 -2.3
GYA S S 19 34 26.4 +4.3
GYA AMB AMB
comp=Z,30nm,1.1s,mb5.5
GYA AMB AMB
comp=Z,290nm,4.2s
GYA LR LR
comp=N,520nm,15.2s,MS5.3
GYA LR LR
comp=E,710nm,19.9s,MS5.3
GYA LR LR
comp=Z,780nm,18.0s,MS5.2
WVOR Wild Horse Val 92.61 40 *e*P **P 19 23 21.6 -0.4**
WVOR pmax pmax
comp=Z,76nm,1.8s,mb5.8
WVOR MLR MLR
comp=Z,7μm,20.0s,MS6.1
WVOR Wild Horse Val 92.61 40 *e*P **P 19 23 21.6 -0.4**
comp=Z,76nm,1.8s,mb5.8
WVOR LR LR
comp=Z,7μm,20.0s,MS6.1
KDAK Kodiak Island 92.62 13 PFAKE 19 23 30.0 +8.3
KDAK LR LR
comp=Z,4μm,20.0s,MS5.8
KLR Kul'dur 92.78 330 *e*P **P 19 23 22.2 -0.4**
KLR *e*S S 19 33 55.0 -30
KLR *e* 19 35 35.0
KLR smax
comp=N,1μm,10.0s
KLR smax
comp=E,800nm,10.0s
KLR MLR MLR
comp=N,2μm,18.0s,MS5.7
KLR MLR MLR
comp=E,2μm,18.0s,MS5.7
BMW Boistfort Moun 93.10 35 *e*P **P 19 23 24.3 +0.1**
LVC Limon Verde 93.13 119 LR LR 19 55 19.0
comp=E,635nm,21.7s,MS5.0,baz=302,slow=29
LVC Limon Verde 93.13 119 PFAKE 19 23 40.0 +15
LVC LR LR
comp=Z,2μm,19.0s,MS5.6
OCWA Octopus Mounta 93.58 33 PFAKE 19 23 40.0 +14
OCWA LR LR
comp=Z,3μm,20.0s,MS5.7
MVU Marysvale 93.71 46 PFAKE 19 23 40.0 +13
MVU LR LR
comp=Z,2μm,19.0s,MS5.7
MSU Marysvale 93.73 46 *e*P **P 19 23 28.1 +0.8**
TXAR Lajitas Array 93.83 58 P **P 19 23 30.5 +2.5**
comp=Z,0.9nm,0.3s,mb4.7,baz=219,slow=5.8,SNR=2.9
TXAR LR LR 20 00 22.3
comp=Z,3μm,18.6s,MS5.7,baz=245,slow=32
CM31 Chiang Mai Arr 93.84 289 PFAKE 19 23 40.0 +12
CM31 LR LR
comp=Z,1μm,20.0s,MS5.4
CMAR Chiang Mai Arr 93.84 289 P **P 19 23 28.9 +0.7**
comp=Z,0.9nm,1.0s,baz=135,slow=3.8,SNR=3.2
CMAR PP PP 19 27 14.9 -1.8
comp=Z,2.6nm,1.0s,baz=144,slow=6.9,SNR=7.2
CMAR Chiang Mai Arr 93.84 289 P **P 19 23 29.0 +0.8**
CMAR 19 27 14.9
CMAR pmax pmax
comp=Z,1.0nm,1.0s
CMAR pmax pmax
comp=Z,3.0nm,1.0s
MNTX Cornudas Mount 94.00 55 PFAKE 19 23 40.0 +11
MNTX LR LR
comp=Z,1μm,19.0s,MS5.4
BJI Beijing 94.28 316 P **P 19 23 29.6 -0.2**
BJI AMB AMB
comp=Z,6.0nm,0.9s,mb5.0
BJI AMB AMB
comp=Z,371nm,9.0s
BJI LR LR
comp=N,700nm,21.0s,MS5.1
BJI LR LR
comp=E,339nm,22.9s,MS5.1
BJI LR LR
comp=Z,870nm,28.7s
RMW Rattlesnake Mo 94.49 35 P **P 19 23 30.9 +0.4**
KMI Kunming 94.54 297 *e*P **P 19 23 31.8 +0.5**
KMI PP PP 19 27 21.8 +0.1
KMI SKS SKS 19 34 07.8 -2.3
KMI S S 19 34 49.6 +8.8
KMI SP SP 19 36 09.1 +7.5
KMI SS SS 19 41 06.1 -1.4
KMI AMB AMB
comp=Z,313nm,10.5s
KMI LR LR
comp=N,1μm,17.4s,MS5.4
KMI LR LR
comp=E,399nm,15.7s,MS5.4
KMI LR LR
comp=Z,1μm,17.1s,MS5.4
HAWA Hanford 94.86 36 PFAKE 19 23 40.0 +7.8
HAWA LR LR
comp=Z,5μm,19.0s,MS6.0
LNOR Lincton Mounta 95.13 37 P **P 19 23 33.4 -0.1**
ANMO Albuquerque 95.19 52 *e*P **P 19 23 35.2 +1.1**
ANMO Albuquerque 95.19 52 *e*P **P 19 23 35.1 +1.1**
ANMO LR LR
comp=Z,3μm,19.0s,MS5.8
MA2 Magadan 95.33 345 *e*P **P 19 23 33.5 -0.6**
MA2 *e* 19 27 20.2
MA2 *e*PPP PPP 19 29 35.1 +3.4
MA2 *e* 19 34 07.5
MA2 *e*S S 19 34 45.2 -1.5
MA2 *e*PS PS 19 36 12.4 +1.4
MA2 pmax pmax
comp=Z,20nm,1.5s,mb5.3
MA2 MLR MLR
comp=Z,3μm,21.0s,MS5.7
MA2 Magadan 95.33 345 PFAKE 19 23 50.0 +16
MA2 LR LR
comp=Z,1μm,19.0s,MS5.5
HLID Hailey 95.67 41 *e*P **P 19 23 35.8 -0.3**
comp=Z,4.9nm,1.1s,mb4.8
HLID LR LR
comp=Z,2μm,19.0s,MS5.6
HWUT Hardware Ranch 96.05 44 *e*P **P 19 23 38.4 +0.5**
HWUT LR LR
comp=Z,2μm,20.0s,MS5.6
FIB Fire Island 96.22 13 PFAKE 19 23 50.0 +12
FIB LR LR
comp=Z,5μm,20.0s,MS6.0
SIT Sitka 96.43 22 PFAKE 19 23 50.0 +11
SIT LR LR
comp=Z,3μm,19.0s,MS5.7
PMR Palmer 96.82 14 PFAKE 19 23 50.0 +9.2
PMR LR LR
comp=Z,2μm,19.0s,MS5.7
AHID Auburn Hatcher 97.04 43 PFAKE 19 23 50.0 +7.7
AHID LR LR
comp=Z,2μm,19.0s,MS5.7
JCT Junction City 97.24 59 PFAKE 19 23 50.0 +6.5
JCT LR LR
comp=Z,2μm,19.0s,MS5.7
NEW Newport 97.33 36 PFAKE 19 23 50.0 +6.6
NEW LR LR
comp=Z,6μm,19.0s,MS6.1
SDCO Great Sand Dun 97.45 50 PFAKE 19 24 00.0 +16
SDCO LR LR
comp=Z,2μm,19.0s,MS5.5
LPAZ La Paz 97.51 115 LR LR 19 58 13.0
comp=Z,616nm,21.0s,MS5.1,baz=321,slow=30
LPAZ La Paz 97.51 115 P **P 19 23 45.9 +0.9**
LPAZ MLR MLR
comp=Z,440nm,19.0s
HHC Hu-ho-hao-te 97.54 314 *e*P **P 19 23 44.6 0.0**
HHC SKS SKS 19 34 23.9 -1.8
HHC S S 19 35 11.8 +5.9
HHC AMB AMB
comp=Z,9.0nm,1.4s,mb5.1
HHC AMB AMB
comp=Z,132nm,10.5s
HHC LR LR
comp=N,881nm,19.0s,MS5.4
HHC LR LR
comp=E,722nm,19.2s,MS5.4
HHC LR LR
comp=Z,613nm,18.7s,MS5.1
BW06 Boulder Array 97.93 44 *e*P **P 19 23 46.3 0.0**
BW06 LR LR
comp=Z,2μm,20.0s,MS5.6
PDAR Pinedale Array 97.93 44 P **P 19 23 46.2 -0.1**
comp=Z,0.9nm,1.0s,baz=214,slow=5.3,SNR=6.1
PDAR PP PP 19 27 43.9 -4.0
comp=Z,0.4nm,0.6s,baz=252,slow=4.7,SNR=4.5
PDAR PKKPbc 19 40 24.2
comp=Z,0.7nm,0.9s,baz=77,slow=5.4,SNR=4.7
PDAR LR LR 20 00 58.9
comp=Z,2μm,19.3s,baz=246,slow=31
MSO Missoula 98.03 39 PFAKE 19 24 00.0 +13
MSO LR LR
comp=Z,8μm,19.0s,MS6.2
SEY Seymchan 98.05 347 *e*P **P 19 23 46.1 -0.2**
SEY 19 27 44.0
SEY *e*PPP PPP 19 29 47.8 -7.6
SEY 19 34 21.9
SEY 19 35 07.8
SEY *e* 19 36 40.2
SEY SS SS 19 41 50.4 -5.3
SEY SSS SSS 19 45 42.2 -0.6
SEY pmax pmax
comp=N,10.0nm,1.1s
SEY pmax pmax
comp=E,5.0nm,1.1s
SEY pmax pmax
comp=Z,40nm,1.1s,mb5.9
SEY smax
comp=N,3μm,12.6s
SEY smax
comp=E,3μm,13.9s
SEY MLR MLR
comp=E,4μm,19.0s,MS6.2
SEY MLR MLR
comp=Z,12μm,19.0s,MS6.4
SEY MLR MLR
comp=N,7μm,20.0s,MS6.2

QLMT **Earthquake Lak** 98.13 41 P P 19 23 47.2 +0.1
TNA **Tin City** 98.18 4 PFAKE 19 24 00.0 +13
TNA LR LR
comp=Z,969nm,21.0s,MS5.3
CHMT **Chamberlain Mo** 98.44 39 P P 19 23 48.2 -0.3
BOZ **Bozeman (W)** 98.53 41 *e*P P 19 23 48.3 -0.6
BOZ pmax pmax
comp=Z,16nm,1.6s,mb5.3
BOZ MLR MLR
comp=Z,2µm,19.0s,MS5.7
BOZ **Bozeman (W)** 98.53 41 *e*P P 19 23 48.3 -0.6
comp=Z,16nm,1.6s,mb5.3
BOZ LR LR
comp=Z,2µm,19.0s,MS5.7
ISCO **Idaho Springs** 98.57 48 PFAKE 19 24 00.0 +11
ISCO LR LR
comp=Z,2µm,19.0s,MS5.7
MCK **McKinley** 98.81 13 PFAKE 19 24 00.0 +10
MCK LR LR
comp=Z,2µm,20.0s,MS5.5
CPUP **Villa Florida** 98.85 129 LR LR 20 02 38.6
comp=Z,1µm,18.3s,MS5.5,baz=250,slow=32
CPUP **Villa Florida** 98.85 129 PFAKE 19 24 00.0 +9.2
CPUP LR LR
comp=Z,727nm,19.0s,MS5.2
LZH **Lanzhou** 99.79 307 *e*P P 19 23 57.0 +2.1
LZH AP pP 19 24 08.0 +10
LZH PP PP 19 27 58.3 -3.6
LZH SKS SKS 19 34 33.1 -4.1
LZH S S 19 35 28.3 +3.4
LZH PS PS 19 37 04.0 +5.5
LZH AMB AMB
comp=Z,20nm,1.1s,mb5.5
LZH LR LR
comp=E,2µm,15.6s
LZH LR LR
comp=Z,2µm,18.8s,MS5.7
HKT **Hockley** 99.85 61 PFAKE 19 24 10.0 +15
HKT LR LR
comp=Z,390nm,19.0s,MS4.9
COLA **College** 100.05 13 PFAKE 19 24 10.0 +15
COLA LR LR
comp=Z,3µm,20.0s,MS5.8
ILAR **Eielson Array** 100.14 13 P P 19 23 56.0 +0.2
comp=Z,1.1nm,1.0s,baz=224,slow=5.2,SNR=6.4
ILAR PP PP 19 28 00.3 -3.7
comp=Z,2.0nm,1.0s,baz=215,slow=7.0,SNR=7.4
ILAR PKKPbc 19 40 18.6
comp=Z,0.7nm,0.8s,baz=342,slow=4.9,SNR=5.8
ILAR LR LR 20 07 32.3
comp=Z,1µm,18.8s,MS5.5,baz=224,slow=34
ILAR **Eielson Array** 100.14 13 P P 19 23 56.0 +0.2
ILAR 19 28 00.3
ILAR pmax pmax
comp=Z,1.0nm,1.0s
ILAR pmax pmax
comp=Z,2.0nm,1.0s
ILAR pmax pmax
comp=Z,1.0nm,0.8s
ILAR MLR MLR
comp=Z,1µm,18.8s
WMOK **Wichita Mounta** 100.28 55 PFAKE 19 24 10.0 +13
WMOK LR LR
comp=Z,2µm,20.0s,MS5.5
BILL **Bilibino** 101.00 354⇑ *i*P P 19 24 01.2 +1.6
BILL *e* 19 28 11.7
BILL *i* S S 19 34 40.0 -54
BILL *e*SS SS 19 42 40.8 +3.9
BILL *e* 19 46 32.9
BILL pmax pmax
comp=Z,6.0nm,1.4s
BILL MLR MLR
comp=Z,2µm,19.0s,MS5.7
CBKS **Cedar Bluff** 101.81 51 PFAKE 19 24 20.0 +16
CBKS LR LR
comp=Z,2µm,19.0s,MS5.8
RSSD **Black Hills** 101.99 45 PFAKE 19 24 20.0 +15
RSSD LR LR
comp=Z,1µm,19.0s,MS5.5
YAK **Yakutsk** 103.16 338 PFAKE 19 24 20.0 +11
YAK LR LR
comp=Z,2µm,19.0s,MS5.7
MIAR **Mount Ida** 103.85 58 PFAKE 19 24 20.0 +6.9
MIAR LR LR
comp=Z,2µm,19.0s,MS5.6
ULN **Ulaanbaatar** 104.21 318 PFAKE 19 24 30.0 +16
ULN LR LR
comp=Z,1µm,19.0s,MS5.5
SONM **Songino Array** 104.57 318 Pdiff Pdif 19 24 16.0 +0.1
comp=Z,0.7nm,1.0s,baz=153,slow=3.2,SNR=4.3
SONM PP PP 19 28 34.0 -3.8
comp=Z,0.4nm,0.8s,baz=90,slow=3.7,SNR=4.0
SONM PKKPbc 19 40 04.3
comp=Z,1.1nm,1.2s,baz=270,slow=1.2,SNR=5.7
INK **Inuvik** 105.98 16 PKP 19 28 34.7
OXF **Oxford** 106.84 60 PFAKE 19 28 50.0
OXF LR LR
comp=Z,2µm,19.0s,MS5.6
CCM **Cathedral Cave** 107.19 56 PFAKE 19 28 50.0
CCM LR LR
comp=Z,396nm,19.0s,MS5.0
ZAK **Zakamensk** 107.64 319 *e*P Pdif 19 24 30.5 +1.1
LRAL **Lakeview Retre** 107.92 62 PFAKE 19 28 50.0
LRAL LR LR
comp=Z,1µm,19.0s,MS5.4
PLAL **Pickwick Lake** 108.03 60 PFAKE 19 28 50.0
PLAL LR LR
comp=Z,2µm,19.0s,MS5.6
WVT **Waverly** 108.73 59 PFAKE 19 28 50.0
WVT LR LR
comp=Z,2µm,19.0s,MS5.7
ULM **Lac du Bonnet** 109.89 43 PFAKE 19 28 50.0
ULM LR LR
comp=Z,3µm,19.0s,MS5.9
JFWS **Jewell Farm** 110.08 51 PFAKE 19 28 50.0 +6.3
JFWS LR LR
comp=Z,2µm,19.0s,MS5.8
TIXI **Tiksi** 110.30 344 *e*PKIKP PKPdf 19 28 44.0 +0.6
TIXI MLR MLR
comp=Z,2µm,20.0s,MS5.7
WCI **Wyandotte Cave** 110.76 57 PFAKE 19 29 00.0 +15
WCI LR LR
comp=Z,3µm,19.0s,MS5.9
MYNC **Murphy** 110.97 61 PFAKE 19 29 00.0 +14
MYNC LR LR
comp=Z,1µm,19.0s,MS5.5
SUR **Sutherland** 112.88 198 PFAKE 19 29 00.0 +11
SUR LR LR
comp=Z,3µm,20.0s,MS5.9
ACSO **Alum Creek Sta** 113.92 56 PFAKE 19 29 00.0 +8.7
ACSO LR LR
comp=Z,3µm,19.0s,MS5.9
AAM **Ann Arbor** 114.26 54 PFAKE 19 29 00.0 +8.1
AAM LR LR
comp=Z,953nm,19.0s,MS5.4
WMQ **Urumqi** 114.34 308 PKP PKPdf 19 28 49.8 -2.2
WMQ XPKP 19 28 56.8
WMQ PP PP 19 29 49.5 -0.3
WMQ PKS PKS 19 32 25.1 +0.5
WMQ SKS SKS 19 35 56.9 +16
WMQ SKKS 19 36 39.5
WMQ SS SS 19 45 36.3 -1.6
WMQ PP PP
comp=Z,51nm,10.2s
WMQ LR LR
comp=N,811nm,28.2s,MS5.3
WMQ LR LR
comp=E,822nm,29.1s,MS5.3
WMQ LR LR
comp=Z,1µm,28.6s,MS5.4
BLA **Blacksburg** 114.58 60 PFAKE 19 29 00.0 +7.4
BLA LR LR
comp=Z,2µm,19.0s,MS5.7
ERPA **Erie** 116.72 56 PFAKE 19 29 10.0 +13
ERPA LR LR
comp=Z,2µm,19.0s,MS5.8
CBN **Corbin** 117.19 60 PFAKE 19 29 10.0 +12
CBN LR LR
comp=Z,2µm,19.0s,MS5.7
SSPA **Standing Stone** 117.68 58 PFAKE 19 29 10.0 +11
SSPA LR LR
comp=Z,1µm,20.0s,MS5.6
SJG **San Juan** 117.97 86 PFAKE 19 29 10.0 +10
SJG LR LR
comp=Z,808nm,19.0s,MS5.4

LBTB **Lobatse** 118.31 205 PFAKE 19 29 10.0 +10
LBTB LR LR
comp=Z,837nm,19.0s,MS5.4
MKAR **Makanchi Array** 118.94 309 PKP PKPdf 19 28 57.9 -3.0
comp=Z,11nm,1.0s,baz=90,slow=1.2,SNR=45
MKAR PKKPbc 19 39 26.1
comp=Z,1.0nm,0.7s,baz=283,slow=5.0,SNR=7.7
MKAR **Makanchi Array** 118.94 309 PKIKP PKPdf 19 28 57.9 -3.0
MKAR pmax pmax
comp=Z,11nm,1.0s
MKAR pmax pmax
comp=Z,1.0nm,0.7s
RES **Resolute Bay** 119.44 18 *e*PKIKP PKPdf 19 28 57.4 -3.7
ZAL **Zalesovo** 119.47 318 PKP PKPdf 19 28 58.4 -3.2
comp=Z,1.6nm,0.5s,baz=296,slow=0.5,SNR=8.8
ZAL **Zalesovo** 119.47 318 PKIKP PKPdf 19 28 58.4 -3.2
ZAL pmax pmax
comp=Z,2.0nm,0.5s
NVS **Novosibirsk** 120.59 318⇓ *i*PKIKP PKPdf 19 29 00.0 -3.8
NVS pmax pmax
comp=Z,28nm,1.6s
NVS **Novosibirsk** 120.59 318 *e*PKP PKPdf 19 29 00.8 -3.0
KSH **Kashi** 121.08 300 *e*PKP PKPdf 19 29 03.3 -1.9
KSH *e*PP PP 19 30 33.5 -2.6
KSH *e*PKS PKS 19 32 39.1 +1.3
KSH *e*SKS SKS 19 36 13.8 +9.1
KSH *e*SKKS 19 37 26.3
KSH PP PP
comp=Z,230nm,5.8s
KSH LR LR
comp=N,840nm,19.0s,MS5.5
KSH LR LR
comp=E,500nm,17.4s,MS5.5
NCB **Newcomb** 121.32 55 PFAKE 19 29 20.0 +14
NCB LR LR
comp=Z,2µm,19.0s,MS5.8
ULHL **Ulahol** 121.71 303 P PKPdf 19 29 05.0 -1.3
SNR=19
KURK **Kurchatov** 122.34 313 *e*PKIKP PKPdf 19 29 04.2 -3.1
TKM2 **Tokmak 2** 122.36 303 P PKPdf 19 29 05.3 -2.2
SNR=25
KZA **Kyzart** 122.37 302 P PKPdf 19 29 06.4 -1.1
SNR=18
KBK **Karagaybulak** 122.75 303 P PKPdf 19 29 06.3 -1.9
SNR=16
HRV **Harvard--Oak R** 122.78 57 PFAKE 19 29 20.0 +12
HRV LR LR
comp=Z,517nm,19.0s,MS5.2
WES **Weston** 122.91 58 PFAKE 19 29 20.0 +11
WES LR LR
comp=Z,4µm,19.0s,MS6.1
UCH **Uchtor** 122.94 302 P PKPdf 19 29 07.9 -0.7
SNR=35
CHMS **Chumysh** 122.98 303 P PKPdf 19 29 06.2 -2.4
SNR=14
FRU **Bishkek** 123.03 303 *e*PKIKP PKPdf 19 29 08.0 -0.8
FRU pmax pmax
comp=Z,60nm,1.6s
FRU MLR MLR
comp=Z,1µm,18.0s,MS5.5
AAK **Ala-Archa** 123.06 303 P PKPdf 19 29 07.0 -1.8
SNR=12
USP **Ospenovka** 123.23 303 P PKPdf 19 29 07.0 -2.2
SNR=9.5
AML **Almayashu** 123.50 302 P PKPdf 19 29 08.5 -1.3
SNR=22
EKS2 **Erkin-Say** 123.58 303 P PKPdf 19 29 08.2 -1.8
SNR=23
BBSR **BB Station** 124.92 71 PFAKE 19 29 20.0 +7.2
BBSR LR LR
comp=Z,3µm,19.0s,MS6.0
KKAR **Karatay Array** 126.02 302 *i* PKIKP PKPdf 19 29 12.6 -2.0
KKAR pmax pmax
comp=Z,54nm,1.3s
BVAR **Borovoye Array** 127.75 315 PKP PKPdf 19 29 15.6 -2.1
comp=Z,15nm,0.9s,baz=117,slow=3.3,SNR=65
BRVK **Borovoye** 127.82 315 *e*PKIKP PKPdf 19 29 15.4 -2.4
SCHQ **Schefferville** 128.07 43 PKP PKPdf 19 29 17.2 -1.0
comp=Z,11nm,1.1s,baz=301,slow=5.9,SNR=4.9
SCHQ **Schefferville** 128.07 43 PKP PKPdf 19 29 17.2 -1.0
SCHQ LR LR
comp=Z,5µm,20.0s,MS6.2
KMBO **Kilima Mbogo** 132.50 232 PKP PKPdf 19 29 28.0 +0.1
comp=Z,6.6nm,1.1s,baz=46,slow=2.1,SNR=5.2
KMBO SKPbc 19 32 54.3
comp=Z,16nm,1.0s,baz=84,slow=3.1,SNR=20
KMBO **Kilima Mbogo** 132.50 232 *e*PKP PKPdf 19 29 25.7 -2.2
KBS **Kingsbay** 133.37 357 *e*PKPd 19 29 26.9
KBS *e*PP PP 19 31 51.0 -5.2
KBS *e*SS SS 19 49 38.5 +0.5
KBS AMS AMS 20 28 27.4
comp=Z,624nm,20.0s,MS5.3
SPB4 **Spitsbergen Ar** 133.88 356 PKP PKPdf 19 29 26.5 -2.1
SPITS **Spitsbergen Ar** 133.88 356 PKP PKPdf 19 29 27.4 -1.2
comp=Z,8.3nm,0.8s,baz=90,slow=2.0,SNR=9.1
SPITS SKP 19 32 58.0
comp=Z,7.1nm,0.9s,baz=146,slow=7.2,SNR=3.9
AB31 **Akbulak array** 134.09 309 PKIKP PKPdf 19 29 27.5 -2.2
AB31 pmax pmax
comp=Z,21nm,1.1s
ARU **Arti** 134.58 319⇓ *i*PKIKP PKPdf 19 29 28.5 -1.9
ARU pmax pmax
comp=Z,17nm,1.1s
ARU MLR MLR
comp=N,600nm,19.0s,MS5.5
ARU MLR MLR
comp=E,700nm,19.0s,MS5.5
ARU MLR MLR
comp=Z,1µm,19.0s,MS5.6
ARU **Arti** 134.58 319 *e*PKP PKPdf 19 29 27.9 -2.5
DAG **Danmarks Havn** 134.76 6 *i* P PKPdf 19 29 32.0 +1.6
DAG **Danmarks Havn** 134.76 6 *e*P PKPdf 19 29 32.0 +1.6
SUMG **Summit** 134.90 16 *e*PKP PKPdf 19 29 29.1 -1.6
THR **Tehran** 139.31 289 PKP PKPdf 19 29 39.8 +0.1
comp=Z,2.2nm,0.8s,baz=56,slow=3.5,SNR=6.7
THR **Tehran** 139.31 289 PKIKP PKPdf 19 29 39.8 +0.1
THR pmax pmax
comp=Z,2.0nm,0.8s
APA **Apatity** 140.41 342⇑ *i*PKIKP PKPdf 19 29 35.1 -5.7
APA *e* 19 32 40.0
APA MLR MLR
comp=Z,2µm,20.0s,MS5.9
ARCES **ARCESS Array B** 140.67 347 PKhKP 19 29 32.0
comp=Z,4.0nm,0.7s,baz=37,slow=2.0,SNR=11
ARCES PKP PKPdf 19 29 40.0 -1.2
comp=Z,5.1nm,0.8s,slow=0.9,SNR=12
ARCES **ARCESS Array B** 140.67 347 PKHKP 19 29 32.0
ARCES 19 29 40.0
ARCES pmax pmax
comp=Z,4.0nm,0.7s
ARCES pmax pmax
comp=Z,5.0nm,0.8s
ARCES **ARCESS Array B** 140.67 347 PKP PKPdf 19 29 40.0 -1.1
JMIC **Jan Mayen** 141.16 5 *e*PP PP 19 32 34.9 -10
JMIC *e*SS SS 19 51 08.7 -1.6
JMIC AMS AMS 20 31 57.2
comp=Z,585nm,19.8s,MS5.3
TRO **Tromso** 141.68 350 *e*P PKPdf 19 29 34.3 -8.6
TRO *e*PP PP 19 32 39.8 -7.9
TRO *e*SS SS 19 51 14.9 -1.5
TRO AMS AMS 20 45 20.9
comp=Z,644nm,14.1s,MS5.5
JOF **Joensuu** 144.34 337 *e*pkp PKPdf 19 29 42.7 -4.9
comp=Z,8.8nm,0.7s
JOF **Joensuu** 144.34 337 *e*PKIKP PKPdf 19 29 42.7 -4.9
JOF pmax pmax
comp=Z,9.0nm,0.7s
TI2 **Plekhanov** 144.77 298 *e*PKIKP PKPdf 19 29 46.0 -3.1
TI2 MLR MLR
comp=N,500nm,18.0s,MS5.5
TI2 MLR MLR
comp=E,500nm,18.0s,MS5.5
TI2 MLR MLR
comp=Z,1µm,18.0s,MS5.6
ZEI **Tsey** 145.37 299 *ce*PKP2 PKPab 19 29 47.5 -1.6
ZEI *i* 19 29 48.0
ZEI pmax pmax
comp=Z,1µm,10.0s
ZEI pmax pmax
comp=Z,400nm,13.0s
ZEI MLR MLR
comp=Z,1µm,21.0s,MS5.6
MOR8 **Moi Rana** 145.53 351 *e*P PKPbc 19 29 45.6 -1.6
MOR8 AMb AMB 19 29 50.4
comp=Z,166nm,1.9s
GOF **Gofitskoye** 145.80 304⇑ *i*PKP2 PKPab 19 29 50.0 -0.7

GOF pmax pmax
comp=Z,3µm,8.0s
GOF pmax pmax
comp=Z,160nm,1.3s
GOF MLR MLR
comp=N,3µm,20.0s,MS6.1
GOF MLR MLR
comp=E,2µm,20.0s,MS6.1
GOF MLR MLR
comp=Z,2µm,20.0s,MS5.9
PYA **Pyatigorsk** 145.90 302 *c i*PKIKP PKPdf 19 29 48.0 -2.9
PYA pmax pmax
comp=Z,1µm,9.0s
MOS **Moscow** 145.95 324⇑ *i*PKP2 PKPab 19 29 49.4 -1.5
MOS pmax pmax
comp=Z,667nm,1.0s
MOS pmax pmax
comp=Z,2µm,2.2s
KIV **Kislovodsk** 146.17 302 *i* PKP2 PKPab 19 29 50.1 -2.0
KIV *e* 19 36 50.8
KIV pmax pmax
comp=Z,20nm,1.2s
KIV pmax pmax
comp=E,4.0nm,1.0s
KIV **Kislovodsk** 146.17 302 *e*PKP PKPdf 19 29 50.3 -1.1
KAF **Kangasniemi** 146.51 339 *e*pkp PKPdf 19 29 49.9 -1.5
comp=E,5.4nm,0.4s,baz=54,slow=3.9
KAF **Kangasniemi** 146.51 339 *e*PKP2 PKPab 19 29 49.9 -3.0
KAF pmax pmax
comp=Z,5.0nm,0.4s
VOR **Voronezh** 146.73 316 *e*PKP2 PKPab 19 29 51.5 -2.6
VOR pmax pmax
comp=Z,300nm,1.2s
OBN **Obninsk** 146.78 323⇓ *i*PKP2 PKPab 19 29 52.2 -1.9
OBN *e* 19 36 54.9
OBN pmax pmax
comp=Z,165nm,0.9s
OBN MLR MLR
comp=Z,1µm,21.0s,MS5.6
OBN **Obninsk** 146.78 323 *e*PKP PKPdf 19 29 51.6 -0.5
FINES **FINESS Array B** 147.09 339 PKPbc PKPdf 19 29 51.9 -0.5
comp=Z,51nm,0.7s,baz=45,slow=2.7,SNR=105
FINES **FINESS Array B** 147.09 339 PKP2 PKPab 19 29 51.9 -3.3
FINES pmax pmax
comp=Z,51nm,0.7s
NSS **Namsos** 147.42 352 *e*P PKPdf 19 29 52.8 0.0
NSS AMb AMB 19 29 55.9
comp=Z,124nm,1.5s
NSS AMS AMS 20 40 39.2
comp=Z,724nm,22.5s,MS5.4
SOC **Sochi** 148.35 301 *de*P Pdif 19 27 33.4 +4.8
SOC *i* 19 29 54.4
SOC *e* 19 33 24.7
SOC pmax pmax
comp=Z,8.0nm,0.9s
SOC pmax pmax
comp=N,3.0nm,0.7s
SOC pmax pmax
comp=E,10.0nm,0.7s
SOC pmax pmax
comp=Z,40nm,0.8s
SOC pmax pmax
comp=N,6.0nm,0.9s
SOC pmax pmax
comp=E,10.0nm,0.7s
ANN **Anapa** 149.77 304 *ce*PKHKP 19 29 56.6
ANN pmax pmax
comp=Z,60nm,0.8s
ANN MLR MLR
comp=Z,250nm,15.0s,MS5.1
MOL **Molde** 149.78 355 *e*PKPd 19 29 55.1
MOL AMb AMB 19 30 14.5
comp=Z,151nm,2.0s
DOMB **Dombas** 150.16 353 *e* PKPdf 19 30 01.5 +4.2
DOMB AMb AMB 19 30 24.8
comp=Z,110nm,1.5s
GZT **Gaziantep** 150.31 289 *i* P PKPdf 19 30 00.7 +2.4
SVST **Sivas** 150.76 294 *i* P PKPdf 19 30 03.7 +4.8
NB2 **NORSAR Subarra** 150.88 350 PKP 19 30 01.6
comp=Z,46nm,1.2s,baz=17,slow=2.6
NB2 **NORSAR Subarra** 150.88 350 PKPa 19 30 01.6
baz=17,slow=2.6
NOA **NORSAR Array B** 150.88 350 PKPbc PKPdf 19 30 01.9 +3.5
comp=Z,20nm,0.8s,baz=16,slow=4.2,SNR=46
NOA PKPab PKPab 19 30 10.3 -0.3
comp=Z,5.9nm,0.7s,baz=20,slow=3.8,SNR=15
NOA **NORSAR Array B** 150.88 350 PKIKP PKPdf 19 30 01.9 +3.5
NOA 19 30 10.3
NOA pmax pmax
comp=Z,20nm,0.8s
NOA pmax pmax
comp=Z,6.0nm,0.7s
DUSS **Damascus Unive** 151.03 281 *i* P PKPdf 19 30 04.3 +4.8
NAO01 **NORSAR Array S** 151.11 351 *e*PKPbc PKPdf 19 30 02.6 +3.9
MKRJ **Makawir** 151.24 277 P PKPdf 19 29 59.9 0.0
COBT **Iskenderun** 151.32 288 *i* P PKPdf 19 30 04.8 +5.0
MNK **Minsk** 151.33 328‖ *e*PKIKP PKPdf 19 30 03.0 +3.7
HFS **Hagfors** 151.33 347 PKPbc PKPdf 19 30 05.1 +6.0
comp=Z,45nm,0.8s,baz=90,slow=2.9,SNR=4.0
HFS **Hagfors** 151.33 347 PKIKP PKPdf 19 30 05.1 +6.0
HFS pmax pmax
comp=Z,45nm,0.8s
AQBJ **Aqaba** 151.34 273 P PKPdf 19 30 00.2 +0.1
KSHT **Keshet** 151.35 280 P PKPdf 19 30 00.4 +0.4
EIL **Elat** 151.41 273 P PKPdf 19 30 00.2 0.0
ZFRI **Zfri** 151.42 275 P PKPdf 19 30 00.2 0.0
MZDA **Masada** 151.43 277 P PKPdf 19 30 00.2 0.0
HRI **Mount Hermon** 151.45 281 P PKPdf 19 30 00.7 +0.6
DRGI **Dragot** 151.46 277 P PKPdf 19 30 00.3 +0.1
HMDT **Nahal Hemdat** 151.47 279 P PKPdf 19 30 00.6 +0.4
MBH **Mount Berech** 151.47 273 P PKPdf 19 30 00.5 +0.2
PRNI **Paran** 151.52 274 P PKPdf 19 30 00.6 +0.3
KMTI **Karmit** 151.70 274 P PKPdf 19 30 00.7 +0.1
MASH **Mash'abbe Sade** 151.85 276 P PKPdf 19 30 01.0 +0.2
SLTI **Sal'it** 151.87 278 P PKPdf 19 30 01.3 +0.5
HNTI **Hanita** 151.89 280 P PKPdf 19 30 00.9 +0.1
SVTA **Shivta** 151.97 276 P PKPdf 19 30 01.4 +0.4
OFRI **'Ofer** 151.98 279 P PKPdf 19 30 01.1 +0.2
SIM **Simferopol'** 152.04 306 *c i*PKIKP PKPdf 19 30 06.8 +6.2
SIM *e* 19 33 45.0
SIM *e*PPP PPP 19 37 06.0 -11
SIM pmax pmax
comp=Z,140nm,11.6s
KZIT **Kziot** 152.16 275 P PKPdf 19 30 01.9 +0.6
BOYT **Boyabat** 152.16 298 *i* P PKPdf 19 30 05.8 +4.8
CTKT **Corum** 152.34 296 *i* P PKPdf 19 30 06.8 +5.6
AVNT **Avonos** 152.43 292 *i* P PKPdf 19 30 06.8 +5.4
KONO **Kongsberg** 152.44 351 *e*PP PP 19 33 49.8 -0.7
KONO *e*SS SS 19 53 18.0 +0.5
KONO AMS AMS 20 57 16.2
comp=Z,685nm,18.0s,MS5.5
KONO **Kongsberg** 152.44 351 *i* PKIKP PKPdf 19 30 04.2 +3.5
KONO **Kongsberg** 152.44 351 *e*PKPbc PKPdf 19 30 05.0 +4.2
LIC **Lamto** 153.03 165 *e*PKIKP PKPdf 19 30 11.1 +8.2
comp=Z,22nm,0.7s
LIC **Lamto** 153.03 165 *e*P PKPdf 19 30 10.5 +7.5
comp=Z,99nm,1.0s
KIC **Kosan Boka** 153.22 166 *e*P PKPdf 19 30 11.8 +8.6
comp=Z,204nm,0.9s
BALT **Daday** 153.27 299 *i* P PKPdf 19 30 01.0 -1.5
BRTR **Keskin Array B** 153.31 295 PKPbc PKPdf 19 30 09.3 +6.8
comp=Z,27nm,1.0s,baz=135,slow=3.5,SNR=62
BRTR PKPab PKPab 19 30 21.9 +0.4
comp=Z,14nm,1.0s,baz=124,slow=4.5,SNR=9.9
TIC **Toumodi** 153.43 165 *e*P PKPdf 19 30 12.7 +9.2
comp=Z,35nm,0.2s
DBIC **Dimbokro** 153.49 165 PKPbc PKPdf 19 30 12.1 +8.5
comp=Z,15nm,0.9s,baz=161,slow=2.9,SNR=11
DBIC PKPab PKPab 19 30 23.1 +0.1
comp=Z,6.3nm,0.5s,baz=118,slow=2.9,SNR=7.7
DBIC **Dimbokro** 153.49 165 PKIKP PKPdf 19 30 12.1 +8.5
DBIC 19 30 23.2
DBIC pmax pmax
comp=Z,15nm,0.9s
DBIC pmax pmax
comp=Z,6.0nm,0.5s
SUW **Suwalki** 153.68 331 *e*PKP PKPdf 19 30 01.9 -0.7
SUW *e*PKP(bc) 19 30 09.8
SUW *e*PKP(ab) 19 30 21.8
SUW *e*PP PP 19 33 52.3 -5.8
SUW MLR MLR 20 43 12.6
comp=Z,1µm,19.7s,MS5.8
SUW **Suwalki** 153.68 331 *e*PKP PKPdf 19 30 01.9 -0.7
SUW *e*PP PP 19 33 52.3 -5.8
KIS **Kishinev** 154.81 313 *i* PKIKP PKPdf 19 30 08.0 +3.6

KIS			*e*		19 30 13.0		
KIS			*e*PPP	PPP	19 37 00.0	-38	
KIS			MLR	MLR			
	comp=Z,600nm,20.0s,MS5.4						
KIS			MLR	MLR			
	comp=Z,500nm,20.0s						
MUD	**Monsted U'grnd**	**155.59 350**	*i* P	PKPdf	19 30 00.7	-4.4	
MUD			*i*		19 30 37.7		
MUD			*i*		19 34 13.4		
MUD			*i*		19 56 01.0		
	comp=Z,1μm,19.0s						
MUD	**Monsted U'grnd**	**155.59 350**	*i* PKIKP	PKPdf	19 30 00.7	-4.4	
MUD			*i*		19 34 13.4		
MUD			MLR	MLR			
	comp=Z,1μm,19.0s,MS5.8						
BSD	**Bornholm Skovb**	**155.63 341**	*i* P	PKPdf	19 30 04.4	-0.8	
BSD			*i*		19 30 30.1		
BSD			*e*		19 33 42.4		
	comp=Z,940nm,19.0s						
BSD	**Bornholm Skovb**	**155.63 341**	*e*PKIKP	PKPdf	19 30 04.4	-0.8	
BSD			*i*		19 30 30.1		
BSD			MLR	MLR			
	comp=Z,940nm,19.0s,MS5.6						
BSD	**Bornholm Skovb**	**155.63 341**	*e*P	PKPdf	19 30 04.4	-0.8	
BSD			*i*		19 30 30.1		
BSD			*e*		19 33 42.4		
COP	**Copenhagen**	**155.72 345**	*i* P	PKPdf	19 30 05.6	+0.3	
COP			*i*		19 30 37.7		
COP			*i*		19 34 51.2		
COP			*e*		19 53 21.5		
	comp=Z,500μm,18.0s						
COP	**Copenhagen**	**155.72 345**	*i* PKIKP	PKPdf	19 30 05.6	+0.3	
COP			MLR	MLR			
	comp=Z,500μm,18.0s						
WAR	**Warsaw**	**155.85 330**	*e*PKP	PKPab	19 30 32.3	+0.4	
KWP	**Kalwaria**	**156.87 324**	*e*PKP	PKPdf	19 30 04.1	-2.9	
KWP			*e*PKP(ab)		19 30 35.9		
KWP			*e*PP	PP	19 34 15.8	+0.3	
KWP			MLR	MLR	20 43 44.9		
	comp=Z,2μm,19.6s,MS6.0						
KWP	**Kalwaria**	**156.87 324**	*e*PKIKP	PKPdf	19 30 05.2	-1.8	
KWP	**Kalwaria**	**156.87 324**	*e*PKP	PKPdf	19 30 04.1	-2.9	
KWP			*e*PP	PP	19 34 15.8	+0.3	
OJC	**Ojcow**	**157.85 328**	*e*PKP(df)		19 30 05.3		
OJC			*e*PP	PP	19 34 18.0	-3.3	
OJC			*e*SKS(df)		19 37 11.2		
OJC			*e*SS	SS	19 54 09.0	-7.3	
OJC			MLR	MLR	20 49 50.5		
	comp=Z,1μm,19.3s,MS5.8						
CRVS	**Cervenica-Dubn**	**157.96 323**	*e*PKP	PKPdf	19 30 08.2	-0.3	
CRVS			*e*		19 30 21.8		
CRVS			*e*		19 30 34.3		
CRVS			*i*		19 30 40.4		
CRVS	**Cervenica-Dubn**	**157.96 323**	*e*PKIKP	PKPdf	19 30 08.2	-0.3	
CRVS			*i*		19 30 40.4		
NIE	**Niedzica**	**158.18 326**	*e*PKP	PKPdf	19 30 09.0	+0.3	
KSP	**Ksiaz**	**158.82 334**	*e*PKP	PKPdf	19 30 08.4	-1.0	
KSP			MLR	MLR	20 43 33.5		
	comp=Z,3μm,20.0s,MS6.1						
KSP	**Ksiaz**	**158.82 334**	*e*PKPdf	PKPdf	19 30 07.7	-1.7	
KSP			*e*PKPab	PKPab	19 30 42.8	-1.9	
KSP			*e*PP	PP	19 34 20.0	-6.3	
KSP			*e*SS	SS	19 54 25.0	-2.0	
KSP			LR	LR			
	comp=Z,3μm,20.0s,MS6.1						
OKC	**Ostrava-Krasne**	**158.86 329**	*e*PKPDF	PKPdf	19 30 05.8	-3.7	
OKC			*e*PKPAB	PKPab	19 30 42.8	-2.1	
OKC			*e*PP	PP	19 34 23.1	-3.4	
OKC			*ex*	x	19 41 18.3		
OKC			*ex*	x	19 54 37.8		
OKC			*ex*	x	20 01 42.6		
OKC			L		20 50 50.0		
MORC	**Moravsky Berou**	**159.16 330**	*e*PKP	PKPdf	19 30 08.9	-1.0	
UPC	**Upice**	**159.20 334**	*e*PKPDF	PKPdf	19 30 09.2	-0.7	
UPC			*e*PKPAB	PKPab	19 30 43.1	-3.2	
DPC	**Dobruska-Polom**	**159.21 333**	*e*PKPDF	PKPdf	19 30 06.2	-3.7	
DPC			*e*PKPAB	PKPab	19 30 40.0	-6.4	
DPC			*e*PP	PP	19 34 31.7	+3.5	
DPC			*ex*	x	19 41 17.9		
DPC			*ex*	x	19 54 37.6		
DPC			*ex*	x	20 00 42.0		
DPC			L		20 56 20.0		
	comp=Z,1.2nm,17.9s						
DPC	**Dobruska-Polom**	**159.21 333**	*e*PKIKP	PKPdf	19 30 06.2	-3.7	
DPC			*e*		19 34 31.7		
DPC			*e*		20 00 42.0		
DPC			MLR	MLR			
	comp=Z,1μm,17.9s,MS5.8						
PSZ	**Piszkesteto**	**159.39 323**⇑	*i*PKP/F		19 30 08.6		
VYHS	**Vyhne**	**159.52 326**	*i* PKP	PKPdf	19 30 09.2	-1.1	
VYHS			*e*		19 30 47.2		
CLL	**Collm**	**159.54 339**	*e*	PKPdf	19 30 05.0	-5.2	
CLL			*i*		19 30 24.2		
CLL			*i* PKP2	PKPab	19 30 46.3	-1.5	
CLL			*i*		19 31 01.2		
CLL			*i*		19 31 06.9		
CLL			*e*		19 31 13.0		
CLL			*e*		19 31 56.0		
CLL			*e*PP	PP	19 34 23.0	-6.8	
CLL			*e*PPP	PPP	19 38 07.0	-5.9	
CLL			*e*SKKS		19 41 18.0		
CLL			*e*		19 44 55.0		
CLL			*e*PPS	PPS	19 47 36.0	-14	
CLL			*e*		19 49 17.0		
CLL			*e*SS	SS	19 54 36.0	+1.7	
CLL			*e*		19 55 24.0		
CLL			*e*		20 01 00.0		
CLL			*e*		20 02 33.0		
CLL	**Collm**	**159.54 339**	*e*PKIKP	PKPdf	19 30 05.0	-5.2	
CLL			*i*		19 30 46.3		
CLL			MLR	MLR			
	comp=Z,1μm,17.5s,MS5.8						
BRG	**Berggiesshubel**	**159.62 337**	*e*PKIKP	PKPdf	19 30 22.7	+12	
BRG			*i*		19 30 47.0		
BRG			*e*		19 34 24.0		
BRG			*i* SS	SS	19 54 30.0	-5.1	
BRG			pmax	pmax			
	comp=Z,27nm,1.1s						
BRG			MLR	MLR			
	comp=N,1μm,19.9s,MS5.7						
BRG			MLR	MLR			
	comp=E,610nm,19.9s,MS5.7						
BRG			MLR	MLR			
	comp=Z,1μm,19.9s,MS5.8						
PVCC	**Panska Ves**	**159.70 336**	*e*PKPDF	PKPdf	19 30 13.9	+3.5	
PVCC			*e*PKPAB	PKPab	19 30 48.4	-0.1	
PVCC			*e*PP	PP	19 34 26.2	-4.5	
PVCC			*ex*	x	19 41 21.6		
PVCC			*ex*	x	19 54 33.1		
PVCC			*ex*	x	20 01 06.7		
PVCC			L		20 42 00.0		
PVCC	**Panska Ves**	**159.70 336**	*e*PKIKP	PKPdf	19 30 13.9	+3.5	
PVCC			*e*		19 34 26.2		
PVCC			*e*		19 54 33.1		
SMOL	**Smolenice**	**160.16 328**	*e*PKP	PKPab	19 30 50.1	-0.4	
SMOL			*e*		19 31 01.8		
PRU	**Pruhonice**	**160.16 335**	*e*PKPDF	PKPdf	19 30 10.3	-0.7	
PRU			*e*PKPAB	PKPab	19 30 49.2	-1.3	
PRU			*e*PP	PP	19 34 26.7	-6.5	
PRU			*ex*	x	19 41 28.6		
PRU			*ex*	x	19 54 44.5		
PRU			*ex*	x	20 00 47.8		
PRU			L		20 55 10.0		
	comp=Z,1.4nm,16.0s						
PRU	**Pruhonice**	**160.16 335**	*e*PKIKP	PKPdf	19 30 10.3	-0.7	
PRU			*e*		19 30 49.2		
PRU			*e*		19 34 26.7		
PRU			*e*		19 54 44.5		
PRU			*e*		20 00 47.8		
PRU			MLR	MLR			
	comp=Z,1μm,16.0s						
SRO	**Srobarova**	**160.25 325**	*e*PKP	PKPab	19 30 50.6	-0.3	
SRO			*e*		19 31 12.1		
MOX	**Moxa**	**160.53 341**	*e*PKP2	PKPab	19 30 51.2	-0.8	
MOX			pmax	pmax			
	comp=Z,34nm,1.4s						
MOX			MLR	MLR			
	comp=Z,1μm,19.0s						
ZST	**Bratislava**	**160.54 328**⇑	*e*PKIKP	PKPdf	19 30 11.3	-0.1	
ZST			*e*		19 34 29.5		
ZST			*e*		19 47 57.7		
ZST	**Bratislava**	**160.54 328**	*e*PKP	PKPdf	19 30 11.3	-0.1	
ZST			*e*		19 30 31.0		
ZST			*e*PP	PP	19 34 29.5	-6.0	
ZST			*e*SKSdf		19 37 29.6		
ZST			*e*SKKSac		19 41 59.7		
ZST			*e*		19 43 25.2		
ZST			*e*		19 47 57.7		
NKC	**Novy Kostel**	**160.65 339**	*e*PKPDF	PKPdf	19 30 06.7	-4.7	
NKC			*e*PKPAB	PKPab	19 30 50.6	-2.0	
NKC			*e*PP	PP	19 34 28.3	-7.8	
NKC			*ex*	x	19 41 27.2		
NKC			*ex*	x	19 55 00.8		
NKC			*ex*	x	20 01 32.2		
NKC			L		20 54 40.0		
	comp=Z,1.8nm,18.2s						
NKC	**Novy Kostel**	**160.65 339**	*e*PKIKP	PKPdf	19 30 06.7	-4.7	
NKC			*e*		19 30 50.6		
NKC			MLR	MLR			
	comp=Z,2μm,18.2s						
KHC	**Kasperske Hory**	**161.23 335**	*e*PKPDF	PKPdf	19 30 10.8	-1.2	
KHC			*ex*	x	19 30 24.5		
KHC			*e*PKPAB	PKPab	19 30 53.7	-1.4	
KHC			*e*PP	PP	19 34 38.7	-0.6	
KHC			*ex*	x	19 41 31.5		
KHC			*ex*	x	19 54 56.0		
KHC			*ex*	x	20 00 36.6		
KHC			L		20 51 20.0		
	comp=Z,2.0nm,18.3s						
KHC	**Kasperske Hory**	**161.23 335**	*e*PKIKP	PKPdf	19 30 10.8	-1.2	
KHC			*e*		19 30 53.7		
KHC			*e*		19 34 38.7		
KHC			*e*		19 54 56.0		
KHC			MLR	MLR			
	comp=Z,2μm,18.3s						
GERES	**GERESS Array B**	**161.42 334**	PKP	PKPdf	19 30 11.3	-0.9	
	comp=Z,0.4nm,0.7s,baz=135,slow=2.8,SNR=6.5						
GERES			PKPab	PKPab	19 30 54.7	-1.3	
	comp=Z,8.0nm,0.9s,baz=34,slow=4.8,SNR=20						
GERES	**GERESS Array B**	**161.42 334**	PKIKP	PKPdf	19 30 11.3	-0.9	
GERES					19 30 54.7		
GERES			pmax	pmax			
	comp=Z,8.0nm,0.9s						
GRF	**Grafenberg Arr**	**161.50 340**	*e*PKP2	PKPab	19 30 55.4	-0.9	
GRF			*e*		19 34 36.9		
GRF			*e*SS	SS	19 54 58.4	+4.0	
GRF			MLR	MLR			
	comp=Z,2μm,18.5s						
HGN	**Heimansgroeve**	**161.58 351**⇑	*e*P	PKPab	19 30 55.3	-1.3	
	comp=Z,17nm,0.8s						
ARSA	**Arzberg**	**161.95 328**⇑	*i*PKP	PKPdf	19 30 12.6	-0.2	
ARSA			*i*		19 30 57.3		
MOA	**Molln**	**162.02 332**⇑	*i*PKP	PKPdf	19 30 09.6	-3.3	
MOA			*i*		19 30 45.7		
GIVF	**Givet**	**162.36 353**	*e*PKP2	PKPab	19 30 57.5	-2.5	
BAIF	**Baives**	**162.46 355**	*e*PKP2	PKPab	19 30 58.2	-2.3	
PERS	**Pernice**	**162.60 328**	*e*PKPab	PKPab	19 30 58.9	-2.3	
GOLS	**Golise**	**162.82 325**	*e*PKPab	PKPab	19 30 59.3	-2.9	
KBA	**Koelnbreinsper**	**163.01 332**⇑	*i*PKP	PKPdf	19 30 13.5	-0.4	
KBA			*i*		19 30 50.3		
LJU	**Ljubljana**	**163.31 327**	*e*PKPdf	PKPdf	19 30 13.5	-0.7	
WATA	**Walderalm**	**163.46 336**⇑	*i*PKP	PKPdf	19 30 16.8	+2.5	
WATA			*i*		19 31 04.7		
WTTA	**Wattenberg**	**163.50 335**⇓	*i*PKP	PKPdf	19 30 15.6	+1.2	
WTTA			*i*		19 31 04.7		
ROBS	**Robic**	**163.61 330**	*e*PKPab	PKPab	19 31 00.5	-5.1	
MOTA	**Moosalm**	**163.61 337**⇑	*i*PKP	PKPdf	19 30 14.5	0.0	
MOTA			*i*		19 31 04.5		
CDF	**Champ du Feu**	**163.65 347**	*e*PKP2	PKPab	19 31 03.4	-2.3	
SQTA	**Sankt Quirin**	**163.68 336**⇑	*i*PKP	PKPdf	19 30 15.8	+1.2	
SQTA			*i*		19 31 05.6		
MEZF	**Maizieres J'vi**	**163.91 352**	*e*PKP2	PKPab	19 31 04.7	-2.2	
DAVA	**Damuels**	**164.05 339**⇑	*i*PKP	PKPdf	19 30 18.6	+3.7	
DAVA			*i*		19 31 07.1		
GRR	**Gorron**	**164.12 6**	*e*PKP2	PKPab	19 31 05.1	-2.7	
HAU	**Haudompre**	**164.21 348**	*e*PKP2	PKPab	19 31 05.7	-2.5	
HINF	**Hinteralfeld**	**164.30 347**	*e*PKP2	PKPab	19 31 06.0	-2.6	
LOR	**Lormes**	**165.26 354**	*e*PKP2	PKPab	19 31 10.5	-2.2	
SSF	**Saint Saulge**	**165.49 355**	*e*PKP2	PKPab	19 31 11.6	-2.1	
	comp=Z,34nm,1.0s						
CABF	**La Chapelle**	**165.60 348**	*e*PKP2	PKPab	19 31 12.3	-2.0	
AVF	**Avril sur Loir**	**165.77 355**	*e*PKP2	PKPab	19 31 12.7	-2.3	
	comp=Z,49nm,1.3s						
SMF	**Signal de Mont**	**165.88 354**	*e*PKP2	PKPab	19 31 13.2	-2.3	
	comp=Z,140nm,1.5s						
MFF	**Saint Martin d**	**165.96 5**	*e*PKP2	PKPab	19 31 13.1	-2.7	
BGF	**Bois d'Agland**	**166.04 357**	*e*PKP2	PKPab	19 31 13.9	-2.3	
TCF	**Toulx Ste Croi**	**166.33 358**	*e*PKP2	PKPab	19 31 15.5	-1.9	
LPL	**La Plagne**	**166.52 344**	*e*PKP2	PKPab	19 31 17.0	-1.3	
	comp=Z,73nm,1.3s						
LPG	**La Plagne**	**166.53 344**	*e*PKP2	PKPab	19 31 17.2	-1.1	
	comp=Z,88nm,1.3s						
MBDF	**Montbardon**	**167.26 343**	*e*PKP2	PKPab	19 31 19.6	-1.9	
	comp=Z,40nm,1.1s						
ORIF	**Orsi-en-Rattie**	**167.27 346**	*e*PKP2	PKPab	19 31 20.3	-1.3	
	comp=Z,26nm,1.0s						
VIVF	**Saint-Julien-l**	**167.54 350**	*e*PKP2	PKPab	19 31 21.2	-1.5	
	comp=Z,173nm,1.9s						
SBF	**Sospel**	**167.88 340**	*e*PKP2	PKPab	19 31 21.7	-2.6	
	comp=Z,86nm,1.0s						
SMRF	**Simiane la Rot**	**168.24 346**	*e*PKP2	PKPab	19 31 24.4	-1.4	
	comp=Z,78nm,1.5s						
FRF	**La Foret Royal**	**168.38 342**	*e*PKP2	PKPab	19 31 24.1	-2.4	
	comp=Z,69nm,1.2s						
LASF	**Ste Croix**	**168.42 352**	*e*PKP2	PKPab	19 31 25.0	-1.6	
LMR	**La Mourre**	**168.63 342**	*e*PKP2	PKPab	19 31 25.4	-2.2	
	comp=Z,63nm,1.0s						
ESDC	**Sonseca Array**	**171.62 31**	PKP	PKPdf	19 30 20.6	+0.1	
	comp=Z,0.2nm,0.3s,baz=343,slow=2.3,SNR=5.3						
ESDC			PKPab	PKPab	19 31 40.6	-0.4	
	comp=Z,0.2nm,0.3s,baz=330,slow=4.8,SNR=3.1						

IDC 24 19:11:37.5±6.2, 37.31N×96.33E, mb3.5/1, mb1 3.8/4, mb1mx3.5/20, ML3.5/3, Error ellipse: s-maj=111.0km s-min=50.7km az=14.0, Qinghai

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SONM	**Songino Array**	**12.86**	**32**	Pn	P	19 14 42.3	-2.0
	0.4nm,0.3s,baz=215,slow=15,SNR=13						
MKAR	**Makanchi Array**	**14.07**	**317**	Pn	P	19 14 55.0	-5.2
	0.2nm,0.3s,baz=126,slow=14,SNR=12						
ZAL	**Zalesovo**	**18.44**	**338**	P	P	19 15 52.9	-3.1
	0.2nm,0.3s,baz=62,slow=22,SNR=2.5						
ILAR	**Eielson Array**	**66.97**	**25**	P	P	19 22 31.5	-2.0
	0.4nm,0.7s,baz=301,slow=5.3,SNR=4.5						

*NEIC **24** 19:22:06.5, 39.26S×174.86E, h205km, After WEL.*
*WEL **24** 19:22:06.1±0.5, 39.25S×174.85E, h208km±4km, ML4.0/3, Error ellipse: s-maj=2.7km s-min=2.3km az=90.0*

ISC 24 19:22:03.8±0.9, 39.32S±0.06×174.79E±0.08, h222km±9km, n53, σ0§99/66, 1C-1D, North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DFE	**Dawson Falls**	**0.54**	**269**	PN	**P**	**19 22 34.3**	**+0.4**
DFE	**Dawson Falls**	**0.54**	**269**	P	**P**	**19 22 34.4**	**+0.5**
NEZ	**North Egmont**	**0.54**	**275**	PN	**P**	**19 22 34.5**	**+0.6**
NEZ	**North Egmont**	**0.54**	**275**	P	**P**	**19 22 34.5**	**+0.6**
TWVZ	**Taurewa**	**0.56**	**64**	PN	**P**	**19 22 33.8**	**-0.1**
WNVZ	**Wahianoa**	**0.62**	**91**	*e*PN	**P**	**19 22 34.8**	**+0.6**
NGZ	**Ngauruhoe**	**0.64**	**77**	PN	**P**	**19 22 34.6**	**+0.4**
MGZ	**Maungaku**	**0.66**	**62**	PN	**P**	**19 22 34.4**	**+0.1**
MGZ	**Maungaku**	**0.66**	**62**	P	**P**	**19 22 34.4**	**+0.1**
TUVZ	**Tukino**	**0.67**	**86**	PN	**P**	**19 22 34.8**	**+0.4**
TUVZ	**Tukino**	**0.67**	**86**	P	**P**	**19 22 35.0**	**+0.6**
NWEZ	**Newall Road**	**0.72**	**273**	PN	**P**	**19 22 34.9**	**+0.3**
NWEZ	**Newall Road**	**0.72**	**273**	P	**P**	**19 22 35.0**	**+0.4**
TSZ	**Takapari Road**	**1.17**	**130**	PN	**P**	**19 22 38.4**	**+1.2**
TSZ				SN	**S**	**19 23 02.5**	**-0.6**
TSZ	**Takapari Road**	**1.17**	**130**	*e*P	**P**	**19 22 38.5**	**+1.3**
BKZ	**Black Stump Fm**	**1.33**	**84**	⇓PN	**P**	**19 22 38.3**	**-0.2**
BKZ				SN	**S**	**19 23 02.7**	**-2.6**
BKZ	**Black Stump Fm**	**1.33**	**84**	*e*P	**P**	**19 22 38.4**	**-0.1**
BKZ				S	**S**	**19 23 02.7**	**-2.6**
MRZ	**Mangatainoka R**	**1.47**	**156**	PN	**P**	**19 22 40.5**	**+0.9**
MRZ				SN	**S**	**19 23 07.0**	**-0.3**
KIW	**Kapiti Island**	**1.54**	**177**	PN	**P**	**19 22 41.3**	**+1.1**
KIW	**Kapiti Island**	**1.54**	**177**	P	**P**	**19 22 41.5**	**+1.3**
PWZ	**Pawanui**	**1.75**	**115**	PN	**P**	**19 22 42.9**	**+0.9**
PWZ				SN	**S**	**19 23 11.3**	**-0.2**
PWZ	**Pawanui**	**1.75**	**115**	*e*P	**P**	**19 22 42.9**	**+0.9**
BFZ	**Birch Farm**	**1.76**	**141**	PN	**P**	**19 22 43.0**	**+0.9**
BFZ				SN	**S**	**19 23 11.5**	**-0.2**
BFZ	**Birch Farm**	**1.76**	**141**	*e*P	**P**	**19 22 43.1**	**+1.0**
CAW	**Cannon Point**	**1.80**	**173**	PN	**P**	**19 22 43.5**	**+1.0**
CAW	**Cannon Point**	**1.80**	**173**	P	**P**	**19 22 43.5**	**+1.0**
MRW	**Makara Radio**	**1.91**	**182**	PN	**P**	**19 22 44.5**	**+1.0**
MRW	**Makara Radio**	**1.91**	**182**	P	**P**	**19 22 44.5**	**+1.0**
MTW	**Mount Morrison**	**1.92**	**164**	PN	**P**	**19 22 44.3**	**+0.8**
MTW	**Mount Morrison**	**1.92**	**164**	P	**P**	**19 22 44.4**	**+0.9**
URZ	**Urewera**	**2.10**	**60**	PN	**P**	**19 22 43.2**	**-2.1**
URZ				SN	**S**	**19 23 12.1**	**-5.3**
URZ	**Urewera**	**2.10**	**60**	*e*P	**P**	**19 22 43.5**	**-1.8**
MSWZ	**Moikau Station**	**2.12**	**171**	PN	**P**	**19 22 46.4**	**+0.9**
NNZ	**Nelson**	**2.18**	**209**⇑	PN	**P**	**19 22 46.8**	**+0.6**
NNZ				SN	**S**	**19 23 18.7**	**-0.3**
TUWZ	**Tuamarina**	**2.21**	**197**	PN	**P**	**19 22 47.4**	**+0.9**
QRZ	**Quartz Range**	**2.30**	**228**	PN	**P**	**19 22 46.9**	**-0.5**
QRZ	**Quartz Range**	**2.30**	**228**	*e*P	**P**	**19 22 47.0**	**-0.4**
MWZ	**Matawai**	**2.35**	**66**	PN	**P**	**19 22 46.4**	**-1.6**
MWZ	**Matawai**	**2.35**	**66**	*e*P	**P**	**19 22 46.7**	**-1.2**
BSWZ	**Blackbirch Sta**	**2.49**	**196**	*e*PN	**P**	**19 22 50.5**	**+1.0**
THZ	**Tophouse**	**2.83**	**210**	PN	**P**	**19 22 53.5**	**+0.3**
THZ				SN	**S**	**19 23 30.5**	**-1.0**
THZ	**Tophouse**	**2.83**	**210**	*e*P	**P**	**19 22 53.5**	**+0.3**
THZ				S	**S**	**19 23 31.0**	**-0.5**
PUZ	**Puketiti**	**2.98**	**66**	PN	**P**	**19 22 53.0**	**-1.8**
PUZ	**Puketiti**	**2.98**	**66**	*e*P	**P**	**19 22 53.1**	**-1.7**
KHZ	**Kahutara**	**3.24**	**197**	PN	**P**	**19 22 58.4**	**+0.6**
KHZ				SN	**S**	**19 23 39.2**	**-0.6**
KHZ	**Kahutara**	**3.24**	**197**	*e*P	**P**	**19 22 58.6**	**+0.8**
DSZ	**Denniston Nort**	**3.33**	**222**	SN	**S**	**19 23 39.1**	**-2.5**
MQZ	**McQueen's Vall**	**4.67**	**199**	*e*PN	**P**	**19 23 14.0**	**-1.3**
MQZ				SN	**S**	**19 24 07.6**	**-3.1**
MQZ	**McQueen's Vall**	**4.67**	**199**	*e*P	**P**	**19 23 14.1**	**-1.1**
MQZ				S	**S**	**19 24 08.1**	**-2.6**
WVZ	**Waitaha Valley**	**4.84**	**218**	*e*PN	**P**	**19 23 16.1**	**-1.2**
WVZ	**Waitaha Valley**	**4.84**	**218**	*e*P	**P**	**19 23 16.6**	**-0.8**
ODZ	**Otahua Downs**	**6.50**	**207**	PN	**P**	**19 23 37.9**	**-0.6**
ODZ	**Otahua Downs**	**6.50**	**207**	*e*P	**P**	**19 23 38.4**	**0.0**

*IDC **24** 19:22:41.1±2.8, 32.62S×178.29W, mb4.2/3, mb1 4.3/4, mb1mx4.0/14, ML3.4/1, Error ellipse: s-maj=59.4km s-min=35.3km az=117.0*

ISC 24 19:22:56.7±1.1, 32.7S±0.1×179.1W±0.2, h100km, n19, σ0§45/10, mb4.1/3, 9C-2D, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**6.31**	**208**	Pn	**P**	**19 24 21.8**	**-6.9**
	0.7nm,0.3s,baz=277,slow=5.9,SNR=4.7						
URZ				Sn	**S**	**19 25 39.8**	**0.0**
	3.3nm,0.3s,baz=153,slow=19,SNR=8.6						
RPZ	**Rata Peaks**	**13.39**	**212**	Sn	**S**	**19 28 21.2**	**-9.3**
	0.5nm,0.3s,baz=43,slow=15,SNR=2.8						
RAR	**Rarotonga**	**20.68**	**61**	S	**S**	**19 31 00.0**	**-11**
	5.9nm,0.3s,baz=87,slow=17,SNR=3.7						
CTA	**Charters Tower**	**33.32**	**284**	P	**P**	**19 29 27.3**	**+0.2**
	2.1nm,0.6s,mb4.2,baz=94,slow=9.7,SNR=3.6						
ASAR	**Alice Springs**	**42.09**	**270**	P	**P**	**19 30 40.5**	**+0.1**
	1.5nm,0.6s,mb3.9,baz=111,slow=7.9,SNR=16						
WRA	**Warramunga Arr**	**43.29**	**275**	P	**P**	**19 30 49.8**	**-0.4**
	2.3nm,0.5s,mb4.2,baz=112,slow=8.1,SNR=43						
VNA3	**Neumayer Olymp**	**76.04**	**177**⇑	*i*	**P**	**19 34 33.7**	**-0.3**
VNA3	**Neumayer Olymp**	**76.04**	**177**⇑	*i*	PcP	19 34 44.5	-1.6
VNA3	**Neumayer Olymp**	**76.04**	**177**⇑	*i*	pP	19 34 55.8	-4.2
VNA3	**Neumayer Olymp**	**76.04**	**177**⇑	*i*	sP	19 35 16.0	+5.2
VNA2	**Neumayer--Watz**	**76.46**	**177**		**P**	**19 34 35.8**	**-0.6**
VNA2	**Neumayer--Watz**	**76.46**	**177**⇓	*i*	PcP	19 34 44.4	-1.6
VNA2	**Neumayer--Watz**	**76.46**	**177**⇑	*i*	pP	19 34 57.6	-4.8
VNA2	**Neumayer--Watz**	**76.46**	**177**⇑	*i*	sP	19 35 18.3	+5.1
VNA1	**Neumayer--Stat**	**76.69**	**177**⇑	*i*	**P**	**19 34 38.6**	**+0.9**
VNA1	**Neumayer--Stat**	**76.69**	**177**⇓	*i*	PcP	19 34 49.4	+0.4
VNA1	**Neumayer--Stat**	**76.69**	**177**⇑	*i*	pP	19 35 00.2	-3.5
VNA1	**Neumayer--Stat**	**76.69**	**177**⇑	*i*	sP	19 35 21.3	+6.7
FINES	**FINESS Array B**	**146.98**	**338**	PKPbc	PKPbc	19 42 24.5	-1.8
	1.1nm,0.5s,baz=72,slow=4.4,SNR=12						

CASC 24 19:26:16.9±1.8, 12.01N×86.95W, h89km±7km, MD3.8, ML3.4, 9C-10D, Nicaragua

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PYN	**Poneloya**	**0.37**	**349**⇑	*e*P		19 26 31.2	+0.6
PYN				*e*S		19 26 41.6	+0.5
COPN	**Copaltepe**	**0.39**	**65**⇑	*e*P		19 26 31.1	+0.4
COPN				*e*S		19 26 40.9	-0.4
LEON	**Leon**	**0.40**	**8**⇓	*e*P		19 26 31.0	+0.2
LEON				*e*S		19 26 41.5	+0.1
CNGN	**Cerro Negro**	**0.54**	**27**	*e*P		19 26 32.1	+0.1
CNGN				*e

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEF	**Keuruu**	**0.36**	**84**	*eP*	**Pg**	**19 33 29.9**	**+1.2**
KEF				*eS*	**Sg**	**19 33 33.6**	**+0.2**
KAF	**Kangasniemi**	**1.03**	**90**	*eP*	**Pb**	**19 33 42.3**	**+0.3**
KAF				*eS*	**Sg**	**19 33 54.8**	**-1.1**
SUF	**Sumiainen**	**1.11**	**57**	*eP*	**Pb**	**19 33 43.8**	**+0.4**
SUF				*eS*	**Sb**	**19 33 58.2**	**-0.1**
FIA0	**FINESS Array S**	**1.16**	**126**	*eP*	**Pb**	**19 33 45.0**	**+0.7**
FIA0				*eS*	**Sb**	**19 33 59.3**	**-0.4**
FIA0	**FINESS Array S**	**1.16**	**126**	Pn	**Pn**	**19 33 44.7**	**-0.3**
	baz=305,slow=16						
FIA0				Lg		19 33 59.4	
	baz=311,slow=28						
FIA0				Rg		19 34 04.2	
	baz=315,slow=37						
HFS	**Hagfors**	**5.43**	**253**	*eS*	**Sn**	**19 35 49.8**	**-0.2**
HFS				*eSG*	**Sg**	**19 36 11.9**	**-11**
HFS	**Hagfors**	**5.43**	**253**	Sn	**Sn**	**19 35 49.8**	**-0.2**
	baz=65,slow=28						
HFS				Lg		19 36 11.9	
	baz=67,slow=37						
ARA0	**ARCESS Array S**	**7.46**	**4**	Pn	**Pn**	**19 35 13.7**	**-0.6**
	baz=183,slow=12						
ARA0				Sn	**Sn**	**19 36 34.8**	**-5.8**
	baz=182,slow=28						
ARA0	**ARCESS Array S**	**7.46**	**4**	*eP*	**Pn**	**19 35 13.7**	**-0.6**
ARA0				*eS*	**Sn**	**19 36 34.8**	**-5.8**

*IDC **24** 19:38:59.9±0.9,32.41S×178.25W,mb4.4/6,mb1 4.6/8, mb1mx4.4/16,ML4.4/2,Error ellipse: s-maj=32.0km s-min=18.4km az=164.0*
*NEIC **24** 19:39:01.7±0.5,32.42S×178.40W,h10km,mb4.6/10, Error ellipse: s-maj=13.3km s-min=11.6km az=97.0*
ISC 24 19:38:59.7±2.4,32.60S±0.06×178.4W±0.1,h4km±15km, n60,σ1§09/44,mb4.5/13,5C-4D,South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**6.09**	**205**	*eP*	**Pn**	**19 40 31.2**	**-1.5**
PUZ				S	**Sn**	**19 41 42.4**	**-1.3**
URZ	**Urewera**	**6.71**	**211**	Pn	**Pn**	**19 40 41.2**	**-0.3**
	7.5nm,0.3s,baz=46,slow=4.1,SNR=25						
URZ				Sn	**Sn**	**19 42 00.3**	**+1.0**
	15nm,0.3s,baz=156,slow=18,SNR=14						
URZ	**Urewera**	**6.71**	**211**	*eP*	**Pn**	**19 40 40.3**	**-1.2**
MGZ	**Maungaku**	**8.04**	**216**	*eP*	**P**	**19 41 01.0**	**+0.9**
BFZ	**Birch Farm**	**9.12**	**206**	S	**Sn**	**19 42 53.0**	**-6.4**
MTW	**Mount Morrison**	**9.82**	**208**	S	**Sn**	**19 43 08.3**	**-8.3**
THZ	**Tophouse**	**11.45**	**215**	S	**S**	**19 43 48.2**	**-8.4**
MQZ	**McQueen's Vall**	**13.10**	**210**	S	**S**	**19 44 22.0**	**-15**
RPZ	**Rata Peaks**	**13.82**	**214**	Pn	**P**	**19 42 18.5**	**-0.2**
	1.6nm,0.3s,baz=68,slow=9.5,SNR=6.2						
RPZ				Sn	**S**	**19 44 41.4**	**-12**
	1.4nm,0.3s,baz=329,slow=21,SNR=7.1						
ARMA	**Armidale**	**25.57**	**267**	*eP*	**P**	**19 44 36.1**	**+4.7**
STKA	**Stephens Creek**	**33.67**	**260**	*eP*	**P**	**19 45 46.0**	**+2.2**
	3.3nm,0.9s,mb4.3						
STKA	**Stephens Creek**	**33.67**	**260**	P	**P**	**19 45 45.8**	**+1.9**
	4.0nm,1.1s,mb4.3,baz=116,slow=10.0,SNR=5.8						
CTA	**Charters Tower**	**33.84**	**283**	*eP*	**P**	**19 45 47.4**	**+2.0**
	5.3nm,0.5s,mb4.7						
CTAO	**Charters Tower**	**33.84**	**283**	*eP*	**P**	**19 45 42.5**	**-2.9**
	41nm,1.3s,mb5.2						
AS12	**Alice Springs**	**42.66**	**270**	*eP*	**P**	**19 46 59.6**	**+0.4**
	10nm,0.8s,mb4.6						
ASAR	**Alice Springs**	**42.66**	**270**	P	**P**	**19 46 59.8**	**+0.5**
	7.5nm,0.6s,mb4.6,baz=108,slow=7.1,SNR=98						
ASAR				S	**S**	**19 53 29.2**	**+6.4**
	0.4nm,0.9s,baz=111,slow=17,SNR=3.4						
WB2	**Warramunga Arr**	**43.84**	**275**	*eP*	**P**	**19 47 08.7**	**-0.1**
WRAB	**Tennant Creek**	**43.84**	**275**	*eP*	**P**	**19 47 08.7**	**-0.2**
	43nm,0.7s,mb5.3						
WRA	**Warramunga Arr**	**43.85**	**275**	P	**P**	**19 47 09.1**	**+0.2**
	8.0nm,0.4s,mb4.8,baz=113,slow=8.0,SNR=205						
WRA				S	**S**	**19 53 39.5**	**-0.6**
	0.4nm,0.8s,baz=115,slow=13,SNR=3.4						
FORT	**Forrest**	**45.16**	**257**	*eP*	**P**	**19 47 19.2**	**-0.1**
	67nm,0.6s						
SBA	**Scott Base**	**45.82**	**184**	*eP*	**P**	**19 47 23.7**	**-0.2**
	3.6nm,0.9s,mb4.3						
VNDA	**Vanda**	**45.87**	**186**	*eP*	**P**	**19 47 17.5**	**-6.9**
	0.8nm,0.9s,mb3.6						
KAKA	**Kakadu**	**49.02**	**282**	*eP*	**P**	**19 47 48.7**	**-1.1**
	3.4nm,0.3s,mb4.8						
FITZ	**Fitzroy Crossi**	**52.01**	**272**	*eP*	**P**	**19 48 12.3**	**-0.3**
	8.2nm,1.6s,mb4.4						
FITZ	**Fitzroy Crossi**	**52.01**	**272**	P	**P**	**19 48 12.8**	**+0.1**
	3.6nm,0.6s,mb4.5,baz=149,slow=5.9,SNR=12						
QSPA	**South Pole Qui**	**57.51**	**180**	*eP*	**P**	**19 48 52.7**	**+0.7**
	3.0nm,0.8s,mb4.4						
MAW	**Mawson**	**70.12**	**201**	P	**P**	**19 50 16.0**	**+1.3**
	1.8nm,0.9s,mb4.0,baz=108,slow=13,SNR=2.2						
SNAA	**Sanae**	**75.97**	**179**	*eP*	**P**	**19 50 48.7**	**-0.3**
VNA3	**Neumayer Olymp**	**76.14**	**176**	⇑*i*	**P**	**19 50 52.4**	**+2.5**
VNA3	**Neumayer Olymp**	**76.14**	**176**	⇑*i*	**P**	**19 51 04.0**	**+14**
VNA3	**Neumayer Olymp**	**76.14**	**176**	⇑*i*	**P**	**19 51 09.0**	**+19**
VNA2	**Neumayer--Watz**	**76.57**	**177**		**P**	**19 50 55.1**	**+2.8**
VNA2	**Neumayer--Watz**	**76.57**	**177**	⇓*i*	**P**	**19 51 06.2**	**+14**
VNA2	**Neumayer--Watz**	**76.57**	**177**	⇓*i*	**P**	**19 51 11.5**	**+19**
VNA1	**Neumayer--Stat**	**76.80**	**177**	⇑*i*	**P**	**19 50 57.6**	**+4.0**
VNA1	**Neumayer--Stat**	**76.80**	**177**	⇑*i*	**P**	**19 51 08.5**	**+15**
VNA1	**Neumayer--Stat**	**76.80**	**177**	⇓*i*	**P**	**19 51 13.0**	**+19**
NVAR	**Mina Array Bea**	**90.11**	**43**	P	**P**	**19 52 00.9**	**-1.3**
	0.6nm,0.8s,mb4.0,baz=235,slow=13,SNR=3.5						
ENH	**Enshi**	**92.53**	**305**	P	**P**	**19 52 12.7**	**-0.9**
	14nm,1.3s,mb5.2						
MKAR	**Makanchi Array**	**118.88**	**309**	PKP	PKPdf	19 57 49.1	-2.5
	1.1nm,0.7s,baz=135,slow=1.7,SNR=4.6						
QUA2	**Belchertown**	**122.21**	**57**	*eP*	PKPdf	19 58 04.2	+6.0
KURK	**Kurchatov**	**122.28**	**313**	*ePKP*	PKPdf	19 57 55.5	-2.5
BVAR	**Borovoye Array**	**127.69**	**315**	PKP	PKPdf	19 58 06.3	-2.1
	1.2nm,0.5s,baz=90,slow=1.5,SNR=12						
BRVK	**Borovoye**	**127.76**	**315**	*ePKP*	PKPdf	19 58 06.6	-2.0
ZRNK	**Zerenda**	**128.52**	**314**	*ePKP*	PKPdf	19 58 07.7	-2.4
ARCES	**ARCESS Array B**	**140.65**	**347**	PKP	PKPdf	19 58 31.4	-0.6
	4.4nm,1.1s,baz=18,slow=3.8,SNR=4.6						
JOF	**Joensuu**	**144.31**	**337**	*epkp*	PKPdf	19 58 32.8	-5.7
	0.9nm,0.4s						
KAF	**Kangasniemi**	**146.48**	**339**	*epkp*	PKPdf	19 58 40.5	-1.8
	5.1nm,0.7s						
FINES	**FINESS Array B**	**147.06**	**338**	PKPbc	PKPdf	19 58 43.0	-0.2
	6.5nm,0.7s,baz=43,slow=4.3,SNR=28						
NB2	**NORSAR Subarra**	**150.86**	**350**	PKP		19 58 52.4	
	1.1nm,0.7s,baz=10.0,slow=2.5						
NOA	**NORSAR Array B**	**150.86**	**350**	PKPbc	PKPdf	19 58 52.4	+3.1
	1.2nm,0.7s,baz=15,slow=4.2,SNR=6.3						
KSHT	**Keshet**	**151.27**	**280**	P	PKPdf	19 58 56.5	+5.7
EIL	**Elat**	**151.33**	**273**	P	PKPdf	19 58 56.3	+5.3
ZFRI	**Zfri**	**151.35**	**275**	P	PKPdf	19 58 56.3	+5.3
MBH	**Mount Berech**	**151.39**	**273**	P	PKPdf	19 58 56.6	+5.6
PRNI	**Paran**	**151.45**	**275**	P	PKPdf	19 58 56.6	+5.5
PRNI	**Paran**	**151.45**	**275**	⇓P	PKPdf	19 58 56.6	+5.5
BRTR	**Keskin Array B**	**153.24**	**295**	PKPbc	PKPdf	19 58 59.4	+6.0
	2.1nm,0.7s,baz=135,slow=3.5,SNR=15						
CLL	**Collm**	**159.51**	**339**	*i* PKP2	PKPab	19 59 37.5	-1.7
GERES	**GERESS Array B**	**161.39**	**334**	PKPab	PKPab	19 59 46.1	-1.3
	0.3nm,0.6s,baz=90,slow=2.0,SNR=4.4						

*IDC **24** 19:53:29.9±2.8,32.32S×178.42W,mb4.1/2,mb1 4.3/3, mb1mx3.9/14,ML3.8/1,Error ellipse: s-maj=66.9km s-min=43.1km az=124.0*
*NEIC **24** 19:53:31.8±1.1,32.34S×178.45W,h10km,mb4.6/3,Error ellipse: s-maj=26.4km s-min=18.5km az=61.0*
ISC 24 19:53:38.0±1.3,32.48S±0.08×179.6W±0.2,h10km,n16, σ1§07/16,mb4.3/5,4C-2D,South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**6.36**	**204**	Pn	**Pn**	**19 55 12.2**	**-2.0**
	1.7nm,0.3s,baz=318,slow=3.1,SNR=13						
URZ				Sn	**Sn**	**19 56 28.5**	**+0.8**
	2.6nm,0.3s,baz=162,slow=23,SNR=13						
CTAO	**Charters Tower**	**32.88**	**284**	*eP*	**P**	**20 00 16.0**	**+1.7**
	19nm,1.3s,mb4.9						
ASAR	**Alice Springs**	**41.70**	**270**	P	**P**	**20 01 28.8**	**+0.2**
	1.3nm,0.8s,mb3.6,baz=109,slow=7.2,SNR=18						
WB2	**Warramunga Arr**	**42.87**	**275**	*eP*	**P**	**20 01 37.9**	**-0.4**
WRAB	**Tennant Creek**	**42.87**	**275**	P	**P**	**20 01 37.5**	**-0.8**
	6.9nm,0.7s,mb4.5						
WRA	**Warramunga Arr**	**42.88**	**275**	P	**P**	**20 01 38.1**	**-0.3**
	3.6nm,0.8s,mb4.2,baz=114,slow=7.9,SNR=99						
QSPA	**South Pole Qui**	**57.63**	**180**	*eP*	**P**	**20 03 31.3**	**+1.2**
	2.8nm,0.7s,mb4.4						
SNAA	**Sanae**	**76.11**	**179**	*eP*	**P**	**20 05 26.1**	**-0.9**
VNA3	**Neumayer Olymp**	**76.32**	**177**	⇑*i*	**P**	**20 05 22.0**	**-6.2**
VNA3	**Neumayer Olymp**	**76.32**	**177**	⇑*i*	**P**	**20 05 32.9**	**+4.7**
VNA2	**Neumayer--Watz**	**76.73**	**177**	⇑*i*	**P**	**20 05 24.6**	**-5.9**
VNA2	**Neumayer--Watz**	**76.73**	**177**	⇑*i*	**P**	**20 05 35.4**	**+4.9**
VNA1	**Neumayer--Stat**	**76.97**	**177**	⇓*i*	**P**	**20 05 23.6**	**-8.2**
VNA1	**Neumayer--Stat**	**76.97**	**177**	⇓*i*	**P**	**20 05 33.0**	**+1.2**
BJT	**Baijiatuan**	**93.46**	**316**	P	**P**	**20 06 48.4**	**-6.5**
FINES	**FINESS Array B**	**146.59**	**338**	PKPbc	PKPbc	20 13 12.4	-6.3
	1.9nm,0.7s,baz=72,slow=4.4,SNR=16						

*IDC **24** 20:01:49.8±0.8,41.46S×72.02W,mb4.4/8,mb1 4.6/10, mb1mx4.5/15,ML5.2/2,Error ellipse: s-maj=39.4km s-min=23.4km az=142.0*
*NEIC **24** 20:02:07.2±0.8,41.03S×72.14W,h126km±7km,mb4.5/5, Error ellipse: s-maj=13.1km s-min=10.3km az=100.0*
NEIC Felt [II] at Puerto Montt and Puerto Varas.
*GUC **24** 20:02:07.2±0.8,41.24S×71.96W,h85km±29km,ML4.6*
*SYO **24** 20:02:07.1,41.03S×72.14W,h126km,MB4.5*
ISC 24 20:02:05.8±0.7,41.11S±0.05×72.1W±0.1,h128km±6km, n42,σ1§42/42,mb4.3/14,5C-1D,Southern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OSCH	**Osorno**	**0.95**	**304**	*eP*	**P**	**20 02 27.8**	**-0.5**
OSCH				*i* S	**S**	**20 02 43.9**	**-1.5**
OSCH				AMP		20 02 46.4	
	comp=N,13μm,0.4s						
VLCH	**Valdivia**	**1.57**	**325**	*eP*	**P**	**20 02 36.3**	**+1.3**
VLCH				*i* S	**S**	**20 02 57.9**	**+0.6**
VLCH				AMP		20 03 02.1	
	comp=N,18μm,0.3s						
TMCH	**Temuco**	**2.39**	**350**	*eP*	**P**	**20 02 47.0**	**+1.9**
TMCH				*i* S	**S**	**20 03 16.7**	**+1.6**
TMCH				AMP		20 03 24.0	
	comp=N,2μm,0.8s						
CCHI	**Chillan**	**4.50**	**0**	*eP*	**P**	**20 03 11.5**	**-1.7**
CCHI				*i* S	**S**	**20 04 03.2**	**-1.9**
CICH	**Cipreses**	**6.91**	**12**	*i* P	**P**	**20 03 46.0**	**+0.3**
CICH				*i* S	**S**	**20 05 05.1**	**+1.9**
CACH	**El Canelo**	**7.08**	**10**	*eP*	**P**	**20 03 46.2**	**-1.9**
CACH				*i* S	**S**	**20 05 09.3**	**+1.8**
CHCH	**Chadas Angostu**	**7.25**	**9**	*eP*	**P**	**20 03 49.7**	**-0.7**
LMEL	**Las Melosas**	**7.40**	**12**	*eP*	**P**	**20 03 52.8**	**+0.4**
FCH	**Farellones**	**7.90**	**11**	*eP*	**P**	**20 03 56.7**	**-2.4**
FCH				*i* S	**S**	**20 05 24.8**	**-2.5**
TRQA	**Tornquist**	**8.38**	**72**	*eP*	**P**	**20 04 07.9**	**+2.4**
LVC	**Limon Verde**	**18.64**	**9**	P	**P**	**20 06 17.5**	**+1.5**
	comp=N,2.5nm,0.3s,baz=194,slow=8.4,SNR=23						
LVC	**Limon Verde**	**18.64**	**9**	*eP*	**P**	**20 06 18.1**	**+2.1**
	comp=N,17nm,0.8s						
CPUP	**Villa Florida**	**19.14**	**44**	P	**P**	**20 06 18.4**	**-2.9**
	comp=N,0.9nm,0.3s,baz=236,slow=9.1,SNR=14						
CPUP	**Villa Florida**	**19.14**	**44**	*eP*	**P**	**20 06 18.5**	**-2.8**
	comp=N,6.3nm,0.9s						
LPAZ	**La Paz**	**24.97**	**9**	P	**P**	**20 07 21.9**	**+3.0**
	comp=N,1.2nm,0.4s,mb3.8,baz=157,slow=9.2,SNR=2.8						
BDFB	**Brasilia**	**32.84**	**46**	P	**P**	**20 08 27.1**	**-2.1**
	comp=N,13nm,0.7s,mb4.8,baz=211,slow=8.0,SNR=14						
VNA3	**Neumayer Olymp**	**42.87**	**155**	⇑*i*	**P**	**20 09 53.7**	**+1.5**
VNA1	**Neumayer--Stat**	**43.23**	**154**	⇑*i*	**P**	**20 09 57.0**	**+1.8**
VNA2	**Neumayer--Watz**	**43.55**	**154**	⇑*i*	**P**	**20 09 59.1**	**+1.4**
QSPA	**South Pole Qui**	**49.14**	**180**	*eP*	**P**	**20 10 40.4**	**-1.2**
	comp=N,5.0nm,0.8s,mb4.2						
VNDA	**Vanda**	**57.14**	**192**	P	**P**	**20 11 39.6**	**-1.1**
	comp=N,1.3nm,1.0s,mb3.7,baz=121,slow=11,SNR=5.4						
SYO	**Syowa Base**	**59.31**	**157**	⇑P	**P**	**20 11 52.3**	**-3.5**
SYO	**Syowa Base**	**59.31**	**157**	⇓PcP	PcP	20 12 40.0	-2.2
SYO	**Syowa Base**	**59.31**	**157**	⇑*e*P	**P**	**20 11 52.3**	**-3.5**
SYO				*e*PcP	PcP	20 12 40.0	-2.2
LRAL	**Lakeview Retre**	**75.05**	**347**	P	**P**	**20 13 34.9**	**0.0**
	comp=N,7.9nm,0.6s,mb4.5						
TXAR	**Lajitas Array**	**75.94**	**332**	P	**P**	**20 13 40.1**	**+0.1**
	comp=N,0.9nm,0.3s,mb3.8,baz=153,slow=8.4,SNR=4.9						
SWET	**Sewanee**	**77.01**	**348**	*eP*	**P**	**20 13 45.4**	**-0.5**
SWET				*e*		20 13 59.5	
LIC	**Lamto**	**77.16**	**70**	*eP*	**P**	**20 13 46.4**	**-0.7**
	comp=N,19nm,0.7s,mb4.8						
KIC	**Kosan Boka**	**77.45**	**70**	*eP*	**P**	**20 13 48.4**	**-0.3**
	comp=N,14nm,0.7s,mb4.7						
TIC	**Toumodi**	**77.45**	**70**	*eP*	**P**	**20 13 48.2**	**-0.5**
	comp=N,6.6nm,0.2s,mb4.9						
DBIC	**Dimbokro**	**77.59**	**70**	P	**P**	**20 13 49.0**	**-0.4**
	comp=N,4.0nm,0.7s,mb4.2,baz=228,slow=4.7,SNR=9.5						
URZ	**Urewera**	**78.89**	**229**	P	**P**	**20 13 55.8**	**-0.3**
	comp=N,18nm,1.2s,mb4.6,baz=148,slow=17,SNR=4.2						
NVAR	**Mina Array Bea**	**89.70**	**325**	P	**P**	**20 14 51.4**	**+1.2**
	comp=N,1.3nm,1.0s,mb3.8,baz=143,slow=5.2,SNR=6.7						
NVAR	**Mina Array Bea**	**89.70**	**325**	P	**P**	**20 14 51.4**	**+1.2**
HWUT	**Hardware Ranch**	**89.76**	**332**	*eP*	**P**	**20 14 51.0**	**+0.6**
	comp=N,9.6nm,0.9s,mb4.7						
PDAR	**Pinedale Array**	**90.08**	**333**	P	**P**	**20 14 52.4**	**+0.5**
	comp=N,2.2nm,0.7s,mb4.2,baz=141,slow=5.8,SNR=9.2						
ASAR	**Alice Springs**	**111.18**	**206**	PKiKP		20 20 23.6	
	comp=N,0.9nm,0.9s,baz=142,slow=1.1,SNR=4.6						
WRA	**Warramunga Arr**	**114.49**	**207**	PKP	PKPdf	20 20 30.2	-0.5
	comp=N,0.5nm,0.5s,baz=166,slow=1.6,SNR=11						
FITZ	**Fitzroy Crossi**	**118.84**	**199**	PKP	PKPdf	20 20 38.1	-1.0
	comp=N,0.7nm,0.6s,baz=228,slow=6.3,SNR=5.4						
TIXI	**Tiksi**	**147.65**	**348**	*ePKPdf*	PKPdf	20 21 33.8	+3.1
YAK	**Yakutsk**	**155.30**	**335**	*ePKP*	PKPdf	20 21 47.5	+5.3
MKAR	**Makanchi Array**	**160.74**	**64**	PKP	PKPdf	20 21 50.5	+1.2
	comp=N,0.3nm,0.7s,baz=270,slow=1.2,SNR=3.7						
MKAR				PKPab	PKPab	20 22 32.5	-1.9
	comp=N,0.2nm,0.5s,baz=272,slow=2.3,SNR=5.0						

*MOS **24** 20:16:48.1±1.1,16.00N×145.84E,h41km,mb5.1/17,Error ellipse: s-maj=16.6km s-min=8.8km az=107.5*
*NEIC **24** 20:16:55.7±0.5,15.91N×145.73E,h94km±5km,mb4.8/26, Error ellipse: s-maj=7.1km s-min=4.2km az=102.0*
NEIC Felt on Saipan.
*BJI **24** 20:16:55.1,16.44N×146.15E,h85km,mB5.1,mb4.7, Ms4.7,Msz4.7*
*IDC **24** 20:16:57.2±2.4,15.89N×145.84E,h109km±21km, mb4.3/27,mb1 4.4/28,mb1mx4.4/30,MS4.1/9,Ms1 4.1/9, ms1mx4.0/26,Error ellipse: s-maj=15.9km s-min=9.4km az=90.0*
ISC 24 20:16:54.9±0.6,15.87N±0.03×145.84E±0.04,h98km±5km, h91km±2.7km:pP-P,n184,σ1§19/174,mb4.7/72,11C-7D, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SAPN	**Saipan**	**0.66**	**188**	⇓*i*P	**P**	**20 17 11.6**	**-0.4**
SARN	**Sarigan**	**0.83**	**355**	⇓*i*P	**P**	**20 17 13.7**	**+0.1**
GUMO	**Guam**	**2.46**	**203**	⇓*e*Pn	**P**	**20 17 34.8**	**+0.6**
GUMO				*e*Sn	**S**	**20 18 03.6**	**+0.2**
JHJ	**Hachijo jima 2**	**18.03**	**343**	LR	LR	20 26 32.9	
	comp=Z,485nm,18.5s,baz=139,slow=32						
JOW	**Kunigami**	**19.64**	**307**	P	**P**	**20 21 20.9**	**+2.6**
	1.4nm,0.3s,baz=145,slow=8.4,SNR=6.8						
JOW				LR	LR	20 27 18.9	
	comp=Z,481nm,21.9s,baz=258,slow=32						
MAJO	**Matsushiro**	**21.68**	**343**	*eP*	**P**	**20 21 37.1**	**-1.8**
	16nm,1.0s,mb4.3						
MAJO				*e*pP		20 21 59.4	
MAT	**Matsushiro**	**21.68**	**343**	P	**P**	**20 21 36.8**	**-2.1**
MAT	**Matsushiro**	**21.68**	**343**	*eP*	**P**	**20 21 37.0**	**-1.9**
	12nm,1.0s,mb4.2						
JNU	**Nakatsue**	**21.87**	**324**	P	**P**	**20 21 41.0**	**+0.1**
	6.9nm,0.7s,mb4.1,baz=79,slow=16,SNR=6.8						
TGY	**Tagaytay City**	**24.12**	**269**	P	**P**	**20 22 03.3**	**+0.5**
	177nm,0.4s,mb5.8,baz=178,slow=11,SNR=2.8						
TGY				LR	LR	20 30 47.5	
	comp=Z,201nm,18.3s,baz=345,slow=34						
TGY	**Tagaytay City**	**24.12**	**269**	P	**P**	**20 22 03.3**	**+0.5**
TGY				pmax	pmax		
	comp=Z,177nm,0.4s						
TGY				MLR	MLR		
	comp=Z,201nm,18.3s						
PMG	**Port Moresby**	**25.15**	**177**	P	**P**	**20 22 12.5**	**-0.2**
	comp=Z,19nm,0.6s,mb4.7,baz=330,slow=6.5,SNR=10						
PMG	**Port Moresby**	**25.15**	**177**	P	**P**	**20 22 12.5**	**-0.2**
PMG				pmax	pmax		
	comp=Z,19nm,0.6s						
SSE	**Sheshan**	**27.13**	**308**	P	**P**	**20 22 29.3**	**-1.6**
SSE				AMB	AMB		
	comp=Z,52nm,0.7s,mb5.2						
ASAJ	**Asahikawa**	**28.29**	**355**	P	**P**	**20 22 43.4**	**+2.2**
	comp=Z,3.8nm,0.6s,mb4.1,baz=203,slow=7.7,SNR=2.5						
ASAJ				LR	LR	20 34 52.8	
	comp=Z,452nm,18.2s,baz=341,slow=38						
ASAJ	**Asahikawa**	**28.29**	**355**	P	**P**	**20 22 43.4**	**+2.2**
ASAJ				pmax	pmax		
	comp=Z,4.0nm,0.6s						
ASAJ				MLR	MLR		
	comp=Z,452nm,18.3s						
NJ2	**Nanjing**	**29.34**	**308**	*eP*	**P**	**20 22 47.8**	**-2.9**
NJ2				AP	pP	20 23 09.1	-3.6
NJ2				XP	sP	20 23 19.6	-4.5
NJ2				S	**S**	**20 27 27.0**	**-8.5**
NJ2				AMB	AMB		
	comp=Z,10.0nm,0.6s,mb4.6						
NJ2				AMB	AMB		
	comp=Z,92nm,4.0s						
KAKA	**Kakadu**	**31.35**	**206**	*eP*	**P**	**20 23 06.7**	**-1.8**
	comp=Z,9.2nm,0.5s,mb4.8						
CN2	**Changchun**	**32.80**	**332**	*eP*	**P**	**20 23 20.3**	**-0.6**
KLR	**Kul'dur**	**35.20**	**344**	*eP*	**P**	**20 23 38.0**	**-3.4**
CTA	**Charters Tower**	**35.73**	**179**	P	**P**	**20 23 46.2**	**0.0**
	comp=Z,6.6nm,0.7s,mb4.7,baz=348,slow=5.8,SNR=6.8						
CTA	**Charters Tower**	**35.73**	**179**	P	**P**	**20 23 46.3**	**+0.1**
CTA				pmax	pmax		
	comp=Z,7.0nm,0.7s						
ENH	**Enshi**	**36.22**	**300**	*eP*	**P**	**20 23 52.1**	**+1.9**
	comp=Z,8.0nm,0.8s,mb4.7						
WRAB	**Tennant Creek**	**37.33**	**198**	⇑*eP*	**P**	**20 23 58.8**	**-0.8**
	comp=Z,93nm,1.0s,mb5.7						
WB2	**Warramunga Arr**	**37.34**	**198**	*eP*	**P**	**20 23 59.0**	**-0.7**
WB2				*eS*	**S**	**20 29 37.5**	**-2.1**
WRA	**Warramunga Arr**	**37.34**	**198**	P	**P**	**20 23 59.0**	**-0.7**
	comp=Z,20nm,0.8s,mb5.1,baz=22,slow=9.8,SNR=122						
WRA				ScP		20 29 53.9	
	comp=Z,1.6nm,0.9s,baz=16,slow=4.0,SNR=5.4						
WRA	**Warramunga Arr**	**37.34**	**198**	P	**P**	**20 23 59.0**	**-0.7**
WRA						20 29 53.9	
WRA				pmax	pmax		
	comp=Z,20nm,0.8s						
WRA				pmax	pmax		
	comp=Z,2.0nm,0.9s						
GYA	**Guiyang**	**37.89**	**293**	⇑*iP*	**P**	**20 24 07.8**	**+3.6**
GYA				AP	pP	20 24 31.4	+4.3
GYA				XP	sP	20 24 42.0	+3.3
GYA				PP	PP	20 25 39.8	+5.0
GYA				S	**S**	**20 29 54.4**	**+6.5**
GYA				AMB	AMB		
	comp=Z,20nm,1.1s,mb4.9						
GYA				LR	LR		
	comp=N,620nm,15.2s						
GYA				LR	LR		
	comp=E,340nm,14.2s						
GYA				LR	LR		
	comp=Z,370nm,17.1s						
FITZ	**Fitzroy Crossi**	**39.19**	**211**	*eP*	**P**	**20 24 15.0**	**-0.1**
	comp=Z,7.0nm,0.8s,mb4.5						
FITZ	**Fitzroy Crossi**	**39.19**	**211**	P	**P**	**20 24 14.7**	**-0.4**
	comp=Z,6.9nm,0.6s,mb4.7,baz=28,slow=7.8,SNR=85						
BTO	**Baotou**	**39.62**	**316**	*eP*	**P**	**20 24 19.3**	**+0.9**
AS12	**Alice Springs**	**40.99**	**197**	*eP*	**P**	**20 24 28.6**	**-1.3**
	comp=Z,6.0nm,0.6s,mb4.6						
ASAR	**Alice Springs**	**40.99**	**197**	P	**P**	**20 24 29.6**	**-0.3**
	comp=Z,3.9nm,0.6s,mb4.4,baz=25,slow=9.4,SNR=52						
ASAR				ScP		20 30 08.2	
	comp=Z,1.1nm,0.7s,baz=21,slow=3.4,SNR=5.6						
ASAR				LR	LR	20 40 23.0	
	comp=Z,190nm,18.7s,baz=19,slow=34						
CD2	**Chengdu

comp=Z,34nm,1.0s,mb5.3
GKN Gorkha 57.53 293 *e*P P **20 26 37.8 +1.1**
comp=Z,66nm,1.1s,mb5.6
TNA Tin City 58.39 21 *e*P P **20 26 41.2 -1.0**
comp=Z,28nm,1.4s,mb5.1
KOLN Koldanda 58.46 293 *e*P P **20 26 43.4 +0.2**
comp=Z,34nm,1.0s,mb5.3
ANM Nome 58.74 22 *e*P P **20 26 44.0 -0.6**
ZAL Zalesovo 60.35 323 P P **20 26 54.3 -1.5**
comp=Z,1.4nm,0.8s,mb4.0,baz=271,slow=7.5,SNR=12
ZAL Zalesovo 60.35 323 P P **20 26 54.3 -1.5**
ZAL pmax pmax
comp=Z,1.0nm,0.9s
MKAR Makanchi Array 60.53 315 P P **20 26 57.1 -0.1**
comp=Z,3.5nm,0.5s,mb4.7,baz=91,slow=8.6,SNR=62
MKAR Makanchi Array 60.53 315 *i* P P **20 26 57.3 +0.2**
MKAR pmax pmax
comp=Z,4.0nm,0.5s
SVW Sparrevohn 61.22 28 *e*P P **20 27 01.2 -0.3**
URZ Urewera 61.31 152 P P **20 27 01.2 -1.3**
comp=Z,7.8nm,0.7s,mb4.9,baz=314,slow=10,SNR=4.2
NVS Novosibirsk 61.46 324 *e*P P **20 27 01.0 -2.3**
NVS pmax pmax
comp=Z,8.0nm,1.4s,mb4.6
KURK Kurchatov 63.47 319 *i* P P **20 27 15.7 -1.0**
KURK pmax pmax
comp=Z,18nm,1.5s,mb4.8
KURK Kurchatov 63.47 319 *e*P P **20 27 15.6 -1.2**
KURK *e* 20 27 30.6
RPZ Rata Peaks 63.63 160 P P **20 27 16.3 -1.6**
comp=Z,5.1nm,0.6s,mb4.5,baz=162,slow=6.4,SNR=3.8
RPZ LR LR 20 52 28.1
comp=Z,197nm,18.9s,baz=256,slow=34
IMA Indian Mountai 63.80 23 *e*P P **20 27 18.4 -0.2**
PMS Palmer South 64.05 29 *e*P P **20 27 19.1 -1.2**
HYB Hyderabad 64.18 282 *i* P P **20 27 22.5 +0.6**
HYB *e*pP pP 20 27 43.0 -3.5
HYB Hyderabad 64.18 282 *e*P P **20 27 22.5 +0.6**
HYB *e* pP 20 27 43.0 -3.5
PMR Palmer 64.34 29 *e*P P **20 27 21.0 -1.2**
ULHL Ulahoi 64.46 310 P P **20 27 24.5 +1.2**
SNR=9.5
SML Sawmill 64.77 29 *e*P P **20 27 24.0 -0.9**
TKM2 Tokmak 2 64.96 310 P P **20 27 27.6 +1.2**
SNR=15
MCK McKinley 64.98 26 *e*P P **20 27 24.8 -1.5**
comp=Z,4.3nm,0.7s,mb4.4
KZA Kyzart 65.20 309 P P **20 27 30.2 +2.2**
SNR=15
KBK Karagaybulak 65.43 310 P P **20 27 30.6 +1.0**
SNR=7.9
COLA College 65.74 25c *i*P P **20 27 30.5 -0.7**
COLA College 65.74 25 *e*P P **20 27 29.9 -1.3**
UCH Uchtor 65.75 309 P P **20 27 33.5 +2.0**
SNR=17
ILAR Eielson Array 66.11 26 P P **20 27 31.4 -2.2**
comp=Z,17nm,0.6s,mb5.0,baz=259,slow=5.6,SNR=160
ILAR LR LR 20 57 44.4
comp=Z,142nm,18.8s,baz=271,slow=37
ILAR Eielson Array 66.11 26 P P **20 27 31.4 -2.1**
ILAR pmax pmax
comp=Z,17nm,0.6s
ILAR MLR MLR
comp=Z,142nm,18.8s
EKS2 Erkin-Say 66.29 310 P P **20 27 36.0 +1.0**
SNR=9.3
AML Almayashu 66.36 309 P P **20 27 37.1 +1.7**
SNR=8.3
VOSK Vostochnaya 68.37 321 P P **20 27 45.8 -2.0**
VOSK pmax pmax
comp=Z,2.0nm,0.8s,mb4.0
KKAR Karatay Array 68.68 310 *i* P P **20 27 50.0 +0.1**
KKAR pmax pmax
comp=Z,20nm,1.0s,mb4.9
BVA0 Borovoye Array 68.74 321 *i* P P **20 27 49.2 -0.9**
BVA0 pmax pmax
comp=Z,1.0nm,0.8s,mb3.7
BRVK Borovoye 68.81 321 *e*P P **20 27 49.4 -1.1**
DAWY Dawson 69.19 27↓*e*P P **20 27 52.6 0.0**
ZRNK Zerenda 69.58 321 P P **20 27 53.8 -1.4**
ZRNK pmax pmax
comp=Z,8.0nm,1.3s,mb4.4
ZRNK Zerenda 69.58 321 *e*P P **20 27 53.9 -1.3**
PPT Papeete 71.79 115 P P **20 28 09.9 +0.8**
comp=Z,22nm,0.4s,mb5.4,baz=39,slow=22,SNR=2.2
PPT Papeete 71.79 115 P P **20 28 09.9 +0.8**
PPT pmax pmax
comp=Z,22nm,0.4s
INK Inuvik 71.91 23 P P **20 28 08.2 -0.9**
comp=Z,25nm,0.9s,mb5.0,baz=270,slow=6.4,SNR=82
INK Inuvik 71.91 23 P P **20 28 08.2 -0.8**
INK pmax pmax
comp=Z,25nm,0.9s
INK Inuvik 71.91 23 *e*P P **20 28 07.8 -1.2**
comp=Z,34nm,1.0s,mb5.1
VIB Van Inlet 72.45 39 T 21 47 40.1
SNR=6.4
DLBC Dease Lake 73.57 33 P P **20 28 19.8 +1.0**
comp=Z,17nm,0.7s,mb4.9,baz=284,slow=6.3,SNR=42
DLBC Dease Lake 73.57 33 *e*P P **20 28 19.3 +0.5**
ARU Arti 75.44 325↓*i*P P **20 28 28.7 -0.9**
ARU *e* 20 28 44.7
ARU *e* 20 31 12.6
ARU *e*S S 20 37 56.9 -3.4
ARU pmax pmax
comp=Z,5.0nm,0.8s,mb4.3
ARU Arti 75.44 325 *e*P P **20 28 28.4 -1.3**
comp=Z,4.2nm,0.8s,mb4.2
AB31 Akbulak array 75.50 318 P P **20 28 29.3 -0.8**
HDW Hoodsport 79.18 43 P P **20 28 52.3 +1.7**
KEBM Edson Butte 79.26 48 P P **20 28 52.6 +1.5**
BMW Boistfort Moun 79.30 45 *e*P P **20 28 52.1 +0.8**
GNW Green Mountain 79.35 44 *e*P P **20 28 52.5 +1.0**
VDB Vedder Mountai 79.52 42 P P **20 28 53.0 +0.6**
JCW Jim Creek 79.81 43 P P **20 28 55.2 +1.2**
RPW Rockport 80.02 42 *e*P P **20 28 55.5 +0.4**
RMW Rattlesnake Mo 80.05 44 *e*P P **20 28 56.3 +1.1**
SSOR Sweet Springs 80.17 46 *e*P P **20 28 56.8 +0.9**
HUMO Hull Mountain 80.30 48 *e*P P **20 28 57.2 +0.5**
YKW3 Yellowknife Ar 80.39 28 *e*P P **20 28 55.7 -1.1**
YKA Yellowknife Ar 80.41 28 P P **20 28 56.5 -0.4**
comp=Z,17nm,0.6s,mb5.0,baz=287,slow=5.3,SNR=332
YKA Yellowknife Ar 80.41 28 P P **20 28 56.5 -0.4**
YKA pmax pmax
comp=Z,17nm,0.6s
WRW Wenatchee Ridg 80.57 43 P P **20 28 59.0 +0.9**
YBH Yreka Blue Hor 80.67 49 *e*P P **20 28 59.5 +0.8**
comp=Z,18nm,1.0s,mb4.9
NSHM Saint Helena R 81.48 52 *e*P P **20 29 03.8 +0.8**
RES Resolute Bay 82.13 14 *e*P P **20 29 04.6 -1.0**
comp=Z,2.4nm,0.6s,mb4.2
OHCM Honcut 82.14 51 *e*P P **20 29 07.1 +0.7**
BEKR Beckwourth 82.85 51 *e*P P **20 29 10.8 +0.7**
comp=Z,26nm,0.9s,mb5.1
CMB Columbia Colle 83.29 53 *e*P P **20 29 12.6 +0.4**
comp=Z,20nm,1.1s,mb4.8
WVOR Wild Horse Val 83.44 48 *e*P P **20 29 13.5 +0.6**
comp=Z,8.8nm,0.9s,mb4.6
BSMT Bassoo Peak 84.53 42 P P **20 29 19.4 +1.2**
THR Tehran 84.58 306 P P **20 29 19.1 +0.3**
comp=Z,1.5nm,0.8s,mb4.0,baz=341,slow=8.5,SNR=5.0
THR Tehran 84.58 306 P P **20 29 19.2 +0.4**
THR pmax pmax
comp=Z,2.0nm,0.8s
NVAR Mina Array Bea 84.77 52 P P **20 29 20.9 +1.2**
comp=Z,15nm,1.1s,mb4.8,baz=265,slow=4.3,SNR=44
MTUM Tungsten Hills 84.87 53 *e*P P **20 29 21.1 +0.8**
ARCES ARCESS Array B 85.21 342 P P **20 29 19.4 -1.7**
comp=Z,6.4nm,1.1s,mb4.5,baz=59,slow=7.1,SNR=7.5
ARCES ARCESS Array B 85.21 342 P P **20 29 19.4 -1.8**
ARCES pmax pmax
comp=Z,6.0nm,1.1s
ARCES ARCESS Array B 85.21 342 P P **20 29 19.4 -1.7**
CHMT Chamberlain Mo 85.81 42 *e*P P **20 29 24.6 0.0**
HLID Hailey 86.09 46 *e*P P **20 29 26.9 +0.9**
comp=Z,7.2nm,0.9s,mb4.6
HLID *e*pP pP 20 29 52.3 +0.3
MCMT McKenzie Canyo 86.75 44 *e*P P **20 29 30.0 +0.7**
HRY Holter Researc 86.80 42 *e*P P **20 29 30.3 +0.9**
DAG Danmarks Havn 87.08 356 *i* P P **20 29 28.0 -2.2**
DAG Danmarks Havn 87.08 356 *e*P P **20 29 28.0 -2.2**
BOZ Bozeman (W) 87.29 43 *e*P P **20 29 32.5 +0.6**
comp=Z,18nm,1.3s,mb4.8
QLMT Earthquake Lak 87.70 44 *e*P P **20 29 34.9 +1.1**
OBN Obninsk 87.71 327 *e*P P **20 29 28.8 -4.8**
OBN *e* 20 32 55.2
OBN pmax pmax
comp=Z,3.0nm,0.7s,mb4.4
ZEI Tsey 87.87 314 *e*P P **20 29 33.0 -1.7**
ZEI MLR MLR
comp=Z,800nm,17.0s
NEN Nelson 88.23 54 *e*P P **20 29 37.4 +0.8**
KIV Kislovodsk 88.30 315 *e*P P **20 29 37.1 +0.4**
KIV pmax pmax
comp=Z,6.0nm,0.9s,mb4.6
KIV pmax pmax
comp=N,3.0nm,1.0s
KIV MLR MLR
comp=Z,590nm,19.0s
KIV MLR MLR
comp=E,300nm,18.0s
HWUT Hardware Ranch 88.71 47 *e*P P **20 29 39.3 +0.6**
comp=E,11nm,0.9s,mb4.9
HWUT *e*pP pP 20 30 03.2 -1.8
MSU Marysvale 89.32 50 *e*P P **20 29 43.0 +1.3**
FINES FINESS Array B 89.50 335 P P **20 29 40.0 -1.9**
comp=E,0.6nm,0.5s,mb3.9,baz=65,slow=3.5,SNR=8.6
FINES FINESS Array B 89.50 335 P P **20 29 40.0 -1.9**
FINES pmax pmax
comp=Z,1.0nm,0.5s
PDAR Pinedale Array 89.70 45 P P **20 29 42.0 -1.4**
comp=Z,1.1nm,0.6s,mb4.2,baz=339,slow=1.2,SNR=11
PDAR PP PP 20 33 15.8 -2.8
comp=Z,0.9nm,1.0s,baz=270,slow=4.4,SNR=5.2
RW3 Ridgway 92.71 49 *e*P P **20 29 58.7 +1.3**
VNDA Vanda 93.67 177 P P **20 30 01.1 +0.2**
comp=Z,1.1nm,0.9s,mb4.2,baz=342,slow=4.3,SNR=6.3
VNDA LR LR 21 10 30.8
comp=Z,172nm,18.5s,baz=297,slow=34
VNDA Vanda 93.67 177 P P **20 30 01.1 +0.2**
VNDA pmax pmax
comp=Z,1.0nm,0.9s
VNDA MLR MLR
comp=Z,172nm,18.5s
ULM Lac du Bonnet 94.84 35 P P **20 30 06.8 0.0**
comp=Z,2.0nm,0.7s,mb4.7,baz=328,slow=3.8,SNR=3.7
ANMO Albuquerque 94.89 52 P P **20 30 08.3 +0.8**
BRTR Keskin Array B 96.17 314 P P **20 30 11.6 -1.5**
comp=Z,0.6nm,0.8s,mb4.1,baz=135,slow=1.7,SNR=4.5
VNA2 Neumayer--Watz 122.63 190↓*i* PKPdf 20 35 40.5 +1.9
VNA2 Neumayer--Watz 122.63 190↑*i* PKPdf 20 35 44.2 +5.6
VNA2 Neumayer--Watz 122.63 190↑*i* PKPdf 20 35 50.5 +12
VNA2 Neumayer--Watz 122.63 190↑*i* PKPdf 20 36 15.5 +37
VNA3 Neumayer Olymp 122.72 189 PKPdf 20 35 42.9 +4.1
VNA3 Neumayer Olymp 122.72 189↑*i* PKPdf 20 35 50.9 +12
VNA1 Neumayer--Stat 123.01 190↓*i* PKPdf 20 35 41.5 +2.1
DBIC Dimbokro 143.35 305 PKP PKPdf 20 36 17.6 -1.1
comp=Z,1.2nm,0.4s,baz=64,slow=4.0,SNR=6.1
DBIC Dimbokro 143.35 305 PKIKP PKPdf 20 36 17.6 -1.1
DBIC pmax pmax
comp=Z,1.0nm,0.4s
LVC Limon Verde 146.56 107 *e*PKPbc PKPbc 20 36 27.6 +2.1
LPAZ La Paz 147.37 96 PKPbc PKPdf 20 36 27.7 +2.2
comp=Z,20nm,1.2s,baz=323,slow=3.2,SNR=12
LPAZ La Paz 147.37 96 PKIKP PKPdf 20 36 27.7 +2.2
LPAZ pmax pmax
comp=Z,20nm,1.3s
LPAZ La Paz 147.37 96 *e*PKPdf PKPdf 20 36 27.1 +1.6

CASC 24 20:23:13.7±2.2, 10.89N×86.45W, h20km±17km, MD3.7, 2C-3D, Off coast of Costa Rica

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CRZC	**La Cruz**	**0.84**	**86**↓	*e*P	Pb	20 23 29.4	0.0
CRZC				*e*S	Sb	20 23 41.3	+1.1
CONN	**Concepcion**	**1.05**	**50**⇑	*e*P	Pb	20 23 32.7	-0.3
CONN				*e*S	Sb	20 23 46.8	+0.4
APON	**Apoyo**	**1.09**	**20**	*e*P	Pb	20 23 34.3	+0.7
APON				*e*S	Sb	20 23 47.0	-0.5
VCR	**Vista de Mar**	**1.10**	**133**	*e*P	Pb	20 23 32.3	-1.7
TICN	**Ticuantepe**	**1.16**	**11**	*e*P	Pb	20 23 34.9	+0.1
TICN				*e*S	Sb	20 23 49.4	0.0
COPN	**Copaltepe**	**1.29**	**354**↓	*e*P	Pn	20 23 36.2	-0.7
COPN				*e*S	Sb	20 23 55.0	+1.7
LEON	**Leon**	**1.58**	**344**⇑	*e*P	Pn	20 23 40.5	-0.4
PYN	**Poneloya**	**1.59**	**339**	*e*P	Pn	20 23 40.0	-1.0
JCR	**Jicaral**	**1.67**	**128**	*e*P	Pn	20 23 40.4	-1.9
LAJ	**Bijagual**	**2.51**	**114**	*e*P	Pn	20 23 49.4	-4.8
URSC	**Urasca**	**2.83**	**111**↓	*e*P	Pn	20 23 59.7	+0.9

*DUSS **24** 20:26:54.2±0.9, 34.13N×37.30E, h15km, ML3.8*
*GII **24** 20:26:58.2±0.7, 34.28N×36.80E, h6km±30km, ML2.6/4, Mw3.0/3*
*NSSC **24** 20:26:59.1, 33.89N×37.10E, h10km±7km*
*GRAL **24** 20:27:01.1±0.5, 34.56N×35.82E, h144km, MD3.3*
*NEIC **24** 20:27:17.7, 34.74N×33.68E, h15km, ML3.0(NIC), After NIC.*

NIC 24 20:27:17.7±0.1, 34.74N×33.68E, h15km, ML3.0, MW2.7, 2C-4D, Cyprus region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CSS	**Prodhromos**	**0.36**	**308**	⇑P	Pb	20 27 25.4	+0.1
	5.4nm,0.2s						
CSS				S	Sb	20 27 31.0	+0.6
CSS	**Prodhromos**	**0.36**	**308**⇑	*i*P	Pb	20 27 25.4	+0.1
CSS				S	Sb	20 27 31.0	+0.6
PHNC	**Paralimni**	**0.39**	**48**	↓P	Pb	20 27 30.4	+4.6
PHNC				S	Sb	20 27 40.4	+9.1
PHNC	**Paralimni**	**0.39**	**48**↓	*i*P	Pb	20 27 30.4	+4.6
PHNC				S	Sb	20 27 40.4	+9.1
MAMC	**Mammari**	**0.57**	**319**	P	Pb	20 27 29.1	+0.2
SZAC	**Souni-Zanaja**	**0.66**	**272**	P	Pb	20 27 30.3	0.0
	3.3nm,0.2s						
SZAC				S	Sb	20 27 40.4	+1.5
ALFC	**Alevga**	**0.98**	**295**	P	Pb	20 27 36.0	+0.2
	4.5nm,0.2s						
ALFC				S	Sb	20 27 50.1	+1.8
PPCY	**Paphos**	**1.11**	**278**	P	Pb	20 27 37.9	-0.1
BHL	**Bhannes**	**1.84**	**117**	*i* PG	Pg	20 27 22.3	-32
BHL				*i* SG	Sg	20 27 37.4	-42
MATL	**Matirih**	**1.85**	**132**	*i* PG	Pg	20 27 25.3	-30
HWQ	**Hawqa**	**1.93**	**103**	*i* PG	Pg	20 27 20.1	-36
HWQ				*i* SG	Sg	20 27 34.2	-48
HNTI	**Hanita**	**2.07**	**143**	Pn	Pn	20 27 29.4	-23
HNTI				Sn	Sn	20 27 53.3	-25
HRI	**Mount Hermon**	**2.25**	**130**	Sn	Sn	20 27 41.8	-41
KSDI	**Kefar Szold**	**2.26**	**133**	Pn	Pn	20 27 24.1	-31
KSDI				Sn	Sn	20 27 42.5	-40
BRBR	**Barbar**	**2.31**	**124**	⇑P	Pn	20 27 19.6	-36
BRBR				⇓S	Sn	20 27 34.7	-49
OFRI	**'Ofer**	**2.38**	**152**	Pn	Pn	20 27 35.6	-21
OFRI				Sn	Sn	20 28 03.2	-23
QASN	**Qassioun**	**2.47**	**118**	⇑P	Pn	20 27 13.4	-45
QASN				⇑S	Sn	20 27 25.3	-63
DUSS	**Damascus Unive**	**2.49**	**119**	*i* P	Pn	20 27 13.4	-45
DUSS				*e*		20 27 13.6	
	baz=54,slow=5.9						
DUSS				*i* P		20 27 14.2	
DUSS				*i* P		20 27 14.5	
DUSS				*e*S	Sn	20 27 28.3	-60
DUSS				AML	AML	20 27 39.4	
	comp=N,4μm,0.7s						
DUSS				AML	AML	20 27 39.6	
	comp=E,5μm,0.9s						
DUSS				AML	AML	20 27 57.6	
	comp=Z,2μm,0.7s						
KSHT	**Keshet**	**2.50**	**134**	Sn	Sn	20 27 46.9	-42
MMLI	**Mount Malkishu**	**2.72**	**147**	Pn	Pn	20 27 34.3	-27
MMLI				Sn	Sn	20 28 02.2	-32
SLTI	**Sal'it**	**2.74**	**155**	Pn	Pn	20 27 38.3	-24
SLTI				Sn	Sn	20 28 09.7	-25
TCHB	**Talchebab**	**2.81**	**137**	⇑P	Pn	20 27 26.4	-37
HMDT	**Nahal Hemdat**	**2.92**	**148**	Pn	Pn	20 27 36.0	-29
HMDT				Sn	Sn	20 28 04.3	-35
SALA	**Sala**	**3.25**	**128**	⇑P	Pn	20 27 21.4	-48
SALA				⇓S	Sn	20 27 38.9	-69

*BJI **24** 20:32:25.9, 36.96N×135.22E, h365km, mB4.5, mb4.3*
*NEIC **24** 20:32:27.1±0.4, 37.00N×135.18E, h354km±4km, mb4.1/14, Error ellipse: s-maj=6.2km s-min=5.1km az=131.0*
*JMA **24** 20:32:27.4±0.1, 36.99N×135.29E, h358km±2km, M3.7*
*IDC **24** 20:32:27.3±0.9, 37.02N×135.14E, h354km±9km, mb3.5/18, mb1 3.6/22, mb1mx3.6/27, Error ellipse: s-maj=10.2km s-min=9.1km az=111.0*

ISC 24 20:32:26.4±0.2, 37.01N±0.04×135.21E±0.04, h360km±2km, n88, σ0.79/103, mb3.9/37, 3C-1D, Sea of Japan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JKG	**Kaga**	**1.16**	**129**	P	P	**20 33 14.4**	**+0.2**
JKG				S	S	**20 33 51.4**	**-0.3**
JJH	**Hakui**	**1.26**	**93**	P	P	**20 33 15.0**	**+0.3**
JJH				S	S	**20 33 52.8**	**+0.3**
JHG	**Hegura jima**	**1.60**	**58**	P	P	**20 33 17.1**	**+0.6**
JHG				S	S	**20 33 56.4**	**+0.7**
SAI	**Saigo**	**1.71**	**242**	P	P	**20 33 18.0**	**+0.8**
JWT	**Wachi**	**1.73**	**175**	P	P	**20 33 17.7**	**+0.4**
JWT				S	S	**20 33 56.8**	**-0.3**
JSZ	**Suzu**	**1.77**	**75**	P	P	**20 33 17.6**	**0.0**
JSZ				S	S	**20 33 57.6**	**0.0**
JGM	**Miyama**	**1.79**	**137**	P	P	**20 33 17.8**	**+0.1**
JGM				S	S	**20 33 57.0**	**-0.8**
MAJO	**Matsushiro**	**2.45**	**100**	*e*P	P	**20 33 22.4**	**0.0**
MAT	**Matsushiro**	**2.45**	**100**	P	P	**20 33 22.3**	**-0.1**
MAT				S	S	**20 34 06.0**	**-0.3**
MAT	**Matsushiro**	**2.45**	**100**	P	P	**20 33 22.4**	**0.0**
MAT				S	S	**20 34 06.3**	**0.0**
MAT	**Matsushiro**	**2.45**	**100**	*e*P	P	**20 33 22.0**	**-0.4**
MAT				*e*S	S	**20 34 06.0**	**-0.3**
JHS	**Saijyo**	**2.63**	**221**	P	P	**20 33 24.6**	**+0.8**
JSD	**Sado**	**2.63**	**66**	P	P	**20 33 23.8**	**0.0**
JSD				S	S	**20 34 08.0**	**-0.8**
JWY	**Kouya**	**2.80**	**173**	P	P	**20 33 25.8**	**+0.6**
JWY				S	S	**20 34 11.1**	**-0.3**
JIE	**Ise**	**2.88**	**155**	P	P	**20 33 26.7**	**+0.8**
JIE				S	S	**20 34 12.5**	**-0.1**
JYN	**Shimob**	**3.09**	**118**	P	P	**20 33 28.0**	**+0.3**
JRY	**Ryogami san**	**3.14**	**107**	P	P	**20 33 28.3**	**+0.1**
JWZ	**Kozaga**	**3.50**	**173**	P	P	**20 33 31.7**	**+0.2**
JWZ				*e*S	S	**20 34 22.5**	**-0.2**
JOD2	**Odawara 2**	**3.59**	**118**	P	P	**20 33 32.3**	**-0.1**
JOD2				S	S	**20 34 24.7**	**+0.4**
JMK	**Ichinoseki**	**5.13**	**66**	P	P	**20 33 47.6**	**-0.9**
JMK				*e*S	S	**20 34 53.5**	**+0.7**
BSO1	**Boso 1**	**5.24**	**115**	P	P	**20 33 48.1**	**-1.6**
BSO1				*e*S	S	**20 34 54.2**	**-0.9**
JNU	**Nakatsue**	**5.26**	**224**	P	P	**20 33 51.1**	**+1.2**
	1.4nm,0.3s,baz=44,slow=8.3,SNR=13						
JNU				S	S	**20 34 56.8**	**+1.3**
	0.2nm,0.3s,baz=117,slow=30,SNR=6.7						
JHJ	**Hachijo jima 2**	**5.40**	**135**	P	P	**20 33 51.5**	**0.0**
	16nm,0.3s,baz=299,slow=21,SNR=6.9						
JHJ				S	S	**20 35 02.2**	**+4.1**
	26nm,0.3s,baz=59,slow=23,SNR=7.4						
ASAJ	**Asahikawa**	**9.05**	**36**	P	P	**20 34 32.3**	**-1.7**
	27nm,0.3s,baz=243,slow=8.2,SNR=73						
ASAJ				S	S	**20 36 08.4**	**-6.3**
	4.7nm,0.3s,baz=46,slow=32,SNR=11						
CN2	**Changchun**	**10.06**	**315**	*e*P	P	**20 34 47.1**	**+1.1**
CN2				AMB	AMB		
	comp=Z,10.0nm,0.9s						
YSS	**Yuzh-Sakhalins**	**11.40**	**27**	*e*P	P	**20 35 00.9**	**-1.2**
CBIJ	**Chichi jima**	**11.52**	**147**	S	S	**20 36 58.0**	**-10**
	comp=Z,11nm,0.3s,baz=285,slow=20,SNR=4.0						
JOW	**Kunigami**	**11.73**	**212**	P	P	**20 35 03.6**	**-2.3**
	comp=Z,1.2nm,0.3s,baz=12,slow=18,SNR=5.4						
BJI	**Beijing**	**15.20**	**287**	P	P	**20 35 44.1**	**-0.9**
BJI				AMB	AMB		
	comp=Z,13nm,0.8s						
BJT	**Baijiatuau**	**15.21**	**287**	*e*P	P	**20 35 44.4**	**-0.7**
	comp=Z,12nm,0.5s						
WHN	**Wuhan**	**18.48**	**256**	↓P	P	**20 36 19.4**	**+0.7**
HHC	**Hu-ho-hao-te**	**18.78**	**289**	*e*P	P	**20 36 21.0**	**-0.6**
HHC				AMB	AMB		
	comp=Z,12nm,1.0s						
ENH	**Enshi**	**22.41**	**260**	*e*P	P	**20 36 56.1**	**-0.6**
	comp=Z,60nm,0.5s						
ULN	**Ulaanbaatar**	**23.31**	**307**	*e*P	P	**20 37 04.9**	**0.0**
	comp=Z,2.7nm,0.8s,mb3.5						
ULN				*e*		20 37 22.2	
SONM	**Songino Array**	**23.73**	**306**	P	P	**20 37 08.3**	**-0.4**
	comp=Z,1.8nm,0.6s,mb3.5,baz=109,slow=9.0,SNR=24						
LZH	**Lanzhou**	**25.16**	**277**	*e*P	P	**20 37 22.5**	**+0.7**
LZH				AMB	AMB		
	comp=Z,26nm,1.0s,mb4.4						
YAK	**Yakutsk**	**25.28**	**354**	*e*P	P	**20 37 20.9**	**-1.7**
	comp=Z,12nm,0.5s,mb4.4						
GYA	**Guiyang**	**26.37**	**255**	P	P	**20 37 32.0**	**-0.8**
GYA				AMB	AMB		
	comp=Z,10.0nm,0.8s,mb4.1						
GTA	**Gaotai**	**27.81**	**286**	*e*P	P	**20 37 45.1**	**-0.4**
GTA				AMB	AMB		
	comp=Z,7.0nm,0.9s,mb3.9						
TIXI	**Tiksi**	**34.86**	**356**	*e*P	P	**20 38 45.4**	**-0.4**
	comp=Z,5.8nm,0.8s,mb3.9						
BILL	**Bilibino**	**35.58**	**19**	*e*P	P	**20 38 51.5**	**-0.4**
	comp=Z,11nm,0.9s,mb4.1						
WMQ	**Urumqi**	**36.40**	**296**	*e*P	P	**20 38 59.8**	**+0.8**
CM31	**Chiang Mai Arr**	**36.75**	**250**	*e*P	P	**20 39 03.1**	**+0.9**
	comp=Z,1.7nm,0.6s,mb3.5						
CMAR	**Chiang Mai Arr**	**36.75**	**250**	P	P	**20 39 03.0**	**+0.8**
	comp=Z,1.1nm,0.6s,mb3.2,baz=48,slow=7.4,SNR=11						
CMAR				ScP		20 44 28.9	
	comp=Z,0.9nm,0.7s,baz=27,slow=2.7,SNR=6.2						
ZAL	**Zalesovo**	**38.28**	**313**	P	P	**20 39 13.8**	**-0.6**
	comp=Z,0.7nm,0.3s,mb3.4,baz=249,slow=8.6,SNR=2.6						
MKAR	**Makanchi Array**	**39.91**	**301**	P	P	**20 39 27.8**	**-0.1**
	comp=Z,2.2nm,0.4s,mb3.8,baz=85,slow=11,SNR=50						
MKAR				ScP		20 44 39.0	
	comp=Z,0.6nm,0.6s,baz=82,slow=6.6,SNR=6.5						
KURK	**Kurchatov**	**42.02**	**308**	*e*P	P	**20 39 44.4**	**-0.5**
PKI	**Pulchoki**	**42.73**	**272**	*e*P	P	**20 39 50.1**	**-0.7**
KKN	**Kakani**	**42.73**	**272**	*e*P	P	**20 39 50.8**	**-0.1**
	comp=Z,12nm,0.6s,mb4.2						
DMN	**Daman**	**42.95**	**272**	*e*P	P	**20 39 51.8**	**-0.8**
GKN	**Gorkha**	**43.16**	**273**	*e*P	P	**20 39 54.4**	**+0.1**
	comp=Z,15nm,0.6s,mb4.3						
KOLN	**Koldanda**	**44.09**	**273**	*e*P	P	**20 40 02.3**	**+0.6**
	comp=Z,3.8nm,0.3s,mb4.1						
BRVK	**Borovoye**	**46.95**	**312**	*e*P	P	**20 40 23.3**	**-0.4**
ZRNK	**Zerenda**	**47.73**	**312**	*e*P	P	**20 40 29.5**	**-0.2**
MCK	**McKinley**	**51.41**	**34**	*e*P	P	**20 40 57.3**	**+0.2**
	comp=Z,2.1nm,0.4s,mb3.7						
COLA	**College**	**51.74**	**32**	P	P	**20 41 00.1**	**+0.5**
	comp=Z,4.8nm,0.7s,mb3.9						
ILAR	**Eielson Array**	**52.16**	**32**	P	P	**20 41 02.2**	**-0.4**
	comp=Z,1.9nm,0.5s,mb3.7,baz=260,slow=6.3,SNR=30						
ARU	**Arti**	**53.05**	**317**	*e*P	P	**20 41 08.2**	**-1.1**
	comp=Z,1.9nm,0.7s,mb3.5						
WRAB	**Tennant Creek**	**56.64**	**181**	*e*P	P	**20 41 34.0**	**-1.2**
	comp=Z,9.5nm,0.5s,mb4.4						
INK	**Inuvik**	**56.65**	**26**	P	P	**20 41 34.2**	**-0.4**
	comp=Z,2.2nm,0.4s,mb3.9,baz=300,slow=6.4,SNR=15						
INK				PcP	PcP	20 42 25.9	-0.3
	comp=Z,0.7nm,0.4s,baz=314,slow=2.2,SNR=3.1						
INK	**Inuvik**	**56.65**	**26**	*e*P	P	**20 41 34.4**	**-0.2**
	comp=Z,2.3nm,0.4s,mb3.9						
WB2	**Warramunga Arr**	**56.65**	**181**⇑	*i*P	P	**20 41 34.2**	**-1.1**
WRA	**Warramunga Arr**	**56.65**	**181**	P	P	**20 41 34.2**	**-1.1**
	comp=Z,4.8nm,0.3s,mb4.2,baz=358,slow=7.5,SNR=273						
WRA				PcP	PcP	20 42 26.7	-0.3
	comp=Z,0.6nm,0.5s,baz=355,slow=4.3,SNR=5.3						
AS12	**Alice Springs**	**60.36**	**181**	*e*P	P	**20 41 59.4**	**-1.1**
	comp=Z,3.1nm,1.0s,mb3.7						
ASAR	**Alice Springs**	**60.36**	**181**	P	P	**20 41 59.8**	**-0.7**
	comp=Z,1.3nm,0.4s,mb3.7,baz=358,slow=7.3,SNR=50						
**DLB

GERES	**GERESS Array B**	**80.00**	**325**	P		**P**		**20 43 57.7**	**+0.4**
	comp=Z,0.3nm,0.6s,mb3.2,baz=37,slow=6.7,SNR=4.1								
HWUT	**Hardware Ranch**	**80.81**	**44**	*e*P		**P**		**20 44 03.0**	**+1.3**
	comp=Z,4.1nm,1.0s,mb4.1								
PDAR	**Pinedale Array**	**81.13**	**42**	P		**P**		**20 44 04.4**	**+1.1**
	comp=Z,1.3nm,0.5s,mb3.9,baz=332,slow=0.9,SNR=16								
ULM	**Lac du Bonnet**	**82.14**	**30**	P		**P**		**20 44 08.2**	**-0.2**
	comp=Z,2.8nm,0.5s,mb4.4,baz=319,slow=5.7,SNR=4.3								
SCHQ	**Schefferville**	**86.58**	**13**	P		**P**		**20 44 31.2**	**+1.1**
	comp=Z,1.2nm,0.6s,mb3.9,baz=301,slow=8.1,SNR=6.4								
TXAR	**Lajitas Array**	**93.97**	**49**	P		**P**		**20 45 06.7**	**+1.7**
	comp=Z,1.1nm,0.3s,mb4.4,baz=333,slow=2.8,SNR=4.5								
TXAR	**Lajitas Array**	**93.97**	**49**	P		**P**		**20 45 06.7**	**+1.7**
LRAL	**Lakeview Retre**	**99.95**	**35**	Pdif		**P**		**20 45 36.1**	**+3.9**
DBIC	**Dimbokro**	**122.72**	**311**	PKP		PKPdf		20 50 40.7	+0.5
	comp=Z,9.2nm,1.3s,baz=325,slow=4.5,SNR=4.1								
VNA2	**Neumayer--Watz**	**140.82**	**198**	⇑*i*		PKPdf		20 51 10.3	-2.3
VNA3	**Neumayer Olymp**	**141.16**	**197**	⇑*i*		PKPdf		20 51 11.6	-1.6
LPAZ	**La Paz**	**150.80**	**51**	PKPbc		PKPdf		20 51 38.9	+8.2
	comp=Z,1.6nm,0.8s,baz=270,slow=4.9,SNR=4.9								

*IDC **24** 20:39:29.3±1.7, 32.39S×178.56W, h54km±9km, mb3.3/3, mb1 3.6/4, mb1mx3.6/14, Error ellipse: s-maj=33.3km s-min=20.5km az=87.0*

ISC 24 20:39:26.3±5.7, 32.5S±0.2×178.4W±0.3, h48km±43km, h53km±.6km; pP-P, n6, σ1§38/6, mb3.5/3, 1C, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID			Time		Res
				Op		ISC	h	m s	ISC
URZ	**Urewera**	**6.81**	**211**	P		**P**	**20**	**41 06.1**	**0.0**
	0.8nm,0.3s,baz=328,slow=13,SNR=3.8								
URZ				S		**S**	**20**	**42 22.9**	**-0.2**
	1.7nm,0.3s,baz=105,slow=22,SNR=9.8								
ASAR	**Alice Springs**	**42.68**	**269**	P		**P**	**20**	**47 20.3**	**+0.2**
	0.4nm,0.5s,mb3.4,baz=109,slow=7.4,SNR=5.4								
ASAR				pP		pP	20	47 34.0	+0.9
	1.0nm,0.6s,baz=106,slow=7.4,SNR=7.2								
WRA	**Warramunga Arr**	**43.86**	**275**	P		**P**	**20**	**47 29.7**	**-0.1**
	0.7nm,0.4s,mb3.7,baz=114,slow=8.0,SNR=32								
WRA				pP		pP	20	47 43.6	+0.8
	1.9nm,0.5s,baz=114,slow=7.9,SNR=13								
VNDA	**Vanda**	**45.98**	**186**	P		**P**	**20**	**47 47.4**	**+1.4**
	0.4nm,0.7s,mb3.5,baz=200,slow=5.2,SNR=3.1								
VNDA				pP		pP	20	48 01.6	+2.6
	0.5nm,0.4s,baz=97,slow=10.0,SNR=3.2								
VNA2	**Neumayer--Watz**	**76.67**	**177**	⇑*i*		**P**	**20**	**51 11.8**	**-1.3**
FINES	**FINESS Array B**	**146.97**	**339**	PKPbc		PKPbc	20	59 03.2	+0.8
	0.7nm,0.5s,baz=40,slow=4.9,SNR=11								

*IDC **24** 20:42:13.8±1.7, 22.60S×173.75W, mb4.2/4, mb1 4.5/5, mb1mx4.1/15, ML4.7/1, Error ellipse: s-maj=114.0km s-min=25.7km az=162.0*

*NEIC **24** 20:42:15.1±0.7, 22.68S×173.72W, h10km, mb4.5/1, Error ellipse: s-maj=53.6km s-min=11.5km az=170.0*

ISC 24 20:42:12.9±0.9, 22.5S±0.4×173.7W±0.1, h10km, n12, σ1§15/11, mb4.3/5, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase ID			Time		Res
				Op		ISC	h	m s	ISC
RAR	**Rarotonga**	**13.01**	**87**	Pn		**P**	**20**	**45 20.2**	**-0.3**
	4.5nm,0.3s,baz=204,slow=3.2,SNR=10								
RAR				Sn		**S**	**20**	**47 38.0**	**-8.4**
	0.9nm,0.3s,baz=106,slow=23,SNR=2.3								
RAR	**Rarotonga**	**13.01**	**87**	Pn		**P**	**20**	**45 20.2**	**-0.4**
RAR				Sn		**S**	**20**	**47 38.0**	**-8.4**
AS12	**Alice Springs**	**47.98**	**258**	*e*P		**P**	**20**	**50 55.1**	**+1.0**
	7.1nm,1.2s,mb4.6								
ASAR	**Alice Springs**	**47.98**	**258**	P		**P**	**20**	**50 54.7**	**+0.6**
	3.3nm,0.8s,mb4.4,baz=92,slow=8.2,SNR=29								
WB2	**Warramunga Arr**	**48.29**	**263**	*e*P		**P**	**20**	**50 55.6**	**-0.9**
WRA	**Warramunga Arr**	**48.30**	**263**	P		**P**	**20**	**50 56.0**	**-0.6**
	2.5nm,0.8s,mb4.3,baz=96,slow=8.4,SNR=37								
NVAR	**Mina Array Bea**	**79.82**	**41**	P		**P**	**20**	**54 24.9**	**+1.8**
	0.8nm,0.8s,mb3.7,baz=218,slow=7.2,SNR=4.5								
MCK	**McKinley**	**88.12**	**11**	P		**P**	**20**	**55 02.7**	**-1.9**
	2.2nm,0.8s,mb4.4								
CMAR	**Chiang Mai Arr**	**94.54**	**288**	P		**P**	**20**	**55 36.5**	**+1.0**
	1.8nm,1.0s,mb4.5,baz=120,slow=3.5,SNR=6.3								
BRTR	**Keskin Array B**	**151.13**	**313**	PKPbc		PKPdf	21	02 09.8	+6.3
	0.8nm,0.9s,baz=135,slow=2.0,SNR=3.6								
KHC	**Kasperske Hory**	**152.81**	**349**	*e*PKP		PKPdf	21	02 14.0	+8.4
GERES	**GERESS Array B**	**153.06**	**349**	PKPbc		PKPdf	21	02 13.2	+7.2
	0.6nm,0.9s,baz=63,slow=3.0,SNR=4.3								

IDC 24 20:48:45.7±3.2, 32.52S×178.24W, mb3.6/2, mb1 3.8/3, mb1mx3.7/13, ML3.4/1, 1C-2D, Error ellipse: s-maj=71.8km s-min=36.7km az=114.0, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID			Time		Res
				Op		ISC	h	m s	ISC
URZ	**Urewera**	**6.87**	**212**	Pn		Pn	20	50 27.4	-2.8
	0.8nm,0.3s,baz=270,slow=14,SNR=3.1								
URZ				Sn		Sn	20	51 45.4	-4.7
	1.2nm,0.3s,baz=319,slow=21,SNR=6.0								
ASAR	**Alice Springs**	**42.83**	**269**	P		P	20	56 45.7	-1.5
	0.4nm,0.7s,baz=122,slow=8.5,SNR=5.5								
WRA	**Warramunga Arr**	**44.01**	**274**	P		P	20	56 55.1	-1.7
	0.8nm,0.5s,baz=114,slow=8.0,SNR=41								
VNA3	**Neumayer Olymp**	**76.21**	**176**	⇑*i*		P	21	00 45.8	+8.9
VNA2	**Neumayer--Watz**	**76.64**	**177**	⇓*i*		P	21	00 49.7	+10
VNA1	**Neumayer--Stat**	**76.88**	**177**	⇓*i*		P	21	00 43.7	+3.1
FINES	**FINESS Array B**	**147.05**	**339**	PKPbc		PKPdf	21	08 29.0	-0.4
	2.1nm,1.1s,baz=45,slow=2.7,SNR=4.3								

*IDC **24** 21:28:17.8±1.9, 32.37S×178.20W, mb4.3/3, mb1 4.5/4, mb1mx4.1/14, ML4.1/1, Error ellipse: s-maj=62.8km s-min=34.2km az=144.0*

*NEIC **24** 21:28:20.8±0.7, 32.17S×178.51W, h10km, mb4.6/6, Error ellipse: s-maj=17.8km s-min=15.0km az=47.0*

ISC 24 21:28:21.7±5.1, 32.48S±0.08×178.9W±0.2, h10km±33km, n30, σ0§75/28, mb4.6/8, 9C-1D, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID			Time		Res
				Op		ISC	h	m s	ISC
PUZ	**Puketiti**	**6.06**	**202**	*e*P		**Pn**	**21**	**29 49.4**	**-4.3**
PUZ				S		**Sn**	**21**	**31 03.5**	**-0.4**
URZ	**Urewera**	**6.64**	**209**	Pn		**Pn**	**21**	**30 01.9**	**0.0**
	3.5nm,0.3s,baz=20,slow=2.2,SNR=9.8								
URZ				Sn		**Sn**	**21**	**31 18.9**	**+0.5**
	6.0nm,0.3s,baz=174,slow=12,SNR=14								
MRZ	**Mangatainoka R**	**9.31**	**207**	S		**Sn**	**21**	**32 17.6**	**-7.4**
MQZ	**McQueen's Vall**	**13.04**	**208**	S		**S**	**21**	**33 42.8**	**-13**
STKA	**Stephens Creek**	**33.36**	**260**	*e*P		**P**	**21**	**35 02.9**	**+0.7**
	2.3nm,1.0s,mb4.1								
STKA	**Stephens Creek**	**33.36**	**260**	P		**P**	**21**	**35 03.0**	**+0.8**
	2.1nm,0.7s,mb4.2,baz=108,slow=9.6,SNR=3.1								
CTA	**Charters Tower**	**33.49**	**283**	*e*P		**P**	**21**	**35 06.7**	**+3.2**
	8.0nm,1.3s,mb4.5								
ASAR	**Alice Springs**	**42.32**	**270**	P		**P**	**21**	**36 17.9**	**+0.4**
	2.6nm,0.7s,mb4.0,baz=112,slow=7.8,SNR=25								
WB2	**Warramunga Arr**	**43.49**	**275**	⇑*i*P		**P**	**21**	**36 27.1**	**0.0**
WRAB	**Tennant Creek**	**43.49**	**275**	*e*P		**P**	**21**	**36 27.2**	**0.0**
	23nm,0.8s,mb5.0								
WRA	**Warramunga Arr**	**43.50**	**275**	P		**P**	**21**	**36 27.3**	**+0.1**
	5.5nm,0.5s,mb4.5,baz=113,slow=8.0,SNR=62								
FORT	**Forrest**	**44.85**	**257**	*e*P		**P**	**21**	**36 37.6**	**-0.4**
	44nm,0.6s,mb5.5								
VNDA	**Vanda**	**45.96**	**186**	P		**P**	**21**	**36 39.0**	**-7.2**
FITZ	**Fitzroy Crossi**	**51.67**	**272**	*e*P		**P**	**21**	**37 30.2**	**-0.9**
	2.1nm,0.6s,mb4.2								
MBWA	**Marble Bar**	**55.31**	**265**	P		**P**	**21**	**37 56.7**	**-1.3**
QSPA	**South Pole Qui**	**57.63**	**180**	*e*P		**P**	**21**	**38 20.6**	**+6.7**
	5.3nm,0.6s,mb4.8								
SNAA	**Sanae**	**76.10**	**179**	P		**P**	**21**	**40 11.3**	**+0.6**
VNA3	**Neumayer Olymp**	**76.28**	**176**	⇑*i*		**P**	**21**	**40 11.8**	**0.0**
VNA3	**Neumayer Olymp**	**76.28**	**176**	⇑*i*		**P**	**21**	**40 17.6**	**+5.8**
VNA3	**Neumayer Olymp**	**76.28**	**176**	⇑*i*		**P**	**21**	**40 22.4**	**+11**
VNA2	**Neumayer--Watz**	**76.71**	**177**	⇑*i*		**P**	**21**	**40 13.6**	**-0.5**
VNA2	**Neumayer--Watz**	**76.71**	**177**	⇑*i*		**P**	**21**	**40 19.8**	**+5.7**
VNA2	**Neumayer--Watz**	**76.71**	**177**	⇑*i*		**P**	**21**	**40 24.9**	**+11**
VNA1	**Neumayer--Stat**	**76.94**	**177**	⇑*i*		**P**	**21**	**40 15.7**	**+0.3**
VNA1	**Neumayer--Stat**	**76.94**	**177**	⇓*i*		**P**	**21**	**40 21.6**	**+6.2**
VNA1	**Neumayer--Stat**	**76.94**	**177**	⇑*i*		**P**	**21**	**40 26.6**	**+11**
KAF	**Kangasniemi**	**146.24**	**339**	*ep*		PKPbc	21	47 58.5	-3.2
	2.3nm,0.7s								
FINES	**FINESS Array B**	**146.83**	**338**	PKPbc		PKPbc	21	48 01.0	-2.1
	3.6nm,0.7s,baz=63,slow=3.1,SNR=18								
NOA	**NORSAR Array B**	**150.68**	**350**	PKPbc		PKPdf	21	48 10.8	+0.1
	1.0nm,0.7s,baz=17,slow=4.1,SNR=3.7								
BRTR	**Keskin Array B**	**152.88**	**295**	PKPbc		PKPdf	21	48 17.7	+3.1
	0.9nm,0.7s,baz=96,slow=4.9,SNR=5.5								

*IDC **24** 21:36:26.1±2.5, 35.51N×103.76W, mb1 3.7/3, mb1mx3.4/20, ML3.4/3, Error ellipse: s-maj=55.3km s-min=11.8km az=73.0*

*NEIC **24** 21:36:28.6±0.4, 34.47N×106.90W, h5km, ML3.5, Error ellipse: s-maj=6.1km s-min=4.4km az=58.0*

NEIC Felt at Bernardo and Veguita.

ISC 24 21:36:27.4±0.4, 34.51N±0.04×106.90W±0.05, h5km, n32, σ1§08/33, 1C, New Mexico

Code	Station Name	Δ°	AZ°	Phase ID			Time		Res
				Op		ISC	h	m s	ISC
LAZ	**Ladron**	**0.23**	**240**	⇑*i*P		**Pg**	**21**	**36 32.7**	**+0.7**
LPM	**Los Pinos Moun**	**0.30**	**132**	*e*P		**Pg**	**21**	**36 33.1**	**-0.4**
LENM	**Lemitar**	**0.35**	**190**	*e*P		**Pg**	**21**	**36 34.0**	**-0.6**
BNM	**Barren Site**	**0.43**	**148**	*e*P		**Pg**	**21**	**36 35.6**	**-0.5**
ANMO	**Albuquerque**	**0.57**	**40**	*e*P		**Pg**	**21**	**36 39.1**	**+0.3**
CPRX	**Cap Rock**	**2.93**	**119**	*e*Pn		**Pn**	**21**	**37 16.4**	**+0.9**
MNTX	**Cornudas Mount**	**3.08**	**155**	*e*Pn		**Pn**	**21**	**37 17.4**	**-0.3**
GDL2	**Guadalupe Moun**	**3.14**	**137**	*e*Pn		**Pn**	**21**	**37 19.5**	**+1.0**
CLNB	**Carlsbad**	**3.38**	**131**	*e*Pn		**Pn**	**21**	**37 21.9**	**-0.1**
CLNB				*e*Pg		**Pg**	**21**	**37 29.2**	**-5.8**
SDCO	**Great Sand Dun**	**3.42**	**19**	*e*Pn		**Pn**	**21**	**37 23.7**	**+1.1**
WUAZ	**Wupatki**	**3.80**	**287**	*e*Pn		**Pn**	**21**	**37 29.5**	**+1.5**
PV01	**Paradox Valley**	**3.86**	**340**	*e*Pn		**Pn**	**21**	**37 30.8**	**+2.0**
TUC	**Tucson**	**3.92**	**237**	*e*Pn		**Pn**	**21**	**37 28.3**	**-1.3**
PV10	**Paradox Valley**	**4.22**	**337**	*e*Pn		**Pn**	**21**	**37 34.0**	**+0.1**
ISCO	**Idaho Springs**	**5.38**	**11**	*e*Pg		**Pg**	**21**	**38 05.7**	**-9.0**
SRU	**San Rafael**	**5.43**	**329**	*e*Pn		**Pn**	**21**	**37 50.5**	**-0.5**
MSU	**Marysvale**	**5.83**	**315**	Pn		**Pn**	**21**	**37 55.6**	**-1.1**
MVU	**Marysvale**	**5.84**	**314**	Pn		**Pn**	**21**	**37 59.0**	**+2.2**
TXAR	**Lajitas Array**	**5.85**	**151**	Pn		**Pn**	**21**	**37 59.0**	**+2.0**
	0.3nm,0.3s,baz=339,slow=13,SNR=3.0								
TXAR				Pg		**Pg**	**21**	**38 14.5**	**-10**
	1.4nm,0.3s,baz=329,slow=15,SNR=11								
TXAR				Lg			21	39 34.8	
	2.8nm,0.3s,baz=345,slow=28,SNR=7.9								
NEN	**Nelson**	**6.61**	**282**	*e*Pg		**Pg**	**21**	**38 30.8**	**-8.6**
MPU	**Maple Canyon**	**6.66**	**327**	Pn		**Pn**	**21**	**38 07.6**	**-0.8**
WMOK	**Wichita Mounta**	**6.70**	**86**	*e*Pn		**Pn**	**21**	**38 07.5**	**-1.5**
NLU	**North Lily Min**	**6.82**	**324**	Pn		**Pn**	**21**	**38 09.6**	**-1.0**
DAU	**Daniels Canyon**	**6.83**	**331**	Pn		**Pn**	**21**	**38 10.9**	**+0.1**
JLU	**Jordanelle**	**7.07**	**331**	Pn		**Pn**	**21**	**38 15.1**	**+1.0**
JCT	**Junction City**	**7.22**	**122**	*e*Pn		**Pn**	**21**	**38 12.8**	**-3.5**
CTU	**Camp Tracy**	**7.27**	**329**	Pn		**Pn**	**21**	**38 16.6**	**-0.3**
TCUT	**Toone Canyon**	**7.49**	**333**	Pn		**Pn**	**21**	**38 20.3**	**+0.2**
HWUT	**Hardware Ranch**	**7.98**	**334**	Pn		**Pn**	**21**	**38 26.4**	**-0.5**
SPUT	**South Promonto**	**8.07**	**329**	Pn		**P**	**21**	**38 26.4**	**-1.8**
PDAR	**Pinedale Array**	**8.50**	**347**	Pn		**P**	**21**	**38 33.0**	**-1.1**
	0.1nm,0.3s,baz=155,slow=13,SNR=5.2								
PDAR				Pg		P	21	39 06.8	+33
	0.3nm,0.3s,baz=159,slow=16,SNR=6.9								
PDAR				Lg			21	40 58.5	
	0.2nm,0.3s,baz=161,slow=22,SNR=3.6								
NVAR	**Mina Array Bea**	**9.98**	**296**	Pn		Px	21	39 21.6	
	0.1nm,0.3s,baz=113,slow=14,SNR=2.5								

*NIED **24** 21:39:00, 35.70N×140.60E, h47km, Mw4.0 Best double couple: M₀9.83×10¹⁴ NP1:φ₁≈26°, δ62°, λ90°. NP2:φ₂≈206°, δ28°, λ90°.*

*JMA **24** 21:39:34.4±0.1, 35.72N×140.63E, h50km±1km, M3.8 Broadband fault plane solution: P waves. NP1:φ₁≈227°, δ3°, λ135°. NP2:φ₂≈2°, δ88°, λ88°. Principal axes: T Plg47°, Azm270°; N Plg2°, Azm2°; P Plg43°, Azm94°;*

JMA Felt II J1.

*IDC **24** 21:39:34.8±2.7, 35.63N×140.54E, h47km±27km, mb3.5/10, mb1 3.7/11, mb1mx3.6/22, ML3.6/1, MS3.2/1, Ms1 3.2/1, ms1mx2.7/29 Error ellipse: s-maj=25.5km s-min=17.9km az=77.0*

*NEIC **24** 21:39:36.3±1.3, 35.58N×140.51E, h65km±10km, mb4.3/5, Error ellipse: s-maj=11.9km s-min=10.0km az=80.0*

ISC 24 21:39:33.7±0.4, 35.66N±0.03×140.64E±0.06, h59km±3km, n35, σ1§06/43, mb3.8/15, 4D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID			Time		Res
				Op		ISC	h	m s	ISC
CHOJ	**Chosi**	**0.18**	**75**	P		**P**	**21**	**39 42.5**	**-0.4**
CHOJ				S		**S**	**21**	**39 48.3**	**-1.5**
JCN	**Nagara**	**0.43**	**237**	⇓P		**P**	**21**	**39 45.9**	**+1.0**
JCN				S		**S**	**21**	**39 54.6**	**+1.4**
JYT	**Yasato**	**0.68**	**328**	⇓P		**P**	**21**	**39 47.2**	**-0.5**
JYT				S		**S**	**21**	**39 56.3**	**+1.8**
BSO4	**Boso 4**	**0.71**	**200**	P		**P**	**21**	**39 49.1**	**+1.1**
BSO4				*e*S		**S**	**21**	**39 59.5**	**+0.7**
BSO3	**Boso 3**	**0.86**	**187**	P		**P**	**21**	**39 50.9**	**+0.9**
BSO3				*e*S		**S**	**21**	**40 02.1**	**-0.1**
JHO	**Hitachi**	**0.96**	**357**	⇓P		**P**	**21**	**39 51.1**	**-0.2**
BSO1	**Boso 1**	**1.04**	**164**	P		**P**	**21**	**39 52.8**	**+0.4**
JAG	**Ashikaga**	**1.23**	**309**	P		**P**	**21**	**39 54.6**	**-0.5**
JOD2	**Odawara 2**	**1.32**	**253**	⇓P		**P**	**21**	**39 57.0**	**+0.5**
JIM2	**Oshima 3**	**1.36**	**227**	P		**P**	**21**	**39 56.8**	**-0.2**
JIM2				S		**S**	**21**	**40 13.4**	**-0.9**
MAJO	**Matsushiro**	**2.16**	**295**	*e*P		**P**	**21**	**40 09.6**	**+1.5**
MAT	**Matsushiro**	**2.16**	**295**	P		**P**	**21**	**40 08.9**	**+0.8**
MAT				S		**S**	**21**	**40 34.7**	**+1.1**
MAT	**Matsushiro**	**2.16**	**295**	*e*P		**P**	**21**	**40 09.0**	**+0.9**
MAT				*e*S		**S**	**21**	**40 35.0**	**+1.4**
JHJ	**Hachijo jima 2**	**2.63**	**196**	P		**P**	**21**	**40 14.7**	**0.0**
	28nm,0.3s,baz=16,slow=15,SNR=20								
JHJ				S		**S**	**21**	**40 44.5**	**-0.9**
	83nm,0.3s,baz=60,slow=22,SNR=8.1								
JNU	**Nakatsue**	**8.45**	**255**	S		**S**	**21**	**43 08.7**	**-2.2**
	0.5nm,0.3s,baz=318,slow=30,SNR=2.0								
JNU				LR		LR	21	44 17.7	
	comp=Z,154nm,19.6s,baz=138,slow=34								
CBIJ	**Chichi jima**	**8.64**	**171**	S		**S**	**21**	**43 06.8**	**-8.5**
	7.0nm,0.3s,baz=269,slow=23,SNR=2.9								
ENH	**Enshi**	**26.62**	**267**	*e*P		**P**	**21**	**45 06.8**	**-1.6**
	6.6nm,0.7s,mb4.3								
ULN	**Ulaanbaatar**	**27.64**	**307**	P		**P**	**21**	**45 17.6**	**-0.1**
	1.0nm,0.7s,mb3.5								
SONM	**Songino Array**	**28.07**	**306**	P		**P**	**21**	**45 20.8**	**-0.6**
	0.5nm,0.8s,mb3.2,baz=108,slow=9.6,SNR=4.4								
MKAR	**Makanchi Array**	**44.34**	**303**	P		**P**	**21**	**47 40.1**	**+0.6**
	1.3nm,0.7s,mb3.8,baz=90,slow=8.6,SNR=12								
KURK	**Kurchatov**	**46.30**	**309**	*e*P		**P**	**21**	**47 55.0**	**0.0**
KURK				*e*		pP	21	48 10.1	-0.3
ILAR	**Eielson Array**	**50.99**	**32**	P		**P**	**21**	**48 30.9**	**-0.3**
	0.4nm,0.5s,mb3.6,baz=271,slow=6.5,SNR=6.1								
ZRNK	**Zerenda**	**51.88**	**313**	P		**P**	**21**	**48 38.2**	**+0.2**
ZRNK				*e*		pP	21	48 55.0	+1.4
WRAB	**Tennant Creek**	**55.60**	**187**	*e*P		**P**	**21**	**49 03.8**	**-1.9**
	4.4nm,0.8s,mb4.5								
WRA	**Warramunga Arr**	**55.61**	**187**	P		**P**	**21**	**49 05.0**	**-0.8**
	0.7nm,0.5s,mb4.0,baz=2.3,slow=7.6,SNR=33								
INK	**Inuvik**	**55.90**	**27**	*e*P		**P**	**21**	**49 07.5**	**+0.3**
	2.6nm,1.1s,mb4.2								
ARU	**Arti**	**56.98**	**319**	*e*P		**P**	**21**	**49 14.4**	**-0.8**
	4.6nm,0.8s,mb4.6								
ASAR	**Alice Springs**	**59.34**	**187**	P		**P**	**21**	**49 32.0**	**0.0**
	0.4nm,0.6s,mb3.7,baz=4.4,slow=7.0,SNR=6.9								
FINES	**FINESS Array B**	**69.74**	**332**	P		**P**	**21**	**50 38.8**	**0.0**
	1.1nm,0.9s,mb3.8,baz=55,slow=6.0,SNR=3.4								
NOA	**NORSAR Array B**	**75.21**	**337**	P		**P**	**21**	**51 12.1**	**+1.1**
	0.6nm,0.7s,mb3.6,baz=50,slow=5.9,SNR=2.8								
NVAR	**Mina Array Bea**	**76.32**	**52**	P		**P**	**21**	**51 20.1**	**+2.3**
	0.6nm,0.6s,mb3.7,baz=284,slow=6.0,SNR=5.4								
MTUM	**Tungsten Hills**	**76.76**	**54**	*e*P		**P**	**21**	**51 17.7**	**-2.7**
PDAR	**Pinedale Array**	**79.08**	**45**	P		**P**	**21**	**51 35.1**	**+2.1**
	0.4nm,0.7s,mb3.4,baz=315,slow=2.1,SNR=3.5								
BRTR	**Keskin Array B**	**79.30**	**311**	P		**P**	**21**	**51 35.4**	**+1.1**
	0.7nm,0.9s,mb3.6,baz=112,slow=7.8,SNR=3.6								
LPAZ	**La Paz**	**147.92**	**60**	PKPbc		PKPdf	21	59 15.7	+6.2
	0.9nm,0.7s,baz=307,slow=5.1,SNR=3.5								

*NEIC **24** 21:44:49.1, 44.42N×6.80E, h2km, ML2.4(GEN), ML2.2(LDG), ML2.0(STR), After LDG.*

*LDG **24** 21:44:49.1±0.1, 44.42N×6.80E, h2km, Md2.1/1, Ml2.2/6, Error ellipse: s-maj=1.6km s-min=0.9km az=74.0*

*STR **24** 21:44:49.2±0.1, 44.43N×6.82E, h5km±1km, Ml2.0, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*

ISC 24 21:44:48.2±0.3, 44.41N±0.01×6.78E±0.02, h11km±2km, n33, σ0§46/65, France

Code	Station Name	Δ°	AZ°	Phase ID			Time		Res
				Op		ISC	h	m s	ISC
SURF	**Saint Ours**	**0.07**	**21**	Pg		**Pg**	**21**	**44 50.9**	**+0.2**
SURF				Sg		**Sg**	**21**	**44 52.5**	**+0.1**
PZZ	**Prazzo**	**0.25**	**68**	P		**Pg**	**21**	**44 54.3**	**+0.7**
PZZ				S		**Sg**	**21**	**44 58.1**	**+0.9**
MBDF	**Montbardon**	**0.31**	**359**	*e*Pg		**Pg**	**21**	**44 54.9**	**+0.1**
	SNR=1.0								
MBDF				*e*Sg		**Sg**	**21**	**44 59.1**	**-0.1**
	59nm,0.3s								
DOI	**San Damiano**	**0.35**	**75**	*e*Pg		**Pg**	**21**	**44 55.9**	**+0.5**
DOI				*e*Sg		**Sg**	**21**	**45 01.1**	**+0.8**
OG22	**Abries**	**0.43**	**16**	Pg		**Pg**	**21**	**44 57.2**	**+0.2**
OG22				Sg		**Sg**	**21**	**45 02.9**	**+0.1**
STV	**Sta Anna Valdi**	**0.43**	**113**	P		**Pg**	**21**	**44 57.3**	**+0.3**
STV				S		**Sg**	**21**	**45 03.0**	**+0.1**
STV2	**Anna di Valdie**	**0.43**	**113**	P		**Pg**	**21**	**44 57.3**	**+0.3**
STV2				S		**Sg**	**21**	**45 03.0**	**+0.1**
ENR	**Entracque**	**0.50**	**112**	P		**Pg**	**21**	**44 58.5**	**+0.1**
ENR				S		**Sg**	**21**	**45 05.1**	**0.0**
RRL	**Cesana Torines**	**0.51**	**1**	P		**Pg**	**21**	**44 58.8**	**+0.2**
RRL				S		**Sg**	**21**	**45 05.6**	**+0.1**
TOUF	**Mont Tournerai**	**0.52**	**140**	Pg		**Pg**	**21**	**44 59.1**	**+0.2**
TOUF				Sg		**Sg**	**21**	**45 06.4**	**+0.4**
BHB	**Bricherasio**	**0.55**	**39**	P		**Pb**	**21**	**44 59.4**	**0.0**
BHB				S		**Sg**	**21**	**45 06.5**	**-0.4**
MVIF	**Mont Vial**	**0.58**	**152**	Pg		**Pg**	**21**	**45 00.1**	**+0.1**
MVIF				Sg		**Sg**	**21**	**45 07.0**	**-0.9**
FENE	**Fenestrelle**	**0.65**	**18**	P		**Pb**	**21**	**45 01.1**	**+0.1**
FENE				S		**Sb**	**21**	**45 09.5**	**-0.3**
AURF	**Auriere**	**0.66**	**143**	Pg		**Pg**	**21**	**45 01.7**	**+0.2**
CALN	**Calern**	**0.67**	**173**	Pg		**Pg**	**21**	**45 02.1**	**+0.4**
SAOF	**Saorge**	**0.70**	**127**	Pg		**Pg**	**21**	**45 02.4**	**0.0**
SAOF				Sg		**Sg**	**21**	**45 11.8**	**-0.1**
SBF	**Sospel**	**0.73**	**139**	*e*Pg		**Pg**	**21**	**45 02.9**	**0.0**
	SNR=1.0								
SBF				*e*Sg		**Sg**	**21**	**45 12.1**	**-0.5**
	7.6nm,0.2s,SNR=1.0								
MONE	**Monesi**	**0.78**	**115**	P		**Pb**	**21**	**45 03.5**	**+0.2**
MONE				S		**Sb**	**21**	**45 13.3**	**-0.2**
ROB	**Roburent**	**0.79**	**98**	P		**Pb**	**21**	**45 03.9**	**+0.4**
ROB				S		**Sb**	**21**	**45 14.1**	**+0.1**
RSP	**Reno Superiore**	**0.81**	**25**	P		**Pb**	**21**	**45 04.0**	**+0.1**
RSP				S		**Sb**	**21**	**45 14.4**	**-0.2**
ORIF	**Oris-en-Rattie**	**0.81**	**309**	*e*Pg		**Pg**	**21**	**45 04.4**	**

IDC ***24*** *22:00:57.3±0.5,27.15N×97.13E,mb4.4/22,mb1 4.5/23, mb1mx4.5/26,ML3.9/1,MS3.9/11,Ms1 4.0/11, ms1mx3.8/26,Error ellipse: s-maj=16.7km s-min=10.9km az=52.0*

BJI ***24*** *22:01:01.2,27.22N×97.04E,h38km,mB4.9,mb4.9,ML4.6, Ms4.8,Ms2.6*

NEIC ***24*** *22:01:02.4±0.2,27.10N×97.22E,h35km,mb5.0/70, MS4.4/8,Error ellipse: s-maj=6.8km s-min=5.1km az=218.0*

HRVD ***24*** *22:01:02.4±0.4,27.06N×97.21E,h26km,MW4.9/42, Centroid moment Tensor Solution. LP body waves: s19,c23;Mantle waves: s42,c69; Half duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr2.46±.20; Mθθ-0.31±.13; Mϕϕ-2.15±.13; Mrθ0.37±.23; Mθϕ1.94±.08; Mϕr0.04±.21; Best double couple: Mo2.96×10¹⁶ NP1:ϕs339°,δ45°,λ107°. NP2:ϕs136°,δ48°,λ74°. Principal axes: T 2.53, Plg78°, Azm335°; N .85, Plg12°, Azm147°; P -3.38, Plg2°, Azm238°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

MOS ***24*** *22:01:07.0±2.0,27.81N×96.87E,h33km,mb5.1/21 Error ellipse: s-maj=13.2km s-min=6.5km az=116.0*

ISC 24 22:00:56.1±1.2,**27.05N**±0.04×**97.14E**±0.02,**h1**km±7km, **n298,**σ1§**47**/311,**mb4.8**/114,**MS4.3**/31,**12C-6D, Myanmar-India border region**

Code	Station Name	Δ°	AZ°	Phase Op	ID ISC	Time h m s	Res ISC
LKP	**Lekhapani**	**1.00**	**287**	*e*	**Pb**	**22 01 13.0**	**-2.8**
LKP				*e*S	**Sb**	**22 01 37.0**	**+7.7**
IMP	**Imphal**	**3.66**	**233**	*i* P	**Pn**	**22 01 59.0**	**+3.9**
IMP				*e*		22 02 13.0	
SHL	**Shillong**	**4.94**	**254**	*i* PN	**Pn**	**22 02 15.0**	**+1.7**
	303nm,0.8s						
SHL				*e*		22 03 13.0	
KMI	**Kunming**	**5.39**	**110**	*e*P	**Pn**	**22 02 23.8**	**+4.2**
KMI				LR	LR		
	comp=Z,29μm,7.9s						
LSA	**Lhasa**	**5.90**	**298**	P	**Pn**	**22 02 27.8**	**+1.0**
LSA				S	**Sn**	**22 03 37.0**	**+1.0**
LSA				S	Sn		
	comp=N,170nm,1.4s						
LSA				S	Sn		
	comp=E,200nm,1.5s						
LSA	**Lhasa**	**5.90**	**298**	*e*P	**Pn**	**22 02 27.7**	**+0.9**
	comp=E,19nm,0.6s						
AGT	**Agartala**	**6.19**	**241** ⇓	*i* P	**Pn**	**22 02 34.0**	**+3.2**
AGT				*i*		22 03 24.0	
GYA	**Guiyang**	**8.54**	**92** ⇑	*i* P	**P**	**22 03 05.8**	**+2.1**
GYA				PP	PP	22 03 13.8	+2.3
GYA				S	**Sn**	**22 04 41.8**	**0.0**
GYA				AMB	AMB		
	comp=Z,20nm,1.0s						
GYA				LR	LR		
	comp=N,7μm,10.0s						
GYA				LR	LR		
	comp=E,2μm,9.0s						
GYA				LR	LR		
	comp=Z,3μm,11.7s						
CM31	**Chiang Mai Arr**	**8.71**	**169**	P	**P**	**22 03 03.9**	**-2.3**
	comp=Z,27nm,1.1s						
CMAR	**Chiang Mai Arr**	**8.71**	**169**	Pn	**P**	**22 03 07.5**	**+1.4**
	comp=Z,0.3nm,0.3s,baz=340,slow=12,SNR=13						
CMAR				Lg		22 05 39.9	
	comp=Z,0.1nm,0.3s,baz=356,slow=14,SNR=4.2						
CMAR				LR	LR	22 06 05.2	
	comp=Z,169nm,20.5s,baz=164,slow=35						
BDT	**Bhumibol Dam**	**9.91**	**170**	P	**P**	**22 03 18.0**	**-4.8**
PKI	**Pulchoki**	**10.45**	**276**	*e*P	**P**	**22 03 27.7**	**-2.5**
	comp=Z,138nm,0.4s						
PKI				*e*S	**S**	**22 05 20.1**	**-9.0**
KKN	**Kakani**	**10.56**	**277**	*e*P	**P**	**22 03 28.0**	**-3.8**
	comp=Z,660nm,0.9s						
LZH	**Lanzhou**	**10.67**	**31** ⇑	P	**P**	**22 03 32.8**	**-0.3**
LZH				AP		22 03 43.3	
LZH				XP		22 03 47.6	
LZH				*e*S	**S**	**22 05 26.4**	**-8.0**
LZH				LG		22 06 40.3	
LZH				AMB	AMB		
	comp=Z,40nm,1.2s						
LZH				LR	LR		
	comp=E,6μm,7.9s						
LZH				LR	LR		
	comp=Z,6μm,9.7s						
DMN	**Daman**	**10.72**	**276**	*e*P	**P**	**22 03 31.7**	**-2.1**
	comp=Z,281nm,0.8s						
GKN	**Gorkha**	**11.14**	**278**	*e*P	**P**	**22 03 36.6**	**-3.0**
	comp=Z,195nm,0.5s						
ENH	**Enshi**	**11.31**	**71**	*e*P	**P**	**22 03 35.9**	**-6.0**
	comp=Z,18nm,0.8s						
KOLN	**Koldanda**	**12.05**	**277**	*e*P	**P**	**22 03 48.5**	**-3.5**
	comp=Z,271nm,0.8s						
KOLN				*e*S	**S**	**22 05 58.1**	**-10**
XAN	**Xi'an**	**12.31**	**53**	P	**P**	**22 03 57.6**	**+2.1**
XAN				LR	LR		
	comp=N,714nm,12.8s						
XAN				LR	LR		
	comp=E,1μm,13.4s						
XAN				LR	LR		
	comp=Z,2μm,12.3s						
GTA	**Gaotai**	**12.53**	**10**	*e*P	**P**	**22 03 56.4**	**-2.0**
GTA				AP		22 04 02.1	
GTA				XP		22 04 06.4	
GTA				AMB	AMB		
	comp=Z,133nm,6.5s						
GTA				LR	LR		
	comp=N,2μm,10.7s						
GTA				LR	LR		
	comp=E,4μm,12.2s						
GTA				LR	LR		
	comp=Z,3μm,9.9s						
BLSP	**Bilaspur**	**14.50**	**254**	*e*	**P**	**22 04 22.3**	**-2.3**
PTH	**Pithoragarh**	**15.12**	**283**	*e*	**P**	**22 04 30.0**	**-2.6**
WHN	**Wuhan**	**15.48**	**73**	*e*P	**P**	**22 04 35.0**	**-2.4**
WHN				LR	LR		
	comp=N,3μm,10.4s						
WHN				LR	LR		
	comp=E,5μm,12.5s						
WHN				LR	LR		
	comp=Z,8μm,11.9s						
VIS	**Vishakhapatnam**	**15.78**	**237**	*e*	**P**	**22 04 50.8**	**+10**
KALG	**Kalgarh**	**16.38**	**283**	*e*	**P**	**22 04 38.1**	**-11**
KALG				*e*		22 07 33.2	
TIY	**Taiyuan**	**16.71**	**47**	*e*P	**P**	**22 04 53.3**	**+0.3**
TIY				LR	LR		
	comp=E,541nm,11.0s						
TIY				LR	LR		
	comp=Z,769nm,11.0s						
AGRA	**Agra**	**17.09**	**275**	*e*P	**P**	**22 04 58.5**	**+0.5**
ASOR	**Ausora**	**17.21**	**280**	*e*	**P**	**22 04 57.0**	**-2.4**
BTO	**Baotou**	**17.22**	**35**	*e*P	**P**	**22 05 00.3**	**+0.9**
NDI	**New Delhi**	**17.69**	**280**	*e*P	**P**	**22 05 06.0**	**+0.6**
NDI				*e*		22 08 04.0	
AYAN	**Aya Nagar**	**17.77**	**279**	*e*	**P**	**22 05 03.9**	**-2.5**
AYAN				*e*		22 05 18.0	
	comp=Z,129nm,1.7s						
SONA	**Sohna**	**17.81**	**278**	*e*P	**P**	**22 05 06.5**	**-0.5**
SONA				*e*		22 05 17.9	
	comp=Z,119nm,1.9s						
SONA				*e*		22 08 20.4	
BHGR	**Bahadurgarh**	**17.94**	**280**	*e*P	**P**	**22 05 13.0**	**+4.5**
KKR	**Kurukshetra**	**18.09**	**284**	*e*P	**P**	**22 05 11.3**	**+0.9**
HHC	**Hu-ho-hao-te**	**18.20**	**37**	*e*P	**P**	**22 05 12.5**	**+0.8**
HHC				PP	PP	22 05 28.0	+1.2
HHC				PCP	PcP	22 09 40.8	-5.0
HHC				AMB	AMB		
	comp=Z,194nm,6.4s						
HHC				LR	LR		
	comp=N,1μm,12.9s						
HHC				LR	LR		
	comp=E,883nm,13.1s						
HHC				LR	LR		
	comp=Z,2μm,13.6s						
BHPL	**Bhopal**	**18.25**	**262**	*e*P	**P**	**22 05 10.6**	**-1.8**
BHPL				*e*		22 05 22.0	
	comp=Z,199nm,1.3s						
BHPL				*e*		22 08 24.1	
KUDL	**Kundal**	**18.34**	**278**	*e*P	**P**	**22 05 14.3**	**+0.8**
KUDL				*e*		22 05 21.5	
	comp=Z,33nm,0.7s						
KUDL				*e*		22 08 32.2	
WMQ	**Urumqi**	**18.40**	**338** ⇑	P	**P**	**22 05 14.0**	**-0.1**
WMQ				AP		22 05 16.5	
WMQ				PP	PP	22 05 29.6	+0.1
WMQ				S	**S**	**22 08 36.3**	**-0.8**
WMQ				XS		22 08 41.9	
WMQ				SS	SS	22 09 00.0	-0.8
WMQ				PCP	PcP	22 09 45.4	-0.7
WMQ				SCP		22 13 19.1	
WMQ				SCS	ScS	22 16 58.8	-2.1
WMQ				AMB	AMB		
	comp=Z,54nm,0.8s						
WMQ				AMB	AMB		
	comp=Z,328nm,4.4s						
WMQ				LR	LR		
	comp=N,4μm,15.5s						
WMQ				LR	LR		
	comp=E,3μm,12.8s						
WMQ				LR	LR		
	comp=Z,5μm,15.9s						
RTK	**Rohtak**	**18.40**	**281**	*e*P	**P**	**22 05 15.5**	**+1.2**
KHET	**Khetri**	**18.94**	**278**	*e*P	**P**	**22 05 20.8**	**0.0**
TIA	**Tai'an**	**19.29**	**57**	P	**P**	**22 05 24.6**	**-0.3**
TIA				S	**S**	**22 09 03.4**	**+6.1**
TIA				LR	LR		
	comp=N,800nm,11.8s						
TIA				LR	LR		
	comp=E,1μm,12.7s						
NJ2	**Nanjing**	**19.53**	**70**	*e*P	**P**	**22 05 30.3**	**+2.6**
NJ2				AP		22 05 39.9	
NJ2				XP		22 05 42.5	
NJ2				S	**S**	**22 09 07.0**	**+4.2**
NJ2				XS		22 09 20.0	
NJ2				AMB	AMB		
	comp=Z,70nm,1.1s						
NJ2				LR	LR		
	comp=N,990nm,12.2s						
NJ2				LR	LR		
	comp=E,3μm,19.0s						
NJ2				LR	LR		
	comp=Z,1μm,10.1s						
HYB	**Hyderabad**	**19.67**	**245**	*i* P	**P**	**22 05 28.0**	**-1.5**
	comp=Z,80nm,1.0s						
HYB				*e*S	**S**	**22 09 12.0**	**+6.0**
HYB	**Hyderabad**	**19.67**	**245**	*e*P	**P**	**22 05 28.0**	**-1.5**
	comp=Z,80nm,1.0s						
HYB				*e*S	**S**	**22 09 12.0**	**+6.0**
AJM	**Ajmer**	**20.09**	**273**	*e*P	**P**	**22 05 34.2**	**+0.1**
AJM				*e*		22 08 34.2	
BJT	**Baijiatuau**	**20.41**	**46**	*e*P	**P**	**22 05 32.9**	**-4.4**
	comp=Z,16nm,0.9s						
BJI	**Beijing**	**20.43**	**46**	P	**P**	**22 05 39.1**	**+1.6**
BJI				AP		22 05 52.0	
BJI				S	**S**	**22 09 24.9**	**+3.1**
BJI				LR	LR		
	comp=N,407nm,13.7s,MS4.2						
BJI				LR	LR		
	comp=E,598nm,11.6s,MS4.2						
BJI				LR	LR		
	comp=Z,430nm,15.9s,MS3.9						
CUD	**Cuddapah**	**21.22**	**238**	*e*P	**P**	**22 05 45.4**	**-0.3**
CUD				*e*sP		22 05 50.3	
CUD				*e*S	**S**	**22 09 45.9**	**+8.4**
SSE	**Sheshan**	**21.39**	**73**	P	**P**	**22 05 53.1**	**+5.7**
SSE				SP		22 06 05.4	
SSE				S	**S**	**22 09 42.8**	**+2.1**
SSE				XS		22 09 56.1	
SSE				AMB	AMB		
	comp=Z,57nm,0.9s,mb4.9						
SSE				LR	LR		
	comp=N,706nm,13.6s,MS4.5						
SSE				LR	LR		
	comp=E,1μm,13.6s,MS4.5						
SSE				LR	LR		
	comp=Z,2μm,14.1s,MS4.6						
KSH	**Kashi**	**21.56**	**311**	P	**P**	**22 05 48.8**	**-0.3**
KSH				*e*PP	PP	22 06 13.0	-0.3
KSH				*e*S	**S**	**22 09 42.8**	**-1.1**
KSH				*e*PCP	PcP	22 09 50.8	-1.1
KSH				*e*SS	SS	22 10 18.6	-0.4
KSH				*e*SCP		22 13 26.4	
KSH				*e*PCS		22 13 27.5	
KSH				*e*SCS	ScS	22 17 08.3	-3.2
KSH				AMB	AMB		
	comp=Z,40nm,0.7s,mb5.0						
KSH				LR	LR		
	comp=N,620nm,10.1s						
KSH				LR	LR		
	comp=E,900nm,9.3s						
SONM	**Songino Array**	**21.98**	**17**	P	**P**	**22 05 51.7**	**-1.5**
	comp=E,2.9nm,0.7s,mb3.8,baz=197,slow=9.9,SNR=13						
ULN	**Ulaanbaatar**	**22.18**	**18***c*	*i* P	**P**	**22 05 54.0**	**-1.2**
ULN	**Ulaanbaatar**	**22.18**	**18**	*e*P	**P**	**22 05 53.2**	**-2.0**
	comp=E,14nm,0.9s,mb4.4						
ULHL	**Ulahol**	**22.83**	**317**	P	**P**	**22 06 02.5**	**+0.8**
	SNR=20						
MKAR	**Makanchi Array**	**22.93**	**333**	P	**P**	**22 06 01.8**	**-0.8**
	comp=E,8.9nm,0.7s,mb4.3,baz=143,slow=11,SNR=50						
MKAR				PcP	PcP	22 09 52.7	-1.9
	comp=E,0.7nm,0.6s,baz=141,slow=0.6,SNR=4.4						
MKAR	**Makanchi Array**	**22.93**	**333**	*i* P	**P**	**22 06 01.5**	**-1.1**
MKAR				pmax	pmax		
	comp=Z,49nm,0.9s						
MKAR	**Makanchi Array**	**22.93**	**333**	P	**P**	**22 06 01.8**	**-0.8**
MKAR				PcP	PcP	22 09 52.7	-1.9
POO	**Poona**	**23.06**	**253**	*e*P	**P**	**22 06 07.9**	**+3.8**
POO				*e*		22 06 14.5	
	comp=Z,46nm,1.2s						
KAD	**Karad**	**23.33**	**250**	*e*P	**P**	**22 06 12.0**	**+5.2**
KZA	**Kyzart**	**23.35**	**316**	P	**P**	**22 06 08.0**	**+1.2**
	SNR=14						
JASL	**Jaisalmer**	**23.37**	**276**	*e*P	**P**	**22 06 07.7**	**+0.6**
TKM2	**Tokmak 2**	**23.61**	**318**	P	**P**	**22 06 11.3**	**+2.1**
	SNR=7.9						
DL2	**Dalian**	**23.62**	**54**	P	**P**	**22 06 10.8**	**+1.4**
DL2				S	**S**	**22 10 23.4**	**+2.2**
DL2				AMB	AMB		
	comp=Z,30nm,1.2s,mb4.6						
DL2				AMB	AMB		
	comp=Z,260nm,7.7s						
DL2				LR	LR		
	comp=N,530nm,12.6s,MS4.3						
DL2				LR	LR		
	comp=E,370nm,13.8s,MS4.3						
DL2				LR	LR		
	comp=Z,620nm,12.6s,MS4.3						
ZAK	**Zakamensk**	**23.77**	**10** ⇓	*i* P	**P**	**22 06 10.5**	**-0.2**
BOM	**Bombay**	**23.79**	**255**	*e*P	**P**	**22 06 13.2**	**+1.9**
BOM				*e*		22 10 35.9	
KBK	**Karagaybulak**	**23.86**	**316**	P	**P**	**22 06 14.8**	**+3.1**
	SNR=18						
UCH	**Uchtor**	**23.89**	**315**	P	**P**	**22 06 14.1**	**+2.1**
	SNR=9.2						
AAK	**Ala-Archa**	**24.12**	**316**	P	**P**	**22 06 15.8**	**+1.6**
	SNR=11						
FRU	**Bishkek**	**24.16**	**316**	*e*P	**P**	**22 06 16.0**	**+1.4**
FRU				pmax	pmax		
	comp=Z,100nm,1.6s,mb5.0						
AML	**Almayashu**	**24.36**	**314**	P	**P**	**22 06 17.6**	**+1.0**
	SNR=12						
USP	**Ospenovka**	**24.47**	**317**	P	**P**	**22 06 18.8**	**+1.2**
	SNR=8.2						
EKS2	**Erkin-Say**	**24.59**	**315**	P	**P**	**22 06 19.4**	**+0.6**
	SNR=14						
MOY	**Mondy**	**24.76**	**6**	*e*P	**P**	**22 06 23.0**	**+2.7**
KGM	**Kluang**	**25.59**	**166**	*e*P	**P**	**22 06 33.5**	**+4.9**
IRK	**Irkutsk**	**25.73**	**10**	*e*P	**P**	**22 06 32.1**	**+2.6**
IRK				*e*		22 06 44.2	
SNY	**Shenyang**	**26.19**	**49** ⇑	P	**P**	**22 06 37.9**	**+4.0**
SNY				S	**S**	**22 11 03.1**	**-1.4**
SNY				AMB	AMB		
	comp=Z,20nm,1.3s,mb4.5						
SNY				AMB	AMB		
	comp=Z,180nm,10.8s						
SNY				LR	LR		
	comp=N,690nm,11.6s,MS4.4						
SNY				LR	LR		
	comp=E,230nm,13.7s,MS4.4						
SNY				LR	LR		
	comp=Z,460nm,11.3s,MS4.3						
KKAR	**Karatay Array**	**26.89**	**313**	*i* P	**P**	**22 06 40.0**	**-0.3**
KKAR				pmax	pmax		
	comp=Z,16nm,1.0s,mb4.5						
KURK	**Kurchatov**	**27.53**	**334**	*e*P	**P**	**22 06 44.3**	**-1.7**
JOW	**Kunigami**	**27.72**	**83**	P	**P**	**22 06 47.1**	**-1.0**
	baz=239,slow=5.2						
JOW				LR	LR	22 18 27.3	
	comp=Z,627nm,19.7s,MS4.2,baz=128,slow=38						
HIA	**Hailar**	**28.22**	**32**	*e*P	**P**	**22 06 51.7**	**-0.6**
	comp=Z,12nm,1.0s,mb4.5						
CN2	**Changchun**	**28.30**	**46**	*e*P	**P**	**22 06 52.9**	**-0.2**
CN2				*e*S	**S**	**22 11 36.5**	**-2.2**
CN2				AMB	AMB		
	comp=Z,10.0nm,0.9s,mb4.5						
CN2				AMB	AMB		
	comp=Z,200nm,10.0s						
CN2				LR	LR		
	comp=N,600nm,11.0s,MS4.6						
CN2				LR	LR		
	comp=E,600nm,11.0s,MS4.6						
CN2				LR	LR		
	comp=Z,700nm,12.0s,MS4.5						
ZAL	**Zalesovo**	**28.36**	**345**	P	**P**	**22 06 52.2**	**-1.4**
	comp=Z,1.7nm,0.9s,mb3.7,baz=222,slow=9.8,SNR=7.7						
ZAL				LR	LR	22 20 25.3	
	comp=Z,164nm,20.1s,MS3.6,baz=219,slow=41						
ZAL	**Zalesovo**	**28.36**	**345**	*i* P	**P**	**22 06 52.4**	**-1.2**
ZAL				pmax	pmax		
	comp=Z,2.0nm,0.9s						
NVS	**Novosibirsk**	**29.57**	**344**	*e*P	**P**	**22 07 01.5**	**-3.0**
NVS				pmax	pmax		
	comp=Z,14nm,1.2s,mb4.6						
NVS				pmax	pmax		
	comp=N,21nm,1.6s						
NVS				pmax	pmax		
	comp=E,10.0nm,1.4s						
JNU	**Nakatsue**	**29.73**	**70**	P	**P**	**22 07 05.8**	**-0.3**
	comp=E,3.6nm,0.4s,mb4.5,baz=249,slow=8.6,SNR=3.6						
MDJ	**Mudanjiang**	**31.34**	**47**	P	**P**	**22 07 16.8**	**-3.4**
MDJ				AMB	AMB		
	comp=Z,11nm,1.0s,mb4.6						
MDJ				AMB	AMB		
	comp=Z,107nm,7.9s						
VOSK	**Vostochnaya**	**32.23**	**330**	P	**P**	**22 07 26.2**	**-1.7**
VOSK				pmax	pmax		
	comp=Z,37nm,1.3s,mb5.0						
BVAR	**Borovoye Array**	**32.70**	**330**	P	**P**	**22 07 30.9**	**-1.1**
	comp=Z,2.3nm,0.7s,mb4.2,baz=135,slow=10,SNR=15						
BVAR				PcP	PcP	22 10 16.4	-1.5
	comp=Z,1.4nm,0.7s,baz=146,slow=5.2,SNR=3.6						
BRVK	**Borovoye**	**32.77**	**330**	*e*P	**P**	**22 07 30.9**	**-1.6**
ZRNK	**Zerenda**	**33.28**	**329**	*e*P	**P**	**22 07 35.3**	**-1.7**
KLR	**Kul'dur**	**34.64**	**41**	*e*P	**P**	**22 07 52.0**	**+3.2**
KLR				MLR	MLR		
	comp=E,1μm,12.0s						
KLR				MLR	MLR		
	comp=Z,2μm,12.0s,MS5.0						
CLNS	**Chul'man**	**35.74**	**26**	*e*P	**P**	**22 08 00.4**	**+2.2**
CLNS				pmax	pmax		
	comp=Z,10.0nm,1.2s,mb4.6						
CLNS				pmax	pmax		
	comp=N,10.0nm,1.0s						
CLNS				pmax	pmax		
	comp=E,10.0nm,1.2s						
AB31	**Akbulak array**	**36.18**	**318**	P	**P**	**22 08 01.2**	**-0.7**
AB31				pmax	pmax		
	comp=Z,51nm,1.0s,mb5.4						
THR	**Tehran**	**39.92**	**294**	P	**P**	**22 08 34.1**	**+0.7**
	comp=Z,1.1nm,0.7s,mb3.7,baz=92,slow=9.0,SNR=4.9						
THR				LR	LR	22 28 08.0	
	comp=Z,199nm,18.6s,MS4.0,baz=263,slow=41						
ASAJ	**Asahikawa**	**40.15**	**53**	P	**P**	**22 08 36.4**	**+1.2**
	comp=Z,23nm,0.8s,mb5.0,baz=259,slow=12,SNR=11						
ASAJ				LR	LR	22 26 22.5	
	comp=Z,271nm,18.2s,MS4.1,baz=87,slow=38						
ARU	**Arti**	**40.23**	**328**	*i* P	**P**	**22 08 35.1**	**-0.7**
ARU				*i* PPP	PPP	22 10 27.8	-10
ARU				*e*		22 10 39.5	
ARU				*e*S	**S**	**22 14 37.5**	**-6.1**
ARU				*e*SSS	SSS	22 17 53.8	-17
ARU				*e*		22 18 37.0	
ARU				pmax	pmax		
	comp=Z,9.0nm,1.0s,mb4.5						
ARU				MLR	MLR		
	comp=N,100nm,16.0s,MS4.1						
ARU				MLR	MLR		
	comp=E,200nm,16.0s,MS4.1						
ARU				MLR	MLR		
	comp=Z,200nm,16.0s,MS4.1						
ARU	**Arti**	**40.23**	**328**	*e*P	**P**	**22 08 34.6**	**-1.1**
	comp=Z,50nm,1.2s,mb5.1						
YSS	**Yuzh-Sakhalins**	**40.81**	**49**	*e*P	**P**	**22 08 42.7**	**+2.1**
SOKR	**Solikamsk**	**42.66**	**331** ⇑	*i* P	**P**	**22 08 58.0**	**+2.4**
SOKR				pmax	pmax		
	comp=Z,50nm,1.2s,mb5.1						
SOKR				MLR	MLR		
	comp=Z,250nm,19.0s,MS4.1						
ZEI	**Tsey**	**45.65**	**304**	*e*P	**P**	**22 09 18.9**	**-1.0**
ZEI				*e*		22 15 52.0	
ZEI				*e*		22 16 04.0	
ZEI				pmax	pmax		
	comp=Z,50nm,2.0s,mb5.1						
ZEI				MLR	MLR		
	comp=Z,300nm,17.0s,MS4.3						
GOF	**Gofitskoye**	**46.39**	**308**	*e*P	**P**	**22 09 26.0**	**+0.2**
GOF				pmax	pmax		
	comp=Z,70nm,1.3s,mb5.4						
KIV	**Kislovodsk**	**46.58**	**306**	*e*P	**P**	**22 09 26.1**	**-1.2**
KIV				pmax	pmax		
	comp=Z,20nm,1.1s,mb5.0						
KIV				MLR	MLR		
	comp=Z,90nm,17.0s,MS3.8						
KIV	**Kislovodsk**	**46.58**	**306**	*e*P	**P**	**22 09 26.0**	**-1.3**
	comp=Z,35nm,1.3s,mb5.1						
MZLS	**Mizel**	**46.69**	**278**	P	**P**	**22 09 28.0**	**-0.4**
ERZM	**Erzurum**	**47.55**	**300**	*i* P	**P**	**22 09 36.5**	**+1.4**
ARSS	**Ar Rass**	**47.95**	**281**	P	**P**	**22 09 38.7**	**+0.3**
TIXI	**Tiksi**	**47.98**	**13**	*e*P	**P**	**22 09 35.8**	**-2.2**
TIXI				pmax	pmax		
	comp=Z,54nm,1.2s,mb5.5						
TIXI				MLR	MLR		
	comp=Z,2μm,13.0s,MS5.3						
KAMS	**Al Khamasin**	**48.32**	**274**	P	**P**	**22 09 41.6**	**+0.4**
AFFS	**'Afif**	**48.66**	**279**	P	**P**	**22 09 44.1**	**+0.3**
SOC	**Sochi**	**48.72**	**305**	*e*P	**P**	**22 09 46.9**	**+2.8**
SOC				*e*		22 11 39.4	
SOC				*e*S	**S**	**22 16 56.3**	**+10**
SOC				pmax	pmax		
	comp=Z,20nm,1.2s,mb5.0						
SOC				pmax	pmax		
	comp=N,10.0nm,0.7s						
SOC				pmax	pmax		
	comp=E,20nm,0.8s						
SOC				MLR	MLR		
	comp=Z,140nm,17.0s,MS4.0						
SOC				MLR	MLR		
	comp=N,220nm,18.0s,MS4.4						
SOC				MLR	MLR		
	comp=E,230nm,17.0s,MS4.4						
MA2	**Magadan**	**48.81**	**33**	*e*P	**P**	**22 09 46.9**	**+2.4**
MA2				pmax	pmax		
	comp=Z,10.0nm,1.0s,mb4.8						
MA2	**Magadan**	**48.81**	**33**	*e*P	**P**	**22 09 44.1**	**-0.4**
	comp=Z,17nm,0.8s,mb5.1						
HILS	**Ha'il**	**48.86**	**284**	P	**P**	**22 09 46.2**	**+0.8**
ELZG	**Elazig**	**49.48**	**299**	*i* P	**P**	**22 09 50.5**	**+0.5**
VOR	**Voronezh**	**49.56**	**316**	*e*P	**P**	**22 09 49.0**	**-1.4**
VOR				*e**PP	pP	22 09 54.0	+3.2
VOR				pmax	pmax		
	comp=Z,50nm,1.6s,mb5.3						
ANN	**Anapa**	**50.36**	**307***c*	*i* P	**P**	**22 09 56.6**	**-0.1**
ANN				pmax	pmax		
	comp=Z,10.0nm,1.4s,mb4.7						
GZT	**Gaziantep**	**50.72**	**297**	*i* P	**P**	**22 09 58.4**	**-1.0**
MOS	**Moscow**	**51.03**	**321**	*e*P	**P**	**22 10 00.3**	**-1.2**
MOS				*e*		22 10 05.6	
MOS				*e*		22 11 59.5	
MOS				*e*S	**S**	**22 17 02.4**	**-16**
MOS				*e*PS	PS	22 17 23.7	-2.5
MOS				*e*SSS	SSS	22 22 08.8	-17
MOS				pmax	pmax		
	comp=Z,90nm,1.5s						
MOS				pmax	pmax		
	comp=E,70nm,1.2s						
MOS				pmax	pmax		
	comp=Z,2μm,2.3s						
MOS				MLR	MLR		
	comp=Z,700nm,18.0s						
BLJS	**Baljurashi**	**51.11**	**274**	P	**P**	**22 10 03.2**	**+0.5**
KBRS	**Khaybar**	**51.45**	**282**	P	**P**	**22 10 05.9**	**+0.7**
OBN	**Obninsk**	**51.54**	**320**	*e*P	**P**	**22 10 04.6**	**-0.8**
OBN				*e*		22 11 21.9	
OBN				pmax	pmax		
	com

OBN MLR MLR
comp=Z,200nm,18.0s,MS4.2
OBN Obninsk 51.54 320 *e*P **P 22 10 04.6 -0.8**
QURS Qurayyt al Mil 51.84 290 P **P 22 10 10.7 +2.7**
LTHS Al Lith 52.04 275 P **P 22 10 10.6 +0.9**
BOYT Boyabat 52.37 303 *i* P **P 22 10 10.9 -1.1**
FITZ Fitzroy Crossi 52.72 145 *e*P **P 22 10 14.5 -0.3**
comp=Z,2.4nm,0.7s,mb4.2
FITZ Fitzroy Crossi 52.72 145 P **P 22 10 14.5 -0.3**
comp=Z,1.3nm,0.5s,mb4.1,baz=341,slow=5.9,SNR=7.2
SIM Simferopol' 52.72 307 *e*P **P 22 10 12.5 -2.0**
SIM pmax pmax
comp=Z,10.0nm,1.2s,mb4.6
SIM MLR MLR
comp=Z,140nm,18.5s,MS4.0
HMDT Nahal Hemdat 53.17 291 P **P 22 10 17.4 -0.6**
TBKS Tabuk 53.18 286 P **P 22 10 19.8 +1.6**
MKRJ Makawir 53.21 290 P **P 22 10 17.7 -0.6**
DRGI Dragot 53.41 291 P **P 22 10 19.1 -0.7**
BRTR Keskin Array B 53.50 301 P **P 22 10 19.7 -0.6**
comp=Z,2.3nm,0.6s,mb4.3,baz=114,slow=8.0,SNR=17
BRTR LR LR 22 35 22.0
comp=Z,85nm,20.8s,MS3.8,baz=95,slow=39
OFRI 'Ofer 53.54 292 P **P 22 10 20.3 -0.5**
SLTI Sal'it 53.57 291 P **P 22 10 20.5 -0.5**
JMQS Jabal Moqyreh 53.60 287 P **P 22 10 23.5 +2.3**
ZFRI Zfri 53.81 289 P **P 22 10 21.8 -0.9**
PRNI Paran 54.00 289 P **P 22 10 23.1 -1.0**
JMOS Jabal al Moail 54.19 288 P **P 22 10 28.1 +2.6**
SVTA Shivta 54.20 290 P **P 22 10 24.4 -1.1**
EIL Elat 54.20 288 P **P 22 10 24.1 -1.5**
MBH Mount Berech 54.20 289 P **P 22 10 24.4 -1.2**
AYUS 'Aynunah 54.29 287 P **P 22 10 28.6 +2.3**
KMTI Karmit 54.29 289 P **P 22 10 25.0 -1.3**
HAQS Haql 54.37 288 P **P 22 10 30.2 +3.4**
BDAS Al Bad' 54.37 287 P **P 22 10 30.0 +3.1**
KZIT Kziot 54.39 290 P **P 22 10 25.7 -1.3**
CSS Prodhromos 54.45 295 P **P 22 10 25.3 -2.1**
JOF Joensuu 55.30 329 *e*p **P 22 10 32.6 -0.6**
comp=Z,5.7nm,0.8s,mb4.7
JOF Joensuu 55.30 329 *e*P **P 22 10 32.6 -0.6**
JOF pmax pmax
comp=Z,6.0nm,0.8s,mb4.7
BILL Bilibino 57.41 25⇓ *e*P **P 22 10 47.0 -1.3**
BILL pmax pmax
comp=Z,17nm,1.4s,mb4.9
BILL MLR MLR
comp=Z,400nm,16.0s,MS4.6
BILL Bilibino 57.41 25 *e*P **P 22 10 46.5 -1.7**
comp=Z,22nm,1.4s,mb5.0
KAF Kangasniemi 57.53 328 *e*p **P 22 10 48.2 -1.0**
comp=Z,2.0nm,0.7s,mb4.3,baz=89,slow=6.9
KAF Kangasniemi 57.53 328 *e*P **P 22 10 48.2 -1.0**
KAF pmax pmax
comp=Z,2.0nm,0.7s,mb4.3
FINES FINESS Array B 57.60 327 P **P 22 10 49.0 -0.7**
comp=Z,4.9nm,1.1s,mb4.5,baz=104,slow=7.9,SNR=6.6
FINES LR LR 22 37 56.5
comp=Z,145nm,20.1s,MS4.1,baz=85,slow=39
ARCES ARCESS Array B 58.52 337 LR LR 22 38 32.5
comp=Z,128nm,18.2s,MS4.1,baz=72,slow=39
WRA Warramunga Arr 59.01 138 P **P 22 10 59.4 -0.7**
comp=Z,7.7nm,0.6s,mb5.0,baz=327,slow=7.5,SNR=129
WRAB Tennant Creek 59.01 138 *e*P **P 22 10 57.5 -2.6**
comp=Z,22nm,0.6s,mb5.4
WB2 Warramunga Arr 59.01 138 *e*P **P 22 10 59.0 -1.1**
SUW Suwalki 59.30 319 *e*P **P 22 10 57.7 -3.9**
KWP Kalwaria 60.05 314 *e*P **P 22 11 05.1 -1.7**
comp=Z,61nm,1.4s,mb5.4
FX1 Attu Island--F 60.64 42 P **P 22 11 08.7 -2.1**
CRVS Cervenica-Dubn 60.96 313 *e*P **P 22 11 16.5 +3.5**
CRVS *e* 22 11 20.4
CRVS *es*P sP 22 11 30.4 +17
CRVS *e* 22 11 55.8
CRVS Cervenica-Dubn 60.96 313 *e*P **P 22 11 16.5 +3.5**
CRVS *e* 22 11 30.4
CRVS *e* 22 11 55.8
NIE Niedzica 61.62 314⇑ *e*P **P 22 11 21.4 +3.9**
AS12 Alice Springs 61.67 141 *e*P **P 22 11 17.6 -0.6**
comp=Z,6.9nm,0.7s,mb4.9
ASAR Alice Springs 61.67 141 P **P 22 11 17.7 -0.5**
comp=Z,6.7nm,0.7s,mb4.9,baz=326,slow=6.6,SNR=101
OJC Ojcow 61.82 315 *e*P **P 22 11 22.3 +3.4**
SKO Skopje 62.25 305 *i* P **P 22 11 23.5 +1.6**
VYHS Vyhne 62.74 313 *i* P **P 22 11 28.6 +3.6**
VYHS *e* 22 11 58.5
OKC Ostrava-Krasne 62.94 314 *e*P **P 22 11 29.7 +3.4**
MORC Moravsky Berou 63.33 314 *e*P **P 22 11 26.9 -2.1**
comp=Z,17nm,1.3s,mb5.0
KSP Ksiaz 63.91 316 *e*P **P 22 11 36.0 +3.3**
ZST Bratislava 63.93 313 *e*P **P 22 11 36.1 +3.2**
KMBO Kilima Mbogo 63.99 254 P **P 22 11 32.7 -1.1**
comp=Z,14nm,0.8s,mb5.0,baz=50,slow=10,SNR=21
KMBO Kilima Mbogo 63.99 254 *e*P **P 22 11 31.8 -2.1**
comp=Z,12nm,0.9s,mb4.9
KMBO LR LR
comp=Z,90nm,19.0s,MS4.0
DPC Dobruska-Polom 63.99 315 *e*P **P 22 11 32.5 -0.7**
DPC *ex* x 22 11 37.6
UPC Upice 64.15 315 *e*P **P 22 11 38.4 +4.1**
NB2 NORSAR Subarra 64.79 328 P **P 22 11 35.7 -2.5**
comp=Z,11nm,0.9s,mb4.9,baz=81,slow=6.5
NOA NORSAR Array B 64.79 328 P **P 22 11 36.2 -2.0**
comp=Z,1.7nm,0.9s,mb4.0,baz=78,slow=8.0,SNR=9.9
NOA LR LR 22 42 46.1
comp=Z,118nm,18.9s,MS4.1,baz=90,slow=39
ARSA Arzberg 65.18 312⇓ *i*P **P 22 11 45.0 +4.0**
comp=Z,11nm,1.5s,mb4.7
PRU Pruhonice 65.19 315 *e*P **P 22 11 40.0 -1.0**
PRU *ex* x 22 11 44.3
BRG Berggiesshubel 65.36 316 *e*P **P 22 11 42.5 +0.4**
BRG pmax pmax
comp=Z,30nm,1.7s,mb5.0
BRG MLR MLR
comp=N,390nm,22.0s,MS4.6
BRG MLR MLR
comp=E,180nm,22.0s,MS4.6
BRG MLR MLR
comp=Z,290nm,22.0s,MS4.4
BRG Berggiesshubel 65.36 316 *e*P **P 22 11 42.5 +0.4**
comp=Z,30nm,1.6s,mb5.1
BRG *e* 22 11 46.7
BRG LR LR
comp=Z,290nm,22.0s,MS4.4
CLL Collm 65.84 317 P **P 22 11 47.9 +2.8**
comp=Z,logA/T=1.1,mb4.9
CLL *e* 22 12 28.0
CLL Collm 65.84 317 *i* P **P 22 11 47.9 +2.8**
CLL pmax pmax
comp=Z,17nm,1.3s,mb4.9
CLL Collm 65.84 317 *i* P **P 22 11 47.9 +2.8**
comp=Z,17nm,1.3s,mb4.9
CLL *e* 22 12 07.0
MOA Molln 65.87 313⇑ *i*P **P 22 11 49.2 +3.8**
comp=Z,17nm,1.5s,mb4.9
GERES GERESS Array B 65.99 314 P **P 22 11 44.9 -1.3**
comp=Z,3.7nm,0.9s,mb4.4,baz=45,slow=5.7,SNR=16
KHC Kasperske Hory 66.00 314 *e*P **P 22 11 48.7 +2.5**
KHC *ex* x 22 12 02.4
NKC Novy Kostel 66.44 316 *e*P **P 22 11 52.7 +3.7**
CTA Charters Tower 66.78 129 P **P 22 11 51.1 -0.5**
comp=Z,3.6nm,0.6s,mb4.6,baz=305,slow=5.4,SNR=4.8
CTAO Charters Tower 66.78 129 *e*P **P 22 11 50.2 -1.5**
CTAO LR LR
comp=Z,650nm,20.0s,MS4.8
MOX Moxa 66.85 316 *i* P **P 22 11 55.6 +4.0**
comp=Z,logA/T=1.2,mb5.0
MOX L 22 45 39.0
MOX Moxa 66.85 316 *e*P **P 22 11 55.6 +4.0**
MOX pmax pmax
comp=Z,27nm,1.7s,mb5.0
MOX MLR MLR
comp=Z,200nm,17.0s,MS4.4
GRF Grafenberg Arr 67.34 315 *e*P **P 22 11 59.1 +4.3**
GRF pmax pmax
comp=Z,59nm,1.8s,mb5.3
WTTA Wattenberg 67.74 313⇑ *i*P **P 22 12 00.7 +3.4**
comp=Z,18nm,1.6s,mb4.9
MOTA Moosalm 68.06 313⇓ *i*P **P 22 12 02.2 +2.9**
comp=Z,14nm,1.2s,mb4.8
STU Stuttgart 68.88 315 P **P 22 12 03.3 -1.1**
DAVA Damuels 68.88 313⇓ *i*P **P 22 12 07.4 +3.0**
comp=Z,21nm,1.3s,mb4.9
MBAR Mbarara 69.37 258 P **P 22 12 05.8 -2.1**
comp=Z,10.0nm,1.3s,mb4.6
WTSB Winterswijk 69.39 319⇑ *e*P **P 22 12 11.4 +4.0**
comp=Z,12nm,1.0s,mb4.8
LANF Langenberg 69.69 315 *e*P **P 22 12 13.5 +4.2**
FELD Feldberg 69.91 314 *e*P **P 22 12 14.3 +3.6**
WLS Welschbruch 70.15 315 *e*P **P 22 12 15.9 +3.8**
CDF Champ du Feu 70.20 315 *e*P **P 22 12 12.2 -0.2**
comp=Z,44nm,1.4s,mb4.9
HGN Heimansgroeve 70.28 318 *e*P **P 22 12 17.0 +4.2**
comp=Z,6.6nm,1.2s,mb4.4
ECH Echery 70.34 315 *e*P **P 22 12 16.9 +3.6**
MOF Molkenrain 70.47 314 *e*P **P 22 12 18.0 +3.9**
WLF Walferdange 70.50 316 *e*P **P 22 12 13.8 -0.4**
comp=Z,57nm,1.2s,mb5.4
HINF Hinteralfeld 70.66 314 *e*P **P 22 12 14.7 -0.6**
HAU Haudompre 70.92 315 *e*P **P 22 12 16.3 -0.5**
HAU *e*R
comp=Z,206nm,20.8s
THEF They Montfort 71.08 315 *e*P **P 22 12 21.3 +3.5**
GIVF Givet 71.16 317 *e*P **P 22 12 18.3 0.0**
SAOF Saorge 71.47 310 *e*P **P 22 12 24.1 +3.8**
LPG La Plagne 71.50 312 *e*P **P 22 12 19.4 -1.0**
comp=Z,49nm,1.2s,mb5.0
LPL La Plagne 71.51 312 *e*P **P 22 12 19.4 -1.0**
comp=Z,40nm,1.1s,mb5.0
BAIF Baives 71.55 317 *e*P **P 22 12 20.6 0.0**
comp=Z,25nm,1.2s,mb4.7
CABF La Chapelle 71.56 313 *e*P **P 22 12 20.5 -0.2**
MEZF Maizieres J'vi 71.57 316 *e*P **P 22 12 20.8 +0.1**
comp=Z,44nm,1.1s,mb5.0
SBF Sospel 71.60 310 *e*P **P 22 12 19.8 -1.2**
comp=Z,64nm,1.1s,mb5.2
MVIF Mont Vial 71.78 310 *e*P **P 22 12 28.2 +6.1**
FRF La Foret Royal 72.24 310 *e*P **P 22 12 23.9 -0.9**
comp=Z,43nm,1.3s,mb4.9
ORIF Oris-en-Rattie 72.28 312 *e*P **P 22 12 24.3 -0.7**
comp=Z,12nm,0.8s,mb4.6
ORIF *e*R
comp=Z,224nm,21.2s
STKA Stephens Creek 72.31 141 *e*P **P 22 12 24.5 -0.9**
comp=Z,4.3nm,0.7s,mb4.5
STKA Stephens Creek 72.31 141 P **P 22 12 25.5 +0.1**
comp=Z,3.6nm,0.8s,mb4.4,baz=323,slow=5.7,SNR=7.8
LMR La Mourre 72.41 310 *e*P **P 22 12 24.6 -1.3**
comp=Z,38nm,1.2s,mb4.9
LOR Lormes 72.75 315 *e*P **P 22 12 27.2 -0.6**
comp=Z,43nm,1.5s,mb4.9
LOR *e*R
comp=Z,171nm,21.2s
SMF Signal de Mont 72.99 314 *e*P **P 22 12 28.8 -0.4**
comp=Z,57nm,1.3s,mb5.0
SSF Saint Saulge 73.05 314 *e*P **P 22 12 29.2 -0.3**
comp=Z,57nm,1.2s,mb5.1
VIVF Saint-Julien-l 73.10 312 *e*P **P 22 12 29.6 -0.3**
comp=Z,50nm,1.3s,mb5.0
AVF Avril sur Loir 73.25 314 *e*P **P 22 12 30.4 -0.3**
comp=Z,63nm,1.4s,mb5.0
PLDF La Plantade 73.38 313 *e*P **P 22 12 35.7 +4.2**
HYF Humbligny 73.53 315 *e*P **P 22 12 32.5 +0.2**
BGF Bois d'Agland 73.66 314 *e*P **P 22 12 32.8 -0.3**
AGO Saint Agoulin 73.67 314 *e*P **P 22 12 37.6 +4.5**
PYM Petit Puy Mans 73.86 313 *e*P **P 22 12 38.5 +4.2**
LBL Lubilhac 73.90 313 *e*P **P 22 12 39.0 +4.5**
LASF Ste Croix 73.93 312 *e*P **P 22 12 33.4 -1.3**
comp=Z,32nm,1.1s,mb4.8
TCF Toulx Ste Croi 74.17 314 *e*P **P 22 12 34.9 -1.1**
comp=Z,80nm,1.4s,mb5.2
LDF La Druitiere 74.73 317 *e*P **P 22 12 39.0 -0.2**
comp=Z,37nm,1.3s,mb4.9
CAF Calviac 74.79 313 *e*P **P 22 12 38.8 -0.9**
comp=Z,35nm,1.2s,mb4.9
FLN La Foliniere 74.88 317 *e*P **P 22 12 39.4 -0.7**
comp=Z,64nm,1.5s,mb5.0
FLN *e*R
comp=Z,268nm,23.0s
RJF Les Rejaudoux 75.00 313 *e*P **P 22 12 40.3 -0.6**
comp=Z,62nm,1.2s,mb5.1
RJF *e*R
comp=Z,125nm,19.0s
EJON La Jonquera 75.21 310 P **P 22 12 42.6 +0.5**
comp=Z,21nm,1.7s,mb4.8
GRR Gorron 75.26 317 *e*P **P 22 12 41.7 -0.6**
comp=Z,37nm,1.2s,mb4.9
MTLF Montolieu 75.31 311 *e*P **P 22 12 42.0 -0.7**
comp=Z,42nm,1.3s,mb4.9
MFF Saint Martin d 75.54 315 *e*P **P 22 12 43.8 -0.1**
comp=Z,53nm,1.5s,mb5.0
COLA College 75.64 24 *e*P **P 22 12 44.9 +0.8**
COLA College 75.64 24 P **P 22 12 42.3 -1.8**
COLA LR LR
comp=Z,200nm,19.0s,MS4.4
LFF La Frestale 75.65 313 *e*P **P 22 12 43.8 -0.8**
comp=Z,43nm,1.3s,mb4.9
MCK McKinley 75.87 25 P **P 22 12 43.6 -1.9**
ILAR Eielson Array 76.04 23 P **P 22 12 44.2 -2.2**
comp=Z,2.0nm,0.9s,mb4.0,baz=288,slow=5.6,SNR=12
SUMG Summit 76.15 347 *e*P **P 22 12 47.0 +0.1**
SGMF Saint Gilles 76.34 317 *e*P **P 22 12 48.1 -0.3**
comp=Z,9.5nm,0.6s,mb4.6
EMIR Miracle 76.35 310 P **P 22 12 49.6 +0.9**
comp=Z,48nm,1.9s,mb5.1
ROSF Rostrenen 76.74 318 *e*P **P 22 12 50.4 -0.2**
comp=Z,19nm,0.8s,mb4.8
QUIF Quistinic 76.86 317 *e*P **P 22 12 50.7 -0.6**
EPOB Poblet 76.89 310 P **P 22 12 52.9 +1.3**
comp=Z,35nm,1.4s,mb5.1
PMR Palmer 76.96 27 *e*P **P 22 12 50.1 -1.5**
PMR LR LR
comp=Z,351nm,19.0s,MS4.7
SML Sawmill 77.16 26 *e*P **P 22 12 51.3 -1.3**
ETSF Etsaut 77.35 312 *e*P **P 22 12 53.7 -0.4**
comp=Z,23nm,1.0s,mb4.8
INK Inuvik 77.89 17 P **P 22 12 56.0 -0.6**
comp=Z,3.0nm,0.9s,mb4.2,baz=317,slow=6.5,SNR=9.7
INK Inuvik 77.89 17 *e*P **P 22 12 55.2 -1.5**
comp=Z,25nm,1.5s,mb4.9
EMOS Mosqueruela 78.37 309 P **P 22 13 01.9 +2.1**
comp=Z,27nm,1.3s,mb5.0
EBEN Beniarda 78.92 308 P **P 22 13 05.4 +2.6**
comp=Z,26nm,1.3s,mb5.0
DAWY Dawson 79.05 22 *e*P **P 22 13 02.0 -1.1**
ELAN Lanestosa 79.10 313 P **P 22 13 04.8 +1.0**
comp=Z,59nm,1.8s,mb5.2
ETOR Torete 79.26 310 P **P 22 13 06.6 +1.9**
comp=Z,9.5nm,1.2s,mb4.6
EVIA Vianos 80.54 308 P **P 22 13 14.6 +3.0**
GUD Guadarrama 80.76 311 P **P 22 13 15.0 +2.3**
comp=Z,6.2nm,0.8s,mb4.6
EHUE Huescar 80.98 308 P **P 22 13 17.2 +3.3**
comp=Z,15nm,1.4s,mb4.7
ESDC Sonseca Array 81.08 310 P **P 22 13 14.7 +0.3**
comp=Z,2.9nm,0.9s,mb4.2,baz=34,slow=5.2,SNR=3.3
ESDC LR LR 22 56 27.4
comp=Z,54nm,19.5s,MS3.9,baz=65,slow=41
ESDC Sonseca Array 81.08 310 P **P 22 13 17.0 +2.6**
comp=Z,6.7nm,1.2s,mb4.5
EQES Quesada 81.32 308 P **P 22 13 18.1 +2.4**
comp=Z,19nm,1.2s,mb4.9
ECAL Calabor 81.86 313 P **P 22 13 19.5 +1.1**
comp=Z,28nm,1.5s,mb5.0
ERON Agron 82.20 308 P **P 22 13 23.1 +2.8**
EADA Adamuz 82.21 309 P **P 22 13 22.6 +2.3**
comp=Z,12nm,1.5s,mb4.6
ELUQ Luque 82.28 308 P **P 22 13 23.2 +2.6**
ELOJ Sierra Loja 82.39 308 P **P 22 13 23.5 +2.2**
comp=Z,3.2nm,1.1s,mb4.2
STS Santiago 82.56 314 P **P 22 13 22.8 +0.8**
comp=Z,6.2nm,1.0s,mb4.6
ELIJ Sierra de Lija 83.36 308 P **P 22 13 28.7 +2.4**
comp=Z,14nm,1.5s,mb4.8
EBAD Badajoz 83.60 310 P **P 22 13 29.2 +1.7**
comp=Z,9.2nm,1.2s,mb4.8
ESPR Espera 83.72 308 P **P 22 13 30.5 +2.4**
comp=Z,15nm,1.3s,mb5.0
EMIN Mina Concepcio 83.85 309 P **P 22 13 30.9 +2.1**
comp=Z,14nm,1.3s,mb4.9
EVO Evora 84.39 310 *e*P **P 22 13 30.9 -0.6**
comp=Z,32nm,1.4s,mb5.0
EVO *e*R
comp=Z,101nm,19.8s
LBTB Lobatse 86.22 240 *e*P **P 22 13 39.4 -1.5**
comp=Z,7.3nm,1.0s,mb4.9
DLBC Dease Lake 86.23 23 P **P 22 13 40.9 +0.7**
comp=Z,2.6nm,1.0s,mb4.4,baz=217,slow=20,SNR=3.4
YKW3 Yellowknife Ar 87.16 14 *e*P **P 22 13 44.3 -0.3**
YKA Yellowknife Ar 87.22 14 P **P 22 13 44.3 -0.5**
comp=Z,0.7nm,0.9s,mb3.9,baz=331,slow=4.6,SNR=5.4
DBIC Dimbokro 97.58 281 LR LR 23 04 51.6
comp=Z,75nm,18.1s,MS4.2,baz=50,slow=39
DPW Davenport 98.94 23 P **P 22 14 38.5 -0.8**
TXAR Lajitas Array 120.50 21 PKP PKPdf 22 19 51.7 -0.2
comp=Z,0.8nm,0.3s,baz=27,slow=2.0,SNR=4.3
TXAR Lajitas Array 120.50 21 PKP PKPdf 22 19 51.7 -0.2
JCT Junction City 120.55 17 PKP PKPdf 22 19 50.2 -1.7
BDFB Brasilia 145.73 282 PKPbc PKPbc 22 20 37.9 +0.1
comp=Z,6.1nm,0.8s,baz=185,slow=5.4,SNR=9.1
ROSC El Rosal 147.23 344 PKPbc PKPdf 22 20 43.5 +1.8
comp=Z,20nm,0.7s,baz=85,slow=7.2,SNR=16
OTAV Otavalo 152.54 350 *e*PKPbc PKPdf 22 20 55.4 +5.4

*IDC **24** 22:16:18.9±1.4, 18.28S×172.94W, mb4.4/12, mb1 4.7/13, mb1mx4.5/21, ML4.5/1, MS4.2/11, Ms1 4.2/11, ms1mx4.0/25, Error ellipse: s-maj=88.7km s-min=14.5km az=151.0*
*NEIC **24** 22:16:25.8±0.3, 18.41S×172.95W, h50km, mb4.6/12, Error ellipse: s-maj=17.2km s-min=7.0km az=147.0*
ISC 24 22:16:18.8±0.4, 18.5S±0.1×172.9W±0.1, h10km, n80, σ0s74/37, mb4.5/21, MS4.2/10, 1D, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**12.67**	**105**	Pn	**P**		**P**	**22 19 09.6**	**-12**
	2.8nm,0.3s,baz=260,slow=10,SNR=8.0								
RAR				LR	LR			22 22 52.9	
	comp=Z,714nm,21.2s,baz=282,slow=31								
RAR	**Rarotonga**	**12.67**	**105**	*e*P	**P**		**P**	**22 19 09.4**	**-13**
URZ	**Urewera**	**21.57**	**202**	P	**P**		**P**	**22 21 04.6**	**-6.0**
	10nm,1.2s,mb4.1,baz=7.4,slow=23,SNR=3.2								
RPZ	**Rata Peaks**	**28.57**	**205**	P	**P**		**P**	**22 22 23.9**	**+6.9**
	25nm,0.5s,mb5.2,baz=304,slow=1.6,SNR=32								
CTA	**Charters Tower**	**38.51**	**261**	*e*P	**P**		**P**	**22 23 43.8**	**+0.6**
	6.1nm,0.4s,mb4.7								
CTA	**Charters Tower**	**38.51**	**261**	P	**P**		**P**	**22 23 43.8**	**+0.6**
	7.7nm,0.5s,mb4.7,baz=97,slow=10,SNR=21								
CTAO	**Charters Tower**	**38.51**	**261**	*e*P	**P**		**P**	**22 23 43.8**	**+0.5**
	8.4nm,0.6s,mb4.7								
CTAO				*e*				22 23 52.5	
PMG	**Port Moresby**	**39.70**	**278**	LR	LR			22 38 56.2	
	comp=Z,340nm,18.1s,MS4.2,baz=189,slow=34								
STKA	**Stephens Creek**	**42.98**	**243**	*e*P			**P**	**22 24 18.2**	**-1.9**
	6.1nm,1.4s,mb4.1								
STKA	**Stephens Creek**	**42.98**	**243**	P			**P**	**22 24 20.4**	**+0.3**
	4.5nm,0.9s,mb4.2,baz=103,slow=8.0,SNR=5.6								
STKA				LR	LR			22 39 42.5	
	comp=Z,327nm,19.5s,MS4.2,baz=23,slow=33								
WB2	**Warramunga Arr**	**49.65**	**259**	*e*P			**P**	**22 25 12.7**	**-0.2**
WRAB	**Tennant Creek**	**49.65**	**259**	*e*P			**P**	**22 25 12.6**	**-0.3**
	14nm,0.7s,mb5.1								
WRA	**Warramunga Arr**	**49.66**	**259**	P			**P**	**22 25 12.9**	**-0.1**
	6.2nm,0.7s,mb4.7,baz=97,slow=8.5,SNR=129								
WRA				LR	LR			22 45 06.7	
	comp=Z,287nm,18.4s,MS4.3,baz=230,slow=35								
AS12	**Alice Springs**	**49.67**	**254**	*e*P			**P**	**22 25 12.5**	**-0.5**
	16nm,1.0s,mb5.0								
ASAR	**Alice Springs**	**49.67**	**254**	P			**P**	**22 25 13.4**	**+0.4**
	13nm,0.8s,mb5.0,baz=88,slow=8.5,SNR=79								
ASAR				S			**S**	**22 32 21.9**	**+1.5**
	0.6nm,0.9s,baz=97,slow=15,SNR=3.1								
ASAR				LR	LR			22 45 46.2	
	comp=Z,210nm,19.2s,MS4.2,baz=298,slow=36								
KAKA	**Kakadu**	**52.83**	**268**	*e*P			**P**	**22 25 36.5**	**-0.6**
	10nm,0.5s,mb5.0								
FITZ	**Fitzroy Crossi**	**58.08**	**260**	LR	LR			22 49 57.8	
	comp=Z,150nm,21.4s,MS4.1,baz=93,slow=35								
SBA	**Scott Base**	**60.26**	**185**	*e*P			**P**	**22 26 29.9**	**+0.6**
	3.6nm,1.0s,mb4.4								
VNDA	**Vanda**	**60.40**	**186**	*e*P			**P**	**22 26 29.5**	**-0.8**
	1.1nm,1.2s,mb3.8								
CBIJ	**Chichi jima**	**62.81**	**315**	LR	LR			22 49 54.8	
	comp=Z,137nm,20.5s,MS4.1,baz=112,slow=32								
NWAO	**Narrogin (SRO)**	**63.56**	**242**	LR	LR			22 51 48.3	
	comp=Z,219nm,21.3s,MS4.3,baz=276,slow=34								
YBH	**Yreka Blue Hor**	**75.76**	**36**	P			**P**	**22 28 04.4**	**-2.2**
	1.5nm,0.6s,mb4.1,baz=225,slow=4.3,SNR=3.5								
NVAR	**Mina Array Bea**	**76.30**	**41**	P			**P**	**22 28 09.2**	**-0.6**
	2.0nm,0.7s,mb4.1,baz=219,slow=7.1,SNR=13								
LON	**Longmire**	**79.55**	**33**	*e*P			**P**	**22 28 36.9**	**+9.4**
MVU	**Marysvale**	**80.25**	**44**	*e*P			**P**	**22 28 32.0**	**+0.5**
	8.9nm,1.1s,mb4.6								
MSU	**Marysvale**	**80.28**	**44**	*e*P			**P**	**22 28 32.1**	**+0.5**
MNTX	**Cornudas Mount**	**81.69**	**53**	*e*P			**P**	**22 28 38.7**	**-0.4**
	9.1nm,1.3s,mb4.5								
SRU	**San Rafael**	**81.69**	**44**	*e*P			**P**	**22 28 39.2**	**+0.2**
TXAR	**Lajitas Array**	**81.94**	**56**	P			**P**	**22 28 40.8**	**+0.4**
	0.8nm,0.3s,mb4.1,baz=225,slow=7.1,SNR=6.4								
ANMO	**Albuquerque**	**82.42**	**49**	*e*P			**P**	**22 28 42.5**	**-0.4**
	5.7nm,1.2s,mb4.4								
GDL2	**Guadalupe Moun**	**82.68**	**53**	*e*P			**P**	**22 28 44.6**	**+0.4**
QLMT	**Earthquake Lak**	**84.19**	**39**	*e*P			**P**	**22 28 52.7**	**+1.0**
PDAR	**Pinedale Array**	**84.23**	**41**	P			**P**	**22 28 50.9**	**-1.1**
	2.4nm,0.7s,mb4.5,baz=218,slow=3.7,SNR=25								
YMR	**Madison River**	**84.38**	**39**	*e*P			**P**	**22 28 53.4**	**+0.7**
BOZ	**Bozeman (W)**	**84.51**	**38**	*e*P			**P**	**22 28 53.3**	**0.0**
	8.1nm,1.2s,mb4.7								
MAW	**Mawson**	**85.06**	**199**	P			**P**	**22 28 56.1**	**+0.6**
	4.0nm,0.9s,mb4.5								
ILAR	**Eielson Array**	**85.34**	**11**	P			**P**	**22 28 56.8**	**-0.2**
	1.4nm,0.8s,mb4.1,baz=226,slow=5.5,SNR=12								
DAWY	**Dawson**	**86.25**	**14**	*e*P			**P**	**22 29 02.4**	**+0.9**
DAWY				*e*				22 29 10.3	
YKA	**Yellowknife Ar**	**92.70**	**23**	P			**P**	**22 29 32.3**	**+0.4**
	0.3nm,0.8s,mb3.8,baz=244,slow=4.2,SNR=5.8								
CMAR	**Chiang Mai Arr**	**94.00**	**288**	LR	LR			23 07 32.5	
	comp=Z,61nm,18.3s,MS4.1,baz=140,slow=33								
LVC	**Limon Verde**	**95.28**	**116**	LR	LR			23 01 36.0	
	comp=Z,146nm,19.2s,MS4.5,baz=213,slow=28								
LPAZ	**La Paz**	**98.33**	**110**	LR	LR			23 04 48.0	
	comp=Z,132nm,18.1s,MS4.5,baz=184,slow=30								
WCI	**Wyandotte Cave**	**98.62**	**53**	*e*P			**P**	**22 29 54.3**	**-5.2**
	31nm,0.9s								
WCI				*e*				22 30 07.3	
KMBO	**Kilima Mbogo**	**144.52**	**240**	PKP	PKPdf			22 35 59.2	-0.4
	2.3nm,0.9s,baz=160,slow=1.5,SNR=5.6								
KMBO	**Kilima Mbogo**	**144.52**	**240**	*e*PKPdf	PKPdf			22 35 58.4	-1.1
CLL	**Collm**	**146.89**	**353**	⇓ *i* PKP1	PKPbc			22 36 03.4	+2.4
CLL				*i* *PPKP				22 36 12.6	
BRG	**Berggiesshubel**	**147.20**	**352**	*i* P	PKPdf			22 36 04.5	+1.5
UPC	**Upice**	**147.24**	**349**	*e*PKPAB	PKPab			22 36 06.5	+0.3
DPC	**Dobruska-Polom**	**147.33**	**349**	*e*PKPAB	PKPab			22 36 05.6	-0.9
DPC				*ex*	x			22 36 41.4	
DPC				L				22 42 10.0	
	0.2nm,19.7s								
PVCC	**Panska Ves**	**147.45**	**351**	*e*PKPAB	PKPab			22 36 05.8	-1.2
PVCC				L				22 42 40.0	
	0.2nm,16.3s								
OKC	**Ostrava-Krasne**	**147.46**	**347**	*e*PKPAB	PKPab			22 36 12.0	+5.0
OKC				*ex*	x			22 36 42.2	
MOX	**Moxa**	**147.68**	**355**	*e*P	PKPdf			22 36 06.0	+2.2
PRU	**Pruhonice**	**147.98**	**351**	*e*PKPAB	PKPab			22 36 06.7	-2.4
PRU				L				22 42 50.0	
NKC	**Novy Kostel**	**148.01**	**353**	*e*PKPAB	PKPab			22 36 06.8	-2.4
NKC				*ex*	x			22 36 40.4	
NKC				L				22 43 30.0	
	0.3nm,20.9s								
GIVF	**Givet**	**148.38**	**3**	*e*PKP1	PKPdf			22 36 07.3	+2.4
BAIF	**Baives**	**148.39**	**4**	*e*PKP1	PKPdf			22 36 07.2	+2.3
	6.4nm,0.8s								
BRTR	**Keskin Array B**	**148.77**	**318**	PKPbc	PKPdf			22 36 09.6	+3.7
	2.9nm,1.0s,baz=135,slow=1.7,SNR=16								
KHC	**Kasperske Hory**	**148.95**	**352**	*e*PKPAB	PKPab			22 36 09.5	-3.6
KHC				*ex*	x			22 36 48.3	
KHC				L				22 43 30.0	
	0.2nm,25.

	13nm,0.9s							
AVF	**Avril sur Loir**	**151.58**	**5**	*e*PKP1	PKPdf	22 36 14.6	+4.6
	6.9nm,1.0s							
BGF	**Bois d'Agland**	**151.76**	**6**	*e*PKP1	PKPdf	22 36 15.3	+5.1
	13nm,0.9s							
SMF	**Signal de Mont**	**151.76**	**5**	*e*PKP1	PKPdf	22 36 15.2	+5.0
CABF	**La Chapelle**	**151.91**	**1**	*e*PKP1	PKPdf	22 36 16.3	+5.8
TCF	**Toulx Ste Croi**	**151.96**	**7**	*e*PKP1	PKPdf	22 36 15.5	+5.0
	6.6nm,0.8s							
LPL	**La Plagne**	**153.02**	**1**	*e*PKP1	PKPdf	22 36 18.3	+6.2
LPG	**La Plagne**	**153.03**	**1**	*e*PKP1	PKPdf	22 36 17.9	+5.8
ORIF	**Oris-en-Rattie**	**153.60**	**2**	*e*PKP1	PKPdf	22 36 19.3	+6.4
ETSF	**Etsaut**	**154.79**	**13**	*e*PKP1	PKPdf	22 36 23.8	+9.3
EPF	**Esparros**	**154.85**	**12**	*e*PKP1	PKPdf	22 36 23.2	+8.6

IDC ***24*** *22:24:21.9±1.1,18.28S×172.91W,mb4.3/7,mb1 4.5/8, mb1mx4.2/20,ML4.2/1,Error ellipse: s-maj=55.4km s-min=21.1km az=145.0*
NEIC ***24*** *22:24:28.8±0.6,18.37S×172.95W,h50km,mb4.7/3,Error ellipse: s-maj=20.7km s-min=12.8km az=140.0*

ISC 24 22:24:21.3±0.8,18.3S±0.2×173.0W±0.2,h10km,n34, σ0§75/14,mb4.4/9,Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**12.75**	**105**	Pn		**P**	**22 27 10.9**	**-15**
	1.2nm,0.3s,baz=296,slow=1.8,SNR=3.9							
URZ	**Urewera**	**21.68**	**202**	P		**P**	**22 29 15.1**	**+0.9**
	8.1nm,0.7s,mb4.3,baz=15,slow=3.8,SNR=3.9							
RPZ	**Rata Peaks**	**28.68**	**205**	P		**P**	**22 30 27.8**	**+7.2**
	9.4nm,0.6s,mb4.7,baz=28,slow=1.5,SNR=9.3							
CTA	**Charters Tower**	**38.49**	**261**	P		**P**	**22 31 46.5**	**+1.0**
	4.0nm,0.7s,mb4.3,baz=84,slow=9.2,SNR=5.0							
CTAO	**Charters Tower**	**38.49**	**261**	*e*P		**P**	**22 31 43.2**	**-2.4**
	14nm,1.1s,mb4.6							
WB2	**Warramunga Arr**	**49.63**	**259**	*e*P		**P**	**22 33 15.4**	**+0.1**
WRAB	**Tennant Creek**	**49.64**	**259**	*e*P		**P**	**22 33 15.0**	**-0.4**
	6.6nm,0.7s,mb4.8							
WRA	**Warramunga Arr**	**49.65**	**259**	P		**P**	**22 33 15.4**	**0.0**
	1.5nm,0.5s,mb4.3,baz=97,slow=8.6,SNR=38							
AS12	**Alice Springs**	**49.66**	**254**	*e*P		**P**	**22 33 16.1**	**+0.6**
	7.4nm,1.0s,mb4.7							
ASAR	**Alice Springs**	**49.66**	**254**	P		**P**	**22 33 16.1**	**+0.6**
	3.9nm,0.7s,mb4.5,baz=88,slow=8.4,SNR=37							
VNDA	**Vanda**	**60.54**	**186**	P		**P**	**22 34 32.7**	**-1.0**
	0.2nm,0.8s							
NVAR	**Mina Array Bea**	**76.22**	**41**	P		**P**	**22 36 12.0**	**+0.2**
	1.0nm,0.9s,mb3.8,baz=215,slow=8.3,SNR=5.8							
PDAR	**Pinedale Array**	**84.15**	**41**	P		**P**	**22 36 54.2**	**+0.1**
	1.1nm,0.7s,mb4.1,baz=225,slow=2.2,SNR=11							
MAW	**Mawson**	**85.18**	**199**	P		**P**	**22 36 54.0**	**-4.6**
	4.2nm,1.0s,mb4.5							
CLL	**Collm**	**146.74**	**353**	*e*PKP1	PKPbc		22 44 07.0	+3.9
BRTR	**Keskin Array B**	**148.63**	**318**	PKPbc	PKPdf		22 44 11.9	+3.7
	1.4nm,0.8s,baz=90,slow=1.4,SNR=7.2							
FLN	**La Foliniere**	**149.02**	**10**	*e*PKP1	PKPdf		22 44 11.7	+3.2
GERES	**GERESS Array B**	**149.07**	**351**	PKPbc	PKPdf		22 44 12.9	+4.3
	1.0nm,0.9s,slow=1.3,SNR=7.4							
LDF	**La Druitiere**	**149.24**	**9**	*e*PKP1	PKPdf		22 44 12.3	+3.5
GRR	**Gorron**	**149.32**	**10**	*e*PKP1	PKPdf		22 44 12.6	+3.6
CDF	**Champ du Feu**	**149.98**	**360**	*e*PKP1	PKPdf		22 44 14.7	+4.7
HAU	**Haudompre**	**150.38**	**1**	*e*PKP1	PKPdf		22 44 15.7	+5.1
HINF	**Hinteralfeld**	**150.57**	**0**	*e*PKP1	PKPdf		22 44 15.9	+5.0
LOR	**Lormes**	**151.00**	**4**	*e*PKP1	PKPdf		22 44 17.1	+5.5
MFF	**Saint Martin d**	**151.17**	**10**	*e*PKP1	PKPdf		22 44 17.1	+5.2
	7.5nm,0.9s							
SSF	**Saint Saulge**	**151.18**	**5**	*e*PKP1	PKPdf		22 44 17.7	+5.8
	8.4nm,0.9s							
AVF	**Avril sur Loir**	**151.44**	**5**	*e*PKP1	PKPdf		22 44 17.8	+5.5
	6.5nm,0.9s							
BGF	**Bois d'Agland**	**151.62**	**6**	*e*PKP1	PKPdf		22 44 18.4	+5.9
	7.4nm,0.8s							
CABF	**La Chapelle**	**151.77**	**1**	*e*PKP1	PKPdf		22 44 19.5	+6.7
	10nm,0.9s							
TCF	**Toulx Ste Croi**	**151.82**	**7**	*e*PKP1	PKPdf		22 44 18.7	+5.8
	3.8nm,0.7s							
LPL	**La Plagne**	**152.87**	**0**	*e*PKP1	PKPdf		22 44 21.7	+7.3
LPG	**La Plagne**	**152.89**	**0**	*e*PKP1	PKPdf		22 44 21.7	+7.3
LFF	**La Frestale**	**152.93**	**10**	*e*PKP1	PKPdf		22 44 22.5	+8.0
	3.9nm,0.5s							
ETSF	**Etsaut**	**154.66**	**13**	*e*PKP1	PKPdf		22 44 26.7	+10

INMG ***24*** *22:28:38.2±1.0,38.33N×7.82W,h6km±4km,ML1.6,Error ellipse: s-maj=2.4km s-min=1.5km az=70.0*
MDD ***24*** *22:28:38.1±0.3,38.35N×7.80W,mbLg1.8/11,Error ellipse: s-maj=3.0km s-min=2.5km az=68.0,PRXIMO*
NEIC ***24*** *22:28:39.3,38.34N×7.74W,h11km,MN2.1(MDD),After MDD.*

ISC 24 22:28:36.9±0.6,38.34N±0.03×7.75W±0.04,h7km±5km,n27, σ0§88/38,Portugal

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
PBEJ	**Beja**	**0.33**	**197**	*e*Pg		**Pg**	**22 28 43.9**	**+0.4**
PBEJ				*e*Sg		**Sg**	**22 28 48.3**	**+0.3**
	27nm,0.1s							
PBEJ	**Beja**	**0.33**	**197**	Pg		**Pg**	**22 28 43.9**	**+0.4**
PBEJ				Lg			22 28 48.3	
	14nm,0.1s							
MOE	**Montemor**	**0.51**	**291**	*e*Pg		**Pg**	**22 28 46.8**	**-0.3**
MOE				*e*Sg		**Sg**	**22 28 53.2**	**-0.7**
EBAD	**Badajoz**	**0.71**	**54**	Pg		**Pg**	**22 28 51.4**	**+0.4**
	2.1nm,0.1s,SNR=63							
EBAD				Lg			22 29 01.8	
	23nm,0.1s,SNR=7.9							
EBAD	**Badajoz**	**0.71**	**54**	Pg		**Pg**	**22 28 52.2**	**+1.2**
EBAD				Lg			22 29 01.8	
EGRO	**El Granado**	**0.83**	**165**	Pg		**Pg**	**22 28 54.8**	**+1.3**
	1.4nm,0.1s,SNR=19							
EGRO				Lg			22 29 05.6	
	6.7nm,0.1s,SNR=7.9							
EGRO	**El Granado**	**0.83**	**165**	Pg		**Pg**	**22 28 54.5**	**+1.0**
EGRO				Lg			22 29 05.2	
PALC	**Alcoutim**	**0.90**	**166**	*e*P		**Pb**	**22 28 55.8**	**+1.4**
PALC				*e*S		**Sb**	**22 29 07.2**	**+0.8**
	13nm,0.1s							
PALC	**Alcoutim**	**0.90**	**166**	P		**Pb**	**22 28 55.8**	**+1.4**
PALC				S		**Sb**	**22 29 07.2**	**+0.8**
	6.7nm,0.1s							
EMIN	**Mina Concepcio**	**1.02**	**124**	Pg		**Pg**	**22 28 56.8**	**-0.5**
	0.6nm,0.1s,SNR=28							
EMIN				Lg			22 29 12.8	
	2.4nm,0.1s,SNR=7.9							
EMIN	**Mina Concepcio**	**1.02**	**124**	Pg		**Pg**	**22 28 57.3**	**0.0**
EMIN				Lg			22 29 12.2	
PTEO	**Sao Teotonio**	**1.11**	**225**	*e*P		**Pb**	**22 28 57.9**	**-0.1**
PTEO				*e*S		**Sb**	**22 29 11.9**	**-0.5**
	9.9nm,0.3s							
PTEO	**Sao Teotonio**	**1.11**	**225**	P		**Pb**	**22 28 57.9**	**-0.1**
PTEO				S		**Sb**	**22 29 11.9**	**-0.5**
	4.9nm,0.3s							
PLOU	**Loures**	**1.23**	**297**	*e*S		**Sb**	**22 29 15.5**	**-0.5**
	9.3nm,0.3s							
PLOU	**Loures**	**1.23**	**297**	S		**Sb**	**22 29 15.5**	**-0.5**
	4.7nm,0.3s							
PTOM	**Tomar**	**1.38**	**338**	*e*P		**Pb**	**22 29 02.9**	**+0.3**
PTOM				*e*S		**Sb**	**22 29 20.4**	**+0.1**
	15nm,0.2s							
PTOM	**Tomar**	**1.38**	**338**	P		**Pb**	**22 29 02.9**	**+0.3**
PTOM				S		**Sb**	**22 29 20.4**	**+0.1**
	7.3nm,0.2s							
PCBR	**Castelo Branco**	**1.51**	**8**	*e*P		**Pn**	**22 29 05.7**	**+1.2**
PCBR				*e*S		**Sb**	**22 29 24.8**	**+0.6**
	4.5nm,0.3s							
PCBR	**Castelo Branco**	**1.51**	**8**	P		**Pn**	**22 29 05.7**	**+1.2**
PCBR				S		**Sb**	**22 29 24.8**	**+0.6**
	2.2nm,0.3s							
ESPR	**Espera**	**2.10**	**134**	Pg		**Pg**	**22 29 16.1**	**-2.7**
	0.5nm,0.1s,SNR=4.0							
ESPR				Lg			22 29 45.8	
	0.5nm,0.1s,SNR=7.9							
ESPR	**Espera**	**2.10**	**134**	Pg		**Pg**	**22 29 16.7**	**-2.1**
ESPR				Lg			22 29 44.5	
ELIJ	**Sierra de Lija**	**2.35**	**126**	Lg			22 29 54.6	
	0.2nm,0.2s,SNR=7.9							
ELIJ	**Sierra de Lija**	**2.35**	**126**	Pn		**Pn**	**22 29 16.9**	**+0.3**
ELIJ				Sn		**Sn**	**22 29 44.3**	**-1.7**
ELIJ				Lg			22 29 54.1	
EADA	**Adamuz**	**2.50**	**93**	Pg		**Pg**	**22 29 25.7**	**-1.1**
	0.2nm,0.1s,SNR=4.0							
EADA				Sn		**Sn**	**22 29 49.8**	**0.0**
	0.3nm,0.1s,SNR=7.9							
ELOB	**Lobios**	**3.53**	**356**	Lg			22 30 30.9	
	1.2nm,0.2s,SNR=7.9							
ECAL	**Calabor**	**3.68**	**12**	Pn		**Pn**	**22 29 35.0**	**-0.4**
	0.4nm,0.1s,SNR=7.9							
ECAL				Lg			22 30 33.8	
	2.3nm,0.3s,SNR=7.9							
ECAL	**Calabor**	**3.68**	**12**	Pn		**Pn**	**22 29 35.0**	**-0.4**
ECAL				Sn		**Sn**	**22 30 15.6**	**-4.1**
ECAL				Lg			22 30 34.8	

IDC ***24*** *22:40:58.6±0.6,21.15S×174.42W,mb4.5/15,mb1 4.7/17, mb1mx4.6/21,ML4.9/2,MS4.0/7,Ms1 4.1/7,ms1mx3.9/17, Error ellipse: s-maj=24.2km s-min=13.1km az=147.0*
NEIC ***24*** *22:41:08.8±0.3,21.12S×174.65W,h75km,mb4.8/15, Error ellipse: s-maj=13.5km s-min=6.9km az=137.0*
BJI ***24*** *22:41:08.7,21.10S×174.60W,h75km,mB5.2,mb4.8*

ISC 24 22:41:02.5±0.3,21.23S±0.08×174.55W±0.09,h33km,n77, σ1§07/53,mb4.7/29,MS4.0/6,3C-2D,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**13.78**	**93**	Pn		**P**	**22 44 03.2**	**-15**
	13nm,0.3s,baz=236,slow=7.9,SNR=22							
RAR				Sn		S	22 46 18.3	-32
	1.8nm,0.3s,baz=165,slow=19,SNR=3.4							
RAR				LR		LR	22 48 21.8	
	comp=Z,779nm,19.6s,baz=243,slow=32							
RAR	**Rarotonga**	**13.78**	**93**	*e*P		**P**	**22 44 03.2**	**-15**
URZ	**Urewera**	**18.44**	**201**	P		**P**	**22 45 18.0**	**+0.7**
	1.4nm,0.3s,baz=337,slow=13,SNR=10.0							
URZ				S		**S**	**22 48 25.1**	**-13**
	0.3nm,0.3s,baz=86,slow=16,SNR=4.0							
RPZ	**Rata Peaks**	**25.43**	**205**	P		**P**	**22 46 27.8**	**-1.0**
	12nm,1.0s,mb4.4,baz=316,slow=15,SNR=3.1							
AMRA	**Armidale**	**31.70**	**246**	*e*P		**P**	**22 47 25.6**	**+0.2**
CTA	**Charters Tower**	**36.63**	**265**	*e*P		**P**	**22 48 08.3**	**+0.4**
	3.3nm,0.6s,mb4.3							
CTA	**Charters Tower**	**36.63**	**265**	P		**P**	**22 48 07.6**	**-0.3**
	3.7nm,0.5s,mb4.4,baz=82,slow=13,SNR=4.3							
CTA				LR		LR	23 01 01.7	
	comp=Z,126nm,18.0s,MS3.7,baz=224,slow=33							
PMG	**Port Moresby**	**38.65**	**282**	P		**P**	**22 48 24.0**	**-0.8**
	27nm,1.0s,mb4.9,baz=122,slow=6.7,SNR=4.6							
STKA	**Stephens Creek**	**40.40**	**245**	*e*P		**P**	**22 48 39.1**	**-0.1**
	5.2nm,0.9s,mb4.3							
STKA	**Stephens Creek**	**40.40**	**245**	P		**P**	**22 48 39.4**	**+0.2**
	5.3nm,0.8s,mb4.3,baz=81,slow=8.0,SNR=8.6							
STKA				LR		LR	23 03 02.8	
	comp=Z,141nm,19.5s,MS3.8,baz=28,slow=33							
AS12	**Alice Springs**	**47.50**	**257**	*e*P		**P**	**22 49 35.7**	**-0.9**
	12nm,0.9s,mb4.8							
ASAR	**Alice Springs**	**47.50**	**257**	P		**P**	**22 49 36.1**	**-0.4**
	12nm,0.9s,mb4.8,baz=91,slow=8.3,SNR=94							
ASAR				PcP		PcP	22 51 06.5	-0.2
	2.1nm,0.9s,baz=91,slow=5.9,SNR=4.2							
ASAR				S		**S**	**22 56 36.4**	**+8.3**
	0.5nm,0.9s,baz=93,slow=19,SNR=3.3							
ASAR				LR		LR	23 09 41.3	
	comp=Z,176nm,18.6s,MS4.1,baz=26,slow=36							
WB2	**Warramunga Arr**	**47.69**	**262**	*e*P		**P**	**22 49 37.1**	**-1.0**
WRAB	**Tennant Creek**	**47.69**	**262**	*e*P		**P**	**22 49 37.1**	**-1.0**
	50nm,1.2s,mb5.4							
WRA	**Warramunga Arr**	**47.70**	**262**	P		**P**	**22 49 37.3**	**-0.8**
	7.1nm,0.8s,mb4.7,baz=96,slow=8.3,SNR=58							
WRA				PcP		PcP	22 51 08.4	+0.8
	2.3nm,0.8s,baz=93,slow=3.6,SNR=5.3							
FITZ	**Fitzroy Crossi**	**56.13**	**262**	*e*P		**P**	**22 50 40.5**	**-0.9**
	5.4nm,1.6s,mb4.3							
FITZ	**Fitzroy Crossi**	**56.13**	**262**	P		**P**	**22 50 40.6**	**-0.8**
	2.2nm,0.9s,mb4.2,baz=153,slow=9.0,SNR=4.4							
VNDA	**Vanda**	**57.50**	**186**	P		**P**	**22 50 50.1**	**-0.3**
	3.1nm,0.9s,mb4.3,baz=2.1,slow=8.1,SNR=12							
KLBR	**Kellerberrin**	**60.67**	**245**	*e*P		**P**	**22 51 12.1**	**-0.9**
	32nm,1.3s,mb5.3							
MUN	**Mundaring**	**61.92**	**244**	*e*P		**P**	**22 51 21.8**	**+0.4**
	10nm,1.1s,mb4.9							
QSPA	**South Pole Qui**	**68.85**	**180**	*e*P		**P**	**22 52 04.9**	**-0.2**
	15nm,1.1s,mb4.8							
MTUM	**Tungsten Hills**	**78.55**	**42**	*e*P		**P**	**22 53 03.5**	**+1.1**
YBH	**Yreka Blue Hor**	**78.88**	**37**	P		**P**	**22 53 03.6**	**-0.6**
	7.1nm,0.9s,mb4.6,baz=286,slow=3.6,SNR=8.3							
YBH	**Yreka Blue Hor**	**78.88**	**37**	*e*P		**P**	**22 53 04.3**	**+0.2**
	8.7nm,1.0s,mb4.6							
NVAR	**Mina Array Bea**	**79.38**	**42**	P		**P**	**22 53 06.5**	**-0.5**
	3.7nm,0.8s,mb4.4,baz=215,slow=6.9,SNR=21							
WVOR	**Wild Horse Val**	**81.65**	**38**	*e*P		**P**	**22 53 18.2**	**-0.7**
	8.1nm,1.1s,mb4.6							
MAW	**Mawson**	**81.96**	**199**	P		**P**	**22 53 20.6**	**+0.7**
	3.0nm,0.8s,mb4.2,baz=161,slow=7.4,SNR=4.0							
LON	**Longmire**	**82.70**	**33**	*e*P		**P**	**22 53 23.2**	**-1.0**
RMW	**Rattlesnake Mo**	**83.17**	**33**	*e*P		**P**	**22 53 27.0**	**+0.5**
RMW				*e*			22 53 39.7	
MSU	**Marysvale**	**83.33**	**44**	*e*P		**P**	**22 53 28.4**	**+0.9**
HAWA	**Hanford**	**83.66**	**35**	*e*P		**P**	**22 53 26.3**	**-2.7**
	23nm,1.4s,mb5.1							
RPW	**Rockport**	**83.97**	**32**	P		**P**	**22 53 30.1**	**-0.5**
NLW	**Nelson Butte**	**84.33**	**33**	*e*P		**P**	**22 53 32.1**	**-0.3**
TXAR	**Lajitas Array**	**84.76**	**56**	P		**P**	**22 53 33.7**	**-1.3**
	0.7nm,0.3s,mb4.3,baz=194,slow=7.4,SNR=2.9							
HLID	**Hailey**	**84.80**	**39**	*e*P		**P**	**22 53 35.1**	**+0.2**
	6.9nm,1.1s,mb4.7							
HLID				*e*		pP	22 53 47.5	+2.1
CN2	**Changchun**	**84.87**	**321**	*e*P		**P**	**22 53 37.3**	**+2.1**
CN2				AMB		AMB		
	comp=Z,10.0nm,0.9s,mb5.0							
TNA	**Tin City**	**86.66**	**3**	*e*P		**P**	**22 53 41.9**	**-1.6**
	comp=Z,6.3nm,0.9s,mb4.8							
MCK	**McKinley**	**87.02**	**11**	*e*P		**P**	**22 53 45.3**	**0.0**
	comp=Z,17nm,1.1s,mb5.2							
VNA3	**Neumayer Olymp**	**87.18**	**175**	*i*		**P**	**22 53 48.5**	**+2.6**
PDAR	**Pinedale Array**	**87.31**	**42**	P		**P**	**22 53 46.3**	**-0.9**
	comp=Z,0.9nm,0.8s,mb4.0,baz=225,slow=2.1,SNR=6.4							
DLBC	**Dease Lake**	**87.49**	**22**	*e*P		**P**	**22 53 47.6**	**-0.1**
VNA2	**Neumayer--Watz**	**87.66**	**176**	*i*		**P**	**22 53 52.3**	**+4.1**
VNA1	**Neumayer--Stat**	**87.87**	**175**	*i*		**P**	**22 53 52.7**	**+3.5**
HRY	**Holter Researc**	**88.10**	**38**	*e*P		**P**	**22 53 51.7**	**+0.8**
HRY				*e*			22 53 58.4	
ILAR	**Eielson Array**	**88.34**	**11**	P		**P**	**22 53 51.6**	**0.0**
	comp=Z,3.3nm,1.0s,mb4.5,baz=220,slow=5.8,SNR=18							
ILAR				LR		LR	23 32 42.3	
	comp=Z,91nm,18.1s,MS4.2,baz=325,slow=35							
ENH	**Enshi**	**89.13**	**303**	*e*P		**P**	**22 53 58.8**	**+2.6**
	comp=Z,28nm,1.1s,mb5.5							
DAWY	**Dawson**	**89.30**	**15**	*e*P		**P**	**22 53 57.1**	**+0.9**
HHC	**Hu-ho-hao-te**	**92.18**	**313**	*e*P		**P**	**22 54 11.5**	**+1.3**
HHC				AMB		AMB		
	comp=Z,7.0nm,1.3s,mb4.8							
HHC				AMB		AMB		
	comp=Z,77nm,5.5s							
KMI	**Kunming**	**92.56**	**296**	*e*P		**P**	**22 54 14.5**	**+2.2**
KMI				AMB		AMB		
	comp=Z,11nm,1.0s,mb5.2							
CMAR	**Chiang Mai Arr**	**93.40**	**288**	P		**P**	**22 54 19.5**	**+3.2**
	comp=Z,5.1nm,0.9s,mb5.0,baz=119,slow=2.9,SNR=22							
CMAR				LR		LR	23 34 43.6	
	comp=Z,49nm,19.4s,MS4.0,baz=145,slow=34							
INK	**Inuvik**	**94.16**	**14**	*e*P		**P**	**22 54 18.5**	**0.0**
	comp=Z,3.1nm,1.0s,mb4.7							
LPAZ	**La Paz**	**98.80**	**111**	LR		LR	23 30 19.1	
	comp=Z,108nm,18.1s,MS4.4,baz=282,slow=30							
CPCT	**Cooper Cave**	**102.02**	**57**	*e*Pdif		Pdif	22 54 47.9	-7.1
MKAR	**Makanchi Array**	**114.05**	**313**	PKiKP			22 59 39.1	
	comp=Z,1.5nm,1.0s,baz=76,slow=5.0,SNR=7.5							
ZRNK	**Zerenda**	**122.55**	**320**	*e*PKP		PKPdf	22 59 55.6	+1.0
TSUM	**Tsumeb**	**138.10**	**197**	PKP		PKPdf	23 00 27.5	+2.6
	comp=Z,3.4nm,1.3s,baz=79,slow=4.7,SNR=4.0							
SUW	**Suwalki**	**144.59**	**342**	*e*PKPdf		PKPdf	23 00 36.1	+0.8
SUW				*e*			23 00 45.9	
MUD	**Monsted U'grnd**	**144.71**	**356**	*i* P		PKPbc	23 00 39.4	+4.0
	comp=Z,40nm,1.4s							
COP	**Copenhagen**	**145.20**	**353**	*i* P		PKPdf	23 00 52.7	+16
	comp=Z,55nm,1.4s							
BSD	**Bornholm Skovb**	**145.42**	**350**	*i* P		PKPdf	23 00 55.5	+19
	comp=Z,48nm,1.1s							
KWP	**Kalwaria**	**148.52**	**338**	*e*PKPbc		PKPdf	23 00 47.9	+5.9
CLL	**Collm**	**149.40**	**351**	*e*PKP1		PKPdf	23 00 50.0	+6.6
CLL				*i* PKP2		PKPab	23 00 54.1	-0.7
BRTR	**Keskin Array B**	**149.69**	**314**	PKPbc		PKPdf	23 00 51.2	+7.0
	comp=Z,2.2nm,0.8s,baz=153,slow=2.8,SNR=14							
MORC	**Moravsky Berou**	**149.94**	**344**	*e*PKPbc		PKPdf	23 00 49.5	+5.2
MOX	**Moxa**	**150.24**	**352**	PP2			23 00 52.0	
PRU	**Pruhonice**	**150.41**	**348**	*e*PKPB			23 00 52.3	
	comp=Z,7.3nm,1.0s							
GIVF	**Givet**	**151.18**	**1**	*e*PKP1		PKPdf	23 00 52.7	+6.5
BAIF	**Baives**	**151.21**	**2**	*e*PKP1		PKPdf	23 00 52.8	+6.6
	comp=Z,15nm,1.0s							
KHC	**Kasperske Hory**	**151.41**	**349**	*e*PKPB			23 00 51.0	
KHC				*e*PKPAB		PKPab	23 01 03.5	+0.3
GERES	**GERESS Array B**	**151.66**	**348**	PKPbc		PKPdf	23 00 55.2	+8.3
	comp=Z,1.4nm,0.8s,slow=1.3,SNR=12							
FLN	**La Foliniere**	**152.12**	**8**	*e*PKP1		PKPdf	23 00 54.1	+6.5
LDF	**La Druitiere**	**152.33**	**8**	*e*PKP1		PKPdf	23 00 54.5	+6.6
	comp=Z,13nm,1.1s							
GRR	**Gorron**	**152.43**	**9**	*e*PKP1		PKPdf	23 00 54.9	+6.8
	comp=Z,17nm,1.0s							
CDF	**Champ du Feu**	**152.84**	**357**	*e*PKP1		PKPdf	23 00 56.4	+7.8
LOR	**Lormes**	**153.99**	**2**	*e*PKP1		PKPdf	23 00 58.3	+8.0
SSF	**Saint Saulge**	**154.18**	**3**	*e*PKP1		PKPdf	23 00 59.3	+8.8
BGF	**Bois d'Agland**	**154.64**	**4**	*e*PKP1		PKPdf	23 01 00.8	+10
	comp=Z,9.7nm,0.8s							

IDC ***24*** *22:55:02.1±7.5,55.91S×27.72W,h132km±66km,mb3.8/6, mb1 3.9/6,mb1mx3.8/12,Error ellipse: s-maj=37.9km s-min=17.8km az=57.0*
NEIC ***24*** *22:55:05.9±3.3,55.93S×27.80W,h169km±31km,mb3.8/4, Error ellipse: s-maj=21.8km s-min=13.8km az=59.0*

ISC 24 22:55:06.1±4.4,55.9S±0.1×27.8W±0.3,h188km±44km,n27, σ0§83/20,mb3.9/8,7C-2D,South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
VNA1	**Neumayer--Stat**	**17.03**	**158**	*i*	P	**P**	**22 58 54.6**	**+0.5**
VNA1	**Neumayer--Stat**	**17.03**	**158**	*i*	P	**P**	**22 58 56.0**	**+1.9**
VNA1	**Neumayer--Stat**	**17.03**	**158**	*i*	P	**P**	**22 59 02.7**	**+8.6**
VNA3	**Neumayer Olymp**	**17.21**	**160**	*i*	P	**P**	**22 58 56.0**	**-0.1**
VNA3	**Neumayer Olymp**	**17.21**	**160**	*i*	P	**P**	**22 58 57.3**	**+1.2**
VNA3	**Neumayer Olymp**	**17.21**	**160**	*i*	P	**P**	**22 59 03.6**	**+7.5**
VNA2	**Neumayer--Watz**	**17.43**	**158**	*i*	P	**P**	**22 58 57.7**	**-0.8**
VNA2	**Neumayer--Watz**	**17.43**	**158**	*i*	P	**P**	**22 58 58.2**	**-0.3**
VNA2	**Neumayer--Watz**	**17.43**	**158**	*i*	P	**P**	**22 59 05.3**	**+6.8**
SNAA	**Sanae**	**18.98**	**156**	*e*P		**P**	**22 59 11.7**	**-3.2**
QSPA	**South Pole Qui**	**34.32**	**180**	*e*P		**P**	**23 01 35.5**	**-0.3**
	3.9nm,0.8s,mb4.2							
CPUP	**Vila Florida**	**36.49**	**312**	P		**P**	**23 01 53.6**	**-1.0**
	2.5nm,1.0s,mb3.8,baz=159,slow=7.2,SNR=3.6							
MAW	**Mawson**	**40.44**	**144**	P		**P**	**23 02 26.8**	**-0.1**
	2.9nm,0.7s,mb4.0,baz=237,slow=7.2,SNR=9.7							
MAW	**Mawson**	**40.44**	**144**	*e*P		**P**	**23 02 26.5**	**-0.4**
	4.1nm,0.7s,mb4.2							
SBA	**Scott Base**	**46.18**	**184**	P		**P**	**23 03 19.0**	**+6.3**
VNDA	**Vanda**	**46.68**	**183**	P		**P**	**23 03 17.1**	**+0.5**
	1.2nm,0.6s,mb3.7,baz=197,slow=6.2,SNR=11							
LBTB	**Lobatse**	**49.28**	**74**	*e*P		**P**	**23 03 37.4**	**+0.1**
	0.5nm,0.5s,mb3.4						

WRA	**Warramunga Arr**	**59.07**	**138**	P		**P**	**23 56 20.1**	**-0.2**
	0.9nm,0.5s,mb4.1,baz=327,slow=7.6,SNR=19							
ASAR	**Alice Springs**	**61.73**	**141**	P		**P**	**23 56 38.5**	**+0.1**
	0.7nm,0.6s,mb4.0,baz=328,slow=6.8,SNR=13							

ISC 24 23:48:07.1±0.9,**46.42N**±0.05×**15.12E**±0.07,**n5,**σ0$83/8,
2C,Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
PERS	**Pernice**	**0.21**	**359**	*i* Pg		**Pg**	**23 48 11.9**	**+0.5**
PERS				*i* Sg		**Sg**	**23 48 15.8**	**+1.5**
GROS	**Grobnik**	**0.27**	**82**	*e*Pg		**Pg**	**23 48 12.9**	**+0.5**
	comp=Z,0.0nm,0.0s							
DOBS	**Dobrina**	**0.36**	**138**	*i* Pg		**Pg**	**23 48 14.5**	**+0.1**
OBKA	**Obir**	**0.41**	**283**	⇑*i*PG		**Pg**	**23 48 14.8**	**-0.4**
OBKA				*i* SG		**Sg**	**23 48 20.5**	**-0.1**
	comp=Z,4.8nm,0.3s							
ARSA	**Arzberg**	**0.87**	**18**	⇑*i*PG		**Pg**	**23 48 23.9**	**-0.7**
ARSA				*i* SG		**Sg**	**23 48 34.7**	**-1.5**
	comp=Z,1.1nm,0.2s							

*TIR **24** 23:54:51.9,39.16N×20.68E*
*THE **24** 23:54:56.6,39.35N×20.53E,h10km,ML4.1*
*ATH **24** 23:54:56.5,39.39N×20.57E,h6km±3km,MD3.9/15,ML3.9*
*NEIC **24** 23:54:57.3,39.35N×20.54E,h0km,mb3.7/2,MD3.7(PDG),*
ML3.9(ATH),ML3.8(THE),After THE.
*IDC **24** 23:54:59.0±2.2,39.40N×20.38E,h37km±17km,mb3.7/13,*
mb1 3.9/20,mb1mx3.8/30,ML3.7/7,MS2.8/1,Ms1 2.8/1,
ms1mx2.3/36,Error ellipse: s-maj=19.1km s-min=13.9km
az=16.0
*SOF **24** 23:55:03.0,39.58N×21.36E,h2km,MD3.5*
ISC 24 23:54:56.4±0.4,**39.32N**±0.02×**20.47E**±0.02,**h17**km±4km,
n177,σ1$50/227,**mb3.8**/15,**6C-15D,Greece-Albania**
border region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
IGT	**Igoumenitsa**	**0.23**	**334**	*e*Pg		**Pb**	**23 55 01.8**	**-0.1**
IGT	**Igoumenitsa**	**0.23**	**334**	P		**Pb**	**23 55 01.9**	**0.0**
JAN	**Janina**	**0.45**	**42**	⇓*i*PB		**Pb**	**23 55 03.5**	**-1.9**
LKD	**Levkas**	**0.63**	**167**	*e*Pg		**Pb**	**23 55 09.0**	**+0.5**
LKD	**Levkas**	**0.63**	**167**	P		**Pb**	**23 55 09.2**	**+0.6**
KEK	**Kerkira**	**0.65**	**307**	*e*PB		**Pb**	**23 55 09.5**	**+0.7**
SRN	**Sarande**	**0.66**	**327**	*i* Pg		**Pb**	**23 55 09.4**	**+0.3**
SRN				*i* Sg		**Sb**	**23 55 20.2**	**+2.4**
MEV	**Metsovon**	**0.75**	**52**	*e*Pg		**Pb**	**23 55 08.9**	**-1.7**
MEV				*e*Sg		**Sb**	**23 55 19.4**	**-0.9**
MEV	**Metsovon**	**0.75**	**52**	P		**Pb**	**23 55 09.4**	**-1.2**
MEV				S		**Sb**	**23 55 19.4**	**-0.9**
LSK	**Leskovik**	**0.83**	**7**	*i* Pg		**Pb**	**23 55 11.5**	**-0.5**
LSK				*i* Sg		**Sb**	**23 55 24.3**	**+1.6**
TPE	**Tepelena**	**1.03**	**340**	*i* Pg		**Pb**	**23 55 17.1**	**+1.7**
TPE				*i* Sg		**Sb**	**23 55 33.7**	**+5.2**
EVR	**Evrytania**	**1.12**	**111**	*e*PB		**Pb**	**23 55 16.7**	**-0.2**
VLS	**Valsamata**	**1.15**	**175**	*e*PN		**Pn**	**23 55 18.5**	**+0.7**
VLS				*e*SB		**Sb**	**23 55 37.0**	**+5.1**
KBN	**Korca**	**1.32**	**11**	epg?		**Pb**	**23 55 23.4**	**+3.1**
KBN				*i* Sg		**Sb**	**23 55 41.5**	**+4.6**
VLO	**Vlora**	**1.37**	**327**	epn?		**Pn**	**23 55 25.6**	**+4.7**
VLO				*i* Sn		**Sn**	**23 55 47.7**	**+9.0**
KZN	**Kozani**	**1.41**	**45**	*e*PG		**Pn**	**23 55 21.0**	**-0.4**
AGG	**Agios Georgios**	**1.48**	**101**	*e*Pb		**Pb**	**23 55 22.3**	**-0.7**
AGG	**Agios Georgios**	**1.48**	**101**	P		**Pn**	**23 55 23.4**	**+0.9**
AGG				S		**Sn**	**23 55 43.6**	**+2.1**
FNA	**Florina**	**1.62**	**25**	*e*Pb		**Pb**	**23 55 24.6**	**-0.8**
	comp=Z,30nm,0.2s							
FNA	**Florina**	**1.62**	**25**	P		**Pn**	**23 55 25.7**	**+1.2**
FNA				S		**Sn**	**23 55 47.0**	**+2.0**
LIT	**Litokhoron**	**1.74**	**63**	*e*Pb		**Pb**	**23 55 26.3**	**-1.2**
	comp=Z,42nm,0.2s							
LIT				*e*Sb		**Sb**	**23 55 50.5**	**+1.4**
LIT	**Litokhoron**	**1.74**	**63**	P		**Pn**	**23 55 27.0**	**+0.7**
LIT				S		**Sn**	**23 55 49.6**	**+1.4**
OHR	**Ohrid**	**1.81**	**8**	⇑*i*Pn		**Pn**	**23 55 29.7**	**+2.5**
OHR				*i*			23 55 35.6	
OHR				*i* Sg		**Sn**	**23 55 53.8**	**+4.0**
BIA	**Bitola**	**1.82**	**21**	*i* Pn		**Pn**	**23 55 27.7**	**+0.4**
BIA				*i*			23 55 35.1	
BIA				*i* Sg		**Sn**	**23 55 52.6**	**+2.5**
TIR	**Tirane**	**2.07**	**347**	*e*Pn		**Pn**	**23 55 33.2**	**+2.2**
TIR				*i* Sn		**Sn**	**23 55 58.5**	**+1.8**
XOR	**Xorichti**	**2.11**	**88**	*e*Pn		**Pn**	**23 55 32.9**	**+1.3**
XOR	**Xorichti**	**2.11**	**88**	P		**Pn**	**23 55 33.2**	**+1.7**
NEO	**Neokhori**	**2.14**	**90**	*e*PN		**Pn**	**23 55 34.0**	**+2.1**
GRG	**Griva**	**2.21**	**42**	*e*Pn		**Pn**	**23 55 33.6**	**+0.7**
GRG				*e*Sn		**Sn**	**23 55 59.7**	**-0.2**
GRG	**Griva**	**2.21**	**42**	P		**Pn**	**23 55 33.7**	**+0.8**
THE	**Thessaloniki**	**2.32**	**55**	*e*Pn		**Pn**	**23 55 35.2**	**+0.6**
	comp=Z,2.8nm,0.5s							
THE	**Thessaloniki**	**2.32**	**55**	P		**Pn**	**23 55 35.8**	**+1.2**
PHP	**Peshkopia**	**2.36**	**360**	⇓*i*Pn		**Pn**	**23 55 36.5**	**+1.4**
PHP				*i* Sn		**Sn**	**23 56 18.0**	**+14**
ITM	**Ithomi**	**2.43**	**151**	*e*PN		**Pn**	**23 55 40.0**	**+3.9**
PLG	**Polygyros**	**2.52**	**64**	*e*PB		**Pb**	**23 55 37.5**	**-3.3**
PAIG	**Paliouri**	**2.55**	**75**	*e*Pn		**Pn**	**23 55 37.7**	**-0.2**
PAIG	**Paliouri**	**2.55**	**75**	P		**Pn**	**23 55 39.0**	**+1.2**
VAY	**Valandovo**	**2.56**	**38**	*i* Pn		**Pn**	**23 55 38.9**	**+0.9**
VAY				*i* Sg		**Sn**	**23 56 00.0**	**-9.1**
VAY				*i*			23 56 06.9	
KNT	**Kendrikon**	**2.62**	**45**	*e*Pn		**Pn**	**23 55 39.4**	**+0.7**
KNT				*e*Sn		**Sn**	**23 56 11.7**	**+1.3**
SOH	**Sokhos**	**2.67**	**55**	*e*Pn		**Pn**	**23 55 40.1**	**+0.6**
SOH	**Sokhos**	**2.67**	**55**	P		**Pn**	**23 55 41.1**	**+1.5**
NSAL	**Nisos Salamina**	**2.74**	**120**	*e*PG		**Pn**	**23 55 45.3**	**+4.8**
SKO	**Skopje**	**2.75**	**15**	⇑*i*Pn		**Pn**	**23 55 41.8**	**+1.1**
SKO				*i* Pb		**Pb**	**23 55 45.0**	**+0.3**
SKO				*i* Pg		**Pn**	**23 55 46.9**	**+6.2**
SKO				*i*			23 55 49.5	
	comp=Z,0.1nm,0.6s							
SKO				*i*			23 55 53.9	
	comp=Z,0.1nm,0.7s							
SKO				*i* Sn		**Sn**	**23 56 11.8**	**-2.0**
SKO				*i* Sg		**Sn**	**23 56 20.3**	**+6.5**
SKO				Lg			23 56 27.0	
	comp=Z,0.1nm,0.7s							
PUK	**Puka**	**2.75**	**351**	*e*Pn		**Pn**	**23 55 42.4**	**+1.7**
ULC	**Ulcinj**	**2.80**	**341**	⇓*i*Pn		**Pn**	**23 55 41.7**	**+0.3**
ULC				*e*Sn		**Sn**	**23 56 16.0**	**+1.1**
NAIG	**Nisos Aigina**	**2.84**	**122**	*e*PB		**Pb**	**23 55 44.0**	**-2.2**
ATH	**Athens Observa**	**2.88**	**117**	*e*PB		**Pb**	**23 55 44.0**	**-2.9**
OUR	**Ouranopolis**	**2.89**	**68**	*e*Pn		**Pn**	**23 55 42.7**	**+0.1**
OUR	**Ouranopolis**	**2.89**	**68**	P		**Pn**	**23 55 43.2**	**+0.6**
BRT	**Bari-Castellan**	**2.95**	**303**	*e*Pn		**Pn**	**23 55 44.5**	**+1.1**
PTL	**Penteli**	**2.95**	**114**	*e*PB		**Pb**	**23 55 45.5**	**-2.6**
SRS	**Serrai**	**2.99**	**52**	*e*Pn		**Pn**	**23 55 44.0**	**-0.1**
SRS	**Serrai**	**2.99**	**52**	P		**Pn**	**23 55 44.6**	**+0.5**
BCI	**Bajram Curri**	**3.06**	**354**	*e*Pn		**Pn**	**23 55 47.3**	**+2.3**
ORI	**Oriolo Calabro**	**3.19**	**285**	*e*Pn		**Pn**	**23 55 48.3**	**+1.4**
GRI	**Girifalco**	**3.19**	**262**	*e*Pn		**Pn**	**23 55 48.8**	**+1.8**
BUM	**Brajici-Budva**	**3.20**	**339**	⇓*i*Pn		**Pn**	**23 55 47.2**	**+0.1**
BUM				*e*Sn		**Sn**	**23 56 26.3**	**+1.0**
TDS	**Terranova Siba**	**3.21**	**277**	*e*Pn		**Pn**	**23 55 50.4**	**+3.1**
KKB	**Krupnik**	**3.23**	**37**	*i* P		**Pn**	**23 55 48.3**	**+0.8**
TTG	**Podgorica**	**3.24**	**344**	⇓*i*Pn		**Pn**	**23 55 47.9**	**+0.3**
TTG				*e*Sn		**Sn**	**23 56 27.4**	**+1.3**
VLI	**Veliai**	**3.25**	**142**	*e*PN		**Pn**	**23 55 50.5**	**+2.7**
PVY	**Plav**	**3.29**	**354**	⇓*i*Pn		**Pn**	**23 55 49.9**	**+1.5**
PVY				*e*Sn		**Sn**	**23 56 28.7**	**+1.3**
MMB	**Musomiste**	**3.36**	**47**	*i* P		**Pn**	**23 55 49.3**	**-0.1**
HCY	**Herceg Novi**	**3.46**	**335**	⇓*i*Pn		**Pn**	**23 55 50.0**	**-0.7**
HCY				*e*Sn		**Sn**	**23 56 32.4**	**+0.6**
IVA	**Berane**	**3.57**	**353**	⇓*i*Pn		**Pn**	**23 55 53.0**	**+0.6**
IVA				*e*Sn		**Sn**	**23 56 35.5**	**+0.8**
NKY	**Niksic**	**3.66**	**343**	*e*Pn		**Pn**	**23 55 53.4**	**-0.2**
NKY				*e*Sn		**Sn**	**23 56 36.7**	**-0.1**
SOI	**Samo**	**3.67**	**252**	*e*Pn		**Pn**	**23 55 54.4**	**+0.6**
SOI				*e*Sn		**Sn**	**23 56 37.0**	**-0.1**
BRY	**Bratogost**	**3.86**	**339**	⇓*i*Pn		**Pn**	**23 55 55.9**	**-0.6**
BRY				*e*Sn		**Sn**	**23 56 41.9**	**+0.1**
SCLL	**Scilla**	**3.86**	**255**	*e*Pn		**Pn**	**23 55 57.7**	**+1.2**
SCLL				*e*Sn		**Sn**	**23 56 42.1**	**+0.2**
VTS	**Vitosha**	**3.87**	**32**	*i* P		**Pn**	**23 55 58.0**	**+1.4**
SLCN	**Sala Consilina**	**3.87**	**288**	*e*Pn		**Pn**	**23 55 59.4**	**+2.8**
MGR	**Morigerati**	**3.88**	**284**	*e*Pn		**Pn**	**23 55 58.4**	**+1.8**
MTTG	**Motta San Giov**	**3.96**	**252**	*e*Pn		**Pn**	**23 55 59.0**	**+1.1**
RZN	**Rozhen**	**4.01**	**53**	P		**Pn**	**23 55 57.5**	**-1.1**
UPM	**Unac-Piva**	**4.05**	**344**	⇓*i*Pn		**Pn**	**23 55 59.6**	**+0.5**
UPM				*e*Sn		**Sn**	**23 56 46.8**	**0.0**
MRLC	**Muro Lucano**	**4.08**	**292**	*e*Pn		**Pn**	**23 56 01.5**	**+1.9**
PLE	**Pljevlja**	**4.08**	**349**	*e*Pn		**Pn**	**23 55 59.9**	**+0.3**
PLE				*e*Sn		**Sn**	**23 56 47.9**	**+0.3**
STON	**Ston**	**4.12**	**330**	*i* Pn		**Pn**	**23 55 58.5**	**-1.6**
STON				*i* Sn		**Sn**	**23 56 44.7**	**-3.7**
SGO	**Sicignano**	**4.15**	**289**	*e*Pn		**Pn**	**23 56 02.4**	**+1.7**
FG4	**Candela**	**4.20**	**297**	*e*Pn		**Pn**	**23 56 03.4**	**+2.1**
NVSS	**Nova Varos 2**	**4.22**	**352**	⇑*i*Pn		**Pn**	**23 56 00.7**	**-0.9**
NVSS				Sn		**Sn**	**23 56 48.2**	**-2.8**
PLD	**Plovdiv**	**4.25**	**48**	P		**Pn**	**23 56 08.0**	**+6.0**
PGB	**Panagyurishte**	**4.27**	**40**	P		**Pn**	**23 56 03.0**	**+0.7**
RDO	**Rodhopi**	**4.29**	**63**	*e*PN		**Pn**	**23 56 02.0**	**-0.5**
RGNG	**Rignano Grg**	**4.40**	**304**	*e*Pn		**Pn**	**23 56 04.6**	**+0.5**
FG5	**Orsara di Pugl**	**4.43**	**298**	*e*Pn		**Pn**	**23 56 06.2**	**+1.6**
CSSN	**Cassano Irpino**	**4.45**	**292**	*e*Pn		**Pn**	**23 56 07.1**	**+2.3**
MRB1	**Monte Rocchett**	**4.58**	**295**	*e*Pn		**Pn**	**23 56 08.6**	**+1.9**
BOLS	**Boljevac**	**4.64**	**13**	*e*Pn		**Pn**	**23 56 06.9**	**-0.7**
FG2	**Serracapriola**	**4.74**	**303**	*e*Pn		**Pn**	**23 56 09.5**	**+0.6**
DIVS	**Divcibare**	**4.79**	**356**	⇓*i*Pn		**Pn**	**23 56 08.0**	**-1.6**
PZI	**Palazzolo**	**4.90**	**244**	*e*Pn		**Pn**	**23 56 09.4**	**-1.8**
VAM	**Vamos**	**4.91**	**142**	*e*PN		**Pn**	**23 56 11.0**	**-0.4**
SVIS	**Svilajnac**	**5.00**	**6**	*e*Pn		**Pn**	**23 56 08.1**	**-4.5**
SGG	**Gregorio Mates**	**5.09**	**296**	*e*Pn		**Pn**	**23 56 15.7**	**+1.9**
VAE	**Valguarnera**	**5.10**	**251**	Pn		**Pn**	**23 56 13.7**	**-0.3**
	comp=Z,0.6nm,0.3s,baz=73,slow=19,SNR=2.0							
VAE				Sn		**Sn**	**23 57 09.9**	**-3.4**
	comp=Z,2.5nm,0.3s,baz=292,slow=11,SNR=3.5							
CPI2	**Carpinone**	**5.21**	**298**	*e*Pn		**Pn**	**23 56 16.9**	**+1.3**
CII	**Carpvilli**	**5.27**	**299**	*e*Pn		**Pn**	**23 56 18.0**	**+1.5**
MSC	**Monte Massico**	**5.31**	**293**	*e*Pn		**Pn**	**23 56 18.1**	**+1.1**
PVL	**Pavlikeni**	**5.34**	**42**	P		**Pn**	**23 56 16.5**	**-1.0**
IDI	**Anoyia**	**5.35**	**137**	Pn		**Pn**	**23 56 15.6**	**-2.0**
	comp=Z,1.5nm,0.3s,baz=316,slow=17,SNR=25							
IDI				Sn		**Sn**	**23 57 13.4**	**-6.2**
	comp=Z,2.5nm,0.3s,baz=325,slow=16,SNR=2.9							
RNI2	**Rionero Sannit**	**5.37**	**298**	*e*Pn		**Pn**	**23 56 19.4**	**+1.6**
SDI	**San Donato**	**5.61**	**297**	*e*Pn		**Pn**	**23 56 22.4**	**+1.2**
PTQR	**Pietraquaria**	**6.01**	**299**	*e*Pn		**Pn**	**23 56 28.3**	**+1.4**
TERO	**Teramo**	**6.15**	**305**	*e*Pn		**Pn**	**23 56 29.0**	**+0.1**
AQU	**L'Aquila**	**6.15**	**302**	*e*Pn		**Pn**	**23 56 29.9**	**+1.0**
CERT	**Cerreto**	**6.27**	**297**	*e*Pn		**Pn**	**23 56 36.0**	**+5.5**
MNS	**Montasola**	**6.65**	**300**	*e*Pn		**Pn**	**23 56 37.1**	**+1.2**
NVLJ	**Novalja**	**6.69**	**323**	*i* Pn		**Pn**	**23 56 34.6**	**-1.9**
NVLJ				*i* Sn		**Sn**	**23 57 46.9**	**-6.3**
CING	**Cingoli**	**6.80**	**309**	*e*Pn		**Pn**	**23 56 37.0**	**-1.1**
SNTG	**Esanatoglia**	**6.89**	**307**	*e*Pn		**Pn**	**23 56 38.6**	**-0.8**
RHK1	**Bakonya**	**6.99**	**346**	*e*P		**Pn**	**23 56 37.6**	**-3.1**
ARV	**Arcevia**	**7.03**	**309**	*e*Pn		**Pn**	**23 56 39.6**	**-1.6**
MURB	**Monte Urbino**	**7.16**	**306**	*e*Pn		**Pn**	**23 56 43.2**	**+0.2**
FSSB	**Fossombrone**	**7.24**	**310**	*e*Pn		**Pn**	**23 56 42.5**	**-1.5**
BOJS	**Bojanci**	**7.28**	**330**	*e*Pn		**Pn**	**23 56 42.6**	**-2.2**
MLR	**Muntele Rosu**	**7.38**	**32**	Pn		**Pn**	**23 56 46.6**	**+0.5**
	comp=Z,0.6nm,0.3s,baz=234,slow=5.8,SNR=7.6							
MLR				Sn		**Sn**	**23 58 11.2**	**+1.0**
	comp=Z,0.2nm,0.3s,baz=225,slow=19,SNR=1.5							
MLR				LR		LR	23 59 48.7	
	comp=Z,78nm,20.1s,baz=148,slow=39							
RSM	**Repubblica di**	**7.56**	**310**	*e*Pn		**Pn**	**23 56 48.4**	**-0.3**
VISS	**Visnje**	**7.69**	**329**	*e*Pn		**Pn**	**23 56 48.3**	**-2.2**
CRE	**Caprese Michel**	**7.70**	**307**	*e*Pn		**Pn**	**23 56 49.6**	**-1.0**
CEY	**Cerknica**	**7.81**	**327**	*e*Pn		**Pn**	**23 56 50.0**	**-2.1**
CEY				*e*Sn		**Sn**	**23 58 13.8**	**-7.2**
SFI	**Santa Sofia**	**7.91**	**308**	*e*Pn		**Pn**	**23 56 53.7**	**+0.1**
PGD	**Poggio Sodo**	**7.97**	**308**	*e*Pn		**Pn**	**23 56 55.3**	**+0.8**
LJU	**Ljubljana**	**8.01**	**329**	*e*Pn		**P**	**23 56 51.6**	**-3.4**
LJU				*e*Sn		**Sn**	**23 58 15.0**	**-11**
CSNT	**Castellina Chi**	**8.05**	**304**	*e*Pn		**P**	**23 56 55.0**	**-0.4**
JAVS	**Javornik**	**8.09**	**326**	*e*Pn		**P**	**23 56 53.3**	**-2.7**
VMG	**Vicchio**	**8.13**	**308**	*e*Pn		**P**	**23 56 57.4**	**+0.8**
VOY	**Vojsko**	**8.27**	**326**	*e*Pn		**P**	**23 56 55.6**	**-2.9**
VOY				*e*Sn		**Sn**	**23 58 25.3**	**-7.2**
PERS	**Pernice**	**8.29**	**334**	*e*Pn		**P**	**23 56 56.0**	**-2.9**
OBKA	**Obir**	**8.39**	**331**	⇑*i*PN		**P**	**23 56 57.9**	**-2.3**
OBKA				*i* SN		**Sn**	**23 58 28.2**	**-7.3**
ROBS	**Robic**	**8.60**	**326**	*e*Pn		**P**	**23 57 00.2**	**-3.0**
PSZ	**Piszkesteto**	**8.60**	**357**	*e*P		**P**	**23 57 00.4**	**-2.8**
ARSA	**Arzberg**	**8.70**	**337**	⇑*i*PN		**P**	**23 57 01.6**	**-3.0**
ARSA				*i* SN		**Sn**	**23 58 35.0**	**-8.3**
GMNA	**Gemona**	**8.74**	**325**	*e*Pn		**P**	**23 57 02.8**	**-2.3**
PTCC	**Patocco-Chiusa**	**8.79**	**326**	*e*Pn		**P**	**23 57 03.2**	**-2.6**
FVI	**Forni Avoltri**	**9.19**	**325**	*e*Pn		**P**	**23 57 10.6**	**-0.7**
CTI	**Castel Tesino**	**9.34**	**319**	*e*Pn		**P**	**23 57 10.5**	**-2.8**
MOA	**Molln**	**9.63**	**334**	⇓*i*PN		**P**	**23 57 14.1**	**-3.3**
MOA				*i* SN		**Sn**	**23 58 58.2**	**-8.0**
BOB	**Bobbio (Coli)**	**9.83**	**307**	*e*Pn		**P**	**23 57 20.5**	**+0.4**
BRTR	**Keskin Array B**	**10.19**	**84**	Pn		**P**	**23 57 25.6**	**+0.7**
	comp=Z,0.1nm,0.3s,baz=267,slow=10,SNR=5.2							
WTTA	**Wattenberg**	**10.21**	**324**	⇑*i*PN		**P**	**23 57 23.3**	**-2.0**
WTTA				*i* SN		**S**	**23 59 14.6**	**-5.9**
WATA	**Walderalm**	**10.29**	**324**	⇓*i*PN		**P**	**23 57 24.2**	**-2.2**
WATA				*i* SN		**S**	**23 59 15.1**	**-7.3**
SQTA	**Sankt Quirin**	**10.38**	**323**	⇓*i*PN		**P**	**23 57 25.6**	**-2.0**
SQTA				*i* SN		**S**	**23 59 18.7**	**-5.9**
MOTA	**Moosalm**	**10.52**	**323**	⇓*i*PN		**P**	**23 57 27.5**	**-2.0**
MOTA				*i* SN		**S**	**23 59 21.7**	**-6.3**
GERES	**GERESS Array B**	**10.69**	**335**	Pn		**P**	**23 57 28.2**	**-3.6**
	comp=Z,0.3nm,0.3s,baz=156,slow=14,SNR=14							
DAVOX	**Davos**	**10.74**	**317**	Pn		**P**	**23 57 30.3**	**-2.2**
	comp=Z,0.2nm,0.3s,baz=130,slow=18,SNR=2.8							
KHC	**Kasperske Hory**	**10.97**	**336**	*e*PN		**P**	**23 57 32.4**	**-3.3**
KHC				*e*SN		**S**	**23 59 29.4**	**-10**
MBDF	**Montbardon**	**11.52**	**302**	*e*P		**P**	**23 57 34.9**	**-8.3**
LPG	**La Plagne**	**11.86**	**306**	*e*P		**P**	**23 57 42.9**	**-4.9**
	comp=Z,11nm,0.8s							
LPL	**La Plagne**	**11.88**	**306**	*e*P		**P**	**23 57 43.0**	**-5.1**
	comp=Z,2.7nm,0.3s							
CABF	**La Chapelle**	**12.79**	**309**	*e*P		**P**	**23 57 56.7**	**-3.6**
	comp=Z,7.8nm,0.8s							
MOX	**Moxa**	**12.93**	**334**	*i* P		**P**	**23 57 59.9**	**-2.1**
CDF	**Champ du Feu**	**13.14**	**318**	*e*P		**P**	**23 57 59.1**	**-5.8**
	comp=Z,5.5nm,0.8s							
HAU	**Haudompre**	**13.39**	**315**	*e*P		**P**	**23 58 00.6**	**-7.6**
SMF	**Signal de Mont**	**14.19**	**306**	*e*P		**P**	**23 58 13.9**	**-4.7**
	comp=Z,7.2nm,0.9s							
SSF	**Saint Saulge**	**14.57**	**308**	*e*P		**P**	**23 58 18.8**	**-4.8**
	comp=Z,6.0nm,0.7s							
BGF	**Bois d'Agland**	**14.78**	**305**	*e*P		**P**	**23 58 21.4**	**-4.9**
BAIF	**Baives**	**15.74**	**318**	*e*P		**P**	**23 58 33.8**	**-5.0**
	comp=Z,6.3nm,0.7s							
ESDC	**Sonseca Array**	**18.85**	**279**	P		**P**	**23 59 18.7**	**+0.9**
	comp=Z,0.2nm,0.3s,baz=75,slow=11,SNR=5.3							
HFS	**Hagfors**	**21.27**	**351**	P		**P**	**23 59 41.2**	**-2.7**
	comp=Z,2.7nm,0.6s,mb3.8,baz=164,slow=11,SNR=11							
FINES	**FINESS Array B**	**22.42**	**7**	P		**P**	**23 59 52.9**	**-2.5**
	comp=Z,1.0nm,0.3s,mb3.7,baz=176,slow=9.6,SNR=22							
FINES	**FINESS Array B**	**22.42**	**7**	P		**P**	**23 59 52.9**	**-2.5**
EKA	**Eskdalemuir Ar**	**22.48**	**323**	P		**P**	**23 59 55.3**	**-0.8**
	comp=Z,4.6nm,0.7s,mb4.0,baz=123,slow=9.7,SNR=17							
NOA	**NORSAR Array B**	**22.49**	**348**	P		**P**	**23 59 54.1**	**-2.1**
	comp=Z,4.0nm,0.8s,mb3.9,baz=165,slow=10,SNR=9.1							
KAF	**Kangasniemi**	**23.10**	**7**	*ep*		**P**	**00 00 00.3**	**-1.7**
	comp=Z,1.6nm,0.5s,mb3.7							
THR	**Tehran**	**24.47**	**88**	P		**P**	**00 00 16.2**	**+0.6**
	comp=Z,0.9nm,0.5s,mb3.5,baz=307,slow=3.4,SNR=4.5							
JOF	**Joensuu**	**24.52**	**12**	*ep*		**P**	**00 00 11.4**	**-4.4**
	comp=Z,0.4nm,0.3s,mb3.4							
ARCES	**ARCESS Array B**	**30.39**	**4**	P		**P**	**00 01 06.0**	**-3.5**
	comp=Z,1.2nm,0.7s,mb3.7,baz=186,slow=11,SNR=8.4							
BVAR	**Borovoye Array**	**36.42**	**51**	P		**P**	**00 01 59.8**	**-2.0**
	comp=Z,0.4nm,0.4s,mb3.7,baz=288,slow=4.7,SNR=5.0							
MKAR	**Makanchi Array**	**44.75**	**59**	P		**P**	**00 03 07.8**	**-2.6**
	comp=Z,0.9nm,0.3s,mb4.0,baz=280,slow=8.0,SNR=23							
ZAL	**Zalesovo**	**44.95**	**49**	P		**P**	**00 03 09.2**	**-2.9**
	comp=Z,2.1nm,0.5s,mb4.2,baz=108,slow=7.5,SNR=16							
SCHQ	**Schefferville**	**57.59**	**317**	P		**P**	**00 04 43.5**	**-3.9**
	comp=Z,1.7nm,0.7s,mb4.2,baz=356,slow=13,SNR=4.0							
SONM	**Songino Array**	**59.77**	**51**	P		**P**	**00 05 03.5**	**+0.9**
	comp=Z,1.2nm,0.8s,mb4.0,baz=288,slow=4.6,SNR=5.7							
PDAR	**Pinedale Array**	**86.58**	**326**	P		**P**	**00 07 38.4**	**-1.3**
	comp=Z,0.3nm,0.6s,mb3.7,baz=31,slow=5.3,SNR=3.4							
TXAR	**Lajitas Array**	**94.16**	**314**	P		**P**	**00 08 14.9**	**-0.6**
	comp=Z,0.4nm,0.7s,mb4.0,baz=59,slow=4.7,SNR=7.0							
WRA	**Warramunga Arr**	**120.62**	**92**	PKP		PKPdf	00 13 47.6	-3.9
	comp=Z,0.2nm,0.7s,baz=302,slow=0.9,SNR=5.2							
ASAR	**Alice Springs**	**122.33**	**95**	PKP		PKPdf	00 13 50.5	-4.3
	comp=Z,0.4nm,0.8s,baz=300,slow=1.3,SNR=4.9							

DJA 25 00:09:30.2±0.9,**9.06S**×**113.09E,h2km,MD5.5/4,ML4.3/4,**
6C-2D,Error ellipse: s-maj=25.8km s-min=17.9km
az=171.0,South of Jawa

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
KELI	**Kelakatan**	**1.62**	**59**	⇓*e*Pn		**Pn**	**00 09 56.7**	**-3.3**
	407nm,0.2s							
KELI				⇑*e*Sn		Sn	**00 10 18.3**	**-3.4**
INGI	**Ingas**	**2.05**	**83**	⇑*i*Pn		**Pn**	**00 10 05.5**	**-0.5**
	325nm,0.2s							
INGI				⇑*i*Sn		Sn	**00 10 27.4**	**-5.1**
RATI	**Rata**	**2.44**	**82**	⇓*i*Pn		**Pn**	**00 10 08.1**	**-3.6**
	255nm,0.2s							
RATI				⇑*e*Sn		Sn	**00 10 36.4**	**-6.1**
KEDI	**Kedomdong**	**3.04**	**79**	⇑*e*Pn		**Pn**	**00 10 15.1**	**-5.2**
	20nm,0.2s							
KEDI				⇑*i*Sn		S

SDLR *i* S **S** **00 23 34.0 -0.7**
NLC **Nalytchevo** **1.62** **196** P **P** **00 23 10.9 -0.8**
NLC S **S** **00 23 32.5 -2.3**
NLC **Nalytchevo** **1.62** **196** *i* P **P** **00 23 10.7 -1.0**
NLC *i* S **S** **00 23 32.6 -2.2**
GNL **Ganaly** **1.63** **231** *i* P **P** **00 23 13.0 +1.2**
GNL *e*S **S** **00 23 35.3 +0.4**
SPN **Mys Shipunski** **1.64** **181** *i* P **P** **00 23 09.4 -2.5**
SPN *i* S **S** **00 23 30.1 -5.0**
SMAR **Somma** **1.65** **208** *e*P **P** **00 23 12.6 +0.5**
SMAR *e*S **S** **00 23 35.6 +0.2**
AVH **Avacha** **1.67** **209** *e*P **P** **00 23 12.8 +0.6**
AVH *e*S **S** **00 23 34.9 -0.8**
KOK **Koryaka** **1.68** **211** *e*P **P** **00 23 13.1 +0.8**
KOK *e*S **S** **00 23 36.0 +0.2**
UGLR **Uglovaya** **1.70** **206** *e*P **P** **00 23 13.1 +0.6**
UGLR *e*S **S** **00 23 36.8 +0.5**
PET **Petropavlovsk** **1.91** **207** *e*P **P** **00 23 15.3 +0.3**
PET *i* S **S** **00 23 40.1 -0.5**
PET **Petropavlovsk** **1.91** **207**⇓ *e*Pn **P** **00 23 15.1 +0.1**
PET *e*Sn **S** **00 23 39.4 -1.2**
SVLR **Shiveluch** **1.96** **19** *i* P **P** **00 23 16.3 +0.7**
SVLR *e*S **S** **00 23 42.0 +0.4**
KBG **Krutoberegovo** **2.14** **43** *i* P **P** **00 23 17.2 -0.7**
KBG *e*S **S** **00 23 42.3 -3.3**
KBG Smax
4µm,0.7s
KBTR **Krutoberegovo** **2.15** **45** P **P** **00 23 17.1 -0.9**
KBTR S **S** **00 23 42.4 -3.5**
KBTR **Krutoberegovo** **2.15** **45** *e*P **P** **00 23 16.8 -1.2**
KBTR *i* S **S** **00 23 42.0 -3.9**
KRMR **Karymshinskiy** **2.23** **212** *e*P **P** **00 23 18.7 -0.4**
KRMR *e*S **S** **00 23 46.4 -1.3**
RUS **Russkaya** **2.49** **203** *e*P **P** **00 23 21.6 -0.8**
RUS *i* S **S** **00 23 50.9 -2.6**
GRL **Gorelyy** **2.49** **209** *e*P **P** **00 23 23.2 +0.8**
GRL *e*S **S** **00 23 52.5 -1.1**
MIPR **Malaya Ipel'ka** **3.16** **220** *e*P **P** **00 23 32.7 +1.5**
MIPR *e*S **S** **00 24 10.0 +0.9**
BKI **Bering** **3.43** **80** *i* P **P** **00 23 31.0 -3.8**
BKI *i* S **S** **00 24 06.3 -9.2**
BKI Smax
4µm,1.1s
PAU **Pauzhetka** **3.82** **212** *i* P **P** **00 23 40.9 +1.0**
PAU *e*S **S** **00 24 27.7 +3.0**
PAU Smax
500nm,1.0s
SKR **Severo-Kuril's** **4.72** **212** *e*PN **P** **00 23 51.7 -0.2**
SKR pmax pmax
comp=E,40nm,0.4s
SKR pmax pmax
comp=Z,50nm,0.4s
SKR pmax pmax
comp=E,50nm,0.7s
ALID **Alaid** **4.75** **217** *e*P **P** **00 23 53.2 +0.9**
ALID *e*S **S** **00 24 45.7 -1.1**
OSSR **Ossora** **4.81** **19** *e*P **P** **00 23 54.1 +0.9**
MA2 **Magadan** **7.01** **318** *d i*PN **P** **00 24 25.0 +2.2**
MA2 **Magadan** **7.01** **318** *e*Pn **P** **00 24 24.0 +1.2**
comp=E,90nm,0.6s
FX1 **Attu Island--F** **7.97** **98** P **P** **00 24 31.7 -4.0**
comp=E,62nm,0.3s,baz=319,slow=2.6,SNR=210
FX1 S **S** **00 25 54.5 -10**
comp=E,84nm,0.3s,baz=156,slow=21,SNR=17
FX1 **Attu Island--F** **7.97** **98** *e*Pn **P** **00 24 31.5 -4.1**
FX1 *e*Sn **S** **00 25 54.0 -11**
KAMR **Kamenskoye** **8.38** **20** *i* P **P** **00 24 43.7 +2.6**
KAMR *e*S **S** **00 26 12.3 -2.1**
SMY **Shemya** **8.55** **98** *e*Pn **P** **00 24 41.4 -2.1**
comp=E,69nm,0.6s
SMY *e*Sn **S** **00 26 09.2 -10**
SEY **Seymchan** **9.13** **337** *e*PN **P** **00 24 54.9 +3.8**
SEY *e*S **S** **00 26 40.1 +7.6**
SEY pmax pmax
comp=N,30nm,1.2s
SEY pmax pmax
comp=E,30nm,1.2s
SEY pmax pmax
comp=Z,60nm,1.2s
SEY smax
comp=N,300nm,7.9s
SEY smax
comp=E,130nm,8.3s
YSS **Yuzh-Sakhalins** **13.40** **242**⇑ *e*PN **P** **00 25 50.5 +3.4**
YSS **Yuzh-Sakhalins** **13.40** **242** *e*P **P** **00 25 50.3 +3.2**
comp=E,49nm,0.9s
YSS *e* 00 25 54.0
BILL **Bilibino** **13.67** **10** *e*P **P** **00 25 51.8 +1.6**
BILL **Bilibino** **13.67** **10** *e*P **P** **00 25 52.1 +1.9**
comp=E,32nm,0.9s
BILL *e* 00 25 56.4
ASAJ **Asahikawa** **15.52** **234** P **P** **00 26 15.6 +1.8**
comp=E,5.6nm,0.3s,baz=48,slow=8.5,SNR=11
ASAJ **Asahikawa** **15.52** **234** P **P** **00 26 15.6 +1.8**
ASAJ pmax pmax
comp=Z,6.0nm,0.3s
YAK **Yakutsk** **17.39** **307** *d i*P **P** **00 26 36.9 0.0**
YAK **Yakutsk** **17.39** **307** *e*P **P** **00 26 37.1 +0.3**
comp=Z,73nm,0.6s
KLR **Kul'dur** **18.22** **264** *e*P **P** **00 26 47.8 +1.3**
TNA **Tin City** **19.02** **43** *e*P **P** **00 26 54.8 -0.1**
comp=Z,5.9nm,0.9s
CLNS **Chul'man** **19.76** **291** *e*P **P** **00 27 04.4 +1.7**
CLNS *e*S **S** **00 30 42.6 +10**
CLNS pmax pmax
comp=N,9.0nm,0.9s
CLNS pmax pmax
comp=Z,10.0nm,0.9s
CLNS pmax pmax
comp=E,10.0nm,1.0s
CLNS smax
comp=N,180nm,14.3s
CLNS smax
comp=Z,140nm,12.7s
CLNS smax
comp=E,110nm,13.2s
CLNS MLR MLR
comp=Z,100nm,11.0s
CLNS MLR MLR
comp=N,100nm,12.0s
CLNS MLR MLR
comp=E,100nm,13.0s
TIXI **Tiksi** **21.59** **334** *e*P **P** **00 27 20.3 -0.7**
TIXI *e**SP 00 28 03.1
TIXI *e*S **S** **00 31 06.4 -0.4**
TIXI pmax pmax
comp=Z,15nm,0.9s,mb4.4
TIXI **Tiksi** **21.59** **334** P **P** **00 27 18.6 -2.4**
comp=Z,12nm,0.1s,mb5.3
TIXI pP 00 27 46.7
TIXI *e*sP 00 28 02.3
MDJ **Mudanjiang** **22.00** **255** P **P** **00 27 25.0 -0.2**
MDJ AP 00 27 46.3
MDJ XP 00 28 00.1
MDJ AMB AMB
comp=Z,5.0nm,0.7s,mb4.0
MDJ AMB AMB
comp=Z,46nm,4.1s
MAJO **Matsushiro** **23.59** **229** *e*P **P** **00 27 41.3 +0.7**
comp=Z,39nm,0.6s,mb5.1
MAT **Matsushiro** **23.59** **229** P **P** **00 27 41.3 +0.8**
MAT S **S** **00 31 55.6 +14**
MAT **Matsushiro** **23.59** **229** *e*P **P** **00 27 41.0 +0.5**
comp=Z,15nm,0.6s,mb4.7
CN2 **Changchun** **24.85** **258** *e*P **P** **00 27 53.8 +1.4**
HIA **Hailar** **25.16** **274** *e*P **P** **00 27 55.3 0.0**
comp=Z,6.5nm,0.5s,mb4.4
HIA *e*pP pP 00 28 23.1 -0.2
BOD **Bodaibo** **25.38** **296** *e*P **P** **00 27 55.6 -1.6**
BOD *e* pP 00 28 26.2 +0.9
BOD *e* 00 31 25.5
ILAR **Eielson Array** **27.69** **47** P **P** **00 28 17.7 -0.7**
comp=Z,3.5nm,0.8s,mb4.1,baz=268,slow=7.7,SNR=27
ILAR pP pP 00 28 43.6 -3.3
comp=Z,2.0nm,0.8s,baz=266,slow=9.0,SNR=3.4
ILAR LR LR 00 40 09.3
comp=Z,18nm,21.4s,baz=19,slow=38
ILAR **Eielson Array** **27.69** **47** P **P** **00 28 17.7 -0.7**
ILAR *PP pP 00 28 43.6 -3.3
ILAR pmax pmax
comp=Z,4.0nm,0.8s
ILAR pmax pmax
comp=Z,2.0nm,0.8s
ILAR MLR MLR
comp=Z,18nm,21.4s
JNU **Nakatsue** **29.78** **235** P **P** **00 28 39.8 +2.3**
comp=Z,9.4nm,0.8s,mb4.5,baz=83,slow=13,SNR=6.6
JNU LR LR 00 41 12.7
comp=Z,32nm,18.9s,baz=300,slow=37
INK **Inuvik** **32.59** **39** P **P** **00 29 01.7 +0.1**
comp=Z,0.5nm,0.4s,mb3.6,baz=252,slow=2.8,SNR=6.4
INK pP pP 00 29 27.8 -3.2
comp=Z,1.3nm,0.7s,baz=249,slow=8.0,SNR=2.5
INK ScP 00 35 16.3
comp=Z,1.3nm,0.9s,baz=48,slow=1.6,SNR=4.7
INK **Inuvik** **32.59** **39** P **P** **00 29 01.7 +0.1**
INK *PP pP 00 29 27.8 -3.2
INK pmax pmax
comp=Z,1.0nm,0.4s
INK pmax pmax
comp=Z,1.0nm,0.7s
INK pmax pmax
comp=Z,1.0nm,0.9s
INK **Inuvik** **32.59** **39** *e*P **P** **00 29 01.5 -0.1**
INK *e*pP pP 00 29 27.8 -3.2
SONM **Songino Array** **33.55** **281** P **P** **00 29 09.4 -0.6**
comp=Z,1.2nm,0.4s,mb4.0,baz=57,slow=8.9,SNR=10
SONM PcP PcP 00 31 48.2 +0.5
comp=Z,6.4nm,0.8s,baz=66,slow=1.5,SNR=21
SONM ScP 00 35 21.4
comp=Z,1.3nm,0.6s,baz=53,slow=2.7,SNR=7.5
ZAK **Zakamensk** **33.99** **287** *e*P **P** **00 29 13.1 -0.6**
ZAK *e* pP 00 29 43.4 +0.1
SSE **Sheshan** **36.30** **245** P **P** **00 29 33.3 -0.2**
SSE S **S** **00 35 05.8 +2.2**
SSE XS 00 35 52.3
SSE AMB AMB
comp=Z,26nm,0.6s,mb5.0
NJ2 **Nanjing** **36.81** **249** *e*P **P** **00 29 38.9 +1.2**
NJ2 AP pP 00 30 05.1 -2.6
NJ2 XP sP 00 30 17.4 -6.2
NJ2 PP PP 00 31 08.1 +1.8
NJ2 S **S** **00 35 15.0 +3.8**
NJ2 AMB AMB
comp=Z,130nm,8.1s
DLBC **Dease Lake** **37.09** **55** P **P** **00 29 41.5 +1.6**
comp=Z,5.3nm,0.8s,mb4.2,baz=288,slow=14,SNR=11
DLBC pP pP 00 30 08.0 -1.8
comp=Z,4.4nm,0.8s,baz=268,slow=11,SNR=4.6
DLBC **Dease Lake** **37.09** **55** P **P** **00 29 41.5 +1.6**
DLBC pP pP 00 30 08.0 -1.8
RES **Resolute Bay** **41.81** **23** *e*P **P** **00 30 18.5 0.0**
comp=Z,4.4nm,0.8s,mb4.1
RES *e*pP pP 00 30 47.8 -1.1
ZAL **Zalesovo** **41.92** **301** P **P** **00 30 18.2 -1.4**
comp=Z,1.4nm,0.9s,mb3.6,baz=247,slow=14,SNR=5.0
ZAL PcP PcP 00 32 13.1 -0.1
comp=Z,2.1nm,0.3s,baz=20,slow=3.0,SNR=5.6
ZAL ScP 00 35 52.6
comp=Z,1.2nm,0.4s,baz=128,slow=3.5,SNR=4.4
ZAL LR LR 00 49 44.3
comp=Z,99nm,18.7s,baz=306,slow=39
ZAL **Zalesovo** **41.92** **301** P **P** **00 30 18.2 -1.4**
ZAL 00 32 13.1
ZAL pmax pmax
comp=Z,1.0nm,0.9s
ZAL pmax pmax
comp=Z,2.0nm,0.3s
ZAL pmax pmax
comp=Z,1.0nm,0.4s
ZAL MLR MLR
comp=Z,99nm,18.7s
YKA **Yellowknife Ar** **41.97** **44** P **P** **00 30 20.5 +0.6**
comp=Z,1.3nm,0.6s,mb3.8,baz=300,slow=8.0,SNR=33
YKA pP pP 00 30 47.5 -2.8
comp=Z,1.2nm,0.6s,baz=299,slow=8.1,SNR=5.5
YKA sP sP 00 31 02.8 -3.3
comp=Z,1.6nm,0.8s,baz=299,slow=8.2,SNR=3.8
YKA PcP PcP 00 32 13.2 -0.1
comp=Z,0.3nm,0.4s,baz=307,slow=3.5,SNR=7.1
YKA ScP 00 35 52.1
comp=Z,0.8nm,0.6s,baz=302,slow=3.9,SNR=21
YKA **Yellowknife Ar** **41.97** **44** P **P** **00 30 20.5 +0.6**
YKA *PP pP 00 30 47.5 -2.8
YKA *SP sP 00 31 02.8 -3.3
YKA 00 32 13.2
YKA pmax pmax
comp=Z,1.0nm,0.6s
YKA pmax pmax
comp=Z,1.0nm,0.6s
YKA pmax pmax
comp=Z,2.0nm,0.8s
YKA pmax pmax
comp=Z,1.0nm,0.6s
YKA **Yellowknife Ar** **41.97** **44** P **P** **00 30 20.6 +0.6**
YKA pP pP 00 30 47.5 -2.8
YKA sP sP 00 31 02.8 -3.3
YKA PcP PcP 00 32 13.2 -0.1
YKA ScP 00 35 52.1
NVS **Novosibirsk** **42.19** **303** *i* P **P** **00 30 21.7 -0.1**
NVS *i* pP 00 30 50.8 -1.4
NVS pmax pmax
comp=Z,10.0nm,0.9s,mb4.5
NVS pmax pmax
comp=N,6.0nm,1.2s
NVS pmax pmax
comp=E,8.0nm,1.2s
GTA **Gaotai** **42.44** **275** *e*P **P** **00 30 24.4 +0.3**
GTA AMB AMB
comp=Z,7.0nm,0.8s,mb4.3
SPB4 **Spitsbergen Ar** **45.52** **350** *e*P **P** **00 30 48.2 0.0**
SPB4 *e*PcP PcP 00 32 25.8 +0.6
WMQ **Urumqi** **46.44** **288** *e*P **P** **00 30 57.4 +1.5**
KURK **Kurchatov** **46.87** **301**⇓ *e*P **P** **00 30 57.7 -1.6**
KURK *e*pP pP 00 31 28.8 -1.3
KURK *e*PcP PcP 00 32 29.5 -0.8
MKAR **Makanchi Array** **47.45** **294** P **P** **00 31 02.4 -1.4**
comp=Z,3.3nm,0.6s,mb4.2,baz=54,slow=7.0,SNR=29
MKAR pP pP 00 31 33.0 -1.7
comp=Z,4.9nm,1.0s,baz=57,slow=7.5,SNR=5.4
MKAR LR LR 00 51 19.3
comp=Z,33nm,18.7s,baz=230,slow=36
MKAR **Makanchi Array** **47.45** **294** P **P** **00 31 02.4 -1.4**
MKAR *PP pP 00 31 33.0 -1.8
MKAR pmax pmax
comp=Z,3.0nm,0.6s
MKAR pmax pmax
comp=Z,5.0nm,1.0s
MKAR MLR MLR
comp=Z,33nm,18.7s
NEW **Newport** **49.11** **61** P **P** **00 31 17.0 +0.4**
comp=Z,3.3nm,0.8s,mb4.0,baz=320,slow=7.8,SNR=4.2
NEW **Newport** **49.11** **61** P **P** **00 31 17.0 +0.4**
NEW pmax pmax
comp=Z,3.0nm,0.8s
NEW **Newport** **49.11** **61** P **P** **00 31 17.0 +0.4**
BVAR **Borovoye Array** **49.37** **307** P **P** **00 31 17.2 -1.3**
comp=Z,4.0nm,0.5s,mb4.3,baz=63,slow=8.0,SNR=39
BVAR pP pP 00 31 49.2 -0.5
comp=Z,2.1nm,0.6s,baz=53,slow=8.4,SNR=4.2
BVAR PcP PcP 00 32 38.4 -0.9
comp=Z,2.8nm,0.3s,baz=58,slow=3.2,SNR=17
BVAR ScP 00 36 22.8
comp=Z,1.0nm,0.6s,baz=63,slow=3.3,SNR=7.5
BVAR LR LR 00 54 47.3
comp=Z,43nm,18.9s,baz=50,slow=39
BRVK **Borovoye** **49.40** **307** *e*P **P** **00 31 17.4 -1.4**
BRVK *e*pP pP 00 31 49.1 -0.8
BRVK *e*PcP PcP 00 32 38.5 -0.9
ZRNK **Zerenda** **50.06** **308** *e*P **P** **00 31 22.5 -1.2**
ZRNK *e*pP pP 00 31 54.1 -0.9
ZRNK *e*PcP PcP 00 32 40.8 -1.0
LNOR **Lincton Mounta** **50.08** **64** *e*P **P** **00 31 23.9 -0.1**
WALA **Waterton Lakes** **50.20** **59** *e*P **P** **00 31 25.0 +0.1**
comp=Z,4.8nm,0.7s,mb4.2
WALA *e*pP pP 00 31 52.9 -3.2
YBH **Yreka Blue Hor** **50.48** **71** P **P** **00 31 28.9 +1.7**
comp=Z,4.6nm,0.6s,mb4.3,baz=330,slow=4.2,SNR=8.6
YBH pP pP 00 31 56.1 -2.4
comp=Z,6.6nm,0.9s,baz=347,slow=4.3,SNR=5.9
YBH **Yreka Blue Hor** **50.48** **71** P **P** **00 31 28.9 +1.7**
YBH *PP pP 00 31 56.1 -2.4
YBH pmax pmax
comp=Z,5.0nm,0.6s
YBH pmax pmax
comp=Z,7.0nm,0.9s
MSO **Missoula** **51.67** **61** *e*P **P** **00 31 36.1 0.0**
comp=Z,9.5nm,1.3s,mb4.3
MSO *e*pP pP 00 32 03.9 -3.6
ARCES **ARCESS Array B** **51.73** **341** P **P** **00 31 35.3 -0.9**
comp=Z,3.0nm,0.8s,mb4.0,baz=33,slow=7.7,SNR=5.1
ARCES PcP PcP 00 32 47.8 +0.1
comp=Z,2.0nm,0.6s,baz=324,slow=2.1,SNR=6.8
ARCES **ARCESS Array B** **51.73** **341** P **P** **00 31 35.3 -0.9**
ARCES 00 32 47.8
ARCES pmax pmax
comp=Z,3.0nm,0.9s
ARCES pmax pmax
comp=Z,2.0nm,0.6s
CHMT **Chamberlain Mo** **51.96** **60** *e*P **P** **00 31 38.1 -0.2**
CHMT *e*pP pP 00 32 06.6 -3.1
ARU **Arti** **52.19** **316**⇓ *i*P **P** **00 31 38.5 -1.3**
ARU *e* 00 32 48.2
ARU *e* 00 33 37.5
ARU *e*PPP PPP 00 34 44.7 -3.6
ARU *e*S **S** **00 38 54.0 +1.9**
ARU *e*SS SS 00 42 34.1 +4.2
ARU pmax pmax
comp=Z,6.0nm,0.8s,mb4.3
ARU **Arti** **52.19** **316** *e*P **P** **00 31 38.5 -1.4**
comp=Z,4.3nm,0.4s,mb4.4
ARU *e*pP pP 00 32 10.0 -1.3
ARU *e*sP sP 00 32 22.2 -3.9
FCC **Fort Churchill** **52.21** **39** *e*P **P** **00 31 41.0 +1.1**
comp=Z,3.0nm,0.7s,mb4.0
FCC *e*pP pP 00 32 09.4 -2.0
FCC *e*PcP PcP 00 32 48.4 -1.3
SUMG **Summit** **52.33** **7** *e*P **P** **00 31 40.5 -0.2**
OHCM **Honcut** **52.81** **73** *e*P **P** **00 31 45.2 +0.5**
BEKR **Beckwourth** **53.06** **71** *e*P **P** **00 31 47.1 +0.6**
comp=Z,11nm,1.0s,mb4.5
BEKR *e*pP pP 00 32 14.6 -3.4
MCMT **McKenzie Canyo** **53.60** **62** *e*pP pP 00 32 17.7 -4.3
BOZ **Bozeman (W)** **53.65** **61** *e*P **P** **00 31 50.6 -0.1**
comp=Z,2.1nm,0.7s,mb4.0
BOZ *e*pP pP 00 32 19.3 -3.1
HLID **Hailey** **53.67** **64** *e*P **P** **00 31 51.4 +0.5**
comp=Z,2.3nm,0.9s,mb3.9
HLID *e*pP pP 00 32 18.8 -3.7
HLID *e*PcP PcP 00 32 56.7 +1.4
WCN **Washoe City** **53.79** **71** *e*P **P** **00 31 52.6 +0.8**
WCN *e*pP pP 00 32 20.8 -2.7
QLMT **Earthquake Lak** **54.32** **61** P **P** **00 31 56.2 +0.5**
QLMT *e*pP pP 00 32 24.4 -2.9
CMB **Columbia Colle** **54.34** **73** *e*P **P** **00 31 56.7 +0.8**
comp=Z,5.3nm,1.0s,mb4.2
AAK **Ala-Archa** **54.36** **295** *e*P **P** **00 31 53.9 -2.1**
comp=Z,2.1nm,0.8s,mb3.9
AAK *e*pP pP 00 32 21.3 -6.3
BMN **Battle Mountai** **54.38** **69** *e*P **P** **00 31 56.7 +0.6**
comp=Z,7.9nm,0.9s,mb4.4
BMN *e*pP pP 00 32 24.7 -3.1
NVAR **Mina Array Bea** **55.21** **71** P **P** **00 32 03.1 +0.9**
comp=Z,7.4nm,0.7s,mb4.5,baz=308,slow=5.8,SNR=57
NVAR pP pP 00 32 30.9 -3.0
comp=Z,9.8nm,0.8s,baz=308,slow=6.1,SNR=15
TPH **Tonopah** **56.05** **71** *e*P **P** **00 32 09.0 +0.7**
comp=Z,12nm,1.1s,mb4.6
TPH *e*pP pP 00 32 36.6 -3.5
JOF **Joensuu** **56.08** **335** *e*p **P** **00 32 05.4 -2.7**
comp=Z,0.6nm,0.4s,mb3.8
JOF **Joensuu** **56.08** **335** *e*P **P** **00 32 05.4 -2.7**
JOF pmax pmax
comp=Z,1.0nm,0.4s,mb4.0
HWUT **Hardware Ranch** **56.54** **64** *e*P **P** **00 32 12.5 +0.8**
comp=Z,12nm,1.0s,mb4.7
HWUT *e*pP pP 00 32 41.0 -2.6
BW06 **Boulder Array** **56.74** **62** *e*P **P** **00 32 14.0 +0.9**
comp=Z,7.3nm,1.0s,mb4.5
BW06 *e*pP pP 00 32 42.2 -2.8
PDAR **Pinedale Array** **56.74** **62** P **P** **00 32 13.6 +0.5**
comp=Z,3.5nm,0.6s,mb4.4,baz=334,slow=3.4,SNR=29
PDAR pP pP 00 32 42.0 -3.0
comp=Z,2.9nm,0.8s,baz=333,slow=3.3,SNR=6.6
CTU **Camp Tracy** **57.10** **65** P **P** **00 32 15.6 0.0**
KAF **Kangasniemi** **57.97** **336** *e*p **P** **00 32 19.7 -1.7**
comp=Z,0.6nm,0.3s,mb3.9,baz=30,slow=6.5
KAF **Kangasniemi** **57.97** **336** *e*P **P** **00 32 19.7 -1.7**
KAF pmax pmax
comp=Z,1.0nm,0.3s,mb4.1
MSU **Marysvale** **58.46** **67** *e*P **P** **00 32 26.4 +1.2**
MSU *e*pP pP 00 32 54.9 -2.4
CMAR **Chiang Mai Arr** **58.52** **257** P **P** **00 32 25.9 0.0**
comp=Z,4.5nm,1.1s,mb4.2,baz=21,slow=6.3,SNR=6.2
CMAR **Chiang Mai Arr** **58.52** **257** P **P** **00 32 25.9 0.0**
CMAR pmax pmax
comp=Z,5.0nm,1.1s
FINES **FINESS Array B** **58.61** **336** P **P** **00 32 24.8 -1.1**
comp=Z,2.7nm,0.6s,mb4.3,baz=33,slow=8.7,SNR=29
FINES LR LR 01 03 33.6
comp=Z,37nm,18.4s,baz=155,slow=42
SRU **San Rafael** **58.90** **65** *e*P **P** **00 32 28.8 +0.6**
SRU *e*pP pP 00 32 57.5 -2.9
KKN **Kakani** **59.16** **275** *e*P **P** **00 32 28.5 -1.7**
comp=Z,12nm,0.7s,mb4.8
PKI **Pulchoki** **59.26** **275** *e*P **P** **00 32 27.0 -3.8**
comp=Z,5.6nm,0.6s,mb4.6
GKN **Gorkha** **59.38** **276** *e*P **P** **00 32 29.8 -1.9**
KOLN **Koldanda** **60.15** **277** *e*P **P** **00 32 34.8 -2.1**
comp=Z,7.8nm,0.8s,mb4.6
ISCO **Idaho Springs** **60.94** **62** *e*P **P** **00 32 43.0 +0.8**
comp=Z,8.4nm,1.2s,mb4.5
ISCO *e*pP pP 00 33 12.0 -2.5
OBN **Obninsk** **61.13** **327** *de*P **P** **00 32 34.8 -8.4**
OBN *e*S **S** **00 40 39.8 -10**
OBN pmax pmax
comp=Z,19nm,1.7s,mb4.7
NB2 **NORSAR Subarra** **61.96** **343** P **P** **00 32 47.3 -1.4**
comp=Z,1.0nm,0.6s,mb3.8,baz=20,slow=6.2
NOA **NORSAR Array B** **61.96** **343** P **P** **00 32 47.5 -1.2**
comp=Z,1.9nm,0.8s,mb4.0,baz=20,slow=6.6,SNR=7.0
NOA **NORSAR Array B** **61.96** **343** P **P** **00 32 47.5 -1.2**
NOA pmax pmax
comp=Z,2.0nm,0.8s
HFS **Hagfors** **62.38** **342** P **P** **00 32 49.6 -1.9**
comp=Z,1.7nm,0.5s,mb4.1,baz=34,slow=5.3,SNR=13
HFS **Hagfors** **62.38** **342** P **P** **00 32 49.6 -1.9**
HFS pmax pmax
comp=Z,2.0nm,0.5s
ANMO **Albuquerque** **64.17** **66** *e*P **P** **00 33 04.0 +0.5**
comp=Z,5.2nm,1.0s,mb4.3
SCHQ **Schefferville** **64.20** **28** P **P** **00 33 02.7 -0.6**
comp=Z,2.1nm,0.6s,mb4.2,baz=124,slow=19,SNR=12
LAZ **Ladron** **64.22** **67** *e*P **P** **00 33 05.1 +1.3**
LAZ *e*pP pP 00 33 33.9 -2.6
MNTX **Cornudas Mount** **67.24** **67** *e*P **P** **00 33 23.5 +0.3**
comp=Z,19nm,1.4s,mb4.7
MNTX *e*pP pP 00 33 52.6 -3.4
MNTX *e*sP sP 00 34 05.3 -5.5
GDL2 **Guadalupe Moun** **67.40** **66** *e*P **P** **00 33 24.9 +0.8**
WMOK **Wichita Mounta** **64.30** **60** *e*P **P** **00 33 29.2 -0.4**
comp=Z,9.8nm,1.0s,mb4.5
ZEI **Tsey** **68.73** **315** *e*P **P** **00 33 34.0 +1.9**
ZEI *e* pP 00 34 08.0 +2.8
ZEI pmax pmax
comp=Z,50nm,5.0s
EKA **Eskdalemuir Ar** **69.44** **350** P **P** **00 33 36.0 -0.3**
comp=Z,1.9nm,0.8s,mb3.9,baz=22,slow=4.9,SNR=6.1
EKA **Eskdalemuir Ar** **69.44** **350** P **P** **00 33 36.0 -0.2**
EKA pmax pmax
comp=Z,2.0nm,0.8s
SOC **Sochi** **69.72** **318** *e*P **P** **00 33 38.6 +0.4**
SOC *e* 00 36 10.9
SOC *e*SS SS 00 47 06.3 -0.8
SOC *e*SSS SSS 00 50 07.1 -5.9
SOC pmax pmax
comp=Z,5.0nm,0.5s,mb4.5
SOC pmax pmax
comp=N,8.0nm,0.7s
SOC pmax pmax
comp=E,20nm,0.9s
TXAR **Lajitas Array** **70.01** **67** P **P** **00 33 41.0 +0.8**
comp=E,6.8nm,0.6s,mb4.6,baz=298,slow=4.7,SNR=109
TXAR pP pP 00 34 09.7 -3.7
comp=E,2.8nm,0.6s,baz=304,slow=4.3,SNR=5.8
MIAR **Mount Ida** **71.03** **57** *e*P **P** **00 33 45.9 -0.3**
comp=E,3.3nm,0.9s,mb4.1
MIAR *e*pP pP 00 34 14.7 -4.7
JCT **Junction City** **71.15** **64** *e*P **P** **00 33 47.3 +0.4**
comp=E,11nm,1.0s,mb4.5
JCT *e*pP pP 00 34 15.4 -4.8
THR **Tehran** **71.17** **306** LR LR 01 05 32.6
comp=E,16nm,20.8s,baz=60,slow=36
VRAC **Vranov** **71.89** **336** P **P** **00 33 51.5 +0.5**

comp=E,1.7nm,0.9s,mb3.8,baz=13,slow=6.3,SNR=4.0
GERES GERESS Array B 72.99 338 P **P** **00 33 57.5 +0.1**
comp=E,0.5nm,0.5s,mb3.5,baz=45,slow=5.7,SNR=7.4
GERES pP pP 00 34 29.9 -0.9
comp=E,0.8nm,0.8s,baz=18,slow=4.2,SNR=2.8
GERES GERESS Array B 72.99 338 P **P** **00 33 57.5 +0.1**
GERES *PP pP 00 34 29.9 -0.9
GERES pmax pmax
comp=Z,1.0nm,0.5s
GERES pmax pmax
comp=Z,1.0nm,0.8s
BAIF Baives 73.64 344 *e*P **P** **00 34 00.1 -1.0**
comp=Z,2.4nm,0.5s,mb3.9
CDF Champ du Feu 74.70 342 *e*P **P** **00 34 06.6 -0.7**
comp=Z,7.0nm,0.8s,mb4.0
MEZF Maizieres J'vi 75.01 343 *e*P **P** **00 34 08.4 -0.6**
HAU Haudompre 75.26 342 *e*P **P** **00 34 09.5 -1.0**
HAU *e*R
comp=Z,35nm,19.2s
BRTR Keskin Array B 75.35 320 P **P** **00 34 11.7 +0.6**
comp=Z,1.3nm,0.9s,mb3.5,baz=45,slow=2.9,SNR=4.9
BRTR pP pP 00 34 43.6 -1.2
comp=Z,1.3nm,0.8s,baz=44,slow=3.9,SNR=3.8
BRTR LR LR 01 08 33.1
comp=Z,19nm,20.4s,baz=320,slow=37
HINF Hinteralfeld 75.36 342 *e*P **P** **00 34 10.0 -1.0**
LRAL Lakeview Retre 75.39 53 *e*P **P** **00 34 10.7 -0.8**
LRAL *e*pP pP 00 34 40.5 -4.7
CTA Charters Tower 75.45 193 P **P** **00 34 12.9 +0.8**
CTA pmax pmax
comp=Z,9.9nm,0.5s,mb4.2,baz=8.5,slow=8.7,SNR=4.4
CTA Charters Tower 75.45 193 P **P** **00 34 12.9 +0.8**
CTA pmax pmax
comp=Z,3.0nm,0.5s
FLN La Foliniere 75.59 347 *e*P **P** **00 34 11.0 -1.3**
comp=Z,2.8nm,0.5s,mb3.9
FLN *e*R
comp=Z,35nm,20.2s
LDF La Druitiere 75.70 347 *e*P **P** **00 34 11.7 -1.2**
GRR Gorron 76.00 347 *e*P **P** **00 34 13.6 -1.0**
comp=Z,3.1nm,0.4s,mb4.0
SGMF Saint Gilles 76.35 348 *e*P **P** **00 34 16.1 -0.4**
comp=Z,13nm,0.8s,mb4.3
ROSF Rostrenen 76.35 349 *e*P **P** **00 34 15.7 -0.9**
LOR Lormes 76.40 344 *e*P **P** **00 34 16.0 -0.9**
comp=Z,7.6nm,0.8s,mb4.1
LOR *e*R
comp=Z,37nm,19.5s
CABF La Chapelle 76.66 342 *e*P **P** **00 34 17.6 -0.7**
SSF Saint Saulge 76.66 344 *e*P **P** **00 34 17.4 -0.9**
comp=Z,3.8nm,0.7s,mb3.8
QUIF Quistinic 76.75 349 *e*P **P** **00 34 17.6 -1.2**
AVF Avril sur Loir 76.95 344 *e*P **P** **00 34 19.1 -0.9**
comp=Z,3.5nm,0.6s,mb3.8
SMF Signal de Mont 77.01 343 *e*P **P** **00 34 19.5 -0.8**
BGF Bois d'Agland 77.26 344 *e*P **P** **00 34 21.1 -0.6**
WB2 Warramunga Arr 77.56 205 *e*P **P** **00 34 24.6 +0.7**
WRA Warramunga Arr 77.57 205 P **P** **00 34 24.8 +0.9**
comp=Z,2.0nm,0.5s,mb4.0,baz=18,slow=6.0,SNR=48
WRA pP pP 00 34 55.9 -1.9
comp=Z,1.1nm,0.6s,baz=18,slow=6.1,SNR=5.9
WRA Warramunga Arr 77.57 205 P **P** **00 34 24.8 +0.9**
WRA *PP pP 00 34 55.9 -1.9
WRA pmax pmax
comp=Z,2.0nm,0.5s
WRA pmax pmax
comp=Z,1.0nm,0.6s
LPL La Plagne 77.59 341 *e*P **P** **00 34 24.1 +0.5**
comp=Z,13nm,0.9s,mb4.2
LPG La Plagne 77.61 341 *e*P **P** **00 34 24.4 +0.8**
comp=Z,16nm,1.1s,mb4.3
MFF Saint Martin d 77.66 346 *e*P **P** **00 34 23.4 -0.5**
comp=Z,9.1nm,0.9s,mb4.1
FITZ Fitzroy Crossi 78.27 213 P **P** **00 34 28.2 +0.4**
comp=Z,3.0nm,0.8s,mb4.0,baz=83,slow=4.1,SNR=5.9
ORIF Oris-en-Rattie 78.33 342 *e*P **P** **00 34 27.0 -0.6**
ORIF *e*R
comp=Z,31nm,19.5s
RJF Les Rejaudoux 78.69 345 *e*P **P** **00 34 28.9 -0.6**
RJF *e*R
comp=Z,37nm,17.2s
CAF Calviac 78.97 344 *e*P **P** **00 34 31.2 +0.1**
SBF Sospel 79.05 340 *e*P **P** **00 34 32.4 +0.9**
comp=Z,20nm,0.9s,mb4.4
SMRF Simiane la Rot 79.30 342 *e*P **P** **00 34 31.6 -1.2**
comp=Z,28nm,1.4s,mb4.4
FRF La Foret Royal 79.50 341 *e*P **P** **00 34 33.3 -0.6**
LMR La Mourre 79.74 341 *e*P **P** **00 34 35.1 -0.2**
comp=Z,29nm,1.2s,mb4.5
MTLF Montolieu 80.49 344 *e*P **P** **00 34 39.6 +0.3**
comp=Z,3.5nm,0.8s,mb3.8
ASF Jabal al Asfar 80.65 314 P **P** **00 34 40.9 +0.6**
comp=Z,2.8nm,0.9s,mb3.9,baz=227,slow=4.1,SNR=4.6
EPF Esparros 81.09 345 *e*P **P** **00 34 43.4 +1.0**
comp=Z,7.1nm,0.9s,mb4.0
ASAR Alice Springs 81.25 204 P **P** **00 34 45.2 +1.5**
comp=Z,1.9nm,0.5s,mb4.0,baz=15,slow=5.3,SNR=26
ASAR pP pP 00 35 15.6 -2.2
comp=Z,3.7nm,0.8s,baz=8.2,slow=4.1,SNR=8.3
ETSF Etsaut 81.35 346 *e*P **P** **00 34 43.5 -0.3**
MTE Manteigas 84.65 351 *e*P **P** **00 35 02.1 +1.6**
ESDC Sonseca Array 84.97 348 P **P** **00 35 03.4 +1.3**
comp=Z,6.0nm,0.8s,mb4.4,baz=4.0,slow=5.2,SNR=20
ESDC pP pP 00 35 35.5 -1.1
comp=Z,1.3nm,0.5s,baz=4.5,slow=4.5,SNR=5.5
EVO Evora 86.54 351 *e*P **P** **00 35 10.2 +0.4**
comp=Z,4.4nm,0.7s,mb4.1
QSPA South Pole Qui 144.48 180 *e*PKP PKPdf 00 42 00.2 +0.5
TRQA Tornquist 147.14 77 *e*PKPbc PKPdf 00 42 10.2 +4.8
VNA3 Neumayer Olymp 162.83 191⇑*i*P PKPdf 00 42 27.5 +2.3
VNA3 *e* 00 43 18.4
VNA3 *e* 00 47 01.4
VNA2 Neumayer--Watz 162.84 194⇑*i*P PKPdf 00 42 28.8 +3.6
VNA2 *e* 00 43 19.6
VNA2 *e* 00 47 00.3

NEIC ***25*** *00:24:03.2, 34.68S×70.80W, h105km, MD3.5(GUC), After GUC.*

GUC 25 00:24:03.2±0.6, 34.68S×70.80W, h105km±2km, MD3.5, ML3.3, 3C-5D, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
SFDO	**San Fernando**	**0.19**	**290**	⇓*i*P		P	00 24 18.2	+0.2
SFDO				*i* S		S	00 24 29.6	+0.4
CICH	**Cipreses**	**0.47**	**41**	⇓*i*P		P	00 24 19.5	0.0
CICH				*i* S		S	00 24 31.5	-0.1
CACH	**El Canelo**	**0.58**	**16**	⇑*i*P		P	00 24 20.6	+0.4
CACH				*i* S		S	00 24 33.9	+0.8
CHCH	**Chadas Angostu**	**0.75**	**9**	*e*P		P	00 24 21.7	0.0
CHCH				*i* S		S	00 24 36.0	+0.4
LNV	**Longovilo**	**0.88**	**325**	⇓*i*P		P	00 24 23.1	0.0
LNV				*i* S		S	00 24 37.9	0.0
LMEL	**Las Melosas**	**0.96**	**31**	⇓*i*P		P	00 24 24.4	+0.5
LMEL				*i* S		S	00 24 40.2	+0.8
LMEL				AMP			00 24 44.0	
	comp=N,782nm,0.1s							
TALC	**Talca**	**0.99**	**224**	⇑*i*P		P	00 24 23.9	-0.2
TALC				*i* S		S	00 24 39.7	-0.3
TALC				AMP			00 24 40.4	
	comp=N,3μm,0.6s							
TACH	**Talagante**	**1.03**	**353**	⇑*i*P		P	00 24 24.9	+0.4
TACH				*i* S		S	00 24 40.8	+0.1
PCH	**Pirque**	**1.08**	**13**	*e*P		P	00 24 25.1	-0.1
PCH				*i* S		S	00 24 41.7	+0.1
ANTU	**Antumapu**	**1.12**	**7**	*i* P		P	00 24 25.8	+0.2
ANTU				*i* S		S	00 24 42.6	+0.2
RCDM	**Rinconada Maip**	**1.19**	**360**	*e*P		P	00 24 26.2	-0.3
RCDM				*i* S		S	00 24 43.8	-0.1
RCDM				AMP			00 24 45.6	
	comp=E,1μm,0.1s							
FSR	**Penalolen**	**1.22**	**11**	*e*P		P	00 24 26.9	+0.1
FSR				*i* S		S	00 24 44.7	+0.1
FSR				AMP			00 24 45.5	
	comp=E,678nm,0.4s							
CLCH	**Cerro Calan**	**1.30**	**10**	*e*P		P	00 24 27.9	+0.2
CLCH				*i* S		S	00 24 46.2	+0.1
CLCH				AMP			00 24 48.5	
	comp=E,486nm,0.1s							
LCCH	**Las Cruces**	**1.36**	**332**	*e*P		P	00 24 28.6	+0.1
FCH	**Farellones**	**1.41**	**17**	⇓*i*P		P	00 24 29.5	+0.4
FCH				*i* S		S	00 24 49.0	+0.6
FCH				AMP			00 24 51.2	
	comp=N,364nm,0.2s							
PEL	**Peldehue**	**1.54**	**3**	*e*P		P	00 24 30.3	-0.3
PEL				*i* S		S	00 24 51.4	+0.3
PEL				AMP			00 24 53.9	
	comp=N,506nm,0.4s							
PACH	**Papudo**	**2.20**	**346**	*e*P		P	00 24 39.1	-0.1
PTCH	**Petorca**	**2.41**	**357**	*i* P		P	00 24 41.9	-0.2
PTCH				*i* S		S	00 25 10.9	-0.2

IDC ***25*** *00:25:03.2±1.5, 5.13S×150.24E, mb3.9/5, mb1 4.2/5, mb1mx3.9/13, Error ellipse: s-maj=73.0km s-min=24.2km az=123.0*
NEIC ***25*** *00:25:13.8±2.5, 5.02S×149.91E, h76km±22km, mb4.0/3, Error ellipse: s-maj=37.0km s-min=17.6km az=119.0*

ISC 25 00:25:12.0±3.7, 5.0S±0.2×149.9E±0.3, h72km±32km, n11, σ0§53/12, mb3.7/7, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
PMG	**Port Moresby**	**5.11**	**212**	*e*Pn		**P**	**00 26 28.2**	**+0.5**
PMG				*e*Sn		**S**	**00 27 25.1**	**-0.9**
KAKA	**Kakadu**	**18.87**	**245**	*e*P		**P**	**00 29 37.1**	**+7.9**
	9.7nm,0.9s							
WB2	**Warramunga Arr**	**21.16**	**224**	*e*P		**P**	**00 29 54.0**	**+0.6**
WRA	**Warramunga Arr**	**21.17**	**224**	P		**P**	**00 29 54.0**	**+0.6**
	0.9nm,0.5s,mb3.4,baz=53,slow=10,SNR=11							
AS12	**Alice Springs**	**24.09**	**218**	*e*P		**P**	**00 30 22.5**	**+0.5**
	2.4nm,0.5s,mb3.8							
ASAR	**Alice Springs**	**24.09**	**218**	P		**P**	**00 30 21.5**	**-0.5**
	2.3nm,0.5s,mb3.8,baz=53,slow=9.1,SNR=29							
FITZ	**Fitzroy Crossi**	**27.02**	**239**	*e*P		**P**	**00 30 54.7**	**+5.1**
	2.9nm,0.3s,mb4.3							
VNDA	**Vanda**	**72.71**	**177**	*e*P		**P**	**00 36 33.7**	**0.0**
	0.4nm,0.7s,mb3.4							
MKAR	**Makanchi Array**	**78.61**	**320**	P		**P**	**00 37 07.2**	**-0.5**
	1.0nm,1.0s,mb3.6,baz=121,slow=8.4,SNR=4.0							
ILAR	**Eielson Array**	**83.49**	**23**	P		**P**	**00 37 33.0**	**+0.1**
	2.2nm,0.7s,mb4.1,baz=252,slow=5.2,SNR=19							
YKA	**Yellowknife Ar**	**96.99**	**28**	P		**P**	**00 38 36.1**	**-0.5**
	0.1nm,0.6s,mb3.4,baz=270,slow=4.6,SNR=5.1							

HEL ***25*** *00:40:02.3±0.3, 59.41N×27.57E, ML1.8, ML2.3(NAO), Explosion*
NAO ***25*** *00:40:02.9±1.9, 59.48N×27.33E, ML2.3*
IDC ***25*** *00:40:05.2±2.0, 59.63N×27.47E, mb1 3.2/3, mb1mx2.9/21, ML3.3/2, Error ellipse: s-maj=20.9km s-min=13.8km az=99.0*
BER ***25*** *00:40:06.4±4.6, 59.56N×27.36E, h10km±21km, ML2.3(NAO)*

ISC 25 00:39:58.8±1.3, 59.57N±0.05×27.9E±0.2, n13, σ1§33/18, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
VSU	**Vasula**	**1.27**	**210**	*e*PN		**Pn**	**00 40 24.1**	**+0.3**
VSU				*e*			00 40 44.7	
PVF	**Pernaja**	**1.43**	**314**	*e*P		**Pb**	**00 40 27.6**	**+1.6**
PVF				*e*S		**Sb**	**00 40 44.6**	**-0.1**
MEF	**Metsahovi**	**1.90**	**292**	*e*P		**Pn**	**00 40 34.8**	**+2.0**
MEF				*e*S		**Sn**	**00 40 57.5**	**-0.1**
FIA0	**FINESS Array S**	**2.09**	**335**	*e*P		**Pn**	**00 40 38.9**	**+3.3**
FIA0				*e*SG		**Sg**	**00 41 09.2**	**+0.7**
FIA0				MSG			00 41 09.3	
	comp=Z,4.9nm,0.2s							
FIA0	**FINESS Array S**	**2.09**	**335**	Pn		**Pn**	**00 40 38.9**	**+3.3**
	baz=153,slow=16							
FIA0				Lg			00 41 07.6	
	baz=162,slow=28							
FINES	**FINESS Array B**	**2.09**	**335**	Pn		**Pn**	**00 40 38.9**	**+3.4**
	comp=Z,2.0nm,0.3s,baz=154,slow=16,SNR=84							
FINES				Lg			00 41 06.8	
	comp=Z,2.2nm,0.3s,baz=151,slow=29,SNR=7.8							
KAF	**Kangasniemi**	**2.67**	**343**	*e*P		**Pn**	**00 40 48.1**	**+4.2**
SUF	**Sumiainen**	**3.28**	**346**	*e*SG		**Sg**	**00 41 47.0**	**-1.0**
SUF				MSG			00 41 48.1	
	comp=Z,2.1nm,0.2s							
HFS	**Hagfors**	**7.19**	**281**	Pn		**Pn**	**00 41 44.6**	**-3.2**
	baz=105,slow=12							
HFS				Sn		**Sn**	**00 43 01.2**	**-10**
	baz=101,slow=28							
HFS				Lg			00 43 38.4	
	baz=93,slow=37							
HFS	**Hagfors**	**7.19**	**281**	Pn		**Pn**	**00 41 45.6**	**-2.3**
	comp=Z,0.0nm,0.3s,baz=111,slow=11,SNR=3.2							
HFS				Lg			00 43 38.9	
	comp=Z,0.1nm,0.3s,baz=87,slow=31,SNR=7.1							
NOA	**NORSAR Array B**	**8.43**	**287**	Pn		**P**	**00 42 02.8**	**-2.3**
	comp=Z,0.2nm,0.3s,baz=98,slow=11,SNR=2.8							
NOA				Lg			00 44 20.6	
	comp=Z,0.4nm,0.3s,baz=120,slow=12,SNR=3.4							
ARA0	**ARCESS Array S**	**10.06**	**355**	Pn		**P**	**00 42 27.1**	**-0.4**
	baz=170,slow=16							
ARA0				Sn		**S**	**00 44 17.1**	**-5.3**
	baz=169,slow=28							
ARA0				Lg			00 45 17.2	
	baz=179,slow=37							
ARCES	**ARCESS Array B**	**10.06**	**355**	Pn		**P**	**00 42 27.3**	**-0.2**
	comp=Z,0.3nm,0.3s,baz=171,slow=14,SNR=14							

IDC ***25*** *01:10:50.5±2.2, 38.21S×73.63W, mb3.9/4, mb1 4.0/6, mb1mx3.9/14, ML4.3/2, MS3.5/3, Ms1 3.5/3, ms1mx3.2/17, Error ellipse: s-maj=51.8km s-min=38.5km az=15.0*
NEIC ***25*** *01:10:52.2, 37.71S×73.79W, h29km, ML4.3(GUC), After GUC.*
GUC ***25*** *01:10:52.2±0.7, 37.71S×73.79W, h29km±3km, ML4.3*

ISC 25 01:10:50.9±0.9, 37.73S±0.03×73.9W±0.1, h29km, n35, σ1§09/41, mb3.9/4, MS3.7/1, 1C-10D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
TMCH	**Temuco**	**1.44**	**136**	*e*P		**Pn**	**01 11 15.1**	**-0.3**
TMCH				*i* S		**Sn**	**01 11 32.7**	**-0.7**
TMCH				AMP			01 11 43.2	
	comp=E,3μm,0.8s							
COCH	**Cobquecura**	**1.82**	**30**	*e*P		**Pn**	**01 11 21.9**	**+1.0**
COCH				*i* S		**Sn**	**01 11 44.3**	**+1.1**
COCH				AMP			01 11 57.5	
	comp=N,2μm,0.5s							
CCHI	**Chillan**	**1.84**	**53**	*e*P		**Pn**	**01 11 21.9**	**+0.8**
CCHI				*i* S		**Sn**	**01 11 44.7**	**+1.1**
CCHI				AMP			01 11 55.7	
	comp=N,5μm,0.4s							
CCHI				AMP			01 11 56.0	
	comp=N,8μm,0.3s							
VLCH	**Valdivia**	**2.14**	**166**	*e*P		**Pn**	**01 11 24.5**	**-1.0**
VLCH				*i* S		**Sn**	**01 11 51.0**	**-0.3**
VLCH				AMP			01 12 07.7	
	comp=E,4μm,0.6s							
TALC	**Talca**	**2.95**	**39**	*e*P		**Pn**	**01 11 36.4**	**-0.7**
TALC				*i* S		**Sn**	**01 12 11.5**	**-0.4**
TALC				AMP			01 12 30.4	
	comp=E,3μm,0.5s							
SFDO	**San Fernando**	**3.88**	**38**	⇑*i*P		**Pn**	**01 11 50.8**	**+0.5**
CICH	**Cipreses**	**4.42**	**41**	*e*P		**Pn**	**01 11 58.6**	**+0.8**
CHCH	**Chadas Angostu**	**4.61**	**36**	⇓*i*P		**Pn**	**01 12 00.6**	**0.0**
CHCH				*i* S		**Sn**	**01 12 53.1**	**-0.8**
TACH	**Talagante**	**4.72**	**32**	⇓*i*P		**Pn**	**01 12 02.1**	**-0.1**
LMEL	**Las Melosas**	**4.90**	**39**	*e*P		**Pn**	**01 12 04.3**	**-0.4**
RCDM	**Rinconada Maip**	**4.92**	**32**	*e*P		**Pn**	**01 12 04.4**	**-0.5**
PCH	**Pirque**	**4.94**	**35**	*e*P		**Pn**	**01 12 05.0**	**-0.2**
CLCH	**Cerro Calan**	**5.12**	**33**	*e*P		**Pn**	**01 12 07.6**	**-0.1**
CLCH				*i* S		**Sn**	**01 13 04.3**	**-2.2**
PEL	**Peldehue**	**5.27**	**31**	*e*P		**Pn**	**01 12 09.2**	**-0.7**
FCH	**Farellones**	**5.28**	**35**	*e*P		**Pn**	**01 12 10.3**	**+0.2**
JACH	**Jahuel**	**5.71**	**29**	*e*P		**Pn**	**01 12 15.5**	**-0.6**
PTCH	**Petorca**	**5.97**	**25**	*e*P		**Pn**	**01 12 19.4**	**-0.4**
CMCH	**Combarbala**	**6.96**	**21**	*e*P		**Pn**	**01 12 32.6**	**-1.1**
TLL	**Tololo Astrono**	**7.96**	**20**	*e*P		**Pn**	**01 12 47.2**	**-0.5**
LVC	**Limon Verde**	**15.66**	**17**	Pn		**P**	**01 14 38.3**	**+7.0**
	comp=E,0.2nm,0.3s,baz=185,slow=11,SNR=2.8							
LVC				LR		LR	01 21 02.6	
	comp=E,84nm,18.5s,baz=240,slow=38							
LVC	**Limon Verde**	**15.66**	**17**	Pn		**P**	**01 14 38.3**	**+7.0**
LVC				LR		LR	01 21 02.6	
CPUP	**Villa Florida**	**18.04**	**56**	P		**P**	**01 15 03.4**	**+2.1**
	comp=E,0.1nm,0.3s,baz=226,slow=13,SNR=3.3							
CPUP				LR		LR	01 22 36.9	
	comp=E,160nm,18.2s,baz=159,slow=39							
LPAZ	**La Paz**	**21.95**	**15**	P		**P**	**01 15 49.6**	**+5.5**
	comp=E,1.6nm,0.8s,mb3.5,baz=165,slow=10,SNR=4.0							
BDFB	**Brasilia**	**31.73**	**53**	P		**P**	**01 17 19.0**	**+4.4**
	comp=E,2.2nm,0.7s,mb4.1,baz=249,slow=8.5,SNR=4.8							
VNA3	**Neumayer Olymp**	**46.52**	**156**	⇓*i*		**P**	**01 19 21.9**	**+4.8**
VNA3	**Neumayer Olymp**	**46.52**	**156**	⇓*i*		**P**	**01 19 21.9**	**+4.8**
VNA3	**Neumayer Olymp**	**46.52**	**156**	⇓*i*		**P**	**01 19 30.1**	**+13**
VNA3	**Neumayer Olymp**	**46.52**	**156**	⇓*i*		**P**	**01 19 30.1**	**+13**
VNA2	**Neumayer--Watz**	**47.21**	**156**	⇓*i*		**P**	**01 19 27.2**	**+4.7**
VNA2	**Neumayer--Watz**	**47.21**	**156**	⇓*i*		**P**	**01 19 27.2**	**+4.7**
VNA2	**Neumayer--Watz**	**47.21**	**156**	⇓*i*		**P**	**01 19 35.5**	**+13**
VNA2	**Neumayer--Watz**	**47.21**	**156**	⇓*i*		**P**	**01 19 35.5**	**+13**
TXAR	**Lajitas Array**	**72.30**	**333**	P		**P**	**01 22 21.5**	**+5.7**
	comp=E,0.4nm,0.9s,mb3.4,baz=135,slow=6.4,SNR=2.8							
TXAR				LR		LR	01 49 23.2	
	comp=E,40nm,19.8s,MS3.7,baz=245,slow=32							
DBIC	**Dimbokro**	**77.79**	**72**	P		**P**	**01 22 49.3**	**+1.9**
	comp=E,4.6nm,0.8s,mb4.5,baz=195,slow=7.6,SNR=7.7							
MKAR	**Makanchi Array**	**160.25**	**55**	PKPab		PKPab	01 31 31.4	+1.8
	comp=E,1.2nm,0.9s,baz=278,slow=3.8,SNR=5.6							

IDC ***25*** *01:12:12.0±2.0, 4.58N×126.27E, mb4.1/4, mb1 4.3/4, mb1mx3.8/18, Error ellipse: s-maj=174.0km s-min=23.4km az=65.0*

ISC 25 01:12:25.3±3.0, 3.9N±0.3×125.0E±0.6, h120km±36km, n6, σ1§20/8, mb3.9/4, 1C-1D, Celebes Sea

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
GSPH	**General Santos**	**2.15**	**359**	⇑*i*P		**P**	**01 13 01.2**	**0.0**
GSPH				*i* S		**S**	**01 13 27.4**	**-0.9**
KCP	**Kidapawan**	**3.07**	**2**	⇓*e*P		**P**	**01 13 16.0**	**+2.5**
KCP				*e*S		**S**	**01 13 49.7**	**-0.3**
WRA	**Warramunga Arr**	**25.43**	**159**	P		**P**	**01 17 43.3**	**-0.5**
	5.3nm,0.4s,mb4.3,baz=342,slow=10,SNR=28							
ASAR	**Alice Springs**	**28.77**	**163**	P		**P**	**01 18 13.8**	**-0.3**
	0.8nm,0.5s,mb3.6,baz=346,slow=7.4,SNR=14							
STKA	**Stephens Creek**	**38.95**	**157**	P		**P**	**01 19 41.5**	**+0.3**
	1.3nm,0.3s,mb4.2,baz=326,slow=9.5,SNR=5.2							
MKAR	**Makanchi Array**	**56.42**	**326**	P		**P**	**01 21 56.6**	**-0.1**
	0.3nm,0.5s,mb3.6,baz=121,slow=8.3,SNR=9.0							

NEIC ***25*** *01:33:25.7±1.1, 5.19S×152.94E, h50km, mb4.0/2, Error ellipse: s-maj=46.0km s-min=13.9km az=128.0*
IDC ***25*** *01:33:25.1±7.2, 5.10S×152.88E, h40km±63km, mb3.6/7, mb1 3.8/8, mb1mx3.7/16, ML2.9/1, MS3.4/2, Ms1 3.4/2, ms1mx2.7/30, Error ellipse: s-maj=56.1km s-min=31.7km az=129.0*

ISC 25 01:33:24.9±4.3, 5.0S±0.2×152.6E±0.2, h44km±35km, n16, σ1§15/14, mb3.7/8, MS3.5/1, 1C, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
PMG	**Port Moresby**	**6.94**	**230**	Pn		**P**	**01 35 07.6**	**+1.0**
	1.2nm,0.3s,baz=92,slow=23,SNR=3.6							
PMG				Sn		**S**	**01 36 23.4**	**-1.8**
	3.6nm,0.3s,baz=341,slow=14,SNR=4.8							
CTA	**Charters Tower**	**16.25**	**202**	LR		LR	01 42 13.8	
	comp=Z,63nm,19.3s,baz=232,slow=33							
WRAB	**Tennant Creek**	**23.15**	**228**	*e*P		**P**	**01 38 28.8**	**+0.4**
	9.6nm,0.9s,mb4.2							
WB2	**Warramunga Arr**	**23.15**	**228**	*e*P		**P**	**01 38 28.8**	**+0.4**
WRA	**Warramunga Arr**	**23.16**	**228**	P		**P**	**01 38 29.1**	**+0.6**
	0.9nm,0.5s,mb3.4,baz=53,slow=9.8,SNR=16							
ASAR	**Alice Springs**	**25.87**	**222**	P		**P**	**01 38 55.7**	**+1.2**
	0.6nm,0.7s,mb3.2,baz=54,slow=9.0,SNR=8.1							
STKA	**Stephens Creek**	**28.69**	**200**	LR		LR	01 51 11.2	
	comp=Z,123nm,18.1s,MS3.5,baz=9.8,slow=37							
FITZ	**Fitzroy Crossi**	**29.37**	**241**	*e*P		**P**	**01 39 25.1**	**-1.2**
	2.6nm,1.3s,mb3.8							
FITZ	**Fitzroy Crossi**	**29.37**	**241**	P		**P**	**01 39 24.7**	**-1.5**
	1.1nm,0.5s,mb3.8,baz=42,slow=7.5,SNR=5.3							
PALP	**Palanan**	**36.94**	**307**	⇑*e*P		**P**	**01 40 31.1**	**-0.6**
CMAR	**Chiang Mai Arr**	**57.71**	**295**	P		**P**	**01 43 15.1**	**+1.2**
	1.9nm,0.9s,mb4.1,baz=102,slow=4.6,SNR=5.0							
MKAR	**Makanchi Array**	**80.27**	**319**	P		**P**	**01 45 34.0**	**+1.2**
	0.2nm,0.4s,mb3.4,baz=90,slow=8.0,SNR=4.3							
ILAR	**Eielson Array**	**82.39**	**22**	P		**P**	**01 45 43.0**	**-0.5**
	1.3nm,0.8s,mb3.9,baz=254,slow=5.4,SNR=15							
YKA	**Yellowknife Ar**	**95.67**	**28**	P		**P**	**01 46 44.4**	**-2.3**
	0.1nm,0.7s,mb3.4,baz=270,slow=5.3,SNR=4.0							
YKA	**Yellowknife Ar**	**95.67**	**28**	P		**P**	**01 46 44.4**	**-2.3**
GERES	**GERESS Array B**	**124.05**	**328**	PKP		PKPdf	01 52 21.0	+2.3
	0.4nm,0.6s,baz=90,slow=1.3,SNR=4.1							

IDC ***25*** *01:44:32.5±5.5, 13.50N×119.69E, mb4.2/3, mb1 4.4/3, mb1mx3.7/19, MS3.2/1, Ms1 3.2/1, ms1mx2.6/29, Error ellipse: s-maj=108.0km s-min=15.4km az=135.0*
MAN ***25*** *01:44:33.5, 13.64N×119.73E, h8km, mb4.4, ML3.3, MS3.1*

ISC 25 01:44:30.9±1.7, 13.70N±0.05×119.54E±0.07, h12km±10km, n19, σ0§88/24, mb4.2/3, MS3.3/1, 8C-3D, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID			Time	Res
				Op		ISC	h m s	ISC
LUBP	**Lubang**	**0.68**	**87**	⇑*e*P		**Pb**	**01 44 43.8**	**-0.5**
LUBP				*e*S		**Sb**	**01 44 48.2**	**-5.2**
NBP	**Mount Natib**	**1.33**	**39**	⇑*e*P		**Pb**	**01 45 02.1**	**+6.7**
PGP	**Puerto Galera**	**1.39**	**98**	⇓*i*P		**Pn**	**01 44 55.0**	**-1.2**
PGP				*i* S		**Sb**	**01 45 13.0**	**-0.8**
TGY	**Tagaytay City**	**1.41**	**74**	⇑*i*P		**Pn**	**01 44 57.9**	**+1.4**
TGY				*i* S		**Sb**	**01 45 15.3**	**+0.9**
TGY	**Tagaytay City**	**1.41**	**74**	Pg		**Pg**	**01 44 57.9**	**-1.2**
	957nm,0.3s,baz=261,slow=3.6,SNR=28							
TGY				Lg			01 45 16.0	
	674nm,0.3s,baz=155,slow=22,SNR=21							
QVPH	**Quezon City--P**	**1.75**	**57**

6.5nm,0.9s,mb4.6
WRA Warramunga Arr 32.71 267 P **P 01 56 07.2 -0.5**
0.2nm,0.7s,mb3.2,baz=100,slow=8.7,SNR=7.6
WRA LR LR 02 09 05.7
comp=Z,96nm,18.6s,MS3.5,baz=110,slow=36
FITZ Fitzroy Crossi 41.14 268 *e*P **P 01 57 19.7 +0.8**
3.1nm,0.6s,mb4.1
FITZ Fitzroy Crossi 41.14 268 P **P 01 57 19.8 +1.0**
4.4nm,0.8s,mb4.2,baz=167,slow=7.8,SNR=17
QSPA South Pole Qui 67.92 180 *e*P **P 02 00 33.2 +0.2**
1.3nm,0.9s,mb4.0
ULN Ulaanbaatar 89.25 323 *e*P **P 02 02 31.6 +1.7**
3.4nm,1.1s,mb4.6
NVAR Mina Array Bea 90.64 48 P **P 02 02 36.3 -0.3**
1.0nm,0.9s,mb4.2,baz=233,slow=9.0,SNR=4.2
ILAR Eielson Array 92.96 17 P **P 02 02 45.4 -1.2**
0.4nm,0.8s,mb3.9,baz=220,slow=5.4,SNR=4.7
NEW Newport 95.92 40 LR LR 02 36 26.3
comp=Z,12nm,21.4s,MS3.3,baz=237,slow=29
GERES GERESS Array B 147.07 330 PKPbc PKPdf 02 09 17.4 -1.0
0.2nm,0.8s,baz=72,slow=3.1,SNR=2.2

*IDC **25** 02:04:16.2±0.9,22.16S×169.51E,mb4.5/14,mb1 4.6/14, mb1mx4.5/17, Error ellipse: s-maj=35.3km s-min=18.2km az=156.0*

ISC 25 02:04:19.8±0.8, 22.2S±0.2×169.4E±0.1, h33km, n18, σ0§86/14, mb4.4/14, Southeast of Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
CTA	**Charters Tower**	**21.72**	**271**	P		**P**		**02 09 11.8**	**+1.8**
	8.8nm,0.9s,mb4.2,baz=90,slow=12,SNR=7.1								
PMG	**Port Moresby**	**24.87**	**297**	P		**P**		**02 09 41.1**	**+0.1**
	14nm,0.7s,mb4.6,baz=190,slow=8.0,SNR=3.7								
STKA	**Stephens Creek**	**26.55**	**243**	P		**P**		**02 09 56.6**	**-0.1**
	3.1nm,0.9s,mb3.8,baz=91,slow=10,SNR=3.4								
ASAR	**Alice Springs**	**32.71**	**260**	P		**P**		**02 10 51.0**	**-0.6**
	4.0nm,0.8s,mb4.4,baz=87,slow=9.2,SNR=46								
WRA	**Warramunga Arr**	**32.79**	**267**	P		**P**		**02 10 50.8**	**-1.6**
	2.8nm,0.8s,mb4.2,baz=99,slow=8.4,SNR=27								
FITZ	**Fitzroy Crossi**	**41.22**	**268**	P		**P**		**02 12 03.5**	**+0.1**
	23nm,0.6s,mb5.0,baz=145,slow=5.3,SNR=78								
NWAO	**Narrogin (SRO)**	**47.09**	**245**	P		**P**		**02 12 49.9**	**-0.7**
	27nm,1.2s,mb5.0,baz=101,slow=9.0,SNR=5.4								
JNU	**Nakatsue**	**66.16**	**325**	P		**P**		**02 15 06.7**	**+0.3**
	5.2nm,0.4s,mb5.0,baz=212,slow=12,SNR=2.3								
MAW	**Mawson**	**75.80**	**202**	P		**P**		**02 16 04.6**	**+0.9**
	1.4nm,0.7s,mb4.0,baz=33,slow=6.0,SNR=3.7								
SONM	**Songino Array**	**89.67**	**323**	P		**P**		**02 17 16.4**	**+0.8**
	1.0nm,0.6s,mb4.3,baz=121,slow=7.2,SNR=8.0								
NVAR	**Mina Array Bea**	**90.60**	**48**	P		**P**		**02 17 20.8**	**+0.6**
	1.8nm,0.7s,mb4.5,baz=214,slow=6.1,SNR=12								
ILAR	**Eielson Array**	**92.97**	**17**	P		**P**		**02 17 29.4**	**-1.1**
	0.8nm,0.5s,mb4.4,baz=253,slow=5.7,SNR=27								
TXAR	**Lajitas Array**	**97.99**	**62**	P		**P**		**02 17 54.6**	**+0.4**
	0.3nm,0.8s,mb3.9,baz=167,slow=22,SNR=3.7								
PDAR	**Pinedale Array**	**98.46**	**47**	P		**P**		**02 17 55.1**	**-0.9**
	0.3nm,0.8s,mb3.9,baz=180,slow=3.0,SNR=2.5								
YKA	**Yellowknife Ar**	**103.17**	**28**	Pdiff		Pdif		02 18 18.7	+2.1
	0.1nm,0.5s,baz=255,slow=4.4,SNR=2.8								
MKAR	**Makanchi Array**	**103.94**	**315**	Pdiff		Pdif		02 18 21.1	+0.7
	0.3nm,0.8s,baz=90,slow=1.4,SNR=2.5								
ARCES	**ARCESS Array B**	**127.94**	**345**	PKP		PKPdf		02 23 23.8	+2.0
	2.6nm,0.9s,baz=101,slow=6.2,SNR=4.2								
GERES	**GERESS Array B**	**147.13**	**330**	PKPbc		PKPdf		02 24 01.2	+4.0
	1.1nm,0.5s,baz=36,slow=2.9,SNR=13								

*BJI **25** 02:04:18.5,22.31S×169.73E,h33km,mB4.9,mb5.0, Ms4.5,Msz4.6*
*NEIC **25** 02:04:20.8±0.2,22.01S×169.37E,mb5.1/25,MS4.3/5, Error ellipse: s-maj=10.1km s-min=5.8km az=157.0*
*SYO **25** 02:04:20.7,22.01S×169.37E,h27km,MB5.1,MS4.3*
*HRVD **25** 02:04:20.8±0.4,22.28S×169.39E,h14km±1km,MW5.0/38, Centroid moment Tensor Solution. LP body waves: s21,c23;Mantle waves: s38,c57; Half duration: 0 Moment tensor: Scale 10^16Nm; Mrr-2.15±.20; Mθθ0.64±.14; Mϕϕ 1.51±.13; Mrθ-2.41±.39; Mθϕ-1.25±.09; Mϕr1.59±.32; Best double couple: M0 3.68×10^16 NP1:ϕs342°, δ22°,λ-58°. NP2:ϕs128°,δ72°,λ-102°. Principal axes: T 3.7, Plg26°, Azm227°; N -.03, Plg11°, Azm132°; P -3.66, Plg62°, Azm20°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*IDC **25** 02:04:24.9±0.7,22.26S×169.45E,mb4.7/16,mb1 4.8/16, mb1mx4.8/17 Error ellipse: s-maj=23.2km s-min=16.9km az=138.0*
*MOS **25** 02:04:25.9±1.7,22.17S×169.29E,h10km,mb5.0/9,Error ellipse: s-maj=23.4km s-min=16.5km az=92.7*
*LDG **25** 02:04:32.3±0.4,21.78S×164.48E,h10km,Mb4.8/2,Error ellipse: s-maj=59.7km s-min=7.1km az=18.0*

ISC 25 02:04:20.0±0.3, 21.90S±0.08×169.41E±0.07, h26km, h26km±.5km:pP-P,n177,σ1§27/103, mb4.9/42, MS4.3/8, 6C-4D, Southeast of Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
DZM	**Mont Dzumac**	**2.76**	**266**	*e*P		**Pn**		**02 05 02.1**	**-1.5**
DZM	**Mont Dzumac**	**2.76**	**266**	*e*P		**Pn**		**02 05 02.1**	**-1.5**
NOUC	**Port Laguerre**	**2.89**	**265**	↑*e*P		**Pn**		**02 05 03.9**	**-1.6**
NOUC	**Port Laguerre**	**2.89**	**265**	↑*e*P		**Pn**		**02 05 03.9**	**-1.6**
BKM	**Butte a Klehm**	**4.35**	**345**	↑*i*P		**Pn**		**02 05 27.0**	**+0.8**
ARMA	**Armidale**	**18.06**	**238**	*e*P		**P**		**02 08 30.6**	**-0.4**
ARMA				*e*				02 08 39.7	
CTA	**Charters Tower**	**21.69**	**271**	*e*P		**P**		**02 09 11.6**	**+0.6**
	18nm,0.8s,mb4.6								
CTA				*e*S		**S**		**02 13 11.9**	**+7.2**
CTAO	**Charters Tower**	**21.69**	**271**	*e*P		**P**		**02 09 08.2**	**-2.9**
	101nm,1.4s,mb5.1								
RPZ	**Rata Peaks**	**21.80**	**177**	P		**P**		**02 09 14.6**	**+2.7**
	14nm,0.8s,mb4.5,baz=243,slow=2.6,SNR=4.9								
CNB	**Canberra Magne**	**22.04**	**228**	*e*P		**P**		**02 09 21.6**	**+7.2**
	46nm,0.9s,mb4.9								
PMG	**Port Moresby**	**24.72**	**297**	*e*P		**P**		**02 09 38.2**	**-2.6**
TOO	**Toolangi**	**25.88**	**228**	*e*P		**P**		**02 09 59.2**	**+7.7**
	9.1nm,1.0s,mb4.3								
STKA	**Stephens Creek**	**26.66**	**242**	*e*P		**P**		**02 09 59.9**	**+1.2**
	15nm,1.6s,mb4.3								
STKA	**Stephens Creek**	**26.66**	**242**	P		**P**		**02 10 04.6**	**+5.9**
	3.3nm,0.8s,mb3.9,baz=86,slow=14,SNR=5.4								
AS12	**Alice Springs**	**32.73**	**260**	*e*P		**P**		**02 10 51.0**	**-2.0**
	10nm,0.8s,mb4.8								
ASAR	**Alice Springs**	**32.73**	**260**	P		**P**		**02 10 58.7**	**+5.7**
	6.8nm,0.8s,mb4.6,baz=88,slow=9.0,SNR=20								
WB2	**Warramunga Arr**	**32.77**	**267**	*e*P		**P**		**02 10 50.7**	**-2.6**
WRAB	**Tennant Creek**	**32.77**	**267**	*e*P		**P**		**02 10 49.7**	**-3.6**
WRA	**Warramunga Arr**	**32.78**	**267**	P		**P**		**02 10 59.7**	**+6.4**
	6.4nm,0.9s,mb4.5,baz=97,slow=8.4,SNR=16								
WRA	**Warramunga Arr**	**32.78**	**267**	P		**P**		**02 10 59.7**	**+6.3**
WRA				pmax	pmax				
	comp=Z,6.0nm,0.9s								
KAKA	**Kakadu**	**36.42**	**278**	*e*P		**P**		**02 11 23.8**	**-0.8**
	comp=Z,10nm,0.6s,mb4.9								
FITZ	**Fitzroy Crossi**	**41.20**	**267**	*e*P		**P**		**02 12 04.0**	**-0.4**
	comp=Z,26nm,0.8s,mb4.9								
FITZ				*e*		pP		02 12 11.3	-1.0
FITZ	**Fitzroy Crossi**	**41.20**	**267**	P		**P**		**02 12 11.7**	**+7.3**
	comp=Z,40nm,0.7s,mb5.2,baz=154,slow=5.9,SNR=28								
KLBR	**Kellerberrin**	**46.77**	**247**	*e*P		**P**		**02 12 46.7**	**-2.5**
	comp=Z,23nm,1.0s,mb5.1								
NWAO	**Narrogin (SRO)**	**47.19**	**245**	P		**P**		**02 12 57.7**	**+5.2**
	comp=Z,18nm,0.9s,mb5.0,baz=86,slow=9.7,SNR=8.3								
NWAO	**Narrogin (SRO)**	**47.19**	**245**	P		**P**		**02 12 57.7**	**+5.2**
NWAO				pmax	pmax				
	comp=Z,18nm,0.9s								
MUN	**Mundaring**	**48.07**	**246**	*e*P		**P**		**02 13 06.1**	**+6.6**
	comp=Z,12nm,0.9s,mb4.9								
VNDA	**Vanda**	**55.79**	**182**	P		**P**		**02 14 00.9**	**+4.1**
	comp=Z,2.5nm,1.2s,mb4.1,baz=335,slow=4.4,SNR=4.5								
VNDA	**Vanda**	**55.79**	**182**	P		**P**		**02 14 00.9**	**+4.1**
VNDA				pmax	pmax				
	comp=Z,3.0nm,1.2s								
VNDA	**Vanda**	**55.79**	**182**	P		**P**		**02 13 53.5**	**-3.3**
SBA	**Scott Base**	**56.02**	**181**	*e*P		**P**		**02 13 55.0**	**-3.4**
	comp=Z,7.2nm,0.9s,mb4.7								
MAT	**Matsushiro**	**65.17**	**333**	P		**P**		**02 15 00.3**	**-1.0**
MAT	**Matsushiro**	**65.17**	**333**	P		**P**		**02 15 00.0**	**-1.3**
	comp=Z,14nm,1.3s,mb4.8								
JNU	**Nakatsue**	**65.92**	**325**	P		**P**		**02 15 15.8**	**+10**
	baz=114,slow=5.3,SNR=2.6								
QSPA	**South Pole Qui**	**68.17**	**180**	*e*P		**P**		**02 15 17.0**	**-2.6**
	comp=Z,9.2nm,0.9s,mb4.8								
QSPA				LR	LR				
	comp=Z,60nm,21.5s,MS3.8								
SSE	**Sheshan**	**70.11**	**317**	P		**P**		**02 15 32.9**	**+0.6**
SSE				XP	sP			02 15 46.0	+2.5
SSE				S	S			02 24 42.8	+2.5
SSE				XS				02 24 58.3	
SSE				AMB	AMB				
	comp=Z,36nm,0.6s,mb5.5								
ASAJ	**Asahikawa**	**70.14**	**340**	P		**P**		**02 15 41.8**	**+10**
	comp=Z,9.8nm,0.6s,mb4.9,baz=111,slow=29,SNR=4.8								
ASAJ	**Asahikawa**	**70.14**	**340**	P		**P**		**02 15 41.8**	**+10**
ASAJ				pmax	pmax				
	comp=Z,10.0nm,0.6s								
NJ2	**Nanjing**	**72.23**	**316**	*e*P		**P**		**02 15 47.6**	**+2.5**
NJ2				AP	pP			02 15 54.1	+0.8
NJ2				XP	sP			02 15 58.4	+2.2
NJ2				PCP	PcP			02 16 05.4	+2.1
NJ2				S	S			02 25 10.0	+5.2
NJ2				XS				02 25 23.0	
NJ2				AMB	AMB				
	comp=Z,200nm,6.1s								
NJ2				LR	LR				
	comp=N,80nm,19.5s								
NJ2				LR	LR				
	comp=E,190nm,25.9s								
NJ2				LR	LR				
	comp=Z,340nm,24.1s,MS4.5								
YSS	**Yuzh-Sakhalins**	**72.64**	**341**	*e*P		**P**		**02 15 56.0**	**+8.8**
YSS				*e*				02 16 01.0	
PET	**Petropavlovsk**	**75.19**	**353**	*e*P		**P**		**02 16 11.2**	**+9.3**
PET				pmax	pmax				
	comp=Z,38nm,1.2s,mb5.2								
PET				pmax	pmax				
	comp=Z,55nm,13.1s								
MDJ	**Mudanjiang**	**75.53**	**332**	P		**P**		**02 16 04.6**	**+0.6**
MDJ				AP	pP			02 16 11.4	-0.9
MDJ				PCP	PcP			02 16 16.9	-0.3
MDJ				PP	PP			02 18 54.8	-0.5
MDJ				S	S			02 25 47.0	+5.5
MDJ				XS				02 25 57.3	
MDJ				AMB	AMB				
	comp=Z,84nm,5.7s								
MDJ				LR	LR				
	comp=N,127nm,38.2s,MS4.0								
MDJ				LR	LR				
	comp=E,60nm,41.1s,MS4.0								
TIA	**Tai'an**	**76.03**	**319**	*e*P		**P**		**02 16 07.1**	**0.0**
MAW	**Mawson**	**76.04**	**202**	P		**P**		**02 16 12.6**	**+6.2**
	comp=E,3.3nm,0.8s,mb4.3,baz=56,slow=7.4,SNR=4.9								
MAW	**Mawson**	**76.04**	**202**	P		**P**		**02 16 12.6**	**+6.2**
MAW				pmax	pmax				
	comp=Z,3.0nm,0.8s								
ENH	**Enshi**	**77.49**	**310**	P		**P**		**02 16 14.4**	**-0.9**
	comp=Z,43nm,1.6s,mb5.1								
KLR	**Kul'dur**	**78.35**	**336**	*e*P		**P**		**02 16 29.2**	**+10**
BJI	**Beijing**	**79.10**	**321**	*e*P		**P**		**02 16 24.6**	**+0.7**
CMAR	**Chiang Mai Arr**	**79.75**	**295**	P		**P**		**02 16 38.6**	**+11**
	comp=Z,2.4nm,0.8s,mb4.2,baz=123,slow=3.8,SNR=7.0								
CMAR	**Chiang Mai Arr**	**79.75**	**295**	P		**P**		**02 16 38.6**	**+11**
CMAR				pmax	pmax				
	comp=Z,2.0nm,0.8s								
KMI	**Kunming**	**79.82**	**302**	*e*P		**P**		**02 16 30.0**	**+1.9**
KMI				AMB	AMB				
	comp=Z,8.0nm,0.8s,mb4.7								
SYO	**Syowa Base**	**82.44**	**196**	⇓P		**P**		**02 16 39.4**	**-1.5**
SYO	**Syowa Base**	**82.44**	**196**	⇓*e*P		**P**		**02 16 39.4**	**-1.5**
LZH	**Lanzhou**	**84.62**	**312**	*e*P		**P**		**02 16 54.5**	**+1.7**
LZH				AP	pP			02 17 04.0	+2.8
LZH				XP	sP			02 17 07.0	+3.1
LZH				AMB	AMB				
	comp=Z,20nm,1.2s,mb5.1								
SNAA	**Sanae**	**86.52**	**182**	*e*P		**P**		**02 16 59.6**	**-1.8**
VNA3	**Neumayer Olymp**	**87.11**	**180**	*e*		**P**		**02 17 11.9**	**+7.7**
VNA3	**Neumayer Olymp**	**87.11**	**180**	*e*		**P**		**02 17 15.9**	**+12**
VNA3	**Neumayer Olymp**	**87.11**	**180**	⇓*i*P		**P**		**02 17 03.9**	**-0.3**
VNA3				*e*		pP		02 17 11.9	-0.8
VNA3				*e*				02 17 15.9	
VNA3				*e*				02 20 24.3	
VNA3				*e*				02 22 06.2	
VNA2	**Neumayer--Watz**	**87.40**	**181**	*e*		**P**		**02 17 14.0**	**+8.4**
VNA2	**Neumayer--Watz**	**87.40**	**181**	*e*		**P**		**02 17 17.8**	**+12**
VNA2	**Neumayer--Watz**	**87.40**	**181**	⇑*i*P		**P**		**02 17 06.0**	**+0.4**
VNA2				*e*		pP		02 17 14.0	-0.1
VNA2				*e*				02 17 17.8	
VNA2				*e*				02 20 26.5	
VNA2				*e*				02 22 08.2	
SAO	**San Andreas Ge**	**87.45**	**49**	*e*P		**P**		**02 17 06.4**	**-0.3**
	comp=Z,13nm,1.0s,mb5.1								
SAO				LR	LR				
	comp=Z,297nm,20.0s,MS4.7								
VNA1	**Neumayer--Stat**	**87.69**	**181**	*e*		**P**		**02 17 15.5**	**+8.5**
VNA1	**Neumayer--Stat**	**87.69**	**181**	*e*		**P**		**02 17 19.6**	**+13**
VNA1	**Neumayer--Stat**	**87.69**	**181**	⇑*i*P		**P**		**02 17 07.9**	**+0.9**
VNA1				*e*		pP		02 17 15.5	0.0
VNA1				*e*				02 17 19.6	
WDC	**Whiskeytown Da**	**88.62**	**45**	*e*P		**P**		**02 17 12.0**	**-0.2**
	comp=Z,37nm,1.4s,mb5.5								
WDC				*e*pP		pP		02 17 20.8	+0.2
OHCM	**Honcut**	**88.70**	**46**	*e*P		**P**		**02 17 12.5**	**-0.1**
OHCM				*e*pP		pP		02 17 21.0	0.0
CMB	**Columbia Colle**	**88.81**	**48**	*e*P		**P**		**02 17 13.2**	**0.0**
	comp=Z,11nm,1.2s,mb5.1								
CMB				*e*pP		pP		02 17 21.3	-0.3
CMB				LR	LR				
	comp=Z,96nm,19.0s,MS4.2								
ULN	**Ulaanbaatar**	**89.08**	**323**	*e*P		**P**		**02 17 15.6**	**+1.4**
	comp=Z,2.1nm,0.7s,mb4.6								
ULN				*e*pP		pP		02 17 24.3	+1.6
YBH	**Yreka Blue Hor**	**89.09**	**44**	P		**P**		**02 17 23.8**	**+9.3**
	comp=Z,9.9nm,1.0s,mb5.1,baz=184,slow=4.7,SNR=7.2								
YBH	**Yreka Blue Hor**	**89.09**	**44**	P		**P**		**02 17 23.8**	**+9.4**
YBH				pmax	pmax				
	comp=Z,10.0nm,1.0s								
YBH	**Yreka Blue Hor**	**89.09**	**44**	*e*P		**P**		**02 17 15.8**	**+1.4**
	comp=Z,31nm,1.4s,mb5.4								
YBH				*e*pP		pP		02 17 23.5	+0.6
HUMO	**Hull Mountain**	**89.38**	**43**	*e*P		**P**		**02 17 14.1**	**-1.7**
HUMO				*e*pP		pP		02 17 24.8	+0.6
SONM	**Songino Array**	**89.43**	**323**	P		**P**		**02 17 25.4**	**+10**
	comp=Z,15nm,1.3s,mb5.2,baz=135,slow=5.2,SNR=17								
PMR	**Palmer**	**89.59**	**18**	P		**P**		**02 17 15.1**	**-1.2**
BILL	**Bilibino**	**89.70**	**359**	⇓*i*P		**P**		**02 17 25.0**	**+8.3**
BILL				*e*				02 20 55.4	
BILL				pmax	pmax				
	comp=Z,17nm,1.7s,mb5.1								
BILL				MLR	MLR				
	comp=Z,100nm,16.0s,MS4.3								
BILL	**Bilibino**	**89.70**	**359**	*e*P		**P**		**02 17 16.0**	**-0.6**
	comp=Z,7.2nm,0.9s,mb5.0								
BEKR	**Beckwourth**	**89.71**	**46**	*e*P		**P**		**02 17 18.8**	**+1.4**
	comp=Z,32nm,1.4s,mb5.5								
BEKR				*e*pP		pP		02 17 25.8	-0.1
NVAR	**Mina Array Bea**	**90.44**	**48**	P		**P**		**02 17 29.4**	**+8.6**
	comp=Z,6.1nm,0.8s,mb5.0,baz=214,slow=5.7,SNR=27								
SSOR	**Sweet Springs**	**90.84**	**41**	*e*P		**P**		**02 17 22.8**	**+0.4**
TPH	**Tonopah**	**91.03**	**49**	*e*P		**P**		**02 17 23.8**	**+0.3**
	comp=Z,57nm,1.5s,mb5.7								
TPH				*e*pP		pP		02 17 32.3	+0.4
OCWA	**Octopus Mounta**	**91.31**	**38**	*e*P		**P**		**02 17 25.2**	**+0.6**
	comp=Z,52nm,1.1s,mb5.8								
OCWA				*e*pP		pP		02 17 34.1	+1.2
NEN	**Nelson**	**91.66**	**52**	*e*P		**P**		**02 17 26.3**	**-0.1**
NEN				*e*pP		pP		02 17 35.1	+0.2
BOD	**Bodaibo**	**91.78**	**334**	*e*P		**P**		**02 17 32.5**	**+6.0**
GNW	**Green Mountain**	**92.00**	**39**	*e*P		**P**		**02 17 27.0**	**-0.7**
GNW				*e*pP		pP		02 17 36.6	+0.4
WVOR	**Wild Horse Val**	**92.08**	**45**	*e*P		**P**		**02 17 28.4**	**+0.1**
	comp=Z,29nm,1.4s,mb5.4								
WVOR				*e*pP		pP		02 17 36.8	+0.2
WVOR				LR	LR				
	comp=Z,103nm,19.0s,MS4.3								
BMN	**Battle Mountai**	**92.10**	**47**	*e*P		**P**		**02 17 28.7**	**+0.3**
BMN				*e*pP		pP		02 17 37.0	+0.2
COLA	**College**	**92.53**	**17**	*e*P		**P**		**02 17 37.5**	**+7.8**
COLA	**College**	**92.53**	**17**	*e*P		**P**		**02 17 28.7**	**-1.0**
COLA				*e*pP		pP		02 17 36.5	-1.7
ZAK	**Zakamensk**	**92.54**	**324**	*e*P		**P**		**02 17 31.3**	**+1.2**
ZAK				*e*		pP		02 17 39.6	+1.0
RMW	**Rattlesnake Mo**	**92.54**	**39**	*e*P		**P**		**02 17 30.4**	**+0.2**
RMW				*e*pP		pP		02 17 39.1	+0.5
ILAR	**Eielson Array**	**92.71**	**17**	P		**P**		**02 17 38.1**	**+7.6**
	comp=Z,2.7nm,0.7s,mb4.8,baz=243,slow=5.2,SNR=13								
ILAR	**Eielson Array**	**92.71**	**17**	P		**P**		**02 17 38.2**	**+7.6**
ILAR				pmax	pmax				
	comp=Z,3.0nm,0.7s								
WUAZ	**Wupatki**	**94.17**	**53**	*e*P		**P**		**02 17 37.7**	**-0.4**
	comp=Z,14nm,1.2s,mb5.3								
WUAZ				*e*pP		pP		02 17 46.5	0.0
DAWY	**Dawson**	**94.43**	**20**	*e*P		**P**		**02 17 37.9**	**-0.6**
DAWY				*e*pP		pP		02 17 46.6	-0.3
HLID	**Hailey**	**95.36**	**45**	*e*P		**P**		**02 17 42.9**	**-0.3**
	comp=Z,2.0nm,0.9s,mb4.5								
HLID				LR	LR				
	comp=Z,89nm,19.0s,MS4.3								
MCMT	**McKenzie Canyo**	**96.91**	**44**	P		**P**		**02 17 48.4**	**-1.8**
MCMT				*e*pP		pP		02 17 58.7	0.0
TXAR	**Lajitas Array**	**97.89**	**62**	P		**P**		**02 18 03.3**	**+8.2**
	comp=Z,1.0nm,1.0s,mb4.3,baz=207,slow=2.8,SNR=5.3								
BW06	**Boulder Array**	**98.30**	**47**	*e*P		**P**		**02 17 56.2**	**-0.4**
PDAR	**Pinedale Array**	**98.30**	**47**	P		**P**		**02 18 04.6**	**+8.0**
	comp=Z,0.8nm,0.9s,mb4.2,SNR=6.0								
INK	**Inuvik**	**99.01**	**18**	*e*P		**P**		**02 17 57.9**	**-1.3**
	comp=Z,18nm,1.5s,mb5.4								
INK				*e*pP		pP		02 18 06.9	-0.8
WMQ	**Urumqi**	**99.15**	**313**	*e*P		**P**		**02 18 00.8**	**+0.4**
WMQ				AP	pP			02 18 08.8	-0.1
WMQ				XP	sP			02 18 11.9	+0.4
WMQ				PP	PP			02 22 05.8	+0.5
WMQ				SKS	SKS			02 28 36.3	-7.3
WMQ				S	S			02 29 26.9	+0.7
WMQ				PS	PS			02 31 01.3	+0.6
WMQ				SS	SS			02 36 19.8	+1.0
YKA	**Yellowknife Ar**	**102.94**	**28**	Pdiff		Pdif		02 18 26.6	+10
	comp=Z,1.1nm,1.0s,baz=257,slow=4.6,SNR=11								
YKA	**Yellowknife Ar**	**102.94**	**28**	P		Pdif		02 18 26.6	+10
YKA				pmax	pmax				
	comp=Z,1.0nm,1.0s								
MKAR	**Makanchi Array**	**103.73**	**315**	Pdiff		Pdif		02 18 29.8	+9.0
	comp=Z,1.0nm,1.1s,baz=143,slow=6.1,SNR=4.0								
MKAR	**Makanchi Array**	**103.73**	**315**	P		Pdif		02 18 29.8	+9.0
MKAR				pmax	pmax				
	comp=Z,1.0nm,1.1s								
ARCES	**ARCESS Array B**	**127.67**	**345**	PKP		PKPdf		02 23 32.2	+4.8
	comp=Z,14nm,1.2s,baz=270,slow=1.2,SNR=9.0								
ARCES	**ARCESS Array B**	**127.67**	**345**	PKIKP		PKPdf		02 23 32.2	+4.8
ARCES				pmax	pmax				
	comp=Z,14nm,1.2s								
CRVS	**Cervenica-Dubn**	**142.94**	**324**	*e*PKP		PKPdf		02 23 58.5	+2.5
CRVS				*e*				02 24 10.6	
BSEG	**Bad Segeberg**	**144.30**	**339**	*e*PKIKP		PKPdf		02 24 02.4	+4.3
PSZ	**Piszkesteto**	**144.37**	**324**	*e*pPKP/F				02 24 02.2	
PSZ	**Piszkesteto**	**144.37**	**324**	*e*PKP		PKPdf		02 23 54.1	-4.4
RZN	**Rozhen**	**144.43**	**312**	P		PKPbc		02 23 53.5	-0.2
PGB	**Panagyurishte**	**144.46**	**314**	P		PKPbc		02 23 54.5	+0.8
VYHS	**Vyhne**	**144.58**	**326**	*e*PKP		PKPdf		02 23 55.4	-3.4
VYHS				*e*				02 24 04.1	
DPC	**Dobruska-Polom**	**144.62**	**330**	*e*PKP		PKPdf		02 24 03.5	+4.7
UPC	**Upice**	**144.65**	**330**	*e*PKP		PKPdf		02 24 03.5	+4.6
VTS	**Vitosha**	**145.08**	**314**	P		PKPbc		02 23 57.3	+1.9
MMB	**Musomiste**	**145.15**	**312**	*i* P		PKPbc		02 23 56.2	+0.6
SRO	**Srobarova**	**145.28**	**325**	*e*PKP		PKPdf		02 23 58.1	-2.0
SRO				*e*				02 24 05.4	
PVCC	**Panska Ves**	**145.28**	**332**	*e*PKP		PKPdf		02 24 05.7	+5.7
BRG	**Berggiesshubel**	**145.31**	**332**	*e*PKHKP				02 23 56.6	
BRG				*i*				02 24 05.8	
BRG				pmax	pmax				
	comp=Z,42nm,1.2s								
BRG	**Berggiesshubel**	**145.31**	**332**	*e*PKP		PKPdf		02 23 56.6

BHUJ				*e*S		**S**	**02 10 51.5**	**-1.2**
BHUJ				*e*			02 10 53.1	
	comp=E,89nm,0.4s							
BHUJ				*e*			02 10 53.2	
	comp=N,135nm,0.7s							
AJM	**Ajmer**	**3.55**	**90**	*e*P		**P**	**02 10 16.8**	**+2.0**
AJM				*i* PB		**P**	**02 10 24.7**	**+10**
AJM				*e*S		**S**	**02 10 57.3**	**+1.6**
AJM				*e*			02 11 01.5	
	comp=N,80nm,0.2s							
AJM				*e*			02 11 01.6	
	comp=E,63nm,0.2s							
KHET	**Khetri**	**4.80**	**71**	*i* S		**S**	**02 11 28.3**	**+1.3**
KHET				*e*			02 11 29.6	
	comp=N,218nm,0.6s							
KHET				*e*			02 11 30.0	
	comp=E,161nm,0.6s							
KUDL	**Kundal**	**5.40**	**72**	*e*P		**P**	**02 10 42.6**	**+2.1**
KUDL				*e*S		**S**	**02 11 42.2**	**+0.2**
SONA	**Sohna**	**5.93**	**72**	*e*P		**P**	**02 10 49.1**	**+1.2**
SONA				*e*S		**S**	**02 11 53.8**	**-1.4**
AYAN	**Aya Nagar**	**6.03**	**70**	*i* S		**S**	**02 11 57.0**	**-0.7**
NDI	**New Delhi**	**6.17**	**68**	*e*P		**P**	**02 10 51.0**	**-0.2**
NDI				*e*S		**S**	**02 12 00.0**	**-1.0**
NDI				*e*			02 12 43.4	
	comp=N,215nm,0.6s							
NDI				*e*			02 12 43.4	
	comp=E,199nm,0.5s							
BHPL	**Bhopal**	**6.95**	**117**	*e*P		**P**	**02 11 02.1**	**-0.1**
BHPL				*e*S		**S**	**02 12 16.7**	**-3.8**
BHPL				*e*			02 12 20.0	
	comp=E,12nm,0.2s							
BHPL				*e*			02 12 20.1	
	comp=N,11nm,0.3s							
PTH	**Pithoragarh**	**8.93**	**68**	*e*P		**P**	**02 11 28.0**	**-1.3**
PTH				*e*S		**S**	**02 13 06.0**	**-3.3**
GKN	**Gorkha**	**12.49**	**80**	*e*P		**P**	**02 12 19.8**	**+2.3**
	comp=N,11nm,0.3s							
DMN	**Daman**	**12.89**	**82**	*e*P		**P**	**02 12 22.8**	**+0.1**
KKN	**Kakani**	**13.05**	**81**	*e*P		**P**	**02 12 23.7**	**-1.1**
	comp=N,7.7nm,0.2s							
PKI	**Pulchoki**	**13.16**	**82**	*e*P		**P**	**02 12 24.9**	**-1.3**
	comp=N,13nm,0.6s							
KK31	**Karatay Array**	**16.50**	**360**	P		**P**	**02 13 12.1**	**+2.9**
	comp=N,1.7nm,0.5s,baz=179,slow=12,SNR=18							
KK31				S		**S**	**02 16 08.3**	**-1.1**
	comp=N,1.0nm,0.5s							
AB31	**Akbulak array**	**24.14**	**343**	P		**P**	**02 14 39.7**	**+8.4**
	comp=N,0.6nm,0.5s,mb3.1,baz=151,slow=11,SNR=21							

IDC 25 02:11:47.3±3.9, 31.68S×178.45W, mb3.9/2, mb1 4.2/2, mb1mx3.8/13, 6D, Error ellipse: s-maj=189.0km s-min=49.7km az=163.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ASAR	**Alice Springs**	**42.67**	**269**	P	P	02 19 45.6	-1.9
	0.7nm,0.5s,baz=107,slow=7.5,SNR=12						
WB2	**Warramunga Arr**	**43.76**	**274**	*e*P	P	02 19 55.0	-1.4
WRA	**Warramunga Arr**	**43.77**	**274**	P	P	02 19 55.1	-1.4
	1.8nm,0.6s,baz=115,slow=7.9,SNR=51						
VNA3	**Neumayer Olymp**	**77.06**	**176**	⇓*i*	P	02 23 47.9	+4.6
VNA3	**Neumayer Olymp**	**77.06**	**176**	⇓*i*	P	02 23 47.9	+4.6
VNA2	**Neumayer--Watz**	**77.49**	**177**	⇓*i*	P	02 23 51.1	+5.5
VNA2	**Neumayer--Watz**	**77.49**	**177**	⇓*i*	P	02 23 51.1	+5.5
VNA1	**Neumayer--Stat**	**77.72**	**177**	⇓*i*	P	02 23 54.1	+7.2
VNA1	**Neumayer--Stat**	**77.72**	**177**	⇓*i*	P	02 23 54.1	+7.2
MKAR	**Makanchi Array**	**118.29**	**310**	PKP	PKPdf	02 30 35.8	-2.5
	0.5nm,0.9s,baz=297,slow=2.7,SNR=3.7						
FINES	**FINESS Array B**	**146.20**	**339**	PKPbc	PKPbc	02 31 28.2	-0.6
	0.3nm,0.3s,baz=56,slow=5.0,SNR=5.2						

*IDC **25** 02:12:53.3±2.9, 36.70S×177.77E, h178km±18km, mb3.9/6, mb1 4.1/7, mb1mx3.9/14, Error ellipse: s-maj=46.5km s-min=22.7km az=43.0*

*NEIC **25** 02:12:55.5, 36.755×177.67E, h180km, mb4.4/1, After WEL.*

*WEL **25** 02:12:56.0±0.2, 36.80S×177.61E, h177km±1km, ML4.6/8, Error ellipse: s-maj=1.4km s-min=1.4km az=0.0*

ISC 25 02:12:56.6±0.5, 37.02S±0.04×177.36E±0.06, h177km, n104, σ1$73/122, mb4.2/7, 5C-7D, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MYRZ	**Mayor Island**	**0.93**	**254**	PN	**P**	**02 13 25.3**	**+1.5**
MXZ	**Matakaoa Point**	**0.93**	**126**	⇑PN	**P**	**02 13 22.9**	**-0.9**
MXZ				SN	**S**	**02 13 43.8**	**-0.9**
MARZ	**Manawahe**	**1.10**	**209**	PN	**P**	**02 13 27.2**	**+2.1**
EDRZ	**Edgecumbe**	**1.19**	**204**	PN	**P**	**02 13 28.1**	**+2.3**
LIRZ	**Lichensteins R**	**1.25**	**218**	PN	**P**	**02 13 28.5**	**+2.1**
URZ	**Urewera**	**1.25**	**189**	P	**P**	**02 13 27.9**	**+1.5**
	62nm,0.3s,baz=359,slow=3.4,SNR=427						
URZ				S	**S**	**02 13 52.0**	**+2.6**
	84nm,0.3s,baz=302,slow=4.6,SNR=10						
URZ	**Urewera**	**1.25**	**189**	⇓PN	**P**	**02 13 27.9**	**+1.5**
URZ				SN	**S**	**02 13 52.5**	**+3.1**
URZ	**Urewera**	**1.25**	**189**	P	**P**	**02 13 27.9**	**+1.5**
PUZ	**Puketiti**	**1.27**	**146**	PN	**P**	**02 13 26.6**	**0.0**
PUZ				SN	**S**	**02 13 49.6**	**-0.1**
PUZ	**Puketiti**	**1.27**	**146**	P	**P**	**02 13 26.8**	**+0.2**
PUZ				S	**S**	**02 13 49.8**	**+0.1**
MWZ	**Matawai**	**1.32**	**174**	PN	**P**	**02 13 28.2**	**+1.2**
MWZ				SN	**S**	**02 13 52.8**	**+2.4**
MWZ	**Matawai**	**1.32**	**174**	P	**P**	**02 13 28.4**	**+1.4**
MWZ				S	**S**	**02 13 53.1**	**+2.6**
KUZ	**Kuaotunu**	**1.34**	**281**	⇓PN	**P**	**02 13 27.7**	**+0.5**
TAZ	**Tarawera**	**1.38**	**209**	PN	**P**	**02 13 30.4**	**+2.8**
MKAZ	**Moumakai**	**1.75**	**266**	⇓PN	**P**	**02 13 33.3**	**+2.0**
OTAZ	**Otara**	**1.95**	**271**	PN	**P**	**02 13 35.3**	**+2.0**
OTAZ	**Otara**	**1.95**	**271**	P	**P**	**02 13 34.8**	**+1.5**
MTAZ	**Motutapu**	**1.98**	**276**	⇓PN	**P**	**02 13 35.1**	**+1.6**
MTAZ	**Motutapu**	**1.98**	**276**	P	**P**	**02 13 35.2**	**+1.6**
KNZ	**Kokohu**	**2.01**	**173**	PN	**P**	**02 13 35.1**	**+1.1**
KNZ				SN	**S**	**02 14 01.3**	**-1.5**
KNZ	**Kokohu**	**2.01**	**173**	P	**P**	**02 13 35.1**	**+1.1**
KAAZ	**Kauri Point**	**2.14**	**275**	PN	**P**	**02 13 37.5**	**+2.0**
WTAZ	**Waiatarua**	**2.23**	**271**	PN	**P**	**02 13 38.5**	**+2.0**
WTAZ	**Waiatarua**	**2.23**	**271**	P	**P**	**02 13 38.7**	**+2.2**
BKZ	**Black Stump Fm**	**2.25**	**197**	⇓PN	**P**	**02 13 38.1**	**+1.4**
BKZ	**Black Stump Fm**	**2.25**	**197**	P	**P**	**02 13 38.1**	**+1.4**
KATZ	**Kakaramea**	**2.35**	**213**	PN	**P**	**02 13 40.9**	**+3.0**
KATZ	**Kakaramea**	**2.35**	**213**	P	**P**	**02 13 41.0**	**+3.1**
MGZ	**Maungaku**	**2.44**	**215**	PN	**P**	**02 13 41.5**	**+2.5**
MGZ	**Maungaku**	**2.44**	**215**	P	**P**	**02 13 41.7**	**+2.7**
KAVZ	**Karewarewa**	**2.47**	**213**	PN	**P**	**02 13 42.0**	**+2.6**
KAVZ	**Karewarewa**	**2.47**	**213**	P	**P**	**02 13 42.1**	**+2.7**
HIZ	**Hauiti**	**2.48**	**232**	PN	**P**	**02 13 42.6**	**+3.1**
WTVZ	**West Tongariro**	**2.51**	**213**	PN	**P**	**02 13 42.1**	**+2.2**
TWVZ	**Taurewa**	**2.54**	**216**	PN	**P**	**02 13 42.5**	**+2.3**
NGZ	**Ngauruhoe**	**2.56**	**212**	PN	**P**	**02 13 42.6**	**+2.2**
NGZ	**Ngauruhoe**	**2.56**	**212**	P	**P**	**02 13 42.8**	**+2.4**
TUVZ	**Tukino**	**2.61**	**210**	PN	**P**	**02 13 42.9**	**+1.9**
TUVZ	**Tukino**	**2.61**	**210**	P	**P**	**02 13 43.1**	**+2.0**
FWVZ	**Far West T-bar**	**2.65**	**212**	PN	**P**	**02 13 43.5**	**+2.1**
FWVZ				SN	**S**	**02 14 20.7**	**+4.8**
FWVZ	**Far West T-bar**	**2.65**	**212**	P	**P**	**02 13 43.6**	**+2.2**
FWVZ				S	**S**	**02 14 12.5**	**-3.4**
DRZ	**Dome Shelter**	**2.66**	**212**	PN	**P**	**02 13 43.6**	**+2.0**
DRZ	**Dome Shelter**	**2.66**	**212**	P	**P**	**02 13 43.6**	**+2.0**
WNVZ	**Wahianoa**	**2.69**	**211**	PN	**P**	**02 13 43.9**	**+2.0**
VRZ	**Vera Road**	**2.93**	**224**	PN	**P**	**02 13 47.9**	**+3.0**
VRZ	**Vera Road**	**2.93**	**224**	*e*P	**P**	**02 13 48.0**	**+3.1**
PWZ	**Pawanui**	**3.03**	**187**	PN	**P**	**02 13 46.2**	**+0.1**
TSZ	**Takapari Road**	**3.22**	**199**	PN	**P**	**02 13 48.6**	**0.0**
WAZ	**Wanganui**	**3.30**	**214**	PN	**P**	**02 13 47.9**	**-1.7**
BFZ	**Birch Farm**	**3.75**	**193**	PN	**P**	**02 13 54.9**	**-0.4**
BFZ				SN	**S**	**02 14 41.1**	**+0.6**
MRZ	**Mangatainoka R**	**3.89**	**200**	PN	**P**	**02 13 56.6**	**-0.4**
KIW	**Kapiti Island**	**4.28**	**206**	PN	**P**	**02 14 01.3**	**-0.7**
KIW	**Kapiti Island**	**4.28**	**206**	P	**P**	**02 14 01.5**	**-0.5**
MTW	**Mount Morrison**	**4.38**	**199**	PN	**P**	**02 14 01.9**	**-1.3**
MTW	**Mount Morrison**	**4.38**	**199**	P	**P**	**02 14 02.0**	**-1.2**
CAW	**Cannon Point**	**4.45**	**203**	PN	**P**	**02 14 03.0**	**-1.1**
CAW				SN	**S**	**02 14 56.1**	**-0.3**
CAW	**Cannon Point**	**4.45**	**203**	P	**P**	**02 14 03.2**	**-1.0**
MRW	**Makara Radio**	**4.68**	**205**	PN	**P**	**02 14 06.1**	**-1.1**
MRW				SN	**S**	**02 15 02.3**	**+0.6**
MRW	**Makara Radio**	**4.68**	**205**	P	**P**	**02 14 06.1**	**-1.1**
MRW				S	**S**	**02 15 02.6**	**+0.9**
MSWZ	**Moikau Station**	**4.68**	**200**	PN	**P**	**02 14 05.8**	**-1.4**
WEL	**Wellington**	**4.71**	**205**	PN	**P**	**02 14 06.1**	**-1.4**
WEL	**Wellington**	**4.71**	**205**	P	**P**	**02 14 06.2**	**-1.3**
SNZO	**South Karori**	**4.75**	**205**	PN	**P**	**02 14 06.3**	**-1.8**
SNZO				SN	**S**	**02 15 03.8**	**+0.5**
SNZO	**South Karori**	**4.75**	**205**	P	**P**	**02 14 06.6**	**-1.5**
SNZO				S	**S**	**02 15 04.1**	**+0.8**
BHW	**Baring Head**	**4.79**	**203**	PN	**P**	**02 14 07.1**	**-1.5**
BHW	**Baring Head**	**4.79**	**203**	P	**P**	**02 14 07.1**	**-1.4**
TUWZ	**Tuamarina**	**5.14**	**210**	PN	**P**	**02 14 11.3**	**-1.8**
TUWZ				SN	**S**	**02 15 11.7**	**-0.6**
NNZ	**Nelson**	**5.21**	**215**	PN	**P**	**02 14 12.3**	**-1.7**
NNZ	**Nelson**	**5.21**	**215**	*e*P	**P**	**02 14 12.5**	**-1.5**
QRZ	**Quartz Range**	**5.35**	**223**	PN	**P**	**02 14 13.9**	**-2.0**
QRZ				SN	**S**	**02 15 16.9**	**-0.4**
QRZ	**Quartz Range**	**5.35**	**223**	*e*P	**P**	**02 14 14.0**	**-1.8**
BSWZ	**Blackbirch Sta**	**5.41**	**209**	PN	**P**	**02 14 15.4**	**-1.2**
THZ	**Tophouse**	**5.86**	**215**	PN	**P**	**02 14 20.1**	**-2.4**
THZ	**Tophouse**	**5.86**	**215**	*e*P	**P**	**02 14 20.4**	**-2.1**
KHZ	**Kahutara**	**6.14**	**207**	PN	**P**	**02 14 23.9**	**-2.3**
KHZ	**Kahutara**	**6.14**	**207**	P	**P**	**02 14 24.2**	**-2.0**
DSZ	**Denniston Nort**	**6.38**	**221**	PN	**P**	**02 14 27.9**	**-1.5**
LTZ	**Lake Taylor**	**6.95**	**213**	PN	**P**	**02 14 33.8**	**-3.3**
LTZ	**Lake Taylor**	**6.95**	**213**	*e*P	**P**	**02 14 34.3**	**-2.7**
MQZ	**McQueen's Vall**	**7.58**	**207**	PN	**P**	**02 14 41.7**	**-3.6**
MQZ				SN	**S**	**02 16 04.2**	**-5.8**
MQZ	**McQueen's Vall**	**7.58**	**207**	P	**P**	**02 14 41.7**	**-3.6**
MQZ				S	**S**	**02 16 05.2**	**-4.8**
RPZ	**Rata Peaks**	**8.23**	**214**	P	**P**	**02 14 51.5**	**-2.4**
	6.9nm,0.3s,baz=54,slow=1.4,SNR=38						
RPZ				S	**S**	**02 16 19.7**	**-5.7**
	7.7nm,0.3s,baz=81,slow=21,SNR=18						
BWZ	**Berwen**	**9.40**	**215**	PN	**P**	**02 15 05.5**	**-3.7**
ODZ	**Otahua Downs**	**9.48**	**210**	PN	**P**	**02 15 07.4**	**-2.8**
ODZ	**Otahua Downs**	**9.48**	**210**	*e*P	**P**	**02 15 07.7**	**-2.5**
CTA	**Charters Tower**	**31.92**	**293**	P	**P**	**02 19 04.3**	**-3.3**
	1.8nm,0.5s,mb4.1,baz=114,slow=10.0,SNR=4.7						
AS12	**Alice Springs**	**39.47**	**277**	*e*P	**P**	**02 20 08.7**	**-2.5**
	7.2nm,0.7s,mb4.4						
ASAR	**Alice Springs**	**39.47**	**277**	P	**P**	**02 20 08.6**	**-2.6**
	5.4nm,0.7s,mb4.3,baz=120,slow=8.1,SNR=34						
WB2	**Warramunga Arr**	**41.07**	**282**	*e*P	**P**	**02 20 21.0**	**-3.4**
WRA	**Warramunga Arr**	**41.08**	**282**	P	**P**	**02 20 21.3**	**-3.2**
	2.8nm,0.4s,mb4.2,baz=120,slow=7.7,SNR=58						
FITZ	**Fitzroy Crossi**	**48.95**	**278**	*e*P	**P**	**02 21 23.6**	**-3.2**
FITZ	**Fitzroy Crossi**	**48.95**	**278**	P	**P**	**02 21 23.7**	**-3.1**
	1.3nm,0.3s,mb4.0,baz=166,slow=5.0,SNR=12						
QSPA	**South Pole Qui**	**53.10**	**180**	*e*P	**P**	**02 21 57.2**	**0.0**
	5.8nm,0.7s,mb4.4						
QSPA				*e*		02 29 53.2	
MAW	**Mawson**	**64.74**	**203**	P	**P**	**02 23 15.0**	**-2.4**
	1.9nm,0.8s,mb4.0,baz=153,slow=23,SNR=5.7						
VNA3	**Neumayer Olymp**	**71.92**	**178**	⇑*i*	**P**	**02 24 01.2**	**-0.4**
VNA3	**Neumayer Olymp**	**71.92**	**178**	⇑*i*	**P**	**02 24 01.2**	**-0.4**
VNA2	**Neumayer--Watz**	**72.30**	**178**	⇑*i*	**P**	**02 24 03.7**	**-0.2**
VNA2	**Neumayer--Watz**	**72.30**	**178**	⇑*i*	**P**	**02 24 03.7**	**-0.2**
VNA1	**Neumayer--Stat**	**72.56**	**178**	⇓*i*	**P**	**02 24 06.4**	**+1.1**
VNA1	**Neumayer--Stat**	**72.56**	**178**	⇓*i*	**P**	**02 24 06.4**	**+1.1**
CMAR	**Chiang Mai Air**	**92.07**	**291**	P	**P**	**02 25 44.2**	**-2.7**
	1.1nm,0.4s,mb4.3,baz=146,slow=3.3,SNR=4.3						
ARCES	**ARCESS Array B**	**144.04**	**344**	PKP	PKPdf	02 32 03.9	-5.8
	2.1nm,0.7s,baz=27,slow=2.7,SNR=3.8						
FINES	**FINESS Array B**	**149.66**	**333**	PKPbc	PKPdf	02 32 18.6	-0.7
	1.0nm,0.6s,baz=45,slow=2.7,SNR=4.1						
DBIC	**Dimbokro**	**149.72**	**176**	PKPbc	PKPdf	02 32 23.1	+2.4
	23nm,1.5s,baz=181,slow=5.2,SNR=4.7						

WEL 25 02:19:07.1±0.4, 37.03S×177.12E, h228km±4km, ML3.8/1, 1C, Error ellipse: s-maj=5.3km s-min=5.0km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MXZ	**Matakaoa Point**	**1.09**	**120**	PN	P	02 19 40.3	-0.2
MXZ				SN	S	02 20 05.3	-1.2
URZ	**Urewera**	**1.23**	**180**	⇑PN	P	02 19 41.4	-0.2
MWZ	**Matawai**	**1.35**	**166**	PN	P	02 19 42.3	-0.1
MWZ				SN	S	02 20 09.6	-0.3
PUZ	**Puketiti**	**1.38**	**139**	PN	P	02 19 42.6	-0.2
KNZ	**Kokohu**	**2.04**	**168**	PN	P	02 19 48.0	-0.4
FWVZ	**Far West T-bar**	**2.54**	**209**	PN	P	02 19 53.3	-0.4
WNVZ	**Wahianoa**	**2.59**	**207**	PN	P	02 19 53.9	-0.3
MRZ	**Mangatainoka R**	**3.82**	**198**	PN	P	02 20 05.9	-2.4
MTW	**Mount Morrison**	**4.31**	**196**	PN	P	02 20 11.5	-2.8
MSWZ	**Moikau Station**	**4.62**	**198**	PN	P	02 20 15.1	-3.0
MQZ	**McQueen's Vall**	**7.49**	**206**	SN	S	02 22 11.4	-7.2

*IDC **25** 02:19:50.2±2.8, 32.41S×178.26W, mb4.0/2, mb1 4.2/3, mb1mx3.8/14, ML3.5/1, Error ellipse: s-maj=67.6km s-min=35.8km az=118.0*

ISC 25 02:19:58.3±1.5, 32.4S±0.1×179.7W±0.2, n7, σ0$61/7, mb3.9/2, 2C, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**6.45**	**203**	Pn	**Pn**	**02 21 33.4**	**-3.5**
	0.8nm,0.3s,baz=278,slow=13,SNR=3.8						
URZ				Sn	**Sn**	**02 22 52.5**	**+0.3**
	4.7nm,0.3s,baz=228,slow=17,SNR=9.6						
ASAR	**Alice Springs**	**41.63**	**270**	P	**P**	**02 27 50.0**	**0.0**
	0.8nm,0.6s,mb3.6,baz=104,slow=7.3,SNR=11						
WB2	**Warramunga Arr**	**42.79**	**275**	*e*P	**P**	**02 27 59.6**	**0.0**
WRA	**Warramunga Arr**	**42.80**	**275**	P	**P**	**02 27 59.7**	**0.0**
	1.7nm,0.4s,mb4.1,baz=114,slow=7.9,SNR=70						
VNA3	**Neumayer Olymp**	**76.44**	**177**	⇑*i*	**P**	**02 31 51.1**	**+0.2**
VNA2	**Neumayer--Watz**	**76.86**	**177**	⇑*i*	**P**	**02 31 53.2**	**0.0**
FINES	**FINESS Array B**	**146.46**	**338**	PKPbc	PKPbc	02 39 33.0	-7.5
	0.8nm,0.5s,baz=63,slow=4.3,SNR=12						

IDC 25 02:24:36.0±9.4, 7.15S×117.76E, h289km±109km, mb2.6/3, mb1 2.9/4, mb1mx2.8/17, Error ellipse: s-maj=171.0km s-min=33.0km az=51.0, Bali Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**13.32**	**146**	P	P	02 27 34.4	-1.6
	0.1nm,0.3s,slow=10,SNR=4.6						
FITZ				S	S	02 30 05.4	+6.9
	0.1nm,0.3s,baz=171,slow=12,SNR=2.6						
WRA	**Warramunga Arr**	**20.50**	**130**	P	P	02 28 53.0	-0.2
	0.1nm,0.3s,baz=315,slow=9.6,SNR=5.1						
ASAR	**Alice Springs**	**22.58**	**138**	P	P	02 29 12.1	-1.3
	0.5nm,0.4s,baz=311,slow=8.9,SNR=11						
MKAR	**Makanchi Array**	**62.26**	**333**	P	P	02 34 27.8	-1.6
	0.3nm,0.6s,baz=146,slow=5.2,SNR=4.6						

*IDC **25** 03:42:58.7±4.0, 6.22S×105.69E, h47km±37km, mb4.0/13, mb1 4.1/13, mb1mx4.0/19, Error ellipse: s-maj=26.5km s-min=12.4km az=42.0*

*NEIC **25** 03:43:07.0±0.3, 6.145×105.91E, mb4.4/7, Error ellipse: s-maj=14.4km s-min=8.9km az=47.0*

ISC 25 03:43:05.3±0.5, 6.1S±0.1×106.0E±0.1, h120km, n40, σ1$21/29, mb4.1/15, 1C-1D, Sunda Strait

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**22.63**	**124**	*e*P	**P**	**03 47 58.2**	**+1.3**
	1.2nm,0.5s,mb3.5						
FITZ	**Fitzroy Crossi**	**22.63**	**124**	P	**P**	**03 47 56.2**	**-0.7**
	2.2nm,0.9s,mb3.5,baz=242,slow=1.5,SNR=9.4						
FITZ				S	**S**	**03 52 04.1**	**+12**
	1.3nm,0.9s,baz=350,slow=15,SNR=2.0						
KAKA	**Kakadu**	**26.90**	**106**	*e*P	**P**	**03 48 35.7**	**-1.5**
	8.3nm,0.6s,mb4.4						
WRA	**Warramunga Arr**	**30.83**	**119**	P	**P**	**03 49 12.0**	**-0.4**
	3.0nm,0.7s,mb4.2,baz=287,slow=10,SNR=44						
WRA				PcP	PcP	03 52 06.5	-0.1
	0.7nm,0.5s,baz=298,slow=2.0,SNR=8.3						
WB2	**Warramunga Arr**	**30.84**	**119**	*e*P	**P**	**03 49 11.9**	**-0.6**
AS12	**Alice Springs**	**32.08**	**126**	*e*P	**P**	**03 49 23.2**	**0.0**
	6.5nm,1.4s,mb4.2						
ASAR	**Alice Springs**	**32.08**	**126**	P	**P**	**03 49 22.1**	**-1.1**
	0.6nm,0.5s,mb3.6,baz=307,slow=8.1,SNR=15						
ASAR				PcP	PcP	03 52 09.8	-0.2
	0.6nm,0.5s,baz=304,slow=2.0,SNR=6.4						
PMG	**Port Moresby**	**40.95**	**97**	P	**P**	**03 50 40.1**	**+2.3**
	9.1nm,0.6s,mb4.8,baz=227,slow=4.7,SNR=6.5						
PMG	**Port Moresby**	**40.95**	**97**	*e*P	**P**	**03 50 39.5**	**+1.6**
	11nm,0.2s,mb5.3						
CTA	**Charters Tower**	**41.52**	**113**	P	**P**	**03 50 44.1**	**+1.5**
	6.4nm,1.1s,mb4.3,baz=333,slow=14,SNR=2.9						
STKA	**Stephens Creek**	**42.03**	**132**	*e*P	**P**	**03 50 47.1**	**+0.4**
	5.6nm,0.4s,mb4.7						
STKA	**Stephens Creek**	**42.03**	**132**	P	**P**	**03 50 47.0**	**+0.3**
	5.7nm,0.4s,mb4.7,baz=304,slow=7.7,SNR=28						
SONM	**Songino Array**	**53.67**	**0**	PcP	PcP	03 53 22.4	+1.0
	1.8nm,0.5s,baz=252,slow=4.6,SNR=4.8						
ULN	**Ulaanbaatar**	**53.71**	**1**	P	**P**	**03 52 17.2**	**+0.1**
ULN				*e*PcP	PcP	03 53 22.4	+0.8
MKAR	**Makanchi Array**	**56.66**	**341**	P	**P**	**03 52 37.5**	**-1.0**
	0.6nm,0.4s,mb4.0,baz=152,slow=9.3,SNR=14						
BVAR	**Borovoye Array**	**66.11**	**337**	P	**P**	**03 53 40.8**	**-1.0**
	0.7nm,0.4s,mb3.8,baz=144,slow=8.4,SNR=7.4						
BRVK	**Borovoye**	**66.17**	**337**	P	**P**	**03 53 38.0**	**-4.2**
BRVK				*e*pP	pP	03 54 07.4	-4.3
ZRNK	**Zerenda**	**66.59**	**337**	*e*P	**P**	**03 53 44.8**	**0.0**
MAW	**Mawson**	**67.96**	**196**	P	**P**	**03 53 51.0**	**-2.1**
	2.3nm,0.6s,mb4.2,baz=55,slow=6.9,SNR=3.7						
VNDA	**Vanda**	**77.07**	**169**	P	**P**	**03 54 45.0**	**-1.4**
	1.4nm,0.5s,mb3.9,baz=307,slow=6.0,SNR=14						
VNDA	**Vanda**	**77.07**	**169**	*e*P	**P**	**03 54 45.3**	**-1.1**
	1.5nm,1.0s,mb3.7						
VNDA				*e*pP	pP	03 55 15.8	-1.1
SBA	**Scott Base**	**78.15**	**169**	*e*P	**P**	**03 54 51.4**	**-1.0**
	2.4nm,0.8s,mb4.0						
BRTR	**Keskin Array B**	**80.43**	**312**	P	**P**	**03 55 04.8**	**-0.6**
	0.9nm,0.7s,mb3.7,baz=121,slow=7.2,SNR=5.5						
SUR	**Sutherland**	**82.69**	**238**	P	**P**	**03 55 17.9**	**+0.6**
	1.4nm,0.7s,mb4.5,baz=108,slow=12,SNR=4.7						
QSPA	**South Pole Qui**	**83.92**	**180**	*e*P	**P**	**03 55 22.2**	**-0.3**
	25nm,0.4s						
SNAA	**Sanae**	**90.10**	**197**	*e*P	**P**	**03 55 52.7**	**+0.2**
FINES	**FINESS Array B**	**90.46**	**332**	P	**P**	**03 55 56.6**	**+2.3**
	0.9nm,0.7s,mb4.0,baz=149,slow=8.1,SNR=5.5						
VNA2	**Neumayer--Watz**	**91.75**	**198**	⇓*i*	**P**	**03 56 02.2**	**+2.1**
VNA3	**Neumayer Olymp**	**92.28**	**197**	⇑*i*	**P**	**03 56 04.7**	**+2.1**
YKA	**Yellowknife Ar**	**116.34**	**20**	PKP	PKPdf	04 01 36.0	+1.5
	0.1nm,0.4s,baz=348,slow=1.5,SNR=5.9						
YKA	**Yellowknife Ar**	**116.34**	**20**	PKP	PKPdf	04 01 36.0	+1.5
WMOK	**Wichita Mounta**	**143.46**	**35**	*e*PKP	PKPdf	04 02 26.1	0.0
TXAR	**Lajitas Array**	**143.71**	**47**	PKP	PKPdf	04 02 28.6	+1.9
	2.9nm,0.5s,baz=277,slow=1.2,SNR=68						
CPUP	**Villa Florida**	**143.94**	**206**	PKP	PKPdf	04 02 27.9	+0.6
	1.8nm,0.9s,baz=196,slow=1.9,SNR=4.8						
CCM	**Cathedral Cave**	**144.53**	**24**	*e*PKPdf	PKPdf	04 02 29.4	+1.5
JCT	**Junction City**	**145.71**	**42**	*e*PKP	PKPdf	04 02 33.9	+3.6
BDFB	**Brasilia**	**146.39**	**230**	PKPbc	PKPbc	04 02 35.0	+2.0
	4.9nm,0.5s,baz=161,slow=2.3,SNR=11						
WVT	**Waverly**	**147.51**	**21**	*e*PKPbc	PKPdf	04 02 38.8	+5.8
SWET	**Sewanee**	**148.99**	**19**	*e*PKPbc	PKPdf	04 02 41.3	+5.9
CPCT	**Cooper Cave**	**149.21

CRVS	**Cervenica-Dubn**	**4.33**	**123**	*e*PN		**Pn**	**03 51 06.3**	**+1.0**
CRVS				*e*PG		**Pg**	**03 51 19.0**	**-4.1**
KWP	**Kalwaria**	**4.64**	**110**	*e*Pn		**Pn**	**03 51 13.4**	**+3.6**
KWP				*e*P*		**Pb**	**03 51 22.0**	**+3.1**
KWP				*e*Pg		**Pg**	**03 51 31.0**	**+1.6**
KBA	**Koelnbreinsper**	**4.68**	**203**	⇑*i*PN		**Pn**	**03 51 11.1**	**+0.8**
KBA				*i* SG		**Sg**	**03 52 31.1**	**-1.3**
	17nm,0.7s							

IDC ***25*** *04:18:29.5±2.9,32.38S×178.23W,mb4.2/2,mb1 4.4/3, mb1mx4.0/14,ML3.9/1, Error ellipse: s-maj=67.1km s-min=35.3km az=117.0*

ISC 25 04:18:35.2±1.8,32.5S±0.1×178.6W±0.3, h33km, n9, σ0§71/9, mb4.0/2, 2D, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**6.74**	**210**	Pn	**Pn**	**04 20 13.1**	**-1.5**
	2.0nm,0.3s,baz=201,slow=2.4,SNR=11						
URZ				Sn	**Sn**	**04 21 31.7**	**+0.7**
	9.6nm,0.3s,baz=163,slow=19,SNR=13						
ASAR	**Alice Springs**	**42.52**	**269**	P	**P**	**04 26 29.8**	**+0.4**
	0.7nm,0.4s,mb3.7,baz=108,slow=7.4,SNR=14						
WB2	**Warramunga Arr**	**43.69**	**275**	*e*P	**P**	**04 26 38.8**	**-0.1**
WRA	**Warramunga Arr**	**43.70**	**275**	P	**P**	**04 26 38.9**	**0.0**
	2.5nm,0.4s,mb4.3,baz=113,slow=8.0,SNR=106						
VNA3	**Neumayer Olymp**	**76.27**	**176**	⇓*i*	**P**	**04 30 22.0**	**+0.4**
VNA3	**Neumayer Olymp**	**76.27**	**176**	*e*	**P**	**04 30 32.7**	**+11**
VNA2	**Neumayer--Watz**	**76.70**	**177**	⇓*i*	**P**	**04 30 24.7**	**+0.7**
VNA2	**Neumayer--Watz**	**76.70**	**177**	*e*	**P**	**04 30 34.7**	**+11**
FINES	**FINESS Array B**	**146.90**	**338**	PKPbc	PKPbc	04 38 12.1	-0.9
	0.9nm,0.4s,baz=59,slow=4.7,SNR=11						

INMG ***25*** *04:47:39.8±0.8, 37.57N×7.96W, ML0.8, Error ellipse: s-maj=2.2km s-min=1.8km az=32.0*

MDD ***25*** *04:47:39.3±0.8, 37.55N×7.95W, mbLg1.4/5, Error ellipse: s-maj=6.8km s-min=3.6km az=31.0, PRXIMO*

ISC 25 04:47:38.7±0.7, 37.58N±0.04×7.95W±0.04, n11, σ0§39/13, Portugal

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
EGRO	**El Granado**	**0.37**	**96**	Pg	**Pg**	**04 47 46.5**	**+0.3**
	2.0nm,0.1s,SNR=25						
EGRO				Lg		04 47 51.6	
	5.8nm,0.1s,SNR=15						
PALC	**Alcoutim**	**0.39**	**106**	*e*Pg	**Pg**	**04 47 46.7**	**+0.1**
PALC				*e*Sg	**Sg**	**04 47 52.2**	**+0.4**
	7.4nm,0.1s						
PALC	**Alcoutim**	**0.39**	**106**	Pg	**Pg**	**04 47 46.7**	**+0.1**
PALC				Lg		04 47 52.2	
	3.7nm,0.1s						
PBEJ	**Beja**	**0.46**	**8**	*e*Pg	**Pg**	**04 47 48.1**	**+0.3**
PBEJ				*e*Sg	**Sg**	**04 47 54.1**	**+0.2**
	3.3nm,0.1s						
PBEJ	**Beja**	**0.46**	**8**	Pg	**Pg**	**04 47 48.1**	**+0.3**
PBEJ				Lg		04 47 54.1	
	1.6nm,0.1s						
PTEO	**Sao Teotonio**	**0.62**	**268**	*e*Pg	**Pg**	**04 47 51.1**	**0.0**
PTEO				*e*Sg	**Sg**	**04 47 59.2**	**-0.1**
	1.7nm,0.1s						
PTEO	**Sao Teotonio**	**0.62**	**268**	Pg	**Pg**	**04 47 51.1**	**0.0**
PTEO				Lg		04 47 59.2	
	0.9nm,0.1s						
MOE	**Montemor**	**1.00**	**342**	*e*S	**Sg**	**04 48 12.2**	**+0.2**
EMIN	**Mina Concepcio**	**1.03**	**79**	Pg	**Pg**	**04 47 58.5**	**-0.8**
	0.2nm,0.1s,SNR=17						
EMIN				Lg		04 48 13.4	
	2.2nm,0.1s,SNR=10						
EBAD	**Badajoz**	**1.39**	**32**	Pg	**Pg**	**04 48 05.8**	**-0.7**
	1.5nm,0.1s,SNR=11						
EBAD				Lg		04 48 24.1	
	3.5nm,0.1s,SNR=8.0						
EADA	**Adamuz**	**2.73**	**76**	Lg		04 49 05.3	
	0.1nm,0.1s,SNR=7.9						

BJI ***25*** *04:49:39.3, 18.35S×178.03W, h604km, mB4.4, mb4.5*

NEIC ***25*** *04:49:40.4±0.2, 17.90S×178.51W, mb4.6/19, Error ellipse: s-maj=9.4km s-min=4.6km az=143.0*

SYO ***25*** *04:49:40.3, 17.90S×178.51W, h577km, MB4.6*

IDC ***25*** *04:49:42.9±2.2, 18.00S×178.53W, h601km±26km, mb3.9/13, mb1 4.2/13, mb1mx4.1/16, Error ellipse: s-maj=18.4km s-min=12.1km az=158.0*

ISC 25 04:49:41.3±1.7, 17.92S±0.08×178.60W±0.08, h600km±22km, n92, σ0§89/80, mb4.5/32, 7C-2D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**14.65**	**251**	*e*P	**P**	**04 52 45.9**	**-0.1**
DZM	**Mont Dzumac**	**14.65**	**251**	*e*P	**P**	**04 52 45.9**	**-0.1**
URZ	**Urewera**	**20.61**	**190**	P	**P**	**04 53 39.9**	**-1.9**
	11nm,0.8s,baz=218,slow=0.2,SNR=6.1						
ARMA	**Armidale**	**29.78**	**240**	*e*P	**P**	**04 55 03.6**	**+1.0**
CTA	**Charters Tower**	**33.27**	**261**	*e*P	**P**	**04 55 32.5**	**+0.4**
	19nm,0.6s,mb4.9						
CTA	**Charters Tower**	**33.27**	**261**	P	**P**	**04 55 32.6**	**+0.5**
	32nm,0.6s,mb5.1,baz=91,slow=10,SNR=55						
CTAO	**Charters Tower**	**33.27**	**261**	*e*P	**P**	**04 55 32.2**	**+0.1**
	27nm,0.6s,mb5.0						
CNB	**Canberra Magne**	**33.27**	**232**	*e*P	**P**	**04 55 33.0**	**+1.0**
	36nm,0.6s,mb5.2						
PMG	**Port Moresby**	**34.28**	**280**	P	**P**	**04 55 42.3**	**+1.7**
	84nm,0.8s,mb5.5,baz=76,slow=5.6,SNR=21						
PMG	**Port Moresby**	**34.28**	**280**	*e*P	**P**	**04 55 41.4**	**+0.8**
	90nm,0.8s,mb5.5						
TOO	**Toolangi**	**37.02**	**231**	*e*P	**P**	**04 56 03.6**	**+0.7**
	15nm,0.9s,mb4.5						
STKA	**Stephens Creek**	**38.47**	**241**	⇓*i*P	**P**	**04 56 15.8**	**+1.0**
	19nm,0.6s,mb4.8						
STKA	**Stephens Creek**	**38.47**	**241**	P	**P**	**04 56 15.9**	**+1.1**
	30nm,0.6s,mb5.0,baz=88,slow=9.5,SNR=64						
WB2	**Warramunga Arr**	**44.44**	**260**	*e*P	**P**	**04 57 01.6**	**-0.6**
WRAB	**Tennant Creek**	**44.44**	**260**	*e*P	**P**	**04 57 01.1**	**-1.1**
	65nm,0.6s,mb5.3						
WRA	**Warramunga Arr**	**44.45**	**260**	P	**P**	**04 57 01.6**	**-0.7**
	25nm,0.5s,mb5.0,baz=94,slow=7.1,SNR=757						
WRA				S	**S**	**05 02 52.0**	**-3.2**
	1.1nm,0.9s,baz=100,slow=13,SNR=5.0						
AS12	**Alice Springs**	**44.61**	**254**	*e*P	**P**	**04 57 03.5**	**0.0**
	87nm,0.5s,mb5.5						
ASAR	**Alice Springs**	**44.61**	**254**	P	**P**	**04 57 03.6**	**+0.1**
	155nm,0.5s,baz=88,slow=8.5,SNR=2570						
ASAR				PcP	PcP	04 58 32.9	-0.4
	4.4nm,0.5s,baz=99,slow=3.9,SNR=5.1						
ASAR				S	**S**	**05 02 56.9**	**-0.5**
	2.8nm,1.1s,baz=89,slow=17,SNR=5.7						
KAKA	**Kakadu**	**47.44**	**269**	⇓*i*P	**P**	**04 57 24.3**	**-0.8**
	54nm,0.4s,mb5.4						
FORT	**Forrest**	**49.84**	**245**	*e*P	**P**	**04 57 41.8**	**-0.9**
	124nm,0.4s						
FITZ	**Fitzroy Crossi**	**52.85**	**261**	*e*P	**P**	**04 58 04.1**	**-0.4**
	6.5nm,0.4s,mb4.3						
FITZ	**Fitzroy Crossi**	**52.85**	**261**	P	**P**	**04 58 04.4**	**-0.1**
	6.6nm,0.4s,mb4.3,baz=153,slow=3.4,SNR=76						
KLBR	**Kellerberrin**	**58.66**	**244**	*e*P	**P**	**04 58 43.4**	**-1.0**
	33nm,0.6s,mb4.6						
MUN	**Mundaring**	**59.96**	**243**	*e*P	**P**	**04 58 52.4**	**-0.5**
	13nm,0.7s,mb4.3						
SBA	**Scott Base**	**60.39**	**184**	*e*P	**P**	**04 58 55.9**	**+0.7**
VNDA	**Vanda**	**60.41**	**185**	P	**P**	**04 58 55.0**	**-0.3**
	0.6nm,0.6s,baz=348,slow=7.3,SNR=5.8						
VNDA	**Vanda**	**60.41**	**185**	*e*P	**P**	**04 58 54.9**	**-0.4**
QSPA	**South Pole Qui**	**72.13**	**180**	*e*P	**P**	**05 00 07.1**	**0.0**
	102nm,1.3s,mb5.2						
QSPA				*e*pP	pP	05 02 05.2	-5.1
SSE	**Sheshan**	**75.61**	**310**	P	**P**	**05 00 32.1**	**+4.6**
SSE				XP	sP	05 03 32.3	+0.1
SSE				S	S	05 09 30.3	+9.3
SSE				XS		05 13 06.4	
SSE				AMB	AMB		
	comp=Z,37nm,0.6s,mb5.0						
SAO	**San Andreas Ge**	**76.56**	**44**	*e*P	**P**	**05 00 32.4**	**-0.1**
	comp=Z,7.6nm,0.7s,mb4.2						
NJ2	**Nanjing**	**77.81**	**310**	*e*P	**P**	**05 00 40.5**	**+1.2**
NJ2				AMB	AMB		
	comp=Z,40nm,1.1s,mb4.8						
CMB	**Columbia Colle**	**77.97**	**43**	*e*P	**P**	**05 00 39.6**	**-0.4**
CMB				*e*pP	pP	05 02 43.1	-2.8
MDJ	**Mudanjiang**	**78.09**	**325**	P	**P**	**05 00 41.8**	**+1.3**
MDJ				PP	PP	05 03 48.5	-0.1
MDJ				S	S	05 09 51.0	+4.3
MDJ				SCS	ScS	05 10 09.6	+5.6
MDJ				AMB	AMB		
	comp=Z,7.0nm,0.8s,mb4.1						
MDJ				AMB	AMB		
	comp=Z,48nm,5.0s						
MTUM	**Tungsten Hills**	**78.80**	**45**	*e*P	**P**	**05 00 44.7**	**+0.3**
NVAR	**Mina Array Bea**	**79.56**	**44**	P	**P**	**05 00 49.0**	**+0.7**
	comp=Z,6.4nm,0.8s,mb4.0,baz=215,slow=7.3,SNR=38						
CN2	**Changchun**	**79.92**	**322**	*e*P	**P**	**05 00 49.3**	**-0.8**
LDFC	**Landfair**	**80.00**	**48**	*e*P	**P**	**05 00 51.0**	**+0.3**
TPH	**Tonopah**	**80.09**	**45**	*e*P	**P**	**05 00 51.2**	**+0.1**
	comp=Z,1.4nm,0.5s,mb3.5						
WVOR	**Wild Horse Val**	**81.53**	**40**	*e*P	**P**	**05 00 58.7**	**+0.3**
	comp=Z,11nm,1.0s,mb4.3						
GNW	**Green Mountain**	**82.09**	**34**	*e*P	**P**	**05 01 01.1**	**0.0**
PMR	**Palmer**	**82.66**	**14**	*e*P	**P**	**05 01 02.6**	**-1.1**
WUAZ	**Wupatki**	**82.89**	**49**	*e*P	**P**	**05 01 06.1**	**+0.7**
NLW	**Nelson Butte**	**83.74**	**35**	*e*P	**P**	**05 01 09.0**	**-0.3**
MAW	**Mawson**	**83.78**	**200**	P	**P**	**05 01 09.7**	**+0.7**
	comp=Z,2.6nm,0.5s,mb4.1,baz=135,slow=7.7,SNR=13						
ENH	**Enshi**	**84.13**	**304**	*e*P	**P**	**05 01 12.5**	**+0.9**
	comp=Z,8.6nm,0.6s,mb4.5						
HLID	**Hailey**	**84.76**	**41**	*e*P	**P**	**05 01 14.7**	**+0.3**
	comp=Z,3.3nm,0.7s,mb4.1						
GYA	**Guiyang**	**84.89**	**300**	⇑*i*P	**P**	**05 01 17.0**	**+1.6**
GYA				XP	sP	05 04 21.6	-1.3
GYA				S	S	05 10 48.8	-5.4
GYA				AMB	AMB		
	comp=Z,10.0nm,0.8s,mb4.5						
TCUT	**Toone Canyon**	**85.50**	**44**	*e*P	**P**	**05 01 18.4**	**+0.4**
HWUT	**Hardware Ranch**	**85.63**	**44**	*e*P	**P**	**05 01 18.3**	**-0.3**
NEW	**Newport**	**85.63**	**36**	*e*P	**P**	**05 01 17.5**	**-1.0**
MNTX	**Cornudas Mount**	**85.73**	**55**	*e*P	**P**	**05 01 19.7**	**+0.3**
COLA	**College**	**85.83**	**13**	*e*P	**P**	**05 01 17.5**	**-1.5**
PV10	**Paradox Valley**	**85.86**	**48**	*e*P	**P**	**05 01 19.4**	**-0.4**
ILAR	**Eielson Array**	**85.94**	**13**	P	**P**	**05 01 18.4**	**-1.1**
	comp=Z,1.5nm,0.5s,mb3.9,baz=229,slow=4.9,SNR=25						
PV01	**Paradox Valley**	**86.08**	**48**	*e*P	**P**	**05 01 20.4**	**-0.5**
TXAR	**Lajitas Array**	**86.16**	**58**	P	**P**	**05 01 22.8**	**+1.3**
	comp=Z,5.3nm,0.8s,mb4.2,baz=218,slow=6.1,SNR=72						
ANMO	**Albuquerque**	**86.25**	**52**	*e*P	**P**	**05 01 21.5**	**-0.2**
	comp=Z,2.7nm,0.9s,mb3.9						
MCMT	**McKenzie Canyo**	**86.37**	**41**	*e*P	**P**	**05 01 22.5**	**+0.4**
GDL2	**Guadalupe Moun**	**86.73**	**55**	*e*P	**P**	**05 01 24.7**	**+0.6**
DAWY	**Dawson**	**87.15**	**16**	*e*P	**P**	**05 01 24.1**	**-1.2**
CHMT	**Chamberlain Mo**	**87.16**	**39**	*e*P	**P**	**05 01 25.4**	**-0.3**
QLMT	**Earthquake Lak**	**87.25**	**41**	*e*P	**P**	**05 01 27.4**	**+1.2**
BW06	**Boulder Array**	**87.49**	**43**	*e*P	**P**	**05 01 27.0**	**-0.4**
	comp=Z,1.8nm,0.6s,mb4.0						
PDAR	**Pinedale Array**	**87.49**	**43**	P	**P**	**05 01 27.8**	**+0.4**
	comp=Z,3.2nm,0.6s,mb4.2,baz=225,slow=3.2,SNR=27						
PDAR				PP	PP	05 05 01.2	-3.6
	comp=Z,0.7nm,0.9s,baz=243,slow=6.6,SNR=5.7						
WALA	**Waterton Lakes**	**87.86**	**37**	*e*P	**P**	**05 01 28.5**	**-0.5**
	comp=Z,7.7nm,1.4s,mb4.2						
CMAR	**Chiang Mai Arr**	**88.72**	**290**	P	**P**	**05 01 35.5**	**+1.7**
	comp=Z,3.7nm,0.9s,mb4.2,baz=115,slow=3.2,SNR=15						
SYO	**Syowa Base**	**89.10**	**193**	⇑P	**P**	**05 01 32.8**	**-1.5**
SYO	**Syowa Base**	**89.10**	**193**	⇑PcP	PcP	05 01 35.7	+0.4
SYO	**Syowa Base**	**89.10**	**193**	⇑*e*P	**P**	**05 01 32.8**	**-1.5**
SYO				*e*PcP	PcP	05 01 35.7	+0.4
SNAA	**Sanae**	**90.59**	**179**	*e*P	**P**	**05 01 40.0**	**-1.1**
VNA3	**Neumayer Olymp**	**90.74**	**176**	*e*	**P**	**05 01 43.9**	**+2.1**
VNA3	**Neumayer Olymp**	**90.74**	**176**	⇑*i*P	**P**	**05 01 42.0**	**+0.2**
VNA3				*e*		05 01 43.9	
VNA2	**Neumayer--Watz**	**91.17**	**177**	*e*	**P**	**05 01 45.7**	**+1.9**
VNA2	**Neumayer--Watz**	**91.17**	**177**	⇑*i*P	**P**	**05 01 43.7**	**-0.1**
VNA2				*e*		05 01 45.7	
VNA1	**Neumayer--Stat**	**91.40**	**177**	*e*	**P**	**05 01 47.1**	**+2.2**
VNA1	**Neumayer--Stat**	**91.40**	**177**	⇑*i*P	**P**	**05 01 45.0**	**+0.1**
VNA1				*e*		05 01 47.1	
INK	**Inuvik**	**91.95**	**15**	*e*P	**P**	**05 01 46.3**	**-1.1**
YKA	**Yellowknife Ar**	**94.42**	**25**	P	**P**	**05 01 58.2**	**-0.5**
	comp=Z,0.5nm,0.5s,mb3.9,baz=236,slow=4.5,SNR=15						
YKA				PKKPbc		05 18 54.2	
	comp=Z,0.1nm,0.4s,baz=39,slow=2.1,SNR=6.1						
YKA	**Yellowknife Ar**	**94.42**	**25**	P	**P**	**05 01 58.2**	**-0.5**
YKA				PKKPbc		05 18 54.2	
MKAR	**Makanchi Array**	**109.02**	**314**	PKiKP		05 07 03.7	
	comp=Z,0.8nm,0.5s,baz=171,slow=0.6,SNR=13						
MKAR	**Makanchi Array**	**109.02**	**314**	PKPdf		05 07 03.7	
BVAR	**Borovoye Array**	**116.74**	**321**	PKP	PKPdf	05 07 18.7	+0.6
	comp=Z,1.8nm,0.4s,baz=126,slow=1.6,SNR=12						
HFS	**Hagfors**	**136.92**	**351**	PKhKP		05 07 50.9	
	comp=Z,2.2nm,0.8s,slow=1.4,SNR=6.4						
BRTR	**Keskin Array B**	**144.67**	**315**	PKP	PKPdf	05 08 12.8	+2.3
	comp=Z,13nm,0.3s,baz=146,slow=2.9,SNR=11						
ASF	**Jabal al Asfar**	**145.03**	**301**	PKPbc	PKPbc	05 08 14.5	+2.2
	comp=Z,3.0nm,0.6s,baz=305,slow=2.9,SNR=5.4						
MLR	**Muntele Rosu**	**145.75**	**329**	PKPbc	PKPbc	05 08 16.7	+3.0
	comp=Z,4.0nm,0.5s,baz=176,slow=4.3,SNR=4.4						
GERES	**GERESS Array B**	**147.58**	**345**	PKPbc	PKPdf	05 08 20.3	+5.2
	comp=Z,2.8nm,0.6s,baz=63,slow=6.0,SNR=9.8						
LDF	**La Druitiere**	**149.38**	**2**	*e*PKP1	PKPdf	05 08 24.2	+6.3
	comp=Z,3.3nm,0.4s						
GRR	**Gorron**	**149.56**	**3**	*e*PKP1	PKPdf	05 08 24.9	+6.7
	comp=Z,7.0nm,0.6s						
DAVOX	**Davos**	**150.38**	**348**	PKPbc	PKPdf	05 08 27.9	+8.4
	comp=Z,4.4nm,0.5s,baz=40,slow=2.1,SNR=6.7						
LOR	**Lormes**	**150.67**	**357**	*e*PKP1	PKPdf	05 08 27.4	+7.5
	comp=Z,3.2nm,0.4s						
LFF	**La Frestale**	**153.06**	**1**	*e*PKP1	PKPdf	05 08 34.0	+11
	comp=Z,5.9nm,0.4s						

BER ***25*** *05:00:48.4±4.6,54.59N×19.36E, ML2.8(NAO)*

IDC ***25*** *05:00:50.4±1.2,54.74N×19.42E, mb1 3.5/5, mb1mx3.3/21, ML3.2/5, Error ellipse: s-maj=16.5km s-min=10.3km az=106.0*

NAO ***25*** *05:00:52.0±4.6,54.88N×19.30E, ML2.8*

ISC 25 05:00:44.3±1.2, 54.83N±0.07×19.7E±0.1, n9, σ0§95/15, Poland

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BSD	**Bornholm Skovb**	**2.77**	**278**	*i* P	**Pn**	**05 01 31.0**	**+0.3**
BSD				*i*		05 01 33.6	
BSD				*e*S	**Sn**	**05 02 04.0**	**-1.3**
HFS	**Hagfors**	**6.22**	**331**	Pn	**Pn**	**05 02 21.8**	**+2.2**
	baz=158,slow=11						
HFS				Sn	**Sn**	**05 03 33.0**	**+0.6**
	baz=142,slow=28						
HFS				Lg		05 04 02.1	
	baz=147,slow=37						
HFS	**Hagfors**	**6.22**	**331**	Pn	**Pn**	**05 02 21.7**	**+2.2**
	0.2nm,0.3s,baz=145,slow=14,SNR=51						
HFS				Sn	**Sn**	**05 03 32.8**	**+0.4**
	0.1nm,0.3s,baz=139,slow=29,SNR=4.1						
HFS				Lg		05 04 02.1	
	0.1nm,0.3s,baz=150,slow=23,SNR=3.5						
GERES	**GERESS Array B**	**7.05**	**214**	Pn	**Pn**	**05 02 31.7**	**+0.4**
	0.2nm,0.3s,baz=28,slow=19,SNR=2.4						
FIA0	**FINESS Array S**	**7.44**	**24**	Pn	**Pn**	**05 02 40.9**	**+4.2**
	baz=200,slow=12						
FIA0				Sn	**Sn**	**05 04 02.4**	**-0.4**
	baz=207,slow=22						
FIA0				Lg		05 04 48.5	
	baz=224,slow=37						
FINES	**FINESS Array B**	**7.44**	**24**	Pn	**Pn**	**05 02 41.1**	**+4.4**
	0.5nm,0.3s,baz=203,slow=11,SNR=19						
FINES				Sn	**Sn**	**05 04 02.6**	**-0.2**
	0.3nm,0.3s,baz=219,slow=18,SNR=3.1						
FINES				Lg		05 04 50.2	
	0.4nm,0.3s,baz=192,slow=26,SNR=3.2						
NOA	**NORSAR Array B**	**7.68**	**328**	Pn	**Pn**	**05 02 40.2**	**+0.1**
	0.2nm,0.3s,baz=148,slow=10,SNR=2.8						
NOA				Sn	**Sn**	**05 04 03.2**	**-5.7**
	0.2nm,0.3s,baz=250,slow=19,SNR=1.6						
NOA				Lg		05 04 49.0	
	0.3nm,0.3s,baz=75,slow=10,SNR=1.3						
ARA0	**ARCESS Array S**	**14.99**	**8**	Pn	**P**	**05 04 18.0**	**-0.8**
	baz=183,slow=14						
ARCES	**ARCESS Array B**	**14.99**	**8**	Pn	**P**	**05 04 18.0**	**-0.8**
	0.1nm,0.3s,baz=185,slow=13,SNR=5.6						

NEIC ***25*** *05:05:16.8±0.7, 32.52S×177.85W, h10km, mb4.7/4, Error ellipse: s-maj=18.1km s-min=13.6km az=146.0*

IDC ***25*** *05:05:17.9±2.2, 32.59S×178.16W, mb4.4/3, mb1 4.5/4, mb1mx4.1/13, ML3.8/1, MS3.6/2, Ms1 3.6/2, ms1mx3.3/13, Error ellipse: s-maj=53.3km s-min=33.8km az=124.0*

ISC 25 05:05:22.4±3.2, 32.8S±0.2×178.1W±0.1, h61km±31km, n20, σ1§08/17, mb4.4/5, 3C, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**6.74**	**214**	Pn	**P**	**05 06 60.0**	**-1.0**
	1.9nm,0.3s,baz=330,slow=2.0,SNR=13						
URZ				Sn	**S**	**05 08 17.1**	**+0.1**
	2.3nm,0.3s,baz=152,slow=15,SNR=7.4						
RAR	**Rarotonga**	**19.93**	**59**	*e*P	**P**	**05 09 53.6**	**+1.9**
	592nm,2.5s						
STKA	**Stephens Creek**	**33.95**	**260**	LR	LR	05 24 49.9	
	comp=Z,110nm,18.8s,baz=203,slow=35						
CTA	**Charters Tower**	**34.19**	**283**	P	**P**	**05 12 05.3**	**+1.4**
	2.3nm,0.6s,mb4.3,baz=107,slow=14,SNR=6.7						
CTAO	**Charters Tower**	**34.19**	**283**	*e*P	**P**	**05 12 01.9**	**-2.1**
	8.1nm,1.1s,mb4.6						
ASAR	**Alice Springs**	**42.97**	**269**	P	**P**	**05 13 18.1**	**+0.9**
	2.7nm,0.7s,mb4.1,baz=112,slow=7.9,SNR=32						
WB2	**Warramunga Arr**	**44.16**	**275**	*e*P	**P**	**05 13 27.4**	**+0.5**
WRAB	**Tennant Creek**	**44.17**	**275**	*e*P	**P**	**05 13 26.8**	**-0.2**
	15nm,0.7s,mb4.8						
WRA	**Warramunga Arr**	**44.18**	**275**	P	**P**	**05 13 27.5**	**+0.5**
	6.1nm,0.7s,mb4.5,baz=114,slow=7.7,SNR=44						
WRA				LR	LR	05 30 47.9	
	comp=Z,63nm,18.6s,baz=155,slow=35						
VNDA	**Vanda**	**45.74**	**186**	*e*P	**P**	**05 13 39.8**	**+1.0**
	4.3nm,1.8s,mb4.1						
QSPA	**South Pole Qui**	**57.35**	**180**	*e*P	**P**	**05 15 20.2**	**+14**
QSPA				*e*P		05 15 20.7	
QSPA				*e*		05 19 37.7	
VNA3	**Neumayer Olymp**	**75.95**	**176**	⇑*i*P	**P**	**05 17 09.6**	**+5.9**
VNA3				*e*		05 17 20.6	
VNA3				*e*		05 17 32.1	
VNA2	**Neumayer--Watz**	**76.39**	**177**	⇑*i*P	**P**	**05 17 12.5**	**+6.4**
VNA2				*e*		05 17 22.3	
VNA2				*e*	pP	05 17 34.5	+11
VNA1	**Neumayer--Stat**	**76.62**	**177**	⇑*i*P	**P**	**05 17 14.3**	**+6.9**
VNA1				*e*		05 17 24.2	
VNA1				*e*		05 17 36.4	
NSHM	**Saint Helena R**	**87.67**	**40**	P	**P**	**05 18 03.8**	**-1.6**
MTUM	**Tungsten Hills**	**89.13**	**43**	*e*P	**P**	**05 18 10.8**	**-1.4**
PV10	**Paradox Valley**	**95.51**	**48**	P	**P**	**05 18 41.3**	**-0.3**
KAF	**Kangasniemi**	**146.74**	**339**	*e*p	PKPdf	05 24 58.7	+3.9
	2.0nm,0.7s						
FINES	**FINESS Array B**	**147.33**	**339**	PKPbc	PKPdf	05 25 01.4	+5.6
	3.1nm,0.8s,baz=63,slow=4.3,SNR=15						
BRTR	**Keskin Array B**	**153.59**	**294**	PKPbc	PKPdf	05 25 18.2	+12
	0.7nm,0.5s,baz=72,slow=3.9,SNR=3.5						

BJI ***25*** *05:34:22.4, 35.67N×26.83E, h26km, mB4.9, mb5.0, Ms4.8, Msz4.5*

CSEM ***25*** *05:34:24.3, 35.83N×27.46E, h19km, mb4.8*

ATH ***25*** *05:34:24.9, 35.93N×27.16E, h5km, MD4.4/21, ML4.7*

NEIC ***25*** *05:34:25.1, 35.92N×27.18E, h5km, mb4.6/106, ML4.5(NIC), ML4.3(ATH), After ATH.*

HRVD ***25*** *05:34:25.1±1.4, 35.86N×27.27E, h17km±2km, MW4.8/39, Centroid moment Tensor Solution. LP body waves: s5,c5; Mantle waves: s39,c50; Half duration: 0 Moment tensor: Scale 10^16 Nm; Mrr=-1.12±.17; Mθθ=0.30±.11; Mφφ=1.42±.11; Mrθ=1.12±.41; Mrφ=-0.03±.07; Mθφ=0.61±.25; Best double couple: M=1.79×10^16 NP1:φ=225°, δ=39°, λ=-38°. NP2:φ=146°, δ=68°, λ=-122°. Principal axes: T 1.61, Plg16°, Azm259°; N .37, Plg29°, Azm160°; P -1.97, Plg55°, Azm15°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

MED_RC ***25*** *05:34:25.1±0.3, 35.90N×27.27E, h19km, MW4.6/21, Moment Tensor Solution. Body waves: s21,c25; Duration: 1s0 Moment tensor: Scale 10^16 Nm; Mrr=6.65±.93; Mθθ-2.88±.50; Mφφ=9.53±.57; Mrθ=4.80±.64; Mrφ=-3.03±.40; Mθφ=0.72±.45; Best double couple: M=1.02×10^16 NP1:φ=198°, δ=54°, λ=-43°. NP2:φ=316°, δ=56°, λ=-135°. Principal axes: T 1.02, Plg1°, Azm76°; N 0, Plg36°, Azm345°; P -1.02, Plg54°, Azm168°; nsta1 refers to waves, cutoff=35s.*

ZUR_RM ***25*** *05:34:25

55nm,0.3s
ALFC S Sn 05 36 21.3 -0.2
ALFC Alevga 4.33 96 ⇓*i*P Pn 05 35 31.5 +0.2
ALFC S Sn 05 36 21.3 -0.2
AOS Alonnisos 4.39 322 *e*P Pn 05 35 32.2 0.0
LIA Limnos Island 4.48 338 ⇓*i*PN Pn 05 35 32.8 -0.7
LIA Limnos Island 4.48 338 ⇓*e*Pn Pn 05 35 32.8 -0.7
LKR Lokris 4.52 311 ⇑*i*PN Pn 05 35 34.6 +0.6
LKR Lokris 4.52 311 ⇑*e*Pn Pn 05 35 34.6 +0.6
LOS Limnos 4.55 337 *e*P Pn 05 35 35.3 +0.9
ITM Ithomi 4.59 290 ⇑*i*PB Pb 05 35 37.6 -7.8
ITM Ithomi 4.59 290 ⇑*e*Pb Pb 05 35 37.6 -7.8
SZAC Souni-Zanaja 4.64 101 ⇓⇓P Pn 05 35 35.9 +0.2
SZAC S Sn 05 36 29.5 +0.2
SZAC Souni-Zanaja 4.64 101 ⇓*i*P Pn 05 35 35.9 +0.2
SZAC S Sn 05 36 29.5 +0.2
MAMC Mammari 4.83 95 P Pn 05 35 39.8 +1.4
NEO Neokhori 4.83 319 ⇓*i*PN Pn 05 35 38.7 +0.3
NEO Neokhori 4.83 319 ⇓*e*Pn Pn 05 35 38.7 +0.3
XOR Xorichti 4.89 319 *e*P Pn 05 35 39.2 0.0
CSS Prodhromos 4.96 97 ⇑⇑P Pn 05 35 40.3 +0.2
38nm,0.8s
CSS S Sn 05 36 38.1 +0.9
CSS Prodhromos 4.96 97 ⇑*e*P Pn 05 35 40.3 +0.2
CSS S Sn 05 36 38.1 +0.9
AGG Agios Georgios 5.16 311 *e*P Pn 05 35 44.1 +1.1
ALN Alexandroupoli 5.24 349 *e*P Pn 05 35 44.2 +0.1
RLS Riolos of Patr 5.24 298 ⇓*i*PB Pb 05 35 47.8 -8.7
RLS Riolos of Patr 5.24 298 ⇓*e*Pb Pb 05 35 47.8 -8.7
EVR Evrytania 5.43 307 ⇑*i*PN Pn 05 35 48.4 +1.6
EVR Evrytania 5.43 307 ⇑*e*Pn Pn 05 35 48.4 +1.6
PHNC Paralimni 5.51 96 ⇑⇑P Pn 05 35 49.0 +1.0
53nm,0.7s
PHNC S Sn 05 36 54.5 +3.3
PHNC Paralimni 5.51 96 ⇑*e*P Pn 05 35 49.0 +1.0
PHNC S Sn 05 36 54.5 +3.3
RDO Rodhopi 5.57 346 ⇑*i*PN Pn 05 35 48.5 -0.3
RDO Rodhopi 5.57 346 ⇑*e*Pn Pn 05 35 48.5 -0.3
LIT Litokhoron 5.80 320 *e*P Pn 05 35 51.8 -0.2
VLS Valsamata 5.93 296 *e*PN Pn 05 35 55.6 +1.8
VLS Valsamata 5.93 296 ⇑*e*Pn Pn 05 35 55.6 +1.8
THE Thessaloniki 5.97 326 *e*P Pn 05 35 56.6 +2.2
KDZ Kurdzhali 6.08 346 *e*P Pn 05 35 57.0 +1.0
LKD Levkas 6.10 301 *e*P Pn 05 35 57.8 +1.5
RZN Rozhen 6.28 342 *i*P Pn 05 35 58.0 -0.8
MEV Metsovon 6.30 312 *e*P Pn 05 36 00.6 +1.5
KZN Kozani 6.33 318 ⇓*e*Pn Pn 05 35 58.2 -1.3
BRTR Keskin Array B 6.38 50 Pn Pn 05 36 00.7 +0.5
2.5nm,0.3s,baz=217,slow=15,SNR=48
BRTR Sn Sn 05 37 11.5 -1.2
baz=222,slow=22,SNR=2.0
KNT Kendrikon 6.43 329 *e*P Pn 05 36 03.0 +2.0
JAN Janina 6.46 309 ⇑*e*Pn Pn 05 36 04.7 +3.4
MMB Musomiste 6.48 335 *e*P Pn 05 36 00.0 -1.7
GRG Griva 6.49 325 *e*P Pn 05 36 01.8 0.0
KKB Krupnik 6.96 333 *e*P Pn 05 36 06.0 -2.3
HNTI Hanita 7.00 110 P Pn 05 36 08.1 -0.8
HNTI S Sn 05 37 23.0 -5.2
ARNB Al Arnab 7.01 87 ⇑⇑P Pn 05 36 08.1 -1.0
ARNB ⇑⇑S Sn 05 37 07.0 -22
HAF Haifa 7.01 113 P Pn 05 36 08.2 -0.9
OFRI 'Ofer 7.06 114 P Pn 05 36 08.4 -1.4
PGB Panagyurishte 7.23 341 *e*P Pn 05 36 13.0 +0.9
SLNF Slenfeh 7.23 89 ⇑⇑P Pn 05 36 10.4 -1.7
SLNF ⇑⇑S Sn 05 37 11.6 -22
SLTI Sal'it 7.29 116 P Pn 05 36 11.3 -1.6
KSDI Kefar Szold 7.33 108 P Pn 05 36 12.3 -1.2
HRI Mount Hermon 7.36 107 P Pn 05 36 12.5 -1.4
BIDA Albida 7.37 93 ⇑⇑P Pn 05 36 11.2 -2.9
BIDA ⇑⇑S Sn 05 37 14.9 -23
BTCH Batrach 7.41 85 ⇑⇑P Pn 05 36 13.8 -0.8
BTCH ⇑⇑S Sn 05 37 17.1 -21
PRD Provadia 7.44 0 *e*P Pn 05 36 15.0 -0.1
BRBR Barbar 7.47 106 ⇑⇑P Pn 05 36 14.5 -1.1
BRBR ⇑⇑S Sn 05 37 19.2 -21
HAWK Haweek 7.53 97 ⇑⇑P Pn 05 36 15.2 -1.1
HAWK ⇑⇑S Sn 05 37 18.8 -23
KSHT Keshet 7.53 109 P Pn 05 36 15.5 -0.8
VTS Vitosha 7.55 336 *i*P Pn 05 36 17.0 +0.4
DRWC Darouich 7.59 81 ⇓⇓P Pn 05 36 15.5 -1.7
DRWC ⇓⇓S Sn 05 37 21.3 -22
PVL Pavlikeni 7.62 349 *e*P Pn 05 36 19.0 +1.4
KZIT Kziot 7.62 127 P Pn 05 36 16.6 -1.1
KZIT S Sn 05 37 38.8 -5.2
HMDT Nahal Hemdat 7.64 115 P Pn 05 36 16.5 -1.3
QASN Qassioun 7.69 104 ⇓⇓P Pn 05 36 17.6 -0.9
DUSS Damascus Unive 7.70 104 *i*P Pn 05 36 19.2 +0.4
DUSS *i*P 05 36 19.2
DUSS *i*P 05 36 19.2
DUSS *e* 05 36 19.3
baz=290,slow=8.6
DUSS *e*S Sn 05 37 39.2 -6.7
DUSS AML AML 05 37 49.3
comp=E,7μm,0.7s
DUSS AML AML 05 37 51.6
comp=N,9μm,0.7s
DUSS AML AML 05 37 53.9
comp=Z,5μm,0.7s
RTMM Retamin 7.72 125 P Pn 05 36 18.3 -0.7
SVTA Shivta 7.75 126 P Pn 05 36 18.8 -0.7
MASH Mash'abbe Sade 7.82 125 P Pn 05 36 19.1 -1.3
DRGI Dragot 7.88 119 P Pn 05 36 20.0 -1.3
MZDA Masada 8.02 121 P P 05 36 22.2 -1.0
MZDA S Sn 05 37 49.0 -4.9
MKRJ Makawir 8.08 119 P P 05 36 23.1 -1.0
RABH Abou Rabah 8.19 96 ⇑⇑P P 05 36 23.3 -2.2
SALA Sala 8.34 109 ⇓⇓P P 05 36 27.0 -0.6
SALA ⇓⇓S Sn 05 37 39.5 -22
ZFRI Zfri 8.36 126 P P 05 36 26.3 -1.7
KMTI Karmit 8.37 130 P P 05 36 26.8 -1.3
KMTI S Sn 05 37 56.7 -6.0
PRNI Paran 8.38 128 P P 05 36 26.7 -1.5
PRNI S Sn 05 37 57.5 -5.4
ASF Jabal al Asfar 8.70 111 Pn P 05 36 31.8 -0.9
comp=Z,4.5nm,0.3s,baz=155,slow=2.5,SNR=17
ASF Sn Sn 05 38 14.6 +3.9
comp=Z,5.4nm,0.3s,baz=105,slow=23,SNR=5.9
ASF LR LR 05 41 27.9
comp=Z,137nm,18.7s,baz=174,slow=47
MBH Mount Berech 8.71 131 P P 05 36 31.9 -0.9
EIL Elat 8.82 131 P P 05 36 33.3 -1.0
AQBJ Aqaba 8.84 131 P P 05 36 34.1 -0.4
ALWS Ilw as Safayha 9.14 132 P P 05 36 38.3 -0.5
ALWS S Sn 05 38 16.4 -5.4
GRI Girifalco 9.23 293 *e*Pn P 05 36 39.8 -0.1
GRI *e*Sn Sn 05 38 16.2 -7.6
HAQS Haql 9.25 134 P P 05 36 39.8 -0.5
JMOS Jabal al Moall 9.28 133 P P 05 36 40.1 -0.5
SOI Samo 9.33 288 *e*Pn P 05 36 40.7 -0.7
SOI *e*Sn Sn 05 38 15.9 -11
BRT Bari-Castellan 9.47 306 *e*Pn P 05 36 45.1 +1.8
TDS Terranova Siba 9.55 297 *e*Pn P 05 36 45.0 +0.6
MTTG Motta San Giov 9.60 287 *e*Pn P 05 36 46.0 +1.0
ORI Oriolo Calabro 9.62 300 *e*Pn P 05 36 48.3 +1.1
MLR Muntele Rosu 9.79 354 Pn P 05 36 48.5 +0.9
comp=Z,0.5nm,0.3s,baz=183,slow=5.7,SNR=24
MLR Muntele Rosu 9.79 354 P P 05 36 48.5 +0.9
MLR pmax pmax
comp=Z,1.0nm,0.3s
BDAS Al Bad' 9.82 136 P P 05 36 47.7 -0.4
JMQS Jabal Moqyreh 9.94 131 P P 05 36 49.3 -0.5
PZI Palazzolo 10.08 281 *e*Pn P 05 36 50.6 -1.0
AYUS 'Aynunah 10.10 136 P P 05 36 51.5 -0.4
MGR Morigerati 10.29 299 *e*Pn P 05 36 54.7 +0.2
SLCN Sala Consilina 10.33 300 *e*Pn P 05 36 53.6 -1.4
VAE Valguarnera 10.54 283 Pn P 05 36 59.4 +1.5
comp=Z,2.8nm,0.3s,baz=86,slow=13,SNR=3.0
VAE Sn S 05 38 54.5 -1.5
comp=Z,6.3nm,0.3s,baz=213,slow=18,SNR=4.9
SIM Simferopol' 10.54 27 *e*P P 05 36 58.9 +1.0
SIM pmax pmax
comp=Z,33nm,0.8s
SIM MLR MLR
comp=Z,400nm,17.0s
MRLC Muro Lucano 10.57 302 *e*Pn P 05 36 57.1 -1.3
TBKS Tabuk 10.83 131 P P 05 37 01.4 -0.5
KIS Kishinev 11.29 5 *e*P P 05 37 08.0 -0.2
KIS *e*S S 05 39 08.0 -6.4
KIS MLR MLR
comp=Z,1μm,11.0s
KIS MLR MLR
comp=N,1μm,10.0s
KIS MLR MLR
comp=Z,1μm,11.0s
ANN Anapa 11.87 37 *e*P P 05 37 13.1 -2.9
ANN *e*S S 05 39 18.1 -10
ANN pmax pmax
comp=Z,10.0nm,0.9s
SOC Sochi 12.32 47 *e*P P 05 37 23.4 +1.3
SOC *e*S S 05 39 38.1 -1.3
SOC pmax pmax
comp=Z,10.0nm,1.1s
SOC pmax pmax
comp=N,2.0nm,0.3s
SOC pmax pmax
comp=E,10.0nm,0.6s
SOC MLR MLR
comp=Z,180nm,11.0s
SOC MLR MLR
comp=N,80nm,9.0s
SOC MLR MLR
comp=E,490nm,11.0s
PSZ Piszkesteto 13.36 338 ⇓*e*PP PP 05 37 46.0 -0.1
PSZ Piszkesteto 13.36 338 *e*P P 05 37 35.4 -0.4
comp=E,56nm,0.8s
BOJS Bojanci 13.38 320 *e*Pn P 05 37 34.9 -1.1
UZH Uzhgorod 13.40 345 *e*P P 05 37 45.0 +8.6
CRES Cresnjevec ost 13.49 322 *e*Pn P 05 37 37.0 -0.5
KECS Kecovo 13.70 340 *e*PN P 05 37 49.2 +9.0
VISS Visnje 13.79 321 *i* Pn P 05 37 40.4 -1.0
CRVS Cervenica-Dubn 13.84 344 *i* PN P 05 37 48.7 +6.6
CRVS *e* 05 37 51.5
VYHS Vyhne 14.20 336 *i* PN P 05 37 47.8 +1.0
VYHS *e* 05 37 56.6
KBRS Khaybar 14.25 131 P P 05 37 48.3 +0.7
LVV L'vov 14.27 351 *e*P P 05 37 47.7 0.0
KWP Kalwaria 14.28 348 *e*P P 05 37 49.6 +1.7
KWP *e* 05 37 57.5
KIV Kislovodsk 14.34 50 *e*P P 05 37 54.3 +5.7
KIV *e*S S 05 40 30.8 +3.3
KIV pmax pmax
comp=Z,30nm,1.0s
KIV pmax pmax
comp=E,10.0nm,0.8s
KIV MLR MLR
comp=Z,170nm,17.0s
KIV MLR MLR
comp=N,80nm,18.0s
KIV Kislovodsk 14.34 50 P P 05 37 51.8 +3.2
GNI Garni 14.41 67 Pn P 05 37 30.3 -19
comp=N,1.4nm,0.3s,baz=49,slow=5.9,SNR=4.4
OBKA Obir 14.42 322 ⇑*i*P P 05 37 59.9 +10
comp=N,12nm,0.8s
VOY Vojsko 14.44 319 *e*Pn P 05 37 46.7 -3.2
VOY *e* 05 37 49.9
VOY *e* 05 37 54.3
ZST Bratislava 14.57 332 *e* P 05 38 01.2 +10
NIE Niedzica 14.60 342 ⇑*e*P P 05 38 00.2 +8.2
ZEI Tsey 14.61 56 *e*P P 05 37 55.0 +2.9
ZEI *e* 05 40 26.0
ZEI MLR MLR
comp=Z,200nm,15.0s
YNBS Yanbu' al Bahr 14.63 138 P P 05 37 53.7 +1.2
HILS Ha'il 14.86 120 P P 05 37 57.5 +1.9
GOF Gofitskoye 15.12 47 *e*P P 05 37 58.0 -0.9
KBA Koelnbreinsper 15.41 322 ⇑*i*P P 05 38 03.5 +0.9
comp=Z,34nm,0.7s
OJC Ojcow 15.47 342 *e*P P 05 38 09.5 +6.2
OJC *e*S S 05 41 08.0 +14
OJC MLR MLR 05 45 35.9
comp=Z,200nm,15.6s
OJC Ojcow 15.47 342 *e*P P 05 38 09.5 +6.2
OJC MLR MLR
comp=Z,200nm,15.6s
MOA Molln 15.51 325 ⇓*i*P P 05 38 07.4 +3.6
comp=Z,13nm,0.8s
OKC Ostrava-Krasne 15.60 337 *e*P P 05 38 13.1 +8.1
OKC L 05 45 20.0
comp=Z,1.0nm,11.3s
VRAC Vranov 15.67 333 Pn P 05 38 10.2 +4.2
comp=Z,1.7nm,0.3s,baz=131,slow=8.8,SNR=8.0
MORC Moravsky Berou 15.74 336 *e*P P 05 38 05.1 -1.7
comp=Z,11nm,0.9s
PGF Pioggiola 15.75 301 *e*P P 05 38 05.8 -1.3
comp=Z,81nm,1.2s
WTTA Wattenberg 16.42 319 ⇓*i*P P 05 38 18.1 +2.6
comp=Z,16nm,0.7s
GEC2 GERESS Array S 16.49 327 *e*P P 05 38 17.7 +1.3
GERES GERESS Array B 16.49 327 Pn P 05 38 17.8 +1.4
comp=Z,0.2nm,0.3s,baz=139,slow=12,SNR=22
GERES ScP 05 46 40.0
comp=Z,0.2nm,0.3s,baz=180,slow=2.7,SNR=7.1
DPC Dobruska-Polom 16.64 335 *e*P P 05 38 21.4 +3.1
DPC L 05 45 20.0
comp=Z,0.4nm,14.2s
KHC Kasperske Hory 16.76 327 *e*P P 05 38 21.2 +1.4
KHC L 05 45 40.0
comp=Z,0.9nm,10.3s
UPC Upice 16.88 334 *e*P P 05 38 23.1 +1.8
PRU Pruhonice 17.01 331 *e*P P 05 38 24.0 +1.1
PRU L 05 47 30.0
comp=Z,0.3nm,8.0s
KSP Ksiaz 17.07 336 *e*P P 05 38 25.1 +1.5
KSP Ksiaz 17.07 336 ⇑*e*P P 05 38 24.6 +1.0
KSP *e*S S 05 41 36.0 +5.1
WET Wettzell 17.08 326 *e*P P 05 38 24.9 +1.1
DAVOX Davos 17.10 315 Pn P 05 38 26.2 +2.1
comp=Z,0.3nm,0.3s,baz=146,slow=19,SNR=3.4
FUR Furstenfeldbru 17.18 321 *e*P P 05 38 27.6 +2.5
SAOF Saorge 17.25 304 *e*P P 05 38 26.9 +1.0
SBF Sospel 17.28 304 *e*P P 05 38 22.3 -4.1
comp=Z,61nm,0.7s
DAVA Damuels 17.39 317 ⇑*i*P P 05 38 29.8 +2.1
comp=Z,22nm,0.6s
PVCC Panska Ves 17.43 332 *e*P P 05 38 30.5 +2.3
PVCC L 05 46 50.0
comp=Z,0.5nm,12.1s
CALN Calern 17.61 303 *e*P P 05 38 30.8 +0.3
FRF La Foret Royal 17.72 302 *e*P P 05 38 30.0 -1.8
comp=Z,21nm,0.8s
LMR La Mourre 17.74 302 *e*P P 05 38 30.3 -1.8
comp=Z,32nm,1.0s
MBDF Montbardon 18.05 306 *e*P P 05 38 34.6 -1.4
comp=Z,37nm,0.7s
NKC Novy Kostel 18.07 328 L 05 46 20.0
comp=Z,0.8nm,9.7s
TAVF Tavernes 18.14 302 *e*P P 05 38 42.8 +5.7
GRA1 Grafenberg Arr 18.23 325 *e*P P 05 38 38.8 +0.6
GRF Grafenberg Arr 18.23 325 *e*P P 05 38 38.8 +0.6
GRF MLR MLR
comp=Z,200nm,21.7s
BERF Bertagne 18.30 301 *e*P P 05 38 40.0 +0.9
PUYF Puyloubier 18.36 302 *e*P P 05 38 38.0 -1.8
LPG La Plagne 18.37 308 *e*P P 05 38 38.8 -1.1
comp=Z,49nm,0.6s
LPL La Plagne 18.39 308 *e*P P 05 38 39.1 -1.1
comp=Z,34nm,0.5s
VILF Villemus 18.45 303 *e*P P 05 38 40.4 -0.5
SPAK Spaichingen 18.46 318 *e*P P 05 38 43.2 +2.2
SUW Suwalki 18.49 352 *e*P P 05 38 40.0 -1.4
SMRF Simiane la Rot 18.59 303 *e*P P 05 38 39.6 -2.9
TREF Trevaresse 18.61 302 *e*P P 05 38 37.8 -5.0
CLL Collm 18.65 331 P P 05 38 40.0 -3.3
CLL *i* *PP 05 38 44.9
CLL *i* 05 39 01.2
CLL *e*S S 05 42 06.0 -0.9
CLL *e* 05 42 25.0
CLL Collm 18.65 331 *e*P P 05 38 40.0 -3.3
CLL *e*S S 05 42 06.0 -0.9
CLL Collm 18.65 331 *e*P P 05 38 40.0 -3.3
CLL *i* pP 05 38 44.9
CLL *e*S S 05 42 06.0 -0.9
ORIF Oris-en-Rattie 18.71 306 *e*P P 05 38 42.8 -1.2
comp=Z,23nm,0.7s
ORIF *e*R
comp=Z,359nm,20.0s
MOX Moxa 18.73 327 *i* P P 05 38 46.1 +1.8
comp=Z,logA/T=1.5
MOX S S 05 42 14.0 +5.3
MOX L 05 48 31.0
MOX Moxa 18.73 327 *e*P P 05 38 46.1 +1.8
MOX pmax pmax
comp=Z,38nm,1.3s
MOX MLR MLR
comp=Z,500nm,15.0s
MOX Moxa 18.73 327 *e*P P 05 38 46.1 +1.8
comp=Z,38nm,1.3s
FELD Feldberg 18.77 316 *e*P P 05 38 45.6 +0.9
PRAF Pradon 18.81 302 *e*P P 05 38 40.0 -5.2
BBS Basel-Blauen 18.84 315 *e*P P 05 38 49.3 +3.8
BFO Black Forest 18.84 318 *e*P P 05 38 45.3 -0.3
LOMF Lomont 19.18 313 *e*P P 05 38 52.1 +2.6
LTHS Al Lith 19.22 140 P P 05 38 53.8 +3.6
MOF Molkenrain 19.25 315 *e*P P 05 38 50.6 +0.2
CABF La Chapelle 19.27 311 *e*P P 05 38 49.2 -1.4
comp=Z,54nm,0.8s
THR Tehran 19.28 83 P P 05 38 52.6 +1.8
comp=Z,0.5nm,0.3s,baz=236,slow=6.0,SNR=14
THR Tehran 19.28 83 P P 05 38 52.6 +1.8
THR pmax pmax
comp=Z,1.0nm,0.3s
MZLS Mizel 19.36 122 P P 05 38 54.2 +2.4
HINF Hinteralfeld 19.40 315 *e*P P 05 38 50.4 -1.7
comp=Z,11nm,0.6s
WLS Welschbruch 19.43 317 *e*P P 05 38 52.5 +0.1
ECH Echery 19.43 316 *e*P P 05 38 50.8 -1.7
CDF Champ du Feu 19.47 317 *e*P P 05 38 52.6 -0.3
comp=Z,39nm,0.8s
VIVF Saint-Julien-l 19.49 305 *e*P P 05 38 51.8 -1.3
comp=Z,38nm,0.8s
LANF Langenberg 19.50 319 *e*P P 05 38 52.1 -1.2
HAU Haudompre 19.79 315 *e*P P 05 38 55.3 -1.1
comp=Z,38nm,0.7s
HAU *e*R
comp=Z,231nm,19.0s
LASF Ste Croix 19.80 302 *e*P P 05 38 54.5 -2.0
comp=Z,31nm,0.9s
EJON La Jonquera 20.09 297 P P 05 38 59.0 -0.6
comp=Z,12nm,0.9s
THEF They Montfort 20.11 315 *e*P P 05 38 58.1 -1.7
BLJS Baljurashi 20.18 138 P P 05 39 03.3 +2.6
RUP Ruppelstein 20.32 320 *e*P P 05 39 00.1 -1.9
OBN Obninsk 20.39 15*d i*P P 05 39 00.9 -1.7
OBN *e*S S 05 42 43.8 -0.6
OBN pmax pmax
comp=Z,176nm,0.6s
OBN MLR MLR
comp=Z,100nm,14.0s,MS3.3
OBN Obninsk 20.39 15 *e*P P 05 39 00.7 -1.9
comp=Z,210nm,0.8s
LBL Lubilhac 20.57 305 *e*P P 05 39 04.4 -0.2
PLDF La Plantade 20.57 307 *e*P P 05 39 02.9 -1.7
SMF Signal de Mont 20.69 309 *e*P P 05 39 05.3 -0.5
comp=Z,48nm,0.6s
MTLF Montolieu 20.76 299 *e*P P 05 39 04.7 -1.8
comp=Z,21nm,0.7s
WLF Walferdange 20.78 319 *e*P P 05 39 05.7 -1.1
MEZF Maizieres J'vi 20.78 315 *e*P P 05 39 06.3 -0.5
comp=Z,54nm,0.7s
PYM Petit Puy Mans 20.90 306 *e*P P 05 39 05.7 -2.3
LOR Lormes 20.93 311 *e*P P 05 39 06.7 -1.6
comp=Z,24nm,0.7s
LOR *e*R
comp=Z,302nm,17.0s
EMIR Miracle 20.99 295 P P 05 39 08.8 -0.1
comp=Z,35nm,1.2s
ECHF Ech Chlef 21.04 279 P P 05 39 10.0 +0.5
AVF Avril sur Loir 21.06 309 *e*P P 05 39 08.0 -1.6
comp=Z,29nm,0.8s,mb4.4
SSF Saint Saulge 21.07 310 *e*P P 05 39 08.4 -1.3
comp=Z,86nm,0.6s,mb5.0
ETRT Tiaret 21.17 277 P P 05 39 14.0 +3.2
BSD Bornholm Skovb 21.18 340 *i*P P 05 39 08.4 -2.3
comp=Z,9.3nm,0.5s,mb4.4
BSD *i* 05 39 15.5
BSD Bornholm Skovb 21.18 340 *e*P P 05 39 08.4 -2.3
BSD pmax pmax
comp=Z,9.0nm,0.5s,mb4.4
BSD Bornholm Skovb 21.18 340 *e*P P 05 39 08.4 -2.3
comp=Z,9.3nm,0.5s,mb4.4
BSD *i* 05 39 15.5
MOS Moscow 21.20 16 *i*P P 05 39 10.1 -0.8
MOS *e* 05 39 23.0
MOS *e* 05 39 43.6
MOS pmax pmax
comp=N,500nm,1.3s
MOS pmax pmax
comp=Z,700nm,1.3s,mb5.8
MOS pmax pmax
comp=Z,280nm,0.7s,mb5.7
MOS pmax pmax
comp=N,410nm,1.2s
EPOB Poblet 21.25 293 P P 05 39 11.1 -0.5
comp=N,42nm,1.1s,mb4.7
EANR 'Ain N'Sour 21.26 278 P P 05 39 12.0 +0.3
CAF Calviac 21.27 303 *e*P P 05 39 10.8 -0.9
comp=N,56nm,1.2s,mb4.5
BGF Bois d'Agland 21.29 308 *e*P P 05 39 11.2 -0.7
comp=N,56nm,0.6s,mb4.8
TATS Tathlith 21.51 134 P P 05 39 18.3 +4.0
HGN Heimansgroeve 21.53 321 *e*P P 05 39 15.6 +1.3
comp=N,16nm,1.7s,mb4.2
HGN *ex* x 05 39 38.7
comp=N,1.5nm,0.3s
TCF Toulx Ste Croi 21.60 307 *e*P P 05 39 13.8 -1.3
comp=N,40nm,1.2s,mb4.4
EBR Ebro Roquetas 21.64 292 *e*P P 05 39 18.5 +3.0
HYF Humbligny 21.69 310 *e*P P 05 39 15.1 -0.9
GIVF Givet 21.74 318 *e*P P 05 39 15.5 -0.9
comp=N,17nm,0.5s,mb4.5
RJF Les Rejaudoux 21.75 304 *e*P P 05 39 15.8 -0.8
RJF *e*R
comp=N,100nm,20.3s
WTSB Winterswijk 21.84 324 *e*P P 05 39 22.7 +5.3
comp=N,9.4nm,1.4s,mb4.0
HASS Wahat al Ahsa' 21.90 113 P P 05 39 20.9 +2.6
EPF Esparros 22.04 297 *e*P P 05 39 18.5 -1.0
comp=N,13nm,0.8s,mb4.1
BAIF Baives 22.05 318 *e*P P 05 39 18.5 -1.1
comp=N,55nm,0.8s,mb4.7
EBEN Beniarda 22.12 286 P P 05 39 20.3 0.0
comp=N,22nm,0.8s,mb4.6
EMOS Mosqueruela 22.34 290 P P 05 39 22.8 +0.4
comp=N,11nm,0.7s,mb4.4
ESAC San Caprasio 22.45 294 P P 05 39 24.9 +1.4
comp=N,28nm,1.2s,mb4.6
ETSF Etsaut 22.67 297 *e*P P 05 39 25.0 -0.7
comp=N,13nm,0.7s,mb4.2
FRSS Farasan al Kab 23.05 141 P P 05 39 34.9 +5.2
ETOB Tobarra 23.16 286 P P 05 39 32.2 +1.7
comp=N,8.7nm,1.3s,mb4.0
MFF Saint Martin d 23.25 306 *e*P P 05 39 30.4 -0.8
comp=N,28nm,0.7s,mb4.5
EALK Alkurruntz 23.41 297 P P 05 39 34.0 +1.2
comp=N,14nm,1.0s,mb4.3
ETOR Torete 23.57 291 P P 05 39 35.5 +1.1
EVIA Vianos 23.90 286 P P 05 39 38.6 +0.9
comp=N,16nm,0.8s,mb4.5
LDF La Druitiere 23.92 311 *e*P P 05 39 37.0 -0.7
comp=N,25nm,0.7s,mb4.5
EHUE Huescar 24.02 284 P P 05 39 39.7 +0.8
comp=N,3.0nm,0.6s,mb3.9
FLN La Foliniere 24.20 311 *e*P P 05 39 39.7 -0.8
comp=N,50nm,0.6s,mb4.8
FLN *e*R
comp=N,179nm,21.5s
GRR Gorron 24.30 310 *e*P P 05 39 40.1 -1.4
comp=N,60nm,0.5s,mb4.9
EQES Quesada 24.40 284 P P 05 39 43.1 +0.6
comp=N,19nm,0.7s,mb4.6
ELAN Lanestosa 24.80 297 P P 05 39 46.8 +0.4
comp=N,57nm,1.5s,mb4.9
ESDC Sonseca Array 25.01 288 P P 05 39 49.1 +0.7
comp=N,4.4nm,0.5s,mb4.2,baz=79,slow=9.7,SNR=23
ESDC PcP PcP 05 43 24.6 +0.8
comp=N,0.4nm,0.3s,baz=65,slow=2.0,SNR=5.6
ESLA Sonseca Array 25.01 288 *e*P P 05 39 48.5 +0.1
ERON Agron 25.06 282 P P 05 39 49.1 +0.2
GUD Guadarrama 25.16 291 P P 05 39 50.1 +0.3
comp=N,15nm,1.1s,mb4.4
ELOJ Sierra Loja 25.32 283 P P 05 39 51.4 +0.1
SGMF Saint Gilles 25.32 309 *e*P P 05 39 50.6 -0.6
comp=N,34nm,0.6s,mb4.8
ELUQ Luque 25.37 284 P P 05 39 51.8 0.0
EADA Adamuz 25.56 285 P P 05 39 53.6 0.0
comp=N,12nm,1.6s,mb4.2
QUIF Quistinic 25.60 308 *e*P P 05 39 52.0 -1.9
comp=N,30nm,0.6s,mb4.7
FINES FINESS Array B 25.73 359 P P 05 39 53.6 -1.3
comp=N,20nm,0.7s,mb4.7,baz=153,slow=13,SNR=83
FINES PcP PcP 05 43 24.9 -0.3

comp=N,5.7nm,0.5s,baz=122,slow=3.4,SNR=15
FINES ScP 05 47 03.1
comp=N,1.2nm,0.7s,baz=135,slow=5.4,SNR=3.7
FINES LR LR 05 51 28.1
comp=N,60nm,20.3s,MS3.1,baz=189,slow=40
FINES FINESS Array B 25.73 359 P **P** **05 39 53.7 -1.2**
FINES 05 43 24.9
FINES pmax pmax
comp=Z,20nm,0.7s
FINES pmax pmax
comp=Z,6.0nm,0.5s
FINES pmax pmax
comp=Z,1.0nm,0.7s
FINES MLR MLR
comp=Z,60nm,20.3s
ROSF Rostrenen 25.80 309 *e*P **P** **05 39 53.8 -1.9**
comp=Z,29nm,0.9s,mb4.5
HFS Hagfors 25.95 344 P **P** **05 39 55.0 -1.9**
comp=Z,18nm,0.5s,mb4.8,baz=149,slow=8.6,SNR=63
HFS Hagfors 25.95 344 P **P** **05 39 55.0 -2.0**
HFS pmax pmax
comp=Z,18nm,0.5s
HFS Hagfors 25.95 344 P **P** **05 39 55.0 -1.9**
ELIJ Sierra de Lija 26.32 282 P **P** **05 40 00.5 -0.2**
comp=Z,7.2nm,0.9s,mb4.2
KAF Kangasniemi 26.40 359 *e*p **P** **05 39 58.7 -2.4**
comp=Z,8.4nm,0.7s,mb4.4,baz=176,slow=9.1
KAF Kangasniemi 26.40 359 *e*P **P** **05 39 58.7 -2.4**
KAF pmax pmax
comp=Z,8.0nm,0.7s,mb4.4
EJIF Jimena Fronter 26.45 281 P **P** **05 40 01.6 -0.3**
ESPR Espera 26.71 282 P **P** **05 40 03.8 -0.4**
comp=Z,17nm,0.7s,mb4.7
ECAL Calabor 27.13 294 P **P** **05 40 08.7 +0.7**
comp=Z,15nm,1.4s,mb4.3
PBRG Braganca 27.13 293 *e*P **P** **05 40 08.3 +0.3**
comp=Z,11nm,1.3s,mb4.2
NAO01 NORSAR Array S 27.23 342 *e*P **P** **05 40 06.3 -2.4**
comp=Z,9.1nm,0.6s,mb4.5
EMIN Mina Concepcio 27.24 284 P **P** **05 40 08.7 -0.4**
comp=Z,26nm,1.3s,mb4.6
JOF Joensuu 27.31 4 *e*p **P** **05 40 04.2 -5.2**
comp=Z,2.0nm,0.5s,mb3.9
JOF Joensuu 27.31 4 *e*P **P** **05 40 04.2 -5.2**
JOF pmax pmax
comp=Z,2.0nm,0.5s,mb3.9
NB2 NORSAR Subarra 27.32 343 P **P** **05 40 07.3 -2.3**
comp=Z,0.7nm,0.6s,baz=139,slow=10
NOA NORSAR Array B 27.32 343 P **P** **05 40 06.9 -2.7**
comp=Z,4.2nm,0.6s,mb4.1,baz=143,slow=6.6,SNR=19
NOA PcP PcP 05 43 28.7 -0.2
comp=Z,3.7nm,0.8s,baz=138,slow=2.4,SNR=5.4
NOA ScP 05 47 06.5
comp=Z,1.2nm,0.7s,baz=97,slow=2.0,SNR=4.4
NOA NORSAR Array B 27.32 343 P **P** **05 40 06.9 -2.7**
NOA 05 43 28.7
NOA pmax pmax
comp=Z,4.0nm,0.6s
NOA pmax pmax
comp=Z,4.0nm,0.8s
NOA pmax pmax
comp=Z,1.0nm,0.7s
NOA NORSAR Array B 27.32 343 P **P** **05 40 06.9 -2.7**
NOA PcP PcP 05 43 28.7 -0.2
NOA ScP 05 47 06.5
AB31 Akbulak array 27.33 50 *i* P **P** **05 40 09.4 -0.3**
AB31 pmax pmax
comp=Z,20nm,0.9s,mb4.7
EBAD Badajoz 27.42 287 P **P** **05 40 10.3 -0.4**
comp=Z,14nm,1.1s,mb4.4
ERUA La Rua 27.45 295 P **P** **05 40 10.7 -0.2**
comp=Z,7.4nm,0.9s,mb4.2
EPON Pontenova 27.51 297 P **P** **05 40 11.2 -0.2**
comp=Z,23nm,1.3s,mb4.6
PCBR Castelo Branco 27.71 289 *e*P **P** **05 40 13.8 +0.5**
comp=Z,10nm,2.0s,mb4.1
MTE Manteigas 27.74 290 *e*- 06 27 24.0
EGRO El Granado 27.91 284 P **P** **05 40 14.7 -0.5**
comp=Z,26nm,1.2s,mb4.7
PALC Alcoutim 27.91 284 *e*P **P** **05 40 15.9 +0.7**
comp=Z,51nm,1.6s,mb4.9
ELOB Lobios 28.12 293 P **P** **05 40 16.8 -0.2**
comp=Z,12nm,1.1s,mb4.5
PBEJ Beja 28.15 285 *e*P **P** **05 40 18.5 +1.2**
comp=Z,16nm,1.4s,mb4.5
EKA Eskdalemuir Ar 28.62 323 P **P** **05 40 20.5 -0.8**
comp=Z,1.6nm,0.6s,mb3.9,baz=124,slow=10,SNR=5.7
EKA PcP PcP 05 43 32.0 -0.1
comp=Z,1.7nm,0.6s,baz=100,slow=2.1,SNR=5.2
EKA ScP 05 47 11.4
comp=Z,0.8nm,0.8s,baz=143,slow=4.2,SNR=4.3
EKA Eskdalemuir Ar 28.62 323 P **P** **05 40 20.5 -0.8**
EKA 05 43 32.0
EKA pmax pmax
comp=Z,2.0nm,0.6s
EKA pmax pmax
comp=Z,2.0nm,0.6s
EKA pmax pmax
comp=Z,1.0nm,0.8s
ARU Arti 29.53 36 *e*P **P** **05 40 28.8 -0.7**
ARU pmax pmax
comp=Z,25nm,1.8s,mb4.6
ARU Arti 29.53 36 *e*P **P** **05 40 28.1 -1.4**
comp=Z,7.4nm,0.8s,mb4.5
SOKR Solikamsk 30.55 29⇑ *i*P **P** **05 40 36.9 -1.6**
SOKR pmax pmax
comp=Z,20nm,0.8s,mb5.0
APA Apatity 32.06 4⇓ *i*P **P** **05 40 49.7 -2.0**
APA *e* 05 41 57.1
APA *i* 05 43 40.1
APA pmax pmax
comp=Z,7.0nm,0.6s,mb4.7
ZRNK Zerenda 33.82 46 *e*P **P** **05 41 07.2 +0.1**
KKAR Karatay Array 33.85 64 *i* P **P** **05 41 08.1 +0.6**
KKAR pmax pmax
comp=Z,6.0nm,0.9s,mb4.5
ARCES ARCESS Array B 33.86 359 P **P** **05 41 05.3 -2.1**
comp=Z,20nm,0.7s,mb5.2,baz=180,slow=8.5,SNR=59
ARCES PcP PcP 05 43 45.1 -0.8
comp=Z,2.9nm,0.5s,baz=184,slow=3.3,SNR=7.2
ARCES ARCESS Array B 33.86 359 P **P** **05 41 05.3 -2.0**
ARCES 05 43 45.1
ARCES pmax pmax
comp=Z,20nm,0.7s
ARCES pmax pmax
comp=Z,3.0nm,0.5s
KEV Kevo 34.06 360 *e*p **P** **05 41 06.8 -2.3**
comp=Z,6.9nm,0.8s,mb4.6
KEV Kevo 34.06 360 *e*P **P** **05 41 06.8 -2.3**
KEV pmax pmax
comp=Z,7.0nm,0.8s,mb4.6
BRVK Borovoye 34.60 46 *e*P **P** **05 41 13.1 -0.8**
BVA0 Borovoye Array 34.65 46 *i* P **P** **05 41 14.5 +0.2**
BVA0 pmax pmax
comp=Z,2.0nm,1.0s,mb4.0
BVAR Borovoye Array 34.65 46 P **P** **05 41 14.4 +0.1**
comp=Z,12nm,0.8s,mb4.9,baz=243,slow=6.6,SNR=73
EKS2 Erkin-Say 36.27 65 P **P** **05 41 28.8 +0.7**
SNR=5.7
AAK Ala-Archa 36.80 65 P **P** **05 41 34.3 +1.7**
SNR=9.1
AAK Ala-Archa 36.80 65 *e*P **P** **05 41 33.7 +1.1**
comp=Z,4.9nm,0.5s,mb4.6
UCH Uchtor 36.85 65 P **P** **05 41 35.0 +1.9**
SNR=6.0
KZA Kyzart 37.41 65 P **P** **05 41 40.0 +2.2**
SNR=9.9
TKM2 Tokmak 2 37.58 64 P **P** **05 41 40.4 +1.2**
SNR=8.3
KMBO Kilima Mbogo 37.83 164 P **P** **05 41 45.5 +4.0**
comp=Z,2.0nm,0.5s,mb4.1,baz=47,slow=22,SNR=8.9
KMBO LR LR 05 58 43.5
comp=Z,82nm,19.5s,MS3.5,baz=280,slow=38
KMBO Kilima Mbogo 37.83 164 *e*P **P** **05 41 45.2 +3.6**
ULHL Ulahol 38.13 65 P **P** **05 41 45.9 +2.1**
SNR=19
KSH Kashi 38.33 69 P **P** **05 41 47.3 +1.8**
KSH *e*PP PP 05 43 19.3 +2.5
KSH *e*PCP PcP 05 44 00.3 +0.8
KSH *e*S **S** **05 47 36.3 -1.3**
KSH *e*SCP 05 47 41.4
KSH *e*PCS 05 47 48.8
KSH *e*XS 05 48 02.0
KSH *e*SCS ScS 05 51 51.3 -1.0
KSH AMB AMB
comp=Z,30nm,0.6s,mb5.2
KSH AMB AMB
comp=Z,120nm,6.1s
KURK Kurchatov 39.42 51 *e*P **P** **05 41 54.9 +0.4**
DBIC Dimbokro 41.34 233 P **P** **05 42 11.6 +0.9**
comp=Z,11nm,0.7s,mb4.6,baz=31,slow=9.9,SNR=23
DBIC LR LR 06 01 59.3
comp=Z,102nm,19.1s,MS3.7,baz=26,slow=40
DBIC Dimbokro 41.34 233 P **P** **05 42 11.6 +1.0**
DBIC pmax pmax
comp=Z,11nm,0.7s
DBIC MLR MLR
comp=Z,102nm,19.2s
DBIC Dimbokro 41.34 233 *e*P **P** **05 42 11.2 +0.6**
TIC Toumodi 41.46 233 *e*P **P** **05 42 12.6 +1.0**
comp=Z,29nm,0.4s,mb5.2
KIC Kosan Boka 41.49 233 *e*P **P** **05 42 12.9 +1.0**
comp=Z,68nm,0.5s,mb5.5
RTK Rohtak 41.62 85 *e*P **P** **05 42 13.6 +0.7**
RTK AMb AMB 05 42 18.0
comp=Z,107nm,0.1s
LIC Lamto 41.78 233 *e*P **P** **05 42 15.2 +0.9**
comp=Z,38nm,0.5s,mb5.3
LIC Lamto 41.78 233 *e*P **P** **05 42 15.0 +0.7**
comp=Z,11nm,0.5s,mb4.7
MKAR Makanchi Array 41.96 57 P **P** **05 42 16.3 +0.9**
comp=Z,31nm,0.6s,mb5.1,baz=281,slow=6.5,SNR=334
MKAR PcP PcP 05 44 11.5 +0.5
comp=Z,6.1nm,0.6s,baz=262,slow=3.8,SNR=6.0
MKAR ScP 05 48 01.2
comp=Z,1.9nm,1.0s,baz=260,slow=4.7,SNR=4.4
MKAR LR LR 06 01 16.5
comp=Z,71nm,21.6s,MS3.5,baz=101,slow=38
MKAR Makanchi Array 41.96 57 P **P** **05 42 16.3 +0.9**
MKAR 05 44 11.5
MKAR pmax pmax
comp=Z,31nm,0.6s
MKAR pmax pmax
comp=Z,6.0nm,0.6s
MKAR pmax pmax
comp=Z,2.0nm,1.0s
MKAR MLR MLR
comp=Z,71nm,21.6s
MKAR Makanchi Array 41.96 57 P **P** **05 42 16.3 +0.9**
MKAR PcP PcP 05 44 11.5 +0.5
MKAR ScP 05 48 01.2
MKAR LR LR 06 01 16.5
KUDL Kundal 42.03 86 *e*P **P** **05 42 18.0 +1.8**
KUDL *e* 05 42 20.0
comp=Z,17nm,0.6s
BHGR Bahadurgarh 42.18 85 *e*P **P** **05 42 19.6 +2.2**
NDI New Delhi 42.41 85⇓ *i*P **P** **05 42 20.0 +0.7**
NVS Novosibirsk 42.41 45 *i* P **P** **05 42 19.1 +0.1**
NVS *i* 05 43 58.1
NVS pmax pmax
comp=Z,44nm,1.0s,mb5.0
AYAN Aya Nagar 42.41 85 *e*P **P** **05 42 20.6 +1.3**
AYAN *e* 05 42 22.1
comp=Z,23nm,1.4s
SONA Sohna 42.47 86 *e*P **P** **05 42 21.1 +1.3**
SONA AMb AMB 05 42 22.2
comp=Z,8.6nm,0.3s,mb4.8
SPITS Spitsbergen Ar 42.80 357 P **P** **05 42 21.0 -0.8**
comp=Z,43nm,1.2s,mb5.1,baz=143,slow=10.0,SNR=43
SPITS PcP PcP 05 44 13.0 -0.4
comp=Z,2.6nm,0.5s,baz=146,slow=7.2,SNR=5.0
SPITS ScP 05 48 01.5
comp=Z,5.0nm,1.0s,baz=135,slow=5.7,SNR=5.5
SPB4 Spitsbergen Ar 42.80 357 *e*P **P** **05 42 21.1 -0.8**
ASOR Ausora 42.83 85 *e*P **P** **05 42 24.6 +1.9**
ASOR AMb AMB 05 42 27.3
comp=Z,270nm,0.1s
KALG Kalgarh 43.34 83 *e* **P** **05 42 22.9 -3.9**
KALG AMb AMB 05 42 24.3
comp=Z,43nm,0.7s,mb5.3
SCO Scoresbysund 43.44 338 *i* P **P** **05 42 27.2 +0.1**
comp=Z,4.6nm,0.6s,mb4.4
SCO Scoresbysund 43.44 338 *i* P **P** **05 42 27.2 +0.1**
SCO pmax pmax
comp=Z,5.0nm,0.6s,mb4.4
KBS Kingsbay 43.76 356 *e*P **P** **05 42 28.3 -1.4**
comp=Z,14nm,0.8s,mb4.8
BHPL Bhopal 44.90 92 *e*P **P** **05 42 41.3 +1.7**
BHPL *e* 05 42 42.7
comp=Z,24nm,1.8s
DAG Danmarks Havn 45.88 347⇓ *i*P **P** **05 42 45.8 -0.9**
comp=Z,4.7nm,0.6s,mb4.6
DAG Danmarks Havn 45.88 347⇓ *i*P **P** **05 42 45.8 -0.9**
DAG pmax pmax
comp=Z,5.0nm,0.6s,mb4.6
WMQ Urumqi 46.17 61 P **P** **05 42 51.1 +1.8**
WMQ PCP PcP 05 44 26.4 +1.0
WMQ PP PP 05 44 40.3 +2.6
WMQ SCP 05 48 13.0
WMQ PCS 05 48 19.6
WMQ S **S** **05 49 32.3 -0.4**
WMQ SCS ScS 05 52 38.1 -1.8
WMQ SS SS 05 52 50.4 +0.2
WMQ AMB AMB
comp=Z,7.0nm,1.2s,mb4.5
WMQ AMB AMB
comp=Z,54nm,7.4s
WMQ LR LR
comp=N,612nm,19.2s,MS4.7
WMQ LR LR
comp=E,654nm,18.3s,MS4.7
WMQ LR LR
comp=Z,1μm,20.1s,MS4.8
DANN Dangsing 47.83 82 *e*P **P** **05 43 04.8 +2.1**
KOLN Koldanda 47.94 83 *e*P **P** **05 43 04.7 +1.2**
comp=Z,86nm,0.7s
GKN Gorkha 48.68 82 *e*P **P** **05 43 10.1 +0.9**
comp=Z,115nm,0.6s
SUMG Summit 49.08 339 *e*P **P** **05 43 10.4 -1.3**
SUMG *e*PcP PcP 05 44 35.0 -0.3
DMN Daman 49.22 82 *e*P **P** **05 43 14.6 +1.2**
comp=Z,137nm,0.7s
KKN Kakani 49.28 82 *e*P **P** **05 43 14.7 +0.8**
comp=Z,93nm,0.5s
PKI Pulchoki 49.48 82 *e*P **P** **05 43 16.3 +0.9**
comp=Z,74nm,0.9s,mb5.7
LSA Lhasa 53.19 77 P **P** **05 43 44.6 +1.2**
LSA AMB AMB
comp=Z,20nm,0.7s,mb5.2
LSA Lhasa 53.19 77 *e*P **P** **05 43 44.9 +1.4**
comp=Z,17nm,0.6s,mb5.2
MOY Mondy 53.30 48 *e*P **P** **05 43 45.3 +1.4**
TLY Talaya 54.90 48 *e*P **P** **05 43 56.7 +1.1**
TLY *i* 05 44 58.7
TLY *e* 05 45 58.8
TLY pmax pmax
comp=Z,143nm,0.9s
ZAK Zakamensk 55.02 49⇑ *i*P **P** **05 43 57.1 +0.6**
ZAK *e* 05 44 03.7
ZAK *e* 05 44 58.8
TSUM Tsumeb 55.42 191 P **P** **05 44 01.3 +1.4**
comp=Z,1.9nm,0.4s,mb4.4,baz=350,slow=5.0,SNR=9.3
SHL Shillong 55.56 81 *e*P **P** **05 44 00.2 -0.6**
SHL *e* 05 46 04.1
GTA Gaotai 56.11 63 *e*P **P** **05 44 05.3 +0.7**
GTA AP pP 05 44 11.8 -1.9
GTA XP sP 05 44 15.6 -1.5
GTA AMB AMB
comp=Z,12nm,0.8s,mb5.0
SONM Songino Array 57.73 51 P **P** **05 44 16.8 +0.8**
comp=Z,7.5nm,0.5s,mb5.0,baz=283,slow=8.1,SNR=11
SONM PcP PcP 05 45 09.8 +1.4
comp=Z,4.9nm,0.8s,baz=243,slow=2.8,SNR=4.0
ULN Ulaanbaatar 58.14 51 *d i*P **P** **05 44 19.3 +0.5**
ULN Ulaanbaatar 58.14 51 *e*P **P** **05 44 19.0 +0.2**
comp=Z,14nm,0.8s,mb5.0
BOD Bodaibo 58.89 39⇓ *i*P **P** **05 44 22.8 -1.1**
TIXI Tiksi 59.99 21 *e*P **P** **05 44 30.1 -1.2**
TIXI *e* 05 46 40.9
TIXI *e*S **S** **05 52 31.8 -8.2**
TIXI pmax pmax
comp=Z,7.0nm,0.8s,mb4.7
TIXI MLR MLR
comp=Z,53nm,17.0s,MS3.8
TIXI Tiksi 59.99 21 *e*P **P** **05 44 30.0 -1.3**
comp=Z,5.4nm,0.5s,mb4.8
LBTB Lobatse 60.45 182 *e*P **P** **05 44 37.4 +2.3**
comp=Z,6.8nm,0.9s,mb4.7
CD2 Chengdu 62.52 70⇓ *i*P **P** **05 44 49.6 +0.7**
CD2 AMB AMB
comp=Z,30nm,1.0s,mb5.4
RES Resolute Bay 63.55 345 *e*P **P** **05 44 53.0 -2.0**
comp=Z,2.2nm,0.8s,mb4.2
HHC Hu-ho-hao-te 63.83 57⇓ P **P** **05 44 58.8 +1.4**
HHC AMB AMB
comp=Z,32nm,1.0s,mb5.3
HHC AMB AMB
comp=Z,82nm,5.5s
SCHQ Schefferville 63.89 320 P **P** **05 44 56.5 -1.0**
comp=Z,38nm,0.6s,mb5.6,baz=61,slow=5.7,SNR=140
SCHQ LR LR 06 13 31.2
comp=Z,65nm,19.7s,MS3.8,baz=297,slow=37
SCHQ Schefferville 63.89 320 *e*P **P** **05 44 55.9 -1.7**
comp=Z,46nm,0.6s,mb5.7
YAK Yakutsk 64.47 31 *d e*P **P** **05 44 59.8 -1.4**
CMAR Chiang Mai Arr 64.74 85 P **P** **05 45 03.8 0.0**
comp=Z,3.9nm,0.6s,mb4.6,baz=300,slow=8.3,SNR=23
CMAR Chiang Mai Arr 64.74 85 P **P** **05 45 03.8 +0.1**
CMAR pmax pmax
comp=Z,4.0nm,0.6s
XAN Xi'an 64.98 65 P **P** **05 45 05.4 +0.4**
XAN AP pP 05 45 12.4 -1.9
XAN AMB AMB
comp=Z,16nm,0.8s,mb5.1
HIA Hailar 65.34 46 *e*P **P** **05 45 07.3 +0.2**
comp=Z,45nm,1.3s,mb5.3
GYA Guiyang 66.87 73 P **P** **05 45 17.4 +0.2**
GYA S S 05 54 03.6 -2.8
GYA AMB AMB
comp=Z,20nm,1.0s,mb5.1
ENH Enshi 67.17 68 *e*P **P** **05 45 18.9 -0.2**
comp=Z,10nm,0.7s,mb5.0
BJI Beijing 67.33 56 *e*P **P** **05 45 20.4 +0.5**
BJI AMB AMB
comp=Z,26nm,0.7s,mb5.4
BJI AMB AMB
comp=Z,123nm,3.5s
BJT Baijiatuau 67.33 56 *e*P **P** **05 45 20.0 0.0**
comp=Z,12nm,0.6s,mb5.1
SUR Sutherland 68.05 186 P **P** **05 45 26.2 +1.7**
comp=Z,7.9nm,0.6s,mb4.9,baz=32,slow=8.0,SNR=9.7
CN2 Changchun 71.45 49 *e*P **P** **05 45 45.3 +0.1**
CN2 *e*S S 05 54 56.5 -3.8
CN2 AMB AMB
comp=Z,20nm,1.0s,mb5.0
BILL Bilibino 72.05 15 *d i*P **P** **05 45 47.6 -0.7**
BILL pmax pmax
comp=Z,6.0nm,0.8s,mb4.6
KLR Kul'dur 72.15 42 *e*P **P** **05 45 48.3 -0.9**
SEY Seymchan 72.33 23 *e*P **P** **05 45 50.8 +0.7**
SEY pmax pmax
comp=Z,20nm,0.7s,mb5.2
NJ2 Nanjing 73.20 62 *e*P **P** **05 45 56.3 +0.6**
NJ2 PCP PcP 05 46 14.9 +2.6
NJ2 S S 05 55 13.0 -7.5
NJ2 XS 05 55 42.0
NJ2 AMB AMB
comp=Z,30nm,0.9s,mb5.2
NJ2 AMB AMB
comp=Z,340nm,4.2s
NJ2 LR LR
comp=N,210nm,18.3s,MS4.5
NJ2 LR LR
comp=E,130nm,19.7s,MS4.5
NJ2 LR LR
comp=Z,330nm,24.0s,MS4.5
MDJ Mudanjiang 73.51 47 P **P** **05 45 59.0 +1.8**
MDJ PP PP 05 48 43.0 0.0
MDJ S S 05 55 21.6 -2.0
MDJ XS 05 55 46.1
MDJ SCS ScS 05 56 01.8 +1.4
MDJ AMB AMB
comp=Z,7.0nm,0.8s,mb4.6
MDJ AMB AMB
comp=Z,23nm,4.2s
MDJ LR LR
comp=N,71nm,37.4s,MS3.8
MDJ LR LR
comp=E,55nm,37.4s,MS3.8
MDJ LR LR
comp=Z,42nm,16.0s
FCC Fort Churchill 74.02 332 *e*P **P** **05 45 58.8 -1.1**
comp=Z,2.2nm,0.5s,mb4.3
MA2 Magadan 74.18 26 *d e*P **P** **05 46 00.5 -0.3**
MA2 pmax pmax
comp=Z,14nm,0.9s,mb4.9
MA2 Magadan 74.18 26 *e*P **P** **05 46 00.7 -0.1**
comp=Z,10nm,0.7s,mb4.9
INK Inuvik 75.27 353 P **P** **05 46 05.6 -1.4**
comp=Z,2.9nm,0.5s,mb4.5,baz=18,slow=8.4,SNR=32
INK Inuvik 75.27 353 P **P** **05 46 05.6 -1.4**
INK pmax pmax
comp=Z,3.0nm,0.5s
INK Inuvik 75.27 353 *e*P **P** **05 46 05.2 -1.7**
comp=Z,3.1nm,0.6s,mb4.4
SSE Sheshan 75.40 62 P **P** **05 46 08.6 +0.2**
SSE S S 05 55 41.6 -3.3
SSE AMB AMB
comp=Z,27nm,0.6s,mb5.3
SSE LR LR
comp=N,45nm,21.0s,MS3.8
SSE LR LR
comp=E,31nm,22.0s,MS3.8
SSE LR LR
comp=Z,25nm,16.6s
KS15 Wonju Array Si 76.49 54 *e*P **P** **05 46 15.4 +1.0**
MVL Millersville 77.03 310 *e*P **P** **05 46 17.6 +0.2**
YKW3 Yellowknife Ar 77.37 343 *e*P **P** **05 46 17.2 -1.6**
YKA Yellowknife Ar 77.43 343 P **P** **05 46 17.9 -1.2**
comp=Z,3.8nm,0.7s,mb4.4,baz=32,slow=5.6,SNR=96
YKA PKPPKP 06 13 30.5
comp=Z,0.1nm,0.5s,baz=180,slow=2.5,SNR=4.3
IMA Indian Mountai 78.51 0 *e*P **P** **05 46 25.7 +0.7**
YSS Yuzh-Sakhalins 79.36 39 *e*P **P** **05 46 29.2 -0.9**
YSS pmax pmax
comp=Z,50nm,1.2s,mb5.3
ANM Nome 79.52 6 *e*P **P** **05 46 30.2 -0.3**
COLA College 79.64 358⇑ *e*P **P** **05 46 31.4 +0.2**
COLA College 79.64 358 *e*P **P** **05 46 30.8 -0.3**
comp=Z,2.6nm,0.6s,mb4.3
ILAR Eielson Array 79.71 357 P **P** **05 46 31.2 -0.4**
comp=Z,4.7nm,0.7s,mb4.5,baz=341,slow=3.4,SNR=92
ILAR PKKPbc 06 05 18.0
comp=Z,0.5nm,0.8s,baz=194,slow=1.2,SNR=6.0
ILAR Eielson Array 79.71 357 P **P** **05 46 31.2 -0.4**
ILAR pmax pmax
comp=Z,5.0nm,0.7s
ILAR pmax pmax
comp=Z,1.0nm,0.8s
FFC Flin Flon 79.94 333 *e*P **P** **05 46 32.0 -1.0**
comp=Z,14nm,0.9s,mb4.9
DAWY Dawson 79.97 354 *e*P **P** **05 46 32.6 -0.3**
ULM Lac du Bonnet 80.80 327 P **P** **05 46 37.1 -0.5**
comp=Z,28nm,0.6s,mb5.4,baz=48,slow=5.2,SNR=27
ULM LR LR 06 24 37.4
comp=Z,63nm,19.1s,MS4.0,baz=331,slow=37
ULM Lac du Bonnet 80.80 327 *e*P **P** **05 46 36.5 -1.1**
comp=Z,18nm,0.5s,mb5.2
MCK McKinley 80.81 358 *e*P **P** **05 46 36.9 -0.5**
JNU Nakatsue 80.99 56 LR LR 06 28 22.8
comp=Z,49nm,18.4s,MS3.9,baz=248,slow=40
ASAJ Asahikawa 81.17 41 LR LR 06 29 33.2
comp=Z,56nm,20.1s,MS3.9,baz=65,slow=41
FWV Forest Hill 81.27 310 *e*P **P** **05 46 40.8 +0.5**
PWA Palmer West 82.92 359 *e*P **P** **05 46 48.9 +0.5**
PMR Palmer 82.96 358 *e*P **P** **05 46 48.5 -0.2**
PMS Palmer South 83.32 358 *e*P **P** **05 46 50.4 -0.1**
SVW Sparrevohn 83.46 1 *e*P **P** **05 46 50.8 -0.4**
MAJO Matsushiro 83.60 49 *e*P **P** **05 46 53.9 +1.4**
comp=Z,6.0nm,0.4s,mb5.1
MAT Matsushiro 83.60 49 P **P** **05 46 51.9 -0.6**
MAT Matsushiro 83.60 49 P **P** **05 46 52.0 -0.5**
comp=Z,17nm,0.8s,mb5.2
BLO Bloomington 83.68 314 *e*P **P** **05 46 52.1 -0.7**
comp=Z,16nm,0.6s,mb5.3
WCI Wyandotte Cave 84.17 314 *e*P **P** **05 46 55.5 +0.2**
comp=Z,7.3nm,0.8s,mb4.9
DLBC Dease Lake 84.28 348 *e*P **P** **05 46 55.8 +0.5**
CPCT Cooper Cave 84.92 310 *e*P **P** **05 46 59.6 +0.5**
SLM Saint Louis 86.18 316 P **P** **05 47 05.7 +0.4**
WVT Waverly 86.48 313 *e*P **P** **05 47 06.3 -0.6**
comp=Z,3.9nm,0.6s,mb4.8
FX1 Attu Island--F 86.86 20 *e*P **P** **05 47 07.5 -0.7**
CCM Cathedral Cave 87.15 316 *e*P **P** **05 47 09.8 -0.2**
comp=Z,18nm,0.6s,mb5.5
PLAL Pickwick Lake 87.41 312 *e*P **P** **05 47 10.5 -0.9**
comp=Z,12nm,1.3s,mb5.0

HALT	Halls	87.53 313	*e*P	P	05 47 11.8	-0.1
BDFB	Brasilia	87.58 249	P	P	05 47 15.7	+3.1
	comp=Z,9.3nm,0.7s,mb5.1,baz=58,slow=3.7,SNR=22					
BDFB			LR	LR	06 26 41.9	
	comp=Z,105nm,21.4s,MS4.2,baz=298,slow=36					
BDFB	Brasilia	87.58 249	P	P	05 47 15.7	+3.1
BDFB			pmax	pmax		
	comp=Z,9.0nm,0.7s					
BDFB			MLR	MLR		
	comp=Z,105nm,21.4s					
LRAL	Lakeview Retre	88.06 310	*e*P	P	05 47 14.5	-0.1
	comp=Z,4.2nm,0.5s,mb4.9					
WALA	Waterton Lakes	88.81 336	*e*P	P	05 47 17.4	-0.3
	comp=Z,12nm,0.8s,mb5.3					
HRY	Holter Researc	90.09 333	*e*P	P	05 47 24.0	+0.2
CHMT	Chamberlain Mo	90.43 334	*e*P	P	05 47 25.1	-0.3
NIKO	Nikolski	90.53 10	P	P	05 47 25.6	-0.1
MSO	Missoula	90.74 335	*e*P	P	05 47 26.5	-0.3
	comp=Z,16nm,1.0s,mb5.3					
BOZ	Bozeman (W)	90.92 333	*e*P	P	05 47 28.3	+0.7
	comp=Z,14nm,0.7s,mb5.4					
MIAR	Mount Ida	90.96 315	*e*P	P	05 47 27.6	-0.5
	comp=Z,2.8nm,0.6s,mb4.8					
YMR	Madison River	91.49 332	*e*P	P	05 47 31.5	+1.2
QLMT	Earthquake Lak	91.53 332	*e*P	P	05 47 31.5	+1.0
NLW	Nelson Butte	91.69 339	*e*P	P	05 47 31.0	-0.1
MCMT	McKenzie Canyo	92.07 333	*e*P	P	05 47 33.6	+0.6
KSWY	Kelly School	92.23 331	*e*P	P	05 47 34.5	+0.8
BW06	Boulder Array	92.52 330	*e*P	P	05 47 34.6	-0.5
	comp=Z,1.1nm,0.6s,mb4.5					
PDAR	Pinedale Array	92.52 330	P	P	05 47 35.0	-0.1
	comp=Z,2.2nm,0.8s,mb4.7,baz=60,slow=3.9,SNR=21					
PDAR			LR	LR	06 27 13.9	
	comp=Z,55nm,18.5s,MS4.0,baz=55,slow=34					
GNW	Green Mountain	92.86 340	*e*P	P	05 47 36.8	+0.3
HAWA	Hanford	92.97 338	*e*P	P	05 47 37.3	+0.3
	comp=Z,8.9nm,0.8s,mb5.2					
HLID	Hailey	93.73 333	*e*P	P	05 47 41.1	+0.5
	comp=Z,2.3nm,0.8s,mb4.7					
WMOK	Wichita Mounta	93.73 318	*e*P	P	05 47 41.0	+0.2
	comp=Z,1.6nm,0.6s,mb4.6					
HWUT	Hardware Ranch	94.30 330	*e*P	P	05 47 42.9	-0.4
	comp=Z,11nm,0.9s,mb5.3					
SDCO	Great Sand Dun	94.82 324	*e*P	P	05 47 45.3	-0.5
	comp=Z,4.9nm,1.0s,mb4.9					
JLU	Jordanelle	95.10 330	*e*P	P	05 47 47.0	0.0
PV01	Paradox Valley	95.92 327	*e*P	P	05 47 50.8	0.0
PV10	Paradox Valley	95.93 327	*e*P	P	05 47 51.5	+0.6
SRU	San Rafael	95.97 328	*e*P	P	05 47 50.5	-0.6
MSU	Marysvale	97.17 329	*e*P	P	05 47 57.0	+0.5
ANMO	Albuquerque	97.52 323	P	P	05 47 57.4	-0.7
MNTX	Cornudas Mount	99.58 321	*e*P	P	05 48 06.8	-0.7
	comp=Z,1.4nm,1.0s,mb4.3					
NVAR	Mina Array Bea	99.64 333	P	P	05 48 08.2	+0.6
	comp=Z,2.3nm,0.7s,mb4.7,baz=51,slow=4.7,SNR=21					
NVAR			PKKPbc		06 04 31.0	
	comp=Z,0.6nm,0.8s,baz=177,slow=3.8,SNR=4.7					
NVAR			LR	LR	06 37 07.9	
	comp=Z,40nm,20.4s,MS3.9,baz=170,slow=38					
NVAR	Mina Array Bea	99.64 333	P	P	05 48 08.2	+0.6
NVAR			PKKPbc		06 04 31.0	
NVAR			LR	LR	06 37 07.9	
TXAR	Lajitas Array	100.52 318	P	P	05 48 12.1	+0.2
	comp=Z,0.6nm,0.9s,baz=60,slow=4.7,SNR=6.0					
CMB	Columbia Colle	100.73 335	Pdif	P	05 48 11.6	-1.0
WRA	Warramunga Arr	114.89 97	PKP	PKPdf	05 53 05.9	-3.1
	comp=Z,1.9nm,0.7s,baz=309,slow=1.9,SNR=22					
WRA	Warramunga Arr	114.89 97	PKIKP	PKPdf	05 53 05.9	-3.1
WRA			pmax	pmax		
	comp=Z,2.0nm,0.7s					
WRAB	Tennant Creek	114.89 97	*e*PKP	PKPdf	05 53 05.9	-3.1
WB2	Warramunga Arr	114.90 97	*e*P	PKPdf	05 53 06.1	-2.9
ASAR	Alice Springs	116.41 101	PKP	PKPdf	05 53 09.0	-2.9
	comp=Z,3.2nm,0.8s,baz=308,slow=1.3,SNR=36					
CTA	Charters Tower	124.63 91	PKP	PKPdf	05 53 25.6	-2.3
	comp=Z,3.1nm,0.4s,baz=290,slow=4.5,SNR=5.9					
CTA	Charters Tower	124.63 91	PKIKP	PKPdf	05 53 25.6	-2.3
CTA			pmax	pmax		
	comp=Z,3.0nm,0.4s					
QSPA	South Pole Qui	125.60 180	*e*P	PKPdf	05 53 25.3	-2.9
QSPA			*e*PKP	PKPdf	05 53 25.9	-2.4
STKA	Stephens Creek	126.15 106	PKP	PKPdf	05 53 28.1	-2.5
	comp=Z,9.8nm,1.1s,baz=336,slow=4.0,SNR=6.7					
RPZ	Rata Peaks	151.16 117	PKPbc	PKPdf	05 54 19.3	+4.6
	comp=Z,20nm,0.7s,baz=208,slow=2.2,SNR=9.2					
URZ	Urewera	155.78 105	PKPab	PKPab	05 54 45.2	-0.1
	comp=Z,8.6nm,0.6s,baz=330,slow=4.6,SNR=5.5					

IDC ***25*** *05:40:00.4±2.1,4.75N×126.25E,mb3.6/3,mb1 3.8/3, mb1mx3.6/16,Error ellipse: s-maj=164.0km s-min=27.0km az=65.0*

ISC 25 05:40:12.4±4.6,3.4N±0.3×123.6E±0.8,h95km±57km,n6, σ1§07/6,mb3.5/4,Celebes Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KALP	Kalibo	8.30	351	*e*	P	05 42 11.7	0.0
FITZ	Fitzroy Crossi	21.48	175	*e*P	P	05 44 54.7	-0.2
	0.8nm,0.3s,mb3.5						
WRA	Warramunga Arr	25.50	156	P	P	05 45 33.0	-0.7
	1.1nm,0.4s,mb3.6,baz=342,slow=10,SNR=22						
WB2	Warramunga Arr	25.50	156	*e*P	P	05 45 33.5	-0.3
ASAR	Alice Springs	28.73	160	P	P	05 46 04.5	+1.3
	0.2nm,0.5s,mb3.0,baz=347,slow=7.6,SNR=5.2						
MKAR	Makanchi Array	56.07	327	P	P	05 49 44.0	-0.1
	0.3nm,0.4s,mb3.6,baz=120,slow=8.0,SNR=4.8						

NEIC ***25*** *05:40:48.7, 40.44N×29.14E,h8km,MD3.7(ISK),After ISK.*
ISK ***25*** *05:40:48.7, 40.44N×29.14E,h8km,MD3.7*

ISC 25 05:40:48.7±0.3,40.46N±0.02×29.12E±0.02,h4km±3km, n59,σ0§72/69,2C,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
YLV	Yalova	0.22	61	*i* PG	Pg	05 40 53.4	+0.3
YLV				*i* SG	Sg	05 40 56.9	+0.9
IZI	Iznik	0.29	115	*i* PG	Pg	05 40 54.8	+0.1
IZI				*i* SG	Sg	05 40 58.7	+0.1
ULDT	Uludag	0.32	178	*i* P	Pg	05 40 54.9	-0.3
ULDT				*i* S	Sg	05 40 59.7	+0.2
BOY	Boyalica	0.33	86	*i* PG	Pg	05 40 55.8	+0.4
SAY	Sayfiye	0.38	155	*i* PG	Pg	05 40 55.9	-0.5
BADT	Buyukada	0.39	359	*i* PG	Pg	05 40 57.6	+1.1
DERT	Derbent	0.43	104	*i* PG	Pg	05 40 57.8	+0.4
ORLT	Orhaneli	0.45	203	*i* PG	Pg	05 40 57.8	0.0
OSMT	Osmaniye	0.46	72	*i* PG	Pg	05 40 58.2	+0.2
HRT	Hereke	0.55	49	*i* PG	Pg	05 40 59.9	+0.2
HRT	Hereke	0.55	49	*i* Pg	Pg	05 40 59.0	-0.7
HRT				*i* Pg	Pg	05 40 59.9	+0.2
ISK	Istanbul-Kandi	0.60	355	*i* PG	Pg	05 41 01.5	+0.7
CAVI	Cavuskoy	0.61	115	*i* PG	Pg	05 41 00.5	-0.4
HIS	Hisarcik	0.62	89	*i* PG	Pg	05 41 01.1	+0.1
KCT	Karacabey	0.62	252	*i* PG	Pg	05 41 01.0	-0.1
GEDT	Gedikpinar	0.67	137	*i* PG	Pg	05 41 01.6	-0.5
KLYT	Kilyos	0.79	356	*i* PG	Pg	05 41 05.0	+0.4
SILT	Sile	0.79	30	*i* PG	Pg	05 41 04.9	+0.3
EYL	Eskiyayla	0.80	82	*i* PG	Pg	05 41 04.1	-0.5
ORH	Orhaniye	0.82	61	*i* PG	Pg	05 41 05.1	-0.1
CTT	Catalca	0.86	323	*i* PG	Pg	05 41 06.2	+0.2
GPA	Golpazari	0.92	100	*i* PG	Pg	05 41 06.6	-0.5
BNT	Bandirma	0.93	264	*i* PG	Pg	05 41 06.7	-0.5
DST	Dursunbey	0.94	204	*i* PG	Pg	05 41 06.4	-1.0
EDC	Edincik	0.97	264	*i* PG	Pg	05 41 07.0	-1.1
EDC				*i* SG	Sg	05 41 22.4	+1.4
SLVT	Silivri	1.03	318	*i* PG	Pg	05 41 09.7	+0.3
GULT	Gulveren	1.06	91	*i* PG	Pg	05 41 09.3	-0.6
BTOK	Tokmak	1.09	230	*i* P	Pb	05 41 09.4	-0.4
BTOK				*i* S	Sb	05 41 24.6	+0.4
MRMT	Marmara Adasi	1.17	277	*i* PN	Pn	05 41 11.9	+0.1
CRLT	Corlu	1.25	303	PN	Pn	05 41 12.6	-0.3
BALB	Balikesir	1.26	230	*i* PN	Pn	05 41 13.4	+0.3
KGT	Karabiga	1.39	270	*e*PN	Pn	05 41 14.8	-0.1
HENT	Hendek	1.40	74⇑	*i*P	Pb	05 41 14.5	-0.5
HENT				*i* S	Sb	05 41 33.1	0.0
MDU	Mudurnu	1.59	89	*e*PN	Pn	05 41 18.0	+0.1
ALT	Altintas	1.60	151	*e*PN	Pn	05 41 17.8	-0.1
ESKT	Eskisehir	1.63	125	*e*PN	Pn	05 41 18.2	-0.1
ESKT	Eskisehir	1.63	125	*i* P	Pn	05 41 17.6	-0.7
ESKT				*i* S	Sb	05 41 40.7	+1.0
LPK	Lapseki	1.81	268	*e*PN	Pn	05 41 21.3	+0.4
AKS	Akhisar	1.88	213	*e*PN	Pn	05 41 20.9	-1.0
MANT	Manisa	2.02	193	*i* P	Pn	05 41 26.2	+2.3
MANT				*i* S	Sn	05 41 51.4	+1.6
KHL	Karahalli	2.16	172	*e*PN	Pn	05 41 26.4	+0.5
EDRB	Edirne	2.27	308	*e*PN	Pn	05 41 28.7	+1.2
KDAG	Bornova	2.51	216⇑	*i*P	Pn	05 41 34.6	+3.6
KDAG				*i* S	Sn	05 42 09.4	+7.0
IZM	Izmir	2.52	216	*e*PN	Pn	05 41 31.1	+0.1
KIZT	Kizilcal	2.65	126	*e*PN	Pn	05 41 32.5	-0.5
SAFT	Safranbolu	2.81	73	*e*PN	Pn	05 41 35.1	-0.2
PRD	Provadia	3.02	335	*e*P	Pn	05 41 45.0	+6.7
KDZ	Kurdzhali	3.04	294	*e*P	Pn	05 41 49.0	+10
DIM	Dimitrovgrad	3.14	302	*e*P	Pn	05 41 40.0	+0.1
PSN	Preselentsi	3.29	348	*e*P	Pn	05 41 41.0	-1.1
YER	Yerkesik	3.39	191	PN	Pn	05 41 43.5	+0.1
KONT	Konya--Tatoy	3.56	134	*e*PN	Pn	05 41 44.7	-1.1
KAMT	Kaman	3.69	106	*e*PN	Pn	05 41 47.4	-0.4
TOS	Tosya	3.77	80	*e*PN	Pn	05 41 49.5	+0.7
PVL	Pavlikeni	3.95	315	*e*P	Pn	05 41 51.0	-0.4
MMB	Musomiste	4.23	287	*e*P	Pn	05 41 55.0	-0.5
PGB	Panagyurishte	4.27	301	*e*P	Pn	05 41 53.0	-2.9
KKB	Krupnik	4.77	289	*e*P	Pn	05 42 10.0	+6.9
VTS	Vitosha	4.92	298	*e*P	Pn	05 42 04.0	-1.3

NEIC ***25*** *05:44:08.9±0.5,21.84S×169.42E,h10km,mb4.6/2,Error ellipse: s-maj=15.4km s-min=9.5km az=180.0*
IDC ***25*** *05:44:08.3±3.2,21.55S×169.28E,mb3.9/5,mb1 4.2/5, mb1mx4.0/13,Error ellipse: s-maj=173.0km s-min=26.9km az=157.0*

ISC 25 05:44:06.9±4.3,21.9S±0.1×169.45E±0.07,h6km±26km, n16,σ0§79/18,mb4.1/6,1C-3D,Southeast of Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	Mont Dzumac	2.79	266	*e*P	Pn	05 44 53.4	+0.5
NOUC	Port Laguerre	2.92	266⇑	*e*P	Pn	05 44 55.2	+0.4
NOUC				*e*S	Sn	05 45 31.0	+0.3
NOUC	Port Laguerre	2.92	266⇑	*e*P	Pn	05 44 55.2	+0.4
NOUC				*e*S	Sn	05 45 31.0	+0.3
SNZO	South Karori	19.83	168	*e*P	P	05 48 40.9	-0.2
RAR	Rarotonga	28.61	94	P	P	05 49 57.2	-9.0
ASAR	Alice Springs	32.77	260	P	P	05 50 42.6	-0.3
	0.7nm,0.6s,mb3.8,baz=85,slow=8.8,SNR=8.3						
WRAB	Tennant Creek	32.80	267	P	P	05 50 42.6	-0.7
	52nm,2.1s,mb5.1						
WRA	Warramunga Arr	32.81	267	P	P	05 50 41.3	-2.1
	0.4nm,0.7s,mb3.5,baz=99,slow=8.3,SNR=5.9						
FITZ	Fitzroy Crossi	41.24	267	*e*P	P	05 51 54.9	+0.4
	3.4nm,0.8s,mb4.0						
FITZ	Fitzroy Crossi	41.24	267	P	P	05 51 54.9	+0.5
	4.1nm,0.6s,mb4.2,baz=156,slow=8.0,SNR=15						
VNA3	Neumayer Olymp	87.08	180	*i*	P	05 56 54.2	+0.1
VNA2	Neumayer--Watz	87.38	181	*i*	P	05 56 56.6	+1.1
VNA1	Neumayer--Stat	87.67	181	*i*	P	05 56 53.1	-3.8
NVAR	Mina Array Bea	90.42	48	P	P	05 57 11.4	+0.7
	0.6nm,0.7s,mb4.0,baz=223,slow=5.1,SNR=5.6						
ILAR	Eielson Array	92.72	17	P	P	05 57 20.4	-0.2
	0.3nm,0.5s,mb3.9,baz=233,slow=5.4,SNR=7.7						
PV10	Paradox Valley	96.99	52	*e*P	P	05 57 40.8	0.0

NEIC ***25*** *06:06:46.7, 44.92S×167.66E,h73km,ML4.2(WEL),After WEL.*

WEL 25 06:06:47.1±0.2,44.96S×167.61E,h67km±1km,ML4.2/12, 2C-4D,Error ellipse: s-maj=1.9km s-min=0.9km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MSZ	Milford Sound	0.36	39	⇑PN	P	06 06 58.3	-0.2
MSZ				SN	S	06 07 06.4	-0.5
MLZ	Mavora Lakes	0.56	134	⇓PN	P	06 07 00.1	-0.4
MLZ				SN	S	06 07 09.5	-0.7
MLZ	Mavora Lakes	0.56	134	P	P	06 07 00.1	-0.3
MLZ				S	S	06 07 09.5	-0.6
DCZ	Deep Cove	0.61	211	⇓PN	P	06 07 00.3	-0.7
DCZ				SN	S	06 07 10.6	-0.5
WHZ	Wether Hill Ro	0.97	166	⇓PN	P	06 07 04.9	-0.4
WHZ				SN	S	06 07 18.4	-0.4
WHZ	Wether Hill Ro	0.97	166	P	P	06 07 04.9	-0.4
WHZ				S	S	06 07 18.4	-0.4
AXZ	Alexandra	1.26	105	PN	P	06 07 08.9	-0.3
AXZ				SN	S	06 07 23.8	-1.8
BWZ	Berwen	1.68	76	⇓PN	P	06 07 13.8	-1.2
LMZ	Lake Moeraki	1.72	45	PN	P	06 07 14.4	-1.2
TUZ	Tuapeka	1.74	126	PN	P	06 07 01.1	-0.8
TUZ				SN	S	06 07 34.6	-2.4
TUZ	Tuapeka	1.74	126	P	P	06 07 15.1	-0.7
ODZ	Otahua Downs	2.16	93	⇑PN	P	06 07 20.0	-1.6
ODZ				SN	S	06 07 42.7	-4.4
ODZ	Otahua Downs	2.16	93	P	P	06 07 20.0	-1.6
RPZ	Rata Peaks	2.77	65	PN	P	06 07 27.2	-3.0
RPZ	Rata Peaks	2.77	65	P	P	06 07 27.2	-3.0
WVZ	Waitaha Valley	2.94	51	PN	P	06 07 29.8	-2.8
MQZ	McQueen's Vall	3.83	73	PN	P	06 07 41.0	-4.1
LTZ	Lake Taylor	4.01	59	PN	P	06 07 43.1	-4.6
DSZ	Denniston Nort	4.43	45	PN	P	06 07 50.4	-3.1
KHZ	Kahutara	5.00	62	PN	P	06 07 57.6	-3.8
THZ	Tophouse	5.01	52	PN	P	06 07 57.2	-4.4
QRZ	Quartz Range	5.49	43	PN	P	06 08 05.4	-2.7
NNZ	Nelson	5.64	51	PN	P	06 08 08.4	-1.8
TUWZ	Tuamarina	5.82	55	PN	P	06 08 13.1	+0.4
MRZ	Mangatainoka R	7.26	57	PN	P	06 09 27.1	-5.8
WAZ	Wanganui	7.54	49	PN	P	06 08 36.2	-0.5
WCZ	Waipu Caves	10.36	32	PN	P	06 09 12.8	-2.4
OUZ	Omahuta	10.75	27	PN	P	06 09 17.5	-2.9

NAO ***25*** *06:10:19.5±2.4,67.83N×20.40E,ML2.5*
HEL ***25*** *06:10:21.3±0.2,67.87N×20.33E,ML2.0,ML2.1(BER), ML2.5(NAO),Explosion*
BER ***25*** *06:10:21.3±3.7,67.88N×20.23E,ML2.1,ML2.5(NAO), Suspected explosion*

ISC 25 06:10:16.6±0.5,67.72N±0.03×20.15E±0.08,n17,σ1§72/27, Sweden

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KTK1	Kautokeino	1.73	40	*e*P	Pn	06 10 50.0	+1.9
KTK1				*e*SN	Sn	06 11 11.7	+0.5
KTK1				AML	AML	06 11 16.2	
	comp=Z,19nm,0.3s						
TRO	Tromso	1.97	347	*e*P	Pn	06 10 53.4	+1.9
TRO				*e*SG	Sg	06 11 19.2	-3.0
TRO				AML	AML	06 11 20.9	
	comp=Z,34nm,0.4s						
SGF	Sodankyl	2.46	94	*e*P	Pn	06 11 01.1	+2.5
SGF				*e*S	Sn	06 11 32.8	+3.0
LOF	Lofoten	2.53	282	*e*SG	Sg	06 11 40.8	0.0
LOF				AML	AML	06 11 43.6	
	comp=Z,17nm,0.4s						
ARA0	ARCESS Array S	2.68	45	*e*P	Pn	06 11 02.0	+0.3
ARA0				*e*SG	Sg	06 11 38.5	-7.2
ARA0	ARCESS Array S	2.68	45	Pn	Pn	06 11 02.0	+0.3
	baz=229,slow=16						
ARA0				Lg		06 11 38.5	
	baz=228,slow=28						
MOR8	Moi Rana	2.73	238	*e*SB	Sb	06 11 42.7	+2.3
MOR8				AML	AML	06 11 45.0	
	comp=Z,21nm,0.4s						
KEV	Kevo	3.23	48	*e*P	Pn	06 11 09.5	0.0
KEV				*e*P		06 11 11.2	
KEV				MSG		06 12 07.1	
	comp=Z,6.1nm,0.3s						
MSF	Maaselka	3.96	113	*e*P	Pn	06 11 23.4	+3.5
MSF				*e*SG	Sg	06 12 23.6	-4.8
NSS	Namsos	4.62	230	*e*SG	Sg	06 12 47.5	-2.8
NSS				AML	AML	06 12 48.2	
	comp=Z,8.7nm,0.5s						
APA0	Apatity Array	4.90	85	Pn	Pn	06 11 32.5	-0.8
	baz=275,slow=14						
APA0				Sn	Sn	06 12 29.3	-2.4
	baz=277,slow=28						
APA0				Lg		06 12 49.5	
	baz=278,slow=37						
APA0	Apatity Array	4.90	85	*e*P	Pn	06 11 32.5	-0.8
APA0				*e*S	Sn	06 12 29.3	-2.4
APA0				*e*SG	Sg	06 12 49.5	-10
SUF	Sumiainen	5.62	151	*e*S	Sn	06 12 51.2	+1.5
SUF				MSG		06 13 22.2	
	comp=Z,1.0nm,0.3s						
FIA0	FINESS Array S	6.80	155	*e*S	Sn	06 13 18.8	-0.3
FIA0				*e*SG	Sg	06 13 53.5	-9.5
FIA0	FINESS Array S	6.80	155	Sn	Sn	06 13 18.8	-0.3
	baz=350,slow=28						
FIA0				Lg		06 13 53.5	
	baz=339,slow=37						
HFS	Hagfors	8.13	203	*e*S	Sn	06 13 50.6	-1.7
HFS				*e*SG	Sg	06 14 38.0	-9.1
HFS	Hagfors	8.13	203	Sn	Sn	06 13 50.6	-1.7
	baz=34,slow=28						
HFS				Lg		06 14 38.0	
	baz=27,slow=28						

IDC ***25*** *06:14:18.3±0.6,19.31N×146.01E,h45km±3km,mb3.8/13, mb1 4.0/13,mb1mx3.9/23,MS3.5/4,Ms1 3.6/4, ms1mx3.0/29,Error ellipse: s-maj=22.5km s-min=12.4km az=109.0*
NEIC ***25*** *06:14:19.0±1.6,19.35N×145.93E,h51km±15km,mb4.4/5, Error ellipse: s-maj=16.5km s-min=12.1km az=86.0*

ISC 25 06:14:16.9±0.4,19.33N±0.05×145.8E±0.1,h45km,n29, σ1§08/28,mb4.1/15,MS3.6/4,Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SARN	Sarigan	2.61	181	*e*P	P	06 14 59.7	+2.0
SAPN	Saipan	4.09	181	*e*P	P	06 15 20.5	+1.9
GUMO	Guam	5.78	189	*e*P	P	06 15 41.2	-1.0
GUMO				S	S	06 16 45.4	-2.8
MAJO	Matsushiro	18.41	340	*e*P	P	06 18 31.1	+0.6
	3.8nm,0.5s						
ENH	Enshi	34.61	295	*e*P	P	06 21 03.8	+0.1
	26nm,2.2s,mb4.8						
WB2	Warramunga Arr	40.62	197	*e*P	P	06 21 54.2	0.0
WRA	Warramunga Arr	40.62	197	P	P	06 21 53.9	-0.2
	2.4nm,0.6s,mb4.0,baz=17,slow=8.9,SNR=35						
WRA				sP	sP	06 22 11.8	-0.3
	4.1nm,0.9s,baz=17,slow=9.1,SNR=9.7						
WRA				LR	LR	06 37 20.4	
	comp=Z,36nm,21.3s,MS3.2,baz=195,slow=34						
WRA	Warramunga Arr	40.62	197	P	P	06 21 53.9	-0.3
WRA				sP	sP	06 22 11.8	-0.3
WRA				LR	LR	06 37 20.4	
FITZ	Fitzroy Crossi	42.15	209	*e*P	P	06 22 07.0	+0.1
	4.5nm,0.8s,mb4.2						
FITZ	Fitzroy Crossi	42.15	209	P	P	06 22 06.7	-0.2
	6.2nm,0.8s,mb4.3,baz=16,slow=7.4,SNR=12						
FITZ				sP	sP	06 22 25.3	+0.5
	2.5nm,0.8s,baz=8.9,slow=12,SNR=2.9						
CMAR	Chiang Mai Arr	44.26	277	P	P	06 22 25.5	+1.4
	1.3nm,0.6s,mb3.9,baz=67,slow=6.4,SNR=8.1						
ASAR	Alice Springs	44.29	196	P	P	06 22 24.3	+0.1
	0.8nm,0.5s,mb3.7,baz=22,slow=9.9,SNR=13						
ASAR				sP	sP	06 22 41.7	-0.4
	0.8nm,0.5s,baz=20,slow=11,SNR=4.7						
MKAR	Makanchi Array	56.12	314	P	P	06 24 08.7	+0.5
	0.9nm,0.9s,mb3.6,baz=91,slow=9.5,SNR=5.9						
MKAR				sP	sP	06 24 25.4	-1.0
	0.5nm,0.8s,baz=108,slow=7.7,SNR=3.4						
KURK	Kurchatov	60.89	318	*e*P	P	06 24 26.5	-0.7
ILAR	Eielson Array	63.03	26	P	P	06 24 39.5	-1.9
	1.3nm,1.0s,mb4.0,baz=268,slow=5.3,SNR=8.5						
ILAR				sP	sP	06 24 58.0	-1.5
	0.9nm,0.8s,baz=258,slow=5.3,SNR=5.8						
BVAR	Borovoye Array	66.07	320	P	P	06 25 01.2	0.0
	1.5nm,0.7s,mb4.2,baz=100,slow=9.0,SNR=6.7						
BVAR				pP	pP	06 25 15.6	+1.3
	1.2nm,0.6s,baz=246,slow=36,SNR=2.1						
BRVK	Borovoye	66.14	320	P	P	06 24 59.0	-2.6
ZRNK	Zerenda	66.91	320	*e*P	P	06 25 06.8	+0.4
INK	Inuvik	68.75	23	P	P	06 25 16.2	-1.5
	1.6nm,1.0s,mb3.9,baz=150,slow=3.6,SNR=3.8						
INK	Inuvik	68.75	23	*e*P	P	06 25 14.0	-3.7
	9.5nm,1.8s,mb4.4						
YKA	Yellowknife Ar	77.38	28	P	P	06 26 07.9	-0.5
	0.8nm,0.9s,mb3.7,baz=290,slow=5.6,SNR=14						
YKA				sP	sP	06 26 27.2	+0.5
	1.0nm,0.7s,baz=290,slow=5.5,SNR=9.8						
YKA				LR	LR	07 01 04.4	
	comp=Z,24nm,18.4s,MS3.5,baz=180,slow=36						
ARCES	ARCESS Array B	81.94	342	P	P	06 26 33.5	+0.7
	5.6nm,0.9s,mb4.5,baz=30,slow=9.8,SNR=6.1						
NVAR	Mina Array Bea	82.66	52	P	P	06 26 37.8	+0.6
	1.3nm,0.8s,mb4.0,baz=258,slow=4.6,SNR=15						
NVAR				LR	LR	07 03 00.5	
	comp=Z,29nm,18.3s,MS3.7,baz=65,slow=35						
FINES	FINESS Array B	86.37	335	P	P	06 26 54.5	-0.6
	0.8nm,0.5s,mb4.2,baz=77,slow=5.0,SNR=15						
FINES				sP	sP	06 27 15.3	+1.9
	0.5nm,0.5s,baz=

comp=Z,72nm,20.4s,MS3.4,baz=110,slow=37
ASAR Alice Springs 33.25 259 P **P** 06 52 03.0 -0.1
0.4nm,0.8s,mb3.4,baz=72,slow=8.5,SNR=3.0
ASAR LR LR 07 04 38.5
comp=Z,55nm,18.7s,MS3.3,baz=38,slow=35
VNA3 Neumayer Olymp 87.82 180⇓*i* **P** 06 58 10.3 -2.6
VNA3 Neumayer Olymp 87.82 180 *e* **P** 06 58 14.1 +1.2
VNA2 Neumayer--Watz 88.12 181⇓*i* **P** 06 58 13.7 -0.6
VNA2 Neumayer--Watz 88.12 181 *e* **P** 06 58 17.3 +3.0
GERES GERESS Array B 146.46 331 PKPbc PKPbc 07 05 08.0 +4.2
0.3nm,0.3s,baz=27,slow=4.4,SNR=3.8

*NEIC **25** 07:02:52.1, 19.20N×65.35W, h25km, MD3.6(RSPR), After RSPR.*
RSPR 25 07:02:52.1, 19.20N×65.35W, h25km±31km, M3.6, 7C-7D, Puerto Rico region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STVI	**Saint Thomas**	**0.92**	**156**↑	*e*P		Pb	07 03 06.8 -2.5
ABV	**Anegada**	**1.07**	**116**	S		Sb	07 03 21.9 -3.5
ABV	**Anegada**	**1.07**	**116**↑	*e*P		Pn	07 03 08.8 -2.8
HUMP	**Col San Antoni**	**1.15**	**204**⇓	*e*P		Pn	07 03 09.5 -3.3
HUMP				S		Sb	07 03 24.4 -3.3
CSB	**Colonia Sabana**	**1.18**	**220**⇓	*e*P		Pn	07 03 10.0 -3.3
SJG	**San Juan**	**1.32**	**215**↑	*e*P		Pn	07 03 12.0 -3.2
SJG				S		Sn	07 03 27.7 -4.4
SJG	**San Juan**	**1.32**	**215**⇓	*e*P		Pn	07 03 11.9 -3.3
SJG	**San Juan**	**1.32**	**215**⇓	*e*P		Pn	07 03 11.9 -3.3
SJG				S		Sn	07 03 28.0 -4.2
AOPR	**Arecibo Observ**	**1.57**	**238**⇓	*e*P		Pn	07 03 15.9 -2.9
AOPR	**Arecibo Observ**	**1.57**	**238**	S		Sn	07 03 33.6 -5.0
CELP	**Cerrillos**	**1.61**	**226**⇓	*e*P		Pn	07 03 16.6 -2.8
CELP				S		Sn	07 03 35.3 -4.3
OBIP	**Obispado Ponce**	**1.65**	**226**⇓	*e*P		Pn	07 03 17.2 -2.8
OBIP	**Obispado Ponce**	**1.65**	**226**	S		Sn	07 03 35.3 -5.3
PORP	**Portuguez**	**1.67**	**227**↑	*e*P		Pn	07 03 17.3 -2.9
PORP				S		Sn	07 03 36.5 -4.5
LRS	**Lares**	**1.68**	**238**↑	*e*P		Pn	07 03 17.2 -3.1
LSP	**Las Mesas**	**1.93**	**239**↑	*e*P		Pn	07 03 21.0 -3.0
LSP				S		Sn	07 03 42.9 -4.8
MGP	**Maguayo**	**2.03**	**235**↑	*e*P		Pn	07 03 22.6 -2.7

IDC 25 07:09:58.1±4.4, 13.10S×110.63W, mb3.6/3, mb1 4.0/3, mb1mx3.6/15, MS3.7/6, Ms1 3.7/6, ms1mx3.4/19, Error ellipse: s-maj=357.0km s-min=97.7km az=89.0, Central East Pacific Rise

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LPAZ	**La Paz**	**41.18**	**100**	LR	LR	07 31 43.3	
	comp=Z,79nm,19.3s,baz=90,slow=32						
CPUP	**Villa Florida**	**51.54**	**113**	LR	LR	07 36 45.0	
	comp=Z,112nm,21.4s,baz=326,slow=31						
NVAR	**Mina Array Bea**	**51.76**	**352**	P	P	07 19 08.0	-1.7
	0.9nm,0.7s,baz=182,slow=9.5,SNR=8.2						
NVAR				LR	LR	07 36 25.2	
	comp=Z,32nm,19.1s,baz=275,slow=31						
PDAR	**Pinedale Array**	**55.60**	**1**	P	P	07 19 35.8	-2.2
	0.3nm,0.7s,baz=157,slow=6.9,SNR=3.4						
YKA	**Yellowknife Ar**	**75.42**	**358**	P	P	07 21 43.0	-2.3
	0.6nm,1.0s,baz=174,slow=5.5,SNR=5.5						
VNDA	**Vanda**	**76.76**	**193**	LR	LR	07 47 59.3	
	comp=Z,64nm,21.4s,baz=141,slow=30						
SCHQ	**Schefferville**	**77.11**	**24**	LR	LR	07 56 16.1	
	comp=Z,46nm,19.1s,baz=303,slow=36						
ILAR	**Eielson Array**	**82.35**	**345**	LR	LR	07 49 59.0	
	comp=Z,35nm,21.6s,baz=217,slow=29						
MKAR	**Makanchi Array**	**144.70**	**345**	PKP	PKPdf	07 29 36.9	-1.8
	0.8nm,1.0s,baz=18,slow=4.6,SNR=4.8						

*IDC **25** 07:11:24.4±0.8, 18.43S×172.86W, mb4.4/11, mb1 4.7/12, mb1mx4.5/19, ML4.5/1, MS3.8/1, Ms1 3.8/1, ms1mx3.2/17, Error ellipse: s-maj=48.2km s-min=17.3km az=142.0*
*NEIC **25** 07:11:31.6±4.6, 18.63S×172.82W, h58km±41km, mb4.3/9, Error ellipse: s-maj=12.1km s-min=9.3km az=130.0*
*BJI **25** 07:11:31.6, 18.60S×172.80W, h57km, mB4.4, mb4.7, Ms3.9, Msz4.2*
*SYO **25** 07:11:31.6, 18.63S×172.82W, h58km, MB4.3*
ISC 25 07:11:29.6±0.3, 18.67S±0.09×172.84W±0.09, h52km, h52km±1.0km: pP-P, n74, σ0°93/47, mb4.4/20, 4C-2D, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAR	**Rarotonga**	**12.54**	**104**	Pn	**P**	**07 14 15.4**	**-12**
	2.5nm,0.3s,baz=280,slow=5.8,SNR=8.0						
RAR				Sn	S	07 16 21.8	-25
	0.4nm,0.3s,baz=15,slow=11,SNR=3.2						
RAR				LR	LR	07 17 37.2	
	comp=Z,418nm,19.6s,baz=282,slow=30						
URZ	**Urewera**	**21.40**	**202**	P	**P**	**07 16 16.0**	**+1.1**
	7.0nm,0.4s,mb4.4,baz=315,slow=3.8,SNR=16						
PPT	**Papeete**	**22.13**	**91**	*e*L		07 20 12.8	
PPT				*e*R		07 21 07.5	
	446nm,25.5s,baz=254						
RPZ	**Rata Peaks**	**28.42**	**205**	P	**P**	**07 17 29.8**	**+8.3**
	15nm,0.5s,mb4.8,baz=6.0,slow=6.2,SNR=24						
CTA	**Charters Tower**	**38.55**	**261**	*e*P	**P**	**07 18 49.4**	**+0.3**
	4.4nm,0.5s,mb4.4						
CTAO	**Charters Tower**	**38.55**	**261**	*e*P	**P**	**07 18 48.8**	**-0.3**
	4.6nm,0.6s,mb4.4						
STKA	**Stephens Creek**	**42.96**	**243**	*e*P	**P**	**07 19 25.2**	**-0.3**
	6.2nm,1.4s,mb4.2						
STKA	**Stephens Creek**	**42.96**	**243**	P	**P**	**07 19 25.6**	**+0.1**
	12nm,1.2s,mb4.5,baz=119,slow=6.7,SNR=6.8						
AS12	**Alice Springs**	**49.69**	**254**	*e*P	**P**	**07 20 18.5**	**-0.2**
	20nm,1.1s,mb5.1						
ASAR	**Alice Springs**	**49.69**	**254**	P	**P**	**07 20 18.6**	**-0.1**
	11nm,0.9s,mb4.9,baz=87,slow=8.4,SNR=59						
WB2	**Warramunga Arr**	**49.69**	**259**	*e*P	**P**	**07 20 18.1**	**-0.6**
WRAB	**Tennant Creek**	**49.69**	**259**	*e*P	**P**	**07 20 17.8**	**-1.0**
	46nm,1.4s,mb5.3						
WRA	**Warramunga Arr**	**49.70**	**259**	P	**P**	**07 20 18.0**	**-0.8**
	4.5nm,0.8s,mb4.6,baz=97,slow=7.3,SNR=127						
KAKA	**Kakadu**	**52.90**	**268**	*e*P	**P**	**07 20 42.2**	**-0.8**
	9.8nm,0.8s,mb4.8						
SBA	**Scott Base**	**60.06**	**185**	P	**P**	**07 21 32.8**	**-0.5**
	1.1nm,0.6s,mb4.1						
VNDA	**Vanda**	**60.20**	**186**	P	**P**	**07 21 31.9**	**-2.4**
QSPA	**South Pole Qui**	**71.40**	**180**	*e*P	**P**	**07 22 46.5**	**+0.8**
NVAR	**Mina Array Bea**	**76.40**	**41**	P	**P**	**07 23 14.9**	**-0.5**
	1.4nm,0.8s,mb4.0,baz=218,slow=7.7,SNR=12						
SSE	**Sheshan**	**80.35**	**307**	P	**P**	**07 23 39.5**	**+2.2**
SSE				AMB	AMB		
	comp=Z,24nm,0.7s,mb5.2						
MSU	**Marysvale**	**80.38**	**44**	*e*P	**P**	**07 23 37.5**	**+0.3**
MNTX	**Cornudas Mount**	**81.75**	**53**	*e*P	**P**	**07 23 44.1**	**-0.5**
	comp=Z,2.0nm,0.7s,mb4.2						
HLID	**Hailey**	**81.81**	**39**	*e*P	**P**	**07 23 44.4**	**-0.3**
	comp=Z,1.9nm,0.8s,mb4.1						
MDJ	**Mudanjiang**	**81.93**	**322**	P	**P**	**07 23 47.3**	**+2.1**
MDJ				AP	pP	07 24 01.5	+1.4
MDJ				XP	sP	07 24 07.5	+1.7
MDJ				PP	PP	07 26 57.5	+2.4
MDJ				S	S	07 33 56.3	+2.8
MDJ				XS		07 34 25.3	
MDJ				AMB	AMB		
	comp=Z,9.0nm,0.9s,mb4.7						
MDJ				AMB	AMB		
	comp=Z,32nm,4.5s						
MDJ				LR	LR		
	comp=N,53nm,41.9s						
MDJ				LR	LR		
	comp=E,38nm,34.0s						
TXAR	**Lajitas Array**	**81.99**	**56**	P	**P**	**07 23 46.4**	**+0.6**
	comp=E,2.0nm,0.8s,mb4.1,baz=219,slow=9.2,SNR=23						
TXAR	**Lajitas Array**	**81.99**	**56**	*e*P	**P**	**07 23 46.4**	**+0.5**
ANMO	**Albuquerque**	**82.49**	**49**	*e*P	**P**	**07 23 48.2**	**-0.1**
PV01	**Paradox Valley**	**82.59**	**46**	*e*P	**P**	**07 23 48.4**	**-0.4**
GDL2	**Guadalupe Moun**	**82.75**	**53**	*e*P	**P**	**07 23 49.9**	**+0.2**
CPRX	**Cap Rock**	**83.50**	**52**	*e*P	**P**	**07 23 53.5**	**+0.1**
QLMT	**Earthquake Lak**	**84.30**	**39**	*e*P	**P**	**07 23 57.7**	**+0.4**
BW06	**Boulder Array**	**84.33**	**41**	*e*P	**P**	**07 23 56.8**	**-0.7**
	comp=E,2.8nm,1.4s,mb4.2						
PDAR	**Pinedale Array**	**84.33**	**41**	P	**P**	**07 23 57.2**	**-0.3**
	comp=E,2.3nm,0.9s,mb4.3,baz=238,slow=2.8,SNR=18						
SDCO	**Great Sand Dun**	**84.51**	**47**	*e*P	**P**	**07 23 58.4**	**-0.1**
ILAR	**Eielson Array**	**85.53**	**11**	P	**P**	**07 24 02.5**	**-0.3**
	comp=E,1.1nm,0.8s,mb4.1,baz=225,slow=6.2,SNR=10						
DAWY	**Dawson**	**86.44**	**14**	*e*P	**P**	**07 24 07.3**	**-0.1**
WMOK	**Wichita Mounta**	**88.05**	**52**	P	**P**	**07 24 15.4**	**-0.4**
SYO	**Syowa Base**	**89.52**	**191**↑	P	**P**	**07 24 23.8**	**+1.8**
SYO	**Syowa Base**	**89.52**	**191**↑	*e*P	**P**	**07 24 23.8**	**+1.8**
VNA3	**Neumayer Olymp**	**89.57**	**175**	*e*	**P**	**07 24 20.7**	**-1.5**
VNA3	**Neumayer Olymp**	**89.57**	**175**	*e*	pP	07 24 33.2	-4.2
VNA3	**Neumayer Olymp**	**89.57**	**175**	⇓*i*P	**P**	**07 24 18.2**	**-4.0**
VNA3				*e*	pP	07 24 33.2	-4.2
VNA3				*e*		07 27 50.5	
SNAA	**Sanae**	**89.64**	**177**	*e*P	**P**	**07 24 23.1**	**+0.6**
VNA2	**Neumayer--Watz**	**90.07**	**175**	*e*	**P**	**07 24 26.5**	**+1.9**
VNA2	**Neumayer--Watz**	**90.07**	**175**	*e*	pP	07 24 39.6	-0.2
VNA2	**Neumayer--Watz**	**90.07**	**175**	⇓*i*P	**P**	**07 24 24.0**	**-0.6**
VNA2				*e*	pP	07 24 39.6	-0.2
VNA2				*e*		07 27 55.5	
VNA2				*e*		07 29 19.1	
VNA2				*e*		07 49 43.3	
VNA1	**Neumayer--Stat**	**90.27**	**175**	*e*	**P**	**07 24 27.4**	**+1.9**
VNA1	**Neumayer--Stat**	**90.27**	**175**	*e*	pP	07 24 40.0	-0.7
VNA1	**Neumayer--Stat**	**90.27**	**175**	⇓*i*P	**P**	**07 24 24.4**	**-1.1**
VNA1				*e*	pP	07 24 40.0	-0.7
VNA1				*e*		07 27 55.8	
VNA1				*e*		07 29 19.4	
YKA	**Yellowknife Ar**	**92.86**	**23**	P	**P**	**07 24 37.4**	**-0.2**
	comp=E,0.3nm,0.8s,mb3.8,baz=238,slow=4.6,SNR=6.3						
YKA	**Yellowknife Ar**	**92.86**	**23**	P	**P**	**07 24 37.4**	**-0.2**
CMAR	**Chiang Mai Arr**	**94.14**	**288**	P	**P**	**07 24 48.3**	**+3.8**
	comp=E,1.7nm,1.0s,mb4.4,baz=114,slow=2.5,SNR=6.4						
KMBO	**Kilima Mbogo**	**144.48**	**240**	PKP	PKPdf	07 31 04.8	+3.6
	comp=E,6.2nm,1.0s,baz=67,slow=6.4,SNR=8.4						
CLL	**Collm**	**147.10**	**353**↑	*i*PKP1	PKPdf	07 31 09.5	+5.0
GIVF	**Givet**	**148.58**	**3**	*e*PKP1	PKPdf	07 31 13.2	+6.3
BAIF	**Baives**	**148.59**	**4**	*e*PKP1	PKPdf	07 31 13.5	+6.6
BRTR	**Keskin Array B**	**148.98**	**318**	PKPbc	PKPdf	07 31 15.2	+7.3
	comp=E,4.4nm,0.9s,baz=153,slow=2.8,SNR=12						
FLN	**La Foliniere**	**149.34**	**10**	*e*PKP1	PKPdf	07 31 14.8	+6.6
SGMF	**Saint Gilles**	**149.44**	**13**	*e*PKP1	PKPdf	07 31 15.0	+6.6
LDF	**La Druitiere**	**149.57**	**10**	*e*PKP1	PKPdf	07 31 15.4	+6.8
GRR	**Gorron**	**149.64**	**11**	*e*PKP1	PKPdf	07 31 15.6	+6.9
	comp=E,24nm,0.9s						
ASF	**Jabal al Asfar**	**150.08**	**303**	PKPbc	PKPdf	07 31 18.7	+8.8
	comp=E,1.0nm,0.4s,baz=340,slow=4.7,SNR=3.1						
CDF	**Champ du Feu**	**150.33**	**360**	*e*PKP1	PKPdf	07 31 18.0	+8.2
HAU	**Haudompre**	**150.73**	**1**	*e*PKP1	PKPdf	07 31 18.8	+8.4
HINF	**Hinteralfeld**	**150.92**	**0**	*e*PKP1	PKPdf	07 31 19.0	+8.3
LOR	**Lormes**	**151.34**	**5**	*e*PKP1	PKPdf	07 31 20.3	+9.0
	comp=E,16nm,1.0s						
MFF	**Saint Martin d**	**151.49**	**11**	*e*PKP1	PKPdf	07 31 20.2	+8.7
SSF	**Saint Saulge**	**151.52**	**5**	*e*PKP1	PKPdf	07 31 20.7	+9.1
	comp=E,18nm,0.8s						
AVF	**Avril sur Loir**	**151.78**	**6**	*e*PKP1	PKPdf	07 31 20.8	+8.8
	comp=E,4.7nm,0.5s						
BGF	**Bois d'Agland**	**151.96**	**6**	*e*PKP1	PKPdf	07 31 21.4	+9.2
	comp=E,11nm,0.6s						
SMF	**Signal de Mont**	**151.96**	**5**	*e*PKP1	PKPdf	07 31 21.4	+9.2
CABF	**La Chapelle**	**152.12**	**2**	*e*PKP1	PKPdf	07 31 22.7	+10
	comp=E,34nm,1.2s						
TCF	**Toulx Ste Croi**	**152.15**	**7**	*e*PKP1	PKPdf	07 31 21.6	+9.1
	comp=E,7.1nm,0.8s						
VIVF	**Saint-Julien-l**	**153.80**	**4**	*e*PKP1	PKPdf	07 31 26.0	+11
EVO	**Evora**	**156.20**	**31**	*e*PKIKP	PKPdf	07 31 20.6	+2.4
	comp=E,1.4nm,0.3s						

*IDC **25** 07:12:06.9±3.0, 18.24S×172.96W, mb4.2/5, mb1 4.5/5, mb1mx4.1/17, Error ellipse: s-maj=266.0km s-min=29.8km az=155.0*
ISC 25 07:12:11.9±1.1, 17.4S±0.3×173.4W±0.3, h33km, n5, σ0°47/5, mb4.2/5, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RPZ	**Rata Peaks**	**29.31**	**203**	P	**P**	**07 18 13.6**	**+0.1**
	11nm,0.6s,mb4.8,baz=8.7,slow=3.3,SNR=5.3						
WRA	**Warramunga Arr**	**49.37**	**258**	P	**P**	**07 21 00.6**	**0.0**
	2.0nm,0.7s,mb4.3,baz=97,slow=8.6,SNR=3.5						
ASAR	**Alice Springs**	**49.48**	**254**	P	**P**	**07 21 01.2**	**-0.1**
	6.0nm,1.1s,mb4.5,baz=87,slow=8.6,SNR=2.4						
TXAR	**Lajitas Array**	**81.77**	**56**	P	**P**	**07 24 28.7**	**-0.5**
	0.8nm,0.9s,mb3.6,baz=202,slow=6.7,SNR=2.8						
PDAR	**Pinedale Array**	**83.79**	**42**	P	**P**	**07 24 39.8**	**+0.5**
	0.7nm,0.9s,mb3.8,baz=225,slow=2.6,SNR=2.8						

*NEIC **25** 07:28:57.2±0.6, 14.63S×170.94E, h550km, mb4.6/9, Error ellipse: s-maj=22.9km s-min=10.7km az=136.0*
*IDC **25** 07:29:04.6±5.6, 14.85S×170.75E, h644km±72km, mb3.5/10, mb1 3.7/10, mb1mx3.5/17, Error ellipse: s-maj=57.0km s-min=33.3km az=146.0*
ISC 25 07:28:58.6±4.9, 14.7S±0.2×170.8E±0.2, h575km±61km, n26, σ0°69/24, mb4.3/15, 1D, Vanuatu Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ARMA	**Armidale**	**23.57**	**225**	*e*P	**P**	**07 33 27.3**	**+0.3**
PMG	**Port Moresby**	**23.71**	**280**	P	**P**	**07 33 27.8**	**-0.6**
	27nm,1.1s,mb4.8						
CTA	**Charters Tower**	**24.02**	**254**	*e*P	**P**	**07 33 32.0**	**+0.9**
	4.1nm,0.6s,mb4.2						
CTA	**Charters Tower**	**24.02**	**254**	P	**P**	**07 33 32.1**	**+0.9**
	6.5nm,0.7s,mb4.4,baz=83,slow=12,SNR=8.4						
CTAO	**Charters Tower**	**24.02**	**254**	*e*P	**P**	**07 33 31.8**	**+0.7**
	7.3nm,0.8s,mb4.4						
CNB	**Canberra Magne**	**28.15**	**219**	*e*P	**P**	**07 34 07.1**	**0.0**
	12nm,0.6s,mb4.7						
STKA	**Stephens Creek**	**31.67**	**232**⇓	*i*P	**P**	**07 34 37.6**	**+0.4**
	8.2nm,0.3s,mb4.8						
STKA	**Stephens Creek**	**31.67**	**232**	P	**P**	**07 34 37.6**	**+0.5**
	11nm,0.3s,mb4.9,baz=60,slow=8.2,SNR=45						
TOO	**Toolangi**	**31.99**	**220**	*e*P	**P**	**07 34 39.9**	**+0.1**
	5.5nm,0.7s,mb4.3						
WB2	**Warramunga Arr**	**35.15**	**256**	*e*P	**P**	**07 35 06.1**	**-0.2**
WRAB	**Tennant Creek**	**35.15**	**256**	*e*P	**P**	**07 35 06.2**	**-0.1**
	16nm,0.8s,mb4.7						
WRA	**Warramunga Arr**	**35.16**	**256**	P	**P**	**07 35 06.2**	**-0.2**
	4.8nm,0.6s,mb4.3,baz=80,slow=6.0,SNR=133						
AS12	**Alice Springs**	**35.89**	**250**	*e*P	**P**	**07 35 12.3**	**-0.2**
	12nm,0.4s,mb4.8						
ASAR	**Alice Springs**	**35.89**	**250**	P	**P**	**07 35 12.5**	**0.0**
	10nm,0.4s,mb4.7,baz=76,slow=9.6,SNR=211						
FITZ	**Fitzroy Crossi**	**43.39**	**259**	*e*P	**P**	**07 36 13.2**	**+0.4**
	5.7nm,0.4s,mb4.5						
FITZ	**Fitzroy Crossi**	**43.39**	**259**	P	**P**	**07 36 13.3**	**+0.5**
	7.0nm,0.5s,mb4.5,baz=137,slow=3.2,SNR=43						
NWAO	**Narrogin (SRO)**	**51.71**	**240**	P	**P**	**07 37 13.2**	**-2.1**
	13nm,1.0s,mb4.2,baz=107,slow=2.4,SNR=4.4						
NWAO	**Narrogin (SRO)**	**51.71**	**240**	P	**P**	**07 37 13.2**	**-2.1**
NWAO				*e*P		07 37 13.3	
NWAO				*e*		07 38 50.3	
CM31	**Chiang Mai Arr**	**78.08**	**293**	*e*P	**P**	**07 40 01.1**	**+0.8**
NVAR	**Mina Array Bea**	**84.68**	**48**	P	**P**	**07 40 34.2**	**+0.7**
	1.3nm,0.8s,mb3.6,baz=214,slow=6.1,SNR=12						
ILAR	**Eielson Array**	**85.48**	**17**	P	**P**	**07 40 35.5**	**-1.2**
	0.7nm,0.7s,mb3.4,baz=243,slow=4.8,SNR=12						
LSA	**Lhasa**	**88.47**	**301**	P	**P**	**07 40 51.6**	**-0.1**
	3.7nm,0.5s,mb4.4						
YKA	**Yellowknife Ar**	**95.97**	**27**	P	**P**	**07 41 24.9**	**-0.2**
	0.4nm,0.5s,mb3.9,baz=255,slow=4.8,SNR=13						
MKAR	**Makanchi Array**	**99.56**	**316**	P	**P**	**07 41 42.5**	**+0.8**
	0.2nm,0.6s,mb3.7,baz=101,slow=7.3,SNR=3.2						
ARCES	**ARCESS Array B**	**121.06**	**346**	PKP	PKPdf	07 46 45.2	-0.5
	2.6nm,0.9s,baz=45,slow=1.7,SNR=10						
ARCES	**ARCESS Array B**	**121.06**	**346**	PKP	PKPdf	07 46 45.2	-0.5

*NEIC **25** 07:30:14.8±0.5, 47.44N×17.14E, h10km±4km, ML4.1(SZGRF), ML4.0(VIE), ML4.0(FUR), ML3.8(BUD), ML3.7(BRA), Error ellipse: s-maj=3.6km s-min=2.7km az=170.0*
*LDG **25** 07:30:14.9±0.2, 47.42N×17.29E, h10km, Ml3.9/20, Error ellipse: s-maj=7.3km s-min=4.6km az=178.0*
*BGR **25** 07:30:16.1±0.6, 47.51N×17.11E, ML3.8/4, Error ellipse: s-maj=5.6km s-min=4.4km az=102.0*
*PRU **25** 07:30:17.2, 47.55N×17.07E, h20km*
*IDC **25** 07:30:22.9±1.8, 47.86N×16.64E, h26km±12km, mb3.1/1, mb1 3.7/6, mb1mx3.4/23, ML3.5/5, MS2.9/1, Ms1 2.9/1, ms1mx2.3/14, Error ellipse: s-maj=14.7km s-min=10.6km az=155.0*
*STR **25** 07:30:28.9±7.3, 47.59N×15.66E, h10km±1km, Ml3.9, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
ISC 25 07:30:15.4±0.4, 47.47N±0.02×17.07E±0.02, h26km±4km, n117, σ1°29/215, mb3.2/1, 12C-6D, Hungary

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SOP	**Sopron**	**0.41**	**302**↑	*e*PB		**Pb**	**07 30 24.3**	**+0.1**
SOP				*e*SB		**Sb**	**07 30 30.1**	**-0.1**
ZST	**Bratislava**	**0.73**	**2**	*i* PG		**Pb**	**07 30 28.9**	**-0.6**
ZST				*e*SG		**Sb**	**07 30 38.1**	**-1.0**
PKSG		**0.90**	**94**↑	*e*P		**Pb**	**07 30 31.9**	**-0.4**
PKSG				*e*S		**Sb**	**07 30 44.0**	**+0.1**
SRO	**Srobarova**	**0.91**	**67**	*i* PG		**Pn**	**07 30 32.0**	**-0.6**
SRO				*i* SG		**Sb**	**07 30 44.8**	**+0.6**
VKA	**Vienna**	**0.95**	**328**↑	*i*PG		**Pn**	**07 30 34.1**	**+1.0**
VKA				*i* SG		**Sb**	**07 30 48.8**	**+3.6**
ARSA	**Arzberg**	**1.07**	**259**↑	*i*PG		**Pn**	**07 30 36.3**	**+1.3**
ARSA				*i* SG		**Sn**	**07 30 51.6**	**+2.5**
	1μm,0.4s						
ARSA	**Arzberg**	**1.07**	**259**	*e*Pg		**Pn**	**07 30 36.2**	**+1.3**
	SNR=234						
ARSA				*e*Sg		**Sn**	**07 30 50.8**	**+1.8**
	SNR=4.7						
SMOL	**Smolenice**	**1.08**	**13**	*e*PN		**Pn**	**07 30 35.4**	**+0.4**
SMOL				*i* PG		**Pn**	**07 30 36.1**	**+1.1**
SMOL				*e*SN		**Sn**	**07 30 49.0**	**-0.1**
PKS9	**Tamasi**	**1.21**	**136**↑	*i*P		**Pn**	**07 30 37.3**	**+0.4**
PKS9				*e*S		**Sn**	**07 30 51.8**	**-0.7**
PKS8	**Sarbogard**	**1.24**	**118**⇓	*e*P		**Pn**	**07 30 37.5**	**+0.1**
PKS8				*e*S		**Sn**	**07 30 52.6**	**-0.8**
BUD	**Budapest**	**1.32**	**89**↑	*e*Pg		**Pn**	**07 30 39.5**	**+1.0**
BUD				*e*Sg		**Sn**	**07 30 56.3**	**+0.8**
PENC	**Penc**	**1.53**	**77**↑	*i*P		**Pn**	**07 30 41.5**	**0.0**
PENC				*e*S		**Sn**	**07 31 02.0**	**+1.3**
RHK1	**Bakonya**	**1.54**	**153**	*e*P		**Pn**	**07 30 41.7**	**+0.2**
BISS	**Bistriski jare**	**1.56**	**239**	*i* Pn		**Pn**	**07 30 43.4**	**+1.5**
VYHS	**Vyhne**	**1.57**	**48**	*e*PN		**Pn**	**07 30 40.9**	**-1.1**
VYHS				*e*SN		**Sn**	**07 31 03.9**	**+2.2**
PERS	**Pernice**	**1.57**	**239**	*e*Pn		**Pn**	**07 30 43.3**	**+1.2**
PERS				*e*Pg		**Pn**	**07 30 45.4**	**+3.3**
RHK3	**Tenkes**	**1.77**	**152**⇓	*i*P		**Pn**	**07 30 45.6**	**+0.6**
RHK3				*e*S		**Sn**	**07 31 10.2**	**+3.3**
VRAC	**Vranov**	**1.87**	**350**	Pn		**Pn**	**07 30 46.6**	**+0.3**
	6.9nm,0.3s,baz=179,slow=13,SNR=20						
VRAC				Pg		**Pn**	**07 30 50.6**	**+4.3**
	18nm,0.3s,baz=171,slow=15,SNR=41						
VRAC				Lg			07 31 10.1	
	25nm,0.3s,baz=277,slow=17,SNR=10						
MOA	**Molln**	**1.93**	**282**↑	*i*PN		**Pn**	**07 30 48.8**	**+1.5**
MOA				*i* PG		**Pn**	**07 30 52.4**	**+5.1**
MOA				*i* SG		**Sn**	**07 31 18.7**	**+7.8**
	440nm,0.6s						
MOA	**Molln**	**1.93**	**282**	*e*Pn		**Pn**	**07 30 49.2**	**+1.9**
	SNR=86						
MOA				*e*Sg		**Sn**	**07 31 17.4**	**+6.5**
	SNR=5.3						
PSZ	**Piszkesteto**	**1.96**	**76**↑	*i*Pn		**Pn**	**07 30 47.4**	**-0.2**
PSZ				*e*Sn		**Sn**	**07 31 09.8**	**-1.8**
OBKA	**Obir**	**1.97**	**242**⇓	*i*PN		**Pn**	**07 30 48.1**	**+0.3**
OBKA				*i* SG		**Sn**	**07 31 20.6**	**+8.7**
	223nm,0.4s						
OBKA	**Obir**	**1.97**	**242**	*e*Pn		**Pn**	**07 30 49.5**	**+1.7**
	SNR=15						
OBKA				*e*Pg		**Pn**	**07 30 53.7**	**+5.8**
	SNR=72						
OBKA				*e*Sg		**Sn**	**07 31 20.5**	**+8.5**
	SNR=2.8						
SISC	**Sisak**	**2.05**	**194**	*i* Pn		**Pn**	**07 30 49.5**	**+0.5**
SISC				*i* Sn		**Sn**	**07 31 14.3**	**+0.3**
LIKS	**Likavka**	**2.09**	**40**	*e*PN		**Pn**	**07 30 50.0**	**+0.5**
LIKS				*e*PG		**Pn**	**07

MOTA			*i* SG		Sn	07 32 30.5	+26
	80nm,0.5s						
NKC	**Novy Kostel**	**4.12 314**	*e*PN		**Pn**	**07 31 18.6**	**+0.2**
NKC			*e*PG		**Pn**	**07 31 32.6**	**+14**
NKC			*e*SG		**Sn**	**07 32 26.3**	**+20**
KWP	**Kalwaria**	**4.33 58**	*e*Pn		**Pn**	**07 31 21.1**	**-0.2**
KWP			*e*			07 31 24.4	
KWP			*e*P*		**Pb**	**07 31 28.8**	**-1.8**
KWP			*e*Sn		**Sn**	**07 32 14.8**	**+3.3**
GRA1	**Grafenberg Arr**	**4.48 302**	*e*Pn		**Pn**	**07 31 24.0**	**+0.6**
GRA1			*e*Sg		Sn	07 32 39.5	+24
GRFO	**Grafenberg**	**4.48 302**	*e*Pn		**Pn**	**07 31 23.9**	**+0.4**
	SNR=5.5						
GRFO			*e*Sg		Sn	07 32 39.4	+24
	SNR=5.7						
CLL	**Collm**	**4.67 327**	*e*Pn		**Pn**	**07 31 26.2**	**0.0**
	SNR=2.9						
CLL			*e*Pg		**Pn**	**07 31 47.0**	**+21**
CLL			*e*Sg		**Sn**	**07 32 40.9**	**+21**
	SNR=3.7						
CLL	**Collm**	**4.67 327**	*i* PN		**Pn**	**07 31 26.5**	**+0.3**
CLL			*e*PG		**Pn**	**07 31 47.0**	**+21**
CLL			*e*			07 32 32.0	
CLL			*e*			07 32 41.0	
CLL			*e*SG		Sn	07 32 51.0	+31
CLL	**Collm**	**4.67 327**	*i* Pn		**Pn**	**07 31 26.5**	**+0.3**
CLL			*e*Pg		**Pn**	**07 31 47.0**	**+21**
CLL			*e*			07 32 41.0	
CLL			*e*Sg		Sn	07 32 51.0	+31
BRMO	**Bormio**	**4.69 260**	*e*Pn		**Pn**	**07 31 28.7**	**+2.2**
MABI	**Malga Bissina**	**4.72 255**	*e*Pn		**Pn**	**07 31 27.0**	**+0.1**
MOX	**Moxa**	**4.79 314**	*e*Pn		**Pn**	**07 31 27.9**	**-0.1**
	SNR=5.8						
MOX			*e*Pg		**Pn**	**07 31 45.4**	**+17**
MOX			*e*Sg		Sn	07 32 47.1	+24
	SNR=2.8						
MOX	**Moxa**	**4.79 314**	*i* P		**Pn**	**07 31 28.1**	**+0.2**
MOX			Pg		**Pn**	**07 31 45.0**	**+17**
MOX			Sg		Sn	07 32 47.0	+24
MOX	**Moxa**	**4.79 314**	*e*Pn		**Pn**	**07 31 28.1**	**+0.2**
MOX			*e*Pg		**Pn**	**07 31 45.4**	**+17**
MOX			*e*Sg		Sn	07 32 46.6	+23
DAVA	**Damuels**	**4.89 271** ⇑	*i*PN		**Pn**	**07 31 27.7**	**-1.6**
DAVA			*i* PG		**Pn**	**07 31 48.4**	**+19**
DAVA			*i* SN		**Sn**	**07 32 25.8**	**+0.1**
DAVA			*i* SG		Sn	07 32 57.0	+31
	78nm,0.7s						
DAVA	**Damuels**	**4.89 271**	*e*Pn		**Pn**	**07 31 29.9**	**+0.6**
	SNR=7.6						
DAVA			*e*Pg		**Pn**	**07 31 48.3**	**+19**
	SNR=12						
DAVOX	**Davos**	**4.96 265**	Pn		**Pn**	**07 31 32.0**	**+1.7**
	3.2nm,0.3s,baz=80,slow=14,SNR=12						
DAVOX			Pg		**Pn**	**07 31 50.2**	**+20**
	3.6nm,0.3s,baz=337,slow=22,SNR=7.2						
DAVOX			Sn		**Sn**	**07 32 27.9**	**+0.5**
	4.2nm,0.3s,baz=319,slow=21,SNR=3.2						
DAVOX			Lg			07 33 01.0	
	2.4nm,0.3s,baz=335,slow=15,SNR=7.3						
TOD	**Tromm**	**5.89 294**	P		**Pn**	**07 31 43.3**	**-0.1**
BFO	**Black Forest**	**5.94 282**	*e*Pn		**Pn**	**07 31 43.3**	**-0.9**
	SNR=6.5						
BFO	**Black Forest**	**5.94 282**	*e*Pn		**Pn**	**07 31 43.6**	**-0.5**
FELD	**Feldberg**	**6.14 277**	P		**Pn**	**07 31 46.0**	**-0.9**
MLR	**Muntele Rosu**	**6.44 105**	Pn		**Pn**	**07 32 02.7**	**+12**
	0.5nm,0.3s,baz=300,slow=16,SNR=4.3						
MLR			LR		LR	07 34 35.4	
	comp=Z,98nm,19.0s,baz=271,slow=37						
BBS	**Basel-Blauen**	**6.48 274**	P		**Pn**	**07 31 50.2**	**-1.6**
CDF	**Champ du Feu**	**6.65 282**	*e*Pn		**Pn**	**07 31 53.5**	**-0.6**
	SNR=1.0						
CDF			*e*Sn		**Sn**	**07 33 02.4**	**-7.4**
	SNR=1.0						
CDF			*e*Sg		Sn	07 33 48.3	+39
	62nm,0.7s						
MOF	**Molkenrain**	**6.72 277**	P		**Pn**	**07 31 54.0**	**-1.2**
HINF	**Hinteralfeld**	**6.91 277**	*e*Pn		**Pn**	**07 31 56.2**	**-1.6**
	SNR=1.0						
HINF			*e*Sn		**Sn**	**07 33 08.6**	**-7.8**
	SNR=1.0						
HINF			*e*Sg		Sn	07 33 56.1	+40
	52nm,0.7s						
HAU	**Haudompre**	**7.25 278**	*e*Pn		**Pn**	**07 32 01.6**	**-1.0**
	SNR=1.0						
HAU			*e*Sn		**Sn**	**07 33 18.9**	**-6.0**
HAU			*e*Sg		Sn	07 34 06.2	+41
	46nm,0.7s						
LPG	**La Plagne**	**7.39 258**	*e*Pn		**Pn**	**07 32 04.0**	**-0.5**
	SNR=1.0						
LPG			*e*Sn		**Sn**	**07 33 22.5**	**-5.9**
	8.2nm,0.4s						
LPL	**La Plagne**	**7.40 259**	*e*Pn		**Pn**	**07 32 04.0**	**-0.6**
	SNR=1.0						
LPL			*e*Sn		**Sn**	**07 33 22.9**	**-5.6**
	5.2nm,0.4s						
THEF	**They Montfort**	**7.50 280**	P		**Pn**	**07 32 04.8**	**-1.2**
SAOF	**Saorge**	**7.51 246**	P		**Pn**	**07 32 07.3**	**+1.1**
PGF	**Pioggiola**	**7.54 232**	*e*Pn		**Pn**	**07 32 03.0**	**-3.6**
PGF			*e*Sn		**Sn**	**07 33 25.2**	**-6.9**
CABF	**La Chapelle**	**7.55 268**	*e*Pn		**Pn**	**07 32 04.7**	**-2.1**
	SNR=1.0						
CABF			*e*Sn		**Sn**	**07 33 24.7**	**-7.7**
	SNR=1.0						
CABF			*e*Sg		Sn	07 34 17.6	+45
	118nm,1.4s						
SBF	**Sospel**	**7.65 245**	*e*Pn		**Pn**	**07 32 05.4**	**-2.7**
MBDF	**Montbardon**	**7.67 253**	*e*Pn		**Pn**	**07 32 06.6**	**-1.7**
	SNR=1.0						
MBDF			*e*Sn		**Sn**	**07 33 29.5**	**-5.7**
	6.0nm,0.4s						
RFYF	**Reffroy**	**7.86 283**	*e*Pn		**Pn**	**07 32 10.3**	**-0.7**
RFYF			*e*Sn		**Sn**	**07 33 32.2**	**-7.9**
RFYF			*e*Sg		Sn	07 34 26.0	+46
	35nm,0.6s						
SFTF	**Sexfontaines**	**8.13 280**	*e*Pn		**P**	**07 32 12.6**	**-2.2**
	baz=104						
SFTF			*e*Sn		**Sn**	**07 33 37.9**	**-9.0**
SFTF			*e*Sg		Sn	07 34 34.3	+47
	54nm,1.0s						
ORIF	**Oris-en-Rattie**	**8.17 256**	*e*Pn		**P**	**07 32 13.5**	**-1.9**
	SNR=1.0						
ORIF			*e*Sn		**Sn**	**07 33 41.5**	**-6.4**
	13nm,0.6s						
FRF	**La Foret Royal**	**8.30 246**	*e*Pn		**P**	**07 32 15.8**	**-1.3**
	SNR=1.0						
FRF			*e*Sg		Sn	07 34 36.8	+46
	4.4nm,0.4s,SNR=1.0						
LMR	**La Mourre**	**8.50 245**	*e*Pn		**P**	**07 32 18.0**	**-2.0**
GIVF	**Givet**	**8.51 293**	*e*Pn		**P**	**07 32 20.2**	**+0.2**
	SNR=1.0						
GIVF			*e*Sg		Sn	07 34 46.2	+50
	21nm,0.7s						
SMRF	**Simiane la Rot**	**8.77 251**	*e*Pn		**P**	**07 32 20.5**	**-3.1**
BAIF	**Baives**	**8.88 292**	*e*Pn		**P**	**07 32 25.5**	**+0.2**
BAIF			*e*Sg		Sn	07 34 58.2	+53
	9.3nm,0.3s						
LOR	**Lormes**	**8.97 274**	*e*Pn		**P**	**07 32 24.4**	**-2.1**
	baz=104						
LOR			*e*Sn		**Sn**	**07 34 00.4**	**-7.3**
LOR			*e*Sg		Sn	07 34 59.7	+52
	26nm,1.0s						
VIVF	**Saint-Julien-l**	**8.99 258**	*e*Pn		**P**	**07 32 23.8**	**-3.0**
	SNR=1.0						
SMF	**Signal de Mont**	**9.07 270**	*e*Pn		**P**	**07 32 26.0**	**-1.9**
	SNR=1.0						
SMF			*e*Sn		**Sn**	**07 34 01.9**	**-8.3**
SSF	**Saint Saulge**	**9.24 272**	*e*Pn		**P**	**07 32 28.8**	**-1.3**
	SNR=1.0						
SSF			*e*Sg		Sn	07 35 09.6	+55
	6.1nm,0.5s						
AVF	**Avril sur Loir**	**9.38 271**	*e*Pn		**P**	**07 32 30.5**	**-1.6**
	SNR=1.0						
AVF			*e*Sg		Sn	07 35 13.3	+56
	9.9nm,0.7s						
BGF	**Bois d'Agland**	**9.76 270**	*e*Pn		**P**	**07 32 35.6**	**-1.7**
	SNR=1.0						
BGF			*e*Sn		**Sn**	**07 34 18.6**	**-8.5**
LASF	**Ste Croix**	**9.84 255**	*e*Pn		**P**	**07 32 36.8**	**-1.5**
	SNR=1.0						
LASF			*e*Sn		**Sn**	**07 34 19.5**	**-9.4**
	3.6nm,0.4s						
TCF	**Toulx Ste Croi**	**10.25 269**	*e*Pn		**P**	**07 32 42.3**	**-1.6**
	SNR=1.0						
TCF			*e*Sn		**S**	**07 34 29.7**	**-9.3**
	9.8nm,0.6s,SNR=1.0						
CAF	**Calviac**	**10.71 262**	*e*Pn		**P**	**07 32 47.5**	**-2.8**
MFF	**Saint Martin d**	**11.78 272**	*e*Pn		**P**	**07 33 01.4**	**-3.5**
	SNR=1.0						
SGMF	**Saint Gilles**	**13.21 281**	*e*Pn		**P**	**07 33 21.7**	**-2.1**
EKA	**Eskdalemuir Ar**	**14.84 310**	Pn		**P**	**07 33 47.5**	**+2.3**
	0.2nm,0.3s,baz=107,slow=12,SNR=3.1						
FINES	**FINESS Array B**	**14.93 17**	Pn		**P**	**07 33 43.1**	**-3.2**
	0.1nm,0.3s,baz=187,slow=11,SNR=3.4						
YKA	**Yellowknife Ar**	**63.82 337**	P		**P**	**07 40 47.8**	**+0.8**
	0.2nm,0.8s,mb3.2,baz=33,slow=6.1,SNR=6.0						

*NEIC **25** 07:33:22.2±2.2,4.16S×127.56E,h246km±23km,mb4.5/6, Error ellipse: s-maj=20.1km s-min=12.6km az=67.0*
*IDC **25** 07:33:23.9±2.0,4.255S×127.47E,h265km±20km, mb3.7/11, mb1 3.8/13,mb1mx3.7/20,Error ellipse: s-maj=25.5km s-min=8.6km az=64.0*
ISC 25 07:33:20.6±1.9,**4.07S**±0.07×**127.6E**±0.1,**h248**km±20km, **n31**,σ1§**14**/36,**mb4.1**/13,**Banda Sea**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KAKA	**Kakadu**	**9.79**	**151**	*e*P	**P**	**07 35 38.0**	**+0.6**
	150nm,0.7s						
FITZ	**Fitzroy Crossi**	**14.08**	**188**	*e*P	**P**	**07 36 30.3**	**-0.8**
	7.5nm,0.6s						
FITZ	**Fitzroy Crossi**	**14.08**	**188**	P	**P**	**07 36 30.1**	**-0.9**
	1.4nm,0.3s,baz=17,slow=9.7,SNR=19						
FITZ				S	**S**	**07 39 03.7**	**+2.1**
	0.1nm,0.3s,baz=185,slow=3.7,SNR=5.0						
WRAB	**Tennant Creek**	**17.07**	**158**	*e*P	**P**	**07 37 04.2**	**-1.8**
	27nm,0.3s						
WRA	**Warramunga Arr**	**17.08**	**158**	P	**P**	**07 37 04.0**	**-2.1**
	2.1nm,0.3s,baz=338,slow=12,SNR=66						
WRA				S	**S**	**07 40 14.1**	**+7.6**
	1.0nm,0.3s,baz=341,slow=17,SNR=23						
WB2	**Warramunga Arr**	**17.08**	**158**	*e*P	**P**	**07 37 04.2**	**-1.9**
WB2				*e*S	**S**	**07 40 14.0**	**+7.4**
PMG	**Port Moresby**	**20.11**	**106**	P	**P**	**07 37 38.8**	**+1.8**
	11nm,0.7s,baz=300,slow=6.7,SNR=3.1						
PMG	**Port Moresby**	**20.11**	**106**	*e*P	**P**	**07 37 38.8**	**+1.8**
	9.0nm,0.8s						
AS12	**Alice Springs**	**20.40**	**163**	*e*P	**P**	**07 37 39.6**	**-0.2**
	20nm,0.7s						
AS12				*e*S	**S**	**07 41 09.3**	**+0.2**
ASAR	**Alice Springs**	**20.40**	**163**	P	**P**	**07 37 39.4**	**-0.4**
	22nm,0.6s,baz=343,slow=9.2,SNR=125						
ASAR				S	**S**	**07 41 12.2**	**+3.1**
	8.7nm,0.7s,baz=350,slow=22,SNR=19						
ASAR				ScP		07 44 52.6	
	0.8nm,0.6s,baz=347,slow=1.5,SNR=5.0						
CTA	**Charters Tower**	**24.14**	**133**	P	**P**	**07 38 17.8**	**+1.9**
	6.3nm,1.1s,mb4.2,baz=308,slow=14,SNR=4.0						
CTA	**Charters Tower**	**24.14**	**133**	P	**P**	**07 38 17.8**	**+1.9**
NWAO	**Narrogin (SRO)**	**30.30**	**197**	P	**P**	**07 39 12.8**	**+1.6**
	3.2nm,0.6s,mb4.1,baz=32,slow=9.5,SNR=4.0						
NWAO	**Narrogin (SRO)**	**30.30**	**197**	P	**P**	**07 39 12.8**	**+1.6**
STKA	**Stephens Creek**	**30.61**	**156**	*e*P	**P**	**07 39 13.0**	**-0.9**
	7.0nm,0.5s,mb4.5						
STKA	**Stephens Creek**	**30.61**	**156**	P	**P**	**07 39 13.2**	**-0.8**
	12nm,0.7s,mb4.7,baz=324,slow=9.2,SNR=26						
CMAR	**Chiang Mai Arr**	**36.05**	**309**	P	**P**	**07 40 00.9**	**+0.4**
	2.4nm,0.5s,mb4.0,baz=139,slow=6.3,SNR=17						
LSA	**Lhasa**	**48.46**	**316**	P	**P**	**07 41 41.5**	**+1.3**
	4.2nm,0.8s,mb3.8						
GUN	**Gumba**	**51.26**	**311**	*e*P	**P**	**07 42 01.6**	**+0.3**
	31nm,0.5s,mb5.0						
PKI	**Pulchoki**	**51.44**	**310**	*e*P	**P**	**07 42 02.3**	**-0.4**
KKN	**Kakani**	**51.65**	**310**	*e*P	**P**	**07 42 04.2**	**0.0**
GKN	**Gorkha**	**52.25**	**310**	*e*P	**P**	**07 42 08.4**	**-0.2**
	30nm,0.5s,mb5.0						
KOLN	**Koldanda**	**52.92**	**309**	*e*P	**P**	**07 42 13.3**	**-0.3**
	15nm,0.6s,mb4.6						
SONM	**Songino Array**	**54.95**	**343**	P	**P**	**07 42 28.9**	**+0.9**
	1.5nm,0.9s,mb3.5,baz=180,slow=7.2,SNR=3.6						
SONM	**Songino Array**	**54.95**	**343**	P	**P**	**07 42 28.9**	**+0.9**
MKAR	**Makanchi Array**	**64.50**	**327**	P	**P**	**07 43 32.7**	**-0.2**
	4.0nm,0.6s,mb4.2,baz=128,slow=7.9,SNR=50						
MKAR				PcP	PcP	07 44 04.5	-0.5
	1.3nm,0.6s,baz=128,slow=5.0,SNR=6.6						
MKAR	**Makanchi Array**	**64.50**	**327**	P	**P**	**07 43 32.7**	**-0.2**
MKAR				PcP	PcP	07 44 04.5	-0.5
KURK	**Kurchatov**	**68.80**	**329**	*e*P	**P**	**07 43 58.8**	**-1.0**
BVAR	**Borovoye Array**	**74.34**	**328**	P	**P**	**07 44 32.4**	**-0.3**
	1.1nm,0.6s,mb3.7,baz=153,slow=6.6,SNR=9.4						
VNDA	**Vanda**	**75.62**	**173**	P	**P**	**07 44 38.6**	**-0.9**
	0.4nm,0.8s,mb3.1,baz=316,slow=8.8,SNR=3.5						
MAW	**Mawson**	**76.81**	**201**	P	**P**	**07 44 45.8**	**-0.4**
	1.7nm,0.6s,mb3.9,baz=34,slow=3.6,SNR=5.9						

*IDC **25** 07:37:14.3±1.8, 1.66N×125.27E,mb3.8/3,mb1 4.0/4, mb1mx3.7/17,ML3.9/1,MS3.8/2,Ms1 3.8/2,ms1mx2.9/22, Error ellipse: s-maj=121.0km s-min=24.1km az=67.0*
ISC 25 07:37:17.6±1.7,**1.5N**±0.3×**124.9E**±0.7,**h33**km,**n6**,σ1§**07**/4, **mb3.7**/3,**MS3.9**/2,**Minahassa Peninsula, Sulawesi**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**19.49**	**178**	P	**P**	**07 41 45.0**	**+0.1**
	0.3nm,0.3s,baz=8.9,slow=8.8,SNR=3.6						
WRA	**Warramunga Arr**	**23.25**	**157**	P	**P**	**07 42 23.9**	**+0.7**
	1.9nm,0.3s,mb4.0,baz=337,slow=11,SNR=13						
ASAR	**Alice Springs**	**26.52**	**161**	P	**P**	**07 42 53.5**	**-0.8**
	0.6nm,0.6s,mb3.3,baz=332,slow=8.7,SNR=5.0						
STKA	**Stephens Creek**	**36.79**	**156**	LR	LR	07 58 28.5	
	comp=Z,130nm,19.0s,MS3.7,baz=177,slow=35						
MKAR	**Makanchi Array**	**58.35**	**327**	P	**P**	**07 47 12.0**	**0.0**
	1.0nm,0.8s,mb3.9,baz=123,slow=8.8,SNR=5.7						
KMBO	**Kilima Mbogo**	**87.63**	**269**	LR	LR	08 28 55.2	
	comp=Z,53nm,19.0s,MS4.0,baz=274,slow=35						

*NEIC **25** 07:37:37.1,15.79N×97.13W,h16km,MD3.9(MEX),After MEX.*
*MEX **25** 07:37:37.2±1.1,15.79N×97.13W,h16km±20km,MD3.9*
ISC 25 07:37:33.5±4.0,**15.8N**±0.2×**97.1W**±0.1,**h18**km±32km,**n5**, σ0§**78**/9,**Near coast of Oaxaca**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PNIG	**Pinotepa**	**1.14**	**300**	*i* P	**Pb**	**07 37 54.8**	**+0.4**
PNIG				*i* S	**Sb**	**07 38 07.8**	**-1.0**
VHO	**Vista Hermosa**	**1.30**	**16**	*i* P	**Pn**	**07 37 57.5**	**+0.6**
VHO				*i* S	**Sb**	**07 38 12.7**	**-0.6**
OXX	**Oaxaca**	**1.31**	**16**	*i* P	**Pn**	**07 37 58.2**	**+1.1**
OXX				*i* S	**Sb**	**07 38 14.3**	**+0.7**
CMIG	**Matias Romero**	**2.48**	**59**	*e*P	**Pn**	**07 38 13.6**	**-0.1**
CMIG				*i* S	**Sn**	**07 38 42.6**	**-1.2**
IISM	**Ciudad Serdan**	**3.17**	**355**	*e*P	**Pn**	**07 38 30.5**	**+6.9**

*NEIC **25** 07:44:17.7±2.5,51.45N×16.28E,h5km,ML2.3(CLL),Error ellipse: s-maj=28.2km s-min=11.5km az=224.0*
*WAR **25** 07:44:17.5,51.52N×16.12E,h1km,Location given by Rudna mine, origin time based upon KSP*
*PRU **25** 07:44:17.5,51.49N×16.14E,h31km*
ISC 25 07:44:15.3±1.3,**51.48N**±0.06×**16.07E**±0.06,**n13**,σ1§**15**/23, **Poland**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KSP	**Ksiaz**	**0.65**	**167**	*e*Pg	**Pg**	**07 44 30.0**	**+1.7**
KSP				*e*Sg	**Sg**	**07 44 40.9**	**+4.0**
KSP	**Ksiaz**	**0.65**	**167**	*e*PG	**Pg**	**07 44 30.0**	**+1.7**
KSP				*e*SG	**Sg**	**07 44 39.0**	**+2.1**
UPC	**Upice**	**0.97**	**182**	*e*PG	**Pg**	**07 44 36.1**	**+1.5**
DPC	**Dobruska-Polom**	**1.14**	**172**	*e*PG	**Pg**	**07 44 38.6**	**+0.6**
DPC				*e*SG	**Sg**	**07 44 54.9**	**+1.7**
PVCC	**Panska Ves**	**1.34**	**225**	*e*PG	**Pg**	**07 44 42.7**	**+0.7**
PRU	**Pruhonice**	**1.78**	**214**	*e*PG	**Pg**	**07 44 50.5**	**-0.2**
PRU				*e*SG	**Sg**	**07 45 14.5**	**+0.1**
	14nm,0.3s						
CLL	**Collm**	**1.93**	**266**	*i* PG	**Pg**	**07 44 53.5**	**-0.2**
CLL				*i*		07 44 57.2	
CLL				*i* SG	**Sg**	**07 45 19.6**	**+0.2**
CLL	**Collm**	**1.93**	**266**	*i* Pg	**Pg**	**07 44 53.5**	**-0.2**
CLL				*i* Sg	**Sg**	**07 45 19.6**	**+0.2**
MORC	**Moravsky Berou**	**1.94**	**150**	*e*Pn	**Pn**	**07 44 50.0**	**+0.1**
MORC				*e*Sn	**Sn**	**07 45 10.4**	**-5.0**
MORC				*e*Sg	**Sg**	**07 45 18.4**	**-1.7**
OKC	**Ostrava-Krasne**	**2.11**	**140**	*e*SG	**Sg**	**07 45 23.4**	**-2.1**
NKC	**Novy Kostel**	**2.61**	**243**	*e*SG	**Sg**	**07 45 41.8**	**-0.3**
KHC	**Kasperske Hory**	**2.84**	**215**	*e*PG	**Pg**	**07 45 09.7**	**-2.2**
KHC				*e*SG	**Sg**	**07 45 48.6**	**-1.2**
MOX	**Moxa**	**2.93**	**255**	*e*Pg	**Pg**	**07 45 13.7**	**0.0**
MOX				*e*Sg	**Sg**	**07 45 52.6**	**-0.1**

*TAP **25** 07:45:46.1,22.78N×121.24E,h11km,ML3.5*
TAP Felt I J at Taitung, I J at Pinlang, I J at Tauyuan.
*JMA **25** 07:45:48.2±0.3,22.66N×121.39E,h89km,M3.0*
ISC 25 07:45:45.1±0.5,**22.76N**±0.02×**121.33E**±0.03,**h4**km±4km, **n52**,σ0§**91**/72,**10C-3D,Taiwan region**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
TTN	**Taitung**	**0.16**	**269** ⇑	*i*P	**Pg**	**07 45 49.0**	**+0.5**
TTN				S	**Sg**	**07 45 51.6**	**+0.9**
TWG	**Pinlang**	**0.24**	**285** ⇓	*i*P	**Pg**	**07 45 49.6**	**-0.3**
TWG				S	**Sg**	**07 45 52.3**	**-0.9**
CHKT	**Chengkung**	**0.34**	**6**	P	**Pg**	**07 45 53.5**	**+1.5**
ECL	**Taimali**	**0.38**	**245** ⇓	*i*P	**Pg**	**07 45 52.5**	**-0.1**
ECL				S	**Sg**	**07 45 57.7**	**0.0**
ELDTW	**Lidau**	**0.52**	**327** ⇑	*i*P	**Pg**	**07 45 55.3**	**-0.1**
ELDTW				S	**Sg**	**07 46 01.8**	**-0.5**
TAW	**Tawu**	**0.56**	**225**	*i* P	**Pg**	**07 45 56.5**	**+0.2**
TAW				S	**Sg**	**07 46 04.3**	**+0.5**
EAST	**Anshuo**	**0.58**	**230** ⇓	*i*P	**Pg**	**07 45 56.6**	**0.0**
EAST				S	**Sg**	**07 46 04.2**	**-0.1**
TWF1	**Yuli**	**0.59**	**358** ⇑	*i*P	**Pg**	**07 45 56.9**	**-0.1**
SSD	**Sandimen**	**0.64**	**269**	P	**Pg**	**07 45 56.7**	**-1.1**
SSD				S	**Sg**	**07 46 03.7**	**-2.7**
STYT	**Tauyuan**	**0.66**	**308** ⇑	*i*P	**Pg**	**07 45 57.7**	**-0.6**
STYT				S	**Sg**	**07 46 06.0**	**-1.1**
EHY	**Hungye**	**0.74**	**360**	*e*P	**Pg**	**07 45 59.8**	**-0.2**
EHY				S	**Sg**	**07 46 13.1**	**+3.2**
LAY	**Lan-yu**	**0.74**	**164**	P	**Pg**	**07 46 00.4**	**+0.4**
SCZT	**Fangliau**	**0.76**	**240**	*e*P	**Pg**	**07 45 59.5**	**-0.7**
SGST	**Jiashian**	**0.76**	**295**	*i* P	**Pg**	**07 45 59.9**	**-0.3**
SGST				S	**Sg**	**07 46 09.6**	**-0.7**
YUS	**Yu-Shan**	**0.81**	**335** ⇑	*i*P	**Pg**	**07 46 01.1**	**-0.1**
YUS				S	**Sg**	**07 46 10.6**	**-1.3**
WTP	**Ta-pu**	**0.82**	**307** ⇑	*i*P	**Pg**	**07 46 01.3**	**-0.1**
WTP				S	**Sg**	**07 46 12.2**	**-0.1**
CHN1	**Nanshi**	**0.85**	**300** ⇑	*i*P	**Pb**	**07 46 02.2**	**+0.2**
CHN1				S	**Sg**	**07 46 13.6**	**+0.2**
ALS	**Alishan**	**0.89**	**328** ⇑	*i*P	**Pb**	**07 46 02.6**	**-0.1**
CHN4	**Tsaushan**	**0.90**	**311** ⇑	*i*P	**Pb**	**07 46 03.1**	**+0.3**
CHN4				S	**Sb**	**07 46 15.2**	**+0.3**
TWK	**Hsinying**	**0.92**	**303** ⇑	*i*P	**Pb**	**07 46 03.3**	**0.0**
TWK				S	**Sb**	**07 46 16.1**	**+0.4**
HEN	**Hengchun**	**0.92**	**216**	*e*P	**Pb**	**07 46 04.0**	**+0.7**
TWK1	**Hengchun**	**0.94**	**211**	*e*P	**Pb**	**07 46 02.6**	**-1.0**
TWP	**Hsiaoliuchiu**	**0.98**	**245**	*e*P	**Pb**	**07 46 07.2**	**+3.0**
CHN5	**Tsauling**	**1.03**	**325**	*i* P	**Pb**	**07 46 05.2**	**+0.2**
ESL	**Shilin**	**1.06**	**5**	*e*P	**Pb**	**07 46 06.5**	**+0.9**
CHN2	**Minshiung**	**1.10**	**315**	*e*P	**Pb**	**07 46 06.8**	**+0.6**
CHY	**Chiayi**	**1.11**	**312**	P	**Pb**	**07 46 07.2**	**+0.8**
WGK	**Gukeng**	**1.16**	**323**	*e*P	**Pb**	**07 46 07.4**	**+0.1**
SMLT	**Sun Moon Lake**	**1.19**	**341**	*e*P	**Pb**	**07 46 08.1**	**+0.3**
TYC	**Yuchr**	**1.22**	**339**	*e*P	**Pb**	**07 46 08.8**	**+0.4**
WNT	**Mingjian**	**1.26**	**332**	*e*P	**Pb**	**07 46 09.9**	**+0.8**
TWD	**Chiawan**	**1.34**	**11**	*e*P	**Pb**	**07 46 09.5**	**-1.0**
WHF	**Hehuan Shan**	**1.38**	**358**	*e*P	**Pb**	**07 46 10.4**	**-0.7**
TWT	**Tachien**	**1.50**	**355**	*e*P	**Pn**	**07 46 12.4**	**-0.4**
TCU	**Taichung**	**1.51**	**337**	*e*P	**Pn**	**07 46 12.9**	**0.0**
WDGT	**Dungji**	**1.51**	**288**	*e*P	**Pn**	**07 46 12.6**	**-1.9**
TWQ1	**Liyutan**	**1.66**	**342**	*e*P	**Pn**	**07 46 16.6**	**+1.4**
NNS	**Nan Shan**	**1.68**	**2**	*e*P	**Pn**	**07 46 17.9**	**+2.5**
ENA	**Nanau**	**1.71**	**13**	*e*P	**Pn**	**07 46 15.7**	**-0.1**
NSY	**Sanyi**	**1.73**	**343**	*e*P	**Pn**	**07 46 17.4**	**+1.2**
ENTT	**Nioudou**	**1.89**	**7**	*e*P	**Pn**	**07 46 17.2**	**-1.2**
NSTT	**Nanjuang**	**1.89**	**351**	*e*P	**Pn**	**07 46 19.3**	**+0.9**
TWC	**Suao**	**1.91**	**15**	*e*P	**Pn**	**07 46 19.5**	**+0.9**
NSK	**Sanguang**	**1.91**	**1**	*e*P	**Pn**	**07 46 18.4**	**-0.3**
TWE	**Neicheng**	**1.98**	**9**	*e

MEF	**Metsahovi**	**0.43**	**356**	*e*P		**Pg**	**08 39 42.9**	**+1.9**
MEF				*e*S		**Sg**	**08 39 48.8**	**+2.1**
PVF	**Pernaja**	**1.03**	**42**	*e*P		**Pb**	**08 39 53.0**	**+0.1**
PVF				*e*S		**Sg**	**08 40 05.6**	**-1.2**
VJF	**Virojoki**	**1.72**	**63**	*e*P		**Pn**	**08 40 04.4**	**+0.6**
VJF				*e*S		**Sb**	**08 40 26.2**	**-0.6**
VSU	**Vasula**	**1.78**	**138**	*e*P		**Pn**	**08 40 05.7**	**+1.0**
VSU				*e*S		**Sn**	**08 40 28.0**	**-0.3**
VSU	**Vasula**	**1.78**	**138**	Pn		**Pn**	**08 40 06.0**	**+1.3**
VSU				Lg			08 40 28.3	
FIA0	**FINESS Array S**	**1.84**	**25**	*e*P		**Pn**	**08 40 07.7**	**+2.1**
FIA0				*e*S		**Sn**	**08 40 30.5**	**+0.6**
FIA0	**FINESS Array S**	**1.84**	**25**	Pn		**Pn**	**08 40 07.8**	**+2.3**
	baz=197,slow=18							
FIA0				Lg			08 40 31.1	
	baz=196,slow=37							
FINES	**FINESS Array B**	**1.84**	**25**	Pn		**Pn**	**08 40 07.8**	**+2.2**
	15nm,0.3s,baz=201,slow=16,SNR=242							
FINES				Lg			08 40 30.9	
	17nm,0.3s,baz=192,slow=28,SNR=30							
FINES				Rg			08 40 45.0	
	6.4nm,0.6s,baz=190,slow=35,SNR=7.5							
KEF	**Keuruu**	**2.39**	**5**	MSG			08 40 50.5	
	comp=Z,9.3nm,0.2s							
KAF	**Kangasniemi**	**2.50**	**20**	MSG			08 40 53.5	
	comp=Z,11nm,0.3s							
SUF	**Sumiainen**	**3.05**	**15**	MSG			08 41 12.2	
	comp=Z,4.0nm,0.2s							
HFS	**Hagfors**	**5.42**	**278**	Pn		**Pn**	**08 40 58.0**	**+1.5**
	baz=108,slow=14							
HFS				Sn		**Sn**	**08 41 59.8**	**-0.7**
	baz=103,slow=28							
HFS				Lg			08 42 22.8	
	baz=93,slow=37							
HFS	**Hagfors**	**5.42**	**278**	*e*P		**Pn**	**08 40 58.0**	**+1.5**
HFS				*e*S		**Sn**	**08 41 59.8**	**-0.7**
HFS				*e*SG		**Sg**	**08 42 22.8**	**-10**
HFS	**Hagfors**	**5.42**	**278**	Pn		**Pn**	**08 40 57.5**	**+1.0**
	comp=Z,0.1nm,0.3s,baz=108,slow=14,SNR=7.3							
HFS				Sn		**Sn**	**08 42 00.8**	**+0.2**
	comp=Z,0.3nm,0.3s,baz=87,slow=26,SNR=7.2							
HFS				Lg			08 42 23.3	
	comp=Z,0.5nm,0.3s,baz=87,slow=32,SNR=6.4							
NOA	**NORSAR Array B**	**6.68**	**287**	Pn		**Pn**	**08 41 13.8**	**-0.4**
	comp=Z,0.7nm,0.3s,baz=97,slow=13,SNR=3.7							
NOA				Sn		**Sn**	**08 42 28.0**	**-4.0**
	comp=Z,0.5nm,0.3s,baz=31,slow=20,SNR=2.8							
NOA				Lg			08 43 03.4	
	comp=Z,1.4nm,0.3s,baz=138,slow=15,SNR=5.1							
ARA0	**ARCESS Array S**	**9.79**	**2**	Pn		**P**	**08 41 54.9**	**-2.5**
	baz=172,slow=16							
ARA0				Sn		**Sn**	**08 43 42.1**	**-7.3**
	baz=184,slow=28							
ARA0	**ARCESS Array S**	**9.79**	**2**	*e*P		**P**	**08 41 54.9**	**-2.5**
ARA0				*e*S		**Sn**	**08 43 42.1**	**-7.3**
ARCES	**ARCESS Array B**	**9.79**	**2**	Pn		**P**	**08 41 55.2**	**-2.3**
	comp=Z,1.2nm,0.3s,baz=178,slow=14,SNR=51							
ARCES				Sn		**Sn**	**08 43 41.5**	**-7.9**
	comp=Z,0.2nm,0.3s,baz=182,slow=23,SNR=2.8							
ARCES				Lg			08 44 38.9	
	comp=Z,0.4nm,0.3s,baz=180,slow=28,SNR=3.0							
SPA0	**Spitsbergen Ar**	**18.66**	**355**	P		**P**	**08 43 52.5**	**-1.0**
	baz=146,slow=18							
SPA0	**Spitsbergen Ar**	**18.66**	**355**	*e*P		**P**	**08 43 52.5**	**-1.0**
SPITS	**Spitsbergen Ar**	**18.66**	**355**	P		**P**	**08 43 55.0**	**+1.5**
	comp=Z,0.0nm,0.3s,baz=146,slow=9.8,SNR=5.6							

*NEIC **25** 08:44:36.2±2.7,20.54S×178.25W,h557km±32km, mb4.5/8, Error ellipse: s-maj=23.4km s-min=13.7km az=171.0*
*IDC **25** 08:44:38.1±2.0,20.83S×178.19W,h582km±23km, mb3.7/11,mb1 3.9/12,mb1mx3.7/17,Error ellipse: s-maj=18.7km s-min=9.9km az=151.0*

ISC 25 08:44:36.8±2.2,20.7S±0.1×178.28W±0.09,h581km±28km, n39,σ0§95/30,mb4.3/16,3D,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**17.92**	**192**	P	**P**	**08 48 13.5**	**+0.4**
	0.5nm,0.3s,baz=4.7,slow=4.2,SNR=3.5						
URZ				S	**S**	**08 51 06.2**	**-1.1**
	0.2nm,0.3s,baz=32,slow=18,SNR=2.9						
CTA	**Charters Tower**	**33.21**	**265**	⇓*i*P	**P**	**08 50 28.7**	**+0.6**
	10.0nm,0.6s,mb4.6						
CTA	**Charters Tower**	**33.21**	**265**	P	**P**	**08 50 28.8**	**+0.7**
	19nm,0.7s,mb4.8,baz=97,slow=11,SNR=33						
CTAO	**Charters Tower**	**33.21**	**265**	*e*P	**P**	**08 50 28.6**	**+0.5**
	14nm,0.7s,mb4.7						
PMG	**Port Moresby**	**35.14**	**283**	P	**P**	**08 50 44.2**	**-0.1**
	9.5nm,0.6s,mb4.6,baz=162,slow=9.6,SNR=5.1						
STKA	**Stephens Creek**	**37.46**	**244**	*e*P	**P**	**08 51 04.4**	**+1.3**
	3.5nm,1.0s,mb3.8						
STKA	**Stephens Creek**	**37.46**	**244**	P	**P**	**08 51 04.5**	**+1.4**
	11nm,1.2s,mb4.2,baz=93,slow=8.7,SNR=8.1						
AS12	**Alice Springs**	**44.21**	**257**	*e*P	**P**	**08 51 57.3**	**+0.2**
	22nm,1.1s,mb4.6						
ASAR	**Alice Springs**	**44.21**	**257**	P	**P**	**08 51 57.5**	**+0.4**
	16nm,0.5s,mb4.8,baz=98,slow=7.5,SNR=341						
ASAR				PcP	PcP	08 53 29.1	0.0
	2.2nm,0.8s,baz=108,slow=4.1,SNR=7.6						
ASAR				S	**S**	**08 57 50.7**	**+1.2**
	2.2nm,0.9s,baz=94,slow=14,SNR=11						
WB2	**Warramunga Arr**	**44.30**	**262**	*e*P	**P**	**08 51 57.3**	**-0.5**
WRAB	**Tennant Creek**	**44.30**	**262**	*e*P	**P**	**08 51 57.5**	**-0.3**
	54nm,1.0s,mb5.0						
WRA	**Warramunga Arr**	**44.31**	**262**	P	**P**	**08 51 57.5**	**-0.4**
	6.5nm,0.3s,mb4.6,baz=97,slow=7.5,SNR=569						
WRA				S	**S**	**08 57 50.9**	**0.0**
	0.8nm,1.0s,baz=99,slow=13,SNR=5.0						
KAKA	**Kakadu**	**47.76**	**271**	⇓*i*P	**P**	**08 52 23.3**	**-0.9**
	7.5nm,0.3s,mb4.7						
FITZ	**Fitzroy Crossi**	**52.74**	**263**	⇓*i*P	**P**	**08 53 00.6**	**+0.1**
	3.7nm,0.5s,mb4.0						
KS15	**Wonju Array Si**	**76.90**	**319**	*e*P	**P**	**08 55 29.9**	**-1.5**
YBH	**Yreka Blue Hor**	**80.63**	**39**	P	**P**	**08 55 51.8**	**+0.9**
	3.8nm,0.6s,mb4.0,baz=220,slow=3.8,SNR=12						
NVAR	**Mina Array Bea**	**81.37**	**43**	P	**P**	**08 55 55.3**	**+0.7**
	1.9nm,0.7s,mb3.6,baz=230,slow=11,SNR=19						
MSU	**Marysvale**	**85.45**	**46**	*e*P	**P**	**08 56 15.7**	**+0.8**
SRU	**San Rafael**	**86.86**	**46**	*e*P	**P**	**08 56 20.8**	**-0.8**
TXAR	**Lajitas Array**	**87.39**	**57**	P	**P**	**08 56 25.3**	**+0.9**
	1.2nm,0.7s,mb3.8,baz=214,slow=7.5,SNR=20						
TXAR	**Lajitas Array**	**87.39**	**57**	P	**P**	**08 56 25.3**	**+0.9**
MCMT	**McKenzie Canyo**	**88.29**	**40**	*e*P	**P**	**08 56 29.2**	**+1.0**
ILAR	**Eielson Array**	**88.59**	**13**	P	**P**	**08 56 27.6**	**-1.4**
	1.9nm,0.9s,mb3.9,baz=220,slow=5.2,SNR=20						
PDAR	**Pinedale Array**	**89.30**	**43**	P	**P**	**08 56 32.6**	**-0.3**
	1.7nm,0.7s,mb4.0,baz=218,slow=3.0,SNR=15						
CMAR	**Chiang Mai Arr**	**89.94**	**290**	P	**P**	**08 56 38.5**	**+2.0**
	2.3nm,0.6s,mb4.2,baz=195,slow=2.1,SNR=8.8						
INK	**Inuvik**	**94.56**	**15**	*e*P	**P**	**08 56 54.5**	**-1.9**
	2.4nm,1.3s,mb4.2						
ULN	**Ulaanbaatar**	**95.36**	**319**	P	**P**	**08 56 59.8**	**-0.6**
	3.3nm,1.2s,mb4.3						
MKAR	**Makanchi Array**	**111.16**	**313**	PKiKP		09 02 05.5	
	0.7nm,0.8s,baz=225,slow=1.2,SNR=6.7						
BVAR	**Borovoye Array**	**119.08**	**320**	PKP	PKPdf	09 02 21.0	+1.1
	1.2nm,0.5s,baz=92,slow=1.0,SNR=6.9						
ZRNK	**Zerenda**	**119.92**	**320**	*e*PKP	PKPdf	09 02 21.8	+0.2
EKA	**Eskdalemuir Ar**	**145.25**	**5**	PKPbc	PKPbc	09 03 10.4	+1.0
	1.2nm,0.7s,slow=3.3,SNR=3.7						
ASF	**Jabal al Asfar**	**146.65**	**297**	PKPbc	PKPbc	09 03 16.6	+3.1
	3.8nm,0.7s,baz=132,slow=2.6,SNR=5.4						
BRTR	**Keskin Array B**	**146.80**	**312**	PKPbc	PKPbc	09 03 16.2	+2.7
	3.2nm,0.9s,baz=135,slow=4.1,SNR=9.4						
CLL	**Collm**	**148.22**	**347**	*i* PKP1	PKPdf	09 03 19.3	+6.0
BRG	**Berggiesshubel**	**148.41**	**345**	*i* P	PKPdf	09 03 20.7	+7.1
BRG				*e*		09 03 25.4	
KHC	**Kasperske Hory**	**150.11**	**344**	*e*PKP	PKPdf	09 03 21.0	+4.7
GERES	**GERESS Array B**	**150.35**	**344**	PKPbc	PKPdf	09 03 24.6	+7.9
	1.4nm,0.7s,baz=45,slow=1.9,SNR=8.2						
GERES				PKPab	PKPab	09 03 33.6	-0.5
	0.6nm,0.5s,SNR=4.5						
DAVOX	**Davos**	**153.17**	**348**	PKPab	PKPab	09 03 45.2	-0.9
	2.4nm,0.8s,baz=65,slow=4.2,SNR=3.4						
DAVOX	**Davos**	**153.17**	**348**	PKPab	PKPab	09 03 45.2	-0.9

*NEIC **25** 08:51:46.5,46.30N×7.20E,h8km,ML2.9(LDG), ML2.9(VIE),ML2.8(GEN),ML2.6(STR),ML2.3(ZUR),After ZUR.*
*LDG **25** 08:51:46.0±0.1,46.28N×7.20E,h5km,Md3.0/2,Ml2.9/21, Error ellipse: s-maj=1.3km s-min=0.9km az=104.0*
*STR **25** 08:51:46.4±0.6,46.32N×7.32E,h5km±1km,Ml2.6,Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*

ZUR 25 08:51:46.5,46.28N×7.20E,h8km,ML2.3/7,4C-3D, Switzerland

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
GRYON	**Gryon**	**0.07**	**243**	*e*Pg	Pg	08 51 48.7	+0.3
	80nm,0.1s						
GRYON				*i* Sg	Sg	08 51 50.1	+0.4
	80nm,0.1s						
SENIN	**Lac Senin**	**0.11**	**41**	⇑*i*Pg	Pg	08 51 49.4	+0.3
	59nm,0.2s						
SENIN				*i* Sg	Sg	08 51 51.4	+0.5
	59nm,0.2s						
AIGLE	**Aigle**	**0.18**	**290**	*e*Pg	Pg	08 51 50.3	0.0
	24nm,0.3s						
AIGLE	**Aigle**	**0.18**	**290**	*e*P	Pg	08 51 50.2	-0.1
SALAN	**Lac Salanfe**	**0.21**	**229**	⇑*i*Pg	Pg	08 51 51.0	+0.2
	54nm,0.3s						
SALAN				*e*Sg	Sg	08 51 53.9	+0.2
	54nm,0.3s						
DIX	**Grande Dixence**	**0.25**	**143**	⇓*i*Pg	Pg	08 51 52.1	+0.4
	18nm,0.4s						
DIX				*i* Sg	Sg	08 51 55.7	+0.6
	18nm,0.4s						
EMV	**Vieux Emosson**	**0.30**	**224**	⇑*i*Pg	Pg	08 51 52.6	0.0
	13nm,0.1s						
LKBD	**Leukerbad**	**0.32**	**70**	⇓*i*Pg	Pg	08 51 53.0	0.0
	65nm,0.5s						
LKBD				*e*Sg	Sg	08 51 57.6	+0.2
	65nm,0.5s						
WIMIS	**Wimmis**	**0.49**	**37**	⇑*i*Pg	Pg	08 51 56.0	-0.3
	4.2nm,0.2s						
LSD	**Ceresole Reale**	**0.82**	**182**	P	Pb	08 52 00.9	-1.8
LSD				S	Sb	08 52 09.3	-4.3
LPL	**La Plagne**	**0.83**	**203**	*e*Pg	Pg	08 52 00.9	-2.2
	SNR=1.0						
LPL				*e*Sg	Sg	08 52 12.3	-1.9
	16nm,0.2s,SNR=1.0						
CABF	**La Chapelle**	**0.83**	**294**	*e*Pg	Pg	08 52 01.5	-1.7
	SNR=1.0						
CABF				*e*Pn	Pn	08 52 03.1	-1.2
CABF				*e*Sg	Sg	08 52 13.1	-1.3
	SNR=1.0						
CABF				*e*Sn	Sn	08 52 15.1	-1.7
	38nm,0.2s						
LPG	**La Plagne**	**0.84**	**202**	*e*Pg	Pg	08 52 01.3	-2.1
	SNR=1.0						
LPG				*e*Sg	Sg	08 52 13.0	-1.6
	18nm,0.2s,SNR=1.0						
LOMF	**Lomont**	**1.10**	**347**	Pg	Pg	08 52 07.0	-1.5
LOMF				Sg	Sg	08 52 21.7	-1.5
RSP	**Reno Superiore**	**1.13**	**178**	P	Pb	08 52 06.5	-1.4
RSP				S	Sb	08 52 18.6	-3.9
BBS	**Basel-Blauen**	**1.20**	**10**	Pg	Pg	08 52 08.4	-2.2
BBS				Sg	Sg	08 52 24.9	-1.8
FENE	**Fenestrelle**	**1.25**	**184**	P	Pb	08 52 08.9	-1.1
FENE				S	Sb	08 52 22.2	-3.9
RRL	**Cesana Torines**	**1.39**	**192**	P	Pn	08 52 11.3	-1.0
BHB	**Bricherasio**	**1.44**	**178**	P	Pn	08 52 11.8	-1.2
HINF	**Hinteralfeld**	**1.56**	**351**	*e*Pn	Pn	08 52 12.3	-2.3
	SNR=1.0						
HINF				*e*Pg	Pg	08 52 14.4	-3.2
HINF				*e*Sn	Sn	08 52 31.8	-3.3
	SNR=1.0						
HINF				*e*Sg	Sg	08 52 35.2	-3.1
	78nm,0.4s						
MOF	**Molkenrain**	**1.57**	**358**	Pn	Pn	08 52 13.8	-1.1
MOF				Sg	Sg	08 52 35.9	-3.0
MBDF	**Montbardon**	**1.58**	**191**	*e*Pn	Pn	08 52 13.3	-1.7
MBDF				*e*Pg	Pg	08 52 15.0	-3.1
	SNR=1.0						
MBDF				*e*Sn	Sn	08 52 32.9	-2.9
MBDF				*e*Sg	Sg	08 52 36.5	-2.7
	30nm,0.4s,SNR=1.0						
ORIF	**Oris-en-Rattie**	**1.65**	**215**	*e*Pn	Pn	08 52 14.2	-1.7
	SNR=1.0						
ORIF				*e*Pg	Pg	08 52 16.9	-2.5
ORIF				*e*Sn	Sn	08 52 34.4	-3.0
	SNR=1.0						
ORIF				*e*Sg	Sg	08 52 38.3	-3.0
	10nm,0.2s						
FELD	**Feldberg**	**1.69**	**19**	Pn	Pn	08 52 13.1	-3.5
FELD				Pg	Pg	08 52 16.7	-3.6
PZZ	**Prazzo**	**1.78**	**182**	P	Pn	08 52 16.5	-1.3
HAU	**Haudompre**	**1.82**	**342**	*e*Pn	Pn	08 52 16.4	-2.0
HAU				*e*Pg	Pg	08 52 19.1	-3.8
	SNR=1.0						
HAU				*e*Sn	Sn	08 52 37.9	-4.0
	SNR=1.0						
HAU				*e*Sg	Sg	08 52 43.0	-4.2
	46nm,0.3s,SNR=1.0						
ECH	**Echery**	**1.94**	**359**	Pn	Pn	08 52 18.6	-1.5
PCP	**Pian Castagno**	**1.98**	**151**	P	Pn	08 52 20.2	-0.5
STV2	**Anna di Valdie**	**2.04**	**177**	P	Pn	08 52 20.2	-1.4
STV	**Sta Anna Valdi**	**2.04**	**177**	P	Pn	08 52 20.2	-1.3
ROB	**Roburent**	**2.04**	**166**	P	Pn	08 52 20.6	-1.0
ENR	**Entracque**	**2.06**	**175**	P	Pn	08 52 20.4	-1.4
DAVA	**Damuels**	**2.10**	**60**	⇓*i*PN	Pn	08 52 21.5	-1.0
DAVA				*i* PG	Pg	08 52 26.0	-2.5
DAVA				*i* SG	Sg	08 52 53.4	-3.1
	23nm,0.5s						
THEF	**They Montfort**	**2.12**	**338**	Pn	Pn	08 52 20.9	-1.7
CDF	**Champ du Feu**	**2.13**	**1**	*e*Pn	Pn	08 52 20.4	-2.5
	SNR=1.0						
CDF				*e*Pg	Pg	08 52 25.0	-4.1
CDF				*e*Sn	Sn	08 52 45.7	-4.2
CDF				*e*Sg	Sg	08 52 52.6	-5.0
	13nm,0.3s,SNR=1.0						
FIN	**Finale Ligure**	**2.19**	**161**	P	Pn	08 52 21.4	-2.3
MONE	**Monesi**	**2.24**	**170**	P	Pn	08 52 23.6	-0.8
VIVF	**Saint-Julien-l**	**2.27**	**232**	*e*Pn	Pn	08 52 23.2	-1.7
VIVF				*e*Pg	Pg	08 52 28.5	-3.4
VIVF				*e*Sn	Sn	08 52 49.0	-4.4
	SNR=1.0						
VIVF				*e*Sg	Sg	08 52 57.2	-5.0
	22nm,0.3s						
SMF	**Signal de Mont**	**2.35**	**280**	*e*Pn	Pn	08 52 23.6	-2.4
	SNR=1.0						
SMF				*e*Pg	Pg	08 52 29.2	-4.2
	SNR=1.0						
SMF				*e*Sn	Sn	08 52 51.2	-4.1
SMF				*e*Sg	Sg	08 52 59.2	-5.5
	12nm,0.2s,SNR=1.0						
IMI	**Imperia**	**2.42**	**168**	P	Pn	08 52 24.8	-2.2
SFTF	**Sexfontaines**	**2.42**	**323**	*e*Pn	Pn	08 52 24.4	-2.7
	baz=145						
SFTF				*e*Pg	Pg	08 52 30.8	-4.1
	baz=138						
SFTF				*e*Sn	Sn	08 52 52.6	-4.6
SFTF				*e*Sg	Sg	08 53 02.1	-5.1
	23nm,0.3s,baz=139						
SBF	**Sospel**	**2.42**	**176**	*e*Pn	Pn	08 52 24.2	-2.9
SBF				*e*Pg	Pg	08 52 30.0	-4.9
	SNR=1.0						
SBF				*e*Sg	Sg	08 53 01.9	-5.3
	24nm,0.5s						
NEGI	**Negi**	**2.46**	**171**	P	Pn	08 52 25.4	-2.2
LOR	**Lormes**	**2.50**	**295**	*e*Pn	Pn	08 52 25.9	-2.2
	SNR=1.0						
LOR				*e*Pg	Pg	08 52 32.5	-3.9
	baz=115,SNR=1.0						
LOR				*e*Sn	Sn	08 52 54.5	-4.6
	baz=114						
LOR				*e*Sg	Sg	08 53 04.5	-5.2
	6.7nm,0.2s,SNR=1.0						
SMRF	**Simiane la Rot**	**2.57**	**207**	*e*Pn	Pn	08 52 26.6	-2.6
	SNR=1.0						
SMRF				*e*Pg	Pg	08 52 33.9	-4.0
	SNR=1.0						
SMRF				*e*Sn	Sn	08 52 56.4	-4.6
SMRF				*e*Sg	Sg	08 53 06.7	-5.5
	2.4nm,0.3s						
RFYF	**Reffroy**	**2.62**	**334**	*e*Pn	Pn	08 52 27.3	-2.6
RFYF				*e*Pg	Pg	08 52 34.4	-4.5
RFYF				*e*Sn	Sn	08 52 56.8	-5.5
MEZF	**Maizieres J'vi**	**2.66**	**328**	*e*Pn	Pn	08 52 27.8	-2.6
MEZF				*e*Pg	Pg	08 52 35.1	-4.5
MEZF				*e*Sn	Sn	08 52 57.9	-5.3
	50nm,0.6s,SNR=1.0						
SSF	**Saint Saulge**	**2.66**	**288**	*e*Pn	Pn	08 52 27.9	-2.5
	SNR=1.0						
SSF				*e*Pg	Pg	08 52 35.5	-4.1
SSF				*e*Sn	Sn	08 52 58.7	-4.5
	SNR=1.0						
SSF				*e*Sg	Sg	08 53 09.4	-5.6
	7.4nm,0.3s,SNR=1.0						
AVF	**Avril sur Loir**	**2.70**	**282**	*e*Pn	Pn	08 52 28.7	-2.3
	SNR=1.0						
AVF				*e*Sn	Sn	08 52 59.7	-4.6
	SNR=1.0						
AVF				*e*Sg	Sg	08 53 10.7	-5.8
	4.1nm,0.2s,SNR=1.0						
FRF	**La Foret Royal**	**2.75**	**188**	*e*Pn	Pn	08 52 28.5	-3.2
	SNR=1.0						
FRF				*e*Pg	Pg	08 52 37.0	-4.4
FRF				*e*Sn	Sn	08 53 00.7	-4.7
	SNR=1.0						
FRF				*e*Sg	Sg	08 53 12.4	-5.6
	8.1nm,0.4s,SNR=1.0						
LMR	**La Mourre**	**2.99**	**190**	*e*Pg	Pg	08 52 41.1	-5.0
LMR				*e*Sn	Sn	08 53 10.2	-1.3
	2.6nm,0.2s,SNR=1.0						
BGF	**Bois d'Agland**	**3.02**	**277**	*e*Pn	Pn	08 52 33.3	-2.3
	SNR=1.0						
BGF				*e*Pg	Pg	08 52 42.1	-4.7
BGF				*e*Sn	Sn	08 53 07.4	-5.0
	SNR=1.0						
BGF				*e*Sg	Sg	08 53 21.2	-5.9
	14nm,0.3s,SNR=1.0						
LASF	**Ste Croix**	**3.23**	**228**	*e*Pn	Pn	08 52 36.3	-2.2
LASF				*e*Pg	Pg	08 52 45.4	-5.6
	SNR=1.0						
LASF				*e*Sn	Sn	08 53 12.3	-5.3
LASF				*e*Sg	Sg	08 53 26.5	-7.5
	5.7nm,0.2s,SNR=1.0						
HYF	**Humbligny**	**3.28**	**289**	*e*Pn	Pn	08 52 36.2	-3.1
TCF	**Toulx Ste Croi**	**3.46**	**272**	*e*Pn	Pn	08 52 39.0	-2.8
	SNR=1.0						
TCF				*e*Sn	Sn	08 53 18.0	-5.4
	SNR=1.0						
TCF				*e*Sg	Sg	08 53 34.6	-7.0
	2.4nm,0.3s						

IDC 25 08:57:48.1±51.0,16.83S×179.91W,mb3.9/3,mb1 4.1/3, mb1mx3.7/13,Error ellipse: s-maj=920.0km s-min=154.8km az=77.0,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**37.92**	**240**	P	P	09 05 07.2	-1.9
	1.2nm,0.7s,baz=96,slow=10,SNR=3.3						
WRA	**Warramunga Arr**	**43.43**	**259**	P	P	09 05 53.2	-1.5
	0.2nm,0.3s,baz=92,slow=7.9,SNR=20						
ASAR	**Alice Springs**	**43.72**	**253**	P	P	09 05 55.2	-1.8
	2.5nm,0.5s,baz=88,slow=8.3,SNR=63						

*HEL **25** 09:03:23.7±0.4,59.82N×24.45E,ML1.8,ML2.2(NAO), Explosion*
*NAO **25** 09:03:24.5±1.5,59.86N×24.45E,ML2.2*
*IDC **25** 09:03:25.7±2.1,59.91N×24.47E,mb1 3.3/3, mb1mx3.1/20,ML2.8/2,Error ellipse: s-maj=21.7km s-min=6.3km az=147.0*
*BER **25** 09:03:26.1±4.7,59.86N×24.45E,ML2.2(NAO), Suspected explosion*

ISC 25 09:03:21.1±0.7,59.83N±0.04×24.29E±0.07,n18,σ1§41/25, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MEF	**Metsahovi**	**0.39**	**8**	*e*P	**Pg**	**09 03 30.1**	**+1.2**
MEF				*e*S	**Sg**	**09 03 35.4**	**+1.2**
PVF	**Pernaja**	**1.06**	**47**	*e*P	**Pb**	**09 03 41.6**	**-0.4**
PVF				*e*S	**Sb**	**09 03 55.4**	**-1.0**
VJF	**Virojoki**	**1.78**	**65**	*e*P	**Pn**	**09 03 53.9**	**+0.5**
VJF				*e*S	**Sn**	**09 04 16.8**	**-0.2**
FIA0	**FINESS Array S**	**1.84**	**28**	*e*P	**Pn**	**09 03 55.5**	**+1.3**
FIA0				*e*S	**Sn**	**09 04 19.9**	**+1.3**
FIA0	**FINESS Array S**	**1.84**	**28**	Pn	**Pn**	**09 03 55.6**	**+1.4**
	baz=204,slow=16						
FIA0				Lg		09 04 20.9	
	baz=190,slow=28						
FINES	**FINESS Array B**	**1.84**	**28**	Pg	**Pg**	**09 03 55.6**	**-2.3**
	2.0nm,0.3s,baz=207,slow=15,SNR=90						
FINES				Lg		09 04 20.1	
	1.8nm,0.3s,baz=206,slow=25,SNR=13						
FINES				Rg		09 04 30.4	
	5.4nm,0.9s,baz=201,slow=33,SNR=8.3						
VSU	**Vasula**	**1.86**	**136**	Pn	**Pn**	**09 03 56.6**	**+2.2**
VSU				Lg		09 04 23.7	
VSU	**Vasula**	**1.86**	**136**	*e*S	**Sn**	**09 04 18.1**	**-0.9**
KEF	**Keuruu**	**2.36**	**7**	MSG		09 04 39.3	
	comp=Z,4.2nm,0.2s						
KAF	**Kangasniemi**	**2.49**	**22**	MSG		09 04 41.5	
	comp=Z,4.1nm,0.2s						
SUF	**Sumiainen**	**3.04**	**16**	MSG		09 04 57.3	
	comp=Z,2.1nm,0.2s						
HFS	**Hagfors**	**5.33**	**278**	*e*P	**Pn**	**09 04 46.7**	**+2.8**
HFS				*e*SG	**Sg**	**09 06 12.4**	**-6.1**
HFS	**Hagfors**	**5.33**	**278**	Pn	**Pn**	**09 04 46.9**	**+3.1**
	baz=119,slow=12,SNR=9.4						
HFS				Sn	**S

FIA0					*e*S		**Sn**	**09 40 59.3**	**+1.3**
FIA0					MSG			09 41 05.6	
	comp=Z,9.9nm,0.1s								
FIA0	**FINESS Array S**	**2.48**	**48**		Pn		**Pn**	**09 40 29.5**	**+2.9**
	baz=231,slow=14								
FIA0					Lg			09 41 01.4	
	baz=227,slow=22								
FIA0					Rg			09 41 16.4	
	baz=213,slow=37								
FINES	**FINESS Array B**	**2.48**	**48**		Pn		**Pn**	**09 40 29.4**	**+2.8**
	comp=Z,1.5nm,0.3s,baz=234,slow=13,SNR=36								
FINES					Lg			09 41 01.9	
	comp=Z,3.3nm,0.3s,baz=232,slow=22,SNR=20								
FINES					Rg			09 41 16.1	
	comp=Z,12nm,0.8s,baz=218,slow=34,SNR=12								
KEF	**Keuruu**	**2.65**	**28**		MSG			09 41 09.9	
	comp=Z,6.5nm,0.1s								
VSU	**Vasula**	**2.72**	**119**		*e*S		**Sn**	**09 41 04.0**	**-0.2**
VSU					*e*SB		**Sb**	**09 41 06.7**	**-0.9**
VJF	**Virojoki**	**2.75**	**73**		*e*SB		**Sb**	**09 41 08.8**	**+0.2**
KAF	**Kangasniemi**	**3.01**	**40**		MSG			09 41 18.0	
	comp=Z,3.9nm,0.1s								
HFS	**Hagfors**	**4.29**	**277**		*e*P		**Pn**	**09 40 53.6**	**+1.2**
HFS					*e*SG		**Sg**	**09 41 58.0**	**-9.1**
HFS	**Hagfors**	**4.29**	**277**		Pn		**Pn**	**09 40 54.1**	**+1.7**
	comp=Z,0.0nm,0.3s,baz=99,slow=12,SNR=10								
HFS					Pg		**Pg**	**09 41 03.8**	**-6.2**
	comp=Z,0.1nm,0.3s,baz=102,slow=16,SNR=7.0								
HFS					Sn		**Sn**	**09 41 44.7**	**+0.8**
	comp=Z,0.1nm,0.3s,baz=105,slow=28,SNR=2.4								
HFS					Lg			09 41 57.6	
	comp=Z,0.1nm,0.3s,baz=98,slow=29,SNR=4.0								
HFS	**Hagfors**	**4.29**	**277**		Pn		**Pn**	**09 40 53.6**	**+1.2**
	baz=95,slow=11								
HFS					Lg			09 41 58.0	
	baz=97,slow=28								
NOA	**NORSAR Array B**	**5.57**	**287**		Pn		**Pn**	**09 41 10.6**	**0.0**
	comp=Z,0.2nm,0.3s,baz=98,slow=15,SNR=3.1								
NOA					Sn		**Sn**	**09 42 15.2**	**-1.1**
	comp=Z,0.2nm,0.3s,baz=65,slow=22,SNR=2.5								
NOA					Lg			09 42 38.8	
	comp=Z,0.4nm,0.3s,baz=108,slow=23,SNR=2.8								
ARA0	**ARCESS Array S**	**9.81**	**7**		Pn		**P**	**09 42 07.2**	**-2.4**
	baz=180,slow=16								
ARA0					Sn		**Sn**	**09 43 53.0**	**-8.7**
	baz=193,slow=28								
ARA0	**ARCESS Array S**	**9.81**	**7**		*e*P		**P**	**09 42 07.2**	**-2.4**
ARA0					*e*S		**Sn**	**09 43 53.0**	**-8.7**
ARCES	**ARCESS Array B**	**9.81**	**7**		Pn		**P**	**09 42 07.8**	**-1.8**
	comp=Z,0.2nm,0.3s,baz=186,slow=13,SNR=8.6								
ARCES					Sn		**Sn**	**09 43 52.2**	**-10**
	comp=Z,0.1nm,0.3s,baz=188,slow=25,SNR=2.9								
ARCES					Lg			09 44 49.6	
	comp=Z,0.1nm,0.3s,baz=174,slow=34,SNR=2.5								

HEL ***25*** *09:48:02.8±0.2,59.43N×27.58E,ML1.8,ML2.2(NAO), Explosion*
NAO ***25*** *09:48:03.9±1.8,59.53N×27.31E,ML2.2*
IDC ***25*** *09:48:06.0±2.5,59.67N×27.71E,mb1 3.3/2, mb1mx3.0/19,ML3.3/2,Error ellipse: s-maj=22.5km s-min=16.3km az=94.0*
BER ***25*** *09:48:06.0±3.6,59.57N×27.41E,ML2.2(NAO), Suspected explosion*

ISC 25 09:48:00.1±1.2,59.62N±0.06×27.7E±0.2,n15,σ1ϑ31/21,
Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VSU	**Vasula**	**1.26**	**203**	Pn	**Pn**	**09 48 24.8**	**-0.2**
VSU				Lg		09 48 44.9	
VSU	**Vasula**	**1.26**	**203**	*e*PN	**Pn**	**09 48 24.8**	**-0.2**
PVF	**Pernaja**	**1.30**	**316**	*e*SN	**Sn**	**09 48 49.4**	**+5.5**
MEF	**Metsahovi**	**1.76**	**291**	*e*P	**Pn**	**09 48 35.0**	**+2.9**
MEF				*e*S	**Sb**	**09 48 56.8**	**+1.2**
FIA0	**FINESS Array S**	**1.99**	**337**	*e*P	**Pn**	**09 48 39.3**	**+3.8**
FIA0				*e*SB	**Sb**	**09 49 08.0**	**+5.6**
FIA0				MSG		09 49 10.4	
	comp=Z,4.7nm,0.1s						
FIA0	**FINESS Array S**	**1.99**	**337**	Pn	**Pn**	**09 48 39.1**	**+3.7**
	baz=156,slow=16						
FIA0				Lg		09 49 08.3	
	baz=160,slow=28						
FINES	**FINESS Array B**	**1.99**	**337**	Pg	**Pg**	**09 48 39.3**	**-0.6**
	comp=Z,2.0nm,0.3s,baz=154,slow=16,SNR=48						
FINES				Lg		09 49 08.2	
	comp=Z,2.9nm,0.3s,baz=150,slow=30,SNR=5.7						
FINES				Rg		09 49 20.7	
	comp=Z,2.0nm,0.5s,baz=158,slow=35,SNR=5.2						
KEF	**Keuruu**	**2.90**	**333**	*e*SG	**Sg**	**09 49 36.5**	**-0.2**
KEF				MSG		09 49 37.7	
	comp=Z,2.0nm,0.2s						
JOF	**Joensuu**	**3.75**	**26**	*e*P	**Pn**	**09 49 04.6**	**+4.2**
HFS	**Hagfors**	**7.06**	**280**	*e*S	**Sn**	**09 51 01.7**	**-7.6**
HFS				*e*SG	**Sg**	**09 51 39.1**	**-16**
HFS	**Hagfors**	**7.06**	**280**	Sn	**Sn**	**09 51 01.7**	**-7.6**
	baz=95,slow=37						
HFS				Lg		09 51 39.1	
	baz=77,slow=28						
NOA	**NORSAR Array B**	**8.29**	**287**	Pn	**P**	**09 50 03.8**	**-0.7**
	comp=Z,0.2nm,0.3s,baz=95,slow=12,SNR=2.6						
ARA0	**ARCESS Array S**	**10.00**	**356**	Pn	**P**	**09 50 27.4**	**-0.5**
	baz=170,slow=14						
ARA0				Sn	**S**	**09 52 17.2**	**-4.9**
	baz=173,slow=22						
ARA0				Lg		09 53 17.3	
	baz=183,slow=37						
ARA0	**ARCESS Array S**	**10.00**	**356**	*e*P	**P**	**09 50 27.4**	**-0.5**
ARA0				*e*S	**S**	**09 52 17.2**	**-4.9**
ARA0				*e*SG	S	09 53 17.3	+55
ARCES	**ARCESS Array B**	**10.00**	**356**	Pn	**P**	**09 50 27.5**	**-0.4**
	comp=Z,0.3nm,0.3s,baz=172,slow=14,SNR=9.7						
ARCES				Sn	**S**	**09 52 15.1**	**-7.0**
	comp=Z,0.2nm,0.3s,baz=172,slow=25,SNR=2.8						
ARCES				Lg		09 53 17.0	
	comp=Z,0.2nm,0.3s,baz=172,slow=34,SNR=3.2						

IDC 25 09:49:38.9±17.0,51.65N×170.41W,h131km±155km,
mb3.3/5,mb1 3.3/6,mb1mx3.0/25,ML3.3/1,Error ellipse: s-maj=111.0km s-min=36.7km az=171.0,Fox Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ILAR	**Eielson Array**	**17.91**	**34**	P	P	09 53 39.5	-1.0
	0.0nm,0.3s,baz=238,slow=8.6,SNR=7.1						
INK	**Inuvik**	**24.30**	**33**	P	P	09 54 41.9	-2.8
	0.4nm,0.4s,baz=252,slow=4.7,SNR=4.8						
YKA	**Yellowknife Ar**	**31.20**	**48**	P	P	09 55 45.6	-1.7
	0.3nm,0.4s,baz=271,slow=7.7,SNR=15						
SPITS	**Spitsbergen Ar**	**50.37**	**358**	P	P	09 58 21.5	-2.2
	1.9nm,1.0s,slow=6.3,SNR=3.6						
SONM	**Songino Array**	**51.12**	**301**	P	P	09 58 27.5	-2.3
	0.2nm,0.3s,baz=52,slow=10.0,SNR=2.9						
BVAR	**Borovoye Array**	**63.91**	**324**	P	P	09 59 58.1	-1.3
	0.8nm,0.4s,baz=45,slow=4.9,SNR=5.8						

CASC ***25*** *10:03:49.3±1.0,4.49S×80.08W,h61km,mb5.1(NEIC)*
IGQ ***25*** *10:04:16.2,4.57S×80.62W,h25km±6km,mb5.3,Error ellipse: s-maj=7.1km s-min=1.4km az=168.5*
NEIC ***25*** *10:04:20.2±0.2,4.49S×80.08W,mb5.1/62,Error ellipse: s-maj=5.7km s-min=3.4km az=53.0*
NEIC Felt [III] at Sullana, Peru.
HRVD ***25*** *10:04:20.2±0.7,4.82S×80.31W,h59km±3km,MW4.9/31, Centroid moment Tensor Solution. LP body waves: s21,c24;Mantle waves: s31,c42; Half duration: 0 Moment tensor: Scale 10^16Nm; Mrr2.18±.15; Mθθ0.52±.12; Mϕϕ-2.70±.12; Mrθ-0.28±.09; Mθϕ0.31±.12; Mϕr0.35±.12; Best double couple: M0 2.5×10^16 NP1:ϕ183°,δ41°,λ102°. NP2:ϕ347°,δ50°,λ79°. Principal axes: T 2.24, Plg81°, Azm203°; N .51, Plg8°, Azm354°; P -2.76, Plg4°, Azm84°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
IDC ***25*** *10:04:20.4±0.4,4.49S×80.24W,h61km±3km,mb4.6/25, mb1 4.7/28,mb1mx4.6/30,MS3.8/15,Ms1 3.8/15, ms1mx3.6/23 Error ellipse: s-maj=13.3km s-min=9.8km az=58.0*
SYO ***25*** *10:04:20.1,4.49S×80.08W,h61km,MB5.1*
BJI ***25*** *10:04:20.1,4.50S×80.10W,h60km,mB5.6,Ms5.1,Msz5.1*
ISC 25 10:04:18.3±0.2,4.61S±0.03×80.38W±0.03,h61km,

h61km±7km:pP-P,n262,σ1ϑ01/226,mb5.0/84,43C-22D,
Peru-Ecuador border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HCA		**1.35**	**136**	⇑P	**P**	**10 04 43.6**	**+2.0**
PP16	**Cajamarca**	**3.12**	**144**	⇓P	**P**	**10 05 09.8**	**+3.5**
PP16				S	**S**	**10 05 45.9**	**+3.5**
IGUA	**Igualata**	**3.55**	**29**	P	**P**	**10 05 13.3**	**+1.0**
ARRY	**Arrayan**	**3.63**	**32**	⇓P	**P**	**10 05 14.1**	**+0.7**
PATA	**Patacocha**	**3.64**	**32**	⇓P	**P**	**10 05 14.6**	**+0.9**
CUSU	**Cusua**	**3.67**	**31**	P	**P**	**10 05 15.0**	**+1.0**
RETU	**Refugio**	**3.68**	**32**	⇓P	**P**	**10 05 15.6**	**+1.4**
RETU				S	**S**	**10 05 58.4**	**+1.7**
JUIV	**Juive**	**3.69**	**31**	P	**P**	**10 05 15.1**	**+0.7**
ULBA	**Ulba**	**3.70**	**32**	⇓P	**P**	**10 05 15.3**	**+0.8**
RUN2	**Runtun**	**3.72**	**32**	P	**P**	**10 05 16.2**	**+1.4**
PISA	**Pisayambo**	**4.05**	**29**	⇓P	**P**	**10 05 20.3**	**+0.9**
MARY	**Rancho Maria**	**4.29**	**26**	⇓P	**P**	**10 05 23.1**	**+0.4**
JAMA	**Jama**	**4.32**	**2**	P	**P**	**10 05 23.6**	**+0.4**
JAMA				S	**S**	**10 06 10.7**	**-2.1**
TAMB	**Tambo**	**4.38**	**27**	P	**P**	**10 05 24.8**	**+0.9**
NAS1	**Nasa**	**4.38**	**26**	⇓P	**P**	**10 05 24.9**	**+0.9**
VC1	**Cotopaxi 1**	**4.41**	**27**	⇑P	**P**	**10 05 25.6**	**+1.3**
ANTI	**Antisana**	**4.69**	**28**	⇓P	**P**	**10 05 28.8**	**+0.5**
GGP	**Refugio Guagua**	**4.75**	**22**	P	**P**	**10 05 30.5**	**+1.3**
PINO	**Pino**	**4.76**	**22**	⇓P	**P**	**10 05 30.2**	**+0.9**
YANA	**Yana**	**4.81**	**22**	⇓P	**P**	**10 05 30.4**	**+0.4**
JOR1	**San Jorge 1**	**4.90**	**21**	P	**P**	**10 05 32.8**	**+1.6**
JOR1				S	**S**	**10 06 20.5**	**-6.7**
CAYR	**Refugio Cayamb**	**5.17**	**27**	P	**P**	**10 05 36.6**	**+1.6**
OTAV	**Otavalo**	**5.18**	**22**	⇓*e*Pn	**P**	**10 05 35.3**	**+0.1**
OTAV				*e*Sn	**S**	**10 06 34.1**	**-0.3**
CAYA	**Cayambe**	**5.22**	**27**	P	**P**	**10 05 36.2**	**+0.5**
CONE	**Cono NE Rev Vo**	**5.27**	**31**	⇓P	**P**	**10 05 36.9**	**+0.5**
COTA	**Cotacachi**	**5.32**	**23**	⇑P	**P**	**10 05 38.5**	**+1.5**
COTA				S	**S**	**10 06 40.6**	**+2.9**
ROSC	**El Rosal**	**11.17**	**33**	P	**P**	**10 07 03.8**	**+6.0**
	1.5nm,0.3s,baz=297,slow=19,SNR=2.7						
ROSC				Lg		10 09 50.7	
	0.1nm,0.3s,baz=16,slow=20,SNR=2.3						
ROSC				LR	LR	10 11 49.3	
	comp=Z,971nm,18.2s,baz=210,slow=41						
JTS	**JuntasAbangare**	**15.49**	**343**	*e*Pn	**P**	**10 07 57.4**	**+2.8**
	5.3nm,1.1s						
JTS				*e*pP		10 08 16.9	
SDV	**Santo Domingo**	**16.55**	**36**	P	**P**	**10 08 04.9**	**-3.2**
	0.9nm,0.3s,baz=228,slow=13,SNR=13						
SDV				Lg		10 12 43.1	
	0.5nm,0.3s,baz=90,slow=20,SNR=2.5						
SDV				LR	LR	10 15 04.8	
	comp=Z,426nm,18.6s,baz=135,slow=39						
LPAZ	**La Paz**	**16.71**	**135**	P	**P**	**10 08 11.9**	**+1.9**
	0.3nm,0.3s,baz=332,slow=16,SNR=14						
LPAZ				S	**S**	**10 11 25.8**	**+13**
	0.2nm,0.3s,baz=22,slow=19,SNR=2.1						
LPAZ				LR	LR	10 15 58.0	
	comp=Z,413nm,18.1s,baz=93,slow=42						
LPAZ	**La Paz**	**16.71**	**135**	*e*P	**P**	**10 08 11.4**	**+1.5**
	2.1nm,0.9s						
LVC	**Limon Verde**	**21.06**	**149**	P	**P**	**10 09 02.1**	**+2.5**
	23nm,0.8s,mb4.6,baz=314,slow=7.3,SNR=24						
LVC	**Limon Verde**	**21.06**	**149**	*e*P	**P**	**10 09 01.8**	**+2.3**
	38nm,1.1s,mb4.6						
PCRV	**Puerto La Cruz**	**21.48**	**47**	P	**P**	**10 09 02.5**	**-1.4**
	30nm,0.6s,mb4.8,baz=198,slow=2.8,SNR=14						
PCRV				S	**S**	**10 12 58.7**	**+5.3**
	5.1nm,0.6s,baz=128,slow=19,SNR=1.9						
PCRV				LR	LR	10 18 17.0	
	comp=Z,559nm,20.9s,baz=230,slow=39						
TRN	**Trinidad (W)**	**24.22**	**51**	*e*P	**P**	**10 09 32.0**	**+1.3**
TRN				*e*S		10 09 57.8	
TEIG	**Tepich**	**25.87**	**343**	P	**P**	**10 09 46.8**	**+0.4**
	30nm,0.8s,mb4.9,baz=165,slow=13,SNR=2.4						
TEIG	**Tepich**	**25.87**	**343**	P	**P**	**10 09 46.0**	**-0.3**
SJG	**San Juan**	**26.58**	**31**	P	**P**	**10 09 52.3**	**-0.7**
	50nm,1.1s,mb5.0,baz=131,slow=23,SNR=8.3						
SJG				LR	LR	10 21 17.5	
	comp=Z,273nm,20.4s,baz=112,slow=38						
SJG	**San Juan**	**26.58**	**31**	*e*P	**P**	**10 09 50.6**	**-2.3**
	38nm,0.8s,mb5.0						
SJG				*e*		10 10 18.1	
CPUP	**Villa Florida**	**30.86**	**137**	P	**P**	**10 10 30.0**	**-1.3**
	3.1nm,1.1s,mb4.1,baz=358,slow=8.9,SNR=3.7						
CPUP				PcP	PcP	10 13 26.1	-0.9
	2.4nm,0.9s,baz=281,slow=1.4,SNR=3.6						
CPUP				LR	LR	10 25 22.8	
	comp=Z,226nm,19.8s,baz=116,slow=41						
BDFB	**Brasilia**	**33.63**	**111**	P	**P**	**10 10 54.4**	**-1.1**
	2.4nm,0.5s,mb4.3,baz=279,slow=4.9,SNR=4.5						
BDFB				pP	pP	10 11 09.6	-1.1
	3.4nm,0.8s,baz=318,slow=6.5,SNR=3.0						
BDFB				sP	sP	10 11 17.9	-0.4
	13nm,1.0s,baz=278,slow=9.7,SNR=6.9						
BDFB				LR	LR	10 25 18.3	
	comp=Z,123nm,20.7s,baz=144,slow=38						
TRQA	**Tornquist**	**37.28**	**156**	*e*P	**P**	**10 11 25.9**	**-0.4**
TRQA				*e*pP	pP	10 11 41.2	-0.4
TRQA				*e*sP	sP	10 11 49.6	+0.6
LRAL	**Lakeview Retre**	**37.96**	**351**	*e*P	**P**	**10 11 30.8**	**-1.1**
	25nm,0.8s,mb5.0						
JSC	**Jenkinsville**	**38.69**	**359**	*e*P	**P**	**10 11 36.9**	**-1.0**
JSC				*e*PcP	PcP	10 13 48.4	-1.1
JCT	**Junction City**	**39.53**	**333**	⇑*i*P	**P**	**10 11 46.3**	**+1.3**
	38nm,0.7s,mb5.2						
JCT				*e*PcP	PcP	10 13 51.1	-1.1
MYNC	**Murphy**	**39.63**	**355**	*e*P	**P**	**10 11 44.2**	**-1.5**
	48nm,1.2s,mb5.1						
MYNC				*e*PcP	PcP	10 13 51.0	-1.5
SWET	**Sewanee**	**39.95**	**353**	*e*P	**P**	**10 11 47.3**	**-1.2**
CPCT	**Cooper Cave**	**40.03**	**355**	⇑*i*P	**P**	**10 11 48.3**	**-0.8**
TXAR	**Lajitas Array**	**40.48**	**328**	P	**P**	**10 11 54.2**	**+1.3**
	4.0nm,0.8s,mb4.2,baz=145,slow=10,SNR=36						
TXAR				PcP	PcP	10 13 55.4	+0.1
	8.7nm,0.8s,baz=155,slow=6.6,SNR=23						
TXAR				pPcP		10 14 13.6	
	1.9nm,0.8s,baz=153,slow=5.6,SNR=3.9						
TXAR				LR	LR	10 26 19.4	
	comp=Z,28nm,19.3s,baz=130,slow=33						
UALR	**University of**	**40.76**	**345**	*e*P	**P**	**10 11 54.9**	**-0.2**
	41nm,1.0s,mb5.0						
MIAR	**Mount Ida**	**40.88**	**343**	⇑*e*P	**P**	**10 11 56.2**	**0.0**
	26nm,0.9s,mb4.9						
MIAR				*e*PcP	PcP	10 13 55.3	-1.3
WVT	**Waverly**	**41.12**	**351**	⇑*i*P	**P**	**10 11 56.1**	**-1.9**
	17nm,0.6s,mb4.8						
WVT				*e*PcP	PcP	10 13 55.8	-1.4
ELN	**Prospectdale**	**41.62**	**360**	*e*P	**P**	**10 12 01.6**	**-0.6**
PWV	**Princeton**	**41.73**	**359**	*e*P	**P**	**10 12 02.1**	**-1.0**
FWV	**Forest Hill**	**41.97**	**359**	*e*P	**P**	**10 12 04.2**	**-0.9**
WMOK	**Wichita Mounta**	**42.80**	**338**	⇑*i*P	**P**	**10 12 12.1**	**+0.1**
	25nm,0.9s,mb4.9						
WMOK				⇑*i*PcP	PcP	10 14 02.2	-0.7
USIN	**University of**	**42.89**	**352**	*e*P	**P**	**10 12 11.0**	**-1.7**
	126nm,1.2s,mb5.5						
SIUC	**Southern Illin**	**42.90**	**350**	*e*P	**P**	**10 12 11.4**	**-1.3**
	70nm,1.0s,mb5.3						
SIUC				*e*PcP	PcP	10 14 01.9	-1.3
CLNB	**Carlsbad**	**42.94**	**330**	*e*P	**P**	**10 12 14.4**	**+1.3**
WCI	**Wyandotte Cave**	**42.97**	**353**	*e*P	**P**	**10 12 11.1**	**-2.2**
	40nm,0.9s,mb5.2						
WCI				*e*PcP	PcP	10 14 02.0	-1.4
GDL2	**Guadalupe Moun**	**43.13**	**330**	*e*P	**P**	**10 12 15.9**	**+1.2**
MNTX	**Cornudas Mount**	**43.26**	**328**	*e*P	**P**	**10 12 16.0**	**+0.3**
	26nm,0.9s,mb5.0						
FVM	**French Village**	**43.39**	**348**	*e*P	**P**	**10 12 15.2**	**-1.6**
	36nm,0.7s,mb5.2						
FVM				*e*PcP	PcP	10 14 03.4	-1.4
CPRX	**Cap Rock**	**43.56**	**331**	*e*P	**P**	**10 12 19.5**	**+1.4**
CPRX				*e*PcP	PcP	10 14 04.8	-0.7
CCM	**Cathedral Cave**	**43.63**	**348**	⇑*e*P	**P**	**10 12 17.2**	**-1.5**
	23nm,0.8s,mb5.0						
CCM				*e*PcP	PcP	10 14 04.4	-1.3
BLO	**Bloomington**	**43.93**	**353**	*e*P	**P**	**10 12 18.8**	**-2.3**
	12nm,0.8s,mb4.7						
BLO				*e*PcP	PcP	10 14 04.9	-1.7
ACSO	**Alum Creek Sta**	**44.68**	**357**	*e*P	**P**	**10 12 25.1**	**-2.0**
	48nm,0.9s,mb5.3						
BNM	**Barren Site**	**45.83**	**329**	*e*P	**P**	**10 12 37.8**	**+1.5**
BNM				*e*PcP	PcP	10 14 13.4	+0.1
KSU1	**Kansas State U**	**46.01**	**342**	*e*P	**P**	**10 12 37.3**	**-0.3**
LENM	**Lemitar**	**46.02**	**329**	*e*P	**P**	**10 12 39.2**	**+1.4**
LENM				*e*PcP	PcP	10 14 13.7	-0.2
ANMO	**Albuquerque**	**46.38**	**330**	⇑*i*P	**P**	**10 12 41.9**	**+1.3**
	62nm,0.8s,mb5.6						
TUC	**Tucson**	**46.72**	**324**	⇑*e*P	**P**	**10 12 44.0**	**+0.7**
	16nm,0.8s,mb5.0						
TUC				*e*PcP	PcP	10 14 16.2	-0.2
BINY	**Binghamton**	**46.76**	**4**	*e*P	**P**	**10 12 42.2**	**-1.3**
SDCO	**Great Sand Dun**	**48.18**	**333**	⇑*i*P	**P**	**10 12 55.8**	**+1.0**
	48nm,0.8s,mb5.6						
SDCO				*e*PcP	PcP	10 14 21.2	-0.4
WUAZ	**Wupatki**	**49.39**	**326**	⇑*i*P	**P**	**10 13 05.5**	**+1.4**
	77nm,0.9s,mb5.7						
WUAZ				*e*PcP	PcP	10 14 26.1	+0.1
MSNY	**Massena**	**49.63**	**5**	*e*P	**P**	**10 13 03.8**	**-2.0**
MSNY				*e*pP	pP	10 13 20.7	-0.8
ISCO	**Idaho Springs**	**49.93**	**335**	⇑*e*P	**P**	**10 13 08.4**	**+0.3**
	21nm,1.0s,mb5.1						
ISCO				*e*PcP	PcP	10 14 27.4	-0.4
PV01	**Paradox Valley**	**49.93**	**331**	*e*P	**P**	**10 13 09.2**	**+1.0**
PV01				*e*PcP	PcP	10 14 27.2	-0.7
PV10	**Paradox Valley**	**50.35**	**331**	*e*P	**P**	**10 13 11.1**	**-0.3**
PV10				*e*pP	pP	10 13 27.4	+0.2
PV10				*e*PcP	PcP	10 14 28.4	-1.1
BAR	**Barrett**	**50.60**	**320**	*e*P	**P**	**10 13 14.0**	**+0.6**
BAR				*e*PcP	PcP	10 14 28.5	-2.0
USHA	**Ushuaia**	**51.00**	**171**	P	**P**	**10 13 17.0**	**+0.9**
	14nm,0.6s,mb5.1,baz=30,slow=11,SNR=14						
PFO	**Pinyon Flat Ob**	**51.07**	**321**	*e*P	**P**	**10 13 17.9**	**+0.9**
	21nm,1.0s,mb5.0						
PFO				*e*PcP	PcP	10 14 31.5	-0.7
LDFC	**Landfair**	**51.23**	**323**	*e*P	**P**	**10 13 19.6**	**+1.5**
NEN	**Nelson**	**51.46**	**324**	⇑*i*P	**P**	**10 13 20.6**	**+0.8**
SRU	**San Rafael**	**51.65**	**330**	⇑*e*P	**P**	**10 13 21.4**	**+0.2**
SRU				*e*PcP	PcP	10 14 33.2	-1.0
MSU	**Marysvale**	**52.04**	**328**	*e*P	**P**	**10 13 25.1**	**+0.9**
MSU				*e*PcP	PcP	10 14 35.8	+0.1
MVU	**Marysvale**	**52.05**	**328**	⇑*i*P	**P**	**10 13 25.2**	**+1.0**
	23nm,0.9s,mb5.1						
MVU				*e*pP	PcP	10 14 35.8	0.0
MWC	**Mount Wilson**	**52.48**	**320**	*e*P	**P**	**10 13 28.6**	**+1.0**
MPU	**Maple Canyon**	**52.89**	**330**	⇑*e*P	**P**	**10 13 30.6**	**+0.1**
MPU				*e*PcP	PcP	10 14 38.2	-0.6
RSSD	**Black Hills**	**52.97**	**339**	⇑*i*P	**P**	**10 13 31.1**	**0.0**
	21nm,1.1s,mb5.0						
RSSD				*e*pP	pP	10 13 46.4	-0.6
RSSD				*e*PcP	PcP	10 14 38.0	-1.1
DAU	**Daniels Canyon**	**53.01**	**331**	*e*P	**P**	**10 13 32.1**	**+0.7**
DAU				*e*PcP	PcP	10 14 39.3	0.0
NLU	**North Lily Min**	**53.07**	**330**	⇑*e*P	**P**	**10 13 32.2**	**+0.4**
NLU				*e*PcP	PcP	10 14 39.4	-0.1
JLU	**Jordanelle**	**53.25**	**331**	⇑*e*P	**P**	**10 13 33.5**	**+0.4**
JLU				*e*PcP	PcP	10 14 40.4	+0.2
CTU	**Camp Tracy**	**53.47**	**330**	*e*P	**P**	**10 13 35.0**	**+0.3**
TCUT	**Toone Canyon**	**53.62**	**331**	⇑*e*P	**P**	**10 13 36.2**	**+0.3**
TCUT				*e*PcP	PcP	10 14 41.4	-0.2
PDAR	**Pinedale Array**	**54.06**	**334**	P	**P**	**10 13 38.7**	**-0.4**
	11nm,0.8s,mb4.8,baz=134,slow=7.8,SNR=103						
PDAR				PcP	PcP	10 14 42.5	-0.7
	4.2nm,0.6s,baz=130,slow=6.4,SNR=11						
HWUT	**Hardware Ranch**	**54.08**	**331**	⇑*i*P	**P**	**10 13 39.1**	**-0.1**
	56nm,0.8s,mb5.5						
HWUT				*e*pP	pP	10 13 55.5	+0.3
HWUT				*e*PcP	PcP	10 14 42.4	-0.9
SPUT	**South Promonto**	**54.28**	**330**	⇑*i*P	**P**	**10 13 41.0**	**+0.3**
SPUT				*e*pP	pP	10 13 56.1	-0.6
TPH	**Tonopah**	**54.51**	**324**	⇑*i*P	**P**	**10 13 43.2**	**+0.8**
	21nm,1.0s,mb5.1						
HVU	**Hansel Valley**	**54.79**	**331**	⇑*e*P	**P**	**10 13 44.1**	**-0.4**
MTUM	**Tungsten Hills**	**54.82**	**323**	*e*P	**P**	**10 13 45.5**	**+0.8**
WUWY	**Wally Ulrich**	**55.20**	**333**	*e*P	**P**	**10 13 46.6**	**-0.7**
KSWY	**Kelly School**	**55.22**	**334**	*e*P	**P**	**10 13 47.1**	**-0.3**
NVAR	**Mina Array Bea**	**55.38**	**324**	P	**P**	**10 13 49.6**	**+0.9**
	15nm,0.7s,mb5.1,baz=132,slow=7.6,SNR=138						
NVAR				PcP	PcP	10 14 48.7	+0.4
	4.8nm,0.7s,baz=132,slow=5.9,SNR=5.9						
NVAR				LR	LR	10 34 55.9	
	comp=Z,37nm,20.6s,

DLBC					pP		pP	10 16 07.8	+0.5
	7.5nm,1.0s,baz=221,slow=2.9,SNR=3.3								
LIC	**Lamto**	**75.99**	**82**	*eP*		**P**		**10 15 59.8**	**-1.6**
	37nm,1.1s,mb4.9								
LIC				*eR*					
	95nm,22.2s								
LIC	**Lamto**	**75.99**	**82**	*eP*		**P**		**10 16 00.6**	**-0.8**
	57nm,1.1s,mb5.4								
TIC	**Toumodi**	**76.05**	**82**	*eP*		**P**		**10 16 01.0**	**-0.7**
	139nm,1.1s,mb5.8								
DBIC	**Dimbokro**	**76.21**	**82**	P		**P**		**10 16 02.2**	**-0.4**
	33nm,1.1s,mb5.2,baz=242,slow=5.5,SNR=16								
DBIC					pP		pP	10 16 18.9	-0.6
	16nm,0.9s,baz=231,slow=4.9,SNR=7.4								
DBIC					LR		LR	10 47 10.9	
	comp=Z,53nm,19.6s,baz=179,slow=34								
DBIC	**Dimbokro**	**76.21**	**82**	*eP*		**P**		**10 16 01.8**	**-0.8**
DBIC					epP		pP	10 16 17.9	-1.7
KIC	**Kosan Boka**	**76.29**	**82**	*eP*		**P**		**10 16 02.5**	**-0.6**
	136nm,1.0s,mb5.8								
EVO	**Evora**	**79.20**	**50**	*eP*		**P**		**10 16 17.5**	**-1.2**
	9.5nm,0.7s,mb4.5								
EVO				*eR*					
	82nm,18.8s								
VNA3	**Neumayer Olymp**	**79.51**	**162**	*e*		**P**		**10 16 26.8**	**+7.1**
VNA3	**Neumayer Olymp**	**79.51**	**162**	*e*		pP		10 16 37.8	+1.1
VNA3	**Neumayer Olymp**	**79.51**	**162**	⇓*iP*		**P**		**10 16 21.5**	**+1.8**
VNA3				*e*				10 16 26.8	
VNA3				*e*		pP		10 16 37.8	+1.1
VNA3				*e*				10 16 44.0	
VNA1	**Neumayer--Stat**	**79.79**	**161**	*e*		**P**		**10 16 28.4**	**+7.2**
VNA1	**Neumayer--Stat**	**79.79**	**161**	*e*		pP		10 16 40.1	+1.9
VNA1	**Neumayer--Stat**	**79.79**	**161**	⇓*iP*		**P**		**10 16 23.7**	**+2.5**
VNA1				*e*				10 16 28.4	
VNA1				*e*		pP		10 16 40.1	+1.9
VNA1				*e*				10 16 46.2	
VNA2	**Neumayer--Watz**	**80.14**	**161**	*e*		**P**		**10 16 29.4**	**+6.3**
VNA2	**Neumayer--Watz**	**80.14**	**161**	*e*		pP		10 16 40.9	+0.8
VNA2	**Neumayer--Watz**	**80.14**	**161**	⇑*iP*		**P**		**10 16 24.6**	**+1.5**
VNA2				*e*				10 16 29.4	
VNA2				*e*		pP		10 16 40.9	+0.8
VNA2				*e*				10 16 47.4	
DAWY	**Dawson**	**81.14**	**338**	⇑*eP*		**P**		**10 16 28.3**	**-0.3**
INK	**Inuvik**	**81.48**	**342**	P		**P**		**10 16 30.1**	**-0.1**
	10nm,0.5s,mb5.0,baz=120,slow=4.5,SNR=33								
INK					pP		pP	10 16 48.0	+0.7
	13nm,1.1s,baz=138,slow=2.5,SNR=4.9								
INK	**Inuvik**	**81.48**	**342**	⇑*iP*		**P**		**10 16 30.0**	**-0.2**
	33nm,1.1s,mb5.2								
INK				*e*	pP		pP	10 16 47.2	-0.1
BORG	**Borgarnes**	**81.50**	**22**	P		**P**		**10 16 31.4**	**+1.0**
	10.0nm,0.7s,mb4.9,baz=257,slow=6.0,SNR=4.6								
SUMG	**Summit**	**81.53**	**12**	*eP*		**P**		**10 16 30.1**	**-0.3**
SUMG				*e*	pP		pP	10 16 47.6	+0.2
SNAA	**Sanae**	**81.73**	**162**	⇑*iP*		**P**		**10 16 31.5**	**0.0**
SNAA				*e*	pP		pP	10 16 49.1	+0.6
SNAA				*e*	sP		sP	10 16 55.6	+0.3
ESDC	**Sonseca Array**	**82.53**	**49**	P		**P**		**10 16 35.6**	**-0.6**
	0.9nm,0.4s,mb4.1,baz=265,slow=4.8,SNR=9.7								
ESDC					pP		pP	10 16 53.1	-0.2
	1.8nm,0.7s,baz=268,slow=4.6,SNR=1.9								
ESDC					LR		LR	10 50 11.4	
	comp=Z,37nm,20.1s,baz=295,slow=33								
PMS	**Palmer South**	**84.18**	**333**	*eP*		**P**		**10 16 44.0**	**-0.1**
ILAR	**Eielson Array**	**84.37**	**337**	P		**P**		**10 16 44.6**	**-0.3**
	11nm,1.1s,mb4.9,baz=148,slow=3.5,SNR=62								
ILAR					pP		pP	10 17 01.5	-0.6
	4.1nm,1.0s,baz=108,slow=4.5,SNR=6.2								
ILAR					PP		PP	10 20 00.8	-1.2
	1.4nm,0.9s,baz=110,slow=6.3,SNR=8.8								
ILAR					LR		LR	10 54 06.2	
	comp=Z,36nm,19.3s,baz=134,slow=35								
COLA	**College**	**84.79**	**337**	*eP*		**P**		**10 16 47.6**	**+0.6**
MCK	**McKinley**	**84.80**	**335**	*eP*		**P**		**10 16 47.1**	**0.0**
	4.5nm,0.8s,mb4.7								
QUIF	**Quistinic**	**84.87**	**41**	*eP*		**P**		**10 16 46.8**	**-1.1**
	13nm,0.8s,mb4.8								
ROSF	**Rostrenen**	**84.89**	**41**	*eP*		**P**		**10 16 46.6**	**-1.3**
	18nm,0.9s,mb4.9								
QSPA	**South Pole Qui**	**85.47**	**180**	⇑*eP*		**P**		**10 16 50.7**	**+0.6**
	96nm,1.1s,mb5.8								
QSPA				*e*		pP		10 17 10.0	+2.6
MAIT	**Maitri**	**86.38**	**161**	*eP*		**P**		**10 16 55.7**	**+1.0**
GRR	**Gorron**	**86.48**	**41**	*eP*		**P**		**10 16 55.1**	**-0.6**
ESK	**Eskdalemuir**	**86.50**	**34**	*eP*		**P**		**10 16 55.0**	**-0.6**
MFF	**Saint Martin d**	**86.63**	**43**	*eP*		**P**		**10 16 55.4**	**-1.1**
	12nm,0.8s,mb4.8								
FLN	**La Foliniere**	**86.80**	**41**	*eP*		**P**		**10 16 56.9**	**-0.4**
	16nm,0.7s,mb5.0								
FLN				*eR*					
	56nm,21.2s								
SVW	**Sparrevohn**	**86.93**	**332**	*eP*		**P**		**10 16 57.1**	**-0.5**
LFF	**La Frestale**	**86.95**	**45**	*eP*		**P**		**10 16 57.2**	**-1.0**
LDF	**La Druitiere**	**87.00**	**41**	*eP*		**P**		**10 16 57.8**	**-0.5**
	33nm,1.1s,mb5.2								
IMA	**Indian Mountai**	**87.48**	**337**	*eP*		**P**		**10 17 00.3**	**+0.1**
RJF	**Les Rejaudoux**	**87.56**	**44**	*eP*		**P**		**10 17 00.0**	**-1.0**
	5.2nm,0.7s,mb4.6								
RJF				*eR*					
	56nm,19.2s								
MTLF	**Montolieu**	**87.76**	**46**	*eP*		**P**		**10 17 01.0**	**-1.1**
	5.5nm,0.8s,mb4.5								
TCF	**Toulx Ste Croi**	**88.18**	**43**	*eP*		**P**		**10 17 03.5**	**-0.5**
	3.5nm,0.6s,mb4.5								
DAG	**Danmarks Havn**	**88.22**	**12**	⇓*iP*		**P**		**10 17 03.3**	**-0.2**
	15nm,0.9s,mb5.2								
DAG	**Danmarks Havn**	**88.22**	**12**	⇓*eP*		**P**		**10 17 03.3**	**-0.2**
	15nm,0.9s,mb5.2								
JMIC	**Jan Mayen**	**88.49**	**18**	LR		LR		10 53 50.6	
	comp=Z,34nm,21.1s,baz=270,slow=34								
BGF	**Bois d'Agland**	**88.66**	**43**	*eP*		**P**		**10 17 05.2**	**-1.1**
LASF	**Ste Croix**	**89.03**	**46**	*eP*		**P**		**10 17 07.4**	**-0.7**
AVF	**Avril sur Loir**	**89.04**	**43**	*eP*		**P**		**10 17 06.7**	**-1.3**
	15nm,1.1s,mb4.9								
SSF	**Saint Saulge**	**89.18**	**43**	*eP*		**P**		**10 17 07.3**	**-1.4**
	10.0nm,1.0s,mb4.8								
SMF	**Signal de Mont**	**89.35**	**43**	*eP*		**P**		**10 17 08.3**	**-1.2**
LOR	**Lormes**	**89.44**	**43**	*eP*		**P**		**10 17 08.8**	**-1.1**
LOR				*eR*					
	67nm,21.7s								
VIVF	**Saint-Julien-l**	**89.71**	**45**	*eP*		**P**		**10 17 11.9**	**+0.6**
SBA	**Scott Base**	**90.23**	**191**	*eP*		**P**		**10 17 14.7**	**+1.7**
SBA				*e*	pP		pP	10 17 32.1	+1.7
SMRF	**Simiane la Rot**	**90.25**	**46**	*eP*		**P**		**10 17 12.9**	**-0.9**
GIVF	**Givet**	**90.42**	**40**	*eP*		**P**		**10 17 13.2**	**-1.3**
ORIF	**Oris-en-Rattie**	**90.57**	**45**	*eP*		**P**		**10 17 14.6**	**-0.7**
ORIF				*eR*					
	47nm,22.5s								
CABF	**La Chapelle**	**90.88**	**43**	*eP*		**P**		**10 17 16.1**	**-0.6**
	14nm,0.9s,mb5.0								
FRF	**La Foret Royal**	**90.98**	**47**	*eP*		**P**		**10 17 16.3**	**-1.0**
	16nm,0.9s,mb5.0								
LPL	**La Plagne**	**91.23**	**45**	*eP*		**P**		**10 17 18.1**	**-0.3**
LPG	**La Plagne**	**91.24**	**45**	*eP*		**P**		**10 17 17.8**	**-0.6**
	24nm,1.2s,mb5.1								
VNDA	**Vanda**	**91.33**	**191**	P		**P**		**10 17 20.1**	**+1.9**
	3.0nm,0.8s,mb4.7,baz=124,slow=2.9,SNR=20								
VNDA					pP		pP	10 17 37.6	+2.1
	3.0nm,0.9s,baz=38,slow=5.5,SNR=6.1								
VNDA					LR		LR	10 52 01.0	
	comp=Z,59nm,21.0s,baz=145,slow=31								
SBF	**Sospel**	**91.58**	**46**	*eP*		**P**		**10 17 19.2**	**-0.8**
	44nm,1.1s,mb5.4								
CDF	**Champ du Feu**	**91.85**	**42**	*eP*		**P**		**10 17 20.3**	**-0.9**
	11nm,0.9s,mb4.8								
NOA	**NORSAR Array B**	**94.77**	**29**	P		**P**		**10 17 33.9**	**-0.2**
	3.7nm,1.2s,mb4.7,baz=274,slow=4.0,SNR=2.9								
NOA					LR		LR	10 53 33.9	
	comp=Z,18nm,19.3s,baz=250,slow=31								
CLL	**Collm**	**95.68**	**39**	P		**P**		**10 17 39.0**	**+0.5**
CLL	**Collm**	**95.68**	**39**	*eP*		**P**		**10 17 39.0**	**+0.5**
SYO	**Syowa Base**	**96.03**	**162**	⇓P		**P**		**10 17 39.5**	**-0.2**
SYO	**Syowa Base**	**96.03**	**162**	⇑PcP		PcP		10 17 40.3	+0.1
SYO	**Syowa Base**	**96.03**	**162**	⇓*pP*		pP		10 17 57.9	+0.8
SYO	**Syowa Base**	**96.03**	**162**	⇓*sP*		sP		10 18 01.8	-1.5
SYO	**Syowa Base**	**96.03**	**162**	⇓*eP*		**P**		**10 17 39.5**	**-0.2**
SYO				*e*PcP		PcP		10 17 40.3	+0.1
SYO				*epP*		pP		10 17 57.9	+0.8
SYO				*esP*		sP		10 18 01.8	-1.5
GERES	**GERESS Array B**	**96.13**	**42**	P		**P**		**10 17 40.3**	**-0.3**
	0.6nm,0.7s,mb4.2,baz=225,slow=3.8,SNR=4.4								
FINES	**FINESS Array B**	**101.87**	**28**	P		P		10 18 04.9	-1.4
	1.9nm,0.8s,slow=5.7,SNR=6.7								
KMBO	**Kilima Mbogo**	**117.43**	**94**	PKP		PKPdf		10 23 00.9	+2.8
	0.9nm,0.7s,baz=221,slow=20,SNR=2.5								

ZRNK	**Zerenda**	**125.63**	**22**	*e*PKPdf		PKPdf		10 23 13.9	+0.8
ZRNK				*ep*PKPdf				10 23 32.0	
THR	**Tehran**	**125.65**	**48**	PKP		PKPdf		10 23 14.1	+0.5
	1.6nm,0.9s,baz=258,slow=3.6,SNR=3.9								
THR	**Tehran**	**125.65**	**48**	PKP		PKPdf		10 23 14.1	+0.5
BRVK	**Borovoye**	**126.02**	**21**	*e*PKPdf		PKPdf		10 23 14.6	+0.8
STKA	**Stephens Creek**	**126.06**	**225**	*eP*		PKPdf		10 23 15.6	+1.1
	5.4nm,0.6s								
STKA	**Stephens Creek**	**126.06**	**225**	PKP		PKPdf		10 23 16.0	+1.5
	7.2nm,0.7s,baz=98,slow=2.9,SNR=19								
STKA				pPKP				10 23 34.5	
	1.6nm,0.6s,baz=150,slow=3.0,SNR=2.9								
CTA	**Charters Tower**	**128.03**	**240**	*eP*		PKPdf		10 23 19.8	+1.2
	4.4nm,0.6s								
KURK	**Kurchatov**	**130.78**	**18**	*e*PKPpre				10 23 04.9	
KURK				*e*PKPdf		PKPdf		10 23 24.0	+1.0
KURK				*ep*PKPdf				10 23 41.4	
MDJ	**Mudanjiang**	**132.27**	**331**	PKP		PKPdf		10 23 26.8	+0.8
MKAR	**Makanchi Array**	**135.38**	**17**	PKP		PKPdf		10 23 31.6	-0.1
	8.2nm,0.9s,baz=351,slow=2.2,SNR=27								
MKAR				pPKP				10 23 50.6	
	1.6nm,0.7s,baz=315,slow=1.7,SNR=3.3								
AAK	**Ala-Archa**	**136.04**	**27**	*e*PKPdf		PKPdf		10 23 34.9	+1.9
AS12	**Alice Springs**	**136.33**	**228**	*eP*		PKPdf		10 23 29.2	-4.9
	6.6nm,0.7s								
ASAR	**Alice Springs**	**136.33**	**228**	PKhKP				10 23 24.7	
	0.8nm,0.5s,baz=116,slow=3.7,SNR=14								
ASAR				PKP		PKPdf		10 23 34.7	+0.6
	6.2nm,0.7s,baz=121,slow=2.2,SNR=39								
ASAR				pPKP				10 23 54.2	
	2.2nm,0.8s,baz=124,slow=1.4,SNR=3.7								
SONM	**Songino Array**	**136.54**	**353**	PKhKP				10 23 21.5	
	0.6nm,0.6s,baz=342,slow=3.9,SNR=4.1								
SONM				PKP		PKPdf		10 23 34.6	+0.8
	3.5nm,0.8s,baz=4.7,slow=1.7,SNR=14								
SONM				PP		PP		10 26 13.1	-6.3
	1.0nm,1.1s,slow=4.9,SNR=3.9								
WB2	**Warramunga Arr**	**138.04**	**233**	*eP*		PKPdf		10 23 30.9	-6.4
WRAB	**Tennant Creek**	**138.05**	**233**	*e*PKPdf		PKPdf		10 23 37.8	+0.5
WRAB				*ep*PKPdf				10 23 57.6	
WRA	**Warramunga Arr**	**138.05**	**233**	PKhKP				10 23 29.8	
	1.3nm,1.0s,baz=112,slow=2.9,SNR=14								
WRA				PKP		PKPdf		10 23 38.6	+1.2
	8.1nm,0.7s,baz=109,slow=2.5,SNR=51								
WRA				pPKP				10 23 56.5	
	2.9nm,0.5s,baz=116,slow=2.1,SNR=5.1								
KS15	**Wonju Array Si**	**138.34**	**325**	*e*PKPdf		PKPdf		10 23 38.2	+0.7
WMQ	**Urumqi**	**139.55**	**13**	PKP		PKPdf		10 23 40.5	+1.1
WMQ				PP		PP		10 26 39.0	+0.5
WMQ				PKS		PKS		10 27 15.0	+0.6
WMQ				SKS		SKS		10 30 45.5	+4.0
WMQ				SKKS				10 33 24.8	
WMQ				SS		SS		10 44 51.3	+1.2
WMQ				LR		LR			
	comp=N,254nm,30.0s								
WMQ				LR		LR			
	comp=E,125nm,23.2s								
WMQ				LR		LR			
	comp=Z,403nm,28.6s								
KAKA	**Kakadu**	**143.17**	**242**	*eP*		PKPbc		10 23 44.4	-0.4
	comp=Z,6.4nm,0.6s								
TIA	**Tai'an**	**144.66**	**335**	*e*PKP		PKPdf		10 23 46.5	-2.1
GTA	**Gaotai**	**145.36**	**360**	⇑PKP		PKPdf		10 23 50.5	+0.8
GTA				APKP				10 24 08.5	
GTA				XPKP				10 24 18.5	
FITZ	**Fitzroy Crossi**	**145.83**	**228**	*eP*		PKPdf		10 23 53.6	+2.5
	comp=Z,30nm,0.8s								
FITZ				*e*				10 24 12.8	
SSE	**Sheshan**	**146.75**	**325**	PKP		PKPdf		10 23 55.5	+3.1
SSE				PP		PP		10 27 25.8	+3.7
SSE				SS		SS		10 46 18.8	+5.0
NJ2	**Nanjing**	**147.29**	**329**	*e*PKP		PKPdf		10 23 56.3	+3.1
NJ2				PP		PP		10 27 26.0	+0.7
NJ2				PP		PP			
	comp=Z,240nm,5.8s								
NJ2				LR		LR			
	comp=N,110nm,29.9s								
NJ2				LR		LR			
	comp=E,240nm,24.4s								
NJ2				LR		LR			
	comp=Z,360nm,23.8s								
LZH	**Lanzhou**	**148.43**	**353**	⇓PKP		PKPdf		10 23 59.8	+4.9
XAN	**Xi'an**	**149.47**	**345**	PKP		PKPdf		10 24 02.0	+5.4
XAN				APKP				10 24 14.5	
WHN	**Wuhan**	**150.70**	**333**	⇑PKP		PKPdf		10 24 04.5	+5.8
KOLN	**Koldanda**	**152.37**	**32**	*eP*		PKPdf		10 24 08.9	+7.7
	comp=Z,36nm,0.9s								
GKN	**Gorkha**	**152.71**	**30**	*eP*		PKPdf		10 24 10.0	+8.3
	comp=Z,102nm,0.9s								
ENH	**Enshi**	**152.83**	**341**	*e*PKPdf		PKPdf		10 24 02.8	+1.0
ENH				*e*PKPbc		PKPdf		10 24 09.5	+7.8
KKN	**Kakani**	**153.20**	**29**	*eP*		PKPdf		10 24 11.0	+8.6
	comp=Z,28nm,0.8s								
GUN	**Gumba**	**153.39**	**28**	*eP*		PKPdf		10 24 11.9	+9.3
	comp=Z,69nm,1.1s								
PKI	**Pulchoki**	**153.45**	**29**	*eP*		PKPdf		10 24 11.4	+8.7
	comp=Z,22nm,0.9s								
CMAR	**Chiang Mai Arr**	**166.22**	**3**	PKP		PKPdf		10 24 18.8	+1.4
	comp=Z,3.7nm,0.8s,baz=301,slow=1.5,SNR=18								
CMAR				PKPab		PKPab		10 25 18.4	-2.2
	comp=Z,5.6nm,1.0s,baz=337,slow=5.2,SNR=14								
CMAR				pPKPab				10 25 38.0	
	comp=Z,2.0nm,0.9s,baz=338,slow=6.2,SNR=3.1								

*HEL **25** 10:32:18.3±0.4,59.67N×22.50E,ML2.1,ML2.5(UPP), ML2.2(NAO),Explosion*
*BER **25** 10:32:18.9±3.3,59.90N×22.24E,ML2.2(NAO), Suspected explosion*
*IDC **25** 10:32:18.9±1.7,59.93N×22.32E,mb1 3.0/4, mb1mx2.9/21,ML2.7/4,Error ellipse: s-maj=22.9km s-min=6.0km az=160.0*
*NAO **25** 10:32:20.2±2.4,60.11N×22.09E,ML2.2*

ISC 25 10:32:16.9±1.0,60.1N±0.1×22.21E±0.07,n18,σ1^{2}25/26, Finland

Code	Station Name	Δ°	AZ°	Phase ID		ISC	Time h m s	Res ISC
MEF	**Metsahovi**	**1.10**	**82**	*eP*		**Pb**	**10 32 38.0**	**-0.5**
MEF				*eS*		**Sb**	**10 32 51.2**	**-2.1**
PVF	**Pernaja**	**1.87**	**74**	*eP*		**Pn**	**10 32 52.0**	**+1.5**
PVF				*eS*		**Sn**	**10 33 15.9**	**+0.7**
FIA0	**FINESS Array S**	**2.33**	**53**	*eP*		**Pn**	**10 33 00.6**	**+3.5**
FIA0				*eS*		**Sn**	**10 33 31.8**	**+4.8**
FIA0				MSG			10 33 36.9	
	comp=Z,8.9nm,0.1s							
FIA0	**FINESS Array S**	**2.33**	**53**	Pn		**Pn**	**10 33 00.7**	**+3.6**
	baz=231,slow=14							
FIA0				Lg			10 33 32.9	
	baz=227,slow=22							
FIA0				Rg			10 33 48.4	
	baz=224,slow=37							
FINES	**FINESS Array B**	**2.33**	**53**	Pn		**Pn**	**10 33 00.7**	**+3.6**
	comp=Z,1.4nm,0.3s,baz=226,slow=13,SNR=46							
FINES				Lg			10 33 32.5	
	comp=Z,3.2nm,0.3s,baz=232,slow=23,SNR=23							
FINES				Rg			10 33 48.5	
	comp=Z,10.0nm,0.7s,baz=218,slow=34,SNR=12							
KEF	**Keuruu**	**2.45**	**31**	*eS*		**Sn**	**10 33 36.9**	**+7.0**
KEF				MSG			10 33 41.3	
	comp=Z,6.5nm,0.1s							
VJF	**Virojoki**	**2.70**	**78**	*e*SG		**Sg**	**10 33 40.4**	**-6.4**
KAF	**Kangasniemi**	**2.84**	**43**	MSG			10 33 49.3	
	comp=Z,3.7nm,0.1s							
VAF	**Ylistaro**	**2.97**	**4**	*eS*		**Sn**	**10 33 52.2**	**+9.1**
HFS	**Hagfors**	**4.26**	**274**	*eP*		**Pn**	**10 33 24.9**	**+0.3**
HFS				*e*SB		**Sb**	**10 34 29.5**	**+4.4**
HFS	**Hagfors**	**4.26**	**274**	Pn		**Pn**	**10 33 25.2**	**+0.7**
	comp=Z,0.0nm,0.3s,baz=102,slow=12,SNR=12							
HFS				Pg		**Pg**	**10 33 33.5**	**-8.5**
	comp=Z,0.1nm,0.3s,baz=93,slow=14,SNR=7.7							
HFS				Sn		**Sn**	**10 34 16.2**	**+0.5**
	comp=Z,0.1nm,0.3s,baz=84,slow=28,SNR=2.6							
HFS				Lg			10 34 30.5	
	comp=Z,0.1nm,0.3s,baz=92,slow=30,SNR=4.8							
HFS	**Hagfors**	**4.26**	**274**	Pn		**Pn**	**10 33 24.9**	**+0.3**
	baz=97,slow=9.3							
HFS				Lg			10 34 29.5	
	baz=100,slow=37							
NOA	**NORSAR Array B**	**5.51**	**285**	Pn		**Pn**	**10 33 42.1**	**-0.1**
	comp=Z,0.2nm,0.3s,baz=77,slow=12,SNR=2.9							
NOA				Sn		**Sn**	**10 34 45.4**	**-1.7**
	comp=Z,0.2nm,0.3s,baz=41,slow=23,SNR=2.4							
NOA				Lg			10 35 12.2	
	comp=Z,0.4nm,0.3s,baz=120,slow=19,SNR=3.0							

ARA0	**ARCESS Array S**	**9.59**	**7**	Pn		**P**		**10 34 38.3**	**-0.7**
	baz=180,slow=16								
ARA0				Sn		**Sn**		**10 36 23.8**	**-4.9**
	baz=194,slow=28								
ARA0	**ARCESS Array S**	**9.59**	**7**	*eP*		**P**		**10 34 38.3**	**-0.7**
ARA0				*e*				10 36 23.8	
ARCES	**ARCESS Array B**	**9.59**	**7**	Pn		**P**		**10 34 38.3**	**-0.7**
	comp=Z,0.1nm,0.3s,baz=184,slow=13,SNR=10								
ARCES				Sn		**Sn**		**10 36 23.9**	**-4.8**
	comp=Z,0.1nm,0.3s,baz=186,slow=25,SNR=2.9								
SPA0	**Spitsbergen Ar**	**18.27**	**356**	P		**P**		**10 36 35.2**	**+2.1**
	baz=164,slow=9.3								
SPA0	**Spitsbergen Ar**	**18.27**	**356**	*eP*		**P**		**10 36 35.2**	**+2.1**

*NEIC **25** 10:35:22.1±0.3,43.40N×17.50E,h10^{km},MD3.4(PDG), MD3.3(ROM),ML3.9(BUD),ML3.4(ZAG),ML3.3(LDG), Error ellipse: s-maj=4.3km s-min=3.5km az=223.0*
*ROM **25** 10:35:22.0±0.5,43.44N×17.59E,h10^{km},MD3.3/16, ML3.3/13,Error ellipse: s-maj=4.6km s-min=3.0km az=90.0*
*LDG **25** 10:35:30.8±1.3,43.79N×16.85E,h10^{km},MI3.3/7,Error ellipse: s-maj=34.4km s-min=14.1km az=149.0*

ISC 25 10:35:21.5±0.2,43.43N±0.02×17.45E±0.02,h10^{km},n88, σ1^{2}28/135,11C-13D,Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID		ISC	Time h m s	Res ISC
STON	**Ston**	**0.59**	**161**	*i* Pg		**Pg**	**10 35 32.1**	**-1.2**
STON				*i* Sg		**Sg**	**10 35 41.3**	**+0.1**
BRY	**Bratogost**	**0.96**	**123**	⇓*i*Pg		**Pg**	**10 35 38.4**	**-2.3**
BRY				*e*Sg		**Sg**	**10 35 53.1**	**-0.5**
UPM	**Unac-Piva**	**1.09**	**101**	⇓*i*Pg		**Pg**	**10 35 41.4**	**-2.0**
UPM				*e*Sg		**Sg**	**10 35 58.7**	**+0.8**
HCY	**Herceg Novi**	**1.25**	**141**	⇓*i*Pg		**Pg**	**10 35 43.6**	**-2.8**
HCY				*e*Sg		**Sg**	**10 36 02.4**	**-0.7**
NKY	**Niksic**	**1.29**	**118**	*e*Pg		**Pg**	**10 35 44.9**	**-2.4**
NKY				*e*Sg		**Sg**	**10 36 04.6**	**0.0**
PLE	**Pljevlja**	**1.43**	**93**	⇓*i*Pg		**Pg**	**10 35 48.0**	**-2.0**
PLE				*e*Sg		**Sg**	**10 36 10.0**	**+1.0**
BUM	**Brajici-Budva**	**1.55**	**136**	⇓*i*Pg		**Pg**	**10 35 48.8**	**-3.7**
BUM				*e*Sg		**Sg**	**10 36 12.8**	**-0.4**
NVSS	**Nova Varos 2**	**1.64**	**86**	⇑*i*Pn		**Pn**	**10 35 53.6**	**+3.0**
NVSS				Sn		**Sn**	**10 36 18.5**	**+6.5**
TTG	**Podgorica**	**1.67**	**126**	⇓*i*Pn		**Pn**	**10 35 51.9**	**+0.9**
TTG				*e*Sn		**Sn**	**10 36 14.4**	**+3.9**
IVA	**Berane**	**1.88**	**106**	*e*Pn		**Pn**	**10 35 56.0**	**+2.0**
IVA				*e*Sn		**Sn**	**10 36 22.6**	**+4.7**
DIVS	**Divcibare**	**1.96**	**69**	⇑*i*Pn		**Pn**	**10 35 55.0**	**-0.2**
DIVS				Sn		**Sn**	**10 36 21.7**	**+1.6**
ULC	**Ulcinj**	**1.98**	**137**	⇓*i*Pn		**Pn**	**10 35 56.3**	**+0.9**
ULC				*e*Sn		**Sn**	**10 36 24.0**	**+3.6**
PVY	**Plav**	**2.03**	**113**	⇓*i*Pn		**Pn**	**10 35 58.4**	**+2.2**
PVY				*e*Sn		**Sn**	**10 36 26.4**	**+4.6**
FGMS	**Monte Sant'Ang**	**2.04**	**213**	*e*PN		**Pn**	**10 35 58.6**	**+2.3**
FGMS				SN		**Sn**	**10 36 23.0**	**+0.

SBF	**Sospel**	**7.28 277**	*e*Pn	**Pn**	**10 37 08.5**	**-2.0**
SBF			*e*Sn	**Sn**	**10 38 22.4**	**-12**
	3.9nm,0.3s					
MBDF	**Montbardon**	**7.80 283**	*e*Pn	**Pn**	**10 37 15.8**	**-1.9**
MBDF			*e*Sn	**Sn**	**10 38 33.9**	**-13**
	4.4nm,0.4s					
FRF	**La Foret Royal**	**7.85 275**	*e*Pn	**Pn**	**10 37 15.7**	**-2.9**
FRF			*e*Sn	**Sn**	**10 38 36.8**	**-12**
	1.0nm,0.2s					
LPG	**La Plagne**	**7.92 289**	*e*Pn	**Pn**	**10 37 15.7**	**-3.9**
LPG			*e*Sn	**Sn**	**10 38 32.2**	**-18**
	8.0nm,0.5s					
LPL	**La Plagne**	**7.94 289**	*e*Pn	**Pn**	**10 37 16.7**	**-3.1**
LPL			*e*Sn	**Sn**	**10 38 31.6**	**-19**
	8.9nm,0.4s					
LMR	**La Mourre**	**7.97 273**	*e*Pn	**Pn**	**10 37 18.5**	**-1.7**
LMR			*e*Sn	**Sn**	**10 38 39.3**	**-12**
	0.7nm,0.2s					
ORIF	**Oris-en-Rattie**	**8.45 284**	*e*Pn	**P**	**10 37 24.5**	**-2.3**
ORIF			*e*Sn	**Sn**	**10 38 49.9**	**-13**
	4.4nm,0.4s					
CABF	**La Chapelle**	**8.65 296**	*e*Pn	**P**	**10 37 25.5**	**-4.2**
CDF	**Champ du Feu**	**8.66 309**	*e*Pn	**P**	**10 37 25.8**	**-4.0**
VIVF	**Saint-Julien-l**	**9.30 283**	*e*Pn	**P**	**10 37 35.2**	**-3.4**

NEIC ***25*** *10:39:20.0, 15.37N×96.85W, h16km, MD3.9(MEX), After MEX.*

MEX ***25*** *10:39:20.3±0.6, 15.38N×96.85W, h16km±17km, MD3.9*

ISC 25 10:39:17.1±2.1**, 15.5N**±0.1×**96.85W**±0.07**, h16**km**, n4,** σ0§**48/8, Near coast of Oaxaca**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	**Pinotepa**	**1.54**	**307**	*i* P	**Pn**	**10 39 44.2**	**+0.1**
PNIG				*i* S	**Sn**	**10 40 03.1**	**-0.7**
VHO	**Vista Hermosa**	**1.60**	**4**	*e*P	**Pn**	**10 39 45.5**	**+0.4**
VHO				*i* S	**Sn**	**10 40 05.3**	**-0.2**
OXX	**Oaxaca**	**1.61**	**4**	*i* P	**Pn**	**10 39 45.8**	**+0.6**
OXX				*i* S	**Sn**	**10 40 06.2**	**+0.5**
CMIG	**Matias Romero**	**2.49**	**49**	*e*P	**Pn**	**10 39 57.8**	**0.0**
CMIG				*i* S	**Sn**	**10 40 27.2**	**-0.8**

IDC ***25*** *10:42:53.9±0.9, 43.47N×17.56E, mb3.8/7, mb1 3.9/17, mb1mx3.8/29, ML3.7/10, Error ellipse: s-maj=17.3km s-min=10.7km az=61.0, Putative timing error at GNI and EIL*

NEIC ***25*** *10:42:55.9±0.2, 43.40N×17.43E, h10km, MD3.5(ROM), ML3.8(ZAG), ML3.7(PDG), ML3.7(BUD), Error ellipse: s-maj=3.7km s-min=2.6km az=220.0*

ROM ***25*** *10:42:55.8±0.6, 43.37N×17.56E, h10km, MD3.5/28, ML3.8/23, Error ellipse: s-maj=5.8km s-min=2.9km az=90.0*

LDG ***25*** *10:42:57.1±0.3, 43.56N×17.48E, h10km, Ml4.0/13, Error ellipse: s-maj=6.7km s-min=5.4km az=174.0*

PRU ***25*** *10:42:57.4, 43.52N×17.43E*

STR ***25*** *10:42:57.1±0.0, 43.56N×17.48E, h10km±1km, Ml4.0, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*

ISC 25 10:42:54.2±0.4**, 43.43N**±0.01×**17.42E**±0.02**, h8**km±3km**, n184,** σ1§**29**/255**, mb3.6**/6**, 29C-3D, Northwestern Balkan Peninsula**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STON	**Ston**		**0.59**	**159** *i* Pg	**Pg**	**10 43 05.6**	**-0.5**
STON				*i* Sg	**Sg**	**10 43 14.8**	**+0.9**
BRY	**Bratogost**		**0.98**	**122**⇑ *i* Pg	**Pg**	**10 43 12.7**	**-1.1**
BRY				*e*Sg	**Sg**	**10 43 26.7**	**-0.1**
UPM	**Unac-Piva**		**1.11**	**101**⇑ *i* Pg	**Pg**	**10 43 15.7**	**-0.7**
UPM				*e*Sg	**Sg**	**10 43 32.6**	**+1.3**
HCY	**Herceg Novi**		**1.26**	**141**⇑ *i* Pg	**Pg**	**10 43 17.5**	**-1.9**
HCY				*e*Sg	**Sg**	**10 43 36.0**	**-0.2**
NKY	**Niksic**		**1.31**	**117**⇑ *i* Pg	**Pg**	**10 43 19.1**	**-1.3**
NKY				*e*Sg	**Sg**	**10 43 38.6**	**+0.8**
PLE	**Pljevlja**		**1.45**	**93**⇑ *i* Pg	**Pg**	**10 43 21.9**	**-1.1**
PLE				*e*Sg	**Sg**	**10 43 44.0**	**+1.7**
BUM	**Brajici-Budva**		**1.56**	**135**⇑ *i* Pg	**Pg**	**10 43 23.5**	**-2.0**
BUM				*e*Sg	**Sg**	**10 43 46.1**	**-0.3**
NVSS	**Nova Varos 2**		**1.67**	**86**⇑ *i* Pn	**Pn**	**10 43 27.3**	**+3.3**
NVSS				Sn	**Sn**	**10 43 52.6**	**+6.9**
TTG	**Podgorica**		**1.68**	**126**⇑ *i* Pn	**Pn**	**10 43 26.1**	**+1.9**
TTG				*e*Sn	**Sn**	**10 43 50.4**	**+4.3**
IVA	**Berane**		**1.90**	**106**⇑ *i* Pn	**Pn**	**10 43 30.5**	**+3.2**
IVA				*e*Sn	**Sn**	**10 43 57.2**	**+5.6**
DIVS	**Divcibare**		**1.98**	**69**⇑ *i* Pn	**Pn**	**10 43 28.9**	**+0.4**
DIVS				Sn	**Sn**	**10 43 56.5**	**+2.7**
ULC	**Ulcinj**		**1.99**	**137**⇑ *i* Pn	**Pn**	**10 43 30.5**	**+1.9**
ULC				*e*Sn	**Sn**	**10 43 57.9**	**+4.0**
FGMS	**Monte Sant'Ang**		**2.03**	**213** *e*PN	**Pn**	**10 43 29.2**	**+0.1**
FGMS				SN	**Sn**	**10 43 54.6**	**-0.3**
FGMS	**Monte Sant'Ang**		**2.03**	**213** *e*Pn	**Pn**	**10 43 29.2**	**+0.1**
FGMS				*e*Sn	**Sn**	**10 43 54.6**	**-0.4**
PVY	**Plav**		**2.05**	**113**⇑ *i* Pn	**Pn**	**10 43 32.4**	**+2.9**
PVY				*e*Sn	**Sn**	**10 44 00.6**	**+5.1**
NVLJ	**Novalja**		**2.16**	**303** *i* Pn	**Pn**	**10 43 32.7**	**+1.7**
NVLJ				*i* Sn	**Sn**	**10 43 59.9**	**+1.6**
SISC	**Sisak**		**2.18**	**340** *i* Pn	**Pn**	**10 43 32.8**	**+1.5**
SISC				*i* Sn	**Sn**	**10 44 00.6**	**+1.9**
RGNG	**Rignano Grg**		**2.21**	**218** *e*PN	**Pn**	**10 43 31.1**	**-0.7**
RGNG				SN	**Sn**	**10 44 00.0**	**+0.4**
RGNG	**Rignano Grg**		**2.21**	**218** *e*Pn	**Pn**	**10 43 31.1**	**-0.6**
RGNG				*e*Sn	**Sn**	**10 44 00.0**	**+0.4**
FG2	**Serracapriola**		**2.32**	**227** *e*PN	**Pn**	**10 43 33.6**	**+0.2**
FG2				SN	**Sn**	**10 44 00.3**	**-2.1**
	635nm,0.3s						
FG2	**Serracapriola**		**2.32**	**227** *e*Pn	**Pn**	**10 43 33.6**	**+0.2**
FG2				*e*Sn	**Sn**	**10 44 00.3**	**-2.1**
GRUS	**Gruza**		**2.44**	**78**⇑ *i* Pn	**Pn**	**10 43 35.8**	**+0.8**
GRUS				Sn	**Sn**	**10 44 04.9**	**-0.4**
RHK3	**Tenkes**		**2.53**	**13**⇑ *e*P	**Pn**	**10 43 35.9**	**-0.5**
RHK3				*e*S	**Sn**	**10 44 04.6**	**-3.2**
BRT	**Bari-Castellan**		**2.55**	**184** *e*PN	**Pn**	**10 43 35.7**	**-0.9**
BRT				SN	**Sn**	**10 44 07.7**	**-0.5**
	213nm,0.2s						
BRT	**Bari-Castellan**		**2.55**	**184** *e*Pn	**Pn**	**10 43 35.7**	**-0.9**
BRT				*e*Sn	**Sn**	**10 44 07.7**	**-0.5**
VBY	**Vinica-Bojanci**		**2.59**	**324** *e*Sn	**Sn**	**10 44 13.0**	**+3.8**
BOJS	**Bojanci**		**2.59**	**324** *e*Pn	**Pn**	**10 43 38.9**	**+1.7**
BEO	**Belgrade**		**2.59**	**56** *e*Pn	**Pn**	**10 43 38.7**	**+1.4**
BEO				Sn	**Sn**	**10 44 10.8**	**+1.4**
FG5	**Orsara di Pugl**		**2.67**	**217** *e*PN	**Pn**	**10 43 38.5**	**+0.2**
	323nm,0.6s						
FG5	**Orsara di Pugl**		**2.67**	**217** *e*Pn	**Pn**	**10 43 38.5**	**+0.2**
FG4	**Candela**		**2.69**	**212** *e*PN	**Pn**	**10 43 39.5**	**+0.9**
	122nm,0.4s						
RHK1	**Bakonya**		**2.71**	**10**⇑ *e*P	**Pn**	**10 43 38.5**	**-0.4**
RHK1				*e*S	**Sn**	**10 44 10.7**	**-1.5**
CII	**Carovilli**		**2.86**	**235** *e*P	**Pn**	**10 43 41.4**	**+0.4**
SVIS	**Svilajnac**		**2.89**	**71**⇑ *i* Pn	**Pn**	**10 43 41.9**	**+0.5**
SVIS				Sn	**Sn**	**10 44 17.0**	**+0.3**
VISS	**Visnje**		**3.01**	**323** *e*Pn	**Pn**	**10 43 44.6**	**+1.4**
CING	**Cingoli**		**3.08**	**271** *e*PN	**Pn**	**10 43 46.4**	**+2.3**
CING	**Cingoli**		**3.08**	**271** *e*Pn	**Pn**	**10 43 46.4**	**+2.3**
CSSN	**Cassano Irpino**		**3.12**	**216** *e*PN	**Pn**	**10 43 45.1**	**+0.4**
	149nm,0.5s						
CSSN	**Cassano Irpino**		**3.12**	**216** *e*Pn	**Pn**	**10 43 45.1**	**+0.4**
AQU	**L'Aquila**		**3.14**	**251** *e*P	**Pn**	**10 43 45.7**	**+0.7**
CEY	**Cerknica**		**3.15**	**318** *e*Pn	**Pn**	**10 43 47.0**	**+1.9**
CEY				*e*Sn	**Sn**	**10 44 27.4**	**+4.0**
SDI	**San Donato**		**3.17**	**238** *e*PN	**Pn**	**10 43 45.9**	**+0.5**
	194nm,0.4s						
PKS9	**Tamasi**		**3.22**	**11**⇑ *i* P	**Pn**	**10 43 46.3**	**+0.1**
ARV	**Arcevia**		**3.26**	**273** *e*PN	**Pn**	**10 43 47.2**	**+0.5**
	64nm,0.5s						
SGO	**Sicignano**		**3.27**	**209** *e*PN	**Pn**	**10 43 46.9**	**+0.1**
	69nm,0.2s						
SGO	**Sicignano**		**3.27**	**209** *e*Pn	**Pn**	**10 43 46.9**	**+0.1**
SNTG	**Esanatoglia**		**3.27**	**269** *e*PN	**Pn**	**10 43 47.5**	**+0.6**
	66nm,0.3s						
SNTG	**Esanatoglia**		**3.27**	**269** *e*Pn	**Pn**	**10 43 47.5**	**+0.7**
PTQR	**Pietraquaria**		**3.27**	**246** *e*PN	**Pn**	**10 43 48.1**	**+1.2**
PTQR	**Pietraquaria**		**3.27**	**246** *e*Pn	**Pn**	**10 43 48.1**	**+1.1**
SKO	**Skopje**		**3.30**	**115** *i* Pn	**Pn**	**10 43 53.0**	**+5.7**
SKO				Lg		10 44 52.5	
	comp=Z,0.1nm,0.6s						
SLCN	**Sala Consilina**		**3.31**	**204** *e*PN	**Pn**	**10 43 47.8**	**+0.3**
	comp=Z,82nm,0.3s						
SLCN	**Sala Consilina**		**3.31**	**204** *e*Pn	**Pn**	**10 43 47.8**	**+0.3**
BOLS	**Boljevac**		**3.32**	**81**⇑ *i* Pn	**Pn**	**10 43 47.9**	**+0.3**
BOLS				Sn	**Sn**	**10 44 28.1**	**+0.3**
LJU	**Ljubljana**		**3.33**	**323** *e*Pn	**Pn**	**10 43 49.3**	**+1.5**
LJU				*e*		10 44 00.0	
LJU				*e*Sn	**Sn**	**10 44 33.8**	**+5.8**
FSSB	**Fossombrone**		**3.38**	**276** *e*PN	**Pn**	**10 43 49.0**	**+0.5**
FSSB	**Fossombrone**		**3.38**	**276** *e*Pn	**Pn**	**10 43 49.0**	**+0.5**
ORI	**Oriolo Calabro**		**3.44**	**192** *e*PN	**Pn**	**10 43 49.2**	**0.0**
	comp=Z,203nm,0.4s						
JAVS	**Javornik**		**3.44**	**317** *i* Pn	**Pn**	**10 43 50.8**	**+1.5**
PKS8	**Sarbogard**		**3.57**	**14**⇓ *e*P	**Pn**	**10 43 50.2**	**-0.9**
MGR	**Morigerati**		**3.57**	**204** *e*PN	**Pn**	**10 43 47.9**	**-3.2**
	comp=Z,56nm,0.4s						
MURB	**Monte Urbino**		**3.57**	**269** *e*PN	**Pn**	**10 43 52.3**	**+1.1**
MURB	**Monte Urbino**		**3.57**	**269** *e*Pn	**Pn**	**10 43 52.3**	**+1.2**
CERT	**Cerreto**		**3.59**	**247** *e*PN	**Pn**	**10 43 51.6**	**+0.2**
CERT	**Cerreto**		**3.59**	**247** *e*Pn	**Pn**	**10 43 51.6**	**+0.2**
PERS	**Pernice**		**3.60**	**334** *e*Pn	**Pn**	**10 43 52.2**	**+0.6**
VOY	**Vojsko**		**3.62**	**317** *e*Pn	**Pn**	**10 43 53.0**	**+1.2**
VOY				*e*Sn	**Sn**	**10 44 38.0**	**+2.7**
MNS	**Montasola**		**3.63**	**255** *e*PN	**Pn**	**10 43 52.8**	**+0.8**
	comp=Z,103nm,0.4s						
MNS	**Montasola**		**3.63**	**255** *e*Pn	**Pn**	**10 43 52.8**	**+0.9**
OBKA	**Obir**		**3.69**	**328**⇑ *i* PN	**Pn**	**10 43 54.3**	**+1.4**
OBKA				*i* SN	**Sn**	**10 44 38.3**	**+1.1**
TDS	**Terranova Siba**		**3.85**	**193** *e*PN	**Pn**	**10 43 54.7**	**-0.4**
	comp=Z,44nm,0.4s						
TDS	**Terranova Siba**		**3.85**	**193** *e*Pn	**Pn**	**10 43 54.7**	**-0.3**
FNA	**Florina**		**3.96**	**131** *e*P	**Pn**	**10 43 57.1**	**+0.5**
ROBS	**Robic**		**3.96**	**317** *i* Pn	**Pn**	**10 43 57.4**	**+0.8**
CRE	**Caprese Michel**		**3.98**	**275** *e*PN	**Pn**	**10 43 58.7**	**+1.8**
	comp=Z,39nm,0.4s						
CRE	**Caprese Michel**		**3.98**	**275** *e*Pn	**Pn**	**10 43 58.7**	**+1.8**
PKSG			**4.03**	**9**⇑ *i* P	**Pn**	**10 43 57.6**	**0.0**
ARSA	**Arzberg**		**4.05**	**341**⇑ *i* PN	**Pn**	**10 43 58.1**	**+0.1**
ARSA				*i* SN	**Sn**	**10 44 44.8**	**-1.4**
SFI	**Santa Sofia**		**4.07**	**279** *e*PN	**Pn**	**10 43 59.5**	**+1.3**
	comp=Z,78nm,0.7s						
SFI	**Santa Sofia**		**4.07**	**279** *e*Pn	**Pn**	**10 43 59.5**	**+1.3**
GMNA	**Gemona**		**4.12**	**315** *e*PN	**Pn**	**10 43 59.8**	**+0.9**
	comp=Z,399nm,0.6s						
GMNA	**Gemona**		**4.12**	**315** *e*Pn	**Pn**	**10 43 59.8**	**+0.9**
PTCC	**Patocco-Chiusa**		**4.15**	**317** *e*PN	**Pn**	**10 44 00.1**	**+0.8**
	comp=Z,125nm,0.7s						
PGD	**Poggio Sodo**		**4.16**	**278** *e*PN	**Pn**	**10 44 00.6**	**+1.1**
	comp=Z,45nm,0.4s						
VMG	**Vicchio**		**4.29**	**279** *e*PN	**Pn**	**10 44 02.7**	**+1.3**
	comp=Z,191nm,0.7s						
VMG	**Vicchio**		**4.29**	**279** *e*Pn	**Pn**	**10 44 02.7**	**+1.3**
SOP	**Sopron**		**4.30**	**352**⇑ *i* Pn	**Pn**	**10 44 02.5**	**+1.0**
SOP				*e*Sn	**Sn**	**10 44 51.7**	**-0.8**
SRO	**Srobarova**		**4.43**	**8** *i* PN	**Pn**	**10 44 03.2**	**-0.2**
SEI	**Scarperia**		**4.44**	**280** *e*PN	**Pn**	**10 44 06.2**	**+2.8**
	comp=Z,156nm,0.4s						
SEI	**Scarperia**		**4.44**	**280** *e*Pn	**Pn**	**10 44 06.2**	**+2.8**
GRG	**Griva**		**4.45**	**122** *e*P	**Pn**	**10 44 03.6**	**0.0**
IGT	**Igoumenitsa**		**4.46**	**150** P	**Pn**	**10 44 02.6**	**-1.2**
IGT				S	**Sn**	**10 44 54.7**	**-2.0**
MEV	**Metsovon**		**4.62**	**141** *e*P	**Pn**	**10 44 08.2**	**+2.1**
KBA	**Koelnbreinsper**		**4.65**	**323**⇑ *i* PN	**Pn**	**10 44 07.9**	**+1.5**
KBA				*i* SN	**Sn**	**10 45 01.9**	**+0.6**
KNT	**Kendrikon**		**4.65**	**117** *e*P	**Pn**	**10 44 07.4**	**+0.9**
GRI	**Girifalco**		**4.66**	**190** *e*PN	**Pn**	**10 44 06.7**	**+0.1**
	comp=Z,59nm,0.4s						
GRI	**Girifalco**		**4.66**	**190** *e*Pn	**Pn**	**10 44 06.7**	**+0.1**
ZST	**Bratislava**		**4.78**	**357** *i* PN	**Pn**	**10 44 08.2**	**-0.1**
PSZ	**Piszkesteto**		**4.82**	**20**⇓ *e*PN	**Pn**	**10 44 07.6**	**-1.2**
PSZ				*e*Sn	**Sn**	**10 45 01.6**	**-4.0**
CTI	**Castel Tesino**		**4.87**	**305** *e*PN	**Pn**	**10 44 09.1**	**-0.5**
	comp=Z,106nm,0.6s						
CTI	**Castel Tesino**		**4.87**	**305** *e*Pn	**Pn**	**10 44 09.1**	**-0.5**
MOA	**Molln**		**4.95**	**335**⇑ *i* PN	**Pn**	**10 44 11.1**	**+0.5**
MOA				*i* SN	**Sn**	**10 45 08.7**	**-0.1**
BDI	**Bagni Di Lucca**		**4.98**	**280** *e*PN	**Pn**	**10 44 12.0**	**+0.8**
	comp=Z,18nm,0.3s						
BDI	**Bagni Di Lucca**		**4.98**	**280** *e*Pn	**Pn**	**10 44 12.0**	**+0.8**
PII	**Pisa**		**5.02**	**276** *e*PN	**Pn**	**10 44 11.4**	**-0.2**
LIT	**Litokhoron**		**5.04**	**129** *e*P	**Pn**	**10 44 12.4**	**+0.4**
SRS	**Serrai**		**5.13**	**115** *e*P	**Pn**	**10 44 14.2**	**+0.9**
VYHS	**Vyhne**		**5.17**	**11** *i* PN	**Pn**	**10 44 13.1**	**-0.6**
VYHS				*e*SN	**Sn**	**10 45 13.8**	**-0.5**
KOLL	**Kolacno**		**5.20**	**7** *e*PN	**Pn**	**10 44 13.5**	**-0.7**
KOLL				*e*SN	**Sn**	**10 45 11.7**	**-3.5**
BGLD	**Berchtesgaden**		**5.24**	**325**⇑ *i* PN	**Pn**	**10 44 16.0**	**+1.2**
LKD	**Levkas**		**5.31**	**152** *e*P	**Pn**	**10 44 14.4**	**-1.4**
LKD	**Levkas**		**5.31**	**152** P	**Pn**	**10 44 14.4**	**-1.4**
LKD				S	**Sn**	**10 45 14.4**	**-3.5**
SCE	**Schlegeis**		**5.41**	**314** *e*Pn	**Pn**	**10 44 17.5**	**+0.3**
WTTA	**Wattenberg**		**5.60**	**315**⇓ *i* PN	**Pn**	**10 44 20.5**	**+0.7**
WTTA				*i* SN	**Sn**	**10 45 26.5**	**+1.3**
WATA	**Walderalm**		**5.67**	**316**⇑ *i* PN	**Pn**	**10 44 21.7**	**+0.8**
WATA				*i* SN	**Sn**	**10 45 27.9**	**+0.8**
AGG	**Agios Georgios**		**5.75**	**138** *e*P	**Pn**	**10 44 21.7**	**-0.3**
AGG	**Agios Georgios**		**5.75**	**138** P	**Pn**	**10 44 21.7**	**-0.3**
AGG				S	**Sn**	**10 45 25.4**	**-3.6**
OUR	**Ouranopolis**		**5.79**	**120** *e*P	**Pn**	**10 44 23.2**	**+0.7**
SQTA	**Sankt Quirin**		**5.79**	**313**⇓ *i* PN	**Pn**	**10 44 23.5**	**+0.9**
SQTA				*i* SN	**Sn**	**10 45 31.4**	**+1.3**
PAIG	**Paliouri**		**5.85**	**125** *e*P	**Pn**	**10 44 22.5**	**-0.9**
VRAC	**Vranov**		**5.91**	**355** Pn	**Pn**	**10 44 23.3**	**-1.0**
	comp=Z,0.7nm,0.3s,baz=210,slow=14,SNR=2.1						
VRAC				Sn	**Sn**	**10 45 30.6**	**-2.4**
	comp=Z,4.3nm,0.3s,baz=102,slow=7.2,SNR=9.7						
MOTA	**Moosalm**		**5.93**	**314**⇑ *i* PN	**Pn**	**10 44 25.2**	**+0.7**
MOTA				*i* SN	**Sn**	**10 45 34.5**	**+1.1**
XOR	**Xorichti**		**5.94**	**131** *e*P	**Pn**	**10 44 24.0**	**-0.7**
GEC2	**GERESS Array S**		**6.00**	**336** *e*Pn	**Pn**	**10 44 25.9**	**+0.3**
GEC2				*e*Sn	**Sn**	**10 45 34.9**	**-0.5**
GERES	**GERESS Array B**		**6.00**	**336** Pn	**Pn**	**10 44 25.7**	**+0.1**
	comp=Z,6.0nm,0.3s,baz=157,slow=14,SNR=88						
GERES				Sn	**Sn**	**10 45 32.4**	**-3.0**
	comp=Z,9.1nm,0.3s,baz=152,slow=24,SNR=12						
GERES				Lg		10 46 08.4	
	baz=159,slow=25,SNR=2.2						
CRVS	**Cervenica-Dubn**		**6.16**	**26** *i* PN	**Pn**	**10 44 27.6**	**-0.1**
PGF	**Pioggiola**		**6.24**	**265** *e*Pn	**Pn**	**10 44 28.2**	**-0.7**
KHC	**Kasperske Hory**		**6.30**	**336** *e*PN	**Pn**	**10 44 30.3**	**+0.6**
KHC				*e*SN	**Sn**	**10 45 38.5**	**-4.2**
DAVOX	**Davos**		**6.30**	**305** Pn	**Pn**	**10 44 30.1**	**+0.3**
	comp=Z,3.6nm,0.3s,baz=127,slow=16,SNR=20						
DAVOX				Sn	**Sn**	**10 45 41.9**	**-0.9**
	comp=Z,3.5nm,0.3s,baz=325,slow=21,SNR=3.2						
DAVOX				Lg		10 46 17.9	
	comp=Z,1.1nm,0.3s,baz=143,slow=20,SNR=2.4						
MORC	**Moravsky Berou**		**6.36**	**1** *e*P	**Pn**	**10 44 26.8**	**-3.8**
	comp=Z,7.5nm,0.6s						
VAE	**Valguarnera**		**6.37**	**202** Pn	**Pn**	**10 44 33.2**	**+2.5**
	comp=Z,1.5nm,0.3s,baz=101,slow=10,SNR=1.8						
OKC	**Ostrava-Krasne**		**6.43**	**4** *e*SN	**Sn**	**10 45 41.2**	**-4.9**
MLR	**Muntele Rosu**		**6.44**	**68** Pn	**Pn**	**10 44 31.6**	**-0.2**
	comp=Z,0.2nm,0.3s,baz=264,slow=18,SNR=2.0						
MLR				Sn	**Sn**	**10 45 46.6**	**+0.3**
	comp=Z,1.0nm,0.3s,baz=314,slow=19,SNR=5.6						
DAVA	**Damuels**		**6.56**	**309**⇑ *i* PN	**Pn**	**10 44 34.1**	**+0.6**
DAVA				*i* SN	**Sn**	**10 45 50.4**	**+1.0**
PRU	**Pruhonice**		**6.86**	**344** *e*PN	**Pn**	**10 44 37.4**	**-0.2**
ALN	**Alexandroupoli**		**6.89**	**109** *e*P	**Pn**	**10 44 38.8**	**+0.8**
DPC	**Dobruska-Polom**		**6.97**	**354** *e*SN	**Sn**	**10 45 55.2**	**-4.3**
SAOF	**Saorge**		**7.17**	**278** P	**Pn**	**10 44 43.9**	**+1.9**
SBF	**Sospel**		**7.25**	**277** *e*Pn	**Pn**	**10 44 41.3**	**-1.9**
	SNR=1.0						
SBF				*e*Sn	**Sn**	**10 45 59.1**	**-7.6**
	comp=Z,30nm,0.5s						
TOUF	**Mont Tournerai**		**7.39**	**278** P	**Pn**	**10 44 44.1**	**-1.0**
SPAK	**Spaichingen**		**7.63**	**311** P	**Pn**	**10 44 45.8**	**-2.7**
CALN	**Calern**		**7.65**	**276** P	**Pn**	**10 44 48.6**	**-0.1**
MBDF	**Montbardon**		**7.78**	**283** *e*Pn	**Pn**	**10 44 47.3**	**-3.2**
	SNR=1.0						
MBDF				*e*Sn	**Sn**	**10 46 11.7**	**-8.0**
	comp=Z,19nm,0.5s						
BRG	**Berggiesshubel**		**7.82**	**344** *e*P	**Pn**	**10 44 54.4**	**+3.3**
BRG				*e*		10 46 09.2	
BRG				*e*		10 46 16.0	
BRG				*i* Sg	Sg	10 46 38.6	-36
STU	**Stuttgart**		**7.82**	**316** *e*Pn	**Pn**	**10 44 50.8**	**-0.4**
FRF	**La Foret Royal**		**7.83**	**275** *e*Pn	**Pn**	**10 44 49.5**	**-1.8**
FRF				*e*Sn	**Sn**	**10 46 10.6**	**-11**
	comp=Z,12nm,0.4s,SNR=1.0						
LPG	**La Plagne**		**7.91**	**289** *e*Pn	**Pn**	**10 44 50.8**	**-1.5**
	SNR=1.0						
LPG				*e*Sn	**Sn**	**10 46 14.1**	**-8.8**
	comp=Z,32nm,0.6s,SNR=1.0						
LPL	**La Plagne**		**7.92**	**289** *e*Pn	**Pn**	**10 44 50.3**	**-2.2**
	SNR=1.0						
LPL				*e*Sn	**Sn**	**10 46 13.8**	**-10**
	comp=Z,24nm,0.4s,SNR=1.0						
LMR	**La Mourre**		**7.95**	**273** *e*Pn	**Pn**	**10 44 51.5**	**-1.4**
LMR				*e*Sn	**Sn**	**10 46 16.0**	**-8.0**
	comp=Z,3.5nm,0.3s						
FELD	**Feldberg**		**7.95**	**307** P	**Pn**	**10 44 51.7**	**-1.3**
MOX	**Moxa**		**8.23**	**333** *i* P	**Pn**	**10 44 56.1**	**-0.8**
MOX				S	**Sn**	**10 46 25.0**	**-6.1**
MOX	**Moxa**		**8.23**	**333** *e*Pn	**Pn**	**10 44 56.1**	**-0.8**
MOX				Sn	**Sn**	**10 46 25.5**	**-5.6**
LOMF	**Lomont**		**8.42**	**301** P	**Pn**	**10 45 00.0**	**+0.5**
ORIF	**Oris-en-Rattie**		**8.43**	**284** *e*Pn	**P**	**10 44 57.9**	**-1.7**
ORIF				*e*Sn	**Sn**	**10 46 27.7**	**-8.2**
	comp=Z,27nm,0.6s,SNR=1.0						
CLL	**Collm**		**8.44**	**341** *e*PN	**P**	**10 44 59.0**	**-0.7**
CLL				*e*		10 45 17.0	
CLL				*e*		10 46 15.0	
CLL				*e*SN	**Sn**	**10 46 31.0**	**-5.1**
CLL				*e*		10 46 59.0	
CLL				*e*SG	**Sg**	**10 47 40.0**	**+5.0**
MOF	**Molkenrain**		**8.46**	**305** P	**P**	**10 44 58.7**	**-1.2**
SMRF	**Simiane la Rot**		**8.60**	**278** *e*Pn	**P**	**10 44 58.2**	**-3.7**
HINF	**Hinteralfeld**		**8.61**	**304** *e*Pn	**P**	**10 44 59.8**	**-2.2**
HINF				*e*Sn	**Sn**	**10 46 29.4**	**-11**
	comp=Z,16nm,0.5s,SNR=1.0						
ECH	**Echery**		**8.62**	**307** P	**P**	**10 45 00.5**	**-1.7**
CABF	**La Chapelle**		**8.63**	**296** *e*Pn	**P**	**10 45 00.0**	**-2.4**
	SNR=1.0						
CABF				*e*Sn	**Sn**	**10 46 30.9**	**-10**
	comp=Z,10nm,0.5s						
CDF	**Champ du Feu**		**8.65**	**309** *e*Pn	**P**	**10 44 59.9**	**-2.7**
CDF				*e*Sn	**Sn**	**10 46 31.4**	**-10**
	comp=Z,11nm,0.6s						
HAU	**Haudompre**		**8.99**	**304** *e*Pn	**P**	**10 45 04.9**	**-2.5**
HAU				*e*Sn	**Sn**	**10 46 39.7**	**-10**
	comp=Z,23nm,0.6s,SNR=1.0						
VIVF	**Saint-Julien-l**		**9.28**	**283** *e*Pn	**P**	**10 45 07.1**	**-4.2**
VIVF				*e*Sn	**Sn**	**10 46 46.8**	**-10**
	comp=Z,6.7nm,0.5s						
THEF	**They Montfort**		**9.31**	**305** P	**P**	**

CLNS A 11 09 44.6
2µm,0.8s
CLNS Chul'man 1.01 335 *e*P **Pg 11 09 30.0 -0.5**
CLNS *e* 11 09 42.6
CLNS pmax pmax
comp=N,1µm,0.9s
CLNS pmax pmax
comp=Z,1µm,0.9s
CLNS pmax pmax
comp=E,220nm,0.7s
CLNS smax
comp=N,1µm,0.7s
CLNS smax
comp=E,2µm,0.8s
CLNS smax
comp=Z,580nm,0.8s
KROS Kirovskiy 1.67 153 *i* Pn **Pn 11 09 41.7 +2.0**
KROS *e*Pg **Pg 11 09 43.6 +0.1**
KROS AMB AMB 11 09 44.0
comp=Z,190nm,0.4s
KROS AMB AMB 11 09 44.0
comp=Z,200nm,0.4s
KROS AMB AMB 11 09 44.0
comp=Z,470nm,0.4s
KROS *e*Sg **Sg 11 10 05.6 -0.2**
BMKR Bomnak 2.18 122⇑*i*Pn **Pn 11 09 48.5 +1.4**
BMKR ⇑*i*Pg **Pg 11 09 52.8 -1.0**
BMKR AMB AMB 11 09 54.3
comp=Z,596nm,0.6s
BMKR AMB AMB 11 09 54.3
comp=Z,760nm,0.6s
BMKR sPg 11 09 56.7
BMKR *e*Sn **Sn 11 10 15.9 +1.5**
BMKR *e*Sg **Sg 11 10 22.0 -0.9**
ZEA Zeya 2.37 157 *e*Pn **Pn 11 09 51.6 +1.8**
ZEA *i* rx rx 11 09 53.6
ZEA ⇑*i*Pg **Pg 11 09 55.6 -2.0**
ZEA AMB AMB 11 09 57.0
comp=Z,700nm,1.0s
ZEA AMB AMB 11 09 57.3
comp=Z,310nm,0.3s
ZEA AMB AMB 11 09 57.3
comp=Z,600nm,0.3s
ZEA *i* Sn **Sn 11 10 20.2 +1.0**
ZEA *i* Sg **Sg 11 10 27.5 -1.7**
ZEA A 11 10 30.0
comp=Z,2µm,0.5s
ZEA A 11 10 30.0
comp=Z,2µm,0.5s
ZEA A 11 10 30.0
comp=Z,3µm,0.5s
ZEA A 11 10 30.0
comp=Z,2µm,0.5s
YASR Yasnyy 2.96 152⇑*e*Pn **Pn 11 10 00.2 +2.0**
YASR ⇑*i*Pg **Pg 11 10 06.3 -3.0**
YASR AMB AMB 11 10 16.3
comp=Z,130nm,0.7s
YASR AMB AMB 11 10 16.3
comp=Z,120nm,0.7s
YASR AMB AMB 11 10 16.3
comp=Z,160nm,0.7s
YASR *i* Sg **Sg 11 10 46.2 -2.6**
TUP Tupik 3.60 248 *e*Pn **Pn 11 10 08.1 +0.8**
TUP *e*Pg **Pg 11 10 16.8 -5.3**
TUP AMB AMB 11 10 18.5
comp=Z,400nm,0.7s
TUP *e*Sn **Sn 11 10 49.7 -0.7**
TUP *e*Sg **Sg 11 11 01.7 -8.5**
TUP A 11 11 14.7
comp=Z,567nm,1.0s
CRS Chara 4.23 286 *e*Pn **Pn 11 10 18.3 +2.1**
CRS *e*Pg **Pg 11 10 28.3 -6.3**
CRS AMB AMB 11 10 34.3
comp=Z,120nm,0.7s
CRS *e*Sg **Sg 11 11 20.6 -10**
EKMR Ekimchan 5.12 121⇑*e*Pn **Pn 11 10 30.0 +1.2**
EKMR sPn 11 10 38.6
EKMR ⇓*e*Pg **Pg 11 10 46.5 -5.8**
EKMR AMB AMB 11 10 50.0
comp=Z,26nm,0.3s
EKMR AMB AMB 11 10 50.0
comp=Z,23nm,0.3s
EKMR AMB AMB 11 10 50.0
comp=Z,36nm,0.3s
EKMR *e*rx rx 11 11 27.7
EKMR *e*rx rx 11 11 53.1
EKMR *e*Sg **Sg 11 11 55.6 -4.9**
EKMR A 11 12 06.0
comp=Z,457nm,0.3s
EKMR A 11 12 06.0
comp=Z,391nm,0.3s
YAK Yakutsk 6.47 17 *e*P **Pn 11 10 47.7 -0.2**
YAK pmax pmax
comp=E,5.0nm,0.9s
YAK pmax pmax
comp=Z,12nm,0.9s
YAK pmax pmax
comp=N,8.0nm,1.1s
YAK MLR MLR
comp=Z,77nm,14.0s
KLR Kul'dur 7.65 149 *e*Pn **Pn 11 11 04.3 -0.2**
KLR *e*rx rx 11 12 39.0
GRNR Gornyy 8.24 124 *e*Pn **P 11 11 15.0 +2.3**
GRNR *e*Sg **Sg 11 13 31.0 -14**
GRNR A 11 13 48.5
comp=Z,100nm,0.9s
GRNR A 11 13 48.5
comp=Z,105nm,0.9s
NKL Nikolayevsk 9.16 101 *e*rx rx 11 13 26.3
NKL *e*Sg **Sg 11 13 58.5 -17**
NKL A 11 14 11.1
comp=Z,130nm,0.8s
TYV Tymovskoe 11.33 109 *e*rx rx 11 15 00.0
UGL Uglegorsk 12.10 118 *e*rx rx 11 15 37.0
TEY Ternei 12.91 143 *e*rx rx 11 16 04.0
YSS Yuzh-Sakhalins 13.90 123 AMS AMS 11 18 09.0
comp=Z,200nm,13.0s
TIXI Tiksi 15.85 4 *e*P **P 11 12 52.6 -2.0**
MKAR Makanchi Array 28.16 270 P **P 11 15 04.4 +0.2**
comp=Z,0.8nm,0.8s,mb3.4,baz=59,slow=7.1,SNR=4.5
MKAR Makanchi Array 28.16 270 P **P 11 15 04.4 +0.1**
MKAR pmax pmax
comp=Z,1.0nm,0.8s
ILAR Eielson Array 40.76 41 P **P 11 16 53.0 +0.5**
comp=Z,0.6nm,1.0s,mb3.2,baz=286,slow=6.3,SNR=10
ILAR Eielson Array 40.76 41 P **P 11 16 53.0 +0.6**
ILAR pmax pmax
comp=Z,1.0nm,1.0s
FINES FINESS Array B 47.17 320 P **P 11 17 48.4 +4.4**
comp=Z,0.4nm,0.5s,mb3.6,baz=45,slow=11,SNR=3.9
WRA Warramunga Arr 75.92 172 P **P 11 20 58.3 -0.3**
comp=Z,0.3nm,0.5s,mb3.5,baz=352,slow=6.8,SNR=7.2

*NEIC **25** 11:10:46.7, 44.49N×6.79E, h2km, ML1.9(LDG), ML1.9(STR), After LDG.*
*LDG **25** 11:10:46.7±0.2, 44.49N×6.79E, h2km, Md1.8/1, Ml1.9/3, Error ellipse: s-maj=6.3km s-min=2.9km az=86.0*
*STR **25** 11:10:47.8±1.8, 44.63N×7.18E, h5km±1km, Ml1.9, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
ISC 25 11:10:46.7±1.0**, 44.53N**±0.05×**6.80E**±0.07**, h22**km±13km**, n8, σ0°64/14, France**

Code	Station Name	Δ°	AZ°	Phase	ID		Time			Res
				Op		ISC	h	m	s	ISC
MBDF	**Montbardon**	**0.20**	**354**	*e*Pg		**Pb**	**11**	**10**	**51.9**	**-0.1**
MBDF				*e*Sg		**Sb**	**11**	**10**	**55.5**	**-0.1**
	3.9nm,0.2s									
MVIF	**Mont Vial**	**0.68**	**158**	Pg		**Pb**	**11**	**11**	**01.5**	**+1.6**
AUTN	**L'Aution**	**0.70**	**140**	Pg		**Pb**	**11**	**11**	**01.0**	**+0.8**
AUTN				Sg		**Sb**	**11**	**11**	**09.4**	**0.0**
ORIF	**Oris-en-Rattie**	**0.76**	**301**	*e*Pg		**Pb**	**11**	**11**	**01.0**	**-0.2**
ORIF				*e*Sg		**Sb**	**11**	**11**	**11.2**	**+0.1**
	3.8nm,0.3s									
SAOF	**Saorge**	**0.77**	**135**	Pg		**Pb**	**11**	**11**	**00.5**	**-0.8**
FRF	**La Foret Royal**	**0.98**	**186**	*e*Pg		**Pb**	**11**	**11**	**03.7**	**-1.1**
FRF				*e*Sg		**Sb**	**11**	**11**	**16.8**	**-0.5**
	2.5nm,0.2s									
SMRF	**Simiane la Rot**	**1.04**	**238**	*e*Pg		**Pb**	**11**	**11**	**06.2**	**+0.3**
SMRF				*e*Sg		**Sb**	**11**	**11**	**19.5**	**+0.4**
	2.1nm,0.3s									
LMR	**La Mourre**	**1.22**	**190**	*e*Pg		**Pn**	**11**	**11**	**08.4**	**-0.2**
LMR				*e*Sg		**Sb**	**11**	**11**	**24.1**	**-0.1**
	1.6nm,0.2s									

*NAO **25** 11:12:00.1±2.3, 59.26N×27.13E, ML2.1*
*HEL **25** 11:12:01.0±0.2, 59.32N×27.07E, ML1.5, ML2.1(NAO), Explosion*
*BER **25** 11:12:05.2±3.0, 59.40N×27.05E, ML2.1(NAO), Suspected explosion*
ISC 25 11:11:59.6±1.0**, 59.30N**±0.04×**27.0E**±0.2**, n9, σ0°59**/12**, Baltic States - Belarus - Northwestern Russia**

Code	Station Name	Δ°	AZ°	Phase	ID		Time			Res
				Op		ISC	h	m	s	ISC
VSU	**Vasula**	**0.85**	**190**	*e*S		**Sg**	**11**	**12**	**27.8**	**-0.1**
VJF	**Virojoki**	**1.27**	**12**	*e*P		**Pb**	**11**	**12**	**23.5**	**-0.6**
VJF				*e*S		**Sb**	**11**	**12**	**40.7**	**-0.3**
PVF	**Pernaja**	**1.38**	**335**	*e*P		**Pb**	**11**	**12**	**25.5**	**-0.5**
PVF				*e*S		**Sb**	**11**	**12**	**43.7**	**-0.4**
MEF	**Metsahovi**	**1.62**	**306**	*e*P		**Pn**	**11**	**12**	**30.2**	**+0.7**
MEF				*e*S		**Sb**	**11**	**12**	**50.5**	**-0.5**
FIA0	**FINESS Array S**	**2.21**	**348**	Pn		**Pn**	**11**	**12**	**38.6**	**+0.7**
	baz=164,slow=18									
FIA0				Sn		**Sn**	**11**	**13**	**07.3**	**+1.1**
	baz=153,slow=37									
FIA0				Lg			11	13	10.4	
	baz=166,slow=37									
FIA0				Rg			11	13	21.7	
	baz=173,slow=28									
FIA0	**FINESS Array S**	**2.21**	**348**	*e*P		**Pn**	**11**	**12**	**38.5**	**+0.6**
FIA0				*e*SG		**Sg**	**11**	**13**	**08.0**	**-5.0**
FIA0				MSG			11	13	10.3	
	comp=Z,1.7nm,0.1s									
HFS	**Hagfors**	**6.79**	**283**	Lg			11	15	34.1	
	baz=92,slow=37									
HFS	**Hagfors**	**6.79**	**283**	*e*SG		**Sg**	**11**	**15**	**34.1**	**-12**
HFS	**Hagfors**	**6.79**	**283**	Lg			11	15	34.1	
	baz=92,slow=37									

*NEIC **25** 11:18:38.5, 38.55S×175.47E, h246km, After WEL.*
*WEL **25** 11:18:39.8±0.4, 38.60S×175.49E, h236km±3km, ML3.8/2, Error ellipse: s-maj=4.4km s-min=3.6km az=90.0*
ISC 25 11:18:37.0±1.2**, 38.82S**±0.08×**175.5E**±0.2**, h260**km±11km**, n42, σ1°05/54, 1D, North Island**

Code	Station Name	Δ°	AZ°	Phase	ID		Time			Res
				Op		ISC	h	m	s	ISC
MGZ	**Maungaku**	**0.18**	**173**	PN		**P**	**11**	**19**	**10.6**	**0.0**
MGZ	**Maungaku**	**0.18**	**173**	P		**P**	**11**	**19**	**10.6**	**0.0**
KAVZ	**Karewarewa**	**0.29**	**159**	PN		**P**	**11**	**19**	**11.1**	**+0.3**
KAVZ	**Karewarewa**	**0.29**	**159**	P		**P**	**11**	**19**	**11.1**	**+0.3**
NGZ	**Ngauruhoe**	**0.36**	**169**	PN		**P**	**11**	**19**	**11.2**	**+0.3**
NGZ	**Ngauruhoe**	**0.36**	**169**	P		**P**	**11**	**19**	**11.3**	**+0.4**
CNZ	**Chateau**	**0.38**	**176**	PN		**P**	**11**	**19**	**11.3**	**+0.4**
CNZ	**Chateau**	**0.38**	**176**	P		**P**	**11**	**19**	**11.4**	**+0.5**
WPVZ	**Whakapapa**	**0.38**	**176**	PN		**P**	**11**	**19**	**11.4**	**+0.4**
FWVZ	**Far West T-bar**	**0.43**	**176**	PN		**P**	**11**	**19**	**11.6**	**+0.5**
FWVZ	**Far West T-bar**	**0.43**	**176**	P		**P**	**11**	**19**	**11.6**	**+0.5**
TUVZ	**Tukino**	**0.46**	**166**	PN		**P**	**11**	**19**	**11.8**	**+0.7**
WNVZ	**Wahianoa**	**0.51**	**173**	PN		**P**	**11**	**19**	**11.8**	**+0.6**
BKZ	**Black Stump Fm**	**0.84**	**115**	⇓PN		**P**	**11**	**19**	**13.3**	**+0.9**
BKZ				SN		**S**	**11**	**19**	**39.4**	**-0.7**
BKZ	**Black Stump Fm**	**0.84**	**115**	P		**P**	**11**	**19**	**13.3**	**+0.9**
BKZ				S		**S**	**11**	**19**	**40.5**	**+0.4**
TSZ	**Takapari Road**	**1.28**	**164**	PN		**P**	**11**	**19**	**16.5**	**+1.5**
TSZ				SN		**S**	**11**	**19**	**44.5**	**-0.1**
TSZ	**Takapari Road**	**1.28**	**164**	P		**P**	**11**	**19**	**16.6**	**+1.6**
MWZ	**Matawai**	**1.65**	**74**	PN		**P**	**11**	**19**	**17.7**	**0.0**
MWZ				SN		**S**	**11**	**19**	**46.4**	**-2.9**
MWZ	**Matawai**	**1.65**	**74**	*e*P		**P**	**11**	**19**	**17.7**	**0.0**
MWZ				S		**S**	**11**	**19**	**46.5**	**-2.8**
MRZ	**Mangatainoka R**	**1.84**	**178**	PN		**P**	**11**	**19**	**20.4**	**+1.3**
MRZ				SN		**S**	**11**	**19**	**52.2**	**+0.3**
BFZ	**Birch Farm**	**1.94**	**163**	PN		**P**	**11**	**19**	**21.7**	**+1.7**
BFZ	**Birch Farm**	**1.94**	**163**	*e*P		**P**	**11**	**19**	**21.7**	**+1.7**
PUZ	**Puketiti**	**2.28**	**72**	SN		**S**	**11**	**19**	**56.6**	**-2.4**
CAW	**Cannon Point**	**2.31**	**188**	PN		**P**	**11**	**19**	**24.2**	**+0.8**
CAW				SN		**S**	**11**	**19**	**59.1**	**-0.4**
CAW	**Cannon Point**	**2.31**	**188**	P		**P**	**11**	**19**	**24.3**	**+0.9**
CAW				S		**S**	**11**	**19**	**59.6**	**+0.1**
MTW	**Mount Morrison**	**2.33**	**180**	PN		**P**	**11**	**19**	**24.4**	**+0.8**
MTW				SN		**S**	**11**	**20**	**00.2**	**+0.2**
MTW	**Mount Morrison**	**2.33**	**180**	P		**P**	**11**	**19**	**24.9**	**+1.2**
MTW				S		**S**	**11**	**19**	**56.1**	**-3.8**
MRW	**Makara Radio**	**2.48**	**194**	PN		**P**	**11**	**19**	**25.5**	**+0.4**
MRW				SN		**S**	**11**	**20**	**01.3**	**-1.2**
MRW	**Makara Radio**	**2.48**	**194**	P		**P**	**11**	**19**	**25.7**	**+0.6**
WEL	**Wellington**	**2.53**	**193**	SN		**S**	**11**	**20**	**02.8**	**-0.5**
MSWZ	**Moikau Station**	**2.60**	**184**	PN		**P**	**11**	**19**	**26.8**	**+0.5**
MSWZ				SN		**S**	**11**	**20**	**04.3**	**-0.3**
TUWZ	**Tuamarina**	**2.87**	**204**	PN		**P**	**11**	**19**	**29.3**	**+0.2**
QRZ	**Quartz Range**	**3.05**	**228**	PN		**P**	**11**	**19**	**28.8**	**-2.2**
QRZ	**Quartz Range**	**3.05**	**228**	*e*P		**P**	**11**	**19**	**29.0**	**-2.0**
KHZ	**Kahutara**	**3.89**	**202**	PN		**P**	**11**	**19**	**40.4**	**-0.1**
KHZ	**Kahutara**	**3.89**	**202**	*e*P		**P**	**11**	**19**	**40.6**	**+0.1**
DSZ	**Denniston Nort**	**4.07**	**223**	PN		**P**	**11**	**19**	**40.2**	**-2.3**
DSZ	**Denniston Nort**	**4.07**	**223**	*e*P		**P**	**11**	**19**	**40.2**	**-2.4**
LTZ	**Lake Taylor**	**4.66**	**211**	PN		**P**	**11**	**19**	**48.3**	**-1.2**
LTZ	**Lake Taylor**	**4.66**	**211**	*e*P		**P**	**11**	**19**	**48.4**	**-1.1**
MQZ	**McQueen's Vall**	**5.33**	**203**	PN		**P**	**11**	**19**	**56.0**	**-1.7**
MQZ	**McQueen's Vall**	**5.33**	**203**	*e*P		**P**	**11**	**19**	**56.1**	**-1.6**

*NEIC **25** 11:22:10.4±0.7, 1.80N×121.80E, h542km±8km, mb4.5/22, Error ellipse: s-maj=10.2km s-min=5.0km az=66.0*
*MOS **25** 11:22:10.6±0.8, 1.78N×121.79E, h566km, mb4.5/21, Error ellipse: s-maj=19.8km s-min=8.3km az=113.7*
*BJI **25** 11:22:10.4, 1.80N×121.80E, h542km, mB4.6, mb4.7*
*SYO **25** 11:22:10.4, 1.80N×121.80E, h542km, MB4.5*
*IDC **25** 11:22:10.5±0.8, 1.75N×121.77E, h540km±9km, mb4.1/27, mb1 4.1/27, mb1mx4.0/29, Error ellipse: s-maj=13.2km s-min=5.4km az=67.0*
ISC 25 11:22:09.9±0.5**, 1.76N**±0.03×**121.79E**±0.05**, h550**km±6km**, h563**km±8.6km**; pP-P, n182, σ0°92**/182**, mb4.6**/70**, 24C-11D, Minahassa Peninsula, Sulawesi**

Code	Station Name	Δ°	AZ°	Phase	ID		Time			Res
				Op		ISC	h	m	s	ISC
KKM	**Kota Kinabalu**	**7.00**	**308**⇑	*e*P		**P**	**11**	**23**	**57.3**	**-1.4**
BIPH	**Bislig**	**7.84**	**35**⇓	*e*P		**P**	**11**	**24**	**06.5**	**-0.4**
BIPH				*i* S		**S**	**11**	**25**	**40.9**	**+1.0**
LLP	**Lapu-Lapu**	**8.77**	**14**	*e*P		**P**	**11**	**24**	**15.7**	**-0.4**
MSLP	**Maasin**	**8.86**	**20**⇑	*e*P		**P**	**11**	**24**	**16.9**	**-0.1**
CUYO	**Cuyo Island**	**9.06**	**355**⇑	*e*P		**P**	**11**	**24**	**19.1**	**+0.1**
OCLP	**Ormoc**	**9.64**	**17**⇑	*e*P		**P**	**11**	**24**	**25.1**	**+0.1**
ENPP	**El Nido**	**9.67**	**346**⇑	*e*P		**P**	**11**	**24**	**25.1**	**-0.2**
KALP	**Kalibo**	**9.87**	**3**⇓	*e*P		**P**	**11**	**24**	**26.6**	**-0.7**
KALP							22	35	25.2	
BUSP	**Coron**	**10.30**	**351**⇑	*e*P		**P**	**11**	**24**	**31.7**	**+0.1**
BESP	**Borongan**	**10.42**	**20**⇑	*e*P		**P**	**11**	**24**	**33.0**	**0.0**
OTRP	**Odiongan**	**10.54**	**1**⇑	*e*P		**P**	**11**	**24**	**33.8**	**-0.2**
SJMP	**San Jose**	**10.65**	**356**⇑	*e*P		**P**	**11**	**24**	**35.5**	**+0.2**
CNP	**Catarman**	**11.05**	**15**⇑	*e*P		**P**	**11**	**24**	**39.9**	**+0.6**
AUQP	**San Andres**	**11.52**	**4**⇑	*e*P		**P**	**11**	**24**	**46.7**	**+2.6**
BOAC	**Boac**	**11.62**	**0**⇑	*e*P		**P**	**11**	**24**	**49.6**	**+4.5**
PVCP	**Virac**	**11.99**	**11**⇑	*e*P		**P**	**11**	**24**	**48.3**	**-0.5**
TGY	**Tagaytay City**	**12.29**	**356**	P		**P**	**11**	**24**	**52.3**	**+0.4**
	71nm,0.3s,baz=261,slow=1.5,SNR=10									
TGY	**Tagaytay City**	**12.29**	**356**	P		**P**	**11**	**24**	**52.3**	**+0.5**
TGY				pmax	pmax					
	comp=Z,71nm,0.3s									
BOLP	**Bolinao**	**14.64**	**353**⇑	*e*P		**P**	**11**	**25**	**15.1**	**-0.6**
CAUP	**Cauayan**	**15.09**	**0**⇑	*e*P		**P**	**11**	**25**	**20.9**	**+0.9**
KAKA	**Kakadu**	**17.81**	**144**⇑	*i*P		**P**	**11**	**25**	**47.1**	**+0.7**
	comp=Z,358nm,0.8s									
KGM	**Kluang**	**18.46**	**271**⇑	*e*P		**P**	**11**	**25**	**53.6**	**+0.9**
	comp=Z,177nm,1.0s									
FITZ	**Fitzroy Crossi**	**20.10**	**169**	*e*P		**P**	**11**	**26**	**07.6**	**-0.3**
	comp=Z,72nm,0.6s									
FITZ	**Fitzroy Crossi**	**20.10**	**169**	P		**P**	**11**	**26**	**08.0**	**+0.1**
	comp=Z,93nm,0.7s,baz=2.7,slow=7.0,SNR=175									
FITZ				S		**S**	**11**	**29**	**20.3**	**+1.1**
	comp=Z,6.1nm,0.6s,baz=28,slow=17,SNR=3.2									
PSI	**Prapat**	**22.87**	**273**	*e*Pn		**P**	**11**	**26**	**33.1**	**-0.3**
KKTK	**Khon Kaen**	**23.64**	**309**	P		**P**	**11**	**26**	**40.0**	**-0.3**
	comp=Z,370nm,0.5s									
GSI	**Gunungsitoli**	**24.21**	**269**⇑	*e*Pn		**P**	**11**	**26**	**43.0**	**-2.5**
WRAB	**Tennant Creek**	**24.83**	**151**⇑	*i*P		**P**	**11**	**26**	**49.5**	**-1.4**
	comp=Z,90nm,0.6s,mb5.6									
WRA	**Warramunga Arr**	**24.84**	**151**	P		**P**	**11**	**26**	**49.5**	**-1.5**
	comp=Z,40nm,0.5s,mb5.3,baz=334,slow=9.5,SNR=594									
WRA				S		**S**	**11**	**30**	**31.4**	**-4.3**
	comp=Z,2.5nm,0.8s,baz=354,slow=14,SNR=5.1									
WRA				ScP			11	32	56.1	
	comp=Z,5.9nm,1.0s,baz=338,slow=3.1,SNR=9.8									
WRA	**Warramunga Arr**	**24.84**	**151**	P		**P**	**11**	**26**	**49.5**	**-1.4**
WRA				S		**S**	**11**	**30**	**31.4**	**-4.4**
WRA				pmax	pmax					
	comp=Z,40nm,0.5s									
WRA				smax						
	comp=Z,3.0nm,0.8s									
WRA				pmax	pmax					
	comp=Z,6.0nm,1.0s									
WB2	**Warramunga Arr**	**24.84**	**151**⇑	*i*P		**P**	**11**	**26**	**49.5**	**-1.5**
WB2				*e*S		**S**	**11**	**30**	**31.4**	**-4.4**
WB2				*e*SCS		ScS	11	36	40.5	-2.8
JOW	**Kunigami**	**25.69**	**13**	P		**P**	**11**	**26**	**58.1**	**-0.3**
	comp=Z,23nm,0.4s,mb5.2,baz=211,slow=14,SNR=33									
BDT	**Bhumibol Dam**	**27.18**	**306**	P		**P**	**11**	**27**	**12.0**	**+0.4**
PMG	**Port Moresby**	**27.60**	**114**	P		**P**	**11**	**27**	**14.8**	**-0.5**
	comp=Z,18nm,0.6s,mb4.9,baz=308,slow=8.0,SNR=8.7									
PMG	**Port Moresby**	**27.60**	**114**	P		**P**	**11**	**27**	**14.8**	**-0.5**
PMG				pmax	pmax					
	comp=Z,18nm,0.6s									
PMG	**Port Moresby**	**27.60**	**114**	*e*P		**P**	**11**	**27**	**14.4**	**-0.9**
	comp=Z,20nm,0.7s,mb4.9									
PMG				P			11	27	14.8	
CM31	**Chiang Mai Arr**	**27.88**	**308**	*e*P		**P**	**11**	**27**	**17.7**	**0.0**
	comp=Z,8.2nm,0.9s,mb4.4									
CMAR	**Chiang Mai Arr**	**27.88**	**308**	P		**P**	**11**	**27**	**18.1**	**+0.4**
	comp=Z,6.4nm,1.0s,mb4.2,baz=135,slow=7.5,SNR=22									
CMAR				PcP	PcP		11	30	15.8	+0.1
	comp=Z,2.3nm,0.7s,baz=175,slow=1.3,SNR=7.7									
CMAR				ScP			11	33	06.6	
	comp=Z,0.5nm,0.4s,baz=155,slow=2.8,SNR=4.2									
CMAR	**Chiang Mai Arr**	**27.88**	**308**	P		**P**	**11**	**27**	**18.1**	**+0.4**
CMAR							11	30	15.8	
CMAR				pmax	pmax					
	comp=Z,6.0nm,1.0s									
CMAR				pmax	pmax					
	comp=Z,2.0nm,0.7s									
CMAR				pmax	pmax					
	comp=Z,1.0nm,0.4s									
AS12	**Alice Springs**	**27.89**	**156**	*e*P		**P**	**11**	**27**	**17.1**	**-0.6**
	comp=Z,27nm,0.6s,mb5.0									
ASAR	**Alice Springs**	**27.89**	**156**	P		**P**	**11**	**27**	**17.1**	**-0.6**
	comp=Z,30nm,0.6s,mb5.1,baz=337,slow=7.9,SNR=772									
ASAR				PcP	PcP		11	30	15.6	-0.2
	comp=Z,3.3nm,0.5s,baz=350,slow=2.9,SNR=6.5									
ASAR				S		**S**	**11**	**31**	**21.2**	**-2.4**
	comp=Z,5.5nm,0.6s,baz=353,slow=28,SNR=6.3									
ASAR				ScP			11	33	05.4	
	comp=Z,2.6nm,0.5s,baz=337,slow=2.8,SNR=8.6									
SSE	**Sheshan**	**29.18**	**359**	P		**P**	**11**	**27**	**33.0**	**+4.2**
SSE				AMB	AMB					
	comp=Z,46nm,0.6s,mb5.3									
WHN	**Wuhan**	**29.48**	**347**	⇓P		**P**	**11**	**27**	**32.8**	**+1.4**
NJ2	**Nanjing**	**30.26**	**355**	*e*P		**P**	**11**	**27**	**39.0**	**+1.0**
NJ2				AMB	AMB					
	comp=Z,50nm,1.0s,mb5.0									
ENH	**Enshi**	**30.66**	**339**	*e*P		**P**	**11**	**27**	**41.3**	**-0.2**
	comp=Z,12nm,0.9s,mb4.4									
ENH				*e*PcP	PcP		11	30	22.8	-0.1
CBIJ	**Chichi jima**	**31.89**	**36**	P		**P**	**11**	**27**	**52.3**	**+0.4**
	comp=Z,39nm,0.5s,mb5.2,baz=319,slow=20,SNR=3.4									
JNU	**Nakatsue**	**32.34**	**14**	P		**P**	**11**	**27**	**54.7**	**-1.0**
	comp=Z,10nm,0.7s,mb4.5,baz=57,slow=10,SNR=8.6									
CTA	**Charters Tower**	**32.36**	**133**	*e*P		**P**	**11**	**27**	**56.7**	**+0.8**
	comp=Z,10.0nm,0.9s,mb4.3									
CTA				*e*			11	33	20.7	
CTA	**Charters Tower**	**32.36**	**133**	P		**P**	**11**	**27**	**56.9**	**+1.0**
	comp=Z,14nm,0.8s,mb4.6,baz=316,slow=9.8,SNR=19									
CTA				ScP			11	33	21.4	
	comp=Z,11nm,0.6s,baz=310,slow=4.7,SNR=15									
CTA	**Charters Tower**	**32.36**	**133**	P		**P**	**11**	**27**	**56.9**	**+1.0**
CTA				pmax	pmax					
	comp=Z,14nm,0.8s									
CTA				pmax	pmax					
	comp=Z,11nm,0.6s									
FORT	**Forrest**	**32.91**	**170**	*e*P		**P**	**11**	**28**	**00.1**	**-0.3**
	comp=Z,194nm,0.5s									
MUN	**Mundaring**	**33.97**	**189**	*e*P		**P**	**11**	**28**	**08.9**	**-0.4**
	comp=Z,8.0nm,0.5s,mb4.5									
NWAO	**Narrogin (SRO)**	**34.77**	**187**	P		**P**	**11**	**28**	**16.0**	**0.0**
	comp=Z,35nm,0.6s,mb5.0,baz=12,slow=8.0,SNR=50									
NWAO	**Narrogin (SRO)**	**34.77**	**187**	P		**P**	**11**	**28**	**16.0**	**0.0**
NWAO				pmax	pmax					
	comp=Z,35nm,0.6s									
NWAO	**Narrogin (SRO)**	**34.77**	**187**	*e*P		**P**	**11**	**28**	**15.7**	**-0.3**
	comp=Z,23nm,0.7s,mb4.8									
KS15	**Wonju Array Si**	**35.95**	**8**	*e*P		**P**	**11**	**28**	**26.1**	**+0.4**
SHL	**Shillong**	**37.28**	**312**	*e*P		**P**	**11**	**28**	**36.9**	**+0.2**
SHL				AMb	AMB		11	28	38.9	
	comp=Z,16nm,0.8s,mb4.6									
MAJO	**Matsushiro**	**37.79**	**22**	*e*P		**P**	**11**	**28**	**39.3**	**-1.5**
	comp=Z,10nm,0.6s,mb4.5									
MAT	**Matsushiro**	**37.79**	**22**	P		**P**	**11**	**28**	**39.0**	**-1.8**
MAT	**Matsushiro**	**37.79**	**22**	*e*P		**P**	**11**	**28**	**39.0**	**-1.8**
	comp=Z,7.5nm,0.7s,mb4.3									
STKA	**Stephens Creek**	**38.37**	**152**⇑	*i*P		**P**	**11**	**28**	**46.4**	**+0.9**
	comp=Z,40nm,0.5s,mb5.2									
STKA				*e*SCP			11	33	42.2	
STKA				*e*S		**S**	**11**	**34**	**02.3**	**-0.2**
STKA	**Stephens Creek**	**38.37**	**152**	P		**P**	**11**	**28**	**46.5**	**+1.0**
	comp=Z,64nm,0.6s,mb5.4,baz=330,slow=7.9,SNR=132									
STKA				ScP			11	33	42.2	
	comp=Z,5.7nm,0.8s,baz=321,slow=3.1,SNR=5.4									
STKA				S		**S**	**11**	**34**	**02.0**	**-0.5**
	comp=Z,2.5nm,0.5s,baz=104,slow=22,SNR=5.5									
LSA	**Lhasa**	**40

ZAK	**Zakamensk**	**50.93**	**345**	*e*P	**P**	**11 30 22.1**	**-0.4**
ZAK				*e*		11 31 27.6	
WMQ	**Urumqi**	**51.67**	**329**	P	**P**	**11 30 28.5**	**+0.5**
WMQ				AP	pP	11 32 11.8	-0.6
WMQ				PP	PP	11 32 35.5	+3.2
WMQ				XP	sP	11 33 09.5	-1.5
WMQ				S	**S**	**11 37 10.0**	**+1.8**
WMQ				AMB	AMB		
	comp=Z,66nm,2.3s,mb4.6						
WMQ				AMB	AMB		
	comp=Z,331nm,9.8s						
TLY	**Talaya**	**52.03**	**346**	*i* P	**P**	**11 30 30.2**	**-0.3**
TLY				pmax	pmax		
	comp=Z,59nm,0.8s,mb5.0						
BOD	**Bodaibo**	**56.24**	**355**	*e*P	**P**	**11 30 59.3**	**-0.6**
MKAR	**Makanchi Array**	**56.49**	**328**	P	**P**	**11 31 01.6**	**-0.2**
	comp=Z,9.9nm,0.4s,mb4.3,baz=126,slow=8.5,SNR=117						
MKAR				PcP	PcP	11 31 50.1	-0.5
	comp=Z,6.9nm,0.6s,baz=130,slow=4.5,SNR=13						
MKAR				S	**S**	**11 38 11.7**	**+0.4**
	comp=Z,0.8nm,0.9s,baz=151,slow=12,SNR=3.9						
MKAR	**Makanchi Array**	**56.49**	**328**	P	**P**	**11 31 01.6**	**-0.2**
MKAR						11 31 50.1	
MKAR				S	**S**	**11 38 11.7**	**+0.4**
MKAR				pmax	pmax		
	comp=Z,10.0nm,0.4s						
MKAR				pmax	pmax		
	comp=Z,7.0nm,0.6s						
MKAR				smax			
	comp=Z,1.0nm,0.9s						
KZA	**Kyzart**	**57.84**	**320**	P	**P**	**11 31 12.3**	**+1.1**
	SNR=13						
TKM2	**Tokmak 2**	**58.06**	**321**	P	**P**	**11 31 12.8**	**+0.2**
	SNR=19						
KBK	**Karagaybulak**	**58.33**	**321**	P	**P**	**11 31 15.2**	**+0.8**
	SNR=6.6						
UCH	**Uchtor**	**58.39**	**320**	P	**P**	**11 31 15.9**	**+1.1**
	SNR=14						
AAK	**Ala-Archa**	**58.61**	**321**	P	**P**	**11 31 17.0**	**+0.8**
	SNR=8.8						
AAK	**Ala-Archa**	**58.61**	**321**	*e*P	**P**	**11 31 16.4**	**+0.2**
	comp=Z,12nm,1.0s,mb4.1						
AAK				*e*PcP	PcP	11 31 59.3	+0.2
AML	**Almayashu**	**58.87**	**320**	P	**P**	**11 31 18.9**	**+0.9**
	SNR=14						
USP	**Ospenovka**	**58.93**	**321**	P	**P**	**11 31 18.5**	**+0.1**
	SNR=10						
EKS2	**Erkin-Say**	**59.08**	**320**	P	**P**	**11 31 20.1**	**+0.7**
	SNR=13						
ZAL	**Zalesovo**	**60.22**	**336**	P	**P**	**11 31 25.4**	**-1.4**
	comp=Z,4.7nm,0.4s,mb4.2,baz=268,slow=6.4,SNR=22						
ZAL				S	**S**	**11 38 56.0**	**-2.4**
	comp=Z,2.2nm,0.8s,baz=135,slow=20,SNR=20						
ZAL	**Zalesovo**	**60.22**	**336**	P	**P**	**11 31 25.4**	**-1.4**
ZAL				S	**S**	**11 38 56.0**	**-2.4**
ZAL				pmax	pmax		
	comp=Z,5.0nm,0.4s						
ZAL				smax			
	comp=Z,2.0nm,0.8s						
YAK	**Yakutsk**	**60.42**	**4**	*e*P	**P**	**11 31 27.1**	**-0.8**
YAK				pmax	pmax		
	comp=Z,16nm,0.8s,mb4.4						
KURK	**Kurchatov**	**60.86**	**330**	*i* P	**P**	**11 31 30.5**	**-0.5**
KURK				pmax	pmax		
	comp=Z,19nm,0.8s,mb4.5						
KURK	**Kurchatov**	**60.86**	**330**	*e*P	**P**	**11 31 30.2**	**-0.8**
KKAR	**Karatay Array**	**61.40**	**319**	*i* P	**P**	**11 31 33.8**	**-0.8**
KKAR				pmax	pmax		
	comp=Z,2.0nm,0.4s,mb3.8						
MA2	**Magadan**	**61.88**	**16**	*e*P	**P**	**11 31 37.9**	**+0.4**
MA2				pmax	pmax		
	comp=Z,9.0nm,1.2s,mb4.1						
URZ	**Urewera**	**64.60**	**134**	P	**P**	**11 31 56.8**	**+1.5**
	comp=Z,2.7nm,0.4s,mb4.1,baz=286,slow=15,SNR=6.6						
VOSK	**Vostochnaya**	**65.90**	**329**	P	**P**	**11 32 02.2**	**-0.9**
VOSK				pmax	pmax		
	comp=Z,7.0nm,0.7s,mb4.3						
BVAR	**Borovoye Array**	**66.36**	**329**	P	**P**	**11 32 05.4**	**-0.5**
	comp=Z,6.8nm,0.5s,mb4.4,baz=135,slow=8.4,SNR=49						
BRVK	**Borovoye**	**66.43**	**329**	P	**P**	**11 32 05.5**	**-0.9**
BRVK				pmax	pmax		
	comp=Z,3.0nm,0.6s,mb4.0						
BRVK	**Borovoye**	**66.43**	**329**	*i* P	**P**	**11 32 05.9**	**-0.5**
ZRNK	**Zerenda**	**67.04**	**328**	P	**P**	**11 32 09.4**	**-0.7**
ZRNK				pmax	pmax		
	comp=Z,9.0nm,0.6s,mb4.5						
ZRNK	**Zerenda**	**67.04**	**328**	*i* P	**P**	**11 32 09.6**	**-0.5**
TIXI	**Tiksi**	**69.93**	**2**	*i* P	**P**	**11 32 26.5**	**-0.7**
TIXI				*e**PP	pP	11 34 21.9	+0.3
TIXI				pmax	pmax		
	comp=Z,12nm,0.6s,mb4.6						
TIXI	**Tiksi**	**69.93**	**2**	*e*P	**P**	**11 32 26.1**	**-1.1**
	comp=Z,18nm,0.8s,mb4.7						
AB31	**Akbulak array**	**70.61**	**322**	P	**P**	**11 32 30.9**	**-0.6**
AB31				pmax	pmax		
	comp=Z,1.0nm,0.4s,mb3.7						
BILL	**Bilibino**	**72.75**	**16**	*e*P	**P**	**11 32 43.5**	**0.0**
BILL				pmax	pmax		
	comp=Z,6.0nm,2.1s,mb3.7						
THR	**Tehran**	**73.35**	**307**	P	**P**	**11 32 47.7**	**+0.1**
	comp=Z,5.1nm,0.7s,mb4.0,baz=93,slow=5.6,SNR=12						
THR	**Tehran**	**73.35**	**307**	P	**P**	**11 32 47.7**	**+0.1**
THR				pmax	pmax		
	comp=Z,5.0nm,0.7s						
THR	**Tehran**	**73.35**	**307**	P	**P**	**11 32 47.7**	**+0.1**
ARU	**Arti**	**74.01**	**329**	*c i* P	**P**	**11 32 50.1**	**-0.7**
ARU				pmax	pmax		
	comp=Z,14nm,0.8s,mb4.4						
ARU	**Arti**	**74.01**	**329**	*e*P	**P**	**11 32 49.7**	**-1.1**
	comp=Z,19nm,0.8s,mb4.6						
MZLS	**Mizel**	**77.03**	**294**	P	**P**	**11 33 08.0**	**-0.1**
KAMS	**Al Khamasin**	**77.40**	**290**	P	**P**	**11 33 09.4**	**-0.8**
DJNS	**Zahran al Janu**	**78.27**	**288**	P	**P**	**11 33 16.0**	**+1.1**
TATS	**Tathlith**	**78.40**	**289**	P	**P**	**11 33 16.0**	**+0.5**
ARSS	**Ar Rass**	**78.93**	**296**	P	**P**	**11 33 18.6**	**+0.3**
AFFS	**'Afif**	**79.04**	**294**	P	**P**	**11 33 19.3**	**+0.5**
NAMS	**An Nimas**	**79.58**	**289**	P	**P**	**11 33 23.2**	**+1.4**
ZEI	**Tsey**	**79.92**	**313**	*e*P	**P**	**11 33 22.8**	**-0.3**
BLJS	**Baljurashi**	**80.18**	**290**	P	**P**	**11 33 26.4**	**+1.6**
MAW	**Mawson**	**80.24**	**199**	P	**P**	**11 33 25.0**	**+0.8**
	comp=Z,1.6nm,0.8s,baz=83,slow=8.1,SNR=4.2						
MAW	**Mawson**	**80.24**	**199**	P	**P**	**11 33 25.0**	**+0.8**
MAW				pmax	pmax		
	comp=Z,2.0nm,0.8s						
HILS	**Ha'il**	**80.31**	**297**	P	**P**	**11 33 26.6**	**+1.2**
KBRS	**Khaybar**	**82.51**	**296**	P	**P**	**11 33 38.2**	**+1.6**
YNBS	**Yanbu' al Bahr**	**83.63**	**294**	P	**P**	**11 33 43.5**	**+1.2**
VOR	**Voronezh**	**84.03**	**322**	P	**P**	**11 33 43.0**	**-0.6**
VOR				pmax	pmax		
	comp=Z,120nm,1.4s,mb5.2						
KMBO	**Kilima Mbogo**	**84.58**	**269**	P	**P**	**11 33 48.3**	**+1.1**
	comp=Z,8.5nm,0.8s,mb4.3,baz=54,slow=7.8,SNR=21						
KMBO	**Kilima Mbogo**	**84.58**	**269**	*e*P	**P**	**11 33 47.9**	**+0.6**
	comp=Z,7.6nm,1.0s,mb4.2						
ASF	**Jabal al Asfar**	**84.74**	**302**	P	**P**	**11 33 49.2**	**+1.6**
	comp=Z,24nm,0.9s,mb4.7,baz=319,slow=4.6,SNR=11						
ANN	**Anapa**	**84.76**	**315**	*e*P	**P**	**11 33 47.4**	**+0.1**
ANN				*e**PP	pP	11 35 50.5	+3.3
ANN				*e*S	S	11 43 26.2	-2.8
ANN				pmax	pmax		
	comp=Z,20nm,0.7s,mb4.8						
JMQS	**Jabal Moqyreh**	**85.58**	**299**	P	**P**	**11 33 52.7**	**+1.0**
OBN	**Obninsk**	**85.82**	**325**	*e*P	**P**	**11 33 51.9**	**-0.3**
OBN				*e**PP	pP	11 35 59.0	+6.5
OBN				*e*S	S	11 43 39.0	+0.3
OBN				pmax	pmax		
	comp=Z,41nm,1.7s,mb4.8						
JMOS	**Jabal al Moall**	**86.25**	**299**	P	**P**	**11 33 55.7**	**+0.8**
BRTR	**Keskin Array B**	**87.46**	**310**	P	**P**	**11 33 59.8**	**-0.6**
	comp=Z,3.0nm,0.6s,mb4.1,baz=134,slow=5.9,SNR=14						
JOF	**Joensuu**	**88.66**	**333**	*e*p	**P**	**11 34 03.7**	**-1.7**
SYO	**Syowa Base**	**88.83**	**201**	||P	**P**	**11 34 06.5**	**+0.4**
SYO	**Syowa Base**	**88.83**	**201**	||*e*P	**P**	**11 34 06.5**	**+0.4**
ILAR	**Eielson Array**	**88.99**	**25**	P	**P**	**11 34 05.9**	**-1.0**
	comp=Z,0.7nm,0.7s,mb3.6,baz=268,slow=4.1,SNR=17						
ILAR	**Eielson Array**	**88.99**	**25**	P	**P**	**11 34 05.9**	**-1.0**
ILAR				pmax	pmax		
	comp=Z,1.0nm,0.7s						
ARCES	**ARCESS Array B**	**90.57**	**340**	P	**P**	**11 34 13.3**	**-0.7**
	comp=Z,5.5nm,1.0s,mb4.4,baz=90,slow=4.9,SNR=8.5						
ARCES	**ARCESS Array B**	**90.57**	**340**	P	**P**	**11 34 13.4**	**-0.7**
ARCES				pmax	pmax		
	comp=Z,6.0nm,1.0s						
KAF	**Kangasniemi**	**91.03**	**332**	*e*p	**P**	**11 34 13.8**	**-2.6**
	comp=Z,2.0nm,0.5s,mb4.3						
KAF	**Kangasniemi**	**91.03**	**332**	*e*P	**P**	**11 34 13.8**	**-2.6**
KAF				pmax	pmax		
	comp=Z,2.0nm,0.5s,mb4.3						
FINES	**FINESS Array B**	**91.21**	**331**	P	**P**	**11 34 16.3**	**-0.9**
	comp=Z,1.9nm,0.6s,mb4.2,baz=68,slow=6.0,SNR=13						
FINES	**FINESS Array B**	**91.21**	**331**	P	**P**	**11 34 16.3**	**-0.9**
FINES				pmax	pmax		
	comp=Z,2.0nm,0.6s						
SPB4	**Spitsbergen Ar**	**91.43**	**349**	*e*P	**P**	**11 34 17.5**	**-0.4**
QSPA	**South Pole Qui**	**91.68**	**180**	*e*P	**P**	**11 34 19.9**	**+0.9**
	comp=Z,2.7nm,0.9s,mb4.3						
INK	**Inuvik**	**93.78**	**21**	*e*P	**P**	**11 34 29.0**	**+0.1**
	comp=Z,1.3nm,0.5s,mb4.3						
KWP	**Kalwaria**	**94.56**	**320**	*e*P	**P**	**11 34 32.1**	**-0.7**
IDI	**Anoyia**	**94.63**	**305**	P	**P**	**11 34 35.1**	**+1.6**
	comp=Z,11nm,0.8s,mb5.0,baz=294,slow=13,SNR=2.6						
LBTB	**Lobatse**	**96.36**	**245**	P	**P**	**11 34 41.1**	**-0.4**
NOA	**NORSAR Array B**	**98.30**	**333**	P	**P**	**11 34 47.9**	**-1.5**
	comp=Z,0.7nm,0.6s,mb4.2,baz=73,slow=4.6,SNR=4.2						
NOA	**NORSAR Array B**	**98.30**	**333**	P	**P**	**11 34 47.9**	**-1.5**
NOA				pmax	pmax		
	comp=Z,1.0nm,0.6s						
GERES	**GERESS Array B**	**100.49**	**320**	P	P	11 34 59.9	+0.4
	comp=Z,0.9nm,0.8s,baz=60,slow=7.9,SNR=3.4						
GERES	**GERESS Array B**	**100.49**	**320**	P	P	11 34 59.9	+0.3
GERES				pmax	pmax		
	comp=Z,1.0nm,0.8s						
YKA	**Yellowknife Ar**	**103.29**	**23**	PKiKP		11 39 27.7	
	comp=Z,0.2nm,0.6s,baz=306,slow=1.8,SNR=3.7						
NVAR	**Mina Array Bea**	**111.87**	**47**	PKiKP		11 39 45.4	
	comp=Z,0.3nm,0.6s,baz=181,slow=0.9,SNR=5.6						
PDAR	**Pinedale Array**	**116.05**	**40**	PKP	PKPdf	11 39 52.6	+2.0
	comp=Z,0.4nm,0.7s,baz=27,slow=3.3,SNR=3.9						
MSU	**Marysvale**	**116.25**	**45**	*e*PKPdf	PKPdf	11 39 54.1	+3.0
ULM	**Lac du Bonnet**	**118.98**	**27**	PKP	PKPdf	11 39 57.2	+1.0
	comp=Z,3.8nm,1.1s,baz=36,slow=2.7,SNR=3.0						
ULM	**Lac du Bonnet**	**118.98**	**27**	PKP	PKPdf	11 39 57.2	+1.0
SCHQ	**Schefferville**	**123.15**	**6**	PKP	PKPdf	11 40 06.0	+1.9
	comp=Z,3.6nm,0.9s,baz=123,slow=18,SNR=5.5						
DBIC	**Dimbokro**	**126.09**	**280**	PKP	PKPdf	11 40 12.8	+1.9
	comp=Z,3.1nm,0.7s,baz=148,slow=7.4,SNR=4.8						
DBIC	**Dimbokro**	**126.09**	**280**	PKIKP	PKPdf	11 40 12.8	+1.9
DBIC				pmax	pmax		
	comp=Z,3.0nm,0.7s						
TXAR	**Lajitas Array**	**126.68**	**51**	PKP	PKPdf	11 40 14.3	+2.7
	comp=Z,0.4nm,0.5s,baz=257,slow=0.4,SNR=7.5						
TXAR				SKPbc		11 42 40.0	
	comp=Z,0.2nm,0.5s,baz=301,slow=3.6,SNR=4.1						
TXAR				SKP		11 42 59.1	
	comp=Z,0.4nm,0.7s,SNR=3.1						
PLCA	**Paso Flores**	**139.63**	**165**	PKP	PKPdf	11 40 38.4	+2.9
	comp=Z,1.5nm,0.8s,baz=327,slow=5.6,SNR=3.4						
PLCA				SKPbc		11 43 23.3	
	comp=Z,1.5nm,0.8s,baz=197,slow=7.2,SNR=3.5						
PLCA	**Paso Flores**	**139.63**	**165**	PKIKP	PKPdf	11 40 38.4	+3.0
PLCA				pmax	pmax		
	comp=Z,2.0nm,0.8s						
PLCA				pmax	pmax		
	comp=Z,2.0nm,0.8s						

HEL ***25*** *11:24:30.4±0.3,59.53N×22.44E, ML2.1, ML2.4(UPP), ML2.2(NAO), Explosion*
BER ***25*** *11:24:32.4±4.5,59.89N×22.24E, ML2.2(NAO), Suspected explosion*
IDC ***25*** *11:24:32.5±2.2,59.84N×22.42E, mb1 3.1/3, mb1mx3.0/21, ML2.8/3, Error ellipse: s-maj=25.6km s-min=9.3km az=160.0*
NAO ***25*** *11:24:34.2±2.4, 60.13N×22.06E, ML2.2*
ISC 25 11:24:29.0±1.2, 59.58N±0.09×22.42E±0.08, n15, σ1°13/22, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MEF	**Metsahovi**	**1.18**	**57**	*e*P	**Pb**	**11 24 52.1**	**0.0**
MEF				*e*S	**Sb**	**11 25 05.7**	**-2.1**
PVF	**Pernaja**	**1.98**	**59**	*e*P	**Pn**	**11 25 05.9**	**+1.8**
PVF				*e*S	**Sn**	**11 25 30.1**	**+0.2**
FIA0	**FINESS Array S**	**2.60**	**43**	*e*P	**Pn**	**11 25 14.5**	**+1.5**
FIA0				*e*S	**Sn**	**11 25 46.4**	**+0.6**
FIA0				MSG		11 25 50.8	
	comp=Z,8.3nm,0.1s						
FIA0	**FINESS Array S**	**2.60**	**43**	Pn	**Pn**	**11 25 14.7**	**+1.7**
	baz=232,slow=14						
FIA0				Lg		11 25 46.9	
	baz=226,slow=22						
FIA0				Rg		11 26 01.4	
	baz=214,slow=37						
FINES	**FINESS Array B**	**2.60**	**43**	Pn	**Pn**	**11 25 14.7**	**+1.6**
	comp=Z,1.4nm,0.3s,baz=225,slow=13,SNR=47						
FINES				Lg		11 25 47.4	
	comp=Z,3.1nm,0.3s,baz=232,slow=22,SNR=23						
FINES				Rg		11 26 00.6	
	comp=Z,13nm,0.8s,baz=221,slow=35,SNR=12						
VJF	**Virojoki**	**2.75**	**67**	*e*S	**Sn**	**11 25 48.2**	**-1.3**
KEF	**Keuruu**	**2.86**	**24**	*e*P	**Pn**	**11 25 17.9**	**+1.2**
KEF				*e*S	**Sn**	**11 25 52.3**	**0.0**
KEF				MSG		11 25 55.1	
	comp=Z,5.9nm,0.1s						
KAF	**Kangasniemi**	**3.17**	**35**	MSG		11 26 03.8	
	comp=Z,4.7nm,0.1s						
VAF	**Ylistaro**	**3.48**	**2**	*e*S	**Sn**	**11 26 07.6**	**-0.3**
HFS	**Hagfors**	**4.43**	**281**	*e*P	**Pn**	**11 25 38.8**	**-0.3**
HFS				*e*SB	**Sb**	**11 26 42.3**	**+0.2**
HFS	**Hagfors**	**4.43**	**281**	Pn	**Pn**	**11 25 38.8**	**-0.3**
	baz=98,slow=9.3						
HFS				Lg		11 26 42.3	
	baz=91,slow=37						
NOA	**NORSAR Array B**	**5.76**	**290**	Pn	**Pn**	**11 25 55.9**	**-1.8**
	comp=Z,0.2nm,0.3s,baz=86,slow=17,SNR=2.8						
NOA				Sn	**Sn**	**11 26 58.3**	**-7.2**
	comp=Z,0.1nm,0.3s,baz=101,slow=20,SNR=2.2						
NOA				Lg		11 27 23.9	
	comp=Z,0.4nm,0.3s,baz=120,slow=16,SNR=2.9						
ARA0	**ARCESS Array S**	**10.08**	**6**	Pn	**P**	**11 26 52.3**	**-5.6**
	baz=178,slow=16						
ARA0				Sn	**S**	**11 28 37.7**	**-15**
	baz=178,slow=28						
ARA0	**ARCESS Array S**	**10.08**	**6**	*e*P	**P**	**11 26 52.3**	**-5.6**
ARA0				*e*		11 28 37.7	
ARCES	**ARCESS Array B**	**10.08**	**6**	Pn	**P**	**11 26 53.1**	**-4.8**
	comp=Z,0.2nm,0.3s,baz=187,slow=13,SNR=8.3						
ARCES				Sn	**S**	**11 28 37.7**	**-15**
	comp=Z,0.2nm,0.3s,baz=195,slow=24,SNR=3.1						

IDC ***25*** *11:48:50.0±5.2,3.58S×129.86E, h34km±44km, mb3.7/3, mb1 3.9/5, mb1mx3.6/17, ML3.8/2, Error ellipse: s-maj=71.7km s-min=19.7km az=64.0*
NEIC ***25*** *11:48:51.7±3.8,3.64S×129.95E, h48km±35km, mb3.7/1, Error ellipse: s-maj=53.2km s-min=17.3km az=55.0*
ISC 25 11:48:44.1±3.3, 3.5S±0.2×130.1E±0.3, h6km±22km, n10, σ1°00/12, mb3.6/2, Seram

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KAKA	**Kakadu**	**9.42**	**166**	*e*P	**P**	**11 51 04.5**	**+1.1**
	2.8nm,0.6s						
FITZ	**Fitzroy Crossi**	**15.15**	**196**	Pn	**P**	**11 52 20.9**	**+0.2**
	0.4nm,0.3s,baz=358,slow=12,SNR=10						
WRAB	**Tennant Creek**	**16.85**	**166**	*e*Pn	**P**	**11 52 41.9**	**-0.6**
	4.6nm,0.7s						
WRA	**Warramunga Arr**	**16.85**	**166**	Pn	**P**	**11 52 41.8**	**-0.8**
	0.3nm,0.3s,baz=345,slow=11,SNR=16						
WRA				Sn	**S**	**11 55 48.7**	**-0.6**
	0.1nm,0.3s,baz=345,slow=22,SNR=4.7						
WB2	**Warramunga Arr**	**16.86**	**166**	*e*P	**P**	**11 52 43.4**	**+0.8**
AS12	**Alice Springs**	**20.38**	**170**	*e*P	**P**	**11 53 23.7**	**-0.8**
	6.5nm,0.9s						
ASAR	**Alice Springs**	**20.38**	**170**	P	**P**	**11 53 23.6**	**-0.9**
	4.5nm,0.6s,baz=348,slow=11,SNR=51						
ASAR				S	**S**	**11 57 10.8**	**+2.8**
	0.3nm,0.6s,baz=352,slow=24,SNR=3.7						
STKA	**Stephens Creek**	**30.22**	**160**	P	**P**	**11 54 58.0**	**0.0**
	1.2nm,0.7s,mb3.7,baz=139,slow=3.8,SNR=2.8						
CMAR	**Chiang Mai Arr**	**37.66**	**306**	P	**P**	**11 56 00.8**	**-1.4**
	0.4nm,0.3s,mb3.6,baz=141,slow=9.2,SNR=5.1						
LSA	**Lhasa**	**49.80**	**314**	*e*P	**P**	**11 57 41.7**	**+1.6**

NEIC ***25*** *11:49:30.0, 35.13N×4.25W, MG3.5(MDD), After MDD.*
MDD 25 11:49:29.9±1.6, 35.11N×4.28W, mb3.5/7, Error ellipse: s-maj=17.0km s-min=6.3km az=17.0, AftershockPLICA PRXIMO, Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
EMEL	**Melilla**	**1.10**	**80**	P	Pb	11 49 49.7	-1.9
	132nm,0.1s,SNR=4.6						
EMEL				S	Sb	11 50 04.1	-2.2
	261nm,0.2s						
MELI	**Melilla**	**1.12**	**80**	S	Sb	11 50 06.8	+0.1
EJIF	**Jimena Fronter**	**1.65**	**324**	P	Pn	11 49 59.5	-0.8
	2.7nm,0.2s,SNR=7.9						
EJIF	**Jimena Fronter**	**1.65**	**324**	P	Pn	11 49 59.2	-1.1
EJIF				S	Sb	11 50 20.3	-1.8
ERON	**Agron**	**1.94**	**11**	P	Pn	11 50 02.9	-1.5
	1.4nm,0.1s,SNR=7.9						
ERON	**Agron**	**1.94**	**11**	P	Pn	11 50 02.6	-1.9
ERON				S	Sn	11 50 24.0	-5.9
ELIJ	**Sierra de Lija**	**2.01**	**334**	P	Pn	11 50 04.1	-1.3
	0.7nm,0.1s,SNR=7.0						
ELIJ				S	Sn	11 50 30.0	-1.7
	1.5nm,0.2s						
ELIJ	**Sierra de Lija**	**2.01**	**334**	P	Pn	11 50 05.1	-0.4
ELIJ				S	Sn	11 50 29.3	-2.4
ELOJ	**Sierra Loja**	**2.03**	**3**	P	Pn	11 50 03.2	-2.6
	3.4nm,0.3s,SNR=7.9						
ELOJ				S	Sn	11 50 30.4	-1.8
	2.7nm,0.2s,SNR=5.1						
ELOJ	**Sierra Loja**	**2.03**	**3**	P	Pn	11 50 03.2	-2.6
ELOJ				S	Sn	11 50 29.7	-2.5
ESPR	**Espera**	**2.17**	**324**	P	Pn	11 50 04.6	-3.1
	4.2nm,0.3s,SNR=4.0						
ESPR				S	Sn	11 50 32.7	-3.0
	4.4nm,0.3s,SNR=4.0						
ESPR	**Espera**	**2.17**	**324**	P	Pn	11 50 04.5	-3.3
ESPR				S	Sn	11 50 32.6	-3.1
ELUQ	**Luque**	**2.44**	**0**	P	Pn	11 50 11.5	-0.1
	1.5nm,0.2s,SNR=7.9						
ELUQ				S	Sn	11 50 39.2	-3.5
	3.0nm,0.2s,SNR=7.9						
ELUQ	**Luque**	**2.44**	**0**	P	Pn	11 50 11.5	-0.1
ELUQ				S	Sn	11 50 39.9	-2.8
EQES	**Quesada**	**2.85**	**20**	P	Pn	11 50 16.1	-1.5
	4.4nm,0.2s,SNR=7.9						
EQES				S	Sn	11 50 49.5	-3.6
	8.0nm,0.2s,SNR=7.9						
EQES	**Quesada**	**2.85**	**20**	P	Pn	11 50 16.1	-1.5
EQES				S	Sn	11 50 49.0	-4.1
EADA	**Adamuz**	**3.06**	**356**	P	Pn	11 50 18.1	-2.3
	0.2nm,0.1s,SNR=6.4						
EADA				S	Sn	11 50 53.2	-5.0
	2.0nm,0.2s						
EADA	**Adamuz**	**3.06**	**356**	P	Pn	11 50 18.1	-2.4
EADA				S	Sn	11 50 53.0	-5.3
ECAB	**El Cabril**	**3.09**	**343**	P	Pn	11 50 18.6	-2.3
	0.1nm,0.1s,SNR=7.9						
ECAB				S	Sn	11 50 54.6	-4.6
	2.2nm,0.2s,SNR=7.9						
EMIN	**Mina Concepcio**	**3.27**	**325**	P	Pn	11 50 20.6	-2.9
	0.3nm,0.1s,SNR=6.9						
EMIN				S	Sn	11 50 58.1	-5.7
	1.1nm,0.2s						
EMIN	**Mina Concepcio**	**3.27**	**325**	P	Pn	11 50 21.1	-2.5
EMIN				S	Sn	11 50 58.0	-5.8
ETOB	**Tobarra**	**4.15**	**31**	P	Pn	11 50 33.5	-2.5
	1.4nm,0.3s,SNR=5.8						
ETOB				S	Sn	11 51 19.0	-6.9
	1.0nm,0.3s						
ETOB	**Tobarra**	**4.15**	**31**	P	Pn	11 50 33.2	-2.8
ETOB				S	Sn	11 51 18.9	-7.0

JMA ***25*** *11:56:08.8±0.2,25.03N×122.10E, h33km, M2.3*
TAP ***25*** *11:56:09.5,24.35N×121.97E, h15km±1km, ML3.0*
ISC 25 11:56:08.8±2.9, 25.2N±0.2×122.4E±0.3, h9km±34km, n5, σ0°28/9, Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
YOJ	**Yonaguni jima**	**0.95**	**140**	P	**Pb**	**11 56 26.7**	**-0.2**
YOJ				S	**Sb**	**11 56 39.7**	**+0.4**
IRIF	**Iriomote-Funau**	**1.52**	**124**	P	**Pn**	**11 56 36.3**	**0.0**
IRIF				S	**Sb**	**11 56 55.7**	**-0.3**
HATJ	**Hateruma jima**	**1.75**	**130**	*e*S	**Sn**	**11 57 01.5**	**-0.5**
JKRS	**Kuro-shima**	**1.79**	**122**	P	**Pn**	**11 56 39.9**	**-0.2**
JKRS				S	**Sn**	**11 57 03.3**	**+0.2**
JIJ	**Ishigaki jima**	**1.83**	**116**	P	**Pn**	**11 56 41.0**	**+0.3**
JIJ				S	**Sn**	**11 57 04.3**	**+0.1**

HEL ***25*** *11:58:23.2±0.2, 60.47N×26.90E, ML1.1, ML2.7(NAO), Explosion*
NAO ***25*** *11:58:25.2±4.8, 60.55N×26.73E, ML2.7*
BER ***25*** *11:58:25.5±1.5, 60.56N×26.83E, ML2.7(NAO), Suspected explosion*
ISC 25 11:58:22.5±1.8, 60.50N±0.07×26.8E±0.2, n8, σ0°65/10, Finland

| Code | Station Name | Δ° | AZ° | Phase | ID | Time | Res |
|---|---|---|---|---|---|---

FIA0	**FINESS Array S**	**2.17**	**56**	Pn		**Pn**	**12 32 44.7**	**+5.1**
	baz=232,slow=14							
FIA0				Lg			12 33 16.9	
	baz=226,slow=22							
FIA0				Rg			12 33 31.7	
	baz=205,slow=37							
FINES	**FINESS Array B**	**2.17**	**56**	Pn		**Pn**	**12 32 44.6**	**+5.0**
	comp=Z,1.3nm,0.3s,baz=226,slow=14,SNR=47							
FINES				Lg			12 33 16.9	
	comp=Z,2.9nm,0.3s,baz=233,slow=23,SNR=23							
FINES				Rg			12 33 31.9	
	comp=Z,14nm,0.9s,baz=218,slow=34,SNR=13							
KEF	**Keuruu**	**2.26**	**32**	MSG			12 33 25.3	
	comp=Z,7.0nm,0.1s							
VJF	**Virojoki**	**2.60**	**82**	*e*P		**Pn**	**12 32 48.0**	**+2.2**
VJF				*e*S		**Sn**	**12 33 18.0**	**-0.6**
VSU	**Vasula**	**2.90**	**127**	*e*P		**Pn**	**12 32 49.1**	**-0.8**
VSU				*e*S		**Sn**	**12 33 20.8**	**-5.2**
HFS	**Hagfors**	**4.31**	**272**	Pn		**Pn**	**12 33 09.0**	**-1.1**
	baz=99,slow=9.3							
HFS				Lg			12 34 13.6	
	baz=95,slow=28							
HFS	**Hagfors**	**4.31**	**272**	*e*		**Pn**	**12 33 09.0**	**-1.1**
HFS				*e*SB		**Sb**	**12 34 13.6**	**+2.2**
NOA	**NORSAR Array B**	**5.52**	**283**	Pn		**Pn**	**12 33 26.4**	**-0.8**
	comp=Z,0.2nm,0.3s,baz=102,slow=10,SNR=2.9							
NOA				Sn		**Sn**	**12 34 30.0**	**-2.3**
	comp=Z,0.1nm,0.3s,baz=98,slow=15,SNR=2.7							
NOA				Lg			12 34 54.2	
	comp=Z,0.4nm,0.3s,baz=22,slow=17,SNR=2.9							
ARA0	**ARCESS Array S**	**9.39**	**7**	Pn		**P**	**12 34 22.4**	**+1.0**
	baz=181,slow=14							
ARA0				Sn		**Sn**	**12 36 07.7**	**-1.2**
	baz=191,slow=28							
ARA0	**ARCESS Array S**	**9.39**	**7**	*e*P		**P**	**12 34 22.4**	**+1.0**
ARA0				*e*S		**Sn**	**12 36 07.7**	**-1.2**
ARCES	**ARCESS Array B**	**9.39**	**7**	Pn		**P**	**12 34 22.4**	**+1.1**
	comp=Z,0.2nm,0.3s,baz=185,slow=13,SNR=9.3							
ARCES				Sn		**Sn**	**12 36 08.5**	**-0.4**
	comp=Z,0.2nm,0.3s,baz=187,slow=24,SNR=3.1							

*NAO **25** 12:54:42.2±3.8,59.81N×24.37E,ML2.0*
*BER **25** 12:54:42.0±5.4,59.68N×24.56E,ML2.0(NAO), Suspected explosion*
*HEL **25** 12:54:43.7±0.1,59.91N×24.51E,ML1.7,ML2.0(NAO), Explosion*
ISC 25 12:54:39.9±1.1,59.83N±0.07×24.41E±0.09,n11,σ1§05/19,
Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MEF	**Metsahovi**	**0.39**	**359**	*e*P	**Pg**	**12 54 49.0**	**+1.4**
MEF				*e*S	**Sg**	**12 54 53.3**	**+0.6**
PVF	**Pernaja**	**1.02**	**45**	*e*P	**Pb**	**12 55 00.1**	**0.0**
PVF				*e*S	**Sg**	**12 55 12.1**	**-1.8**
PVF				*e*S	**Sg**	**12 55 12.1**	**-1.7**
VJF	**Virojoki**	**1.73**	**64**	*e*P	**Pn**	**12 55 12.7**	**+1.3**
VJF				*e*S	**Sb**	**12 55 34.3**	**-0.2**
FIA0	**FINESS Array S**	**1.81**	**26**	*e*P	**Pn**	**12 55 14.3**	**+1.6**
FIA0				*e*S	**Sn**	**12 55 36.1**	**-0.6**
FIA0				MSG		12 55 41.2	
	comp=Z,5.0nm,0.1s						
FIA0	**FINESS Array S**	**1.81**	**26**	Pn	**Pn**	**12 55 14.6**	**+1.9**
	baz=203,slow=18						
FIA0				Lg		12 55 39.9	
	baz=208,slow=28						
KEF	**Keuruu**	**2.35**	**5**	MSG		12 55 57.7	
	comp=Z,2.8nm,0.1s						
KAF	**Kangasniemi**	**2.47**	**21**	MSG		12 56 02.0	
	comp=Z,3.1nm,0.2s						
HFS	**Hagfors**	**5.39**	**278**	Pn	**Pn**	**12 56 02.7**	**-0.8**
	baz=125,slow=12						
HFS				Sn	**Sn**	**12 57 06.7**	**-0.5**
	baz=93,slow=28						
HFS				Lg		12 57 28.5	
	baz=92,slow=37						
HFS	**Hagfors**	**5.39**	**278**	*e*P	**Pn**	**12 56 02.7**	**-0.8**
HFS				*e*S	**Sn**	**12 57 06.7**	**-0.5**
HFS				*e*SG	**Sg**	**12 57 28.5**	**-11**
ARA0	**ARCESS Array S**	**9.75**	**2**	Pn	**P**	**12 57 03.2**	**-1.1**
	baz=178,slow=14						
ARA0				Sn	**Sn**	**12 58 50.3**	**-5.6**
	baz=187,slow=22						
ARA0	**ARCESS Array S**	**9.75**	**2**	*e*P	**P**	**12 57 03.2**	**-1.1**
ARA0				*e*S	**Sn**	**12 58 50.3**	**-5.6**

*IDC **25** 13:07:34.2±0.9,27.22N×97.28E,mb3.7/7,mb1 3.9/8, mb1mx3.8/21,ML3.5/1,MS3.3/2,Ms1 3.4/2,ms1mx2.8/30, Error ellipse: s-maj=41.1km s-min=15.9km az=68.0*
*BJI **25** 13:07:38.8,27.20N×97.06E,h42km,mB4.3,mb4.0,ML3.9, Ms3.9,Msz3.7*
*NEIC **25** 13:07:40.2±0.9,27.19N×97.23E,h42km±11km,mb4.1/4, Error ellipse: s-maj=12.6km s-min=7.6km az=62.0*
ISC 25 13:07:39.1±0.7,27.11N±0.05×97.13E±0.04,h54km±9km,
n34,σ1§24/37,mb3.9/11,MS3.3/2,Myanmar-India border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LKP	**Lekhapani**	**0.97**	**284**	*e*S	**S**	**13 08 12.0**	**+2.1**
LKP				*e*		13 08 36.0	
IMP	**Imphal**	**3.69**	**232**	*e*P	**P**	**13 08 36.0**	**+0.9**
SHL	**Shillong**	**4.95**	**253**	*e*P	**P**	**13 08 51.5**	**-1.3**
SHL				*e*S	**S**	**13 09 49.5**	**+0.1**
KMI	**Kunming**	**5.42**	**110**	*e*P	**P**	**13 08 58.3**	**-1.0**
KMI				S	**S**	**13 10 07.0**	**+5.8**
KMI				S	S		
	comp=N,78nm,1.2s						
KMI				S	S		
	comp=E,65nm,1.3s						
KMI				LR	LR		
	comp=N,1µm,5.8s						
KMI				LR	LR		
	comp=E,541nm,4.6s						
LSA	**Lhasa**	**5.86**	**298**	P	**P**	**13 09 04.8**	**-0.7**
LSA				S	**S**	**13 10 14.0**	**+1.7**
LSA				S	S		
	comp=N,30nm,1.0s						
LSA				S	S		
	comp=E,40nm,0.9s						
LSA	**Lhasa**	**5.86**	**298**	*e*P	**P**	**13 09 04.4**	**-1.1**
LSA				*e*S	**S**	**13 10 10.4**	**-1.8**
GYA	**Guiyang**	**8.55**	**92**	P	**P**	**13 09 44.3**	**+1.5**
GYA				S	**S**	**13 11 19.8**	**+1.0**
GYA				AMB	AMB		
	comp=Z,10.0nm,0.6s						
GYA				LR	LR		
	comp=N,830nm,10.8s						
GYA				LR	LR		
	comp=E,120nm,6.0s						
GYA				LR	LR		
	comp=Z,270nm,8.5s						
CM31	**Chiang Mai Arr**	**8.77**	**169**	P	**P**	**13 09 46.9**	**+1.0**
CMAR	**Chiang Mai Arr**	**8.77**	**169**	Pn	**P**	**13 09 45.4**	**-0.5**
	comp=Z,0.1nm,0.3s,baz=342,slow=13,SNR=11						
CMAR				Lg		13 12 17.1	
	baz=347,slow=16,SNR=3.9						
PKI	**Pulchoki**	**10.43**	**275**	*e*P	**P**	**13 10 04.1**	**-4.6**
	comp=Z,32nm,0.6s						
KKN	**Kakani**	**10.55**	**276**	*e*P	**P**	**13 10 06.3**	**-3.9**
	comp=Z,74nm,0.7s						
DMN	**Daman**	**10.70**	**275**	*e*P	**P**	**13 10 07.0**	**-5.3**
	comp=Z,82nm,0.9s						
GKN	**Gorkha**	**11.12**	**277**	*e*P	**P**	**13 10 13.0**	**-5.0**
	comp=Z,65nm,0.7s						
ENH	**Enshi**	**11.30**	**71**	*e*P	**P**	**13 10 17.8**	**-2.6**
KOLN	**Koldanda**	**12.03**	**276**	*e*P	**P**	**13 10 24.6**	**-5.7**
	comp=Z,40nm,0.8s						
HHC	**Hu-ho-hao-te**	**18.16**	**37**	*e*P	**P**	**13 11 49.5**	**+0.5**
HHC				AMB	AMB		
	comp=Z,7.0nm,1.0s						
HHC				AMB	AMB		
	comp=Z,76nm,5.1s						
WMQ	**Urumqi**	**18.34**	**338**	*e*P	**P**	**13 11 49.8**	**-1.4**
SONM	**Songino Array**	**21.93**	**17**	P	**P**	**13 12 28.2**	**-1.2**
	comp=Z,1.2nm,0.7s,mb3.4,baz=204,slow=12,SNR=7.1						
ULN	**Ulaanbaatar**	**22.13**	**18**	*e*P	**P**	**13 12 31.0**	**-0.3**
	comp=Z,2.3nm,0.8s,mb3.7						
MKAR	**Makanchi Array**	**22.88**	**333**	P	**P**	**13 12 38.5**	**-0.2**
	comp=Z,2.7nm,0.8s,mb3.8,baz=146,slow=9.2,SNR=15						
MKAR	**Makanchi Array**	**22.88**	**333**	P	**P**	**13 12 38.5**	**-0.2**
AAK	**Ala-Archa**	**24.07**	**316**	*e*P	**P**	**13 12 53.2**	**+3.0**
	comp=Z,6.8nm,1.0s,mb4.0						
KURK	**Kurchatov**	**27.47**	**334**	*e*P	**P**	**13 13 23.7**	**+1.6**
JNU	**Nakatsue**	**29.72**	**70**	LR	LR	13 25 47.5	
	comp=Z,58nm,18.1s,MS3.2,baz=242,slow=37						
BVAR	**Borovoye Array**	**32.64**	**330**	P	**P**	**13 14 06.8**	**-1.1**
	comp=Z,0.2nm,0.4s,mb3.4,baz=101,slow=7.3,SNR=2.5						
BRTR	**Keskin Array B**	**53.46**	**301**	P	**P**	**13 16 57.3**	**+1.2**
	comp=Z,0.4nm,0.4s,mb3.7,baz=82,slow=7.6,SNR=2.7						
ARCES	**ARCESS Array B**	**58.46**	**337**	LR	LR	13 46 10.4	
	comp=Z,28nm,19.2s,MS3.4,baz=252,slow=40						
WRAB	**Tennant Creek**	**59.06**	**138**	*e*P	**P**	**13 17 35.2**	**-1.0**
	comp=Z,4.5nm,0.6s,mb4.7						
WRA	**Warramunga Arr**	**59.06**	**138**	P	**P**	**13 17 35.8**	**-0.5**
	comp=Z,1.7nm,0.6s,mb4.3,baz=328,slow=7.4,SNR=24						
WB2	**Warramunga Arr**	**59.06**	**138**	*e*P	**P**	**13 17 35.9**	**-0.4**
AS12	**Alice Springs**	**61.72**	**141**	*e*P	**P**	**13 17 54.0**	**-0.4**
	comp=Z,4.4nm,1.2s,mb4.5						
ASAR	**Alice Springs**	**61.72**	**141**	P	**P**	**13 17 54.1**	**-0.3**
	comp=Z,1.5nm,0.5s,mb4.4,baz=324,slow=6.7,SNR=40						
ILAR	**Eielson Array**	**75.99**	**23**	P	**P**	**13 19 23.1**	**+1.4**
	comp=Z,0.3nm,0.7s,mb3.3,baz=301,slow=5.3,SNR=4.0						
INK	**Inuvik**	**77.84**	**17**	P	**P**	**13 19 33.4**	**+1.4**
	comp=Z,1.6nm,0.8s,mb4.0						

*HEL **25** 13:10:27.8±0.3,61.87N×30.70E,ML2.1,ML2.3(NAO), Explosion*
*NAO **25** 13:10:31.3±3.9,62.19N×30.05E,ML2.3*
*BER **25** 13:10:33.2±3.9,62.10N×30.13E,ML2.3(NAO), Suspected explosion*
ISC 25 13:10:26.9±1.2,61.92N±0.06×30.7E±0.1,n11,σ0§97/16,
Finland-Karelia border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JOF	**Joensuu**	**1.05**	**16**	*e*P	**Pb**	**13 10 47.2**	**-0.5**
JOF				*e*S	**Sb**	**13 11 00.7**	**-1.2**
VJF	**Virojoki**	**2.04**	**229**	*e*P	**Pn**	**13 11 02.5**	**-0.4**
VJF				*e*S	**Sn**	**13 11 28.3**	**-1.2**
KAF	**Kangasniemi**	**2.06**	**277**	*e*P	**Pn**	**13 11 03.9**	**+0.6**
KAF				*e*S	**Sn**	**13 11 30.7**	**+0.6**
FIA0	**FINESS Array S**	**2.24**	**260**	*e*P	**Pn**	**13 11 06.5**	**+0.7**
FIA0				*e*S	**Sn**	**13 11 34.7**	**+0.2**
FIA0	**FINESS Array S**	**2.24**	**260**	Pn	**Pn**	**13 11 06.5**	**+0.7**
	baz=78,slow=16						
FIA0				Lg		13 11 35.0	
	baz=70,slow=28						
FIA0				Rg		13 11 46.7	
	baz=70,slow=37						
SUF	**Sumiainen**	**2.26**	**293**	*e*P	**Pn**	**13 11 07.3**	**+1.3**
SUF				*e*SB	**Sb**	**13 11 36.2**	**-0.6**
SUF				MSG		13 11 39.5	
	comp=Z,7.8nm,0.2s						
KJN	**Kajaani**	**2.56**	**330**	*e*P	**Pn**	**13 11 12.2**	**+1.9**
KJN				MSG		13 11 46.6	
	comp=Z,6.9nm,0.2s						
KEF	**Keuruu**	**2.74**	**278**	*e*SB	**Sb**	**13 11 49.7**	**-1.3**
ARA0	**ARCESS Array S**	**7.94**	**347**	*e*S	**Sn**	**13 13 49.7**	**-8.3**
ARA0				*e*		13 14 27.9	
ARA0	**ARCESS Array S**	**7.94**	**347**	Sn	**Sn**	**13 13 49.7**	**-8.3**
	baz=169,slow=28						
ARA0				Lg		13 14 27.9	
	baz=156,slow=37						
HFS	**Hagfors**	**8.43**	**265**	Sn	**Sn**	**13 14 01.8**	**-8.5**
	baz=82,slow=22						
HFS				Lg		13 14 47.5	
	baz=77,slow=28						

*IDC **25** 13:14:48.8±3.2,59.81N×24.93E,mb1 3.2/3, mb1mx3.0/21,ML2.3/2,Error ellipse: s-maj=44.4km s-min=12.9km az=145.0*
*HEL **25** 13:14:49.4±0.4,59.86N×24.45E,ML1.8,Explosion*
ISC 25 13:14:47.5±1.2,59.84N±0.07×24.46E±0.10,n11,σ1§11/13,
Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MEF	**Metsahovi**	**0.38**	**355**	*e*P	**Pg**	**13 14 55.8**	**+0.7**
MEF				*e*S	**Sg**	**13 15 00.8**	**+0.6**
PVF	**Pernaja**	**1.00**	**44**	*e*P	**Pb**	**13 15 06.9**	**-0.4**
PVF				*e*S	**Sg**	**13 15 19.4**	**-1.3**
VJF	**Virojoki**	**1.70**	**64**	*e*P	**Pn**	**13 15 19.4**	**+0.7**
VJF				*e*S	**Sb**	**13 15 41.7**	**+0.5**
FIA0	**FINESS Array S**	**1.80**	**26**	*e*P	**Pn**	**13 15 21.3**	**+1.2**
FIA0				*e*S	**Sn**	**13 15 43.8**	**-0.1**
FINES	**FINESS Array B**	**1.80**	**26**	Pn	**Pn**	**13 15 21.1**	**+1.1**
	1.8nm,0.3s,baz=206,slow=15,SNR=75						
FINES				Sn	**Sn**	**13 15 44.4**	**+0.5**
	4.3nm,0.3s,baz=201,slow=27,SNR=32						
KEF	**Keuruu**	**2.34**	**5**	MSG		13 16 03.6	
	comp=Z,2.7nm,0.2s						
KAF	**Kangasniemi**	**2.45**	**21**	MSG		13 16 06.4	
	comp=Z,3.7nm,0.2s						
VAF	**Ylistaro**	**3.33**	**346**	MSG		13 16 44.8	
	comp=Z,2.9nm,0.2s						
HFS	**Hagfors**	**5.41**	**278**	Pn	**Pn**	**13 16 12.5**	**+1.1**
	comp=Z,0.0nm,0.3s,baz=98,slow=10,SNR=4.3						
NOA	**NORSAR Array B**	**6.66**	**286**	Pn	**Pn**	**13 16 27.4**	**-1.7**
	baz=93,slow=14,SNR=2.1						
ARCES	**ARCESS Array B**	**9.75**	**2**	Pn	**P**	**13 17 09.3**	**-2.5**
	comp=Z,0.1nm,0.3s,baz=178,slow=14,SNR=5.8						

*IDC **25** 13:17:32.4±2.5,59.87N×24.69E,mb1 3.2/3, mb1mx3.0/21,ML3.0/2,Error ellipse: s-maj=31.0km s-min=9.9km az=156.0*
*HEL **25** 13:17:33.2±0.1,59.88N×24.46E,ML1.9,ML2.2(UPP), ML2.2(NAO),Explosion*
*BER **25** 13:17:33.6±4.9,59.83N×24.51E,ML2.2(NAO), Suspected explosion*
*NAO **25** 13:17:34.5±3.6,60.01N×24.27E,ML2.2*
ISC 25 13:17:30.2±0.6,59.87N±0.04×24.24E±0.07,n17,σ1§43/25,
Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MEF	**Metsahovi**	**0.36**	**13**	*e*P	**Pg**	**13 17 39.3**	**+1.9**
MEF				*e*S	**Sg**	**13 17 43.9**	**+1.8**
PVF	**Pernaja**	**1.06**	**49**	*e*P	**Pb**	**13 17 50.4**	**-0.7**
PVF				*e*S	**Sb**	**13 18 02.9**	**-2.4**
VJF	**Virojoki**	**1.79**	**66**	*e*P	**Pn**	**13 18 02.6**	**+0.1**
VJF				*e*S	**Sn**	**13 18 25.3**	**-1.1**
FIA0	**FINESS Array S**	**1.82**	**29**	*e*P	**Pn**	**13 18 04.7**	**+1.7**
FIA0				*e*S	**Sn**	**13 18 27.4**	**+0.3**
FIA0	**FINESS Array S**	**1.82**	**29**	Pn	**Pn**	**13 18 04.8**	**+1.8**
	baz=201,slow=16						
FIA0				Lg		13 18 27.8	
	baz=206,slow=28						
FINES	**FINESS Array B**	**1.82**	**29**	Pn	**Pn**	**13 18 04.4**	**+1.4**
	3.3nm,0.3s,baz=205,slow=15,SNR=68						
FINES				Sn	**Sn**	**13 18 27.9**	**+0.8**
	4.8nm,0.3s,baz=201,slow=27,SNR=22						
VSU	**Vasula**	**1.91**	**137**	*e*P	**Pn**	**13 18 05.6**	**+1.3**
VSU				*e*S	**Sn**	**13 18 29.4**	**0.0**
KEF	**Keuruu**	**2.33**	**7**	MSG		13 18 46.8	
	comp=Z,5.5nm,0.1s						
KAF	**Kangasniemi**	**2.47**	**23**	MSG		13 18 48.1	
	comp=Z,5.0nm,0.1s						
VAF	**Ylistaro**	**3.27**	**347**	MSG		13 19 22.5	
	comp=Z,2.7nm,0.2s						
HFS	**Hagfors**	**5.30**	**277**	Pn	**Pn**	**13 18 55.3**	**+2.8**
	baz=113,slow=14						
HFS				Sn	**Sn**	**13 19 55.2**	**+0.1**
	baz=105,slow=28						
HFS				Lg		13 20 19.4	
	baz=103,slow=37						
HFS	**Hagfors**	**5.30**	**277**	*e*P	**Pn**	**13 18 55.3**	**+2.8**
HFS				*e*S	**Sn**	**13 19 55.2**	**+0.1**
HFS				*e*SG	**Sg**	**13 20 19.4**	**-7.1**
HFS	**Hagfors**	**5.30**	**277**	Pn	**Pn**	**13 18 55.1**	**+2.6**
	comp=Z,0.0nm,0.3s,baz=117,slow=13,SNR=3.6						
HFS				Sn	**Sn**	**13 19 55.1**	**-0.1**
	comp=Z,0.1nm,0.3s,baz=97,slow=23,SNR=4.3						
HFS				Lg		13 20 17.9	
	comp=Z,0.1nm,0.3s,baz=92,slow=32,SNR=4.2						
NOA	**NORSAR Array B**	**6.55**	**286**	Pn	**Pn**	**13 19 10.2**	**0.0**
	comp=Z,0.2nm,0.3s,baz=114,slow=16,SNR=2.2						
NOA				Sn	**Sn**	**13 20 23.8**	**-2.7**
	comp=Z,0.2nm,0.3s,baz=255,slow=19,SNR=2.8						
ARA0	**ARCESS Array S**	**9.72**	**3**	Pn	**P**	**13 19 53.0**	**-1.2**
	baz=182,slow=14						
ARA0	**ARCESS Array S**	**9.72**	**3**	*e*P	**P**	**13 19 53.0**	**-1.2**
ARCES	**ARCESS Array B**	**9.72**	**3**	Pn	**P**	**13 19 52.2**	**-1.9**
	comp=Z,0.2nm,0.3s,baz=180,slow=14,SNR=5.2						

DJA 25 13:22:10.3±1.0,9.02S×114.22E,h33km,MD4.7/1,
ML4.0/2,1C-6D,Error ellipse: s-maj=22.8km
s-min=10.5km az=50.0,South of Bali

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KELI	**Kelakatan**	**0.84**	**18**	*e*Pn	Pn	13 22 25.3	-0.7
KELI				↓*i*Sn	Sn	13 22 34.3	-3.0
KELI				↓*i*S	S	13 22 37.9	+0.8
INGI	**Ingas**	**0.93**	**77**	↓*i*Pn	Pn	13 22 26.4	-0.8
	230nm,0.2s						
INGI				↓*i*Sn	Sn	13 22 38.2	-1.3
RATI	**Rata**	**1.33**	**77**	↑*i*Pn	Pn	13 22 30.6	-2.3
	160nm,0.2s						
RATI				↓*i*Sn	Sn	13 22 47.2	-2.3

*MDD **25** 13:35:16.3±2.7,36.80N×11.05W,mb4.2/2,Error ellipse: s-maj=22.1km s-min=19.1km az=81.0,PRXIMO*
*INMG **25** 13:35:17.8±0.8,36.73N×11.07W,h10km,ML2.2,Error ellipse: s-maj=9.3km s-min=5.0km az=92.0*
ISC 25 13:35:17.0±1.8,36.81N±0.08×10.9W±0.1,h10km,n16,
σ0§86/23,Azores-Cape St. Vincent Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PTEO	**Sao Teotonio**	**1.86**	**66**	*e*Pn	**Pn**	**13 35 50.4**	**+1.2**
PTEO				*e*Sn	**Sn**	**13 36 14.6**	**+1.7**
PLOU	**Loures**	**2.48**	**33**	*e*Sn	**Sn**	**13 36 29.1**	**+0.5**
	18nm,0.2s						
PLOU	**Loures**	**2.48**	**33**	Sn	**Sn**	**13 36 29.1**	**+0.5**
	9.1nm,0.2s						
MOE	**Montemor**	**2.63**	**49**	*e*Pn	**Pn**	**13 36 00.5**	**+0.3**
MOE				*e*Sn	**Sn**	**13 36 33.1**	**+0.7**
PALC	**Alcoutim**	**2.78**	**75**	*e*Sn	**Sn**	**13 36 37.1**	**+0.7**
	7.2nm,0.2s						
PALC	**Alcoutim**	**2.78**	**75**	Sn	**Sn**	**13 36 37.1**	**+0.7**
	3.6nm,0.2s						
EGRO	**El Granado**	**2.79**	**74**	Sn	**Sn**	**13 36 37.5**	**+0.8**
	2.8nm,0.1s,SNR=7.9						
EMIN	**Mina Concepcio**	**3.47**	**73**	Pn	**Pn**	**13 36 12.4**	**+0.1**
	0.3nm,0.0s,SNR=14						
EMIN				Sn	**Sn**	**13 36 54.2**	**+0.3**
	2.2nm,0.1s,SNR=16						
EBAD	**Badajoz**	**3.61**	**56**	Pn	**Pn**	**13 36 14.0**	**-0.3**
	0.9nm,0.1s,SNR=7.9						
EBAD				Sn	**Sn**	**13 36 57.3**	**-0.1**
	1.6nm,0.1s,SNR=6.5						
ESPR	**Espera**	**4.01**	**88**	Pn	**Pn**	**13 36 19.6**	**-0.3**
	4.3nm,0.1s,SNR=7.8						
ESPR				Sn	**Sn**	**13 37 07.1**	**-0.5**
	13nm,0.3s,SNR=7.9						
PCBR	**Castelo Branco**	**4.03**	**40**	*e*Sn	**Sn**	**13 37 06.5**	**-1.5**
	2.2nm,0.2s						
PCBR	**Castelo Branco**	**4.03**	**40**	Sn	**Sn**	**13 37 06.5**	**-1.5**
	1.1nm,0.2s						
ECAB	**El Cabril**	**4.51**	**72**	Pn	**Pn**	**13 36 26.9**	**-0.1**
	0.4nm,0.1s,SNR=6.6						
ECAB				Sn	**Sn**	**13 37 19.0**	**-1.2**
	2.0nm,0.2s,SNR=5.6						
EADA	**Adamuz**	**5.18**	**73**	Pn	**Pn**	**13 36 35.9**	**-0.5**
	0.3nm,0.1s,SNR=6.5						
EADA				Sn	**Sn**	**13 37 35.5**	**-1.4**
	2.6nm,0.1s,SNR=5.0						
ELOB	**Lobios**	**5.50**	**22**	Sn	**Sn**	**13 37 38.6**	**-6.5**
	2.7nm,0.1s,SNR=7.9						
ECAL	**Calabor**	**6.04**	**31**	Sn	**Sn**	**13 37 54.3**	**-4.3**
	4.2nm,0.4s,SNR=7.9						

*IDC **25** 13:35:36.9±6.2,2.64S×136.71E,h30km±47km,mb3.7/4, mb1 3.8/6,mb1mx3.6/15,ML3.8/2,Error ellipse: s-maj=71.4km s-min=19.8km az=82.0*
*NEIC **25** 13:35:38.8±1.4,2.65S×136.98E,h50km,mb3.7/2,Error ellipse: s-maj=50.0km s-min=18.0km az=88.0*
ISC 25 13:35:39.4±2.8,2.8S±0.1×137.0E±0.2,h68km±26km,n12,
σ1§26/18,mb3.6/3,Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KAKA	**Kakadu**	**10.83**	**204**	*e*P	**P**	**13 38 13.8**	**-0.1**
	7.9nm,0.5s						
KAKA				*e*		13 40 12.6	
WRAB	**Tennant Creek**	**17.23**	**188**	*e*P	**P**	**13 39 38.5**	**+1.4**
	5.6nm,0.4s						
WB2	**Warramunga Arr**	**17.24**	**188**	*e*P	**P**	**13 39 36.5**	**-0.7**
WB2				*e*S	**S**	**13 42 40.2**	**-4.7**
WRA	**Warramunga Arr**	**17.24**	**188**	P	**P**	**13 39 35.9**	**-1.3**
	0.7nm,0.3s,baz=9.1,slow=12,SNR=26						
WRA				S	**S**	**13 42 43.0**	**-1.9**
	0.2nm,0.3s,baz=14,slow=22,SNR=4.6						
FITZ	**Fitzroy Crossi**	**18.84**	**215**	*e*P	**P**	**13 40 00.4**	**+3.9**
	1.3nm,0.6s						
FITZ				*e*S	**S**	**13 43 20.4**	**-0.2**
FITZ	**Fitzroy Crossi**	**18.84**	**215**	P	**P**	**13 39 59.1**	**+2.6**
	0.1nm,0.3s,baz=93,slow=18,SNR=2.6						
FITZ				S	**S**	**13 43 21.7**	**+1.1**
	0.4nm,0.3s,baz=187,slow=12,SNR=7.0						
AS12	**Alice Springs**	**20.96**	**188**	*e*P	**P**	**13 40 20.2**	**+1.2**
	4.0nm,0.3s						
AS12				*e*S	**S**	**13 44 13.1**	**+9.5**
ASAR	**Alice Springs**	**20.96**	**188**	P	**P**	**13 40 20.4**	**+1.3**
	1.6nm,0.3s,baz=17,slow=11,SNR=46						
ASAR				S	**S**	**13 44 12.7**	**+9.0**
	0.3nm,0.5s,baz=3.3,slow=27,SNR=5.0						
STKA	**Stephens Creek**	**29.26**	**172**	P	**P**	**13 41 37.4**	**+0.1**
	0.6nm,0.3s,mb3.6,baz=22,slow=8.0,SNR=4.3						
STKA	**Stephens Creek**	**29.26**	**172**	P	**P**	**13 41 37.4**	**+0.1**
MKAR	**Makanchi Array**	**68.79**	**323**	P	**P**	**13 46 36.7**	**-1.7**
	0.4nm,0.6s,mb3.5,baz=102,slow=8.7,SNR=5.9						
VNDA	**Vanda**	**75.86**	**175**	P	**P**	**13 47 20.8**	**+1.2**
	0.8n

5.6nm,1.2s,mb4.4
ASAR Alice Springs 34.25 161 P **P** 13 56 20.9 **+0.1**
1.6nm,0.6s,mb4.1,baz=344,slow=6.9,SNR=42
ASAR PcP PcP 13 58 56.2 -0.7
0.4nm,0.6s,baz=338,slow=2.4,SNR=4.2
SONM Songino Array 41.13 344 P **P** 13 57 19.9 **+1.6**
0.5nm,0.7s,mb3.2,baz=164,slow=8.2,SNR=4.5
STKA Stephens Creek 44.51 156 P **P** 13 57 46.1 **+0.1**
1.5nm,0.6s,mb4.0,baz=332,slow=11,SNR=3.6
DRP Derazinda 53.24 303 P **P** 13 58 49.9 **-3.5**
MLR Muntele Rosu 88.12 316 LR LR 14 48 41.7
comp=Z,22nm,19.9s,MS3.6,baz=81,slow=40

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*NEIC **25** 13:52:36.0, 63.46N× 147.58W, h9km, ML3.5(PMR), ML3.1(AEIC), After AEIC.*
ISC 25 13:52:35.4±0.7, 63.49N±0.06×147.6W±0.1, h9km, n11, σ0§67/12, 1D, Central Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MCK	**McKinley**	**0.66**	**292**	⇓*iP*	**Pb**	**13 52 49.0**	**+0.4**
MCK				*eS*	**Sg**	**13 52 57.1**	**-0.4**
COLA	**College**	**1.39**	**355**	*eP*	**Pn**	**13 53 01.9**	**+0.7**
TOA	**Tolsona**	**1.53**	**155**	*eP*	**Pn**	**13 53 03.3**	**+0.2**
SML	**Sawmill**	**1.73**	**192**	*eP*	**Pn**	**13 53 05.3**	**-0.6**
PMR	**Palmer**	**2.04**	**202**	*eP*	**Pn**	**13 53 10.0**	**-0.4**
PWA	**Palmer West**	**2.14**	**211**	*eP*	**Pn**	**13 53 11.7**	**-0.1**
PMS	**Palmer South**	**2.44**	**203**	*eP*	**Pn**	**13 53 17.7**	**+1.6**
EYAK	**Cordova Ski Ar**	**3.07**	**163**	*eP*	**Pn**	**13 53 25.4**	**+0.3**
DAWY	**Dawson**	**3.67**	**77**	*eP*	**Pn**	**13 53 32.8**	**-0.9**
IMA	**Indian Mountai**	**3.68**	**317**	*eP*	**Pn**	**13 53 33.8**	**0.0**
SVW	**Sparrevohn**	**4.46**	**241**	*eP*	**Pn**	**13 53 44.0**	**-0.8**

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*NNC **25** 13:55:17.6±4.4, 41.83N× 84.43E, mpv3.6, Error ellipse: s-maj=57.1km s-min=34.8km az=103.0*
*IDC **25** 13:55:19.4±0.7, 41.86N× 84.20E, mb4.0/11, mb1 4.1/15, mb1mx4.0/24, ML3.6/4, MS2.9/2, Ms1 2.9/2, ms1mx2.5/27, Error ellipse: s-maj=22.8km s-min=12.2km az=63.0*
*BJI **25** 13:55:20.3, 41.73N× 84.11E, h12km, mB4.6, mb4.4, ML4.3, Ms4.0*
*NEIC **25** 13:55:21.0±0.4, 41.80N× 84.12E, h10km, mb4.4/2, Error ellipse: s-maj=9.3km s-min=6.1km az=48.0*
ISC 25 13:55:19.5±0.5, 41.77N±0.05× 84.11E±0.06, h12km, n40, σ0§99/45, mb3.9/13, 10C-6D, Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WMQ	**Urumqi**	**3.34**	**51**	P	**Pn**	**13 56 16.0**	**+3.3**
WMQ				S	**Sn**	**13 56 57.3**	**+4.6**
WMQ				SG	**Sg**	**13 57 04.0**	**-6.9**
WMQ				S	Sn		
	comp=N,270nm,0.7s						
WMQ				S	Sn		
	comp=E,366nm,0.7s						
MK31	**Makanchi Array**	**5.19**	**346**	⇑Pn	**Pn**	**13 56 38.8**	**-0.2**
	comp=E,0.9nm,0.2s,baz=159,slow=14,SNR=132						
MK31				⇑Pg	**Pg**	**13 56 55.0**	**-8.2**
	comp=E,6.4nm,0.3s,baz=163,slow=16,SNR=22						
MK31				⇑Lg		13 57 58.7	
	comp=E,52nm,0.6s,baz=173,slow=28,SNR=5.3						
MK31				⇓Rg		13 58 39.0	
	comp=E,106nm,7.8s						
MKAR	**Makanchi Array**	**5.19**	**346**	Pn	**Pn**	**13 56 38.7**	**-0.2**
	comp=E,1.7nm,0.3s,baz=150,slow=14,SNR=60						
MKAR				Pg	**Pg**	**13 56 54.8**	**-8.3**
	comp=E,7.4nm,0.3s,baz=161,slow=15,SNR=28						
MKAR				Lg		13 58 01.6	
	comp=E,25nm,0.3s,baz=160,slow=27,SNR=8.8						
MKAR				LR	LR	13 59 02.0	
	comp=E,86nm,21.3s,baz=128,slow=44						
ULHL	**Ulahol**	**5.88**	**277**	P	**Pn**	**13 56 48.8**	**+0.2**
	SNR=18						
TKM2	**Tokmak 2**	**6.41**	**283**	P	**Pn**	**13 56 57.0**	**+0.9**
	SNR=57						
KZA	**Kyzart**	**6.62**	**276**	P	**Pn**	**13 57 00.6**	**+1.6**
	SNR=8.9						
KBK	**Karagaybulak**	**6.86**	**280**	P	**Pn**	**13 57 02.8**	**+0.3**
	SNR=26						
UCH	**Uchtor**	**7.16**	**277**	P	**Pn**	**13 57 06.5**	**-0.2**
	SNR=5.7						
AAK	**Ala-Archa**	**7.19**	**280**	P	**Pn**	**13 57 08.4**	**+1.3**
	SNR=5.5						
AAK	**Ala-Archa**	**7.19**	**280**	*e*Pn	**Pn**	**13 57 04.9**	**-2.2**
AAK				*e*Sg	**Sg**	**13 59 06.0**	**-13**
USP	**Ospenovka**	**7.26**	**285**	P	**Pn**	**13 57 07.6**	**-0.4**
	SNR=9.9						
KURK	**Kurchatov**	**9.72**	**339**	⇑Pn	**P**	**13 57 40.5**	**-1.6**
	comp=E,1.8nm,1.0s,baz=175,slow=17,SNR=4.5						
KURK				⇓Lg		14 00 22.9	
	comp=E,18nm,1.0s,baz=249,slow=16,SNR=5.6						
KURK	**Kurchatov**	**9.72**	**339**	*e*Pn	**P**	**13 57 39.5**	**-2.7**
KK31	**Karatay Array**	**10.14**	**282**	⇑Lg		14 00 39.5	
	comp=E,8.5nm,0.8s,baz=90,slow=27,SNR=4.3						
CHCP	**Chirah Chowk**	**11.79**	**230**	P	**P**	**13 58 09.0**	**-1.5**
ZAL	**Zalesovo**	**12.19**	**2**	Pn	**P**	**13 58 13.2**	**-2.6**
	comp=E,1.2nm,0.3s,baz=210,slow=10,SNR=8.3						
ZAL				Sn	**S**	**14 00 20.2**	**-12**
	comp=E,0.5nm,0.3s,baz=156,slow=17,SNR=3.0						
ZAL				Lg		14 01 43.1	
	comp=E,0.2nm,0.3s,baz=113,slow=19,SNR=2.5						
CEP	**Cherat**	**12.48**	**234**	P	**P**	**13 58 17.6**	**-2.2**
THW	**Thamme Wali**	**13.30**	**232**	P	**P**	**13 58 26.7**	**-3.9**
VOSK	**Vostochnaya**	**14.10**	**325**	⇓Pn	**P**	**13 58 37.0**	**-4.0**
	comp=E,5.2nm,0.6s						
VOSK				⇓Lg		14 02 43.4	
	comp=E,16nm,1.4s						
BVA0	**Borovoye Array**	**14.57**	**325**	⇑Pn	**P**	**13 58 48.0**	**+0.8**
	comp=E,0.4nm,0.7s,baz=136,slow=13,SNR=11						
BVA0				⇑Lg		14 02 52.5	
	comp=E,2.8nm,1.2s,baz=133,slow=28,SNR=4.0						
BVAR	**Borovoye Array**	**14.57**	**325**	Pn	**P**	**13 58 47.2**	**0.0**
	comp=E,0.3nm,0.3s,baz=126,slow=13,SNR=10						
BVAR				Lg		14 03 01.6	
	comp=E,0.2nm,0.3s,baz=292,slow=40,SNR=3.1						
BVAR				LR	LR	14 04 31.6	
	comp=E,78nm,19.1s,baz=140,slow=38						
BRVK	**Borovoye**	**14.64**	**325**	⇓Pn	**P**	**13 58 48.2**	**+0.1**
	comp=E,3.4nm,0.9s						
BRVK				⇑Lg		14 02 57.1	
	comp=E,14nm,1.4s						
BRVK	**Borovoye**	**14.64**	**325**	P	**P**	**13 58 48.3**	**+0.2**
ZRNK	**Zerenda**	**15.13**	**323**	⇑Pn	**P**	**13 58 54.9**	**+0.4**
	comp=E,4.1nm,0.8s						
ZRNK				⇓Lg		14 03 20.1	
	comp=E,16nm,1.2s						
SONM	**Songino Array**	**16.91**	**61**	Pn	**P**	**13 59 17.4**	**0.0**
	comp=E,0.1nm,0.3s,baz=256,slow=13,SNR=3.4						
SONM				Lg		14 04 17.5	
	baz=268,slow=35,SNR=3.6						
AB31	**Akbulak array**	**18.47**	**302**	⇑P	**P**	**13 59 36.2**	**-0.6**
	comp=E,1.3nm,0.6s,baz=108,slow=10,SNR=22						
ARU	**Arti**	**22.07**	**320**	*e*P	**P**	**14 00 16.9**	**+1.2**
	comp=E,5.0nm,0.6s,mb4.1						
THR	**Tehran**	**26.25**	**268**	P	**P**	**14 00 57.0**	**+0.9**
	comp=E,1.4nm,0.8s,mb3.5,baz=167,slow=1.6,SNR=3.9						
CMAR	**Chiang Mai Arr**	**26.46**	**147**	P	**P**	**14 00 58.6**	**+0.4**
	comp=E,3.0nm,1.0s,mb3.8,baz=321,slow=9.3,SNR=13						
BRTR	**Keskin Array B**	**37.85**	**284**	P	**P**	**14 02 38.1**	**+0.5**
	comp=E,2.0nm,0.6s,mb4.0,baz=96,slow=9.9,SNR=7.0						
FINES	**FINESS Array B**	**39.44**	**320**	P	**P**	**14 02 51.4**	**+0.6**
	comp=E,0.6nm,0.5s,mb3.6,baz=105,slow=10,SNR=8.8						
ARCES	**ARCESS Array B**	**40.69**	**333**	P	**P**	**14 03 01.1**	**+0.1**
	comp=E,2.5nm,0.5s,mb4.1,baz=88,slow=7.6,SNR=17						
NB2	**NORSAR Subarra**	**46.62**	**320**	P	**P**	**14 03 49.9**	**+1.0**
	comp=E,0.8nm,0.5s,mb3.9,baz=79,slow=7.9						
NOA	**NORSAR Array B**	**46.62**	**320**	P	**P**	**14 03 48.3**	**-0.6**
	comp=E,2.5nm,0.9s,mb4.1,baz=80,slow=7.8,SNR=4.8						
ILAR	**Eielson Array**	**66.56**	**21**	P	**P**	**14 06 10.2**	**-0.8**
	comp=E,0.6nm,0.9s,mb3.6,baz=319,slow=5.3,SNR=9.9						
FITZ	**Fitzroy Crossi**	**70.87**	**138**	P	**P**	**14 06 38.3**	**-0.1**
	comp=E,1.6nm,0.8s,mb4.0,baz=175,slow=3.2,SNR=4.4						
YKA	**Yellowknife Ar**	**75.00**	**9**	P	**P**	**14 07 01.7**	**-0.1**
	comp=E,0.2nm,0.4s,mb3.4,baz=336,slow=6.1,SNR=4.3						
WRAB	**Tennant Creek**	**76.98**	**132**	*e*P	**P**	**14 07 14.2**	**+0.3**
	comp=E,4.1nm,0.7s,mb4.5						
WRA	**Warramunga Arr**	**76.98**	**132**	P	**P**	**14 07 14.3**	**+0.4**
	comp=E,1.4nm,0.7s,mb4.0,baz=330,slow=5.5,SNR=21						
ASAR	**Alice Springs**	**79.75**	**135**	P	**P**	**14 07 29.1**	**+0.1**
	comp=E,1.1nm,0.7s,mb3.9,baz=326,slow=5.2,SNR=18						

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*NEIC **25** 14:03:13.2, 44.52N× 7.19E, h7km, ML2.4(GEN), ML2.2(LDG), ML1.9(STR), After GEN.*

*LDG **25** 14:03:13.4±0.0, 44.53N× 7.19E, h2km, Md2.1/1, Ml2.2/6, Error ellipse: s-maj=1.0km s-min=0.5km az=79.0*
*STR **25** 14:03:13.6±0.3, 44.52N× 7.25E, h5km±1km, Ml1.9, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
ISC 25 14:03:12.5±0.3, 44.52N±0.01× 7.16E±0.04, h13km±3km, n29, σ0§43/57, Northern Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PZZ	**Prazzo**	**0.04**	**250**	P	**Pg**	**14 03 15.1**	**+0.2**
PZZ				S	**Sg**	**14 03 16.3**	**-0.3**
STV2	**Anna di Valdie**	**0.30**	**156**	P	**Pg**	**14 03 19.0**	**+0.2**
STV2				S	**Sg**	**14 03 23.0**	**-0.2**
STV	**Sta Anna Valdi**	**0.30**	**157**	P	**Pg**	**14 03 19.1**	**+0.2**
STV				S	**Sg**	**14 03 23.0**	**-0.2**
BHB	**Bricherasio**	**0.33**	**13**	P	**Pg**	**14 03 19.6**	**+0.2**
BHB				S	**Sg**	**14 03 24.0**	**-0.1**
MBDF	**Montbardon**	**0.34**	**307**	*e*Pg	**Pg**	**14 03 20.6**	**+0.9**
MBDF				*e*Sg	**Sg**	**14 03 24.9**	**+0.3**
	15nm,0.2s						
ENR	**Entracque**	**0.35**	**147**	P	**Pg**	**14 03 19.7**	**-0.1**
ENR				S	**Sg**	**14 03 24.2**	**-0.4**
RRL	**Cesana Torines**	**0.48**	**326**	P	**Pg**	**14 03 23.0**	**+0.7**
RRL				S	**Sg**	**14 03 29.5**	**+0.6**
FENE	**Fenestrelle**	**0.52**	**352**	P	**Pb**	**14 03 23.3**	**+0.4**
FENE				S	**Sg**	**14 03 30.0**	**0.0**
ROB	**Roburent**	**0.56**	**114**	P	**Pb**	**14 03 23.4**	**-0.2**
ROB				S	**Sb**	**14 03 30.6**	**-0.6**
AUTN	**L'Aution**	**0.56**	**160**	Pg	**Pg**	**14 03 23.6**	**-0.3**
AUTN				Pg	**Pg**	**14 03 24.3**	**+0.4**
AUTN				Sg	**Sg**	**14 03 31.4**	**-0.1**
AUTN				Sg	**Sg**	**14 03 31.7**	**+0.2**
AUTN	**L'Aution**	**0.56**	**160**	Pg	**Pg**	**14 03 23.6**	**-0.3**
AUTN				Sg	**Sg**	**14 03 31.4**	**-0.1**
MONE	**Monesi**	**0.61**	**136**	P	**Pb**	**14 03 24.6**	**0.0**
MONE				S	**Sb**	**14 03 32.5**	**-0.4**
MVIF	**Mont Vial**	**0.62**	**180**	Pg	**Pg**	**14 03 25.9**	**+0.8**
MVIF				Sg	**Sg**	**14 03 34.5**	**+0.9**
RSP	**Reno Superiore**	**0.64**	**6**	P	**Pb**	**14 03 25.4**	**+0.4**
RSP				S	**Sb**	**14 03 33.6**	**+0.1**
AURF	**Auriere**	**0.64**	**169**	Pg	**Pg**	**14 03 25.5**	**0.0**
SBF	**Sospel**	**0.69**	**163**	*e*Pg	**Pg**	**14 03 26.5**	**+0.1**
SBF				*e*Sg	**Sg**	**14 03 35.5**	**-0.1**
	7.5nm,0.3s						
RORO		**0.77**	**122**	P	**Pb**	**14 03 27.3**	**+0.1**
RORO				S	**Sb**	**14 03 37.1**	**-0.2**
NEGI	**Negi**	**0.78**	**150**	P	**Pb**	**14 03 27.7**	**+0.3**
NEGI				S	**Sb**	**14 03 37.7**	**+0.1**
CALN	**Calern**	**0.79**	**194**	Pg	**Pg**	**14 03 28.9**	**+0.5**
CALN				Sg	**Sg**	**14 03 40.2**	**+1.1**
IMI	**Imperia**	**0.81**	**139**	P	**Pb**	**14 03 28.2**	**+0.3**
IMI				S	**Sb**	**14 03 38.5**	**+0.1**
FIN	**Finale Ligure**	**0.81**	**112**	P	**Pb**	**14 03 28.3**	**+0.3**
FIN				S	**Sb**	**14 03 38.6**	**-0.1**
LSD	**Ceresole Reale**	**0.94**	**360**	P	**Pb**	**14 03 30.4**	**+0.3**
PCP	**Pian Castagno**	**0.99**	**88**	P	**Pb**	**14 03 30.9**	**-0.1**
ORIF	**Oris-en-Rattie**	**0.99**	**294**	*e*Pg	**Pg**	**14 03 32.3**	**-0.2**
ORIF				*e*Sg	**Sg**	**14 03 45.3**	**-0.5**
	4.4nm,0.4s						
LPG	**La Plagne**	**1.02**	**344**	*e*Pg	**Pg**	**14 03 32.8**	**-0.2**
LPG				*e*Sg	**Sg**	**14 03 46.1**	**-0.5**
	4.7nm,0.4s						
FRF	**La Foret Royal**	**1.03**	**201**	*e*Pg	**Pg**	**14 03 33.0**	**-0.1**
FRF				*e*Sg	**Sg**	**14 03 46.4**	**-0.5**
	7.0nm,0.2s						
LPL	**La Plagne**	**1.04**	**343**	*e*Pg	**Pg**	**14 03 33.1**	**-0.3**
LPL				*e*Sg	**Sg**	**14 03 46.3**	**-1.1**
	4.7nm,0.3s						
SMRF	**Simiane la Rot**	**1.26**	**245**	*e*Pg	**Pg**	**14 03 37.4**	**-0.4**
SMRF				*e*Sg	**Sg**	**14 03 54.2**	**-0.4**
	11nm,0.4s						
LMR	**La Mourre**	**1.27**	**202**	*e*Pg	**Pg**	**14 03 37.4**	**-0.6**
LMR				*e*Sg	**Sg**	**14 03 54.2**	**-0.9**
	8.8nm,0.3s						

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*IDC **25** 14:22:40.2±5.9, 8.92S× 127.58E, mb3.8/1, mb1 3.8/3, mb1mx3.5/14, ML3.4/2, Error ellipse: s-maj=185.0km s-min=71.2km az=65.0*
ISC 25 14:22:41.6±3.0, 8.4S±0.4× 128.5E±0.8, h33km, n3, σ1§15/5, mb3.5/1, Timor Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**12.81**	**154**	Pn	**P**	**14 25 42.6**	**-1.5**
	0.3nm,0.3s,baz=322,slow=14,SNR=30						
WRA				Sn	**S**	**14 28 06.9**	**+0.5**
	0.7nm,0.3s,baz=320,slow=25,SNR=14						
ASAR	**Alice Springs**	**16.05**	**162**	Pn	**P**	**14 26 26.9**	**+0.3**
	0.2nm,0.3s,baz=340,slow=11,SNR=14						
ASAR				Sn	**S**	**14 29 23.1**	**-0.2**
	0.1nm,0.3s,baz=347,slow=24,SNR=3.2						
STKA	**Stephens Creek**	**26.36**	**154**	P	**P**	**14 28 17.5**	**+0.8**
	1.3nm,0.8s,mb3.5,baz=319,slow=11,SNR=3.1						

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*IDC **25** 14:36:38.4±10.0, 32.05S× 179.64W, h223km±104km, mb3.1/2, mb1 3.3/3, mb1mx3.1/13, Error ellipse: s-maj=102.0km s-min=45.1km az=1.0*
ISC 25 14:36:34.1±2.9, 32.1S±0.1× 179.5W±0.4, h200km, n9, σ0§64/11, mb3.2/2, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**6.20**	**196**	P	**P**	**14 38 10.5**	**+5.8**
URZ	**Urewera**	**6.70**	**203**	P	**P**	**14 38 16.1**	**+4.8**
	0.7nm,0.3s,baz=346,slow=9.1,SNR=7.7						
URZ				S	**S**	**14 39 32.3**	**+5.2**
	2.5nm,0.3s,baz=110,slow=18,SNR=14						
MRZ	**Mangatainoka R**	**9.38**	**203**	P	**P**	**14 38 45.9**	**-0.2**
MRZ				S	**S**	**14 40 28.3**	**-1.1**
CAW	**Cannon Point**	**9.95**	**204**	P	**P**	**14 38 54.3**	**+0.8**
THZ	**Tophouse**	**11.36**	**210**	P	**P**	**14 39 11.6**	**0.0**
THZ				S	**S**	**14 41 16.1**	**+0.8**
MOZ	**McQueen's Vall**	**13.09**	**206**	S	**S**	**14 41 50.5**	**-4.7**
ASAR	**Alice Springs**	**41.75**	**270**	P	**P**	**14 44 05.3**	**+0.1**
	0.3nm,0.5s,mb3.0,baz=106,slow=7.3,SNR=11						
WRA	**Warramunga Arr**	**42.90**	**275**	P	**P**	**14 44 14.3**	**-0.4**
	0.7nm,0.3s,mb3.5,baz=111,slow=8.1,SNR=35						
FINES	**FINESS Array B**	**146.29**	**338**	PKPbc	PKPbc	14 55 50.8	+0.7
	0.4nm,0.5s,baz=18,slow=4.4,SNR=5.3						

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*NAO **25** 14:37:47.5±1.4, 59.88N× 24.45E, ML2.6*
*IDC **25** 14:37:47.6±2.3, 59.87N× 24.67E, mb1 3.2/3, mb1mx3.0/21, ML3.2/2, Error ellipse: s-maj=27.1km s-min=9.4km az=151.0*
*BER **25** 14:37:48.9±3.3, 59.88N× 24.51E, ML2.6(NAO), Suspected explosion*
HEL 25 14:37:48.1±0.1, 59.88N× 24.49E, ML2.2, ML2.5(UPP), **ML2.6**(NAO), **Explosion, Baltic States - Belarus - Northwestern Russia**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MEF	**Metsahovi**	**0.34**	**352**	*e*P	Pg	14 37 54.2	-0.8
MEF				*e*S	Sg	14 37 59.1	-0.4
PVF	**Pernaja**	**0.96**	**45**	*e*P	Pg	14 38 05.2	-2.0
PVF				*e*S	Sg	14 38 17.2	-2.7
VJF	**Virojoki**	**1.67**	**65**	*e*P	Pn	14 38 17.5	-1.3
VJF				*e*S	Sb	14 38 39.1	-1.8
FIA0	**FINESS Array S**	**1.75**	**26**	*e*P	Pn	14 38 19.6	-0.4
FIA0				*e*S	Sn	14 38 41.2	-2.2
FIA0	**FINESS Array S**	**1.75**	**26**	Pn	Pn	14 38 19.6	-0.4
	baz=200,slow=16						
FIA0				Lg		14 38 42.3	
	baz=208,slow=28						
FINES	**FINESS Array B**	**1.75**	**26**	Pn	Pn	14 38 19.6	-0.4
	6.5nm,0.3s,baz=206,slow=14,SNR=100						
FINES				Sn	Sn	14 38 42.0	-1.4
	14nm,0.3s,baz=208,slow=24,SNR=47						
VSU	**Vasula**	**1.83**	**140**	*e*P	Pn	14 38 20.4	-0.8
VSU				*e*S	Sn	14 38 44.2	-1.1
VSU	**Vasula**	**1.83**	**140**	Pn	Pn	14 38 20.4	-0.7
VSU				Lg		14 38 44.3	
KEF	**Keuruu**	**2.30**	**4**	MSG		14 39 01.7	
	comp=Z,12nm,0.2s						
KAF	**Kangasniemi**	**2.41**	**21**	MSG		14 39 03.1	
	comp=Z,9.7nm,0.1s						
HFS	**Hagfors**	**5.42**	**277**	Pn	Pn	14 39 09.6	-2.5
	baz=101,slow=12						
HFS				Sn	Sn	14 40 10.8	-5.4
	baz=71,slow=28						
HFS				Lg		14 40 34.3	
	baz=91,slow=37						
HFS	**Hagfors**	**5.42**	**277**	Pn	Pn	14 39 09.9	-2.2
	comp=Z,0.0nm,0.3s,baz=90,slow=7.4,SNR=6.4						
HFS				Sn	Sn	14 40 10.7	-5.6
	comp=Z,0.1nm,0.3s,baz=105,slow=29,SNR=6.1						
HFS				Lg		14 40 34.2	
	comp=Z,0.3nm,0.3s,baz=95,slow=31,SNR=7.1						
NOA	**NORSAR Array B**	**6.67**	**286**	Pn	Pn	14 39 24.9	-4.8
	comp=Z,0.3nm,0.3s,baz=82,slow=20,SNR=2.2						
NOA				Sn	Sn	14 40 39.0	-8.5
	comp=Z,0.2nm,0.3s,baz=83,slow=20,SNR=2.9						
NOA				Lg		14 41 16.9	
	comp=Z,0.5nm,0.3s,baz=76,slow=17,SNR=2.9						
ARA0	**ARCESS Array S**	**9.71**	**2**	Pn	P	14 40 07.0	-4.9
	baz=179,slow=14						
ARA0				Sn	Sn	14 41 52.0	-11
	baz=184,slow=28						
ARA0	**ARCESS Array S**	**9.71**	**2**	*e*P	P	14 40 07.0	-4.9
ARA0				*e*S	Sn	14 41 52.0	-11
ARCES	**ARCESS Array B**	**9.71**	**2**	Pn	P	14 40 06.9	-4.9
	comp=Z,0.3nm,0.3s,baz=180,slow=14,SNR=16						
ARCES				Sn	Sn	14 41 52.9	-10
	comp=Z,0.2nm,0.3s,baz=186,slow=23,SNR=4.4						
SPA0	**Spitsbergen Ar**	**18.58**	**355**	P	P	14 42 05.0	-3.1
	baz=176,slow=18						
SPA0	**Spitsbergen Ar**	**18.58**	**355**	*e*P	P	14 42 05.0	-3.1

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*IDC **25** 15:02:03.1±2.6, 44.77S× 166.62E, mb3.7/3, mb1 3.9/4, mb1mx3.8/9, ML4.0/1, Error ellipse: s-maj=108.0km s-min=28.0km az=4.0*
*WEL **25** 15:02:06.7±0.8, 45.33S× 166.92E, h12km, ML4.1/7, Error ellipse: s-maj=8.6km s-min=2.7km az=90.0*
*NEIC **25** 15:02:07.3±0.7, 45.25S× 166.87E, h55km, mb4.4/1, ML4.0(WEL), Error ellipse: s-maj=22.1km s-min=9.4km az=193.0*
ISC 25 15:02:06.1±1.0, 45.29S±0.08× 167.0E±0.2, h73km±14km, n26, σ1§39/29, mb3.8/4, Off west coast of South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MLZ	**Mavora Lakes**	**0.85**	**94**	P*	**P**	**15 02 23.0**	**-0.2**
MLZ				S*	**S**	**15 02 34.7**	**-1.2**
MLZ	**Mavora Lakes**	**0.85**	**94**	P	**P**	**15 02 23.0**	**-0.2**
MLZ				S	**S**	**15 02 34.7**	**-1.2**
WHZ	**Wether Hill Ro**	**0.92**	**131**	P*	**P**	**15 02 23.7**	**-0.3**
WHZ				S*	**S**	**15 02 34.4**	**-2.8**
WHZ	**Wether Hill Ro**	**0.92**	**131**	P	**P**	**15 02 23.8**	**-0.1**
MSZ	**Milford Sound**	**0.92**	**48**	P*	**P**	**15 02 23.8**	**-0.2**
MSZ				S*	**S**	**15 02 39.1**	**+1.8**
AXZ	**Alexandra**	**1.67**	**90**	*e*PN	**P**	**15 02 36.3**	**+2.3**
TUZ	**Tuapeka**	**1.99**	**110**	PN	**P**	**15 02 40.0**	**+1.7**
TUZ	**Tuapeka**	**1.99**	**110**	*e*P	**P**	**15 02 40.4**	**+2.2**
BWZ	**Berwen**	**2.21**	**71**	PN	**P**	**15 02 43.6**	**+2.2**
ODZ	**Otahua Downs**	**2.62**	**86**	PN	**P**	**15 02 48.5**	**+1.4**
ODZ	**Otahua Downs**	**2.62**	**86**	*e*P	**P**	**15 02 48.9**	**+1.8**
RPZ	**Rata Peaks**	**3.32**	**63**	Pn	**P**	**15 02 57.8**	**+0.8**
	17nm,0.3s,baz=228,slow=4.6,SNR=79						
RPZ				Sn	**S**	**15 03 42.1**	**+6.6**
	17nm,0.3s,baz=35,slow=14,SNR=3.5						
RPZ	**Rata Peaks**	**3.32**	**63**	PN	**P**	**15 02 57.4**	**+0.5**
RPZ	**Rata Peaks**	**3.32**	**63**	*e*P	**P**	**15 02 58.2**	**+1.2**
WVZ	**Waitaha Valley**	**3.50**	**52**	PN	**P**	**15 02 58.6**	**-0.9**
LTZ	**Lake Taylor**	**4.57**	**59**	PN	**P**	**15 03 14.2**	**-0.2**
DSZ	**Dunniston Nort**	**4.99**	**46**	PN	**P**	**15 03 18.2**	**-2.0**
THZ	**Tophouse**	**5.58**	**53**	PN	**P**	**15 03 28.0**	**-0.1**
QRZ	**Quartz Range**	**6.04**	**44**	PN	**P**	**15 03 32.8**	**-1.9**
SNZO	**South Karori**	**6.91**	**58**	P	**P**	**15 03 45.1**	**-1.7**
STKA	**Stephens Creek**	**23.81**	**295**	P	**P**	**15 07 14.8**	**+2.0**
	1.9nm,0.8s,mb3.5,baz=115,slow=14,SNR=4.2						
ASAR	**Alice Springs**	**34.40**	**298**	P	**P**	**15 08 47.6**	**-0.5**
	0.7nm,0.8s,mb3.5,baz=119,slow=7.5,SNR=8.8						
WRA	**Warramunga Arr**	**36.92**	**302**	P	**P**	**15 09 09.3**	**-0.3**
	1.2nm,0.7s,mb3.9,baz=136,slow=8.2,SNR=18						
WRAB	**Tennant Creek**	**36.92**	**302**	*e*P	**P**	**15 09 09.1**	**-0.5**
	3.0nm,0.6s,mb4.4						
BRTR	**Keskin Array B**	**145.53**	**278**	PKPbc	PKPbc	15 21 40.5	+4.6
	2.5nm,1.0s,baz=135,slow=3.5,SNR=6.6						
ARCES	**ARCESS Array B**	**149.01**	**335**	PKPbc	PKPdf	15 21 49.5	+9.5
	1.4nm,0.7s,baz=90,slow=3.6,SNR=5.2						

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*IDC **25** 15:07:19.0±6.6, 37.61N× 72.27E, h170km±43km, mb3.5/5, mb1 3.6/9, mb1mx3.3/21, Error ellipse: s-maj=67.3km s-min=26.1km az=167.0*
*MOS **25** 15:07:19.2±0.9, 37.53N× 72.21E, h194km, mb3.9/6, Error ellipse: s-maj=27.1km s-min=16.1km az=93.6*
*NEIC **25

JOF pmax pmax
comp=Z,2.0nm,0.3s,mb4.2
FINES FINESS Array B 37.14 325 P **P** **15 14 12.9 0.0**
comp=Z,1.2nm,0.4s,mb3.9,baz=119,slow=10,SNR=15
FINES FINESS Array B 37.14 325 P **P** **15 14 12.9 0.0**
FINES pmax pmax
comp=Z,1.0nm,0.4s
ARCES ARCESS Array B 40.53 337 P **P** **15 14 41.4 +0.6**
comp=Z,2.2nm,0.7s,mb3.9,baz=118,slow=9.3,SNR=11
ARCES ARCESS Array B 40.53 337 P **P** **15 14 41.4 +0.6**
ARCES pmax pmax
comp=Z,2.0nm,0.7s
NB2 NORSAR Subarra 44.11 322 P **P** **15 15 09.3 -0.5**
comp=Z,1.2nm,0.6s,mb3.7,baz=91,slow=7.9
NOA NORSAR Array B 44.11 322 P **P** **15 15 09.4 -0.3**
comp=Z,1.4nm,0.6s,mb3.7,baz=93,slow=7.6,SNR=5.2
NOA NORSAR Array B 44.11 322 P **P** **15 15 09.5 -0.3**
NOA pmax pmax
comp=Z,1.0nm,0.6s
TIXI Tiksi 44.44 22 *eP* **P** **15 15 13.2 +0.9**
ILAR Eielson Array 73.50 16 P **P** **15 18 31.6 -0.7**
comp=Z,0.7nm,1.0s,mb3.4,baz=300,slow=3.2,SNR=5.5
ILAR Eielson Array 73.50 16 P **P** **15 18 31.7 -0.7**
ILAR pmax pmax
comp=Z,1.0nm,1.0s
YKA Yellowknife Ar 80.14 3 P **P** **15 19 09.6 +0.4**
comp=Z,1.0nm,0.6s,mb3.6,baz=350,slow=5.4,SNR=14
YKA Yellowknife Ar 80.14 3 P **P** **15 19 09.6 +0.4**
YKA pmax pmax
comp=Z,1.0nm,0.6s

JMA ***25*** *15:18:09.9±0.2,25.05N×122.51E,h111km,M2.2*
TAP ***25*** *15:18:10.1,24.83N×122.52E,h115km±1km,ML3.6*
ISC 25 15:18:10.1±2.3,25.0N±0.3×122.5E±0.1,h115km±24km,n7,
σθ=38/12,Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
YOJ	**Yonaguni jima**	**0.67**	**138**	P	**P**	**15 18 28.7**	**0.0**
YOJ				S	**S**	**15 18 43.3**	**+0.3**
IRIF	**Iriomote-Funau**	**1.27**	**119**	P	**P**	**15 18 34.5**	**-0.4**
IRIF				S	**S**	**15 18 53.1**	**-0.4**
HATJ	**Hateruma jima**	**1.48**	**127**	P	**P**	**15 18 37.6**	**+0.2**
HATJ				S	**S**	**15 18 58.4**	**+0.5**
JKRS	**Kuro-shima**	**1.54**	**118**	P	**P**	**15 18 38.2**	**+0.2**
JKRS				S	**S**	**15 18 59.3**	**+0.2**
JIJ	**Ishigaki jima**	**1.59**	**112**	P	**P**	**15 18 38.6**	**-0.1**
JIJ				S	**S**	**15 18 59.5**	**-0.8**
JTJ	**Tarama**	**2.01**	**99**	S	**S**	**15 19 09.2**	**-0.1**
JOGS	**Gusukube**	**2.63**	**94**	*eS*	**S**	**15 19 24.5**	**+0.6**

NIED ***25*** *15:26:00,26.50N×125.60E,h160km,Mw4.0 Best double couple: M0 1.04×10^15 NP1:φs349°,δ63°,λ-69°. NP2: φs128°,δ34°,λ-126°.*
IDC ***25*** *15:26:24.5±1.6,26.58N×125.64E,h149km±17km, mb3.6/12,mb1 3.7/14,mb1mx3.5/26,Error ellipse: s-maj=21.5km s-min=13.0km az=63.0*
NEIC ***25*** *15:26:25.6±0.7,26.56N×125.64E,h161km±7km,mb4.4/1, Error ellipse: s-maj=10.0km s-min=9.1km az=57.0*
BJI ***25*** *15:26:25.6,26.60N×125.60E,h161km,mB4.3,mb4.2*
JMA ***25*** *15:26:25.8±0.3,26.51N×125.55E,h146km,M4.0*
ISC 25 15:26:24.0±0.3,26.48N±0.06×125.62E±0.05,h161km±5km,
n45,σθ=96/62,mb3.8/14,2C,Northeast of Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JKE	**Kume jima 2**	**1.06**	**98**	P	**P**	**15 26 51.8**	**+1.3**
JKE				S	**S**	**15 27 10.9**	**0.0**
JAGN	**Aguni-jima**	**1.46**	**85**	P	**P**	**15 26 55.4**	**+1.1**
JAGN				S	**S**	**15 27 17.1**	**-0.6**
JMJ	**Miyako jima 2**	**1.68**	**190**	P	**P**	**15 26 57.7**	**+1.1**
JMJ				S	**S**	**15 27 20.9**	**-1.0**
JOGS	**Gusukube**	**1.72**	**186**	P	**P**	**15 26 58.5**	**+1.4**
JOGS				S	**S**	**15 27 22.7**	**+0.1**
NAH1	**Naha**	**1.88**	**98**	P	**P**	**15 27 00.3**	**+1.6**
NAH1				S	**S**	**15 27 24.7**	**-0.9**
JJT2	**Tamagusuku 2**	**1.94**	**100**	P	**P**	**15 27 01.3**	**+1.9**
JJT2				S	**S**	**15 27 27.8**	**+1.0**
JTJ	**Tarama**	**2.01**	**205**	P	**P**	**15 27 01.1**	**+0.9**
JTJ				S	**S**	**15 27 26.6**	**-1.6**
JIH	**Iheya**	**2.17**	**75**	P	**P**	**15 27 03.3**	**+1.1**
JIH				S	**S**	**15 27 30.6**	**-1.0**
JOW	**Kunigami**	**2.40**	**81**	P	**P**	**15 27 05.6**	**+0.6**
	70nm,0.3s,baz=187,slow=13,SNR=365						
JOW				S	**S**	**15 27 34.8**	**-1.7**
	334nm,0.3s,baz=124,slow=26,SNR=72						
JOW	**Kunigami**	**2.40**	**81**	P	**P**	**15 27 05.8**	**+0.8**
JOW				S	**S**	**15 27 35.0**	**-1.5**
JIJ	**Ishigaki jima**	**2.49**	**213**	P	**P**	**15 27 06.0**	**-0.1**
JIJ				S	**S**	**15 27 35.1**	**-3.4**
JKRS	**Kuro-shima**	**2.67**	**214**	P	**P**	**15 27 08.3**	**0.0**
JKRS				S	**S**	**15 27 40.9**	**-1.3**
IRIF	**Iriomote-Funau**	**2.73**	**219**	P	**P**	**15 27 09.0**	**-0.1**
IRIF				S	**S**	**15 27 42.3**	**-1.4**
HATJ	**Hateruma jima**	**2.92**	**215**	P	**P**	**15 27 11.6**	**+0.2**
HATJ				S	**S**	**15 27 46.7**	**-1.1**
YOJ	**Yonaguni jima**	**3.10**	**230**	P	**P**	**15 27 14.7**	**+1.0**
YOJ				*eS*	**S**	**15 27 52.6**	**+0.8**
JTK	**Tokunoshima**	**3.24**	**66**	P	**P**	**15 27 15.5**	**0.0**
JTK				S	**S**	**15 27 53.6**	**-1.5**
TATO	**Taipei**	**4.02**	**249**	*eP*	**P**	**15 27 27.1**	**+1.5**
JAM	**Amami Oshima**	**4.03**	**61**	P	**P**	**15 27 25.2**	**-0.5**
JAM				S	**S**	**15 28 10.1**	**-3.2**
JZK	**Kikaishima**	**4.28**	**64**	P	**P**	**15 27 28.8**	**-0.2**
JZK				S	**S**	**15 28 19.0**	**-0.1**
JNN	**Nakanoshima**	**5.03**	**47**	P	**P**	**15 27 39.5**	**+0.7**
JMZ	**Minamidaito 2**	**5.08**	**96**	P	**P**	**15 27 39.2**	**-0.2**
JMZ				S	**S**	**15 28 32.1**	**-5.6**
JKC	**Kuchinoerabu**	**5.65**	**44**	P	**P**	**15 27 47.0**	**0.0**
JTN	**Tanegashima 3**	**6.29**	**47**	P	**P**	**15 27 55.2**	**-0.2**
JTN				*eS*	**S**	**15 29 06.2**	**-0.3**
JNU	**Nakatsue**	**8.04**	**33**	P	**P**	**15 28 20.9**	**+2.0**
	1.0nm,0.3s,baz=202,slow=12,SNR=5.1						
HHC	**Hu-ho-hao-te**	**18.47**	**324**	*eP*	**P**	**15 30 35.5**	**+5.6**
HHC				AMB	AMB		
	comp=Z,11nm,1.1s						
HHC				AMB	AMB		
	comp=Z,43nm,7.3s						
LZH	**Lanzhou**	**20.89**	**303**	*eP*	**P**	**15 30 56.0**	**+1.2**
LZH				AMB	AMB		
	comp=Z,26nm,1.2s						
GTA	**Gaotai**	**25.11**	**307**	*eP*	**P**	**15 31 35.0**	**-0.3**
GTA				AMB	AMB		
	comp=Z,6.0nm,1.1s,mb4.0						
ULN	**Ulaanbaatar**	**25.85**	**331**	*eP*	**P**	**15 31 41.7**	**-0.4**
	comp=Z,11nm,1.0s,mb4.4						
CMAR	**Chiang Mai Arr**	**25.88**	**258**	P	**P**	**15 31 43.0**	**+0.3**
	comp=Z,0.8nm,0.7s,mb3.4,baz=58,slow=6.9,SNR=5.3						
SONM	**Songino Array**	**26.12**	**330**	P	**P**	**15 31 44.6**	**0.0**
	comp=Z,8.2nm,0.4s,mb4.7,baz=147,slow=11,SNR=68						
MKAR	**Makanchi Array**	**39.63**	**312**	P	**P**	**15 33 41.1**	**-0.2**
	comp=Z,7.5nm,0.5s,mb4.6,baz=99,slow=10,SNR=136						
MKAR				PcP	PcP	15 35 45.3	-0.3
	comp=Z,1.0nm,0.7s,baz=76,slow=5.0,SNR=6.5						
ZAL	**Zalesovo**	**40.65**	**324**	P	**P**	**15 33 48.5**	**-1.1**
	comp=Z,3.2nm,0.8s,mb4.0,baz=272,slow=8.0,SNR=16						
TIXI	**Tiksi**	**45.24**	**1**	P	**P**	**15 34 25.8**	**-0.7**
WRA	**Warramunga Arr**	**46.91**	**169**	P	**P**	**15 34 40.6**	**+0.4**
	comp=Z,0.6nm,0.8s,mb3.3,baz=348,slow=8.4,SNR=7.9						
BVAR	**Borovoye Array**	**48.54**	**319**	P	**P**	**15 34 51.7**	**-0.7**
	comp=Z,0.8nm,0.6s,mb3.5,baz=102,slow=9.3,SNR=6.8						
BVAR				PcP	PcP	15 36 14.3	-1.7
	comp=Z,0.3nm,0.3s,baz=100,slow=4.0,SNR=4.5						
ASAR	**Alice Springs**	**50.49**	**170**	P	**P**	**15 35 08.2**	**+0.6**
	comp=Z,0.3nm,0.5s,mb3.2,baz=358,slow=14,SNR=13						
ASAR				PcP	PcP	15 36 23.1	-0.4
	comp=Z,0.1nm,0.5s,baz=345,slow=3.8,SNR=3.8						
ARU	**Arti**	**55.75**	**322**	P	**P**	**15 35 44.6**	**-1.3**
FINES	**FINESS Array B**	**71.49**	**330**	P	**P**	**15 37 28.2**	**-0.4**
	comp=Z,0.5nm,0.5s,mb3.5,baz=45,slow=5.9,SNR=8.3						
BRTR	**Keskin Array B**	**75.03**	**307**	P	**P**	**15 37 49.9**	**+0.4**
	comp=Z,0.7nm,0.6s,mb3.5,SNR=4.3						
HFS	**Hagfors**	**77.50**	**332**	P	**P**	**15 38 02.1**	**-0.7**
	comp=Z,2.3nm,0.8s,mb3.9,baz=70,slow=4.7,SNR=7.4						
NOA	**NORSAR Array B**	**78.05**	**333**	P	**P**	**15 38 05.5**	**-0.3**
	comp=Z,0.9nm,1.0s,mb3.4,baz=74,slow=7.1,SNR=3.1						
YKA	**Yellowknife Ar**	**79.28**	**24**	P	**P**	**15 38 13.1**	**+0.7**
	comp=Z,0.8nm,0.4s,mb3.7,baz=301,slow=5.3,SNR=14						
VNA2	**Neumayer--Watz**	**128.30**	**198**	↑*i*		PKPdf	15 45 13.7 +3.0
VNA1	**Neumayer--Stat**	**128.70**	**198**	↑*i*		PKPdf	15 45 11.5 +0.1
VNA3	**Neumayer Olymp**	**128.73**	**197**			PKPdf	15 45 12.5 +1.0

NAO ***25*** *15:47:13.6±2.9,60.85N×29.21E,ML2.4*
BER ***25*** *15:47:15.1±1.9,60.92N×29.19E,ML2.4(NAO), Suspected explosion*
HEL 25 15:47:14.8±0.5,60.90N×29.26E,ML1.8,ML2.4(NAO)**,**
Explosion,Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
VJF	**Virojoki**	**0.92**	**247**	*eP*	Pg	15 47 31.0	-2.1
VJF				*eS*	Sg	15 47 43.8	-1.5
FIA0	**FINESS Array S**	**1.64**	**291**	*eP*	Pn	15 47 43.0	-2.0
FIA0				*eSG*	Sg	15 48 05.2	-4.1
FIA0	**FINESS Array S**	**1.64**	**291**	Pn	Pn	15 47 43.2	-1.8
	baz=112,slow=18						
FIA0				Lg		15 48 05.3	
	baz=104,slow=37						
FIA0				Rg		15 48 13.4	
	baz=117,slow=37						
PVF	**Pernaja**	**1.71**	**259**	*eP*	Pn	15 47 44.2	-1.8
KAF	**Kangasniemi**	**1.87**	**312**	*eP*	Pn	15 47 48.1	-0.2
KAF				*eS*	Sn	15 48 11.7	-1.2
KAF				MSG		15 48 14.4	
	comp=Z,4.9nm,0.1s						
SUF	**Sumiainen**	**2.35**	**322**	*eP*	Pn	15 47 55.7	+0.5
SUF				MSG		15 48 28.1	
	comp=Z,3.5nm,0.1s						
KEF	**Keuruu**	**2.46**	**303**	*eP*	Pn	15 47 56.1	-0.7
VSU	**Vasula**	**2.76**	**209**	Lg		15 48 40.5	
VSU	**Vasula**	**2.76**	**209**	*eSG*	Sg	15 48 40.5	-6.3
HFS	**Hagfors**	**7.72**	**271**	Pn	Pn	15 49 06.0	-5.2
	baz=83,slow=12						
HFS				Lg		15 51 11.9	
	baz=74,slow=37						
ARA0	**ARCESS Array S**	**8.81**	**351**	Pn	P	15 49 21.1	-5.2
	baz=168,slow=14						
ARA0	**ARCESS Array S**	**8.81**	**351**	*eP*	P	15 49 21.1	-5.2

DJA 25 16:01:45.5±1.0,7.83S×112.75E,h30km±9km,MD4.5/4, ML4.3/3,4C-5D,Error ellipse: s-maj=64.6km s-min=27.9km az=22.0,Jawa

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KELI	**Kelakatan**	**1.76**	**103**	↓*eP*	Pn	16 02 21.1	+6.6
	64nm,0.1s						
KELI	**Kelakatan**	**1.76**	**103**	↑*eP*	Pn	16 02 21.5	+7.0
KELI				↑*eSn*	Sn	16 02 48.1	+12
INGI	**Ingas**	**2.56**	**113**	↓*iPn*	Pn	16 02 30.2	+4.2
INGI				↑*eSn*	Sn	16 03 02.5	+6.0
RATI	**Rata**	**2.89**	**108**	↓*iPn*	Pn	16 02 34.1	+3.5
	278nm,0.2s						
RATI				↑*eSn*	Sn	16 03 09.1	+4.3
KEDI	**Kedomdong**	**3.39**	**101**	↓*iP*	Pn	16 02 39.6	+1.9
	146nm,0.1s						
KEDI	**Kedomdong**	**3.39**	**101**	↓*iP*	Pn	16 02 40.1	+2.4

IDC ***25*** *16:08:04.4±1.2,27.91N×62.69E,mb3.8/10,mb1 3.9/10, mb1mx3.8/22,MS3.0/1,Ms1 3.0/1,ms1mx2.3/32,Error ellipse: s-maj=35.2km s-min=21.1km az=45.0*
NEIC ***25*** *16:08:12.2±5.8,27.99N×62.73E,h57km±49km,mb3.8/3, Error ellipse: s-maj=28.3km s-min=13.9km az=207.0*
ISC 25 16:08:10.7±6.0,28.0N±0.2×62.7E±0.2,h56km±47km,n23,
σθ=65/23,mb3.8/12,MS2.9/1,Southwestern Pakistan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
UCH	**Uchtor**	**17.14**	**31**	P	**P**	**16 12 07.4**	**-0.2**
	SNR=6.3						
EKS2	**Erkin-Say**	**17.16**	**29**	P	**P**	**16 12 07.5**	**-0.5**
	SNR=7.5						
KZA	**Kyzart**	**17.36**	**33**	P	**P**	**16 12 11.1**	**+0.5**
	SNR=9.6						
AAK	**Ala-Archa**	**17.45**	**30**	P	**P**	**16 12 12.2**	**+0.5**
	SNR=5.0						
AAK	**Ala-Archa**	**17.45**	**30**	*eP*	**P**	**16 12 11.5**	**-0.1**
	4.8nm,0.9s						
KBK	**Karagaybulak**	**17.67**	**31**	P	**P**	**16 12 14.2**	**-0.2**
	SNR=7.4						
CHMS	**Chumysh**	**17.86**	**30**	P	**P**	**16 12 05.0**	**-12**
	SNR=6.5						
ULHL	**Ulahol**	**17.98**	**34**	P	**P**	**16 12 33.8**	**+16**
	SNR=111						
MKAR	**Makanchi Array**	**24.25**	**34**	P	**P**	**16 13 23.9**	**+0.6**
	1.1nm,0.7s,mb3.4,baz=230,slow=8.2,SNR=13						
BVAR	**Borovoye Array**	**25.63**	**11**	P	**P**	**16 13 35.2**	**-1.2**
	1.5nm,0.4s,mb3.6,baz=184,slow=12,SNR=10						
BVAR				LR	LR	16 25 11.3	
	comp=Z,35nm,21.8s,MS2.9,baz=30,slow=40						
BRVK	**Borovoye**	**25.65**	**11**	*eP*	**P**	**16 13 36.2**	**-0.4**
KURK	**Kurchatov**	**25.69**	**24**	*eP*	**P**	**16 13 37.3**	**+0.2**
SONM	**Songino Array**	**39.11**	**48**	P	**P**	**16 15 35.7**	**+1.7**
	0.7nm,0.6s,mb3.6,baz=247,slow=9.7,SNR=9.5						
ULN	**Ulaanbaatar**	**39.55**	**48**	P	**P**	**16 15 37.3**	**-0.3**
	0.6nm,0.6s,mb3.5						
FINES	**FINESS Array B**	**41.35**	**334**	P	**P**	**16 15 52.5**	**+0.1**
	0.4nm,0.3s,mb3.5,baz=132,slow=9.0,SNR=8.0						
FINES	**FINESS Array B**	**41.35**	**334**	P	**P**	**16 15 52.5**	**+0.1**
GERES	**GERESS Array B**	**42.79**	**313**	P	**P**	**16 16 05.4**	**+1.1**
	0.7nm,0.7s,mb3.5,baz=117,slow=9.0,SNR=4.1						
HFS	**Hagfors**	**46.00**	**328**	P	**P**	**16 16 29.7**	**-0.2**
	0.5nm,0.3s,mb3.9,baz=109,slow=10,SNR=15						
ARCES	**ARCESS Array B**	**46.76**	**343**	P	**P**	**16 16 35.4**	**-0.5**
	1.5nm,0.8s,mb4.0,baz=140,slow=9.5,SNR=6.4						
WRA	**Warramunga Arr**	**84.05**	**116**	P	**P**	**16 20 36.7**	**-0.3**
	1.6nm,0.8s,mb4.2,baz=311,slow=4.4,SNR=19						
WRAB	**Tennant Creek**	**84.05**	**116**	*eP*	**P**	**16 20 36.0**	**-0.9**
	5.0nm,0.7s,mb4.8						
ILAR	**Eielson Array**	**84.69**	**12**	P	**P**	**16 20 39.1**	**0.0**
	0.2nm,0.5s,mb3.5,baz=331,slow=5.4,SNR=5.1						
ASAR	**Alice Springs**	**85.71**	**119**	P	**P**	**16 20 45.6**	**+0.5**
	0.7nm,0.7s,mb4.0,baz=305,slow=5.1,SNR=14						

NAO ***25*** *16:16:01.0±3.0,67.79N×20.18E,ML2.4*
BER 25 16:16:04.4±4.2,67.84N×20.19E,ML1.6,ML2.4(NAO)**,**
Suspected explosion,Sweden

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TRO	**Tromso**	**1.86**	**346**	*eP*	Pn	16 16 34.6	-3.2
TRO				*eSg*	Sg	16 17 00.6	-5.7
TRO				AML	AML	16 17 02.7	
	comp=Z,9.3nm,0.4s						
LOF	**Lofoten**	**2.52**	**280**	*eSg*	Sg	16 17 23.8	-4.6
LOF				AML	AML	16 17 25.6	
	comp=Z,5.1nm,0.4s						
ARA0	**ARCESS Array S**	**2.58**	**46**	Pn	Pn	16 16 43.7	-4.4
	baz=228,slow=16						
ARA0				Sn	Sn	16 17 17.5	-3.1
	baz=227,slow=28						
MOR8	**Moi Rana**	**2.81**	**236**	*eSg*	Sg	16 17 25.4	-13
MOR8				AML	AML	16 17 26.7	
	comp=Z,9.7nm,0.3s						
NSS	**Namsos**	**4.71**	**229**	*eSg*	Sg	16 18 29.0	-12
FIA0	**FINESS Array S**	**6.90**	**156**	Lg		16 19 35.5	
	baz=350,slow=28						
FIA0	**FINESS Array S**	**6.90**	**156**	Lg		16 19 35.5	
	baz=350,slow=28						
HFS	**Hagfors**	**8.24**	**203**	Sn	Sn	16 19 32.6	-10
HFS				Lg		16 20 21.9	
	baz=16,slow=28						

IDC 25 16:20:41.3±52.0,18.71S×177.55W,mb4.0/3,mb1 4.2/3, mb1mx3.8/14,Error ellipse: s-maj=963.0km s-min=154.8km az=81.0,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**38.98**	**242**	P	P	16 28 09.5	-1.6
	0.8nm,0.4s,baz=78,slow=9.0,SNR=5.6						
WB2	**Warramunga Arr**	**45.29**	**260**	*eP*	P	16 29 00.7	-2.1
WRA	**Warramunga Arr**	**45.30**	**260**	P	P	16 29 00.9	-2.0
	0.8nm,0.3s,baz=97,slow=7.4,SNR=64						
ASAR	**Alice Springs**	**45.37**	**255**	P	P	16 29 01.7	-1.7
	1.4nm,0.6s,baz=89,slow=8.0,SNR=51						

IDC ***25*** *16:21:19.3±1.4,34.96N×86.50E,mb3.5/4,mb1 3.7/8, mb1mx3.6/21,ML3.5/3,MS3.1/2,Ms1 3.2/2,ms1mx2.5/25, Error ellipse: s-maj=52.6km s-min=20.9km az=62.0*

NEIC ***25*** *16:21:20.5±0.6,34.97N×86.41E,h10km,Error ellipse: s-maj=18.9km s-min=8.2km az=62.0*
ISC 25 16:21:23.8±1.5,35.18N±0.06×86.5E±0.2,h45km±20km,
n17,σθ=90/17,mb3.5/4,MS3.2/1,Xizang

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GKN	**Gorkha**	**7.33**	**193**	*eP*	**P**	**16 23 10.3**	**-0.6**
	12nm,0.4s						
KKN	**Kakani**	**7.44**	**188**	*eP*	**P**	**16 23 12.8**	**+0.3**
	10nm,0.5s						
PKI	**Pulchoki**	**7.64**	**187**	*eP*	**P**	**16 23 16.4**	**+1.1**
	16nm,0.5s						
KOLN	**Koldanda**	**7.79**	**199**	*eP*	**P**	**16 23 16.9**	**-0.4**
	16nm,0.6s						
MKAR	**Makanchi Array**	**12.03**	**346**	Pn	**P**	**16 24 14.2**	**-1.1**
	0.2nm,0.3s,baz=156,slow=14,SNR=16						
KURK	**Kurchatov**	**16.55**	**342**	*eP*	**P**	**16 25 13.2**	**-0.9**
ZAL	**Zalesovo**	**18.79**	**357**	P	**P**	**16 25 41.3**	**-0.5**
	0.2nm,0.3s,baz=204,slow=13,SNR=6.6						
ZAL				LR	LR	16 34 27.4	
	comp=Z,56nm,19.0s,baz=21,slow=41						
SONM	**Songino Array**	**19.47**	**43**	P	**P**	**16 25 50.0**	**+0.6**
	baz=236,slow=11,SNR=5.0						
ULN	**Ulaanbaatar**	**19.86**	**44**	*eP*	**P**	**16 25 54.4**	**+0.7**
	0.6nm,0.5s						
CM31	**Chiang Mai Arr**	**19.98**	**143**	P	**P**	**16 25 51.5**	**-3.7**
CMAR	**Chiang Mai Arr**	**19.98**	**143**	P	**P**	**16 25 56.3**	**+1.1**
	0.3nm,0.3s,baz=320,slow=9.6,SNR=6.9						
BVAR	**Borovoye Array**	**21.18**	**332**	P	**P**	**16 26 08.8**	**+1.4**
	2.8nm,0.9s,mb3.6,baz=135,slow=10,SNR=14						
ZRNK	**Zerenda**	**21.67**	**330**	*eP*	**P**	**16 26 12.7**	**+0.5**
NOA	**NORSAR Array B**	**52.97**	**324**	P	**P**	**16 30 38.4**	**+0.7**
	1.4nm,1.1s,mb3.8,baz=73,slow=7.6,SNR=2.3						
NOA				LR	LR	16 54 27.5	
	comp=Z,21nm,19.6s,MS3.2,baz=260,slow=37						
WRA	**Warramunga Arr**	**71.16**	**133**	P	**P**	**16 32 38.9**	**-1.1**
	0.3nm,0.9s,mb3.2,baz=326,slow=6.4,SNR=5.7						
WRAB	**Tennant Creek**	**71.16**	**133**	P	**P**	**16 32 39.0**	**-1.0**
ASAR	**Alice Springs**	**73.77**	**135**	P	**P**	**16 32 55.0**	**-0.3**
	0.3nm,0.7s,mb3.3,baz=326,slow=5.4,SNR=5.0						

JMA ***25*** *16:26:26.6±0.4,34.19N×141.91E,h35km±4km,M3.8*
IDC ***25*** *16:26:26.1±0.6,34.26N×141.68E,mb4.0/17,mb1 4.2/20, mb1mx4.1/27,ML3.7/3,Error ellipse: s-maj=17.5km s-min=13.6km az=119.0*
NEIC ***25*** *16:26:31.6±1.4,34.25N×141.69E,h38km±12km,mb4.5/4, Error ellipse: s-maj=11.9km s-min=6.7km az=94.0*
ISC 25 16:26:28.5±1.4,34.24N±0.04×141.78E±0.06,h32km±9km,
n53,σθ=93/59,mb4.1/22,1C,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BSO1	**Boso 1**	**0.78**	**302**	P	**Pn**	**16 26 43.0**	**-0.4**
BSO1				*eS*	**Sb**	**16 26 54.5**	**+0.6**
BSO3	**Boso 3**	**1.19**	**299**	P	**Pn**	**16 26 49.8**	**+0.6**
BSO3				*eS*	**Sn**	**16 27 06.6**	**+2.2**
BSO4	**Boso 4**	**1.41**	**303**	P	**Pn**	**16 26 53.3**	**+1.0**
CHOJ	**Chosi**	**1.65**	**333**	P	**Pn**	**16 26 55.5**	**-0.3**
CHOJ				S	**Sn**	**16 27 15.0**	**-1.0**
JCN	**Nagara**	**1.75**	**313**	P	**Pn**	**16 26 58.2**	**+0.9**
JHJ2	**Mitsune**	**1.98**	**236**	P	**Pn**	**16 27 02.1**	**+1.5**
JIM2	**Oshima 3**	**2.00**	**285**	P	**Pn**	**16 27 00.4**	**-0.4**
JHJ	**Hachijo jima 2**	**2.00**	**237**	Pn	**Pn**	**16 27 02.1**	**+1.3**
	78nm,0.3s,baz=64,slow=5.4,SNR=43						
JHJ				Sn	**Sn**	**16 27 26.0**	**+0.9**
	72nm,0.3s,baz=262,slow=23,SNR=5.3						
JOD2	**Odawara 2**	**2.44**	**296**	P	**Pn**	**16 27 06.2**	**-1.0**
JOD2				*eS*	**Sn**	**16 27 37.2**	**+1.0**
JIZS	**Izushimoda**	**2.44**	**282**	P	**Pn**	**16 27 06.5**	**-0.7**
JAG	**Ashikaga**	**2.90**	**320**	P	**Pn**	**16 27 13.1**	**-0.5**
JYN	**Shimob**	**2.94**	**296**	P	**Pn**	**16 27 14.3**	**0.0**
JRY	**Ryogami san**	**2.95**	**308**	P	**Pn**	**16 27 14.2**	**-0.2**
MAJO	**Matsushiro**	**3.71**	**309**	*eP*	**Pn**	**16 27 25.1**	**-0.1**
MAT	**Matsushiro**	**3.71**	**309**	P	**Pn**	**16 27 24.6**	**-0.7**
MAT				*eS*	**Sn**	**16 28 05.7**	**-2.8**
MAT	**Matsushiro**	**3.71**	**309**	*eP*	**Pn**	**16 27 25.0**	**-0.3**
MAT				S	**Sn**	**16 28 06.0**	**-2.5**
CBIJ	**Chichi jima**	**7.13**	**177**	Pn	**Pn**	**16 28 10.9**	**-2.6**
	8.2nm,0.3s,baz=319,slow=12,SNR=4.7						
CBIJ				Sn	**Sn**	**16 29 29.6**	**-4.6**
	7.0nm,0.3s,baz=264,slow=18,SNR=2.9						
JNU	**Nakatsue**	**9.15**	**266**	Pn	**P**	**16 28 41.0**	**-0.5**
	0.2nm,0.3s,baz=69,slow=8.6,SNR=2.4						
ASAJ	**Asahikawa**	**9.89**	**3**	Pn	**P**	**16 28 46.9**	**-4.8**
	1.1nm,0.3s,baz=210,slow=8.6,SNR=7.4						
ASAJ				Sn	**Sn**	**16 30 31.4**	**-11**
	0.5nm,0.3s,baz=269,slow=18,SNR=3.5						
ULN	**Ulaanbaatar**	**29.25**	**308**	*eP*	**P**	**16 32 30.2**	**+0.5**
	1.3nm,0.8s,mb3.7						
SONM	**Songino Array**	**29.67**	**308**	P	**P**	**16 32 33.7**	**+0.2**
	1.3nm,0.7s,mb3.8,baz=117,slow=8.3,SNR=12						
TIXI	**Tiksi**	**38.10**	**353

JNE					AML	AML	17 03 59.6		
	comp=Z,3µm,0.3s								
JNW	**Jan Mayen West**	**0.55**	**268**	⇑*iP*		**Pg**	**17 03 51.4**	**+0.7**
JNW				*eS*		**Sg**	**17 03 57.7**	**-0.3**
JNW					AML	AML	17 04 00.8		
	comp=Z,2µm,0.3s								
JMIC	**Jan Mayen**	**0.58**	**264**	Pg		**Pg**	**17 03 51.7**	**+0.4**
JMIC				Lg			17 03 58.7		
JMI	**Jan Mayen**	**0.66**	**260**	⇑*iP*		**Pb**	**17 03 53.4**	**+0.7**
JMI				*eS*		**Sb**	**17 04 01.0**	**-0.7**
JMI					AML	AML	17 04 03.7		
	comp=Z,4µm,0.3s								
DAG	**Danmarks Havn**	**6.61**	**336**	*i* P		**Pn**	**17 05 16.0**	**-3.3**
DAG				*i*			17 06 28.0		
DAG	**Danmarks Havn**	**6.61**	**336**	*e*P		**Pn**	**17 05 16.0**	**-3.3**
DAG				*i*			17 06 28.0		
LOF	**Lofoten**	**7.66**	**103**	*e*P		**Pn**	**17 05 36.0**	**+2.0**
MOR8	**Moi Rana**	**9.12**	**112**	*e*P		**P**	**17 05 53.9**	**-0.5**
SPA0	**Spitsbergen Ar**	**9.33**	**30**	Pn		**P**	**17 05 57.7**	**+0.5**
	baz=225,slow=16								
NSS	**Namsos**	**9.61**	**124**	*e*P		**P**	**17 05 59.5**	**-1.3**
ARA0	**ARCESS Array S**	**10.92**	**83**	Pn		**P**	**17 06 17.9**	**-0.9**
	baz=290,slow=12								
HFS	**Hagfors**	**13.73**	**133**	Pn		**P**	**17 06 56.4**	**+0.1**
	baz=342,slow=14								

NEIC ***25*** *17:11:18.7±0.8,2.48S×139.37E,h45km,mb3.7/2,Error ellipse: s-maj=18.9km s-min=11.3km az=94.0*
IDC ***25*** *17:11:18.6±5.2,2.47S×139.41E,h43km±48km,mb3.5/4, mb1 3.8/5,mb1mx3.5/14,ML3.8/1,Error ellipse: s-maj=57.0km s-min=16.1km az=99.0*

ISC 25 17:11:15.5±0.8,2.48S±0.08×139.4E±0.1,h33km,n13, σ0§84/16,mb3.8/3,Near north coast of Irian Jaya

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**10.35**	**132**		*eP*		**P**	**17 13 44.0**	**-0.8**
KAKA	**Kakadu**	**12.28**	**214**		*eP*		**P**	**17 14 09.2**	**-1.8**
	7.4nm,0.4s								
WRAB	**Tennant Creek**	**18.03**	**195**		*eP*		**P**	**17 15 26.0**	**+0.7**
	4.6nm,0.5s								
WB2	**Warramunga Arr**	**18.04**	**195**		*eP*		**P**	**17 15 26.0**	**+0.6**
WB2					*eS*		**S**	**17 18 36.8**	**-5.8**
WRA	**Warramunga Arr**	**18.04**	**195**		P		**P**	**17 15 25.9**	**+0.5**
	0.3nm,0.3s,baz=18,slow=12,SNR=27								
WRA					S		**S**	**17 18 34.5**	**-8.2**
	0.0nm,0.3s,baz=8.0,slow=21,SNR=3.4								
FITZ	**Fitzroy Crossi**	**20.56**	**220**		*eP*		**P**	**17 15 53.5**	**-0.6**
	2.4nm,1.1s								
FITZ	**Fitzroy Crossi**	**20.56**	**220**		P		**P**	**17 15 53.9**	**-0.1**
	3.4nm,1.1s,baz=32,slow=9.5,SNR=9.9								
AS12	**Alice Springs**	**21.72**	**194**		*eP*		**P**	**17 16 09.1**	**+3.3**
	16nm,1.6s,mb4.2								
ASAR	**Alice Springs**	**21.72**	**194**		P		**P**	**17 16 06.7**	**+1.0**
	1.2nm,0.6s,mb3.5,baz=24,slow=9.4,SNR=15								
ASAR					S		**S**	**17 20 05.7**	**+6.5**
	0.7nm,1.0s,baz=14,slow=27,SNR=3.0								
MKAR	**Makanchi Array**	**70.02**	**322**		P		**P**	**17 22 26.1**	**+0.2**
	1.0nm,0.6s,mb3.9,baz=110,slow=7.8,SNR=9.4								
KURK	**Kurchatov**	**73.91**	**325**		P		**P**	**17 22 48.4**	**-0.7**
BRVK	**Borovoye**	**79.58**	**325**		P		**P**	**17 23 21.1**	**+0.3**
ILAR	**Eielson Array**	**85.35**	**24**		P		**P**	**17 23 50.8**	**+0.5**
	0.6nm,0.8s,mb3.8,baz=256,slow=5.9,SNR=6.9								

JMA 25 17:15:17.5±0.1,27.08N×141.40E,h185km,M3.7,Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**0.70**	**89**		P		P	17 15 43.9	-0.2
CBIJ					*eS*		S	17 16 04.4	-0.2
JHHJ	**Haha-jima-NKT**	**0.83**	**123**		P		P	17 15 44.7	-0.1
JHHJ					S		S	17 16 05.1	-0.8
BSO1	**Boso 1**	**7.56**	**357**		P		P	17 17 04.1	-1.7
BSO3	**Boso 3**	**7.74**	**355**		P		P	17 17 06.0	-2.1
JOD2	**Odawara 2**	**8.39**	**347**		P		P	17 17 16.3	-0.5
JHO	**Hitachi**	**9.53**	**356**		P		P	17 17 28.8	-2.8

IDC 25 17:41:42.1±2.3,7.49S×128.14E,mb3.5/1,mb1 3.6/3, mb1mx3.4/14,ML3.2/2,Error ellipse: s-maj=271.0km s-min=31.5km az=65.0,Banda Sea

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**13.76**	**155**		Pn		P	17 44 57.7	-3.3
	0.2nm,0.3s,baz=330,slow=14,SNR=11								
WRA					Sn		S	17 47 20.4	-15
	0.6nm,0.3s,baz=332,slow=22,SNR=11								
ASAR	**Alice Springs**	**17.01**	**162**		P		P	17 45 42.4	-0.7
	0.1nm,0.3s,baz=346,slow=12,SNR=10.0								
ASAR					S		S	17 48 42.1	-10
	0.1nm,0.3s,baz=345,slow=24,SNR=7.9								
MKAR	**Makanchi Array**	**67.64**	**328**		P		P	17 52 40.9	-2.1
	0.2nm,0.3s,baz=121,slow=8.4,SNR=8.3								

NEIC ***25*** *17:48:46.1,27.41S×69.21W,h42km,MD3.4(GUC),After GUC.*
GUC ***25*** *17:48:46.1±0.6,27.41S×69.21W,h42km±3km,MD3.4, ML3.9*

ISC 25 17:48:45.2±1.3,27.44S±0.05×69.1W±0.1,h42km,n5, σ0§33/9,2C-1D,Northern Chile

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
CPCH	**Copiapo**	**1.12**	**274**	⇓*iP*			**P**	**17 49 04.5**	**-0.1**
CPCH				*i* S			**S**	**17 49 18.8**	**-0.4**
CPCH					AMP			17 49 20.4	
	comp=E,13µm,0.1s								
VACH	**Vallenar**	**1.86**	**232**	⇑*iP*			**P**	**17 49 15.8**	**+0.7**
VACH				*i* S			**S**	**17 49 37.8**	**+0.3**
VACH					AMP			17 49 39.0	
	comp=N,4µm,0.1s								
CPN1	**Cerro Paranal**	**3.04**	**337**	⇑*iP*			**P**	**17 49 32.2**	**+0.2**
CPN1				*i* S			**S**	**17 50 07.6**	**+0.1**
CPN1					AMP			17 50 10.5	
	comp=N,103nm,0.4s								
TLL	**Tololo Astrono**	**3.11**	**208**	*i* P			**P**	**17 49 32.8**	**-0.2**
TLL				*i* S			**S**	**17 50 08.9**	**-0.3**
TLL					AMP			17 50 10.3	
	comp=N,153nm,0.8s								
LVC	**Limon Verde**	**4.81**	**2**	*e*P			**P**	**17 49 56.7**	**-0.3**

IDC 25 18:11:14.7±2.4,5.97S×130.41E,mb3.7/1,mb1 3.7/3, mb1mx3.5/14,ML3.4/2,Error ellipse: s-maj=146.0km s-min=30.5km az=70.0,Banda Sea

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**14.41**	**165**		Pn		P	18 14 38.4	-3.8
	0.3nm,0.3s,baz=348,slow=13,SNR=7.9								
WRA					Sn		S	18 17 06.0	-18
	0.3nm,0.3s,baz=333,slow=22,SNR=8.3								
ASAR	**Alice Springs**	**17.91**	**170**		P		P	18 15 26.3	-0.7
	0.2nm,0.3s,baz=349,slow=11,SNR=26								
MKAR	**Makanchi Array**	**67.59**	**326**		P		P	18 22 13.3	-2.1
	0.4nm,0.6s,baz=111,slow=7.5,SNR=9.0								

NEIC ***25*** *18:23:13.5,40.42S×173.35E,h186km,After WEL.*
WEL 25 18:23:14.4±0.3,40.42S×173.40E,h176km±2km,ML3.7/4, 3C-2D,Error ellipse: s-maj=2.0km s-min=1.0km az=90.0, Cook Strait

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
NNZ	**Nelson**	**0.80**	**181**	⇑PN			P	18 23 40.4	-0.3
NNZ					SN		S	18 24 00.2	-0.6
NNZ	**Nelson**	**0.80**	**181**	P			P	18 23 40.4	-0.2
NNZ					S		S	18 24 00.3	-0.6
TUWZ	**Tuamarina**	**1.09**	**158**	PN			P	18 23 42.5	-0.1
TUWZ					SN		S	18 24 02.9	-1.6
NRZ	**Ngariki Road**	**1.15**	**21**	PN			P	18 23 42.9	-0.3
NWEZ	**Newall Road**	**1.20**	**18**	PN			P	18 23 43.2	-0.4
NWEZ	**Newall Road**	**1.20**	**18**	P			P	18 23 43.3	-0.3
DFE	**Dawson Falls**	**1.22**	**27**	PN			P	18 23 43.5	-0.3
DFE	**Dawson Falls**	**1.22**	**27**	P			P	18 23 43.5	-0.3
KIW	**Kapiti Island**	**1.23**	**112**	PN			P	18 23 44.0	+0.1
KIW	**Kapiti Island**	**1.23**	**112**	P			P	18 23 44.3	+0.4
NEZ	**North Egmont**	**1.26**	**25**	PN			P	18 23 43.5	-0.7
NEZ	**North Egmont**	**1.26**	**25**	P			P	18 23 43.8	-0.4
MRW	**Makara Radio**	**1.28**	**130**	PN			P	18 23 44.2	-0.1
MRW					SN		S	18 24 05.6	-1.9
MRW	**Makara Radio**	**1.28**	**130**	P			P	18 23 44.2	-0.1
MRW					S		S	18 24 05.5	-2.0
PKE	**Pukeiti**	**1.30**	**21**	PN			P	18 23 44.0	-0.6
PKE					SN		S	18 24 07.1	-0.8
PKE	**Pukeiti**	**1.30**	**21**	P			P	18 23 44.0	-0.6
SNZO	**South Karori**	**1.33**	**132**	PN			P	18 23 44.6	-0.2
SNZO					SN		S	18 24 06.6	-1.8
SNZO	**South Karori**	**1.33**	**132**	P			P	18 23 44.6	-0.3
SNZO					S		S	18 24 07.6	-0.8
BSWZ	**Blackbirch Sta**	**1.35**	**165**	PN			P	18 23 44.9	-0.1
BSWZ					SN		S	18 24 07.8	-0.8
WEL	**Wellington**	**1.35**	**130**	PN			P	18 23 44.8	-0.2
WEL					SN		S	18 24 07.0	-1.7
WEL	**Wellington**	**1.35**	**130**	P			P	18 23 44.9	-0.1
WEL					S		S	18 24 07.2	-1.5
RAEZ	**Rainy Point**	**1.36**	**35**	PN			P	18 23 44.6	-0.5
WAZ	**Wanganui**	**1.39**	**62**	PN			P	18 23 45.3	0.0
WAZ					*e*SN		S	18 24 08.8	-0.4
WAZ	**Wanganui**	**1.39**	**62**	P			P	18 23 45.5	+0.2
WAZ					S		S	18 24 10.6	+1.4
THZ	**Tophouse**	**1.40**	**195**	⇑PN			P	18 23 44.9	-0.6
THZ					SN		S	18 24 07.3	-2.1
THZ	**Tophouse**	**1.40**	**195**	P			P	18 23 44.9	-0.5
CAW	**Cannon Point**	**1.44**	**119**	PN			P	18 23 45.6	-0.3
CAW					SN		S	18 24 08.3	-1.9
CAW	**Cannon Point**	**1.44**	**119**	P			P	18 23 45.7	-0.2
CAW					S		S	18 24 09.6	-0.6
BHW	**Baring Head**	**1.49**	**132**	PN			P	18 23 45.5	-0.9
BHW	**Baring Head**	**1.49**	**132**	P			P	18 23 45.7	-0.7
VRZ	**Vera Road**	**1.66**	**40**	PN			P	18 23 46.3	-1.7
VRZ					SN		S	18 24 12.1	-1.8
VRZ	**Vera Road**	**1.66**	**40**	*e*P			P	18 23 46.9	-1.1
MRZ	**Mangatainoka R**	**1.68**	**99**	⇓PN			P	18 23 47.7	-0.5
MRZ					SN		S	18 24 11.6	-2.7
MSWZ	**Moikau Station**	**1.72**	**126**	PN			P	18 23 48.1	-0.6
MSWZ					SN		S	18 24 12.5	-2.5
MTW	**Mount Morrison**	**1.76**	**116**	⇓PN			P	18 23 48.5	-0.5
MTW					SN		S	18 24 13.4	-2.3
MTW	**Mount Morrison**	**1.76**	**116**	P			P	18 23 48.5	-0.5
MTW					S		S	18 24 13.9	-1.8
DSZ	**Denniston Nort**	**1.79**	**222**	⇑PN			P	18 23 48.4	-1.0
DSZ					SN		S	18 24 13.1	-3.2
DSZ	**Denniston Nort**	**1.79**	**222**	P			P	18 23 48.4	-1.0
DSZ					S		S	18 24 13.6	-2.7
TSZ	**Takapari Road**	**1.99**	**81**	PN			P	18 23 50.8	-0.7
TSZ					SN		S	18 24 17.9	-2.2
TSZ	**Takapari Road**	**1.99**	**81**	P			P	18 23 50.8	-0.7
TSZ					S		S	18 24 19.0	-1.1
KHZ	**Kahutara**	**2.00**	**177**	PN			P	18 23 50.6	-1.0
KHZ					SN		S	18 24 18.3	-1.9
KHZ	**Kahutara**	**2.00**	**177**	P			P	18 23 50.7	-0.9
KHZ					S		S	18 24 16.3	-3.9
WNVZ	**Wahianoa**	**2.01**	**58**	PN			P	18 23 50.9	-0.8
WPVZ	**Whakapapa**	**2.05**	**55**	PN			P	18 23 51.7	-0.4
BFZ	**Birch Farm**	**2.19**	**98**	PN			P	18 23 52.9	-0.8
BFZ					SN		S	18 24 20.9	-3.1
BFZ	**Birch Farm**	**2.19**	**98**	P			P	18 23 53.1	-0.6
HIZ	**Hauiti**	**2.21**	**31**	PN			P	18 23 52.9	-1.1
LTZ	**Lake Taylor**	**2.51**	**199**	PN			P	18 23 56.0	-1.5
LTZ					SN		S	18 24 26.1	-4.7
LTZ	**Lake Taylor**	**2.51**	**199**	P			P	18 23 56.1	-1.5
LTZ					S		S	18 24 28.7	-2.1
BKZ	**Black Stump Fm**	**2.69**	**63**	PN			P	18 23 57.3	-2.4
BKZ	**Black Stump Fm**	**2.69**	**63**	P			P	18 23 57.8	-1.9
CRLZ	**Canterbury Las**	**3.21**	**190**	PN			P	18 24 03.4	-2.7
CRLZ					SN		S	18 24 40.1	-5.8
WVZ	**Waitaha Valley**	**3.32**	**216**	PN			P	18 24 04.7	-2.8
WVZ	**Waitaha Valley**	**3.32**	**216**	*e*P			P	18 24 04.9	-2.6
MQZ	**McQueen's Vall**	**3.33**	**189**	PN			P	18 24 04.6	-3.1
MQZ					SN		S	18 24 42.3	-6.4
MQZ	**McQueen's Vall**	**3.33**	**189**	P			P	18 24 04.8	-2.9
ODZ	**Otahua Downs**	**5.05**	**203**	PN			P	18 24 26.7	-3.0
ODZ	**Otahua Downs**	**5.05**	**203**	*e*P			P	18 24 26.8	-2.9

NEIC ***25*** *18:39:09.8,46.00N×7.90E,h4km,ML2.9(GEN), ML2.6(VIE),ML2.6(STR),ML2.3(ZUR),After ZUR.*
STR ***25*** *18:39:09.8±0.6,45.95N×7.83E,h5km±1km,Ml2.6,Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
ZUR ***25*** *18:39:09.8,46.00N×7.88E,h4km,ML2.3/5*
LDG ***25*** *18:39:10.2±0.1,45.97N×7.91E,h5km,Md3.1/2,Ml2.8/23, Error ellipse: s-maj=2.5km s-min=1.3km az=102.0*

ISC 25 18:39:07.9±0.2,45.96N±0.01×7.88E±0.02,h6km±2km,n75, σ1§32/136,10C-8D,Northern Italy

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
MCGN	**Macugnaga**	**0.07**	**88**	⇓*iP*g			**Pg**	**18 39 11.4**	**+1.7**
MCGN					*e*Sg		**Sg**	**18 39 14.3**	**+3.3**
MMK	**Mattmark**	**0.11**	**30**	⇑*iP*g			**Pg**	**18 39 12.0**	**+1.6**
	142nm,0.3s								
MMK					*e*Sg		**Sg**	**18 39 13.5**	**+1.4**
	142nm,0.3s								
ORO	**Oropa**	**0.34**	**168**	⇑*iP*g			**Pg**	**18 39 16.4**	**+1.7**
ORO					*e*Sg		**Sg**	**18 39 20.4**	**+1.2**
DIX	**Grande Dixence**	**0.35**	**291**	⇓*iP*g			**Pg**	**18 39 16.9**	**+1.9**
	14nm,0.3s								
DIX					*e*Sg		**Sg**	**18 39 21.8**	**+2.0**
	14nm,0.3s								
LKBD	**Leukerbad**	**0.47**	**338**	*e*Pg			**Pg**	**18 39 18.6**	**+1.3**
	26nm,0.5s								
LKBD					*e*Sg		**Sg**	**18 39 24.7**	**+1.1**
	26nm,0.5s								
SENIN	**Lac Senin**	**0.58**	**315**	⇓*iP*g			**Pg**	**18 39 20.8**	**+1.3**
	7.0nm,0.3s								
SENIN					*e*Sg		**Sg**	**18 39 28.4**	**+1.2**
	7.0nm,0.3s								
GRYON	**Gryon**	**0.61**	**299**	*e*Pg			**Pg**	**18 39 21.7**	**+1.5**
	4.7nm,0.4s								
VAI	**Varese**	**0.62**	**98**	*e*Pg			**Pg**	**18 39 20.3**	**-0.1**
VAI					*e*Sg		**Sg**	**18 39 28.4**	**-0.4**
SALAN	**Lac Salanfe**	**0.66**	**287**	⇓*iP*g			**Pg**	**18 39 22.8**	**+1.6**
EMV	**Vieux Emosson**	**0.69**	**279**	⇓*iP*g			**Pg**	**18 39 23.3**	**+1.5**
	1.5nm,0.4s								
LSD	**Ceresole Reale**	**0.71**	**226**	P			**Pg**	**18 39 23.7**	**+1.5**
LSD					S		**Sg**	**18 39 32.7**	**+1.0**
WIMIS	**Wimmis**	**0.73**	**346**	*e*Pg			**Pg**	**18 39 23.4**	**+0.8**
	3.1nm,0.3s								
FUSIO	**Fusio**	**0.74**	**47**	*e*Pg			**Pg**	**18 39 22.6**	**0.0**
	3.6nm,0.3s								
AIGLE	**Aigle**	**0.75**	**301**	⇑*iP*g			**Pg**	**18 39 24.5**	**+1.5**
	3.8nm,0.5s								
MUGIO	**Muggio**	**0.81**	**92**	⇓*iP*g			**Pg**	**18 39 23.6**	**-0.5**
	3.1nm,0.3s								
HASLI	**Hasliberg**	**0.82**	**13**	⇑*iP*g			**Pg**	**18 39 24.4**	**0.0**
	2.6nm,0.3s								
LPG	**La Plagne**	**0.92**	**240**	*e*Pg			**Pg**	**18 39 27.3**	**+1.1**
LPG					*e*Sg		**Sg**	**18 39 39.1**	**+0.7**
	52nm,0.2s,SNR=1.0								
RSP	**Reno Superiore**	**0.92**	**209**	P			**Pb**	**18 39 26.8**	**+1.0**
RSP					S		**Sb**	**18 39 38.1**	**+0.1**
LPL	**La Plagne**	**0.92**	**242**	*e*Pg			**Pg**	**18 39 27.3**	**+1.0**
	SNR=1.0								
LPL					*e*Sg		**Sg**	**18 39 39.3**	**+0.8**
	43nm,0.3s								
RSL	**Roselend**	**0.92**	**254**	Pg			**Pg**	**18 39 27.3**	**+1.0**
RSL					Sg		**Sg**	**18 39 39.2**	**+0.6**
BNALP	**Bannalp**	**0.99**	**22**	⇑*iP*g			**Pg**	**18 39 27.3**	**-0.4**
	2.6nm,0.5s								
FENE	**Fenestrelle**	**1.09**	**212**	P			**Pb**	**18 39 29.9**	**+1.1**
FENE					S		**Sb**	**18 39 42.7**	**-0.4**
BHB	**Bricherasio**	**1.20**	**202**	P			**Pb**	**18 39 30.8**	**+0.2**
BHB					S		**Sb**	**18 39 44.8**	**-1.3**
GIMEL	**Gimel**	**1.26**	**298**	⇓*iP**P				18 39 34.7	
	1.9nm,0.5s								
RRL	**Cesana Torines**	**1.29**	**217**	P			**Pb**	**18 39 33.4**	**+1.2**
RRL					S		**Sb**	**18 39 49.5**	**+0.6**
OG22	**Abries**	**1.31**	**211**	Pg			**Pg**	**18 39 35.1**	**+1.0**
OG22					Sg		**Sg**	**18 39 49.7**	**-1.9**
BRANT	**Les Verrieres**	**1.39**	**316**	⇑*iP**			**Pb**	**18 39 36.6**	**+2.8**
	4.0nm,0.6s								
BALST	**Balsthal**	**1.39**	**355**	*eP**			**Pb**	**18 39 35.8**	**+2.0**
	2.6nm,0.4s								
CABF	**La Chapelle**	**1.41**	**298**	*e*Pg			**Pg**	**18 39 36.9**	**+0.9**
	SNR=1.0								
CABF					*e*Sg		**Sg**	**18 39 55.2**	**+0.4**
	14nm,0.3s								
MBDF	**Montbardon**	**1.46**	**213**	*e*Pn			**Pn**	**18 39 36.4**	**+1.6**
	SNR=1.0								
MBDF					*e*Pg		**Pg**	**18 39 37.7**	**+0.7**
MBDF					*e*Sn		**Sn**	**18 39 55.0**	**+0.6**
	SNR=1.0								
MBDF					*e*Sg		**Sg**	**18 39 57.1**	**+0.6**
	45nm,0.4s,SNR=1.0								
PCP	**Pian Castagno**	**1.49**	**161**	P			**Pn**	**18 39 35.8**	**+0.5**
PCP					S		**Sb**	**18 39 53.2**	**-1.4**
DOI	**San Damiano**	**1.52**	**197**	*e*Pg			**Pg**	**18 39 36.9**	**-1.4**
BBS	**Basel-Blauen**	**1.53**	**350**	Pg			**Pg**	**18 39 38.9**	**+0.4**
PZZ	**Prazzo**	**1.55**	**201**	P			**Pn**	**18 39 36.2**	**0.0**
PZZ					S		**Sb**	**18 39 53.7**	**-2.7**
LOMF	**Lomont**	**1.57**	**333**	Pg			**Pg**	**18 39 38.7**	**-0.7**
LOMF					Sg		**Sg**	**18 39 59.6**	**-0.7**
SULZ	**Sulz-Cheisache**	**1.58**	**6**	⇑*iP*n			**Pn**	**18 39 38.3**	**+1.7**
	3.0nm,0.4s								
WILA	**Wila**	**1.62**	**25**	⇑*iP*n			**Pn**	**18 39 39.4**	**+2.2**
	16nm,0.6s								
ROB	**Roburent**	**1.66**	**180**	P			**Pn**	**18 39 38.2**	**+0.4**
OG05	**Jujurieux**	**1.69**	**274**	Pg			**Pg**	**18 39 42.3**	**+0.6**
ORIF	**Oris-en-Rattie**	**1.75**	**234**	*e*Pn			**Pn**	**18 39 39.8**	**+0.8**
	SNR=1.0								
ORIF					*e*Pg		**Pg**	**18 39 42.8**	**-0.1**
ORIF					*e*Sn		**Sn**	**18 40 01.9**	**0.0**
	SNR=1.0								
ORIF					*e*Sg		**Sg**	**18 40 06.7**	**+0.5**
	19nm,0.4s								
STV2	**Anna di Valdie**	**1.75**	**193**	P			**Pn**	**18 39 39.1**	**0.0**
STV	**Sta Anna Valdi**	**1.76**	**193**	P			**Pn**	**18 39 39.0**	**-0.1**
ENR	**Entracque**	**1.76**	**191**	P			**Pn**	**18 39 38.6**	**-0.6**
FIN	**Finale Ligure**	**1.76**	**172**	P			**Pn**	**18 39 38.6**	**-0.6**
BRMO	**Bormio**	**1.81**	**72**	*e*Pg			**Pg**	**18 39 41.1**	**-2.8**
BRMO					*e*Sg		**Sg**	**18 40 02.3**	**-5.7**
RORO		**1.85**	**176**	P			**Pn**	**18 39 39.8**	**-0.6**
SLE	**Schleitheim**	**1.86**	**13**	⇓*i*Pn			**Pn**	**18 39 41.7**	**+1.1**
	7.6nm,0.8s								
MONE	**Monesi**	**1.88**	**183**	P			**Pn**	**18 39 41.1**	**+0.2**
DAVA	**Damuels**	**1.92**	**45**	⇑*i*PG			**Pg**	**18 39 44.4**	**-1.7**
DAVA					*i* SG		**Sg**	**18 40 07.8**	**-3.9**
	17nm,0.5s								
FELD	**Feldberg**	**1.92**	**2**	Pn			**Pn**	**18 39 42.4**	**+0.9**
FELD					Pg		**Pg**	**18 39 45.4**	**-0.9**
MOF	**Molkenrain**	**1.97**	**345**	Pn			**Pn**	**18 39 43.3**	**+1.2**
MOF					Pg		**Pg**	**18 39 47.0**	**-0.2**
HINF	**Hinteralfeld**	**1.99**	**340**	*e*Pn			**Pn**	**18 39 43.7**	**+1.2**
	SNR=1.0								
HINF					*e*Pg		**Pg**	**18 39 47.0**	**-0.7**
HINF					*e*Sn		**Sn**	**18 40 07.0**	**-1.0**
	SNR=1.0								
HINF					*e*Sg		**Sg**	**18 40 12.6**	**-1.6**
	9.0nm,0.2s,SNR=1.0								
IMI	**Imperia**	**2.04**	**180**	P			**Pn**	**18 39 42.6**	**-0.7**
NEGI	**Negi**	**2.11**	**184**	P			**Pn**	**18 39 43.5**	**-0.6**
SBF	**Sospel**	**2.12**	**189**	*e*Pn			**Pn**	**18 39 44.9**	**+0.6**
	SNR=1.0								
SBF					*e*Pg		**Pg**	**18 39 49.9**	**-0.3**
SBF					*e*Sg		**Sg**	**18 40 17.7**	**-0.7**
	16nm,0.5s								
HAU	**Haudompre**	**2.31**	**333**	*e*Pn			**Pn**	**18 39 48.2**	**+1.2**
HAU					*e*Pg		**Pg**	**18 39 52.9**	**-1.0**
	SNR=1.0								
HAU					*e*Sg		**Sg**	**18 40 22.0**	**-2.7**
	13nm,0.2s,SNR=1.0								
ECH	**Echery**	**2.31**	**348**	Pn			**Pn**	**18 39 47.4**	**+0.3**
CDF	**Champ du Feu**	**2.49**	**351**	*e*Pn			**Pn**	**18 39 50.5**	**+0.8**
	SNR=1.0								
CDF					*e*Pg		**Pg**	**18 39 56.1**	**-1.6**
	SNR=1.0								
CDF					*e*Sn		**Sn**	**18 40 19.0**	**-1.7**
	SNR=1.0								
CDF					*e*Sg		**Sg**	**18 40 28.0**	**-2.9**
	7.8nm,0.4s								
VIVF	**Saint-Julien-l**	**2.52**	**245**	*e*Pn			**Pn**	**18 39 50.8**	**+0.8**
	SNR=1.0								
VIVF					*e*Pg		**Pg**	**18 39 56.4**	**-1.7**
VIVF					*e*Sg		**Sg**	**18 40 29.5**	**-2.1**
	8.8nm,0.4s,SNR=1.0								
FRF	**La Foret Royal**	**2.55**	**201**	*e*Pn			**Pn**	**18 39 51.2**	**+0.7**
	SNR=1.

MOF	**Molkenrain**	**1.38**	**29**	Pg		**Pg**	**18 42 12.4**	**+0.5**	
MOF				Sg		**Sg**	**18 42 31.7**	**+1.3**	
SMF	**Signal de Mont**	**1.58**	**271**	*e*Pg		**Pg**	**18 42 16.8**	**+0.9**	
SMF				*e*Sg		**Sg**	**18 42 37.7**	**+0.6**	
	2.9nm,0.2s								
LOR	**Lormes**	**1.68**	**292**	*e*Pg		**Pg**	**18 42 18.2**	**+0.3**	
LOR				*e*Sg		**Sg**	**18 42 40.7**	**+0.4**	
	7.8nm,0.3s								
SFTF	**Sexfontaines**	**1.73**	**335**	*e*Pg		**Pg**	**18 42 18.4**	**-0.4**	
SFTF				*e*Sg		**Sg**	**18 42 41.7**	**-0.2**	
	7.2nm,0.4s								
ORIF	**Oris-en-Rattie**	**1.74**	**186**	*e*Pg		**Pg**	**18 42 19.6**	**+0.5**	
ORIF				*e*Sg		**Sg**	**18 42 41.7**	**-0.6**	
	4.3nm,0.3s								
SSF	**Saint Saulge**	**1.85**	**284**	*e*Pg		**Pg**	**18 42 21.3**	**0.0**	
SSF				*e*Sg		**Sg**	**18 42 46.3**	**+0.2**	
	2.0nm,0.2s								
CDF	**Champ du Feu**	**1.93**	**23**	*e*Pg		**Pg**	**18 42 21.9**	**-0.9**	
CDF				*e*Sg		**Sg**	**18 42 46.8**	**-1.7**	
	3.5nm,0.4s								
MEZF	**Maizieres J'vi**	**2.00**	**339**	*e*Sg		**Sg**	**18 42 49.8**	**-1.0**	
	5.4nm,0.3s								
RFYF	**Reffroy**	**2.03**	**347**	*e*Pg		**Pg**	**18 42 23.5**	**-1.4**	
RFYF				*e*Sg		**Sg**	**18 42 50.7**	**-1.3**	
	7.3nm,0.4s								
VIVF	**Saint-Julien-l**	**2.07**	**210**	*e*Pg		**Pg**	**18 42 24.8**	**-0.8**	
VIVF				*e*Sg		**Sg**	**18 42 51.7**	**-1.5**	
	2.8nm,0.3s								

IDC 25 18:47:32.1±25.0, 1.73N×123.89E, h422km±320km, mb2.9/4, mb1 3.0/5, mb1mx2.8/17, MS2.4/1, Ms1 2.4/1, ms1mx2.3/4, Error ellipse: s-maj=133.0km s-min=37.3km az=46.0, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TGY	**Tagaytay City**	**12.64**	**347**	LR	LR	18 56 08.0	
	comp=Z,178nm,21.8s,baz=234,slow=41						
FITZ	**Fitzroy Crossi**	**19.78**	**175**	P	P	18 51 34.0	+0.4
	0.2nm,0.3s,baz=7.1,slow=8.1,SNR=12						
WRA	**Warramunga Arr**	**23.85**	**155**	P	P	18 52 09.2	-2.4
	0.5nm,0.3s,baz=327,slow=11,SNR=24						
WB2	**Warramunga Arr**	**23.86**	**155**	*e*P	P	18 52 09.1	-2.6
ASAR	**Alice Springs**	**27.05**	**159**	P	P	18 52 38.4	-2.0
	0.3nm,0.4s,baz=340,slow=7.0,SNR=15						
STKA	**Stephens Creek**	**37.40**	**155**	P	P	18 54 08.1	-0.5
	0.5nm,0.3s,baz=348,slow=9.3,SNR=4.9						
MKAR	**Makanchi Array**	**57.63**	**327**	P	P	18 56 40.3	-2.0
	0.4nm,0.3s,baz=122,slow=7.7,SNR=18						

OTT 25 18:51:08.4±0.9, 72.02N×68.04W, h18km, MN3.4/4, Baffin Bay Seismic Zone. 174km northeast from Clyde River, Nu, Baffin Bay

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PINU	**Pond Inlet**	**3.10**	**287**	PN	Pn	18 51 58.1	+0.5
PINU				SN	Sn	18 52 32.2	-2.4
TULEG	**Thule**	**4.55**	**358**	PN	Pn	18 52 16.2	-2.0
TULEG				SN	Sn	18 53 03.3	-8.0
IGL	**Igloolik**	**5.28**	**247**	PN	Pn	18 52 26.9	-1.6
IGL				SN	Sn	18 53 23.3	-6.1
IGL				LG		18 53 47.3	
IGL				Trac		18 53 52.8	
	comp=Z,50nm,0.3s						
RES	**Resolute Bay**	**8.11**	**302**	PN	P	18 53 06.1	-2.1
RES				SN	Sn	18 54 29.7	-11
RES				Trac		18 54 35.6	
	comp=Z,4.7nm,0.1s						
EUNU	**Eureka**	**9.14**	**340**	PN	P	18 53 20.5	-2.0
EUNU				SN	Sn	18 54 54.2	-12
DAG	**Danmarks Havn**	**13.70**	**48**	*i* P	P	18 54 20.0	-3.7
KUQ	**Kuujjuuaa**	**13.97**	**181**	SN	S	18 56 47.6	-15
KUQ				Trac		18 58 49.9	
	comp=Z,2.6nm,0.2s						
SCO	**Scoresbysund**	**14.62**	**74**	*i* P	P	18 54 30.4	-5.3
	2.8nm,0.7s						
SCO				*i* S	S	18 56 58.8	-19
FCC	**Fort Churchill**	**16.93**	**232**	PN	P	18 55 00.3	-5.2
FCC				SN	S	18 57 57.8	-14
FCC				LG		18 59 45.2	
FCC				Trac		19 00 12.0	
	comp=Z,6.0nm,0.5s						
SCHQ	**Schefferville**	**17.26**	**178**	SN	S	18 58 00.0	-20
LG4Q	**La Grande 4**	**18.65**	**191**	PN	P	18 55 20.2	-6.8
LG4Q				SN	S	18 58 35.2	-15
SILO	**Sutton Inlier**	**19.03**	**211**	PN	P	18 55 27.2	-4.4
SILO				SN	S	18 58 47.4	-12
YKW3	**Yellowknife Ar**	**19.73**	**265**	PN	P	18 55 36.8	-2.8
YKW3				SN	S	18 59 02.9	-12
YKW3				LG		19 01 01.5	
YKW3				Trac		19 01 27.1	
	comp=Z,6.6nm,0.9s						
VIMO	**Victor Mine**	**20.46**	**208**	PN	P	18 55 45.3	-2.0
VIMO				SN	S	18 59 20.8	-10

*NEIC **25** 18:52:20.1, 33.51S×68.66W, h20km, ML3.5(GUC), After GUC.*

GUC 25 18:52:20.1±0.6, 33.51S×68.66W, h20km±8km, MD3.6, ML3.5, 3C-6D, Mendoza Province

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MDZ	**Mendoza**	**0.64**	**346**	*e*P	Pb	18 52 31.2	-1.3
MDZ				*e*		18 52 38.5	
MDZ				S	Sb	18 52 44.3	+3.3
LMEL	**Las Melosas**	**1.33**	**255**	⇓*i*P	Pn	18 52 42.6	-1.2
LMEL				*i* S	Sb	18 52 59.9	-1.0
LMEL				AMP		18 53 02.8	
	comp=N,642nm,0.3s						
FCH	**Farellones**	**1.38**	**277**	⇓*i*P	Pn	18 52 43.5	-0.9
FCH				*i* S	Sn	18 53 01.6	-0.5
FCH				AMP		18 53 04.2	
	comp=N,309nm,0.2s						
PCH	**Pirque**	**1.55**	**265**	⇑*i*P	Pn	18 52 46.4	-0.5
PCH				*i* S	Sn	18 53 06.5	-0.1
CLCH	**Cerro Calan**	**1.57**	**274**	⇓*i*P	Pn	18 52 47.0	-0.3
CLCH				*i* S	Sn	18 53 07.5	+0.3
CLCH				AMP		18 53 10.2	
	comp=N,808nm,0.4s						
ANTU	**Antumapu**	**1.65**	**267**	⇓*i*P	Pn	18 52 48.2	-0.2
ANTU				*i* S	Sn	18 53 09.5	+0.4
ANTU				AMP		18 53 11.7	
	comp=E,609nm,0.4s						
CICH	**Cipreses**	**1.67**	**241**	⇑*i*P	Pn	18 52 48.9	+0.2
CICH				*i* S	Sn	18 53 10.7	+1.0
CHCH	**Chadas Angostu**	**1.71**	**255**	⇓*i*P	Pn	18 52 49.4	+0.1
CHCH				*i* S	Sn	18 53 12.0	+1.3
CACH	**El Canelo**	**1.73**	**249**	*e*P	Pn	18 52 49.4	-0.1
CACH				*i* S	Sn	18 53 11.9	+0.8
PEL	**Peldehue**	**1.73**	**282**	*i* S	Sn	18 53 11.8	+0.6
RCDM	**Rinconada Maip**	**1.79**	**270**	⇓*i*P	Pn	18 52 50.6	+0.2
RCDM				*i* S	Sn	18 53 13.7	+0.9
RCDM				AMP		18 53 14.5	
	comp=N,320nm,0.3s						
JACH	**Jahuel**	**1.82**	**296**	*i* P	Pn	18 52 51.1	+0.4
JACH				*i* S	Sn	18 53 14.7	+1.3
TACH	**Talagante**	**1.91**	**265**	⇑*i*P	Pn	18 52 52.2	+0.2
TACH				*i* S	Sn	18 53 16.7	+1.1
ROCH	**El Roble**	**2.04**	**285**	*i* P	Pn	18 52 54.9	+0.9
ROCH				*i* S	Sn	18 53 21.5	+2.4
LNV	**Longovilo**	**2.33**	**258**	*e*P	Pn	18 52 58.5	+0.3
LCCH	**Las Cruces**	**2.43**	**270**	*e*P	Pn	18 53 00.6	+1.0
LCCH				*i* S	Sn	18 53 30.6	+1.6
CMCH	**Combarbala**	**3.06**	**319**	AMP		18 54 07.3	
	comp=N,662nm,0.8s						
TLL	**Tololo Astrono**	**3.80**	**331**	AMP		18 54 20.5	
	comp=E,234nm,0.3s						

*IDC **25** 19:14:46.6±2.4, 0.06S×16.70W, mb3.7/4, mb1 3.9/5, mb1mx3.7/22, ML4.2/1, MS3.3/5, Ms1 3.4/5, ms1mx3.1/25, Error ellipse: s-maj=81.7km s-min=46.4km az=100.0*

ISC 25 19:14:53.6±2.4, 0.9N±0.4×16.3W±0.1, h10km, n14, σ1§05/9, mb3.6/4, MS3.4/4, North of Ascension Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LIC	**Lamto**	**12.44**	**64**	*e*P	**P**	**19 17 54.4**	**+0.6**
	41nm,1.0s						
TIC	**Toumodi**	**12.63**	**63**	*e*P	**P**	**19 17 57.1**	**+0.8**
	21nm,0.2s						
KIC	**Kosan Boka**	**12.76**	**64**	*e*P	**P**	**19 17 57.2**	**-0.8**
	88nm,1.2s						
DBIC	**Dimbokro**	**12.79**	**63**	Pn	**P**	**19 18 00.2**	**+1.8**
	1.2nm,0.3s,baz=240,slow=14,SNR=14						
DBIC				Sn	**S**	**19 20 20.9**	**-1.0**
	1.6nm,0.3s,baz=138,slow=17,SNR=9.2						
DBIC				LR	LR	19 22 16.2	
	comp=Z,85nm,20.9s,baz=126,slow=33						
DBIC				T		19 28 35.0	
	0.2nm,0.3s,baz=164,slow=19,SNR=2.4						
ESDC	**Sonseca Array**	**40.23**	**15**	P	**P**	**19 22 33.5**	**+1.4**
	0.5nm,0.6s,mb3.4,baz=202,slow=10,SNR=4.1						
CPUP	**Villa Florida**	**47.91**	**233**	LR	LR	19 43 21.2	
	comp=Z,62nm,19.3s,MS3.6,baz=37,slow=36						
PCRV	**Puerto La Cruz**	**48.93**	**283**	LR	LR	19 42 15.9	
	comp=Z,49nm,18.4s,MS3.5,baz=263,slow=34						
GERES	**GERESS Array B**	**54.31**	**24**	P	**P**	**19 24 21.4**	**-1.0**
	0.6nm,0.7s,mb3.7,baz=207,slow=6.0,SNR=5.8						
BRTR	**Keskin Array B**	**59.61**	**43**	P	**P**	**19 24 59.5**	**-0.7**
	1.3nm,0.8s,mb4.0,baz=225,slow=5.2,SNR=6.2						
NOA	**NORSAR Array B**	**63.59**	**15**	LR	LR	19 54 48.0	
	comp=Z,22nm,20.6s,MS3.3,baz=285,slow=37						
THR	**Tehran**	**71.31**	**52**	LR	LR	20 00 39.7	
	comp=Z,16nm,18.7s,MS3.3,baz=217,slow=38						
BVAR	**Borovoye Array**	**87.31**	**37**	P	**P**	**19 27 40.9**	**-1.0**
	0.1nm,0.3s,mb3.5,baz=225,slow=2.0,SNR=3.6						
ASAR	**Alice Springs**	**143.28**	**130**	PKP	PKPdf	19 34 21.1	-11
	0.3nm,0.7s,baz=219,slow=2.4,SNR=6.1						
WRA	**Warramunga Arr**	**145.58**	**125**	PKPbc	PKPbc	19 34 26.7	-7.2
	0.8nm,0.9s,baz=238,slow=2.8,SNR=4.0						

*HEL **25** 19:24:54.7±0.1, 59.69N×24.55E, ML2.4, ML2.7(UPP), ML2.7(NAO), Explosion*
*NAO **25** 19:24:54.6±1.3, 59.71N×24.52E, ML2.7*
*IDC **25** 19:24:54.6±1.5, 59.70N×24.73E, mb3.3/1, mb1 3.6/5, mb1mx3.3/21, ML3.6/4, Error ellipse: s-maj=20.2km s-min=9.2km az=159.0*
*BER **25** 19:24:55.5±3.8, 59.72N×24.60E, ML2.7(NAO)*

ISC 25 19:24:51.2±0.6, 59.63N±0.04×24.41E±0.07, n21, σ1§43/28, mb3.1/1, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MEF	**Metsahovi**	**0.58**	**359**	*e*P	**Pg**	**19 25 04.3**	**+1.4**
MEF				*e*S	**Sg**	**19 25 11.1**	**+0.4**
PVF	**Pernaja**	**1.17**	**38**	*e*P	**Pb**	**19 25 13.9**	**-0.1**
PVF				*e*S	**Sb**	**19 25 27.4**	**-2.1**
VSU	**Vasula**	**1.68**	**133**	*e*PN	**Pn**	**19 25 25.0**	**+2.9**
VSU				*e*SG	**Sg**	**19 25 46.6**	**-0.6**
VJF	**Virojoki**	**1.82**	**59**	*e*P	**Pn**	**19 25 24.9**	**+0.9**
VJF				*e*S	**Sn**	**19 25 47.5**	**-0.6**
FIA0	**FINESS Array S**	**1.99**	**24**	*e*P	**Pn**	**19 25 28.8**	**+2.3**
FIA0				*e*S	**Sn**	**19 25 53.3**	**+0.7**
FIA0				MSG		19 25 55.1	
	comp=Z,21nm,0.2s						
FIA0	**FINESS Array S**	**1.99**	**24**	Pn	**Pn**	**19 25 28.9**	**+2.3**
	baz=193,slow=18						
FIA0				Lg		19 25 52.9	
	baz=194,slow=28						
FINES	**FINESS Array B**	**1.99**	**24**	Pn	**Pn**	**19 25 28.8**	**+2.3**
	comp=Z,18nm,0.3s,baz=200,slow=16,SNR=785						
FINES				Sn	**Sn**	**19 25 53.8**	**+1.2**
	comp=Z,15nm,0.3s,baz=205,slow=26,SNR=19						
KEF	**Keuruu**	**2.55**	**5**	MSG		19 26 13.4	
	comp=Z,18nm,0.2s						
KAF	**Kangasniemi**	**2.65**	**20**	MSG		19 26 14.8	
	comp=Z,14nm,0.2s						
SUF	**Sumiainen**	**3.21**	**14**	MSG		19 26 38.2	
	comp=Z,6.5nm,0.2s						
VAF	**Ylistaro**	**3.52**	**347**	MSG		19 26 50.4	
	comp=Z,14nm,0.2s						
HFS	**Hagfors**	**5.42**	**280**	Pn	**Pn**	**19 26 17.0**	**+1.8**
	baz=94,slow=14						
HFS				Sn	**Sn**	**19 27 18.2**	**-1.1**
	baz=95,slow=28						
HFS				Lg		19 27 43.4	
	baz=101,slow=28						
HFS	**Hagfors**	**5.42**	**280**	Pn	**Pn**	**19 26 17.0**	**+1.7**
	comp=Z,0.3nm,0.3s,baz=96,slow=13,SNR=44						
HFS				Sn	**Sn**	**19 27 19.4**	**+0.1**
	comp=Z,0.4nm,0.3s,baz=89,slow=26,SNR=10						
HFS				Lg		19 27 41.5	
	comp=Z,0.3nm,0.3s,baz=80,slow=26,SNR=5.1						
NOA	**NORSAR Array B**	**6.70**	**288**	Pn	**Pn**	**19 26 33.5**	**+0.1**
	comp=Z,0.8nm,0.3s,baz=91,slow=14,SNR=5.1						
NOA				Sn	**Sn**	**19 27 47.9**	**-3.5**
	comp=Z,1.0nm,0.3s,baz=87,slow=13,SNR=4.4						
NOA				Lg		19 28 22.2	
	comp=Z,1.8nm,0.3s,baz=123,slow=16,SNR=5.4						
BSD	**Bornholm Skovb**	**6.84**	**233**	*i* P	**Pn**	**19 26 35.7**	**+0.4**
BSD				*i* S	**Sn**	**19 27 51.0**	**-4.0**
ARA0	**ARCESS Array S**	**9.95**	**2**	Pn	**P**	**19 27 15.7**	**-2.7**
	baz=173,slow=14						
ARA0				Sn	**Sn**	**19 29 01.6**	**-10**
	baz=193,slow=28						
ARCES	**ARCESS Array B**	**9.95**	**2**	Pn	**P**	**19 27 15.9**	**-2.5**
	comp=Z,1.3nm,0.3s,baz=178,slow=12,SNR=77						
SPA0	**Spitsbergen Ar**	**18.82**	**355**	P	**P**	**19 29 14.3**	**+0.2**
	baz=158,slow=12						
SPA0	**Spitsbergen Ar**	**18.82**	**355**	*e*P	**P**	**19 29 14.3**	**+0.2**
SPITS	**Spitsbergen Ar**	**18.82**	**355**	P	**P**	**19 29 14.5**	**+0.4**
	comp=Z,0.1nm,0.3s,baz=149,slow=1.2,SNR=3.3						
MKAR	**Makanchi Array**	**35.76**	**85**	P	**P**	**19 31 53.0**	**-0.4**
	comp=Z,0.1nm,0.3s,mb3.1,baz=316,slow=6.4,SNR=6.8						

*JMA **25** 19:28:24.0±0.2, 24.71N×122.12E, h45km, M2.3*
*TAP **25** 19:28:24.5, 24.44N×122.00E, h12km, ML2.9*

ISC 25 19:28:24.5±2.3, 24.6N±0.5×122.1E±0.2, h45km, n6, σ0§40/10, Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
YOJ	**Yonaguni jima**	**0.83**	**103**	P	**P**	**19 28 39.6**	**-0.2**
YOJ				S	**S**	**19 28 51.0**	**-0.1**
IRIF	**Iriomote-Funau**	**1.49**	**102**	P	**P**	**19 28 49.0**	**-0.4**
IRIF				S	**S**	**19 29 08.0**	**+0.2**
HATJ	**Hateruma jima**	**1.64**	**111**	P	**P**	**19 28 51.7**	**+0.3**
JKRS	**Kuro-shima**	**1.76**	**103**	P	**P**	**19 28 53.2**	**+0.1**
JKRS				*e*S	**S**	**19 29 15.0**	**+0.5**
JIJ	**Ishigaki jima**	**1.86**	**98**	P	**P**	**19 28 54.0**	**-0.5**
JIJ				*e*S	**S**	**19 29 16.3**	**-0.5**
JTJ	**Tarama**	**2.34**	**90**	P	**P**	**19 29 02.1**	**+0.7**

*IDC **25** 19:50:38.7±0.8, 3.58S×140.17E, mb4.0/7, mb1 4.3/10, mb1mx4.1/15, ML3.9/3, MS3.5/5, Ms1 3.6/5, ms1mx3.2/21, Error ellipse: s-maj=28.1km s-min=18.8km az=80.0*
*NEIC **25** 19:50:41.4±5.5, 3.65S×140.02E, h18km±33km, mb4.1/5, Error ellipse: s-maj=15.4km s-min=12.3km az=185.0*

ISC 25 19:50:38.4±0.8, 3.75S±0.09×140.0E±0.1, h10km, n25, σ1§09/22, mb3.8/6, MS3.4/4, Irian Jaya

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**9.09**	**129**	Pn	**P**	**19 52 52.5**	**-0.2**
	1.6nm,0.3s,baz=302,slow=16,SNR=11						
PMG				Sn	**Sn**	**19 54 31.5**	**-4.6**
	0.8nm,0.3s,baz=169,slow=9.8,SNR=2.0						
KAKA	**Kakadu**	**11.63**	**220**	*e*P	**P**	**19 53 27.0**	**-0.6**
	50nm,0.4s						
WRAB	**Tennant Creek**	**17.00**	**198**	*e*P	**P**	**19 54 36.8**	**-1.2**
	44nm,0.6s						
WB2	**Warramunga Arr**	**17.00**	**198**	*e*P	**P**	**19 54 37.0**	**-1.2**
WRA	**Warramunga Arr**	**17.01**	**198**	P	**P**	**19 54 37.0**	**-1.2**
	0.9nm,0.3s,baz=19,slow=12,SNR=34						
CTA	**Charters Tower**	**17.36**	**160**	*e*P	**P**	**19 54 44.5**	**+1.9**
	3.6nm,0.6s						
CTA	**Charters Tower**	**17.36**	**160**	P	**P**	**19 54 45.0**	**+2.5**
	0.4nm,0.3s,baz=324,slow=11,SNR=10.0						
CTA				LR	LR	20 02 00.3	
	comp=Z,132nm,18.6s,baz=239,slow=39						
CTAO	**Charters Tower**	**17.36**	**160**	*e*P	**P**	**19 54 43.2**	**+0.6**
	4.8nm,0.7s						
FITZ	**Fitzroy Crossi**	**20.01**	**223**	*e*P	**P**	**19 55 14.9**	**+0.5**
	5.3nm,0.6s						
FITZ				*e*S	**S**	**19 58 44.5**	**-9.2**
FITZ	**Fitzroy Crossi**	**20.01**	**223**	P	**P**	**19 55 15.1**	**+0.7**
	40nm,1.3s,baz=32,slow=11,SNR=21						
FITZ				LR	LR	20 03 56.2	
	comp=Z,105nm,19.0s,MS3.2,baz=348,slow=39						
AS12	**Alice Springs**	**20.65**	**196**	*e*P	**P**	**19 55 21.9**	**+0.9**
	30nm,1.1s						
ASAR	**Alice Springs**	**20.65**	**196**	P	**P**	**19 55 22.0**	**+1.0**
	12nm,0.5s,baz=26,slow=9.4,SNR=112						
ASAR				LR	LR	20 03 41.7	
	comp=Z,180nm,18.3s,MS3.5,baz=47,slow=38						
STKA	**Stephens Creek**	**28.02**	**177**	P	**P**	**19 56 32.3**	**+0.4**
	1.5nm,0.8s,mb3.7,baz=348,slow=12,SNR=3.5						
STKA				LR	LR	20 09 06.1	
	comp=Z,233nm,18.9s,MS3.8,baz=27,slow=39						
STKA	**Stephens Creek**	**28.02**	**177**	P	**P**	**19 56 32.3**	**+0.4**
STKA				LR	LR	20 09 06.1	
NWAO	**Narrogin (SRO)**	**35.99**	**214**	P	**P**	**19 57 44.1**	**+2.5**
	baz=37,slow=5.1						
CMAR	**Chiang Mai Arr**	**46.05**	**300**	LR	LR	20 18 49.3	
	comp=Z,28nm,18.7s,MS3.2,baz=36,slow=37						
MKAR	**Makanchi Array**	**71.38**	**322**	P	**P**	**20 02 00.7**	**0.0**
	0.4nm,0.5s,mb3.6,baz=124,slow=5.2,SNR=5.5						
VNDA	**Vanda**	**74.64**	**175**	P	**P**	**20 02 19.4**	**0.0**
	0.5nm,0.6s,mb3.6,baz=9.1,slow=4.7,SNR=6.1						
BVAR	**Borovoye Array**	**80.88**	**325**	P	**P**	**20 02 54.7**	**+0.6**
	0.6nm,0.6s,mb3.7,baz=112,slow=7.8,SNR=2.6						
QSPA	**South Pole Qui**	**86.20**	**180**	*e*P	**P**	**20 03 21.3**	**+0.5**
	4.3nm,1.0s,mb4.6						
ILAR	**Eielson Array**	**86.25**	**24**	P	**P**	**20 03 19.4**	**-1.8**
	0.4nm,0.6s,mb3.9,baz=267,slow=4.5,SNR=9.6						
DBIC	**Dimbokro**	**144.86**	**276**	PKPbc	PKPbc	20 10 18.8	+1.8
	5.0nm,0.8s,baz=36,slow=3.3,SNR=8.0						
CPUP	**Villa Florida**	**145.73**	**152**	PKPbc	PKPbc	20 10 20.5	+1.7
	2.0nm,0.8s,baz=198,slow=3.2,SNR=3.5						
CPUP	**Villa Florida**	**145.73**	**152**	PKPbc	PKPbc	20 10 20.5	+1.7
LPAZ	**La Paz**	**145.82**	**126**	PKPbc	PKPbc	20 10 21.7	+2.4
	1.2nm,0.7s,baz=255,slow=3.7,SNR=5.6						

*IDC **25** 19:57:52.3±5.2, 6.35S×130.10E, h235km±51km, mb3.4/1, mb1 3.5/4, mb1mx3.1/14, Error ellipse: s-maj=98.1km s-min=19.5km az=71.0*

ISC 25 19:57:48.6±3.2, 6.3S±0.1×129.9E±0.2, h207km±32km, n4, σ1§39/7, mb3.6/1, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**12.44**	**199**	P	**P**	**20 00 41.0**	**+1.3**
	0.2nm,0.3s,baz=14,slow=12,SNR=2.3						
FITZ				S	**S**	**20 02 53.9**	**-0.7**
	0.3nm,0.3s,baz=170,slow=19,SNR=3.6						
WRA	**Warramunga Arr**	**14.26**	**163**	P	**P**	**20 01 02.4**	**-0.2**
	0.5nm,0.3s,baz=348,slow=11,SNR=7.3						
WRA				S	**S**	**20 03 27.7**	**-8.1**
	0.5nm,0.3s,baz=343,slow=21,SNR=7.4						
ASAR	**Alice Springs**	**17.71**	**168**	P	**P**	**20 01 42.4**	**-1.1**
	0.4nm,0.3s,baz=349,slow=11,SNR=8.2						
ASAR				S	**S**	**20 04 52.4**	**+0.9**
	0.1nm,0.3s,baz=356,slow=29,SNR=3.3						
MKAR	**Makanchi Array**	**67.55**	**327**	P	**P**	**20 08 24.6**	**0.0**
	0.6nm,0.4s,mb3.6,baz=113,slow=7.8,SNR=17						

*NEIC **25** 20:29:54.9, 39.57S×175.25E, h85km, ML3.8(WEL), After WEL.*

WEL 25 20:29:54.9±0.2, 39.58S×175.25E, h84km±1km, ML3.5/5, 6C-7D, Error ellipse: s-maj=1.1km s-min=0.8km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WAZ	**Wanganui**	**0.27**	**229**	⇑PN	P	20 30 07.4	-0.2
WAZ				SN	S	20 30 16.8	-0.1
WAZ	**Wanganui**	**0.27**	**229**	P	P	20 30 07.4	-0.1
WAZ				S	S	20 30 17.1	+0.1
WNVZ	**Wahianoa**	**0.37**	**47**	⇓PN	P	20 30 08.0	-0.1
WNVZ				SN	S	20 30 17.3	-0.7
DRZ	**Dome Shelter**	**0.39**	**39**	PN	P	20 30 08.1	-0.1
FWVZ	**Far West T-bar**	**0.40**	**36**	⇑PN	P	20 30 08.2	-0.1
FWVZ				SN	S	20 30 17.5	-0.9
FWVZ	**Far West T-bar**	**0.40**	**36**	P	P	20 30 08.2	-0.1
FWVZ				S	S	20 30 17.0	-1.4
WPVZ	**Whakapapa**	**0.44**	**32**	⇓PN	P	20 30 08.4	-0.2
WPVZ				SN	S	20 30 17.8	-1.1
TUVZ	**Tukino**	**0.44**	**45**	⇑PN	P	20 30 08.6	0.0
TUVZ	**Tukino**	**0.44**	**45**	P	P	20 30 08.6	0.0
CNZ	**Chateau**	**0.45**	**32**	⇑PN	P	20 30 08.4	-0.2
CNZ	**Chateau**	**0.45**	**32**	P	P	20 30 08.5	-0.1
NGZ	**Ngauruhoe**	**0.49**	**34**	⇑PN	P	20 30 08.9	-0.1
NGZ				SN	S	20 30 18.2	-1.4
NGZ	**Ngauruhoe**	**0.49**	**34**	P	P	20 30 08.8	-0.2
NGZ				S	S	20 30 18.8	-0.8
TWVZ	**Taurewa**	**0.53**	**16**	⇓PN	P	20 30 08.8	-0.6
TWVZ				SN	S	20 30 18.7	-1.4
WTVZ	**West Tongariro**	**0.53**	**30**	⇓PN	P	20 30 09.1	-0.3
WTVZ				SN	S	20 30 19.2	-1.1
KAVZ	**Karewarewa**	**0.57**	**33**	⇑PN	P	20 30 09.5	-0.3
KAVZ	**Karewarewa**	**0.57**	**33**	P	P	20 30 09.5	-0.3
VRZ	**Vera Road**	**0.59**	**320**	PN	P	20 30 09.5	-0.6
VRZ				SN	S	20 30 20.5	-0.7
VRZ	**Vera Road**	**0.59**	**320**	P	P	20 30 09.5	-0.5
MGZ	**Maungaku**	**0.62**	**21**	⇓PN	P	20 30 09.9	-0.4
KATZ	**Kakaramea**	**0.70**

MWZ	**Matawai**	**2.17**	**56**	*e*P		P	20 30 28.9	-0.9
NNZ	**Nelson**	**2.17**	**220**	PN		P	20 30 27.9	-2.0
NNZ	**Nelson**	**2.17**	**220**	*e*P		P	20 30 28.5	-1.4
QRZ	**Quartz Range**	**2.43**	**238**	PN		P	20 30 31.7	-1.8
QRZ	**Quartz Range**	**2.43**	**238**	*e*P		P	20 30 31.9	-1.5
PUZ	**Puketiti**	**2.79**	**58**	PN		P	20 30 36.4	-2.1
THZ	**Tophouse**	**2.82**	**219**	PN		P	20 30 36.7	-2.2
THZ	**Tophouse**	**2.82**	**219**	*e*P		P	20 30 36.9	-2.0
KHZ	**Kahutara**	**3.12**	**204**	PN		P	20 30 40.2	-2.9
KHZ	**Kahutara**	**3.12**	**204**	*e*P		P	20 30 40.3	-2.7
DSZ	**Denniston Nort**	**3.40**	**229**	PN		P	20 30 45.0	-1.9
DSZ	**Denniston Nort**	**3.40**	**229**	P		P	20 30 45.4	-1.6
LTZ	**Lake Taylor**	**3.91**	**214**	PN		P	20 30 50.0	-4.0
LTZ	**Lake Taylor**	**3.91**	**214**	*e*P		P	20 30 50.2	-3.8
MQZ	**McQueen's Vall**	**4.56**	**204**	PN		P	20 30 57.4	-5.6
MQZ				*e*SN		S	20 31 46.0	-9.1
MQZ	**McQueen's Vall**	**4.56**	**204**	*e*P		P	20 30 57.4	-5.6
ODZ	**Otahua Downs**	**6.44**	**210**	PN		P	20 31 23.7	-5.3
ODZ	**Otahua Downs**	**6.44**	**210**	*e*P		P	20 31 23.8	-5.1

*NEIC **25** 20:36:43.1,42.98N×0.19W,h2km,ML2.2(STR), ML1.7(LDG),After LDG.*
*LDG **25** 20:36:43.1±0.1,42.98N×0.20W,h2km,Md2.0/2,Ml1.7/4, Error ellipse: s-maj=4.0km s-min=1.8km az=156.0*
*STR **25** 20:36:43.1±0.4,42.90N×0.28W,h5km±1km,Ml2.2, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
*MDD **25** 20:36:43.1±0.6,43.03N×0.21W,mbLg1.0/4,Error ellipse: s-maj=8.7km s-min=2.6km az=163.0,PRXIMO SIN SOLUCIN*

ISC 25 20:36:42.2±0.6,**43.08N**±0.03×**0.17W**±0.04,**h2km**,**n10,** σ0§**85**/**13**,**Pyrenees**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
REYF	**Montagne du Re**	**0.17**	**265**	Pg	**Pg**	**20 36 46.3**	**+0.7**
REYF				Sg	**Sg**	**20 36 48.9**	**+1.1**
VIEF	**Viey**	**0.24**	**145**	Pg	**Pg**	**20 36 47.3**	**+0.2**
VIEF				Sg	**Sg**	**20 36 50.1**	**-0.3**
ETSF	**Etsaut**	**0.34**	**237**	*e*Pg	**Pg**	**20 36 48.9**	**-0.2**
ETSF				*e*Sg	**Sg**	**20 36 51.7**	**-1.9**
	5.4nm,0.2s						
EPF	**Esparros**	**0.38**	**98**	*e*Pg	**Pg**	**20 36 50.6**	**+0.9**
EPF				*e*Sg	**Sg**	**20 36 56.0**	**+1.3**
	4.4nm,0.2s						
ESAC	**San Caprasio**	**1.38**	**189**	Pg	**Pg**	**20 37 09.7**	**-0.1**
	1.3nm,0.1s,SNR=4.0						
ESAC				Lg		20 37 26.7	
	2.0nm,0.1s,SNR=7.9						
MTLF	**Montolieu**	**1.76**	**81**	*e*Sg	**Sg**	**20 37 39.9**	**-1.0**
	0.8nm,0.2s						
EPOB	**Poblet**	**1.96**	**151**	Lg		20 37 43.8	
	0.6nm,0.2s,SNR=7.9						
LFF	**La Frestale**	**1.97**	**19**	*e*Sg	**Sg**	**20 37 48.0**	**+0.3**
	1.7nm,0.3s						
CAF	**Calviac**	**2.45**	**40**	*e*Sg	**Sg**	**20 38 02.9**	**-0.8**
	0.8nm,0.3s						
RJF	**Les Rejaudoux**	**2.53**	**28**	*e*Sg	**Sg**	**20 38 06.0**	**-0.4**
	0.8nm,0.2s						

*NEIC **25** 20:37:06.7±0.7,43.37N×104.98W,ML3.1,Error ellipse: s-maj=16.4km s-min=7.9km az=136.0,Suspected Mining explosion.*
NEIC 75 km [45 miles] NNE of Douglas. ML 3.1 [GS].
*IDC **25** 20:37:06.1±2.1,43.37N×105.25W,mb3.8/2,mb1 3.7/5, mb1mx3.5/21,ML3.3/3,Error ellipse: s-maj=52.1km s-min=8.3km az=156.0*

ISC 25 20:37:04.2±0.8,**43.47N**±0.09×**105.13W**±0.10,**n13,** σ1§**64**/**15**,**mb3.9**/**2**,**Wyoming**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RSSD	**Black Hills**	**1.03**	**50**	*e*P	**Pb**	**20 37 27.4**	**+2.9**
PDAR	**Pinedale Array**	**3.31**	**259**	Pn	**Pn**	**20 38 01.6**	**+3.3**
	1.5nm,0.3s,baz=69,slow=16,SNR=31						
PDAR				Pg	**Pg**	**20 38 07.0**	**-3.3**
	4.4nm,0.3s,baz=68,slow=19,SNR=46						
PDAR				Sn	**Sn**	**20 38 41.4**	**+2.4**
	1.6nm,0.3s,baz=78,slow=30,SNR=7.6						
PDAR				Lg		20 38 47.1	
	3.8nm,0.3s,baz=71,slow=30,SNR=12						
BW06	**Boulder Array**	**3.31**	**259**	*e*P	**Pn**	**20 38 01.6**	**+3.2**
ISCO	**Idaho Springs**	**3.68**	**186**	*e*P	**Pn**	**20 38 03.8**	**+0.3**
QLMT	**Earthquake Lak**	**4.73**	**289**	P	**Pn**	**20 38 18.9**	**+0.5**
HWUT	**Hardware Ranch**	**5.10**	**251**	P	**Pn**	**20 38 22.7**	**-1.0**
	2.1nm,0.5s						
TCUT	**Toone Canyon**	**5.21**	**245**	P	**Pn**	**20 38 23.6**	**-1.7**
SPUT	**South Promonto**	**5.83**	**251**	P	**Pn**	**20 38 32.4**	**-1.5**
CHMT	**Chamberlain Mo**	**6.69**	**304**	*e*P	**Pn**	**20 38 44.3**	**-1.8**
ULM	**Lac du Bonnet**	**9.28**	**40**	Pn	**P**	**20 39 20.6**	**-1.6**
	1.2nm,0.3s,baz=232,slow=12,SNR=6.4						
YKA	**Yellowknife Ar**	**19.85**	**347**	P	**P**	**20 41 39.6**	**+0.3**
	0.1nm,0.3s,baz=159,slow=11,SNR=2.9						
ARCES	**ARCESS Array B**	**61.65**	**18**	P	**P**	**20 47 25.3**	**-0.2**
	1.4nm,0.9s,mb4.2,baz=338,slow=6.5,SNR=5.5						
MKAR	**Makanchi Array**	**89.89**	**355**	P	**P**	**20 50 07.5**	**+1.7**
	0.3nm,0.7s,mb3.7,baz=19,slow=3.2,SNR=3.4						

*IDC **25** 20:43:18.8±1.8,59.64N×24.75E,mb3.5/1,mb1 3.7/5, mb1mx3.4/22,ML3.5/4,Error ellipse: s-maj=25.1km s-min=11.6km az=148.0*
*HEL **25** 20:43:19.5±0.1,59.70N×24.55E,ML2.2,ML2.4(UPP), ML2.5(NAO),Explosion*
*NAO **25** 20:43:19.4±1.3,59.70N×24.52E,ML2.5*
*BER **25** 20:43:20.3±3.9,59.72N×24.61E,ML2.5(NAO)*

ISC 25 20:43:16.0±0.7,**59.63N**±0.04×**24.42E**±0.08,**n20,** σ1§**48**/**25**, **mb3.4**/**1**,**Baltic States - Belarus - Northwestern Russia**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MEF	**Metsahovi**	**0.58**	**359**	*e*P	**Pg**	**20 43 29.0**	**+1.3**
MEF				*e*S	**Sg**	**20 43 35.8**	**+0.3**
PVF	**Pernaja**	**1.17**	**38**	*e*P	**Pb**	**20 43 38.5**	**-0.2**
PVF				*e*S	**Sb**	**20 43 52.0**	**-2.3**
VSU	**Vasula**	**1.68**	**133**	*e*PN	**Pn**	**20 43 49.7**	**+2.9**
VSU				*e*SG	**Sg**	**20 44 11.2**	**-0.7**
VJF	**Virojoki**	**1.82**	**59**	*e*P	**Pn**	**20 43 49.8**	**+1.0**
VJF				*e*S	**Sn**	**20 44 12.1**	**-0.7**
FIA0	**FINESS Array S**	**1.99**	**24**	*e*P	**Pn**	**20 43 53.4**	**+2.1**
FIA0				*e*S	**Sn**	**20 44 17.8**	**+0.4**
FIA0				MSG		20 44 19.5	
	comp=Z,14nm,0.2s						
FIA0	**FINESS Array S**	**1.99**	**24**	Pn	**Pn**	**20 43 53.6**	**+2.3**
	baz=194,slow=18						
FIA0				Lg		20 44 17.8	
	baz=191,slow=28						
FINES	**FINESS Array B**	**1.99**	**24**	Pn	**Pn**	**20 43 53.5**	**+2.2**
	comp=Z,12nm,0.3s,baz=197,slow=14,SNR=541						
FINES				Sn	**Sn**	**20 44 19.0**	**+1.7**
	comp=Z,10nm,0.3s,baz=214,slow=27,SNR=17						
KEF	**Keuruu**	**2.55**	**5**	MSG		20 44 35.6	
	comp=Z,9.7nm,0.2s						
KAF	**Kangasniemi**	**2.65**	**20**	MSG		20 44 41.4	
	comp=Z,8.4nm,0.2s						
SUF	**Sumiainen**	**3.21**	**14**	MSG		20 45 01.3	
	comp=Z,5.2nm,0.2s						
VAF	**Ylistaro**	**3.52**	**347**	MSG		20 45 16.3	
	comp=Z,9.6nm,0.2s						
HFS	**Hagfors**	**5.42**	**280**	Pn	**Pn**	**20 44 41.9**	**+1.8**
	baz=87,slow=14						
HFS				Sn	**Sn**	**20 45 43.1**	**-1.1**
	baz=82,slow=28						
HFS				Lg		20 46 08.1	
	baz=93,slow=28						
HFS	**Hagfors**	**5.42**	**280**	*e*P	**Pn**	**20 44 41.9**	**+1.8**
HFS				*e*S	**Sn**	**20 45 43.1**	**-1.1**
HFS				*e*SG	**Sg**	**20 46 08.1**	**-8.5**
HFS	**Hagfors**	**5.42**	**280**	Pn	**Pn**	**20 44 41.6**	**+1.5**
	comp=Z,0.2nm,0.3s,baz=105,slow=13,SNR=33						
HFS				Lg		20 46 08.2	
	comp=Z,0.5nm,0.3s,baz=98,slow=30,SNR=7.5						
NOA	**NORSAR Array B**	**6.70**	**288**	Pn	**Pn**	**20 44 56.6**	**-1.5**
	comp=Z,0.6nm,0.3s,baz=130,slow=18,SNR=4.4						
NOA				Lg		20 46 48.0	
	comp=Z,1.2nm,0.3s,baz=309,slow=5.7,SNR=4.4						
ARA0	**ARCESS Array S**	**9.95**	**2**	Pn	**P**	**20 45 40.5**	**-2.7**
	baz=179,slow=16						
ARA0	**ARCESS Array S**	**9.95**	**2**	*e*P	**P**	**20 45 40.5**	**-2.7**
ARCES	**ARCESS Array B**	**9.95**	**2**	Pn	**P**	**20 45 40.5**	**-2.6**
	comp=Z,0.9nm,0.3s,baz=181,slow=12,SNR=66						
ARCES				Lg		20 48 25.4	
	comp=Z,0.3nm,0.3s,baz=177,slow=32,SNR=3.6						
SPITS	**Spitsbergen Ar**	**18.82**	**355**	P	**P**	**20 47 40.3**	**+1.4**
	comp=Z,0.1nm,0.3s,baz=189,slow=12,SNR=4.9						
MKAR	**Makanchi Array**	**35.76**	**85**	P	**P**	**20 50 17.9**	**-0.3**
	comp=Z,0.8nm,1.1s,mb3.4,baz=301,slow=5.1,SNR=4.4						

*IDC **25** 20:55:06.5±12.0,7.44S×128.76E,h112km±139km, mb3.6/1,mb1 3.4/4,mb1mx3.1/15,ML3.4/3,Error ellipse: s-maj=81.9km s-min=59.0km az=14.0*

ISC 25 20:55:10.9±3.5,**7.7S**±0.1×**128.5E**±0.2,**h173**km±38km,**n4,** σ1§**03**/**7**,**mb3.6**/**1**,**Banda Sea**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**10.73**	**195**	P	**P**	**20 57 41.9**	**+1.0**
	0.8nm,0.3s,baz=22,slow=9.2,SNR=6.9						
FITZ				S	**S**	**20 59 37.9**	**-0.7**
	1.2nm,0.3s,baz=344,slow=21,SNR=8.6						
WRA	**Warramunga Arr**	**13.46**	**156**	P	**P**	**20 58 14.9**	**-1.2**
	0.2nm,0.3s,baz=344,slow=12,SNR=16						
WRA				S	**S**	**21 00 35.3**	**-6.7**
	0.6nm,0.3s,baz=332,slow=22,SNR=8.1						
ASAR	**Alice Springs**	**16.74**	**162**	P	**P**	**20 58 57.4**	**+0.5**
	0.1nm,0.3s,baz=342,slow=11,SNR=4.1						
ASAR				S	**S**	**21 01 56.6**	**+0.5**
	0.2nm,0.3s,baz=346,slow=26,SNR=4.3						
MKAR	**Makanchi Array**	**67.96**	**328**	P	**P**	**21 05 53.2**	**-0.1**
	0.6nm,0.5s,mb3.6,baz=122,slow=7.7,SNR=17						

*IDC **25** 20:59:06.0±1.1,5.03S×133.30E,mb4.0/4,mb1 4.3/8, mb1mx4.0/16,ML4.1/4,MS3.5/1,Ms1 3.5/1,ms1mx2.9/15, Error ellipse: s-maj=65.9km s-min=18.8km az=70.0*
*NEIC **25** 20:59:12.6±4.3,5.04S×133.41E,h49km±42km,mb3.9/3, Error ellipse: s-maj=38.1km s-min=17.4km az=223.0*

ISC 25 20:59:11.7±2.5,**5.19S**±0.08×**133.3E**±0.1,**h62**km±24km, **n14,** σ1§**27**/**19**,**mb3.9**/**4**,**Aru Islands region**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KAKA	**Kakadu**	**7.52**	**187**	*e*P	**P**	**21 01 02.4**	**+1.4**
	34nm,0.4s						
KAKA				*e*S	**S**	**21 02 31.7**	**+6.1**
WRAB	**Tennant Creek**	**14.69**	**176**	*e*P	**P**	**21 02 34.3**	**-3.3**
	22nm,0.8s						
WRA	**Warramunga Arr**	**14.70**	**176**	Pn	**P**	**21 02 35.3**	**-2.5**
	1.1nm,0.3s,baz=359,slow=13,SNR=24						
WRA				Sn	**S**	**21 05 14.8**	**-4.7**
	0.9nm,0.3s,baz=350,slow=23,SNR=7.2						
FITZ	**Fitzroy Crossi**	**14.86**	**210**	*e*P	**P**	**21 02 42.1**	**+2.2**
	7.4nm,0.8s						
FITZ				*e*S	**S**	**21 05 22.1**	**-1.2**
FITZ	**Fitzroy Crossi**	**14.86**	**210**	Pn	**P**	**21 02 40.3**	**+0.4**
	1.2nm,0.3s,baz=26,slow=9.7,SNR=8.1						
FITZ				Sn	**S**	**21 05 22.7**	**-0.6**
	4.2nm,0.3s,baz=185,slow=18,SNR=15						
ASAR	**Alice Springs**	**18.38**	**178**	P	**P**	**21 03 23.4**	**-0.5**
	1.0nm,0.3s,baz=358,slow=11,SNR=32						
ASAR				S	**S**	**21 06 44.2**	**+0.7**
	0.4nm,0.3s,baz=356,slow=25,SNR=5.5						
ASAR				LR	LR	21 10 58.1	
	comp=Z,133nm,18.5s,baz=14,slow=38						
CTA	**Charters Tower**	**19.44**	**141**	P	**P**	**21 03 35.9**	**-0.1**
	0.2nm,0.3s,baz=318,slow=14,SNR=5.9						
CTAO	**Charters Tower**	**19.44**	**141**	*e*P	**P**	**21 03 35.2**	**-0.8**
	6.9nm,0.9s						
STKA	**Stephens Creek**	**27.66**	**165**	*e*P	**P**	**21 04 58.8**	**+2.8**
	3.1nm,1.1s,mb3.9						
STKA	**Stephens Creek**	**27.66**	**165**	P	**P**	**21 04 57.5**	**+1.5**
	1.7nm,0.6s,mb3.9,baz=7.9,slow=10,SNR=5.2						
MKAR	**Makanchi Array**	**68.58**	**325**	P	**P**	**21 10 10.3**	**+0.1**
	0.8nm,0.5s,mb3.9,baz=115,slow=8.7,SNR=16						
MKAR	**Makanchi Array**	**68.58**	**325**	P	**P**	**21 10 10.3**	**+0.1**
ZAL	**Zalesovo**	**71.48**	**332**	P	**P**	**21 10 26.7**	**-0.9**
	1.7nm,1.1s,mb3.9,baz=342,slow=1.3,SNR=3.9						
BVAR	**Borovoye Array**	**78.33**	**327**	P	**P**	**21 11 07.4**	**+0.5**
	0.9nm,0.7s,mb3.8,baz=125,slow=6.1,SNR=7.2						

*MOS **25** 21:09:17.0±1.6,17.42S×179.82E,h518km,mb4.5/9,Error ellipse: s-maj=20.5km s-min=17.7km az=116.1*
*NEIC **25** 21:09:25.0±0.3,17.58S×179.61E,mb4.5/19,Error ellipse: s-maj=10.4km s-min=7.1km az=139.0*
*BJI **25** 21:09:24.2,17.04S×179.72E,h586km,mB4.8,mb4.6*
*IDC **25** 21:09:24.8±0.7,17.57S×179.66E,h602km±8km,mb3.6/15, mb1 3.8/15,mb1mx3.8/17,Error ellipse: s-maj=16.5km s-min=10.6km az=139.0*

ISC 25 21:09:22.9±1.7,**17.53S**±0.08×**179.63E**±0.09, **h586**km±21km,**h601**km±2.3km:**pP-P**,**n193,** σ1§**11**/68, **mb4.4**/38,**7C-27D**,**Fiji Islands**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**13.21**	**248**	*e*P	**P**	**21 12 15.2**	**+1.6**
DZM	**Mont Dzumac**	**13.21**	**248**	*e*P	**P**	**21 12 15.2**	**+1.5**
NOUC	**Port Laguerre**	**13.34**	**248**	*e*P	**P**	**21 12 16.7**	**+1.7**
URZ	**Urewera**	**20.77**	**186**	P	**P**	**21 13 23.6**	**-1.8**
	4.5nm,0.3s,baz=256,slow=2.3,SNR=6.6						
RPZ	**Rata Peaks**	**27.10**	**194**	P	**P**	**21 14 19.8**	**-1.9**
	5.3nm,0.5s,mb4.5,baz=335,slow=4.8,SNR=3.6						
CTA	**Charters Tower**	**31.67**	**260**	*i*P	**P**	**21 15 01.1**	**+0.1**
	16nm,0.8s,mb4.7						
CTA	**Charters Tower**	**31.67**	**260**	P	**P**	**21 15 01.1**	**+0.2**
	17nm,0.6s,mb4.8,baz=90,slow=10,SNR=33						
CTA	**Charters Tower**	**31.67**	**260**	P	**P**	**21 15 01.1**	**+0.1**
CTA				pmax	pmax		
	comp=Z,17nm,0.6s						
CTAO	**Charters Tower**	**31.67**	**260**	*e*P	**P**	**21 15 01.1**	**+0.1**
	comp=Z,25nm,0.8s,mb4.9						
CNB	**Canberra Magne**	**32.20**	**231**	*i*P	**P**	**21 15 06.1**	**+0.8**
	comp=Z,9.6nm,0.4s,mb4.8						
PMG	**Port Moresby**	**32.55**	**280**	P	**P**	**21 15 09.0**	**+0.6**
	comp=Z,9.1nm,0.5s,mb4.6,baz=94,slow=11,SNR=3.7						
PMG	**Port Moresby**	**32.55**	**280**	P	**P**	**21 15 09.0**	**+0.5**
PMG				pmax	pmax		
	comp=Z,9.0nm,0.5s						
TOO	**Toolangi**	**35.98**	**229**	*i*P	**P**	**21 15 37.7**	**+1.0**
	comp=Z,15nm,1.4s,mb4.3						
STKA	**Stephens Creek**	**37.19**	**240**	*i*P	**P**	**21 15 47.2**	**+0.6**
	comp=Z,17nm,0.9s,mb4.6						
STKA	**Stephens Creek**	**37.19**	**240**	P	**P**	**21 15 47.2**	**+0.6**
	comp=Z,18nm,0.7s,mb4.7,baz=89,slow=9.0,SNR=48						
WB2	**Warramunga Arr**	**42.85**	**259**	*i*P	**P**	**21 16 30.9**	**-1.3**
WB2				*e*S	**S**	**21 22 09.2**	**-6.6**
WRAB	**Tennant Creek**	**42.85**	**259**	*e*P	**P**	**21 16 30.8**	**-1.4**
	comp=Z,29nm,0.7s,mb4.9						
WRA	**Warramunga Arr**	**42.86**	**259**	P	**P**	**21 16 31.0**	**-1.4**
	comp=Z,10.0nm,0.7s,mb4.5,baz=94,slow=6.9,SNR=171						
WRA				PcP	PcP	21 18 09.1	-0.9
	comp=Z,2.7nm,0.5s,baz=90,slow=3.5,SNR=6.9						
WRA				S	**S**	**21 22 10.0**	**-5.9**
	comp=Z,1.9nm,0.8s,baz=93,slow=14,SNR=12						
WRA	**Warramunga Arr**	**42.86**	**259**	P	**P**	**21 16 31.0**	**-1.3**
WRA						21 18 09.1	
WRA				pmax	pmax		
	comp=Z,10.0nm,0.7s						
WRA				pmax	pmax		
	comp=Z,3.0nm,0.5s						
AS12	**Alice Springs**	**43.10**	**254**	*i*P	**P**	**21 16 33.5**	**-0.6**
	comp=Z,70nm,0.6s,mb5.4						
AS12				*e*S	**S**	**21 22 18.4**	**-0.8**
ASAR	**Alice Springs**	**43.10**	**254**	P	**P**	**21 16 33.5**	**-0.6**
	comp=Z,79nm,0.6s,mb5.4,baz=87,slow=8.2,SNR=1262						
ASAR				PcP	PcP	21 18 09.5	-1.3
	comp=Z,4.7nm,0.7s,baz=97,slow=3.9,SNR=7.8						
ASAR				pP	pP	21 18 17.9	0.0
	comp=Z,3.5nm,0.9s,baz=80,slow=8.4,SNR=1.8						
ASAR				S	**S**	**21 22 14.7**	**-4.5**
	comp=Z,6.1nm,1.0s,baz=82,slow=16,SNR=12						
KAKA	**Kakadu**	**45.76**	**269**	*i*P	**P**	**21 16 53.8**	**-1.0**
	comp=Z,46nm,0.5s,mb5.3						
FITZ	**Fitzroy Crossi**	**51.25**	**261**	*i*P	**P**	**21 17 35.0**	**-0.6**
	comp=Z,23nm,0.6s,mb4.8						
FITZ	**Fitzroy Crossi**	**51.25**	**261**	P	**P**	**21 17 35.1**	**-0.5**
	comp=Z,25nm,0.6s,mb4.8,baz=155,slow=3.1,SNR=133						
MUN	**Mundaring**	**58.63**	**243**	*i*P	**P**	**21 18 25.2**	**-1.5**
	comp=Z,12nm,0.6s,mb4.2						
VNDA	**Vanda**	**60.67**	**184**	P	**P**	**21 18 38.9**	**-0.7**
	comp=Z,2.2nm,0.7s,mb3.5,baz=7.2,slow=7.6,SNR=16						
VNDA	**Vanda**	**60.67**	**184**	P	**P**	**21 18 38.9**	**-0.7**
VNDA				pmax	pmax		
	comp=Z,2.0nm,0.7s						
SBA	**Scott Base**	**60.69**	**183**	*e*P	**P**	**21 18 38.8**	**-0.9**
	comp=Z,7.7nm,0.8s,mb4.0						
MAJO	**Matsushiro**	**66.50**	**324**	*e*P	**P**	**21 19 16.4**	**-0.6**
	comp=Z,16nm,0.7s,mb4.6						
MAT	**Matsushiro**	**66.50**	**324**	P	**P**	**21 19 16.1**	**-1.0**
MAT	**Matsushiro**	**66.50**	**324**	*e*P	**P**	**21 19 16.0**	**-1.1**
	comp=Z,9.3nm,0.6s,mb4.4						
YSS	**Yuzh-Sakhalins**	**72.25**	**334**	*e*P	**P**	**21 19 50.9**	**0.0**
YSS				pmax	pmax		
	comp=Z,33nm,1.2s,mb4.7						
QSPA	**South Pole Qui**	**72.53**	**180**	*e*P	**P**	**21 19 52.1**	**+0.2**
	comp=Z,17nm,0.8s,mb4.6						
MDJ	**Mudanjiang**	**76.81**	**326**	P	**P**	**21 20 14.5**	**-1.9**
MDJ				AMB	AMB		
	comp=Z,16nm,1.0s,mb4.4						
MDJ				AMB	AMB		
	comp=Z,40nm,4.0s						
MDJ	**Mudanjiang**	**76.81**	**326**	*e*P	**P**	**21 20 17.3**	**+1.0**
	comp=Z,19nm,1.1s,mb4.4						
CMB	**Columbia Colle**	**78.86**	**44**	*e*P	**P**	**21 20 26.9**	**-0.5**
	comp=Z,2.6nm,0.7s,mb3.7						
NVAR	**Mina Array Bea**	**80.46**	**45**	P	**P**	**21 20 36.1**	**+0.5**
	comp=Z,1.9nm,0.7s,mb3.5,baz=213,slow=6.7,SNR=12						
NVAR				pP	pP	21 22 43.0	+2.7
	comp=Z,1.0nm,0.9s,baz=225,slow=12,SNR=3.7						
WVOR	**Wild Horse Val**	**82.34**	**41**	*e*P	**P**	**21 20 45.9**	**+0.8**
	comp=Z,4.4nm,0.9s,mb4.0						
ENH	**Enshi**	**82.51**	**305**	*e*P	**P**	**21 20 47.0**	**+0.7**
	comp=Z,25nm,0.9s,mb4.7						
MAW	**Mawson**	**83.58**	**200**	*i*P	**P**	**21 20 51.2**	**+0.4**
	comp=Z,6.9nm,0.6s,mb4.4						
MAW	**Mawson**	**83.58**	**200**	P	**P**	**21 20 51.2**	**+0.4**
	comp=Z,8.9nm,0.7s,mb4.4,baz=136,slow=6.1,SNR=20						
MAW	**Mawson**	**83.58**	**200**	P	**P**	**21 20 51.2**	**+0.4**
MAW				pmax	pmax		
	comp=Z,9.0nm,0.7s						
HLID	**Hailey**	**85.58**	**42**	*e*P	**P**	**21 21 01.5**	**+0.5**
	comp=Z,1.1nm,0.6s,mb3.7						
HHC	**Hu-ho-hao-te**	**85.68**	**315**	*e*P	**P**	**21 21 03.0**	**+1.4**
HHC				AMB	AMB		
	comp=Z,15nm,1.4s,mb4.4						
HHC				AMB	AMB		
	comp=Z,137nm,5.4s						
BILL	**Bilibino**	**85.88**	**355**	*c i*P	**P**	**21 21 01.8**	**-0.1**
BILL				pmax	pmax		
	comp=Z,7.0nm,0.6s,mb4.5						
ILAR	**Eielson Array**	**85.95**	**14**	P	**P**	**21 21 00.7**	**-1.7**
	comp=Z,1.1nm,0.7s,mb3.6,baz=228,slow=5.6,SNR=16						
ILAR				pP	pP	21 23 10.2	+1.3
	comp=Z,1.1nm,1.0s,baz=231,slow=5.6,SNR=4.6						
ILAR				PP	PP	21 24 35.8	+2.2
	comp=Z,0.6nm,0.9s,baz=215,slow=7.0,SNR=4.1						
ILAR	**Eielson Array**	**85.95**	**14**	P	**P**	**21 21 00.7**	**-1.6**
ILAR						21 24 35.8	
ILAR				pmax	pmax		
	comp=Z,1.0nm,0.7s						
ILAR				pmax	pmax		
	comp=Z,1.0nm,1.0s						
ILAR				pmax	pmax		
	comp=Z,1.0nm,0.9s						
KMI	**Kunming**	**86.00**	**298**	*e*P	**P**	**21 21 04.8**	**+1.3**
KMI				AMB	AMB		
	comp=Z,11nm,0.9s,mb4.5						
MNTX	**Cornudas Mount**	**86.89**	**56**	P	**P**	**21 21 07.8**	**+0.2**
CMAR	**Chiang Mai Arr**	**87.00**	**290**	P	**P**	**21 21 09.2**	**+0.9**
	comp=Z,2.1nm,0.8s,mb3.9,baz=109,slow=3.2,SNR=4.2						
CMAR	**Chiang Mai Arr**	**87.00**	**290**	P	**P**	**21 21 09.2**	**+0.9**
CMAR				pmax	pmax		
	comp=Z,2.0nm,0.8s						
TXAR	**Lajitas Array**	**87.38**	**58**	pP	pP	21 23 20.4	+3.5
	comp=Z,0.9nm,0.3s,baz=256,slow=3.7,SNR=1.6						
PDAR	**Pinedale Array**	**88.37**	**44**	P	**P**	**21 21 13.9**	**-0.3**
	comp=Z,0.7nm,0.8s,mb3.4,baz=243,slow=3.3,SNR=5.7						
PDAR				pP	pP	21 23 24.4	+2.9
	comp=Z,0.7nm,0.9s,baz=270,slow=1.5,SNR=4.4						
YAK	**Yakutsk**	**88.54**	**339**	*e*P	**P**	**21 21 14.1**	**-0.4**
YAK				pmax	pmax		
	comp=Z,9.0nm,0.5s,mb4.9						
LZH	**Lanzhou**	**89.18**	**308**	*e*P	**P**	**21 21 20.0**	**+1.8**
LZH				AMB	AMB		
	comp=Z,25nm,1.1s,mb5.0						
VNA3	**Neumayer Olymp**	**91.23**	**177**	*i*	**P**	**21 21 29.4**	**+2.6**
VNA2	**Neumayer--Watz**	**91.64**	**178**		**P**	**21 21 31.3**	**+2.6**
ULN	**Ulaanbaatar**	**91.66**	**320**	*e*P	**P**	**21 21 29.5**	**+0.2**
	comp=Z,5.6nm,1.0s,mb4.5	

DRGI	**Dragot**	**144.76**	**300**	P		PKPdf	21 27 55.5 +1.7
BRG	**Berggiesshubel**	**144.82**	**344**	*i* PKIKP		PKPdf	21 27 55.1 +1.8
BRG				pmax		pmax	
	comp=Z,22nm,0.8s						
SLTI	**Sal'it**	**144.88**	**301**	P		PKPdf	21 27 56.0 +2.0
JMQS	**Jabal Moqyreh**	**144.95**	**295**	P		PKPdf	21 27 56.5 +2.3
PVCC	**Panska Ves**	**144.97**	**343**	⫴*i* PKPBC		PKPbc	21 27 55.8 +1.4
ESKT	**Eskisehir**	**145.17**	**315**	*i* P		PKPdf	21 27 55.8 +1.6
WTSB	**Winterswijk**	**145.17**	**352**	*e*P		PKPdf	21 27 54.6 +0.7
	comp=Z,21nm,0.9s						
ZFRI	**Zfri**	**145.19**	**299**	P		PKPdf	21 27 56.8 +2.2
ZFRI	**Zfri**	**145.19**	**299**	⫴P		PKPdf	21 27 56.8 +2.2
CSS	**Prodhromos**	**145.36**	**307**	*e*PKPdf		PKPdf	21 27 56.4 +1.6
VYHS	**Vyhne**	**145.37**	**337**	*e*PKP		PKPdf	21 27 56.8 +2.5
VYHS				*e*			21 27 59.4
PRNI	**Paran**	**145.39**	**298**	P		PKPdf	21 27 57.5 +2.6
PRNI	**Paran**	**145.39**	**298**	⫴P		PKPdf	21 27 57.5 +2.6
MASH	**Mash'abbe Sade**	**145.41**	**299**	P		PKPdf	21 27 57.3 +2.4
PSZ	**Piszkesteto**	**145.44**	**336**	*e*PKPdf		PKPdf	21 27 56.9 +2.5
PRU	**Pruhonice**	**145.46**	**343**	⫴*i* PKPBC		PKPbc	21 27 56.8 +1.1
JMOS	**Jabal al Moall**	**145.55**	**296**	P		PKPdf	21 27 58.0 +2.8
ALWS	**Ilw as Safayha**	**145.56**	**296**	P		PKPdf	21 27 58.2 +2.9
EIL	**Elat**	**145.58**	**297**	P		PKPdf	21 27 57.9 +2.6
EIL	**Elat**	**145.58**	**297**	⫴P		PKPdf	21 27 57.9 +2.6
MOX	**Moxa**	**145.59**	**346**	*i* P		PKPdf	21 27 57.3 +2.7
	comp=Z,logA/T=1.2						
MOX	**Moxa**	**145.59**	**346**	*e*PKIKP		PKPdf	21 27 57.3 +2.7
MOX				pmax		pmax	
	comp=Z,22nm,1.5s						
AYUS	**'Aynunah**	**145.60**	**294**	P		PKPdf	21 27 57.9 +2.6
KMTI	**Karmit**	**145.68**	**298**	P		PKPdf	21 27 57.9 +2.5
BDAS	**Al Bad'**	**145.70**	**295**	P		PKPdf	21 27 58.3 +2.8
HAQS	**Haql**	**145.73**	**296**	P		PKPdf	21 27 58.4 +2.9
KZIT	**Kziot**	**145.76**	**299**	P		PKPdf	21 27 58.4 +2.9
KZIT	**Kziot**	**145.76**	**299**	⫴P		PKPdf	21 27 58.4 +2.9
NKC	**Novy Kostel**	**145.78**	**345**	⫴*i* PKPBC		PKPbc	21 27 58.0 +1.5
ULDT	**Uludag**	**145.97**	**318**	*i* P		PKPdf	21 27 58.7 +3.1
ZST	**Bratislava**	**146.24**	**339**	*e*PKP		PKPdf	21 27 59.9 +4.1
HGN	**Heimansgroeve**	**146.46**	**353**	*e*P		PKPdf	21 27 56.3 +0.2
	comp=Z,3.8nm,1.2s						
KHC	**Kasperske Hory**	**146.50**	**343**	⫴*i* PKPBC		PKPbc	21 27 59.9 +1.7
GRF	**Grafenberg Arr**	**146.57**	**346**	*e*PKP2		PKPab	21 28 00.2 -4.3
WET	**Wettzell**	**146.68**	**344**	*e*PKP2		PKPab	21 28 00.4 -4.5
GEC2	**GERESS Array S**	**146.73**	**343**	*e*PKIKP		PKPdf	21 28 00.4 +3.8
GERES	**GERESS Array B**	**146.73**	**343**	PKPbc		PKPbc	21 28 00.4 +1.7
	comp=Z,6.8nm,0.5s,baz=23,slow=3.0,SNR=78						
GERES	**GERESS Array B**	**146.73**	**343**	PKIKP		PKPdf	21 28 00.4 +3.8
GERES				pmax		pmax	
	comp=Z,7.0nm,0.5s						
GIVF	**Givet**	**147.24**	**354**	*e*PKP1		PKPdf	21 28 01.6 +4.2
DNZL	**Cakiroluk**	**147.31**	**314**	*i* P		PKPdf	21 28 02.4 +4.5
BAIF	**Baives**	**147.34**	**355**	*e*PKP1		PKPdf	21 28 01.9 +4.4
	comp=Z,20nm,0.6s						
MOA	**Molln**	**147.46**	**342**	⫛*i* PKP		PKPdf	21 28 02.6 +4.8
WLF	**Walferdange**	**147.51**	**352**	*e*PKPbc		PKPdf	21 28 03.1 +5.2
ARSA	**Arzberg**	**147.59**	**340**	⫛*i* PKP		PKPdf	21 28 02.7 +4.6
FUR	**Furstenfeldbru**	**147.99**	**345**	*e*PKHKP		PKPdf	21 28 03.7 +5.1
KDAG	**Bornova**	**148.13**	**316**	*i* P		PKPdf	21 28 03.6 +4.4
KBA	**Koelnbreinsper**	**148.43**	**342**	⫴*i* PKP		PKPdf	21 28 04.3 +5.0
BFO	**Black Forest**	**148.47**	**349**	*e*PKHKP		PKPdf	21 28 04.7 +5.4
CDF	**Champ du Feu**	**148.57**	**350**	*e*PKP1		PKPdf	21 28 05.0 +5.5
	comp=Z,17nm,0.7s						
WATA	**Walderalm**	**148.69**	**344**	⫴*i* PKP		PKPdf	21 28 05.2 +5.5
WTTA	**Wattenberg**	**148.74**	**344**	⫛*i* PKP		PKPdf	21 28 05.6 +5.8
MEZF	**Maizieres J'vi**	**148.79**	**353**	*e*PKP1		PKPdf	21 28 05.8 +6.0
	comp=Z,15nm,0.6s						
MOTA	**Moosalm**	**148.80**	**345**	⫴*i* PKP		PKPdf	21 28 05.5 +5.6
FLN	**La Foliniere**	**148.84**	**0**	*e*PKP1		PKPdf	21 28 05.4 +5.5
	comp=Z,33nm,0.5s						
SQTA	**Sankt Quirin**	**148.89**	**345**	⫴*i* PKP		PKPdf	21 28 05.9 +5.9
LJU	**Ljubljana**	**148.98**	**340**	*i* PKPbc		PKPdf	21 28 05.9 +5.7
LDF	**La Druitiere**	**149.01**	**360**	*e*PKP1		PKPdf	21 28 05.7 +5.5
	comp=Z,17nm,0.5s						
HAU	**Haudompre**	**149.11**	**351**	*e*PKP1		PKPdf	21 28 06.2 +5.9
	comp=Z,11nm,0.7s						
DAVA	**Damuels**	**149.14**	**346**	⫛*i* PKP		PKPdf	21 28 06.9 +6.5
ROSF	**Rostrenen**	**149.18**	**4**	*e*PKP1		PKPdf	21 28 06.0 +5.5
BOJS	**Bojanci**	**149.21**	**338**	*e*PKPbc		PKPdf	21 28 06.8 +6.2
HINF	**Hinteralfeld**	**149.21**	**350**	*e*PKP1		PKPdf	21 28 06.1 +5.6
	comp=Z,12nm,0.9s						
GRR	**Gorron**	**149.22**	**1**	*e*PKP1		PKPdf	21 28 06.4 +5.9
	comp=Z,37nm,0.6s						
JAVS	**Javornik**	**149.27**	**340**	*e*PKPbc		PKPdf	21 28 06.3 +5.6
SGMF	**Saint Gilles**	**149.30**	**3**	*e*PKP1		PKPdf	21 28 06.3 +5.6
	comp=Z,37nm,0.9s						
QUIF	**Quistinic**	**149.60**	**4**	*e*PKP1		PKPdf	21 28 06.7 +5.5
LOR	**Lormes**	**150.13**	**354**	*e*PKP1		PKPdf	21 28 08.8 +6.8
	comp=Z,24nm,0.7s						
HYF	**Humbligny**	**150.24**	**356**	*e*PKP1		PKPdf	21 28 09.4 +7.2
SSF	**Saint Saulge**	**150.37**	**355**	*e*PKP1		PKPdf	21 28 09.3 +6.9
	comp=Z,25nm,0.7s						
CABF	**La Chapelle**	**150.51**	**351**	*e*PKP1		PKPdf	21 28 10.1 +7.5
	comp=Z,23nm,0.8s						
AVF	**Avril sur Loir**	**150.66**	**355**	*e*PKP1		PKPdf	21 28 09.4 +6.6
	comp=Z,8.5nm,0.8s						
SMF	**Signal de Mont**	**150.75**	**354**	*e*PKP1		PKPdf	21 28 10.2 +7.2
BGF	**Bois d'Agland**	**150.93**	**355**	*e*PKP1		PKPdf	21 28 10.2 +7.0
	comp=Z,15nm,0.6s						
MFF	**Saint Martin d**	**151.00**	**360**	*e*PKP1		PKPdf	21 28 10.5 +7.2
	comp=Z,17nm,0.6s						
TCF	**Toulx Ste Croi**	**151.24**	**356**	*e*PKP1		PKPdf	21 28 11.0 +7.3
	comp=Z,10nm,0.8s						
LPL	**La Plagne**	**151.47**	**350**	*e*PKP1		PKPdf	21 28 12.5 +8.5
	comp=Z,9.1nm,0.6s						
LPG	**La Plagne**	**151.48**	**349**	*e*PKP1		PKPdf	21 28 12.7 +8.6
	comp=Z,14nm,0.9s						
ORIF	**Oris-en-Rattie**	**152.19**	**350**	*e*PKP1		PKPdf	21 28 13.5 +8.4
	comp=Z,12nm,0.6s						
MBDF	**Montbardon**	**152.22**	**349**	*e*PKP1		PKPdf	21 28 13.6 +8.5
	comp=Z,14nm,0.7s						
RJF	**Les Rejaudoux**	**152.26**	**357**	*e*PKP1		PKPdf	21 28 13.4 +8.3
	comp=Z,10nm,0.8s						
VIVF	**Saint-Julien-l**	**152.43**	**352**	*e*PKP1		PKPdf	21 28 14.0 +8.6
CAF	**Calviac**	**152.61**	**356**	*e*PKP1		PKPdf	21 28 14.4 +8.8
	comp=Z,5.7nm,0.8s						
LFF	**La Frestale**	**152.65**	**358**	*e*PKP1		PKPdf	21 28 14.8 +9.1
	comp=Z,12nm,0.8s						
SBF	**Sospel**	**152.93**	**348**	*e*PKP1		PKPdf	21 28 14.4 +8.3
	comp=Z,8.0nm,0.6s						
SMRF	**Simiane la Rot**	**153.16**	**350**	*e*PKP1		PKPdf	21 28 15.8 +9.4
LASF	**Ste Croix**	**153.29**	**353**	*e*PKP1		PKPdf	21 28 16.0 +9.4
	comp=Z,14nm,1.1s						
FRF	**La Foret Royal**	**153.38**	**349**	*e*PKP1		PKPdf	21 28 16.1 +9.4
PGF	**Pioggiola**	**153.81**	**344**	*e*PKP1		PKPdf	21 28 16.6 +9.3
	comp=Z,15nm,0.9s						
EVO	**Evora**	**158.03**	**16**	*e*PKIKP		PKPdf	21 28 15.4 +2.4
	comp=Z,3.9nm,0.7s						

NEIC ***25*** *21:16:43.0±7.0, 17.53S×167.89E, h20km±42km, mb4.7/9, Error ellipse: s-maj=18.8km s-min=9.7km az=222.0*
LDG ***25*** *21:16:42.7±0.2, 17.355S×167.04E, h10km, Mb4.5/2, Error ellipse: s-maj=32.3km s-min=5.6km az=88.0*
IDC ***25*** *21:16:47.1±8.2, 17.57S×167.85E, h50km±70km, mb4.2/11, mb1 4.3/11, mb1mx4.2/17, MS3.6/7, Ms1 3.5/7, ms1mx3.3/22, Error ellipse: s-maj=36.2km s-min=23.0km az=37.0*

ISC 25 21:16:42.2±1.7, 17.66S±0.05×167.74E±0.09, h20km±14km, n60, σ1§06/39, mb4.4/15, MS3.4/7, 7C-2D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BKM	**Butte a Klehm**	**0.48**	**91**	⫛*i* P	**Pb**	**21 16 51.3**	**-0.5**
DZM	**Mont Dzumac**	**4.56**	**195**	*e*P	**Pn**	**21 17 52.4**	**+0.5**
DZM				*e*S	**Sn**	**21 18 43.9**	**-1.0**
DZM	**Mont Dzumac**	**4.56**	**195**	*e*P	**Pn**	**21 17 52.4**	**+0.5**
DZM				*e*S	**Sn**	**21 18 43.9**	**-1.0**
NOUC	**Port Laguerre**	**4.62**	**197**	*e*P	**Pn**	**21 17 53.3**	**+0.6**
NOUC				*e*S	**Sn**	**21 18 45.0**	**-1.5**
NOUC	**Port Laguerre**	**4.62**	**197**	*e*P	**Pn**	**21 17 53.3**	**+0.6**
NOUC				*e*S	**Sn**	**21 18 45.0**	**-1.5**
CTA	**Charters Tower**	**20.48**	**260**	*e*P	**P**	**21 21 23.4**	**+1.8**
	7.7nm,0.9s						
CTA	**Charters Tower**	**20.48**	**260**	P	**P**	**21 21 22.8**	**+1.2**
	9.7nm,0.8s,baz=75,slow=14,SNR=12						
CTA				LR	LR	21 28 21.3	
	comp=Z,257nm,18.8s,MS3.6,baz=37,slow=34						
CTAO	**Charters Tower**	**20.48**	**260**	*e*P	**P**	**21 21 22.3**	**+0.7**
	13nm,0.9s						
PMG	**Port Moresby**	**21.61**	**290**	LR	LR	21 28 13.5	
	comp=Z,103nm,21.9s,MS3.2,baz=144,slow=32						
PMG	**Port Moresby**	**21.61**	**290**	*e*P	**P**	**21 21 32.9**	**-0.3**
URZ	**Urewera**	**22.10**	**160**	P	**P**	**21 21 38.8**	**+0.9**
	11nm,0.8s,mb4.3,baz=15,slow=5.5,SNR=5.0						
CNB	**Canberra Magne**	**24.01**	**219**	⫴*i* P	**P**	**21 21 59.1**	**+2.4**
	24nm,0.8s,mb4.7						
RPZ	**Rata Peaks**	**26.13**	**175**	LR	LR	21 31 22.5	
	comp=Z,134nm,20.8s,MS3.5,baz=327,slow=33						
STKA	**Stephens Creek**	**27.55**	**234**	*e*P	**P**	**21 22 31.1**	**+1.3**
	8.6nm,0.5s,mb4.6						
STKA	**Stephens Creek**	**27.55**	**234**	P	**P**	**21 22 31.3**	**+1.5**
	13nm,0.7s,mb4.7,baz=61,slow=8.5,SNR=14						
STKA				PcP	PcP	21 25 47.0	-1.0
	2.3nm,0.8s,baz=44,slow=4.0,SNR=4.1						
STKA				LR	LR	21 33 05.2	
	comp=Z,170nm,20.1s,MS3.6,baz=27,slow=35						
WB2	**Warramunga Arr**	**31.66**	**261**	*e*P	**P**	**21 23 06.2**	**-0.5**
WRAB	**Tennant Creek**	**31.67**	**261**	*e*P	**P**	**21 23 05.7**	**-1.0**
	6.4nm,0.7s,mb4.6						
WRA	**Warramunga Arr**	**31.68**	**261**	P	**P**	**21 23 06.1**	**-0.7**
	3.1nm,0.8s,mb4.2,baz=91,slow=9.3,SNR=14						
WRA				PcP	PcP	21 25 57.1	-1.4
	0.7nm,0.7s,baz=102,slow=2.7,SNR=5.4						
WRA				LR	LR	21 34 59.0	
	comp=Z,53nm,19.5s,MS3.2,baz=210,slow=34						
AS12	**Alice Springs**	**32.17**	**254**	*e*P	**P**	**21 23 10.3**	**-0.7**
	8.7nm,0.6s,mb4.8						
ASAR	**Alice Springs**	**32.17**	**254**	P	**P**	**21 23 10.7**	**-0.4**
	7.4nm,0.6s,mb4.7,baz=79,slow=8.4,SNR=73						
ASAR				PcP	PcP	21 25 58.5	-1.4
	1.2nm,0.7s,baz=104,slow=2.4,SNR=7.3						
ASAR				LR	LR	21 36 09.9	
	comp=Z,87nm,21.2s,MS3.4,baz=282,slow=36						
FITZ	**Fitzroy Crossi**	**40.01**	**263**	⫴*i* P	**P**	**21 24 18.2**	**+0.6**
	17nm,0.6s,mb4.9						
FITZ	**Fitzroy Crossi**	**40.01**	**263**	P	**P**	**21 24 18.3**	**+0.6**
	22nm,0.7s,mb5.0,baz=111,slow=3.7,SNR=39						
FITZ				LR	LR	21 40 45.1	
	comp=Z,65nm,19.2s,MS3.5,baz=167,slow=36						
VNDA	**Vanda**	**59.96**	**181**	P	**P**	**21 26 48.3**	**-0.8**
	0.6nm,0.7s,mb3.7,baz=348,slow=4.6,SNR=5.1						
SBA	**Scott Base**	**60.23**	**180**	*e*P	**P**	**21 26 50.6**	**-0.3**
	4.8nm,0.8s,mb4.6						
QSPA	**South Pole Qui**	**72.39**	**180**	*e*P	**P**	**21 28 08.5**	**+0.2**
	9.5nm,0.9s,mb4.7						
CM31	**Chiang Mai Arr**	**76.56**	**295**	P	**P**	**21 28 32.2**	**-1.2**
CMAR	**Chiang Mai Arr**	**76.56**	**295**	P	**P**	**21 28 34.0**	**+0.6**
	0.9nm,0.7s,mb3.8,baz=131,slow=5.2,SNR=9.1						
ULN	**Ulaanbaatar**	**84.76**	**324**	*e*P	**P**	**21 29 15.8**	**-0.4**
	9.0nm,0.8s,mb5.0						
SONM	**Songino Array**	**85.11**	**324**	P	**P**	**21 29 17.8**	**-0.2**
	3.6nm,0.8s,mb4.6,baz=153,slow=7.3,SNR=28						
ILAR	**Eielson Array**	**89.16**	**18**	P	**P**	**21 29 36.1**	**-1.1**
	0.6nm,0.7s,mb4.0,baz=232,slow=5.4,SNR=5.9						
VNA3	**Neumayer Olymp**	**91.31**	**181**	⫛*i*	**P**	**21 29 50.3**	**+3.2**
VNA3	**Neumayer Olymp**	**91.31**	**181**	⫛*i*	**P**	**21 29 51.8**	**+4.7**
VNA2	**Neumayer--Watz**	**91.58**	**182**	⫛*i*	**P**	**21 29 51.0**	**+2.6**
VNA2	**Neumayer--Watz**	**91.58**	**182**	⫛*i*	**P**	**21 29 52.1**	**+3.7**
VNA1	**Neumayer--Stat**	**91.88**	**181**	⫛*i*	**P**	**21 29 52.6**	**+2.8**
VNA1	**Neumayer--Stat**	**91.88**	**181**	⫛*i*	**P**	**21 29 53.5**	**+3.7**
MKAR	**Makanchi Array**	**99.62**	**316**	P	**P**	**21 30 25.2**	**-0.4**
	0.5nm,0.7s,mb4.1,baz=104,slow=5.0,SNR=4.3						
ARCES	**ARCESS Array B**	**123.19**	**345**	PKP	PKPdf	21 35 36.3	-5.1
	2.8nm,0.9s,baz=63,slow=2.0,SNR=4.8						
CDF	**Champ du Feu**	**145.44**	**337**	*e*PKP1	PKPbc	21 36 18.6	-0.8
	16nm,0.7s						
HINF	**Hinteralfeld**	**146.09**	**337**	*e*PKP1	PKPbc	21 36 21.3	+0.3
HAU	**Haudompre**	**146.12**	**337**	*e*PKP1	PKPbc	21 36 21.2	+0.1
	5.2nm,0.6s						
MEZF	**Maizieres J'vi**	**146.16**	**339**	*e*PKP1	PKPbc	21 36 21.4	+0.3
CABF	**La Chapelle**	**147.38**	**336**	*e*PKP1	PKPdf	21 36 24.6	-1.7
	5.4nm,0.8s						
LOR	**Lormes**	**147.63**	**339**	*e*PKP1	PKPdf	21 36 25.2	-1.4
	7.4nm,0.8s						
SSF	**Saint Saulge**	**147.93**	**340**	*e*PKP1	PKPdf	21 36 26.6	-0.5
	8.2nm,0.7s						
GRR	**Gorron**	**147.97**	**346**	*e*PKP1	PKPdf	21 36 26.6	-0.6
LPL	**La Plagne**	**148.03**	**334**	*e*PKP1	PKPdf	21 36 26.6	-0.7
	2.6nm,0.5s						
LPG	**La Plagne**	**148.03**	**334**	*e*PKP1	PKPdf	21 36 26.8	-0.6
	3.4nm,0.7s						
SMF	**Signal de Mont**	**148.18**	**339**	*e*PKP1	PKPdf	21 36 27.0	-0.5
AVF	**Avril sur Loir**	**148.22**	**339**	*e*PKP1	PKPdf	21 36 27.1	-0.5
BGF	**Bois d'Agland**	**148.59**	**340**	*e*PKP1	PKPdf	21 36 28.2	0.0
ORIF	**Oris-en-Rattie**	**148.86**	**335**	*e*PKP1	PKPdf	21 36 28.4	-0.3
	5.7nm,0.8s						
TCF	**Toulx Ste Croi**	**149.03**	**340**	*e*PKP1	PKPdf	21 36 29.6	+0.7
	5.2nm,0.8s						
PGF	**Pioggiola**	**149.29**	**328**	*e*PKP1	PKPdf	21 36 29.5	0.0
	40nm,1.3s						
MFF	**Saint Martin d**	**149.45**	**343**	*e*PKP1	PKPdf	21 36 30.7	+1.1
	5.5nm,0.6s						
FRF	**La Foret Royal**	**149.63**	**332**	*e*PKP1	PKPdf	21 36 30.3	+0.3
SMRF	**Simiane la Rot**	**149.76**	**334**	*e*PKP1	PKPdf	21 36 30.9	+0.7
LMR	**La Mourre**	**149.87**	**332**	*e*PKP1	PKPdf	21 36 30.7	+0.3
	20nm,1.2s						
LASF	**Ste Croix**	**150.37**	**336**	*e*PKP1	PKPdf	21 36 32.2	+1.1
MTLF	**Montolieu**	**151.61**	**337**	*e*PKP1	PKPdf	21 36 34.8	+1.8
	8.6nm,0.9s						

BJI ***25*** *21:47:41.8, 30.26N×122.60E, h27km, mB4.1, mb3.6, ML4.3, Ms3.9, Msz4.1*
IDC ***25*** *21:47:41.9±1.0, 30.05N×122.42E, mb3.8/5, mb1 3.9/6, mb1mx3.6/23, ML3.9/1, MS3.2/4, Ms1 3.2/4, ms1mx2.9/34, Error ellipse: s-maj=39.3km s-min=18.1km az=54.0*
NEIC ***25*** *21:47:43.0±0.5, 30.04N×122.39E, h10km, mb4.0/2, Error ellipse: s-maj=13.8km s-min=8.5km az=215.0*

ISC 25 21:47:39.2±1.5, 30.06N±0.06×122.30E±0.06, h0km±10km, n23, σ1§44/24, mb3.9/7, MS3.3/3, Southeastern China

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SSE	**Sheshan**	**1.41**	**318**	PG	**Pg**	**21 48 07.3**	**0.0**
SSE				SG	**Sg**	**21 48 27.0**	**+0.9**
SSE				S	Sb		
	comp=N,5μm,0.8s						
SSE				S	Sb		
	comp=E,5μm,0.8s						
NJ2	**Nanjing**	**3.56**	**305**	*e*P	**Pn**	**21 48 38.3**	**+1.5**
NJ2				S	**Sn**	**21 49 18.8**	**-1.4**
NJ2				SG	**Sg**	**21 49 35.3**	**-2.4**
QZH	**Quanzhou**	**6.06**	**214**	P	**Pn**	**21 49 15.8**	**+3.6**
QZH				S	**Sn**	**21 50 21.8**	**-1.4**
QZH				LR	LR		
	comp=N,3μm,4.8s						
QZH				LR	LR		
	comp=E,5μm,5.3s						
JOW	**Kunigami**	**6.17**	**120**	Pn	**Pn**	**21 49 12.2**	**-1.5**
TIA	**Tai'an**	**7.51**	**326**	*e*P	**Pn**	**21 49 30.0**	**-2.7**
JNU	**Nakatsue**	**7.93**	**65**	Pn	**Pn**	**21 49 38.2**	**-0.3**
	comp=E,1.5nm,0.3s,baz=130,slow=3.2,SNR=3.3						
JNU				LR	LR	21 52 37.0	
	comp=E,61nm,20.4s,baz=246,slow=38						
JNU	**Nakatsue**	**7.93**	**65**	Pn	**Pn**	**21 49 38.2**	**-0.3**
JNU				LR	LR	21 52 37.0	
ENH	**Enshi**	**11.09**	**274**	*e*P	**P**	**21 50 22.1**	**0.0**
LZH	**Lanzhou**	**16.59**	**296**	*e*P	**P**	**21 51 33.5**	**-1.1**
LZH				PP	PP	21 51 47.5	-0.9
LZH				AMB	AMB		
	comp=Z,21nm,1.2s						
LZH				LR	LR		
	comp=E,452nm,8.5s						
LZH				LR	LR		
	comp=Z,597nm,11.0s						
GTA	**Gaotai**	**20.66**	**303**	*e*P	**P**	**21 52 26.8**	**+3.8**
GTA				AP		21 52 31.0	
GTA				XP		21 52 34.0	
GTA				AMB	AMB		
	comp=Z,2.0nm,0.7s						
ULN	**Ulaanbaatar**	**21.30**	**331**	*e*P	**P**	**21 52 28.8**	**-0.8**
	comp=Z,3.1nm,0.7s,mb3.8						
SONM	**Songino Array**	**21.56**	**330**	P	**P**	**21 52 32.9**	**+0.8**
	comp=Z,3.8nm,0.7s,mb4.0,baz=140,slow=10.0,SNR=22						
CMAR	**Chiang Mai Arr**	**24.17**	**247**	LR	LR	22 02 00.0	
	comp=Z,34nm,21.6s,MS2.8,baz=260,slow=35						
LSA	**Lhasa**	**26.97**	**277**	P	**P**	**21 53 27.3**	**+2.9**
MKAR	**Makanchi Array**	**35.08**	**310**	P	**P**	**21 54 37.5**	**+1.6**
	comp=Z,1.3nm,0.7s,mb4.0,baz=96,slow=10,SNR=17						
ZAL	**Zalesovo**	**36.04**	**322**	P	**P**	**21 54 45.8**	**+1.8**
	comp=Z,0.5nm,0.5s,mb3.6,baz=291,slow=7.5,SNR=3.7						
KURK	**Kurchatov**	**38.44**	**315**	P	**P**	**21 55 04.8**	**+0.7**
TIXI	**Tiksi**	**41.80**	**3**	P	**P**	**21 55 28.2**	**-3.4**
WRAB	**Tennant Creek**	**51.04**	**165**	*e*P	**P**	**21 56 45.0**	**-0.3**
	comp=Z,24nm,0.6s,mb4.3						
WRA	**Warramunga Arr**	**51.04**	**165**	P	**P**	**21 56 45.2**	**-0.1**
	comp=Z,1.0nm,0.6s,mb3.9,baz=349,slow=8.1,SNR=9.3						
ASAR	**Alice Springs**	**54.56**	**167**	P	**P**	**21 57 12.1**	**+0.6**
	comp=Z,0.3nm,0.5s,mb3.6,baz=357,slow=14,SNR=7.7						
FINES	**FINESS Array B**	**66.93**	**329**	LR	LR	22 28 54.8	
	comp=Z,27nm,19.9s,MS3.5,baz=279,slow=37						
NOA	**NORSAR Array B**	**73.53**	**332**	LR	LR	22 35 00.2	
	comp=Z,30nm,19.0s,MS3.6,baz=115,slow=39						

IDC ***25*** *21:58:31.8±11.0, 7.44S×128.65E, h98km±135km, mb3.4/2, mb1 3.8/5, mb1mx3.5/15, ML3.9/3, Error ellipse: s-maj=100.0km s-min=57.9km az=33.0*

ISC 25 21:58:38.6±1.9, 7.89S±0.09×128.6E±0.1, h200km±22km, n9, σ0§54/16, mb3.4/2, 2C, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KAKA	**Kakadu**	**6.08**	**142**	⫛*i* P	**P**	**22 00 07.6**	**0.0**
	54nm,0.1s						
KAKA				*e*S	**S**	**22 01 16.6**	**-0.3**
FITZ	**Fitzroy Crossi**	**10.54**	**195**	⫛*i* P	**P**	**22 01 05.8**	**0.0**
	4.8nm,0.3s						
FITZ				*e*S	**S**	**22 03 00.5**	**-0.6**
FITZ	**Fitzroy Crossi**	**10.54**	**195**	P	**P**	**22 01 05.9**	**+0.1**
	2.5nm,0.3s,baz=20,slow=9.3,SNR=51						
FITZ				S	**S**	**22 03 01.5**	**+0.4**
	1.4nm,0.3s,baz=334,slow=6.7,SNR=5.4						
WRA	**Warramunga Arr**	**13.22**	**156**	P	**P**	**22 01 39.6**	**-0.1**
	0.8nm,0.3s,baz=337,slow=10,SNR=51						
WRA				S	**S**	**22 04 01.8**	**-0.8**
	1.0nm,0.3s,baz=338,slow=22,SNR=10						
WB2	**Warramunga Arr**	**13.22**	**156**	*e*P	**P**	**22 01 40.4**	**+0.6**
WB2				*e*S	**S**	**22 04 03.4**	**+0.7**
AS12	**Alice Springs**	**16.50**	**163**	*e*P	**P**	**22 02 26.4**	**+6.1**
	2.3nm,0.7s						
AS12				*e*S	**S**	**22 05 24.4**	**+8.0**
ASAR	**Alice Springs**	**16.50**	**163**	P	**P**	**22 02 23.9**	**+3.6**
	0.2nm,0.3s,baz=333,slow=9.4,SNR=15						
ASAR				S	**S**	**22 05 25.1**	**+8.7**
	0.3nm,0.3s,baz=346,slow=25,SNR=6.2						
SONM	**Songino Array**	**58.85**	**343**	P	**P**	**22 08 18.6**	**+0.1**
	0.3nm,0.6s,mb3.1,baz=158,slow=6.7,SNR=4.1						
MKAR	**Makanchi Array**	**68.21**	**328**	P	**P**	**22 09 19.1**	**-0.4**
	1.0nm,0.5s,mb3.7,baz=115,slow=8.3,SNR=22						

IDC ***25*** *22:09:03.2±1.4, 54.71S×144.66E, mb3.9/6, mb1 4.2/6, mb1mx4.1/10, Error ellipse: s-maj=105.0km s-min=22.3km az=79.0*
NEIC ***25*** *22:09:04

JTS	JuntasAbangare	21.61	108	*e*P		P	22 19 38.4	+2.3	
ISCO	Idaho Springs	21.75	0	*e*P		P	22 19 38.2	+0.8	
	16nm,1.4s,mb4.3								
MET	Memphis--Engin	22.17	36	P		P	22 19 42.4	+0.8	
TPH	Tonopah	22.38	336	*e*P		P	22 19 44.2	+0.6	
	19nm,1.1s,mb4.4								
KSU1	Kansas State U	22.53	19	*e*P		P	22 19 45.2	+0.1	
LRAL	Lakeview Retre	22.61	45	*e*P		P	22 19 46.7	+0.7	
	1.8nm,0.5s,mb3.8								
DAU	Daniels Canyon	22.85	349	*e*P		P	22 19 48.7	+0.3	
JLU	Jordanelle	23.07	349	*e*P		P	22 19 51.1	+0.6	
NVAR	Mina Array Bea	23.12	334	P		P	22 19 51.8	+0.8	
	4.4nm,0.9s,mb3.9,baz=145,slow=11,SNR=13								
PLAL	Pickwick Lake	23.16	40	*e*P		P	22 19 50.9	-0.5	
	31nm,1.4s,mb4.5								
CTU	Camp Tracy	23.21	348	*e*P		P	22 19 53.6	+1.8	
TCUT	Toone Canyon	23.56	349	*e*P		P	22 19 56.3	+1.0	
CMB	Columbia Colle	23.71	330	*e*P		P	22 19 56.6	-0.2	
	6.4nm,1.0s,mb4.0								
CCM	Cathedral Cave	23.73	30	*e*P		P	22 19 57.1	+0.2	
	2.6nm,0.5s,mb3.9								
HWUT	Hardware Ranch	24.07	349	*e*P		P	22 20 00.9	+0.7	
	5.6nm,0.9s,mb4.0								
WVT	Waverly	24.09	38	*e*P		P	22 19 59.9	-0.6	
	34nm,1.5s,mb4.5								
BMN	Battle Mountai	24.45	339	*e*P		P	22 20 04.7	+0.7	
HVU	Hansel Valley	24.47	347	*e*P		P	22 20 03.7	-0.4	
SIUC	Southern Illin	24.47	33	*e*P		P	22 20 04.4	+0.3	
	44nm,1.2s,mb4.8								
DWPF	Disney	24.56	61	*e*P		P	22 20 06.9	+1.8	
	25nm,0.8s,mb4.8								
SWET	Sewanee	24.64	42	*e*P		P	22 20 05.5	-0.3	
SLM	Saint Louis	24.67	30	P		P	22 20 05.8	-0.2	
BW06	Boulder Array	24.92	353	*e*P		P	22 20 08.3	-0.1	
	2.5nm,0.8s,mb3.8								
PDAR	Pinedale Array	24.92	353	P		P	22 20 08.4	0.0	
	1.9nm,0.8s,mb3.7,baz=166,slow=12,SNR=13								
BEKR	Beckwourth	25.19	333	*e*P		P	22 20 10.2	-0.8	
	13nm,1.1s,mb4.4								
OHCM	Honcut	25.27	331	*e*P		P	22 20 12.3	+0.5	
CPCT	Cooper Cave	25.69	43	*e*P		P	22 20 15.7	-0.1	
KSWY	Kelly School	25.89	352	*e*P		P	22 20 18.7	+1.1	
HLID	Hailey	26.53	346	*e*P		P	22 20 23.8	+0.4	
	3.2nm,0.6s,mb4.0								
QLMT	Earthquake Lak	27.19	351	*e*P		P	22 20 29.8	+0.4	
JSC	Jenkinsville	27.28	49	*e*P		P	22 20 30.4	0.0	
MCMT	McKenzie Canyo	27.42	349	*e*P		P	22 20 32.0	+0.4	
BOZ	Bozeman (W)	28.02	351	*e*P		P	22 20 37.5	+0.5	
	3.9nm,0.2s,mb4.7								
CHMT	Chamberlain Mo	29.51	350	*e*P		P	22 20 50.6	+0.2	
MSO	Missoula	29.55	349	*e*P		P	22 20 49.8	-0.9	
	53nm,1.5s,mb5.0								
SSOR	Sweet Springs	30.21	336	*e*P		P	22 20 55.6	-1.1	
LON	Longmire	31.59	339	*e*P		P	22 21 07.7	-1.1	
NEW	Newport	31.59	346	P		P	22 21 07.8	-1.0	
	1.8nm,0.4s,mb4.2,baz=152,slow=9.8,SNR=6.9								
NEW				LR		LR	22 33 03.4		
	comp=Z,190nm,20.1s,MS3.8,baz=220,slow=35								
NEW	Newport	31.59	346	P		P	22 21 07.8	-1.0	
NEW				LR		LR	22 33 03.4		
OTAV	Otavalo	32.16	120	*e*P		P	22 21 15.9	+1.8	
	17nm,1.4s,mb4.7								
GNW	Green Mountain	32.64	338	*e*P		P	22 21 17.1	-0.9	
ULM	Lac du Bonnet	33.18	12	P		P	22 21 23.5	+0.9	
	4.9nm,0.8s,mb4.5,baz=209,slow=10,SNR=3.9								
ULM				LR		LR	22 35 17.6		
	comp=Z,208nm,18.2s,MS3.9,baz=206,slow=37								
ULM	Lac du Bonnet	33.18	12	P		P	22 21 23.5	+0.9	
ULM				LR		LR	22 35 17.6		
MVL	Millersville	33.60	43	*e*P		P	22 21 26.8	+0.4	
SADO	Sadowa	34.81	34	P		P	22 21 35.9	-0.9	
	10nm,0.8s,mb4.8,baz=230,slow=7.3,SNR=5.1								
SDV	Santo Domingo	35.34	100	P		P	22 21 43.0	+1.5	
	3.7nm,0.6s,mb4.5,baz=326,slow=7.5,SNR=5.0								
FFC	Flin Flon	36.80	4	*e*P		P	22 21 51.4	-2.1	
	12nm,1.3s,mb4.6								
FCC	Fort Churchill	41.63	9	*e*P		P	22 22 31.9	-1.7	
	8.7nm,1.2s,mb4.3								
DLBC	Dease Lake	44.16	342	P		P	22 22 55.0	+0.8	
	11nm,1.1s,mb4.5,baz=163,slow=2.4,SNR=8.6								
DLBC				LR		LR	22 41 35.6		
	comp=Z,221nm,19.9s,MS4.1,baz=184,slow=36								
DLBC	Dease Lake	44.16	342	*e*P		P	22 22 53.8	-0.4	
YKA	Yellowknife Ar	44.90	354	P		P	22 22 58.3	-1.9	
	1.7nm,0.8s,mb3.9,baz=168,slow=7.5,SNR=13								
YKA				LR		LR	22 42 32.1		
	comp=Z,204nm,19.4s,MS4.1,baz=180,slow=37								
YKA	Yellowknife Ar	44.90	354	P		P	22 22 58.3	-1.9	
YKA				LR		LR	22 42 32.1		
YKW3	Yellowknife Ar	44.97	354	*e*P		P	22 22 58.7	-2.0	
SCHQ	Schefferville	47.30	30	LR		LR	22 42 52.4		
	comp=Z,167nm,18.3s,MS4.0,baz=228,slow=36								
LPAZ	La Paz	50.36	130	P		P	22 23 43.1	-0.3	
	2.2nm,0.8s,mb4.2,baz=333,slow=8.3,SNR=7.5								
LPAZ				LR		LR	22 42 50.9		
	comp=Z,142nm,18.1s,MS4.0,baz=271,slow=34								
LPAZ	La Paz	50.36	130	*e*P		P	22 23 42.5	-0.9	
	3.7nm,1.2s,mb4.3								
DAWY	Dawson	51.38	342	*e*P		P	22 23 49.2	-1.3	
INK	Inuvik	53.27	348	P		P	22 24 03.0	-1.7	
	9.5nm,0.9s,mb4.7,baz=144,slow=7.3,SNR=16								
INK	Inuvik	53.27	348	*e*P		P	22 24 03.2	-1.4	
	19nm,1.2s,mb4.9								
LVC	Limon Verde	54.12	137	LR		LR	22 42 14.1		
	comp=Z,81nm,19.7s,MS3.8,baz=132,slow=30								
ILAR	Eielson Array	54.23	340	P		P	22 24 10.0	-1.6	
	5.0nm,0.9s,mb4.4,baz=150,slow=5.5,SNR=38								
ILAR				LR		LR	22 46 34.0		
	comp=Z,44nm,21.2s,MS3.5,baz=1.9,slow=35								
PPT	Papeete	55.68	233	*e*S		S	22 32 03.2	-4.2	
PPT				*e*R			22 39 47.7		
	466nm,26.5s,baz=42								
TBI	Tubuai	59.19	228	*e*S		S	22 32 55.3	+1.8	
TBI				*e*R			22 41 31.8		
	599nm,28.8s,baz=44								
CPUP	Villa Florida	64.48	132	LR		LR	22 52 04.9		
	comp=Z,96nm,20.8s,MS4.0,baz=102,slow=35								
CPUP	Villa Florida	64.48	132	*e*P		P	22 25 21.3	-1.9	
RAR	Rarotonga	65.65	236	LR		LR	22 46 12.2		
	comp=Z,264nm,18.2s,MS4.5,baz=77,slow=29								
BDFB	Brasilia	66.02	117	P		P	22 25 32.5	-0.8	
	2.6nm,0.6s,mb4.4,baz=345,slow=5.9,SNR=3.8								
BORG	Borgarnes	71.57	27	LR		LR	22 55 07.2		
	comp=Z,171nm,19.9s,MS4.3,baz=30,slow=34								
ARCES	ARCESS Array B	86.22	15	LR		LR	23 06 26.7		
	comp=Z,103nm,19.1s,MS4.2,baz=209,slow=36								
ASAR	Alice Springs	124.22	253	PKP		PKPdf	22 33 41.9	-4.8	
	0.7nm,0.9s,baz=108,slow=4.5,SNR=4.5								
CMAR	Chiang Mai Arr	136.38	325	PKP		PKPdf	22 34 07.3	-2.4	
	0.7nm,1.0s,baz=210,slow=31,SNR=4.8								

*IDC **25** 22:15:48.7±1.6,54.80S×144.07E,mb3.7/4,mb1 4.0/4, mb1mx3.8/9,MS3.7/4,Ms1 3.7/4,ms1mx3.4/18, Error ellipse: s-maj=156.0km s-min=24.8km az=80.0*
*NEIC **25** 22:15:49.9±0.6,54.77S×144.12E,h10km,mb4.2/2, Error ellipse: s-maj=44.1km s-min=9.9km az=84.0*

ISC 25 22:15:48.9±1.0,54.76S±0.10×143.6E±0.8,h10km,n13, σ0§87/9,mb4.0/7,MS3.6/4,West of Macquarie Island

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
STKA	Stephens Creek	22.92	356	P		P	22 20 55.6	+1.8
	4.8nm,1.1s,mb3.8,baz=168,slow=13,SNR=3.5							
STKA				LR		LR	22 28 46.1	
	comp=Z,171nm,20.5s,MS3.5,baz=193,slow=34							
VNDA	Vanda	23.77	170	P		P	22 21 01.3	-0.4
	0.8nm,0.8s,mb3.2,baz=332,slow=9.2,SNR=4.3							
VNDA				LR		LR	22 29 51.5	
	comp=Z,99nm,20.6s,MS3.3,baz=79,slow=36							
NWAO	Narrogin (SRO)	28.64	309	LR		LR	22 30 58.5	
	comp=Z,208nm,19.6s,MS3.7,baz=211,slow=32							
ASAR	Alice Springs	31.89	343	P		P	22 22 16.2	-0.1
	0.5nm,0.6s,mb3.5,baz=165,slow=9.2,SNR=6.5							
QSPA	South Pole Qui	35.34	180	*e*P		P	22 22 46.4	+0.6
	7.6nm,1.2s,mb4.5							
WB2	Warramunga Arr	35.47	345	*e*P		P	22 22 46.7	-0.7
WRA	Warramunga Arr	35.47	345	P		P	22 22 47.1	-0.3
	3.0nm,0.8s,mb4.3,baz=169,slow=7.8,SNR=28							
WRAB	Tennant Creek	35.48	345	*e*P		P	22 22 46.4	-1.0
	6.7nm,0.6s,mb4.8							
MAW	Mawson	37.95	218	LR		LR	22 37 02.3	
	comp=Z,183nm,18.4s,MS3.9,baz=241,slow=33							
SNAA	Sanae	51.66	193	*e*P		P	22 24 56.3	-0.8
LBTB	Lobatse	84.49	234	P		P	22 28 24.0	+1.0
	0.8nm,0.8s,mb3.9							
FINES	FINESS Array B	147.49	308	PKPbc		PKPdf	22 35 33.8	+1.7
	0.3nm,0.6s,baz=90,slow=1.4,SNR=5.1							
FCC	Fort Churchill	148.99	59	*e*PKPbc		PKPdf	22 35 35.1	+0.6

MAN 25 22:23:19.2,11.11N×124.65E,h8km,mb3.8,ML2.6,MS2.1, 4C,Leyte

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
OCLP	Ormoc	0.07	212	⇑*e*P		Pg	22 23 22.1	+0.9
PLP	Palo	0.33	80	*e*P		Pg	22 23 25.9	-0.1
PLP				*e*S		Sg	22 23 31.2	+0.7
BESP	Borongan	0.92	58	⇑*e*P		Pb	22 23 36.8	-0.2
MSLP	Maasin	0.99	168	⇑*e*P		Pb	22 23 38.7	+0.6
LLP	Lapu-Lapu	1.03	220	*e*P		Pb	22 23 39.3	+0.4
LLP				*e*S		Sb	22 23 53.9	+1.5
CNP	Catarman	1.40	1	⇑*e*P		Pn	22 23 43.9	-1.1
TBP	Tagbilaran	1.60	209	*e*P		Pn	22 23 47.9	-0.1
TBP				*e*S		Sb	22 24 08.7	-0.3

*NEIC **25** 22:27:30.9±1.9,33.98S×179.70E,h105km±16km,mb4.8/7, Error ellipse: s-maj=19.4km s-min=12.3km az=217.0*
*SYO **25** 22:27:30.9,33.98S×179.70E,h105km,MB4.8*
*IDC **25** 22:27:35.5±2.1,33.98S×179.58E,h142km±16km, mb4.1/11,mb1 4.3/12,mb1mx4.3/16,MS3.7/4,Ms1 3.7/4, ms1mx3.5/15,Error ellipse: s-maj=20.1km s-min=16.1km az=24.0*

ISC 25 22:27:37.7±0.7,35.05S±0.05×179.9E±0.1,h208km±6km, n170,σ1§45/146,mb4.3/16,9C-4D,Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
MXZ	Matakaoa Point	2.81	206	P		P	22 28 25.7	-0.4
MXZ				S		S	22 29 08.7	+5.2
PUZ	Puketiti	3.29	203	⇓P		P	22 28 32.1	+0.4
PUZ				S		S	22 29 20.1	+6.6
PUZ	Puketiti	3.29	203	P		P	22 29 32.2	+0.5
PUZ				S		S	22 29 20.1	+6.6
WIZ	White Island	3.29	221	P		P	22 28 31.6	-0.1
WIZ	White Island	3.29	221	P		P	22 28 31.9	+0.1
KUZ	Kuaotunu	3.78	242	P		P	22 28 36.9	-0.8
KUZ	Kuaotunu	3.78	242	*e*P		P	22 28 37.2	-0.5
MWZ	Matawai	3.79	209	P		P	22 28 38.1	+0.4
URZ	Urewera	3.90	214	P		P	22 28 39.1	0.0
	228nm,0.3s,baz=336,slow=1.9,SNR=618							
URZ				S		S	22 29 33.3	+6.6
	205nm,0.3s,baz=191,slow=12,SNR=3.3							
MARZ	Manawahe	3.91	220	P		P	22 28 39.8	+0.6
MARZ	Manawahe	3.91	220	P		P	22 28 39.9	+0.7
TGRZ	Tauranga	3.96	226	P		P	22 28 40.6	+0.7
TGRZ				S		S	22 29 34.9	+6.9
EDRZ	Edgecumbe	3.96	219	P		P	22 28 41.4	+1.5
LIRZ	Lichensteins R	4.08	223	P		P	22 28 42.4	+1.1
TAZ	Tarawera	4.18	220	P		P	22 28 43.4	+0.8
TAZ	Tarawera	4.18	220	P		P	22 28 43.7	+1.1
MKAZ	Moumakai	4.34	240	⇓P		P	22 28 45.2	+0.6
MKAZ	Moumakai	4.34	240	*e*P		P	22 28 45.2	+0.6
KNZ	Kokohu	4.34	203	P		P	22 28 44.0	-0.6
KNZ				*e*S		S	22 29 42.4	+5.9
KNZ	Kokohu	4.34	203	*e*P		P	22 28 44.1	-0.5
MTAZ	Motutapu	4.39	245	⇓P		P	22 28 45.1	-0.2
MTAZ	Motutapu	4.39	245	P		P	22 28 45.2	-0.1
PATZ	Paeroa	4.42	220	P		P	22 28 46.4	+0.8
TOZ	Tahuroa Road	4.43	232	P		P	22 28 47.0	+1.2
TOZ	Tahuroa Road	4.43	232	*e*P		P	22 28 47.0	+1.2
TOZ				S		S	22 29 47.0	+8.4
OTAZ	Otara	4.45	243	P		P	22 28 46.3	+0.4
OTAZ	Otara	4.45	243	*e*P		P	22 28 46.5	+0.6
WCZ	Waipu Caves	4.61	257	P		P	22 28 48.3	-2.7
WCZ	Waipu Caves	4.61	257	*e*P		P	22 28 45.3	-2.7
WTAZ	Waiatarua	4.70	245	P		P	22 28 49.8	+0.7
WHTZ	Whakaora	4.79	220	P		P	22 28 51.4	+1.1
WHTZ	Whakaora	4.79	220	P		P	22 28 51.5	+1.2
HATZ	Hinemaiaia	4.89	217	P		P	22 28 52.1	+0.6
BKZ	Black Stump Fm	4.92	212	P		P	22 28 51.4	-0.6
WATZ	Wairara	4.94	221	P		P	22 28 53.1	+0.9
RATZ	Rangitukua	5.04	220	P		P	22 28 53.3	-0.1
RATZ	Rangitukua	5.04	220	*e*P		P	22 28 53.3	-0.1
RITZ	Rihia Road	5.07	218	*e*P		P	22 28 54.9	+1.0
OUZ	Omahuta	5.16	266	P		P	22 28 49.9	-5.0
KATZ	Kakaramea	5.16	219	P		P	22 28 56.4	+1.5
KATZ	Kakaramea	5.16	219	*e*P		P	22 28 56.4	+1.5
MGZ	Maungaku	5.26	220	P		P	22 28 56.7	+0.5
NGZ	Ngauruhoe	5.35	218	P		P	22 28 57.9	+0.4
NGZ	Ngauruhoe	5.35	218	*e*S		S	22 30 07.3	+7.8
NGZ	Ngauruhoe	5.35	218	P		P	22 28 57.7	+0.2
TUVZ	Tukino	5.40	217	P		P	22 28 57.3	-0.7
TUVZ	Tukino	5.40	217	*e*P		P	22 28 57.9	-0.1
CNZ	Chateau	5.40	219	P		P	22 28 57.7	-0.4
CNZ	Chateau	5.40	219	*e*P		P	22 28 58.1	0.0
FWVZ	Far West T-bar	5.44	218	P		P	22 28 58.9	+0.3
FWVZ				*e*S		S	22 30 05.9	+4.5
FWVZ	Far West T-bar	5.44	218	*e*P		P	22 28 58.8	+0.2
PWZ	Pawanui	5.52	205	P		P	22 28 58.7	-0.9
PWZ				*e*S		S	22 30 06.3	+3.0
PWZ	Pawanui	5.52	205	P		P	22 28 57.8	-1.8
VRZ	Vera Road	5.77	224	P		P	22 29 04.0	+1.1
TSZ	Takapari Road	5.89	211	P		P	22 29 01.9	-2.5
NEZ	North Egmont	6.25	226	P		P	22 29 11.1	+2.1
NEZ	North Egmont	6.25	226	*e*P		P	22 29 11.3	+2.3
BFZ	Birch Farm	6.32	206	P		P	22 29 08.3	-1.5
BFZ				*e*S		S	22 30 24.5	+2.9
BFZ	Birch Farm	6.32	206	*e*P		P	22 29 08.3	-1.5
MRZ	Mangatainoka R	6.55	210	P		P	22 29 10.4	-2.5
MRZ				*e*S		S	22 30 26.1	-1.1
KIW	Kapiti Island	7.01	213	P		P	22 29 16.5	-2.3
KIW	Kapiti Island	7.01	213	*e*P		P	22 29 16.5	-2.3
MTW	Mount Morrison	7.01	208	P		P	22 29 16.2	-2.6
MTW	Mount Morrison	7.01	208	*e*P		P	22 29 16.1	-2.7
MRW	Makara Radio	7.40	212	P		P	22 29 21.4	-2.5
MRW				*e*S		S	22 30 47.4	+0.6
WEL	Wellington	7.41	211	P		P	22 29 21.1	-3.0
SNZO	South Karori	7.46	212	P		P	22 29 21.3	-3.4
SNZO				S		S	22 30 49.0	+0.7
SNZO	South Karori	7.46	212	*e*P		P	22 29 21.4	-3.3
BHW	Baring Head	7.47	210	P		P	22 29 22.2	-2.7
BHW	Baring Head	7.47	210	*e*P		P	22 29 22.2	-2.7
NNZ	Nelson	8.01	218	P		P	22 29 29.5	-2.3
QRZ	Quartz Range	8.18	223	P		P	22 29 30.9	-3.2
QRZ				*e*S		S	22 31 09.6	+4.5
QRZ	Quartz Range	8.18	223	*e*P		P	22 29 30.9	-3.2
THZ	Tophouse	8.65	217	P		P	22 29 36.3	-3.3
THZ				*e*S		S	22 31 14.1	-1.9
THZ	Tophouse	8.65	217	*e*P		P	22 29 36.8	-3.4
KHZ	Kahutara	8.87	212	P		P	22 29 39.9	-3.1
KHZ				*e*S		S	22 31 24.3	+3.3
KHZ	Kahutara	8.87	212	*e*P		P	22 29 40.1	-2.9
DSZ	Denniston Nort	9.21	221	P		P	22 29 44.2	-3.2
DSZ				*e*S		S	22 31 29.5	+0.6
DSZ	Denniston Nort	9.21	221	*e*P		P	22 29 44.2	-3.2
LTZ	Lake Taylor	9.73	215	P		P	22 29 51.1	-3.0
LTZ	Lake Taylor	9.73	215	*e*P		P	22 29 51.2	-2.9
CRLZ	Canterbury Las	10.20	211	*e*P		P	22 29 57.7	-2.5
MQZ	McQueen's Vall	10.29	211	P		P	22 29 58.5	-2.9
MQZ				*e*S		S	22 31 53.6	-0.4
WVZ	Waitaha Valley	10.71	219	P		P	22 30 02.7	-4.0
WVZ				*e*S		S	22 32 02.9	-0.7
WVZ	Waitaha Valley	10.71	219	*e*P		P	22 30 02.5	-4.2
RPZ	Rata Peaks	11.02	216	P		P	22 30 08.9	-1.8
	12nm,0.3s,baz=60,slow=1.9,SNR=35							
RPZ				S		S	22 32 11.7	+0.9
	29nm,0.3s,baz=15,slow=22,SNR=12							
RPZ				LR		LR	22 35 01.1	
	comp=Z,243nm,19.3s,baz=153,slow=38							
RPZ				ScP			22 39 13.7	
	0.5nm,0.3s,baz=158,slow=12,SNR=5.3							
BWZ	Berwen	12.19	216	P		P	22 30 23.3	-2.2
ODZ	Otahua Downs	12.23	213	P		P	22 30 24.4	-1.6
ODZ				*e*S		S	22 32 40.1	+1.5
AXZ	Alexandra	13.00	215	P		P	22 30 35.4	-0.2
TUZ	Tuapeka	13.38	212	P		P	22 30 40.8	+0.3
DZM	Mont Dzumac	17.48	314	*e*P		P	22 31 21.3	-8.6
NOUC	Port Laguerre	17.55	314	*e*P		P	22 31 23.8	-6.7
RAR	Rarotonga	22.57	58	S		S	22 36 19.3	+10
	22nm,1.0s,baz=45,slow=14,SNR=2.9							
STKA	Stephens Creek	31.97	265	ScP			22 40 03.3	
	3.0nm,0.8s,baz=71,slow=8.1,SNR=3.8							
CTA	Charters Tower	33.15	288	*e*P		P	22 33 55.3	-1.0
	9.1nm,0.6s,mb4.5							
CTA	Charters Tower	33.15	288	P		P	22 33 55.2	-1.0
	7.0nm,0.6s,mb4.4,baz=104,slow=12,SNR=9.6							
CTAO	Charters Tower	33.15	288	*e*P		P	22 33 54.5	-1.7
	12nm,0.7s,mb4.5							
AS12	Alice Springs	41.33	273	*e*P		P	22 35 05.1	+0.6
	3.4nm,0.4s,mb4.1							
ASAR	Alice Springs	41.33	273	P		P	22 35 05.0	+0.5
	2.6nm,0.5s,mb3.9,baz=116,slow=7.9,SNR=30							
ASAR				ScP			22 40 37.1	
	1.1nm,0.5s,baz=115,slow=3.8,SNR=6.7							
ASAR				S		S	22 41 12.4	+10
	3.4nm,1.2s,baz=116,slow=15,SNR=5.4							
ASAR				LR		LR	22 50 00.6	
	comp=Z,27nm,21.0s,baz=328,slow=33							
WB2	Warramunga Arr	42.73	278	*e*P		P	22 35 16.0	0.0
WRAB	Tennant Creek	42.74	278	*e*P		P	22 35 15.8	-0.3
	26nm,1.0s,mb4.6							
WRA	Warramunga Arr	42.74	278	P		P	22 35 15.7	-0.4
	4.3nm,0.6s,mb4.1,baz=118,slow=7.6,SNR=59							
WRA				ScP			22 40 43.8	
	0.7nm,0.5s,baz=116,slow=3.4,SNR=4.6							
SBA	Scott Base	43.28	184	*e*P		P	22 35 32.4	+13
	5.0nm,0.8s,mb4.0							
VNDA	Vanda	43.30	186	P		P	22 35 31.2	+11
	1.5nm,0.7s,mb3.6,baz=1.0,slow=7.6,SNR=8.9							
VNDA				ScP			22 40 52.2	
	1.5nm,0.7s,baz=315,slow=4.2,SNR=6.9							
VNDA	Vanda	43.30	186	P		P	22 35 31.2	+11
VNDA				ScP			22 40 52.2	
KAKA	Kakadu	48.24	285	*e*P		P	22 35 58.1	-1.3
	27nm,1.5s,mb4.3							
FITZ	Fitzroy Crossi	50.76	275	*e*P		P	22 36 20.1	+1.6
	3.9nm,0.7s,mb4.0							
FITZ	Fitzroy Crossi	50.76	275	P		P	22 36 19.3	+0.8
	3.4nm,0.6s,mb4.0,baz=166,slow=8.1,SNR=13							
NWAO	Narrogin (SRO)	51.22	253	P		P	22 36 24.1	+2.4
	2.4nm,0.6s,mb3.8,baz=124,slow=8.0,SNR=2.9							
QSPA	South Pole Qui	55.07	180	⇑*i*P		P	22 37 00.8	+11
	30nm,0.7s,mb4.9							
MAW	Mawson	67.34	202	P		P	22 38 20.0	+8.5
	9.3nm,0.9s,mb4.4,baz=129,slow=7.1,SNR=9.7							
MAW				LR		LR	23 08 37.6	
	comp=Z,152nm,18.4s,baz=62,slow=36							
MAW	Mawson	67.34	202	*e*P		P	22 38 20.1	+8.5
	24nm,1.2s,mb4.7							
SYO	Syowa Base	72.19	194	⇑P		P	22 38 47.9	+7.0
SYO	Syowa Base	72.19	194	⇑*e*P		P	22 38 47.9	+7.0
SNAA	Sanae	73.56	179	*e*P		P	22 38 58.2	+9.4
VNA3	Neumayer Olymp	73.79	177	⇑*i*		P	22 39 02.9	+13
VNA2	Neumayer--Watz	74.20	178	⇑*i*		P	22 39 05.5	+13
VNA1	Neumayer--Stat	74.44	177	⇑*i*		P	22 39 07.1	+13
PET	Petropavlovsk	89.64	347	*e*P		P	22 40 12.1	-0.3
	35nm,0.8s,mb5.2							
YBH	Yreka Blue Her	92.77	39	P		P	22 40 30.1	+2.9
	1.5nm,0.5s,mb4.3,baz=199,slow=3.1,SNR=5.5							
NVAR	Mina Array Bea	92.84	44	P		P	22 40 30.8	+3.1
	1.0nm,0.7s,mb4.0,baz=215,slow=6.6,SNR=5.0							
LVC	Limon Verde	93.19	120	P		P	22 40 38.5	+8.9
	7.1nm,0.9s,mb4.7,baz=228,slow=4.1,SNR=6.7							
LVC				LR		LR	23 11 05.1

mb1 4.5/22,mb1mx4.5/24,ML4.7/2,MS3.9/8,Ms1 3.9/8, ms1mx3.6/22,Error ellipse: s-maj=27.3km s-min=13.0km az=52.0

NEIC ***25*** *22:46:35.4±0.3,14.96N×93.96W,mb4.9/67,MS4.3/4, MD4.6(MEX),Error ellipse: s-maj=6.9km s-min=3.3km az=213.0*

HRVD ***25*** *22:46:35.4±0.7,14.87N×94.28W,h13km±2km,MW4.8/44, Centroid moment Tensor Solution. LP body waves: s13,c14;Mantle waves: s44,c59; Half duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr1.24±.14; Mθθ-0.77±.08; Mφφ-0.48±.10; Mrθ1.18±.26; Mrφ0.54±.05; Mθφ-1.06±.30; Best double couple: M₀2×10¹⁶ NP1:φs304°,δ19°,λ84°. NP2:φs131°,δ71°,λ92°. Principal axes: T 2.03, Plg64°, Azm44°; N -.06, Plg2°, Azm310°; P -1.96, Plg26°, Azm219°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 25 22:46:34.5±0.5,14.89N±0.04×94.13W±0.03,h36km±3km, h27km±1.4km:pP-P,n236,σ1§13/232,mb4.8/85,MS4.0/11, 3C-3D,Off coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op		h m s	ISC
TPX	**Tapachula**	**1.80**	**89**	*i* P		**P**	**22 47 03.8 +0.1**
TPX				*i* S		**S**	**22 47 26.0 +0.5**
HUIG	**Huatulco**	**2.10**	**295**	*i* P		**P**	**22 47 04.3 -3.7**
HUIG				*i* S		**S**	**22 47 27.0 -6.2**
CMIG	**Matias Romero**	**2.31**	**342**	*i* P		**P**	**22 47 10.7 -0.2**
CMIG				*i* S		**S**	**22 47 39.6 +1.2**
SCX	**San Cristobal**	**2.33**	**38**	*i* P		**P**	**22 47 14.0 +2.7**
CCIG	**Comitan**	**2.37**	**54**	*i* P		**P**	**22 47 14.4 +2.7**
CCIG				*i* S		**S**	**22 47 44.8 +5.0**
JAT	**Jato**	**2.47**	**103**	*e*P		**P**	**22 47 13.0 -0.3**
JAT				*e*S		**S**	**22 47 48.3 +5.7**
JAT				AML		AML	22 48 00.7
	comp=N,3µm,0.4s						
TP2	**Tecpan 2**	**3.00**	**92**	*e*P		**P**	**22 47 22.3 +1.5**
TP2				AML		AML	22 48 16.0
	comp=E,2µm,0.6s						
TUIG	**Tuzandepetl**	**3.14**	**355**	*i* P		**P**	**22 47 22.9 +0.1**
TUIG				*i* S		**S**	**22 48 00.7 +1.1**
OXX	**Oaxaca**	**3.32**	**311**	*i* P		**P**	**22 47 25.8 +0.5**
OXX				*i* S		**S**	**22 48 02.5 -1.5**
VHO	**Vista Hermosa**	**3.32**	**311**	*i* P		**P**	**22 47 25.0 -0.4**
VHO				*i* S		**S**	**22 48 02.0 -2.0**
IXG	**Ixpaco**	**3.62**	**101**	*e*P		**P**	**22 47 30.1 +0.4**
NBG	**Las Nubes**	**3.67**	**94**	*e*P		**P**	**22 47 31.0 +0.8**
EVV	**El Vigia**	**3.74**	**342**	*i* P		**P**	**22 47 30.5 -0.8**
PNIG	**Pinotepa**	**4.14**	**292**	*i* P		**P**	**22 47 33.2 -3.7**
RBDL	**Robledal**	**4.37**	**100**	*e*P		**P**	**22 47 40.0 -0.2**
RTR	**El Retiro**	**4.45**	**102**	*e*P		**P**	**22 47 39.9 -1.5**
SBLS	**San Blas**	**4.49**	**103**	*e*P		**P**	**22 47 43.0 +1.1**
SNJE	**San Jose**	**4.50**	**102**	*e*P		**P**	**22 47 42.2 +0.1**
BOQS	**Boqueron**	**4.83**	**103**	*e*P		**P**	**22 47 48.1 +1.3**
IISM	**Ciudad Serdan**	**5.13**	**323**	*i* P		**P**	**22 47 49.0 -2.0**
POHV	**Veracruz**	**5.14**	**324**	*i* P		**P**	**22 47 50.0 -1.1**
ACX	**Acapulco**	**5.91**	**290**	*e*P		**P**	**22 47 54.5 -7.4**
PPM	**Popocatepetl**	**5.99**	**315**	*i* P		**P**	**22 48 04.5 +1.6**
YAIG	**Yautepec**	**6.17**	**311**	*e*P		**P**	**22 48 06.3 +0.9**
UNM	**Universidad Na**	**6.55**	**313**	*e*P		**P**	**22 48 12.5 +1.6**
ZIIG	**Zihuatanejo**	**7.55**	**292**	*i* P		**P**	**22 48 22.9 -2.0**
TEIG	**Tepich**	**7.70**	**46**	Pn		**P**	**22 48 25.7 -1.2**
	comp=E,7.1nm,0.3s,baz=169,slow=12,SNR=3.2						
TEIG				Sn		**S**	**22 49 55.4 +1.5**
	comp=E,19nm,0.3s,baz=323,slow=22,SNR=7.5						
MOIG	**Morelia**	**8.26**	**306**	*i* P		**P**	**22 48 35.9 +1.1**
JTS	**JuntasAbangare**	**10.05**	**116**	*e*P		**P**	**22 48 56.8 -2.8**
	comp=E,1.8nm,1.1s						
COLM	**Colima**	**10.10**	**296**	*i* P		**P**	**22 49 00.0 -0.2**
SFJM	**Santa Fe**	**10.16**	**305**	*i* P		**P**	**22 49 01.5 +0.5**
HKT	**Hockley**	**15.07**	**354**	*e*P		**P**	**22 50 06.9 +0.2**
	comp=E,130nm,2.0s						
JCT	**Junction City**	**16.37**	**342**	*e*P		**P**	**22 50 22.9 -0.4**
	comp=E,36nm,0.9s						
LTX	**Lajitas**	**16.86**	**330**	*e*P		**P**	**22 50 30.4 +0.9**
	comp=E,29nm,1.2s						
TXAR	**Lajitas Array**	**16.86**	**330**	Pn		**P**	**22 50 30.4 +0.9**
	comp=E,0.7nm,0.3s,baz=153,slow=12,SNR=12						
DWPF	**Disney**	**17.66**	**40**	*e*P		**P**	**22 50 37.0 -2.5**
	comp=E,26nm,0.8s						
LRAL	**Lakeview Retre**	**19.19**	**18**	*e*P		**P**	**22 50 56.9 -1.1**
	comp=E,25nm,1.0s						
CLNB	**Carlsbad**	**19.45**	**334**	*e*P		**P**	**22 51 01.2 +0.3**
MIAR	**Mount Ida**	**19.58**	**1**	*e*P		**P**	**22 51 00.6 -1.7**
	comp=E,18nm,0.5s						
GDL2	**Guadalupe Moun**	**19.60**	**333**	*e*P		**P**	**22 51 02.3 -0.3**
MNTX	**Cornudas Mount**	**19.64**	**330**	*e*P		**P**	**22 51 01.7 -1.4**
	comp=E,6.5nm,0.7s						
UALR	**University of**	**19.87**	**4**	*e*P		**P**	**22 51 02.2 -3.2**
	comp=E,33nm,0.8s						
CPRX	**Cap Rock**	**20.11**	**336**	*e*P		**P**	**22 51 07.6 -0.5**
WMOK	**Wichita Mounta**	**20.21**	**349**	*e*P		**P**	**22 51 07.1 -1.9**
	comp=E,14nm,0.6s						
PLAL	**Pickwick Lake**	**20.74**	**14**	*e*P		**P**	**22 51 10.2 -4.3**
	comp=E,3.0nm,0.4s						
OTAV	**Otavalo**	**21.26**	**132**	*e*P		**P**	**22 51 19.4 -0.6**
SWET	**Sewanee**	**21.54**	**19**	*e*P		**P**	**22 51 20.5 -2.2**
ROSC	**El Rosal**	**21.88**	**115**	P		**P**	**22 51 28.2 +2.0**
	comp=E,10nm,0.5s,mb4.5,baz=100,slow=21,SNR=2.1						
WVT	**Waverly**	**21.89**	**14**	*e*P		**P**	**22 51 23.6 -2.5**
	comp=E,9.9nm,0.8s,mb4.3						
COW	**Cow Castle Cre**	**22.07**	**31**	*e*P		**P**	**22 51 27.4 -0.5**
CPCT	**Cooper Cave**	**22.22**	**21**	*e*P		**P**	**22 51 25.9 -3.5**
BNM	**Barren Site**	**22.26**	**332**	*e*P		**P**	**22 51 31.6 +1.8**
LPM	**Los Pinos Moun**	**22.39**	**332**	*e*P		**P**	**22 51 33.2 +2.1**
LENM	**Lemitar**	**22.43**	**331**	*e*P		**P**	**22 51 33.2 +1.7**
JSC	**Jenkinsville**	**22.54**	**29**	*e*P		**P**	**22 51 29.6 -3.0**
LAZ	**Ladron**	**22.70**	**331**	*e*P		**P**	**22 51 36.2 +2.0**
ANMO	**Albuquerque**	**22.86**	**333**	*e*P		**P**	**22 51 37.5 +1.8**
ANMO	**Albuquerque**	**22.86**	**333**	*e*P		**P**	**22 51 37.1 +1.4**
	comp=E,8.9nm,0.8s,mb4.2						
TUC	**Tucson**	**23.05**	**322**	*e*P		**P**	**22 51 39.6 +1.9**
	comp=E,7.8nm,0.8s,mb4.2						
SIUC	**Southern Illin**	**23.15**	**10**	*e*P		**P**	**22 51 37.5 -1.1**
	comp=E,27nm,0.6s,mb4.8						
CCM	**Cathedral Cave**	**23.22**	**6**	*e*P		**P**	**22 51 37.0 -2.2**
	comp=E,43nm,0.8s,mb4.9						
USIN	**University of**	**23.69**	**13**	*e*P		**P**	**22 51 43.4 -0.4**
	comp=E,47nm,0.8s,mb5.0						
SLM	**Saint Louis**	**23.90**	**8**	*e*P		**P**	**22 51 44.8 -1.1**
	comp=E,30nm,0.5s,mb5.0						
KSU1	**Kansas State U**	**24.22**	**355**	*e*P		**P**	**22 51 49.0 0.0**
CBKS	**Cedar Bluff**	**24.34**	**349**	*e*P		**P**	**22 51 51.2 +1.0**
	comp=E,108nm,1.0s,mb5.2						
BLO	**Bloomington**	**25.10**	**14**	*e*P		**P**	**22 51 55.9 -1.6**
	comp=E,34nm,0.8s,mb4.9						
WUAZ	**Wupatki**	**25.72**	**326**	*e*P		**P**	**22 52 04.5 +1.2**
	comp=E,27nm,0.9s,mb4.8						
PV01	**Paradox Valley**	**26.45**	**334**	*e*P		**P**	**22 52 11.8 +1.8**
ISCO	**Idaho Springs**	**26.78**	**340**	*e*P		**P**	**22 52 13.4 +0.3**
	comp=E,12nm,1.0s,mb4.4						
PV10	**Paradox Valley**	**26.85**	**333**	*e*P		**P**	**22 52 14.1 +0.3**
ACSO	**Alum Creek Sta**	**27.06**	**19**	P		**P**	**22 52 13.0 -2.7**
	comp=E,8.1nm,0.7s,mb4.4						
NEN	**Nelson**	**27.79**	**322**	*e*P		**P**	**22 52 23.0 +0.6**
JFWS	**Jewell Farm**	**28.13**	**6**	*e*P		**P**	**22 52 23.3 -2.0**
	comp=E,34nm,0.8s,mb5.0						
MSU	**Marysvale**	**28.42**	**329**	*e*P		**P**	**22 52 28.7 +0.8**
DAU	**Daniels Canyon**	**29.50**	**333**	*e*P		**P**	**22 52 37.1 -0.4**
TCUT	**Toone Canyon**	**30.14**	**333**	*e*P		**P**	**22 52 44.5 +1.2**
HWUT	**Hardware Ranch**	**30.61**	**334**	P		**P**	**22 52 48.4 +0.9**
	comp=E,6.8nm,0.3s,mb5.0						
BW06	**Boulder Array**	**30.79**	**337**	*e*P		**P**	**22 52 49.1 +0.1**
	comp=E,2.6nm,0.8s,mb4.1						
PDAR	**Pinedale Array**	**30.79**	**337**	P		**P**	**22 52 49.0 0.0**
	comp=E,3.2nm,0.8s,mb4.2,baz=141,slow=8.0,SNR=23						
PDAR				sP		sP	22 52 58.9 -5.2
	comp=E,3.0nm,0.8s,baz=143,slow=7.4,SNR=10						
PDAR				LR		LR	23 08 11.5
	comp=E,140nm,19.3s,MS3.6,baz=320,slow=42						
HVU	**Hansel Valley**	**31.28**	**333**	*e*P		**P**	**22 52 54.2 +0.8**
AHID	**Auburn Hatcher**	**31.38**	**336**	*e*P		**P**	**22 52 54.4 +0.1**
	comp=E,6.4nm,0.8s,mb4.5						
NVAR	**Mina Array Bea**	**31.70**	**322**	P		**P**	**22 52 59.0 +1.8**
	comp=E,9.2nm,0.9s,mb4.6,baz=130,slow=9.8,SNR=42						
NVAR				sP		sP	22 53 08.2 -4.0
	comp=E,3.6nm,0.8s,baz=131,slow=9.9,SNR=5.9						
NVAR				PcP		PcP	22 55 48.8 +0.4
	comp=E,2.9nm,1.0s,baz=114,slow=3.7,SNR=5.0						
KSWY	**Kelly School**	**31.93**	**337**	*e*P		**P**	**22 52 59.4 +0.4**
LRV	**Little Rabbit**	**32.18**	**317**	*e*P		**P**	**22 53 02.5 +1.2**
SADO	**Sadowa**	**32.38**	**20**	P		**P**	**22 53 01.4 -1.6**
	comp=E,2.3nm,0.5s,mb4.2,baz=234,slow=7.3,SNR=7.8						
SADO	**Sadowa**	**32.38**	**20**	P		**P**	**22 53 01.4 -1.6**
BMN	**Battle Mountai**	**32.46**	**326**	*e*P		**P**	**22 53 04.6 +1.0**
	comp=E,4.5nm,0.8s,mb4.3						
CMB	**Columbia Colle**	**32.72**	**320**	*e*P		**P**	**22 53 05.7 -0.3**
	comp=E,2.8nm,0.8s,mb4.2						
HLID	**Hailey**	**33.43**	**333**	*e*P		**P**	**22 53 12.8 +0.7**
	comp=E,7.9nm,0.9s,mb4.6						
WVOR	**Wild Horse Val**	**34.62**	**327**	*e*P		**P**	**22 53 22.8 +0.4**
	comp=E,20nm,1.0s,mb5.0						
WVOR				*e*pP		pP	22 53 32.3 -0.5
ULM	**Lac du Bonnet**	**35.30**	**358**	P		**P**	**22 53 26.1 -1.9**
	comp=E,12nm,0.5s,mb5.0,baz=172,slow=9.3,SNR=13						
ULM				LR		LR	23 10 11.2
	comp=E,131nm,19.4s,MS3.7,slow=40						
ULM	**Lac du Bonnet**	**35.30**	**358**	*e*P		**P**	**22 53 25.2 -2.8**
	comp=E,27nm,0.9s,mb5.2						
CHMT	**Chamberlain Mo**	**35.70**	**337**	*e*P		**P**	**22 53 30.5 -0.9**
MSO	**Missoula**	**35.89**	**337**	*e*P		**P**	**22 53 32.8 -0.3**
	comp=E,12nm,1.0s,mb4.8						
YBH	**Yreka Blue Hor**	**36.41**	**323**	P		**P**	**22 53 37.1 -0.5**
	comp=E,3.6nm,0.7s,mb4.4,baz=125,slow=5.8,SNR=6.8						
YBH	**Yreka Blue Hor**	**36.41**	**323**	P		**P**	**22 53 37.1 -0.4**
YBH				pmax		pmax	
	comp=Z,4.0nm,0.7s						
LNOR	**Lincton Mounta**	**36.96**	**332**	*e*P		**P**	**22 53 39.9 -2.2**
NEW	**Newport**	**38.31**	**335**	P		**P**	**22 53 53.6 +0.2**
	comp=Z,9.6nm,1.1s,mb4.4,baz=137,slow=8.9,SNR=7.8						
NEW	**Newport**	**38.31**	**335**	P		**P**	**22 53 53.6 +0.2**
NEW				pmax		pmax	
	comp=Z,10.0nm,1.1s						
NEW	**Newport**	**38.31**	**335**	*e*P		**P**	**22 53 53.2 -0.2**
LON	**Longmire**	**39.28**	**330**	*e*P		**P**	**22 54 01.9 +0.5**
FFC	**Flin Flon**	**40.22**	**353**	*e*P		**P**	**22 54 08.7 -0.5**
	comp=Z,30nm,1.4s,mb4.8						
LPAZ	**La Paz**	**40.23**	**139**	P		**P**	**22 54 08.7 -0.9**
	comp=Z,1.1nm,0.7s,mb3.7,baz=318,slow=6.3,SNR=6.7						
LPAZ	**La Paz**	**40.23**	**139**	P		**P**	**22 54 08.7 -0.9**
LPAZ				pmax		pmax	
	comp=Z,1.0nm,0.7s						
LPAZ	**La Paz**	**40.23**	**139**	*e*P		**P**	**22 54 08.3 -1.3**
FCC	**Fort Churchill**	**43.80**	**0**	*e*P		**P**	**22 54 36.9 -1.5**
	comp=Z,13nm,0.9s,mb4.7						
LVC	**Limon Verde**	**44.71**	**146**	P		**P**	**22 54 44.5 -1.7**
SCHQ	**Schefferville**	**45.14**	**22**	P		**P**	**22 54 47.7 -1.5**
	comp=Z,6.9nm,0.9s,mb4.5,baz=214,slow=1.4,SNR=6.6						
SCHQ				LR		LR	23 15 19.8
	comp=Z,313nm,20.0s,MS4.2,baz=318,slow=38						
YKA	**Yellowknife Ar**	**49.71**	**348**	P		**P**	**22 55 24.4 -0.5**
	comp=Z,7.3nm,0.7s,mb4.8,baz=151,slow=7.5,SNR=61						
YKA				pP		pP	22 55 33.1 -2.4
	comp=Z,7.8nm,0.7s,baz=152,slow=7.3,SNR=14						
YKA				PcP		PcP	22 56 44.6 -1.3
	comp=Z,4.0nm,1.1s,baz=148,slow=3.5,SNR=6.6						
YKA				LR		LR	23 21 16.1
	comp=Z,138nm,19.2s,MS4.0,baz=180,slow=42						
YKA	**Yellowknife Ar**	**49.71**	**348**	P		**P**	**22 55 24.4 -0.5**
YKA				*PP		pP	22 55 33.1 -2.4
YKA							22 56 44.6
YKA				pmax		pmax	
	comp=Z,7.0nm,0.7s						
YKA				pmax		pmax	
	comp=Z,8.0nm,0.7s						
YKA				pmax		pmax	
	comp=Z,4.0nm,1.1s						
YKA				MLR		MLR	
	comp=Z,138nm,19.2s						
YKW3	**Yellowknife Ar**	**49.77**	**348**	*e*P		**P**	**22 55 24.5 -0.9**
YKW3				*e*pP		pP	22 55 32.6 -3.4
DLBC	**Dease Lake**	**51.02**	**337**	P		**P**	**22 55 36.6 +1.7**
	comp=Z,6.5nm,0.8s,mb4.6,baz=135,slow=5.6,SNR=8.5						
CPUP	**Villa Florida**	**54.40**	**139**	P		**P**	**22 55 57.1 -3.3**
	comp=Z,2.3nm,1.0s,mb4.1,baz=295,slow=8.0,SNR=3.3						
CPUP	**Villa Florida**	**54.40**	**139**	P		**P**	**22 55 57.2 -3.3**
CPUP				pmax		pmax	
	comp=Z,2.0nm,1.0s						
CPUP	**Villa Florida**	**54.40**	**139**	P		**P**	**22 55 57.5 -3.0**
BDFB	**Brasilia**	**54.73**	**122**	P		**P**	**22 56 01.2 -1.9**
	comp=Z,9.3nm,0.9s,mb4.8,baz=289,slow=8.6,SNR=13						
BDFB				LR		LR	23 21 36.7
	comp=Z,102nm,18.6s,MS3.9,baz=297,slow=39						
BDFB	**Brasilia**	**54.73**	**122**	P		**P**	**22 56 01.2 -1.9**
BDFB				pmax		pmax	
	comp=Z,9.0nm,0.9s						
BDFB				MLR		MLR	
	comp=Z,102nm,18.6s						
DAWY	**Dawson**	**58.09**	**338**	*e*P		**P**	**22 56 24.6 -1.8**
INK	**Inuvik**	**59.02**	**344**	P		**P**	**22 56 31.9 -0.9**
	comp=Z,8.8nm,0.8s,mb4.8,baz=130,slow=7.4,SNR=16						
INK	**Inuvik**	**59.02**	**344**	P		**P**	**22 56 32.0 -0.8**
INK				pmax		pmax	
	comp=Z,9.0nm,0.9s						
INK	**Inuvik**	**59.02**	**344**	*e*P		**P**	**22 56 31.3 -1.5**
	comp=Z,27nm,1.4s,mb5.1						
INK				*e*pP		pP	22 56 39.9 -3.8
PMS	**Palmer South**	**60.74**	**333**	*e*P		**P**	**22 56 44.6 -0.2**
ILAR	**Eielson Array**	**61.22**	**337**	P		**P**	**22 56 47.4 -0.6**
	comp=Z,7.6nm,0.8s,mb4.9,baz=145,slow=4.2,SNR=70						
ILAR	**Eielson Array**	**61.22**	**337**	P		**P**	**22 56 47.4 -0.5**
ILAR				pmax		pmax	
	comp=Z,8.0nm,0.8s						
COLA	**College**	**61.63**	**337**	*e*P		**P**	**22 56 50.3 -0.4**
COLA	**College**	**61.63**	**337**	*e*P		**P**	**22 56 49.3 -1.4**
SVW	**Sparrevohn**	**63.43**	**331**	*e*P		**P**	**22 57 07.0 +4.3**
PPT	**Papeete**	**63.48**	**241**	*e*L			23 13 30.0
PPT				*e*R			23 15 38.4
	comp=Z,133nm,26.2s						
SUMG	**Summit**	**65.94**	**16**	*e*P		**P**	**22 57 18.2 -0.5**
PVIS	**Viseu**	**77.63**	**51**	*e*P		**P**	**22 58 26.9 -2.1**
	comp=Z,7.9nm,0.8s,mb4.7						
EVO	**Evora**	**77.89**	**53**	*e*P		**P**	**22 58 28.0 -2.5**
	comp=Z,4.5nm,0.6s,mb4.3						
EVO				*e*R			
	comp=Z,135nm,21.0s						
MTE	**Manteigas**	**77.94**	**51**	*e*P		**P**	**22 58 28.8 -2.0**
	comp=Z,9.4nm,0.8s,mb4.8						
PCBR	**Castelo Branco**	**78.09**	**52**	*e*P		**P**	**22 58 30.6 -0.9**
	comp=Z,11nm,1.3s,mb4.6						
PBRG	**Braganca**	**78.31**	**50**	*e*P		**P**	**22 58 31.8 -1.0**
	comp=Z,15nm,1.8s,mb4.6						
SPB4	**Spitsbergen Ar**	**79.62**	**11**	P		**P**	**22 58 39.5 +0.2**
BILL	**Bilibino**	**79.87**	**338**	*i* P		**P**	**22 58 41.0 +0.3**
BILL				pmax		pmax	
	comp=Z,12nm,0.8s,mb4.9						
BILL				MLR		MLR	
	comp=Z,100nm,18.0s,MS4.2						
BILL	**Bilibino**	**79.87**	**338**	*e*P		**P**	**22 58 40.8 +0.1**
	comp=Z,8.9nm,0.8s,mb4.8						
ESDC	**Sonseca Array**	**80.78**	**51**	P		**P**	**22 58 45.1 -1.0**
	comp=Z,3.1nm,0.8s,mb4.3,baz=290,slow=5.5,SNR=17						
ESDC				pP		pP	22 58 52.4 -4.9
	comp=Z,2.6nm,0.8s,baz=294,slow=5.2,SNR=7.0						
ESDC				LR		LR	23 33 20.9
	comp=Z,83nm,18.6s,MS4.1,baz=265,slow=35						
ESLA	**Sonseca Array**	**80.78**	**51**	*e*P		**P**	**22 58 44.2 -1.9**
	comp=Z,1.6nm,0.9s,mb4.0						
GRR	**Gorron**	**81.17**	**42**	*e*P		**P**	**22 58 47.2 -0.7**
	comp=Z,31nm,0.9s,mb4.9						
FLN	**La Foliniere**	**81.33**	**42**	*e*P		**P**	**22 58 48.5 -0.3**
	comp=Z,22nm,0.9s,mb4.8						
FLN				*e*R			
	comp=Z,182nm,22.5s						
LDF	**La Druitiere**	**81.60**	**42**	*e*P		**P**	**22 58 49.7 -0.5**
	comp=Z,26nm,1.0s,mb4.8						
MFF	**Saint Martin d**	**82.03**	**44**	*e*P		**P**	**22 58 51.9 -0.6**
	comp=Z,33nm,1.4s,mb4.8						
ETSF	**Etsaut**	**82.59**	**48**	*e*P		**P**	**22 58 55.4 0.0**
	comp=Z,22nm,1.1s,mb4.8						
LFF	**La Frestale**	**83.02**	**45**	*e*P		**P**	**22 58 57.0 -0.6**
	comp=Z,15nm,0.8s,mb4.8						
EPF	**Esparros**	**83.20**	**47**	*e*P		**P**	**22 58 58.6 +0.1**
	comp=Z,22nm,1.0s,mb4.8						
RJF	**Les Rejaudoux**	**83.47**	**45**	*e*P		**P**	**22 58 59.5 -0.3**
RJF				*e*R			
	comp=Z,163nm,22.5s						
TCF	**Toulx Ste Croi**	**83.69**	**44**	*e*P		**P**	**22 58 59.8 -1.1**
	comp=Z,11nm,0.9s,mb4.7						
CAF	**Calviac**	**83.94**	**45**	*e*P		**P**	**22 59 01.8 -0.4**
BAIF	**Baives**	**83.98**	**40**	*e*P		**P**	**22 59 02.4 +0.1**
	comp=Z,15nm,1.0s,mb4.8						
BGF	**Bois d'Agland**	**84.04**	**44**	*e*P		**P**	**22 59 02.3 -0.4**
	comp=Z,27nm,0.8s,mb5.2						
AVF	**Avril sur Loir**	**84.32**	**43**	*e*P		**P**	**22 59 03.2 -0.9**
	comp=Z,10nm,0.8s,mb4.7						
SSF	**Saint Saulge**	**84.34**	**43**	*e*P		**P**	**22 59 03.7 -0.5**
	comp=Z,15nm,0.8s,mb4.9						
NB2	**NORSAR Subarra**	**84.34**	**28**	P		**P**	**22 59 05.2 +1.3**
	comp=Z,8.4nm,0.8s,mb4.9,baz=291,slow=5.3						
NOA	**NORSAR Array B**	**84.34**	**28**	P		**P**	**22 59 04.9 +1.0**
	comp=Z,6.0nm,0.7s,mb4.8,baz=291,slow=5.2,SNR=33						
NOA				LR		LR	23 35 21.0
	comp=Z,63nm,18.8s,MS4.0,baz=290,slow=35						
NOA	**NORSAR Array B**	**84.34**	**28**	P		**P**	**22 59 04.9 +1.0**
NOA				pmax		pmax	
	comp=Z,6.0nm,0.7s						
NOA				MLR		MLR	
	comp=Z,63nm,18.8s						
PYM	**Petit Puy Mans**	**84.36**	**44**	*e*P		**P**	**22 59 05.0 +0.6**
MTLF	**Montolieu**	**84.45**	**47**	*e*P		**P**	**22 59 04.5 -0.4**
	comp=Z,20nm,0.9s,mb4.9						
LOR	**Lormes**	**84.52**	**43**	*e*P		**P**	**22 59 05.0 -0.1**
LOR				*e*R			
	comp=Z,170nm,22.2s						
LBL	**Lubilhac**	**84.66**	**45**	*e*P		**P**	**22 59 06.5 +0.6**
SMF	**Signal de Mont**	**84.68**	**43**	*e*P		**P**	**22 59 05.3 -0.6**
	comp=Z,9.3nm,0.9s,mb4.6						
HGN	**Heimansgroes**	**84.84**	**39**	*e*P		**P**	**22 59 07.0 +0.4**
	comp=Z,12nm,1.0s,mb5.0						
MEZF	**Maizieres J'vi**	**84.95**	**41**	*e*P		**P**	**22 59 07.5 +0.3**
	comp=Z,23nm,0.9s,mb5.0						
WTSB	**Winterswijk**	**85.00**	**38**	*e*P		**P**	**22 59 08.2 +0.8**
	comp=Z,19nm,1.1s,mb5.1						
WLF	**Walferdange**	**85.30**	**40**	*e*P		**P**	**22 59 08.7 -0.2**
	comp=Z,19nm,1.0s,mb5.2						
LASF	**Ste Croix**	**85.40**	**46**	*e*P		**P**	**22 59 10.0 +0.4**
	comp=Z,16nm,1.0s,mb4.9						
THEF	**They Montfort**	**85.62**	**41**	*e*P		**P**	**22 59 11.1 +0.6**
VIVF	**Saint-Julien-l**	**85.74**	**45**	*e*P		**P**	**22 59 11.8 +0.6**
	comp=Z,41nm,1.3s,mb5.2						
RUP	**Ruppelstein**	**85.85**	**40**	*e*P		**P**	**22 59 12.8 +1.2**
HAU	**Haudompre**	**85.92**	**41**	*e*P		**P**	**22 59 12.2 +0.2**
	comp=Z,41nm,0.8s,mb5.4						
HAU				*e*R			
	comp=Z,147nm,22.0s						
ARCES	**ARCESS Array B**	**85.94**	**18**	P		**P**	**22 59 11.7 +0.1**
	comp=Z,2.8nm,0.8s,mb4.5,baz=301,slow=5.3,SNR=16						
ARCES	**ARCESS Array B**	**85.94**	**18**	P		**P**	**22 59 11.7 +0.1**
ARCES				pmax		pmax	
	comp=Z,3.0nm,0.9s						
ABH	**Alteburg**	**86.09**	**39**	*e*P		**P**	**22 59 13.9 +1.1**
CABF	**La Chapelle**	**86.17**	**43**	*e*P		**P**	**22 59 13.6 +0.3**
	comp=Z,30nm,1.1s,mb5.1						
HINF	**Hinteralfeld**	**86.30**	**42**	*e*P		**P**	**22 59 13.8 -0.1**
	comp=Z,24nm,1.0s,mb5.1						
ECH	**Echery**	**86.37**	**41**	*e*P		**P**	**22 59 14.8 +0.6**
CDF	**Champ du Feu**	**86.39**	**41**	*e*P		**P**	**22 59 14.5 +0.2**
	comp=Z,30nm,1.0s,mb5.2						
PRAF	**Pradon**	**86.39**	**46**	*e*P		**P**	**22 59 15.9 +1.5**
LOMF	**Lomont**	**86.43**	**42**	*e*P		**P**	**22 59 15.0 +0.5**
MOF	**Molkenrain**	**86.47**	**41**	*e*P		**P**	**22 59 15.0 +0.3**
LANF	**Langenberg**	**86.54**	**40**	*e*P		**P**	**22 59 15.9 +0.9**
ORIF	**Oris-en-Rattie**	**86.54**	**45**	*e*P		**P**	**22 59 15.7 +0.6**
ORIF				*e*R			
	comp=Z,136nm,21.5s						
SMRF	**Simiane la Rot**	**86.61**	**45**	*e*P		**P**	**22 59 16.4 +0.9**
	comp=Z,26nm,0.9s,mb5.2						
VILF	**Villemus**	**86.75**	**46**	*e*P		**P**	**22 59 17.6 +1.4**
BBS	**Basel-

MKAR	**Makanchi Array**	**118.52**	**3**	PKIKP	PKPdf	23 05 18.9	+0.3
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.7s						
WRA	**Warramunga Arr**	**133.61**	**257**	PKP	PKPdf	23 05 49.5	+1.2
	comp=Z,0.9nm,0.8s,baz=72,slow=1.8,SNR=5.8						
WRA				pPKP		23 05 59.6	
	comp=Z,1.7nm,0.9s,baz=72,slow=1.9,SNR=4.7						
WRA	**Warramunga Arr**	**133.61**	**257**	PKIKP	PKPdf	23 05 49.5	+1.1
WRA						23 05 59.6	
WRA				pmax	pmax		
	comp=Z,1.0nm,0.8s						
WRA				pmax	pmax		
	comp=Z,2.0nm,1.0s						
ASAR	**Alice Springs**	**134.01**	**251**	PKP	PKPdf	23 05 50.3	+1.2
	comp=Z,0.9nm,0.7s,baz=89,slow=0.2,SNR=5.4						
CMAR	**Chiang Mai Arr**	**144.45**	**338**	PKP	PKPdf	23 06 07.2	-0.7
	comp=Z,4.9nm,0.7s,baz=348,slow=3.7,SNR=30						
CMAR	**Chiang Mai Arr**	**144.45**	**338**	PKIKP	PKPdf	23 06 07.2	-0.7
CMAR				pmax	pmax		
	comp=Z,5.0nm,0.7s						
HYB	**Hyderabad**	**147.10**	**13**	*i* PKP	PKPdf	23 06 14.5	+2.1
HYB				*e*		23 06 19.0	
HYB				*e*		23 06 23.5	
HYB				*e*pPKP		23 06 27.0	

*IDC **25** 23:04:33.5±13.0, 24.74S×179.96E, h423km±137km, mb2.9/3, mb1 3.3/4, mb1mx3.1/14, Error ellipse: s-maj=103.0km s-min=36.3km az=36.0*

ISC 25 23:04:40.8±4.7, 25.2S±0.2×179.6E±0.7, h500km, n6, σ0§98/5, mb3.2/2, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**13.17**	**189**	P		**P**		**23 07 31.7**	**-0.9**
	3.7nm,0.3s,baz=44,slow=1.3,SNR=19								
URZ				S		**S**		**23 09 50.6**	**-0.1**
	0.3nm,0.3s,baz=351,slow=23,SNR=3.9								
RPZ	**Rata Peaks**	**19.73**	**199**	P		**P**		**23 08 38.7**	**+1.3**
	2.6nm,0.5s,baz=30,slow=8.1,SNR=3.7								
ASAR	**Alice Springs**	**41.49**	**262**	P		**P**		**23 11 44.9**	**+0.1**
	0.4nm,0.5s,mb3.1,baz=88,slow=6.6,SNR=5.6								
WRA	**Warramunga Arr**	**41.99**	**268**	P		**P**		**23 11 48.5**	**-0.3**
	0.9nm,0.7s,mb3.3,baz=104,slow=8.2,SNR=8.1								
NB2	**NORSAR Subarra**	**143.32**	**351**	PKP				23 23 16.8	
	0.7nm,0.5s,baz=15,slow=3.1								
NOA	**NORSAR Array B**	**143.32**	**351**	PKP	PKPdf			23 23 16.8	+0.1
	1.0nm,0.6s,baz=22,slow=3.8,SNR=5.4								

IDC 25 23:13:35.5±26.0, 20.58S×172.92W, mb4.0/4, mb1 4.2/4, mb1mx3.9/17, Error ellipse: s-maj=494.0km s-min=166.1km az=74.0, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**38.21**	**263**	P		P		23 20 57.9	-1.1
	1.5nm,0.5s,baz=83,slow=10,SNR=5.1								
STKA	**Stephens Creek**	**42.05**	**245**	P		P		23 21 28.4	-2.2
	0.9nm,0.4s,baz=73,slow=11,SNR=2.9								
ASAR	**Alice Springs**	**49.12**	**256**	P		P		23 22 25.2	-1.9
	1.2nm,0.6s,baz=96,slow=8.2,SNR=13								
WRA	**Warramunga Arr**	**49.29**	**261**	P		P		23 22 26.4	-2.1
	0.6nm,0.3s,baz=96,slow=8.2,SNR=27								

*NEIC **25** 23:20:42.6, 31.42S×71.76W, h20km, ML3.1(GUC), After GUC.*

GUC 25 23:20:42.6±0.7, 31.42S×71.76W, h20km±4km, MD3.6, ML3.1, 3C-1D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ILCH	**Illapel**	**0.55**	**114**	⇑*i*P			Pb	23 20 53.3	-0.1
ILCH				*i* S			Sb	23 21 01.3	+0.5
ILCH				AMP				23 21 01.7	
	comp=N,2μm,0.1s								
CMCH	**Combarbala**	**0.69**	**70**	⇑*i*P			Pb	23 20 55.8	0.0
CMCH				*i* S			Sb	23 21 05.2	+0.3
CMCH				AMP				23 21 11.0	
	comp=N,1μm,0.3s								
PTCH	**Petorca**	**1.10**	**140**	⇑*i*P			Pb	23 21 01.9	-0.8
PTCH				*i* S			Sb	23 21 16.5	-0.2
PTCH				AMP				23 21 20.1	
	comp=N,2μm,0.3s								
PACH	**Papudo**	**1.15**	**166**	*e*P			Pb	23 21 02.3	-1.4
PACH				*e*S			Sb	23 21 18.3	+0.2
TLL	**Tololo Astrono**	**1.49**	**34**	*e*P			Pn	23 21 08.6	0.0
TLL				*i* S			Sn	23 21 28.8	+1.1
TLL				AMP				23 21 32.2	
	comp=E,342nm,0.3s								
JACH	**Jahuel**	**1.60**	**142**	*e*P			Pn	23 21 09.9	-0.3
ROCH	**El Roble**	**1.67**	**158**	⇓*i*P			Pn	23 21 11.8	+0.6
PEL	**Peldehue**	**1.95**	**152**	*e*P			Pn	23 21 15.0	-0.1
PEL				*i* S			Sn	23 21 40.6	+1.4
PEL				AMP				23 21 45.8	
	comp=E,431nm,0.4s								
RCDM	**Rinconada Maip**	**2.22**	**159**	AMP				23 21 56.1	
	comp=E,144nm,0.2s								
CLCH	**Cerro Calan**	**2.23**	**153**	*i* S			Sn	23 21 48.2	+1.9
CLCH				AMP				23 21 59.5	
	comp=N,218nm,0.6s								
FCH	**Farellones**	**2.27**	**147**	*e*P			Pn	23 21 20.4	+0.6
FCH				*i* S			Sn	23 21 49.8	+2.3
FCH				AMP				23 21 58.6	
	comp=E,100nm,0.2s								
CHCH	**Chadas Angostu**	**2.68**	**160**	*e*S			Sn	23 21 58.7	+0.9
LMEL	**Las Melosas**	**2.75**	**152**	*e*P			Pn	23 21 27.4	+0.6
LMEL				*e*S			Sn	23 22 01.2	+1.4
LMEL				AMP				23 22 13.6	
	comp=N,145nm,0.1s								

*IDC **25** 23:55:26.3±5.0, 4.59S×134.80E, mb3.8/3, mb1 3.9/5, mb1mx3.7/13, ML3.4/2, Error ellipse: s-maj=311.0km s-min=31.3km az=82.0*

ISC 25 23:55:29.8±1.2, 5.03S±0.06×133.9E±0.4, h33km, n8, σ1§25/13, mb3.7/3, Aru Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
KAKA	**Kakadu**	**7.76**	**191**	*e*P			**P**	**23 57 26.6**	**+3.3**
	6.0nm,0.4s								
KAKA				*e*S			**S**	**23 58 49.7**	**-1.3**
WRA	**Warramunga Arr**	**14.83**	**178**	Pn			**P**	**23 58 58.4**	**-0.7**
	0.1nm,0.3s,baz=357,slow=13,SNR=9.0								
WRA				Sn			**S**	**00 01 36.0**	**-6.9**
	0.3nm,0.3s,baz=356,slow=23,SNR=4.6								
WB2	**Warramunga Arr**	**14.83**	**178**	*e*P			**P**	**23 59 00.5**	**+1.5**
WB2				*e*S			**S**	**00 01 37.6**	**-5.3**
FITZ	**Fitzroy Crossi**	**15.30**	**211**	*e*P			**P**	**23 59 08.0**	**+2.8**
	2.2nm,0.3s								
FITZ				*e*S			**S**	**00 01 48.3**	**-5.7**
ASAR	**Alice Springs**	**18.53**	**180**	P			**P**	**23 59 49.6**	**+3.7**
	0.3nm,0.3s,baz=5.9,slow=11,SNR=20								
ASAR				S			**S**	**00 03 07.6**	**-0.3**
	0.1nm,0.3s,baz=358,slow=24,SNR=4.2								
SONM	**Songino Array**	**57.93**	**338**	P			**P**	**00 05 20.3**	**-0.9**
	0.5nm,0.6s,mb3.8,baz=169,slow=7.3,SNR=2.9								
MKAR	**Makanchi Array**	**68.80**	**325**	P			**P**	**00 06 33.4**	**+0.6**
	0.8nm,0.6s,mb3.8,baz=120,slow=8.8,SNR=10.0								
ZAL	**Zalesovo**	**71.62**	**332**	P			**P**	**00 06 49.2**	**-0.6**
	0.7nm,0.8s,mb3.6,baz=266,slow=5.0,SNR=3.5								

*NEIC **26** 00:09:32.2±0.8, 6.95S×125.12E, h511km±11km, mb4.5/13, Error ellipse: s-maj=13.9km s-min=6.2km az=66.0*
*IDC **26** 00:09:32.5±1.7, 6.97S×125.11E, h514km±21km, mb3.6/13, mb1 3.8/16, mb1mx3.7/21, Error ellipse: s-maj=22.1km s-min=9.5km az=70.0*

ISC 26 00:09:30.9±1.1, 6.94S±0.06×125.07E±0.10, h508km±16km, n46, σ0§71/48, mb4.1/25, 3C, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
KAKA	**Kakadu**	**9.22**	**129**	⇑*i*P				**00 11 41.3**	**0.0**
	35nm,0.4s								
KAKA				*e*S			**S**	**00 13 24.3**	**-0.8**
FITZ	**Fitzroy Crossi**	**11.11**	**177**	*e*P			**P**	**00 12 01.3**	**+0.1**
	14nm,0.2s								
FITZ				*e*S			**S**	**00 14 00.2**	**-1.3**
FITZ	**Fitzroy Crossi**	**11.11**	**177**	P			**P**	**00 12 01.4**	**+0.2**
	6.8nm,0.3s,baz=10,slow=8.1,SNR=457								
FITZ				S			**S**	**00 14 01.8**	**+0.3**
	2.9nm,0.3s,baz=181,slow=23,SNR=22								

WRAB	**Tennant Creek**	**15.75**	**146**	⇑*e*P			**P**	**00 12 48.6**	**-0.2**
	77nm,0.6s								
WRA	**Warramunga Arr**	**15.75**	**146**	P			**P**	**00 12 48.7**	**-0.1**
	8.2nm,0.3s,baz=323,slow=11,SNR=394								
WRA				S			**S**	**00 15 30.1**	**+1.6**
	baz=320,slow=17,SNR=5.4								
WB2	**Warramunga Arr**	**15.76**	**146**	⇑*i*P			**P**	**00 12 48.7**	**-0.1**
AS12	**Alice Springs**	**18.68**	**154**	*e*P			**P**	**00 13 18.0**	**+0.7**
	30nm,0.6s								
ASAR	**Alice Springs**	**18.68**	**154**	P			**P**	**00 13 18.2**	**+0.9**
	6.7nm,0.3s,baz=330,slow=8.0,SNR=468								
FORT	**Forrest**	**23.89**	**174**	*e*P			**P**	**00 14 04.3**	**-1.2**
	52nm,0.6s,mb5.1								
CTA	**Charters Tower**	**24.36**	**125**	*e*P			**P**	**00 14 09.5**	**-0.3**
	4.1nm,0.6s,mb4.0								
CTA	**Charters Tower**	**24.36**	**125**	P			**P**	**00 14 09.6**	**-0.2**
	4.6nm,0.4s,mb4.2,baz=302,slow=11,SNR=12								
CTAO	**Charters Tower**	**24.36**	**125**	*e*P			**P**	**00 14 08.8**	**-1.1**
	8.9nm,0.8s,mb4.2								
NWAO	**Narrogin (SRO)**	**26.87**	**195**	P			**P**	**00 14 31.2**	**-0.8**
	6.0nm,0.4s,mb4.3,baz=36,slow=9.3,SNR=14								
NWAO	**Narrogin (SRO)**	**26.87**	**195**	*e*P			**P**	**00 14 31.1**	**-0.8**
	5.2nm,0.5s,mb4.2								
STKA	**Stephens Creek**	**29.22**	**150**	*e*P			**P**	**00 14 51.9**	**-0.6**
	21nm,0.9s,mb4.6								
STKA	**Stephens Creek**	**29.22**	**150**	P			**P**	**00 14 52.2**	**-0.3**
	22nm,0.6s,mb4.8,baz=322,slow=8.9,SNR=57								
JOW	**Kunigami**	**33.71**	**5**	P			**P**	**00 15 31.1**	**+0.4**
	4.9nm,0.5s,mb4.2,baz=168,slow=4.9,SNR=3.9								
ARMA	**Armidale**	**34.16**	**137**	*e*P			**P**	**00 15 35.8**	**+1.4**
TOO	**Toolangi**	**35.70**	**152**	*e*P			**P**	**00 15 48.5**	**+1.3**
	5.7nm,0.4s,mb4.3								
CNB	**Canberra Magne**	**36.00**	**145**	*e*P			**P**	**00 15 50.6**	**+0.9**
	7.4nm,0.5s,mb4.4								
CM31	**Chiang Mai Arr**	**36.06**	**315**	P			**P**	**00 15 51.1**	**+0.7**
CMAR	**Chiang Mai Arr**	**36.06**	**315**	P			**P**	**00 15 51.8**	**+1.4**
	1.0nm,0.5s,mb3.5,baz=146,slow=6.8,SNR=6.1								
CMAR				PcP		PcP		00 18 03.5	0.0
	0.7nm,0.3s,baz=141,slow=2.9,SNR=4.3								
CMAR				ScP				00 21 01.2	
	1.1nm,0.8s,baz=153,slow=3.8,SNR=5.0								
JNU	**Nakatsue**	**40.22**	**8**	P			**P**	**00 16 24.3**	**+0.2**
	6.5nm,0.7s,mb4.1,baz=243,slow=16,SNR=3.6								
LSA	**Lhasa**	**48.88**	**320**	*e*P			**P**	**00 17 32.1**	**+0.5**
	2.9nm,0.7s,mb3.7								
PKI	**Pulchoki**	**51.44**	**314**	*e*P			**P**	**00 17 50.3**	**-0.3**
	11nm,0.6s,mb4.4								
KKN	**Kakani**	**51.66**	**314**	*e*P			**P**	**00 17 52.5**	**+0.3**
DMN	**Daman**	**51.68**	**313**	*e*P			**P**	**00 17 52.8**	**+0.4**
	11nm,0.3s,mb4.6								
GKN	**Gorkha**	**52.25**	**314**	*e*P			**P**	**00 17 56.2**	**-0.3**
	4.5nm,0.3s,mb4.3								
KOLN	**Koldanda**	**52.87**	**313**	*e*P			**P**	**00 18 00.6**	**-0.3**
	13nm,0.8s,mb4.3								
ULN	**Ulaanbaatar**	**56.83**	**346**	*e*P			**P**	**00 18 28.3**	**0.0**
	2.3nm,0.6s,mb3.7								
SONM	**Songino Array**	**56.97**	**345**	P			**P**	**00 18 29.3**	**0.0**
	4.0nm,0.9s,mb3.7,baz=159,slow=6.4,SNR=8.5								
MKAR	**Makanchi Array**	**65.57**	**329**	P			**P**	**00 19 25.6**	**0.0**
	6.2nm,0.5s,mb4.5,baz=128,slow=7.8,SNR=80								
ZAL	**Zalesovo**	**69.44**	**336**	P			**P**	**00 19 48.2**	**-0.8**
	2.7nm,0.7s,mb3.9,baz=240,slow=6.0,SNR=12								
KURK	**Kurchatov**	**69.98**	**331**	*e*P			**P**	**00 19 52.2**	**0.0**
VNDA	**Vanda**	**73.14**	**172**	P			**P**	**00 20 09.5**	**-0.6**
	1.4nm,0.7s,mb3.6,baz=321,slow=7.2,SNR=17								
VNDA	**Vanda**	**73.14**	**172**	P			**P**	**00 20 09.5**	**-0.6**
SBA	**Scott Base**	**74.08**	**172**	*e*P			**P**	**00 20 15.4**	**0.0**
	0.6nm,0.6s,mb3.3								
BVAR	**Borovoye Array**	**75.45**	**329**	P			**P**	**00 20 23.6**	**+0.1**
	3.0nm,0.7s,mb4.0,baz=126,slow=8.8,SNR=24								
BRVK	**Borovoye**	**75.53**	**329**	*e*P			**P**	**00 20 23.7**	**-0.2**
ZRNK	**Zerenda**	**76.12**	**329**	*e*P			**P**	**00 20 26.7**	**-0.4**
TIXI	**Tiksi**	**78.46**	**1**	*e*P			**P**	**00 20 38.8**	**-0.7**
	5.7nm,0.2s,mb4.7								
THR	**Tehran**	**81.20**	**308**	P			**P**	**00 20 54.8**	**+0.3**
	0.4nm,0.6s,mb3.1,baz=189,slow=6.2,SNR=3.5								
QSPA	**South Pole Qui**	**83.04**	**180**	*e*P			**P**	**00 21 02.9**	**0.0**
	2.1nm,0.6s,mb3.8								
ILAR	**Eielson Array**	**95.39**	**25**	P			**P**	**00 21 59.1**	**-1.9**
	0.6nm,0.8s,mb3.7,baz=292,slow=3.7,SNR=6.2								
TXAR	**Lajitas Array**	**129.07**	**58**	SKPbc				00 30 15.3	
	1.0nm,0.8s,baz=256,slow=3.7,SNR=8.3								
LPAZ	**La Paz**	**153.49**	**151**	PKPab		PKPab		00 28 49.1	0.0
	1.1nm,0.8s,baz=243,slow=9.0,SNR=5.0								

*IDC **26** 00:58:28.9±1.3, 6.60S×129.81E, mb4.2/6, mb1 4.5/9, mb1mx4.2/17, ML4.6/3, Error ellipse: s-maj=71.4km s-min=18.7km az=68.0*
*NEIC **26** 00:58:42.2±3.8, 7.19S×129.13E, h112km±37km, Error ellipse: s-maj=38.8km s-min=16.7km az=46.0*

ISC 26 00:58:45.2±2.9, 7.4S±0.1×129.0E±0.1, h164km±30km, n18, σ1§30/21, mb4.3/10, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**11.10**	**197**	Pn			**P**	**01 01 22.1**	**+1.8**
	2.4nm,0.3s,baz=19,slow=9.0,SNR=94								
FITZ				Sn			**S**	**01 03 21.7**	**-0.2**
	5.1nm,0.3s,baz=338,slow=17,SNR=7.1								
WRAB	**Tennant Creek**	**13.51**	**158**	*e*Pn			**P**	**01 01 50.0**	**-1.3**
	61nm,1.0s								
WRAB				*e*Sn			**S**	**01 04 14.8**	**-3.0**
WRA	**Warramunga Arr**	**13.51**	**158**	Pn			**P**	**01 01 49.6**	**-1.8**
	4.2nm,0.3s,baz=346,slow=13,SNR=122								
WRA				Sn			**S**	**01 04 12.5**	**-5.4**
	8.8nm,0.3s,baz=332,slow=22,SNR=16								
ASAR	**Alice Springs**	**16.85**	**164**	P			**P**	**01 02 34.4**	**+1.5**
	3.0nm,0.3s,baz=327,slow=9.3,SNR=113								
CTA	**Charters Tower**	**20.98**	**129**	P			**P**	**01 03 18.4**	**+1.6**
	4.2nm,0.8s,baz=302,slow=12,SNR=8.4								
STKA	**Stephens Creek**	**27.05**	**156**	P			**P**	**01 04 16.5**	**+2.2**
	3.7nm,0.5s,mb4.3,baz=326,slow=7.5,SNR=9.0								
CMAR	**Chiang Mai Arr**	**39.20**	**311**	P			**P**	**01 06 00.7**	**+1.5**
	1.6nm,0.7s,mb3.8,baz=131,slow=7.3,SNR=6.4								
PKI	**Pulchoki**	**54.60**	**311**	*e*P			**P**	**01 07 58.0**	**-1.1**
	8.5nm,0.6s,mb4.7								
KKN	**Kakani**	**54.82**	**312**	*e*P			**P**	**01 08 00.5**	**-0.2**
	13nm,0.6s,mb4.8								
DMN	**Daman**	**54.85**	**311**	*e*P			**P**	**01 08 01.0**	**+0.1**
GKN	**Gorkha**	**55.41**	**311**	*e*P			**P**	**01 08 03.9**	**-1.1**
	20nm,0.4s,mb5.2								
KOLN	**Koldanda**	**56.06**	**311**	*e*P			**P**	**01 08 09.6**	**0.0**
	10nm,0.4s,mb5.0								
DANN	**Dangsing**	**56.25**	**311**	*e*P			**P**	**01 08 08.1**	**-2.9**
MKAR	**Makanchi Array**	**68.00**	**327**	P			**P**	**01 09 28.7**	**0.0**
	2.1nm,0.3s,mb4.3,baz=124,slow=8.0,SNR=59								
ZAL	**Zalesovo**	**71.49**	**334**	P			**P**	**01 09 49.1**	**-0.6**
	1.3nm,0.3s,mb4.1,baz=282,slow=3.0,SNR=3.7								
KURK	**Kurchatov**	**72.33**	**329**	*e*P			**P**	**01 09 54.4**	**-0.3**
SBA	**Scott Base**	**73.07**	**172**	P			**P**	**01 09 59.4**	**+0.8**
	0.4nm,0.6s,mb3.3								
BVAR	**Borovoye Array**	**77.86**	**328**	P			**P**	**01 10 27.0**	**+1.0**
	0.7nm,0.5s,mb3.5,baz=135,slow=8.4,SNR=5.0								

*BJI **26** 01:01:22.2, 7.46S×125.45E, h513km, mB4.7, mb4.8*
*DJA **26** 01:01:25.3±0.8, 7.74S×125.31E, h438km±23km, mb5.4/3, MD4.7/4, Error ellipse: s-maj=79.8km s-min=14.0km az=164.0*
*NEIC **26** 01:01:27.8±0.5, 6.96S×125.09E, h514km±5km, mb4.8/23, Error ellipse: s-maj=6.7km s-min=4.0km az=58.0*
*SYO **26** 01:01:27.7, 6.96S×125.09E, h514km, MB4.8*
*IDC **26** 01:01:28.1±0.8, 6.95S×125.17E, h515km±8km, mb4.3/19, mb1 4.4/22, mb1mx4.3/24, Error ellipse: s-maj=12.2km s-min=5.9km az=67.0*

ISC 26 01:01:26.9±0.5, 6.96S±0.03×125.11E±0.04, h516km±7km, h513km±3.3km:pP-P, n167, σ0§98/133, mb4.7/54, 12C-7D, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
AAI	**Ambon**	**4.48**	**44**	*e*Pn			**P**	**01 02 51.5**	**+0.6**
KEDI	**Kedomdong**	**9.04**	**260**	⇑*e*P			**P**	**01 03 35.4**	**-0.1**
	639nm,0.3s								
KEDI				⇑*i*S			**S**	**01 05 16.7**	**-1.2**
KEDI	**Kedomdong**	**9.04**	**260**	⇑*e*Pn			**P**	**01 03 35.2**	**-0.3**
KEDI				*i* Sn			**S**	**01 05 15.6**	**-2.3**
RATI	**Rata**	**9.65**	**259**	⇓*e*P			**P**	**01 03 41.2**	**-0.7**
	724nm,0.2s								
RATI				⇑*e*S			**S**	**01 05 29.5**	**0.0**
RATI	**Rata**	**9.65**	**259**	⇓*e*Pn			**P**	**01 03 41.2**	**-0.7**
RATI				*i* Sn			**S**	**01 05 29.5**	**0.0**
INGI	**Ingas**	**10.04**	**259**	⇓*e*P			**P**	**01 03 45.6**	**-0.4**
INGI				⇓*i*S			**S**	**01 05 36.3**	**-0.7**

INGI	**Ingas**	**10.04**	**259**	⇓*i*Pn			**P**	**01 03 45.2**	**-0.8**
INGI				*i* Sn			**S**	**01 05 36.3**	**-0.7**
KELI	**Kelakatan**	**10.60**	**263**	⇑*i*P			**P**	**01 03 52.1**	**+0.3**
	249nm,0.2s								
KELI				⇑*i*S			**S**	**01 05 50.2**	**+2.6**
KELI	**Kelakatan**	**10.60**	**263**	⇑*i*Pn			**P**	**01 03 52.1**	**+0.3**
KELI				*i* Sn			**S**	**01 05 50.0**	**+2.4**
FITZ	**Fitzroy Crossi**	**11.08**	**177**	*e*P			**P**	**01 03 56.9**	**+0.1**
	337nm,0.8s								
FITZ	**Fitzroy Crossi**	**11.08**	**177**	P			**P**	**01 03 56.4**	**-0.4**
	30nm,0.3s,baz=12,slow=9.0,SNR=42								
FITZ				S			**S**	**01 05 56.8**	**-0.1**
	8.6nm,0.3s,baz=185,slow=23,SNR=19								
WRA	**Warramunga Arr**	**15.71**	**146**	P			**P**	**01 04 43.8**	**-0.2**
	14nm,0.3s,baz=323,slow=10,SNR=9.1								
WRA				S			**S**	**01 07 25.4**	**+2.2**
	baz=324,slow=17,SNR=13								
WRA				ScP				01 11 55.2	
	0.3nm,0.3s,baz=315,slow=1.7,SNR=4.8								
WRA	**Warramunga Arr**	**15.71**	**146**	P			**P**	**01 04 43.8**	**-0.2**
WRA				S			**S**	**01 07 25.4**	**+2.2**
WRA				ScP				01 11 55.2	
TBP	**Tagbilaran**	**16.59**	**356**	⇑*e*P			**P**	**01 04 55.0**	**+2.3**
AS12	**Alice Springs**	**18.64**	**154**	*e*P			**P**	**01 05 13.3**	**+0.7**
	111nm,0.7s								
AS12				*e*S			**S**	**01 08 14.2**	**-0.2**
ASAR	**Alice Springs**	**18.64**	**154**	P			**P**	**01 05 13.3**	**+0.7**
	20nm,0.3s,baz=329,slow=7.7,SNR=163								
ASAR				S			**S**	**01 08 16.4**	**+2.0**
	1.3nm,0.3s,baz=344,slow=18,SNR=4.4								
ASAR				ScP				01 12 01.3	
	1.2nm,0.3s,baz=348,slow=2.0,SNR=14								
PMG	**Port Moresby**	**21.96**	**98**	P			**P**	**01 05 43.1**	**-0.6**
	58nm,1.2s,mb5.1,baz=288,slow=5.5,SNR=5.9								
FORT	**Forrest**	**23.85**	**174**	*e*P			**P**	**01 05 59.8**	**-1.0**
	252nm,0.6s								
CTA	**Charters Tower**	**24.31**	**125**	*e*P			**P**	**01 06 04.5**	**-0.5**
	13nm,0.6s,mb4.7								
CTA	**Charters Tower**	**24.31**	**125**	P			**P**	**01 06 04.5**	**-0.5**
	17nm,0.7s,mb4.8,baz=309,slow=10,SNR=26								
CTA				ScP				01 12 15.6	
	13nm,0.9s,baz=245,slow=6.0,SNR=7.7								
CTAO	**Charters Tower**	**24.31**	**125**	⇑*e*P			**P**	**01 06 04.2**	**-0.8**
	28nm,0.9s,mb4.9								
MUN	**Mundaring**	**26.24**	**197**	*e*P			**P**	**01 06 21.4**	**-0.6**
	26nm,0.6s,mb5.0								
NWAO	**Narrogin (SRO)**	**26.85**	**195**	P			**P**	**01 06 27.0**	**-0.4**
	35nm,0.4s,mb5.3,baz=21,slow=8.2,SNR=43								
NWAO	**Narrogin (SRO)**	**26.85**	**195**	*e*P			**P**	**01 06 26.4**	**-1.0**
	80nm,1.1s,mb5.3								
STKA	**Stephens Creek**	**29.17**	**150**	⇑*i*P			**P**	**01 06 47.2**	**-0.5**
	54nm,0.6s,mb5.4								
STKA				*e*S			**S**	**01 11 02.4**	**-1.5**
STKA	**Stephens Creek**	**29.17**	**150**	P			**P**	**01 06 47.2**	**-0.4**
	66nm,0.5s,mb5.5,baz=321,slow=8.7,SNR=64								
STKA				S			**S**	**01 11 03.0**	**-1.0**
	21nm,0.8s,baz=149,slow=17,SNR=8.8								
STKA				ScP				01 12 29.5	
	7.4nm,0.8s,baz=329,slow=5.9,SNR=2.7								
QIZ	**Qiongzhong**	**29.89**	**330**	P			**P**	**01 06 52.8**	**-1.1**
QIZ				S			**S**	**01 11 12.5**	**-2.6**
QIZ				SS			SS	01 14 01.8	+9.3
QIZ				AMB			AMB		
	comp=Z,17nm,1.4s,mb4.4								
JOW	**Kunigami**	**33.73**	**5**	P			**P**	**01 07 26.6**	**+0.2**
	comp=Z,320nm,0.5s,mb5.1,baz=203,slow=7.4,SNR=14								
ARMA	**Armidale**	**34.11**	**137**	*e*P			**P**	**01 07 30.6**	**+1.1**
TOO	**Toolangi**	**35.66**	**152**	*e*P			**P**	**01 07 43.8**	**+1.4**
	comp=Z,21nm,0.5s,mb4.9								
CNB	**Canberra Magne**	**35.95**

comp=Z,30nm,0.7s,mb4.7
PKI Pulchoki 51.49 314 *e*P **P 01 09 46.1 -0.3**
comp=Z,39nm,0.5s,mb5.0
MDJ Mudanjiang 51.50 4 P **P 01 09 46.3 +0.1**
MDJ PCP PcP 01 10 51.3 -0.4
MDJ AP pP 01 11 24.3 -1.4
MDJ PP PP 01 11 53.5 +3.7
MDJ XP sP 01 12 18.8 -2.2
MDJ SCP 01 13 58.5
MDJ PCS 01 14 49.8
MDJ S **S 01 16 28.8 +1.6**
MDJ AMB AMB
comp=Z,77nm,1.0s,mb5.0
MDJ AMB AMB
comp=Z,100nm,5.3s
MDJ Mudanjiang 51.50 4 *e*P **P 01 09 45.6 -0.6**
comp=Z,55nm,0.8s,mb4.9
KKN Kakani 51.71 314 *e*P **P 01 09 47.8 -0.2**
comp=Z,21nm,0.5s,mb4.7
DMN Daman 51.73 313 *e*P **P 01 09 48.2 +0.1**
GTA Gaotai 51.74 335 P **P 01 09 47.8 -0.3**
GTA PCP PcP 01 10 53.5 +0.8
GTA AP pP 01 11 28.8 +1.1
GTA PP PP 01 11 53.8 +1.8
GTA XP sP 01 12 23.8 +0.9
GTA SCP 01 14 00.5
GTA S **S 01 16 29.5 -1.1**
GTA SCS ScS 01 18 41.3 +0.1
GTA XS 01 19 26.0
GTA SS SS 01 20 16.5 -1.0
GTA AMB AMB
comp=Z,28nm,0.6s,mb4.8
GTA AMB AMB
comp=Z,130nm,4.2s
HYB Hyderabad 51.98 298 *i*P **P 01 09 49.0 -1.1**
HYB Hyderabad 51.98 298 *e*P **P 01 09 49.0 -1.1**
GKN Gorkha 52.30 314 *e*P **P 01 09 51.7 -0.6**
comp=Z,53nm,0.6s,mb5.1
KOLN Koldanda 52.92 313 *e*P **P 01 09 55.8 -0.9**
comp=Z,47nm,0.6s,mb5.0
RPZ Rata Peaks 54.31 140 P **P 01 10 05.8 -0.5**
comp=Z,44nm,0.6s,mb5.0,baz=266,slow=2.0,SNR=29
HIA Hailar 56.19 356 *e*P **P 01 10 19.4 +0.1**
comp=Z,55nm,1.3s,mb4.6
URZ Urewera 56.26 132 P **P 01 10 18.8 -1.2**
comp=Z,94nm,0.4s,mb4.4,baz=265,slow=7.7,SNR=19
ULN Ulaanbaatar 56.87 346 *e*P **P 01 10 23.6 -0.4**
SONM Songino Array 57.01 345 P **P 01 10 24.6 -0.4**
comp=Z,13nm,0.7s,mb4.3,baz=160,slow=8.2,SNR=25
SONM ScP 01 14 21.3
comp=Z,1.6nm,0.7s,baz=135,slow=3.5,SNR=3.6
WMQ Urumqi 60.81 330 P **P 01 10 50.8 +0.3**
WMQ PCP PcP 01 11 28.5 +0.3
WMQ AP pP 01 12 34.3 -1.0
WMQ PP PP 01 13 14.8 +2.0
WMQ XP sP 01 13 27.5 -1.1
WMQ SCP 01 14 40.5
WMQ PCS 01 15 30.3
WMQ S **S 01 18 28.3 +0.7**
WMQ SCS ScS 01 19 48.0 +1.0
WMQ XS 01 21 29.8
WMQ SS SS 01 22 40.0 +0.3
WMQ AMB AMB
comp=Z,19nm,2.0s,mb4.1
WMQ AMB AMB
comp=Z,79nm,7.2s
KSH Kashi 64.78 320 P **P 01 11 16.3 +0.2**
KSH *e*PCP PcP 01 11 45.3 +0.7
KSH *e*AP pP 01 13 02.0 -0.8
KSH *e*PP PP 01 13 49.0 +1.8
KSH *e*SCP 01 14 58.5
KSH *e*PCS 01 15 47.5
KSH *e*S **S 01 19 17.0 +1.0**
KSH *e*SCS ScS 01 20 18.8 +1.4
KSH *e*XS 01 22 21.5
KSH *e*SS SS 01 23 42.0 +0.1
KSH AMB AMB
comp=Z,110nm,3.6s
MKAR Makanchi Array 65.62 329 P **P 01 11 20.6 -0.6**
comp=Z,40nm,0.5s,mb5.2,baz=127,slow=7.8,SNR=197
MKAR S S 01 19 25.2 -0.7
comp=Z,1.2nm,0.8s,baz=129,slow=16,SNR=9.7
ULHL Ulahol 66.16 322 P **P 01 11 25.6 +1.0**
SNR=5.4
KZA Kyzart 66.67 322 P **P 01 11 29.3 +1.5**
SNR=24
TKM2 Tokmak 2 66.93 323 P **P 01 11 30.2 +0.8**
SNR=18
KBK Karagaybulak 67.18 322 P **P 01 11 31.9 +1.0**
SNR=5.7
UCH Uchtor 67.20 322 P **P 01 11 31.9 +0.8**
SNR=11
AAK Ala-Archa 67.44 322 P **P 01 11 33.0 +0.5**
SNR=12
AAK Ala-Archa 67.44 322 *e*P **P 01 11 32.0 -0.5**
comp=Z,17nm,0.6s,mb4.8
CHMS Chumysh 67.49 322 P **P 01 11 52.4 +20**
SNR=21
AML Almayashu 67.66 321 P **P 01 11 34.5 +0.6**
SNR=18
USP Ospenovka 67.79 322 P **P 01 11 35.2 +0.5**
SNR=11
EKS2 Erkin-Say 67.90 322 P **P 01 11 36.2 +0.9**
SNR=13
YAK Yakutsk 68.88 2 *e*P **P 01 11 39.5 -1.3**
comp=Z,78nm,0.6s,mb5.4
MA2 Magadan 69.41 14 *e*P **P 01 11 43.2 -0.9**
ZAL Zalesovo 69.48 336 P **P 01 11 43.2 -1.4**
comp=Z,18nm,0.5s,mb4.9,baz=257,slow=4.5,SNR=50
ZAL S S 01 20 06.6 -4.2
comp=Z,1.5nm,0.3s,baz=359,slow=23,SNR=23
ZAL Zalesovo 69.48 336 P **P 01 11 43.2 -1.4**
ZAL S S 01 20 06.6 -4.2
KURK Kurchatov 70.03 331 *e*P **P 01 11 47.0 -0.9**
FX1 Attu Island--F 72.16 28 *e*P **P 01 12 00.5 +0.1**
VNDA Vanda 73.11 172 P **P 01 12 04.9 -0.4**
comp=Z,3.9nm,0.7s,mb4.0,baz=312,slow=6.8,SNR=33
VNDA Vanda 73.11 172 *e*P **P 01 12 04.5 -0.8**
comp=Z,2.8nm,0.8s,mb3.7
SBA Scott Base 74.05 172 *e*P **P 01 12 11.0 +0.4**
comp=Z,6.3nm,0.8s,mb4.1
SBA *e* 01 12 19.2
BVAR Borovoye Array 75.50 329 P **P 01 12 18.7 -0.4**
comp=Z,15nm,0.6s,mb4.6,baz=122,slow=8.9,SNR=84
BRVK Borovoye 75.57 329 *e*P **P 01 12 19.2 -0.3**
TIXI Tiksi 78.49 1 *e*P **P 01 12 33.8 -1.1**
comp=Z,27nm,0.5s,mb4.8
THR Tehran 81.25 308 P **P 01 12 51.2 +1.1**
comp=Z,1.7nm,0.5s,mb3.7,baz=94,slow=5.3,SNR=9.7
SYO Syowa Base 81.93 201 ⇑P **P 01 12 51.9 -0.9**
SYO Syowa Base 81.93 201⇑ *e*P **P 01 12 51.9 -0.9**
QSPA South Pole Qui 83.02 180 *e*P **P 01 12 58.4 +0.3**
comp=Z,5.6nm,0.7s,mb4.2
QSPA *e* pP 01 14 55.4 +3.9
ARU Arti 83.14 329 *e*P **P 01 12 57.5 -1.6**
comp=Z,8.8nm,0.6s,mb4.5
KMBO Kilima Mbogo 87.74 269 P **P 01 13 23.8 +1.5**
comp=Z,0.5nm,0.5s,baz=69,slow=11,SNR=5.1
ASF Jabal al Asfar 92.15 302 P **P 01 13 43.6 +1.3**
comp=Z,0.4nm,0.3s,mb3.9,baz=13,slow=17,SNR=3.6
ILAR Eielson Array 95.39 25 P **P 01 13 54.5 -1.8**
comp=Z,1.6nm,0.7s,mb4.3,baz=277,slow=4.3,SNR=25
ILAR PP PP 01 17 47.0 -10
comp=Z,0.3nm,0.6s,baz=256,slow=7.4,SNR=3.7
BRTR Keskin Array B 95.52 309 P **P 01 13 57.0 -0.5**
comp=Z,1.3nm,0.6s,mb4.4,baz=127,slow=5.1,SNR=8.7
ARCES ARCESS Array B 99.84 339 P **P 01 14 16.6 +0.3**
comp=Z,1.2nm,0.7s,mb4.5,baz=83,slow=4.6,SNR=12
ARCES PKiKP 01 18 41.4
comp=Z,1.5nm,0.8s,baz=90,slow=0.9,SNR=8.7
FINES FINESS Array B 100.40 331 P P 01 14 18.0 -0.9
comp=Z,0.2nm,0.4s,baz=90,slow=3.8,SNR=5.5
FINES PKiKP 01 18 42.8
comp=Z,0.6nm,0.5s,baz=90,slow=2.8,SNR=6.7
SPITS Spitsbergen Ar 100.58 349 P P 01 14 18.9 -0.5
comp=Z,6.4nm,1.1s,baz=90,slow=8.0,SNR=7.5
HFS Hagfors 106.60 331 Pdiff Pdif 01 14 45.5 -0.8
comp=Z,2.6nm,1.1s,baz=124,slow=5.3,SNR=6.1
GERES GERESS Array B 109.25 319 PKiKP 01 18 59.2
comp=Z,0.3nm,0.4s,baz=90,slow=2.0,SNR=5.8
YKA Yellowknife Ar 109.82 25 Pdiff Pdif 01 15 03.4 +3.0
comp=Z,0.2nm,0.6s,baz=290,slow=4.8,SNR=3.1
YKA PKiKP 01 18 59.8
comp=Z,0.7nm,0.5s,baz=308,slow=1.8,SNR=18
YKA SKP 01 21 45.3
comp=Z,0.3nm,0.6s,baz=290,slow=1.6,SNR=4.2
PGF Pioggiola 113.83 313 *e*PKiKP PKPdf 01 19 07.8 +1.1
comp=Z,2.5nm,0.5s
SBF Sospel 114.62 315 *e*PKiKP PKPdf 01 19 09.1 +0.9
comp=Z,6.3nm,0.6s
LPG La Plagne 114.66 317 *e*PKiKP PKPdf 01 19 09.8 +1.6
comp=Z,2.9nm,0.6s
LPL La Plagne 114.67 317 *e*PKiKP PKPdf 01 19 09.7 +1.4
comp=Z,3.1nm,0.5s
CABF La Chapelle 114.79 318 *e*PKiKP PKPdf 01 19 09.8 +1.4
comp=Z,5.2nm,0.5s
NVAR Mina Array Bea 115.06 51 PKP PKPdf 01 19 12.2 +3.0
comp=Z,0.9nm,0.6s,baz=268,slow=0.7,SNR=6.9
FRF La Foret Royal 115.25 315 *e*PKiKP PKPdf 01 19 10.5 +1.1
comp=Z,2.1nm,0.5s
LMR La Mourre 115.41 315 *e*PKiKP PKPdf 01 19 10.7 +1.0
comp=Z,2.5nm,0.6s
ORIF Oris-en-Rattie 115.41 317 *e*PKiKP PKPdf 01 19 10.9 +1.2
comp=Z,2.6nm,0.6s
SMRF Simiane la Rot 115.89 316 *e*PKiKP PKPdf 01 19 12.3 +1.7
comp=Z,1.5nm,0.5s
SSF Saint Saulge 116.33 319 *e*PKiKP PKPdf 01 19 12.6 +1.2
comp=Z,6.3nm,0.8s
AVF Avril sur Loir 116.52 319 *e*PKiKP PKPdf 01 19 12.5 +0.7
comp=Z,1.6nm,0.4s
HLID Hailey 116.66 45 *e*PKPdf PKPdf 01 19 14.3 +2.1
EKA Eskdalemuir Ar 116.75 330 PKP PKPdf 01 19 13.4 +1.4
comp=Z,0.9nm,0.5s,baz=50,slow=3.4,SNR=6.8
BGF Bois d'Agland 116.92 319 *e*PKiKP PKPdf 01 19 14.1 +1.5
comp=Z,11nm,0.7s
LASF Ste Croix 117.04 316 *e*PKiKP PKPdf 01 19 14.3 +1.4
comp=Z,3.4nm,0.7s
CAF Calviac 117.99 318 *e*PKiKP PKPdf 01 19 16.3 +1.6
LDF La Druitiere 118.05 322 *e*PKiKP PKPdf 01 19 16.4 +1.7
comp=Z,1.4nm,0.4s
RJF Les Rejaudoux 118.22 318 *e*PKiKP PKPdf 01 19 16.6 +1.5
comp=Z,2.2nm,0.5s
HVU Hansel Valley 118.34 46 PKPdf PKPdf 01 19 16.5 +1.0
MTLF Montolieu 118.40 316 *e*PKiKP PKPdf 01 19 16.6 +1.0
GRR Gorron 118.58 322 *e*PKiKP PKPdf 01 19 16.8 +1.0
comp=Z,2.8nm,0.4s
MFF Saint Martin d 118.84 320 *e*PKiKP PKPdf 01 19 17.3 +1.0
comp=Z,3.9nm,0.5s
LFF La Frestale 118.87 318 *e*PKiKP PKPdf 01 19 17.9 +1.5
comp=Z,4.2nm,0.5s
HWUT Hardware Ranch 119.26 46 *e*PKPdf PKPdf 01 19 19.0 +1.8
MSU Marysvale 119.71 49 *e*PKPdf PKPdf 01 19 21.3 +3.1
EPF Esparros 119.80 316 *e*PKiKP PKPdf 01 19 20.2 +1.9
comp=Z,1.2nm,0.4s
FCC Fort Churchill 120.25 22 *e*PKPdf PKPdf 01 19 18.4 -0.3
BW06 Boulder Array 120.28 44 PKPdf PKPdf 01 19 21.0 +1.8
PDAR Pinedale Array 120.28 44 PKP PKPdf 01 19 20.9 +1.8
comp=Z,0.8nm,0.5s,baz=321,slow=0.9,SNR=12
SRU San Rafael 120.78 48 *e*Pdif Pdif 01 15 50.9 +1.7
PV01 Paradox Valley 122.53 49 *e*PKPdf PKPdf 01 19 26.1 +2.4
RSSD Black Hills 123.45 41 *e*PKPdf PKPdf 01 19 26.1 +0.8
ULM Lac du Bonnet 124.99 31 PKP PKPdf 01 19 28.6 +0.5
comp=Z,1.2nm,0.3s,baz=245,slow=2.0,SNR=4.7
ANMO Albuquerque 125.14 52 *e*PKPdf PKPdf 01 19 31.1 +2.2
MNTX Cornudas Mount 126.97 55 *e*PKPdf PKPdf 01 19 33.2 +0.8
TXAR Lajitas Array 129.05 58 PKP PKPdf 01 19 39.1 +2.5
comp=Z,0.9nm,0.4s,baz=213,slow=2.5,SNR=14
TXAR SKPbc 01 22 10.6
comp=Z,6.1nm,0.8s,baz=255,slow=3.7,SNR=35
DBIC Dimbokro 130.34 273 PKP PKPdf 01 19 40.8 +1.4
comp=Z,3.3nm,0.5s,baz=162,slow=16,SNR=9.2
DBIC SKPbc 01 22 16.5
comp=Z,9.2nm,0.7s,baz=60,slow=4.7,SNR=14
DBIC Dimbokro 130.34 273 PKP PKPdf 01 19 40.8 +1.4
DBIC SKPbc 01 22 16.5
SCHQ Schefferville 131.31 9 PKP PKPdf 01 19 41.5 +1.4
comp=Z,3.0nm,0.5s,baz=234,slow=1.9,SNR=17
SCHQ SKPbc 01 22 17.2
comp=Z,2.7nm,0.8s,baz=27,slow=4.1,SNR=6.3
SCHQ Schefferville 131.31 9 PKP PKPdf 01 19 41.5 +1.4
SCHQ SKPbc 01 22 17.2
JCT Junction City 131.89 55 *e*PKPdf PKPdf 01 19 43.4 +1.5
SADO Sadowa 136.82 25 PKP PKPdf 01 19 53.2 +2.7
comp=Z,3.6nm,0.5s,baz=248,slow=1.7,SNR=6.7
SADO SKPbc 01 22 35.0
comp=Z,7.5nm,0.6s,baz=346,slow=5.6,SNR=14
SADO Sadowa 136.82 25 PKP PKPdf 01 19 53.2 +2.7
SADO SKPbc 01 22 35.0
LRAL Lakeview Retre 140.51 45 *e*PKPpre 01 19 53.1
FWV Forest Hill 141.49 34 *e*PKPpre 01 19 55.5
PWV Princeton 141.53 34 PKPpre 01 19 53.8
ELN Prospectdale 141.78 34 *e*PKPpre 01 19 55.9
MVL Millersville 141.89 27 *e*PKPpre 01 19 56.4
PAL Palisades 142.10 24 PKPpre 01 19 54.6
JSC Jenkinsville 143.52 38 *e*PKPdf PKPdf 01 20 02.6 -0.1
CPUP Villa Florida 146.82 176 PKPbc PKPbc 01 20 13.2 +2.5
comp=Z,9.4nm,0.8s,baz=139,slow=2.2,SNR=14
CPUP SKPbc 01 23 01.9
comp=Z,8.0nm,1.2s,baz=215,slow=1.7,SNR=3.8
LVC Limon Verde 147.56 155 PKPbc PKPdf 01 20 16.0 +6.2
comp=Z,6.1nm,0.6s,baz=247,slow=5.7,SNR=7.7
JTS JuntasAbangare 150.10 82 *e*PKPbc PKPdf 01 20 21.7 +7.5
LPAZ La Paz 153.44 151 PKP PKPdf 01 20 22.7 +3.9
comp=Z,0.4nm,0.5s,baz=207,slow=4.5,SNR=4.0
LPAZ PKPbc PKPdf 01 20 30.6 +12
comp=Z,1.9nm,1.1s,baz=142,slow=1.7,SNR=5.0
LPAZ PKPab PKPab 01 20 45.0 +0.9
comp=Z,5.8nm,0.8s,baz=198,slow=5.4,SNR=20
ROSC El Rosal 160.55 95 PKPab PKPab 01 21 15.2 +0.5
comp=Z,9.4nm,0.8s,baz=137,slow=19,SNR=3.5
SDV Santo Domingo 164.29 82 PKPab PKPab 01 21 32.2 +1.2
comp=Z,4.1nm,0.5s,baz=280,slow=4.2,SNR=7.9

*IDC **26** 01:13:54.4±6.5,31.88S×179.89W,h332km±69km, mb3.5/4, mb1 3.7/5, mb1mx3.5/14, Error ellipse: s-maj=74.9km s-min=28.6km az=7.0*
*NEIC **26** 01:13:55.7±2.3,31.79S×179.97E,h340km±19km, mb3.8/2, Error ellipse: s-maj=30.3km s-min=18.2km az=219.0*
ISC 26 01:13:58.0±1.2,31.99S±0.09×179.6E±0.2,h354km±11km, n48,σ1ᵗ17/48,mb3.6/5,2C-1D,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MXZ	**Matakaoa Point**	**5.66**	**191**	*e*P	**P**	**01 15 25.3**	**-0.4**
PUZ	**Puketiti**	**6.17**	**190**	P	**P**	**01 15 32.1**	**+0.6**
PUZ				S	**S**	**01 16 44.2**	**-0.8**
PUZ	**Puketiti**	**6.17**	**190**	*e*P	**P**	**01 15 32.1**	**+0.6**
MWZ	**Matawai**	**6.56**	**194**	P	**P**	**01 15 36.5**	**+0.5**
MWZ				S	**S**	**01 16 54.3**	**+1.3**
URZ	**Urewera**	**6.58**	**197**	P	**P**	**01 15 35.0**	**-1.3**
	7.8nm,0.3s,baz=356,slow=3.1,SNR=33						
URZ				S	**S**	**01 16 54.2**	**+0.6**
	15nm,0.3s,baz=59,slow=23,SNR=17						
KNZ	**Kokohu**	**7.19**	**192**	P	**P**	**01 15 42.8**	**-0.7**
KNZ				S	**S**	**01 17 07.4**	**+1.0**
KNZ	**Kokohu**	**7.19**	**192**	*e*P	**P**	**01 15 42.8**	**-0.7**
BKZ	**Black Stump Fm**	**7.60**	**199**	*e*P	**P**	**01 15 48.3**	**+0.1**
MGZ	**Maungaku**	**7.74**	**204**	P	**P**	**01 15 52.5**	**+2.5**
KAVZ	**Karewarewa**	**7.79**	**203**	P	**P**	**01 15 53.2**	**+2.7**
NGZ	**Ngauruhoe**	**7.88**	**203**	P	**P**	**01 15 53.2**	**+1.6**
TUVZ	**Tukino**	**7.94**	**203**	P	**P**	**01 15 54.5**	**+2.2**
FWVZ	**Far West T-bar**	**7.96**	**203**	P	**P**	**01 15 54.3**	**+1.7**
PWZ	**Pawanui**	**8.32**	**195**	P	**P**	**01 15 55.6**	**-1.2**
WAZ	**Wanganui**	**8.61**	**205**	P	**P**	**01 16 01.7**	**+1.5**
BFZ	**Birch Farm**	**9.09**	**196**	P	**P**	**01 16 05.2**	**-0.7**
BFZ				S	**S**	**01 17 47.7**	**+0.8**
MRZ	**Mangatainoka R**	**9.24**	**199**	P	**P**	**01 16 06.2**	**-1.6**
MRZ				S	**S**	**01 17 50.2**	**-0.1**
KIW	**Kapiti Island**	**9.63**	**202**	P	**P**	**01 16 12.1**	**-0.3**
MTW	**Mount Morrison**	**9.73**	**199**	P	**P**	**01 16 12.5**	**-1.1**
CAW	**Cannon Point**	**9.80**	**201**	*e*P	**P**	**01 16 12.9**	**-1.6**
MRW	**Makara Radio**	**10.03**	**202**	*e*P	**P**	**01 16 16.5**	**-0.7**
SNZO	**South Karori**	**10.10**	**202**	*e*P	**P**	**01 16 16.7**	**-1.3**
SNZO	**South Karori**	**10.10**	**202**	*e*Pn	**P**	**01 16 17.4**	**-0.7**
SNZO				*e*Sn	**S**	**01 18 00.6**	**-8.2**
BHW	**Baring Head**	**10.14**	**201**	*e*P	**P**	**01 16 17.7**	**-0.8**
QRZ	**Quartz Range**	**10.50**	**211**	*e*P	**P**	**01 16 22.2**	**-0.6**
THZ	**Tophouse**	**11.13**	**207**	P	**P**	**01 16 28.3**	**-2.1**
THZ				S	**S**	**01 18 31.4**	**+0.4**
THZ	**Tophouse**	**11.13**	**207**	*e*P	**P**	**01 16 28.3**	**-2.1**
KHZ	**Kahutara**	**11.47**	**203**	S	**S**	**01 18 36.6**	**-1.8**
LTZ	**Lake Taylor**	**12.24**	**206**	P	**P**	**01 16 42.8**	**-0.9**
LTZ	**Lake Taylor**	**12.24**	**206**	*e*P	**P**	**01 16 42.8**	**-0.9**
CTA	**Charters Tower**	**32.10**	**283**	P	**P**	**01 19 55.6**	**+0.5**
	2.2nm,0.4s,mb3.7,baz=88,slow=11,SNR=5.4						
CTAO	**Charters Tower**	**32.10**	**283**	*e*P	**P**	**01 19 55.6**	**+0.5**
	2.0nm,0.4s,mb3.7						
STKA	**Stephens Creek**	**32.15**	**260**	P	**P**	**01 19 57.0**	**+1.5**
	1.9nm,0.4s,mb3.7,baz=105,slow=13,SNR=6.7						
STKA	**Stephens Creek**	**32.15**	**260**	P	**P**	**01 19 57.0**	**+1.5**
ASAR	**Alice Springs**	**41.01**	**270**	P	**P**	**01 21 09.2**	**-0.1**
	1.2nm,0.4s,mb3.5,baz=104,slow=7.4,SNR=12						
WRAB	**Tennant Creek**	**42.15**	**275**	*e*P	**P**	**01 21 17.8**	**-0.7**
	3.7nm,0.6s,mb3.7						
WRA	**Warramunga Arr**	**42.15**	**275**	P	**P**	**01 21 18.0**	**-0.5**
	1.5nm,0.3s,mb3.5,baz=111,slow=8.1,SNR=38						
VNA3	**Neumayer Olymp**	**76.85**	**177**	⇑*i*	**P**	**01 25 13.4**	**+0.9**
VNA2	**Neumayer--Watz**	**77.26**	**178**	⇑*i*	**P**	**01 25 16.2**	**+1.5**
VNA1	**Neumayer--Stat**	**77.50**	**177**	⇑*i*	**P**	**01 25 15.1**	**-0.9**
ARCES	**ARCESS Array B**	**139.67**	**346**	PKhKP		01 32 33.5	
	1.5nm,0.9s,baz=8.8,slow=2.3,SNR=14						
JOF	**Joensuu**	**143.09**	**336**	*e*p	PKPbc	01 32 44.3	-3.2
	0.4nm,0.4s						
KAF	**Kangasniemi**	**145.31**	**338**	*e*p	PKPdf	01 32 50.6	-2.5
	2.9nm,0.5s						
FINES	**FINESS Array B**	**145.88**	**338**	PKPbc	PKPbc	01 32 53.7	-1.6
	5.0nm,0.5s,baz=50,slow=4.5,SNR=75						
NB2	**NORSAR Subarra**	**149.96**	**349**	PKP		01 33 04.3	
	1.2nm,0.5s,baz=16,slow=2.6						
NOA	**NORSAR Array B**	**149.96**	**349**	PKPbc	PKPdf	01 33 04.5	+3.9
	1.1nm,0.4s,baz=17,slow=4.1,SNR=6.3						
NAO01	**NORSAR Array S**	**150.20**	**349**	*e*PKPbc	PKPdf	01 33 05.1	+4.1
NAO01				*e*PKPab	PKPab	01 33 12.4	-3.8
KONO	**Kongsberg**	**151.54**	**349**	*e*PKPbc	PKPdf	01 33 08.3	+5.3

IDC 26 01:26:16.2±18.0,0.31S×116.77E,mb4.0/3,mb1 4.0/4, mb1mx3.6/19,ML3.6/1,Error ellipse: s-maj=323.0km s-min=163.9km az=115.0,Borneo

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**19.72**	**154**	P	P	01 30 48.0	-2.3
	0.1nm,0.3s,baz=349,slow=13,SNR=10						
WRA	**Warramunga Arr**	**26.02**	**140**	P	P	01 31 51.1	-1.8
	1.8nm,0.7s,baz=318,slow=10,SNR=14						
WB2	**Warramunga Arr**	**26.02**	**140**	*e*P	P	01 31 50.9	-2.1
ASAR	**Alice Springs**	**28.56**	**146**	P	P	01 32 13.2	-2.9
	0.4nm,0.3s,baz=321,slow=8.3,SNR=8.0						
STKA	**Stephens Creek**	**39.20**	**146**	P	P	01 33 47.0	-1.0
	1.7nm,0.5s,baz=300,slow=8.1,SNR=4.0						

*BJI **26** 01:32:35.8,52.63N×175.03W,h16km,mB4.9,mb4.9, Ms4.7,Msz4.5*
*NEIC **26** 01:32:38.5±0.3,51.67N×174.75W,mb4.6/18, ML4.1(AEIC),Error ellipse: s-maj=8.7km s-min=3.1km az=172.0*
*IDC **26** 01:32:38.8±0.8,51.67N×174.70W,h50km±5km,mb3.8/22, mb1 4.0/24,mb1mx4.0/29,MS3.6/7,Ms1 3.6/7, ms1mx3.2/35,Error ellipse: s-maj=21.4km s-min=11.1km az=177.0*
ISC 26 01:32:36.0±0.9,51.42N±0.08×174.58W±0.06,h48km±5km, h49km±1.8km:pP-P,n87,σ0ᵗ83/88,mb4.3/43,MS3.6/6, Andreanof Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ATKA	**Atka Island**	**0.82**	**17**	P	**P**	**01 32 50.6**	**-0.7**
ATKA				S	**S**	**01 33 04.0**	**+1.4**
GSIG	**Igitkin Island**	**1.01**	**305**	P	**P**	**01 32 53.3**	**-0.6**
GSIG				S	**S**	**01 33 08.0**	**+0.8**
GSMY	**Great Sitkin M**	**1.11**	**305**	P	**P**	**01 32 54.9**	**-0.4**
GSTD	**Great Sitkin T**	**1.16**	**304**	P	**P**	**01 32 55.8**	**-0.2**
GSTD				S	**S**	**01 33 12.7**	**+1.7**
ETKA	**Kagalaska Isla**	**1.22**	**292**	P	**P**	**01 32 56.1**	**-0.8**
ETKA				S	**S**	**01 33 12.8**	**+0.3**
ADAG	**Mount Adagdak**	**1.38**	**295**	P	**P**	**01 32 59.4**	**+0.1**
ADK	**Adak**	**1.39**	**290**	P	**P**	**01 32 58.6**	**-0.8**
ADK				S	**S**	**01 33 17.5**	**+0.7**
KIWB	**Kanaga Island**	**1.66**	**286**	P	**P**	**01 33 03.0**	**-0.1**
KIKV	**Kanaga Island**	**1.68**	**287**	P	**P**	**01 33 03.0**	**-0.4**
KIMD	**Kanaga Island**	**1.69**	**283**	P	**P**	**01 33 02.9**	**-0.7**
NIKO	**Nikolski**	**3.85**	**64**	P	**P**	**01 33 34.5**	**+0.2**
UNV	**Unalaska Valle**	**5.49**	**61**	P	**P**	**01 33 57.1**	**-0.1**
FX1	**Attu Island--F**	**7.68**	**286**	P	**P**	**01 34 27.2**	**-0.6**
	2.3nm,0.3s,baz=322,slow=18,SNR=18						
FX1				S	**S**	**01 35 59.5**	**+5.1**
	2.6nm,0.3s,baz=73,slow=19,SNR=3.8						
ILAR	**Eielson Array**	**19.60**	**36**	P	**P**	**01 37 00.5**	**-2.1**
	0.5nm,0.3s,baz=224,slow=7.8,SNR=44						
ILAR				LR	LR	01 45 12.7	
	comp=Z,110nm,18.3s,baz=257,slow=39						
INK	**Inuvik**	**25.93**	**34**	P	**P**	**01 38 04.5**	**-0.4**
	2.5nm,0.7s,mb3.9,baz=239,slow=10.0,SNR=6.5						
DLBC	**Dease Lake**	**26.13**	**57**	P	**P**	**01 38 08.7**	**+1.8**
	11nm,1.3s,mb4.2,baz=285,slow=12,SNR=3.6						
DLBC				LR	LR	01 47 16.8	
	comp=Z,71nm,20.6s,MS3.2,baz=122,slow=34						
BBB	**Bella Bella**	**28.37**	**70**	LR	LR	01 47 56.9	
	comp=Z,96nm,19.3s,MS3.4,baz=332,slow=32						
YKA	**Yellowknife Ar**	**33.28**	**47**	P	**P**	**01 39 09.2**	**-1.2**
	0.6nm,1.0s,mb3.5,baz=264,slow=9.5,SNR=5.1						
YKA				PcP	PcP	01 41 51.6	-0.4
	0.5nm,0.8s,baz=290,slow=3.0,SNR=5.9						
YKA				LR	LR	01 54 37.0	
	comp=Z,159nm,18.2s,MS3.8,baz=265,slow=40						
YKA	**Yellowknife Ar**	**33.28**	**47**	P	**P**	**01 39 09.2**	**-1.2**
YKA				PcP	PcP	01 41 51.6	-0.4
YKA				LR	LR	01 54 37.0	
NEW	**Newport**	**36.38**	**72**	P	**P**	**01 39 39.5**	**+2.5**
	1.6nm,0.5s,mb4.2,baz=270,slow=6.1,SNR=3.4						
NEW				pP	pP	01 39 51.1	+1.3
	4.0nm,0.9s,baz=277,slow=8.0,SNR=4.2						
JHJ	**Hachijo jima 2**	**37.68**	**259**	LR	LR	01 52 14.4	
	comp=Z,8nm,19.6s,MS3.5,baz=318,slow=31						
CN2	**Changchun**	**40.12**	**283**	*e*P	**P**	**01 40 09.3**	**+1.0**
NVAR	**Mina Array Bea**	**40.92**	**86**	P	**P**	**01 40 17.8**	**+2.8**
	0.2nm,0.3s,baz=290,slow=11,SNR=3.2						
JNU	**Nakatsue**	**43.21**	**267**	P	**P**	**01 40 34.0**	**+0.2**
	3.4nm,0.5s,mb4.4,baz=258,slow=37,SNR=3.7						
PDAR	**Pinedale Array**	**43.77**	**75**	P	**P**	**01 40 38.2**	**+0.1**
	3.4nm,1.1s,mb4.0,baz=309,slow=4.5,SNR=13						
PDAR				pP	pP	01 40 52.5	+1.3
	3.8nm,0.9s,baz=307,slow=7.4,SNR=8.9						
ULM	**Lac du Bonnet**	**47.43**	**59**	P	**P**	**01 41 06.5**	**-0.6**
	2.3nm,0.6s,mb4.3,baz=288,slow=5.8,SNR=2.7						
ZAL	**Zalesovo**	**55.90**	**315**	P	**P**	**01 42 09.6**	**-1.2**
	0.9nm,0.3s,mb4.2,baz=247,slow=23,SNR=3.3						
ZAL				PcP	PcP	01 43 09.1	+0.2
	0.9nm,0.4s,baz=16,slow=3.3,SNR=5.0						
ZAL				pPcP		01 43 23.4	
	1.0nm,0.5s,baz=164,slow=6.1,SNR=4.8						
ZAL	**Zalesovo**	**55.90**	**315**	P	**P**	**01 42 09.6**	**-1.2**
ZAL				PcP	PcP	01 43 09.1	+0.2
ZAL				pPcP		01 43 23.4	
TXAR	**Lajitas Array**	**56.03**	**84**	P	**P**	**01 42 11.3**	**-0.6**
	0.6nm,0.8s,mb3.7,baz=207,slow=2.8,SNR=4.1						
SCHQ	**Schefferville**	**58.30**	**40**	LR	LR	02 10 17.8	
	comp=Z,

PKI	**Pulchoki**	**74.79**	**295**	*eP*		**P**		**01 44 13.4**	**+0.8**
	50nm,1.1s,mb5.3								
GKN	**Gorkha**	**74.89**	**296**	*eP*		**P**		**01 44 13.5**	**+0.3**
	23nm,0.7s,mb5.2								
DMN	**Daman**	**74.93**	**295**	*eP*		**P**		**01 44 13.1**	**-0.3**
KOLN	**Koldanda**	**75.66**	**296**	*eP*		**P**		**01 44 17.9**	**+0.3**
	16nm,0.8s,mb5.0								
CLL	**Collm**	**77.45**	**355**	P		**P**		**01 44 27.0**	**-0.2**
GIVF	**Givet**	**78.86**	**0**	*eP*		**P**		**01 44 34.8**	**-0.1**
BAIF	**Baives**	**78.89**	**1**	*eP*		**P**		**01 44 35.2**	**+0.1**
GERES	**GERESS Array B**	**79.86**	**354**	P		**P**		**01 44 40.8**	**+0.4**
	1.1nm,0.8s,mb3.8,slow=4.0,SNR=8.3								
FLN	**La Foliniere**	**80.07**	**4**	*eP*		**P**		**01 44 41.1**	**-0.4**
	16nm,0.9s,mb4.6								
LDF	**La Druitiere**	**80.25**	**4**	*eP*		**P**		**01 44 42.0**	**-0.5**
	20nm,1.1s,mb4.7								
ROSF	**Rostrenen**	**80.34**	**6**	*eP*		**P**		**01 44 42.7**	**-0.3**
GRR	**Gorron**	**80.43**	**4**	*eP*		**P**		**01 44 43.2**	**-0.2**
	42nm,1.3s,mb4.9								
SGMF	**Saint Gilles**	**80.47**	**5**	*eP*		**P**		**01 44 43.5**	**-0.2**
	25nm,1.2s,mb4.7								
CDF	**Champ du Feu**	**80.53**	**359**	*eP*		**P**		**01 44 43.9**	**-0.1**
	3.8nm,0.7s,mb4.1								
HAU	**Haudompre**	**80.95**	**359**	*eP*		**P**		**01 44 46.1**	**-0.1**
	10nm,0.9s,mb4.4								
HINF	**Hinteralfeld**	**81.14**	**359**	*eP*		**P**		**01 44 47.0**	**-0.2**
LOR	**Lormes**	**81.68**	**1**	*eP*		**P**		**01 44 50.0**	**0.0**
SSF	**Saint Saulge**	**81.89**	**1**	*eP*		**P**		**01 44 51.2**	**+0.1**
	4.4nm,0.7s,mb4.2								
AVF	**Avril sur Loir**	**82.15**	**1**	*eP*		**P**		**01 44 52.4**	**-0.1**
	11nm,0.9s,mb4.5								
MFF	**Saint Martin d**	**82.24**	**4**	*eP*		**P**		**01 44 53.1**	**+0.2**
	15nm,1.0s,mb4.6								
SMF	**Signal de Mont**	**82.31**	**1**	*eP*		**P**		**01 44 53.2**	**-0.1**
	8.7nm,0.8s,mb4.4								
CABF	**La Chapelle**	**82.35**	**360**	*eP*		**P**		**01 44 53.9**	**+0.4**
	9.9nm,1.0s,mb4.4								
BGF	**Bois d'Agland**	**82.38**	**2**	*eP*		**P**		**01 44 53.7**	**+0.1**
	11nm,0.8s,mb4.5								
TCF	**Toulx Ste Croi**	**82.63**	**2**	*eP*		**P**		**01 44 54.9**	**0.0**
	5.7nm,0.9s,mb4.3								
LPG	**La Plagne**	**83.46**	**359**	*eP*		**P**		**01 44 59.5**	**+0.4**
RJF	**Les Rejaudoux**	**83.60**	**3**	*eP*		**P**		**01 44 59.9**	**+0.1**
WRA	**Warramunga Arr**	**83.93**	**227**	P		**P**		**01 45 05.0**	**+3.0**
	0.3nm,1.1s,mb3.3,baz=33,slow=5.9,SNR=5.1								
LFF	**La Frestale**	**83.94**	**3**	*eP*		**P**		**01 45 01.9**	**+0.4**
CAF	**Calviac**	**83.99**	**2**	*eP*		**P**		**01 45 02.3**	**+0.5**
	25nm,1.5s,mb4.8								
VIVF	**Saint-Julien-l**	**84.10**	**1**	*eP*		**P**		**01 45 03.2**	**+0.9**
THR	**Tehran**	**84.25**	**324**	P		**P**		**01 45 06.6**	**+3.3**
	0.8nm,0.7s,mb4.0,baz=1.2,slow=8.7,SNR=3.7								
LASF	**Ste Croix**	**84.88**	**1**	*eP*		**P**		**01 45 07.0**	**+0.8**
SMRF	**Simiane la Rot**	**84.98**	**360**	*eP*		**P**		**01 45 06.4**	**-0.4**
	14nm,1.2s,mb4.7								
SBF	**Sospel**	**85.08**	**359**	*eP*		**P**		**01 45 07.5**	**+0.3**
	8.8nm,0.7s,mb4.7								
FRF	**La Foret Royal**	**85.39**	**359**	*eP*		**P**		**01 45 09.1**	**+0.3**
	5.2nm,0.9s,mb4.3								
MTLF	**Montolieu**	**85.58**	**2**	*eP*		**P**		**01 45 09.7**	**0.0**
EPF	**Esparros**	**85.83**	**4**	*eP*		**P**		**01 45 10.9**	**0.0**
BRTR	**Keskin Array B**	**85.94**	**339**	P		**P**		**01 45 11.7**	**+0.1**
	1.0nm,0.9s,mb4.1,baz=20,slow=2.5,SNR=4.7								
BRTR				pP		pP		01 45 27.4	+1.7
	2.3nm,1.2s,baz=34,slow=4.5,SNR=2.9								
PGF	**Pioggiola**	**86.36**	**357**	*eP*		**P**		**01 45 13.9**	**+0.4**
	17nm,1.2s,mb4.8								
HYB	**Hyderabad**	**86.64**	**294**	*i* P		**P**		**01 45 16.0**	**+0.5**
HYB				epP		pP		01 45 30.0	+0.3
HYB	**Hyderabad**	**86.64**	**294**	*eP*		**P**		**01 45 16.0**	**+0.5**
ASAR	**Alice Springs**	**87.36**	**226**	P		**P**		**01 45 19.2**	**+0.4**
	0.9nm,0.9s,mb4.0,baz=33,slow=5.1,SNR=5.6								
POO	**Poona**	**88.40**	**298**	*eP*		**P**		**01 45 22.0**	**-1.9**
ESDC	**Sonseca Array**	**88.91**	**7**	P		**P**		**01 45 26.5**	**+0.6**
	1.6nm,1.1s,mb4.2,baz=346,slow=5.3,SNR=4.8								
TSUM	**Tsumeb**	**146.45**	**339**	PKPbc		PKPbc		01 52 14.1	+2.6
	9.9nm,1.1s,baz=354,slow=4.0,SNR=16								
TSUM				pPKPbc				01 52 28.2	
	9.5nm,1.1s,baz=351,slow=4.4,SNR=6.0								
LBTB	**Lobatse**	**149.44**	**322**	*e*PKPbc		PKPdf		01 52 21.3	+6.4

*IDC **26** 01:39:42.3±0.7, 19.19N×121.24E, mb3.9/13, mb1 4.2/13, mb1mx4.0/22, ML5.0/1, MS3.7/3, Ms1 3.8/3, ms1mx3.2/32, Error ellipse: s-maj=26.6km s-min=16.3km az=72.0*
*BJI **26** 01:39:51.1, 18.76N×120.84E, h120km, mB4.1, mb4.3*
*NEIC **26** 01:39:53.5±1.7, 19.24N×121.26E, h92km±17km, mb4.3/4, Error ellipse: s-maj=17.6km s-min=10.6km az=81.0*
ISC 26 01:39:47.3±0.7, 19.22N±0.04×121.15E±0.07, h45km±8km, n40, σ1°10/42, mb4.0/17, MS3.7/4, 10C-1D, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SGCP	**Mt. Cagua**	**1.29**	**139**	*e*P	**P**	**01 40 07.8**	**-1.4**
SGCP				*e*S	**S**	**01 40 26.3**	**+0.7**
APYP	**Conner**	**1.35**	**176**	*e*P	**P**	**01 40 08.8**	**-1.4**
APYP				*e*S	**S**	**01 40 26.5**	**-0.6**
BBP	**Basco**	**1.44**	**32**	*e*P	**P**	**01 40 11.1**	**-0.3**
ABRA	**Dolores**	**1.61**	**195**	*e*P	**P**	**01 40 12.1**	**-1.7**
CVP	**Callao Caves**	**1.64**	**157**	*i*P	**P**	**01 40 13.4**	**-0.7**
CVP				*i*S	**S**	**01 40 35.1**	**+1.0**
SZP	**Santa**	**1.78**	**202**	*e*P	**P**	**01 40 02.6**	**-14**
SZP				*i*S	**S**	**01 40 30.2**	**-7.6**
CAUP	**Cauayan**	**2.35**	**164**	*e*P	**P**	**01 40 26.4**	**+2.1**
BCPH	**Baguio City Da**	**2.87**	**191**	*i*P	**S**	**01 41 10.0**	**+4.7**
BOLP	**Bolinao**	**3.06**	**203**	*e*P	**P**	**01 40 35.0**	**+0.6**
BALP	**Baler**	**3.48**	**173**	*e*P	**P**	**01 40 41.2**	**+0.9**
SCZP	**Santa Cruz**	**3.62**	**199**	*e*P	**P**	**01 40 43.5**	**+1.2**
PCPH	**Palayan**	**3.63**	**181**	*e*P	**P**	**01 40 44.1**	**+1.6**
TGY	**Tagaytay City**	**5.09**	**182**	Pn	**P**	**01 41 10.0**	**+7.0**
	57nm,0.3s,baz=282,slow=19,SNR=2.5						
QIZ	**Qiongzhong**	**10.69**	**271**	*e*Pn	**P**	**01 42 13.7**	**-7.1**
ENH	**Enshi**	**15.26**	**318**	*e*P	**P**	**01 43 19.8**	**-1.6**
	31nm,1.6s						
JNU	**Nakatsue**	**16.36**	**30**	Pn	**P**	**01 43 35.1**	**-0.1**
	baz=155,slow=2.7						
CMAR	**Chiang Mai Arr**	**21.03**	**272**	P	**P**	**01 44 28.8**	**-0.8**
	1.0nm,0.4s,mb3.5,baz=85,slow=8.5,SNR=6.2						
CMAR				LR	LR	01 53 40.8	
	comp=Z,82nm,20.0s,MS3.1,baz=80,slow=40						
BJT	**Baijiatuau**	**21.17**	**349**	P	**P**	**01 44 30.5**	**-0.3**
	20nm,0.8s,mb4.5						
LZH	**Lanzhou**	**22.69**	**321**	*e*P	**P**	**01 44 45.5**	**-0.4**
LZH				AMB	AMB		
	comp=Z,33nm,1.5s,mb4.5						
LZH				LR	LR		
	comp=E,189nm,10.2s						
LZH				LR	LR		
	comp=Z,249nm,13.6s,MS3.8						
HHC	**Hu-ho-hao-te**	**23.07**	**341**	*e*P	**P**	**01 44 52.0**	**+2.3**
HHC				AMB	AMB		
	comp=Z,11nm,1.0s,mb4.2						
HHC				AMB	AMB		
	comp=E,65nm,7.4s						
SONM	**Songino Array**	**30.97**	**341**	P	**P**	**01 46 04.8**	**+2.5**
	comp=Z,9nm,1.1s,mb4.2,baz=96,slow=12,SNR=3.0						
FITZ	**Fitzroy Crossi**	**37.35**	**173**	P	**P**	**01 46 55.2**	**-2.2**
	comp=Z,3.3nm,1.0s,mb4.1,baz=346,slow=4.2,SNR=4.0						
WRAB	**Tennant Creek**	**41.00**	**161**	*e*P	**P**	**01 47 26.2**	**-1.6**
	comp=Z,1.4nm,0.5s,mb3.9						
WRA	**Warramunga Arr**	**41.01**	**161**	P	**P**	**01 47 27.0**	**-0.8**
	comp=Z,0.7nm,0.8s,mb3.4,baz=342,slow=8.9,SNR=6.0						
WRA				PcP	PcP	01 49 27.2	-0.6
	comp=Z,0.7nm,0.5s,baz=344,slow=3.2,SNR=8.9						
MKAR	**Makanchi Array**	**41.99**	**320**	P	**P**	**01 47 36.2**	**+0.6**
	comp=Z,3.6nm,0.8s,mb4.0,baz=120,slow=9.8,SNR=24						
ASAR	**Alice Springs**	**44.40**	**163**	P	**P**	**01 47 55.2**	**-0.3**
	comp=Z,0.5nm,0.4s,mb3.6,baz=342,slow=6.7,SNR=7.6						
ZAL	**Zalesovo**	**44.45**	**330**	P	**P**	**01 47 55.1**	**-0.4**
	comp=Z,1.2nm,0.7s,mb3.7,baz=262,slow=6.5,SNR=9.0						
KURK	**Kurchatov**	**45.95**	**323**	*e*P	**P**	**01 48 07.4**	**-0.1**
BVAR	**Borovoye Array**	**51.55**	**323**	P	**P**	**01 48 50.7**	**-0.1**
	comp=Z,0.7nm,0.7s,mb3.7,baz=117,slow=13,SNR=4.7						
BRVK	**Borovoye**	**51.62**	**323**	*e*P	**P**	**01 48 51.0**	**-0.2**
ILAR	**Eielson Array**	**73.64**	**27**	P	**P**	**01 51 16.9**	**-0.5**
	comp=Z,0.5nm,0.8s,mb3.5,baz=273,slow=6.7,SNR=5.5						
INK	**Inuvik**	**77.83**	**22**	P	**P**	**01 51 41.0**	**-0.2**
	comp=Z,2.8nm,0.9s,mb4.2,baz=316,slow=6.8,SNR=4.1						
INK	**Inuvik**	**77.83**	**22**	*e*P	**P**	**01 51 40.7**	**-0.5**
	comp=Z,6.3nm,1.2s,mb4.4						
NOA	**NORSAR Array B**	**82.59**	**333**	LR	LR	02 32 08.3	
	comp=Z,52nm,19.6s,MS3.9,baz=60,slow=38						
JMIC	**Jan Mayen**	**83.60**	**345**	LR	LR	02 31 47.8	
	comp=Z,65nm,19.7s,MS4.0,baz=140,slow=37						
KMBO	**Kilima Mbogo**	**84.61**	**267**	P	**P**	**01 52 19.2**	**+1.3**
	comp=Z,0.5nm,0.5s,mb4.0,baz=52,slow=21,SNR=2.4						
GERES	**GERESS Array B**	**86.65**	**321**	P	**P**	**01 52 28.3**	**+1.2**
	comp=Z,0.6nm,0.9s,mb3.8,baz=34,slow=4.8,SNR=4.3						
YKW3	**Yellowknife Ar**	**87.50**	**23**	*e*P	**P**	**01 52 31.0**	**+0.1**
YKA	**Yellowknife Ar**	**87.54**	**23**	P	**P**	**01 52 31.9**	**+0.8**
	comp=Z,3.7nm,0.8s,mb4.7,baz=312,slow=4.6,SNR=75						
YKA	**Yellowknife Ar**	**87.54**	**23**	P	**P**	**01 52 31.9**	**+0.8**

*IDC **26** 01:43:14.7±4.3, 17.50S×177.21W, mb3.9/5, mb1 4.1/5, mb1mx3.8/15, Error ellipse: s-maj=177.0km s-min=35.2km az=139.0*
ISC 26 01:43:21.0±4.1, 16.9S±0.9×177.9W±0.9, h33km, n5, σ1°26/5, mb3.9/5, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**39.58**	**240**	P	**P**	**01 50 50.9**	**0.0**
	2.2nm,1.0s,mb3.9,baz=108,slow=13,SNR=3.5						
WRA	**Warramunga Arr**	**45.33**	**258**	P	**P**	**01 51 39.2**	**+1.1**
	0.7nm,0.4s,mb3.9,baz=97,slow=7.3,SNR=26						
ASAR	**Alice Springs**	**45.57**	**253**	P	**P**	**01 51 40.3**	**+0.3**
	1.0nm,0.4s,mb4.1,baz=90,slow=7.7,SNR=18						
FITZ	**Fitzroy Crossi**	**53.71**	**260**	P	**P**	**01 52 40.7**	**-1.6**
	1.9nm,0.9s,mb4.0,baz=122,slow=9.5,SNR=2.8						
ILAR	**Eielson Array**	**84.77**	**13**	P	**P**	**01 55 52.9**	**+0.1**
	0.2nm,0.4s,mb3.6,baz=222,slow=6.0,SNR=4.5						

*BJI **26** 02:07:07.1, 51.73N×175.23W, h24km, mB4.3, mb4.8, Ms4.0, Msz3.8*
*NEIC **26** 02:07:08.6±0.4, 51.49N×174.66W, mb4.3/23, ML3.8(AEIC), Error ellipse: s-maj=11.0km s-min=4.2km az=182.0*
*IDC **26** 02:07:09.2±0.9, 51.58N×174.48W, h47km±5km, mb3.7/16, mb1 4.0/18, mb1mx3.8/30, MS3.3/4, Ms1 3.3/4, ms1mx2.9/31, Error ellipse: s-maj=23.5km s-min=14.1km az=7.0*
ISC 26 02:07:06.0±0.8, 51.32N±0.07×174.53W±0.05, h40km±5km, h43km±1.9km; pP-P, n87, σ0°98/91, mb4.2/44, MS3.5/5, Andreanof Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ATKA	**Atka Island**	**0.91**	**13**	P	**P**	**02 07 22.1**	**-0.4**
ATKA				S	**S**	**02 07 35.2**	**+0.7**
GSIG	**Igitkin Island**	**1.09**	**308**	P	**P**	**02 07 24.6**	**-0.5**
GSIG				S	**S**	**02 07 39.8**	**+0.5**
GSMY	**Great Sitkin M**	**1.19**	**308**	P	**P**	**02 07 26.2**	**-0.3**
GSMY				S	**S**	**02 07 42.9**	**+1.2**
GSTD	**Great Sitkin T**	**1.25**	**307**	P	**P**	**02 07 27.1**	**-0.2**
GSTD				S	**S**	**02 07 43.6**	**+0.5**
ETKA	**Kagalaska Isla**	**1.29**	**296**	P	**P**	**02 07 27.5**	**-0.4**
ADK	**Adak**	**1.46**	**294**	P	**P**	**02 07 30.0**	**-0.4**
ADK				S	**S**	**02 07 48.8**	**+0.4**
KIRH	**Kanaga Island**	**1.70**	**291**	P	**P**	**02 07 34.1**	**+0.3**
KIWB	**Kanaga Island**	**1.72**	**289**	P	**P**	**02 07 34.0**	**0.0**
KIKV	**Kanaga Island**	**1.74**	**290**	P	**P**	**02 07 34.4**	**+0.1**
KIMD	**Kanaga Island**	**1.75**	**286**	P	**P**	**02 07 34.2**	**-0.2**
NIKO	**Nikolski**	**3.87**	**62**	P	**P**	**02 08 05.2**	**+0.6**
UNV	**Unalaska Valle**	**5.51**	**60**	P	**P**	**02 08 26.8**	**-0.9**
FX1	**Attu Island--F**	**7.74**	**286**	P	**P**	**02 08 58.8**	**-0.1**
	4.7nm,0.3s,baz=239,slow=4.6,SNR=13						
FX1				S	**S**	**02 10 33.1**	**+6.9**
	2.5nm,0.3s,baz=68,slow=18,SNR=4.2						
FX1	**Attu Island--F**	**7.74**	**286**	*e*P	**P**	**02 08 57.0**	**-1.9**
BILL	**Bilibino**	**19.21**	**338**	*e*P	**P**	**02 11 27.9**	**-1.1**
	23nm,1.4s						
ILAR	**Eielson Array**	**19.66**	**36**	P	**P**	**02 11 29.8**	**-4.1**
	0.6nm,0.3s,baz=224,slow=7.8,SNR=57						
ILAR				LR	LR	02 19 35.0	
	comp=Z,55nm,18.6s,baz=91,slow=38						
DAWY	**Dawson**	**22.34**	**42**	*e*P	**P**	**02 12 00.7**	**-0.6**
INK	**Inuvik**	**25.99**	**34**	P	**P**	**02 12 35.3**	**-1.1**
	1.0nm,0.5s,mb3.6,baz=268,slow=9.3,SNR=4.5						
INK	**Inuvik**	**25.99**	**34**	*e*P	**P**	**02 12 35.6**	**-0.7**
DLBC	**Dease Lake**	**26.16**	**57**	P	**P**	**02 12 40.5**	**+2.5**
	4.0nm,0.9s,mb3.9,baz=231,slow=8.3,SNR=3.7						
BBB	**Bella Bella**	**28.37**	**70**	LR	LR	02 21 58.7	
	comp=Z,40nm,21.6s,MS3.0,baz=240,slow=32						
YKA	**Yellowknife Ar**	**33.32**	**47**	P	**P**	**02 13 40.2**	**-1.5**
	0.2nm,0.8s,baz=265,slow=9.3,SNR=4.6						
YKA				PcP	PcP	02 16 23.1	-0.1
	0.9nm,1.0s,baz=285,slow=3.0,SNR=7.6						
YKA				pPcP		02 16 36.7	
	0.1nm,0.4s,baz=284,slow=3.1,SNR=5.1						
YKA				LR	LR	02 28 59.0	
	comp=Z,91nm,18.4s,baz=245,slow=40						
YKA	**Yellowknife Ar**	**33.32**	**47**	P	**P**	**02 13 40.2**	**-1.5**
YKA				PcP	PcP	02 16 23.1	-0.1
YKA				pPcP		02 16 36.7	
YKA				LR	LR	02 28 59.0	
NEW	**Newport**	**36.38**	**72**	P	**P**	**02 14 10.7**	**+2.7**
	2.4nm,0.6s,mb4.3						
MDJ	**Mudanjiang**	**37.21**	**282**	P	**P**	**02 14 11.3**	**-3.7**
MDJ				AP	pP	02 14 22.0	-4.2
MDJ				XP	sP	02 14 26.8	-4.5
MDJ				PP	PP	02 15 36.0	-6.7
MDJ				PCP	PcP	02 16 32.0	-2.7
MDJ				S	**S**	**02 19 49.5**	**-9.2**
MDJ				XS		02 20 12.5	
MDJ				PCS		02 20 20.5	
MDJ				AMB	AMB		
	comp=Z,7.0nm,1.8s,mb4.2						
MDJ				AMB	AMB		
	comp=Z,43nm,3.8s						
MDJ				LR	LR		
	comp=N,59nm,17.5s,MS3.6						
MDJ				LR	LR		
	comp=E,61nm,19.9s,MS3.6						
MDJ				LR	LR		
	comp=Z,81nm,19.9s,MS3.5						
CN2	**Changchun**	**40.18**	**284**	*e*P	**P**	**02 14 41.3**	**+1.6**
HLID	**Hailey**	**40.36**	**77**	*e*P	**P**	**02 14 41.5**	**+0.3**
	comp=Z,0.6nm,0.8s,mb3.4						
NVAR	**Mina Array Bea**	**40.89**	**86**	P	**P**	**02 14 45.1**	**-0.6**
	comp=Z,0.7nm,1.0s,mb3.3,baz=299,slow=9.3,SNR=3.2						
BW06	**Boulder Array**	**43.76**	**75**	*e*P	**P**	**02 15 09.3**	**+0.3**
	comp=Z,1.2nm,0.6s,mb3.8						
PDAR	**Pinedale Array**	**43.76**	**75**	P	**P**	**02 15 09.7**	**+0.6**
	comp=Z,1.2nm,0.6s,mb3.8,baz=314,slow=3.4,SNR=12						
PDAR				pP	pP	02 15 21.1	+0.8
	comp=Z,2.4nm,1.0s,baz=297,slow=3.3,SNR=6.7						
SDCO	**Great Sand Dun**	**49.26**	**78**	*e*P	**P**	**02 15 53.0**	**+0.6**
	comp=Z,1.2nm,0.8s,mb4.0						
SSE	**Sheshan**	**50.67**	**272**	P	**P**	**02 16 03.0**	**-0.4**
SSE				S	**S**	**02 23 13.0**	**-1.1**
SSE				XS		02 23 32.0	
SSE				AMB	AMB		
	comp=Z,19nm,10.4s						
SSE				LR	LR		
	comp=N,32nm,18.2s,MS3.5						
SSE				LR	LR		
	comp=E,30nm,18.0s,MS3.5						
SSE				LR	LR		
	comp=Z,39nm,15.9s,MS3.5						
NJ2	**Nanjing**	**51.49**	**275**	*e*P	**P**	**02 16 07.8**	**-1.7**
MNTX	**Cornudas Mount**	**53.31**	**83**	P	**P**	**02 16 21.8**	**-1.3**
	comp=Z,0.6nm,0.8s,mb3.6						
WMOK	**Wichita Mounta**	**55.33**	**76**	*e*P	**P**	**02 16 37.0**	**-0.8**
	comp=Z,0.8nm,0.5s,mb4.0						
LTX	**Lajitas**	**56.01**	**84**	P	**P**	**02 16 44.0**	**+1.2**
TXAR	**Lajitas Array**	**56.01**	**84**	P	**P**	**02 16 42.5**	**-0.2**
	comp=Z,0.8nm,1.0s,mb3.7,baz=344,slow=6.6,SNR=3.1						
TXAR				LR	LR	02 38 10.6	
	comp=Z,29nm,20.6s,MS3.4,baz=45,slow=33						
LZH	**Lanzhou**	**57.95**	**289**	*e*P	**P**	**02 16 56.3**	**-0.2**
LZH				AP	pP	02 17 08.5	+0.3
LZH				XP	sP	02 17 13.8	+0.9
LZH				AMB	AMB		
	comp=Z,23nm,1.3s,mb5.0						
LZH				LR	LR		
	comp=E,193nm,13.2s						
LZH				LR	LR		
	comp=Z,246nm,17.5s,MS4.4						
ARCES	**ARCESS Array B**	**58.57**	**352**	P	**P**	**02 16 58.0**	**-2.3**
	comp=Z,2.4nm,0.7s,mb4.3,baz=39,slow=7.8,SNR=7.6						
ARCES				PcP	PcP	02 17 49.4	-0.7
	comp=Z,6.0nm,0.9s,slow=6.3,SNR=7.2						
MIAR	**Mount Ida**	**58.61**	**73**	*e*P	**P**	**02 17 00.2**	**-0.9**
	comp=Z,3.9nm,0.9s,mb4.4						
KURK	**Kurchatov**	**60.96**	**316**	*e*P	**P**	**02 17 15.0**	**-2.0**
WMQ	**Urumqi**	**61.59**	**305**	*e*P	**P**	**02 17 21.5**	**+0.1**
MKAR	**Makanchi Array**	**62.13**	**311**	P	**P**	**02 17 23.2**	**-1.8**
	comp=Z,1.7nm,0.4s,mb4.5,baz=48,slow=5.9,SNR=38						
MKAR				pP	pP	02 17 36.6	-0.1
	comp=Z,0.8nm,0.4s,baz=59,slow=5.6,SNR=6.4						
MKAR	**Makanchi Array**	**62.13**	**311**	P	**P**	**02 17 23.2**	**-1.8**
MKAR				pP	pP	02 17 36.6	-0.1
BVAR	**Borovoye Array**	**62.62**	**322**	P	**P**	**02 17 26.7**	**-1.4**
	comp=Z,2.4nm,0.4s,mb4.6,baz=53,slow=5.6,SNR=22						
BVAR				pP	pP	02 17 40.5	+0.6
	comp=Z,2.4nm,0.7s,baz=53,slow=7.4,SNR=5.1						
BVAR				PcP	PcP	02 18 06.4	-0.1
	comp=Z,2.6nm,0.6s,baz=63,slow=3.1,SNR=8.3						
BVAR				pPcP		02 18 19.7	
	comp=Z,1.8nm,0.6s,baz=45,slow=4.2,SNR=5.0						
ZRNK	**Zerenda**	**63.21**	**323**	*e*P	**P**	**02 17 30.1**	**-1.9**
ZRNK				*e*	pP	02 17 42.0	-1.9
KAF	**Kangasniemi**	**65.71**	**349**	*e*p	**P**	**02 17 45.3**	**-2.6**
	comp=Z,1.2nm,0.5s,mb4.2						
KMI	**Kunming**	**66.38**	**281**	*e*P	**P**	**02 17 54.5**	**+1.7**
KMI				AMB	AMB		
	comp=Z,10.0nm,0.6s,mb5.0						
FINES	**FINESS Array B**	**66.38**	**349**	P	**P**	**02 17 50.3**	**-1.9**
	comp=Z,0.8nm,1.0s,mb3.7,baz=31,slow=8.1,SNR=5.7						
FINES				PcP	PcP	02 18 20.9	-0.9
	comp=Z,0.5nm,0.5s,slow=3.8,SNR=5.5						
NB2	**NORSAR Subarra**	**67.90**	**357**	P	**P**	**02 18 00.5**	**-1.2**
	comp=Z,0.7nm,0.5s,mb4.0,baz=6.0,slow=6.5						
NOA	**NORSAR Array B**	**67.90**	**357**	P	**P**	**02 17 59.9**	**-1.9**
	comp=Z,0.9nm,0.6s,mb4.0,baz=321,slow=4.4,SNR=4.6						
HFS	**Hagfors**	**68.70**	**356**	P	**P**	**02 18 05.3**	**-1.4**
	comp=Z,2.1nm,0.4s,mb4.4,slow=1.5,SNR=32						
EKA	**Eskdalemuir Ar**	**73.47**	**5**	P	**P**	**02 18 34.7**	**-0.7**
	comp=Z,1.3nm,0.7s,mb4.0,baz=333,slow=3.7,SNR=4.0						
GUN	**Gumba**	**74.33**	**295**	*e*P	**P**	**02 18 41.9**	**+0.9**
	comp=Z,33nm,0.5s						
KKN	**Kakani**	**74.77**	**295**	*e*P	**P**	**02 18 44.2**	**+0.7**
	comp=Z,11nm,0.6s,mb5.0						
PKI	**Pulchoki**	**74.86**	**295**	*e*P	**P**	**02 18 44.5**	**+0.5**
	comp=Z,11nm,0.6s,mb4.9						
GKN	**Gorkha**	**74.97**	**296**	*e*P	**P**	**02 18 44.9**	**+0.3**
	comp=Z,18nm,0.5s,mb5.2						
DMN	**Daman**	**75.00**	**295**	*e*P	**P**	**02 18 45.0**	**+0.2**
DANN	**Dangsing**	**75.19**	**297**	*e*P	**P**	**02 18 46.9**	**+1.0**
KOLN	**Koldanda**	**75.73**	**297**	*e*P	**P**	**02 18 49.3**	**+0.3**
	comp=Z,14nm,0.7s,mb5.0						
BAIF	**Baives**	**78.99**	**1**	*e*P	**P**	**02 19 08.0**	**+1.3**
	comp=Z,2.4nm,0.5s,mb4.1						
GERES	**GERESS Array B**	**79.96**	**354**	P	**P**	**02 19 12.3**	**+0.4**
	comp=Z,1.3nm,1.0s,mb3.8,baz=27,slow=6.0,SNR=7.9						
FLN	**La Foliniere**	**80.17**	**4**	*e*P	**P**	**02 19 13.1**	**+0.1**
	comp=Z,3.3nm,0.5s,mb4.2						
LDF	**La Druitiere**	**80.35**	**4**	*e*P	**P**	**02 19 13.9**	**-0.1**
	comp=Z,9.8nm,0.9s,mb4.5						
ROSF	**Rostrenen**	**80.44**	**6**	*e*P	**P**	**02 19 14.5**	**0.0**
GRR	**Gorron**	**80.52**	**4**	*e*P	**P**	**02 19 15.2**	**+0.3**
	comp=Z,7.0nm,0.7s,mb4.4						
MEZF	**Maizieres J'vi**	**80.56**	**0**	*e*P	**P**	**02 19 15.7**	**+0.6**
SGMF	**Saint Gilles**	**80.57**	**5**	*e*P	**P**	**02 19 15.4**	**+0.2**
CDF	**Champ du Feu**	**80.

	12nm,0.4s,mb5.0								
STKA	**Stephens Creek**	**30.68**	**225**	P		**P**		**02 39 14.2**	**+0.1**
	1.6nm,0.5s,mb4.0,baz=54,slow=11,SNR=5.5								
RPZ	**Rata Peaks**	**32.13**	**174**	P		**P**		**02 39 25.9**	**-0.7**
	15nm,0.5s,mb5.0,baz=327,slow=1.6,SNR=25								
RPZ				LR		LR		02 49 33.4	
	comp=Z,91nm,19.7s,baz=340,slow=30								
WRAB	**Tennant Creek**	**32.19**	**251**	*eP*		**P**		**02 39 25.8**	**-1.5**
	2.9nm,0.5s,mb4.3								
WB2	**Warramunga Arr**	**32.19**	**251**	*eP*		**P**		**02 39 26.1**	**-1.3**
WRA	**Warramunga Arr**	**32.20**	**251**	P		**P**		**02 39 26.2**	**-1.3**
	1.6nm,0.5s,mb4.0,baz=85,slow=9.2,SNR=45								
ASAR	**Alice Springs**	**33.40**	**245**	P		**P**		**02 39 36.2**	**-1.5**
	2.1nm,0.5s,mb4.1,baz=74,slow=9.8,SNR=18								
ASAR				PcP		PcP		02 42 13.6	-1.2
	0.5nm,0.6s,baz=75,slow=2.3,SNR=5.0								
ASAR				ScP				02 45 41.0	
	1.1nm,0.9s,baz=70,slow=4.4,SNR=6.4								
FX1	**Attu Island--F**	**64.54**	**4**	*eP*		**P**		**02 43 33.4**	**-0.3**
VNDA	**Vanda**	**65.88**	**181**	P		**P**		**02 43 41.5**	**-0.5**
	1.1nm,0.7s,mb3.8,baz=346,slow=7.0,SNR=8.8								
VNDA	**Vanda**	**65.88**	**181**	P		**P**		**02 43 41.5**	**-0.5**
SBA	**Scott Base**	**66.16**	**180**	*eP*		**P**		**02 43 44.0**	**+0.3**
	3.6nm,0.8s,mb4.2								
XAN	**Xi'an**	**71.28**	**312**	P		**P**		**02 44 15.5**	**-0.3**
XAN				AMB		AMB			
	comp=Z,9.0nm,0.6s,mb4.7								
CMAR	**Chiang Mai Arr**	**73.28**	**293**	P		**P**		**02 44 28.6**	**+0.7**
	comp=Z,2.6nm,0.6s,mb4.2,baz=106,slow=4.3,SNR=11								
HIA	**Hailar**	**73.42**	**330**	*eP*		**P**		**02 44 27.2**	**-0.9**
LZH	**Lanzhou**	**75.92**	**312**	⇓P		**P**		**02 44 44.0**	**+1.3**
LZH				AMB		AMB			
	comp=Z,27nm,1.3s,mb4.7								
ULN	**Ulaanbaatar**	**79.40**	**324**	*eP*		**P**		**02 45 02.1**	**+0.6**
	comp=Z,4.8nm,0.7s,mb4.2								
SONM	**Songino Array**	**79.77**	**323**	P		**P**		**02 45 04.8**	**+1.4**
	comp=Z,3.8nm,0.8s,mb4.1,baz=135,slow=5.2,SNR=5.3								
COLA	**College**	**83.58**	**18**	P		**P**		**02 45 23.2**	**+0.4**
	comp=Z,7.8nm,1.1s,mb4.3								
ILAR	**Eielson Array**	**83.80**	**18**	P		**P**		**02 45 23.9**	**-0.1**
	comp=Z,6.4nm,0.7s,mb4.5,baz=237,slow=5.1,SNR=62								
NVAR	**Mina Array Bea**	**85.68**	**50**	P		**P**		**02 45 33.5**	**-0.3**
	comp=Z,0.4nm,0.3s,mb3.6,baz=215,slow=6.6,SNR=4.4								
HLID	**Hailey**	**90.01**	**45**	*eP*		**P**		**02 45 55.2**	**+0.9**
	comp=Z,0.9nm,0.7s,mb3.8								
ZAL	**Zalesovo**	**94.66**	**324**	P		**P**		**02 46 15.7**	**+0.3**
	comp=Z,0.9nm,0.3s,mb4.5,baz=30,slow=12,SNR=3.5								
MKAR	**Makanchi Array**	**94.66**	**317**	P		**P**		**02 46 15.8**	**+0.2**
	comp=Z,4.6nm,0.5s,mb4.9,baz=91,slow=6.3,SNR=51								
YKA	**Yellowknife Ar**	**95.08**	**27**	P		**P**		**02 46 16.1**	**-1.0**
	comp=Z,0.7nm,0.4s,mb4.2,baz=258,slow=4.7,SNR=30								
ARCES	**ARCESS Array B**	**117.20**	**346**	PKP		PKPdf		02 51 37.8	+0.7
	comp=Z,1.2nm,0.4s,baz=79,slow=2.2,SNR=42								
JOF	**Joensuu**	**119.89**	**338**	*ep*		PKPdf		02 51 42.7	+0.2
	comp=Z,0.8nm,0.4s								
KAF	**Kangasniemi**	**122.19**	**339**	*ep*		PKPdf		02 51 46.9	0.0
	comp=Z,1.3nm,0.5s								
FINES	**FINESS Array B**	**122.72**	**339**	PKP		PKPdf		02 51 48.7	+0.7
	comp=Z,0.6nm,0.4s,baz=106,slow=2.3,SNR=12								
FINES	**FINESS Array B**	**122.72**	**339**	PKP		PKPdf		02 51 48.7	+0.7
NOA	**NORSAR Array B**	**127.57**	**345**	PKP		PKPdf		02 51 58.5	+1.2
	comp=Z,0.4nm,0.8s,baz=65,slow=2.8,SNR=3.0								
GERES	**GERESS Array B**	**136.71**	**334**	PKP		PKPdf		02 52 18.0	+3.2
	comp=Z,0.5nm,0.6s,SNR=5.0								
SSF	**Saint Saulge**	**142.01**	**341**	*e*PKP1		PKPdf		02 52 22.0	-2.4
	comp=Z,3.6nm,0.7s								
LPL	**La Plagne**	**142.22**	**337**	*e*PKP1		PKPdf		02 52 24.2	-0.6
	comp=Z,3.8nm,0.6s								
LPG	**La Plagne**	**142.23**	**337**	*e*PKP1		PKPdf		02 52 24.3	-0.5
	comp=Z,4.4nm,0.8s								
SGMF	**Saint Gilles**	**142.47**	**348**	*e*PKP1		PKPdf		02 52 22.8	-2.3
MBDF	**Montbardon**	**142.87**	**336**	*e*PKP1		PKPdf		02 52 23.7	-2.2
	comp=Z,3.1nm,0.5s								
ORIF	**Oris-en-Rattie**	**143.05**	**337**	*e*PKP1		PKPbc		02 52 24.6	+0.2
	comp=Z,11nm,0.7s								
TCF	**Toulx Ste Croi**	**143.10**	**342**	*e*PKP1		PKPbc		02 52 26.2	+1.7
SBF	**Sospel**	**143.31**	**335**	*e*PKP1		PKPbc		02 52 25.0	-0.2
	comp=Z,23nm,0.7s								
MFF	**Saint Martin d**	**143.47**	**345**	*e*PKP1		PKPbc		02 52 26.0	+0.4
	comp=Z,7.8nm,0.7s								
VIVF	**Saint-Julien-l**	**143.55**	**338**	*e*PKP1		PKPbc		02 52 26.6	+0.7
	comp=Z,14nm,0.9s								
PGF	**Pioggiola**	**143.67**	**332**	*e*PKP1		PKPbc		02 52 26.4	+0.1
	comp=Z,13nm,0.7s								
FRF	**La Foret Royal**	**143.88**	**335**	*e*PKP1		PKPbc		02 52 27.1	+0.2
	comp=Z,16nm,0.6s								
SMRF	**Simiane la Rot**	**143.96**	**337**	*e*PKP1		PKPbc		02 52 28.0	+0.8
	comp=Z,12nm,0.8s								
LMR	**La Mourre**	**144.12**	**335**	*e*PKP1		PKPbc		02 52 28.1	+0.5
	comp=Z,23nm,0.6s								
RJF	**Les Rejaudoux**	**144.20**	**342**	*e*PKP1		PKPbc		02 52 28.0	+0.2
	comp=Z,3.7nm,0.5s								
CAF	**Calviac**	**144.37**	**341**	*e*PKP1		PKPbc		02 52 29.4	+1.1
	comp=Z,18nm,1.0s								
LASF	**Ste Croix**	**144.52**	**339**	*e*PKP1		PKPbc		02 52 29.9	+1.2
	comp=Z,16nm,0.8s								
LFF	**La Frestale**	**144.76**	**343**	*e*PKP1		PKPbc		02 52 29.7	+0.3
	comp=Z,14nm,0.8s								
MTLF	**Montolieu**	**145.73**	**340**	*e*PKP1		PKPbc		02 52 33.7	+1.8
	comp=Z,16nm,0.6s								
EPF	**Esparros**	**146.62**	**342**	*e*PKP1		PKPbc		02 52 36.3	+2.3
ETSF	**Etsaut**	**147.01**	**343**	*e*PKP1				02 52 38.7	
	comp=Z,7.4nm,0.6s								
ESDC	**Sonseca Array**	**150.94**	**345**	PKPbc		PKPdf		02 52 47.0	+7.7
	comp=Z,1.1nm,0.7s,baz=28,slow=1.4,SNR=5.2								
ESDC				PKPab		PKPab		02 52 55.7	-0.1
	comp=Z,1.2nm,0.5s,baz=11,slow=3.8,SNR=14								

*THE **26** 03:07:57.1,38.93N×19.78E,h10km,ML3.1*
*NEIC **26** 03:07:59.1,39.01N×19.87E,h17km,MD3.2(ATH),After ATH.*
*ATH **26** 03:07:59.1,39.00N×19.86E,h16km±8km,MD3.2/5*
ISC 26 03:07:57.3±1.6,39.01N±0.05×19.6E±0.1,h16km,n12,
σ1§16/17,4C-2D,Greece-Albania border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KEK	**Kerkira**	**0.72**	**111**	⇑*i*PN	**Pn**	**03 08 12.7**	**+0.1**
KEK				*e*SN	**Sn**	**03 08 23.2**	**0.0**
KEK	**Kerkira**	**0.72**	**111**	⇑*e*PN	**Pn**	**03 08 12.7**	**+0.1**
KEK				*e*Sn	**Sn**	**03 08 23.2**	**0.0**
IGT	**Igoumenitsa**	**0.76**	**46**	*e*Pg	**Pb**	**03 08 10.2**	**-1.5**
LKD	**Levkas**	**0.86**	**110**	*e*Pg	**Pb**	**03 08 10.6**	**-2.7**
	comp=Z,10.0nm,0.1s						
VLS	**Valsamata**	**1.12**	**137**	⇓*i*PB	**Pb**	**03 08 17.6**	**-0.3**
VLS				*e*SN	**Sn**	**03 08 33.3**	**-0.2**
VLS	**Valsamata**	**1.12**	**137**	⇓*e*Pb	**Pb**	**03 08 17.6**	**-0.3**
VLS				*e*Sn	**Sn**	**03 08 33.3**	**-0.2**
JAN	**Janina**	**1.15**	**55**	*e*PB	**Pb**	**03 08 17.1**	**-1.3**
MEV	**Metsovon**	**1.47**	**58**	*e*Pb	**Pb**	**03 08 23.3**	**-0.5**
MEV				*e*Sb	**Sb**	**03 08 43.0**	**+1.0**
EVR	**Evrytania**	**1.71**	**92**	*e*PN	**Pn**	**03 08 28.4**	**+1.7**
RLS	**Riolos of Patr**	**1.73**	**123**	⇑*i*PN	**Pn**	**03 08 28.6**	**+1.6**
RLS	**Riolos of Patr**	**1.73**	**123**	⇑*e*Pn	**Pn**	**03 08 28.6**	**+1.6**
FNA	**Florina**	**2.23**	**37**	*e*Pn	**Pn**	**03 08 35.2**	**+1.0**

*INMG **26** 03:32:38.4±1.0,35.28N×3.95W,h1km±17km,ML2.3,Error ellipse: s-maj=13.6km s-min=3.6km az=160.0*
*NEIC **26** 03:32:38.9,35.30N×3.92W,MG3.5(MDD),After MDD.*
*MDD **26** 03:32:39.6±0.9,35.36N×3.89W,mb3.4/10,Error ellipse: s-maj=12.0km s-min=3.6km az=24.0,PRXIMO AftershockPLICA*
ISC 26 03:32:37.4±0.7,35.31N±0.05×3.99W±0.04,h10km,n41,
σ1§16/69,Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
EMEL	**Melilla**	**0.84**	**90**	P	**Pb**	**03 32 53.3**	**-0.3**
	193nm,0.2s,SNR=19						
EMEL				S	**Sb**	**03 33 04.3**	**-0.5**
	565nm,0.2s,SNR=7.9						
MELI	**Melilla**	**0.86**	**91**	P	**Pb**	**03 32 54.6**	**+0.6**
MELI				S	**Sb**	**03 33 04.8**	**-0.6**
EJIF	**Jimena Fronter**	**1.66**	**314**	P	**Pn**	**03 33 09.8**	**+3.1**
	3.4nm,0.2s,SNR=7.9						
EJIF	**Jimena Fronter**	**1.66**	**314**	P	**Pn**	**03 33 08.8**	**+2.0**
ERON	**Agron**	**1.71**	**5**	P	**Pn**	**03 33 08.2**	**+0.7**
	3.3nm,0.2s,SNR=7.9						
ERON				S	**Sn**	**03 33 31.4**	**+1.8**
	18nm,0.4s,SNR=7.9						
ERON	**Agron**	**1.71**	**5**	P	**Pn**	**03 33 06.8**	**-0.7**
ERON				S	**Sn**	**03 33 31.0**	**+1.4**
ELOJ	**Sierra Loja**	**1.84**	**356**	P	**Pn**	**03 33 08.9**	**-0.4**
	0.5nm,0.2s,SNR=5.2						
ELOJ				S	**Sn**	**03 33 33.3**	**+0.4**
	13nm,0.7s,SNR=7.9						
ELOJ	**Sierra Loja**	**1.84**	**356**	P	**Pn**	**03 33 09.8**	**+0.5**
ELOJ				S	**Sn**	**03 33 33.9**	**+1.1**
ELIJ	**Sierra de Lija**	**1.96**	**325**	P	**Pn**	**03 33 13.8**	**+2.7**
	2.3nm,0.2s,SNR=18						
ELIJ				S	**Sn**	**03 33 39.2**	**+3.2**
	9.2nm,0.4s,SNR=4.0						
ELIJ	**Sierra de Lija**	**1.96**	**325**	P	**Pn**	**03 33 13.8**	**+2.7**
ELIJ				S	**Sn**	**03 33 39.1**	**+3.1**
ESPR	**Espera**	**2.17**	**316**	P	**Pn**	**03 33 16.3**	**+2.2**
	0.2nm,0.1s,SNR=6.6						
ESPR				S	**Sn**	**03 33 44.7**	**+3.4**
	20nm,0.5s,SNR=4.0						
ESPR	**Espera**	**2.17**	**316**	P	**Pn**	**03 33 19.0**	**+4.9**
ESPR				S	**Sn**	**03 33 43.9**	**+2.7**
ELUQ	**Luque**	**2.26**	**354**	P	**Pn**	**03 33 18.1**	**+2.8**
	1.6nm,0.4s,SNR=7.9						
ELUQ	**Luque**	**2.26**	**354**	P	**Pn**	**03 33 17.5**	**+2.2**
ELUQ				S	**Sn**	**03 33 43.9**	**+0.5**
EQES	**Quesada**	**2.59**	**16**	P	**Pn**	**03 33 20.1**	**-0.1**
	2.7nm,0.2s,SNR=28						
EQES				S	**Sn**	**03 33 50.6**	**-1.5**
	56nm,0.6s,SNR=7.9						
EQES	**Quesada**	**2.59**	**16**	P	**Pn**	**03 33 20.5**	**+0.3**
EQES				S	**Sn**	**03 33 52.7**	**+0.6**
EADA	**Adamuz**	**2.89**	**351**	P	**Pn**	**03 33 24.3**	**-0.1**
	1.6nm,0.3s,SNR=7.9						
EADA				S	**Sn**	**03 33 59.7**	**+0.1**
	17nm,0.6s,SNR=7.9						
EADA	**Adamuz**	**2.89**	**351**	P	**Pn**	**03 33 25.5**	**+1.1**
EADA				S	**Sn**	**03 33 59.3**	**-0.3**
EMIN	**Mina Concepcio**	**3.27**	**319**	P	**Pn**	**03 33 29.8**	**0.0**
	0.1nm,0.1s,SNR=7.9						
EMIN	**Mina Concepcio**	**3.27**	**319**	P	**Pn**	**03 33 30.0**	**+0.2**
EMIN				S	**Sn**	**03 34 09.1**	**-0.1**
PALC	**Alcoutim**	**3.54**	**308**	*e*Pn	**Pn**	**03 33 34.4**	**+0.8**
PALC				*e*Sn	**Sn**	**03 34 15.2**	**-0.8**
	7.0nm,0.7s						
PALC	**Alcoutim**	**3.54**	**308**	Pn	**Pn**	**03 33 34.4**	**+0.8**
PALC				Sn	**Sn**	**03 34 15.2**	**-0.8**
	3.5nm,0.7s						
EGRO	**El Granado**	**3.59**	**309**	P	**Pn**	**03 33 34.3**	**0.0**
	3.7nm,0.2s,SNR=11						
EGRO	**El Granado**	**3.59**	**309**	P	**Pn**	**03 33 34.4**	**+0.1**
EGRO				S	**Sn**	**03 34 16.9**	**-0.3**
ETOB	**Tobarra**	**3.86**	**30**	P	**Pn**	**03 33 38.2**	**+0.1**
	2.7nm,0.2s,SNR=17						
ETOB	**Tobarra**	**3.86**	**30**	P	**Pn**	**03 33 38.9**	**+0.7**
PBEJ	**Beja**	**4.13**	**312**	*e*Pn	**Pn**	**03 33 42.4**	**+0.4**
PBEJ				*e*Sn	**Sn**	**03 34 29.4**	**-1.6**
	2.9nm,0.3s						
PBEJ	**Beja**	**4.13**	**312**	Pn	**Pn**	**03 33 42.4**	**+0.4**
PBEJ				Sn	**Sn**	**03 34 29.4**	**-1.6**
	1.4nm,0.3s						
EBAD	**Badajoz**	**4.21**	**326**	P	**Pn**	**03 33 43.1**	**+0.1**
	0.8nm,0.1s,SNR=7.9						
EBAD				S	**Sn**	**03 34 30.9**	**-2.0**
	4.3nm,0.2s,SNR=7.9						
EBAD	**Badajoz**	**4.21**	**326**	P	**Pn**	**03 33 43.2**	**+0.1**
EBAD				S	**Sn**	**03 34 31.6**	**-1.3**
ESDC	**Sonseca Array**	**4.36**	**0**	P	**Pn**	**03 33 43.8**	**-1.4**
	1.4nm,0.2s,baz=181,slow=12,SNR=8.4						
PTEO	**Sao Teotonio**	**4.42**	**302**	*e*Sn	**Sn**	**03 34 37.0**	**-1.4**
MOE	**Montemor**	**4.74**	**314**	*e*Sn	**Sn**	**03 34 46.1**	**-0.3**
PCBR	**Castelo Branco**	**5.30**	**330**	*e*Pn	**Pn**	**03 33 57.8**	**-0.8**
PCBR				*e*Sn	**Sn**	**03 34 55.8**	**-4.7**
	2.7nm,0.3s						
PCBR	**Castelo Branco**	**5.30**	**330**	Pn	**Pn**	**03 33 57.8**	**-0.8**
PCBR				Sn	**Sn**	**03 34 55.8**	**-4.7**
	1.4nm,0.3s						
PTOM	**Tomar**	**5.55**	**322**	*e*Pn	**Pn**	**03 34 02.1**	**-0.1**
EIBI	**Ibiza**	**5.65**	**47**	P	**Pn**	**03 34 00.8**	**-2.6**
	0.7nm,0.2s,SNR=7.9						
MTE	**Manteigas**	**5.81**	**332**	*e*Sn	**Sn**	**03 35 09.4**	**-3.8**
PBRG	**Braganca**	**6.83**	**342**	*e*Pn	**Pn**	**03 34 19.8**	**-0.4**
PBRG				*e*Sn	**Sn**	**03 35 37.0**	**-1.8**
ECAL	**Calabor**	**6.96**	**343**	P	**Pn**	**03 34 22.7**	**+0.7**
	1.0nm,0.3s,SNR=7.9						
ECAL				S	**Sn**	**03 35 37.1**	**-4.9**
	1.2nm,0.4s,SNR=7.9						
ECAL	**Calabor**	**6.96**	**343**	P	**Pn**	**03 34 22.2**	**+0.2**
ECAL				S	**Sn**	**03 35 37.5**	**-4.6**

WEL 26 03:42:48.4±0.5,41.77S×178.26E,h33km,ML3.7/10,1C,
Error ellipse: s-maj=4.4km s-min=3.8km az=90.0,Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BFZ	**Birch Farm**	**1.87**	**305**	PN	Pn	03 43 18.0	-0.6
BFZ				SN	Sn	03 43 39.7	-1.5
MTW	**Mount Morrison**	**2.16**	**286**	*e*PN	Pn	03 43 20.4	-2.4
MSWZ	**Moikau Station**	**2.28**	**278**	*e*SN	Sn	03 43 48.6	-3.3
MRZ	**Mangatainoka R**	**2.30**	**298**	PN	Pn	03 43 23.1	-1.7
MRZ				SN	Sn	03 43 50.2	-2.2
TSZ	**Takapari Road**	**2.44**	**314**	PN	Pn	03 43 25.5	-1.3
TSZ				SN	Sn	03 43 51.3	-4.5
CAW	**Cannon Point**	**2.49**	**284**	*e*PN	Pn	03 43 25.9	-1.6
KIW	**Kapiti Island**	**2.68**	**289**	PN	Pn	03 43 28.6	-1.6
SNZO	**South Karori**	**2.71**	**279**	*e*PN	Pn	03 43 28.0	-2.6
SNZO				*e*SN	Sn	03 43 59.0	-3.6
MRW	**Makara Radio**	**2.73**	**280**	*e*PN	Pn	03 43 28.9	-2.1
BKZ	**Black Stump Fm**	**2.93**	**332**	⇑PN	Pn	03 43 32.0	-1.8
BKZ				SN	Sn	03 44 01.9	-6.3
WNVZ	**Wahianoa**	**3.17**	**319**	*e*PN	Pn	03 43 34.7	-2.5
TUVZ	**Tukino**	**3.19**	**321**	PN	Pn	03 43 37.2	-0.3
WAZ	**Wanganui**	**3.20**	**308**	PN	Pn	03 43 37.8	+0.2
FWVZ	**Far West T-bar**	**3.25**	**320**	PN	Pn	03 43 37.8	-0.6
NGZ	**Ngauruhoe**	**3.29**	**321**	*e*PN	Pn	03 43 35.9	-3.0
CNZ	**Chateau**	**3.29**	**320**	PN	Pn	03 43 38.4	-0.6
KAVZ	**Karewarewa**	**3.33**	**322**	*e*PN	Pn	03 43 38.6	-0.9
WTVZ	**West Tongariro**	**3.34**	**322**	*e*PN	Pn	03 43 38.5	-1.2
MGZ	**Maungaku**	**3.46**	**322**	PN	Pn	03 43 40.0	-1.3
MWZ	**Matawai**	**3.48**	**350**	PN	Pn	03 43 38.7	-2.9
URZ	**Urewera**	**3.62**	**346**	PN	Pn	03 43 40.8	-2.7
URZ				*e*SN	Sn	03 44 17.5	-8.1
NNZ	**Nelson**	**3.71**	**277**	PN	Pn	03 43 42.7	-2.1
NNZ				SN	Sn	03 44 23.0	-4.8
VRZ	**Vera Road**	**3.75**	**314**	PN	Pn	03 43 44.7	-0.8
DFE	**Dawson Falls**	**4.00**	**306**	PN	Pn	03 43 48.9	-0.1
THZ	**Tophouse**	**4.00**	**268**	PN	Pn	03 43 45.2	-3.9
NEZ	**North Egmont**	**4.04**	**307**	*e*PN	Pn	03 43 48.1	-1.4
NRZ	**Ngariki Road**	**4.09**	**305**	PN	Pn	03 43 50.4	+0.1
PKE	**Pukeiti**	**4.15**	**307**	*e*PN	Pn	03 43 49.7	-1.4
HIZ	**Hauiti**	**4.17**	**320**	PN	Pn	03 43 49.4	-2.0
NWEZ	**Newall Road**	**4.17**	**305**	PN	Pn	03 43 51.3	-0.1
QRZ	**Quartz Range**	**4.42**	**280**	PN	Pn	03 43 52.3	-2.6
QRZ				SN	Sn	03 44 40.7	-5.2
LTZ	**Lake Taylor**	**4.56**	**255**	PN	Pn	03 43 52.5	-4.4
LTZ				SN	Sn	03 44 42.1	-7.3
MQZ	**McQueen's Vall**	**4.56**	**243**	PN	Pn	03 43 52.1	-4.9
MQZ				SN	Sn	03 44 41.5	-8.0
ODZ	**Otahua Downs**	**6.44**	**237**	PN	Pn	03 44 19.1	-4.3

*CSEM **26** 03:52:44.5,8.40S×74.08W,h33km,mb5.6*
*MOS **26** 03:52:57.3±0.9,8.26S×74.16W,h140km,mb5.2/16,Error ellipse: s-maj=14.3km s-min=10.6km az=79.1*
*NEIC **26** 03:52:59.8±0.1,8.29S×74.17W,mb5.0/137,Error ellipse: s-maj=3.9km s-min=2.5km az=222.0*
NEIC Felt [III] at Pucallpa.
*HRVD **26** 03:52:59.8±0.3,8.37S×74.37W,h164km±1km,MW5.2/63, Centroid moment Tensor Solution. LP body waves: s41,c59;Mantle waves: s63,c106; Half duration: 0 Moment tensor: Scale 10^16^Nm; Mrr 1.78±.20; Mθθ-0.26±.19; Mϕϕ-1.52±.27; Mrθ 0.95±.12; Mrϕ-0.49±.21; Mθϕ-6.82±.17; Best double couple: M0 7.09×10^16^ NP1: ϕs32°,δ8°,λ128°. NP2:ϕs173°,δ84°,λ85°. Principal axes: T 7.29, Plg51°, Azm77°; N -.4, Plg5°, Azm174°; P -6.89, Plg38°, Azm268°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*SYO **26** 03:52:59.8,8.29S×74.17W,h156km,MB5.0*
*BJI **26** 03:53:00.8,8.30S×74.20W,h155km,mB5.0*
*IDC **26** 03:53:00.1±0.3,8.35S×74.18W,h158km±2km,mb4.6/24, mb1 4.8/27,mb1mx4.8/28,MS3.6/3,Ms1 3.6/3, ms1mx3.1/20,Error ellipse: s-maj=13.2km s-min=8.5km az=65.0*

ISC 26 03:52:58.3±1.1,8.28S±0.04×74.26W±0.04,h154km±10km,
h156km±1.0km;pP-P,n509,σ0§71/432,mb5.0/196,100C-4D,
Peru-Brazil border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OTAV	**Otavalo**	**9.43**	**334**	*e*P	**P**	**03 55 13.7**	**+2.1**
	32nm,0.9s						
LPAZ	**La Paz**	**9.96**	**144**	P	**P**	**03 55 18.4**	**-0.3**
	2.4nm,0.3s,baz=325,slow=13,SNR=60						
LPAZ	**La Paz**	**9.96**	**144**	P	**P**	**03 55 18.4**	**-0.3**
LPAZ				pmax	pmax		
	comp=Z,2.0nm,0.3s						
LPAZ	**La Paz**	**9.96**	**144**	*e*P	**P**	**03 55 18.1**	**-0.6**
	comp=Z,0.4nm,1.3s						
ROSC	**El Rosal**	**13.04**	**360**	P	**P**	**03 56 04.9**	**+6.1**
	comp=Z,2.7nm,0.3s,baz=171,slow=13,SNR=6.6						
LVC	**Limon Verde**	**15.15**	**161**	P	**P**	**03 56 26.3**	**+0.7**
	comp=Z,9.8nm,0.3s,baz=348,slow=8.2,SNR=88						
LVC				S	**S**	**03 59 19.0**	**+10**
	comp=Z,0.1nm,0.3s,baz=107,slow=19,SNR=5.0						
LVC	**Limon Verde**	**15.15**	**161**	*e*P	**P**	**03 56 25.4**	**-0.1**
	comp=Z,34nm,0.5s						
SDV	**Santo Domingo**	**17.43**	**12**	P	**P**	**03 56 54.2**	**+0.7**
	comp=Z,13nm,0.3s,baz=198,slow=7.1,SNR=36						
SDV				S	S	04 00 22.5	+22
	comp=Z,0.8nm,0.3s,baz=36,slow=20,SNR=5.5						
PCRV	**Puerto La Cruz**	**20.68**	**28**	P	**P**	**03 57 28.8**	**+1.1**
	comp=Z,32nm,0.6s,baz=195,slow=8.5,SNR=20						
JTS	**JuntasAbangare**	**21.29**	**330**	*e*P	**P**	**03 57 35.0**	**+1.2**
	comp=Z,1.9nm,1.3s						
TRN	**Trinidad (W)**	**22.74**	**34**	*e*P	**P**	**03 57 49.0**	**+0.9**
TPR	**Prospect**	**23.53**	**35**	*e*P	**P**	**03 57 58.6**	**+2.9**
CPUP	**Villa Florida**	**24.11**	**140**	P	**P**	**03 57 59.1**	**-2.0**
	comp=Z,22nm,0.5s,mb4.9,baz=342,slow=10,SNR=85						
CPUP				pP		03 58 30.8	
	comp=Z,17nm,0.6s,baz=345,slow=13,SNR=3.3						
CPUP	**Villa Florida**	**24.11**	**140**	P	**P**	**03 57 59.1**	**-2.0**
CPUP				*PP		03 58 30.8	
CPUP				pmax	pmax		
	comp=Z,22nm,0.5s						
CPUP				pmax	pmax		
	comp=Z,17nm,0.6s						
CPUP	**Villa Florida**	**24.11**	**140**	*e*P	**P**	**03 57 58.6**	**-2.4**
	comp=Z,12nm,0.6s,mb4.6						
MDZ	**Mendoza**	**25.00**	**169**	*e*P	**P**	**03 58 10.3**	**+0.9**
MDZ				*e*		03 58 49.6	
BDFB	**Brasilia**	**26.68**	**108**	P	**P**	**03 58 23.8**	**-1.3**
	comp=Z,23nm,0.6s,mb5.0,baz=279,slow=11,SNR=52						
BDFB				pP	pP	03 58 57.6	+0.7
	comp=Z,69nm,0.6s,baz=279,slow=13,SNR=11						
BDFB	**Brasilia**	**26.68**	**108**	P	**P**	**03 58 23.8**	**-1.2**
BDFB				*PP	pP	03 58 57.6	+0.7
BDFB				pmax	pmax		
	comp=Z,23nm,0.6s						
BDFB				pmax	pmax		
	comp=Z,69nm,0.6s						
SJG	**San Juan**	**27.41**	**17**	P	**P**	**03 58 31.3**	**-0.5**
	comp=Z,34nm,0.3s,mb5.4,baz=189,slow=2.9,SNR=13						
SJG	**San Juan**	**27.41**	**17**	P	**P**	**03 58 31.3**	**-0.4**
SJG				pmax	pmax		
	comp=Z,34nm,0.4s						
SJG	**San Juan**	**27.41**	**17**	*e*P	**P**	**03 58 30.6**	**-1.2**
	comp=Z,76nm,

MPU **Maple Canyon** 59.17 327 *e*P P 04 02 45.0 -0.3
MWC **Mount Wilson** 59.21 318 *e*P P 04 02 46.0 +0.3
DAU **Daniels Canyon** 59.25 328 *e*P P 04 02 46.0 +0.1
NLU **North Lily Min** 59.36 327 *e*P P 04 02 45.3 -1.4
JLU **Jordanelle** 59.49 328 *e*P P 04 02 47.5 0.0
CTU **Camp Tracy** 59.72 328 *e*P P 04 02 48.6 -0.4
TCUT **Toone Canyon** 59.84 328 *e*P P 04 02 50.2 +0.4
PDAR **Pinedale Array** 60.12 331 P P 04 02 51.8 0.0
comp=Z,4.6nm,0.7s,mb4.4,baz=135,slow=8.4,SNR=29
PDAR pP pP 04 03 29.1 +0.9
comp=Z,3.6nm,0.8s,baz=149,slow=8.6,SNR=4.1
PDAR LR LR 04 30 40.7
comp=Z,42nm,18.1s,baz=43,slow=38
BW06 **Boulder Array** 60.12 331 *e*P P 04 02 51.0 -0.7
comp=Z,7.7nm,1.0s,mb4.5
HWUT **Hardware Ranch** 60.28 328 *e*P P 04 02 52.0 -0.8
comp=Z,22nm,0.8s,mb5.0
SPUT **South Promonto** 60.52 328 *e*P P 04 02 54.2 -0.3
SPUT *e*pP pP 04 03 31.1 0.0
HVU **Hansel Valley** 61.03 328 *e*P P 04 02 58.0 0.0
TPH **Tonopah** 61.06 322 *e*P P 04 02 58.0 -0.3
comp=Z,9.5nm,1.3s,mb4.5
REDW **Red Top Meadow** 61.20 330 *e*P P 04 02 59.1 0.0
ULM **Lac du Bonnet** 61.24 344 P P 04 02 58.0 -1.2
comp=Z,23nm,1.1s,mb4.9,baz=154,slow=5.7,SNR=9.8
ULM pP pP 04 03 35.5 -0.4
comp=Z,13nm,0.7s,baz=151,slow=6.5,SNR=5.5
ULM **Lac du Bonnet** 61.24 344 *e*P P 04 02 57.2 -2.0
comp=Z,19nm,1.0s,mb4.9
ULM *e*pP pP 04 03 34.8 -1.1
WUWY **Wally Ulrich** 61.28 330 *e*P P 04 02 59.5 -0.1
KSWY **Kelly School** 61.28 331 *e*P P 04 02 59.8 +0.1
KSWY *e*pP pP 04 03 36.7 +0.5
MTUM **Tungsten Hills** 61.44 321 *e*P P 04 03 00.8 0.0
MTUM *e*pP pP 04 03 36.8 -0.6
NVAR **Mina Array Bea** 61.95 322 P P 04 03 04.6 +0.4
comp=Z,2.6nm,0.8s,mb4.1,baz=118,slow=7.9,SNR=14
NVAR pP pP 04 03 42.7 +1.8
comp=Z,4.4nm,0.8s,baz=128,slow=6.9,SNR=7.0
NVAR LR LR 04 29 22.6
comp=Z,42nm,18.6s,baz=300,slow=35
NVAR **Mina Array Bea** 61.95 322 P P 04 03 04.6 +0.4
NVAR pP pP 04 03 42.7 +1.8
NVAR LR LR 04 29 22.6
YMR **Madison River** 62.22 331 *e*P P 04 03 06.5 +0.6
QLMT **Earthquake Lak** 62.56 331 *e*P P 04 03 08.8 +0.7
QLMT *e*pP pP 04 03 44.3 -0.6
CMB **Columbia Colle** 63.00 320 *e*P P 04 03 10.1 -1.0
comp=Z,7.3nm,1.3s,mb4.3
HLID **Hailey** 63.15 328 *e*P P 04 03 11.8 -0.2
comp=Z,5.8nm,0.8s,mb4.5
SCHQ **Schefferville** 63.18 5 P P 04 03 11.4 -0.6
comp=Z,28nm,0.8s,mb5.2,baz=189,slow=5.4,SNR=42
SCHQ pP pP 04 03 47.3 -1.5
comp=Z,19nm,0.9s,baz=155,slow=4.2,SNR=4.4
SCHQ LR LR 04 28 28.2
comp=Z,46nm,19.4s,baz=23,slow=34
SCHQ **Schefferville** 63.18 5 *e*P P 04 03 11.1 -0.9
comp=Z,57nm,1.0s,mb5.4
MCMT **McKenzie Canyo** 63.25 330 *e*P P 04 03 13.0 +0.3
BOZ **Bozeman (W)** 63.26 332 *e*P P 04 03 12.1 -0.6
comp=Z,14nm,0.9s,mb4.8
WCN **Washoe City** 63.38 322 *e*P P 04 03 13.4 -0.2
comp=Z,24nm,1.6s,mb4.8
HRY **Holter Researc** 64.15 332 *e*P P 04 03 18.8 +0.3
WVOR **Wild Horse Val** 64.58 325 *e*P P 04 03 22.2 +0.1
comp=Z,3.5nm,0.8s,mb4.2
EHRO **Hierro** 65.02 54 P P 04 03 21.8 -2.7
comp=Z,193nm,1.1s,mb5.8
CHIE **El Hierro** 65.13 54 P P 04 03 22.5 -2.6
comp=Z,58nm,1.2s,mb5.3
MSO **Missoula** 65.22 331 *e*P P 04 03 25.8 +0.3
comp=Z,31nm,1.0s,mb5.1
MSO *e*pP pP 04 04 02.4 -0.1
EGOM **La Gomera** 65.91 54 P P 04 03 27.7 -2.5
comp=Z,45nm,0.7s,mb5.4
CCAN **Las Canadas** 66.42 54 P P 04 03 31.8 -1.6
comp=Z,25nm,0.8s,mb5.1
LNOR **Lincton Mounta** 66.74 328 *e*P P 04 03 35.0 -0.1
EBAJ **Bajamar** 66.76 54 P P 04 03 33.1 -2.4
FFC **Flin Flon** 66.93 343 *e*P P 04 03 35.1 -1.1
comp=Z,8.0nm,1.0s,mb4.5
FFC *e*pP pP 04 04 12.7 -0.6
NEW **Newport** 67.76 331 P P 04 03 41.4 0.0
comp=Z,5.8nm,0.8s,mb4.4,baz=135,slow=6.7,SNR=8.2
NEW pP pP 04 04 20.4 +1.7
comp=Z,8.5nm,0.8s,baz=118,slow=7.4,SNR=6.3
NEW **Newport** 67.76 331 P P 04 03 41.4 0.0
NEW *P pP 04 04 20.4 +1.7
NEW pmax pmax
comp=Z,6.0nm,0.8s
NEW pmax pmax
comp=Z,9.0nm,0.8s
NEW **Newport** 67.76 331 *e*P P 04 03 41.0 -0.4
NEW *e*pP pP 04 04 18.5 -0.1
SSOR **Sweet Springs** 68.36 325 *e*P P 04 03 44.4 -0.8
SSOR *e*pP pP 04 04 23.8 +1.3
FCC **Fort Churchill** 68.70 349 *e*P P 04 03 45.9 -1.1
comp=Z,29nm,1.1s,mb4.9
FCC *e*pP pP 04 04 23.5 -0.8
RPW **Rockport** 70.09 329 *e*P P 04 03 55.2 -0.4
RPW *e*pP pP 04 04 33.5 +0.4
LIC **Lamto** 70.52 80⇑ *i*P P 04 03 57.0 -1.8
comp=Z,223nm,1.2s,mb5.8
LIC **Lamto** 70.52 80 *e*P P 04 03 57.1 -1.7
comp=Z,28nm,0.7s,mb5.1
TIC **Toumodi** 70.61 80⇑ *i*P P 04 03 57.8 -1.5
comp=Z,414nm,0.9s,mb6.1
DBIC **Dimbokro** 70.77 80 P P 04 03 58.9 -1.4
comp=Z,60nm,0.5s,mb5.6,baz=239,slow=5.8,SNR=164
DBIC pP pP 04 04 38.4 +0.6
comp=Z,17nm,0.8s,baz=240,slow=19,SNR=3.0
DBIC **Dimbokro** 70.77 80 P P 04 03 58.9 -1.4
DBIC *PP pP 04 04 38.4 +0.6
DBIC pmax pmax
comp=Z,60nm,0.5s
DBIC pmax pmax
comp=Z,17nm,0.8s
DBIC **Dimbokro** 70.77 80 P P 04 03 58.9 -1.4
DBIC pP pP 04 04 38.4 +0.6
KIC **Kosan Boka** 70.83 80⇑ *i*P P 04 03 59.2 -1.4
comp=Z,499nm,0.8s
VNA3 **Neumayer Olymp** 74.18 162⇑ *i* P 04 04 20.7 +1.4
VNA3 **Neumayer Olymp** 74.18 162⇑ *i*P P 04 04 20.7 +1.4
VNA3 *e* 04 04 33.7
VNA1 **Neumayer--Stat** 74.40 162⇑ *i* P 04 04 22.5 +2.0
VNA1 **Neumayer--Stat** 74.40 162⇑ *i*P P 04 04 22.5 +2.0
VNA1 *e* 04 04 35.1
VNA2 **Neumayer--Watz** 74.76 162⇑ *i* P 04 04 23.7 +1.1
VNA2 **Neumayer--Watz** 74.76 162⇑ *i*P P 04 04 23.7 +1.1
VNA2 *e* 04 04 36.7
PTEO **Sao Teotonio** 76.17 48 *e*P P 04 04 32.0 +0.8
comp=Z,126nm,1.7s,mb5.3
PLOU **Loures** 76.37 47 *e*P P 04 04 31.5 -0.8
comp=Z,113nm,0.9s,mb5.5
SNAA **Sanae** 76.39 162 *e*P P 04 04 30.9 -0.8
SNAA *e*pP pP 04 05 09.1 -0.8
MOE **Montemor** 76.81 47 *e*P P 04 04 35.0 +0.2
PBEJ **Beja** 76.98 48 *e*P P 04 04 36.1 +0.4
comp=Z,37nm,1.3s,mb4.9
EVO **Evora** 77.06 47 *e*P P 04 04 35.8 -0.4
comp=Z,105nm,0.9s,mb5.2
EVO *e*R
comp=Z,68nm,22.0s
PALC **Alcoutim** 77.07 49 *i* P P 04 04 36.8 +0.6
comp=Z,69nm,1.1s,mb5.2
YKA **Yellowknife Ar** 77.08 342 P P 04 04 35.4 -0.3
comp=Z,11nm,1.0s,mb4.4,baz=137,slow=6.1,SNR=131
YKA pP pP 04 05 15.2 +1.3
comp=Z,8.7nm,0.6s,baz=138,slow=6.0,SNR=10
YKA **Yellowknife Ar** 77.08 342 P P 04 04 35.4 -0.3
YKA *PP pP 04 05 15.2 +1.2
YKA pmax pmax
comp=Z,11nm,1.0s
YKA pmax pmax
comp=Z,9.0nm,0.6s
YKA **Yellowknife Ar** 77.08 342 P P 04 04 35.4 -0.3
YKA pP pP 04 05 15.2 +1.3
EGRO **El Granado** 77.09 49 P P 04 04 35.9 -0.4
comp=Z,23nm,0.6s,mb5.0
YKW3 **Yellowknife Ar** 77.13 342 *e*P P 04 04 35.5 -0.6
YKW3 *e*pP pP 04 05 14.3 0.0
PTOM **Tomar** 77.18 46 *i* P P 04 04 36.6 -0.2
comp=Z,52nm,0.8s,mb5.2
EMIN **Mina Concepcio** 77.77 49 P P 04 04 39.8 -0.3
comp=Z,11nm,0.7s,mb4.6
EBAD **Badajoz** 77.87 48 P P 04 04 40.2 -0.4
comp=Z,25nm,0.7s,mb5.0
PCBR **Castelo Branco** 77.93 46 *e*P P 04 04 40.6 -0.3
comp=Z,37nm,0.9s,mb5.0
EZAM **Zamans** 77.95 44 P P 04 04 40.7 -0.2
comp=Z,32nm,0.9s,mb5.0
PVIS **Viseu** 77.96 45 *e*P P 04 04 40.7 -0.3
comp=Z,51nm,1.0s,mb5.1
EMAZ **Mazaricos** 78.07 43 P P 04 04 40.7 -0.9
comp=Z,21nm,0.9s,mb4.8
ESPR **Espera** 78.07 50 P P 04 04 41.7 -0.1
comp=Z,32nm,0.7s,mb5.1
MTE **Manteigas** 78.09 46 *i* P P 04 04 41.4 -0.4
comp=Z,52nm,0.8s,mb5.2
MTE **Manteigas** 78.09 46 *e*P P 04 04 40.9 -0.8
EJIF **Jimena Fronter** 78.22 50 P P 04 04 42.7 +0.1
ELOB **Lobios** 78.28 44 P P 04 04 42.2 -0.6
comp=Z,12nm,0.6s,mb4.7
STS **Santiago** 78.33 43 P P 04 04 42.6 -0.4
comp=Z,8.7nm,0.7s,mb4.5
ELIJ **Sierra de Lija** 78.45 50 P P 04 04 44.0 +0.2
comp=Z,16nm,1.0s,mb4.6
PBRG **Braganca** 79.17 45 *e*P P 04 04 47.6 0.0
comp=Z,32nm,0.8s,mb5.0
ECAL **Calabor** 79.22 45 P P 04 04 47.5 -0.3
comp=Z,34nm,1.1s,mb4.9
EPON **Pontenova** 79.45 43 P P 04 04 48.5 -0.5
comp=Z,23nm,0.6s,mb5.0
ELOJ **Sierra Loja** 79.45 50 P P 04 04 50.6 +1.4
EADA **Adamuz** 79.47 49 P P 04 04 49.5 +0.2
comp=Z,37nm,1.0s,mb5.0
ELUQ **Luque** 79.50 49 P P 04 04 49.8 +0.3
comp=Z,25nm,0.7s,mb5.0
ERON **Agron** 79.67 50 P P 04 04 50.2 -0.2
comp=Z,37nm,0.8s,mb5.1
ESDC **Sonseca Array** 80.41 47 P P 04 04 54.7 +0.4
comp=Z,21nm,0.8s,mb4.8,baz=254,slow=6.1,SNR=90
ESDC **Sonseca Array** 80.41 47 P P 04 04 54.5 +0.2
comp=Z,24nm,0.8s,mb4.9
ESLA **Sonseca Array** 80.41 47 *e*P P 04 04 54.3 0.0
comp=Z,12nm,1.0s,mb4.5
EQES **Quesada** 80.47 49 P P 04 04 55.3 +0.6
comp=Z,53nm,1.0s,mb5.1
GUD **Guadarrama** 80.59 46 P P 04 04 55.9 +0.7
comp=Z,9.7nm,0.6s,mb4.6
EARI **Arriondas** 80.76 44 P P 04 04 55.9 -0.2
comp=Z,22nm,0.8s,mb4.8
EHUE **Huescar** 80.84 50 P P 04 04 56.7 +0.1
MAIT **Maitri** 80.92 160⇑ *i*P P 04 04 56.8 +0.4
MAIT *e*PP PP 04 08 16.9 +12
EVIA **Vianos** 81.16 49 P P 04 04 59.3 +1.0
comp=Z,69nm,0.7s,mb5.4
QSPA **South Pole Qui** 81.83 180 *e*P P 04 05 01.7 +0.7
comp=Z,28nm,0.9s,mb4.9
QSPA *e* pP 04 05 42.7 +3.1
EMUR **La Murta** 81.87 50 P P 04 05 01.4 -0.6
comp=Z,20nm,0.9s,mb4.8
ETOB **Tobarra** 81.87 49 P P 04 05 02.9 +0.9
comp=Z,50nm,0.8s,mb5.2
ELAN **Lanestosa** 81.95 44 P P 04 05 02.4 +0.1
comp=Z,27nm,0.8s,mb4.9
ETOR **Torete** 82.16 47 P P 04 05 04.4 +1.0
BORG **Borgarnes** 82.72 20 P P 04 05 07.5 +1.7
comp=Z,58nm,0.9s,mb5.3,baz=199,slow=2.5,SNR=10
BORG pP pP 04 05 45.3 +0.8
comp=Z,13nm,0.8s,baz=148,slow=5.4,SNR=1.7
BORG sP sP 04 06 03.4 +2.1
comp=Z,21nm,0.9s,baz=20,slow=3.0,SNR=2.9
BORG **Borgarnes** 82.72 20 *e*P P 04 05 07.0 +1.2
EBEN **Beniarda** 82.88 49 P P 04 05 07.8 +0.7
comp=Z,98nm,0.9s,mb5.5
CPZ **Penzance** 82.99 37⇑ *e*P P 04 05 07.4 0.0
CPZ AMB AMB 04 05 10.4
comp=Z,72nm,1.8s,mb5.1
EMOS **Mosqueruela** 83.17 48 P P 04 05 09.8 +1.3
comp=Z,92nm,0.7s,mb5.6
CGW **Gweek** 83.19 37⇑ *e*P P 04 05 08.6 +0.2
CGH1 **Goonhilly** 83.20 37⇑ *i*P P 04 05 08.7 +0.2
CCA1 **Carnmenellis** 83.22 37⇑ *i*P P 04 05 08.7 +0.1
CMA1 **Manaccan** 83.24 37⇑ *i*P P 04 05 08.8 +0.1
CRQ2 **Rosemanowes 2** 83.25 37⇑ *i*P P 04 05 08.8 +0.1
CRQ2 AMB AMB 04 05 10.8
comp=Z,139nm,1.1s,mb5.6
EALK **Alkurruntz** 83.29 45 P P 04 05 08.7 -0.3
comp=Z,25nm,0.7s,mb5.0
OSSF **Osses** 83.47 45⇑ *e*P P 04 05 10.1 +0.1
CSA1 **St Austell** 83.48 37⇑ *e*P P 04 05 09.8 0.0
ESAC **San Caprasio** 83.57 46 P P 04 05 11.4 +0.9
comp=Z,77nm,0.9s,mb5.4
LARF **Larrau** 83.59 45⇑ *e*P P 04 05 11.6 +0.9
ORDF **Ordiarp** 83.68 45⇑ *e*P P 04 05 11.2 +0.1
QUIF **Quistinic** 83.69 40 *e*P P 04 05 10.8 -0.2
comp=Z,53nm,1.1s,mb4.9
ROSF **Rostrenen** 83.76 39 *e*P P 04 05 11.3 -0.1
comp=Z,82nm,0.9s,mb5.1
ETSF **Etsaut** 83.85 45 *e*P P 04 05 12.7 +0.8
comp=Z,74nm,1.0s,mb5.1
SUMG **Summit** 83.95 10 *e*P P 04 05 12.5 +0.8
SUMG *e*pP pP 04 05 50.1 -0.4
EBR **Ebro Roquetas** 84.01 47 *i* P P 04 05 14.1 +1.3
REYF **Montagne du Re** 84.02 45⇑ *e*P P 04 05 13.7 +0.9
EIBI **Ibiza** 84.15 49 P P 04 05 14.2 +0.7
comp=Z,18nm,0.7s,mb4.9
SGMF **Saint Gilles** 84.19 40 *e*P P 04 05 13.2 -0.3
comp=Z,146nm,1.3s,mb5.3
OLEF **Ile d'Oleron** 84.23 42 *e*P P 04 05 14.0 +0.2
VIEF **Viey** 84.26 45 *e*P P 04 05 15.1 +1.1
LRYF **La Roche-sur-Y** 84.30 41⇑ *e*P P 04 05 14.2 +0.1
LABF **Labassere** 84.34 45⇑ *e*P P 04 05 15.0 +0.6
RESF **Ens** 84.46 45 *e*P P 04 05 15.9 +0.9
EPF **Esparros** 84.52 45 *e*P P 04 05 15.8 +0.5
comp=Z,162nm,1.2s,mb5.3
EPOB **Poblet** 84.58 47 P P 04 05 16.2 +0.6
comp=Z,8.9nm,0.6s,mb4.7
MELF **Melles** 84.77 45 *e*P P 04 05 17.4 +0.9
LCHF **La Chataignera** 84.86 42⇑ *e*P P 04 05 15.4 -1.5
MATF **Mathat** 84.91 42 *e*P P 04 05 18.0 +0.9
MLS **Moulis** 85.03 45 *e*P P 04 05 18.0 +0.2
SALF **Salau** 85.05 46 *e*P P 04 05 18.9 +1.0
EMIR **Miracle** 85.06 47 P P 04 05 18.9 +0.9
comp=Z,20nm,1.0s,mb4.8
MFF **Saint Martin d** 85.23 42 *e*P P 04 05 18.8 +0.1
GRR **Gorron** 85.31 40 *e*P P 04 05 18.8 -0.2
comp=Z,75nm,0.9s,mb5.1
GRR *e*pP pP 04 06 04.5 +6.5
LFF **La Frestale** 85.34 43 *e*P P 04 05 19.3 0.0
comp=Z,190nm,0.9s,mb5.5
FLN **La Foliniere** 85.66 40 *e*P P 04 05 20.9 +0.1
comp=Z,179nm,1.2s,mb5.4
FLN *e*pP pP 04 06 06.4 +6.7
FLN *e*R
comp=Z,39nm,21.2s
LDF **La Druitiere** 85.83 40 *e*P P 04 05 21.4 -0.2
comp=Z,145nm,1.2s,mb6.3
MTLF **Montolieu** 85.93 45 *e*P P 04 05 21.8 -0.4
comp=Z,33nm,0.9s,mb4.8
FILF **Fillols** 85.97 46⇑ *e*P P 04 05 22.3 -0.1
RJF **Les Rejaudoux** 85.97 43 *e*P P 04 05 22.2 -0.2
comp=Z,98nm,1.1s,mb5.2
RJF *e*R
comp=Z,49nm,19.8s
EJON **La Jonquera** 86.17 46 P P 04 05 23.7 +0.3
comp=Z,8.1nm,0.9s,mb4.5
EKA **Eskdalemuir Ar** 86.23 33 P P 04 05 23.1 -0.3
comp=Z,5.9nm,0.8s,mb4.4,baz=242,slow=5.5,SNR=15
EKA **Eskdalemuir Ar** 86.23 33 P P 04 05 23.1 -0.3
EKA pmax pmax
comp=Z,6.0nm,0.8s
CAF **Calviac** 86.24 44 *e*P P 04 05 23.6 -0.1
comp=Z,13nm,0.4s,mb4.7
MDO **Dochfour** 86.35 31⇑ *e*P P 04 05 23.9 0.0
MDO AMB AMB 04 05 25.6
comp=Z,41nm,0.9s,mb5.2
MVH1 **Achvaich** 86.62 30⇑ *e*P P 04 05 25.2 +0.1
TCF **Toulx Ste Croi** 86.70 42 *e*P P 04 05 25.5 -0.4
comp=Z,22nm,0.7s,mb4.8
INK **Inuvik** 86.83 341 *e*P P 04 05 25.8 -0.2
comp=Z,22nm,1.0s,mb4.9
INK *e*pP pP 04 06 05.4 +0.4
DAWY **Dawson** 86.87 336 *e*P P 04 05 26.6 +0.3
MCD **Coleburn Disti** 86.96 31⇑ *e*P P 04 05 26.7 -0.1
MCD AMB AMB 04 05 28.3
comp=Z,58nm,1.1s,mb5.3
PYM **Petit Puy Mans** 87.10 43⇑ *e*P P 04 05 28.0 +0.2
LBL **Lubilhac** 87.13 44⇑ *e*P P 04 05 28.2 +0.3
MLA1 **Latheron** 87.16 30⇑ *e*P P 04 05 28.1 +0.3
BGF **Bois d'Agland** 87.20 42 *e*P P 04 05 28.1 -0.1
comp=Z,65nm,0.7s,mb5.3
HYF **Humbligny** 87.25 42 *e*P P 04 05 28.5 0.0
AGO **Saint Agoulin** 87.26 43⇑ *e*P P 04 05 28.3 -0.2
LASF **Ste Croix** 87.26 45 *e*P P 04 05 28.7 +0.1
comp=Z,34nm,0.9s,mb4.8
PLDF **La Plantade** 87.57 43⇑ *e*P P 04 05 30.1 +0.1
AVF **Avril sur Loir** 87.59 42 *e*P P 04 05 29.5 -0.6
comp=Z,35nm,0.8s,mb5.0
AVF *e*pP pP 04 06 15.2 +5.9
SSF **Saint Saulge** 87.77 42 *e*P P 04 05 30.3 -0.7
comp=Z,29nm,0.9s,mb4.8
SMF **Signal de Mont** 87.88 42 *e*P P 04 05 31.2 -0.3
comp=Z,95nm,0.9s,mb5.3
SMF *e*pP pP 04 06 16.9 +6.2
VIVF **Saint-Julien-l** 88.02 44 *e*P P 04 05 32.3 +0.1
comp=Z,65nm,1.0s,mb5.1
LOR **Lormes** 88.05 42 *e*P P 04 05 31.7 -0.6
comp=Z,39nm,0.8s,mb5.0
LOR *e*R
comp=Z,43nm,22.8s
PRAF **Pradon** 88.12 45⇑ *e*P P 04 05 33.2 +0.5
GELF **Grande-Etoile** 88.21 46⇑ *e*P P 04 05 33.0 -0.2
BERF **Bertagne** 88.38 46⇑ *e*P P 04 05 34.0 0.0
PUYF **Puyloubier** 88.44 46 *e*P P 04 05 34.0 -0.2
SMRF **Simiane la Rot** 88.44 45 *e*P P 04 05 34.6 +0.3
comp=Z,51nm,1.1s,mb5.0
VILF **Villemus** 88.52 45⇑ *e*P P 04 05 34.9 +0.3
TAVF **Tavernes** 88.71 46⇑ *e*P P 04 05 35.6 +0.1
ORIF **Oris-en-Rattie** 88.87 44 *e*P P 04 05 36.8 +0.6
comp=Z,66nm,0.6s,mb5.4
ORIF *e*R
comp=Z,41nm,19.6s
VNDA **Vanda** 88.88 190 P P 04 05 36.9 +1.3
comp=Z,3.1nm,0.8s,mb4.3,baz=132,slow=3.5,SNR=19
VNDA pP pP 04 06 15.5 +0.7
comp=Z,7.7nm,0.8s,baz=121,slow=5.0,SNR=14
VNDA **Vanda** 88.88 190 P P 04 05 36.9 +1.3
VNDA *PP pP 04 06 15.5 +0.7
VNDA pmax pmax
comp=Z,3.0nm,0.8s
VNDA pmax pmax
comp=Z,8.0nm,0.8s
VNDA **Vanda** 88.88 190 *e*P P 04 05 35.9 +0.3
comp=Z,0.7nm,0.8s
VNDA *e*pP pP 04 06 14.8 0.0
BAIF **Baives** 88.96 39 *e*P P 04 05 36.2 -0.3
LMR **La Mourre** 88.97 46 *e*P P 04 05 36.6 -0.1
comp=Z,50nm,0.9s,mb5.2
FRF **La Foret Royal** 89.11 46 *e*P P 04 05 37.2 -0.2
comp=Z,78nm,1.0s,mb5.3
MEZF **Maizieres J'vi** 89.12 41 *e*P P 04 05 37.1 -0.2
CALN **Calern** 89.33 46⇑ *e*P P 04 05 38.6 +0.2
GIVF **Givet** 89.35 39 *e*P P 04 05 38.4 0.0
comp=Z,124nm,0.8s,mb5.6
CABF **La Chapelle** 89.38 43 *e*P P 04 05 38.3 -0.3
comp=Z,69nm,1.1s,mb5.2
CABF *e*pP pP 04 06 24.3 +6.5
MBDF **Montbardon** 89.45 45 *e*P P 04 05 39.3 +0.4
comp=Z,30nm,1.0s,mb4.9
GIMEL **Gimel** 89.48 43⇑ *i*P P 04 05 39.0 -0.1
comp=Z,24nm,1.1s,mb5.0
RRL **Cesana Torines** 89.50 45 P P 04 05 40.0 +0.8
MVIF **Mont Vial** 89.54 46⇑ *e*P P 04 05 39.4 0.0
LPL **La Plagne** 89.58 44 *e*P P 04 05 40.4 +0.8
comp=Z,94nm,0.8s,mb5.5
LPG **La Plagne** 89.59 44 *e*P P 04 05 40.5 +0.9
comp=Z,120nm,1.0s,mb5.5
LPG *e*pP pP 04 06 26.3 +7.4
PZZ **Prazzo** 89.63 45 P P 04 05 40.6 +0.8
REVF **Revere** 89.66 46⇑ *e*P P 04 05 40.0 0.0
AURF **Auriere** 89.66 46⇑ *e*P P 04 05 40.0 0.0
THEF **They Montfort** 89.67 41⇑ *e*P P 04 05 39.6 -0.3
BRANT **Les Verrieres** 89.71 43⇑ *i*P P 04 05 40.4 +0.3
comp=Z,66nm,1.1s,mb5.5
FENE **Fenestrelle** 89.71 45 P P 04 05 40.6 +0.5
STV **Sta Anna Valdi** 89.73 45 P P 04 05 40.8 +0.5
SBF **Sospel** 89.73 46 *e*P P 04 05 40.1 -0.2
comp=Z,40nm,0.8s,mb5.1
STV2 **Anna di Valdie** 89.73 45 P P 04 05 39.8 -0.5
ENR **Entracque** 89.80 45 P P 04 05 40.1 -0.5
BHB **Bricherasio** 89.81 45 P P 04 05 40.5 -0.2
EMV **Vieux Emosson** 89.81 43⇑ *i*P P 04 05 40.9 +0.3
comp=Z,28nm,1.1s,mb5.1
SAOF **Saorge** 89.84 46⇑ *e*P P 04 05 40.7 -0.1
HAU **Haudompre** 89.86 41 *e*P P 04 05 40.2 -0.6
comp=Z,17nm,0.7s,mb4.8
HAU *e*R
comp=Z,44nm,18.8s
LSD **Ceresole Reale** 89.86 44 P P 04 05 41.9 +1.0
RSP **Reno Superiore** 89.87 44 P P 04 05 41.5 +0.5
SALAN **Lac Salanfe** 89.88 43⇑ *i*P P 04 05 41.1 +0.2
comp=Z,38nm,1.3s,mb5.2
AIGLE **Aigle** 89.91 43⇑ *i*P P 04 05 41.0 -0.1
comp=Z,43nm,1.2s,mb5.2
NEGI **Negi** 89.92 46 P P 04 05 40.6 -0.6
GRYON **Gryon** 90.00 43⇑ *i*P P 04 05 41.6 +0.1
comp=Z,30nm,0.9s,mb5.2
TORNY **Torny** 90.00 43⇑ *i*P P 04 05 41.8 +0.3
comp=Z,95nm,1.0s,mb5.7
MONE **Monesi** 90.00 46 P P 04 05 41.2 -0.3
LOMF **Lomont** 90.03 42⇑ *e*P P 04 05 41.6 0.0
IMI **Imperia** 90.07 46 P P 04 05 41.0 -0.9
WLF **Walferdange** 90.09 40 *e*P P 04 05 41.5 -0.4
comp=Z,56nm,1.0s,mb5.5
ROB **Roburent** 90.13 45 P P 04 05 41.6 -0.6
ILAR **Eielson Array** 90.14 336 P P 04 05 41.9 +0.1
comp=Z,5.5nm,1.0s,mb4.5,baz=134,slow=3.3,SNR=38
ILAR pP pP 04 06 23.2 +2.2
comp=Z,6.9nm,0.9s,baz=132,slow=3.3,SNR=12
ILAR PKKP PKKP 04 23 09.6 +24
comp=Z,0.4nm,0.6s,baz=299,slow=3.0,SNR=4.3
SENIN **Lac Senin** 90.15 43⇑ *i*P P 04 05 42.5 +0.3
comp=Z,20nm,1.1s,mb4.9
HINF **Hinteralfeld** 90.15 42 *e*P P 04 05 41.6 -0.6
comp=Z,24nm,0.9s,mb4.8
HGN **Heimansgroeve** 90.19 39⇑ *e*P P 04 05 42.1 -0.2
comp=Z,29nm,1.0s,mb5.1
RORO 90.23 46 P P 04 05 41.6 -1.1
BOURR **Bourrignon** 90.31 42⇑ *i*P P 04 05 42.8 -0.1
comp=Z,46nm,1.1s,mb5.3
MOF **Molkenrain** 90.34 42⇑ *e*P P 04 05 42.5 -0.6
FIN **Finale Ligure** 90.35 45 P P 04 05 42.1 -1.1
LKBD **Leukerbad** 90.38 43⇑ *i*P P 04 05 43.5 +0.2
comp=Z,25nm,1.1s,mb5.1
ECH **Echery** 90.43 41⇑ *e*P P 04 05 43.1 -0.4
BBS **Basel-Blauen** 90.51 42 *e*P P 04 05 43.5 -0.4
BBS **Basel-Blauen** 90.51 42⇑ *e*P P 04 05 43.5 -0.4
MCGN **Macugnaga** 90.54 44 *e*P P 04 05 44.7 +0.7
MMK **Mattmark** 90.54 44⇑ *i*P P 04 05 44.8 +0.8
comp=Z,38nm,1.0s,mb5.4
CDF **Champ du Feu** 90.55 41 *e*P P 04 05 43.7 -0.3
comp=Z,45nm,0.8s,mb5.2
CDF *e*pP pP 04 06 29.4 +6.0
COLA **College** 90.57 336 *de*P P 04 05 44.6 +0.9
DAG **Danmarks Havn** 90.60 11⇓ *i*P P 04 05 44.1 +0.4
comp=Z,12nm,0.7s,mb5.0
DAG *i* pP 04 06 24.8 +1.8
DAG **Danmarks Havn** 90.60 11⇓ *i*P P 04 05 44.1 +0.4
DAG *i* pP 04 06 24.8 +1.8
DAG pmax pmax
comp=Z,12nm,0.7s,mb5.0
WLS **Welschbruch** 90.60 41⇑ *e*P P 04 05 44.0 -0.3
PGF **Pioggiola** 90.60 47 *e*P P 04 05 44.1 -0.3
comp=Z,16nm,0.9s,mb4.7
BALST **Balsthal** 90.61 42⇑ *i*P P 04 05 44.3 0.0
comp=Z,58nm,1.1s,mb5.5
SYO **Syowa Base** 90.62 161 ⇑P P 04 05 42.2 -1.7
SYO **Syowa Base** 90.62 161 ⇑PcP PcP 04 05 44.1 -0.9
SYO **Syowa Base** 90.62 161⇑ *e*P P 04 05 42.2 -1.7
SYO *e*PcP PcP 04 05 44.1 -0.9
PCP **Pian Castagno** 90.65 45 P P 04 05 43.8 -0.8
RUP **Ruppelstein** 90.68 40 *e*P P 04 05 44.7 +0.1
RUP **Ruppelstein** 90.68 40⇑ *e*P P 04 05 44.6 0.0
LIBD **Limburg** 90.71 42 *e*P P 04 05 44.7 -0.1
HASLI **Hasliberg** 90.80 43⇑ *i*P P 04 05 45.6 +0.3
comp=Z,49nm,1.2s,mb5.4
KIZ **Kirchzarten** 90.88 42 *e*P P 04 05 45.1 -0.5
FELD **Feldberg** 90.92 42⇑ *e*P P 04 05 45.5 -0.3
SULZ **Sulz-Cheisache** 90.93 42⇑ *i*P P 04 05 45.7 -0.1
comp=Z,61nm,1.1s,mb5.5
WTSB **Winterswijk** 90.98 38⇑ *e*P P 04 05 45.8 -0.1
comp=Z,38nm,1.0s,mb5.4
LANF **Langenberg** 91.01 41⇑ *e*P P 04 05 46.1 -0.1

BNALP	**Bannalp**	**91.01**	**43**	⇑	*i*	P	**P**	**04 05 46.6**	**+0.4**		
	comp=Z,26nm,1.2s,mb5.1										
ABH	**Alteburg**	**91.02**	**40**		*e*	P	**P**	**04 05 46.2**	**0.0**		
WIT	**Witteveen**	**91.08**	**37**		*e*	P	**P**	**04 05 47.5**	**+1.0**		
	comp=Z,212nm,0.8s										
FUSIO	**Fusio**	**91.09**	**43**	⇑	*i*	P	**P**	**04 05 47.1**	**+0.5**		
	comp=Z,47nm,1.2s,mb5.4										
MUO	**Muotathal**	**91.17**	**43**	⇑	*i*	P	**P**	**04 05 47.5**	**+0.5**		
	comp=Z,73nm,1.2s,mb5.6										
ZUR	**Zurich**	**91.21**	**42**	⇑	*i*	P	**P**	**04 05 47.3**	**+0.2**		
	comp=Z,52nm,1.3s,mb5.4										
ZUR	**Zurich**	**91.21**	**42**	⇑	*i*	P	**P**	**04 05 47.4**	**+0.3**		
BFO	**Black Forest**	**91.22**	**41**		*e*	P	**P**	**04 05 46.7**	**-0.5**		
BFO						pmax	pmax				
	comp=Z,15nm,1.5s,mb4.8										
BFO	**Black Forest**	**91.22**	**41**		*e*	P	**P**	**04 05 46.7**	**-0.5**		
	comp=Z,15nm,1.5s,mb4.8										
SLE	**Schleitheim**	**91.22**	**42**	⇑	*i*	P	**P**	**04 05 47.1**	**-0.1**		
	comp=Z,84nm,1.2s,mb5.6										
MUGIO	**Muggio**	**91.25**	**44**	⇑	*i*	P	**P**	**04 05 46.5**	**-0.9**		
	comp=Z,37nm,0.8s,mb5.5										
KTD	**Kalmit**	**91.25**	**40**		*e*	P	**P**	**04 05 46.9**	**-0.4**		
LLS	**Linth-Limmern**	**91.40**	**43**	⇑	*i*	P	**P**	**04 05 48.3**	**+0.3**		
	comp=Z,20nm,0.9s,mb5.1										
WILA	**Wila**	**91.43**	**42**	⇑	*i*	P	**P**	**04 05 48.3**	**+0.1**		
	comp=Z,56nm,1.1s,mb5.5										
SPAK	**Spaichingen**	**91.48**	**42**		*e*	P	**P**	**04 05 48.1**	**-0.3**		
SPAK	**Spaichingen**	**91.48**	**42**	⇓	*e*	P	**P**	**04 05 48.1**	**-0.3**		
LBG	**Lerchenberg**	**91.59**	**41**		*e*	P	**P**	**04 05 48.4**	**-0.5**		
PLONS	**Plons**	**91.69**	**43**	⇑	*i*	P	**P**	**04 05 49.5**	**+0.2**		
	comp=Z,40nm,1.2s,mb5.3										
GUT	**Gutenstein**	**91.69**	**42**		*e*	P	**P**	**04 05 48.9**	**-0.4**		
GRAM		**91.71**	**45**		P	P	**P**	**04 05 48.9**	**-0.7**		
KAMOR	**Kamor**	**91.80**	**43**	⇑	*i*	P	**P**	**04 05 50.3**	**+0.4**		
	comp=Z,56nm,1.3s,mb5.5										
KAMOR	**Kamor**	**91.80**	**43**	⇑	*i*	P	**P**	**04 05 50.2**	**+0.3**		
VALM		**91.81**	**46**		P	P	**P**	**04 05 49.5**	**-0.5**		
SARO	**Sassorosso**	**91.90**	**46**		P	P	**P**	**04 05 49.1**	**-1.3**		
BUCH	**Bad Urach**	**91.92**	**41**		*e*	P	**P**	**04 05 50.3**	**-0.1**		
MAIM		**91.92**	**46**		P	P	**P**	**04 05 48.9**	**-1.6**		
DAVOX	**Davos**	**91.97**	**43**		P	P	**P**	**04 05 51.2**	**+0.5**		
	comp=Z,22nm,0.8s,mb5.3,baz=247,slow=4.6,SNR=28										
DAVOX	**Davos**	**91.97**	**43**	⇑	*i*	P	**P**	**04 05 51.2**	**+0.5**		
	comp=Z,71nm,1.5s,mb5.5										
BERNI	**Berninapass**	**92.01**	**44**	⇑	*i*	P	**P**	**04 05 51.3**	**+0.5**		
	comp=Z,50nm,1.5s,mb5.3										
BDI	**Bagni Di Lucca**	**92.02**	**46**		*e*	P	**P**	**04 05 50.1**	**-0.8**		
GSCL	**Gusciola**	**92.06**	**46**		*e*	P	**P**	**04 05 50.8**	**-0.3**		
DAVA	**Damuels**	**92.06**	**43**	⇑	*i*	P	**P**	**04 05 51.3**	**+0.2**		
	comp=Z,48nm,1.5s,mb5.3										
FUORN	**Ofenpass**	**92.21**	**43**	⇑	*i*	P	**P**	**04 05 52.1**	**+0.4**		
	comp=Z,33nm,1.6s,mb5.1										
SIND	**Sindeldorf**	**92.24**	**41**		*e*	P	**P**	**04 05 51.8**	**0.0**		
BRMO	**Bormio**	**92.26**	**44**		*e*	P	**P**	**04 05 52.1**	**+0.1**		
UBR	**Uberruh**	**92.28**	**42**		*e*	P	**P**	**04 05 52.3**	**+0.2**		
ZCCA	**Zocca**	**92.33**	**46**		*e*	P	**P**	**04 05 52.5**	**+0.1**		
HDH	**Heidenheim**	**92.50**	**41**		*e*	P	**P**	**04 05 52.9**	**-0.1**		
MOTA	**Moosalm**	**92.89**	**43**	⇑	*i*	P	**P**	**04 05 55.0**	**+0.1**		
	comp=Z,42nm,1.6s,mb5.3										
SQTA	**Sankt Quirin**	**92.94**	**43**	⇑	*i*	P	**P**	**04 05 55.5**	**+0.4**		
	comp=Z,46nm,1.5s,mb5.4										
CTI	**Castel Tesino**	**93.06**	**44**		*e*	P	**P**	**04 05 55.7**	**0.0**		
CLZ	**Clausthal**	**93.14**	**38**		*e*	P	**P**	**04 05 56.5**	**+0.6**		
	comp=Z,14nm,1.0s,mb5.0										
WATA	**Walderalm**	**93.21**	**43**	⇑	*i*	P	**P**	**04 05 56.4**	**+0.1**		
	comp=Z,33nm,1.5s,mb5.2										
IMA	**Indian Mountai**	**93.23**	**336**		*e*	P	**P**	**04 05 56.4**	**+0.4**		
WTTA	**Wattenberg**	**93.24**	**43**	⇑	*i*	P	**P**	**04 05 56.8**	**+0.3**		
	comp=Z,86nm,1.6s,mb5.6										
GRA1	**Grafenberg Arr**	**93.33**	**40**		*e*	P	**P**	**04 05 57.6**	**+0.8**		
	comp=Z,18nm,1.2s,mb5.1										
GRF	**Grafenberg Arr**	**93.33**	**40**		*e*	P	**P**	**04 05 57.6**	**+0.8**		
GRF						pmax	pmax				
	comp=Z,18nm,1.2s,mb5.1										
BSEG	**Bad Segeberg**	**93.44**	**36**		*e*	P	**P**	**04 05 57.8**	**+0.6**		
BSEG						pmax	pmax				
	comp=Z,18nm0.9s,mb5.2										
SNTG	**Esanatoglia**	**93.58**	**47**		*e*	P	**P**	**04 05 57.3**	**-0.8**		
MOX	**Moxa**	**93.72**	**40**		*i*	P	**P**	**04 05 58.7**	**+0.1**		
	comp=Z,logA/T=1.2,mb5.1										
MOX						pP	pP	04 06 26.0	-12		
MOX	**Moxa**	**93.72**	**40**		*e*	P	**P**	**04 05 58.7**	**+0.1**		
MOX						pmax	pmax				
	comp=Z,30nm,1.8s,mb5.1										
MOX	**Moxa**	**93.72**	**40**		*e*	P	**P**	**04 05 58.7**	**+0.1**		
	comp=Z,30nm,1.8s,mb5.1										
PTQR	**Pietraquaria**	**93.74**	**48**		*e*	P	**P**	**04 05 59.1**	**+0.2**		
FVI	**Forni Avoltri**	**93.92**	**44**		*e*	P	**P**	**04 05 59.6**	**0.0**		
NKC	**Novy Kostel**	**94.19**	**40**		*e*	P	**P**	**04 06 01.8**	**+1.1**		
PTCC	**Patocco-Chiusa**	**94.29**	**44**		*e*	P	**P**	**04 06 01.3**	**+0.1**		
WET	**Wettzell**	**94.33**	**41**		*e*	P	**P**	**04 06 01.6**	**+0.3**		
WET						pmax	pmax				
	comp=Z,27nm,1.7s,mb5.1										
WET	**Wettzell**	**94.33**	**41**		*e*	P	**P**	**04 06 01.6**	**+0.3**		
	comp=Z,27nm,1.7s,mb5.1										
KBA	**Koelnbreinsper**	**94.37**	**43**	⇑	*i*	P	**P**	**04 06 01.7**	**+0.1**		
	comp=Z,37nm,1.6s,mb5.3										
ROBS	**Robic**	**94.37**	**44**		*e*	P	**P**	**04 06 01.5**	**-0.1**		
VOY	**Vojsko**	**94.61**	**44**		*e*	P	**P**	**04 06 02.7**	**0.0**		
CLL	**Collm**	**94.69**	**39**	⇑		P	**P**	**04 06 03.4**	**+0.5**		
	comp=Z,logA/T=1.0,mb5.0										
CLL	**Collm**	**94.69**	**39**	⇑	*i*	P	**P**	**04 06 03.4**	**+0.5**		
CLL						pmax	pmax				
	comp=Z,9.0nm,0.9s,mb5.0										
CLL	**Collm**	**94.69**	**39**	⇑	*i*	P	**P**	**04 06 03.4**	**+0.5**		
	comp=Z,9.0nm,0.9s,mb5.0										
CLL						*e*pP	pP	04 06 25.0	-17		
JAVS	**Javornik**	**94.71**	**44**		*e*	P	**P**	**04 06 03.4**	**+0.2**		
KHC	**Kasperske Hory**	**94.78**	**41**		*e*	P	**P**	**04 06 04.0**	**+0.6**		
GEC2	**GERESS Array S**	**94.83**	**41**		*e*	P	**P**	**04 06 04.0**	**+0.4**		
GEC2						pmax	pmax				
	comp=Z,16nm,1.5s,mb5.0										
GEC2	**GERESS Array S**	**94.83**	**41**		*e*	P	**P**	**04 06 04.0**	**+0.4**		
	comp=Z,16nm,1.5s,mb5.0										
GERES	**GERESS Array B**	**94.83**	**41**		P	P	**P**	**04 06 03.8**	**+0.1**		
	comp=Z,1.5nm,0.8s,mb4.3,baz=243,slow=3.0,SNR=16										
GERES	**GERESS Array B**	**94.83**	**41**		P	P	**P**	**04 06 03.8**	**+0.2**		
GERES						pmax	pmax				
	comp=Z,2.0nm,0.8s										
CEY	**Cerknica**	**94.95**	**45**		*e*	P	**P**	**04 06 04.3**	**0.0**		
NB2	**NORSAR Subarra**	**94.99**	**29**		P	P	**P**	**04 06 05.1**	**+1.0**		
	comp=Z,18nm,1.1s,mb5.2,baz=261,slow=4.5										
NB2	**NORSAR Subarra**	**94.99**	**29**		P	P	**P**	**04 06 05.1**	**+1.0**		
	baz=261,slow=4.6										
NOA	**NORSAR Array B**	**94.99**	**29**		P	P	**P**	**04 06 05.1**	**+1.1**		
	comp=Z,7.7nm,0.9s,mb4.9,baz=258,slow=4.6,SNR=17										
NOA						pP	pP	04 06 43.9	+0.4		
	comp=Z,0.6nm,0.7s,baz=279,slow=3.5,SNR=1.8										
NOA	**NORSAR Array B**	**94.99**	**29**		P	P	**P**	**04 06 05.1**	**+1.0**		
NOA						*PP	pP	04 06 43.9	+0.4		
NOA						pmax	pmax				
	comp=Z,8.0nm,0.9s										
NOA						pmax	pmax				
	comp=Z,1.0nm,0.7s										
LJU	**Ljubljana**	**95.05**	**44**		*e*	P	**P**	**04 06 04.7**	**0.0**		
MOA	**Molln**	**95.08**	**43**	⇑	*i*	P	**P**	**04 06 04.9**	**+0.1**		
	comp=Z,44nm,1.5s,mb5.5										
OBKA	**Obir**	**95.12**	**44**	⇑	*i*	P	**P**	**04 06 05.3**	**+0.3**		
	comp=Z,13nm,1.1s,mb5.1										
BRG	**Berggiesshubel**	**95.22**	**39**		*i*	P	**P**	**04 06 06.4**	**+1.0**		
BRG						pmax	pmax				
	comp=Z,14nm,1.1s,mb5.1										
BRG	**Berggiesshubel**	**95.22**	**39**		*i*	P	**P**	**04 06 06.4**	**+1.0**		
	comp=Z,14nm,1.1s,mb5.1										
LBTB	**Lobatse**	**95.37**	**116**		*e*	P	**P**	**04 06 05.9**	**-0.8**		
	comp=Z,6.0nm,0.8s,mb4.9										
BOJS	**Bojanci**	**95.50**	**45**		*e*	P	**P**	**04 06 06.3**	**-0.5**		
PRU	**Pruhonice**	**95.50**	**40**		*e*	P	**P**	**04 06 07.3**	**+0.6**		
PERS	**Pernice**	**95.52**	**44**		*e*	P	**P**	**04 06 05.6**	**-1.3**		
PVCC	**Panska Ves**	**95.58**	**40**		*e*	P	**P**	**04 06 07.8**	**+0.8**		
ARSA	**Arzberg**	**95.86**	**43**	⇓	*i*	P	**P**	**04 06 08.4**	**0.0**		
	comp=Z,22nm,1.4s,mb5.3										
HFS	**Hagfors**	**96.09**	**30**		P	P	**P**	**04 06 09.4**	**+0.4**		
	comp=Z,6.7nm,0.8s,mb5.0,baz=243,slow=3.3,SNR=11										
HFS	**Hagfors**	**96.09**	**30**		P	P	**P**	**04 06 09.4**	**+0.3**		
HFS						pmax	pmax				
	comp=Z,7.0nm,0.8s										
UPC	**Upice**	**96.49**	**40**		*e*	P	**P**	**04 06 11.9**	**+0.8**		
DPC	**Dobruska-Polom**	**96.68**	**40**		*e*	P	**P**	**04 06 12.7**	**+0.7**		
VRAC	**Vranov**	**96.77**	**41**		P	P	**P**	**04 06 13.2**	**+0.8**		
	comp=Z,3.9nm,0.3s,mb5.2,baz=278,slow=7.1,SNR=11										
ZST	**Bratislava**	**97.01**	**42**		*e*	P	**P**	**04 06 14.0**	**+0.4**		
MORC	**Moravsky Berou**	**97.42**	**41**		*e*	P	**P**	**04 06 15.6**	**+0.2**		
	comp=Z,23nm,1.5s,mb5.3										
OKC	**Ostrava-Krasne**	**97.81**	**41**		*e*	P	**P**	**04 06 17.9**	**+0.7**		

VYHS	**Vyhne**	**98.18**	**42**		PDIF		**P**	**04 06 19.4**	**+0.5**		
VYHS					*e*			04 06 23.9			
VYHS					*e*			04 06 27.0			
VYHS	**Vyhne**	**98.18**	**42**		*i*	P	**P**	**04 06 19.4**	**+0.5**		
VYHS					*e*			04 06 23.9			
VYHS					*e*			04 06 27.0			
MAW	**Mawson**	**98.39**	**165**		P		**P**	**04 06 19.6**	**+0.3**		
	comp=Z,2.0nm,0.7s,mb4.7,baz=201,slow=6.1,SNR=3.0										
MAW	**Mawson**	**98.39**	**165**		P		**P**	**04 06 19.6**	**+0.2**		
MAW						pmax	pmax				
	comp=Z,2.0nm,0.7s										
OJC	**Ojcow**	**98.89**	**40**		*e*	P	**P**	**04 06 23.2**	**+1.1**		
NIE	**Niedzica**	**99.20**	**41**		*e*	P	**P**	**04 06 26.0**	**+2.5**		
CRVS	**Cervenica-Dubn**	**99.94**	**42**		PDIF		**P**	**04 06 28.4**	**+1.5**		
CRVS	**Cervenica-Dubn**	**99.94**	**42**		*e*	P	**P**	**04 06 28.4**	**+1.5**		
ARCES	**ARCESS Array B**	**101.12**	**21**		P		P	04 06 31.2	-0.5		
	comp=Z,1.7nm,0.7s,baz=259,slow=4.6,SNR=6.7										
ARCES						pP		04 07 11.4			
	comp=Z,1.2nm,0.8s,baz=284,slow=5.0,SNR=1.3										
ARCES						PKKPbc		04 22 41.3			
	comp=Z,0.3nm,0.4s,baz=90,slow=2.7,SNR=8.4										
BRTR	**Keskin Array B**	**109.00**	**51**		PP		PP	04 11 38.5	-5.8		
	comp=Z,0.6nm,0.5s,baz=270,slow=7.4,SNR=3.9										
SOC	**Sochi**	**112.99**	**46**		*e*	P	Pdif	04 07 21.8	-2.7		
SOC					*i*			04 11 16.9			
SOC					*e*			04 12 07.1			
SOC						pmax	pmax				
	comp=Z,30nm,0.9s										
SOC						pmax	pmax				
	comp=N,20nm,0.8s										
SOC						pmax	pmax				
	comp=E,30nm,0.7s										
SOC						MLR	MLR				
	comp=Z,220nm,23.0s										
SOC						MLR	MLR				
	comp=N,200nm,25.0s										
SOC						MLR	MLR				
	comp=E,130nm,21.0s										
ZEI	**Tsey**	**116.15**	**46**		*e*	PKIKP	PKPdf	04 11 22.0	-1.3		
ZEI						pmax	pmax				
	comp=Z,50µm,6.0s										
ARU	**Arti**	**119.52**	**28**		*i*	PKIKP	PKPdf	04 11 27.8	-1.6		
ARU						pmax	pmax				
	comp=Z,3.0nm,0.6s										
THR	**Tehran**	**123.29**	**52**		PKP		PKPdf	04 11 39.0	+1.8		
	comp=Z,3.3nm,0.9s,baz=134,slow=2.6,SNR=7.8										
THR	**Tehran**	**123.29**	**52**		PKIKP		PKPdf	04 11 39.1	+1.8		
THR						pmax	pmax				
	comp=Z,3.0nm,0.9s										
AB31	**Akbulak array**	**124.07**	**35**		PKIKP		PKPdf	04 11 40.2	+1.7		
AB31						pmax	pmax				
	comp=Z,10.0nm,0.8s										
ZRNK	**Zerenda**	**126.43**	**27**		PKIKP		PKPdf	04 11 44.6	+1.7		
ZRNK						pmax	pmax				
	comp=Z,11nm,0.9s										
ZRNK	**Zerenda**	**126.43**	**27**		*e*PKP		PKPdf	04 11 44.2	+1.4		
BVA0	**Borovoye Array**	**126.98**	**26**		*i*	PKIKP	PKPdf	04 11 45.8	+1.9		
BVA0						pmax	pmax				
	comp=Z,1.0nm,0.8s										
BVAR	**Borovoye Array**	**126.98**	**26**		PKP		PKPdf	04 11 46.0	+2.0		
	comp=Z,6.0nm,0.8s,baz=270,slow=1.5,SNR=26										
BVAR						pPKP		04 12 28.3			
	comp=Z,1.8nm,0.8s,baz=288,slow=4.6,SNR=2.8										
STKA	**Stephens Creek**	**127.39**	**219**		*i*	PKP	PKPdf	04 11 46.5	+1.1		
	comp=Z,3.9nm,0.6s										
STKA						*e*pPKP		04 12 25.4			
STKA	**Stephens Creek**	**127.39**	**219**		PKP		PKPdf	04 11 46.8	+1.4		
	comp=Z,5.0nm,0.6s,baz=82,slow=2.1,SNR=11										
STKA						pPKP		04 12 29.9			
	comp=Z,8.4nm,0.9s,baz=21,slow=1.0,SNR=7.1										
VOSK	**Vostochnaya**	**127.45**	**26**		PKIKP		PKPdf	04 11 46.4	+1.5		
VOSK						pmax	pmax				
	comp=Z,6.0nm,0.9s										
NVS	**Novosibirsk**	**130.21**	**17**		*e*PKIKP		PKPdf	04 11 51.5	+1.4		
NVS					*e*			04 14 08.0			
NVS						pmax	pmax				
	comp=Z,9.0nm,1.7s										
NVS						pmax	pmax				
	comp=N,1.0nm,0.4s										
NVS						pmax	pmax				
	comp=E,3.0nm,1.0s										
CTA	**Charters Tower**	**131.18**	**234**		*e*PKP		PKPdf	04 11 54.1	+1.2		
	comp=E,2.2nm,0.8s										
CTA						*e*pPKP		04 12 37.4			
CTA	**Charters Tower**	**131.18**	**234**		PKP		PKPdf	04 11 54.5	+1.6		
	comp=E,2.6nm,0.6s,baz=102,slow=3.3,SNR=5.8										
CTA						pPKP		04 12 34.2			
	comp=E,9.2nm,1.0s,baz=76,slow=4.2,SNR=7.6										
CTA	**Charters Tower**	**131.18**	**234**		PKIKP		PKPdf	04 11 54.5	+1.6		
CTA								04 12 34.3			
CTA						pmax	pmax				
	comp=Z,3.0nm,0.6s										
CTA						pmax	pmax				
	comp=Z,9.0nm,1.0s										
CTAO	**Charters Tower**	**131.18**	**234**		*e*PKP		PKPdf	04 11 53.3	+0.4		
ZAL	**Zalesovo**	**131.44**	**16**		PKP		PKPdf	04 11 53.9	+1.4		
	comp=Z,8.1nm,1.0s,baz=20,slow=11,SNR=46										
ZAL						pPKP		04 12 34.8			
	comp=Z,2.4nm,0.6s,baz=22,slow=11,SNR=2.1										
ZAL	**Zalesovo**	**131.44**	**16**		PKIKP		PKPdf	04 11 53.9	+1.4		
ZAL								04 12 34.8			
ZAL						pmax	pmax				
	comp=Z,8.0nm,1.0s										
ZAL						pmax	pmax				
	comp=Z,2.0nm,0.6s										
KURK	**Kurchatov**	**132.10**	**23**		*i*	PKIKP	PKPdf	04 11 55.5	+1.7		
KURK						pmax	pmax				
	comp=Z,9.0nm,1.0s										
KURK	**Kurchatov**	**132.10**	**23**		*e*PKP		PKPdf	04 11 55.3	+1.5		
JOSM	**Okushiri--Mats**	**135.09**	**324**		*e*PKP		PKPdf	04 12 25.4	+26		
AAK	**Ala-Archa**	**136.13**	**34**		*e*PKP		PKPdf	04 12 03.7	+2.2		
MKAR	**Makanchi Array**	**136.70**	**23**		PKhKP			04 11 55.9			
	comp=Z,1.1nm,1.0s,slow=2.4,SNR=5.9										
MKAR						PKP	PKPdf	04 12 03.8	+1.4		
	comp=Z,8.2nm,0.8s,baz=338,slow=1.7,SNR=40										
MKAR						pPKP		04 12 44.3			
	comp=Z,1.9nm,0.7s,baz=333,slow=3.2,SNR=2.2										
MKAR	**Makanchi Array**	**136.70**	**23**		PKHKP			04 11 55.9			
MKAR								04 12 03.8			
MKAR								04 12 44.3			
MKAR						pmax	pmax				
	comp=Z,1.0nm,1.0s										
MKAR						pmax	pmax				
	comp=Z,8.0nm,0.8s										
MKAR						pmax	pmax				
	comp=Z,2.0nm,0.7s										
MKAR	**Makanchi Array**	**136.70**	**23**		PKP		PKPdf	04 11 55.9	-6.5		
MKAR						PKP	PKPdf	04 12 03.8	+1.4		
MKAR						pPKP		04 12 44.3			
ZAK	**Zakamensk**	**137.98**	**2**		*e*PKIKP		PKPdf	04 12 03.8	-0.9		
AS12	**Alice Springs**	**137.98**	**220**		*e*PKP		PKPdf	04 12 06.2	+0.8		
	comp=Z,3.8nm,0.7s										
ASAR	**Alice Springs**	**137.98**	**220**		PKhKP			04 11 59.2			
	comp=Z,0.6nm,0.4s,baz=132,slow=2.3,SNR=12										
ASAR						PKP	PKPdf	04 12 06.2	+0.8		
	comp=Z,3.7nm,0.6s,baz=127,slow=2.1,SNR=23										
ASAR						pPKP		04 12 46.6			
	comp=Z,3.2nm,0.7s,baz=132,slow=2.0,SNR=6.7										
ASAR						SKPbc		04 15 25.1			
	comp=Z,2.3nm,0.9s,baz=132,slow=3.4,SNR=4.8										
MDJ	**Mudanjiang**	**138.29**	**334**		PKP		PKPdf	04 12 05.0	-0.4		
WB2	**Warramunga Arr**	**140.25**	**225**		*e*PKP		PKPdf	04 12 04.2	-5.4		
WB2					*e*			04 12 10.4			
WB2					*e*pPKP			04 12 47.6			
WB2					*e*			04 12 54.8			
WB2					*e*PKS		PKS	04 16 29.5	+45		
WRAB	**Tennant Creek**	**140.26**	**225**		*e*PKPdf		PKPdf	04 12 10.4	+0.8		
WRA	**Warramunga Arr**	**140.26**	**225**		PKhKP			04 12 02.6			
	comp=Z,0.9nm,0.5s,baz=138,slow=3.0,SNR=34										
WRA						PKP	PKPdf	04 12 10.8	+1.2		
	comp=Z,5.6nm,0.5s,baz=136,slow=1.7,SNR=43										
WRA						pPKP		04 12 54.2			
	comp=Z,7.1nm,0.6s,baz=122,slow=1.9,SNR=8.2										
WRA	**Warramunga Arr**	**140.26**	**225**		PKHKP			04 12 02.6			
WRA								04 12 10.8			
WRA						pmax	pmax				
	comp=Z,1.0nm,0.5s										
WRA						pmax	pmax				
	comp=Z,6.0nm,0.5s										
WRA						pmax	pmax				
	comp=Z,7.0nm,0.6s										
ULN	**Ulaanbaatar**	**140.53**	**359**		*i*	PKIKP	PKPdf	04 12 12.3	+2.9		
ULN						pmax	pmax				
	comp=Z,3.0nm,0.9s										
ULN	**Ulaanbaatar**	**140.53**	**359**		*e*PKP		PKPdf	04 12 03.4	-6.0		

SONM	**Songino Array**	**140.57**	**359**		PKP		PKPdf	04 12 11.9	+2.5		
	comp=Z,2.8nm,0.9s,baz=315,slow=2.0,SNR=3.9										
WMQ	**Urumqi**	**141.25**	**21**		*e*PKP		PKPdf	04 12 10.5	-0.3		
KS15	**Wonju Array Si**	**144.71**	**329**		*e*PKP		PKPdf	04 12 17.3	+0.4		
KKR	**Kurukshetra**	**145.37**	**48**		*e*PKP		PKPdf	04 12 21.2	+2.8		
RTK	**Rohtak**	**145.56**	**49**		*e*PKP		PKPdf	04 12 21.6	+2.9		
KHET	**Khetri**	**145.57**	**51**		*e*PKP		PKPdf	04 12 21.1	+2.4		
KAKA	**Kakadu**	**146.29**	**232**		*e*PKP		PKPdf	04 12 22.5	+2.2		
	comp=Z,17nm,0.9s										
KAKA						*e*pPKP		04 13 02.3			
NDI	**New Delhi**	**146.34**	**49**		*e*PKP		PKPdf	04 12 21.5	+1.5		
AYAN	**Aya Nagar**	**146.38**	**50**		*e*PKP		PKPdf	04 12 22.3	+2.2		
AYAN					*e*			04 12 25.1			
	comp=Z,71nm,0.8s										
ASOR	**Ausora**	**146.72**	**49**		*e*PKP		PKPdf	04 12 24.8	+4.2		
BJI	**Beijing**	**147.02**	**345**		PKP		PKPdf	04 12 23.3	+2.6		
BJI					SKKS			04 22 25.5			
BJI					SS		SS	04 34 39.0	+0.9		
KALG	**Kalgarh**	**147.03**	**47**		*e*PKP		PKPdf	04 12 17.3	-3.8		
BJT	**Baijiatuan**	**147.04**	**345**		*e*PKP		PKPdf	04 12 23.4	+2.6		
HHC	**Hu-ho-hao-te**	**147.15**	**352**		*e*PKP		PKPdf	04 12 25.3	+4.4		
FITZ	**Fitzroy Crossi**	**147.24**	**217**		*e*PKP		PKPdf	04 12 23.4	+1.7		
	comp=Z,20nm,0.7s										
FITZ						*e*pPKP		04 13 04.8			
FITZ	**Fitzroy Crossi**	**147.24**	**217**		PKPbc		PKPdf	04 12 23.4	+1.7		
	comp=Z,29nm,0.8s,baz=188,slow=4.7,SNR=45										
FITZ						pPKPbc		04 13 05.3			
	comp=Z,96nm,0.7s,baz=182,slow=5.1,SNR=23										
POO	**Poona**	**147.41**	**68**		*e*PKP		PKPdf	04 12 26.2	+4.2		
BTO	**Baotou**	**147.58**	**354**		*e*PKP		PKPdf	04 12 22.0	+0.3		
AGRA	**Agra**	**147.64**	**51**		*e*PKP		PKPdf	04 12 25.9	+3.7		
AGRA					*e*			04 12 28.1			
	comp=Z,55nm,0.4s										
KAD	**Karad**	**147.99**	**71**		*e*PKP

FINES	**FINESS Array B**	**38.77**	**328**	P		**P**	**04 17 26.5**	**-0.1**
	1.2nm,0.8s,mb3.8,baz=112,slow=10,SNR=5.2							
ARCES	**ARCESS Array B**	**42.68**	**339**	P		**P**	**04 17 59.0**	**+0.4**
	1.6nm,0.8s,mb3.8,baz=101,slow=9.2,SNR=3.8							
NB2	**NORSAR Subarra**	**45.59**	**324**	P		**P**	**04 18 21.5**	**-0.5**
	0.7nm,0.5s,mb3.6,baz=99,slow=7.9							
NOA	**NORSAR Array B**	**45.59**	**324**	P		**P**	**04 18 21.8**	**-0.2**
	1.0nm,0.6s,mb3.7,baz=97,slow=7.8,SNR=5.4							
WRA	**Warramunga Arr**	**81.42**	**121**	P		**P**	**04 22 18.3**	**-0.1**
	0.4nm,0.6s,mb3.5,baz=321,slow=5.1,SNR=7.2							
YKA	**Yellowknife Ar**	**83.10**	**2**	P		**P**	**04 22 26.8**	**+0.7**
	0.4nm,0.6s,mb3.4,baz=349,slow=5.4,SNR=11							
ASAR	**Alice Springs**	**83.59**	**124**	P		**P**	**04 22 28.9**	**-0.5**
	0.5nm,0.5s,mb3.6,baz=318,slow=4.7,SNR=4.7							

IDC 26 04:26:36.7±10.0, 0.34S×101.04E, h176km±94km, mb3.5/9, mb1 3.6/10, mb1mx3.4/19, Error ellipse: s-maj=84.6km s-min=13.3km az=55.0, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CMAR	**Chiang Mai Arr**	**18.79**	**354**	P		P	04 30 43.5	-1.6
	0.2nm,0.3s,baz=180,slow=10,SNR=3.4							
FITZ	**Fitzroy Crossi**	**29.94**	**127**	P		P	04 32 28.2	-2.5
	2.8nm,1.0s,baz=221,slow=7.8,SNR=2.7							
WRA	**Warramunga Arr**	**37.98**	**123**	P		P	04 33 37.5	-1.8
	0.4nm,0.4s,baz=304,slow=8.8,SNR=12							
ASAR	**Alice Springs**	**39.43**	**128**	P		P	04 33 50.4	-0.9
	0.3nm,0.4s,baz=302,slow=8.3,SNR=4.1							
MKAR	**Makanchi Array**	**49.73**	**343**	P		P	04 35 11.0	-1.9
	1.3nm,0.3s,baz=161,slow=8.8,SNR=29							
ZAL	**Zalesovo**	**55.74**	**348**	P		P	04 35 54.4	-2.8
	1.3nm,0.6s,baz=59,slow=16,SNR=2.8							
BVAR	**Borovoye Array**	**59.00**	**339**	P		P	04 36 17.3	-2.8
	1.0nm,0.3s,baz=139,slow=9.3,SNR=9.0							
BRTR	**Keskin Array B**	**72.98**	**312**	P		P	04 37 47.4	-1.7
	1.3nm,0.6s,baz=128,slow=6.5,SNR=7.8							
FINES	**FINESS Array B**	**83.13**	**332**	P		P	04 38 43.0	-0.9
	0.5nm,0.4s,baz=90,slow=7.6,SNR=8.1							
ARCES	**ARCESS Array B**	**85.28**	**340**	P		P	04 38 53.7	-0.7
	1.0nm,0.6s,baz=108,slow=3.8,SNR=14							

*HEL **26** 04:55:21.5±0.1, 59.71N×24.60E, ML2.3, ML2.7(UPP), ML2.8(NAO), Explosion*
*NAO **26** 04:55:21.1±1.3, 59.74N×24.56E, ML2.8*
*BER **26** 04:55:22.1±4.7, 59.74N×24.63E, ML2.8(NAO)*
*IDC **26** 04:55:24.4±2.4, 59.92N×24.38E, mb1 3.6/3, mb1mx3.2/21, ML3.6/3, Error ellipse: s-maj=27.0km s-min=5.9km az=147.0*
ISC 26 04:55:18.7±0.6, 59.69N±0.03×24.47E±0.07, n19, σ1§28/32, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
MEF	**Metsahovi**	**0.53**	**356**	*e*P		**Pg**	**04 55 30.7**	**+1.4**
MEF				*e*S		**Sg**	**04 55 36.7**	**+0.5**
PVF	**Pernaja**	**1.10**	**39**	*e*P		**Pb**	**04 55 40.2**	**-0.2**
PVF				*e*S		**Sb**	**04 55 53.9**	**-1.2**
VSU	**Vasula**	**1.70**	**136**	*e*P		**Pn**	**04 55 51.2**	**+1.4**
VSU				*e*S		**Sb**	**04 56 12.3**	**-0.2**
VSU	**Vasula**	**1.70**	**136**	Pn		**Pn**	**04 55 51.4**	**+1.6**
VSU				Lg			04 56 12.5	
VJF	**Virojoki**	**1.76**	**60**	*e*P		**Pn**	**04 55 51.4**	**+0.7**
VJF				*e*S		**Sn**	**04 56 12.7**	**-1.5**
FIA0	**FINESS Array S**	**1.93**	**24**	*e*P		**Pn**	**04 55 55.1**	**+2.0**
FIA0				*e*S		**Sn**	**04 56 18.8**	**+0.4**
FIA0	**FINESS Array S**	**1.93**	**24**	Pn		**Pn**	**04 55 55.2**	**+2.1**
	baz=200,slow=16							
FIA0				Lg			04 56 19.2	
	baz=215,slow=28							
FINES	**FINESS Array B**	**1.93**	**24**	Pg		**Pg**	**04 55 55.1**	**-2.0**
	10nm,0.3s,baz=201,slow=16,SNR=314							
FINES				Lg			04 56 19.4	
	15nm,0.3s,baz=198,slow=29,SNR=19							
KEF	**Keuruu**	**2.49**	**4**	*e*PB		**Pb**	**04 56 04.4**	**+0.3**
KEF				*e*SB		**Sb**	**04 56 36.0**	**+0.6**
KEF				MSG			04 56 39.5	
	comp=Z,5.2nm,0.1s							
KAF	**Kangasniemi**	**2.59**	**19**	*e*PB		**Pb**	**04 56 05.2**	**-0.6**
KAF				*e*SB		**Sb**	**04 56 38.8**	**+0.5**
KAF				MSG			04 56 41.5	
	comp=Z,21nm,0.2s							
SUF	**Sumiainen**	**3.14**	**14**	*e*P		**Pn**	**04 56 12.4**	**+2.0**
SUF				*e*SG		**Sg**	**04 56 56.9**	**-6.4**
SUF				MSG			04 57 01.6	
	comp=Z,7.6nm,0.3s							
VAF	**Ylistaro**	**3.47**	**346**	*e*P		**Pn**	**04 56 18.3**	**+3.2**
VAF				*e*SG		**Sg**	**04 57 08.3**	**-5.9**
VAF				MSG			04 57 13.1	
	comp=Z,11nm,0.2s							
HFS	**Hagfors**	**5.44**	**279**	Pn		**Pn**	**04 56 43.4**	**+0.4**
	baz=91,slow=14							
HFS				Sn		**Sn**	**04 57 45.9**	**-1.4**
	baz=71,slow=22							
HFS				Lg			04 58 10.4	
	baz=72,slow=37							
HFS	**Hagfors**	**5.44**	**279**	Pn		**Pn**	**04 56 43.8**	**+0.7**
	comp=Z,0.3nm,0.3s,baz=98,slow=13,SNR=37							
HFS				Sn		**Sn**	**04 57 46.2**	**-1.1**
	comp=Z,0.4nm,0.3s,baz=83,slow=25,SNR=9.5							
HFS				Lg			04 58 10.0	
	comp=Z,0.6nm,0.3s,baz=104,slow=31,SNR=7.8							
NOA	**NORSAR Array B**	**6.71**	**287**	Pn		**Pn**	**04 57 00.5**	**-0.5**
	comp=Z,0.9nm,0.3s,baz=91,slow=14,SNR=5.7							
NOA				Sn		**Sn**	**04 58 14.6**	**-4.6**
	comp=Z,1.0nm,0.3s,baz=49,slow=23,SNR=4.6							
NOA				Lg			04 58 49.2	
	comp=Z,1.6nm,0.3s,baz=96,slow=16,SNR=4.8							
ARA0	**ARCESS Array S**	**9.89**	**2**	Pn		**P**	**04 57 42.0**	**-3.1**
	baz=176,slow=16							
ARA0				Sn		**Sn**	**04 59 29.9**	**-8.1**
	baz=184,slow=28							
ARA0				Lg			05 00 23.7	
	baz=172,slow=37							
ARCES	**ARCESS Array B**	**9.89**	**2**	Pn		**P**	**04 57 42.4**	**-2.7**
	comp=Z,1.0nm,0.3s,baz=176,slow=12,SNR=65							
SPA0	**Spitsbergen Ar**	**18.76**	**355**	P		**P**	**04 59 40.6**	**-0.3**
	baz=167,slow=18							
SPA0	**Spitsbergen Ar**	**18.76**	**355**	*e*P		**P**	**04 59 40.6**	**-0.3**

*NEIC **26** 05:07:22.9±2.5, 5.74S×147.38E, h91km±23km, mb4.5/3, Error ellipse: s-maj=31.2km s-min=16.8km az=144.0*
*IDC **26** 05:07:22.6±2.9, 5.86S×147.59E, h88km±28km, mb4.0/3, mb1 4.2/5, mb1mx3.7/16, Error ellipse: s-maj=49.4km s-min=17.2km az=116.0*
ISC 26 05:07:23.4±3.5, 5.9S±0.2×147.4E±0.2, h107km±33km, n11, σ0§82/14, mb4.1/3, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
PMG	**Port Moresby**	**3.46**	**184**	P		**P**	**05 08 17.6**	**+1.0**
	9.6nm,0.3s,baz=46,slow=6.0,SNR=28							
PMG				S		**S**	**05 08 56.5**	**-0.4**
	26nm,0.3s,baz=52,slow=23,SNR=14							
PMG	**Port Moresby**	**3.46**	**184**	*e*P		**P**	**05 08 17.3**	**+0.7**
PMG				*e*S		**S**	**05 08 56.3**	**-0.7**
KAKA	**Kakadu**	**16.27**	**245**	*e*P		**P**	**05 11 06.7**	**-0.3**
	5.6nm,0.5s							
WRAB	**Tennant Creek**	**18.85**	**221**	*e*P		**P**	**05 11 37.1**	**-0.5**
	26nm,0.8s							
WB2	**Warramunga Arr**	**18.86**	**221**	*e*P		**P**	**05 11 36.6**	**-1.1**
WRA	**Warramunga Arr**	**18.86**	**221**	P		**P**	**05 11 37.5**	**-0.3**
	0.6nm,0.3s,baz=44,slow=11,SNR=44							
AS12	**Alice Springs**	**21.92**	**215**	*e*P		**P**	**05 12 10.3**	**+1.3**
	5.5nm,0.6s,mb4.1							
ASAR	**Alice Springs**	**21.92**	**215**	P		**P**	**05 12 10.7**	**+1.6**
	4.5nm,0.5s,mb4.1,baz=56,slow=9.0,SNR=68							
ASAR				S		**S**	**05 16 09.9**	**+11**
	0.6nm,0.5s,baz=28,slow=21,SNR=4.7							
FITZ	**Fitzroy Crossi**	**24.46**	**238**	*e*P		**P**	**05 12 34.6**	**+0.8**
	12nm,0.5s,mb4.5							
FITZ	**Fitzroy Crossi**	**24.46**	**238**	P		**P**	**05 12 35.0**	**+1.2**
	20nm,0.8s,mb4.5,baz=92,slow=4.0,SNR=81							
ILAR	**Eielson Array**	**85.25**	**23**	P		**P**	**05 19 48.4**	**-0.5**
	0.9nm,0.9s,mb3.7,baz=254,slow=5.0,SNR=8.8							

*BER **26** 05:14:09.5±4.4, 79.89N×19.99E, h17km±39km, ML2.0(NAO)*
NAO 26 05:14:09.8±8.0, 79.88N×19.37E, h26km±43km, ML2.0, Svalbard region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
KBS	**Kingsbay**	**1.67**	**239**	Pn		Pn	05 14 37.5	-0.4
KBS				Pg		Pn	05 14 40.2	+2.3
KBS				Lg			05 15 02.4	
SPA0	**Spitsbergen Ar**	**1.81**	**200**	Pn		Pn	05 14 39.5	-0.3
	baz=21,slow=16							
SPA0				Pg		Pn	05 14 42.3	+2.6
	baz=32,slow=16							
SPA0				Lg			05 15 07.7	
	baz=38,slow=22							
ARA0	**ARCESS Array S**	**10.52**	**168**	Sn		S	05 18 28.1	-12
	baz=6.9,slow=22							

*IDC **26** 05:38:20.5±1.1, 7.86N×125.27E, mb3.8/4, mb1 3.9/4, mb1mx3.7/19, Error ellipse: s-maj=66.6km s-min=23.2km az=79.0*
*MAN **26** 05:38:22.9, 7.80N×125.00E, h10km, mb4.7, ML3.6, MS3.5*
MAN F MALAYBALAY BUKIDNON II CAGAYAN DE ORO II.
ISC 26 05:38:22.4±0.6, 7.90N±0.03×125.08E±0.07, h10km, n17, σ1§19/22, mb3.8/5, 4C-4D, Mindanao

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CGP	**Cagayan de Oro**	**0.67**	**326**	⇓*e*P		**Pb**	**05 38 35.9**	**+0.1**
CGP				*i* S		**Sb**	**05 38 45.6**	**+0.7**
KCP	**Kidapawan**	**0.88**	**179**	⇑*e*P		**Pb**	**05 38 41.1**	**+1.8**
KCP				*i* S		**Sb**	**05 38 52.8**	**+1.9**
CTBH	**Cotabato--PC H**	**1.06**	**231**	⇑*i*P		**Pb**	**05 38 41.3**	**-1.1**
CTBH				*i* S		**Sb**	**05 38 55.5**	**-0.7**
GSPH	**General Santos**	**1.80**	**184**	⇑*i*P		**Pn**	**05 38 54.1**	**+0.3**
DCPH	**Dipolog City**	**1.84**	**292**	⇓*i*P		**Pn**	**05 38 54.3**	**-0.1**
TBP	**Tagbilaran**	**2.15**	**326**	⇓*e*P		**Pn**	**05 38 58.5**	**-0.3**
TBP				*e*S		**Sn**	**05 39 26.0**	**+0.2**
SNPH	**Sibulan**	**2.32**	**308**	*e*P		**Pn**	**05 39 02.5**	**+1.2**
LLP	**Lapu-Lapu**	**2.65**	**336**	*e*P		**Pn**	**05 39 05.2**	**-0.7**
LLP				*e*S		**Sn**	**05 39 39.1**	**+0.7**
ZMPH	**Zamboanga City**	**3.13**	**253**	⇓*i*P		**Pn**	**05 39 12.5**	**-0.3**
PLP	**Palo**	**3.25**	**358**	*e*P		**Pn**	**05 39 14.9**	**+0.4**
RCP	**Roxas**	**4.31**	**328**	⇓*e*P		**Pn**	**05 39 30.5**	**+1.0**
KAKA	**Kakadu**	**21.72**	**160**	*e*P		**P**	**05 43 17.2**	**+1.4**
	7.9nm,0.6s,mb4.3							
FITZ	**Fitzroy Crossi**	**25.84**	**179**	*e*P		**P**	**05 43 52.7**	**-3.2**
	2.5nm,0.6s,mb3.9							
FITZ	**Fitzroy Crossi**	**25.84**	**179**	P		**P**	**05 43 52.9**	**-3.0**
	2.6nm,1.0s,mb3.7,baz=9.9,slow=7.9,SNR=4.9							
ASAR	**Alice Springs**	**32.53**	**165**	P		**P**	**05 44 53.1**	**-2.7**
	0.5nm,0.5s,mb3.7,baz=345,slow=7.1,SNR=4.9							
MKAR	**Makanchi Array**	**53.23**	**324**	P		**P**	**05 47 41.9**	**-1.4**
	1.3nm,0.8s,mb3.9,baz=126,slow=7.5,SNR=11							
ILAR	**Eielson Array**	**82.08**	**26**	P		**P**	**05 50 42.2**	**-1.9**
	0.5nm,1.0s,mb3.4,baz=231,slow=5.8,SNR=3.2							

*IDC **26** 05:49:42.6±2.0, 4.29N×124.57E, mb3.6/4, mb1 3.8/4, mb1mx3.6/18, MS3.3/1, Ms1 3.3/1, ms1mx2.8/20, Error ellipse: s-maj=142.0km s-min=24.8km az=67.0*
ISC 26 05:49:44.7±2.0, 4.5N±0.4×125.0E±0.9, h33km, n5, σ0§41/4, mb3.5/4, MS3.2/1, Celebes Sea

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**22.44**	**178**	P		**P**	**05 54 42.3**	**+0.1**
	0.6nm,0.3s,mb3.5,baz=356,slow=11,SNR=6.6							
WRA	**Warramunga Arr**	**25.95**	**159**	P		**P**	**05 55 16.5**	**+0.3**
	0.4nm,0.3s,mb3.4,baz=331,slow=10,SNR=2.7							
ASAR	**Alice Springs**	**29.29**	**163**	P		**P**	**05 55 46.1**	**-0.3**
	0.4nm,0.4s,mb3.5,baz=344,slow=7.3,SNR=7.4							
JHJ	**Hachijo jima 2**	**31.68**	**24**	LR		LR	06 06 55.6	
	comp=Z,53nm,20.4s,MS3.2,baz=39,slow=32							
MKAR	**Makanchi Array**	**55.95**	**326**	P		**P**	**05 59 22.1**	**0.0**
	0.3nm,0.5s,mb3.6,baz=122,slow=7.5,SNR=5.5							

*NEIC **26** 06:22:54.4±0.8, 54.49S×140.92E, h10km, mb4.5/3, Error ellipse: s-maj=76.5km s-min=13.6km az=78.0*
*IDC **26** 06:22:54.9±2.6, 54.18S×141.74E, mb4.1/3, mb1 4.3/3, mb1mx4.0/9, Error ellipse: s-maj=144.0km s-min=39.5km az=70.0*
ISC 26 06:22:52.6±0.8, 54.4S±0.2×14 1E±, h10km, n10, σ1§09/7, mb4.2/6, West of Macquarie Island

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
STKA	**Stephens Creek**	**22.54**	**1**	P		**P**	**06 27 54.7**	**+0.9**
	3.2nm,0.6s,mb3.9,baz=192,slow=9.1,SNR=5.4							
VNDA	**Vanda**	**24.34**	**169**	*e*P		**P**	**06 28 09.6**	**-1.3**
	1.3nm,0.6s,mb3.5							
SBA	**Scott Base**	**25.20**	**168**	*e*P		**P**	**06 28 20.6**	**+1.5**
FORT	**Forrest**	**25.48**	**333**	*e*P		**P**	**06 28 23.2**	**+0.9**
	24nm,0.7s,mb4.8							
ASAR	**Alice Springs**	**31.21**	**347**	P		**P**	**06 29 13.9**	**-0.2**
	1.5nm,0.5s,mb4.1,baz=165,slow=9.9,SNR=27							
WRA	**Warramunga Arr**	**34.83**	**348**	P		**P**	**06 29 45.4**	**-0.2**
	1.7nm,0.5s,mb4.2,baz=171,slow=7.6,SNR=21							
WRAB	**Tennant Creek**	**34.84**	**348**	*e*P		**P**	**06 29 44.1**	**-1.6**
	5.3nm,0.5s,mb4.7							
TXAR	**Lajitas Array**	**127.68**	**91**	PKhKP			06 41 49.7	
	0.4nm,0.9s,baz=180,slow=0.9,SNR=5.8							
TXAR				PKP		PKPdf	06 42 01.2	+0.1
	0.4nm,0.8s,baz=145,slow=48,SNR=5.3							
TXAR	**Lajitas Array**	**127.68**	**91**	PKP		PKPdf	06 42 01.2	+0.1
YKA	**Yellowknife Ar**	**141.69**	**47**	PKP		PKPdf	06 42 25.5	-0.4
	0.2nm,0.8s,baz=246,slow=3.7,SNR=3.4							

JMA 26 06:36:28.6±0.1, 25.04N×123.33E, h135km±2km, M3.5, Northeast of Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
YOJ	**Yonaguni jima**	**0.65**	**207**	P		P	06 36 49.3	-0.3
YOJ				S		S	06 37 05.3	-0.4
IRIF	**Iriomote-Funau**	**0.79**	**153**	P		P	06 36 50.2	-0.4
IRIF				S		S	06 37 06.7	-0.7
JIJ	**Ishigaki jima**	**1.00**	**132**	P		P	06 36 52.0	-0.2
JIJ				S		S	06 37 09.5	-0.7
JKRS	**Kuro-shima**	**1.01**	**142**	P		P	06 36 52.5	+0.2
JKRS				S		S	06 37 10.5	+0.1
HATJ	**Hateruma jima**	**1.07**	**156**	P		P	06 36 52.9	0.0
HATJ				S		S	06 37 11.0	-0.5
JTJ	**Tarama**	**1.31**	**107**	P		P	06 36 55.4	0.0
JTJ				S		S	06 37 16.0	+0.1
JMJ	**Miyako jima 2**	**1.80**	**97**	P		P	06 37 00.7	-0.1
JMJ				S		S	06 37 25.1	-0.3
JOGS	**Gusukube**	**1.91**	**98**	P		P	06 37 02.2	+0.1
JOGS				S		S	06 37 27.5	-0.2

CASC 26 06:39:00.1±1.3, 12.91N×88.92W, h30km, MD3.8, ML3.1, 5C-9D, Off coast of central America

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
SNVI	**San Vicente**	**0.70**	**6**	⇓*e*P		Pb	06 39 14.2	+0.5
SNVI				*e*S		Sb	06 39 24.2	+1.0
VSM	**San Miguel**	**0.81**	**51**	⇑*i*P		Pn	06 39 15.6	0.0
VSM				*e*S		Sb	06 39 28.1	+1.9
SNET	**Serv Nac Est T**	**0.83**	**338**	⇑*e*P		Pn	06 39 15.8	0.0
SNET				⇓*e*P			06 39 15.9	
SNET				*e*S		Sb	06 39 27.0	+0.2
SNET				*e*S		Sb	06 39 27.5	+0.7
LBRS	**Las Brisas**	**0.83**	**352**	⇑*e*P		Pn	06 39 16.3	+0.5
LBRS				*e*S		Sb	06 39 27.2	+0.3
BLLM	**Bellamira**	**0.85**	**51**	⇓*e*P		Pn	06 39 16.3	+0.2
BLLM				*e*S		Sb	06 39 29.2	+1.9
PICS	**Picacho**	**0.89**	**338**	⇓*i*P		Pn	06 39 17.1	+0.5
PICS				*e*S		Sb	06 39 30.0	+1.7
BOQS	**Boqueron**	**0.89**	**337**	⇓*i*P		Pn	06 39 17.0	+0.3
BOQS				*e*S		Sb	06 39 29.2	+0.7
CAHU	**Cacacuatique**	**1.10**	**39**	⇓*e*P		Pn	06 39 20.3	+0.7
CAHU				*e*S		Sn	06 39 33.7	-0.2
CNCH	**Conchagua**	**1.12**	**71**	⇑*e*P		Pn	06 39 19.4	-0.5
CNCH				*e*S		Sn	06 39 34.6	+0.3
SBLS	**San Blas**	**1.15**	**323**	⇓*e*P		Pn	06 39 20.6	+0.2
SBLS				*e*S		Sn	06 39 36.6	+1.4
SNJE	**San Jose**	**1.16**	**325**	⇓*e*P		Pn	06 39 20.8	+0.3
SNJE				*e*S		Sn	06 39 36.1	+0.5
RTR	**El Retiro**	**1.21**	**324**	⇓*e*P		Pn	06 39 21.5	+0.3
RTR				*e*S		Sn	06 39 37.3	+0.6
RBDL	**Robledal**	**1.41**	**328**	*e*P		Pn	06 39 24.5	+0.4
PYN	**Poneloya**	**1.92**	**106**	⇑*e*P		Pn	06 39 30.3	-1.1
LEON	**Leon**	**2.04**	**104**	*e*P		Pn	06 39 31.6	-1.5
LEON				*e*S		Sn	06 39 53.1	-4.6
XAVN	**Gruta Xavier**	**2.64**	**106**	*e*P		Pn	06 39 40.7	-1.0
MGAN	**Managua**	**2.72**	**106**	*e*P		Pn	06 39 42.2	-0.5
MGAN				*e*S		Sn	06 40 11.7	-3.3
MGAN				*i*			06 40 16.4	
	comp=N,112nm,0.3s							
JCR	**Jicaral**	**4.81**	**129**	*e*P		Pn	06 40 10.5	-2.1
LCR2	**La Lucha 2**	**5.76**	**123**	*e*P		Pn	06 40 25.1	-0.7
LCR2				*e*S		Sn	06 41 26.1	-5.6

IDC 26 06:42:20.3±2.2, 1.33N×127.23E, mb3.5/3, mb1 3.7/3, mb1mx3.5/15, Error ellipse: s-maj=167.0km s-min=26.7km az=66.0, Halmahera

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
WRA	**Warramunga Arr**	**22.26**	**162**	P		P	06 47 19.2	-1.4
	1.9nm,0.7s,baz=341,slow=11,SNR=14							
ASAR	**Alice Springs**	**25.68**	**166**	P		P	06 47 52.1	-1.7
	0.4nm,0.6s,baz=351,slow=7.4,SNR=11							
MKAR	**Makanchi Array**	**59.81**	**326**	P		P	06 52 27.5	-2.3
	0.4nm,0.6s,baz=127,slow=7.2,SNR=4.1							

*IDC **26** 06:51:24.2±1.0, 20.97S×68.35W, h117km±10km, mb4.5/18, mb1 4.5/20, mb1mx4.5/21, MS3.5/4, Ms1 3.4/4, ms1mx3.2/20, Error ellipse: s-maj=15.1km s-min=9.9km az=79.0*
*GUC **26** 06:51:25.2±0.8, 21.62S×68.17W, h173km±6km, ML4.9*
*NEIC **26** 06:51:26.2±0.2, 21.08S×68.35W, mb4.8/39, Error ellipse: s-maj=8.7km s-min=4.5km az=73.0*
*SYO **26** 06:51:26.2, 21.08S×68.35W, h138km, MB4.8*
*BJI **26** 06:51:26.2, 21.10S×68.30W, h138km, mB4.8*
ISC 26 06:51:24.6±0.2, 21.06S±0.03×68.34W±0.06, h139km, h139km±9km: pP-P, n142, σ1§25/121, mb4.6/53, 6C-6D, Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
LVC	**Limon Verde**	**1.63**	**199**	⇑*i*P		**P**	**06 51 54.8**	**-0.4**
LVC				*i* S		**S**	**06 52 17.3**	**-1.4**
LVC				AMP			06 52 18.9	
	comp=E,10μm,0.6s							
LVC	**Limon Verde**	**1.63**	**199**	P		**P**	**06 51 55.2**	**0.0**
	comp=E,2μm,0.3s,baz=18,slow=8.8							
LVC				S		**S**	**06 52 17.4**	**-1.2**
	comp=E,644nm,0.3s,baz=107,slow=23,SNR=30							
LVC	**Limon Verde**	**1.63**	**199**	*e*Pn		**P**	**06 51 54.4**	**-0.8**
LVC				*e*Sn		**S**	**06 52 16.0**	**-2.6**
ANCH	**Antofagasta**	**3.24**	**216**	⇓*i*P		**P**	**06 52 13.3**	**-2.1**
ANCH				*i* S		**S**	**06 52 49.0**	**-5.2**
ANCH				AMP			06 52 55.4	
	comp=N,4μm,0.3s							
CPN1	**Cerro Paranal**	**4.03**	**208**	*e*P		**P**	**06 52 23.2**	**-2.6**
CPN1				*i* S		**S**	**06 53 07.1**	**-5.7**
LPAZ	**La Paz**	**4.75**	**2**	P		**P**	**06 52 37.0**	**+1.5**
	comp=N,94nm,0.3s,baz=188,slow=7.8,SNR=984							
LPAZ				LR		LR	06 54 20.9	
	comp=N,428nm,19.6s,baz=10,slow=38							
LPAZ	**La Paz**	**4.75**	**2**	*e*Pn		**P**	**06 52 36.9**	**+1.4**
CPCH	**Copiapo**	**6.53**	**196**	⇓*i*P		**P**	**06 52 54.4**	**-5.0**
CPCH				*i* S		**S**	**06 54 02.2**	**-11**
VACH	**Vallenar**	**7.80**	**196**	⇑*i*P		**P**	**06 53 10.9**	**-5.5**
VACH				*i* S		**S**	**06 54 31.9**	**-12**
CPUP	**Villa Florida**	**11.37**	**120**	P		**P**	**06 54 03.5**	**-0.2**
	comp=N,0.9nm,0.3s,baz=325,slow=11,SNR=20							
CPUP				LR		LR	06 58 19.7	
	comp=N,65nm,21.7s,baz=320,slow=36							
CPUP	**Villa Florida**	**11.37**	**120**	*e*P		**P**	**06 54 03.4**	**-0.4**
MDZ	**Mendoza**	**11.78**	**182**	*e*P		**P**	**06 54 09.4**	**+0.2**
TRQA	**Tornquist**	**17.81**	**163**	*e*P		**P**	**06 55 23.8**	**-1.2**
	comp=N,3.6nm,0.6s							
BDFB	**Brasilia**	**20.03**	**78**	P		**P**	**06 55 47.8**	**-0.8**
	comp=N,42nm,0.4s,baz=259,slow=11,SNR=43							
BDFB				LR		LR	07 04 59.2	
	comp=N,203nm,18.2s,baz=289,slow=41							
OTAV	**Otavalo**	**23.36**	**334**	*e*P		**P**	**06 56 24.4**	**+2.8**
	comp=N,25nm,0.6s,mb4.8							
ROSC	**El Rosal**	**26.42**	**346**	P		**P**	**06 56 51.5**	**+1.1**
	comp=N,16nm,0.6s,mb4.9,baz=137,slow=6.6,SNR=19							
TRSB	**Teresina**	**29.63**	**61**	*e*P		**P**	**06 57 18.0**	**-1.3**
TRSB				*i*			06 57 19.8	
SDV	**Santo Domingo**	**29.84**	**355**	P		**P**	**06 57 19.3**	**-1.8**
	comp=N,16nm,0.6s,mb4.9,baz=203,slow=7.5,SNR=19						

MNTX				*es*P	sP	07 02 28.9	-1.2	
CPRX	**Cap Rock**	**63.59**	**327**	*e*P	**P**	**07 01 42.4**	**-0.6**	
CPRX				*e*		07 01 50.2		
CPRX				*e*		07 01 59.0		
ERPA	**Erie**	**63.77**	**350**	*e*P	**P**	**07 01 42.7**	**-1.3**	
	comp=N,30nm,0.7s,mb5.2							
ERPA				*ep*P	pP	07 02 17.0	-0.6	
ANMO	**Albuquerque**	**66.43**	**326**	*e*P	**P**	**07 02 00.8**	**-0.5**	
	comp=N,4.2nm,1.0s,mb4.2							
ANMO				*ep*P	pP	07 02 34.8	-0.2	
MAIT	**Maitri**	**67.02**	**159**	⇓*i*P	**P**	**07 02 05.2**	**+0.9**	
LIC	**Lamto**	**67.76**	**74**	*e*P	**P**	**07 02 08.9**	**-0.9**	
	comp=N,34nm,1.0s,mb5.0							
TIC	**Toumodi**	**67.94**	**73**	*e*P	**P**	**07 02 10.2**	**-0.8**	
	comp=N,11nm,0.2s,mb5.2							
KIC	**Kosan Boka**	**68.07**	**74**	*e*P	**P**	**07 02 11.2**	**-0.6**	
	comp=N,48nm,0.4s,mb5.6							
DBIC	**Dimbokro**	**68.10**	**73**	P	**P**	**07 02 11.5**	**-0.5**	
	comp=N,18nm,0.7s,mb4.9,baz=223,slow=6.6,SNR=24							
DBIC	**Dimbokro**	**68.10**	**73**	*e*P	**P**	**07 02 11.2**	**-0.7**	
	comp=N,10nm,0.8s,mb4.6							
DBIC				*e*		07 02 15.4		
SDCO	**Great Sand Dun**	**68.14**	**329**	*e*P	**P**	**07 02 12.3**	**+0.5**	
	comp=N,18nm,1.1s,mb4.7							
SDCO				*ep*P	pP	07 02 45.2	-0.5	
QSPA	**South Pole Qui**	**69.13**	**180**	*e*P	**P**	**07 02 18.3**	**+1.1**	
	comp=N,37nm,0.6s,mb5.3							
QSPA				*e*		07 09 53.9		
WUAZ	**Wupatki**	**69.49**	**324**	*e*P	**P**	**07 02 20.8**	**+0.7**	
	comp=N,18nm,1.0s,mb4.8							
WUAZ				*es*P	sP	07 03 10.5	+1.2	
PV01	**Paradox Valley**	**69.96**	**327**	*e*P	**P**	**07 02 23.5**	**+0.6**	
PV01				*ep*P	pP	07 02 57.3	+0.3	
PV01				*es*P	sP	07 03 13.6	+1.4	
BAR	**Barrett**	**70.63**	**318**	*e*P	**P**	**07 02 27.7**	**+0.7**	
BAR				*ep*P	pP	07 03 01.7	+0.5	
PFO	**Pinyon Flat Ob**	**71.12**	**319**	*e*P	**P**	**07 02 30.7**	**+0.8**	
	comp=N,16nm,1.2s,mb4.6							
PFO				*ep*P	pP	07 03 05.4	+1.3	
LDFC	**Landfair**	**71.32**	**321**	P	**P**	**07 02 32.0**	**+0.9**	
NEN	**Nelson**	**71.56**	**321**	*e*P	**P**	**07 02 33.4**	**+0.8**	
SRU	**San Rafael**	**71.70**	**327**	*e*P	**P**	**07 02 33.7**	**+0.4**	
SRU				*ep*P	pP	07 03 07.1	-0.4	
SRU				*es*P	sP	07 03 23.2	+0.6	
MSU	**Marysvale**	**72.12**	**325**	*e*P	**P**	**07 02 37.0**	**+1.3**	
MSU				*e*		07 02 54.4		
MSU				*ep*P	pP	07 03 11.3	+1.3	
MVU	**Marysvale**	**72.13**	**325**	*e*P	**P**	**07 02 37.0**	**+1.1**	
	comp=N,12nm,0.9s,mb4.6							
MVU				*e*		07 02 54.4		
MVU				*ep*P	pP	07 03 11.1	+1.0	
MVU				*es*P	sP	07 03 27.2	+1.9	
RSSD	**Black Hills**	**72.63**	**334**	*e*P	**P**	**07 02 39.2**	**+0.5**	
	comp=N,5.0nm,0.8s,mb4.3							
MPU	**Maple Canyon**	**72.94**	**327**	*e*P	**P**	**07 02 41.6**	**+1.0**	
MPU				*ep*P	pP	07 03 15.2	+0.2	
MPU				*es*P	sP	07 03 31.1	+0.9	
DAU	**Daniels Canyon**	**73.05**	**327**	*e*P	**P**	**07 02 42.4**	**+1.1**	
DAU				*ep*P	pP	07 03 16.3	+0.7	
DAU				*es*P	sP	07 03 30.9	+0.1	
JLU	**Jordanelle**	**73.29**	**327**	*e*P	**P**	**07 02 43.2**	**+0.6**	
JLU				*ep*P	pP	07 03 16.8	-0.2	
JLU				*es*P	sP	07 03 33.7	+1.6	
TCUT	**Toone Canyon**	**73.65**	**327**	*e*P	**P**	**07 02 45.0**	**+0.3**	
PDAR	**Pinedale Array**	**74.00**	**330**	P	**P**	**07 02 46.9**	**+0.2**	
	comp=N,1.3nm,0.7s,mb3.8,baz=127,slow=8.2,SNR=12							
HWUT	**Hardware Ranch**	**74.09**	**328**	*e*P	**P**	**07 02 47.4**	**+0.2**	
	comp=N,8.6nm,0.6s,mb4.7							
SPUT	**South Promonto**	**74.32**	**327**	*e*P	**P**	**07 02 49.1**	**+0.5**	
SPUT				*ep*P	pP	07 03 23.2	+0.1	
TPH	**Tonopah**	**74.61**	**322**	*e*P	**P**	**07 02 51.4**	**+1.1**	
	comp=N,4.6nm,0.9s,mb4.1							
MTUM	**Tungsten Hills**	**74.91**	**321**	*e*P	**P**	**07 02 53.0**	**+1.0**	
MTUM				*ep*P	pP	07 03 27.6	+1.0	
ULM	**Lac du Bonnet**	**75.06**	**342**	P	**P**	**07 02 52.1**	**-0.5**	
	comp=N,7.6nm,0.5s,mb4.6,baz=145,slow=5.2,SNR=8.8							
ULM				LR	LR	07 38 14.9		
	comp=N,55nm,18.0s,baz=4.4,slow=38							
ULM	**Lac du Bonnet**	**75.06**	**342**	*e*P	**P**	**07 02 51.5**	**-1.1**	
	comp=N,16nm,0.6s,mb4.8							
ULM				*e*PcP	PcP	07 03 10.2	+4.3	
REDW	**Red Top Meadow**	**75.06**	**329**	*e*P	**P**	**07 02 53.5**	**+0.7**	
REDW				*es*P	sP	07 03 37.5	-5.0	
KSWY	**Kelly School**	**75.16**	**330**	*e*P	**P**	**07 02 54.1**	**+0.8**	
NVAR	**Mina Array Bea**	**75.48**	**322**	P	**P**	**07 02 56.3**	**+1.1**	
	comp=N,3.5nm,0.9s,mb4.0,baz=142,slow=7.3,SNR=17							
SCHQ	**Schefferville**	**75.59**	**1**	P	**P**	**07 02 54.0**	**-1.5**	
	comp=N,4.3nm,0.8s,mb4.1,baz=177,slow=5.8,SNR=6.8							
SCHQ	**Schefferville**	**75.59**	**1**	*e*P	**P**	**07 02 54.9**	**-0.6**	
	comp=N,21nm,0.8s,mb4.8							
SCHQ				*e*PcP	PcP	07 03 08.3	+0.3	
LRV	**Little Rabbit**	**75.79**	**319**	*e*P	**P**	**07 02 58.1**	**+1.2**	
YMR	**Madison River**	**76.11**	**330**	*e*P	**P**	**07 03 00.6**	**+2.1**	
YMR				*ep*P	pP	07 03 32.2	-1.1	
SBA	**Scott Base**	**76.35**	**190**	*e*P	**P**	**07 03 01.5**	**+2.1**	
	comp=N,18nm,1.2s,mb4.6							
CMB	**Columbia Colle**	**76.44**	**320**	*e*P	**P**	**07 03 01.3**	**+0.7**	
	comp=N,4.6nm,1.2s,mb4.0							
SYO	**Syowa Base**	**76.72**	**159**	⇑P	**P**	**07 03 02.3**	**+0.7**	
SYO	**Syowa Base**	**76.72**	**159**	⇑PcP	PcP	07 03 08.1	-4.5	
SYO	**Syowa Base**	**76.72**	**159**	⇓pP	pP	07 03 30.6	-5.7	
SYO	**Syowa Base**	**76.72**	**159**	⇑P	**P**	**07 03 02.3**	**+0.7**	
SYO				*e*PcP	PcP	07 03 08.1	-4.5	
SYO				*ep*P	pP	07 03 30.6	-5.7	
HLID	**Hailey**	**76.96**	**327**	*e*P	**P**	**07 03 04.7**	**+1.3**	
	comp=N,10nm,0.9s,mb4.5							
HLID				*ep*P	pP	07 03 39.6	+1.4	
HLID				*es*P	sP	07 03 54.2	+0.9	
MCMT	**McKenzie Canyo**	**77.11**	**329**	*e*P	**P**	**07 03 05.4**	**+1.2**	
MCMT				*ep*P	pP	07 03 40.1	+1.1	
MCMT				*es*P	sP	07 03 55.5	+1.3	
BOZ	**Bozeman (W)**	**77.16**	**330**	*e*P	**P**	**07 03 03.2**	**-1.2**	
	comp=N,1.3nm,0.5s,mb3.8							
VNDA	**Vanda**	**77.37**	**190**	P	**P**	**07 03 06.2**	**+1.1**	
	comp=N,5.3nm,0.8s,mb4.2,baz=129,slow=3.1,SNR=28							
VNDA	**Vanda**	**77.37**	**190**	*e*P	**P**	**07 03 06.0**	**+0.9**	
	comp=N,4.0nm,0.9s,mb4.0							
HRY	**Holter Researc**	**78.05**	**331**	*e*P	**P**	**07 03 10.5**	**+1.2**	
HRY				*ep*P	pP	07 03 43.5	-0.6	
NSHM	**Saint Helena R**	**78.09**	**319**	*e*P	**P**	**07 03 10.6**	**+0.9**	
SUR	**Sutherland**	**78.34**	**120**	P	**P**	**07 03 13.0**	**+1.8**	
	comp=N,11nm,0.8s,mb4.5,baz=233,slow=12,SNR=15							
SUR	**Sutherland**	**78.34**	**120**	*e*P	**P**	**07 03 12.7**	**+1.5**	
	comp=N,12nm,0.7s,mb4.6							
TSUM	**Tsumeb**	**79.66**	**107**	P	**P**	**07 03 19.9**	**+1.3**	
	comp=N,8.5nm,0.7s,mb4.5,baz=231,slow=5.4,SNR=35							
YBH	**Yreka Blue Hor**	**80.19**	**322**	P	**P**	**07 03 20.7**	**-0.3**	
	comp=N,2.0nm,0.5s,mb4.0,baz=142,slow=2.4,SNR=6.1							
DPW	**Davenport**	**81.88**	**329**	*e*P	**P**	**07 03 30.9**	**+1.1**	
DPW				*ep*P	pP	07 04 06.3	+1.5	
DPW				*es*P	sP	07 04 20.9	+0.7	
FCC	**Fort Churchill**	**82.33**	**347**	*e*P	**P**	**07 03 31.8**	**0.0**	
	comp=N,9.5nm,0.7s,mb4.5							
FCC				*ep*P	pP	07 04 06.4	-0.6	
FCC				*es*P	sP	07 04 22.2	-0.1	
RPW	**Rockport**	**83.91**	**328**	P	**P**	**07 03 38.8**	**-1.2**	
RPW				*ep*P	pP	07 04 15.8	+0.6	
MAW	**Mawson**	**84.60**	**163**	P	**P**	**07 03 44.5**	**+1.5**	
	comp=N,9.5nm,0.7s,mb4.7,baz=223,slow=6.2,SNR=32							
MAW	**Mawson**	**84.60**	**163**	*e*P	**P**	**07 03 44.5**	**+1.6**	
	comp=N,11nm,0.6s,mb4.8							
LBTB	**Lobatse**	**84.72**	**115**	*e*P	**P**	**07 03 45.8**	**+1.2**	
	comp=N,7.4nm,0.7s,mb4.5							
LBTB				*ep*P	pP	07 04 20.2	+0.2	
ESDC	**Sonseca Array**	**85.15**	**44**	P	**P**	**07 03 48.3**	**+1.9**	
	comp=N,1.2nm,0.8s,mb3.7,baz=244,slow=5.1,SNR=4.8							
ESLA	**Sonseca Array**	**85.15**	**44**	*e*P	**P**	**07 03 47.2**	**+0.8**	
	comp=N,0.8nm,0.8s,mb3.5							
YKA	**Yellowknife Ar**	**90.95**	**340**	P	**P**	**07 04 13.8**	**+0.3**	
	comp=N,9.5nm,0.7s,mb4.9,baz=134,slow=4.5,SNR=250							
YKW3	**Yellowknife Ar**	**91.00**	**340**	*e*P	**P**	**07 04 14.2**	**+0.4**	
YKW3				*ep*P	pP	07 04 49.4	-0.2	
STKA	**Stephens Creek**	**120.06**	**209**	PKP	PKPdf	07 10 01.1	+2.0	
	comp=N,3.0nm,1.0s,baz=124,slow=3.6,SNR=4.4							
FORT	**Forrest**	**126.10**	**198**	*e*PKP	PKPdf	07 10 12.4	+1.5	
	comp=N,41nm,0.7s							
CTA	**Charters Tower**	**126.92**	**222**	PKP	PKPdf	07 10 14.8	+2.2	
	comp=N,2.7nm,0.6s,baz=56,slow=3.6,SNR=8.4							
KLBR	**Kellerberrin**	**127.32**	**187**	*e*PKP	PKPdf	07 10 14.8	+1.6	
	comp=N,9.2nm,0.6s							
ARU	**Arti**	**127.49**	**34**	*e*PKPdf	PKPdf	07 10 15.4	+2.5	
AS12	**Alice Springs**	**130.54**	**207**	*e*PKP	PKPdf	07 10 20.9	+1.3	
	comp=N,6.5nm,0.7s							
ASAR	**Alice Springs**	**130.54**	**207**	PKhKP		07 10 09.8		
	comp=N,0.4nm,0.5s,baz=132,slow=1.9,SNR=6.4							
ASAR				PKP	PKPdf	07 10 21.4	+1.7	
	comp=N,4.7nm,0.5s,baz=132,slow=1.8,SNR=50							
WRA	**Warramunga Arr**	**133.60**	**210**	PKhKP		07 10 14.9		
	comp=N,0.5nm,0.7s,baz=129,slow=2.8,SNR=12							
WRA				PKP	PKPdf	07 10 26.9	+1.5	
	comp=N,3.3nm,0.7s,baz=156,slow=1.7,SNR=5.5							
WRAB	**Tennant Creek**	**133.60**	**210**	*e*PKPdf	PKPdf	07 10 27.3	+1.9	
ZRNK	**Zerenda**	**134.43**	**35**	*e*PKPdf	PKPdf	07 10 28.1	+2.0	
FITZ	**Fitzroy Crossi**	**138.74**	**200**	*e*PKP	PKPdf	07 10 26.5	-8.4	
	comp=N,1.6nm,0.6s							
FITZ				*e*		07 10 36.7		
KURK	**Kurchatov**	**140.67**	**33**	*e*PKPdf	PKPdf	07 10 40.0	+2.4	
KAKA	**Kakadu**	**140.75**	**213**	*e*PKP	PKPdf	07 10 32.9	-5.8	
	comp=N,5.5nm,0.6s							
AAK	**Ala-Archa**	**142.22**	**47**	*e*PKPdf	PKPdf	07 10 42.9	+2.4	
MKAR	**Makanchi Array**	**144.97**	**36**	PKP	PKPdf	07 10 47.5	+2.4	
	comp=N,13nm,0.4s,baz=320,slow=3.0,SNR=142							
MKAR	**Makanchi Array**	**144.97**	**36**	PKP	PKPdf	07 10 47.5	+2.4	
WMQ	**Urumqi**	**149.80**	**36**	*e*PKP	PKPdf	07 10 54.0	+0.9	
MDJ	**Mudanjiang**	**152.22**	**332**	PKP	PKPdf	07 10 57.0	+0.3	
SONM	**Songino Array**	**152.95**	**8**	PKP	PKPdf	07 11 01.0	+3.4	
	comp=N,2.3nm,0.8s,baz=256,slow=1.6,SNR=14							
SONM				PKPbc	PKPdf	07 11 07.9	+10	
	comp=N,4.4nm,0.7s,baz=314,slow=1.4,SNR=17							
SONM				PKPab	PKPab	07 11 19.6	+0.4	
	comp=N,1.1nm,0.6s,baz=328,slow=1.6,SNR=4.4							
ULN	**Ulaanbaatar**	**153.00**	**7**	*e*PKPdf	PKPdf	07 11 00.4	+2.8	
ULN				*e*PKPbc	PKPdf	07 11 07.9	+10	
CN2	**Changchun**	**154.58**	**336**	*e*PKP	PKPdf	07 10 57.8	-2.1	
GTA	**Gaotai**	**159.08**	**26**	*e*PKP	PKPdf	07 11 09.5	+3.6	
GTA				APKP		07 11 42.3		
BJI	**Beijing**	**160.69**	**349**	PKP	PKPdf	07 11 12.0	+4.4	
NJ2	**Nanjing**	**167.31**	**331**	*e*PKP	PKPdf	07 11 18.0	+4.1	
NJ2				PKP2	PKPab	07 12 25.3	+3.7	
NJ2				PKS	PKS	07 14 50.0	+4.5	
NJ2				PP	PP	07 16 14.0	+3.1	
NJ2				PP	PP			
	comp=Z,190nm,7.8s							
NJ2				LR	LR			
	comp=N,300nm,23.6s							
NJ2				LR	LR			
	comp=E,170nm,17.6s							
NJ2				LR	LR			
	comp=Z,170nm,21.2s							
CMAR	**Chiang Mai Arr**	**167.75**	**100**	PKP	PKPdf	07 11 17.9	+3.4	
	comp=Z,1.4nm,0.9s,baz=282,slow=1.3,SNR=8.7							
CMAR				PKPab	PKPab	07 12 24.4	+0.5	
	comp=Z,0.9nm,0.4s,baz=261,slow=6.2,SNR=5.7							
KMI	**Kunming**	**170.85**	**62**	*e*PKP	PKPdf	07 11 14.0	-2.3	
KMI				LR	LR			
	comp=Z,41nm,19.0s							

*IDC **26** 07:16:07.9±2.7, 5.58S×102.21E, h27km±4km, mb3.6/6, mb1 3.8/6, mb1mx3.6/15, MS3.6/3, Ms1 3.6/3, ms1mx3.1/23, Error ellipse: s-maj=113.0km s-min=16.2km az=57.0*
*NEIC **26** 07:16:11.6±2.2, 5.42S×102.60E, h50km, mb4.4/2, Error ellipse: s-maj=90.9km s-min=11.8km az=55.0*

ISC 26 07:16:06.0±2.9, 5.6S±0.4×102.4E±0.6, h27km, n13, σ0s98/9, mb3.9/8, MS3.6/3, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**24.10**	**352**	P	**P**		**07 21 22.0**	**+1.3**
	1.0nm,0.4s,mb3.6,baz=206,slow=23,SNR=4.6							
WRA	**Warramunga Arr**	**34.21**	**118**	P	**P**		**07 22 51.4**	**-0.4**
	0.4nm,0.4s,mb3.7,baz=304,slow=9.1,SNR=12							
WRA				LR	LR		07 35 14.0	
	comp=Z,114nm,21.4s,MS3.6,baz=255,slow=33							
WRA	**Warramunga Arr**	**34.21**	**118**	P	**P**		**07 22 51.4**	**-0.4**
WRA				LR	LR		07 35 14.0	
WRAB	**Tennant Creek**	**34.22**	**118**	*e*P	**P**		**07 22 51.0**	**-0.8**
	3.3nm,0.4s,mb4.6							
WRAB				*e*			07 23 03.1	
ASAR	**Alice Springs**	**35.29**	**124**	P	**P**		**07 23 01.5**	**+0.5**
	0.6nm,0.6s,mb3.7,baz=301,slow=7.9,SNR=5.8							
ASAR				pP	pP		07 23 11.2	+2.1
	0.7nm,0.4s,baz=300,slow=8.2,SNR=6.9							
CTAO	**Charters Tower**	**45.00**	**113**	*e*P	**P**		**07 24 20.9**	**-0.5**
	2.6nm,0.6s,mb4.2							
STKA	**Stephens Creek**	**45.05**	**131**	P	**P**		**07 24 23.1**	**+1.4**
	2.3nm,0.5s,mb4.3,baz=312,slow=9.9,SNR=6.4							
SONM	**Songino Array**	**53.28**	**3**	P	**P**		**07 25 25.1**	**+0.2**
	0.2nm,0.4s,mb3.4,baz=180,slow=8.6,SNR=3.5							
SONM				pP	pP		07 25 33.2	+0.1
	1.2nm,0.7s,baz=180,slow=8.7,SNR=7.1							
SONM				sP	sP		07 25 36.4	+0.1
	1.2nm,0.7s,baz=179,slow=8.7,SNR=7.2							
MKAR	**Makanchi Array**	**55.08**	**343**	P	**P**		**07 25 36.4**	**-1.7**
	0.5nm,0.5s,mb3.8,baz=145,slow=9.2,SNR=4.2							
MKAR				sP	sP		07 25 49.1	-0.4
	0.9nm,0.5s,baz=136,slow=9.1,SNR=7.3							
KMBO	**Kilima Mbogo**	**65.12**	**271**	LR	LR		07 50 45.9	
	comp=Z,37nm,20.8s,MS3.6,baz=111,slow=32							
ASF	**Jabal al Asfar**	**72.57**	**306**	LR	LR		08 00 11.6	
	comp=Z,38nm,20.0s,MS3.7,baz=302,slow=36							
TXAR	**Lajitas Array**	**145.88**	**43**	PKPbc	PKPbc		07 35 45.8	+1.8
	0.4nm,0.5s,baz=274,slow=0.8,SNR=12							
TXAR				pPKPbc			07 35 53.2	
	0.3nm,0.5s,baz=304,slow=1.4,SNR=4.2							
TXAR				sPKPbc			07 35 58.6	
	1.0nm,0.5s,baz=293,slow=1.1,SNR=14							
TXAR	**Lajitas Array**	**145.88**	**43**	PKPbc	PKPbc		07 35 45.8	+1.8
TXAR				pPKPbc			07 35 53.2	
TXAR				sPKPbc			07 35 58.6	

IDC 26 07:17:24.7±8.2, 23.63S×176.09W, mb4.0/4, mb1 4.2/4, mb1mx3.8/15, Error ellipse: s-maj=272.0km s-min=96.5km az=147.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**35.06**	**268**	P		P	07 24 20.6	-1.0
	2.1nm,0.6s,baz=81,slow=8.4,SNR=4.6							
ASAR	**Alice Springs**	**45.61**	**259**	P		P	07 25 47.4	-1.4
	0.9nm,1.0s,baz=101,slow=9.5,SNR=5.2							
WRA	**Warramunga Arr**	**46.00**	**265**	P		P	07 25 48.7	-3.2
	0.7nm,0.7s,baz=102,slow=8.1,SNR=5.2							
CMAR	**Chiang Mai Arr**	**92.81**	**289**	P		P	07 30 39.8	-1.2
	0.6nm,0.3s,baz=162,slow=2.9,SNR=6.0							

CASC 26 07:32:51.6±2.0, 8.20N×82.80W, h11km±10km, MD3.5, 2C-1D, Panama-Costa Rica border region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
ACR	**Cerro Adams**	**0.58**	**321**	*e*P		Pb	07 33 01.7	-1.5
BRU2	**Volcan**	**0.60**	**10**	⇓*i*P		Pb	07 33 03.3	-0.3
BRU2				*e*S		Sb	07 33 11.9	+0.3
LCR2	**La Lucha 2**	**1.94**	**322**	⇑*e*P		Pn	07 33 24.8	-0.1
LCR2				*e*S		Sn	07 33 49.9	+0.5
CGA2	**Cerro Gallo 2**	**2.44**	**318**	⇑*e*P		Pn	07 33 32.5	+0.4
CGA2				*e*S		Sn	07 34 02.6	+0.4
TRTC	**Tortuguero**	**2.53**	**339**	*e*P		Pn	07 33 35.1	+1.9
TRTC				*e*S		Sn	07 34 07.6	+3.3

IDC 26 07:33:02.2±8.4, 4.84S×102.33E, mb3.5/3, mb1 3.6/3, mb1mx3.4/15, Error ellipse: s-maj=313.0km s-min=31.2km az=59.0, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**34.58**	**119**	P		P	07 39 53.0	-2.1
	0.3nm,1.0s,baz=301,slow=10,SNR=3.2							
ASAR	**Alice Springs**	**35.72**	**125**	P		P	07 40 03.0	-1.9
	0.3nm,0.4s,baz=293,slow=7.6,SNR=4.1							
SONM	**Songino Array**	**52.58**	**3**	P		P	07 42 17.8	-2.1
	0.7nm,0.7s,baz=180,slow=7.4,SNR=4.5							
TXAR	**Lajitas Array**	**145.38**	**42**	PKPbc	PKPbc		07 52 41.9	-1.4
	0.7nm,1.1s,baz=270,slow=1.3,SNR=4.1							

*HEL **26** 07:35:47.4±0.2, 59.79N×22.31E, ML2.0, ML2.5(UPP), ML2.2(NAO), Explosion*
*IDC **26** 07:35:47.2±2.0, 59.80N×22.43E, mb1 3.0/3, mb1mx2.8/20, ML2.8/2, Error ellipse: s-maj=25.9km s-min=6.6km az=158.0*
*NAO **26** 07:35:49.5±2.0, 60.05N×22.18E, ML2.2*
*BER **26** 07:35:51.7±12.0, 60.12N×22.24E, ML2.2(NAO), Suspected explosion*

ISC 26 07:35:45.1±0.7, 59.83N±0.05×22.22E±0.06, n19, σ1s37/34, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
MEF	**Metsahovi**	**1.16**	**69**	*e*P		**Pb**	**07 36 07.6**	**-0.2**
MEF				*e*S		**Sb**	**07 36 22.1**	**-1.1**
PVF	**Pernaja**	**1.96**	**67**	*e*P		**Pn**	**07 36 21.8**	**+1.9**
PVF				*e*S		**Sn**	**07 36 46.0**	**+0.5**
PVF				MSG			07 36 51.8	
	comp=Z,11nm,0.1s							
FIA0	**FINESS Array S**	**2.50**	**48**	*e*PB		**Pb**	**07 36 30.5**	**-0.1**
FIA0				*e*SB		**Sb**	**07 37 02.8**	**+0.8**
FIA0				MSG			07 37 06.6	
	comp=Z,6.8nm,0.1s							
FIA0	**FINESS Array S**	**2.50**	**48**	Pn		**Pn**	**07 36 30.2**	**+2.6**
	baz=228,slow=14							
FIA0				Lg			07 37 02.7	
	baz=233,slow=28							
FIA0				Rg			07 37 15.9	
	baz=215,slow=37							
FINES	**FINESS Array B**	**2.50**	**48**	Pg		**Pg**	**07 36 30.4**	**-4.6**
	comp=Z,0.8nm,0.3s,baz=228,slow=14,SNR=29							
FINES				Lg			07 37 02.5	
	comp=Z,3.2nm,0.3s,baz=237,slow=23,SNR=23							
KEF	**Keuruu**	**2.68**	**28**	*e*PB		**Pb**	**07 36 33.9**	**+0.2**
KEF				*e*SB		**Sb**	**07 37 08.3**	**+1.0**
KEF				MSG			07 37 11.4	
	comp=Z,3.9nm,0.1s							
VSU	**Vasula**	**2.70**	**119**	*e*SB		**Sb**	**07 37 06.1**	**-1.8**
VSU	**Vasula**	**2.70**	**119**	Sn		**Sn**	**07 37 09.6**	**+5.2**
VJF	**Virojoki**	**2.76**	**73**	*e*P		**Pn**	**07 36 32.3**	**+0.9**
VJF				*e*S		**Sn**	**07 37 06.4**	**+0.5**
KAF	**Kangasniemi**	**3.04**	**39**	*e*PB		**Pb**	**07 36 38.8**	**-1.1**
KAF				*e*SB		**Sb**	**07 37 16.7**	**-0.9**
KAF				MSG			07 37 18.6	
	comp=Z,3.0nm,0.2s							
VAF	**Ylistaro**	**3.23**	**4**	*e*PB		**Pb**	**07 36 43.3**	**+0.1**
VAF				*e*SB		**Sb**	**07 37 24.2**	**+0.9**
SUF	**Sumiainen**	**3.46**	**31**	*e*P		**Pn**	**07 36 43.5**	**+2.1**
SUF				*e*SB		**Sb**	**07 37 28.1**	**-2.0**
HFS	**Hagfors**	**4.30**	**278**	Pn		**Pn**	**07 36 54.6**	**+1.4**
	baz=96,slow=8.6							
HFS				Sn		**Sn**	**07 37 45.9**	**+1.1**
	baz=339,slow=37							
HFS				Lg			07 38 01.3	
	baz=94,slow=28							
HFS	**Hagfors**	**4.30**	**278**	*e*P		**Pn**	**07 36 54.6**	**+1.4**
HFS				*e*S		**Sn**	**07 37 45.9**	**+1.1**
HFS				*e*SG		**Sg**	**07 38 01.3**	**-6.9**
HFS	**Hagfors**	**4.30**	**278**	Pn		**Pn**	**07 36 54.4**	**+1.2**
	baz=108,slow=11,SNR=2.9							
HFS				Lg			07 38 02.0	
	comp=Z,0.2nm,0.3s,baz=93,slow=30,SNR=8.8							
NOA	**NORSAR Array B**	**5.58**	**287**	Pn		**Pn**	**07 37 11.1**	**-0.4**
	comp=Z,0.2nm,0.3s,baz=115,slow=10,SNR=2.6							
NOA				Sn		**Sn**	**07 38 15.2**	**-2.1**
	comp=Z,0.2nm,0.3s,baz=110,slow=5.2,SNR=2.4							
NOA				Lg			07 38 39.6	
	comp=Z,0.4nm,0.3s,baz=56,slow=21,SNR=3.1							
ARA0	**ARCESS Array S**	**9.84**	**7**	Pn		**P**	**07 38 08.0**	**-2.8**
	baz=182,slow=14							
ARA0				Sn		**Sn**	**07 39 53.0**	**-10**
	baz=188,slow=28							
ARA0	**ARCESS Array S**	**9.84**	**7**	*e*P		**P**	**07 38 08.0**	**-2.8**
ARA0				*e*S		**Sn**	**07 39 53.0**	**

CGA2	**Cerro Gallo 2**	**2.36**	**318**⇓	*e*P	Pn	08 09 06.7	0.0
CGA2				*e*S	Sn	08 09 36.6	0.0

*CASC **26** 08:12:29.3±2.1, 8.30N×82.88W, h3km±12km, MD3.5, MW2.8*
ISC 26 08:12:29.4±2.7, 8.2N±0.1×82.90W±0.09, h3km, n4, σ0§63/8, 1D, Panama-Costa Rica border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BRU2	**Volcan**	**0.60**	**20**⇓	*i*P	**Pg**	**08 12 40.8**	**-0.6**
BRU2				*e*S	**Sg**	**08 12 49.8**	**+0.4**
LCR2	**La Lucha 2**	**1.86**	**324**	*e*P	**Pn**	**08 13 01.4**	**-1.0**
LCR2				*e*S	**Sn**	**08 13 26.5**	**-0.1**
LAJ	**Bijagual**	**2.02**	**324**	*e*P	**Pn**	**08 13 05.4**	**+0.6**
LAJ				*e*S	**Sn**	**08 13 36.9**	**+6.1**
CGA2	**Cerro Gallo 2**	**2.35**	**319**	*e*P	**Pn**	**08 13 10.4**	**+0.9**
CGA2				*e*S	**Sn**	**08 13 39.0**	**-0.2**

*IDC **26** 08:17:53.9±2.1, 59.61N×24.83E, mb1 3.8/4, mb1mx3.4/21, ML3.6/4, Error ellipse: s-maj=21.3km s-min=7.4km az=144.0*
*NAO **26** 08:17:55.3±1.4, 59.79N×24.55E, ML2.6*
*BER **26** 08:17:56.8±3.9, 59.80N×24.70E, ML2.6(NAO), Suspected explosion*
HEL 26 08:17:56.0±0.1, 59.79N×24.57E, ML2.4, ML2.6(UPP), **ML2.6**(NAO), **Explosion, Baltic States - Belarus - Northwestern Russia**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MEF	**Metsahovi**	**0.43**	**349**	*e*P	Pg	08 18 03.7	-0.9
MEF				*e*S	Sg	08 18 09.4	-1.0
PVF	**Pernaja**	**0.99**	**40**	*e*P	Pb	08 18 13.8	-2.0
PVF				*e*S	Sg	08 18 27.2	-1.9
VJF	**Virojoki**	**1.67**	**62**	*e*P	Pn	08 18 25.3	-1.4
VJF				*e*S	Sb	08 18 46.9	-2.0
VSU	**Vasula**	**1.74**	**139**	*e*P	Pn	08 18 26.5	-1.2
VSU				*e*S	Sn	08 18 49.5	-1.5
VSU	**Vasula**	**1.74**	**139**	Pn	Pn	08 18 26.6	-1.1
VSU				Lg		08 18 49.1	
FIA0	**FINESS Array S**	**1.82**	**24**	*e*P	Pn	08 18 28.4	-0.4
FIA0				*e*S	Sn	08 18 51.7	-1.1
FIA0				MSG		08 18 55.1	
	comp=Z,26nm,0.2s						
FIA0	**FINESS Array S**	**1.82**	**24**	Pn	Pn	08 18 28.5	-0.2
	baz=198,slow=18						
FIA0				Lg		08 18 51.8	
	baz=183,slow=28						
FINES	**FINESS Array B**	**1.82**	**24**	Pg	Pg	08 18 28.4	-3.8
	comp=Z,16nm,0.3s,baz=198,slow=16,SNR=593						
FINES				Sn	Sn	08 18 51.5	-1.3
	comp=Z,9.0nm,0.3s,baz=199,slow=26,SNR=4.2						
FINES				Lg		08 18 54.7	
	comp=Z,19nm,0.3s,baz=199,slow=34,SNR=22						
KEF	**Keuruu**	**2.39**	**3**	*e*PB	Pb	08 18 37.8	-1.8
KEF				*e*SG	Sg	08 19 09.0	-6.5
KEF				MSG		08 19 11.7	
	comp=Z,23nm,0.2s						
KAF	**Kangasniemi**	**2.48**	**19**	*e*PB	Pb	08 18 39.0	-2.2
KAF				*e*SG	Sg	08 19 11.7	-6.8
KAF				MSG		08 19 13.2	
	comp=Z,14nm,0.2s						
SUF	**Sumiainen**	**3.04**	**14**	*e*P	Pn	08 18 45.8	-0.4
SUF				*e*SB	Sb	08 19 26.3	-2.2
SUF				MSG		08 19 33.1	
	comp=Z,10nm,0.2s						
VAF	**Ylistaro**	**3.39**	**345**	*e*SG	Sg	08 19 39.5	-9.2
HFS	**Hagfors**	**5.47**	**278**	Pn	Pn	08 19 17.0	-3.8
	baz=81,slow=11						
HFS				Sn	Sn	08 20 19.6	-5.8
	baz=73,slow=22						
HFS	**Hagfors**	**5.47**	**278**	*e*P	Pn	08 19 17.0	-3.8
HFS				*e*S	Sn	08 20 19.6	-5.8
HFS	**Hagfors**	**5.47**	**278**	Pn	Pn	08 19 17.0	-3.7
	comp=Z,0.1nm,0.3s,baz=96,slow=13,SNR=10						
HFS				Sn	Sn	08 20 20.2	-5.3
	comp=Z,0.4nm,0.3s,baz=86,slow=22,SNR=8.9						
HFS				Lg		08 20 51.4	
	comp=Z,0.5nm,0.3s,baz=87,slow=25,SNR=6.1						
NOA	**NORSAR Array B**	**6.73**	**286**	Pn	Pn	08 19 33.8	-4.7
	comp=Z,0.9nm,0.3s,baz=98,slow=12,SNR=4.9						
NOA				Sn	Sn	08 20 48.9	-8.0
	comp=Z,0.6nm,0.3s,baz=110,slow=21,SNR=2.7						
NOA				Lg		08 21 24.0	
	comp=Z,1.6nm,0.3s,baz=164,slow=3.2,SNR=5.5						
ARA0	**ARCESS Array S**	**9.79**	**2**	Pn	P	08 20 15.6	-5.4
	baz=181,slow=16						
ARA0				Sn	Sn	08 22 01.5	-11
	baz=178,slow=22						
ARA0	**ARCESS Array S**	**9.79**	**2**	*e*P	P	08 20 15.6	-5.4
ARA0				*e*S	Sn	08 22 01.5	-11
ARCES	**ARCESS Array B**	**9.79**	**2**	Pn	P	08 20 15.7	-5.3
	comp=Z,1.4nm,0.3s,baz=179,slow=15,SNR=55						
ARCES				Sn	Sn	08 22 04.6	-8.3
	comp=Z,0.3nm,0.3s,baz=182,slow=24,SNR=3.6						
SPITS	**Spitsbergen Ar**	**18.67**	**355**	P	P	08 22 14.4	-2.7
	comp=Z,0.1nm,0.3s,baz=158,slow=15,SNR=6.9						

*IDC **26** 08:23:01.9±1.3, 5.67S×125.07E, mb3.8/4, mb1 3.9/7, mb1mx3.8/17, ML3.3/3, Error ellipse: s-maj=83.7km s-min=21.1km az=66.0*
*NEIC **26** 08:23:05.8±0.7, 5.81S×125.10E, h30km, mb4.2/3, Error ellipse: s-maj=34.3km s-min=11.0km az=62.0*
ISC 26 08:23:04.1±0.8, 5.8S±0.1×125.0E±0.3, h33km, n11, σ0§90/11, mb3.9/5, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**12.23**	**177**	Pn	**P**	**08 25 58.7**	**-0.2**
	0.2nm,0.3s,baz=11,slow=12,SNR=4.9						
WRAB	**Tennant Creek**	**16.70**	**148**	P	**P**	**08 26 55.8**	**-1.5**
	14nm,0.9s						
WRAB				*e*		08 27 02.4	
WRA	**Warramunga Arr**	**16.71**	**148**	Pn	**P**	**08 26 56.9**	**-0.4**
	0.1nm,0.3s,baz=322,slow=13,SNR=8.3						
AS12	**Alice Springs**	**19.70**	**155**	*e*P	**P**	**08 27 41.5**	**+8.0**
	4.3nm,0.8s						
ASAR	**Alice Springs**	**19.70**	**155**	P	**P**	**08 27 35.4**	**+1.8**
	0.1nm,0.3s,baz=335,slow=14,SNR=17						
CTA	**Charters Tower**	**25.03**	**126**	P	**P**	**08 28 31.6**	**+4.7**
	1.1nm,0.3s,mb3.8,baz=261,slow=11,SNR=5.0						
CTAO	**Charters Tower**	**25.03**	**126**	*e*P	**P**	**08 28 28.4**	**+1.5**
	5.7nm,1.0s,mb4.1						
CTAO				*e*	pP	08 28 36.8	+0.6
CMAR	**Chiang Mai Arr**	**35.27**	**314**	P	**P**	**08 29 57.8**	**-0.2**
	0.8nm,0.5s,mb3.9,baz=137,slow=7.3,SNR=5.2						
SONM	**Songino Array**	**55.89**	**345**	P	**P**	**08 32 40.5**	**-0.5**
	0.5nm,0.9s,mb3.5,baz=124,slow=5.2,SNR=2.9						
MKAR	**Makanchi Array**	**64.60**	**329**	P	**P**	**08 33 40.6**	**+0.2**
	0.9nm,0.7s,mb3.9,baz=126,slow=7.5,SNR=8.5						
SBA	**Scott Base**	**75.19**	**172**	*e*P	**P**	**08 34 45.5**	**+1.0**
	6.1nm,1.4s,mb4.3						

IDC 26 08:40:02.8±30.0, 22.89S×171.82W, mb3.6/4, mb1 3.8/4, mb1mx3.6/17, Error ellipse: s-maj=556.0km s-min=175.2km az=78.0, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**39.02**	**266**	P	P	08 47 31.6	-1.5
	1.0nm,0.4s,baz=101,slow=7.7,SNR=3.6						
STKA	**Stephens Creek**	**42.06**	**247**	P	P	08 47 56.5	-1.5
	0.5nm,0.4s,baz=104,slow=12,SNR=3.1						
ASAR	**Alice Springs**	**49.61**	**258**	P	P	08 48 54.8	-3.3
	0.2nm,0.6s,baz=90,slow=6.7,SNR=5.9						
WRA	**Warramunga Arr**	**49.99**	**263**	P	P	08 48 60.0	-1.0
	0.3nm,0.4s,baz=103,slow=8.2,SNR=6.8						

*HEL **26** 08:40:53.7±0.3, 59.92N×22.29E, ML2.5(UPP), ML2.9(NAO), Explosion*
*IDC **26** 08:40:53.7±1.7, 59.82N×22.40E, mb1 2.9/4, mb1mx2.8/21, ML2.6/4, Error ellipse: s-maj=22.6km s-min=7.5km az=162.0*
*BER **26** 08:40:54.7±5.1, 59.92N×22.31E, ML2.9(NAO), Suspected explosion*
*NAO **26** 08:40:55.4±2.5, 60.09N×22.15E, ML2.9*
ISC 26 08:40:52.6±0.7, 60.12N±0.05×22.16E±0.06, n16, σ1§51/32,

Finland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MEF	**Metsahovi**	**1.12**	**84**	*e*P	**Pb**	**08 41 12.9**	**-1.6**
MEF				*e*S	**Sb**	**08 41 27.1**	**-2.4**
PVF	**Pernaja**	**1.89**	**75**	*e*P	**Pn**	**08 41 26.9**	**+0.5**
PVF				*e*S	**Sn**	**08 41 52.3**	**+1.0**
FIA0	**FINESS Array S**	**2.33**	**54**	*e*PB	**Pb**	**08 41 35.5**	**+0.3**
FIA0				*e*SG	**Sg**	**08 42 07.8**	**-2.4**
FIA0	**FINESS Array S**	**2.33**	**54**	Pn	**Pn**	**08 41 35.2**	**+2.5**
	baz=227,slow=14						
FIA0				Lg		08 42 07.8	
	baz=231,slow=28						
FINES	**FINESS Array B**	**2.33**	**54**	Pn	**Pn**	**08 41 35.5**	**+2.8**
	0.8nm,0.3s,baz=227,slow=14,SNR=36						
FINES				Sn	**Sn**	**08 42 07.9**	**+5.3**
	3.1nm,0.3s,baz=234,slow=24,SNR=20						
KEF	**Keuruu**	**2.44**	**31**	*e*PG	**Pg**	**08 41 39.2**	**-2.0**
KEF				*e*SG	**Sg**	**08 42 13.5**	**-0.2**
KAF	**Kangasniemi**	**2.83**	**43**	*e*PB	**Pb**	**08 41 43.8**	**0.0**
KAF				*e*SB	**Sb**	**08 42 21.3**	**+2.0**
VAF	**Ylistaro**	**2.94**	**5**	*e*PB	**Pb**	**08 41 47.9**	**+2.2**
VAF				*e*SG	**Sg**	**08 42 29.6**	**-0.8**
SUF	**Sumiainen**	**3.23**	**35**	*e*P	**Pn**	**08 41 48.8**	**+3.3**
SUF				*e*SB	**Sb**	**08 42 33.5**	**+2.7**
HFS	**Hagfors**	**4.24**	**274**	Pn	**Pn**	**08 42 00.6**	**+0.8**
	baz=98,slow=9.3						
HFS				Sn	**Sn**	**08 42 51.1**	**+0.4**
	baz=118,slow=111						
HFS				Lg		08 43 05.2	
	baz=97,slow=37						
HFS	**Hagfors**	**4.24**	**274**	*e*P	**Pn**	**08 42 00.6**	**+0.8**
HFS				*e*S	**Sn**	**08 42 51.1**	**+0.4**
HFS				*e*SG	**Sg**	**08 43 05.2**	**-8.3**
HFS	**Hagfors**	**4.24**	**274**	Pn	**Pn**	**08 42 00.8**	**+1.0**
	0.1nm,0.3s,baz=104,slow=12,SNR=11						
HFS				Sn	**Sn**	**08 42 52.3**	**+1.5**
	0.1nm,0.3s,baz=87,slow=29,SNR=2.9						
HFS				Lg		08 43 09.9	
	0.2nm,0.3s,baz=85,slow=30,SNR=7.8						
NOA	**NORSAR Array B**	**5.47**	**284**	Pn	**Pn**	**08 42 16.6**	**-0.8**
	0.2nm,0.3s,baz=109,slow=12,SNR=2.1						
NOA				Sn	**Sn**	**08 43 21.0**	**-1.0**
	0.2nm,0.3s,baz=129,slow=28,SNR=2.5						
ARA0	**ARCESS Array S**	**9.56**	**7**	Pn	**P**	**08 43 13.1**	**-1.1**
	baz=181,slow=16						
ARA0				Sn	**Sn**	**08 44 58.1**	**-5.5**
	baz=190,slow=28						
ARA0	**ARCESS Array S**	**9.56**	**7**	*e*P	**P**	**08 43 13.1**	**-1.1**
ARA0				*e*S	**Sn**	**08 44 58.1**	**-5.5**
ARCES	**ARCESS Array B**	**9.56**	**7**	Pn	**P**	**08 43 13.6**	**-0.6**
	0.1nm,0.3s,baz=184,slow=14,SNR=16						
ARCES				Sn	**Sn**	**08 44 60.0**	**-3.7**
	0.2nm,0.3s,baz=188,slow=25,SNR=3.5						

*HEL **26** 08:55:30.7±0.1, 59.70N×24.56E, ML2.3, ML2.7(UPP), ML2.6(NAO), Explosion*
*NAO **26** 08:55:30.5±1.3, 59.69N×24.51E, ML2.6*
*BER **26** 08:55:31.5±2.6, 59.71N×24.59E, ML2.6(NAO), Suspected explosion*
*IDC **26** 08:55:32.7±2.0, 59.83N×24.48E, mb1 3.8/4, mb1mx3.3/21, ML3.9/4, Error ellipse: s-maj=21.7km s-min=6.3km az=147.0*
ISC 26 08:55:27.7±0.6, 59.68N±0.04×24.38E±0.07, n20, σ1§43/34, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MEF	**Metsahovi**	**0.54**	**1**	*e*P	**Pg**	**08 55 40.0**	**+1.6**
MEF				*e*S	**Sg**	**08 55 46.7**	**+1.2**
PVF	**Pernaja**	**1.14**	**40**	*e*P	**Pb**	**08 55 49.6**	**-0.4**
PVF				*e*S	**Sb**	**08 56 03.5**	**-1.6**
VSU	**Vasula**	**1.73**	**134**	*e*P	**Pn**	**08 56 00.5**	**+1.3**
VSU				*e*S	**Sb**	**08 56 21.6**	**-0.6**
VSU	**Vasula**	**1.73**	**134**	Pn	**Pn**	**08 56 00.9**	**+1.7**
VSU				Lg		08 56 22.2	
VJF	**Virojoki**	**1.81**	**60**	*e*P	**Pn**	**08 56 01.1**	**+0.8**
VJF				*e*S	**Sn**	**08 56 23.1**	**-1.2**
FIA0	**FINESS Array S**	**1.96**	**25**	*e*P	**Pn**	**08 56 04.6**	**+2.1**
FIA0				*e*S	**Sn**	**08 56 28.2**	**+0.2**
FIA0				MSG		08 56 30.8	
	comp=Z,19nm,0.2s						
FIA0	**FINESS Array S**	**1.96**	**25**	Pn	**Pn**	**08 56 04.8**	**+2.4**
	baz=196,slow=18						
FIA0				Lg		08 56 29.4	
	baz=208,slow=28						
FINES	**FINESS Array B**	**1.96**	**25**	Pg	**Pg**	**08 56 04.7**	**-2.0**
	comp=Z,15nm,0.3s,baz=206,slow=18,SNR=443						
FINES				Lg		08 56 29.4	
	comp=Z,12nm,0.3s,baz=205,slow=29,SNR=18						
KEF	**Keuruu**	**2.50**	**5**	*e*PB	**Pb**	**08 56 14.0**	**+0.7**
KEF				*e*SG	**Sg**	**08 56 46.2**	**-4.8**
KAF	**Kangasniemi**	**2.61**	**20**	*e*PB	**Pb**	**08 56 15.6**	**+0.4**
KAF				*e*SB	**Sb**	**08 56 48.2**	**+0.3**
KAF				MSG		08 56 51.0	
	comp=Z,15nm,0.2s						
SUF	**Sumiainen**	**3.17**	**15**	*e*P	**Pn**	**08 56 21.3**	**+1.6**
SUF				*e*SG	**Sg**	**08 57 07.9**	**-5.1**
SUF				MSG		08 57 18.0	
	comp=Z,7.3nm,0.2s						
VAF	**Ylistaro**	**3.47**	**347**	*e*P	**Pn**	**08 56 27.7**	**+3.7**
VAF				*e*SG	**Sg**	**08 57 18.1**	**-5.1**
HFS	**Hagfors**	**5.40**	**279**	Pn	**Pn**	**08 56 52.9**	**+1.6**
	baz=86,slow=12						
HFS				Sn	**Sn**	**08 57 54.4**	**-0.7**
	baz=86,slow=28						
HFS				Lg		08 58 19.4	
	baz=86,slow=37						
HFS	**Hagfors**	**5.40**	**279**	*e*P	**Pn**	**08 56 52.9**	**+1.6**
HFS				*e*S	**Sn**	**08 57 54.4**	**-0.7**
HFS				*e*SG	**Sg**	**08 58 19.4**	**-7.9**
HFS	**Hagfors**	**5.40**	**279**	Pn	**Pn**	**08 56 53.1**	**+1.7**
	comp=Z,0.3nm,0.3s,baz=90,slow=12,SNR=33						
HFS				Sn	**Sn**	**08 57 54.5**	**-0.7**
	comp=Z,0.5nm,0.3s,baz=86,slow=22,SNR=9.7						
HFS				Lg		08 58 23.0	
	comp=Z,0.5nm,0.3s,baz=88,slow=34,SNR=5.6						
NOA	**NORSAR Array B**	**6.67**	**287**	Pn	**Pn**	**08 57 09.5**	**+0.2**
	comp=Z,0.9nm,0.3s,baz=86,slow=14,SNR=4.7						
NOA				Sn	**Sn**	**08 58 24.2**	**-2.8**
	comp=Z,1.2nm,0.3s,baz=94,slow=5.8,SNR=4.5						
NOA				Lg		08 58 59.3	
	comp=Z,1.5nm,0.3s,baz=225,slow=32,SNR=4.5						
ARA0	**ARCESS Array S**	**9.90**	**2**	Pn	**P**	**08 57 51.6**	**-2.5**
	baz=177,slow=16						
ARA0	**ARCESS Array S**	**9.90**	**2**	*e*P	**P**	**08 57 51.6**	**-2.5**
ARCES	**ARCESS Array B**	**9.90**	**2**	Pn	**P**	**08 57 51.9**	**-2.3**
	comp=Z,1.6nm,0.3s,baz=179,slow=12,SNR=89						
MLR	**Muntele Rosu**	**14.25**	**176**	Pn	**P**	**08 58 45.6**	**-7.0**
	comp=Z,0.4nm,0.3s,baz=280,slow=6.1,SNR=3.8						

*NEIC **26** 09:37:49.6, 48.33N×6.65E, h5km, ML3.0(LDG), ML2.7(STR), After STR.*
*STR **26** 09:37:49.6±0.2, 48.33N×6.65E, h5km±1km, Ml2.7, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
*BGR **26** 09:37:50.5±0.6, 48.34N×6.71E, h10km, ML2.2/2, Error ellipse: s-maj=4.4km s-min=3.3km az=78.0*
*LDG **26** 09:37:50.0±0.1, 48.33N×6.63E, h12km, Md3.0/3, Ml3.0/19, Error ellipse: s-maj=1.1km s-min=0.8km az=166.0*
ISC 26 09:37:47.5±0.2, 48.31N±0.02×6.59E±0.02, h12km, n45, σ1§29/89, France

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAU	**Haudompre**	**0.34**	**208**	*e*Pg	**Pg**	**09 37 57.5**	**+2.9**
	SNR=1.0						
HAU				*e*Sg	**Sg**	**09 38 01.4**	**+2.0**
	235nm,0.2s						
ECH	**Echery**	**0.39**	**104**	Pg	**Pg**	**09 37 56.8**	**+1.2**
ECH				Sg	**Sg**	**09 38 01.4**	**+0.4**
THEF	**They Montfort**	**0.41**	**259**	Pg	**Pg**	**09 37 58.6**	**+2.7**
THEF				Sg	**Sg**	**09 38 04.3**	**+2.7**
CDF	**Champ du Feu**	**0.47**	**77**	*e*Pg	**Pg**	**09 37 58.0**	**+0.9**
	SNR=1.0						
CDF				*e*Sg	**Sg**	**09 38 03.5**	**0.0**
	147nm,0.2s,SNR=1.0						
HINF	**Hinteralfeld**	**0.52**	**160**	*e*Pg	**Pg**	**09 38 00.0**	**+1.9**
	SNR=1.0						
HINF				*e*Pn	**Pn**	**09 38 02.0**	**+1.6**
	SNR=1.0						
HINF				*e*Sg	**Sg**	**09 38 06.8**	**+1.5**
	181nm,0.2s						
HINF				*e*Sn	**Sn**	**09 38 09.7**	**+0.5**
MOF	**Molkenrain**	**0.59**	**141**	Pg	**Pg**	**09 38 00.8**	**+1.4**
LIBD	**Limburg**	**0.70**	**103**	Pg	**Pg**	**09 38 02.8**	**+1.3**
RFYF	**Reffroy**	**0.81**	**294**	*e*Pg	**Pg**	**09 38 06.4**	**+2.7**
	baz=117						
RFYF				*e*Sg	**Sg**	**09 38 16.4**	**+1.8**
	79nm,0.2s						
LOMF	**Lomont**	**0.97**	**170**	Pg	**Pg**	**09 38 08.7**	**+1.7**
LOMF				Sg	**Sg**	**09 38 21.5**	**+1.5**
BOURR	**Bourrignon**	**1.01**	**154**	*e*Pg	**Pg**	**09 38 09.6**	**+1.8**
	SNR=3.0						
BOURR				*e*Sg	**Sg**	**09 38 22.3**	**+0.9**
	SNR=4.2						
MEZF	**Maizieres J'vi**	**1.04**	**281**	*e*Pg	**Pg**	**09 38 10.0**	**+1.6**
	baz=99,SNR=1.0						
MEZF				*e*Sn	**Sn**	**09 38 22.9**	**+0.6**
	SNR=1.0						
MEZF				*e*Sg	**Sg**	**09 38 23.9**	**+1.6**
	47nm,0.3s						
SFTF	**Sexfontaines**	**1.04**	**265**	*e*Pg	**Pg**	**09 38 09.8**	**+1.5**
SFTF				*e*Sg	**Sg**	**09 38 24.1**	**+1.8**
	65nm,0.2s						
FELD	**Feldberg**	**1.04**	**114**	Pg	**Pg**	**09 38 08.8**	**+0.4**
FELD				Sg	**Sg**	**09 38 22.4**	**0.0**
LANF	**Langenberg**	**1.05**	**50**	Pg	**Pg**	**09 38 08.1**	**-0.4**
LANF				Sg	**Sg**	**09 38 22.6**	**0.0**
BFO	**Black Forest**	**1.16**	**88**	*e*Pg	**Pg**	**09 38 10.8**	**+0.1**
	SNR=12						
BFO				*e*Sg	**Sg**	**09 38 24.9**	**-1.5**
	SNR=12						
BFO	**Black Forest**	**1.16**	**88**	*e*Pg	**Pg**	**09 38 10.9**	**+0.1**
BFO				*e*Sn	**Sn**	**09 38 23.5**	**-1.9**
WLF	**Walferdange**	**1.39**	**348**	*e*Sg	**Sg**	**09 38 34.3**	**+0.5**
	SNR=4.0						
SLE	**Schleitheim**	**1.39**	**112**	*e*Pg	**Pg**	**09 38 15.5**	**+0.2**
	SNR=13						
SLE				*e*Sg	**Sg**	**09 38 32.4**	**-1.4**
	SNR=7.5						
SPAK	**Spaichingen**	**1.48**	**97**	Pg	**Pg**	**09 38 17.2**	**0.0**
CABF	**La Chapelle**	**1.73**	**191**	*e*Pn	**Pn**	**09 38 19.2**	**+1.5**
	SNR=1.0						
CABF				*e*Pg	**Pg**	**09 38 22.9**	**+0.8**
CABF				*e*Sn	**Sn**	**09 38 40.0**	**+0.1**
	SNR=1.0						
CABF				*e*Sg	**Sg**	**09 38 45.3**	**0.0**
	46nm,0.6s,SNR=1.0						
STU	**Stuttgart**	**1.79**	**74**	*e*Sg	**Sg**	**09 38 44.6**	**-2.7**
	SNR=3.2						
WILA	**Wila**	**1.80**	**119**	*e*Sg	**Sg**	**09 38 46.0**	**-1.5**
	SNR=6.8						
LOR	**Lormes**	**2.12**	**241**	*e*Pn	**Pn**	**09 38 24.2**	**+1.0**
	baz=64,SNR=1.0						
LOR				*e*Pg	**Pg**	**09 38 30.4**	**+0.7**
	baz=62,SNR=1.0						
LOR				*e*Sn	**Sn**	**09 38 48.9**	**-0.7**
LOR				*e*Sg	**Sg**	**09 38 56.8**	**-1.1**
	24nm,0.2s,SNR=1.0						
GIVF	**Givet**	**2.13**	**328**	*e*Pg	**Pg**	**09 38 29.5**	**-0.6**
GIVF				*e*Sg	**Sg**	**09 38 57.0**	**-1.6**
	7.1nm,0.3s						
KAMOR	**Kamor**	**2.21**	**116**	*e*Sg	**Sg**	**09 38 59.3**	**-1.7**
	SNR=2.8						
BAIF	**Baives**	**2.35**	**319**	*e*Pn	**Pn**	**09 38 26.6**	**+0.1**
BAIF				*e*Sg	**Sg**	**09 39 04.1**	**-1.6**
	7.0nm,0.3s						
SSF	**Saint Saulge**	**2.43**	**240**	*e*Pn	**Pn**	**09 38 28.0**	**+0.3**
	SNR=1.0						
SSF				*e*Pg	**Pg**	**09 38 36.0**	**0.0**
	SNR=1.0						
SSF				*e*Sg	**Sg**	**09 39 06.6**	**-1.8**
	14nm,0.3s						
SMF	**Signal de Mont**	**2.50**	**229**	*e*Pn	**Pn**	**09 38 29.0**	**+0.3**
SMF				*e*Pg	**Pg**	**09 38 37.1**	**-0.3**
	SNR=1.0						
SMF				*e*Sg	**Sg**	**09 39 08.7**	**-2.0**
	30nm,0.2s,SNR=1.0						
AVF	**Avril sur Loir**	**2.67**	**236**	*e*Pn	**Pn**	**09 38 31.6**	**+0.5**
	SNR=1.0						
AVF				*e*Pg	**Pg**	**09 38 40.0**	**-0.7**
	SNR=1.0						
AVF				*e*Sn	**Sn**	**09 39 02.1**	**-1.5**
	SNR=1.0						
AVF				*e*Sg	**Sg**	**09 39 13.7**	**-2.6**
	6.9nm,0.2s,SNR=1.0						
LPL	**La Plagne**	**2.80**	**178**	*e*Pn	**Pn**	**09 38 33.4**	**+0.5**
LPL				*e*Sg	**Sg**	**09 39 18.9**	**-1.7**
	4.1nm,0.3s						
LPG	**La Plagne**	**2.81**	**178**	*e*Pn	**Pn**	**09 38 33.8**	**+0.6**
LPG				*e*Sg	**Sg**	**09 39 19.8**	**-1.5**
	2.5nm,0.2s,SNR=1.0						
HYF	**Humbligny**	**2.86**	**250**	*e*Pn	**Pn**	**09 38 34.3**	**+0.5**
HYF				*e*Sg	**Sg**	**09 39 21.1**	**-1.6**
BGF	**Bois d'Agland**	**3.09**	**237**	*e*Pn	**Pn**	**09 38 37.5**	**+0.5**
	SNR=1.0						
BGF				*e*Pg	**Pg**	**09 38 48.1**	**-1.0**
BGF				*e*Sg	**Sg**	**09 39 27.3**	**-2.9**
	41nm,0.4s,SNR=1.0						
GRFO	**Grafenberg**	**3.35**	**64**	*e*Sg	**Sg**	**09 39 33.6**	**-5.4**
ORIF	**Oris-en-Rattie**	**3.43**	**188**	*e*Pn	**Pn**	**09 38 41.9**	**0.0**
ORIF				*e*Sg	**Sg**	**09 39 39.3**	**-2.3**
	4.2nm,0.3s,SNR=1.0						
TCF	**Toulx Ste Croi**	**3.60**	**237**	*e*Pn	**Pn**	**09 38 43.0**	**-1.4**
	SNR=1.0						
TCF				*e*Pg	**Pg**	**09 38 57.4**	**-2.0**
	SNR=1.0						
TCF				*e*Sg	**Sg**	**09 39 43.4**	**-4.0**
	7.5nm,0.3s,SNR=1.0						
VIVF	**Saint-Julien-l**	**3.70**	**202**	*e*Pn	**Pn**	**09 38 45.7**	**0.0**
VIVF				*e*Sg	**Sg**	**09 39 46.7**	**-3.9**
	4.6nm,0.3s						
MOX	**Moxa**	**4.03**	**53**	*e*Sg	**Sg**	**09 39 56.4**	**-5.1**
CAF	**Calviac**	**4.60**	**224**	*e*Pn	**Pn**	**09 38 57.8**	**-0.8**
RJF	**

VJF	**Virojoki**	**2.75**	**73**	*e*P	**Pn**	10 01 30.8	**+0.5**
VJF				*e*S	**Sn**	10 02 04.4	**-0.3**
KAF	**Kangasniemi**	**3.02**	**39**	*e*PB	**Pb**	10 01 37.1	**-1.4**
KAF				*e*SB	**Sb**	10 02 14.9	**-1.2**
KAF				MSG		10 02 18.3	
	comp=Z,3.3nm,0.1s						
VAF	**Ylistaro**	**3.21**	**4**	*e*PB	**Pb**	10 01 41.4	**-0.4**
VAF				*e*SB	**Sb**	10 02 23.1	**+1.3**
SUF	**Sumiainen**	**3.45**	**32**	*e*P	**Pn**	10 01 42.4	**+2.2**
SUF				*e*SB	**Sb**	10 02 26.7	**-1.9**
HFS	**Hagfors**	**4.29**	**278**	*e*P	**Pn**	10 01 52.8	**+0.6**
HFS				*e*SG	**Sg**	10 02 57.5	**-10**
HFS	**Hagfors**	**4.29**	**278**	P	**Pn**	10 01 52.8	**+0.6**
	baz=99,slow=9.3						
HFS				Lg		10 02 57.5	
	baz=96,slow=28						
NOA	**NORSAR Array B**	**5.58**	**287**	Pn	**Pn**	10 02 10.6	**+0.2**
	comp=Z,0.2nm,0.3s,baz=87,slow=12,SNR=2.6						
NOA				Sn	**Sn**	10 03 15.5	**-0.7**
	comp=Z,0.2nm,0.3s,baz=71,slow=24,SNR=2.3						
ARA0	**ARCESS Array S**	**9.83**	**7**	Pn	**P**	10 03 06.3	**-3.2**
	baz=180,slow=16						
ARA0				Sn	**Sn**	10 04 51.5	**-10**
	baz=191,slow=28						
ARA0	**ARCESS Array S**	**9.83**	**7**	*e*P	**P**	10 03 06.3	**-3.2**
ARA0				*e*S	**Sn**	10 04 51.5	**-10**
ARCES	**ARCESS Array B**	**9.83**	**7**	Pn	**P**	10 03 07.2	**-2.4**
	comp=Z,0.1nm,0.3s,baz=191,slow=14,SNR=12						
ARCES				Sn	**Sn**	10 04 53.6	**-8.2**
	comp=Z,0.2nm,0.3s,baz=191,slow=24,SNR=3.6						

SVSA 26 10:10:57.7±0.8,38.76N×29.68W,MD3.7,ML2.9, Error ellipse: s-maj=153.3km s-min=9.4km az=91.0, Azores Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PCED	**Cedros**	**0.77**	**99**	*e*P	Pg	10 11 10.7	-2.4
PCED				*e*S	Sg	10 11 20.6	-2.8
	290nm,0.5s						
CALA	**Caldeira**	**0.78**	**103**	*e*S	Sg	10 11 21.2	-2.5
PICO	**Pico**	**1.01**	**104**	*i* P	Pb	10 11 14.2	-3.6
PICO				*e*S	Sg	10 11 27.0	-4.4
ROSA	**Rosais**	**1.12**	**91**	*e*P	Pb	10 11 16.0	-3.7
ROSA				*e*S	Sb	10 11 28.9	-5.8
PMAN	**Manadas**	**1.25**	**95**	*e*S	Sb	10 11 32.1	-6.2
	68nm,0.4s						
PID	**Ribeirinha**	**1.26**	**104**	*e*P	Pb	10 11 17.6	-4.4
PID				*e*S	Sb	10 11 32.8	-5.8
PGRA	**Graciosa**	**1.35**	**78**	*e*S	Sb	10 11 35.0	-6.3
	81nm,0.4s						
TOPO	**Topo**	**1.38**	**96**	*e*P	Pb	10 11 19.3	-4.9
TOPO				*e*S	Sb	10 11 35.4	-6.9

*IDC **26** 10:15:14.8±9.8,29.91S×179.07W,h333km±98km, mb2.9/2, mb1 3.3/3, mb1mx3.0/13, Error ellipse: s-maj=95.9km s-min=50.0km az=13.0*

ISC 26 10:15:16.2±2.8,30.3S±0.1×178.4W±0.5,h422km±33km, n11,σ0°88/13,mb3.0/2,Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**8.78**	**204**	P	**P**	**10 17 19.9**	**-1.3**
	4.9nm,0.3s,baz=350,slow=6.1,SNR=35						
URZ				S	**S**	**10 19 01.0**	**+0.9**
	5.4nm,0.3s,baz=75,slow=19,SNR=14						
URZ	**Urewera**	**8.78**	**204**	*e*P	**P**	10 17 20.7	**-0.5**
BFZ	**Birch Farm**	**11.25**	**201**	P	**P**	**10 17 51.1**	**+1.8**
BFZ				S	**S**	**10 19 51.4**	**+0.2**
MRZ	**Mangatainoka R**	**11.45**	**204**	*e*P	**P**	**10 17 50.0**	**-1.6**
MRZ				S	**S**	**10 19 54.5**	**-0.9**
CAW	**Cannon Point**	**12.03**	**204**	*e*P	**P**	**10 17 57.6**	**-0.4**
QRZ	**Quartz Range**	**12.84**	**213**	*e*P	**P**	10 18 06.4	**-0.5**
THZ	**Tophouse**	**13.43**	**209**	*e*P	**P**	**10 18 14.0**	**+0.7**
KHZ	**Kahutara**	**13.73**	**206**	P	**P**	**10 18 17.1**	**+0.6**
ASAR	**Alice Springs**	**42.76**	**267**	P	**P**	**10 22 35.8**	**-0.1**
	0.4nm,0.7s,mb2.9,baz=102,slow=6.6,SNR=8.9						
WRA	**Warramunga Arr**	**43.73**	**272**	P	**P**	**10 22 44.0**	**+0.2**
	0.9nm,0.7s,mb3.2,baz=110,slow=7.8,SNR=13						
FINES	**FINESS Array B**	**144.91**	**340**	PKP	PKPdf	10 34 10.0	+7.1
	0.9nm,0.4s,baz=45,slow=3.9,SNR=8.1						

IDC 26 10:20:27.5±1.8,13.00N×144.50E,mb3.6/4,mb1 3.9/4, mb1mx3.6/19,Error ellipse: s-maj=173.0km s-min=26.4km az=114.0,Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**34.23**	**197**	P	P	10 27 14.9	-2.3
	0.4nm,0.6s,baz=21,slow=9.8,SNR=6.6						
ASAR	**Alice Springs**	**37.89**	**196**	P	P	10 27 46.6	-1.6
	0.2nm,0.4s,baz=18,slow=12,SNR=4.3						
YKA	**Yellowknife Ar**	**83.55**	**27**	P	P	10 32 56.6	-1.8
	0.2nm,0.4s,baz=286,slow=5.1,SNR=9.2						
NVAR	**Mina Array Bea**	**87.57**	**51**	P	P	10 33 18.9	0.0
	0.4nm,0.6s,baz=269,slow=4.1,SNR=4.6						

*MOS **26** 10:25:41.4±1.6,39.31N×75.16E,h33km,mb4.2/5, Error ellipse: s-maj=24.1km s-min=13.6km az=112.2*
*NNC **26** 10:25:43.8±8.4,39.51N×75.53E,h103km±206km,mpv3.6, Error ellipse: s-maj=105.3km s-min=63.9km az=45.0*
*IDC **26** 10:25:47.0±4.2,39.56N×75.29E,h63km±35km,mb3.4/9, mb1 3.6/12,mb1mx3.5/22,ML2.9/3, Error ellipse: s-maj=31.3km s-min=20.8km az=7.0*
*NEIC **26** 10:25:48.9±2.3,39.59N×75.30E,h82km±17km,mb4.4/1, Error ellipse: s-maj=23.6km s-min=13.8km az=176.0*

ISC 26 10:25:43.1±0.6,39.09N±0.04×75.14E±0.09,h65km±8km, n44,σ1°10/47,mb3.6/10,2C-2D,Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KZA	**Kyzart**	**2.98**	**2**	P	**P**	**10 26 29.5**	**+0.3**
	SNR=13						
UCH	**Uchtor**	**3.17**	**352**	P	**P**	**10 26 32.2**	**+0.4**
	SNR=36						
AML	**Almayashu**	**3.23**	**341**	P	**P**	**10 26 33.1**	**+0.5**
	SNR=12						
ULHL	**Ulahol**	**3.26**	**15**	P	**P**	**10 26 33.4**	**+0.3**
	SNR=13						
KBK	**Karagaybulak**	**3.56**	**358**	P	**P**	**10 26 38.0**	**+0.6**
	SNR=8.5						
AAK	**Ala-Archa**	**3.57**	**352**	P	**P**	**10 26 38.0**	**+0.6**
	SNR=11						
AAK	**Ala-Archa**	**3.57**	**352**	*e*Pn	**P**	**10 26 38.0**	**+0.6**
TKM2	**Tokmak 2**	**3.84**	**5**	P	**P**	**10 26 41.6**	**+0.4**
	SNR=65						
CHMS	**Chumysh**	**3.91**	**356**	P	**P**	**10 26 42.6**	**+0.4**
	SNR=6.7						
USP	**Ospenovka**	**4.20**	**354**	P	**P**	**10 26 46.7**	**+0.5**
	SNR=8.0						
KK31	**Karatay Array**	**5.32**	**320**	⇑Pn	**P**	**10 27 00.5**	**-1.2**
	2.6nm,0.3s,baz=122,slow=12,SNR=97						
KK31				Sn	**S**	**10 28 01.3**	**-1.1**
	14nm,0.6s,baz=136,slow=24,SNR=6.5						
KK31				⇓Lg		10 28 32.1	
	9.0nm,0.4s,baz=132,slow=28,SNR=4.1						
KKAR	**Karatay Array**	**5.32**	**320**	*e*Pn	**P**	**10 27 00.5**	**-1.2**
KKAR						10 28 01.3	
KKAR				pmax	pmax		
	comp=Z,1.0nm,0.2s						
KKAR				smax			
	comp=Z,1.0nm,0.2s						
KKAR				smax			
	comp=Z,2.0nm,0.3s						
CHCP	**Chirah Chowk**	**5.63**	**196**	P	**P**	**10 27 07.2**	**+1.2**
CEP	**Cherat**	**5.87**	**207**	P	**P**	**10 27 09.8**	**+0.5**
CEP				S	**S**	**10 28 16.0**	**0.0**
THW	**Thamme Wali**	**6.86**	**205**	P	**P**	**10 27 21.2**	**-2.0**
MKAR	**Makanchi Array**	**9.31**	**32**	P	**P**	**10 27 52.6**	**-4.3**
	comp=Z,0.1nm,0.3s,baz=207,slow=13,SNR=6.0						
MKAR				Lg		10 30 30.8	
	comp=Z,0.2nm,0.3s,baz=217,slow=26,SNR=3.4						
MKAR	**Makanchi Array**	**9.31**	**32**	*i* P	**P**	**10 27 54.4**	**-2.5**
MKAR				pmax	pmax		
	comp=Z,1.0nm,1.0s						
KOLN	**Koldanda**	**13.31**	**145**	*e*P	**P**	**10 28 44.5**	**-6.1**
	comp=Z,8.1nm,0.5s						
GKN	**Gorkha**	**13.59**	**142**	*e*P	**P**	**10 28 47.5**	**-6.8**
	comp=Z,12nm,0.3s						
KKN	**Kakani**	**14.09**	**140**	*e*P	**P**	**10 28 53.4**	**-7.3**
	comp=Z,5.5nm,0.4s						
GUN	**Gumba**	**14.29**	**138**	*e*P	**P**	**10 29 02.5**	**-0.9**
	comp=Z,2μm,1.0s						
BVAR	**Borovoye Array**	**14.31**	**348**	P	**P**	**10 28 59.6**	**-4.0**
	comp=Z,0.1nm,0.3s,baz=157,slow=11,SNR=2.5						
BVAR				Lg		10 33 13.0	
	comp=Z,0.1nm,0.3s,baz=158,slow=27,SNR=5.1						
PKI	**Pulchoki**	**14.33**	**140**	*e*P	**P**	**10 28 56.4**	**-7.5**
BRVK	**Borovoye**	**14.36**	**348**	*e*P	**P**	**10 29 07.5**	**+3.3**
AB31	**Akbulak array**	**14.88**	**318**	⇑Pn	**P**	**10 29 08.0**	**-2.9**
	comp=Z,1.2nm,0.5s,baz=124,slow=14						
AB31				⇓Sn	**S**	**10 31 49.4**	**-5.0**
	comp=Z,0.9nm,0.7s,baz=123,slow=22						
AB31	**Akbulak array**	**14.88**	**318**	P	**P**	**10 29 07.9**	**-2.9**
AB31						10 31 46.4	
AB31				pmax	pmax		
	comp=Z,1.0nm,0.4s						
THR	**Tehran**	**19.30**	**268**	P	**P**	**10 30 08.2**	**+2.9**
	comp=Z,0.0nm,0.3s,baz=49,slow=5.9,SNR=3.1						
SONM	**Songino Array**	**24.18**	**59**	P	**P**	**10 30 53.9**	**-0.1**
	comp=Z,0.2nm,0.4s,mb2.8,baz=260,slow=8.8,SNR=2.5						
FINES	**FINESS Array B**	**37.27**	**323**	P	**P**	**10 32 49.8**	**-0.1**
	comp=Z,0.9nm,0.4s,mb4.0,baz=115,slow=9.7,SNR=11						
FINES	**FINESS Array B**	**37.27**	**323**	P	**P**	**10 32 49.8**	**-0.2**
FINES				pmax	pmax		
	comp=Z,1.0nm,0.4s						
ARCES	**ARCESS Array B**	**40.08**	**335**	P	**P**	**10 33 13.3**	**+0.1**
	comp=Z,3.3nm,0.9s,mb4.1,baz=109,slow=8.9,SNR=23						
ARCES	**ARCESS Array B**	**40.08**	**335**	P	**P**	**10 33 13.3**	**+0.1**
ARCES				pmax	pmax		
	comp=Z,3.0nm,1.0s						
GERES	**GERESS Array B**	**44.17**	**304**	P	**P**	**10 33 47.9**	**+1.0**
	comp=Z,0.2nm,0.3s,mb3.4,baz=63,slow=9.0,SNR=3.8						
NB2	**NORSAR Subarra**	**44.35**	**321**	P	**P**	**10 33 47.1**	**-1.0**
	comp=Z,1.2nm,0.5s,mb3.9,baz=90,slow=7.9						
NOA	**NORSAR Array B**	**44.35**	**321**	P	**P**	**10 33 47.8**	**-0.3**
	comp=Z,1.2nm,0.5s,mb3.9,baz=91,slow=7.9,SNR=6.5						
NOA	**NORSAR Array B**	**44.35**	**321**	P	**P**	**10 33 47.8**	**-0.3**
NOA				pmax	pmax		
	comp=Z,1.0nm,0.5s						
ESLA	**Sonseca Array**	**59.14**	**298**	P	**P**	**10 35 41.3**	**+2.1**
	comp=Z,2.2nm,0.8s,mb4.2						
INK	**Inuvik**	**70.79**	**11**	P	**P**	**10 36 53.6**	**-0.2**
	comp=Z,0.9nm,0.6s,mb3.8,baz=344,slow=7.4,SNR=6.0						
INK	**Inuvik**	**70.79**	**11**	P	**P**	**10 36 53.6**	**-0.2**
INK				pmax	pmax		
	comp=Z,1.0nm,0.6s						
ILAR	**Eielson Array**	**71.36**	**18**	P	**P**	**10 36 56.2**	**-1.1**
	comp=Z,0.9nm,1.1s,mb3.5,baz=328,slow=5.5,SNR=5.4						
ILAR	**Eielson Array**	**71.36**	**18**	P	**P**	**10 36 56.2**	**-1.1**
ILAR				pmax	pmax		
	comp=Z,1.0nm,1.1s						
YKA	**Yellowknife Ar**	**78.46**	**5**	P	**P**	**10 37 37.7**	**-0.2**
	comp=Z,0.3nm,0.5s,mb3.3,baz=346,slow=5.8,SNR=12						
YKA	**Yellowknife Ar**	**78.46**	**5**	P	**P**	**10 37 37.7**	**-0.2**
WRA	**Warramunga Arr**	**80.68**	**125**	P	**P**	**10 37 54.5**	**+3.8**
	comp=Z,0.1nm,0.4s,mb3.0,baz=327,slow=4.4,SNR=5.2						

*IDC **26** 10:31:24.5±15.0,44.50N×127.63W,mb2.9/1,mb1 3.4/3, mb1mx3.2/20,ML2.9/2,MS2.7/2,Ms1 2.7/2,ms1mx2.4/9, Error ellipse: s-maj=330.0km s-min=30.3km az=69.0*
*NEIC **26** 10:31:26.5±2.7,44.63N×127.53W,h10km,mb3.4/1, Error ellipse: s-maj=41.0km s-min=13.8km az=78.0*

ISC 26 10:31:19.3±2.7,44.3N±0.1×128.5W±0.3,h10km,n15, σ1°24/13,mb3.0/2,Off coast of Oregon

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HSO	**Harness Mounta**	**3.96**	**100**	*e*P	**Pn**	**10 32 20.8**	**-0.6**
BMW	**Boistfort Moun**	**4.27**	**58**	P	**Pn**	**10 32 21.2**	**-4.8**
SSOR	**Sweet Springs**	**4.32**	**81**	*e*P	**Pn**	**10 32 27.8**	**+1.1**
HUMO	**Hull Mountain**	**4.35**	**111**	*e*P	**Pn**	**10 32 25.9**	**-1.2**
GNW	**Green Mountain**	**5.10**	**48**	P	**Pn**	**10 32 32.9**	**-4.8**
LON	**Longmire**	**5.27**	**60**	*e*P	**Pn**	**10 32 43.0**	**+3.0**
RPW	**Rockport**	**6.34**	**47**	P	**Pn**	**10 32 55.2**	**+0.1**
NEW	**Newport**	**8.79**	**59**	LR	LR	10 36 57.4	
	comp=Z,48nm,20.1s,baz=35,slow=41						
NVAR	**Mina Array Bea**	**9.63**	**124**	Pn	**P**	**10 33 41.1**	**+0.1**
	0.1nm,0.3s,baz=301,slow=10,SNR=4.1						
HLID	**Hailey**	**10.16**	**89**	*e*P	**P**	**10 33 52.6**	**+4.3**
DLBC	**Dease Lake**	**14.18**	**357**	LR	LR	10 39 11.1	
	comp=Z,36nm,18.5s,baz=301,slow=33						
YKA	**Yellowknife Ar**	**19.92**	**19**	P	**P**	**10 35 53.3**	**-0.5**
	0.0nm,0.3s,baz=209,slow=11,SNR=8.7						
YKA	**Yellowknife Ar**	**19.92**	**19**	P	**P**	**10 35 53.3**	**-0.5**
WMOK	**Wichita Mounta**	**24.69**	**103**	*e*P	**P**	**10 36 40.3**	**-1.3**
	0.7nm,0.6s,mb3.4						
TXAR	**Lajitas Array**	**24.72**	**119**	P	**P**	**10 36 44.1**	**+2.2**
	0.2nm,0.8s,mb2.7,baz=281,slow=6.4,SNR=4.1						

*IDC **26** 10:33:55.5±0.6,52.73S×18.66E,mb4.2/10,mb1 4.3/10, mb1mx4.1/17,MS4.1/17,Ms1 4.1/17,ms1mx4.0/24, Error ellipse: s-maj=31.8km s-min=18.1km az=53.0*
*NEIC **26** 10:33:56.4±0.3,52.55S×18.78E,h10km,mb4.4/3, MS4.3/1, Error ellipse: s-maj=13.8km s-min=9.5km az=90.0*

ISC 26 10:33:55.7±0.6,52.66S±0.09×18.7E±0.2,h10km,n40, σ0°93/17,mb4.2/11,MS4.1/18,1C-2D,Southwest of Africa

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SUR	**Sutherland**	**20.32**	**5**	P	**P**	**10 38 39.9**	**+5.4**
	10nm,0.7s,baz=182,slow=11,SNR=9.7						
SUR				LR	LR	10 44 46.9	
	comp=Z,505nm,18.1s,MS3.9,baz=146,slow=32						
SUR	**Sutherland**	**20.32**	**5**	*e*P	**P**	**10 38 39.4**	**+4.9**
	18nm,0.9s						
SNAA	**Sanae**	**21.32**	**199**	*e*P	**P**	**10 38 43.7**	**-0.8**
VNA2	**Neumayer--Watz**	**21.75**	**203**	⇓*i*	**P**	**10 38 49.7**	**+0.8**
VNA1	**Neumayer--Stat**	**21.77**	**204**	⇓*i*	**P**	**10 38 50.4**	**+1.3**
VNA3	**Neumayer Olymp**	**22.52**	**204**	⇓*i*	**P**	**10 38 57.2**	**+0.9**
MAW	**Mawson**	**25.84**	**142**	P	**P**	**10 39 28.4**	**+0.1**
	5.9nm,0.8s,mb4.2,baz=286,slow=10,SNR=9.7						
MAW				LR	LR	10 46 47.5	
	comp=Z,336nm,22.0s,MS3.8,baz=277,slow=30						
TSUM	**Tsumeb**	**33.40**	**358**	P	**P**	**10 40 37.9**	**+1.5**
	2.4nm,1.1s,mb4.0,baz=204,slow=8.1,SNR=3.9						
TSUM				LR	LR	10 52 03.6	
	comp=Z,352nm,20.1s,MS4.1,baz=316,slow=32						
QSPA	**South Pole Qui**	**37.57**	**180**	*e*P	**P**	**10 41 11.3**	**0.0**
	9.2nm,0.9s,mb4.5						
QSPA				*e*		10 41 23.9	
QSPA				LR	LR		
	comp=Z,450nm,19.0s,MS4.3						
VNDA	**Vanda**	**48.08**	**170**	P	**P**	**10 42 35.8**	**-0.8**
	comp=Z,1.1nm,0.7s,mb4.0,baz=237,slow=7.3,SNR=9.1						
VNDA				LR	LR	11 01 39.8	
	comp=Z,291nm,20.9s,MS4.2,baz=202,slow=35						
SBA	**Scott Base**	**48.27**	**171**	P	**P**	**10 42 36.5**	**-1.5**
	comp=Z,5.4nm,1.0s,mb4.5						
USHA	**Ushuaia**	**48.37**	**231**	LR	LR	10 57 26.7	
	comp=Z,365nm,19.9s,MS4.4,baz=51,slow=29						
KMBO	**Kilima Mbogo**	**53.63**	**23**	LR	LR	11 04 26.8	
	comp=Z,136nm,20.5s,MS4.0,baz=53,slow=34						
CPUP	**Villa Florida**	**61.21**	**264**	P	**P**	**10 44 11.6**	**-1.3**
	comp=Z,1.7nm,0.7s,mb4.3,baz=88,slow=10.0,SNR=3.9						
CPUP				LR	LR	11 05 32.7	
	comp=Z,88nm,18.7s,MS3.9,baz=159,slow=31						
DBIC	**Dimbokro**	**62.42**	**333**	P	**P**	**10 44 19.9**	**-1.2**
	comp=Z,6.4nm,0.8s,mb4.8,baz=152,slow=4.2,SNR=6.5						
DBIC				LR	LR	11 04 46.3	
	comp=Z,112nm,20.4s,MS4.0,baz=146,slow=30						
BDFB	**Brasilia**	**63.62**	**279**	LR	LR	11 05 41.6	
	comp=Z,83nm,19.0s,MS3.9,baz=128,slow=30						
LPAZ	**La Paz**	**75.34**	**262**	P	**P**	**10 45 41.3**	**+0.4**
	comp=Z,1.0nm,0.8s,mb3.8,baz=201,slow=5.4,SNR=4.9						
LPAZ				LR	LR	11 13 16.2	
	comp=Z,84nm,19.4s,MS4.0,baz=293,slow=31						
RPZ	**Rata Peaks**	**81.08**	**160**	LR	LR	11 19 03.3	
	comp=Z,247nm,21.3s,MS4.5,baz=233,slow=33						
STKA	**Stephens Creek**	**82.21**	**134**	P	**P**	**10 46 18.7**	**+0.7**
	comp=Z,1.4nm,0.6s,mb4.1,baz=186,slow=5.7,SNR=3.7						
EIL	**Elat**	**83.20**	**14**	LR	LR	11 23 37.2	
	comp=Z,112nm,18.5s,MS4.3,baz=317,slow=36						
ASAR	**Alice Springs**	**85.47**	**124**	P	**P**	**10 46 35.0**	**+0.3**
	comp=Z,1.5nm,0.9s,mb4.1,baz=208,slow=4.5,SNR=14						
ASAR				LR	LR	11 15 09.1	
	comp=Z,65nm,21.7s,MS4.0,baz=18,slow=29						
WRA	**Warramunga Arr**	**88.79**	**122**	P	**P**	**10 46 50.5**	**-0.3**
	comp=Z,0.9nm,1.1s,mb4.0,baz=210,slow=4.2,SNR=7.7						
THR	**Tehran**	**92.61**	**26**	LR	LR	11 28 40.8	
	comp=Z,64nm,19.8s,MS4.1,baz=163,slow=35						
BRTR	**Keskin Array B**	**92.92**	**11**	LR	LR	11 34 14.3	
	comp=Z,65nm,19.7s,MS4.1,baz=245,slow=39						
ROSC	**El Rosal**	**95.68**	**271**	LR	LR	11 30 06.1	
	comp=Z,64nm,19.7s,MS4.1,baz=58,slow=35						
CMAR	**Chiang Mai Arr**	**98.70**	**71**	LR	LR	11 25 05.8	
	comp=Z,66nm,19.4s,MS4.1,baz=195,slow=31						
BVAR	**Borovoye Array**	**113.82**	**31**	PKIKP		10 52 34.8	
	comp=Z,0.2nm,0.4s,baz=180,slow=1.5,SNR=4.4						
ARCES	**ARCESS Array B**	**121.98**	**3**	PKP	PKPdf	10 52 49.0	-3.3
	comp=Z,1.4nm,0.8s,baz=45,slow=3.4,SNR=4.0						
ARCES	**ARCESS Array B**	**121.98**	**3**	PKP	PKPdf	10 52 49.0	-3.3
SONM	**Songino Array**	**124.71**	**55**	PKP	PKPdf	10 52 55.7	-2.3
	comp=Z,0.8nm,0.9s,baz=70,slow=1.3,SNR=2.7						
MSU	**Marysvale**	**143.58**	**267**	*e*PKPdf	PKPdf	10 53 29.6	-3.3
PDAR	**Pinedale Array**	**144.53**	**275**	PKP	PKPdf	10 53 30.9	-3.6
	comp=Z,2.8nm,0.8s,baz=120,slow=4.4,SNR=17						
TIXI	**Tiksi**	**144.95**	**31**	*e*PKPdf	PKPdf	10 53 31.8	-2.7
HWUT	**Hardware Ranch**	**145.09**	**272**	*e*PKPdf	PKPdf	10 53 32.4	-3.1
TPH	**Tonopah**	**146.36**	**262**	*e*PKPdf	PKPdf	10 53 35.7	-2.2
NVAR	**Mina Array Bea**	**147.24**	**262**	PKPbc	PKPdf	10 53 40.6	+1.4
	comp=Z,4.5nm,0.8s,baz=126,slow=5.4,SNR=28						
MSO	**Missoula**	**149.32**	**278**	*e*PKPbc	PKPdf	10 53 44.3	+2.0
YKA	**Yellowknife Ar**	**153.70**	**310**	PKPbc	PKPdf	10 53 54.0	+5.8
	comp=Z,0.5nm,0.8s,baz=85,slow=2.1,SNR=13						
YKA				PKPab	PKPab	10 54 07.1	-1.2
	comp=Z,0.7nm,0.7s,baz=96,slow=5.4,SNR=12						
YKA	**Yellowknife Ar**	**153.70**	**310**	PKPbc	PKPdf	10 53 54.0	+5.7
YKA				PKPab	PKPab	10 54 07.1	-1.2
ILAR	**Eielson Array**	**165.79**	**334**	PKPab	PKPab	10 55 01.6	+1.2
	comp=Z,1.1nm,0.9s,baz=19,slow=3.5,SNR=9.0						

*NIED **26** 10:45:00,42.20N×144.30E,h32km,Mw4.1 Best double couple: M0 1.6×10^15 NP1:φ±30°,δ76°,λ71°. NP2:φ±266°,δ23°,λ143°.*
*MOS **26** 10:45:50.7±1.1,42.17N×144.20E,h56km,mb4.2/8, Error ellipse: s-maj=22.2km s-min=10.9km az=91.5*
*JMA **26** 10:45:51.0±0.1,42.24N×144.30E,h52km±2km,M4.0*
*BJI **26** 10:45:51.3,42.28N×144.02E,h37km,mB4.5,mb4.4, Ms3.5,Msz3.4*
*NEIC **26** 10:45:52.6±1.4,42.16N×144.14E,h48km±14km,mb4.0/5, Error ellipse: s-maj=18.3km s-min=12.4km az=129.0*
*IDC **26** 10:45:54.1±2.3,42.14N×144.16E,h62km±19km,mb3.6/14, mb1 3.8/16,mb1mx3.7/26,MS3.1/2,Ms1 3.1/2, ms1mx2.5/27, Error ellipse: s-maj=18.9km s-min=13.9km az=91.0*

ISC 26 10:45:50.6±0.6,42.19N±0.04×144.27E±0.05,h47km±5km, n61,σ1°05/77,mb4.0/20,MS3.7/1,2C-8D,Hokkaido region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JOB	**Onbets**	**0.78**	**336**	⇓P	**P**	**10 46 06.0**	**+0.7**
JOB				*e*S	**S**	**10 46 16.2**	**+0.1**
JCH	**Churui**	**0.79**	**302**	⇓P	**P**	**10 46 06.2**	**+0.7**
JCH				*e*S	**S**	**10 46 16.2**	**-0.3**
JEM	**Erimo**	**0.85**	**258**	P	**P**	**10 46 07.3**	**+1.1**
JAK	**Akkeshi**	**0.86**	**21**	⇓P	**P**	**10 46 06.4**	**-0.1**
JAK				*e*S	**S**	**10 46 17.7**	**-0.5**
JNBK	**Urakawa-nobuka**	**1.13**	**275**	P	**P**	**10 46 10.8**	**+0.6**
JAR	**Ashorobuto**	**1.16**	**342**	⇓P	**P**	**10 46 10.9**	**+0.2**
JAR				*e*S	**S**	**10 46 24.9**	**-0.8**
JNK	**Nakash**	**1.43**	**13**	⇓P	**P**	**10 46 13.8**	**-0.8**
JNK				*e*S	**S**	**10 46 30.5**	**-1.9**
JBT2	**Biratori 2**	**1.53**	**293**	P	**P**	**10 46 15.6**	**-0.3**
JFR	**Furan**	**1.57**	**309**	⇓P	**P**	**10 46 16.9**	**+0.4**
NEM2	**Nemuro 2**	**1.60**	**42**	⇓P	**P**	**10 46 16.7**	**-0.2**
NEM2				*e*S	**S**	**10 46 34.8**	**-1.7**
JTKR	**Abashiri--Toko**	**1.80**	**352**	⇓P	**P**	**10 46 20.4**	**+0.7**
JRA	**Rausu**	**1.85**	**19**	⇑P	**P**	**10 46 20.5**	**0.0**
JRA				*e*S	**S**	**10 46 42.3**	**-0.5**
YUK	**Yuzh-Kuril'sk**	**2.18**	**32**	⇑*i* PN	**P**	**10 46 25.0**	**-0.1**
YUK				*i* S	**S**	**10 46 50.5**	**-0.5**
YUK				pmax	pmax		
	comp=Z,310nm,0.3s						
YUK				pmax	pmax		
	comp=N,210nm,0.2s						
YUK				smax			
	comp=E,530nm,0.4s						
YUK				smax			
	comp=N,2μm,0.5s						
YUK				smax			
	comp=N,4μm,0.8s						
YUK				smax

KMI SS SS 11 01 32.0 -3.5
KMI AMB AMB
comp=Z,7.0nm,0.5s,mb4.7
KMI AMB AMB
comp=Z,50nm,5.1s
KMI LR LR
comp=N,101nm,17.3s,MS3.9
KMI LR LR
comp=E,97nm,14.0s,MS3.9
KMI LR LR
comp=Z,82nm,17.3s,MS3.6
WMQ Urumqi 40.71 292 *eP* **P 10 53 29.5 +1.4**
MKAR Makanchi Array 43.44 298 P **P 10 53 50.5 +0.2**
comp=Z,1.6nm,0.6s,mb3.9,baz=79,slow=9.1,SNR=17
MKAR Makanchi Array 43.44 298 P **P 10 53 50.5 +0.1**
MKAR pmax pmax
comp=Z,2.0nm,0.6s
COLA College 43.57 35 *eP* **P 10 53 52.3 +1.2**
comp=Z,1.9nm,0.7s,mb3.9
ILAR Eielson Array 43.99 35 P **P 10 53 55.2 +0.8**
comp=Z,0.8nm,0.8s,mb3.5,baz=273,slow=7.0,SNR=11
ILAR Eielson Array 43.99 35 P **P 10 53 55.3 +0.8**
ILAR pmax pmax
comp=Z,1.0nm,0.8s
KURK Kurchatov 44.66 305 *eP* **P 10 53 59.7 -0.4**
INK Inuvik 48.81 29 P **P 10 54 33.5 +1.0**
comp=Z,1.2nm,0.7s,mb4.0,baz=292,slow=6.2,SNR=7.9
INK Inuvik 48.81 29 P **P 10 54 33.5 +1.0**
INK pmax pmax
comp=Z,1.0nm,0.7s
INK Inuvik 48.81 29 *eP* **P 10 54 33.0 +0.6**
comp=Z,3.5nm,0.9s,mb4.4
BVAR Borovoye Array 48.86 310 P **P 10 54 33.1 0.0**
comp=Z,1.4nm,0.3s,mb4.4,baz=73,slow=8.8,SNR=10
ZRNK Zerenda 49.68 310 *eP* **P 10 54 39.0 -0.3**
SPITS Spitsbergen Ar 55.90 349 P **P 10 55 23.5 -1.9**
comp=Z,6.3nm,1.2s,mb4.5,baz=39,slow=7.1,SNR=2.3
YKA Yellowknife Ar 58.26 32 P **P 10 55 42.1 -0.1**
comp=Z,0.4nm,0.9s,mb3.5,baz=303,slow=6.9,SNR=6.2
ARCES ARCESS Array B 59.96 339 P **P 10 55 53.8 -0.1**
comp=Z,3.7nm,1.2s,mb4.3,baz=45,slow=5.1,SNR=3.6
ARCES ARCESS Array B 59.96 339 P **P 10 55 53.8 -0.1**
ARCES pmax pmax
comp=Z,4.0nm,1.2s
JOF Joensuu 62.47 332 *ep* **P 10 56 09.1 -1.8**
WRA Warramunga Arr 62.50 191 P **P 10 56 10.7 -0.9**
comp=Z,0.5nm,0.7s,mb3.8,baz=11,slow=6.9,SNR=6.3
WRA Warramunga Arr 62.50 191 P **P 10 56 10.7 -1.0**
WRA pmax pmax
comp=Z,1.0nm,0.7s
KAF Kangasniemi 64.74 333 *ep* **P 10 56 24.1 -1.6**
comp=Z,0.4nm,0.3s,mb3.9
FINES FINESS Array B 65.28 332 P **P 10 56 28.3 -0.9**
comp=Z,2.7nm,0.6s,mb4.5,baz=56,slow=5.2,SNR=13
FINES FINESS Array B 65.28 332 P **P 10 56 28.3 -0.9**
FINES pmax pmax
comp=Z,3.0nm,0.6s
ASAR Alice Springs 66.22 190 P **P 10 56 36.0 +0.1**
comp=Z,0.3nm,0.7s,mb3.5,baz=61,slow=4.6,SNR=6.4
FCC Fort Churchill 68.42 28 *eP* **P 10 56 49.0 +0.1**
comp=Z,2.7nm,1.1s,mb4.2
NVAR Mina Array Bea 70.20 56 P **P 10 57 02.5 +2.2**
comp=Z,0.6nm,0.7s,mb3.6,baz=287,slow=7.5,SNR=4.7
NB2 NORSAR Subarra 70.27 338 P **P 10 56 59.6 -0.7**
comp=Z,0.6nm,0.4s,mb3.9,baz=35,slow=6.2
NOA NORSAR Array B 70.27 338 P **P 10 56 59.9 -0.4**
comp=Z,1.2nm,0.8s,mb3.9,baz=34,slow=6.4,SNR=4.2
NOA NORSAR Array B 70.27 338 P **P 10 56 59.9 -0.4**
NOA pmax pmax
comp=Z,1.0nm,0.8s
TPH Tonopah 71.09 56 *eP* **P 10 57 07.6 +1.9**
TXAR Lajitas Array 85.28 54 P **P 10 58 24.7 +1.1**
comp=Z,0.2nm,0.4s,mb3.6,baz=296,slow=3.0,SNR=8.4

*HEL **26** 10:46:54.8±0.1,59.69N×24.54E,ML2.1,ML2.9(UPP), ML2.6(NAO),Explosion*
*NAO **26** 10:46:54.7±1.3,59.70N×24.49E,ML2.6*
*BER **26** 10:46:55.3±10.0,59.69N×24.57E,ML2.6(NAO), Suspected explosion*
*IDC **26** 10:46:56.8±1.9,59.83N×24.47E,mb1 3.9/4, mb1mx3.4/21,ML3.7/4,Error ellipse: s-maj=20.0km s-min=6.1km az=146.0*
ISC 26 10:46:51.7±0.6,59.67N±0.04×24.37E±0.07,n24,σ1§57/39, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
MEF	**Metsahovi**	**0.55**	**1**	*eP*		**Pg**	**10 47 04.4**	**+1.7**
MEF				*eS*		**Sg**	**10 47 11.3**	**+1.4**
PVF	**Pernaja**	**1.15**	**40**	*eP*		**Pb**	**10 47 14.1**	**-0.1**
PVF				*eS*		**Sb**	**10 47 27.9**	**-1.7**
VSU	**Vasula**	**1.72**	**134**	*eP*		**Pn**	**10 47 24.8**	**+1.7**
VSU				*eS*		**Sb**	**10 47 46.0**	**-0.1**
VSU	**Vasula**	**1.72**	**134**	Pn		**Pn**	**10 47 25.2**	**+2.1**
VSU				Lg			10 47 46.4	
VJF	**Virojoki**	**1.82**	**60**	*eP*		**Pn**	**10 47 25.3**	**+0.8**
VJF				*eS*		**Sn**	**10 47 47.4**	**-1.2**
FIA0	**FINESS Array S**	**1.97**	**25**	*eP*		**Pn**	**10 47 28.9**	**+2.3**
FIA0				*eS*		**Sn**	**10 47 52.5**	**+0.1**
FIA0				MSG			10 47 57.6	
comp=Z,8.7nm,0.1s								
FIA0	**FINESS Array S** baz=196,slow=18	**1.97**	**25**	Pn		**Pn**	**10 47 29.0**	**+2.4**
FIA0				Lg			10 47 53.2	
baz=188,slow=37								
FINES	**FINESS Array B**	**1.97**	**25**	Pg		**Pg**	**10 47 29.0**	**-2.0**
comp=Z,18nm,0.3s,baz=204,slow=18,SNR=353								
FINES				Lg			10 47 53.4	
comp=Z,13nm,0.3s,baz=204,slow=30,SNR=18								
KEF	**Keuruu**	**2.52**	**5**	*ePB*		**Pb**	**10 47 38.2**	**+0.7**
KEF				*eSB*		**Sb**	**10 48 10.5**	**+1.3**
KAF	**Kangasniemi**	**2.63**	**20**	*ePB*		**Pb**	**10 47 38.8**	**-0.6**
KAF				*eSB*		**Sb**	**10 48 12.6**	**+0.3**
SUF	**Sumiainen**	**3.18**	**15**	*eP*		**Pn**	**10 47 46.5**	**+2.6**
SUF				*eSG*		**Sg**	**10 48 31.8**	**-5.7**
SUF				MSG			10 48 39.1	
comp=Z,6.0nm,0.2s								
VAF	**Ylistaro**	**3.48**	**347**	*eP*		**Pn**	**10 47 52.2**	**+3.9**
VAF				*eSG*		**Sg**	**10 48 42.4**	**-5.2**
HFS	**Hagfors** baz=95,slow=14	**5.39**	**280**	Pn		**Pn**	**10 48 17.3**	**+1.9**
HFS				Sn		**Sn**	**10 49 18.2**	**-0.9**
baz=82,slow=28								
HFS				Lg			10 49 42.7	
baz=183,slow=37								
HFS	**Hagfors**	**5.39**	**280**	*eP*		**Pn**	**10 48 17.3**	**+1.9**
HFS				*eS*		**Sn**	**10 49 18.2**	**-0.9**
HFS				*eSG*		**Sg**	**10 49 42.7**	**-8.6**
HFS	**Hagfors**	**5.39**	**280**	Pn		**Pn**	**10 48 17.4**	**+2.1**
comp=Z,0.5nm,0.3s,baz=96,slow=14,SNR=45								
HFS				Sn		**Sn**	**10 49 20.9**	**+1.8**
comp=Z,0.8nm,0.3s,baz=83,slow=26,SNR=13								
HFS				Lg			10 49 43.4	
comp=Z,0.7nm,0.3s,baz=85,slow=33,SNR=5.6								
NOA	**NORSAR Array B**	**6.67**	**288**	Pn		**Pn**	**10 48 32.3**	**-1.0**
comp=Z,1.4nm,0.3s,baz=96,slow=13,SNR=5.6								
NOA				Sn		**Sn**	**10 49 48.2**	**-2.8**
comp=Z,1.5nm,0.3s,baz=123,slow=18,SNR=4.8								
NOA				Lg			10 50 23.1	
comp=Z,2.2nm,0.3s,baz=225,slow=32,SNR=4.8								
APA0	**Apatity Array** baz=214,slow=11	**8.83**	**22**	Pn		**P**	**10 49 01.1**	**-2.4**
APA0	**Apatity Array**	**8.83**	**22**	*eP*		**P**	**10 49 01.1**	**-2.4**
ARA0	**ARCESS Array S** baz=176,slow=16	**9.92**	**2**	Pn		**P**	**10 49 15.6**	**-2.8**
ARA0	**ARCESS Array S**	**9.92**	**2**	*eP*		**P**	**10 49 15.6**	**-2.8**
ARCES	**ARCESS Array B**	**9.92**	**2**	Pn		**P**	**10 49 15.9**	**-2.4**
comp=Z,1.7nm,0.3s,baz=180,slow=11,SNR=71								
ARCES				Sn		**Sn**	**10 51 01.1**	**-11**
comp=Z,0.2nm,0.3s,baz=187,slow=22,SNR=2.4								
SPA0	**Spitsbergen Ar** baz=178,slow=12	**18.78**	**355**	P		**P**	**10 51 14.8**	**+0.7**
SPA0	**Spitsbergen Ar**	**18.78**	**355**	*eP*		**P**	**10 51 14.8**	**+0.7**
SPITS	**Spitsbergen Ar**	**18.78**	**355**	P		**P**	**10 51 15.9**	**+1.8**
comp=Z,0.1nm,0.3s,baz=0.9,slow=0.7,SNR=3.6								

*HEL **26** 11:16:51.6±0.2,59.83N×22.26E,ML2.0,ML2.5(UPP), ML2.2(NAO),Explosion*
*IDC **26** 11:16:52.1±2.5,59.84N×22.41E,mb1 2.9/3, mb1mx2.8/20,ML2.7/3,Error ellipse: s-maj=38.1km s-min=9.8km az=156.0*
*NAO **26** 11:16:53.9±2.4,60.10N×22.09E,ML2.2*
*BER **26** 11:16:53.0±4.0,59.91N×22.29E,ML2.2(NAO), Suspected explosion*
ISC 26 11:16:49.2±0.7,59.85N±0.04×22.17E±0.06,n17,σ1§27/30, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
MEF	**Metsahovi**	**1.18**	**71**	*ePB*		**Pb**	**11 17 11.8**	**-0.3**
MEF				*eSB*		**Sb**	**11 17 26.6**	**-1.1**
PVF	**Pernaja**	**1.97**	**68**	*eP*		**Pn**	**11 17 25.7**	**+1.6**
PVF				*eS*		**Sn**	**11 17 49.8**	**-0.2**
PVF				MSG			11 17 53.4	
comp=Z,9.6nm,0.1s								
FIA0	**FINESS Array S**	**2.50**	**49**	*ePB*		**Pb**	**11 17 34.8**	**0.0**
FIA0				*eSB*		**Sb**	**11 18 07.0**	**+0.8**
FIA0				MSG			11 18 10.2	
comp=Z,6.4nm,0.1s								
FIA0	**FINESS Array S** baz=230,slow=14	**2.50**	**49**	Pn		**Pn**	**11 17 34.5**	**+2.7**
FIA0				Lg			11 18 06.6	
baz=229,slow=28								
FIA0				Rg			11 18 21.8	
baz=213,slow=37								
FINES	**FINESS Array B**	**2.50**	**49**	Pn		**Pn**	**11 17 34.5**	**+2.7**
comp=Z,0.9nm,0.3s,baz=226,slow=14,SNR=31								
FINES				Lg			11 18 07.0	
comp=Z,3.0nm,0.3s,baz=236,slow=23,SNR=20								
FINES				Rg			11 18 22.8	
comp=Z,8.7nm,0.8s,baz=218,slow=34,SNR=11								
KEF	**Keuruu**	**2.67**	**28**	*ePB*		**Pb**	**11 17 37.8**	**+0.2**
KEF				*eSB*		**Sb**	**11 18 12.4**	**+1.3**
KEF				MSG			11 18 14.5	
comp=Z,3.6nm,0.1s								
VSU	**Vasula**	**2.73**	**119**	*eSB*		**Sb**	**11 18 12.8**	**-0.2**
VJF	**Virojoki**	**2.78**	**73**	*eP*		**Pn**	**11 17 36.4**	**+0.7**
VJF				*eS*		**Sn**	**11 18 10.4**	**0.0**
KAF	**Kangasniemi**	**3.04**	**40**	*ePB*		**Pb**	**11 17 42.4**	**-1.5**
KAF				*eSB*		**Sb**	**11 18 20.9**	**-0.8**
KAF				MSG			11 18 23.8	
comp=Z,3.6nm,0.1s								
VAF	**Ylistaro**	**3.21**	**4**	*ePB*		**Pb**	**11 17 46.7**	**-0.2**
VAF				*eSB*		**Sb**	**11 18 28.8**	**+1.9**
SUF	**Sumiainen**	**3.46**	**32**	*eP*		**Pn**	**11 17 47.9**	**+2.5**
SUF				*eSB*		**Sb**	**11 18 32.1**	**-1.9**
HFS	**Hagfors** baz=97,slow=9.3	**4.27**	**277**	Pn		**Pn**	**11 17 58.5**	**+1.6**
HFS				Sn		**Sn**	**11 18 47.6**	**-0.6**
baz=76,slow=28								
HFS				Lg			11 19 03.9	
baz=91,slow=37								
HFS	**Hagfors**	**4.27**	**277**	*eP*		**Pn**	**11 17 58.5**	**+1.6**
HFS				*eS*		**Sn**	**11 18 47.6**	**-0.6**
HFS				*eSG*		**Sg**	**11 19 03.9**	**-7.3**
NOA	**NORSAR Array B**	**5.55**	**287**	Pn		**Pn**	**11 18 14.2**	**-0.9**
comp=Z,0.1nm,0.3s,baz=93,slow=9.5,SNR=2.4								
ARA0	**ARCESS Array S** baz=182,slow=16	**9.83**	**7**	Pn		**P**	**11 19 12.1**	**-2.5**
ARA0				Sn		**Sn**	**11 20 57.5**	**-9.4**
baz=191,slow=28								
ARA0	**ARCESS Array S**	**9.83**	**7**	*eP*		**P**	**11 19 12.1**	**-2.5**
ARA0				*eS*		**Sn**	**11 20 57.5**	**-9.4**
ARCES	**ARCESS Array B**	**9.83**	**7**	Pn		**P**	**11 19 13.0**	**-1.6**
comp=Z,0.1nm,0.3s,baz=184,slow=14,SNR=18								

*IDC **26** 11:20:58.7±0.5,52.88S×18.56E,mb4.5/13,mb1 4.6/13, mb1mx4.5/18,MS4.5/22,Ms1 4.5/22,ms1mx4.4/27,Error ellipse: s-maj=23.8km s-min=15.1km az=52.0*
*NEIC **26** 11:20:59.8±0.3,52.54S×18.77E,h10km,mb4.8/12, MS4.8/1,Error ellipse: s-maj=13.4km s-min=9.7km az=65.0*
*HRVD **26** 11:20:59.8±0.2,52.82S×18.94E,h12km,MW5.2/58, Centroid moment Tensor Solution. LP body waves: s38,c53;Mantle waves: s58,c100; Half duration: 0 Moment tensor: Scale 10^16Nm; Mrr-6.32±.16; Mθθ4.92±.14; Mφφ1.40±.16; Mrθ2.44±.41; Mrφ-2.06±.15; Mθφ-0.26±.51; Best double couple: M0 6.57×10^16 NP1: φs120°,δ35°,λ-80°. NP2:φs288°,δ56°,λ-97°. Principal axes: T 6.3, Plg11°, Azm23°; N .53, Plg6°, Azm292°; P -6.83, Plg78°, Azm174°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*SYO **26** 11:20:59.7,52.54S×18.77E,h10km,MB4.8,MS4.8*
*BJI **26** 11:20:59.7,52.50S×18.80E,h10km,mB5.1,Ms5.1, Ms2.4*
ISC 26 11:20:58.3±0.4,52.63S±0.07×18.6E±0.2,h10km,n95, σ1§01/47,mb4.8/21,MS4.6/25,7C-6D,Southwest of Africa

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
MAIT	**Maitri**	**18.48**	**187**	*eP*		**P**	**11 25 15.4**	**-0.4**
SYO	**Syowa Base**	**19.17**	**157**	*||P*		**P**	**11 25 23.9**	**-0.2**
SYO	**Syowa Base**	**19.17**	**157**	*||P*		**P**	**11 25 28.8**	**+4.7**
SYO	**Syowa Base**	**19.17**	**157**	*||pP*			11 25 31.7	
SYO	**Syowa Base**	**19.17**	**157**	*||eP*		**P**	**11 25 23.9**	**-0.2**
SYO				*epP*			11 25 31.7	
SUR	**Sutherland** 25nm,0.7s,baz=180,slow=11,SNR=17	**20.30**	**5**	P		**P**	**11 25 40.8**	**+4.0**
SUR				LR		LR	11 31 40.0	
comp=Z,2μm,20.4s,MS4.5,baz=359,slow=31								
SUR	**Sutherland** 46nm,0.9s	**20.30**	**5**	*eP*		**P**	**11 25 39.0**	**+2.2**
SNAA	**Sanae**	**21.33**	**199**	*eP*		**P**	**11 25 46.5**	**-0.8**
VNA2	**Neumayer--Watz**	**21.76**	**203**	*|i*		**P**	**11 25 56.6**	**+5.1**
VNA2	**Neumayer--Watz**	**21.76**	**203**	*|i*		**P**	**11 26 01.4**	**+10**
VNA2	**Neumayer--Watz**	**21.76**	**203**	S		**S**	**11 29 52.4**	**+5.3**
VNA2	**Neumayer--Watz**	**21.76**	**203**	P		**P**	**11 25 54.0**	**+2.5**
VNA2				S		**S**	**11 29 52.4**	**+5.3**
VNA1	**Neumayer--Stat**	**21.78**	**204**	*|i*		**P**	**11 25 54.6**	**+2.8**
VNA1	**Neumayer--Stat**	**21.78**	**204**	*|i*		**P**	**11 25 56.6**	**+4.8**
VNA1	**Neumayer--Stat**	**21.78**	**204**	*|i*		**P**	**11 26 01.2**	**+9.4**
VNA3	**Neumayer Olymp**	**22.52**	**204**	*|i*		**P**	**11 26 04.2**	**+5.2**
VNA3	**Neumayer Olymp**	**22.52**	**204**	*|i*		**P**	**11 26 09.3**	**+10**
VNA3	**Neumayer Olymp**	**22.52**	**204**	S		**S**	**11 30 02.5**	**+1.5**
VNA3	**Neumayer Olymp**	**22.52**	**204**	*|iP*		**P**	**11 26 02.7**	**+3.7**
VNA3				S		**S**	**11 30 02.5**	**+1.5**
MAW	**Mawson** 10nm,1.1s,mb4.3	**25.91**	**142**	*eP*		**P**	**11 26 31.8**	**+0.2**
MAW	**Mawson** 14nm,1.0s,mb4.4,baz=293,slow=9.2,SNR=14	**25.91**	**142**	P		**P**	**11 26 31.2**	**-0.4**
MAW				LR		LR	11 34 49.9	
comp=Z,558nm,21.6s,MS4.1,baz=292,slow=32								
TSUM	**Tsumeb** 4.8nm,1.0s,mb4.4,baz=187,slow=9.6,SNR=4.9	**33.37**	**358**	P		**P**	**11 27 42.6**	**+3.9**
TSUM				LR		LR	11 38 56.6	
comp=Z,1μm,20.7s,MS4.7,baz=142,slow=32								
QSPA	**South Pole Qui** 37nm,1.0s,mb5.1	**37.60**	**180**	*eP*		**P**	**11 28 14.5**	**+0.3**
QSPA				LR		LR		
comp=Z,1μm,19.2s,MS4.8								
EFI	**East Falkland** comp=Z,229nm,1.5s,mb5.8	**44.95**	**239**	P		**P**	**11 29 09.6**	**-5.1**
VNDA	**Vanda** comp=Z,6.4nm,1.0s,mb4.6,baz=233,slow=8.2,SNR=21	**48.13**	**170**	P		**P**	**11 29 38.7**	**-0.8**
VNDA				LR		LR	11 48 52.5	
comp=Z,906nm,19.0s,MS4.8,baz=200,slow=35								
VNDA	**Vanda** comp=Z,7.3nm,1.1s,mb4.6	**48.13**	**170**	*eP*		**P**	**11 29 37.6**	**-1.9**
SBA	**Scott Base** comp=Z,13nm,1.0s,mb4.9	**48.31**	**171**	*eP*		**P**	**11 29 41.9**	**+0.9**
USHA	**Ushuaia** comp=Z,846nm,21.2s,MS4.7,baz=105,slow=29	**48.34**	**231**	LR		LR	11 44 15.8	
KMBO	**Kilima Mbogo** comp=Z,623nm,21.4s,MS4.6,baz=274,slow=34	**53.63**	**23**	LR		LR	11 51 08.6	
TRQA	**Tornquist** comp=Z,1.4nm,1.0s,mb4.0	**55.58**	**251**	*eP*		**P**	**11 30 35.4**	**-0.7**
CPUP	**Villa Florida** comp=Z,5.4nm,0.8s,mb4.7,baz=140,slow=4.9,SNR=8.5	**61.15**	**264**	P		**P**	**11 31 14.0**	**-1.0**
CPUP				LR		LR	11 52 34.8	
comp=Z,215nm,18.1s,MS4.3,baz=168,slow=31								
CPUP	**Villa Florida** comp=Z,12nm,1.3s,mb4.9	**61.15**	**264**	*eP*		**P**	**11 31 13.5**	**-1.6**
LIC	**Lamto** comp=Z,115nm,2.0s,mb5.7	**61.98**	**333**	*eP*		**P**	**11 31 20.1**	**-0.8**
KIC	**Kosan Boka** comp=Z,311nm,2.1s	**62.03**	**333**	*eP*		**P**	**11 31 20.9**	**-0.3**
DBIC	**Dimbokro** comp=Z,6.6nm,0.7s,mb4.9,baz=146,slow=9.6,SNR=7.9	**62.36**	**333**	P		**P**	**11 31 22.8**	**-0.6**
DBIC				LR		LR	11 51 50.2	
comp=Z,377nm,21.5s,MS4.5,baz=141,slow=30								
DBIC	**Dimbokro** comp=Z,6.4nm,0.9s,mb4.8	**62.36**	**333**	*eP*		**P**	**11 31 22.1**	**-1.3**
TIC	**Toumodi**	**62.38**	**333**	*eP*		**P**	**11 31 23.5**	**0.0**
comp=Z,59nm,0.8s,mb5.8								
BDFB	**Brasilia** comp=Z,2.8nm,0.8s,mb4.4,baz=99,slow=7.2,SNR=3.5	**63.56**	**279**	P		**P**	**11 31 31.2**	**0.0**
BDFB				LR		LR	11 53 50.2	
comp=Z,163nm,21.2s,MS4.2,baz=359,slow=31								
NWAO	**Narrogin (SRO)** comp=Z,7.5nm,1.0s,mb4.6,baz=196,slow=6.7,SNR=3.7	**69.39**	**117**	P		**P**	**11 32 06.9**	**-1.1**
TAU	**Tasmania Unive** comp=Z,34nm,1.1s,mb5.2	**75.07**	**144**	*eP*		**P**	**11 32 33.5**	**-8.0**
LPAZ	**La Paz** comp=Z,2.9nm,0.8s,mb4.3,baz=129,slow=6.5,SNR=15	**75.28**	**262**	P		**P**	**11 32 44.5**	**+1.3**
LPAZ				LR		LR	12 03 25.2	
comp=Z,157nm,19.5s,MS4.3,baz=277,slow=34								
LPAZ	**La Paz** comp=Z,2.8nm,1.0s,mb4.2	**75.28**	**262**	*eP*		**P**	**11 32 43.7**	**+0.5**
RPZ	**Rata Peaks** comp=Z,779nm,19.1s,MS5.1,baz=184,slow=34	**81.14**	**160**	LR		LR	12 06 38.8	
STKA	**Stephens Creek** comp=Z,7.4nm,0.9s,mb4.6,baz=268,slow=5.4,SNR=9.7	**82.28**	**134**	P		**P**	**11 33 21.2**	**+0.2**
ASAR	**Alice Springs** comp=Z,3.7nm,0.9s,mb4.6,baz=210,slow=5.6,SNR=24	**85.55**	**124**	P		**P**	**11 33 38.0**	**+0.3**
ASAR				LR		LR	12 04 56.2	
comp=Z,125nm,18.6s,MS4.3,baz=204,slow=31								
FITZ	**Fitzroy Crossi** comp=Z,54nm,19.6s,MS4.0,baz=256,slow=33	**85.69**	**114**	LR		LR	12 07 41.7	
ASF	**Jabal al Asfar** comp=Z,330nm,19.0s,MS4.8,baz=247,slow=35	**85.94**	**15**	LR		LR	12 11 51.8	
URZ	**Urewera** comp=Z,389nm,19.8s,MS4.8,baz=128,slow=34	**87.57**	**163**	LR		LR	12 10 07.0	
WRA	**Warramunga Arr** comp=Z,3.1nm,1.1s,mb4.6,baz=209,slow=3.5,SNR=14	**88.86**	**122**	P		**P**	**11 33 53.9**	**0.0**
WRA				LR		LR	12 09 33.8	
comp=Z,195nm,20.3s,MS4.5,baz=235,slow=33								
WRAB	**Tennant Creek** comp=Z,30nm,1.3s,mb5.5	**88.87**	**122**	*eP*		**P**	**11 33 54.5**	**+0.6**
VAE	**Valguarnera** comp=Z,406nm,19.4s,MS4.9,baz=313,slow=36	**89.81**	**357**	LR		LR	12 15 33.7	
THR	**Tehran** comp=Z,232nm,21.9s,MS4.6,baz=165,slow=34	**92.61**	**26**	LR		LR	12 13 40.8	
BRTR	**Keskin Array B** comp=Z,221nm,19.0s,MS4.6,baz=320,slow=39	**92.89**	**12**	LR		LR	12 21 26.9	
ESDC	**Sonseca Array** comp=Z,0.2nm,0.3s,mb4.0,baz=182,slow=4.5,SNR=4.3	**93.99**	**343**	P		**P**	**11 34 19.7**	**+2.5**
CTAO	**Charters Tower** comp=Z,2.3nm,1.0s,mb4.6	**94.54**	**132**	*eP*		**P**	**11 34 19.5**	**-0.6**
GNI	**Garni** comp=Z,218nm,18.6s,MS4.7,baz=21,slow=37	**95.14**	**20**	LR		LR	12 19 55.8	
ROSC	**El Rosal** comp=Z,236nm,19.6s,MS4.7,baz=156,slow=35	**95.62**	**271**	LR		LR	12 16 01.7	
CMAR	**Chiang Mai Arr** comp=Z,93nm,18.8s,MS4.3,baz=230,slow=33	**98.75**	**71**	LR		LR	12 14 55.4	
WMQ	**Urumqi**	**112.91**	**47**	PKP		PKPdf	11 39 37.5	-0.4
WMQ				PP		PP	11 40 31.5	+3.1
WMQ				PKS		PKS	11 43 13.0	+2.5
WMQ				SKS		SKS	11 46 48.5	+25
WMQ				SKKS			11 47 24.5	
WMQ				SS		SS	11 56 12.5	+4.5
WMQ				LR		LR		
comp=N,155nm,28.4s,MS4.7								
WMQ				LR		LR		
comp=E,233nm,29.5s,MS4.7								
WMQ				LR		LR		
comp=Z,345nm,28.6s,MS4.8								
MKAR	**Makanchi Array** comp=Z,1.0nm,0.9s,baz=224,slow=0.9,SNR=6.9	**112.97**	**42**	PKiKP			11 39 36.5	
LZH	**Lanzhou**	**115.07**	**63**	*ePKP*		PKPdf	11 39 40.3	-1.9
LZH				XPKP			11 39 47.0	
LZH				LR		LR		
comp=N,289nm,18.2s								
LZH				LR		LR		
comp=Z,345nm,20.1s,MS5.0								
NJ2	**Nanjing**	**120.70**	**76**	*ePKP*		PKPdf	11 39 49.0	-4.3
NJ2				PP		PP	11 41 24.0	+1.7
NJ2				PKS		PKS	11 43 25.0	-0.9
NJ2				SKKS			11 48 12.0	
NJ2				PP		PP		
comp=Z,150nm,8.2s								
NJ2				LR		LR		
comp=N,300nm,26.3s								
NJ2				LR		LR		
comp=E,170nm,20.8s								
NJ2				LR		LR		
comp=Z,170nm,19.8s								
ARCES	**ARCESS Array B** comp=Z,3.2nm,0.8s,baz=180,slow=0.9,SNR=9.6	**121.95**	**3**	PKP		PKPdf	11 39 52.6	-2.2
JSC	**Jenkinsville**	**122.08**	**286**	*ePKP*		PKPdf	11 40 00.0	+4.1
BJI	**Beijing**	**124.71**	**68**	PKP		PKPdf	11 40 02.0	+1.2
SONM	**Songino Array** comp=Z,2.3nm,0.9s,baz=225,slow=1.7,SNR=14	**124.74**	**55**	PKP		PKPdf	11 39 59.1	-1.5
TXAR	**Lajitas Array** comp=Z,0.3nm,0.8s,baz=135,slow=1.8,SNR=5.4	**132.12**	**264**	PKP		PKPdf	11 40 13.8	-1.5
CN2	**Changchun**	**132.42**	**70**	*ePKP*		PKPdf	11 40 11.5	-4.0
MDJ	**Mudanjiang**	**135.29**	**71**	PKP		PKPdf	11 40 20.5	-0.2
PV01	**Paradox Valley**	**141.08**	**270**	*ePKP*		PKPdf	11 40 31.5	+0.2
MSU	**Marysvale**	**143.52**	**267**	*ePKP*		PKPdf	11 40 32.9	-2.6
MVU	**Marysvale**	**143.53**	**267**	*ePKP*		PKPdf	11 40 32.8	-2.7
JLU	**Jordanelle**	**144.36**	**271**	*ePKP*		PKPdf	11 40 34.8	-2.1
PDAR	**Pinedale Array** comp=Z,9.5nm,0.9s,baz=124,slow=5.3,SNR=55	**144.47**	**275**	PKP		PKPdf	11 40 34.0	-3.0
TCUT	**Toone Canyon**	**144.64**	**271**	*ePKPdf*		PKPdf	11 40 35.4	-2.0
TIXI	**Tiksi**	**144.96**	**31**	*ePKPdf*		PKPdf	11 40 35.0	-2.0
HWUT	**Hardware Ranch**	**145.02**	**272**	*ePKPdf*		PKPdf	11 40 36.3	-1.8
AHID	**Auburn Hatcher**	**145.40**	**274**	*|ePKPdf*		PKPdf	11 40 37.4	-1.2
FFC	**Flin Flon**	**145.66**	**298**	*ePKPdf*		PKPdf	11 40 38.1	-0.6
HVU	**Hansel Valley**	**145.86**	**271**	*ePKPdf*		PKPdf	11 40 38.9	-0.5
TPH	**Tonopah**	**146.30**	**262**	*ePKPdf*		PKPdf	11 40 41.0	+0.7
MTUM	**Tungsten Hills**	**146.64**

WRA	**Warramunga Arr**	**88.66**	**122**	P		**P**	**11 40 17.0**	**-1.0**
	2.2nm,1.4s,mb4.3,baz=217,slow=4.4,SNR=4.6							
PDAR	**Pinedale Array**	**144.63**	**275**	PKP		PKPdf	11 46 57.5	-5.1
	1.3nm,0.7s,baz=117,slow=4.0,SNR=11							
TIXI	**Tiksi**	**145.00**	**31**	*e*PKPdf		PKPdf	11 46 58.2	-4.1
HWUT	**Hardware Ranch**	**145.18**	**272**	*e*PKPdf		PKPdf	11 46 59.3	-4.2
NVAR	**Mina Array Bea**	**147.31**	**261**	PKPbc		PKPdf	11 47 06.8	-0.5
	1.3nm,0.7s,baz=135,slow=5.1,SNR=14							
YKA	**Yellowknife Ar**	**153.84**	**310**	PKPbc		PKPdf	11 47 19.6	+3.4
	0.4nm,0.8s,baz=78,slow=2.4,SNR=7.1							
YKA				PKPab		PKPab	11 47 32.9	-3.8
	0.4nm,0.7s,baz=93,slow=4.9,SNR=9.5							
ILAR	**Eielson Array**	**165.93**	**334**	PKPab		PKPab	11 48 27.4	-1.5
	0.7nm,0.9s,baz=17,slow=3.4,SNR=7.6							

NEIC ***26*** *12:01:21.6±0.9, 17.34N×105.61W, h10km, mb4.3/14, MD4.5(MEX), Error ellipse: s-maj=13.1km s-min=9.7km az=196.0*

IDC ***26*** *12:01:21.9±6.8, 17.54N×105.80W, mb3.6/5, mb1 4.0/6, mb1mx3.8/19, ML4.3/1, MS3.9/12, Ms1 3.9/12, ms1mx3.7/22, Error ellipse: s-maj=131.0km s-min=81.6km az=133.0*

MEX ***26*** *12:01:27.0±0.6, 18.23N×106.21W, h10km, MD4.5*

ISC 26 12:01:22.6±1.7, 17.6N±0.2×105.77W±0.06, h10km, n61, σ1§03/55, mb4.2/13, MS3.9/11, Off coast of Jalisco

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CJM	**Chamela**	**2.03**	**20**	*e*P	**Pn**	**12 01 52.9**	**-4.4**
CJM				*i* S	**Sn**	**12 02 13.1**	**-10**
COLM	**Colima**	**2.53**	**51**	*e*P	**Pn**	**12 02 05.1**	**+0.6**
COLM				*i* S	**Sn**	**12 02 36.1**	**+0.4**
SFJM	**Santa Fe**	**3.88**	**41**	*i* P	**Pn**	**12 02 23.5**	**-0.1**
ZAIG	**Zacatecas**	**5.97**	**30**	*e*P	**Pn**	**12 02 47.6**	**-5.6**
ZAIG				*i* S	**Sn**	**12 03 56.3**	**-6.2**
PPM	**Popocatepetl**	**6.94**	**77**	*e*P	**Pn**	**12 03 14.0**	**+7.1**
OXX	**Oaxaca**	**8.65**	**92**	*e*P	**P**	**12 03 40.0**	**+9.3**
TXAR	**Lajitas Array**	**11.86**	**9**	Pn	**P**	**12 04 13.6**	**-1.2**
	0.4nm,0.3s,baz=190,slow=14,SNR=12						
TXAR				LR	LR	12 08 42.5	
	comp=Z,773nm,19.2s,baz=190,slow=37						
JCT	**Junction City**	**13.95**	**22**	*e*P	**P**	**12 04 44.5**	**+1.8**
	6.3nm,0.8s						
MNTX	**Cornudas Mount**	**14.06**	**1**	*e*P	**P**	**12 04 43.7**	**-0.5**
	4.3nm,1.2s						
GDL2	**Guadalupe Moun**	**14.61**	**5**	*e*P	**P**	**12 04 52.1**	**+0.7**
CLNB	**Carlsbad**	**14.72**	**6**	*e*P	**P**	**12 04 52.7**	**-0.1**
TUC	**Tucson**	**15.35**	**344**	*e*P	**P**	**12 04 59.7**	**-1.4**
	5.3nm,1.0s						
CPRX	**Cap Rock**	**15.48**	**6**	*e*P	**P**	**12 05 02.7**	**0.0**
BNM	**Barren Site**	**16.52**	**357**	*e*P	**P**	**12 05 15.6**	**-0.5**
TEIG	**Tepich**	**16.76**	**78**	P	**P**	**12 05 12.9**	**-6.2**
ANMO	**Albuquerque**	**17.31**	**358**	*e*P	**P**	**12 05 26.3**	**+0.3**
	13nm,1.4s						
BAR	**Barrett**	**17.97**	**329**	*e*P	**P**	**12 05 34.2**	**0.0**
WMOK	**Wichita Mounta**	**18.19**	**19**	*e*P	**P**	**12 05 40.2**	**+3.2**
	7.9nm,1.2s						
WUAZ	**Wupatki**	**18.55**	**345**	*e*P	**P**	**12 05 40.4**	**-1.0**
	32nm,1.5s						
PFO	**Pinyon Flat Ob**	**18.63**	**331**	*e*P	**P**	**12 05 42.4**	**+0.1**
LDFC	**Landfair**	**19.32**	**336**	*e*P	**P**	**12 05 51.5**	**+0.9**
NEN	**Nelson**	**19.73**	**338**	*e*P	**P**	**12 05 55.8**	**+0.5**
MWC	**Mount Wilson**	**19.90**	**329**	*e*P	**P**	**12 05 57.6**	**+0.5**
SDCO	**Great Sand Dun**	**20.09**	**1**	*e*P	**P**	**12 05 58.7**	**-0.5**
	41nm,1.5s						
PV01	**Paradox Valley**	**20.63**	**354**	*e*P	**P**	**12 06 03.6**	**-1.2**
PV10	**Paradox Valley**	**20.92**	**353**	*e*P	**P**	**12 06 06.5**	**-1.2**
MSU	**Marysvale**	**21.60**	**346**	*e*P	**P**	**12 06 14.6**	**-0.1**
MVU	**Marysvale**	**21.60**	**346**	*e*P	**P**	**12 06 15.1**	**+0.4**
	16nm,1.4s,mb4.3						
CBKS	**Cedar Bluff**	**21.80**	**13**	*e*P	**P**	**12 06 17.3**	**+0.6**
	63nm,1.4s,mb4.8						
SRU	**San Rafael**	**21.85**	**350**	*e*P	**P**	**12 06 16.9**	**-0.3**
MTUM	**Tungsten Hills**	**22.69**	**333**	*e*P	**P**	**12 06 27.0**	**+1.4**
TPH	**Tonopah**	**22.76**	**336**	*e*P	**P**	**12 06 26.7**	**+0.5**
	14nm,1.4s,mb4.2						
LRAL	**Lakeview Retre**	**22.85**	**44**	*e*P	**P**	**12 06 24.5**	**-2.7**
	18nm,1.1s,mb4.4						
DAU	**Daniels Canyon**	**23.25**	**349**	*e*P	**P**	**12 06 32.6**	**+1.6**
PLAL	**Pickwick Lake**	**23.43**	**39**	*e*P	**P**	**12 06 32.7**	**-0.1**
	9.1nm,1.0s,mb4.2						
NVAR	**Mina Array Bea**	**23.49**	**335**	P	**P**	**12 06 33.6**	**+0.2**
	1.4nm,0.9s,mb3.4,baz=151,slow=9.3,SNR=9.3						
NVAR				LR	LR	12 15 34.3	
	comp=Z,226nm,20.1s,MS3.6,baz=225,slow=36						
CTU	**Camp Tracy**	**23.61**	**349**	*e*P	**P**	**12 06 35.3**	**+0.8**
CCM	**Cathedral Cave**	**24.05**	**29**	*e*P	**P**	**12 06 35.9**	**-2.9**
	32nm,1.4s,mb4.5						
BMN	**Battle Mountai**	**24.83**	**339**	*e*P	**P**	**12 06 47.4**	**+1.0**
	6.5nm,1.0s,mb4.1						
PDAR	**Pinedale Array**	**25.31**	**353**	P	**P**	**12 06 52.6**	**+1.7**
	0.8nm,1.0s,mb3.2,baz=170,slow=10,SNR=4.0						
PDAR				LR	LR	12 16 23.6	
	comp=Z,267nm,19.6s,MS3.8,baz=187,slow=36						
REDW	**Red Top Meadow**	**26.06**	**352**	*e*P	**P**	**12 06 58.7**	**+0.8**
HLID	**Hailey**	**26.92**	**346**	*e*P	**P**	**12 07 06.2**	**+0.5**
	6.2nm,1.3s,mb4.0						
WVOR	**Wild Horse Val**	**27.10**	**339**	*e*P	**P**	**12 07 07.7**	**+0.3**
MCMT	**McKenzie Canyo**	**27.81**	**349**	*e*P	**P**	**12 07 14.5**	**+0.6**
CHMT	**Chamberlain Mo**	**29.90**	**350**	P	**P**	**12 07 30.3**	**-2.4**
MSO	**Missoula**	**29.94**	**349**	*e*P	**P**	**12 07 32.0**	**-1.1**
	28nm,1.6s,mb4.7						
NEW	**Newport**	**31.98**	**346**	LR	LR	12 20 18.8	
	comp=Z,235nm,18.1s,MS3.9,baz=143,slow=36						
NLW	**Nelson Butte**	**32.67**	**342**	*e*P	**P**	**12 07 57.1**	**+0.1**
ULM	**Lac du Bonnet**	**35.55**	**12**	LR	LR	12 20 36.4	
	comp=Z,162nm,18.7s,MS3.8,baz=238,slow=34						
SADO	**Sadowa**	**35.10**	**34**	LR	LR	12 23 35.3	
	comp=Z,170nm,19.3s,MS3.8,baz=344,slow=38						
BBB	**Bella Bella**	**38.77**	**338**	LR	LR	12 24 12.4	
	comp=Z,128nm,20.1s,MS3.7,baz=210,slow=35						
DLBC	**Dease Lake**	**44.55**	**342**	LR	LR	12 28 08.8	
	comp=Z,230nm,18.5s,MS4.1,baz=138,slow=36						
YKA	**Yellowknife Ar**	**45.29**	**354**	P	**P**	**12 09 41.5**	**-0.6**
	0.1nm,0.6s,baz=159,slow=6.6,SNR=3.7						
LPAZ	**La Paz**	**50.07**	**130**	LR	LR	12 29 24.9	
	comp=Z,125nm,20.6s,MS3.9,baz=92,slow=34						
LPAZ	**La Paz**	**50.07**	**130**	P	**P**	**12 10 14.7**	**-5.3**
INK	**Inuvik**	**53.67**	**348**	P	**P**	**12 10 45.0**	**-1.3**
	3.5nm,1.2s,mb4.2,baz=142,slow=6.1,SNR=3.0						
INK	**Inuvik**	**53.67**	**348**	*e*P	**P**	**12 10 46.1**	**-0.2**
ILAR	**Eielson Array**	**54.61**	**340**	P	**P**	**12 10 51.5**	**-1.7**
	1.2nm,1.0s,mb3.9,baz=148,slow=5.7,SNR=10						
CPUP	**Villa Florida**	**64.18**	**132**	LR	LR	12 38 06.8	
	comp=Z,106nm,19.1s,MS4.0,baz=341,slow=34						
BDFB	**Brasilia**	**65.80**	**117**	LR	LR	12 41 30.0	
	comp=Z,94nm,18.8s,MS4.0,baz=305,slow=37						
ESDC	**Sonseca Array**	**87.69**	**49**	LR	LR	12 51 31.2	
	comp=Z,36nm,19.7s,MS3.8,baz=305,slow=34						

HEL ***26*** *12:03:41.2±0.2, 59.70N×24.54E, ML2.3, ML2.7(UPP), ML2.6(NAO), Explosion*

NAO ***26*** *12:03:41.0±1.3, 59.70N×24.50E, ML2.6*

BER ***26*** *12:03:41.9±3.9, 59.68N×24.56E, ML2.6(NAO), Suspected explosion*

IDC ***26*** *12:03:41.0±1.5, 59.68N×24.85E, mb3.3/1, mb1 3.6/5, mb1mx3.4/21, ML3.6/4, Error ellipse: s-maj=17.1km s-min=7.7km az=143.0*

ISC 26 12:03:38.4±0.6, 59.70N±0.04×24.44E±0.07, n21, σ1§41/31, mb3.1/1, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MEF	**Metsahovi**	**0.52**	**357**	*e*P	**Pg**	**12 03 50.5**	**+1.7**
MEF				*e*S	**Sg**	**12 03 57.6**	**+1.9**
PVF	**Pernaja**	**1.11**	**39**	*e*P	**Pb**	**12 04 00.4**	**+0.3**
PVF				*e*S	**Sb**	**12 04 13.8**	**-1.2**
VSU	**Vasula**	**1.71**	**135**	*e*P	**Pn**	**12 04 11.1**	**+1.3**
VSU				*e*S	**Sb**	**12 04 33.0**	**+0.4**
VSU	**Vasula**	**1.71**	**135**	Pn	**Pn**	**12 04 11.2**	**+1.4**
VSU				Lg		12 04 32.6	
VJF	**Virojoki**	**1.77**	**60**	*e*P	**Pn**	**12 04 11.5**	**+0.9**
VJF				*e*S	**Sn**	**12 04 33.6**	**-0.5**
FIA0	**FINESS Array S**	**1.93**	**24**	*e*P	**Pn**	**12 04 15.3**	**+2.5**
FIA0				*e*S	**Sn**	**12 04 39.8**	**+1.7**
FIA0				MSG		12 04 41.6	
	comp=Z,13nm,0.2s						
FIA0	**FINESS Array S**	**1.93**	**24**	Pn	**Pn**	**12 04 15.2**	**+2.4**
	baz=197,slow=18						
FIA0				Lg		12 04 39.8	
	baz=186,slow=28						
FINES	**FINESS Array B**	**1.93**	**24**	Pg	**Pg**	**12 04 15.2**	**-1.8**
	comp=Z,14nm,0.3s,baz=198,slow=16,SNR=310						
FINES				Lg		12 04 38.9	
	comp=Z,8.9nm,0.3s,baz=198,slow=31,SNR=7.0						
KEF	**Keuruu**	**2.48**	**5**	MSG		12 04 58.2	
	comp=Z,21nm,0.2s						
KAF	**Kangasniemi**	**2.59**	**20**	MSG		12 05 01.1	
	comp=Z,15nm,0.2s						
HFS	**Hagfors**	**5.43**	**279**	Pn	**Pn**	**12 05 03.5**	**+0.9**
	baz=97,slow=14						
HFS				Sn	**Sn**	**12 06 03.9**	**-2.7**
	baz=88,slow=28						
HFS				Lg		12 06 29.7	
	baz=80,slow=28						
HFS	**Hagfors**	**5.43**	**279**	*e*P	**Pn**	**12 05 03.5**	**+0.9**
HFS				*e*S	**Sn**	**12 06 03.9**	**-2.7**
HFS				*e*SG	**Sg**	**12 06 29.7**	**-9.3**
HFS	**Hagfors**	**5.43**	**279**	Pn	**Pn**	**12 05 03.1**	**+0.6**
	comp=Z,0.2nm,0.3s,baz=90,slow=13,SNR=25						
HFS				Sn	**Sn**	**12 06 07.3**	**+0.7**
	comp=Z,0.4nm,0.3s,baz=87,slow=26,SNR=9.8						
HFS				Lg		12 06 30.1	
	comp=Z,0.5nm,0.3s,baz=100,slow=34,SNR=5.2						
NOA	**NORSAR Array B**	**6.70**	**287**	Pn	**Pn**	**12 05 19.9**	**-0.6**
	comp=Z,0.8nm,0.3s,baz=94,slow=14,SNR=3.6						
NOA				Sn	**Sn**	**12 06 39.0**	**+0.5**
	comp=Z,1.1nm,0.3s,baz=95,slow=20,SNR=4.9						
NOA				Lg		12 07 09.9	
	comp=Z,2.0nm,0.3s,baz=97,slow=16,SNR=5.4						
APA0	**Apatity Array**	**8.79**	**22**	Pn	**P**	**12 05 48.4**	**-1.3**
	baz=215,slow=12						
APA0				Sn	**Sn**	**12 07 24.5**	**-6.2**
	baz=193,slow=28						
APA0	**Apatity Array**	**8.79**	**22**	*e*P	**P**	**12 05 48.4**	**-1.3**
APA0				*e*S	**Sn**	**12 07 24.5**	**-6.2**
ARA0	**ARCESS Array S**	**9.89**	**2**	Pn	**P**	**12 06 01.9**	**-2.7**
	baz=174,slow=16						
ARA0	**ARCESS Array S**	**9.89**	**2**	*e*P	**P**	**12 06 01.9**	**-2.7**
ARCES	**ARCESS Array B**	**9.89**	**2**	Pn	**P**	**12 06 02.2**	**-2.5**
	comp=Z,1.3nm,0.3s,baz=178,slow=12,SNR=47						
SPITS	**Spitsbergen Ar**	**18.75**	**355**	P	**P**	**12 08 00.9**	**+0.3**
	comp=Z,0.1nm,0.3s,baz=163,slow=15,SNR=3.7						
MKAR	**Makanchi Array**	**35.74**	**85**	P	**P**	**12 10 39.5**	**-1.0**
	comp=Z,0.1nm,0.3s,mb3.1,baz=321,slow=6.1,SNR=4.6						

HEL ***26*** *12:09:36.1±0.5, 59.57N×22.44E, ML2.1, ML2.6(UPP), ML2.3(NAO), Explosion*

BER ***26*** *12:09:38.7±4.1, 59.90N×22.39E, ML2.3(NAO), Suspected explosion*

IDC ***26*** *12:09:38.1±1.6, 59.91N×22.21E, mb1 2.8/4, mb1mx2.7/21, ML2.6/4, Error ellipse: s-maj=21.4km s-min=7.0km az=164.0*

NAO ***26*** *12:09:39.3±2.5, 60.08N×22.19E, ML2.3*

ISC 26 12:09:36.4±0.7, 60.27N±0.06×22.19E±0.06, n15, σ1§12/26, Finland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MEF	**Metsahovi**	**1.10**	**92**	*e*P	**Pb**	**12 09 57.2**	**-0.9**
MEF				*e*S	**Sb**	**12 10 12.1**	**-0.8**
PVF	**Pernaja**	**1.84**	**80**	*e*P	**Pn**	**12 10 11.2**	**+1.6**
PVF				*e*S	**Sn**	**12 10 35.4**	**+1.4**
PVF				MSG		12 10 42.0	
	comp=Z,12nm,0.1s						
FIA0	**FINESS Array S**	**2.24**	**57**	*e*P	**Pn**	**12 10 19.9**	**+4.6**
FIA0				*e*S	**Sn**	**12 10 51.9**	**+7.9**
FIA0				MSG		12 10 55.5	
	comp=Z,8.5nm,0.1s						
FIA0	**FINESS Array S**	**2.24**	**57**	Pn	**Pn**	**12 10 19.7**	**+4.5**
	baz=234,slow=14						
FIA0				Lg		12 10 51.2	
	baz=233,slow=28						
FIA0				Rg		12 11 05.8	
	baz=220,slow=37						
FINES	**FINESS Array B**	**2.24**	**57**	Pn	**Pn**	**12 10 19.7**	**+4.5**
	comp=Z,0.9nm,0.3s,baz=229,slow=14,SNR=22						
FINES				Sn	**Sn**	**12 10 51.8**	**+7.8**
	comp=Z,3.0nm,0.3s,baz=236,slow=24,SNR=17						
FINES				Rg		12 11 06.0	
	comp=Z,7.1nm,0.7s,baz=212,slow=29,SNR=12						
KEF	**Keuruu**	**2.30**	**33**	MSG		12 11 00.2	
	comp=Z,4.6nm,0.1s						
VJF	**Virojoki**	**2.68**	**82**	*e*P	**Pn**	**12 10 21.4**	**-0.1**
VJF				*e*S	**Sn**	**12 10 53.6**	**-1.5**
KAF	**Kangasniemi**	**2.72**	**45**	MSG		12 11 09.0	
	comp=Z,4.3nm,0.1s						
HFS	**Hagfors**	**4.24**	**272**	*e*P	**Pn**	**12 10 44.2**	**+0.5**
HFS				*e*S	**Sn**	**12 11 36.3**	**+1.6**
HFS				*e*SB	**Sb**	**12 11 50.2**	**+6.3**
HFS	**Hagfors**	**4.24**	**272**	Pn	**Pn**	**12 10 43.7**	**0.0**
	comp=Z,0.1nm,0.3s,baz=103,slow=9.7,SNR=6.8						
HFS				Pg	**Pg**	**12 10 53.7**	**-7.3**
	comp=Z,0.1nm,0.3s,baz=85,slow=16,SNR=5.4						
HFS				Sn	**Sn**	**12 11 33.2**	**-1.4**
	comp=Z,0.1nm,0.3s,baz=82,slow=29,SNR=2.3						
HFS				Lg		12 11 50.1	
	comp=Z,0.1nm,0.3s,baz=90,slow=30,SNR=4.8						
HFS	**Hagfors**	**4.24**	**272**	Pn	**Pn**	**12 10 44.2**	**+0.5**
	baz=97,slow=8.6						
HFS				Sn	**Sn**	**12 11 36.3**	**+1.6**
	baz=101,slow=28						
HFS				Lg		12 11 50.2	
	baz=97,slow=37						
NOA	**NORSAR Array B**	**5.45**	**283**	Pn	**Pn**	**12 11 00.4**	**-0.5**
	comp=Z,0.1nm,0.3s,baz=79,slow=20,SNR=2.0						
NOA				Sn	**Sn**	**12 12 03.9**	**-1.4**
	comp=Z,0.2nm,0.3s,baz=114,slow=15,SNR=2.1						
NOA				Lg		12 12 28.5	
	comp=Z,0.4nm,0.3s,baz=215,slow=24,SNR=3.2						
ARA0	**ARCESS Array S**	**9.41**	**7**	Pn	**P**	**12 11 57.9**	**+1.7**
	baz=184,slow=16						
ARA0				Sn	**Sn**	**12 13 43.5**	**-0.5**
	baz=189,slow=28						
ARA0	**ARCESS Array S**	**9.41**	**7**	*e*P	**P**	**12 11 57.9**	**+1.7**
ARA0				*e*		12 13 43.5	
ARCES	**ARCESS Array B**	**9.41**	**7**	Pn	**P**	**12 11 57.3**	**+1.1**
	comp=Z,0.2nm,0.3s,baz=184,slow=14,SNR=7.8						
ARCES				Sn	**Sn**	**12 13 43.1**	**-0.9**
	comp=Z,0.1nm,0.3s,baz=190,slow=26,SNR=3.3						

IDC ***26*** *12:16:54.7±0.8, 19.03S×175.76E, mb4.2/11, mb1 4.5/12, mb1mx4.4/15, ML4.4/1, MS3.8/4, Ms1 3.8/4, ms1mx3.4/23, Error ellipse: s-maj=36.5km s-min=18.4km az=148.0*

NEIC ***26*** *12:17:02.7±0.4, 19.20S×175.70E, h60km, mb4.3/4, Error ellipse: s-maj=15.9km s-min=10.9km az=141.0*

ISC 26 12:16:59.0±7.4, 19.2S±0.2×175.7E±0.1, h40km±64km, n29, σ0§93/22, mb4.2/14, MS3.8/4, 1C, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**19.02**	**177**	P	**P**	**12 21 20.5**	**+0.3**
	1.2nm,0.3s,baz=10,slow=1.6,SNR=9.4						
RAR	**Rarotonga**	**23.09**	**99**	LR	LR	12 28 17.8	
	comp=Z,177nm,20.2s,MS3.5,baz=187,slow=30						
CTA	**Charters Tower**	**27.74**	**263**	LR	LR	12 32 06.0	
	comp=Z,163nm,21.9s,MS3.6,baz=140,slow=33						
STKA	**Stephens Creek**	**33.12**	**241**	*e*P	**P**	**12 23 34.0**	**+0.4**
	4.3nm,1.1s,mb4.3						
STKA	**Stephens Creek**	**33.12**	**241**	P	**P**	**12 23 33.8**	**+0.2**
	9.4nm,1.2s,mb4.6,baz=92,slow=11,SNR=4.6						
WRA	**Warramunga Arr**	**38.91**	**262**	P	**P**	**12 24 22.2**	**-0.5**
	1.0nm,0.8s,mb3.6,baz=96,slow=8.6,SNR=4.6						
WRA	**Warramunga Arr**	**38.91**	**262**	P	**P**	**12 24 22.2**	**-0.5**
AS12	**Alice Springs**	**39.06**	**256**	*e*P	**P**	**12 24 23.2**	**-0.7**
	9.0nm,0.9s,mb4.5						
ASAR	**Alice Springs**	**39.06**	**256**	P	**P**	**12 24 24.1**	**+0.1**
	5.9nm,0.7s,mb4.5,baz=87,slow=9.0,SNR=98						
ASAR				PcP	PcP	12 26 32.6	-1.3
	1.5nm,0.7s,baz=106,slow=2.8,SNR=9.2						
FITZ	**Fitzroy Crossi**	**47.32**	**263**	P	**P**	**12 25 31.7**	**+0.7**
	4.7nm,1.0s,mb4.4,baz=138,slow=8.0,SNR=4.3						
FITZ				LR	LR	12 44 07.8	
	comp=Z,52nm,20.8s,MS3.5,baz=76,slow=34						
QSPA	**South Pole Qui**	**70.85**	**180**	*e*P	**P**	**12 28 11.7**	**-1.4**
	4.8nm,0.8s,mb4.5						
COCO	**West Island**	**75.70**	**262**	*e*P	**P**	**12 28 40.0**	**-2.7**
	206nm,0.5s						
CMB	**Columbia Colle**	**82.67**	**46**	*e*P	**P**	**12 29 19.6**	**-0.3**
	2.0nm,0.8s,mb4.2						
MTUM	**Tungsten Hills**	**83.57**	**47**	*e*P	**P**	**12 29 25.1**	**+0.5**
CMAR	**Chiang Mai Arr**	**84.12**	**292**	P	**P**	**12 29 29.3**	**+1.5**
	1.1nm,0.9s,mb4.0,baz=122,slow=3.7,SNR=4.3						
NVAR	**Mina Array Bea**	**84.29**	**46**	P	**P**	**12 29 28.4**	**+0.2**
	1.9nm,0.8s,mb4.3,baz=213,slow=6.7,SNR=15						
TPH	**Tonopah**	**84.86**	**47**	*e*P	**P**	**12 29 31.5**	**+0.5**
	3.8nm,1.0s,mb4.5						
ILAR	**Eielson Array**	**88.50**	**15**	P	**P**	**12 29 46.6**	**-1.5**
	1.4nm,0.8s,mb4.2,baz=239,slow=5.7,SNR=16						
VNA3	**Neumayer Olymp**	**89.71**	**178**		**P**	**12 29 54.2**	**+0.5**
VNA2	**Neumayer--Watz**	**90.08**	**179**	⇑ *i*	**P**	**12 29 56.0**	**+0.6**
SONM	**Songino Array**	**90.96**	**321**	P	**P**	**12 30 01.1**	**+1.0**
	0.3nm,0.4s,mb4.0,baz=117,slow=3.2,SNR=3.2						
TXAR	**Lajitas Array**	**91.44**	**60**	P	**P**	**12 30 03.6**	**+0.9**
	0.5nm,0.3s,mb4.3,baz=236,slow=4.5,SNR=4.1						
PDAR	**Pinedale Array**	**92.18**	**45**	P	**P**	**12 30 05.3**	**-0.6**
	0.3nm,0.8s,mb3.7,baz=190,slow=5.5,SNR=2.8						
PDAR				LR	LR	13 02 58.2	
	comp=Z,181nm,18.8s,MS4.5,baz=74,slow=30						
YKA	**Yellowknife Ar**	**97.90**	**26**	P	**P**	**12 30 30.5**	**-0.8**
	0.3nm,0.7s,mb3.9,baz=249,slow=4.6,SNR=7.3						
CLL	**Collm**	**145.18**	**341**	*i*	PKPdf	12 36 33.7	+1.6
CLL				*i*		12 36 35.7	
CLL				*i*		12 36 41.2	
CLL				*i* *PPKP		12 36 46.4	
CLL	**Collm**	**145.18**	**341**	*i* P	PKPdf	12 36 33.7	+1.6
CLL				*i*		12 36 41.2	
BRG	**Berggiesshubel**	**145.26**	**340**	*e*P	PKPdf	12 36 34.1	+1.8
BRG				*e*		12 36 46.8	
KHC	**Kasperske Hory**	**146.87**	**338**	*e*PKP	PKPdf	12 36 38.5	+3.4
GERES	**GERESS Array B**	**147.06**	**338**	PKPbc	PKPdf	12 36 38.3	+2.9
	0.9nm,0.7s,baz=56,slow=4.8,SNR=4.9						

MDD ***26*** *12:25:43.4±2.1, 36.65N×9.41W, mbLg2.3/8, Error ellipse: s-maj=19.7km s-min=12.9km az=92.0, PRXIMO*

INMG ***26*** *12:25:44.0±0.6, 36.68N×9.66W, h22km±25km, ML1.9, Error ellipse: s-maj=24.1km s-min=3.4km az=63.0*

ISC 26 12:25:43.4±1.6, 36.66N±0.06×9.4W±0.1, h22km, n16, σ1§11/27, West of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PTEO	**Sao Teotonio**	**1.04**	**31**	*e*P	**Pb**	**12 26 03.3**	**+0.7**
PTEO				S	**Sb**	**12 26 17.6**	**+1.8**
	14nm,0.2s						
PTEO	**Sao Teotonio**	**1.04**	**31**	P	**Pb**	**12 26 03.3**	**+0.7**
PTEO				S	**Sb**	**12 26 17.6**	**+1.8**
	6.8nm,0.2s						
PALC	**Alcoutim**	**1.74**	**62**	*e*Pn	**Pn**	**12 26 13.6**	**+0.9**
PALC				*e*Sn	**Sn**	**12 26 36.0**	**+1.6**
	7.2nm,0.1s						
PALC	**Alcoutim**	**1.74**	**62**	P	**Pn**	**12 26 13.6**	**+0.9**
PALC				S	**Sn**	**12 26 36.0**	**+1.6**
	3.6nm,0.1s						
EGRO	**El Granado**	**1.77**	**60**	P	**Pn**	**12 26 13.9**	**+0.7**
	2.4nm,0.1s,SNR=21						
EGRO				S	**Sn**	**12 26 36.6**	**+1.5**
	3.2nm,0.1s,SNR=5.0						
PBEJ	**Beja**	**1.84**	**41**	*e*Sn	**Sn**	**12 26 36.9**	**0.0**
	3.3nm,0.1s						
PBEJ	**Beja**	**1.84**	**41**	S	**Sn**	**12 26 36.9**	**0.0**
	1.6nm,0.1s						
MOE	**Montemor**	**2.04**	**24**	*e*Sn	**Sn**	**12 26 41.0**	**-1.2**
EMIN	**Mina Concepcio**	**2.45**	**62**	P	**Pn**	**12 26 23.0**	**+0.1**
	1.7nm,0.2s,SNR=19						
EMIN				S	**Sn**	**12 26 53.1**	**+0.8**
	0.9nm,0.1s,SNR=5.0						
EBAD	**Badajoz**	**2.83**	**41**	P	**Pn**	**12 26 27.6**	**-0.7**
	1.1nm,0.1s,SNR=5.6						
EBAD				S	**Sn**	**12 27 00.8**	**-1.3**
	3.2nm,0.1s,SNR=7.9						
ESPR	**Espera**	**2.85**	**85**	P	**Pn**	**12 26 29.1**	**+0.4**
	3.3nm,0.1s,SNR=18						
ESPR				S	**Sn**	**12 27 03.5**	**+0.8**
	14nm,0.2s,SNR=5.6						
ELIJ	**Sierra de Lija**	**3.24**	**84**	P	**Pn**	**12 26 34.6**	**+0.5**
	0.3nm,0.1s,SNR=4.0						
ECAB	**El Cabril**	**3.48**	**65**	P	**Pn**	**12 26 37.3**	**-0.2**
	0.7nm,0.1s,SNR=11						
ECAB	

*IDC **26** 12:48:00.1±7.7,17.78N×106.08W,mb3.3/4,mb1 3.9/5, mb1mx3.7/18,ML4.2/1,MS3.7/6,Ms1 3.7/6,ms1mx3.6/11, Error ellipse: s-maj=139.0km s-min=83.3km az=139.0*

*NEIC **26** 12:48:02.3±2.2,17.56N×105.93W,h30km,mb3.8/5,Error ellipse: s-maj=31.8km s-min=14.9km az=182.0*

ISC 26 12:48:01.8±2.3,17.7N±0.2×106.0W±0.1,h30km,n27, σ1§04/24,mb3.6/7,MS3.7/5,Off coast of Jalisco

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
COLM	**Colima**	**2.61**	**55**	*i* P	**Pn**	**12 48 42.4**	**-0.6**
SFJM	**Santa Fe**	**3.92**	**44**	*e*P	**Pn**	**12 48 56.0**	**-5.5**
TXAR	**Lajitas Array**	**11.78**	**10**	Pn	**P**	**12 50 49.6**	**-1.4**
	0.4nm,0.3s,baz=190,slow=14,SNR=5.5						
TXAR				LR	LR	12 55 17.1	
	comp=Z,331nm,19.7s,baz=195,slow=37						
JCT	**Junction City**	**13.91**	**23**	P	**P**	**12 51 20.0**	**+0.6**
GDL2	**Guadalupe Moun**	**14.52**	**5**	*e*P	**P**	**12 51 27.7**	**+0.4**
TUC	**Tucson**	**15.20**	**344**	P	**P**	**12 51 34.5**	**-1.7**
HKT	**Hockley**	**15.31**	**35**	P	**P**	**12 51 36.7**	**-0.9**
ANMO	**Albuquerque**	**17.20**	**359**	*e*P	**P**	**12 52 01.4**	**-0.2**
	14nm,1.7s						
WMOK	**Wichita Mounta**	**18.15**	**19**	P	**P**	**12 52 15.1**	**+1.6**
	3.9nm,1.0s						
WUAZ	**Wupatki**	**18.40**	**346**	*e*P	**P**	**12 52 18.1**	**+1.5**
	8.4nm,1.4s						
NEN	**Nelson**	**19.56**	**338**	*e*P	**P**	**12 52 30.3**	**+0.1**
NEN				*e*		12 52 42.5	
SDCO	**Great Sand Dun**	**19.99**	**1**	*e*P	**P**	**12 52 35.6**	**+0.7**
	29nm,1.5s						
PV01	**Paradox Valley**	**20.50**	**354**	*e*P	**P**	**12 52 40.4**	**+0.2**
PV10	**Paradox Valley**	**20.79**	**353**	*e*P	**P**	**12 52 43.5**	**+0.4**
PV10				*e*		12 52 57.3	
MSU	**Marysvale**	**21.45**	**347**	*e*P	**P**	**12 52 49.5**	**-0.3**
LRAL	**Lakeview Retre**	**22.89**	**45**	P	**P**	**12 53 05.2**	**+0.9**
	16nm,1.3s,mb4.3						
DAU	**Daniels Canyon**	**23.11**	**350**	*e*P	**P**	**12 53 07.2**	**+0.9**
NVAR	**Mina Array Bea**	**23.32**	**335**	P	**P**	**12 53 09.5**	**+1.2**
	0.8nm,0.9s,mb3.1,baz=153,slow=8.1,SNR=5.2						
CCM	**Cathedral Cave**	**24.04**	**29**	*e*P	**P**	**12 53 15.2**	**-0.2**
	16nm,1.1s,mb4.4						
PDAR	**Pinedale Array**	**25.19**	**354**	P	**P**	**12 53 25.9**	**-0.5**
	0.4nm,0.8s,mb3.0,baz=158,slow=4.9,SNR=3.3						
REDW	**Red Top Meadow**	**25.93**	**352**	P	**P**	**12 53 31.1**	**-2.1**
HLID	**Hailey**	**26.77**	**346**	*e*P	**P**	**12 53 40.2**	**-0.8**
	2.7nm,1.1s,mb3.7						
ULM	**Lac du Bonnet**	**33.48**	**12**	LR	LR	13 07 33.3	
	comp=Z,117nm,18.3s,MS3.6,baz=312,slow=35						
YKA	**Yellowknife Ar**	**45.17**	**354**	P	**P**	**12 56 19.0**	**+1.6**
	0.3nm,0.9s,mb3.1,baz=168,slow=7.8,SNR=7.2						
YKA				LR	LR	13 15 39.7	
	comp=Z,146nm,18.5s,MS3.9,baz=220,slow=37						
LPAZ	**La Paz**	**50.28**	**130**	LR	LR	13 15 17.5	
	comp=Z,83nm,21.9s,MS3.7,baz=63,slow=32						
ILAR	**Eielson Array**	**54.45**	**340**	P	**P**	**12 57 26.8**	**-1.7**
	1.8nm,1.2s,mb3.9,baz=136,slow=7.7,SNR=8.6						
ILAR				LR	LR	13 21 16.8	
	comp=Z,37nm,19.5s,MS3.5,baz=168,slow=37						
CPUP	**Villa Florida**	**64.38**	**132**	LR	LR	13 26 49.8	
	comp=Z,88nm,18.6s,MS4.0,baz=337,slow=36						

*IDC **26** 12:50:59.1±0.9,18.40N×146.47E,mb3.8/9,mb1 4.0/9, mb1mx3.8/20,Error ellipse: s-maj=37.2km s-min=19.4km az=96.0*

*NEIC **26** 12:51:08.3±1.7,18.34N×146.41E,h71km±15km,Error ellipse: s-maj=30.5km s-min=15.3km az=91.0*

ISC 26 12:51:07.4±2.0,18.3N±0.1×146.3E±0.2,h76km±17km,n15, σ0§80/15,mb3.8/10,1C,Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SARN	**Sarigan**	**1.71**	**198**	⇑*e*P	**P**	**12 51 35.6**	**-0.3**
SAPN	**Saipan**	**3.15**	**190**	P	**P**	**12 51 54.8**	**-1.2**
GUMO	**Guam**	**4.92**	**197**	*e*P	**P**	**12 52 22.6**	**+2.0**
WRAB	**Tennant Creek**	**39.80**	**198**	*e*P	**P**	**12 58 34.8**	**-0.1**
	7.9nm,0.9s,mb4.5						
WRA	**Warramunga Arr**	**39.81**	**198**	P	**P**	**12 58 35.1**	**+0.1**
	2.3nm,1.0s,mb4.0,baz=23,slow=9.0,SNR=7.5						
WRA	**Warramunga Arr**	**39.81**	**198**	P	**P**	**12 58 35.1**	**+0.1**
FITZ	**Fitzroy Crossi**	**41.53**	**210**	P	**P**	**12 58 49.8**	**+0.6**
	2.4nm,0.8s,mb4.0,baz=14,slow=7.9,SNR=8.7						
SONM	**Songino Array**	**43.80**	**321**	P	**P**	**12 59 07.4**	**0.0**
	0.8nm,1.0s,mb3.4,baz=135,slow=6.1,SNR=3.3						
STKA	**Stephens Creek**	**50.13**	**185**	P	**P**	**12 59 56.1**	**-1.1**
	1.1nm,0.7s,mb3.9,baz=6.3,slow=9.2,SNR=3.3						
MKAR	**Makanchi Array**	**59.15**	**314**	P	**P**	**13 01 02.5**	**-0.1**
	0.2nm,0.4s,mb3.5,baz=90,slow=7.2,SNR=2.8						
YKA	**Yellowknife Ar**	**78.03**	**28**	P	**P**	**13 02 58.8**	**-0.2**
	0.2nm,0.5s,mb3.1,baz=286,slow=5.4,SNR=2.9						
YKA	**Yellowknife Ar**	**78.03**	**28**	P	**P**	**13 02 58.8**	**-0.2**
NVAR	**Mina Array Bea**	**82.89**	**52**	P	**P**	**13 03 26.3**	**+1.0**
	0.3nm,0.7s,mb3.3,baz=297,slow=8.1,SNR=3.6						
ARCES	**ARCESS Array B**	**83.03**	**342**	P	**P**	**13 03 25.6**	**+0.2**
	2.6nm,0.6s,mb4.2,baz=70,slow=8.1,SNR=18						
FINES	**FINESS Array B**	**87.47**	**335**	P	**P**	**13 03 46.6**	**-0.8**
	0.4nm,0.5s,mb3.6,baz=72,slow=6.0,SNR=4.6						

*IDC **26** 13:03:34.5±2.3,31.52N×93.22E,mb3.7/2,mb1 3.7/4, mb1mx3.5/18,ML3.7/2,MS3.9/3,Ms1 3.9/3,ms1mx3.1/30, Error ellipse: s-maj=83.3km s-min=29.1km az=76.0*

ISC 26 13:03:36.9±0.8,31.5N±0.1×93.1E±0.1,h33km,n12, σ0§67/9,mb3.7/2,MS4.0/3,Xizang

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KKN	**Kakani**	**7.77**	**243**	*e*P	**P**	**13 05 31.2**	**+0.9**
	8.6nm,0.4s						
PKI	**Pulchoki**	**7.78**	**241**	*e*P	**P**	**13 05 30.4**	**-0.1**
	7.7nm,0.3s						
DMN	**Daman**	**7.99**	**243**	*e*P	**P**	**13 05 33.7**	**+0.2**
GKN	**Gorkha**	**8.16**	**247**	*e*P	**P**	**13 05 36.1**	**+0.3**
	12nm,0.4s						
KOLN	**Koldanda**	**9.08**	**248**	*e*P	**P**	**13 05 47.0**	**-1.6**
	7.2nm,0.3s						
MKAR	**Makanchi Array**	**17.37**	**334**	P	**P**	**13 07 38.6**	**+0.4**
	0.1nm,0.3s,baz=128,slow=14,SNR=3.2						
SONM	**Songino Array**	**19.18**	**28**	P	**P**	**13 07 59.9**	**-0.4**
	0.2nm,0.3s,baz=209,slow=13,SNR=8.9						
FITZ	**Fitzroy Crossi**	**58.40**	**143**	LR	LR	13 38 21.8	
	comp=Z,40nm,20.5s,MS3.5,baz=6.0,slow=36						
WRA	**Warramunga Arr**	**64.68**	**137**	P	**P**	**13 14 13.8**	**-0.2**
	0.6nm,1.0s,mb3.6,baz=335,slow=6.4,SNR=12						
PMG	**Port Moresby**	**65.78**	**119**	LR	LR	13 42 11.0	
	comp=Z,181nm,21.5s,MS4.2,baz=115,slow=35						
ASAR	**Alice Springs**	**67.36**	**140**	P	**P**	**13 14 31.4**	**+0.4**
	0.6nm,0.5s,mb3.9,baz=324,slow=6.8,SNR=14						
CTA	**Charters Tower**	**72.32**	**128**	LR	LR	13 47 12.1	
	comp=Z,104nm,18.3s,MS4.1,baz=115,slow=36						

*NEIC **26** 13:08:11.8±4.8,16.85S×179.34W,h512km±50km,mb4.1/4, Error ellipse: s-maj=28.0km s-min=17.1km az=91.0*

*IDC **26** 13:08:11.0±2.7,16.91S×179.16W,h508km±24km, mb3.5/12,mb1 3.7/12,mb1mx3.6/17,Error ellipse: s-maj=38.2km s-min=16.7km az=142.0*

ISC 26 13:08:05.4±0.6,16.8S±0.1×179.3W±0.1,h450km,n53, σ1§03/27,mb4.1/16,8D,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ARMA	**Armidale**	**29.79**	**238**	*e*P	**P**	**13 13 34.2**	**-1.4**
CTA	**Charters Tower**	**32.82**	**259**	*e*P	**P**	**13 14 02.6**	**+1.1**
	3.3nm,0.6s,mb3.9						
CTA	**Charters Tower**	**32.82**	**259**	P	**P**	**13 14 02.9**	**+1.4**
	3.5nm,0.5s,mb4.1,baz=88,slow=9.3,SNR=14						
CTAO	**Charters Tower**	**32.82**	**259**	*e*P	**P**	**13 14 02.6**	**+1.1**
	5.0nm,0.9s,mb3.9						
PMG	**Port Moresby**	**33.47**	**278**	P	**P**	**13 14 09.6**	**+2.6**
	21nm,0.9s,mb4.6,baz=76,slow=7.0,SNR=5.4						
STKA	**Stephens Creek**	**38.44**	**240**	⇓*i*P	**P**	**13 14 49.3**	**+1.1**
	8.2nm,0.9s,mb4.2						
STKA	**Stephens Creek**	**38.44**	**240**	P	**P**	**13 14 49.5**	**+1.2**
	9.4nm,0.8s,mb4.3,baz=84,slow=10,SNR=18						
WRAB	**Tennant Creek**	**44.01**	**259**	*e*P	**P**	**13 15 32.5**	**-0.7**
	13nm,0.8s,mb4.4						
WRA	**Warramunga Arr**	**44.02**	**259**	P	**P**	**13 15 32.9**	**-0.4**
	2.4nm,0.5s,mb3.9,baz=96,slow=6.2,SNR=38						
WRA				PcP	PcP	13 17 08.5	-1.5
	1.1nm,0.8s,baz=89,slow=3.5,SNR=5.5						
WRA				ScP		13 20 11.6	
	0.6nm,0.9s,baz=92,slow=3.9,SNR=4.3						
AS12	**Alice Springs**	**44.30**	**253**	⇓*i*P	**P**	**13 15 35.5**	**+0.1**
	19nm,0.6s,mb4.7						
ASAR	**Alice Springs**	**44.30**	**253**	P	**P**	**13 15 35.7**	**+0.3**
	21nm,0.5s,mb4.8,baz=86,slow=8.4,SNR=421						
ASAR				PcP	PcP	13 17 09.0	-1.8
	1.4nm,0.7s,baz=102,slow=3.7,SNR=6.5						
ASAR				ScP		13 20 12.4	
	0.6nm,0.6s,baz=98,slow=4.9,SNR=5.3						
KAKA	**Kakadu**	**46.82**	**268**	*e*P	**P**	**13 15 55.0**	**-0.1**
	26nm,0.4s,mb5.0						
FORT	**Forrest**	**49.73**	**244**	*e*P	**P**	**13 16 16.0**	**-0.9**
	77nm,0.6s,mb5.2						
FITZ	**Fitzroy Crossi**	**52.39**	**260**	⇓*i*P	**P**	**13 16 36.7**	**+0.1**
	7.0nm,0.6s,mb4.2						
FITZ	**Fitzroy Crossi**	**52.39**	**260**	P	**P**	**13 16 36.7**	**0.0**
	7.2nm,0.7s,mb4.1,baz=162,slow=6.5,SNR=26						
KLBR	**Kellerberrin**	**58.57**	**243**	⇓*i*P	**P**	**13 17 18.2**	**-1.4**
	15nm,0.7s,mb4.4						
NWAO	**Narrogin (SRO)**	**58.99**	**241**	*e*P	**P**	**13 17 21.1**	**-1.2**
MAJO	**Matsushiro**	**66.55**	**324**	*e*P	**P**	**13 18 11.2**	**0.0**
MAW	**Mawson**	**84.59**	**200**	P	**P**	**13 19 50.6**	**0.0**
	2.4nm,0.7s,mb4.0,baz=118,slow=6.3,SNR=4.2						
ILAR	**Eielson Array**	**85.03**	**13**	P	**P**	**13 19 51.9**	**-0.9**
	1.3nm,1.1s,mb3.5,baz=225,slow=4.9,SNR=7.2						
PDAR	**Pinedale Array**	**87.14**	**44**	P	**P**	**13 20 03.7**	**+0.2**
	0.4nm,0.8s,mb3.2,baz=214,slow=5.3,SNR=4.2						
CMAR	**Chiang Mai Arr**	**87.74**	**290**	P	**P**	**13 20 07.7**	**+0.8**
	1.3nm,1.0s,mb3.6,baz=123,slow=3.1,SNR=5.4						
VNA3	**Neumayer Olymp**	**91.87**	**177**	⇓*i*	**P**	**13 20 26.7**	**+2.0**
SONM	**Songino Array**	**92.19**	**320**	P	**P**	**13 20 27.1**	**+0.3**
	0.3nm,0.6s,mb3.4,baz=117,slow=6.4,SNR=2.6						
VNA2	**Neumayer--Watz**	**92.30**	**177**	⇓*i*	**P**	**13 20 28.2**	**+1.5**
VNA1	**Neumayer--Stat**	**92.53**	**177**	⇓*i*	**P**	**13 20 26.7**	**-1.1**
YKA	**Yellowknife Ar**	**93.70**	**25**	P	**P**	**13 20 32.6**	**-0.7**
	0.3nm,0.6s,mb3.5,baz=243,slow=4.4,SNR=8.2						
BVAR	**Borovoye Array**	**115.48**	**321**	PKP	PKPdf	13 25 52.8	-2.1
	0.2nm,0.3s,baz=76,slow=5.9,SNR=3.0						
BVAR	**Borovoye Array**	**115.48**	**321**	PKP	PKPdf	13 25 52.8	-2.1
ARCES	**ARCESS Array B**	**125.11**	**350**	PKP	PKPdf	13 26 12.6	-0.5
	1.2nm,0.6s,baz=27,slow=2.7,SNR=8.5						
BRTR	**Keskin Array B**	**143.43**	**315**	PKP	PKPdf	13 26 46.5	-1.1
	12nm,1.2s,baz=117,slow=2.8,SNR=15						
CRVS	**Cervenica-Dubn**	**143.82**	**337**	*e*PKP	PKPdf	13 26 48.4	+0.4
CRVS				*e*		13 27 00.8	
CLL	**Collm**	**144.23**	**347**	⇓*i*	PKPbc	13 26 48.6	+0.1
BRG	**Berggiesshubel**	**144.42**	**346**	*e*P	PKPdf	13 26 49.6	+0.6
VYHS	**Vyhne**	**145.11**	**339**	*e*PKP	PKPdf	13 26 51.6	+1.3
MOX	**Moxa**	**145.15**	**348**	*e*P	PKPdf	13 26 50.0	-0.3
KHC	**Kasperske Hory**	**146.12**	**345**	*e*PKP	PKPdf	13 26 55.0	+3.0
GERES	**GERESS Array B**	**146.35**	**344**	PKPbc	PKPbc	13 26 54.8	+0.7
	1.4nm,0.6s,SNR=10.0						
FLN	**La Foliniere**	**148.13**	**2**	*e*PKP1	PKPdf	13 26 59.4	+4.2
LDF	**La Druitiere**	**148.31**	**1**	*e*PKP1	PKPdf	13 26 59.8	+4.3
GRR	**Gorron**	**148.50**	**2**	*e*PKP1	PKPdf	13 27 00.5	+4.7
	8.1nm,0.6s						
SGMF	**Saint Gilles**	**148.54**	**4**	*e*PKP1	PKPdf	13 27 00.4	+4.5
LOR	**Lormes**	**149.53**	**356**	*e*PKP1	PKPdf	13 27 03.3	+5.8
	9.9nm,0.7s						
SSF	**Saint Saulge**	**149.76**	**356**	*e*PKP1	PKPdf	13 27 03.9	+6.0
	5.5nm,0.5s						
CABF	**La Chapelle**	**149.97**	**353**	*e*PKP1	PKPdf	13 27 04.7	+6.5
	10nm,0.8s						
AVF	**Avril sur Loir**	**150.04**	**356**	*e*PKP1	PKPdf	13 27 04.1	+5.8
MFF	**Saint Martin d**	**150.30**	**1**	*e*PKP1	PKPdf	13 27 04.9	+6.2
TCF	**Toulx Ste Croi**	**150.60**	**358**	*e*PKP1	PKPdf	13 27 06.2	+7.0
LPL	**La Plagne**	**150.96**	**351**	*e*PKP1	PKPdf	13 27 07.4	+7.7
	3.5nm,0.6s						
MBDF	**Montbardon**	**151.72**	**351**	*e*PKP1	PKPdf	13 27 08.6	+7.7
	3.6nm,0.5s						
VIVF	**Saint-Julien-l**	**151.86**	**354**	*e*PKP1	PKPdf	13 27 08.8	+7.8
CAF	**Calviac**	**151.96**	**358**	*e*PKP1	PKPdf	13 27 09.5	+8.3
ETSF	**Etsaut**	**153.99**	**2**	*e*PKP1	PKPdf	13 27 12.6	+8.6

*BJI **26** 13:25:14.1,0.97N×126.61E,h14km,mb4.4,Ms4.7, Msz4.5*

*IDC **26** 13:25:16.1±1.0,1.16N×126.56E,mb4.1/7,mb1 4.1/8, mb1mx4.0/18,ML3.5/1,MS3.5/4,Ms1 3.5/4,ms1mx3.1/23, Error ellipse: s-maj=54.6km s-min=13.0km az=67.0*

*NEIC **26** 13:25:17.5±0.7,1.10N×126.62E,h10km,mb4.5/1,Error ellipse: s-maj=34.9km s-min=10.7km az=66.0*

ISC 26 13:25:15.7±0.7,1.0N±0.1×126.4E±0.2,h10km,n17, σ0§77/16,mb4.2/10,MS3.8/6,Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KAKA	**Kakadu**	**14.88**	**157**	*e*P	**P**	**13 28 55.9**	**+7.7**
	22nm,0.6s						
FITZ	**Fitzroy Crossi**	**19.04**	**182**	*e*P	**P**	**13 29 42.0**	**+1.4**
	5.9nm,1.0s						
FITZ	**Fitzroy Crossi**	**19.04**	**182**	P	**P**	**13 29 40.1**	**-0.5**
	0.1nm,0.3s,baz=27,slow=9.0,SNR=3.8						
WRAB	**Tennant Creek**	**22.24**	**160**	*e*P	**P**	**13 30 14.7**	**+0.3**
	14nm,0.8s,mb4.5						
WRA	**Warramunga Arr**	**22.24**	**160**	P	**P**	**13 30 14.3**	**-0.1**
	5.3nm,0.7s,mb4.1,baz=338,slow=11,SNR=23						
WRA				S	**S**	**13 34 23.2**	**+9.1**
	0.8nm,0.8s,baz=344,slow=18,SNR=4.0						
AS12	**Alice Springs**	**25.61**	**164**	*e*P	**P**	**13 30 47.6**	**+0.5**
	13nm,0.7s,mb4.6						
ASAR	**Alice Springs**	**25.61**	**164**	P	**P**	**13 30 46.7**	**-0.4**
	1.3nm,0.4s,mb3.8,baz=348,slow=13,SNR=30						
ASAR				S	**S**	**13 35 22.8**	**+10**
	0.8nm,0.8s,baz=353,slow=23,SNR=2.9						
CMAR	**Chiang Mai Arr**	**32.06**	**304**	P	**P**	**13 31 44.4**	**-0.8**
	0.3nm,0.4s,mb3.5,baz=124,slow=9.8,SNR=4.1						
JNU	**Nakatsue**	**32.18**	**7**	LR	LR	13 43 38.7	
	comp=Z,24nm,19.6s,MS2.9,baz=229,slow=34						
STKA	**Stephens Creek**	**35.75**	**158**	P	**P**	**13 32 15.8**	**-1.1**
	1.2nm,0.5s,mb4.1,baz=337,slow=7.7,SNR=2.3						
CD2	**Chengdu**	**36.67**	**326**	P	**P**	**13 32 23.5**	**-1.2**
CD2				AMB	AMB		
	comp=Z,10.0nm,1.3s,mb4.5						
CD2				LR	LR		
	comp=E,590nm,10.8s						
CD2				LR	LR		
	comp=Z,620nm,13.2s,MS4.6						
LZH	**Lanzhou**	**40.69**	**331**	*e*P	**P**	**13 32 58.5**	**+0.4**
LZH				AP	pP	13 33 07.5	+6.4
LZH				XP	sP	13 33 11.5	+9.1
LZH				AMB	AMB		
	comp=Z,31nm,1.5s,mb4.7						
LZH				LR	LR		
	comp=E,445nm,13.1s						
LZH				LR	LR		
	comp=Z,491nm,17.4s,MS4.4						
ASAJ	**Asahikawa**	**45.23**	**16**	LR	LR	13 52 19.1	
	comp=Z,64nm,20.3s,MS3.5,baz=164,slow=36						
MKAR	**Makanchi Array**	**59.60**	**326**	P	**P**	**13 35 22.9**	**+0.6**
	comp=Z,2.1nm,0.4s,mb4.5,baz=119,slow=7.7,SNR=4.5						
MKAR				LR	LR	14 01 49.5	
	comp=Z,66nm,20.9s,MS3.7,baz=116,slow=37						
ILAR	**Eielson Array**	**87.64**	**25**	P	**P**	**13 38 05.6**	**+0.3**
	comp=Z,0.4nm,0.7s,mb3.7,baz=246,slow=5.0,SNR=4.9						
ASF	**Jabal al Asfar**	**89.07**	**302**	P	**P**	**13 38 14.2**	**+1.2**
	comp=Z,3.0nm,0.7s,mb4.7,baz=135,slow=1.4,SNR=6.8						
FINES	**FINESS Array B**	**94.05**	**332**	LR	LR	14 28 41.3	
	comp=Z,28nm,18.8s,MS3.8,baz=345,slow=40						

*NNC **26** 13:26:58.3±11.0,37.61N×69.42E,h111km±136km,mpv5.0, Error ellipse: s-maj=95.6km s-min=73.5km az=39.0*

*IDC **26** 13:27:07.6±0.6,38.69N×70.41E,mb4.4/21,mb1 4.6/26, mb1mx4.5/31,ML4.2/4,MS3.9/17,Ms1 3.9/17, ms1mx3.8/28,Error ellipse: s-maj=12.6km s-min=11.1km az=161.0,Putative timing error at GNI*

*MOS **26** 13:27:12.1±1.4,38.90N×70.56E,h37km,mb4.8/19,Error ellipse: s-maj=10.2km s-min=7.3km az=104.4*

*BJI **26** 13:27:13.5,39.05N×70.45E,h58km,mB4.7,mb4.5,ML5.0, Ms4.6,Msz4.3*

*NEIC **26** 13:27:15.4±1.2,38.87N×70.49E,h56km±11km,mb4.7/31, Error ellipse: s-maj=8.7km s-min=5.3km az=196.0*

ISC 26 13:27:12.0±0.6,38.71N±0.03×70.40E±0.04,h41km±5km, n184,σ1§25/200,mb4.6/61,MS4.1/23,6C-5D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AML	**Almayashu**	**4.24**	**35**	P	**P**	**13 28 16.1**	**+0.3**
	SNR=400						
KK31	**Karatay Array**	**4.39**	**1**	P	**P**	**13 28 17.6**	**-0.3**
	84nm,0.5s,baz=193,slow=14,SNR=824						
KK31				S	**S**	**13 29 22.7**	**+14**
	330nm,0.5s,baz=181,slow=29,SNR=11						
KKAR	**Karatay Array**	**4.39**	**1**	*i* PN	**P**	**13 28 17.6**	**-0.3**
KKAR				pmax	pmax		
	comp=Z,79nm,0.3s						
KSH	**Kashi**	**4.41**	**78**	P	**P**	**13 28 19.5**	**+1.3**
KSH				S	S		
	comp=N,3μm,1.0s						
KSH				S	S		
	comp=E,2μm,0.9s						
KSH				LR	LR		
	comp=N,11μm,3.7s						
KSH				LR	LR		
	comp=E,10μm,4.4s						
EKS2	**Erkin-Say**	**4.71**	**32**	P	**P**	**13 28 22.7**	**+0.3**
	SNR=116						
UCH	**Uchtor**	**4.71**	**40**	P	**P**	**13 28 23.1**	**+0.7**
	SNR=582						
KZA	**Kyzart**	**5.00**	**46**	P	**P**	**13 28 27.0**	**+0.5**
	SNR=513						
AAK	**Ala-Archa**	**5.00**	**37**	P	**P**	**13 28 26.9**	**+0.4**
	SNR=189						
AAK	**Ala-Archa**	**5.00**	**37**	*e*P	**P**	**13 28 26.8**	**+0.2**
CEP	**Cherat**	**5.03**	**166**	P	**P**	**13 28 31.0**	**+4.0**
CEP				S	**S**	**13 29 43.0**	**+18**
FRU	**Bishkek**	**5.21**	**37**	*e*PN	**P**	**13 28 31.0**	**+1.5**
FRU				*i* S	**S**	**13 29 31.0**	**+1.8**
FRU				pmax	pmax		
	comp=Z,640nm,1.4s						
FRU				smax			
	comp=E,2μm,1.8s						
KBK	**Karagaybulak**	**5.24**	**40**	P	**P**	**13 28 30.9**	**+1.0**
	SNR=289						
CHMS	**Chumysh**	**5.40**	**36**	P	**P**	**13 28 31.8**	**-0.4**
	SNR=104						
USP	**Ospenovka**	**5.50**	**33**	P	**P**	**13 28 33.2**	**-0.3**
	SNR=74						
CHCP	**Chirah Chowk**	**5.55**	**154**	P	**P**	**13 28 38.5**	**+4.3**
ULHL	**Ulahol**	**5.68**	**50**	P	**P**	**13 28 35.9**	**-0.1**
	SNR=27						
TKM2	**Tokmak 2**	**5.76**	**42**	P	**P**	**13 28 37.2**	**0.0**
	SNR=394						
THW	**Thamme Wali**	**6.01**	**169**	P	**P**	**13 28 43.0**	**+2.4**
KALG	**Kalgarh**	**11.50**	**141**	*e*	**P**	**13 29 48.9**	**-7.5**
KALG				*e*		13 31 56.6	
NDI	**New Delhi**	**11.50**	**148**	*e*P	**P**	**13 29 55.0**	**-1.5**
NDI				*e*		13 32 02.0	
KHET	**Khetri**	**11.53**	**155**	*e*P	**P**	**13 29 54.5**	**-2.4**
KHET				AMb	AMB	13 29 57.0	
	comp=Z,4.7nm,0.3s						
KHET				*e*		13 31 51.1	
AYAN	**Aya Nagar**	**11.64**	**149**	*e*P	**P**	**13 29 56.9**	**-1.4**
AYAN				*e*		13 32 06.7	
KUDL	**Kundal**	**11.70**	**152**	*e*P	**P**	**13 29 57.5**	**-1.7**
KUDL				AMb	AMB	13 29 59.9	
	comp=Z,14nm,0.6s						
KUDL				*e*		13 32 06.7	
SONA	**Sohna**	**11.83**	**150**	*e*P	**P**	**13 29 59.6**	**-1.3**
SONA				AMb	AMB	13 30 01.8	
	comp=Z,10nm,0.2s						
SONA				*e*		13 32 08.6	
MK31	**Makanchi Array**	**11.89**	**43**	⇑P	**P**	**13 30 00.3**	**-1.4**
	comp=Z,25nm,1.0s,baz=225,slow=13,SNR=123						
MKAR	**Makanchi Array**	**11.89**	**43**	Pn	**P**	**13 29 59.2**	**-2.4**
	comp=Z,1.0nm,0.3s,baz=227,slow=14,SNR=70						
MKAR				Lg		13 33 21.8	
	comp=Z,0.9nm,0.3s,baz=240,slow=28,SNR=3.7						
MKAR				LR	LR	13 34 44.2	
	comp=Z,456nm,19.9s,baz=303,slow=38						
MKAR	**Makanchi Array**	**11.89**	**43**	*e*P	**P**	**13 29 58.7**	**-2.9**
MKAR				pmax	pmax		
	comp=Z,25nm,1.0s						
MKAR	**Makanchi Array**	**11.89**	**43**	Pn	**P**	**13 29 59.2**	**-2.4**
MKAR				Lg		13 33 21.8	
AJM	**Ajmer**	**12.71**	**162**	*e*	**P**	**13 30 01.0**	**-12**
AB31	**Akbulak array**	**12.94**	**328**	⇑P	**P**	**13 30 10.9**	**-4.8**
	comp=Z,43nm,0.6s						
AB31				⇓S	**S**	**13 32 28.3**	**-11**
	comp=Z,64nm,0.6s						
AB31	**Akbulak array**	**12.94**	**328**	P	**P**	**13 30 10.8**	**-4.9**
AB31				S	**S**	**13 32 28.2**	**-11**
AB31				pmax	pmax		
	comp

ARU MLR MLR
comp=Z,400nm,14.0s
ARU MLR MLR
comp=E,200nm,15.0s
ARU Arti 19.39 340 *eP* **P 13 31 34.4 -2.6**
comp=E,31nm,0.8s
GNI Garni 19.85 282 P **P 13 31 22.8 -19**
comp=E,1.0nm,0.3s,baz=73,slow=2.9,SNR=7.1
GNI LR LR 13 40 38.5
comp=E,332nm,19.3s,baz=247,slow=41
POO Poona 20.34 171 *eP* **P 13 31 48.0 +0.6**
ZEI Tsey 20.45 290 *eP* **P 13 31 50.0 +1.6**
ZEI *e* 13 32 10.0
ZEI *eS* **S 13 35 36.0 +5.9**
ZEI smax
comp=E,200nm,8.0s
ZEI MLR MLR
comp=Z,600nm,14.0s,MS4.1
GOF Gofitskoye 21.28 296⇑ *iP* **P 13 32 00.0 +3.2**
GOF *e* 13 36 06.0
GOF pmax pmax
comp=Z,100nm,1.6s,mb4.9
KIV Kislovodsk 21.41 293 *eP* **P 13 31 59.0 +0.9**
KIV *eS* **S 13 35 59.5 +11**
KIV pmax pmax
comp=Z,40nm,0.9s,mb4.8
KIV pmax pmax
comp=E,5.0nm,0.5s
KIV MLR MLR
comp=Z,370nm,17.0s,MS3.9
KIV Kislovodsk 21.41 293 P **P 13 31 55.0 -3.2**
comp=Z,31nm,0.7s,mb4.8
SHL Shillong 22.36 120 *eP* **P 13 32 09.0 +1.3**
SHL *eS* **S 13 36 11.0 +5.1**
HYB Hyderabad 22.38 159 *i* P **P 13 32 10.5 +2.5**
HYB *ep*P 13 32 23.5
HYB *e* 13 32 29.0
HYB Hyderabad 22.38 159 *eP* **P 13 32 10.5 +2.5**
GTA Gaotai 22.81 79 *eP* **P 13 32 12.5 +0.4**
GTA PP PP 13 32 42.0 +0.1
GTA XS 13 36 29.3
GTA AMB AMB
comp=Z,7.0nm,0.5s,mb4.3
GTA AMB AMB
comp=Z,80nm,3.8s
GTA LR LR
comp=N,340nm,11.4s,MS4.2
GTA LR LR
comp=E,293nm,11.4s,MS4.2
GTA LR LR
comp=Z,323nm,10.6s,MS4.0
SOC Sochi 23.54 292 *eP* **P 13 32 23.2 +4.2**
SOC *e* 13 32 48.5
SOC *eS* **S 13 36 29.7 +3.0**
SOC *eSS* SS 13 37 17.9 +1.7
SOC pmax pmax
comp=Z,10.0nm,0.6s,mb4.4
SOC pmax pmax
comp=N,6.0nm,0.3s
SOC pmax pmax
comp=E,20nm,0.4s
SOC MLR MLR
comp=Z,440nm,21.0s,MS3.9
SOC MLR MLR
comp=N,300nm,17.0s,MS4.0
SOC MLR MLR
comp=E,320nm,15.0s,MS4.0
MOY Mondy 24.94 49 *eP* **P 13 32 36.0 +3.4**
VRSR Storozhevoye 25.16 310 *eP* **P 13 32 35.5 +0.8**
VRSR *e**PP pP 13 32 43.9 -1.7
VRSR *e**SP sP 13 32 47.8 -2.7
VRSR *e* 13 33 13.1
VRSR *e* 13 36 10.9
VRSR pmax pmax
comp=Z,20nm,0.6s,mb4.8
VRSR pmax pmax
comp=N,30nm,1.4s
VRSR pmax pmax
comp=E,20nm,0.8s
VRSR MLR MLR
comp=Z,460nm,18.0s,MS4.0
VRSR MLR MLR
comp=N,1μm,35.0s
VRSR MLR MLR
comp=E,320nm,20.0s
ANN Anapa 25.22 295 *eP* **P 13 32 38.0 +2.7**
ANN pmax pmax
comp=Z,20nm,0.9s,mb4.7
ZAK Zakamensk 25.96 53⇑ *eP* **P 13 32 41.7 -0.5**
TLY Talaya 26.52 50 *eP* **P 13 32 46.2 -1.1**
TLY pmax pmax
comp=Z,88nm,1.6s,mb5.0
SONM Songino Array 27.54 59 P **P 13 32 55.7 -1.0**
comp=Z,1.3nm,0.6s,mb3.8,baz=266,slow=9.2,SNR=8.2
SIM Simferopol' 27.58 295*d iP* **P 13 33 02.0 +4.9**
ASF Jabal al Asfar 27.96 267 LR LR 13 45 17.0
comp=Z,102nm,22.0s,MS3.4,baz=124,slow=39
OBN Obninsk 27.97 317*de*P **P 13 33 02.0 +1.4**
OBN pmax pmax
comp=Z,200nm,0.7s,mb4.9
OBN MLR MLR
comp=Z,200nm,17.0s,MS3.8
OBN Obninsk 27.97 317 P **P 13 32 57.8 -2.8**
ULN Ulaanbaatar 27.98 59 *eP* **P 13 32 59.8 -0.9**
ULN pmax pmax
comp=Z,2.0nm,0.8s,mb3.8
ULN Ulaanbaatar 27.98 59 *eP* **P 13 32 60.0 -0.8**
BRTR Keskin Array B 28.37 284 P **P 13 33 05.0 +0.7**
comp=Z,4.5nm,0.8s,mb4.2,baz=82,slow=8.7,SNR=11
KMI Kunming 30.44 107 *eP* **P 13 33 25.5 +2.6**
KMI PP PP 13 34 22.5 -0.9
KMI S **S 13 38 26.3 +6.6**
KMI AMB AMB
comp=Z,5.0nm,0.9s,mb4.2
KMI AMB AMB
comp=Z,73nm,7.0s
KMI LR LR
comp=N,246nm,16.7s
KMI LR LR
comp=E,201nm,23.3s
KMI LR LR
comp=Z,250nm,15.3s,MS4.0
CMAR Chiang Mai Arr 31.97 121 P **P 13 33 35.4 -1.0**
comp=Z,1.3nm,0.8s,mb3.8,baz=314,slow=8.8,SNR=6.3
CMAR Chiang Mai Arr 31.97 121 P **P 13 33 35.4 -1.0**
CMAR pmax pmax
comp=Z,1.0nm,0.8s
GYA Guiyang 32.70 101 P **P 13 33 43.5 +0.8**
GYA S **S 13 38 59.3 +4.2**
GYA AMB AMB
comp=Z,10.0nm,1.0s,mb4.7
MLR Muntele Rosu 33.33 296 P **P 13 33 48.6 +0.7**
comp=Z,10nm,0.9s,mb4.8,baz=152,slow=2.0,SNR=17
MLR LR LR 13 49 40.2
comp=Z,232nm,19.8s,MS3.9,baz=80,slow=41
MLR Muntele Rosu 33.33 296 P **P 13 33 48.6 +0.7**
MLR pmax pmax
comp=Z,10.0nm,0.9s
MLR MLR MLR
comp=Z,232nm,19.8s
BOD Bodaibo 33.97 41 *eP* **P 13 33 51.6 -1.7**
FINES FINESS Array B 35.39 325 P **P 13 34 04.3 -1.1**
comp=Z,8.0nm,0.8s,mb4.7,baz=108,slow=12,SNR=11
FINES LR LR 13 49 13.8
comp=Z,250nm,20.5s,MS4.0,baz=159,slow=37
FINES FINESS Array B 35.39 325 P **P 13 34 04.4 -1.1**
FINES pmax pmax
comp=Z,8.0nm,0.8s
FINES MLR MLR
comp=Z,251nm,20.5s
APA Apatity 35.41 337⇓ *iP* **P 13 34 00.1 -5.5**
APA MLR MLR
comp=Z,2μm,11.0s,MS5.0
NIE Niedzica 36.91 303 *eP* **P 13 34 21.1 +2.7**
OJC Ojcow 37.22 305 *eP* **P 13 34 23.7 +2.7**
ARCES ARCESS Array B 38.92 337 P **P 13 34 34.3 -0.7**
comp=Z,2.1nm,0.6s,mb4.0,baz=108,slow=7.7,SNR=10
ARCES LR LR 13 51 39.5
comp=Z,618nm,18.1s,MS4.5,baz=22,slow=38
ARCES ARCESS Array B 38.92 337 P **P 13 34 34.3 -0.7**
ARCES pmax pmax
comp=Z,2.0nm,0.6s
ARCES MLR MLR
comp=Z,618nm,18.1s
NJ2 Nanjing 39.69 84 *eP* **P 13 34 41.5 -0.2**
NJ2 PP PP 13 36 16.8 -0.2
NJ2 S **S 13 40 44.0 +1.8**
NJ2 SS SS 13 43 31.0 -1.1
NJ2 AMB AMB
comp=Z,30nm,0.9s,mb5.0
NJ2 AMB AMB
comp=Z,170nm,7.6s
NJ2 LR LR
comp=N,800nm,15.6s,MS4.9
NJ2 LR LR
comp=E,870nm,13.5s,MS4.9
NJ2 LR LR
comp=Z,660nm,15.5s,MS4.6
BRG Berggiesshubel 40.91 306 *eP* **P 13 34 53.1 +1.5**
BRG pmax pmax
comp=Z,7.0nm,1.1s,mb4.2
BRG MLR MLR
comp=N,100nm,12.0s,MS4.2
BRG MLR MLR
comp=E,180nm,12.0s,MS4.2
BRG MLR MLR
comp=Z,290nm,12.0s,MS4.4
BRG Berggiesshubel 40.91 306 *eP* **P 13 34 53.1 +1.5**
comp=Z,7.4nm,1.1s,mb4.2
HFS Hagfors 41.05 320 P **P 13 34 52.0 -0.7**
comp=Z,14nm,0.7s,mb4.7,baz=98,slow=10,SNR=13
HFS Hagfors 41.05 320 P **P 13 34 52.0 -0.7**
HFS pmax pmax
comp=Z,14nm,0.7s
CN2 Changchun 41.05 65 *eP* **P 13 34 53.3 +0.4**
GERES GERESS Array B 41.29 303 P **P 13 34 54.7 -0.1**
comp=Z,0.3nm,0.3s,baz=74,slow=7.1,SNR=2.5
GERES PP PP 13 36 32.3 -1.0
comp=Z,0.4nm,0.3s,baz=97,slow=7.9,SNR=3.0
KHC Kasperske Hory 41.33 304 *eP* **P 13 34 54.0 -1.1**
CLL Collm 41.45 307 P **P 13 34 58.0 +1.9**
CLL *e*PCP PcP 13 36 57.0 +3.0
CLL *e*PPP PPP 13 37 05.0 -1.2
CLL Collm 41.45 307 *eP* **P 13 34 58.0 +1.9**
SSE Sheshan 41.90 84 P **P 13 35 01.3 +1.4**
SSE PCP PcP 13 36 57.5 +1.8
SSE S **S 13 41 19.3 +4.3**
SSE AMB AMB
comp=Z,25nm,0.6s,mb5.0
SSE LR LR
comp=N,166nm,13.0s,MS4.2
SSE LR LR
comp=E,146nm,13.1s,MS4.2
SSE LR LR
comp=Z,287nm,12.7s,MS4.3
NB2 NORSAR Subarra 42.34 322 P **P 13 35 02.1 -1.1**
comp=Z,6.3nm,0.7s,mb4.3,baz=94,slow=7.9
NOA NORSAR Array B 42.34 322 P **P 13 35 02.3 -0.9**
comp=Z,6.4nm,0.7s,mb4.4,baz=94,slow=8.2,SNR=16
NOA PP PP 13 36 37.4 -6.9
comp=Z,2.7nm,0.8s,baz=99,slow=8.6,SNR=4.3
NOA LR LR 13 53 29.8
comp=Z,198nm,18.8s,MS4.0,baz=90,slow=37
NOA NORSAR Array B 42.34 322 P **P 13 35 02.3 -0.9**
NOA pmax pmax
comp=Z,6.0nm,0.7s
NOA pmax pmax
comp=Z,3.0nm,0.8s
NOA MLR MLR
comp=Z,198nm,18.8s
MOX Moxa 42.40 306 *eP* **P 13 35 06.0 +2.2**
MOX L 13 54 09.0
YAK Yakutsk 42.46 37 *eP* **P 13 35 02.2 -2.0**
YAK pmax pmax
comp=Z,8.0nm,1.0s,mb4.3
YAK Yakutsk 42.46 37 *eP* **P 13 35 02.6 -1.6**
comp=Z,20nm,0.6s,mb4.9
NAO01 NORSAR Array S 42.49 321 *eP* **P 13 35 03.9 -0.5**
GRA1 Grafenberg Arr 42.78 305 *eP* **P 13 35 09.0 +2.1**
comp=Z,6.0nm,0.8s,mb4.4
GRF Grafenberg Arr 42.78 305 *eP* **P 13 35 09.0 +2.1**
GRF pmax pmax
comp=Z,6.0nm,0.8s,mb4.4
MDJ Mudanjiang 43.77 62 P **P 13 35 13.3 -1.8**
MDJ PCP PcP 13 37 01.0 -0.8
MDJ PCS 13 40 53.3
MDJ S **S 13 41 43.5 +1.3**
MDJ AMB AMB
comp=Z,2.0nm,1.2s,mb3.7
MDJ AMB AMB
comp=Z,54nm,5.9s
TIXI Tiksi 43.91 23 *eP* **P 13 35 14.6 -1.2**
comp=Z,10nm,0.6s,mb4.7
DAVOX Davos 44.19 301 P **P 13 35 18.8 +0.4**
comp=Z,2.9nm,0.5s,mb4.2,baz=96,slow=2.3,SNR=4.4
SPITS Spitsbergen Ar 45.23 346 P **P 13 35 25.5 -0.9**
comp=Z,3.6nm,0.7s,mb4.3,baz=97,slow=16,SNR=4.7
CDF Champ du Feu 45.56 304 *eP* **P 13 35 30.7 +1.3**
HINF Hinteralfelt 45.97 303 *eP* **P 13 35 32.6 0.0**
LPG La Plagne 46.60 300 *eP* **P 13 35 39.6 +2.0**
comp=Z,9.1nm,0.7s,mb4.5
LPL La Plagne 46.61 300 *eP* **P 13 35 39.5 +1.8**
comp=Z,9.6nm,0.7s,mb4.6
MBDF Montbardon 46.80 299 *eP* **P 13 35 40.0 +0.9**
comp=Z,8.7nm,0.7s,mb4.5
BAIF Baives 47.17 306 *eP* **P 13 35 43.1 +1.1**
SMRF Simiane la Rot 47.84 298 *eP* **P 13 35 47.8 +0.5**
LOR Lormes 48.07 303 *eP* **P 13 35 48.8 -0.3**
LOR *eR*
comp=Z,119nm,22.2s
SMF Signal de Mont 48.25 302 *eP* **P 13 35 50.6 +0.1**
SSF Saint Saulge 48.36 303 *eP* **P 13 35 51.1 -0.2**
JNU Nakatsue 48.53 77 P **P 13 35 52.8 -0.1**
comp=Z,6.0nm,0.6s,mb4.8,baz=43,slow=8.0,SNR=9.4
AVF Avril sur Loir 48.53 302 *eP* **P 13 35 52.7 0.0**
comp=Z,18nm,0.8s,mb4.8
LASF Ste Croix 48.99 299 *eP* **P 13 35 57.0 +0.8**
comp=Z,14nm,0.9s,mb4.7
TCF Toulx Ste Croi 49.43 302 *eP* **P 13 36 00.1 +0.5**
comp=Z,19nm,0.9s,mb4.8
CAF Calviac 49.94 300 *eP* **P 13 36 04.2 +0.6**
KMBO Kilima Mbogo 50.00 226 P **P 13 36 04.6 +0.1**
LDF La Druitiere 50.28 306 *eP* **P 13 36 05.9 -0.2**
JMIC Jan Mayen 50.38 335 LR LR 13 57 51.1
comp=Z,133nm,20.3s,MS3.9,baz=283,slow=37
EKA Eskdalemuir Ar 50.38 315 P **P 13 36 06.1 -0.7**
comp=Z,4.1nm,0.8s,mb4.5,baz=79,slow=8.5,SNR=10
EKA Eskdalemuir Ar 50.38 315 P **P 13 36 06.1 -0.7**
EKA pmax pmax
comp=Z,4.0nm,0.8s
FLN La Foliniere 50.46 306 *eP* **P 13 36 07.1 -0.4**
FLN *eR*
comp=Z,158nm,20.0s
GRR Gorron 50.81 305 *eP* **P 13 36 09.7 -0.4**
comp=Z,21nm,0.8s,mb4.8
MFF Saint Martin d 50.89 303 *eP* **P 13 36 10.4 -0.4**
SGMF Saint Gilles 51.93 306 *eP* **P 13 36 18.4 -0.2**
comp=Z,21nm,0.9s,mb4.8
ETSF Etsaut 52.41 299 *eP* **P 13 36 22.6 +0.4**
comp=Z,13nm,0.9s,mb4.6
MA2 Magadan 52.93 39 *eP* **P 13 36 20.4 -5.5**
ELAN Lanesoga 54.24 300 P **P 13 36 33.6 -2.2**
comp=Z,18nm,0.9s,mb5.0
ETOB Tobarra 54.74 294 P **P 13 36 37.3 -2.2**
comp=Z,8.5nm,0.8s,mb4.8
EVIA Vianos 55.43 295 P **P 13 36 43.0 -1.5**
GUD Guadarrama 55.76 297 P **P 13 36 45.3 -1.5**
EHUE Huescar 55.84 294 P **P 13 36 45.8 -1.6**
ESDC Sonseca Array 56.02 296 P **P 13 36 48.5 -0.2**
comp=Z,12nm,1.1s,mb4.8,baz=66,slow=7.0,SNR=14
ESDC LR LR 14 04 52.1
comp=Z,46nm,18.4s,MS3.6,baz=5.0,slow=40
ESDC Sonseca Array 56.02 296 P **P 13 36 47.1 -1.7**
comp=Z,3.2nm,0.5s,mb4.6
ESLA Sonseca Array 56.02 296 *eP* **P 13 36 48.5 -0.3**
comp=Z,1.6nm,0.9s,mb4.0
BORG Borgarnes 56.46 329 LR LR 14 00 34.6
comp=Z,143nm,18.4s,MS4.1,baz=198,slow=36
EADA Adamuz 57.10 295 P **P 13 36 54.6 -1.9**
comp=Z,6.1nm,0.9s,mb4.6
ELUQ Luque 57.15 294 P **P 13 36 54.9 -1.9**
comp=Z,7.6nm,0.6s,mb4.9
ELOB Lobios 57.92 300 P **P 13 37 00.2 -2.0**
comp=Z,11nm,0.9s,mb4.9
ELIJ Sierra de Lija 58.23 294 P **P 13 37 04.5 +0.1**
comp=Z,3.7nm,0.7s,mb4.5
EBAD Badajoz 58.56 297 P **P 13 37 06.6 -0.1**
comp=Z,4.3nm,0.7s,mb4.6
ESPR Espera 58.59 294 P **P 13 37 06.8 -0.1**
comp=Z,11nm,0.9s,mb4.9
EMIN Mina Concepcio 58.76 295 P **P 13 37 08.0 -0.1**
comp=Z,10.0nm,0.8s,mb4.9
SUMG Summit 58.82 341 *eP* **P 13 37 07.5 -0.5**
EGRO El Granado 59.44 295 P **P 13 37 12.6 -0.2**
comp=Z,11nm,0.7s,mb5.0
INK Inuvik 71.80 9 P **P 13 38 30.9 -0.6**
comp=Z,4.4nm,0.6s,mb4.5,baz=4.2,slow=6.7,SNR=23
INK Inuvik 71.80 9 P **P 13 38 30.9 -0.6**
INK pmax pmax
comp=Z,4.0nm,0.6s
INK Inuvik 71.80 9 *eP* **P 13 38 30.9 -0.5**
comp=Z,3.6nm,0.6s,mb4.5
COLA College 72.49 16 *eP* **P 13 38 35.2 -0.4**
COLA College 72.49 16 *eP* **P 13 38 34.6 -0.9**
comp=Z,4.6nm,0.8s,mb4.5
ILAR Eielson Array 72.78 16 P **P 13 38 36.5 -0.7**
comp=Z,2.1nm,1.1s,mb4.0,baz=331,slow=5.1,SNR=15
ILAR LR LR 14 11 24.8
comp=Z,85nm,20.7s,MS4.0,baz=95,slow=36
ILAR Eielson Array 72.78 16 P **P 13 38 36.5 -0.7**
ILAR pmax pmax
comp=Z,2.0nm,1.1s
ILAR MLR MLR
comp=Z,85nm,20.7s
DBIC Dimbokro 74.36 266 LR LR 14 16 12.3
comp=Z,93nm,18.5s,MS4.1,baz=34,slow=40
DAWY Dawson 74.88 13 *eP* **P 13 38 48.8 -0.7**
PMR Palmer 75.02 18 *eP* **P 13 38 49.1 -1.2**
YKW3 Yellowknife Ar 78.99 2 *eP* **P 13 39 11.6 -0.9**
YKA Yellowknife Ar 79.06 2 P **P 13 39 12.8 0.0**
comp=Z,2.9nm,0.6s,mb4.4,baz=351,slow=5.8,SNR=85
YKA Yellowknife Ar 79.06 2 P **P 13 39 12.8 -0.1**
YKA pmax pmax
comp=Z,3.0nm,0.6s
SCHQ Schefferville 79.88 336 P **P 13 39 18.6 +1.2**
comp=Z,3.2nm,0.7s,mb4.3,baz=41,slow=5.5,SNR=6.6
SCHQ LR LR 14 13 14.5
comp=Z,98nm,20.4s,MS4.1,baz=66,slow=35
FCC Fort Churchill 82.03 352 *eP* **P 13 39 28.5 -0.1**
comp=Z,2.8nm,0.8s,mb4.2
WRA Warramunga Arr 83.56 122 P **P 13 39 38.0 +0.7**
comp=Z,2.9nm,0.6s,mb4.5,baz=325,slow=4.8,SNR=23
WRA Warramunga Arr 83.56 122 P **P 13 39 38.0 +0.7**
WRA pmax pmax
comp=Z,3.0nm,0.6s
WRAB Tennant Creek 83.56 122 *eP* **P 13 39 37.3 0.0**
comp=Z,11nm,0.8s,mb5.0
ASAR Alice Springs 85.91 125 P **P 13 39 49.7 +0.8**
comp=Z,1.5nm,0.6s,mb4.4,baz=313,slow=4.9,SNR=15
FFC Flin Flon 86.70 356 *eP* **P 13 39 52.6 +0.6**
CTA Charters Tower 91.89 114 P **P 13 40 18.6 +1.2**
comp=Z,2.8nm,0.9s,mb4.6,baz=280,slow=6.5,SNR=4.3
CTA Charters Tower 91.89 114 P **P 13 40 18.7 +1.3**
CTA pmax pmax
comp=Z,3.0nm,0.9s
PDAR Pinedale Array 98.90 360 LR LR 14 27 17.1
comp=Z,54nm,21.1s,MS4.0,baz=145,slow=36

*IDC **26** 13:28:32.2±4.6,28.36S×178.45W,h216km±40km, mb3.9/10,mb1 4.0/11,mb1mx4.0/16,Error ellipse: s-maj=24.2km s-min=16.4km az=49.0*
*NEIC **26** 13:28:43.9±6.2,28.32S×178.80W,h321km±56km,mb4.3/8, Error ellipse: s-maj=27.9km s-min=12.2km az=60.0*
ISC 26 13:28:35.1±2.6,28.7S±0.1×179.1W±0.2,h226km±19km, n52,σ1912/37,mb4.2/16,1C-2D,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**9.62**	**193**	*eP*	**P**		**P**	**13 30 51.1**	**+1.2**
PUZ					S		**S**	**13 32 35.7**	**+0.2**
URZ	**Urewera**	**10.06**	**197**	P	**P**		**P**	**13 30 56.6**	**+1.0**
	1.0nm,0.3s,baz=171,slow=18,SNR=7.3								
URZ					S		**S**	**13 32 51.1**	**+5.4**
	5.3nm,0.3s,baz=14,slow=21,SNR=14								
URZ	**Urewera**	**10.06**	**197**	P	**P**		**P**	**13 30 58.1**	**+2.5**
BFZ	**Birch Farm**	**12.56**	**197**	P	**P**		**P**	**13 31 26.8**	**-0.4**
BFZ					S		**S**	**13 33 42.7**	**-0.3**
MRZ	**Mangatainoka R**	**12.72**	**199**	P	**P**		**P**	**13 31 27.6**	**-1.6**
MRZ					S		**S**	**13 33 43.4**	**-3.3**
THZ	**Tophouse**	**14.59**	**205**	P	**P**		**P**	**13 31 51.0**	**-1.3**
DZM	**Mont Dzumac**	**14.66**	**293**	*eP*	**P**		**P**	**13 31 59.5**	**+6.2**
CTA	**Charters Tower**	**32.63**	**277**	*eP*	**P**		**P**	**13 34 48.5**	**+0.6**
	5.4nm,0.7s,mb4.2								
CTA	**Charters Tower**	**32.63**	**277**	P	**P**		**P**	**13 34 48.8**	**+0.9**
	7.8nm,0.7s,mb4.3,baz=101,slow=11,SNR=10								
CTAO	**Charters Tower**	**32.63**	**277**	*eP*	**P**		**P**	**13 34 49.2**	**+1.4**
	5.6nm,0.6s,mb4.3								
STKA	**Stephens Creek**	**33.99**	**255**	P	**P**		**P**	**13 35 01.1**	**+1.7**
	1.6nm,0.5s,mb3.8,baz=126,slow=6.4,SNR=3.5								
AS12	**Alice Springs**	**42.29**	**266**	*eP*	**P**		**P**	**13 36 09.3**	**+1.0**
	8.6nm,1.4s,mb4.0								
ASAR	**Alice Springs**	**42.29**	**266**	P	**P**		**P**	**13 36 09.4**	**+1.1**
	2.7nm,0.6s,mb3.9,baz=94,slow=6.4,SNR=38								
ASAR					PcP		PcP	13 37 55.8	-2.3
	0.8nm,0.4s,baz=111,slow=3.7,SNR=9.2								
WRAB	**Tennant Creek**	**43.12**	**271**	*eP*	**P**		**P**	**13 36 15.0**	**0.0**
	12nm,0.6s,mb4.5								
WRAB				*e*				13 38 21.8	
WRA	**Warramunga Arr**	**43.12**	**271**	P	**P**		**P**	**13 36 15.7**	**+0.6**
	7.3nm,0.6s,mb4.3,baz=108,slow=7.6,SNR=35								
WRA					PcP		PcP	13 37 58.6	-2.3
	2.5nm,0.7s,baz=112,slow=3.1,SNR=9.0								
FORT	**Forrest**	**45.61**	**254**	*eP*	**P**		**P**	**13 36 34.3**	**-0.4**
	37nm,0.4s,mb5.1								
KAKA	**Kakadu**	**47.78**	**279**	*eP*	**P**		**P**	**13 36 50.9**	**-0.8**
	14nm,1.2s,mb4.2								
SBA	**Scott Base**	**49.67**	**184**	*eP*	**P**		**P**	**13 37 07.0**	**+1.7**
	20nm,1.2s,mb4.3								
VNDA	**Vanda**	**49.70**	**185**	P	**P**		**P**	**13 37 06.0**	**+0.5**
	1.7nm,0.7s,mb3.5,baz=14,slow=7.8,SNR=16								
VNDA	**Vanda**	**49.70**	**185**	*eP*	**P**		**P**	**13 37 05.7**	**+0.2**
	0.8nm,0.6s,mb3.2								
FITZ	**Fitzroy Crossi**	**51.45**	**269**	*eP*	**P**		**P**	**13 37 19.3**	**-0.1**
	5.2nm,0.9s,mb4.0								
FITZ	**Fitzroy Crossi**	**51.45**	**269**	P	**P**		**P**	**13 37 19.7**	**+0.3**
	8.0nm,0.9s,mb4.1,baz=160,slow=6.8,SNR=13								
NWAO	**Narrogin (SRO)**	**54.14**	**248**	*eP*	**P**		**P**	**13 37 38.7**	**-0.3**
QSPA	**South Pole Qui**	**61.41**	**180**	*eP*	**P**		**P**	**13 38 28.5**	**-0.4**
	6.9nm,0.7s,mb4.4								
MAW	**Mawson**	**73.57**	**201**	P	**P**		**P**	**13 39 43.7**	**-1.0**
	2.9nm,0.5s,mb4.1,baz=123,slow=6.9,SNR=11								
JNU	**Nakatsue**	**77.67**	**319**	P	**P**		**P**	**13 40 06.0**	**-2.3**
	5.9nm,0.5s,mb4.5,baz=60,slow=10.0,SNR=8.6								
SNAA	**Sanae**	**79.88**	**179**	*eP*	**P**		**P**	**13 40 17.6**	**-1.9**
VNA3	**Neumayer Olymp**	**80.06**	**177**⇓ *i*		**P**		**P**	**13 40 21.0**	**+0.6**
VNA2	**Neumayer--Watz**	**80.49**	**177**⇓ *i*		**P**		**P**	**13 40 23.6**	**+1.0**
VNA1	**Neumayer--Stat**	**80.72**	**177**⇓ *i*		**P**		**P**	**13 40 25.2**	**+1.3**
NVAR	**Mina Array Bea**	**87.63**	**43**	P	**P**		**P**	**13 40 54.6**	**-4.4**
	0.7nm,0.7s,mb3.6,baz=215,slow=6.8,SNR=6.7								
ENH	**Enshi**	**89.87**	**305**	*eP*	**P**		**P**	**13 41 08.6**	**-1.2**
	14nm,1.1s,mb4.7								
CMAR	**Chiang Mai Arr**	**91.96**	**290**	P	**P**		**P**	**13 41 19.8**	**+0.1**
	1.0nm,0.6s,mb4.0,baz=132,slow=3.9,SNR=7.1								
MKAR	**Makanchi Array**	**115.96**	**311**	PKP		PKPdf		13 46 48.3	-2.6
	0.6nm,0.4s,baz=221,slow=1.4,SNR=4.1								
BVAR	**Borovoye Array**	**124.53**	**317**	PKP		PKPdf		13 47 04.8	-2.4
	1.7nm,0.4s,baz=114,slow=1.5,SNR=15								
ZRNK	**Zerenda**		**125.37**	**317**	*eP*	PKPdf		13 47 06.2	-2.6
SPITS	**Spitsbergen Ar**	**129.94**	**356**	PKP		PKPdf		13 47 13.9	-3.1
	4.4nm,0.9s,slow=4.0,SNR=3.3								
ARCES	**ARCESS Array B**	**136.73**	**348**	PKP		PKPdf		13 47 24.8	-5.0
	1.2nm,0.6s,baz=27,slow=2.7,SNR=6.1								
JOF	**Joensuu**	**140.50**	**339**	*ep*		PKPdf		13 47 33.6	-3.2
FINES	**FINESS Array B**	**143.23**	**340**	PKhKP				13 47 36.0	
	1.5nm,0.3s,baz=55,slow=3.8,SNR=13								
FINES	**FINESS Array B**	**143.23**	**340**	PKP		PKPdf		13 47 36.0	-5.4
KBRS	**Khaybar**	**145.90**	**274**	P		PKPdf		13 47 48.9	+1.8
NOA	**NORSAR Array B**	**146.93**	**351**	PKPbc		PKPbc		13 47 46.8	-2.9
	2.6nm,0.6s,baz=16,slow=4.5,SNR=7.4								
HFS	**Hagfors**	**147.39**	**348**	PKPbc		PKPdf		13 47 47.9	-0.6
	2.4nm,0.4s,baz=90,slow=1.5,SNR=9.2								
ASF	**Jabal al Asfar**	**148.89**	**285**	PKPbc		PKPdf		13 47 55.0	+3.1
	2.1nm,0.5s,baz=153,slow=2.3,SNR=3.2								
JMQS	**Jabal Moqyreh**	**149.44**	**279**	P		PKPdf		13 47 58.0	+5.1
BDAS	**Al Bad'**	**150.05**	**278**	P		PKPdf		13 47 59.0	+5.2
JMOS	**Jabal al Moall**	**150.15**	**279**	P		PKPdf		13 47 59.3	+5.4
ALWS	**Ilw as Safayha**	**150.20**	**280**	P		PKPdf		13 47 59.5	+5.4
HAQS	**Haql**	**150.29**	**279**	P		PKPdf		13 47 59.6	+5.4
BRTR	**Keskin Array B**	**150.95**	**301**	PKPbc		PKPdf		13 47 58.1	+3.3
	1.7nm,0.5s,baz=124,slow=4.5,SNR=6.9								
EKA	**Eskdalemuir Ar**	**153.22**	**5**	PKPab		PKPab		13 48 14.5	-5.9
	0.8nm,0.5s,baz=342,slow=2.6,SNR=4.2								

*HEL **26** 13:30:46.9±0.1,59.79N×24.60E,ML2.4,ML2.6(UPP),*

ML2.6(NAO), Explosion
NAO ***26*** *13:30:46.0±1.4, 59.76N×24.49E, ML2.6*
IDC ***26*** *13:30:46.7±2.2, 59.78N×24.69E, mb1 3.7/4, mb1mx3.4/22, ML3.7/3, Error ellipse: s-maj=23.5km s-min=6.9km az=141.0*
BER ***26*** *13:30:47.1±3.8, 59.77N×24.54E, ML2.6(NAO), Suspected explosion*

ISC 26 13:30:43.9±0.6, 59.80N±0.04×24.45E±0.07, n20, σ1§26/29, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
MEF	**Metsahovi**	**0.42**	**357**	*eP*		**Pg**		**13 30 54.5**	**+2.2**
MEF				*eS*		**Sg**		**13 31 00.6**	**+2.6**
PVF	**Pernaja**	**1.03**	**43**	*eP*		**Pb**		**13 31 04.4**	**+0.1**
PVF				*eS*		**Sg**		**13 31 17.5**	**-0.8**
VJF	**Virojoki**	**1.72**	**63**	*eP*		**Pn**		**13 31 16.0**	**+0.7**
VJF				*eS*		**Sb**		**13 31 37.6**	**-0.7**
VSU	**Vasula**	**1.78**	**138**	*eP*		**Pn**		**13 31 17.2**	**+1.1**
VSU				*eS*		**Sn**		**13 31 39.8**	**0.0**
VSU	**Vasula**	**1.78**	**138**	Pn		**Pn**		**13 31 17.3**	**+1.2**
VSU				Lg				13 31 39.6	
FIA0	**FINESS Array S**	**1.84**	**25**	*eP*		**Pn**		**13 31 19.3**	**+2.3**
FIA0				*eS*		**Sn**		**13 31 41.4**	**+0.2**
FIA0	comp=Z,23nm,0.3s			MSG				13 31 45.0	
FIA0	**FINESS Array S** baz=193,slow=18	**1.84**	**25**	Pn		**Pn**		**13 31 19.4**	**+2.4**
FIA0	baz=201,slow=37			Lg				13 31 43.7	
FINES	**FINESS Array B** comp=Z,14nm,0.3s,baz=201,slow=16,SNR=292	**1.84**	**25**	Pg		**Pg**		**13 31 19.2**	**-1.3**
FINES	comp=Z,18nm,0.3s,baz=201,slow=33,SNR=26			Lg				13 31 42.2	
FINES	comp=Z,9.9nm,0.6s,baz=193,slow=33,SNR=11			Rg				13 31 53.6	
KEF	**Keuruu** comp=Z,25nm,0.2s	**2.39**	**5**	MSG				13 32 02.5	
HFS	**Hagfors** baz=87,slow=10	**5.41**	**278**	Pn		**Pn**		**13 32 08.6**	**+0.8**
HFS	baz=95,slow=28			Sn		**Sn**		**13 33 11.3**	**-0.4**
HFS	baz=85,slow=37			Lg				13 33 31.9	
HFS	**Hagfors**	**5.41**	**278**	*eP*		**Pn**		**13 32 08.6**	**+0.8**
HFS				*eS*		**Sn**		**13 33 11.3**	**-0.4**
HFS				*eSB*		**Sb**		**13 33 31.9**	**+6.5**
HFS	**Hagfors** comp=Z,0.1nm,0.3s,baz=96,slow=14,SNR=11	**5.41**	**278**	Pn		**Pn**		**13 32 08.0**	**+0.2**
HFS	comp=Z,0.3nm,0.3s,baz=90,slow=28,SNR=8.6			Sn		**Sn**		**13 33 10.8**	**-1.0**
HFS	comp=Z,0.5nm,0.3s,baz=93,slow=29,SNR=9.0			Lg				13 33 32.2	
NB2	**NORSAR Subarra** comp=Z,2.6nm,0.5s,baz=11,slow=2.9	**6.67**	**286**	PKP				13 47 47.0	
NOA	**NORSAR Array B** comp=Z,0.7nm,0.3s,baz=94,slow=14,SNR=5.0	**6.67**	**286**	Pn		**Pn**		**13 32 24.8**	**-0.8**
NOA	comp=Z,0.6nm,0.3s,baz=257,slow=23,SNR=3.2			Sn		**Sn**		**13 33 38.8**	**-4.4**
NOA	comp=Z,1.4nm,0.3s,baz=113,slow=14,SNR=5.7			Lg				13 34 12.6	
ARA0	**ARCESS Array S** baz=181,slow=14	**9.79**	**2**	Pn		**P**		**13 33 06.4**	**-2.4**
ARA0	**ARCESS Array S**	**9.79**	**2**	*eP*		**P**		**13 33 06.4**	**-2.4**
ARCES	**ARCESS Array B** comp=Z,1.0nm,0.3s,baz=180,slow=14,SNR=59	**9.79**	**2**	Pn		**P**		**13 33 07.2**	**-1.5**
ARCES	comp=Z,0.3nm,0.3s,baz=180,slow=22,SNR=6.3			Sn		**Sn**		**13 34 54.8**	**-6.0**
SPA0	**Spitsbergen Ar** baz=148,slow=11	**18.66**	**355**	P		**P**		**13 35 04.3**	**-0.5**
SPA0	**Spitsbergen Ar**	**18.66**	**355**	*eP*		**P**		**13 35 04.3**	**-0.5**
SPITS	**Spitsbergen Ar** comp=Z,0.1nm,0.3s,baz=153,slow=14,SNR=3.1	**18.66**	**355**	P		**P**		**13 35 05.6**	**+0.8**

NEIC ***26*** *13:30:59.9±0.6, 19.79S×178.22W, h560km, mb4.1/4, Error ellipse: s-maj=22.3km s-min=14.8km az=169.0*
IDC ***26*** *13:31:02.2±15.0, 19.78S×178.36W, h583km±158km, mb3.3/5, mb1 3.5/5, mb1mx3.2/14, Error ellipse: s-maj=128.0km s-min=63.9km az=128.0*

ISC 26 13:31:02.3±1.1, 19.8S±0.2×178.4W±0.2, h600km, n14, σ0§27/13, mb4.0/6, 3C-1D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
CTA	**Charters Tower** 3.1nm,0.6s,mb4.1	**33.18**	**263**	*eP*		**P**		**13 36 53.0**	**+0.6**
CTA	**Charters Tower** 6.6nm,0.9s,mb4.3,baz=103,slow=12,SNR=6.9	**33.18**	**263**	P		**P**		**13 36 52.8**	**+0.3**
CTAO	**Charters Tower** 4.2nm,0.7s,mb4.2	**33.18**	**263**	*eP*		**P**		**13 36 53.0**	**+0.6**
STKA	**Stephens Creek** 1.7nm,1.2s,mb3.5	**37.77**	**243**	*eP*		**P**		**13 37 30.0**	**-0.1**
STKA	**Stephens Creek** 1.8nm,0.5s,mb3.9,baz=73,slow=9.0,SNR=3.7	**37.77**	**243**	P		**P**		**13 37 29.8**	**-0.3**
AS12	**Alice Springs** 5.7nm,1.0s,mb4.1	**44.32**	**256**	*eP*		**P**		**13 38 22.0**	**-0.2**
ASAR	**Alice Springs** 4.7nm,0.5s,mb4.3,baz=91,slow=8.4,SNR=22	**44.32**	**256**	P		**P**		**13 38 21.6**	**-0.6**
WRA	**Warramunga Arr** 3.5nm,0.3s,mb4.3,baz=97,slow=7.7,SNR=29	**44.32**	**261**	P		**P**		**13 38 22.3**	**-0.1**
KAKA	**Kakadu** 2.1nm,0.2s,mb4.3	**47.61**	**271**	↑*iP*		**P**		**13 38 47.5**	**+0.1**
ILAR	**Eielson Array** 0.2nm,0.5s,mb3.1,baz=222,slow=5.8,SNR=4.5	**87.67**	**13**	P		**P**		**13 42 48.6**	**-0.1**
VNA3	**Neumayer Olymp**	**88.91**	**176**	↑*i*		**P**		**13 42 54.4**	**0.0**
VNA2	**Neumayer--Watz**	**89.35**	**177**	↑*i*		**P**		**13 42 56.6**	**+0.2**
VNA1	**Neumayer--Stat**	**89.58**	**177**	↓*i*		**P**		**13 42 51.9**	**-5.6**
GERES	**GERESS Array B** 0.4nm,0.4s,baz=14,slow=4.0,SNR=5.4	**149.38**	**344**	PKPbc		PKPdf		13 49 46.2	+7.4

HEL ***26*** *13:42:03.9±0.2, 59.56N×27.59E, ML2.1, ML2.1(UPP), ML2.5(NAO), Explosion*
NAO ***26*** *13:42:04.6±3.0, 59.58N×27.35E, ML2.5*
BER ***26*** *13:42:05.0±3.1, 59.60N×27.52E, ML2.5(NAO), Suspected explosion*
IDC ***26*** *13:42:06.4±2.0, 59.66N×27.43E, mb1 3.2/3, mb1mx3.0/21, ML3.2/3, Error ellipse: s-maj=16.6km s-min=10.5km az=118.0*

ISC 26 13:42:02.2±0.8, 59.62N±0.04×27.2E±0.1, n16, σ1§49/25, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
VJF	**Virojoki**	**0.94**	**12**	*eP*		**Pg**		**13 42 21.6**	**+0.7**
VJF				*eS*		**Sg**		**13 42 34.1**	**+0.6**
PVF	**Pernaja**	**1.13**	**326**	*eP*		**Pb**		**13 42 27.5**	**+3.3**
PVF				*eS*		**Sb**		**13 42 44.4**	**+5.1**
VSU	**Vasula**	**1.19**	**191**	*eP*		**Pb**		**13 42 25.1**	**-0.1**
VSU				*eS*		**Sb**		**13 42 41.2**	**+0.2**
MEF	**Metsahovi**	**1.51**	**294**	*eP*		**Pn**		**13 42 35.0**	**+4.4**
MEF				*eS*		**Sb**		**13 42 57.5**	**+7.2**
FIA0	**FINESS Array S**	**1.90**	**344**	*eP*		**Pn**		**13 42 38.8**	**+2.6**
FIA0				*eS*		**Sn**		**13 43 05.1**	**+3.9**
FIA0	comp=Z,14nm,0.2s			MSG				13 43 09.4	
FIA0	**FINESS Array S** baz=159,slow=18	**1.90**	**344**	Pn		**Pn**		**13 42 39.1**	**+2.9**
FIA0	baz=162,slow=28			Lg				13 43 07.2	
FIA0	baz=161,slow=37			Rg				13 43 18.0	
FINES	**FINESS Array B** comp=Z,2.4nm,0.3s,baz=158,slow=16,SNR=70	**1.90**	**344**	Pg		**Pg**		**13 42 38.9**	**-1.2**
FINES	comp=Z,3.0nm,0.3s,baz=159,slow=27,SNR=14			Lg				13 43 07.3	
KEF	**Keuruu** comp=Z,4.7nm,0.2s	**2.78**	**337**	MSG				13 43 36.5	
SUF	**Sumiainen** comp=Z,3.8nm,0.2s	**3.14**	**352**	MSG				13 43 55.4	
HFS	**Hagfors** baz=88,slow=12	**6.79**	**280**	Pn		**Pn**		**13 43 46.4**	**+0.8**
HFS	baz=86,slow=37			Sn		**Sn**		**13 45 03.8**	**-0.8**
HFS	baz=71,slow=37			Lg				13 45 38.9	
HFS	**Hagfors**	**6.79**	**280**	*eP*		**Pn**		**13 43 46.4**	**+0.8**
HFS				*eS*		**Sn**		**13 45 03.8**	**-0.8**
HFS				*eSG*		**Sg**		**13 45 38.9**	**-9.4**
HFS	**Hagfors** comp=Z,0.1nm,0.3s,baz=114,slow=13,SNR=6.5	**6.79**	**280**	Pn		**Pn**		**13 43 46.7**	**+1.1**
HFS	comp=Z,0.1nm,0.3s,baz=93,slow=27,SNR=2.9			Sn		**Sn**		**13 45 03.3**	**-1.3**
HFS				Lg				13 45 36.5	
NOA	**NORSAR Array B** comp=Z,0.1nm,0.3s,baz=82,slow=29,SNR=3.7	**8.03**	**287**	Pn		**P**		**13 44 03.4**	**+0.5**
NOA	comp=Z,0.4nm,0.3s,baz=88,slow=13,SNR=2.8			Sn		**Sn**		**13 45 30.3**	**-5.3**
NOA	comp=Z,0.2nm,0.3s,baz=63,slow=15,SNR=2.3			Lg				13 46 20.1	
ARA0	**ARCESS Array S** baz=170,slow=16	**9.98**	**357**	Pn		**P**		**13 44 26.8**	**-2.9**
ARA0	**ARCESS Array S**	**9.98**	**357**	*eP*		**P**		**13 44 26.8**	**-2.9**
ARCES	**ARCESS Array B** comp=Z,0.4nm,0.3s,baz=172,slow=13,SNR=23	**9.98**	**357**	Pn		**P**		**13 44 27.1**	**-2.6**
ARCES	comp=Z,0.2nm,0.3s,baz=175,slow=23,SNR=3.8			Sn		**Sn**		**13 46 15.1**	**-8.6**

IDC ***26*** *14:00:08.0±3.9, 36.18N×64.89E, mb3.5/5, mb1 3.7/7, mb1mx3.5/20, ML3.4/2, Error ellipse: s-maj=90.0km s-min=28.3km az=159.0*
MOS ***26*** *14:00:13.7±1.0, 36.60N×64.80E, h33km, mb4.1/1, Error ellipse: s-maj=46.7km s-min=17.9km az=75.4*
NNC ***26*** *14:00:20.6±34.0, 36.49N×65.85E, h344km±751km, mpv3.8, Error ellipse: s-maj=906.0km s-min=349.8km az=96.0*

ISC 26 14:00:10.4±2.6, 36.5N±0.1×64.8E±0.1, h12km±21km, n18, σ1§26/22, mb3.4/5, 3C-1D, Turkmenistan-Afghanistan border region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
KK31	**Karatay Array** 3.2nm,0.6s,baz=210,slow=12,SNR=29	**7.87**	**32**	⇑P		**Pn**		**14 02 08.3**	**+0.9**
KK31	3.0nm,0.6s,baz=271,slow=24,SNR=4.7			⇓S		**Sn**		**14 03 38.0**	**+0.7**
KKAR	**Karatay Array**	**7.87**	**32**	*eP*		**Pn**		**14 02 08.3**	**+0.9**
KKAR				S		**Sn**		**14 03 37.9**	**+0.7**
KKAR	comp=Z,1.0nm,0.3s			smax					
AML	**Almayashu** SNR=8.7	**8.84**	**48**	P		**P**		**14 02 21.3**	**+0.4**
EKS2	**Erkin-Say** SNR=7.8	**9.21**	**46**	P		**P**		**14 02 27.4**	**+1.4**
UCH	**Uchtor** SNR=7.8	**9.39**	**50**	P		**P**		**14 02 27.2**	**-1.3**
AAK	**Ala-Archa** SNR=5.5	**9.61**	**48**	P		**P**		**14 02 32.8**	**+1.2**
KZA	**Kyzart** SNR=13	**9.77**	**52**	P		**P**		**14 02 31.7**	**-2.0**
TKM2	**Tokmak 2** SNR=9.2	**10.44**	**49**	P		**P**		**14 02 40.5**	**-2.4**
AB31	**Akbulak array** comp=Z,0.2nm,0.4s,baz=155,slow=14	**13.20**	**346**	⇑P		**P**		**14 03 19.8**	**-0.4**
AB31	comp=Z,0.9nm,0.5s,baz=145,slow=23			⇑S		**S**		**14 05 45.5**	**-2.3**
AB31	**Akbulak array**	**13.20**	**346**	P		**P**		**14 03 19.7**	**-0.4**
AB31				S		**S**		**14 05 45.5**	**-2.3**
MKAR	**Makanchi Array** comp=Z,0.1nm,0.3s,baz=234,slow=10,SNR=7.0	**16.54**	**46**	Pn		**P**		**14 04 01.6**	**-2.1**
BVAR	**Borovoye Array** comp=Z,0.2nm,0.3s,baz=186,slow=14,SNR=3.7	**16.93**	**12**	P		**P**		**14 04 08.9**	**+0.4**
ZAL	**Zalesovo** comp=Z,0.8nm,0.7s,mb3.3,baz=159,slow=11,SNR=4.9	**22.23**	**32**	P		**P**		**14 05 09.8**	**+1.6**
BRTR	**Keskin Array B** comp=Z,1.0nm,0.6s,mb3.5,baz=90,slow=9.9,SNR=5.3	**24.69**	**287**	P		**P**		**14 05 33.3**	**+1.0**
ARCES	**ARCESS Array B** comp=Z,1.8nm,1.1s,mb3.7,baz=135,slow=10,SNR=6.8	**39.28**	**339**	P		**P**		**14 07 41.1**	**+0.9**
ARCES	**ARCESS Array B** comp=Z,2.0nm,1.1s	**39.28**	**339**	P		**P**		**14 07 41.2**	**+0.9**
ARCES				pmax		pmax			
ILAR	**Eielson Array** comp=Z,0.2nm,0.6s,mb3.2,baz=308,slow=3.6,SNR=4.6	**75.99**	**13**	P		**P**		**14 11 57.5**	**-0.9**
YKA	**Yellowknife Ar** comp=Z,0.2nm,0.5s,mb3.3,baz=353,slow=5.4,SNR=7.2	**81.31**	**360**	P		**P**		**14 12 26.9**	**-0.4**

MOS ***26*** *14:16:02.0±0.9, 50.61N×155.83E, h123km, mb3.8/6, Error ellipse: s-maj=24.1km s-min=7.4km az=67.4*
IDC ***26*** *14:16:03.1±4.4, 50.81N×155.67E, h111km±40km, mb3.6/14, mb1 3.9/16, mb1mx3.7/25, Error ellipse: s-maj=20.0km s-min=13.3km az=152.0*
KRSC ***26*** *14:16:03.9±1.5, 50.55N×156.30E, h107km±3km, ML4.4*
NEIC ***26*** *14:16:04.4±0.9, 50.78N×155.79E, h123km±8km, mb4.3/4, Error ellipse: s-maj=10.1km s-min=6.2km az=151.0*

ISC 26 14:16:03.6±0.4, 50.75N±0.04×155.85E±0.09, h129km±3km, n90, σ1§33/124, mb3.9/20, 1C-1D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time	Res
								h m s	ISC
SKR	**Severo-Kuril's**	**0.18**	**110**	*i*	P	**P**		**14 16 19.5**	**-1.9**
SKR				*i*	S	**S**		**14 16 31.6**	**-3.3**
SKR	**Severo-Kuril's**	**0.18**	**110**	⇑*i*	PN	**P**		**14 16 19.5**	**-1.9**
SKR				*i*	S	**S**		**14 16 31.6**	**-3.3**
SKR	comp=N,620nm,0.5s			pmax		pmax			
SKR	comp=E,650nm,0.5s			pmax		pmax			
SKR	comp=Z,2μm,0.5s			pmax		pmax			
SKR	comp=Z,4μm,1.0s			pmax		pmax			
SKR	comp=N,1μm,2.0s			pmax		pmax			
SKR	comp=E,1μm,2.0s			smax					
SKR	comp=N,2μm,0.5s			smax					
SKR	comp=E,1μm,0.5s			smax					
SKR	comp=N,3μm,2.0s			smax					
SKR	comp=E,5μm,2.0s			smax					
ALID	**Alaid**	**0.23**	**303**	*i*	P	**P**		**14 16 21.7**	**+0.2**
ALID				*e*	S	**S**		**14 16 33.0**	**-2.2**
PAU	**Pauzhetka**	**0.94**	**40**	*i*	P	**P**		**14 16 26.1**	**0.0**
PAU				*i*	S	**S**		**14 16 43.3**	**+0.1**
PAU	comp=E,3μm,0.9s			Smax					
MIPR	**Malaya Ipel'ka**	**1.64**	**20**	*i*	P	**P**		**14 16 34.5**	**+0.9**
MIPR				*e*	S	**S**		**14 16 55.3**	**-1.1**
GRL	**Gorelyy**	**2.28**	**37**	*i*	P	**P**		**14 16 43.0**	**+1.5**
GRL				*e*	S	**S**		**14 17 10.7**	**+0.3**
APC	**Apacha**	**2.33**	**20**	*i*	P	**P**		**14 16 43.2**	**+1.0**
APC				*e*	S	**S**		**14 17 11.7**	**+0.2**
APC	comp=E,110nm,0.9s			Smax					
RUS	**Russkaya**	**2.37**	**43**	P		**P**		**14 16 42.6**	**-0.1**
RUS				S		**S**		**14 17 09.9**	**-2.5**
RUS	**Russkaya**	**2.37**	**43**	*e*	P	**P**		**14 16 42.4**	**-0.3**
RUS				*e*	S	**S**		**14 17 10.3**	**-2.1**
PET	**Petropavlovsk**	**2.87**	**36**	P		**P**		**14 16 49.9**	**+0.6**
PET				S		**S**		**14 17 23.0**	**-1.0**
PET	**Petropavlovsk**	**2.87**	**36**	*i*	P	**P**		**14 16 49.8**	**+0.5**
PET				*e*	S	**S**		**14 17 22.6**	**-1.4**
PET	**Petropavlovsk**	**2.87**	**36**	*e*	Pn	**P**		**14 16 49.2**	**-0.1**
KOK	**Koryaka**	**3.08**	**33**	*i*	P	**P**		**14 16 54.2**	**+2.2**
KOK				*e*	S	**S**		**14 17 28.2**	**-0.7**
UGLR	**Uglovaya**	**3.08**	**36**	*i*	P	**P**		**14 16 53.7**	**+1.7**
UGLR				*e*	S	**S**		**14 17 29.8**	**+0.9**
AVH	**Avacha**	**3.09**	**34**	*i*	P	**P**		**14 16 54.0**	**+1.8**
AVH				*e*	S	**S**		**14 17 30.3**	**+1.1**
SMAR	**Somma**	**3.11**	**35**	*e*	P	**P**		**14 16 54.0**	**+1.5**
SMAR				*e*	S	**S**		**14 17 31.3**	**+1.6**
SDLR	**Sedlovina**	**3.15**	**35**	*i*	P	**P**		**14 16 54.1**	**+1.0**
SDLR				*e*	S	**S**		**14 17 29.1**	**-1.6**
GNL	**Ganaly**	**3.22**	**23**	*i*	P	**P**		**14 16 55.8**	**+1.8**
GNL				*e*	S	**S**		**14 17 32.8**	**+0.5**
NLC	**Nalytchevo**	**3.25**	**40**	P		**P**		**14 16 53.4**	**-1.0**
NLC				S		**S**		**14 17 28.4**	**-4.6**
NLC	**Nalytchevo**	**3.25**	**40**	*i*	P	**P**		**14 16 53.3**	**-1.1**
NLC				*e*	S	**S**		**14 17 29.6**	**-3.4**
SPN	**Mys Shipunski**	**3.50**	**46**	*e*	P	**P**		**14 16 56.5**	**-1.1**
SPN				*e*	S	**S**		**14 17 33.9**	**-4.9**
KII	**Karymskiy**	**3.96**	**32**	P		**P**		**14 17 05.2**	**+1.3**
KII	**Karymskiy**	**3.96**	**32**	*e*	P	**P**		**14 17 05.1**	**+1.2**
KII				*e*	S	**S**		**14 17 49.9**	**-0.1**
MKZ	**Mys Kozlova**	**5.23**	**41**	P		**P**		**14 17 19.3**	**-1.5**
MKZ	**Mys Kozlova**	**5.23**	**41**	*i*	P	**P**		**14 17 19.1**	**-1.7**
MKZ				*e*	S	**S**		**14 18 14.9**	**-5.6**
TUMR	**Tumrok**	**5.23**	**28**	*i*	P	**P**		**14 17 22.8**	**+2.0**
TUMR				*e*	S	**S**		**14 18 20.5**	**0.0**
ESO	**Esso**	**5.46**	**17**	*e*	P	**P**		**14 17 26.2**	**+2.3**
KMNR	**Kamenistaya**	**5.67**	**26**	*i*	P	**P**		**14 17 28.8**	**+2.1**
KMNR				*e*	S	**S**		**14 18 30.0**	**-1.1**
KOZ	**Kozyrevsk**	**5.84**	**23**	P		**P**		**14 17 30.9**	**+1.9**
KOZ	**Kozyrevsk**	**5.84**	**23**	*e*	P	**P**		**14 17 30.8**	**+1.8**
KOZ				*e*	S	**S**		**14 18 33.1**	**-2.1**
KPT	**Kopyto**	**5.85**	**25**	*i*	P	**P**		**14 17 30.8**	**+1.7**
KPT				*e*	S	**S**		**14 18 33.2**	**-2.2**
SRDR	**Sredinnyy**	**6.04**	**21**	*i*	P	**P**		**14 17 34.1**	**+2.4**
ZLN	**Zelenaya**	**6.05**	**27**	*i*	P	**P**		**14 17 34.0**	**+2.1**
ZLN				*e*	S	**S**		**14 18 39.3**	**-1.1**
LGNR	**Loginova**	**6.08**	**27**	*e*	P	**P**		**14 17 33.9**	**+1.7**
LGNR				*e*	S	**S**		**14 18 38.0**	**-3.0**
CIRR	**Tsirk**	**6.12**	**27**	*i*	P	**P**		**14 17 34.6**	**+1.8**
CIRR				*e*	S	**S**		**14 18 39.8**	**-2.3**
KRSR	**Krestovskiy**	**6.16**	**25**	*e*	P	**P**		**14 17 35.2**	**+1.9**
KRSR				*e*	S	**S**		**14 18 40.5**	**-2.5**
KLY	**Klyuchi**	**6.27**	**25**	P		**P**		**14 17 37.4**	**+2.6**
KLY	**Klyuchi**	**6.27**	**25**	*i*	P	**P**		**14 17 37.1**	**+2.3**
KLY				*e*	S	**S**		**14 18 45.2**	**-0.4**
KBG	**Krutoberegovo**	**6.87**	**34**	*e*	P	**P**		**14 17 42.0**	**-1.0**
KBG	comp=E,200nm,0.8s			Smax					
KBTR	**Krutoberegovo**	**6.87**	**35**	P		**P**		**14 17 41.7**	**-1.3**
KBTR				S		**S**		**14 18 51.5**	**-8.7**
KBTR	**Krutoberegovo**	**6.87**	**35**	*e*	P	**P**		**14 17 42.1**	**-0.9**
KBTR				*e*	S	**S**		**14 18 53.8**	**-6.4**
BKI	**Bering**	**7.56**	**50**	*i*	P	**P**		**14 17 49.5**	**-2.9**
BKI				*i*	S	**S**		**14 19 06.4**	**-11**
BKI	comp=E,90nm,0.3s			Smax					
MA2	**Magadan**	**9.31**	**344**	P		**P**		**14 18 15.2**	**-0.6**
FX1	**Attu Island--F** comp=E,4.5nm,0.3s,baz=89,slow=5.3,SNR=11	**10.93**	**72**	P		**P**		**14 18 36.4**	**-0.6**
FX1	comp=E,11nm,0.3s,baz=184,slow=18,SNR=9.4			S		**S**		**14 20 28.2**	**-9.2**
FX1	**Attu Island--F**	**10.93**	**72**	*e*	Pn	**P**		**14 18 36.1**	**-1.0**
ASAJ	**Asahikawa** comp=E,3.5nm,0.3s,baz=72,slow=13,SNR=28	**11.15**	**239**	P		**P**		**14 18 41.2**	**+1.2**
ASAJ	**Asahikawa** comp=Z,4.0nm,0.3s	**11.15**	**239**	PN		**P**		**14 18 41.3**	**+1.3**
ASAJ				pmax		pmax			
KAMR	**Kamenskoye**	**13.03**	**22**	*e*	P	**P**		**14 19 06.1**	**+1.6**
KAMR				*e*	S	**S**		**14 21 20.5**	**-6.3**
YAK	**Yakutsk**	**18.22**	**318**	*de*	P	**P**		**14 20 08.6**	**-0.3**
YAK	**Yakutsk** comp=Z,13nm,0.8s	**18.22**	**318**	*e*	P	**P**		**14 20 08.3**	**-0.5**
MAJO	**Matsushiro**	**19.02**	**228**	P		**P**		**14 20 16.3**	**-1.4**
MAT	**Matsushiro**	**19.02**	**228**	PKP		**P**		**14 20 17.5**	**-0.2**
MAT	**Matsushiro**	**19.02**	**228**	*eP*		**P**		**14 20 17.0**	**-0.7**
TIXI	**Tiksi** comp=Z,2.0nm,0.8s,mb3.7	**24.24**	**340**	*eP*		**P**		**14 21 09.2**	**+0.2**
TIXI				pmax		pmax			
ILAR	**Eielson Array** comp=Z,1.0nm,0.5s,mb3.8,baz=266,slow=6.0,SNR=21	**32.33**	**42**	P		**P**		**14 22 21.6**	**-0.5**
ILAR	**Eielson Array** comp=Z,1.0nm,0.5s	**32.33**	**42**	P		**P**		**14 22 21.6**	**-0.4**
ILAR				pmax		pmax			
INK	**Inuvik** comp=Z,0.9nm,0.3s,mb3.8,baz=305,slow=5.9,SNR=13	**37.32**	**35**	P		**P**		**14 23 04.8**	**+0.5**
INK	**Inuvik** comp=Z,1.0nm,0.4s	**37.32**	**35**	P		**P**		**14 23 04.8**	**+0.5**
INK				pmax		pmax			
INK	**Inuvik**	**37.32**	**35**	*eP*		**P**		**14 23 03.6**	**-0.7**
YKA	**Yellowknife Ar** comp=Z,1.0nm,0.6s,mb3.6,baz=298,slow=7.6,SNR=15	**46.66**	**40**	P		**P**		**14 24 20.4**	**+0.3**
YKA	comp=Z,0.4nm,0.5s,baz=302,slow=3.5,SNR=8.1			PcP		PcP		14 25 51.9	-0.3
YKA	**Yellowknife Ar**	**46.66**	**40**	P		**P**		**14 24 20.4**	**+0.3**
YKA								14 25 51.9	
YKA	comp=Z,1.0nm,0.6s			pmax		pmax			
YKA	**Yellowknife Ar**	**46.66**	**40**	P		**P**		**14 24 20.4**	**+0.3**
YKA				PcP		PcP		14 25 51.9	-0.3
MKAR	**Makanchi Array** comp=Z,0.2nm,0.3s,mb3.2,baz=55,slow=6.3,SNR=8.3	**46.79**	**295**	P		**P**		**14 24 20.0**	**-1.4**
MKAR	comp=Z,1.6nm,0.8s,baz=63,slow=8.1,SNR=8.3			pP		pP		14 24 51.1	0.0
MKAR	**Makanchi Array**	**46.79**	**295**	P		**P**		**14 24 20.0**	**-1.4**
MKAR				*PP		pP		14 24 51.1	0.0
MKAR	comp=N,2.0nm,0.8s			pmax		pmax			
MKAR	**Makanchi Array**	**46.79**	**295**	P		**P**		**14 24 20.0**	**-1.4**
MKAR				pP		pP		14 24 51.1	0.0
BVAR	**Borovoye Array** comp=N,1.2nm,0.3s,mb3.9,baz=60,slow=8.3,SNR=14	**49.78**	**308**	P		**P**		**14 24 43.0**	**-1.4**
BVAR	comp=N,0.9nm,0.7s,baz=56,slow=11,SNR=4.1			pP		pP		14 25 13.9	-0.5
BVAR	comp=N,0.6nm,0.4s,baz=66,slow=2.5,SNR=5.8			PcP		PcP		14 26 02.4	-1.1
WALA	**Waterton Lakes** comp=N,4.2nm,0.5s,mb4.4	**54.55**	**54**	*eP*		**P**		**14 25 19.9**	**-0.1**
ARCES	**ARCESS Array B** comp=N,1.5nm,1.1s,mb3.6,baz=31,slow=7.1,SNR=5.3	**54.67**	**341**	P		**P**		**14 25 17.7**	**-3.0**
ARCES	**ARCESS Array B** comp=Z,2.0nm,1.1s	**54.67**	**341**	P		**P**		**14 25 17.7**	**-2.9**
ARCES				pmax		pmax			
ARCES	**ARCESS Array B**	**54.67**	**341**	P		**P**		**14 25 17.7**	**-3.0**
CMAR	**Chiang Mai Arr** comp=Z,0.8nm,0.5s,mb3.7,baz=31,slow=6.4,SNR=6.2	**55.09**	**256**	P		**P**		**14 25 24.2**	**-0.2**
CMAR	**Chiang Mai Arr** comp=Z,1.0nm,0.5s	**55.09**	**256**	P		**P**		**14 25 24.2**	**-0.2**
CMAR				pmax		pmax			
WVOR	**Wild Horse Val** comp=Z,3.5nm,0.6s,mb4.4	**56.22**	**63**	*eP*		**P**		**14 25 32.9**	**+0.7**
CHMT	**Chamberlain Mo**	**56.26**	**56**	*eP*		**P**		**14 25 31.8**	**-0.6**
NVAR	**

*NAO **26** 14:32:50.4±1.3,59.70N×24.51E,ML2.6*
*HEL **26** 14:32:51.1±0.1,59.71N×24.60E,ML2.5,ML2.5(UPP), ML2.6(NAO),Explosion*
*BER **26** 14:32:51.4±3.5,59.70N×24.59E,ML2.6(NAO), Suspected explosion*
*IDC **26** 14:32:54.1±2.2,59.96N×24.30E,mb1 3.6/3, mb1mx3.2/21,ML3.6/3,Error ellipse: s-maj=25.8km s-min=6.3km az=149.0*

ISC 26 14:32:47.7±0.6,59.72N±0.04×24.39E±0.07,n21,σ1§53/31, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MEF	**Metsahovi**	**0.50**	**0**	*eP*	**Pg**	**14 33 00.2**	**+2.6**
MEF				*eS*	**Sg**	**14 33 07.1**	**+2.8**
PVF	**Pernaja**	**1.11**	**41**	*eP*	**Pb**	**14 33 09.9**	**+0.5**
PVF				*eS*	**Sb**	**14 33 23.2**	**-1.0**
VSU	**Vasula**	**1.75**	**135**	*eP*	**Pn**	**14 33 20.6**	**+1.2**
VSU				*eS*	**Sn**	**14 33 42.3**	**-0.5**
VSU	**Vasula**	**1.75**	**135**	Pn	**Pn**	**14 33 20.8**	**+1.4**
VSU				Lg		14 33 42.4	
VJF	**Virojoki**	**1.78**	**61**	*eP*	**Pn**	**14 33 20.8**	**+0.8**
VJF				*eS*	**Sn**	**14 33 43.3**	**-0.3**
FIA0	**FINESS Array S**	**1.92**	**25**	*eP*	**Pn**	**14 33 24.6**	**+2.7**
FIA0				*eS*	**Sn**	**14 33 48.7**	**+1.6**
FIA0				MSG		14 33 55.5	
	comp=Z,18nm,0.2s						
FIA0	**FINESS Array S**	**1.92**	**25**	Pn	**Pn**	**14 33 24.6**	**+2.7**
	baz=197,slow=18						
FIA0				Lg		14 33 48.8	
	baz=197,slow=37						
FINES	**FINESS Array B**	**1.92**	**25**	Pg	**Pg**	**14 33 24.8**	**-1.2**
	comp=Z,13nm,0.3s,baz=207,slow=9.3,SNR=474						
FINES				Lg		14 33 48.3	
	comp=Z,11nm,0.3s,baz=211,slow=22,SNR=6.8						
FINES				Rg		14 33 59.0	
	comp=Z,7.7nm,0.3s,baz=197,slow=26,SNR=5.1						
KEF	**Keuruu**	**2.47**	**5**	MSG		14 34 07.7	
	comp=Z,29nm,0.3s						
VAF	**Viitasaro**	**3.44**	**347**	MSG		14 34 41.5	
	comp=Z,11nm,0.2s						
HFS	**Hagfors**	**5.40**	**279**	Pn	**Pn**	**14 34 12.9**	**+1.5**
	baz=96,slow=14						
HFS				Sn	**Sn**	**14 35 15.8**	**+0.7**
	baz=89,slow=28						
HFS				Lg		14 35 37.9	
	baz=99,slow=37						
HFS	**Hagfors**	**5.40**	**279**	*eP*	**Pn**	**14 34 12.9**	**+1.5**
HFS				*eS*	**Sn**	**14 35 15.8**	**+0.7**
HFS				*e*Sg	**Sg**	**14 35 37.9**	**-9.4**
HFS	**Hagfors**	**5.40**	**279**	Pn	**Pn**	**14 34 13.1**	**+1.7**
	comp=Z,0.2nm,0.3s,baz=114,slow=12,SNR=33						
HFS				Sn	**Sn**	**14 35 16.0**	**+0.9**
	comp=Z,0.6nm,0.3s,baz=84,slow=27,SNR=13						
HFS				Lg		14 35 37.3	
	comp=Z,0.6nm,0.3s,baz=93,slow=33,SNR=6.3						
NOA	**NORSAR Array B**	**6.67**	**287**	Pn	**Pn**	**14 34 28.8**	**-0.5**
	comp=Z,1.0nm,0.3s,baz=90,slow=13,SNR=5.6						
NOA				Sn	**Sn**	**14 35 43.8**	**-3.1**
	comp=Z,1.7nm,0.3s,baz=98,slow=14,SNR=6.7						
NOA				Lg		14 36 16.0	
	comp=Z,1.8nm,0.3s,baz=120,slow=25,SNR=3.7						
APA0	**Apatity Array**	**8.78**	**22**	Pn	**P**	**14 34 56.3**	**-2.5**
	baz=211,slow=14						
APA0	**Apatity Array**	**8.78**	**22**	*eP*	**P**	**14 34 56.3**	**-2.5**
ARA0	**ARCESS Array S**	**9.87**	**2**	Pn	**P**	**14 35 11.6**	**-2.1**
	baz=174,slow=16						
ARA0				Sn	**Sn**	**14 37 00.0**	**-6.4**
	baz=188,slow=28						
ARA0	**ARCESS Array S**	**9.87**	**2**	*eP*	**P**	**14 35 11.6**	**-2.1**
ARA0				*eS*	**Sn**	**14 37 00.0**	**-6.4**
ARCES	**ARCESS Array B**	**9.87**	**2**	Pn	**P**	**14 35 11.7**	**-1.9**
	comp=Z,1.5nm,0.3s,baz=179,slow=12,SNR=77						
SPA0	**Spitsbergen Ar**	**18.73**	**355**	P	**P**	**14 37 09.7**	**+0.2**
	baz=166,slow=10						
SPA0	**Spitsbergen Ar**	**18.73**	**355**	*eP*	**P**	**14 37 09.7**	**+0.2**

*NEIC **26** 14:41:59.2±5.1,13.66N×91.31W,h62km±24km, MD4.3(MEX),Error ellipse: s-maj=61.9km s-min=19.9km az=165.0*
*CASC **26** 14:42:03.7±1.8,14.07N×91.43W,h71km±11km,MD3.7, ML4.7*
*MEX **26** 14:42:08.9±0.6,14.21N×91.75W,h71km±10km,MD4.4*
*IDC **26** 14:42:19.4±7.1,15.09N×90.86W,h178km±45km,mb3.3/5, mb1 3.7/7,mb1mx3.4/19,MS3.0/1,Ms1 3.0/1,ms1mx2.5/16, Error ellipse: s-maj=71.6km s-min=37.5km az=6.0*

ISC 26 14:42:02.8±0.7,14.10N±0.08×91.46W±0.05,h87km±6km, n33,σ1§12/45,mb3.8/5,3C-4D,Guatemala

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JAT	**Jato**	**0.28**	**322**	*e*P	**P**	**14 42 15.1**	**-0.8**
JAT				AML	AML	14 42 25.1	
	comp=N,49μm,0.3s						
FUG	**Fuego 3**	**0.69**	**59**	*i*P	**P**	**14 42 18.1**	**-1.1**
TP2	**Tecpan 2**	**0.80**	**32**	*e*P	**P**	**14 42 20.2**	**-0.2**
TP2				*e*S	**S**	**14 42 34.1**	**+0.7**
TP2				AML	AML	14 42 35.5	
	comp=E,7μm,0.4s						
PCG	**Pacaya**	**0.88**	**70**	*e*P	**P**	**14 42 20.7**	**-0.4**
IXG	**Ixpaco**	**0.97**	**85**	*e*P	**P**	**14 42 21.8**	**-0.5**
IXG				*e*S	**S**	**14 42 35.4**	**-1.5**
IXG				AML	AML	14 42 43.3	
	comp=E,48μm,0.5s						
GCG	**Guatemala City**	**1.02**	**61**	*e*P	**P**	**14 42 23.9**	**+1.1**
GCG				*e*S	**S**	**14 42 38.5**	**+0.7**
TPX	**Tapachula**	**1.12**	**316**	*i* P	**P**	**14 42 24.2**	**+0.1**
TPX				*i* S	**S**	**14 42 36.6**	**-3.4**
NBG	**Las Nubes**	**1.18**	**65**	*e*P	**P**	**14 42 25.1**	**+0.2**
NBG				*e*S	**S**	**14 42 45.2**	**+3.9**
CUSS	**Cusmapa**	**1.48**	**97**	*e*P	**P**	**14 42 28.4**	**-0.2**
CUSS				*e*S	**S**	**14 42 46.7**	**-1.0**
RBDL	**Robledal**	**1.72**	**89**	*e*P	**P**	**14 42 31.7**	**0.0**
RBDL				*e*S	**S**	**14 42 54.0**	**+1.0**
RTR	**El Retiro**	**1.77**	**96**	*e*P	**P**	**14 42 32.8**	**+0.4**
RTR				*e*S	**S**	**14 42 54.5**	**+0.4**
SBLS	**San Blas**	**1.80**	**98**	*e*P	**P**	**14 42 33.5**	**+0.7**
SBLS				*e*S	**S**	**14 42 55.5**	**+0.6**
SNJE	**San Jose**	**1.81**	**97**	*e*P	**P**	**14 42 33.5**	**+0.5**
SNJE				*e*S	**S**	**14 42 55.3**	**+0.2**
BOQS	**Boqueron**	**2.14**	**99**	*e*P	**P**	**14 42 38.2**	**+0.8**
BOQS				*e*S	**S**	**14 43 03.0**	**-0.1**
CCIG	**Comitan**	**2.27**	**343**	*i*P	**P**	**14 42 40.8**	**+1.5**
CCIG				*i* S	**S**	**14 43 04.4**	**-1.9**
LFU	**La Fuente**	**2.30**	**98**	*e*P	**P**	**14 42 40.0**	**+0.3**
LFU				*e*S	**S**	**14 43 05.4**	**-1.6**
SCX	**San Cristobal**	**2.86**	**337**	*i* P	**P**	**14 42 49.5**	**+2.0**
CMIG	**Matias Romero**	**4.45**	**312**	*e*P	**P**	**14 43 09.8**	**+0.4**
CMIG				*i* S	**S**	**14 43 56.1**	**-4.2**
TUIG	**Tuzandepetl**	**4.84**	**324**	*i* P	**P**	**14 43 16.8**	**+2.0**
OXX	**Oaxaca**	**5.88**	**301**	*i* P	**P**	**14 43 28.0**	**-1.0**
VHO	**Vista Hermosa**	**5.88**	**301**	*i* S	**S**	**14 44 29.9**	**-5.9**
TEIG	**Tepich**	**6.81**	**26**	P	**P**	**14 43 41.8**	**-0.1**
	comp=E,33nm,0.3s,baz=20,slow=23,SNR=38						
TEIG	**Tepich**	**6.81**	**26**	*e*Pn	**P**	**14 43 41.0**	**-0.9**
TXAR	**Lajitas Array**	**18.91**	**325**	P	**P**	**14 46 21.4**	**+2.2**
	baz=151,slow=9.3,SNR=3.7						
SADO	**Sadowa**	**32.32**	**17**	LR	LR	15 03 51.1	
	comp=E,26nm,19.4s,baz=250,slow=41						
NVAR	**Mina Array Bea**	**33.93**	**321**	P	**P**	**14 48 43.3**	**+3.7**
	comp=E,3.2nm,1.0s,mb4.1,baz=124,slow=8.7,SNR=4.5						
NVAR				PcP	PcP	14 51 19.3	+3.0
	comp=E,0.5nm,0.7s,baz=124,slow=3.3,SNR=4.2						
SCHQ	**Scheffervill e**	**44.95**	**20**	P	**P**	**14 50 08.0**	**-2.8**
	comp=E,4.5nm,1.1s,mb4.1,baz=236,slow=6.2,SNR=4.6						
YKA	**Yellowknife Ar**	**51.06**	**346**	P	**P**	**14 50 57.1**	**-0.9**
	comp=E,0.7nm,0.8s,mb3.8,baz=148,slow=7.6,SNR=11						
YKA				PcP	PcP	14 52 12.5	-0.4
	comp=E,0.2nm,0.5s,baz=148,slow=3.8,SNR=9.2						
YKA	**Yellowknife Ar**	**51.06**	**346**	*e*P	**P**	**14 50 57.1**	**-0.9**
YKA				PcP	PcP	14 52 12.5	-0.4
INK	**Inuvik**	**60.50**	**343**	P	**P**	**14 52 04.2**	**-1.5**
	comp=E,0.6nm,0.6s,mb3.8,baz=164,slow=2.7,SNR=3.7						
INK	**Inuvik**	**60.50**	**343**	P	**P**	**14 52 04.2**	**-1.5**
ILAR	**Eielson Array**	**62.96**	**337**	P	**P**	**14 52 21.8**	**-0.5**
	comp=E,0.3nm,0.7s,mb3.3,baz=173,slow=4.5,SNR=6.0						
CMAR	**Chiang Mai Arr**	**146.07**	**342**	PKPbc	PKPbc	15 01 36.0	+2.4
	comp=E,2.9nm,0.9s,baz=343,slow=3.4,SNR=16						

DJA 26 14:47:00.5±0.9,8.79S×114.60E,h108km±6km,MD4.5/2, ML3.8/2,2C-6D,Error ellipse: s-maj=29.5km s-min=11.0km az=23.0,Bali region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
INGI	**Ingas**	**0.54**	**93**	*e*Pn	P	14 47 16.9	-0.7
INGI				*i*Sn	S	14 47 29.2	-1.2
KELI	**Kelakatan**	**0.58**	**349**	*e*Pn	P	14 47 17.4	-0.4
KELI				*i*Sn	S	14 47 30.5	-0.4
RATI	**Rata**	**0.92**	**86**	*i*Pn	P	14 47 21.2	+0.2
	234nm,0.2s						
RATI				*i*Sn	S	14 47 35.4	-1.0
KEDI	**Kedomdong**	**1.52**	**79**	*i*Pn	P	14 47 26.9	-1.0
	58nm,0.2s						
KEDI				*i*Sn	S	14 47 46.1	-2.4

*IDC **26** 14:54:55.0±17.0,27.52N×87.72E,mb3.8/2,mb1 3.7/3, mb1mx3.3/19,ML3.3/1,Error ellipse: s-maj=439.0km s-min=130.8km az=110.0*

ISC 26 14:55:06.9±2.5,28.1N±0.5×88.2E±0.6,h100km,n4, σ0§42/5,mb4.0/2,Xizang

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SHL	**Shillong**	**4.12**	**126**	*e*P	**P**	**14 56 09.2**	**+0.2**
SHL				*e*S	**S**	**14 56 56.2**	**-0.2**
MKAR	**Makanchi Array**	**19.28**	**348**	P	**P**	**14 59 26.0**	**-0.1**
	0.1nm,0.3s,baz=157,slow=11,SNR=3.8						
FINES	**FINESS Array B**	**52.49**	**328**	P	**P**	**15 04 11.0**	**-0.4**
	0.6nm,0.5s,mb3.9,baz=108,slow=6.0,SNR=5.8						
ARCES	**ARCESS Array B**	**54.51**	**337**	P	**P**	**15 04 26.6**	**+0.4**
	1.8nm,1.0s,mb4.0,baz=104,slow=7.4,SNR=12						

*NEIC **26** 15:01:52.3±2.8,26.89N×112.23W,h10km,mb3.8/3,Error ellipse: s-maj=34.9km s-min=12.0km az=199.0*
*IDC **26** 15:02:03.0±3.5,27.86N×111.81W,mb3.5/3,mb1 4.0/6, mb1mx3.8/20,ML3.8/3,MS3.2/4,Ms1 3.2/4,ms1mx3.0/18, Error ellipse: s-maj=54.2km s-min=16.5km az=19.0*

ISC 26 15:01:55.8±2.1,27.4N±0.2×112.0W±0.1,h10km,n30, σ1§69/30,mb3.5/4,MS3.0/2,Baja California

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TUC	**Tucson**	**5.03**	**12**	*e*P	**Pn**	**15 03 10.9**	**-2.3**
MNTX	**Cornudas Mount**	**7.22**	**52**	*e*P	**Pn**	**15 03 42.9**	**-1.1**
LTX	**Lajitas**	**7.63**	**73**	P	**Pn**	**15 03 48.5**	**-1.2**
TXAR	**Lajitas Array**	**7.63**	**73**	Pn	**Pn**	**15 03 51.9**	**+2.2**
	0.5nm,0.3s,baz=253,slow=15,SNR=2.0						
TXAR				Lg		15 05 55.6	
	1.0nm,0.3s,baz=262,slow=27,SNR=4.2						
TXAR				LR	LR	15 06 52.5	
	comp=Z,323nm,20.9s,baz=270,slow=40						
LDFC	**Landfair**	**8.12**	**342**	*e*P	**P**	**15 03 55.2**	**-1.4**
WUAZ	**Wupatki**	**8.13**	**4**	*e*P	**P**	**15 03 55.7**	**-1.1**
BNM	**Barren Site**	**8.20**	**33**	P	**P**	**15 03 57.4**	**-0.2**
GDL2	**Guadalupe Moun**	**8.21**	**52**	*e*P	**P**	**15 03 58.0**	**+0.1**
NEN	**Nelson**	**8.59**	**344**	*e*P	**P**	**15 04 01.2**	**-1.9**
ANMO	**Albuquerque**	**8.93**	**31**	*e*P	**P**	**15 04 08.4**	**+0.6**
MVU	**Marysvale**	**11.10**	**359**	*e*P	**P**	**15 04 39.5**	**+1.8**
MSU	**Marysvale**	**11.11**	**359**	*e*P	**P**	**15 04 39.2**	**+1.5**
PV10	**Paradox Valley**	**11.25**	**12**	*e*P	**P**	**15 04 38.7**	**-1.0**
SRU	**San Rafael**	**11.77**	**6**	*e*P	**P**	**15 04 48.4**	**+1.6**
NVAR	**Mina Array Bea**	**12.21**	**336**	Pn	**P**	**15 04 57.0**	**+4.3**
	0.1nm,0.3s,baz=157,slow=12,SNR=5.9						
NVAR				LR	LR	15 09 30.4	
	comp=Z,66nm,18.5s,baz=295,slow=38						
NVAR	**Mina Array Bea**	**12.21**	**336**	Pn	**P**	**15 04 57.0**	**+4.2**
NVAR				LR	LR	15 09 30.4	
CMB	**Columbia Colle**	**12.73**	**329**	P	**P**	**15 04 57.5**	**-2.2**
WMOK	**Wichita Mounta**	**13.52**	**54**	*e*P	**P**	**15 05 09.4**	**-0.7**
HWUT	**Hardware Ranch**	**14.20**	**1**	*e*P	**P**	**15 05 21.9**	**+2.8**
PDAR	**Pinedale Array**	**15.49**	**7**	Pn	**P**	**15 05 39.9**	**+4.0**
	0.1nm,0.3s,baz=177,slow=16,SNR=15						
WVOR	**Wild Horse Val**	**15.96**	**342**	*e*P	**P**	**15 05 39.6**	**-2.4**
	6.9nm,1.1s						
HLID	**Hailey**	**16.26**	**354**	*e*P	**P**	**15 05 50.1**	**+4.2**
NEW	**Newport**	**21.23**	**351**	P	**P**	**15 06 46.0**	**+2.1**
	9.0nm,0.9s,mb4.1,baz=170,slow=9.7,SNR=5.9						
NEW				LR	LR	15 14 45.1	
	comp=Z,36nm,21.8s,MS2.7,baz=14,slow=37						
NEW	**Newport**	**21.23**	**351**	*e*P	**P**	**15 06 43.1**	**-0.9**
	8.5nm,0.9s,mb4.1						
NLW	**Nelson Butte**	**21.66**	**345**	*e*P	**P**	**15 06 51.2**	**+2.9**
ULM	**Lac du Bonnet**	**25.97**	**24**	*e*P	**P**	**15 07 26.8**	**-3.3**
FCC	**Fort Churchill**	**33.77**	**17**	*e*P	**P**	**15 08 39.7**	**+0.1**
YKA	**Yellowknife Ar**	**35.16**	**358**	P	**P**	**15 08 53.1**	**+1.7**
	0.1nm,0.4s,mb3.1,baz=179,slow=8.5,SNR=2.7						
YKA				LR	LR	15 23 25.9	
	comp=Z,54nm,19.9s,MS3.3,baz=190,slow=37						
INK	**Inuvik**	**42.92**	**348**	*e*P	**P**	**15 09 54.0**	**-1.9**
	0.7nm,0.5s,mb3.6						
ILAR	**Eielson Array**	**43.45**	**339**	P	**P**	**15 10 03.9**	**+3.7**
	0.4nm,0.7s,mb3.2,baz=151,slow=6.0,SNR=5.8						

IDC 26 15:06:05.5±2.2,0.63S×126.94E,mb3.1/3,mb1 3.4/3, mb1mx3.3/16,Error ellipse: s-maj=207.0km s-min=26.4km az=66.0,Southern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**20.51**	**160**	P	P	15 10 44.8	-3.4
	0.2nm,0.5s,baz=338,slow=12,SNR=2.6						
ASAR	**Alice Springs**	**23.87**	**164**	P	P	15 11 21.6	-0.2
	0.2nm,0.5s,baz=345,slow=11,SNR=5.3						
MKAR	**Makanchi Array**	**61.26**	**327**	P	P	15 16 22.6	-2.4
	0.3nm,0.4s,baz=119,slow=8.3,SNR=6.1						

*BER **26** 15:06:12.7±2.0,59.20N×12.86E,ML2.2(NAO), Suspected explosion*

NAO 26 15:06:10.5±2.5,59.10N×12.95E,ML2.2,Sweden

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HFS	**Hagfors**	**1.10**	**20**	Pg	Pg	15 06 30.8	-1.6
	baz=200,slow=18						
HFS				Lg		15 06 45.6	
	baz=200,slow=37						
HFS				Rg		15 06 50.0	
	baz=200,slow=28						
KON	**Kongsberg**	**1.80**	**289**	Lg		15 07 05.2	
KONO	**Kongsberg**	**1.80**	**289**	Lg		15 07 05.2	
NB2	**NORSAR Subarra**	**2.13**	**337**	Pn	Pn	15 06 47.5	-0.3
NB2				Lg		15 07 14.4	

*DJA **26** 15:33:05.7±1.0,7.98S×111.82E,h228km±18km,MD4.4/3, ML4.4/3,Error ellipse: s-maj=101.5km s-min=34.9km az=21.0*
*IDC **26** 15:33:06.8±20.0,8.35S×111.23E,h156km±197km, mb3.3/4,mb1 3.3/5,mb1mx3.1/16,ML3.3/1,Error ellipse: s-maj=145.0km s-min=33.3km az=54.0*

ISC 26 15:33:08.5±2.7,7.9S±0.3×111.8E±0.3,h177km±23km,n9, σ0§72/13,mb3.5/4,1C-6D,Jawa

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KELI	**Kelakatan**	**2.65**	**97**	*i*Pn	**P**	**15 33 53.7**	**+0.3**
	128nm,0.2s						
KELI				*i*Sn	**S**	**15 34 29.5**	**+1.6**
INGI	**Ingas**	**3.40**	**106**	*i*Pn	**P**	**15 34 02.7**	**0.0**
	158nm,0.2s						
INGI				*e*Sn	**S**	**15 34 43.2**	**-1.2**
RATI	**Rata**	**3.75**	**103**	*e*Pn	**P**	**15 34 06.9**	**-0.2**
RATI				*i*Sn	**S**	**15 34 51.9**	**-0.3**
KEDI	**Kedomdong**	**4.27**	**98**	*i*Pn	**P**	**15 34 13.0**	**-0.8**
	46nm,0.2s						
FITZ	**Fitzroy Crossi**	**16.84**	**128**	P	**P**	**15 36 55.5**	**+0.1**
	0.1nm,0.3s,baz=285,slow=16,SNR=6.1						
FITZ				S	**S**	**15 39 55.5**	**-0.1**
	0.1nm,0.3s,baz=127,slow=21,SNR=4.3						
WRA	**Warramunga Arr**	**24.87**	**121**	P	**P**	**15 38 17.9**	**+1.4**
	0.3nm,0.3s,mb3.2,baz=294,slow=11,SNR=5.1						
ASAR	**Alice Springs**	**26.34**	**129**	P	**P**	**15 38 29.8**	**-0.3**
	0.4nm,0.4s,mb3.4,baz=301,slow=8.1,SNR=18						
STKA	**Stephens Creek**	**36.55**	**135**	P	**P**	**15 39 59.0**	**0.0**
	0.9nm,0.8s,mb3.5,baz=288,slow=9.6,SNR=3.1						
MKAR	**Makanchi Array**	**60.45**	**337**	P	**P**	**15 43 01.3**	**-0.4**
	0.6nm,0.3s,mb3.9,baz=152,slow=7.4,SNR=20						

*NEIC **26** 15:33:44.1±0.7,19.15S×175.63E,h60km,mb4.1/1,Error ellipse: s-maj=22.2km s-min=17.3km az=111.0*
*IDC **26** 15:33:45.3±14.0,19.03S×175.58E,h70km±134km, mb3.7/5,mb1 4.1/6,mb1mx3.8/14,ML3.9/1,Error ellipse: s-maj=62.6km s-min=30.4km az=173.0*

ISC 26 15:33:46.7±0.8,19.3S±0.1×175.6E±0.2,h100km,n12, σ0§60/9,mb3.9/6,2Jc,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**18.98**	**176**	P	**P**	**15 38 03.5**	**+0.7**
	0.4nm,0.3s,baz=16,slow=6.2,SNR=3.6						
WRA	**Warramunga Arr**	**38.81**	**262**	P	**P**	**15 41 03.0**	**-0.4**
	0.5nm,0.8s,mb3.4,baz=97,slow=8.5,SNR=3.4						
AS12	**Alice Springs**	**38.95**	**256**	*e*P	**P**	**15 41 05.3**	**+0.7**
	6.6nm,1.0s,mb4.4						
ASAR	**Alice Springs**	**38.95**	**256**	P	**P**	**15 41 05.3**	**+0.8**
	3.5nm,0.7s,mb4.3,baz=86,slow=8.3,SNR=36						
ASAR				PcP	PcP	15 43 14.1	+0.3
	0.8nm,0.8s,baz=112,slow=2.0,SNR=6.4						
SBA	**Scott Base**	**58.80**	**182**	*e*P	**P**	**15 43 35.7**	**-0.6**
QSPA	**South Pole Qui**	**70.81**	**180**	*e*P	**P**	**15 44 53.0**	**-0.7**
	1.9nm,0.8s,mb4.0						
NVAR	**Mina Array Bea**	**84.39**	**46**	P	**P**	**15 46 10.0**	**+0.8**
	2.8nm,1.2s,mb4.0,baz=205,slow=7.1,SNR=5.4						
ILAR	**Eielson Array**	**88.56**	**15**	P	**P**	**15 46 28.6**	**-0.4**
	1.1nm,0.9s,mb3.9,baz=233,slow=5.4,SNR=6.8						
YKA	**Yellowknife Ar**	**97.98**	**26**	P	**P**	**15 47 12.0**	**-0.1**
	0.1nm,0.4s,mb3.7,baz=242,slow=4.4,SNR=3.7						
CLL	**Collm**	**145.19**	**341**	*i*	PKPdf	15 53 15.1	+2.9
CLL				*i*		15 53 17.4	
CLL				*i*		15 53 23.2	
CLL	**Collm**	**145.19**	**341**	*i*P	PKPdf	15 53 15.1	+2.9
CLL				*i*		15 53 23.2	
BRG	**Berggiesshubel**	**145.26**	**340**	*e*P	PKPdf	15 53 16.2	+3.8
BRG				*e*		15 53 24.2	

*IDC **26** 15:50:39.2±3.0,32.41S×177.21W,mb3.7/2,mb1 4.0/4, mb1mx3.8/15,ML3.5/2,Error ellipse: s-maj=72.7km s-min=33.5km az=117.0*

ISC 26 15:50:43.8±3.9,32.6S±0.1×177.4W±0.6,h33km,n9, σ0§39/10,mb3.5/2,South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PUZ	**Puketiti**	**6.47**	**212**	P	**P**	**15 52 19.9**	**+0.7**
URZ	**Urewera**	**7.16**	**217**	Pn	**Pn**	**15 52 28.5**	**-0.6**
	0.2nm,0.3s,baz=113,slow=13,SNR=3.7						
URZ				Sn	**Sn**	**15 53 55.2**	**+5.0**
	2.9nm,0.3s,baz=151,slow=21,SNR=8.7						
MRZ	**Mangatainoka R**	**9.78**	**213**	S	**S**	**15 54 55.1**	**+0.1**
THZ	**Tophouse**	**11.92**	**217**	*e*P	**P**	**15 53 34.1**	**-0.3**
LTZ	**Lake Taylor**	**12.99**	**216**	*e*P	**P**	**15 53 43.4**	**-5.3**
RPZ	**Rata Peaks**	**14.28**	**216**	Pn	**P**	**15 54 05.4**	**-0.2**
	0.7nm,0.3s,baz=45,slow=7.1,SNR=4.9						
RPZ				Sn	**S**	**15 56 38.2**	**-5.5**
	0.3nm,0.3s,baz=150,slow=20,SNR=3.0						
ASAR	**Alice Springs**	**43.51**	**269**	P	**P**	**15 58 46.2**	**+0.2**
	0.6nm,0.8s,mb3.4,baz=106,slow=7.3,SNR=12						
WRA	**Warramunga Arr**	**44.70**	**274**	P	**P**	**15 58 55.6**	**0.0**
	0.4nm,0.3s,mb3.7,baz=114,slow=8.0,SNR=4.3						
FINES	**FINESS Array B**	**147.40**	**339**	PKPbc	PKPdf	16 10 23.0	+2.1
	1.0nm,0.8s,baz=45,slow=2.0,SNR=6.2						

*KRSC **26** 15:56:01.9±1.4,48.84N×156.04E,h21km±7km,ML4.3*
*NEIC **26** 15:56:07.8±3.1,49.45N×154.90E,h56km±28km,Error ellipse: s-maj=36.2km s-min=21.8km az=144.0*
*MOS **26** 15:56:07.0±0.9,49.67N×154.70E,h58km,mb4.1/2,Error ellipse: s-maj=47.1km s-min=17.9km az=59.9*
*IDC **26** 15:56:10.4±4.5,49.45N×154.89E,h80km±42km,mb3.2/6, mb1 3.5/7,mb1mx3.3/23,ML4.1/1,Error ellipse: s-maj=38.5km s-min=19.9km az=140.0*

ISC 26 15:56:04.5±1.0,48.94N±0.07×156.0E±0.1,h94km±10km, n38,σ1§35/63,mb3.4/6,East of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SKR	**Severo-Kuril's**	**1.74**	**2**	*e*P	**P**	**15 56 32.1**	**-1.8**
SKR	**Severo-Kuril's**	**1.74**	**2**	*e*PN	**P**	**15 56 29.7**	**-4.2**
SKR				*e*S	**S**	**15 56 49.6**	**-6.0**
SKR				pmax	pmax		
	comp=Z,140nm,0.4s						
ALID	**Alaid**	**1.95**	**351**	*e*P	**P**	**15 56 35.8**	**-0.9**
ALID				*e*S	**S**	**15 57 00.9**	**+0.5**
PAU	**Pauzhetka**	**2.57**	**11**	*e*P	**P**	**15 56 43.4**	**-1.8**
PAU				*e*S	**S**	**15 57 15.4**	**-0.3**
PAU				Smax			
	comp=Z,560nm,0.7s						
MIPR	**Malaya Ipel'ka**	**3.37**	**8**	*e*P	**P**	**15 56 55.2**	**-1.0**
MIPR				*e*S	**S**	**15 57 34.5**	**-0.7**
RUS	**Russkaya**	**3.83**	**23**	*e*P	**P**	**15 57 01.5**	**-1.0**
RUS				*e*S	**S**	**15 57 44.8**	**-1.9**
GRL	**Gorelyy**	**3.84**	**19**	*e*P	**P**	**15 57 02.9**	**+0.3**
GRL				*e*S	**S**	**15 57 47.7**	**+0.9**
APC	**Apacha**	**4.05**	**10**	*e*P	**

CMAR	**Chiang Mai Arr**	**54.79**	**257**	P	**P**		**16 05 27.9**	**+1.1**
CMAR				pmax	pmax				
	comp=Z,1.0nm,0.6s								
FINES	**FINESS Array B**	**62.88**	**336**	P	**P**		**16 06 21.1**	**-1.1**
	comp=Z,1.4nm,0.9s,mb3.9,baz=34,slow=6.9,SNR=5.0								
FINES	**FINESS Array B**	**62.88**	**336**	P	**P**		**16 06 21.1**	**-1.1**
FINES				pmax	pmax				
	comp=Z,1.0nm,0.9s								
ASAR	**Alice Springs**	**74.94**	**201**	P	**P**		**16 07 43.5**	**+6.7**
	comp=Z,0.7nm,1.1s,mb3.3,baz=8.8,slow=5.5,SNR=4.0								

NIED ***26*** *16:03:00,34.80N×140.30E,h8km,Mw3.5 Best double couple: M0 2.19×10^14 NP1:φs 110°,δ57°,λ-51°. NP2: φs 233°,δ49°,λ-134°.*
IDC ***26*** *16:03:02.6±0.8,34.79N×140.00E,mb3.6/8,mb1 3.9/9, mb1mx3.7/24,ML3.5/1,Error ellipse: s-maj=30.7km s-min=11.0km az=91.0*
JMA ***26*** *16:03:05.0±0.1,34.78N×140.27E,h41km±1km,M3.9*
JMA Felt I J1.
NEIC ***26*** *16:03:08.8±2.0,34.83N×140.01E,h42km±17km,Error ellipse: s-maj=23.1km s-min=15.7km az=81.0*

ISC 26 16:03:05.4±0.4,34.77N±0.04×140.25E±0.03,h36km±4km, n26,σ0§76/38,mb3.6/8,6C-1D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO3	**Boso 3**	**0.22**	**80**	P	**P**	**16 03 12.2**	**-0.3**
BSO3				S	**S**	**16 03 18.1**	**+0.6**
BSO4	**Boso 4**	**0.24**	**19**	⇑P	**P**	**16 03 12.0**	**-0.6**
BSO4				S	**S**	**16 03 18.5**	**+0.8**
KTR	**Katsuura**	**0.39**	**9**	⇑P	**P**	**16 03 13.9**	**-0.5**
KTR				S	**S**	**16 03 19.9**	**-0.9**
TATJ	**Tateyama 2**	**0.40**	**312**	⇑P	**P**	**16 03 14.8**	**+0.3**
TATJ				S	**S**	**16 03 22.2**	**+1.2**
BSO1	**Boso 1**	**0.61**	**100**	⇓P	**P**	**16 03 17.2**	**-0.3**
BSO1				S	**S**	**16 03 26.0**	**-0.4**
JIM2	**Oshima 3**	**0.67**	**266**	⇑P	**P**	**16 03 18.5**	**+0.1**
JIM2				S	**S**	**16 03 27.9**	**+0.1**
JMY	**Miyake jima 2**	**0.92**	**221**	P	**P**	**16 03 22.5**	**+0.6**
AJI	**Ajiro**	**0.98**	**287**	P	**P**	**16 03 22.7**	**-0.1**
AJI				S	**S**	**16 03 35.4**	**-0.3**
KTJJ	**Kamata 2**	**0.98**	**280**	⇑P	**P**	**16 03 22.5**	**-0.3**
KTJJ				S	**S**	**16 03 34.6**	**-1.2**
JOD2	**Odawara 2**	**1.07**	**298**	⇑P	**P**	**16 03 23.7**	**-0.4**
JOD2				S	**S**	**16 03 37.2**	**-0.8**
JKO	**Kozu shima**	**1.08**	**238**	P	**P**	**16 03 25.0**	**+0.8**
JIZS	**Izushimoda**	**1.13**	**268**	P	**P**	**16 03 24.9**	**+0.1**
JIZS				S	**S**	**16 03 39.1**	**-0.3**
JHJ	**Hachijo jima 2**	**1.69**	**193**	Pg	**P**	**16 03 33.1**	**+0.3**
	187nm,0.3s,baz=45,slow=4.5,SNR=115						
JHJ				Lg		16 03 54.6	
	193nm,0.3s,baz=62,slow=23,SNR=15						
MAJO	**Matsushiro**	**2.43**	**317**	*e*Pn	**P**	**16 03 43.1**	**-0.4**
MAT	**Matsushiro**	**2.43**	**317**	P	**P**	**16 03 44.1**	**+0.6**
MAT				S	**S**	**16 04 13.8**	**+1.5**
MAT	**Matsushiro**	**2.43**	**317**	*e*P	**P**	**16 03 44.0**	**+0.5**
MAT				*e*S	**S**	**16 04 14.0**	**+1.7**
CBIJ	**Chichi jima**	**7.83**	**167**	Pn	**P**	**16 04 56.4**	**-3.1**
	2.3nm,0.3s,baz=245,slow=16,SNR=3.5						
MKAR	**Makanchi Array**	**44.56**	**304**	P	**P**	**16 11 14.7**	**-0.6**
	0.2nm,0.4s,mb3.3,baz=90,slow=10,SNR=4.1						
BVAR	**Borovoye Array**	**51.42**	**313**	P	**P**	**16 12 08.7**	**+0.1**
	0.2nm,0.3s,mb3.5,baz=98,slow=10,SNR=2.6						
BRVK	**Borovoye**	**51.48**	**314**	*e*P	**P**	**16 12 09.3**	**+0.3**
ILAR	**Eielson Array**	**51.92**	**31**	P	**P**	**16 12 12.6**	**+0.4**
	0.6nm,0.8s,mb3.5,baz=269,slow=7.1,SNR=7.2						
WRA	**Warramunga Arr**	**54.69**	**187**	P	**P**	**16 12 34.7**	**+1.4**
	2.7nm,1.0s,mb4.2,baz=3.5,slow=7.6,SNR=18						
ASAR	**Alice Springs**	**58.42**	**187**	P	**P**	**16 12 59.8**	**-0.1**
	0.4nm,0.7s,mb3.6,baz=4.5,slow=7.5,SNR=9.9						
ARCES	**ARCESS Array B**	**65.78**	**339**	P	**P**	**16 13 47.8**	**-0.6**
	0.3nm,0.5s,mb3.6,baz=45,slow=6.9,SNR=5.4						
FINES	**FINESS Array B**	**70.38**	**332**	P	**P**	**16 14 16.3**	**-0.7**
	0.6nm,0.7s,mb3.6,baz=76,slow=5.7,SNR=3.4						
NVAR	**Mina Array Bea**	**77.12**	**52**	P	**P**	**16 15 00.1**	**+3.4**
	0.2nm,0.3s,mb3.5,baz=315,slow=5.1,SNR=3.0						

NAO ***26*** *16:14:13.7±1.3,59.71N×24.53E,ML2.6*
HEL ***26*** *16:14:14.0±0.1,59.71N×24.57E,ML2.5,ML2.8(UPP), ML2.6(NAO),Explosion*
BER ***26*** *16:14:14.7±3.8,59.73N×24.63E,ML2.6(NAO)*
IDC ***26*** *16:14:15.9±2.4,59.83N×24.52E,mb1 3.6/4, mb1mx3.3/22,ML3.6/4,Error ellipse: s-maj=26.5km s-min=6.6km az=147.0*

ISC 26 16:14:11.1±0.6,59.74N±0.05×24.44E±0.08,n20,σ1§41/27, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MEF	**Metsahovi**	**0.48**	**357**	*e*P	**Pg**	**16 14 23.3**	**+2.6**
MEF				*e*S	**Sg**	**16 14 30.0**	**+3.0**
PVF	**Pernaja**	**1.07**	**41**	*e*P	**Pb**	**16 14 32.9**	**+0.6**
PVF				*e*S	**Sb**	**16 14 45.8**	**-0.9**
VSU	**Vasula**	**1.75**	**136**	*e*P	**Pn**	**16 14 43.7**	**+0.9**
VSU				*e*S	**Sn**	**16 15 05.3**	**-0.8**
VSU	**Vasula**	**1.75**	**136**	Pn	**Pn**	**16 14 44.0**	**+1.1**
VSU				Lg		16 15 05.5	
VJF	**Virojoki**	**1.75**	**61**	*e*P	**Pn**	**16 14 44.0**	**+1.1**
VJF				*e*S	**Sn**	**16 15 06.5**	**+0.2**
FIA0	**FINESS Array S**	**1.89**	**25**	Pn	**Pn**	**16 14 47.8**	**+2.9**
	baz=194,slow=18						
FIA0				Lg		16 15 11.9	
	baz=197,slow=37						
FINES	**FINESS Array B**	**1.89**	**25**	Pg	**Pg**	**16 14 47.8**	**-1.0**
	14nm,0.3s,baz=196,slow=17,SNR=497						
FINES				Lg		16 15 12.6	
	9.3nm,0.3s,baz=184,slow=27,SNR=6.9						
KEF	**Keuruu**	**2.44**	**5**	MSG		16 15 30.8	
	comp=Z,26nm,0.2s						
KAF	**Kangasniemi**	**2.55**	**20**	MSG		16 15 34.0	
	comp=Z,17nm,0.3s						
HFS	**Hagfors**	**5.42**	**279**	Pn	**Pn**	**16 15 36.1**	**+1.0**
	baz=90,slow=16						
HFS				Sn	**Sn**	**16 16 38.9**	**-0.2**
	baz=78,slow=22						
HFS				Lg		16 17 02.4	
	baz=82,slow=37						
HFS	**Hagfors**	**5.42**	**279**	Pn	**Pn**	**16 15 36.3**	**+1.2**
	comp=Z,0.3nm,0.3s,baz=108,slow=13,SNR=38						
HFS				Sn	**Sn**	**16 16 38.7**	**-0.4**
	comp=Z,0.5nm,0.3s,baz=83,slow=25,SNR=11						
HFS				Lg		16 17 09.1	
	comp=Z,1.1nm,0.3s,baz=82,slow=31,SNR=6.4						
NOA	**NORSAR Array B**	**6.68**	**287**	Pn	**Pn**	**16 15 52.9**	**0.0**
	comp=Z,0.9nm,0.3s,baz=90,slow=14,SNR=4.5						
NOA				Sn	**Sn**	**16 17 07.1**	**-3.7**
	comp=Z,1.3nm,0.3s,baz=87,slow=19,SNR=4.9						
NOA				Lg		16 17 42.0	
	comp=Z,2.6nm,0.3s,baz=61,slow=14,SNR=5.9						
APA0	**Apatity Array**	**8.75**	**22**	Pn	**P**	**16 16 20.4**	**-1.4**
	baz=209,slow=12						
APA0	**Apatity Array**	**8.75**	**22**	*e*P	**P**	**16 16 20.4**	**-1.4**
ARA0	**ARCESS Array S**	**9.85**	**2**	Pn	**P**	**16 16 34.6**	**-2.2**
	baz=174,slow=16						
ARA0				Sn	**Sn**	**16 18 20.2**	**-9.1**
	baz=194,slow=22						
ARA0	**ARCESS Array S**	**9.85**	**2**	*e*P	**P**	**16 16 34.6**	**-2.2**
ARA0				*e*S	**Sn**	**16 18 20.2**	**-9.1**
ARCES	**ARCESS Array B**	**9.85**	**2**	Pn	**P**	**16 16 34.6**	**-2.1**
	comp=Z,1.4nm,0.3s,baz=178,slow=12,SNR=78						
SPA0	**Spitsbergen Ar**	**18.71**	**355**	P	**P**	**16 18 33.7**	**+1.0**
	baz=173,slow=11						
SPA0	**Spitsbergen Ar**	**18.71**	**355**	*e*P	**P**	**16 18 33.7**	**+1.0**
SPITS	**Spitsbergen Ar**	**18.71**	**355**	P	**P**	**16 18 34.2**	**+1.5**
	comp=Z,0.1nm,0.3s,baz=135,slow=8.5,SNR=3.4						

MDD ***26*** *16:19:35.0±2.5,36.52N×9.86W,h69km±62km,mb3.5/2, Error ellipse: s-maj=26.5km s-min=17.6km ac=44.0, PRXIMO*
INMG ***26*** *16:19:36.3±0.8,36.48N×9.78W,h31km,ML2.0,Error ellipse: s-maj=9.8km s-min=5.2km az=94.0*

ISC 26 16:19:35.0±1.7,36.56N±0.08×9.7W±0.1,h69km,n13, σ0§92/22,West of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PTEO	**Sao Teotonio**	**1.24**	**37**	*e*S	**S**	**16 20 14.2**	**+1.1**
	8.1nm,0.1s						

PTEO	**Sao Teotonio**	**1.24**	**37**	S	**S**		**16 20 14.2**	**+1.1**
	4.1nm,0.1s								
PALC	**Alcoutim**	**1.98**	**62**	*e*Pn	**P**		**16 20 07.9**	**+1.0**
PALC				*e*Sn	**S**		**16 20 31.1**	**+0.7**
	9.3nm,0.1s								
PALC	**Alcoutim**	**1.98**	**62**	Pn	**P**		**16 20 07.9**	**+1.0**
PALC				Sn	**S**		**16 20 31.1**	**+0.7**
	4.7nm,0.1s								
PBEJ	**Beja**	**2.05**	**44**	*e*Sn	**S**		**16 20 33.2**	**+0.9**
	3.1nm,0.1s								
PBEJ	**Beja**	**2.05**	**44**	Sn	**S**		**16 20 33.2**	**+0.9**
	1.6nm,0.1s								
MOE	**Montemor**	**2.22**	**28**	*e*Pn	**P**		**16 20 10.8**	**+0.4**
MOE				*e*Sn	**S**		**16 20 37.5**	**+0.9**
EMIN	**Mina Concepcio**	**2.68**	**62**	Pn	**P**		**16 20 17.1**	**+0.2**
	0.2nm,0.1s,SNR=9.0								
EMIN				Sn	**S**		**16 20 47.9**	**-0.3**
	0.8nm,0.1s,SNR=7.9								
EBAD	**Badajoz**	**3.04**	**43**	Pn	**P**		**16 20 21.8**	**-0.2**
	1.6nm,0.1s,SNR=6.2								
EBAD				Sn	**S**		**16 20 56.2**	**-1.0**
	1.5nm,0.1s,SNR=7.9								
ESPR	**Espera**	**3.08**	**83**	Pn	**P**		**16 20 22.8**	**+0.3**
	1.8nm,0.1s,SNR=7.9								
ESPR				Sn	**S**		**16 20 58.8**	**+0.5**
	8.1nm,0.2s,SNR=7.9								
ECAB	**El Cabril**	**3.71**	**65**	Pn	**P**		**16 20 31.5**	**+0.2**
	0.2nm,0.1s,SNR=5.9								
ECAB				Sn	**S**		**16 21 13.1**	**-1.0**
	0.8nm,0.1s,SNR=7.9								
EADA	**Adamuz**	**4.36**	**67**	Pn	**P**		**16 20 40.3**	**-0.1**
	0.7nm,0.2s,SNR=4.0								
EADA				Sn	**S**		**16 21 28.7**	**-1.6**
	1.2nm,0.2s,SNR=7.9								
ELOB	**Lobios**	**5.44**	**13**	Pn	**P**		**16 20 53.0**	**-2.3**
	0.5nm,0.1s,SNR=4.0								
ELOB				Sn	**S**		**16 21 53.1**	**-4.2**
	2.0nm,0.1s,SNR=7.9								

NEIC ***26*** *16:37:17.0,34.55S×72.35W,h35km,MD3.6(GUC),After GUC.*

GUC 26 16:37:17.0±0.7,34.55S×72.35W,h35km±4km,MD3.6, ML2.6,1C-1D,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LNV	**Longovilo**	**0.98**	**53**	*e*P	P	16 37 34.2	-0.2
LNV				*i* S	S	16 37 48.3	+1.1
SFDO	**San Fernando**	**1.10**	**94**	⇑*i*P	P	16 37 36.5	+0.3
LCCH	**Las Cruces**	**1.25**	**31**	*i* P	P	16 37 38.9	+0.7
LCCH				*i* S	S	16 37 55.4	+1.1
CACH	**El Canelo**	**1.51**	**74**	*e*P	P	16 37 43.9	+1.8
CACH				*i* S	S	16 38 04.3	+3.6
CHCH	**Chadas Angostu**	**1.54**	**67**	*e*P	P	16 37 43.8	+1.4
CHCH				*i* S	S	16 38 03.4	+2.1
CICH	**Cipreses**	**1.61**	**82**	⇓*i*P	P	16 37 44.6	+1.2
CICH				*i* S	S	16 38 05.4	+2.2
LMEL	**Las Melosas**	**1.91**	**69**	*e*P	P	16 37 49.3	+1.5
LMEL				*i* S	S	16 38 12.8	+2.0
LMEL				AMP		16 38 19.1	
	comp=N,140nm,0.1s						
FCH	**Farellones**	**2.10**	**55**	*e*P	P	16 37 51.9	+1.4
FCH				*i* S	S	16 38 19.4	+3.7
FCH				AMP		16 38 22.8	
	comp=N,40nm,0.3s						

OTT 26 17:04:30.5±0.9,47.94N×91.87W,MN3.0/6,Blast, Minnesota, U.S. Mining explosion.,Minnesota

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TBO	**Thunder Bay**	**1.79**	**66**	PN	Pn	17 05 01.5	-1.4
TBO				SG	Sg	17 05 28.7	-1.4
TBO				Trac		17 05 34.4	
	comp=Z,15nm,0.1s						
SOLO	**Sioux Lookout**	**2.09**	**356**	PN	Pn	17 05 07.8	+0.6
SOLO				SG	Sg	17 05 38.9	-1.3
SOLO				Trac		17 05 48.0	
	comp=Z,6.4nm,0.1s						
ULM	**Lac du Bonnet**	**3.51**	**313**	PN	Pn	17 05 25.2	-2.1
ULM				SN	Sn	17 06 07.8	-2.4
ULM				Trac		17 06 09.7	
	comp=Z,1.2nm,0.1s						
ULM				SG	Sg	17 06 23.4	-3.9
GTO	**Geraldton**	**3.71**	**59**	SN	Sn	17 06 10.8	-4.7
GTO				SG	Sg	17 06 29.0	-5.1
GTO				Trac		17 06 33.7	
	comp=Z,13nm,0.2s						
KAPO	**Kapuskasing**	**6.38**	**73**	SN	Sn	17 07 13.7	-8.9
KAPO				SG	Sg	17 07 47.5	-15
VIMO	**Victor Mine**	**7.13**	**44**	PN	Pn	17 06 14.8	-3.9
VIMO				SN	Sn	17 07 37.7	-3.7
VIMO				SG	Sg	17 08 09.3	-19
VIMO				Trac		17 08 21.0	
	comp=Z,11nm,0.4s						
SILO	**Sutton Inlier**	**7.87**	**31**	PN	Pn	17 06 25.3	-3.7
SILO				SN	Sn	17 07 51.5	-8.4
SILO				SG	Sg	17 08 40.4	-12
SILO				Trac		17 08 43.6	
	comp=Z,3.3nm,0.3s						
MALO	**McAlpine Lake**	**8.24**	**71**	SN	Sn	17 07 57.0	-12
MALO				SG	Sg	17 08 43.0	-22
FCC	**Fort Churchill**	**10.93**	**354**	PN	P	17 07 05.6	-5.4
FCC				SN	S	17 09 00.9	-14

HEL ***26*** *17:13:30.3±0.1,59.77N×24.58E,ML2.5,ML2.6(UPP), ML2.7(NAO),Explosion*
NAO ***26*** *17:13:30.2±1.3,59.78N×24.57E,ML2.7*
IDC ***26*** *17:13:30.6±2.0,59.79N×24.57E,mb1 3.7/4, mb1mx3.3/22,ML3.5/4,Error ellipse: s-maj=20.3km s-min=6.3km az=145.0*
BER ***26*** *17:13:31.7±3.9,59.79N×24.73E,ML2.7(NAO)*

ISC 26 17:13:26.9±0.6,59.77N±0.04×24.39E±0.07,n22,σ1§44/32, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MEF	**Metsahovi**	**0.45**	**0**	*e*P	**Pg**	**17 13 38.2**	**+2.2**
MEF				*e*S	**Sg**	**17 13 44.2**	**+2.2**
PVF	**Pernaja**	**1.07**	**43**	*e*P	**Pb**	**17 13 48.2**	**+0.1**
PVF				*e*S	**Sb**	**17 14 01.3**	**-1.2**
VJF	**Virojoki**	**1.76**	**62**	*e*P	**Pn**	**17 13 59.8**	**+0.9**
VJF				*e*S	**Sn**	**17 14 21.7**	**-0.7**
VSU	**Vasula**	**1.78**	**136**	*e*P	**Pn**	**17 14 00.9**	**+1.7**
VSU				*e*S	**Sn**	**17 14 22.2**	**-0.6**
VSU	**Vasula**	**1.78**	**136**	Pn	**Pn**	**17 14 01.1**	**+2.0**
VSU				Lg		17 14 24.0	
FIA0	**FINESS Array S**	**1.88**	**26**	*e*P	**Pn**	**17 14 03.0**	**+2.4**
FIA0				*e*S	**Sn**	**17 14 26.3**	**+1.0**
FIA0				MSG		17 14 29.4	
	comp=Z,36nm,0.3s						
FIA0	**FINESS Array S**	**1.88**	**26**	Pn	**Pn**	**17 14 03.0**	**+2.5**
	baz=199,slow=18						
FIA0				Lg		17 14 26.4	
	baz=182,slow=37						
FINES	**FINESS Array B**	**1.88**	**26**	Pg	**Pg**	**17 14 03.0**	**-1.5**
	comp=Z,15nm,0.3s,baz=201,slow=16,SNR=728						
FINES				Lg		17 14 27.2	
	comp=Z,17nm,0.3s,baz=201,slow=31,SNR=22						
KEF	**Keuruu**	**2.42**	**5**	MSG		17 14 45.8	
	comp=Z,22nm,0.2s						
KAF	**Kangasniemi**	**2.54**	**21**	MSG		17 14 49.9	
	comp=Z,17nm,0.3s						
HFS	**Hagfors**	**5.39**	**279**	*e*P	**Pn**	**17 14 52.2**	**+1.7**
HFS				*e*S	**Sn**	**17 15 54.7**	**+0.5**
HFS	**Hagfors**	**5.39**	**279**	Pn	**Pn**	**17 14 51.9**	**+1.4**
	comp=Z,0.1nm,0.3s,baz=100,slow=12,SNR=19						
HFS				Sn	**Sn**	**17 15 53.6**	**-0.6**
	comp=Z,0.3nm,0.3s,baz=83,slow=25,SNR=8.6						
HFS				Lg		17 16 18.8	
	comp=Z,0.7nm,0.3s,baz=76,slow=31,SNR=11						
HFS	**Hagfors**	**5.39**	**279**	Pn	**Pn**	**17 14 52.2**	**+1.7**
	baz=84,slow=14						
HFS				Sn	**Sn**	**17 15 54.7**	**+0.5**
	baz=92,slow=28						
NOA	**NORSAR Array B**	**6.65**	**287**	Pn	**Pn**	**17 15 08.2**	**-0.2**
	comp=Z,0.9nm,0.3s,baz=98,slow=12,SNR=5.4						
NOA				Sn	**Sn**	**17 16 24.0**	**-1.8**
	comp=Z,0.8nm,0.3s,baz=66,slow=19,SNR=3.5						
NOA				Lg		17 16 57.8	
	comp=Z,1.5nm,0.3s,baz=117,slow=18,SNR=5.3						

APA0	**Apatity Array**	**8.74**	**22**	Pn	**P**		**17 15 36.2**	**-1.3**
	baz=216,slow=14								
APA0	**Apatity Array**	**8.74**	**22**	*e*P	**P**		**17 15 36.2**	**-1.3**
ARA0	**ARCESS Array S**	**9.82**	**2**	Pn	**P**		**17 15 50.0**	**-2.3**
	baz=175,slow=16								
ARA0				Sn	**Sn**		**17 17 38.2**	**-6.3**
	baz=178,slow=28								
ARA0	**ARCESS Array S**	**9.82**	**2**	*e*P	**P**		**17 15 50.0**	**-2.3**
ARA0				*e*S	**Sn**		**17 17 38.2**	**-6.3**
ARCES	**ARCESS Array B**	**9.82**	**2**	Pn	**P**		**17 15 50.2**	**-2.1**
	comp=Z,1.2nm,0.3s,baz=178,slow=15,SNR=99								
ARCES				Sn	**Sn**		**17 17 37.5**	**-7.0**
	comp=Z,0.2nm,0.3s,baz=180,slow=22,SNR=3.5								
SPA0	**Spitsbergen Ar**	**18.69**	**355**	P	**P**		**17 17 48.8**	**+0.5**
	baz=150,slow=16								
SPA0	**Spitsbergen Ar**	**18.69**	**355**	*e*P	**P**		**17 17 48.8**	**+0.5**
SPITS	**Spitsbergen Ar**	**18.69**	**355**	P	**P**		**17 17 48.8**	**+0.6**
	comp=Z,0.1nm,0.3s,baz=158,slow=9.7,SNR=7.4								

NEIC ***26*** *17:18:49.0±1.1,51.49N×16.07E,h5km,ML2.4(CLL), ML2.2(BRG),Error ellipse: s-maj=13.1km s-min=6.1km az=198.0*
WAR ***26*** *17:18:49.1,51.54N×16.03E,h1km,Location given by Polkowice mine, origin time based upon KSP*
PRU ***26*** *17:18:50.5,51.45N×16.06E*

ISC 26 17:18:47.0±0.7,51.49N±0.04×16.01E±0.03,n18,σ1§37/48, 1C,Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.67**	**165**	*e*Pg	**Pg**	**17 19 02.1**	**+1.7**
KSP				*e*Pn	**Pn**	**17 19 04.9**	**+1.5**
KSP				*e*Sg	**Sg**	**17 19 11.5**	**+2.2**
KSP				*e*Sn	**Sn**	**17 19 15.6**	**+0.9**
KSP	**Ksiaz**	**0.67**	**165**	*e*PG	**Pg**	**17 19 02.0**	**+1.6**
KSP				*e*SG	**Sg**	**17 19 11.0**	**+1.7**
KSP	**Ksiaz**	**0.67**	**165**	*e*Pg	**Pg**	**17 19 01.9**	**+1.5**
KSP				*e*		17 19 03.7	
KSP				*i* Sg	**Sg**	**17 19 11.4**	**+2.1**
KSP				*e*		17 19 15.5	
UPC	**Upice**	**0.98**	**180**	*e*PG	**Pg**	**17 19 07.8**	**+1.2**
UPC				*e*SG	**Sg**	**17 19 21.7**	**+2.0**
DPC	**Dobruska-Polom**	**1.16**	**170**	*e*PG	**Pg**	**17 19 10.6**	**+0.5**
DPC				*e*SG	**Sg**	**17 19 26.0**	**+0.5**
	27nm,0.3s						
PVCC	**Panska Ves**	**1.32**	**224**	*e*PG	**Pg**	**17 19 14.4**	**+0.9**
PVCC				*e*SG	**Sg**	**17 19 32.6**	**+1.5**
BRG	**Berggiesshubel**	**1.44**	**246**	*i* Pg	**Pg**	**17 19 16.3**	**+0.5**
BRG				*i* Sg	**Sg**	**17 19 35.9**	**+0.9**
PRU	**Pruhonice**	**1.77**	**212**	PN	**Pn**	**17 19 19.8**	**+0.7**
PRU				PG	**Pg**	**17 19 21.3**	**-1.0**
PRU				*i* x	x	17 19 38.7	
PRU				SG	**Sg**	**17 19 45.1**	**-0.8**
	27nm,0.4s						
CLL	**Collm**	**1.90**	**266**	*e*PN	**Pn**	**17 19 22.0**	**+1.1**
CLL				*e*PG	**Pg**	**17 19 26.0**	**+1.2**
CLL				*e*		17 19 45.0	
CLL				*e*SG	**Sg**	**17 19 49.0**	**-1.1**
CLL	**Collm**	**1.90**	**266**	*e*Pn	**Pn**	**17 19 22.0**	**+1.1**
CLL				*e*Pg	**Pg**	**17 19 26.0**	**+1.2**
CLL				*e*Sg	**Sg**	**17 19 49.0**	**-1.1**
MORC	**Moravsky Berou**	**1.97**	**150**	*e*Pn	**Pn**	**17 19 22.5**	**+0.5**
MORC				*e*Pb	**Pb**	**17 19 26.6**	**+3.1**
MORC				*e*Sg	**Sg**	**17 19 51.1**	**-1.5**
OKC	**Ostrava-Krasne**	**2.14**	**140**	*e*PN	**Pn**	**17 19 25.0**	**+0.6**
OKC				*e*PG	**Pg**	**17 19 28.4**	**-1.3**
OKC				*e*SG	**Sg**	**17 19 56.0**	**-2.2**
NKC	**Novy Kostel**	**2.58**	**242**	*e*PN	**Pn**	**17 19 31.6**	**+0.8**
NKC				*e*PG	**Pg**	**17 19 36.7**	**-1.9**
NKC				*e*SG	**Sg**	**17 20 12.4**	**-0.7**
OJC	**Ojcow**	**2.71**	**116**	*e*Pg	**Pg**	**17 19 40.8**	**-0.4**
OJC				*e*Sn	**Sn**	**17 20 04.8**	**-1.9**
OJC				*e*Sg	**Sg**	**17 20 15.9**	**-1.5**
OJC	**Ojcow**	**2.71**	**116**	*e*PG	**Pg**	**17 19 41.0**	**-0.2**
OJC				*e*SN	**Sn**	**17 20 05.0**	**-1.7**
OJC				*e*SG	**Sg**	**17 20 16.0**	**-1.4**
KHC	**Kasperske Hory**	**2.83**	**214**	*e*PN	**Pn**	**17 19 36.8**	**+2.5**
KHC				*e*PG	**Pg**	**17 19 40.9**	**-2.6**
KHC				*e*SN	**Sn**	**17 20 09.2**	**-0.4**
KHC				*e*SG	**Sg**	**17 20 19.5**	**-1.7**
MOX	**Moxa**	**2.90**	**255**	*e*Pg	**Pg**	**17 19 42.9**	**-2.0**
MOX				*e*Sg	**Sg**	**17 20 22.1**	**-1.5**
MOA	**Molln**	**3.81**	**198**	⇑*i*PN	**Pn**	**17 19 49.0**	**+0.7**
MOA				*i* SG	**Sg**	**17 20 52.0**	**-2.0**
	2.7nm,0.3s						

HEL ***26*** *17:35:58.7±0.1,59.70N×24.55E,ML2.5,ML2.7(UPP), ML2.8(NAO),Explosion*
NAO ***26*** *17:35:58.5±1.3,59.69N×24.74E,ML2.8*
BER ***26*** *17:35:59.8±3.3,59.72N×24.69E,ML2.8(NAO)*
IDC ***26*** *17:36:01.2±2.1,59.88N×24.37E,mb1 3.6/4, mb1mx3.3/22,ML3.5/4,Error ellipse: s-maj=23.2km s-min=5.8km az=146.0*

ISC 26 17:35:55.6±0.6,59.70N±0.04×24.37E±0.07,n22,σ1§51/31, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MEF	**Metsahovi**	**0.52**	**1**	*e*P	**Pg**	**17 36 08.2**	**+2.2**
MEF				*e*S	**Sg**	**17 36 15.1**	**+2.2**
PVF	**Pernaja**	**1.13**	**41**	*e*P	**Pb**	**17 36 18.0**	**+0.3**
PVF				*e*S	**Sb**	**17 36 31.1**	**-1.6**
**V

comp=Z,0.1nm,0.3s,baz=146,slow=7.2,SNR=3.6

MAN 26 17:48:13.8, 15.95N×120.47E, h1km, mb3.5, ML2.2, MS1.7, 8C-1D, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BCPH	**Baguio City Da**	**0.44**	**14**⇑	*iP*	Pg	17 48 22.6	-0.1
BCPH				*i* S	Sg	17 48 29.4	+0.8
SCZP	**Santa Cruz**	**0.56**	**252**⇑	*eP*	Pg	17 48 24.4	-0.6
BOLP	**Bolinao**	**0.68**	**309**⇑	*eP*	Pg	17 48 27.2	-0.2
PCPH	**Palayan**	**0.72**	**122**⇓	*iP*	Pg	17 48 28.0	-0.1
PCPH				*i* S	Sg	17 48 38.9	+1.2
BALP	**Baler**	**1.09**	**101**⇑	*eP*	Pb	17 48 34.5	-0.6
CAUP	**Cauayan**	**1.64**	**53**⇑	*eP*	Pn	17 48 43.8	-0.1
ABRA	**Dolores**	**1.71**	**8**⇑	*eP*	Pn	17 48 41.0	-3.9
POLP	**Polilio Island**	**1.87**	**130**⇑	*eP*	Pn	17 48 51.4	+4.2
APYP	**Conner**	**2.04**	**21**⇑	*eP*	Pn	17 48 50.3	+0.6

WEL 26 17:49:04.7±0.4, 37.67S×179.31E, h21km±2km, ML3.5/5, 3C, Error ellipse: s-maj=3.2km s-min=2.5km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MXZ	**Matakaoa Point**	**0.81**	**277**⇑	*eP*	Pb	17 49 19.7	-0.2
MXZ				*S*	Sb	17 49 30.7	+0.4
PUZ	**Puketiti**	**0.93**	**244**⇑	*eP**	Pb	17 49 21.8	-0.1
PUZ				*S**	Sb	17 49 34.3	+0.6
MWZ	**Matawai**	**1.56**	**244**⇑	PN	Pn	17 49 30.1	-1.4
MWZ				SN	Sn	17 49 49.7	-1.5
URZ	**Urewera**	**1.83**	**251**	PN	Pn	17 49 34.6	-0.9
URZ				SN	Sn	17 49 56.7	-1.6
KNZ	**Kokohu**	**1.86**	**223**	*e*PN	Pn	17 49 34.1	-1.8
BKZ	**Black Stump Fm**	**2.67**	**235**	PN	Pn	17 49 45.8	-1.7
KUZ	**Kuaotunu**	**3.01**	**287**	PN	Pn	17 49 50.6	-1.7
PWZ	**Pawanui**	**3.03**	**218**	PN	Pn	17 49 49.1	-3.5
PWZ				SN	Sn	17 50 23.7	-5.0
NGZ	**Ngauruhoe**	**3.28**	**242**	PN	Pn	17 49 53.9	-2.3
TUVZ	**Tukino**	**3.28**	**240**	*e*PN	Pn	17 49 53.8	-2.4
CNZ	**Chateau**	**3.33**	**242**	PN	Pn	17 49 54.7	-2.1
WNVZ	**Wahianoa**	**3.35**	**239**	PN	Pn	17 49 54.6	-2.5
TSZ	**Takapari Road**	**3.54**	**227**	PN	Pn	17 49 55.8	-4.0
TSZ				SN	Sn	17 50 35.8	-5.7
HIZ	**Hauiti**	**3.61**	**255**	PN	Pn	17 49 59.4	-1.5
BFZ	**Birch Farm**	**3.83**	**217**	PN	Pn	17 49 59.6	-4.4
BFZ				SN	Sn	17 50 41.6	-7.4
VRZ	**Vera Road**	**3.86**	**247**	PN	Pn	17 50 02.2	-2.2
WAZ	**Wanganui**	**3.97**	**237**	PN	Pn	17 50 03.7	-2.3
WAZ				SN	Sn	17 50 48.5	-3.9
MRZ	**Mangatainoka R**	**4.16**	**223**	PN	Pn	17 50 03.8	-4.9
MRZ				SN	Sn	17 50 49.5	-7.9
WCZ	**Waipu Caves**	**4.34**	**292**	PN	Pn	17 50 10.2	-1.1
MTW	**Mount Morrison**	**4.56**	**219**	*e*PN	Pn	17 50 08.8	-5.6
CAW	**Cannon Point**	**4.75**	**222**	*e*PN	Pn	17 50 11.3	-5.8
SNZO	**South Karori**	**5.09**	**223**	PN	Pn	17 50 15.3	-6.5
OUZ	**Omahuta**	**5.21**	**296**	PN	Pn	17 50 22.6	-1.0
NNZ	**Nelson**	**5.80**	**231**	*e*PN	Pn	17 50 25.7	-6.1
QRZ	**Quartz Range**	**6.13**	**237**	PN	Pn	17 50 29.9	-6.7
THZ	**Tophouse**	**6.41**	**228**	PN	Pn	17 50 33.5	-7.0
KHZ	**Kahutara**	**6.48**	**221**	*e*PN	Pn	17 50 34.9	-6.6
LTZ	**Lake Taylor**	**7.42**	**224**	*e*PN	Pn	17 50 48.0	-6.6

*NEIC **26** 17:52:15.0, 43.39N×17.43E, h4km, MD3.5(PDG), MD3.4(ROM), ML3.9(BUD), ML3.5(ZAG), After PDG.*
*LDG **26** 17:52:15.6±0.3, 43.44N×17.68E, h10km, Ml3.7/16, Error ellipse: s-maj=5.7km s-min=5.1km az=78.0*
*ROM **26** 17:52:17.0±0.4, 43.37N×17.48E, h10km, MD3.4/24, ML3.4/20, Error ellipse: s-maj=3.6km s-min=2.1km az=90.0*
*PRU **26** 17:52:19.3, 43.62N×17.39E*
*IDC **26** 17:52:23.5±2.4, 43.62N×17.30E, h68km±20km, mb3.3/6, mb1 3.4/13, mb1mx3.3/27, Error ellipse: s-maj=20.2km s-min=13.2km az=11.0*
ISC 26 17:52:14.6±0.2, 43.44N±0.01×17.41E±0.02, h4km, n141, σ1s42/202, mb3.5/6, 26C-6D, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STON	**Ston**	**0.61**	**159**⇓	*iPg*	**Pg**	**17 52 25.8**	**-1.0**
STON				*i* Sg	**Sg**	**17 52 35.1**	**+0.2**
BRY	**Bratogost**	**0.99**	**123**⇑	*iPg*	**Pg**	**17 52 32.5**	**-1.9**
BRY				*e*Sg	**Sg**	**17 52 47.9**	**+0.2**
UPM	**Unac-Piva**	**1.12**	**102**⇑	*iPg*	**Pg**	**17 52 35.3**	**-1.7**
UPM				*e*Sg	**Sg**	**17 52 52.5**	**+0.5**
HCY	**Herceg Novi**	**1.28**	**141**⇑	*iPg*	**Pg**	**17 52 37.4**	**-2.8**
HCY				*e*Sg	**Sg**	**17 52 56.4**	**-0.7**
NKY	**Niksic**	**1.32**	**118**⇑	*iPg*	**Pg**	**17 52 38.8**	**-2.2**
NKY				*e*Sg	**Sg**	**17 52 58.8**	**+0.1**
PLE	**Pljevlja**	**1.45**	**94**⇑	*iPg*	**Pg**	**17 52 41.9**	**-1.8**
PLE				*e*Sg	**Sg**	**17 53 03.5**	**+0.5**
BUM	**Brajici-Budva**	**1.58**	**136**⇑	*iPg*	**Pg**	**17 52 43.0**	**-3.2**
BUM				*e*Sg	**Sg**	**17 53 06.8**	**-0.5**
NVSS	**Nova Varos 2**	**1.67**	**87**	*e*Pn	**Pn**	**17 52 47.5**	**+2.6**
NVSS				Sg	**Sg**	**17 53 13.4**	**+3.2**
TTG	**Podgorica**	**1.70**	**126**⇑	*i*Pn	**Pn**	**17 52 45.4**	**+0.2**
TTG				*e*Sn	**Sn**	**17 53 09.8**	**+2.2**
IVA	**Berane**	**1.91**	**107**⇑	*i*Pn	**Pn**	**17 52 49.4**	**+1.2**
IVA				*e*Sn	**Sn**	**17 53 15.9**	**+2.9**
DIVS	**Divcibare**	**1.98**	**70**⇓	*i*Pn	**Pn**	**17 52 49.0**	**-0.2**
DIVS				Sg	**Sg**	**17 53 19.0**	**-1.7**
ULC	**Ulcinj**	**2.01**	**137**	*e*Pn	**Pn**	**17 52 50.1**	**+0.4**
ULC				*e*Sn	**Sn**	**17 53 17.7**	**+2.2**
FGMS	**Monte Sant'Ang** 523nm,0.5s	**2.04**	**212**	*e*PN	**Pn**	**17 52 50.8**	**+0.7**
FGMS	**Monte Sant'Ang**	**2.04**	**212**	*e*Pn	**Pn**	**17 52 50.8**	**+0.7**
PVY	**Plav**	**2.06**	**113**⇑	*i*Pn	**Pn**	**17 52 51.4**	**+1.0**
PVY				*e*Sn	**Sn**	**17 53 19.7**	**+2.8**
SDA	**Shkodra**	**2.08**	**131**	*e*Pn	**Pn**	**17 52 52.7**	**+1.6**
NVLJ	**Novalja**	**2.15**	**302**	*i* Pn	**Pn**	**17 52 53.2**	**+1.6**
NVLJ				*i* Sn	**Sn**	**17 53 20.2**	**+1.2**
NVLJ				*i* Sg	**Sg**	**17 53 24.6**	**-1.5**
SISC	**Sisak**	**2.16**	**340**	*i* Pn	**Pn**	**17 52 53.8**	**+2.0**
SISC				*i* Sn	**Sn**	**17 53 21.6**	**+2.3**
RGNG	**Rignano Grg**	**2.22**	**218**	*e*PN	**Pn**	**17 52 53.4**	**+0.7**
BCI	**Bajram Curri**	**2.23**	**118**	*e*Pn	**Pn**	**17 52 55.0**	**+2.2**
PUK	**Puka**	**2.31**	**127**	*e*Pg	**Pg**	**17 52 49.2**	**-11**
PUK				*i* Sg	Sg	17 52 59.7	-32
FG2	**Serracapriola** 272nm,0.3s	**2.33**	**226**	*e*PN	**Pn**	**17 52 54.2**	**0.0**
GRUS	**Gruza**	**2.44**	**78**	*e*Pn	**Pn**	**17 53 06.2**	**+10**
GRUS				Sn	**Sn**	**17 53 34.3**	**+7.8**
RHK3	**Tenkes**	**2.52**	**14**⇓	*eP*	**Pn**	**17 52 56.7**	**-0.2**
BRT	**Bari-Castellan** 101nm,0.4s	**2.57**	**183**	*e*PN	**Pn**	**17 52 58.3**	**+0.6**
BRT				SN	**Sn**	**17 53 26.8**	**-2.9**
BRT	**Bari-Castellan**	**2.57**	**183**	*e*Pn	**Pn**	**17 52 58.2**	**+0.6**
BRT				*e*Sn	**Sn**	**17 53 26.8**	**-2.9**
VBY	**Vinica-Bojanci**	**2.57**	**324**	*e*Sn	**Sn**	**17 53 32.3**	**+2.5**
BOJS	**Bojanci**	**2.57**	**324**⇑	*i*Pn	**Pn**	**17 52 59.4**	**+1.7**
FG5	**Orsara di Pugl** 146nm,0.5s	**2.68**	**217**	*e*PN	**Pn**	**17 53 00.3**	**+1.1**
FG5	**Orsara di Pugl**	**2.68**	**217**	*e*Pn	**Pn**	**17 53 00.3**	**+1.0**
RHK1	**Bakonya**	**2.69**	**10**⇑	*eP*	**Pn**	**17 52 59.0**	**-0.4**
RHK1				*e*S	**Sn**	**17 53 31.0**	**-1.9**
TIR	**Tirane**	**2.77**	**138**	*e*Pn	**Pn**	**17 53 05.7**	**+5.1**
CII	**Carovilli**	**2.86**	**234**	*e*PN	**Pn**	**17 53 02.2**	**+0.3**
CII	**Carovilli**	**2.86**	**234**	*e*Pn	**Pn**	**17 53 02.2**	**+0.3**
SVIS	**Svilajnac**	**2.89**	**72**	*e*PN	**Pn**	**17 53 12.1**	**+10**
TERO	**Teramo**	**2.91**	**255**	*e*PN	**Pn**	**17 53 03.0**	**+0.5**
TERO				SN	**Sn**	**17 53 37.7**	**-0.6**
TERO	**Teramo**	**2.91**	**255**	*e*Pn	**Pn**	**17 53 03.0**	**+0.6**
TERO				*e*Sn	**Sn**	**17 53 37.6**	**-0.6**
IPES	**Pescosannita**	**2.92**	**222**	*e*PN	**Pn**	**17 53 02.7**	**0.0**
MRB1	**Monte Rocchett**	**2.94**	**219**	*e*PN	**Pn**	**17 53 03.5**	**+0.6**
MRB1	**Monte Rocchett**	**2.94**	**219**	*e*Pn	**Pn**	**17 53 03.5**	**+0.6**
CPI2	**Carpinone** 49nm,0.4s	**2.94**	**232**	*e*PN	**Pn**	**17 53 03.1**	**+0.1**
RNI2	**Rionero Sannit** 70nm,0.7s	**2.97**	**235**	*e*PN	**Pn**	**17 53 05.0**	**+1.7**
RNI2	**Rionero Sannit**	**2.97**	**235**	*e*Pn	**Pn**	**17 53 05.0**	**+1.6**
VISS	**Visnje**	**2.99**	**323**⇑	*i*Pn	**Pn**	**17 53 05.2**	**+1.5**
KNDS	**Knezji Dol**	**3.01**	**315**⇑	*e*Pn	**Pn**	**17 53 06.2**	**+2.3**
MRLC	**Muro Lucano** 48nm,0.5s	**3.04**	**209**	*e*PN	**Pn**	**17 53 04.4**	**0.0**
MRLC	**Muro Lucano**	**3.04**	**209**	*e*Pn	**Pn**	**17 53 04.4**	**0.0**
SGG	**Gregorio Mates**	**3.04**	**229**	*e*PN	**Pn**	**17 53 05.2**	**+0.8**
SGG	**Gregorio Mates**	**3.04**	**229**	*e*Pn	**Pn**	**17 53 05.2**	**+0.8**
CEY	**Cerknica**	**3.13**	**318**⇑	*i*Pn	**Pn**	**17 53 07.5**	**+1.9**
AQU	**L'Aquila**	**3.14**	**251**	*e*Pn	**Pn**	**17 53 06.8**	**+1.0**
SDI	**San Donato** 64nm,0.4s	**3.17**	**238**	*e*PN	**Pn**	**17 53 06.5**	**+0.3**
SDI	**San Donato**	**3.17**	**238**	*e*Pn	**Pn**	**17 53 06.5**	**+0.2**
PKS9	**Tamasi**	**3.20**	**11**	*eP*	**Pn**	**17 53 06.8**	**+0.1**
ARV	**Arcevia** 16nm,0.3s	**3.25**	**272**	*e*PN	**Pn**	**17 53 08.1**	**+0.7**
ARV	**Arcevia**	**3.25**	**272**	*e*Pn	**Pn**	**17 53 08.1**	**+0.7**
SNTG	**Esanatoglia** 37nm,0.2s	**3.26**	**268**	*e*PN	**Pn**	**17 53 08.0**	**+0.5**
SNTG	**Esanatoglia**	**3.26**	**268**	*e*Pn	**Pn**	**17 53 08.0**	**+0.4**
SGO	**Sicignano** 23nm,0.3s	**3.28**	**209**	*e*PN	**Pn**	**17 53 07.0**	**-0.8**
SGO	**Sicignano**	**3.28**	**209**	*e*Pn	**Pn**	**17 53 07.0**	**-0.7**
GROS	**Grobnik**	**3.31**	**337**⇑	*i*Pn	**Pn**	**17 53 08.5**	**+0.3**
LJU	**Ljubljana**	**3.31**	**323**⇑	*e*Pn	**Pn**	**17 53 08.8**	**+0.5**
SKO	**Skopje**	**3.32**	**115**	*e*Pn	**Pn**	**17 53 13.3**	**+5.0**
SLCN	**Sala Consilina** 50nm,0.4s	**3.33**	**204**	*e*PN	**Pn**	**17 53 07.7**	**-0.7**
SLCN	**Sala Consilina**	**3.33**	**204**	*e*Pn	**Pn**	**17 53 07.7**	**-0.7**
FSSB	**Fossombrone** 32nm,0.3s	**3.37**	**276**	*e*PN	**Pn**	**17 53 09.4**	**+0.3**
FSSB	**Fossombrone**	**3.37**	**276**	*e*Pn	**Pn**	**17 53 09.4**	**+0.3**
ORI	**Oriolo Calabro** 82nm,0.4s	**3.45**	**192**	*e*PN	**Pn**	**17 53 09.4**	**-0.8**
ORI	**Oriolo Calabro**	**3.45**	**192**	*e*Pn	**Pn**	**17 53 09.4**	**-0.8**
PERS	**Pernice**	**3.58**	**334**⇑	*e*Pn	**Pn**	**17 53 12.7**	**+0.7**
PERS				*i* Sn	**Sn**	**17 53 55.1**	**-0.3**
MGR	**Morigerati** 29nm,0.4s	**3.58**	**203**	*e*PN	**Pn**	**17 53 11.5**	**-0.6**
MGR	**Morigerati**	**3.58**	**203**	*e*Pn	**Pn**	**17 53 11.5**	**-0.6**
VOY	**Vojsko**	**3.60**	**317**	*e*Pn	**Pn**	**17 53 13.5**	**+1.2**
VOY				*e*Sn	**Sn**	**17 53 57.3**	**+1.4**
MNS	**Montasola** 48nm,0.4s	**3.63**	**255**	*e*PN	**Pn**	**17 53 13.5**	**+0.8**
MNS	**Montasola**	**3.63**	**255**	*e*Pn	**Pn**	**17 53 13.5**	**+0.8**
OBKA	**Obir**	**3.67**	**328**⇑	*i*PN	**Pn**	**17 53 15.5**	**+2.1**
OBKA				*i* SN	**Sn**	**17 53 59.6**	**+1.8**
CADS	**Cadrg**	**3.82**	**318**⇑	*i*Pn	**Pn**	**17 53 16.7**	**+1.3**
TDS	**Terranova Siba** 21nm,0.6s	**3.87**	**192**	*e*PN	**Pn**	**17 53 15.4**	**-0.7**
PKSG		**4.01**	**10**⇓	*eP*	**Pn**	**17 53 17.5**	**-0.6**
ARSA	**Arzberg**	**4.03**	**341**⇑	*i*PN	**Pn**	**17 53 18.6**	**+0.1**
ARSA				*i* SN	**Sn**	**17 54 06.2**	**-0.6**
SFI	**Santa Sofia** 30nm,0.5s	**4.06**	**278**	*e*PN	**Pn**	**17 53 20.0**	**+1.1**
PTCC	**Patocco-Chiusa** 59nm,0.7s	**4.13**	**317**	*e*PN	**Pn**	**17 53 20.7**	**+0.8**
PTCC	**Patocco-Chiusa**	**4.13**	**317**	*e*Pn	**Pn**	**17 53 20.7**	**+0.9**
PGD	**Poggio Sodo** 23nm,0.6s	**4.15**	**278**	*e*PN	**Pn**	**17 53 21.4**	**+1.3**
PGD	**Poggio Sodo**	**4.15**	**278**	*e*Pn	**Pn**	**17 53 21.4**	**+1.3**
TIP	**Timpagrande**	**4.29**	**187**	*e*Pn	**Pn**	**17 53 21.1**	**-1.1**
FVI	**Forni Avoltri** 52nm,0.6s	**4.55**	**315**	*e*PN	**Pn**	**17 53 27.7**	**+1.9**
FVI	**Forni Avoltri**	**4.55**	**315**	*e*Pn	**Pn**	**17 53 27.7**	**+1.9**
KBA	**Koelnbreinsper**	**4.63**	**323**⇑	*i*Pn	**Pn**	**17 53 27.9**	**+0.9**
KBA				*i* SN	**Sn**	**17 54 23.3**	**+1.4**
ZST	**Bratislava**	**4.76**	**358**	*i* Pn	**Pn**	**17 53 28.7**	**-0.1**
ZST				*e*SN	**Sn**	**17 54 22.8**	**-2.4**
PSZ	**Piszketsto**	**4.80**	**20**⇑	*e*PB	**Pn**	**17 53 27.7**	**-1.7**
PSZ				*e*SB	**Sn**	**17 54 21.4**	**-4.9**
CTI	**Castel Tesino** 34nm,0.3s	**4.86**	**304**	*e*PN	**Pn**	**17 53 29.9**	**-0.3**
CTI	**Castel Tesino**	**4.86**	**304**	*e*Pn	**Pn**	**17 53 29.9**	**-0.3**
MOA	**Molln**	**4.93**	**335**⇑	*i*PN	**Pn**	**17 53 32.3**	**+1.1**
MOA				*i* SN	**Sn**	**17 54 30.9**	**+1.5**
VYHS	**Vyhne**	**5.15**	**11**	*i* PN	**Pn**	**17 53 33.4**	**-0.9**
VYHS				*e*SN	**Sn**	**17 54 30.8**	**-4.2**
WTTA	**Wattenberg**	**5.58**	**315**⇓	*i*PN	**Pn**	**17 53 41.0**	**+0.6**
WTTA				*i* SN	**Sn**	**17 54 46.4**	**+0.6**
WATA	**Walderalm**	**5.66**	**315**⇑	*i*PN	**Pn**	**17 53 42.4**	**+0.9**
WATA				*i* SN	**Sn**	**17 54 48.9**	**+1.1**
SQTA	**Sankt Quirin**	**5.77**	**313**⇓	*i*PN	**Pn**	**17 53 44.5**	**+1.4**
SQTA				*i* SN	**Sn**	**17 54 51.8**	**+1.1**
VRAC	**Vranov** 0.5nm,0.3s,baz=158,slow=23,SNR=2.3	**5.89**	**355**	P	**Pn**	**17 53 44.0**	**-0.8**
VRAC				S	**Sn**	**17 54 51.5**	**-2.2**
MOTA	**Moosalm** 1.2nm,0.3s,baz=262,slow=23,SNR=5.2	**5.91**	**314**⇑	*i*PN	**Pn**	**17 53 45.7**	**+0.7**
MOTA				*i* SN	**Sn**	**17 54 54.4**	**+0.3**
GEC2	**GERESS Array S**	**5.98**	**336**	*e*Pn	**Pn**	**17 53 46.5**	**+0.4**
GEC2				*e*Sn	**Sn**	**17 54 53.7**	**-2.3**
GERES	**GERESS Array B** 2.9nm,0.3s,baz=158,slow=14,SNR=67	**5.98**	**336**	P	**Pn**	**17 53 46.1**	**0.0**
GERES				S	**Sn**	**17 54 52.9**	**-3.0**
CRVS	**Cervenica-Dubn** 2.6nm,0.3s,baz=143,slow=23,SNR=9.8	**6.14**	**26**	*i* PN	**Pn**	**17 53 48.1**	**-0.2**
PGF	**Pioggiola** 1.5nm,0.3s	**6.23**	**265**	*e*Pn	**Pn**	**17 53 48.9**	**-0.7**
PGF				*e*Sn	**Sn**	**17 54 58.3**	**-3.8**
KHC	**Kasperske Hory**	**6.28**	**336**	*e*PN	**Pn**	**17 53 50.5**	**+0.3**
KHC				*e*SN	**Sn**	**17 54 57.6**	**-5.7**
DAVOX	**Davos** 1.6nm,0.3s,baz=147,slow=15,SNR=9.5	**6.28**	**305**	P	**Pn**	**17 53 49.9**	**-0.4**
DAVOX				S	**Sn**	**17 55 01.2**	**-2.2**
MORC	**Moravsky Berou** 4.0nm,0.6s	**6.34**	**1**	*e*Pn	**Pn**	**17 53 50.0**	**-1.1**
MORC				*e*Sn	**Sn**	**17 55 01.6**	**-3.1**
OKC	**Ostrava-Krasne**	**6.42**	**4**	*e*SN	**Sn**	**17 55 01.2**	**-5.6**
MLR	**Muntele Rosu** 0.2nm,0.3s,baz=194,slow=12,SNR=3.5	**6.44**	**69**	P	**Pn**	**17 53 55.9**	**+3.4**
MLR				S	**Sn**	**17 55 09.4**	**+2.0**
WET	**Wettzell** 0.3nm,0.3s,baz=313,slow=21,SNR=2.7	**6.51**	**333**	*e*Pn	**Pn**	**17 53 53.5**	**0.0**
WET				*e*Sn	**Sn**	**17 55 05.8**	**-3.2**
DAVA	**Damuels**	**6.55**	**309**⇑	*i*PN	**Pn**	**17 53 54.9**	**+0.9**
DAVA				*i* SN	**Sn**	**17 55 11.2**	**+1.2**
PRU	**Pruhonice**	**6.84**	**344**	*e*SN	**Sn**	**17 55 11.5**	**-5.8**
DPC	**Dobruska-Polom**	**6.95**	**354**	*e*PN	**Pn**	**17 53 59.6**	**-0.1**
DPC				*e*SN	**Sn**	**17 55 14.4**	**-5.7**
SBF	**Sospel** 8.7nm,0.3s	**7.25**	**277**	*e*Pn	**Pn**	**17 54 02.0**	**-1.9**
SBF				*e*Sn	**Sn**	**17 55 22.3**	**-5.2**
MBDF	**Montbardon** 6.9nm,0.4s	**7.76**	**283**	*e*Pn	**Pn**	**17 54 07.6**	**-3.5**
MBDF				*e*Sn	**Sn**	**17 55 34.4**	**-6.1**
FRF	**La Foret Royal** 4.2nm,0.4s	**7.83**	**275**	*e*Pn	**Pn**	**17 54 09.7**	**-2.3**
FRF				*e*Sn	**Sn**	**17 55 36.1**	**-5.9**
LPG	**La Plagne** 11nm,0.4s	**7.89**	**289**	*e*Pn	**Pn**	**17 54 10.3**	**-2.6**
LPG				*e*Sn	**Sn**	**17 55 35.8**	**-7.9**
LPL	**La Plagne** 9.9nm,0.3s	**7.91**	**289**	*e*Pn	**Pn**	**17 54 10.7**	**-2.5**
LPL				*e*Sn	**Sn**	**17 55 36.4**	**-7.7**
LMR	**La Mourre** 2.0nm,0.3s	**7.94**	**273**	*e*Pn	**Pn**	**17 54 10.8**	**-2.8**
LMR				*e*Sn	**Sn**	**17 55 38.9**	**-5.9**
BFO	**Black Forest**	**8.00**	**311**	*e*Pn	**Pn**	**17 54 14.8**	**+0.4**
BFO				*e*Sn	**Sn**	**17 55 41.0**	**-5.3**
MOX	**Moxa**	**8.21**	**333**	*i* P	**P**	**17 54 17.1**	**-0.3**
MOX	**Moxa**	**8.21**	**333**	*e*Pn	**P**	**17 54 17.1**	**-0.3**
ORIF	**Oris-en-Rattie** 7.2nm,0.4s	**8.42**	**284**	*e*Pn	**P**	**17 54 18.4**	**-1.8**
ORIF				*e*Sn	**Sn**	**17 55 49.7**	**-7.0**
HINF	**Hinteralfeld** 7.1nm,0.5s	**8.59**	**304**	*e*Pn	**P**	**17 54 20.0**	**-2.6**
HINF				*e*Sn	**Sn**	**17 55 53.2**	**-7.9**
CABF	**La Chapelle** 6.5nm,0.5s	**8.62**	**295**	*e*Pn	**P**	**17 54 19.5**	**-3.5**
CABF				*e*Sn	**Sn**	**17 55 54.0**	**-7.8**
CDF	**Champ du Feu** 2.5nm,0.4s	**8.63**	**309**	*e*Pn	**P**	**17 54 20.4**	**-2.8**
CDF				*e*Sn	**Sn**	**17 55 54.5**	**-7.6**
HAU	**Haudompre** 12nm,0.6s	**8.98**	**304**	*e*Sn	**Sn**	**17 56 02.2**	**-8.5**
VIVF	**Saint-Julien-l** 5.3nm,0.4s	**9.27**	**283**	*e*Pn	**P**	**17 54 28.3**	**-3.7**
SMF	**Signal de Mont**	**10.12**	**293**	*e*Pn	**P**	**17 54 40.9**	**-2.8**
SMF				*e*Sn	**S**	**17 56 29.1**	**-10**
LOR	**Lormes** 5.4nm,0.4s	**10.27**	**297**	*e*Pn	**P**	**17 54 43.2**	**-2.6**
LOR				*e*Sn	**S**	**17 56 32.8**	**-10**
SSF	**Saint Saulge** 5.0nm,0.6s	**10.45**	**295**	*e*Pn	**P**	**17 54 44.8**	**-3.4**
SSF				*e*Sn	**S**	**17 56 38.2**	**-8.6**
AVF	**Avril sur Loir** 2.4nm,0.4s	**10.48**	**293**	*e*Pn	**P**	**17 54 46.1**	**-2.5**
AVF				*e*Sn	**S**	**17 56 37.6**	**-10**
HFS	**Hagfors** 0.0nm,0.3s,baz=150,slow=12,SNR=4.0	**16.87**	**354**	P	**P**	**17 56 13.2**	**+0.3**
NOA	**NORSAR Array B** 0.1nm,0.3s,baz=165,slow=12,SNR=2.9	**18.01**	**350**	P	**P**	**17 56 26.4**	**-0.7**
FINES	**FINESS Array B** 0.1nm,0.3s,baz=225,slow=8.1,SNR=3.5	**18.76**	**13**	P	**P**	**17 56 35.8**	**-0.6**
ARCES	**ARCESS Array B** 1.4nm,0.4s,baz=187,slow=9.8,SNR=17	**26.49**	**6**	P	**P**	**17 57 52.0**	**-2.3**
BVAR	**Borovoye Array** 0.5nm,0.7s,mb3.6,baz=256,slow=6.1,SNR=4.9	**35.81**	**56**	P	**P**	**17 59 15.0**	**-1.7**
DBIC	**Dimbokro** 4.0nm,0.9s,mb4.0,baz=72,slow=6.4,SNR=3.2	**41.53**	**215**	P	**P**	**18 00 05.8**	**+1.1**
MKAR	**Makanchi Array** 0.2nm,0.5s,mb3.2,baz=274,slow=8.3,SNR=3.1	**44.74**	**62**	P	**P**	**18 00 30.1**	**-0.4**
YKA	**Yellowknife Ar** 0.1nm,0.5s,mb3.1,baz=38,slow=5.2,SNR=4.6	**67.64**	**338**	P	**P**	**18 03 11.5**	**-2.5**
ILAR	**Eielson Array** 0.2nm,0.5s,mb3.3,baz=14,slow=3.7,SNR=3.0	**71.42**	**353**	P	**P**	**18 03 34.4**	**-2.9**

IDC 26 17:52:31.5±2.9, 31.75S×178.32W, mb3.7/2, mb1 4.0/3, mb1mx3.8/14, ML3.0/1, 3C-1D, Error ellipse: s-maj=68.0km s-min=35.5km az=113.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera** 0.2nm,0.3s,baz=47,slow=23,SNR=3.9	**7.50**	**209**	Pn	Pn	17 54 21.2	-3.5
URZ				Sn	Sn	17 55 48.8	-2.7
ASAR	**Alice Springs** 0.5nm,0.6s,baz=108,slow=7.3,SNR=8.3	**42.78**	**269**	P	P	18 00 29.6	-2.9
WRA	**Warramunga Arr** 0.6nm,0.3s,baz=112,slow=8.0,SNR=6.7	**43.89**	**274**	P	P	18 00 41.5	-0.1
VNA3	**Neumayer Olymp**	**76.98**	**176**⇑	*i*	P	18 04 35.3	+8.3
VNA3	**Neumayer Olymp**	**76.98**	**176**⇑	*i*	P	18 04 45.3	+18
VNA2	**Neumayer--Watz**	**77.41**	**177**⇑	*i*	P	18 04 35.5	+6.1
VNA2	**Neumayer--Watz**	**77.41**	**177**⇓	*i*	P	18 04 44.2	+15
KAF	**Kangasniemi** 0.3nm,0.3s	**145.72**	**340**	*ep*	PKPbc	18 12 06.9	-4.9
FINES	**FINESS Array B** 2.0nm,0.9s,baz=63,slow=3.1,SNR=10	**146.31**	**339**	PKPbc	PKPbc	18 12 12.5	-0.8

*IDC **26** 17:53:31.0±3.3, 1.25N×97.94E, mb3.7/4, mb1 3.9/5, mb1mx3.7/18, ML4.1/1, Error ellipse: s-maj=123.0km s-min=22.6km az=61.0*
ISC 26 17:53:41.7±2.4, 1.4N±0.2×98.0E±0.2, h104km±18km, n9, σ0s89/9, mb3.6/4, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PSI	**Prapat**	**1.57**	**34**	*e*Pn	**P**	**17 54 09.4**	**-0.1**
PSI	**Prapat**	**1.57**	**34**	*e*Sn	**S**	**17 54 23.0**	**-7.3**
TSI	**Tuntungan**	**2.17**	**14**	*e*Pn	**P**	**17 54 18.0**	**+0.8**
BSI	**Banda Aceh**	**4.91**	**326**	*e*Sn	**P**	**17 54 54.5**	**-0.1**
CMAR	**Chiang Mai Arr** 0.2nm,0.3s,baz=192,slow=11,SNR=11	**16.99**	**3**	P	**P**	**17 57 32.3**	**-2.0**
WRA	**Warramunga Arr** 0.9nm,0.3s,mb4.0,baz=303,slow=9.0,SNR=5.7	**41.43**	**123**	P	**P**	**18 01 19.1**	**-0.6**
ASAR	**Alice Springs** 0.4nm,0.7s,mb3.3

	0.6nm,0.7s								
VNDA	**Vanda**	**63.04**	**185**		P	P	18 55 28.8	-3.4	
	1.0nm,1.1s,baz=30,slow=7.3,SNR=3.5								
BRTR	**Keskin Array B**	**145.02**	**319**		PKPbc	PKPbc	19 04 39.8	-1.3	
	0.8nm,0.6s,baz=71,slow=2.8,SNR=5.7								
MLR	**Muntele Rosu**	**145.16**	**333**		PKPbc	PKPbc	19 04 41.2	0.0	
	1.1nm,0.8s,baz=315,slow=5.7,SNR=3.6								

*IDC **26** 18:47:32.9±1.9,60.01N×25.40E,mb1 2.9/3, mb1mx2.8/21,ML2.4/3,Error ellipse: s-maj=19.5km s-min=6.9km az=140.0*
*NAO **26** 18:47:34.1±3.7,60.26N×25.16E,ML2.2*
*BER **26** 18:47:34.4±3.0,60.19N×25.31E,h0km±17km, ML2.2(NAO)*
HEL 26 18:47:33.7±0.1,60.16N×25.22E,ML1.6,ML2.0(UPP), **ML2.2**(NAO),**Explosion, Finland**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MEF	**Metsahovi**	**0.42**	**278**	*e*P	Pg	18 47 41.2	-0.7
MEF				*e*S	Sg	18 47 46.7	-0.9
PVF	**Pernaja**	**0.50**	**39**	*e*P	Pg	18 47 42.7	-1.0
PVF				*e*S	Sg	18 47 49.0	-1.3
VJF	**Virojoki**	**1.22**	**71**	*e*P	Pb	18 47 55.5	-1.8
VJF				*e*S	Sb	18 48 11.6	-2.0
FIA0	**FINESS Array S**	**1.35**	**18**	*e*P	Pb	18 47 58.1	-1.5
FIA0				*e*S	Sb	18 48 15.1	-2.3
FIA0	**FINESS Array S**	**1.35**	**18**	Pn	Pn	18 47 58.1	-1.7
	baz=200,slow=12						
FIA0				Lg		18 48 15.0	
	baz=194,slow=37						
FINES	**FINESS Array B**	**1.35**	**18**	Pg	Pg	18 47 58.2	-2.5
	2.2nm,0.3s,baz=196,slow=17,SNR=95						
FINES				Lg		18 48 19.9	
	6.5nm,0.3s,baz=195,slow=30,SNR=22						
KEF	**Keuruu**	**2.02**	**355**	MSG		18 48 38.1	
	comp=Z,3.7nm,0.1s						
KAF	**Kangasniemi**	**2.03**	**15**	MSG		18 48 39.3	
	comp=Z,2.1nm,0.1s						
SUF	**Sumiainen**	**2.60**	**9**	MSG		18 48 53.4	
	comp=Z,1.3nm,0.1s						
HFS	**Hagfors**	**5.76**	**275**	Pn	Pn	18 48 60.0	-2.5
	baz=93,slow=10						
HFS				Sn	Sn	18 50 05.5	-4.8
	baz=81,slow=28						
HFS				Lg		18 50 31.5	
	baz=93,slow=37						
HFS	**Hagfors**	**5.76**	**275**	*e*P	Pn	18 48 60.0	-2.5
HFS				*e*S	Sn	18 50 05.5	-4.8
HFS				*e*SG	Sg	18 50 31.5	-14
HFS	**Hagfors**	**5.76**	**275**	Pn	Pn	18 49 00.3	-2.2
	comp=Z,0.0nm,0.3s,baz=92,slow=13,SNR=4.0						
HFS				Sn	Sn	18 50 05.4	-4.9
	comp=Z,0.1nm,0.3s,baz=81,slow=28,SNR=6.2						
HFS				Lg		18 50 33.7	
	comp=Z,0.1nm,0.3s,baz=93,slow=32,SNR=4.2						
NB2	**NORSAR Subarra**	**6.95**	**283**	*e*P	Pn	18 49 15.7	-3.7
NB2				*e*S	Sn	18 50 32.7	-7.4
NB2				*e*SG	Sg	18 51 09.4	-16
NOA	**NORSAR Array B**	**6.95**	**283**	Pn	Pn	18 49 15.3	-4.1
	comp=Z,0.1nm,0.3s,baz=39,slow=22,SNR=2.3						
NOA				Sn	Sn	18 50 32.5	-7.6
	baz=295,slow=19,SNR=1.8						
ARA0	**ARCESS Array S**	**9.41**	**1**	Pn	P	18 49 48.8	-4.9
	baz=178,slow=12						
ARA0	**ARCESS Array S**	**9.41**	**1**	*e*P	P	18 49 48.8	-4.9
ARCES	**ARCESS Array B**	**9.41**	**1**	Pn	P	18 49 48.5	-5.1
	comp=Z,0.1nm,0.3s,baz=180,slow=12,SNR=8.4						

*IDC **26** 19:01:32.0±2.0,14.70S×167.92E,mb3.8/5,mb1 4.0/5, mb1mx3.8/16,Error ellipse: s-maj=50.1km s-min=36.8km az=0.0*
*NEIC **26** 19:01:49.4±3.6,14.91S×167.60E,h133km±24km,mb4.0/3, Error ellipse: s-maj=38.2km s-min=15.5km az=205.0*
ISC 26 19:01:51.9±2.2,15.2S±0.2×167.5E±0.2,h158km±17km, **n14,σ0s78/15,mb3.8/6,1C,Vanuatu Islands**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BKM	**Butte a Klehm**	**2.57**	**163**	⇑*i*P	**P**	**19 02 33.4**	**-1.4**
BKM					**S**	**19 03 08.6**	**+0.8**
DZM	**Mont Dzumac**	**6.90**	**188**	*e*P	**P**	**19 03 32.3**	**+0.7**
DZM				*e*S	**S**	**19 04 48.4**	**-0.8**
NOUC	**Port Laguerre**	**6.95**	**189**	*e*P	**P**	**19 03 32.8**	**+0.6**
CTA	**Charters Tower**	**20.77**	**253**	P	**P**	**19 06 23.1**	**+1.3**
	0.9nm,0.7s,baz=103,slow=5.0,SNR=3.9						
CTAO	**Charters Tower**	**20.77**	**253**	*e*P	**P**	**19 06 22.7**	**+0.9**
STKA	**Stephens Creek**	**28.82**	**230**	P	**P**	**19 07 37.7**	**+0.2**
	2.9nm,0.4s,mb4.3,baz=44,slow=7.6,SNR=14						
STKA	**Stephens Creek**	**28.82**	**230**	P	**P**	**19 07 37.7**	**+0.2**
WRAB	**Tennant Creek**	**31.87**	**257**	P	**P**	**19 08 03.6**	**-0.7**
	3.4nm,0.8s,mb4.1						
WRA	**Warramunga Arr**	**31.88**	**257**	P	**P**	**19 08 04.9**	**+0.4**
	0.3nm,0.8s,mb3.1,baz=80,slow=6.7,SNR=4.7						
ASAR	**Alice Springs**	**32.67**	**250**	P	**P**	**19 08 10.1**	**-1.1**
	1.9nm,0.8s,mb3.9,baz=77,slow=9.6,SNR=28						
VNDA	**Vanda**	**62.40**	**181**	P	**P**	**19 11 59.9**	**+0.1**
	0.5nm,0.4s,mb3.7,baz=357,slow=6.2,SNR=8.3						
VNDA	**Vanda**	**62.40**	**181**	*e*P	**P**	**19 11 59.4**	**-0.4**
	0.2nm,0.4s,mb3.3						
SBA	**Scott Base**	**62.67**	**180**	*e*P	**P**	**19 12 02.0**	**+0.4**
	1.8nm,0.7s,mb4.0						
ARCES	**ARCESS Array B**	**120.75**	**345**	PKP	PKPdf	19 20 24.6	0.0
	1.1nm,0.9s,baz=45,slow=3.4,SNR=6.1						

*NEIC **26** 19:24:41.9,49.37N×6.86E,h1km,ML2.7(LDG), ML2.6(STR),ML2.0(SZGRF),After LDG.*
*BGR **26** 19:24:41.8±0.2,49.37N×6.89E,h1km,ML2.2/1,Error ellipse: s-maj=2.2km s-min=1.1km az=69.0*
*LDG **26** 19:24:41.9±0.1,49.37N×6.86E,h1km,Md2.8/1,Ml2.7/14, Error ellipse: s-maj=1.1km s-min=0.9km az=91.0, Suspected Mining induced.*
*BNS **26** 19:24:43.6±1.1,49.45N×6.91E,h1km,ML2.0*
ISC 26 19:24:39.9±0.3,49.35N±0.01×6.82E±0.03,n40,σ1s20/83, Germany

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RUP	**Ruppelstein**	**0.38**	**24**	*e*Pg	**Pg**	**19 24 48.7**	**+1.3**
	SNR=25						
WLF	**Walferdange**	**0.54**	**306**	*e*Pg	**Pg**	**19 24 52.9**	**+2.3**
	SNR=5.4						
WLF				*e*Sg	**Sg**	**19 24 59.8**	**+2.0**
	SNR=7.5						
WLF	**Walferdange**	**0.54**	**306**	*e*P	**Pg**	**19 24 52.5**	**+1.9**
ABH	**Alteburg**	**0.71**	**41**	*e*Pg	**Pg**	**19 24 54.2**	**+0.2**
	SNR=3.6						
LANF	**Langenberg**	**0.74**	**120**	*e*Pg	**Pg**	**19 24 55.4**	**+0.7**
	SNR=4.2						
BGG	**Burgeitz**	**0.92**	**21**	*e*Pg	**Pg**	**19 24 58.4**	**+0.2**
BGG				*e*Sg	**Sg**	**19 25 10.1**	**-0.3**
	44nm,0.7s						
CDF	**Champ du Feu**	**0.99**	**162**	*e*Pg	**Pg**	**19 25 00.8**	**+1.2**
	SNR=1.0						
CDF				*e*Pn	**Pn**	**19 25 01.1**	**+0.3**
CDF				*e*Sg	**Sg**	**19 25 13.2**	**+0.4**
	12nm,0.2s,SNR=1.0						
CDF				*e*Sn	**Sn**	**19 25 15.3**	**-0.4**
RFYF	**Reffroy**	**1.15**	**231**	*e*Pg	**Pg**	**19 25 04.5**	**+1.7**
RFYF				*e*Sg	**Sg**	**19 25 19.3**	**+1.2**
	19nm,0.2s						
ECH	**Echery**	**1.16**	**169**	*e*Pg	**Pg**	**19 25 04.0**	**+1.0**
	SNR=6.9						
ECH				*e*Sg	**Sg**	**19 25 19.0**	**+0.5**
	SNR=8.2						
ECH	**Echery**	**1.16**	**169**	P	**Pb**	**19 25 04.0**	**+1.5**
ECH				S	**Sb**	**19 25 19.0**	**+1.1**
STB	**Steinbach**	**1.24**	**0**	*e*Pg	**Pg**	**19 25 05.2**	**+0.5**
STB				*e*Sg	**Sg**	**19 25 21.4**	**+0.1**
	19nm,0.9s						
THEF	**They Montfort**	**1.26**	**206**	*e*Pg	**Pg**	**19 25 05.4**	**+0.5**
	SNR=11						
THEF				*e*Sg	**Sg**	**19 25 22.4**	**+0.7**
	SNR=2.2						
THEF	**They Montfort**	**1.26**	**206**	P	**Pb**	**19 25 05.4**	**+1.3**
THEF				S	**Sb**	**19 25 23.2**	**+2.5**
TOD	**Tromm**	**1.32**	**78**	*e*Pg	**Pg**	**19 25 05.4**	**-0.7**
	SNR=7.3						
TOD				*e*Sg	**Sg**	**19 25 22.5**	**-1.2**
	SNR=3.0						
KLL	**Kalltalsperre**	**1.34**	**346**	*e*Pg	**Pg**	**19 25 06.3**	**-0.2**

HAU	**Haudompre**	**1.39**	**193**	*e*Pg		**Pg**	**19 25 08.0**	**+0.5**	
	SNR=1.0								
HAU				*e*Sg		**Sg**	**19 25 26.7**	**+0.7**	
	17nm,0.3s,SNR=1.0								
BFO	**Black Forest**	**1.43**	**135**	*e*Pg		**Pg**	**19 25 08.6**	**+0.2**	
	SNR=4.3								
BFO				*e*Sg		**Sg**	**19 25 26.1**	**-1.3**	
	SNR=7.0								
BFO	**Black Forest**	**1.43**	**135**	*e*Pg		**Pg**	**19 25 08.6**	**+0.2**	
BFO				*e*Sg		**Sg**	**19 25 26.9**	**-0.5**	
MEZF	**Maizieres J'vi**	**1.45**	**235**	*e*Pg		**Pg**	**19 25 09.4**	**+0.7**	
	SNR=1.0								
MEZF				*e*Sg		**Sg**	**19 25 28.3**	**+0.3**	
	11nm,0.3s,SNR=1.0								
GIVF	**Givet**	**1.50**	**301**	*e*Pn		**Pn**	**19 25 07.4**	**-0.7**	
	SNR=1.0								
GIVF				*e*Pg		**Pg**	**19 25 09.9**	**+0.1**	
	SNR=1.0								
GIVF				*e*Sn		**Sn**	**19 25 27.1**	**-1.5**	
GIVF				*e*Sg		**Sg**	**19 25 29.2**	**-0.6**	
	26nm,0.4s,SNR=1.0								
MOF	**Molkenrain**	**1.52**	**172**	*e*Pg		**Pg**	**19 25 10.5**	**+0.4**	
	SNR=7.0								
MOF				*e*Sg		**Sg**	**19 25 30.6**	**+0.3**	
	SNR=6.3								
MOF	**Molkenrain**	**1.52**	**172**	P		**Pn**	**19 25 10.3**	**+1.9**	
MOF				S		**Sb**	**19 25 30.7**	**+2.4**	
HGN	**Heimansgroeve**	**1.52**	**338**	*e*Pg		**Pg**	**19 25 10.9**	**+0.6**	
	SNR=3.5								
HGN				*e*Sg		**Sg**	**19 25 29.2**	**-1.4**	
	SNR=3.6								
HGN	**Heimansgroeve**	**1.52**	**338**	*e*Pg		**Pg**	**19 25 09.7**	**-0.6**	
	2.1nm,0.3s								
HGN				*ex*		x	19 25 10.9		
HGN				*e*Sg		**Sg**	**19 25 28.8**	**-1.9**	
HINF	**Hinteralfeld**	**1.54**	**179**	*e*Pn		**Pn**	**19 25 09.1**	**+0.4**	
	SNR=1.0								
HINF				*e*Pg		**Pg**	**19 25 10.7**	**+0.1**	
HINF				*e*Sg		**Sg**	**19 25 31.0**	**-0.1**	
	30nm,0.2s,SNR=1.0								
SFTF	**Sexfontaines**	**1.65**	**226**	*e*Pn		**Pn**	**19 25 11.0**	**+0.8**	
SFTF				*e*Sg		**Sg**	**19 25 34.8**	**+0.1**	
	8.5nm,0.2s								
FELD	**Feldberg**	**1.67**	**152**	*e*Pg		**Pg**	**19 25 13.5**	**+0.3**	
	SNR=3.6								
FELD				*e*Sg		**Sg**	**19 25 34.7**	**-0.8**	
	SNR=8.7								
FELD	**Feldberg**	**1.67**	**152**	P		**Pn**	**19 25 13.6**	**+3.0**	
FELD				S		**Sb**	**19 25 34.7**	**+1.9**	
BAIF	**Baives**	**1.84**	**294**	*e*Pn		**Pn**	**19 25 13.4**	**+0.4**	
	SNR=1.0								
BAIF				*e*Pg		**Pg**	**19 25 16.5**	**-0.1**	
	SNR=1.0								
BAIF				*e*Sg		**Sg**	**19 25 40.4**	**-0.7**	
	8.6nm,0.3s								
SLE	**Schleitheim**	**1.94**	**144**	*e*Pg		**Pg**	**19 25 17.9**	**-0.7**	
	SNR=2.1								
SLE				*e*Sg		**Sg**	**19 25 42.5**	**-1.9**	
BOURR	**Bourrignon**	**1.98**	**172**	*e*Pg		**Pg**	**19 25 19.5**	**+0.1**	
	SNR=2.2								
BOURR				*e*Sg		**Sg**	**19 25 45.1**	**-0.7**	
	SNR=2.8								
SULZ	**Sulz-Cheisache**	**2.02**	**154**	*e*Sg		**Sg**	**19 25 45.6**	**-1.5**	
	SNR=2.1								
WILA	**Wila**	**2.39**	**144**	*e*Sg		**Sg**	**19 25 57.3**	**-2.0**	
	SNR=3.4								
CABF	**La Chapelle**	**2.79**	**190**	*e*Pn		**Pn**	**19 25 26.5**	**0.0**	
	SNR=1.0								
CABF				*e*Pg		**Pg**	**19 25 34.0**	**-1.5**	
	SNR=1.0								
CABF				*e*Sg		**Sg**	**19 26 10.5**	**-2.2**	
	9.6nm,0.6s,SNR=1.0								
LOR	**Lormes**	**2.88**	**225**	*e*Pn		**Pn**	**19 25 27.2**	**-0.6**	
	SNR=1.0								
LOR				*e*Pg		**Pg**	**19 25 39.0**	**+1.7**	
	SNR=1.0								
LOR				*e*Sn		**Sn**	**19 26 01.1**	**-2.5**	
	7.0nm,0.3s,SNR=1.0								
LOR				*e*Sg		**Sg**	**19 26 12.9**	**-2.7**	
SSF	**Saint Saulge**	**3.19**	**225**	*e*Pn		**Pn**	**19 25 31.5**	**-0.8**	
	SNR=1.0								
SSF				*e*Sn		**Sn**	**19 26 08.7**	**-2.9**	
	3.6nm,0.3s,SNR=1.0								
SMF	**Signal de Mont**	**3.37**	**218**	*e*Pn		**Pn**	**19 25 33.7**	**-1.1**	
	SNR=1.0								
SMF				*e*Pg		**Pg**	**19 25 46.6**	**-0.5**	
	SNR=1.0								
SMF				*e*Sn		**Sn**	**19 26 12.4**	**-3.7**	
	SNR=1.0								
SMF				*e*Sg		**Sg**	**19 26 28.9**	**-3.1**	
	2.9nm,0.2s,SNR=1.0								
AVF	**Avril sur Loir**	**3.46**	**224**	*e*Pn		**Pn**	**19 25 34.9**	**-1.2**	
	SNR=1.0								
AVF				*e*Sn		**Sn**	**19 26 15.0**	**-3.5**	
	3.0nm,0.4s,SNR=1.0								
BGF	**Bois d'Agland**	**3.87**	**225**	*e*Pn		**Pn**	**19 25 40.0**	**-1.9**	
	SNR=1.0								
BGF				*e*Sn		**Sn**	**19 26 24.9**	**-3.8**	
LDF	**La Druitiere**	**4.64**	**263**	*e*Sn		**Sn**	**19 26 42.8**	**-5.4**	

DJA 26 19:39:26.8±1.1,7.28S×115.78E,h80km,**MD4.5/1, ML3.8/1,2C-4D,Error ellipse: s-maj=30.4km s-min=14.6km az=31.0,Bali Sea**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KEDI	**Kedomdong**	**1.24**	**165**	⇑*e*Pn	P	19 39 48.2	-0.9
	116nm,0.2s						
KEDI				⇓*e*Sn	S	19 40 05.6	-0.3
RATI	**Rata**	**1.45**	**190**	⇓*e*Pn	P	19 39 50.9	-1.1
RATI				⇓*e*Sn	S	19 40 08.3	-2.3
KELI	**Kelakatan**	**1.58**	**234**	⇑*e*Pn	P	19 39 53.1	-0.6
INGI	**Ingas**	**1.65**	**202**	⇓*i*Pn	P	19 39 54.3	-0.3

*IDC **26** 19:52:36.6±0.5,52.74S×18.68E,mb4.6/13,mb1 4.6/13, mb1mx4.4/20,MS4.5/16,Ms1 4.5/16,ms1mx4.4/22,Error ellipse: s-maj=22.4km s-min=15.5km az=54.0*
*NEIC **26** 19:52:38.0±0.2,52.66S×18.61E,h10km,mb4.9/6, MS4.5/8,Error ellipse: s-maj=10.9km s-min=7.1km az=89.0*
*BJI **26** 19:52:37.9,52.70S×18.60E,h10km,mB5.2,Ms5.0, Msz4.9*
*SYO **26** 19:52:37.9,52.66S×18.61E,h10km,MB4.9,MS4.5*
*HRVD **26** 19:52:38.0±0.2,52.78S×18.89E,h12km,MW5.2/63, Centroid moment Tensor Solution. LP body waves: s35,c53;Mantle waves: s63,c109; Half duration: 1s0 Moment tensor: Scale 10^17^Nm; Mrr=0.76±.02; Mθθ0.56±.02; Mφφ0.19±.02; Mrθ0.39±.06; Mθφ-0.23±.01; Mφr-0.07±.06; Best double couple: M0.82×10^17^ NP1: φs121°,δ31°,λ-79°. NP2:φs289°,δ59°,λ-96°. Principal axes: T.77, Plg14°, Azm23°; N.09, Plg5°, Azm292°; P -.86, Plg75°, Azm182°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
ISC 26 19:52:36.4±0.4,52.65S±0.06×18.6E±0.2,h10km,**n71, σ1s12/36,mb4.7/14,MS4.6/21,7C-4D,Southwest of Africa**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MAIT	**Maitri**	**18.46**	**187**	*e*P	**P**	**19 56 54.4**	**+0.7**
SYO	**Syowa Base**	**19.15**	**157**	⇓P	**P**	**19 57 00.8**	**-1.2**
SYO	**Syowa Base**	**19.15**	**157**	⇑pP		19 57 03.0	
SYO	**Syowa Base**	**19.15**	**157**	⇓pP		19 57 10.1	
SYO	**Syowa Base**	**19.15**	**157**	⇑sP		19 57 13.8	
SYO	**Syowa Base**	**19.15**	**157**	⇓*e*P	**P**	**19 57 00.8**	**-1.2**
SYO				*e*pP		19 57 03.0	
SYO				*e*pP		19 57 10.1	
SYO				*e*sP		19 57 13.8	
SUR	**Sutherland**	**20.32**	**5**	P	**P**	**19 57 14.3**	**-0.9**
	15nm,0.7s,baz=186,slow=10,SNR=16						
SUR				S	**S**	**20 00 49.3**	**-8.3**
	3.2nm,0.6s,baz=181,slow=16,SNR=5.7						
SUR				LR	LR	20 03 17.4	
	comp=Z,2μm,20.2s,MS4.5,baz=359,slow=31						
SUR	**Sutherland**	**20.32**	**5**	*e*P	**P**	**19 57 14.7**	**-0.5**
	172nm,1.6s						
SUR				LR	LR		
	comp=Z,3μm,19.0s,MS4.6						
SNAA	**Sanae**	**21.31**	**199**	*e*P	**P**	**19 57 23.9**	**-1.2**
VNA2	**Neumayer--Watz**	**21.74**	**203**	⇑*i*	**P**	**19 57 30.8**	**+1.3**
VNA2	**Neumayer--Watz**	**21.74**	**203**	⇓*i*	**P**	**19 57 32.8**	**+3.3**

VNA2	**Neumayer--Watz**	**21.74**	**203**	⇑*i*		**P**	**19 57 33.8**	**+4.3**	
VNA1	**Neumayer--Stat**	**21.76**	**204**			**P**	**19 57 30.4**	**+0.7**	
VNA1	**Neumayer--Stat**	**21.76**	**204**	⇑*i*		**P**	**19 57 32.4**	**+2.7**	
VNA3	**Neumayer Olymp**	**22.50**	**204**	⇑*i*		**P**	**19 57 36.9**	**0.0**	
VNA3	**Neumayer Olymp**	**22.50**	**204**	⇑*i*		**P**	**19 57 39.9**	**+3.0**	
MAW	**Mawson**	**25.89**	**142**	*e*P		**P**	**19 58 10.1**	**+0.6**	
	comp=Z,15nm,1.0s,mb4.5								
MAW	**Mawson**	**25.89**	**142**	P		**P**	**19 58 09.6**	**+0.1**	
	comp=Z,15nm,0.9s,mb4.5,baz=283,slow=8.9,SNR=16								
MAW				LR		LR	20 06 16.6		
	comp=Z,769nm,20.5s,MS4.2,baz=292,slow=32								
LBTB	**Lobatse**	**28.09**	**14**	*e*P		**P**	**19 58 29.9**	**-0.3**	
LBTB				LR		LR			
	comp=Z,1μm,21.0s,MS4.4								
TSUM	**Tsumeb**	**33.39**	**358**	P		**P**	**19 59 17.9**	**+0.9**	
	comp=Z,2.7nm,1.0s,mb4.1,baz=175,slow=9.7,SNR=5.5								
TSUM				LR		LR	20 10 34.1		
	comp=Z,1μm,21.2s,MS4.7,baz=177,slow=32								
QSPA	**South Pole Qui**	**37.58**	**180**	*e*P		**P**	**19 59 51.2**	**-0.9**	
	comp=Z,46nm,1.0s,mb5.2								
QSPA				*e*			20 03 23.5		
QSPA				LR		LR			
	comp=Z,2μm,19.2s,MS4.8								
VNDA	**Vanda**	**48.11**	**170**	P		**P**	**20 01 15.2**	**-2.2**	
	comp=Z,9.0nm,1.1s,mb4.7,baz=234,slow=8.0,SNR=24								
VNDA				LR		LR	20 20 30.2		
	comp=Z,967nm,18.9s,MS4.8,baz=199,slow=35								
VNDA	**Vanda**	**48.11**	**170**	*e*P		**P**	**20 01 16.4**	**-1.0**	
	comp=Z,11nm,1.3s,mb4.7								
VNDA				LR		LR			
	comp=Z,611nm,22.0s,MS4.5								
SBA	**Scott Base**	**48.29**	**171**	*e*P		**P**	**20 01 19.1**	**+0.2**	
	comp=Z,104nm,1.9s,mb5.5								
SBA				LR		LR			
	comp=Z,2μm,21.0s,MS5.0								
USHA	**Ushuaia**	**48.33**	**231**	LR		LR	20 16 17.3		
	comp=Z,1μm,20.8s,MS4.8,baz=73,slow=29								
KMBO	**Kilima Mbogo**	**53.65**	**23**	LR		LR	20 23 17.3		
	comp=Z,582nm,20.5s,MS4.6,baz=276,slow=34								
TRQA	**Tornquist**	**55.58**	**251**	P		**P**	**20 02 12.8**	**-1.3**	
CPUP	**Villa Florida**	**61.15**	**264**	P		**P**	**20 02 52.5**	**-0.6**	
	comp=Z,11nm,1.1s,mb4.9,baz=120,slow=5.6,SNR=5.1								
CPUP				LR		LR	20 24 25.2		
	comp=Z,162nm,20.4s,MS4.2,baz=168,slow=31								
CPUP	**Villa Florida**	**61.15**	**264**	*e*P		**P**	**20 02 52.2**	**-1.0**	
CPUP				LR		LR			
	comp=Z,204nm,21.0s,MS4.2								
DBIC	**Dimbokro**	**62.38**	**333**	P		**P**	**20 02 60.0**	**-1.7**	
	comp=Z,2.8nm,0.7s,mb4.5,baz=141,slow=8.4,SNR=3.7								
DBIC				LR		LR	20 23 27.6		
	comp=Z,395nm,21.6s,MS4.5,baz=141,slow=30								
DBIC	**Dimbokro**	**62.38**	**333**	*e*P		**P**	**20 03 00.1**	**-1.5**	
DBIC				LR		LR			
	comp=Z,293nm,22.0s,MS4.4								
BDFB	**Brasilia**	**63.56**	**279**	LR		LR	20 25 37.5		
	comp=Z,194nm,19.5s,MS4.3,baz=17,slow=31								
NWAO	**Narrogin (SRO)**	**69.38**	**117**	P		**P**	**20 03 45.6**	**-0.5**	
	comp=Z,8.0nm,0.9s,mb4.7,baz=180,slow=6.6,SNR=4.5								
LVC	**Limon Verde**	**70.89**	**258**	P		**P**	**20 03 55.7**	**+1.0**	
	comp=Z,7.3nm,1.1s,mb4.5,baz=141,slow=3.0,SNR=3.3								
LVC	**Limon Verde**	**70.89**	**258**	*e*P		**P**	**20 03 55.7**	**+0.2**	
LPAZ	**La Paz**	**75.28**	**262**	P		**P**	**20 04 22.7**	**+1.4**	
	comp=Z,10nm,1.3s,mb4.6,baz=138,slow=5.6,SNR=12								
LPAZ	**La Paz**	**75.28**	**262**	*e*P		**P**	**20 04 22.2**	**+0.9**	
	comp=Z,4.9nm,1.2s,mb4.3								
LPAZ				LR		LR			
	comp=Z,322nm,22.0s,MS4.6								
STKA	**Stephens Creek**	**82.27**	**134**	P		**P**	**20 05 00.1**	**+1.0**	
	comp=Z,7.2nm,0.9s,mb4.6,baz=177,slow=2.9,SNR=11								
ASAR	**Alice Springs**	**85.53**	**124**	P		**P**	**20 05 16.2**	**+0.5**	
	comp=Z,3.9nm,0.8s,mb4.7,baz=205,slow=5.8,SNR=25								
ASAR				LR		LR	20 36 45.2		
	comp=Z,112nm,19.7s,MS4.3,baz=194,slow=31								
ASF	**Jabal al Asfar**	**85.96**	**15**	P		**P**	**20 05 20.3**	**+2.6**	
	comp=Z,1.4nm,0.5s,mb4.5,baz=248,slow=4.3,SNR=4.0								
WRA	**Warramunga Arr**	**88.85**	**122**	P		**P**	**20 05 32.0**	**+0.1**	
	comp=Z,3.8nm,1.0s,mb4.7,baz=203,slow=3.5,SNR=15								
THR	**Tehran**	**92.62**	**26**	LR		LR	20 45 18.0		
	comp=Z,256nm,22.0s,MS4.6,baz=164,slow=34								
BRTR	**Keskin Array B**	**92.92**	**12**	LR		LR	20 53 03.8		
	comp=Z,249nm,18.9s,MS4.7,baz=195,slow=39								
PCRV	**Puerto La Cruz**	**93.94**	**281**	LR		LR	20 42 43.4		
	comp=Z,190nm,21.2s,MS4.5,baz=137,slow=32								
ROSC	**El Rosal**	**95.62**	**271**	LR		LR	20 47 38.4		
	comp=Z,250nm,19.1s,MS4.7,baz=208,slow=34								
SDV	**Santo Domingo**	**96.54**	**276**	LR		LR	20 46 20.8		
	comp=Z,176nm,21.5s,MS4.5,baz=146,slow=33								
CMAR	**Chiang Mai Arr**	**98.76**	**71**	LR		LR	20 44 43.2		
	comp=Z,96nm,19.0s,MS4.3,baz=175,slow=32								
WMQ	**Urumqi**	**112.93**	**47**	PKP		PKPdf	20 11 15.5	-0.5	

ISC 26 19:57:27.4±3.3, 10.6S±0.2×115.8E±0.3, h30km, n5, σ0§37/7, 2C-5D, South of Bali

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RATI	**Rata**	**1.89**	**351**	*e*Pn	**Pn**	**19 57 58.0**	**-0.3**
RATI				↑*e*Sn	**Sn**	**19 58 21.1**	**-0.2**
INGI	**Ingas**	**1.90**	**339**	↓*e*Pn	**Pn**	**19 57 58.0**	**-0.3**
KEDI	**Kedomdong**	**2.12**	**8**	↓*e*P	**Pn**	**19 58 01.2**	**-0.4**
	228nm,0.2s						
KEDI	**Kedomdong**	**2.12**	**8**	↓*e*P	**Pn**	**19 58 02.0**	**+0.4**
KEDI				↑*e*Sn	**Sn**	**19 58 27.5**	**+0.3**
KELI	**Kelakatan**	**2.71**	**331**	↓*e*Pn	**Pn**	**19 58 10.6**	**+0.6**
	43nm,0.2s						

*NAO **26** 20:02:28.9±1.3,59.72N×24.52E,ML2.7*
*HEL **26** 20:02:29.0±0.1,59.70N×24.55E,ML2.3,ML2.7(NAO), Explosion*
*BER **26** 20:02:29.8±4.0,59.73N×24.59E,ML2.7(NAO)*
*IDC **26** 20:02:31.3±2.0,59.88N×24.42E,mb1 3.6/4, mb1mx3.3/22,ML3.5/4,Error ellipse: s-maj=21.2km s-min=6.0km az=147.0*

ISC 26 20:02:25.1±0.7, 59.65N±0.04×24.42E±0.07, n20, σ1§50/31, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MEF	**Metsahovi**	**0.57**	**359**	*e*P	**Pg**	**20 02 38.4**	**+1.9**
MEF				*e*S	**Sg**	**20 02 45.2**	**+1.1**
PVF	**Pernaja**	**1.15**	**38**	*e*P	**Pb**	**20 02 48.1**	**+0.5**
PVF				*e*S	**Sb**	**20 03 01.7**	**-1.3**
VSU	**Vasula**	**1.69**	**134**	*e*PN	**Pn**	**20 02 59.4**	**+3.3**
VSU				*e*SG	**Sg**	**20 03 20.7**	**-0.6**
VJF	**Virojoki**	**1.80**	**59**	*e*P	**Pn**	**20 02 59.4**	**+1.6**
VJF				*e*S	**Sn**	**20 03 21.9**	**+0.2**
FIA0	**FINESS Array S**	**1.98**	**24**	*e*P	**Pn**	**20 03 03.0**	**+2.8**
FIA0				*e*S	**Sn**	**20 03 26.0**	**0.0**
FIA0				MSG		20 03 30.5	
	comp=Z,16nm,0.2s						
FIA0	**FINESS Array S**	**1.98**	**24**	Pn	**Pn**	**20 03 03.1**	**+2.9**
	baz=194,slow=18						
FIA0				Lg		20 03 27.1	
	baz=218,slow=37						
FINES	**FINESS Array B**	**1.98**	**24**	Pg	**Pg**	**20 03 03.0**	**-1.6**
	comp=Z,14nm,0.3s,baz=196,slow=17,SNR=552						
FINES				Lg		20 03 26.9	
	comp=Z,14nm,0.3s,baz=207,slow=28,SNR=23						
KEF	**Keuruu**	**2.54**	**5**	MSG		20 03 47.3	
	comp=Z,13nm,0.2s						
KAF	**Kangasniemi**	**2.64**	**20**	MSG		20 03 49.2	
	comp=Z,10nm,0.2s						
HFS	**Hagfors**	**5.42**	**280**	Pn	**Pn**	**20 03 51.0**	**+1.8**
	baz=83,slow=16						
HFS				Sn	**Sn**	**20 04 53.8**	**+0.5**
	baz=91,slow=28						
HFS				Lg		20 05 17.1	
	baz=93,slow=37						
HFS	**Hagfors**	**5.42**	**280**	*e*P	**Pn**	**20 03 51.0**	**+1.8**
HFS				*e*S	**Sn**	**20 04 53.8**	**+0.5**
HFS				*e*SG	**Sg**	**20 05 17.1**	**-8.6**
HFS	**Hagfors**	**5.42**	**280**	Pn	**Pn**	**20 03 51.2**	**+2.0**
	comp=Z,0.2nm,0.3s,baz=110,slow=13,SNR=52						
HFS				Sn	**Sn**	**20 04 53.7**	**+0.4**
	comp=Z,0.5nm,0.3s,baz=87,slow=25,SNR=13						
HFS				Lg		20 05 18.6	
	comp=Z,0.6nm,0.3s,baz=90,slow=34,SNR=6.7						
NOA	**NORSAR Array B**	**6.70**	**288**	Pn	**Pn**	**20 04 07.1**	**-0.2**
	comp=Z,0.7nm,0.3s,baz=88,slow=15,SNR=4.8						
NOA				Sn	**Sn**	**20 05 21.8**	**-3.5**
	comp=Z,0.8nm,0.3s,baz=353,slow=19,SNR=3.5						
NOA				Lg		20 05 56.2	
	comp=Z,1.3nm,0.3s,baz=101,slow=17,SNR=4.6						
ARA0	**ARCESS Array S**	**9.94**	**2**	Pn	**P**	**20 04 49.9**	**-2.2**
	baz=174,slow=16						
ARA0				Sn	**Sn**	**20 06 35.1**	**-10**
	baz=190,slow=28						
ARA0	**ARCESS Array S**	**9.94**	**2**	*e*P	**P**	**20 04 49.9**	**-2.2**
ARA0				*e*S	**Sn**	**20 06 35.1**	**-10**
ARCES	**ARCESS Array B**	**9.94**	**2**	Pn	**P**	**20 04 49.9**	**-2.2**
	comp=Z,0.9nm,0.3s,baz=180,slow=12,SNR=69						
ARCES				Sn	**Sn**	**20 06 34.1**	**-11**
	comp=Z,0.1nm,0.3s,baz=171,slow=23,SNR=2.9						
BRG	**Berggiesshubel**	**10.62**	**219**	*e*Sg	**S**	**20 06 55.9**	**-6.5**
SPA0	**Spitsbergen Ar**	**18.80**	**355**	P	**P**	**20 06 48.3**	**+0.4**
	baz=177,slow=14						
SPA0	**Spitsbergen Ar**	**18.80**	**355**	*e*P	**P**	**20 06 48.3**	**+0.4**
SPITS	**Spitsbergen Ar**	**18.80**	**355**	P	**P**	**20 06 47.9**	**0.0**
	comp=Z,0.1nm,0.3s,baz=146,slow=7.2,SNR=3.2						

*IDC **26** 20:09:48.1±1.5,32.64S×178.06W,mb4.5/3,mb1 4.6/5, mb1mx4.2/15,ML4.2/2,Error ellipse: s-maj=47.4km s-min=29.2km az=142.0*
*NEIC **26** 20:09:52.4±0.4,31.33S×178.57W,h10km,mb4.6/5,Error ellipse: s-maj=12.8km s-min=11.4km az=179.0*

ISC 26 20:09:50.5±0.8, 31.3S±0.1×178.5W±0.1, h10km, n31, σ0§79/18, mb4.5/6, 5C-2D, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PUZ	**Puketiti**	**7.26**	**201**	P	Px	20 11 19.7	
URZ	**Urewera**	**7.82**	**206**	Pn	Px	20 11 30.9	
	5.8nm,0.3s,baz=327,slow=0.6,SNR=30						
URZ				Sn	Sx	20 12 48.8	
	7.6nm,0.3s,baz=164,slow=21,SNR=10						
URZ	**Urewera**	**7.82**	**206**	P	Px	20 11 30.2	
SNZO	**South Karori**	**11.39**	**207**	P	Px	20 12 19.4	
RPZ	**Rata Peaks**	**14.89**	**211**	Pn	Px	20 13 03.5	
	1.1nm,0.3s,baz=54,slow=4.8,SNR=5.2						
RAR	**Rarotonga**	**19.54**	**64**	P	**P**	**20 14 20.9**	**-0.2**
CTA	**Charters Tower**	**33.54**	**281**	*e*P	**P**	**20 16 36.4**	**+3.8**
	3.5nm,0.6s,mb4.5						
CTA	**Charters Tower**	**33.54**	**281**	P	**P**	**20 16 36.2**	**+3.6**
	4.4nm,0.8s,mb4.4,baz=116,slow=9.6,SNR=11						
CTAO	**Charters Tower**	**33.54**	**281**	*e*P	**P**	**20 16 32.5**	**-0.1**
	4.1nm,0.7s,mb4.5						
AS12	**Alice Springs**	**42.65**	**268**	*e*P	**P**	**20 17 47.8**	**-1.1**
	3.1nm,0.6s,mb4.2						
ASAR	**Alice Springs**	**42.65**	**268**	P	**P**	**20 17 48.8**	**-0.2**
	3.5nm,0.6s,mb4.3,baz=106,slow=7.4,SNR=40						
WRAB	**Tennant Creek**	**43.71**	**273**	*e*P	**P**	**20 17 57.8**	**+0.2**
	34nm,1.0s,mb5.0						
WRA	**Warramunga Arr**	**43.72**	**273**	P	**P**	**20 17 58.1**	**+0.4**
	5.2nm,0.4s,mb4.6,baz=114,slow=7.8,SNR=33						
SBA	**Scott Base**	**47.11**	**184**	*e*P	**P**	**20 18 23.9**	**0.0**
	2.8nm,0.9s,mb4.2						
VNDA	**Vanda**	**47.16**	**186**	P	**P**	**20 18 24.1**	**-0.3**
QSPA	**South Pole Qui**	**58.81**	**180**	*e*P	**P**	**20 19 51.4**	**+0.6**
	6.3nm,0.7s,mb4.8						
MAW	**Mawson**	**71.31**	**201**	*e*P	**P**	**20 21 10.3**	**-1.5**
SNAA	**Sanae**	**77.27**	**179**	*e*P	**P**	**20 21 47.0**	**+1.0**
VNA3	**Neumayer Olymp**	**77.43**	**176**	↑*i*	**P**	**20 21 51.1**	**+4.2**
VNA3	**Neumayer Olymp**	**77.43**	**176**	↓*i*P	**P**	**20 21 40.4**	**-6.5**
VNA3				↑*i*P		20 21 51.1	
VNA2	**Neumayer--Watz**	**77.86**	**177**	↑*i*	**P**	**20 21 53.4**	**+4.2**
VNA2	**Neumayer--Watz**	**77.86**	**177**	↓*i*P	**P**	**20 21 43.3**	**-5.9**
VNA2				↑*i*P		20 21 53.4	
VNA1	**Neumayer--Stat**	**78.09**	**177**	↑*i*	**P**	**20 21 55.5**	**+5.0**
MKAR	**Makanchi Array**	**118.03**	**310**	PKP	PKPdf	20 28 37.9	-2.6
	0.6nm,0.8s,baz=54,slow=1.3,SNR=4.3						
BVAR	**Borovoye Array**	**126.75**	**315**	PKP	PKPdf	20 28 55.2	-1.9
	0.7nm,0.5s,baz=90,slow=5.9,SNR=6.9						
KAF	**Kangasniemi**	**145.25**	**340**	*e*pkp	PKPdf	20 29 29.7	-1.0
	2.4nm,0.7s,baz=40,slow=2.8						
FINES	**FINESS Array B**	**145.84**	**339**	PKPbc	PKPbc	20 29 32.1	+2.5
	3.8nm,0.6s,baz=63,slow=4.3,SNR=18						
NB2	**NORSAR Subarra**	**149.58**	**351**	PKPbc	PKPdf	20 29 41.2	+3.4
	1.1nm,0.8s,baz=19,slow=4.3						
NOA	**NORSAR Array B**	**149.58**	**351**	PKPbc	PKPdf	20 29 41.9	+4.1
	0.6nm,0.7s,baz=17,slow=4.2,SNR=3.7						
NOA	**NORSAR Array B**	**149.58**	**351**	PKPbc	PKPdf	20 29 41.9	+4.1
BRTR	**Keskin Array B**	**152.64**	**297**	PKPbc	PKPdf	20 29 48.5	+5.4
	1.1nm,0.6s,baz=140,slow=3.4,SNR=6.8						

*TIF **26** 20:10:28.8,42.22N×45.91E,h11km,Mpv4.4*
*IDC **26** 20:10:29.3±2.7,42.21N×46.51E,mb3.5/2,mb1 3.6/5, mb1mx3.4/20,ML3.6/2,Error ellipse: s-maj=51.7km s-min=27.4km az=62.0,putative timing error at GNI*
*MOS **26** 20:10:31.4±1.4,42.05N×46.14E,h27km,mb4.0/1,Error ellipse: s-maj=13.3km s-min=7.4km az=57.7*

ISC 26 20:10:31.4±0.5, 42.04N±0.03×46.20E±0.04, h28km±5km, n28, σ1§24/48, mb3.4/2, 7C-4D, Eastern Caucasus

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BTLR	**Botlikh**	**0.63**	**2**	*i* Pg	**Pb**	**20 10 42.8**	**-0.9**
BTLR				*i* S	**Sb**	**20 10 52.3**	**+0.1**
BTLR				pmax	pmax		
	comp=Z,594nm,0.3s						
XNZR	**Khunzakh**	**0.63**	**37**	*i* Pg	**Pb**	**20 10 42.2**	**-1.5**
XNZR				*e*S	**Sb**	**20 10 51.2**	**-1.1**
XNZR				pmax	pmax		
	comp=Z,285nm,0.2s						
KMKR	**Kumukh**	**0.68**	**82**	↑*i*Pg	**Pb**	**20 10 44.0**	**-0.6**
KMKR				*i* S	**Sb**	**20 10 54.4**	**+0.8**
KMKR				pmax	pmax		
	comp=Z,705nm,0.2s						
UNCR	**Uncukul**	**0.81**	**33**	*i* Pg	**Pb**	**20 10 46.0**	**-0.7**
UNCR				*i* S	**Sb**	**20 10 57.5**	**+0.2**
UNCR				pmax	pmax		
	comp=Z,230nm,0.2s						
ARKR	**Arakani**	**0.82**	**46**	↑*i*Pg	**Pb**	**20 10 47.2**	**+0.3**
ARKR				*i* S	**Sb**	**20 10 59.7**	**+2.1**
ARKR				pmax	pmax		
	comp=Z,180nm,0.2s						
DGRG	**David-gareji**	**0.85**	**227**	↓*i*P	**Pb**	**20 10 47.3**	**-0.2**
DGRG				*i* S	**Sb**	**20 11 00.5**	**+1.9**
KRNR	**Karanay**	**0.95**	**33**	↓*i*Pg	**Pn**	**20 10 47.8**	**-1.1**
KRNR				*i* S	**Sb**	**20 11 00.6**	**-0.7**
KRNR				pmax	pmax		
	comp=Z,265nm,0.2s						
BUJR	**Buynaksk**	**1.04**	**40**	*e*PG	**Pn**	**20 10 49.7**	**-0.5**
BUJR				*e*S	**Sb**	**20 11 04.7**	**+0.9**
BUJR				pmax	pmax		
	comp=Z,241nm,0.2s						
URKR	**Urkarakh**	**1.08**	**83**	*e*PG	**Pn**	**20 10 53.0**	**+2.3**
URKR				*e*S	**Sn**	**20 11 09.0**	**+4.2**
DLMR	**Dylym**	**1.08**	**17**	↓*i*PG	**Pn**	**20 10 49.7**	**-1.1**
DLMR				*e*S	**Sn**	**20 11 04.4**	**-0.5**
DLMR				pmax	pmax		
	comp=Z,587nm,0.3s						
DBC	**Dubki**	**1.09**	**25**	*e*PG	**Pn**	**20 10 50.5**	**-0.4**
DBC				*e*S	**Sn**	**20 11 06.5**	**+1.4**
DBC				pmax	pmax		
	comp=Z,232nm,0.2s						
MTA	**Mtatsminda**	**1.10**	**252**	↓*i*P	**Pn**	**20 10 50.2**	**-0.9**
MTA				*i* S	**Sn**	**20 11 05.6**	**+0.1**
TI2	**Plekhanov**	**1.12**	**255**	↑*i*PG	**Pn**	**20 10 49.9**	**-1.5**
TI2				*i* S	**Sn**	**20 11 06.6**	**+0.6**
TI2				smax			
	comp=Z,4μm,0.5s						
TBLG	**Delisi**	**1.13**	**255**	↑*i*P	**Pn**	**20 10 50.4**	**-1.1**
	comp=Z,1μm,0.4s						
TBLG				*i* S	**Sn**	**20 11 06.0**	**-0.2**
	comp=E,4μm,0.5s						
SGKR	**Sergokala**	**1.16**	**68**	*i* PG	**Pn**	**20 10 54.5**	**+2.5**
SGKR				*e*S	**Sn**	**20 11 14.2**	**+7.2**
MNSR	**Manas**	**1.31**	**59**	*i* PG	**Pn**	**20 10 57.0**	**+2.9**
MAK	**Makhachkala**	**1.34**	**46**	↑*i*PG	**Pn**	**20 10 58.0**	**+3.5**
MAK				*i*		20 11 16.0	
MAK				pmax	pmax		
	comp=Z,420nm,0.5s						
MAK				smax			
	comp=E,2μm,0.8s						
MAK				smax			
	comp=Z,420nm,1.0s						
MAK				smax			
	comp=N,1μm,0.8s						
STE	**Stepanavan**	**1.70**	**233**	*i* P	**Pn**	**20 10 59.0**	**-0.7**
STE				*i* S	**Sn**	**20 11 21.0**	**+0.3**
AKH	**Akhalkalaki**	**2.12**	**254**	↑*i*P	**Pn**	**20 11 05.8**	**+0.1**
	comp=Z,50nm,0.2s						
AKH				*i* S	**Sn**	**20 11 33.8**	**+2.5**
GNI	**Garni**	**2.18**	**211**	Pn	Pn	20 10 44.0	-23
	comp=Z,40nm,0.3s,baz=346,slow=3.3,SNR=132						
GNI				Pg	Pn	20 10 45.9	-21
	comp=Z,40nm,0.3s,baz=304,slow=11,SNR=136						
GNI				Sn	**Sn**	**20 11 14.8**	**-18**
	comp=Z,73nm,0.3s,baz=307,slow=9.0,SNR=12						
AMRG		**2.32**	**283**	↑*i*P	**Pn**	**20 11 06.6**	**-2.0**
AMRG				*e*S	**Sn**	**20 11 37.4**	**+0.9**
KIV	**Kislovodsk**	**3.21**	**308**	*e*PN	**Pn**	**20 11 23.6**	**+2.4**
KIV				pmax	pmax		
	comp=Z,3.0nm,0.8s						
KIV				pmax	pmax		
	comp=E,2.0nm,0.6s						
GOF	**Gofitskoye**	**3.79**	**324**	*e*PN	**Pn**	**20 11 49.5**	**+20**
GOF				*i* S	**Sn**	**20 12 27.0**	**+13**
GOF				smax			
	comp=N,80nm,1.2s						
THR	**Tehran**	**7.22**	**146**	Pn	**Pn**	**20 12 17.6**	**-0.4**
	comp=N,0.4nm,0.3s,baz=318,slow=11,SNR=6.6						
THR				Sn	**Sn**	**20 13 38.8**	**-1.1**
	comp=N,0.1nm,0.3s,baz=270,slow=20,SNR=1.9						
BVAR	**Borovoye Array**	**19.59**	**48**	P	**P**	**20 14 55.9**	**-4.1**
	comp=N,0.3nm,0.3s,baz=248,slow=9.4,SNR=7.9						
FINES	**FINESS Array B**	**22.90**	**335**	P	**P**	**20 15 33.7**	**+0.1**
	comp=N,4.4nm,1.2s,mb3.8,baz=131,slow=13,SNR=2.0						
FINES	**FINESS Array B**	**22.90**	**335**	P	**P**	**20 15 33.7**	**+0.1**
FINES				pmax	pmax		
	comp=Z,4.0nm,1.2s						
MKAR	**Makanchi Array**	**26.06**	**67**	P	**P**	**20 16 01.6**	**-2.3**
	comp=Z,0.3nm,0.6s,mb3.0,baz=263,slow=9.5,SNR=3.7						

IDC 26 20:12:15.2±5.0, 5.45S×132.21E, mb3.5/1, mb1 3.4/3, mb1mx3.3/13, ML2.9/2, Error ellipse: s-maj=331.0km s-min=32.0km az=74.0, Aru Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**14.55**	**172**	Pn	P	20 15 42.2	-2.5
	0.1nm,0.3s,baz=352,slow=13,SNR=2.5						
ASAR	**Alice Springs**	**18.18**	**175**	P	P	20 16 29.4	-1.5
	0.1nm,0.3s,baz=351,slow=11,SNR=8.9						
MKAR	**Makanchi Array**	**68.17**	**326**	P	P	20 23 17.5	-2.0
	0.2nm,0.5s,baz=112,slow=9.2,SNR=5.1						

*ZUR **26** 20:16:34.7,47.37N×6.74E,h3km,ML2.0/13*
*NEIC **26** 20:16:35.4,47.32N×6.76E,h2km,ML2.6(LDG), ML2.2(STR),ML2.0(ZUR),After LDG.*
*LDG **26** 20:16:35.4±0.1,47.32N×6.76E,h2km,Md2.8/2,Ml2.6/14, Error ellipse: s-maj=1.1km s-min=0.8km az=103.0*
*STR **26** 20:16:36.7±0.5,47.37N×6.80E,h5km±1km,Ml2.2,Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*

ISC 26 20:16:33.7±0.3, 47.30N±0.01×6.67E±0.02, h8km±2km, n41, σ1§12/91, 4C-6D, France

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BRANT	**Les Verrieres**	**0.39**	**200**	↓*i*Pg	**Pg**	**20 16 44.6**	**+3.0**
	2.9nm,0.4s						
BRANT				*e*Sg	**Sg**	**20 16 51.5**	**+4.7**
	2.9nm,0.4s						
BOURR	**Bourrignon**	**0.40**	**76**	↑*i*Pg	**Pg**	**20 16 41.8**	**+0.1**
	13nm,1.0s						
HINF	**Hinteralfeld**	**0.53**	**14**	*e*Pg	**Pg**	**20 16 45.0**	**+0.6**
	SNR=1.0						
HINF				*e*Pn	**Pn**	**20 16 46.4**	**-0.8**
HINF				*e*Sg	**Sg**	**20 16 51.5**	**0.0**
	27nm,0.2s,SNR=1.0						
HINF				*e*Sn	**Sn**	**20 16 54.0**	**-2.3**
TORNY	**Torny**	**0.56**	**159**	↓*i*Pg	**Pg**	**20 16 46.8**	**+1.7**
	2.3nm,0.3s						
MOF	**Molkenrain**	**0.63**	**30**	Pg	**Pg**	**20 16 46.7**	**+0.3**
BALST	**Balsthal**	**0.70**	**87**	*e*Pg	**Pg**	**20 16 47.8**	**0.0**
	1.7nm,0.4s						
HAU	**Haudompre**	**0.74**	**343**	*e*Pg	**Pg**	**20 16 49.6**	**+1.1**
HAU				*e*Pn	**Pn**	**20 16 50.6**	**+0.5**
	SNR=1.0						
HAU				*e*Sg	**Sg**	**20 16 58.8**	**+0.5**
	25nm,0.2s,SNR=1.0						
HAU				*e*Sn	**Sn**	**20 17 02.0**	**+0.4**
	SNR=1.0						
CABF	**La Chapelle**	**0.80**	**210**	*e*Pg	**Pg**	**20 16 51.5**	**+1.8**
	SNR=1.0						
CABF				*e*Pn	**Pn**	**20 16 52.9**	**+1.9**
	SNR=1.0						
CABF				*e*Sg	**Sg**	**20 17 02.9**	**+2.6**
	SNR=1.0						
CABF				*e*Sn	**Sn**	**20 17 04.0**	**+0.9**
	23nm,0.2s,SNR=1.0						
GIMEL	**Gimel**	**0.82**	**200**	↓*i*P*P		20 16 52.6	
	5.6nm,0.5s						
ECH	**Echery**	**0.97**	**20**	Pg	**Pg**	**20 16 53.6**	**+0.4**
ECH				Sg	**Sg**	**20 17 05.4**	**-0.8**
AIGLE	**Aigle**	**0.98**	**168**	↓*i*P*P		20 16 54.8	
	3.0nm,0.7s						
SULZ	**Sulz-Cheisache**	**1.01**	**77**	↑*e*Pn	**Pn**	**20 16 53.8**	**-0.2**
	2.4nm,0.6s						
THEF	**They Montfort**	**1.03**	**334**	Pg	**Pg**	**20 16 56.1**	**+1.7**
THEF				Sg	**Sg**	**20 17 10.2**	**+2.0**
FELD	**Feldberg**	**1.07**	**57**	Pg	**Pg**	**20 16 54.4**	**-0.7**
FELD				Sg	**Sg**	**20 17 08.8**	**-0.7**
LKBD	**Leukerbad**	**1.13**	**144**	↓*i*P*P		20 16 57.9	
	7.4nm,0.7s						
HASLI	**Hasliberg**	**1.15**	**118**	*e*P*P		20 16 57.5	
	2.8nm,0.6s						
CDF	**Champ du Feu**	**1.18**	**20**	*e*Pn	**Pn**	**20 16 56.4**	**-0.1**
	SNR=1.0						
CDF				*e*Sn	**Sn**	**20 17 12.1**	**-0.9**
	SNR=1.0						
EMV	**Vieux Emosson**	**1.25**	**173**	↑*i*Pn	**Pn**	**20 16 59.7**	**+2.2**
	2.2nm,0.7s						
BNALP	**Bannalp**	**1.28**	**109**	↓*e*Pn	**Pn**	**20 16 59.0**	**+1.1**
	0.7nm,0.4s						
SLE	**Schleitheim**	**1.32**	**69**	↑*i*Pn	**Pn**	**20 16 57.8**	**-0.7**
	1.9nm,0.4s						
SFTF	**Sexfontaines**	**1.42**	**310**	*e*Pn	**Pn**	**20 17 01.2**	**+1.3**
	baz=125						
SFTF				*e*Pg	**Pg**	**20 17 02.4**	**+0.3**
	baz=127						
SFTF				*e*Sn	**Sn**	**20 17 19.7**	**+0.7**
BFO	**Black Forest**	**1.52**	**47**	*e*Pg	**Pg**	**20 17 00.5**	**-3.6**
	SNR=3.6						
BFO				*e*Sg	**Sg**	**20 17 19.3**	**-5.1**
BFO	**Black Forest**	**1.52**	**47**	*e*Pn	**Pn**	**20 17 00.6**	**-0.8**
BFO				*e*Sn	**Sn**	**20 17 19.3**	**-2.2**
RFYF	**Reffroy**	**1.55**	**329**	*e*Pn	**Pn**	**20 17 02.3**	**+0.5**
RFYF				*e*Pg	**Pg**	**20 17 04.5**	**-0.2**
RFYF				*e*Sg	**Sg**	**20 17 24.9**	**-0.5**
	18nm,0.3s						
MEZF	**Maizieres J'vi**	**1.62**	**318**	*e*Pn	**Pn**	**20 17 03.6**	**+0.8**
	baz=137,SNR=1.0						
MEZF				*e*Pg	**Pg**	**20 17 06.2**	**+0.2**
MEZF				*e*Sn	**Sn**	**20 17 24.0**	**0.0**
	SNR=1.0						
MEZF				*e*Sg	**Sg**	**20 17 27.5**	**-0.1**
	7.8nm,0.3s,baz=141,SNR=1.0						
LPL	**La Plagne**	**1.79**	**178**	*e*Pn	**Pn**	**20 17 06.1**	**+0.9**
	SNR=1.0						
LPL				*e*Pg	**Pg**	**20 17 09.0**	**-0.4**
	SNR=1.0						
LPL				*e*Sn	**Sn**	**20 17 28.1**	**-0.2**
LPG	**La Plagne**	**1.81**	**178**	*e*Pn	**Pn**	**20 17 06.5**	**+1.1**
	SNR=1.0						
LPG				*e*Pg	**Pg**	**20 17 09.6**	**-0.2**
	SNR=1.0						
LPG				*e*Sn	**Sn**	**20 17 27.9**	**-0.8**
	5.0nm,0.3s,SNR=1.0						
LOR	**Lormes**	**1.91**	**270**	*e*Pn	**Pn**	**20 17 08.3**	**+1.4**
	SNR=1.0						
LOR				*e*Pg	**Pg**	**20 17 12.9**	**+1.0**
	baz=96						
LOR				*e*Sn	**Sn**	**20 17 32.0**	**+0.6**
LOR				*e*Sg	**Sg**	**20 17 37.8**	**+0.4**
	6.9nm,0.2s,baz=91,SNR=1.0						
SMF	**Signal de Mont**	**2.04**	**252**	*e*Pn	**Pn**	**20 17 09.5**	**+0.7**
	SNR=1.0						
SMF				*e*Pg	**Pg**	**20 17 13.0**	**-1.5**
	SNR=1.0						
SMF				*e*Sn	**Sn**	**20 17 35.3**	**+0.5**
	SNR=1.0						
SMF				*e*Sg	**Sg**	**20 17 42.6**	**+0.9**
	11nm,0.3s,SNR=1.0						
SSF	**Saint Saulge**	**2.17**	**265**	*e*Pn	**Pn**	**20 17 11.9**	**+1.3**
	SNR=1.0						
SSF				*e*Pg	**Pg**	**20 17 17.6**	**+0.6**
SSF				*e*Sn	**Sn**	**20 17 37.9**	**-0.1**
	SNR=1.0						
SSF				*e*Sg	**Sg**	**20 17 45.2**	**-0.7**
	5.8nm,0.3s,SNR=1.0						
AVF	**Avril sur Loir**	**2.32**	**258**	*e*Pn	**Pn**	**20 17 13.9**	**+1.1**
	SNR=1.0						
AVF				*e*Pg	**Pg**	**20 17 19.4**	**-0.7**
	SNR=1.0						
AVF				*e*Sn	**Sn**	**20 17 42.0**	**+0.1**
AVF				*e*Sg	**Sg**	**20 17 50.2**	**-0.9**
	2.6nm,0.2s,SNR=1.0						
WLF	**Walferdange**	**2.39**	**352**	*e*Sg	**Sg**	**20 17 51.2**	**-2.1**
ORIF	**Oris-en-Rattie**	**2.45**	**193**	*e*Pn	**Pn**	**20 17 16.0**	**+1.4**
	SNR=1.0						
ORIF				*e*Pg	**Pg**	**20 17 22.0**	**-0.5**
	SNR=1.0						
ORIF				*e*Sn	**Sn**	**20 17 43.9**	**-1.1**
	SNR=1.0						
ORIF				*e*Sg	**Sg**	**20 17 54.2**	**-1.0**
	4.7nm,0.3s,SNR=1.0						
MBDF	**Montbardon**	**2.58**	**178**	*e*Pn	**Pn**	**20 17 16.6**	**+0.1**
BGF	**Bois d'Agland**	**2.72**	**256**	*e*Pn	**Pn**	**20 17 19.7**	**+1.2**
	SNR=1.0						
BGF				*e*Pg	**Pg**	**20 17 26.6**	**-1.4**
	SNR=1.0						
BGF				*e*Sn	**Sn**	**20 17 51.5**	**-0.5**
BGF				*e*Sg	**Sg**	**20 18 03.3**	**-1.0**
	11nm,0.4s,SNR=1.0						
HYF	**Humbligny**	**2.74**	**271**	*e*Sg	**Sg**	**20 18 03.5**	**-1.5**
VIVF	**Saint-Julien-l**	**2.81**	**210**	*e*Pn	**Pn**	**20 17 20.3**	**+0.5**
VIVF			

	2.0nm,0.4s,mb4.3						
VNA3	**Neumayer Olymp**	**65.70**	**162**⇑*i*		**P**	**20 40 43.6**	**+0.6**
VNA3	**Neumayer Olymp**	**65.70**	**162**⇑*i*		**P**	**20 40 43.6**	**+0.6**
VNA1	**Neumayer--Stat**	**65.92**	**161**⇑*i*		**P**	**20 40 46.2**	**+1.8**
VNA1	**Neumayer--Stat**	**65.92**	**161**⇑*i*		**P**	**20 40 46.2**	**+1.8**
VNA1	**Neumayer--Stat**	**65.92**	**161**⇑*i*		pP	20 41 21.5	+2.1
VNA1	**Neumayer--Stat**	**65.92**	**161**⇑*i*		pP	20 41 21.5	+2.1
VNA2	**Neumayer--Watz**	**66.28**	**161**⇓*i*		**P**	**20 40 47.5**	**+0.8**
VNA2	**Neumayer--Watz**	**66.28**	**161**⇓*i*		**P**	**20 40 47.5**	**+0.8**
VNA2	**Neumayer--Watz**	**66.28**	**161**⇑*i*		pP	20 41 23.9	+2.1
VNA2	**Neumayer--Watz**	**66.28**	**161**⇑*i*		pP	20 41 23.9	+2.1
MSU	**Marysvale**	**66.60**	**326** *eP*		**P**	**20 40 19.7**	**+0.5**
SNAA	**Sanae**	**67.91**	**161** *eP*		**P**	**20 40 55.3**	**-1.5**
PDAR	**Pinedale Array**	**68.47**	**331** P		**P**	**20 41 00.9**	**+0.2**
	0.6nm,0.6s,mb3.5,baz=127,slow=7.4,SNR=4.7						
PDAR			LR		LR	21 12 26.4	
	comp=Z,78nm,20.1s,baz=105,slow=37						
DBIC	**Dimbokro**	**69.67**	**76** P		**P**	**20 41 07.4**	**-1.1**
	3.9nm,0.5s,mb4.4,baz=226,slow=9.9,SNR=14						
NVAR	**Mina Array Bea**	**69.98**	**322** P		**P**	**20 41 11.7**	**+1.7**
	1.5nm,0.7s,mb3.8,baz=140,slow=7.6,SNR=10						
QSPA	**South Pole Qui**	**73.83**	**180** *eP*		**P**	**20 41 32.1**	**+0.1**
	3.9nm,0.6s,mb4.3						
QSPA			*e*		pP	20 42 08.9	+1.0
VNDA	**Vanda**	**81.50**	**190** P		**P**	**20 42 15.2**	**+0.9**
	1.3nm,0.7s,mb3.7,baz=125,slow=3.9,SNR=8.8						
VNDA	**Vanda**	**81.50**	**190** *eP*		**P**	**20 42 14.5**	**+0.2**
	0.5nm,0.6s,mb3.3						
SYO	**Syowa Base**	**82.14**	**160** ⇓P		**P**	**20 42 17.3**	**-0.3**
SYO	**Syowa Base**	**82.14**	**160** ⇓pP		pP	20 42 41.8	-12
ESDC	**Sonseca Array**	**83.88**	**46** P		**P**	**20 42 28.4**	**+1.4**
	2.7nm,0.7s,mb4.1,baz=250,slow=5.2,SNR=10						
YKA	**Yellowknife Ar**	**85.56**	**341** P		**P**	**20 42 35.6**	**+0.8**
	1.2nm,0.6s,mb3.8,baz=136,slow=5.0,SNR=31						
YKA			pP		pP	20 43 03.6	-8.0
	0.7nm,0.6s,baz=135,slow=5.0,SNR=3.6						
YKA	**Yellowknife Ar**	**85.56**	**341** P		**P**	**20 42 35.6**	**+0.9**
YKA			pP		pP	20 43 03.6	-8.0
ILAR	**Eielson Array**	**98.59**	**335** LR		LR	21 31 19.4	
	comp=Z,149nm,21.9s,baz=109,slow=37						
ASAR	**Alice Springs**	**133.19**	**213** PKP		PKPdf	20 49 12.6	+1.1
	0.5nm,0.8s,baz=130,slow=2.0,SNR=14						
WRA	**Warramunga Arr**	**135.97**	**216** PKP		PKPdf	20 49 18.2	+1.5
	1.2nm,0.5s,baz=156,slow=1.6,SNR=9.5						
ZAL	**Zalesovo**	**138.14**	**21** PKP		PKPdf	20 49 22.1	+2.2
	1.1nm,0.7s,baz=55,slow=2.5,SNR=7.3						
ZAL			pPKP			20 49 52.3	
	0.9nm,0.2s,baz=251,slow=1.7,SNR=2.0						
MKAR	**Makanchi Array**	**142.60**	**30** PKhKP			20 49 26.1	
	0.5nm,0.8s,baz=304,slow=5.2,SNR=3.8						
MKAR			PKP		PKPdf	20 49 30.0	+2.1
	0.3nm,0.6s,baz=315,slow=3.4,SNR=4.4						
MAT	**Matsushiro**	**146.92**	**313** PKP		PKPdf	20 49 40.2	+4.6
MAT	**Matsushiro**	**146.92**	**313** *eP*		PKPdf	20 49 40.0	+4.4
SONM	**Songino Array**	**148.53**	**3** PKPbc		PKPdf	20 49 42.8	+4.9
	1.4nm,0.6s,baz=333,slow=2.8,SNR=6.1						
SONM			pPKPbc			20 50 13.8	
	1.2nm,0.7s,baz=315,slow=1.7,SNR=3.3						

*IDC **26** 20:57:26.9±1.9,32.53S×178.33W,mb4.1/3,mb1 4.2/4, mb1mx3.9/14,ML3.6/1,Error ellipse: s-maj=51.9km s-min=31.2km az=131.0*

ISC 26 20:57:33.3±2.3,32.5S±0.1×178.8W±0.3,h33km,n16, σ0s73/12,mb4.0/3,5C,South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**6.63**	**209**	Pn	**Pn**	**20 59 07.5**	**-3.6**
	1.0nm,0.3s,baz=194,slow=6.6,SNR=7.2						
URZ				Sn	**Sn**	**21 00 26.5**	**+0.2**
	1.9nm,0.3s,baz=334,slow=23,SNR=6.1						
CTA	**Charters Tower**	**33.55**	**283** P		**P**	**21 04 12.8**	**+0.5**
	0.8nm,0.3s,mb4.1,baz=122,slow=10,SNR=3.6						
ASAR	**Alice Springs**	**42.38**	**270** P		**P**	**21 05 26.5**	**+0.2**
	1.2nm,0.6s,mb3.7,baz=107,slow=7.9,SNR=21						
WRA	**Warramunga Arr**	**43.56**	**275** P		**P**	**21 05 35.3**	**-0.7**
	1.5nm,0.4s,mb4.0,baz=112,slow=8.0,SNR=6.8						
VNA3	**Neumayer Olymp**	**76.23**	**176**⇑*i*		**P**	**21 09 12.4**	**-7.0**
VNA3	**Neumayer Olymp**	**76.23**	**176**		**P**	**21 09 19.8**	**+0.4**
VNA3	**Neumayer Olymp**	**76.23**	**176**⇑*i*		**P**	**21 09 29.1**	**+10**
VNA2	**Neumayer--Watz**	**76.66**	**177**⇑*i*		**P**	**21 09 14.1**	**-7.8**
VNA2	**Neumayer--Watz**	**76.66**	**177**⇑*i*		**P**	**21 09 22.0**	**+0.1**
VNA2	**Neumayer--Watz**	**76.66**	**177**		**P**	**21 09 26.1**	**+4.2**
VNA2	**Neumayer--Watz**	**76.66**	**177**⇑*i*		**P**	**21 09 31.7**	**+10**
JOF	**Joensuu**	**144.13**	**337** *e*pkp		PKPdf	21 16 59.7	-5.0
	0.2nm,0.3s						
KAF	**Kangasniemi**	**146.31**	**339** *e*pkp		PKPdf	21 17 06.5	-2.0
	0.7nm,0.4s						
FINES	**FINESS Array B**	**146.89**	**338** PKPbc		PKPbc	21 17 09.6	-1.5
	1.9nm,0.4s,baz=52,slow=3.9,SNR=40						
NB2	**NORSAR Subarra**	**150.74**	**350** PKP			21 17 18.4	
	0.6nm,0.5s,baz=15,slow=4.1						
NOA	**NORSAR Array B**	**150.74**	**350** PKPbc		PKPdf	21 17 20.7	+5.0
	0.2nm,0.4s,baz=50,slow=4.4,SNR=3.3						

*NEIC **26** 21:03:35.5, 19.43N×69.22W, h25km, MD3.8(RSPR), After RSPR.*

RSPR 26 21:03:35.5,19.43N×69.22W,h25km±31km,M3.8,16C-1D, Dominican Republic region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
IDE	**Isla Desecheo**	**1.94**	**122**⇑*eP*		Pn	21 04 04.1	-3.4
IDE				S	Sn	21 04 29.4	-1.9
LSP	**Las Mesas**	**2.37**	**121**⇑*eP*		Pn	21 04 10.7	-3.0
LSP				S	Sn	21 04 39.7	-2.6
MGP	**Maguayo**	**2.46**	**125**⇑*eP*		Pn	21 04 11.0	-4.0
MGP				S	Sn	21 04 38.3	-6.2
LRS	**Lares**	**2.51**	**116**⇑*eP*		Pn	21 04 13.2	-2.6
LRS				S	Sn	21 04 41.3	-4.5
AOPR	**Arecibo Observ**	**2.57**	**114**⇑*eP*		Pn	21 04 14.7	-1.8
AOPR	**Arecibo Observ**	**2.57**	**114** S		Sn	21 04 42.5	-4.8
PORP	**Portuguez**	**2.80**	**119**⇑*eP*		Pn	21 04 15.9	-3.9
PORP				S	Sn	21 04 48.7	-4.4
OBIP	**Obispado Ponce**	**2.83**	**119**⇓*eP*		Pn	21 04 16.6	-3.7
OBIP	**Obispado Ponce**	**2.83**	**119** S		Sn	21 04 50.3	-3.6
CELP	**Cerrillos**	**2.84**	**118**⇑*eP*		Pn	21 04 16.8	-3.5
CELP				S	Sn	21 04 47.4	-6.7
SJG	**San Juan**	**3.19**	**114**⇑*eP*		Pn	21 04 21.5	-3.8
SJG				S	Sn	21 04 55.5	-7.4
SJG	**San Juan**	**3.19**	**114**⇑*eP*		Pn	21 04 22.6	-2.7
SJG	**San Juan**	**3.19**	**114** S		Sn	21 04 57.1	-5.9
SJG	**San Juan**	**3.19**	**114**⇑*eP*		Pn	21 04 22.6	-2.7
SJG				S	Sn	21 04 57.1	-5.9
CBYP	**Canovanas**	**3.38**	**109**⇑*eP*		Pn	21 04 24.1	-4.0
CBYP				S	Sn	21 05 01.1	-6.8
CPD	**Cerro la Pandu**	**3.42**	**113**⇑*eP*		Pn	21 04 25.4	-3.2
CPD				S	Sn	21 05 00.1	-8.7
HUMP	**Col San Antoni**	**3.44**	**111**⇑*eP*		Pn	21 04 25.2	-3.6
HUMP				S	Sn	21 05 02.6	-6.6
MTP	**Monte Pirata**	**3.71**	**110**⇑*eP*		Pn	21 04 28.4	-4.4
STVI	**Saint Thomas**	**4.17**	**104**⇑*eP*		Pn	21 04 38.7	-0.5
STVI				S	Sn	21 05 20.5	-7.3
ABV	**Anegada**	**4.67**	**98**⇑*eP*		Pn	21 04 42.9	-3.4
ABV	**Anegada**	**4.67**	**98** S		Sn	21 05 35.6	-4.8

*BJI **26** 21:09:12.9,21.64N×143.30E,h328km,mB4.3,mb4.4*
*IDC **26** 21:09:13.6±1.2,21.63N×142.90E,h296km±11km, mb4.0/24,mb1 4.1/27,mb1mx4.1/34,Error ellipse: s-maj=13.2km s-min=7.1km az=93.0*
*NEIC **26** 21:09:15.1±0.5,21.65N×142.96E,h313km±5km,mb4.4/23, Error ellipse: s-maj=5.8km s-min=4.2km az=76.0*

ISC 26 21:09:13.6±0.5,21.67N±0.03×142.96E±0.05,h308km±4km, h319km±1.0km:pP-P,n102,σ0s89/114,mb4.3/45,2C-3D, Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHHJ	**Haha-jima-NKT**	**4.99**	**352** P		**P**	**21 10 32.1**	**+0.4**
JHHJ				*e*S	**S**	**21 11 32.3**	**-0.7**
CBIJ	**Chichi jima**	**5.44**	**353** P		**P**	**21 10 36.8**	**-0.3**
	117nm,0.3s,baz=202,slow=4.2,SNR=54						
CBIJ				S	**S**	**21 11 42.3**	**-0.3**
	59nm,0.3s,baz=297,slow=23,SNR=8.6						
CBIJ	**Chichi jima**	**5.44**	**353** P		**P**	**21 10 36.7**	**-0.4**
CBIJ				*e*S	**S**	**21 11 42.4**	**-0.2**
SARN	**Sarigan**	**5.61**	**151**⇓*eP*		**P**	**21 10 39.4**	**+0.3**
SAPN	**Saipan**	**6.95**	**157**⇓*eP*		**P**	**21 10 55.4**	**+0.3**
GUMO	**Guam**	**8.24**	**167** *eP*		**P**	**21 11 12.7**	**+1.8**
	685nm,1.3s						
JHJ2	**Mitsune**	**11.73**	**347** P		**P**	**21 11 53.3**	**-0.5**
JHJ	**Hachijo jima 2**	**11.74**	**347** P		**P**	**21 11 53.2**	**-0.8**
	21nm,0.3s,baz=70,slow=19,SNR=13						
JHJ				S	**S**	**21 14 01.9**	**+1.2**
	7.3nm,0.3s,baz=50,slow=19,SNR=3.3						
BSO1	**Boso 1**	**13.05**	**353** P		**P**	**21 12 10.1**	**+0.3**
JWZ	**Kozaga**	**13.44**	**333** P		**P**	**21 12 15.9**	**+1.3**
JIE	**Ise**	**13.82**	**338** P		**P**	**21 12 18.2**	**-0.9**
JOD2	**Odawara 2**	**13.96**	**347** P		**P**	**21 12 20.2**	**-0.6**
JOD2				*e*S	**S**	**21 14 47.3**	**-2.2**
JTO	**Tosashimizu**	**14.33**	**323** P		**P**	**21 12 27.5**	**+2.4**
JRY	**Ryogami san**	**14.72**	**347** P		**P**	**21 12 28.8**	**-0.8**
JRY				*e*S	**S**	**21 15 06.1**	**+0.3**
MAJO	**Matsushiro**	**15.38**	**345** *eP**		**P**	**21 12 34.9**	**-2.1**
	7.6nm,0.4s						
MAT	**Matsushiro**	**15.38**	**345** P		**P**	**21 12 35.9**	**-1.1**
MAT				S	**S**	**21 15 18.7**	**-0.9**
MAT	**Matsushiro**	**15.38**	**345** P		**P**	**21 12 35.8**	**-1.2**
MAT				*e*S	**S**	**21 15 18.6**	**-1.0**
MAT	**Matsushiro**	**15.38**	**345** *eP**		**P**	**21 12 36.0**	**-1.0**
	19nm,1.4s						
MAT				*e*S	**S**	**21 15 19.0**	**-0.6**
JNU	**Nakatsue**	**15.64**	**319** P		**P**	**21 12 40.5**	**+0.7**
	0.7nm,0.3s,baz=113,slow=5.8,SNR=9.2						
JMK	**Ichinoseki**	**17.29**	**355** P		**P**	**21 12 57.6**	**+0.5**
KS15	**Wonju Array Si**	**20.42**	**324** *eP**		**P**	**21 13 29.2**	**+0.7**
SSE	**Sheshan**	**21.61**	**300** P		**P**	**21 13 41.5**	**+1.3**
SSE				XP		21 15 12.5	
SSE				S	**S**	**21 17 14.0**	**-1.1**
SSE				AMB	AMB		
	comp=Z,55nm,0.7s,mb5.0						
SSE				LR	LR		
	comp=N,33nm,15.0s						
SSE				LR	LR		
	comp=E,22nm,15.0s						
SSE				LR	LR		
	comp=Z,31nm,15.3s						
ASAJ	**Asahikawa**	**22.38**	**359** P		**P**	**21 13 48.8**	**+1.4**
	comp=Z,7.8nm,0.8s,mb4.1,baz=259,slow=13,SNR=3.6						
NJ2	**Nanjing**	**23.81**	**301** *eP**		**P**	**21 14 01.0**	**+0.1**
NJ2				XP		21 15 36.0	
NJ2				S	**S**	**21 17 52.0**	**0.0**
NJ2				LR	LR		
	comp=N,230nm,19.5s						
NJ2				LR	LR		
	comp=E,250nm,19.7s						
NJ2				LR	LR		
	comp=Z,360nm,17.5s						
MDJ	**Mudanjiang**	**25.40**	**337** P		**P**	**21 14 15.5**	**+0.3**
MDJ				PP	PP	21 15 19.5	+11
MDJ				XP	sP	21 15 48.5	+0.2
MDJ				PCP	PcP	21 17 37.5	-1.5
MDJ				S	**S**	**21 18 18.3**	**+0.6**
MDJ				SCP		21 20 46.8	
MDJ				PCS		21 21 18.5	
MDJ				AMB	AMB		
	comp=Z,12nm,1.0s,mb4.3						
CN2	**Changchun**	**26.42**	**331** *eP*		**P**	**21 14 25.0**	**+0.5**
PMG	**Port Moresby**	**31.16**	**172** P		**P**	**21 15 05.4**	**-1.1**
	comp=Z,13nm,0.9s,mb4.5,baz=291,slow=3.6,SNR=3.2						
PMG	**Port Moresby**	**31.16**	**172** *eP*		**P**	**21 15 05.1**	**-1.5**
GYA	**Guiyang**	**33.41**	**285** P		**P**	**21 15 27.5**	**+1.8**
GYA				AP	pP	21 16 30.3	+4.0
GYA				XP	sP	21 17 05.8	+4.1
GYA				S	**S**	**21 20 23.5**	**-0.2**
GYA				AMB	AMB		
	comp=Z,10.0nm,1.0s,mb4.3						
LZH	**Lanzhou**	**36.88**	**302** ⇑P		**P**	**21 15 55.3**	**+0.5**
LZH				AP	pP	21 16 58.3	+1.9
LZH				PP	PP	21 17 30.0	+3.1
LZH				XP	sP	21 17 34.5	+3.2
LZH				AMB	AMB		
	comp=Z,35nm,1.3s,mb4.6						
KMI	**Kunming**	**36.98**	**283** *eP*		**P**	**21 15 55.3**	**-0.4**
KMI				S	**S**	**21 21 20.5**	**+2.4**
KMI				AMB	AMB		
	comp=Z,6.0nm,1.8s,mb3.7						
KMI				AMB	AMB		
	comp=Z,39nm,6.0s						
KMI				LR	LR		
	comp=N,150nm,17.6s						
KMI				LR	LR		
	comp=E,113nm,14.3s						
KMI				LR	LR		
	comp=Z,117nm,12.8s						
ULN	**Ulaanbaatar**	**38.85**	**321** *eP*		**P**	**21 16 11.1**	**+0.1**
	comp=Z,4.3nm,1.2s,mb3.8						
SONM	**Songino Array**	**39.23**	**321** P		**P**	**21 16 14.0**	**0.0**
	comp=Z,1.4nm,0.6s,mb3.6,baz=131,slow=8.1,SNR=8.6						
GTA	**Gaotai**	**40.72**	**306** *eP*		**P**	**21 16 27.0**	**+0.7**
GTA				AP	pP	21 17 31.5	+2.7
GTA				XP	sP	21 18 05.8	+2.5
GTA				PP	PP	21 18 09.3	+2.0
GTA				PCP	PcP	21 18 21.8	-0.1
GTA				SCP		21 21 41.0	
GTA				AMB	AMB		
	comp=Z,7.0nm,1.3s,mb3.7						
GTA				AMB	AMB		
	comp=Z,86nm,4.9s						
GTA				LR	LR		
	comp=N,67nm,13.7s						
GTA				LR	LR		
	comp=E,65nm,16.4s						
GTA				LR	LR		
	comp=Z,64nm,11.4s						
CM31	**Chiang Mai Arr**	**41.37**	**274** *eP*		**P**	**21 16 32.0**	**+0.2**
	comp=Z,3.5nm,0.5s,mb3.9						
CTA	**Charters Tower**	**41.63**	**175** *eP*		**P**	**21 16 33.6**	**-0.4**
	comp=Z,8.0nm,0.9s,mb4.0						
CTA	**Charters Tower**	**41.63**	**175** P		**P**	**21 16 33.6**	**-0.3**
	comp=Z,16nm,1.1s,mb4.2,baz=356,slow=7.2,SNR=14						
CTAO	**Charters Tower**	**41.63**	**175** *eP*		**P**	**21 16 33.0**	**-1.0**
	comp=Z,10nm,0.9s,mb4.1						
WRAB	**Tennant Creek**	**42.20**	**192** *eP*		**P**	**21 16 37.2**	**-1.4**
	comp=Z,44nm,0.9s,mb4.7						
WRA	**Warramunga Arr**	**42.21**	**192** P		**P**	**21 16 38.0**	**-0.6**
	comp=Z,7.6nm,0.6s,mb4.1,baz=14,slow=8.7,SNR=32						
WRA				ScP		21 21 49.8	
	comp=Z,1.2nm,0.8s,baz=9.3,slow=4.3,SNR=6.4						
WRA				S	**S**	**21 22 33.8**	**-1.6**
	comp=Z,0.8nm,0.8s,baz=7.5,slow=14,SNR=5.7						
FITZ	**Fitzroy Crossi**	**43.02**	**205** *eP*		**P**	**21 16 44.6**	**-0.5**
	comp=Z,5.2nm,0.6s,mb3.9						
FITZ	**Fitzroy Crossi**	**43.02**	**205** P		**P**	**21 16 44.5**	**-0.6**
	comp=Z,7.2nm,0.8s,mb4.0,baz=24,slow=6.5,SNR=11						
AS12	**Alice Springs**	**45.92**	**192** *eP*		**P**	**21 17 07.8**	**-0.2**
	comp=Z,2.5nm,0.6s,mb3.7						
ASAR	**Alice Springs**	**45.92**	**192** P		**P**	**21 17 07.0**	**-1.1**
	comp=Z,1.4nm,0.5s,mb3.5,baz=18,slow=11,SNR=34						
ASAR				PP	PP	21 19 03.9	+4.6
	comp=Z,0.6nm,0.8s,baz=22,slow=8.7,SNR=3.9						
ASAR				ScP		21 22 04.7	
	comp=Z,0.8nm,1.1s,baz=4.5,slow=1.4,SNR=5.1						
ASAR				S	**S**	**21 23 26.9**	**-1.5**
	comp=Z,1.4nm,0.9s,baz=17,slow=19,SNR=5.8						
LSA	**Lhasa**	**47.05**	**291** P		**P**	**21 17 18.5**	**+1.7**
LSA	**Lhasa**	**47.05**	**291** *eP*		**P**	**21 17 17.7**	**+1.0**
	comp=Z,5.9nm,0.9s,mb3.9						
UNV	**Unalaska Valle**	**49.75**	**37** *eP*		**P**	**21 17 36.3**	**-0.7**
WMQ	**Urumqi**	**50.44**	**309** *eP*		**P**	**21 17 42.5**	**+0.3**
WMQ				AP	pP	21 18 49.3	+1.9
WMQ				XP	sP	21 19 24.0	+2.4
WMQ				PP	PP	21 19 43.0	+1.2
WMQ				AMB	AMB		
	comp=Z,23nm,1.3s,mb4.3						
WMQ				AMB	AMB		
	comp=Z,139nm,6.2s						
TIXI	**Tiksi**	**50.65**	**354** *eP*		**P**	**21 17 42.1**	**-1.3**
	comp=Z,3.8nm,0.3s,mb4.2						
STKA	**Stephens Creek**	**53.26**	**181** *eP*		**P**	**21 18 01.8**	**-1.3**
	comp=Z,4.2nm,0.6s,mb4.0						
STKA	**Stephens Creek**	**53.26**	**181** P		**P**	**21 18 01.9**	**-1.3**
	comp=Z,5.7nm,0.7s,mb4.0,baz=350,slow=8.1,SNR=14						
ZAL	**Zalesovo**	**54.11**	**322** P		**P**	**21 18 08.4**	**-0.5**
	comp=Z,3.5nm,0.9s,mb3.7,baz=279,slow=8.2,SNR=15						
ZAL				PcP	PcP	21 19 08.2	-1.4
	comp=Z,2.3nm,0.5s,baz=270,slow=3.9,SNR=5.2						
MKAR	**Makanchi Array**	**54.56**	**313** P		**P**	**21 18 12.3**	**+0.1**
	comp=Z,3.5nm,0.7s,mb3.9,baz=93,slow=9.3,SNR=34						
MKAR				PcP	PcP	21 19 10.9	-0.5
	comp=Z,2.7nm,0.7s,baz=86,slow=5.3,SNR=9.5						
KURK	**Kurchatov**	**57.35**	**317** *eP*		**P**	**21 18 30.8**	**-1.0**
PMR	**Palmer**	**60.67**	**31** *eP*		**P**	**21 18 53.1**	**-1.3**
SML	**Sawmill**	**61.08**	**30** *eP*		**P**	**21 18 56.0**	**-1.0**
MCK	**McKinley**	**61.11**	**28** *eP*		**P**	**21 18 56.2**	**-1.0**
COLA	**College**	**61.76**	**27** *eP*		**P**	**21 19 01.0**	**-0.5**
ILAR	**Eielson Array**	**62.15**	**27** P		**P**	**21 19 02.6**	**-1.4**
	comp=Z,8.8nm,0.7s,mb4.5,baz=259,slow=5.3,SNR=92						
BVAR	**Borovoye Array**	**62.56**	**320** P		**P**	**21 19 06.9**	**0.0**
	comp=Z,11nm,0.4s,mb4.8,baz=98,slow=7.7,SNR=102						
BVAR				PcP	PcP	21 19 42.4	-0.7
	comp=Z,3.6nm,0.9s,baz=97,slow=5.7,SNR=3.6						
DAWY	**Dawson**	**65.34**	**28** *eP*		**P**	**21 19 24.8**	**+0.3**
INK	**Inuvik**	**67.67**	**24** P		**P**	**21 19 38.8**	**-0.3**
	comp=Z,6.0nm,0.7s,mb4.5,baz=283,slow=6.4,SNR=22						
INK	**Inuvik**	**67.67**	**24** *eP*		**P**	**21 19 38.4**	**-0.7**
	comp=Z,8.5nm,0.9s,mb4.5						
ARU	**Arti**	**69.16**	**324** *eP*		**P**	**21 19 47.6**	**-0.7**
	comp=Z,15nm,1.2s,mb4.6						
DLBC	**Dease Lake**	**70.26**	**34** P		**P**	**21 19 56.3**	**+1.3**
	comp=Z,8.8nm,1.0s,mb4.4,baz=288,slow=5.7,SNR=6.3						
YKW3	**Yellowknife Ar**	**76.54**	**28** *eP*		**P**	**21 20 30.6**	**-0.7**
YKA	**Yellowknife Ar**	**76.57**	**28** P		**P**	**21 20 31.3**	**-0.2**
	comp=Z,7.5nm,0.6s,mb4.6,baz=291,slow=5.5,SNR=142						
HUMO	**Hull Mountain**	**78.53**	**49** *eP*		**P**	**21 20 43.0**	**+0.4**
ARCES	**ARCESS Array B**	**78.88**	**341** P		**P**	**21 20 44.0**	**+0.2**
	comp=Z,11nm,0.6s,mb4.8,baz=75,slow=8.8,SNR=61						
YBH	**Yreka Blue Hor**	**78.99**	**49** P		**P**	**21 20 46.1**	**+1.1**
	comp=Z,7.1nm,0.8s,mb4.5,baz=314,slow=2.1,SNR=14						
YBH	**Yreka Blue Hor**	**78.99**	**49** *eP*		**P**	**21 20 45.6**	**+0.7**
	comp=Z,9.7nm,1.0s,mb4.5						
THR	**Tehran**	**79.04**	**304** P		**P**	**21 20 46.6**	**+1.3**
	comp=Z,1.3nm,0.7s,mb3.8,baz=38,slow=7.0,SNR=5.0						
DPW	**Dawnport**	**79.90**	**43** *eP*		**P**	**21 20 50.3**	**+0.6**
NEW	**Newport**	**80.44**	**42** P		**P**	**21 20 53.5**	**+1.0**
	comp=Z,10nm,0.7s,mb4.7,baz=279,slow=3.2,SNR=11						
NEW	**Newport**	**80.44**	**42** *eP*		**P**	**21 20 52.7**	**+0.2**
	comp=Z,16nm,1.1s,mb4.7						
BEKR	**Beckwourth**	**81.31**	**51** *eP*		**P**	**21 20 57.6**	**+0.4**
	comp=Z,9.5nm,0.8s,mb4.6						
WVOR	**Wild Horse Val**	**81.59**	**48** *eP*		**P**	**21 20 59.1**	**+0.5**
CMB	**Columbia Colle**	**81.94**	**52** *eP*		**P**	**21 21 00.8**	**+0.3**
	comp=Z,9.6nm,0.8s,mb4.6						
KIV	**Kislovodsk**	**82.29**	**314** *eP*		**P**	**21 21 02.0**	**-0.2**
FINES	**FINESS Array B**	**83.11**	**334** P		**P**	**21 21 05.3**	**-0.7**
	comp=Z,4.9nm,0.5s,mb4.6,baz=67,slow=5.2,SNR=55						
NVAR	**Mina Array Bea**	**83.32**	**51** P		**P**	**21 21 08.6**	**+1.1**
	comp=Z,8.2nm,0.7s,mb4.7,baz=275,slow=4.0,SNR=52						
HLID	**Hailey**	**84.01**	**46** *eP*		**P**	**21 21 11.4**	**+0.5**
	comp=Z,6.1nm,1.0s,mb4.4						
TPH	**Tonopah**	**84.24**	**51** *eP*		**P**	**21 21 12.8**	**+0.6**
	comp=Z,3.1nm,0.7s,mb4.2						
HRY	**Holter Researc**	**84.34**	**42** *eP*		**P**	**21 21 12.9**	**+0.4**
BOZ	**Bozeman (W)**	**84.93**	**43** *eP*		**P**	**21 21 15.8**	**+0.4**
	comp=Z,6.6nm,0.7s,mb4.6						
QLMT	**Earthquake Lak**	**85.42**	**43** *eP*		**P**	**21 21 18.7**	**+0.9**
HVU	**Hansel Valley**	**85.85**	**47** *eP*		**P**	**21 21 20.8**	**+0.9**
FFC	**Flin Flon**	**85.95**	**32** *eP*		**P**	**21 21 20.5**	**+0.4**
	comp=Z,8.8nm,1.0s,mb4.5						
HWUT	**Hardware Ranch**	**86.74**	**46** *eP*		**P**	**21 21 24.5**	**+0.2**
	comp=Z,7.5nm,1.1s,mb4.4						
NEN	**Nelson**	**86.96**	**53** *eP*		**P**	**21 21 26.0**	**+0.6**
FCC	**Fort Churchill**	**87.15**	**26** *eP*		**P**	**21 21 24.9**	**-0.8**
	comp=Z,2.5nm,0.6s,mb4.2						
MSU	**Marysvale**	**87.68**	**49** *eP*		**P**	**21 21 29.8**	**+1.0**
SRU	**San Rafael**	**88.57**	**48** *eP*		**P**	**21 21 33.1**	**+0.1**
NB2	**NORSAR Subarra**	**88.89**	**339** P		**P**	**21

comp=Z,13nm,0.5s
AB31 ⇓Sn **S** **21 22 25.2 -4.8**
comp=Z,14nm,0.5s
AB31 Akbulak array 12.85 327 P **P** **21 20 02.2 -5.8**
AB31 S **S** **21 22 18.4 -12**
AB31 pmax pmax
comp=Z,12nm,0.5s
AB31 smax
comp=Z,10.0nm,0.5s
KURK Kurchatov 13.11 23 Pn **P** **21 20 09.7 -1.6**
comp=Z,2.3nm,0.9s,baz=198,slow=13,SNR=4.3
KURK Kurchatov 13.11 23 *e*P **P** **21 20 09.7 -1.6**
KURK pmax pmax
comp=Z,2.0nm,0.9s
KURK Kurchatov 13.11 23 *e*P **P** **21 20 06.6 -4.7**
WMQ Urumqi 13.76 64 *e*P **P** **21 20 22.0 +2.2**
VOSK Vostochnaya 13.83 1 ⇓Pn **P** **21 20 17.4 -3.2**
comp=Z,5.6nm,1.2s
VOSK Vostochnaya 13.83 1 P **P** **21 20 17.4 -3.2**
VOSK pmax pmax
comp=Z,7.0nm,1.3s
ZRNK Zerenda 14.09 356 ⇑Sn **S** **21 22 58.7 -0.8**
comp=Z,11nm,1.1s
ZRNK Zerenda 14.09 356 P **P** **21 20 20.2 -3.9**
ZRNK **21 22 50.0**
ZRNK pmax pmax
comp=Z,2.0nm,0.6s
ZRNK smax
comp=Z,13nm,1.2s
ZRNK smax
comp=Z,30nm,1.2s
ZRNK Zerenda 14.09 356 *e*P **P** **21 20 19.7 -4.4**
BVA0 Borovoye Array 14.13 360 ⇓Pn **P** **21 20 20.7 -3.8**
comp=Z,0.6nm,0.8s,baz=170,slow=13,SNR=8.6
BVA0 ⇑Sn **S** **21 22 59.0 -1.2**
comp=Z,2.1nm,1.5s,baz=169,slow=27,SNR=3.5
BVA0 Borovoye Array 14.13 360 *i* P **P** **21 20 20.6 -3.9**
BVA0 **21 22 55.1**
BVAR Borovoye Array 14.13 360 P **P** **21 20 21.3 -3.2**
comp=Z,0.4nm,0.3s,baz=162,slow=13,SNR=4.9
BVAR S **S** **21 22 54.4 -5.8**
comp=Z,0.5nm,0.3s,baz=180,slow=23,SNR=3.5
BVAR Borovoye Array 14.13 360 P **P** **21 20 21.3 -3.2**
BVAR S **S** **21 22 54.4 -5.8**
BRVK Borovoye 14.16 359 *e*P **P** **21 20 19.7 -5.3**
KOLN Koldanda 15.53 132 *e*P **P** **21 20 36.8 -6.0**
comp=Z,22nm,0.6s
GKN Gorkha 15.97 129 *e*P **P** **21 20 43.4 -5.1**
comp=Z,99nm,0.6s
KKN Kakani 16.52 128 *e*P **P** **21 20 48.8 -6.6**
comp=Z,22nm,0.5s
DMN Daman 16.55 129 *e*P **P** **21 20 47.9 -7.7**
comp=Z,38nm,0.7s
PKI Pulchoki 16.76 128 *e*P **P** **21 20 51.1 -7.2**
comp=Z,36nm,0.8s
ZAL Zalesovo 17.90 28 P **P** **21 21 10.6 -1.8**
comp=Z,1.9nm,0.3s,baz=164,slow=11,SNR=14
ZAL Zalesovo 17.90 28 P **P** **21 21 10.6 -1.8**
ZAL pmax pmax
comp=Z,2.0nm,0.3s
ARU Arti 19.26 339 ⇓*i*P **P** **21 21 29.4 +1.1**
ARU *e*S **S** **21 24 56.3 -1.1**
ARU pmax pmax
comp=Z,10.0nm,0.8s
ARU MLR MLR
comp=Z,100nm,14.0s
ARU MLR MLR
comp=N,40nm,13.0s
ARU Arti 19.26 339 *e*P **P** **21 21 23.7 -4.6**
comp=N,5.6nm,0.8s
LSA Lhasa 19.29 112 *e*P **P** **21 21 25.4 -3.4**
comp=N,2.9nm,0.6s
KIV Kislovodsk 21.46 293 *e*P **P** **21 21 55.1 +3.8**
KIV pmax pmax
comp=Z,10.0nm,0.7s,mb4.2
GTA Gaotai 22.64 79 *e*P **P** **21 22 04.0 +1.1**
GTA AMB AMB
comp=Z,5.0nm,1.2s,mb3.8
ZAK Zakamensk 25.74 53 *e*P **P** **21 22 33.1 +0.5**
SONM Songino Array 27.32 59 P **P** **21 22 47.8 +0.5**
comp=Z,0.6nm,0.6s,mb3.3,baz=260,slow=8.8,SNR=2.9
ULN Ulaanbaatar 27.77 59 *e*P **P** **21 22 49.4 -1.9**
comp=Z,3.1nm,1.1s,mb3.9
BRTR Keskin Array B 28.46 283 P **P** **21 22 58.8 +1.2**
comp=Z,1.2nm,0.8s,mb3.6,baz=90,slow=6.2,SNR=5.8
JOF Joensuu 33.63 328 *e*p **P** **21 23 43.6 +0.8**
BOD Bodaibo 33.74 41 *e*P **P** **21 23 42.8 -0.9**
FINES FINESS Array B 35.32 324 P **P** **21 23 56.0 -1.3**
comp=Z,1.7nm,0.6s,mb4.2,baz=100,slow=12,SNR=7.6
FINES FINESS Array B 35.32 324 P **P** **21 23 56.0 -1.2**
FINES pmax pmax
comp=Z,2.0nm,0.6s
KAF Kangasniemi 35.44 326 *e*p **P** **21 23 59.1 +0.8**
comp=Z,1.2nm,0.8s,mb3.9
KAF Kangasniemi 35.44 326 *e*P **P** **21 23 59.1 +0.8**
KAF pmax pmax
comp=Z,1.0nm,0.8s,mb3.8
ARCES ARCESS Array B 38.80 337 P **P** **21 24 25.5 -0.8**
comp=Z,0.9nm,0.6s,mb3.6,baz=103,slow=6.8,SNR=8.4
ARCES ARCESS Array B 38.80 337 P **P** **21 24 25.5 -0.8**
ARCES pmax pmax
comp=Z,1.0nm,0.6s
GERES GERESS Array B 41.30 303 P **P** **21 24 48.5 +1.3**
comp=Z,0.3nm,0.7s,mb3.0,baz=63,slow=13,SNR=2.9
NB2 NORSAR Subarra 42.28 322 P **P** **21 24 53.6 -1.4**
comp=Z,2.3nm,0.8s,mb3.9,baz=94,slow=7.9
NOA NORSAR Array B 42.28 322 P **P** **21 24 53.6 -1.3**
comp=Z,2.2nm,0.8s,mb3.9,baz=94,slow=8.1,SNR=12
NOA NORSAR Array B 42.28 322 P **P** **21 24 53.7 -1.3**
NOA pmax pmax
comp=Z,2.0nm,0.8s
MDJ Mudanjiang 43.56 63 P **P** **21 25 04.0 -1.7**
MDJ PP PP 21 26 46.5 -3.1
MDJ PCP PcP 21 26 49.0 -4.1
MDJ SCP 21 30 38.8
MDJ PCS 21 30 43.5
MDJ S **S** **21 31 31.3 +1.3**
MDJ AMB AMB
comp=Z,4.0nm,1.1s,mb4.1
MDJ AMB AMB
comp=Z,28nm,4.2s
MDJ LR LR
comp=N,77nm,14.6s,MS3.9
MDJ LR LR
comp=E,88nm,15.8s,MS3.9
MDJ LR LR
comp=Z,154nm,13.4s,MS4.1
TIXI Tiksi 43.69 23 *e*P **P** **21 25 05.7 -0.7**
comp=Z,4.9nm,0.8s,mb4.3
LPG La Plagne 46.63 300 *e*P **P** **21 25 34.2 +4.0**
comp=Z,5.9nm,0.9s,mb4.2
LOR Lormes 48.09 303 *e*P **P** **21 25 42.7 +1.2**
comp=Z,1.9nm,0.6s,mb4.0
SSF Saint Saulge 48.37 303 *e*P **P** **21 25 45.0 +1.3**
AVF Avril sur Loir 48.55 302 *e*P **P** **21 25 44.4 -0.7**
TCF Toulx Ste Croi 49.45 302 *e*P **P** **21 25 53.4 +1.3**
FLN La Foliniere 50.47 306 *e*P **P** **21 26 01.1 +1.3**
GRR Gorron 50.81 305 *e*P **P** **21 26 03.1 +0.6**
comp=Z,9.7nm,0.9s,mb4.4
SGMF Saint Gilles 51.94 306 *e*P **P** **21 26 12.4 +1.5**
ESDC Sonseca Array 56.07 296 P **P** **21 26 42.5 +1.2**
comp=Z,0.9nm,0.7s,mb3.9,baz=58,slow=7.3,SNR=5.9
SUMG Summit 58.69 341 *e*P **P** **21 26 57.5 -1.9**
PET Petropavlovsk 59.05 45 *e*P **P** **21 27 03.3 +1.2**
PET pmax pmax
comp=Z,14nm,0.3s
INK Inuvik 71.59 9 P **P** **21 28 22.3 -0.1**
comp=Z,1.5nm,0.6s,mb4.1,baz=4.5,slow=8.1,SNR=5.6
INK Inuvik 71.59 9 P **P** **21 28 22.3 -0.1**
INK pmax pmax
comp=Z,2.0nm,0.6s
ILAR Eielson Array 72.56 16 P **P** **21 28 27.4 -0.7**
comp=Z,0.3nm,0.8s,mb3.3,baz=327,slow=3.6,SNR=5.7
YKA Yellowknife Ar 78.87 2 P **P** **21 29 04.3 +0.4**
comp=Z,0.9nm,0.6s,mb3.9,baz=352,slow=5.8,SNR=23
YKA Yellowknife Ar 78.87 2 P **P** **21 29 04.3 +0.4**
YKA pmax pmax
comp=Z,1.0nm,0.6s
WRA Warramunga Arr 83.54 122 P **P** **21 29 28.8 -0.5**
comp=Z,0.8nm,0.6s,mb4.0,baz=323,slow=4.9,SNR=7.9
WRA Warramunga Arr 83.54 122 P **P** **21 29 28.8 -0.5**
WRA pmax pmax
comp=Z,1.0nm,0.6s
ASAR Alice Springs 85.90 125 P **P** **21 29 41.0 +0.1**
comp=Z,0.6nm,0.6s,mb4.0,baz=312,slow=4.9,SNR=10

BJI 26 21:18:08.0, 30.41N×122.62E, h15km, ML4.2, 1C, Southeastern China

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SSE	**Sheshan**	**1.41**	**299**	PG	Pg	21 18 32.8	-3.5
SSE				SG	Sg	21 18 52.0	-3.2
SSE				S	Sb		
	comp=N,2μm,0.6s						
SSE				S	Sb		
	comp=E,1μm,0.6s						
NJ2	**Nanjing**	**3.62**	**298**	⇑P	Pn	21 19 03.5	-1.3
NJ2				PG	Pg	21 19 16.5	-3.8
NJ2				S	Sn	21 19 45.3	-2.3
NJ2				SG	Sg	21 20 01.0	-7.5
NJ2				S	Sn		
	comp=N,1μm,0.6s						
NJ2				S	Sn		
	comp=E,1μm,0.9s						

*IDC **26** 21:43:21.8±5.9, 47.79N×153.19E, mb3.7/5, mb1 3.9/5, mb1mx3.6/22, Error ellipse: s-maj=145.0km s-min=44.3km az=126.0*
*MOS **26** 21:43:22.9±1.6, 47.53N×153.08E, h33km, mb4.0/2, Error ellipse: s-maj=48.6km s-min=26.4km az=63.6*
ISC 26 21:43:25.0±3.7, 47.5N±0.4×153.6E±0.5, h57km±14km, n15, σ0°62/17, mb4.3/9, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SKR	**Severo-Kuril's**	**3.58**	**26**	*e*PN	**P**	**21 44 18.9**	**-0.5**
SKR				*e*S	**S**	**21 45 01.2**	**+0.4**
SKR				pmax	pmax		
	comp=Z,20nm,0.5s						
KUR	**Kuril'sk**	**4.60**	**243**	*e*PN	**P**	**21 44 25.6**	**-8.1**
KUR				*e*S	**S**	**21 45 26.7**	**+0.3**
KUR				pmax	pmax		
	comp=Z,70nm,0.9s						
KUR				smax			
	comp=N,120nm,0.5s						
KUR				smax			
	comp=E,30nm,0.5s						
MKAR	**Makanchi Array**	**46.92**	**297**	P	**P**	**21 51 50.6**	**-0.7**
	comp=E,0.5nm,0.6s,mb3.7,baz=65,slow=7.8,SNR=7.4						
MKAR	**Makanchi Array**	**46.92**	**297**	P	**P**	**21 51 50.6**	**-0.7**
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.6s						
CMAR	**Chiang Mai Arr**	**52.90**	**256**	P	**P**	**21 52 37.7**	**+0.3**
	comp=Z,0.4nm,0.6s,mb3.5,baz=36,slow=7.8,SNR=4.3						
KKN	**Kakani**	**55.78**	**275**	*e*P	**P**	**21 52 58.7**	**+0.4**
	comp=Z,11nm,0.8s,mb5.0						
PKI	**Pulchoki**	**55.84**	**275**	*e*P	**P**	**21 52 58.2**	**-0.5**
DMN	**Daman**	**56.02**	**275**	*e*P	**P**	**21 53 00.0**	**0.0**
	comp=Z,14nm,0.8s,mb5.0						
GKN	**Gorkha**	**56.08**	**276**	*e*P	**P**	**21 52 59.9**	**-0.6**
	comp=Z,10nm,0.6s,mb5.1						
KOLN	**Koldanda**	**56.93**	**276**	*e*P	**P**	**21 53 06.2**	**-0.3**
	comp=Z,7.2nm,0.7s,mb4.8						
FINES	**FINESS Array B**	**63.52**	**335**	P	**P**	**21 53 50.2**	**-0.7**
	comp=Z,0.4nm,0.4s,mb3.8,baz=38,slow=9.6,SNR=9.2						
NB2	**NORSAR Array B**	**67.64**	**341**	P	**P**	**21 54 17.4**	**+0.2**
	comp=Z,0.7nm,0.6s,mb3.9,baz=26,slow=6.2						
NOA	**NORSAR Array B**	**67.64**	**341**	P	**P**	**21 54 17.9**	**+0.7**
	comp=Z,1.0nm,0.6s,mb4.0,baz=26,slow=6.3,SNR=6.3						
NOA	**NORSAR Array B**	**67.64**	**341**	P	**P**	**21 54 17.9**	**+0.7**
NOA				pmax	pmax		
	comp=Z,1.0nm,0.6s						
BRTR	**Keskin Array B**	**78.09**	**317**	P	**P**	**21 55 20.5**	**+1.5**
	comp=Z,0.9nm,0.9s,mb3.7,baz=45,slow=2.0,SNR=4.4						

*IDC **26** 21:43:49.0±1.2, 20.79S×174.54W, mb4.1/8, mb1 4.3/9, mb1mx4.1/18, ML4.7/1, Error ellipse: s-maj=49.3km s-min=22.8km az=142.0*
*NEIC **26** 21:43:55.0±0.9, 20.84S×174.56W, h35km, mb4.3/2, Error ellipse: s-maj=32.9km s-min=18.7km az=144.0*
ISC 26 21:43:49.1±0.9, 20.8S±0.2×174.6W±0.2, h10km, n16, σ0°93/14, mb4.1/10, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAR	**Rarotonga**	**13.89**	**94**	Pn	**P**	**21 46 53.8**	**-15**
	4.1nm,0.3s,baz=292,slow=14,SNR=7.6						
RAR	**Rarotonga**	**13.89**	**94**	*e*P	**P**	**21 46 53.7**	**-15**
RPZ	**Rata Peaks**	**25.80**	**204**	P	**P**	**21 49 22.5**	**+0.6**
	5.5nm,0.7s,mb4.2,baz=17,slow=3.6,SNR=6.2						
CTA	**Charters Tower**	**36.60**	**264**	P	**P**	**21 50 59.0**	**+1.5**
	2.5nm,0.9s,mb4.0,baz=103,slow=9.0,SNR=3.9						
CTAO	**Charters Tower**	**36.60**	**264**	*e*P	**P**	**21 50 58.6**	**+1.2**
STKA	**Stephens Creek**	**40.51**	**245**	P	**P**	**21 51 29.6**	**-0.4**
	1.6nm,0.7s,mb3.8,baz=123,slow=6.4,SNR=4.5						
ASAR	**Alice Springs**	**47.52**	**257**	P	**P**	**21 52 25.9**	**-0.8**
	2.6nm,0.6s,mb4.4,baz=101,slow=7.4,SNR=40						
WRAB	**Tennant Creek**	**47.67**	**262**	*e*P	**P**	**21 52 27.0**	**-0.9**
	5.7nm,0.8s,mb4.7						
WRA	**Warramunga Arr**	**47.68**	**262**	P	**P**	**21 52 27.4**	**-0.7**
	0.7nm,0.4s,mb4.0,baz=97,slow=7.7,SNR=7.1						
NVAR	**Mina Array Bea**	**79.10**	**42**	P	**P**	**21 55 55.3**	**-0.3**
	1.6nm,1.1s,mb3.9,baz=203,slow=8.3,SNR=4.2						
MAW	**Mawson**	**82.34**	**199**	P	**P**	**21 56 11.9**	**-0.2**
	1.0nm,0.8s,mb3.8						
CMAR	**Chiang Mai Arr**	**93.19**	**288**	P	**P**	**21 57 07.8**	**+2.4**
	1.0nm,0.8s,mb4.3,baz=110,slow=2.9,SNR=6.0						
YKA	**Yellowknife Ar**	**95.47**	**24**	P	**P**	**21 57 14.7**	**-0.3**
	0.1nm,0.4s,mb3.6,baz=240,slow=4.3,SNR=3.8						
YKA	**Yellowknife Ar**	**95.47**	**24**	P	**P**	**21 57 14.7**	**-0.3**
BRTR	**Keskin Array B**	**149.33**	**314**	PKPbc	PKPdf	22 03 39.8	+2.7
	0.7nm,0.7s,baz=135,slow=5.2,SNR=3.9						
GERES	**GERESS Array B**	**151.22**	**349**	PKPbc	PKPdf	22 03 43.9	+4.3
	0.5nm,0.8s,slow=1.3,SNR=4.5						

*NEIC **26** 21:54:50.0, 16.32N×98.13W, h10km, MD3.7(MEX), After MEX.*
MEX 26 21:54:48.6±1.3, 16.26N×98.13W, h3km±13km, MD3.8, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PNIG	**Pinotepa**	**0.13**	**360**	*i* P	Pg	21 54 50.9	-0.4
PNIG				*i* S	Sg	21 54 53.4	+0.4
VHO	**Vista Hermosa**	**1.56**	**59**	*i* P	Pn	21 55 14.1	-3.3
VHO				*i* S	Sb	21 55 33.5	-4.4
OXX	**Oaxaca**	**1.57**	**59**	*i* P	Pn	21 55 14.2	-3.4
ACX	**Acapulco**	**1.82**	**290**	*e*P	Pn	21 55 17.7	-3.4
CAIG	**El Cayaco**	**2.20**	**291**	*i* P	Pn	21 55 24.3	-2.2
CAIG				*i* S	Sn	21 55 50.0	-4.5
IISM	**Ciudad Serdan**	**2.81**	**15**	*i* P	Pn	21 55 38.6	+3.4
CMIG	**Matias Romero**	**3.22**	**75**	*e*P	Pn	21 55 41.0	0.0
CMIG				*i* S	Sn	21 56 13.6	-6.8

CASC 26 22:03:10.6±1.9, 10.29N×85.59W, h22km±4km, MD3.7, ML4.1, 9C-2D, Costa Rica

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
VCR	**Vista de Mar**	**0.17**	**194**	⇑*i*P	Pb	22 03 15.9	+0.3
VCR				*e*S	Sb	22 03 20.9	+1.9
JCR	**Jicaral**	**0.64**	**133**	⇑*i*P	Pb	22 03 22.6	-0.4
JCR				*e*S	Sb	22 03 31.8	+0.1
CRZC	**La Cruz**	**0.66**	**359**	⇑*i*P	Pb	22 03 22.6	-0.7
CRZC				*e*S	Sb	22 03 32.5	+0.5
FORC	**Fortuna**	**0.92**	**79**	*e*P	Pb	22 03 26.8	-1.0
FORC				*e*S	Sb	22 03 42.6	+3.0
SSNN	**San Juan del S**	**1.02**	**346**	⇑*e*P	Pb	22 03 28.5	-0.9
SSNN				*e*S	Sb	22 03 43.0	+0.6
MADN	**Villa Maderas**	**1.11**	**3**	⇑*e*P	Pn	22 03 30.2	-0.7
CGA2	**Cerro Gallo 2**	**1.14**	**104**	⇓*e*P	Pn	22 03 30.6	-0.8
CGA2				*e*S	Sb	22 03 48.4	+2.5
CONN	**Concepcion**	**1.26**	**358**	⇑*e*P	Pn	22 03 31.9	-1.3
CONN				*e*S	Sb	22 03 47.6	-1.9
LAJ	**Bijagual**	**1.51**	**106**	⇓*e*P	Pn	22 03 30.3	-6.3
LCR2	**La Lucha 2**	**1.66**	**109**	⇑*e*P	Pn	22 03 37.9	-0.8
APON	**Apoyo**	**1.68**	**344**	*e*P	Pn	22 03 38.3	-0.8
APON				*e*S	Sn	22 04 01.4	+1.3
ICR	**Volcan Irazu**	**1.76**	**100**	*e*P	Pn	22 03 40.7	+0.5
CRUN	**El Crucero**	**1.82**	**338**	*e*P	Pn	22 03 40.6	-0.4
URSC	**Urasca**	**1.84**	**104**	⇑*e*P	Pn	22 03 41.7	+0.3
TICN	**Ticuantepe**	**1.84**	**340**	*e*P	Pn	22 03 38.3	-3.1
TICN				*e*S	Sn	22 04 04.9	+0.7
TRTC	**Tortuguero**	**1.87**	**81**	*e*P	Pn	22 03 40.3	-1.5
TRTC				*e*S	Sn	22 04 07.5	+2.6
BUS	**Buena Vista**	**1.95**	**112**	*e*P	Pn	22 03 43.6	+0.7
WILN	**Americas 2**	**1.95**	**343**	*e*S	Sn	22 04 05.9	-1.0
MGAN	**Managua**	**1.95**	**341**	*e*S	Sn	22 04 07.7	+0.7
MGAN				*i*		22 04 08.8	
	comp=E,210nm,0.3s						
COPN	**Copaltepe**	**2.12**	**332**	⇑*e*P	Pn	22 03 45.2	-0.1
LEON	**Leon**	**2.47**	**329**	*e*P	Pn	22 03 50.3	-0.1
PYN	**Poneloya**	**2.51**	**326**	*e*P	Pn	22 03 50.7	-0.2
PYN				*e*S	Sn	22 04 21.5	+0.4

*IDC **26** 22:10:48.4±3.0, 5.40S×102.20E, mb3.8/7, mb1 3.9/7, mb1mx3.7/18, Error ellipse: s-maj=126.0km s-min=19.7km az=53.0*
*NEIC **26** 22:10:53.8±1.5, 5.41S×102.14E, h35km, mb4.4/2, Error ellipse: s-maj=62.7km s-min=10.4km az=52.0*
ISC 26 22:10:51.0±1.9, 5.5S±0.3×102.0E±0.4, h35km, n11, σ0°61/11, mb3.9/9, Southwest of Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CMAR	**Chiang Mai Arr**	**24.00**	**353**	P	**P**	**22 16 04.3**	**+0.7**
	0.5nm,0.5s,mb3.2,baz=184,slow=8.6,SNR=6.2						
WRA	**Warramunga Arr**	**34.57**	**117**	P	**P**	**22 17 38.3**	**-0.4**
	0.6nm,0.7s,mb3.6,baz=303,slow=9.4,SNR=3.5						
WRAB	**Tennant Creek**	**34.57**	**117**	P	**P**	**22 17 40.2**	**+1.4**
	4.7nm,0.7s,mb4.5						
ASAR	**Alice Springs**	**35.63**	**124**	P	**P**	**22 17 47.0**	**-0.8**
	0.3nm,0.6s,mb3.4,baz=297,slow=8.1,SNR=3.2						
SONM	**Songino Array**	**53.25**	**4**	P	**P**	**22 20 07.7**	**-0.7**
	0.9nm,0.4s,mb4.0,baz=203,slow=9.4,SNR=5.2						
ULN	**Ulaanbaatar**	**53.33**	**4**	*e*P	**P**	**22 20 08.8**	**-0.2**
	1.1nm,0.4s,mb4.1						
MKAR	**Makanchi Array**	**54.92**	**344**	P	**P**	**22 20 21.0**	**+0.3**
	0.6nm,0.4s,mb4.0,baz=150,slow=8.8,SNR=17						
KURK	**Kurchatov**	**59.51**	**343**	*e*P	**P**	**22 20 53.1**	**0.0**
ZAL	**Zalesovo**	**60.96**	**348**	P	**P**	**22 21 02.5**	**-0.4**
	0.8nm,0.3s,mb4.3,baz=175,slow=4.9,SNR=3.7						
BVAR	**Borovoye Array**	**64.14**	**339**	P	**P**	**22 21 24.2**	**+0.1**
	0.8nm,0.5s,mb4.0,baz=129,slow=9.5,SNR=5.9						
BRVK	**Borovoye**	**64.20**	**339**	*e*P	**P**	**22 21 24.6**	**+0.1**

*IGQ **26** 22:13:56.1, 4.10S×77.25W, h14km±8km, mb4.7, Error ellipse: s-maj=9.1km s-min=1.7km az=12.1*
*IDC **26** 22:13:59.8±2.1, 2.82S×75.77W, mb3.9/5, mb1 4.2/6, mb1mx4.0/18, ML3.6/1, Error ellipse: s-maj=153.0km s-min=42.4km az=60.0*
*NEIC **26** 22:14:03.8±0.6, 3.08S×76.19W, h35km, mb4.4/5, Error ellipse: s-maj=68.2km s-min=11.3km az=61.0*
ISC 26 22:13:58.2±0.6, 4.13S±0.03×77.4W±0.1, h14km, n46, σ1°27/57, mb4.1/10, 2C-5D, Northern Peru

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HCA		**2.52**	**235**	⇓P	**Pn**	**22 14 41.2**	**+1.9**
PATA	**Patacocha**	**2.82**	**338**	⇓P	**Pn**	**22 14 42.8**	**-0.8**
ARRY	**Arrayan**	**2.82**	**337**	⇓P	**Pn**	**22 14 42.7**	**-1.0**
ARRY				S	**Sn**	**22 15 16.9**	**-0.9**
ULBA	**Ulba**	**2.86**	**339**	P	**Pn**	**22 14 43.5**	**-0.7**
RETU	**Refugio**	**2.87**	**338**	⇓P	**Pn**	**22 14 45.6**	**+1.3**
RETU				S	**Sn**	**22 15 20.3**	**+1.3**
CUSU	**Cusua**	**2.89**	**337**	P	**Pn**	**22 14 43.7**	**-0.9**
CUSU				S	**Sn**	**22 15 18.7**	**-0.8**
JUIV	**Juive**	**2.90**	**338**	P	**Pn**	**22 14 44.0**	**-0.8**
JUIV				S	**Sn**	**22 15 19.4**	**-0.3**
IGUA	**Igualata**	**2.91**	**334**	⇑P	**Pn**	**22 14 45.4**	**+0.4**
IGUA				S	**Sn**	**22 15 20.9**	**+0.9**
PP16	**Cajamarca**	**3.19**	**201**	P	**Pn**	**22 14 48.9**	**-0.1**
PP16				S	**Sn**	**22 15 25.3**	**-1.8**
PISA	**Pisayambo**	**3.21**	**342**	P	**Pn**	**22 14 48.5**	**-0.8**
PISA				S	**Sn**	**22 15 28.7**	**+1.0**
MARY	**Rancho Maria**	**3.55**	**342**	P	**Pn**	**22 14 53.6**	**-0.5**
TAMB	**Tambo**	**3.56**	**344**	P	**Pn**	**22 14 53.5**	**-0.6**
VC1	**Cotopaxi 1**	**3.62**	**343**	P	**Pn**	**22 14 54.8**	**-0.2**
QIL1	**Quilotoa**	**3.62**	**334**	P	**Pn**	**22 14 54.6**	**-0.3**
QIL1				S	**Sn**	**22 15 40.7**	**+2.8**
NAS1	**Nasa**	**3.65**	**342**	P	**Pn**	**22 14 56.5**	**+1.2**
NAS1				S	**Sn**	**22 15 47.4**	**+8.8**
ANTI	**Antisana**	**3.74**	**348**	P	**Pn**	**22 14 56.6**	**-0.1**
CONE	**Cono NE Rev Vo**	**4.04**	**356**	P	**Pn**	**22 14 59.7**	**-1.4**
JUA2	**San Juan 2**	**4.08**	**342**	P	**Pn**	**22 15 01.4**	**-0.1**
GGP	**Refugio Guagua**	**4.12**	**343**	P	**Pn**	**22 15 02.6**	**+0.6**
CGGP	**Crater GGP**	**4.12**	**342**	P	**Pn**	**22 15 03.0**	**+0.9**
PINO	**Pino**	**4.13**	**343**	P	**Pn**	**22 15 02.3**	**-0.1**
YANA	**Yana**	**4.16**	**343**	P	**Pn**	**22 15 02.9**	**+0.2**
CAYR	**Refugio Cayamb**	**4.17**	**351**	P	**Pn**	**22 15 02.8**	**+0.1**
CAYR				S	**Sn**	**22 16 02.9**	**+11**
CAYA	**Cayambe**	**4.22**	**351**	P	**Pn**	**22 15 03.4**	**-0.1**
CAYA				S	**Sn**	**22 16 03.3**	**+10**
JOR1	**San Jorge 1**	**4.29**	**343**	P	**Pn**	**22 15 01.7**	**-2.9**
COTA	**Cotacachi**	**4.54**	**348**	P	**Pn**	**22 15 19.4**	**+11**
LPAZ	**La Paz**	**15.11**	**144**	Pn	**P**	**22 17 37.7**	**+4.7**
	0.1nm,0.3s,baz=328,slow=11,SNR=3.8						
LPAZ	**La Paz**	**15.11**	**144**	Pn	**P**	**22 17 37.7**	**+4.6**
CPUP	**Villa Florida**	**29.25**	**141**	P	**P**	**22 20 03.8**	**+1.8**
TXAR	**Lajitas Array**	**41.76**	**324**	P	**P**	**22 21 50.9**	**+2.1**
	0.8nm,0.3s,mb3.8,baz=143,slow=9.0,SNR=4.6						
TXAR	**Lajitas Array**	**41.76**	**324**	P	**P**	**22 21 50.9**	**+2.1**
WMOK	**Wichita Mounta**	**43.60**	**334**	*e*P	**P**	**22 22 01.2**	**-2.6**
	7.2nm,0.9s,mb4.4						
CCM	**Cathedral Cave**	**43.90**	**344**	*e*P	**P**	**22 22 01.9**	**-4.3**
	4.0nm,0.6s,mb4.3						
GDL2	**Guadalupe Moun**	**44.31**	**327**	P	**P**	**22 22 12.3**	**+2.7**
MNTX	**Cornudas Mount**	**44.50**	**325**	*e*P	**P**	**22 22 08.4**	**-2.7**
	2.6nm,0.8s,mb4.1						
ANMO	**Albuquerque**	**47.53**	**327**	*e*P	**P**	**22 22 33.6**	**-1.5**
	3.0nm,0.8s,mb4.4						
PV01	**Paradox Valley**	**51.04**	**328**	*e*P	**P**	**22 23 01.9**	**-0.1**
PV10	**Paradox Valley**	**51.47**	**328**	*e*P	**P**	**22 23 06.8**	**+1.5**
PDAR	**Pinedale Array**	**55.02**	**331**	P	**P**	**22 23 29.1**	**-2.5**
	1.0nm,0.7s,mb4.0,baz=117,slow=6.6,SNR=4.7						
ULM	**Lac du Bonnet**	**56.47**	**346**	P	**P**	**22 23 37.5**	**-4.4**
	4.4nm,0.6s,mb4.7,baz=146,slow=5.4,SNR=5.0						
YKA	**Yellowknife Ar**	**72.22**	**343**	P	**P**	**22 25 21.4**	**-3.0**
	0.1nm,0.4s,mb3.1,baz=138,slow=5.8,SNR=6.3						
YKA	**Yellowknife Ar**	**72.22**	**343**	P	**P**	**22 25 21.4**	**-3.0**
VNA3	**Neumayer Olymp**	**79.04**	**162**	⇓*i*	**P**	**22 26 12.3**	**+9.3**
VNA2	**Neumayer--Watz**	**79.64**	**162**	⇑*i*	**P**	**22 26 15.4**	**+9.1**
ILAR	**Eielson Array**	**85.13**	**336**	P	**P**	**22 26 36.7**	**+2.0**
	0.7nm,1.0s,mb3.8,baz=117,slow=4.0,SNR=4.9						
QSPA	**South Pole Qui**	**85.95**	**180**	*e*P	**P**	**22 26 46.0**	**+7.5**
	5.5n

0.3nm,0.6s,mb3.4,baz=252,slow=5.0,SNR=4.8
ILAR pP pP 22 34 45.5 -1.5
0.3nm,0.6s,baz=261,slow=7.5,SNR=4.1

MOS ***26*** *22:24:49.6±1.1,32.45S×178.28W,h10km,mb5.4/10, MS4.6/6,Error ellipse: s-maj=19.7km s-min=17.3km az=77.3*
IDC ***26*** *22:24:49.3±0.5,32.31S×178.34W,mb4.9/9,mb1 5.0/12, mb1mx4.9/17,ML4.5/3,MS4.7/9,Ms1 4.7/9,ms1mx4.6/14, Error ellipse: s-maj=23.6km s-min=13.4km az=172.0, putative timing error at GNI*
BJI ***26*** *22:24:51.3,32.34S×177.81W,h29km,mB5.3,mb5.1, Ms5.0,Msz4.7*
NEIC ***26*** *22:24:53.3±0.3,32.67S×178.16W,mb5.1/16,MS4.9/95, Error ellipse: s-maj=10.3km s-min=7.4km az=156.0*
SYO ***26*** *22:24:53.2,32.67S×178.16W,h32km,MB5.1,MS4.9*
HRVD ***26*** *22:24:53.3±0.2,32.49S×177.90W,h16km,MW5.2/65, Centroid moment Tensor Solution. LP body waves: s48,c84;Mantle waves: s65,c116; Half duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-5.36±.19; $M_{\theta\theta}$-0.25±.14; $M_{\phi\phi}$5.60±.14; $M_{r\theta}$2.54±.45; $M_{\theta\phi}$-0.59±.10; $M_{\phi r}$-4.53±.44; Best double couple: M_o7.58×10^{16} NP1: ϕ_s189°,δ26°,λ-62°. NP2:ϕ_s339°,δ67°,λ-103°. Principal axes: T 7.5, Plg21°, Azm78°; N .14, Plg12°, Azm344°; P -7.65, Plg65°, Azm226°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 26 22:24:51.8±0.3,32.79S±0.04×178.18W±0.06,h31km, h31km±.4km:pP-P,n321,σ1s33/98,mb5.1/25,MS4.9/104, 16C-16D,South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PUZ	**Puketiti**	**6.02**	**208**	P	**Pn**	**22 26 19.6**	**-1.5**
PUZ				S	**Sn**	**22 27 33.7**	**+4.0**
URZ	**Urewera**	**6.67**	**214**	Pn	**Pn**	**22 26 28.6**	**-1.7**
	15nm,0.3s,baz=30,slow=4.8,SNR=57						
URZ				Sn	**Sn**	**22 27 48.0**	**+2.0**
	26nm,0.3s,baz=142,slow=19,SNR=11						
KNZ	**Kokohu**	**7.07**	**207**	P	**Pn**	**22 26 33.6**	**-2.3**
KNZ				S	**Sn**	**22 27 56.2**	**+0.2**
OUZ	**Omahuta**	**7.24**	**248**	P	**Pn**	**22 26 41.7**	**+3.4**
BFZ	**Birch Farm**	**9.05**	**208**	P	**P**	**22 26 58.5**	**-5.0**
BFZ				S	**Sn**	**22 28 41.6**	**-3.8**
MRZ	**Mangatainoka R**	**9.31**	**211**	P	**P**	**22 27 02.6**	**-4.5**
MRZ				S	**Sn**	**22 28 47.3**	**-4.5**
SNZO	**South Karori**	**10.22**	**212**	P	**P**	**22 27 16.2**	**-3.3**
THZ	**Tophouse**	**11.42**	**216**	P	**P**	**22 27 35.8**	**-0.1**
THZ				S	**S**	**22 29 36.8**	**-6.6**
KHZ	**Kahutara**	**11.63**	**212**	P	**P**	**22 27 34.7**	**-4.0**
LTZ	**Lake Taylor**	**12.50**	**214**	P	**P**	**22 27 47.6**	**-2.8**
MQZ	**McQueen's Vall**	**13.05**	**211**	S	**S**	**22 30 12.2**	**-11**
RPZ	**Rata Peaks**	**13.79**	**215**	Pn	**P**	**22 27 60.0**	**-7.4**
	0.6nm,0.3s,baz=90,slow=2.0,SNR=5.1						
RPZ				Sn	**S**	**22 30 30.2**	**-10**
	2.2nm,0.3s,baz=6.5,slow=21,SNR=9.3						
DZM	**Mont Dzumac**	**17.30**	**304**	eP	**P**	**22 28 53.5**	**+0.7**
NOUC	**Port Laguerre**	**17.38**	**304**	eP	**P**	**22 28 55.3**	**+1.6**
RAR	**Rarotonga**	**20.02**	**59**	P	**P**	**22 29 22.8**	**-2.1**
	2.1nm,0.3s,baz=240,slow=6.2,SNR=3.9						
RAR	**Rarotonga**	**20.02**	**59**	P	**P**	**22 29 22.8**	**-2.1**
RAR				pmax	pmax		
	comp=Z,2.0nm,0.3s						
RAR	**Rarotonga**	**20.02**	**59**	eP	**P**	**22 29 22.7**	**-2.2**
ARMA	**Armidale**	**25.78**	**267**	eP	**P**	**22 30 24.2**	**+2.6**
TAU	**Tasmania Unive**	**28.88**	**240**	PFAKE		22 31 00.0	+10
TAU				LR	LR		
	comp=Z,1μm,20.0s,MS4.5						
TOO	**Toolangi**	**29.95**	**251**	eP	**P**	**22 31 00.7**	**+1.3**
	comp=Z,6.5nm,0.9s,mb4.4						
STKA	**Stephens Creek**	**33.86**	**260**	eP	**P**	**22 31 34.2**	**+0.6**
	comp=Z,8.4nm,0.8s,mb4.7						
STKA	**Stephens Creek**	**33.86**	**260**	P	**P**	**22 31 33.9**	**+0.2**
	comp=Z,5.1nm,0.6s,mb4.7,baz=103,slow=10,SNR=12						
STKA				LR	LR	22 44 48.1	
	comp=Z,2μm,18.1s,MS5.0,baz=278,slow=36						
CTA	**Charters Tower**	**34.10**	**283**	⇓iP	**P**	**22 31 36.2**	**+0.4**
	comp=Z,21nm,0.6s,mb5.2						
CTA				eS	**S**	**22 37 00.3**	**+1.7**
CTA	**Charters Tower**	**34.10**	**283**	P	**P**	**22 31 35.5**	**-0.3**
	comp=Z,31nm,0.8s,mb5.3,baz=107,slow=10,SNR=42						
CTA	**Charters Tower**	**34.10**	**283**	P	**P**	**22 31 35.6**	**-0.2**
CTA				pmax	pmax		
	comp=Z,31nm,0.8s						
CTAO	**Charters Tower**	**34.10**	**283**	eP	**P**	**22 31 35.0**	**-0.8**
	comp=Z,25nm,0.7s,mb5.2						
CTAO				LR	LR		
	comp=Z,1μm,19.0s,MS4.6						
PMG	**Port Moresby**	**39.54**	**298**	PFAKE		22 32 30.0	+8.2
PMG				LR	LR		
	comp=Z,950nm,19.0s,MS4.7						
AS12	**Alice Springs**	**42.88**	**270**	⇓iP	**P**	**22 32 48.5**	**-0.6**
	comp=Z,43nm,0.8s,mb5.2						
ASAR	**Alice Springs**	**42.88**	**270**	P	**P**	**22 32 48.6**	**-0.5**
	comp=Z,36nm,0.8s,mb5.2,baz=112,slow=7.8,SNR=236						
ASAR				S	**S**	**22 39 16.7**	**+5.4**
	comp=Z,1.2nm,0.9s,baz=124,slow=16,SNR=4.2						
ASAR				LR	LR	22 51 09.8	
	comp=Z,580nm,18.6s,MS4.5,baz=107,slow=37						
WRAB	**Tennant Creek**	**44.08**	**275**	eP	**P**	**22 32 57.6**	**-1.3**
	comp=Z,138nm,0.8s,mb5.7						
WRAB				LR	LR		
	comp=Z,1μm,19.0s,MS4.8						
WRA	**Warramunga Arr**	**44.08**	**275**	P	**P**	**22 32 57.9**	**-1.0**
	comp=Z,55nm,0.7s,mb5.4,baz=115,slow=7.6,SNR=98						
WRA				ScP		22 38 36.1	
	comp=Z,2.1nm,1.0s,baz=106,slow=3.9,SNR=4.6						
WRA				S	**S**	**22 39 28.5**	**-0.3**
	comp=Z,0.5nm,0.8s,baz=140,slow=13,SNR=2.9						
WRA				LR	LR	22 50 44.9	
	comp=Z,700nm,21.1s,MS4.5,baz=115,slow=35						
WRA	**Warramunga Arr**	**44.08**	**275**	P	**P**	**22 32 57.9**	**-1.0**
WRA				S	**S**	**22 39 28.5**	**-0.3**
WRA				pmax	pmax		
	comp=Z,55nm,0.7s						
WRA				pmax	pmax		
	comp=Z,2.0nm,1.0s						
WRA				smax			
	comp=Z,1.0nm,0.8s						
WRA				MLR	MLR		
	comp=Z,700nm,21.1s						
FORT	**Forrest**	**45.33**	**257**	⇓iP	**P**	**22 33 07.6**	**-1.2**
	comp=Z,276nm,0.7s						
SBA	**Scott Base**	**45.65**	**184**	eP	**P**	**22 33 12.4**	**+1.7**
	comp=Z,8.0nm,0.8s,mb4.7						
SBA				LR	LR		
	comp=Z,545nm,19.0s,MS4.5						
VNDA	**Vanda**	**45.71**	**186**	P	**P**	**22 33 14.5**	**+3.3**
	comp=Z,1.1nm,0.8s,baz=9.7,slow=5.8,SNR=5.4						
VNDA				PcP	PcP	22 34 50.5	+1.2
	comp=Z,5.2nm,0.8s,baz=307,slow=2.1,SNR=5.7						
VNDA	**Vanda**	**45.71**	**186**	P	**P**	**22 33 14.5**	**+3.3**
VNDA						22 34 50.5	
VNDA				pmax	pmax		
	comp=Z,1.0nm,0.8s						
VNDA				pmax	pmax		
	comp=Z,5.0nm,0.8s						
VNDA	**Vanda**	**45.71**	**186**	eP	**P**	**22 33 12.7**	**+1.5**
	comp=Z,1.7nm,1.3s						
VNDA				LR	LR		
	comp=Z,419nm,20.0s						
KAKA	**Kakadu**	**49.27**	**282**	⇓iP	**P**	**22 33 37.3**	**-2.5**
	comp=Z,28nm,0.8s,mb5.3						
FITZ	**Fitzroy Crossi**	**52.24**	**272**	⇓iP	**P**	**22 34 00.6**	**-1.8**
	comp=Z,25nm,1.3s,mb5.0						
FITZ	**Fitzroy Crossi**	**52.24**	**272**	P	**P**	**22 34 00.7**	**-1.6**
	comp=Z,21nm,0.8s,mb5.1,baz=165,slow=7.4,SNR=18						
CASY	**Casey**	**52.97**	**209**	eP	**P**	**22 34 07.9**	**+0.7**
NWAO	**Narrogin (SRO)**	**53.44**	**251**	PFAKE		22 34 20.0	+8.9
NWAO				LR	LR		
	comp=Z,1μm,19.0s,MS4.9						
KLBR	**Kellerberrin**	**53.46**	**253**	eP	**P**	**22 34 10.4**	**-0.9**
	comp=Z,18nm,1.1s,mb4.9						
WAKE	**Wake Island**	**53.77**	**342**	PFAKE		22 34 20.0	+6.3
WAKE				LR	LR		
	comp=Z,523nm,22.0s,MS4.5						
QSPA	**South Pole Qui**	**57.33**	**180**	eP	**P**	**22 34 41.3**	**+2.6**
	comp=Z,7.9nm,0.7s,mb4.8						
QSPA				LR	LR		
	comp=Z,790nm,20.2s,MS4.8						
GUMO	**Guam**	**58.08**	**316**	PFAKE		22 35 00.0	+15
GUMO				LR	LR		
	comp=Z,374nm,20.0s,MS4.5						
MIR	**Mirnyy**	**59.94**	**208**	⇑eP	**P**	**22 34 59.2**	**+2.3**
MIR				pmax	pmax		
	comp=Z,70nm,1.3s,mb5.5						
MAW	**Mawson**	**70.03**	**201**	eP	**P**	**22 36 06.0**	**+4.0**
	comp=Z,14nm,1.2s,mb4.8						
MAW	**Mawson**	**70.03**	**201**	P	**P**	**22 36 06.0**	**+4.0**
	comp=Z,14nm,1.1s,mb4.8,baz=137,slow=5.3,SNR=7.1						
MAW				LR	LR	23 08 19.2	
	comp=Z,637nm,18.1s,MS4.9,baz=109,slow=37						
MAW	**Mawson**	**70.03**	**201**	P	**P**	**22 36 06.0**	**+4.0**
MAW				pmax	pmax		
	comp=Z,14nm,1.1s						
MAW				MLR	MLR		
	comp=Z,637nm,18.1s						
MAW	**Mawson**	**70.03**	**201**	eP	**P**	**22 36 02.0**	**0.0**
	comp=Z,7.8nm,0.8s,mb4.7						
MAW				LR	LR	23 08 19.2	
TGY	**Tagaytay City**	**74.50**	**298**	P	**P**	**22 36 29.9**	**+0.4**
	comp=Z,101nm,0.3s,baz=281,slow=5.8,SNR=4.5						
TGY	**Tagaytay City**	**74.50**	**298**	P	**P**	**22 36 29.9**	**+0.4**
TGY				pmax	pmax		
	comp=Z,101nm,0.3s						
SYO	**Syowa Base**	**74.76**	**193**	⇑P	**P**	**22 36 30.0**	**+0.1**
SYO	**Syowa Base**	**74.76**	**193**	⇑pP	pP	22 36 39.8	0.0
SYO	**Syowa Base**	**74.76**	**193**	⇓sP	PcP	22 36 47.1	+2.9
SYO	**Syowa Base**	**74.76**	**193**	⇑eP	**P**	**22 36 30.0**	**+0.1**
SYO				epP	pP	22 36 39.8	0.0
SYO				esP	sP	22 36 47.1	+3.9
SNAA	**Sanae**	**75.78**	**178**	eP	**P**	**22 36 36.8**	**+1.0**
SNAA				e	pP	22 36 47.0	+1.4
VNA3	**Neumayer Olymp**	**75.94**	**176**	⇓i	**P**	**22 36 40.3**	**+3.7**
VNA3	**Neumayer Olymp**	**75.94**	**176**	⇑i	**P**	**22 36 51.1**	**+14**
VNA3	**Neumayer Olymp**	**75.94**	**176**	⇑i	**P**	**22 36 54.1**	**+17**
VNA2	**Neumayer--Watz**	**76.37**	**177**	⇓i	**P**	**22 36 43.0**	**+3.9**
VNA2	**Neumayer--Watz**	**76.37**	**177**	⇑i	**P**	**22 36 53.1**	**+14**
VNA2	**Neumayer--Watz**	**76.37**	**177**	⇑i	**P**	**22 36 53.8**	**+15**
VNA2	**Neumayer--Watz**	**76.37**	**177**	⇑i	**P**	**22 36 57.4**	**+18**
MAIT	**Maitri**	**76.49**	**183**	eP	**P**	**22 36 41.7**	**+2.0**
VNA1	**Neumayer--Stat**	**76.60**	**177**	⇓i	**P**	**22 36 44.6**	**+4.2**
VNA1	**Neumayer--Stat**	**76.60**	**177**	⇑i	**P**	**22 36 55.2**	**+15**
VNA1	**Neumayer--Stat**	**76.60**	**177**	⇑i	**P**	**22 36 58.3**	**+18**
MAJO	**Matsushiro**	**80.12**	**326**	PFAKE		22 37 10.0	+10
MAJO				LR	LR		
	comp=Z,276nm,20.0s,MS4.6						
ADK	**Adak**	**84.32**	**1**	PFAKE		22 37 30.0	+8.4
ADK				LR	LR		
	comp=Z,95nm,20.0s,MS4.2						
SMY	**Shemya**	**85.42**	**355**	PFAKE		22 37 40.0	+13
SMY				LR	LR		
	comp=Z,1μm,21.0s,MS5.2						
INCN	**Inchon**	**86.79**	**319**	PFAKE		22 37 50.0	+16
INCN				LR	LR		
	comp=Z,181nm,19.0s,MS4.5						
YSS	**Yuzh-Sakhalins**	**86.82**	**334**	*b* iP	**P**	**22 37 33.5**	**-0.7**
YSS				eS	S	22 48 00.0	-8.1
YSS				pmax	pmax		
	comp=Z,30nm,0.9s,mb5.5						
YSS				pmax	pmax		
	comp=Z,300nm,7.0s						
YSS				MLR	MLR		
	comp=N,400nm,18.0s						
YSS				MLR	MLR		
	comp=Z,400nm,18.0s,MS4.9						
YSS	**Yuzh-Sakhalins**	**86.82**	**334**	PFAKE		22 37 40.0	+5.8
YSS				LR	LR		
	comp=Z,334nm,19.0s,MS4.8						
UNV	**Unalaska Valle**	**86.87**	**7**	PFAKE		22 37 40.0	+5.8
UNV				LR	LR		
	comp=Z,962nm,21.0s,MS5.2						
SAO	**San Andreas Ge**	**87.14**	**42**	PFAKE		22 37 50.0	+14
SAO				LR	LR		
	comp=Z,490nm,19.0s,MS4.9						
NJ2	**Nanjing**	**87.68**	**311**	eP	**P**	**22 37 38.0**	**-0.7**
NJ2				AP	pP	22 37 48.5	-0.2
NJ2				XP	sP	22 37 52.5	+0.5
NJ2				PP	PP	22 41 04.5	-2.1
NJ2				SKS	SKS	22 48 00.0	-11
NJ2				S	S	22 48 15.0	-1.5
NJ2				XS		22 48 31.0	
NJ2				SS	SS	22 54 03.0	-3.5
NJ2				AMB	AMB		
	comp=Z,30nm,0.9s,mb5.5						
NJ2				LR	LR		
	comp=N,230nm,26.6s						
NJ2				LR	LR		
	comp=E,280nm,19.7s						
NJ2				LR	LR		
	comp=Z,270nm,21.3s						
PET	**Petropavlovsk**	**87.81**	**346**	eP	**P**	**22 37 30.6**	**-8.1**
PET				e		22 41 09.8	
PET				e		22 48 06.7	
PET				e		22 54 01.4	
PET				pmax	pmax		
	comp=Z,100nm,8.0s						
PET				pmax	pmax		
	comp=E,100nm,15.0s						
PET				MLR	MLR		
	comp=Z,300nm,18.0s,MS4.8						
PET	**Petropavlovsk**	**87.81**	**346**	PFAKE		22 37 50.0	+11
PET				LR	LR		
	comp=Z,318nm,19.0s,MS4.8						
HOPS	**Hopland**	**87.84**	**40**	PFAKE		22 37 50.0	+11
HOPS				LR	LR		
	comp=Z,913nm,19.0s,MS5.2						
PFO	**Pinyon Flat Ob**	**87.94**	**47**	eP	**P**	**22 37 38.4**	**-1.4**
PFO				LR	LR		
	comp=Z,763nm,21.0s,MS5.1						
CMB	**Columbia Colle**	**88.64**	**42**	eP	**P**	**22 37 42.1**	**-1.0**
	comp=Z,30nm,1.6s,mb5.4						
CMB				LR	LR		
	comp=Z,356nm,19.0s,MS4.8						
DAC	**Darwin (Calif)**	**89.04**	**45**	PFAKE		22 38 00.0	+15
DAC				LR	LR		
	comp=Z,773nm,19.0s,MS5.2						
MTUM	**Tungsten Hills**	**89.21**	**43**	eP	**P**	**22 37 45.4**	**-0.4**
WDC	**Whiskeytown Da**	**89.26**	**39**	eP	**P**	**22 37 45.2**	**-0.8**
	comp=Z,16nm,1.3s,mb5.2						
WDC				LR	LR		
	comp=Z,577nm,19.0s,MS5.0						
LDFC	**Landfair**	**89.74**	**47**	eP	**P**	**22 37 49.1**	**+0.7**
LDFC				epP	pP	22 37 59.7	+1.2
YBH	**Yreka Blue Hor**	**90.00**	**38**	P	**P**	**22 37 51.7**	**+2.3**
	comp=Z,1.8nm,0.9s,mb4.4,baz=149,slow=10.0,SNR=6.5						
YBH	**Yreka Blue Hor**	**90.00**	**38**	P	**P**	**22 37 51.7**	**+2.2**
YBH				pmax	pmax		
	comp=Z,2.0nm,0.9s						
YBH	**Yreka Blue Hor**	**90.00**	**38**	eP	**P**	**22 37 49.5**	**+0.1**
YBH				LR	LR		
	comp=Z,463nm,20.0s,MS4.9						
NVAR	**Mina Array Bea**	**90.09**	**43**	P	**P**	**22 37 50.0**	**+0.1**
	comp=Z,1.8nm,0.8s,mb4.4,baz=206,slow=6.7,SNR=11						
NEN	**Nelson**	**90.28**	**47**	eP	**P**	**22 37 51.0**	**+0.1**
NEN				epP	pP	22 38 01.1	+0.2
TPH	**Tonopah**	**90.48**	**44**	eP	**P**	**22 37 51.2**	**-0.5**
	comp=Z,47nm,1.7s,mb5.5						
TPH				LR	LR		
	comp=Z,358nm,19.0s,MS4.8						
MDJ	**Mudanjiang**	**90.50**	**326**	P	**P**	**22 37 52.0**	**+0.3**
MDJ				AP	pP	22 38 02.5	+0.8
MDJ				XP	sP	22 38 05.5	+0.5
MDJ				PP	PP	22 41 22.3	-6.6
MDJ				S	S	22 48 45.3	+3.1
MDJ				XS		22 49 01.3	
MDJ				SS	SS	22 54 47.5	+0.5
MDJ				AMB	AMB		
	comp=Z,4.0nm,0.8s,mb4.8						
MDJ				AMB	AMB		
	comp=Z,145nm,5.1s						
MDJ				LR	LR		
	comp=N,58nm,23.9s,MS4.4						
MDJ				LR	LR		
	comp=E,157nm,19.5s,MS4.4						
MDJ				LR	LR		
	comp=Z,256nm,18.6s,MS4.7						
MDJ	**Mudanjiang**	**90.50**	**326**	PFAKE		22 38 00.0	+8.3
MDJ				LR	LR		
	comp=Z,272nm,20.0s,MS4.7						
HUMO	**Hull Mountain**	**90.51**	**37**	eP	**P**	**22 37 51.8**	**0.0**
HUMO				epP	pP	22 38 01.7	-0.2
TUC	**Tucson**	**90.72**	**51**	eP	**P**	**22 37 53.2**	**+0.2**
	comp=Z,34nm,1.8s,mb5.4						
TUC				LR	LR		
	comp=Z,496nm,19.0s,MS5.0						
COR	**Corvallis**	**91.76**	**36**	PFAKE		22 38 10.0	+13
COR				LR	LR		
	comp=Z,3μm,19.0s,MS5.7						
CN2	**Changchun**	**91.94**	**323**	eP	**P**	**22 37 59.8**	**+1.5**
BMN	**Battle Mountai**	**92.07**	**42**	PFAKE		22 38 10.0	+11
BMN				LR	LR		
	comp=Z,435nm,19.0s,MS4.9						
GYA	**Guiyang**	**92.60**	**300**	P	**P**	**22 38 02.8**	**+1.0**
GYA				AP	pP	22 38 12.5	+0.7
GYA				XP	sP	22 38 17.3	+2.2
GYA				SKS	SKS	22 48 31.0	-9.1
GYA				S	S	22 49 04.3	+3.2
GYA				AMB	AMB		
	comp=Z,10.0nm,0.7s,mb5.3						
WVOR	**Wild Horse Val**	**92.65**	**40**	eP	**P**	**22 38 02.4**	**+0.7**
WVOR				epP	pP	22 38 12.0	+0.3
WVOR				LR	LR		
	comp=Z,893nm,19.0s,MS5.2						
KDAK	**Kodiak Island**	**92.76**	**13**	PFAKE		22 38 10.0	+8.3
KDAK				LR	LR		
	comp=Z,573nm,20.0s,MS5.0						
ENH	**Enshi**	**92.82**	**304**	eP	**P**	**22 38 01.5**	**-1.2**
ENH				LR	LR		
	comp=Z,98nm,21.0s,MS4.2						
KLR	**Kul'dur**	**93.01**	**330**	eP	**P**	**22 38 02.2**	**-0.9**
OCWA	**Octopus Mounta**	**93.65**	**33**	PFAKE		22 38 20.0	+14
OCWA				LR	LR		
	comp=Z,422nm,19.0s,MS4.9						
LTX	**Lajitas**	**93.80**	**57**	PFAKE		22 38 20.0	+13
LTX				LR	LR		
	comp=Z,550nm,19.0s,MS5.0						
TXAR	**Lajitas Array**	**93.80**	**57**	LR	LR	23 16 40.0	
	comp=Z,642nm,18.3s,MS5.1,baz=215,slow=33						
MNTX	**Cornudas Mount**	**93.99**	**55**	PFAKE		22 38 20.0	+12
MNTX				LR	LR		
	comp=Z,439nm,19.0s,MS4.9						
CMAR	**Chiang Mai Arr**	**94.04**	**289**	PP	PP	22 41 58.0	+0.2
	comp=Z,3.2nm,1.1s,baz=142,slow=6.6,SNR=8.3						
BJT	**Baijiatuan**	**94.50**	**315**	PFAKE		22 38 20.0	+10
BJT				LR	LR		
	comp=Z,351nm,20.0s,MS4.8						
KMI	**Kunming**	**94.75**	**297**	eP	**P**	**22 38 12.5**	**+0.8**
KMI				AP	pP	22 38 21.8	0.0
KMI				PP	PP	22 42 00.0	-2.6
KMI				SKS	SKS	22 48 48.8	-3.2
KMI				S	S	22 49 21.0	+1.3
KMI				XS		22 49 38.0	
KMI				AMB	AMB		
	comp=Z,4.0nm,1.3s,mb4.7						
KMI				AMB	AMB		
	comp=Z,46nm,5.9s						
KMI				LR	LR		
	comp=Z,138nm,46.4s,MS4.0						
HAWA	**Hanford**	**94.92**	**36**	PFAKE		22 38 20.0	+8.1
HAWA				LR	LR		
	comp=Z,780nm,19.0s,MS5.2						
ANMO	**Albuquerque**	**95.18**	**52**	PFAKE		22 38 20.0	+6.5
ANMO				LR	LR		
	comp=Z,563nm,20.0s,MS5.0						
MA2	**Magadan**	**95.55**	**345**	PFAKE		22 38 30.0	+15
MA2				LR	LR		
	comp=Z,287nm,19.0s,MS4.8						
HLID	**Hailey**	**95.71**	**41**	eP	**P**	**22 38 15.2**	**-0.5**
	comp=Z,0.8nm,0.3s,mb4.6						
HLID				LR	LR		
	comp=Z,283nm,19.0s,MS4.8						
HWUT	**Hardware Ranch**	**96.08**	**44**	PFAKE		22 38 30.0	+13
HWUT				LR	LR		
	comp=Z,402nm,19.0s,MS4.9						
SIT	**Sitka**	**96.55**	**22**	PFAKE		22 38 30.0	+11
SIT				LR	LR		
	comp=Z,623nm,20.0s,MS5.1						
PMR	**Palmer**	**96.96**	**14**	PFAKE		22 38 30.0	+9.1
PMR				LR	LR		
	comp=Z,336nm,19.0s,MS4.8						
AHID	**Auburn Hatcher**	**97.07**	**43**	PFAKE		22 38 30.0	+8.2
AHID				LR	LR		
	comp=Z,313nm,19.0s,MS4.8						
JCT	**Junction City**	**97.21**	**58**	PFAKE		22 38 30.0	+7.2
JCT				LR	LR		
	comp=Z,542nm,19.0s,MS5.0						
LPAZ	**La Paz**	**97.31**	**115**	LR	LR	23 12 27.9	
	comp=Z,88nm,20.8s,MS4.2,baz=204,slow=29						
LPAZ	**La Paz**	**97.31**	**115**	PFAKE		22 38 40.0	+17
LPAZ				LR	LR		
	comp=Z,168nm,21.0s,MS4.5						
NEW	**Newport**	**97.39**	**36**	PFAKE		22 38 30.0	+6.9
NEW				LR	LR		
	comp=Z,826nm,19.0s,MS5.2						
SDCO	**Great Sand Dun**	**97.46**	**50**	PFAKE		22 38 30.0	+6.3
SDCO				LR	LR		
	comp=Z,414nm,19.0s,MS4.9						
BW06	**Boulder Array**	**97.97**	**44**	P	**P**	**22 38 26.6**	**+0.8**
BW06				LR	LR		
	comp=Z,246nm,19.0s,MS4.7						
PDAR	**Pinedale Array**	**97.97**	**44**	LR	LR	23 20 55.5	
	comp=Z,509nm,18.1s,MS5.0,baz=253,slow=34						
MSO	**Missoula**	**98.08**	**39**	PFAKE		22 38 40.0	+14
MSO				LR	LR		
	comp=Z,1μm,19.0s,MS5.3						
JTS	**JuntasAbangare**	**98.19**	**83**	PFAKE		22 38 40.0	+13
JTS				LR	LR		
	comp=Z,60nm,20.0s,MS4.1						
HIA	**Hailar**	**98.56**	**324**	PFAKE		22 38 40.0	+12
HIA				LR	LR		
	comp=Z,308nm,20.0s,MS4.8						
BOZ	**Bozeman (W)**	**98.57**	**41**	PFAKE		22 38 40.0	+12
BOZ				LR	LR		
	comp=Z,482nm,19.0s,MS5.0						
ISCO	**Idaho Springs**	**98.58**	**48**	PFAKE		22 38 40.0	+11
ISCO				LR	LR		
	comp=Z,478nm,19.0s,MS5.0						
CPUP	**Villa Florida**	**98.62**	**129**	LR	LR	23 19 48.7	
	comp=Z,234nm,18.9s,MS4.7,baz=249,slow=33						
MCK	**McKinley**	**98.95**	**13**	PFAKE		22 38 40.0	+10
MCK				LR	LR		
	comp=Z,227nm,20.0s,MS4.7						
HKT	**Hockley**	**99.81**	**61**	PFAKE		22 38 50.0	+15
HKT				LR	LR		
	comp=Z,354nm,19.0s,MS4.9						
COLA	**College**	**100.19**	**13**	PFAKE		22 38 50.0	+15
COLA				LR	LR		
	comp=Z,401nm,20.0s,MS4.9						
WMOK	**Wichita Mounta**	**100.26**	**55**	PFAKE		22 38 50.0	+13
WMOK				LR	LR		
	comp=Z,625nm,19.0s,MS5.1						
ILAR	**Eielson Array**	**100.28**	**13**	P	P	22 38 36.6	+0.8
	comp=Z,0.8nm,1.1s,baz=254,slow=6.6,SNR=3.0						
ILAR				PP	PP	22 42 40.8	-3.

comp=Z,606nm,19.0s,MS5.2
YKA Yellowknife Ar 107.66 26 PKiKP 22 43 17.6
YKA Z,0.1nm,0.3s,baz=255,slow=1.4,SNR=2.9
PKKPbc 22 54 31.5
comp=Z,1.8nm,0.9s,baz=44,slow=3.3,SNR=28
LRAL Lakeview Retre 107.88 62 PFAKE 22 43 30.0
LRAL LR LR
comp=Z,321nm,19.0s,MS4.9
PLAL Pickwick Lake 107.99 60 PFAKE 22 43 30.0
PLAL LR LR
comp=Z,526nm,19.0s,MS5.1
WVT Waverly 108.70 59 PFAKE 22 43 30.0
WVT LR LR
comp=Z,354nm,20.0s,MS4.9
FFC Flin Flon 108.81 37 PFAKE 22 43 30.0
FFC LR LR
comp=Z,455nm,20.0s,MS5.0
DWPF Disney 109.88 69 PFAKE 22 43 30.0
DWPF LR LR
comp=Z,168nm,20.0s,MS4.6
ULM Lac du Bonnet 109.93 43 PFAKE 22 43 30.0
ULM LR LR
comp=Z,819nm,19.0s,MS5.3
JFWS Jewell Farm 110.08 51 PFAKE 22 43 30.0 +4.9
JFWS LR LR
comp=Z,845nm,19.0s,MS5.3
TIXI Tiksi 110.52 344 PFAKE 22 43 30.0 +4.7
TIXI LR LR
comp=Z,209nm,19.0s,MS4.7
WCI Wyandotte Cave 110.73 57 PFAKE 22 43 30.0 +3.5
WCI LR LR
comp=Z,2µm,19.0s,MS5.8
MYNC Murphy 110.93 61 PFAKE 22 43 30.0 +3.0
MYNC LR LR
comp=Z,429nm,19.0s,MS5.0
ACSO Alum Creek Sta 113.90 57 PFAKE 22 43 40.0 +7.3
ACSO LR LR
comp=Z,959nm,19.0s,MS5.4
AAM Ann Arbor 114.25 54 PFAKE 22 43 40.0 +6.7
AAM LR LR
comp=Z,477nm,19.0s,MS5.1
BLA Blacksburg 114.54 60 PFAKE 22 43 40.0 +6.0
BLA LR LR
comp=Z,549nm,19.0s,MS5.2
WMQ Urumqi 114.56 307 PKP PKPdf 22 43 29.3 -4.6
WMQ XPKP 22 43 43.5
WMQ PP PP 22 44 30.0 -0.8
WMQ PKS PKS 22 47 04.8 +0.4
WMQ SKS SKS 22 50 36.5 +14
WMQ SKKS 22 51 18.0
WMQ LR LR
comp=N,258nm,29.2s,MS4.7
WMQ LR LR
comp=E,112nm,29.8s,MS4.7
WMQ LR LR
comp=Z,331nm,29.0s,MS4.8
ERPA Erie 116.71 56 PFAKE 22 43 50.0 +12
ERPA LR LR
comp=Z,532nm,19.0s,MS5.2
CBN Corbin 117.16 60 PFAKE 22 43 50.0 +11
CBN LR LR
comp=Z,786nm,19.0s,MS5.3
SSPA Standing Stone 117.66 58 PFAKE 22 43 50.0 +10
SSPA LR LR
comp=Z,2µm,19.0s,MS5.8
SJG San Juan 117.84 86 PFAKE 22 43 50.0 +9.2
SJG LR LR
comp=Z,177nm,19.0s,MS4.7
MKAR Makanchi Array 119.17 309 PKP PKPdf 22 43 37.6 -5.2
comp=Z,6.7nm,1.0s,baz=75,slow=2.7,SNR=34
MKAR Makanchi Array 119.17 309 PKIKP PKPdf 22 43 37.6 -5.2
MKAR pmax pmax
comp=Z,7.0nm,1.0s
ZAL Zalesovo 119.70 317 PKP PKPdf 22 43 38.0 -5.5
comp=Z,1.0nm,0.3s,baz=80,slow=5.5,SNR=4.7
ZAL Zalesovo 119.70 317 PKIKP PKPdf 22 43 38.1 -5.5
ZAL pmax pmax
comp=Z,1.0nm,0.3s
NVS Novosibirsk 120.82 318 *e*PKIKP PKPdf 22 43 39.5 -6.3
NVS *e* 22 50 51.7
NVS pmax pmax
comp=N,6.0nm,1.3s
NVS pmax pmax
comp=E,10.0nm,1.3s
NVS pmax pmax
comp=Z,24nm,1.3s
KSH Kashi 121.30 299 *e*PKP PKPdf 22 43 43.3 -3.8
KSH *e*XPKP 22 43 58.3
KSH *e*PP PP 22 45 20.0 +2.9
KSH *e*PKS PKS 22 47 19.0 +1.4
KSH *e*SKS SKS 22 50 50.5 +4.3
KSH *e*SKKS 22 52 08.0
KSH *e*SS SS 23 01 50.5 +4.5
KSH LR LR
comp=N,190nm,5.6s
KSH LR LR
comp=E,110nm,5.0s
NCB Newcomb 121.31 55 PFAKE 22 43 50.0 +3.0
NCB LR LR
comp=Z,2µm,22.0s,MS5.6
KURK Kurchatov 122.57 313 PKIKP PKPdf 22 43 43.7 -5.5
KURK pmax pmax
comp=Z,7.0nm,0.9s
KURK Kurchatov 122.57 313 *e*PKP PKPdf 22 43 43.0 -6.2
TKM2 Tokmak 2 122.58 303 P PKPdf 22 43 44.8 -4.6
SNR=11
KZA Kyzart 122.59 302 P PKPdf 22 43 45.6 -3.9
SNR=8.6
HRV Harvard--Oak R 122.75 57 PFAKE 22 44 00.0 +10
HRV LR LR
comp=Z,148nm,19.0s,MS4.7
WES Weston 122.89 58 PFAKE 22 44 00.0 +10
WES LR LR
comp=Z,3µm,20.0s,MS5.9
KBK Karagaybulak 122.97 303 P PKPdf 22 43 46.4 -3.8
SNR=7.7
UCH Uchtor 123.16 302 P PKPdf 22 43 46.9 -3.6
SNR=14
CHMS Chumysh 123.20 303 P PKPdf 22 43 46.5 -4.2
SNR=8.5
AAK Ala-Archa 123.28 303 *e*PKP PKPdf 22 43 46.0 -4.9
USP Ospenovka 123.45 303 P PKPdf 22 43 46.7 -4.5
SNR=9.7
AML Almayashu 123.72 302 P PKPdf 22 43 48.2 -3.5
SNR=12
EKS2 Erkin-Say 123.80 302 P PKPdf 22 43 48.2 -3.7
SNR=5.2
KKAR Karatay Array 126.23 302 *i* PKIKP PKPdf 22 43 51.8 -4.7
KKAR pmax pmax
comp=Z,6.0nm,0.8s
VOSK Vostochnaya 127.59 314 PKIKP PKPdf 22 43 53.4 -5.4
VOSK pmax pmax
comp=Z,12nm,1.0s
BVA0 Borovoye Array 127.98 314 PKIKP PKPdf 22 43 54.5 -5.1
BVAR Borovoye Array 127.98 314 PKP PKPdf 22 43 55.0 -4.6
comp=Z,6.9nm,0.8s,baz=90,slow=3.0,SNR=42
BRVK Borovoye 128.05 315 *e*PKP PKPdf 22 43 54.9 -4.8
SCHQ Schefferville 128.10 43 PFAKE 22 44 10.0 +10
SCHQ LR LR
comp=Z,1µm,19.0s,MS5.5
ZRNK Zerenda 128.81 314 *e*PKP PKPdf 22 43 55.5 -5.6
KMBO Kilima Mbogo 132.50 232 PKP PKPdf 22 44 07.3 -2.0
comp=Z,2.3nm,0.9s,baz=227,slow=21,SNR=5.1
KMBO SKPbc 22 47 34.8
comp=Z,9.5nm,1.2s,baz=138,slow=2.7,SNR=8.6
KMBO Kilima Mbogo 132.50 232 PKP PKPdf 22 44 07.3 -2.0
KMBO SKPbc 22 47 34.8
KMBO LR LR
comp=Z,132nm,21.0s,MS4.6
KBS Kingsbay 133.56 357 PFAKE 22 44 20.0 +10
KBS LR LR
comp=Z,162nm,19.0s,MS4.8
AB31 Akbulak array 134.31 309 PKIKP PKPdf 22 44 06.4 -5.2
AB31 pmax pmax
comp=Z,9.0nm,1.1s
ARU Arti 134.81 319 *i* PKIKP PKPdf 22 44 07.5 -4.9
ARU *e* 22 46 52.3
ARU pmax pmax
comp=Z,8.0nm,0.8s
ARU Arti 134.81 319 *e*PKP PKPdf 22 44 07.0 -5.4
ARU LR LR
comp=Z,243nm,20.0s,MS4.9
MBAR Mbarara 137.02 225 PFAKE 22 44 30.0 +12
MBAR LR LR
comp=Z,206nm,20.0s,MS4.9

THR Tehran 139.51 289 PKP PKPdf 22 44 18.6 -3.0
comp=Z,1.7nm,1.1s,baz=68,slow=5.4,SNR=4.2
THR Tehran 139.51 289 PKIKP PKPdf 22 44 18.6 -3.0
THR pmax pmax
comp=Z,2.0nm,1.1s
DJNS Zahran al Janu 139.66 259 P PKPdf 22 44 22.7 +0.5
ARCES ARCESS Array B 140.88 347 PKhKP 22 44 13.9
comp=Z,2.3nm,0.6s,baz=56,slow=1.5,SNR=12
ARCES ARCESS Array B 140.88 347 PKHKP 22 44 13.9
ARCES pmax pmax
comp=Z,2.0nm,0.6s
NAMS An Nimas 141.47 260 P PKPdf 22 44 26.7 +1.2
AFFS 'Afif 142.89 267 P PKPdf 22 44 28.4 +0.6
JOF Joensuu 144.56 337 *e*pkp PKPdf 22 44 22.8 -6.7
TI2 Plekhanov 144.99 297 *e*PKIKP PKPdf 22 44 27.4 -3.5
ZEI Tsey 145.59 299 *i* PKP2 PKPab 22 44 27.0 -2.2
ZEI pmax pmax
comp=Z,500nm,6.0s
VANT Van 145.95 291 P PKPbc 22 44 30.3 +1.9
VANB Van 145.96 292 P PKPbc 22 44 27.7 -0.7
GOF Gofitskoye 146.03 303 *i* PKP2 PKPab 22 44 29.0 -1.8
GOF pmax pmax
comp=Z,50nm,1.1s
MOS Moscow 146.18 324 *i* PKP2 PKPab 22 44 29.2 -1.9
MOS pmax pmax
comp=Z,240nm,0.9s
MOS pmax pmax
comp=Z,2µm,4.3s
KIV Kislovodsk 146.39 301 *i* PKP2 PKPab 22 44 29.8 -2.5
KIV pmax pmax
comp=Z,20nm,1.0s
KIV pmax pmax
comp=N,10.0nm,0.9s
KIV pmax pmax
comp=E,5.0nm,0.8s
KIV Kislovodsk 146.39 301 *e*PKP PKPdf 22 44 29.1 -4.1
KIV LR LR
comp=Z,166nm,20.0s,MS4.8
KAF Kangasniemi 146.73 339 *e*pkp PKPdf 22 44 28.9 -4.4
comp=Z,21nm,0.7s
KAF Kangasniemi 146.73 339 *e*PKIKP PKPdf 22 44 28.9 -4.4
KAF pmax pmax
comp=Z,21nm,0.7s
VOR Voronezh 146.96 316 *e*PKIKP PKPdf 22 44 30.5 -3.5
VOR pmax pmax
comp=E,50nm,1.3s
VOR pmax pmax
comp=Z,90nm,1.3s
OBN Obninsk 147.01 323 *e*PKP PKPdf 22 44 30.0 -3.9
OBN LR LR
comp=Z,224nm,19.0s,MS5.0
PUL Pulkovo 147.08 334 *e*PKP2 PKPab 22 44 31.5 -3.0
VRSR Storozhevoye 147.14 315 *c i*PKIKP PKPdf 22 44 30.3 -4.0
VRSR pmax pmax
comp=Z,60nm,1.1s
VRSR pmax pmax
comp=N,10.0nm,0.8s
VRSR pmax pmax
comp=E,30nm,1.0s
FINES FINESS Array B 147.32 339 PKPbc PKPdf 22 44 31.8 -2.5
comp=E,41nm,0.8s,baz=90,slow=3.8,SNR=144
FINES FINESS Array B 147.32 339 PKP2 PKPab 22 44 31.8 -3.5
FINES pmax pmax
comp=Z,41nm,0.8s
BINT Bingol 148.24 292 P PKPdf 22 44 36.2 -0.2
EZC Erzincan 148.76 294 P PKPdf 22 44 38.6 +1.4
GUMT Gumushane 149.00 295 P PKPdf 22 44 38.7 +1.1
TBKS Tabuk 149.82 271 P PKPdf 22 44 41.1 +1.8
QURS Qurayyt al Mil 149.97 277 P PKPdf 22 44 42.0 +2.6
ASF Jabal al Asfar 150.48 278 PKPbc PKPdf 22 44 42.5 +2.3
comp=Z,14nm,0.9s,baz=340,slow=1.5,SNR=19
JMQS Jabal Moqyreh 150.57 272 P PKPdf 22 44 42.8 +2.4
AYUS 'Aynunah 150.88 270 P PKPdf 22 44 43.3 +2.4
SVSK Karacayir 150.92 294 P PKPdf 22 44 36.6 -4.0
NB2 NORSAR Subarra151.08 351 PKP 22 44 41.0
comp=Z,94nm,1.7s,baz=17,slow=2.6
NB2 NORSAR Subarra151.08 351 PKPa 22 44 41.0
baz=17,slow=2.6
NOA NORSAR Array B151.08 351 PKPbc PKPdf 22 44 41.5 +1.3
comp=Z,6.7nm,0.7s,baz=15,slow=4.1,SNR=28
NOA NORSAR Array B151.08 351 PKIKP PKPdf 22 44 41.5 +1.4
NOA pmax pmax
comp=Z,7.0nm,0.7s
BDAS Al Bad' 151.09 270 P PKPdf 22 44 43.7 +2.5
JMOS Jabal al Moall 151.29 272 P PKPdf 22 44 44.2 +2.7
NAO01 NORSAR Array S 151.31 351 *e*PKPbc PKPdf 22 44 41.9 +1.4
ALWS Ilw as Safayha 151.37 272 P PKPdf 22 44 44.6 +3.0
HAQS Haql 151.42 271 P PKPdf 22 44 44.7 +3.1
KSHT Keshet 151.52 280 P PKPdf 22 44 45.1 +3.4
KSHT Keshet 151.52 280 ⇓P PKPdf 22 44 45.1 +3.4
EIL Elat 151.56 273 P PKPdf 22 44 44.9 +3.0
MNK Minsk 151.56 328 ⇑ *e*PKIKP PKPdf 22 44 41.0 -0.1
MNK pmax pmax
comp=Z,180nm,1.0s
ZFRI Zfri 151.58 275 P PKPdf 22 44 44.9 +3.0
GLH Golan-Tel Qazi 151.61 279 P PKPdf 22 44 45.4 +3.5
GLH Golan-Tel Qazi 151.61 279 ⇓P PKPdf 22 44 45.4 +3.5
MBH Mount Berech 151.62 273 P PKPdf 22 44 45.2 +3.2
DRGI Dragot 151.62 277 P PKPdf 22 44 44.9 +3.0
HRI Mount Hermon 151.63 280 P PKPdf 22 44 45.3 +3.4
HMDT Nahal Hemdat 151.64 278 P PKPdf 22 44 45.3 +3.4
HMDT Nahal Hemdat 151.64 278 ⇓P PKPdf 22 44 45.3 +3.4
PRNI Paran 151.68 274 P PKPdf 22 44 45.2 +3.2
KMTI Karmit 151.86 273 P PKPdf 22 44 45.3 +3.0
MASH Mash'abbe Sade 152.01 275 P PKPdf 22 44 45.7 +3.2
SLTI Sal'it 152.04 278 P PKPdf 22 44 46.0 +3.5
SLTI Sal'it 152.04 278 ⇓P PKPdf 22 44 46.0 +3.5
HNTI Hanita 152.06 280 P PKPdf 22 44 45.7 +3.2
SVTA Shivta 152.13 275 P PKPdf 22 44 46.0 +3.3
OFRI 'Ofer 152.15 279 P PKPdf 22 44 45.7 +3.0
SIM Simferopol' 152.26 305 *d i*PKIKP PKPdf 22 44 45.5 +3.1
SIM *e* 22 48 27.0
SIM pmax pmax
comp=Z,50nm,17.1s
KZIT Kziot 152.32 275 P PKPdf 22 44 46.4 +3.4
KONO Kongsberg 152.64 351 *e*PKPbc PKPdf 22 44 44.9 +2.5
KONO LR LR
comp=Z,157nm,20.0s,MS4.8
LIC Lamto 152.81 165 *e*PKIKP PKPdf 22 44 48.7 +4.6
comp=Z,143nm,1.5s
LIC Lamto 152.81 165 *e*PKIKP PKPdf 22 44 48.6 +4.5
comp=Z,170nm,1.5s
KIC Kosan Boka 153.00 166 *e*PKIKP PKPdf 22 44 48.3 +3.9
comp=Z,590nm,1.9s
AKASG Malin Array Be 153.06 320 PKPbc PKPdf 22 44 46.5 +3.2
comp=Z,14nm,0.8s,baz=57,slow=2.1,SNR=46
TIC Toumodi 153.22 165 *e*PKIKP PKPdf 22 44 49.0 +4.3
comp=Z,69nm,0.9s
DBIC Dimbokro 153.28 165 PKPbc PKPdf 22 44 51.1 +6.3
comp=Z,13nm,1.1s,baz=108,slow=6.4,SNR=4.1
DBIC Dimbokro 153.28 165 PKIKP PKPdf 22 44 51.1 +6.3
DBIC pmax pmax
comp=Z,13nm,1.1s
DBIC Dimbokro 153.28 165 PFAKE 22 44 50.0 +5.2
DBIC LR LR
comp=Z,175nm,20.0s,MS4.9
BRTR Keskin Array B 153.52 294 PKP PKPdf 22 44 41.0 -3.4
comp=Z,0.9nm,0.9s,baz=45,slow=1.7,SNR=4.5
BRTR PKPbc PKPdf 22 44 48.4 +4.1
comp=Z,11nm,0.8s,baz=130,slow=3.7,SNR=54
CSS Prodhromos 153.80 284 *e*PKPbc PKPdf 22 44 48.5 +3.6
SUW Suwalki 153.90 331 *e*PKP PKPdf 22 44 48.3 +3.9
SUW *e* 22 44 59.3
ESKT Eskisehir 155.68 294 P PKPdf 22 44 46.6 -0.6
KWP Kalwaria 157.10 323 *e*PKP PKPdf 22 44 56.0 +7.2
KWP *e* 22 45 17.2
KWP Kalwaria 157.10 323 *e*PKP PKPdf 22 44 44.8 -4.0
ESK Eskdalemuir 157.20 7 PFAKE 22 45 00.0 +11
ESK LR LR
comp=Z,283nm,21.0s,MS5.1
CRVS Cervenica-Dubn 158.19 323 *e*PKP PKPdf 22 44 44.9 -5.4
CRVS *e* 22 44 57.6
CRVS *e* 22 45 19.6
CRVS Cervenica-Dubn 158.19 323 *e*PKIKP PKPdf 22 44 44.9 -5.4
CRVS *e* 22 45 19.6
NIE Niedzica 158.41 326 *e*P PKPdf 22 44 46.4 -4.1
KSP Ksiaz 159.05 334 *e*PKP2 PKPab 22 45 25.5 +0.6
OKC Ostrava-Krasne 159.09 329 *e*PKPAB PKPab 22 45 22.5 -2.6
OKC *e*pPKP 22 45 33.7
OKC *e*x x 23 17 42.5
OKC L 00 17 10.0
comp=Z,0.2nm,15.8s
UPC Upice 159.43 334 *e*PKPAB PKPab 22 45 25.0 -1.5
DPC Dobruska-Polom 159.43 333 *e*PKPDF PKPdf 22 44 59.4 +7.7
DPC *e*PKPAB PKPab 22 45 24.3 -2.3
DPC *e*pPKP 22 45 35.4
DPC *e*x x 23 15 42.9
DPC L 00 14 10.0
comp=Z,0.2nm,17.0s
VYHS Vyhne 159.75 326 *i* PKP PKPab 22 45 26.5 -1.5
VYHS *e* 22 45 57.3
VYHS Vyhne 159.75 326 *e*PKIKP PKPdf 22 44 57.1 +5.0
VYHS *i* 22 45 26.5
CLL Collm 159.76 339 *e* PKPdf 22 45 05.0 +13
CLL *i* PKP2 PKPab 22 45 25.6 -2.4
CLL *e* 22 45 30.0
CLL *i* *PPKP2 22 45 35.5
CLL *e* 22 45 51.0
BRG Berggiesshubel 159.84 337 *i* PKP2 PKPab 22 45 26.6 -1.7
BRG pmax pmax
comp=Z,15nm,1.0s
PVCC Panska Ves 159.93 336 *e*PKPAB PKPab 22 45 27.2 -1.5
PVCC L 00 14 40.0
comp=Z,0.2nm,17.1s
PRU Pruhonice 160.39 335 *e*PKPAB PKPab 22 45 28.4 -2.3
PRU *ex* x 23 15 30.0
PRU L 00 09 50.0
WTSB Winterswijk 160.49 351 *e*PKP PKPab 22 45 31.8 +0.7
comp=Z,8.8nm,1.8s
MOX Moxa 160.75 341 *e*PKP2 PKPab 22 45 30.4 -1.8
MOX pmax pmax
comp=Z,17nm,1.4s
MOX MLR MLR
comp=Z,100nm,22.0s
ZST Bratislava 160.77 328 *e* PKPdf 22 44 44.7 -8.4
ZST *e* 22 45 17.7
ZST *e* 22 49 50.7
NKC Novy Kostel 160.87 339 *e*PKPAB PKPab 22 45 30.9 -1.9
NKC *e*pPKP 22 45 41.4
NKC L 00 09 30.0
comp=Z,0.3nm,17.8s
KHC Kasperske Hory 161.45 335 *e*PKPDF PKPdf 22 45 00.3 +6.5
KHC *e*PKPAB PKPab 22 45 33.6 -1.8
KHC *e*pPKP 22 45 44.5
KHC *ex* x 23 16 26.0
KHC L 00 06 20.0
comp=Z,0.3nm,18.4s
GERES GERESS Array B 161.65 334 PKP PKPdf 22 44 51.7 -2.3
comp=Z,0.5nm,0.8s,baz=135,slow=3.8,SNR=5.3
GERES PKPab PKPab 22 45 34.7 -1.5
comp=Z,3.1nm,0.8s,baz=34,slow=4.8,SNR=16
GERES GERESS Array B 161.65 334 PKIKP PKPdf 22 44 51.7 -2.3
GERES 22 45 34.7
GERES pmax pmax
comp=Z,1.0nm,0.8s
GERES pmax pmax
comp=Z,3.0nm,0.8s
GRF Grafenberg Arr 161.72 340 *e*PKP2 PKPab 22 45 34.4 -2.1
HGN Heimansgroeve 161.78 352 *e*PKP PKPab 22 45 37.8 +1.1
comp=Z,9.6nm,0.7s
BAIF Baives 162.65 355 *e*PKP2 PKPab 22 45 38.4 -2.1
comp=Z,44nm,1.5s
CDF Champ du Feu 163.86 347 *e*PKP2 PKPab 22 45 43.7 -2.2
comp=Z,33nm,1.4s
MEZF Maizieres J'vi 164.12 352 *e*PKP2 PKPab 22 45 45.1 -1.9
HAU Haudompre 164.42 349 *e*PKP2 PKPab 22 45 46.2 -2.1
comp=Z,18nm,0.9s
HINF Hinteralfeld 164.51 347 *e*PKP2 PKPab 22 45 46.4 -2.3
LOR Lormes 165.45 354 *e*PKP2 PKPab 22 45 50.6 -2.2
comp=Z,31nm,1.3s
SSF Saint Saulge 165.69 355 *e*PKP2 PKPab 22 45 51.7 -2.2
comp=Z,23nm,1.2s
AVF Avril sur Loir 165.97 356 *e*PKP2 PKPab 22 45 52.8 -2.3
comp=Z,19nm,1.3s
SMF Signal de Mont 166.07 354 *e*PKP2 PKPab 22 45 53.5 -2.1
comp=Z,45nm,1.3s
LPL La Plagne 166.73 345 *e*PKP2 PKPab 22 45 57.3 -1.1
comp=Z,46nm,1.4s
LPG La Plagne 166.75 345 *e*PKP2 PKPab 22 45 57.4 -1.1
comp=Z,36nm,1.1s
MBDF Montbardon 167.47 344 *e*PKP2 PKPab 22 46 00.0 -1.7
ORIF Oris-en-Rattie 167.48 347 *e*PKP2 PKPab 22 46 00.1 -1.6
comp=Z,26nm,1.2s
VIVF Saint-Julien-l 167.75 350 *e*PKP2 PKPab 22 46 01.3 -1.6
comp=Z,52nm,1.5s
SBF Sospel 168.10 340 *e*PKP2 PKPab 22 46 02.1 -2.4
comp=Z,27nm,1.0s
SMRF Simiane la Rot 168.45 346 *e*PKP2 PKPab 22 46 04.7 -1.3
comp=Z,57nm,1.6s
FRF La Foret Royal 168.60 342 *e*PKP2 PKPab 22 46 04.5 -2.2
comp=Z,34nm,1.2s
LMR La Mourre 168.84 342 *e*PKP2 PKPab 22 46 05.7 -2.1
comp=Z,31nm,1.1s
ESDC Sonseca Array 171.69 33 PKP PKPdf 22 45 00.5 -1.6
comp=Z,0.6nm,0.7s,baz=90,slow=1.3,SNR=3.9
ESDC PKPab PKPab 22 46 20.4 -0.2
comp=Z,0.3nm,0.6s,baz=315,slow=1.8,SNR=2.9

NEIC ***26*** *22:25:43.8, 33.47S×72.42W, h36km, MD3.8(GUC), After GUC.*
GUC ***26*** *22:25:43.8±0.6, 33.47S×72.42W, h36km±2km, MD3.8, ML3.0*
ISC 26 22:25:43.2±1.7**, 33.5S**±0.1×**72.47W**±0.09**, h21**km±9km**, n13, σ0°33/21, 1C-1D, Off coast of central Chile**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LCCH	**Las Cruces**	**0.75**	**91**	*e*P	**Pb**	**22 25 57.3**	**-0.1**
LCCH				*i* S	**Sb**	**22 26 07.5**	**+0.3**
LNV	**Longovilo**	**1.01**	**119**	⇑*i*P	**Pb**	**22 26 01.4**	**-0.3**
TACH	**Talagante**	**1.29**	**99**	*e*P	**Pn**	**22 26 05.9**	**-0.3**
TACH				*i* S	**Sb**	**22 26 22.8**	**0.0**
RCDM	**Rinconada Maip**	**1.39**	**91**	⇓*i*P	**Pn**	**22 26 07.4**	**-0.2**
RCDM				*i* S	**Sn**	**22 26 24.7**	**-0.7**
PEL	**Peldehue**	**1.53**	**78**	*e*P	**Pn**	**22 26 09.4**	**-0.1**
PEL				*i* S	**Sn**	**22 26 29.6**	**+0.6**
CHCH	**Chadas Angostu**	**1.58**	**108**	*e*P	**Pn**	**22 26 10.3**	**-0.1**
CLCH	**Cerro Calan**	**1.62**	**88**	*e*P	**Pn**	**22 26 11.1**	**+0.2**
CLCH				*i* S	**Sn**	**22 26 31.1**	**-0.1**
CLCH				AMP		22 26 42.3	
	comp=E,407nm,0.6s						
PCH	**Pirque**	**1.64**	**96**	*e*P	**Pn**	**22 26 11.0**	**-0.2**
PCH				*i* S	**Sn**	**22 26 31.7**	**-0.1**
SFDO	**San Fernando**	**1.66**	**134**	*e*P	**Pn**	**22 26 11.7**	**+0.1**
JACH	**Jahuel**	**1.76**	**64**	*i* P	**Pn**	**22 26 12.9**	**0.0**
FCH	**Farellones**	**1.83**	**86**	*e*P	**Pn**	**22 26 14.2**	**+0.4**
FCH				*i* S	**Sn**	**22 26 36.4**	**-0.2**
FCH				AMP		22 26 46.7	
	comp=N,224nm,0.4s						
CICH	**Cipreses**	**1.90**	**117**	*e*P	**Pn**	**22 26 15.7**	**+0.7**
LMEL	**Las Melosas**	**1.93**	**102**	*e*P	**Pn**	**22 26 15.2**	**-0.1**
LMEL				*i* S	**Sn**	**22 26 39.5**	**+0.4**
LMEL				AMP		22 26 44.6	
	comp=N,124nm,0.4s						

NEIC ***26*** *22:31:27.4±2.9, 41.00N×20.18E, h5km, MD2.5(PDG), Error ellipse: s-maj=42.4km s-min=7.4km az=200.0*
TIR ***26*** *22:31:28.9, 41.19N×20.31E, h5km*
THE ***26*** *22:31:31.8, 41.15N×20.46E, h10km, ML2.7*
ISC 26 22:31:29.3±0.3**, 41.12N**±0.03×**20.27E**±0.03**, h5**km**, n27, σ1°35/50, 5C-1D, Albania**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TIR	**Tirane**	**0.38**	**306**	*e*Pg	**Pg**	**22 31 36.3**	**-0.6**
TIR				*i* Sg	**Sg**	**22 31 42.8**	**+0.8**
OHR	**Ohrid**	**0.40**	**92**	⇑*i*Pg	**Pg**	**22 31 37.6**	**+0.3**
OHR				⇓*i*Sg	**Sg**	**22 31 44.9**	**+2.2**
QSH	**Qafa e Shtames**	**0.48**	**325**	*i* Pg	**Pg**	**22 31 37.2**	**-1.8**
QSH				*i* Sg	**Sg**	**22 31 45.2**	**-0.3**
KBN	**Korca**	**0.64**	**142**	*i* Pg	**Pg**	**22 31 42.1**	**+0.1**
KBN				*i* Sg	**Sg**	**22 31 51.4**	**+0.9**
LACI	**Lac**	**0.66**	**321**	*e*Pg	**Pg**	**22 31 40.8**	**-1.8**
LACI				*i* Sg	**Sg**	**22 31 50.6**	**-0.8**
BIA	**Bitola**	**0.80**	**97**	*e*Pg	**Pg**	**22 31 43.0**	**-2.3**
BIA				⇑*i*Sg	**Sg**	**22 31 55.3**	**-0.8**
FNA	**Florina**	**0.90**	**112**	*e*Pg	**Pg**	**22 31 46.4**	**-1.0**
	comp=Z,3.4nm,0.3s						
FNA				*e*Sg	**Sg**	**22 31 57.9**	**-1.5**
PUK	**Puka**	**0.96**	**343**	*i* Pn	**Pn**	**22 31 47.2**	**-2.1**
PUK				*i* Sn	**Sn**	**22 32 02.9**	**-0.5**
LSK	**Leskovik**	**1.00**	**165**	epn?	**Pn**	**22 31 47.5**	**-2.4**
LSK				*i* Sn	**Sn**	**22 32 03.6**	**-1.0**
ULC	**Ulcinj**	**1.14**	**318**	*e*Pg	**Pg**	**22 31 49.0**	**-3.0**
ULC				*e*Sg	**Sg**	**22 32 04.8**	**-2.4**

SKO	**Skopje**	**1.22**	**46**	*e*Pn	**Pn**	**22 31 52.8**	**-0.2**
SKO				*i* Sg	**Sg**	**22 32 10.5**	**+0.6**
BCI	**Bajram Curri**	**1.25**	**353**	*e*Pn	**Pn**	**22 31 52.4**	**-1.0**
BCI				*i* Sn	**Sn**	**22 32 11.7**	**+0.9**
SRN	**Sarande**	**1.26**	**190**	*i* Pn	**Pn**	**22 31 55.3**	**+1.7**
SRN				*i* Sn	**Sn**	**22 32 15.0**	**+4.0**
PVY	**Plav**	**1.49**	**351**	*e*Pn	**Pn**	**22 31 56.9**	**+0.1**
PVY				*e*Sn	**Sn**	**22 32 20.4**	**+3.6**
TTG	**Podgorica**	**1.51**	**330**	⇑*i*Pn	**Pn**	**22 31 56.1**	**-1.0**
TTG				*e*Sn	**Sn**	**22 32 18.3**	**+1.0**
MEV	**Metsovon**	**1.52**	**151**	*e*Pb	**Pb**	**22 31 59.5**	**+1.8**
BUM	**Brajici-Budva**	**1.56**	**319**	*e*Pn	**Pn**	**22 31 56.4**	**-1.4**
BUM				*e*Sn	**Sn**	**22 32 18.3**	**-0.4**
IGT	**Igoumenitsa**	**1.59**	**178**	*e*Pb	**Pb**	**22 31 59.7**	**+0.9**
IGT				*e*Sb	**Sb**	**22 32 23.1**	**+3.9**
GRG	**Griva**	**1.62**	**95**	*e*Pb	**Pb**	**22 31 58.7**	**-0.6**
IVA	**Berane**	**1.77**	**351**	*e*Pn	**Pn**	**22 32 02.8**	**+1.9**
IVA				*e*Sn	**Sn**	**22 32 28.5**	**+4.6**
HCY	**Herceg Novi**	**1.87**	**316**	*e*Pn	**Pn**	**22 32 01.8**	**-0.5**
HCY				*e*Sn	**Sn**	**22 32 26.6**	**0.0**
NKY	**Niksic**	**1.94**	**331**	⇑*i*Pn	**Pn**	**22 32 04.0**	**+0.8**
NKY				*e*Sn	**Sn**	**22 32 30.8**	**+2.6**
KNT	**Kendrikon**	**1.98**	**88**	*e*Pb	**Pb**	**22 32 04.7**	**-0.9**
BRY	**Bratogost**	**2.19**	**325**	*e*Pn	**Pn**	**22 32 07.0**	**+0.1**
BRY				*e*Sn	**Sn**	**22 32 36.2**	**+1.4**
PLE	**Pljevlja**	**2.30**	**344**	⇑*i*Pn	**Pn**	**22 32 10.0**	**+1.6**
PLE				*e*Sn	**Sn**	**22 32 40.9**	**+3.5**
UPM	**Unac-Piva**	**2.31**	**334**	*e*Pn	**Pn**	**22 32 09.4**	**+0.8**
UPM				*e*Sn	**Sn**	**22 32 40.2**	**+2.5**
AGG	**Agios Georgios**	**2.63**	**142**	*e*Pn	**Pn**	**22 32 14.5**	**+1.3**

NEIC ***26*** *22:33:37.7, 33.35S×72.26W, h36km, MD3.8(GUC), After GUC.*

GUC 26 22:33:37.7±0.6, 33.35S×72.26W, h36km±3km, MD3.8, ML2.6, 1D, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LCCH	**Las Cruces**	**0.59**	**102**	*e*P	P	22 33 49.7	+0.1
LNV	**Longovilo**	**0.93**	**131**	*e*P	P	22 33 54.3	-0.1
TACH	**Talagante**	**1.15**	**106**	*e*P	P	22 33 57.8	+0.3
RCDM	**Rinconada Maip**	**1.23**	**97**	*e*P	P	22 33 59.8	+1.3
CHCH	**Chadas Angostu**	**1.46**	**114**	*i* P	P	22 34 03.0	+0.9
CHCH				*i* S	S	22 34 22.4	+2.1
PCH	**Pirque**	**1.49**	**101**	*e*P	P	22 34 03.8	+1.4
JACH	**Jahuel**	**1.55**	**65**	*e*P	P	22 34 04.4	+1.1
JACH				*i* S	S	22 34 24.7	+2.2
CACH	**El Canelo**	**1.58**	**119**	*e*P	P	22 34 05.1	+1.3
SFDO	**San Fernando**	**1.63**	**141**	*e*P	P	22 34 05.4	+1.0
FCH	**Farellones**	**1.65**	**90**	*e*P	P	22 34 06.2	+1.4
FCH				*i* S	S	22 34 27.9	+3.0
FCH				AMP		22 34 38.7	
	comp=N,117nm,0.6s						
LMEL	**Las Melosas**	**1.79**	**107**	⇓*i*P	P	22 34 08.3	+1.6
LMEL				*i* S	S	22 34 30.8	+2.4
LMEL				AMP		22 34 48.2	
	comp=N,73nm,0.3s						
CICH	**Cipreses**	**1.81**	**123**	*e*P	P	22 34 07.9	+0.9

IDC ***26*** *22:45:24.5±1.4, 14.44N×54.71E, mb3.9/10, mb1 4.1/10, mb1mx3.9/20, MS3.4/6, Ms1 3.4/6, ms1mx3.2/25, Error ellipse: s-maj=40.3km s-min=22.0km az=48.0*
NEIC ***26*** *22:45:26.0±0.5, 14.40N×54.66E, h10km, mb4.2/1, Error ellipse: s-maj=15.5km s-min=11.8km az=114.0*

ISC 26 22:45:24.4±0.6, 14.45N±0.10×54.7E±0.1, h10km, n21, σ0§85/17, mb4.0/11, MS3.3/6, Owen Fracture Zone region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THR	**Tehran**	**21.60**	**352**	P	**P**	**22 50 16.6**	**+0.1**
	2.5nm,1.0s,mb3.6,baz=126,slow=7.3,SNR=4.7						
THR				LR	LR	22 59 48.3	
	comp=Z,72nm,21.6s,MS3.0,baz=301,slow=40						
KMBO	**Kilima Mbogo**	**23.16**	**229**	LR	LR	23 00 18.2	
	comp=Z,140nm,19.0s,MS3.4,baz=88,slow=38						
KMBO	**Kilima Mbogo**	**23.16**	**229**	P	**P**	**22 50 32.5**	**+0.3**
GNI	**Garni**	**27.04**	**343**	LR	LR	23 03 21.8	
	comp=Z,95nm,21.4s,MS3.3,baz=166,slow=40						
MKAR	**Makanchi Array**	**39.66**	**30**	P	**P**	**22 52 57.2**	**-1.0**
	1.0nm,0.6s,mb3.7,baz=213,slow=9.8,SNR=12						
MKAR				LR	LR	23 10 36.9	
	comp=Z,40nm,21.4s,MS3.2,baz=25,slow=38						
MKAR	**Makanchi Array**	**39.66**	**30**	P	**P**	**22 52 57.2**	**-1.0**
MKAR				LR	LR	23 10 36.9	
KURK	**Kurchatov**	**41.05**	**23**	*e*P	**P**	**22 53 10.4**	**+0.9**
CMAR	**Chiang Mai Arr**	**42.59**	**78**	P	**P**	**22 53 22.2**	**-0.3**
	2.0nm,0.8s,mb3.9,baz=273,slow=10,SNR=11						
ZAL	**Zalesovo**	**45.95**	**24**	P	**P**	**22 53 50.4**	**+1.2**
	1.1nm,0.5s,mb4.0,baz=176,slow=6.8,SNR=3.5						
ZAL				LR	LR	23 13 20.8	
	comp=Z,50nm,20.9s,MS3.4,baz=11,slow=36						
GERES	**GERESS Array B**	**47.97**	**324**	*e*P	**P**	**22 54 06.5**	**+1.3**
	0.5nm,0.6s,mb3.7,baz=129,slow=8.5,SNR=4.5						
LBTB	**Lobatse**	**48.39**	**216**	*e*P	**P**	**22 54 08.7**	**0.0**
	2.8nm,1.1s,mb4.2						
FINES	**FINESS Array B**	**51.23**	**343**	P	**P**	**22 54 28.2**	**-1.8**
	1.1nm,0.6s,mb4.0,baz=129,slow=12,SNR=7.6						
FINES	**FINESS Array B**	**51.23**	**343**	P	**P**	**22 54 28.2**	**-1.8**
SONM	**Songino Array**	**54.03**	**41**	P	**P**	**22 54 51.7**	**+0.6**
	0.5nm,0.4s,mb3.8,baz=248,slow=6.7,SNR=3.7						
ULN	**Ulaanbaatar**	**54.46**	**41**	P	**P**	**22 54 54.5**	**+0.3**
NOA	**NORSAR Array B**	**56.02**	**336**	LR	LR	23 22 17.1	
	comp=Z,28nm,19.1s,MS3.4,baz=280,slow=40						
ARCES	**ARCESS Array B**	**58.02**	**348**	P	**P**	**22 55 18.1**	**-1.3**
	2.8nm,1.0s,mb4.2,baz=143,slow=6.1,SNR=11						
WRA	**Warramunga Arr**	**85.47**	**112**	P	**P**	**22 58 03.6**	**-0.6**
	1.9nm,1.0s,mb4.2,baz=300,slow=4.0,SNR=6.6						
WRAB	**Tennant Creek**	**85.47**	**112**	P	**P**	**22 58 04.5**	**+0.2**
ASAR	**Alice Springs**	**86.18**	**115**	P	**P**	**22 58 07.8**	**+0.1**
	2.1nm,0.8s,mb4.4,baz=286,slow=4.7,SNR=13						
NVAR	**Mina Array Bea**	**126.99**	**353**	PKP	PKPdf	23 04 33.0	+0.8
	0.9nm,0.6s,baz=47,slow=1.7,SNR=4.7						

BER ***26*** *23:01:46.2±4.2, 76.67N×25.36E, h21km±22km, ML1.9, ML2.1(NAO)*
NAO ***26*** *23:01:48.2±1.7, 76.53N×23.45E, h46km±38km, ML2.1*

ISC 26 23:01:40.8±1.3, 76.76N±0.06×25.2E±0.5, h10km, n5, σ1§43/11, Barents Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SPA0	**Spitsbergen Ar**	**2.40**	**311**	Pn	**Pn**	**23 02 23.2**	**+2.4**
	baz=133,slow=14						
SPA0				Pg	**Pg**	**23 02 29.4**	**+0.7**
	baz=139,slow=22						
SPA0				Sg	**Sg**	**23 02 59.1**	**-1.5**
	baz=132,slow=37						
BJO	**Bjornoya**	**2.71**	**216**	*e*P	**Pn**	**23 02 28.5**	**+3.2**
BJO				*e*Pg	**Pg**	**23 02 30.7**	**-4.3**
BJO				*e*S	**Sn**	**23 02 59.1**	**+0.6**
BJO				AML	AML	23 03 03.9	
	comp=Z,11nm,0.4s						
KBS	**Kingsbay**	**3.54**	**314**	Pn	**Pn**	**23 02 38.5**	**+1.3**
KBS				Sn	**Sn**	**23 03 18.4**	**-1.1**
KBS				Lg		23 03 35.3	
ARA0	**ARCESS Array S**	**7.26**	**179**	Pn	**Pn**	**23 03 28.1**	**-1.5**
	baz=0.4,slow=9.3						
ARA0				Sn	**Sn**	**23 04 39.8**	**-13**
	baz=6.2,slow=22						
APA0	**Apatity Array**	**9.49**	**162**	Pn	**P**	**23 03 60.0**	**-0.6**

IDC ***26*** *23:06:12.9±1.5, 5.32S×102.27E, mb3.9/9, mb1 4.0/9, mb1mx3.8/18, Error ellipse: s-maj=70.6km s-min=17.1km az=53.0*
NEIC ***26*** *23:06:19.6±0.8, 5.33S×102.27E, h50km, mb4.3/2, Error ellipse: s-maj=36.2km s-min=8.1km az=51.0*

ISC 26 23:06:15.6±1.1, 5.3S±0.2×102.2E±0.3, h33km, n15, σ0§77/14, mb3.9/11, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**23.86**	**352**	P	**P**	**23 11 28.4**	**+1.2**
	0.7nm,0.5s,mb3.4,baz=184,slow=8.8,SNR=5.3						
WRA	**Warramunga Arr**	**34.45**	**118**	P	**P**	**23 13 01.5**	**-1.0**
	0.3nm,0.3s,mb3.7,baz=307,slow=9.2,SNR=5.3						
WRAB	**Tennant Creek**	**34.45**	**118**	*e*P	**P**	**23 13 03.0**	**+0.5**
	7.1nm,0.7s,mb4.7						
ASAR	**Alice Springs**	**35.54**	**124**	P	**P**	**23 13 11.7**	**-0.1**
	0.2nm,0.5s,mb3.4,baz=297,slow=8.1,SNR=3.7						
CTAO	**Charters Tower**	**45.23**	**113**	P	**P**	**23 14 32.4**	**+0.5**
STKA	**Stephens Creek**	**45.30**	**131**	P	**P**	**23 14 32.6**	**+0.3**
	2.5nm,1.0s,mb4.0,baz=281,slow=7.1,SNR=2.8						
SONM	**Songino Array**	**53.07**	**4**	P	**P**	**23 15 32.3**	**+0.4**
	1.4nm,0.7s,mb4.0,baz=178,slow=8.5,SNR=6.0						
ULN	**Ulaanbaatar**	**53.15**	**4**	*e*P	**P**	**23 15 32.6**	**+0.1**
	0.6nm,0.5s,mb3.8						
MKAR	**Makanchi Array**	**54.83**	**343**	P	**P**	**23 15 44.8**	**0.0**
	0.9nm,0.5s,mb4.1,baz=154,slow=8.8,SNR=20						
ZAL	**Zalesovo**	**60.84**	**348**	P	**P**	**23 16 25.6**	**-1.4**
	1.1nm,0.3s,mb4.5,baz=159,slow=2.0,SNR=3.1						
BVAR	**Borovoye Array**	**64.06**	**339**	P	**P**	**23 16 48.2**	**-0.2**
	2.8nm,1.0s,mb4.3,baz=135,slow=8.4,SNR=5.4						
BRVK	**Borovoye**	**64.13**	**339**	P	**P**	**23 16 48.3**	**-0.5**
ZRNK	**Zerenda**	**64.50**	**338**	*e*P	**P**	**23 16 50.2**	**-1.1**
BRTR	**Keskin Array B**	**77.19**	**313**	P	**P**	**23 18 09.6**	**+1.4**
	0.5nm,0.6s,mb3.6,baz=140,slow=9.6,SNR=3.8						
TXAR	**Lajitas Array**	**145.82**	**43**	PKPbc	PKPbc	23 25 54.4	+2.0
	0.8nm,0.3s,baz=270,slow=0.9,SNR=2.9						

IDC ***26*** *23:55:12.0±1.3, 29.55N×99.35E, mb3.7/4, mb1 4.0/5, mb1mx3.6/21, ML3.9/1, MS3.6/2, Ms1 3.6/2, ms1mx3.1/23, Error ellipse: s-maj=57.8km s-min=19.0km az=68.0*
BJI ***26*** *23:55:14.8, 29.22N×98.69E, h9km, mb4.4, ML3.4, Ms3.9, Msz4.0*

ISC 26 23:55:11.0±0.6, 29.09N±0.07×98.66E±0.06, h9km, n17, σ1§35/21, mb3.7/4, MS4.0/1, 1C, Xizang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CD2	**Chengdu**	**4.78**	**66**	*e*P	**Pn**	**23 56 28.0**	**+3.0**
CD2				PG	**Pg**	**23 56 40.0**	**-6.5**
CD2				SG	**Sg**	**23 57 42.0**	**-8.2**
CD2				S	Sn		
	comp=N,60nm,1.3s						
CD2				S	Sn		
	comp=E,50nm,0.8s						
KMI	**Kunming**	**5.37**	**136**	*e*P	**Pn**	**23 56 34.3**	**+1.0**
KMI				S	**Sn**	**23 57 34.8**	**-1.2**
KMI				SG	**Sg**	**23 58 04.0**	**-5.8**
KMI				S	Sn		
	comp=N,43nm,1.8s						
KMI				S	Sn		
	comp=E,34nm,1.7s						
KMI				LR	LR		
	comp=N,609nm,10.2s						
KMI				LR	LR		
	comp=E,862nm,10.8s						
KMI				LR	LR		
	comp=Z,223nm,9.6s						
LSA	**Lhasa**	**6.58**	**277**	P	**Pn**	**23 56 56.8**	**+6.4**
SHL	**Shillong**	**6.97**	**241**	*e*P	**Pn**	**23 57 00.0**	**+4.1**
SHL				*e*S	**Sn**	**23 58 18.5**	**+2.3**
GYA	**Guiyang**	**7.56**	**108**	⇑*i*P	**Pn**	**23 57 08.0**	**+3.9**
LZH	**Lanzhou**	**8.23**	**31**	*e*P	**P**	**23 57 15.3**	**+1.8**
LZH				AP		23 57 24.8	
LZH				AMB	AMB		
	comp=Z,32nm,1.5s						
LZH				LR	LR		
	comp=E,725nm,10.1s						
LZH				LR	LR		
	comp=Z,1μm,12.4s						
CMAR	**Chiang Mai Arr**	**10.59**	**179**	Pn	**P**	**23 57 52.2**	**+6.2**
	comp=Z,0.2nm,0.3s,baz=348,slow=11,SNR=8.5						
CMAR				Pg	P	23 58 35.1	+49
	comp=Z,0.4nm,0.3s,baz=357,slow=17,SNR=9.8						
CMAR				Lg		00 01 01.2	
	comp=Z,0.2nm,0.3s,baz=8.8,slow=29,SNR=6.6						
CMAR				LR	LR	00 02 08.7	
	comp=Z,111nm,18.8s,baz=345,slow=38						
PKI	**Pulchoki**	**11.77**	**266**	*e*P	**P**	**23 58 02.1**	**-0.1**
	comp=Z,46nm,0.6s						
KKN	**Kakani**	**11.85**	**267**	*e*P	**P**	**23 58 02.6**	**-0.6**
	comp=Z,20nm,0.5s						
DMN	**Daman**	**12.03**	**266**	*e*P	**P**	**23 58 04.8**	**-0.9**
GKN	**Gorkha**	**12.38**	**268**	*e*P	**P**	**23 58 09.2**	**-1.1**
	comp=Z,14nm,0.6s						
KOLN	**Koldanda**	**13.32**	**268**	*e*P	**P**	**23 58 20.6**	**-2.3**
	comp=Z,18nm,0.8s						
MKAR	**Makanchi Array**	**21.81**	**329**	P	**P**	**00 00 04.7**	**-0.6**
	comp=Z,2.5nm,0.6s,mb3.8,baz=135,slow=13,SNR=21						
BVAR	**Borovoye Array**	**31.67**	**327**	P	**P**	**00 01 36.6**	**-0.2**
	comp=Z,0.5nm,0.6s,mb3.5,baz=137,slow=11,SNR=5.0						
ASF	**Jabal al Asfar**	**52.59**	**290**	LR	LR	00 31 22.3	
	comp=Z,126nm,19.4s,MS4.0,baz=27,slow=41						
WRA	**Warramunga Arr**	**59.68**	**141**	P	**P**	**00 05 18.1**	**-0.2**
	comp=Z,0.8nm,0.5s,mb4.0,baz=329,slow=7.7,SNR=7.2						
GERES	**GERESS Array B**	**65.55**	**314**	P	**P**	**00 05 58.3**	**+1.3**
	comp=Z,0.4nm,0.7s,mb3.6,baz=72,slow=4.2,SNR=4.4						

BJI ***26*** *23:56:49.6, 54.35N×111.73E, h11km, mB4.1, mb4.4, ML5.1, Ms4.6, Msz4.1*
IDC ***26*** *23:56:50.7±0.7, 54.08N×111.68E, mb4.2/17, mb1 4.3/20, mb1mx4.2/29, ML3.3/2, MS3.8/13, Ms1 3.8/13, ms1mx3.7/27, Error ellipse: s-maj=14.4km s-min=13.1km az=158.0*
BYKL ***26*** *23:56:51.9±0.2, 54.12N×111.44E, h9km±13km, #FAULT_PLANE Typ Strike Dip Rake NP NS Plane Author # FM 219.00 58.00 -82.00 14 0 IEC + 24.00 33.00 -103.00 IEC #PRINAX sc T_val T_azim T_pl B_val B_azim B_pl P_val P_azim P_pl Author + eTv eTa eTp eBv eBa eBp ePv ePa ePp fCLVD # 303.00 13.00 35.00 7.00 153.00 76.00 IEC + 9.50 1.16 7.51 7.94 29.28 4.04 Felt I=III-IV MSK at Suvo, II-III at Ulyunkhan*
NEIC ***26*** *23:56:52.1±0.3, 54.12N×111.71E, h10km, mb4.6/9, Error ellipse: s-maj=7.1km s-min=5.9km az=206.0*

NEIC Felt [III] at Ulyunkhan and [II] at Suvo.
MOS ***26*** *23:56:52.6±1.1, 54.13N×111.40E, h23km, mb4.6/21, Error ellipse: s-maj=8.2km s-min=5.8km az=76.5*
MOS Felt (II-III) at Ulyunkhan; (II) at Suvo.

ISC 26 23:56:50.1±0.2, 54.12N±0.02×111.44E±0.03, h9km, n151, σ1§53/220, mb4.3/36, MS3.9/18, 24C-16D, Lake Baykal region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YLYR	**Ulyunkhan**	**0.78**	**348**	⇑*i*Pg	**Pg**	**23 57 05.3**	**-0.4**
	3μm,1.1s						
YLYR				⇓*i*Pg	**Pg**	**23 57 05.3**	**-0.4**
	643nm,1.1s						
YLYR				⇑*i*Pg	**Pg**	**23 57 05.3**	**-0.4**
	2μm,1.1s						
YLYR				Pmax		23 57 06.6	
	5μm,1.0s						
YLYR				*i* Sg	**Sg**	**23 57 15.6**	**-0.5**
YLYR				Smax		23 57 17.3	
	14μm,1.2s						
YLYR	**Ulyunkhan**	**0.78**	**348**	⇑*i*PG	**Pg**	**23 57 05.3**	**-0.4**
YLYR				*e*		23 57 15.4	
YLYR				pmax	pmax		
	comp=Z,6μm,1.0s						
SYVR	**Suvo**	**0.97**	**242**	⇓*i*Pg	**Pg**	**23 57 09.3**	**-0.2**
	comp=Z,150nm,0.7s						
SYVR				⇓*i*Pg	**Pg**	**23 57 09.3**	**-0.2**
	comp=Z,396nm,0.7s						
SYVR				⇑*i*Pg	**Pg**	**23 57 09.3**	**-0.2**
	comp=Z,382nm,0.7s						
SYVR				Pmax		23 57 12.4	
	comp=Z,2μm,0.5s						
SYVR				*e*Sg	**Sg**	**23 57 22.7**	**+0.2**
SYVR				*e*		23 57 28.7	
SYVR				max		23 57 29.3	
	comp=Z,14μm,0.3s						
SYVR	**Suvo**	**0.97**	**242**	*e*PG	**Pg**	**23 57 09.4**	**-0.1**
SYVR				*e*		23 57 22.6	
SYVR				pmax	pmax		
	comp=Z,2μm,0.2s						
KMO	**Kumora**	**1.78**	**356**	⇑*i*Pg	**Pg**	**23 57 23.5**	**-2.1**
KMO				Pmax		23 57 25.8	
	comp=Z,8μm,0.4s						
KMO				*i* Sg	**Sg**	**23 57 47.7**	**-1.6**
KMO				Smax		23 57 50.6	
	comp=Z,48μm,0.9s						
KMO	**Kumora**	**1.78**	**356**	⇑*i*PN	**Pn**	**23 57 23.6**	**+2.3**
KMO				*e*		23 57 24.8	
KMO				*i* S	**Sg**	**23 57 47.7**	**-1.6**
KMO				*i*		23 57 48.8	
KMO				pmax	pmax		
	comp=Z,8μm,0.5s						
KMO				smax			
	comp=N,4μm,1.3s						
UKT	**Uakit**	**1.87**	**42**	⇓*i*Pg	**Pg**	**23 57 24.9**	**-2.6**
	comp=N,985nm,1.7s						
UKT				⇓*i*Pg	**Pg**	**23 57 24.9**	**-2.6**
	comp=N,1μm,1.7s						
UKT				⇓*i*Pg	**Pg**	**23 57 24.9**	**-2.6**
	comp=N,985nm,1.7s						
UKT				*e*		23 57 27.3	
UKT				max		23 57 28.1	
	comp=N,6μm,0.8s						
UKT				*e*Sg	**Sg**	**23 57 50.0**	**-2.4**
UKT				Smax		23 57 52.7	
	comp=N,8μm,0.6s						
UKT	**Uakit**	**1.87**	**42**	*e*PN	**Pn**	**23 57 25.2**	**+2.6**
UKT				*e*		23 57 51.8	
UKT				pmax	pmax		
	comp=Z,4μm,0.4s						
UKT				smax			
	comp=E,6μm,0.3s						
NIZ	**Nizh Angarsk**	**1.99**	**327**	⇑*i*Pg	**Pg**	**23 57 27.0**	**-2.8**
	comp=E,771nm,1.0s						
NIZ				⇓*i*Pg	**Pg**	**23 57 27.0**	**-2.8**
	comp=E,280nm,1.0s						
NIZ				⇑*i*Pg	**Pg**	**23 57 27.0**	**-2.8**
	comp=E,2μm,1.0s						
NIZ				Pmax		23 57 28.5	
	comp=E,5μm,1.4s						
NIZ				*e*Sn	**Sn**	**23 57 51.9**	**+2.3**
NIZ				*e*Sg	**Sg**	**23 57 54.4**	**-1.9**
NIZ				Smax		23 57 56.3	
	comp=E,22μm,1.2s						
NIZ	**Nizh Angarsk**	**1.99**	**327**	*e*PN	**Pn**	**23 57 28.0**	**+3.7**
NIZ				*e*		23 57 54.4	
NIZ				pmax	pmax		
	comp=Z,3μm,1.0s						
YOA	**Uoyan**	**2.02**	**5**	⇑*i*Pg	**Pg**	**23 57 28.4**	**-2.2**
YOA				Pmax		23 57 29.7	
	comp=Z,3μm,0.2s						
YOA				*i* Sg	**Sg**	**23 57 56.0**	**-1.6**
YOA				Smax		23 57 56.9	
	comp=Z,84μm,0.7s						
YOA	**Uoyan**	**2.02**	**5**	⇑*i*PN	**Pn**	**23 57 28.3**	**+3.4**
YOA				*i* S	**Sn**	**23 57 56.1**	**+5.6**
OGRR	**Ongureny**	**2.32**	**260**	*e*Pn	**Pn**	**23 57 30.9**	**+1.7**
OGRR				⇑*i*Pg	**Pg**	**23 57 32.7**	**-3.8**
OGRR				Pmax		23 57 35.4	
	comp=Z,882nm,0.6s						
OGRR				*e*		23 57 56.2	
OGRR				*e*Sg	**Sg**	**23 58 03.2**	**-4.3**
OGRR				Smax		23 58 05.2	
	comp=Z,15μm,1.2s						
OGRR	**Ongureny**	**2.32**	**260**	*e*PN	**Pn**	**23 57 30.9**	**+1.7**
OGRR				*e*		23 57 33.6	
OGRR				*e*		23 58 03.3	
OGRR				pmax	pmax		
	comp=Z,651nm,0.5s						
OGRR				smax			
	comp=N,7μm,1.0s						
SVKR	**Severomuysk**	**2.34**	**30**	*e*Pn	**Pn**	**23 57 30.3**	**+0.9**
SVKR				⇑*i*Pg	**Pg**	**23 57 34.8**	**-2.1**
SVKR				Pmax		23 57 37.0	
	comp=N,2μm,0.4s						
SVKR				*e*Sn	**Sn**	**23 58 00.8**	**+2.2**
SVKR				*e*Sg	**Sg**	**23 58 07.4**	**-0.8**
SVKR				Smax		23 58 11.1	
	comp=N,32μm,0.9s						
SVKR	**Severomuysk**	**2.34**	**30**	*e*PN	**Pn**	**23 57 31.0**	**+1.6**
SVKR				*e*		23 57 34.8	
SVKR				*e*S	**Sn**	**23 58 01.8**	**+3.2**
SVKR				*e*		23 58 07.2	
SVKR				pmax	pmax		
	comp=Z,2μm,0.4s						
SVKR				smax			
	comp=N,2μm,0.9s						
CIT	**Chita**	**2.46**	**148**	*e*Pn	**Pn**	**23 57 33.2**	**+2.1**
CIT				⇑*i*Pg	**Pg**	**23 57 35.5**	**-3.7**
CIT				Pmax		23 57 38.4	
	comp=N,3μm,1.5s						
CIT				*i* Sg	**Sg**	**23 58 08.8**	**-3.2**
CIT				*e*SgSg		23 58 19.8	
CIT				max		23 58 20.4	
	comp=N,7μm,0.9s						
CIT	**Chita**	**2.46**	**148**	*e*PN	**Pn**	**23 57 35.4**	**+4.3**
CIT				*e*		23 58 08.6	
CIT				pmax	pmax		
	comp=Z,3μm,1.5s						
CIT				smax			
	comp=E,7μm,1.2s						
TRTB	**Turuntaevo**	**2.97**	**232**	*e*Pn	**Pn**	**23 57 40.0**	**+1.6**
TRTB				⇑*i*Pg	**Pg**	**23 57 44.7**	**-4.8**
TRTB				Pmax		23 57 56.8	
	comp=E,721nm,1.1s						
TRTB				*e*Sn	**Sn**	**23 58 14.9**	**+0.3**
TRTB				*i* Sg	**Sg**	**23 58 24.8**	**-4.3**
TRTB				Smax		23 58 28.3	
	comp=E,4μm,1.4s						
ZRHB	**Zarechye**	**3.01**	**240**	*e*Pn	**Pn**	**23 57 40.0**	**+1.1**
ZRHB				*e*Pg	**Pg**	**23 57 45.6**	**-4.6**
ZRHB				Pmax		23 57 54.3	
	comp=E,1μm,0.8s						
ZRHB				*e*Sg	**Sg**	**23 58 26.5**	**-3.9**
ZRHB				Smax		23 58 52.0	
	comp=E,14μm,1.6s						
TRG	**Tyrgan**	**3.33**	**248**	⇑*i*Pn	**Pn**	**23 57 44.9**	**+1.4**
TRG				max		23 57 55.6	
	comp=E,247nm,0.3s						
TRG				*e*Sn	**Sn**	**23 58 24.0**	**+0.3**
TRG				*e*Sg	**Sg**	**23 58 33.8**	**-7.4**
TRG				Smax		23 58 38.0	
	comp=E,3μm,0.3s						
TRG	**Tyrgan**	**3.33**	**248**	*e*PN	**Pn**	**23 57 44.7**	**+1.2**

TRG					*e*			23 57 51.9		
TRG					*e*			23 58 34.2		
TRG					pmax	pmax				
	comp=Z,247nm,0.3s									
TRG					smax					
	comp=N,3μm,0.3s									
NLYR	**Nelyaty**	**3.41**	**44**	⇑	*i*Pn	**Pn**		**23 57 46.0**	**+1.4**	
NLYR				⇑	*e*Pg	**Pg**		**23 57 52.5**	**-5.6**	
NLYR					*e*Sg	**Sg**		**23 58 37.8**	**-5.7**	
NLYR	**Nelyaty**	**3.41**	**44**	⇑	*i*PN	**Pn**		**23 57 46.0**	**+1.4**	
NLYR					*e*			23 57 52.5		
NLYR					*e*			23 58 37.8		
NLYR					pmax	pmax				
	comp=Z,715nm,0.3s									
NLYR					smax					
	comp=N,440nm,1.3s									
FFNB	**Fofonovo**	**3.50**	**236**		*e*Pn	**Pn**		**23 57 46.0**	**+0.1**	
FFNB				⇑	*i*Pg	**Pg**		**23 57 56.0**	**-4.0**	
FFNB					Pmax			23 57 57.7		
	comp=N,586nm,0.2s									
FFNB					*e*Sn	**Sn**		**23 58 28.2**	**+0.3**	
FFNB					*e*Sg	**Sg**		**23 58 40.8**	**-5.9**	
FFNB					Smax			23 58 52.6		
	comp=N,8μm,1.0s									
KAB	**Kabansk**	**3.55**	**236**		*e*Pg	**Pg**		**23 57 56.3**	**-4.7**	
KAB					Pmax			23 58 02.1		
	comp=N,684nm,1.0s									
KAB					*e*Sg	**Sg**		**23 58 41.2**	**-7.2**	
KAB					Smax			23 59 12.8		
	comp=N,13μm,1.4s									
KAB	**Kabansk**	**3.55**	**236**		*e*PN	**Pn**		**23 57 57.4**	**+11**	
KAB					*e*			23 58 43.4		
KAB					pmax	pmax				
	comp=Z,714nm,0.9s									
KAB					smax					
	comp=E,10μm,1.3s									
HRMR	**Khuramsha**	**3.69**	**229**		*e*Pn	**Pn**		**23 57 50.3**	**+1.7**	
HRMR					*e*Pg	**Pg**		**23 57 57.9**	**-5.9**	
HRMR					Pmax			23 58 00.9		
	comp=E,885nm,0.5s									
HRMR					*e*Sn	**Sn**		**23 58 33.7**	**+1.0**	
HRMR					*e*Sg	**Sg**		**23 58 47.6**	**-5.3**	
HRMR					Smax			23 58 53.7		
	comp=E,10μm,1.1s									
BOD	**Bodaibo**	**3.98**	**20**	⇑	*i*Pn	**Pn**		**23 57 53.3**	**+0.6**	
BOD					*e*Pg	**Pg**		**23 58 03.5**	**-6.1**	
BOD					Pmax			23 58 07.0		
	comp=E,515nm,0.7s									
BOD					*e*Sn	**Sn**		**23 58 36.7**	**-3.3**	
BOD					*e*Sg	**Sg**		**23 58 54.2**	**-8.4**	
BOD					Smax			23 59 00.2		
	comp=E,2μm,1.5s									
BOD	**Bodaibo**	**3.98**	**20**		*e*PN	**Pn**		**23 57 52.6**	**-0.1**	
BOD					*e*			23 58 02.2		
BOD					*e*S	**Sn**		**23 58 52.5**	**+12**	
BOD					pmax	pmax				
	comp=Z,522nm,0.6s									
BOD					smax					
	comp=E,2μm,1.4s									
KPC	**Khapcheranga**	**4.46**	**172**		*e*Pn	**Pn**		**23 57 59.8**	**+0.2**	
KPC					*e*Pg	**Pg**		**23 58 10.5**	**-8.7**	
KPC					Pmax			23 58 15.3		
	comp=E,295nm,0.7s									
KPC					*e*Sn	**Sn**		**23 58 51.0**	**-1.3**	
KPC					*e*Sg	**Sg**		**23 59 09.5**	**-9.2**	
KPC					Smax			23 59 14.5		
	comp=E,4μm,1.2s									
KPC	**Khapcheranga**	**4.46**	**172**		*e*PN	**Pn**		**23 58 12.6**	**+13**	
LSTR	**Listvyanka**	**4.58**	**243**	⇓	*i*Pn	**Pn**		**23 58 01.8**	**+0.5**	
LSTR					*e*Pg	**Pg**		**23 58 14.7**	**-6.9**	
LSTR					Pmax			23 58 24.8		
	comp=E,155nm,1.0s									
LSTR					*e*Sn	**Sn**		**23 58 52.9**	**-2.4**	
LSTR					*e*Sg	**Sg**		**23 59 13.5**	**-9.2**	
LSTR					Smax			23 59 18.3		
	comp=E,1μm,1.2s									
LSTR	**Listvyanka**	**4.58**	**243**		*e*PN	**Pn**		**23 58 01.8**	**+0.5**	
LSTR					*e*			23 58 14.6		
LSTR					*e*S	**Sn**		**23 58 52.8**	**-2.5**	
LSTR					*e*			23 59 13.5		
LSTR					pmax	pmax				
	comp=Z,91nm,0.9s									
LSTR					smax					
	comp=N,1μm,1.2s									
IRK	**Irkutsk**	**4.70**	**249**		*e*Pg	**Pg**		**23 58 17.6**	**-6.4**	
IRK					Pmax			23 58 21.9		
	comp=N,179nm,0.2s									
IRK					*e*Sn	**Sn**		**23 58 54.5**	**-3.8**	
IRK					*e*Sg	**Sg**		**23 59 17.7**	**-9.0**	
IRK					Smax			23 59 21.0		
	comp=N,5μm,1.0s									
IRK	**Irkutsk**	**4.70**	**249**		*e*PN	**Pn**		**23 58 03.0**	**0.0**	
IRK					*e*			23 58 16.1		
IRK					*e*			23 59 17.1		
IRK					pmax	pmax				
	comp=Z,186nm,0.3s									
IRK					smax					
	comp=N,5μm,0.8s									
CRS	**Chara**	**4.78**	**52**	⇓	*i*Pn	**Pn**		**23 58 04.8**	**+0.7**	
CRS					*e*Pg	**Pg**		**23 58 18.4**	**-7.1**	
CRS					Pmax			23 58 23.6		
	comp=N,933nm,1.1s									
CRS					*e*Sn	**Sn**		**23 58 57.6**	**-2.7**	
CRS					*e*Sg	**Sg**		**23 59 21.0**	**-8.3**	
CRS					Smax			23 59 25.4		
	comp=N,6μm,1.1s									
CRS	**Chara**	**4.78**	**52**		*e*PN	**Pn**		**23 58 05.1**	**+1.0**	
CRS					*e*			23 58 18.2		
CRS					*e*			23 59 21.6		
CRS					pmax	pmax				
	comp=Z,926nm,1.0s									
CRS					smax					
	comp=E,6μm,1.3s									
TUP	**Tupik**	**5.00**	**83**	⇓	*i*Pn	**Pn**		**23 58 07.5**	**+0.3**	
TUP					*e*Pg	**Pg**		**23 58 21.3**	**-8.7**	
TUP					Pmax			23 58 23.7		
	comp=E,132nm,0.5s									
TUP					*e*Sn	**Sn**		**23 59 02.1**	**-3.8**	
TUP					*e*Sg	**Sg**		**23 59 26.4**	**-10**	
TUP					Smax			23 59 29.6		
	comp=E,6μm,1.2s									
TUP	**Tupik**	**5.00**	**83**		*e*PN	**Pn**		**23 58 07.5**	**+0.3**	
TUP					*e*			23 58 21.5		
TUP					*e*			23 59 25.6		
TUP					pmax	pmax				
	comp=Z,125nm,0.5s									
TUP					smax					
	comp=N,529nm,1.2s									
TLY	**Talaya**	**5.31**	**246**	⇑	*i*Pn	**Pn**		**23 58 11.8**	**+0.2**	
TLY					*e*Pg	**Pg**		**23 58 27.0**	**-9.2**	
TLY					Pmax			23 58 30.8		
	comp=N,53nm,0.6s									
TLY					*e*Sn	**Sn**		**23 59 11.0**	**-2.7**	
TLY					*e*Sg	**Sg**		**23 59 34.5**	**-12**	
TLY					Smax			23 59 44.8		
	comp=N,686nm,1.2s									
TLY	**Talaya**	**5.31**	**246**		*e*PN	**Pn**		**23 58 11.5**	**-0.1**	
TLY					*e*S	Sn		23 59 33.1	+19	
TLY					pmax	pmax				
	comp=Z,45nm,0.4s									
TLY					smax					
	comp=E,4μm,1.3s									
ARS	**Arshan**	**5.87**	**252**		*e*Pn	**Pn**		**23 58 19.6**	**+0.2**	
ARS					*e*Pg	**Pg**		**23 58 36.7**	**-11**	
ARS					Pmax			23 58 40.1		
	comp=E,107nm,0.5s									
ARS					*e*			23 59 21.6		
ARS					*e*Sg	**Sg**		**23 59 51.0**	**-15**	
ARS					Smax			00 00 00.7		
	comp=E,2μm,0.9s									
ARS	**Arshan**	**5.87**	**252**		*e*PN	**Pn**		**23 58 20.2**	**+0.8**	
ARS					*e*			23 58 36.3		
ZAK	**Zakamensk**	**6.25**	**237**		*e*Pn	**Pn**		**23 58 24.0**	**-0.8**	
ZAK					*e*Pg	**Pg**		**23 58 45.1**	**-10**	
ZAK					Pmax			23 58 48.5		
	comp=E,75nm,1.2s									
ZAK					*e*Sn	**Sn**		**23 59 34.2**	**-3.0**	
ZAK					*e*Sg	**Sg**		**00 00 07.0**	**-11**	
ZAK					Smax			00 00 17.2		
	comp=E,552nm,1.5s									
ZAK	**Zakamensk**	**6.25**	**237**		*e*PN	**Pn**		**23 58 25.7**	**+0.9**	
ZAK					*e*			23 58 44.7		
ZAK					*e*			00 00 06.7		
ZAK					pmax	pmax				
	comp=Z,75nm,1.2s									
ZAK					smax					
	comp=N,553nm,1.3s									
MOY	**Mondy**	**6.78**	**253**	⇓	*i*Pn	**Pn**		**23 58 34.0**	**+1.7**	
MOY				⇓	*i*Pg	**Pg**		**23 58 54.5**	**-11**	
MOY					Pmax			23 59 04.8		
	comp=N,108nm,1.1s									
MOY					*e*			23 59 49.4		
MOY					*e*Sg	**Sg**		**00 00 21.4**	**-14**	
MOY					Smax			00 00 26.0		
	comp=N,920nm,1.7s									
MOY	**Mondy**	**6.78**	**253**		*e*PN	**Pn**		**23 58 34.0**	**+1.7**	
MOY					*e*			23 58 55.1		
MOY					*e*			00 00 21.2		
MOY					pmax	pmax				
	comp=Z,108nm,1.0s									
MOY					smax					
	comp=N,920nm,1.6s									
SONM	**Songino Array**	**7.05**	**209**		Pn	**Pn**		**23 58 36.3**	**+0.2**	
	comp=N,4.0nm,0.3s,baz=17,slow=13,SNR=31									
SONM					Pg	**Pg**		**23 58 59.2**	**-12**	
	comp=N,9.6nm,0.3s,baz=10,slow=16,SNR=12									
SONM					Sn	**Sn**		**23 59 56.0**	**-1.2**	
	comp=N,7.0nm,0.3s,baz=348,slow=11,SNR=3.7									
SONM					Lg			00 00 32.8		
	comp=N,34nm,0.3s,baz=20,slow=28,SNR=14									
HIA	**Hailar**	**7.09**	**130**		*e*P	**Pn**		**23 58 33.7**	**-2.9**	
	comp=N,39nm,0.5s									
ORL	**Orlik**	**7.14**	**262**	⇑	*i*Pn	**Pn**		**23 58 37.3**	**-0.1**	
ORL					*i*			23 58 44.9		
ORL					max			23 58 45.3		
	comp=N,83nm,1.3s									
ORL				⇑	*i*Pg	**Pg**		**23 59 00.8**	**-12**	
ORL					*e*Sn	**Sn**		**23 59 56.7**	**-2.8**	
ORL					*e*Sg	**Sg**		**00 00 33.1**	**-15**	
ORL					Smax			00 00 40.0		
	comp=N,1μm,2.2s									
ORL	**Orlik**	**7.14**	**262**		*e*PN	**Pn**		**23 58 37.4**	**0.0**	
ORL					*e*			23 59 00.3		
ORL					*e*			00 00 33.1		
ORL					pmax	pmax				
	comp=Z,86nm,1.3s									
ORL					smax					
	comp=N,1μm,1.8s									
TNDR	**Tynda**	**7.78**	**77**		*e*Pg	Px		23 59 11.0		
TNDR					*e*Sg	Sx		00 00 51.3		
CLNS	**Chul'man**	**8.12**	**65**		*e*Pg	Px		23 59 18.3		
CLNS					*e*Sg	Sx		00 01 02.5		
CLNS	**Chul'man**	**8.12**	**65**		*e*PN	**P**		**23 58 49.9**	**-1.1**	
CLNS					*e*PPP	PPP		23 59 15.8	+10	
CLNS					*e*S	Sn		00 01 06.0	+42	
CLNS					pmax	pmax				
	comp=E,6.0nm,0.6s									
CLNS					pmax	pmax				
	comp=Z,10.0nm,0.6s									
CLNS					pmax	pmax				
	comp=N,3.0nm,0.5s									
CLNS					smax					
	comp=E,750nm,0.6s									
CLNS					smax					
	comp=Z,380nm,0.7s									
CLNS					smax					
	comp=N,2μm,0.8s									
CLNS					MLR	MLR				
	comp=Z,100nm,14.0s									
CLNS					MLR	MLR				
	comp=N,100nm,11.0s									
CLNS					MLR	MLR				
	comp=E,30nm,11.0s									
TDJR	**Todzha**	**9.35**	**266**		*e*Pn	**P**		**23 59 08.6**	**+0.4**	
TDJR					*e*Pg	P		23 59 38.1	+30	
TDJR					*e*Sg	Sg		00 01 38.7	-23	
ARDR	**Aradan**	**10.88**	**269**		*e*Pg	Px		00 00 09.4		
ARDR					*e*Sg	Sx		00 02 29.4		
SHRR	**Shira**	**12.42**	**280**		*e*P	**P**		**23 59 44.3**	**-5.6**	
SHRR					pmax	pmax				
	comp=Z,149nm,0.7s									
YAK	**Yakutsk**	**12.45**	**43**		*e*P	**P**		**23 59 44.3**	**-6.0**	
YAK					pmax	pmax				
	comp=Z,3.0nm,0.8s									
YAK					pmax	pmax				
	comp=N,1.0nm,0.6s									
YAK					pmax	pmax				
	comp=E,1.0nm,0.7s									
YAK					MLR	MLR				
	comp=E,126nm,10.0s									
YAK					MLR	MLR				
	comp=Z,196nm,10.0s									
YAK					MLR	MLR				
	comp=N,98nm,9.0s									
KLR	**Kul'dur**	**13.51**	**103**		*e*P	**P**		**00 00 06.3**	**+2.1**	
KLR					MLR	MLR				
	comp=N,4μm,9.0s									
KLR					MLR	MLR				
	comp=E,2μm,9.0s									
KLR					MLR	MLR				
	comp=Z,2μm,7.0s									
BTO	**Baotou**	**13.55**	**185**		*e*P	**P**		**00 00 07.5**	**+2.6**	
BTO					LR	LR				
	comp=N,2μm,6.5s									
BTO					LR	LR				
	comp=E,4μm,13.5s									
CN2	**Changchun**	**13.80**	**133**		*e*P	**P**		**00 00 08.3**	**+0.2**	
CN2					*e*XP			00 00 15.0		
CN2					*e*S	**S**		**00 02 41.3**	**-1.3**	
CN2					AMB	AMB				
	comp=Z,10.0nm,0.6s									
CN2					AMB	AMB				
	comp=Z,200nm,3.0s									
CN2					LR	LR				
	comp=N,2μm,11.0s									
CN2					LR	LR				
	comp=E,2μm,11.0s									
CN2					LR	LR				
	comp=Z,2μm,13.0s									
SNY	**Shenyang**	**14.71**	**142**	⇑	P	**P**		**00 00 25.3**	**+5.2**	
SNY					LR	LR				
	comp=N,800nm,11.7s									
SNY					LR	LR				
	comp=E,650nm,7.5s									
SNY					LR	LR				
	comp=Z,790nm,12.7s									
MDJ	**Mudanjiang**	**15.13**	**122**		P	**P**		**00 00 22.3**	**-3.3**	
MDJ					AP			00 00 26.0		
MDJ					XP			00 00 29.8		
MDJ					PP	PP		00 00 34.3	-3.4	
MDJ					S	**S**		**00 03 09.3**	**-4.8**	
MDJ					PCP	PcP		00 05 30.5	-3.0	
MDJ					AMB	AMB				
	comp=Z,4.0nm,1.5s									
MDJ					LR	LR				
	comp=N,890nm,10.9s									
MDJ					LR	LR				
	comp=E,904nm,10.5s									
MDJ					LR	LR				
	comp=Z,1μm,14.3s									
MDJ	**Mudanjiang**	**15.13**	**122**		*e*P	**P**		**00 00 23.1**	**-2.4**	
ZAL	**Zalesovo**	**15.62**	**280**		Pn	**P**		**00 00 30.4**	**-1.5**	
	comp=Z,0.2nm,0.3s,baz=297,slow=11,SNR=10									
ZAL					Lg			00 04 56.4		
	comp=Z,0.3nm,0.3s,baz=31,slow=8.2,SNR=5.7									
ZAL					LR	LR		00 07 21.7		
	comp=Z,392nm,18.8s,baz=304,slow=40									
NVS	**Novosibirsk**	**16.36**	**284**		*e*P	**P**		**00 00 42.2**	**+0.9**	
NVS					pmax	pmax				
	comp=Z,45nm,1.4s									
GTA	**Gaotai**	**16.69**	**213**		*e*P	**P**		**00 00 48.5**	**+2.9**	
GTA					AP			00 00 56.3		
GTA					XP			00 01 00.0		
GTA					AMB	AMB				
	comp=Z,4.0nm,1.0s									
GTA					LR	LR				
	comp=N,510nm,6.5s									
GTA					LR	LR				
	comp=E,793nm,8.7s									
GTA					LR	LR				
	comp=Z,401nm,9.1s									
WMQ	**Urumqi**	**18.59**	**246**		*e*P	**P**		**00 01 13.0**	**+3.6**	
WMQ					AP			00 01 15.5		
WMQ					XP			00 01 17.8		
WMQ					PP	PP		00 01 29.0	+3.8	
WMQ					AMB	AMB				
	comp=Z,6.0nm,0.6s									
WMQ					AMB	AMB				
	comp=Z,45nm,4.5s									
WMQ					LR	LR				
	comp=N,219nm,15.1s									
WMQ					LR	LR				
	comp=E,318nm,15.3s									
WMQ					LR	LR				
	comp=Z,381nm,16.7s									
LZH	**Lanzhou**	**18.79**	**199**		*e*P	**P**		**00 01 14.0**	**+2.2**	
LZH					AP			00 01 22.5		
LZH					XP			00 01 27.0		
LZH					AMB	AMB				
	comp=Z,36nm,1.2s									
LZH					LR	LR				
	comp=E,1μm,10.0s									
LZH					LR	LR				
	comp=Z,2μm,12.5s									
TIXI	**Tiksi**	**19.15**	**17**		*e*P	**P**		**00 01 11.7**	**-4.2**	
TIXI					pmax	pmax				
	comp=Z,21nm,0.9s									
TIXI					MLR	MLR				
	comp=Z,51nm,14.0s									
TIXI	**Tiksi**	**19.15**	**17**		*e*P	**P**		**00 01 11.3**	**-4.6**	
	comp=Z,34nm,0.9s									
MKAR	**Makanchi Array**	**19.85**	**260**		P	**P**		**00 01 25.2**	**+1.3**	
	comp=Z,0.3nm,0.3s,baz=56,slow=8.7,SNR=9.6									
MKAR					Lg			00 07 07.4		
	baz=74,slow=21,SNR=3.5									
KURK	**Kurchatov**	**20.20**	**274**		*e*P	**P**		**00 01 26.6**	**-1.1**	
KURK					*e*			00 01 27.7		
MA2	**Magadan**	**21.94**	**60**		*e*P	**P**		**00 01 42.3**	**-3.1**	
ASAJ	**Asahikawa**	**22.54**	**104**		LR	LR		00 11 04.6		
	comp=Z,314nm,18.6s,MS3.8,baz=231,slow=38									
NJ2	**Nanjing**	**22.69**	**163**		*e*P	**P**		**00 01 51.5**	**-1.5**	
SEY	**Seymchan**	**22.75**	**51**		*e*P	**P**		**00 01 57.0**	**+3.8**	
SEY					*e*			00 02 17.9		
SEY					pmax	pmax				
	comp=E,40nm,1.1s									
SEY					pmax	pmax				
	comp=Z,60nm,1.1s,mb4.9									
ENH	**Enshi**	**23.87**	**184**		*e*P	**P**		**00 02 07.2**	**+2.6**	
	comp=Z,14nm,1.0s,mb4.3									
BVAR	**Borovoye Array**	**24.16**	**284**		P	**P**		**00 02 08.9**	**+1.8**	
	comp=Z,10nm,0.9s,mb4.2,baz=68,slow=8.0,SNR=37									
BVAR					S	**S**		**00 06 32.4**	**+10**	
	comp=Z,0.6nm,0.6s,baz=59,slow=17,SNR=2.0									
BVAR					LR	LR		00 12 25.7		
	comp=Z,278nm,18.6s,MS3.8,baz=315,slow=38									
BRVK	**Borovoye**	**24.21**	**284**		*e*P	**P**		**00 02 09.3**	**+1.7**	
FRU	**Bishkek**	**26.59**	**260**		*e*P	**P**		**00 02 33.0**	**+2.9**	
PET	**Petropavlovsk**	**27.66**	**73**		*e*P	**P**		**00 02 40.3**	**+0.5**	
PET					pmax	pmax				
	comp=Z,23nm,1.1s,mb4.7									
PET					MLR	MLR				
	comp=Z,200nm,15.0s,MS3.8									
BILL	**Bilibino**	**28.77**	**40**		*i*P	**P**		**00 02 49.5**	**-0.2**	
BILL					pmax	pmax				
	comp=Z,4.0nm,1.0s,mb4.1									
BILL					MLR	MLR				
	comp=Z,100nm,19.0s,MS3.4									
JHJ	**Hachijo jima 2**	**29.03**	**125**		LR	LR		00 14 28.6		
	comp=Z,126nm,19.6s,MS3.5,baz=340,slow=37									
ARU	**Arti**	**29.60**	**296**	⇓	*i*P	**P**		**00 02 56.6**	**-0.6**	
ARU					*i* PPP	PPP		00 03 49.8	-17	
ARU					*i*			00 05 59.2		
ARU					*e*S	**S**		**00 07 53.9**	**+2.8**	
ARU					*i* SS	SS		00 09 24.6	+0.3	
ARU					*e*SSS	SSS		00 09 39.8	-5.2	
ARU					*i*			00 13 32.2		
ARU					pmax	pmax				
	comp=Z,3.0nm,0.9s,mb4.0									
ARU					MLR	MLR				
	comp=N,100nm,17.0s,MS4.0									
ARU					MLR	MLR				
	comp=Z,300nm,17.0s,MS4.0									
ARU					MLR	MLR				
	comp=E,300nm,16.0s,MS4.0									
KMI	**Kunming**	**29.68**	**196**		*e*P	**P**		**00 02 58.8**	**+0.5**	
KMI					AP	pP		00 03 01.8	+0.9	
KMI					PP	PP		00 03 59.3	+4.6	
KMI					S	**S**		**00 07 50.3**	**-2.4**	
KMI					SS	SS		00 09 33.5	+6.8	
KMI					AMB	AMB				
	comp=Z,10.0nm,0.8s,mb4.6									
KMI					LR	LR				
	comp=N,297nm,13.1s									
KMI					LR	LR				
	comp=E,602nm,18.4s									
KMI					LR	LR				
	comp=Z,276nm,19.0s									
KKN	**Kakani**	**32.54**	**227**		*e*P	**P**		**00 03 24.3**	**+0.9**	
	comp=Z,17nm,0.9s,mb5.0									
GKN	**Gorkha**	**32.63**	**228**		*e*P	**P**		**00 03 25.2**	**+1.0**	
	comp=Z,29nm,0.9s,mb5.2									
PKI	**Pulchoki**	**32.67**	**226**		*e*P	**P**		**00 03 23.4**	**-1.2**	
KOLN	**Koldanda**	**33.29**	**229**		*e*P	**P**		**00 03 29.9**	**0.0**	
	comp=Z,8.6nm,0.8s,mb4.7									
CMAR	**Chiang Mai Arr**	**36.88**	**200**		LR	LR		00 18 45.0		
	comp=Z,80nm,18.3s,MS3.5,baz=200,slow=36									
SPITS	**Spitsbergen Ar**	**38.72**	**341**		P	**P**		**00 04 16.5**	**+1.0**	
	comp=Z,8.3nm,0.9s,mb4.5,baz=88,slow=0.5,SNR=7.2									
KEV	**Kevo**	**38.95**	**327**		*e*p	**P**		**00 04 17.6**	**0.0**	
ARCES	**ARCESS Array B**	**39.52**	**327**		P	**P**		**00 04 22.8**	**+0.5**	
	comp=Z,1.2nm,0.4s,mb3.9,baz=67,slow=9.2,SNR=20									
ARCES					LR	LR		00 24 38.2		
	comp=Z,168nm,19.2s,MS3.9,baz=6.3,slow=42									
ARCES	**ARCESS Array B**	**39.52**	**327**		P	**P**		**00 04 22.8**	**+0.5**	
ARCES					pmax	pmax				
	comp=Z,1.0nm,0.4s									
ARCES					MLR	MLR				
	comp=Z,168nm,19.2s									
JOF	**Joensuu**	**40.10**	**316**		*e*p	**P**		**00 04 28.1**	**+1.0**	
OBN	**Obninsk**	**41.42**	**303**		*e*P	**P**		**00 04 29.1**	**-8.9**	
OBN								00 06 30.0		
OBN					S	**S**		**00 10 44.0**	**-8.9**	
OBN					pmax	pmax				
	comp=Z,4.0nm,0.5s,mb4.3									
OBN					MLR	MLR				
	comp=Z,300nm,19.0s,MS4.2									
VRSR	**Storozhevoye**	**42.15**	**297**		*e*P	**P**		**00 04 45.3**	**+1.3**	
VRSR					pmax	pmax				
	comp=Z,10.0nm,1.1s,mb4.4									
VRSR					pmax	pmax				
	comp=N,10.0nm,0.8s									
VRSR					pmax	pmax				
	comp=E,10.0nm,1.0s									
KAF	**Kangasniemi**	**42.53**	**316**		*e*p	**P**		**00 04 46.8**	**-0.1**	
	comp=E,0.4nm,0.4s,mb3.5									
FINES	**FINESS Array B**	**42.96**	**315**		P	**P**		**00 04 51.6**	**+1.1**	
	comp=E,2.3nm,0.5s,mb4.2,baz=65,slow=9.1,SNR=46									
FINES					LR	LR		00 24 07.0		
	comp=E,169nm,19.1s,MS4.0,baz=5.0,slow=38									
FINES	**FINESS Array B**	**42.96**	**315**		P	**P**		**00 04 51.6**	**+1.1**	
FINES					pmax	pmax				
	comp=Z,2.0nm,0.5s									
FINES					MLR	MLR				
	comp=Z,169nm,19.2s									
KIV	**Kislovodsk**	**44.50**	**286**		*e*P	**P**		**00 05 03.6**	**+0.4**	
KIV					pmax	pmax				
	comp=N,6.0nm,1.2s									

INK	**Inuvik**	**48.87**	**27**	P	**P**	**00 05 37.6**	**+0.4**
	comp=Z,3.4nm,0.8s,mb4.4,baz=351,slow=8.1,SNR=7.8						
INK	**Inuvik**	**48.87**	**27**	P	**P**	**00 05 37.7**	**+0.4**
INK				pmax	pmax		
	comp=Z,3.0nm,0.8s						
INK	**Inuvik**	**48.87**	**27**	*e*P	**P**	**00 05 37.2**	**-0.1**
	comp=Z,7.6nm,1.3s,mb4.6						
NB2	**NORSAR Subarra**	**49.06**	**321**	P	**P**	**00 05 39.2**	**+0.4**
	comp=Z,6.9nm,0.9s,mb4.7,baz=49,slow=7.0						
NOA	**NORSAR Array B**	**49.06**	**321**	P	**P**	**00 05 39.4**	**+0.5**
	comp=Z,5.3nm,1.0s,mb4.5,baz=52,slow=7.7,SNR=13						
NOA				LR	LR	00 28 18.9	
	comp=Z,77nm,20.3s,MS3.7,slow=38						
NOA	**NORSAR Array B**	**49.06**	**321**	P	**P**	**00 05 39.4**	**+0.6**
NOA				pmax	pmax		
	comp=Z,5.0nm,1.0s						
NOA				MLR	MLR		
	comp=Z,77nm,20.3s						
DAWY	**Dawson**	**50.13**	**33**	P	**P**	**00 05 46.3**	**-0.7**
BRTR	**Keskin Array B**	**52.37**	**288**	P	**P**	**00 06 06.0**	**+1.7**
	comp=Z,2.9nm,1.0s,mb4.2,baz=90,slow=2.5,SNR=8.6						
BRTR				LR	LR	00 30 30.3	
	comp=Z,56nm,18.6s,MS3.6,baz=15,slow=38						
BRG	**Berggiesshubel**	**54.78**	**310**	*e*P	**P**	**00 06 23.0**	**+1.1**
BRG				pmax	pmax		
	comp=Z,8.0nm,1.1s,mb4.7						
BRG				MLR	MLR		
	comp=N,210nm,14.0s,MS4.4						
BRG				MLR	MLR		
	comp=E,100nm,14.0s,MS4.4						
BRG				MLR	MLR		
	comp=Z,210nm,14.0s,MS4.4						
BRG	**Berggiesshubel**	**54.78**	**310**	*e*P	**P**	**00 06 23.0**	**+1.1**
	comp=Z,7.5nm,1.1s,mb4.6						
BRG				LR	LR		
	comp=Z,210nm,14.0s,MS4.4						
CLL	**Collm**	**54.90**	**311**	P	**P**	**00 06 23.1**	**+0.3**
	comp=Z,logA/T=0.8,mb4.6						
CLL				*e*		00 07 02.0	
CLL	**Collm**	**54.90**	**311**	*i* P	**P**	**00 06 23.1**	**+0.3**
CLL				pmax	pmax		
	comp=Z,7.0nm,1.1s,mb4.6						
CLL	**Collm**	**54.90**	**311**	*i* P	**P**	**00 06 23.1**	**+0.3**
	comp=Z,7.0nm,1.1s,mb4.6						
MOX	**Moxa**	**55.98**	**311**	*i* P	**P**	**00 06 31.9**	**+1.2**
	comp=Z,logA/T=1.0,mb4.8						
MOX	**Moxa**	**55.98**	**311**	*e*P	**P**	**00 06 31.9**	**+1.2**
MOX				pmax	pmax		
	comp=Z,13nm,1.2s,mb4.8						
MOX	**Moxa**	**55.98**	**311**	*e*P	**P**	**00 06 31.9**	**+1.2**
	comp=Z,13nm,1.2s,mb4.8						
KHC	**Kasperske Hory**	**56.18**	**308**	*e*P	**P**	**00 06 33.5**	**+1.4**
GERES	**GERESS Array B**	**56.32**	**308**	P	**P**	**00 06 34.2**	**+1.1**
	comp=Z,1.8nm,1.0s,mb4.0,baz=53,slow=6.7,SNR=8.6						
GERES	**GERESS Array B**	**56.32**	**308**	P	**P**	**00 06 34.2**	**+1.1**
GERES				pmax	pmax		
	comp=Z,2.0nm,1.0s						
GRA1	**Grafenberg Arr**	**56.85**	**310**	*e*P	**P**	**00 06 38.0**	**+1.1**
	comp=Z,9.0nm,1.1s,mb4.7						
GRF	**Grafenberg Arr**	**56.85**	**310**	*e*P	**P**	**00 06 38.0**	**+1.1**
GRF				pmax	pmax		
	comp=Z,9.0nm,1.1s,mb4.7						
YKA	**Yellowknife Ar**	**58.25**	**23**	P	**P**	**00 06 45.4**	**-1.1**
	comp=Z,1.1nm,0.8s,mb3.9,baz=330,slow=7.1,SNR=18						
YKA				LR	LR	00 32 35.0	
	comp=Z,68nm,18.9s,MS3.8,baz=340,slow=37						
YKA	**Yellowknife Ar**	**58.25**	**23**	P	**P**	**00 06 45.4**	**-1.2**
YKA				pmax	pmax		
	comp=Z,1.0nm,0.8s						
YKA				MLR	MLR		
	comp=Z,69nm,18.9s						
YKA	**Yellowknife Ar**	**58.25**	**23**	P	**P**	**00 06 45.4**	**-1.1**
YKA				LR	LR	00 32 35.0	
EKA	**Eskdalemuir Ar**	**58.44**	**322**	P	**P**	**00 06 48.1**	**+0.1**
	comp=Z,1.8nm,0.8s,mb4.1,baz=40,slow=6.5,SNR=5.6						
EKA	**Eskdalemuir Ar**	**58.44**	**322**	P	**P**	**00 06 48.2**	**+0.2**
EKA				pmax	pmax		
	comp=Z,2.0nm,0.8s						
ESDC	**Sonseca Array**	**71.39**	**313**	P	**P**	**00 08 12.6**	**+0.5**
	comp=Z,0.8nm,0.7s,mb3.8,baz=25,slow=6.0,SNR=4.1						
BOZ	**Bozeman (W)**	**74.07**	**30**	*e*P	**P**	**00 08 27.9**	**+0.2**
	comp=Z,2.9nm,0.7s,mb4.3						
HLID	**Hailey**	**75.11**	**33**	P	**P**	**00 08 34.8**	**+1.1**
WRA	**Warramunga Arr**	**76.34**	**158**	P	**P**	**00 08 40.9**	**-0.3**
	comp=Z,3.0nm,1.0s,mb4.2,baz=346,slow=6.3,SNR=8.5						
WRA	**Warramunga Arr**	**76.34**	**158**	P	**P**	**00 08 40.9**	**-0.3**
WRA				pmax	pmax		
	comp=Z,3.0nm,1.0s						
PDAR	**Pinedale Array**	**77.31**	**30**	P	**P**	**00 08 46.4**	**+0.3**
	comp=Z,0.4nm,0.7s,mb3.5,baz=27,slow=3.3,SNR=6.0						
HWUT	**Hardware Ranch**	**77.77**	**32**	*e*P	**P**	**00 08 49.3**	**+0.7**
	comp=Z,2.7nm,0.7s,mb4.3						
NVAR	**Mina Array Bea**	**78.37**	**38**	LR	LR	00 45 14.3	
	comp=Z,52nm,18.2s,MS3.9,baz=165,slow=37						
ASAR	**Alice Springs**	**79.86**	**159**	P	**P**	**00 09 01.3**	**+0.9**
	comp=Z,1.4nm,0.9s,mb3.9,baz=356,slow=5.3,SNR=12						
QSPA	**South Pole Qui**	**143.88**	**180**	*e*PKP	PKPdf	00 16 23.5	-3.3
VNA2	**Neumayer--Watz**	**148.95**	**214**	⇓*i*	PKPdf	00 16 38.0	+2.5
VNA1	**Neumayer--Stat**	**149.24**	**214**	⇓*i*	PKPdf	00 16 39.0	+3.0
VNA3	**Neumayer Olymp**	**149.69**	**213**	⇓*i*	PKPdf	00 16 40.6	+3.9
CPUP	**Villa Florida**	**151.02**	**339**	PKPbc	PKPdf	00 16 44.1	+4.1
	comp=Z,2.5nm,0.9s,baz=72,slow=3.2,SNR=3.7						
CPUP	**Villa Florida**	**151.02**	**339**	PKIKP	PKPdf	00 16 44.1	+4.0
CPUP				pmax	pmax		
	comp=Z,3.0nm,0.9s						

*NEIC **27** 00:06:39.3±0.8,34.92N×120.61E,h10km,mb4.6/8, Error ellipse: s-maj=18.7km s-min=12.6km az=179.0*
*BJI **27** 00:06:39.9,34.98N×120.56E,h8km,mb4.7,ML4.3,Ms3.9, Msz3.8*
*IDC **27** 00:06:39.2±0.7,35.26N×120.71E,mb3.8/19,mb1 4.0/20, mb1mx4.0/26,ML4.2/1, Error ellipse: s-maj=20.2km s-min=17.1km az=68.0*

ISC 27 00:06:39.1±0.4,35.10N±0.04×120.37E±0.06,h10km,n55, σ1§00/66,mb4.0/33,2C,Southeastern China

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
TIA	**Tai'an**	**2.87**	**294**	P		**Pn**	**00 07 27.8**	**+2.0**
TIA				PG		**Pg**	**00 07 34.3**	**-2.1**
TIA				SG		**Sg**	**00 08 13.0**	**-1.6**
TIA				S		Sn		
	comp=N,4μm,3.0s							
TIA				S		Sn		
	comp=E,2μm,3.0s							
NJ2	**Nanjing**	**3.29**	**203**	*e*P		**Pn**	**00 07 32.5**	**+0.7**
NJ2				PG		**Pg**	**00 07 41.3**	**-3.6**
NJ2				S		**Sn**	**00 08 11.0**	**-0.5**
NJ2				SG		**Sg**	**00 08 23.8**	**-4.9**
NJ2				S		Sn		
	comp=N,980nm,0.4s							
NJ2				S		Sn		
	comp=E,1μm,0.6s							
DL2	**Dalian**	**3.93**	**14**	PG		**Pg**	**00 07 53.0**	**-4.7**
DL2				SG		**Sg**	**00 08 42.5**	**-7.6**
DL2				S		Sn		
	comp=N,419nm,0.9s							
DL2				S		Sn		
	comp=E,637nm,0.9s							
SSE	**Sheshan**	**4.05**	**170**	⇑PG		**Pg**	**00 07 52.8**	**-7.2**
SSE				S		**Sn**	**00 08 35.3**	**+4.6**
SSE				S		Sn		
	comp=N,156nm,0.8s							
SSE				S		Sn		
	comp=E,252nm,0.9s							
BJI	**Beijing**	**5.95**	**327**	P		**Pn**	**00 08 09.8**	**+0.3**
BJI				S		**Sn**	**00 09 29.3**	**+11**
BJI				SG		**Sg**	**00 09 49.3**	**-8.0**
BJI				S		Sn		
	comp=N,186nm,0.7s							
BJI				S		Sn		
	comp=E,114nm,0.6s							
WHN	**Wuhan**	**6.80**	**230**	P		**Pn**	**00 08 22.5**	**+1.0**
WHN				S		**Sn**	**00 09 35.8**	**-4.0**
WHN				SG		**Sg**	**00 10 12.0**	**-14**
WHN				S		Sn		
	comp=N,209nm,0.8s							
WHN				S		Sn		
	comp=E,193nm,1.0s							
SNY	**Shenyang**	**7.17**	**20**	⇑P		**Pn**	**00 08 25.0**	**-1.7**
SNY				LR		LR		
	comp=N,390nm,4.8s							
SNY				LR		LR		
	comp=E,330nm,6.9s							
SNY				LR		LR		
	comp=Z,420nm,7.0s							
HIA	**Hailar**	**14.17**	**358**	*e*P		**P**	**00 10 04.3**	**+2.4**
	comp=Z,12nm,0.8s							
GYA	**Guiyang**	**14.58**	**238**	P		**P**	**00 10 14.8**	**+7.3**
GYA				AMB		AMB		
	comp=Z,10.0nm,0.6s							
SONM	**Songino Array**	**16.45**	**325**	Pn		**P**	**00 10 33.2**	**+1.8**
	comp=Z,0.2nm,0.3s,baz=131,slow=15,SNR=3.5							
LSA	**Lhasa**	**25.20**	**266**	P		**P**	**00 12 10.2**	**+3.7**
	comp=Z,10.0nm,1.3s,mb4.2							
CMAR	**Chiang Mai Arr**	**25.22**	**234**	P		**P**	**00 12 11.6**	**+4.9**
	comp=Z,0.4nm,0.3s,mb3.4,baz=38,slow=10,SNR=3.4							
MKAR	**Makanchi Array**	**30.75**	**304**	P		**P**	**00 12 57.0**	**+0.4**
	comp=Z,0.8nm,0.8s,mb3.6,baz=78,slow=11,SNR=5.2							
ZAL	**Zalesovo**	**31.13**	**318**	P		**P**	**00 13 00.7**	**+0.8**
	comp=Z,1.4nm,0.8s,mb3.9,baz=286,slow=5.7,SNR=6.3							
KURK	**Kurchatov**	**33.82**	**310**	P		**P**	**00 13 23.2**	**-0.2**
BVAR	**Borovoye Array**	**39.22**	**313**	P		**P**	**00 14 10.6**	**+1.5**
	comp=Z,0.8nm,0.7s,mb3.6,baz=106,slow=11,SNR=5.8							
BRVK	**Borovoye**	**39.29**	**313**	*e*P		**P**	**00 14 10.1**	**+0.4**
ZRNK	**Zerenda**	**40.05**	**313**	*e*P		**P**	**00 14 16.2**	**+0.3**
THR	**Tehran**	**55.24**	**292**	P		**P**	**00 16 15.9**	**+1.2**
	comp=Z,0.7nm,0.7s,mb3.8,baz=88,slow=6.7,SNR=3.5							
WRA	**Warramunga Arr**	**56.32**	**164**	P		**P**	**00 16 22.2**	**-0.5**
	comp=Z,0.3nm,0.5s,mb3.6,baz=347,slow=7.6,SNR=2.4							
JOF	**Joensuu**	**59.00**	**328**	*e*p		**P**	**00 16 39.4**	**-1.5**
	comp=Z,0.4nm,0.4s,mb3.8							
ASAR	**Alice Springs**	**59.84**	**166**	P		**P**	**00 16 46.4**	**-0.9**
	comp=Z,0.4nm,0.7s,mb3.5,baz=1.6,slow=15,SNR=6.5							
ILAR	**Eielson Array**	**59.98**	**30**	P		**P**	**00 16 43.5**	**-4.2**
	comp=Z,0.4nm,0.9s,mb3.5,baz=270,slow=7.2,SNR=3.5							
FINES	**FINESS Array B**	**61.80**	**327**	P		**P**	**00 16 59.4**	**-0.8**
	comp=Z,1.5nm,0.7s,mb4.3,baz=60,slow=6.5,SNR=18							
INK	**Inuvik**	**63.47**	**24**	P		**P**	**00 17 09.8**	**-1.3**
	comp=Z,0.6nm,0.5s,mb4.0,baz=302,slow=6.3,SNR=4.3							
AKASG	**Malin Array Be**	**64.45**	**315**	P		**P**	**00 17 16.3**	**-1.4**
	comp=Z,0.6nm,0.5s,mb3.9,baz=62,slow=6.1,SNR=4.5							
BRTR	**Keskin Array B**	**66.39**	**303**	P		**P**	**00 17 30.8**	**+0.4**
	comp=Z,1.3nm,0.9s,mb4.0,baz=90,slow=4.9,SNR=7.4							
HFS	**Hagfors**	**67.80**	**329**	P		**P**	**00 17 38.1**	**-0.8**
	comp=Z,0.7nm,0.5s,mb4.0,baz=72,slow=9.1,SNR=3.6							
NOA	**NORSAR Array B**	**68.34**	**330**	P		**P**	**00 17 41.0**	**-1.3**
	comp=Z,1.6nm,0.9s,mb4.0,baz=56,slow=6.3,SNR=4.4							
KWP	**Kalwaria**	**68.67**	**316**	*e*P		**P**	**00 17 45.2**	**+0.7**
	comp=Z,3.9nm,0.6s,mb4.5							
YKA	**Yellowknife Ar**	**73.24**	**23**	P		**P**	**00 18 10.9**	**-0.8**
	comp=Z,1.7nm,0.6s,mb4.1,baz=317,slow=5.7,SNR=14							
YKA	**Yellowknife Ar**	**73.24**	**23**	P		**P**	**00 18 10.9**	**-0.8**
GERES	**GERESS Array B**	**74.08**	**319**	P		**P**	**00 18 17.6**	**+0.8**
	comp=Z,0.7nm,0.8s,mb3.6,baz=45,slow=5.7,SNR=6.2							
CDF	**Champ du Feu**	**77.73**	**321**	*e*P		**P**	**00 18 37.7**	**+0.2**
CABF	**La Chapelle**	**79.50**	**320**	*e*P		**P**	**00 18 47.0**	**-0.3**
LPL	**La Plagne**	**79.87**	**319**	*e*P		**P**	**00 18 49.8**	**+0.5**
	comp=Z,6.0nm,0.9s,mb4.2							
LPG	**La Plagne**	**79.87**	**319**	*e*P		**P**	**00 18 49.9**	**+0.6**
	comp=Z,6.3nm,0.8s,mb4.3							
LOR	**Lormes**	**80.22**	**322**	*e*P		**P**	**00 18 50.7**	**-0.4**
MBDF	**Montbardon**	**80.36**	**319**	*e*P		**P**	**00 18 51.4**	**-0.5**
SSF	**Saint Saulge**	**80.54**	**322**	*e*P		**P**	**00 18 52.4**	**-0.4**
	comp=Z,7.2nm,0.9s,mb4.3							
SBF	**Sospel**	**80.55**	**318**	*e*P		**P**	**00 18 52.9**	**-0.1**
	comp=Z,13nm,0.9s,mb4.6							
SMF	**Signal de Mont**	**80.64**	**321**	*e*P		**P**	**00 18 53.1**	**-0.3**
	comp=Z,4.7nm,0.8s,mb4.2							
ORIF	**Oris-en-Rattie**	**80.72**	**319**	*e*P		**P**	**00 18 54.0**	**+0.2**
	comp=Z,5.0nm,0.9s,mb4.2							
AVF	**Avril sur Loir**	**80.80**	**322**	*e*P		**P**	**00 18 53.9**	**-0.3**
FRF	**La Foret Royal**	**81.19**	**318**	*e*P		**P**	**00 18 56.0**	**-0.3**
	comp=Z,15nm,1.3s,mb4.5							
LDF	**La Druitiere**	**81.27**	**325**	*e*P		**P**	**00 18 56.3**	**-0.3**
	comp=Z,14nm,1.1s,mb4.5							
LMR	**La Mourre**	**81.41**	**318**	*e*P		**P**	**00 18 57.3**	**-0.2**
	comp=Z,15nm,1.2s,mb4.5							
FCC	**Fort Churchill**	**82.18**	**17**	*e*P		**P**	**00 19 00.0**	**-1.1**
	comp=Z,5.6nm,0.8s,mb4.5							
LASF	**Ste Croix**	**82.36**	**319**	*e*P		**P**	**00 19 02.7**	**+0.3**
	comp=Z,7.8nm,1.1s,mb4.3							
CAF	**Calviac**	**82.72**	**321**	*e*P		**P**	**00 19 04.8**	**+0.5**
RJF	**Les Rejaudoux**	**82.75**	**321**	*e*P		**P**	**00 19 04.7**	**+0.3**
KMBO	**Kilima Mbogo**	**85.00**	**265**	P		**P**	**00 19 18.3**	**+1.7**
	comp=Z,0.3nm,0.4s,mb3.8,baz=232,slow=24,SNR=4.0							
WVOR	**Wild Horse Val**	**85.86**	**40**	*e*P		**P**	**00 19 20.1**	**-0.1**
WVOR				*e*			00 19 30.0	
NVAR	**Mina Array Bea**	**88.89**	**42**	P		**P**	**00 19 35.9**	**+1.0**
	comp=Z,0.3nm,0.3s,mb4.1,baz=288,slow=4.7,SNR=3.6							
PDAR	**Pinedale Array**	**90.09**	**34**	P		**P**	**00 19 41.2**	**+0.8**
	comp=Z,0.4nm,0.9s,mb3.8,baz=326,slow=3.3,SNR=3.0							

*BJI **27** 00:22:05.7,25.48N×89.18E,h10km,mB4.5,mb4.2,ML3.9, Ms4.1,Msz4.0*
*DMN **27** 00:22:14.4±0.7,26.33N×88.93E,h2km±2km,Ml4.6/5, Error ellipse: s-maj=71.3km s-min=10.2km az=22.0*
*IDC **27** 00:22:15.1±0.7,26.36N×88.93E,h20km±3km,mb3.6/15, mb1 3.8/16,mb1mx3.7/24,ML4.0/1,MS2.8/1,Ms1 3.0/1, ms1mx2.7/25, Error ellipse: s-maj=37.4km s-min=12.8km az=52.0*
*NEIC **27** 00:22:17.3±0.5,26.30N×89.52E,h10km,mb4.5/9, Error ellipse: s-maj=12.5km s-min=10.8km az=72.0*
*LDG **27** 00:22:24.0±0.4,27.27N×88.55E,h10km,Mb4.4/11, Error ellipse: s-maj=20.1km s-min=6.5km az=158.0*

ISC 27 00:22:16.0±0.4,26.28N±0.05×89.22E±0.03,h10km, (h22km±9km:pP-P),n64,σ1§37/82,mb4.0/27,MS4.2/1,1C, India-Bangladesh border region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
SLGI	**Shiliguri**	**0.83**	**300**	⇑*i* P		**Pb**	**00 22 32.3**	**+0.2**
SLGI				*i* S		**Sb**	**00 22 43.7**	**+0.6**
SHBG	**Sahibganj**	**1.76**	**233**	*e*P		**Pn**	**00 22 55.5**	**+8.7**
SHBG				*e*S		**Sn**	**00 23 20.5**	**+11**
SHL	**Shillong**	**2.50**	**106**	*e*P		**Pn**	**00 22 56.0**	**-1.4**
SHL				*e*S		**Sn**	**00 23 28.5**	**+0.3**
PKI	**Pulchoki**	**3.64**	**292**	*e*Pn		**Pn**	**00 23 13.1**	**-0.5**
PKI				*e*Pg		**Pg**	**00 23 22.9**	**-5.8**
PKI				*e*Sn		**Sn**	**00 23 56.5**	**-0.6**
PKI				*e*Sg		**Sg**	**00 24 12.5**	**-4.7**
	593nm,0.5s							
LSA	**Lhasa**	**3.81**	**26**	P		**Pn**	**00 23 18.0**	**+2.0**
LSA				S		Sn		
	comp=N,140nm,0.8s							
LSA				S		Sn		
	comp=E,190nm,0.8s							
LSA	**Lhasa**	**3.81**	**26**	*e*Pn		**Pn**	**00 23 15.0**	**-1.0**
LSA				*e*Sn		**Sn**	**00 24 00.9**	**-0.4**
KKN	**Kakani**	**3.83**	**294**	*e*Pn		**Pn**	**00 23 15.1**	**-1.2**
KKN				*e*Pg		**Pg**	**00 23 25.9**	**-6.5**
KKN				*e*Sn		**Sn**	**00 24 01.3**	**-0.5**
	comp=E,250nm,0.2s							
DMN	**Daman**	**3.91**	**291**	*e*Pn		**Pn**	**00 23 16.5**	**-0.9**
DMN				*e*Pg		**Pg**	**00 23 27.6**	**-6.4**
DMN				*e*Sn		**Sn**	**00 24 02.8**	**-1.1**
	comp=E,525nm,0.6s							
GKN	**Gorkha**	**4.43**	**294**	*e*Pn		**Pn**	**00 23 23.9**	**-1.0**
GKN				*e*Sn		**Sn**	**00 24 15.6**	**-1.6**
	comp=E,350nm,0.3s							
IMP	**Imphal**	**4.51**	**108**	*e*P		**Pn**	**00 23 25.0**	**-1.0**
IMP				*e*			00 24 17.0	
KOLN	**Koldanda**	**5.23**	**288**	*e*Pn		**Pn**	**00 23 34.4**	**-1.8**
KOLN				*e*Sn		**Sn**	**00 24 33.6**	**-3.7**
	comp=E,159nm,0.2s							
DANN	**Dangsing**	**5.28**	**294**	*e*Pn		**Pn**	**00 23 34.8**	**-2.1**
CMAR	**Chiang Mai Arr**	**11.89**	**129**	Pn		**P**	**00 25 05.3**	**-3.4**
	comp=E,0.2nm,0.3s,baz=315,slow=12,SNR=3.1							
CMAR				LR		LR	00 29 35.3	
	comp=E,45nm,20.9s,baz=215,slow=36							
HYB	**Hyderabad**	**13.26**	**230**	*i* P		**P**	**00 25 27.0**	**0.0**
HYB				*e*S		**S**	**00 28 03.5**	**+8.0**
HYB	**Hyderabad**	**13.26**	**230**	*e*P		**P**	**00 25 27.0**	**0.0**
HYB				*e*S		**S**	**00 28 03.5**	**+8.0**
CUD	**Cuddapah**	**15.29**	**222**	*e*P		**P**	**00 25 41.1**	**-13**
CUD				*e*S		**S**	**00 28 35.6**	**-8.1**
WMQ	**Urumqi**	**17.54**	**356**	*e*P		**P**	**00 26 22.0**	**-0.2**
WMQ				AP			00 26 24.5	
WMQ				XP			00 26 26.8	
WMQ				PP		PP	00 26 36.8	0.0
WMQ				S		**S**	**00 29 36.0**	**+0.3**
WMQ				AMB		AMB		
	comp=Z,6.0nm,0.8s							
WMQ				AMB		AMB		
	comp=Z,36nm,4.4s							
WMQ				LR		LR		
	comp=N,378nm,15.5s							
WMQ				LR		LR		
	comp=E,322nm,12.8s							
WMQ				LR		LR		
	comp=Z,501nm,15.9s							
ENH	**Enshi**	**18.28**	**73**	*e*P		**P**	**00 26 22.7**	**-8.8**
	comp=Z,15nm,0.9s							
MKAR	**Makanchi Array**	**21.20**	**347**	P		**P**	**00 26 57.1**	**-6.8**
	comp=Z,0.8nm,0.4s,mb3.5,baz=163,slow=11,SNR=10							
SONM	**Songino Array**	**25.39**	**28**	P		**P**	**00 27 43.0**	**-2.0**
	comp=Z,0.4nm,0.4s,mb3.4,baz=203,slow=11,SNR=3.1							
KURK	**Kurchatov**	**25.72**	**344**	*e*P		**P**	**00 27 46.6**	**-1.4**
NJ2	**Nanjing**	**26.46**	**70**	*e*P		**P**	**00 27 50.0**	**-5.0**
ZAL	**Zalesovo**	**27.82**	**354**	P		**P**	**00 28 06.7**	**-0.5**
	comp=Z,1.2nm,0.3s,mb3.9,baz=245,slow=3.3,SNR=5.4							
BVAR	**Borovoye Array**	**30.20**	**337**	P		**P**	**00 28 27.7**	**-0.9**
	comp=Z,0.3nm,0.4s,mb3.4,baz=149,slow=8.6,SNR=3.9							
BRVK	**Borovoye**	**30.27**	**337**	P		**P**	**00 28 26.9**	**-2.3**
ZRNK	**Zerenda**	**30.64**	**336**	*e*P		**P**	**00 28 31.9**	**-0.5**
MDJ	**Mudanjiang**	**37.17**	**50**	P		**P**	**00 29 23.5**	**-5.4**
MDJ				PCP		PcP	00 31 44.5	-4.9
MDJ				S		**S**	**00 35 09.0**	**-6.0**
MDJ				SCP			00 35 31.5	
MDJ				AMB		AMB		
	comp=Z,2.0nm,0.5s,mb4.2							
MDJ				LR		LR		
	comp=N,116nm,10.6s,MS4.2							
MDJ				LR		LR		
	comp=E,157nm,11.1s,MS4.2							
MDJ				LR		LR		
	comp=Z,123nm,8.5s							
ARU	**Arti**	**37.32**	**332**	*e*P		**P**	**00 29 28.9**	**-1.1**
	comp=Z,1.6nm,0.8s,mb3.9							
AKASG	**Malin Array Be**	**51.29**	**315**	P		**P**	**00 31 18.2**	**-3.9**
	comp=Z,0.4nm,0.3s,mb3.8,baz=77,slow=6.9,SNR=3.8							
AKASG				pP		pP	00 31 23.2	-2.0
	comp=Z,1.0nm,0.5s,baz=82,slow=6.4,SNR=3.6							
FINES	**FINESS Array B**	**54.47**	**328**	P		**P**	**00 31 39.5**	**-6.1**
	comp=Z,1.0nm,0.8s,mb3.8,baz=90,slow=13,SNR=4.9							
FINES				pP		pP	00 31 46.3	-2.4
	comp=Z,0.5nm,0.5s,baz=101,slow=9.7,SNR=1.7							
ARCES	**ARCESS Array B**	**56.49**	**338**	P		**P**	**00 31 53.8**	**-6.4**
	comp=Z,2.1nm,1.1s,mb4.1,baz=98,slow=6.4,SNR=5.4							
ARCES				pP		pP	00 32 00.6	-2.7
	comp=Z,0.8nm,0.6s,baz=103,slow=7.3,SNR=2.3							
HFS	**Hagfors**	**60.43**	**326**	P		**P**	**00 32 21.5**	**-6.2**
	comp=Z,1.2nm,0.5s,mb4.2,baz=90,slow=8.9,SNR=7.2							
HFS				pP		pP	00 32 28.6	-2.3
	comp=Z,3.3nm,0.7s,baz=83,slow=12,SNR=7.5							
SPITS	**Spitsbergen Ar**	**60.95**	**347**	P		**P**	**00 32 24.1**	**-7.0**
	comp=Z,3.1nm,1.1s,mb4.3,baz=112,slow=9.7,SNR=2.0							
SPITS				pP		pP	00 32 32.3	-1.9
	comp=Z,4.9nm,1.0s,baz=119,slow=1.4,SNR=2.4							
GERES	**GERESS Array B**	**61.39**	**313**	P		**P**	**00 32 28.5**	**-6.0**
	comp=Z,0.1nm,0.3s,mb3.4,baz=63,slow=3.0,SNR=4.1							
GERES				pP		pP	00 32 34.9	-2.6
	comp=Z,1.1nm,0.7s,baz=90,slow=4.0,SNR=8.3							
GERES				sP		sP	00 32 36.5	-2.1
	comp=Z,1.0nm,0.7s,baz=79,slow=6.8,SNR=8.3							
NB2	**NORSAR Subarra**	**61.61**	**327**	P		**P**	**00 32 29.0**	**-6.8**
	comp=Z,1.6nm,0.7s,mb4.3,baz=87,slow=7.0							
NOA	**NORSAR Array B**	**61.61**	**327**	P		**P**	**00 32 29.4**	**-6.4**
	comp=Z,0.3nm,0.6s,mb3.6,baz=110,slow=7.7,SNR=3.5							
NOA				pP		pP	00 32 35.9	-3.0
	comp=Z,1.5nm,0.7s,baz=86,slow=6.9,SNR=6.7							
WRA	**Warramunga Arr**	**63.47**	**132**	P		**P**	**00 32 45.3**	**-3.3**
	comp=Z,0.6nm,0.4s,mb4.1,baz=322,slow=6.7,SNR=2.9							
WRA				pP		pP	00 32 53.1	+1.4
	comp=Z,0.6nm,0.4s,baz=324,slow=7.0,SNR=2.3							
WRAB	**Tennant Creek**	**63.47**	**132**	*e*P		**P**	**00 32 44.8**	**-3.9**
	comp=Z,5.9nm,0.9s,mb4.7							
CDF	**Champ du Feu**	**65.66**	**314**	*e

KMO	**Kumora**	**1.76**	**356**	⇑*i*	Pg		**00 37 13.9**	**-1.4**
KMO				Pmax			00 37 14.3		
	comp=E,4μm,0.3s								
KMO				*i* Sg	**Sg**		**00 37 37.6**	**-1.2**
KMO				Smax			00 37 38.6		
	comp=E,9μm,0.8s								
KMO	**Kumora**	**1.76**	**356**	⇑*i*	PN	**Pg**	**00 37 13.9**	**-1.4**
KMO				*e*			00 37 14.6		
KMO				*i* S		**Sn**	**00 37 37.9**	**+4.1**
KMO				*e*			00 37 38.5		
KMO				pmax	pmax				
	comp=Z,4μm,0.4s								
KMO				smax					
	comp=N,210nm,1.2s								
UKT	**Uakit**	**1.86**	**42**	⇓*i*	Pg	**Pg**	**00 37 15.4**	**-1.8**
	comp=N,143nm,0.9s								
UKT				⇓*i*	Pg	**Pg**	**00 37 15.4**	**-1.8**
	comp=N,166nm,0.9s								
UKT				⇓*i*	Pg	**Pg**	**00 37 15.4**	**-1.8**
	comp=N,214nm,0.9s								
UKT				*e*			00 37 18.0		
UKT				max			00 37 18.3		
	comp=N,2μm,0.6s								
UKT				*e*Sg		**Sg**	**00 37 41.5**	**-0.4**
UKT				Smax			00 37 42.7		
	comp=N,4μm,0.3s								
UKT	**Uakit**	**1.86**	**42**	*e*PN		**Pn**	**00 37 15.8**	**+3.4**
UKT				*e*			00 37 41.9		
UKT				pmax	pmax				
	comp=Z,1μm,0.4s								
UKT				smax					
	comp=E,3μm,0.3s								
NIZ	**Nizh Angarsk**	**1.98**	**327**	⇑*i*	Pg	**Pg**	**00 37 17.5**	**-2.1**
	comp=E,161nm,1.0s								
NIZ				⇓*i*	Pg	**Pg**	**00 37 17.5**	**-2.1**
	comp=E,81nm,1.0s								
NIZ				⇑*i*	Pg	**Pg**	**00 37 17.5**	**-2.1**
	comp=E,533nm,1.0s								
NIZ				Pmax			00 37 18.2		
	comp=E,1μm,0.6s								
NIZ				*e*Sg		**Sg**	**00 37 44.6**	**-1.4**
NIZ				Smax			00 37 46.6		
	comp=E,2μm,0.2s								
NIZ	**Nizh Angarsk**	**1.98**	**327**	*e*PN		**Pn**	**00 37 17.4**	**+3.3**
NIZ				*e*			00 37 18.2		
NIZ				*e*			00 37 44.6		
NIZ				pmax	pmax				
	comp=Z,1μm,0.3s								
NIZ				smax					
	comp=N,2μm,0.3s								
YOA	**Uoyan**	**2.01**	**4**	⇑*i*	Pg	**Pg**	**00 37 18.5**	**-1.7**
YOA				Pmax			00 37 19.1		
	comp=N,3μm,0.5s								
YOA				*i* Sg		**Sg**	**00 37 46.2**	**-0.9**
YOA				Smax			00 37 47.0		
	comp=N,20μm,0.7s								
YOA	**Uoyan**	**2.01**	**4**	⇑*i*	PN	**Pn**	**00 37 18.7**	**+4.1**
YOA				*i*			00 37 46.4		
YOA				pmax	pmax				
	comp=Z,2μm,0.4s								
YOA				smax					
	comp=N,10μm,0.7s								
OGRR	**Ongureny**	**2.33**	**259**	⇑*i*	Pn	**Pn**	**00 37 21.5**	**+2.3**
OGRR				*e*Pg		**Pg**	**00 37 23.3**	**-3.3**
OGRR				Pmax			00 37 26.1		
	comp=N,227nm,0.4s								
OGRR				*e*Sn		**Sn**	**00 37 50.6**	**+2.4**
OGRR				*e*Sg		**Sg**	**00 37 53.8**	**-3.9**
OGRR				Smax			00 37 55.0		
	comp=N,2μm,1.0s								
OGRR	**Ongureny**	**2.33**	**259**	*e*PN		**Pn**	**00 37 24.5**	**+5.3**
OGRR				*e*			00 37 53.7		
OGRR				pmax	pmax				
	comp=Z,210nm,0.5s								
OGRR				smax					
	comp=N,1μm,0.9s								
SVKR	**Severomuysk**	**2.33**	**31**	*e*Pn		**Pn**	**00 37 21.5**	**+2.3**
SVKR				⇑*i*Pg		**Pg**	**00 37 25.2**	**-1.4**
SVKR				Pmax			00 37 26.7		
	comp=N,753nm,0.6s								
SVKR				*e*Sn		**Sn**	**00 37 51.2**	**+3.0**
SVKR				*e*Sg		**Sg**	**00 37 57.2**	**-0.5**
SVKR				Smax			00 38 01.7		
	comp=N,9μm,0.8s								
SVKR	**Severomuysk**	**2.33**	**31**	*e*PN		**Pn**	**00 37 21.8**	**+2.6**
SVKR				*e*			00 37 24.9		
SVKR				*e*S		**Sn**	**00 37 52.2**	**+4.0**
SVKR				pmax	pmax				
	comp=Z,762nm,0.6s								
SVKR				smax					
	comp=N,9μm,0.9s								
CIT	**Chita**	**2.47**	**148**	*e*Pn		**Pn**	**00 37 21.5**	**+0.3**
CIT				⇑*i*Pg		**Pg**	**00 37 25.9**	**-3.5**
CIT				*i*			00 37 26.9		
CIT				max			00 37 29.6		
	comp=N,617nm,1.5s								
CIT				*e*Sn		**Sn**	**00 37 53.8**	**+2.0**
CIT				*i* Sg		**Sg**	**00 37 59.3**	**-3.0**
CIT				*e*SgSg			00 38 10.1		
CIT				max			00 38 10.6		
	comp=N,2μm,0.8s								
CIT	**Chita**	**2.47**	**148**	*e*PN		**Pg**	**00 37 25.9**	**-3.5**
CIT				*e*			00 37 59.2		
CIT				pmax	pmax				
	comp=Z,612nm,1.6s								
CIT				smax					
	comp=E,2μm,1.0s								
TRTB	**Turuntaevo**	**2.98**	**232**	*e*Pn		**Pn**	**00 37 30.6**	**+2.1**
TRTB				*e*Pg		**Pg**	**00 37 35.4**	**-4.3**
TRTB				Pmax			00 37 47.8		
	comp=E,133nm,0.8s								
TRTB				*e*Sn		**Sn**	**00 38 06.5**	**+1.7**
TRTB				*e*Sg		**Sg**	**00 38 15.4**	**-4.0**
TRTB				Smax			00 38 18.0		
	comp=E,1μm,1.3s								
ZRHB	**Zarechye**	**3.02**	**240**	*e*Pn		**Pn**	**00 37 31.4**	**+2.4**
ZRHB				*e*Pg		**Pg**	**00 37 36.5**	**-3.9**
ZRHB				Pmax			00 37 44.3		
	comp=E,421nm,0.8s								
ZRHB				*e*Sg		**Sg**	**00 38 16.7**	**-4.0**
ZRHB				Smax			00 38 35.3		
	comp=E,3μm,0.8s								
TRG	**Tyrgan**	**3.34**	**248**	⇓*i*	Pn	**Pn**	**00 37 35.1**	**+1.5**
TRG				max			00 37 36.8		
	comp=E,69nm,0.5s								
TRG				⇓*e*Pg		**Pg**	**00 37 42.2**	**-4.6**
TRG				*e*Sn		**Sn**	**00 38 15.3**	**+1.4**
TRG				*e*Sg		**Sg**	**00 38 25.8**	**-5.6**
TRG				Smax			00 38 31.0		
	comp=E,501nm,0.5s								
TRG	**Tyrgan**	**3.34**	**248**	*e*PN		**Pn**	**00 37 42.4**	**+8.8**
TRG				*e*			00 38 25.4		
TRG				pmax	pmax				
	comp=Z,61nm,0.2s								
TRG				smax					
	comp=N,502nm,0.4s								
NLYR	**Nelyaty**	**3.39**	**44**	*e*PN		**Pn**	**00 37 36.3**	**+2.0**
NLYR				*e*			00 37 42.9		
NLYR				*e*			00 38 28.4		
NLYR				pmax	pmax				
	comp=Z,287nm,0.8s								
NLYR				smax					
	comp=N,2μm,0.7s								
FFNB	**Fofonovo**	**3.51**	**235**	*e*Pn		**Pn**	**00 37 38.0**	**+2.0**
FFNB				*e*Pg		**Pg**	**00 37 45.1**	**-5.1**
FFNB				Pmax			00 37 51.1		
	comp=N,243nm,0.2s								
FFNB				*e*Sn		**Sn**	**00 38 18.0**	**-0.2**
FFNB				*e*Sg		**Sg**	**00 38 31.1**	**-5.9**
FFNB				Smax			00 38 42.9		
	comp=N,2μm,0.6s								
KAB	**Kabansk**	**3.56**	**236**	*e*Pg		**Pg**	**00 37 46.8**	**-4.4**
KAB				Pmax			00 37 53.8		
	comp=N,249nm,0.5s								
KAB				*e*Sg		**Sg**	**00 38 33.6**	**-5.1**
KAB				Smax			00 38 55.0		
	comp=N,3μm,1.4s								
STDB	**Stepnoy Dvoret**	**3.63**	**239**	*e*Sg		**Sg**	**00 38 36.7**	**-4.4**
STDB				Smax			00 38 43.1		
	comp=N,2μm,1.1s								
HRMR	**Khuramsha**	**3.70**	**229**	*e*Pn		**Pn**	**00 37 40.8**	**+2.1**
HRMR				*e*Pg		**Pg**	**00 37 48.4**	**-5.6**
HRMR				Pmax			00 37 52.1		
	comp=N,287nm,0.5s								
HRMR				*e*Sg		**Sg**	**00 38 37.4**	**-5.9**
HRMR				*e*			00 38 38.7		
HRMR				Smax			00 38 47.6		
	comp=N,4μm,0.6s								
BOD	**Bodaibo**	**3.96**	**20**	*e*Pn		**Pn**	**00 37 43.6**	**+1.1**
BOD				*e*Pg		**Pg**	**00 37 54.0**	**-5.2**
BOD				Pmax			00 37 57.3		
	comp=N,146nm,0.7s								
BOD				*e*Sn		**Sn**	**00 38 27.1**	**-2.5**
BOD				*e*Sg		**Sg**	**00 38 44.4**	**-7.7**
BOD				Smax			00 38 45.4		
	comp=N,507nm,0.6s								
BOD	**Bodaibo**	**3.96**	**20**	*e*PN		**Pn**	**00 37 43.4**	**+0.9**
BOD				*e*			00 37 52.6		
BOD				*e*			00 38 43.6		
BOD				pmax	pmax				
	comp=Z,47nm,0.7s								
BOD				smax					
	comp=N,510nm,0.5s								
BTMB	**Babushkin**	**4.18**	**237**	*e*Pn		**Pn**	**00 37 45.1**	**-0.4**
BTMB				*e*Pg		**Pg**	**00 37 56.8**	**-6.7**
BTMB				Pmax			00 37 59.4		
	comp=N,85nm,0.5s								
BTMB				*e*Sn		**Sn**	**00 38 34.6**	**-0.5**
BTMB				*e*Sg		**Sg**	**00 38 52.4**	**-6.9**
BTMB				Smax			00 38 57.5		
	comp=N,512nm,1.0s								
KPC	**Khapcheranga**	**4.47**	**172**	⇑*i*	Pn	**Pn**	**00 37 51.3**	**+1.6**
KPC				⇑*i*	Pg	**Pg**	**00 38 02.4**	**-7.0**
KPC				Pmax			00 38 05.4		
	comp=N,94nm,0.8s								
KPC				*e*Sn		**Sn**	**00 38 41.9**	**-0.7**
KPC				*e*Sg		**Sg**	**00 38 59.8**	**-9.3**
KPC				Smax			00 39 07.6		
	comp=N,950nm,0.9s								
KPC	**Khapcheranga**	**4.47**	**172**	*e*PN		**Pg**	**00 38 02.4**	**-7.0**
KPC				*e*			00 39 00.5		
KPC				pmax	pmax				
	comp=Z,42nm,0.7s								
KPC				smax					
	comp=E,697nm,0.8s								
IRK	**Irkutsk**	**4.71**	**249**	*e*Pg		**Pg**	**00 38 06.8**	**-7.3**
IRK				Pmax			00 38 06.9		
	comp=E,287nm,0.2s								
IRK				*e*Sg		**Sg**	**00 39 07.8**	**-9.1**
IRK				Smax			00 39 11.1		
	comp=E,807nm,0.5s								
IRK	**Irkutsk**	**4.71**	**249**	*e*PN		**Pg**	**00 38 06.8**	**-7.3**
IRK				*e*			00 39 07.0		
IRK				pmax	pmax				
	comp=Z,170nm,0.1s								
IRK				smax					
	comp=N,1μm,1.1s								
CRS	**Chara**	**4.77**	**52**	*e*Pn		**Pn**	**00 37 54.6**	**+0.7**
CRS				⇑*i*Pg		**Pg**	**00 38 07.5**	**-7.8**
CRS				Pmax			00 38 15.2		
	comp=N,224nm,1.2s								
CRS				*e*Sn		**Sn**	**00 38 48.0**	**-2.0**
CRS				*e*Sg		**Sg**	**00 39 10.8**	**-8.0**
CRS				Smax			00 39 15.5		
	comp=N,960nm,1.1s								
CRS	**Chara**	**4.77**	**52**	*e*PN		**Pn**	**00 37 55.4**	**+1.5**
CRS				*e*			00 38 08.6		
TUP	**Tupik**	**5.00**	**83**	⇓*i*	Pn	**Pn**	**00 37 58.1**	**+1.0**
TUP				*e*Pg		**Pg**	**00 38 11.5**	**-8.4**
TUP				Pmax			00 38 17.2		
	comp=N,64nm,0.3s								
TUP				*e*Sn		**Sn**	**00 38 54.6**	**-1.1**
TUP				*e*Sg		**Sg**	**00 39 17.2**	**-9.3**
TUP				Smax			00 39 23.8		
	comp=N,1μm,0.8s								
TUP	**Tupik**	**5.00**	**83**	*e*PN		**Pn**	**00 37 57.6**	**+0.5**
TUP				*e*			00 38 12.2		
TUP				*e*S		**Sn**	**00 38 54.4**	**-1.3**
TUP				*e*			00 39 17.2		
TUP				pmax	pmax				
	comp=Z,64nm,0.4s								
TUP				smax					
	comp=N,1μm,0.9s								
TLY	**Talaya**	**5.32**	**246**	*e*Pn		**Pn**	**00 38 02.1**	**+0.4**
TLY				*e*Pg		**Pg**	**00 38 17.3**	**-9.0**
TLY				Pmax			00 38 25.6		
	comp=N,20nm,0.6s								
TLY				*e*Sg		**Sg**	**00 39 25.0**	**-12**
TLY				Smax			00 39 29.6		
	comp=N,182nm,0.6s								
TLY	**Talaya**	**5.32**	**246**	*e*PN		**Pn**	**00 38 02.9**	**+1.2**
TLY				*e*S		Sn	00 39 26.1	+22	
TLY				pmax	pmax				
	comp=Z,20nm,0.5s								
TLY				smax					
	comp=E,1μm,0.7s								
ARS	**Arshan**	**5.88**	**251**	*e*Pn		**Pn**	**00 38 09.7**	**+0.2**
ARS				*e*Pg		**Pg**	**00 38 26.8**	**-11**
ARS				Pmax			00 38 38.8		
	comp=E,41nm,0.6s								
ARS				*e*Sn		**Sn**	**00 39 13.5**	**-4.3**
ARS				*e*Sg		**Sg**	**00 39 41.8**	**-14**
ARS				Smax			00 39 50.7		
	comp=E,511nm,0.8s								
ARS	**Arshan**	**5.88**	**251**	*e*PN		**Pn**	**00 38 26.4**	**+17**
ZAK	**Zakamensk**	**6.26**	**236**	*e*Pn		**Pn**	**00 38 14.2**	**-0.8**
ZAK				*e*Pg		**Pg**	**00 38 35.2**	**-10**
ZAK				Pmax			00 38 38.4		
	comp=E,23nm,1.0s								
ZAK				*e*			00 39 27.6		
ZAK				*e*Sg		**Sg**	**00 39 55.3**	**-13**
ZAK				Smax			00 40 06.9		
	comp=E,138nm,1.5s								
ZAK	**Zakamensk**	**6.26**	**236**	*e*PN		**Pn**	**00 38 16.8**	**+1.8**
ZAK				*e*			00 38 35.7		
ZAK				*e*			00 39 56.8		
ZAK				pmax	pmax				
	comp=Z,23nm,1.0s								
ZAK				smax					
	comp=N,139nm,1.3s								
MOY	**Mondy**	**6.79**	**253**	*e*Pn		**Pn**	**00 38 24.7**	**+2.3**
MOY				*e*Pg		**Pg**	**00 38 44.7**	**-11**
MOY				Pmax			00 38 58.4		
	comp=N,19nm,1.0s								
MOY				*e*			00 39 39.3		
MOY				*e*Sg		**Sg**	**00 40 10.9**	**-15**
MOY				Smax			00 40 15.8		
	comp=N,135nm,1.5s								
MOY	**Mondy**	**6.79**	**253**	*e*PN		**Pn**	**00 38 24.7**	**+2.3**
MOY				*e*			00 38 44.0		
MOY				*e*			00 40 10.1		
MOY				pmax	pmax				
	comp=Z,3.0nm,0.2s								
MOY				smax					
	comp=E,140nm,1.2s								
ULN	**Ulaanbaatar**	**6.86**	**206**	*de*PN		**Pn**	**00 38 24.9**	**+1.5**
ULN	**Ulaanbaatar**	**6.86**	**206**	*e*Pn		**Pn**	**00 38 23.6**	**+0.2**
	comp=E,5.0nm,0.7s								
ULN				*e*Pb		**Pb**	**00 38 42.9**	**+3.5**
ULN				*e*S		**Sn**	**00 39 40.0**	**-2.4**
SONM	**Songino Array**	**7.06**	**209**	Pn		**Pn**	**00 38 27.0**	**+0.8**
	comp=E,1.1nm,0.3s,baz=15,slow=14,SNR=12								
SONM				Pg		**Pg**	**00 38 48.4**	**-13**
	comp=E,3.1nm,0.3s,baz=8.7,slow=16,SNR=7.1								
SONM				Sn		**Sn**	**00 39 46.5**	**-1.0**
	comp=E,3.6nm,0.3s,baz=22,slow=29,SNR=6.0								
SONM				Lg			00 40 23.2		
	comp=E,11nm,0.3s,baz=20,slow=27,SNR=13								
HIA	**Hailar**	**7.09**	**130**	*e*Pn		**Pn**	**00 38 24.4**	**-2.2**
	comp=E,12nm,0.6s								
HIA				*e*Pg		**Pg**	**00 38 50.8**	**-11**
ORL	**Orlik**	**7.15**	**262**	*e*Pn		**Pn**	**00 38 28.2**	**+0.8**
ORL				max			00 39 03.6		
	comp=E,17nm,0.6s								
ORL				*e*Sn		**Sn**	**00 39 45.6**	**-4.0**
ORL				*e*Sg		**Sg**	**00 40 21.3**	**-17**
ORL				Smax			00 40 31.4		
	comp=E,202nm,1.4s								
ORL	**Orlik**	**7.15**	**262**	*e*PN		**Pn**	**00 38 28.2**	**+0.8**
ORL				*e*			00 38 50.8		
ORL				*e*S		**Sn**	**00 39 46.5**	**-3.1**
ORL				*e*			00 40 21.3		
ORL				pmax	pmax				
	comp=Z,19nm,1.0s								
ORL				smax					
	comp=N,203nm,1.8s								
TNDR	**Tynda**	**7.77**	**77**	*e*Sg		**Sg**	**00 40 42.4**	**-16**
CLNS	**Chul'man**	**8.11**	**65**	*e*Sg		**Sg**	**00 40 53.6**	**-16**
CLNS	**Chul'man**	**8.11**	**65**	*e*PN		**P**	**00 38 40.6**	**-0.2**
CLNS				*e*			00 39 07.5		
CLNS				*e*S		**Sn**	**00 40 12.6**	**-0.9**
CLNS				pmax	pmax				
	comp=Z,10.0nm,0.8s								
CLNS				pmax	pmax				
	comp=N,3.0nm,0.9s								
CLNS				pmax	pmax				
	comp=E,10.0nm,0.8s								
CLNS				pmax	pmax				
	comp=Z,10.0nm,1.0s								
CLNS				pmax	pmax				
	comp=N,10.0nm,0.9s								
CLNS				pmax	pmax				
	comp=E,20nm,1.0s								
CLNS				smax					
	comp=E,40nm,0.8s								
CLNS				smax					
	comp=Z,10.0nm,0.9s								
CLNS				smax					
	comp=N,20nm,0.8s								
CLNS				smax					
	comp=N,330nm,0.9s								
CLNS				smax					
	comp=E,280nm,0.9s								
CLNS				smax					
	comp=Z,130nm,0.9s								
CLNS				MLR	MLR				
	comp=Z,110nm,12.0s								
TDJR	**Todzha**	**9.36**	**266**	*e*Pn		**P**		**00 38 58.2**	**0.0**
TDJR				*e*Pg		P		00 39 29.4	+31
TDJR				*e*Sn		**Sn**		**00 40 38.2**	**-6.5**
TDJR				*e*Sg		Sg		00 41 29.7	-22
SHRR	**Shira**	**12.42**	**280**	*e*P		**P**		**00 39 41.1**	**+1.3**
SHRR				pmax	pmax				
	comp=Z,19nm,0.7s								
YAK	**Yakutsk**	**12.44**	**43**	*i* P		**P**		**00 39 39.7**	**-0.4**
YAK				pmax	pmax				
	comp=Z,15nm,0.5s								
CN2	**Changchun**	**13.81**	**133**	*e*P		**P**		**00 39 58.3**	**+0.1**
ZAL	**Zalesovo**	**15.62**	**280**	Pn		**P**		**00 40 23.6**	**+1.7**
	comp=Z,0.1nm,0.3s,baz=299,slow=13,SNR=3.4								
ZAL				Lg				00 44 45.7	
	comp=Z,0.2nm,0.3s,baz=354,slow=14,SNR=3.6								
ZAL	**Zalesovo**	**15.62**	**280**	*i* P		**P**		**00 40 24.1**	**+2.2**
ZAL				pmax	pmax				
	comp=Z,1.0nm,0.3s								
ZAL	**Zalesovo**	**15.62**	**280**	Pn		**P**		**00 40 23.6**	**+1.7**
ZAL				Lg				00 44 45.7	
WMQ	**Urumqi**	**18.60**	**246**	*e*P		**P**		**00 41 02.5**	**+3.1**
WMQ				AP				00 41 05.0	
WMQ				XP				00 41 07.5	
WMQ				PP	PP			00 41 18.8	+3.6
WMQ				AMB	AMB				
	comp=Z,8.0nm,0.7s								
WMQ				AMB	AMB				
	comp=Z,49nm,4.6s								
WMQ				LR	LR				
	comp=N,219nm,15.0s								
WMQ				LR	LR				
	comp=E,318nm,15.4s								
WMQ				LR	LR				
	comp=Z,386nm,17.3s								
TIXI	**Tiksi**	**19.14**	**17**	*e*P		**P**		**00 41 05.8**	**+0.1**
TIXI				pmax	pmax				
	comp=Z,9.0nm,0.8s								
TIXI				MLR	MLR				
	comp=Z,62nm,17.0s								
TIXI	**Tiksi**	**19.14**	**17**	*e*P		**P**		**00 41 05.6**	**-0.1**
	comp=Z,9.0nm,0.8s								
MKAR	**Makanchi Array**	**19.85**	**260**	P		**P**		**00 41 15.7**	**+1.7**
	comp=Z,0.1nm,0.3s,baz=54,slow=9.0,SNR=11								
KURK	**Kurchatov**	**20.20**	**274**	*e*P		**P**		**00 41 17.4**	**-0.3**
NJ2	**Nanjing**	**22.70**	**164**	*e*P		**P**		**00 41 43.3**	**+0.2**
NJ2				AP				00 41 47.5	
NJ2				XP				00 41 50.8	
NJ2				AMB	AMB				
	comp=Z,20nm,0.5s,mb4.8								
SSE	**Sheshan**	**24.07**	**159**	⇓P		**P**		**00 41 56.0**	**-0.4**
SSE				AMB	AMB				
	comp=Z,46nm,3.8s								
BVAR	**Borovoye Array**	**24.16**	**284**	P		**P**		**00 41 59.9**	**+2.9**
	comp=Z,2.2nm,0.6s,mb3.8,baz=76,slow=6.1,SNR=13								
ZRNK	**Zerenda**	**24.98**	**285**	*e*P		**P**		**00 42 07.0**	**+2.0**
AAK	**Ala-Archa**	**26.79**	**260**	*e*P		**P**		**00 42 25.4**	**+3.5**
	comp=Z,5.7nm,1.1s,mb4.0								
BILL	**Bilibino**	**28.76**	**40**	*e*P		**P**		**00 42 32.5**	**-7.0**
BILL				*e*				00 43 26.6	
BILL				pmax	pmax				
	comp=Z,6.0nm,1.5s,mb4.1								
KMI	**Kunming**	**29.69**	**196**	*e*P		**P**		**00 42 49.5**	**+1.1**
KMI				AMB	AMB				
	comp=Z,7.0nm,0.8s,mb4.4								
KEV	**Kevo**	**38.94**	**327**	*e*p		**P**		**00 44 08.2**	**+0.8**
ARCES	**ARCESS Array B**	**39.51**	**327**	P		**P**		**00 44 13.4**	**+1.2**
	comp=Z,1.0nm,0.7s,mb3.7,baz=68,slow=10,SNR=11								
ARCES				PcP		PcP		00 46 18.0	-2.4
	comp=Z,1.2nm,0.9s,baz=56,slow=4.4,SNR=3.7								
ARCES				LR		LR		01 06 09.2	
	comp=Z,41nm,18.3s,MS3.3,baz=263,slow=45								
ARCES	**ARCESS Array B**	**39.51**	**327**	P		**P**		**00 44 13.4**	**+1.2**
ARCES								00 46 18.0	
ARCES				pmax	pmax				
	comp=Z,1.0nm,0.7s								
ARCES				pmax	pmax				
	comp=Z,1.0nm,0.9s								
JOF	**Joensuu**	**40.09**	**316**	*e*p		**P**		**00 44 19.9**	**+2.9**
	comp=Z,0.8nm,0.6s,mb3.6								
JOF	**Joensuu**	**40.09**	**316**	*e*P		**P**		**00 44 19.9**	**+2.9**
JOF				pmax	pmax				
	comp=Z,1.0nm,0.6s,mb3.7								
VRSR	**Storozhevoye**	**42.15**	**297**	*e*P		**P**		**00 44 34.7**	**+0.8**
VRSR				pmax	pmax				
	comp=N,4.0nm,0.6s								
VRSR				pmax	pmax				
	comp=Z,3.0nm,0.6s,mb4.1								
VRSR				pmax	pmax				
	comp=E,6.0nm,1.3s								
FINES	**FINESS Array B**	**42.95**	**315**	P		**P**		**00 44 42.1**	**+1.7**
	comp=E,1.2nm,0.5s,mb3.9,baz=63,slow=8.5,SNR=13								
FINES	**FINESS Array B**	**42.95**	**315**	P		**P**		**00 44 42.1**	**+1.7**
FINES				pmax	pmax				
	comp=Z,1.0nm,0.5s								
ILAR	**Eielson Array**	**47.20**	**35**	P		**P**		**00 45 16.5**	**+2.2**
	comp=Z,1.0nm,0.9s,mb3.7,baz=301,slow=5.9,SNR=10								
ILAR	**Eielson Array**	**47.20**	**35**	P		**P**		**00 45 16.5**	**+2.2**
ILAR				pmax	pmax				
	comp=Z,1.0nm,0.9s								
AKASG	**Malin Array Be**	**47.57**	**301**	P		**P**		**00 45 18.3**	**+0.8**
	comp=Z,1.0nm,0.5s,mb4.1,baz=46,slow=8.5,SNR=12								
HFS	**Hagfors**	**48.68**	**319**	P		**P**		**00 45 26.8**	**+0.9**
	comp=Z,1.5nm,0.5s,mb4.3,baz=63,slow=6.6,SNR=12								
HFS	**Hagfors**	**48.68**	**319**	P		**P**		**00 45 26.8**	**+0.9**
HFS				pmax	pmax				
	comp=Z,2.0nm,0.5s								
NB2	**NORSAR Subarra**	**49.05**	**321**	P		**P**		**00 45 29.6**	**+0.9**
	comp=Z,0.5nm,0.6s,mb3.7,baz=49,slow=7.4								
NOA	**NORSAR Array B**	**49.05**	**321**	P		**P**		**00 45 29.2**	**+0.5**
	comp=Z,0.9nm,0.7s,mb3.9,baz=53,slow=7.8,SNR=5.4								
NOA	**NORSAR Array B**	**49.05

ms1mx2.3/27, Error ellipse: s-maj=15.2km s-min=7.3km az=133.0

ISC 27 00:59:08.0±0.5, **6.72N**×0.05×**72.94W**±0.05, **h177**km±5km, **h171**km×2.8km: **pP-P, n58,** σ0≦**92/50, mb4.1**/18, **4C-4D, Northern Colombia**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ROSC	**El Rosal**	**2.31**	**217**	P	**P**	**00 59 49.4**	**+0.6**
	375nm,0.3s,baz=76,slow=3.2,SNR=725						
ROSC				S	**S**	**01 00 18.7**	**-1.5**
	714nm,0.3s,baz=132,slow=18,SNR=13						
SDV	**Santo Domingo**	**3.14**	**47**	P	**P**	**00 59 59.0**	**+0.1**
	292nm,0.3s,baz=240,slow=6.6,SNR=841						
SDV				S	**S**	**01 00 38.2**	**+0.2**
	64nm,0.3s,baz=278,slow=21,SNR=7.5						
PCRV	**Puerto La Cruz**	**8.91**	**67**	P	**P**	**01 01 13.2**	**-0.9**
	3.7nm,0.3s,baz=203,slow=5.4,SNR=21						
PCRV				S	**S**	**01 02 53.4**	**+0.8**
	2.1nm,0.3s,baz=328,slow=19,SNR=2.3						
PCRV				LR	LR	01 04 27.6	
	comp=Z,43nm,21.4s,baz=271,slow=36						
STH	**Stony Hill**	**11.90**	**342**	*eP*	**P**	**01 01 53.0**	**-0.1**
STH				*eS*	**S**	**01 03 51.8**	**-11**
MCJ	**Malvern**	**12.06**	**338**	*eP*	**P**	**01 01 55.5**	**+0.3**
BNJ	**Bonny Gate**	**12.17**	**342**	*eP*	**P**	**01 01 56.4**	**-0.2**
CVJ	**Coleyville**	**12.28**	**339**	*eP*	**P**	**01 01 59.6**	**+1.6**
BBJ	**Bamboo Saint A**	**12.33**	**340**	*eP*	**P**	**01 01 59.5**	**+0.8**
JTS	**JuntasAbangare**	**12.39**	**287**	*eP*	**P**	**01 02 01.0**	**+1.6**
SJG	**San Juan**	**13.12**	**30**	P	**P**	**01 02 07.2**	**-1.4**
	2.6nm,0.3s,baz=220,slow=17,SNR=4.4						
SJG	**San Juan**	**13.12**	**30**	*eP*	**P**	**01 02 06.3**	**-2.4**
	14nm,0.6s						
DWPF	**Disney**	**22.74**	**340**	*eP*	**P**	**01 03 56.2**	**+0.3**
	8.4nm,0.6s,mb4.3						
LPAZ	**La Paz**	**23.35**	**168**	P	**P**	**01 04 03.5**	**+1.8**
	0.9nm,0.5s,mb3.5,baz=342,slow=9.9,SNR=9.5						
LPAZ				pP		01 04 36.4	
	4.3nm,0.8s,baz=347,slow=13,SNR=8.7						
LPAZ	**La Paz**	**23.35**	**168**	*eP*	**P**	**01 04 03.0**	**+1.3**
	3.6nm,0.8s,mb3.9						
LPAZ				*ep*	P	01 04 34.7	
PLAL	**Pickwick Lake**	**31.39**	**336**	*eP*	**P**	**01 05 13.2**	**-1.3**
	11nm,0.9s,mb4.6						
CCM	**Cathedral Cave**	**35.34**	**335**	*eP*	**P**	**01 05 47.8**	**-0.5**
	21nm,0.7s,mb4.9						
TXAR	**Lajitas Array**	**36.66**	**312**	P	**P**	**01 05 59.3**	**-0.1**
	1.6nm,0.5s,mb3.9,baz=128,slow=9.1,SNR=21						
SADO	**Sadowa**	**38.28**	**353**	P	**P**	**01 06 13.3**	**+0.4**
	2.8nm,0.5s,mb4.2,baz=190,slow=7.7,SNR=6.1						
CPRX	**Cap Rock**	**38.85**	**317**	*eP*	**P**	**01 06 17.5**	**-0.1**
LAZ	**Ladron**	**41.87**	**316**	*eP*	**P**	**01 06 42.2**	**-0.3**
ULM	**Lac du Bonnet**	**47.44**	**340**	P	**P**	**01 07 25.2**	**-1.3**
	7.7nm,0.4s,mb4.7,baz=139,slow=7.3,SNR=11						
ULM	**Lac du Bonnet**	**47.44**	**340**	*eP*	**P**	**01 07 24.4**	**-2.1**
	11nm,0.5s,mb4.7						
MSU	**Marysvale**	**47.50**	**318**	*eP*	**P**	**01 07 28.0**	**+0.8**
DAU	**Daniels Canyon**	**47.92**	**320**	*eP*	**P**	**01 07 31.1**	**+0.7**
NEN	**Nelson**	**47.97**	**313**	*eP*	**P**	**01 07 30.7**	**-0.2**
SCHQ	**Schefferville**	**48.23**	**5**	P	**P**	**01 07 32.7**	**+0.2**
	4.3nm,0.8s,mb4.2,baz=182,slow=7.3,SNR=8.5						
PDAR	**Pinedale Array**	**48.26**	**324**	P	**P**	**01 07 33.0**	**0.0**
	6.8nm,0.5s,mb4.6,baz=126,slow=10,SNR=24						
PDAR	**Pinedale Array**	**48.26**	**324**	P	**P**	**01 07 33.0**	**0.0**
MCMT	**McKenzie Canyo**	**51.40**	**324**	*eP*	**P**	**01 07 57.0**	**+0.2**
HLID	**Hailey**	**51.62**	**322**	*eP*	**P**	**01 07 57.8**	**-0.7**
	1.7nm,0.6s,mb3.9						
NVAR	**Mina Array Bea**	**51.68**	**315**	P	**P**	**01 07 58.9**	**0.0**
	1.0nm,0.6s,mb3.6,baz=119,slow=8.1,SNR=5.6						
NVAR	**Mina Array Bea**	**51.68**	**315**	*e*	**P**	**01 07 58.9**	**-0.1**
WVOR	**Wild Horse Val**	**53.72**	**319**	*eP*	**P**	**01 08 13.6**	**-0.4**
	6.1nm,1.0s,mb4.3						
FCC	**Fort Churchill**	**54.41**	**347**	*eP*	**P**	**01 08 17.1**	**-1.7**
	3.6nm,0.7s,mb4.2						
KEBM	**Edson Butte**	**57.69**	**317**	*eP*	**P**	**01 08 42.8**	**+0.4**
YKA	**Yellowknife Ar**	**63.42**	**340**	P	**P**	**01 09 19.8**	**-0.9**
	7.0nm,0.7s,mb4.6,baz=133,slow=6.6,SNR=214						
YKA				pP	pP	01 09 59.2	-3.2
	0.4nm,0.5s,baz=130,slow=6.9,SNR=2.2						
YKA	**Yellowknife Ar**	**63.42**	**340**	P	**P**	**01 09 19.8**	**-0.9**
YKA				pP	pP	01 09 59.2	-3.2
DBIC	**Dimbokro**	**67.57**	**86**	P	**P**	**01 09 47.0**	**-1.0**
	4.5nm,0.9s,mb4.2,baz=166,slow=8.3,SNR=4.7						
SUMG	**Summit**	**69.05**	**11**	*eP*	**P**	**01 09 55.9**	**-0.3**
ILAR	**Eielson Array**	**77.13**	**335**	P	**P**	**01 10 43.2**	**0.0**
	0.9nm,0.9s,mb3.4,baz=110,slow=4.5,SNR=8.3						
NOA	**NORSAR Array B**	**81.33**	**29**	P	**P**	**01 11 07.3**	**+1.3**
	0.4nm,0.7s,mb3.2,baz=352,slow=14,SNR=3.0						
ARCES	**ARCESS Array B**	**86.70**	**20**	P	**P**	**01 11 33.6**	**+1.0**
	0.5nm,0.6s,mb3.5,baz=268,slow=3.7,SNR=9.0						
VNA3	**Neumayer Olymp**	**88.02**	**163**	*e*	**P**	**01 11 41.4**	**+2.6**
VNA3	**Neumayer Olymp**	**88.02**	**163**	*e*	pP	01 12 21.6	-1.4
VNA3	**Neumayer Olymp**	**88.02**	**163**	*e*	sP	01 12 38.3	-3.7
VNA3	**Neumayer Olymp**	**88.02**	**163**	*eS*	S	01 22 12.2	+7.0
VNA3	**Neumayer Olymp**	**88.02**	**163**	*ip*	**P**	**01 11 38.1**	**-0.7**
VNA3				*e*		01 11 41.4	
VNA3				*e*	pP	01 12 21.6	-1.4
VNA3				*e*		01 12 38.3	
VNA3				*eS*	S	01 22 12.2	+7.0
VNA2	**Neumayer--Watz**	**88.55**	**163**	*e*	**P**	**01 11 43.4**	**+2.1**
VNA2	**Neumayer--Watz**	**88.55**	**163**	*e*	pP	01 12 23.6	-1.9
VNA2	**Neumayer--Watz**	**88.55**	**163**	*e*	sP	01 12 40.3	-4.2
VNA2	**Neumayer--Watz**	**88.55**	**163**	*eS*	S	01 22 13.8	+3.8
VNA2	**Neumayer--Watz**	**88.55**	**163**	*ip*	**P**	**01 11 40.0**	**-1.3**
VNA2				*e*		01 11 43.4	
VNA2				*e*	pP	01 12 23.6	-1.9
VNA2				*e*		01 12 40.3	
VNA2				*eS*	S	01 22 13.8	+3.8
MKAR	**Makanchi Array**	**122.36**	**20**	PKP	PKPdf	01 17 43.7	+1.4
	0.3nm,0.4s,baz=301,slow=2.7,SNR=7.0						
WMQ	**Urumqi**	**126.73**	**17**	*e*PKP	PKPdf	01 17 52.3	+1.5
CN2	**Changchun**	**127.03**	**343**	*e*PKP	PKPdf	01 17 52.5	+1.1
NJ2	**Nanjing**	**139.84**	**344**	*e*PKP	PKPdf	01 18 09.5	-6.2
SSE	**Sheshan**	**140.04**	**341**	⇑PKP	PKPdf	01 18 16.5	+0.5
WRA	**Warramunga Arr**	**150.44**	**241**	PKPbc	PKPdf	01 18 41.8	+8.0
	0.9nm,0.4s,baz=107,slow=2.6,SNR=1.5						

*JMA **27** 00:59:57.8±0.4, 24.01N×122.14E, h25km, M2.0*
*TAP **27** 01:00:00.9, 24.12N×122.25E, h22km±1km, ML2.3*

ISC 27 00:59:57.6±3.1, **24.0N**±0.2×**122.1E**±0.2, **h22**km, **n5,** σ0≦**43/8, Taiwan region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**0.91**	**61**	P	**Pb**	**01 00 14.6**	**+0.1**
YOJ				*eS*	**Sb**	**01 00 26.4**	**+0.3**
IRIF	**Iriomote-Funau**	**1.48**	**78**	P	**Pn**	**01 00 23.4**	**+0.1**
IRIF				*eS*	**Sn**	**01 00 41.2**	**-1.0**
HATJ	**Hateruma jima**	**1.52**	**89**	*eS*	**Sn**	**01 00 43.8**	**+0.6**
JKRS	**Kuro-shima**	**1.72**	**83**	*eS*	**Sn**	**01 00 48.3**	**+0.1**
JIJ	**Ishigaki jima**	**1.86**	**79**	P	**Pn**	**01 00 28.6**	**-0.1**
JIJ				*eS*	**Sn**	**01 00 51.7**	**0.0**

*NEIC **27** 01:13:26.5±1.4, 5.45S×147.08E, h129km±12km, mb4.6/21, Error ellipse: s-maj=11.6km s-min=7.1km az=90.0*
*BJI **27** 01:13:26.5, 5.40S×147.10E, h129km, mB4.6, mb4.9*
*IDC **27** 01:13:26.6±1.6, 5.53S×147.09E, h130km±14km, mb4.2/14, mb1 4.4/17, mb1mx4.3/20, Error ellipse: s-maj=17.7km s-min=8.7km az=108.0*
*SYO **27** 01:13:26.5, 5.45S×147.08E, h129km, MB4.6*

ISC 27 01:13:24.3±1.3, **5.46S**±0.05×**147.11E**±0.07, **h121**km±12km, **h130**km±3.2km: **pP-P, n66,** σ1≦**01/66, mb4.6**/34, **3C-6D, Eastern New Guinea region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.92**	**179**	P	**P**	**01 14 25.2**	**+1.4**
	30nm,0.3s,baz=20,slow=6.7,SNR=59						
PMG				S	**S**	**01 15 08.3**	**-1.1**
	27nm,0.3s,baz=261,slow=22,SNR=10.0						
PMG	**Port Moresby**	**3.92**	**179**	*eP*n	**P**	**01 14 24.9**	**+1.1**
PMG				*eS*n	**S**	**01 15 04.1**	**-5.2**
CTA	**Charters Tower**	**14.56**	**183**	*eP*	**P**	**01 16 50.7**	**+5.1**
	6.3nm,1.0s						
CTA	**Charters Tower**	**14.56**	**183**	P	**P**	**01 16 50.7**	**+5.1**
	0.6nm,0.3s,baz=359,slow=12,SNR=9.8						
CTAO	**Charters Tower**	**14.56**	**183**	*eP*	**P**	**01 16 50.7**	**+5.0**
KAKA	**Kakadu**	**16.20**	**243**	⇑*iP*	**P**	**01 17 06.4**	**+0.2**
	28nm,0.6s						
KAKA				*eS*	**S**	**01 20 00.7**	**-0.9**
WRAB	**Tennant Creek**	**19.00**	**220**	*eP*	**P**	**01 17 38.7**	**-0.4**
	213nm,0.8s						
WRAB				*eS*	**S**	**01 21 04.9**	**+1.8**
WB2	**Warramunga Arr**	**19.00**	**220**	*eP*	**P**	**01 17 38.5**	**-0.7**
WB2				*eS*	**S**	**01 21 01.4**	**-1.8**
WRA	**Warramunga Arr**	**19.01**	**220**	P	**P**	**01 17 38.9**	**-0.3**
	5.4nm,0.3s,baz=46,slow=11,SNR=185						
WRA				S	**S**	**01 21 06.2**	**+2.9**
	0.1nm,0.3s,baz=40,slow=21,SNR=15						
WRA				PcP	PcP	01 21 57.8	-1.5
	0.2nm,0.3s,baz=26,slow=2.0,SNR=5.0						
AS12	**Alice Springs**	**22.12**	**214**	⇓*iP*	**P**	**01 18 12.0**	**+1.3**
	14nm,0.4s,mb4.6						
AS12				*eS*	**S**	**01 22 04.6**	**+3.0**
ASAR	**Alice Springs**	**22.12**	**214**	P	**P**	**01 18 12.1**	**+1.3**
	22nm,0.7s,mb4.6,baz=47,slow=8.3,SNR=214						
ASAR				S	**S**	**01 22 06.5**	**+5.0**
	8.6nm,0.8s,baz=30,slow=23,SNR=9.8						
FITZ	**Fitzroy Crossi**	**24.44**	**237**	⇓*iP*	**P**	**01 18 33.4**	**+0.1**
	10nm,0.3s,mb4.6						
FITZ	**Fitzroy Crossi**	**24.44**	**237**	P	**P**	**01 18 33.5**	**+0.3**
	21nm,0.4s,mb4.8,baz=41,slow=4.7,SNR=70						
ARMA	**Armidale**	**25.19**	**171**	⇓*iP*	**P**	**01 18 40.9**	**+0.7**
STKA	**Stephens Creek**	**26.78**	**190**	*eP*	**P**	**01 18 53.6**	**-1.3**
	5.2nm,0.8s,mb4.1						
STKA	**Stephens Creek**	**26.78**	**190**	P	**P**	**01 18 54.4**	**-0.5**
	6.3nm,0.8s,mb4.2,baz=1.8,slow=6.9,SNR=13						
FORT	**Forrest**	**30.91**	**213**	⇓*iP*	**P**	**01 19 31.1**	**-0.7**
	127nm,0.6s						
KLBR	**Kellerberrin**	**37.84**	**223**	⇓*iP*	**P**	**01 20 30.1**	**-0.8**
	20nm,0.5s,mb5.2						
NWAO	**Narrogin (SRO)**	**39.00**	**222**	*eP*	**P**	**01 20 40.4**	**-0.1**
	9.8nm,0.9s,mb4.6						
MUN	**Mundaring**	**39.12**	**224**	*eP*	**P**	**01 20 41.3**	**-0.3**
	9.3nm,0.8s,mb4.7						
TATO	**Taipei**	**39.20**	**322**	P	**P**	**01 20 42.0**	**-0.2**
	44nm,0.6s,mb5.5						
JNU	**Nakatsue**	**41.34**	**339**	P	**P**	**01 21 01.0**	**+1.2**
	8.4nm,0.8s,mb4.6,baz=112,slow=14,SNR=6.5						
MAJO	**Matsushiro**	**42.60**	**349**	*eP*	**P**	**01 21 06.1**	**-4.1**
	20nm,1.6s,mb4.6						
RPZ	**Rata Peaks**	**43.55**	**155**	P	**P**	**01 21 18.1**	**+0.4**
	9.7nm,0.7s,mb4.7,baz=238,slow=3.7,SNR=7.6						
SSE	**Sheshan**	**43.98**	**327**	⇓P	**P**	**01 21 23.3**	**+1.9**
SSE				AMB	AMB		
	comp=Z,41nm,0.7s,mb5.3						
SSE				AMB	AMB		
	comp=Z,48nm,5.2s						
NJ2	**Nanjing**	**45.99**	**326**	*eP*	**P**	**01 21 39.0**	**+1.7**
NJ2				AP	pP	01 22 07.0	+1.7
NJ2				XP	sP	01 22 21.3	+2.3
NJ2				PP	PP	01 23 30.0	+3.0
NJ2				S	**S**	**01 28 14.0**	**+1.8**
NJ2				XS		01 29 05.0	
NJ2				SCS	ScS	01 31 17.0	-0.8
NJ2				SS	SS	01 31 34.0	+2.0
NJ2				AMB	AMB		
	comp=Z,50nm,1.1s,mb5.2						
NJ2				LR	LR		
	comp=N,160nm,23.4s						
NJ2				LR	LR		
	comp=E,280nm,24.0s						
NJ2				LR	LR		
	comp=Z,2μm,19.0s						
ENH	**Enshi**	**50.60**	**317**	*eP*	**P**	**01 22 09.9**	**-3.1**
	comp=Z,6.4nm,0.8s,mb4.7						
MDJ	**Mudanjiang**	**52.27**	**344**	P	**P**	**01 22 25.0**	**-0.4**
MDJ				AMB	AMB		
	comp=Z,5.0nm,1.0s,mb4.5						
MDJ				AMB	AMB		
	comp=Z,52nm,5.0s						
KMI	**Kunming**	**52.76**	**307**	*eP*	**P**	**01 22 33.3**	**+4.0**
KMI				AMB	AMB		
	comp=Z,12nm,0.7s,mb5.0						
KMI				AMB	AMB		
	comp=Z,160nm,6.8s						
CN2	**Changchun**	**52.79**	**340**	*eP*	**P**	**01 22 30.3**	**+1.0**
BJT	**Baijiatuan**	**53.47**	**331**	*eP*	**P**	**01 22 34.0**	**-0.3**
	comp=Z,8.9nm,0.9s,mb4.8						
HIA	**Hailar**	**59.49**	**340**	*eP*	**P**	**01 23 16.4**	**-0.6**
	comp=Z,13nm,0.9s,mb5.0						
GTA	**Gaotai**	**62.40**	**320**	*eP*	**P**	**01 23 37.8**	**+1.1**
GTA				AMB	AMB		
	comp=Z,8.0nm,0.7s,mb4.9						
ULAN	**Ulaanbaatar**	**63.69**	**331**	*eP*	**P**	**01 23 45.4**	**+0.3**
	comp=Z,8.5nm,0.8s,mb4.6						
SONM	**Songino Array**	**63.99**	**331**	P	**P**	**01 23 47.4**	**+0.4**
	comp=Z,3.7nm,0.6s,mb4.4,baz=152,slow=6.0,SNR=22						
VNDA	**Vanda**	**72.44**	**177**	P	**P**	**01 24 38.5**	**-0.4**
	comp=Z,5.2nm,0.7s,mb4.5,baz=329,slow=6.8,SNR=36						
VNDA	**Vanda**	**72.44**	**177**	*eP*	**P**	**01 24 38.4**	**-0.4**
	comp=Z,3.9nm,0.8s,mb4.3						
WMQ	**Urumqi**	**72.45**	**319**	*eP*	**P**	**01 24 39.3**	**-0.2**
WMQ				AP	pP	01 25 10.5	+0.7
WMQ				XP	sP	01 25 24.3	+1.4
WMQ				PP	PP	01 27 23.8	+0.1
WMQ				AMB	AMB		
	comp=Z,8.0nm,1.4s,mb4.4						
WMQ				AMB	AMB		
	comp=Z,35nm,4.8s						
SBA	**Scott Base**	**73.08**	**176**	P	**P**	**01 24 42.6**	**+0.1**
	comp=Z,3.5nm,0.9s,mb4.2						
MKAR	**Makanchi Array**	**77.15**	**320**	P	**P**	**01 25 05.8**	**-0.5**
	comp=Z,0.7nm,0.5s,mb3.7,baz=100,slow=8.8,SNR=12						
TIXI	**Tiksi**	**77.89**	**354**	*eP*	**P**	**01 25 08.9**	**-0.9**
	comp=Z,5.4nm,0.9s,mb4.3						
ZAL	**Zalesovo**	**78.62**	**328**	P	**P**	**01 25 13.2**	**-1.0**
	comp=Z,2.1nm,0.4s,mb4.3,baz=270,slow=4.4,SNR=6.4						
KURK	**Kurchatov**	**80.84**	**323**	*eP*	**P**	**01 25 25.6**	**-0.6**
MAW	**Mawson**	**82.78**	**203**	P	**P**	**01 25 35.3**	**-0.6**
	comp=Z,3.0nm,0.6s,mb4.3,baz=95,slow=7.5,SNR=11						
MAW	**Mawson**	**82.78**	**203**	*eP*	**P**	**01 25 34.9**	**-1.0**
	comp=Z,4.3nm,0.7s,mb4.4						
MCK	**McKinley**	**83.69**	**24**	*eP*	**P**	**01 25 39.8**	**-0.7**
	comp=Z,4.6nm,1.1s,mb4.2						
QSPA	**South Pole Qui**	**84.50**	**180**	*eP*	**P**	**01 25 44.1**	**-0.1**
	comp=Z,7.5nm,0.9s,mb4.6						
COLA	**College**	**84.61**	**23**	P	**P**	**01 25 45.0**	**0.0**
	comp=Z,5.5nm,0.6s,mb4.7						
ILAR	**Eielson Array**	**84.95**	**23**	P	**P**	**01 25 46.5**	**-0.2**
	comp=Z,3.3nm,0.7s,mb4.4,baz=257,slow=5.0,SNR=38						
ILAR				pP	pP	01 26 20.7	+2.8
	comp=Z,1.6nm,0.7s,baz=258,slow=4.7,SNR=5.5						
BRVK	**Borovoye**	**86.47**	**324**	P	**P**	**01 25 53.4**	**-1.0**
ZRNK	**Zerenda**	**87.19**	**324**	*eP*	**P**	**01 25 56.4**	**-1.6**
INK	**Inuvik**	**91.12**	**21**	P	**P**	**01 26 15.1**	**-1.0**
	comp=Z,3.3nm,1.0s,mb4.4,baz=235,slow=13,SNR=4.2						
INK	**Inuvik**	**91.12**	**21**	*eP*	**P**	**01 26 12.4**	**-3.7**
	comp=Z,4.4nm,1.2s,mb4.5						
SYO	**Syowa Base**	**91.13**	**200**	⇑P	**P**	**01 26 17.9**	**+1.7**
SYO	**Syowa Base**	**91.13**	**200**	⇑*eP*	**P**	**01 26 17.9**	**+1.7**
NVAR	**Mina Array Bea**	**96.95**	**52**	P	**P**	**01 26 44.7**	**+1.2**
	comp=Z,0.5nm,0.6s,mb4.1,baz=257,slow=12,SNR=2.8						
YKA	**Yellowknife Ar**	**98.65**	**28**	P	**P**	**01 26 50.9**	**+0.3**
	comp=Z,0.4nm,0.8s,mb4.0,baz=274,slow=4.8,SNR=8.3						
YKA				pP	pP	01 27 26.0	+3.8
	comp=Z,0.2nm,0.7s,baz=275,slow=4.9,SNR=3.5						
PDAR	**Pinedale Array**	**103.48**	**47**	Pdiff	Pdif	01 27 13.4	+0.8
	comp=Z,0.5nm,0.8s,baz=270,slow=1.8,SNR=3.5						
GERES	**GERESS Array B**	**121.53**	**326**	PKP	PKPdf	01 32 04.2	+0.5
	comp=Z,0.9nm,0.6s,baz=90,slow=1.3,SNR=11						
SCHQ	**Schefferville**	**123.71**	**23**	PKP	PKPdf	01 32 07.5	-0.3
	comp=Z,2.8nm,0.9s,baz=198,slow=6.4,SNR=3.8						
TSUM	**Tsumeb**	**124.60**	**242**	PKP	PKPdf	01 32 12.3	+1.9
	comp=Z,1.2nm,0.9s,baz=100,slow=4.8,SNR=3.2						
LPAZ	**La Paz**	**138.99**	**122**	PKP	PKPdf	01 32 40.5	+2.9
	comp=Z,0.7nm,0.6s,baz=210,slow=3.0,SNR=3.9						
SDV	**Santo Domingo**	**142.41**	**83**	PKhKP		01 32 41.9	
	comp=Z,3.6nm,0.7s,baz=274,slow=8.2,SNR=4.0						
SJG	**San Juan**	**145.18**	**66**	PKPbc	PKPbc	01 32 49.3	+0.4
	comp=Z,7.4nm,0.5s,baz=353,slow=21,SNR=3.2						
DBIC	**Dimbokro**	**152.09**	**274**	PKPbc	PKPdf	01 33 07.2	+7.7
	comp=Z,2.0nm,0.7s,baz=138,slow=20,SNR=2.4						
BDFB	**Brasilia**	**154.24**	**145**	PKPbc	PKPdf	01 33 11.7	+9.3
	comp=Z,3.1nm,0.9s,baz=104,slow=9.7,SNR=4.0						

*IDC **27** 01:25:36.4±1.2,2.49N×98.51E, mb3.8/10, mb1 4.0/10, mb1mx3.8/20, Error ellipse: s-maj=93.9km s-min=17.1km az=48.0*
*NEIC **27** 01:25:48.6±2.3,2.30N×98.45E, h104km±20km, mb4.2/2, Error ellipse: s-maj=23.0km s-min=13.3km az=50.0*

ISC 27 01:25:48.1±2.7, **2.3N**±0.1×**98.5E**±0.2, **h116**km±23km, **n17,** σ1≦**16/16, mb3.8**/12, **1D, Northern Sumatera**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IPM	**Ipoh**	**3.38**	**48**	⇓*eP*	**P**	**01 26 40.8**	**+0.5**
	70nm,0.6s						
DGAR	**Diego Garcia**	**27.72**	**249**	P	**P**	**01 31 26.0**	**-2.0**
FITZ	**Fitzroy Crossi**	**33.58**	**128**	P	**P**	**01 32 19.6**	**+0.2**
	4.0nm,0.9s,mb4.2,baz=305,slow=4.8,SNR=3.6						
WRA	**Warramunga Arr**	**41.56**	**124**	P	**P**	**01 33 25.4**	**-0.8**
	1.9nm,0.5s,mb4.1,baz=302,slow=9.2,SNR=8.2						
WRAB	**Tennant Creek**	**41.57**	**124**	*eP*	**P**	**01 33 25.6**	**-0.7**
	5.9nm,0.5s,mb4.6						
ASAR	**Alice Springs**	**43.07**	**129**	P	**P**	**01 33 40.0**	**+1.5**
	0.9nm,0.7s,mb3.6,baz=311,slow=8.2,SNR=9.4						
MKAR	**Makanchi Array**	**46.48**	**345**	P	**P**	**01 34 05.1**	**-0.3**
	0.4nm,0.5s,mb3.4,baz=150,slow=8.4,SNR=6.6						
MDJ	**Mudanjiang**	**50.26**	**29**	*eP*	**P**	**01 34 32.5**	**-2.1**
BVAR	**Borovoye Array**	**55.63**	**340**	P	**P**	**01 35 12.8**	**-1.5**
	0.9nm,0.7s,mb3.9,baz=138,slow=8.8,SNR=4.7						
BRTR	**Keskin Array B**	**69.32**	**312**	P	**P**	**01 36 45.7**	**+0.5**
	0.6nm,0.8s,mb3.5,baz=127,slow=7.2,SNR=4.1						
LBTB	**Lobatse**	**75.54**	**244**	*eP*	**P**	**01 37 27.6**	**+5.4**
	1.5nm,0.8s,mb3.8						
FINES	**FINESS Array B**	**79.60**	**332**	P	**P**	**01 37 44.4**	**+0.6**
	0.9nm,0.4s,mb3.9,baz=108,slow=6.7,SNR=15						
FINES	**FINESS Array B**	**79.60**	**332**	P	**P**	**01 37 44.4**	**+0.6**
ARCES	**ARCESS Array B**	**81.92**	**340**	P	**P**	**01 37 56.1**	**+0.3**
	1.1nm,1.0s,mb3.6,baz=90,slow=4.9,SNR=6.1						
GERES	**GERESS Array B**	**84.82**	**319**	P	**P**	**01 38 12.9**	**+2.0**
	0.1nm,0.3s,mb3.2,baz=101,slow=5.0,SNR=3.1						
NOA	**NORSAR Array B**	**86.65**	**331**	P	**P**	**01 38 20.8**	**+1.2**
	0.2nm,0.7s,mb3.1,baz=84,slow=5.4,SNR=2.5						
ULM	**Lac du Bonnet**	**126.19**	**11**	PKP	PKPdf	01 44 41.1	+4.0
	2.3nm,0.6s,slow=7.1,SNR=3.1						

*IDC **27** 01:59:42.7±0.8,30.88N×141.95E, mb3.7/9, mb1 3.8/11, mb1mx3.8/23, ML3.3/2, MS2.8/1, Ms1 2.8/1, ms1mx2.4/32, Error ellipse: s-maj=28.6km s-min=17.8km az=83.0*
*NEIC **27** 01:59:44.3±0.6, 30.85N×142.00E, h10km, Error ellipse: s-maj=18.4km s-min=10.7km az=72.0*

ISC 27 01:59:44.1±3.1, **30.84N**±0.06×**141.8E**±0.2, **h22**km±23km, **n16,** σ0≦**99/17, mb3.6**/9, **Southeast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHJ	**Hachijo jima 2**	**2.87**	**323**	Pn	**Pn**	**02 00 30.1**	**+0.5**
	6.0nm,0.3s,baz=286,slow=20,SNR=2.0						
JHJ				Sn	**Sn**	**02 01 02.6**	**-1.2**
	12nm,0.3s,baz=59,slow=21,SNR=2.7						
CBIJ	**Chichi jima**	**3.74**	**175**	Pn	**Pn**	**02 00 43.0**	**+0.9**
	4.5nm,0.3s,baz=300,slow=20,SNR=4.9						
CBIJ				Sn	**Sn**	**02 01 24.7**	**-1.3**
	6.5nm,0.3s,baz=292,slow=19,SNR=3.3						
MAJO	**Matsushiro**	**6.44**	**333**	*e*Pn	**Pn**	**02 01 19.9**	**-0.4**
MAT	**Matsushiro**	**6.44**	**333**	P	**Pn**	**02 01 20.1**	**-0.1**
MAT	**Matsushiro**	**6.44**	**333**	*eP*	**Pn**	**02 01 20.0**	**-0.2**
	6.7nm,0.6s						
ASAJ	**Asahikawa**	**13.27**	**2**	LR	LR	02 08 48.1	
	comp=Z,37nm,20.0s,baz=43,slow=41						
SONM	**Songino Array**	**31.89**	**312**	P	**P**	**02 06 10.7**	**+0.7**
	1.1nm,0.9s,mb3.7,baz=121,slow=8.4,SNR=4.0						

TAU	**Tasmania Unive**	**13.88**	**1**	*e*P		**P**	**02 22 13.7**	**-0.5**
	280nm,1.1s								
TAU				*e*			02 22 21.8		
TOO	**Toolangi**	**19.25**	**356**	⇑*i*P		**P**	**02 23 21.2**	**-1.1**
	83nm,1.3s								
TOO				*i* S		**S**	**02 26 57.0**	**+3.5**
CASY	**Casey**	**19.57**	**226**	*e*P		**P**	**02 23 25.2**	**-0.6**
RPZ	**Rata Peaks**	**19.97**	**59**	P		**P**	**02 23 30.6**	**+0.1**
	26nm,1.1s,baz=214,slow=7.3,SNR=3.0								
RPZ				S		**S**	**02 27 18.3**	**+8.9**
	30nm,1.4s,baz=343,slow=19,SNR=2.1								
RPZ				LR	LR		02 29 25.6		
	comp=Z,7μm,19.6s,baz=219,slow=31								
VNDA	**Vanda**	**21.46**	**171**	P		**P**	**02 23 44.2**	**-1.3**
	10nm,1.1s,mb4.1,baz=344,slow=11,SNR=18								
VNDA				S		**S**	**02 27 44.6**	**+6.1**
	1.5nm,1.0s,baz=338,slow=11,SNR=1.7								
VNDA	**Vanda**	**21.46**	**171**	P		**P**	**02 23 44.3**	**-1.3**
VNDA				S		**S**	**02 27 44.6**	**+6.0**
VNDA				pmax	pmax				
	comp=Z,10.0nm,1.1s								
VNDA				smax					
	comp=Z,2.0nm,1.0s								
VNDA	**Vanda**	**21.46**	**171**	*e*P		**P**	**02 23 43.7**	**-1.8**
	comp=Z,69nm,1.7s,mb4.7								
VNDA				LR	LR				
	comp=Z,681nm,22.0s,MS4.0								
CNB	**Canberra Magne**	**21.52**	**5**	*e*P		**P**	**02 23 45.9**	**-0.5**
	comp=Z,65nm,0.9s,mb5.1								
SBA	**Scott Base**	**22.22**	**169**	*e*P		**P**	**02 23 51.4**	**-1.7**
	comp=Z,62nm,1.3s,mb4.9								
SBA				LR	LR				
	comp=Z,938nm,20.0s,MS4.2								
STKA	**Stephens Creek**	**25.19**	**349**	⇓*i*P		**P**	**02 24 23.1**	**+0.8**
	comp=Z,57nm,1.4s,mb4.9								
STKA	**Stephens Creek**	**25.19**	**349**	P		**P**	**02 24 23.3**	**+1.0**
	comp=Z,49nm,0.8s,mb5.1,baz=164,slow=9.7,SNR=38								
STKA				S		**S**	**02 28 53.2**	**+8.5**
	comp=Z,4.0nm,1.1s,baz=78,slow=19,SNR=2.2								
STKA				LR	LR		02 32 16.7		
	comp=Z,2μm,18.1s,MS4.7,baz=346,slow=32								
ARMA	**Armidale**	**26.53**	**9**	⇓*i*P		**P**	**02 24 34.7**	**-0.1**
MIR	**Mirnyy**	**26.60**	**226**	⇓*e*P		**P**	**02 24 43.0**	**+7.9**
MIR				*e*S		**S**	**02 29 26.0**	**+18**
MIR				pmax	pmax				
	comp=Z,50nm,1.8s,mb4.7								
MIR				smax					
	comp=E,1μm,8.0s								
MIR				smax					
	comp=N,700nm,7.0s								
MIR				MLR	MLR				
	comp=Z,2μm,14.0s,MS4.9								
URZ	**Urewera**	**27.09**	**60**	P		**P**	**02 24 41.3**	**+1.4**
	comp=Z,16nm,0.8s,mb4.6,baz=222,slow=4.1,SNR=8.3								
URZ				LR	LR		02 35 03.9		
	comp=Z,3μm,18.0s,MS4.8,baz=210,slow=36								
FORT	**Forrest**	**29.21**	**325**	*e*P		**P**	**02 24 57.8**	**-1.3**
	comp=Z,143nm,0.8s,mb5.8								
NWAO	**Narrogin (SRO)**	**31.47**	**307**	LR	LR		02 35 05.3		
	comp=Z,4μm,19.2s,MS5.1,baz=157,slow=31								
KLBR	**Kellerberrin**	**32.38**	**309**	*e*P		**P**	**02 25 26.9**	**-0.2**
	comp=Z,61nm,1.5s,mb5.2								
QSPA	**South Pole Qui**	**33.33**	**180**	*e*P		**P**	**02 25 35.3**	**+0.5**
	comp=Z,21nm,1.2s,mb4.9								
AS12	**Alice Springs**	**34.46**	**338**	*e*P		**P**	**02 25 44.2**	**-1.0**
	comp=Z,34nm,1.2s,mb5.2								
ASAR	**Alice Springs**	**34.46**	**338**	P		**P**	**02 25 44.7**	**-0.5**
	comp=Z,12nm,0.7s,mb4.9,baz=166,slow=9.7,SNR=85								
ASAR				PcP	PcP		02 28 18.6	-2.1	
	comp=Z,8.3nm,1.1s,baz=157,slow=3.4,SNR=4.8								
ASAR				LR	LR		02 38 27.7		
	comp=Z,377nm,19.9s,MS4.1,baz=163,slow=34								
CTA	**Charters Tower**	**36.64**	**359**	*e*P		**P**	**02 26 03.3**	**-0.4**
	comp=Z,19nm,0.8s,mb5.0								
CTAO	**Charters Tower**	**36.64**	**359**	*e*P		**P**	**02 26 02.7**	**-1.0**
	comp=Z,37nm,0.9s,mb5.2								
CTAO				LR	LR				
	comp=Z,5μm,19.0s,MS5.3								
MAW	**Mawson**	**37.62**	**219**	*e*P		**P**	**02 26 13.7**	**+2.3**
	comp=Z,3.5nm,0.6s,mb4.3								
MAW	**Mawson**	**37.62**	**219**	LR	LR		02 41 16.2		
	comp=Z,2μm,18.5s,MS5.0,baz=89,slow=36								
WB2	**Warramunga Arr**	**37.99**	**340**	⇓*i*P		**P**	**02 26 14.4**	**-0.7**
WB2				*e*			02 27 39.2		
WRA	**Warramunga Arr**	**38.00**	**340**	P		**P**	**02 26 14.5**	**-0.6**
	comp=Z,23nm,0.7s,mb5.0,baz=166,slow=7.6,SNR=145								
WRA				PP	PP		02 27 39.0	-6.0	
	comp=Z,8.4nm,1.1s,baz=161,slow=10,SNR=3.6								
WRA				PcP	PcP		02 28 29.1	-2.1	
	comp=Z,3.4nm,0.8s,baz=174,slow=2.3,SNR=5.3								
WRA				S		**S**	**02 32 08.0**	**+1.1**
	comp=Z,0.5nm,0.8s,baz=166,slow=13,SNR=3.5								
WRA				LR	LR		02 39 29.3		
	comp=Z,761nm,19.4s,MS4.5,baz=150,slow=32								
WRA	**Warramunga Arr**	**38.00**	**340**	P		**P**	**02 26 14.5**	**-0.6**
WRA							02 28 29.1		
WRA				S		**S**	**02 32 08.0**	**+1.1**
WRA				pmax	pmax				
	comp=Z,23nm,0.7s								
WRA				pmax	pmax				
	comp=Z,8.0nm,1.2s								
WRA				pmax	pmax				
	comp=Z,3.0nm,0.8s								
WRA				smax					
	comp=Z,1.0nm,0.8s								
WRAB	**Tennant Creek**	**38.00**	**340**	*e*P		**P**	**02 26 14.3**	**-0.8**
	comp=Z,86nm,0.7s,mb5.6								
WRAB				LR	LR				
	comp=Z,1μm,19.0s,MS4.8								
FITZ	**Fitzroy Crossi**	**41.85**	**328**	*e*P		**P**	**02 26 47.2**	**+0.2**
	comp=Z,19nm,1.1s,mb4.6								
SYO	**Syowa Base**	**44.04**	**210**	⇑sP		sP	02 27 12.0	+3.6	
KAKA	**Kakadu**	**45.42**	**340**	⇓*i*P		**P**	**02 27 15.3**	**-0.7**
	comp=Z,29nm,0.8s,mb5.2								
PMG	**Port Moresby**	**47.26**	**0**	*e*P		**P**	**02 27 30.5**	**0.0**
	comp=Z,26nm,0.9s,mb5.2								
PMG				LR	LR				
	comp=Z,3μm,19.0s,MS5.2								
MAIT	**Maitri**	**48.87**	**198**	*e*P		**P**	**02 27 42.6**	**+0.3**
MAIT				*e*PcP	PcP		02 29 04.7	-2.5	
MAIT				*e*PP	PP		02 29 34.9	-0.8	
SNAA	**Sanae**	**50.12**	**192**	*e*P		**P**	**02 27 51.3**	**-0.7**
VNA3	**Neumayer Olymp**	**51.23**	**189**	*e*		**P**	**02 28 00.6**	**+0.3**
VNA3	**Neumayer Olymp**	**51.23**	**189**	*e*		**P**	**02 28 02.7**	**+2.4**
VNA3	**Neumayer Olymp**	**51.23**	**189**	⇑*i*P		**P**	**02 27 58.5**	**-1.8**
VNA3				*e*		pP	02 28 00.6	-2.8	
VNA3				*e*		pP	02 28 02.7	-0.7	
VNA3				*e*			02 29 10.0		
VNA2	**Neumayer--Watz**	**51.32**	**190**	*e*		**P**	**02 28 02.0**	**+1.0**
VNA2	**Neumayer--Watz**	**51.32**	**190**	*e*		**P**	**02 28 04.0**	**+3.0**
VNA2	**Neumayer--Watz**	**51.32**	**190**	⇑*i*P		**P**	**02 27 59.8**	**-1.2**
VNA2				*e*		pP	02 28 02.0	-2.1	
VNA2				*e*		pP	02 28 04.0	-0.1	
VNA2				*e*			02 29 13.2		
VNA1	**Neumayer--Stat**	**51.67**	**190**	*e*		**P**	**02 28 02.5**	**-1.2**
VNA1	**Neumayer--Stat**	**51.67**	**190**	*e*		**P**	**02 28 04.7**	**+1.0**
VNA1	**Neumayer--Stat**	**51.67**	**190**	⇓*i*P		**P**	**02 28 00.1**	**-3.6**
VNA1				*e*		pP	02 28 02.5	-4.2	
VNA1				*e*		pP	02 28 04.7	-2.0	
VNA1				*e*			02 29 15.8		
SNG	**Songkhla**	**74.21**	**312**	P		**P**	**02 30 33.0**	**-1.1**
SUR	**Sutherland**	**80.28**	**224**	*e*P		**P**	**02 31 09.7**	**+2.2**
	comp=Z,17nm,0.9s,mb5.0								
SUR				*e*			02 31 17.1		
SUR				LR	LR				
	comp=Z,907nm,19.0s,MS5.1								
QIZ	**Qiongzhong**	**81.74**	**325**	P		**P**	**02 31 17.8**	**+2.4**
QIZ				S		S	02 41 27.3	+0.4	
QIZ				XS			02 41 42.0		
QIZ				SS		SS	02 46 46.5	-1.4	
QIZ				LR	LR				
	comp=E,260nm,18.4s								
QIZ				LR	LR				
	comp=Z,331nm,23.4s,MS4.6								
BDT	**Bhumibol Dam**	**83.97**	**314**	P		**P**	**02 31 27.5**	**+0.6**
LBTB	**Lobatse**	**84.86**	**231**	P		**P**	**02 31 28.1**	**-3.0**
	comp=Z,11nm,1.4s,mb4.8								
LBTB				LR	LR				
	comp=Z,222nm,20.0s,MS4.5								
CMAR	**Chiang Mai Arr**	**85.09**	**315**	P		**P**	**02 31 33.9**	**+1.4**
	comp=Z,4.0nm,0.9s,mb4.5,baz=180,slow=5.1,SNR=12								
CMAR				LR	LR		03 09 49.6		
	comp=Z,459nm,18.6s,MS4.9,baz=165,slow=36								
CMAR	**Chiang Mai Arr**	**85.09**	**315**	P		**P**	**02 31 33.9**	**+1.4**
CMAR				pmax	pmax				
	comp=Z,4.0nm,0.9s								
CMAR				MLR	MLR				
	comp=Z,459nm,18.6s								
GYA	**Guiyang**	**89.69**	**324**	P		**P**	**02 31 55.5**	**+0.9**
GYA				SKS	SKS		02 42 28.3	+0.2	
GYA				S	S		02 42 48.3	+4.5	
GYA				AMB	AMB				
	comp=Z,10.0nm,0.7s,mb5.2								
GYA				LR	LR				
	comp=N,410nm,22.2s,MS5.0								
GYA				LR	LR				
	comp=E,430nm,19.5s,MS5.0								
GYA				LR	LR				
	comp=Z,450nm,19.8s,MS4.9								
KMI	**Kunming**	**89.77**	**321**	⇑*e*P		**P**	**02 32 00.3**	**+5.3**
KMI				AP	pP		02 32 03.8	+5.6	
KMI				SKS	SKS		02 42 25.0	-3.6	
KMI				S	S		02 42 49.0	+4.4	
KMI				XS			02 42 54.8		
KMI				SS	SS		02 48 53.5	+8.3	
KMI				AMB	AMB				
	comp=Z,8.0nm,1.1s,mb5.0								
KMI				AMB	AMB				
	comp=Z,107nm,3.8s								
KMI				LR	LR				
	comp=N,549nm,21.8s,MS5.0								
KMI				LR	LR				
	comp=E,332nm,24.6s,MS5.0								
KMI				LR	LR				
	comp=Z,682nm,19.2s								
NJ2	**Nanjing**	**91.68**	**336**	*e*P		**P**	**02 32 04.8**	**+1.1**
NJ2				AP	pP		02 32 14.5	+7.6	
NJ2				XP	sP		02 32 19.5	+12	
NJ2				S	S		02 43 03.0	+1.6	
NJ2				XS			02 43 20.0		
NJ2				AMB	AMB				
	comp=Z,20nm,0.8s,mb5.5								
NJ2				LR	LR				
	comp=N,150nm,18.1s,MS4.7								
NJ2				LR	LR				
	comp=E,250nm,21.6s,MS4.7								
NJ2				LR	LR				
	comp=Z,480nm,15.4s								
MAJO	**Matsushiro**	**93.27**	**353**	PFAKE			02 32 20.0	+9.2	
MAJO				LR	LR				
	comp=Z,348nm,19.4s,MS4.8,baz=216,slow=33								
CPUP	**Villa Florida**	**94.67**	**158**	LR	LR		03 10 45.3		
	comp=Z,348nm,19.4s,MS4.8,baz=216,slow=33								
LVC	**Limon Verde**	**95.28**	**147**	PFAKE			02 32 30.0	+10	
LVC				LR	LR				
	comp=Z,610nm,20.0s,MS5.1								
KMBO	**Kilima Mbogo**	**99.85**	**253**	LR	LR		03 10 24.9		
	comp=Z,247nm,21.5s,MS4.7,baz=281,slow=31								
KMBO	**Kilima Mbogo**	**99.85**	**253**	PFAKE			02 32 50.0	+8.6	
KMBO				LR	LR				
	comp=Z,180nm,21.0s,MS4.5								
LPAZ	**La Paz**	**101.47**	**146**	PFAKE			02 33 00.0	+11	
LPAZ				LR	LR				
	comp=Z,168nm,20.0s,MS4.5								
CN2	**Changchun**	**101.86**	**344**	*e*P		P	02 32 53.5	+3.8	
MDJ	**Mudanjiang**	**102.09**	**347**	P		Pdif	02 32 52.0	+1.2	
MDJ				AMB	AMB				
	comp=Z,3.0nm,0.6s								
MDJ				AMB	AMB				
	comp=Z,45nm,5.4s								
MDJ	**Mudanjiang**	**102.09**	**347**	PFAKE			02 33 00.0	+9.2	
MDJ				LR	LR				
	comp=Z,229nm,19.0s,MS4.7								
ULN	**Ulaanbaatar**	**109.49**	**333**	PFAKE			02 37 40.0		
ULN				LR	LR				
	comp=Z,309nm,20.0s,MS4.9								
SONM	**Songino Array**	**109.63**	**332**	PKiKP			02 37 26.9		
	comp=Z,0.6nm,0.7s,baz=90,slow=1.4,SNR=4.1								
WMQ	**Urumqi**	**111.93**	**318**	PKP	PKPdf		02 37 31.8	-1.0	
WMQ				XPKP			02 37 41.5		
WMQ				PP	PP		02 38 20.0	+2.4	
WMQ				PKS	PKS		02 41 06.8	+1.2	
WMQ				SKS	SKS		02 44 42.8	+26	
WMQ				SKKS			02 45 09.0		
WMQ				PP	PP				
	comp=Z,14nm,10.1s								
WMQ				LR	LR				
	comp=N,187nm,28.1s,MS4.6								
WMQ				LR	LR				
	comp=E,158nm,29.0s,MS4.6								
WMQ				LR	LR				
	comp=Z,291nm,28.7s,MS4.7								
MKAR	**Makanchi Array**	**116.48**	**316**	PKP	PKPdf		02 37 38.6	-3.1	
	comp=Z,3.3nm,1.2s,baz=117,slow=2.7,SNR=5.6								
MKAR	**Makanchi Array**	**116.48**	**316**	PKIKP	PKPdf		02 37 38.6	-3.2	
MKAR				pmax	pmax				
	comp=Z,3.0nm,1.2s								
JTS	**JuntasAbangare**	**118.75**	**118**	PFAKE			02 38 00.0	+13	
JTS				LR	LR				
	comp=Z,42nm,19.0s,MS4.1								
YAK	**Yakutsk**	**119.25**	**351**	*i* PKIKP	PKPdf		02 37 46.5	-0.2	
YAK				pmax	pmax				
	comp=Z,12nm,0.5s								
YAK				MLR	MLR				
	comp=Z,100nm,17.0s,MS4.5								
NVAR	**Mina Array Bea**	**123.44**	**70**	PKP	PKPdf		02 37 54.4	-1.0	
	comp=Z,0.8nm,0.8s,baz=182,slow=3.1,SNR=6.5								
NVAR	**Mina Array Bea**	**123.44**	**70**	PKP	PKPdf		02 37 54.4	-1.0	
YBH	**Yreka Blue Hor**	**123.68**	**64**	PKP	PKPdf		02 37 54.0	-1.8	
	comp=Z,1.1nm,0.9s,baz=241,slow=6.3,SNR=2.5								
YBH	**Yreka Blue Hor**	**123.68**	**64**	PKIKP	PKPdf		02 37 54.0	-1.8	
YBH				pmax	pmax				
	comp=Z,1.0nm,0.9s								
YBH	**Yreka Blue Hor**	**123.68**	**64**	*e*PKPdf	PKPdf		02 37 54.0	-1.9	
HUMO	**Hull Mountain**	**124.22**	**63**	*e*PKPdf	PKPdf		02 37 55.1	-1.7	
LTX	**Lajitas**	**124.39**	**88**	PFAKE			02 38 10.0	+12	
LTX				LR	LR				
	comp=Z,352nm,21.0s,MS5.0								
MNTX	**Cornudas Mount**	**125.26**	**85**	*e*PKPdf	PKPdf		02 37 55.9	-3.2	
BILL	**Bilibino**	**125.30**	**9**	*i* PKIKP	PKPdf		02 38 00.5	+2.4	
BILL				pmax	pmax				
	comp=Z,9.0nm,1.6s								
BILL				MLR	MLR				
	comp=Z,200nm,21.0s,MS4.8								
DBIC	**Dimbokro**	**125.39**	**215**	PFAKE			02 38 10.0	+10	
DBIC				LR	LR				
	comp=Z,221nm,19.0s,MS4.8								
BVAR	**Borovoye Array**	**126.10**	**313**	PKP	PKPdf		02 37 57.2	-2.8	
	comp=Z,1.9nm,0.9s,baz=146,slow=5.3,SNR=7.5								
ZRNK	**Zerenda**	**126.60**	**312**	*e*PKPdf	PKPdf		02 37 58.5	-2.4	
MVU	**Marysvale**	**126.68**	**74**	*e*PKPdf	PKPdf		02 37 57.5	-4.0	
MSU	**Marysvale**	**126.70**	**74**	*e*PKPdf	PKPdf		02 38 01.1	-0.4	
ANMO	**Albuquerque**	**127.13**	**81**	PFAKE			02 38 10.0	+7.5	
ANMO				LR	LR				
	comp=Z,381nm,20.0s,MS5.1								
NLU	**North Lily Min**	**127.81**	**73**	*e*PKPdf	PKPdf		02 38 01.1	-2.6	
NLU				*e*			02 38 12.4		
PV10	**Paradox Valley**	**128.27**	**76**	*e*PKPdf	PKPdf		02 38 03.5	-1.2	
PV01	**Paradox Valley**	**128.35**	**77**	*e*PKPdf	PKPdf		02 38 01.0	-3.8	
DAU	**Daniels Canyon**	**128.57**	**73**	*e*PKPdf	PKPdf		02 38 04.0	-1.2	
TIXI	**Tiksi**	**128.78**	**353**	*i* PKIKP	PKPdf		02 38 02.2	-2.6	
TIXI				pmax	pmax				
	comp=Z,4.0nm,1.0s								
HLID	**Hailey**	**129.19**	**68**	PFAKE			02 38 20.0	+14	
HLID				LR	LR				
	comp=Z,261nm,19.0s,MS4.9								
HWUT	**Hardware Ranch**	**129.27**	**72**	*e*PKPdf	PKPdf		02 38 04.9	-1.6	
MCK	**McKinley**	**129.78**	**31**	*e*PKPdf	PKPdf		02 38 03.4	-3.5	
MCK				LR	LR				
	comp=Z,287nm,22.0s,MS4.9								
COLA	**College**	**130.96**	**31**	PFAKE			02 38 20.0	+11	
COLA				LR	LR				
	comp=Z,420nm,21.0s,MS5.1								
ZEI	**Tsey**	**131.13**	**288**	*e*PKIKP	PKPdf		02 38 11.1	+1.1	
PDAR	**Pinedale Array**	**131.15**	**72**	PKP	PKPdf		02 38 07.4	-2.6	
	comp=Z,0.2nm,0.4s,baz=263,slow=7.3,SNR=3.6								
ILAR	**Eielson Array**	**131.16**	**31**	PKP	PKPdf		02 38 07.2	-2.2	
	comp=Z,0.9nm,0.7s,baz=280,slow=3.3,SNR=7.4								
ILAR	**Eielson Array**	**131.16**	**31**	PKIKP	PKPdf		02 38 07.3	-2.1	
ILAR				pmax	pmax				
	comp=Z,1.0nm,0.7s								
WMOK	**Wichita Mounta**	**131.18**	**88**	*e*PKPdf	PKPdf		02 38 08.5	-1.8	
KIV	**Kislovodsk**	**132.59**	**288**	*i* PKIKP	PKPdf		02 38 08.6	-4.1	
KIV				pmax	pmax				
	comp=Z,4.0nm,0.9s								
DAWY	**Dawson**	**132.91**	**35**	*e*PKPdf	PKPdf		02 38 10.6	-2.2	
ARU	**Arti**	**133.37**	**310**	*i* PKIKP	PKPdf		02 38 11.6	-2.1	
ARU				pmax	pmax				
	comp=Z,6.0nm,1.5s								
ARU				MLR	MLR				
	comp=Z,200nm,20.0s,MS4.8								
BRTR	**Keskin Array B**	**134.49**	**278**	PKP	PKPdf		02 38 15.6	-0.7	
	comp=Z,0.5nm,0.8s,baz=45,slow=2.0,SNR=3.5								
RSSD	**Black Hills**	**134.99**	**75**	*e*PKPpre			02 38 14.2		
ANN	**Anapa**	**135.93**	**286**	*i* PKIKP	PKPdf		02 38 16.0	-2.9	
ANN				pmax	pmax				
	comp=Z,46nm,2.1s								
PLAL	**Pickwick Lake**	**137.24**	**96**	*e*PKPpre			02 38 18.3		
YKA	**Yellowknife Ar**	**140.90**	**47**	PKhKP			02 38 18.3		
	comp=Z,0.4nm,0.8s,baz=239,slow=2.8,SNR=10								
FFC	**Flin Flon**	**142.54**	**63**	*e*PKPpre			02 38 24.1		
MLR	**Muntele Rosu**	**142.56**	**278**	PKhKP			02 38 24.0		
	comp=Z,1.8nm,0.7s,baz=177,slow=14,SNR=4.9								
MLR				PKP	PKPdf		02 38 29.1	-1.5	
	comp=Z,2.4nm,0.7s,baz=221,slow=11,SNR=7.0								
MLR	**Muntele Rosu**	**142.56**	**278**	PKHKP			02 38 24.0		
MLR							02 38 29.1		
MLR				pmax	pmax				
	comp=Z,2.0nm,0.7s								
MLR				pmax	pmax				
	comp=Z,2.0nm,0.7s								
OBN	**Obninsk**	**142.61**	**298**	*i* PKIKP	PKPdf		02 38 30.0	-0.4	
OBN				*e*			02 38 34.4		
OBN				pmax	pmax				
	comp=Z,7.0nm,1.1s								
OBN				MLR	MLR				
	comp=Z,100nm,19.0s,MS4.6								
ULM	**Lac du Bonnet**	**143.16**	**73**	PKhKP			02 38 25.4		
	comp=Z,3.2nm,0.7s,baz=225,slow=2.9,SNR=2.7								
VAE	**Valguarnera**	**143.42**	**259**	PKP	PKPdf		02 38 29.0	-3.3	
	comp=Z,11nm,0.9s,baz=76,slow=5.0,SNR=3.3								
AKASG	**Malin Array Be**	**143.93**	**287**	PKhKP			02 38 28.1		
	comp=Z,2.2nm,0.6s,baz=104,slow=2.5,SNR=20								
TDS	**Terranova Siba**	**143.94**	**263**	*e*PKP	PKPdf		02 38 30.4	-2.7	
MGR	**Morigerati**	**144.71**	**263**	*e*PKP	PKPdf		02 38 32.7	-1.8	
NVSS	**Nova Varos 2**	**144.71**	**271**	*e*PKP	PKPdf		02 38 32.5	-1.9	
SGO	**Sicignano**	**145.14**	**263**	*e*PKP	PKPdf		02 38 32.7	-2.5	
MRB1	**Monte Rocchett**	**145.71**	**264**	*e*PKP	PKPdf		02 38 35.2	-1.0	
CII	**Carovilli**	**146.49**	**264**	*e*PKP	PKPdf		02 38 38.5	+1.0	
MNK	**Minsk**	**146.65**	**292**	*e*PKHKP			02 38 35.0		
SDI	**San Donato**	**146.75**	**263**	*e*PKP	PKPdf		02 38 37.0	-0.9	
KWP	**Kalwaria**	**146.80**	**282**	*e*PKP	PKPdf		02 38 37.2	-0.6	
KWP				*e*			02 38 42.8		
KWP				*e*			02 38 46.8		
SSPA	**Standing Stone**	**146.89**	**100**	*e*PKPdf	PKPdf		02 38 37.8	-0.4	
CRVS	**Cervenica-Dubn**	**147.06**	**280**	*i* PKP	PKPdf		02 38 38.9	+0.7	
CRVS				*e*			02 38 46.5		
PSZ	**Piszkesteto**	**147.34**	**277**	*e*PKPbc	PKPdf		02 38 40.5	+1.8	
MNS	**Montasola**	**147.83**	**263**	*e*PKP	PKPdf		02 38 40.2	+0.5	
NIE	**Niedzica**	**147.97**	**280**	*e*PKP	PKPdf		02 38 45.3	+5.6	
VYHS	**Vyhne**	**148.25**	**277**	*i* PKP	PKPdf		02 38 41.5	+1.4	
VYHS				*e*			02 38 46.9		
FCC	**Fort Churchill**	**148.27**	**60**	*e*PKPdf	PKPdf		02 38 39.2	-0.6	
JOF	**Joensuu**	**148.44**	**308**	*ep*	PKPdf		02 38 40.8	+0.8	
	comp=Z,4.9nm,0.7s								
JOF	**Joensuu**	**148.44**	**308**	*e*PKHKP			02 38 40.8		
JOF				pmax	pmax				
	comp=Z,5.0nm,0.7s								
LVZ	**Lovozero**	**148.48**	**318**	*i* PKIKP	PKPdf		02 38 41.5	+1.6	
LVZ				pmax	pmax				
	comp=Z,26nm,1.1s								
LVZ				MLR	MLR				
	comp=Z,300nm,23.0s,MS5.0								
OJC	**Ojcow**	**148.69**	**281**	*e*PKP	PKPdf		02 38 43.0	+2.2	
SUW	**Suwalki**	**148.81**	**289**	*e*PKP	PKPdf		02 38 42.8	+1.9	
SUW				*e*			02 38 46.8		
BINY	**Binghamton**	**149.00**	**99**	*e*PKPbc	PKPdf		02 38 43.2	+1.7	
LJU	**Ljubljana**	**149.17**	**270**	*e*PKPab	PKPab		02 38 45.0	-4.5	
SFI	**Santa Sofia**	**149.29**	**265**	*e*PKP	PKPdf		02 38 46.0	+4.0	
ARSA	**Arzberg**	**149.35**	**273**	⇓*i*PKP	PKPdf		02 38 44.8	+2.9	
OKC	**Ostrava-Krasne**	**149.38**	**279**	*e*PKP	PKPdf		02 38 46.1	+4.2	
VOY	**Vojsko**	**149.51**	**270**	*e*PKPab	PKPab		02 38 45.4	-5.5	
VOY				*e*			02 38 51.5		
MORC	**Moravsky Berou**	**149.68**	**278**	*e*PKPbc	PKPdf		02 38 45.8	+3.4	
PGF	**Pioggiola**	**149.94**	**260**	*e*PKIKP	PKPdf		02 38 46.0	+3.0	
PTCC	**Patocco-Chiusa**	**150.04

VIVF	**Saint-Julien-I**	**153.82**	**259**	*e*PKIKP	PKPdf	02 38 51.2	+2.6
MTLF	**Montolieu**	**154.12**	**254**	*e*PKIKP	PKPdf	02 38 52.6	+3.6
CABF	**La Chapelle**	**154.15**	**264**	*e*PKIKP	PKPdf	02 38 52.9	+3.9
ESDC	**Sonseca Array**	**154.54**	**240**	PKPbc	PKPdf	02 38 57.2	+7.4
	comp=Z,0.4nm,0.6s,baz=159,slow=0.8,SNR=3.6						
ESDC				PKPab	PKPab	02 39 12.4	+0.3
	comp=Z,1.4nm,0.8s,baz=137,slow=2.2,SNR=5.4						
EVO	**Evora**	**155.47**	**233**	*e*PKIKP	PKPdf	02 38 54.0	+3.0
	comp=Z,3.4nm,0.7s						
EVO				*e*R			
	comp=Z,373nm,21.0s						
HFS	**Hagfors**	**155.82**	**298**	PKPab	PKPab	02 39 16.6	-0.4
	comp=Z,1.4nm,0.7s,baz=90,slow=2.9,SNR=3.9						
HFS	**Hagfors**	**155.82**	**298**	PKP2	PKPab	02 39 16.6	-0.4
HFS				pmax	pmax		
	comp=Z,1.0nm,0.7s						
SSF	**Saint Saulge**	**155.84**	**262**	*e*PKIKP	PKPdf	02 38 54.8	+3.6
NB2	**NORSAR Subarra**	**157.19**	**299**	P	PKPab	02 39 22.6	-0.3
	comp=Z,1.6nm,0.8s,baz=96,slow=5.3						
NOA	**NORSAR Array B**	**157.19**	**299**	PKPab	PKPab	02 39 22.1	-0.8
	comp=Z,1.4nm,0.9s,baz=101,slow=5.9,SNR=5.3						
NOA	**NORSAR Array B**	**157.19**	**299**	PKP2	PKPab	02 39 22.1	-0.8
NOA				pmax	pmax		
	comp=Z,1.0nm,0.9s						
DAG	**Danmarks Havn**	**159.28**	**351**	∥ *i*P	PKPab	02 39 29.9	-1.6
	comp=Z,4.0nm,0.6s						
DAG	**Danmarks Havn**	**159.28**	**351**	∥ *i*PKP2	PKPab	02 39 29.9	-1.6
DAG				pmax	pmax		
	comp=Z,4.0nm,0.6s						
SCHQ	**Schefferville**	**160.91**	**81**	PKPab	PKPab	02 39 36.9	-2.1
	comp=Z,1.3nm,0.6s,baz=229,slow=6.4,SNR=4.2						

NEIC ***27*** *02:27:44.1±2.3,51.45N×16.29E,h5km,ML2.7(VIE), ML2.1(BRG),Error ellipse: s-maj=26.4km s-min=9.9km az=222.0*
WAR ***27*** *02:27:45.5,51.45N×16.07E,h1km,Location given by Polkowice mine, origin time based upon KSP*
PRU ***27*** *02:27:46.5,51.38N×16.13E*
ISC 27 02:27:43.5±0.8,51.41N±0.05×16.06E±0.04,n15,σ1§19/30, 1C,Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.58**	**165**	*e*Pg	**Pg**	**02 27 56.9**	**+1.7**
KSP				*e*Sg	**Sg**	**02 28 04.4**	**+1.4**
KSP	**Ksiaz**	**0.58**	**165**	*e*PG	**Pg**	**02 27 57.0**	**+1.8**
KSP				*e*SG	**Sg**	**02 28 06.0**	**+3.0**
UPC	**Upice**	**0.90**	**182**	*e*PG	**Pg**	**02 28 02.9**	**+1.4**
DPC	**Dobruska-Polom**	**1.07**	**171**	*e*PG	**Pg**	**02 28 05.5**	**+0.6**
DPC				*e*SG	**Sg**	**02 28 20.1**	**+0.9**
	6.9nm,0.2s						
PVCC	**Panska Ves**	**1.29**	**227**	*e*PG	**Pg**	**02 28 09.9**	**+0.7**
BRG	**Berggiesshubel**	**1.44**	**249**	*i* Pn	**Pn**	**02 28 11.8**	**+1.0**
BRG				*i* Pg	**Pg**	**02 28 12.5**	**+0.4**
BRG				*i* Sg	**Sg**	**02 28 32.3**	**+1.0**
PRU	**Pruhonice**	**1.72**	**215**	PG	**Pg**	**02 28 16.8**	**-1.0**
PRU				*i* x	x	02 28 19.2	
PRU				*i* x	x	02 28 34.2	
PRU				*e*SG	**Sg**	**02 28 40.5**	**-0.1**
	8.5nm,0.4s						
MORC	**Moravsky Berou**	**1.89**	**149**	*e*Pn	**Pn**	**02 28 16.2**	**-1.1**
MORC				*e*Sn	**Sn**	**02 28 44.1**	**+2.0**
CLL	**Collm**	**1.92**	**268**	*e*PG	**Pg**	**02 28 21.0**	**-0.8**
CLL				*e*SG	**Sg**	**02 28 47.0**	**-0.3**
OKC	**Ostrava-Krasne**	**2.06**	**139**	*e*SG	**Sg**	**02 28 49.6**	**-2.5**
NKC	**Novy Kostel**	**2.57**	**244**	*e*PN	**Pn**	**02 28 27.9**	**+0.8**
NKC				*e*PG	**Pg**	**02 28 33.8**	**-1.0**
NKC				*e*SG	**Sg**	**02 29 09.2**	**+0.1**
OJC	**Ojcow**	**2.66**	**115**	*e*Pg	**Pg**	**02 28 35.6**	**-0.9**
OJC				*e*Sg	**Sg**	**02 29 11.0**	**-0.9**
OJC	**Ojcow**	**2.66**	**115**	*e*PG	**Pg**	**02 28 36.0**	**-0.5**
OJC				*e*SG	**Sg**	**02 29 11.0**	**-0.9**
KHC	**Kasperske Hory**	**2.78**	**216**	*e*PN	**Pn**	**02 28 30.9**	**+0.9**
KHC				*e*PG	**Pg**	**02 28 36.6**	**-2.4**
KHC				*e*SG	**Sg**	**02 29 14.4**	**-1.6**
MOA	**Molln**	**3.75**	**199**	⇑ *i*PN	**Pn**	**02 28 43.9**	**+0.1**
MOA				*i* SG	**Sg**	**02 29 46.5**	**-1.7**
	2.0nm,0.3s						

IDC 27 02:51:21.2±2.5,56.81S×147.54E,mb3.5/4,mb1 3.8/4, mb1mx3.7/8,Error ellipse: s-maj=281.0km s-min=25.4km az=78.0,West of Macquarie Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VNDA	**Vanda**	**21.40**	**172**	P	P	02 56 10.0	-2.2
	0.5nm,0.9s,baz=333,slow=9.0,SNR=2.2						
STKA	**Stephens Creek**	**25.27**	**348**	P	P	02 56 48.4	-1.9
	2.4nm,0.9s,baz=164,slow=7.2,SNR=2.9						
ASAR	**Alice Springs**	**34.57**	**338**	P	P	02 58 11.5	-2.0
	0.5nm,0.8s,baz=164,slow=9.3,SNR=4.8						
WRA	**Warramunga Ar**	**38.10**	**340**	P	P	02 58 41.8	-1.5
	1.3nm,0.7s,baz=167,slow=7.7,SNR=4.9						
FINES	**FINESS Array B**	**150.50**	**304**	PKPbc	PKPdf	03 11 12.1	+2.5
	1.3nm,0.9s,baz=45,slow=11,SNR=3.2						
ARCES	**ARCESS Array B**	**152.18**	**320**	PKPbc	PKPdf	03 11 17.2	+5.4
	1.7nm,1.0s,baz=104,slow=3.7,SNR=6.0						

IDC ***27*** *02:55:33.5±7.0,31.96N×85.74E,h79km±66km,mb3.1/4, mb1 3.4/6,mb1mx3.2/21,ML3.8/2,Error ellipse: s-maj=46.1km s-min=31.0km az=43.0*
ISC 27 02:55:31.3±2.9,31.9N±0.2×85.6E±0.3,h70km±32km,n7, σ1§21/8,mb3.3/4,Xizang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHL	**Shillong**	**8.42**	**137**	*e*P	**P**	**02 57 31.9**	**-0.8**
SHL				*e*S	**S**	**02 59 08.5**	**+1.4**
MKAR	**Makanchi Array**	**15.06**	**351**	P	**P**	**02 59 01.3**	**+0.1**
	0.1nm,0.3s,baz=166,slow=10.0,SNR=6.0						
CMAR	**Chiang Mai Arr**	**18.04**	**135**	P	**P**	**02 59 37.8**	**-1.0**
	0.2nm,0.3s,baz=317,slow=16,SNR=3.2						
SONM	**Songino Array**	**22.43**	**39**	P	**P**	**03 00 24.4**	**-0.5**
	1.1nm,0.8s,mb3.2,baz=225,slow=10,SNR=4.0						
BVAR	**Borovoye Array**	**23.78**	**337**	P	**P**	**03 00 39.2**	**+1.4**
	0.2nm,0.3s,mb2.9,baz=143,slow=7.2,SNR=2.2						
GERES	**GERESS Array B**	**55.26**	**310**	P	**P**	**03 04 58.9**	**-0.4**
	0.4nm,0.6s,mb3.7,baz=80,slow=8.1,SNR=5.0						
YKA	**Yellowknife Ar**	**84.52**	**9**	P	**P**	**03 07 57.1**	**0.0**
	0.3nm,0.7s,mb3.4,baz=342,slow=4.7,SNR=8.4						

IDC ***27*** *03:43:20.9±6.3,32.11N×85.68E,h66km±57km,mb3.2/8, mb1 3.5/10,mb1mx3.4/21,ML4.0/2,Error ellipse: s-maj=34.2km s-min=17.5km az=47.0*
NEIC ***27*** *03:43:22.1±2.0,32.10N×85.63E,h79km±19km,mb3.7/1, Error ellipse: s-maj=26.7km s-min=11.0km az=55.0*
ISC 27 03:43:18.7±2.2,32.0N±0.1×85.5E±0.2,h66km±21km,n16, σ1§07/17,mb3.3/9,Xizang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LSA	**Lhasa**	**5.37**	**114**	*e*Pn	**P**	**03 44 39.9**	**+2.0**
SHL	**Shillong**	**8.50**	**137**	*e*P	**P**	**03 45 18.8**	**-2.6**
SHL				*e*S	**S**	**03 46 57.0**	**+0.3**
MKAR	**Makanchi Array**	**14.99**	**351**	P	**P**	**03 46 47.8**	**-0.2**
	0.1nm,0.3s,baz=167,slow=11,SNR=8.0						
CMAR	**Chiang Mai Arr**	**18.12**	**135**	P	**P**	**03 47 26.7**	**-0.8**
	0.5nm,0.3s,baz=318,slow=11,SNR=7.1						
SONM	**Songino Array**	**22.42**	**39**	P	**P**	**03 48 12.2**	**-0.4**
	0.1nm,0.4s,mb2.5,baz=212,slow=12,SNR=5.3						
SONM	**Songino Array**	**22.42**	**39**	P	**P**	**03 48 12.2**	**-0.4**
ULN	**Ulaanbaatar**	**22.79**	**40**	P	**P**	**03 48 10.9**	**-5.3**
	1.6nm,0.6s,mb3.5						
ZRNK	**Zerenda**	**24.12**	**335**	P	**P**	**03 48 28.5**	**-0.5**
MLR	**Muntele Rosu**	**47.35**	**304**	P	**P**	**03 51 48.7**	**+1.0**
	0.3nm,2.3s,mb2.6,baz=66,slow=2.6,SNR=7.7						
NOA	**NORSAR Array B**	**55.08**	**325**	P	**P**	**03 52 47.2**	**+1.5**
	1.1nm,0.9s,mb3.9,baz=181,slow=12,SNR=4.1						
GERES	**GERESS Array B**	**55.17**	**310**	P	**P**	**03 52 45.6**	**-1.1**
	1.1nm,0.9s,mb3.9,baz=72,slow=4.2,SNR=5.8						
WRA	**Warramunga Arr**	**69.67**	**131**	P	**P**	**03 54 22.8**	**-0.7**
	0.4nm,0.5s,mb3.5,baz=323,slow=6.3,SNR=3.2						
ASAR	**Alice Springs**	**72.13**	**134**	P	**P**	**03 54 39.6**	**+1.4**
	0.2nm,0.5s,mb3.2,baz=315,slow=5.1,SNR=4.1						
ILAR	**Eielson Array**	**75.29**	**21**	P	**P**	**03 54 55.5**	**-0.3**
	0.4nm,0.8s,mb3.2,baz=308,slow=3.8,SNR=4.8						
YKA	**Yellowknife Ar**	**84.47**	**9**	P	**P**	**03 55 44.7**	**-0.1**
	0.5nm,0.7s,mb3.4,baz=338,slow=5.1,SNR=13						
YKA	**Yellowknife Ar**	**84.47**	**9**	P	**P**	**03 55 44.7**	**-0.1**

NAO ***27*** *03:50:01.0±7.1,56.01N×10.24E,h18km±43km,ML2.2*
BER 27 03:49:56.2±4.8,55.76N×10.18E,h1km±30km, ML2.2(NAO),Denmark

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MUD	**Monsted U'grnd**	**0.90**	**322**	*i* P	Pg	03 50 16.2	+2.1
MUD				*e*S	Sg	03 50 30.7	+4.6
BSD	**Bornholm Skovb**	**2.78**	**101**	*i* P	Pn	03 50 45.0	+2.4
BSD				*i* S	Sn	03 51 28.4	+11
HFS	**Hagfors**	**4.77**	**22**	Pn	Pn	03 51 08.6	-2.4
	baz=211,slow=14						
HFS				Sn	Sn	03 52 01.9	-5.9
	baz=220,slow=28						
HFS				Lg		03 52 21.4	
	baz=205,slow=37						
NB2	**NORSAR Subarra**	**5.33**	**5**	Pn	Pn	03 51 15.6	-3.2
NB2				Sn	Sn	03 52 11.9	-10
NB2				Lg		03 52 42.7	
FIA0	**FINESS Array S**	**10.05**	**49**	Pn	P	03 52 19.5	-5.1
	baz=260,slow=11						
ARA0	**ARCESS Array S**	**15.44**	**20**	Pn	P	03 53 29.6	-6.8
	baz=211,slow=14						

BJI ***27*** *03:51:59.1,14.11N×54.10E,h10km,mB5.2,mb5.1,Ms4.8, Msz4.6*
DUSS ***27*** *03:52:04.9±0.3,14.13N×55.47E,h15km,MS5.6*
MOS ***27*** *03:52:06.2±1.1,14.66N×54.81E,h10km,mb5.1/34, MS4.5/28,Error ellipse: s-maj=12.2km s-min=5.3km az=108.2*
IDC ***27*** *03:52:06.5±0.4,14.70N×54.92E,mb4.7/32,mb1 4.8/32, mb1mx4.7/35,MS4.4/23,Ms1 4.4/23,ms1mx4.3/31,Error ellipse: s-maj=13.3km s-min=11.0km az=51.0,Putative timing error at EIL and GNI*
NEIC ***27*** *03:52:07.4±0.2,14.63N×54.87E,h10km,mb5.1/79, MS4.4/21,Error ellipse: s-maj=5.6km s-min=3.8km az=207.0*
SYO ***27*** *03:52:07.4,14.63N×54.87E,h10km,MB5.1,MS4.4*
STR ***27*** *03:52:07.2±0.0,15.15N×55.50E,Mb4.9,Ms4.4,Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
HRVD ***27*** *03:52:07.4±0.3,14.79N×54.66E,h12km,MW5.1/67, Centroid moment Tensor Solution. LP body waves: s40,c70;Mantle waves: s67,c136; Half duration: 0 Moment tensor: Scale 10^16Nm; Mrr=5.40±.13; Mθθ=5.35±.11; Mϕϕ=0.05±.14; Mrθ=1.96±.35; Mrϕ=-2.00±.10; Mθϕ=0.46±.39; Best double couple: Mo=6.07×10^16 NP1: ϕs=120°,δ=38°,λ=-72°. NP2:ϕs=278°,δ=54°,λ=-104°. Principal axes: T 6.28, Plg8°, Azm17°; N -.41, Plg11°, Azm286°; P -5.86, Plg76°, Azm144°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
ISC 27 03:52:05.6±0.8,14.58N±0.04×54.82E±0.02,h10km±5km, h17km±2.1km:pP-P,n387,σ1§05/404,mb5.0/147,MS4.5/62, 48C-18D,Owen Fracture Zone region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DJNS	**Zahran al Janu**	**11.27**	**288**	P	**P**	**03 54 50.5**	**+0.6**
HASS	**Wahat al Ahsa'**	**11.60**	**336**	P	**P**	**03 54 53.4**	**-1.0**
TATS	**Tathlith**	**11.91**	**296**	P	**P**	**03 54 57.2**	**-1.4**
MZLS	**Mizel**	**13.05**	**317**	P	**P**	**03 55 10.7**	**-3.2**
ARSS	**Ar Rass**	**15.62**	**318**	P	**P**	**03 55 47.2**	**-0.5**
HILS	**Ha'il**	**17.59**	**318**	P	**P**	**03 56 14.3**	**+1.7**
BOM	**Bombay**	**17.76**	**74**	*e*P	**P**	**03 56 06.2**	**-8.5**
KBRS	**Khaybar**	**18.35**	**310**	P	**P**	**03 56 24.2**	**+2.1**
YNBS	**Yanbu' al Bahr**	**18.58**	**304**	P	**P**	**03 56 28.3**	**+3.4**
POO	**Poona**	**18.66**	**75**	*e*P	**P**	**03 56 26.4**	**+0.5**
POO				*e*		03 56 38.8	
	comp=Z,82nm,1.3s						
KAD	**Karad**	**18.82**	**79**	*e*P	**P**	**03 56 29.0**	**+1.1**
QUE	**Quetta**	**19.14**	**34**	*e*P	**P**	**03 56 32.0**	**+0.4**
QUE				*e*S	**S**	**04 00 18.0**	**+16**
QUE				*e*		04 03 10.0	
JASL	**Jaisalmer**	**19.39**	**48**	*e*P	**P**	**03 56 35.2**	**+0.6**
THR	**Tehran**	**21.50**	**352**	P	**P**	**03 56 57.0**	**+0.2**
	comp=Z,0.6nm,0.9s,baz=145,slow=7.9,SNR=26						
THR				LR	LR	04 06 17.4	
	comp=Z,1μm,21.4s,baz=142,slow=40						
THR	**Tehran**	**21.50**	**352**	P	**P**	**03 56 57.0**	**+0.3**
THR				pmax	pmax		
	comp=Z,1.0nm,1.0s						
THR				MLR	MLR		
	comp=Z,1μm,21.5s						
AJM	**Ajmer**	**21.98**	**54**	*e*P	**P**	**03 57 00.8**	**-0.9**
AJM				*e*		03 57 13.4	
	comp=Z,93nm,2.0s						
HYB	**Hyderabad**	**22.99**	**80**	*i* P	**P**	**03 57 14.5**	**+2.7**
	comp=Z,50nm,1.0s,mb4.9						
HYB	**Hyderabad**	**22.99**	**80**	*e*P	**P**	**03 57 14.5**	**+2.7**
	comp=Z,50nm,1.0s,mb4.9						
BHPL	**Bhopal**	**23.03**	**65**	*e*P	**P**	**03 57 10.8**	**-1.4**
BHPL				*e*		03 57 30.3	
	comp=Z,106nm,1.5s						
CUD	**Cuddapah**	**23.18**	**87**	*e*P	**P**	**03 57 11.0**	**-2.7**
CUD				*ep*P		03 57 16.4	
CUD				*es*P		03 57 25.4	
CUD				*e*PnPn		03 57 34.4	
CUD				*e*		03 58 08.1	
CUD				*e*S	**S**	**04 01 27.6**	**+6.6**
KMBO	**Kilima Mbogo**	**23.36**	**230**	P	**P**	**03 57 18.3**	**+2.9**
	comp=Z,19nm,1.2s,mb4.4,baz=35,slow=11,SNR=12						
KMBO				LR	LR	04 06 49.7	
	comp=Z,2μm,18.3s,MS4.6,baz=49,slow=38						
KMBO	**Kilima Mbogo**	**23.36**	**230**	*e*P	**P**	**03 57 17.3**	**+1.8**
	comp=Z,70nm,1.9s,mb4.8						
KHET	**Khetri**	**23.67**	**52**	*e*P	**P**	**03 57 19.5**	**+1.2**
ASF	**Jabal al Asfar**	**23.96**	**320**	P	**P**	**03 57 23.1**	**+2.0**
	comp=Z,29nm,1.1s,mb4.6,baz=69,slow=0.4,SNR=25						
ASF				LR	LR	04 07 20.0	
	comp=Z,1μm,19.1s,MS4.4,baz=174,slow=38						
KUDL	**Kundal**	**24.23**	**53**	*e*P	**P**	**03 57 25.0**	**+1.2**
KUDL				*e*		03 57 38.5	
	comp=Z,81nm,2.2s						
RTK	**Rohtak**	**24.62**	**51**	*e*P	**P**	**03 57 28.2**	**+0.7**
SONA	**Sohna**	**24.74**	**53**	*e*P	**P**	**03 57 29.2**	**+0.5**
AYAN	**Aya Nagar**	**24.88**	**53**	*e*P	**P**	**03 57 30.1**	**0.0**
AGRA	**Agra**	**24.95**	**56**	*e*P	**P**	**03 57 31.3**	**+0.6**
NDI	**New Delhi**	**25.05**	**52**	*e*P	**P**	**03 57 32.0**	**+0.4**
DUSS	**Damascus Unive**	**25.25**	**322**	*i* P	**P**	**03 57 37.4**	**+3.9**
DUSS				*i* P		03 57 37.5	
DUSS				*i* P		03 57 37.6	
DUSS				*e*	pP	03 57 39.1	+2.6
	baz=133,slow=2.4						
DUSS				*e*S	**S**	**04 02 08.8**	**+12**
DUSS				AMS	AMS	04 08 40.0	
	comp=E,15μm,17.3s						
DUSS				AMS	AMS	04 08 45.2	
	comp=Z,17μm,19.1s						
DUSS				AMS	AMS	04 08 49.6	
	comp=N,14μm,19.1s						
ASOR	**Ausora**	**25.51**	**53**	*e*P	**P**	**03 57 36.8**	**+0.8**
TVAN	**Van**	**25.90**	**339**	*i* P	**P**	**03 57 44.8**	**+5.3**
BEST	**Besiri**	**26.14**	**335**	*i* P	**P**	**03 57 44.9**	**+3.2**
GZT	**Gaziantep**	**27.38**	**329**	*i* P	**P**	**03 57 56.3**	**+3.1**
COBT	**Iskenderun**	**27.43**	**326**	*i* P	**P**	**03 57 58.4**	**+4.8**
ELZG	**Elazig**	**27.63**	**333**	*i* P	**P**	**03 57 58.5**	**+3.1**
ERZM	**Erzurum**	**27.85**	**337**	*i* P	**P**	**03 58 00.2**	**+2.8**
MAK	**Makhachkala**	**28.97**	**349**	*e*P	**P**	**03 58 09.0**	**+1.5**
MAK				*e*		03 59 06.0	
MAK				*i* S	**S**	**04 03 03.0**	**+6.1**
MAK				eSS	SS	04 04 27.0	+1.7
MAK				pmax	pmax		
	comp=Z,400nm,2.0s,mb5.8						
MAK				smax			
	comp=N,1μm,4.0s						
MAK				smax			
	comp=E,1μm,4.0s						
ZEI	**Tsey**	**29.62**	**344**	*e*P	**P**	**03 58 14.0**	**+0.7**
ZEI				*e*		03 59 08.0	
ZEI				*e*PPP	PPP	03 59 20.0	-3.2
ZEI				*e*S	**S**	**04 03 04.0**	**-3.3**
ZEI				SS	SS	04 04 54.0	+13
ZEI				pmax	pmax		
	comp=Z,100nm,2.0s,mb5.2						
ZEI				MLR	MLR		
	comp=Z,2μm,16.0s,MS4.9						
KOLN	**Koldanda**	**29.79**	**59**	*e*P	**P**	**03 58 15.7**	**+0.7**
	comp=Z,88nm,1.2s,mb5.4						
AVNT	**Avonos**	**29.85**	**328**	*i* P	**P**	**03 58 16.9**	**+1.5**
GKN	**Gorkha**	**30.73**	**59**	*e*P	**P**	**03 58 23.1**	**-0.2**
	comp=Z,76nm,1.1s,mb5.4						
DMN	**Daman**	**31.00**	**60**	*e*P	**P**	**03 58 26.6**	**+1.0**
KSH	**Kashi**	**31.02**	**33**	*e*P	**P**	**03 58 24.0**	**-1.7**
KSH				*e*AP	pP	03 58 28.8	+0.1
KSH				*e*XP	sP	03 58 31.3	+1.3
KSH				*e*PCP	PcP	04 01 21.0	-0.7
KSH				*e*S	**S**	**04 03 25.5**	**-3.9**
KSH				*e*SCP		04 05 02.0	
KSH				*e*PCS		04 05 04.3	
KSH				AMB	AMB		
	comp=Z,90nm,2.3s,mb5.2						
KSH				LR	LR		
	comp=N,1μm,15.0s,MS4.7						
KSH				LR	LR		
	comp=E,800nm,16.6s,MS4.7						
KIV	**Kislovodsk**	**31.06**	**343**	*e*P	**P**	**03 58 27.3**	**+1.3**
KIV				*e*		03 59 27.8	
KIV				*e*PPP	PPP	03 59 37.9	-5.3
KIV				*e*S	**S**	**04 03 29.8**	**-0.1**
KIV				pmax	pmax		
	comp=Z,10.0nm,1.3s,mb4.5						
KIV				MLR	MLR		
	comp=Z,1μm,18.0s,MS4.6						
KIV				MLR	MLR		
	comp=N,670nm,17.0s						
KIV	**Kislovodsk**	**31.06**	**343**	*e*P	**P**	**03 58 26.6**	**+0.6**
	comp=N,41nm,1.5s,mb5.0						
BRTR	**Keskin Array B**	**31.18**	**327**	P	**P**	**03 58 27.2**	**+0.1**
	comp=N,2.4nm,0.9s,mb4.0,baz=144,slow=11,SNR=14						
BRTR				PcP	PcP	04 01 22.9	+0.8
	comp=N,2.9nm,1.0s,baz=153,slow=5.5,SNR=6.4						
BRTR				LR	LR	04 12 24.3	
	comp=N,576nm,20.5s,MS4.2,baz=130,slow=39						
KKN	**Kakani**	**31.20**	**60**	*e*P	**P**	**03 58 27.8**	**+0.4**
	comp=N,79nm,0.9s,mb5.5						
PKI	**Pulchoki**	**31.24**	**61**	*e*P	**P**	**03 58 28.0**	**+0.2**
	comp=N,31nm,0.8s,mb5.2						
SOC	**Sochi**	**31.66**	**339**	*e*P	**P**	**03 58 31.3**	**0.0**
SOC				*e*PPP	PPP	03 59 40.9	-10
SOC				*e*S	**S**	**04 03 36.6**	**-2.8**
SOC				*e*SSS	SSS	04 05 45.6	-5.9
SOC				pmax	pmax		
	comp=Z,10.0nm,1.0s,mb4.6						
SOC				pmax	pmax		
	comp=N,20nm,0.9s						
SOC				pmax	pmax		
	comp=E,70nm,1.0s						
SOC				MLR	MLR		
	comp=N,2μm,15.0s,MS4.9						
SOC				MLR	MLR		
	comp=Z,980nm,15.0s,MS4.6						
SOC				MLR	MLR		
	comp=E,180nm,13.0s,MS4.9						
ELDT	**Eldivan**	**31.86**	**328**	*i* P	**P**	**03 58 31.2**	**-1.8**
GOF	**Gofitskoye**	**31.98**	**344**	*e*P	**P**	**03 58 32.5**	**-1.6**
GOF				pmax	pmax		
	comp=Z,30nm,1.3s,mb5.0						
GOF				MLR	MLR		
	comp=Z,2μm,16.0s,MS4.8						
ESKT	**Eskisehir**	**32.55**	**324**	*i* P	**P**	**03 58 40.1**	**+0.9**
AAK	**Ala-Archa**	**32.69**	**27**	*e*P	**P**	**03 58 41.4**	**+1.1**
	comp=Z,37nm,1.6s,mb5.1						
FRU	**Bishkek**	**32.91**	**27**	*e*P	**P**	**03 58 44.0**	**+1.8**
FRU				*e*S	**S**	**04 04 08.0**	**+9.2**
FRU				pmax	pmax		
	comp=Z,90nm,2.5s,mb5.3						
FRU				MLR	MLR		
	comp=Z,800nm,17.0s,MS4.5						
HENT	**Hendek**	**33.43**	**326**	*i* P	**P**	**03 58 48.2**	**+1.4**
ANN	**Anapa**	**33.54**	**337**	*e*P	**P**	**03 58 50.0**	**+2.3**
ANN				*e*S	**S**	**04 04 09.0**	**+0.4**
ANN				pmax	pmax		
	comp=Z,20nm,0.9s,mb5.0						
IDI	**Anoyia**	**33.87**	**313**	P	**P**	**03 58 52.8**	**+2.1**
	comp=Z,23nm,1.1s,mb5.0,baz=91,slow=12,SNR=2.9						
IDI				PcP	PcP	04 01 30.8	+1.2
	comp=Z,15nm,0.8s,baz=37,slow=3.9,SNR=4.0						
KDAG	**Bornova**	**33.98**	**319**	*i* P	**P**	**03 58 53.5**	**+1.9**
AB31	**Akbulak array**	**34.83**	**6**	P	**P**	**03 58 58.3**	**-0.5**
AB31				pmax	pmax		
	comp=Z,21nm,0.9s,mb5.1						
SIM	**Simferopol'**	**34.99**	**334**	*d i*P	**P**	**03 59 02.4**	**+2.2**
SIM				*e*		04 00 19.0	
SIM				*i* S	**S**	**04 04 36.5**	**+5.5**
SIM				eSS	SS	04 06 47.0	+1.4
SIM				pmax	pmax		
	comp=Z,30nm,1.2s,mb5.1						
SHL	**Shillong**	**36.38**	**67**	*e*P	**P**	**03 59 12.0**	**-0.1**
SHL				*e*S	**S**	**04 05 00.0**	**+7.3**
HARR	**Harsova**	**37.69**	**328**	⇑ *i*P	**P**	**03 59 23.9**	**+0.9**
HARR	**Harsova**	**37.69**	**328**	∥ *i*P	**P**	**03 59 23.6**	**+0.6**
CFR	**Carcaliu**	**37.93**	**329**	∥ *i*P	**P**	**03 59 25.3**	**+0.3**
CFR	**Carcaliu**	**37.93**	**329**	∥ *i*P	**P**	**03 59 25.2**	**+0.2**
VRSR	**Storozhevoye**	**38.65**	**344**	*c i*P	**P**	**03 59 30.8**	**-0.2**
VRSR				*e*		04 01 01.3	
VRSR				*e*		04 01 41.9	
VRSR				*i* S	**S**	**04 05 27.1**	**0.0**
VRSR				eSS	SS	04 08 05.6	-2.6
VRSR				eSSS	SSS	04 08 41.6	+0.1
VRSR				*e*		04 09 37.4	
VRSR				pmax	pmax		
	comp=Z,130nm,2.8s,mb5.2						
VRSR				pmax	pmax		
	comp=N,30nm,1.7s						
VRSR				pmax	pmax		
	comp=E,30nm,2.4s						
VRSR				smax			
	comp=N,170nm,4.0s						
VRSR				smax			
	comp=Z,160nm,3.9s						
VRS

WMQ S **S** **04 05 54.8 +0.8**
WMQ SCS ScS 04 09 51.0 +0.9
WMQ AMB AMB
comp=Z,35nm,1.2s,mb5.0
WMQ AMB AMB
comp=Z,435nm,5.1s
WMQ LR LR
comp=N,1μm,20.2s,MS4.8
WMQ LR LR
comp=E,987nm,20.0s,MS4.8
WMQ LR LR
comp=Z,2μm,20.2s,MS4.8
KURK Kurchatov 40.87 23 *e*P **P** **03 59 49.8 +0.5**
TIP Timpagrande 41.41 314 *e*P **P** **03 59 55.0 +1.0**
AKASG Malin Array Be 41.55 336 P **P** **03 59 54.8 -0.1**
comp=Z,9.3nm,0.9s,mb4.4,baz=140,slow=7.8,SNR=45
AKASG LR LR 04 18 42.3
comp=Z,254nm,21.5s,MS4.1,baz=170,slow=38
ARU Arti 41.87 3⇑ *e*P **P** **03 59 58.1 +0.7**
ARU pmax pmax
comp=Z,700nm,23.0s
ARU MLR MLR
comp=Z,500nm,22.0s,MS4.3
ARU Arti 41.87 3 *e*P **P** **03 59 55.6 -1.8**
comp=Z,2.7nm,0.4s,mb4.2
ARU LR LR
comp=Z,507nm,19.0s,MS4.4
CM31 Chiang Mai Arr 42.41 79 *e*P **P** **04 00 02.6 +0.3**
comp=Z,4.0nm,0.4s,mb4.4
CMAR Chiang Mai Arr 42.41 79 P **P** **04 00 03.0 +0.6**
comp=Z,18nm,0.8s,mb4.8,baz=280,slow=9.4,SNR=72
CMAR LR LR 04 18 34.2
comp=Z,167nm,19.0s,MS4.0,baz=275,slow=38
CMAR Chiang Mai Arr 42.41 79 P **P** **04 00 03.0 +0.6**
CMAR pmax pmax
comp=Z,18nm,0.8s
CMAR MLR MLR
comp=Z,167nm,19.0s
MGR Morigerati 42.67 314 *e*P **P** **04 00 05.2 +0.9**
SLCN Sala Consilina 42.72 315 *e*P **P** **04 00 07.1 +2.5**
OBN Obninsk 42.86 345 *α iP* **P** **04 00 06.5 +0.9**
OBN *e* pP 04 00 10.9 +2.3
OBN *e* 04 01 42.3
OBN *i* 04 01 56.6
OBN *e*S **S** **04 06 30.5 +0.8**
OBN pmax pmax
comp=Z,64nm,1.5s,mb5.1
OBN MLR MLR
comp=Z,900nm,22.0s,MS4.6
OBN Obninsk 42.86 345 *e*P **P** **04 00 05.4 -0.1**
MRLC Muro Lucano 42.98 315 *e*P **P** **04 00 08.2 +1.5**
MOS Moscow 43.16 346 *e*P **P** **04 00 09.2 +1.2**
MOS *e* 04 01 47.1
MOS *e* 04 01 55.4
MOS *e*PPP PPP 04 02 18.6 -6.9
MOS *e*S **S** **04 06 33.6 -0.5**
MOS *e* 04 10 03.9
MOS pmax pmax
comp=Z,142nm,0.8s,mb5.8
LVV L'vov 43.17 331 *e*P **P** **04 00 05.0 -3.2**
KWP Kalwaria 43.67 330 *e*P **P** **04 00 11.7 -0.5**
comp=Z,41nm,1.2s,mb5.0
PKSM Moragy 43.72 324 P **P** **04 00 13.8 +1.1**
CRVS Cervenica-Dubn 43.81 328 *i* P **P** **04 00 14.5 +1.1**
CRVS *e*PP PP 04 02 07.3 +10
PSZ Piszkesteto 44.02 326 *e* **P** **04 00 15.6 +0.5**
KECS Kecovo 44.05 327 *e*P **P** **04 00 13.8 -1.5**
RNI2 Rionero Sannit 44.29 316 *e*P **P** **04 00 18.9 +1.5**
SISC Sisak 44.66 322 *e*P **P** **04 00 20.8 +0.5**
NIE Niedzica 44.72 328 *e*P **P** **04 00 21.6 +0.8**
VYHS Vyhne 44.93 326 *i* P **P** **04 00 22.4 -0.1**
VYHS *e*PP PP 04 02 04.8 -3.7
PTQR Pietraquaria 44.94 316 *e*P **P** **04 00 23.4 +0.8**
BOJS Bojanci 45.35 321 *i* P **P** **04 00 26.5 +0.6**
BOJS *e*S **S** **04 07 09.4 +3.5**
OJC Ojcow 45.49 329 *e*P **P** **04 00 26.5 -0.3**
OJC *e*S **S** **04 07 09.2 +1.4**
OJC MLR MLR 04 25 11.9
comp=Z,400nm,19.3s,MS4.4
CING Cingoli 45.66 317 *e*P **P** **04 00 29.1 +0.8**
ZST Bratislava 45.70 325 *i* P **P** **04 00 28.8 +0.2**
SNTG Esanatoglia 45.77 317 *e*P **P** **04 00 29.9 +0.7**
ARV Arcevia 45.88 317 *e*P **P** **04 00 30.9 +0.8**
TOLF Tolfa 45.91 315 *e*P **P** **04 00 30.5 +0.3**
LJU Ljubljana 46.06 321 *e*P **P** **04 00 32.2 +0.8**
LJU *e* 04 01 10.1
FSSB Fossombrone 46.07 318 *e*P **P** **04 00 32.8 +1.3**
KMI Kunming 46.07 69 *e*P **P** **04 00 32.5 +0.7**
KMI AP pP 04 00 35.5 +0.7
KMI PCP PcP 04 02 09.5 +0.9
KMI PP PP 04 02 20.5 +0.3
KMI S **S** **04 07 14.3 -2.2**
KMI SS SS 04 10 36.5 +2.7
KMI AMB AMB
comp=Z,14nm,0.9s,mb4.9
KMI AMB AMB
comp=Z,142nm,5.9s
KMI LR LR
comp=N,457nm,19.9s,MS4.6
KMI LR LR
comp=E,479nm,20.7s,MS4.6
KMI LR LR
comp=Z,630nm,18.8s,MS4.6
ARSA Arzberg 46.08 323 ⇑ *iP* **P** **04 00 32.4 +0.8**
comp=Z,146nm,3.0s
OKC Ostrava-Krasne 46.09 328 *e*P **P** **04 00 31.9 +0.3**
OKC *e*S **S** **04 07 20.6 +4.1**
OKC L 04 22 50.0
comp=Z,0.4nm,17.7s
JAVS Javornik 46.27 321 *e*P **P** **04 00 33.2 +0.2**
OBKA Obir 46.28 322 ⇑ *iP* **P** **04 00 34.5 +1.4**
comp=Z,158nm,3.4s
MORC Moravsky Berou 46.37 327 *e*P **P** **04 00 33.3 -0.5**
comp=Z,31nm,1.3s,mb5.1
RSM Repubblica di 46.38 318 *e*P **P** **04 00 35.6 +1.6**
VOY Vojsko 46.44 321 *e*P **P** **04 00 34.3 -0.1**
GTA Gaotai 46.48 49 *e*P **P** **04 00 36.0 +1.1**
GTA AP pP 04 00 43.5 +5.6
GTA XP sP 04 00 47.0 +7.9
GTA PCP PcP 04 02 07.3 -2.6
GTA PP PP 04 02 26.5 +2.4
GTA PCS 04 06 02.0
GTA S **S** **04 07 27.3 +5.1**
GTA XS 04 07 40.0
GTA SS SS 04 10 48.3 +7.7
GTA AMB AMB
comp=Z,114nm,4.6s
GTA LR LR
comp=N,185nm,18.3s,MS4.3
GTA LR LR
comp=E,340nm,21.7s,MS4.3
GTA LR LR
comp=Z,465nm,22.8s,MS4.4
SUW Suwalki 46.49 335 *e*P **P** **04 00 34.6 -0.1**
VRAC Vranov 46.61 326 P **P** **04 00 35.7 0.0**
comp=Z,11nm,1.1s,mb4.7,baz=140,slow=7.9,SNR=14
SFI Santa Sofia 46.77 317 *e*P **P** **04 00 38.3 +1.3**
PGD Poggio Sodo 46.84 317 *e*P **P** **04 00 38.9 +1.3**
PTCC Patocco-Chiusa 46.95 321 *e*P **P** **04 00 38.5 +0.1**
MOA Molln 47.12 323 ⇑ *iP* **P** **04 00 40.1 +0.3**
comp=Z,191nm,4.1s
KBA Koelnbreinsper 47.28 322 ⇑ *iP* **P** **04 00 41.5 +0.4**
DPC Dobruska-Polom 47.35 327 *e*P **P** **04 00 40.2 -1.3**
DPC *e*S **S** **04 07 34.4 +0.1**
DPC L 04 23 20.0
comp=Z,0.4nm,18.5s
FVI Forni Avoltri 47.39 321 *e*P **P** **04 00 41.5 -0.4**
ZCCA Zocca 47.52 318 *e*P **P** **04 00 44.9 +1.8**
UPC Upice 47.60 327 *e*P **P** **04 00 43.4 -0.1**
KSP Ksiaz 47.65 328 *e*P **P** **04 00 43.4 -0.5**
KSP *e**PP pP 04 00 50.4 +3.4
KSP *e*S **S** **04 07 39.0 +0.5**
KSP MLR MLR
comp=Z,700nm,22.6s,MS4.6
BDI Bagni Di Lucca 47.65 317 *e*P **P** **04 00 43.0 -1.0**
ERBM Eremo 47.92 318 *e*P **P** **04 00 47.8 +1.6**
GEC2 GERESS Array S 47.96 324 *e*P **P** **04 00 45.6 -0.8**
GEC2 pmax pmax
comp=Z,33nm,1.7s,mb5.1
GEC2 GERESS Array S 47.96 324 *e*P **P** **04 00 45.6 -0.8**
comp=Z,33nm,1.7s,mb5.1
GERES GERESS Array B 47.96 324 P **P** **04 00 45.5 -0.9**
comp=Z,1.5nm,0.6s,mb4.2,baz=127,slow=6.7,SNR=19
GERES PcP PcP 04 02 14.5 -0.5
comp=Z,4.3nm,1.1s,baz=124,slow=3.5,SNR=6.6
GERES GERESS Array B 47.96 324 P **P** **04 00 45.5 -0.9**
GERES 04 02 14.5
GERES pmax pmax
comp=Z,2.0nm,0.6s
GERES pmax pmax
comp=Z,4.0nm,1.1s
PRU Pruhonice 48.10 326 *e*P **P** **04 00 46.4 -1.0**
comp=Z,42nm,1.8s,mb5.2
PRU *e*S **S** **04 07 46.5 +1.6**
PRU L 04 25 30.0
comp=Z,0.5nm,17.0s
PRU Pruhonice 48.10 326 *e*P **P** **04 00 46.4 -1.0**
PRU *e*S **S** **04 07 46.5 +1.6**
PRU pmax pmax
comp=Z,42nm,1.8s,mb5.2
PRU MLR MLR
comp=Z,500nm,17.0s,MS4.6
PGF Pioggiola 48.15 315 *e*P **P** **04 00 47.6 -0.3**
comp=Z,34nm,1.2s,mb4.9
KHC Kasperske Hory 48.17 324 *e*P **P** **04 00 47.3 -0.7**
KHC *e*S **S** **04 07 46.7 +0.7**
KHC L 04 25 20.0
comp=Z,0.3nm,16.9s
PVCC Panska Ves 48.38 327 *e*P **P** **04 00 49.1 -0.5**
PVCC L 04 24 00.0
comp=Z,0.3nm,23.0s
WTTA Wattenberg 48.39 321 ⇑ *iP* **P** **04 00 49.1 -0.6**
comp=Z,133nm,2.8s,mb5.5
WATA Walderalm 48.46 322 ⇓ *iP* **P** **04 00 49.7 -0.6**
comp=Z,26nm,1.2s,mb5.2
VSU Vasula 48.56 341⇑ *e*P **P** **04 00 51.3 +0.4**
WET Wettzell 48.58 324 *e*P **P** **04 00 50.3 -0.8**
WET pmax pmax
comp=Z,63nm,2.7s,mb5.2
WET Wettzell 48.58 324 *e*P **P** **04 00 50.3 -0.8**
comp=Z,63nm,2.7s,mb5.2
LBTB Lobatse 48.59 216 *e*P **P** **04 00 53.0 +1.5**
comp=Z,37nm,1.2s,mb5.3
LBTB LR LR
comp=Z,436nm,20.0s,MS4.4
LZH Lanzhou 48.63 55 ⇑P **P** **04 00 52.3 +0.6**
LZH AP pP 04 01 01.5 +6.7
LZH XP sP 04 01 05.5 +9.5
LZH PP PP 04 02 45.3 +0.7
LZH S **S** **04 07 52.5 -0.1**
LZH XS 04 08 07.5
LZH AMB AMB
comp=Z,43nm,1.5s,mb5.3
LZH AMB AMB
comp=Z,157nm,5.2s
LZH LR LR
comp=E,626nm,13.3s
LZH LR LR
comp=Z,937nm,16.9s,MS4.8
SQTA Sankt Quirin 48.63 321 ⇑ *iP* **P** **04 00 51.4 -0.2**
comp=Z,15nm,1.0s,mb5.0
BOB Bobbio (Coli) 48.69 318 *e*P **P** **04 00 52.4 +0.3**
MOTA Moosalm 48.75 321 ⇑ *iP* **P** **04 00 51.0 -1.5**
comp=Z,22nm,1.1s,mb5.1
BRMO Bormio 48.81 320 *e*P **P** **04 00 53.7 +0.7**
BRG Berggiesshubel 48.90 327 *e*P **P** **04 00 53.9 +0.3**
BRG *e* 04 02 19.4
BRG *i* S **S** **04 07 57.0 +0.8**
BRG pmax pmax
comp=Z,31nm,1.7s,mb5.1
BRG MLR MLR
comp=N,400nm,20.6s,MS4.5
BRG MLR MLR
comp=E,230nm,20.6s,MS4.5
BRG MLR MLR
comp=Z,320nm,20.6s,MS4.3
BRG Berggiesshubel 48.90 327 *e*P **P** **04 00 53.9 +0.3**
comp=Z,31nm,1.7s,mb5.1
BRG *e* 04 02 19.4
BRG *i* S **S** **04 07 57.0 +0.8**
BRG LR LR
comp=Z,320nm,20.6s,MS4.3
DAVOX Davos 49.25 320 P **P** **04 00 56.2 -0.2**
comp=Z,23nm,1.1s,mb5.1,baz=145,slow=7.6,SNR=18
DAVOX PcP PcP 04 02 19.9 +0.2
comp=Z,2.8nm,0.6s,baz=193,slow=4.6,SNR=2.4
FIN Finale Ligure 49.30 316 *e*P **P** **04 00 56.7 0.0**
NKC Novy Kostel 49.37 325 *e*P **P** **04 00 57.3 +0.1**
NKC *e*S **S** **04 08 00.9 -1.9**
NKC L 04 27 30.0
comp=Z,0.3nm,19.0s
IMI Imperia 49.40 316 *e*P **P** **04 00 57.9 +0.3**
DAVA Damuels 49.47 321 ⇑ *iP* **P** **04 00 57.6 -0.4**
comp=Z,65nm,1.5s,mb5.4
CLL Collm 49.63 327 ⇑P **P** **04 00 59.5 +0.3**
comp=Z,logA/T=1.5,mb5.3
CLL *i* *SP sP 04 01 13.7 +10
CLL *e* 04 02 14.0
CLL *e*S **S** **04 07 59.0 -7.4**
CLL Collm 49.63 327 ⇑ *iP* **P** **04 00 59.5 +0.3**
CLL *e*S **S** **04 07 59.0 -7.4**
CLL pmax pmax
comp=Z,51nm,1.8s,mb5.2
CLL MLR MLR
comp=Z,300nm,18.3s,MS4.3
CLL Collm 49.63 327 ⇑ *iP* **P** **04 00 59.5 +0.3**
comp=Z,51nm,1.8s,mb5.2
CLL *i* 04 01 13.7
CLL *e*S **S** **04 07 59.0 -7.4**
CLL LR LR
comp=Z,300nm,18.3s,MS4.3
SAOF Saorge 49.65 316⇑ *e*P **P** **04 01 00.3 +0.8**
GYA Guiyang 49.68 68⇑ *iP* **P** **04 00 59.5 -0.5**
GYA S **S** **04 08 11.8 +4.4**
GYA AMB AMB
comp=Z,10.0nm,0.6s,mb5.0
GYA LR LR
comp=N,530nm,18.0s,MS4.7
GYA LR LR
comp=E,520nm,20.3s,MS4.7
GYA LR LR
comp=Z,400nm,25.7s
SBF Sospel 49.69 316 *e*P **P** **04 00 59.8 0.0**
comp=Z,60nm,1.1s,mb5.2
REVF Revere 49.69 316⇑ *e*P **P** **04 01 00.3 +0.5**
TSUM Tsumeb 49.70 229 P **P** **04 01 03.1 +2.9**
comp=Z,6.6nm,1.0s,mb4.6,baz=39,slow=8.0,SNR=9.1
TSUM PcP PcP 04 02 23.8 +2.1
comp=Z,5.1nm,1.2s,baz=60,slow=6.8,SNR=3.5
AUTN L'Aution 49.74 316⇑ *e*P **P** **04 01 01.4 +1.2**
AURF Auriere 49.77 316⇑ *e*P **P** **04 01 01.4 +1.0**
GRA1 Grafenberg Arr 49.79 324 *e*P **P** **04 00 59.7 -0.8**
comp=Z,35nm,1.2s,mb5.3
GRA1 *e* 04 02 25.6
GRA1 LR LR
comp=Z,200nm,21.7s,MS4.1
GRF Grafenberg Arr 49.79 324 *e*P **P** **04 00 59.7 -0.8**
GRF *e* 04 02 25.6
GRF pmax pmax
comp=Z,35nm,1.2s,mb5.3
LLS Linth-Limmern 49.82 320 ⇓P **P** **04 00 59.8 -1.0**
MVIF Mont Vial 49.89 316⇑ *e*P **P** **04 01 02.2 +0.9**
CALN Calern 50.02 315⇑ *e*P **P** **04 01 03.2 +0.9**
MOX Moxa 50.04 325 *i* P **P** **04 01 02.1 -0.3**
comp=Z,logA/T=1.6,mb5.4
MOX LR LR 04 16 56.0
MOX L 04 26 46.0
MOX Moxa 50.04 325 *e*P **P** **04 01 02.1 -0.3**
MOX pmax pmax
comp=Z,100nm,2.4s,mb5.4
MOX MLR MLR
comp=Z,300nm,18.0s,MS4.3
MOX Moxa 50.04 325 *e*P **P** **04 01 02.1 -0.3**
comp=Z,100nm,2.4s,mb5.4
MOX LR LR
comp=Z,300nm,18.0s,MS4.3
MUO Muotathal 50.10 320 ⇑P **P** **04 01 03.0 +0.1**
FRF La Foret Royal 50.12 315 *e*P **P** **04 01 02.9 -0.2**
comp=Z,127nm,1.6s,mb5.4
WILA Wila 50.12 321 ⇑P **P** **04 01 03.1 +0.1**
LMR La Mourre 50.14 315 *e*P **P** **04 01 03.1 -0.1**
comp=Z,98nm,1.2s,mb5.4
MMK Mattmark 50.16 319 ⇑P **P** **04 01 03.3 0.0**
ZUR Zurich 50.30 320 ⇑P **P** **04 01 04.4 0.0**
SURF Saint Ours 50.33 316⇑ *e*P **P** **04 01 05.9 +1.2**
MBDF Montbardon 50.44 317 *e*P **P** **04 01 05.9 +0.4**
comp=Z,19nm,0.8s,mb4.9
SPAK Spaichingen 50.49 321⇑ *e*P **P** **04 01 05.8 0.0**
LKBD Leukerbad 50.51 319 ⇓P **P** **04 01 06.2 +0.2**
SLE Schleitheim 50.52 321 ⇑P **P** **04 01 06.0 -0.1**
BNI Bardonecchia 50.62 317 *e*P **P** **04 01 05.7 -1.2**
SULZ Sulz-Cheisache 50.66 320 ⇓P **P** **04 01 06.4 -0.7**
LPG La Plagne 50.73 317 *e*P **P** **04 01 07.2 -0.5**
comp=Z,213nm,1.6s,mb5.5
LPL La Plagne 50.75 318 *e*P **P** **04 01 07.5 -0.4**
comp=Z,77nm,1.0s,mb5.3
EMV Vieux Emosson 50.85 318 ⇓P **P** **04 01 07.8 -0.8**
BFO Black Forest 50.86 321 *e*P **P** **04 01 08.4 -0.3**
BFO pmax pmax
comp=Z,35nm,1.3s,mb5.1
BFO Black Forest 50.86 321 *e*P **P** **04 01 08.4 -0.3**
comp=Z,35nm,1.3s,mb5.1
FELD Feldberg 50.87 321 *e*P **P** **04 01 08.7 0.0**
SMRF Simiane la Rot 50.99 315 *e*P **P** **04 01 09.9 +0.2**
comp=Z,20nm,0.8s,mb4.8
BBS Basel-Blauen 51.01 320⇑ *e*P **P** **04 01 09.8 0.0**
JOF Joensuu 51.04 346 *ep* **P** **04 01 09.0 -0.8**
comp=Z,4.2nm,0.6s,mb4.5
JOF Joensuu 51.04 346 *e*P **P** **04 01 09.0 -0.8**
JOF pmax pmax
comp=Z,4.0nm,0.6s,mb4.5
FINES FINESS Array B 51.15 343 P **P** **04 01 09.9 -0.7**
comp=Z,7.2nm,0.5s,mb4.8,baz=140,slow=9.6,SNR=57
FINES LR LR 04 25 35.3
comp=Z,453nm,21.8s,MS4.5,baz=153,slow=39
FINES FINESS Array B 51.15 343 P **P** **04 01 09.9 -0.7**
FINES pmax pmax
comp=Z,7.0nm,0.5s
FINES MLR MLR
comp=Z,453nm,21.8s
CLZ Clausthal 51.31 326 *e*P **P** **04 01 12.4 +0.4**
comp=Z,44nm,1.6s,mb5.1
LOMF Lomont 51.39 320⇑ *e*P **P** **04 01 13.0 +0.3**
MOF Molkenrain 51.40 320⇑ *e*P **P** **04 01 12.4 -0.3**
ECH Echery 51.53 321⇑ *e*P **P** **04 01 13.7 0.0**
CDF Champ du Feu 51.54 321 *e*P **P** **04 01 13.0 -0.8**
comp=Z,78nm,1.3s,mb5.2
HINF Hinteralfeld 51.55 320 *e*P **P** **04 01 13.0 -0.9**
comp=Z,38nm,1.4s,mb4.8
CABF La Chapelle 51.58 319 *e*P **P** **04 01 13.9 -0.2**
comp=Z,32nm,0.8s,mb5.0
VIVF Saint-Julien-l 51.89 316 *e*P **P** **04 01 15.9 -0.6**
HAU Haudompre 51.94 320 *e*P **P** **04 01 15.6 -1.3**
HAU *e*R
comp=Z,235nm,21.0s
MOY Mondy 52.18 35 *e*P **P** **04 01 20.1 +1.5**
LASF Ste Croix 52.20 315 *e*P **P** **04 01 18.3 -0.5**
comp=Z,78nm,1.6s,mb5.1
XAN Xi'an 52.36 58 P **P** **04 01 19.0 -1.2**
XAN AP pP 04 01 27.3 +4.0
XAN AMB AMB
comp=Z,4.0nm,0.4s,mb4.7
BSEG Bad Segeberg 52.41 328 *e*P **P** **04 01 19.5 -0.8**
BSEG pmax pmax
comp=Z,22nm,1.4s,mb4.9
ENH Enshi 52.42 63 *e*P **P** **04 01 18.3 -2.4**
comp=Z,19nm,1.0s,mb5.0
ENH LR LR
comp=Z,287nm,21.0s,MS4.3
QIZ Qiongzhong 52.69 77 P **P** **04 01 22.8 -0.1**
QIZ S **S** **04 08 49.3 +0.3**
QIZ XS 04 09 02.0
QIZ AMB AMB
comp=Z,17nm,1.4s,mb4.8
QIZ LR LR
comp=N,142nm,22.5s,MS4.2
QIZ LR LR
comp=E,161nm,20.5s,MS4.2
QIZ LR LR
comp=Z,231nm,20.5s,MS4.2
WLF Walferdange 52.72 322 *e*P **P** **04 01 21.6 -1.1**
comp=Z,19nm,1.1s,mb4.9
ZAK Zakamensk 52.90 37 *e*P **P** **04 01 23.0 -1.0**
MEZF Maizieres J'vi 52.93 320 *e*P **P** **04 01 23.7 -0.6**
comp=Z,67nm,0.9s,mb5.3
PLDF La Plantade 52.95 317 *e*P **P** **04 01 24.7 +0.2**
LBL Lubilhac 52.97 316 *e*P **P** **04 01 25.2 +0.6**
SMF Signal de Mont 53.03 318 *e*P **P** **04 01 24.1 -1.0**
comp=Z,82nm,1.5s,mb5.2
MTLF Montolieu 53.12 314 *e*P **P** **04 01 25.1 -0.7**
comp=Z,71nm,1.6s,mb5.0
LOR Lormes 53.24 319 *e*P **P** **04 01 25.8 -0.7**
comp=Z,111nm,1.2s,mb5.4
LOR *e*R
comp=Z,225nm,20.5s
PYM Petit Puy Mans 53.29 317 *e*P **P** **04 01 27.5 +0.5**
AGO Saint Agoulin 53.30 317 *e*P **P** **04 01 27.2 +0.1**
SSF Saint Saulge 53.39 318 *e*P **P** **04 01 26.9 -0.8**
comp=Z,58nm,1.1s,mb5.1
AVF Avril sur Loir 53.40 318 *e*P **P** **04 01 26.7 -1.1**
comp=Z,45nm,1.2s,mb5.0
EPOB Poblet 53.43 311 P **P** **04 01 26.9 -1.2**
BGF Bois d'Agland 53.65 318 *e*P **P** **04 01 29.3 -0.3**
comp=Z,92nm,1.1s,mb5.3
TLY Talaya 53.66 36*c iP* **P** **04 01 29.7 +0.1**
TLY *e*S **S** **04 09 07.3 +5.7**
TLY *e*SS SS 04 12 48.3 +6.6
TLY pmax pmax
comp=Z,130nm,1.8s,mb5.6
TLY MLR MLR
comp=Z,4μm,17.0s,MS5.6
CAF Calviac 53.67 315 *e*P **P** **04 01 29.1 -0.7**
comp=Z,21nm,1.2s,mb4.6
GIVF Givet 53.69 322 *e*P **P** **04 01 29.3 -0.5**
SONM Songino Array 53.83 41 P **P** **04 01 31.1 +0.3**
comp=Z,10nm,0.9s,mb4.8,baz=244,slow=6.9,SNR=40
SONM PcP PcP 04 02 38.0 +1.4
comp=Z,1.2nm,0.8s,baz=207,slow=3.2,SNR=1.8
TCF Toulx Ste Croi 53.99 317 *e*P **P** **04 01 31.4 -0.6**
comp=Z,22nm,1.1s,mb4.7
HYF Humbligny 54.02 318 *e*P **P** **04 01 31.9 -0.3**
BAIF Baives 54.03 322 *e*P **P** **04 01 31.8 -0.5**
comp=Z,98nm,1.3s,mb5.3
RJF Les Rejaudoux 54.16 316 *e*P **P** **04 01 32.8 -0.5**
RJF *e*R
comp=Z,241nm,18.8s
ULN Ulaanbaatar 54.26 41*c iP* **P** **04 01 34.2 +0.2**
ULN Ulaanbaatar 54.26 41 *e*P **P** **04 01 33.4 -0.5**
comp=Z,21nm,1.3s,mb4.9
ULN LR LR
comp=Z,460nm,20.0s,MS4.5
BTO Baotou 54.35 50 *e*P **P** **04 01 34.0 -0.8**
HFS Hagfors 54.44 336 P **P** **04 01 34.3 -0.8**
comp=Z,8.2nm,0.8s,mb4.7,baz=135,slow=6.3,SNR=13
HFS Hagfors 54.44 336 P **P** **04 01 34.3 -0.8**
HFS pmax pmax
comp=Z,8.0nm,0.8s
HFS Hagfors 54.44 336 P **P** **04 01 34.3 -0.8**
LFF La Frestale 54.58 315 *e*P **P** **04 01 35.8 -0.6**
comp=Z,36nm,0.9s,mb5.1
ESAC San Caprasio 54.65 311 P **P** **04 01 35.9 -1.0**
APA Apatity 54.77 350⇑ *e*P **P** **04 01 53.0 +16**
APA *i* S **S** **04 09 20.0 +3.7**
APA MLR MLR
comp=Z,1μm,19.0s,MS4.9
ETSF Etsaut 54.98 312 *e*P **P** **04 01 38.9 -0.5**
comp=Z,13nm,0.7s,mb4.8
HHC Hu-ho-hao-te 55.55 50 *e*P **P** **04 01 44.0 +0.4**
HHC AP pP 04 01 48.0 +1.3
HHC XP sP 04 01 50.5 +2.7
HHC PCP PcP 04 02 34.8 -8.5
HHC PP PP 04 03 51.8 +2.6
HHC PCS 04 06 41.3
HHC S **S** **04 09 32.5 +5.3**
HHC XS 04 09 38.3
HHC PS PS 04 09 46.0 +6.4
HHC SCS ScS 04 11 28.8 -0.6
HHC SS SS 04 13 16.0 +3.9
HHC AMB AMB
comp=Z,21nm,1.9s,mb4.8
HHC AMB AMB
comp=Z,212nm,4.9s
HHC LR LR
comp=N,141nm,19.2s,MS4.3
HHC LR LR
comp=E,249nm,22.0s,MS4.3
HHC LR LR
comp=Z,402nm,21.6s,MS4.5
EVIA Vianos 55.60 307 P **P** **04 01 43.7 -0.3**
comp=Z,5.7nm,0.6s,mb4.8
MFF Saint Martin d 55.63 317 *e*P **P** **04 01 42.9 -1.2**
EQES Quesada 55.92 306 P **P** **04 01 45.5 -0.7**
comp=Z,4.4nm,0.6s,mb4.7
NB2 NORSAR Subarra 55.96 336 P **P** **04 01 44.3 -1.9**

comp=Z,21nm,1.2s,mb5.0,baz=124,slow=7.0
NB2 NORSAR Subarra 55.96 336 P **P** **04 01 44.5 -1.7**
NOA NORSAR Array B 55.96 336 P **P** **04 01 45.0 -1.3**
comp=Z,7.5nm,1.1s,mb4.7,baz=123,slow=7.4,SNR=9.6
NOA LR LR 04 28 49.0
comp=Z,562nm,19.8s,MS4.7,baz=125,slow=39
NOA NORSAR Array B 55.96 336 P **P** **04 01 45.0 -1.2**
NOA pmax pmax
comp=Z,8.0nm,1.1s
NOA MLR MLR
comp=Z,562nm,19.8s
LDF La Druitiere 56.20 319 *e*P **P** **04 01 46.9 -1.2**
comp=Z,117nm,1.4s,mb5.4
FLN La Foliniere 56.48 319 *e*P **P** **04 01 48.9 -1.2**
comp=Z,96nm,1.4s,mb5.3
FLN *e*R
comp=Z,181nm,21.8s
GRR Gorron 56.60 319 *e*P **P** **04 01 49.6 -1.4**
comp=Z,43nm,1.2s,mb5.0
ESDC Sonseca Array 56.88 308 P **P** **04 01 52.4 -0.7**
comp=Z,3.3nm,0.6s,mb4.5,baz=86,slow=7.1,SNR=28
ESDC Sonseca Array 56.88 308 P **P** **04 01 52.1 -1.0**
comp=Z,2.6nm,0.6s,mb4.4
ESLA Sonseca Array 56.88 308 *e*P **P** **04 01 52.1 -1.1**
comp=Z,37nm,1.8s,mb5.1
SUR Sutherland 56.92 214 P **P** **04 01 56.1 +2.6**
comp=Z,16nm,1.1s,mb5.0,baz=30,slow=5.8,SNR=5.4
ELAN Lanestosa 57.10 312 P **P** **04 01 53.0 -1.6**
EADA Adamuz 57.15 306 P **P** **04 01 54.3 -0.7**
comp=Z,17nm,1.3s,mb4.9
GUD Guadarrama 57.17 309 P **P** **04 01 54.1 -1.1**
comp=Z,2.6nm,0.7s,mb4.4
SGMF Saint Gilles 57.66 318 *e*P **P** **04 01 56.8 -1.7**
comp=Z,42nm,1.1s,mb5.1
KEV Kevo 57.82 349 *e*p **P** **04 01 57.7 -1.6**
ARCES ARCESS Array B 57.92 348 P **P** **04 01 58.8 -1.2**
comp=Z,24nm,1.1s,mb5.2,baz=151,slow=6.8,SNR=102
ARCES PcP PcP 04 02 51.5 -0.6
comp=Z,1.8nm,0.7s,baz=149,slow=5.3,SNR=2.9
ARCES LR LR 04 30 12.8
comp=Z,533nm,19.8s,MS4.7,baz=140,slow=40
ARCES ARCESS Array B 57.92 348 P **P** **04 01 58.8 -1.2**
ARCES 04 02 51.5
ARCES pmax pmax
comp=Z,24nm,1.1s
ARCES pmax pmax
comp=Z,2.0nm,0.7s
ARCES MLR MLR
comp=Z,533nm,19.8s
ARE0 ARCESS Array S 57.92 348 *e*P **P** **04 01 58.0 -2.1**
QUIF Quistinic 57.97 318 *e*P **P** **04 01 59.3 -1.3**
ESPR Espera 58.01 304 P **P** **04 01 59.7 -1.4**
comp=Z,19nm,1.1s,mb5.0
ROSF Rostrenen 58.14 318 *e*P **P** **04 02 00.0 -1.9**
comp=Z,59nm,1.4s,mb5.1
EARI Arriondas 58.39 312 P **P** **04 02 01.3 -2.4**
comp=Z,15nm,1.2s,mb4.9
EMIN Mina Concepcio 58.75 305 P **P** **04 02 04.8 -1.4**
comp=Z,19nm,1.2s,mb5.0
BJT Baijiatuau 58.89 52 *e*P **P** **04 02 06.6 -0.6**
comp=Z,26nm,1.1s,mb5.2
BJT LR LR
comp=Z,621nm,20.0s,MS4.7
BJI Beijing 58.90 52 P **P** **04 02 07.5 +0.2**
BJI XP sP 04 02 20.5 +8.9
BJI S **S** **04 10 13.5 +2.1**
BJI SS SS 04 14 10.0 +3.3
BJI AMB AMB
comp=Z,24nm,1.2s,mb5.1
BJI LR LR
comp=N,374nm,18.8s,MS4.6
BJI LR LR
comp=E,298nm,19.9s,MS4.6
BJI LR LR
comp=Z,460nm,19.9s,MS4.6
KIC Kosan Boka 58.99 269 *e*P **P** **04 02 09.4 +1.1**
comp=Z,327nm,1.4s
DBIC Dimbokro 59.04 269 P **P** **04 02 09.6 +1.0**
comp=Z,19nm,1.0s,mb5.1,baz=60,slow=5.5,SNR=8.2
DBIC LR LR 04 25 38.2
comp=Z,266nm,20.9s,MS4.3,baz=41,slow=34
DBIC Dimbokro 59.04 269 *e*P **P** **04 02 08.9 +0.4**
DBIC LR LR
comp=Z,205nm,22.0s,MS4.2
EBAD Badajoz 59.11 307 P **P** **04 02 07.2 -1.6**
comp=Z,11nm,1.1s,mb4.8
TIC Toumodi 59.20 269 *e*P **P** **04 02 10.6 +0.9**
comp=Z,422nm,1.5s
TIA Tai'an 59.27 56 *e*P **P** **04 02 09.8 -0.1**
PBRG Braganca 59.28 310 *e*P **P** **04 02 09.9 0.0**
comp=Z,18nm,1.9s,mb4.8
ECAL Calabor 59.29 310 P **P** **04 02 08.0 -2.0**
comp=Z,8.1nm,0.9s,mb4.8
LIC Lamto 59.30 269 *e*P **P** **04 02 11.1 +0.7**
comp=Z,175nm,1.5s,mb5.9
LIC Lamto 59.30 269 *e*P **P** **04 02 11.0 +0.6**
comp=Z,142nm,1.3s,mb5.5
LIC *e*R
comp=Z,282nm,21.2s
LIC Lamto 59.30 269 *e*P **P** **04 02 11.0 +0.6**
comp=Z,71nm,1.3s,mb5.5
LIC LR LR
comp=Z,140nm,21.3s,MS4.1
PALC Alcoutim 59.35 305 *e*P **P** **04 02 10.0 -0.5**
comp=Z,63nm,1.2s,mb5.5
EGRO El Granado 59.37 305 P **P** **04 02 09.3 -1.3**
comp=Z,6.9nm,0.9s,mb4.7
PCBR Castelo Branco 59.59 308 *e*P **P** **04 02 11.8 -0.3**
comp=Z,19nm,2.4s,mb4.7
ERUA La Rua 59.65 311 P **P** **04 02 10.4 -2.1**
MTE Manteigas 59.70 308 *e*P **P** **04 02 12.9 +0.1**
comp=Z,29nm,1.7s,mb5.0
MTE Manteigas 59.70 308 *e*P **P** **04 02 12.8 0.0**
PBEJ Beja 59.71 306 *e*P **P** **04 02 12.6 -0.3**
comp=Z,30nm,1.3s,mb5.2
PBEJ Beja 59.71 306 *e*P **P** **04 02 12.5 -0.4**
EPON Pontenova 59.79 312 P **P** **04 02 11.3 -2.2**
comp=Z,7.6nm,0.8s,mb4.8
EVO Evora 59.87 306 *e*P **P** **04 02 13.9 -0.1**
comp=Z,76nm,1.7s,mb5.2
EVO *e*R
comp=Z,187nm,18.8s
PVRL Vila Real 59.93 309 *e*P **P** **04 02 14.6 +0.2**
comp=Z,37nm,1.2s,mb5.3
PVIS Viseu 60.00 309 *e*P **P** **04 02 15.3 +0.4**
comp=Z,40nm,1.2s,mb5.3
EKA Eskdalemuir Ar 60.09 326 P **P** **04 02 13.9 -1.3**
comp=Z,1.4nm,0.7s,mb4.1,baz=120,slow=5.7,SNR=6.5
EKA Eskdalemuir Ar 60.09 326 P **P** **04 02 13.9 -1.4**
EKA pmax pmax
comp=Z,1.0nm,0.7s
EKA Eskdalemuir Ar 60.09 326 P **P** **04 02 13.9 -1.3**
ELOB Lobios 60.26 310 P **P** **04 02 14.9 -1.7**
comp=Z,11nm,1.1s,mb4.8
PTOM Tomar 60.28 307 *e*P **P** **04 02 16.5 -0.3**
comp=Z,38nm,1.7s,mb5.2
PTOM Tomar 60.28 307 *e*P **P** **04 02 16.4 -0.4**
NJ2 Nanjing 60.53 61 *e*P **P** **04 02 18.3 -0.3**
NJ2 AP pP 04 02 28.8 +7.1
NJ2 PP PP 04 04 32.5 -1.6
NJ2 S **S** **04 10 29.0 -3.5**
NJ2 XS 04 10 44.0
NJ2 PS PS 04 10 48.0 -0.8
NJ2 AMB AMB
comp=Z,40nm,0.6s,mb5.7
NJ2 LR LR
comp=Z,2μm,21.2s,MS5.2
STS Santiago 60.75 311 P **P** **04 02 19.1 -0.9**
BOD Bodaibo 61.53 32 *e*P **P** **04 02 22.7 -2.3**
SSE Sheshan 62.52 62 ⇑P **P** **04 02 31.8 -0.3**
SSE S **S** **04 10 57.5 -0.3**
SSE AMB AMB
comp=Z,34nm,0.7s,mb5.6
SSE LR LR
comp=N,86nm,15.0s,MS4.5
SSE LR LR
comp=E,239nm,15.0s,MS4.5
SSE LR LR
comp=Z,275nm,15.0s,MS4.5
HIA Hailar 62.76 42 *e*P **P** **04 02 33.1 -0.2**
comp=Z,13nm,0.9s,mb5.1
HIA LR LR
comp=Z,424nm,20.0s,MS4.6
CN2 Changchun 66.11 48 ⇑P **P** **04 02 55.0 -0.2**
CN2 *e*AP pP 04 03 01.8 +3.4
CN2 *e*S S 04 11 41.0 -1.1
CN2 AMB AMB
comp=Z,50nm,0.7s,mb5.7
CN2 AMB AMB
comp=Z,200nm,4.0s
CN2 LR LR
comp=N,400nm,20.0s,MS4.7
CN2 LR LR
comp=E,300nm,20.0s,MS4.7
CN2 LR LR
comp=Z,200nm,21.0s,MS4.3
SPB4 Spitsbergen Ar 66.36 352 *e*P **P** **04 02 55.9 -0.4**
KS15 Wonju Array Si 67.92 55 *e*P **P** **04 03 03.7 -3.2**
JOW Kunigami 68.98 67 P **P** **04 03 13.0 -0.6**
comp=Z,18nm,0.7s,mb5.1,baz=357,slow=8.5,SNR=4.3
JOW LR LR 04 35 23.2
comp=Z,215nm,21.7s,MS4.3,baz=172,slow=38
MDJ Mudanjiang 69.11 48 P **P** **04 03 12.8 -1.3**
MDJ AP pP 04 03 16.0 -1.2
MDJ XP sP 04 03 17.3 -1.1
MDJ PCP PcP 04 03 38.8 +0.6
MDJ S S 04 12 12.3 -5.7
MDJ SCS ScS 04 13 11.5 +0.3
MDJ AMB AMB
comp=Z,10.0nm,1.3s,mb4.6
MDJ AMB AMB
comp=Z,66nm,7.8s
MDJ LR LR
comp=N,220nm,31.8s,MS4.2
MDJ LR LR
comp=E,67nm,36.6s,MS4.2
MDJ LR LR
comp=Z,290nm,22.3s
YAK Yakutsk 70.14 29 *e*P **P** **04 03 18.1 -1.9**
YAK pmax pmax
comp=Z,11nm,0.9s,mb4.8
YAK pmax pmax
comp=E,5.0nm,1.2s
YAK MLR MLR
comp=Z,452nm,24.0s,MS4.6
YAK MLR MLR
comp=N,168nm,17.0s
YAK MLR MLR
comp=E,221nm,23.0s
YAK Yakutsk 70.14 29⇑ *e*P **P** **04 03 19.3 -0.8**
KLR Kul'dur 70.59 43 *e*P **P** **04 03 21.8 -1.2**
KLR MLR MLR
comp=E,1μm,19.0s
JNU Nakatsue 70.63 60 P **P** **04 03 23.8 +0.2**
comp=E,8.4nm,0.8s,mb4.7,baz=294,slow=3.6,SNR=6.6
JNU LR LR 04 36 42.8
comp=E,207nm,19.2s,MS4.4,baz=255,slow=38
BORG Borgarnes 71.01 334 P **P** **04 03 24.8 -0.5**
comp=E,19nm,0.8s,mb5.1,baz=126,slow=4.2,SNR=2.8
TIXI Tiksi 71.24 19 *e*P **P** **04 03 25.8 -0.9**
TIXI *e*S S 04 12 40.5 -2.1
TIXI *e*SS SS 04 17 12.5 -6.0
TIXI pmax pmax
comp=Z,7.0nm,1.2s,mb4.5
TIXI MLR MLR
comp=Z,557nm,17.0s,MS4.9
TIXI Tiksi 71.24 19 *e*P **P** **04 03 24.3 -2.4**
comp=Z,3.5nm,0.5s,mb4.5
TIXI LR LR
comp=Z,641nm,20.0s,MS4.9
DAG Danmarks Havn 72.13 347⇑ *i*P **P** **04 03 31.5 -0.4**
comp=Z,13nm,0.9s,mb4.8
DAG Danmarks Havn 72.13 347⇑ *e*P **P** **04 03 31.5 -0.4**
DAG pmax pmax
comp=Z,13nm,0.9s,mb4.9
DAG Danmarks Havn 72.13 347⇑ *e*P **P** **04 03 31.5 -0.4**
comp=Z,13nm,0.9s,mb4.8
KLBR Kellerberrin 75.79 128 *e*P **P** **04 03 53.3 -0.6**
comp=Z,50nm,1.7s,mb5.2
NWAO Narrogin (SRO) 76.01 130 P **P** **04 03 55.3 +0.1**
comp=Z,4.2nm,0.5s,mb4.6,baz=315,slow=4.2,SNR=5.9
NWAO Narrogin (SRO) 76.01 130 P **P** **04 03 55.3 +0.1**
NWAO pmax pmax
comp=Z,4.0nm,0.5s
FITZ Fitzroy Crossi 76.98 113 *e*P **P** **04 04 00.6 -0.2**
comp=Z,8.2nm,0.9s,mb4.7
FITZ Fitzroy Crossi 76.98 113 P **P** **04 04 00.8 0.0**
comp=Z,7.9nm,0.8s,mb4.7,baz=340,slow=1.4,SNR=10
FITZ LR LR 04 33 19.1
comp=Z,82nm,21.7s,MS4.0,baz=284,slow=32
SUMG Summit 77.18 342 *e*P **P** **04 04 01.4 +0.5**
JHJ Hachijo jima 2 78.04 59 LR LR 04 42 24.9
comp=Z,136nm,20.2s,MS4.3,baz=342,slow=39
YSS Yuzh-Sakhalins 78.11 44 *e*P **P** **04 04 06.6 +0.1**
ASAJ Asahikawa 78.43 47 LR LR 04 40 12.1
comp=Z,338nm,21.1s,MS4.7,baz=345,slow=37
CBIJ Chichi jima 81.20 64 LR LR 04 40 24.3
comp=Z,210nm,20.7s,MS4.5,baz=94,slow=36
KAKA Kakadu 81.46 105 *e*P **P** **04 04 24.7 -0.4**
comp=Z,11nm,0.6s,mb5.0
MAW Mawson 82.17 177⇑ *i*P **P** **04 04 30.0 +2.3**
comp=Z,5.8nm,1.1s,mb4.4
MAW Mawson 82.17 177 P **P** **04 04 30.2 +2.5**
comp=Z,9.3nm,1.1s,mb4.6,baz=346,slow=9.3,SNR=7.6
MAW LR LR 04 32 42.7
comp=Z,603nm,20.6s,MS5.0,baz=49,slow=30
SYO Syowa Base 84.07 185 ⇓P **P** **04 04 38.0 +0.6**
SYO Syowa Base 84.07 185⇑ *i*pP pP 04 04 41.1 +0.4
SYO Syowa Base 84.07 185 ⇓PcP PcP 04 04 44.5 +2.7
SYO Syowa Base 84.07 185⇓ *e*P **P** **04 04 38.0 +0.6**
SYO *e*pP pP 04 04 41.1 +0.4
SYO *e*PcP PcP 04 04 44.5 +2.7
BILL Bilibino 84.34 21⇑ *e*P **P** **04 04 39.9 +1.1**
BILL pmax pmax
comp=Z,11nm,1.1s,mb4.9
BILL MLR MLR
comp=Z,300nm,19.0s,MS4.7
BILL Bilibino 84.34 21 *e*P **P** **04 04 39.5 +0.6**
WRA Warramunga Arr 85.36 112 P **P** **04 04 44.9 -0.1**
comp=Z,11nm,0.8s,mb5.0,baz=298,slow=3.9,SNR=41
WRA Warramunga Arr 85.36 112 P **P** **04 04 44.9 -0.1**
WRA pmax pmax
comp=Z,11nm,0.9s
WRAB Tennant Creek 85.37 112 *e*P **P** **04 04 44.3 -0.7**
comp=Z,46nm,1.0s,mb5.6
WB2 Warramunga Arr 85.38 112 ⇓ *i*P **P** **04 04 44.7 -0.4**
AS12 Alice Springs 86.09 116 ⇓ *i*P **P** **04 04 48.3 -0.3**
comp=Z,13nm,0.7s,mb5.3
ASAR Alice Springs 86.09 116 P **P** **04 04 48.4 -0.2**
comp=Z,13nm,0.7s,mb5.2,baz=292,slow=4.5,SNR=107
ASAR LR LR 04 38 29.8
comp=Z,128nm,19.9s,MS4.3,baz=105,slow=32
PET Petropavlovsk 86.59 36 *e*P **P** **04 04 45.3 -5.0**
PET *e*S S 04 15 17.5 -7.9
PET *e*PS PS 04 16 20.2 -7.3
PET *e*SS SS 04 21 04.9 -4.5
PET MLR MLR
comp=Z,372nm,20.0s,MS4.8
MAIT Maitri 90.10 193 *e*P **P** **04 05 10.0 +3.3**
STKA Stephens Creek 94.89 122 LR LR 04 46 06.3
comp=Z,234nm,19.2s,MS4.7,baz=208,slow=34
SCHQ Schefferville 95.16 330 LR LR 04 51 47.6
comp=Z,239nm,18.6s,MS4.7,baz=80,slow=38
IMA Indian Mountai 96.82 11 *e*P **P** **04 05 40.5 +2.9**
INK Inuvik 97.12 3 P **P** **04 05 39.9 +1.0**
comp=Z,1.9nm,0.8s,mb4.6,baz=326,slow=0.9,SNR=3.6
INK Inuvik 97.12 3 P **P** **04 05 39.9 +1.0**
INK pmax pmax
comp=Z,2.0nm,0.8s
ILAR Eielson Array 99.18 9 LR LR 04 59 14.6
comp=Z,195nm,19.1s,MS4.6,baz=349,slow=41
YKA Yellowknife Ar 102.73 355 P Pdif 04 06 04.3 -0.1
comp=Z,0.2nm,0.6s,baz=4.6,slow=4.7,SNR=4.9
YKA PP PP 04 10 19.4 -1.3
comp=Z,0.2nm,0.8s,baz=5.2,slow=7.3,SNR=3.8
CPUP Villa Florida 115.97 248 PKP PKPdf 04 10 51.2 -1.3
comp=Z,1.7nm,0.9s,baz=215,slow=16,SNR=2.4
CPUP Villa Florida 115.97 248 PKIKP PKPdf 04 10 51.3 -1.2
CPUP pmax pmax
comp=Z,2.0nm,0.9s
NEW Newport 117.03 354 PKP PKPdf 04 10 53.9 -0.1
comp=Z,1.4nm,0.7s,baz=37,slow=10,SNR=2.7
NEW Newport 117.03 354 PKIKP PKPdf 04 10 53.9 -0.1
NEW pmax pmax
comp=Z,1.0nm,0.7s
NEW Newport 117.03 354 PKP PKPdf 04 10 53.9 -0.1
PDAR Pinedale Array 121.16 347 PKP PKPdf 04 11 00.5 -1.7
comp=Z,2.1nm,0.6s,baz=71,slow=3.0,SNR=22
MIAR Mount Ida 122.64 329 *e*PKP PKPdf 04 11 04.2 -0.9
MIAR LR LR
comp=Z,157nm,20.0s,MS4.7
HWUT Hardware Ranch 122.70 348 *e*PKP PKPdf 04 11 03.8 -1.2
HWUT LR LR
comp=Z,354nm,19.0s,MS5.0
DAU Daniels Canyon 123.78 347 *e*PKP PKPdf 04 11 07.1 -0.2
WMOK Wichita Mounta 124.91 333 *e*PKP PKPdf 04 11 08.4 -1.3
LPAZ La Paz 125.13 260 PKP PKPdf 04 11 10.0 -0.5
comp=Z,0.9nm,0.6s,baz=344,slow=0.8,SNR=4.3
LPAZ La Paz 125.13 260 PKIKP PKPdf 04 11 10.0 -0.5
LPAZ pmax pmax
comp=Z,1.0nm,0.6s
ROSC El Rosal 126.02 287 PKP PKPdf 04 11 11.7 -0.6
comp=Z,4.5nm,0.4s,baz=139,slow=15,SNR=2.7
NVAR Mina Array Bea 126.88 353 PKP PKPdf 04 11 13.4 +0.2
comp=Z,5.4nm,0.7s,baz=49,slow=2.0,SNR=26
NEN Nelson 129.09 349 *e*PKP PKPdf 04 11 17.9 +0.2
TXAR Lajitas Array 131.65 335 PKP PKPdf 04 11 21.9 -0.8
comp=Z,5.0nm,1.2s,baz=135,slow=1.8,SNR=14

NEIC 27 04:04:51.2,63.11N×151.61W,h18km,ML3.7(PMR), **ML3.3**(AEIC), **After AEIC., Central Alaska**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KTH	**Kantishna Hill**	**0.54**	**35**	P	Pb	04 05 02.2	+0.4
KTH				S	Sb	04 05 10.2	+1.1
TRF	**Thorofare Mounta**	**0.69**	**60**	P	Pb	04 05 04.7	+0.3
TRF				S	Sb	04 05 14.5	+1.1
HUR	**Hurricane**	**0.91**	**98**	P	Pb	04 05 07.8	-0.4
HUR				S	Sb	04 05 19.2	-0.6
CUT	**Chulitna**	**0.94**	**138**	P	Pb	04 05 08.0	-0.6
RND	**Reindeer**	**1.28**	**75**	P	Pn	04 05 14.0	-0.5
RND				S	Sb	04 05 31.6	+1.0
MCK	**McKinley**	**1.35**	**61**	P	Pn	04 05 14.6	-0.9
MCK				S	Sb	04 05 34.5	+1.8
BWN	**Browne**	**1.43**	**41**	P	Pn	04 05 16.2	-0.4
PWA	**Palmer West**	**1.67**	**150**	P	Pn	04 05 19.9	-0.1
SUA	**Susitna One**	**1.70**	**166**	P	Pn	04 05 20.5	+0.1
NCG	**North Capps Gl**	**1.73**	**189**	P	Pn	04 05 20.1	-0.7
CGLM	**Capps Glacier**	**1.82**	**186**	P	Pn	04 05 22.8	+0.7
GHO	**Glory Hole Cre**	**1.83**	**136**	P	Pn	04 05 22.4	0.0
NEA	**Nenana**	**1.85**	**36**	P	Pn	04 05 21.8	-0.8
CP2	**Crater Peak Tw**	**1.88**	**189**	P	Pn	04 05 22.9	-0.1
PMR	**Palmer**	**1.91**	**142**	P	Pn	04 05 23.5	0.0
DHY	**Denali Highway**	**1.93**	**89**	P	Pn	04 05 23.9	+0.2
SPU	**Mount Spurr**	**1.95**	**186**	P	Pn	04 05 23.6	-0.3
CKL	**Chakachamna La**	**1.95**	**190**	P	Pn	04 05 24.2	+0.2
MLY	**Manley**	**1.97**	**11**	P	Pn	04 05 24.5	+0.2
SML	**Sawmill**	**2.01**	**129**	P	Pn	04 05 24.5	-0.3
TT01	**Tatalina**	**2.02**	**266**	P	Pn	04 05 24.4	-0.6
FIB	**Fire Island**	**2.06**	**160**	P	Pn	04 05 26.2	+0.6
BKG	**Blockade Glaci**	**2.07**	**189**	P	Pn	04 05 25.3	-0.4
PMS	**Palmer South**	**2.10**	**152**	P	Pn	04 05 26.2	0.0
RC01	**Rabbit Creek A**	**2.21**	**156**	P	Pn	04 05 27.2	-0.5
KNK	**Knik Glacier**	**2.25**	**138**	P	Pn	04 05 28.3	-0.1
CCB	**Clear Creek Bu**	**2.28**	**46**	P	Pn	04 05 27.8	-0.9
SCM	**Sheep Creek Mo**	**2.37**	**121**	P	Pn	04 05 29.7	-0.2
MDM	**Murphy Dome**	**2.38**	**37**	P	Pn	04 05 29.4	-0.8
COLA	**College**	**2.42**	**41**	P	Pn	04 05 29.8	-1.0
HDA	**Harding Lake**	**2.44**	**56**	P	Pn	04 05 30.2	-0.9
RDT	**Redoubt**	**2.57**	**189**	P	Pn	04 05 31.7	-1.2
IL1	**Eielson Array**	**2.67**	**49**	P	Pn	04 05 33.2	-1.1
REF	**Redoubt East F**	**2.68**	**192**	P	Pn	04 05 33.2	-1.3
SLKM	**Skilak Lake**	**2.69**	**165**	P	Pn	04 05 33.5	-1.1
TOA	**Tolsona**	**2.71**	**109**	P	Pn	04 05 34.3	-0.6
SVW	**Sparrevohn**	**2.76**	**225**	P	Pn	04 05 34.5	-1.0
PAX	**Paxson**	**2.80**	**90**	P	Pn	04 05 35.3	-0.8
IM3	**Indian Mountai**	**3.03**	**343**	P	Pn	04 05 39.4	0.0
ILIM	**Iliamna**	**3.11**	**193**	P	Pn	04 05 40.4	-0.1
ILW	**Iliamna West**	**3.15**	**194**	P	Pn	04 05 41.1	+0.1
VLZ	**Valdez**	**3.18**	**126**	P	Pn	04 05 41.7	+0.2
SEW	**Seward**	**3.19**	**160**	P	Pn	04 05 40.8	-0.9
DOT	**Dot Lake**	**3.44**	**78**	P	Pn	04 05 44.5	-0.8
PRP	**Porcupine Dome**	**3.59**	**45**	P	Pn	04 05 46.0	-1.3
CNPM	**China Poot**	**3.60**	**177**	P	Pn	04 05 47.1	-0.4
WANC	**Wrangell North**	**3.66**	**104**	P	Pn	04 05 47.3	-1.1
EYAK	**Cordova Ski Ar**	**3.79**	**130**	P	Pn	04 05 48.6	-1.5
BMRM	**Bremner River**	**3.94**	**120**	P	Pn	04 05 51.3	-1.0
COLD	**Coldfoot**	**4.18**	**8**	P	Pn	04 05 55.3	-0.5
BCA3	**Beaver Creek A**	**4.47**	**86**	P	Pn	04 05 59.5	-0.4
BM3	**Burnt Mountain**	**5.23**	**31**	P	Pn	04 06 08.5	-2.1
KDAK	**Kodiak Island**	**5.37**	**186**	P	Pn	04 06 11.8	-0.8
DAWY	**Dawson**	**5.54**	**75**	P	Pn	04 06 13.3	-1.7
PCA	**Pinnacle**	**6.20**	**114**	P	Pn	04 06 22.9	-1.4

*IDC **27** 04:17:18.8±14.0,22.61S×179.54W,h420km±131km, mb3.8/4,mb1 3.9/5,mb1mx3.4/15, Error ellipse: s-maj=193.0km s-min=49.5km az=55.0*
*NEIC **27** 04:17:32.0±1.6,22.78S×179.67W,h600km,mb4.7/8, Error ellipse: s-maj=37.2km s-min=18.5km az=48.0*
ISC 27 04:17:18.5±6.1,22.5S±0.3×179.3W±0.3,h462km±60km, n16,σ0s74/17,mb4.5/10,6C,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**15.98**	**190**	P	**P**	**04 20 39.8**	**-0.4**
	4.1nm,0.3s,baz=14,slow=2.6,SNR=16						
URZ				S	**S**	**04 23 12.5**	**-11**
	0.3nm,0.3s,baz=40,slow=24,SNR=4.4						
RPZ	**Rata Peaks**	**22.59**	**198**	P	**P**	**04 21 44.0**	**+0.2**
	5.6nm,0.5s,mb4.2,baz=18,slow=3.2,SNR=3.5						
CTA	**Charters Tower**	**32.16**	**268**⇑ *i*P		**P**	**04 23 10.1**	**+1.9**
	10nm,0.4s,mb4.6						
CTAO	**Charters Tower**	**32.16**	**268** *e*P		**P**	**04 23 09.7**	**+1.5**
	14nm,0.5s,mb4.7						
STKA	**Stephens Creek**	**35.86**	**246**⇑ *i*P		**P**	**04 23 38.9**	**-0.2**
	2.7nm,0.4s,mb4.0						
STKA	**Stephens Creek**	**35.86**	**246** P		**P**	**04 23 39.0**	**-0.1**
	4.5nm,0.5s,mb4.2,baz=92,slow=10,SNR=16						
AS12	**Alice Springs**	**42.93**	**259**⇑ *i*P		**P**	**04 24 36.8**	**+0.1**
	4.3nm,0.4s,mb4.2						
ASAR	**Alice Springs**	**42.93**	**259** P		**P**	**04 24 36.9**	**+0.1**
	4.9nm,0.5s,mb4.2,baz=96,slow=6.6,SNR=59						
WB2	**Warramunga Arr**	**43.17**	**264**⇑ *i*P		**P**	**04 24 38.7**	**0.0**
WRAB	**Tennant Creek**	**43.17**	**264** *e*P		**P**	**04 24 38.3**	**-0.4**
	15nm,0.7s,mb4.5						
WRA	**Warramunga Arr**	**43.18**	**264** P		**P**	**04 24 38.9**	**+0.1**
	2.8nm,0.3s,mb4.2,baz=102,slow=8.4,SNR=66						
FORT	**Forrest**	**47.42**	**248**⇑ *i*P		**P**	**04 25 09.8**	**-1.7**
	42nm,0.5s,mb5.1						
GUMO	**Guam**	**50.23**	**312** P		**P**	**04 25 32.3**	**-0.5**
	182nm,1.3s,mb5.2						
FITZ	**Fitzroy Crossi**	**51.61**	**264**⇑ *i*P		**P**	**04 25 43.5**	**+0.5**
	3.4nm,0.6s,mb3.9						
QSPA	**South Pole Qui**	**67.55**	**180** *e*P		**P**	**04 27 29.3**	**+0.7**
	12nm,0.6s,mb4.7						
SNAA	**Sanae**	**86.02**	**179** *e*P		**P**	**04 29 09.1**	**-0.2**

*IDC **27** 04:23:52.6±1.1,17.41S×174.65W,mb4.1/4,mb1 4.3/4, mb1mx4.0/13,Error ellipse: s-maj=55.7km s-min=23.1km az=138.0*
*NEIC **27** 04:23:57.4±0.7,17.59S×174.55W,h35km,mb4.7/2,Error ellipse: s-maj=24.3km s-min=14.5km az=134.0*
ISC 27 04:23:55.7±0.8,17.6S±0.2×174.6W±0.2,h33km,n10,
σ0s68/10,mb4.3/7,1D,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**21.83**	**198**	P	**P**	**04 28 48.1**	**+1.2**
	3.8nm,0.3s,mb4.2,baz=274,slow=3.6,SNR=2.6						
RPZ	**Rata Peaks**	**28.72**	**202**	P	**P**	**04 29 46.5**	**-5.6**
	6.3nm,0.6s,mb4.5,baz=356,slow=12,SNR=2.1						
WRAB	**Tennant Creek**	**48.25**	**259** *e*P		**P**	**04 32 35.5**	**-0.2**
	3.2nm,0.7s,mb4.5						
WRA	**Warramunga Arr**	**48.26**	**259** P		**P**	**04 32 36.0**	**+0.2**
	0.6nm,0.5s,mb3.9,baz=93,slow=7.4,SNR=3.5						
AS12	**Alice Springs**	**48.37**	**254** ⇓ *i*P		**P**	**04 32 36.2**	**-0.4**
	5.0nm,0.7s,mb4.7						
ASAR	**Alice Springs**	**48.37**	**254** P		**P**	**04 32 36.5**	**-0.1**
QSPA	**South Pole Qui**	**72.46**	**180** *e*P		**P**	**04 35 18.8**	**-1.4**
	9.2nm,0.7s,mb4.8						
NVAR	**Mina Array Bea**	**76.72**	**42** P		**P**	**04 35 46.0**	**+0.4**
PDAR	**Pinedale Array**	**84.66**	**42** P		**P**	**04 36 27.6**	**+0.1**
	0.6nm,1.0s,mb3.7,baz=180,slow=3.0,SNR=3.7						
ILAR	**Eielson Array**	**84.81**	**12** P		**P**	**04 36 27.6**	**-0.1**

*MAN **27** 04:28:31.9,9.01N×126.25E,h44km,mb4.5,ML3.4,MS3.3*
*NEIC **27** 04:28:39.0±2.1,8.92N×125.94E,h136km±21km,mb4.6/2, Error ellipse: s-maj=31.7km s-min=10.3km az=77.0*
*IDC **27** 04:28:38.2±3.6,8.96N×126.08E,h126km±34km,mb3.3/8, mb1 3.5/9,mb1mx3.4/19,Error ellipse: s-maj=42.2km*

s-min=13.0km az=76.0

ISC 27 04:28:28.8±0.5, 8.94N±0.03×126.50E±0.04, h44km, n32, σ1§29/43, mb3.9/11, 9C-3D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BUTP	**Butuan**	**0.87**	**272**↑	*e*P	**P**	**04 28 45.5**	**+0.8**
BUTP				*e*S	**S**	**04 28 56.1**	**-0.4**
SCPH	**Surigao**	**1.31**	**310**	*e*P	**P**	**04 28 51.2**	**+0.2**
SCPH				*e*S	**S**	**04 29 07.9**	**+0.4**
MSLP	**Maasin**	**2.01**	**306**↑	*e*P	**P**	**04 29 01.8**	**+0.8**
MSLP				*e*S	**S**	**04 29 24.2**	**-0.7**
KCP	**Kidapawan**	**2.37**	**216**↓	*e*P	**P**	**04 29 08.2**	**+2.1**
KCP				*i* S	**S**	**04 29 35.8**	**+1.8**
PLP	**Palo**	**2.68**	**326**	*e*P	**P**	**04 29 11.4**	**+1.0**
PLP				*e*S	**S**	**04 29 44.3**	**+2.5**
TBP	**Tagbilaran**	**2.71**	**286**↓	*e*P	**P**	**04 29 10.6**	**-0.3**
TBP				*e*S	**S**	**04 29 39.3**	**-3.5**
OCLP	**Ormoc**	**2.81**	**319**↑	*e*P	**P**	**04 29 14.1**	**+1.7**
BESP	**Borongan**	**2.85**	**339**↑	*e*P	**P**	**04 29 13.4**	**+0.5**
BESP				*e*S	**S**	**04 29 46.3**	**0.0**
LLP	**Lapu-Lapu**	**2.85**	**299**↓	*i*P	**P**	**04 29 12.6**	**-0.4**
LLP				*e*S	**S**	**04 29 37.0**	**-9.4**
DCPH	**Dipolog City**	**3.13**	**264**↑	*i*P	**P**	**04 29 15.2**	**-1.7**
DCPH				*e*S	**S**	**04 29 49.2**	**-4.2**
SNPH	**Sibulan**	**3.25**	**277**	*e*P	**P**	**04 29 18.0**	**-0.6**
PAGZ	**Pagadian**	**3.27**	**251**↑	*e*P	**P**	**04 29 19.8**	**+0.9**
PAGZ				*e*S	**S**	**04 29 55.3**	**-1.7**
CNP	**Catarman**	**3.99**	**333**↑	*e*P	**P**	**04 29 29.2**	**+0.3**
CNP				*e*S	**S**	**04 30 13.9**	**-1.2**
KALP	**Kalibo**	**4.92**	**304**↑	*e*P	**P**	**04 29 43.4**	**+1.2**
PVCP	**Virac**	**5.17**	**334**↑	*e*P	**P**	**04 29 45.6**	**-0.1**
TGY	**Tagaytay City**	**7.49**	**314**	*e*P	**P**	**04 30 20.6**	**+2.5**
	53nm,0.3s,baz=237,slow=18,SNR=4.0						
JOW	**Kunigami**	**17.88**	**5**	P	**P**	**04 32 39.8**	**+3.8**
	1.4nm,0.3s,baz=207,slow=16,SNR=3.0						
FITZ	**Fitzroy Crossi**	**26.88**	**182**	P	**P**	**04 34 08.0**	**+0.2**
	18nm,1.6s,mb4.4,baz=176,slow=18,SNR=4.5						
WRAB	**Tennant Creek**	**29.71**	**165**	P	**P**	**04 34 32.0**	**-1.1**
	15nm,1.2s,mb4.6						
WRA	**Warramunga Arr**	**29.71**	**165**	P	**P**	**04 34 33.1**	**-0.1**
	0.2nm,0.4s,mb3.2,baz=353,slow=9.3,SNR=3.7						
ASAR	**Alice Springs**	**33.20**	**168**	P	**P**	**04 35 02.9**	**-0.9**
	0.3nm,0.4s,mb3.6,baz=342,slow=7.3,SNR=4.4						
MDJ	**Mudanjiang**	**35.65**	**4**	*e*P	**P**	**04 35 23.4**	**-1.1**
	10nm,1.0s,mb4.7						
STKA	**Stephens Creek**	**43.07**	**161**	P	**P**	**04 36 27.8**	**+1.4**
	1.7nm,0.7s,mb3.9,baz=102,slow=20,SNR=2.8						
MKAR	**Makanchi Array**	**53.23**	**323**	P	**P**	**04 37 41.5**	**-3.5**
	0.4nm,0.8s,mb3.4,baz=124,slow=8.2,SNR=20						
KURK	**Kurchatov**	**57.29**	**326**	*e*P	**P**	**04 38 10.3**	**-4.1**
BRVK	**Borovoye**	**62.96**	**326**	P	**P**	**04 38 46.7**	**-6.5**
ILAR	**Eielson Array**	**80.53**	**26**	P	**P**	**04 40 36.4**	**-1.3**
ARCES	**ARCESS Array B**	**85.52**	**340**	P	**P**	**04 41 00.7**	**-2.3**
	0.1nm,0.4s,mb3.4,baz=81,slow=6.3,SNR=5.8						
FINES	**FINESS Array B**	**87.17**	**332**	P	**P**	**04 41 08.4**	**-2.8**
	0.4nm,0.3s,mb4.1,baz=90,slow=5.7,SNR=6.1						
VNDA	**Vanda**	**88.58**	**173**	P	**P**	**04 41 18.2**	**+0.6**
	0.7nm,0.8s,mb4.1,baz=332,slow=5.2,SNR=2.7						
YKA	**Yellowknife Ar**	**94.88**	**24**	P	**P**	**04 41 47.0**	**0.0**
	0.2nm,0.6s,mb3.8,baz=306,slow=4.7,SNR=7.5						
YKA	**Yellowknife Ar**	**94.88**	**24**	P	**P**	**04 41 47.0**	**0.0**

BGR 27 04:32:00.7±0.6,51.60N×16.14E, h1km, ML3.1/9, Error ellipse: s-maj=5.6km s-min=4.4km az=100.0
NEIC 27 04:32:01.4±0.5,51.63N×16.04E, h5km, ML3.1(SZGRF), ML3.1(VIE), ML2.7(BRG), Error ellipse: s-maj=6.3km s-min=4.4km az=218.0
WAR 27 04:32:03.0,51.58N×16.00E, h1km, Location given by Polkowice mine, origin time based upon KSP
PRU 27 04:32:05.5,51.45N×15.99E, Felt In Harrachov

ISC 27 04:32:00.4±0.4, 51.54N±0.03×15.99E±0.03, n39, σ1§20/88, 1C-2D, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.72**	**164**	*e*Pg	**Pg**	**04 32 16.9**	**+2.1**
KSP				*e*Pn	**Pn**	**04 32 18.7**	**+1.2**
KSP				*e*Sg	**Sg**	**04 32 27.1**	**+2.7**
KSP	**Ksiaz**	**0.72**	**164**	*i* Pg	**Pg**	**04 32 16.9**	**+2.1**
KSP				*i* SG	**Sg**	**04 32 27.0**	**+2.6**
KSP	**Ksiaz**	**0.72**	**164**	*i* Pg	**Pg**	**04 32 16.9**	**+2.1**
KSP				*i* Sg	**Sg**	**04 32 27.0**	**+2.6**
KSP				*e*		04 32 30.5	
UPC	**Upice**	**1.03**	**179**	*e*PG	**Pg**	**04 32 22.4**	**+1.4**
DPC	**Dobruska-Polom**	**1.21**	**170**	*e*PG	**Pg**	**04 32 25.5**	**+1.0**
DPC				*e*SG	**Sg**	**04 32 41.6**	**+1.1**
	40nm,0.2s						
PVCC	**Panska Ves**	**1.35**	**222**	*e*PG	**Pg**	**04 32 28.1**	**+0.8**
BRG	**Berggiesshubel**	**1.45**	**244**	*e*Pn	**Pn**	**04 32 29.2**	**+1.3**
BRG				*e*Sg	**Sg**	**04 32 50.2**	**+1.6**
BRG	**Berggiesshubel**	**1.45**	**244**	*e*Pn	**Pn**	**04 32 29.1**	**+1.2**
BRG				*i* Pg	**Pg**	**04 32 29.9**	**+0.6**
BRG				*i* Sg	**Sg**	**04 32 49.8**	**+1.2**
RUE	**Ruedersdorf**	**1.66**	**306**	*e*Pn	**Pn**	**04 32 30.7**	**-0.2**
RUE				*e*Sg	**Sg**	**04 32 55.5**	**-0.2**
RUE	**Ruedersdorf**	**1.66**	**306**	*e*Pn	**Pn**	**04 32 30.7**	**-0.3**
RUE				*e*Sg	**Sg**	**04 32 55.5**	**-0.2**
PRU	**Pruhonice**	**1.80**	**211**	PN	**Pn**	**04 32 33.9**	**+0.9**
PRU				PG	**Pg**	**04 32 36.0**	**-0.4**
PRU				*i* x	x	04 32 40.3	
PRU				*i* x	x	04 32 52.5	
PRU				*e*SG	**Sg**	**04 33 00.5**	**+0.1**
	40nm,0.4s						
CLL	**Collm**	**1.88**	**264**	*e*Pn	**Pn**	**04 32 34.5**	**+0.3**
CLL				*e*Sg	**Sg**	**04 33 03.1**	**0.0**
CLL	**Collm**	**1.88**	**264**	*i*PN	**Pn**	**04 32 34.4**	**+0.3**
	logA/T=1.6						
CLL				*e*PG	**Pg**	**04 32 37.0**	**-1.0**
CLL				*i*		04 32 41.5	
CLL				*e*SG	**Sg**	**04 33 03.0**	**-0.1**
CLL	**Collm**	**1.88**	**264**	*i* Pn	**Pn**	**04 32 34.4**	**+0.3**
CLL				*e*Pg	**Pg**	**04 32 37.0**	**-1.0**
CLL				*e*Sg	**Sg**	**04 33 03.0**	**-0.1**
MORC	**Moravsky Berou**	**2.02**	**150**	*e*Pn	**Pn**	**04 32 37.1**	**+1.0**
MORC				*e*Sn	**Sn**	**04 33 05.8**	**+3.4**
OKC	**Ostrava-Krasne**	**2.19**	**140**	*e*PN	**Pn**	**04 32 38.9**	**+0.4**
OKC				*e*PG	**Pg**	**04 32 43.7**	**-0.3**
OKC				*e*SG	**Sg**	**04 33 12.6**	**-0.5**
GUNZ	**Gunzen**	**2.59**	**245**	*e*Pn	**Pn**	**04 32 44.9**	**+0.6**
GUNZ				*e*Sg	**Sg**	**04 33 26.5**	**-0.2**
NKC	**Novy Kostel**	**2.59**	**241**	*e*PN	**Pn**	**04 32 45.4**	**+1.1**
NKC				*e*PG	**Pg**	**04 32 52.3**	**+0.1**
NKC				*e*SG	**Sg**	**04 33 26.7**	**-0.1**
OJC	**Ojcow**	**2.75**	**117**	*e*Pn	**Pn**	**04 32 45.0**	**-1.5**
OJC				*e*Pg	**Pg**	**04 32 55.6**	**+0.3**
OJC				*e*Sn	**Sn**	**04 33 21.5**	**+0.6**
OJC				*e*Sg	**Sg**	**04 33 31.2**	**-0.7**
OJC	**Ojcow**	**2.75**	**117**	*e*PN	**Pn**	**04 32 45.0**	**-1.5**
OJC				*e*PG	**Pg**	**04 32 56.0**	**+0.7**
OJC				*e*SN	**Sn**	**04 33 21.0**	**+0.1**
OJC				*e*SG	**Sg**	**04 33 31.0**	**-0.9**
KHC	**Kasperske Hory**	**2.86**	**214**	*e*PN	**Pn**	**04 32 48.6**	**+0.5**
KHC				*e*PG	**Pg**	**04 32 55.2**	**-2.3**
KHC				*e*SG	**Sg**	**04 33 34.4**	**-1.2**
MOX	**Moxa**	**2.90**	**254**	*e*Pn	**Pn**	**04 32 48.6**	**-0.1**
MOX				*e*Sg	**Sg**	**04 33 36.3**	**-0.6**
MOX	**Moxa**	**2.90**	**254**	*i* P	**Pn**	**04 32 49.0**	**+0.3**
MOX				Pg	**Pg**	**04 32 56.0**	**-2.3**
MOX				Sg	**Sg**	**04 33 36.0**	**-0.9**
MOX	**Moxa**	**2.90**	**254**	*e*Pn	**Pn**	**04 32 49.0**	**+0.3**
MOX				*e*Pg	**Pg**	**04 32 56.4**	**-1.9**
MOX				*e*Sg	**Sg**	**04 33 36.2**	**-0.7**
GEC2	**GERESS Array S**	**3.07**	**210**	*e*Pn	**Pn**	**04 32 53.1**	**+2.0**
GEC2				*e*Sg	**Sg**	**04 33 41.6**	**-0.9**
GEC2	**GERESS Array S**	**3.07**	**210**	*e*Pn	**Pn**	**04 32 53.1**	**+2.0**
GEC2				*e*Sg	**Sg**	**04 33 41.6**	**-1.0**
WET	**Wettzell**	**3.12**	**221**	*e*Pn	**Pn**	**04 32 52.8**	**+1.0**
WET				*e*Sg	**Sg**	**04 33 43.2**	**-0.9**
WET	**Wettzell**	**3.12**	**221**	*e*Pn	**Pn**	**04 32 52.8**	**+1.1**
WET				*e*Sg	**Sg**	**04 33 43.2**	**-0.9**
ZST	**Bratislava**	**3.42**	**167**	*e*SB	**Sb**	**04 33 52.3**	**+8.2**
NIE	**Niedzica**	**3.48**	**126**	*e*P	**Pg**	**04 33 07.8**	**-2.1**
NIE				*e*S	**Sg**	**04 33 53.6**	**-2.7**
CLZ	**Clausthal**	**3.51**	**277**	*e*Pn	**Pn**	**04 32 57.6**	**+0.2**
CLZ	**Clausthal**	**3.51**	**277**	*e*Pn	**Pn**	**04 32 57.6**	**+0.3**
GRA1	**Grafenberg Arr**	**3.55**	**241**	*e*Pn	**Pn**	**04 32 57.7**	**-0.3**
GRA1				*e*Sg	**Sg**	**04 33 56.7**	**-2.0**
GRF	**Grafenberg Arr**	**3.55**	**241**	*e*Pn	**Pn**	**04 32 57.7**	**-0.3**
GRF				*e*Sg	**Sg**	**04 33 56.7**	**-2.0**
VYHS	**Vyhne**	**3.56**	**148**	*e*Pn	**Pn**	**04 32 57.9**	**-0.1**
VYHS				*e*Sg	**Sg**	**04 33 56.4**	**-2.4**
VYHS				*e*SG	**Sg**	**04 33 56.7**	**-2.1**
BSD	**Bornholm Skovb**	**3.64**	**350**	*i* P	**Pn**	**04 32 57.0**	**-2.2**
BSD				*i* S	**Sn**	**04 33 36.7**	**-6.9**
MOA	**Molln**	**3.86**	**198**↑	*i*PN	**Pn**	**04 33 03.2**	**+0.9**
MOA				*i* SG	**Sg**	**04 34 06.9**	**-1.9**
	7.3nm,0.3s						
ARSA	**Arzberg**	**4.30**	**184**↓	*i*PN	**Pn**	**04 33 10.1**	**+1.5**
ARSA				*i* SG	**Sg**	**04 34 20.3**	**-3.3**
	9.3nm,0.6s						
CRVS	**Cervenica-Dubn**	**4.39**	**125**	*e*PN	**Pn**	**04 33 10.3**	**+0.4**
CRVS				*e*SG	**Sg**	**04 34 25.8**	**-0.8**

NEIC 27 04:38:50.3±0.5,29.28N×139.46E, h400km, mb3.9/3, Error ellipse: s-maj=18.1km s-min=10.4km az=80.0
JMA 27 04:38:50.9±0.1,29.30N×139.80E, h408km, M3.6
IDC 27 04:38:50.0±0.7,29.26N×139.45E, h396km±10km, mb3.1/12, mb1 3.2/14, mb1mx3.1/25, Error ellipse: s-maj=27.2km s-min=9.3km az=76.0

ISC 27 04:38:49.4±0.5, 29.25N±0.05×139.5E±0.2, h408km±7km, n25, σ0§77/31, mb3.4/16, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**3.21**	**131**	P	**P**	**04 39 55.0**	**-0.3**
	44nm,0.3s,baz=279,slow=23,SNR=45						
CBIJ				S	**S**	**04 40 46.9**	**-0.4**
	114nm,0.3s,baz=293,slow=23,SNR=32						
CBIJ	**Chichi jima**	**3.21**	**131**	P	**P**	**04 39 55.3**	**-0.1**
CBIJ				*e*S	**S**	**04 40 46.3**	**-1.0**
JHHJ	**Haha-jima-NKT**	**3.54**	**137**	P	**P**	**04 39 58.2**	**0.0**
JHHJ				*e*S	**S**	**04 40 52.4**	**+0.1**
JHJ2	**Mitsune**	**3.86**	**4**	P	**P**	**04 40 02.6**	**+1.5**
JHJ2				*e*S	**S**	**04 40 57.3**	**-0.2**
JHJ	**Hachijo jima 2**	**3.86**	**4**	P	**P**	**04 40 02.1**	**+1.0**
	9.6nm,0.3s,baz=33,slow=15,SNR=4.5						
JHJ				S	**S**	**04 40 58.1**	**+0.5**
	11nm,0.3s,baz=257,slow=23,SNR=4.2						
BSO1	**Boso 1**	**5.53**	**13**	P	**P**	**04 40 19.4**	**+1.5**
BSO1				*e*S	**S**	**04 41 27.3**	**-0.1**
BSO3	**Boso 3**	**5.60**	**9**	*e*S	**S**	**04 41 27.6**	**-1.1**
BSO4	**Boso 4**	**5.77**	**7**	*e*S	**S**	**04 41 30.2**	**-1.7**
ENH	**Enshi**	**26.02**	**280**	*e*P	**P**	**04 43 49.0**	**-0.2**
	7.4nm,0.6s,mb4.3						
SONM	**Songino Array**	**31.51**	**315**	P	**P**	**04 44 37.9**	**+1.0**
	0.6nm,0.5s,mb3.2,baz=117,slow=5.5,SNR=3.9						
MKAR	**Makanchi Array**	**47.27**	**308**	P	**P**	**04 46 44.8**	**-0.5**
	0.7nm,0.3s,mb3.4,baz=87,slow=9.9,SNR=18						
FITZ	**Fitzroy Crossi**	**48.94**	**198**	P	**P**	**04 46 58.8**	**+0.4**
	2.1nm,0.7s,mb3.6,baz=178,slow=8.6,SNR=3.9						
WRAB	**Tennant Creek**	**49.15**	**186**	*e*P	**P**	**04 46 59.3**	**-0.7**
	2.2nm,0.4s,mb3.8						
WRA	**Warramunga Arr**	**49.16**	**186**	P	**P**	**04 46 59.6**	**-0.4**
	0.9nm,0.3s,mb3.5,baz=2.2,slow=7.8,SNR=8.5						
KURK	**Kurchatov**	**49.77**	**313**	*e*P	**P**	**04 47 02.9**	**-1.4**
ASAR	**Alice Springs**	**52.89**	**186**	P	**P**	**04 47 28.0**	**+0.4**
	0.4nm,0.6s,mb2.8,baz=16,slow=12,SNR=5.0						
BVAR	**Borovoye Array**	**54.84**	**316**	P	**P**	**04 47 40.5**	**-0.7**
	2.1nm,0.4s,mb3.7,baz=88,slow=7.5,SNR=14						
ILAR	**Eielson Array**	**56.99**	**29**	P	**P**	**04 47 56.9**	**+0.8**
	0.1nm,0.5s,mb2.4,baz=290,slow=8.6,SNR=4.7						
ARCES	**ARCESS Array B**	**70.72**	**340**	P	**P**	**04 49 23.9**	**+0.3**
	0.4nm,0.5s,mb3.2,baz=63,slow=8.1,SNR=8.8						
JOF	**Joensuu**	**72.09**	**333**	*e*p	**P**	**04 49 31.0**	**-0.8**
	0.3nm,0.3s,mb3.3						
FINES	**FINESS Array B**	**74.95**	**333**	P	**P**	**04 49 47.9**	**-0.2**
	0.6nm,0.4s,mb3.5,baz=72,slow=6.0,SNR=8.0						
AKASG	**Malin Array Be**	**79.47**	**323**	P	**P**	**04 50 12.8**	**-0.1**
	0.6nm,0.4s,mb3.6,baz=53,slow=4.6,SNR=4.0						
NOA	**NORSAR Array B**	**80.72**	**337**	P	**P**	**04 50 19.2**	**0.0**
	0.5nm,0.9s,mb3.3,baz=58,slow=4.1,SNR=3.0						
BRTR	**Keskin Array B**	**82.79**	**312**	P	**P**	**04 50 31.4**	**+1.2**
	0.4nm,0.4s,mb3.5,baz=56,slow=5.2,SNR=2.5						
HWUT	**Hardware Ranch**	**83.76**	**46**	P	**P**	**04 50 35.2**	**+0.1**
	1.7nm,0.9s,mb3.8						

IDC 27 04:42:30.4±0.8, 14.52N×54.80E, mb3.9/15, mb1 4.1/15, mb1mx4.1/20, MS3.6/3, Ms1 3.6/3, ms1mx3.0/23, Error ellipse: s-maj=21.7km s-min=17.0km az=37.0
NEIC 27 04:42:32.5±0.5, 14.64N×54.75E, h10km, mb4.5/19, Error ellipse: s-maj=10.6km s-min=7.9km az=152.0
SYO 27 04:42:32.5, 14.64N×54.75E, h10km, MB4.5

ISC 27 04:42:30.6±0.6, 14.65N±0.09×54.76E±0.08, h10km, n60, σ0§71/56, mb4.2/36, MS3.6/3, 3C-3D, Owen Fracture Zone region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THR	**Tehran**	**21.42**	**352**	P	**P**	**04 47 21.8**	**+0.9**
	2.1nm,0.7s,mb3.6,baz=139,slow=8.1,SNR=6.4						
KMBO	**Kilima Mbogo**	**23.36**	**229**	P	**P**	**04 47 40.4**	**0.0**
	0.9nm,0.7s,mb3.3,baz=48,slow=14,SNR=1.9						
KMBO				LR	LR	04 57 23.2	
	comp=Z,126nm,18.9s,MS3.4,baz=275,slow=38						
KMBO	**Kilima Mbogo**	**23.36**	**229**	P	**P**	**04 47 40.4**	**0.0**
KMBO				*e*P		04 47 45.8	
KMBO				LR	LR	04 57 23.2	
ASF	**Jabal al Asfar**	**23.87**	**320**	P	**P**	**04 47 48.2**	**+3.1**
BRTR	**Keskin Array B**	**31.09**	**327**	P	**P**	**04 48 52.9**	**+1.6**
	0.6nm,0.8s,mb3.5,baz=141,slow=9.2,SNR=3.1						
AAK	**Ala-Archa**	**32.66**	**28**	P	**P**	**04 49 06.2**	**+1.2**
	2.2nm,0.7s,mb4.2						
MKAR	**Makanchi Array**	**39.44**	**30**	P	**P**	**04 50 02.9**	**+0.4**
	1.2nm,0.5s,mb3.9,baz=213,slow=9.4,SNR=19						
MKAR				LR	LR	05 06 49.5	
	comp=Z,49nm,21.9s,MS3.3,baz=132,slow=37						
BVAR	**Borovoye Array**	**40.24**	**15**	P	**P**	**04 50 09.4**	**+0.3**
	0.4nm,0.4s,mb3.5,baz=194,slow=12,SNR=4.0						
KURK	**Kurchatov**	**40.83**	**23**	*e*P	**P**	**04 50 13.4**	**-0.5**
AKASG	**Malin Array Be**	**41.47**	**336**	P	**P**	**04 50 19.6**	**+0.4**
	0.7nm,0.5s,mb3.6,baz=134,slow=7.6,SNR=7.6						
ARU	**Arti**	**41.80**	**3**	*e*P	**P**	**04 50 20.6**	**-1.1**
	17nm,0.7s,mb4.8						
CMAR	**Chiang Mai Arr**	**42.45**	**79**	P	**P**	**04 50 27.8**	**+0.2**
	4.5nm,1.0s,mb4.1,baz=278,slow=9.3,SNR=18						
MORC	**Moravsky Berou**	**46.28**	**327**	P	**P**	**04 50 58.7**	**+0.7**
	3.4nm,0.9s,mb4.3						
MOA	**Molln**	**47.03**	**323**↑	*i*P	**P**	**04 51 05.1**	**+1.1**
	78nm,3.6s						
GERES	**GERESS Array B**	**47.87**	**324**	P	**P**	**04 51 10.5**	**-0.1**
	1.2nm,0.7s,mb4.0,baz=143,slow=6.7,SNR=15						
WTTA	**Wattenberg**	**48.30**	**321**↑	*i*P	**P**	**04 51 14.5**	**+0.5**
	85nm,4.8s						
LBTB	**Lobatse**	**48.61**	**216**	P	**P**	**04 51 18.6**	**+2.0**
	8.5nm,1.3s,mb4.6						
DAVA	**Damuels**	**49.38**	**321**↑	*i*P	**P**	**04 51 22.5**	**+0.2**
	57nm,3.5s						
SBF	**Sospel**	**49.60**	**316**	*e*P	**P**	**04 51 24.0**	**0.0**
	12nm,0.8s,mb4.7						
FRF	**La Foret Royal**	**50.03**	**315**	*e*P	**P**	**04 51 27.5**	**+0.2**
LMR	**La Mourre**	**50.05**	**315**	*e*P	**P**	**04 51 27.7**	**+0.2**
	8.5nm,0.8s,mb4.5						
MBDF	**Montbardon**	**50.35**	**317**	*e*P	**P**	**04 51 29.9**	**+0.1**
	8.0nm,0.7s,mb4.6						
LPG	**La Plagne**	**50.64**	**317**	*e*P	**P**	**04 51 32.0**	**0.0**
	13nm,0.8s,mb4.6						
LPL	**La Plagne**	**50.66**	**317**	*e*P	**P**	**04 51 32.5**	**+0.4**
	14nm,0.7s,mb4.7						
SMRF	**Simiane la Rot**	**50.90**	**315**	*e*P	**P**	**04 51 34.5**	**+0.6**
	3.5nm,0.6s,mb4.2						
FINES	**FINESS Array B**	**51.06**	**343**	P	**P**	**04 51 34.7**	**-0.2**
	3.3nm,0.5s,mb4.5,baz=133,slow=11,SNR=19						
FINES	**FINESS Array B**	**51.06**	**343**	P	**P**	**04 51 34.7**	**-0.2**
CDF	**Champ du Feu**	**51.45**	**321**	*e*P	**P**	**04 51 37.6**	**-0.4**
	6.5nm,0.8s,mb4.3						
CABF	**La Chapelle**	**51.48**	**319**	*e*P	**P**	**04 51 38.5**	**+0.2**
	4.8nm,0.6s,mb4.3						
VIVF	**Saint-Julien-l**	**51.80**	**316**	*e*P	**P**	**04 51 40.5**	**-0.3**
	4.8nm,0.7s,mb4.2						
LASF	**Ste Croix**	**52.11**	**315**	*e*P	**P**	**04 51 42.9**	**-0.2**
	3.8nm,0.6s,mb4.2						
SMF	**Signal de Mont**	**52.95**	**318**	*e*P	**P**	**04 51 48.7**	**-0.6**
LOR	**Lormes**	**53.15**	**319**	*e*P	**P**	**04 51 50.5**	**-0.3**
	8.9nm,0.7s,mb4.5						
SSF	**Saint Saulge**	**53.30**	**318**	*e*P	**P**	**04 51 51.5**	**-0.5**
	7.2nm,0.7s,mb4.4						
AVF	**Avril sur Loir**	**53.31**	**318**	*e*P	**P**	**04 51 51.3**	**-0.7**
	4.6nm,0.7s,mb4.2						
BGF	**Bois d'Agland**	**53.56**	**318**	*e*P	**P**	**04 51 53.8**	**-0.1**
	19nm,0.7s,mb4.8						
GIVF	**Givet**	**53.60**	**322**	*e*P	**P**	**04 51 53.8**	**-0.3**
SONM	**Songino Array**	**53.81**	**41**	P	**P**	**04 51 56.4**	**+0.7**
	1.5nm,0.6s,mb4.1,baz=243,slow=8.3,SNR=5.9						
TCF	**Toulx Ste Croi**	**53.90**	**317**	*e*P	**P**	**04 51 55.9**	**-0.4**
RJF	**Les Rejaudoux**	**54.07**	**316**	*e*P	**P**	**04 51 57.1**	**-0.4**
LFF	**La Frestale**	**54.49**	**315**	*e*P	**P**	**04 52 00.5**	**-0.2**
ETSF	**Etsaut**	**54.89**	**312**	*e*P	**P**	**04 52 03.5**	**-0.2**
	4.7nm,0.7s,mb4.3						
NB2	**NORSAR Subarra**	**55.87**	**336**	P	**P**	**04 52 09.4**	**-1.1**
	2.1nm,0.9s,mb4.2,baz=124,slow=7.0						
NOA	**NORSAR Array B**	**55.87**	**336**	P	**P**	**04 52 10.1**	**-0.5**
	0.8nm,0.8s,mb3.8,baz=107,slow=9.2,SNR=4.5						
NOA	**NORSAR Array B**	**55.87**	**336**	P	**P**	**04 52 10.1**	**-0.5**
LDF	**La Druitiere**	**56.11**	**319**	*e*P	**P**	**04 52 11.4**	**-1.0**
GRR	**Gorron**	**56.52**	**319**	*e*P	**P**	**04 52 14.2**	**-1.1**
ESDC	**Sonseca Array**	**56.79**	**308**	P	**P**	**04 52 17.7**	**+0.2**
	0.7nm,0.5s,mb4.0,baz=98,slow=7.0,SNR=6.8						
SGMF	**Saint Gilles**	**57.57**	**318**	*e*P	**P**	**04 52 21.6**	**-1.2**
	4.3nm,0.6s,mb4.3						
ARCES	**ARCESS Array B**	**57.84**	**348**	P	**P**	**04 52 23.8**	**-0.7**
	1.4nm,0.6s,mb4.2,baz=146,slow=7.0,SNR=29						
ARCES	**ARCESS Array B**	**57.84**	**348**	P	**P**	**04 52 23.8**	**-0.7**
EVO	**Evora**	**59.78**	**306**	*e*P	**P**	**04 52 38.0**	**-0.4**
	14nm,1.1s,mb4.6						
SYO	**Syowa Base**	**84.13**	**185**	↓P	**P**	**04 55 09.3**	**+6.6**
SYO	**Syowa Base**	**84.13**	**185**	↓PcP	PcP	04 55 13.8	+6.8
SYO	**Syowa Base**	**84.13**	**185**↓	*e*P	**P**	**04 55 09.3**	**+6.6**
SYO				*e*PcP	PcP	04 55 13.8	+6.8
WRA	**Warramunga Arr**	**85.44**	**112**	P	**P**	**04 55 09.6**	**-0.8**
	1.7nm,0.9s,mb4.2,baz=298,slow=4.0,SNR=7.3						
ASAR	**Alice Springs**	**86.17**	**116**	P	**P**	**04 55 13.3**	**-0.6**
	1.5nm,0.7s,mb4.3,baz=296,slow=4.7,SNR=12						
ASAR				LR	LR	05 30 20.8	
	comp=Z,62nm,18.2s,MS4.0,baz=194,slow=33						
PDAR	**Pinedale Array**	**121.08**	**347**	PKP	PKPdf	05 01 25.6	-1.3
	0.8nm,0.9s,baz=59,slow=3.0,SNR=4.5						
NVAR	**Mina Array Bea**	**126.80**	**353**	PKP	PKPdf	05 01 38.2	+0.2
	1.2nm,0.7s,baz=66,slow=2.0,SNR=14						
TXAR	**Lajitas Array**	**131.56**	**335**	PKP	PKPdf	05 01 46.2	-1.2
	0.3nm,0.8s,baz=27,slow=4.0,SNR=2.9						

NNC 27 04:58:31.0±23.0, 36.71N×70.18E, mpv4.4, Error ellipse: s-maj=243.2km s-min=184.6km az=107.0

ISC 27 04:58:32.1±3.9, 36.5N±0.2×71.0E±0.4, h166km±60km, n9, σ0§24/11, 2C-1D, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AML	**Almayashu**	**5.97**	**20**	P	**P**	**04 59 59.2**	**-0.2**
	SNR=19						
UCH	**Uchtor**	**6.30**	**25**	P	**P**	**05 00 03.5**	**-0.3**
	SNR=8.0						
EKS2	**Erkin-Say**	**6.49**	**19**	P	**P**	**05 00 06.4**	**+0.1**
	SNR=11						
KK31	**

MLZ					S*	Sb	06 03 08.8	-0.8
WHZ	**Wether Hill Ro**	**1.03**	**143**	⇑	P*	Pb	06 03 01.4	-0.8
WHZ					S*	Sb	06 03 15.5	0.0
AXZ	**Alexandra**	**1.62**	**98**		PN	Pn	06 03 11.2	-0.2
AXZ					SN	Sn	06 03 31.2	-1.1
TUZ	**Tuapeka**	**2.01**	**117**		PN	Pn	06 03 15.9	-1.1
TUZ					*e*SN	Sn	06 03 41.3	-1.0
BWZ	**Berwen**	**2.08**	**76**		PN	Pn	06 03 17.1	-0.9
ODZ	**Otahua Downs**	**2.54**	**91**		PN	Pn	06 03 22.8	-1.8
ODZ					SN	Sn	06 03 52.4	-3.2
RPZ	**Rata Peaks**	**3.16**	**66**		PN	Pn	06 03 30.7	-2.7
WVZ	**Waitaha Valley**	**3.31**	**54**		*e*PN	Pn	06 03 31.3	-4.2
MQZ	**McQueen's Vall**	**4.23**	**73**		SN	Sn	06 04 29.6	-8.9
LTZ	**Lake Taylor**	**4.40**	**61**		*e*PN	Pn	06 03 46.7	-4.4
DSZ	**Denniston Nort**	**4.79**	**48**		*e*PN	Pn	06 03 52.0	-4.6
THZ	**Tophouse**	**5.39**	**54**		*e*PN	Pn	06 04 01.1	-3.8
QRZ	**Quartz Range**	**5.83**	**45**		*e*PN	Pn	06 04 06.1	-5.1

IDC ***27*** *06:04:11.0±3.4,30.25S×138.56E,mb1 2.9/3, mb1mx2.9/11,ML2.4/3,Error ellipse: s-maj=86.5km s-min=15.8km az=44.0*

ISC 27 06:04:09.9±0.8,30.2S±0.1×138.6E±0.2,h10km,n6, σ1§21/10,2C-1D,South Australia

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**3.07**	**124**	Pn		**Pn**	**06 05 00.8**	**+1.3**
	0.2nm,0.3s,baz=317,slow=17,SNR=2.3							
STKA				Pg		**Pg**	**06 05 07.9**	**-3.3**
	0.7nm,0.3s,baz=298,slow=14,SNR=5.0							
STKA				Sn		**Sn**	**06 05 36.6**	**-0.1**
	1.0nm,0.3s,baz=257,slow=16,SNR=6.3							
STKA				Lg			06 05 47.1	
	1.8nm,0.3s,baz=359,slow=11,SNR=6.0							
ASAR	**Alice Springs**	**7.73**	**326**	Pn		**Pn**	**06 06 04.8**	**-0.5**
	0.0nm,0.3s,baz=148,slow=13,SNR=2.4							
ASAR				Sn		**Sn**	**06 07 34.4**	**+0.6**
	0.1nm,0.3s,baz=152,slow=22,SNR=4.4							
WRA	**Warramunga Arr**	**10.90**	**338**	Pn		**P**	**06 06 50.4**	**+1.2**
	0.1nm,0.3s,baz=154,slow=14,SNR=3.3							
WRA				Sn		**S**	**06 08 51.3**	**-1.0**
	0.1nm,0.3s,baz=162,slow=24,SNR=4.6							
VNA2	**Neumayer--Watz**	**76.33**	**191**	⇑ *i*		**P**	**06 15 58.9**	**-1.3**
VNA3	**Neumayer Olymp**	**76.41**	**190**	⇓ *i*		**P**	**06 16 04.2**	**+3.5**
VNA1	**Neumayer--Stat**	**76.71**	**191**	⇑ *i*		**P**	**06 16 02.4**	**0.0**

NEIC ***27*** *06:15:55.3,30.37S×71.58W,h25km,ML2.8(GUC),After GUC.*

GUC 27 06:15:55.3±0.6,30.37S×71.58W,h25km±5km,MD3.7, ML2.8,2C-1D,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
LSCH	**La Serena**	**0.55**	**32**	⇓ *i*P		Pb	06 16 06.1	-0.1
LSCH				*i* S		Sb	06 16 13.7	0.0
LSCH				AMP			06 16 15.6	
	comp=E,567nm,0.4s							
TLL	**Tololo Astrono**	**0.70**	**73**	⇑ *i*P		Pb	06 16 09.0	+0.2
TLL				*i* S		Sb	06 16 19.3	+1.1
TLL				AMP			06 16 23.4	
	comp=E,381nm,0.5s							
CMCH	**Combarbala**	**0.94**	**148**	⇑ *i*P		Pb	06 16 12.4	-0.5
CMCH				*i* S		Sb	06 16 25.2	+0.2
CMCH				AMP			06 16 26.8	
	comp=N,1μm,0.5s							
PTCH	**Petorca**	**1.97**	**164**	*i* P		Pn	06 16 27.9	+0.2
PTCH				*i* S		Sn	06 16 53.3	+1.5
PTCH				AMP			06 16 56.4	
	comp=E,293nm,0.2s							

NIED ***27*** *06:18:00,38.30N×142.20E,h20km,Mw3.6 Best double couple: M0 3.08×10¹⁴ NP1:φs49°,δ75°,λ-139°. NP2: φs307°,δ51°,λ-19°.*

JMA ***27*** *06:18:09.3±0.1,38.29N×142.22E,h35km±2km,M4.1 JMA Felt I J1.*

ISC 27 06:18:09.1±1.8,38.25N±0.07×142.2E±0.2,h52km±26km, n8,σ0§81/14,4C-3D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.66**	**288**	⇓ P		**P**	**06 18 23.0**	**+0.5**
JIO				S		**S**	**06 18 32.2**	**-0.2**
OFUJ	**Ofunato**	**0.91**	**336**	⇑ P		**P**	**06 18 25.6**	**-0.2**
OFUJ				S		**S**	**06 18 37.0**	**-1.3**
JMK	**Ichinoseki**	**1.01**	**314**	⇑ P		**P**	**06 18 27.8**	**+0.5**
JMK				*e*S		**S**	**06 18 40.8**	**+0.1**
JMM	**Marumori**	**1.14**	**251**	⇓ P		**P**	**06 18 29.6**	**+0.6**
JMM				S		**S**	**06 18 44.1**	**+0.3**
JFK	**Kawauchi**	**1.34**	**229**	⇑ P		**P**	**06 18 31.9**	**-0.1**
JOM	**Ohasama**	**1.39**	**332**	⇑ P		**P**	**06 18 33.2**	**+0.5**
JOM				*e*S		**S**	**06 18 50.2**	**0.0**
JYK	**Kaneyama**	**1.55**	**296**	⇓ P		**P**	**06 18 36.2**	**+1.3**
MAT	**Matsushiro**	**3.57**	**243**	P		**P**	**06 19 00.8**	**-2.6**
MAT				S		**S**	**06 19 44.4**	**-0.4**

NEIC ***27*** *06:18:41.4±0.7,17.37S×27.86E,h10km,mb4.1/4,Error ellipse: s-maj=17.2km s-min=12.0km az=107.0*

BJI ***27*** *06:18:41.3,17.40S×27.90E,h10km*

IDC ***27*** *06:18:41.2±0.8,17.27S×27.90E,mb4.0/11,mb1 4.1/14, mb1mx4.0/24,ML4.2/2,Error ellipse: s-maj=22.6km s-min=18.6km az=103.0*

SYO ***27*** *06:18:41.3,17.37S×27.86E,h10km,MB4.1*

PRE ***27*** *06:18:57.3±2.9,18.79S×28.08E,h5km,ML4.6*

ISC 27 06:18:40.3±2.9,17.61S±0.05×27.76E±0.07,h16km±21km, n34,σ1§25/34,mb4.1/12,1C-1D,Zimbabwe

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
MSNA	**Messina**	**5.17**	**156**	*e*P		**Pn**	**06 19 58.2**	**-0.8**
MOPA	**Mopani**	**6.79**	**150**	*e*S		**Sn**	**06 21 21.0**	**-19**
MOPA				*e*			06 22 14.0	
	comp=Z,290nm,0.6s							
LBTB	**Lobatse**	**7.64**	**195**	*e*Pn		**Pn**	**06 20 35.8**	**+2.1**
LBTB				*e*Sn		**Sn**	**06 21 55.9**	**-4.8**
LBTB				*e*Lg			06 22 27.5	
SLR	**Silverton**	**8.10**	**177**	*e*S		**Sn**	**06 22 11.7**	**-0.6**
SLR				*e*			06 23 01.9	
	comp=Z,111nm,0.6s							
KSR	**Koster**	**8.25**	**185**	*e*P		**P**	**06 20 41.5**	**-0.8**
TSUM	**Tsumeb**	**9.79**	**259**	Pn		**P**	**06 21 04.3**	**+0.7**
	comp=Z,2.1nm,0.3s,baz=56,slow=11,SNR=30							
TSUM				Sn		**Sn**	**06 22 52.7**	**-1.5**
	comp=Z,1.9nm,0.3s,baz=107,slow=19,SNR=5.1							
TSUM				Lg			06 23 55.8	
	comp=Z,3.6nm,0.3s,baz=141,slow=21,SNR=3.3							
NWL	**Newcastle**	**10.27**	**169**	*e*P		**P**	**06 21 08.3**	**-1.9**
BOSA	**Boshof**	**11.19**	**191**	*e*P		**P**	**06 21 22.9**	**+0.1**
SUR	**Sutherland**	**15.99**	**202**	Pn		**P**	**06 22 29.0**	**+2.8**
	comp=Z,1.9nm,0.3s,baz=16,slow=12,SNR=12							
SUR				Sn		**S**	**06 25 20.9**	**-2.3**
	comp=Z,0.6nm,0.3s,baz=180,slow=20,SNR=3.6							
SUR				Lg			06 27 04.4	
	comp=Z,0.8nm,0.3s,baz=308,slow=22,SNR=5.3							
SUR	**Sutherland**	**15.99**	**202**	*e*P		**P**	**06 22 29.7**	**+3.4**
	comp=Z,12nm,0.6s							
SUR				*e*S		**S**	**06 25 08.0**	**-15**
SUR				*e*Lg			06 26 57.6	
KMBO	**Kilima Mbogo**	**18.85**	**31**	P		**P**	**06 22 58.4**	**-3.8**
	comp=Z,0.2nm,0.3s,baz=49,slow=23,SNR=3.5							
KMBO				Lg			06 28 24.4	
	comp=Z,0.2nm,0.3s,baz=116,slow=19,SNR=4.1							
KMBO	**Kilima Mbogo**	**18.85**	**31**	*e*P		**P**	**06 22 58.5**	**-3.6**
	comp=Z,1.8nm,0.7s							
DBIC	**Dimbokro**	**40.24**	**304**	P		**P**	**06 26 19.0**	**+0.7**
	comp=Z,1.7nm,0.4s,mb4.1,baz=306,slow=15,SNR=6.3							
DBIC	**Dimbokro**	**40.24**	**304**	*e*P		**P**	**06 26 18.7**	**+0.4**
	comp=Z,1.9nm,0.5s,mb4.1							
SYO	**Syowa Base**	**51.91**	**175**	⇓ P		**P**	**06 27 52.0**	**+1.9**
MAW	**Mawson**	**54.78**	**164**	P		**P**	**06 28 14.7**	**+3.3**
	comp=Z,1.2nm,0.6s,mb4.1,baz=322,slow=11,SNR=4.3							
MAW	**Mawson**	**54.78**	**164**	P		**P**	**06 28 14.1**	**+2.8**
	comp=Z,1.9nm,0.8s,mb4.2							
SNAA	**Sanae**	**56.98**	**191**	*e*P		**P**	**06 28 28.7**	**+1.6**
BRTR	**Keskin Array B**	**57.30**	**5**	P		**P**	**06 28 29.2**	**-0.6**
	comp=Z,1.2nm,0.8s,mb4.0,baz=196,slow=9.0,SNR=3.8							
THR	**Tehran**	**57.64**	**22**	P		**P**	**06 28 31.6**	**-0.7**
	comp=Z,0.9nm,0.8s,mb3.9,baz=226,slow=14,SNR=2.4							
ESDC	**Sonseca Array**	**64.22**	**333**	P		**P**	**06 29 16.9**	**+0.1**
	comp=Z,0.3nm,0.3s,mb3.8,baz=146,slow=6.3,SNR=3.3							
GERES	**GERESS Array B**	**67.33**	**350**	P		**P**	**06 29 36.8**	**+0.2**
	comp=Z,0.8nm,0.5s,mb4.0,baz=240,slow=11,SNR=4.8							
AKASG	**Malin Array Be**	**68.02**	**1**	P		**P**	**06 29 39.4**	**-1.5**
	comp=Z,3.1nm,0.8s,mb4.4,baz=187,slow=6.2,SNR=5.3							
KSH	**Kashi**	**72.48**	**37**	*e*P		**P**	**06 30 13.0**	**+4.8**
KSH				*e*XP		sP	06 30 17.5	+2.5
KSH				LR		LR		
	comp=N,80nm,3.2s							
KSH				LR		LR		
	comp=E,130nm,5.8s							
QSPA	**South Pole Qui**	**72.53**	**180**	*e*P		**P**	**06 30 09.2**	**+1.4**
	comp=E,30nm,0.9s,mb5.2							
CMAR	**Chiang Mai Arr**	**78.62**	**66**	P		**P**	**06 30 42.1**	**-1.4**
	comp=E,1.0nm,0.5s,mb4.0,baz=251,slow=6.7,SNR=5.1							
NOA	**NORSAR Array B**	**79.50**	**352**	P		**P**	**06 30 48.1**	**+0.6**
	comp=E,0.8nm,0.7s,mb3.7,baz=166,slow=5.1,SNR=4.2							
VNDA	**Vanda**	**81.42**	**171**	P		**P**	**06 31 02.1**	**+4.7**
	comp=E,0.4nm,0.7s,mb3.5,baz=261,slow=6.0,SNR=4.6							
WMQ	**Urumqi**	**82.05**	**39**	*e*P		**P**	**06 31 01.5**	**+0.2**
ARCES	**ARCESS Array B**	**86.92**	**359**	P		**P**	**06 31 25.5**	**+0.2**
	comp=E,1.2nm,0.6s,mb4.3,baz=180,slow=4.9,SNR=7.0							
NJ2	**Nanjing**	**100.04**	**60**	*e*P		P	06 32 26.8	+0.1
SSE	**Sheshan**	**101.74**	**61**	⇑ P		P	06 32 34.3	0.0
TXAR	**Lajitas Array**	**134.23**	**294**	PKP		PKPdf	06 38 01.5	-0.3
	comp=E,0.1nm,0.5s,baz=90,slow=0.9,SNR=2.7							
NVAR	**Mina Array Bea**	**143.86**	**312**	PKP		PKPdf	06 38 16.3	-2.5
	comp=E,0.9nm,0.7s,baz=72,slow=4.9,SNR=7.5							

IDC ***27*** *06:19:34.4±2.0,5.57N×126.43E,h125km±18km,mb4.1/23, mb1 4.2/23,mb1mx4.2/26,Error ellipse: s-maj=18.7km s-min=9.1km az=75.0*

MAN ***27*** *06:19:35.7,5.37N×126.02E,h168km,mb4.7,ML3.7, MS3.5*

BJI ***27*** *06:19:37.7,5.42N×126.38E,h175km,mB4.6,mb4.5*

NEIC ***27*** *06:19:38.7±2.5,5.49N×126.32E,h164km±24km,mb4.5/25, Error ellipse: s-maj=9.8km s-min=4.6km az=71.0*

SYO ***27*** *06:19:38.6,5.49N×126.32E,h165km,MB4.5*

ISC 27 06:19:35.5±0.5,5.46N±0.04×126.29E±0.06,h148km±4km, n100,σ1§05/105,mb4.5/58,11C-3D,Mindanao

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
GSPH	**General Santos**	**1.47**	**295**	⇓ *e*P		**P**	**06 20 03.6**	**-1.4**
GSPH				*i* S		**S**	**06 20 24.4**	**-3.2**
KCP	**Kidapawan**	**1.94**	**322**	⇓ *e*P		**P**	**06 20 10.8**	**+0.6**
KCP				*i* S		**S**	**06 20 38.4**	**+1.5**
CTBH	**Cotabato--PC H**	**2.68**	**311**	⇓ *i*P		**P**	**06 20 19.1**	**-0.3**
CTBH				*i* S		**S**	**06 20 44.8**	**-8.1**
CGP	**Cagayan de Oro**	**3.37**	**332**	*e*P		**P**	**06 20 28.7**	**+0.4**
BUTP	**Butuan**	**3.55**	**349**	⇑ *e*P		**P**	**06 20 32.2**	**+1.5**
BUTP				*e*S		**S**	**06 21 16.1**	**+3.2**
PAGZ	**Pagadian**	**3.73**	**310**	⇑ *e*P		**P**	**06 20 33.1**	**0.0**
PAGZ				*e*S		**S**	**06 21 15.1**	**-2.2**
DCPH	**Dipolog City**	**4.25**	**317**	⇑ *i*P		**P**	**06 20 40.9**	**+1.0**
TBP	**Tagbilaran**	**4.84**	**330**	*e*P		**P**	**06 20 47.2**	**-0.5**
TBP				*e*S		**S**	**06 21 41.0**	**-2.4**
MSLP	**Maasin**	**4.85**	**343**	⇑ *e*P		**P**	**06 20 47.3**	**-0.6**
MSLP				*e*S		**S**	**06 21 34.9**	**-8.8**
SNPH	**Sibulan**	**4.90**	**322**	*e*P		**P**	**06 20 50.0**	**+1.5**
KALP	**Kalibo**	**7.31**	**328**	⇑ *i*P		**P**	**06 21 23.7**	**+3.0**
APYP	**Conner**	**13.27**	**339**	⇑ *e*P		**P**	**06 22 41.4**	**+2.2**
KAKA	**Kakadu**	**19.04**	**161**	*e*P		**P**	**06 23 48.7**	**0.0**
	21nm,0.6s							
QIZ	**Qiongzhong**	**20.95**	**311**	P		**P**	**06 24 09.5**	**+1.4**
FITZ	**Fitzroy Crossi**	**23.42**	**182**	*e*P		**P**	**06 24 34.0**	**+1.6**
	8.1nm,0.7s,mb4.3							
FITZ	**Fitzroy Crossi**	**23.42**	**182**	P		**P**	**06 24 33.3**	**+0.9**
	4.9nm,0.5s,mb4.2,baz=6.0,slow=8.3,SNR=24							
KKTK	**Khon Kaen**	**25.42**	**297**	P		**P**	**06 24 52.0**	**+0.7**
PMG	**Port Moresby**	**25.51**	**125**	P		**P**	**06 24 50.5**	**-1.7**
	12nm,0.6s,mb4.8,baz=306,slow=8.1,SNR=4.6							
PMG	**Port Moresby**	**25.51**	**125**	*e*P		**P**	**06 24 51.1**	**-1.1**
	16nm,0.8s,mb4.7							
PMG				*e*			06 24 54.2	
CBIJ	**Chichi jima**	**26.31**	**33**	P		**P**	**06 24 55.5**	**-3.9**
	67nm,0.5s,mb5.5,baz=289,slow=21,SNR=7.1							
WRAB	**Tennant Creek**	**26.45**	**163**	*e*P		**P**	**06 24 60.0**	**-0.8**
	33nm,0.6s,mb5.1							
WRA	**Warramunga Arr**	**26.46**	**163**	P		**P**	**06 24 59.5**	**-1.3**
	3.6nm,0.3s,mb4.4,baz=342,slow=10,SNR=34							
WB2	**Warramunga Arr**	**26.46**	**163**	*e*P		**P**	**06 24 59.7**	**-1.1**
NJ2	**Nanjing**	**27.35**	**346**	*e*P		**P**	**06 25 11.5**	**+2.6**
NJ2				PP		PP	06 26 03.5	+1.6
NJ2				PCS			06 32 05.0	
NJ2				AMB		AMB		
	comp=Z,30nm,0.8s,mb5.0							
NJ2				AMB		AMB		
	comp=Z,68nm,4.6s							
NJ2				LR		LR		
	comp=N,100nm,15.0s							
NJ2				LR		LR		
	comp=E,220nm,14.2s							
NJ2				LR		LR		
	comp=Z,910nm,12.6s							
JNU	**Nakatsue**	**27.85**	**8**	P		**P**	**06 25 11.2**	**-2.2**
	comp=Z,6.3nm,0.6s,mb4.6,baz=250,slow=6.5,SNR=5.1							
GYA	**Guiyang**	**28.05**	**320**	P		**P**	**06 25 15.5**	**+0.2**
GYA				S		**S**	**06 29 44.0**	**-3.4**
GYA				AMB		AMB		
	comp=Z,10.0nm,1.0s,mb4.5							
GYA				LR		LR		
	comp=N,590nm,39.0s							
GYA				LR		LR		
	comp=E,550nm,42.0s							
GYA				LR		LR		
	comp=Z,420nm,31.2s							
ENH	**Enshi**	**29.32**	**329**	*e*P		**P**	**06 25 25.1**	**-1.5**
	comp=Z,9.1nm,0.8s,mb4.6							
CMAR	**Chiang Mai Arr**	**29.65**	**298**	P		**P**	**06 25 29.1**	**-0.4**
	comp=Z,2.4nm,0.5s,mb4.2,baz=103,slow=6.8,SNR=14							
CMAR				ScP			06 32 00.9	
	comp=Z,0.6nm,0.5s,baz=183,slow=1.0,SNR=4.7							
KMI	**Kunming**	**29.86**	**313**	*e*P		**P**	**06 25 34.3**	**+2.9**
KMI				S		**S**	**06 30 16.3**	**+0.2**
KMI				AMB		AMB		
	comp=Z,8.0nm,0.9s,mb4.5							
KMI				LR		LR		
	comp=Z,52nm,19.9s							
AS12	**Alice Springs**	**29.89**	**166**	⇑ *i*P		**P**	**06 25 30.9**	**-0.8**
	comp=Z,3.7nm,0.5s,mb4.4							
ASAR	**Alice Springs**	**29.89**	**166**	P		**P**	**06 25 31.1**	**-0.6**
	comp=Z,3.5nm,0.5s,mb4.4,baz=343,slow=6.9,SNR=55							
ASAR				PcP		PcP	06 28 31.1	+0.2
	comp=Z,2.4nm,0.6s,baz=350,slow=2.5,SNR=9.6							
ASAR				ScP			06 32 00.7	
	comp=Z,0.4nm,0.5s,baz=355,slow=3.3,SNR=4.3							
CTA	**Charters Tower**	**32.09**	**143**	*e*P		**P**	**06 25 51.2**	**+0.2**
	comp=Z,1.1nm,0.5s,mb4.1							
CTAO	**Charters Tower**	**32.09**	**143**	*e*P		**P**	**06 25 51.1**	**+0.1**
	comp=Z,3.1nm,0.6s,mb4.2							
XAN	**Xi'an**	**32.68**	**333**	P		**P**	**06 25 54.5**	**-1.4**
XAN				AMB		AMB		
	comp=Z,13nm,0.9s,mb4.7							
BJT	**Baijiatuan**	**35.59**	**347**	*e*P		**P**	**06 26 20.8**	**+0.2**
	comp=Z,20nm,0.6s,mb4.9							
BJI	**Beijing**	**35.61**	**347**	P		**P**	**06 26 21.3**	**+0.6**
BJI				AMB		AMB		
	comp=Z,23nm,0.6s,mb5.0							
FORT	**Forrest**	**36.08**	**177**	⇑ *i*P		**P**	**06 26 25.1**	**+0.4**
	comp=Z,61nm,0.5s,mb5.5							
LZH	**Lanzhou**	**36.80**	**329**	*e*P		**P**	**06 26 31.5**	**+0.7**
LZH				AMB		AMB		
	comp=Z,23nm,1.2s,mb4.7							
KLBR	**Kellerberrin**	**37.73**	**192**	*e*P		**P**	**06 26 38.9**	**+0.2**
	comp=Z,22nm,1.3s,mb4.6							
CN2	**Changchun**	**38.19**	**359**	*e*P		**P**	**06 26 44.5**	**+2.1**
MUN	**Mundaring**	**38.45**	**194**	*e*P		**P**	**06 26 45.2**	**+0.6**
	comp=Z,5.5nm,0.5s,mb4.4							
MDJ	**Mudanjiang**	**39.10**	**4**	P		**P**	**06 26 51.3**	**+1.4**
MDJ				AP		pP	06 27 28.5	+5.8
MDJ				S		**S**	**06 32 31.0**	**-7.0**
MDJ				AMB		AMB		
	comp=Z,9.0nm,0.8s,mb4.5							
MDJ				AMB		AMB		
	comp=Z,44nm,5.0s							
MDJ				LR		LR		
	comp=N,47nm,43.3s							
MDJ				LR		LR		
	comp=E,26nm,27.2s							
MDJ				LR		LR		
	comp=Z,41nm,17.3s							
MDJ	**Mudanjiang**	**39.10**	**4**	*e*P		**P**	**06 26 50.6**	**+0.7**
	comp=Z,7.8nm,0.6s,mb4.5							
NWAO	**Narrogin (SRO)**	**39.13**	**192**	P		**P**	**06 26 50.9**	**+0.6**
	comp=Z,4.9nm,0.4s,mb4.5,baz=11,slow=9.5,SNR=11							
NWAO	**Narrogin (SRO)**	**39.13**	**192**	*e*P		**P**	**06 26 51.3**	**+1.0**
	comp=Z,4.6nm,0.4s,mb4.5							
STKA	**Stephens Creek**	**39.89**	**160**	⇑ *i*P		**P**	**06 26 57.2**	**+0.7**
	comp=Z,6.5nm,0.4s,mb4.6							
STKA	**Stephens Creek**	**39.89**	**160**	P		**P**	**06 26 56.9**	**+0.3**
	comp=Z,9.8nm,0.5s,mb4.7,baz=338,slow=8.3,SNR=24							
STKA				PcP		PcP	06 28 59.0	-0.9
	comp=Z,3.7nm,0.5s,baz=312,slow=5.1,SNR=3.6							
LSA	**Lhasa**	**40.98**	**310**	*e*P		**P**	**06 27 07.0**	**+1.6**
	comp=Z,12nm,1.2s,mb4.4							
ASAJ	**Asahikawa**	**41.08**	**18**	P		**P**	**06 27 06.3**	**+0.2**
	comp=Z,7.2nm,0.6s,mb4.5,baz=127,slow=34,SNR=2.9							
GTA	**Gaotai**	**41.40**	**329**	*e*P		**P**	**06 27 09.3**	**+0.5**
GTA				AMB		AMB		
	comp=Z,5.0nm,0.8s,mb4.2							
ARMA	**Armidale**	**43.15**	**147**	*e*P		**P**	**06 27 24.0**	**+0.8**
YSS	**Yuzh-Sakhalins**	**43.71**	**16**	P		**P**	**06 27 27.6**	**+0.1**
	comp=Z,16nm,0.9s,mb4.7							
HIA	**Hailar**	**44.00**	**354**	*e*P		**P**	**06 27 30.2**	**+0.4**
	comp=Z,5.1nm,0.7s,mb4.3							
GUN	**Gumba**	**44.37**	**305**	*e*P		**P**	**06 27 33.3**	**+0.3**
	comp=Z,80nm,0.7s,mb5.5							
PKI	**Pulchoki**	**44.63**	**304**	*e*P		**P**	**06 27 34.8**	**-0.3**
KKN	**Kakani**	**44.81**	**304**	*e*P		**P**	**06 27 36.3**	**-0.3**
	comp=Z,29nm,0.7s,mb5.0							
ULN	**Ulaanbaatar**	**45.35**	**342**	*e*P		**P**	**06 27 41.1**	**+0.6**
	comp=Z,6.3nm,0.8s,mb4.3							
GKN	**Gorkha**	**45.42**	**304**	*e*P		**P**	**06 27 41.0**	**-0.4**
	comp=Z,14nm,0.5s,mb4.8							
SONM	**Songino Array**	**45.53**	**341**	P		**P**	**06 27 41.0**	**-1.0**
	comp=Z,1.9nm,0.6s,mb3.9,baz=154,slow=7.5,SNR=8.7							
KOLN	**Koldanda**	**46.19**	**304**	*e*P		**P**	**06 27 47.2**	**-0.3**
	comp=Z,50nm,0.5s,mb5.4							
WMQ	**Urumqi**	**51.06**	**325**	*e*P		**P**	**06 28 26.0**	**+1.2**
WMQ				PCP		PcP	06 29 39.3	+0.7
WMQ				PP		PP	06 30 25.8	+2.4
WMQ				AMB		AMB		
	comp=Z,15nm,1.9s,mb4.3							
WMQ				AMB		AMB		
	comp=Z,96nm,9.6s							
MKAR	**Makanchi Array**	**55.89**	**325**	P		**P**	**06 28 59.3**	**-0.9**
	comp=Z,4.7nm,0.4s,mb4.7,baz=122,slow=7.4,SNR=89							
MKAR				ScP			06 33 42.4	
	comp=Z,0.8nm,0.8s,baz=100,slow=5.0,SNR=3.7							
YAK	**Yakutsk**	**56.50**	**2**	P		**P**	**06 29 04.0**	**-0.3**
	comp=Z,36nm,0.8s,mb5.2							
KZA	**Kyzart**	**58.05**	**317**	P		**P**	**06 29 16.1**	**+0.7**
	SNR=9.2							
TKM2	**Tokmak 2**	**58.17**	**318**	P		**P**	**06 29 15.9**	**-0.3**
	SNR=6.4							
UCH	**Uchtor**	**58.61**	**317**	P		**P**	**06 29 20.1**	**+0.8**
	SNR=14							
AAK	**Ala-Archa**	**58.79**	**317**	*e*P		**P**	**06 29 20.2**	**-0.3**
	comp=Z,3.0nm,0.7s,mb4.2							
ZAL	**Zalesovo**	**58.86**	**333**	P		**P**	**06 29 19.9**	**-0.9**
	comp=Z,1.9nm,0.3s,mb4.3,baz=271,slow=6.5,SNR=4.1							
USP	**Ospenovka**	**59.04**	**318**	P		**P**	**06 29 21.6**	**-0.8**
	SNR=14							
AML	**Almayashu**	**59.13**	**316**	P		**P**	**06 29 23.4**	**+0.4**
	SNR=9.9							
EKS2	**Erkin-Say**	**59.28**	**317**	P		**P**	**06 29 24.9**	**+0.9**
	SNR=6.3							
KURK	**Kurchatov**	**60.05**	**327**	*e*P		**P**	**06 29 27.9**	**-1.2**
RPZ	**Rata Peaks**	**63.42**	**145**	P		**P**	**06 29 51.7**	**0.0**
	comp=Z,7.5nm,0.6s,mb4.7,baz=10,slow=17,SNR=3.9							
BRVK	**Borovoye**	**65.71**	**327**	*e*P		**P**	**06 30 05.1**	**-1.3**
TIXI	**Tiksi**	**66.13**	**1**	*e*P		**P**	**06 30 07.4**	**-1.3**
	comp=Z,8.9nm,1.0s,mb4.5							
ZRNK	**Zerenda**	**66.37**	**326**	*e*P		**P**	**06 30 08.7**	**-1.8**
BILL	**Bilibino**	**68.00**	**15**	P		**P**	**06 30 19.6**	**-0.9**
	comp=Z,4.5nm,0.9s,mb4.2							
ARU	**Arti**	**73.25**	**328**	*e*P		**P**	**06 30 50.6**	**-1.5**
	comp=Z,11nm,0

WTTA	**Wattenberg**	**2.00**	**260**	⇓*i*PG		**Pg**	**06 24 20.5**	**-0.1**
WTTA				*i* SG		**Sg**	**06 24 48.2**	**+0.8**
	12nm,0.4s							
WTTA	**Wattenberg**	**2.00**	**260**	*e*Pg		**Pg**	**06 24 20.3**	**-0.3**
	SNR=4.3							
WTTA				*e*Sg		**Sg**	**06 24 47.4**	**0.0**
	SNR=3.9							
WATA	**Walderalm**	**2.03**	**263**	⇑*i*PG		**Pg**	**06 24 21.0**	**-0.2**
WATA				*i* SG		**Sg**	**06 24 49.0**	**+0.7**
	8.8nm,0.2s							
PRU	**Pruhonice**	**2.36**	**0**	*e*PG		**Pg**	**06 24 27.2**	**-0.5**
PRU				*e*SG		**Sg**	**06 24 58.1**	**-1.0**
	9.1nm,0.4s							
NKC	**Novy Kostel**	**2.95**	**333**	*e*SG		**Sg**	**06 25 17.3**	**-1.4**
DPC	**Dobruska-Polom**	**2.96**	**23**	*e*SG		**Sg**	**06 25 18.5**	**-0.7**
	11nm,0.5s							
GRFO	**Grafenberg**	**3.02**	**314**	*e*Sg		**Sg**	**06 25 21.0**	**0.0**
	SNR=2.9							
UPC	**Upice**	**3.04**	**18**	*e*SG		**Sg**	**06 25 20.8**	**-0.9**
DAVA	**Damuels**	**3.18**	**265**	*e*Sg		**Sg**	**06 25 24.3**	**-2.2**
	SNR=3.1							
BRG	**Berggiesshubel**	**3.27**	**353**	*e*Sg		**Sg**	**06 25 25.8**	**-3.6**
MOX	**Moxa**	**3.58**	**329**	*e*Sg		**Sg**	**06 25 38.0**	**-1.6**
	SNR=2.7							
CLL	**Collm**	**3.81**	**345**	*e*Sg		**Sg**	**06 25 46.0**	**-1.5**

*BJI **27** 06:47:35.4, 37.24N×112.16E, h11km, mb4.4, ML3.7, Ms3.5*
ISC 27 06:47:30.6±0.8, 37.26N±0.04×112.22E±0.10, h11km, n12, σ0§98/23, mb4.5/3, 1C, Northeastern China

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time	Res
TIY	**Taiyuan**	**0.48**	**20**	⇑*i*PG		**Pg**	**06 47 44.8**	**+4.3**
TIY					SG	**Sg**	**06 47 53.3**	**+6.2**
TIY				S	Sg			
	comp=N,2μm,0.8s							
TIY				S	Sg			
	comp=E,2μm,0.6s							
HHC	**Hu-ho-hao-te**	**3.62**	**352**	*e*P		**Pn**	**06 48 32.3**	**+4.4**
HHC				PG		**Pg**	**06 48 42.0**	**-1.0**
HHC				SG		**Sg**	**06 49 31.5**	**+0.2**
HHC				S	Sn			
	comp=N,179nm,0.6s							
HHC				S	Sn			
	comp=E,127nm,0.5s							
BTO	**Baotou**	**3.76**	**334**	*e*P		**Pn**	**06 48 34.0**	**+4.2**
BTO				*e*PG		**Pg**	**06 48 40.5**	**-5.2**
BTO				SG		**Sg**	**06 49 31.3**	**-4.5**
BTO				S	Sn			
	comp=N,111nm,0.3s							
BTO				S	Sn			
	comp=E,108nm,0.3s							
TIA	**Tai'an**	**4.07**	**103**	P		**Pn**	**06 48 34.5**	**+0.1**
TIA				PG		**Pg**	**06 48 45.0**	**-7.0**
TIA				SG		**Sg**	**06 49 36.3**	**-10**
TIA				S	Sn			
	comp=N,290nm,0.5s							
TIA				S	Sn			
	comp=E,360nm,0.6s							
BJI	**Beijing**	**4.16**	**47**	P		**Pn**	**06 48 40.3**	**+4.7**
BJI				PG		**Pg**	**06 48 45.5**	**-8.2**
BJI				SG		**Sg**	**06 49 43.5**	**-5.6**
BJI				S	Sn			
	comp=N,277nm,0.7s							
BJI				S	Sn			
	comp=E,219nm,0.7s							
XAN	**Xi'an**	**4.19**	**221**	P		**Pn**	**06 48 36.3**	**+0.3**
XAN				S		**Sn**	**06 49 25.0**	**-0.5**
XAN				SG		**Sg**	**06 49 40.3**	**-10**
XAN				S	Sn			
	comp=N,105nm,0.6s							
XAN				S	Sn			
	comp=E,72nm,0.7s							
GTA	**Gaotai**	**9.98**	**286**	*e*P		**P**	**06 49 57.8**	**+0.7**
GTA				AMB	AMB			
	comp=Z,8.0nm,0.6s							
GTA				LR	LR			
	comp=N,105nm,5.7s							
GTA				LR	LR			
	comp=E,65nm,5.3s							
KKN	**Kakani**	**24.53**	**255**	*e*P		**P**	**06 52 50.9**	**-0.5**
	comp=E,8.6nm,0.6s,mb4.5							
PKI	**Pulchoki**	**24.54**	**255**	*e*P		**P**	**06 52 50.2**	**-1.3**
DMN	**Daman**	**24.75**	**255**	*e*P		**P**	**06 52 52.3**	**-1.2**
GKN	**Gorkha**	**24.93**	**256**	*e*P		**P**	**06 52 56.4**	**+1.2**
	comp=E,12nm,0.4s,mb4.7							
KOLN	**Koldanda**	**25.84**	**257**	*e*P		**P**	**06 53 05.5**	**+1.7**
	comp=E,12nm,0.9s,mb4.5							

*IDC **27** 06:47:42.7±1.2, 64.64S×173.99E, mb3.9/3, mb1 4.2/4, mb1mx4.0/9, ML3.8/1, MS3.7/4, Ms1 3.7/4, ms1mx3.5/12, Error ellipse: s-maj=57.8km s-min=30.1km az=48.0*
*NEIC **27** 06:47:44.3±0.9, 64.67S×173.82E, h10km, mb4.7/2, Error ellipse: s-maj=34.2km s-min=15.0km az=83.0*
ISC 27 06:47:43.8±1.2, 64.8S±0.1×173.1E±0.6, h10km, n14, σ0§90/7, mb3.9/3, MS3.5/3, Balleny Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time	Res
VNDA	**Vanda**	**13.25**	**191**	Pn		**P**	**06 50 53.8**	**-0.5**
	0.5nm,0.3s,baz=39,slow=16,SNR=32							
VNDA				LR		LR	06 55 02.2	
	comp=Z,332nm,18.9s,baz=37,slow=33							
SBA	**Scott Base**	**13.27**	**186**	*e*P		**P**	**06 50 53.9**	**-0.7**
	8.1nm,0.8s							
RPZ	**Rata Peaks**	**21.15**	**356**	LR		LR	06 58 52.6	
	comp=Z,225nm,20.7s,MS3.5,baz=352,slow=32							
QSPA	**South Pole Qui**	**25.30**	**180**	*e*P		**P**	**06 53 13.2**	**+2.1**
	142nm,0.9s							
URZ	**Urewera**	**26.67**	**7**	LR		LR	07 02 01.7	
	comp=Z,77nm,20.8s,MS3.2,baz=199,slow=32							
MAW	**Mawson**	**38.93**	**215**	LR		LR	07 11 34.7	
	comp=Z,164nm,19.7s,MS3.9,baz=249,slow=36							
ASAR	**Alice Springs**	**48.32**	**309**	P		**P**	**06 56 27.2**	**+0.2**
	1.1nm,0.9s,mb3.9,baz=152,slow=7.0,SNR=6.4							
WRA	**Warramunga Arr**	**51.65**	**311**	P		**P**	**06 56 52.2**	**-0.3**
	1.3nm,0.7s,mb4.0,baz=162,slow=6.1,SNR=4.8							
LPAZ	**La Paz**	**86.90**	**123**	P		**P**	**07 00 29.2**	**-0.5**
	0.6nm,0.6s,mb4.0,baz=209,slow=13,SNR=3.2							
LPAZ	**La Paz**	**86.90**	**123**	*e*P		**P**	**07 00 29.1**	**-0.6**
	0.4nm,0.7s,mb3.8							
VIB	**Van Inlet**	**124.91**	**37**	T			09 22 51.8	
	SNR=5.6							
ILAR	**Eielson Array**	**132.52**	**22**	PKP		PKPdf	07 06 54.1	-6.1
	0.6nm,0.8s,baz=217,slow=4.5,SNR=4.9							
YKA	**Yellowknife Ar**	**137.72**	**41**	PKP		PKPdf	07 07 07.8	-2.0
	0.2nm,0.8s,baz=207,slow=1.6,SNR=3.2							
BRTR	**Keskin Array B**	**145.72**	**243**	PKPbc		PKPbc	07 07 23.6	+1.5
	1.1nm,0.7s,baz=162,slow=4.6,SNR=5.0							

*DJA **27** 06:51:50.7±0.9, 8.72S×115.33E, h100km±6km, MD5.0/4, Error ellipse: s-maj=25.8km s-min=9.2km az=5.0*
ISC 27 06:51:51.1±2.8, 8.6S±0.2×115.35E±0.08, h93km±19km, n4, σ0§36/8, 8D, Bali region

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time	Res
RATI	**Rata**	**0.21**	**120**	⇓*e*Pg		**P**	**06 52 04.8**	**+0.3**
	511nm,0.2s							
RATI				⇓*e*Sg		**S**	**06 52 14.6**	**-0.1**
INGI	**Ingas**	**0.28**	**225**	⇓*e*Pg		**P**	**06 52 04.5**	**-0.3**
	1μm,0.2s							
INGI				⇓*e*Sg		**S**	**06 52 15.4**	**+0.1**
KEDI	**Kedomdong**	**0.77**	**81**	⇓*e*Pg		**P**	**06 52 08.5**	**-0.3**
	212nm,0.2s							
KEDI				⇓*e*Sg		**S**	**06 52 22.0**	**+0.1**
KELI	**Kelakatan**	**0.93**	**295**	⇓*e*Pg		**P**	**06 52 10.9**	**+0.4**
KELI				⇓*e*Sg		**S**	**06 52 24.8**	**-0.2**

*NEIC **27** 06:56:57.5, 31.02S×70.88W, h82km, MD3.5(GUC), After GUC.*
GUC 27 06:56:57.5±0.6, 31.02S×70.88W, h82km±4km, MD3.5, ML2.8, 3C, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time	Res
CMCH	**Combarbala**	**0.19**	**214**	⇑*i*P		P	06 57 10.1	+0.6
CMCH				*i* S		S	06 57 19.5	+0.9
CMCH				AMP			06 57 20.8	
	comp=E,1μm,0.9s							
ILCH	**Illapel**	**0.67**	**202**	⇑*i*P		P	06 57 13.4	+0.2
ILCH				*i* S		S	06 57 25.0	+0.1
ILCH				AMP			06 57 25.2	
	comp=E,1μm,0.2s							
TLL	**Tololo Astrono**	**0.85**	**4**	*e*P		P	06 57 15.9	+0.7
TLL				*i* S		S	06 57 29.4	+1.0
TLL				AMP			06 57 31.1	
	comp=N,176nm,0.6s							
LSCH	**La Serena**	**1.15**	**344**	*e*P		P	06 57 18.7	0.0
LSCH				*i* S		S	06 57 34.7	-0.1
LSCH				AMP			06 57 36.2	
	comp=N,123nm,0.2s							
PTCH	**Petorca**	**1.24**	**182**	⇑*i*P		P	06 57 19.7	-0.3
PTCH				*i* S		S	06 57 36.5	-0.4
PTCH				AMP			06 57 38.4	
	comp=E,450nm,0.2s							
PACH	**Papudo**	**1.59**	**197**	*i* S		S	06 57 45.2	+0.6
FCH	**Farellones**	**2.36**	**168**	*e*P		P	06 57 35.5	+0.4
FCH				*i* S		S	06 58 04.5	+1.5
FCH				AMP			06 58 09.9	
	comp=E,36nm,0.3s							

*KRSC **27** 07:06:26.8±1.2, 53.81N×161.55E, h39km±6km, ML4.0*
*IDC **27** 07:06:30.7±4.5, 53.84N×162.22E, h47km±50km, mb2.9/4, mb1 3.2/4, mb1mx3.1/21, ML3.8/1, Error ellipse: s-maj=81.1km s-min=29.1km az=178.0*
ISC 27 07:06:26.3±0.5, 53.77N±0.03×161.64E±0.06, h40km±10km, n36, σ1§01/65, mb3.1/4, Off east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time	Res
MKZ	**Mys Kozlova**	**0.79**	**4**	*i* P		**P**	**07 06 39.4**	**-1.6**
MKZ				*i* S		**S**	**07 06 50.0**	**-1.8**
SPN	**Mys Shipunski**	**1.18**	**236**	*e*P		**P**	**07 06 45.9**	**-0.6**
SPN				*e*S		**S**	**07 07 01.3**	**-0.3**
KII	**Karymskiy**	**1.32**	**283**	*e*P		**P**	**07 06 48.4**	**-0.3**
KII				*e*S		**S**	**07 07 03.8**	**-1.5**
NLC	**Nalytchevo**	**1.50**	**247**	*e*P		**P**	**07 06 50.6**	**-0.5**
NLC				*e*S		**S**	**07 07 08.3**	**-1.3**
SDLR	**Sedlovina**	**1.71**	**254**	*i* P		**P**	**07 06 54.2**	**0.0**
SDLR				*e*S		**S**	**07 07 14.0**	**-1.1**
TUMR	**Tumrok**	**1.75**	**331**	*e*P		**P**	**07 06 55.2**	**+0.5**
TUMR				*e*S		**S**	**07 07 15.7**	**-0.2**
SMAR	**Somma**	**1.77**	**254**	*e*P		**P**	**07 06 55.8**	**+0.8**
SMAR				*e*S		**S**	**07 07 17.5**	**+1.1**
UGLR	**Uglovaya**	**1.77**	**253**	*e*P		**P**	**07 06 55.3**	**+0.3**
UGLR				*e*S		**S**	**07 07 15.9**	**-0.6**
AVH	**Avacha**	**1.80**	**255**	*i* P		**P**	**07 06 55.7**	**+0.2**
AVH				*e*S		**S**	**07 07 16.4**	**-0.9**
KOK	**Koryaka**	**1.85**	**256**	*e*P		**P**	**07 06 56.2**	**0.0**
KOK				*e*S		**S**	**07 07 17.5**	**-1.1**
PET	**Petropavlovsk**	**1.94**	**249**	*e*P		**P**	**07 06 57.4**	**0.0**
PET				*e*S		**S**	**07 07 19.5**	**-1.1**
KMNR	**Kamenistaya**	**2.15**	**338**	*e*P		**P**	**07 07 01.5**	**+1.1**
KMNR				*e*S		**S**	**07 07 26.8**	**+0.7**
GNL	**Ganaly**	**2.20**	**270**	*e*P		**P**	**07 07 02.1**	**+1.0**
GNL				*e*S		**S**	**07 07 27.6**	**+0.4**
ZLN	**Zelenaya**	**2.30**	**348**	*e*P		**P**	**07 07 03.4**	**+0.8**
ZLN				*e*S		**S**	**07 07 29.8**	**-0.2**
KRMR	**Karymshinskiy**	**2.31**	**247**	*e*P		**P**	**07 07 02.4**	**-0.2**
KRMR				*e*S		**S**	**07 07 28.4**	**-1.6**
RUS	**Russkaya**	**2.31**	**236**	*e*P		**P**	**07 07 03.0**	**+0.3**
RUS				*e*S		**S**	**07 07 29.0**	**-1.1**
KPT	**Kopyto**	**2.35**	**340**	*e*P		**P**	**07 07 04.7**	**+1.4**
KPT				*e*S		**S**	**07 07 31.9**	**+0.8**
LGNR	**Loginova**	**2.38**	**347**	*e*P		**P**	**07 07 04.5**	**+0.7**
LGNR				*e*S		**S**	**07 07 31.7**	**-0.3**
CIRR	**Tsirk**	**2.41**	**348**	*e*P		**P**	**07 07 04.8**	**+0.7**
CIRR				*e*S		**S**	**07 07 32.4**	**-0.2**
GRL	**Gorelyy**	**2.47**	**242**	*e*P		**P**	**07 07 06.4**	**+1.4**
GRL				*e*S		**S**	**07 07 34.8**	**+0.7**
KOZ	**Kozyrevsk**	**2.51**	**337**	*e*P		**P**	**07 07 06.9**	**+1.3**
KOZ				*e*S		**S**	**07 07 36.2**	**+1.0**
KRSR	**Krestovskiy**	**2.53**	**346**	*e*P		**P**	**07 07 06.5**	**+0.6**
KRSR				*e*S		**S**	**07 07 34.8**	**-0.9**
KBTR	**Krutoberegovo**	**2.54**	**15**	*e*P		**P**	**07 07 06.2**	**+0.2**
KBTR				*e*S		**S**	**07 07 36.7**	**+0.8**
KBG	**Krutoberegovo**	**2.57**	**13**	*e*P		**P**	**07 07 06.9**	**+0.5**
KBG				*e*S		**S**	**07 07 36.0**	**-0.6**
KBG				Smax				
	380nm,1.0s							
KLY	**Klyuchi**	**2.61**	**348**	P		**P**	**07 07 07.2**	**+0.2**
KLY				*e*S		**S**	**07 07 36.7**	**-1.1**
ESO	**Esso**	**2.75**	**323**	*e*P		**P**	**07 07 09.1**	**+0.1**
ESO				*e*S		**S**	**07 07 38.4**	**-2.9**
ESO				Smax				
	250nm,0.7s							
APC	**Apacha**	**2.81**	**254**	*e*P		**P**	**07 07 12.1**	**+2.2**
APC				*e*S		**S**	**07 07 42.7**	**-0.2**
APC				Smax				
	90nm,0.7s							
BKI	**Bering**	**2.91**	**59**	*e*P		**P**	**07 07 09.8**	**-1.5**
BKI				*i* S		**S**	**07 07 41.4**	**-3.9**
BKI				Smax				
	70nm,0.6s							
MIPR	**Malaya Ipel'ka**	**3.30**	**245**	*e*P		**P**	**07 07 18.7**	**+1.8**
MIPR				*e*S		**S**	**07 07 56.5**	**+1.1**
PAU	**Pauzhetka**	**3.74**	**234**	*e*P		**P**	**07 07 25.6**	**+2.6**
FX1	**Attu Island--F**	**6.96**	**93**	P		**P**	**07 08 07.0**	**-1.4**
	7.0nm,0.3s,baz=308,slow=7.3,SNR=13			S				
FX1						**S**	**07 09 18.5**	**-8.7**
	4.6nm,0.3s,baz=330,slow=20,SNR=10							
ILAR	**Eielson Array**	**27.68**	**46**	P		**P**	**07 12 11.9**	**-0.3**
	0.2nm,0.8s,mb2.8,baz=264,slow=9.1,SNR=3.0							
YKA	**Yellowknife Ar**	**42.04**	**44**	P		**P**	**07 14 13.8**	**-1.1**
	0.1nm,0.5s,mb2.7,baz=298,slow=8.3,SNR=2.9							
YKA					pP	pP	07 14 28.4	+2.2
	0.1nm,0.5s,baz=298,slow=7.7,SNR=3.4							
MKAR	**Makanchi Array**	**48.69**	**296**	P		**P**	**07 15 11.4**	**+3.3**
	0.2nm,0.5s,mb3.4,baz=64,slow=8.3,SNR=3.9							
NVAR	**Mina Array Bea**	**54.65**	**72**	pP		pP	07 16 08.8	+4.1
	0.5nm,0.8s,baz=306,slow=6.3,SNR=3.6							
TXAR	**Lajitas Array**	**69.53**	**68**	P		**P**	**07 17 32.8**	**+0.2**
	0.2nm,0.4s,mb3.4,baz=294,slow=5.4,SNR=5.0							
TXAR					pP	pP	07 17 46.7	+2.2
	0.3nm,0.7s,baz=304,slow=4.5,SNR=3.6							

*NEIC **27** 07:17:19.6, 36.63N×9.40W, MN2.4(MDD), After MDD.*
*MDD **27** 07:17:19.2±2.6, 36.46N×9.64W, h32km±47km, mbLg2.3/1, Error ellipse: s-maj=33.3km s-min=14.5km az=59.0, PRXIMO*
*INMG **27** 07:17:20.1±0.9, 36.52N×9.58W, h20km±28km, ML2.1, Error ellipse: s-maj=27.5km s-min=4.3km az=54.0*
ISC 27 07:17:18.9±1.6, 36.55N±0.07×9.39W±0.10, h20km, n22, σ1§05/37, 1C, West of Gibraltar

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time	Res
PTEO	**Sao Teotonio**	**1.13**	**28**	*e*P		**Pb**	**07 17 40.3**	**+0.8**
PTEO				*e*S		**Sb**	**07 17 56.2**	**+2.4**
	15nm,0.1s							
PTEO	**Sao Teotonio**	**1.13**	**28**	P		**Pb**	**07 17 40.3**	**+0.8**
PTEO				S		**Sb**	**07 17 56.2**	**+2.4**
	7.4nm,0.1s							
PALC	**Alcoutim**	**1.79**	**59**	*e*Pn		**Pn**	**07 17 50.0**	**+0.9**
PALC				*e*Sn		**Sn**	**07 18 12.4**	**+1.0**
	12nm,0.1s							
PALC	**Alcoutim**	**1.79**	**59**	Pn		**Pn**	**07 17 50.0**	**+0.9**
PALC				Sn		**Sn**	**07 18 12.4**	**+1.0**
	5.8nm,0.1s							
PBEJ	**Beja**	**1.91**	**39**	*e*Sn		**Sn**	**07 18 15.6**	**+1.0**
	5.5nm,0.2s							
PBEJ	**Beja**	**1.91**	**39**	Sn		**Sn**	**07 18 15.6**	**+1.0**
	2.8nm,0.2s							
MOE	**Montemor**	**2.14**	**22**	*e*Pn		**Pn**	**07 17 54.0**	**-0.1**
MOE				*e*Sn		**Sn**	**07 18 20.3**	**-0.1**
EMIN	**Mina Concepcio**	**2.49**	**60**	Pn		**Pn**	**07 17 59.8**	**+0.6**
	0.2nm,0.1s,SNR=7.9							
EMIN				Sn		**Sn**	**07 18 29.9**	**+0.5**
	1.0nm,0.1s,SNR=7.9							
EMIN	**Mina Concepcio**	**2.49**	**60**	P		**Pn**	**07 17 59.8**	**+0.7**
EMIN				S		**Sn**	**07 18 29.9**	**+0.6**
ESPR	**Espera**	**2.86**	**83**	⇑Pn		**Pn**	**07 18 04.9**	**+0.4**
	2.2nm,0.1s,SNR=18							
ESPR				Sn		**Sn**	**07 18 38.6**	**-0.1**
	12nm,0.2s,SNR=7.9							
EBAD	**Badajoz**	**2.90**	**40**	Pn		**Pn**	**07 18 05.2**	**+0.1**
	1.1nm,0.1s,SNR=7.9							
EBAD				Sn		**Sn**	**07 18 39.6**	**-0.1**
	4.8nm,0.1s,SNR=7.9							
EBAD	**Badajoz**	**2.90**	**40**	P		**Pn**	**07 18 05.2**	**+0.1**
EBAD				S		**Sn**	**07 18 39.2**	**-0.6**
ECAB	**El Cabril**	**3.52**	**63**	Pn		**Pn**	**07 18 14.0**	**+0.3**
	0.3nm,0.1s,SNR=7.9							
ECAB				Sn		**Sn**	**07 18 53.5**	**-1.8**
	0.7nm,0.1s,SNR=7.9							
PCBR	**Castelo Branco**	**3.62**	**24**	*e*Sn		**Sn**	**07 18 55.9**	**-1.9**
	2.7nm,0.2s							
PCBR	**Castelo Branco**	**3.62**	**24**	Sn		**Sn**	**07 18 55.9**	**-1.9**
	1.4nm,0.2s							
EADA	**Adamuz**	**4.16**	**66**	Pn		**Pn**	**07 18 22.7**	**-0.2**
	1.0nm,0.1s,SNR=7.9							
EADA				Sn		**Sn**	**07 19 08.8**	**-2.9**
	0.4nm,0.0s,SNR=7.9							
EADA	**Adamuz**	**4.16**	**66**	P		**Pn**	**07 18 22.9**	**-0.1**
EADA				S		**Sn**	**07 19 08.9**	**-2.8**
ELUQ	**Luque**	**4.22**	**75**	Pn		**Pn**	**07 18 23.7**	**-0.2**
	4.2nm,0.2s,SNR=4.0							
ELUQ	**Luque**	**4.22**	**75**	P		**Pn**	**07 18 23.8**	**-0.1**
ELOB	**Lobios**	**5.41**	**11**	Sn		**Sn**	**07 19 36.3**	**-6.8**
	0.3nm,0.1s,SNR=7.9							
ECAL	**Calabor**	**5.77**	**20**	Pn		**Pn**	**07 18 44.1**	**-1.6**
	0.5nm,0.1s,SNR=4.0							
ECAL				Sn		**Sn**	**07 19 46.0**	**-6.0**
	1.4nm,0.2s,SNR=7.9							
ECAL	**Calabor**	**5.77**	**20**	P		**Pn**	**07 18 44.0**	**-1.6**
ECAL				S		**Sn**	**07 19 46.0**	**-6.0**

BJI 27 08:08:01.4, 32.94N×120.47E, h15km, ML3.9, Southeastern China

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time	Res
NJ2	**Nanjing**	**1.63**	**237**	*e*P		Pn	08 08 28.0	-1.8
NJ2					PG	Pg	08 08 30.3	-3.7
NJ2					S	Sn	08 08 48.0	-2.5
NJ2					SG	Sg	08 08 52.0	-3.8
NJ2					S	Sn		
	comp=N,3μm,0.4s							
NJ2					S	Sn		
	comp=E,2μm,0.4s							
TIA	**Tai'an**	**4.27**	**321**	P		Pn	08 09 05.8	-1.7
TIA					PG	Pg	08 09 15.0	-12
TIA					SG	Sg	08 10 15.3	-8.5
TIA					S	Sn		
	comp=N,84nm,0.9s							
TIA					S	Sn		
	comp=E,181nm,1.0s							
WHN	**Wuhan**	**5.73**	**247**		PG	Pg	08 09 46.0	-10
WHN					SG	Sg	08 10 57.8	-15
WHN					S	Sn		
	comp=N,110nm,0.6s							
WHN					S	Sn		
	comp=E,86nm,0.7s							

*HEL **27** 08:10:24.6±0.2, 59.77N×24.60E, ML2.3, ML2.8(NAO), Explosion*
*NAO **27** 08:10:24.5±1.3, 59.79N×24.56E, ML2.8*
*BER **27** 08:10:25.6±3.5, 59.77N×24.60E, ML2.8(NAO), Suspected explosion*
*IDC **27** 08:10:25.1±2.0, 59.79N×24.70E, mb1 3.7/3, mb1mx3.2/20, ML3.8/2, Error ellipse: s-maj=20.8km s-min=6.5km az=143.0*
ISC 27 08:10:22.3±0.6, 59.78N±0.03×24.52E±0.07, n21, σ1§46/42, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time	Res
MEF	**Metsahovi**	**0.45**	**352**	*e*P		**Pg**	**08 10 32.8**	**+1.6**
MEF				*e*S		**Sg**	**08 10 38.6**	**+1.4**
PVF	**Pernaja**	**1.02**	**40**	*e*P		**Pb**	**08 10 42.6**	**+0.1**
PVF				*e*S		**Sg**	**08 10 55.1**	**-1.2**
VJF	**Virojoki**	**1.70**	**62**	*e*P		**Pn**	**08 10 54.4**	**+1.1**
VJF				*e*S		**Sb**	**08 11 15.1**	**-0.9**
VSU	**Vasula**	**1.74**	**138**	*e*P		**Pn**	**08 10 54.4**	**+0.4**
VSU				*e*S		**Sn**	**08 11 17.2**	**-0.1**
VSU	**Vasula**	**1.74**	**138**	Pn		**Pn**	**08 10 55.6**	**+1.6**
VSU				Lg			08 11 18.1	
FIA0	**FINESS Array S**	**1.84**	**24**	*e*P		**Pn**	**08 10 57.2**	**+1.8**
FIA0				*e*S		**Sn**	**08 11 19.9**	**+0.2**
FIA0	**FINESS Array S**	**1.84**	**24**	Pn		**Pn**	**08 10 57.4**	**+2.0**
	baz=198,slow=18							
FIA0				Lg			08 11 21.0	
	baz=193,slow=37							
FINES	**FINESS Array B**	**1.84**	**24**	Pg		**Pg**	**08 10 57.5**	**-1.5**
	16nm,0.3s,baz=200,slow=16,SNR=616							
FINES				Lg			08 11 20.7	
	20nm,0.3s,baz=203,slow=26,SNR=40							
FINES				Rg			08 11 34.4	
	3.9nm,0.3s,baz=186,slow=38,SNR=6.4							
KEF	**Keuruu**	**2.41**	**4**	*e*P		**Pn**	**08 11 05.8**	**+2.4**
KEF				*e*S		**Sn**	**08 11 35.1**	**+1.0**
KAF	**Kangasniemi**	**2.50**	**20**	*e*P		**Pn**	**08 11 07.5**	**+2.6**
KAF				*e*S		**Sn**	**08 11 37.2**	**+0.6**
SUF	**Sumiainen**	**3.06**	**14**	*e*P		**Pn**	**08 11 15.0**	**+2.2**
SUF				*e*S		**Sn**	**08 11 50.0**	**-0.6**
SUF				*e*SB		**Sb**	**08 11 53.6**	**-1.8**
SUF				MSG			08 11 56.1	
	comp=Z,5.5nm,0.3s							
VAF	**Ylistaro**	**3.40**	**346**	*e*P		**Pn**	**08 11 19.1**	**+1.5**
VAF				*e*S		**Sn**	**08 11 59.5**	**+0.3**
JOF	**Joensuu**	**4.54**	**43**	*e*P		**Pn**	**08 11 33.7**	**-0.2**
JOF				*e*S		**Sn**	**08 12 26.1**	**-2.1**
JOF				*e*SG		**Sg**	**08 12 43.6**	**-10**
JOF				MSG			08 12 45.1	
	comp=Z,9.8nm,0.3s							
KJN	**Kajaani**	**4.58**	**18**	*e*P		**Pn**	**08 11 35.1**	**+0.7**
KJN				*e*SG		**Sg**	**08 12 44.7**	**-10**
HFS	**Hagfors**	**5.45**	**278**	Pn		**Pn**	**08 11 46.9**	**+0.1**
	baz=94,slow=12							
HFS				Sn		**Sn**	**08 12 49.3**	**-1.9**
	baz=96,slow=28							
HFS				Lg			08 13 12.2	
	baz=86,slow=37							
HFS	**Hagfors**	**5.45**	**278**	*e*P		**Pn**	**

ISC 27 08:22:03.3±1.6, 14.63N±0.05×144.9E±0.1, h2km±11km, n6, σ0§34/10, 2C, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SAPN	**Saipan**	**1.02**	**55**	*iP*	**Pb**	**08 22 23.1**	**-0.2**
SAPN				*eS*	**Sb**	**08 22 37.4**	**+0.3**
GUMO	**Guam**	**1.03**	**181**	*ePg*	**Pg**	**08 22 24.6**	**+0.7**
GUMO				*eSg*	**Sg**	**08 22 37.3**	**-0.4**
GUMO				*eSn*	**Sn**	**08 22 40.0**	**0.0**
ANAT	**Anatahan**	**1.87**	**23**	*eP*	**Pn**	**08 22 36.7**	**+0.1**
ANA2	**Anatahan**	**1.88**	**25**	*eP*	**Pn**	**08 22 36.6**	**-0.2**
SARN	**Sarigan**	**2.23**	**22**	*eP*	**Pn**	**08 22 41.3**	**-0.5**
SARN				*eS*	**Sn**	**08 23 10.3**	**0.0**
QIZ	**Qiongzhong** 5.8nm,0.9s	**33.79**	**282**	P	**P**	**08 28 49.3**	**+0.2**

BJI 27 08:24:07.7, 34.20N×83.26E, h10km, mB4.3, mb4.3, Ms3.9, Msz3.7
IDC 27 08:24:07.3±0.6, 34.14N×83.40E, mb4.2/17, mb1 4.4/18, mb1mx4.3/22, ML4.0/1, MS3.2/3, Ms1 3.3/3, ms1mx3.0/22, Error ellipse: s-maj=25.8km s-min=12.7km az=47.0
NEIC 27 08:24:08.8±0.2, 34.08N×83.32E, h10km, mb4.6/10, Error ellipse: s-maj=7.5km s-min=4.4km az=222.0
MOS 27 08:24:10.7±1.1, 34.21N×83.49E, h33km, mb4.6/12, Error ellipse: s-maj=26.3km s-min=11.2km az=108.9
LDG 27 08:24:10.2±0.5, 34.14N×83.27E, h33km, Mb4.6/9, Error ellipse: s-maj=23.0km s-min=5.5km az=156.0

ISC 27 08:24:12.2±1.0, 34.10N±0.05×83.35E±0.05, h49km±9km, n72, σ0§79/75, mb4.3/30, MS3.4/4, 1C, Xizang

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
NDI	**New Delhi**	**7.52**	**226**	*eP*	**P**	**08 26 03.0**	**+1.2**
NDI				*e*		08 27 30.0	
LSA	**Lhasa**	**7.95**	**121**	*eP*	**P**	**08 26 04.7**	**-3.1**
KZA	**Kyzart** SNR=5.7	**10.20**	**324**	P	**P**	**08 26 39.2**	**+0.5**
WMQ	**Urumqi**	**10.28**	**18**	*eP*	**P**	**08 26 38.8**	**-1.0**
WMQ				AP		08 26 41.0	
WMQ				XP		08 26 42.8	
WMQ				PP	PP	08 26 47.0	-0.9
WMQ				S	**S**	**08 28 35.3**	**+0.6**
WMQ				XS		08 28 40.3	
WMQ	comp=Z,3.0nm,0.7s			AMB	AMB		
WMQ	comp=Z,18nm,4.1s			AMB	AMB		
WMQ	comp=N,1μm,10.2s			LR	LR		
WMQ	comp=E,976nm,11.4s			LR	LR		
WMQ	comp=Z,1μm,11.7s			LR	LR		
UCH	**Uchtor** SNR=25	**10.68**	**322**	P	**P**	**08 26 46.1**	**+0.9**
TKM2	**Tokmak 2** SNR=9.2	**10.69**	**328**	P	**P**	**08 26 44.5**	**-0.9**
KBK	**Karagaybulak** SNR=7.8	**10.79**	**325**	P	**P**	**08 26 47.4**	**+0.7**
AAK	**Ala-Archa**	**10.99**	**323**	*eP*	**P**	**08 26 50.1**	**+0.7**
AML	**Almayashu** SNR=30	**11.04**	**319**	P	**P**	**08 26 50.4**	**+0.2**
FRU	**Bishkek**	**11.08**	**324**	*eP*	**P**	**08 26 51.5**	**+0.8**
FRU	comp=Z,100nm,1.8s			pmax	pmax		
SHL	**Shillong**	**11.27**	**137**	*eP*	**P**	**08 26 50.0**	**-3.3**
SHL				*eS*	**S**	**08 28 52.5**	**-6.3**
MKAR	**Makanchi Array** comp=Z,0.9nm,0.3s,baz=180,slow=13,SNR=52	**12.71**	**357**	Pn	**P**	**08 27 08.8**	**-3.8**
MKAR	comp=Z,0.2nm,0.3s,baz=317,slow=23,SNR=5.5			Lg		08 30 31.6	
GTA	**Gaotai**	**14.22**	**63**	*eP*	**P**	**08 27 32.3**	**-0.1**
GTA				AP		08 27 37.0	
GTA				XP		08 27 40.0	
GTA	comp=Z,4.0nm,0.7s			AMB	AMB		
GTA	comp=N,334nm,12.5s			LR	LR		
GTA	comp=E,144nm,11.8s			LR	LR		
GTA	comp=Z,144nm,12.9s			LR	LR		
KURK	**Kurchatov**	**16.96**	**350**	*eP*	**P**	**08 28 07.4**	**0.0**
KMI	**Kunming**	**19.06**	**113**	*eP*	**P**	**08 28 32.8**	**-0.4**
KMI				AP		08 28 36.0	
KMI				XP		08 28 38.3	
KMI				S	**S**	**08 32 02.0**	**+1.5**
KMI				SS	SS	08 32 31.0	+3.8
KMI	comp=Z,8.0nm,0.7s			AMB	AMB		
KMI	comp=Z,56nm,3.3s			AMB	AMB		
KMI	comp=N,147nm,15.9s			LR	LR		
KMI	comp=E,115nm,18.7s			LR	LR		
KMI	comp=Z,114nm,20.6s			LR	LR		
CMAR	**Chiang Mai Arr** comp=Z,1.8nm,0.6s,baz=306,slow=13,SNR=10	**20.89**	**134**	P	**P**	**08 28 51.9**	**-0.8**
CMAR	comp=Z,43nm,18.2s,MS2.9,baz=180,slow=42			LR	LR	08 38 35.9	
CMAR	**Chiang Mai Arr**	**20.89**	**134**	P	**P**	**08 28 51.9**	**-0.8**
CMAR	comp=Z,2.0nm,0.6s			pmax	pmax		
CMAR	comp=Z,43nm,18.2s			MLR	MLR		
BVAR	**Borovoye Array** comp=Z,59nm,18.3s,MS3.0,baz=110,slow=41	**21.06**	**338**	LR	LR	08 38 30.0	
ZRNK	**Zerenda**	**21.45**	**336**	*eP*	**P**	**08 28 56.8**	**-1.2**
GYA	**Guiyang**	**21.50**	**104**	P	**P**	**08 29 02.0**	**+3.3**
GYA				S	**S**	**08 32 54.3**	**+5.1**
GYA	comp=Z,10.0nm,1.0s,mb4.1			AMB	AMB		
GYA	comp=N,930nm,26.9s,MS4.2			LR	LR		
GYA	comp=E,970nm,25.2s,MS4.2			LR	LR		
GYA	comp=Z,280nm,10.1s			LR	LR		
ZAK	**Zakamensk**	**21.86**	**36**	*iP*	**P**	**08 29 02.0**	**-0.2**
SONM	**Songino Array** comp=Z,6.0nm,0.7s,mb4.1,baz=240,slow=10.0,SNR=22	**22.06**	**45**	P	**P**	**08 29 05.0**	**+0.8**
ENH	**Enshi** comp=Z,6.4nm,0.7s,mb4.2	**22.43**	**93**	P	**P**	**08 29 08.2**	**+0.2**
ULN	**Ulaanbaatar** comp=Z,13nm,1.1s,mb4.3	**22.46**	**45**	*eP*	**P**	**08 29 08.9**	**+0.8**
BRTR	**Keskin Array B** comp=Z,1.3nm,0.8s,mb3.7,baz=101,slow=6.3,SNR=5.2	**39.73**	**293**	P	**P**	**08 31 42.5**	**+1.0**
AKASG	**Malin Array Be** comp=Z,1.8nm,0.4s,mb4.0,baz=78,slow=8.1,SNR=16	**42.28**	**310**	P	**P**	**08 32 02.2**	**-0.1**
JOF	**Joensuu** comp=Z,3.4nm,0.6s,mb4.2	**43.13**	**328**	*ep*	**P**	**08 32 09.4**	**+0.3**
JOF	**Joensuu** comp=Z,3.0nm,0.6s,mb4.2	**43.13**	**328**	*eP*	**P**	**08 32 09.4**	**+0.3**
TIXI	**Tiksi** comp=Z,1.0nm,0.8s,mb3.6	**44.48**	**19**	*eP*	**P**	**08 32 19.1**	**-0.9**
FINES	**FINESS Array B** comp=Z,4.1nm,0.5s,mb4.5,baz=105,slow=8.4,SNR=31	**45.17**	**325**	P	**P**	**08 32 25.8**	**+0.2**
FINES	**FINESS Array B** comp=Z,4.0nm,0.5s	**45.17**	**325**	P	**P**	**08 32 25.8**	**+0.2**
FINES	**FINESS Array B**	**45.17**	**325**	P	**P**	**08 32 25.8**	**+0.2**
KEV	**Kevo** comp=Z,1.7nm,0.4s,mb4.3	**46.91**	**337**	*ep*	**P**	**08 32 38.5**	**-0.7**
KEV	**Kevo** comp=Z,2.0nm,0.4s,mb4.4	**46.91**	**337**	*eP*	**P**	**08 32 38.5**	**-0.7**
ARCES	**ARCESS Array B** comp=Z,2.2nm,0.5s,mb4.3,baz=95,slow=7.1,SNR=18	**47.34**	**336**	P	**P**	**08 32 42.7**	**+0.1**
ARCES	comp=Z,54nm,21.1s,MS3.5,baz=100,slow=38			LR	LR	08 54 09.3	
ARCES	**ARCESS Array B** comp=Z,2.0nm,0.5s	**47.34**	**336**	P	**P**	**08 32 42.7**	**+0.1**
ARCES	comp=Z,54nm,21.1s			MLR	MLR		
NB2	**NORSAR Subarra** comp=Z,9.0nm,0.7s,mb4.8,baz=86,slow=7.4	**52.31**	**324**	P	**P**	**08 33 19.9**	**-0.8**
NOA	**NORSAR Array B** comp=Z,6.6nm,0.7s,mb4.7,baz=87,slow=7.3,SNR=34	**52.31**	**324**	P	**P**	**08 33 20.0**	**-0.7**
NOA	comp=Z,7.0nm,0.7s			pmax	pmax		
GERES	**GERESS Array B** comp=Z,0.8nm,0.5s,mb3.9,baz=76,slow=5.5,SNR=7.3	**52.44**	**309**	P	**P**	**08 33 22.2**	**+0.4**
GERES	comp=Z,1.0nm,0.5s	**GERESS Array B**	**52.44**	**309**	P	**P**	**08 33 22.2**	**+0.4**
GERES				pmax	pmax		
BILL	**Bilbino** comp=Z,2.5nm,0.6s,mb4.4	**56.26**	**27**	*eP*	**P**	**08 33 49.5**	**0.0**
LPG	**La Plagne** comp=Z,16nm,0.8s,mb4.8	**57.86**	**306**	*eP*	**P**	**08 34 01.4**	**+0.2**
LPL	**La Plagne** comp=Z,15nm,0.7s,mb4.8	**57.87**	**306**	*eP*	**P**	**08 34 01.3**	**+0.1**
SBF	**Sospel**	**57.90**	**304**	*eP*	**P**	**08 34 01.2**	**-0.3**
LOR	**Lormes**	**59.22**	**309**	*eP*	**P**	**08 34 09.7**	**-0.9**
SMF	**Signal de Mont** comp=Z,9.1nm,0.7s,mb4.6	**59.43**	**308**	*eP*	**P**	**08 34 11.3**	**-0.8**
VIVF	**Saint-Julien-l**	**59.46**	**306**	*eP*	**P**	**08 34 11.7**	**-0.6**
SSF	**Saint Saulge** comp=Z,10nm,0.8s,mb4.6	**59.52**	**309**	*eP*	**P**	**08 34 11.9**	**-0.7**
AVF	**Avril sur Loir** comp=Z,3.6nm,0.6s,mb4.3	**59.70**	**308**	*eP*	**P**	**08 34 13.2**	**-0.7**
LDF	**La Druitiere**	**61.32**	**311**	*eP*	**P**	**08 34 24.1**	**-0.8**
GRR	**Gorron** comp=Z,7.7nm,0.6s,mb4.7	**61.85**	**311**	*eP*	**P**	**08 34 27.6**	**-0.9**
MFF	**Saint Martin d**	**62.03**	**309**	*eP*	**P**	**08 34 29.7**	**0.0**
ETSF	**Etsaut**	**63.69**	**305**	*eP*	**P**	**08 34 40.5**	**-0.3**
FITZ	**Fitzroy Crossi** comp=Z,1.1nm,0.5s,mb4.2,baz=351,slow=8.0,SNR=3.9	**65.70**	**135**	P	**P**	**08 34 54.1**	**0.0**
SUMG	**Summit**	**66.40**	**344**	*eP*	**P**	**08 34 58.6**	**+0.9**
WRA	**Warramunga Arr** comp=Z,2.6nm,0.7s,mb4.3,baz=326,slow=6.0,SNR=15	**72.41**	**130**	P	**P**	**08 35 35.8**	**+0.4**
WRA	**Warramunga Arr** comp=Z,3.0nm,0.7s	**72.41**	**130**	P	**P**	**08 35 35.8**	**+0.5**
WRA				pmax	pmax		
ILAR	**Eielson Array** comp=Z,1.0nm,0.7s,mb3.9,baz=316,slow=5.3,SNR=20	**73.94**	**20**	P	**P**	**08 35 43.1**	**-0.4**
ILAR	**Eielson Array** comp=Z,1.0nm,0.7s	**73.94**	**20**	P	**P**	**08 35 43.1**	**-0.4**
ILAR				pmax	pmax		
ASAR	**Alice Springs** comp=Z,1.0nm,0.6s,mb3.9,baz=318,slow=5.3,SNR=11	**74.89**	**133**	P	**P**	**08 35 50.1**	**+0.4**
PMR	**Palmer** comp=Z,2.2nm,0.7s,mb4.2	**75.62**	**23**	*eP*	**P**	**08 35 53.2**	**+0.1**
CTA	**Charters Tower** comp=Z,3.1nm,0.9s,mb4.2,baz=344,slow=11,SNR=5.8	**80.52**	**122**	P	**P**	**08 36 21.2**	**+0.2**
CTA	**Charters Tower** comp=Z,3.0nm,0.9s	**80.52**	**122**	P	**P**	**08 36 21.2**	**+0.2**
CTA				pmax	pmax		
CTA	**Charters Tower**	**80.52**	**122**	P	**P**	**08 36 21.2**	**+0.1**
YKW3	**Yellowknife Ar**	**82.60**	**8**	*eP*	**P**	**08 36 31.1**	**+0.1**
YKA	**Yellowknife Ar** comp=Z,3.3nm,0.5s,mb4.6,baz=335,slow=5.5,SNR=110	**82.67**	**8**	P	**P**	**08 36 31.4**	**+0.1**
YKA	**Yellowknife Ar** comp=Z,3.0nm,0.5s	**82.67**	**8**	P	**P**	**08 36 31.4**	**+0.1**
YKA				pmax	pmax		
DBIC	**Dimbokro** comp=Z,5.9nm,1.0s,mb4.7,baz=240,slow=5.1,SNR=2.4	**84.82**	**275**	P	**P**	**08 36 44.5**	**+1.3**
DBIC	**Dimbokro** comp=Z,6.0nm,1.0s	**84.82**	**275**	P	**P**	**08 36 44.6**	**+1.4**
DBIC				pmax	pmax		
STKA	**Stephens Creek** comp=Z,1.9nm,0.8s,mb4.4,baz=243,slow=6.8,SNR=3.0	**85.51**	**133**	P	**P**	**08 36 46.6**	**+0.3**
SCHQ	**Schefferville** comp=Z,1.2nm,0.7s,mb4.2,baz=48,slow=16,SNR=3.4	**87.79**	**343**	P	**P**	**08 36 57.2**	**+0.5**

NEIC 27 08:26:11.8±1.8, 5.55S×149.12E, mb4.0/2, Error ellipse: s-maj=39.8km s-min=15.5km az=89.0
IDC 27 08:26:11.1±3.0, 5.54S×149.26E, h115km±14km, mb3.5/4, mb1 3.7/6, mb1mx3.5/16, Error ellipse: s-maj=70.0km s-min=18.3km az=103.0

ISC 27 08:26:09.8±3.6, 5.5S±0.2×149.1E±0.4, h116km±30km, n9, σ0§54/11, mb3.7/3, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby** 11nm,0.3s,baz=40,slow=14,SNR=23	**4.38**	**207**	P	**P**	**08 27 15.4**	**-0.1**
PMG	8.7nm,0.3s,baz=46,slow=20,SNR=12			S	**S**	**08 28 06.4**	**+0.6**
PMG	**Port Moresby**	**4.38**	**207**	*ePn*	**P**	**08 27 15.1**	**-0.4**
PMG				*eSn*	**S**	**08 28 05.8**	**0.0**
CTA	**Charters Tower** 0.2nm,0.3s,baz=17,slow=14,SNR=5.8	**14.80**	**191**	P	**P**	**08 29 35.6**	**+1.2**
CTAO	**Charters Tower** 4.6nm,0.9s	**14.80**	**191**	*eP*	**P**	**08 29 33.4**	**-1.0**
WRAB	**Tennant Creek** 13nm,1.0s	**20.34**	**224**	*eP*	**P**	**08 30 38.1**	**-0.8**
WRA	**Warramunga Arr** 1.2nm,0.5s,baz=50,slow=10,SNR=8.5	**20.36**	**224**	P	**P**	**08 30 39.1**	**0.0**
WRA	1.5nm,0.9s,baz=49,slow=10,SNR=4.4			pP		08 31 01.3	
ASAR	**Alice Springs** 2.0nm,0.7s,mb3.5,baz=51,slow=8.9,SNR=22	**23.30**	**218**	P	**P**	**08 31 08.4**	**+0.3**
ASAR	0.8nm,0.7s,baz=54,slow=10,SNR=3.0			pP		08 31 31.7	
FITZ	**Fitzroy Crossi** 2.9nm,0.4s,mb4.1,baz=45,slow=7.9,SNR=17	**26.16**	**239**	P	**P**	**08 31 35.6**	**+0.3**
FITZ	3.2nm,0.8s,baz=68,slow=3.4,SNR=2.9			pP	pP	08 31 59.9	-0.3
SONM	**Songino Array** 0.4nm,0.4s,mb3.6,baz=144,slow=6.0,SNR=2.6	**65.00**	**330**	P	**P**	**08 36 39.8**	**+0.2**

NEIC 27 08:30:11.7±0.5, 18.77N×145.28E, h300km, mb4.1/2, Error ellipse: s-maj=20.4km s-min=10.8km az=93.0
IDC 27 08:30:15.2±24.0, 18.73N×145.32E, h336km±256km, mb3.1/9, mb1 3.3/9, mb1mx3.1/22, Error ellipse: s-maj=54.4km s-min=26.9km az=46.0

ISC 27 08:30:10.6±0.7, 18.8N±0.1×145.2E±0.2, h300km, n14, σ0§47/14, mb3.5/11, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ENH	**Enshi** 9.4nm,0.9s,mb4.3	**34.33**	**296**	P	**P**	**08 36 30.7**	**-0.4**
WRAB	**Tennant Creek** 5.6nm,0.8s,mb4.0	**39.91**	**196**	*eP*	**P**	**08 37 17.6**	**0.0**
WRA	**Warramunga Arr** 0.5nm,0.4s,mb3.2,baz=16,slow=8.4,SNR=5.2	**39.92**	**196**	P	**P**	**08 37 17.5**	**-0.2**
FITZ	**Fitzroy Crossi** 0.7nm,0.4s,mb3.2,baz=25,slow=8.8,SNR=4.1	**41.38**	**209**	P	**P**	**08 37 30.3**	**+0.7**
ASAR	**Alice Springs** 0.2nm,0.6s,mb2.6,baz=11,slow=8.4,SNR=3.0	**43.59**	**195**	P	**P**	**08 37 47.0**	**-0.4**
MKAR	**Makanchi Array** 0.4nm,0.5s,mb3.1,baz=92,slow=8.8,SNR=5.0	**58.08**	**314**	P	**P**	**08 39 35.0**	**+0.2**
MKAR	**Makanchi Array**	**58.08**	**314**	P	**P**	**08 39 35.0**	**+0.2**
BVAR	**Borovoye Array** 1.1nm,0.5s,mb3.6,baz=92,slow=7.5,SNR=6.0	**66.13**	**320**	P	**P**	**08 40 27.7**	**+0.1**
YKA	**Yellowknife Ar** 0.3nm,0.5s,mb3.3,baz=290,slow=5.4,SNR=11	**78.15**	**28**	P	**P**	**08 41 37.2**	**-0.7**
YKA	**Yellowknife Ar**	**78.15**	**28**	P	**P**	**08 41 37.2**	**-0.7**
ARCES	**ARCESS Array B** 0.7nm,0.8s,mb3.4,baz=80,slow=7.4,SNR=5.4	**82.29**	**342**	P	**P**	**08 42 00.3**	**+0.8**
ARCES	**ARCESS Array B**	**82.29**	**342**	P	**P**	**08 42 00.3**	**+0.8**
NVAR	**Mina Array Bea** 1.1nm,0.8s,mb3.7,baz=273,slow=4.0,SNR=7.8	**83.46**	**52**	P	**P**	**08 42 06.5**	**+0.4**
FINES	**FINESS Array B** 0.3nm,0.3s,mb3.6,baz=63,slow=4.3,SNR=6.0	**86.63**	**335**	P	**P**	**08 42 20.7**	**-0.4**

IDC 27 09:02:03.8±1.6, 52.44S×18.95E, mb3.7/2, mb1 3.8/2, mb1mx3.6/15, MS3.7/2, Ms1 3.7/2, ms1mx3.4/16, Error ellipse: s-maj=150.0km s-min=36.8km az=41.0
NEIC 27 09:02:08.2±1.1, 52.93S×18.57E, h10km, mb4.1/3, Error ellipse: s-maj=35.5km s-min=18.0km az=95.0

ISC 27 09:02:06.4±0.9, 52.9S±0.1×18.8E±0.3, h10km, n17, σ1§25/12, mb4.0/4, MS3.7/2, 3D, Southwest of Africa

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SUR	**Sutherland** 2.1nm,0.6s	**20.53**	**5**	*eP*	**P**	**09 06 48.6**	**+1.3**
SNAA	**Sanae**	**21.14**	**199**	*eP*	**P**	**09 06 53.5**	**+0.1**
VNA2	**Neumayer--Watz**	**21.58**	**203**	*e*	**P**	**09 07 02.0**	**+4.1**
VNA2	**Neumayer--Watz**	**21.58**	**203**	*iP*	**P**	**09 06 59.3**	**+1.4**
VNA2				*e*		09 07 02.0	
VNA1	**Neumayer--Stat**	**21.61**	**204**	*e*	**P**	**09 07 03.9**	**+5.8**
VNA1	**Neumayer--Stat**	**21.61**	**204**	*iP*	**P**	**09 07 02.1**	**+4.0**
VNA1				*e*		09 07 03.9	
VNA3	**Neumayer Olymp**	**22.35**	**204**	*e*	**P**	**09 07 07.7**	**+2.2**
VNA3	**Neumayer Olymp**	**22.35**	**204**	*iP*	**P**	**09 07 05.0**	**-0.5**
VNA3				*e*		09 07 07.7	
MAW	**Mawson** 1.5nm,0.9s,mb3.5,baz=284,slow=17,SNR=1.4	**25.63**	**142**	P	**P**	**09 07 37.1**	**0.0**
QSPA	**South Pole Qui** 37nm,1.1s,mb5.1	**37.36**	**180**	*eP*	**P**	**09 09 19.8**	**-0.4**
VNDA	**Vanda** comp=Z,84nm,18.3s,MS3.8,baz=223,slow=34	**47.86**	**170**	LR	LR	09 29 35.7	
KMBO	**Kilima Mbogo** comp=Z,58nm,19.7s,MS3.6,baz=108,slow=34	**53.80**	**23**	LR	LR	09 32 34.7	
LPAZ	**La Paz** 2.4nm,1.4s,mb3.9	**75.37**	**262**	*eP*	**P**	**09 13 49.8**	**-2.0**
ASAR	**Alice Springs** 0.5nm,1.0s,mb3.6,baz=211,slow=4.5,SNR=4.0	**85.30**	**124**	P	**P**	**09 14 43.8**	**-0.7**
PDAR	**Pinedale Array** 0.9nm,0.8s,baz=117,slow=4.0,SNR=7.7	**144.61**	**275**	PKP	PKPdf	09 21 39.6	-5.8
NVAR	**Mina Array Bea** 1.1nm,0.8s,baz=153,slow=4.0,SNR=8.2	**147.27**	**261**	PKPbc	PKPdf	09 21 48.9	-1.1
YKA	**Yellowknife Ar** 0.2nm,0.8s,baz=83,slow=2.6,SNR=4.6	**153.88**	**310**	PKPbc	PKPdf	09 22 03.2	+3.9

IDC 27 09:06:42.1±35.0, 20.78S×174.93W, h462km±329km, mb2.9/4, mb1 3.1/4, mb1mx2.9/16, Error ellipse: s-maj=432.0km s-min=51.8km az=41.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CTA	**Charters Tower** 1.4nm,0.3s,baz=98,slow=10.0,SNR=6.7	**36.32**	**264**	P	P	09 13 05.5	-1.2
ASAR	**Alice Springs** 0.5nm,0.8s,baz=99,slow=6.9,SNR=4.8	**47.25**	**257**	P	P	09 14 31.6	-2.3
WRA	**Warramunga Arr** 0.7nm,0.3s,baz=96,slow=8.4,SNR=24	**47.40**	**262**	P	P	09 14 34.0	-1.1
VNDA	**Vanda** 0.3nm,0.6s,baz=4.8,slow=17,SNR=4.4	**57.90**	**186**	P	P	09 15 48.1	-2.0

TAP 27 09:20:57.5, 24.00N×121.97E, h17km, ML3.3
JMA 27 09:21:00.6±0.2, 24.01N×122.16E, h42km, M2.6

ISC 27 09:21:00.7±3.0, 24.0N±0.3×122.2E±0.2, h30km±22km, n5, σ0§25/10, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
YOJ	**Yonaguni jima**	**0.88**	**58**	P	**Pn**	**09 21 16.9**	**-0.2**
YOJ				*eS*	**Sb**	**09 21 28.6**	**0.0**
HATJ	**Hateruma jima**	**1.47**	**88**	P	**Pn**	**09 21 25.9**	**+0.3**
HATJ				*eS*	**Sn**	**09 21 43.9**	**-0.2**
JKRS	**Kuro-shima**	**1.68**	**82**	P	**Pn**	**09 21 28.7**	**+0.2**
JKRS				*eS*	**Sn**	**09 21 49.1**	**-0.1**
JIJ	**Ishigaki jima**	**1.82**	**78**	P	**Pn**	**09 21 30.0**	**-0.5**
JIJ				*eS*	**Sn**	**09 21 52.6**	**-0.1**
JTJ	**Tarama**	**2.38**	**74**	P	**Pn**	**09 21 38.7**	**+0.2**
JTJ				*eS*	**Sn**	**09 22 07.3**	**+0.3**

IDC 27 09:29:51.4±2.5, 45.02N×149.91E, mb3.3/4, mb1 3.7/4, mb1mx3.4/23, Error ellipse: s-maj=189.0km s-min=26.7km az=119.0

ISC 27 09:30:02.9±1.6, 44.5N±0.2×150.3E±0.2, h119km±18km, n18, σ1§13/26, mb3.2/4, East of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
NEM2	**Nemuro 2**	**3.51**	**252**	P	**P**	**09 30 56.3**	**-0.7**
NEM2				*eS*	**S**	**09 31 37.3**	**-0.8**
JRA	**Rausu**	**3.79**	**263**	P	**P**	**09 31 00.8**	**+0.1**
JRA				*eS*	**S**	**09 31 46.3**	**+1.4**
JNK	**Nakash**	**4.16**	**259**	P	**P**	**09 31 05.1**	**-0.5**
JNK				*eS*	**S**	**09 31 54.5**	**+0.9**
JAK	**Akkeshi**	**4.36**	**252**	P	**P**	**09 31 07.8**	**-0.6**
JAK				*eS*	**S**	**09 31 58.5**	**-0.1**
JAR	**Ashorobuto**	**4.90**	**258**	P	**P**	**09 31 16.0**	**+0.3**
JAR				*eS*	**S**	**09 32 13.0**	**+1.3**
JOB	**Onbets**	**4.98**	**253**	P	**P**	**09 31 17.0**	**+0.2**
JOB				*eS*	**S**	**09 32 14.0**	**+0.3**
JCH	**Churui**	**5.41**	**252**	P	**P**	**09 31 22.6**	**+0.1**
JCH				*eS*	**S**	**09 32 24.2**	**0.0**
JEM	**Erimo**	**5.81**	**247**	P	**P**	**09 31 29.4**	**+1.5**
JNBK	**Urakawa-nobuka**	**5.96**	**251**	P	**P**	**09 31 29.8**	**-0.2**
JBT2	**Biratori 2**	**6.04**	**256**	P	**P**	**09 31 31.3**	**+0.3**
JKB	**Kayabe**	**7.29**	**252**	P	**P**	**09 31 47.3**	**-0.8**
JKB				*eS*	**S**	**09 33 07.4**	**-2.4**
JTM	**Tenmabayashi**	**7.78**	**245**	*eS*	**S**	**09 33 19.4**	**-2.4**
OFUJ	**Ofunato**	**8.45**	**233**	*eS*	**S**	**09 33 37.7**	**-0.3**
JRG	**Rokugo**	**8.85**	**238**	*eS*	**S**	**09 33 48.0**	**+0.3**
ILAR	**Eielson Array** 0.1nm,0.8s,mb2.7,baz=260,slow=9.0,SNR=4.4	**39.51**	**37**	P	**P**	**09 37 21.9**	**-1.1**
YKA	**Yellowknife Ar** 0.2nm,0.5s,mb3.5,baz=300,slow=7.1,SNR=7.3	**53.88**	**35**	P	**P**	**09 39 13.5**	**-1.9**
WRA	**Warramunga Arr** 0.5nm,1.1s,mb3.3,baz=15,slow=6.3,SNR=2.9	**65.79**	**197**	P	**P**	**09 40 40.8**	**+3.3**
TXAR	**Lajitas Array** 0.3nm,0.5s,mb3.4,baz=301,slow=4.0,SNR=12	**80.31**	**58**	P	**P**	**09 42 04.5**	**+2.5**

NIED 27 09:47:00, 38.10N×142.50E, h23km, Mw3.5 Best double couple: M0 2.34×10^14 NP1:φs 342°, δ72°, λ51°. NP2:φs 231°, δ42°, λ152°.
JMA 27 09:47:16.5±0.3, 38.10N×142.51E, h37km±3km, M3.5

ISC 27 09:47:16.5±2.4, 38.08N±0.08×142.6E±0.2, h33km, n11, σ0§99/14, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.02**	**292**	P	**P**	**09 47 34.2**	**-0.3**
OFUJ	**Ofunato**	**1.22**	**325**	P	**P**	**09 47 37.0**	**-0.3**
OFUJ				*eS*	**S**	**09 47 51.7**	**-1.2**
JMK	**Ichinoseki**	**1.37**	**310**	P	**P**	**09 47 39.3**	**-0.1**
JMM	**Marumori**	**1.41**	**262**	P	**P**	**09 47 39.6**	**-0.5**
JFK	**Kawauchi**	**1.51**	**243**	P	**P**	**09 47 40.9**	**-0.6**
JOM	**Ohasama**	**1.71**	**325**	P	**P**	**09 47 44.7**	**+0.4**
JFT	**Otama**	**1.85**	**253**	P	**P**	**09 47 47.1**	**+0.8**
JFT				*eS*	**S**	**09 48 09.1**	**+0.4**
JYK	**Kaneyama**	**1.92**	**297**	P	**P**	**09 47 48.2**	**+0.8**
JYS	**Shirataka**	**1.97**	**275**	P	**P**	**09 47 49.6**	**+1.5**
JYA	**Atsumi**	**2.30**	**284**	P	**P**	**09 47 54.4**	**+1.6**
MAT	**Matsushiro**	**3.79**	**248**	P	**P**	**09 48 11.4**	**-2.7**
MAT				*eS*	**S**	**09 48 57.6**	**-0.6**

NEIC 27 09:54:06.2, 38.92N×23.59E, h23km, ML3.1(ATH), After ATH.
ATH 27 09:54:06.2, 38.92N×23.59E, h23km±1km, MD2.9/9, ML3.1
THE 27 09:54:07.0, 38.92N×23.57E, h4km, ML3.0

ISC 27 09:54:06.5±1.0, 38.89N±0.04×23.60E±0.07, h17km±14km, n16, σ0§86/22, Greece

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
AOS	**Alonnisos**	**0.35**	**38**	*ePg*	**Pb**	**09 54 13.6**	**-0.3**
NEO	**Neokhori**	**0.51**	**325**	*ePB*	**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAN	**Janina**	**0.18**	**117**	*e*PG	**Pg**	**10 06 45.2**	**-0.1**
JAN				*e*SG	**Sg**	**10 06 48.5**	**+0.6**
IGT	**Igoumenitsa**	**0.32**	**230**	*e*Pg	**Pg**	**10 06 47.8**	**-0.2**
IGT				*e*Sg	**Sg**	**10 06 54.0**	**+1.6**
MEV	**Metsovon**	**0.45**	**84**	*e*Pg	**Pg**	**10 06 49.6**	**-1.0**
KEK	**Kerkira**	**0.66**	**268**	*e*PB	**Pb**	**10 06 53.3**	**-1.2**
LKD	**Levkas**	**1.03**	**180**	*e*Pg	**Pg**	**10 07 00.8**	**-1.2**
FNA	**Florina**	**1.19**	**28**	*e*Pb	**Pb**	**10 07 03.1**	**-0.5**
FNA				*e*Sb	**Sb**	**10 07 20.4**	**+1.5**
EVR	**Evrytania**	**1.22**	**132**	*e*PB	**Pb**	**10 07 05.2**	**+1.0**
LIT	**Litokhoron**	**1.46**	**75**	*e*Pb	**Pb**	**10 07 08.4**	**+0.1**
	comp=Z,7nm,0.6s						
AGG	**Agios Georgios**	**1.49**	**118**	*e*Pb	**Pb**	**10 07 08.1**	**-0.7**
VLS	**Valsamata**	**1.56**	**182**	*e*PB	**Pb**	**10 07 10.4**	**+0.4**

BJI ***27*** *10:10:27.1,5.68N×126.77E,h62km,mB5.4,mb5.3,Ms5.0, Msz4.8*

CSEM ***27*** *10:10:30.7,6.60N×126.37E,h33km,mb5.5*

MOS ***27*** *10:10:33.3±1.1,6.62N×126.31E,h48km,mb5.6/43, MS4.8/31,Error ellipse: s-maj=11.4km s-min=5.7km az=111.7*

NEIC ***27*** *10:10:36.3±0.1,6.59N×126.41E,mb5.5/50,MW5.7,Error ellipse: s-maj=6.1km s-min=3.7km az=70.0,Moment Tensor Solution. s12 Moment tensor: Scale 10^{17}Nm; M_{rr}0.69; $M_{\theta\theta}$0.42; $M_{\phi\phi}$-1.11; $M_{r\theta}$-0.74; $M_{\theta\phi}$-1.18; $M_{\phi r}$2.91; Best double couple: M_o3.4×10^{17} NP1:ϕ_s246°,δ25°,λ165°. NP2:ϕ_s349°,δ84°,λ66°. Principal axes: T 3.41, Plg46°, Azm235°; N -.07, Plg24°, Azm352°; P -3.33, Plg34°, Azm100°;*

NEIC Felt [III PIVS] at Davao and General Santos; [II PIVS] at Kidapawan.

IDC ***27*** *10:10:36.4±0.8,6.54N×126.42E,h64km±5km,mb4.9/40, mb1 4.9/41,mb1mx4.9/42,MS4.6/22,Ms1 4.7/22, ms1mx4.6/25 Error ellipse: s-maj=11.1km s-min=5.3km az=76.0,Putative timing error at GNI, EIL and KMBO*

SYO ***27*** *10:10:36.2,6.59N×126.41E,h63km,MB5.5*

HRVD ***27*** *10:10:36.3±0.2,6.42N×126.45E,h60km,MW5.6/75, Centroid moment Tensor Solution. LP body waves: s66,c124;Mantle waves: s75,c145; Half duration: 1s6 Moment tensor: Scale 10^{17}Nm; M_{rr}1.22±.05; $M_{\theta\theta}$1.16±.04; $M_{\phi\phi}$-2.38±.05; $M_{r\theta}$-0.81±.04; $M_{\theta\phi}$-0.62±.04; $M_{\phi r}$2.11±.04; Best double couple: M_o3.09×10^{17} NP1:ϕ_s227°,δ34°,λ153°. NP2:ϕ_s340°,δ75°,λ59°. Principal axes: T 2.81, Plg50°, Azm216°; N .56, Plg30°, Azm348°; P -3.37, Plg24°, Azm93°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

MAN ***27*** *10:10:41.4,6.69N×126.06E,h51km,mb6.1,ML5.2,MS5.7*

MAN F GENERAL SANTOS CITY III DAVAO CITY III KIDAPAWAN CITY II.

ISC 27 10:10:36.8±0.4,**6.49N**±0.02×**126.36E**±0.03,**h82**km±3km, **h58**km±3.1km:**pP-P,n517,**σ1§**18**/437,**mb5.3**/113,**69C-26D, Mindanao**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DAV	**Davao City (W)**	**0.96**	**307**	⇓*e*P	**P**	**10 10 55.0**	**-0.7**
DMPH	**Davao City--Mi**	**1.03**	**305**	⇓*i*P	**P**	**10 10 56.5**	**0.0**
DMPH				*i* S	**S**	**10 11 11.5**	**+0.1**
KCP	**Kidapawan**	**1.36**	**292**	⇑*e*P	**P**	**10 11 00.1**	**-0.8**
KCP				*i* S	**S**	**10 11 17.7**	**-1.0**
GSPH	**General Santos**	**1.45**	**254**	⇓*e*P	**P**	**10 10 59.2**	**-2.8**
GSPH				*i* S	**S**	**10 11 17.1**	**-3.7**
CTBH	**Cotabato--PC H**	**2.22**	**289**	⇓*i*P	**P**	**10 11 11.6**	**-0.8**
CTBH				*i* S	**S**	**10 11 34.6**	**-4.1**
CGP	**Cagayan de Oro**	**2.56**	**320**	*e*P	**P**	**10 11 17.8**	**+0.7**
CGP				*i* S	**S**	**10 11 49.9**	**+2.7**
BUTP	**Butuan**	**2.57**	**344**	⇑*e*P	**P**	**10 11 19.3**	**+2.0**
BUTP				*e*S	**S**	**10 11 55.1**	**+7.6**
PAGZ	**Pagadian**	**3.25**	**295**	⇑*e*P	**P**	**10 11 26.0**	**-0.6**
PAGZ				*e*S	**S**	**10 11 57.1**	**-7.2**
SCPH	**Surigao**	**3.38**	**345**	⇓*e*P	**P**	**10 11 29.0**	**+0.5**
SCPH				*e*S	**S**	**10 12 18.4**	**+11**
DCPH	**Dipolog City**	**3.63**	**305**	⇑*i*P	**P**	**10 11 32.5**	**+0.5**
MSLP	**Maasin**	**3.91**	**338**	⇑*e*P	**P**	**10 11 35.3**	**-0.6**
TBP	**Tagbilaran**	**4.03**	**322**	⇓*e*P	**P**	**10 11 36.6**	**-0.9**
TBP				*i* S	**S**	**10 12 23.4**	**-0.4**
SNPH	**Sibulan**	**4.20**	**313**	⇓*e*P	**P**	**10 11 40.0**	**+0.2**
LLP	**Lapu-Lapu**	**4.48**	**328**	⇓*e*P	**P**	**10 11 44.9**	**+1.2**
LLP				*e*S	**S**	**10 12 34.4**	**-0.6**
PLP	**Palo**	**4.84**	**344**	*e*P	**P**	**10 11 50.0**	**+1.2**
PLP				*e*S	**S**	**10 12 40.2**	**-3.8**
OCLP	**Ormoc**	**4.85**	**339**	⇑*e*P	**P**	**10 11 49.1**	**+0.3**
BESP	**Borongan**	**5.16**	**350**	⇑*e*P	**P**	**10 11 54.0**	**+0.9**
BESP				*e*S	**S**	**10 12 56.5**	**+4.5**
AAP	**Anini-y**	**5.86**	**312**	*e*P	**P**	**10 12 01.0**	**-1.6**
RCP	**Roxas**	**6.17**	**325**	⇓*e*P	**P**	**10 12 07.6**	**+0.5**
CNP	**Catarman**	**6.21**	**345**	⇑*e*P	**P**	**10 12 09.2**	**+1.6**
CNP				*e*S	**S**	**10 13 18.4**	**+0.5**
KALP	**Kalibo**	**6.51**	**323**	⇑*e*P	**P**	**10 12 13.6**	**+1.9**
CUYO	**Cuyo Island**	**6.83**	**310**	⇑*e*P	**P**	**10 12 16.2**	**0.0**
OTRP	**Odiongan**	**7.24**	**324**	⇑*e*P	**P**	**10 12 24.5**	**+2.7**
PVCP	**Virac**	**7.39**	**343**	⇑*e*P	**P**	**10 12 24.5**	**+0.6**
AUQP	**San Andres**	**7.70**	**332**	⇑*e*P	**P**	**10 12 30.1**	**+1.9**
SJMP	**San Jose**	**7.87**	**319**	⇑*e*P	**P**	**10 12 31.6**	**+1.1**
BUSP	**Coron**	**8.18**	**312**	⇑*e*P	**P**	**10 12 34.4**	**-0.3**
PPR	**Puerto Princes**	**8.22**	**294**	⇑*e*P	**P**	**10 12 34.1**	**-1.2**
BOAC	**Boac**	**8.23**	**328**	⇑*e*P	**P**	**10 12 39.4**	**+4.1**
ENPP	**El Nido**	**8.30**	**305**	⇑*e*P	**P**	**10 12 36.0**	**-0.3**
PGP	**Puerto Galera**	**8.77**	**323**	*e*P	**P**	**10 12 47.0**	**+4.3**
BATP	**Bataraza**	**8.78**	**286**	⇑*e*P	**P**	**10 12 43.8**	**+0.9**
TGY	**Tagaytay City**	**9.26**	**325**	*e*P	**P**	**10 12 54.0**	**+4.7**
TGY	**Tagaytay City**	**9.26**	**325**	P	**P**	**10 12 53.1**	**+3.8**
	17nm,0.3s,baz=296,slow=7.0,SNR=10.0						
TGY				LR	LR	10 16 47.0	
	comp=Z,5μm,21.3s,baz=354,slow=40						
TGY	**Tagaytay City**	**9.26**	**325**	P	**P**	**10 12 53.1**	**+3.8**
TGY				pmax	pmax		
	comp=Z,17nm,0.3s						
TGY				MLR	MLR		
	comp=Z,5μm,21.3s						
TGY	**Tagaytay City**	**9.26**	**325**	P	**P**	**10 12 53.1**	**+3.8**
TGY				LR	LR	10 16 47.0	
LUBP	**Lubang**	**9.38**	**321**	⇑*e*P	**P**	**10 12 54.6**	**+3.6**
KKM	**Kota Kinabalu**	**10.09**	**268**	⇓*e*P	**P**	**10 13 04.0**	**+3.2**
BALP	**Baler**	**10.32**	**333**	⇑*e*P	**P**	**10 13 04.0**	**+0.1**
PCPH	**Palayan**	**10.39**	**331**	*e*P	**P**	**10 13 06.7**	**+2.0**
SCZP	**Santa Cruz**	**11.19**	**326**	⇑*e*P	**P**	**10 13 19.8**	**+4.3**
PALP	**Palanan**	**11.19**	**340**	⇑*e*P	**P**	**10 13 21.5**	**+5.9**
CAUP	**Cauayan**	**11.30**	**337**	⇑*e*P	**P**	**10 13 14.1**	**-2.9**
BOLP	**Bolinao**	**11.68**	**328**	⇑*e*P	**P**	**10 13 29.7**	**+7.6**
CVP	**Callao Caves**	**11.99**	**339**	*e*P	**P**	**10 13 29.5**	**+3.2**
APYP	**Conner**	**12.36**	**337**	⇑*e*P	**P**	**10 13 34.5**	**+3.4**
TATO	**Taipei**	**18.96**	**346**	*e*P	**P**	**10 14 50.8**	**-3.4**
GUMO	**Guam**	**19.54**	**67**	*e*P	**P**	**10 14 57.9**	**-2.5**
GUMO				pmax	pmax		
	comp=Z,470nm,1.2s						
GUMO	**Guam**	**19.54**	**67**	*e*P	**P**	**10 14 57.9**	**-2.5**
	comp=Z,468nm,1.2s						
HKC	**Hong Kong**	**19.64**	**324**	⇑*e*P	**P**	**10 15 03.0**	**+1.6**
QZH	**Quanzhou**	**19.80**	**339**	⇑*i*P	**P**	**10 15 03.5**	**+0.3**
QZH				AP		10 15 20.5	
QZH				AMB	AMB		
	comp=Z,1μm,1.9s						
QZH				LR	LR		
	comp=N,2μm,12.5s						
QZH				LR	LR		
	comp=E,960nm,14.2s						
QZH				LR	LR		
	comp=Z,7μm,32.8s						
KAKA	**Kakadu**	**19.99**	**163**	⇓*i*P	**P**	**10 15 04.9**	**-0.3**
	comp=Z,540nm,0.6s						
KAKA				*e*S	**S**	**10 18 45.0**	**+4.6**
JOW	**Kunigami**	**20.32**	**5**	P	**P**	**10 15 07.7**	**-0.9**
	comp=Z,46nm,0.6s,baz=187,slow=9.4,SNR=16						
JOW				S	**S**	**10 18 52.8**	**+6.1**
	comp=Z,14nm,0.7s,baz=161,slow=23,SNR=1.9						
JOW				LR	LR	10 21 53.1	
	comp=Z,3μm,20.8s,baz=229,slow=33						
JOW				ScS	ScS	10 26 31.4	+3.3
	comp=Z,4.4nm,0.7s,baz=306,slow=25,SNR=2.3						
QIZ	**Qiongzhong**	**20.34**	**309**	⇑P	**P**	**10 15 10.0**	**+1.2**
QIZ				XP		10 15 28.0	
QIZ				PPP	PPP	10 15 40.8	-1.1
QIZ				S	**S**	**10 18 53.3**	**+6.2**
QIZ				SS	SS	10 19 26.0	+4.3
QIZ				AMB	AMB		
	comp=Z,181nm,1.2s						
QIZ				LR	LR		
	comp=N,2μm,18.1s						
QIZ				LR	LR		
	comp=E,2μm,18.7s						
QIZ				LR	LR		
	comp=Z,4μm,23.3s						
QIZ	**Qiongzhong**	**20.34**	**309**	*e*P	**P**	**10 15 09.3**	**+0.5**
	comp=Z,246nm,1.3s						
GZH	**Guangzhou**	**20.72**	**324**	P	**P**	**10 15 15.5**	**+2.8**
GZH				S	**S**	**10 19 05.5**	**+11**
GZH				AMB	AMB		
	comp=Z,217nm,0.5s						
GZH				LR	LR		
	comp=N,2μm,24.7s						
GZH				LR	LR		
	comp=E,2μm,13.7s						
GZH				LR	LR		
	comp=Z,4μm,25.3s						
SAPN	**Saipan**	**20.91**	**64**	*e*P	**P**	**10 15 16.3**	**+1.6**
UBT	**Ubonrachathani**	**22.67**	**294**	⇓P	**P**	**10 15 33.0**	**+0.9**
KGM	**Kluang**	**23.39**	**260**	⇓*e*P	**P**	**10 15 40.2**	**+1.1**
	comp=Z,194nm,1.0s,mb5.4						
FITZ	**Fitzroy Crossi**	**24.44**	**182**	*e*P	**P**	**10 15 49.8**	**+0.5**
	comp=Z,158nm,0.4s,mb5.7						
FITZ				*e*S	**S**	**10 20 05.9**	**+5.4**
FITZ				*e*SCS	ScS	10 26 46.1	+2.5
FITZ	**Fitzroy Crossi**	**24.44**	**182**	P	**P**	**10 15 50.1**	**+0.8**
	comp=Z,323nm,1.1s,mb5.6,baz=6.3,slow=9.7,SNR=285						
FITZ				S	**S**	**10 20 04.9**	**+4.4**
	comp=Z,19nm,0.8s,baz=357,slow=18,SNR=2.9						
FITZ				ScS	ScS	10 26 45.5	+1.9
	comp=Z,2.8nm,0.8s,baz=356,slow=23,SNR=4.0						
CHAT	**Chantaburi**	**24.59**	**286**	P	**P**	**10 15 52.0**	**+1.3**
	comp=Z,868nm,1.0s,mb6.1						
SSE	**Sheshan**	**24.95**	**349**	⇑P	**P**	**10 15 55.0**	**+0.9**
SSE				AP		10 16 07.5	
SSE				XP		10 16 12.5	
SSE				S	**S**	**10 20 12.5**	**+3.5**
SSE				AMB	AMB		
	comp=Z,81nm,1.3s,mb5.0						
SSE				AMB	AMB		
	comp=Z,227nm,4.5s						
SSE				LR	LR		
	comp=N,459nm,15.0s						
SSE				LR	LR		
	comp=E,1μm,15.0s						
SSE				LR	LR		
	comp=Z,1μm,15.0s						
KKTK	**Khon Kaen**	**25.03**	**295**	PG	**P**	**10 15 56.0**	**+1.1**
KKTK				SG	x	10 16 00.0	
IPM	**Ipoh**	**25.28**	**267**	⇓*e*P	**P**	**10 15 58.0**	**+0.7**
	comp=Z,162nm,0.7s,mb5.6						
CBIJ	**Chichi jima**	**25.43**	**34**	P	**P**	**10 15 56.7**	**-1.9**
	comp=Z,276nm,0.6s,mb5.9,baz=242,slow=5.4,SNR=20						
CBIJ				LR	LR	10 23 46.2	
	comp=Z,2μm,21.8s,baz=249,slow=31						
SNG	**Songkhla**	**25.56**	**273**	P	**P**	**10 15 59.5**	**-0.5**
	comp=Z,562nm,1.0s,mb6.0						
PMG	**Port Moresby**	**26.06**	**127**	P	**P**	**10 16 04.5**	**-0.1**
	comp=Z,30nm,0.8s,mb4.8,baz=350,slow=6.1,SNR=9.6						
PMG				S	**S**	**10 20 28.2**	**+0.8**
	comp=Z,5.8nm,0.8s,baz=250,slow=9.1,SNR=2.3						
PMG	**Port Moresby**	**26.06**	**127**	P	**P**	**10 16 04.5**	**-0.1**
PMG				S	**S**	**10 20 28.2**	**+0.8**
PMG				pmax	pmax		
	comp=Z,30nm,0.8s						
PMG				smax			
	comp=Z,6.0nm,0.8s						
PMG	**Port Moresby**	**26.06**	**127**	*e*P	**P**	**10 16 01.6**	**-2.9**
	comp=Z,36nm,1.0s,mb4.8						
PMG				LR	LR		
	comp=Z,2μm,21.0s						
NJ2	**Nanjing**	**26.38**	**346**	*e*P	**P**	**10 16 09.5**	**+2.1**
NJ2				AP	pP	10 16 21.3	-4.7
NJ2				XP	sP	10 16 26.8	-9.2
NJ2				PP	PP	10 16 53.3	+0.3
NJ2				S	**S**	**10 20 37.0**	**+4.5**
NJ2				AMB	AMB		
	comp=Z,190nm,1.3s,mb5.4						
NJ2				AMB	AMB		
	comp=Z,1μm,5.6s						
NJ2				LR	LR		
	comp=N,2μm,22.0s						
NJ2				LR	LR		
	comp=E,2μm,14.5s						
NJ2				LR	LR		
	comp=Z,4μm,20.2s						
WHN	**Wuhan**	**26.45**	**336**	⇓P	**P**	**10 16 10.0**	**+1.9**
WHN				AP	pP	10 16 26.0	-0.7
WHN				S	**S**	**10 20 40.0**	**+6.2**
WHN				AMB	AMB		
	comp=Z,134nm,1.4s,mb5.2						
WHN				LR	LR		
	comp=N,5μm,27.5s						
WHN				LR	LR		
	comp=E,6μm,28.8s						
WHN				LR	LR		
	comp=Z,5μm,23.2s						
PPI	**Padang Panjang**	**26.81**	**256**	*e*Sn	sP	10 16 36.5	-3.6
JNU	**Nakatsue**	**26.83**	**8**	P	**P**	**10 16 10.9**	**-0.6**
	comp=Z,11nm,0.8s,mb4.5,baz=355,slow=12,SNR=6.7						
JNU				S	**S**	**10 20 39.1**	**-0.7**
	comp=Z,5.5nm,0.8s,baz=204,slow=40,SNR=1.8						
JNU				LR	LR	10 25 56.9	
	comp=Z,1μm,20.9s,baz=188,slow=34						
JNU				ScS	ScS	10 26 57.5	+4.1
	comp=Z,1.7nm,0.4s,baz=241,slow=40,SNR=1.9						
NNT	**Nongplab**	**26.93**	**285**	P	**P**	**10 16 13.5**	**+0.9**
NST	**Nakhon Sawan**	**27.27**	**292**	⇑P	**P**	**10 16 16.1**	**+0.4**
	comp=Z,202nm,0.8s,mb5.7						
GYA	**Guiyang**	**27.32**	**319**	P	**P**	**10 16 16.0**	**-0.1**
GYA				AP	pP	10 16 27.5	-7.4
GYA				XP	sP	10 16 37.0	-7.7
GYA				S	**S**	**10 20 49.3**	**+1.3**
GYA				AMB	AMB		
	comp=Z,570nm,7.8s						
GYA				LR	LR		
	comp=N,1μm,16.8s						
GYA				LR	LR		
	comp=E,2μm,22.5s						
GYA				LR	LR		
	comp=Z,2μm,20.7s						
WRAB	**Tennant Creek**	**27.41**	**163**	*e*P	**P**	**10 16 15.9**	**-1.0**
	comp=Z,218nm,1.0s,mb5.6						
WRAB				LR	LR		
	comp=Z,1μm,20.0s						
WRA	**Warramunga Arr**	**27.41**	**164**	P	**P**	**10 16 16.3**	**-0.7**
	comp=Z,29nm,0.8s,mb4.8,baz=334,slow=10,SNR=132						
WRA				S	**S**	**10 20 49.8**	**+0.4**
	comp=Z,71nm,1.4s,baz=331,slow=16,SNR=7.2						
WRA				ScP		10 23 09.4	
	comp=Z,11nm,0.8s,baz=328,slow=3.9,SNR=5.7						
WRA				ScS	ScS	10 26 58.9	+2.8
	comp=Z,6.7nm,1.1s,baz=325,slow=3.4,SNR=6.0						
WRA	**Warramunga Arr**	**27.41**	**164**	P	**P**	**10 16 16.3**	**-0.6**
WRA				S	**S**	**10 20 49.8**	**+0.3**
WRA						10 26 58.9	
WRA				pmax	pmax		
	comp=Z,29nm,0.8s						
WRA				smax			
	comp=Z,71nm,1.4s						
WRA				pmax	pmax		
	comp=Z,11nm,0.8s						
WRA				pmax	pmax		
	comp=Z,7.0nm,1.1s						
WB2	**Warramunga Arr**	**27.42**	**163**	⇑*i*P	**P**	**10 16 16.3**	**-0.7**
WB2				*e*S	**S**	**10 20 50.3**	**+0.8**
WB2				*e*SCS	ScS	10 26 59.7	+3.6
PSI	**Prapat**	**27.60**	**263**	*e*Pn	**P**	**10 16 17.8**	**-0.9**
PSI	**Prapat**	**27.60**	**263**	*e*Sn	sP	10 16 54.1	+6.8
TSI	**Tuntungan**	**27.84**	**265**	*e*Pn	**P**	**10 16 22.5**	**+1.6**
ENH	**Enshi**	**28.48**	**328**	*e*P	**P**	**10 16 25.6**	**-0.9**
	comp=Z,212nm,1.3s,mb5.5						
ENH				LR	LR		
	comp=Z,4μm,21.0s						
BDT	**Bhumibol Dam**	**28.78**	**294**	P	**P**	**10 16 30.0**	**+0.8**
	comp=Z,27nm,0.9s,mb4.9						
GSI	**Gunungsitoli**	**29.16**	**261**	*e*Pn	**P**	**10 16 30.0**	**-2.7**
KMI	**Kunming**	**29.22**	**312**	⇑*i*P	**P**	**10 16 34.0**	**+0.9**
KMI				AP	pP	10 16 48.0	-4.1
KMI				XP	sP	10 16 54.0	-7.8
KMI				PP	PP	10 17 32.3	+1.6
KMI				S	**S**	**10 21 23.3**	**+4.9**
KMI				AMB	AMB		
	comp=Z,76nm,1.5s,mb5.1						
KMI				AMB	AMB		
	comp=Z,277nm,3.6s						
KMI				LR	LR		
	comp=N,2μm,20.2s						
KMI				LR	LR		
	comp=E,2μm,21.2s						
KMI				LR	LR		
	comp=Z,3μm,26.2s						
CM31	**Chiang Mai Arr**	**29.24**	**297**	*e*P	**P**	**10 16 33.6**	**+0.3**
	comp=Z,33nm,0.9s,mb5.0						
CM31				LR	LR		
	comp=Z,3μm,20.0s						
CMAR	**Chiang Mai Arr**	**29.24**	**297**	P	**P**	**10 16 32.9**	**-0.4**
	comp=Z,8.6nm,0.6s,mb4.6,baz=120,slow=7.3,SNR=61						
CMAR				PcP	PcP	10 19 39.2	+0.6
	comp=Z,8.9nm,1.0s,baz=127,slow=1.7,SNR=6.3						
CMAR				ScP		10 23 15.9	
	comp=Z,16nm,0.8s,baz=108,slow=1.4,SNR=24						
CMAR				LR	LR	10 27 04.5	
	comp=Z,2μm,21.7s,baz=120,slow=34						
CMAR				ScS	ScS	10 27 07.2	+2.8
	comp=Z,0.4nm,0.4s,baz=356,slow=28,SNR=2.2						
CMAR	**Chiang Mai Arr**	**29.24**	**297**	P	**P**	**10 16 32.9**	**-0.4**
CMAR						10 19 39.3	
CMAR						10 23 15.9	
CMAR						10 27 07.2	
CMAR				pmax	pmax		
	comp=Z,9.0nm,0.6s						
CMAR				pmax	pmax		
	comp=Z,9.0nm,1.0s						
CMAR				pmax	pmax		
	comp=Z,17nm,0.8s						
CMAR				MLR	MLR		
	comp=Z,2μm,21.7s						
JHJ	**Hachijo jima 2**	**29.29**	**23**	P	**P**	**10 16 30.7**	**-2.9**
	comp=Z,87nm,1.0s,mb5.3,baz=73,slow=21,SNR=2.9						
JHJ				LR	LR	10 26 14.4	
	comp=Z,2μm,21.8s,baz=120,slow=32						
TIA	**Tai'an**	**30.77**	**345**	*e*P	**P**	**10 16 46.0**	**-0.7**
TIA				S	**S**	**10 21 43.3**	**+0.7**
TIA				LR	LR		
	comp=E,2μm,10.0s						
KS15	**Wonju Array Si**	**30.84**	**2**	*e*P	**P**	**10 16 45.9**	**-1.5**
INCN	**Inchon**	**30.85**	**0**	PFAKE		10 17 00.0	+13
INCN				LR	LR		
	comp=Z,1μm,20.0s						
AS12	**Alice Springs**	**30.86**	**166**	⇑*i*P	**P**	**10 16 47.4**	**-0.2**
	comp=Z,50nm,0.5s,mb5.5						
AS12				*e*S	**S**	**10 21 46.3**	**+2.1**
ASAR	**Alice Springs**	**30.86**	**166**	P	**P**	**10 16 47.5**	**-0.2**
	comp=Z,47nm,0.4s,mb5.6,baz=338,slow=6.7,SNR=202						
ASAR				PcP	PcP	10 19 43.4	+0.6
	comp=Z,9.9nm,0.5s,baz=356,slow=2.9,SNR=4.2						
ASAR				S	**S**	**10 21 45.2**	**+1.0**
	comp=Z,47nm,1.2s,baz=348,slow=18,SNR=4.2						
ASAR				ScP		10 23 21.9	
	comp=Z,20nm,1.1s,baz=354,slow=2.3,SNR=8.3						
ASAR				ScS	ScS	10 27 15.4	+3.3
	comp=Z,2.3nm,0.9s,baz=304,slow=5.2,SNR=4.6						
BSI	**Banda Aceh**	**30.90**	**270**	*e*Pn	**P**	**10 16 46.0**	**-2.1**
XAN	**Xi'an**	**31.81**	**332**	P	**P**	**10 16 55.3**	**-0.5**
XAN				AMB	AMB		
	comp=Z,183nm,1.0s,mb5.8						
MAJO	**Matsushiro**	**31.82**	**18**	*e*P	**P**	**10 16 51.7**	**-4.1**
	comp=Z,11nm,0.8s,mb4.7						
MAJO				LR	LR		
	comp=Z,2μm,22.0s						
MAT	**Matsushiro**	**31.82**	**18**	P	**P**	**10 16 52.2**	**-3.7**
MAT				S	**S**	**10 21 54.0**	**-5.1**
MAT	**Matsushiro**	**31.82**	**18**	*e*P	**P**	**10 16 52.0**	**-3.9**
	comp=Z,6.0nm,0.8s,mb4.4						
MAT				*e*S	**S**	**10 21 55.0**	**-4.1**
MAT				LR	LR		
	comp=Z,1μm,20.0s						
CD2	**Chengdu**	**32.23**	**322**	⇑*i*P	**P**	**10 16 59.0**	**-0.6**
CD2				S	**S**	**10 22 07.5**	**+1.9**
CD2				AMB	AMB		
	comp=Z,30nm,1.2s,mb4.9						
CD2				AMB	AMB		
	comp=Z,300nm,4.9s						
CD2				LR	LR		
	comp=N,2μm,22.2s						
CD2				LR	LR		
	comp=Z,2μm,17.4s						
DL2	**Dalian**	**32.55**	**353**	P	**P**	**10 17 05.0**	**+2.7**
DL2				S	**S**	**10 22 11.5**	**+1.0**
DL2				AMB	AMB		
	comp=Z,50nm,1.1s,mb5.3						
DL2				LR	LR		
	comp=E,780nm,14.7s						
DL2				LR	LR		
	comp=Z,740nm,16.5s						
CTA	**Charters Tower**	**32.87**	**144**	*e*P	**P**	**10 17 06.4**	**+1.2**
	comp=Z,30nm,0.8s,mb5.2						
CTA				*i* S	**S**	**10 22 19.5**	**+3.9**
CTA				*e*SCS	ScS	10 27 41.1	+19
CTA	**Charters Tower**	**32.87**	**144**	P	**P**	**10 17 06.2**	**+1.0**
	comp=Z,17nm,0.9s,mb4.9,baz=326,slow=11,SNR=30						
CTA				S	**S**	**10 22 18.4**	**+2.9**
	comp=Z,4.7nm,1.0s,baz=282,slow=12,SNR=2.8						
CTA				ScP		10 23 29.7	
	comp=Z,7.0nm,0.8s,baz=333,slow=4.6,SNR=2.7						
CTA				ScS	ScS	10 27 27.2	+4.9
	comp=Z,1.6nm,0.5s,baz=84,slow=11,SNR=1.8						
CTA				LR	LR	10 30 52.9	
	comp=Z,2μm,21.8s,baz=323,slow=37						
CTA	**Charters Tower**	**32.87**	**144**	P	**P**	**10 17 06.2**	**+1.0**
CTA				S	**S**	**10 22 18.4**	**+2.8**
CTA						10 27 27.2	
CTA				pmax	pmax		
	comp=Z,17nm,0.9s						
CTA				smax			
	comp=Z,5.0nm,1.0s						
CTA				pmax	pmax		
	comp=Z,7.0nm,0.8s						
CTA				pmax	pmax		
	comp=Z,2.0nm,0.5s						
CTA				MLR	MLR		
	comp=Z,2μm,21.8s						
CTAO	**Charters Tower**	**32.87**	**144**	*e*P	**P**	**10 17 05.0**	**-0.2**
	comp=Z,44nm,2.5s,mb4.8						
CTAO				LR	LR		
	comp=Z,2μm,21.0s						
TIY	**Taiyuan**	**33.

comp=Z,89nm,1.7s,mb5.4
HHC LR LR
comp=N,1µm,19.0s
HHC LR LR
comp=E,1µm,19.2s
HHC LR LR
comp=Z,2µm,18.6s
VLA Vladivostok 36.81 7 *e*P **P 10 17 54.0 +15**
VLA *e* 10 19 09.0
VLA *i* PPP PPP 10 19 20.0 -6.5
VLA *i* S **S 10 23 18.0 +2.0**
VLA *i* 10 23 44.0
VLA *i* 10 27 50.0
VLA pmax pmax
comp=Z,600nm,12.0s
VLA pmax pmax
comp=Z,900nm,6.0s
VLA smax
comp=E,1µm,14.0s
VLA smax
comp=Z,500nm,8.0s
VLA MLR MLR
comp=Z,2µm,19.0s
BTO Baotou 36.98 339 *e*P **P 10 17 39.5 -0.5**
BTO AMB AMB
comp=Z,72nm,1.9s,mb5.3
BTO LR LR
comp=N,2µm,19.6s
BTO LR LR
comp=E,2µm,17.3s
FORT Forrest 37.09 178⇑*i*P **P 10 17 41.4 +0.4**
comp=E,916nm,0.4s
FORT *e*S **S 10 23 21.8 +1.4**
CN2 Changchun 37.17 359 *e*P **P 10 17 43.8 +2.3**
CN2 *e*AP pP 10 17 57.0 -4.2
CN2 *e*S **S 10 23 27.3 +5.8**
CN2 AMB AMB
comp=Z,200nm,3.0s
CN2 LR LR
comp=N,300nm,20.0s
CN2 LR LR
comp=E,400nm,20.0s
CN2 LR LR
comp=Z,500nm,22.0s
SHL Shillong 37.99 304 *i* P **P 10 17 48.0 -0.5**
SHL *i* S **S 10 23 32.5 -1.7**
SHL *e* 10 23 44.0
MDJ Mudanjiang 38.08 4 P **P 10 17 49.0 -0.1**
MDJ AP pP 10 18 00.0 -8.8
MDJ XP sP 10 18 05.0 -14
MDJ S **S 10 23 36.5 +1.1**
MDJ SS SS 10 26 26.0 +8.7
MDJ LR LR
comp=N,1µm,31.0s
MDJ LR LR
comp=E,482nm,16.9s
MDJ LR LR
comp=Z,2µm,29.6s
MDJ Mudanjiang 38.08 4 *e*P **P 10 17 48.6 -0.5**
comp=Z,32nm,1.1s,mb5.1
KLBR Kellerberrin 38.74 192⇑*i*P **P 10 17 54.9 +0.2**
comp=Z,226nm,0.4s,mb6.3
KLBR *e*S **S 10 23 49.1 +3.6**
MUN Mundaring 39.46 194⇑*i*P **P 10 18 01.0 +0.4**
comp=Z,234nm,0.4s,mb6.4
MUN *e*S **S 10 23 59.6 +3.4**
CAL Calcutta 39.96 298 *e*P **P 10 18 06.0 +1.1**
CAL *e* 10 18 36.0
ASAJ Asahikawa 40.09 18 P **P 10 18 05.9 +0.1**
comp=Z,24nm,0.4s,mb5.3,baz=232,slow=8.1,SNR=51
ASAJ S **S 10 24 06.2 +0.6**
comp=Z,13nm,1.2s,baz=204,slow=22,SNR=4.4
ASAJ Asahikawa 40.09 18 P **P 10 18 05.9 +0.1**
ASAJ S **S 10 24 06.2 +0.6**
ASAJ pmax pmax
comp=Z,24nm,0.4s
ASAJ smax
comp=Z,13nm,1.2s
NWAO Narrogin (SRO) 40.14 192 P **P 10 18 07.3 +1.0**
NWAO ScP 10 23 54.3
NWAO Narrogin (SRO) 40.14 192 P **P 10 18 07.1 +0.8**
comp=Z,232nm,0.4s,mb6.4,baz=20,slow=8.3,SNR=337
NWAO ScP 10 23 54.2
comp=Z,59nm,1.2s,baz=20,slow=2.8,SNR=6.4
NWAO S **S 10 24 07.9 +1.4**
comp=Z,9.6nm,0.9s,baz=330,slow=2.8,SNR=3.0
NWAO LR LR 10 34 09.6
comp=Z,948nm,21.6s,baz=174,slow=35
NWAO Narrogin (SRO) 40.14 192 P **P 10 18 07.1 +0.8**
NWAO S **S 10 24 07.9 +1.4**
NWAO pmax pmax
comp=Z,232nm,0.4s
NWAO pmax pmax
comp=Z,59nm,1.2s
NWAO smax
comp=Z,10.0nm,0.9s
NWAO MLR MLR
comp=Z,949nm,21.6s
NWAO Narrogin (SRO) 40.14 192 *e*P **P 10 18 06.9 +0.6**
comp=Z,161nm,0.4s,mb6.2
LSA Lhasa 40.38 309 P **P 10 18 09.8 +1.5**
LSA AMB AMB
comp=Z,50nm,1.5s,mb5.1
LSA Lhasa 40.38 309 *e*P **P 10 18 09.4 +1.1**
comp=Z,107nm,1.5s,mb5.5
LSA LR LR
comp=Z,784nm,20.0s
GTA Gaotai 40.57 328 *e*P **P 10 18 10.3 +0.6**
GTA AP pP 10 18 24.0 -5.6
GTA XP sP 10 18 29.3 -10
GTA PP PP 10 19 48.0 +0.3
GTA PCS 10 24 01.5
GTA S **S 10 24 16.5 +3.8**
GTA AMB AMB
comp=Z,253nm,4.2s
GTA LR LR
comp=N,626nm,24.3s
GTA LR LR
comp=E,789nm,22.1s
GTA LR LR
comp=Z,1µm,25.9s
STKA Stephens Creek 40.83 160⇓*i*P **P 10 18 12.8 +0.9**
comp=Z,96nm,0.8s,mb5.7
STKA *e*S **S 10 24 10.2 -6.4**
STKA *e* 10 27 09.0
STKA Stephens Creek 40.83 160 P **P 10 18 13.0 +1.1**
comp=Z,67nm,0.6s,mb5.6,baz=338,slow=7.8,SNR=61
STKA ScP 10 23 59.4
comp=Z,12nm,0.9s,baz=331,slow=6.4,SNR=3.7
STKA S **S 10 24 16.9 +0.3**
comp=Z,8.6nm,1.0s,baz=204,slow=17,SNR=3.4
STKA ScS ScS 10 28 07.7 +1.1
comp=Z,4.2nm,0.9s,baz=28,slow=23,SNR=2.0
KWAJ Kwajalein Atol 40.94 84 PFAKE 10 18 20.0 +7.0
KWAJ LR LR
comp=Z,1µm,21.0s
YUK Yuzh-Kuril'sk 41.12 21 P **P 10 18 24.0 +10**
YUK *e* 10 19 54.0
YUK *e*PPP PPP 10 20 12.0 -12
YUK *e*S **S 10 24 20.0 -0.9**
YUK *e*SSS SSS 10 28 13.0 +8.5
YUK pmax pmax
comp=Z,2µm,2.0s
YUK pmax pmax
comp=N,2µm,3.0s
YUK smax
comp=E,2µm,3.0s
YUK smax
comp=N,2µm,2.0s
WAKE Wake Island 41.17 68 PFAKE 10 18 30.0 +15
WAKE LR LR
comp=Z,352nm,20.0s
YSS Yuzh-Sakhalins 42.71 17⇑*i*P **P 10 18 26.8 -0.5**
YSS *e* 10 18 41.0
YSS *e**SP sP 10 18 46.8 -10
YSS *e* 10 20 20.0
YSS *e*S **S 10 24 37.0 -7.3**
YSS MLR MLR
comp=N,400nm,16.0s
YSS MLR MLR
comp=Z,500nm,16.0s
YSS Yuzh-Sakhalins 42.71 17 PFAKE 10 18 40.0 +13
YSS LR LR
comp=Z,451nm,22.0s
KLR Kul'dur 42.84 5 *e*P **P 10 18 26.8 -1.5**
KLR *e*S **S 10 24 42.5 -3.6**
KLR MLR MLR
comp=E,1µm,17.0s
HIA Hailar 43.00 354 *e*P **P 10 18 28.3 -1.3**
HIA pmax pmax
comp=Z,18nm,0.6s
HIA Hailar 43.00 354 *e*P **P 10 18 28.3 -1.3**
comp=Z,18nm,0.6s,mb5.0
HIA *e*ScP 10 24 06.1
HIA LR LR
comp=Z,1µm,21.0s
VIS Vishakhapatnam 43.42 289 *e*P **P 10 18 33.4 -0.1**
VIS *e* 10 18 34.2
VIS *e* 10 18 59.2
comp=Z,129nm,2.4s
ARMA Armidale 43.97 148⇑*i*P **P 10 18 38.6 +0.8**
PKI Pulchoki 44.12 303 *e*P **P 10 18 38.2 -0.7**
comp=Z,150nm,1.0s,mb5.7
KKN Kakani 44.30 304 *e*P **P 10 18 39.6 -0.8**
comp=Z,157nm,0.9s,mb5.7
DMN Daman 44.38 303 *e*P **P 10 18 40.6 -0.5**
comp=Z,126nm,0.9s,mb5.7
ULN Ulaanbaatar 44.40 341 P **P 10 18 42.2 +1.3**
ULN PcP PcP 10 20 25.0 +1.1
ULN ScP 10 24 11.9
ULN PcS 10 24 17.6
ULN ScS ScS 10 28 33.2 +4.9
ULN Ulaanbaatar 44.40 341⇑*i*P **P 10 18 41.9 +1.0**
ULN LR LR
comp=Z,1µm,20.0s
SONM Songino Array 44.58 341 P **P 10 18 43.0 +0.6**
comp=Z,49nm,1.2s,mb5.1,baz=162,slow=7.8,SNR=94
SONM PcP PcP 10 20 25.3 +0.8
comp=Z,11nm,0.7s,baz=165,slow=3.1,SNR=7.6
SONM ScP 10 24 13.0
comp=Z,8.7nm,1.0s,baz=166,slow=2.2,SNR=8.0
SONM ScS ScS 10 28 29.3 -0.1
comp=Z,0.4nm,0.7s,baz=180,slow=12,SNR=2.5
GKN Gorkha 44.91 304 *e*P **P 10 18 44.4 -0.9**
comp=Z,54nm,0.5s,mb5.5
KOLN Koldanda 45.69 303 *e*P **P 10 18 50.9 -0.6**
comp=Z,150nm,0.7s,mb5.8
DANN Dangsing 45.75 304 *e*P **P 10 18 51.9 -0.1**
KGD Kothagudem 45.92 288 *e*P **P 10 18 52.2 -1.2**
KGD *e* 10 25 46.7
CNB Canberra Magne 46.89 154⇑*i*P **P 10 19 02.5 +1.7**
comp=Z,48nm,0.9s,mb5.2
TOO Toolangi 47.33 159 *e*P **P 10 19 04.3 0.0**
comp=Z,21nm,0.6s,mb5.0
CUD Cuddapah 47.39 284 *e*P **P 10 19 04.2 -0.8**
CUD *e* pP 10 19 23.7 -1.5
CUD *e*PP PP 10 20 58.4 +1.8
CUD *e* 10 24 12.9
CUD *e*S **S 10 25 51.6 -0.1**
ZAK Zakamensk 47.82 340 *e*P **P 10 19 08.0 +0.1**
ZAK *e* 10 20 35.9
HYB Hyderabad 47.88 288⇓*i*P **P 10 19 08.5 -0.3**
HYB *e*pP pP 10 19 25.0 -4.0
HYB *e*PP PP 10 21 04.0 +3.1
HYB *e*S **S 10 26 08.0 +9.3**
HYB Hyderabad 47.88 288⇓*e*P **P 10 19 08.5 -0.3**
HYB *e*S **S 10 26 08.0 +9.3**
NOUC Port Laguerre 48.36 127 *e*P **P 10 19 13.6 +1.2**
NOUC Port Laguerre 48.36 127 *e*P **P 10 19 13.6 +1.2**
DZM Mont Dzumac 48.45 127 *e*P **P 10 19 13.0 -0.2**
DZM Mont Dzumac 48.45 127 *e*P **P 10 19 13.0 -0.2**
TLY Talaya 48.81 341 *i* P **P 10 19 16.2 +0.7**
TLY *e* 10 20 39.5
TLY *e*S **S 10 26 15.1 +3.9**
TLY *e* 10 29 03.0
TLY pmax pmax
comp=Z,915nm,1.6s
TLY MLR MLR
comp=Z,5µm,18.0s
IRK Irkutsk 49.10 342 *e*P **P 10 19 17.4 -0.4**
IRK *e* 10 21 17.6
MOY Mondy 49.68 340 *e*P **P 10 19 23.6 +1.3**
BHPL Bhopal 49.87 295 *e*P **P 10 19 23.4 -0.7**
BHPL *e* 10 19 26.4
comp=Z,82nm,1.3s
LATR Latur 49.89 289 *e*P **P 10 19 24.3 0.0**
CLNS Chul'man 50.23 359 *e*P **P 10 19 27.0 +0.6**
CLNS *e* 10 20 47.6
CLNS *e* 10 21 26.1
CLNS *e*S **S 10 26 36.1 +5.2**
CLNS *e*SSS SSS 10 31 32.0 -5.3
CLNS pmax pmax
comp=Z,10.0nm,0.9s,mb4.8
CLNS pmax pmax
comp=N,8.0nm,1.0s
CLNS pmax pmax
comp=E,6.0nm,0.9s
CLNS pmax pmax
comp=N,20nm,0.9s
CLNS pmax pmax
comp=Z,10.0nm,0.9s,mb4.8
CLNS pmax pmax
comp=E,10.0nm,1.0s
CLNS smax
comp=N,270nm,13.6s
CLNS smax
comp=Z,120nm,12.0s
CLNS smax
comp=E,130nm,10.8s
CLNS MLR MLR
comp=Z,400nm,15.0s
CLNS MLR MLR
comp=N,400nm,13.0s
CLNS MLR MLR
comp=E,200nm,13.0s
WMQ Urumqi 50.28 324⇓*i*P **P 10 19 27.0 +0.1**
WMQ AP pP 10 19 40.0 -7.3
WMQ XP sP 10 19 45.3 -11
WMQ PP PP 10 21 24.0 +0.2
WMQ S **S 10 26 35.5 +3.8**
WMQ SCS ScS 10 29 11.5 +4.8
WMQ SS SS 10 30 06.5 +3.4
WMQ AMB AMB
comp=Z,46nm,1.2s,mb5.3
WMQ AMB AMB
comp=Z,358nm,7.4s
WMQ LR LR
comp=N,1µm,19.2s
WMQ LR LR
comp=E,3µm,18.3s
WMQ LR LR
comp=Z,3µm,20.1s
SONA Sohna 51.33 301 *e*P **P 10 19 32.6 -2.5**
NDI New Delhi 51.33 302 *e*P **P 10 19 33.5 -1.6**
AYAN Aya Nagar 51.35 301 *e*P **P 10 19 32.6 -2.7**
KUDL Kundal 51.81 301 *e*P **P 10 19 35.9 -2.8**
KAD Karad 52.02 287 *e*P **P 10 19 39.2 -1.2**
KAD *e* 10 19 41.4
comp=Z,86nm,1.0s
BOD Bodaibo 52.10 352 *e*P **P 10 19 39.1 -1.4**
KHET Khetri 52.38 301 *e*P **P 10 19 41.0 -1.9**
POO Poona 52.46 288⇓*i*P **P 10 19 40.5 -3.2**
PET Petropavlovsk 53.36 24 *e*P **P 10 19 53.0 +3.1**
PET *i* S **S 10 27 17.0 +3.3**
PET *e* 10 29 34.0
PET *e*SS SS 10 30 49.6 -4.4
PET pmax pmax
comp=Z,35nm,1.1s,mb5.3
PET pmax pmax
comp=N,200nm,18.7s
PET pmax pmax
comp=Z,200nm,13.0s
PET smax
comp=N,700nm,31.8s
PET Petropavlovsk 53.36 24 PFAKE 10 20 00.0 +10
PET LR LR
comp=Z,607nm,21.0s
MKAR Makanchi Array 55.10 324 P **P 10 20 01.8 -0.9**
comp=Z,51nm,0.6s,mb5.8,baz=118,slow=7.6,SNR=584
MKAR ScP 10 24 55.4
comp=Z,7.2nm,0.8s,baz=117,slow=5.4,SNR=4.5
MKAR S **S 10 27 38.9 +1.7**
comp=Z,1.2nm,0.9s,baz=117,slow=11,SNR=3.0
MKAR ScS ScS 10 29 41.1 +0.8
comp=Z,0.3nm,0.5s,baz=112,slow=6.5,SNR=1.9
MKAR LR LR 10 45 40.1
comp=Z,1µm,19.1s,baz=118,slow=38
MKAR PKPPKP 10 50 03.0
comp=Z,2.5nm,1.1s,baz=315,slow=2.0,SNR=9.8
MKAR PKP2bc 10 50 19.6
comp=Z,1.0nm,1.0s,baz=292,slow=1.3,SNR=3.9
MKAR Makanchi Array 55.10 324 P **P 10 20 01.8 -0.9**
MKAR S **S 10 27 38.9 +1.7**
MKAR 10 29 41.2
MKAR pmax pmax
comp=Z,51nm,0.6s
MKAR pmax pmax
comp=Z,7.0nm,0.8s
MKAR smax
comp=Z,1.0nm,0.9s
MKAR MLR MLR
comp=Z,1µm,19.1s
MKAR pmax pmax
comp=Z,3.0nm,1.1s
MKAR pmax pmax
comp=Z,1.0nm,1.0s
MKAR Makanchi Array 55.10 324 P **P 10 20 01.8 -0.9**
MKAR ScP 10 24 55.4
MKAR S **S 10 27 38.9 +1.7**
MKAR ScS ScS 10 29 41.1 +0.8
MKAR LR LR 10 45 40.1
MKAR P'P' 10 50 03.0
MKAR ⇑*e* 10 50 19.6
YAK Yakutsk 55.48 2d*i*P **P 10 20 03.5 -1.8**
YAK *i* *PP pP 10 20 21.9 -4.1
YAK *i* 10 20 58.0
YAK *i* S **S 10 27 41.1 -1.0**
YAK *i* 10 29 45.9
YAK pmax pmax
comp=Z,30nm,0.8s,mb5.4
YAK pmax pmax
comp=N,10.0nm,1.1s
YAK pmax pmax
comp=E,3.0nm,0.8s
YAK smax
comp=E,5.0nm,1.5s
YAK smax
comp=Z,5.0nm,1.0s
YAK smax
comp=N,12nm,1.3s
YAK Yakutsk 55.48 2⇓*i*P **P 10 20 03.5 -1.8**
YAK LR LR
comp=Z,554nm,22.0s
KSH Kashi 55.86 314 *e*P **P 10 20 08.0 -0.3**
KSH *e*AP pP 10 20 20.5 -8.5
KSH *e*PCP PcP 10 21 07.0 +1.0
KSH *e*PP PP 10 22 14.5 -0.5
KSH *e*PCS 10 25 05.5
KSH *e*S **S 10 27 49.0 +1.6**
KSH *e*SCS ScS 10 29 49.3 +3.5
KSH AMB AMB
comp=Z,200nm,2.4s,mb5.7
KSH LR LR
comp=N,320nm,11.7s
KSH LR LR
comp=E,630nm,11.9s
MA2 Magadan 56.14 15 *e*P **P 10 20 09.6 -0.4**
MA2 *e*S **S 10 27 52.9 +2.0**
MA2 *i* 10 29 52.9
MA2 pmax pmax
comp=Z,10.0nm,0.7s,mb5.0
MA2 Magadan 56.14 15 PFAKE 10 20 20.0 +10
MA2 LR LR
comp=Z,367nm,20.0s
MIDW Midway 57.34 61 PFAKE 10 20 30.0 +11
MIDW LR LR
comp=Z,10µm,22.0s
KZA Kyzart 57.35 317 P **P 10 20 19.0 +0.1**
SNR=25
TKM2 Tokmak 2 57.46 318 P **P 10 20 18.7 -0.9**
SNR=24
KBK Karagaybulak 57.79 317 P **P 10 20 21.4 -0.5**
SNR=12
UCH Uchtor 57.92 316 P **P 10 20 22.5 -0.3**
SNR=51
ZAL Zalesovo 57.98 332 P **P 10 20 20.9 -2.2**
comp=Z,8.6nm,0.7s,mb4.9,baz=260,slow=7.6,SNR=6.6
ZAL S **S 10 28 17.9 +2.7**
comp=Z,2.7nm,1.0s,baz=115,slow=18,SNR=6.7
ZAL ScS ScS 10 30 00.7 -0.3
comp=Z,1.3nm,0.3s,baz=206,slow=24,SNR=3.2
ZAL PKPPKP 10 49 58.8
comp=Z,0.9nm,0.3s,baz=178,slow=16,SNR=2.3
ZAL LR LR 10 50 12.4
comp=Z,576nm,18.5s,baz=248,slow=41
ZAL Zalesovo 57.98 332 P **P 10 20 20.9 -2.2**
ZAL S **S 10 28 17.9 +2.7**
ZAL 10 30 00.7
ZAL pmax pmax
comp=Z,9.0nm,0.7s
ZAL smax
comp=Z,3.0nm,1.0s
ZAL pmax pmax
comp=Z,1.0nm,0.3s
ZAL pmax pmax
comp=Z,1.0nm,0.3s
ZAL MLR MLR
comp=Z,576nm,18.5s
CHMS Chumysh 58.06 317 P **P 10 20 22.9 -0.8**
SNR=8.7
FRU Bishkek 58.08 317 *e*P **P 10 20 23.0 -1.0**
FRU *e* 10 20 37.0
FRU *e* 10 30 08.0
FRU pmax pmax
comp=Z,60nm,2.0s,mb5.3
FRU MLR MLR
comp=Z,600nm,20.0s
AAK Ala-Archa 58.09 317 P **P 10 20 22.7 -1.3**
SNR=13
AAK Ala-Archa 58.09 317 *e*P **P 10 20 22.6 -1.4**
comp=Z,77nm,1.4s,mb5.5
AAK LR LR
comp=Z,756nm,21.0s
USP Ospenovka 58.33 318 P **P 10 20 24.7 -1.0**
SNR=18
AML Almayashu 58.44 316 P **P 10 20 26.3 -0.2**
SNR=22
EKS2 Erkin-Say 58.59 317 P **P 10 20 26.7 -0.8**
SNR=22
KURK Kurchatov 59.24 327 *e*P **P 10 20 30.5 -1.3**
NVS Novosibirsk 59.26 333 *i* P **P 10 20 29.3 -2.6**
NVS *i* S **S 10 28 31.1 -0.7**
NVS *i* 10 30 09.1
NVS pmax pmax
comp=N,23nm,1.1s
NVS pmax pmax
comp=E,25nm,1.1s
NVS pmax pmax
comp=Z,56nm,1.1s,mb5.5
NVS smax
comp=N,113nm,2.5s
NVS smax
comp=E,158nm,2.5s
FX1 Attu Island--F 59.90 31 P **P 10 20 34.2 -2.1**
comp=E,10nm,0.5s,mb5.1,baz=197,slow=19,SNR=3.1
FX1 Attu Island--F 59.90 31 P **P 10 20 34.2 -2.2**
FX1 pmax pmax
comp=Z,10.0nm,0.5s
FX1 Attu Island--F 59.90 31 P **P 10 20 32.5 -3.9**
SMY Shemya 60.30 31 PFAKE 10 20 50.0 +11
SMY LR LR
comp=Z,2µm,20.0s
RPZ Rata Peaks 64.22 146 P **P 10 21 06.0 +0.6**
comp=Z,29nm,0.9s,mb5.1,baz=255,slow=3.3,SNR=12
BVAR Borovoye Array 64.83 326 P **P 10 21 07.6 -1.5**
comp=Z,20nm,0.5s,mb5.2,baz=130,slow=7.6,SNR=3.9
BVAR S **S 10 29 45.7 +3.8**
comp=Z,0.8nm,0.5s,baz=222,slow=44,SNR=2.5
BVAR ScS ScS 10 30 54.1 +1.8
comp=Z,0.9nm,0.6s,baz=231,slow=42,SNR=2.3
BRVK Borovoye 64.90 326 *e*P **P 10 21 08.1 -1.5**
SNZO South Karori 64.93 142 *e*P **P 10 21 08.0 -2.1**
comp=Z,23nm,0.8s,mb5.1
SNZO LR LR
comp=Z,878nm,20.0s
TIXI Tiksi 65.11 1 *e*P **P 10 21 09.0 -1.7**
TIXI *e*S S 10 29 41.7 -3.4
TIXI *e**SS 10 30 19.9
TIXI *e*SS SS 10 34 03.4 +2.8
TIXI *e*SSS SSS 10 37 00.6 +6.9
TIXI pmax pmax
comp=Z,43nm,1.0s,mb5.2
TIXI MLR MLR
comp=Z,579nm,19.0s
TIXI Tiksi 65.11 1⇑*i*P **P 10 21 09.3 -1.4**
TIXI LR LR

comp=Z,896nm,21.0s
ZRNK Zerenda 65.56 326 *e*P **P** **10 21 12.1 -1.7**
BILL Bilibino 67.00 15 *e*P **P** **10 21 22.1 -0.6**
BILL pmax pmax
comp=Z,14nm,0.8s,mb4.8
BILL MLR MLR
comp=Z,300nm,20.0s
BILL Bilibino 67.00 15 *e*P **P** **10 21 22.2 -0.5**
UNV Unalaska Valle 71.39 35 *e*P **P** **10 21 48.4 -1.5**
UNV LR LR
comp=Z,4µm,22.0s
ARU Arti 72.42 327*c i*P **P** **10 21 54.6 -1.3**
ARU pmax pmax
comp=Z,62nm,0.5s,mb5.7
ARU MLR MLR
comp=Z,400nm,20.0s
ARU Arti 72.42 327 *e*P **P** **10 21 54.6 -1.3**
comp=Z,6.7nm,0.6s,mb4.7
ARU LR LR
comp=Z,392nm,21.0s
CASY Casey 73.49 187⇑ *i*P **P** **10 22 02.6 +0.7**
THR Tehran 74.26 305 P **P** **10 22 06.0 -1.2**
comp=Z,1.8nm,0.6s,baz=98,slow=5.4,SNR=10
THR S S 10 31 38.5 +5.8
comp=Z,0.8nm,0.8s,baz=25,slow=14,SNR=2.1
THR LR LR 10 59 15.2
comp=Z,157nm,21.9s,baz=208,slow=39
THR Tehran 74.26 305 P **P** **10 22 06.0 -1.1**
THR S S 10 31 38.6 +5.8
THR pmax pmax
comp=Z,2.0nm,0.6s
THR smax
comp=Z,1.0nm,0.8s
THR MLR MLR
comp=Z,157nm,21.9s
HASS Wahat al Ahsa' 75.21 294 P **P** **10 22 11.7 -1.0**
MUKL Al Mukalla 76.19 283⇑ *e*P **P** **10 22 17.4 -1.1**
MIR Mirnyy 76.74 193⇑ *e*P **P** **10 22 21.0 +0.5**
MIR pmax pmax
comp=Z,120nm,1.1s,mb5.5
MAK Makhachkala 77.45 312 *e*P **P** **10 22 24.0 -1.0**
MAK *i* pP 10 22 46.0 -0.9
MAK S S 10 32 07.0 -0.6
MAK pmax pmax
comp=Z,600nm,4.0s
MAK smax
comp=N,500nm,6.0s
MAK MLR MLR
comp=N,1µm,13.0s
MAK MLR MLR
comp=Z,900nm,13.0s
SVW Sparrevohn 78.56 29 *e*P **P** **10 22 31.3 +0.6**
MZLS Mizel 79.32 293 P **P** **10 22 34.7 -0.9**
TI2 Plekhanov 79.45 311 *e*P **P** **10 22 35.4 -0.6**
TI2 *e*S S 10 33 17.4 +48
KDAK Kodiak Island 79.78 33 *e*P **P** **10 22 37.0 -0.3**
comp=Z,19nm,0.5s,mb5.2
KDAK LR LR
comp=Z,835nm,22.0s
IMA Indian Mountai 80.03 24 *e*P **P** **10 22 39.3 +0.7**
KAMS Al Khamasin 80.09 289 P **P** **10 22 38.4 -1.3**
ZEI Tsey 80.10 312 *e*P **P** **10 22 39.0 -0.4**
ZEI *e*S S 10 32 36.0 +0.4
ZEI pmax pmax
comp=Z,100nm,2.0s,mb5.3
ZEI MLR MLR
comp=Z,500nm,20.0s
GOF Gofitskoye 80.73 314⇓ *i*P **P** **10 22 42.0 -0.7**
GOF pmax pmax
comp=Z,70nm,1.8s,mb5.2
KIV Kislovodsk 80.98 313 *e*P **P** **10 22 43.4 -0.6**
KIV *e*PPP PPP 10 27 41.5 -1.7
KIV *i* S S 10 32 45.1 +0.3
KIV pmax pmax
comp=Z,40nm,1.6s,mb5.0
KIV smax
comp=N,70nm,2.4s
KIV MLR MLR
comp=Z,400nm,24.0s
KIV MLR MLR
comp=N,200nm,21.0s
KIV MLR MLR
comp=E,290nm,21.0s
KIV Kislovodsk 80.98 313 *e*P **P** **10 22 43.2 -0.8**
comp=E,26nm,0.8s,mb5.1
KIV LR LR
comp=Z,353nm,22.0s
TATS Tathlith 81.17 289 P **P** **10 22 45.1 -0.4**
HAJJ Hajjah 81.32 285⇑ *e*P **P** **10 22 47.0 +0.6**
AFFS 'Afif 81.34 293 P **P** **10 22 45.7 -0.7**
PWA Palmer West 81.36 29 *e*P **P** **10 22 44.4 -1.3**
PMS Palmer South 81.50 29 *e*P **P** **10 22 46.8 +0.4**
PMR Palmer 81.72 29 *e*P **P** **10 22 46.9 -0.6**
PMR pmax pmax
comp=Z,13nm,0.7s,mb4.9
PMR Palmer 81.72 29 *e*P **P** **10 22 47.8 +0.3**
PMR LR LR
comp=Z,300nm,21.0s
MCK McKinley 81.88 27 *e*P **P** **10 22 47.8 -0.5**
comp=Z,18nm,1.0s,mb4.9
MCK LR LR
comp=Z,158nm,22.0s
ERZM Erzurum 82.04 309 *i* P **P** **10 22 52.5 +2.9**
SML Sawmill 82.11 29 *e*P **P** **10 22 48.3 -1.2**
HILS Ha'il 82.24 297 P **P** **10 22 50.9 0.0**
COLA College 82.38 25 *e*P **P** **10 22 49.9 -1.0**
COLA pmax pmax
comp=Z,12nm,0.9s,mb4.7
COLA College 82.38 25 *e*P **P** **10 22 51.4 +0.5**
COLA LR LR
comp=Z,300nm,20.0s
NAMS An Nimas 82.39 288 P **P** **10 22 52.5 +0.7**
FRSS Farasan al Kab 82.67 286 P **P** **10 22 53.6 +0.4**
ILAR Eielson Array 82.79 26 P **P** **10 22 51.9 -1.1**
comp=Z,5.6nm,0.9s,mb4.4,baz=239,slow=4.9,SNR=46
ILAR S S 10 33 05.5 +2.7
comp=Z,0.6nm,1.2s,baz=298,slow=6.4,SNR=3.1
ILAR PKKPbc 10 41 16.8
comp=Z,0.7nm,0.6s,baz=58,slow=0.9,SNR=8.5
ILAR PKPPKP 10 49 18.9
comp=Z,1.9nm,1.2s,baz=135,slow=1.3,SNR=4.8
ILAR LR LR 10 59 40.9
comp=Z,116nm,19.8s,baz=247,slow=36
ILAR Eielson Array 82.79 26 P **P** **10 22 51.9 -1.1**
ILAR S S 10 33 05.5 +2.7
ILAR pmax pmax
comp=Z,6.0nm,0.9s
ILAR smax
comp=Z,1.0nm,1.2s
ILAR pmax pmax
comp=Z,1.0nm,0.6s
ILAR pmax pmax
comp=Z,2.0nm,1.2s
ILAR MLR MLR
comp=Z,116nm,19.8s
BLJS Baljurashi 82.91 289 P **P** **10 22 55.0 +0.5**
SOC Sochi 83.14 313*c i*P **P** **10 22 52.9 -2.3**
SOC *e* 10 26 03.3
SOC *e*PPP PPP 10 27 58.6 -4.1
SOC *e*S S 10 33 02.2 -4.5
SOC *e*SS SS 10 38 30.3 -5.4
SOC *e*SSS SSS 10 41 56.8 -4.9
SOC pmax pmax
comp=Z,20nm,0.6s,mb5.1
SOC pmax pmax
comp=N,8.0nm,0.7s
SOC pmax pmax
comp=E,3.0nm,0.3s
VOR Voronezh 83.19 321 P **P** **10 22 54.0 -1.2**
VOR pmax pmax
comp=Z,140nm,1.5s,mb5.6
VRSR Storozhevoye 83.21 321*c i*P **P** **10 22 54.1 -1.3**
VRSR *e* 10 26 07.7
VRSR *e*S S 10 33 04.0 -3.3
VRSR *e* 10 33 15.9
VRSR *e*SSS SSS 10 41 57.2 -5.5
VRSR pmax pmax
comp=Z,70nm,2.6s,mb5.0
VRSR pmax pmax
comp=N,30nm,3.7s
VRSR pmax pmax
comp=E,20nm,2.4s
VRSR smax
comp=Z,70nm,7.8s
VRSR smax
comp=N,180nm,5.0s
VRSR smax
comp=E,100nm,3.7s
EYAK Cordova Ski Ar 83.36 30 *e*P **P** **10 22 53.9 -2.0**
MOS Moscow 83.97 325 *e*P **P** **10 22 59.3 +0.2**
MOS *e**PP pP 10 23 15.3 -5.9
MOS *e* 10 33 10.7
MOS *e*S S 10 33 16.7 +1.9
MOS pmax pmax
comp=Z,185nm,0.8s,mb6.0
LTHS Al Lith 83.99 290 P **P** **10 23 00.6 +0.6**
KBRS Khaybar 84.61 295 P **P** **10 23 03.1 +0.1**
OBN Obninsk 84.61 325*c i*P **P** **10 23 01.8 -0.4**
OBN *e**PP pP 10 23 18.0 -6.5
OBN *i **SP sP 10 23 25.5 -7.9
OBN *e* 10 33 16.6
OBN PS PS 10 34 50.0 +22
OBN pmax pmax
comp=Z,264nm,1.5s,mb6.0
OBN pmax pmax
comp=Z,100nm,17.6s
OBN MLR MLR
comp=Z,600nm,23.0s
OBN Obninsk 84.61 325 *e*P **P** **10 23 01.9 -0.4**
comp=Z,449nm,1.5s,mb6.2
OBN LR LR
comp=Z,560nm,21.0s
LVZ Lovozero 84.68 338 *e*P **P** **10 23 02.3 0.0**
LVZ *e*S S 10 33 27.2 +5.7
LVZ *e*SS SS 10 38 55.3 -2.1
LVZ pmax pmax
comp=Z,60nm,1.3s,mb5.4
LVZ pmax pmax
comp=N,10.0nm,1.2s
LVZ pmax pmax
comp=E,20nm,1.7s
LVZ pmax pmax
comp=Z,260nm,1.9s,mb5.8
LVZ pmax pmax
comp=N,120nm,1.8s
LVZ pmax pmax
comp=E,100nm,2.0s
LVZ smax
comp=Z,120nm,14.3s
LVZ smax
comp=N,490nm,9.7s
LVZ smax
comp=E,310nm,14.2s
LVZ smax
comp=N,930nm,5.5s
LVZ smax
comp=Z,80nm,1.9s
LVZ smax
comp=E,240nm,2.7s
LVZ Lovozero 84.68 338 *e*P **P** **10 23 02.2 -0.1**
ANN Anapa 84.71 314 *e*P **P** **10 23 02.0 -1.0**
ANN pmax pmax
comp=Z,50nm,0.6s,mb5.6
APA Apatity 85.18 337⇑ *i*P **P** **10 23 04.6 -0.2**
APA *i* pP 10 23 23.3 -3.8
APA *i* 10 26 31.4
APA *e* 10 33 30.0
APA *e*PS PS 10 34 47.0 +12
APA pmax pmax
comp=Z,120nm,1.6s,mb5.6
YNBS Yanbu' al Bahr 85.88 294 P **P** **10 23 10.9 +1.7**
DAWY Dawson 86.08 26 *e*P **P** **10 23 10.0 +0.7**
ASF Jabal al Asfar 86.13 302 P **P** **10 23 10.6 +0.3**
comp=Z,12nm,0.7s,mb5.0,baz=347,slow=1.4,SNR=20
ASF S S 10 33 29.4 -7.1
comp=Z,0.9nm,0.3s,baz=30,slow=8.4,SNR=1.4
ASF LR LR 11 07 35.3
comp=Z,244nm,19.6s,baz=314,slow=40
VNDA Vanda 86.19 173 P **P** **10 23 11.0 +1.4**
comp=Z,9.6nm,0.6s,mb4.9,baz=317,slow=5.9,SNR=92
VNDA S S 10 33 31.4 -4.6
comp=Z,0.5nm,0.8s,baz=278,slow=18,SNR=2.5
VNDA PKKPbc 10 41 10.4
comp=Z,1.6nm,1.0s,baz=259,slow=1.1,SNR=5.6
VNDA LR LR 11 02 28.1
comp=Z,416nm,18.3s,baz=337,slow=36
VNDA Vanda 86.19 173 P **P** **10 23 11.0 +1.4**
VNDA S S 10 33 31.5 -4.5
VNDA pmax pmax
comp=Z,10.0nm,0.6s
VNDA smax
comp=Z,1.0nm,0.8s
VNDA pmax pmax
comp=Z,2.0nm,1.0s
VNDA MLR MLR
comp=Z,417nm,18.3s
VNDA Vanda 86.19 173 *e*P **P** **10 23 10.4 +0.8**
comp=Z,18nm,1.1s,mb4.9
VNDA LR LR
comp=Z,259nm,19.0s
MAW Mawson 86.20 200⇑ *i*P **P** **10 23 10.7 +0.9**
comp=Z,16nm,0.7s,mb5.1
MAW Mawson 86.20 200 P **P** **10 23 10.8 +1.0**
comp=Z,35nm,1.0s,mb5.2,baz=20,slow=3.8,SNR=31
MAW S S 10 33 30.3 -6.0
comp=Z,1.4nm,0.8s,baz=255,slow=22,SNR=2.1
MAW LR LR 10 54 23.8
comp=Z,288nm,21.8s,baz=64,slow=30
MAW Mawson 86.20 200 P **P** **10 23 10.8 +1.0**
MAW S S 10 33 30.3 -5.9
MAW pmax pmax
comp=Z,35nm,1.0s
MAW smax
comp=Z,1.0nm,0.8s
TBKS Tabuk 86.80 298 P **P** **10 23 16.5 +2.7**
SIM Simferopol' 87.05 315 *e*P **P** **10 23 15.9 +1.4**
SIM *e*S S 10 33 46.3 +1.4
SIM pmax pmax
comp=Z,30nm,0.8s,mb5.3
SBA Scott Base 87.10 172 *e*P **P** **10 23 15.8 +1.7**
SBA pmax pmax
comp=Z,130nm,1.7s,mb5.6
SBA Scott Base 87.10 172 *e*P **P** **10 23 15.8 +1.7**
comp=Z,125nm,1.8s,mb5.5
MKRJ Makawir 87.26 301 P **P** **10 23 18.2 +2.3**
HMDT Nahal Hemdat 87.28 302 P **P** **10 23 16.0 0.0**
SPITS Spitsbergen Ar 87.72 349 P **P** **10 23 17.3 +0.3**
comp=Z,49nm,1.0s,mb5.5,baz=90,slow=6.3,SNR=105
SPB4 Spitsbergen Ar 87.72 349 *e*P **P** **10 23 17.8 +0.7**
ARCES ARCESS Array B 87.75 340 P **P** **10 23 17.8 +0.5**
comp=Z,38nm,0.9s,mb5.4,baz=79,slow=5.1,SNR=177
ARCES S S 10 33 39.5 -11
comp=Z,1.1nm,0.9s,baz=77,slow=21,SNR=3.0
ARCES PKKPbc 10 41 05.7
comp=Z,0.8nm,0.5s,baz=258,slow=3.4,SNR=9.4
ARCES LR LR 11 06 03.5
comp=Z,438nm,21.6s,baz=79,slow=38
ARCES ARCESS Array B 87.75 340 P **P** **10 23 17.8 +0.5**
ARCES S S 10 33 39.5 -11
ARCES pmax pmax
comp=Z,38nm,0.9s
ARCES smax
comp=Z,1.0nm,0.9s
ARCES pmax pmax
comp=Z,1.0nm,0.5s
ARCES MLR MLR
comp=Z,438nm,21.6s
ARCES ARCESS Array B 87.75 340 P **P** **10 23 17.8 +0.5**
ARCES S S 10 33 39.5 -11
ARCES PKKPbc 10 41 05.7
ARCES LR LR 11 06 03.5
ARE0 ARCESS Array S 87.75 340 *e*P **P** **10 23 17.2 -0.1**
INK Inuvik 87.75 21 P **P** **10 23 16.9 -0.4**
comp=Z,7.0nm,0.8s,mb4.7,baz=284,slow=5.1,SNR=12
INK LR LR 11 02 38.1
comp=Z,362nm,21.7s,baz=248,slow=36
INK Inuvik 87.75 21 *e*P **P** **10 23 16.0 -1.3**
INK pmax pmax
comp=Z,6.0nm,0.8s
INK Inuvik 87.75 21 *e*P **P** **10 23 16.0 -1.3**
comp=Z,6.4nm,0.8s,mb4.7
ZFRI Zfri 87.76 300 P **P** **10 23 18.1 -0.2**
PRNI Paran 87.93 300 P **P** **10 23 19.2 +0.1**
JMOS Jabal al Moall 87.96 299 P **P** **10 23 21.5 +2.2**
BRTR Keskin Array B 87.99 310 P **P** **10 23 19.2 0.0**
comp=Z,3.1nm,0.5s,mb4.6,baz=113,slow=4.0,SNR=12
BRTR S S 10 33 42.2 -12
comp=Z,0.3nm,0.4s,baz=205,slow=6.8,SNR=2.1
EIL Elat 88.05 299 P **P** **10 23 19.0 -0.7**
BDAS Al Bad' 88.05 298 P **P** **10 23 21.7 +1.9**
MBH Mount Berech 88.06 300 P **P** **10 23 21.9 +2.1**
HAQS Haql 88.13 299 P **P** **10 23 22.4 +2.3**
KBS Kingsbay 88.24 350 *e*SKSa 10 33 39.7
KBS *e*SS SS 10 39 46.1 -3.3
KBS AMS AMS 11 07 06.3
comp=Z,437nm,20.0s
KBS Kingsbay 88.24 350 *e*P **P** **10 23 19.3 -0.2**
comp=Z,36nm,1.3s,mb5.2
KBS LR LR
comp=Z,437µm,20.0s
KTK1 Kautokeino 88.66 339⇑ *i*P **P** **10 23 22.5 +0.9**
KTK1 AMb AMB 10 23 25.5
comp=Z,120nm,1.8s,mb5.6
KTK1 Kautokeino 88.66 339⇑ *i*P **P** **10 23 22.5 +0.9**
comp=Z,120nm,1.8s,mb5.6
CSS Prodhromos 88.80 305 *e*P **P** **10 23 25.9 +2.8**
SIT Sitka 89.11 33 PFAKE 10 23 40.0 +16
SIT LR LR
comp=Z,987nm,21.0s
KMBO Kilima Mbogo 89.23 269 *e*P **P** **10 23 24.8 -0.9**
comp=Z,68nm,1.5s,mb5.5
KMBO LR LR
comp=Z,296nm,21.0s
FINES FINESS Array B 89.24 332 P **P** **10 23 23.9 -0.6**
comp=Z,6.7nm,0.4s,mb5.0,baz=76,slow=4.0,SNR=14
FINES S S 10 33 49.6 -15
comp=Z,2.3nm,1.0s,baz=315,slow=11,SNR=3.1
FINES LR LR 11 07 27.3
comp=Z,363nm,21.2s,baz=60,slow=38
FINES FINESS Array B 89.24 332 P **P** **10 23 23.9 -0.6**
FINES S S 10 33 49.6 -15
FINES pmax pmax
comp=Z,7.0nm,0.4s
FINES smax
comp=Z,2.0nm,1.0s
FINES MLR MLR
comp=Z,363nm,21.2s
FINES FINESS Array B 89.24 332 P **P** **10 23 23.9 -0.6**
FINES S S 10 33 49.6 -15
FINES LR LR 11 07 27.3
VSU Vasula 89.53 329⇑ *i*P **P** **10 23 25.7 -0.2**
AKASG Malin Array Be 89.53 321 P **P** **10 23 25.0 -1.2**
comp=Z,6.5nm,0.5s,mb5.0,baz=69,slow=3.8,SNR=31
AKASG S S 10 33 51.5 -16
comp=Z,0.2nm,0.2s,baz=90,slow=2.9,SNR=2.4
AKASG LR LR 11 09 14.0
comp=Z,328nm,20.6s,baz=70,slow=39
MNK Minsk 89.70 325 *e*P **P** **10 23 25.0 -1.8**
KIS Kishinev 90.42 317 *e*P **P** **10 23 29.0 -1.4**
KIS *e* pP 10 23 52.0 -1.0
KIS *e*S S 10 34 20.0 +4.0
KIS MLR MLR
comp=Z,600nm,20.0s
KIS MLR MLR
comp=Z,500nm,20.0s
DLBC Dease Lake 91.58 31 P **P** **10 23 36.0 +0.4**
comp=Z,2.7nm,1.0s,mb4.4,baz=282,slow=9.3,SNR=2.8
DLBC Dease Lake 91.58 31 P **P** **10 23 36.0 +0.4**
SUW Suwalki 92.47 325 *e*P **P** **10 23 38.9 -0.8**
SUW MLR MLR 11 07 23.2
comp=Z,800nm,24.1s
SUW Suwalki 92.47 325 *e*P **P** **10 23 38.3 -1.4**
MLR Muntele Rosu 92.67 316 P **P** **10 23 41.1 +0.3**
comp=Z,9.2nm,0.7s,mb5.2,baz=62,slow=3.2,SNR=16
MLR S S 10 34 09.6 -26
comp=Z,2.1nm,0.9s,baz=186,slow=14,SNR=6.6
MLR Muntele Rosu 92.67 316 P **P** **10 23 41.1 +0.3**
MLR S S 10 34 09.6 -26
MLR pmax pmax
comp=Z,9.0nm,0.7s
MLR smax
comp=Z,2.0nm,0.9s
MOR8 Moi Rana 92.76 338 *e*P **P** **10 23 40.0 -0.7**
MOR8 AMb AMB 10 23 42.4
comp=Z,46nm,1.6s,mb5.6
MOR8 Moi Rana 92.76 338 *e*P **P** **10 23 40.0 -0.7**
comp=Z,46nm,1.6s,mb5.5
STOK Stokkvaagen 93.22 338 *e*P **P** **10 23 42.0 -0.9**
KWP Kalwaria 93.85 321 *e*P **P** **10 23 48.8 +2.7**
KWP MLR MLR 11 07 43.8
comp=Z,700nm,28.4s
KWP Kalwaria 93.85 321 *e*P **P** **10 23 46.3 +0.2**
KWP pmax pmax
comp=Z,130nm,1.6s,mb6.0
DAG Danmarks Havn 94.49 352⇑ *i*P **P** **10 23 49.7 +1.2**
comp=Z,16nm,0.7s,mb5.5
DAG Danmarks Havn 94.49 352⇑ *i*P **P** **10 23 49.7 +1.2**
DAG pmax pmax
comp=Z,16nm,0.7s,mb5.5
SYO Syowa Base 94.85 201⇓ P **P** **10 23 50.9 +0.7**
SYO Syowa Base 94.85 201⇑ PcP PcP 10 23 55.8 +5.0
SYO Syowa Base 94.85 201⇑ *s*P *s*P 10 24 15.6 -5.7
SYO Syowa Base 94.85 201⇓ *e*P **P** **10 23 50.9 +0.7**
SYO *e*PcP PcP 10 23 55.8 +5.0
SYO *e*sP sP 10 24 15.6 -5.7
NIE Niedzica 95.41 321 *e*P **P** **10 23 56.0 +2.8**
HFS Hagfors 95.42 332 P **P** **10 23 52.4 -0.6**
comp=Z,5.3nm,0.6s,mb5.2,baz=90,slow=4.4,SNR=16
HFS S S 10 34 23.2 -36
comp=Z,0.6nm,0.4s,baz=200,slow=35,SNR=3.0
HFS Hagfors 95.42 332 P **P** **10 23 52.4 -0.6**
HFS S S 10 34 23.2 -36
HFS pmax pmax
comp=Z,5.0nm,0.6s
HFS smax
comp=Z,1.0nm,0.4s
OJC Ojcow 95.50 322 *e*P **P** **10 23 54.1 +0.5**
OJC *e*SKS(ac) 10 34 25.4
OJC *e*S S 10 35 02.7 +2.8
OJC *e*SP SP 10 36 28.3 +5.0
OJC MLR MLR 11 10 19.0
comp=Z,400nm,23.0s
IDI Anoyia 95.57 306 P **P** **10 23 57.3 +3.0**
comp=Z,10nm,0.9s,mb5.3,baz=108,slow=5.7,SNR=2.8
IDI S S 10 34 27.3 -34
comp=Z,5.8nm,0.9s,baz=193,slow=11,SNR=2.1
MBAR Mbarara 95.65 270 PFAKE 10 24 10.0 +15
MBAR LR LR
comp=Z,306nm,20.0s
NB2 NORSAR Subarra 96.17 334 P **P** **10 23 55.6 -0.7**
comp=Z,7.8nm,0.9s,mb5.1,baz=66,slow=4.5
NB2 NORSAR Subarra 96.17 334 P **P** **10 23 55.6 -0.7**
baz=66,slow=4.6
NOA NORSAR Array B 96.17 334 P **P** **10 23 55.4 -1.0**
comp=Z,4.8nm,0.8s,mb5.0,baz=66,slow=4.5,SNR=14
NOA S S 10 34 29.8 -35
comp=Z,0.4nm,0.7s,baz=227,slow=24,SNR=2.7
NOA LR LR 11 10 18.5
comp=Z,424nm,21.0s,baz=60,slow=37
NOA NORSAR Array B 96.17 334 P **P** **10 23 55.4 -0.9**
NOA S S 10 34 29.8 -35
NOA pmax pmax
comp=Z,5.0nm,0.8s
NOA MLR MLR
comp=Z,424nm,21.0s
NOA NORSAR Array B 96.17 334 P **P** **10 23 55.4 -1.0**
NOA S S 10 34 29.8 -35
NOA LR LR 11 10 18.5
QSPA South Pole Qui 96.38 180 *e*P **P** **10 23 58.5 +1.5**
comp=Z,37nm,1.2s,mb5.7
QSPA LR LR
comp=Z,230nm,21.1s
NAO01 NORSAR Array S 96.39 334 *e*P **P** **10 23 56.7 -0.7**
comp=Z,3.5nm,0.6s,mb5.0
NAO01 LR LR
comp=Z,639nm,19.0s
OKC Ostrava-Krasne 96.63 322 *e*P **P** **10 24 00.3 +1.5**
OKC *e*SKS SKS 10 34 55.9 +29
OKC L 11 13 50.0
comp=Z,0.3nm,21.2s
OKC Ostrava-Krasne 96.63 322 *e*P **P** **10 24 00.3 +1.5**
OKC MLR MLR
comp=Z,300nm,21.2s
SKO Skopje 96.66 313 *e*P **P** **10 23 56.0 -3.1**
YKW3 Yellowknife Ar 97.12 24 *e*P **P** **10 23 59.6 -1.1**
YKA Yellowknife Ar 97.16 24 P **P** **10 24 00.8 0.0**
comp=Z,2.1nm,0.7s,mb4.7,baz=300,slow=4.3,SNR=44
YKA PKiKP 10 28 37.6
comp=Z,0.7nm,0.5s,baz=298,slow=1.8,SNR=26
YKA S S 10 34 32.5 -41
comp=Z,0.3nm,1.0s,baz=326,slow=2.5,SNR=2.7
YKA PKKPbc 10 40 40.7
comp=Z,0.9nm,0.4s,baz=124,slow=3.3,SNR=22
YKA PKPPKP 10 48 50.2
comp=Z,1.6nm,1.4s,baz=149,slow=3.6,SNR=4.2
YKA LR LR 11 07 54.4
comp=Z,200nm,21.6s,baz=280,slow=35

YKA Yellowknife Ar 97.16 24 P **P** 10 24 00.8 -0.1
YKA S S 10 34 32.5 -41
YKA pmax pmax
comp=Z,2.0nm,0.7s
YKA pmax pmax
comp=Z,1.0nm,0.5s
YKA pmax pmax
comp=Z,1.0nm,0.4s
YKA pmax pmax
comp=Z,2.0nm,1.4s
YKA MLR MLR
comp=Z,200nm,21.6s
KSP Ksiaz 97.43 323 *e*P **P** **10 24 02.8 +0.4**
KSP MLR MLR 11 10 43.1
comp=Z,900nm,21.3s
KSP Ksiaz 97.43 323⇑ *e*P **P** **10 24 02.7 +0.3**
KSP *e**PP pP 10 24 17.7 -7.3
KSP *e* 10 34 35.0
KSP *e*S S 10 35 20.0 +3.8
KSP MLR MLR
comp=Z,1µm,21.3s
KONO Kongsberg 97.50 333 *e*SKSa 10 34 34.9
KONO *e* 10 35 20.7
KONO AMS AMS 11 14 37.9
comp=Z,382nm,22.0s
KONO Kongsberg 97.50 333 PFAKE 10 24 10.0 +7.5
KONO LR LR
comp=Z,336nm,20.0s
DPC Dobruska-Polom 97.58 323 *e*P **P** **10 24 03.9 +0.8**
DPC *e*pP pP 10 24 23.5 -2.2
DPC *e*SKS SKS 10 35 03.6 +32
DPC *ex* x 10 38 00.9
DPC L 11 13 10.0
comp=Z,0.4nm,19.1s
DPC Dobruska-Polom 97.58 323 *e*P **P** **10 24 03.9 +0.8**
DPC *e**PP pP 10 24 23.5 -2.2
DPC MLR MLR
comp=Z,400nm,19.1s
UPC Upice 97.71 323 *e*P **P** **10 24 04.6 +0.9**
VRAC Vranov 97.76 322 P **P** **10 24 03.8 -0.1**
comp=Z,9.2nm,0.8s,mb5.3,baz=142,slow=4.2,SNR=6.7
OCWA Octopus Mounta 98.09 40 PFAKE 10 24 20.0 +15
OCWA LR LR
comp=Z,1µm,22.0s
PVCC Panska Ves 98.57 323 L 11 11 20.0
comp=Z,0.6nm,19.2s
PRU Pruhonice 98.78 323 *e*P **P** **10 24 09.0 +0.5**
comp=Z,27nm,1.3s,mb5.6
PRU *e*SKS SKS 10 34 46.0 +8.1
PRU *ex* x 10 38 09.2
PRU L 11 11 40.0
PRU Pruhonice 98.78 323 *e*P **P** **10 24 09.0 +0.5**
PRU *e* 10 34 46.0
PRU pmax pmax
comp=Z,27nm,1.3s,mb5.6
BRG Berggiesshubel 98.81 324 *e*P **P** **10 23 53.2 -15**
BRG *e* 10 24 09.1
BRG *i* S S 10 35 33.0 +5.2
BRG *i* SS SS 10 42 16.0 -3.9
BRG pmax pmax
comp=Z,17nm,1.2s,mb5.5
BRG MLR MLR
comp=N,430nm,23.4s
BRG MLR MLR
comp=E,330nm,23.4s
BRG MLR MLR
comp=Z,580nm,34.3s
BRG Berggiesshubel 98.81 324 *e*P **P** **10 24 09.1 +0.4**
comp=Z,17nm,1.2s,mb5.5
BRG *e* 10 28 36.1
BRG *i* S S 10 35 33.0 +5.2
BRG *i* SS SS 10 42 16.0 -3.9
BRG LR LR
comp=Z,580nm,34.3s
CLL Collm 99.20 324 P **P** **10 24 10.2 -0.2**
comp=Z,logA/T=1.3,mb5.6
CLL *i* *PP pP 10 24 22.2 -11
CLL *e* pP 10 24 33.0 0.0
CLL *e*PP PP 10 28 16.0 0.0
CLL Collm 99.20 324 *i* P **P** **10 24 10.2 -0.2**
CLL *i* 10 24 22.2
CLL pmax pmax
comp=Z,46nm,2.1s,mb5.6
CLL MLR MLR
comp=Z,400nm,19.8s
CLL Collm 99.20 324 *i* P **P** **10 24 10.2 -0.2**
comp=Z,46nm,2.1s,mb5.6
CLL *i* 10 24 22.2
CLL LR LR
comp=Z,400nm,19.8s
CRES Cresnjevec ost 99.65 318 *e* **P** **10 24 12.1 -0.5**
KHC Kasperske Hory 99.67 322 *e*PDIF **P** **10 24 13.8 +1.2**
KHC *e*pP pP 10 24 29.9 -5.3
KHC *ex* x 10 28 01.5
KHC *e*SKS SKS 10 34 47.1 +4.7
KHC *ex* x 10 38 06.3
KHC L 11 11 20.0
comp=Z,0.4nm,20.6s
KHC Kasperske Hory 99.67 322 *e*P **P** **10 24 13.8 +1.2**
KHC *e**PP pP 10 24 29.9 -5.3
KHC *e* 10 34 47.1
KHC *e* 10 38 06.3
KHC MLR MLR
comp=Z,400nm,20.6s
COR Corvallis 99.69 43 PFAKE 10 24 20.0 +7.2
COR LR LR
comp=Z,2µm,22.0s
GEC2 GERESS Array S 99.70 322 *e*P **P** **10 24 12.6 -0.2**
GEC2 pmax pmax
comp=Z,20nm,1.5s,mb5.5
GEC2 GERESS Array S 99.70 322 *e*P **P** **10 24 12.6 -0.2**
comp=Z,20nm,1.5s,mb5.5
GERES GERESS Array B 99.70 322 P **P** **10 24 12.0 -0.8**
comp=Z,2.2nm,0.8s,mb4.8,baz=72,slow=4.2,SNR=9.3
GERES S S 10 34 46.4 -49
comp=Z,0.3nm,0.3s,baz=214,slow=38,SNR=3.3
GERES GERESS Array B 99.70 322 P **P** **10 24 12.0 -0.8**
GERES S S 10 34 46.4 -49
GERES pmax pmax
comp=Z,2.0nm,0.8s
BOJS Bojanci 99.89 318 *e* **P** **10 24 13.2 -0.5**
BOJS *e* 10 28 21.3
NKC Novy Kostel 99.94 323 *e*PDIF **P** **10 24 14.4 +0.6**
NKC *ex* x 10 38 26.4
NKC L 11 12 20.0
comp=Z,0.5nm,21.1s
NKC Novy Kostel 99.94 323 *e*P **P** **10 24 14.4 +0.6**
NKC MLR MLR
comp=Z,500nm,21.1s
WET Wettzell 100.10 322 *e*P P 10 24 14.9 +0.4
WET pmax pmax
comp=Z,8.0nm,0.9s
WET Wettzell 100.10 322 *e*P P 10 24 14.9 +0.4
comp=Z,8.0nm,0.9s
MOX Moxa 100.27 324 *i* P P 10 24 16.3 +1.1
comp=Z,logA/T=1.2
MOX PP PP 10 28 22.0 -2.6
MOX SKS SKS 10 35 16.0 +31
MOX SS SS 10 42 50.0 +10
MOX L 11 11 44.0
MOX Moxa 100.27 324 *e*P P 10 24 16.3 +1.1
MOX pmax pmax
comp=Z,26nm,1.8s
MOX MLR MLR
comp=Z,300nm,23.0s
MOX Moxa 100.27 324 *e*P P 10 24 16.3 +1.1
comp=Z,26nm,1.8s
MOX LR LR
comp=Z,300nm,23.0s
SUMG Summit 100.48 355 Pdif P 10 24 15.6 -0.1
CLZ Clausthal 100.49 325 *e*P P 10 24 16.9 +0.7
comp=Z,14nm,1.2s
GRA1 Grafenberg Arr 100.88 323 *e*P P 10 24 19.0 +1.0
comp=Z,13nm,0.9s
GRA1 *e* 10 24 42.1
GRA1 LR LR
comp=Z,500nm,20.3s
GRF Grafenberg Arr 100.88 323 *e*P P 10 24 19.0 +1.0
GRF pmax pmax
comp=Z,13nm,0.9s
GRF MLR MLR
comp=Z,500nm,20.3s
YBH Yreka Blue Hor 101.03 45 PFAKE 10 24 30.0 +11
YBH LR LR
comp=Z,510nm,22.0s

WDC Whiskeytown Da 101.52 46 PFAKE 10 24 30.0 +8.9
WDC LR LR
comp=Z,376nm,19.0s
HAWA Hanford 101.53 40 PFAKE 10 24 30.0 +9.0
HAWA LR LR
comp=Z,704nm,21.0s
HOPS Hopland 101.64 48 PFAKE 10 24 30.0 +8.3
HOPS LR LR
comp=Z,595nm,20.0s
NEW Newport 102.30 38 P Pdif 10 24 24.8 +0.4
comp=Z,1.0nm,0.6s,baz=348,slow=8.1,SNR=2.8
NEW Newport 102.30 38 P Pdif 10 24 24.8 +0.4
NEW LR LR
comp=Z,506nm,20.0s
LBTB Lobatse 102.44 246 PFAKE 10 24 40.0 +14
LBTB LR LR
comp=Z,318nm,19.0s
DAVOX Davos 102.88 321 P Pdif 10 24 27.8 +0.8
comp=Z,2.2nm,0.5s,baz=158,slow=10,SNR=7.0
DAVOX Davos 102.88 321 P Pdif 10 24 27.8 +0.8
SAO San Andreas Ge 103.57 50 PFAKE 10 24 40.0 +10
SAO LR LR
comp=Z,574nm,22.0s
WVOR Wild Horse Val 103.62 44 PFAKE 10 24 40.0 +10
WVOR LR LR
comp=Z,809nm,22.0s
WLF Walferdange 103.86 325 P Pdif 10 24 33.4 +2.2
CMB Columbia Colle 103.94 48 PFAKE 10 24 40.0 +8.1
CMB LR LR
comp=Z,670nm,22.0s
MSO Missoula 104.86 38 PFAKE 10 24 50.0 +14
MSO LR LR
comp=Z,810nm,22.0s
NVAR Mina Array Bea 105.34 47 Pdiff Pdif 10 24 39.2 +1.2
comp=Z,0.7nm,1.0s,baz=270,slow=4.5,SNR=2.5
NVAR PKKPbc 10 40 19.4
comp=Z,2.4nm,0.6s,baz=116,slow=5.1,SNR=19
NVAR PKKPab 10 40 35.4
comp=Z,1.3nm,0.8s,baz=112,slow=5.8,SNR=6.2
NVAR Mina Array Bea 105.34 47 Pdif Pdif 10 24 39.2 +1.2
NVAR PKKPbc 10 40 19.4
NVAR PKKPab 10 40 35.4
BMN Battle Mountai 105.37 45 PFAKE 10 29 00.0
BMN LR LR
comp=Z,346nm,22.0s
MNV Mina 105.45 47 PFAKE 10 29 00.0
MNV LR LR
comp=Z,906nm,22.0s
ESK Eskdalemuir 105.64 333 PFAKE 10 29 00.0
ESK LR LR
comp=Z,451nm,21.0s
HLID Hailey 106.00 41 PFAKE 10 29 00.0
HLID LR LR
comp=Z,362nm,20.0s
TPH Tonopah 106.26 47 PFAKE 10 29 10.0
TPH LR LR
comp=Z,528nm,22.0s
SUR Sutherland 106.57 238 PKiKP 10 28 57.7
comp=Z,3.9nm,0.6s,baz=160,slow=18,SNR=6.3
SUR Sutherland 106.57 238 PKPdf 10 28 57.7
SUR LR LR
comp=Z,834nm,20.0s
DAC Darwin (Calif) 106.65 49 PFAKE 10 29 10.0
DAC LR LR
comp=Z,697nm,22.0s
BOZ Bozeman (W) 106.83 38 PFAKE 10 29 10.0
BOZ LR LR
comp=Z,429nm,20.0s
FFC Flin Flon 106.97 27 PFAKE 10 29 10.0
FFC LR LR
comp=Z,279nm,19.0s
FCC Fort Churchill 107.36 21 *e*PKP 10 28 55.0
PFO Pinyon Flat Ob 108.49 52 PFAKE 10 29 10.0
PFO LR LR
comp=Z,581nm,21.0s
AHID Auburn Hatcher 108.53 41 PFAKE 10 29 10.0
AHID LR LR
comp=Z,426nm,22.0s
HWUT Hardware Ranch 108.75 42 PFAKE 10 29 10.0
HWUT LR LR
comp=Z,595nm,20.0s
VNA2 Neumayer--Watz 109.39 195 *e* 10 29 29.1
BW06 Boulder Array 109.52 40 PFAKE 10 29 10.0
BW06 LR LR
comp=Z,476nm,20.0s
PDAR Pinedale Array 109.52 40 PKiKP 10 29 00.4
comp=Z,0.6nm,0.5s,baz=105,slow=0.6,SNR=6.6
PDAR PKKPbc 10 40 05.0
comp=Z,1.2nm,0.5s,baz=117,slow=3.3,SNR=10
PDAR PKKPab 10 40 15.8
comp=Z,3.7nm,0.6s,baz=124,slow=5.3,SNR=20
MVU Marysvale 109.69 45 PFAKE 10 29 10.0
MVU LR LR
comp=Z,695nm,22.0s
MSU Marysvale 109.72 45 *e*PKP 10 29 01.0
VNA3 Neumayer Olymp 109.73 194 *e* 10 29 32.3
VNA1 Neumayer--Stat 109.78 195 *e* 10 29 34.3
WUAZ Wupatki 111.59 48 *e*PKP PKPdf 10 29 04.4 +2.4
PV10 Paradox Valley 111.97 44 *e*PKP PKPdf 10 29 05.3 +2.7
RSSD Black Hills 112.23 37 *e*PKIKP PKPdf 10 29 05.2 +2.2
PV01 Paradox Valley 112.41 44 *e*PKP PKPdf 10 29 06.1 +2.6
ULM Lac du Bonnet 112.72 28 PKiKP 10 29 05.4
comp=Z,1.3nm,0.4s,baz=349,slow=4.4,SNR=2.7
ULM PKKPab 10 40 01.8
comp=Z,4.1nm,0.9s,baz=126,slow=6.0,SNR=3.6
ULM Lac du Bonnet 112.72 28 PKPdf PKPdf 10 29 05.4 +1.6
ULM PKKPab 10 40 01.8
ULM LR LR
comp=Z,725nm,21.0s
TUC Tucson 113.38 51 PFAKE 10 29 20.0 +14
TUC LR LR
comp=Z,300nm,19.0s
ISCO Idaho Springs 113.58 41 PFAKE 10 29 20.0 +14
ISCO LR LR
comp=Z,466nm,19.0s
SDCO Great Sand Dun 114.72 43 *e*PKP PKPdf 10 29 11.3 +3.2
SDCO LR LR
comp=Z,552nm,21.0s
ESDC Sonseca Array 115.14 319 PKP PKPdf 10 29 11.6 +2.7
comp=Z,0.3nm,0.3s,baz=56,slow=4.6,SNR=4.1
ESLA Sonseca Array 115.14 319 PFAKE 10 29 20.0 +11
ESLA LR LR
comp=Z,1µm,20.0s
ANMO Albuquerque 115.42 46 *i* PKiKP PKPdf 10 29 11.3 +1.8
ANMO Albuquerque 115.42 46 *e*PKP PKPdf 10 29 12.7 +3.2
ANMO LR LR
comp=Z,393nm,22.0s
BNM Barren Site 115.69 47 *e*PKP PKPdf 10 29 13.4 +3.3
PVRL Vila Real 116.56 323 *e*PKPdf PKPdf 10 29 15.3 +3.8
MTE Manteigas 116.98 322 *e*PKPdf PKPdf 10 29 15.5 +3.1
MTE *e*- 11 09 37.9
comp=Z,410nm,19.6s
PVIS Viseu 117.01 322 *e*PKPdf PKPdf 10 29 15.8 +3.4
PCBR Castelo Branco 117.27 321 *e*PKPdf PKPdf 10 29 16.2 +3.3
MNTX Cornudas Mount 117.77 49 *e*PKP PKPdf 10 29 16.7 +2.7
MNTX LR LR
comp=Z,300nm,20.0s
SCHQ Schefferville 117.92 9 PKP PKPdf 10 29 16.9 +3.1
comp=Z,7.8nm,0.6s,baz=273,slow=1.8,SNR=25
SCHQ SKP 10 32 47.5
comp=Z,3.9nm,0.9s,baz=61,slow=6.1,SNR=3.6
SCHQ PKKPbc 10 39 37.1
comp=Z,4.3nm,1.0s,baz=179,slow=6.4,SNR=3.5
SCHQ PKKPab 10 39 41.0
comp=Z,1.9nm,0.6s,baz=192,slow=3.8,SNR=6.7
SCHQ Schefferville 117.92 9 *e*PKP PKPdf 10 29 16.2 +2.5
SCHQ LR LR
comp=Z,1µm,19.0s
CBKS Cedar Bluff 117.92 40 PFAKE 10 29 30.0 +16
CBKS LR LR
comp=Z,579nm,21.0s
PTOM Tomar 117.98 322 *e*PKPdf PKPdf 10 29 17.4 +3.1
GDL2 Guadalupe Moun 118.28 48 *e*PKP PKPdf 10 29 18.2 +3.2
CLNB Carlsbad 118.61 48 *e*PKP PKPdf 10 29 19.4 +3.6
KSU1 Kansas State U 119.69 38 *e*PKP PKPdf 10 29 19.5 +1.9
LTX Lajitas 120.18 51 *e*PKP PKPdf 10 29 21.5 +2.7
LTX LR LR
comp=Z,536nm,22.0s
TXAR Lajitas Array 120.18 51 PKP PKPdf 10 29 21.5 +2.7
comp=Z,2.4nm,0.7s,baz=283,slow=1.0,SNR=32
TXAR SKP 10 32 50.3
comp=Z,0.5nm,0.7s,baz=315,slow=1.3,SNR=3.6
TXAR PKKPbc 10 39 28.9
comp=Z,3.4nm,1.0s,baz=122,slow=4.0,SNR=26
JFWS Jewell Farm 120.66 31 PFAKE 10 29 30.0 +11
JFWS LR LR
comp=Z,475nm,21.0s
WMOK Wichita Mounta 120.91 43 *e*PKP PKPdf 10 29 21.8 +1.6
WMOK LR LR
comp=Z,824nm,22.0s
JCT Junction City 122.52 48 *e*PKP PKPdf 10 29 25.5 +2.2
JCT LR LR
comp=Z,319nm,21.0s
CCM Cathedral Cave 123.55 35 *e*PKP PKPdf 10 29 26.7 +1.5
CCM LR LR
comp=Z,426nm,20.0s
FVM French Village 124.06 35 *e*PKIKP PKPdf 10 29 27.5 +1.3
SADO Sadowa 124.06 22 PKP PKPdf 10 29 28.2 +2.2
comp=Z,7.0nm,0.6s,baz=350,slow=3.7,SNR=11
AAM Ann Arbor 124.27 27 PFAKE 10 29 40.0 +14
AAM LR LR
comp=Z,543nm,21.0s
MIAR Mount Ida 124.45 40 *e*PKP PKPdf 10 29 29.6 +2.6
MIAR LR LR
comp=Z,808nm,21.0s
SIUC Southern Illin 124.93 34 *e*PKP PKPdf 10 29 30.5 +2.6
UALR University of 125.08 39 *e*PKP PKPdf 10 29 30.1 +1.9
BLO Bloomington 125.32 31 *e*PKIKP PKPdf 10 29 30.0 +1.4
MSNY Massena 125.32 18 *e*PKP PKPdf 10 29 30.0 +1.6
PQI Presque Isle 125.56 12 PFAKE 10 29 40.0 +11
PQI LR LR
comp=Z,3µm,21.0s
HKT Hockley 125.68 46 *e*PKP PKPdf 10 29 32.3 +2.8
HKT LR LR
comp=Z,637nm,20.0s
ERPA Erie 125.98 24 *e*PKP PKPdf 10 29 31.1 +1.3
ERPA LR LR
comp=Z,617nm,21.0s
WCI Wyandotte Cave 126.14 32 *e*PKP PKPdf 10 29 32.0 +1.8
WCI LR LR
comp=Z,2µm,20.0s
ACSO Alum Creek Sta 126.23 28 *e*PKP PKPdf 10 29 32.1 +1.8
ACSO LR LR
comp=Z,670nm,19.0s
MET Memphis--Engin 126.32 37 PKP PKPdf 10 29 34.3 +3.7
NCB Newcomb 126.44 18 *e*PKP PKPdf 10 29 32.4 +1.8
NCB LR LR
comp=Z,700nm,22.0s
WVT Waverly 126.84 35 *e*PKP PKPdf 10 29 33.0 +1.4
WVT LR LR
comp=Z,411nm,19.0s
LBNH Lisbon 126.88 16 PFAKE 10 29 40.0 +8.6
LBNH LR LR
comp=Z,448nm,20.0s
OXF Oxford 127.05 37 PFAKE 10 29 50.0 +18
OXF LR LR
comp=Z,333nm,20.0s
ACCN Adirondack Com 127.15 18 *e*PKP PKPdf 10 29 33.5 +1.5
HNH Hanover 127.27 17 *e*PKP PKPdf 10 29 33.7 +1.5
PLAL Pickwick Lake 127.51 36 *e*PKP PKPdf 10 29 33.6 +0.6
PLAL LR LR
comp=Z,395nm,21.0s
SSPA Standing Stone 128.08 23 PFAKE 10 29 50.0 +16
SSPA LR LR
comp=Z,2µm,20.0s
SWET Sewanee 128.56 34 *e*PKP PKPdf 10 29 37.3 +2.3
HRV Harvard--Oak R 128.58 17 PFAKE 10 29 50.0 +15
HRV LR LR
comp=Z,155nm,22.0s
WES Weston 128.76 17 PFAKE 10 29 50.0 +15
WES LR LR
comp=Z,2µm,19.0s
CPCT Cooper Cave 129.16 33 *e*PKP PKPdf 10 29 38.9 +2.8
MVL Millersville 129.22 23 *e*PKP PKPdf 10 29 37.7 +1.6
LRAL Lakeview Retre 129.52 37 *e*PKP PKPdf 10 29 37.8 +1.0
LRAL LR LR
comp=Z,611nm,21.0s
KIC Kosan Boka 129.56 284 *e*PKIKP PKPdf 10 29 40.1 +2.7
comp=Z,406nm,1.2s
DBIC Dimbokro 129.59 284 PKP PKPdf 10 29 39.9 +2.4
comp=Z,50nm,1.2s,baz=81,slow=2.1,SNR=16
DBIC SKPbc 10 32 56.7
comp=Z,51nm,1.1s,baz=51,slow=5.3,SNR=12
DBIC Dimbokro 129.59 284 PKIKP PKPdf 10 29 39.9 +2.4
DBIC pmax pmax
comp=Z,50nm,1.2s
DBIC pmax pmax
comp=Z,51nm,1.1s
MYNC Murphy 129.66 33 *e*PKP PKPdf 10 29 39.4 +2.3
MYNC LR LR
comp=Z,547nm,22.0s
TIC Toumodi 129.76 284 *e*PKIKP PKPdf 10 29 40.2 +2.4
comp=Z,502nm,1.5s
BLA Blacksburg 129.84 28 PFAKE 10 29 50.0 +13
BLA LR LR
comp=Z,476nm,22.0s
LIC Lamto 129.87 284 *e*PKIKP PKPdf 10 29 40.3 +2.3
comp=Z,268nm,1.3s
USHA Ushuaia 130.35 169 SKPbc 10 32 59.3
comp=Z,27nm,0.8s,baz=181,slow=11,SNR=5.7
CBN Corbin 130.36 25 PFAKE 10 29 50.0 +12
CBN LR LR
comp=Z,568nm,21.0s
DWPF Disney 136.38 37 PFAKE 10 30 00.0 +10
DWPF LR LR
comp=Z,462nm,20.0s
BBSR BB Station 139.95 15 PFAKE 10 30 10.0 +14
BBSR LR LR
comp=Z,2µm,19.0s
JTS JuntasAbangare 144.65 62 *e*PKP PKPdf 10 30 05.3 +0.4
JTS LR LR
comp=Z,47nm,22.0s
CCHI Chillan 145.61 153⇑ *e*P PKPdf 10 30 09.7 +3.7
TRQA Tornquist 147.68 168 *e*PKPdf PKPdf 10 30 11.8 +2.4
TRQA *e*PKPbc PKPdf 10 30 15.2 +5.8
LMEL Las Melosas 148.75 153⇑ *e*P PKPdf 10 30 18.9 +7.7
CLCH Cerro Calan 148.97 152⇑ *e*P PKPdf 10 30 19.3 +7.7
FCH Farellones 149.14 152⇑ *e*P PKPdf 10 30 19.9 +8.1
MDZ Mendoza 150.17 154 *e*P PKPdf 10 30 23.6 +10
SJG San Juan 152.62 27 PKPbc PKPdf 10 30 28.3 +11
comp=Z,13nm,0.3s,baz=321,slow=15,SNR=5.9
SJG PKPab PKPab 10 30 35.2 -2.6
comp=Z,17nm,0.4s,baz=360,slow=7.0,SNR=6.4
SJG San Juan 152.62 27 *e*PKPbc PKPdf 10 30 27.9 +10
SJG LR LR
comp=Z,355nm,22.0s
ROSC El Rosal 156.48 62 PKPab PKPab 10 30 53.1 -1.3
comp=Z,5.6nm,0.5s,baz=154,slow=22,SNR=2.5
SDV Santo Domingo 157.20 48 PKP PKPdf 10 30 26.6 +2.9
comp=Z,14nm,0.8s,baz=340,slow=0.7,SNR=12
LVC Limon Verde 158.23 139 PKP PKPdf 10 30 27.3 +2.5
comp=Z,2.0nm,0.7s,baz=289,slow=23,SNR=1.7
LVC PKPab PKPab 10 31 04.4 +2.7
comp=Z,4.1nm,0.6s,baz=219,slow=7.1,SNR=7.9
LVC Limon Verde 158.23 139 PKP PKPdf 10 30 27.3 +2.5
LVC PKPab PKPab 10 31 04.4 +2.7
LVC LR LR
comp=Z,384nm,19.0s
CPUP Villa Florida 159.96 170 PKP PKPdf 10 30 29.9 +3.2
comp=Z,6.1nm,1.0s,baz=269,slow=3.6,SNR=4.9
CPUP PKPab PKPab 10 31 10.2 +1.2
comp=Z,24nm,1.1s,baz=226,slow=4.9,SNR=7.8
CPUP Villa Florida 159.96 170 PKIKP PKPdf 10 30 30.0 +3.3
CPUP pmax pmax
comp=Z,6.0nm,1.0s
CPUP pmax pmax
comp=Z,24nm,1.1s
CPUP Villa Florida 159.96 170 *e*PKP PKPdf 10 30 30.0 +3.3
LPAZ La Paz 162.79 126 PKP PKPdf 10 30 33.9 +4.1
comp=Z,8.6nm,1.1s,baz=18,slow=2.3,SNR=16
LPAZ PKPab PKPab 10 31 23.2 +1.7
comp=Z,7.7nm,0.8s,baz=348,slow=2.1,SNR=5.5
LPAZ La Paz 162.79 126 *e*PKP PKPdf 10 30 33.8 +4.0
LPAZ LR LR
comp=Z,191nm,20.0s
BDFB Brasilia 169.36 211 PKP PKPdf 10 30 37.6 +2.6
comp=Z,14nm,1.0s,baz=42,slow=2.6,SNR=7.9
BDFB PKPab PKPab 10 31 50.7 +0.6
comp=Z,34nm,1.0s,baz=100,slow=2.8,SNR=13
BDFB Brasilia 169.36 211 PKIKP PKPdf 10 30 37.6 +2.6
BDFB 10 31 50.7
BDFB pmax pmax
comp=Z,14nm,1.0s
BDFB pmax pmax
comp=Z,34nm,1.0s

MAN ***27*** *10:19:28.8, 6.48N×126.13E, h79km, mb4.8, ML3.7, MS3.7*
NEIC ***27*** *10:19:31.6±0.9, 6.40N×125.76E, h100km, Error ellipse: s-maj=58.1km s-min=14.9km az=73.0*

*IDC **27** 10:19:36.9±11.0, 6.32N×125.63E, h148km±107km, mb3.8/8, mb1 3.9/8, mb1mx3.6/23, Error ellipse: s-maj=65.6km s-min=21.3km az=69.0*

ISC 27 10:19:27.9±0.6, 6.41N±0.05×126.14E±0.07, h79km, n16, σ1°02/22, mb4.1/8, 4C-2D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DMPH	**Davao City--Mi**	**0.92**	**317**	*iP*	**P**	**10 19 45.8**	**-0.3**
DMPH				*i* S	**S**	**10 20 01.2**	**+1.5**
KCP	**Kidapawan**	**1.20**	**300**	*eP*	**P**	**10 19 49.4**	**-0.3**
KCP				*i* S	**S**	**10 20 07.4**	**+1.5**
GSPH	**General Santos**	**1.22**	**255**	*iP*	**P**	**10 19 48.8**	**-1.1**
GSPH				*i* S	**S**	**10 20 05.9**	**-0.5**
CGP	**Cagayan de Oro**	**2.49**	**325**	*eP*	**P**	**10 20 07.9**	**+0.7**
BUTP	**Butuan**	**2.60**	**349**	*eP*	**P**	**10 20 09.4**	**+0.7**
BUTP				*eS*	**S**	**10 20 43.0**	**+3.8**
PAGZ	**Pagadian**	**3.08**	**298**	*eP*	**P**	**10 20 15.4**	**-0.1**
MSLP	**Maasin**	**3.91**	**341**	*eP*	**P**	**10 20 26.0**	**-1.0**
MSLP				*eS*	**S**	**10 21 10.7**	**-1.3**
TBP	**Tagbilaran**	**3.96**	**326**	*eP*	**P**	**10 20 28.4**	**+0.7**
TBP				*eS*	**S**	**10 21 12.8**	**-0.5**
FITZ	**Fitzroy Crossi**	**24.36**	**181**	P	**P**	**10 24 40.4**	**+0.5**
	5.9nm,0.6s,mb4.1,baz=4.8,slow=12,SNR=2.9						
WRA	**Warramunga Arr**	**27.40**	**163**	P	**P**	**10 25 08.9**	**+0.7**
	1.5nm,0.6s,mb3.7,baz=338,slow=11,SNR=5.0						
ASAR	**Alice Springs**	**30.84**	**166**	P	**P**	**10 25 38.2**	**-0.6**
	0.9nm,0.4s,mb3.9,baz=341,slow=7.1,SNR=5.9						
NWAO	**Narrogin (SRO)**	**40.02**	**192**	P	**P**	**10 26 56.5**	**-0.3**
	8.1nm,0.5s,mb4.9,baz=23,slow=7.8,SNR=11						
STKA	**Stephens Creek**	**40.83**	**160**	P	**P**	**10 27 06.1**	**+2.8**
	3.6nm,0.8s,mb4.3,baz=337,slow=8.8,SNR=3.0						
MKAR	**Makanchi Array**	**55.04**	**324**	P	**P**	**10 28 51.6**	**-2.1**
	0.9nm,0.4s,mb4.1,baz=124,slow=7.5,SNR=7.2						
VNDA	**Vanda**	**86.14**	**173**	P	**P**	**10 32 00.4**	**-0.4**
	0.3nm,0.5s,mb3.5,baz=323,slow=8.0,SNR=2.9						
SPITS	**Spitsbergen Ar**	**87.76**	**349**	P	**P**	**10 32 08.4**	**-0.3**
	4.2nm,1.0s,mb4.4,baz=90,slow=6.3,SNR=2.7						

IDC 27 10:34:44.5±10.0, 5.91S×100.10W, mb3.4/3, mb1 3.8/3, mb1mx3.6/15, Error ellipse: s-maj=415.0km s-min=183.9km az=105.0, Central East Pacific Rise

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PDAR	**Pinedale Array**	**49.20**	**351**	P	P	10 43 34.8	-1.7
	0.4nm,0.8s,baz=164,slow=6.6,SNR=3.0						
YKA	**Yellowknife Ar**	**69.11**	**353**	P	P	10 45 52.5	-1.8
	0.1nm,0.8s,baz=162,slow=6.3,SNR=2.5						
ILAR	**Eielson Array**	**78.49**	**341**	P	P	10 46 46.9	-1.9
	0.9nm,0.8s,baz=164,slow=5.4,SNR=3.4						

*NEIC **27** 11:01:47.0, 19.45N×68.78W, h25km, MD3.5(RSPR), After RSPR.*

RSPR 27 11:01:47.0, 19.45N×68.78W, h25km±31km, M3.5, 10C-1D, North Atlantic Ocean

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IDE	**Isla Desecheo**	**1.62**	**131**	S	Sn	11 02 29.8	-5.0
LSP	**Las Mesas**	**2.04**	**128**	*eP*	Pn	11 02 17.8	-2.7
LSP				S	Sn	11 02 39.4	-6.0
MGP	**Maguayo**	**2.15**	**132**	*eP*	Pn	11 02 18.1	-3.9
MGP				S	Sn	11 02 42.8	-5.3
LRS	**Lares**	**2.16**	**122**	*eP*	Pn	11 02 19.2	-3.0
LRS				S	Sn	11 02 43.8	-4.7
AOPR	**Arecibo Observ**	**2.21**	**119**	*eP*	Pn	11 02 20.5	-2.4
AOPR	**Arecibo Observ**	**2.21**	**119**	S	Sn	11 02 45.0	-4.7
PORP	**Portuguez**	**2.46**	**124**	*eP*	Pn	11 02 21.9	-4.5
PORP				S	Sn	11 02 50.5	-5.5
OBIP	**Obispado Ponce**	**2.49**	**124**	S	Sn	11 02 50.9	-5.8
CELP	**Cerrillos**	**2.49**	**123**	*eP*	Pn	11 02 23.8	-3.1
CELP				S	Sn	11 02 52.1	-4.7
CSB	**Colonia Sabana**	**2.74**	**115**	*eP*	Pn	11 02 27.2	-3.3
CSB				S	Sn	11 02 58.2	-4.9
CBYP	**Canovanas**	**3.00**	**113**	*eP*	Pn	11 02 30.8	-3.4
CBYP				S	Sn	11 03 03.2	-6.6
CPD	**Cerro la Pandu**	**3.05**	**117**	*eP*	Pn	11 02 31.0	-3.9
CPD				S	Sn	11 03 04.5	-6.6
HUMP	**Col San Antoni**	**3.06**	**115**	*eP*	Pn	11 02 32.1	-3.0
HUMP				S	Sn	11 03 04.8	-6.5
MTP	**Monte Pirata**	**3.33**	**113**	*eP*	Pn	11 02 35.3	-3.6
MTP				S	Sn	11 03 11.5	-6.7

*IDC **27** 11:04:53.4±9.9, 36.22N×71.33E, h90km±80km, mb3.5/6, mb1 3.6/8, mb1mx3.4/21, ML3.3/2, Error ellipse: s-maj=68.5km s-min=28.1km az=36.0*
*NEIC **27** 11:04:56.6±3.8, 36.33N×71.36E, h116km±29km, Error ellipse: s-maj=36.1km s-min=17.2km az=214.0*
*NNC **27** 11:05:01.6±55.0, 36.76N×70.40E, h111km±999km, mpv4.3, Error ellipse: s-maj=841.9km s-min=478.5km az=75.0*

ISC 27 11:04:54.3±0.5, 36.25N±0.03×71.4E±0.1, h120km±9km, n33, σ1°22/38, mb3.7/5, 2C-4D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CEP	**Cherat**	**2.46**	**170**	*iP*	**P**	**11 05 35.4**	**+1.1**
CHCP	**Chirah Chowk**	**3.01**	**149**	P	**P**	**11 05 43.9**	**+1.3**
THW	**Thamme Wali**	**3.46**	**175**	*iP*	**P**	**11 05 47.9**	**+0.2**
THW				S	**S**	**11 06 30.0**	**+1.6**
SBDP	**Sheikh Budin**	**3.97**	**187**	P	**P**	**11 05 53.6**	**-1.0**
SARP	**Sargodha**	**4.45**	**166**	P	**P**	**11 06 00.1**	**-0.9**
DRP	**Derazinda**	**4.60**	**193**	P	**P**	**11 06 02.1**	**-1.0**
DRP				S	**S**	**11 06 51.0**	**-4.9**
AML	**Almayashu**	**6.14**	**16**	P	**P**	**11 06 24.2**	**+0.4**
	SNR=47						
UCH	**Uchtor**	**6.44**	**21**	P	**P**	**11 06 29.0**	**+1.0**
	SNR=11						
EKS2	**Erkin-Say**	**6.66**	**15**	P	**P**	**11 06 31.2**	**+0.2**
	SNR=11						
AAK	**Ala-Archa**	**6.81**	**20**	P	**P**	**11 06 34.1**	**+1.0**
	SNR=5.8						
AAK	**Ala-Archa**	**6.81**	**20**	*e*Pn	**P**	**11 06 33.7**	**+0.6**
AAK				*e*Sn	**S**	**11 07 48.4**	**-1.2**
KK31	**Karatay Array**	**6.88**	**355**	P	**P**	**11 06 32.2**	**-1.8**
	8.6nm,0.3s,baz=178,slow=12,SNR=146						
KK31					**S**	**11 07 44.4**	**-6.8**
	12nm,0.5s,baz=190,slow=25,SNR=7.7						
CHMS	**Chumysh**	**7.22**	**20**	P	**P**	**11 06 39.4**	**+0.8**
	SNR=5.2						
USP	**Ospenovka**	**7.40**	**18**	P	**P**	**11 06 41.5**	**+0.4**
	SNR=5.3						
TKM2	**Tokmak 2**	**7.41**	**25**	P	**P**	**11 06 42.5**	**+1.4**
	SNR=6.8						
DANN	**Dangsing**	**13.09**	**124**	*eP*	**P**	**11 07 54.8**	**-1.8**
MKAR	**Makanchi Array**	**13.31**	**34**	P	**P**	**11 07 59.8**	**+0.4**
	0.1nm,0.3s,baz=204,slow=12,SNR=6.1						
KOLN	**Koldanda**	**13.36**	**126**	*eP*	**P**	**11 07 58.4**	**-1.7**
	7.7nm,0.3s						
GKN	**Gorkha**	**13.90**	**123**	*eP*	**P**	**11 08 04.0**	**-3.1**
	13nm,0.3s						
KKN	**Kakani**	**14.48**	**122**	*eP*	**P**	**11 08 12.7**	**-1.8**
	17nm,0.5s						
PKI	**Pulchoki**	**14.70**	**122**	*eP*	**P**	**11 08 16.5**	**-0.9**
	11nm,0.3s						
AB31	**Akbulak array**	**15.46**	**331**	P	**P**	**11 08 23.8**	**-2.9**
	1.5nm,0.5s,baz=302,slow=2.3,SNR=4.2						
AB31					**S**	**11 11 02.3**	**-12**
	1.4nm,0.6s,baz=149,slow=24,SNR=6.0						
ZRNK	**Zerenda**	**16.78**	**355**	P	**P**	**11 08 43.6**	**+0.4**
BVAR	**Borovoye Array**	**16.79**	**358**	P	**P**	**11 08 42.6**	**-0.6**
	0.3nm,0.3s,baz=180,slow=14,SNR=7.3						
BRVK	**Borovoye**	**16.82**	**358**	P	**P**	**11 08 39.6**	**-4.1**
ZAL	**Zalesovo**	**20.00**	**24**	P	**P**	**11 09 19.1**	**-0.3**
	1.8nm,0.4s,baz=126,slow=4.3,SNR=3.4						
FINES	**FINESS Array B**	**37.87**	**326**	P	**P**	**11 12 00.7**	**-0.1**
	1.3nm,0.9s,mb3.8,baz=104,slow=12,SNR=3.5						
ARCES	**ARCESS Array B**	**41.49**	**338**	P	**P**	**11 12 32.0**	**+1.4**
	11nm,1.4s,mb4.5,baz=122,slow=8.5,SNR=9.0						
NB2	**NORSAR Subarra**	**44.77**	**323**	P	**P**	**11 12 57.3**	**+0.2**
	0.9nm,0.6s,mb3.7,baz=96,slow=7.9						
NOA	**NORSAR Array B**	**44.77**	**323**	P	**P**	**11 12 57.4**	**+0.3**
	1.1nm,0.6s,mb3.8,baz=97,slow=7.7,SNR=5.9						
NOA	**NORSAR Array B**	**44.77**	**323**	P	**P**	**11 12 57.4**	**+0.3**
YKA	**Yellowknife Ar**	**81.48**	**3**	P	**P**	**11 17 00.4**	**+1.4**
	0.3nm,0.5s,mb3.4,baz=349,slow=5.4,SNR=15						
YKA				pP	pP	11 17 29.4	-0.3
	0.1nm,0.6s,baz=349,slow=5.3,SNR=4.3						
WRA	**Warramunga Arr**	**81.59**	**122**	P	**P**	**11 17 01.8**	**+1.4**
	0.2nm,0.7s,mb3.1,baz=326,slow=4.9,SNR=5.0						

*NEIC **27** 11:42:22.2±2.9, 35.63N×5.60W, h10km, MG3.7(MDD), Error ellipse: s-maj=33.2km s-min=11.1km az=186.0*
*INMG **27** 11:42:33.6±0.8, 36.34N×5.58W, h41km±3km, ML2.6, Error ellipse: s-maj=2.6km s-min=2.2km az=176.0*
*MDD **27** 11:42:33.8±0.8, 36.31N×5.57W, h41km±5km, mb4.0/10, Error ellipse: s-maj=8.4km s-min=4.4km az=177.0, PRXIMO*

ISC 27 11:42:33.9±0.5, 36.53N±0.03×5.59W±0.03, h41km, n67, σ1°09/116, 3C-7D, Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EJIF	**Jimena Fronter**	**0.12**	**130**	*i*P	**P**	**11 42 40.4**	**-0.2**
	118nm,0.2s,SNR=18						
EJIF				S	**S**	**11 42 45.1**	**-0.4**
	97nm,0.2s,SNR=7.9						
EJIF	**Jimena Fronter**	**0.12**	**130**	*i*P	**P**	**11 42 40.5**	**-0.2**
EJIF				S	**S**	**11 42 44.9**	**-0.6**
MOMI	**Momias**	**0.23**	**208**	P	**P**	**11 42 41.1**	**-0.4**
REAL	**Reales**	**0.31**	**99**	*i*P	**P**	**11 42 42.5**	**+0.1**
ESPR	**Espera**	**0.40**	**327**	*i*P	**P**	**11 42 45.8**	**+2.4**
	16nm,0.1s,SNR=18						
ESPR				S	**S**	**11 42 55.9**	**+5.9**
	148nm,0.3s,SNR=5.0						
ESPR	**Espera**	**0.40**	**327**	*i*P	**P**	**11 42 45.8**	**+2.4**
ESPR				S	**S**	**11 42 55.5**	**+5.5**
LIJA	**Lijar**	**0.40**	**21**	*i*P	**P**	**11 42 46.7**	**+3.3**
CNIL	**Conil**	**0.41**	**247**	*i*P	**P**	**11 42 43.5**	**0.0**
ELUQ	**Luque**	**1.47**	**45**	S	**S**	**11 43 18.2**	**+1.5**
	8.8nm,0.2s,SNR=7.9						
ELUQ	**Luque**	**1.47**	**45**	P	**P**	**11 42 58.8**	**+0.3**
ELUQ				S	**S**	**11 43 17.1**	**+0.3**
EMIN	**Mina Concepcio**	**1.51**	**325**	*i*P	**P**	**11 42 59.6**	**+0.7**
	1.2nm,0.1s,SNR=18						
EMIN				S	**S**	**11 43 19.8**	**+2.2**
	3.8nm,0.1s,SNR=20						
EMIN	**Mina Concepcio**	**1.51**	**325**	*i*P	**P**	**11 42 59.8**	**+0.8**
EMIN				S	**S**	**11 43 19.8**	**+2.2**
ECAB	**El Cabril**	**1.55**	**5**	*i*P	**P**	**11 43 00.9**	**+1.4**
	0.4nm,0.0s,SNR=18						
ECAB				S	**S**	**11 43 21.2**	**+2.7**
	2.0nm,0.1s,SNR=7.9						
ERIP	**Rio Piedras**	**1.58**	**303**	P	**P**	**11 42 60.0**	**+0.1**
	2.4nm,0.1s,SNR=7.9						
ERIP				S	**S**	**11 43 20.2**	**+0.9**
	9.0nm,0.1s,SNR=7.9						
ERIP	**Rio Piedras**	**1.58**	**303**	P	**P**	**11 43 00.0**	**+0.1**
ERIP				S	**S**	**11 43 20.2**	**+0.9**
PALC	**Alcoutim**	**1.78**	**302**	*e*P	**P**	**11 43 02.5**	**-0.2**
PALC				*e*S	**S**	**11 43 24.9**	**+0.7**
	20nm,0.3s						
PALC	**Alcoutim**	**1.78**	**302**	P	**P**	**11 43 02.5**	**-0.2**
PALC				S	**S**	**11 43 24.9**	**+0.7**
	10nm,0.3s						
EGRO	**El Granado**	**1.82**	**304**	P	**P**	**11 43 03.2**	**-0.1**
	3.6nm,0.0s,SNR=7.9						
EGRO				S	**S**	**11 43 25.9**	**+0.6**
	13nm,0.1s,SNR=8.6						
EGRO	**El Granado**	**1.82**	**304**	P	**P**	**11 43 03.2**	**-0.1**
EGRO				S	**S**	**11 43 26.0**	**+0.7**
EADA	**Adamuz**	**1.82**	**26**	P	**P**	**11 43 04.6**	**+1.2**
	0.7nm,0.1s,SNR=12						
EADA				S	**S**	**11 43 27.4**	**+2.1**
	1.3nm,0.0s,SNR=5.0						
EADA	**Adamuz**	**1.82**	**26**	P	**P**	**11 43 04.5**	**+1.2**
EADA				S	**S**	**11 43 27.3**	**+1.9**
PBEJ	**Beja**	**2.35**	**310**	*e*S	**S**	**11 43 38.8**	**0.0**
	8.6nm,0.1s						
PBEJ	**Beja**	**2.35**	**310**	S	**S**	**11 43 38.8**	**0.0**
	4.3nm,0.1s						
EQES	**Quesada**	**2.38**	**57**	P	**P**	**11 43 13.1**	**+1.7**
	1.3nm,0.2s,SNR=4.0						
EQES				S	**S**	**11 43 39.7**	**+0.2**
	8.2nm,0.1s,SNR=6.8						
EQES	**Quesada**	**2.38**	**57**	P	**P**	**11 43 07.1**	**-4.2**
EQES				S	**S**	**11 43 39.2**	**-0.2**
EBAD	**Badajoz**	**2.49**	**333**	P	**P**	**11 43 13.7**	**+0.8**
	0.8nm,0.1s,SNR=7.9						
EBAD				S	**S**	**11 43 43.4**	**+1.0**
	8.2nm,0.2s,SNR=13						
EBAD	**Badajoz**	**2.49**	**333**	P	**P**	**11 43 13.6**	**+0.6**
EBAD				S	**S**	**11 43 43.8**	**+1.4**
PTEO	**Sao Teotonio**	**2.71**	**293**	*e*P	**P**	**11 43 14.7**	**-1.3**
PTEO				S	**S**	**11 43 46.3**	**-1.5**
	12nm,0.3s						
PTEO	**Sao Teotonio**	**2.71**	**293**	P	**P**	**11 43 14.7**	**-1.3**
PTEO				S	**S**	**11 43 46.3**	**-1.5**
	6.2nm,0.3s						
EHUE	**Huescar**	**2.71**	**61**	P	**P**	**11 43 17.0**	**+0.9**
	0.4nm,0.1s,SNR=7.9						
EHUE				S	**S**	**11 43 46.6**	**-1.4**
	1.1nm,0.1s,SNR=7.9						
EHUE	**Huescar**	**2.71**	**61**	P	**P**	**11 43 15.5**	**-0.7**
EHUE				S	**S**	**11 43 46.3**	**-1.7**
MOE	**Montemor**	**2.96**	**313**	*e*S	**S**	**11 43 54.3**	**0.0**
EVIA	**Vianos**	**3.23**	**48**	P	**P**	**11 43 23.4**	**-0.1**
	0.4nm,0.1s,SNR=7.9						
EVIA				S	**S**	**11 43 59.5**	**-1.6**
	2.3nm,0.2s						
EVIA	**Vianos**	**3.23**	**48**	P	**P**	**11 43 23.2**	**-0.2**
EVIA				S	**S**	**11 43 59.3**	**-1.8**
ESDC	**Sonseca Array**	**3.39**	**22**	P	**P**	**11 43 26.2**	**+0.5**
	1.6nm,0.1s,baz=201,slow=13,SNR=6.4						
ESDC				S	**S**	**11 44 05.3**	**+0.1**
	3.9nm,0.1s,baz=201,slow=24,SNR=8.3						
PCBR	**Castelo Branco**	**3.62**	**336**	*e*P	**P**	**11 43 29.5**	**+0.5**
PCBR				*e*S	**S**	**11 44 10.7**	**-0.4**
	18nm,0.2s						
PCBR	**Castelo Branco**	**3.62**	**336**	P	**P**	**11 43 29.5**	**+0.5**
PCBR				S	**S**	**11 44 10.7**	**-0.4**
	8.9nm,0.2s						
PLOU	**Loures**	**3.68**	**311**	*e*P	**P**	**11 43 28.4**	**-1.4**
PLOU				S	**S**	**11 44 10.6**	**-1.8**
	10nm,0.4s						
PLOU	**Loures**	**3.68**	**311**	P	**P**	**11 43 28.4**	**-1.4**
PLOU				S	**S**	**11 44 10.6**	**-1.8**
	5.2nm,0.4s						
PTOM	**Tomar**	**3.80**	**325**	*e*P	**P**	**11 43 31.9**	**+0.3**
PTOM				*e*S	**S**	**11 44 14.6**	**-1.0**
	9.3nm,0.1s						
PTOM	**Tomar**	**3.80**	**325**	P	**P**	**11 43 31.9**	**+0.3**
PTOM				S	**S**	**11 44 14.6**	**-1.0**
	4.7nm,0.1s						
ETOB	**Tobarra**	**3.84**	**55**	P	**P**	**11 43 30.3**	**-1.8**
	1.4nm,0.1s,SNR=8.1						
ETOB				S	**S**	**11 44 13.4**	**-3.1**
	3.9nm,0.1s,SNR=5.0						
ETOB	**Tobarra**	**3.84**	**55**	P	**P**	**11 43 30.5**	**-1.6**
ETOB				S	**S**	**11 44 13.5**	**-3.0**
MTE	**Manteigas**	**4.16**	**339**	*e*P	**P**	**11 43 36.9**	**+0.3**
MTE				*e*S	**S**	**11 44 24.4**	**-0.2**
	8.3nm,0.5s						
MTE	**Manteigas**	**4.16**	**339**	P	**P**	**11 43 36.9**	**+0.3**
MTE				S	**S**	**11 44 24.4**	**-0.2**
	4.2nm,0.5s						
GUD	**Guadarrama**	**4.26**	**15**	P	**P**	**11 43 38.2**	**+0.2**
	0.4nm,0.1s,SNR=7.9						
GUD	**Guadarrama**	**4.26**	**15**	P	**P**	**11 43 38.3**	**+0.3**
PVIS	**Viseu**	**4.55**	**337**	*e*P	**P**	**11 43 42.6**	**+0.4**
PVIS				*e*S	**S**	**11 44 33.6**	**-0.9**
	5.9nm,0.1s						
PVIS	**Viseu**	**4.55**	**337**	P	**P**	**11 43 42.6**	**+0.4**
PVIS				S	**S**	**11 44 33.6**	**-0.9**
	3.0nm,0.1s						
PVRL	**Vila Real**	**5.02**	**341**	*e*P	**P**	**11 43 48.9**	**+0.1**
PVRL				S	**S**	**11 44 45.0**	**-1.3**
	33nm,0.1s						
PVRL	**Vila Real**	**5.02**	**341**	P	**P**	**11 43 48.9**	**+0.1**
PVRL				S	**S**	**11 44 45.0**	**-1.3**
	16nm,0.1s						
PBRG	**Braganca**	**5.34**	**351**	*e*P	**P**	**11 43 53.5**	**+0.2**
PBRG				*e*S	**S**	**11 44 52.4**	**-2.0**
	2.0nm,0.2s						
PBRG	**Braganca**	**5.34**	**351**	P	**P**	**11 43 53.5**	**+0.2**
PBRG				S	**S**	**11 44 52.4**	**-2.0**
	1.0nm,0.2s						
ECAL	**Calabor**	**5.48**	**351**	P	**P**	**11 43 55.6**	**+0.5**
	3.1nm,0.2s,SNR=18						
ECAL				S	**S**	**11 44 56.4**	**-1.3**
	1.1nm,0.2s,SNR=7.9						
ECAL	**Calabor**	**5.48**	**351**	P	**P**	**11 43 55.7**	**+0.6**
ECAL				S	**S**	**11 44 56.1**	**-1.7**
ELOB	**Lobios**	**5.66**	**341**	P	**P**	**11 43 58.4**	**+0.7**
	0.6nm,0.1s,SNR=7.9						
ELOB				S	**S**	**11 45 00.2**	**-2.2**
	3.5nm,0.2s,SNR=7.9						
ELOB	**Lobios**	**5.66**	**341**	P	**P**	**11 43 58.6**	**+0.8**
ELOB				S	**S**	**11 44 59.3**	**-3.1**
ERUA	**La Rua**	**5.98**	**349**	P	**P**	**11 44 02.6**	**+0.5**
	3.0nm,0.2s,SNR=7.9						
ERUA	**La Rua**	**5.98**	**349**	P	**P**	**11 44 02.6**	**+0.5**
EARI	**Arriondas**	**6.77**	**2**	P	**P**	**11 44 13.6**	**+0.3**
	0.3nm,0.2s,SNR=5.8						
EARI	**Arriondas**	**6.77**	**2**	P	**P**	**11 44 14.0**	**+0.7**
EPON	**Pontenova**	**6.89**	**350**	P	**P**	**11 44 14.6**	**-0.5**
	0.3nm,0.1s,SNR=4.0						
EPON	**Pontenova**	**6.89**	**350**	P	**P**	**11 44 14.3**	**-0.7**
ELAN	**Lanestosa**	**6.89**	**13**	P	**P**	**11 44 14.9**	**-0.2**
	0.8nm,0.2s,SNR=4.0						
ELAN	**Lanestosa**	**6.89**	**13**	P	**P**	**11 44 14.6**	**-0.4**
ELAN				S	**S**	**11 45 29.4**	**-3.7**
EALK	**Alkurruntz**	**7.38**	**24**	P	**P**	**11 44 22.4**	**+0.6**
	0.9nm,0.1s,SNR=4.0						
EALK	**Alkurruntz**	**7.38**	**24**	P	**P**	**11 44 22.3**	**+0.5**
EALK				S	**S**	**11 45 40.0**	**-5.2**

*NAO **27** 11:57:25.3±1.3, 59.71N×24.52E, ML2.7*
*BER **27** 11:57:26.1±3.2, 59.72N×24.57E, ML2.7(NAO), Suspected explosion*
*IDC **27** 11:57:27.8±2.2, 59.87N×24.44E, mb1 3.6/4, mb1mx3.2/22, ML3.5/4, Error ellipse: s-maj=24.1km s-min=6.5km az=146.0*

HEL 27 11:57:26.2±0.2, 59.72N±24.64E, ML2.3, ML2.5(UPP), ML2.7(NAO), Explosion, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MEF	**Metsahovi**	**0.51**	**346**	*e*P	Pg	11 57 34.8	-1.6
MEF				*e*S	Sg	11 57 41.9	-1.3
PVF	**Pernaja**	**1.02**	**36**	*e*P	Pb	11 57 44.9	-1.7
PVF				*e*S	Sg	11 57 58.1	-2.2
VSU	**Vasula**	**1.66**	**139**	*e*P	Pn	11 57 55.8	-1.0
VSU				*e*S	Sb	11 58 17.0	-1.9
VSU	**Vasula**	**1.66**	**139**	Pn	Pn	11 57 55.8	-1.0
VSU				Lg		11 58 17.2	
VJF	**Virojoki**	**1.67**	**59**	*e*P	Pn	11 57 56.0	-0.9
VJF				*e*S	Sb	11 58 17.0	-2.1
FIA0	**FINESS Array S**	**1.86**	**22**	*e*P	Pn	11 57 59.5	-0.1
FIA0				*e*S	Sn	11 58 22.5	-1.8
FIA0	**FINESS Array S**	**1.86**	**22**	Pn	Pn	11 57 59.5	-0.2
	baz=196,slow=18						
FIA0				Lg		11 58 23.8	
	baz=191,slow=28						
FINES	**FINESS Array B**	**1.86**	**22**	Pg	Pg	11 57 59.5	-3.9
	15nm,0.3s,baz=202,slow=15,SNR=432						
FINES				Lg		11 58 23.8	
	13nm,0.3s,baz=219,slow=27,SNR=16						
KEF	**Keuruu**	**2.45**	**2**	*e*P	Pn	11 58 08.8	+0.6
KEF				*e*SB	Sb	11 58 40.3	-1.5
SUF	**Sumiainen**	**3.09**	**13**	*e*P	Pn	11 58 15.6	-1.6
SUF				*e*SG	Sg	11 59 01.2	-8.0
VAF	**Ylistaro**	**3.46**	**345**	*e*P	Pn	11 58 22.2	-0.2
VAF				*e*SG	Sg	11 59 12.6	-8.9
JOF	**Joensuu**	**4.54**	**42**	*e*P	Pn	11 58 35.2	-2.5
JOF				*e*S	Sn	11 59 27.0	-5.0
JOF				*e*SG	Sg	11 59 45.2	-12
JOF				MSG		11 59 47.7	
	comp=Z,3.5nm,0.2s						
KJN	**Kajaani**	**4.61**	**17**	*e*P	Pn	11 58 37.6	-1.2
KJN				*e*S	Sn	11 59 29.1	-4.8
KJN				*e*SG	Sg	11 59 48.3	-11
KJN				MSG		11 59 50.1	
	comp=Z,7.7nm,0.3s						
HFS	**Hagfors**	**5.52**	**279**	Pn	Pn	11 58 47.9	-3.8
	baz=92,slow=12						
HFS				Sn	Sn	11 59 48.8	-8.0
	baz=94,slow=28						
HFS				Lg		12 00 13.3	
	baz=78,slow=37						
HFS	**Hagfors**	**5.52**	**279**	*e*P	Pn	11 58 47.9	-3.8
HFS				*e*S	Sn	11 59 48.8	-8.0
HFS				*e*SG	Sg	12 00 13.3	-17
HFS	**Hagfors**	**5.52**	**279**	Pn	Pn	11 58 47.8	-3.9
	comp=Z,0.2nm,0.3s,baz=102,slow=13,SNR=32						
HFS				Sn	Sn	11 59 51.1	-5.7
	comp=Z,0.5nm,0.3s,baz=93,slow=25,SNR=9.4						
HFS				Lg		12 00 14.4	
	comp=Z,0.4nm,0.3s,baz=85,slow=33,SNR=4.5						
NOA	**NORSAR Array B**	**6.79**	**287**	Pn	Pn	11 59 04.3	-5.2
	comp=Z,0.7nm,0.3s,baz=86,slow=13,SNR=3.0						
NOA				Sn	Sn	12 00 18.4	-10
	comp=Z,0.6nm,0.3s,baz=112,slow=21,SNR=3.1						
NOA				Lg		12 00 54.3	
	comp=Z,1.4nm,0.3s,baz=138,slow=23,SNR=4.2						
ARA0	**ARCESS Array S**	**9.86**	**2**	Pn	P	11 59 46.1	-5.9
	baz=181,slow=16						
ARA0	**ARCESS Array S**	**9.86**	**2**	*e*P	P	11 59 46.1	-5.9
ARCES	**ARCESS Array B**	**9.86**	**2**	Pn	P	11 59 46.3	-5.8
	comp=

5.0nm,0.4s,mb4.4
CTA Charters Tower 31.54 270 P **P** **12 06 12.0 +0.9**
6.2nm,0.5s,mb4.4,baz=95,slow=9.8,SNR=20
CTAO Charters Tower 31.54 270 *eP* **P** **12 06 11.8 +0.8**
STKA Stephens Creek 34.95 248 P **P** **12 06 40.2 +0.8**
1.5nm,0.4s,mb3.9,baz=101,slow=15,SNR=4.6
AS12 Alice Springs 42.17 260 *eP* **P** **12 07 38.5 +0.3**
2.3nm,0.5s,mb4.0
ASAR Alice Springs 42.17 260 P **P** **12 07 38.4 +0.1**
4.0nm,0.8s,mb4.0,baz=98,slow=6.8,SNR=39
ASAR S **S** **12 13 18.6 -1.0**
0.5nm,0.7s,baz=96,slow=14,SNR=5.4
WB2 Warramunga Arr 42.49 266 *eP* **P** **12 07 40.3 -0.5**
WRAB Tennant Creek 42.49 266 *eP* **P** **12 07 39.8 -1.0**
13nm,0.7s,mb4.6
WRA Warramunga Arr 42.50 266 P **P** **12 07 40.4 -0.4**
2.7nm,0.5s,mb4.1,baz=92,slow=8.5,SNR=60
FITZ Fitzroy Crossi 50.93 265 P **P** **12 08 44.9 -0.1**
5.1nm,1.1s,mb3.8,baz=161,slow=3.1,SNR=6.6
VNDA Vanda 54.82 185 P **P** **12 09 12.7 +0.8**
0.6nm,0.8s,mb2.9,baz=23,slow=5.8,SNR=3.1
QSPA South Pole Qui 66.62 180 *eP* **P** **12 10 29.5 +0.4**
35nm,0.9s,mb4.9
MAW Mawson 78.18 200 P **P** **12 11 36.2 +0.8**
1.0nm,0.5s,mb3.4,baz=141,slow=6.5,SNR=4.2
MAW Mawson 78.18 200 *eP* **P** **12 11 29.7 -5.7**
1.9nm,0.8s,mb3.5
MAW P 12 11 36.2
YBH Yreka Blue Hor 83.71 39 P **P** **12 12 04.2 0.0**
0.8nm,0.6s,mb3.5,baz=164,slow=10,SNR=2.9
SNAA Sanae 85.10 179 P **P** **12 12 08.3 -2.0**
VNA3 Neumayer Olymp 85.31 177 ǁ*i* **P** **12 12 17.2 +5.8**
VNA2 Neumayer--Watz 85.73 178 ǁ*i* **P** **12 12 17.5 +4.1**
CMAR Chiang Mai Arr 89.44 290 P **P** **12 12 32.8 +0.7**
1.3nm,0.9s,mb3.8,baz=150,slow=4.4,SNR=6.1
ILAR Eielson Array 91.59 14 P **P** **12 12 40.6 -0.2**
0.1nm,0.5s,mb3.1,baz=219,slow=5.8,SNR=3.7
ELN Prospectdale 110.82 57 *eP* Pdif 12 14 13.4 +6.2
MKAR Makanchi Array 111.91 313 PKiKP 12 18 04.0
0.3nm,0.6s,SNR=3.6
BVAR Borovoye Array 120.15 319 PKP PKPdf 12 18 20.2 -0.1
0.4nm,0.3s,baz=104,slow=6.1,SNR=3.7
SPITS Spitsbergen Ar 124.69 356 PKP PKPdf 12 18 28.5 0.0
5.0nm,1.0s,baz=68,slow=11,SNR=3.1
HFS Hagfors 142.13 349 PKhKP 12 18 57.8
1.9nm,0.3s,baz=76,slow=6.1,SNR=4.5
AKASG Malin Array Be 144.64 328 PKP PKPdf 12 19 05.9 +0.2
1.3nm,0.4s,baz=41,slow=3.7,SNR=9.9
ASF Jabal al Asfar 146.42 293 PKPbc PKPbc 12 19 13.4 +2.2
3.0nm,0.7s,baz=323,slow=12,SNR=3.1
BRTR Keskin Array B 147.37 308 PKPbc PKPdf 12 19 14.4 +3.9
0.7nm,0.6s,baz=117,slow=2.8,SNR=4.0
BRTR PKPab PKPab 12 19 18.4 -1.8
1.3nm,0.7s,baz=78,slow=4.6,SNR=5.2
EKA Eskdalemuir Ar 148.08 3 PKPbc PKPdf 12 19 15.3 +4.1
0.9nm,0.6s,baz=27,slow=3.7,SNR=4.4
CLL Collm 150.46 343 *i* PKP1 PKPdf 12 19 22.1 +7.0
BRG Berggiesshubel 150.59 342 *eP* PKPdf 12 19 22.6 +7.3

TAP **27** *12:04:03.0±2.22.87N×121.13E,h17km,ML3.5*
JMA **27** *12:04:03.7±0.2,22.72N×121.36E,h102km*
ISC 27 12:04:03.1±2.1,22.6N±0.2×121.5E±0.2,h17km,n6,
σ0§42/12,Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**2.31**	**37**	P		**Pn**	**Pn**	**12 04 40.8**	**-0.2**
YOJ				*e*S		**Sn**	**Sn**	**12 05 09.5**	**+0.3**
HATJ	**Hateruma jima**	**2.57**	**56**	P		**Pn**	**Pn**	**12 04 45.0**	**+0.3**
HATJ				*e*S		**Sn**	**Sn**	**12 05 16.8**	**+0.9**
IRIF	**Iriomote-Funau**	**2.68**	**50**	P		**Pn**	**Pn**	**12 04 46.3**	**0.0**
IRIF				*e*S		**Sn**	**Sn**	**12 05 18.0**	**-0.6**
JKRS	**Kuro-shima**	**2.83**	**55**	P		**Pn**	**Pn**	**12 04 48.7**	**+0.3**
JKRS				*e*S		**Sn**	**Sn**	**12 05 22.5**	**+0.2**
JIJ	**Ishigaki jima**	**3.00**	**54**	P		**Pn**	**Pn**	**12 04 50.6**	**-0.2**
JIJ				*e*S		**Sn**	**Sn**	**12 05 26.0**	**-0.7**
JTJ	**Tarama**	**3.57**	**55**	P		**Pn**	**Pn**	**12 04 58.8**	**-0.2**
JTJ				*e*S		**Sn**	**Sn**	**12 05 41.1**	**-0.2**

NEIC **27** *12:08:28.1,48.41N×8.32E,h10km,ML2.5(LDG),*
ML2.0(STR),After STR.
BGR **27** *12:08:28.1±0.3,48.48N×8.32E,h10km,ML2.0/1,Error*
ellipse: s-maj=3.3km s-min=2.2km az=129.0
LDG **27** *12:08:28.2±0.1,48.43N×8.33E,h10km,Md2.2/2,Ml2.5/7,*
Error ellipse: s-maj=1.4km s-min=1.2km az=38.0
STR **27** *12:08:28.1±0.2,48.41N×8.32E,h10km,±1km,Ml2.0,Error*
ellipse: s-maj=0.0km s-min=0.0km az=1.0
ISC 27 12:08:26.7±0.5,48.46N±0.02×8.29E±0.03,h14km,±4km,
n25,σ0§76/41,Germany

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
BFO	**Black Forest**	**0.14**	**169**	*e*Pg		**Pg**	**Pg**	**12 08 30.6**	**+0.1**
	SNR=40								
BFO				*e*Sg		**Sg**	**Sg**	**12 08 32.3**	**-0.7**
	SNR=6.0								
SPAK	**Spaichingen**	**0.49**	**137**	Pg		**Pg**	**Pg**	**12 08 36.9**	**+0.1**
LANF	**Langenberg**	**0.61**	**328**	Pg		**Pg**	**Pg**	**12 08 40.8**	**+1.7**
FELD	**Feldberg**	**0.62**	**198**	*e*Pg		**Pg**	**Pg**	**12 08 39.8**	**+0.5**
	SNR=4.7								
FELD	**Feldberg**	**0.62**	**198**	Pg		**Pg**	**Pg**	**12 08 39.6**	**+0.3**
STU	**Stuttgart**	**0.68**	**62**	*e*Sg		**Sg**	**Sg**	**12 08 48.9**	**-0.7**
	SNR=3.9								
CDF	**Champ du Feu**	**0.68**	**266**	*e*Pg		**Pg**	**Pg**	**12 08 41.3**	**+0.8**
CDF				*e*Pn		**Pn**	**Pn**	**12 08 42.1**	**+0.5**
CDF				*e*Sg		**Sg**	**Sg**	**12 08 50.1**	**+0.4**
	8.6nm,0.2s								
SLE	**Schleitheim**	**0.71**	**169**	*e*Pg		**Pg**	**Pg**	**12 08 41.2**	**+0.1**
	SNR=3.2								
SLE				*e*Sg		**Sg**	**Sg**	**12 08 52.0**	**+1.3**
	SNR=9.3								
ECH	**Echery**	**0.80**	**252**	*e*Pg		**Pg**	**Pg**	**12 08 43.8**	**+1.0**
	SNR=5.2								
ECH				*e*Sg		**Sg**	**Sg**	**12 08 54.2**	**+0.7**
	SNR=6.6								
ECH	**Echery**	**0.80**	**252**	Pg		**Pg**	**Pg**	**12 08 43.6**	**+0.8**
MOF	**Molkenrain**	**0.99**	**232**	*e*Pg		**Pg**	**Pg**	**12 08 47.5**	**+0.9**
	SNR=2.8								
MOF				*e*Sg		**Sg**	**Sg**	**12 09 00.2**	**+0.4**
	SNR=4.6								
MOF	**Molkenrain**	**0.99**	**232**	Pg		**Pg**	**Pg**	**12 08 46.9**	**+0.3**
MOF				Sg		**Sg**	**Sg**	**12 09 00.2**	**+0.3**
ZUR	**Zurich**	**1.11**	**170**	*e*Sg		**Sg**	**Sg**	**12 09 03.8**	**-0.2**
	SNR=2.4								
WILA	**Wila**	**1.13**	**158**	*e*Pg		**Pg**	**Pg**	**12 08 49.7**	**+0.3**
	SNR=1.7								
WILA				*e*Sg		**Sg**	**Sg**	**12 09 04.6**	**+0.1**
	SNR=4.8								
BBS	**Basel-Blauen**	**1.13**	**208**	*e*Pg		**Pg**	**Pg**	**12 08 49.6**	**+0.2**
	SNR=2.0								
BBS	**Basel-Blauen**	**1.13**	**208**	Pg		**Pg**	**Pg**	**12 08 48.3**	**-1.1**
BBS				Sg		**Sg**	**Sg**	**12 09 03.7**	**-0.8**
HINF	**Hinteralfeld**	**1.16**	**237**	*e*Pn		**Pn**	**Pn**	**12 08 49.0**	**+0.5**
HINF				*e*Pg		**Pg**	**Pg**	**12 08 50.3**	**+0.3**
HINF				*e*Sn		**Sn**	**Sn**	**12 09 03.9**	**-0.2**
HINF				*e*Sg		**Sg**	**Sg**	**12 09 05.1**	**-0.5**
	14nm,0.3s								
TOD	**Tromm**	**1.19**	**16**	*e*Sg		**Sg**	**Sg**	**12 09 05.7**	**-0.9**
	SNR=2.9								
BOURR	**Bourrignon**	**1.29**	**214**	*e*Sg		**Sg**	**Sg**	**12 09 10.0**	**+0.2**
	SNR=1.9								
HAU	**Haudompre**	**1.38**	**251**	*e*Pn		**Pn**	**Pn**	**12 08 52.0**	**+0.4**
HAU				*e*Pg		**Pg**	**Pg**	**12 08 54.3**	**0.0**
HAU				*e*Sn		**Sn**	**Sn**	**12 09 09.2**	**-0.4**
HAU				*e*Sg		**Sg**	**Sg**	**12 09 12.7**	**-0.1**
	16nm,0.3s								
KAMOR	**Kamor**	**1.42**	**145**	*e*Sg		**Sg**	**Sg**	**12 09 13.4**	**-0.9**
	SNR=3.6								
RFYF	**Reffroy**	**1.88**	**276**	*e*Sn		**Sn**	**Sn**	**12 09 21.9**	**-0.4**
RFYF				*e*Sg		**Sg**	**Sg**	**12 09 28.5**	**-0.9**
	7.1nm,0.2s								
SFTF	**Sexfontaines**	**2.19**	**264**	*e*Sg		**Sg**	**Sg**	**12 09 37.8**	**-1.8**
	4.5nm,0.2s								
CABF	**La Chapelle**	**2.38**	**220**	*e*Sg		**Sg**	**Sg**	**12 09 42.8**	**-3.2**
	1.6nm,0.3s								
LOR	**Lormes**	**3.21**	**250**	*e*Sg		**Sg**	**Sg**	**12 10 09.6**	**-4.2**
	2.7nm,0.3s								

IDC **27** *12:11:23.1±27.0,5.34N×124.21E,h395km±330km,*
mb2.8/5,mb1 3.0/5,mb1mx2.8/21,Error ellipse:
s-maj=138.0km s-min=38.3km az=53.0

ISC 27 12:10:51.9±2.0,6.4N±0.1×125.9E±0.3,h104km±21km,n7,
σ0§94/9,mb3.4/5,1C-1D,Mindanao

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
KCP	**Kidapawan**	**1.03**	**305**	ǁ*eP*		**P**	**P**	**12 11 12.4**	**-0.9**
KCP				*i* S		**S**	**S**	**12 11 30.6**	**+1.3**
GSPH	**General Santos**	**1.04**	**252**	ǁ*iP*		**P**	**P**	**12 11 11.6**	**-1.7**
GSPH				*i* S		**S**	**S**	**12 11 29.9**	**+0.5**
FITZ	**Fitzroy Crossi**	**24.36**	**181**	P		**P**	**P**	**12 15 57.7**	**-3.9**
	2.9nm,1.1s,mb3.5,baz=357,slow=8.3,SNR=2.9								
WRA	**Warramunga Arr**	**27.46**	**163**	P		**P**	**P**	**12 16 30.8**	**+0.3**
	0.2nm,0.4s,mb3.0,baz=338,slow=11,SNR=9.0								
ASAR	**Alice Springs**	**30.89**	**166**	P		**P**	**P**	**12 17 01.6**	**+0.7**
	0.1nm,0.3s,mb3.0,baz=340,slow=7.2,SNR=3.2								
STKA	**Stephens Creek**	**40.90**	**159**	P		**P**	**P**	**12 18 25.8**	**+0.3**
	1.4nm,0.8s,mb3.9,baz=44,slow=18,SNR=2.8								
MKAR	**Makanchi Array**	**54.92**	**325**	P		**P**	**P**	**12 20 13.8**	**-0.4**
	0.3nm,0.4s,mb3.7,baz=108,slow=8.1,SNR=3.2								

NAO **27** *12:15:14.8±1.3,59.78N×24.55E,ML2.8*
HEL **27** *12:15:15.5±0.2,59.78N×24.61E,ML2.6,ML2.5(UPP),*
ML2.8(NAO),Explosion
BER **27** *12:15:15.8±5.5,59.79N×24.60E,ML2.8(NAO),*
Suspected explosion
IDC **27** *12:15:16.1±2.0,59.86N×24.48E,mb1 3.5/4,*
mb1mx3.2/22,ML3.7/3,Error ellipse: s-maj=21.4km
s-min=6.9km az=148.0
ISC 27 12:15:11.6±0.6,59.73N±0.03×24.53E±0.07,n21,σ1§44/38,
Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
MEF	**Metsahovi**	**0.50**	**352**	*e*P		**Pg**	**Pg**	**12 15 23.1**	**+1.7**
MEF				*e*S		**Sg**	**Sg**	**12 15 29.2**	**+1.1**
PVF	**Pernaja**	**1.06**	**38**	*e*P		**Pb**	**Pb**	**12 15 33.2**	**+0.8**
PVF				*e*S		**Sb**	**Sb**	**12 15 45.3**	**-1.4**
VSU	**Vasula**	**1.70**	**137**	*e*PG		**Pg**	**Pg**	**12 15 46.1**	**+0.5**
VSU				*e*SG		**Sg**	**Sg**	**12 16 08.2**	**0.0**
FIA0	**FINESS Array S**	**1.88**	**23**	*e*P		**Pn**	**Pn**	**12 15 48.0**	**+2.7**
FIA0				*e*S		**Sn**	**Sn**	**12 16 11.5**	**+1.4**
FIA0	**FINESS Array S**	**1.88**	**23**	Pn		**Pn**	**Pn**	**12 15 48.1**	**+2.8**
	baz=198,slow=16								
FIA0				Lg				12 16 11.4	
	baz=192,slow=28								
FINES	**FINESS Array B**	**1.88**	**23**	Pg		**Pg**	**Pg**	**12 15 47.9**	**-1.2**
	14nm,0.3s,baz=203,slow=16,SNR=373								
FINES				Lg				12 16 11.6	
	5.7nm,0.3s,baz=202,slow=26,SNR=4.0								
FINES				Rg				12 16 22.1	
	5.5nm,0.3s,baz=203,slow=25,SNR=4.8								
KEF	**Keuruu**	**2.45**	**4**	*e*P		**Pn**	**Pn**	**12 15 57.2**	**+3.7**
KEF				*e*S		**Sn**	**Sn**	**12 16 25.5**	**+0.9**
SUF	**Sumiainen**	**3.10**	**14**	*e*P		**Pn**	**Pn**	**12 16 05.6**	**+2.8**
SUF				*e*S		**Sn**	**Sn**	**12 16 39.8**	**-1.3**
VAF	**Ylistaro**	**3.44**	**346**	*e*P		**Pn**	**Pn**	**12 16 10.6**	**+3.0**
VAF				*e*S		**Sn**	**Sn**	**12 16 49.8**	**0.0**
JOF	**Joensuu**	**4.57**	**43**	*e*P		**Pn**	**Pn**	**12 16 24.2**	**+0.6**
JOF				*e*S		**Sn**	**Sn**	**12 17 16.9**	**-1.4**
JOF				*e*SG		**Sg**	**Sg**	**12 17 34.6**	**-9.2**
KJN	**Kajaani**	**4.62**	**18**	*e*P		**Pn**	**Pn**	**12 16 25.5**	**+1.2**
KJN				*e*S		**Sn**	**Sn**	**12 17 17.6**	**-2.0**
KJN				*e*SG		**Sg**	**Sg**	**12 17 35.7**	**-10**
KJN				MSG				12 17 40.4	
	comp=Z,9.6nm,0.2s								
HFS	**Hagfors**	**5.47**	**279**	Pn		**Pn**	**Pn**	**12 16 36.7**	**+0.5**
	baz=56,slow=12								
HFS				Sn		**Sn**	**Sn**	**12 17 39.9**	**-0.9**
	baz=107,slow=28								
HFS				Lg				12 18 02.4	
	baz=84,slow=37								
HFS	**Hagfors**	**5.47**	**279**	*e*P		**Pn**	**Pn**	**12 16 36.7**	**+0.5**
HFS				*e*S		**Sn**	**Sn**	**12 17 39.9**	**-0.9**
HFS				*e*SG		**Sg**	**Sg**	**12 18 02.4**	**-11**
HFS	**Hagfors**	**5.47**	**279**	Pn		**Pn**	**Pn**	**12 16 36.3**	**+0.1**
	comp=Z,0.1nm,0.3s,baz=96,slow=11,SNR=13								
HFS				Sn		**Sn**	**Sn**	**12 17 39.5**	**-1.3**
	comp=Z,0.4nm,0.3s,baz=97,slow=25,SNR=9.0								
HFS				Lg				12 18 02.4	
	comp=Z,0.3nm,0.3s,baz=85,slow=34,SNR=5.0								
NOA	**NORSAR Array B**	**6.73**	**287**	Pn		**Pn**	**Pn**	**12 16 52.7**	**-1.4**
	comp=Z,1.0nm,0.3s,baz=97,slow=12,SNR=3.6								
NOA				Sn		**Sn**	**Sn**	**12 18 07.8**	**-4.7**
	comp=Z,0.5nm,0.3s,baz=154,slow=7.9,SNR=2.4								
NOA				Lg				12 18 41.7	
	comp=Z,1.2nm,0.3s,baz=88,slow=19,SNR=4.1								
ARA0	**ARCESS Array S**	**9.86**	**2**	Pn		**Pn**	**P**	**12 17 35.0**	**-2.5**
	baz=180,slow=16								
ARA0	**ARCESS Array S**	**9.86**	**2**	*e*P		**P**	**P**	**12 17 35.0**	**-2.5**
ARCES	**ARCESS Array B**	**9.86**	**2**	Pn		**Pn**	**P**	**12 17 34.8**	**-2.6**
	comp=Z,0.9nm,0.3s,baz=181,slow=14,SNR=49								
ARCES				Sn		**Sn**	**Sn**	**12 19 21.7**	**-8.4**
	comp=Z,0.2nm,0.3s,baz=182,slow=21,SNR=2.9								
ARCES				Lg				12 20 20.8	
	comp=Z,0.3nm,0.3s,baz=158,slow=32,SNR=2.9								
SPA0	**Spitsbergen Ar**	**18.73**	**355**	P		**P**	**P**	**12 19 34.2**	**+0.8**
	baz=162,slow=10								
SPA0	**Spitsbergen Ar**	**18.73**	**355**	*e*P		**P**	**P**	**12 19 34.2**	**+0.8**
SPITS	**Spitsbergen Ar**	**18.73**	**355**	P		**P**	**P**	**12 19 34.4**	**+1.0**
	comp=Z,0.1nm,0.3s,baz=169,slow=15,SNR=7.1								

HEL **27** *12:28:35.8±0.4,59.14N×18.15E,ML1.8,ML2.4(UPP),*
ML2.0(NAO),Explosion
NAO **27** *12:28:37.6±3.3,59.33N×18.08E,ML2.0*
BER **27** *12:28:38.5±2.9,59.28N×18.06E,ML2.0(NAO),*
Suspected explosion
ISC 27 12:28:37.9±1.0,59.70N±0.08×18.07E±0.07,n11,σ1§66/24,
Sweden

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
HFS	**Hagfors**	**2.25**	**283**	*e*P		**Pn**	**Pn**	**12 29 17.6**	**+0.7**
HFS				*e*SG		**Sg**	**Sg**	**12 29 51.5**	**-1.1**
HFS	**Hagfors**	**2.25**	**283**	Pn		**Pn**	**Pn**	**12 29 17.6**	**+0.7**
	baz=110,slow=14								
HFS				Lg				12 29 51.5	
	baz=113,slow=28								
MEF	**Metsahovi**	**3.23**	**78**	*e*P		**Pn**	**Pn**	**12 29 27.8**	**-3.1**
MEF				*e*S		**Sn**	**Sn**	**12 30 09.3**	**-1.3**
PVF	**Pernaja**	**3.99**	**74**	*e*SG		**Sg**	**Sg**	**12 30 43.2**	**-7.7**
PVF				MSG				12 30 45.3	
	comp=Z,1.7nm,0.3s								
VAF	**Ylistaro**	**4.02**	**31**	*e*P		**Pn**	**Pn**	**12 29 45.0**	**+2.8**
VAF				*e*S		**Sn**	**Sn**	**12 30 37.1**	**+6.5**
VAF				*e*SG		**Sg**	**Sg**	**12 30 53.2**	**+1.4**
KEF	**Keuruu**	**4.14**	**50**	*e*P		**Pn**	**Pn**	**12 29 45.6**	**+1.8**
KEF				*e*S		**Sn**	**Sn**	**12 30 35.8**	**+2.1**
KEF				*e*SG		**Sg**	**Sg**	**12 30 53.2**	**-2.6**
FIA0	**FINESS Array S**	**4.32**	**63**	*e*P		**Pn**	**Pn**	**12 29 46.0**	**-0.4**
FIA0				*e*S		**Sn**	**Sn**	**12 30 37.8**	**-0.5**
FIA0				*e*SG		**Sg**	**Sg**	**12 30 55.2**	**-6.7**
FIA0				MSG				12 30 59.2	
	comp=Z,1.4nm,0.3s								
FIA0	**FINESS Array S**	**4.32**	**63**	Pn		**Pn**	**Pn**	**12 29 46.2**	**-0.3**
	baz=246,slow=12								
FIA0				Sn		**Sn**	**Sn**	**12 30 39.4**	**+1.1**
	baz=236,slow=22								
FIA0				Lg				12 30 57.2	
	baz=244,slow=28								
SUF	**Sumiainen**	**4.95**	**49**	*e*P		**Pn**	**Pn**	**12 29 56.3**	**+1.1**
SUF				*e*S		**Sn**	**Sn**	**12 30 55.9**	**+1.9**
SUF				*e*SG		**Sg**	**Sg**	**12 31 20.0**	**-2.6**
SUF				MSG				12 31 25.1	
	comp=Z,0.5nm,0.2s								
ARA0	**ARCESS Array S**	**10.37**	**15**	Pn		**P**	**P**	**12 31 10.6**	**-0.2**
	baz=192,slow=14								
ARA0				Sn		**S**	**S**	**12 33 07.0**	**-2.0**
	baz=191,slow=28								
ARA0	**ARCESS Array S**	**10.37**	**15**	*e*P		**P**	**P**	**12 31 10.6**	**-0.2**
ARA0				*e*S		**S**	**S**	**12 33 07.0**	**-2.0**

HEL **27** *12:41:20.0±0.3,59.11N×18.19E,ML1.8,ML2.1(NAO),*
Explosion
NAO **27** *12:41:21.5±3.3,59.37N×18.11E,ML2.1*
BER **27** *12:41:21.1±3.8,59.21N×18.10E,ML2.1(NAO),*
Suspected explosion
IDC **27** *12:41:21.2±2.2,59.25N×18.08E,mb1 2.8/4,*
mb1mx2.8/22,ML2.3/4,Error ellipse: s-maj=26.6km
s-min=6.7km az=179.0

ISC 27 12:41:21.5±0.9,59.63N±0.07×18.16E±0.07,n15,σ1§63/35,
Sweden

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
HFS	**Hagfors**	**2.31**	**285**	*e*P		**Pn**	**Pn**	**12 42 01.6**	**+0.3**
HFS				*e*SB		**Sb**	**Sb**	**12 42 35.2**	**+2.3**
HFS	**Hagfors**	**2.31**	**285**	Pn		**Pn**	**Pn**	**12 42 01.6**	**+0.2**
	0.1nm,0.3s,baz=105,slow=18,SNR=2.9								
HFS				Sn		**Sn**	**Sn**	**12 42 29.5**	**-1.4**
	0.1nm,0.3s,baz=105,slow=17,SNR=5.2								
HFS				Lg				12 42 35.0	
	0.5nm,0.3s,baz=111,slow=28,SNR=13								
HFS	**Hagfors**	**2.31**	**285**	Pn		**Pn**	**Pn**	**12 42 01.6**	**+0.3**
	baz=110,slow=16								
HFS				Lg				12 42 35.2	
	baz=104,slow=37								
MEF	**Metsahovi**	**3.20**	**77**	*e*P		**Pn**	**Pn**	**12 42 14.5**	**+0.4**
MEF				*e*S		**Sn**	**Sn**	**12 42 51.9**	**-1.5**
MEF				*e*SG		**Sg**	**Sg**	**12 43 03.1**	**-4.8**
NOA	**NORSAR Array B**	**3.73**	**295**	Pn		**Pn**	**Pn**	**12 42 21.1**	**-0.6**
	0.1nm,0.3s,baz=144,slow=8.0,SNR=1.5								
NOA				Pg		**Pg**	**Pg**	**12 42 29.9**	**-6.1**
	0.2nm,0.3s,baz=315,slow=11,SNR=1.4								
NOA				Sn		**Sn**	**Sn**	**12 43 01.3**	**-5.6**
	0.1nm,0.3s,baz=240,slow=16,SNR=1.0								
NOA				Lg				12 43 24.3	
	0.5nm,0.3s,baz=139,slow=9.9,SNR=3.3								
PVF	**Pernaja**	**3.97**	**73**	*e*SG		**Sg**	**Sg**	**12 43 26.1**	**-7.5**
PVF				MSG				12 43 29.3	
	comp=Z,1.2nm,0.2s								
VAF	**Ylistaro**	**4.06**	**30**	*e*P		**Pn**	**Pn**	**12 42 30.7**	**+4.4**
VAF				*e*S		**Sn**	**Sn**	**12 43 21.0**	**+5.8**
VAF				*e*SG		**Sg**	**Sg**	**12 43 39.0**	**+2.3**
KEF	**Keuruu**	**4.15**	**49**	*e*P		**Pn**	**Pn**	**12 42 29.6**	**+1.9**
KEF				*e*S		**Sn**	**Sn**	**12 43 19.4**	**+1.7**
KEF				*e*SG		**Sg**	**Sg**	**12 43 37.6**	**-2.2**
FIA0	**FINESS Array S**	**4.32**	**62**	Pn		**Pn**	**Pn**	**12 42 29.7**	**-0.2**
	baz=246,slow=12								
FIA0				Pg		**Pg**	**Pg**	**12 42 40.9**	**-6.9**
	baz=247,slow=16								
FIA0				Sn		**Sn**	**Sn**	**12 43 23.1**	**+1.3**
	baz=237,slow=22								
FIA0				Lg				12 43 40.8	
	baz=235,slow=22								
FIA0	**FINESS Array S**	**4.32**	**62**	*e*P		**Pn**	**Pn**	**12 42 30.7**	**+0.7**
FIA0				*e*S		**Sn**	**Sn**	**12 43 21.1**	**-0.7**
FIA0				*e*SG		**Sg**	**Sg**	**12 43 40.7**	**-4.6**
FIA0				MSG				12 43 45.4	
	comp=Z,1.1nm,0.2s								
FINES	**FINESS Array B**	**4.32**	**62**	Pn		**Pn**	**Pn**	**12 42 29.8**	**-0.2**
	comp=Z,0.1nm,0.3s,baz=252,slow=13,SNR=2.1								
FINES				Pg		**Pg**	**Pg**	**12 42 40.1**	**-7.6**
	comp=Z,0.1nm,0.3s,baz=242,slow=14,SNR=1.9								
FINES				Sn		**Sn**	**Sn**	**12 43 25.1**	**+3.3**
	comp=Z,0.4nm,0.3s,baz=241,slow=22,SNR=2.8								
FINES				Lg				12 43 40.7	
	comp=Z,0.5nm,0.3s,baz=244,slow=25,SNR=5.0								
SUF	**Sumiainen**	**4.96**	**48**	*e*P		**Pn**	**Pn**	**12 42 40.1**	**+1.0**
SUF				*e*S		**Sn**	**Sn**	**12 43 39.8**	**+1.7**
SUF				*e*SG		**Sg**	**Sg**	**12 44 03.3**	**-3.3**
ARA0	**ARCESS Array S**	**10.43**	**14**	Pn		**P**	**P**	**12 43 52.3**	**-2.9**
	baz=194,slow=16								
ARA0				Sn		**S**	**S**	**12 45 52.4**	**-1.6**
	baz=191,slow=28								
ARA0	**ARCESS Array S**	**10.43**	**14**	*e*P		**P**	**P**	**12 43 52.3**	**-2.9**
ARA0				*e*S		**S**	**S**	**12 45 52.4**	**-1.6**
ARCES	**ARCESS Array B**	**10.43**	**14**	Pn		**P**	**P**	**12 43 53.6**	**-1.6**
	comp=Z,0.1nm,0.3s,baz=194,slow=14,SNR=2.6								
ARCES				Lg				12 47 02.0	
	comp=Z,0.1nm,0.3s,baz=198,slow=35,SNR=1.1								

IDC **27** *12:51:58.3±1.8,3.37S×150.96E,mb3.5/5,mb1 3.7/6,*
mb1mx3.6/17,ML2.1/1,MS3.2/1,Ms1 3.2/1,ms1mx3.0/13,
Error ellipse: s-maj=74.5km s-min=23.2km az=115.0
ISC 27 12:52:02.0±1.8,3.5S±0.2×150.9E±0.5,h33km,n7,σ1§52/6,
mb3.4/5,MS3.1/1,New Ireland region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**6.96**	**212**	Pn		**Pn**	**Pn**	**12 53 42.7**	**-1.7**
	0.2

	9.1nm,0.6s						
PRU	**Pruhonice**	**2.78**	**266**	*e*Pg	Pg	13 25 20.0	-4.7
PRU				*e*Sg	Sg	13 25 57.5	-4.2
KHC	**Kasperske Hory**	**3.59**	**254**	*e*PN	Pn	13 25 26.0	-1.3
KHC				*e*PG	Pg	13 25 34.9	-6.1
KHC				*e*SG	Sg	13 26 21.7	-7.2
CLL	**Collm**	**3.85**	**288**	*e*SG	Sg	13 26 33.0	-4.6
NKC	**Novy Kostel**	**4.10**	**272**	*e*SG	Sg	13 26 39.9	-6.0

NEIC ***27*** *13:31:46.6±1.3,50.19N×18.98E,h5km,MG2.1(WAR), Error ellipse: s-maj=17.4km s-min=8.3km az=1.0*
WAR ***27*** *13:31:47.5,50.23N×19.03E,h1km,Location given by Central Institute of Mining, origin time based upon OJC*
PRU ***27*** *13:31:47.3,50.29N×18.95E*
ISC 27 13:31:46.1±0.7,**50.24N**±0.04×**18.92E**±0.04,**n11**,σ1§**18**/20,
Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OJC	**Ojcow**	**0.57**	**92**	*e*Pg	**Pg**	**13 31 57.4**	**0.0**
OJC				*e*Sg	**Sg**	**13 32 04.5**	**-0.4**
OKC	**Ostrava-Krasne**	**0.64**	**231**	*e*PG	**Pg**	**13 32 00.6**	**+1.8**
OKC				*e*SG	**Sg**	**13 32 08.6**	**+1.2**
MORC	**Moravsky Berou**	**1.00**	**243**	*e*Pg	**Pg**	**13 32 06.9**	**+0.8**
MORC				*e*Sg	**Sg**	**13 32 20.1**	**+0.7**
NIE	**Niedzica**	**1.22**	**132**	*e*Pg	**Pg**	**13 32 09.6**	**-0.9**
NIE				*e*Sg	**Sg**	**13 32 26.3**	**-0.4**
NIE	**Niedzica**	**1.22**	**132**	*e*PG	**Pg**	**13 32 10.0**	**-0.5**
NIE				*e*SG	**Sg**	**13 32 26.0**	**-0.7**
DPC	**Dobruska-Polom**	**1.67**	**275**	*e*PG	**Pg**	**13 32 17.9**	**-1.5**
DPC				*e*SG	**Sg**	**13 32 40.9**	**-0.7**
VYHS	**Vyhne**	**1.75**	**182**	*e*PB	**Pb**	**13 32 18.1**	**-0.7**
VYHS				*e*SG	**Sg**	**13 32 42.4**	**-1.9**
KSP	**Ksiaz**	**1.78**	**291**	*e*PG	**Pg**	**13 32 22.0**	**+0.4**
KSP				*e*SG	**Sg**	**13 32 46.0**	**+0.6**
CRVS	**Cervenica-Dubn**	**2.13**	**128**	*e*PB	**Pb**	**13 32 25.9**	**+0.6**
CRVS				*e*SB	**Sb**	**13 32 54.6**	**+2.3**
PRU	**Pruhonice** 5.7nm,0.5s	**2.83**	**267**	*e*SG	**Sg**	**13 33 17.4**	**-2.8**
KHC	**Kasperske Hory**	**3.64**	**254**	*e*SG	**Sg**	**13 33 43.1**	**-4.2**

IDC ***27*** *13:33:59.2±0.6,52.83S×18.55E,mb4.4/14,mb1 4.5/14, mb1mx4.4/17,MS4.4/16,Ms1 4.5/16,ms1mx4.4/20,Error ellipse: s-maj=23.4km s-min=17.5km az=63.0*
NEIC ***27*** *13:34:01.0±0.3,52.76S×18.41E,h10km,mb4.8/10, MS4.8/1,Error ellipse: s-maj=15.4km s-min=10.0km az=81.0*
BJI ***27*** *13:34:01.0,52.80S×18.40E,h10km*
SYO ***27*** *13:34:01.0,52.76S×18.41E,h10km,MB4.8,MS4.8*
HRVD ***27*** *13:34:01.0±0.2,52.82S×18.98E,h12km,MW5.2/68, Centroid moment Tensor Solution. LP body waves: s44,c66;Mantle waves: s68,c125; Half duration: 1§0 Moment tensor: Scale 10¹⁶Nm; Mrr=7.19±.16; Mθθ6.15±.17; Mϕϕ1.03±.17; Mrθ-0.45±.51; Mrϕ-2.28±.15; Mθϕ-0.54±.54; Best double couple: M₀7.14×10¹⁶ NP1: ϕs296°,δ44°,λ-83°. NP2:ϕs106°,δ46°,λ-97°. Principal axes: T 7.02, Plg1°, Azm201°; N .22, Plg5°, Azm111°; P -7.25, Plg85°, Azm301°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
ISC 27 13:33:59.8±0.4,**52.77S**±0.07×**18.4E**±0.2,**h10km**,**n72,**
σ1§**32**/41,**mb4.5**/18,**MS4.5**/17,**13C-2D,Southwest of Africa**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MAIT	**Maitri**	**18.32**	**187**	*e*P	**P**	**13 38 17.1**	**+1.7**
SYO	**Syowa Base**	**19.09**	**157**	⇑P	**P**	**13 38 23.7**	**-1.0**
SYO	**Syowa Base**	**19.09**	**157**	⇑pP		13 38 27.1	
SYO	**Syowa Base**	**19.09**	**157**	⇑pP		13 38 34.6	
SYO	**Syowa Base**	**19.09**	**157**	⇑*e*P	**P**	**13 38 23.7**	**-1.0**
SYO				epP		13 38 27.1	
SYO				epP		13 38 34.6	
SUR	**Sutherland** 24nm,0.7s,baz=182,slow=11,SNR=6.4	**20.45**	**6**	P	**P**	**13 38 39.4**	**-0.6**
SUR				LR	LR	13 44 40.7	
	comp=Z,2μm,20.2s,MS4.5,baz=19,slow=31						
SUR	**Sutherland** 40nm,0.8s	**20.45**	**6**	*e*P	**P**	**13 38 40.6**	**+0.6**
SNAA	**Sanae**	**21.15**	**199**	*e*P	**P**	**13 38 46.2**	**-0.7**
VNA2	**Neumayer--Watz**	**21.57**	**203**		**P**	**13 38 45.4**	**-5.8**
VNA2	**Neumayer--Watz**	**21.57**	**203**	⇑*i*	**P**	**13 38 56.8**	**+5.6**
VNA2	**Neumayer--Watz**	**21.57**	**203**	⇓*i*	**P**	**13 38 58.5**	**+7.3**
VNA2	**Neumayer--Watz**	**21.57**	**203**	⇑*i*	**P**	**13 39 01.3**	**+10**
VNA1	**Neumayer--Stat**	**21.59**	**204**	⇑*i*	**P**	**13 38 45.8**	**-5.6**
VNA1	**Neumayer--Stat**	**21.59**	**204**	⇑*i*	**P**	**13 38 56.1**	**+4.7**
VNA1	**Neumayer--Stat**	**21.59**	**204**	⇑*i*	**P**	**13 38 58.5**	**+7.1**
VNA1	**Neumayer--Stat**	**21.59**	**204**	⇓*i*	**P**	**13 39 00.4**	**+9.0**
VNA3	**Neumayer Olymp**	**22.34**	**204**	⇑*i*	**P**	**13 38 52.7**	**-6.1**
VNA3	**Neumayer Olymp**	**22.34**	**204**		**P**	**13 39 03.6**	**+4.8**
VNA3	**Neumayer Olymp**	**22.34**	**204**	⇑*i*	**P**	**13 39 04.8**	**+6.0**
VNA3	**Neumayer Olymp**	**22.34**	**204**	⇑*i*	**P**	**13 39 08.1**	**+9.3**
MAW	**Mawson** 6.3nm,0.9s,mb4.1,baz=287,slow=13,SNR=8.5	**25.88**	**142**	P	**P**	**13 39 30.8**	**-2.0**
MAW				LR	LR	13 47 39.5	
	comp=Z,725nm,20.7s,MS4.2,baz=292,slow=32						
MAW	**Mawson** 44nm,1.4s,mb4.8	**25.88**	**142**	*e*P	**P**	**13 39 32.5**	**-0.3**
TSUM	**Tsumeb** 2.9nm,0.9s,mb4.2,baz=168,slow=6.3,SNR=4.8	**33.51**	**359**	P	**P**	**13 40 39.7**	**-1.7**
QSPA	**South Pole Qui** 25nm,0.8s,mb5.1	**37.46**	**180**	*e*P	**P**	**13 41 15.3**	**+0.8**
QSPA				LR	LR		
	comp=Z,1μm,19.7s,MS4.8						
VNDA	**Vanda**	**48.01**	**170**	P	**P**	**13 42 40.0**	**-0.1**
	comp=Z,7.3nm,1.1s,mb4.6,baz=229,slow=8.9,SNR=5.7						
VNDA				LR	LR	14 01 53.5	
	comp=Z,950nm,19.1s,MS4.8,baz=201,slow=35						
VNDA	**Vanda**	**48.01**	**170**	*e*P	**P**	**13 42 40.3**	**+0.2**
	comp=Z,7.6nm,1.2s,mb4.6						
SBA	**Scott Base**	**48.19**	**171**	*e*P	**P**	**13 42 42.7**	**+1.2**
	comp=Z,15nm,1.1s,mb4.9						
KMBO	**Kilima Mbogo**	**53.81**	**24**	LR	LR	14 03 58.3	
	comp=Z,714nm,21.8s,MS4.7,baz=278,slow=33						
TRQA	**Tornquist**	**55.41**	**251**	*e*P	**P**	**13 43 35.6**	**-0.6**
	comp=Z,0.9nm,0.9s,mb3.8						
CPUP	**Villa Florida**	**61.00**	**264**	P	**P**	**13 44 13.9**	**-1.6**
	comp=Z,5.6nm,0.9s,mb4.7,baz=139,slow=8.1,SNR=5.9						
CPUP				LR	LR	14 05 03.3	
	comp=Z,277nm,20.8s,MS4.4,baz=166,slow=30						
CPUP	**Villa Florida**	**61.00**	**264**	*e*P	**P**	**13 44 14.6**	**-0.9**
	comp=Z,6.4nm,1.1s,mb4.7						
DBIC	**Dimbokro**	**62.42**	**334**	P	**P**	**13 44 22.9**	**-2.4**
	comp=Z,9.4nm,1.0s,mb4.9,baz=148,slow=11,SNR=4.0						
DBIC				LR	LR	14 04 50.8	
	comp=Z,390nm,21.4s,MS4.5,baz=136,slow=30						
BDFB	**Brasilia**	**63.44**	**279**	P	**P**	**13 44 32.4**	**+0.4**
	comp=Z,6.0nm,0.9s,mb4.7,baz=99,slow=13,SNR=2.1						
LVC	**Limon Verde**	**70.73**	**258**	LR	LR	14 11 20.6	
	comp=Z,246nm,20.6s,MS4.5,baz=174,slow=32						
LVC	**Limon Verde**	**70.73**	**258**	P	**P**	**13 45 15.3**	**-2.6**
	comp=Z,13nm,1.2s,mb4.7						
LPAZ	**La Paz**	**75.12**	**263**	P	**P**	**13 45 44.6**	**+0.8**
	comp=Z,2.5nm,0.8s,mb4.2,baz=115,slow=7.6,SNR=8.8						
LPAZ				LR	LR	14 15 56.8	
	comp=Z,209nm,18.8s,MS4.5,baz=284,slow=34						
LPAZ	**La Paz**	**75.12**	**263**	*e*P	**P**	**13 45 45.1**	**+1.4**
	comp=Z,3.4nm,1.1s,mb4.2						
STKA	**Stephens Creek**	**82.28**	**134**	P	**P**	**13 46 21.2**	**-1.3**
	comp=Z,4.3nm,0.8s,mb4.4,baz=167,slow=4.3,SNR=5.6						
STKA				LR	LR	14 18 11.4	
	comp=Z,125nm,18.5s,MS4.3,baz=207,slow=32						
STKA	**Stephens Creek**	**82.28**	**134**	P	**P**	**13 46 21.2**	**-1.2**
STKA				LR	LR	14 18 11.4	
ASAR	**Alice Springs**	**85.58**	**124**	P	**P**	**13 46 38.5**	**-0.8**
	comp=Z,2.8nm,1.0s,mb4.4,baz=204,slow=2.8,SNR=12						
ASAR				LR	LR	14 15 27.9	
	comp=Z,109nm,21.8s,MS4.2,baz=92,slow=29						
FITZ	**Fitzroy Crossi**	**85.76**	**114**	LR	LR	14 19 20.6	
	comp=Z,56nm,18.6s,MS4.0,baz=305,slow=32						
ASF	**Jabal al Asfar**	**86.11**	**16**	P	**P**	**13 46 43.2**	**+1.4**
	comp=Z,1.5nm,0.3s,mb4.6,baz=337,slow=2.9,SNR=5.0						
URZ	**Urewera**	**87.47**	**163**	LR	LR	14 23 18.8	
	comp=Z,456nm,19.2s,MS4.9,baz=202,slow=34						
THR	**Tehran**	**92.80**	**26**	P	**P**	**13 47 14.9**	**+1.7**
	comp=Z,0.2nm,0.3s,mb4.0,baz=187,slow=4.8,SNR=4.3						
THR				LR	LR	14 26 52.4	
	comp=Z,261nm,21.6s,MS4.7,baz=161,slow=34						
BRTR	**Keskin Array B**	**93.06**	**12**	P	**P**	**13 47 15.1**	**+0.7**
	comp=Z,0.3nm,0.4s,mb4.1,baz=180,slow=1.4,SNR=2.8						
BRTR				LR	LR	14 34 26.9	
	comp=Z,257nm,18.6s,MS4.7,baz=200,slow=39						
ESDC	**Sonseca Array**	**94.09**	**343**	P	**P**	**13 47 20.8**	**+1.8**
	comp=Z,0.3nm,0.3s,mb4.2,baz=165,slow=4.0,SNR=4.5						
OTAV	**Otavalo**	**94.34**	**265**	P	**P**	**13 47 24.6**	**+3.8**
	comp=Z,2.2nm,0.8s,mb4.6						
ROSC	**El Rosal**	**95.48**	**271**	LR	LR	14 29 00.7	
	comp=Z,222nm,18.2s,MS4.7,baz=146,slow=34						
CMAR	**Chiang Mai Arr**	**98.93**	**71**	LR	LR	14 22 22.7	
	comp=Z,149nm,19.7s,MS4.5,baz=180,slow=29						
WMQ	**Urumqi**	**113.11**	**47**	*e*PKP	PKPdf	13 52 39.0	-0.8
MKAR	**Makanchi Array**	**113.17**	**42**	PKiKP		13 52 36.9	
	comp=Z,0.8nm,0.9s,baz=214,slow=5.2,SNR=4.0						
NJ2	**Nanjing**	**120.87**	**77**	*e*PKP	PKPdf	13 52 50.0	-5.2
SSE	**Sheshan**	**121.57**	**79**	⇑PKP	PKPdf	13 52 57.0	+0.5
ARCES	**ARCESS Array B**	**122.10**	**3**	PKP	PKPdf	13 52 53.4	-3.2
	comp=Z,1.5nm,0.9s,baz=180,slow=0.9,SNR=5.1						
SONM	**Songino Array**	**124.93**	**55**	PKP	PKPdf	13 52 59.2	-3.3
	comp=Z,1.8nm,1.0s,baz=225,slow=1.7,SNR=7.6						
MSU	**Maryvale**	**143.37**	**267**	*e*PKPdf	PKPdf	13 53 34.7	-2.1
PDAR	**Pinedale Array**	**144.34**	**275**	PKP	PKPdf	13 53 34.2	-4.0
	comp=Z,4.8nm,0.8s,baz=120,slow=4.0,SNR=37						
HWUT	**Hardware Ranch**	**144.89**	**272**	*e*PKPdf	PKPdf	13 53 36.9	-2.4
TIXI	**Tiksi**	**145.15**	**31**	*e*PKPdf	PKPdf	13 53 35.3	-3.6
TPH	**Tonopah**	**146.15**	**262**	*e*PKPbc	PKPbc	13 53 41.6	+2.0
MTUM	**Tungsten Hills**	**146.48**	**260**	*e*PKPdf	PKPdf	13 53 42.8	+0.6
QLMT	**Earthquake Lak**	**146.61**	**277**	*e*PKPdf	PKPdf	13 53 43.3	+1.1
MNV	**Mina**	**146.94**	**262**	*e*PKPdf	PKPdf	13 53 42.5	-0.4
NVAR	**Mina Array Bea**	**147.02**	**262**	PKPbc	PKPdf	13 53 44.1	+1.1
	comp=Z,6.9nm,1.0s,baz=131,slow=5.1,SNR=33						
MCMT	**McKenzie Canyo**	**147.46**	**276**	*e*PKPbc	PKPdf	13 53 44.3	+0.8
HLID	**Hailey**	**147.73**	**273**	*e*PKPbc	PKPdf	13 53 45.9	+1.9
HRY	**Holter Researc**	**147.81**	**280**	*e*PKPbc	PKPdf	13 53 45.5	+1.5
CHMT	**Chamberlain Mo**	**148.76**	**279**	*e*PKPbc	PKPdf	13 53 48.3	+2.7
MSO	**Missoula**	**149.13**	**278**	*e*PKPbc	PKPdf	13 53 49.2	+3.0
YKA	**Yellowknife Ar**	**153.61**	**310**	PKP	PKPdf	13 53 46.7	-5.5
	comp=Z,1.1nm,1.1s,baz=79,slow=1.4,SNR=9.5						
YKA				PKPbc	PKPdf	13 53 57.7	+5.4
	comp=Z,1.3nm,0.9s,baz=88,slow=2.4,SNR=15						
YKA	**Yellowknife Ar**	**153.61**	**310**	PKP	PKPdf	13 53 46.7	-5.5
YKA				PKPbc	PKPdf	13 53 57.7	+5.4
ILAR	**Eielson Array**	**165.80**	**334**	PKPab	PKPab	13 55 04.8	+0.2
	comp=Z,3.8nm,1.0s,baz=17,slow=3.2,SNR=27						

TAP ***27*** *13:39:13.7,22.91N×121.31E,h24km,ML3.9*
TAP Felt III J at Chenggung, I J at Taitung, I J at Pinlang, I J at Lidau, I J at Taimali, I J at Tauyuan.
JMA ***27*** *13:39:15.6±0.1,22.69N×121.56E,h71km,M3.4*
ISC 27 13:39:12.6±0.5,**22.85N**±0.02×**121.44E**±0.02,**h13**km,≤3km,
n62,σ1§**09**/105,**14C-4D,Taiwan region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHKT	**Chengkung**	**0.26**	**346**	⇓*i*P	**Pg**	**13 39 19.2**	**+1.0**
CHKT				S	**Sg**	**13 39 23.4**	**+1.3**
TTN	**Taitung**	**0.28**	**251**	⇓*i*P	**Pg**	**13 39 19.3**	**+0.6**
TWG	**Pinlang**	**0.34**	**266**	⇑*i*P	**Pg**	**13 39 19.4**	**-0.3**
TWG				S	**Sg**	**13 39 23.8**	**-0.7**
ECL	**Taimali**	**0.51**	**241**	⇑*i*P	**Pb**	**13 39 22.0**	**-0.8**
ELDTW	**Lidau**	**0.51**	**311**	⇑*i*P	**Pb**	**13 39 21.8**	**-1.1**
ELDTW				S	**Sb**	**13 39 27.5**	**-2.5**
TWF1	**Yuli**	**0.52**	**346**	⇓*i*P	**Pb**	**13 39 22.5**	**-0.4**
TWF1				S	**Sb**	**13 39 29.5**	**-0.6**
EHY	**Hungye**	**0.66**	**351**	*i* P	**Pb**	**13 39 24.8**	**-0.7**
EHY				S	**Sb**	**13 39 33.3**	**-1.0**
TAW	**Tawu**	**0.70**	**226**	*i* P	**Pb**	**13 39 25.3**	**-0.8**
STYT	**Tauyuan**	**0.70**	**297**	⇑*i*P	**Pb**	**13 39 24.9**	**-1.1**
STYT				S	**Sb**	**13 39 33.4**	**-2.0**
EAST	**Anshuo**	**0.71**	**230**	⇓*i*P	**Pb**	**13 39 25.5**	**-0.8**
YUS	**Yu-Shan**	**0.78**	**325**	⇑*i*P	**Pb**	**13 39 26.9**	**-0.6**
YUS				S	**Sb**	**13 39 36.1**	**-1.6**
LAY	**Lan-yu**	**0.81**	**172**	⇑*i*P	**Pb**	**13 39 28.1**	**+0.1**
LAY				S	**Sb**	**13 39 40.0**	**+1.4**
SGST	**Jiashian**	**0.82**	**287**	⇑*i*P	**Pb**	**13 39 27.6**	**-0.5**
SGST				S	**Sb**	**13 39 39.4**	**+0.5**
WTP	**Ta-pu**	**0.85**	**298**	⇑*i*P	**Pb**	**13 39 28.2**	**-0.6**
WTP				S	**Sb**	**13 39 39.9**	**+0.1**
ALS	**Alishan**	**0.88**	**319**	⇑*i*P	**Pb**	**13 39 28.8**	**-0.3**
ALS				S	**Sb**	**13 39 39.0**	**-1.6**
SGLT	**Jiouru**	**0.88**	**262**	*e*P	**Pb**	**13 39 29.3**	**+0.1**
SCZT	**Fangliau**	**0.89**	**238**	⇑P	**Pb**	**13 39 28.6**	**-0.7**
SCZT				S	**Sb**	**13 39 40.3**	**-0.5**
CHN1	**Nanshi**	**0.90**	**292**	⇑P	**Pb**	**13 39 29.2**	**-0.3**
CHN1				S	**Sb**	**13 39 41.8**	**+0.6**
CHN4	**Tsaushan**	**0.92**	**303**	⇑*i*P	**Pb**	**13 39 29.5**	**-0.4**
CHN4				S	**Sb**	**13 39 42.5**	**+0.7**
ESL	**Shilin**	**0.96**	**360**	*e*P	**Pb**	**13 39 29.2**	**-1.4**
ESL				S	**Sb**	**13 39 41.3**	**-1.6**
TWK	**Hsinying**	**0.97**	**296**	⇑*i*P	**Pb**	**13 39 30.2**	**-0.5**
TWK				S	**Sb**	**13 39 44.1**	**+1.1**
CHN5	**Tsauling**	**1.02**	**317**	⇑P	**Pb**	**13 39 31.4**	**-0.2**
CHN5				S	**Sb**	**13 39 46.3**	**+1.7**
HEN	**Hengchun**	**1.06**	**218**	*e*P	**Pb**	**13 39 32.3**	**+0.1**
TWK1	**Hengchun**	**1.07**	**213**	*e*P	**Pb**	**13 39 32.5**	**-0.9**
KAU	**Kaohsiung**	**1.08**	**255**	*e*P	**Pb**	**13 39 34.6**	**+2.1**
KAU				S	**Sb**	**13 39 50.7**	**+4.4**
TWP	**Hsiaoliuchiu**	**1.11**	**243**	*e*P	**Pb**	**13 39 35.5**	**+2.4**
TWP				S	**Sb**	**13 39 52.9**	**+5.6**
CHN2	**Minshiung**	**1.12**	**308**	*e*P	**Pb**	**13 39 33.8**	**+0.6**
CHN2				S	**Sb**	**13 39 49.0**	**+1.5**
TAI1	**Yung-k'ang**	**1.13**	**280**	*e*P	**Pb**	**13 39 34.4**	**+0.9**
CHY	**Chiayi**	**1.13**	**305**	*e*P	**Pb**	**13 39 33.4**	**-0.1**
CHY				S	**Sb**	**13 39 48.7**	**+0.7**
HWA	**Hwalien**	**1.14**	**8**	*e*P	**Pb**	**13 39 32.1**	**-1.4**
SMLT	**Sun Moon Lake**	**1.14**	**335**	*e*P	**Pb**	**13 39 33.4**	**-0.2**
SMLT				S	**Sb**	**13 39 49.3**	**+1.1**
WGK	**Gukeng**	**1.16**	**316**	*e*P	**Pb**	**13 39 34.3**	**+0.4**
WGK				S	**Sb**	**13 39 50.2**	**+1.6**
TYC	**Yuchr**	**1.18**	**333**	*e*P	**Pb**	**13 39 34.0**	**-0.2**
TYC				S	**Sb**	**13 39 50.5**	**+1.3**
SCLT	**Jiali**	**1.19**	**286**	*e*P	**Pb**	**13 39 34.5**	**0.0**
SCLT				S	**Sb**	**13 39 51.5**	**+1.9**
CHN8	**Yiju**	**1.23**	**294**	*e*P	**Pb**	**13 39 34.8**	**-0.4**
CHN8				S	**Sb**	**13 39 52.1**	**+1.3**
TWD	**Chiawan**	**1.24**	**7**	*e*P	**Pb**	**13 39 33.8**	**-1.5**
WNT	**Mingjian**	**1.24**	**326**	*e*P	**Pb**	**13 39 35.9**	**+0.6**
WNT				S	**Sb**	**13 39 52.6**	**+1.6**
WHF	**Hehuan Shan**	**1.30**	**353**	*e*P	**Pb**	**13 39 35.3**	**-1.1**
WHF				S	**Sb**	**13 39 51.6**	**-1.2**
WSF	**Szhu**	**1.37**	**305**	*e*P	**Pn**	**13 39 36.6**	**-0.7**
WSF				S	**Sb**	**13 39 54.4**	**-0.3**
TWT	**Tachien**	**1.42**	**350**	*e*P	**Pn**	**13 39 37.8**	**-0.3**
TWT				S	**Sb**	**13 39 54.9**	**-1.3**
WTCT	**Ta-ch'eng**	**1.47**	**314**	*e*P	**Pn**	**13 39 38.1**	**-0.7**
WTCT				S	**Sb**	**13 39 57.4**	**-0.2**
TCU	**Taichung**	**1.47**	**332**	*e*P	**Pn**	**13 39 39.7**	**+0.8**
TCU				S	**Sb**	**13 39 58.5**	**+0.8**
NNS	**Nan Shan**	**1.59**	**358**	*e*P	**Pn**	**13 39 39.7**	**-0.9**
ENA	**Nanau**	**1.60**	**10**	*e*P	**Pn**	**13 39 39.4**	**-1.3**
TWQ1	**Liyutan**	**1.61**	**338**	*e*P	**Pn**	**13 39 42.1**	**+1.1**
TWQ1				S	**Sn**	**13 40 03.8**	**+2.1**
NSY	**Sanyi**	**1.68**	**339**	*e*P	**Pn**	**13 39 43.2**	**+1.3**
NSY				S	**Sn**	**13 40 05.8**	**+2.5**
WDGT	**Dungji**	**1.69**	**284**	*e*P	**Pn**	**13 39 40.3**	**-1.6**
WDGT				S	**Sn**	**13 40 00.7**	**-2.8**
ENTT	**Nioudou**	**1.79**	**4**	*e*P	**Pn**	**13 39 42.4**	**-1.0**
TWC	**Suao**	**1.79**	**12**	*e*P	**Pn**	**13 39 43.8**	**+0.2**
NSTT	**Nanjuang**	**1.82**	**347**	*e*P	**Pn**	**13 39 45.5**	**+1.6**
NSK	**Sanguang**	**1.82**	**358**	*e*P	**Pn**	**13 39 43.9**	**0.0**
PNG	**Penghu**	**1.87**	**293**	*e*P	**Pn**	**13 39 43.0**	**-1.6**
PNG				S	**Sn**	**13 40 04.8**	**-3.4**
TWE	**Neicheng**	**1.88**	**6**	*e*P	**Pn**	**13 39 44.1**	**-0.6**
YOJ	**Yonaguni jima**	**2.16**	**42**	P	**Pn**	**13 39 50.8**	**+2.0**
YOJ				S	**Sn**	**13 40 17.3**	**+1.7**
TWB1	**Santiao Chiao**	**2.21**	**13**	*e*P	**Pn**	**13 39 50.4**	**+0.9**
NWF	**Wu-fen Shan**	**2.24**	**8**	*e*P	**Pn**	**13 39 49.7**	**-0.2**
HATJ	**Hateruma jima**	**2.49**	**61**	P	**Pn**	**13 39 54.4**	**+1.0**
HATJ				*e*S	**Sn**	**13 40 23.5**	**-0.4**
IRIF	**Iriomote-Funau**	**2.57**	**54**	P	**Pn**	**13 39 56.0**	**+1.3**
IRIF				*e*S	**Sn**	**13 40 26.8**	**+0.7**
JKRS	**Kuro-shima**	**2.74**	**59**	P	**Pn**	**13 39 58.0**	**+1.0**
JKRS				*e*S	**Sn**	**13 40 29.8**	**-0.4**
JIJ	**Ishigaki jima**	**2.91**	**58**	P	**Pn**	**13 40 00.3**	**+0.9**
JIJ				*e*S	**Sn**	**13 40 34.0**	**-0.5**
JTJ	**Tarama**	**3.48**	**59**	P	**Pn**	**13 40 08.3**	**+0.7**
JTJ				*e*S	**Sn**	**13 40 48.4**	**-0.7**
JOGS	**Gusukube**	**4.11**	**62**	P	**Pn**	**13 40 17.1**	**+0.7**
JOGS				*e*S	**Sn**	**13 41 03.4**	**-1.4**

IDC ***27*** *14:15:35.2±0.8,1.33N×127.05E,mb4.3/10,mb1 4.3/11, mb1mx4.1/19,ML4.3/1,Error ellipse: s-maj=51.8km s-min=12.1km az=70.0*
NEIC ***27*** *14:15:39.5±0.4,1.31N×127.12E,h30km,mb4.6/8,Error ellipse: s-maj=23.5km s-min=5.8km az=70.0*
ISC 27 14:15:37.9±0.6,**1.29N**±0.10×**127.0E**±0.2,**h33**km,**n26,**
σ0§**72**/27,**mb4.5**/14,**Halmahera**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAKA	**Kakadu** 9.2nm,0.5s	**14.88**	**159**	*e*P	**P**	**14 19 07.7**	**-0.2**
FITZ	**Fitzroy Crossi** 9.6nm,1.4s	**19.32**	**184**	*e*P	**P**	**14 20 02.5**	**-0.8**
FITZ	**Fitzroy Crossi** 0.7nm,0.3s,baz=2.9,slow=14,SNR=20	**19.32**	**184**	P	**P**	**14 20 02.6**	**-0.7**
WRAB	**Tennant Creek** 21nm,0.6s,mb4.8	**22.28**	**162**	*e*P	**P**	**14 20 34.2**	**+0.4**
WB2	**Warramunga Arr**	**22.29**	**162**	*e*P	**P**	**14 20 34.1**	**+0.2**
AS12	**Alice Springs** 5.4nm,0.3s,mb4.6	**25.69**	**165**	*e*P	**P**	**14 21 06.8**	**-0.2**
ASAR	**Alice Springs** 3.0nm,0.4s,mb4.2,baz=344,slow=10,SNR=75	**25.69**	**165**	P	**P**	**14 21 07.0**	**0.0**
ASAR				S	**S**	**14 25 41.1**	**+10**
	0.6nm,0.7s,baz=349,slow=18,SNR=5.9						
FORT	**Forrest** 53nm,0.6s,mb5.5	**31.91**	**178**	*e*P	**P**	**14 22 02.5**	**-0.3**
KLBR	**Kellerberrin** 6.8nm,0.5s,mb4.8	**33.87**	**194**	*e*P	**P**	**14 22 20.1**	**+0.3**
MUN	**Mundaring** 7.6nm,0.4s,mb5.0	**34.64**	**196**	*e*P	**P**	**14 22 22.9**	**-3.5**
NWAO	**Narrogin (SRO)** 5.1nm,0.7s,mb4.6,baz=31,slow=6.9,SNR=8.4	**35.27**	**194**	P	**P**	**14 22 31.9**	**+0.1**
NWAO	**Narrogin (SRO)** 11nm,1.1s,mb4.7	**35.27**	**194**	*e*P	**P**	**14 22 32.4**	**+0.6**
STKA	**Stephens Creek** 2.9nm,0.7s,mb4.3	**35.76**	**159**	*e*P	**P**	**14 22 36.1**	**+0.2**
STKA	**Stephens Creek** 4.5nm,0.8s,mb4.5,baz=339,slow=7.9,SNR=8.9	**35.76**	**159**	P	**P**	**14 22 36.1**	**+0.2**
SONM	**Songino Array** 0.7nm,0.5s,mb4.0,baz=145,slow=10.0,SNR=5.0	**49.70**	**342**	P	**P**	**14 24 29.0**	**+0.2**
RPZ	**Rata Peaks** 14nm,1.0s,mb5.0,baz=38,slow=22,SNR=3.0	**59.60**	**144**	P	**P**	**14 25 41.2**	**+0.1**
MKAR	**Makanchi Array** 1.6nm,0.4s,mb4.4,baz=121,slow=7.6,SNR=22	**59.73**	**326**	P	**P**	**14 25 41.3**	**-0.6**
ZAL	**Zalesovo**	**62.89**	**333**	P	**P**	**14 26 03.7**	**+0.5**
ZAL	**Zalesovo**	**62.89**	**333**	P	**P**	**14 26 03.7**	**+0.5**
KURK	**Kurchatov**	**63.96**	**328**	*e*P	**P**	**14 26 08.7**	**-1.4**
BVAR	**Borovoye Array** 0.4nm,0.4s,mb3.7,baz=141,slow=9.5,SNR=5.6	**69.53**	**327**	P	**P**	**14 26 45.5**	**+0.2**

LPAZ	**La Paz**	**49.25**	**108**	P	**P**	**15**	**14**	**06.3 +0.2**
	1.9nm,1.1s,mb4.0,baz=286,slow=7.4,SNR=4.4							
LPAZ	**La Paz**	**49.25**	**108**	P	**P**	**15**	**14**	**06.0 -0.1**
	2.2nm,1.3s,mb4.0							
LVC	**Limon Verde**	**49.82**	**116**	P	**P**	**15**	**14**	**10.8 +0.3**
	1.0nm,0.6s,mb4.1,baz=249,slow=17,SNR=3.9							
LVC				LR	LR	15	28	16.6
	comp=Z,49nm,18.3s,MS3.5,baz=249,slow=28							
LVC	**Limon Verde**	**49.82**	**116**	P	**P**	**15**	**14**	**10.8 +0.3**
LVC				LR	LR	15	28	16.6
ULM	**Lac du Bonnet**	**56.89**	**16**	P	**P**	**15**	**15**	**00.5 -2.0**
	5.2nm,0.8s,mb4.6,baz=196,slow=9.2,SNR=4.1							
YKA	**Yellowknife Ar**	**66.26**	**1**	P	**P**	**15**	**16**	**03.8 -1.5**
	1.4nm,0.6s,mb4.2,baz=180,slow=6.2,SNR=38							
SCHQ	**Schefferville**	**71.56**	**28**	P	**P**	**15**	**16**	**37.6 -0.7**
	3.5nm,1.1s,mb4.2,baz=201,slow=8.6,SNR=2.3							
ILAR	**Eielson Array**	**72.06**	**347**	P	**P**	**15**	**16**	**39.5 -1.6**
	1.0nm,0.9s,mb3.7,baz=169,slow=4.8,SNR=9.1							
INK	**Inuvik**	**73.03**	**354**	P	**P**	**15**	**16**	**45.3 -1.4**
	1.3nm,0.8s,mb3.9,baz=152,slow=6.2,SNR=3.8							
QSPA	**South Pole Qui**	**86.10**	**180**	*e*P	**P**	**15**	**17**	**59.2 +2.4**
	6.1nm,1.0s,mb4.8							
VNA3	**Neumayer Olymp**	**91.73**	**162**	⇑*i*	**P**	**15**	**18**	**22.5 -1.1**
VNA3	**Neumayer Olymp**	**91.73**	**162**	⇑*i*	**P**	**15**	**18**	**26.5 +2.9**
VNA1	**Neumayer--Stat**	**92.35**	**162**		**P**	**15**	**18**	**24.4 -2.1**
VNA1	**Neumayer--Stat**	**92.35**	**162**	⇑*i*	**P**	**15**	**18**	**29.3 +2.8**
VNA2	**Neumayer--Watz**	**92.53**	**162**	⇓*i*	**P**	**15**	**18**	**25.9 -1.4**
VNA2	**Neumayer--Watz**	**92.53**	**162**	⇓*i*	**P**	**15**	**18**	**29.9 +2.6**
BVAR	**Borovoye Array**	**130.72**	**354**	PKP	PKPdf	15	24	24.7 -5.0
	0.3nm,0.6s,baz=90,slow=1.4,SNR=3.7							
MKAR	**Makanchi Array**	**134.24**	**342**	PKP	PKPdf	15	24	32.1 -4.3
	0.6nm,0.6s,baz=51,slow=3.5,SNR=7.1							
CMAR	**Chiang Mai Arr**	**142.26**	**295**	PKP	PKPdf	15	24	48.8 -3.1
	0.7nm,0.8s,baz=34,slow=1.4,SNR=3.7							
THR	**Tehran**	**146.26**	**18**	PKPbc	PKPbc	15	24	58.5 +2.1
	2.3nm,0.9s,baz=352,slow=2.0,SNR=2.7							

IDC ***27*** *15:10:29.1±3.4,0.10S×123.25E,h186km±32km,mb3.2/6, mb1 3.4/7,mb1mx3.3/18,Error ellipse: s-maj=38.9km s-min=11.9km az=70.0*

NEIC ***27*** *15:10:30.5±3.3,0.14S×123.23E,h200km±35km,mb4.4/5, Error ellipse: s-maj=38.0km s-min=11.2km az=62.0*

ISC 27 15:10:25.9±2.7,0.1S±0.1×123.1E±0.2,h169km±27km,n14, σ0s96/15,mb3.9/9,1C-1D,Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
KAKA	**Kakadu**	**15.54**	**144**	*e*P		**P**	**15 13 58.3**	**+0.9**
	5.6nm,0.6s							
FITZ	**Fitzroy Crossi**	**18.06**	**172**	⇓*i*P		**P**	**15 14 26.4**	**-0.8**
	3.5nm,0.4s							
FITZ	**Fitzroy Crossi**	**18.06**	**172**	P		**P**	**15 14 26.5**	**-0.7**
	1.2nm,0.3s,baz=4.0,slow=9.4,SNR=35							
WRAB	**Tennant Creek**	**22.58**	**151**	*e*P		**P**	**15 15 13.4**	**+0.6**
	8.3nm,0.5s,mb4.4							
WB2	**Warramunga Arr**	**22.59**	**151**	⇑*i*P		**P**	**15 15 13.2**	**+0.3**
AS12	**Alice Springs**	**25.66**	**157**	*e*P		**P**	**15 15 42.4**	**+0.4**
	3.1nm,1.3s,mb3.8							
ASAR	**Alice Springs**	**25.66**	**157**	P		**P**	**15 15 41.0**	**-1.1**
	0.4nm,0.5s,mb3.3,baz=331,slow=8.7,SNR=14							
ASAR				S		**S**	**15 19 56.8**	**+1.1**
	0.2nm,0.4s,baz=338,slow=12,SNR=8.0							
CMAR	**Chiang Mai Arr**	**30.04**	**309**	P		**P**	**15 16 22.9**	**+1.2**
	0.4nm,0.6s,mb3.3,baz=132,slow=7.2,SNR=4.3							
FORT	**Forrest**	**30.87**	**172**	*e*P		**P**	**15 16 26.4**	**-2.3**
	12nm,0.6s,mb4.8							
STKA	**Stephens Creek**	**36.12**	**153**	P		**P**	**15 17 13.4**	**-0.1**
	2.1nm,0.8s,mb3.8,baz=354,slow=9.7,SNR=3.8							
ASAJ	**Asahikawa**	**47.32**	**19**	P		**P**	**15 18 44.1**	**-0.3**
	2.1nm,0.6s,mb3.9,baz=233,slow=10,SNR=2.8							
SONM	**Songino Array**	**49.91**	**345**	P		**P**	**15 19 03.3**	**-0.8**
	0.7nm,0.5s,mb3.5,baz=157,slow=9.4,SNR=3.9							
MKAR	**Makanchi Array**	**58.75**	**328**	P		**P**	**15 20 07.7**	**-0.7**
	0.2nm,0.3s,mb3.4,baz=124,slow=8.7,SNR=5.1							
MKAR				PcP		PcP	15 20 55.1	-0.9
	0.3nm,0.6s,baz=111,slow=5.1,SNR=3.2							
MALT	**Malatya**	**85.88**	**308**	*e*P		**P**	**15 22 49.3**	**+1.2**
	5.6nm,0.9s,mb4.3							

IDC ***27*** *15:10:54.8±7.3,17.34N×102.54W,mb3.5/4,mb1 4.0/5, mb1mx3.7/19,Error ellipse: s-maj=163.0km s-min=100.9km az=108.0*

NEIC ***27*** *15:11:07.2,18.11N×103.24W,h5km,MD4.3(MEX),After MEX.*

MEX ***27*** *15:11:07.3±1.7,18.14N×103.21W,h3km±18km,MD4.3*

ISC 27 15:11:04.6±1.4,18.11N±0.05×103.25W±0.05, h17km±11km,n19,σ1s15/29,mb3.5/4,Near coast of Michoacan

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
COLM	**Colima**	**1.14**	**339**	*i*P		**Pb**	**15 11 25.6**	**0.0**
COLM				*i* S		**Sb**	**15 11 39.5**	**-0.5**
CGX	**Ciudad Guzman**	**1.59**	**351**	*i*P		**Pn**	**15 11 32.7**	**+0.4**
CGX				*i* S		**Sn**	**15 11 53.2**	**+0.6**
ZIIG	**Zihuatanejo**	**1.78**	**106**	*i*P		**Pn**	**15 11 33.9**	**-1.1**
ZIIG				*i* S		**Sn**	**15 11 57.2**	**-0.1**
CJM	**Chamela**	**2.19**	**310**	*i*P		**Pn**	**15 11 42.9**	**+2.1**
CJM				*i* S		**Sn**	**15 12 07.8**	**0.0**
SFJM	**Santa Fe**	**2.38**	**5**	*i*P		**Pn**	**15 11 43.5**	**0.0**
SFJM				*i* S		**Sn**	**15 12 11.5**	**-1.0**
MOIG	**Morelia**	**2.50**	**51**	*i*P		**Pn**	**15 11 45.4**	**0.0**
MOIG				*i* S		**Sn**	**15 12 17.0**	**+1.2**
CAIG	**El Cayaco**	**3.04**	**110**	*i*P		**Pn**	**15 11 52.1**	**-0.8**
CAIG				*i* S		**Sn**	**15 12 28.6**	**-0.7**
ACX	**Acapulco**	**3.42**	**111**	*e*P		**Pn**	**15 11 54.0**	**-4.3**
YAIG	**Yautepec**	**4.04**	**79**	*e*P		**Pn**	**15 12 07.7**	**+0.4**
YAIG				*i* S		**Sn**	**15 12 56.0**	**+1.2**
PPM	**Popocatepetl**	**4.49**	**77**	*e*P		**Pn**	**15 12 10.0**	**-3.6**
PPM				*i* S		**Sn**	**15 12 52.9**	**-13**
ZAIG	**Zacatecas**	**4.68**	**8**	*i*P		**Pn**	**15 12 15.5**	**-0.8**
ZAIG				*i* S		**Sn**	**15 13 08.8**	**-2.1**
POHV	**Veracruz**	**5.75**	**79**	*e*P		**Pn**	**15 12 35.5**	**+4.2**
VHO	**Vista Hermosa**	**6.30**	**98**	*i* S		**Sn**	**15 13 55.0**	**+3.4**
OXX	**Oaxaca**	**6.31**	**98**	*e*P		**Pn**	**15 12 49.0**	**+10**
TXAR	**Lajitas Array**	**11.18**	**358**	Pn		**P**	**15 13 49.0**	**+2.1**
	baz=177,slow=15,SNR=2.0							
NVAR	**Mina Array Bea**	**24.14**	**330**	P		**P**	**15 16 21.6**	**+0.9**
	0.5nm,0.5s,mb3.2,baz=143,slow=12,SNR=4.9							
PDAR	**Pinedale Array**	**25.16**	**349**	P		**P**	**15 16 30.7**	**+0.2**
	0.4nm,0.7s,mb3.1,baz=156,slow=11,SNR=2.7							
INK	**Inuvik**	**53.69**	**347**	P		**P**	**15 20 23.4**	**-4.1**
	0.9nm,0.8s,mb3.8,baz=149,slow=5.9,SNR=2.5							
ILAR	**Eielson Array**	**54.96**	**339**	P		**P**	**15 20 34.9**	**-2.0**
	1.1nm,1.0s,mb3.8,baz=153,slow=5.7,SNR=8.0							

MOS ***27*** *15:11:36.8±0.9,14.06S×14.51W,h10km,mb4.8/17, MS5.1/17,Error ellipse: s-maj=24.4km s-min=10.0km az=62.7*

IDC ***27*** *15:11:36.2±0.5,14.10S×14.38W,mb4.5/23,mb1 4.6/23, mb1mx4.5/24,MS4.9/25,Ms1 4.9/25,ms1mx4.9/28,Error ellipse: s-maj=17.0km s-min=12.8km az=148.0*

NEIC ***27*** *15:11:37.5±0.2,14.20S×14.43W,h10km,mb4.9/55, MS5.1/22,Error ellipse: s-maj=7.6km s-min=4.7km az=115.0*

HRVD ***27*** *15:11:37.5±0.2,14.10S×14.33W,h12km,MW5.5/69, Centroid moment Tensor Solution. LP body waves: s68,c124;Mantle waves: s69,c139; Half duration: 1s Moment tensor: Scale 10¹⁷Nm; Mrr=0.07±.03; Mθθ=0.55±.03; Mφφ=0.48±.03; Mrθ=0.15±.07; Mrφ=-1.77±.03; Mθφ=0.37±.07; Best double couple: M₀1.89×10¹⁷ NP1: φs82°,δ79°,λ-174°. NP2:φs351°,δ84°,λ-11°. Principal axes: T 1.89, Plg3°, Azm37°; N 0, Plg78°, Azm141°; P -1.89, Plg12°, Azm307°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

SYO ***27*** *15:11:37.5,14.20S×14.43W,h10km,MB4.9,MS5.1*

BJI ***27*** *15:11:38.5,14.20S×14.40W,h10km,mB5.4,Ms5.3, Msz5.1*

ISC 27 15:11:35.9±0.2,14.12S±0.04×14.41W±0.06,h10km, (h19km±3.8km:pP-P),n231,σ0s98/199,mb4.8/78,MS5.0/55, 14C-6D,Southern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
CAUB	**Caruaru**	**21.99**	**283**	⇓*i*P		**P**	**15 16 33.0**	**+0.9**
CAUB				*i*			15 16 38.6	
CAUB				*i*			15 16 46.5	

LIC	**Lamto**	**22.25**	**25**	*e*P		**P**	**15 16 38.8**	**+4.0**
	190nm,1.1s,mb5.5							
LIC	**Lamto**	**22.25**	**25**	*e*P		**P**	**15 16 35.1**	**+0.3**
	152nm,1.1s,mb5.1							
LIC				*e*R				
	6μm,18.9s							
LIC	**Lamto**	**22.25**	**25**	*e*P		**P**	**15 16 35.1**	**+0.3**
	76nm,1.1s,mb5.0							
LIC				LR	LR			
	comp=Z,3μm,18.9s,MS4.7							
KIC	**Kosan Boka**	**22.50**	**26**	*e*P		**P**	**15 16 37.9**	**+0.7**
	comp=Z,404nm,1.3s,mb5.7							
TIC	**Toumodi**	**22.64**	**25**	*e*P		**P**	**15 16 39.6**	**+0.9**
	comp=Z,605nm,1.5s,mb5.8							
DBIC	**Dimbokro**	**22.73**	**25**	P		**P**	**15 16 39.4**	**-0.2**
	comp=Z,22nm,0.8s,mb4.6,baz=183,slow=10,SNR=12							
DBIC				LR		LR	15 23 22.0	
	comp=Z,4μm,19.5s,MS4.9,baz=181,slow=31							
DBIC	**Dimbokro**	**22.73**	**25**	*e*P		**P**	**15 16 39.9**	**+0.3**
TSUM	**Tsumeb**	**31.04**	**104**	P		**P**	**15 17 55.3**	**-1.1**
	comp=Z,1.8nm,0.8s,mb4.0,baz=249,slow=8.6,SNR=3.6							
TSUM				LR		LR	15 28 04.2	
	comp=Z,2μm,18.3s,MS4.8,baz=102,slow=32							
BDFB	**Brasilia**	**32.49**	**263**	P		**P**	**15 18 09.9**	**+0.7**
	comp=Z,8.1nm,0.5s,mb4.8,baz=85,slow=5.4,SNR=14							
BDFB				LR		LR	15 28 17.4	
	comp=Z,1μm,19.6s,MS4.7,baz=270,slow=31							
SUR	**Sutherland**	**36.89**	**126**	P		**P**	**15 18 46.5**	**-0.1**
	comp=Z,16nm,0.7s,mb4.9,baz=134,slow=3.8,SNR=12							
SUR				LR		LR	15 30 30.3	
	comp=Z,2μm,20.7s,MS5.0,baz=105,slow=31							
SUR	**Sutherland**	**36.89**	**126**	*e*P		**P**	**15 18 46.5**	**-0.1**
SUR				LR		LR		
	comp=Z,3μm,22.0s,MS5.0							
LBTB	**Lobatse**	**39.09**	**112**	*e*P		**P**	**15 19 04.5**	**-0.8**
	comp=Z,3.3nm,0.9s,mb4.1							
CPUP	**Villa Florida**	**41.88**	**246**	P		**P**	**15 19 27.2**	**-1.0**
	comp=Z,6.3nm,0.6s,mb4.5,baz=100,slow=7.6,SNR=12							
CPUP				LR		LR	15 34 47.9	
	comp=Z,2μm,18.2s,MS5.1,baz=111,slow=33							
CPUP	**Villa Florida**	**41.88**	**246**	*e*P		**P**	**15 19 27.3**	**-1.0**
	comp=Z,13nm,1.1s,mb4.5							
CPUP				LR		LR		
	comp=Z,1μm,20.0s,MS4.9							
TRQA	**Tornquist**	**48.27**	**231**	*e*P		**P**	**15 20 18.7**	**-0.6**
	comp=Z,14mm,1.8s,mb4.7							
EFI	**East Falkland**	**51.19**	**213**	*e*P		**P**	**15 20 40.9**	**-0.5**
LPAZ	**La Paz**	**51.77**	**260**	P		**P**	**15 20 46.6**	**+0.4**
	comp=Z,1.9nm,0.5s,mb4.3,baz=88,slow=8.7,SNR=12							
LPAZ				LR		LR	15 41 03.5	
	comp=Z,964nm,18.6s,MS4.9,baz=274,slow=34							
LPAZ	**La Paz**	**51.77**	**260**	*e*P		**P**	**15 20 45.9**	**-0.4**
	comp=Z,17nm,1.8s,mb4.7							
LPAZ				LR		LR		
	comp=Z,735nm,19.0s,MS4.7							
EGRO	**El Granado**	**51.79**	**7**	P		**P**	**15 20 47.1**	**+1.0**
LVC	**Limon Verde**	**52.17**	**252**	P		**P**	**15 20 48.8**	**-0.5**
	comp=Z,2.3nm,0.6s,mb4.3,baz=20,slow=2.1,SNR=5.8							
LVC	**Limon Verde**	**52.17**	**252**	*e*P		**P**	**15 20 47.3**	**-1.9**
	comp=Z,32nm,1.7s,mb5.0							
LVC				LR		LR		
	comp=Z,1μm,19.0s,MS4.9							
KMBO	**Kilima Mbogo**	**52.67**	**80**	P		**P**	**15 20 53.1**	**-0.1**
	comp=Z,2.0nm,0.7s,mb4.2,baz=198,slow=4.7,SNR=5.2							
KMBO				LR		LR	15 39 44.1	
	comp=Z,828nm,18.0s,MS4.8,baz=277,slow=32							
KMBO	**Kilima Mbogo**	**52.67**	**80**	*e*P		**P**	**15 20 53.4**	**+0.3**
	comp=Z,4.6nm,1.1s,mb4.3							
KMBO				LR		LR		
	comp=Z,925nm,22.0s,MS4.8							
EVO	**Evora**	**52.72**	**6**	*e*P		**P**	**15 20 52.8**	**-0.3**
	comp=Z,42nm,1.2s,mb5.0							
EVO				*e*R				
	comp=Z,1μm,17.5s							
MDZ	**Mendoza**	**52.72**	**239**	*e*P		**P**	**15 20 50.0**	**-3.2**
MDZ				*e*			15 21 03.0	
EQES	**Quesada**	**52.73**	**11**	P		**P**	**15 20 52.8**	**-0.5**
	comp=Z,0.4nm,0.1s,mb4.3							
EHUE	**Huescar**	**52.84**	**12**	P		**P**	**15 20 54.2**	**+0.2**
EBAD	**Badajoz**	**53.05**	**7**	P		**P**	**15 20 55.5**	**-0.1**
	comp=Z,14nm,0.8s,mb4.9							
EVIA	**Vianos**	**53.65**	**12**	P		**P**	**15 21 00.8**	**+0.7**
ETOB	**Tobarra**	**53.85**	**12**	P		**P**	**15 21 01.5**	**+0.1**
	comp=Z,15nm,0.7s,mb5.0							
ESDC	**Sonseca Array**	**54.40**	**10**	P		**P**	**15 21 05.3**	**-0.1**
	comp=Z,2.7nm,0.6s,mb4.3,baz=192,slow=7.4,SNR=14							
ESDC				LR		LR	15 42 48.0	
	comp=Z,1μm,20.2s,MS4.9,baz=180,slow=34							
ESDC	**Sonseca Array**	**54.40**	**10**	P		**P**	**15 21 04.7**	**-0.8**
	comp=Z,2.0nm,0.6s,mb4.2							
MTE	**Manteigas**	**54.61**	**6**	*e*P		**P**	**15 21 07.3**	**+0.2**
EIBI	**Ibiza**	**54.88**	**15**	P		**P**	**15 21 07.2**	**-1.9**
GUD	**Guadarrama**	**55.31**	**9**	P		**P**	**15 21 11.5**	**-0.7**
	comp=Z,4.0nm,0.6s,mb4.6							
EMOS	**Mosqueruela**	**55.73**	**13**	P		**P**	**15 21 13.9**	**-1.3**
	comp=Z,8.9nm,0.7s,mb4.9							
ELOB	**Lobios**	**56.01**	**6**	P		**P**	**15 21 17.1**	**-0.1**
	comp=Z,28nm,0.7s,mb5.4							
ECAL	**Calabor**	**56.23**	**7**	P		**P**	**15 21 18.5**	**-0.2**
	comp=Z,5.7nm,0.7s,mb4.7							
VNA1	**Neumayer--Stat**	**56.63**	**178**	⇓*i*		**P**	**15 21 23.3**	**+2.1**
VNA1	**Neumayer--Stat**	**56.63**	**178**	⇓*i*		**P**	**15 21 27.6**	**+6.4**
VNA1	**Neumayer--Stat**	**56.63**	**178**	⇑*i*		**P**	**15 21 29.3**	**+8.1**
ERUA	**La Rua**	**56.63**	**6**	P		**P**	**15 21 21.4**	**-0.3**
VNA2	**Neumayer--Watz**	**56.94**	**177**	⇑*i*		**P**	**15 21 26.0**	**+2.5**
VNA2	**Neumayer--Watz**	**56.94**	**177**	⇑*i*		**P**	**15 21 29.7**	**+6.2**
VNA2	**Neumayer--Watz**	**56.94**	**177**	⇑*i*		**P**	**15 21 31.3**	**+7.8**
STS	**Santiago**	**56.98**	**5**	P		**P**	**15 21 24.1**	**-0.1**
	comp=Z,21nm,0.9s,mb5.2							
EMAZ	**Mazaricos**	**57.01**	**5**	P		**P**	**15 21 24.4**	**0.0**
EPOB	**Poblet**	**57.02**	**14**	P		**P**	**15 21 22.9**	**-1.6**
	comp=Z,9.8nm,0.9s,mb4.8							
ESAC	**San Caprasio**	**57.03**	**12**	P		**P**	**15 21 23.2**	**-1.4**
	comp=Z,1.5nm,0.1s,mb5.0							
VNA3	**Neumayer Olymp**	**57.17**	**178**	⇓*i*		**P**	**15 21 27.5**	**+2.4**
VNA3	**Neumayer Olymp**	**57.17**	**178**	⇓*i*		**P**	**15 21 30.5**	**+5.4**
VNA3	**Neumayer Olymp**	**57.17**	**178**	⇓*i*		**P**	**15 21 32.1**	**+7.0**
EPON	**Pontenova**	**57.55**	**6**	P		**P**	**15 21 27.9**	**-0.2**
EGRA	**Graus**	**57.66**	**13**	P		**P**	**15 21 27.5**	**-1.4**
EMIR	**Miracle**	**57.66**	**14**	P		**P**	**15 21 27.3**	**-1.6**
EARI	**Arrondas**	**57.76**	**8**	P		**P**	**15 21 31.1**	**+1.5**
SNAA	**Sanae**	**57.95**	**176**	*e*P		**P**	**15 21 29.2**	**-1.3**
ELAN	**Lanestosa**	**57.95**	**9**	P		**P**	**15 21 31.4**	**+0.5**
VAE	**Valguarnera**	**58.04**	**27**	LR		LR	15 46 54.6	
	comp=Z,2μm,18.6s,MS5.2,baz=91,slow=36							
ETSF	**Etsaut**	**58.15**	**12**	*e*P		**P**	**15 21 32.1**	**-0.2**
	comp=Z,12nm,0.7s,mb4.7							
USHA	**Ushuaia**	**58.16**	**213**	P		**P**	**15 21 31.7**	**-0.6**
	comp=Z,9.5nm,0.8s,mb4.9,baz=74,slow=15,SNR=2.2							
USHA				LR		LR	15 41 49.2	
	comp=Z,2μm,19.6s,MS5.1,baz=211,slow=31							
EALK	**Alkurruntz**	**58.27**	**11**	P		**P**	**15 21 32.9**	**-0.3**
SALF	**Salau**	**58.39**	**13**	*e*P		**P**	**15 21 33.5**	**-0.5**
MELF	**Melles**	**58.40**	**13**	*e*P		**P**	**15 21 35.4**	**+1.3**
LABF	**Labassere**	**58.42**	**12**	*e*P		**P**	**15 21 34.5**	**+0.3**
EPF	**Esparros**	**58.46**	**13**	*e*P		**P**	**15 21 34.2**	**-0.3**
MLS	**Moulis**	**58.55**	**13**	*e*P		**P**	**15 21 33.7**	**-1.5**
MAIT	**Maitri**	**58.85**	**170**	*e*P		**P**	**15 21 36.4**	**-0.5**
MTLF	**Montolieu**	**59.17**	**14**	*e*P		**P**	**15 21 38.2**	**-1.3**
	comp=Z,14nm,1.0s,mb4.7							
LASF	**Ste Croix**	**60.27**	**15**	*e*P		**P**	**15 21 46.3**	**-0.7**
	comp=Z,9.0nm,0.9s,mb4.5							
SDV	**Santo Domingo**	**60.28**	**289**	P		**P**	**15 21 48.6**	**+1.2**
	comp=Z,6.7nm,0.7s,mb4.8,baz=117,slow=8.0,SNR=6.5							
LMR	**La Mourre**	**60.30**	**17**	*e*P		**P**	**15 21 46.3**	**-0.9**
PGF	**Pioggiola**	**60.36**	**20**	*e*P		**P**	**15 21 46.6**	**-1.0**
LFF	**La Frestale**	**60.37**	**12**	*e*P		**P**	**15 21 47.1**	**-0.6**
	comp=Z,19nm,0.7s,mb4.9							
TIP	**Timpagrande**	**60.48**	**28**	*e*P		**P**	**15 21 46.9**	**-1.6**
FRF	**La Foret Royal**	**60.55**	**17**	*e*P		**P**	**15 21 48.1**	**-0.8**
	comp=Z,11nm,0.9s,mb4.7							
SMRF	**Simiane la Rot**	**60.63**	**16**	*e*P		**P**	**15 21 49.0**	**-0.4**
CAF	**Calviac**	**60.64**	**13**	*e*P		**P**	**15 21 48.6**	**-0.9**
	comp=Z,9.0nm,0.8s,mb4.7							
RJF	**Les Rejaudoux**	**60.88**	**13**	*e*P		**P**	**15 21 50.3**	**-0.8**
	comp=Z,29nm,1.0s,mb5.1							
RJF				*e*R				
	comp=Z,2μm,17.5s							
SBF	**Sospel**	**61.06**	**18**	*e*P		**P**	**15 21 51.6**	**-0.7**
AUTN	**L'Aution**	**61.17**	**18**	*e*P		**P**	**15 21 58.5**	**+5.4**
LBL	**Lubilhac**	**61.20**	**14**	*e*P		**P**	**15 21 53.5**	**+0.2**
VIVF	**Saint-Julien-l**	**61.20**	**15**	*e*P		**P**	**15 21 52.9**	**-0.4**
SDI	**San Donato**	**61.36**	**24**	*e*P		**P**	**15 21 55.5**	**+1.1**
RNI2	**Rionero Sannit**	**61.48**	**24**	*e*P		**P**	**15 22 05.0**	**+10**
ORIF	**Oris-en-Rattie**	**61.58**	**16**	*e*P		**P**	**15 21 55.8**	**-0.1**
ORIF				*e*R				

	comp=Z,2μm,17.0s							
FIN	**Finale Ligure**	**61.60**	**18**	*e*P		**P**	**15 21 56.3**	**+0.2**
PYM	**Petit Puy Mans**	**61.64**	**14**	*e*P		**P**	**15 21 57.7**	**+1.4**
MBDF	**Montbardon**	**61.65**	**17**	*e*P		**P**	**15 21 56.4**	**0.0**
MFF	**Saint Martin d**	**61.79**	**11**	*e*P		**P**	**15 21 56.5**	**-0.8**
	comp=Z,14nm,0.8s,mb4.8							
BNI	**Bardonecchia**	**61.92**	**17**	*e*P		**P**	**15 21 58.5**	**+0.2**
CSNT	**Castellina Chi**	**61.95**	**21**	*e*P		**P**	**15 21 59.7**	**+1.3**
PLDF	**La Plantade**	**61.99**	**14**	*e*P		**P**	**15 21 58.6**	**0.0**
BDI	**Bagni Di Lucca**	**62.24**	**20**	*e*P		**P**	**15 22 00.6**	**+0.2**
ROSC	**El Rosal**	**62.34**	**283**	P		**P**	**15 22 01.7**	**+0.2**
	comp=Z,9.2nm,0.5s,mb5.2,baz=130,slow=18,SNR=5.6							
ROSC				LR		LR	15 47 38.9	
	comp=Z,3μm,18.4s,MS5.5,baz=151,slow=35							
SNTG	**Esanatoglia**	**62.35**	**22**	*e*P		**P**	**15 22 01.7**	**+0.6**
LPG	**La Plagne**	**62.35**	**17**	*e*P		**P**	**15 22 01.2**	**+0.1**
	comp=Z,17nm,0.8s,mb4.9							
BGF	**Bois d'Agland**	**62.36**	**13**	*e*P		**P**	**15 22 00.6**	**-0.5**
	comp=Z,11nm,0.7s,mb4.8							
LPL	**La Plagne**	**62.37**	**17**	*e*P		**P**	**15 22 01.2**	**0.0**
	comp=Z,14nm,0.7s,mb4.9							
BOB	**Bobbio (Coli)**	**62.49**	**19**	*e*P		**P**	**15 22 03.9**	**+1.9**
QUIF	**Quistinic**	**62.57**	**8**	*e*P		**P**	**15 22 00.6**	**-1.9**
	comp=Z,21nm,1.0s,mb4.9							
SMF	**Signal de Mont**	**62.67**	**14**	*e*P		**P**	**15 22 02.4**	**-0.8**
	comp=Z,9.4nm,0.7s,mb4.7							
SSF	**Saint Saulge**	**62.99**	**14**	*e*P		**P**	**15 22 04.7**	**-0.5**
	comp=Z,23nm,0.9s,mb5.0							
CABF	**La Chapelle**	**63.20**	**16**	*e*P		**P**	**15 22 06.6**	**0.0**
	comp=Z,38nm,0.8s,mb5.2							
LOR	**Lormes**	**63.26**	**14**	*e*P		**P**	**15 22 06.1**	**-0.9**
	comp=Z,9.2nm,0.8s,mb4.7							
LOR				*e*R				
	comp=Z,2μm,17.5s							
GRR	**Gorron**	**63.39**	**10**	*e*P		**P**	**15 22 07.2**	**-0.6**
	comp=Z,21nm,0.9s,mb5.0							
LDF	**La Druitiere**	**63.71**	**11**	*e*P		**P**	**15 22 09.2**	**-0.8**
	comp=Z,11nm,0.8s,mb4.6							
FLN	**La Foliniere**	**63.81**	**10**	*e*P		**P**	**15 22 09.6**	**-1.1**
FLN				*e*R				
	comp=Z,3μm,17.8s							
BBS	**Basel-Blauen**	**64.37**	**16**	*e*P		**P**	**15 22 15.0**	**+0.7**
SYO	**Syowa Base**	**64.43**	**161**	⇑P		**P**	**15 22 13.4**	**-1.0**
SYO	**Syowa Base**	**64.43**	**161**	⇑pP		pP	15 22 16.0	-1.5
SYO	**Syowa Base**	**64.43**	**161**	⇑*e*P		**P**	**15 22 13.4**

UPC	**Upice**	**69.66**	**20**	*eP*		**P**		**15 22 56.6**	**+8.9**
BRTR	**Keskin Array B**	**69.77**	**38**	P		**P**		**15 22 49.0**	**+0.4**
	comp=Z,2.8nm,0.7s,mb4.3,baz=208,slow=6.8,SNR=13								
BRTR				LR		LR		15 55 04.3	
	comp=Z,325nm,20.2s,MS4.6,baz=260,slow=37								
OKC	**Ostrava-Krasne**	**69.84**	**22**	*eS*		S		15 32 04.2	+7.4
OKC				*e*SS		SS		15 36 38.3	+11
OKC				L				15 52 50.0	
	comp=Z,1.8nm,19.4s								
KSP	**Ksiaz**	**70.04**	**20**	*eP*		**P**		**15 22 54.4**	**+4.4**
KSP				*e*pP		pP		15 22 59.6	+6.5
KSP				*e*S		S		15 32 07.6	+8.4
KSP				MLR		MLR		15 52 44.1	
	comp=Z,2µm,19.8s,MS5.5								
CRVS	**Cervenica-Dubn**	**70.33**	**24**	*eP*		**P**		**15 22 54.0**	**+2.2**
CRVS				*e*				15 23 06.5	
CRVS				*e*				15 25 38.2	
OJC	**Ojcow**	**70.75**	**22**	*eP*		**P**		**15 22 55.9**	**+1.5**
OJC				*e*S		S		15 32 07.3	-0.3
OJC				MLR		MLR		15 53 51.1	
	comp=Z,2µm,19.7s,MS5.4								
KWP	**Kalwaria**	**71.41**	**24**	*eP*		**P**		**15 22 58.4**	**+0.1**
KWP				MLR		MLR		15 55 06.7	
	comp=Z,2µm,19.9s,MS5.4								
KIS	**Kishinev**	**72.11**	**30**	*eP*		**P**		**15 23 02.0**	**-0.6**
KIS				*e*				15 23 10.0	
KIS				*e*				15 27 26.0	
KIS				*e*S		S		15 32 23.0	-0.3
KIS				*e*				15 32 50.0	
KIS				MLR		MLR			
	comp=N,400nm,20.0s,MS5.0								
KIS				MLR		MLR			
	comp=Z,1µm,20.0s,MS5.1								
KIS				MLR		MLR			
	comp=E,600nm,19.0s,MS5.0								
KIS				MLR		MLR			
	comp=Z,1µm,20.0s								
MAW	**Mawson**	**72.19**	**157**	P		**P**		**15 23 04.6**	**+1.9**
	comp=Z,3.2nm,0.8s,mb4.3,baz=266,slow=6.1,SNR=3.2								
MAW				LR		LR		15 49 41.6	
	comp=Z,959nm,18.8s,MS5.1,baz=281,slow=32								
MAW	**Mawson**	**72.19**	**157**	*eP*		**P**		**15 23 01.0**	**-1.7**
	comp=Z,43nm,1.7s,mb5.1								
MAW				LR		LR		15 49 41.6	
GKP	**Gorka Klasztor**	**72.41**	**19**	*eP*		**P**		**15 23 13.2**	**+9.0**
GKP				*e*pP		pP		15 23 19.6	+12
GKP				*e*S		S		15 32 30.6	+4.0
GKP				MLR		MLR		15 52 59.1	
	comp=Z,2µm,22.4s,MS5.3								
AKASG	**Malin Array Be**	**74.97**	**27**	P		**P**		**15 23 18.4**	**-0.7**
	comp=Z,5.5nm,0.6s,mb4.6,baz=223,slow=6.2,SNR=28								
AKASG				LR		LR		15 57 11.6	
	comp=Z,603nm,21.0s,MS4.9,baz=225,slow=36								
SUW	**Suwalki**	**75.05**	**22**	*eP*		**P**		**15 23 20.1**	**+0.6**
SUW				*e*pP		pP		15 23 23.2	+0.5
SUW				MLR		MLR		15 57 01.3	
SOC	**Sochi**	**75.72**	**37**	*c iP*		**P**		**15 23 24.4**	**+0.8**
SOC				*e*				15 26 12.6	
SOC				*e*S		S		15 33 05.5	+1.6
SOC				*e*				15 33 37.7	
SOC				pmax		pmax			
	comp=Z,10.0nm,1.0s,mb4.7								
SOC				pmax		pmax			
	comp=N,5.0nm,0.6s								
SOC				pmax		pmax			
	comp=E,8.0nm,0.5s								
SOC				pmax		pmax			
	comp=Z,170nm,4.8s								
SOC				pmax		pmax			
	comp=N,40nm,1.7s								
SOC				pmax		pmax			
	comp=E,40nm,1.9s								
SOC				smax					
	comp=N,210nm,9.9s								
SOC				smax					
	comp=E,710nm,9.9s								
QSPA	**South Pole Qui**	**76.04**	**180**	*eP*		**P**		**15 23 26.2**	**+1.5**
	comp=E,12nm,0.6s,mb5.0								
QSPA				LR		LR			
	comp=Z,680nm,20.8s,MS4.9								
NB2	**NORSAR Subarra**	**77.65**	**12**	P		**P**		**15 23 34.5**	**+0.5**
	comp=Z,12nm,1.2s,mb4.7,baz=206,slow=6.2								
NOA	**NORSAR Array B**	**77.65**	**12**	P		**P**		**15 23 34.2**	**+0.2**
	comp=Z,1.2nm,0.8s,mb3.9,baz=196,slow=6.5,SNR=6.3								
NOA				PP		PP		15 26 27.7	-3.4
	comp=Z,0.8nm,0.9s,baz=191,slow=7.3,SNR=3.5								
NOA				LR		LR		15 56 07.1	
	comp=Z,698nm,20.6s,MS5.0,baz=210,slow=34								
NOA	**NORSAR Array B**	**77.65**	**12**	P		**P**		**15 23 34.2**	**+0.2**
NOA								15 26 27.7	
NOA				pmax		pmax			
	comp=Z,1.0nm,0.8s								
NOA				pmax		pmax			
	comp=Z,1.0nm,0.9s								
NOA	**NORSAR Array B**	**77.65**	**12**	P		**P**		**15 23 34.2**	**+0.2**
NOA				PP		PP		15 26 27.7	-3.4
NOA				LR		LR		15 56 07.1	
KIV	**Kislovodsk**	**77.71**	**38**	*eP*		**P**		**15 23 34.8**	**+0.1**
KIV				*e*				15 26 28.9	
KIV				*e*S		S		15 33 22.0	-3.4
KIV				pmax		pmax			
	comp=Z,9.0nm,1.0s,mb4.7								
KIV	**Kislovodsk**	**77.71**	**38**	*eP*		**P**		**15 23 34.4**	**-0.3**
	comp=Z,32nm,1.1s,mb5.2								
KIV				LR		LR			
	comp=Z,394nm,19.0s,MS4.8								
GOF	**Gofitskoye**	**78.52**	**38**	*eP*		**P**		**15 23 41.0**	**+1.9**
GOF				pmax		pmax			
	comp=Z,50nm,1.8s,mb5.1								
THR	**Tehran**	**79.36**	**49**	P		**P**		**15 23 44.5**	**+0.6**
	comp=Z,1.3nm,0.6s,mb4.0,baz=44,slow=4.3,SNR=7.9								
THR				LR		LR		15 58 01.8	
	comp=Z,254nm,21.4s,MS4.5,baz=47,slow=35								
THR	**Tehran**	**79.36**	**49**	P		**P**		**15 23 44.6**	**+0.7**
THR				pmax		pmax			
	comp=Z,1.0nm,0.6s								
THR				MLR		MLR			
	comp=Z,254nm,21.4s								
JSC	**Jenkinsville**	**79.64**	**309**	P		**P**		**15 23 45.1**	**-0.4**
VRSR	**Storozhevoye**	**80.00**	**31**	*eP*		**P**		**15 23 47.4**	**+0.4**
VRSR				pmax		pmax			
	comp=Z,7.0nm,0.5s,mb4.8								
VRSR				pmax		pmax			
	comp=N,8.0nm,0.9s								
VRSR				pmax		pmax			
	comp=E,3.0nm,0.7s								
VRSR				MLR		MLR			
	comp=Z,790nm,17.0s,MS5.1								
VRSR				MLR		MLR			
	comp=N,880nm,24.0s								
VRSR				MLR		MLR			
	comp=E,860nm,21.0s								
SSPA	**Standing Stone**	**80.07**	**316**	*eP*		**P**		**15 23 47.6**	**0.0**
SSPA				LR		LR			
	comp=Z,4µm,22.0s,MS5.7								
MAK	**Makhachkala**	**80.17**	**41**	*eP*		**P**		**15 23 52.0**	**+3.9**
MAK				*e*				15 34 31.0	
MAK				pmax		pmax			
	comp=Z,500nm,6.0s								
FWV	**Forest Hill**	**80.72**	**312**	*eP*		**P**		**15 23 53.3**	**+2.2**
OBN	**Obninsk**	**81.23**	**27**	*eP*		**P**		**15 23 58.8**	**+5.4**
OBN				PS		PS		15 34 50.0	-1.4
OBN				pmax		pmax			
	comp=Z,17nm,1.3s,mb4.8								
OBN				MLR		MLR			
	comp=Z,1µm,17.0s,MS5.4								
SCHQ	**Schefferville**	**81.69**	**332**	P		**P**		**15 23 57.0**	**+1.2**
	comp=Z,3.0nm,0.6s,mb4.4,baz=95,slow=3.3,SNR=6.8								
SCHQ				LR		LR		15 53 26.9	
	comp=Z,682nm,21.5s,MS5.0,baz=236,slow=31								
SCHQ	**Schefferville**	**81.69**	**332**	*eP*		**P**		**15 23 56.5**	**+0.7**
	comp=Z,22nm,1.1s,mb5.0								
FINES	**FINESS Array B**	**81.84**	**18**	P		**P**		**15 23 56.5**	**0.0**
	comp=Z,3.5nm,0.6s,mb4.4,baz=190,slow=3.7,SNR=18								
FINES				LR		LR		16 00 57.2	
	comp=Z,550nm,19.2s,MS4.9,baz=38,slow=36								
FINES	**FINESS Array B**	**81.84**	**18**	P		**P**		**15 23 56.5**	**0.0**
FINES				pmax		pmax			
	comp=Z,4.0nm,0.6s								
FINES				MLR		MLR			
	comp=Z,550nm,19.2s								
FINES	**FINESS Array B**	**81.84**	**18**	P		**P**		**15 23 56.5**	**0.0**
FINES				LR		LR		16 00 57.2	
JMIC	**Jan Mayen**	**85.00**	**2**	LR		LR		15 58 48.9	
	comp=Z,229nm,18.7s,MS4.6,baz=148,slow=33								
WVT	**Waverly**	**85.31**	**309**	*eP*		**P**		**15 24 14.0**	**-0.7**
	comp=Z,19nm,1.4s,mb5.0								
WVT				LR		LR			
	comp=Z,965nm,20.0s,MS5.2								
FVM	**French Village**	**87.90**	**310**	*eP*		**P**		**15 24 25.5**	**-1.8**
	comp=Z,5.6nm,0.7s,mb4.9								
ARCES	**ARCESS Array B**	**88.01**	**13**	P		**P**		**15 24 28.0**	**+0.8**
	comp=Z,1.8nm,0.7s,mb4.4,baz=214,slow=4.4,SNR=8.0								
ARCES				LR		LR		16 04 07.8	
	comp=Z,611nm,19.8s,MS5.0,baz=226,slow=36								
ARCES	**ARCESS Array B**	**88.01**	**13**	P		**P**		**15 24 28.0**	**+0.9**
ARCES				pmax		pmax			
	comp=Z,2.0nm,0.7s								
ARCES				MLR		MLR			
	comp=Z,611nm,19.8s								
SBA	**Scott Base**	**88.20**	**180**	*eP*		**P**		**15 24 29.1**	**+1.2**
	comp=Z,20nm,1.1s,mb5.2								
SBA				LR		LR			
	comp=Z,404nm,19.0s,MS4.9								
APA	**Apatity**	**88.50**	**17**	*iP*		**P**		**15 24 37.6**	**+8.1**
APA				*e*S		S		15 35 17.0	+3.6
APA				MLR		MLR			
	comp=Z,900nm,15.0s,MS5.3								
APA				MLR		MLR			
	comp=Z,500nm,18.0s								
VNDA	**Vanda**	**88.51**	**179**	P		**P**		**15 24 30.6**	**+1.2**
	comp=Z,1.0nm,0.7s,mb4.2,baz=235,slow=4.8,SNR=7.5								
VNDA				LR		LR		15 58 40.0	
	comp=Z,625nm,19.5s,MS5.0,baz=186,slow=32								
VNDA	**Vanda**	**88.51**	**179**	*eP*		**P**		**15 24 29.3**	**-0.1**
	comp=Z,1.9nm,1.0s,mb4.4								
CCM	**Cathedral Cave**	**88.53**	**310**	*eP*		**P**		**15 24 29.3**	**-1.1**
	comp=Z,9.9nm,1.0s,mb5.1								
CCM				LR		LR			
	comp=Z,225nm,20.0s,MS4.6								
DAG	**Danmarks Havn**	**90.75**	**359**	*iP*		**P**		**15 24 42.2**	**+2.3**
	comp=Z,2.2nm,0.8s,mb4.5								
DAG	**Danmarks Havn**	**90.75**	**359**	*eP*		**P**		**15 24 42.2**	**+2.3**
DAG				pmax		pmax			
	comp=Z,2.0nm,0.8s,mb4.5								
DAG	**Danmarks Havn**	**90.75**	**359**	*eP*		**P**		**15 24 42.2**	**+2.3**
	comp=Z,2.2nm,0.8s,mb4.5								
ARU	**Arti**	**92.51**	**32**	*iP*		**P**		**15 24 59.2**	**+11**
ARU				*e*				15 28 32.0	
ARU				*e*S		S		15 35 26.8	-23
ARU				*e*SP		SP		15 37 00.5	-5.2
ARU				*e*PS		PS		15 37 08.1	+0.9
ARU				pmax		pmax			
	comp=Z,11nm,1.2s,mb5.2								
ARU				MLR		MLR			
	comp=Z,500nm,17.0s,MS5.0								
ARU				MLR		MLR			
	comp=N,100nm,19.0s,MS4.9								
ARU				MLR		MLR			
	comp=E,400nm,18.0s,MS4.9								
ARU	**Arti**	**92.51**	**32**	P		**P**		**15 24 47.6**	**-0.7**
	comp=E,5.4nm,1.0s,mb4.9								
JCT	**Junction City**	**93.16**	**300**	P		**P**		**15 24 51.9**	**-0.1**
	comp=E,15nm,1.1s,mb5.3								
KBS	**Kingsbay**	**94.00**	**5**	*e*		**P**		**15 24 56.7**	**+1.8**
KBS				*e*				15 36 09.3	
KBS				*e*				15 42 33.8	
KBS				AMS		AMS		16 10 13.0	
	comp=Z,351nm,18.0s,MS4.9								
ULM	**Lac du Bonnet**	**95.36**	**320**	LR		LR		16 01 36.8	
	comp=Z,660nm,19.4s,MS5.1,baz=308,slow=32								
TXAR	**Lajitas Array**	**96.15**	**299**	P		**P**		**15 25 09.9**	**+4.0**
	comp=Z,0.6nm,0.3s,mb4.5,baz=315,slow=29,SNR=3.1								
TXAR				LR		LR		16 03 06.2	
	comp=Z,240nm,22.0s,MS4.6,baz=70,slow=32								
PDAR	**Pinedale Array**	**103.19**	**311**	PP		PP		15 29 57.0	+2.1
	comp=Z,0.5nm,1.0s,baz=79,slow=4.6,SNR=2.7								
MKAR	**Makanchi Array**	**104.71**	**45**	PP		PP		15 30 09.6	+3.3
	comp=Z,0.8nm,0.9s,baz=256,slow=5.0,SNR=4.3								
YKA	**Yellowknife Ar**	**107.12**	**331**	Pdiff		Pdif		15 25 59.6	+5.6
	comp=Z,0.1nm,0.3s,baz=249,slow=19,SNR=2.9								
WMQ	**Urumqi**	**108.33**	**48**	PDIF		Pdif		15 26 01.0	+1.2
WMQ				PP		PP		15 30 34.5	+1.2
WMQ				S				15 38 05.8	
WMQ				PS		PS		15 39 54.0	+1.4
WMQ				PP		PP			
	comp=Z,91nm,9.0s								
WMQ				LR		LR			
	comp=N,711nm,28.0s,MS5.3								
WMQ				LR		LR			
	comp=E,788nm,27.2s,MS5.3								
WMQ				LR		LR			
	comp=Z,962nm,27.4s,MS5.2								
CMAR	**Chiang Mai Arr**	**116.19**	**76**	PKP		PKPdf		15 30 22.1	-1.2
	comp=Z,0.4nm,0.5s,baz=256,slow=3.7,SNR=3.6								
ZAK	**Zakamensk**	**118.35**	**40**	*e*PKIKP		PKPdf		15 30 18.6	-8.2
ILAR	**Eielson Array**	**119.99**	**339**	PKP		PKPdf		15 30 27.0	-2.6
	comp=Z,0.3nm,0.8s,slow=1.8,SNR=3.9								
KMI	**Kunming**	**120.24**	**69**	*e*PKP		PKPdf		15 30 31.0	0.0
KMI				PP		PP			
	comp=Z,75nm,5.6s								
KMI				LR		LR			
	comp=N,226nm,50.8s								
KMI				LR		LR			
	comp=E,242nm,25.5s								
KMI				LR		LR			
	comp=Z,210nm,30.6s								
SONM	**Songino Array**	**120.92**	**42**	PKP		PKPdf		15 30 30.2	-1.7
	comp=Z,0.5nm,0.6s,baz=315,slow=2.0,SNR=3.0								
BOD	**Bodaibo**	**121.83**	**30**	*e*PKIKP		PKPdf		15 30 25.1	-8.3
GYA	**Guiyang**	**123.80**	**68**	PKP		PKPdf		15 30 42.8	+4.8
GYA				LR		LR			
	comp=N,180nm,19.4s,MS4.8								
GYA				LR		LR			
	comp=E,140nm,19.5s,MS4.8								
GYA				LR		LR			
	comp=Z,350nm,20.7s,MS5.0								
STKA	**Stephens Creek**	**128.80**	**154**	PKP		PKPdf		15 30 45.8	-1.8
	comp=Z,1.1nm,0.8s,baz=16,slow=19,SNR=1.8								
FITZ	**Fitzroy Crossi**	**129.23**	**128**	PKP		PKPdf		15 30 47.5	-1.1
	comp=Z,1.5nm,0.8s,baz=168,slow=20,SNR=3.4								
ASAR	**Alice Springs**	**131.31**	**140**	PKP		PKPdf		15 30 50.3	-2.2
	comp=Z,0.7nm,0.8s,baz=218,slow=2.1,SNR=5.9								
NJ2	**Nanjing**	**133.84**	**59**	*e*PKP		PKPdf		15 30 51.5	-5.4
NJ2				PP		PP		15 33 26.0	-1.9
NJ2				LR		LR			
	comp=N,460nm,24.6s,MS5.2								
NJ2				LR		LR			
	comp=E,450nm,27.6s,MS5.2								
CN2	**Changchun**	**134.77**	**41**	*e*PKP		PKPdf		15 30 52.5	-5.9
SSE	**Sheshan**	**135.99**	**60**	PKP		PKPdf		15 31 00.8	-0.2
SSE				PP		PP		15 33 40.8	-0.1
SSE				SS		SS		15 51 39.8	+2.0
SSE				LR		LR			
	comp=N,203nm,15.0s,MS5.0								
SSE				LR		LR			
	comp=E,123nm,15.0s,MS5.0								
SSE				LR		LR			
	comp=Z,328nm,15.0s,MS5.2								
MDJ	**Mudanjiang**	**136.91**	**38**	PKP		PKPdf		15 30 59.3	-2.9
MDJ				PP		PP		15 33 45.0	-1.1
MDJ				PKS		PKS		15 34 34.3	0.0
MDJ				LR		LR			
	comp=N,245nm,21.9s,MS5.0								
MDJ				LR		LR			
	comp=E,174nm,19.5s,MS5.0								
MDJ				LR		LR			
	comp=Z,318nm,17.0s,MS5.1								
PET	**Petropavlovsk**	**140.80**	**7**	*eP*		Pdif		15 28 26.2	+3.8
PET				*e*SS		SS		15 52 30.0	-3.8
PET				pmax		pmax			
	comp=Z,45nm,1.0s								
PET				MLR		MLR			
	comp=Z,300nm,23.0s,MS5.0								
CTA	**Charters Tower**	**141.05**	**150**	PKP		PKPdf		15 31 09.0	-1.6
	comp=Z,1.3nm,0.5s,baz=262,slow=2.1,SNR=3.7								
CTA	**Charters Tower**	**141.05**	**150**	PKIKP		PKPdf		15 31 09.0	-1.6
CTA				pmax		pmax			
	comp=Z,1.0nm,0.5s								
YSS	**Yuzh-Sakhalins**	**142.10**	**26**	PKIKP		PKPdf		15 31 09.3	-2.3
YSS				*e*				15 31 13.2	
YSS				*e*				15 37 24.0	
YSS				*e*				15 53 18.0	
MAJO	**Matsushiro**	**146.88**	**43**	*e*PKP		PKPdf		15 31 19.2	-0.9
MAT	**Matsushiro**	**146.88**	**43**	PKP		PKPdf		15 31 19.6	-0.5
MAT	**Matsushiro**	**146.88**	**43**	*e*PKP		PKPdf		15 31 23.0	+2.9
MAT				LR		LR			
	comp=Z,350nm,20.0s,MS5.1								

*IDC **27** 15:30:55.1±0.8,52.89S×19.04E,mb4.0/7,mb1 4.0/7, mb1mx3.9/16,Error ellipse: s-maj=32.8km s-min=20.2km az=66.0*

*NEIC **27** 15:30:57.2±0.8,52.74S×19.44E,h10km,mb4.4/1,Error ellipse: s-maj=29.5km s-min=14.3km az=95.0*

ISC 27 15:30:56.0±0.7,**52.72S**±0.09×**19.0E**±0.3,**h10**km,**n19,**
σ1º**14**/15,**mb4.0/7,4C-2D,Southwest of Africa**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
SUR	**Sutherland**	**20.37**	**4**	P		**P**		**15 35 36.4**	**+1.0**
	9.4nm,1.0s,baz=273,slow=12,SNR=3.1								
SNAA	**Sanae**	**21.32**	**199**	*eP*		**P**		**15 35 43.5**	**-1.4**
VNA2	**Neumayer--Watz**	**21.76**	**203**	*i*		**P**		**15 35 51.2**	**+1.9**
VNA2	**Neumayer--Watz**	**21.76**	**203**	*i*		**P**		**15 35 53.5**	**+4.2**
VNA1	**Neumayer--Stat**	**21.79**	**204**	*i*		**P**		**15 35 51.6**	**+2.0**
VNA1	**Neumayer--Stat**	**21.79**	**204**	*i*		**P**		**15 35 54.5**	**+4.9**
VNA3	**Neumayer Olymp**	**22.53**	**204**	*i*		**P**		**15 35 58.5**	**+1.8**
VNA3	**Neumayer Olymp**	**22.53**	**204**	*i*		**P**		**15 36 00.4**	**+3.7**
MAW	**Mawson**	**25.68**	**142**	P		**P**		**15 36 23.4**	**-3.8**
	1.4nm,0.7s,mb3.6,baz=312,slow=10.0,SNR=2.6								
TSUM	**Tsumeb**	**33.47**	**358**	P		**P**		**15 37 36.9**	**-0.5**
	2.2nm,1.1s,mb4.0,baz=156,slow=14,SNR=2.5								
QSPA	**South Pole Qui**	**37.51**	**180**	*eP*		**P**		**15 38 11.2**	**+0.1**
	5.2nm,0.8s,mb4.3								
VNDA	**Vanda**	**47.99**	**170**	P		**P**		**15 39 35.3**	**-0.9**
	0.8nm,0.7s,mb3.9,baz=224,slow=5.6,SNR=6.1								
BDFB	**Brasilia**	**63.81**	**279**	P		**P**		**15 41 30.1**	**-0.5**
	5.1nm,1.0s,mb4.5,baz=76,slow=10,SNR=2.6								
LPAZ	**La Paz**	**75.50**	**262**	P		**P**		**15 42 41.3**	**-0.9**
	0.6nm,0.5s,mb3.8,baz=142,slow=6.5,SNR=3.3								
ASAR	**Alice Springs**	**85.29**	**123**	P		**P**		**15 43 34.5**	**+0.4**
	0.6nm,0.7s,mb3.8,baz=204,slow=3.9,SNR=4.7								
PDAR	**Pinedale Array**	**144.71**	**275**	PKP		PKPdf		15 50 31.2	-4.0
	2.0nm,1.0s,baz=108,slow=4.7,SNR=9.8								
NVAR	**Mina Array Bea**	**147.40**	**261**	PKPbc		PKPdf		15 50 39.8	-0.1
	2.0nm,0.8s,baz=127,slow=4.5,SNR=13								
YKA	**Yellowknife Ar**	**153.87**	**310**	PKPbc		PKPdf		15 50 53.6	+4.8
	0.1nm,0.5s,baz=81,slow=2.0,SNR=4.1								
ILAR	**Eielson Array**	**165.93**	**335**	PKPab		PKPab		15 52 01.2	-0.2
	1.0nm,0.9s,baz=18,slow=2.9,SNR=9.3								

*IDC **27** 15:40:50.2±7.0,6.75S×155.42E,h55km±61km,mb3.5/6, mb1 3.7/7,mb1mx3.6/14,ML2.8/1,Error ellipse: s-maj=55.8km s-min=39.3km az=138.0*

ISC 27 15:40:49.4±6.5,**6.7S**±0.3×**155.3E**±0.4,**h59**km±53km,**n7,**
σ0º**65/7,mb3.6**/6,**Bougainville - Solomon Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**8.47**	**251**	P		**P**		**15 42 51.9**	**0.0**
	0.7nm,0.3s,baz=74,slow=5.5,SNR=3.4								
ASAR	**Alice Springs**	**26.57**	**228**	P		**P**		**15 46 24.1**	**0.0**
	0.5nm,0.9s,mb3.0,baz=60,slow=9.6,SNR=4.3								
CMAR	**Chiang Mai Arr**	**60.91**	**295**	P		**P**		**15 50 59.5**	**+0.5**
	2.0nm,0.7s,mb4.3,baz=120,slow=5.4,SNR=17								
SONM	**Songino Array**	**69.25**	**327**	P		**P**		**15 51 52.5**	**+0.2**
	0.8nm,1.0s,mb3.6,baz=104,slow=5.9,SNR=3.1								
ILAR	**Eielson Array**	**83.01**	**21**	P		**P**		**15 53 09.2**	**-0.2**
	0.4nm,0.7s,mb3.5,baz=243,slow=5.3,SNR=5.3								
MKAR	**Makanchi Array**	**83.37**	**319**	P		**P**		**15 53 10.7**	**-0.9**
	0.6nm,1.0s,mb3.6,baz=117,slow=5.4,SNR=3.8								
YKA	**Yellowknife Ar**	**95.95**	**28**	P		**P**		**15 54 11.2**	**+0.4**
	0.3nm,0.7s,mb3.8,baz=266,slow=4.7,SNR=6.7								

*IDC **27** 15:45:51.1±1.0,30.01S×177.40W,mb4.1/5,mb1 4.2/7, mb1mx4.1/15,ML4.1/2,Error ellipse: s-maj=34.8km s-min=31.0km az=153.0*

*NEIC **27** 15:45:52.4±0.7,29.95S×177.38W,h10km,mb4.5/6,Error ellipse: s-maj=22.2km s-min=17.4km az=218.0*

ISC 27 15:45:59.6±1.1,**30.64S**±0.07×**178.2W**±0.2,**h33**km,**n29,**
σ1º**04**/21,**mb4.3**/8,**MS5.2**/1,**1D,Kermadec Islands**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**7.98**	**201**	S		**S**		**15 49 25.9**	**-0.2**
URZ	**Urewera**	**8.54**	**206**	Pn		**P**		**15 48 00.3**	**-3.5**
	1.1nm,0.3s,baz=291,slow=11,SNR=8.3								
URZ				Sn		**Sn**		**15 49 40.4**	**+0.2**
	2.6nm,0.3s,baz=160,slow=21,SNR=10.0								
MRZ	**Mangatainoka R**	**11.21**	**205**	*eP*		**P**		**15 48 34.1**	**-6.5**
MRZ				*e*S		**S**		**15 50 36.9**	**-8.9**
RPZ	**Rata Peaks**	**15.60**	**210**	Pn		**P**		**15 49 38.8**	**+0.2**
	1.3nm,0.3s,baz=176,slow=22,SNR=6.3								
RPZ				Sn		**S**		**15 52 21.6**	**-8.9**
	0.5nm,0.3s,baz=175,slow=22,SNR=2.9								
CTA	**Charters Tower**	**33.68**	**280**	*eP*		**P**		**15 52 40.4**	**+0.7**
	2.9nm,0.4s,mb4.6								
CTA	**Charters Tower**	**33.68**	**280**	P		**P**		**15 52 40.3**	**+0.6**
	4.3nm,0.8s,mb4.5,baz=99,slow=11,SNR=7.3								
CTAO	**Charters Tower**	**33.68**	**280**	P		**P**		**15 52 40.6**	**+0.9**
	6.3nm,1.0s,mb4.5								
STKA	**Stephens Creek**	**34.27**	**257**	*eP*		**P**		**15 52 46.4**	**+1.7**
	3.6nm,0.6

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**1.20**	**65**	P	**P**	**16 01 18.2**	**+0.4**
YOJ				*e*S	**S**	**16 01 34.2**	**-0.3**
IRIF	**Iriomote-Funau**	**1.79**	**78**	P	**P**	**16 01 25.6**	**+0.3**
IRIF				*e*S	**S**	**16 01 47.5**	**+0.1**
HATJ	**Hateruma jima**	**1.83**	**87**	P	**P**	**16 01 25.4**	**-0.4**
HATJ				*e*S	**S**	**16 01 47.9**	**-0.3**
JKRS	**Kuro-shima**	**2.03**	**82**	P	**P**	**16 01 28.7**	**+0.2**
JKRS				*e*S	**S**	**16 01 53.7**	**+0.8**
JIJ	**Ishigaki jima**	**2.17**	**79**	P	**P**	**16 01 30.0**	**-0.4**
JIJ				S	**S**	**16 01 55.8**	**-0.5**
JTJ	**Tarama**	**2.72**	**75**	P	**P**	**16 01 38.1**	**-0.1**
JTJ				*e*S	**S**	**16 02 10.2**	**+0.1**

NAO ***27*** *17:15:42.3±1.3,59.77N×24.59E, ML2.4*
BER ***27*** *17:15:43.9±3.5,59.77N×24.71E, ML2.4(NAO)*
IDC ***27*** *17:15:44.4±2.0,59.90N×24.47E, mb1 3.7/4, mb1mx3.3/22, ML3.6/3, Error ellipse: s-maj=22.1km s-min=6.1km az=146.0*

HEL 27 17:15:43.1±0.2, 59.77N×24.64E, ML2.5, ML2.4(UPP), **ML2.4**(NAO), **Explosion, Baltic States - Belarus - Northwestern Russia**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MEF	**Metsahovi**	**0.47**	**345**	*e*P	Pg	17 15 51.0	-1.5
MEF				*e*S	Sg	17 15 57.1	-1.6
PVF	**Pernaja**	**0.99**	**37**	*e*P	Pb	17 16 00.5	-2.3
PVF				*e*S	Sg	17 16 13.2	-2.9
VJF	**Virojoki**	**1.65**	**61**	*e*P	Pn	17 16 12.5	-1.0
VJF				*e*S	Sb	17 16 34.5	-0.9
VSU	**Vasula**	**1.69**	**140**	*e*P	Pn	17 16 13.2	-1.0
VSU				*e*S	Sb	17 16 34.9	-1.9
VSU	**Vasula**	**1.69**	**140**	Pn	Pn	17 16 13.4	-0.7
VSU				Lg		17 16 35.7	
FIA0	**FINESS Array S**	**1.83**	**22**	*e*P	Pn	17 16 15.5	-0.5
FIA0				*e*S	Sn	17 16 38.6	-1.6
FIA0	**FINESS Array S** baz=199,slow=16	**1.83**	**22**	Pn	Pn	17 16 15.6	-0.4
FIA0	baz=196,slow=37			Lg		17 16 39.0	
FINES	**FINESS Array B** 15nm,0.3s,baz=200,slow=16,SNR=661	**1.83**	**22**	Pg	Pg	17 16 15.5	-4.1
FINES	14nm,0.3s,baz=207,slow=28,SNR=33			Lg		17 16 39.1	
FINES	3.0nm,0.3s,baz=190,slow=33,SNR=6.2			Rg		17 16 50.1	
KEF	**Keuruu**	**2.41**	**3**	*e*P	Pn	17 16 24.5	+0.1
KEF				*e*SG	Sg	17 16 57.2	-6.2
SUF	**Sumiainen**	**3.05**	**13**	*e*P	Pn	17 16 32.7	-0.8
SUF				*e*S	Sn	17 17 09.6	-1.7
SUF				*e*SG	Sg	17 17 18.7	-6.0
VAF	**Ylistaro**	**3.42**	**345**	*e*P	Pn	17 16 38.5	-0.3
VAF				*e*S	Sn	17 17 18.4	-2.3
JOF	**Joensuu**	**4.51**	**43**	*e*P	Pn	17 16 51.9	-2.3
JOF				*e*S	Sn	17 17 42.5	-5.6
JOF				*e*SG	Sg	17 18 01.2	-12
KJN	**Kajaani**	**4.57**	**17**	*e*P	Pn	17 16 53.3	-1.8
KJN				*e*S	Sn	17 17 45.2	-4.6
KJN				*e*SG	Sg	17 18 03.9	-11
KJN	comp=Z,8.0nm,0.3s			MSG		17 18 07.9	
HFS	**Hagfors** baz=89,slow=14	**5.52**	**279**	Pn	Pn	17 17 04.4	-4.0
HFS	baz=101,slow=28			Sn	Sn	17 18 07.3	-6.3
HFS	**Hagfors**	**5.52**	**279**	*e*P	Pn	17 17 04.4	-4.0
HFS				*e*S	Sn	17 18 07.3	-6.3
HFS	**Hagfors** comp=Z,0.1nm,0.3s,baz=90,slow=13,SNR=16	**5.52**	**279**	Pn	Pn	17 17 04.5	-4.0
HFS	comp=Z,0.2nm,0.3s,baz=93,slow=27,SNR=5.2			Sn	Sn	17 18 07.7	-5.9
HFS	comp=Z,0.4nm,0.3s,baz=85,slow=32,SNR=7.7			Lg		17 18 33.2	
NOA	**NORSAR Array B** comp=Z,0.7nm,0.3s,baz=98,slow=12,SNR=4.8	**6.78**	**287**	Pn	Pn	17 17 20.8	-5.5
NOA	comp=Z,0.4nm,0.3s,baz=123,slow=19,SNR=2.4			Sn	Sn	17 18 35.5	-10
NOA	comp=Z,1.0nm,0.3s,baz=94,slow=21,SNR=4.6			Lg		17 19 09.8	
ARA0	**ARCESS Array S** baz=174,slow=16	**9.82**	**2**	Pn	P	17 18 02.3	-6.1
ARA0	baz=177,slow=22			Sn	Sn	17 19 50.9	-10
ARA0	**ARCESS Array S**	**9.82**	**2**	*e*P	P	17 18 02.3	-6.1
ARA0				*e*S	Sn	17 19 50.9	-10
ARCES	**ARCESS Array B** comp=Z,1.0nm,0.3s,baz=177,slow=15,SNR=60	**9.82**	**2**	Pn	P	17 18 02.5	-5.8
ARCES	comp=Z,0.3nm,0.3s,baz=180,slow=23,SNR=3.5			Sn	Sn	17 19 51.1	-9.5
ARCES	comp=Z,0.4nm,0.3s,baz=189,slow=30,SNR=4.0			Lg		17 20 47.3	
SPA0	**Spitsbergen Ar** baz=160,slow=12	**18.70**	**355**	P	P	17 19 59.8	-4.7
SPA0	**Spitsbergen Ar**	**18.70**	**355**	*e*P	P	17 19 59.8	-4.7
SPITS	**Spitsbergen Ar** comp=Z,0.1nm,0.3s,baz=170,slow=21,SNR=6.4	**18.70**	**355**	P	P	17 20 01.1	-3.5

IDC 27 17:58:45.0±13.0, **1.81S×144.07E, mb4.1**/1, **mb1 4.3**/1, **mb1mx3.5**/11, **Error ellipse: s-maj=547.0km s-min=34.7km az=92.0, Ninigo Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs** 1um,0.3s,baz=23,slow=11,SNR=5.3	**23.86**	**204**	P	P	18 04 00.2	-0.7
MKAR	**Makanchi Array** 0.5nm,0.8s,baz=108,slow=7.7,SNR=4.5	**72.42**	**321**	P	P	18 10 13.7	-1.4
ZAL	**Zalesovo** 0.7nm,0.4s,baz=107,slow=3.1,SNR=3.7	**73.94**	**328**	P	P	18 10 21.5	-2.3

IDC ***27*** *18:04:32.2±1.8,43.46N×105.25W, mb3.9/3, mb1 3.8/7, mb1mx3.6/23, ML3.5/4, Error ellipse: s-maj=46.5km s-min=8.7km az=152.0*
NEIC ***27*** *18:04:34.5±0.5,43.82N×105.28W, ML3.2, Error ellipse: s-maj=6.3km s-min=5.6km az=118.0, Suspected Mining explosion.*
NEIC 55 km [35 miles] SSE of Gillette. 55 km [35 miles] SSE of Gillette, Wyoming.

ISC 27 18:04:32.5±0.5, **43.82N**±0.04×**105.28W**±0.07, **n35, σ1§09/34, mb4.0**/3, **Wyoming**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RSSD	**Black Hills**	**0.94**	**71**	*e*Pg	**Pg**	**18 04 53.4**	**+2.0**
PDAR	**Pinedale Array** 3.3nm,0.3s,baz=75,slow=16,SNR=59	**3.30**	**253**	Pn	**Pn**	**18 05 27.8**	**+1.3**
PDAR	9.1nm,0.3s,baz=73,slow=35,SNR=11			Lg		18 06 12.8	
BW06	**Boulder Array**	**3.30**	**253**	*e*Pn	**Pn**	**18 05 27.9**	**+1.5**
KSWY	**Kelly School**	**3.88**	**269**	*e*Pn	**Pn**	**18 05 33.1**	**-1.7**
WUWY	**Wally Ulrich**	**3.98**	**268**	*e*Pn	**Pn**	**18 05 37.5**	**+1.4**
ISCO	**Idaho Springs**	**4.02**	**184**	*e*Pn	**Pn**	**18 05 36.9**	**+0.2**
REDW	**Red Top Meadow**	**4.08**	**266**	*e*Pn	**Pn**	**18 05 37.8**	**+0.3**
AHID	**Auburn Hatcher**	**4.38**	**258**	*e*Pn	**Pn**	**18 05 40.8**	**-1.0**
BOZ	**Bozeman (W)**	**4.88**	**294**	*e*Pn	**Pn**	**18 05 48.9**	**0.0**
HWUT	**Hardware Ranch** 5.3nm,0.4s	**5.13**	**247**	*e*Pn	**Pn**	**18 05 52.6**	**+0.1**
HRY	**Holter Researc**	**5.46**	**304**	*e*Pn	**Pn**	**18 05 56.5**	**-0.6**
MCMT	**McKenzie Canyo**	**5.53**	**283**	*e*Pn	**Pn**	**18 06 02.9**	**+4.9**
JLU	**Jordanelle**	**5.60**	**237**	*e*Pn	**Pn**	**18 05 59.1**	**+0.1**
DAU	**Daniels Canyon**	**5.60**	**235**	*e*Pn	**Pn**	**18 05 59.5**	**+0.4**
CTU	**Camp Tracy**	**5.73**	**239**	*e*Pn	**Pn**	**18 05 59.9**	**-1.0**
RW3	**Ridgway**	**5.85**	**199**	*e*Pn	**Pn**	**18 06 02.5**	**-0.1**
SPUT	**South Promonto**	**5.86**	**247**	*e*Pn	**Pn**	**18 06 03.0**	**+0.3**
HVU	**Hansel Valley**	**5.88**	**252**	*e*Pn	**Pn**	**18 06 02.8**	**-0.2**
SDCO	**Great Sand Dun** 1.7nm,0.6s	**6.07**	**182**	*e*Pn	**Pn**	**18 06 05.7**	**0.0**
MPU	**Maple Canyon**	**6.08**	**233**	Pn	**Pn**	**18 06 05.5**	**-0.3**
PV10	**Paradox Valley**	**6.13**	**209**	*e*Pn	**Pn**	**18 06 07.9**	**+1.3**
SRU	**San Rafael**	**6.13**	**222**	*e*Pn	**Pn**	**18 06 05.9**	**-0.7**
PV01	**Paradox Valley**	**6.20**	**205**	*e*Pn	**Pn**	**18 06 07.6**	**0.0**
CHMT	**Chamberlain Mo**	**6.42**	**302**	*e*Pn	**Pn**	**18 06 11.2**	**+0.6**
HLID	**Hailey** 1.2nm,0.7s	**6.63**	**271**	*e*Pn	**Pn**	**18 06 15.0**	**+1.4**
MSU	**Marysvale**	**7.43**	**227**	*e*Pn	**Pn**	**18 06 24.2**	**-0.6**
ULM	**Lac du Bonnet** 1.4nm,0.3s,baz=228,slow=12,SNR=6.1	**9.08**	**42**	Pn	**P**	**18 06 46.0**	**-1.9**
ULM	0.5nm,0.3s,baz=222,slow=20,SNR=2.8			Lg		18 09 17.9	
NEW	**Newport** 0.3nm,0.3s,baz=322,slow=20,SNR=2.7	**9.36**	**302**	Lg		18 09 25.3	
WUAZ	**Wupatki** 3.6nm,0.8s	**9.53**	**212**	*e*Pn	**P**	**18 06 51.9**	**-2.1**
FFC	**Flin Flon** 2.7nm,0.6s	**11.13**	**10**	*e*P	**P**	**18 07 13.4**	**-2.4**
NVAR	**Mina Array Bea** 0.1nm,0.3s,baz=55,slow=11,SNR=5.9	**11.20**	**246**	Pn	**P**	**18 07 13.9**	**-3.0**
YKA	**Yellowknife Ar** 0.1nm,0.3s,baz=156,slow=12,SNR=5.5	**19.49**	**347**	P	**P**	**18 09 04.0**	**+0.5**
ARCES	**ARCESS Array B** 1.7nm,1.0s,mb4.1,baz=319,slow=8.3,SNR=2.9	**61.34**	**18**	P	**P**	**18 14 51.2**	**-0.6**
SONM	**Songino Array** 0.4nm,0.8s,mb3.7,slow=5.8,SNR=3.2	**84.56**	**339**	P	**P**	**18 17 10.0**	**+1.7**
MKAR	**Makanchi Array** 1.2nm,1.0s,mb4.1,baz=13,slow=4.9,SNR=5.9	**89.53**	**355**	P	**P**	**18 17 32.9**	**+0.4**

WEL 27 18:09:18.5±0.3, **36.31S×177.58E, h173**km±3km, **ML4.0**/1, **Error ellipse: s-maj=4.4km s-min=2.5km az=90.0, Off east coast of North Island**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MXZ	**Matakaoa Point**	**1.38**	**155**	PN	P	18 09 48.8	-0.2
MXZ				SN	S	18 10 11.7	-0.9
PUZ	**Puketiti**	**1.84**	**163**	*e*PN	P	18 09 53.0	-0.7
PUZ				SN	S	18 10 19.4	-1.3
URZ	**Urewera**	**1.98**	**191**	PN	P	18 09 55.2	0.0
URZ				SN	S	18 10 23.5	+0.1
MWZ	**Matawai**	**2.02**	**181**	*e*PN	P	18 09 55.6	0.0
MWZ				SN	S	18 10 23.9	-0.3
KNZ	**Kokohu**	**2.70**	**178**	PN	P	18 10 03.5	-0.3
KNZ				SN	S	18 10 36.6	-2.0
BKZ	**Black Stump Fm**	**2.98**	**197**	*e*PN	P	18 10 06.3	-0.8
BKZ				SN	S	18 10 44.5	0.0
PWZ	**Pawanui**	**3.75**	**188**	PN	P	18 10 15.3	-1.6
PWZ				SN	S	18 10 57.6	-4.3
TSZ	**Takapari Road**	**3.95**	**198**	*e*PN	P	18 10 15.8	-3.7
BFZ	**Birch Farm**	**4.49**	**193**	*e*PN	P	18 10 24.4	-1.9
BFZ				SN	S	18 11 13.3	-5.5
BFZ				*e*SN	S	18 11 14.1	-4.7
MRZ	**Mangatainoka R**	**4.62**	**199**	*e*PN	P	18 10 25.6	-2.4
MRZ				SN	S	18 11 17.2	-4.6
CAW	**Cannon Point**	**5.17**	**202**	*e*PN	P	18 10 31.1	-4.3
MRW	**Makara Radio**	**5.40**	**204**	SN	S	18 11 36.9	-3.3
TUWZ	**Tuamarina**	**5.84**	**208**	*e*PN	P	18 10 41.2	-2.9
NNZ	**Nelson**	**5.90**	**213**	SN	S	18 11 48.8	-3.1
THZ	**Tophouse**	**6.55**	**212**	*e*PN	P	18 10 48.9	-4.6
THZ				SN	S	18 12 03.6	-3.7
KHZ	**Kahutara**	**6.85**	**206**	*e*PN	P	18 10 53.8	-3.7
KHZ				SN	S	18 12 08.9	-5.6
LTZ	**Lake Taylor**	**7.65**	**211**	*e*PN	P	18 11 05.9	-2.2
MQZ	**McQueen's Vall**	**8.29**	**206**	SN	S	18 12 38.5	-10

NEIC 27 18:15:40.2, 35.61N×120.90W, h8km, **ML3.5**(NCEDC), **After NCEDC., Central California**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LRV	**Little Rabbit**	**0.81**	**353**	*e*P	Pb	18 15 53.8	-2.3
SAO	**San Andreas Ge**	**1.23**	**339**	*e*P	Pb	18 16 01.8	-1.5
LKC	**Lake Chabot**	**2.32**	**337**	*e*P	Pn	18 16 17.5	-1.7
MTUM	**Tungsten Hills**	**2.56**	**47**	*e*Pn	Pn	18 16 21.6	-1.1
MWC	**Mount Wilson**	**2.72**	**120**	*e*Pn	Pn	18 16 22.6	-2.3
DAC	**Darwin (Calif)**	**2.76**	**75**	*e*Pn	Pn	18 16 25.1	-0.5
TPH	**Tonopah**	**3.84**	**49**	*e*Pn	Pn	18 16 39.6	-1.3

NIED ***27*** *18:29:00, 25.60N×141.50E, h5km, Mw4.2 Best double couple: Mo1.92×10^15 NP1:φs224°, δ66°, λ82°. NP2:φs62°, δ25°, λ107°.*
MOS ***27*** *18:29:49.4±1.3,26.10N×142.52E, h33km, mb4.6/19, Error ellipse: s-maj=21.9km s-min=9.2km az=107.2*
BJI ***27*** *18:29:49.4,25.76N×142.54E, h54km, mB4.5, mb4.6, Ms3.8, Msz4.1*
NEIC ***27*** *18:29:50.8±1.8,25.88N×142.54E, h43km±15km, mb4.4/13, Error ellipse: s-maj=10.9km s-min=7.5km az=100.0*
IDC ***27*** *18:29:50.6±2.7,25.90N×142.61E, h40km±22km, mb4.0/20, mb1 4.2/22, mb1mx4.1/25, ML3.6/2, MS3.1/1, Ms1 3.1/1, ms1mx2.5/31, Error ellipse: s-maj=19.1km s-min=15.0km az=109.0*

ISC 27 18:29:43.2±2.2, **25.87N**±0.04×**142.54E**±0.07, **h1**km±13km, **n90, σ1§06/93, mb4.4/43, MS3.8/2, 3C-1D, Volcano Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**1.26**	**345**	Pn	**Pn**	**18 30 12.2**	**+4.2**
CBIJ	234nm,0.3s,baz=234,slow=4.9,SNR=188			Sn	**Sn**	**18 30 32.0**	**+6.2**
JHJ	**Hachijo jima 2** 2.3nm,0.3s,baz=290,slow=5.7,SNR=3.6	**7.62**	**342**	Pn	**Pn**	**18 31 37.5**	**-0.5**
JHJ	3.8nm,0.3s,baz=76,slow=19,SNR=2.6			Sn	**Sn**	**18 33 04.2**	**-1.8**
MAJO	**Matsushiro** 12nm,0.8s	**11.27**	**342**	P	**P**	**18 32 26.0**	**-2.4**
MAT	**Matsushiro**	**11.27**	**342**	P	**P**	**18 32 28.0**	**-0.5**
MAT				*e*S	**S**	**18 34 38.7**	**+2.4**
MAT	**Matsushiro** 4.7nm,0.6s	**11.27**	**342**	*e*P	**P**	**18 32 29.0**	**+0.5**
JNU	**Nakatsue** comp=Z,86nm,19.9s,baz=140,slow=34	**12.46**	**308**	LR	LR	18 36 58.4	
ASAJ	**Asahikawa** 0.4nm,0.3s,baz=238,slow=9.5,SNR=4.6	**18.21**	**0**	P	**P**	**18 33 60.0**	**+1.1**
SSE	**Sheshan**	**19.47**	**290**	⇑P	**P**	**18 34 13.5**	**-0.7**
SSE	comp=Z,21nm,0.7s			AMB	AMB		
SSE	comp=Z,51nm,3.5s			AMB	AMB		
YSS	**Yuzh-Sakhalins**	**21.05**	**0**	⇓*i*P	**P**	**18 34 32.0**	**+1.1**
YSS	comp=Z,20nm,1.1s,mb4.4			pmax	pmax		
YSS	**Yuzh-Sakhalins** comp=Z,16nm,1.0s,mb4.3	**21.05**	**0**	*e*P	**P**	**18 34 32.2**	**+1.3**
MDJ	**Mudanjiang**	**21.44**	**334**	P	**P**	**18 34 35.8**	**+0.9**
MDJ				AP		18 34 48.0	
MDJ				XP		18 34 56.3	
MDJ				S	**S**	**18 38 29.5**	**+0.8**
MDJ				PCP	PcP	18 38 38.0	-0.8
MDJ				XS		18 38 49.3	
MDJ				PCS		18 42 16.5	
MDJ				SCS	ScS	18 45 53.0	-5.3
MDJ				AMB	AMB		
MDJ	comp=Z,6.0nm,0.9s,mb3.9			AMB	AMB		
MDJ	comp=Z,53nm,5.5s			LR	LR		
MDJ	comp=N,44nm,8.1s			LR	LR		
MDJ	comp=E,31nm,7.0s			LR	LR		
MDJ	comp=Z,112nm,16.2s,MS3.4			LR	LR		
MDJ	**Mudanjiang** comp=Z,5.6nm,0.7s,mb4.0	**21.44**	**334**	*e*P	**P**	**18 34 34.2**	**-0.7**
NJ2	**Nanjing**	**21.60**	**292**	*e*P	**P**	**18 34 36.8**	**+0.1**
NJ2	comp=Z,10.0nm,0.8s,mb4.3			AMB	AMB		
KLR	**Kul'dur**	**24.79**	**343**	*e*P	**P**	**18 35 09.0**	**+1.2**
HIA	**Hailar** comp=Z,4.6nm,1.1s,mb4.2	**29.32**	**329**	*e*P	**P**	**18 35 49.0**	**-0.4**
GYA	**Guiyang**	**32.15**	**279**	P	**P**	**18 36 14.8**	**+0.2**
GYA				S	**S**	**18 41 25.0**	**-2.0**
GYA	comp=Z,10.0nm,1.0s,mb4.7			AMB	AMB		
GYA	comp=Z,200nm,8.7s			AMB	AMB		
GYA	comp=N,90nm,7.3s			LR	LR		
GYA	comp=E,170nm,6.8s			LR	LR		
GYA	comp=Z,270nm,6.5s			LR	LR		
ULN	**Ulaanbaatar**	**35.44**	**318**	*e*P	**P**	**18 36 43.9**	**+1.1**
ULN	**Ulaanbaatar** comp=Z,1.7nm,0.6s,mb4.2	**35.44**	**318**	P	**P**	**18 36 39.3**	**-3.6**
SONM	**Songino Array** comp=Z,0.7nm,0.4s,mb3.8,baz=132,slow=9.4,SNR=9.0	**35.82**	**317**	P	**P**	**18 36 45.3**	**-0.8**
SONM				PcP	PcP	18 39 14.1	+0.1
KMI	**Kunming** comp=Z,1.5nm,0.9s,baz=139,slow=3.2,SNR=6.6	**35.84**	**278**	*e*P	**P**	**18 36 46.3**	**-0.2**
KMI				AP	pP	18 37 01.0	+14
KMI				XP	sP	18 37 09.8	+23
KMI	comp=Z,6.0nm,1.2s,mb4.3			AMB	AMB		
YAK	**Yakutsk**	**37.18**	**350**	*e*P	**P**	**18 36 56.3**	**-1.1**
YAK	comp=Z,5.0nm,0.6s,mb4.4			pmax	pmax		
BOD	**Bodaibo**	**37.80**	**335**	*e*P	**P**	**18 37 02.9**	**+0.2**
ZAK	**Zakamensk**	**38.75**	**320**	*e*P	**P**	**18 37 10.0**	**-0.7**
CM31	**Chiang Mai Arr** comp=Z,2.5nm,0.6s,mb4.1	**40.90**	**269**	*e*P	**P**	**18 37 30.0**	**+1.2**
CMAR	**Chiang Mai Arr** comp=Z,2.5nm,0.7s,mb4.0,baz=56,slow=7.2,SNR=24	**40.90**	**269**	P	**P**	**18 37 30.6**	**+1.8**
CMAR	comp=Z,3.0nm,0.7s			pmax	pmax		
CTA	**Charters Tower** comp=Z,3.0nm,0.8s,mb4.4,baz=329,slow=12,SNR=3.1	**45.82**	**175**	P	**P**	**18 38 13.8**	**+5.1**
CTA	**Charters Tower**	**45.82**	**175**	P	**P**	**18 38 13.8**	**+5.0**
CTA	comp=Z,3.0nm,0.8s			pmax	pmax		
CTA	**Charters Tower**	**45.82**	**175**	P	**P**	**18 38 13.8**	**+5.0**
WRAB	**Tennant Creek** comp=Z,53nm,0.5s	**46.22**	**191**	*e*P	**P**	**18 38 11.8**	**-0.1**
WRAB				*e*		18 38 18.3	
WB2	**Warramunga Arr**	**46.23**	**191**	⇑*i*P	**P**	**18 38 11.8**	**-0.2**
TIXI	**Tiksi**	**46.46**	**354**	*e*P	**P**	**18 38 11.7**	**-1.4**
TIXI	comp=Z,2.0nm,1.0s,mb4.1			pmax	pmax		
TIXI	**Tiksi** comp=Z,3.8nm,1.0s,mb4.4	**46.46**	**354**	*e*P	**P**	**18 38 13.5**	**+0.4**
TIXI				*e*		18 38 17.5	
FITZ	**Fitzroy Crossi** comp=Z,5.3nm,0.7s,mb4.8	**46.70**	**202**	*e*P	**P**	**18 38 16.2**	**+0.5**
FITZ	**Fitzroy Crossi** comp=Z,4.7nm,0.8s,mb4.7,baz=22,slow=9.1,SNR=11	**46.70**	**202**	P	**P**	**18 38 16.4**	**+0.7**
WMQ	**Urumqi**	**47.56**	**307**	*e*P	**P**	**18 38 23.0**	**+0.8**
ASAR	**Alice Springs** comp=Z,1.4nm,0.5s,mb4.2,baz=15,slow=11	**49.95**	**190**	P	**P**	**18 38 40.6**	**-0.3**
ZAL	**Zalesovo** comp=Z,0.8nm,0.3s,mb4.1,baz=274,slow=11,SNR=4.1	**50.64**	**320**	P	**P**	**18 38 44.3**	**-1.5**
ZAL				PcP	PcP	18 40 01.8	-1.8
ZAL	**Zalesovo** comp=Z,1.4nm,0.8s,baz=285,slow=3.1,SNR=7.4	**50.64**	**320**	P	**P**	**18 38 44.3**	**-1.5**
ZAL						18 40 01.8	
ZAL	comp=Z,1.0nm,0.3s			pmax	pmax		
ZAL	comp=Z,1.0nm,0.8s			pmax	pmax		
PKI	**Pulchoki**	**50.67**	**285**	*e*P	**P**	**18 38 46.0**	**-0.4**
KKN	**Kakani** comp=Z,11nm,0.9s,mb4.8	**50.74**	**286**	*e*P	**P**	**18 38 47.3**	**+0.4**
DMN	**Daman**	**50.92**	**286**	*e*P	**P**	**18 38 48.7**	**+0.4**
GKN	**Gorkha** comp=Z,12nm,0.9s,mb4.8	**51.25**	**286**	*e*P	**P**	**18 38 51.8**	**+1.0**
MKAR	**Makanchi Array** comp=Z,1.1nm,0.4s,mb4.2,baz=88,slow=10,SNR=36	**51.51**	**310**	P	**P**	**18 38 51.5**	**-1.0**
MKAR				PcP	PcP	18 40 06.0	-0.8
MKAR	**Makanchi Array** comp=Z,2.7nm,1.0s,baz=91,slow=5.3,SNR=5.6	**51.51**	**310**	P	**P**	**18 38 51.5**	**-1.0**
MKAR						18 40 06.1	
MKAR	comp=Z,1.0nm,0.4s			pmax	pmax		
MKAR	comp=Z,3.0nm,1.0s			pmax	pmax		
KOLN	**Koldanda** comp=Z,7.9nm,0.9s,mb4.7	**52.20**	**286**	*e*P	**P**	**18 38 58.8**	**+0.8**
KURK	**Kurchatov**	**54.08**	**315**	*e*P	**P**	**18 39 08.9**	**-2.6**
STKA	**Stephens Creek** comp=Z,3.0nm,0.9s,mb4.3,baz=246,slow=10.0,SNR=3.0	**57.43**	**181**	P	**P**	**18 39 33.6**	**-2.4**
MCK	**McKinley** comp=Z,3.5nm,1.0s,mb4.3	**57.63**	**29**	*e*P	**P**	**18 39 36.7**	**-0.3**
FORT	**Forrest** comp=Z,26nm,0.7s,mb5.4	**58.01**	**195**	*e*P	**P**	**18 39 39.6**	**-0.5**
FORT				*e*		18 39 47.1	
ILAR	**Eielson Array** comp=Z,2.2nm,0.8s,mb4.2,baz=262,slow=6.0,SNR=24	**58.63**	**28**	P	**P**	**18 39 42.7**	**-1.3**
ILAR	**Eielson Array** comp=Z,2.0nm,0.8s	**58.63**	**28**	P	**P**	**18 39 42.7**	**-1.3**
ILAR				pmax	pmax		
ZRNK	**Zerenda**	**60.00**	**318**	*e*P	**P**	**18 39 52.8**	**-0.9**
INK	**Inuvik** comp=Z,3.4nm,1.0s,mb4.5,baz=282,slow=8.0,SNR=4.3	**64.01**	**24**	P	**P**	**18 40 19.1**	**-1.1**
INK	**Inuvik** comp=Z,3.0nm,1.0s	**64.01**	**24**	P	**P**	**18 40 19.1**	**-1.1**
INK				pmax	pmax		
INK	**Inuvik** comp=Z,8.7nm,1.3s,mb4.8	**64.01**	**24**	*e*P	**P**	**18 40 18.9**	**-1.3**
ARU	**Arti**	**65.59**	**323**	⇑*i*P	**P**	**18 40 30.2**	**-0.4**
ARU				*e*		18 40 57.1	
ARU				*e*		18 42 56.8	
ARU				*e*S	S	18 49 19.4	+3.9
ARU	comp=Z,10.0nm,0.8s,mb5.1			pmax	pmax		
ARU	**Arti** comp=Z,17nm,0.9s,mb5.3	**65.59**	**323**	*e*P	**P**	**18 40 29.6**	**-1.0**
ARU				*e*		18 40 35.8	
DLBC	**Dease Lake**	**67.03**	**35**	P	**P**	**18 40 40.7**	**+1.0**
YKW3	**Yellowknife Ar**	**73.03**	**28**	*e*P	**P**	**18 41 14.1**	**-2.1**
YKA	**Yellowknife Ar** comp=Z,1.9nm,0.8s,mb4.3,baz=291,slow=6.1,SNR=21	**73.07**	**28**	P	**P**	**18 41 16.2**	**-0.2**
YKA	**Yellowknife Ar** comp=Z,2.0nm,0.8s	**73.07**	**28**	P	**P**	**18 41 16.2**	**-0.3**
YKA				pmax	pmax		
ARCES	**ARCESS Array B** comp=Z,1.3nm,0.5s,mb4.2,baz=63,slow=8.1,SNR=16	**74.80**	**341**	P	**P**	**18 41 28.9**	**+2.5**
ARCES	**ARCESS Array B**	**74.80**	**341**	P	**P**	**18 41 28.9**	**+2.5**
ARCES	comp=Z,1.0nm,0.5s			pmax	pmax		
JOF	**Joensuu** comp=Z,4.1nm,0.7s,mb4.7	**76.32**	**334**	*e*p	**P**	**18 41 35.2**	**0.0**
JOF	**Joensuu**	**76.32**	**334**	*e*P	**P**	**18 41 35.2**	**0.0**
JOF	comp=Z,4.0nm,0.7s,mb4.7			pmax	pmax		
THR	**Tehran** comp=Z,1.9nm,0.9s,mb4.2,baz=89,slow=5.2,SNR=6.6	**76.39**	**303**	P	**P**	**18 41 37.7**	**+1.5**
THR	**Tehran**	**76.39**	**303**	P	**P**	**18 41 37.7**	**+1.6**
THR	comp=Z,2.0nm,0.9s			pmax	pmax		
THR	**Tehran**	**76.39**	**303**	P	**P**	**18 41 37.7**	**+1.5**
OBN	**Obninsk**	**77.72**	**326**	*e*P	**P**	**18 41 41.7**	**-1.4**
OBN						18 41 51.0	
OBN	comp=Z,13nm,1.3s,mb4.9			pmax	pmax		
VRSR	**Storozhevoye**	**78.08**	**321**	*e*P	**P**	**18 41 45.8**	**+0.6**
VRSR	comp=Z,

SOC				MLR	MLR				
	comp=E,60nm,16.0s,MS4.1								
AKASG	**Malin Array Be**	**83.80**	**324**	P	**P**	**18 42 15.5**	**+0.2**		
	comp=E,0.6nm,0.5s,mb4.1,baz=45,slow=5.3,SNR=8.8								
PDAR	**Pinedale Array**	**84.86**	**45**	P	**P**	**18 42 21.1**	**+0.3**		
	comp=E,2.2nm,1.2s,mb4.3,baz=315,slow=2.1,SNR=5.6								
NB2	**NORSAR Subarra**	**84.87**	**338**	P	**P**	**18 42 20.3**	**-0.2**		
	comp=E,2.8nm,0.7s,mb4.6,baz=45,slow=5.0								
NOA	**NORSAR Array B**	**84.87**	**338**	P	**P**	**18 42 20.9**	**+0.4**		
	comp=E,2.7nm,0.8s,mb4.5,baz=46,slow=4.8,SNR=9.0								
NOA	**NORSAR Array B**	**84.87**	**338**	P	**P**	**18 42 20.9**	**+0.4**		
NOA				pmax	pmax				
	comp=Z,3.0nm,0.8s								
BRTR	**Keskin Array B**	**87.07**	**313**	P	**P**	**18 42 32.7**	**+0.8**		
	comp=Z,1.6nm,0.7s,mb4.3,baz=81,slow=3.8,SNR=8.8								
PV10	**Paradox Valley**	**87.45**	**48**	*e*P	**P**	**18 42 34.4**	**+0.7**		
ANMO	**Albuquerque**	**91.02**	**50**	P	**P**	**18 42 52.4**	**+1.7**		
	comp=Z,2.0nm,0.8s,mb4.5								
GERES	**GERESS Array B**	**92.72**	**329**	P	**P**	**18 42 57.8**	**-0.3**		
	comp=Z,0.6nm,0.7s,mb4.2,baz=45,slow=5.7,SNR=5.7								
GERES	**GERESS Array B**	**92.72**	**329**	P	**P**	**18 42 57.8**	**-0.4**		
GERES				pmax	pmax				
	comp=Z,1.0nm,0.7s								
TXAR	**Lajitas Array**	**96.08**	**53**	P	**P**	**18 43 14.0**	**-0.1**		
	comp=Z,1.3nm,0.3s,mb5.0,baz=270,slow=2.7,SNR=3.9								
LPAZ	**La Paz**	**149.90**	**78**	PKPbc	PKPdf	18 49 37.1	+4.2		
	comp=Z,1.1nm,0.5s,baz=238,slow=4.2,SNR=5.9								

WEL ***27*** *18:56:57.6±0.3, 44.15S×168.40E, h5km, ML3.7/7, Error ellipse: s-maj=4.4km s-min=2.2km az=90.0*
ISC 27 18:56:55.5±1.4, 44.08S±0.05×168.4E±0.1, h2km±13km, n15, σ0§62/19, 1C, South Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MSZ	**Milford Sound**	**0.70**	**211**	P*	**Pb**	**18 57 09.6**	**-0.4**
MSZ				SG	**Sg**	**18 57 18.2**	**-0.6**
BWZ	**Berwen**	**1.14**	**114**	⇑P*	**Pb**	**18 57 18.2**	**+0.6**
MLZ	**Mavora Lakes**	**1.28**	**188**	P*	**Pb**	**18 57 20.2**	**+0.2**
MLZ				S*	**Sb**	**18 57 38.3**	**+1.4**
AXZ	**Alexandra**	**1.35**	**152**	P*	**Pb**	**18 57 20.8**	**-0.4**
DCZ	**Deep Cove**	**1.67**	**212**	PN	**Pn**	**18 57 26.0**	**0.0**
WHZ	**Wether Hill Ro**	**1.85**	**190**	PN	**Pn**	**18 57 29.0**	**+0.5**
WHZ				SN	**Sn**	**18 57 52.4**	**-0.4**
ODZ	**Otahua Downs**	**1.86**	**122**	PN	**Pn**	**18 57 28.6**	**0.0**
ODZ				SN	**Sn**	**18 57 51.9**	**-1.0**
RPZ	**Rata Peaks**	**1.93**	**80**	PN	**Pn**	**18 57 31.2**	**+1.5**
WVZ	**Waitaha Valley**	**1.95**	**60**	PN	**Pn**	**18 57 29.7**	**-0.3**
TUZ	**Tuapeka**	**2.06**	**156**	*e*PN	**Pn**	**18 57 31.3**	**-0.3**
LTZ	**Lake Taylor**	**3.08**	**67**	*e*PN	**Pn**	**18 57 46.2**	**0.0**
DSZ	**Denniston Nort**	**3.40**	**48**	*e*PN	**Pn**	**18 57 50.2**	**-0.5**
THZ	**Tophouse**	**4.02**	**56**	*e*PN	**Pn**	**18 57 59.5**	**+0.1**
QRZ	**Quartz Range**	**4.44**	**44**	*e*PN	**Pn**	**18 58 05.0**	**-0.4**
NNZ	**Nelson**	**4.63**	**54**	*e*PN	**Pn**	**18 58 08.4**	**+0.2**

IDC ***27*** *19:13:24.1±3.0, 41.15N×109.43W, mb2.7/1, mb1 3.3/2, mb1mx3.1/20, ML3.1/1, Error ellipse: s-maj=38.4km s-min=8.5km az=113.0*
NEIC ***27*** *19:13:31.5±0.5, 41.77N×110.73W, ML2.3, Error ellipse: s-maj=7.5km s-min=4.4km az=89.0, Suspected Mining explosion.*
NEIC 60 km [35 miles] NNE of Evanston.
ISC 27 19:13:31.1±0.5, 41.74N±0.03×110.72W±0.06, n24, σ1§01/33, Wyoming

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HWUT	**Hardware Ranch**	**0.65**	**258**	*e*Pg	**Pg**	**19 13 44.5**	**+0.5**
TCUT	**Toone Canyon**	**0.81**	**220**	*e*Pg	**Pg**	**19 13 47.6**	**+0.3**
AHID	**Auburn Hatcher**	**1.06**	**345**	*e*Pg	**Pg**	**19 13 50.9**	**-1.3**
JLU	**Jordanelle**	**1.27**	**206**	*e*Pg	**Pg**	**19 13 55.9**	**-0.4**
JLU				*e*Sg	**Sg**	**19 14 08.6**	**-4.5**
CTU	**Camp Tracy**	**1.31**	**217**	*e*Pn	**Pn**	**19 13 56.2**	**-0.3**
CTU				*e*Sn	**Sn**	**19 14 18.5**	**+3.6**
PDAR	**Pinedale Array**	**1.34**	**40**	Pg	**Pg**	**19 13 55.0**	**-2.8**
	5.8nm,0.3s,baz=218,slow=15,SNR=105						
PDAR				Lg		19 14 15.7	
	3.8nm,0.3s,baz=182,slow=21,SNR=14						
SPUT	**South Promonto**	**1.37**	**252**	*e*Pn	**Pn**	**19 13 57.7**	**+0.2**
SPUT				*e*Sn	**Sn**	**19 14 16.1**	**-0.4**
DAU	**Daniels Canyon**	**1.39**	**197**	*e*Pn	**Pn**	**19 13 57.5**	**-0.2**
REDW	**Red Top Meadow**	**1.62**	**357**	*e*Pn	**Pn**	**19 14 00.8**	**-0.3**
MPU	**Maple Canyon**	**1.86**	**202**	*e*Pn	**Pn**	**19 14 04.5**	**+0.1**
KSWY	**Kelly School**	**1.88**	**2**	*e*Pn	**Pn**	**19 14 05.4**	**+0.7**
SRU	**San Rafael**	**2.63**	**177**	*e*Pn	**Pn**	**19 14 16.3**	**+0.8**
SRU				*e*Sn	**Sn**	**19 14 47.2**	**-1.4**
HLID	**Hailey**	**3.28**	**305**	*e*Pn	**Pn**	**19 14 23.4**	**-1.3**
MSU	**Marysvale**	**3.41**	**200**	*e*Pn	**Pn**	**19 14 26.3**	**-0.3**
MSU				*e*Pg	**Pg**	**19 14 34.8**	**-4.4**
MCMT	**McKenzie Canyo**	**3.46**	**334**	*e*Pn	**Pn**	**19 14 28.0**	**+0.8**
PV10	**Paradox Valley**	**3.60**	**158**	*e*Pn	**Pn**	**19 14 29.6**	**+0.4**
BOZ	**Bozeman (W)**	**3.96**	**351**	Pn	**Pn**	**19 14 36.0**	**+1.6**
PV01	**Paradox Valley**	**3.96**	**155**	*e*Pn	**Pn**	**19 14 33.8**	**-0.6**
PV01				*e*Pg	**Pg**	**19 14 42.0**	**-8.1**
RW3	**Ridgway**	**4.19**	**145**	*e*Pn	**Pn**	**19 14 38.2**	**+0.6**
RW3				*e*Pg	**Pg**	**19 14 46.8**	**-7.9**
BMN	**Battle Mountai**	**5.09**	**257**	*e*Pn	**Pn**	**19 14 49.6**	**-0.7**
BMN				*e*		19 14 57.5	
RSSD	**Black Hills**	**5.45**	**62**	*e*Pn	**Pn**	**19 14 57.1**	**+1.6**
RSSD				*e*Pg	**Pg**	**19 15 11.5**	**-8.3**
SDCO	**Great Sand Dun**	**5.66**	**133**	P	**Pn**	**19 15 05.9**	**+7.4**
NVAR	**Mina Array Bea**	**6.69**	**243**	Pn	**Pn**	**19 15 15.1**	**+2.1**
	0.3nm,0.3s,baz=68,slow=14,SNR=9.3						
NVAR				Pg	**Pg**	**19 15 28.0**	**-17**
	0.5nm,0.3s,baz=22,slow=16,SNR=8.7						
NVAR				Lg		19 17 13.1	
	0.1nm,0.3s,baz=50,slow=34,SNR=3.1						
YKA	**Yellowknife Ar**	**20.91**	**355**	P	**P**	**19 18 16.9**	**-0.5**
	0.2nm,0.6s,baz=171,slow=10,SNR=5.5						

LDG ***27*** *19:20:05.8±1.0, 42.58N×18.01E, h10km, Ml3.7/12, Error ellipse: s-maj=19.9km s-min=16.6km az=116.0*
NEIC ***27*** *19:20:13.9±0.3, 43.02N×17.32E, h10km, MD3.4(ROM), MD3.2(PDG), ML3.5(ZAG), ML3.4(BUD), Error ellipse: s-maj=3.9km s-min=3.1km az=199.0*
ROM ***27*** *19:20:13.4±0.4, 43.07N×17.51E, h10km, MD3.4/9, ML3.1/10, Error ellipse: s-maj=3.7km s-min=2.0km az=90.0*
IDC ***27*** *19:20:16.3±1.6, 43.34N×17.40E, mb3.5/5, mb1 3.6/12, mb1mx3.5/26, ML3.4/7, Error ellipse: s-maj=22.4km s-min=11.2km az=29.0*
ISC 27 19:20:13.0±0.2, 43.10N±0.02×17.27E±0.02, h10km, n118, σ1§50/183, mb3.5/5, 23C-2D, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STON	**Ston**	**0.39**	**126**	*i* Pg	**Pg**	**19 20 20.6**	**-0.4**
STON				*i* Sg	**Sg**	**19 20 26.3**	**-0.1**
BRY	**Bratogost**	**0.96**	**102**	⇑*i*Pg	**Pg**	**19 20 30.0**	**-2.2**
BRY				*e*Sg	**Sg**	**19 20 44.8**	**-0.2**
HCY	**Herceg Novi**	**1.12**	**125**	⇑*i*Pg	**Pg**	**19 20 32.9**	**-2.4**
HCY				*e*Sg	**Sg**	**19 20 50.1**	**-0.2**
UPM	**Unac-Piva**	**1.21**	**85**	⇑*i*Pg	**Pg**	**19 20 34.7**	**-2.4**
UPM				*e*Sg	**Sg**	**19 20 53.4**	**+0.2**
NKY	**Niksic**	**1.30**	**102**	⇑*i*Pg	**Pg**	**19 20 36.5**	**-2.6**
NKY				*e*Sg	**Sg**	**19 20 56.0**	**-0.4**
BUM	**Brajici-Budva**	**1.44**	**123**	⇑*i*Pg	**Pg**	**19 20 39.3**	**-2.6**
BUM				*e*Sg	**Sg**	**19 21 00.7**	**-0.4**
PLE	**Pljevlja**	**1.57**	**81**	⇑*i*Pg	**Pg**	**19 20 42.1**	**-2.3**
PLE				*e*Sg	**Sg**	**19 21 05.0**	**-0.3**
TTG	**Podgorica**	**1.61**	**114**	*e*Pg	**Pg**	**19 20 42.4**	**-2.9**
TTG				*e*Sg	**Sg**	**19 21 05.5**	**-1.3**
NVSS	**Nova Varos 2**	**1.82**	**76**	⇑*i*Pn	**Pn**	**19 20 48.3**	**+3.6**
NVSS				Sg	**Sg**	**19 21 13.8**	**+0.1**
ULC	**Ulcinj**	**1.85**	**127**	⇑*i*Pn	**Pn**	**19 20 46.5**	**+1.3**
ULC				*e*Sn	**Sn**	**19 21 12.1**	**+3.3**
IVA	**Berane**	**1.94**	**96**	⇑*i*Pn	**Pn**	**19 20 48.7**	**+2.2**
IVA				*e*Sn	**Sn**	**19 21 15.5**	**+4.4**
SDA	**Shkodra**	**1.95**	**122**	*e*Pn	**Pn**	**19 20 48.7**	**+2.1**
SDA				*i* Sn	**Sn**	**19 21 19.7**	**+8.4**
FG2	**Serracapriola**	**2.03**	**231**	*e*Pn	**Pn**	**19 20 49.7**	**+2.0**
	191nm,0.3s						
FG2	**Serracapriola**	**2.03**	**231**	*e*Pn	**Pn**	**19 20 49.7**	**+2.0**
PVY	**Plav**	**2.05**	**103**	⇑*i*Pn	**Pn**	**19 20 49.8**	**+1.7**
PVY				*e*Sn	**Sn**	**19 21 17.9**	**+4.0**
BCI	**Bajram Curri**	**2.19**	**109**	*e*Pn	**Pn**	**19 20 52.0**	**+2.0**
PUK	**Puka**	**2.21**	**118**	*i* Pn	**Pn**	**19 20 52.6**	**+2.3**
PUK				*i* Sn	**Sn**	**19 21 21.2**	**+3.4**
DIVS	**Divcibare**	**2.21**	**62**	⇑*i*Pn	**Pn**	**19 20 51.4**	**+1.1**
DIVS				Sn	**Sn**	**19 21 19.2**	**+1.2**
BRT	**Bari-Castellan**	**2.22**	**181**	*e*PN	**Pn**	**19 20 49.4**	**-1.1**
BRT				SN	**Sn**	**19 21 16.5**	**-1.7**
	51nm,0.2s						
BRT	**Bari-Castellan**	**2.22**	**181**	*e*Pn	**Pn**	**19 20 49.4**	**-1.1**
BRT				*e*Sn	**Sn**	**19 21 16.5**	**-1.8**
NVLJ	**Novalja**	**2.27**	**311**	*i* Pn	**Pn**	**19 20 52.7**	**+1.6**
NVLJ				*i* Sn	**Sn**	**19 21 20.1**	**+0.6**
NVLJ				*i* Sg	**Sg**	**19 21 24.7**	**-3.9**
SISC	**Sisak**	**2.46**	**345**	*i* Pn	**Pn**	**19 20 55.5**	**+1.6**
SISC				*i* Sn	**Sn**	**19 21 26.6**	**+2.6**
CII	**Carovilli**	**2.59**	**239**	*e*PN	**Pn**	**19 20 56.5**	**+0.7**
	68nm,0.6s						
CII	**Carovilli**	**2.59**	**239**	*e*Pn	**Pn**	**19 20 56.5**	**+0.8**
TIR	**Tirane**	**2.60**	**131**	*i* Pn	**Pn**	**19 20 55.0**	**-0.9**
GRUS	**Gruza**	**2.63**	**71**	⇑*i*Pn	**Pn**	**19 20 57.0**	**+0.8**
GRUS				Sn	**Sn**	**19 21 29.3**	**+0.8**
RNI2	**Rionero Sannit**	**2.70**	**240**	*e*PN	**Pn**	**19 20 59.0**	**+1.7**
	24nm,0.7s						
RNI2	**Rionero Sannit**	**2.70**	**240**	*e*Pn	**Pn**	**19 20 59.0**	**+1.7**
INTR	**Introdacqua**	**2.71**	**247**	*e*PN	**Pn**	**19 20 57.9**	**+0.4**
INTR	**Introdacqua**	**2.71**	**247**	*e*Pn	**Pn**	**19 20 57.9**	**+0.4**
TERO	**Teramo**	**2.74**	**261**	*e*PN	**Pn**	**19 20 59.2**	**+1.4**
TERO	**Teramo**	**2.74**	**261**	*e*Pn	**Pn**	**19 20 59.2**	**+1.4**
SGG	**Gregorio Mates**	**2.75**	**232**	*e*PN	**Pn**	**19 20 59.0**	**+1.0**
SGG	**Gregorio Mates**	**2.75**	**232**	*e*Pn	**Pn**	**19 20 59.0**	**+1.0**
BEO	**Belgrade**	**2.87**	**52**	*e*Pn	**Pn**	**19 21 02.8**	**+3.0**
BEO				Sn	**Sn**	**19 21 35.3**	**+0.6**
RHK3	**Tenkes**	**2.87**	**14**	⇑*e*P	**Pn**	**19 21 00.7**	**+0.9**
RHK3				*e*S	**Sn**	**19 21 34.8**	**0.0**
SDI	**San Donato**	**2.92**	**243**	*e*PN	**Pn**	**19 21 00.7**	**+0.3**
	44nm,0.4s						
SGO	**Sicignano**	**2.93**	**211**	*e*PN	**Pn**	**19 21 00.6**	**0.0**
	13nm,0.3s						
SGO	**Sicignano**	**2.93**	**211**	*e*Pn	**Pn**	**19 21 00.6**	**0.0**
AQU	**L'Aquila**	**2.95**	**257**	*e*Pn	**Pn**	**19 20 59.8**	**-1.0**
SLCN	**Sala Consilina**	**2.97**	**205**	*e*PN	**Pn**	**19 21 01.9**	**+0.7**
SLCN	**Sala Consilina**	**2.97**	**205**	*e*Pn	**Pn**	**19 21 01.9**	**+0.7**
RHK1	**Bakonya**	**3.05**	**11**	⇑P	**Pn**	**19 21 03.2**	**+1.0**
RHK1				*e*S	**Sn**	**19 21 38.4**	**-0.8**
ORI	**Oriolo Calabro**	**3.10**	**192**	*e*PN	**Pn**	**19 21 02.6**	**-0.3**
	39nm,0.4s						
SVIS	**Svilajnac**	**3.10**	**66**	⇑*i*Pn	**Pn**	**19 21 03.9**	**+0.9**
SVIS				Sn	**Sn**	**19 21 38.9**	**-1.7**
SNTG	**Esanatoglia**	**3.17**	**274**	*e*PN	**Pn**	**19 21 04.7**	**+0.7**
	45nm,0.3s						
SNTG	**Esanatoglia**	**3.17**	**274**	*e*Pn	**Pn**	**19 21 04.7**	**+0.7**
ARV	**Arcevia**	**3.19**	**279**	*e*PN	**Pn**	**19 21 05.7**	**+1.5**
	18nm,0.3s						
ARV	**Arcevia**	**3.19**	**279**	*e*Pn	**Pn**	**19 21 05.7**	**+1.5**
SKO	**Skopje**	**3.28**	**109**	*e*Pn	**Pn**	**19 21 09.0**	**+3.4**
FSSB	**Fossombrone**	**3.33**	**282**	*e*PN	**Pn**	**19 21 07.5**	**+1.3**
FSSB				SN	**Sn**	**19 21 47.4**	**+1.2**
	42nm,0.4s						
FSSB	**Fossombrone**	**3.33**	**282**	*e*Pn	**Pn**	**19 21 07.5**	**+1.3**
FSSB				*e*Sn	**Sn**	**19 21 47.4**	**+1.1**
MNS	**Montasola**	**3.46**	**260**	*e*PN	**Pn**	**19 21 08.7**	**+0.7**
	30nm,0.4s						
MNS	**Montasola**	**3.46**	**260**	*e*Pn	**Pn**	**19 21 08.7**	**+0.7**
LJU	**Ljubljana**	**3.54**	**327**	*e*Pn	**Pn**	**19 21 18.1**	**+8.9**
PKS9	**Tamasi**	**3.56**	**11**	*e*P	**Pn**	**19 21 10.6**	**+1.1**
VOY	**Vojsko**	**3.79**	**322**	*e*Pn	**Pn**	**19 21 13.7**	**+0.8**
VOY				*e*Pg	**Pg**	**19 21 23.3**	**-5.5**
VOY				*e*Sn	**Sn**	**19 21 57.5**	**-0.6**
OBKA	**Obir**	**3.92**	**331**	⇑*i*PN	**Pn**	**19 21 15.0**	**+1.4**
OBKA				*i* SN	**Sn**	**19 22 02.5**	**+1.3**
TIP	**Timpagrande**	**3.94**	**186**	*e*Pn	**Pn**	**19 21 11.6**	**-3.3**
PTCC	**Patocco-Chiusa**	**4.32**	**321**	*e*PN	**Pn**	**19 21 20.9**	**+0.5**
	15nm,0.3s						
PTCC	**Patocco-Chiusa**	**4.32**	**321**	*e*Pn	**Pn**	**19 21 20.9**	**+0.5**
ARSA	**Arzberg**	**4.33**	**344**	⇑*i*PN	**Pn**	**19 21 21.5**	**+1.0**
ARSA				*i* SN	**Sn**	**19 22 11.0**	**-0.6**
SOP	**Sopron**	**4.61**	**354**	⇑*i*Pn	**Pn**	**19 21 25.5**	**+1.1**
SOP				*e*Sn	**Sn**	**19 22 17.1**	**-1.6**
SRO	**Srobarova**	**4.77**	**8**	*e*PN	**Pn**	**19 21 27.5**	**+0.8**
SRO				*e*SN	**Sn**	**19 22 21.4**	**-1.3**
KBA	**Koelnbreinsper**	**4.85**	**326**	⇑*i*PN	**Pn**	**19 21 28.8**	**+0.9**
KBA				*i* SN	**Sn**	**19 22 25.8**	**+1.0**
CTI	**Castel Tesino**	**4.98**	**308**	*e*PN	**Pn**	**19 21 29.5**	**-0.2**
CTI	**Castel Tesino**	**4.98**	**308**	*e*Pn	**Pn**	**19 21 29.5**	**-0.2**
ZST	**Bratislava**	**5.10**	**359**	*e*PN	**Pn**	**19 21 32.3**	**+1.0**
ZST				*e*SN	**Sn**	**19 22 27.0**	**-4.0**
PSZ	**Piszkesteto**	**5.16**	**20**	*e*Pn	**Pn**	**19 21 30.6**	**-1.5**
MOA	**Molln**	**5.20**	**337**	⇑*i*PN	**Pn**	**19 21 34.4**	**+1.7**
MOA				*i* SN	**Sn**	**19 22 35.0**	**+1.5**
SMOL	**Smolenice**	**5.42**	**1**	*e*SN	**Sn**	**19 22 34.4**	**-4.6**
VYHS	**Vyhne**	**5.50**	**11**	*e*PN	**Pn**	**19 21 37.6**	**+0.5**
VYHS				*e*SN	**Sn**	**19 22 37.8**	**-3.4**
KOLL	**Kolacno**	**5.54**	**8**	*e*PN	**Pn**	**19 21 37.1**	**-0.4**
KOLL				*e*SN	**Sn**	**19 22 38.4**	**-3.6**
SCE	**Schlegeis**	**5.57**	**317**	⇓*i*PN	**Pn**	**19 21 38.3**	**+0.3**
WTTA	**Wattenberg**	**5.76**	**318**	⇓*i*PN	**Pn**	**19 21 41.1**	**+0.4**
WTTA				*i* SN	**Sn**	**19 22 49.2**	**+1.6**
WATA	**Walderalm**	**5.84**	**318**	⇑*i*PN	**Pn**	**19 21 42.4**	**+0.6**
WATA				*i* SN	**Sn**	**19 22 51.4**	**+1.8**
SQTA	**Sankt Quirin**	**5.94**	**316**	⇑*i*PN	**Pn**	**19 21 44.1**	**+0.8**
SQTA				*i* SN	**Sn**	**19 22 53.1**	**+0.9**
MOTA	**Moosalm**	**6.08**	**316**	⇑*i*PN	**Pn**	**19 21 49.1**	**+0.7**
MOTA				*i* SN	**Sn**	**19 22 57.5**	**+1.9**
PGF	**Pioggiola**	**6.11**	**268**	*e*Pn	**Pn**	**19 21 44.5**	**-1.1**
PGF				*e*Sn	**Sn**	**19 22 54.4**	**-1.9**
	2.0nm,0.3s						
VRAC	**Vranov**	**6.23**	**356**	Pn	**Pn**	**19 21 46.6**	**-0.6**
	0.7nm,0.3s,baz=171,slow=13,SNR=3.5						
VRAC				Sn	**Sn**	**19 22 55.2**	**-4.1**
	2.1nm,0.3s,baz=82,slow=19,SNR=5.3						
GEC2	**GERESS Array S**	**6.26**	**338**	*e*Pn	**Pn**	**19 21 48.6**	**+0.9**
GEC2				*e*Sn	**Sn**	**19 22 59.5**	**-0.6**
GERES	**GERESS Array B**	**6.26**	**338**	Pn	**Pn**	**19 21 48.1**	**+0.4**
	2.5nm,0.3s,baz=158,slow=14,SNR=7.5						
GERES				Sn	**Sn**	**19 22 59.4**	**-0.7**
	2.7nm,0.3s,baz=146,slow=24,SNR=15						
DAVOX	**Davos**	**6.41**	**308**	Pn	**Pn**	**19 21 50.6**	**+0.8**
	0.6nm,0.3s,baz=126,slow=19,SNR=5.5						
DAVOX				Sn	**Sn**	**19 23 03.9**	**+0.2**
	0.9nm,0.3s,baz=141,slow=19,SNR=2.2						
CRVS	**Cervenica-Dubn**	**6.49**	**25**	*e*PN	**Pn**	**19 21 52.0**	**+1.0**
CRVS				*e*SN	**Sn**	**19 23 03.0**	**-3.0**
KHC	**Kasperske Hory**	**6.55**	**338**	*e*PN	**Pn**	**19 21 52.2**	**+0.3**
KHC				*e*SN	**Sn**	**19 23 04.4**	**-3.1**
MLR	**Muntele Rosu**	**6.67**	**66**	Pn	**Pn**	**19 21 53.6**	**+0.1**
	0.2nm,0.3s,baz=321,slow=6.5,SNR=2.6						
MLR				Sn	**Sn**	**19 23 08.2**	**-2.1**
	0.1nm,0.3s,baz=290,slow=17,SNR=2.0						
MORC	**Moravsky Berou**	**6.68**	**2**	*e*Pn	**Pn**	**19 21 51.0**	**-2.7**
MORC				*e*Sn	**Sn**	**19 23 06.9**	**-3.8**
OKC	**Ostrava-Krasne**	**6.77**	**5**	*e*SN	**Sn**	**19 23 09.5**	**-3.3**
WET	**Wettzell**	**6.77**	**335**	*e*Pn	**Pn**	**19 21 54.9**	**0.0**
WET				*e*Sn	**Sn**	**19 23 10.1**	**-2.8**
PRU	**Pruhonice**	**7.14**	**346**	*e*SN	**Sn**	**19 23 18.3**	**-3.9**
SBF	**Sospel**	**7.20**	**279**	*e*Pn	**Pn**	**19 21 58.7**	**-2.2**
SBF				*e*Sn	**Sn**	**19 23 16.5**	**-7.0**
	9.3nm,0.3s						
DPC	**Dobruska-Polom**	**7.28**	**355**	*e*PN	**Pn**	**19 22 04.4**	**+2.3**
DPC				*e*SN	**Sn**	**19 23 23.0**	**-2.7**
MBDF	**Montbardon**	**7.75**	**286**	*e*Pn	**Pn**	**19 22 06.1**	**-2.6**
FRF	**La Foret Royal**	**7.76**	**277**	*e*Pn	**Pn**	**19 22 07.0**	**-1.8**
FRF				*e*Sn	**Sn**	**19 23 31.5**	**-6.1**
	2.8nm,0.3s						
LMR	**La Mourre**	**7.87**	**275**	*e*Sn	**Sn**	**19 23 36.2**	**-4.0**
	1.8nm,0.2s						
BNI	**Bardonecchia**	**7.87**	**288**	*e*Pn	**Pn**	**19 22 08.3**	**-2.1**
BNI				*e*Sn	**Sn**	**19 23 33.4**	**-7.1**
LPG	**La Plagne**	**7.92**	**291**	*e*Pn	**Pn**	**19 22 10.1**	**-0.9**
LPG				*e*Sn	**Sn**	**19 23 37.4**	**-4.1**
	10nm,0.4s						
LPL	**La Plagne**	**7.93**	**291**	*e*Pn	**Pn**	**19 22 08.4**	**-2.8**
LPL				*e*Sn	**Sn**	**19 23 36.5**	**-5.5**
	9.8nm,0.4s						
ORIF	**Oris-en-Rattie**	**8.41**	**286**	*e*Pn	**P**	**19 22 15.8**	**-2.0**
ORIF				*e*Sn	**Sn**	**19 23 52.0**	**-1.8**
	4.2nm,0.3s						
MOX	**Moxa**	**8.48**	**335**	*i* P	**P**	**19 22 18.3**	**-0.5**
MOX				S	**Sn**	**19 23 52.0**	**-3.6**
MOX	**Moxa**	**8.48**	**335**	*e*Pn	**P**	**19 22 18.3**	**-0.5**
MOX				*e*Sn	**Sn**	**19 23 52.5**	**-3.1**
SMRF	**Simiane la Rot**	**8.54**	**280**	*e*Pn	**P**	**19 22 15.6**	**-4.1**
CABF	**La Chapelle**	**8.68**	**298**	*e*Pn	**P**	**19 22 19.1**	**-2.5**
CABF				*e*Sn	**Sn**	**19 23 56.9**	**-3.7**
	1.8nm,0.3s						
HINF	**Hinteralfeld**	**8.71**	**306**	*e*Pn	**P**	**19 22 19.7**	**-2.3**
HINF				*e*Sn	**Sn**	**19 24 00.6**	**-0.6**
	3.1nm,0.3s						
CLL	**Collm**	**8.71**	**342**	*e*PG	x	19 23 06.0	
CLL				*e*SN	**Sn**	**19 23 54.0**	**-7.2**
CLL				*i*		19 24 14.6	
CLL				*i*		19 24 29.8	
CLL				*e*SG	**Sg**	**19 25 04.0**	**+1.1**
CDF	**Champ du Feu**	**8.77**	**311**	*e*Pn	**P**	**19 22 20.7**	**-2.2**
HAU	**Haudompre**	**9.10**	**306**	*e*Sn	**Sn**	**19 24 09.5**	**-1.4**
	4.9nm,0.3s						
VIVF	**Saint-Julien-l**	**9.25**	**285**	*e*Pn	**P**	**19 22 26.0**	**-3.5**
SMF	**Signal de Mont**	**10.17**	**295**	*e*Sn	**S**	**19 24 29.4**	**-7.9**
	3.8nm,0.3s						
LOR	**Lormes**	**10.34**	**298**	*e*Pn	**P**	**19 22 42.1**	**-2.3**
LOR				*e*Sn	**S**	**19 24 33.6**	**-7.9**
	5.4nm,0.3s						
HFS	**Hagfors**	**17.20**	**354**	Pn	**P**	**19 24 15.6**	**+0.9**
	0.0nm,0.3s,baz=299,slow=34,SNR=2.6						
NOA	**NORSAR Array B**	**18.33**	**351**	P	**P**	**19 24 30.0**	**+1.1**
	0.1nm,0.3s,baz=105,slow=17,SNR=2.4						
FINES	**FINESS Array B**	**19.11**	**13**	P	**P**	**19 24 37.4**	**-0.9**
	0.1nm,0.3s,baz=216,slow=12,SNR=3.2						
ARCES	**ARCESS Array B**	**26.84**	**6**	P	**P**	**19 25 52.9**	**-2.1**
	2.9nm,1.2s,mb3.7,baz=192,slow=8.3,SNR=4.6						
ZAL	**Zalesovo**	**44.39**	**51**	P	**P**	**19 28 25.6**	**+0.5**
	0.7nm,0.3s,mb3.8,baz=48,slow=5.7,SNR=2.2						
MKAR	**Makanchi Array**	**44.99**	**62**	P	**P**	**19 28 31.7**	**+1.7**
	0.3nm,0.8s,mb3.2,baz=281,slow=7.3,SNR=3.6						
SONM	**Songino Array**	**59.29**	**52**	P	**P**	**19 30 19.6**	**+2.6**
	0.2nm,0.5s,mb3.4,baz=304,slow=11,SNR=3.0						
YKA	**Yellowknife Ar**	**67.92**	**338**	P	**P**	**19 31 15.1**	**+1.8**
	0.1nm,0.5s,mb3.1,baz=38,slow=5.2,SNR=3.1						

MAN 27 19:26:30.8, 17.67N×120.58E, h6km, mb3.6, ML2.3, MS1.8, 5C, Luzon

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ABRA	**Dolores**	**0.13**	**97**	⇑*e*P	**Pg**	**19 26 34.0**	**+0.4**
ABRA				*e*S	Sg	**19 26 36.8**	**+1.2**
SZP	**Santa**	**0.16**	**225**	*e*P	Pg	**19 26 35.2**	**+1.0**
SZP				*e*S	Sg	**19 26 44.8**	**+8.4**
APYP	**Conner**	**0.67**	**73**	⇑*e*P	Pg	**19 26 42.0**	**-2.1**
APYP				*e*S	Sg	**19 26 51.7**	**-1.4**
BCPH	**Baguio City Da**	**1.28**	**180**	⇑*i

MEF				*e*S	**Sb**	**20 01 50.3**	**+0.4**
FIA0	**FINESS Array S**	**1.92**	**340**	*e*P	**Pn**	**20 01 32.4**	**+0.4**
FIA0				*e*S	**Sn**	**20 01 58.0**	**+0.9**
FIA0	**FINESS Array S**	**1.92**	**340**	Pn	**Pn**	**20 01 32.8**	**+0.8**
	baz=150,slow=16						
FIA0				Lg		20 01 58.9	
	baz=155,slow=37						
KEF	**Keuruu**	**2.82**	**334**	*e*P	**Pn**	**20 01 46.2**	**+1.3**
KEF				*e*S	**Sn**	**20 02 19.9**	**-0.2**
SUF	**Sumiainen**	**3.14**	**349**	*e*P	**Pn**	**20 01 50.0**	**+0.6**
SUF				*e*S	**Sn**	**20 02 27.4**	**-0.7**
SUF				*e*SG	**Sg**	**20 02 36.4**	**-5.8**
SUF				MSG		20 02 40.2	
	comp=Z,1.1nm,0.2s						
HFS	**Hagfors**	**6.95**	**280**	Pn	**Pn**	**20 02 40.8**	**-2.4**
	baz=84,slow=9.3						
HFS				Sn	**Sn**	**20 03 59.9**	**-4.1**
	baz=118,slow=37						
HFS				Lg		20 04 33.8	
	baz=91,slow=37						
ARA0	**ARCESS Array S**	**9.96**	**356**	Pn	**P**	**20 03 21.1**	**-3.8**
	baz=172,slow=16						
ARA0				Sn	**Sn**	**20 05 09.7**	**-8.9**
	baz=173,slow=22						
ARA0				Lg		20 06 10.9	
	baz=179,slow=28						
ARA0	**ARCESS Array S**	**9.96**	**356**	*e*P	**P**	**20 03 21.1**	**-3.8**
ARA0				*e*S	**Sn**	**20 05 09.7**	**-8.9**
ARA0				*e*		20 06 10.9	

*JMA **27** 20:04:06.6±0.2,24.77N×122.63E,h106km,M2.0*
*TAP **27** 20:04:06.2,24.62N×122.70E,h106km±1km,ML3.3*
ISC 27 20:04:06.5±2.7,24.6N±0.3×122.6E±0.1,h108km±18km,n6,
σ0§40/10,Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
YOJ	**Yonaguni jima**	**0.41**	**116**	P		**P**	**20 04 22.8**	**0.0**
YOJ				S		**S**	**20 04 35.1**	**+0.1**
IRIF	**Iriomote-Funau**	**1.07**	**106**	P		**P**	**20 04 28.5**	**-0.1**
IRIF				*e*S		**S**	**20 04 45.1**	**-0.1**
HATJ	**Hateruma jima**	**1.24**	**118**	*e*S		**S**	**20 04 49.0**	**+0.3**
JKRS	**Kuro-shima**	**1.34**	**107**	P		**P**	**20 04 32.1**	**+0.3**
JKRS				S		**S**	**20 04 51.0**	**+0.2**
JIJ	**Ishigaki jima**	**1.43**	**101**	P		**P**	**20 04 32.5**	**-0.3**
JIJ				S		**S**	**20 04 51.6**	**-1.0**
JTJ	**Tarama**	**1.91**	**90**	*e*S		**S**	**20 05 03.4**	**+0.6**

*NEIC **27** 20:05:54.5±0.5,0.35S×123.75E,h65km,mb4.3/3,Error ellipse: s-maj=55.7km s-min=8.5km az=62.0*
*IDC **27** 20:05:55.7±8.0,0.40S×123.71E,h75km±78km,mb3.8/7, mb1 4.0/7,mb1mx3.7/16,Error ellipse: s-maj=64.5km s-min=15.4km az=65.0*
ISC 27 20:05:54.6±4.4,0.3S±0.2×123.8E±0.3,h84km±44km,n18,
σ1§13/18,mb4.2/10,1D,Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
KAKA	**Kakadu**	**14.96**	**146**	*e*P		**P**	**20 09 22.3**	**-0.6**
	9.0nm,0.6s							
WRAB	**Tennant Creek**	**22.06**	**153**	*e*P		**P**	**20 10 45.3**	**+1.6**
	67nm,1.0s,mb4.9							
WRA	**Warramunga Arr**	**22.07**	**153**	P		**P**	**20 10 43.4**	**-0.3**
	12nm,0.6s,mb4.4,baz=334,slow=9.8,SNR=43							
WB2	**Warramunga Arr**	**22.07**	**153**	*e*P		**P**	**20 10 43.0**	**-0.8**
AS12	**Alice Springs**	**25.20**	**158**	*i*P		**P**	**20 11 14.4**	**+0.3**
	9.8nm,0.5s,mb4.5							
ASAR	**Alice Springs**	**25.20**	**158**	P		**P**	**20 11 14.6**	**+0.5**
	26nm,0.3s,mb5.1,baz=338,slow=11,SNR=1.8							
CM31	**Chiang Mai Arr**	**30.75**	**309**	P		**P**	**20 12 07.8**	**+3.5**
	6.9nm,1.2s,mb4.3							
CMAR	**Chiang Mai Arr**	**30.75**	**309**	P		**P**	**20 12 04.7**	**+0.3**
	2.0nm,1.0s,mb3.8,baz=138,slow=7.3,SNR=9.3							
STKA	**Stephens Creek**	**35.61**	**154**	P		**P**	**20 12 46.1**	**-0.1**
	3.1nm,0.9s,mb4.2,baz=309,slow=22,SNR=4.7							
ULN	**Ulaanbaatar**	**50.15**	**345**	*e*P		**P**	**20 14 44.0**	**+0.5**
SONM	**Songino Array**	**50.29**	**345**	P		**P**	**20 14 46.3**	**+1.7**
	0.4nm,0.6s,mb3.5,baz=160,slow=8.8,SNR=6.2							
MKAR	**Makanchi Array**	**59.31**	**328**	P		**P**	**20 15 48.1**	**-1.9**
	1.0nm,0.7s,mb4.0,baz=125,slow=8.3,SNR=9.7							
KURK	**Kurchatov**	**63.65**	**330**	*e*P		**P**	**20 16 16.8**	**-2.3**
BRVK	**Borovoye**	**69.24**	**329**	P		**P**	**20 16 55.0**	**+0.5**
ZRNK	**Zerenda**	**69.86**	**328**	P		**P**	**20 16 57.4**	**-0.9**
MAW	**Mawson**	**79.00**	**200**	P		**P**	**20 17 50.1**	**-0.4**
	1.8nm,0.8s,mb3.9,baz=15,slow=11,SNR=3.0							
VNDA	**Vanda**	**79.83**	**172**	P		**P**	**20 17 55.6**	**+0.7**
	1.6nm,0.8s,mb3.9,baz=310,slow=6.2,SNR=11							
VNDA	**Vanda**	**79.83**	**172**	*e*P		**P**	**20 17 55.8**	**+0.8**
	0.8nm,0.7s,mb3.7							

*NEIC **27** 20:18:32.7,40.90S×173.01E,h227km,After WEL.*
WEL 27 20:18:32.8±0.3,40.83S×172.97E,h222km±2km,ML4.2/5,
7C-1D,Error ellipse: s-maj=2.5km s-min=2.2km az=90.0,
Off west coast of South Island

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
QRZ	**Quartz Range**	**0.33**	**270**	PN		P	20 19 01.9	-0.3
QRZ				SN		S	20 19 23.5	-1.4
NNZ	**Nelson**	**0.50**	**141**	PN		P	20 19 02.5	-0.1
NNZ				SN		S	20 19 24.8	-1.0
NNZ	**Nelson**	**0.50**	**141**	P		P	20 19 02.5	-0.1
NNZ				S		S	20 19 24.8	-1.0
THZ	**Tophouse**	**0.93**	**183**	⇑PN		P	20 19 04.6	+0.1
THZ				SN		S	20 19 28.0	-1.2
TUWZ	**Tuamarina**	**0.95**	**129**	⇑PN		P	20 19 04.6	0.0
TUWZ				SN		S	20 19 28.4	-0.9
BSWZ	**Blackbirch Sta**	**1.12**	**142**	⇑PN		P	20 19 05.6	-0.2
BSWZ				SN		S	20 19 30.4	-1.0
DSZ	**Denniston Nort**	**1.27**	**223**	⇑PN		P	20 19 06.1	-0.8
DSZ				SN		S	20 19 31.5	-1.8
MRW	**Makara Radio**	**1.37**	**107**	PN		P	20 19 07.2	-0.5
MRW				SN		S	20 19 32.8	-1.9
MRW	**Makara Radio**	**1.37**	**107**	P		P	20 19 07.2	-0.5
MRW				S		S	20 19 32.8	-1.9
SNZO	**South Karori**	**1.40**	**111**	⇑PN		P	20 19 07.5	-0.5
SNZO	**South Karori**	**1.40**	**111**	P		P	20 19 07.5	-0.4
KIW	**Kapiti Island**	**1.48**	**92**	PN		P	20 19 08.4	-0.2
KIW	**Kapiti Island**	**1.48**	**92**	P		P	20 19 08.4	-0.2
BHW	**Baring Head**	**1.55**	**112**	PN		P	20 19 08.6	-0.6
BHW	**Baring Head**	**1.55**	**112**	P		P	20 19 08.6	-0.6
CAW	**Cannon Point**	**1.62**	**101**	PN		P	20 19 09.3	-0.5
CAW	**Cannon Point**	**1.62**	**101**	P		P	20 19 09.3	-0.5
KHZ	**Kahutara**	**1.64**	**165**	⇑PN		P	20 19 08.9	-1.1
KHZ				SN		S	20 19 36.5	-2.2
KHZ	**Kahutara**	**1.64**	**165**	P		P	20 19 08.9	-1.1
KHZ				S		S	20 19 36.5	-2.2
NRZ	**Ngariki Road**	**1.67**	**27**	PN		P	20 19 09.5	-0.7
NWEZ	**Newall Road**	**1.70**	**24**	PN		P	20 19 09.6	-0.9
DFE	**Dawson Falls**	**1.74**	**31**	PN		P	20 19 10.1	-0.7
DFE	**Dawson Falls**	**1.74**	**31**	P		P	20 19 10.3	-0.5
NEZ	**North Egmont**	**1.78**	**29**	PN		P	20 19 10.6	-0.7
MSWZ	**Moikau Station**	**1.82**	**109**	PN		P	20 19 11.1	-0.5
WAZ	**Wanganui**	**1.88**	**56**	PN		P	20 19 11.8	-0.3
WAZ	**Wanganui**	**1.88**	**56**	P		P	20 19 11.9	-0.2
MTW	**Mount Morrison**	**1.95**	**101**	PN		P	20 19 12.3	-0.5
MTW				SN		S	20 19 41.8	-1.8
MTW	**Mount Morrison**	**1.95**	**101**	P		P	20 19 12.3	-0.4
MRZ	**Mangatainoka R**	**1.99**	**86**	⇓PN		P	20 19 12.7	-0.5
MRZ				SN		S	20 19 42.5	-1.9
LTZ	**Lake Taylor**	**2.02**	**195**	⇑PN		P	20 19 12.3	-1.2
LTZ	**Lake Taylor**	**2.02**	**195**	P		P	20 19 12.3	-1.1
VRZ	**Vera Road**	**2.19**	**40**	PN		P	20 19 13.6	-1.5
VRZ	**Vera Road**	**2.19**	**40**	P		P	20 19 13.7	-1.5
TSZ	**Takapari Road**	**2.41**	**72**	PN		P	20 19 17.0	-0.5
TSZ	**Takapari Road**	**2.41**	**72**	P		P	20 19 17.1	-0.4
BFZ	**Birch Farm**	**2.50**	**88**	PN		P	20 19 17.8	-0.6
BFZ				SN		S	20 19 51.6	-2.2
WNVZ	**Wahianoa**	**2.52**	**54**	PN		P	20 19 17.6	-1.0
FWVZ	**Far West T-bar**	**2.53**	**52**	PN		P	20 19 17.6	-1.3
WPVZ	**Whakapapa**	**2.56**	**52**	PN		P	20 19 17.8	-1.3
CNZ	**Chateau**	**2.57**	**51**	PN		P	20 19 17.8	-1.4
TUVZ	**Tukino**	**2.59**	**54**	PN		P	20 19 18.3	-1.1
NGZ	**Ngauruhoe**	**2.61**	**52**	PN		P	20 19 18.2	-1.4
NGZ	**Ngauruhoe**	**2.61**	**52**	P		P	20 19 18.3	-1.4
WTVZ	**West Tongariro**	**2.65**	**51**	PN		P	20 19 18.7	-1.3
KAVZ	**Karewarewa**	**2.69**	**51**	PN		P	20 19 18.9	-1.6
MGZ	**Maungaku**	**2.69**	**48**	PN		P	20 19 18.9	-1.6
HIZ	**Hauiti**	**2.73**	**33**	PN		P	20 19 19.0	-2.0
WVZ	**Waitaha Valley**	**2.79**	**216**	PN		P	20 19 19.6	-2.1
MQZ	**McQueen's Vall**	**2.88**	**185**	PN		P	20 19 20.2	-2.5
MQZ				*e*SN		S	20 19 56.9	-4.5
PWZ	**Pawanui**	**3.08**	**76**	PN		P	20 19 24.2	-0.7
BKZ	**Black Stump Fm**	**3.18**	**60**	PN		P	20 19 24.4	-1.6
RPZ	**Rata Peaks**	**3.21**	**206**	PN		P	20 19 24.6	-1.9
RPZ				SN		S	20 20 02.8	-5.3
KNZ	**Kokohu**	**4.05**	**65**	PN		P	20 19 34.9	-1.6
URZ	**Urewera**	**4.11**	**53**	PN		P	20 19 34.3	-2.9
MWZ	**Matawai**	**4.32**	**56**	PN		P	20 19 37.7	-2.1
ODZ	**Otahua Downs**	**4.54**	**201**	PN		P	20 19 40.7	-1.9
PUZ	**Puketiti**	**4.94**	**58**	PN		P	20 19 44.7	-2.8
MXZ	**Matakaoa Point**	**5.28**	**54**	*e*PN		P	20 19 48.1	-3.7
MSZ	**Milford Sound**	**5.34**	**222**	*e*PN		P	20 19 48.8	-3.8

*MAN **27** 20:33:05.5,6.45N×126.30E,h60km,mb4.5,ML3.3,MS3.2*
ISC 27 20:33:02.7±1.8,6.27N±0.09×126.39E±0.10,h36km±27km,
n9,σ0§95/14,mb4.3/2,1C-1D,Mindanao

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
DMPH	**Davao City--Mi**	**1.19**	**313**	⇑*i*P		**P**	**20 33 23.6**	**+0.6**
DMPH				*i* S		**S**	**20 33 38.9**	**+0.6**
GSPH	**General Santos**	**1.45**	**263**	*e*P		**P**	**20 33 26.5**	**-0.2**
GSPH				*i* S		**S**	**20 33 43.7**	**-1.1**
KCP	**Kidapawan**	**1.48**	**300**	⇓*e*P		**P**	**20 33 28.1**	**+0.8**
KCP				*i* S		**S**	**20 33 46.1**	**+0.4**
BIPH	**Bislig**	**1.90**	**359**	*e*P		**P**	**20 33 31.6**	**-1.6**
BIPH				*i* S		**S**	**20 33 52.7**	**-3.5**
SCPH	**Surigao**	**3.60**	**346**	*e*P		**P**	**20 33 58.1**	**+0.6**
SCPH				*e*S		**S**	**20 34 44.8**	**+5.4**
KAKA	**Kakadu**	**19.77**	**162**	*e*P		**P**	**20 37 33.8**	**+1.0**
	6.7nm,0.5s							
FITZ	**Fitzroy Crossi**	**24.23**	**182**	*e*P		**P**	**20 38 17.8**	**+0.2**
	5.7nm,0.5s,mb4.3							
WB2	**Warramunga Arr**	**27.20**	**163**	*e*P		**P**	**20 38 46.0**	**+0.6**
MUN	**Mundaring**	**39.26**	**194**	*e*P		**P**	**20 40 28.1**	**-1.6**
	3.0nm,0.4s,mb4.4							

*NEIC **27** 20:37:00.7±1.1,36.47N×71.54E,h108km±10km,mb4.4/21, Error ellipse: s-maj=7.7km s-min=5.5km az=200.0*
*BJI **27** 20:37:00.2,36.63N×71.40E,h116km,mB4.4,mb4.7*
*MOS **27** 20:37:01.6±1.0,36.53N×71.58E,h130km,mb4.5/19,Error ellipse: s-maj=11.3km s-min=7.3km az=110.9*
*IDC **27** 20:37:02.9±0.8,36.54N×71.65E,h130km±7km,mb3.9/16, mb1 4.0/19,mb1mx3.9/23,MS2.9/1,Ms1 2.9/1, ms1mx2.4/24,Error ellipse: s-maj=14.9km s-min=11.9km az=37.0*
*NNC **27** 20:37:03.3±5.7,36.77N×71.06E,h141km±53km,mpv5.5, Error ellipse: s-maj=47.8km s-min=39.1km az=27.0*
ISC 27 20:36:58.5±0.4,36.35N±0.02×71.56E±0.04,h108km±4km,
h112km±7.8km;pP-P,n163,σ1§17/184,mb4.3/49,8C-9D,
Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
CEP	**Cherat**	**2.53**	**173**	⇓P		**P**	**20 37 41.3**	**+2.2**
CHCP	**Chirah Chowk**	**3.03**	**152**	⇓P		**P**	**20 37 48.6**	**+2.8**
THW	**Thamme Wali**	**3.55**	**177**	⇓P		**P**	**20 37 53.6**	**+0.8**
SBDP	**Sheikh Budin**	**4.08**	**189**	⇑P		**P**	**20 38 00.0**	**-0.1**
SARP	**Sargodha**	**4.51**	**168**	P		**P**	**20 38 06.0**	**+0.1**
KSH	**Kashi**	**4.71**	**46**	P		**P**	**20 38 12.0**	**+3.3**
KSH				XP			20 38 38.5	
KSH				S		**S**	**20 39 04.5**	**+1.9**
KSH				S		S		
	comp=N,590nm,0.6s							
KSH				S		S		
	comp=E,580nm,0.6s							
DRP	**Derazinda**	**4.73**	**194**	P		**P**	**20 38 09.2**	**+0.3**
AML	**Almayashu**	**6.01**	**15**	P		**P**	**20 38 26.3**	**0.0**
	SNR=364							
UCH	**Uchtor**	**6.30**	**20**	P		**P**	**20 38 30.6**	**+0.2**
	SNR=117							
BHK	**Bhakra**	**6.36**	**139**	*e*P		**P**	**20 38 33.0**	**+1.8**
BHK				*e*S		**S**	**20 39 41.0**	**-2.0**
KZA	**Kyzart**	**6.40**	**25**	P		**P**	**20 38 32.3**	**+0.6**
	SNR=37							
EKS2	**Erkin-Say**	**6.54**	**15**	P		**P**	**20 38 33.4**	**-0.2**
	SNR=65							
AAK	**Ala-Archa**	**6.68**	**19**	P		**P**	**20 38 35.7**	**+0.2**
	SNR=108							
AAK	**Ala-Archa**	**6.68**	**19**	*e*P		**P**	**20 38 35.4**	**-0.1**
	comp=E,106nm,0.6s							
KK31	**Karatay Array**	**6.80**	**354**	⇓P		**P**	**20 38 34.7**	**-2.4**
	comp=E,151nm,0.4s,baz=179,slow=13,SNR=4915							
KK31				⇑S		**S**	**20 39 46.0**	**-7.6**
	comp=E,55nm,0.5s,baz=183,slow=23,SNR=6.6							
KBK	**Karagaybulak**	**6.83**	**22**	P		**P**	**20 38 38.0**	**+0.5**
	SNR=26							
FRU	**Bishkek**	**6.90**	**19**	*i* PN		**P**	**20 38 39.0**	**+0.5**
FRU				*i*			20 39 57.5	
FRU				pmax	pmax			
	comp=Z,140nm,1.5s							
FRU				pmax	pmax			
	comp=N,350nm,1.6s							
ULHL	**Ulahol**	**6.92**	**30**	P		**P**	**20 38 40.1**	**+1.2**
	SNR=17							
CHMS	**Chumysh**	**7.09**	**19**	P		**P**	**20 38 41.0**	**-0.2**
	SNR=31							
TKM2	**Tokmak 2**	**7.27**	**24**	P		**P**	**20 38 43.9**	**+0.3**
	SNR=128							
USP	**Ospenovka**	**7.27**	**17**	P		**P**	**20 38 43.6**	**-0.1**
	SNR=12							
RTK	**Rohtak**	**8.36**	**149**	*e*P		**P**	**20 38 56.4**	**-2.0**
KHET	**Khetri**	**9.00**	**155**	*e*P		**P**	**20 39 05.4**	**-1.5**
KHET				*e*S		**S**	**20 40 40.7**	**-6.4**
KHET				AML	AML		20 40 44.9	
	comp=E,85nm,0.5s							
KHET				AML	AML		20 40 45.1	
	comp=N,76nm,0.2s							
NDI	**New Delhi**	**9.01**	**146**	*e*P		**P**	**20 39 08.0**	**+0.9**
NDI				*e*S		**S**	**20 40 43.5**	**-3.9**
KALG	**Kalgarh**	**9.11**	**136**	*e*		**P**	**20 39 03.4**	**-5.1**
KALG				AML	AML		20 40 45.9	
	comp=N,71nm,0.8s							
KALG				AML	AML		20 40 48.1	
	comp=E,130nm,0.3s							
AYAN	**Aya Nagar**	**9.14**	**147**	*e*P		**P**	**20 39 09.8**	**+0.9**
AYAN				*e*S		**S**	**20 40 45.2**	**-5.4**
KUDL	**Kundal**	**9.18**	**152**	*e*P		**P**	**20 39 08.1**	**-1.3**
KUDL				*e*S		**S**	**20 40 46.8**	**-4.7**
SONA	**Sohna**	**9.33**	**148**	*e*P		**P**	**20 39 09.8**	**-1.5**
SONA				*e*S		**S**	**20 40 48.8**	**-6.3**
SONA				AML	AML		20 40 55.3	
	comp=E,68nm,0.6s							
SONA				AML	AML		20 40 56.1	
	comp=N,47nm,0.6s							
AJM	**Ajmer**	**10.18**	**164**	*i* P		**P**	**20 39 21.4**	**-1.4**
AJM				*i* S		**S**	**20 41 06.4**	**-9.2**
AJM				*e*			20 41 09.7	
	comp=E,38nm,0.1s							
AJM				*e*			20 41 09.7	
	comp=N,32nm,0.2s							
BHUJ	**Bhuj**	**13.15**	**188**	*e*		**P**	**20 39 58.6**	**-3.5**
MK31	**Makanchi Array**	**13.16**	**34**	P		**P**	**20 40 01.5**	**-0.6**
	comp=N,5.1nm,0.6s,baz=222,slow=11,SNR=36							
MKAR	**Makanchi Array**	**13.16**	**34**	P		**P**	**20 40 01.2**	**-0.9**
	comp=N,0.4nm,0.3s,baz=223,slow=13,SNR=51							
KOLN	**Koldanda**	**13.31**	**127**	*e*P		**P**	**20 40 03.5**	**-0.6**
	comp=N,15nm,0.3s							
GKN	**Gorkha**	**13.84**	**123**	*e*P		**P**	**20 40 09.6**	**-1.4**
	comp=N,72nm,0.6s							
DMN	**Daman**	**14.41**	**123**	*e*P		**P**	**20 40 17.4**	**-1.0**
	comp=N,31nm,0.4s							
KKN	**Kakani**	**14.42**	**122**	*e*P		**P**	**20 40 16.8**	**-1.6**
	comp=N,40nm,0.6s							
WMQ	**Urumqi**	**14.42**	**54**	*e*P		**P**	**20 40 19.5**	**+1.1**
WMQ				S		**S**	**20 42 52.5**	**-3.3**
PKI	**Pulchoki**	**14.64**	**123**	*e*P		**P**	**20 40 19.6**	**-1.7**
	comp=N,14nm,0.3s							
KURK	**Kurchatov**	**15.24**	**17**	⇑P		**P**	**20 40 28.6**	**-0.1**
	comp=N,5.0nm,0.8s,baz=213,slow=10,SNR=20							
KURK	**Kurchatov**	**15.24**	**17**	*e*P		**P**	**20 40 24.9**	**-3.9**
AB31	**Akbulak array**	**15.44**	**330**	⇓P		**P**	**20 40 26.3**	**-4.9**
	comp=N,7.6nm,0.3s,baz=138,slow=13,SNR=559							
AB31				⇓S		**S**	**20 43 03.2**	**-16**
	comp=N,9.5nm,0.5s,baz=145,slow=24,SNR=7.5							
VOSK	**Vostochnaya**	**16.38**	**359**	⇓P		**P**	**20 40 39.2**	**-3.8**
	comp=N,11nm,0.9s							
THR	**Tehran**	**16.52**	**275**	P		**P**	**20 40 46.5**	**+1.7**
	comp=N,0.2nm,0.3s,baz=88,slow=11,SNR=13							
THR	**Tehran**	**16.52**	**275**	P		**P**	**20 40 46.5**	**+1.7**
BVA0	**Borovoye Array**	**16.70**	**358**	P		**P**	**20 40 43.7**	**-3.2**
	comp=N,0.8nm,0.5s,baz=162,slow=13,SNR=58							
BVAR	**Borovoye Array**	**16.70**	**358**	P		**P**	**20 40 44.0**	**-2.9**
	comp=N,1.6nm,0.3s,baz=168,slow=11,SNR=28							
BVAR				S		**S**	**20 43 43.8**	**-4.0**
	comp=N,0.6nm,0.3s,baz=168,slow=24,SNR=4.5							
BVAR				LR		LR	20 47 34.7	
	comp=N,37nm,18.9s,baz=65,slow=38							
ZRNK	**Zerenda**	**16.70**	**355**	⇑P		**P**	**20 40 43.6**	**-3.4**
	comp=N,11nm,0.8s							
ZRNK	**Zerenda**	**16.70**	**355**	*e*P		**P**	**20 40 42.5**	**-4.5**
BRVK	**Borovoye**	**16.73**	**357**	*e*P		**P**	**20 40 43.5**	**-3.9**
LSA	**Lhasa**	**17.70**	**106**	P		**P**	**20 41 03.0**	**+3.5**
LSA	**Lhasa**	**17.70**	**106**	*e*P		**P**	**20 41 01.1**	**+1.6**
	comp=N,3.6nm,0.6s							
HYB	**Hyderabad**	**19.85**	**160**	*i* P		**P**	**20 41 24.0**	**+0.8**
HYB				*e*S		**S**	**20 45 11.0**	**+15**
HYB	**Hyderabad**	**19.85**	**160**	*e*P		**P**	**20 41 24.0**	**+0.8**
ZAL	**Zalesovo**	**19.86**	**24**	P		**P**	**20 41 22.0**	**-1.0**
	baz=165,slow=7.1							
ZAL				S		**S**	**20 44 53.5**	**-2.1**
	comp=N,0.1nm,0.3s,baz=68,slow=16,SNR=3.1							
NVS	**Novosibirsk**	**20.17**	**20**	*i* P		**P**	**20 41 24.2**	**-2.0**
NVS				*e*			20 41 57.4	
NVS				*i* S		**S**	**20 45 01.5**	**0.0**
NVS				*e*			20 45 39.9	
NVS				pmax	pmax			
	comp=N,12nm,0.8s							
NVS				pmax	pmax			
	comp=E,5.0nm,0.8s							
NVS				pmax	pmax			
	comp=Z,16nm,0.8s							
NVS				smax				
	comp=N,29nm,1.8s							
NVS				smax				
	comp=E,41nm,1.8s							
SHL	**Shillong**	**20.44**	**116**	*e*		**P**	**20 41 31.0**	**+1.8**
SHL				*e*S		**S**	**20 45 05.5**	**-1.3**
ARU	**Arti**	**21.93**	**340**	⇑*i*P		**P**	**20 41 43.3**	**-0.5**
ARU				*e*S		**S**	**20 45 38.1**	**+4.2**
ARU				pmax	pmax			
	comp=Z,33nm,0.9s,mb4.7							
ARU	**Arti**	**21.93**	**340**	*e*P		**P**	**20 41 42.6**	**-1.1**
	comp=Z,27nm,0.8s,mb4.6							
GOF	**Gofitskoye**	**23.21**	**301**	⇑*i*P		**P**	**20 41 57.0**	**+0.7**
GOF				pmax	pmax			
	comp=Z,40nm,1.4s,mb4.6							
KIV	**Kislovodsk**	**23.26**	**298**	*e*P		**P**	**20 41 57.4**	**+0.7**
KIV				*e*S		**S**	**20 46 04.6**	**+7.4**
KIV				pmax	pmax			
	comp=Z,7.0nm,1.0s,mb4.0							
KIV	**Kislovodsk**	**23.26**	**298**	*e*P		**P**	**20 41 57.6**	**+0.9**
	comp=Z,4.9nm,0.7s,mb4.0							
SOC	**Sochi**	**25.34**	**296**	*e*P		**P**	**20 42 19.9**	**+3.2**
SOC				*e*			20 43 00.8	
SOC				*e*S		**S**	**20 46 29.4**	**-3.1**
SOC				pmax	pmax			
	comp=Z,7.0nm,0.6s,mb4.3							
SOC				pmax	pmax			
	comp=N,2.0nm,0.3s							
SOC				pmax	pmax			
	comp=E,10.0nm,0.7s							
SOC				MLR	MLR			
	comp=Z,410nm,29.0s							
SOC				MLR	MLR			
	comp=N,30nm,11.0s							
SOC				MLR	MLR			
	comp=E,110nm,21.0s							
ZAK	**Zakamensk**	**26.76**	**48**	*e*P		**P**	**20 42 31.6**	**+1.9**
VRSR	**Storozhevoye**	**27.42**	**313**	*e*P		**P**	**20 42 34.1**	**-1.7**
VRSR				*e**SP		sP	20 43 04.8	-7.3
VRSR				*e*			20 43 23.6	
VRSR				*e*			20 45 52.3	
VRSR				pmax	pmax			
	comp=Z,7.0nm,0.6s,mb4.4							
VRSR				pmax	pmax			
	comp=N,7.0nm,1.2s							
VRSR				pmax	pmax			
	comp=E,10.0nm,1.0s							
SONM	**Songino Array**	**28.06**	**55**	P		**P**	**20 42 43.6**	**+2.0**
	comp=E,0.9nm,0.6s,mb3.5,baz=263,slow=9.1,SNR=10							
ULN	**Ulaanbaatar**	**28.50**	**55**	*e*P		**P**	**20 42 47.1**	**+1.6**
ULN	**Ulaanbaatar**	**28.50**	**55**	*e*P		**P**	**20 42 46.7**	**+1.2**
	comp=E,0.7nm,0.6s,mb3.4							
KMI	**Kunming**	**28.93**	**104**	*e*P		**P**	**20 42 53.0**	**+3.5**
KMI				AMB	AMB			
	comp=Z,5.0nm,1.4s,mb4.0							
BRTR	**Keskin Array B**	**29.91**	**288**	P		**P**	**20 42 57.5**	**-0.6**

comp=Z,7.0nm,0.6s
ARE0 ARCESS Array S 41.46 338 *e*P **P 20 44 35.2 -0.5**
DPC Dobruska-Polom 41.58 308 *e*P **P 20 44 38.0 +1.2**
DPC LR LR
comp=Z,600nm,20.6s
KTK1 Kautokeino 41.94 336 *e*P **P 20 44 40.5 +1.1**
KTK1 AMb AMB 20 44 42.7
comp=Z,17nm,0.8s,mb4.8
KTK1 Kautokeino 41.94 336 *e*P **P 20 44 40.5 +1.1**
comp=Z,17nm,0.8s,mb4.8
PRU Pruhonice 42.74 307 *e*P **P 20 44 47.2 +0.9**
PRU pmax pmax
comp=Z,13nm,1.5s,mb4.4
PRU Pruhonice 42.74 307 *e*P **P 20 44 47.2 +0.9**
comp=Z,13nm,1.5s,mb4.4
BRG Berggiesshubel 43.07 308 *e*P **P 20 44 49.9 +0.9**
BRG pmax pmax
comp=Z,8.0nm,1.0s,mb4.4
BRG Berggiesshubel 43.07 308 *e*P **P 20 44 49.9 +0.9**
comp=Z,8.4nm,1.0s,mb4.4
GERES GERESS Array B 43.38 305 P **P 20 44 52.3 +0.8**
comp=Z,0.6nm,0.6s,mb3.5,baz=108,slow=4.2,SNR=6.5
GERES GERESS Array B 43.38 305 P **P 20 44 52.3 +0.8**
GERES pmax pmax
comp=Z,1.0nm,0.6s
KHC Kasperske Hory 43.44 306 *e*P **P 20 44 52.4 +0.4**
KHC LR LR
comp=Z,700nm,20.0s
CLL Collm 43.64 309 P **P 20 44 54.2 +0.7**
comp=Z,logA/T=1.1,mb4.6
CLL Collm 43.64 309 *i* P **P 20 44 54.2 +0.7**
CLL pmax pmax
comp=Z,27nm,2.2s,mb4.6
CLL Collm 43.64 309 *i* P **P 20 44 54.2 +0.7**
comp=Z,27nm,2.2s,mb4.6
NKC Novy Kostel 44.07 308 *e*P **P 20 44 53.1 -3.9**
MDJ Mudanjiang 44.09 61 P **P 20 44 59.5 +2.2**
MDJ AMB AMB
comp=Z,3.0nm,0.6s,mb4.2
MDJ AMB AMB
comp=Z,55nm,8.3s
MOR8 Moi Rana 44.17 331 *e*P **P 20 44 56.9 -0.7**
MOR8 AMb AMB 20 44 59.0
comp=Z,31nm,0.8s,mb5.1
MOR8 Moi Rana 44.17 331 *e*P **P 20 44 56.9 -0.7**
comp=Z,31nm,0.8s,mb5.1
NB2 NORSAR Subarra 44.77 323 P **P 20 45 01.8 -0.7**
comp=Z,5.3nm,0.5s,mb4.5,baz=97,slow=7.9
NB2 NORSAR Subarra 44.77 323 P **P 20 45 01.8 -0.7**
baz=97,slow=7.9
NOA NORSAR Array B 44.77 323 P **P 20 45 01.8 -0.7**
comp=Z,4.6nm,0.5s,mb4.5,baz=96,slow=7.7,SNR=39
NOA NORSAR Array B 44.77 323 P **P 20 45 01.8 -0.7**
NOA pmax pmax
comp=Z,5.0nm,0.5s
GRA1 Grafenberg Arr 44.91 307 *e*P **P 20 45 05.1 +1.3**
comp=Z,15nm,1.5s,mb4.5
GRF Grafenberg Arr 44.91 307 *e*P **P 20 45 05.1 +1.3**
GRF pmax pmax
comp=Z,15nm,1.5s,mb4.5
NAO01 NORSAR Array S 44.92 323 *e*P **P 20 45 01.0 -2.6**
LOF Lofoten 44.98 333 *e* **P 20 44 54.9 -9.3**
TIXI Tiksi 45.75 22 *e*P **P 20 45 10.0 -0.1**
TIXI pmax pmax
comp=Z,7.0nm,1.7s,mb4.1
PGF Pioggiola 47.74 298 *e*P **P 20 45 26.0 -0.1**
comp=Z,6.0nm,0.8s,mb4.2
SPB4 Spitsbergen Ar 47.75 347 P **P 20 45 25.2 -0.6**
HINF Hinteralfeld 48.05 305 *e*P **P 20 45 28.0 -0.5**
comp=Z,8.6nm,0.9s,mb4.3
SBF Sospel 48.52 300 *e*P **P 20 45 31.9 -0.3**
LPG La Plagne 48.61 302 *e*P **P 20 45 33.0 +0.2**
comp=Z,7.4nm,0.8s,mb4.4
LPL La Plagne 48.62 302 *e*P **P 20 45 32.9 0.0**
MBDF Montbardon 48.77 301 *e*P **P 20 45 33.5 -0.6**
FRF La Foret Royal 49.15 300 *e*P **P 20 45 37.0 0.0**
BAIF Baives 49.34 308 *e*P **P 20 45 38.6 +0.2**
comp=Z,11nm,0.8s,mb4.5
VIVF Saint-Julien-l 50.19 302 *e*P **P 20 45 45.0 0.0**
comp=Z,4.9nm,0.7s,mb4.3
SMF Signal de Mont 50.31 304 *e*P **P 20 45 45.2 -0.7**
TCF Toulx Ste Croi 51.49 304 *e*P **P 20 45 54.5 -0.3**
comp=Z,5.6nm,0.7s,mb4.4
CAF Calviac 51.96 302 *e*P **P 20 45 58.1 -0.2**
MTLF Montolieu 52.31 300 *e*P **P 20 46 01.0 0.0**
LDF La Druitiere 52.43 307 *e*P **P 20 46 01.6 -0.2**
comp=Z,3.2nm,0.5s,mb4.3
LFF La Frestale 52.86 303 *e*P **P 20 46 05.5 +0.5**
comp=Z,11nm,0.9s,mb4.6
MFF Saint Martin d 52.98 305 *e*P **P 20 46 05.6 -0.3**
comp=Z,2.6nm,0.6s,mb4.2
SGMF Saint Gilles 54.08 307 *e*P **P 20 46 13.9 -0.1**
comp=Z,6.4nm,0.6s,mb4.5
ETSF Etsaut 54.38 301 *e*P **P 20 46 15.8 -0.4**
comp=Z,3.4nm,0.4s,mb4.4
ROSF Rostrenen 54.52 308 *e*P **P 20 46 17.4 +0.3**
QUIF Quistinic 54.57 307 *e*P **P 20 46 16.2 -1.3**
comp=Z,11nm,0.8s,mb4.6
DAG Danmarks Havn 55.00 344 *i* P **P 20 46 18.0 -2.4**
comp=Z,7.0nm,0.5s,mb5.0
DAG Danmarks Havn 55.00 344 *e*P **P 20 46 18.0 -2.4**
DAG pmax pmax
comp=Z,7.0nm,0.5s,mb5.0
DAG Danmarks Havn 55.00 344 *e*P **P 20 46 18.0 -2.4**
comp=Z,7.0nm,0.5s,mb5.0
SUMG Summit 61.35 341 *e*P **P 20 47 05.0 +0.4**
INK Inuvik 73.98 9 P **P 20 48 23.3 +0.1**
comp=Z,2.3nm,0.5s,mb4.2,baz=344,slow=6.2,SNR=13
INK Inuvik 73.98 9 P **P 20 48 23.3 +0.1**
INK pmax pmax
comp=Z,2.0nm,0.5s
COLA College 74.50 16 P **P 20 48 26.3 +0.1**
ILAR Eielson Array 74.81 16 P **P 20 48 27.4 -0.5**
comp=Z,1.6nm,0.9s,mb3.7,baz=321,slow=5.6,SNR=15
ILAR Eielson Array 74.81 16 P **P 20 48 27.5 -0.4**
ILAR pmax pmax
comp=Z,2.0nm,0.9s
LBTB Lobatse 74.86 223 *e*P **P 20 48 29.1 0.0**
comp=Z,1.1nm,0.6s,mb3.8
DBIC Dimbokro 75.14 267 P **P 20 48 31.2 +0.4**
comp=Z,6.6nm,1.2s,mb4.3,baz=278,slow=4.4,SNR=3.4
DBIC Dimbokro 75.14 267 P **P 20 48 31.2 +0.3**
DBIC pmax pmax
comp=Z,7.0nm,1.2s
FRB Frobisher Bay 75.34 343 P **P 20 48 31.0 0.0**
comp=Z,3.1nm,0.5s,mb4.3,baz=40,slow=6.6,SNR=5.4
FRB Frobisher Bay 75.34 343 P **P 20 48 31.0 0.0**
FRB pmax pmax
comp=Z,3.0nm,0.5s
FRB Frobisher Bay 75.34 343 P **P 20 48 31.0 0.0**
DAWY Dawson 76.97 13 *e*P **P 20 48 40.2 0.0**
YKA Yellowknife Ar 81.38 3 P **P 20 49 04.1 +0.1**
comp=Z,1.6nm,0.5s,mb4.1,baz=347,slow=5.2,SNR=20
YKA Yellowknife Ar 81.38 3 P **P 20 49 04.1 +0.1**
YKA pmax pmax
comp=Z,2.0nm,0.5s
YKA Yellowknife Ar 81.38 3 P **P 20 49 04.1 +0.1**
WRA Warramunga Arr 81.53 122 P **P 20 49 05.8 +0.2**
comp=Z,0.9nm,0.6s,mb3.8,baz=324,slow=4.9,SNR=12
WRA pP pP 20 49 35.4 +1.6
comp=Z,0.9nm,0.5s,baz=321,slow=5.1,SNR=3.5
WRA Warramunga Arr 81.53 122 P **P 20 49 05.8 +0.1**
WRA *PP pP 20 49 35.4 +1.7
WRA pmax pmax
comp=Z,1.0nm,0.6s
WRA pmax pmax
comp=N,1.0nm,0.5s
WRAB Tennant Creek 81.53 122 P **P 20 49 10.8 +5.1**
SCHQ Schefferville 82.41 337 P **P 20 49 09.6 0.0**
comp=N,2.9nm,0.8s,mb4.2,baz=26,slow=6.6,SNR=3.2
ASAR Alice Springs 83.80 125 P **P 20 49 17.5 +0.3**
comp=N,1.0nm,0.7s,mb3.8,baz=311,slow=5.0,SNR=13
ASAR pP pP 20 49 46.2 +0.8
comp=N,1.2nm,0.9s,baz=320,slow=4.9,SNR=4.1

*IDC **27** 20:42:21.6±0.8,44.01N×105.47W,mb4.0/8,mb1 4.1/15, mb1mx4.0/27,ML3.8/7,Error ellipse: s-maj=22.5km s-min=6.4km az=146.0*
*NEIC **27** 20:42:22.1±0.4,44.13N×105.30W,mb3.7/1,ML3.9,Error ellipse: s-maj=5.4km s-min=5.0km az=123.0,Suspected Mining explosion.*
NEIC 25 km [15 miles] SE of Gillette. 25 km [15 miles] SE of Gillette, Wyoming.

ISC 27 20:42:20.0±0.4,44.11N±0.04×105.25W±0.06,n55, σ1ŝ16/55,mb4.0/8,Wyoming

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RSSD	**Black Hills**	**0.88**	**89**	*e*Pg	**Pg**	**20 42 40.6**	**+3.1**
BW06	**Boulder Array**	**3.41**	**248**	*e*Pn	**Pn**	**20 43 16.2**	**+0.6**
PDAR	**Pinedale Array**	**3.41**	**248**	Pn	**Pn**	**20 43 16.4**	**+0.8**
	4.1nm,0.3s,baz=68,slow=15,SNR=116						
PDAR				Pg	**Pg**	**20 43 21.9**	**-6.3**
	26nm,0.3s,baz=66,slow=18,SNR=122						
PDAR				Lg		20 44 02.5	
	39nm,0.3s,baz=60,slow=32,SNR=15						
KSWY	**Kelly School**	**3.92**	**265**	*e*Pn	**Pn**	**20 43 24.2**	**+1.4**
WUWY	**Wally Ulrich**	**4.01**	**264**	*e*Pn	**Pn**	**20 43 24.7**	**+0.6**
REDW	**Red Top Meadow**	**4.13**	**261**	*e*Pn	**Pn**	**20 43 24.6**	**-1.2**
YMR	**Madison River**	**4.13**	**280**	*e*Pn	**Pn**	**20 43 26.3**	**+0.5**
ISCO	**Idaho Springs**	**4.32**	**184**	*e*Pn	**Pn**	**20 43 29.6**	**+1.2**
AHID	**Auburn Hatcher**	**4.47**	**254**	*e*Pn	**Pn**	**20 43 30.4**	**-0.2**
QLMT	**Earthquake Lak**	**4.48**	**281**	*e*Pn	**Pn**	**20 43 31.7**	**+0.9**
BOZ	**Bozeman (W)**	**4.79**	**291**	*e*Pn	**Pn**	**20 43 34.6**	**-0.5**
HWUT	**Hardware Ranch**	**5.27**	**244**	*e*Pn	**Pn**	**20 43 41.8**	**-0.1**
	14nm,0.5s						
HRY	**Holter Researc**	**5.31**	**302**	*e*Pn	**Pn**	**20 43 42.8**	**+0.3**
TCUT	**Toone Canyon**	**5.44**	**239**	*e*Pn	**Pn**	**20 43 45.4**	**+1.0**
MCMT	**McKenzie Canyo**	**5.48**	**280**	*e*Pn	**Pn**	**20 43 47.7**	**+2.8**
JLU	**Jordanelle**	**5.78**	**235**	*e*Pn	**Pn**	**20 43 49.4**	**+0.3**
DAU	**Daniels Canyon**	**5.79**	**232**	*e*Pn	**Pn**	**20 43 50.1**	**+0.9**
HVU	**Hansel Valley**	**5.99**	**250**	*e*Pn	**Pn**	**20 43 51.0**	**-1.2**
SPUT	**South Promonto**	**6.00**	**245**	*e*Pn	**Pn**	**20 43 52.2**	**0.0**
RW3	**Ridgway**	**6.14**	**198**	*e*Pn	**Pn**	**20 43 54.6**	**+0.4**
MPU	**Maple Canyon**	**6.27**	**231**	*e*Pn	**Pn**	**20 43 55.7**	**-0.4**
CHMT	**Chamberlain Mo**	**6.28**	**299**	*e*Pn	**Pn**	**20 43 56.0**	**-0.2**
SDCO	**Great Sand Dun**	**6.37**	**182**	*e*Pn	**Pn**	**20 43 57.4**	**0.0**
	16nm,0.6s						
SRU	**San Rafael**	**6.37**	**220**	*e*Pn	**Pn**	**20 43 56.2**	**-1.3**
PV10	**Paradox Valley**	**6.40**	**208**	*e*Pn	**Pn**	**20 43 59.4**	**+1.5**
PV01	**Paradox Valley**	**6.48**	**204**	*e*Pn	**Pn**	**20 43 56.9**	**-2.1**
BGU	**Big Grassy Mou**	**6.57**	**244**	*e*Pn	**Pn**	**20 43 58.3**	**-2.0**
HLID	**Hailey**	**6.65**	**268**	*e*Pn	**Pn**	**20 44 01.2**	**-0.2**
	1.9nm,0.6s						
MSO	**Missoula**	**6.69**	**297**	*e*Pn	**Pn**	**20 44 01.3**	**-0.6**
	13nm,0.5s						
MSU	**Marysvale**	**7.65**	**225**	*e*Pn	**Pn**	**20 44 14.0**	**-1.4**
MVU	**Marysvale**	**7.67**	**225**	*e*Pn	**Pn**	**20 44 14.5**	**-1.2**
	1.4nm,0.4s						
WALA	**Waterton Lakes**	**7.75**	**313**	*e*Pn	**Pn**	**20 44 15.1**	**-1.7**
	5.2nm,0.7s						
KSU1	**Kansas State U**	**8.18**	**125**	*e*Pg	Px	20 44 47.8	
ULM	**Lac du Bonnet**	**8.85**	**43**	Pn	**P**	**20 44 31.4**	**-0.8**
	1.7nm,0.3s,baz=228,slow=11,SNR=11						
ULM				Lg		20 46 58.2	
	0.8nm,0.3s,baz=283,slow=20,SNR=2.8						
ULM	**Lac du Bonnet**	**8.85**	**43**	*e*Pn	**P**	**20 44 30.6**	**-1.5**
	8.0nm,0.5s						
NEW	**Newport**	**9.22**	**301**	Pn	**P**	**20 44 30.6**	**-6.6**
	0.5nm,0.3s,baz=81,slow=22,SNR=2.6						
NEW				Lg		20 47 05.5	
	0.9nm,0.3s,baz=137,slow=22,SNR=2.6						
LNOR	**Lincton Mounta**	**9.40**	**285**	*e*Pn	**P**	**20 44 40.4**	**+0.6**
WUAZ	**Wupatki**	**9.79**	**211**	*e*Pn	**P**	**20 44 42.1**	**-3.0**
	3.6nm,0.6s						
WMOK	**Wichita Mounta**	**10.61**	**150**	*e*Pn	**P**	**20 44 53.1**	**-3.3**
	1.8nm,0.6s						
FFC	**Flin Flon**	**10.83**	**10**	*e*Pn	**P**	**20 44 57.3**	**-2.0**
	8.6nm,0.9s						
TPH	**Tonopah**	**10.86**	**240**	*e*Pn	**P**	**20 44 59.5**	**-0.2**
NVAR	**Mina Array Bea**	**11.34**	**244**	Pn	**P**	**20 45 05.8**	**-0.6**
	0.2nm,0.3s,baz=58,slow=13,SNR=15						
NVAR				Lg		20 48 14.9	
	0.1nm,0.3s,baz=47,slow=55,SNR=2.1						
YBH	**Yreka Blue Hor**	**13.02**	**266**	Pn	**P**	**20 45 30.6**	**+1.6**
	0.2nm,0.3s,baz=55,slow=3.6,SNR=5.8						
TXAR	**Lajitas Array**	**14.81**	**175**	Pn	**P**	**20 45 52.5**	**+0.1**
	0.7nm,0.3s,baz=4.8,slow=11,SNR=3.0						
FCC	**Fort Churchill**	**16.20**	**21**	*e*P	**P**	**20 46 07.5**	**-2.8**
	5.1nm,0.8s						
YKA	**Yellowknife Ar**	**19.20**	**347**	P	**P**	**20 46 46.3**	**-1.4**
	0.1nm,0.3s,baz=157,slow=11,SNR=9.8						
YKA	**Yellowknife Ar**	**19.20**	**347**	P	**P**	**20 46 46.3**	**-1.4**
ILAR	**Eielson Array**	**30.97**	**326**	P	**P**	**20 48 41.6**	**+1.0**
	0.5nm,0.8s,mb3.5,baz=114,slow=7.2,SNR=6.8						
ILAR				PcP	PcP	20 51 36.1	-0.9
	0.5nm,0.6s,baz=146,slow=1.9,SNR=5.1						
ARCES	**ARCESS Array B**	**61.06**	**18**	P	**P**	**20 52 37.2**	**-0.1**
	0.9nm,0.7s,mb4.0,slow=4.5,SNR=4.5						
FINES	**FINESS Array B**	**67.68**	**23**	P	**P**	**20 53 21.1**	**+0.6**
	0.8nm,0.8s,mb4.0,baz=342,slow=4.4,SNR=2.7						
AKASG	**Malin Array Be**	**77.62**	**28**	P	**P**	**20 54 19.6**	**+0.4**
	1.6nm,0.8s,mb4.2,baz=326,slow=5.4,SNR=5.1						
ZAL	**Zalesovo**	**81.95**	**354**	P	**P**	**20 54 43.4**	**+1.0**
	1.1nm,0.9s,mb4.0,baz=48,slow=9.9,SNR=4.9						
BVAR	**Borovoye Array**	**83.17**	**3**	P	**P**	**20 54 49.7**	**+1.0**
	1.9nm,0.9s,mb4.3,baz=342,slow=4.7,SNR=10.0						
SONM	**Songino Array**	**84.29**	**339**	P	**P**	**20 54 56.3**	**+1.8**
	0.5nm,0.8s,mb3.8,baz=31,slow=3.6,SNR=3.4						
MKAR	**Makanchi Array**	**89.23**	**355**	P	**P**	**20 55 19.4**	**+0.8**
	2.2nm,0.7s,mb4.5,baz=14,slow=4.5,SNR=22						

*IDC **27** 20:49:26.1±0.4,52.72S×18.58E,mb4.8/18,mb1 4.9/18, mb1mx4.8/20,MS4.8/18,Ms1 4.8/18,ms1mx4.7/21,Error ellipse: s-maj=18.3km s-min=14.6km az=63.0*
*NEIC **27** 20:49:27.2±0.2,52.62S×18.63E,h10km,mb5.1/34, MS5.0/27,MW5.4,Error ellipse: s-maj=9.3km s-min=6.9km az=75.0,Moment Tensor Solution. s4 Moment tensor: Scale 10^17^Nm; Mrr-1.13; Mθθ0.89; Mϕϕ0.24; Mrθ-0.73; Mθϕ-0.31; Mϕr0.61; Best double couple: M0 1.4×10^17^ NP1: ϕs284°,δ25°, λ-107°. NP2:ϕs123°,δ66°,λ-82°. Principal axes: T 1.35, Plg20°, Azm207°; N .15, Plg7°, Azm300°; P -1.51, Plg68°, Azm49°;*
*HRVD **27** 20:49:27.2±0.2,52.89S×19.00E,h12km,MW5.4/68, Centroid moment Tensor Solution. LP body waves: s58,c102;Mantle waves: s68,c136; Half duration: 1s2 Moment tensor: Scale 10^17^Nm; Mrr-1.58±.03; Mθθ1.29±.03; Mϕϕ0.29±.03; Mrθ-0.18±.06; Mϕθ-0.52±.03; Mϕr-0.22±.07; Best double couple: M0 1.57×10^17^ NP1: ϕs302°,δ44°, λ-77°. NP2:ϕs104°,δ47°,λ-102°. Principal axes: T 1.51, Plg2°, Azm203°; N .11, Plg9°, Azm112°; P -1.63, Plg81°, Azm302°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*BJI **27** 20:49:27.1,52.60S×18.60E,h10km,Ms5.2,Msz5.0*
*SYO **27** 20:49:27.1,52.62S×18.63E,h10km,MB5.1,MS5.0*
*MOS **27** 20:49:29.8±1.4,52.79S×18.36E,h33km,mb5.1/12, MS4.8/10,Error ellipse: s-maj=37.2km s-min=20.3km az=101.1*

ISC 27 20:49:26.5±0.2,52.68S±0.04×18.4E±0.1,h10km,n232, σ1ŝ47/116,mb5.0/45,MS4.9/51,21C-12D,Southwest of Africa

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MAIT	**Maitri**	**18.40**	**187**	*e*P	**P**	**20 53 44.5**	**+1.4**
MAIT				*e*S	**S**	**20 57 08.2**	**+2.8**
SYO	**Syowa Base**	**19.18**	**157**	⇑P	**P**	**20 53 45.9**	**-6.5**
SYO	**Syowa Base**	**19.18**	**157**	⇓pP		20 53 52.6	
SYO	**Syowa Base**	**19.18**	**157**	⇑P	**P**	**20 53 57.0**	**+4.6**
SYO	**Syowa Base**	**19.18**	**157**	⇑PnPn		20 54 00.0	
SYO	**Syowa Base**	**19.18**	**157**	⇓P	**P**	**20 54 11.0**	**+19**
SYO	**Syowa Base**	**19.18**	**157**	⇑*e*P	**P**	**20 53 45.9**	**-6.5**
SYO				*e*pP		20 53 52.6	
SYO				*e*PnPn		20 54 00.0	
SUR	**Sutherland**	**20.37**	**6**	P	**P**	**20 54 05.2**	**-0.6**
	78nm,0.8s,baz=177,slow=9.3,SNR=18						
SUR				LR	LR	21 00 07.6	
	comp=Z,6μm,20.3s,MS4.9,baz=164,slow=32						
SUR	**Sutherland**	**20.37**	**6**	*e*P	**P**	**20 54 05.1**	**-0.8**
	114nm,0.9s						
SUR				*e*S	**S**	**20 57 44.6**	**-4.2**
CVNA	**Calvinia**	**21.21**	**3**	*e*P	**P**	**20 54 21.1**	**+6.6**
SNAA	**Sanae**	**21.23**	**198**	*e*P	**P**	**20 54 14.6**	**+0.2**
VNA2	**Neumayer--Watz**	**21.64**	**203**	⇑*i*	**P**	**20 54 22.0**	**+3.4**
VNA2	**Neumayer--Watz**	**21.64**	**203**	⇑*i*	**P**	**20 54 25.1**	**+6.5**
VNA2	**Neumayer--Watz**	**21.64**	**203**	⇑*i*	**P**	**20 54 26.2**	**+7.6**
VNA2	**Neumayer--Watz**	**21.64**	**203**	⇑*i*	**P**	**20 54 31.0**	**+12**
VNA2	**Neumayer--Watz**	**21.64**	**203**	⇑*i*	**P**	**20 54 33.3**	**+15**
VNA1	**Neumayer--Stat**	**21.66**	**204**	⇑*i*	**P**	**20 54 22.5**	**+3.7**
VNA1	**Neumayer--Stat**	**21.66**	**204**	⇑*i*	**P**	**20 54 25.4**	**+6.6**
VNA1	**Neumayer--Stat**	**21.66**	**204**	⇑*i*	**P**	**20 54 26.5**	**+7.7**
VNA1	**Neumayer--Stat**	**21.66**	**204**	⇑*i*	**P**	**20 54 31.6**	**+13**
VNA1	**Neumayer--Stat**	**21.66**	**204**	⇑*i*	**P**	**20 54 34.5**	**+16**
VNA3	**Neumayer Olymp**	**22.41**	**204**	⇑*i*	**P**	**20 54 30.1**	**+3.9**
VNA3	**Neumayer Olymp**	**22.41**	**204**	⇑*i*	**P**	**20 54 31.4**	**+5.2**
VNA3	**Neumayer Olymp**	**22.41**	**204**	⇓*i*	**P**	**20 54 33.8**	**+7.6**
VNA3	**Neumayer Olymp**	**22.41**	**204**	⇑*i*	**P**	**20 54 39.9**	**+14**
VNA3	**Neumayer Olymp**	**22.41**	**204**	⇑*i*	**P**	**20 54 41.9**	**+16**
MAW	**Mawson**	**25.95**	**142**	⇓*i*P	**P**	**20 54 58.9**	**-1.4**
	27nm,0.9s,mb4.8						
MAW	**Mawson**	**25.95**	**142**	P	**P**	**20 54 59.5**	**-0.7**
	34nm,0.9s,mb4.9,baz=276,slow=9.1,SNR=26						
MAW				LR	LR	21 03 26.4	
	comp=Z,1μm,18.9s,MS4.5,baz=294,slow=32						
MAW	**Mawson**	**25.95**	**142**	P	**P**	**20 54 59.5**	**-0.8**
MAW				pmax	pmax		
	comp=Z,34nm,0.9s						
MAW				MLR	MLR		
	comp=Z,1μm,18.9s						
LBTB	**Lobatse**	**28.17**	**14**	*e*P	**P**	**20 55 18.7**	**-2.2**
	comp=Z,6.9nm,0.9s,mb4.3						
LBTB				LR	LR		
	comp=Z,2μm,21.0s,MS4.8						
TSUM	**Tsumeb**	**33.42**	**359**	P	**P**	**20 56 06.6**	**-0.8**
	comp=Z,5.2nm,0.9s,mb4.4,baz=159,slow=12,SNR=6.5						
QSPA	**South Pole Qui**	**37.55**	**180**	*e*P	**P**	**20 56 42.5**	**+0.6**
	comp=Z,61nm,0.8s,mb5.4						
QSPA				LR	LR		
	comp=Z,4μm,20.0s,MS5.2						
EFI	**East Falkland**	**44.79**	**239**	PFAKE		20 57 50.0	+8.3
EFI				LR	LR		
	comp=Z,3μm,21.0s,MS5.2						
VNDA	**Vanda**	**48.10**	**170**	P	**P**	**20 58 07.3**	**-0.1**
	comp=Z,13nm,1.1s,mb4.9,baz=230,slow=8.6,SNR=34						
VNDA				LR	LR	21 17 10.5	
	comp=Z,3μm,21.8s,MS5.2,baz=200,slow=35						
VNDA	**Vanda**	**48.10**	**170**	P	**P**	**20 58 07.4**	**-0.1**
VNDA				pmax	pmax		
	comp=Z,13nm,1.1s						
VNDA				MLR	MLR		
	comp=Z,3μm,21.8s						
VNDA	**Vanda**	**48.10**	**170**	*e*P	**P**	**20 58 06.6**	**-0.9**
	comp=Z,14nm,1.2s,mb4.9						
VNDA				LR	LR		
	comp=Z,1μm,21.0s,MS4.9						
USHA	**Ushuaia**	**48.19**	**231**	P	**P**	**20 58 09.3**	**+0.9**
	comp=Z,32nm,1.0s,mb5.3,baz=74,slow=6.9,SNR=4.1						
SBA	**Scott Base**	**48.28**	**171**	*e*P	**P**	**20 58 09.7**	**+0.8**
	comp=Z,23nm,0.9s,mb5.2						
SBA				*e*		20 58 17.3	
SBA				*e*PP	PP	21 00 04.0	+3.0
SBA				LR	LR		
	comp=Z,3μm,22.0s,MS5.2						
MBAR	**Mbarara**	**52.92**	**16**	P	**P**	**20 58 42.4**	**-2.7**
	comp=Z,12nm,1.3s,mb4.7						
MBAR				LR	LR		
	comp=Z,2μm,22.0s,MS5.0						
KMBO	**Kilima Mbogo**	**53.74**	**24**	P	**P**	**20 58 51.9**	**+0.8**
	comp=Z,1.1nm,0.7s,mb3.9,baz=52,slow=20,SNR=3.1						
KMBO				LR	LR	21 19 57.4	
	comp=Z,1μm,20.5s,MS5.0,baz=274,slow=34						
KMBO	**Kilima Mbogo**	**53.74**	**24**	P	**P**	**20 58 54.5**	**+3.4**
KMBO				LR	LR		
	comp=Z,2μm,21.0s,MS5.0						
TRQA	**Tornquist**	**55.42**	**251**	*e*P	**P**	**20 59 01.5**	**-1.5**
	comp=Z,1.6nm,1.1s,mb4.0						
CPUP	**Villa Florida**	**60.99**	**264**	P	**P**	**20 59 41.8**	**-0.4**
	comp=Z,17nm,0.8s,mb5.2,baz=152,slow=5.7,SNR=20						
CPUP				LR	LR	21 20 40.5	
	comp=Z,628nm,21.9s,MS4.7,baz=168,slow=31						
CPUP	**Villa Florida**	**60.99**	**264**	P	**P**	**20 59 41.8**	**-0.4**
CPUP				pmax	pmax		
	comp=Z,17nm,0.9s						
CPUP				MLR	MLR		
	comp=Z,628nm,21.9s						
CPUP	**Villa Florida**	**60.99**	**264**	⇓*e*P	**P**	**20 59 41.6**	**-0.6**
	comp=Z,13nm,0.9s,mb5.1						
CPUP				LR	LR		
	comp=Z,505nm,20.0s,MS4.7						
LIC	**Lamto**	**61.96**	**333**	*e*P	**P**	**20 59 47.9**	**-1.1**
	comp=Z,103nm,1.0s,mb5.9						
KIC	**Kosan Boka**	**62.02**	**334**	*e*P	**P**	**20 59 48.1**	**-1.2**
	comp=Z,174nm,1.5s,mb6.0						
DBIC	**Dimbokro**	**62.34**	**334**	P	**P**	**20 59 50.3**	**-1.2**
	comp=Z,23nm,0.8s,mb5.4,baz=151,slow=8.7,SNR=22						
DBIC				LR	LR	21 20 17.5	
	comp=Z,952nm,22.0s,MS4.9,baz=137,slow=30						
DBIC	**Dimbokro**	**62.34**	**334**	P	**P**	**20 59 50.3**	**-1.2**
DBIC				pmax	pmax		
	comp=Z,23nm,0.8s						
DBIC				MLR	MLR		
	comp=Z,952nm,22.0s						
DBIC	**Dimbokro**	**62.34**	**334**	⇓*e*P	**P**	**20 59 50.5**	**-1.0**
	comp=Z,31nm,1.0s,mb5.4						
DBIC				LR	LR		
	comp=Z,538nm,22.0s,MS4.7						
TIC	**Toumodi**	**62.36**	**334**	*e*P	**P**	**20 59 50.7**	**-0.9**
	comp=Z,271nm,1.0s						
CAUB	**Caruaru**	**62.41**	**295**	⇓*i*P	**P**	**20 59 52.4**	**+0.4**
CAUB				*e*		20 59 59.5	
BDFB	**Brasilia**	**63.41**	**279**	P	**P**	**20 59 58.7**	**+0.2**
	comp=Z,13nm,0.9s,mb5.0,baz=211,slow=2.1,SNR=11						
BDFB				LR	LR	21 22 16.8	
	comp=Z,496nm,20.3s,MS4.7,baz=349,slow=31						
BDFB	**Brasilia**	**63.41**	**279**	P	**P**	**20 59 58.7**	**+0.2**
BDFB				pmax	pmax		
	comp=Z,13nm,0.9s						
BDFB				MLR	MLR		
	comp=Z,497nm,20.3s						
NWAO	**Narrogin (SRO)**	**69.50**	**117**	LR	LR	21 22 00.1	
	comp=Z,315nm,21.8s,MS4.5,baz=218,slow=28						
NWAO	**Narrogin (SRO)**	**69.50**	**117**	*e*P	**P**	**21 00 34.9**	**-2.0**
	comp=Z,10.0nm,0.8s,mb4.8						
MUN	**Mundaring**	**69.67**	**116**	*e*P	**P**	**21 00 36.1**	**-1.9**
	comp=Z,16nm,1.1s,mb4.9						
LVC	**Limon Verde**	**70.73**	**258**	LR	LR	21 26 47.7	
	comp=Z,641nm,21.6s,MS4.8,baz=157,slow=32						
LVC	**Limon Verde**	**70.73

ASF **Jabal al Asfar** 86.03 16 P **P** 21 02 09.7 +1.5
comp=Z,5.0nm,0.7s,mb4.8,baz=36,slow=2.2,SNR=7.7
HYB **Hyderabad** 86.96 56 *e*P **P** 21 02 12.0 -1.0
WRA **Warramunga Arr** 88.96 122 P **P** 21 02 21.2 -1.4
comp=Z,4.8nm,1.0s,mb4.8,baz=214,slow=4.4,SNR=17
WRA LR LR 21 36 58.8
comp=Z,197nm,21.5s,MS4.5,baz=290,slow=32
WRA **Warramunga Arr** 88.96 122 P **P** 21 02 21.2 -1.3
WRA pmax pmax
comp=Z,5.0nm,1.0s
WRA MLR MLR
comp=Z,197nm,21.5s
WB2 **Warramunga Arr** 88.97 122 ⇓*i*P **P** 21 02 21.7 -0.9
WRAB **Tennant Creek** 88.97 122 *e*P **P** 21 02 21.1 -1.5
comp=Z,35nm,1.0s,mb5.6
WRAB LR LR
comp=Z,607nm,20.0s,MS5.0
EJIF **Jimena Fronter** 91.16 341 P **P** 21 02 30.6 -1.9
comp=Z,1.5nm,0.2s,mb5.0
ERON **Agron** 91.39 342 P **P** 21 02 30.5 -3.0
comp=Z,5.3nm,0.5s,mb5.1
TIP **Timpagrande** 91.50 359 *e*P **P** 21 02 34.8 +0.9
ELOJ **Sierra Loja** 91.58 342 P **P** 21 02 31.3 -3.0
comp=Z,9.9nm,1.1s,mb5.0
ESPR **Espera** 91.64 341 P **P** 21 02 33.1 -1.6
comp=Z,18nm,1.1s,mb5.3
EMUR **La Murta** 91.75 345 P **P** 21 02 32.9 -2.2
comp=Z,7.3nm,0.8s,mb5.1
EHUE **Huescar** 91.95 344 P **P** 21 02 34.1 -2.0
comp=Z,9.5nm,1.1s,mb5.0
ELUQ **Luque** 92.01 342 P **P** 21 02 34.5 -1.7
comp=Z,40nm,1.1s,mb5.7
EQES **Quesada** 92.03 343 P **P** 21 02 34.5 -1.9
comp=Z,7.9nm,0.9s,mb5.0
EGRO **El Granado** 92.62 340 P **P** 21 02 39.3 +0.2
EADA **Adamuz** 92.65 342 P **P** 21 02 37.5 -1.7
comp=Z,22nm,1.1s,mb5.5
EMIN **Mina Concepcio** 92.68 340 P **P** 21 02 39.5 +0.1
comp=Z,17nm,0.9s,mb5.5
THR **Tehran** 92.73 26 P **P** 21 02 40.4 +0.7
comp=Z,0.5nm,0.6s,mb4.2,baz=149,slow=8.5,SNR=3.7
THR LR LR 21 42 08.3
comp=Z,663nm,21.8s,MS5.0,baz=164,slow=34
THR **Tehran** 92.73 26 P **P** 21 02 40.4 +0.8
THR pmax pmax
comp=Z,1.0nm,0.6s
THR MLR MLR
comp=Z,663nm,21.8s
BRTR **Keskin Array B** 92.98 12 P **P** 21 02 40.9 +0.1
comp=Z,1.5nm,1.0s,mb4.4,baz=166,slow=5.1,SNR=6.6
BRTR LR LR 21 49 54.0
comp=Z,631nm,19.1s,MS5.1,baz=300,slow=39
EBAD **Badajoz** 93.70 340 P **P** 21 02 44.1 +0.1
comp=Z,3.2nm,0.9s,mb4.8
PCRV **Puerto La Cruz** 93.80 282 LR LR 21 40 17.7
comp=Z,449nm,19.7s,MS4.9,baz=140,slow=32
ESLA **Sonseca Array** 94.00 343 *e*P **P** 21 02 45.9 +0.5
comp=Z,3.0nm,1.1s,mb4.6
ESDC **Sonseca Array** 94.00 343 P **P** 21 02 46.1 +0.7
comp=Z,3.6nm,0.8s,mb4.9,baz=161,slow=4.2,SNR=15
ESDC **Sonseca Array** 94.00 343 P **P** 21 02 45.1 -0.3
comp=Z,3.3nm,0.8s,mb4.8
EMOS **Mosqueruela** 94.10 346 P **P** 21 02 45.1 -0.7
CTAO **Charters Tower** 94.62 132 *e*P **P** 21 02 46.2 -2.5
comp=Z,5.4nm,0.9s,mb5.0
AQU **L'Aquila** 94.76 356 *e*P **P** 21 02 50.2 +1.4
EPOB **Poblet** 94.85 347 P **P** 21 02 48.1 -1.1
GUD **Guadarrama** 94.98 343 P **P** 21 02 48.8 -1.1
ROSC **El Rosal** 95.47 271 LR LR 21 44 28.6
comp=Z,643nm,18.6s,MS5.1,baz=221,slow=35
SDV **Santo Domingo** 96.39 276 LR LR 21 43 10.5
comp=Z,594nm,22.0s,MS5.0,baz=38,slow=33
SOC **Sochi** 97.64 15 *e*P **P** 21 03 04.4 +2.5
SOC *e*S S 21 14 27.1 +3.6
SOC pmax pmax
comp=Z,7.0nm,0.7s,mb5.3
SOC pmax pmax
comp=N,5.0nm,0.6s
SOC pmax pmax
comp=E,10.0nm,0.8s
CMAR **Chiang Mai Arr** 98.92 71 LR LR 21 38 25.1
comp=E,259nm,21.3s,MS4.7,baz=235,slow=30
PSZ **Piszkesteto** 100.23 1 *e*P P 21 03 14.7 +1.2
comp=E,3.2nm,0.8s
SJG **San Juan** 100.94 285 PFAKE 21 03 30.0 +13
SJG LR LR
comp=Z,435nm,22.0s,MS4.9
KHC **Kasperske Hory** 101.52 357 *e*PP PP 21 07 28.5 -3.3
KHC L 21 53 40.0
comp=Z,0.7nm,20.0s
OKC **Ostrava-Krasne** 102.14 360 *e*PP PP 21 07 57.0 +21
OKC L 21 52 40.0
comp=Z,0.4nm,19.9s
PRU **Pruhonice** 102.35 357 *e*PP PP 21 07 42.8 +4.9
PRU L 21 48 40.0
NKC **Novy Kostel** 102.66 356 L 21 51 50.0
comp=Z,0.6nm,20.9s
DPC **Dobruska-Polom** 102.67 359 *e*PP PP 21 07 42.8 +2.3
DPC L 21 52 10.0
comp=Z,0.6nm,20.6s
PVCC **Panska Ves** 102.89 358 L 21 54 20.0
comp=Z,0.4nm,20.4s
LSA **Lhasa** 103.55 59 PFAKE 21 03 40.0 +11
LSA LR LR
comp=Z,340nm,20.0s,MS4.9
PMG **Port Moresby** 104.33 127 PFAKE 21 03 40.0 +7.4
PMG LR LR
comp=Z,238nm,20.0s,MS4.7
OBN **Obninsk** 108.48 11 P Pdif 21 03 51.0 +1.1
OBN 21 08 23.0
OBN 21 14 26.0
OBN *e*PS PS 21 17 47.4 +4.0
OBN *e*PPS PPS 21 18 54.9 +7.8
OBN *i* SS SS 21 23 36.8 +0.4
OBN *e*SSS SSS 21 27 45.2 +3.8
OBN MLR MLR
comp=Z,400nm,19.0s,MS5.0
ESK **Eskdalemuir** 109.11 347 PFAKE 21 08 10.0
ESK LR LR
comp=Z,791nm,22.0s,MS5.2
KONO **Kongsberg** 112.20 355 *e*SS SS 21 24 31.9 +6.1
KONO AMS AMS 21 55 44.9
comp=Z,312nm,22.0s,MS4.8
WMQ **Urumqi** 113.07 47 PKP PKPdf 21 08 04.3 -2.1
WMQ XPKP 21 08 14.0
WMQ PP PP 21 08 57.5 -0.3
WMQ PKS PKS 21 11 39.8 +0.7
WMQ SKS SKS 21 15 15.5 +23
WMQ SKKS 21 15 50.8
WMQ SS SS 21 24 38.0 -0.3
WMQ LR LR
comp=N,355nm,28.0s,MS5.0
WMQ LR LR
comp=E,433nm,29.2s,MS5.0
WMQ LR LR
comp=Z,646nm,28.1s,MS5.1
MKAR **Makanchi Array** 113.11 42 PKiKP 21 08 03.7
comp=Z,1.5nm,0.8s,baz=252,slow=3.5,SNR=12
MKAR **Makanchi Array** 113.11 42 *i* PKIKP PKPdf 21 08 03.7 -2.7
MKAR pmax pmax
comp=Z,2.0nm,0.8s
MKAR **Makanchi Array** 113.11 42 PKPdf PKPdf 21 08 03.7 -2.7
ZRNK **Zerenda** 113.45 31 *e*PKPdf PKPdf 21 08 03.7 -3.3
NOA **NORSAR Array B** 113.52 356 PKiKP 21 08 03.9
comp=Z,1.1nm,0.9s,baz=164,slow=1.8,SNR=3.7
NOA **NORSAR Array B** 113.52 356 *i* PKIKP PKPdf 21 08 03.9 -3.0
NOA pmax pmax
comp=Z,1.0nm,0.9s
NOA **NORSAR Array B** 113.52 356 PKPdf PKPdf 21 08 03.9 -3.0
ARU **Arti** 113.66 23 *e*PKIKP PKPdf 21 08 03.9 -3.4
ARU **Arti** 113.66 23 *e*PKPdf PKPdf 21 08 04.8 -2.5
ARU LR LR
comp=Z,429nm,22.0s,MS5.0
FINES **FINESS Array B** 113.94 4 PKiKP 21 08 05.1
comp=Z,2.3nm,1.0s,baz=135,slow=2.0,SNR=4.0
FINES **FINESS Array B** 113.94 4 *i* PKIKP PKPdf 21 08 05.1 -2.6
FINES pmax pmax
comp=Z,2.0nm,1.0s
BRVK **Borovoye** 113.94 31 *e*PKPdf PKPdf 21 08 03.5 -4.4
BVAR **Borovoye Array** 113.95 31 PKKPbc 21 18 46.3
comp=Z,0.4nm,0.6s,baz=63,slow=3.2,SNR=3.7
ENH **Enshi** 114.09 71 *e*PKPdf PKPdf 21 08 05.5 -3.2
KURK **Kurchatov** 114.86 37 *e*PKPdf PKPdf 21 08 07.0 -2.6
GTA **Gaotai** 115.56 58 *e*PKP PKPdf 21 08 09.5 -1.9
GTA XPKP 21 08 16.5
GTA LR LR
comp=N,122nm,19.0s,MS4.6
GTA LR LR
comp=E,112nm,21.3s,MS4.6
GTA LR LR
comp=Z,184nm,18.3s,MS4.7
ZAL **Zalesovo** 119.73 39 PKP PKPdf 21 08 14.5 -4.5
comp=Z,1.8nm,0.7s,baz=149,slow=2.7,SNR=12
ZAL **Zalesovo** 119.73 39 PKIKP PKPdf 21 08 14.5 -4.5
ZAL pmax pmax
comp=Z,2.0nm,0.7s
NJ2 **Nanjing** 120.87 77 *e*PKP PKPdf 21 08 16.0 -5.9
NJ2 PP PP 21 09 51.0 -0.7
NJ2 PKS PKS 21 11 52.0 -2.5
NJ2 SKS SKS 21 15 24.0 +2.9
NJ2 SKKS 21 16 39.0
NJ2 LR LR
comp=N,380nm,27.8s
NJ2 LR LR
comp=E,390nm,20.1s
NJ2 LR LR
comp=Z,580nm,25.2s,MS5.1
SSE **Sheshan** 121.57 79 ⇑PKP PKPdf 21 08 23.0 -0.3
SSE PP PP 21 09 54.3 -2.4
SSE SS SS 21 26 30.8 +1.6
SSE PP PP
comp=Z,88nm,3.3s
SSE LR LR
comp=N,106nm,20.0s,MS4.7
SSE LR LR
comp=E,152nm,20.0s,MS4.7
SSE LR LR
comp=Z,164nm,20.0s,MS4.7
ARCES **ARCESS Array B** 122.02 3 PKP PKPdf 21 08 20.2 -3.0
comp=Z,6.5nm,0.8s,baz=225,slow=1.7,SNR=18
ARCES **ARCESS Array B** 122.02 3 PKIKP PKPdf 21 08 20.2 -3.0
ARCES pmax pmax
comp=Z,7.0nm,0.8s
ARCES **ARCESS Array B** 122.02 3 PKP PKPdf 21 08 20.2 -3.0
JMIC **Jan Mayen** 124.86 350 *e*SS SS 21 27 08.2 -1.5
JMIC AMS AMS 21 58 38.1
comp=Z,218nm,14.2s,MS5.0
BJI **Beijing** 124.88 68 PKP PKPdf 21 08 26.0 -3.4
BJI LR LR
comp=N,134nm,18.1s,MS5.0
BJI LR LR
comp=E,254nm,19.3s,MS5.0
BJI LR LR
comp=Z,224nm,22.3s,MS4.8
MOY **Mondy** 124.89 49 *e*PKIKP PKPdf 21 08 26.9 -2.1
SONM **Songino Array** 124.90 55 PKP PKPdf 21 08 26.2 -3.0
comp=Z,4.8nm,0.8s,baz=210,slow=2.8,SNR=35
ZAK **Zakamensk** 125.09 51 ⇑*i*PKIKP PKPdf 21 08 25.9 -3.5
ULN **Ulaanbaatar** 125.25 56 *e*PKIKP PKPdf 21 08 26.5 -3.3
ULN **Ulaanbaatar** 125.25 56 *e*PKPdf PKPdf 21 08 26.9 -3.0
ULN LR LR
comp=Z,318nm,21.0s,MS5.0
TLY **Talaya** 126.13 50 *e*PKIKP PKPdf 21 08 27.8 -3.5
TLY *e*SS SS 21 27 44.8 +19
TLY *e*SS SS 21 27 46.5 +21
TLY pmax pmax
comp=Z,82nm,1.3s
TLY MLR MLR
comp=Z,2μm,18.0s,MS5.8
ACSO **Alum Creek Sta** 127.02 290 PFAKE 21 08 40.0 +6.7
ACSO LR LR
comp=Z,462nm,22.0s,MS5.1
SCHQ **Schefferville** 128.14 313 PKP PKPdf 21 08 32.4 -2.9
comp=Z,7.1nm,0.9s,baz=54,slow=1.9,SNR=6.6
SCHQ **Schefferville** 128.14 313 PKP PKPdf 21 08 32.4 -2.9
SCHQ LR LR
comp=Z,558nm,21.0s,MS5.2
MIAR **Mount Ida** 129.46 277 PFAKE 21 08 50.0 +12
MIAR LR LR
comp=Z,312nm,19.0s,MS5.0
KBS **Kingsbay** 131.41 358 *e*SS SS 21 28 36.9 +6.2
KBS AMS AMS 22 08 12.1
comp=Z,244nm,22.0s,MS4.9
LTX **Lajitas** 131.96 265 PFAKE 21 08 50.0 +6.8
LTX LR LR
comp=Z,284nm,22.0s,MS4.9
TXAR **Lajitas Array** 131.96 265 PKP PKPdf 21 08 40.8 -2.4
comp=Z,0.8nm,0.2s,baz=124,slow=3.3,SNR=3.4
WMOK **Wichita Mounta** 132.75 274 PFAKE 21 08 50.0 +5.4
WMOK LR LR
comp=Z,207nm,19.0s,MS4.9
FRB **Frobisher Bay** 134.10 322 PKP PKPdf 21 08 42.6 -3.6
comp=Z,3.7nm,0.9s,baz=135,slow=2.9,SNR=2.6
FRB **Frobisher Bay** 134.10 322 PKIKP PKPdf 21 08 42.6 -3.5
FRB pmax pmax
comp=Z,4.0nm,0.9s
BOD **Bodaibo** 134.60 48 *e*PKHKP 21 08 32.2
BOD *e* 21 08 43.1
MDJ **Mudanjiang** 135.46 72 PKP PKPdf 21 08 47.0 -2.3
MDJ **Mudanjiang** 135.46 72 PFAKE 21 09 00.0 +11
MDJ LR LR
comp=Z,181nm,21.0s,MS4.8
SDCO **Great Sand Dun** 138.81 272 PFAKE 21 09 10.0 +14
SDCO LR LR
comp=Z,349nm,19.0s,MS5.1
PFO **Pinyon Flat Ob** 142.68 257 *e*PKPdf PKPdf 21 08 59.5 -3.0
SRU **San Rafael** 142.73 270 *e*PKPdf PKPdf 21 08 56.4 -6.0
FCC **Fort Churchill** 142.96 307 *e*PKPdf PKPdf 21 08 56.4 -5.8
MSU **Marysvale** 143.36 267 *e*PKPdf PKPdf 21 08 58.8 -4.6
YAK **Yakutsk** 143.51 48 *e*PKIKP PKPdf 21 08 57.0 -5.9
YAK pmax pmax
comp=Z,100nm,4.0s
YAK MLR MLR
comp=Z,300nm,22.0s,MS5.0
JLU **Jordanelle** 144.20 271 *e*PKPdf PKPdf 21 09 02.2 -2.7
PDAR **Pinedale Array** 144.32 275 PKP PKPdf 21 09 01.2 -3.7
comp=Z,20nm,0.9s,baz=124,slow=5.3,SNR=41
YSS **Yuzh-Sakhalins** 144.44 76*d* *i* PKIKP PKPdf 21 09 00.6 -4.5
YSS pmax pmax
comp=Z,35nm,0.9s
YSS **Yuzh-Sakhalins** 144.44 76 *e*PKPdf PKPdf 21 09 01.1 -4.0
CTU **Camp Tracy** 144.44 271 *e*PKPdf PKPdf 21 09 02.6 -2.7
HWUT **Hardware Ranch** 144.87 272 *e*PKPdf PKPdf 21 09 03.7 -2.3
HWUT LR LR
comp=Z,288nm,20.0s,MS5.0
TIXI **Tiksi** 145.09 31 *i* PKIKP PKPdf 21 09 02.5 -3.0
TIXI pmax pmax
comp=Z,43nm,1.0s
TIXI MLR MLR
comp=Z,293nm,22.0s,MS5.0
TIXI **Tiksi** 145.09 31 *e*PKPdf PKPdf 21 09 02.4 -3.1
SPUT **South Promonto** 145.23 271 *e*PKPdf PKPdf 21 09 04.3 -2.3
AHID **Auburn Hatcher** 145.25 274 *e*PKPdf PKPdf 21 09 04.9 -1.7
BGU **Big Grassy Mou** 145.36 270 *e*PKPdf PKPdf 21 09 04.7 -2.2
REDW **Red Top Meadow** 145.44 275 *e*PKPdf PKPdf 21 09 04.1 -2.8
FFC **Flin Flon** 145.55 298 *e*PKPdf PKPdf 21 09 04.9 -1.9
HVU **Hansel Valley** 145.71 271 *e*PKPdf PKPdf 21 09 06.4 -1.0
TPH **Tonopah** 146.14 262 *e*PKPbc PKPbc 21 09 07.9 +1.6
YMR **Madison River** 146.22 277 *e*PKPbc PKPbc 21 09 10.0 +3.7
MTUM **Tungsten Hills** 146.48 260 *e*PKPbc PKPbc 21 09 08.9 +1.7
QLMT **Earthquake Lak** 146.58 277 *e*PKPbc PKPbc 21 09 09.2 +2.1
MNV **Mina** 146.93 262 *e*PKPdf PKPdf 21 09 09.1 -0.5
MNV *e*PKPbc PKPbc 21 09 10.2 +2.0
NVAR **Mina Array Bea** 147.02 262 PKPbc PKPdf 21 09 10.3 +0.5
comp=Z,21nm,0.8s,baz=129,slow=5.2,SNR=51
NVAR **Mina Array Bea** 147.02 262 PKPbc PKPdf 21 09 10.3 +0.5
BOZ **Bozeman (W)** 147.13 278 *e*PKPdf PKPdf 21 09 08.2 -1.5
BOZ *e*PKPbc PKPdf 21 09 11.0 +1.2
MCMT **McKenzie Canyo** 147.44 276 *e*PKPdf PKPdf 21 09 05.1 -5.1
MCMT *e*PKPbc PKPdf 21 09 12.2 +1.9
HLID **Hailey** 147.71 273 *e*PKPdf PKPdf 21 09 10.0 -0.7
HLID *e*PKPbc PKPdf 21 09 12.8 +2.1
HLID LR LR
comp=Z,255nm,19.0s,MS5.0
HRY **Holter Researc** 147.78 280 *e*PKPbc PKPdf 21 09 10.2 -0.6
CMB **Columbia Colle** 148.02 259 PKPdf PKPdf 21 09 13.5 +2.1
CMB **Columbia Colle** 148.02 259 *e*PKPdf PKPdf 21 09 10.7 -0.7
CMB *e*PKPbc PKPdf 21 09 13.2 +1.8
CHMT **Chamberlain Mo** 148.73 279 *e*PKPdf PKPdf 21 09 10.3 -2.0
CHMT *e*PKPbc PKPdf 21 09 15.1 +2.9
MSO **Missoula** 149.11 279 *e*PKPdf PKPdf 21 09 10.4 -2.5
MSO *e*PKPbc PKPdf 21 09 15.8 +2.9
BEKR **Beckwourth** 149.17 262 *e*PKPbc PKPdf 21 09 16.6 +3.4
WVOR **Wild Horse Val** 149.65 268 *e*PKPbc PKPdf 21 09 18.4 +4.5
WALA **Waterton Lakes** 150.10 282 *e*PKPdf PKPdf 21 09 13.8 -0.6
WALA *e*PKPbc PKPdf 21 09 18.0 +3.7
WDC **Whiskeytown Da** 150.92 261 *e*PKPdf PKPdf 21 09 14.2 -1.6
WDC *e*PKPbc PKPdf 21 09 20.1 +4.2
MA2 **Magadan** 153.10 56 *e*PKIKP PKPdf 21 09 17.9 -0.5
MA2 pmax pmax
comp=Z,28nm,0.9s
MA2 **Magadan** 153.10 56 *e*PKPbc PKPdf 21 09 23.6 +5.1
YKA **Yellowknife Ar** 153.55 310 PKP PKPdf 21 09 14.2 -4.7
comp=Z,1.4nm,1.0s,baz=80,slow=1.8,SNR=11
YKA PKPbc PKPdf 21 09 24.4 +5.5
comp=Z,4.0nm,0.8s,baz=88,slow=2.3,SNR=13
YKA PKPab PKPab 21 09 38.3 -0.3
comp=Z,4.6nm,0.8s,baz=93,slow=5.3,SNR=18
YKA **Yellowknife Ar** 153.55 310 PKIKP PKPdf 21 09 14.2 -4.7
YKA 21 09 24.4
YKA pmax pmax
comp=Z,1.0nm,1.0s
YKA pmax pmax
comp=Z,4.0nm,0.8s
YKA pmax pmax
comp=Z,5.0nm,0.8s
YKW3 **Yellowknife Ar** 153.55 310 *e*PKPbc PKPdf 21 09 24.9 +6.0
SEY **Seymchan** 154.02 49 *e*PKIKP PKPdf 21 09 26.8 +7.2
SEY pmax pmax
comp=Z,40nm,1.1s
BILL **Bilibino** 158.29 33 ⇓*i*PKIKP PKPdf 21 09 20.4 -4.7
BILL *i* 21 09 58.7
BILL *i* 21 13 36.8
BILL *i* 21 16 19.6
BILL *e*SS SS 21 33 34.7 -2.7
BILL pmax pmax
comp=Z,6.0nm,1.3s
BILL pmax pmax
comp=Z,7.0nm,1.0s
INK **Inuvik** 159.41 330 PKP PKPdf 21 09 20.3 -6.1
comp=Z,0.9nm,0.8s,baz=109,slow=6.6,SNR=4.1
INK PKPab PKPab 21 10 03.7 +0.2
comp=Z,9.1nm,0.9s,baz=51,slow=6.2,SNR=10
INK **Inuvik** 159.41 330 PKIKP PKPdf 21 09 20.3 -6.1
INK pmax pmax
comp=Z,1.0nm,0.8s
INK pmax pmax
comp=Z,9.0nm,0.9s
ILAR **Eielson Array** 165.72 334 PKPab PKPab 21 10 31.6 +0.6
comp=Z,6.4nm,0.9s,baz=343,slow=2.3,SNR=4.2
ILAR **Eielson Array** 165.72 334 PKP2 PKPab 21 10 31.6 +0.6
ILAR pmax pmax
comp=Z,6.0nm,0.9s
MCK **McKinley** 167.09 334 PFAKE 21 09 40.0 +6.2
MCK LR LR
comp=Z,294nm,22.0s

*IDC **27** 21:02:47.1±0.7,5.66S×129.44E,mb4.0/8,mb1 4.4/12, mb1mx4.2/18,ML4.3/4,MS3.4/1,Ms1 3.4/1,ms1mx2.8/15, Error ellipse: s-maj=39.8km s-min=14.0km az=61.0*
*NEIC **27** 21:02:49.6±0.5,5.80S×129.39E,h15km,mb4.5/10,Error ellipse: s-maj=21.6km s-min=8.1km az=65.0*
ISC 27 21:02:48.4±2.9,**5.87S**±0.05×**129.36E**±0.09,**h22**km±22km, **h24**km±1.0km**:pP-P,n42,**σ**1s37/47,mb4.4**/18,**3C-3D, Banda Sea**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
KAKA	**Kakadu**	**7.42**	**156**	⇑*i*P		**Pn**		**21 04 40.5**	**+2.3**
KAKA	26nm,0.4s			*e*S		**Sn**		**21 06 01.7**	**-0.9**
FITZ	**Fitzroy Crossi**	**12.69**	**196**	⇓*i*P		**P**		**21 05 51.3**	**+0.8**
	19nm,0.5s								
FITZ	**Fitzroy Crossi**	**12.69**	**196**	Pn		**P**		**21 05 50.8**	**+0.2**
	4.5nm,0.3s,baz=18,slow=9.7,SNR=94								
FITZ				Sn		**S**		**21 08 12.0**	**-0.1**
	1.0nm,0.3s,baz=183,slow=18,SNR=2.0								
WRAB	**Tennant Creek**	**14.80**	**161**	*e*P		**P**		**21 06 16.7**	**-1.7**
	31nm,0.6s								
WRAB				*e*S		**S**		**21 08 55.9**	**-6.6**
WRA	**Warramunga Arr**	**14.80**	**161**	Pn		**P**		**21 06 17.3**	**-1.2**
	2.0nm,0.3s,baz=339,slow=13,SNR=31								
WRA				Sn		**S**		**21 08 58.0**	**-4.6**
	1.9nm,0.3s,baz=340,slow=22,SNR=8.7								
WB2	**Warramunga Arr**	**14.81**	**161**	⇓*i*P		**P**		**21 06 17.1**	**-1.4**
WB2				*e*S		**S**		**21 08 56.6**	**-6.1**
PMG	**Port Moresby**	**17.98**	**102**	P		**P**		**21 06 58.5**	**-0.5**
	1.3nm,0.3s,baz=299,slow=10,SNR=6.0								
PMG				LR		LR		21 13 47.6	
	comp=Z,107nm,19.0s,baz=83,slow=37								
PMG	**Port Moresby**	**17.98**	**102**	*e*P		**P**		**21 06 58.5**	**-0.5**
	37nm,0.9s								
AS12	**Alice Springs**	**18.23**	**167**	⇑*i*P		**P**		**21 07 03.2**	**+1.2**
	14nm,0.5s								
AS12				*e*S		**S**		**21 10 20.9**	**-0.7**
ASAR	**Alice Springs**	**18.23**	**167**	P		**P**		**21 07 02.7**	**+0.7**
	1.2nm,0.3s,baz=335,slow=9.6,SNR=60								
ASAR				S		**S**		**21 10 20.6**	**-1.0**
	0.3nm,0.3s,baz=349,slow=28,SNR=3.9								
ASAR	**Alice Springs**	**18.23**	**167**	P		**P**		**21 07 02.7**	**+0.7**
ASAR				S		**S**		**21 10 20.6**	**-1.0**
TGY	**Tagaytay City**	**21.53**	**337**	P		**P**		**21 07 37.0**	**-1.4**
	142nm,0.3s,baz=214,slow=12,SNR=2.9								
CTA	**Charters Tower**	**21.66**	**132**	⇓*i*P		**P**		**21 07 42.0**	**+2.4**
	14nm,0.9s,mb4.4								
CTA	**Charters Tower**	**21.66**	**132**	P		**P**		**21 07 41.8**	**+2.1**
	18nm,0.8s,mb4.5,baz=306,slow=12,SNR=9.2								
CTAO	**Charters Tower**	**21.66**	**132**	*e*P		**P**		**21 07 41.8**	**+2.1**
	23nm,0.9s,mb4.6								
FORT	**Forrest**	**24.81**	**183**	*e*P		**P**		**21 08 15.4**	**+4.9**
	85nm,0.6s,mb5.5								
STKA	**Stephens Creek**	**28.29**	**158**	⇑*i*P		**P**		**21 08 44.8**	**+2.2**
	2.6nm,0.6s,mb4.0								
STKA	**Stephens Creek**	**28.29**	**158**	P		**P**		**21 08 44.6**	**+2.0**
	3.4nm,0.6s,mb4.1,baz=327,slow=9.3,SNR=12								
CMAR	**Chiang Mai Arr**	**38.52**	**310**	P		**P**		**21 10 12.2**	**+0.9**
	1.3nm,0.7s,mb3.8,baz=134,slow=7.0,SNR=16								
ENH	**Enshi**	**40.67**	**333**	*e*P		**P**		**21 10 33.5**	**+4.5**
	6.9nm,0.7s,mb4.4								
MAJO	**Matsushiro**	**42.99**	**10**	P		**P**		**21 10 53.4**	**+5.4**
	5.7nm,0.7s,mb4.4								
BJT	**Baijiatuan**	**47.25**	**346**	P		**P**		**21 11 28.4**	**+6.4**
	13nm,1.0s,mb4.8								
LSA	**Lhasa**	**50.95**	**316**	P		**P**		**21 11 53.3**	**+2.7**
	3.1nm,0.6s,mb4.4								
KKN	**Kakani**	**54.12**	**310**	*e*P		**P**		**21 12 15.1**	**+0.8**
DMN	**Daman**	**54.16**	**310**	*e*P		**P**		**21 12 12.7**	**-1.9**
	9.8nm,0.8s,mb4.8								
GKN	**Gorkha**	**54.72**	**310**	*e*P		**P**		**21 12 19.4**	**+0.7**
	15nm,0.9s,mb5.0								
KOLN	**Koldanda**	**55.39**	**310**	*e*P		**P**		**21 12 21.8**	**-1.8**
	11nm,0.9s,mb4.9								
ULN	**Ulaanbaatar**	**57.00**	**342**	*e*P		**P**		**21 12 41.6**	**+6.7**
	7.4nm,0.8s,mb4.8								
SONM	**Songino Array**	**57.17**	**342**	P		**P**		**21 12 33.9**	**-2.2**
	0.5nm,0.6s,mb3.7,baz=170,slow=7.5,SNR=5.2								
MKAR	**Makanchi Array**	**66.94**	**327**	P		**P**		**21 13 39.6**	**-1.9**
	1.4nm,0.5s,mb4.2,baz=112,slow=9.3,SNR=22								
ZAL	**Zalesovo**	**70.30**	**334**	P		**P**		**21 14 01.6**	**-0.5**
	0.8nm,0.7s,mb3.8,baz=93,slow=2.9,SNR=5.7								
KURK	**Kurchatov**	**71.23**	**329**	*e*P		**P**		**21 14 08.8**	**+1.0**
KURK				*e*		pP		21 14 15.6	+0.8
VNDA	**Vanda**	**73.64**	**173**	P		**P**		**21 14 23.5**	**+1.9**
	0.9nm,0.8s,mb3.8,baz=299,slow=5.8,SNR=5.3								
VNDA	**Vanda**	**73.64**	**173**	P		**P**		**21 14 23.5**	**+1.9**
BVAR	**Borovoye Array**	**76.77**	**328**	P		**P**		**21 14 40.6**	**+0.7**
	0.7nm,0.6s,mb3.8,baz=122,slow=11,SNR=6.7								
BRVK	**Borovoye**	**76.84**	**328**	*e*P		**P**		**21 14 40.6**	**+0.2**
BRVK				*e*		pP		21 14 48.7	+1.3
TIXI	**Tiksi**	**77.36**	**360**	*e*P		**P**		**21 14 50.4**	**+7.5**
ZRNK	**Zerenda**	**77.47**	**327**	*e*P		**P**		**21 14 43.9**	**+0.1**
ZRNK				*e*		pP		21 14 51.6	+0.8
ARU	**Arti**	**84.42**	**328**	*e*P		**P**		**21 15 28.8**	**+8.4**
	4.4nm,1.0s,mb4.5								
CPUP	**Villa Florida**	**147.34**	**169**	PKPbc		PKPdf		21 22 33.6	+0.5
	2.7nm,0.9s,baz=50,slow=7.9,SNR=2.7								
LPAZ	**La Paz**	**152.00**	**142**	PKPbc		PKPdf		21 22 44.5	+3.9
	0.7nm,0.5s,baz=189,slow=1.8,SNR=4.5								
LPAZ	**La Paz**	**152.00**	**142**	PKPbc		PKPdf		21 22 44.5	+3.9

*IDC **27** 21:12:07.6±2.6,12.10N×144.84E,mb3.7/6,mb1 3.9/6, mb1mx3.7/22,Error ellipse: s-maj=84.4km s-min=21.8km az=82.0*
*NEIC **27** 21:12:14.0±1.8,12.10N×145.13E,h61km±16km,mb3.9/1, Error ellipse: s-maj=56.6km s-min=12.1km az=87.0*
ISC 27 21:12:13.4±1.9,**12.1N**±0.1×**145.1E**±0.5,**h74**km±16km**,n12,** σ**0s77/13,mb3.7/7,South of Mariana Islands**

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**1.52**	**351**	*e*Pn		**P**		**21 12 39.1**	**-0.2**
GUMO				*e*Sn		**S**		**21 12 58.6**	**+0.3**
MAJO	**Matsushiro**	**25.14**	**347**	*e*P		**P**		**21 17 31.4**	**-1.7**

2.9nm,0.7s,mb3.8
WRAB Tennant Creek 33.53 199 *e*P **P 21 18 47.3 -1.1**
WRA Warramunga Arr 33.55 199 P **P 21 18 48.9 +0.5**
0.4nm,0.5s,mb3.5,baz=21,slow=9.7,SNR=4.6
ASAR Alice Springs 37.19 197 P **P 21 19 19.8 +0.5**
0.3nm,0.6s,mb3.4,baz=15,slow=10,SNR=3.6
CMAR Chiang Mai Arr 44.91 284 P **P 21 20 22.1 -0.6**
0.9nm,0.7s,mb3.6,baz=81,slow=6.7,SNR=11
SONM Songino Array 48.10 326 P **P 21 20 47.8 +0.2**
0.2nm,0.4s,mb3.3,baz=135,slow=8.2,SNR=2.6
MKAR Makanchi Array 62.75 317 P **P 21 22 33.4 +0.3**
2.1nm,1.0s,mb4.0,baz=97,slow=8.6,SNR=8.5
KURK Kurchatov 65.89 320 *e*P **P 21 22 52.7 -0.8**
BVAR Borovoye Array 71.26 322 P **P 21 23 27.7 +1.2**
1.7nm,0.3s,mb4.3,baz=107,slow=7.5,SNR=21
BRVK Borovoye 71.33 322 *e*P **P 21 23 27.6 +0.7**
ZRNK Zerenda 72.09 322 *e*P **P 21 23 32.0 +0.5**

IDC ***27*** *21:19:42.6±0.7, 6.66N×72.87W, h162km±7km, mb3.4/3, mb1 3.9/7, mb1mx3.5/23, Error ellipse: s-maj=27.2km s-min=7.3km az=130.0*
NEIC ***27*** *21:19:43.5±0.8, 6.64N×72.83W, h171km±8km, Error ellipse: s-maj=22.7km s-min=10.1km az=127.0*
ISC 27 21:19:42.3±0.8, 6.7N±0.1×72.9W±0.2, h172km±9km, n9, σ0§87/9, mb3.6/3, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
ROSC	**El Rosal**	**2.32**	**217**	P		**P**	**21 20 24.2**	**+1.3**
	42nm,0.3s,baz=95,slow=22,SNR=60							
ROSC				S		**S**	**21 20 53.4**	**-0.8**
	109nm,0.3s,baz=108,slow=21,SNR=12							
SDV	**Santo Domingo**	**3.12**	**46**	P		**P**	**21 20 33.6**	**+0.8**
	42nm,0.3s,baz=218,slow=2.2,SNR=154							
SDV				S		**S**	**21 21 10.7**	**-0.9**
	25nm,0.3s,baz=274,slow=23,SNR=13							
PCRV	**Puerto La Cruz**	**8.88**	**67**	P		**P**	**21 21 48.1**	**+0.1**
	1.0nm,0.3s,baz=190,slow=4.0,SNR=3.8							
SJG	**San Juan**	**13.11**	**30**	P		**P**	**21 22 42.9**	**0.0**
	6.7nm,0.3s,baz=349,slow=20,SNR=5.1							
LPAZ	**La Paz**	**23.34**	**168**	P		**P**	**21 24 35.5**	**-0.7**
	1.4nm,0.4s,mb3.8,baz=154,slow=9.2,SNR=6.8							
YKA	**Yellowknife Ar**	**63.43**	**340**	P		**P**	**21 29 54.6**	**-1.0**
	0.8nm,0.5s,mb3.8,baz=132,slow=6.8,SNR=20							
GERES	**GERESS Array B**	**82.77**	**42**	P		**P**	**21 31 49.5**	**+1.2**
	0.4nm,0.7s,mb3.2,baz=207,slow=6.0,SNR=3.5							
ASAR	**Alice Springs**	**149.21**	**234**	PKPbc		PKPdf	21 39 12.7	+6.1
	0.5nm,0.5s,baz=123,slow=3.6,SNR=5.4							
WRA	**Warramunga Arr**	**150.46**	**241**	PKPbc		PKPdf	21 39 16.5	+7.8
	0.6nm,0.5s,baz=109,slow=2.5,SNR=6.1							

NEIC ***27*** *21:34:32.6, 40.17N×19.58E, h20km, MD3.5(ATH), ML3.5(THE), After ATH.*
ATH ***27*** *21:34:32.6, 40.17N×19.58E, h20km±3km, MD3.5/6*
THE ***27*** *21:34:33.4, 40.12N×19.65E, h10km, ML3.5*
TIR ***27*** *21:34:35.0, 40.13N×19.96E, h13km, Ml2.9*
ISC 27 21:34:35.4±0.3, 40.08N±0.02×19.81E±0.03, h13km, n46, σ1§21/65, Albania

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
SRN	**Sarande**	**0.25**	**144**	*i* Pg		**Pg**	**21 34 40.1**	**-0.8**
SRN				*i* Sg		**Sg**	**21 34 44.1**	**-0.4**
TPE	**Tepelena**	**0.26**	**36**	*i* Pg		**Pg**	**21 34 38.9**	**-2.2**
TPE				*i* Sg		**Sg**	**21 34 41.1**	**-3.9**
KEK	**Kerkira**	**0.37**	**181**	*e*PB		**Pb**	**21 34 42.6**	**-0.6**
KEK				*e*SB		**Sb**	**21 34 49.9**	**+1.4**
VLO	**Vlora**	**0.46**	**328**	*i* Pg		**Pg**	**21 34 45.1**	**+0.3**
VLO				*i* Sg		**Sg**	**21 34 52.3**	**+1.3**
LSK	**Leskovik**	**0.61**	**83**	*i* Pg		**Pg**	**21 34 45.7**	**-2.1**
LSK				*i* Sg		**Sg**	**21 34 54.3**	**-1.7**
IGT	**Igoumenitsa**	**0.68**	**144**	*e*Pg		**Pg**	**21 34 48.0**	**-1.2**
IGT				*e*Sg		**Sg**	**21 34 59.2**	**+0.9**
JAN	**Janina**	**0.91**	**118**	*e*PB		**Pb**	**21 34 52.5**	**+0.1**
KBN	**Korca**	**0.92**	**54**	*i* Pg		**Pg**	**21 34 50.4**	**-3.5**
KBN				*i* Sg		**Sg**	**21 34 59.9**	**-6.4**
MEV	**Metsovon**	**1.13**	**105**	*e*Pb		**Pb**	**21 34 56.4**	**+0.1**
TIR	**Tirane**	**1.27**	**2**	*e*Pn		**Pn**	**21 34 59.5**	**+0.7**
TIR				*i* Sn		**Sn**	**21 35 18.5**	**+2.8**
OHR	**Ohrid**	**1.27**	**36**	*i*		**Pb**	**21 35 01.0**	**+2.2**
OHR				*i* Sg		**Sg**	**21 35 18.7**	**+0.7**
LCI	**Lecce**	**1.32**	**282**	*e*Pn		**Pn**	**21 34 59.9**	**+0.2**
LCI				*e*Sn		**Sn**	**21 35 20.5**	**+3.3**
FNA	**Florina**	**1.39**	**59**	*e*Pb		**Pb**	**21 34 59.6**	**-1.0**
	comp=Z,12nm,0.1s							
FNA				*e*Sb		**Sb**	**21 35 21.6**	**+3.5**
QSH	**Qafa e Shtames**	**1.44**	**3**	*i* Pn		**Pn**	**21 35 02.0**	**+0.7**
QSH				*i* Sn		**Sn**	**21 35 21.0**	**+0.9**
BIA	**Bitola**	**1.49**	**50**	*i* Pn		**Pn**	**21 35 00.2**	**-1.8**
BIA				*i* Sg		**Sg**	**21 35 22.7**	**-2.3**
KZN	**Kozani**	**1.52**	**81**	*e*PN		**Pn**	**21 35 03.2**	**+0.8**
KZN				*e*SN		**Sn**	**21 35 25.7**	**+3.6**
LKD	**Levkas**	**1.52**	**154**	*e*Pb		**Pb**	**21 35 03.1**	**+0.2**
	comp=Z,19nm,0.1s							
LKD				*e*Sb		**Sb**	**21 35 24.4**	**+2.5**
EVR	**Evrytania**	**1.94**	**126**	*e*PN		**Pn**	**21 35 10.3**	**+1.9**
PUK	**Puka**	**1.96**	**2**	*i* Pn		**Pn**	**21 35 09.5**	**+0.8**
PUK				*i* Sn		**Sn**	**21 35 33.9**	**+0.6**
VLS	**Valsamata**	**2.00**	**162**	*e*PB		**Pb**	**21 35 09.1**	**-2.0**
LIT	**Litokhoron**	**2.06**	**89**	*e*Pn		**Pn**	**21 35 10.9**	**+0.8**
	comp=Z,3.6nm,0.4s							
GRG	**Griva**	**2.16**	**65**	*e*Pn		**Pn**	**21 35 11.7**	**+0.1**
AGG	**Agios Georgios**	**2.22**	**118**	*e*Pn		**Pn**	**21 35 13.4**	**+1.0**
	comp=Z,4.7nm,0.1s							
AGG				*e*Sn		**Sn**	**21 35 42.3**	**+2.4**
SKO	**Skopje**	**2.26**	**33**	*e*Pn		**Pn**	**21 35 13.3**	**+0.3**
RLS	**Riolos of Patr**	**2.40**	**147**	*e*PN		**Pn**	**21 35 15.8**	**+0.8**
TIP	**Timpagrande**	**2.52**	**250**	*e*Pn		**Pn**	**21 35 16.2**	**-0.6**
KNT	**Kendrikon**	**2.59**	**64**	*e*Pn		**Pn**	**21 35 17.7**	**0.0**
XOR	**Xorichti**	**2.70**	**104**	*e*Pn		**Pn**	**21 35 19.5**	**+0.1**
TDS	**Terranova Siba**	**2.71**	**262**	*e*Pn		**Pn**	**21 35 20.2**	**+0.8**
NEO	**Neokhori**	**2.75**	**105**	*e*PN		**Pn**	**21 35 20.4**	**+0.4**
PLG	**Polygyros**	**2.80**	**83**	*e*PN		**Pn**	**21 35 21.1**	**+0.4**
SOH	**Sokhos**	**2.80**	**74**	*e*Pn		**Pn**	**21 35 20.9**	**+0.1**
LKR	**Lokris**	**2.85**	**119**	*e*PN		**Pn**	**21 35 22.3**	**+0.8**
PAIG	**Paliouri**	**2.98**	**92**	*e*Pn		**Pn**	**21 35 22.6**	**-0.7**
SRS	**Serrai**	**3.06**	**69**	*e*Pn		**Pn**	**21 35 24.0**	**-0.5**
OUR	**Ouranopolis**	**3.20**	**84**	*e*Pn		**Pn**	**21 35 26.4**	**-0.1**
	comp=Z,1.2nm,0.6s							
STON	**Ston**	**3.21**	**331**	*i* Pn		**Pn**	**21 35 24.6**	**-1.9**
STON				*i* Sn		**Sn**	**21 36 01.1**	**-3.9**
SLCN	**Sala Consilina**	**3.21**	**277**	*e*Pn		**Pn**	**21 35 26.9**	**+0.3**
MGR	**Morigerati**	**3.27**	**272**	*e*Pn		**Pn**	**21 35 27.6**	**+0.3**
AOS	**Alonnisos**	**3.27**	**105**	*e*Pn		**Pn**	**21 35 26.8**	**-0.7**
ITM	**Ithomi**	**3.34**	**150**	*e*PN		**Pn**	**21 35 28.5**	**+0.1**
MRLC	**Muro Lucano**	**3.37**	**283**	*e*Pn		**Pn**	**21 35 29.1**	**+0.2**
SGO	**Sicignano**	**3.48**	**279**	*e*Pn		**Pn**	**21 35 29.7**	**-0.6**
SOI	**Samo**	**3.54**	**237**	*e*Pn		**Pn**	**21 35 30.1**	**-1.2**
SOI				*e*Sn		**Sn**	**21 36 11.2**	**-2.3**
MTTG	**Motta San Giov**	**3.82**	**238**	*e*Pn		**Pn**	**21 35 34.1**	**-1.1**
CII	**Carovilli**	**4.48**	**293**	*e*Pn		**Pn**	**21 35 42.7**	**-2.0**

NEIC ***27*** *21:36:51.4, 19.67N×67.89W, h55km, MD3.7(RSPR), After RSPR.*
RSPR 27 21:36:51.4, 19.67N×67.89W, h55km±31km, M3.7, 11C-2D, Mona Passage

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
IDE	**Isla Desecheo**	**1.34**	**163**	*e*P		P	21 37 11.8	-2.5
LSP	**Las Mesas**	**1.67**	**153**	*e*P		P	21 37 17.3	-1.6
LSP				S		S	21 37 35.9	-3.3
LRS	**Lares**	**1.69**	**144**	*e*P		P	21 37 17.1	-2.0
LRS				S		S	21 37 37.5	-2.2
AOPR	**Arecibo Observ**	**1.70**	**141**	*e*P		P	21 37 17.4	-1.9
AOPR	**Arecibo Observ**	**1.70**	**141**	S		S	21 37 37.1	-2.8
MGP	**Maguayo**	**1.82**	**155**	*e*P		P	21 37 19.4	-1.6
MGP				S		S	21 37 40.2	-2.7
PORP	**Portuguez**	**2.00**	**143**	*e*P		P	21 37 22.4	-1.0
PORP				S		S	21 37 44.0	-3.2
CELP	**Cerrillos**	**2.02**	**142**	*e*P		P	21 37 21.7	-1.9
CELP				S		S	21 37 44.7	-2.9
OBIP	**Obispado Ponce**	**2.02**	**143**	*e*P		P	21 37 23.0	-0.8
OBIP	**Obispado Ponce**	**2.02**	**143**	S		S	21 37 44.0	-3.8
CSB	**Colonia Sabana**	**2.14**	**130**	*e*P		P	21 37 22.8	-2.6
CSB				S		S	21 37 47.9	-2.8
SJG	**San Juan**	**2.26**	**133**	*e*P		S	21 37 26.0	-1.2
SJG				S		S	21 37 51.1	-2.8
SJG	**San Juan**	**2.26**	**133**	*e*P		P	21 37 25.2	-2.0
SJG	**San Juan**	**2.26**	**133**	S		S	21 37 49.2	-4.7
SJG	**San Juan**	**2.26**	**133**	*e*P		P	21 37 25.2	-2.0
SJG				S		S	21 37 49.2	-4.7
HUMP	**Col San Antoni**	**2.46**	**128**	*e*P		P	21 37 27.4	-2.5
HUMP				S		S	21 37 55.1	-3.7
ABV	**Anegada**	**3.48**	**105**	S		S	21 38 20.1	-4.7

IDC ***27*** *22:35:24.6±0.5, 10.77N×41.00W, mb4.4/29, mb1 4.5/29, mb1mx4.4/32, MS4.1/22, Ms1 4.1/22, ms1mx4.1/27, Error ellipse: s-maj=17.0km s-min=11.9km az=153.0*
NEIC ***27*** *22:35:26.1±0.2, 10.73N×41.01W, h10km, mb4.7/70, MS4.4/3, Error ellipse: s-maj=6.5km s-min=3.4km az=162.0*
BJI ***27*** *22:35:26.0, 10.70N×41.00W, h10km, Ms4.9, Msz4.6*
SYO ***27*** *22:35:26.0, 10.73N×41.01W, h10km, MB4.7, MS4.4*
ISC 27 22:35:24.3±0.3, 10.75N±0.06×41.01W±0.04, h10km, n180, σ0§85/171, mb4.6/99, MS4.2/25, 11C-5D, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
SJG	**San Juan**	**25.40**	**290**	P		**P**	**22 40 54.3**	**+0.5**
	8.8nm,0.6s,mb4.5,baz=26,slow=12,SNR=3.7							
SJG				LR		LR	22 48 51.1	
	comp=Z,298nm,22.0s,MS3.8,baz=102,slow=32							
SJG	**San Juan**	**25.40**	**290**	*e*P		**P**	**22 40 54.5**	**+0.7**
	19nm,0.9s,mb4.6							
BDFB	**Brasilia**	**27.12**	**195**	P		**P**	**22 41 10.0**	**+0.4**
	14nm,1.2s,mb4.4,baz=43,slow=2.9,SNR=6.0							
BDFB				LR		LR	22 51 05.9	
	comp=Z,986nm,21.0s,MS4.3,baz=46,slow=35							
SDV	**Santo Domingo**	**29.24**	**269**	P		**P**	**22 41 29.2**	**+0.3**
	3.2nm,0.9s,mb4.1,baz=115,slow=10,SNR=3.7							
ROSC	**El Rosal**	**33.51**	**263**	P		**P**	**22 42 06.6**	**+0.2**
	4.9nm,0.3s,mb4.9,baz=356,slow=22,SNR=3.6							
ROSC				LR		LR	22 55 28.7	
	comp=Z,450nm,20.6s,MS4.2,baz=45,slow=36							
TIC	**Toumodi**	**35.79**	**94**	*e*PKP2		**P**	**22 42 27.0**	**+1.0**
	13nm,0.2s,mb5.5							
LIC	**Lamto**	**35.85**	**94**	*e*PKP2		**P**	**22 42 25.7**	**-0.8**
	57nm,1.0s,mb5.5							
LIC	**Lamto**	**35.85**	**94**	*e*P		**P**	**22 42 26.2**	**-0.3**
	21nm,1.0s,mb5.0							
DBIC	**Dimbokro**	**35.95**	**93**	P		**P**	**22 42 26.9**	**-0.4**
	15nm,0.8s,mb5.0,baz=272,slow=9.2,SNR=27							
DBIC				LR		LR	22 53 28.6	
	comp=Z,113nm,21.9s,MS3.6,baz=258,slow=30							
DBIC	**Dimbokro**	**35.95**	**93**	*e*P		**P**	**22 42 26.4**	**-0.9**
	12nm,0.9s,mb4.8							
DBIC				*e*			22 42 35.4	
KIC	**Kosan Boka**	**36.11**	**94**	*e*PKP2		**P**	**22 42 25.4**	**-3.3**
	127nm,1.3s							
LPAZ	**La Paz**	**37.97**	**225**	P		**P**	**22 42 45.3**	**+1.1**
	6.6nm,0.8s,mb4.4,baz=43,slow=7.9,SNR=39							
LPAZ				LR		LR	22 58 32.3	
	comp=Z,457nm,20.6s,MS4.3,baz=105,slow=36							
LPAZ	**La Paz**	**37.97**	**225**	*e*P		**P**	**22 42 45.5**	**+1.3**
	5.2nm,0.9s,mb4.3							
LPAZ				*e*PP		PP	22 44 16.6	+2.6
OTAV	**Otavalo**	**38.65**	**257**	*e*P		**P**	**22 42 52.4**	**+2.4**
	15nm,1.2s,mb4.6							
CPUP	**Villa Florida**	**40.13**	**203**	LR		LR	22 59 20.6	
	comp=Z,559nm,18.1s,MS4.5,baz=44,slow=36							
CPUP	**Villa Florida**	**40.13**	**203**	P		**P**	**22 43 02.1**	**0.0**
	1.5nm,0.9s,mb3.7							
PALC	**Alcoutim**	**40.18**	**43**	*e*P		**P**	**22 43 05.5**	**+3.0**
EGRO	**El Granado**	**40.21**	**43**	P		**P**	**22 43 03.6**	**+0.9**
PBEJ	**Beja**	**40.23**	**42**	*e*P		**P**	**22 43 04.2**	**+1.3**
	31nm,1.4s,mb4.8							
EVO	**Evora**	**40.42**	**41**	*e*P		**P**	**22 43 04.5**	**+0.1**
	21nm,1.0s,mb4.5							
EVO				*e*R				
	474nm,19.8s							
EMIN	**Mina Concepcio**	**40.88**	**43**	P		**P**	**22 43 09.1**	**+0.9**
	28nm,1.3s,mb4.7							
ESPR	**Espera**	**40.97**	**45**	P		**P**	**22 43 09.8**	**+0.8**
	42nm,1.2s,mb5.0							
EBAD	**Badajoz**	**41.19**	**42**	P		**P**	**22 43 11.3**	**+0.5**
	76nm,2.7s,mb4.8							
MTE	**Manteigas**	**41.78**	**39**	*e*P		**P**	**22 43 15.5**	**-0.1**
	24nm,1.2s,mb4.7							
MTE				*e*S		**S**	**22 49 42.0**	**+9.2**
MTE				*e*LR		LR	22 54 27.4	
MTE	**Manteigas**	**41.78**	**39**	*e*P		**P**	**22 43 16.9**	**+1.3**
EZAM	**Zamans**	**42.14**	**36**	P		**P**	**22 43 18.9**	**+0.3**
	6.3nm,0.6s,mb4.4							
ELOJ	**Sierra Loja**	**42.30**	**45**	P		**P**	**22 43 19.4**	**-0.5**
	1.5nm,0.3s,mb4.1							
ELOB	**Lobios**	**42.34**	**37**	P		**P**	**22 43 20.2**	**0.0**
ELUQ	**Luque**	**42.42**	**45**	P		**P**	**22 43 20.4**	**-0.5**
	4.4nm,0.7s,mb4.2							
ERON	**Agron**	**42.48**	**46**	P		**P**	**22 43 20.7**	**-0.7**
	4.8nm,0.4s,mb4.5							
EADA	**Adamuz**	**42.51**	**44**	P		**P**	**22 43 20.9**	**-0.7**
	2.2nm,0.9s,mb3.9							
LVC	**Limon Verde**	**42.98**	**219**	P		**P**	**22 43 24.7**	**-0.9**
	1.9nm,0.8s,mb3.9,baz=47,slow=6.0,SNR=3.1							
LVC	**Limon Verde**	**42.98**	**219**	*e*P		**P**	**22 43 24.9**	**-0.7**
	6.0nm,1.0s,mb4.3							
ECAL	**Calabor**	**43.18**	**38**	P		**P**	**22 43 26.9**	**-0.1**
ERUA	**La Rua**	**43.20**	**37**	P		**P**	**22 43 27.1**	**-0.1**
EQES	**Quesada**	**43.36**	**45**	P		**P**	**22 43 27.9**	**-0.7**
	17nm,0.8s,mb4.8							
JSC	**Jenkinsville**	**43.54**	**309**	*e*P		**P**	**22 43 31.2**	**+1.1**
JSC				*e*			22 43 38.8	
JSC				*e*			22 43 47.3	
ESDC	**Sonseca Array**	**43.68**	**42**	P		**P**	**22 43 30.6**	**-0.5**
	3.3nm,0.8s,mb4.1,baz=240,slow=8.7,SNR=14							
ESDC				LR		LR	22 58 18.9	
	comp=Z,393nm,20.1s,MS4.3,baz=235,slow=32							
ESDC	**Sonseca Array**	**43.68**	**42**	P		**P**	**22 43 30.6**	**-0.5**
	2.6nm,0.8s,mb4.0							
ESLA	**Sonseca Array**	**43.68**	**42**	*e*P		**P**	**22 43 31.3**	**+0.1**
	1.7nm,0.9s,mb3.8							
EHUE	**Huescar**	**43.70**	**45**	P		**P**	**22 43 30.6**	**-0.7**
	6.1nm,0.6s,mb4.5							
GUD	**Guadarrama**	**44.06**	**41**	P		**P**	**22 43 33.9**	**-0.3**
	7.7nm,1.0s,mb4.4							
EVIA	**Vianos**	**44.16**	**44**	P		**P**	**22 43 34.4**	**-0.7**
	12nm,0.8s,mb4.7							
CART	**Cartagena**	**44.73**	**47**	P		**P**	**22 43 39.4**	**-0.3**
ETOB	**Tobarra**	**44.82**	**45**	P		**P**	**22 43 39.6**	**-0.8**
	17nm,0.8s,mb4.9							
EARI	**Arriondas**	**44.89**	**37**	P		**P**	**22 43 40.7**	**-0.2**
ELAN	**Lanestosa**	**45.92**	**38**	P		**P**	**22 43 48.8**	**-0.2**
	5.5nm,0.7s,mb4.6							
EMOS	**Mosqueruela**	**46.36**	**43**	P		**P**	**22 43 52.1**	**-0.5**
	5.8nm,0.6s,mb4.7							
ACSO	**Alum Creek Sta**	**47.27**	**316**	*e*P		**P**	**22 43 59.4**	**-0.4**
	11nm,0.7s,mb4.9							
SWET	**Sewanee**	**47.46**	**308**	*e*P		**P**	**22 44 03.0**	**+1.6**
ETSF	**Etsaut**	**47.53**	**40**	*e*P		**P**	**22 44 03.2**	**+1.4**
	27nm,1.2s,mb4.9							
EPOB	**Poblet**	**47.86**	**43**	P		**P**	**22 44 03.8**	**-0.6**
	9.9nm,0.9s,mb4.8							
EPF	**Esparros**	**48.17**	**41**	*e*P		**P**	**22 44 08.2**	**+1.4**
	26nm,1.1s,mb4.9							
EMIR	**Miracle**	**48.41**	**42**	P		**P**	**22 44 08.1**	**-0.6**
SCHQ	**Schefferville**	**48.48**	**340**	P		**P**	**22 44 09.6**	**+0.6**
	3.8nm,0.8s,mb4.5,baz=141,slow=6.7,SNR=8.6							
SCHQ				LR		LR	23 01 17.6	
	comp=Z,184nm,19.3s,MS4.1,baz=169,slow=32							
SCHQ	**Schefferville**	**48.48**	**340**	*e*P		**P**	**22 44 10.1**	**+1.1**
	15nm,0.7s,mb5.1							
WCI	**Wyandotte Cave**	**48.80**	**312**	*e*P		**P**	**22 44 09.0**	**-2.7**
	9.8nm,0.8s,mb4.9							
ROSF	**Rostrenen**	**48.96**	**33**	*e*P		**P**	**22 44 13.2**	**+0.4**
	22nm,0.7s,mb5.0							
WVT	**Waverly**	**49.22**	**309**	*e*P		**P**	**22 44 15.3**	**+0.3**
	11nm,0.8s,mb4.9							
SGMF	**Saint Gilles**	**49.30**	**33**	*e*P		**P**	**22 44 15.8**	**+0.4**
	15nm,0.8s,mb4.8							
LFF	**La Frestale**	**49.37**	**39**	*e*P		**P**	**22 44 16.5**	**+0.5**
	14nm,0.8s,mb4.7							
MTLF	**Montolieu**	**49.52**	**41**	*e*P		**P**	**22 44 17.4**	**+0.2**
	5.2nm,0.7s,mb4.4							
MFF	**Saint Martin d**	**49.71**	**36**	*e*P		**P**	**22 44 19.0**	**+0.4**
	14nm,0.7s,mb4.8							
RJF	**Les Rejaudoux**	**50.03**	**38**	*e*P		**P**	**22 44 20.9**	**-0.2**
	32nm,1.4s,mb4.9							
RJF				*e*R				
	818nm,22.0s							
CAF	**Calviac**	**50.18**	**39**	*e*P		**P**	**22 44 22.6**	**+0.4**
	20nm,0.8s,mb4.9							
GRR	**Gorron**	**50.30**	**34**	*e*P		**P**	**22 44 23.1**	**0.0**
	5.8nm,0.7s,mb4.4							
FLN	**La Foliniere**	**50.72**	**34**	*e*P		**P**	**22 44 26.7**	**+0.5**
FLN				*e*R				
	333nm,21.0s							
SIUC	**Southern Illin**	**50.79**	**310**	*e*P		**P**	**22 44 25.8**	**-1.1**
	26nm,0.9s,mb5.2							
LDF	**La Druitiere**	**50.82**	**34**	*e*P		**P**	**22 44 27.4**	**+0.4**
LASF	**Ste Croix**	**50.92**	**41**	*e*P		**P**	**22 44 28.5**	**+0.7**
	14nm,0.8s,mb4.7							
TCF	**Toulx Ste Croi**	**50.94**	**38**	*e*P		**P**	**22 44 28.3**	**+0.3**
	24nm,1.1s,mb4.7							
BGF	**Bois d'Agland**	**51.46**	**38**	*e*P		**P**	**22 44 32.2**	**+0.3**
	14nm,0.6s,mb4.8							
VIVF	**Saint-Julien-l**	**51.79**	**40**	*e*P		**P**	**22 44 35.1**	**+0.7**
	17nm,0.9s,mb4.7							
SMRF	**Simiane la Rot**	**51.99**	**42**	*e*P		**P**	**22 44 36.0**	**0.0**
SSF	**Saint Saulge**	**52.10**	**37**	*e*P		**P**	**22 44 36.7**	**-0.1**
	11nm,1.0s,mb4.4							
SMF	**Signal de Mont**	**52.10**	**38**	*e*P		**P**	**22 44 35.2**	**-1.6**
	5.1nm,0.7s,mb4.3							
LMR	**La Mourre**	**52.34**	**43**	*e*P		**P**	**22 44 38.5**	**-0.1**
	23nm,1.2s,mb4.7							
LOR	**Lormes**	**52.41**	**37**	*e*P		**P**	**22 44 38.8**	**-0.3**
	5.8nm,0.8s,mb4.3							
LOR				*e*R				
	323nm,17.8s							
CCM	**Cathedral Cave**	**52.42**	**310**	*e*P		**P**	**22 44 38.5**	**-0.8**
	8.1nm,0.9s,mb4.7							
FRF	**La Foret Royal**	**52.52**	**43**	*e*P		**P**	**22 44 40.0**	**0.0**
	14nm,0.8s,mb4.7							
MBDF	**Montbardon**	**53.08**	**41**	*e*P		**P**	**22 44 45.1**	**+1.0**
	7.2nm,0.6s,mb4.5							
BNI	**Bardonecchia**	**53.16**	**41**	*e*P		**P**	**22 44 45.4**	**+0.7**
SBF	**Sospel**	**53.17**	**43**	*e*P		**P**	**22 44 45.1**	**+0.3**
	49nm,1.2s,mb5.0							
MIAR	**Mount Ida**	**53.30**	**305**	*e*P		**P**	**22 44 46.3**	**+0.4**
	6.4nm,1.1s,mb4.5							
DOI	**San Damiano**	**53.30**	**42**	*e*P		**P**	**22 44 47.0**	**+1.2**
LPL	**La Plagne**	**53.39**	**40**	*e*P		**P**	**22 44 46.9**	**+0.5**
LPG	**La Plagne**	**53.39**	**40**	*e*P		**P**	**22 44 46.9**	**+0.5**
ESK	**Eskdalemuir**	**53.43**	**26**	*e*P		**P**	**22 44 46.6**	**+0.1**
	8.7nm,0.8s,mb4.7							
EKA	**Eskdalemuir Ar**	**53.46**	**26**	P		**P**	**22 44 46.2**	**-0.5**
	2.1nm,0.6s,mb4.2,baz=219,slow=5.6,SNR=8.6							
CABF	**La Chapelle**	**53.46**	**39**	*e*P		**P**	**22 44 47.2**	**+0.3**
	6.8nm,0.7s,mb4.4							
MEZF	**Maizieres J'vi**	**53.71**	**36**	*e*P		**P**	**22 44 48.8**	**+0.1**
PGF	**Pioggiola**	**53.73**	**45**	*e*P		**P**	**22 44 48.7**	**-0.2**
	16nm,1.0s,mb4.6							
FIN	**Finale Ligure**	**53.82**	**42**	*e*P		**P**	**22 44 49.6**	**+0.1**
BAIF	**Baives**	**54.00**	**34**	*e*P		**P**	**22 44 50.6**	**-0.1**
HAU	**Haudompre**	**54.24**	**37**	*e*P		**P**	**22 44 53.0**	**+0.4**
	4.2nm,0.5s,mb4.3							
HAU				*e*R				
	262nm,18.2s							
HINF	**Hinteralfeld**	**54.46**	**38**	*e*P		**P**	**22 44 54.0**	**-0.2**
ERC	**Erice**	**54.96**	**51**	*e*P		**P**	**22 45 00.9**	**+2.9**
CSNT	**Castellina Chi**	**55.63**	**44**	*e*P		**P**	**22 45 03.1**	**+0.3**
DAVOX	**Davos**	**55.90**	**40**	P		**P**	**22 45 04.2**	**-0.5**
	3.9nm,0.7s,mb4.7,baz=208,slow=7.9,SNR=6.3							
VAE	**Valguarnera**	**56.22**	**52

9.8nm,1.0s,mb4.7
KMBO Kilima Mbogo 78.68 93 LR LR 23 22 14.8
comp=Z,95nm,18.5s,MS4.2,baz=99,slow=36
INK Inuvik 81.03 338 *eP* **P 22 47 41.3 +0.8**
12nm,1.0s,mb4.8
VNA1 Neumayer--Stat 84.21 170 ⇑*i* **P 22 48 01.3 +4.5**
VNA1 Neumayer--Stat 84.21 170 ⇑*i* **P 22 48 04.3 +7.5**
VNA1 Neumayer--Stat 84.21 170 ⇑*i* **P 22 48 06.9 +10**
VNA1 Neumayer--Stat 84.21 170 ⇓*i* **P 22 48 10.1 +13**
VNA3 Neumayer Olymp 84.48 170 ⇓*i* **P 22 48 02.0 +3.9**
VNA3 Neumayer Olymp 84.48 170 ⇑*i* **P 22 48 05.3 +7.2**
VNA3 Neumayer Olymp 84.48 170 ⇓*i* **P 22 48 07.1 +9.0**
VNA3 Neumayer Olymp 84.48 170 ⇓*i* **P 22 48 11.3 +13**
VNA2 Neumayer--Watz 84.60 169 ⇑*i* **P 22 48 02.7 +3.9**
VNA2 Neumayer--Watz 84.60 169 ⇓*i* **P 22 48 05.5 +6.7**
VNA2 Neumayer--Watz 84.60 169 ⇑*i* **P 22 48 07.1 +8.3**
VNA2 Neumayer--Watz 84.60 169 ⇑*i* **P 22 48 11.5 +13**
THR Tehran 85.50 54 P **P 22 48 05.7 +1.6**
2.4nm,1.1s,mb4.2,baz=231,slow=2.2,SNR=4.6
SNAA Sanae 86.06 169 *eP* **P 22 48 05.9 -0.1**
ILAR Eielson Array 87.01 336 P **P 22 48 12.3 +1.5**
2.3nm,1.0s,mb4.4,baz=63,slow=3.2,SNR=16
ILAR LR LR 23 23 58.3
comp=Z,77nm,20.7s,MS4.1,baz=237,slow=34
BVAR Borovoye Array 93.95 34 P **P 22 48 46.1 +2.6**
0.5nm,0.8s,mb4.0,baz=270,slow=2.9,SNR=3.1
BVAR LR LR 23 28 50.9
comp=Z,258nm,20.3s,MS4.7,baz=195,slow=34
SYO Syowa Base 96.60 159 ⇑P **P 22 48 52.1 -3.2**
SYO Syowa Base 96.60 159 ⇑PcP PcP 22 48 58.9 +3.2
SYO Syowa Base 96.60 159⇑*eP* **P 22 48 52.1 -3.2**
SYO *e*PcP PcP 22 48 58.9 +3.2
WMQ Urumqi 108.48 37 PDIF Pdif 22 49 49.5 +0.7
WMQ PP PP 22 54 23.5 +0.7
WMQ LR LR
comp=N,98nm,28.1s,MS4.3
WMQ LR LR
comp=E,87nm,27.3s,MS4.3
WMQ LR LR
comp=Z,116nm,27.0s,MS4.3
KMI Kunming 129.80 44 *e*PKP PKPdf 22 54 33.3 -4.7
KMI XPKP 22 54 39.0
KMI LR LR
comp=Z,84nm,18.9s,MS4.5
CMAR Chiang Mai Arr 130.97 54 PKP PKPdf 22 54 38.0 -6.4
comp=Z,0.3nm,0.4s,baz=304,slow=3.3,SNR=2.4
NJ2 Nanjing 133.28 24 *e*PKP PKPdf 22 54 38.0 -6.4
NJ2 PP PP 22 57 09.0 -3.4
NJ2 LR LR
comp=N,290nm,28.3s,MS4.9
NJ2 LR LR
comp=E,160nm,24.6s,MS4.9
NJ2 LR LR
comp=Z,730nm,28.5s,MS5.2
SSE Sheshan 135.02 22 ⇑PKP PKPdf 22 54 49.0 +1.3

DJA 27 22:39:41.2±1.0, 9.68S×114.05E, h80km, MD4.9/3, ML4.1/3, 1C, Error ellipse: s-maj=23.6km s-min=16.3km az=27.0, South of Bali

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
INGI	**Ingas**	**1.38**	**51**	*e*Pn		P	22 40 05.0	-0.4
KELI	**Kelakatan**	**1.52**	**17**	*e*Pn		P	22 40 06.4	-0.9
	188nm,0.3s							
KELI				*e*Sn		S	22 40 25.5	-1.0
RATI	**Rata**	**1.74**	**57**	*e*Pn		P	22 40 08.9	-1.3
	221nm,0.2s							
RATI				*e*Sn		S	22 40 30.0	-1.6
KEDI	**Kedomdong**	**2.36**	**60**	⇑*i*Pn		P	22 40 18.0	-0.7
	73nm,0.3s							
KEDI				*e*Sn		S	22 40 44.0	-2.5

WAR 27 22:50:33.9,51.55N×16.05E, ML2.7, Mining Induced
NEIC 27 22:50:34.4±2.4,51.49N×16.17E, h5km, Error ellipse: s-maj=28.1km s-min=10.4km az=220.0
PRU 27 22:50:35.9,51.46N×16.07E
ISC 27 22:50:32.1±1.2, 51.53N±0.05×16.00E±0.06, n11, σ0s94/22, Poland

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.72**	**165**	*e*PG		**Pg**	**22 50 47.0**	**+0.6**
KSP				*e*SG		**Sg**	**22 50 57.0**	**+1.1**
UPC	**Upice**	**1.03**	**179**	*e*PG		**Pg**	**22 50 53.6**	**+1.0**
UPC				*e*SG		**Sg**	**22 51 07.1**	**+0.8**
DPC	**Dobruska-Polom**	**1.20**	**170**	*e*PG		**Pg**	**22 50 56.1**	**0.0**
DPC				*e*SG		**Sg**	**22 51 11.1**	**-1.0**
PVCC	**Panska Ves**	**1.35**	**222**	*e*PG		**Pg**	**22 50 59.8**	**+0.7**
PVCC				*e*SG		**Sg**	**22 51 18.4**	**+1.3**
BRG	**Berggiesshubel**	**1.45**	**244**	*e*Pg		**Pg**	**22 51 01.6**	**+0.6**
BRG				*e*Sg		**Sg**	**22 51 21.2**	**+0.8**
PRU	**Pruhonice**	**1.80**	**211**	*e*PG		**Pg**	**22 51 07.1**	**-1.0**
PRU				*i* x		x	22 51 11.0	
PRU				*ex*		x	22 51 23.1	
PRU				SG		**Sg**	**22 51 31.3**	**-0.8**
	10nm,0.3s							
CLL	**Collm**	**1.89**	**264**	*i* PG		**Pg**	**22 51 09.4**	**-0.4**
CLL				*i*			22 51 31.4	
CLL				*e*SG		**Sg**	**22 51 35.0**	**+0.1**
CLL	**Collm**	**1.89**	**264**	*i* Pg		**Pg**	**22 51 09.4**	**-0.4**
CLL				*e*Sg		**Sg**	**22 51 35.0**	**+0.1**
MORC	**Moravsky Berou**	**2.02**	**150**	*e*Pn		**Pn**	**22 51 07.7**	**-0.1**
MORC				*e*Sn		**Sn**	**22 51 32.6**	**-1.4**
NKC	**Novy Kostel**	**2.60**	**241**	*e*PG		**Pg**	**22 51 22.9**	**-1.0**
NKC				*e*SG		**Sg**	**22 51 57.8**	**-0.8**
KHC	**Kasperske Hory**	**2.86**	**214**	*e*SN		**Sn**	**22 51 56.6**	**+1.1**
KHC				*e*SG		**Sg**	**22 52 05.3**	**-2.0**

IDC 27 22:53:18.7±0.9,35.81N×104.38E, mb3.6/7, mb1 3.7/9, mb1mx3.6/21, ML3.2/1, Error ellipse: s-maj=45.6km s-min=17.6km az=64.0
NEIC 27 22:53:20.0±0.8,35.72N×104.12E, h10km, Error ellipse: s-maj=30.6km s-min=14.1km az=66.0
BJI 27 22:53:20.9,35.83N×104.51E, h14km, ML3.6, Ms3.1, Msz2.9
ISC 27 22:53:19.4±0.5, 35.81N±0.08×104.48E±0.08, h14km, n17, σ1s01/25, mb3.7/7, 1C, Gansu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
LZH	**Lanzhou**	**0.59**	**299**	⇑PG		**Pg**	**22 53 31.8**	**+0.4**
LZH				SG		**Sg**	**22 53 40.0**	**+0.5**
LZH				S		Sb		
	comp=N,4μm,0.5s							
LZH				S		Sb		
	comp=E,3μm,0.6s							
XAN	**Xi'an**	**4.05**	**115**	P		**Pn**	**22 54 22.3**	**-0.1**
XAN				PG		**Pg**	**22 54 32.3**	**-8.0**
XAN				S		**Sn**	**22 55 12.0**	**+1.9**
XAN				SG		**Sg**	**22 55 23.0**	**-11**
XAN				S		Sn		
	comp=N,92nm,0.6s							
XAN				S		Sn		
	comp=E,63nm,0.8s							
CD2	**Chengdu**	**4.92**	**187**	*e*PKP		**Pn**	**22 54 35.0**	**+0.3**
GTA	**Gaotai**	**5.17**	**316**	P		**Pn**	**22 54 40.0**	**+1.8**
GTA				PG		**Pg**	**22 54 54.8**	**-7.8**
GTA				S		**Sn**	**22 55 39.5**	**+1.2**
GTA				SG		**Sg**	**22 56 02.5**	**-8.9**
GTA				S		Sn		
	comp=N,42nm,0.6s							
GTA				S		Sn		
	comp=E,40nm,0.6s							
GTA				LR		LR		
	comp=N,120nm,8.4s							
GTA				LR		LR		
	comp=E,148nm,8.8s							
GTA				LR		LR		
	comp=Z,127nm,11.5s							
HHC	**Hu-ho-hao-te**	**7.50**	**46**	*e*PG		**Pb**	**22 55 36.5**	**+7.3**
HHC				SG		**Sb**	**22 57 09.5**	**+10**
HHC				S		Sn		
	comp=N,41nm,0.5s							
HHC				S		Sn		
	comp=E,42nm,0.6s							
SONM	**Songino Array**	**12.10**	**6**	Pn		**P**	**22 56 14.3**	**0.0**
	baz=188,slow=16,SNR=1.7							
SONM				Lg			22 59 43.7	
	comp=E,0.1nm,0.3s,baz=191,slow=26,SNR=3.3							
MKAR	**Makanchi Array**	**19.89**	**310**	P		**P**	**22 57 52.3**	**-0.9**
	comp=E,0.1nm,0.3s,baz=106,slow=13,SNR=4.2							
ZAL	**Zalesovo**	**22.74**	**329**	P		**P**	**22 58 22.1**	**+0.1**
	comp=E,0.8nm,0.8s,mb3.2,baz=272,slow=12,SNR=3.7							
KURK	**Kurchatov**	**23.85**	**317**	*e*P		**P**	**22 58 33.0**	**+0.2**
JOF	**Joensuu**	**51.28**	**326**	*e*p		**P**	**23 02 20.8**	**-3.7**
ARCES	**ARCESS Array B**	**53.14**	**334**	P		**P**	**23 02 36.3**	**-2.1**
	comp=E,1.2nm,0.6s,mb4.0,baz=80,slow=7.4,SNR=6.7							
FINES	**FINESS Array B**	**53.89**	**324**	P		**P**	**23 02 42.4**	**-1.6**
	comp=E,0.7nm,0.7s,mb3.7,baz=90,slow=7.6,SNR=9.1							
FINES	**FINESS Array B**	**53.89**	**324**	P		**P**	**23 02 42.4**	**-1.6**
NOA	**NORSAR Array B**	**60.91**	**326**	P		**P**	**23 03 32.9**	**-0.8**
	comp=E,0.6nm,0.9s,mb3.7,baz=75,slow=6.2,SNR=2.5							
WRA	**Warramunga Arr**	**62.24**	**148**	P		**P**	**23 03 43.0**	**-0.2**
	comp=E,0.6nm,0.7s,mb3.8,baz=342,slow=7.2,SNR=3.3							
ASAR	**Alice Springs**	**65.37**	**150**	P		**P**	**23 04 03.4**	**-0.3**
	comp=E,0.4nm,0.4s,mb3.8,baz=335,slow=6.5,SNR=5.4							
YKA	**Yellowknife Ar**	**77.12**	**17**	P		**P**	**23 05 13.6**	**+0.1**
	comp=E,0.3nm,0.6s,mb3.4,baz=328,slow=5.6,SNR=6.1							

IDC 27 23:01:17.2±1.5,31.84N×51.81E, mb3.9/12, mb1 3.9/16, mb1mx3.8/27, ML3.6/4, Error ellipse: s-maj=27.0km s-min=20.5km az=141.0, Putative timing error at EIL
ISC 27 23:01:17.0±0.7, 31.76N±0.06×51.67E±0.09, h10km, n21, σ1s28/22, mb3.8/12, Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
THR	**Tehran**	**4.16**	**354**	Pn		**Pn**	**23 02 22.6**	**+0.6**
	1.0nm,0.3s,baz=137,slow=7.5,SNR=18							
THR				Lg			23 03 27.3	
	3.7nm,0.3s,baz=228,slow=8.6,SNR=5.7							
HASS	**Wahat al Ahsa'**	**6.77**	**195**	P		**Pn**	**23 03 01.3**	**+2.3**
ARSS	**Ar Rass**	**9.43**	**234**	P		**P**	**23 03 35.2**	**-0.7**
HILS	**Ha'il**	**9.64**	**246**	P		**P**	**23 03 38.7**	**-0.1**
AFFS	**'Afif**	**10.94**	**227**	P		**P**	**23 03 55.8**	**-0.8**
ASF	**Jabal al Asfar**	**12.55**	**276**	Pn		**P**	**23 04 18.1**	**-0.4**
	1.0nm,0.3s,baz=335,slow=16,SNR=9.0							
ASF				Sn		**S**	**23 06 36.9**	**-2.4**
	0.7nm,0.3s,baz=174,slow=20,SNR=3.8							
ASF				Lg			23 08 21.6	
	baz=166,slow=23,SNR=2.3							
KAMS	**Al Khamasin**	**13.06**	**211**	P		**P**	**23 04 24.9**	**-0.4**
TATS	**Tathlith**	**14.22**	**213**	P		**P**	**23 04 40.7**	**0.0**
BRTR	**Keskin Array B**	**16.64**	**304**	Pn		**P**	**23 05 14.2**	**+2.5**
	0.1nm,0.3s,baz=110,slow=13,SNR=3.3							
IDI	**Anoyia**	**22.57**	**286**	P		**P**	**23 06 20.8**	**+2.1**
	21nm,1.0s,mb4.5,baz=158,slow=8.3,SNR=7.6							
MLR	**Muntele Rosu**	**24.20**	**312**	P		**P**	**23 06 37.0**	**+2.5**
	6.5nm,1.1s,mb4.0,baz=64,slow=4.1,SNR=10							
AKASG	**Malin Array Be**	**25.18**	**325**	P		**P**	**23 06 45.0**	**+1.1**
	0.4nm,0.4s,mb3.4,baz=131,slow=8.8,SNR=6.2							
MKAR	**Makanchi Array**	**27.84**	**49**	P		**P**	**23 07 08.0**	**-0.4**
	0.3nm,0.6s,mb3.1,baz=254,slow=10,SNR=2.8							
ZAL	**Zalesovo**	**32.41**	**37**	P		**P**	**23 07 48.3**	**-0.6**
	0.5nm,0.3s,mb3.8,baz=104,slow=6.9,SNR=3.6							
FINES	**FINESS Array B**	**34.05**	**338**	P		**P**	**23 08 00.6**	**-2.5**
	0.6nm,0.6s,mb3.7,baz=130,slow=11,SNR=6.7							
DAVOX	**Davos**	**35.21**	**307**	P		**P**	**23 08 14.2**	**+0.9**
	5.5nm,1.1s,mb4.2,baz=139,slow=15,SNR=4.3							
HFS	**Hagfors**	**37.85**	**330**	P		**P**	**23 08 33.8**	**-1.5**
	1.3nm,0.6s,mb3.8,baz=113,slow=11,SNR=3.8							
NOA	**NORSAR Array B**	**39.37**	**330**	P		**P**	**23 08 48.1**	**0.0**
	0.8nm,1.0s,mb3.4,baz=128,slow=8.9,SNR=2.6							
ARCES	**ARCESS Array B**	**40.60**	**346**	P		**P**	**23 08 57.1**	**-1.0**
	1.5nm,0.9s,mb3.6,baz=144,slow=7.8,SNR=2.9							
DBIC	**Dimbokro**	**58.19**	**257**	P		**P**	**23 11 14.1**	**+0.3**
	5.5nm,1.1s,mb4.5,baz=45,slow=5.7,SNR=3.4							
YKA	**Yellowknife Ar**	**85.43**	**354**	P		**P**	**23 13 54.4**	**-0.9**
	0.2nm,0.6s,mb3.4,baz=9.5,slow=5.4,SNR=4.3							

IDC 27 23:18:07.7±4.2, 17.00S×175.27W, h283km±41km, mb3.6/11, mb1 3.8/11, mb1mx3.7/16, Error ellipse: s-maj=22.3km s-min=13.4km az=126.0
NEIC 27 23:18:09.6±0.7, 16.99S×175.39W, h300km, mb4.2/8, Error ellipse: s-maj=17.6km s-min=14.8km az=197.0
ISC 27 23:18:08.2±0.5, 17.0S±0.1×175.4W±0.1, h300km, n30, σ0s55/25, mb4.0/18, 4D, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
URZ	**Urewera**	**22.17**	**196**	P		**P**	**23 22 41.1**	**+0.6**
	6.6nm,0.3s,mb4.4,baz=347,slow=2.0,SNR=12							
URZ				S		**S**	**23 26 25.6**	**+5.5**
	25nm,1.2s,baz=42,slow=19,SNR=3.7							
CTA	**Charters Tower**	**36.44**	**259**	P		**P**	**23 24 46.3**	**-0.3**
	6.4nm,0.8s,mb4.2,baz=88,slow=11,SNR=4.4							
PMG	**Port Moresby**	**37.18**	**277**	P		**P**	**23 24 54.3**	**+1.5**
	16nm,1.0s,mb4.4,baz=96,slow=6.9,SNR=3.2							
PMG	**Port Moresby**	**37.18**	**277**	P		**P**	**23 24 53.0**	**+0.2**
	17nm,0.9s,mb4.5							
STKA	**Stephens Creek**	**41.58**	**241**	⇓*i*P		**P**	**23 25 29.5**	**+0.7**
	8.7nm,1.0s,mb3.9							
STKA	**Stephens Creek**	**41.58**	**241**	P		**P**	**23 25 29.3**	**+0.5**
	6.1nm,0.4s,mb4.2,baz=84,slow=9.5,SNR=13							
WB2	**Warramunga Arr**	**47.62**	**258**	⇓*i*P		**P**	**23 26 16.7**	**+0.1**
WRAB	**Tennant Creek**	**47.62**	**258**	*e*P		**P**	**23 26 16.3**	**-0.3**
	13nm,0.7s,mb4.4							
WRA	**Warramunga Arr**	**47.63**	**258**	P		**P**	**23 26 16.6**	**-0.1**
	2.9nm,0.3s,mb4.0,baz=96,slow=7.1,SNR=49							
AS12	**Alice Springs**	**47.80**	**253**	⇓*i*P		**P**	**23 26 18.3**	**+0.3**
	42nm,0.6s,mb5.0							
ASAR	**Alice Springs**	**47.80**	**253**	P		**P**	**23 26 18.4**	**+0.3**
	62nm,0.6s,mb5.2,baz=88,slow=8.4,SNR=905							
ASAR				PcP		PcP	23 27 41.9	-0.3
	0.8nm,0.5s,baz=97,slow=4.9,SNR=2.7							
KAKA	**Kakadu**	**50.53**	**267**	*e*P		**P**	**23 26 38.8**	**+0.1**
	7.6nm,0.6s,mb4.2							
FORT	**Forrest**	**52.99**	**244**	⇓*i*P		**P**	**23 26 55.7**	**-0.8**
	29nm,1.0s,mb4.6							
FITZ	**Fitzroy Crossi**	**56.02**	**259**	*e*P		**P**	**23 27 18.9**	**+0.5**
	5.3nm,1.5s,mb3.8							
SBA	**Scott Base**	**61.50**	**184**	P		**P**	**23 27 55.7**	**+0.5**
	0.3nm,0.6s,mb3.1							
VNDA	**Vanda**	**61.59**	**185**	P		**P**	**23 27 55.0**	**-0.7**
	0.5nm,0.8s,mb3.2,baz=359,slow=3.4,SNR=3.5							
NWAO	**Narrogin (SRO)**	**62.17**	**241**	*e*P		**P**	**23 27 58.8**	**-1.3**
	1.2nm,0.6s,mb3.7							
NVAR	**Mina Array Bea**	**76.80**	**43**	P		**P**	**23 29 28.5**	**-0.3**
	0.9nm,0.7s,mb3.6,baz=218,slow=7.3,SNR=5.3							
TXAR	**Lajitas Array**	**83.09**	**57**	P		**P**	**23 30 02.4**	**+0.3**
	0.3nm,0.3s,mb3.6,baz=214,slow=4.5,SNR=3.5							
MCMT	**McKenzie Canyo**	**83.71**	**39**	*e*P		**P**	**23 30 05.3**	**+0.4**
ILAR	**Eielson Array**	**84.40**	**12**	P		**P**	**23 30 07.7**	**-0.1**
	0.4nm,0.5s,mb3.5,baz=224,slow=6.0,SNR=6.1							
PDAR	**Pinedale Array**	**84.74**	**42**	P		**P**	**23 30 09.7**	**-0.3**
	0.6nm,0.8s,mb3.5,baz=208,slow=4.5,SNR=5.3							
MAW	**Mawson**	**85.66**	**199**	P		**P**	**23 30 14.1**	**+0.1**
	2.5nm,0.8s,mb4.1,baz=121,slow=5.9,SNR=4.5							
MAW	**Mawson**	**85.66**	**199**	P		**P**	**23 30 14.1**	**+0.1**
	3.6nm,0.8s,mb4.2							
MKAR	**Makanchi Array**	**110.58**	**314**	tx		tx	23 36 25.4	
	0.2nm,0.5s,baz=228,slow=2.6,SNR=6.0							
BVAR	**Borovoye Array**	**117.96**	**321**	tx		tx	23 36 40.9	
	0.5nm,0.4s,baz=146,slow=1.5,SNR=5.6							
BRTR	**Keskin Array B**	**146.13**	**318**	tx		tx	23 37 33.8	
	0.6nm,0.6s,baz=135,slow=3.5,SNR=4.0							
MLR	**Muntele Rosu**	**146.47**	**332**	tx		tx	23 37 40.1	
	0.7nm,0.7s,baz=248,slow=3.8,SNR=3.6							
GERES	**GERESS Array B**	**147.40**	**349**	tx		tx	23 37 42.1	
	0.8nm,0.4s,baz=32,slow=2.5,SNR=12							
DAVOX	**Davos**	**150.00**	**353**	tx		tx	23 37 49.5	
	2.6nm,0.4s,baz=148,slow=16,SNR=6.2							

MAN 27 23:26:30.7, 10.99N×124.69E, h1km, mb4.3, ML3.1, MS2.8, Leyte

TAP 27 23:29:41.6, 21.17N×121.39E, h80km±3km, ML3.6, Taiwan region

NIED 27 23:59:00, 36.70N×141.00E, h50km, Mw3.9 Best double couple: M0 9.26×10^14 NP1:φs33°, δ63°, λ96°. NP2:φs200°, δ28°, λ78°.
IDC 27 23:59:47.6±4.5, 36.71N×140.94E, h33km±35km, mb3.7/16, mb1 3.9/20, mb1mx3.8/28, ML3.8/4, Error ellipse: s-maj=19.1km s-min=14.5km az=92.0
JMA 27 23:59:48.6±0.1, 36.69N×141.04E, h45km±1km, M3.9
JMA Felt II J1.

NEIC 27 23:59:50.6±1.3, 36.63N×140.93E, h64km±11km, mb4.5/4, Error ellipse: s-maj=12.6km s-min=9.2km az=84.0
NEIC Recorded [2 JMA] in Fukushima, Ibaraki and Tochigi; [1 JMA] in Gumma Prefectures.
ISC 27 23:59:46.8±0.6, 36.66N±0.03×141.13E±0.06, h50km±4km, n44, σ0s99/57, mb3.9/20, 1C-7D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.46**	**263**	⇓P		**P**	**23 59 58.2**	**+0.6**
JHO				S		**S**	**00 00 04.7**	**-0.7**
ONAJ	**Iwakimizuishiy**	**0.51**	**329**	⇓P		**P**	**23 59 58.8**	**+0.5**
ONAJ				S		**S**	**00 00 05.8**	**-0.7**
JFK	**Kawauchi**	**0.73**	**344**	⇓P		**P**	**00 00 01.7**	**+0.7**
JFK				S		**S**	**00 00 10.8**	**-0.7**
JYT	**Yasato**	**0.87**	**240**	P		**P**	**00 00 03.7**	**+0.7**
JYT				S		**S**	**00 00 14.3**	**-0.7**
JFT	**Otama**	**1.06**	**324**	⇓P		**P**	**00 00 07.1**	**+1.4**
JFT				S		**S**	**00 00 19.4**	**-0.2**
JMM	**Marumori**	**1.23**	**347**	⇓P		**P**	**00 00 08.8**	**+0.8**
JMM				S		**S**	**00 00 23.6**	**-0.1**
JFY	**Yanaizu**	**1.36**	**303**	⇓P		**P**	**00 00 10.5**	**+0.5**
JFY				S		**S**	**00 00 27.8**	**+0.7**
JAG	**Ashikaga**	**1.37**	**260**	⇑P		**P**	**00 00 10.0**	**-0.1**
JAG				S		**S**	**00 00 26.2**	**-1.2**
JKT	**Katashina**	**1.52**	**274**	⇓P		**P**	**00 00 12.9**	**+0.8**
JKT				S		**S**	**00 00 30.4**	**-0.4**
MAJO	**Matsushiro**	**2.36**	**268**	*e*P		**P**	**00 00 25.3**	**+1.3**
MAT	**Matsushiro**	**2.36**	**268**	P		**P**	**00 00 25.3**	**+1.4**
MAT				S		**S**	**00 00 52.8**	**+1.1**
MAT	**Matsushiro**	**2.36**	**268**	*e*P		**P**	**00 00 25.0**	**+1.1**
MAT				*e*S		**S**	**00 00 53.0**	**+1.3**
JHJ	**Hachijo jima 2**	**3.71**	**198**	Pn		**P**	**00 00 43.3**	**+0.2**
	23nm,0.3s,baz=77,slow=22,SNR=13							
JHJ				Sn		**S**	**00 01 26.4**	**+0.4**
	58nm,0.3s,baz=85,slow=22,SNR=9.8							
ASAJ	**Asahikawa**	**7.53**	**8**	Pn		**P**	**00 01 33.6**	**-2.9**
	1.3nm,0.3s,baz=216,slow=8.7,SNR=3.0							
ASAJ				Sn		**S**	**00 02 59.2**	**-2.2**
	0.8nm,0.3s,baz=341,slow=31,SNR=2.3							
JNU	**Nakatsue**	**9.13**	**250**	Pn		**P**	**00 01 56.7**	**-2.0**
	0.4nm,0.3s,baz=72,slow=19,SNR=2.3							
CBIJ	**Chichi jima**	**9.59**	**174**	Pn		**P**	**00 02 02.0**	**-2.9**
	12nm,0.3s,baz=255,slow=22,SNR=8.5							
CBIJ				Sn		**S**	**00 03 43.8**	**-8.5**
	5.5nm,0.3s,baz=94,slow=24,SNR=5.8							
ENH	**Enshi**	**27.08**	**266**	*e*P		**P**	**00 05 25.3**	**-1.4**
	6.7nm,0.5s,mb4.4							
SONM	**Songino Array**	**27.81**	**305**	P		**P**	**00 05 32.0**	**-1.1**
	2.0nm,0.7s,mb3.8,baz=100,slow=7.5,SNR=12							
ZAL	**Zalesovo**	**42.01**	**313**	P		**P**	**00 07 34.4**	**0.0**
	2.1nm,0.5s,mb4.1,baz=276,slow=8.5,SNR=9.4							
ZAL	**Zalesovo**	**42.01**	**313**	P		**P**	**00 07 34.4**	**0.0**
MKAR	**Makanchi Array**	**44.12**	**302**	P		**P**	**00 07 51.6**	**-0.2**
	2.1nm,0.7s,mb4.0,baz=88,slow=9.2,SNR=19							
KURK	**Kurchatov**	**45.98**	**308**	*e*P		**P**	**00 08 06.0**	**-0.6**
ILAR	**Eielson Array**	**49.93**	**32**	P		**P**	**00 08 38.0**	**+0.9**
	0.7nm,0.7s,mb3.8,baz=277,slow=6.3,SNR=8.4							
ILAR				pP		pP	00 08 52.0	+1.3
	0.9nm,0.7s,baz=262,slow=5.7,SNR=6.4							
BRVK	**Borovoye**	**50.71**	**313**	*e*P		**P**	**00 08 43.6**	**+0.4**
ZRNK	**Zerenda**	**51.49**	**313**	*e*P		**P**	**00 08 48.7**	**-0.4**
INK	**Inuvik**	**54.82**	**27**	P		**P**	**00 09 14.5**	**+0.9**
	0.7nm,0.5s,mb4.0,baz=271,slow=3.8,SNR=3.9							
INK	**Inuvik**	**54.82**	**27**	*e*P		**P**	**00 09 14.4**	**+0.9**
	0.9nm,0.6s,mb4.0							
ARU	**Arti**	**56.49**	**319**	*e*P		**P**	**00 09 24.9**	**-0.8**
	3.6nm,0.6s,mb4.6							
WRAB	**Tennant Creek**	**56.65**	**188**	P		**P**	**00 09 25.7**	**-1.7**
WRA	**Warramunga Arr**	**56.66**	**188**	P		**P**	**00 09 27.4**	**-0.1**
	1.3nm,0.5s,mb4.2,baz=4.6,slow=7.4,SNR=11							
ASAR	**Alice Springs**	**60.39**	**188**	P		**P**	**00 09 53.5**	**+0.1**
	0.4nm,0.5s,mb3.7,baz=11,slow=7.1,SNR=5.7							
YKA	**Yellowknife Ar**	**64.24**	**30**	P		**P**	**00 10 19.6**	**+1.2**
	0.2nm,0.8s,mb3.2,baz=302,slow=7.1,SNR=3.5							
ARCES	**ARCESS Array B**	**64.26**	**339**	P		**P**	**00 10 17.8**	**-0.6**
	0.8nm,0.7s,mb3.9,baz=56,slow=8.7,SNR=7.6							
JOF	**Joensuu**	**66.18**	**332**	*e*p		**P**	**00 10 30.4**	**-0.4**
	0.5nm,0.4s,mb3.9							
FINES	**FINESS Array B**	**69.04**	**332**	P		**P**	**00 10 48.4**	**-0.4**
	2.5nm,0.8s,mb4.2,baz=27,slow=4.3,SNR=10							
THR	**Tehran**	**69.69**	**300**	P		**P**	**00 10 54.8**	**+1.6**
	0.6nm,0.8s,mb3.5,baz=23,slow=6.5,SNR=2.7							
KIV	**Kislovodsk**	**70.98**	**311**	*e*P		**P**	**00 11 00.7**	**-0.1**
	5.8nm,0.9s,mb4.5							
NB2	**NORSAR Subarra**	**74.44**	**337**	P		**P**	**00 11 21.1**	**+0.3**
	0.9nm,0.6s,mb3.9,baz=40,slow=5.6							
NOA	**NORSAR Array B**	**74.44**	**337**	P		**P**	**00 11 21.4**	**+0.6**
	1.0nm,0.5s,mb4.0,baz=39,slow=5.8,SNR=7.4							
AKASG	**Malin Array Be**	**74.45**	**322**	P		**P**	**00 11 20.4**	**-0.7**
	0.4nm,0.3s,mb3.8,baz=45,slow=5.2,SNR=4.8							
PDAR	**Pinedale

KWP					*e*Pg		Pg	00 18 32.1	+1.2
KWP					*e*Sn		Sn	00 18 57.4	+0.9
KWP					*e*Sg		Sg	00 19 10.7	+2.7
KWP	**Kalwaria**	**2.79**	**97**		*e*PN		Pn	00 18 24.0	+2.2
KWP					*e*PG		Pg	00 18 32.0	+1.1
KWP					*e*SN		Sn	00 18 57.0	+0.5
KWP					*e*SG		Sg	00 19 11.0	+3.0
KWP	**Kalwaria**	**2.79**	**97**		*e*Pn		Pn	00 18 22.8	+1.0
KHC	**Kasperske Hory**	**3.31**	**255**		*e*PN		Pn	00 18 27.4	-1.8
KHC					*e*PG		Pg	00 18 36.2	-5.1
KHC					*e*SG		Sg	00 19 21.2	-4.2
ARSA	**Arzberg**	**3.43**	**216**	⇑	*i*PN		Pn	00 18 29.8	-1.1
ARSA					*i* SG		Sg	00 19 24.5	-4.8
	4.2nm,0.6s								
MOA	**Molln**	**3.54**	**233**	⇑	*i*PN		Pn	00 18 30.5	-2.0
MOA					*i* SG		Sg	00 19 27.4	-5.8
	5.8nm,0.5s								
CLL	**Collm**	**3.68**	**292**		*e*PG		Pg	00 18 46.0	-2.7
CLL					*e*			00 19 31.0	
CLL					*i* SG		Sg	00 19 33.9	-3.9
NKC	**Novy Kostel**	**3.87**	**275**		*e*PN		Pn	00 18 35.5	-1.6
NKC					*e*PG		Pg	00 18 46.3	-6.1
NKC					*e*SG		Sg	00 19 35.7	-8.3
MOX	**Moxa**	**4.42**	**280**		*i* P		Pn	00 18 41.3	-3.7
MOX						Pg	Pg	00 18 58.0	-5.4
MOX						Sg	Sg	00 19 55.0	-7.3
MOX	**Moxa**	**4.42**	**280**		*e*Pn		Pn	00 18 41.3	-3.7
MOX					*e*Pg		Pg	00 18 58.1	-5.3
MOX					*e*Sg		Sg	00 19 54.7	-7.6

NEIC ***28*** *00:21:41.8,43.12N×1.21W,h5km,ML2.0(STR), ML1.5(LDG),After STR.*
LDG ***28*** *00:21:41.5±0.2,43.09N×1.25W,h9km,Md1.9/2,Ml1.5/2, Error ellipse: s-maj=3.9km s-min=1.8km az=47.0*
STR ***28*** *00:21:41.8±0.2,43.12N×1.21W,h5km±1km,Ml2.0,Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
MDD ***28*** *00:21:42.2±0.4,43.16N×1.19W,h6km±12km,mbLg1.2/3, Error ellipse: s-maj=12.6km s-min=2.4km az=24.0, PRXIMO*

ISC 28 00:21:41.4±0.9,43.19N±0.06×1.19W±0.07,h18km±6km,n9, σ1°05/15,1C,Pyrenees

Code	Station Name	Δ°	AZ°		Phase ID Op	ISC	Time h m s	Res ISC
OSSF	**Osses**	**0.09**	**322**		Pg	**Pb**	**00 21 45.2**	**+0.2**
OSSF					Sg	**Sb**	**00 21 47.3**	**-0.1**
ORDF	**Ordiarp**	**0.18**	**82**		Pg	**Pb**	**00 21 46.7**	**+0.5**
ORDF					Sg	**Sb**	**00 21 49.9**	**+0.5**
LARF	**Larrau**	**0.21**	**135**		Pg	**Pb**	**00 21 45.8**	**-0.8**
LARF					Sg	**Sb**	**00 21 48.7**	**-1.3**
EALK	**Alkurruntz**	**0.24**	**278**	⇑	Pg	**Pb**	**00 21 46.9**	**-0.1**
	1.2nm,0.1s,SNR=18							
EALK					Lg		00 21 50.2	
	10nm,0.2s,SNR=39							
ETSF	**Etsaut**	**0.54**	**122**		*e*Pg	**Pb**	**00 21 51.8**	**-0.3**
ETSF					*e*Sg	**Sb**	**00 21 58.8**	**-0.6**
	3.1nm,0.2s							
EPF	**Esparros**	**1.13**	**97**		*e*Pg	**Pb**	**00 22 03.1**	**+1.0**
EPF					*e*Sg	**Sb**	**00 22 19.3**	**+3.0**
	1.1nm,0.3s							
ESAC	**San Caprasio**	**1.56**	**160**		Pg	**Pn**	**00 22 11.5**	**+2.9**
	2.3nm,0.2s,SNR=4.0							
ESAC					Lg		00 22 30.7	
	3.3nm,0.3s,SNR=7.9							
MTLF	**Montolieu**	**2.49**	**85**		*e*Pn	**Pn**	**00 22 21.1**	**-0.8**
MTLF					*e*Sg	**Sn**	**00 23 01.3**	**+9.2**
	0.5nm,0.3s							
CAF	**Calviac**	**2.92**	**52**		*e*Sn	**Sn**	**00 23 01.8**	**-1.2**

IDC ***28*** *00:29:09.2±1.1,5.62S×151.44E,mb4.0/8,mb1 4.3/9, mb1mx4.1/15,ML3.7/1,Error ellipse: s-maj=51.8km s-min=18.9km az=125.0*
NEIC ***28*** *00:29:19.0±0.6,5.69S×151.15E,h75km,mb4.2/3,Error ellipse: s-maj=29.4km s-min=9.4km az=128.0*

ISC 28 00:29:15.1±3.8,5.6S±0.2×151.1E±0.2,h54km±33km,n16, σ0°76/18,mb3.9/9,1C,New Britain region

Code	Station Name	Δ°	AZ°		Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**5.42**	**226**		Pn	**P**	**00 30 36.3**	**+0.5**
	16nm,0.3s,baz=60,slow=7.6,SNR=25							
PMG					Sn	**S**	**00 31 37.0**	**-0.6**
	9.6nm,0.3s,baz=114,slow=19,SNR=9.5							
PMG	**Port Moresby**	**5.42**	**226**		Pn	**P**	**00 30 36.3**	**+0.5**
PMG					Sn	**S**	**00 31 37.0**	**-0.6**
KAKA	**Kakadu**	**19.75**	**248**		*e*P	**P**	**00 33 43.0**	**-0.8**
	17nm,1.1s							
WRAB	**Tennant Creek**	**21.63**	**227**		*e*P	**P**	**00 34 02.9**	**-0.1**
WB2	**Warramunga Arr**	**21.63**	**227**	⇑	*i*P	**P**	**00 34 03.0**	**-0.1**
WRA	**Warramunga Arr**	**21.64**	**227**		P	**P**	**00 34 03.5**	**+0.3**
	2.4nm,0.5s,mb3.9,baz=54,slow=11,SNR=17							
AS12	**Alice Springs**	**24.41**	**221**		*e*P	**P**	**00 34 31.7**	**+1.4**
	7.8nm,1.0s,mb4.1							
ASAR	**Alice Springs**	**24.41**	**221**		P	**P**	**00 34 30.9**	**+0.6**
	2.1nm,0.8s,mb3.6,baz=53,slow=9.0,SNR=18							
STKA	**Stephens Creek**	**27.59**	**198**		P	**P**	**00 34 59.4**	**-0.5**
	1.5nm,0.8s,mb3.7,baz=7.6,slow=15,SNR=2.3							
FITZ	**Fitzroy Crossi**	**27.79**	**241**		*e*P	**P**	**00 35 06.0**	**+4.2**
	3.1nm,0.6s,mb4.1							
FITZ	**Fitzroy Crossi**	**27.79**	**241**		P	**P**	**00 35 03.2**	**+1.4**
	1.8nm,0.4s,mb4.1,baz=31,slow=8.0,SNR=3.9							
SONM	**Songino Array**	**66.14**	**329**		P	**P**	**00 39 60.0**	**+0.5**
	0.5nm,0.6s,mb3.8,baz=145,slow=6.4,SNR=4.1							
ILAR	**Eielson Array**	**83.56**	**22**		P	**P**	**00 41 37.0**	**-1.8**
	0.5nm,0.4s,mb4.0,baz=248,slow=5.0,SNR=8.0							
INK	**Inuvik**	**89.83**	**21**		*e*P	**P**	**00 42 09.6**	**+0.3**
	0.7nm,0.5s,mb4.2							
NVAR	**Mina Array Bea**	**93.92**	**52**		P	**P**	**00 42 29.5**	**+0.7**
	0.9nm,0.7s,mb4.3,baz=263,slow=3.3,SNR=4.7							
YKA	**Yellowknife Ar**	**96.94**	**28**		P	**P**	**00 42 41.6**	**-0.3**
	0.1nm,0.5s,mb3.5,baz=272,slow=5.0,SNR=4.4							

NEIC ***28*** *01:00:38.5,43.06N×0.39W,h5km,ML2.5(LDG), ML2.3(STR),MN1.7(MDD),After STR.*
LDG ***28*** *01:00:38.5±0.1,43.06N×0.39W,h6km,Md2.7/2,Ml2.5/9, Error ellipse: s-maj=1.5km s-min=1.1km az=173.0*
STR ***28*** *01:00:38.5±0.1,43.06N×0.39W,h5km±1km,Ml2.3,Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
MDD ***28*** *01:00:38.7±0.2,43.08N×0.39W,h8km±3km,mbLg1.7/10, Error ellipse: s-maj=3.0km s-min=1.7km az=6.0,PRXIMO*

ISC 28 01:00:37.0±0.3,43.20N±0.02×0.34W±0.02,h2km±3km,n39, σ1°29/75,Pyrenees

Code	Station Name	Δ°	AZ°		Phase ID Op	ISC	Time h m s	Res ISC
REYF	**Montagne du Re**	**0.13**	**195**		Pg	**Pg**	**01 00 39.3**	**-0.4**
REYF					Sg	**Sg**	**01 00 40.5**	**-1.0**
REYF	**Montagne du Re**	**0.13**	**195**		P	**Pg**	**01 00 39.4**	**-0.3**
ATE	**Arette**	**0.28**	**247**		P	**Pg**	**01 00 42.8**	**+0.1**
ATE					S	**Sg**	**01 00 46.3**	**-0.2**
ETSF	**Etsaut**	**0.34**	**208**		*e*Pg	**Pg**	**01 00 42.8**	**-1.0**
ETSF					*e*Sg	**Sg**	**01 00 45.6**	**-2.7**
	96nm,0.3s							
LABF	**Labassere**	**0.34**	**116**		Pg	**Pg**	**01 00 44.7**	**+0.9**
LABF					Sg	**Sg**	**01 00 50.8**	**+2.4**
LABF	**Labassere**	**0.34**	**116**		P	**Pg**	**01 00 44.9**	**+1.1**
LABF					S	**Sg**	**01 00 50.0**	**+1.6**
FDAF	**Les Forges d'A**	**0.41**	**203**		P	**Pg**	**01 00 44.1**	**-1.1**
FDAF					S	**Sg**	**01 00 47.8**	**-3.0**
VIEF	**Viey**	**0.41**	**139**		Pg	**Pg**	**01 00 45.4**	**+0.1**
VIEF					Sg	**Sg**	**01 00 50.2**	**-0.6**
VIEF	**Viey**	**0.41**	**139**		P	**Pg**	**01 00 45.5**	**+0.2**
VIEF					S	**Sg**	**01 00 50.2**	**-0.6**
ORDF	**Ordiarp**	**0.43**	**272**		Pg	**Pg**	**01 00 46.8**	**+1.1**
ORDF					Sg	**Sg**	**01 00 53.5**	**+2.0**
ORDF	**Ordiarp**	**0.43**	**272**		P	**Pg**	**01 00 46.8**	**+1.1**
ORDF					S	**Sg**	**01 00 53.6**	**+2.1**
LARF	**Larrau**	**0.50**	**251**		Pg	**Pg**	**01 00 47.1**	**+0.1**
LARF					Sg	**Sg**	**01 00 53.5**	**-0.1**
LARF	**Larrau**	**0.50**	**251**		P	**Pg**	**01 00 47.1**	**+0.2**
LARF					S	**Sg**	**01 00 53.4**	**-0.2**
EPF	**Esparros**	**0.53**	**108**		*e*Pg	**Pg**	**01 00 49.0**	**+1.4**
EPF					*e*Sg	**Sg**	**01 00 55.8**	**+1.2**
	17nm,0.2s							
RESF	**Ens**	**0.64**	**128**		Pg	**Pg**	**01 00 49.8**	**+0.1**
RESF					Sg	**Sg**	**01 00 57.9**	**-0.3**
OSSF	**Osses**	**0.67**	**275**		Pg	**Pg**	**01 00 50.5**	**0.0**
OSSF					Sg	**Sg**	**01 01 00.5**	**+1.1**
OSSF	**Osses**	**0.67**	**275**		P	**Pg**	**01 00 50.6**	**+0.1**
OSSF					S	**Sg**	**01 01 00.4**	**+0.9**
EALK	**Alkurruntz**	**0.85**	**272**		Pg	**Pg**	**01 00 54.5**	**+0.5**
	0.2nm,0.1s,SNR=9.0							
EALK					Lg		01 01 04.8	
	1.2nm,0.1s,SNR=7.9							
EALK	**Alkurruntz**	**0.85**	**272**		Pg	**Pg**	**01 00 54.8**	**+0.8**
EALK					Lg		01 01 05.2	
MELF	**Melles**	**0.87**	**112**		P	**Pg**	**01 00 54.5**	**0.0**
MELF					S	**Sg**	**01 01 06.3**	**+0.3**
SALF	**Salau**	**1.21**	**111**		S	**Sb**	**01 01 17.3**	**+1.1**
ESAC	**San Caprasio**	**1.48**	**184**		Pg	**Pg**	**01 01 05.4**	**-1.2**
	3.2nm,0.2s,SNR=17							
ESAC					Lg		01 01 22.5	
	18nm,0.2s,SNR=12							
ESAC	**San Caprasio**	**1.48**	**184**		Pg	**Pg**	**01 01 05.8**	**-0.8**
ESAC					Lg		01 01 24.0	
MTLF	**Montolieu**	**1.88**	**85**		*e*Pn	**Pn**	**01 01 10.4**	**0.0**
MTLF					*e*Pg	**Pg**	**01 01 14.8**	**+0.3**
MTLF					*e*Sn	**Sn**	**01 01 32.9**	**-2.0**
MTLF					*e*Sg	**Sg**	**01 01 39.8**	**+0.3**
	6.7nm,0.4s							
EMIR	**Miracle**	**1.89**	**132**		Pn	**Pn**	**01 01 14.2**	**+3.7**
EMIR					Sn	**Sn**	**01 01 40.2**	**+5.1**
LFF	**La Frestale**	**1.91**	**24**		*e*Pn	**Pn**	**01 01 10.7**	**-0.1**
LFF					*e*Pg	**Pg**	**01 01 16.6**	**+1.5**
LFF					*e*Sn	**Sn**	**01 01 35.7**	**0.0**
LFF					*e*Sg	**Sg**	**01 01 43.0**	**+2.4**
	11nm,0.3s							
EPOB	**Poblet**	**2.12**	**150**		Pg	**Pg**	**01 01 17.0**	**-2.4**
	0.3nm,0.1s,SNR=7.9							
EPOB					Lg		01 01 43.5	
	1.4nm,0.2s,SNR=7.9							
EPOB	**Poblet**	**2.12**	**150**		Pn	**Pn**	**01 01 16.5**	**+2.5**
EPOB					Sn	**Sn**	**01 01 43.6**	**+2.3**
CAF	**Calviac**	**2.45**	**44**		*e*Pn	**Pn**	**01 01 19.0**	**+0.4**
CAF					*e*Sn	**Sn**	**01 01 48.5**	**-1.0**
CAF					*e*Sg	**Sg**	**01 02 01.4**	**+2.8**
	2.6nm,0.2s							
EJON	**La Jonquera**	**2.49**	**106**		Lg		01 01 57.9	
	0.5nm,0.2s,SNR=4.6							
EJON	**La Jonquera**	**2.49**	**106**		Pn	**Pn**	**01 01 26.8**	**+7.5**
EJON					Sn	**Sn**	**01 01 59.8**	**+9.2**
RJF	**Les Rejaudoux**	**2.49**	**32**		*e*Pn	**Pn**	**01 01 19.6**	**+0.4**
RJF					*e*Pg	**Pg**	**01 01 27.3**	**+0.5**
RJF					*e*Sn	**Sn**	**01 01 49.5**	**-1.1**
RJF					*e*Sg	**Sg**	**01 02 01.8**	**+1.7**
	2.9nm,0.2s							
EMOS	**Mosqueruela**	**2.83**	**182**		Pg	**Pg**	**01 01 27.7**	**-5.9**
	0.1nm,0.1s,SNR=7.9							
EMOS	**Mosqueruela**	**2.83**	**182**		Pn	**Pn**	**01 01 25.7**	**+1.6**
EMOS					Sn	**Sn**	**01 02 03.2**	**+4.0**
LASF	**Ste Croix**	**3.17**	**73**		*e*Pn	**Pn**	**01 01 27.9**	**-1.0**
LASF					*e*Pg	**Pg**	**01 01 38.8**	**-1.6**
LASF					*e*Sn	**Sn**	**01 02 05.0**	**-2.9**
LASF					*e*Sg	**Sg**	**01 02 21.2**	**-1.5**
	3.8nm,0.4s							
MFF	**Saint Martin d**	**3.41**	**2**		*e*Sg	**Sg**	**01 02 28.6**	**-1.8**
	0.7nm,0.2s							
TCF	**Toulx Ste Croi**	**3.59**	**30**		*e*Pg	**Pg**	**01 01 46.9**	**-1.7**
TCF					*e*Sg	**Sg**	**01 02 35.2**	**-1.2**
	1.1nm,0.2s							
BGF	**Bois d'Agland**	**4.05**	**33**		*e*Pn	**Pn**	**01 01 40.9**	**-0.5**
BGF					*e*Sg	**Sg**	**01 02 49.9**	**-2.1**
	7.2nm,0.4s							
ESDC	**Sonseca Array**	**4.45**	**219**		Pn	**Pn**	**01 01 47.1**	**+0.1**

IDC ***28*** *01:05:59.9±0.8,13.09N×88.79W,h46km±6km,mb4.2/20, mb1 4.4/23,mb1mx4.3/29,MS4.2/21,Ms1 4.2/21, ms1mx4.0/31,Error ellipse: s-maj=21.5km s-min=10.2km az=53.0*
CASC ***28*** *01:06:00.1±2.3,12.90N×88.99W,h55km±23km,MD4.8, ML5.0,MW4.9,mb4.6(NEIC)*
NEIC ***28*** *01:06:01.5±0.3,13.01N×88.85W,mb4.6/31, MD4.8(SNET),Error ellipse: s-maj=9.2km s-min=3.5km az=47.0*
NEIC Felt [IV] at San Salvador.
BJI ***28*** *01:06:01.4,13.00N×88.90W,h50km,mB4.4,Ms5.2, Msz5.0*

ISC 28 01:06:00.1±0.3,12.91N±0.03×88.93W±0.03,h60km±2km, h47km±2.1km:pP-P,n194,σ1°16/204,mb4.5/42,15C-29D, Off coast of central America

Code	Station Name	Δ°	AZ°		Phase ID Op	ISC	Time h m s	Res ISC
SNVI	**San Vicente**	**0.70**	**8**		*e*P	**P**	**01 06 14.1**	**-0.4**
SNVI				⇓	*e*P		01 06 14.4	
SNVI					*e*S	**S**	**01 06 27.2**	**+1.9**
LFRS	**El Faro**	**0.72**	**350**	⇓	*e*P	**P**	**01 06 14.2**	**-0.4**
LCBS	**La Ceiba**	**0.74**	**357**	⇓	*e*P	**P**	**01 06 14.6**	**-0.4**
VSM	**San Miguel**	**0.82**	**51**	⇓	*i*P	**P**	**01 06 16.7**	**+0.7**
SNET	**Serv Nac Est T**	**0.82**	**339**	⇓	*e*P	**P**	**01 06 15.4**	**-0.6**
SNET					*e*S	**S**	**01 06 27.7**	**-0.2**
SNET					*i*		01 06 29.3	
	comp=Z,29μm,0.3s							
LBRS	**Las Brisas**	**0.83**	**353**	⇓	*e*P	**P**	**01 06 16.2**	**+0.1**
LBRS					*e*S	**S**	**01 06 34.7**	**+6.7**
LFU	**La Fuente**	**0.85**	**348**	⇓	*i*P	**P**	**01 06 16.4**	**0.0**
BLLM	**Bellamira**	**0.86**	**52**	⇓	*e*P	**P**	**01 06 16.9**	**+0.4**
PICS	**Picacho**	**0.88**	**339**	⇓	*i*P	**P**	**01 06 16.8**	**+0.1**
BQQS	**Boqueron**	**0.89**	**338**	⇓	*i*P	**P**	**01 06 16.6**	**-0.2**
CAHU	**Cacacuatique**	**1.11**	**39**	⇓	*e*P	**P**	**01 06 21.5**	**+1.7**
CNCH	**Conchagua**	**1.13**	**71**	⇓	*e*P	**P**	**01 06 20.6**	**+0.5**
CNCH					*e*S	**S**	**01 06 34.9**	**-0.2**
SBLS	**San Blas**	**1.14**	**324**	⇓	*i*P	**P**	**01 06 19.8**	**-0.5**
SNJE	**San Jose**	**1.16**	**326**	⇓	*i*P	**P**	**01 06 20.0**	**-0.5**
RTR	**El Retiro**	**1.20**	**325**	⇓	*i*P	**P**	**01 06 20.8**	**-0.3**
CUSS	**Cusmapa**	**1.40**	**315**		*e*P	**P**	**01 06 22.2**	**-1.8**
CUSS					*e*S	**S**	**01 06 40.5**	**-1.2**
RBDL	**Robledal**	**1.40**	**329**	⇓	*i*P	**P**	**01 06 24.0**	**0.0**
MTO2	**Montecristo 2**	**1.54**	**344**	⇓	*i*P	**P**	**01 06 26.2**	**+0.3**
CRIN	**San Cristobal**	**1.85**	**96**	⇓	*e*P	**P**	**01 06 30.5**	**+0.3**
CHIN	**Chinandega**	**1.88**	**98**	⇓	*e*P	**P**	**01 06 16.5**	**-14**
CHIN					*e*S	S	01 06 30.1	-23
CHIN					*i*		01 06 36.2	
	comp=Z,56μm,0.8s							
PYN	**Poneloya**	**1.94**	**106**	⇓	*e*P	**P**	**01 06 30.3**	**-1.0**
LEON	**Leon**	**2.05**	**104**	⇓	*e*P	**P**	**01 06 31.7**	**-1.2**
TEL3	**Telica 3**	**2.07**	**99**	⇓	*e*P	**P**	**01 06 32.5**	**-0.7**
TELN	**Telica**	**2.07**	**98**	⇓	*e*P	**P**	**01 06 32.7**	**-0.6**
TELN					*e*S	**S**	**01 07 01.4**	**+3.5**
CNGN	**Cerro Negro**	**2.22**	**100**		*e*P	**P**	**01 06 34.8**	**-0.6**
CNGN					*e*S	**S**	**01 07 02.5**	**+0.9**
SOMN	**Somoto**	**2.32**	**77**	⇓	*e*P	**P**	**01 06 38.5**	**+1.7**
MOMJ	**Momotombo**	**2.39**	**102**	⇓	*e*P	**P**	**01 06 36.9**	**-0.9**
COPN	**Copaltepe**	**2.40**	**107**	⇓	*e*P	**P**	**01 06 36.7**	**-1.3**
QUIN	**Quiabu**	**2.46**	**85**	⇓	*e*P	**P**	**01 06 39.0**	**+0.1**
APYN	**Apoyeque**	**2.61**	**105**	⇓	*e*P	**P**	**01 06 42.3**	**+1.4**
APYN					*e*S	**S**	**01 07 09.7**	**-1.8**
XAVN	**Gruta Xavier**	**2.66**	**106**	⇓	*e*P	**P**	**01 06 40.6**	**-0.9**
MGAN	**Managua**	**2.73**	**106**	⇓	*e*P	**P**	**01 06 41.6**	**-1.0**
MGAN					*e*S	**S**	**01 07 13.6**	**-1.0**
MGAN					*i*		01 07 17.6	
	comp=N,18μm,0.4s							
CRUN	**El Crucero**	**2.73**	**109**	⇓	*i*P	**P**	**01 06 44.6**	**+1.9**
TICN	**Ticuantepe**	**2.78**	**108**	⇓	*e*P	**P**	**01 06 42.5**	**-0.8**
WILN	**Americas 2**	**2.78**	**105**		*e*P	**P**	**01 06 42.0**	**-1.4**
WILN					*e*S	**S**	**01 07 16.2**	**+0.4**
PYTN	**Playitas**	**2.83**	**97**	⇓	*e*P	**P**	**01 06 43.1**	**-0.9**
PYTN					*e*S	**S**	**01 07 19.4**	**+2.4**
COFN	**Cofrada**	**2.86**	**105**		*e*P	**P**	**01 06 43.6**	**-0.8**
MASN	**Masaya**	**2.87**	**108**	⇓	*e*P	**P**	**01 06 45.2**	**+0.7**
MASN					*e*S	**S**	**01 07 18.9**	**+0.9**
APON	**Apoyo**	**2.97**	**109**		*e*P	**P**	**01 06 44.4**	**-1.6**
SSNN	**San Juan del S**	**3.42**	**118**	⇑	*i*P	**P**	**01 06 52.1**	**-0.2**
CONN	**Concepcion**	**3.50**	**112**		*e*P	**P**	**01 06 53.2**	**-0.2**
MADN	**Villa Maderas**	**3.65**	**114**	⇓	*e*P	**P**	**01 06 55.0**	**-0.4**
TPX	**Tapachula**	**3.79**	**302**		*i* P	**P**	**01 07 00.3**	**+2.8**
TPX					*i* S	**S**	**01 07 45.5**	**+4.3**
CRZC	**La Cruz**	**3.80**	**120**		*e*P	**P**	**01 06 57.0**	**-0.7**
CRZC					*e*S	**S**	**01 07 41.2**	**-0.3**
CRZC	**La Cruz**	**3.80**	**120**		*e*P	**P**	**01 06 57.0**	**-0.7**
CRZC					*e*S	**S**	**01 07 39.0**	**-2.5**
VCR	**Vista de Mar**	**4.26**	**130**	⇑	*e*P	**P**	**01 07 03.8**	**-0.2**
VCR					*e*S	**S**	**01 07 52.0**	**-0.9**
VCR	**Vista de Mar**	**4.26**	**130**		*e*P	**P**	**01 07 03.9**	**-0.1**
VCR					*e*S	**S**	**01 07 51.4**	**-1.5**
CCIG	**Comitan**	**4.57**	**318**		*e*P	**P**	**01 07 09.3**	**+0.9**
CCIG					*i* S	**S**	**01 08 18.3**	**+18**

Code	Station Name	Δ°	AZ°		Phase ID Op	ISC	Time h m s	Res ISC
JTS	**JuntasAbangare**	**4.69**	**123**		*e*Pn	**P**	**01 07 10.1**	**0.0**
JTS					*e*Sn	**S**	**01 08 02.3**	**-1.5**
JCR	**Jicaral**	**4.83**	**129**		*e*P	**P**	**01 07 12.1**	**0.0**
JCR					*e*S	**S**	**01 08 04.9**	**-2.3**
JCR	**Jicaral**	**4.83**	**129**		*e*P	**P**	**01 07 12.2**	**+0.2**
JCR					*e*S	**S**	**01 08 02.5**	**-4.7**
FORC	**Fortuna**	**4.83**	**120**	⇑	*e*P	**P**	**01 07 13.3**	**+1.2**
FORC	**Fortuna**	**4.83**	**120**		*e*P	**P**	**01 07 13.2**	**+1.1**
CGA2	**Cerro Gallo 2**	**5.24**	**123**		*e*P	**P**	**01 07 18.9**	**+1.1**
VPS2	**Volcan Poas 2**	**5.34**	**120**		*e*P	**P**	**01 07 19.8**	**+0.7**
VPS2	**Volcan Poas 2**	**5.34**	**120**		*e*P	**P**	**01 07 19.4**	**+0.3**
LAJ	**Bijagual**	**5.61**	**122**	⇓	*e*P	**P**	**01 07 19.9**	**-2.9**
LAJ	**Bijagual**	**5.61**	**122**		*e*P	**P**	**01 07 19.9**	**-2.9**
TRTC	**Tortuguero**	**5.61**	**114**		*e*P	**P**	**01 07 22.3**	**-0.6**
SJS	**Escuela Geolog**	**5.62**	**121**	⇑	*e*P	**P**	**01 07 25.2**	**+2.2**
SJS					*e*S	**S**	**01 08 28.6**	**+1.6**
SJS	**Escuela Geolog**	**5.62**	**121**		*e*P	**P**	**01 07 25.0**	**+2.0**
SJS					*e*S	**S**	**01 08 26.8**	**-0.3**
LCR2	**La Lucha 2**	**5.77**	**123**		*e*P	**P**	**01 07 26.2**	**+1.2**
LCR2					*e*S	**S**	**01 08 31.4**	**+0.6**
BUS	**Buena Vista**	**6.07**	**123**	⇑	*e*P	**P**	**01 07 31.2**	**+1.9**
BUS	**Buena Vista**	**6.07**	**123**		*e*P	**P**	**01 07 31.2**	**+1.9**
ACR	**Cerro Adams**	**7.07**	**126**		*e*P	**P**	**01 07 43.8**	**+0.6**
CMIG	**Matias Romero**	**7.09**	**307**		*i* P	**P**	**01 07 42.0**	**-1.6**
CMIG					*i* S	**S**	**01 09 02.9**	**-0.6**
CNI	**Changuinola**	**7.19**	**118**		*e*P	**P**	**01 07 48.0**	**+3.1**
TEIG	**Tepich**	**7.30**	**5**		P	**P**	**01 07 42.6**	**-3.9**
	comp=N,2.3nm,0.3s,baz=178,slow=14,SNR=2.4							
BRU2	**Volcan**	**7.37**	**123**	⇑	*i*P	**P**	**01 07 48.9**	**+1.5**
BRU2					*e*S	**S**	**01 09 10.4**	**0.0**
DVD	**David**	**7.77**	**124**		*e*P	**P**	**01 07 53.9**	**+0.9**
DVD					*e*S	**S**	**01 09 19.4**	**-0.9**
PTP1	**Petroterminal**	**7.92**	**126**		*e*P	**P**	**01 07 52.7**	**-2.4**
VHO	**Vista Hermosa**	**8.60**	**300**		*i* P	**P**	**01 08 03.5**	**-0.7**
VHO					*i* S	**S**	**01 09 39.9**	**-0.8**
AZU	**Azuero**	**9.92**	**120**		*e*P	**P**	**01 08 25.5**	**+2.9**
UPA	**Univ. de Panam**	**10.02**	**112**		*e*P	**P**	**01 08 26.3**	**+2.4**
JEF	**Cerro Jefe**	**10.07**	**110**		*e*P	**P**	**01 08 26.8**	**+2.2**
PPM	**Popocatepetl**	**11.15**	**305**		*e*P	**P**	**01 08 35.0**	**-4.2**
PPM					*e*S	**S**	**01 10 30.9**	**-12**
OTAV	**Otavalo**	**16.33**	**140**		*e*Pn	**P**	**01 09 47.6**	**+0.6**
	comp=N,45nm,1.5s							
ROSC	**El Rosal**	**16.49**	**118**		P	**P**	**01 09 50.1**	**+1.1**
	comp=N,0.8nm,0.3s,baz=172,slow=9.7,SNR=11							
DWPF	**Disney**	**16.67**	**24**		*e*P	**P**	**01 09 53.0**	**+1.8**
	comp=N,86nm,0.9s							
HKT	**Hockley**	**18.12**	**340**		*e*P	**P**	**01 10 11.0**	**+1.8**
SDV	**Santo Domingo**	**18.41**	**101**		P	**P**	**01 10 11.6**	**-1.2**
	comp=N,4.0nm,0.3s,baz=302,slow=5.8,SNR=74							
NATX	**Nacogdoches**	**19.49**	**345**		P	**P**	**01 10 27.4**	**+2.5**
LRAL	**Lakeview Retre**	**20.11**	**5**		*e*P	**P**	**01 10 31.5**	**-0.1**
	comp=N,55nm,1.4s							
JCT	**Junction City**	**20.17**	**332**		*e*P	**P**	**01 10 31.2**	**-0.9**
	comp=N,42nm,1.0s							
LTX	**Lajitas**	**21.31**	**322**		*e*P	**P**	**01 10 44.5**	**+0.6**
	comp=

ULM	**Lac du Bonnet**	**37.67**	**353**	P		**P**	**01 13 08.9**	**-2.2**	
	comp=N,4.1nm,0.5s,mb4.5,baz=158,slow=7.6,SNR=6.2								
ULM				LR		LR	01 30 27.8		
	comp=N,537nm,21.1s,baz=321,slow=39								
ULM	**Lac du Bonnet**	**37.67**	**353**	*eP*		**P**	**01 13 09.0**	**-2.1**	
	comp=N,51nm,1.5s,mb5.0								
MCMT	**McKenzie Canyo**	**37.79**	**332**	*eP*		**P**	**01 13 13.2**	**+1.0**	
BOZ	**Bozeman (W)**	**37.89**	**334**	*eP*		**P**	**01 13 12.8**	**-0.2**	
	comp=N,50nm,1.8s,mb5.0								
HRY	**Holter Researc**	**38.82**	**335**	*eP*		**P**	**01 13 20.4**	**-0.3**	
WVOR	**Wild Horse Val**	**39.08**	**324**	*eP*		**P**	**01 13 23.6**	**+0.7**	
	comp=N,2.4nm,0.6s,mb4.1								
CHMT	**Chamberlain Mo**	**39.58**	**334**	*eP*		**P**	**01 13 26.2**	**-0.8**	
LVC	**Limon Verde**	**40.39**	**151**	P		**P**	**01 13 35.3**	**+1.2**	
	comp=N,4.4nm,0.8s,mb4.2,baz=290,slow=6.4,SNR=7.1								
LVC				LR		LR	01 29 13.9		
	comp=N,175nm,22.0s,baz=323,slow=34								
LVC	**Limon Verde**	**40.39**	**151**	P		**P**	**01 13 35.3**	**+1.2**	
LVC				LR		LR	01 29 13.9		
NEW	**Newport**	**42.32**	**332**	P		**P**	**01 13 48.2**	**-1.4**	
	comp=N,0.8nm,0.4s,mb3.7,baz=132,slow=12,SNR=2.7								
NEW				PcP		PcP	01 15 41.6	-1.3	
	comp=N,2.4nm,0.7s,baz=125,slow=4.9,SNR=3.5								
FFC	**Flin Flon**	**42.96**	**349**	*eP*		**P**	**01 13 53.6**	**-1.1**	
	comp=N,13nm,0.6s,mb4.8								
NLW	**Nelson Butte**	**43.72**	**330**	*eP*		**P**	**01 14 01.9**	**+0.8**	
SCHQ	**Schefferville**	**45.27**	**18**	P		**P**	**01 14 10.7**	**-2.7**	
	comp=N,6.4nm,0.6s,mb4.7,baz=208,slow=6.8,SNR=23								
SCHQ				PcP		PcP	01 15 50.7	-2.2	
	comp=N,2.0nm,0.6s,baz=219,slow=5.8,SNR=3.6								
SCHQ				LR		LR	01 34 11.8		
	comp=N,505nm,18.0s,baz=207,slow=38								
SCHQ	**Schefferville**	**45.27**	**18**	*eP*		**P**	**01 14 10.8**	**-2.6**	
	comp=N,12nm,1.0s,mb4.7								
FCC	**Fort Churchill**	**45.93**	**356**	*eP*		**P**	**01 14 16.6**	**-1.9**	
	comp=N,5.1nm,0.5s,mb4.7								
BDFB	**Brasilia**	**49.43**	**124**	P		**P**	**01 14 45.2**	**-1.2**	
	comp=N,4.8nm,0.6s,mb4.7,baz=294,slow=7.3,SNR=7.8								
BDFB				LR		LR	01 38 26.3		
	comp=N,301nm,20.3s,baz=109,slow=39								
CPUP	**Villa Florida**	**49.66**	**142**	P		**P**	**01 14 46.9**	**-1.2**	
	comp=N,9.7nm,1.1s,mb4.8,baz=353,slow=7.4,SNR=7.3								
CPUP				LR		LR	01 36 54.4		
	comp=N,208nm,20.9s,baz=350,slow=37								
CPUP	**Villa Florida**	**49.66**	**142**	*eP*		**P**	**01 14 46.5**	**-1.5**	
	comp=N,4.7nm,0.9s,mb4.5								
FRB	**Frobisher Bay**	**52.75**	**11**	P		**P**	**01 15 07.3**	**-3.5**	
	comp=N,12nm,0.8s,mb4.9,baz=211,slow=9.2,SNR=18								
YKA	**Yellowknife Ar**	**52.80**	**345**	P		**P**	**01 15 09.0**	**-2.3**	
	comp=N,3.9nm,0.4s,mb4.7,baz=144,slow=7.3,SNR=193								
YKA				ScP			01 20 11.4		
	comp=N,0.2nm,0.6s,baz=147,slow=3.9,SNR=5.2								
YKA				LR		LR	01 41 00.0		
	comp=N,320nm,20.4s,baz=180,slow=40								
YKA	**Yellowknife Ar**	**52.80**	**345**	P		**P**	**01 15 09.0**	**-2.3**	
YKA				ScP			01 20 11.4		
YKA				LR		LR	01 41 00.0		
YKW3	**Yellowknife Ar**	**52.86**	**345**	*eP*		**P**	**01 15 09.5**	**-2.3**	
DLBC	**Dease Lake**	**54.88**	**335**	P		**P**	**01 15 25.5**	**-1.1**	
	comp=N,2.2nm,0.5s,mb4.5,baz=160,slow=11,SNR=7.7								
DLBC	**Dease Lake**	**54.88**	**335**	*eP*		**P**	**01 15 26.2**	**-0.4**	
INK	**Inuvik**	**62.34**	**343**	P		**P**	**01 16 15.8**	**-2.5**	
	comp=N,6.0nm,0.7s,mb4.8,baz=121,slow=7.2,SNR=21								
INK				LR		LR	01 46 25.4		
	comp=N,393nm,20.9s,baz=135,slow=39								
INK	**Inuvik**	**62.34**	**343**	*eP*		**P**	**01 16 16.3**	**-2.0**	
	comp=N,15nm,1.1s,mb5.0								
ILAR	**Eielson Array**	**65.02**	**336**	P		**P**	**01 16 33.8**	**-2.1**	
	comp=N,1.8nm,0.7s,mb4.2,baz=163,slow=4.9,SNR=26								
ILAR				pP		pP	01 16 47.4	-5.0	
	comp=N,2.3nm,0.9s,baz=117,slow=4.6,SNR=7.9								
ILAR				LR		LR	01 51 30.7		
	comp=N,189nm,18.1s,baz=136,slow=42								
SUMG	**Summit**	**66.51**	**15**	*eP*		**P**	**01 16 42.3**	**-3.0**	
SUMG				*e*		pP	01 16 57.5	-4.3	
JMIC	**Jan Mayen**	**74.76**	**20**	LR		LR	01 48 46.0		
	comp=N,140nm,21.6s,baz=77,slow=34								
ESDC	**Sonseca Array**	**78.05**	**52**	LR		LR	01 48 52.6		
	comp=N,163nm,18.7s,baz=290,slow=33								
SPITS	**Spitsbergen Ar**	**80.55**	**12**	LR		LR	01 55 34.7		
	comp=N,13nm,18.5s,baz=98,slow=37								
DBIC	**Dimbokro**	**82.79**	**85**	LR		LR	01 49 08.7		
	comp=N,100nm,20.1s,baz=290,slow=31								
NOA	**NORSAR Array B**	**83.67**	**29**	LR		LR	01 51 51.4		
	comp=N,131nm,21.2s,baz=285,slow=33								
ARCES	**ARCESS Array B**	**86.22**	**19**	P		**P**	**01 18 34.9**	**-0.9**	
	comp=N,0.9nm,0.6s,mb4.2,baz=284,slow=5.0,SNR=10								
ARCES				LR		LR	01 57 13.8		
	comp=N,74nm,19.5s,baz=306,slow=36								
GERES	**GERESS Array B**	**88.52**	**40**	P		**P**	**01 18 46.9**	**-0.5**	
	comp=N,0.4nm,0.9s,mb3.7,baz=248,slow=5.3,SNR=2.8								
GERES				pP		pP	01 19 01.0	-3.6	
	comp=N,0.4nm,0.7s,baz=288,slow=6.2,SNR=3.1								
VRAC	**Vranov**	**90.17**	**39**	LR		LR	01 55 50.6		
	comp=N,165nm,18.2s,baz=210,slow=33								
FINES	**FINESS Array B**	**90.19**	**26**	LR		LR	01 56 21.6		
	comp=N,104nm,20.8s,baz=346,slow=34								
VAE	**Valguarnera**	**92.55**	**51**	LR		LR	01 56 11.2		
	comp=N,324nm,19.1s,baz=138,slow=33								
AKASG	**Malin Array Be**	**96.97**	**34**	LR		LR	02 02 07.8		
VNA3	**Neumayer Olymp**	**98.70**	**161**	⇓*iP*		**P**	**01 19 35.6**	**+2.0**	
VNA3				*e*		pP	01 19 48.2	-2.7	
VNA3				*e*			01 23 37.5		
VNA3				*e*			01 24 03.0		
VNA1	**Neumayer--Stat**	**99.01**	**161**	⇓*iP*		**P**	**01 19 34.7**	**-0.3**	
VNA1				*e*			01 19 46.6		
VNA1				*e*			01 23 36.6		
VNA1				*e*			01 24 02.3		
VNA2	**Neumayer--Watz**	**99.35**	**161**	⇓*iP*		**P**	**01 19 38.6**	**+2.0**	
VNA2				*e*		pP	01 19 51.3	-2.6	
VNA2				*e*			01 23 40.7		
VNA2				*e*			01 24 06.7		
SONM	**Songino Array**	**118.00**	**348**	PKP		PKPdf	01 24 41.0	+0.8	
	comp=N,0.5nm,0.5s,baz=216,slow=0.1,SNR=5.4								
SONM				pPKP			01 24 53.9		
	comp=N,0.6nm,0.8s,baz=80,slow=0.7,SNR=4.3								
MKAR	**Makanchi Array**	**120.05**	**7**	PKP		PKPdf	01 24 44.4	+0.1	
	comp=N,0.5nm,0.4s,baz=324,slow=3.1,SNR=9.1								
MAW	**Mawson**	**122.30**	**168**	PKP		PKPdf	01 24 49.7	+1.7	
	comp=N,1.2nm,0.6s,baz=45,slow=4.3,SNR=3.4								
WMQ	**Urumqi**	**123.46**	**3**	*e*PKP		PKPdf	01 24 52.3	+1.4	
SSE	**Sheshan**	**127.55**	**327**	⇓PKP		PKPdf	01 25 02.5	+3.3	
WRA	**Warramunga Arr**	**138.00**	**255**	PKP		PKPdf	01 25 20.3	+1.3	
	comp=N,1.8nm,0.8s,baz=86,slow=2.3,SNR=7.4								
GYA	**Guiyang**	**138.03**	**339**	PKP		PKPdf	01 25 24.3	+5.4	
GYA				XPKP			01 25 38.3		
GYA				PP		PP	01 28 17.0	+5.3	
GYA				PP		PP			
	comp=Z,80nm,3.3s								
ASAR	**Alice Springs**	**138.09**	**249**	PKhKP			01 25 16.9		
	comp=Z,1.9nm,1.1s,baz=122,slow=3.1,SNR=4.9								
ASAR				PKP		PKPdf	01 25 20.0	+0.9	
	comp=Z,1.1nm,0.7s,baz=120,slow=2.5,SNR=6.7								
ASAR				SKP			01 28 56.4		
	comp=Z,1.2nm,0.8s,baz=98,slow=3.0,SNR=5.6								
KMI	**Kunming**	**140.52**	**343**	*e*PKP		PKPdf	01 25 23.8	+0.2	
KMI				LR		LR			
	comp=N,192nm,21.1s								
KMI				LR		LR			
	comp=E,145nm,21.1s								
KMI				LR		LR			
	comp=Z,216nm,18.7s								
CMAR	**Chiang Mai Arr**	**147.88**	**346**	PKPbc		PKPdf	01 25 37.8	+1.5	
	comp=Z,3.8nm,0.6s,baz=339,slow=3.9,SNR=9.7								

BJI ***28*** *01:41:07.8,62.86N×151.09W,h73km,mb5.2*
NEIC ***28*** *01:41:09.4,62.78N×150.66W,h85km,mb3.8/2,After AEIC.*

IDC 28 01:20:49.9±26.0,34.29N×139.85E,mb3.5/3,mb1 3.7/3, mb1mx3.3/22,Error ellipse: s-maj=708.0km s-min=47.6km az=174.0,Near south coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
MKAR	**Makanchi Array**	**44.55**	**304**	P		P	01 29 03.4	-1.6
	0.3nm,0.7s,baz=90,slow=10,SNR=2.8							
YKA	**Yellowknife Ar**	**66.82**	**29**	P		P	01 31 43.1	-1.9
	0.2nm,0.5s,baz=297,slow=6.2,SNR=4.7							
FINES	**FINESS Array B**	**70.64**	**332**	P		P	01 32 06.7	-2.0
	0.4nm,0.3s,baz=56,slow=6.9,SNR=9.5							

2004 MAY

NEIC Felt at Talkeetna.
IDC ***28*** *01:41:09.5±1.0,62.99N×150.75W,h88km±8km,mb3.8/13, mb1 3.8/16,mb1mx3.7/26,Error ellipse: s-maj=15.1km s-min=11.3km az=120.0*
ISC 28 01:41:08.2±0.2,62.80N±0.02×150.59W±0.04,h98km±2km, h87km±1.6km:pP-P,n120,σ0§83/138,mb4.1/16,1C-1D, Central Alaska

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CUT	**Chulitna**	**0.42**	**160**	P		P	**01 41 23.1**	**-0.4**
HUR	**Hurricane**	**0.47**	**67**	P		P	**01 41 23.7**	**-0.1**
TRF	**Thorofare Moun**	**0.67**	**12**	P		P	**01 41 25.9**	**+0.5**
TRF				S		S	**01 41 38.4**	**+0.1**
KTH	**Kantishna Hill**	**0.77**	**349**	P		P	**01 41 26.7**	**+0.3**
KTH				S		S	**01 41 39.1**	**-0.8**
RND	**Reindeer**	**1.00**	**52**	P		P	**01 41 29.4**	**+0.7**
RND				S		S	**01 41 44.5**	**+0.3**
MCK	**McKinley**	**1.20**	**38**	P		P	**01 41 31.7**	**+0.4**
MCK				S		S	**01 41 48.0**	**-0.3**
PWA	**Palmer West**	**1.20**	**164**	*eP*		P	**01 41 30.8**	**-0.5**
GHO	**Glory Hole Cre**	**1.29**	**142**	P		P	**01 41 32.7**	**+0.4**
GHO				S		S	**01 41 51.1**	**+0.7**
SUA	**Susitna One**	**1.34**	**183**	P		P	**01 41 32.9**	**0.0**
PMR	**Palmer**	**1.39**	**150**	*eP*		P	**01 41 33.6**	**+0.1**
PMR				S		S	**01 41 52.0**	**-0.3**
SML	**Sawmill**	**1.45**	**132**	P		P	**01 41 34.8**	**+0.6**
SML				S		S	**01 41 54.4**	**+0.9**
BWN	**Browne**	**1.47**	**20**	P		P	**01 41 35.2**	**+0.7**
DHY	**Denali Highway**	**1.50**	**78**	P		P	**01 41 34.9**	**+0.1**
PMS	**Palmer South**	**1.63**	**162**	*eP*		P	**01 41 36.6**	**+0.1**
FIB	**Fire Island**	**1.65**	**173**	P		P	**01 41 38.1**	**+1.3**
GOU	**Gould Hall**	**1.66**	**167**	P		P	**01 41 37.5**	**+0.7**
KNK	**Knik Glacier**	**1.71**	**143**	P		P	**01 41 37.8**	**+0.2**
KNK				S		S	**01 42 01.3**	**+2.0**
CP2	**Crater Peak Tw**	**1.73**	**208**	P		P	**01 41 37.7**	**0.0**
CP2				S		S	**01 42 00.3**	**+0.8**
RC01	**Rabbit Creek A**	**1.76**	**166**	P		P	**01 41 38.3**	**+0.2**
SCM	**Sheep Creek Mo**	**1.80**	**121**	P		P	**01 41 39.1**	**+0.4**
CKL	**Chakachamna La**	**1.81**	**208**	P		P	**01 41 38.6**	**-0.1**
NEA	**Nenana**	**1.91**	**20**	P		P	**01 41 40.3**	**+0.3**
BKG	**Blockade Glaci**	**1.91**	**205**	P		P	**01 41 39.7**	**-0.3**
BKG				S		S	**01 42 02.6**	**-0.9**
CFI	**College Fiord**	**2.10**	**139**	P		P	**01 41 43.0**	**+0.4**
TOA	**Tolsona**	**2.17**	**107**	*eP*		P	**01 41 44.8**	**+1.3**
PWL	**Port Wells**	**2.22**	**150**	P		P	**01 41 44.0**	**-0.3**
CCB	**Clear Creek Bu**	**2.23**	**32**	P		P	**01 41 44.4**	**0.0**
MLY	**Manley**	**2.24**	**358**	P		P	**01 41 45.0**	**+0.4**
PAX	**Paxson**	**2.35**	**84**	P		P	**01 41 46.9**	**+0.8**
PAX				S		S	**01 42 16.2**	**+2.0**
MPA	**Moose Pass**	**2.39**	**165**	P		P	**01 41 46.8**	**+0.2**
MPA				S		S	**01 42 13.4**	**-1.8**
RDT	**Redoubt**	**2.40**	**202**	P		P	**01 41 46.5**	**-0.2**
COLA	**College**	**2.41**	**29**	*eP*		P	**01 41 46.9**	**0.0**
TT01	**Tatalina**	**2.50**	**275**	P		P	**01 41 47.6**	**-0.4**
TZL	**Tazlina**	**2.52**	**105**	P		P	**01 41 48.9**	**+0.5**
REF	**Redoubt East F**	**2.53**	**204**	P		P	**01 41 48.3**	**-0.2**
KLU	**Klutina**	**2.55**	**119**	P		P	**01 41 48.3**	**-0.5**
KLU				S		S	**01 42 18.9**	**-0.3**
RSO	**Redoubt South**	**2.56**	**205**	P		P	**01 41 49.0**	**0.0**
IL1	**Eielson Array**	**2.57**	**38**	P		P	**01 41 49.1**	**0.0**
ILAR	**Eielson Array**	**2.57**	**38**	P		P	**01 41 49.1**	**+0.1**
	158nm,0.3s,baz=222,slow=14,SNR=6726							
ILAR				S		S	**01 42 17.8**	**-1.9**
	47nm,0.3s,baz=220,slow=20,SNR=14							
JPK	**Jack Peak**	**2.57**	**131**	P		P	**01 41 48.4**	**-0.7**
JPK				S		S	**01 42 19.2**	**-0.5**
VLZ	**Valdez**	**2.62**	**128**	P		P	**01 41 48.7**	**-1.0**
VLZ				S		S	**01 42 20.3**	**-0.4**
SEW	**Seward**	**2.76**	**168**	P		P	**01 41 51.4**	**-0.3**
SVW	**Sparrevohn**	**2.92**	**237**	*eP*		P	**01 41 53.1**	**-0.8**
ILIM	**Iliamna**	**2.96**	**204**	P		P	**01 41 54.5**	**+0.1**
ILW	**Iliamna West**	**3.01**	**205**	P		P	**01 41 55.3**	**+0.2**
WACK	**Wrangell Chich**	**3.03**	**103**	P		P	**01 41 56.0**	**+0.7**
DOT	**Dot Lake**	**3.07**	**71**	P		P	**01 41 56.5**	**+0.5**
ILS	**Iliamna Low So**	**3.09**	**204**	P		P	**01 41 56.7**	**+0.5**
WANC	**Wrangell North**	**3.14**	**102**	P		P	**01 41 58.1**	**+1.2**
EYAK	**Cordova Ski Ar**	**3.23**	**132**	P		P	**01 41 57.4**	**-0.7**
CVA	**Cordova**	**3.23**	**132**	P		P	**01 41 57.5**	**-0.6**
CNPM	**China Poot**	**3.30**	**186**	P		P	**01 41 58.7**	**-0.4**
BMRM	**Bremner River**	**3.38**	**120**	P		P	**01 41 58.9**	**-1.2**
XLV	**Seldovia**	**3.40**	**190**	P		P	**01 42 01.2**	**+0.8**
OPT	**Oil Point**	**3.41**	**203**	P		P	**01 42 01.2**	**+0.6**
IM3	**Indian Mountai**	**3.48**	**338**	P		P	**01 42 01.5**	**0.0**
PRP	**Porcupine Dome**	**3.52**	**37**	P		P	**01 42 02.1**	**+0.1**
IMA	**Indian Mountai**	**3.54**	**339**	*eP*		P	**01 42 02.6**	**+0.2**
AUE	**Augustine Isla**	**3.71**	**203**	P		P	**01 42 04.7**	**0.0**
AGU	**Augustine-Summ**	**3.72**	**203**	P		P	**01 42 05.0**	**+0.2**
BCA3	**Beaver Creek A**	**4.03**	**82**	P		P	**01 42 08.8**	**-0.2**
MCNL	**McNeil River**	**4.06**	**208**	P		P	**01 42 09.2**	**-0.3**
TGL	**Tana Glacier**	**4.21**	**116**	P		P	**01 42 11.3**	**-0.3**
TGL				S		S	**01 42 58.7**	**-1.3**
BALM	**Baldy**	**4.28**	**111**	P		P	**01 42 11.4**	**-1.0**
SYI	**Shuyak Island**	**4.30**	**193**	P		P	**01 42 12.6**	**-0.1**
COLD	**Coldfoot**	**4.45**	**2**	P		P	**01 42 13.0**	**+0.2**
SNH	**Sunshine Point**	**4.55**	**122**	P		P	**01 42 16.0**	**-0.2**
SNH				S		S	**01 43 06.2**	**-2.0**
KAPH	**Katmai Pasha**	**4.60**	**205**	P		P	**01 42 16.9**	**0.0**
KAHC	**Katmai Hardscr**	**4.70**	**209**	P		P	**01 42 18.3**	**+0.1**
KAHG	**Katmai Hook Gl**	**4.74**	**206**	P		P	**01 42 18.8**	**+0.1**
CTGM	**Chitina Glacie**	**4.75**	**109**	P		P	**01 42 19.1**	**+0.1**
KAIC	**Katmai Ikaglui**	**4.85**	**209**	P		P	**01 42 20.8**	**+0.4**
YAH	**Yahtse**	**4.88**	**116**	P		P	**01 42 19.8**	**-0.9**
WRG	**White River Gl**	**4.95**	**120**	P		P	**01 42 21.3**	**-0.4**
KDAK	**Kodiak Island**	**5.13**	**192**	P		P	**01 42 22.1**	**-2.0**
KABR	**Katmai Barrier**	**5.16**	**207**	P		P	**01 42 24.1**	**-0.4**
MGLS	**Mageik LS**	**5.17**	**209**	P		P	**01 42 25.1**	**+0.5**
DAWY	**Dawson**	**5.18**	**71**	P		P	**01 42 24.5**	**-0.3**
ANCK	**Angle Creek**	**5.21**	**210**	P		P	**01 42 25.3**	**+0.1**
BM3	**Burnt Mountain**	**5.28**	**26**	P		P	**01 42 26.1**	**-0.1**
CAHL	**Cahill**	**5.30**	**208**	P		P	**01 42 26.2**	**-0.2**
CHX	**Chaix Hills**	**5.31**	**117**	P		P	**01 42 26.6**	**+0.1**
KJL	**Kejulik**	**5.36**	**210**	P		P	**01 42 27.0**	**+0.4**
PCA	**Pinnacle**	**5.65**	**114**	P		P	**01 42 30.4**	**-0.7**
PNL	**Peninsula**	**6.25**	**115**	P		P	**01 42 39.0**	**-0.4**
WHY	**Whitehorse**	**7.76**	**99**	P		P	**01 42 59.2**	**-0.9**
TNA	**Tin City**	**8.05**	**298**	P		P	**01 43 03.8**	**-0.3**
BESE	**Bessie Mountai**	**8.79**	**112**	P		P	**01 43 12.8**	**-1.2**
INK	**Inuvik**	**8.95**	**45**	P		P	**01 43 16.0**	**-0.2**
	2.9nm,0.3s,baz=237,slow=16,SNR=70							
INK				S		S	**01 44 51.2**	**-4.9**
	0.9nm,0.3s,baz=216,slow=30,SNR=2.1							
INK	**Inuvik**	**8.95**	**45**	*eP*		P	**01 43 15.8**	**-0.4**
DLBC	**Dease Lake**	**10.98**	**104**	P		P	**01 43 43.6**	**+0.3**
	0.2nm,0.3s,baz=196,slow=16,SNR=2.3							
YKW3	**Yellowknife Ar**	**16.38**	**75**	*eP*		P	**01 44 52.0**	**-1.0**
YKA	**Yellowknife Ar**	**16.41**	**75**	P		P	**01 44 53.1**	**-0.2**
	0.7nm,0.3s,baz=284,slow=10,SNR=31							
YKA				ScP			01 53 06.3	
	baz=284,slow=2.1,SNR=11							
YKA	**Yellowknife Ar**	**16.41**	**75**	P		P	**01 44 53.1**	**-0.2**
YKA				ScP			01 53 06.3	
FX1	**Attu Island--F**	**21.40**	**259**	P		P	**01 45 49.2**	**+0.2**
	14nm,0.7s,mb4.4,baz=85,slow=11,SNR=4.0							
FCC	**Fort Churchill**	**27.10**	**73**	*eP*		P	**01 46 43.8**	**+0.7**
	1.7nm,0.5s,mb3.8							
BW06	**Boulder Array**	**31.11**	**111**	P		P	**01 47 20.3**	**+1.3**
BW06				*ep*P		pP	01 47 40.9	-0.5
PDAR	**Pinedale Array**	**31.11**	**111**	P		P	**01 47 20.9**	**+1.8**
	0.3nm,0.5s,mb3.3,baz=288,slow=4.7,SNR=3.7							
PDAR				pP		pP	01 47 41.0	-0.4
	1.8nm,1.1s,baz=321,slow=9.5,SNR=5.0							
NVAR	**Mina Array Bea**	**31.25**	**126**	pP		pP	01 47 41.7	-1.0
	4.2nm,0.9s,baz=311,slow=9.6,SNR=9.2							
ULM	**Lac du Bonnet**	**31.64**	**87**	P		P	**01 47 24.6**	**+1.1**
	2.2nm,0.6s,mb4.1,baz=307,slow=5.1,SNR=2.6							
ULM				pP		pP	01 47 43.9	-2.1
	2.7nm,0.6s,baz=335,slow=4.7,SNR=2.8							
MSU	**Marysvale**	**33.56**	**118**	P		P	**01 47 41.6**	**+1.2**
ANMO	**Albuquerque**	**38.97**	**115**	P		P	**01 48 26.5**	**+0.6**
SPITS	**Spitsbergen Ar**	**39.04**	**4**	P		P	**01 48 25.9**	**-0.1**
	1.3nm,0.3s,mb4.2,baz=9.5,slow=5.5,SNR=14							
SCHQ	**Schefferville**	**41.12**	**61**	P		P	**01 48 44.4**	**+1.0**
	3.2nm,0.8s,mb4.2,baz=271,slow=6.7,SNR=9.8							
WMOK	**Wichita Mounta**	**42.45**	**106**	P		P	**01 48 56.0**	**+1.5**
	1.0nm,0.6s,mb3.7							
TXAR	**Lajitas Array**	**45.01**	**116**	P		P	**01 49 16.9**	**+1.7**
	0.4nm,0.5s,mb3.4,baz=324,slow=6.4,SNR=5.4							
TXAR				pP		pP	01 49 38.5	0.0
	1.2nm,0.7s,baz=327,slow=6.0,SNR=7.1							
ARCES	**ARCESS Array B**	**47.92**	**2**	P		P	**01 49 36.9**	**-0.7**
	4.1nm,1.1s,mb4.2,baz=16,slow=8.8,SNR=7.1							
CN2	**Changchun**	**49.64**	**289**	*eP*		P	**01 49 54.0**	**+2.8**
FINES	**FINESS Array B**	**56.05**	**2**	P		P	**01 50 36.4**	**-2.1**
	1.3nm,0.9s,mb3.9,slow=7.6,SNR=6.4							
HFS	**Hagfors**	**56.80**	**9**	P		P	**01 50 41.9**	**-1.9**
	1.0nm,0.7s,mb3.9,baz=34,slow=5.3,SNR=5.7							
EKA	**Eskdalemuir Ar**	**59.49**	**21**	P		P	**01 51 01.8**	**-0.8**
	1.1nm,0.8s,mb4.0,baz=333,slow=5.6,SNR=4.1							
BVAR	**Borovoye Array**	**60.12**	**333**	P		P	**01 51 05.9**	**-1.0**
	1.9nm,0.3s,mb4.5,baz=48,slow=6.9,SNR=18							
ZRNK	**Zerenda**	**60.47**	**334**	*eP*		P	**01 51 08.1**	**-1.2**
SSE	**Sheshan**	**62.05**	**284**	⇓P		P	**01 51 22.3**	**+2.0**
NJ2	**Nanjing**	**62.27**	**286**	*eP*		P	**01 51 25.3**	**+3.6**
NJ2				AMB		AMB		
	comp=Z,20nm,0.6s,mb5.3							
MKAR	**Makanchi Array**	**62.95**	**322**	P		P	**01 51 23.8**	**-2.2**
	comp=Z,1.1nm,0.4s,mb4.1,baz=31,slow=7.3,SNR=19							
WMQ	**Urumqi**	**64.03**	**317**	*eP*		P	**01 51 37.0**	**+4.0**
AKASG	**Malin Array Be**	**66.85**	**0**	P		P	**01 51 51.0**	**+0.1**
	comp=Z,1.6nm,0.4s,mb4.2,baz=1.8,slow=6.5,SNR=13							
KMI	**Kunming**	**75.20**	**296**	*eP*		P	**01 52 42.0**	**+0.8**
SHL	**Shillong**	**79.09**	**305**	⇑*iP*		P	**01 53 02.0**	**-0.9**
SHL				*i* S		sP	01 53 38.7	-0.8

BJI 28 01:46:03.8,45.41N×117.99E,h31km,ML3.7, Northeastern China

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
CN2	**Changchun**	**5.56**	**104**	*e*PG		Pn	01 47 44.8	+18
CN2				*e*SG		Sn	01 48 53.3	+23
CN2				S		Sn		
	comp=N,100nm,0.6s							
CN2				S		Sn		
	comp=E,100nm,0.6s							
HHC	**Hu-ho-hao-te**	**6.55**	**228**	*eP*		Pn	01 47 36.3	-4.3

GUC 28 02:10:17.3±0.7,32.29S×70.06W,h117km±4km,MD3.7, ML3.9,9C-9D,Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JACH	**Jahuel**	**0.60**	**229**	⇓*iP*		P	02 10 35.8	+0.1
JACH				*i* S		S	02 10 49.8	+0.1
PTCH	**Petorca**	**0.74**	**272**	⇓*iP*		P	02 10 36.8	+0.1
PTCH				*i* S		S	02 10 51.7	+0.2
PTCH				AMP			02 10 53.2	
	comp=N,8μm,0.3s							
PEL	**Peldehue**	**1.00**	**212**	⇓*iP*		P	02 10 39.2	-0.2
PEL				*i* S		S	02 10 56.1	+0.2
PEL				AMP			02 10 57.3	
	comp=N,4μm,0.3s							
ROCH	**El Roble**	**1.05**	**229**	⇓*iP*		P	02 10 40.0

ATE				S		Sg		02 33 24.4	-0.2
REYF	**Montagne du Re**	**0.19**	**140**	Pg		Pg		02 33 24.1	+1.4
REYF				Sg		Sg		02 33 26.9	+1.5
REYF	**Montagne du Re**	**0.19**	**140**	P		Pg		02 33 24.2	+1.5
REYF				S		Sg		02 33 27.0	+1.6
ORDF	**Ordiarp**	**0.28**	**270**	Pg		Pg		02 33 25.7	+1.4
ORDF				Sg		Sg		02 33 29.7	+1.6
ORDF	**Ordiarp**	**0.28**	**270**	P		Pg		02 33 25.6	+1.2
ORDF				S		Sg		02 33 30.4	+2.3
ETSF	**Etsaut**	**0.32**	**180**	*e*Pg		Pg		02 33 24.6	-0.5
ETSF				*e*Sg		Sg		02 33 26.4	-3.0
	76nm,0.2s,SNR=1.0								
LARF	**Larrau**	**0.36**	**241**	Pg		Pg		02 33 26.0	0.0
LARF	**Larrau**	**0.36**	**241**	P		Pg		02 33 26.0	+0.1
LARF				S		Sg		02 33 30.5	-0.4
FDAF	**Les Forges d'A**	**0.40**	**181**	P		Pg		02 33 25.8	-0.8
FDAF				S		Sg		02 33 29.2	-2.8
LABF	**Labassere**	**0.49**	**110**	Pg		Pg		02 33 30.0	+1.5
LABF				Sg		Sg		02 33 37.2	+2.0
LABF	**Labassere**	**0.49**	**110**	P		Pg		02 33 29.7	+1.2
LABF				S		Sg		02 33 36.4	+1.2
OSSF	**Osses**	**0.52**	**275**	Pg		Pg		02 33 29.0	0.0
OSSF				Sg		Sg		02 33 36.9	+0.9
OSSF	**Osses**	**0.52**	**275**	P		Pg		02 33 29.0	0.0
OSSF				S		Sg		02 33 36.1	+0.2
VIEF	**Viey**	**0.54**	**128**	Pg		Pg		02 33 29.8	+0.3
VIEF				Sg		Sg		02 33 36.3	-0.4
VIEF	**Viey**	**0.54**	**128**	P		Pg		02 33 30.0	+0.5
VIEF				S		Sg		02 33 36.7	-0.1
EPF	**Esparros**	**0.68**	**105**	*e*Pg		Pg		02 33 33.3	+1.0
	SNR=1.0								
EPF				*e*Pn		Pn		02 33 34.6	+0.4
	SNR=1.0								
EPF				*e*Sg		Sg		02 33 43.0	+1.5
	23nm,0.2s,SNR=1.0								
EPF	**Esparros**	**0.68**	**105**	Pg		Pg		02 33 33.3	+1.0
EPF				Lg				02 33 43.0	
	11nm,0.2s								
EALK	**Alkurruntz**	**0.69**	**271**	⇓Pg		Pg		02 33 32.1	-0.4
	4.3nm,0.1s,SNR=18								
EALK				Lg				02 33 40.6	
	8.0nm,0.1s,SNR=25								
EALK	**Alkurruntz**	**0.69**	**271**	⇓Pg		Pg		02 33 32.1	-0.4
EALK				Lg				02 33 41.3	
RESF	**Ens**	**0.77**	**121**	Pg		Pg		02 33 34.1	0.0
RESF				Sg		Sg		02 33 43.9	-0.6
RESF	**Ens**	**0.77**	**121**	P		Pb		02 33 34.3	+0.5
RESF				S		Sb		02 33 44.0	-0.2
MELF	**Melles**	**1.02**	**109**	Pg		Pg		02 33 39.3	+0.2
MELF				Sg		Sg		02 33 52.3	-0.5
MELF	**Melles**	**1.02**	**109**	P		Pb		02 33 39.1	+1.0
MELF				S		Sb		02 33 52.4	+0.9
SALF	**Salau**	**1.36**	**109**	Pg		Pg		02 33 45.7	-0.1
SALF				Sg		Sg		02 34 05.6	+1.6
SALF	**Salau**	**1.36**	**109**	P		Pb		02 33 45.6	+1.8
ESAC	**San Caprasio**	**1.49**	**177**	⇓Pg		Pg		02 33 46.9	-1.6
	14nm,0.2s,SNR=18								
ESAC				Lg				02 34 04.4	
	60nm,0.2s,SNR=23								
ESAC	**San Caprasio**	**1.49**	**177**	⇓Pg		Pg		02 33 46.8	-1.6
ESAC				Lg				02 34 04.8	
LFF	**La Frestale**	**1.96**	**28**	*e*Pn		Pn		02 33 53.7	+1.2
LFF				*e*Pg		Pg		02 33 59.0	+1.2
LFF				*e*Sg		Sg		02 34 26.0	+2.0
	6.6nm,0.2s,SNR=1.0								
EMIR	**Miracle**	**2.02**	**129**	Pg		Pg		02 33 56.7	-2.2
	6.5nm,0.3s,SNR=22								
EMIR	**Miracle**	**2.02**	**129**	Pn		Pn		02 33 56.7	+3.4
EMIR				Lg				02 34 24.9	
MTLF	**Montolieu**	**2.03**	**85**	*e*Pn		Pn		02 33 54.2	+0.7
	SNR=1.0								
MTLF				*e*Pg		Pg		02 33 57.8	-1.4
	SNR=1.0								
MTLF				*e*Sg		Sg		02 34 25.0	-1.3
	6.6nm,0.3s,SNR=1.0								
VALF	**Valcebollere**	**2.06**	**112**	Pg		Pg		02 33 59.2	-0.6
ELAN	**Lanestosa**	**2.10**	**271**	Pg		Pg		02 33 56.7	-3.9
	0.2nm,0.1s,SNR=7.9								
ELAN	**Lanestosa**	**2.10**	**271**	Pg		Pg		02 33 56.7	-3.9
ELAN				Lg				02 34 24.4	
EPOB	**Poblet**	**2.22**	**146**	Pg		Pg		02 34 00.4	-2.6
	0.9nm,0.2s,SNR=8.3								
EPOB				Lg				02 34 27.8	
	3.3nm,0.2s,SNR=6.8								
EPOB	**Poblet**	**2.22**	**146**	Pg		Pg		02 34 00.8	-2.2
EPOB				Sn		Sn		02 34 25.9	+1.8
CAF	**Calviac**	**2.55**	**47**	*e*Pn		Pn		02 34 00.6	-0.3
	SNR=1.0								
CAF				*e*Sn		Sn		02 34 31.7	-0.7
CAF				*e*Sg		Sg		02 34 43.7	+0.2
	2.1nm,0.2s,SNR=1.0								
RJF	**Les Rejaudoux**	**2.57**	**35**	*e*Pn		Pn		02 33 59.5	-1.6
	SNR=1.0								
RJF				*e*Pg		Pg		02 34 09.5	-0.3
	SNR=1.0								
RJF				*e*Sn		Sn		02 34 32.5	-0.3
RJF				*e*Sg		Sg		02 34 44.5	+0.4
	3.0nm,0.2s,SNR=1.0								
RJF	**Les Rejaudoux**	**2.57**	**35**	Pg		Pg		02 34 09.5	-0.3
RJF				Sn		Sn		02 34 32.5	-0.3
RJF				Lg				02 34 44.5	
	0.0nm,0.2s								
ETOR	**Torete**	**2.64**	**205**	Pn		Pn		02 34 01.9	-0.3
	0.3nm,0.1s,SNR=7.9								
EJON	**La Jonquera**	**2.65**	**106**	Pg		Pg		02 34 08.5	-3.0
	0.1nm,0.1s,SNR=4.0								
EJON				Lg				02 34 44.9	
	2.9nm,0.3s,SNR=7.9								
EJON	**La Jonquera**	**2.65**	**106**	Pg		Pg		02 34 06.9	-4.6
EJON				Lg				02 34 45.6	
EMOS	**Mosqueruela**	**2.85**	**179**	Pg		Pg		02 34 08.5	-7.0
	0.2nm,0.1s,SNR=5.6								
EMOS				Sn		Sn		02 34 36.5	-3.5
	0.4nm,0.1s,SNR=7.9								
EMOS				Lg				02 34 44.7	
	1.5nm,0.2s,SNR=7.9								
EMOS	**Mosqueruela**	**2.85**	**179**	Pn		Pn		02 34 05.1	-0.1
EMOS				Sn		Sn		02 34 38.7	-1.3
LASF	**Ste Croix**	**3.32**	**73**	*e*Pn		Pn		02 34 12.6	+0.8
	SNR=1.0								
LASF				*e*Sg		Sg		02 35 06.6	-2.5
	2.4nm,0.3s								
EARI	**Arriondas**	**3.40**	**273**	Pn		Pn		02 34 13.4	+0.4
	0.0nm,0.1s,SNR=7.9								
MFF	**Saint Martin d**	**3.40**	**5**	*e*Pn		Pn		02 34 14.1	+1.1
	SNR=1.0								
MFF				*e*Pg		Pg		02 34 28.0	+1.5
	SNR=1.0								
MFF				*e*Sg		Sg		02 35 11.7	-0.1
	2.6nm,0.4s,SNR=1.0								
MFF	**Saint Martin d**	**3.40**	**5**	Pn		Pn		02 34 14.1	+1.1
MFF				Lg				02 35 11.7	
	1.3nm,0.4s								
TCF	**Toulx Ste Croi**	**3.65**	**32**	*e*Pn		Pn		02 34 13.8	-2.8
TCF				*e*Pg		Pg		02 34 31.0	-0.5
	SNR=1.0								
TCF				*e*Sn		Sn		02 34 57.1	-3.2
	SNR=1.0								
TCF				*e*Sg		Sg		02 35 18.7	-1.5
	1.9nm,0.3s,SNR=1.0								
TCF	**Toulx Ste Croi**	**3.65**	**32**	Lg				02 35 18.7	
	0.9nm,0.3s								
BGF	**Bois d'Agland**	**4.13**	**35**	*e*Pn		Pn		02 34 23.6	+0.3
BGF				*e*Pg		Pg		02 34 40.5	-0.5
	SNR=1.0								
BGF				*e*Sg		Sg		02 35 34.2	-1.8
	6.5nm,0.4s,SNR=1.0								
BGF	**Bois d'Agland**	**4.13**	**35**	Pn		Pn		02 34 23.6	+0.3
BGF				Lg				02 35 34.2	
	3.2nm,0.4s								
GRR	**Gorron**	**5.18**	**358**	*e*Pg		Pg		02 34 59.1	-2.9
	SNR=1.0								

ZUR ***28*** *02:39:17.5,45.77N×6.98E,h4km,ML0.9/4*
LDG ***28*** *02:39:19.5±0.5,45.58N×6.89E,h2km,Md1.8/2,MI1.7/1, Error ellipse: s-maj=57.9km s-min=6.7km az=135.0*

ISC 28 02:39:16.5±0.7,**45.72N**±0.04×**6.9E**±0.1,**h4**km,**n8,**
σ0§**36**/14,**2C-1D,France**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LPL	**La Plagne**	**0.24**	**215**	*e*Pg	**Pg**	**02 39 21.9**	**+0.5**
LPL				*e*Sg	**Sg**	**02 39 24.8**	**+0.2**
	8.8nm,0.4s						
LPG	**La Plagne**	**0.25**	**210**	*e*Pg	**Pg**	**02 39 22.0**	**+0.5**
LPG				*e*Sg	**Sg**	**02 39 24.9**	**0.0**
	22nm,0.2s						
EMV	**Vieux Emosson**	**0.35**	**356**	⇑*i*Pg	**Pg**	**02 39 23.9**	**+0.5**
	0.8nm,0.5s						
EMV				*i* Sg	**Sg**	**02 39 28.3**	**+0.2**
	0.8nm,0.5s						
SALAN	**Lac Salanfe**	**0.43**	**4**	⇑*i*Pg	**Pg**	**02 39 25.3**	**+0.2**
SALAN				*e*Sg	**Sg**	**02 39 30.8**	**0.0**
	0.2nm,0.2s						
DIX	**Grande Dixence**	**0.50**	**42**	⇓*i*Pg	**Pg**	**02 39 26.4**	**0.0**
	0.5nm,0.7s						
DIX				*e*Sg	**Sg**	**02 39 32.9**	**-0.1**
	0.5nm,0.7s						
GRYON	**Gryon**	**0.55**	**13**	*e*Sg	**Sg**	**02 39 34.5**	**-0.3**
SENIN	**Lac Senin**	**0.70**	**22**	*e*Sg	**Sg**	**02 39 39.3**	**-0.4**
	0.1nm,0.2s						
ORIF	**Oris-en-Rattie**	**1.09**	**223**	*e*Pg	**Pg**	**02 39 37.6**	**-0.6**
ORIF				*e*Sg	**Sg**	**02 39 52.1**	**-0.6**
	1.9nm,0.2s						

NEIC ***28*** *03:25:12.8±1.0,18.55N×146.53E,h67km±9km,mb4.4/9, Error ellipse: s-maj=10.3km s-min=6.6km az=88.0*
IDC ***28*** *03:25:14.1±7.0,18.52N×146.58E,h80km±63km,mb4.1/19, mb1 4.3/19,mb1mx4.2/26,MS3.6/8,Ms1 3.6/8, ms1mx3.4/28,Error ellipse: s-maj=21.7km s-min=12.0km az=96.0*

ISC 28 03:25:11.8±1.4,**18.53N**±0.06×**146.4E**±0.1,**h72**km±13km,
n59,σ0§**85**/51,**mb4.2**/26,**3C,Mariana Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SARN	**Sarigan**	**1.93**	**199**	⇑*e*P	**P**	**03 25 42.9**	**-0.3**
SAPN	**Saipan**	**3.36**	**191**	*e*P	**P**	**03 26 02.5**	**-0.8**
GUMO	**Guam**	**5.14**	**197**	*e*Pn	**P**	**03 26 30.1**	**+2.1**
	122nm,0.7s						
MAT	**Matsushiro**	**19.35**	**340**	P	**P**	**03 29 32.5**	**-1.6**
JNU	**Nakatsue**	**20.13**	**319**	LR	LR	03 36 47.8	
	comp=Z,64nm,20.0s,baz=129,slow=34						
ASAJ	**Asahikawa**	**25.71**	**354**	P	**P**	**03 30 38.0**	**+1.0**
	8.0nm,0.7s,mb4.3,baz=336,slow=3.2,SNR=6.3						
ASAJ				LR	LR	03 40 26.0	
	comp=Z,67nm,19.8s,baz=113,slow=35						
PMG	**Port Moresby**	**27.77**	**178**	P	**P**	**03 30 55.8**	**-0.5**
	18nm,0.6s,mb4.8,baz=293,slow=4.5,SNR=4.8						
PMG				LR	LR	03 39 03.4	
	comp=Z,55nm,21.3s,baz=293,slow=30						
PMG	**Port Moresby**	**27.77**	**178**	*e*P	**P**	**03 30 55.5**	**-0.7**
	17nm,0.7s,mb4.7						
HIA	**Hailar**	**37.44**	**331**	*e*P	**P**	**03 32 19.8**	**+0.1**
WRAB	**Tennant Creek**	**40.02**	**198**	*e*P	**P**	**03 32 41.6**	**+0.2**
	22nm,0.8s,mb5.0						
WB2	**Warramunga Arr**	**40.03**	**198**	*e*P	**P**	**03 32 41.6**	**+0.1**
WRA	**Warramunga Arr**	**40.03**	**198**	P	**P**	**03 32 40.9**	**-0.7**
	4.8nm,0.7s,mb4.4,baz=22,slow=9.3,SNR=13						
WRA				PcP	PcP	03 34 45.8	-0.2
	1.2nm,0.5s,baz=16,slow=3.3,SNR=9.1						
FITZ	**Fitzroy Crossi**	**41.74**	**210**	*e*P	**P**	**03 32 55.9**	**+0.2**
	7.1nm,1.2s,mb4.3						
FITZ	**Fitzroy Crossi**	**41.74**	**210**	P	**P**	**03 32 56.0**	**+0.2**
	5.1nm,0.7s,mb4.3,baz=6.5,slow=5.5,SNR=15						
ULN	**Ulaanbaatar**	**43.33**	**322**	*e*P	**P**	**03 33 09.5**	**+1.2**
	2.1nm,0.8s,mb3.9						
ASAR	**Alice Springs**	**43.69**	**197**	P	**P**	**03 33 11.2**	**-0.4**
	1.2nm,0.6s,mb3.8,baz=23,slow=7.6,SNR=14						
ASAR				PcP	PcP	03 34 58.0	0.0
	1.5nm,0.7s,baz=21,slow=2.7,SNR=8.2						
SONM	**Songino Array**	**43.70**	**321**	P	**P**	**03 33 11.7**	**+0.3**
	3.3nm,0.8s,mb4.1,baz=134,slow=8.3,SNR=21						
CMAR	**Chiang Mai Arr**	**44.92**	**278**	P	**P**	**03 33 23.4**	**+1.9**
	1.3nm,0.4s,mb4.0,baz=68,slow=6.3,SNR=5.5						
STKA	**Stephens Creek**	**50.33**	**185**	*e*P	**P**	**03 34 02.5**	**-1.1**
	2.6nm,0.7s,mb4.3						
STKA	**Stephens Creek**	**50.33**	**185**	P	**P**	**03 34 02.7**	**-0.9**
	4.9nm,0.8s,mb4.5,baz=14,slow=7.0,SNR=9.6						
STKA				LR	LR	03 55 09.3	
	comp=Z,197nm,20.9s,baz=24,slow=36						
NWAO	**Narrogin (SRO)**	**58.28**	**209**	*e*P	**P**	**03 35 01.5**	**-0.1**
MKAR	**Makanchi Array**	**59.07**	**314**	P	**P**	**03 35 06.8**	**0.0**
	0.9nm,0.6s,mb4.0,baz=90,slow=8.5,SNR=8.0						
MKAR	**Makanchi Array**	**59.07**	**314**	P	**P**	**03 35 06.8**	**0.0**
KURK	**Kurchatov**	**61.85**	**318**	*e*P	**P**	**03 35 24.7**	**-1.0**
ILAR	**Eielson Array**	**63.49**	**26**	P	**P**	**03 35 34.1**	**-2.3**
	1.6nm,0.9s,mb4.0,baz=257,slow=5.2,SNR=13						
ILAR				LR	LR	04 02 36.9	
	comp=Z,37nm,19.0s,baz=108,slow=35						
BRVK	**Borovoye**	**67.11**	**320**	*e*P	**P**	**03 35 59.3**	**-0.4**
ZRNK	**Zerenda**	**67.88**	**320**	*e*P	**P**	**03 36 03.7**	**-0.9**
INK	**Inuvik**	**69.26**	**23**	P	**P**	**03 36 11.9**	**-0.9**
	13nm,1.4s,mb4.6,baz=241,slow=8.7,SNR=7.3						
INK	**Inuvik**	**69.26**	**23**	*e*P	**P**	**03 36 12.0**	**-0.8**
DLBC	**Dease Lake**	**71.05**	**34**	P	**P**	**03 36 23.7**	**-0.1**
	1.4nm,0.8s,mb3.9,baz=301,slow=12,SNR=4.1						
DLBC	**Dease Lake**	**71.05**	**34**	P	**P**	**03 36 23.7**	**-0.1**
YKA	**Yellowknife Ar**	**77.81**	**28**	P	**P**	**03 37 02.1**	**-0.5**
	2.3nm,0.7s,mb4.0,baz=288,slow=5.6,SNR=42						
YKA				LR	LR	04 10 40.1	
	comp=Z,60nm,19.0s,baz=320,slow=35						
YKA	**Yellowknife Ar**	**77.81**	**28**	P	**P**	**03 37 02.1**	**-0.5**
YKA				LR	LR	04 10 40.1	
YBH	**Yreka Blue Hor**	**78.53**	**50**	P	**P**	**03 37 07.4**	**+0.3**
	2.4nm,0.7s,mb4.1,baz=6.5,slow=2.3,SNR=5.1						
NEW	**Newport**	**80.58**	**42**	*e*P	**P**	**03 37 17.7**	**-0.2**
WVOR	**Wild Horse Val**	**81.26**	**48**	*e*P	**P**	**03 37 21.7**	**0.0**
KEV	**Kevo**	**82.30**	**342**	*e*p	**P**	**03 37 26.8**	**+0.3**
NVAR	**Mina Array Bea**	**82.70**	**52**	P	**P**	**03 37 30.0**	**+0.8**
	9.8nm,1.1s,mb4.5,baz=262,slow=4.5,SNR=11						
ARCES	**ARCESS Array B**	**82.86**	**342**	P	**P**	**03 37 30.4**	**+1.0**
	7.5nm,0.8s,mb4.6,baz=72,slow=7.8,SNR=29						
HLID	**Hailey**	**83.85**	**46**	*e*P	**P**	**03 37 35.4**	**+0.5**
	1.2nm,0.8s,mb3.8						
JOF	**Joensuu**	**84.46**	**335**	*e*p	**P**	**03 37 37.1**	**-0.4**
	4.3nm,0.4s,mb4.6						
HRY	**Holter Researc**	**84.47**	**43**	*e*P	**P**	**03 37 38.8**	**+0.8**
BOZ	**Bozeman (W)**	**84.99**	**44**	*e*P	**P**	**03 37 41.0**	**+0.5**
	1.6nm,0.7s,mb4.1						
HWUT	**Hardware Ranch**	**86.51**	**47**	*e*P	**P**	**03 37 48.8**	**+0.7**
	2.0nm,0.7s,mb4.2						
FINES	**FINESS Array B**	**87.32**	**335**	P	**P**	**03 37 51.0**	**-0.6**
	4.7nm,0.5s,mb4.7,baz=73,slow=5.2,SNR=52						
FINES	**FINESS Array B**	**87.32**	**335**	P	**P**	**03 37 51.0**	**-0.6**
PDAR	**Pinedale Array**	**87.45**	**46**	P	**P**	**03 37 51.7**	**-0.9**
	0.4nm,0.4s,mb3.7,baz=323,slow=7.4,SNR=4.8						
WUAZ	**Wuyatiki**	**88.90**	**53**	*e*P	**P**	**03 38 01.4**	**+1.6**
	5.8nm,1.0s,mb4.6						
PV10	**Paradox Valley**	**89.53**	**50**	*e*P	**P**	**03 38 03.1**	**+0.5**
NB2	**NORSAR Subarra**	**92.97**	**340**	P	**P**	**03 38 17.5**	**-0.5**
	0.7nm,0.6s,mb4.2,baz=54,slow=4.8						
NOA	**NORSAR Array B**	**92.97**	**340**	P	**P**	**03 38 17.6**	**-0.4**
	0.9nm,0.7s,mb4.2,baz=45,slow=4.4,SNR=5.1						
NOA				LR	LR	04 22 35.6	
	comp=Z,24nm,18.2s,baz=225,slow=37						
NOA	**NORSAR Array B**	**92.97**	**340**	P	**P**	**03 38 17.6**	**-0.4**
NOA				LR	LR	04 22 35.6	
MLR	**Muntele Rosu**	**96.55**	**322**	LR	LR	04 27 29.2	
	comp=Z,50nm,18.6s,baz=9.0,slow=39						
VNA2	**Neumayer--Watz**	**125.33**	**190**	⇑*i*	PKPdf	03 44 08.2	+4.2
VNA3	**Neumayer Olymp**	**125.42**	**189**	⇑*i*	PKPdf	03 44 07.0	+2.9
LVC	**Limon Verde**	**146.72**	**103**	*e*PKPbc	PKPbc	03 44 48.7	+2.8
LPAZ	**La Paz**	**146.98**	**92**	PKPbc	PKPbc	03 44 47.8	+1.1
	1.9nm,0.7s,baz=282,slow=1.5,SNR=10						
LPAZ	**La Paz**	**146.98**	**92**	*e*PKPbc	PKPbc	03 44 48.0	+1.4
TRQA	**Tornquist**	**148.51**	**134**	*e*PKPbc	PKPdf	03 44 52.2	+5.3

IDC ***28*** *03:48:13.1±8.6,24.09N×126.18E,mb3.8/3,mb1 3.8/3, mb1mx3.4/19,Error ellipse: s-maj=195.0km s-min=157.1km az=30.0*
JMA ***28*** *03:48:36.8±0.2,26.01N×125.82E,h96km±4km,M3.3*

ISC 28 03:48:35.8±0.5,**26.0N**±0.1×**125.87E**±0.09,**h104**km±9km,
n21,σ0§**78**/34,**mb3.6**/3,**Southwestern Ryukyu Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JKE	**Kume jima 2**	**0.90**	**65**	P	**P**	**03 48 56.4**	**+0.6**
JKE				S	**S**	**03 49 10.2**	**-0.6**
JMJ	**Miyako jima 2**	**1.25**	**205**	P	**P**	**03 49 00.5**	**+0.8**
JMJ				S	**S**	**03 49 17.5**	**-0.1**
JOGS	**Gusukube**	**1.26**	**200**	P	**P**	**03 49 00.9**	**+1.1**
JOGS				S	**S**	**03 49 18.2**	**+0.3**
JAGN	**Aguni-jima**	**1.39**	**62**	P	**P**	**03 49 02.0**	**+0.7**
JAGN				S	**S**	**03 49 19.9**	**-0.5**
NAH1	**Naha**	**1.65**	**81**	S	**S**	**03 49 26.0**	**-0.1**
JTJ	**Tarama**	**1.68**	**219**	P	**P**	**03 49 05.6**	**+0.7**
JTJ				S	**S**	**03 49 26.2**	**-0.5**
JJT2	**Tamagusuku 2**	**1.70**	**83**	P	**P**	**03 49 06.2**	**+1.0**
JJT2				S	**S**	**03 49 27.6**	**+0.6**
JIH	**Iheya**	**2.17**	**60**	P	**P**	**03 49 11.9**	**+0.6**
JIH				S	**S**	**03 49 37.3**	**-0.4**
JIJ	**Ishigaki jima**	**2.23**	**225**	P	**P**	**03 49 11.9**	**-0.2**
JIJ				S	**S**	**03 49 38.0**	**-1.2**
JOW	**Kunigami**	**2.33**	**67**	P	**P**	**03 49 13.5**	**0.0**
JOW				S	**S**	**03 49 42.0**	**+0.4**
JKRS	**Kuro-shima**	**2.40**	**225**	P	**P**	**03 49 14.5**	**0.0**
JKRS				S	**S**	**03 49 43.3**	**-0.1**
IRIF	**Iriomote-Funau**	**2.52**	**231**	P	**P**	**03 49 16.1**	**0.0**
IRIF				S	**S**	**03 49 45.8**	**-0.5**
HATJ	**Hateruma jima**	**2.66**	**225**	P	**P**	**03 49 18.0**	**0.0**
HATJ				S	**S**	**03 49 49.5**	**-0.2**
YOJ	**Yonaguni jima**	**2.99**	**241**	P	**P**	**03 49 23.0**	**+0.5**
JTK	**Tokunoshima**	**3.30**	**56**	P	**P**	**03 49 26.3**	**-0.5**
JAM	**Amami Oshima**	**4.13**	**53**	P	**P**	**03 49 37.0**	**-1.0**
JZK	**Kikaishima**	**4.35**	**56**	P	**P**	**03 49 40.3**	**-0.7**
JMZ	**Minamidaito 2**	**4.82**	**90**	P	**P**	**03 49 44.2**	**-3.2**
JMZ				S	**S**	**03 50 33.9**	**-8.6**
SONM	**Songino Array**	**26.68**	**330**	P	**P**	**03 54 09.7**	**+2.9**
	0.4nm,0.4s,mb3.4,baz=152,slow=11,SNR=5.0						
MKAR	**Makanchi Array**	**40.15**	**313**	P	**P**	**03 56 02.9**	**-0.1**
	0.3nm,0.4s,mb3.5,baz=102,slow=8.7,SNR=6.0						
FINES	**FINESS Array B**	**72.06**	**330**	P	**P**	**03 59 49.2**	**-0.9**
	1.7nm,1.0s,mb3.8,baz=53,slow=6.9,SNR=3.8						

NEIC ***28*** *04:14:55.2,16.74N×100.22W,h5km,MD3.6(MEX),After MEX.*

MEX 28 04:14:55.4±0.6,**16.76N×100.21W,h1**km±8km,**MD3.7,**
Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAIG	**El Cayaco**	**0.29**	**348**	*i* P	Pg	04 15 01.0	-0.2
CAIG				*i* S	Sg	04 15 04.8	-0.3
ACX	**Acapulco**	**0.29**	**69**	*i* P	Pg	04 15 00.8	-0.5
ACX				*i* S	Sg	04 15 05.2	0.0
ZIIG	**Zihuatanejo**	**1.47**	**305**	*i* P	Pn	04 15 18.8	-4.3
ZIIG				*i* S	Sb	04 15 39.0	-3.2
PLIG	**Platanillo**	**1.75**	**22**	*e*P	Pn	04 16 22.1	+55
PLIG				*i* S	Sn	04 16 44.4	+54
YAIG	**Yautepec**	**2.35**	**27**	*i* P	Pn	04 15 33.2	-2.5
YAIG				*i* S	Sn	04 16 02.0	-3.6
PPM	**Popocatepetl**	**2.74**	**33**	*e*P	Pn	04 15 36.5	-4.8
OXX	**Oaxaca**	**3.35**	**84**	*e*P	Pn	04 15 53.5	+3.6

IDC ***28*** *04:18:51.4±1.9,32.90N×48.94E,mb3.6/10,mb1 3.8/12, mb1mx3.7/23,ML3.4/2,Error ellipse: s-maj=36.9km s-min=16.6km az=153.0*
NEIC ***28*** *04:18:56.6±2.1,32.93N×48.90E,h37km±13km,Error ellipse: s-maj=34.4km s-min=10.1km az=161.0*
SNSN ***28*** *04:19:00.9,32.55N×48.55E*

ISC 28 04:18:52.2±0.6,**32.97N**±0.07×**48.80E**±0.10,**h10**km,**n20,**
σ1§**29**/23,**mb3.5/9,Western Iran**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THR	**Tehran**	**3.50**	**33**	Pn	**Pn**	**04 19 48.8**	**+0.9**
	1.4nm,0.3s,baz=194,slow=9.3,SNR=40						
THR				Pg	**Pg**	**04 19 55.8**	**-6.3**
	3.8nm,0.3s,baz=185,slow=16,SNR=24						
THR				Sn	**Sn**	**04 20 30.9**	**+1.0**
	2.4nm,0.3s,baz=307,slow=20,SNR=3.8						
THR				Lg		04 20 42.1	
	3.5nm,0.3s,baz=270,slow=16,SNR=5.7						
HILS	**Ha'il**	**8.23**	**229**	P	**P**	**04 20 56.4**	**+1.8**
HILS				S	**Sn**	**04 22 26.4**	**-2.3**
ARSS	**Ar Rass**	**8.57**	**216**	P	**P**	**04 20 59.8**	**+0.5**
MZLS	**Mizel**	**9.45**	**200**	P	**P**	**04 21 13.4**	**+1.9**
ASF	**Jabal al Asfar**	**10.08**	**269**	Pn

ASAR	**Alice Springs**	**49.79**	**254**	P	**P**	**05 10 55.4**	**+0.3**
	5.6nm,0.6s,mb4.8,baz=87,slow=8.6,SNR=43						
ASAR				LR	LR	05 29 22.1	
	comp=Z,66nm,20.9s,MS3.6,baz=204,slow=33						
SBA	**Scott Base**	**60.28**	**185**	*e*P	**P**	**05 12 10.9**	**+0.4**
VNDA	**Vanda**	**60.43**	**186**	P	**P**	**05 12 11.0**	**-0.6**
	0.7nm,0.8s,mb3.8,baz=0.8,slow=6.3,SNR=4.9						
VNDA				LR	LR	05 35 25.2	
	comp=Z,11nm,18.6s,MS3.0,baz=291,slow=33						
VNDA	**Vanda**	**60.43**	**186**	*e*P	**P**	**05 12 11.4**	**-0.1**
CBIJ	**Chichi jima**	**62.89**	**315**	LR	LR	05 36 06.1	
	comp=Z,76nm,19.3s,MS3.9,baz=11,slow=32						
QSPA	**South Pole Qui**	**71.62**	**180**	*e*P	**P**	**05 13 23.1**	**+0.2**
	3.2nm,0.9s,mb4.2						
MAJO	**Matsushiro**	**71.64**	**320**	*e*P	**P**	**05 13 20.3**	**-3.5**
NVAR	**Mina Array Bea**	**76.20**	**41**	P	**P**	**05 13 49.8**	**-0.4**
	0.7nm,0.7s,mb3.7,baz=221,slow=7.4,SNR=5.8						
TUC	**Tucson**	**77.88**	**50**	*e*P	**P**	**05 13 59.0**	**-0.6**
TUC				*e*	pP	05 14 09.8	0.0
WVOR	**Wild Horse Val**	**78.45**	**38**	*e*P	**P**	**05 14 02.2**	**-0.3**
WUAZ	**Wupatki**	**79.13**	**47**	*e*P	**P**	**05 14 06.3**	**-0.1**
MSU	**Marysvale**	**80.19**	**44**	*e*P	**P**	**05 14 12.6**	**+0.5**
MSU				*e*	pP	05 14 23.5	+1.2
LTX	**Lajitas**	**81.83**	**56**	*e*P	**P**	**05 14 21.1**	**+0.3**
LTX				*e*	pP	05 14 31.1	0.0
TXAR	**Lajitas Array**	**81.83**	**56**	P	**P**	**05 14 21.3**	**+0.5**
	6.5nm,1.3s,mb4.4,baz=207,slow=8.4,SNR=17						
TCUT	**Toone Canyon**	**82.09**	**42**	P	**P**	**05 14 22.5**	**+0.5**
PV10	**Paradox Valley**	**82.21**	**45**	*e*P	**P**	**05 14 22.6**	**-0.1**
PV10				*e*pP	pP	05 14 33.7	+0.8
ANMO	**Albuquerque**	**82.31**	**49**	*e*P	**P**	**05 14 23.0**	**-0.2**
ANMO				*e*pP	pP	05 14 32.9	-0.6
PV01	**Paradox Valley**	**82.40**	**46**	*e*P	**P**	**05 14 23.6**	**-0.1**
PV01				*e*	pP	05 14 34.4	+0.4
GDL2	**Guadalupe Moun**	**82.58**	**53**	*e*P	**P**	**05 14 24.9**	**+0.2**
GDL2				*e*	pP	05 14 35.1	+0.2
MCMT	**McKenzie Canyo**	**83.26**	**38**	*e*P	**P**	**05 14 28.0**	**+0.1**
MCMT				*e*pP	pP	05 14 38.7	+0.5
BW06	**Boulder Array**	**84.14**	**41**	*e*P	**P**	**05 14 32.0**	**-0.5**
BW06				*e*pP	pP	05 14 41.4	-1.4
PDAR	**Pinedale Array**	**84.14**	**41**	P	**P**	**05 14 32.0**	**-0.4**
	1.2nm,0.6s,mb4.2,baz=218,slow=2.7,SNR=8.5						
CHMT	**Chamberlain Mo**	**84.20**	**36**	*e*P	**P**	**05 14 32.5**	**-0.2**
SDCO	**Great Sand Dun**	**84.33**	**47**	*e*P	**P**	**05 14 33.3**	**-0.2**
	12nm,1.5s,mb4.8						
SDCO				*e*pP	pP	05 14 44.1	+0.3
BOZ	**Bozeman (W)**	**84.43**	**38**	*e*pP	pP	05 14 44.2	0.0
WMOK	**Wichita Mounta**	**87.88**	**52**	P	**P**	**05 14 51.2**	**+0.2**
WMOK				*e*pP	pP	05 14 59.7	-1.7
SNAA	**Sanae**	**89.85**	**177**	*e*P	**P**	**05 14 59.2**	**-0.3**
YKA	**Yellowknife Ar**	**92.64**	**23**	P	**P**	**05 15 13.9**	**+1.4**
	0.2nm,0.6s,mb3.7,baz=257,slow=2.7,SNR=3.3						
YKA	**Yellowknife Ar**	**92.64**	**23**	P	**P**	**05 15 13.9**	**+1.4**
CMAR	**Chiang Mai Arr**	**94.11**	**288**	P	**P**	**05 15 24.8**	**+4.4**
	0.8nm,0.4s,mb4.5,baz=90,slow=1.8,SNR=4.6						
ULM	**Lac du Bonnet**	**95.92**	**39**	LR	LR	05 53 20.9	
	comp=Z,94nm,18.1s,MS4.3,baz=294,slow=32						
LPAZ	**La Paz**	**98.22**	**110**	LR	LR	05 49 04.9	
	comp=Z,71nm,21.6s,MS4.1,baz=201,slow=29						
LOF	**Lofoten**	**130.17**	**357**	*e*	PKPdf	05 21 12.4	-2.6
MOR8	**Moi Rana**	**132.06**	**356**	*e*	PKPdf	05 21 12.4	-6.2
KMBO	**Kilima Mbogo**	**144.63**	**240**	PKP	PKPdf	05 21 40.3	-2.5
	1.2nm,0.5s,baz=34,slow=9.2,SNR=4.2						
KMBO	**Kilima Mbogo**	**144.63**	**240**	*e*PKPdf	PKPdf	05 21 39.9	-2.9
KMBO				PKP	PKPdf	05 21 40.3	-2.5
CLL	**Collm**	**146.89**	**353**	*e*PKP1	PKPbc	05 21 45.0	+3.3
CLL				*i* *PKPdf		05 21 53.7	
BRG	**Berggiesshubel**	**147.20**	**352**	*e*P	PKPdf	05 21 55.1	+9.1
BRTR	**Keskin Array B**	**148.85**	**318**	PKPbc	PKPdf	05 21 50.6	+1.6
	1.6nm,0.8s,baz=150,slow=4.6,SNR=5.5						
KHC	**Kasperske Hory**	**148.96**	**352**	*e*PKP	PKPdf	05 21 46.5	-2.4
GERES	**GERESS Array B**	**149.22**	**352**	PKPbc	PKPdf	05 21 50.9	+1.6
	0.3nm,0.3s,baz=315,slow=1.4,SNR=4.4						
CDF	**Champ du Feu**	**150.11**	**360**	*e*PKP1	PKPdf	05 22 02.5	+12
HAU	**Haudompre**	**150.51**	**1**	*e*PKP1	PKPdf	05 22 03.5	+12
	5.8nm,0.5s						
HINF	**Hinteralfeld**	**150.70**	**0**	*e*PKP1	PKPdf	05 22 03.7	+12
LOR	**Lormes**	**151.12**	**5**	*e*PKP1	PKPdf	05 22 05.0	+13
	19nm,1.1s						
SSF	**Saint Saulge**	**151.30**	**5**	*e*PKP1	PKPdf	05 22 05.4	+13
	22nm,0.9s						
BGF	**Bois d'Agland**	**151.73**	**6**	*e*PKP1	PKPdf	05 22 06.2	+13
SMF	**Signal de Mont**	**151.74**	**5**	*e*PKP1	PKPdf	05 22 07.1	+14
CABF	**La Chapelle**	**151.90**	**2**	*e*PKP1	PKPdf	05 22 07.4	+14
	29nm,1.1s						

NIED ***28*** *05:04:00,37.70N×139.30E,h5km,Mw3.6 Best double couple: M₀2.63×10¹⁴ NP1:φs80°,δ79°,λ63°. NP2:φs330°, δ29°,λ157°.*
JMA ***28*** *05:04:44.0,37.64N×139.25E,h3km±1km,M3.5 Broadband fault plane solution: P waves. NP1:φs100°, δ46°,λ47°. NP2:φs333°,δ58°,λ125°. Principal axes: T Plg60°, Azm297°; N Plg29°, Azm133°; P Plg7°, Azm39°; JMA Felt I J1.*

ISC 28 05:04:43.8±0.5,37.64N±0.02×139.27E±0.03,h9km±4km, n11,σ0s74/22,2C-5D,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JNS	**Sasagawa**	**0.18**	**13**	⇓P	**Pg**	**05 04 47.4**	**-0.4**
JNS				S	**Sg**	**05 04 50.0**	**-0.4**
JFY	**Yanaizu**	**0.42**	**123**	⇑P	**Pg**	**05 04 52.6**	**+0.3**
JFY				S	**Sg**	**05 04 58.5**	**+0.5**
JHK	**Hiroka**	**0.44**	**207**	⇓P	**Pg**	**05 04 52.1**	**-0.5**
JHK				S	**Sg**	**05 04 57.8**	**+0.8**
JIZZ	**Izumozaki**	**0.45**	**256**	P	**Pg**	**05 04 53.7**	**+0.7**
JIZZ				S	**Sg**	**05 05 01.2**	**+2.1**
JAW	**Awa shima**	**0.81**	**359**	P	**Pb**	**05 04 59.0**	**-0.7**
JAW				S	**Sb**	**05 05 10.4**	**-0.1**
JYS	**Shirataka**	**0.86**	**47**	⇓P	**Pb**	**05 05 00.2**	**-0.2**
JYS				S	**Sb**	**05 05 12.4**	**+0.6**
JFT	**Otama**	**0.86**	**98**	P	**Pb**	**05 05 00.8**	**+0.4**
JFT				S	**Sb**	**05 05 12.5**	**+0.7**
JKT	**Katashina**	**0.87**	**181**	⇓P	**Pb**	**05 05 00.1**	**-0.5**
JKT				S	**Sb**	**05 05 11.8**	**-0.4**
JSD	**Sado**	**0.89**	**297**	⇑P	**Pb**	**05 04 59.5**	**-1.4**
JSD				S	**Sb**	**05 05 13.5**	**+0.8**
JYA	**Atsumi**	**1.02**	**20**	⇓P	**Pb**	**05 05 02.7**	**-0.4**
JYA				S	**Sb**	**05 05 16.8**	**+0.5**
MAT	**Matsushiro**	**1.38**	**218**	P	**Pn**	**05 05 08.3**	**-1.1**
MAT				S	**Sb**	**05 05 27.6**	**+0.6**

BJI ***28*** *05:07:56.0,60.40N×150.80W,h54km,mB4.8,mb4.9, Ms4.8,Msz4.7*
NEIC ***28*** *05:07:58.0,60.44N×150.83W,h54km,ML4.0(AEIC), ML4.0(PMR),After AEIC.*
NEIC Felt at Chugiak, Eagle River and Girdwood.
IDC ***28*** *05:07:58.6±1.4,60.60N×150.77W,h80km±7km,mb3.7/6, mb1 3.8/10,mb1mx3.5/23,MS2.9/3,Ms1 2.9/3, ms1mx2.5/34,Error ellipse: s-maj=28.0km s-min=17.1km az=139.0*

ISC 28 05:07:55.8±0.2,60.43N±0.02×150.77W±0.04,h75km±3km, h67km±10.5km:pP-P,n96,σ0s83/112,mb4.4/11,1C,Kenai Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SLKM	**Skilak Lake**	**0.28**	**73**	P	**P**	**05 08 07.1**	**-0.4**
SLKM				S	**S**	**05 08 15.0**	**-1.3**
NNL	**Ninilchik**	**0.47**	**214**	P	**P**	**05 08 09.4**	**+0.5**
MPA	**Moose Pass**	**0.70**	**84**	P	**P**	**05 08 11.9**	**+0.6**
MPA				S	**S**	**05 08 22.8**	**0.0**
SEW	**Seward**	**0.73**	**116**	P	**P**	**05 08 11.9**	**+0.2**
SEW				S	**S**	**05 08 24.3**	**+0.8**
FIB	**Fire Island**	**0.80**	**21**	P	**P**	**05 08 13.1**	**+0.6**
FIB				S	**S**	**05 08 25.7**	**+0.9**
RDT	**Redoubt**	**0.82**	**281**	P	**P**	**05 08 11.5**	**-1.1**
RDT				S	**S**	**05 08 23.1**	**-2.2**
RC01	**Rabbit Creek A**	**0.84**	**37**	P	**P**	**05 08 13.0**	**+0.1**
RC01				S	**S**	**05 08 24.6**	**-0.9**
HOM	**Homer**	**0.89**	**210**	P	**P**	**05 08 14.2**	**+0.8**
CNPM	**China Poot**	**0.93**	**195**	P	**P**	**05 08 14.5**	**+0.5**
CNPM				S	**S**	**05 08 28.2**	**+0.6**
REF	**Redoubt East F**	**0.96**	**275**	P	**P**	**05 08 13.5**	**-0.8**
BKG	**Blockade Glaci**	**0.98**	**312**	P	**P**	**05 08 13.7**	**-0.8**
PMS	**Palmer South**	**1.01**	**35**	*e*P	**P**	**05 08 15.3**	**+0.3**
CKL	**Chakachamna La**	**1.09**	**316**	P	**P**	**05 08 15.3**	**-0.7**
CP2	**Crater Peak Tw**	**1.11**	**320**	P	**P**	**05 08 15.9**	**-0.2**
ILIM	**Iliamna**	**1.15**	**253**	P	**P**	**05 08 16.1**	**-0.5**
ILW	**Iliamna West**	**1.24**	**254**	P	**P**	**05 08 17.5**	**-0.3**
ILS	**Iliamna Low So**	**1.24**	**249**	P	**P**	**05 08 17.7**	**-0.3**
PWA	**Palmer West**	**1.30**	**19**	P	**P**	**05 08 19.4**	**+0.5**
PMR	**Palmer**	**1.42**	**34**	*e*P	**P**	**05 08 20.4**	**0.0**
GHO	**Glory Hole Cre**	**1.62**	**33**	P	**P**	**05 08 23.7**	**+0.6**
AUE	**Augustine Isla**	**1.69**	**232**	P	**P**	**05 08 24.6**	**+0.6**
AGU	**Augustine-Summ**	**1.71**	**233**	P	**P**	**05 08 25.2**	**+0.9**
SML	**Sawmill**	**1.82**	**39**	P	**P**	**05 08 26.4**	**+0.6**
CUT	**Chulitna**	**2.00**	**7**	P	**P**	**05 08 28.3**	**+0.2**
JPK	**Jack Peak**	**2.15**	**71**	P	**P**	**05 08 30.4**	**+0.2**
SCM	**Sheep Creek Mo**	**2.19**	**48**	P	**P**	**05 08 31.6**	**+0.8**
VLZ	**Valdez**	**2.29**	**70**	P	**P**	**05 08 32.4**	**+0.1**
MID	**Middleton Isla**	**2.45**	**112**	*e*P	**P**	**05 08 34.5**	**0.0**
SVW	**Sparrevohn**	**2.48**	**288**	*e*P	**P**	**05 08 33.3**	**-1.6**
EYAK	**Cordova Ski Ar**	**2.49**	**85**	P	**P**	**05 08 34.6**	**-0.5**
KAPH	**Katmai Pasha**	**2.59**	**226**	P	**P**	**05 08 37.3**	**+0.9**
TOA	**Tolsona**	**2.79**	**51**	*e*P	**P**	**05 08 40.2**	**+0.9**
KDAK	**Kodiak Island**	**2.81**	**200**	P	**P**	**05 08 39.1**	**-0.5**
RAGM	**Ragged Mountai**	**3.02**	**88**	P	**P**	**05 08 41.6**	**-0.9**
TRF	**Thorofare Moun**	**3.04**	**4**	P	**P**	**05 08 43.7**	**+0.9**
TZL	**Tazlina**	**3.05**	**56**	P	**P**	**05 08 44.0**	**+1.0**
BMRM	**Bremner River**	**3.08**	**77**	P	**P**	**05 08 42.8**	**-0.6**
BMRM				S	**S**	**05 09 18.0**	**-1.1**
DHY	**Denali Highway**	**3.11**	**30**	P	**P**	**05 08 44.7**	**+0.9**
DHY				S	**S**	**05 09 18.5**	**-1.4**
RND	**Reindeer**	**3.12**	**16**	P	**P**	**05 08 45.4**	**+1.4**
KTH	**Kantishna Hill**	**3.14**	**359**	P	**P**	**05 08 45.1**	**+0.9**
KTH				S	**S**	**05 09 22.0**	**+1.4**
KABR	**Katmai Barrier**	**3.15**	**225**	P	**P**	**05 08 44.5**	**+0.1**
KAIM	**Kayak Island**	**3.21**	**96**	P	**P**	**05 08 44.5**	**-0.7**
KAIM				S	**S**	**05 09 22.9**	**+0.5**
ANCK	**Angle Creek**	**3.29**	**229**	P	**P**	**05 08 46.6**	**+0.3**
CAHL	**Cahill**	**3.33**	**226**	P	**P**	**05 08 47.3**	**+0.5**
CNTC	**Contact Creek**	**3.40**	**233**	P	**P**	**05 08 48.5**	**+0.7**
MCK	**McKinley**	**3.43**	**14**	P	**P**	**05 08 49.1**	**+0.9**
MCK				S	**S**	**05 09 26.8**	**-1.1**
TT01	**Tatalina**	**3.53**	**317**	P	**P**	**05 08 49.0**	**-0.6**
GLB	**Gilahina Butte**	**3.55**	**70**	P	**P**	**05 08 49.8**	**-0.1**
GLB				S	**S**	**05 09 29.6**	**-1.1**
PAX	**Paxson**	**3.59**	**42**	P	**P**	**05 08 51.5**	**+1.0**
PAX				S	**S**	**05 09 31.2**	**-0.6**
WANC	**Wrangell North**	**3.61**	**61**	P	**P**	**05 08 51.9**	**+1.2**
BWN	**Browne**	**3.81**	**9**	P	**P**	**05 08 54.9**	**+1.4**
BALM	**Baldy**	**4.18**	**78**	P	**P**	**05 08 58.1**	**-0.5**
NEA	**Nenana**	**4.24**	**10**	P	**P**	**05 08 59.9**	**+0.4**
HDA	**Harding Lake**	**4.37**	**22**	P	**P**	**05 09 02.1**	**+0.9**
CCB	**Clear Creek Bu**	**4.45**	**17**	P	**P**	**05 09 02.4**	**-0.1**
YAH	**Yahtse**	**4.48**	**87**	P	**P**	**05 09 02.1**	**-0.7**
DOT	**Dot Lake**	**4.52**	**41**	P	**P**	**05 09 03.7**	**+0.3**
MLY	**Manley**	**4.62**	**0**	P	**P**	**05 09 05.3**	**+0.5**
COLA	**College**	**4.66**	**16**	*e*P	**P**	**05 09 05.1**	**-0.2**
ILAR	**Eielson Array**	**4.72**	**21**	P	**P**	**05 09 06.0**	**0.0**
	15nm,0.3s,baz=207,slow=14,SNR=68						
ILAR				S	**S**	**05 09 56.7**	**-3.2**
	26nm,0.3s,baz=187,slow=26,SNR=19						
ILAR	**Eielson Array**	**4.72**	**21**	P	**P**	**05 09 06.0**	**0.0**
ILAR				S	**S**	**05 09 56.7**	**-3.2**
CHX	**Chaix Hills**	**4.83**	**90**	P	**P**	**05 09 08.0**	**+0.4**
BCA3	**Beaver Creek A**	**5.02**	**54**	P	**P**	**05 09 10.8**	**+0.4**
PCA	**Pinnacle**	**5.25**	**89**	P	**P**	**05 09 12.5**	**-0.8**
PRP	**Porcupine Dome**	**5.64**	**23**	P	**P**	**05 09 19.7**	**+0.9**
IM3	**Indian Mountai**	**5.74**	**348**	P	**P**	**05 09 19.6**	**-0.5**
IMA	**Indian Mountai**	**5.81**	**348**	*e*P	**P**	**05 09 22.3**	**+1.1**
DAWY	**Dawson**	**6.45**	**51**	P	**P**	**05 09 29.8**	**-0.3**
FYU	**Fort Yukon**	**6.64**	**20**	P	**P**	**05 09 32.7**	**0.0**
SDPT	**Sand Point**	**7.25**	**230**	P	**P**	**05 09 40.5**	**-0.7**
BM3	**Burnt Mountain**	**7.52**	**18**	P	**P**	**05 09 44.1**	**-0.8**
SIT	**Sitka**	**8.71**	**106**	P	**P**	**05 09 59.7**	**-1.4**
TNA	**Tin City**	**9.33**	**311**	*e*P	**P**	**05 10 09.1**	**-0.5**
DLBC	**Dease Lake**	**10.74**	**92**	P	**P**	**05 10 28.3**	**-0.2**
	0.3nm,0.3s,baz=286,slow=15,SNR=8.0						
DLBC				S	**S**	**05 12 21.1**	**-6.7**
	0.6nm,0.3s,baz=166,slow=19,SNR=5.2						
DLBC				LR	LR	05 14 53.7	
	comp=Z,68nm,18.5s,baz=293,slow=39						
DLBC	**Dease Lake**	**10.74**	**92**	*e*P	**P**	**05 10 28.1**	**-0.5**
INK	**Inuvik**	**10.83**	**36**	P	**P**	**05 10 29.3**	**-0.4**
	0.5nm,0.3s,baz=236,slow=14,SNR=10.0						
INK	**Inuvik**	**10.83**	**36**	*e*P	**P**	**05 10 28.8**	**-0.9**
BBB	**Bella Bella**	**14.97**	**113**	LR	LR	05 17 21.6	
	comp=Z,320nm,18.2s,baz=272,slow=37						
YKA	**Yellowknife Ar**	**17.26**	**67**	P	**P**	**05 11 53.0**	**+0.1**
	0.2nm,0.3s,baz=276,slow=11,SNR=23						
YKA				pP		05 12 08.3	
	0.2nm,0.3s,baz=278,slow=9.9,SNR=11						
YKA				LR	LR	05 19 51.7	
	comp=Z,36nm,18.2s,baz=190,slow=42						
YKA	**Yellowknife Ar**	**17.26**	**67**	P	**P**	**05 11 53.0**	**+0.1**
YKA				pP		05 12 08.3	
YKA				LR	LR	05 19 51.7	
NEW	**Newport**	**22.79**	**107**	pP		05 13 10.8	
	1.8nm,0.7s,baz=314,slow=13,SNR=3.1						
NVAR	**Mina Array Bea**	**29.98**	**122**	pP	pP	05 14 18.0	+1.3
	1.0nm,0.7s,baz=276,slow=8.2,SNR=4.3						
MDJ	**Mudanjiang**	**47.82**	**289**	P	**P**	**05 16 27.5**	**+0.4**
MDJ				AP	pP	05 16 39.0	-6.9
MDJ				PP	PP	05 18 21.5	+2.5
MDJ				S	**S**	**05 23 21.3**	**+4.2**
MDJ				SS	SS	05 26 48.8	+7.8
MDJ				AMB	AMB		
	comp=Z,4.0nm,0.6s,mb4.4						
MDJ				AMB	AMB		
	comp=Z,15nm,3.1s						
MDJ				LR	LR		
	comp=N,320nm,15.6s						
MDJ				LR	LR		
	comp=E,358nm,15.6s						
MDJ				LR	LR		
	comp=Z,546nm,14.7s						
ARCES	**ARCESS Array B**	**50.30**	**2**	P	**P**	**05 16 46.3**	**+0.4**
	comp=Z,1.8nm,0.9s,mb4.0,baz=350,slow=7.4,SNR=4.9						
CN2	**Changchun**	**50.37**	**291**	*e*P	**P**	**05 16 47.0**	**+0.2**
CN2				*e*S	**S**	**05 23 55.5**	**+2.8**
CN2				AMB	AMB		
	comp=Z,10.0nm,0.7s,mb4.8						
CN2				AMB	AMB		
	comp=Z,200nm,6.0s						
CN2				LR	LR		
	comp=N,200nm,16.0s						
CN2				LR	LR		
	comp=E,200nm,16.0s						
CN2				LR	LR		
	comp=Z,300nm,15.0s						
SONM	**Songino Array**	**55.43**	**307**	P	**P**	**05 17 24.4**	**+0.2**
	comp=Z,5.9nm,1.1s,mb4.5,baz=42,slow=6.8,SNR=16						
SONM				pP	pP	05 17 43.6	+0.1
	comp=Z,1.5nm,0.9s,baz=31,slow=7.2,SNR=3.5						
FINES	**FINESS Array B**	**58.44**	**2**	P	**P**	**05 17 44.0**	**-1.3**
	comp=Z,1.3nm,0.7s,mb4.0,baz=9.5,slow=8.5,SNR=3.2						
FINES				pP	pP	05 18 03.2	-1.5
	comp=Z,2.4nm,1.1s,baz=16,slow=10,SNR=2.3						
FINES	**FINESS Array B**	**58.44**	**2**	P	**P**	**05 17 44.0**	**-1.3**
FINES				pP	pP	05 18 03.2	-1.5
BVAR	**Borovoye Array**	**62.20**	**333**	P	**P**	**05 18 08.8**	**-2.2**
	comp=Z,1.8nm,0.8s,mb4.2,baz=9.5,slow=9.0,SNR=9.2						
SSE	**Sheshan**	**62.56**	**285**	⇑P	**P**	**05 18 19.3**	**+5.5**
SSE				AMB	AMB		
	comp=Z,47nm,0.7s,mb5.5						
SSE				AMB	AMB		
	comp=Z,30nm,3.7s						
NJ2	**Nanjing**	**62.88**	**287**	*e*P	**P**	**05 18 21.0**	**+5.1**
NJ2				AP	pP	05 18 31.8	-3.8
NJ2				XP	sP	05 18 35.8	-8.3
NJ2				PP	PP	05 20 42.3	+5.7
NJ2				S	**S**	**05 26 46.0**	**+8.1**
NJ2				XS		05 27 04.0	
NJ2				PS	PS	05 27 09.0	+2.0
NJ2				AMB	AMB		
	comp=Z,30nm,1.2s,mb5.1						
NJ2				LR	LR		
	comp=N,430nm,15.5s						
NJ2				LR	LR		
	comp=E,340nm,16.5s						
NJ2				LR	LR		
	comp=Z,5μm,18.8s						
MKAR	**Makanchi Array**	**64.78**	**323**	P	**P**	**05 18 26.8**	**-1.2**
	comp=Z,0.3nm,0.4s,mb3.5,baz=37,slow=9.0,SNR=3.7						
WMQ	**Urumqi**	**65.71**	**317**	*e*P	**P**	**05 18 40.3**	**+6.3**
AKASG	**Malin Array Be**	**69.23**	**0**	P	**P**	**05 18 55.6**	**-0.2**
	comp=Z,1.0nm,0.4s,mb4.0,baz=5.6,slow=6.5,SNR=6.9						
KMI	**Kunming**	**76.17**	**296**	*e*P	**P**	**05 19 41.5**	**+4.4**
KMI				AMB	AMB		
	comp=Z,7.0nm,0.8s,mb4.4						
RAR	**Rarotonga**	**81.67**	**188**	LR	LR	05 48 51.6	
	comp=Z,185nm,20.5s,baz=284,slow=30						

IDC 28 05:12:46.6±6.4,21.47S×70.62W,h138km±84km,mb3.2/4, mb1 3.6/4,mb1mx3.4/13,Error ellipse: s-maj=166.0km s-min=36.0km az=86.0,Near coast of northern Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LVC	**Limon Verde**	**1.95**	**126**	P	P	05 13 20.6	-0.1
	11nm,0.3s,baz=8.5,slow=8.7,SNR=42						
LVC				S	S	05 13 40.5	-6.3
	16nm,0.3s,baz=117,slow=21,SNR=58						
LPAZ	**La Paz**	**5.67**	**25**	P	P	05 14 09.3	-0.4
	0.1nm,0.3s,baz=201,slow=8.0,SNR=3.7						
TXAR	**Lajitas Array**	**59.71**	**327**	P	P	05 22 37.1	-2.1
	1.1nm,1.2s,baz=153,slow=8.1,SNR=3.5						
PDAR	**Pinedale Array**	**73.30**	**331**	P	P	05 24 03.1	-1.7
	0.1nm,0.4s,baz=146,slow=16,SNR=2.4						
ULM	**Lac du Bonnet**	**74.82**	**344**	P	P	05 24 15.9	+2.5
	1.3nm,0.5s,baz=170,slow=12,SNR=1.9						
YKA	**Yellowknife Ar**	**90.64**	**341**	P	P	05 25 32.9	-1.3
	0.1nm,0.8s,baz=144,slow=5.3,SNR=2.6						

NNC ***28*** *05:15:40.9±0.7,42.95N×72.64E,mpv2.8,Error ellipse: s-maj=69.0km s-min=6.0km az=6.0*
KNET ***28*** *05:15:40.9±0.8,42.86N×72.87E,h24km±4km,ml1.7,Error ellipse: s-maj=5.5km s-min=5.1km az=106.0*

ISC 28 05:15:40.1±0.7,42.88N±0.09×72.75E±0.05,h10km,n8, σ0s78/14,6C-7D,Kyrgyzstan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
EKS2	**Erkin-Say**	**0.79**	**106**	⇓P	**Pb**	**05 15 54.8**	**-0.6**
	4.8nm,0.1s,SNR=14						
EKS2				⇑S	**Sb**	**05 16 05.6**	**-0.3**
	7.8nm,0.2s						
AML	**Almayashu**	**1.02**	**137**	⇓P	**Pb**	**05 15 58.9**	**-0.5**
	1.8nm,0.1s						
AML				⇑S	**Sb**	**05 16 12.8**	**+0.1**
	7.6nm,0.2s						
AAK	**Ala-Archa**	**1.31**	**100**	⇑P	**Pb**	**05 16 03.8**	**-0.5**
	5.2nm,0.1s,SNR=8.0						
AAK				⇓S	**Sb**	**05 16 21.1**	**0.0**
	3.9nm,0.1s						
USP	**Ospenovka**	**1.34**	**73**	⇓P	**Pb**	**05 16 02.8**	**-2.0**
	3.5nm,0.1s,SNR=14						
UCH	**Uchtor**	**1.46**	**116**	⇑P	**Pn**	**05 16 07.4**	**+0.8**
	2.1nm,0.1s,SNR=9.8						
KBK	**Karagaybulak**	**1.64**	**97**	⇑P	**Pn**	**05 16 09.2**	**+0.1**
	5.1nm,0.1s						
KBK				⇑S	**Sn**	**05 16 30.5**	**+0.2**
	12nm,0.2s						
KK31	**Karatay Array**	**1.66**	**279**	⇓P	**Pn**	**05 16 09.5**	**+0.1**
	2.9nm,0.3s,baz=96,slow=14,SNR=49						
KK31				S	**Sn**	**05 16 31.0**	**+0.1**
	5.3nm,0.4s,baz=94,slow=30,SNR=17						
TKM2	**Tokmak 2**	**2.10**	**88**	⇓P	**Pn**	**05 16 16.3**	**+0.6**
	4.4nm,0.1s,SNR=11						
TKM2				⇓S	**Sn**	**05 16 43.8**	**+1.8**
	17nm,0.1s						

MAN 28 05:18:32.0,17.08N×121.64E,h24km,mb4.5,ML3.4, MS3.2,6C,Luzon

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CAUP	**Cauayan**	**0.22**	**127**	⇑*e*P	Pb	05 18 39.6	+1.8
CAUP				*e*S	Sb	05 18 47.2	+5.4
CVP	**Callao Caves**	**0.65**	**16**	*e*P	Pb	05 18 44.3	-0.2
CVP				*i* S	Sb	05 19 30.0	+37
PALP	**Palanan**	**0.76**	**91**	⇑*e*P	Pb	05 18 47.0	+0.6
PALP				*e*S	Sb	05 19 01.2	+5.0
APYP	**Conner**	**0.86**	**334**	⇑*e*

KII S **S** **05 24 31.2 +0.8**
KII Karymskiy 2.52 357 *e*P **P** **05 24 01.1 +0.3**
KII *e*S **S** **05 24 31.1 +0.7**
ALID Alaid 2.68 257 *e*P **P** **05 24 02.7 -0.3**
ALID *e*S **S** **05 24 33.6 -0.8**
MKZ Mys Kozlova 3.28 21 P **P** **05 24 09.8 -1.7**
MKZ S **S** **05 24 45.6 -4.1**
MKZ Mys Kozlova 3.28 21 *e*P **P** **05 24 10.4 -1.1**
MKZ *e*S **S** **05 24 46.3 -3.4**
TUMR Tumrok 3.78 4 *e*P **P** **05 24 18.6 +0.1**
TUMR *e*S **S** **05 25 00.9 -1.3**
KMNR Kamenistaya 4.26 4 *e*P **P** **05 24 25.5 +0.2**
KMNR *e*S **S** **05 25 12.6 -1.6**
ESO Esso 4.45 353 *i* P **P** **05 24 26.9 -1.1**
KPT Kopyto 4.46 4 *e*P **P** **05 24 28.8 +0.6**
KPT *e*S **S** **05 25 19.3 -0.2**
KOZ Kozyrevsk 4.55 1 P **P** **05 24 30.9 +1.5**
KOZ Kozyrevsk 4.55 1 *e*P **P** **05 24 30.4 +1.0**
KOZ *e*S **S** **05 25 22.0 +0.5**
ZLN Zelenaya 4.55 8 *e*P **P** **05 24 30.0 +0.5**
ZLN *e*S **S** **05 25 20.8 -0.9**
LGNR Loginova 4.61 7 *e*P **P** **05 24 31.3 +1.1**
LGNR *e*S **S** **05 25 23.2 +0.1**
CIRR Tsirk 4.65 7 *e*P **P** **05 24 31.5 +0.7**
CIRR *e*S **S** **05 25 23.7 -0.3**
KRSR Krestovskiy 4.73 6 *e*P **P** **05 24 31.7 -0.3**
KRSR *e*S **S** **05 25 24.1 -2.1**
SRDR Sredinnyy 4.81 0 *e*P **P** **05 24 33.6 +0.6**
SRDR *e*S **S** **05 25 27.3 -0.7**
KLY Klyuchi 4.84 6 P **P** **05 24 33.9 +0.5**
KLY Klyuchi 4.84 6 *e*P **P** **05 24 33.6 +0.2**
KLY *e*S **S** **05 25 27.4 -1.4**
KBTR Krutoberegovo 5.05 20 P **P** **05 24 35.3 -1.1**
KBTR Krutoberegovo 5.05 20 *e*P **P** **05 24 35.1 -1.3**
KBTR *e*S **S** **05 25 30.0 -4.2**
BKI Bering 5.27 43 *e*P **P** **05 24 36.1 -3.4**
BKI *e*S **S** **05 25 31.4 -8.3**
BKI Smax
comp=E,50nm,0.8s
FX1 Attu Island--F 8.40 75 Pn **P** **05 25 18.9 -4.1**
comp=E,7.7nm,0.3s,baz=297,slow=16,SNR=79
FX1 Sn **S** **05 26 49.2 -8.2**
comp=E,11nm,0.3s,baz=262,slow=23,SNR=10
FX1 Attu Island--F 8.40 75 *e*Pn **P** **05 25 19.2 -3.7**
MA2 Magadan 9.51 332 *e*PN **P** **05 25 55.1 +17**
ASAJ Asahikawa 13.64 244 Pn **P** **05 26 31.8 -1.7**
comp=E,0.6nm,0.3s,baz=59,slow=19,SNR=4.8
ASAJ Asahikawa 13.64 244 P **P** **05 26 31.8 -1.8**
ASAJ pmax pmax
comp=Z,1.0nm,0.3s
BILL Bilibino 16.88 9⇓ *e*P **P** **05 27 15.3 +0.3**
BILL pmax pmax
comp=Z,14nm,1.8s
BILL MLR MLR
comp=Z,500nm,18.0s
KLR Kul'dur 17.92 274 *e*P **P** **05 27 25.3 -2.8**
KLR MLR MLR
comp=N,500nm,16.0s
KLR MLR MLR
comp=E,900nm,16.0s
KLR MLR MLR
comp=Z,2μm,13.5s
YAK Yakutsk 19.32 315 *d i*P **P** **05 27 41.3 -3.3**
YAK pmax pmax
comp=Z,32nm,0.7s
YAK MLR MLR
comp=Z,300nm,14.0s
MAJO Matsushiro 21.39 234 *e*P **P** **05 28 06.8 +0.4**
comp=Z,9.1nm,0.9s,mb4.1
HIA Hailar 25.34 281 *e*P **P** **05 28 42.8 -1.8**
comp=Z,18nm,0.9s,mb4.6
BOD Bodaibo 26.72 302 *e*P **P** **05 28 53.6 -3.7**
JNU Nakatsue 27.86 240 P **P** **05 29 11.0 +3.0**
comp=Z,9.8nm,0.8s,mb4.5,baz=44,slow=18,SNR=2.1
JNU Nakatsue 27.86 240 P **P** **05 29 11.0 +3.0**
ILAR Eielson Array 30.12 43 P **P** **05 29 27.5 -0.3**
comp=Z,0.6nm,0.8s,mb3.4,baz=251,slow=7.6,SNR=8.3
ILAR Eielson Array 30.12 43 P **P** **05 29 27.5 -0.3**
ILAR pmax pmax
comp=Z,1.0nm,0.8s
SONM Songino Array 34.04 285 P **P** **05 30 02.0 -0.2**
comp=Z,0.3nm,0.3s,mb3.7,baz=66,slow=9.7,SNR=2.0
ZAK Zakamensk 34.80 291 *e*P **P** **05 30 07.6 -1.1**
SSE Sheshan 34.84 249 ⇓P **P** **05 30 04.3 -4.9**
SSE S **S** **05 35 28.0 -7.6**
SSE AMB AMB
comp=Z,38nm,3.1s
SSE LR LR
comp=N,103nm,20.0s,MS3.6
SSE LR LR
comp=E,49nm,20.0s,MS3.6
SSE LR LR
comp=Z,85nm,17.7s,MS3.5
INK Inuvik 35.28 36 P **P** **05 30 12.6 0.0**
comp=Z,2.4nm,0.9s,mb4.1,baz=264,slow=5.3,SNR=3.4
INK Inuvik 35.28 36 P **P** **05 30 12.6 0.0**
INK pmax pmax
comp=Z,2.0nm,0.9s
NJ2 Nanjing 35.53 253 *e*P **P** **05 30 10.0 -5.1**
NJ2 AP pP 05 30 20.0 -8.5
NJ2 XP sP 05 30 25.3 -10
NJ2 PP PP 05 31 29.3 -7.0
NJ2 S **S** **05 35 40.0 -6.2**
NJ2 PCS 05 36 26.0
NJ2 AMB AMB
comp=Z,20nm,0.8s,mb5.1
NJ2 LR LR
comp=N,500nm,19.3s,MS4.3
NJ2 LR LR
comp=E,360nm,22.0s,MS4.3
NJ2 LR LR
comp=Z,510nm,21.0s,MS4.3
ZAL Zalesovo 43.44 304 LR LR 05 51 22.9
comp=Z,408nm,18.5s,MS4.4,baz=332,slow=39
YKA Yellowknife Ar 44.51 41 P **P** **05 31 30.2 +1.5**
comp=Z,1.3nm,0.9s,mb3.8,baz=297,slow=7.7,SNR=12
YKA Yellowknife Ar 44.51 41 P **P** **05 31 30.2 +1.4**
YKA pmax pmax
comp=Z,1.0nm,0.9s
GYA Guiyang 46.92 259 P **P** **05 31 48.5 0.0**
GYA AMB AMB
comp=Z,10.0nm,1.0s,mb4.7
KURK Kurchatov 48.36 303 *e*P **P** **05 31 57.2 -2.1**
MKAR Makanchi Array 48.62 297 P **P** **05 31 59.5 -1.9**
comp=Z,0.5nm,0.3s,mb4.0,baz=50,slow=6.7,SNR=13
MKAR Makanchi Array 48.62 297 P **P** **05 31 59.5 -1.9**
MKAR pmax pmax
comp=Z,1.0nm,0.3s
SPITS Spitsbergen Ar 48.65 351 P **P** **05 32 01.5 +0.2**
comp=Z,11nm,0.8s,mb5.0,baz=63,slow=9.0,SNR=7.5
SPB4 Spitsbergen Ar 48.65 351 *e*P **P** **05 32 01.1 -0.1**
BVAR Borovoye Array 51.18 309 P **P** **05 32 18.6 -2.3**
comp=Z,4.0nm,0.8s,mb4.4,baz=63,slow=9.9,SNR=14
BVAR LR LR 05 56 07.2
comp=Z,411nm,18.1s,MS4.5,baz=15,slow=39
ZRNK Zerenda 51.89 310 *e*P **P** **05 32 23.9 -2.4**
KEV Kevo 54.23 342 *ep* **P** **05 32 44.3 +0.9**
comp=Z,0.6nm,0.3s,mb4.0
KEV Kevo 54.23 342 *e*P **P** **05 32 44.3 +0.9**
KEV pmax pmax
comp=Z,1.0nm,0.3s,mb4.2
ARCES ARCESS Array B 54.71 342 P **P** **05 32 46.3 -0.6**
comp=Z,2.6nm,0.7s,mb4.3,baz=31,slow=7.4,SNR=20
ARCES LR LR 06 01 24.9
comp=Z,92nm,18.2s,MS3.9,baz=27,slow=42
ARCES ARCESS Array B 54.71 342 P **P** **05 32 46.3 -0.6**
ARCES pmax pmax
comp=Z,3.0nm,0.7s
ARCES MLR MLR
comp=Z,92nm,18.2s
NVAR Mina Array Bea 56.53 69 P **P** **05 33 02.8 +2.3**
comp=Z,0.3nm,0.5s,mb3.6,baz=289,slow=5.7,SNR=3.9
JMIC Jan Mayen 57.50 355 LR LR 05 57 13.6
comp=Z,57nm,19.1s,MS3.7,baz=120,slow=36
CMAR Chiang Mai Arr 57.62 259 P **P** **05 33 09.6 +1.2**
comp=Z,0.9nm,0.4s,mb4.2,baz=21,slow=6.5,SNR=7.1
CMAR Chiang Mai Arr 57.62 259 P **P** **05 33 09.6 +1.2**
CMAR pmax pmax
comp=Z,1.0nm,0.4s
PDAR Pinedale Array 58.53 60 P **P** **05 33 17.2 +2.8**
comp=Z,0.6nm,0.9s,mb3.6,baz=323,slow=4.5,SNR=4.0
JOF Joensuu 58.89 335 *ep* **P** **05 33 15.7 -0.9**
comp=Z,0.9nm,0.3s,mb4.3
JOF Joensuu 58.89 335 *e*P **P** **05 33 15.7 -0.9**
JOF pmax pmax
comp=Z,1.0nm,0.3s,mb4.3
FINES FINES Array B 61.47 337 P **P** **05 33 33.7 -0.6**
comp=Z,1.6nm,0.5s,mb4.4,baz=45,slow=7.4,SNR=18
FINES LR LR 06 04 10.5
comp=Z,157nm,18.1s,MS4.2,baz=352,slow=40
FINES FINES Array B 61.47 337 P **P** **05 33 33.7 -0.6**
FINES pmax pmax
comp=Z,2.0nm,0.5s
FINES MLR MLR
comp=Z,157nm,18.1s
FINES FINES Array B 61.47 337 P **P** **05 33 33.7 -0.6**
FINES LR LR 06 04 10.5
OBN Obninsk 63.71 328 *e*P **P** **05 33 46.4 -2.7**
OBN pmax pmax
comp=Z,5.0nm,1.1s,mb4.5
OBN MLR MLR
comp=Z,200nm,16.0s,MS4.4
NB2 NORSAR Subarra 64.98 344 P **P** **05 33 57.2 -0.1**
comp=Z,1.5nm,0.6s,mb4.2,baz=23,slow=6.5
NOA NORSAR Array B 64.98 344 P **P** **05 33 57.3 0.0**
comp=Z,2.5nm,0.8s,mb4.3,baz=21,slow=6.6,SNR=12
NOA LR LR 06 05 22.3
comp=Z,43nm,18.0s,MS3.7,baz=245,slow=39
NOA NORSAR Array B 64.98 344 P **P** **05 33 57.3 0.0**
NOA pmax pmax
comp=Z,3.0nm,0.8s
NOA MLR MLR
comp=Z,43nm,18.0s
HFS Hagfors 65.37 342 P **P** **05 33 59.4 -0.4**
comp=Z,1.4nm,0.3s,mb4.4,baz=45,slow=4.2,SNR=16
HFS Hagfors 65.37 342 P **P** **05 33 59.4 -0.4**
HFS pmax pmax
comp=Z,1.0nm,0.3s
SCHQ Schefferville 67.17 27 P **P** **05 34 11.5 +0.3**
comp=Z,0.8nm,0.4s,mb4.1,baz=349,slow=10,SNR=4.4
SCHQ LR LR 06 05 37.8
comp=Z,71nm,18.7s,MS3.9,baz=47,slow=38
AKASG Malin Array Be 69.83 329 P **P** **05 34 27.4 -0.5**
comp=Z,2.8nm,0.4s,mb4.6,baz=30,slow=6.0,SNR=26
KIV Kislovodsk 70.41 317 P **P** **05 34 29.7 -1.8**
KIV *e* 05 34 50.3
KIV pmax pmax
comp=Z,2.0nm,0.8s,mb4.1
KIV MLR MLR
comp=Z,100nm,16.0s,MS4.2
ZEI Tsey 70.84 315 *e*P **P** **05 34 40.0 +5.9**
ZEI MLR MLR
comp=Z,300nm,16.0s,MS4.6
TXAR Lajitas Array 71.50 66 P **P** **05 34 40.4 +2.1**
comp=Z,0.7nm,0.8s,mb3.6,baz=302,slow=4.4,SNR=6.2
TXAR Lajitas Array 71.50 66 P **P** **05 34 40.4 +2.1**
SOC Sochi 71.96 319 *e*P **P** **05 34 39.3 -1.5**
SOC *e*S S 05 44 01.4 +4.5
SOC *e* 05 44 45.0
SOC *e*SS SS 05 48 33.4 -2.7
SOC *e*SSS SSS 05 51 49.1 +3.8
SOC pmax pmax
comp=Z,4.0nm,0.6s,mb4.5
SOC pmax pmax
comp=N,5.0nm,0.5s
SOC pmax pmax
comp=E,10.0nm,0.7s
SOC MLR MLR
comp=Z,250nm,20.0s,MS4.5
SOC MLR MLR
comp=N,160nm,28.0s
SOC MLR MLR
comp=E,130nm,17.0s
CTA Charters Tower 72.27 193 P **P** **05 34 45.2 +2.2**
comp=E,1.5nm,0.3s,mb4.3,baz=328,slow=11,SNR=1.6
CTA Charters Tower 72.27 193 P **P** **05 34 45.2 +2.2**
CTA pmax pmax
comp=Z,2.0nm,0.4s
EKA Eskdalemuir Ar 72.56 350 P **P** **05 34 45.0 +1.0**
comp=Z,1.9nm,0.8s,mb4.1,baz=18,slow=5.4,SNR=5.6
EKA Eskdalemuir Ar 72.56 350 P **P** **05 34 45.0 +1.0**
EKA pmax pmax
comp=Z,2.0nm,0.8s
KWP Kalwaria 72.77 332 *e*P **P** **05 34 46.5 +1.2**
THR Tehran 72.87 306 LR LR 06 10 21.9
comp=Z,41nm,19.0s,MS3.7,baz=294,slow=39
WRA Warramunga Arr 74.54 205 P **P** **05 34 57.4 +1.1**
comp=Z,2.1nm,0.8s,mb4.1,baz=19,slow=6.1,SNR=8.4
WRA Warramunga Arr 74.54 205 P **P** **05 34 57.4 +1.1**
WRA pmax pmax
comp=Z,2.0nm,0.8s
MLR Muntele Rosu 75.45 328 P **P** **05 35 02.9 +1.9**
comp=Z,3.2nm,0.7s,mb4.4,baz=260,slow=4.7,SNR=6.9
MLR Muntele Rosu 75.45 328 P **P** **05 35 02.9 +1.9**
MLR pmax pmax
comp=Z,3.0nm,0.7s
GERES GERESS Array B 75.87 338 P **P** **05 35 04.4 +1.1**
comp=Z,1.0nm,0.6s,mb3.9,baz=22,slow=7.2,SNR=4.2
GERES GERESS Array B 75.87 338 P **P** **05 35 04.4 +1.1**
GERES pmax pmax
comp=Z,1.0nm,0.6s
BRTR Keskin Array B 77.67 320 P **P** **05 35 14.4 +0.8**
comp=Z,2.9nm,0.8s,mb4.2,baz=45,slow=3.5,SNR=13
ASAR Alice Springs 78.22 204 P **P** **05 35 18.7 +1.8**
comp=Z,1.2nm,1.0s,mb3.8,baz=8.7,slow=5.6,SNR=10.0
ASF Jabal al Asfar 82.71 314 P **P** **05 35 42.3 +1.7**
comp=Z,1.7nm,0.4s,mb4.4,baz=360,slow=6.9,SNR=4.0

KRSC 28 05:25:19.2±1.6, 51.43N×159.85E, h60km±33km, ML3.9, Off east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RUS	**Russkaya**	**1.30**	**321**	*i* P	P	05 25 40.4	-1.4
RUS				*i* S	S	05 25 56.6	-1.9
GRL	**Gorelyy**	**1.57**	**316**	*e*P	P	05 25 45.8	+0.4
GRL				*e*S	S	05 26 05.1	+0.3
SPN	**Mys Shipunski**	**1.67**	**4**	*e*P	P	05 25 49.8	+3.0
SPN				*e*S	S	05 26 11.1	+3.9
KRMR	**Karymshinskiy**	**1.76**	**324**	*e*	P	05 26 21.7	+34
PET	**Petropavlovsk**	**1.76**	**336**	*e*P	P	05 25 47.7	-0.3
PET				*e*S	S	05 26 09.7	+0.5
NLC	**Nalytchevo**	**1.77**	**350**	*e*S	S	05 26 11.5	+1.9
PAU	**Pauzhetka**	**1.90**	**272**	*e*P	P	05 25 52.1	+2.1
PAU				*e*S	S	05 26 13.4	+0.7
PAU				Smax			
	360nm,0.7s						
AVH	**Avacha**	**1.96**	**340**	*e*S	S	05 26 14.7	+0.6
KOK	**Koryaka**	**2.01**	**339**	*e*P	P	05 25 53.6	+2.2
KOK				*e*S	S	05 26 18.6	+3.3
MIPR	**Malaya Ipel'ka**	**2.10**	**295**	*e*P	P	05 25 52.4	-0.3
MIPR				*e*S	S	05 26 15.8	-1.7
SKR	**Severo-Kuril's**	**2.47**	**254**	*i* S	S	05 26 31.1	+4.0
GNL	**Ganaly**	**2.55**	**334**	*e*P	P	05 25 59.6	+0.5
GNL				*e*S	S	05 26 29.2	+0.2

*NDI **28** 05:26:37.1±4.4, 15.35N×79.84E, h10km, ML3.7*
ISC 28 05:26:34.8±0.6, 15.40N±0.04×79.65E±0.04, h10km, n12, σ1§23/16, Southern India

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
VJD	**Vijayawada**	**1.47**	**41**	*i* P	**Pn**	**05 27 03.0**	**+1.6**
VJD				*i* S	**Sb**	**05 27 20.0**	**-0.4**
MDRS	**Chennai**	**2.39**	**166**	*e*P	**Pn**	**05 27 15.8**	**+1.2**
MDRS				*e*S	**Sn**	**05 27 43.0**	**-1.2**
MDRS				*e*		05 27 45.0	
MDRS				*e*		05 27 47.0	
	comp=N,2μm,0.3s						
LATR	**Latur**	**4.21**	**316**	*e*S	**Sn**	**05 28 32.9**	**+2.4**
LATR				*e*		05 28 52.9	
VIS	**Vishakhapatnam**	**4.21**	**56**	*e*P	**Pn**	**05 27 41.6**	**+1.0**
VIS				*e*S	**Sn**	**05 28 27.1**	**-3.3**
VIS				*e*		05 28 29.6	
	comp=N,45nm,0.2s						
VIS				*e*		05 28 29.8	
	comp=E,31nm,0.2s						
KAD	**Karad**	**5.58**	**291**	*e*S	**Sn**	**05 29 05.2**	**+0.3**
KAD				*e*		05 29 40.6	
	comp=N,144nm,0.5s						
KAD				*e*		05 29 40.9	
	comp=E,108nm,0.3s						
GOA	**Goa**	**5.62**	**272**	*e*S	**Sn**	**05 29 05.8**	**0.0**
GOA				*e*		05 29 36.4	
AKL	**Akola**	**5.84**	**335**	*e*P	**Pn**	**05 28 02.7**	**-0.9**
AKL				*e*S	**Sn**	**05 29 10.5**	**-0.9**
AKL				*e*		05 29 49.0	
	comp=E,343nm,0.4s						
AKL				*e*		05 29 49.2	
	comp=N,254nm,0.3s						
POO	**Poona**	**6.37**	**300**	*e*S	**Sn**	**05 29 23.3**	**-1.2**
POO				*e*		05 30 07.0	
	comp=N,121nm,0.4s						
POO				*e*		05 30 07.0	
	comp=E,120nm,0.5s						
KOLN	**Koldanda**	**12.85**	**16**	*e*P	**P**	**05 29 39.6**	**-0.7**
	comp=E,5.8nm,0.3s						
DMN	**Daman**	**13.16**	**22**	*e*P	**P**	**05 29 47.8**	**+3.3**
PKI	**Pulchoki**	**13.24**	**23**	*e*P	**P**	**05 29 51.0**	**+5.5**
GKN	**Gorkha**	**13.37**	**19**	*e*P	**P**	**05 29 46.6**	**-0.6**
	comp=E,6.5nm,0.3s						

MAN 28 05:29:05.5, 6.62N×126.35E, h89km, mb4.4, ML3.3, MS3.0, 3C-2D, Mindanao

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KCP	**Kidapawan**	**1.30**	**287**⇑	*i*P	P	05 29 28.9	-0.3
KCP				*i* S	S	05 29 47.2	+0.4
GSPH	**General Santos**	**1.49**	**249**⇓	*i*P	P	05 29 28.3	-3.2
GSPH				*i* S	S	05 29 45.9	-4.8
BIPH	**Bislig**	**1.55**	**1**⇓	*i*P	P	05 29 33.0	+0.7
BIPH				*i* S	S	05 29 53.9	+1.8
BUTP	**Butuan**	**2.44**	**343**⇑	*e*P	P	05 29 48.5	+4.2
BUTP				*e*S	S	05 30 24.0	+11
PAGZ	**Pagadian**	**3.18**	**293**⇑	*e*P	P	05 29 55.1	+0.5
PAGZ				*e*S	S	05 30 04.7	-27

*NEIC **28** 05:31:17.7±0.8, 49.94N×18.56E, h5km, ML2.6(VIE), Error ellipse: s-maj=10.5km s-min=7.8km az=181.0*
*PRU **28** 05:31:19.2, 50.01N×18.53E*
WAR 28 05:31:18.2, 49.96N×18.56E, h1km, 2C, Location given by Central Institute of Mining, origin time based upon RAC, Czech and Slovak Republics

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAC	**Raciborz**	**0.27**	**298**	*e*Pg	Pg	05 31 24.4	+0.8
RAC				*e*Sg	Sg	05 31 29.2	+2.0
RAC	**Raciborz**	**0.27**	**298**	*e*PG	Pg	05 31 24.0	+0.4
RAC				*e*SG	Sg	05 31 28.0	+0.8
OKC	**Ostrava-Krasne**	**0.29**	**246**	*e*PG	Pg	05 31 24.3	+0.2
OKC				*e*SG	Sg	05 31 29.6	+1.6
MORC	**Moravsky Berou**	**0.68**	**255**	*e*Pg	Pg	05 31 30.6	-1.3
MORC				*e*Sg	Sg	05 31 40.6	-0.4
OJC	**Ojcow**	**0.84**	**71**	*e*Pg	Pg	05 31 33.9	-1.1
OJC				*e*Sg	Sg	05 31 44.1	-2.1
OJC	**Ojcow**	**0.84**	**71**	*e*PG	Pg	05 31 34.0	-1.0
OJC				*e*SG	Sg	05 31 47.0	+0.8
NIE	**Niedzica**	**1.26**	**115**⇑	*e*Pg	Pg	05 31 41.8	-1.6
NIE				*e*Sg	Sg	05 32 00.7	+0.5
NIE	**Niedzica**	**1.26**	**115**	*e*PG	Pg	05 31 42.0	-1.4
NIE				*e*SG	Sg	05 32 01.0	+0.8
VYHS	**Vyhne**	**1.48**	**173**	*e*PG	Pg	05 31 45.4	-2.3
VYHS				*e*SG	Sg	05 32 04.3	-3.1
DPC	**Dobruska-Polom**	**1.49**	**286**	*e*PG	Pg	05 31 45.4	-2.7
DPC				*e*SG	Sg	05 32 05.8	-2.2
	24nm,0.4s						
KSP	**Ksiaz**	**1.70**	**302**	*e*PG	Pg	05 31 49.0	-3.2
KSP				*e*SG	Sg	05 32 12.0	-2.9
KSP	**Ksiaz**	**1.70**	**302**	*e*Pg	Pg	05 31 49.4	-2.8
KSP				*e*Sg	Sg	05 32 12.2	-2.7
UPC	**Upice**	**1.73**	**290**	*e*PG	Pg	05 31 49.4	-3.3
UPC				*e*SG	Sg	05 32 13.4	-2.4
CRVS	**Cervenica-Dubn**	**2.17**	**118**	*e*PB	Pb	05 31 58.7	+0.7
CRVS				*e*SB	Sb	05 32 27.6	+2.2
PRU	**Pruhonice**	**2.60**	**272**	*e*PG	Pg	05 32 04.5	-5.6
PRU				*e*SG	Sg	05 32 38.9	-5.8
	7.6nm,0.4s						
PVCC	**Panska Ves**	**2.63**	**284**	*e*PG	Pg	05 32 06.4	-4.3
KHC	**Kasperske Hory**	**3.35**	**258**	*e*PG	Pg	05 32 19.4	-5.7
KHC				*e*SG	Sg	05 33 04.1	-5.7
MOA	**Molln**	**3.53**	**235**⇑	*i*PN	Pn	05 32 13.1	-2.3
MOA				*i* SG	Sg	05 33 11.3	-4.6
	5.4nm,0.6s						
CLL	**Collm**	**3.79**	**293**	*e*SG	Sg	05 33 25.0	+0.6

CASC 28 05:32:25.5±3.0, 14.06N×91.05W, MD3.4, ML3.2, mb4.5(GCG), Guatemala

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JAT	**Jato**	**0.62**	**294**	*e*P	Pg	05 32 32.9	-5.0
JAT				*e*S	Sg	05 32 48.8	+2.6
JAT				AML	AML	05 32 49.3	
	comp=N,2μm,0.6s						
BOQS	**Boqueron**	**1.75**	**101**	*e*P	Pn	05 32 59.6	+2.2
LFU	**La Fuente**	**1.91**	**99**	*e*P	Pn	05 32 58.3	-1.3
LFRS	**El Faro**	**1.98**	**103**	*e*P	Pn	05 32 59.3	-1.3
LFRS				*e*S	Sn	05 33 09.7	-17

*NIED **28** 05:35:00, 42.90N×145.20E, h56km, Mw3.9 Best double couple: M0 7.42×10^14 NP1:φs 16°, δ66°, λ76°. NP2:φs 227°, δ28°, λ118°.*
*MOS **28** 05:35:09.9±1.5, 42.84N×145.19E, h60km, mb4.3/3, Error ellipse: s-maj=31.2km s-min=18.2km az=81.7*
*IDC **28** 05:35:09.6±2.1, 42.67N×145.15E, h39km±7km, mb3.5/9, mb1 3.7/10, mb1mx3.5/26, ML4.1/1, Error ellipse: s-maj=55.6km s-min=17.4km az=5.0*
*JMA **28** 05:35:10.7±0.1, 42.89N×145.24E, h47km±1km, M4.0*
JMA Felt I J1.
*NEIC **28** 05:35:11.2±2.4, 43.02N×145.10E, Error ellipse: s-maj=72.8km s-min=15.8km az=176.0*
NEIC Recorded [1 JMA] in the Kushiro area.
ISC 28 05:35:10.0±0.8, 42.89N±0.06×145.25E±0.06, h50km±5km, h37km±1.3km: pP-P, n25, σ0§85/35, mb3.6/9, 2C-5D, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JAK	**Akkeshi**	**0.42**	**285**	⇓P	**P**	**05 35 20.6**	**+0.1**
JAK				*e*S	**S**	**05 35 27.9**	**0.0**
NEM2	**Nemuro 2**	**0.60**	**37**	⇑P	**P**	**05 35 22.7**	**+0.2**
NEM2				*e*S	**S**	**05 35 31.1**	**-0.5**
JNK	**Nakash**	**0.80**	**331**	⇓P	**P**	**05 35 25.4**	**+0.2**
JNK				*e*S	**S**	**05 35 35.6**	**-0.8**
JOB	**Onbets**	**1.04**	**271**	⇓P	**P**	**05 35 28.6**	**0.0**
JRA	**Rausu**	**1.06**	**355**	P	**P**	**05 35 29.1**	**+0.3**
JRA				*e*S	**S**	**05 35 42.5**	**-0.1**
JAR	**Ashorobuto**	**1.16**	**291**	⇓P	**P**	**05 35 30.5**	**+0.3**
JAR				*e*S	**S**	**05 35 44.1**	**-1.1**
YUK	**Yuzh-Kuril'sk**	**1.23**	**21**⇑	*i*PN	**P**	**05 35 31.4**	**+0.2**
YUK				*i* S	**S**	**05 35 46.0**	**-1.0**
YUK				pmax	pmax		
	comp=Z,530nm,0.3s						
YUK				pmax	pmax		
	comp=N,210μm,0.2s						
YUK				pmax	pmax		
	comp=E,150μm,0.4s						
YUK				smax			
	comp=N,2μm,0.5s						
YUK				smax			
	comp=E,3μm,0.4s						
YUK				smax			
	comp=N,4μm,0.4s						
YUK				smax			
	comp=E,8μm,0.6s						
JCH	**Churui**	**1.42**	**260**	P	**P**	**05 35 33.6**	**-0.4**
JCH				*e*S	**S**	**05 35 50.8**	**-0.9**
JTKR	**Abashiri--Toko**	**1.46**	**318**	⇓P	**P**	**05 35 35.2**	**+0.7**
JTKR				*e*S	**S**	**05 35 53.5**	**+0.8**
ASAJ	**Asahikawa**	**2.29**	**303**	Pn	**P**	**05 35 47.6**	**+1.4**
	comp=E,32nm,0.3s,baz=102,slow=10.0,SNR=39						
ASAJ				Sn	**S**	**05 36 15.2**	**+1.9**
	comp=E,19nm,0.3s,baz=61,slow=31,SNR=6.5						
ASAJ	**Asahikawa**	**2.29**	**303**	PN	**P**	**05 35 47.6**	**+1.4**
ASAJ						05 36 15.2	
ASAJ				pmax	pmax		
	comp=Z,32nm,0.3s						
ASAJ				smax			
	comp=Z,19nm,0.3s						
KUR	**Kuril'sk**	**3.01**	**38**	*e*PN	**P**	**05 35 57.2**	**+0.7**
KUR				*e*S	**S**	**05 36 31.0**	**-0.5**
KUR				pmax	pmax		
	comp=Z,80nm,0.5s						
KUR				smax			

comp=N,190nm,0.5s
KUR smax
comp=E,150nm,0.5s
SONM Songino Array 27.54 294 P **P** 05 40 53.5 **-0.4**
comp=E,1.8nm,0.7s,mb3.8,baz=81,slow=7.8,SNR=8.3
ILAR Eielson Array 43.00 36 P **P** 05 43 06.9 **+1.3**
comp=E,0.4nm,0.7s,mb3.3,baz=284,slow=9.2,SNR=10.0
ILAR pP pP 05 43 17.6 -1.4
comp=E,0.3nm,0.6s,baz=280,slow=8.5,SNR=3.8
MKAR Makanchi Array 43.76 298 P **P** 05 43 10.8 **-1.3**
comp=E,1.3nm,0.5s,mb3.9,baz=82,slow=9.1,SNR=16
MKAR Makanchi Array 43.76 298 P **P** 05 43 10.8 **-1.2**
MKAR pmax pmax
comp=Z,1.0nm,0.5s
BVAR Borovoye Array 48.98 309 P **P** 05 43 52.4 **-0.7**
comp=Z,0.5nm,0.3s,mb4.0,baz=100,slow=8.8,SNR=3.8
YKA Yellowknife Ar 57.28 33 P **P** 05 44 54.0 **-0.5**
comp=Z,0.1nm,0.6s,mb3.0,baz=301,slow=8.2,SNR=1.9
YKA pP pP 05 45 05.3 -3.1
comp=Z,0.2nm,0.7s,baz=299,slow=6.9,SNR=4.1
NB2 NORSAR Subarra 69.90 338 P **P** 05 46 15.5 **-1.6**
comp=Z,0.8nm,0.5s,mb3.9,baz=33,slow=6.2
NOA NORSAR Array B 69.90 338 P **P** 05 46 16.4 **-0.7**
comp=Z,0.9nm,0.6s,mb3.9,baz=34,slow=6.1,SNR=6.7
NOA NORSAR Array B 69.90 338 P **P** 05 46 16.4 **-0.7**
NOA pmax pmax
comp=Z,1.0nm,0.6s
HFS Hagfors 69.94 337 P **P** 05 46 16.4 **-1.0**
comp=Z,1.8nm,0.6s,mb4.2,baz=37,slow=7.4,SNR=5.5
HFS Hagfors 69.94 337 P **P** 05 46 16.4 **-1.0**
HFS pmax pmax
comp=Z,2.0nm,0.6s
PDAR Pinedale Array 71.52 49 P **P** 05 46 27.6 **+0.4**
comp=Z,0.2nm,0.5s,mb3.3,baz=315,slow=3.8,SNR=3.0
PDAR pP pP 05 46 39.5 -2.0
comp=Z,0.3nm,0.6s,baz=180,slow=1.5,SNR=3.5
TXAR Lajitas Array 84.28 55 P **P** 05 47 39.8 **+2.2**
comp=Z,0.2nm,0.8s,mb3.3,baz=270,slow=7.2,SNR=2.9
TXAR pP pP 05 47 50.4 -1.8
comp=Z,0.5nm,0.8s,baz=295,slow=1.6,SNR=4.1

*IDC **28** 05:42:34.0±0.8, 18.25S×172.82W, h34km±4km, mb3.7/9, mb1 4.0/9, mb1mx3.9/17, Error ellipse: s-maj=37.1km s-min=14.8km az=147.0*
*NEIC **28** 05:42:34.0±0.4, 18.18S×172.89W, Error ellipse: s-maj=19.0km s-min=11.6km az=150.0*
ISC 28 05:42:32.6±0.6, 18.2S±0.2×172.9W±0.1, h33km, h33km±1.0km:pP-P,n16,σ0§90/15,mb3.9/9,3D,Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**38.53**	**260**	**P**	**P**	**05 49 53.9**	**+0.2**
	4.2nm,0.9s,mb4.2,baz=88,slow=12,SNR=4.0						
CTA				pP	pP	05 50 04.5	+0.8
	3.5nm,0.5s,baz=88,slow=8.8,SNR=3.1						
CTA	**Charters Tower**	**38.53**	**260**	**P**	**P**	**05 49 53.9**	**+0.2**
CTA				pP	pP	05 50 04.5	+0.8
STKA	**Stephens Creek**	**43.09**	**243**	**P**	**P**	**05 50 32.4**	**+1.0**
	4.9nm,1.1s,mb4.1,baz=75,slow=16,SNR=2.6						
WB2	**Warramunga Arr**	**49.68**	**259**	*eP*	**P**	**05 51 22.4**	**-1.1**
WRA	**Warramunga Arr**	**49.69**	**259**	P	**P**	**05 51 23.4**	**-0.2**
	1.7nm,0.7s,mb4.2,baz=97,slow=8.0,SNR=11						
WRA				pP	pP	05 51 33.1	-0.5
	2.8nm,0.8s,baz=97,slow=8.4,SNR=7.8						
AS12	**Alice Springs**	**49.72**	**254**	*e*P	**P**	**05 51 24.1**	**+0.3**
	7.2nm,1.0s,mb4.7						
ASAR	**Alice Springs**	**49.72**	**254**	P	**P**	**05 51 24.4**	**+0.6**
	3.4nm,0.6s,mb4.6,baz=92,slow=7.7,SNR=33						
ASAR				pP	pP	05 51 34.3	+0.5
	3.7nm,0.6s,baz=96,slow=7.3,SNR=11						
VNDA	**Vanda**	**60.66**	**186**	P	**P**	**05 52 40.4**	**-2.1**
	0.6nm,0.8s,mb3.8,baz=358,slow=6.1,SNR=3.5						
NVAR	**Mina Array Bea**	**76.11**	**41**	P	**P**	**05 54 18.7**	**-0.2**
	0.3nm,0.5s,mb3.5,baz=233,slow=9.0,SNR=3.4						
TXAR	**Lajitas Array**	**81.81**	**56**	P	**P**	**05 54 50.3**	**+0.3**
	0.4nm,0.8s,mb3.4,baz=233,slow=6.3,SNR=4.7						
TXAR				pP	pP	05 55 00.8	+0.3
	0.4nm,0.8s,baz=219,slow=8.0,SNR=3.8						
PDAR	**Pinedale Array**	**84.05**	**41**	P	**P**	**05 55 01.1**	**-0.1**
	0.7nm,0.7s,mb3.9,baz=222,slow=2.5,SNR=9.0						
ILAR	**Eielson Array**	**85.08**	**11**	P	**P**	**05 55 05.6**	**-0.2**
	0.4nm,1.0s,mb3.5,baz=196,slow=6.6,SNR=3.5						
ILAR				pP	pP	05 55 16.0	-0.4
	0.4nm,0.8s,baz=220,slow=5.9,SNR=2.5						
VNA3	**Neumayer Olymp**	**90.06**	**175**	*i*	**P**	**05 55 30.4**	**+0.7**
VNA2	**Neumayer--Watz**	**90.55**	**175**	*i*	**P**	**05 55 33.8**	**+1.8**
VNA1	**Neumayer--Stat**	**90.75**	**175**	*i*	**P**	**05 55 32.2**	**-0.8**
BRTR	**Keskin Array B**	**148.56**	**319**	PKPbc	PKPdf	06 02 17.5	+5.0
	0.6nm,0.7s,baz=146,slow=5.2,SNR=3.1						
BRTR				pPKPbc		06 02 29.1	
	1.7nm,0.9s,baz=56,slow=0.3,SNR=4.8						

KRSC 28 05:43:59.4±0.6, 51.46N×159.80E, h32km±8km, ML4.0, Off east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RUS	**Russkaya**	**1.26**	**321**	*i* P	Pn	05 44 20.5	-0.6
RUS				eS	Sn	05 44 36.0	-1.0
GRL	**Gorelyy**	**1.53**	**316**	eP	Pn	05 44 25.5	+0.6
GRL				eS	Sn	05 44 44.7	+0.9
SPN	**Mys Shipunski**	**1.65**	**5**	eP	Pn	05 44 28.3	+1.7
SPN				eS	Sn	05 44 49.2	+2.4
KRMR	**Karymshinskiy**	**1.71**	**324**	*e*	Pn	05 44 22.3	-5.3
PET	**Petropavlovsk**	**1.72**	**336**	eP	Pn	05 44 27.6	0.0
PET				eS	Sn	05 44 48.3	-0.4
NLC	**Nalytchevo**	**1.74**	**351**	eP	Pn	05 44 27.7	-0.2
NLC				eS	Sn	05 44 48.6	-0.5
UGLR	**Uglovaya**	**1.85**	**342**	eP	Pn	05 44 31.6	+2.1
UGLR				eS	Sn	05 44 54.3	+2.2
PAU	**Pauzhetka**	**1.87**	**271**	eP	Pn	05 44 31.2	+1.4
PAU				eS	Sn	05 44 54.5	+2.0
PAU				Smax			
	420nm,0.6s						
SDLR	**Sedlovina**	**1.91**	**343**	eP	Pn	05 44 30.4	+0.1
SDLR				eS	Sn	05 44 53.2	-0.2
SMAR	**Somma**	**1.91**	**342**	eP	Pn	05 44 31.4	+1.1
SMAR				eS	Sn	05 44 54.2	+0.7
AVH	**Avacha**	**1.92**	**341**	eP	Pn	05 44 31.7	+1.2
AVH				eS	Sn	05 44 55.0	+1.2
KOK	**Koryaka**	**1.97**	**339**	eP	Pn	05 44 32.6	+1.4
KOK				eS	Sn	05 44 56.4	+1.4
MIPR	**Malaya Ipel'ka**	**2.06**	**295**	eP	Pn	05 44 32.9	+0.4
MIPR				eS	Sn	05 44 57.1	-0.2
APC	**Apacha**	**2.19**	**313**	eP	Pn	05 44 35.5	+1.1
APC				eS	Sn	05 45 02.8	+2.1
APC				Smax			
	170nm,0.9s						
SKR	**Severo-Kuril's**	**2.45**	**253**	eP	Pn	05 44 38.6	+0.5
GNL	**Ganaly**	**2.51**	**334**	P	Pn	05 44 40.1	+1.1
GNL				eS	Sn	05 45 09.8	+1.0
KII	**Karymskiy**	**2.59**	**355**	eP	Pn	05 44 40.7	+0.6
KII				eS	Sn	05 45 09.9	-0.9
MKZ	**Mys Kozlova**	**3.31**	**20**	eP	Pn	05 44 51.5	+1.1
MKZ				eS	Sn	05 45 29.8	+0.7
TUMR	**Tumrok**	**3.84**	**3**	eP	Pn	05 44 58.6	+0.8
TUMR				eS	Sn	05 45 42.4	+0.1
KMNR	**Kamenistaya**	**4.31**	**3**	eP	Pn	05 45 03.6	-1.0
KMNR				eS	Sn	05 45 51.1	-3.3
KPT	**Kopyto**	**4.52**	**3**	P	Pn	05 45 07.1	-0.4
KPT				eS	Sn	05 45 56.4	-3.3
ZLN	**Zelenaya**	**4.61**	**7**	eP	Pn	05 45 07.8	-0.9
ZLN				eS	Sn	05 45 57.9	-3.9
LGNR	**Loginova**	**4.66**	**6**	eP	Pn	05 45 08.2	-1.3
LGNR				eS	Sn	05 45 58.6	-4.6
CIRR	**Tsirk**	**4.70**	**6**	eP	Pn	05 45 09.6	-0.4
CIRR				eS	Sn	05 46 00.9	-3.3
KBTR	**Krutoberegovo**	**5.08**	**19**	eP	Pn	05 45 14.7	-0.7
KBTR				eS	Sn	05 46 09.6	-4.2
BKI	**Bering**	**5.27**	**42**	eS	Sn	05 46 12.4	-6.0

*BER **28** 05:44:38.9±3.2, 59.57N×27.62E, ML2.2(NAO)*
*HEL **28** 05:44:39.1±0.0, 59.59N×27.52E, ML1.7, ML2.2(NAO), Explosion*
*NAO **28** 05:44:39.5±4.0, 59.63N×27.36E, ML2.2*
*IDC **28** 05:44:41.2±1.1, 59.68N×27.26E, mb1 3.2/4, mb1mx3.0/22, ML3.4/3, Error ellipse: s-maj=14.4km s-min=8.0km az=83.0*
ISC 28 05:44:36.2±0.7, 59.58N±0.03×27.59E±0.10, n19, σ1§49/35,

Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VJF	**Virojoki**	**0.96**	**359**	*e*P	**Pg**	**05 44 56.2**	**+0.8**
VJF				*e*S	**Sg**	**05 45 08.2**	**0.0**
VSU	**Vasula**	**1.21**	**202**	*e*P	**Pb**	**05 45 00.8**	**+1.1**
VSU				*e*S	**Sb**	**05 45 15.9**	**+0.2**
PVF	**Pernaja**	**1.30**	**319**	*e*P	**Pb**	**05 45 01.8**	**+0.6**
PVF				*e*S	**Sb**	**05 45 18.0**	**-0.3**
MEF	**Metsahovi**	**1.73**	**293**	*e*P	**Pn**	**05 45 09.1**	**+1.4**
MEF				*e*S	**Sb**	**05 45 30.9**	**0.0**
FIA0	**FINESS Array S**	**2.01**	**339**	*e*P	**Pn**	**05 45 13.6**	**+1.8**
FIA0				*e*S	**Sn**	**05 45 39.4**	**+1.4**
FIA0	**FINESS Array S**	**2.01**	**339**	Pn	**Pn**	**05 45 13.3**	**+1.5**
	baz=159,slow=16						
FIA0				Lg		05 45 40.9	
	baz=163,slow=37						
FINES	**FINESS Array B**	**2.01**	**339**	Pg	**Pg**	**05 45 13.3**	**-3.1**
	1.0nm,0.3s,baz=161,slow=16,SNR=38						
FINES				Lg		05 45 40.5	
	1.5nm,0.3s,baz=162,slow=31,SNR=5.5						
KEF	**Keuruu**	**2.91**	**334**	*e*P	**Pn**	**05 45 27.0**	**+2.3**
KEF				*e*S	**Sn**	**05 46 00.9**	**0.0**
KEF				*e*SB	**Sb**	**05 46 05.8**	**+0.6**
KEF				MSG		05 46 10.1	
	comp=Z,2.7nm,0.3s						
SUF	**Sumiainen**	**3.22**	**348**	*e*P	**Pn**	**05 45 31.0**	**+1.9**
SUF				*e*S	**Sn**	**05 46 08.2**	**-0.5**
SUF				*e*SG	**Sg**	**05 46 17.7**	**-5.9**
SUF				MSG		05 46 19.4	
	comp=Z,1.3nm,0.2s						
JOF	**Joensuu**	**3.80**	**27**	*e*P	**Pn**	**05 45 39.2**	**+1.9**
JOF				*e*S	**Sn**	**05 46 22.8**	**-0.6**
VAF	**Ylistaro**	**4.20**	**328**	*e*P	**Pn**	**05 45 43.8**	**+0.8**
VAF				*e*S	**Sn**	**05 46 31.7**	**-1.8**
KJN	**Kajaani**	**4.52**	**1**	*e*P	**Pn**	**05 45 48.9**	**+1.3**
KJN				*e*S	**Sn**	**05 46 40.0**	**-1.6**
HFS	**Hagfors**	**7.02**	**280**	Pn	**Pn**	**05 46 20.9**	**-1.9**
	baz=101,slow=11						
HFS				Sn	**Sn**	**05 47 39.3**	**-5.0**
	baz=90,slow=28						
HFS				Lg		05 48 14.9	
	baz=96,slow=28						
HFS	**Hagfors**	**7.02**	**280**	Pn	**Pn**	**05 46 21.2**	**-1.7**
	comp=Z,0.0nm,0.3s,baz=90,slow=13,SNR=4.1						
HFS				Lg		05 48 13.3	
	comp=Z,0.1nm,0.3s,baz=93,slow=30,SNR=6.8						
NOA	**NORSAR Array B**	**8.26**	**287**	Pn	**P**	**05 46 36.8**	**-3.3**
	comp=Z,0.2nm,0.3s,baz=91,slow=12,SNR=2.2						
NOA				Lg		05 48 51.9	
	comp=Z,0.3nm,0.3s,baz=293,slow=6.7,SNR=3.4						
AKASG	**Malin Array Be**	**8.95**	**173**	Pn	**P**	**05 46 47.8**	**-2.0**
	comp=Z,1.0nm,0.3s,baz=351,slow=13,SNR=3.5						
ARA0	**ARCESS Array S**	**10.03**	**356**	Pn	**P**	**05 47 01.6**	**-2.9**
	baz=168,slow=16						
ARA0				Sn	**S**	**05 48 49.6**	**-9.4**
	baz=179,slow=28						
ARA0	**ARCESS Array S**	**10.03**	**356**	*e*P	**P**	**05 47 01.6**	**-2.9**
ARA0				*e*S	**S**	**05 48 49.6**	**-9.4**
ARCES	**ARCESS Array B**	**10.03**	**356**	Pn	**P**	**05 47 01.6**	**-2.8**
	comp=Z,0.3nm,0.3s,baz=176,slow=12,SNR=35						
ARCES				Sn	**S**	**05 48 47.7**	**-11**
	comp=Z,0.1nm,0.3s,baz=171,slow=23,SNR=2.2						

*KRSC **28** 05:57:19.7±1.7, 51.47N×159.74E, h16km±4km, ML4.5*
*MOS **28** 05:57:20.6±1.8, 51.43N×159.61E, h44km, mb4.3/8, Error ellipse: s-maj=16.7km s-min=7.4km az=91.5*
*BJI **28** 05:57:20.0, 51.70N×159.40E, h33km, mB4.4, mb4.5*
*NEIC **28** 05:57:23.1±0.7, 51.69N×159.45E, Error ellipse: s-maj=17.2km s-min=11.0km az=158.0*
*IDC **28** 05:57:23.8±0.8, 51.81N×159.45E, h34km±4km, mb3.8/15, mb1 4.0/16, mb1mx3.8/26, ML3.9/1, Error ellipse: s-maj=20.3km s-min=11.1km az=168.0*
ISC 28 05:57:19.9±0.4, 51.43N±0.02×159.89E±0.05, h33km, h33km±1.9km:pP-P,n85,σ1§32/119,mb4.2/23,1C,Off east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RUS	**Russkaya**	**1.32**	**320**	P	**Pn**	**05 57 41.9**	**-0.4**
RUS				S	**Sn**	**05 57 57.7**	**-1.2**
RUS	**Russkaya**	**1.32**	**320**	*i* P	**Pn**	**05 57 41.8**	**-0.5**
RUS				*i* S	**Sn**	**05 57 57.6**	**-1.3**
GRL	**Gorelyy**	**1.59**	**316**	*i* P	**Pn**	**05 57 46.6**	**+0.4**
GRL				eS	**Sn**	**05 58 05.4**	**-0.4**
SPN	**Mys Shipunski**	**1.68**	**3**	P	**Pn**	**05 57 50.0**	**+2.5**
SPN				S	**Sn**	**05 58 11.1**	**+3.1**
SPN	**Mys Shipunski**	**1.68**	**3**	*i* P	**Pn**	**05 57 50.1**	**+2.6**
SPN				*i* S	**Sn**	**05 58 11.0**	**+3.0**
PET	**Petropavlovsk**	**1.77**	**335**	*e*P	**Pn**	**05 57 48.6**	**-0.2**
PET				eS	**Sn**	**05 58 09.3**	**-1.1**
PET	**Petropavlovsk**	**1.77**	**335**	*e*Pn	**Pn**	**05 57 48.0**	**-0.8**
NLC	**Nalytchevo**	**1.78**	**349**	P	**Pn**	**05 57 48.9**	**0.0**
NLC				S	**Sn**	**05 58 09.8**	**-0.8**
NLC	**Nalytchevo**	**1.78**	**349**	*e*P	**Pn**	**05 57 48.6**	**-0.3**
NLC				eS	**Sn**	**05 58 09.5**	**-1.1**
UGLR	**Uglovaya**	**1.90**	**340**	*e*P	**Pn**	**05 57 50.8**	**+0.1**
UGLR				eS	**Sn**	**05 58 13.3**	**-0.4**
PAU	**Pauzhetka**	**1.92**	**272**	*i* P	**Pn**	**05 57 51.4**	**+0.4**
PAU				eS	**Sn**	**05 58 16.5**	**+2.2**
PAU				Smax			
	2µm,1.0s						
SDLR	**Sedlovina**	**1.95**	**342**	*e*P	**Pn**	**05 57 51.8**	**+0.4**
SDLR				eS	**Sn**	**05 58 15.1**	**+0.1**
SMAR	**Somma**	**1.96**	**341**	*e*P	**Pn**	**05 57 52.4**	**+0.9**
SMAR				eS	**Sn**	**05 58 16.2**	**+1.1**
AVH	**Avacha**	**1.97**	**340**	*e*P	**Pn**	**05 57 52.2**	**+0.5**
AVH				eS	**Sn**	**05 58 15.4**	**-0.1**
KOK	**Koryaka**	**2.02**	**338**	*e*P	**Pn**	**05 57 52.7**	**+0.3**
KOK				eS	**Sn**	**05 58 16.4**	**-0.3**
MIPR	**Malaya Ipel'ka**	**2.12**	**295**	*e*P	**Pn**	**05 57 54.3**	**+0.5**
MIPR				eS	**Sn**	**05 58 19.3**	**0.0**
APC	**Apacha**	**2.25**	**313**	*e*P	**Pn**	**05 57 56.2**	**+0.5**
APC				eS	**Sn**	**05 58 25.3**	**+2.6**
APC				Smax			
	650nm,0.7s						
SKR	**Severo-Kuril's**	**2.49**	**254**	*e*PN	**Pn**	**05 57 58.5**	**-0.7**
SKR				*i* S	**Sn**	**05 58 30.1**	**+1.3**
SKR				pmax	pmax		
	comp=N,70nm,0.5s						
SKR				pmax	pmax		
	comp=Z,90nm,0.5s						
SKR				pmax	pmax		
	comp=E,60nm,0.4s						
SKR				smax			
	comp=N,2µm,0.5s						
SKR				smax			
	comp=E,1µm,0.9s						
SKR				smax			
	comp=N,3µm,1.0s						
SKR				smax			
	comp=E,2µm,2.0s						
SKR				MLR	MLR		
	comp=Z,2µm,14.0s						
SKR				MLR	MLR		
	comp=N,2µm,10.0s						
SKR				MLR	MLR		
	comp=E,2µm,10.0s						
GNL	**Ganaly**	**2.56**	**333**	*e*P	**Pn**	**05 58 00.5**	**+0.3**
GNL				eS	**Sn**	**05 58 30.5**	**0.0**
KII	**Karymskiy**	**2.63**	**354**	*e*P	**Pn**	**05 58 00.8**	**-0.3**
KII				eS	**Sn**	**05 58 30.5**	**-1.7**
ALID	**Alaid**	**2.79**	**260**	*e*P	**Pn**	**05 58 03.6**	**+0.2**
ALID				eS	**Sn**	**05 58 35.1**	**-1.1**
MKZ	**Mys Kozlova**	**3.33**	**19**	P	**Pn**	**05 58 10.6**	**-0.4**
MKZ				S	**Sn**	**05 58 46.8**	**-3.1**
MKZ	**Mys Kozlova**	**3.33**	**19**	*i* P	**Pn**	**05 58 10.9**	**-0.1**
MKZ				*i* S	**Sn**	**05 58 48.0**	**-1.9**
TUMR	**Tumrok**	**3.87**	**2**	*e*P	**Pn**	**05 58 19.5**	**+0.8**
TUMR				eS	**Sn**	**05 59 03.1**	**-0.4**
KMNR	**Kamenistaya**	**4.34**	**3**	*e*P	**Pn**	**05 58 26.2**	**+0.8**
KMNR				eS	**Sn**	**05 59 14.0**	**-1.6**
KPT	**Kopyto**	**4.55**	**2**	*e*P	**Pn**	**05 58 30.3**	**+1.9**
KPT				eS	**Sn**	**05 59 20.5**	**-0.4**
ESO	**Esso**	**4.56**	**352**	*e*P	**Pn**	**05 58 28.4**	**-0.1**
ZLN	**Zelenaya**	**4.63**	**6**	*e*P	**Pn**	**05 58 31.2**	**+1.7**
ZLN				eS	**Sn**	**05 59 22.8**	**-0.1**
KOZ	**Kozyrevsk**	**4.64**	**360**	P	**Pn**	**05 58 31.9**	**+2.2**
KOZ	**Kozyrevsk**	**4.64**	**360**	*e*P	**Pn**	**05 58 31.8**	**+2.1**
KOZ				eS	**Sn**	**05 59 24.1**	**+1.0**
LGNR	**Loginova**	**4.69**	**6**	*e*P	**Pn**	**05 58 32.8**	**+2.5**
LGNR				*e*S	**Sn**	**05 59 24.8**	**+0.5**
CIRR	**Tsirk**	**4.72**	**6**	*e*P	**Pn**	**05 58 32.8**	**+1.9**
CIRR				*e*S	**Sn**	**05 59 25.5**	**+0.3**
KRSR	**Krestovskiy**	**4.82**	**5**	*e*P	**Pn**	**05 58 34.2**	**+2.1**
KRSR				*e*S	**Sn**	**05 59 28.1**	**+0.6**
SRDR	**Sredinnyy**	**4.90**	**359**	*e*P	**Pn**	**05 58 35.6**	**+2.3**
SRDR				*e*S	**Sn**	**05 59 30.9**	**+1.2**
KLY	**Klyuchi**	**4.92**	**5**	*e*S	**Sn**	**05 59 27.2**	**-2.9**
KBTR	**Krutoberegovo**	**5.09**	**19**	P	**Pn**	**05 58 36.0**	**-0.1**
KBTR	**Krutoberegovo**	**5.09**	**19**	*e*P	**Pn**	**05 58 35.5**	**-0.6**
KBTR				*e*S	**Sn**	**05 59 31.5**	**-3.0**
KBG	**Krutoberegovo**	**5.12**	**18**	P	**Pn**	**05 58 34.7**	**-1.7**
BKI	**Bering**	**5.25**	**42**	*e*P	**Pn**	**05 58 36.5**	**-1.8**
BKI				*e*S	**Sn**	**05 59 32.2**	**-6.3**
BKI				Smax			
	comp=E,20nm,0.3s						
FX1	**Attu Island--F**	**8.30**	**75**	Pn	**P**	**05 59 21.4**	**+0.4**
	comp=E,4.6nm,0.3s,baz=172,slow=23,SNR=24						
FX1				Sn	**Sn**	**06 00 49.5**	**-5.1**
	comp=E,2.4nm,0.3s,baz=195,slow=21,SNR=10						
FX1	**Attu Island--F**	**8.30**	**75**	*e*Pn	**P**	**05 59 21.0**	**0.0**
BILL	**Bilibino**	**16.95**	**8**	*e*P	**P**	**06 01 18.6**	**+2.7**
BILL				pmax	pmax		
	comp=Z,3.0nm,0.8s						
YAK	**Yakutsk**	**19.48**	**315↑**	*e*P	**P**	**06 01 42.5**	**-4.2**
YAK				pmax	pmax		
	comp=Z,22nm,0.7s						
YAK				MLR	MLR		
	comp=Z,100nm,14.0s						
MDJ	**Mudanjiang**	**21.27**	**263**	P	**P**	**06 02 02.3**	**-3.2**
MDJ				AMB	AMB		
	comp=Z,6.0nm,0.7s,mb4.0						
MDJ				AMB	AMB		
	comp=Z,73nm,3.9s						
MAJO	**Matsushiro**	**21.44**	**234**	*e*P	**P**	**06 02 08.0**	**+0.8**
HIA	**Hailar**	**25.49**	**281**	*e*P	**P**	**06 02 44.3**	**-2.1**
	comp=Z,18nm,1.0s,mb4.6						
BOD	**Bodaibo**	**26.88**	**302**	*e*P	**P**	**06 02 54.2**	**-5.0**
CBIJ	**Chichi jima**	**27.75**	**216**	P	**P**	**06 03 10.6**	**+3.1**
	comp=Z,19nm,0.5s,mb5.0,baz=350,slow=18,SNR=2.3						
JNU	**Nakatsue**	**27.93**	**240**	P	**P**	**06 03 09.6**	**+0.6**
	comp=Z,2.8nm,0.3s,mb4.3,baz=78,slow=19,SNR=1.8						
ILAR	**Eielson Array**	**30.10**	**43**	P	**P**	**06 03 28.9**	**+0.8**
	comp=Z,0.4nm,0.8s,mb3.2,baz=248,slow=8.9,SNR=4.9						
ILAR				pP	pP	06 03 39.4	+1.6
	comp=Z,0.4nm,0.8s,baz=254,slow=8.1,SNR=3.6						
SONM	**Songino Array**	**34.19**	**285**	P	**P**	**06 04 02.1**	**-2.0**
	comp=Z,0.3nm,0.5s,mb3.5,baz=117,slow=3.2,SNR=3.2						
ZAK	**Zakamensk**	**34.95**	**291**	*e*P	**P**	**06 04 08.3**	**-2.3**
ZAL	**Zalesovo**	**43.60**	**304**	P	**P**	**06 05 18.8**	**-3.4**
	comp=Z,1.3nm,0.3s,mb4.1,baz=316,slow=7.1,SNR=3.5						
ZAL	**Zalesovo**	**43.60**	**304**	P	**P**	**06 05 18.8**	**-3.5**
ZAL				pmax	pmax		
	comp=Z,1.0nm,0.3s						
YKA	**Yellowknife Ar**	**44.49**	**41**	P	**P**	**06 05 30.7**	**+1.3**
	comp=Z,0.3nm,0.7s,mb3.1,baz=300,slow=8.2,SNR=6.2						
YKA				pP	pP	06 05 40.6	+1.5
	comp=Z,0.4nm,0.9s,baz=298,slow=7.7,SNR=3.8						
KBS	**Kingsbay**	**48.51**	**352**	*e*P	**P**	**06 05 59.9**	**-1.0**
	comp=Z,7.5nm,0.8s,mb4.8						
KURK	**Kurchatov**	**48.52**	**303**	*e*P	**P**	**06 05 58.3**	**-3.0**
SPITS	**Spitsbergen Ar**	**48.76**	**351**	P	**P**	**06 06 01.4**	**-1.4**
	comp=Z,34nm,1.3s,mb5.2,baz=76,slow=8.3,SNR=15						
SPB4	**Spitsbergen Ar**	**48.76**	**351**	*e*P	**P**	**06 06 01.6**	**-1.2**
MKAR	**Makanchi Array**	**48.78**	**297**	P	**P**	**06 06 00.5**	**-2.8**
	comp=Z,0.6nm,0.6s,mb3.8,baz=67,slow=7.4,SNR=6.0						
MKAR	**Makanchi Array**	**48.78**	**297**	*i* P	**P**	**06 06 02.1**	**-1.2**
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.6s						
BVAR	**Borovoye Array**	**51.34**	**309**	P	**P**	**06 06 19.5**	**-3.2**
	comp=Z,1.7nm,0.5s,mb4.3,baz=53,slow=7.4,SNR=12						
BVAR				pP	pP	06 06 30.4	-2.4
	comp=Z,1.0nm,0.4s,baz=59,slow=8.4,SNR=4.0						
BVAR	**Borovoye Array**	**51.34**	**309**	P	**P**	**06 06 19.5**	**-3.2**
BVAR				pP	pP	06 06 30.4	-2.4
BRVK	**Borovoye**	**51.37**	**309**	*e*P	**P**	**06 06 19.0**	**-4.0**
ZRNK	**Zerenda**	**52.05**	**310**	*e*P	**P**	**06 06 24.5**	**-3.7**
ARCES	**ARCESS Array B**	**54.83**	**342**	P	**P**	**06 06 47.2**	**-1.3**
	comp=Z,3.9nm,1.0s,mb4.4,baz=33,slow=6.2,SNR=7.0						
ARCES	**ARCESS Array B**	**54.83**	**342**	P	**P**	**06 06 47.2**	**-1.3**
ARCES				pmax	pmax		
	comp=Z,4.0nm,1.0s						
ARCES	**ARCESS Array B**	**54.83**	**342**	P	**P**	**06 06 47.2**	**-1.3**
CMAR	**Chiang Mai Arr**	**57.72**	**259**	P	**P**	**06 07 10.8**	**+0.9**
	comp=Z,0.7nm,0.5s,mb4.0,baz=21,slow=6.5,SNR=4.5						
CMAR				pP	pP	06 07 21.8	+1.9
	comp=Z,2.2nm,0.9s,baz=31,slow=6.5,SNR=3.2						
CMAR	**Chiang Mai Arr**	**57.72**	**259**	P	**P**	**06 07 10.8**	**+0.9**
CMAR				*PP	pP	06 07 21.8	+1.9
CMAR				pmax	pmax		
	comp=Z,1.0nm,0.5s						
CMAR				pmax	pmax		
	comp=N,2.0nm,0.9s

MAW	**Mawson**	**25.89**	**143**	P	P	06 22 17.4	-1.4
	4.7nm,1.0s						
QSPA	**South Pole Qui**	**37.95**	**180**	*eP*	P	06 24 02.5	-2.0
	6.0nm,1.0s						
VNDA	**Vanda**	**48.38**	**170**	P	P	06 25 25.9	-3.0
	0.9nm,0.8s,baz=227,slow=8.4,SNR=4.6						
VNDA	**Vanda**	**48.38**	**170**	P	P	06 25 26.4	-2.5
SBA	**Scott Base**	**48.58**	**171**	*eP*	P	06 25 29.6	-0.8
PDAR	**Pinedale Array**	**144.91**	**275**	PKPbc	PKPbc	06 36 21.1	-1.2
	0.9nm,0.9s,baz=108,slow=4.7,SNR=6.2						
NVAR	**Mina Array Bea**	**147.71**	**262**	PKPbc	PKPdf	06 36 31.2	+1.1
	2.4nm,1.0s,baz=143,slow=4.5,SNR=5.6						
NVAR	**Mina Array Bea**	**147.71**	**262**	PKPbc	PKPdf	06 36 31.2	+1.1
YKA	**Yellowknife Ar**	**153.77**	**311**	PKPbc	PKPdf	06 36 43.7	+5.3
	0.1nm,0.4s,baz=88,slow=2.8,SNR=4.7						
YKA				PKPab	PKPab	06 36 56.8	-1.8
	0.3nm,0.8s,baz=91,slow=4.9,SNR=6.0						
YKA	**Yellowknife Ar**	**153.77**	**311**	PKPbc	PKPdf	06 36 43.7	+5.3
YKA				PKPab	PKPab	06 36 56.9	-1.8
ILAR	**Eielson Array**	**165.63**	**336**	PKPab	PKPab	06 37 49.2	-0.5
	0.4nm,0.9s,baz=23,slow=4.7,SNR=4.6						

*MOS **28** 06:48:56.3±1.1,47.62N×155.06E,h48km,mb4.3/9, Error ellipse: s-maj=22.1km s-min=13.4km az=77.7*
*NEIC **28** 06:48:58.5±0.5,47.51N×155.11E,mb4.4/6, Error ellipse: s-maj=15.0km s-min=10.5km az=171.0*
*IDC **28** 06:48:58.4±0.7,47.51N×155.15E,h47km±5km,mb3.8/18, mb1 4.1/20,mb1mx4.0/27, Error ellipse: s-maj=17.9km s-min=13.1km az=167.0*

ISC 28 06:48:56.5±0.6,47.5N±0.1×155.1E±0.1,h47km, h47km±1.1km:pP-P,n53,σ0s97/56,mb4.1/23,East of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**3.22**	**11**	*e*PN		**P**		**06 49 41.7**	**-4.2**
SKR				*i* S		**S**		**06 50 17.8**	**-5.5**
SKR				pmax	pmax				
	comp=Z,50nm,0.4s								
KUR	**Kuril'sk**	**5.52**	**248**	*e*PN		**P**		**06 50 17.4**	**-0.8**
KUR				eS		**S**		**06 51 22.5**	**+1.2**
KUR				pmax	pmax				
	comp=Z,70nm,0.5s								
KUR				smax					
	comp=N,70nm,0.4s								
KUR				smax					
	comp=E,110nm,0.4s								
ASAJ	**Asahikawa**	**9.39**	**253**	P		**P**		**06 51 11.1**	**-0.9**
	comp=E,1.1nm,0.3s,baz=101,slow=16,SNR=5.0								
ASAJ	**Asahikawa**	**9.39**	**253**	PN		**P**		**06 51 11.1**	**-0.9**
ASAJ				pmax	pmax				
	comp=Z,1.0nm,0.3s								
FX1	**Attu Island--F**	**12.72**	**58**	P		**P**		**06 51 52.2**	**-4.9**
	comp=Z,2.7nm,0.3s,baz=292,slow=11,SNR=12								
FX1				S		**S**		**06 54 02.4**	**-16**
	comp=Z,3.3nm,0.3s,baz=72,slow=20,SNR=8.4								
FX1	**Attu Island--F**	**12.72**	**58**	P		**P**		**06 51 52.8**	**-4.3**
KS15	**Wonju Array Si**	**22.37**	**253**	*eP*		**P**		**06 53 44.4**	**-7.3**
SONM	**Songino Array**	**32.37**	**289**	P		**P**		**06 55 22.5**	**-0.9**
	comp=Z,1.1nm,0.7s,mb3.8,baz=59,slow=7.2,SNR=3.8								
ILAR	**Eielson Array**	**35.08**	**39**	P		**P**		**06 55 45.3**	**-1.3**
	comp=Z,0.4nm,0.6s,mb3.5,baz=248,slow=8.0,SNR=12								
INK	**Inuvik**	**40.25**	**33**	P		**P**		**06 56 30.1**	**+0.3**
	comp=Z,1.2nm,0.5s,mb3.9,baz=318,slow=9.0,SNR=11								
INK	**Inuvik**	**40.25**	**33**	P		**P**		**06 56 30.1**	**+0.3**
INK				pmax	pmax				
	comp=Z,1.0nm,0.5s								
INK	**Inuvik**	**40.25**	**33**	*e*P		**P**		**06 56 30.5**	**+0.7**
	comp=Z,1.2nm,0.5s,mb3.9								
ZAL	**Zalesovo**	**43.28**	**306**	P		**P**		**06 56 54.0**	**-0.8**
	comp=Z,1.8nm,0.3s,mb4.3,baz=14,slow=14,SNR=4.0								
ZAL	**Zalesovo**	**43.28**	**306**	P		**P**		**06 56 54.0**	**-0.7**
ZAL				pmax	pmax				
	comp=Z,2.0nm,0.3s								
ZAL	**Zalesovo**	**43.28**	**306**	P		**P**		**06 56 54.0**	**-0.8**
MKAR	**Makanchi Array**	**47.79**	**298**	P		**P**		**06 57 30.7**	**-0.1**
	comp=Z,2.2nm,0.6s,mb4.3,baz=66,slow=7.6,SNR=24								
MKAR				pP		pP		06 57 43.9	+0.3
	comp=Z,1.2nm,0.8s,baz=74,slow=10,SNR=3.4								
MKAR	**Makanchi Array**	**47.79**	**298**	P		**P**		**06 57 30.7**	**-0.1**
MKAR				*PP		pP		06 57 43.9	+0.3
MKAR				pmax	pmax				
	comp=Z,2.0nm,0.6s								
MKAR				pmax	pmax				
	comp=N,1.0nm,0.8s								
KURK	**Kurchatov**	**48.07**	**304**	*e*P		**P**		**06 57 32.4**	**-0.4**
YKA	**Yellowknife Ar**	**49.47**	**38**	P		**P**		**06 57 43.3**	**-0.1**
	comp=N,0.5nm,0.7s,mb3.7,baz=296,slow=7.5,SNR=9.3								
YKA				sP		sP		06 58 01.5	-0.4
	comp=N,0.7nm,0.9s,baz=297,slow=7.5,SNR=5.3								
YKA	**Yellowknife Ar**	**49.47**	**38**	P		**P**		**06 57 43.3**	**-0.2**
YKA				*SP		sP		06 58 01.5	-0.4
YKA				pmax	pmax				
	comp=Z,1.0nm,0.7s								
YKA				pmax	pmax				
	comp=N,1.0nm,0.9s								
BVAR	**Borovoye Array**	**51.41**	**310**	P		**P**		**06 57 58.2**	**-0.2**
	comp=N,4.9nm,0.3s,mb4.8,baz=57,slow=8.0,SNR=36								
BVAR				pP		pP		06 58 11.4	0.0
	comp=N,2.1nm,0.5s,baz=60,slow=12,SNR=4.5								
ARCES	**ARCESS Array B**	**57.55**	**341**	P		**P**		**06 58 41.9**	**-1.2**
	comp=N,2.3nm,0.9s,mb4.2,baz=36,slow=8.2,SNR=5.4								
ARCES	**ARCESS Array B**	**57.55**	**341**	P		**P**		**06 58 41.9**	**-1.1**
ARCES				pmax	pmax				
	comp=Z,2.0nm,0.9s								
BOZ	**Bozeman (W)**	**60.19**	**54**	*e*P		**P**		**06 59 01.9**	**+0.3**
NVAR	**Mina Array Bea**	**60.86**	**64**	P		**P**		**06 59 06.2**	**-0.1**
	comp=Z,1.5nm,1.0s,mb4.1,baz=305,slow=5.3,SNR=4.7								
JOF	**Joensuu**	**61.23**	**334**	*e*p		**P**		**06 59 07.9**	**-0.5**
	comp=Z,0.4nm,0.4s,mb3.9								
PDAR	**Pinedale Array**	**63.17**	**55**	P		**P**		**06 59 21.7**	**0.0**
	comp=Z,0.7nm,0.6s,mb4.0,baz=315,slow=4.2,SNR=8.7								
FINES	**FINESS Array B**	**63.91**	**335**	P		**P**		**06 59 26.1**	**+0.1**
	comp=Z,1.8nm,0.4s,mb4.5,baz=35,slow=7.5,SNR=29								
FINES				pP		pP		06 59 39.8	+0.3
	comp=Z,1.8nm,0.8s,baz=74,slow=10,SNR=3.2								
FINES	**FINESS Array B**	**63.91**	**335**	P		**P**		**06 59 26.1**	**+0.1**
FINES				*PP		pP		06 59 39.8	+0.3
FINES				pmax	pmax				
	comp=Z,2.0nm,0.4s								
FINES				pmax	pmax				
	comp=N,2.0nm,0.8s								
NB2	**NORSAR Subarra**	**67.92**	**342**	P		**P**		**06 59 53.0**	**+1.4**
	comp=N,0.8nm,0.5s,mb4.0,baz=25,slow=6.2								
NOA	**NORSAR Array B**	**67.92**	**342**	P		**P**		**06 59 52.5**	**+0.9**
	comp=N,1.0nm,0.5s,mb4.1,baz=26,slow=6.4,SNR=5.6								
NOA				pP		pP		07 00 05.4	+0.3
	comp=N,1.2nm,0.7s,baz=26,slow=6.4,SNR=3.9								
NOA	**NORSAR Array B**	**67.92**	**342**	P		**P**		**06 59 52.6**	**+1.0**
NOA				*PP		pP		07 00 05.4	+0.2
NOA				pmax	pmax				
	comp=Z,1.0nm,0.5s								
NOA				pmax	pmax				
	comp=N,1.0nm,0.7s								
WRA	**Warramunga Arr**	**69.72**	**201**	P		**P**		**07 00 02.4**	**-1.1**
	comp=N,1.0nm,0.8s,mb3.8,baz=20,slow=6.8,SNR=5.6								
WRA	**Warramunga Arr**	**69.72**	**201**	P		**P**		**07 00 02.4**	**-1.0**
WRA				pmax	pmax				
	comp=Z,1.0nm,0.8s								
ZEI	**Tsey**	**71.52**	**314**	*e*P		**P**		**07 00 14.0**	**+0.1**
AKASG	**Malin Array Be**	**71.64**	**327**	P		**P**		**07 00 14.3**	**-0.2**
	comp=Z,0.8nm,0.3s,mb4.1,baz=33,slow=5.8,SNR=5.8								
ASAR	**Alice Springs**	**73.40**	**200**	P		**P**		**07 00 25.9**	**+0.5**
	comp=Z,0.7nm,0.6s,mb3.8,baz=15,slow=5.3,SNR=12								
TXAR	**Lajitas Array**	**75.91**	**62**	P		**P**		**07 00 40.3**	**+0.6**
	comp=Z,2.3nm,0.5s,mb4.4,baz=300,slow=5.0,SNR=61								
TXAR				pP		pP		07 00 54.0	+0.6
	comp=Z,0.6nm,0.5s,baz=302,slow=3.8,SNR=5.6								
CLL	**Collm**	**76.30**	**337**	P		**P**		**07 00 44.5**	**+3.0**
GERES	**GERESS Array B**	**78.33**	**335**	P		**P**		**07 00 54.6**	**+1.8**
	comp=Z,0.9nm,0.5s,mb4.0,baz=18,slow=4.2,SNR=9.4								
GERES	**GERESS Array B**	**78.33**	**335**	P		**P**		**07 00 54.6**	**+1.8**
GERES				pmax	pmax				
	comp=Z,1.0nm,0.5s								
BRTR	**Keskin Array B**	**78.74**	**318**	P		**P**		**07 00 58.1**	**+2.9**
	comp=Z,1.8nm,0.8s,mb4.1,baz=56,slow=4.5,SNR=8.0								
GIVF	**Givet**	**79.42**	**341**	*e*P		**P**		**07 01 04.0**	**+5.3**
CDF	**Champ du Feu**	**80.43**	**339**	*e*P		**P**		**07 01 08.2**	**+4.0**
	comp=Z,11nm,0.9s,mb4.5								
LOR	**Lormes**	**82.31**	**341**	*e*P		**P**		**07 01 18.3**	**+4.3**
	comp=Z,10nm,0.9s,mb4.5								
SSF	**Saint Saulge**	**82.58**	**341**	*e*P		**P**		**07 01 19.8**	**+4.4**
SMF	**Signal de Mont**	**82.90**	**341**	*e*P		**P**		**07 01 23.0**	**+6.0**
LPL	**La Plagne**	**83.27**	**338**	*e*P		**P**		**07 01 24.3**	**+5.4**
LPG	**La Plagne**	**83.28**	**338**	*e*P		**P**		**07 01 24.5**	**+5.5**
TCF	**Toulx Ste Croi**	**83.60**	**341**	*e*P		**P**		**07 01 25.4**	**+4.9**
MBDF	**Montbardon**	**84.00**	**338**	*e*P		**P**		**07 01 27.3**	**+4.8**
ORIF	**Oris-en-Rattie**	**84.04**	**339**	*e*P		**P**		**07 01 28.2**	**+5.4**
	comp=Z,6.1nm,0.6s,mb4.6								
VIVF	**Saint-Julien-l**	**84.39**	**339**	*e*P		**P**		**07 01 29.7**	**+5.2**
	comp=Z,8.3nm,0.8s,mb4.6								

*IDC **28** 07:28:27.9±6.4, 17.85S×178.26W, h601km±72km, mb3.4/6, mb1 3.6/6, mb1mx3.2/16, Error ellipse: s-maj=100.0km s-min=34.9km az=157.0*

ISC 28 07:28:26.9±1.5,17.7S±0.8×178.4W±0.4,h600km,n8, σ0s29/8,mb4.0/6,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**33.51**	**260**	P		**P**		**07 34 19.1**	**-0.6**
	4.4nm,0.7s,mb4.2,baz=86,slow=13,SNR=6.4								
STKA	**Stephens Creek**	**38.76**	**241**	P		**P**		**07 35 02.6**	**-0.1**
	6.3nm,1.1s,mb4.1,baz=93,slow=11,SNR=5.8								
WB2	**Warramunga Arr**	**44.69**	**259**	*e*P		**P**		**07 35 49.8**	**+0.1**
WRA	**Warramunga Arr**	**44.70**	**259**	P		**P**		**07 35 49.8**	**0.0**
	2.5nm,0.5s,mb4.0,baz=96,slow=6.9,SNR=29								
WRA				PcP		PcP		07 37 18.4	-0.8
	0.2nm,0.3s,baz=95,slow=3.3,SNR=2.8								
AS12	**Alice Springs**	**44.88**	**254**	*e*P		**P**		**07 35 51.3**	**+0.2**
	5.7nm,0.4s,mb4.5								
ASAR	**Alice Springs**	**44.88**	**254**	P		**P**		**07 35 51.4**	**+0.3**
	12nm,0.7s,mb4.5,baz=88,slow=8.9,SNR=178								
ASAR				PcP		PcP		07 37 18.2	-1.6
	0.6nm,0.5s,baz=104,slow=4.1,SNR=5.0								
FITZ	**Fitzroy Crossi**	**53.09**	**260**	P		**P**		**07 36 52.2**	**+0.4**
	4.9nm,1.1s,mb3.8,baz=94,slow=8.0,SNR=4.7								
TXAR	**Lajitas Array**	**85.85**	**58**	P		**P**		**07 40 05.5**	**-0.1**
	1.0nm,1.0s,mb3.4,baz=217,slow=6.3,SNR=6.6								

*IDC **28** 07:41:54.8±9.8, 6.49N×126.19E, h118km±90km, mb3.9/12, mb1 4.0/12, mb1mx3.8/23, Error ellipse: s-maj=42.3km s-min=19.0km az=69.0*
*NEIC **28** 07:41:55.9±4.6, 6.48N×126.23E, h128km±42km, mb4.5/4, Error ellipse: s-maj=22.5km s-min=11.6km az=75.0*
*MAN **28** 07:41:58.2, 6.49N×126.21E, h140km, mb4.8, ML3.7, MS3.6*

ISC 28 07:41:56.7±0.5,6.37N±0.05×126.12E±0.10,h148km±6km, n34,σ0s81/37,mb4.1/15,5C-2D,Mindanao

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
DMPH	**Davao City--Mi**	**0.94**	**319**	*e*P		**P**		**07 42 21.6**	**+0.6**
DMPH				*i* S		**S**		**07 42 40.1**	**+0.4**
GSPH	**General Santos**	**1.20**	**256**	*i*P		**P**		**07 42 23.1**	**-0.3**
GSPH				*i* S		**S**		**07 42 42.1**	**-2.0**
KCP	**Kidapawan**	**1.21**	**302**	*e*P		**P**		**07 42 24.3**	**+0.8**
KCP				*i* S		**S**		**07 42 44.7**	**+0.6**
BIPH	**Bislig**	**1.82**	**7**	*i*P		**P**		**07 42 28.4**	**-1.6**
BIPH				*i* S		**S**		**07 42 55.0**	**-0.6**
CGP	**Cagayan de Oro**	**2.51**	**326**	*e*P		**P**		**07 42 38.5**	**0.0**
BUTP	**Butuan**	**2.63**	**349**	*e*P		**P**		**07 42 40.8**	**+0.8**
BUTP				eS		**S**		**07 43 17.6**	**+4.5**
SCPH	**Surigao**	**3.45**	**350**	*e*P		**P**		**07 42 50.6**	**0.0**
TBP	**Tagbilaran**	**3.99**	**326**	*e*P		**P**		**07 42 57.8**	**+0.1**
PLP	**Palo**	**4.89**	**347**	*e*P		**P**		**07 43 10.2**	**+0.6**
BESP	**Borongan**	**5.24**	**353**	*e*P		**P**		**07 43 15.2**	**+1.0**
KAKA	**Kakadu**	**19.95**	**162**	*i*P		**P**		**07 46 19.2**	**-0.1**
	52nm,0.6s								
FITZ	**Fitzroy Crossi**	**24.32**	**181**	*e*P		**P**		**07 47 03.0**	**+0.9**
	10nm,0.9s,mb4.4								
FITZ	**Fitzroy Crossi**	**24.32**	**181**	P		**P**		**07 47 02.6**	**+0.5**
	9.3nm,0.7s,mb4.4,baz=4.2,slow=6.7,SNR=13								
WRA	**Warramunga Arr**	**27.37**	**163**	P		**P**		**07 47 29.4**	**-0.9**
	1.2nm,0.4s,mb3.9,baz=344,slow=10,SNR=19								
WB2	**Warramunga Arr**	**27.37**	**163**	*e*P		**P**		**07 47 29.3**	**-1.0**
AS12	**Alice Springs**	**30.81**	**166**	*e*P		**P**		**07 48 00.1**	**-0.8**
	2.9nm,0.4s,mb4.4								
ASAR	**Alice Springs**	**30.81**	**166**	P		**P**		**07 48 00.3**	**-0.6**
	3.5nm,0.4s,mb4.4,baz=343,slow=7.3,SNR=54								
FORT	**Forrest**	**36.98**	**177**	*e*P		**P**		**07 48 54.0**	**+0.4**
	21nm,0.4s,mb5.1								
KLBR	**Kellerberrin**	**38.59**	**191**	*e*P		**P**		**07 49 07.3**	**+0.3**
	6.0nm,0.4s,mb4.6								
MUN	**Mundaring**	**39.29**	**193**	*e*P		**P**		**07 49 13.8**	**+1.0**
	6.2nm,0.4s,mb4.6								
NWAO	**Narrogin (SRO)**	**39.98**	**192**	P		**P**		**07 49 19.9**	**+1.4**
	6.4nm,0.4s,mb4.6,baz=3.8,slow=6.2,SNR=11								
STKA	**Stephens Creek**	**40.80**	**160**	*e*P		**P**		**07 49 25.5**	**+0.4**
	3.3nm,0.9s,mb4.0								
STKA	**Stephens Creek**	**40.80**	**160**	P		**P**		**07 49 25.5**	**+0.4**
	6.1nm,1.1s,mb4.2,baz=351,slow=7.4,SNR=8.1								
MKAR	**Makanchi Array**	**55.06**	**325**	P		**P**		**07 51 14.0**	**-1.4**
	0.8nm,0.5s,mb3.7,baz=116,slow=8.5,SNR=7.7								
MKAR				PcP		PcP		07 52 14.1	-0.7
	1.2nm,0.5s,baz=122,slow=3.6,SNR=7.1								
MKAR	**Makanchi Array**	**55.06**	**325**	P		**P**		**07 51 14.0**	**-1.4**
MKAR				PcP		PcP		07 52 14.1	-0.7
BVAR	**Borovoye Array**	**64.79**	**327**	P		**P**		**07 52 21.0**	**-0.7**
	0.4nm,0.5s,mb3.5,baz=106,slow=10,SNR=3.1								
ILAR	**Eielson Array**	**82.99**	**26**	P		**P**		**07 54 06.3**	**+0.1**
	0.6nm,0.5s,mb3.6,baz=250,slow=4.9,SNR=23								
VNDA	**Vanda**	**86.11**	**173**	P		**P**		**07 54 22.1**	**+0.6**
	0.6nm,1.0s,mb3.3,baz=318,slow=7.1,SNR=4.5								
ARCES	**ARCESS Array B**	**87.73**	**340**	P		**P**		**07 54 28.7**	**-0.9**
	2.2nm,0.6s,mb4.2,baz=90,slow=3.6,SNR=14								
FINES	**FINESS Array B**	**89.23**	**332**	P		**P**		**07 54 36.4**	**-0.3**
	0.6nm,0.5s,mb3.8,baz=56,slow=6.9,SNR=6.2								
YKA	**Yellowknife Ar**	**97.35**	**24**	P		**P**		**07 55 14.2**	**+0.3**
	0.2nm,0.6s,mb3.6,baz=302,slow=4.7,SNR=8.8								
YKA	**Yellowknife Ar**	**97.35**	**24**	P		**P**		**07 55 14.2**	**+0.3**
SCHQ	**Schefferville**	**118.07**	**8**	PKP		PKPdf		08 00 28.3	+2.4
	1.0nm,0.5s,baz=315,slow=7.1,SNR=5.5								
SCHQ	**Schefferville**	**118.07**	**8**	PKP		PKPdf		08 00 28.3	+2.4

*IDC **28** 07:44:03.3±1.1, 0.96N×123.57E, mb3.9/7, mb1 4.2/8, mb1mx3.9/20, ML4.6/1, MS3.6/1, Ms1 3.8/1, ms1mx2.8/25, Error ellipse: s-maj=124.0km s-min=17.8km az=67.0*

ISC 28 07:44:07.5±2.9,0.9N±0.2×123.3E±0.3,h39km±26km,n18, σ0s88/17,mb4.2/11,MS3.5/1,1C,Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
KKM	**Kota Kinabalu**	**8.76**	**306**	*i*P		**P**		**07 46 13.5**	**-1.0**
	76nm,0.3s								
KAKA	**Kakadu**	**16.23**	**147**	*e*S		**P**		**07 47 55.5**	**+1.2**
FITZ	**Fitzroy Crossi**	**19.01**	**173**	P		**P**		**07 48 28.4**	**-0.5**
	1.4nm,0.3s,baz=2.5,slow=5.4,SNR=3.8								
FITZ	**Fitzroy Crossi**	**19.01**	**173**	*e*S		**P**		**07 48 30.3**	**+1.4**
WRA	**Warramunga Arr**	**23.35**	**153**	P		**P**		**07 49 13.3**	**-0.1**
	5.2nm,0.6s,mb4.1,baz=326,slow=11,SNR=9.5								
WB2	**Warramunga Arr**	**23.35**	**153**	*e*S		**P**		**07 49 14.0**	**+0.5**
ASAR	**Alice Springs**	**26.48**	**158**	P		**P**		**07 49 43.0**	**-0.3**
	1.2nm,0.8s,mb3.5,baz=339,slow=7.7,SNR=3.6								
CMAR	**Chiang Mai Arr**	**29.63**	**308**	LR		LR		08 02 40.2	
	comp=Z,115nm,19.6s,MS3.5,baz=245,slow=38								
STKA	**Stephens Creek**	**36.90**	**154**	P		**P**		**07 51 13.1**	**-1.4**
	5.8nm,1.1s,mb4.3,baz=332,slow=13,SNR=3.3								
PKI	**Pulchoki**	**44.99**	**309**	*e*P		**P**		**07 52 22.7**	**+1.5**
	6.1nm,0.5s,mb4.7								
KKN	**Kakani**	**45.20**	**310**	*e*P		**P**		**07 52 23.5**	**+0.7**
	6.8nm,0.4s,mb4.8								
DMN	**Daman**	**45.24**	**309**	*e*P		**P**		**07 52 23.7**	**+0.5**
GKN	**Gorkha**	**45.80**	**310**	*e*P		**P**		**07 52 27.7**	**+0.1**
	9.5nm,0.5s,mb5.0								
KOLN	**Koldanda**	**46.49**	**309**	*e*P		**P**		**07 52 32.8**	**-0.3**
	8.1nm,0.5s,mb4.9								
SONM	**Songino Array**	**49.01**	**345**	P		**P**		**07 52 51.8**	**-0.7**
	0.7nm,0.6s,mb3.9,baz=169,slow=7.3,SNR=3.5								
MKAR	**Makanchi Array**	**58.04**	**328**	P		**P**		**07 53 58.5**	**-0.6**
	1.2nm,0.6s,mb4.1,baz=124,slow=8.3,SNR=6.1								
BVAR	**Borovoye Array**	**67.90**	**329**	P		**P**		**07 55 05.0**	**+0.8**
	0.7nm,0.8s,mb3.8,baz=130,slow=11,SNR=1.7								
VNDA	**Vanda**	**81.08**	**172**	P		**P**		**07 56 18.3**	**-1.5**
	0.5nm,0.7s,mb3.5,baz=318,slow=7.4,SNR=2.7								

*MAN **28** 08:23:29.4, 17.13N×121.80E, h49km, mb4.3, ML3.2, MS2.9*

ISC 28 08:23:30.2±1.3,17.13N±0.05×121.80E±0.09,h58km±12km, n8,σ0s79/15,7C-1D,Luzon

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CAUP	**Cauayan**	**0.19**	**172**	*e*P		**P**		**08 23 38.8**	**-0.5**
CAUP				eS		**S**		**08 23 46.3**	**+0.2**
PALP	**Palanan**	**0.60**	**96**	*e*P		**P**		**08 23 43.8**	**+0.5**
PALP				eS		**S**		**08 24 05.2**	**+12**
APYP	**Conner**	**0.90**	**324**	*e*P		**P**		**08 23 47.0**	**0.0**
APYP				eS		**S**		**08 24 00.0**	**+0.4**
ABRA	**Dolores**	**1.16**	**297**	*e*P		**P**		**08 23 49.8**	**-0.7**
ABRA				eS		**S**		**08 24 05.2**	**-0.4**
BALP	**Baler**	**1.40**	**189**	*e*P		**P**		**08 23 53.4**	**-0.7**
BALP				eS		**S**		**08 24 12.0**	**+0.4**
PCPH	**Palayan**	**1.70**	**203**	*e*P		**P**		**08 23 57.1**	**-1.1**
PCPH				eS		**S**		**08 24 18.8**	**+0.1**
BOLP	**Bolinao**	**1.95**	**248**	*e*P		**P**		**08 24 03.8**	**+2.1**
BOLP				eS		**S**		**08 24 30.0**	**+5.1**
LUBP	**Lubang**	**3.69**	**204**	*e*P		**P**		**08 24 30.5**	**+4.2**

*IDC **28** 08:39:46.5±1.2, 52.46S×19.10E, mb3.6/3, mb1 3.8/3, mb1mx3.6/15, Error ellipse: s-maj=85.6km s-min=29.1km az=52.0*
*NEIC **28** 08:39:47.5±1.0, 52.34S×19.22E, h10km, Error ellipse: s-maj=30.4km s-min=23.4km az=92.0*

ISC 28 08:39:50.8±3.8,52.9S±0.5×19.7E±0.5,h10km,n12, σ0s69/8,mb3.9/4,1C-2D,Southwest of Africa

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
VNA2	**Neumayer--Watz**	**21.72**	**204**	*i*		**P**		**08 44 45.0**	**+1.3**
VNA1	**Neumayer--Stat**	**21.76**	**205**	*i*		**P**		**08 44 37.0**	**-7.0**
VNA3	**Neumayer Olymp**	**22.49**	**204**	*i*		**P**		**08 44 50.5**	**-0.9**
MAW	**Mawson**	**25.27**	**142**	P		**P**		**08 45 18.4**	**+0.2**
	2.3nm,1.1s,mb3.6,baz=275,slow=8.4,SNR=2.3								
MAW	**Mawson**	**25.27**	**142**	P		**P**		**08 45 18.6**	**+0.4**
QSPA	**South Pole Qui**	**37.29**	**180**	*e*P		**P**		**08 47 03.6**	**-0.5**
	14nm,0.7s,mb4.9								
VNDA	**Vanda**	**47.71**	**170**	P		**P**		**08 48 28.5**	**-0.3**
	0.7nm,0.9s,mb3.7,baz=217,slow=5.3,SNR=2.9								
ASAR	**Alice Springs**	**84.85**	**123**	P		**P**		**08 52 26.8**	**+0.1**
	0.3nm,0.8s,mb3.5,baz=207,slow=3.8,SNR=4.1								
PDAR	**Pinedale Array**	**145.11**	**274**	PKP		PKPdf		08 59 22.6	-8.1
	0.7nm,1.0s,baz=117,slow=4.0,SNR=4.7								
NVAR	**Mina Array Bea**	**147.75**	**260**	PKPbc		PKPdf		08 59 32.0	-3.2
	0.8nm,0.8s,baz=135,slow=5.1,SNR=5.3								
YKA	**Yellowknife Ar**	**154.31**	**310**	PKPbc		PKPdf		08 59 45.7	+1.5
	0.3nm,1.0s,baz=90,slow=1.8,SNR=3.3								
YKA				PKPab		PKPab		08 59 58.5	-7.5
	0.1nm,0.6s,baz=92,slow=5.0,SNR=4.8								
YKA	**Yellowknife Ar**	**154.31**	**310**	PKPbc		PKPdf		08 59 45.7	+1.5
YKA				PKPab		PKPab		08 59 58.5	-7.5

*HEL **28** 09:00:07.5±0.2, 64.73N×30.88E, ML1.4, ML1.9(UPP), Explosion*
*IDC **28** 09:00:09.9±2.6, 64.77N×30.69E, mb1 3.0/4, mb1mx2.9/22, ML2.2/4, Error ellipse: s-maj=36.8km s-min=7.9km az

KKN	**Kakani**	**39.63**	**279**	*e*P	**P**	**09 40 25.2**	**+0.2**
DMN	**Daman**	**39.82**	**279**	*e*P	**P**	**09 40 26.5**	**-0.1**
MKAR	**Makanchi Array**	**41.21**	**309**	P	**P**	**09 40 38.2**	**+0.4**
	0.4nm,0.8s,mb3.1,baz=90,slow=12,SNR=3.5						
WRA	**Warramunga Arr**	**48.94**	**175**	P	**P**	**09 41 39.1**	**-0.8**
	0.8nm,0.7s,mb3.8,baz=354,slow=8.4,SNR=6.6						
ASAR	**Alice Springs**	**52.60**	**176**	P	**P**	**09 42 08.5**	**+0.8**
	0.5nm,0.8s,mb3.5,baz=10,slow=13,SNR=5.3						
ILAR	**Eielson Array**	**60.91**	**29**	P	**P**	**09 43 05.4**	**-0.7**
	0.2nm,0.7s,mb3.4,baz=280,slow=5.5,SNR=4.0						
FINES	**FINESS Array B**	**71.34**	**331**	P	**P**	**09 44 12.7**	**+0.2**
	2.6nm,1.1s,mb4.1,baz=48,slow=17,SNR=2.8						
YKA	**Yellowknife Ar**	**75.03**	**26**	P	**P**	**09 44 35.0**	**+1.1**
	0.2nm,0.8s,mb3.1,baz=294,slow=5.6,SNR=3.6						

MAN ***28*** *09:40:32.0,6.19N×124.08E,h36km,mb4.3,ML3.1,MS2.9*
ISC 28 09:40:34.3±2.1,6.3N±0.1×124.0E±0.1,h36km,n4,σ0§99/7,
2C-2D,Mindanao

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CTBH	**Cotabato--PC H**	**0.93**	**16**⇑	*i*P	**P**	**09 40 51.1**	**+0.1**
CTBH				*i* S	**S**	**09 41 03.4**	**+0.1**
GSPH	**General Santos**	**0.98**	**103**⇓	*i*P	**P**	**09 40 51.5**	**-0.2**
GSPH				*i* S	**S**	**09 41 05.7**	**+1.1**
KCP	**Kidapawan**	**1.29**	**58**⇓	*e*P	**P**	**09 40 53.4**	**-2.7**
PAGZ	**Pagadian**	**1.64**	**338**⇓	*e*P	**P**	**09 41 00.8**	**-0.3**
PAGZ				*e*S	**S**	**09 41 22.0**	**+0.8**

CASC 28 10:03:26.6±1.9,11.22N×86.74W,h1km±6km,MD3.9,
ML2.7,4C-5D,Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CRUN	**El Crucero**	**0.88**	**30**⇑	*e*P	Pg	10 03 45.1	+1.0
SSNN	**San Juan del S**	**0.88**	**85**	*e*P	Pg	10 03 43.9	-0.3
TICN	**Ticuantepe**	**0.95**	**32**	*e*P	Pb	10 03 45.9	+0.3
APON	**Apoyo**	**0.96**	**43**⇑	*e*P	Pb	10 03 45.5	-0.2
COPN	**Copaltepe**	**0.97**	**9**	*e*P	Pb	10 03 45.6	-0.2
COPN				*e*S	Sg	10 03 59.0	+0.1
XAVN	**Gruta Xavier**	**1.01**	**24**⇓	*e*P	Pb	10 03 46.9	+0.3
MGAN	**Managua**	**1.04**	**28**⇓	*e*P	Pb	10 03 47.0	-0.2
MGAN				*e*S	Sb	10 04 01.8	+0.6
MGAN				*i*		10 04 02.3	
	comp=N,164nm,0.4s						
WILN	**Americas 2**	**1.08**	**30**	*e*P	Pb	10 03 47.3	-0.6
WILN				*e*S	Sb	10 04 02.4	0.0
COFN	**Cofrada**	**1.12**	**34**⇓	*e*P	Pb	10 03 47.9	-0.5
CONN	**Concepcion**	**1.15**	**72**	*e*P	Pb	10 03 48.1	-0.8
PYN	**Poneloya**	**1.19**	**347**	*e*P	Pb	10 03 49.1	-0.6
MADN	**Villa Maderas**	**1.20**	**81**⇑	*e*P	Pb	10 03 49.0	-0.8
MOMJ	**Momotombo**	**1.20**	**9**⇓	*e*P	Pb	10 03 49.4	-0.4
LEON	**Leon**	**1.20**	**353**	*e*P	Pb	10 03 48.8	-1.0
CNGN	**Cerro Negro**	**1.28**	**2**⇓	*e*P	Pb	10 03 50.2	-0.9
PYTN	**Playitas**	**1.47**	**27**	*e*P	Pn	10 03 52.9	-1.5
SOMN	**Somoto**	**2.19**	**3**	*e*P	Pn	10 04 04.9	+0.2

IDC ***28*** *10:14:40.9±0.9,37.55N×36.33E,mb3.9/6,mb1 3.9/11,*
mb1mx3.8/20,ML3.5/5,MS3.1/2,Ms1 3.1/2,ms1mx2.5/27,
Error ellipse: s-maj=23.2km s-min=13.4km az=56.0
NEIC ***28*** *10:14:41.1,37.50N×36.31E,h12km,mb4.3/5,ML4.2(ISK),*
After ISK.
ISK ***28*** *10:14:41.1,37.50N×36.31E,h12km,MD4.1,ML4.2*
NSSC ***28*** *10:14:44.8,37.46N×36.56E,h47km±19km*
ISC 28 10:14:41.4±0.2,37.50N±0.02×36.30E±0.03,h12km,n69,
σ1§10/84,mb4.0/12,MS3.1/1,4D,Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CEYT	**Ceyhan**	**0.66**	**222**	*i* PG	**Pg**	**10 14 54.4**	**-0.3**
GAZ	**Gaziantep**	**0.80**	**114**	*i* PG	**Pg**	**10 14 56.8**	**-0.6**
DRWC	**Darouich**	**0.92**	**161**	⇑P	**Pb**	**10 14 59.9**	**+1.1**
DRWC				⇑S	**Sb**	**10 15 11.9**	**+1.1**
COBT	**Iskenderun**	**0.98**	**182**	*i* P	**Pb**	**10 15 00.3**	**+0.5**
COBT				*i* S	**Sb**	**10 15 14.6**	**+2.2**
GZT	**Gaziantep**	**1.02**	**98**	*i* P	**Pb**	**10 15 00.2**	**-0.3**
GZT				*i* S	**Sb**	**10 15 13.6**	**+0.1**
HTY	**Hatay**	**1.38**	**185**	*i* PN	**Pn**	**10 15 06.7**	**+0.1**
BNN	**Bunyan**	**1.40**	**345**	*i* PN	**Pn**	**10 15 06.5**	**-0.3**
BTCH	**Batrach**	**1.46**	**175**	⇓P	**Pn**	**10 15 07.9**	**+0.2**
BTCH				⇓S	**Sb**	**10 15 24.8**	**-1.7**
NIG	**Nigde**	**1.47**	**295**	*i* PN	**Pn**	**10 15 07.9**	**0.0**
ARNB	**Al Arnab**	**1.66**	**189**	⇑P	**Pn**	**10 15 11.8**	**+1.3**
ARNB				⇑S	**Sn**	**10 15 30.6**	**-1.2**
AVNT	**Avonos**	**1.71**	**319**	*i* P	**Pn**	**10 15 11.8**	**+0.5**
AVNT				*i* S	**Sn**	**10 15 36.6**	**+3.4**
MYA	**Malataya**	**1.87**	**63**	*i* PN	**Pn**	**10 15 14.3**	**+0.7**
SLNF	**Slenfeh**	**1.90**	**182**	⇑P	**Pn**	**10 15 15.0**	**+1.0**
SLNF				⇑S	**Sn**	**10 15 37.4**	**-0.7**
WRDH	**Warideh**	**1.99**	**177**	⇓P	**Pn**	**10 15 15.6**	**+0.3**
WRDH				⇓S	**Sn**	**10 15 37.3**	**-2.5**
YOZ	**Yozgat**	**2.27**	**341**	*e*Pn	**Pn**	**10 15 18.9**	**-0.4**
SVST	**Sivas**	**2.33**	**12**	*i* P	**Pn**	**10 15 20.7**	**+0.6**
SVST				*i* S	**Sn**	**10 15 55.2**	**+6.3**
ELZG	**Elazig**	**2.34**	**64**	*i* P	**Pn**	**10 15 23.2**	**+2.9**
ELZG				*i* S	**Sn**	**10 15 49.1**	**-0.2**
IKL	**Isikli**	**2.44**	**240**	*i* PN	**Pn**	**10 15 21.9**	**+0.1**
KAMT	**Kaman**	**2.76**	**313**	*i* PN	**Pn**	**10 15 27.1**	**+0.8**
TOKT	**Tokat**	**2.82**	**4**	*e*PN	**Pn**	**10 15 27.2**	**0.0**
BRTR	**Keskin Array B**	**3.05**	**318**	Pn	**Pn**	**10 15 31.5**	**+1.1**
	4.3nm,0.3s,baz=138,slow=15,SNR=67						
BRTR				Sn	**Sn**	**10 16 08.1**	**+1.0**
	7.9nm,0.3s,baz=142,slow=34,SNR=8.7						
BRTR				Lg		10 16 17.9	
	5.2nm,0.3s,baz=146,slow=28,SNR=5.8						
HDMB	**Hadim**	**3.09**	**261**	*e*PN	**Pn**	**10 15 31.9**	**+0.9**
DIY	**Diyarbakir**	**3.14**	**82**	*e*PN	**Pn**	**10 15 31.1**	**-0.6**
KONT	**Konya--Tatoy**	**3.16**	**279**	*i* PN	**Pn**	**10 15 32.6**	**+0.7**
HWQ	**Hawqa**	**3.23**	**185**	*e*PN	**Pn**	**10 15 36.7**	**+3.8**
CTKT	**Corum**	**3.33**	**340**	*i* P	**Pn**	**10 15 35.6**	**+1.2**
CTKT				*i* S	**Sn**	**10 16 28.2**	**+14**
CSS	**Prodhromos**	**3.49**	**224**	*e*Pn	**Pn**	**10 15 39.1**	**+2.5**
KELT	**Kelkit**	**3.51**	**40**	*i* P	**Pn**	**10 15 36.7**	**-0.3**
EZC	**Erzincan**	**3.55**	**50**	*e*PN	**Pn**	**10 15 33.6**	**-4.0**
ANTO	**Ankara**	**3.62**	**312**	*e*PN	**Pn**	**10 15 39.7**	**+1.1**
BHL	**Bhannes**	**3.63**	**189**	*e*PN	**Pn**	**10 15 38.1**	**-0.5**
ELDT	**Eldivan**	**3.73**	**324**	*i* P	**Pn**	**10 15 41.2**	**+1.1**
ELDT				*i* S	**Sn**	**10 16 32.0**	**+7.5**
KIZT	**Kizilcal**	**3.75**	**293**	PN	**Pn**	**10 15 41.1**	**+0.8**
GUMT	**Gumushane**	**3.86**	**39**	*e*PN	**Pn**	**10 15 42.6**	**+0.7**
TOS	**Tosya**	**3.95**	**334**	*e*PN	**Pn**	**10 15 43.7**	**+0.5**
BEST	**Besiri**	**3.96**	**83**	*i* P	**Pn**	**10 15 46.4**	**+3.1**
BEST				*i* S	**Sn**	**10 16 43.5**	**+13**
BOYT	**Boyabat**	**4.06**	**345**	*i* P	**Pn**	**10 15 45.5**	**+0.7**
BOYT				*i* S	**Sn**	**10 16 49.7**	**+17**
BALT	**Daday**	**4.62**	**332**	*i* P	**Pn**	**10 15 52.9**	**+0.2**
BALT				*i* S	**Sn**	**10 16 55.0**	**+8.2**
ASF	**Jabal al Asfar**	**5.34**	**175**	Pn	**Pn**	**10 16 04.0**	**+1.2**
	1.0nm,0.3s,baz=47,slow=19,SNR=3.5						
ASF				Sn	**Sn**	**10 17 09.1**	**+4.1**
	1.3nm,0.3s,baz=59,slow=19,SNR=4.7						
ASF				Lg		10 17 30.5	
	2.0nm,0.3s,baz=69,slow=21,SNR=4.7						
IDI	**Anoyia**	**9.46**	**260**	Pn	**P**	**10 16 58.7**	**-1.8**
	1.2nm,0.3s,baz=45,slow=14,SNR=4.0						
MLR	**Muntele Rosu**	**11.13**	**319**	LR	LR	10 21 43.6	
	comp=Z,102nm,19.7s,baz=244,slow=38						
AKASG	**Malin Array Be**	**14.13**	**341**	Pn	**P**	**10 18 01.5**	**-1.9**
	0.3nm,0.3s,baz=153,slow=12,SNR=6.5						
GERES	**GERESS Array B**	**19.93**	**312**	P	**P**	**10 19 14.8**	**-1.0**
	0.1nm,0.3s,baz=114,slow=12,SNR=3.7						
PRU	**Pruhonice**	**19.99**	**316**	*e*P	**P**	**10 19 15.4**	**-1.0**
KHC	**Kasperske Hory**	**20.13**	**312**	*e*P	**P**	**10 19 15.5**	**-2.4**
PGF	**Pioggiola**	**21.46**	**292**	*e*P	**P**	**10 19 31.8**	**+0.1**
MOX	**Moxa**	**21.95**	**315**	*e*P	**P**	**10 19 40.0**	**+3.5**
FRF	**La Foret Royal**	**23.26**	**294**	*e*P	**P**	**10 19 46.3**	**-3.2**
	25nm,1.2s,mb4.2						
MBDF	**Montbardon**	**23.30**	**297**	*e*P	**P**	**10 19 49.4**	**-0.4**
	8.7nm,0.7s,mb4.0						
BNI	**Bardonecchia**	**23.41**	**298**	*e*P	**P**	**10 19 51.7**	**+0.8**
LPG	**La Plagne**	**23.43**	**299**	*e*P	**P**	**10 19 52.1**	**+1.0**
	7.2nm,0.7s,mb3.9						
LPL	**La Plagne**	**23.45**	**299**	*e*P	**P**	**10 19 51.7**	**+0.5**
CDF	**Champ du Feu**	**23.74**	**307**	*e*P	**P**	**10 19 53.2**	**-0.8**
HINF	**Hinteralfeld**	**23.85**	**305**	*e*P	**P**	**10 19 53.9**	**-1.2**
HAU	**Haudompre**	**24.23**	**305**	*e*P	**P**	**10 19 57.8**	**-1.0**
	12nm,0.8s,mb4.1						
VIVF	**Saint-Julien-l**	**24.80**	**297**	*e*P	**P**	**10 20 02.7**	**-1.7**
FINES	**FINESS Array B**	**24.81**	**348**	P	**P**	**10 20 03.2**	**-1.1**
	1.5nm,0.6s,mb3.7,baz=145,slow=17,SNR=9.3						
SMF	**Signal de Mont**	**25.62**	**301**	*e*P	**P**	**10 20 11.3**	**-0.8**
	9.1nm,0.8s,mb4.1						
LOR	**Lormes**	**25.71**	**303**	*e*P	**P**	**10 20 12.0**	**-0.9**
AVF	**Avril sur Loir**	**25.97**	**301**	*e*P	**P**	**10 20 14.3**	**-1.1**
	13nm,0.9s,mb4.2						
RJF	**Les Rejaudoux**	**27.07**	**298**	*e*P	**P**	**10 20 24.6**	**-0.9**
KURK	**Kurchatov**	**32.67**	**52**	*e*P	**P**	**10 21 14.0**	**-1.3**
MKAR	**Makanchi Array**	**34.91**	**60**	P	**P**	**10 21 34.8**	**+0.1**
	7.2nm,1.2s,mb4.5,baz=260,slow=7.4,SNR=7.7						
KMBO	**Kilima Mbogo**	**38.44**	**178**	LR	LR	10 38 59.9	
	comp=Z,30nm,20.6s,MS3.1,baz=98,slow=38						
CMAR	**Chiang Mai Arr**	**57.48**	**91**	P	**P**	**10 24 31.4**	**-1.4**
	0.6nm,0.4s,mb4.0,baz=296,slow=8.0,SNR=4.6						
YKA	**Yellowknife Ar**	**77.63**	**347**	P	**P**	**10 26 37.9**	**-0.6**
	0.9nm,0.9s,mb3.7,baz=27,slow=5.5,SNR=16						
YKA	**Yellowknife Ar**	**77.63**	**347**	P	**P**	**10 26 37.9**	**-0.6**
ILAR	**Eielson Array**	**78.03**	**1**	P	**P**	**10 26 40.5**	**-0.2**
	0.2nm,0.5s,mb3.3,baz=332,slow=2.0,SNR=5.8						
PDAR	**Pinedale Array**	**94.28**	**336**	P	**P**	**10 28 01.1**	**-0.4**
	0.4nm,0.8s,mb3.9,baz=31,slow=5.3,SNR=3.3						

IDC ***28*** *10:26:37.0±2.9,20.11S×169.72E,mb3.9/5,mb1 4.1/5,*
mb1mx4.0/12,MS3.6/2,Ms1 3.6/2,ms1mx3.2/17,Error
ellipse: s-maj=114.0km s-min=29.8km az=144.0
ISC 28 10:26:41.2±3.1,20.6S±0.2×169.8E±0.2,h48km±20km,n11,
σ0§77/10,mb3.8/5,MS3.4/2,Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BKM	**Butte a Klehm**	**3.22**	**333**	*i* P	**P**	**10 27 30.9**	**+0.3**
DZM	**Mont Dzumac**	**3.47**	**244**	*e*P	**P**	**10 27 34.2**	**+0.1**
DZM				*e*S	**S**	**10 28 12.7**	**-1.6**
NOUC	**Port Laguerre**	**3.60**	**244**	*e*P	**P**	**10 27 35.8**	**-0.1**
NOUC				*e*S	**S**	**10 28 18.6**	**+0.9**
CTA	**Charters Tower**	**22.08**	**267**	LR	LR	10 39 14.8	
	comp=Z,113nm,20.5s,MS3.3,baz=228,slow=34						
STKA	**Stephens Creek**	**27.62**	**240**	P	**P**	**10 32 27.6**	**+1.3**
	2.7nm,0.7s,mb4.0,baz=83,slow=12,SNR=4.5						
STKA				LR	LR	10 41 37.2	
	comp=Z,174nm,21.1s,MS3.6,baz=25,slow=32						
WRA	**Warramunga Arr**	**33.23**	**265**	P	**P**	**10 33 16.0**	**0.0**
	0.4nm,0.4s,mb3.7,baz=101,slow=8.3,SNR=3.3						
ASAR	**Alice Springs**	**33.34**	**258**	P	**P**	**10 33 17.2**	**+0.2**
	1.9nm,0.8s,mb4.1,baz=83,slow=9.3,SNR=19						
CMAR	**Chiang Mai Arr**	**79.52**	**294**	P	**P**	**10 38 44.9**	**-0.2**
	1.1nm,0.8s,mb3.8,baz=130,slow=4.1,SNR=5.6						
ILAR	**Eielson Array**	**91.32**	**17**	P	**P**	**10 39 41.6**	**-0.9**
	0.2nm,0.7s,mb3.5,baz=217,slow=4.5,SNR=3.2						
YKA	**Yellowknife Ar**	**101.59**	**27**	P	P	10 40 29.9	+0.7
	0.2nm,0.2s,baz=256,slow=3.8,SNR=3.4						
GERES	**GERESS Array B**	**145.89**	**331**	PKPbc	PKPbc	10 46 16.3	+0.7
	0.2nm,0.3s,baz=56,slow=4.8,SNR=3.6						

IDC ***28*** *10:45:20.4±2.2,7.59S×150.55E,mb3.1/2,mb1 3.5/4,*
mb1mx3.4/14,ML2.9/2,Error ellipse: s-maj=123.0km
s-min=26.8km az=136.0
ISC 28 10:45:22.9±1.6,8.1S±0.3×150.9E±0.2,h33km,n4,σ1§47/5,
mb3.1/2,Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**3.93**	**250**	Pn	**Pn**	**10 46 22.0**	**-0.6**
	1.0nm,0.3s,baz=25,slow=17,SNR=4.4						
PMG				Sn	**Sn**	**10 47 08.7**	**+0.5**
	2.7nm,0.3s,baz=11,slow=16,SNR=5.9						
WRA	**Warramunga Arr**	**19.91**	**232**	P	**P**	**10 49 53.0**	**-1.7**
	0.1nm,0.3s,baz=45,slow=9.4,SNR=6.1						
ASAR	**Alice Springs**	**22.49**	**225**	P	**P**	**10 50 22.4**	**+1.5**
	0.2nm,0.5s,mb2.9,baz=56,slow=9.3,SNR=5.6						
ILAR	**Eielson Array**	**85.89**	**22**	P	**P**	**10 58 00.6**	**+0.2**
	0.2nm,0.8s,mb3.4,baz=237,slow=4.7,SNR=4.2						

BJI ***28*** *11:22:53.7,51.30N×179.60E,h55km,mB4.6,Ms4.2,*
Msz3.9
NEIC ***28*** *11:22:56.7±0.5,51.28N×179.56E,h56km±3km,mb3.9/9,*
ML4.3(AEIC),Error ellipse: s-maj=9.1km s-min=3.5km
az=182.0
IDC ***28*** *11:22:57.1±4.0,51.41N×179.56E,h54km±32km,mb3.9/15,*
mb1 4.1/15,mb1mx4.0/26,ML4.1/1,MS3.5/5,Ms1 3.5/5,
ms1mx3.1/31,Error ellipse: s-maj=36.5km s-min=15.1km
az=8.0
ISC 28 11:22:55.3±0.7,51.28N±0.09×179.47E±0.05,h61km±5km,
n72,σ0§92/82,mb4.2/23,1C,Rat Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KIMD	**Kanaga Island**	**2.11**	**76**	P	**P**	**11 23 28.6**	**-0.4**
KIMD				S	**S**	**11 23 55.3**	**+1.2**
KIKV	**Kanaga Island**	**2.18**	**73**	P	**P**	**11 23 30.1**	**+0.1**
KIKV				S	**S**	**11 23 58.2**	**+2.4**
KIWB	**Kanaga Island**	**2.19**	**74**	P	**P**	**11 23 29.6**	**-0.5**
KINC	**Kanaga Island**	**2.22**	**72**	P	**P**	**11 23 31.6**	**+1.0**
KIRH	**Kanaga Island**	**2.23**	**73**	P	**P**	**11 23 31.1**	**+0.4**
ADAG	**Mount Adagdak**	**2.54**	**73**	P	**P**	**11 23 35.6**	**+0.4**
ADAG				S	**S**	**11 24 07.2**	**+2.2**
ETKA	**Kagalaska Isla**	**2.64**	**76**	P	**P**	**11 23 35.6**	**-0.9**
ETKA				S	**S**	**11 24 08.1**	**+0.8**
GSSP	**Great Sitkin S**	**2.83**	**72**	P	**P**	**11 23 38.3**	**-0.9**
GSTD	**Great Sitkin T**	**2.84**	**72**	P	**P**	**11 23 38.6**	**-0.7**
GSTD				S	**S**	**11 24 13.7**	**+1.3**
GSMY	**Great Sitkin M**	**2.89**	**73**	P	**P**	**11 23 39.0**	**-1.0**
GSTR	**Great Sitkin T**	**2.90**	**72**	P	**P**	**11 23 40.4**	**+0.2**
GSIG	**Igitkin Island**	**2.95**	**74**	P	**P**	**11 23 39.8**	**-1.1**
GSIG				S	**S**	**11 24 14.9**	**-0.4**
SMY	**Shemya**	**3.62**	**296**	P	**P**	**11 23 50.8**	**+0.5**
SMY				S	**S**	**11 24 38.6**	**+6.4**
ATKA	**Atka Island**	**4.04**	**74**	P	**P**	**11 23 55.1**	**-1.2**
ATKA				S	**S**	**11 24 41.1**	**-1.6**
FX1	**Attu Island--F**	**4.21**	**295**	P	**P**	**11 23 58.7**	**+0.2**
	36nm,0.3s,baz=216,slow=5.9,SNR=91						
FX1				S	**S**	**11 24 55.2**	**+8.4**
	55nm,0.3s,baz=84,slow=23,SNR=12						
FX1	**Attu Island--F**	**4.21**	**295**	P	**P**	**11 23 58.6**	**+0.1**
NIKO	**Nikolski**	**7.38**	**72**	P	**P**	**11 24 41.5**	**-1.3**
BILL	**Bilibino**	**18.01**	**344**	*e*P	**P**	**11 27 04.3**	**+1.8**
	5.5nm,0.6s						
PMR	**Palmer**	**19.98**	**47**	*e*P	**P**	**11 27 23.1**	**-1.7**
	5.4nm,0.9s						
COLA	**College**	**21.66**	**39**	*e*P	**P**	**11 27 42.0**	**0.0**
	3.7nm,0.8s,mb3.9						
ILAR	**Eielson Array**	**22.00**	**39**	P	**P**	**11 27 44.8**	**-0.5**
	0.9nm,0.5s,mb3.5,baz=246,slow=9.6,SNR=30						
ILAR				PcP	PcP	11 31 41.5	-1.3
	0.4nm,0.7s,baz=223,slow=2.5,SNR=8.3						
DAWY	**Dawson**	**24.92**	**43**	*e*P	**P**	**11 28 13.4**	**-0.1**
INK	**Inuvik**	**28.16**	**35**	P	**P**	**11 28 42.9**	**-0.4**
	1.3nm,0.5s,mb3.8,baz=257,slow=8.4,SNR=12						
INK	**Inuvik**	**28.16**	**35**	*e*P	**P**	**11 28 43.3**	**-0.1**
BBB	**Bella Bella**	**31.89**	**27**	LR	LR	11 39 36.8	
	comp=Z,58nm,18.7s,baz=295,slow=31						
MAJO	**Matsushiro**	**32.70**	**259**	P	**P**	**11 29 23.8**	**0.0**
MDJ	**Mudanjiang**	**33.52**	**278**	P	**P**	**11 29 29.0**	**-1.7**
MDJ				AMB	AMB		
	comp=Z,39nm,3.7s						
YKW3	**Yellowknife Ar**	**36.06**	**46**	*e*P	**P**	**11 29 51.2**	**-1.1**
YKA	**Yellowknife Ar**	**36.08**	**46**	P	**P**	**11 29 51.7**	**-0.7**
	comp=Z,1.3nm,0.5s,mb4.1,baz=281,slow=8.1,SNR=35						
YKA				PcP	PcP	11 32 17.5	-0.2
	comp=Z,0.3nm,0.5s,baz=290,slow=3.3,SNR=5.5						
YKA				LR	LR	11 45 57.9	
	comp=Z,100nm,18.6s,baz=260,slow=38						
YKA	**Yellowknife Ar**	**36.08**	**46**	P	**P**	**11 29 51.7**	**-0.7**
YKA				PcP	PcP	11 32 17.5	-0.2
YKA				LR	LR	11 45 57.9	
CN2	**Changchun**	**36.50**	**280**	*e*P	**P**	**11 29 55.0**	**-1.1**
HIA	**Hailar**	**37.31**	**291**	*e*P	**P**	**11 30 03.7**	**+0.8**
	comp=Z,15nm,0.7s,mb4.9						
NEW	**Newport**	**39.93**	**69**	*e*P	**P**	**11 30 24.3**	**-0.4**
HRY	**Holter Researc**	**43.81**	**68**	*e*P	**P**	**11 30 55.6**	**-0.8**
HLID	**Hailey**	**44.01**	**73**	*e*P	**P**	**11 30 58.4**	**+0.3**
	comp=Z,2.7nm,1.2s,mb3.9						
MCMT	**McKenzie Canyo**	**44.24**	**71**	*e*P	**P**	**11 30 59.8**	**-0.1**
BOZ	**Bozeman (W)**	**44.50**	**69**	*e*P	**P**	**11 31 01.8**	**-0.2**
	comp=Z,2.9nm,0.8s,mb4.2						
NVAR	**Mina Array Bea**	**44.64**	**81**	P	**P**	**11 31 04.4**	**+1.2**
	comp=Z,0.4nm,0.6s,mb3.5,baz=293,slow=6.3,SNR=5.0						
NVAR				LR	LR	11 45 40.7	
	comp=Z,31nm,20.6s,baz=185,slow=31						
TPH	**Tonopah**	**45.53**	**81**	*e*P	**P**	**11 31 11.3**	**+1.0**
FCC	**Fort Churchill**	**46.81**	**46**	*e*P	**P**	**11 31 19.9**	**-0.2**
HWUT	**Hardware Ranch**	**46.86**	**74**	*e*P	**P**	**11 31 21.6**	**+0.9**
SSE	**Sheshan**	**46.91**	**268**	⇑P	**P**	**11 31 22.8**	**+1.6**
SSE				AMB	AMB		
	comp=Z,34nm,3.4s						
BW06	**Boulder Array**	**47.37**	**71**	*e*P	**P**	**11 31 24.5**	**-0.2**
	comp=Z,4.7nm,0.9s,mb4.4						
PDAR	**Pinedale Array**	**47.37**	**71**	P	**P**	**11 31 24.8**	**0.0**
	comp=Z,3.1nm,0.6s,mb4.4,baz=311,slow=3.7,SNR=29						
NJ2	**Nanjing**	**47.73**	**271**	*e*P	**P**	**11 31 23.3**	**-4.4**
NJ2				PCS		11 36 48.0	
NJ2				S	**S**	**11 38 10.0**	**-8.3**
NJ2				LR	LR		
	comp=N,210nm,20.3s						
NJ2				LR	LR		
	comp=E,160nm,16.1s						
DAU	**Daniels Canyon**	**47.76**	**75**	*e*P	**P**	**11 31 28.4**	**+0.6**
SRU	**San Rafael**	**49.01**	**76**	*e*P	**P**	**11 31 38.3**	**+0.9**
PV10	**Paradox Valley**	**50.37**	**75**	*e*P	**P**	**11 31 48.3**	**+0.4**
SPITS	**Spitsbergen Ar**	**50.39**	**356**	P	**P**	**11 31 47.5**	**-0.1**
	comp=E,12nm,0.4s,mb5.3,baz=72,slow=6.3,SNR=104						
PV01	**Paradox Valley**	**50.81**	**75**	*e*P	**P**	**11 31 50.8**	**-0.5**
SDCO	**Great Sand Dun**	**52.92**	**74**	*e*P	**P**	**11 32 07.8**	**+0.7**
ANMO	**Albuquerque**	**54.17**	**77**	*e*P	**P**	**11 32 15.8**	**-0.6**
	comp=E,0.7nm,0.8s,mb3.6						
GTA	**Gaotai**	**54.59**	**291**	*e*P	**P**	**11 32 19.0**	**-0.4**
GTA				S	**S**	**11 39 53.0**	**+0.5**
GTA				LR	LR		
	comp=N,67nm,14.1s						
GTA				LR	LR		
	comp=E,46nm,15.3s						
GTA				LR	LR		
	comp=Z,90nm,15.3s						
MNTX	**Cornudas Mount**	**57.03**	**79**	*e*P	**P**	**11 32 36.5**	**-0.5**
	comp=Z,0.8nm,0.8s,mb3.8						
ARCES	**ARCESS Array B**	**57.99**	**350**	P	**P**	**11 32 41.9**	**-1.4**
	comp=Z,2.8nm,0.8s,mb4.4,baz=24,slow=7.5,SNR=8.8						
KURK	**Kurchatov**	**58.30**	**313**	*e*P	**P**	**11 32 45.3**	**-0.3**
WMOK	**Wichita Mounta**	**58.96**	**72**	*e*P	**P**	**11 32 49.6**	**-0.8**
	comp=Z,1.1nm,0.6s,mb4.1						
MKAR	**Makanchi Array**	**59.24**	**308**	P	**P**	**11 32 51.7**	**-0.5**
	comp=Z,2.0nm,0.4s,mb4.5,baz=48,slow=6.6,SNR=19						
TXAR	**Lajitas Array**	**60.26**	**319**	P	**P**	**11 32 55.0**	**-0.9**
	comp=Z,0.4nm,0.5s,mb3.8,baz=279,slow=4.9,SNR=7.4						
BVAR	**Borovoye Array**	**60.26**	**319**	P	**P**	**11 32 59.7**	**+0.6**
	comp=Z,7.0nm,0.4s,mb5.0,baz=49,slow=6.6,SNR=55						
BVAR				LR	LR	12 00 51.0	
	comp=Z,101nm,19.6s,baz=320,slow=38						
BRVK	**Borovoye**	**60.27**	**319**	*e*P	**P**	**11 32 59.4**	**+0.1**
SCHQ	**Schefferville**	**60.75**	**37**	P	**P**	**11 33 02.4**	**0.0**
	comp=Z,1.1nm,0.6s,mb4.2,baz=225,slow=14,SNR=3.6						
ZRNK	**Zerenda**	**60.88**	**320**	*e*P	**P**	**11 33 03.3**	**0.0**
FINES	**FINESS Array B**	**65.63**	**346**	P	**P**	**11 33 33.0**	**-1.4**
	comp=Z,1.1nm,0.7s,mb4.0,baz=27,slow=8.5,SNR=5.2						
AAK	**Ala-Archa**	**66.09**	**309**	*e*P	**P**	**11 33 38.1**	**+0.5**
PMG	**Port Moresby**	**66.58**	**215**	*e*P	**P**	**11 33 41.5**	**+0.3**
NB2	**NORSAR Subarra**	**67.63**	**354**	P	**P**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**3.01**	**181**	Sn	**Sn**	**11 25 57.0**	**-1.3**
	91nm,0.3s,baz=280,slow=23,SNR=6.0						
CBIJ	**Chichi jima**	**3.01**	**181**	*e*S	**Sn**	**11 25 57.0**	**-1.3**
JHJ	**Hachijo jima 2**	**3.64**	**326**	Sn	**Sn**	**11 26 09.4**	**-4.9**
	32nm,0.3s,baz=102,slow=19,SNR=2.9						
BSO1	**Boso 1**	**4.64**	**347**	P	**Pn**	**11 25 45.2**	**+0.7**
BSO1				*e*S	**Sn**	**11 26 37.1**	**-2.5**
BSO3	**Boso 3**	**4.89**	**343**	P	**Pn**	**11 25 48.4**	**+0.4**
JIM2	**Oshima 3**	**5.16**	**334**	P	**Pn**	**11 25 52.3**	**+0.6**
JOD2	**Odawara 2**	**5.77**	**334**	P	**Pn**	**11 26 00.9**	**+0.5**
JOD2				*e*S	**Sn**	**11 27 08.9**	**+1.0**
JYN	**Shimob**	**6.19**	**331**	P	**Pn**	**11 26 07.6**	**+1.3**
JYN				*e*S	**Sn**	**11 27 21.7**	**+3.2**
JHU	**Hanno**	**6.23**	**337**	P	**Pn**	**11 26 06.4**	**-0.4**
JHU				*e*S	**Sn**	**11 27 15.4**	**-4.0**
JYT	**Yasato**	**6.33**	**345**	P	**Pn**	**11 26 07.2**	**-1.0**
JNY	**Yasuok**	**6.38**	**326**	P	**Pn**	**11 26 13.1**	**+4.0**
JRY	**Ryogami san**	**6.51**	**336**	P	**Pn**	**11 26 10.7**	**-0.1**
JAG	**Ashikaga**	**6.70**	**341**	P	**Pn**	**11 26 12.4**	**-1.1**
JAG				*e*S	**Sn**	**11 27 25.2**	**-6.1**
MAJO	**Matsushiro**	**7.23**	**333**	*e*P	**Pn**	**11 26 20.5**	**-0.4**
MAT	**Matsushiro**	**7.23**	**333**	P	**Pn**	**11 26 20.6**	**-0.4**
MAT				S	**Sn**	**11 27 40.0**	**-4.5**
MAT	**Matsushiro**	**7.23**	**333**	P	**Pn**	**11 26 20.9**	**-0.1**
MAT	**Matsushiro**	**7.23**	**333**	*e*P	**Pn**	**11 26 21.0**	**0.0**
MAT				*e*S	**Sn**	**11 27 40.0**	**-4.5**
ASAJ	**Asahikawa**	**13.98**	**1**	Pn	**P**	**11 27 48.6**	**-4.3**
	0.7nm,0.3s,baz=225,slow=11,SNR=3.3						
YSS	**Yuzh-Sakhalins**	**16.82**	**1**	*e*P	**P**	**11 28 28.8**	**-0.9**
MDJ	**Mudanjiang**	**17.58**	**329**	P	**P**	**11 28 37.8**	**-1.5**
MDJ				AMB	AMB		
	comp=Z,7.0nm,0.8s						
MDJ				AMB	AMB		
	comp=Z,39nm,3.7s						
MDJ	**Mudanjiang**	**17.58**	**329**	*e*P	**P**	**11 28 39.7**	**+0.4**
	comp=Z,9.0nm,0.7s						
CN2	**Changchun**	**19.08**	**320**	*e*P	**P**	**11 28 55.0**	**-2.8**
BJT	**Baijiatuau**	**23.42**	**302**	*e*P	**P**	**11 29 42.4**	**-0.4**
HIA	**Hailar**	**25.62**	**325**	*e*P	**P**	**11 30 03.9**	**+0.1**
HHC	**Hu-ho-hao-te**	**27.03**	**302**	*e*P	**P**	**11 30 20.0**	**+3.0**
HHC				AMB	AMB		
	comp=Z,10.0nm,1.1s,mb4.3						
GYA	**Guiyang**	**31.44**	**272**	P	**P**	**11 30 58.5**	**+1.9**
GYA				AMB	AMB		
	comp=Z,10.0nm,0.8s,mb4.7						
ULN	**Ulaanbaatar**	**32.21**	**313**	*e*P	**P**	**11 31 03.9**	**+0.7**
	comp=Z,4.2nm,0.7s,mb4.4						
SONM	**Songino Array**	**32.62**	**313**	P	**P**	**11 31 07.2**	**+0.5**
	comp=Z,2.0nm,0.6s,mb4.2,baz=117,slow=7.7,SNR=6.8						
CMAR	**Chiang Mai Arr**	**40.89**	**264**	P	**P**	**11 32 17.3**	**+0.4**
	comp=Z,2.3nm,0.7s,mb3.9,baz=67,slow=4.9,SNR=9.2						
CMAR				PcP	PcP	11 34 19.9	+1.7
	comp=Z,0.6nm,0.5s,baz=27,slow=2.0,SNR=4.2						
WMQ	**Urumqi**	**44.89**	**303**	*e*P	**P**	**11 32 49.0**	**-0.2**
MKAR	**Makanchi Array**	**48.62**	**308**	P	**P**	**11 33 17.9**	**-0.6**
	comp=Z,3.9nm,0.9s,mb4.4,baz=98,slow=8.8,SNR=4.7						
CTA	**Charters Tower**	**50.06**	**175**	P	**P**	**11 33 29.7**	**-0.3**
	comp=Z,4.8nm,0.7s,mb4.6,baz=354,slow=6.6,SNR=5.8						
CTAO	**Charters Tower**	**50.06**	**175**	*e*P	**P**	**11 33 30.0**	**0.0**
	comp=Z,9.0nm,0.9s,mb4.8						
WRAB	**Tennant Creek**	**50.33**	**190**	*e*P	**P**	**11 33 31.4**	**-0.6**
	comp=Z,31nm,1.0s,mb5.3						
WRA	**Warramunga Arr**	**50.34**	**190**	P	**P**	**11 33 31.4**	**-0.7**
	comp=Z,7.1nm,0.9s,mb4.7,baz=8.5,slow=7.9,SNR=6.9						
ASAR	**Alice Springs**	**54.07**	**189**	P	**P**	**11 33 59.0**	**-0.9**
	comp=Z,3.0nm,0.9s,mb4.2,baz=5.3,slow=5.5,SNR=13						
ASAR				PcP	PcP	11 35 06.0	+1.1
	comp=Z,1.3nm,0.7s,slow=3.6,SNR=4.3						
COLA	**College**	**54.66**	**29**	*e*P	**P**	**11 34 03.5**	**-0.4**
	comp=Z,3.0nm,0.8s,mb4.4						
ILAR	**Eielson Array**	**55.07**	**30**	P	**P**	**11 34 05.5**	**-1.4**
	comp=Z,2.2nm,0.8s,mb4.2,baz=260,slow=6.0,SNR=12						
BVAR	**Borovoye Array**	**55.87**	**316**	P	**P**	**11 34 13.3**	**+0.6**
	comp=Z,2.8nm,0.6s,mb4.5,baz=100,slow=8.8,SNR=3.3						
ZRNK	**Zerenda**	**56.71**	**316**	*e*P	**P**	**11 34 18.3**	**-0.5**
INK	**Inuvik**	**60.29**	**25**	P	**P**	**11 34 42.5**	**-1.1**
	comp=Z,1.8nm,0.6s,mb4.3,baz=280,slow=10,SNR=5.5						
STKA	**Stephens Creek**	**61.66**	**181**	P	**P**	**11 34 52.8**	**-0.5**
	comp=Z,2.7nm,0.8s,mb4.4,baz=330,slow=11,SNR=4.0						
YKW3	**Yellowknife Ar**	**69.45**	**29**	*e*P	**P**	**11 35 41.7**	**-1.2**
YKA	**Yellowknife Ar**	**69.49**	**29**	P	**P**	**11 35 42.6**	**-0.5**
	comp=Z,3.6nm,0.6s,mb4.5,baz=295,slow=6.5,SNR=26						
THR	**Tehran**	**73.85**	**302**	P	**P**	**11 36 10.2**	**+0.6**
	comp=Z,1.2nm,0.7s,mb3.9,baz=53,slow=6.1,SNR=3.7						
NEW	**Newport**	**74.68**	**43**	P	**P**	**11 36 13.4**	**-0.7**
	comp=Z,1.8nm,0.5s,mb4.2,baz=304,slow=7.8,SNR=4.3						
NEW	**Newport**	**74.68**	**43**	*e*P	**P**	**11 36 13.5**	**-0.7**
BEKR	**Beckwourth**	**76.55**	**52**	*e*P	**P**	**11 36 25.5**	**+0.4**
	comp=Z,3.4nm,0.8s,mb4.3						
CMB	**Columbia Colle**	**77.40**	**53**	*e*P	**P**	**11 36 29.8**	**0.0**
	comp=Z,3.8nm,0.9s,mb4.3						
HRY	**Holter Researc**	**78.56**	**42**	*e*P	**P**	**11 36 36.7**	**+0.7**
HLID	**Hailey**	**78.63**	**46**	*e*P	**P**	**11 36 36.2**	**-0.2**
	comp=Z,1.0nm,0.8s,mb3.8						
NVAR	**Mina Array Bea**	**78.64**	**52**	P	**P**	**11 36 37.3**	**+0.7**
	comp=Z,2.0nm,0.6s,mb4.3,baz=306,slow=4.2,SNR=13						
FFC	**Flin Flon**	**79.17**	**32**	*e*P	**P**	**11 36 38.9**	**-0.3**
	comp=Z,3.8nm,0.9s,mb4.3						
BOZ	**Bozeman (W)**	**79.24**	**43**	*e*P	**P**	**11 36 40.1**	**+0.4**
FCC	**Fort Churchill**	**79.89**	**26**	P	**P**	**11 36 43.1**	**+0.1**
AKASG	**Malin Array Be**	**80.21**	**324**	P	**P**	**11 36 44.1**	**-0.7**
	comp=Z,1.3nm,0.6s,mb4.0,baz=42,slow=4.9,SNR=4.7						
NB2	**NORSAR Subarra**	**80.83**	**338**	P	**P**	**11 36 47.9**	**0.0**
	comp=Z,1.5nm,0.8s,mb4.0,baz=41,slow=5.3						
NOA	**NORSAR Array B**	**80.83**	**338**	P	**P**	**11 36 48.2**	**+0.4**
	comp=Z,2.1nm,0.8s,mb4.1,baz=40,slow=5.2,SNR=4.9						
HWUT	**Hardware Ranch**	**81.45**	**47**	P	**P**	**11 36 51.5**	**0.0**
NLU	**North Lily Min**	**82.01**	**48**	*e*P	**P**	**11 36 55.1**	**+0.6**
BW06	**Boulder Array**	**82.06**	**45**	*e*P	**P**	**11 36 54.9**	**+0.2**
	comp=Z,0.9nm,0.4s,mb4.0						
PDAR	**Pinedale Array**	**82.06**	**45**	P	**P**	**11 36 54.0**	**-0.7**
	comp=Z,0.9nm,0.8s,mb3.8,baz=274,slow=1.9,SNR=5.9						
BRTR	**Keskin Array B**	**83.98**	**313**	P	**P**	**11 37 05.5**	**+0.9**
	comp=Z,4.8nm,1.1s,mb4.5,baz=90,slow=3.7,SNR=6.7						
PV10	**Paradox Valley**	**84.85**	**48**	*e*P	**P**	**11 37 10.3**	**+1.2**
WUAZ	**Wupatki**	**84.89**	**52**	*e*P	**P**	**11 37 09.9**	**+0.5**
PV01	**Paradox Valley**	**85.29**	**48**	*e*P	**P**	**11 37 11.9**	**+0.7**
ISCO	**Idaho Springs**	**86.19**	**46**	*e*P	**P**	**11 37 19.0**	**+1.2**
CLL	**Collm**	**87.43**	**331**	P	**P**	**11 37 21.8**	**+0.4**
SDCO	**Great Sand Dun**	**87.49**	**47**	P	**P**	**11 37 23.3**	**+1.2**
WMOK	**Wichita Mounta**	**93.60**	**46**	*e*P	**P**	**11 37 51.0**	**+0.3**
	comp=Z,2.1nm,0.8s,mb4.6						
TXAR	**Lajitas Array**	**93.78**	**53**	P	**P**	**11 37 53.4**	**+1.8**
	comp=Z,3.4nm,0.7s,mb4.9,baz=292,slow=2.8,SNR=21						
LPAZ	**La Paz**	**149.01**	**70**	PKPbc	PKPdf	11 44 25.3	+5.4
	comp=Z,5.1nm,0.9s,baz=328,slow=3.1,SNR=14						

NAO ***28*** *11:33:26.6±1.4,62.84N×18.01E,ML2.2*
BER ***28*** *11:33:28.6±4.6,62.83N×17.97E,ML2.2(NAO)*
HEL 28 11:33:29.1±0.3,62.76N×17.99E,h10km,ML2.2,
ML1.9(UPP),**ML2.2**(NAO),**Sweden**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VAF	**Ylistaro**	**2.16**	**80**	*e*P	Pn	11 34 06.9	+1.2
VAF				*e*S	Sn	11 34 33.3	+0.5
VAF				*e*SB	Sb	11 34 34.3	-0.5
VAF				MSG		11 34 35.8	
	comp=Z,20nm,0.1s						
KEF	**Keuruu**	**3.25**	**97**	*e*PG	Pg	11 34 27.6	-6.4
KEF				*e*S	Sn	11 34 58.7	-1.6
KEF				*e*SB	Sb	11 35 07.0	+0.6
KEF				MSG		11 35 11.1	
	comp=Z,3.9nm,0.3s						
HFS	**Hagfors**	**3.34**	**220**	*e*P	Pn	11 34 21.1	-1.4
HFS				*e*PG	Pg	11 34 28.9	-7.0
HFS				*e*S	Sn	11 35 01.3	-1.4
HFS				*e*SG	Sg	11 35 11.8	-8.6
HFS	**Hagfors**	**3.34**	**220**	Pn	Pn	11 34 21.1	-1.4
	baz=40,slow=14						
HFS				Pg	Pg	11 34 28.9	-7.0
	baz=34,slow=16						
HFS				Sn	Sn	11 35 01.3	-1.4
	baz=52,slow=22						
HFS				Lg		11 35 11.8	
	baz=43,slow=28						
NB2	**NORSAR Subarra**	**3.64**	**245**	*e*P	Pn	11 34 25.0	-1.8
NB2				*e*PG	Pg	11 34 33.6	-8.2
NB2				*e*SG	Sg	11 35 22.1	-8.2
SUF	**Sumiainen**	**3.75**	**87**	*e*S	Sn	11 35 10.2	-2.9
SUF				*e*SB	Sb	11 35 19.5	-1.5
SUF				MSG		11 35 27.3	
	comp=Z,3.1nm,0.2s						
MEF	**Metsahovi**	**3.99**	**127**	*e*S	Sn	11 35 16.9	-2.2
MEF				*e*SG	Sg	11 35 30.0	-12
FIA0	**FINESS Array S**	**4.02**	**105**	Pn	Pn	11 34 30.1	-2.1
	baz=268,slow=9.3						
FIA0				Sn	Sn	11 35 17.6	-2.3
	baz=288,slow=22						
FIA0				Lg		11 35 32.6	
	baz=300,slow=28						
FIA0	**FINESS Array S**	**4.02**	**105**	*e*P	Pn	11 34 33.5	+1.3
FIA0				*e*S	Sn	11 35 17.7	-2.2
FIA0				*e*SG	Sg	11 35 30.1	-13
FIA0				MSG		11 35 36.2	
	comp=Z,3.1nm,0.3s						
OUL	**Oulu**	**4.20**	**53**	*e*SG	Sg	11 35 38.1	-11
OUL				MSG		11 35 39.9	
	comp=Z,3.3nm,0.3s						
PVF	**Pernaja**	**4.36**	**117**	*e*S	Sn	11 35 26.2	-2.3
PVF				*e*SG	Sg	11 35 41.1	-13
KJN	**Kajaani**	**4.57**	**69**	*e*S	Sn	11 35 30.1	-3.6
KJN				*e*SG	Sg	11 35 48.5	-13
KJN				MSG		11 35 51.1	
	comp=Z,3.5nm,0.3s						
VJF	**Virojoki**	**5.07**	**112**	*e*SG	Sg	11 36 02.7	-15
JOF	**Joensuu**	**6.11**	**83**	*e*SG	Sg	11 36 35.5	-17
JOF				MSG		11 36 39.5	
	comp=Z,4.3nm,0.5s						
ARA0	**ARCESS Array S**	**7.45**	**21**	Pn	Pn	11 35 15.4	-5.2
	baz=206,slow=14						
ARA0				Sn	Sn	11 36 33.6	-12
	baz=207,slow=22						
ARA0				Lg		11 37 16.9	
	baz=196,slow=28						
ARA0	**ARCESS Array S**	**7.45**	**21**	*e*P	Pn	11 35 15.4	-5.2
ARA0				*e*		11 36 33.6	
ARA0				*e*SG	Sg	11 37 16.9	-20

IGIL ***28*** *12:38:40.6,36.40N×51.40E,h2km,MS5.8*
BJI ***28*** *12:38:42.8,36.29N×50.87E,h47km,mB6.3,mb5.9,Ms6.6, Msz6.4*
CSEM ***28*** *12:38:44.8,36.41N×51.41E,h23km,mb6.3*
NEIC ***28*** *12:38:44.5±0.1,36.29N×51.61E,h17km,mb6.2/190, ME6.2,MS6.3/121,MW6.2,Error ellipse: s-maj=3.0km s-min=1.7km az=2.0 Broadband fault plane solution: P waves. NP1:φs290°,δ65°,λ110°. NP2:φs69°,δ32°,λ54°. Principal axes: T Plg64°, Azm234°; N Plg0°, Azm0°; P Plg18°, Azm5°; Moment Tensor Solution. s44 Moment tensor: Scale 1018 Nm; Mrr2.27; Mθθ-1.98; Mφφ-0.29; Mrθ0.00; Mθφ1.00; Mφr0.72; Best double couple: Mo2.5×1018 NP1:φs100°,δ43°,λ67°. NP2:φs310°,δ51°, λ110°. Principal axes: T 2.48, Plg74°, Azm283°; N -.01, Plg16°, Azm117°; P -2.47, Plg4°, Azm26°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism.*
NEIC At least 35 people killed, 400 injured and many buildings damaged in Mazandaran and Qazvin Provinces. Some of the deaths were caused by landslides on the Tehran-Chalus road. Minor damage reported in Tehran. Felt in much of central and northern Iran. Felt [IV] at Lankaran and [III] at Baku, Azerbaijan. Felt [II] at Makhachkala, Russia.
IDC ***28*** *12:38:44.5±1.0,36.31N×51.62E,h16km±6km, mb5.6/39, mb1 5.6/42,mb1mx5.6/42,ML4.8/3,MS6.2/26,Ms1 6.2/26, ms1mx6.1/36 Error ellipse: s-maj=9.5km s-min=5.7km az=7.0,EIL timing error*
HRVD ***28*** *12:38:44.3±0.2,36.55N×51.58E,h22km,MW6.3/76, Centroid moment Tensor Solution. LP body waves: s76,c196;Mantle waves: s68,c126; Half duration: 3±5 Moment tensor: Scale 1018Nm; Mrr2.63±.02; Mθθ-1.61±.02; Mφφ-1.02±.02; Mrθ-1.49±.10; Mθφ1.33±.02; Mφr2.02±.10; Best double couple: Mo3.65×1018 NP1: φs119°,δ24°,λ72°. NP2:φs319°,δ67°,λ98°. Principal axes: T 3.67, Plg67°, Azm244°; N -.04, Plg7°, Azm136°; P -3.63, Plg21°, Azm43°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to mantle waves, cutoff=125s.*
ZUR_RM ***28*** *12:38:44,36.25N×51.62E,h30km,Mw6.5/14,Moment Tensor Solution. s14 Moment tensor: Scale 1018Nm; Mrr4.63; Mθθ-2.82; Mφφ-1.82; Mrθ-0.52; Mθφ3.12; Mφr1.38; Best double couple: Mo5.28×1018 NP1:φs320°,δ53°,λ102°. NP2:φs120°,δ39°,λ74°. Principal axes: T 4.921, Plg78°, Azm275°; N .717, Plg10°, Azm132°; P -5.638, Plg7°, Azm41°;*
DHMR ***28*** *12:38:45.5±2.9,36.21N×51.88E,h8km±999km,mb6.3*
THR ***28*** *12:38:46.1±1.2,36.37N×51.64E,h0km±6km,MS6.3*
KISR ***28*** *12:38:46.0±0.7,36.18N×51.89E,h33km,ML6.1*
MOS ***28*** *12:38:46.3±1.1,36.47N×51.61E,h33km,mb6.2/52, MS6.1/38,Error ellipse: s-maj=6.3km s-min=3.4km az=122.3*
MOS Felt (III-IV) at Lenkoran'; (II-III) at Baku; (II) at Makhachkala.
NNC ***28*** *12:38:49.8±2.8,37.14N×51.68E,Error ellipse: s-maj=42.0km s-min=28.5km az=125.0*
BGS ***28*** *12:38:59.0,37.30N×50.27E,h33km*
ISC 28 12:38:43.0±0.1,36.32N±0.02×51.59E±0.01,h17km,
(h29km±.7km:pP-P),n1345,s0s99/1403,mb6.2/303,
MS6.3/175,635C-43D,Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THR	**Tehran**	**0.56**	**222**	Pg	**Pb**	**12 38 55.9**	**+1.9**
	baz=3.4,slow=17						
THKV	**Tehran--Karaj**	**0.70**	**235**	*i* PG	**Pb**	**12 38 59.0**	**+2.5**
THKV				*e*SG	**Sb**	**12 39 09.6**	**+4.0**
DAMV	**Damavand**	**0.76**	**156**	*e*PG	**Pb**	**12 38 60.0**	**+2.7**
DAMV				*e*SG	**Sb**	**12 39 10.4**	**+3.2**
DAMV				LG		12 39 10.7	
NASN	**Na'in**	**3.66**	**164**	*e*PN	**Pn**	**12 39 43.7**	**+3.6**
NASN				SN	**Sn**	**12 40 24.6**	**+1.3**
SNGE	**Sanandaj**	**3.66**	**252**	*e*PN	**Pn**	**12 39 43.8**	**+3.6**
SHE	**Samaxi**	**4.90**	**333**	*e*P	**Pn**	**12 40 00.0**	**+2.2**
SHE				S	**Sn**	**12 40 51.0**	**-3.8**
ISM	**Ismayilli**	**5.20**	**330**	*i* P	**Pn**	**12 40 00.0**	**-2.1**
ISM				S	**Sn**	**12 40 56.0**	**-6.4**
MGC	**Mingacevir**	**5.35**	**320**	P	**Pn**	**12 40 00.0**	**-4.2**
VAN	**Vannovskaya**	**5.46**	**71**	*i* P	**Pn**	**12 40 05.1**	**-0.6**
VAN				S	**Sn**	**12 41 06.7**	**-2.1**
KRV	**Ganca**	**5.97**	**318**	*i* P	**Pn**	**12 40 11.0**	**-2.0**
KRV				S	**Sn**	**12 41 13.0**	**-8.8**
MAKU	**Maku**	**6.25**	**301**	*e*PN	**Pn**	**12 40 17.9**	**+1.0**
MAKU				SN	**Sn**	**12 41 26.4**	**-2.2**
TVAN	**Van**	**6.87**	**291**	*i* P	**Pn**	**12 40 30.3**	**+4.6**
MAK	**Makhachkala**	**7.34**	**336**	*d* P	**Pn**	**12 40 31.5**	**-0.7**
MAK				*i* S	**Sn**	**12 41 50.0**	**-5.9**
MAK				pmax	pmax		
	comp=Z,22μm,2.0s						
MAK				pmax	pmax		
	comp=N,3μm,1.5s						
MAK				pmax	pmax		
	comp=E,4μm,1.5s						
MAK				MLR	MLR		
	comp=Z,98μm,4.0s						
MAK	**Makhachkala**	**7.34**	**336**	*i* Pr		12 40 31.5	
MAK				*i* S	**Sn**	**12 41 50.0**	**-5.9**
TI2	**Plekhanov**	**7.58**	**318**	*i* P	**Pn**	**12 40 33.6**	**-2.0**
TI2				*i* S	**Sn**	**12 41 57.6**	**-4.4**
TI2				pmax	pmax		
	comp=Z,500nm,1.0s						
RST	**Umm Al-Ruwaisa**	**7.82**	**211**	*e*P	**Pn**	**12 40 38.7**	**-0.2**
RST				*e*S	**Sn**	**12 42 03.7**	**-4.2**
KBD	**Kabd**	**7.84**	**206**	*e*P	**Pn**	**12 40 39.6**	**+0.3**
RDF	**Al-Radifah**	**8.12**	**206**	*e*P	**P**	**12 40 43.4**	**+0.2**
RDF				AML	AML	12 42 03.5	
	comp=Z,2μm,0.6s						
QRN	**Al-Qurain**	**8.16**	**203**	*e*P	**P**	**12 40 43.6**	**-0.1**
QRN				*e*S	**Sn**	**12 42 10.1**	**-6.5**
QRN				AML	AML	12 42 23.2	
	comp=Z,1μm,0.8s						
BEST	**Besiri**	**8.39**	**284**	*i* P	**P**	**12 40 49.9**	**+3.0**
ZEI	**Tsey**	**8.76**	**320**	*c i* P	**P**	**12 40 52.0**	**+0.1**
ZEI				*i* S	**Sn**	**12 42 30.0**	**-1.3**
ZEI				pmax	pmax		
	comp=Z,9μm,12.0s						
ZEI				smax			
	comp=N,7μm,12.0s						
ZEI				smax			
	comp=E,8μm,12.0s						
ZEI				MLR	MLR		
	comp=Z,161μm,16.0s						
ZEI	**Tsey**	**8.76**	**320**	⇑ *i* P	**P**	**12 40 52.0**	**+0.1**
ZEI				*i* S	**Sn**	**12 42 30.0**	**-1.3**
ERZM	**Erzurum**	**8.81**	**297**	⇑ *i* P	**P**	**12 40 57.6**	**+4.9**
EZC	**Erzincan**	**9.90**	**294**	Pn	**P**	**12 41 14.5**	**+6.9**
PYA	**Pyatigorsk**	**10.09**	**322**	*c i* P	**P**	**12 41 08.0**	**-2.3**
PYA				*i*		12 43 07.0	
PYA				pmax	pmax		
	comp=N,7μm,12.0s						
PYA				pmax	pmax		
	comp=E,9μm,12.0s						
PYA				pmax	pmax		
	comp=Z,11μm,12.0s						
PYA				MLR	MLR		
	comp=Z,155μm,17.0s						
PYA	**Pyatigorsk**	**10.09**	**322**	⇑ *i* P	**P**	**12 41 08.0**	**-2.3**
PYA				*i*		12 43 07.0	
ZHSF	**Zahedan**	**10.21**	**128**	*e*PN	**P**	**12 41 12.7**	**+0.7**
ZHSF				SN	**S**	**12 43 01.1**	**-5.9**
ZHSF				AMP		12 46 58.3	
	comp=E,383μm,18.3s						
KIV	**Kislovodsk**	**10.22**	**321**	*c i* P	**P**	**12 41 10.2**	**-1.9**
KIV	**Kislovodsk**	**10.22**	**321**	⇑ *i* P	**P**	**12 41 10.2**	**-1.9**
ELZG	**Elazig**	**10.26**	**286**	*i* P	**P**	**12 41 17.3**	**+4.6**
KELT	**Kelkit**	**10.43**	**295**	⇑ *i* P	**P**	**12 41 18.1**	**+3.2**
GOF	**Gofitskoye**	**10.87**	**326**	*d i* P	**P**	**12 41 18.0**	**-3.0**
GOF				*i* S	**S**	**12 43 15.0**	**-8.2**
GOF				pmax	pmax		
	comp=N,2μm,2.0s						
GOF				pmax	pmax		
	comp=E,2μm,2.0s						
GOF				pmax	pmax		
	comp=Z,4μm,2.0s						
GOF				pmax	pmax		
	comp=Z,10μm,8.0s						
GOF				smax			
	comp=N,30μm,3.0s						
GOF				smax			
	comp=E,33μm,3.0s						
GOF				MLR	MLR		
	comp=Z,114μm,16.0s						
GOF				MLR	MLR		
	comp=N,180μm,14.0s						
GOF				MLR	MLR		
	comp=E,160μm,14.0s						
GOF	**Gofitskoye**	**10.87**	**326**	*i* Pr		12 41 18.0	
GOF				*i* S	**S**	**12 43 15.0**	**-8.2**
HASS	**Wahat al Ahsa'**	**11.21**	**189**	P	**P**	**12 41 24.5**	**-1.2**
GAZ	**Gaziantep**	**11.57**	**278**	Pn	**P**	**12 41 31.4**	**+0.9**
SOC	**Sochi**	**11.64**	**312**	*c i* P	**P**	**12 41 31.6**	**+0.2**
SOC				*e*S	**S**	**12 43 45.2**	**+3.3**
SOC				pmax	pmax		
	comp=Z,460nm,1.6s						
SOC				pmax	pmax		
	comp=N,370nm,1.8s						
SOC				pmax	pmax		
	comp=E,1μm,1.9s						
SOC				pmax	pmax		
	comp=Z,5μm,3.5s						
SOC				pmax	pmax		
	comp=N,3μm,3.4s						
SOC				pmax	pmax		
	comp=E,8μm,3.4s						
SOC				smax			
	comp=N,2μm,2.9s						
SOC				smax			
	comp=E,5μm,3.5s						
SOC				MLR	MLR		
	comp=Z,43μm,10.0s						
SOC				MLR	MLR		
	comp=N,68μm,12.0s						
SOC				MLR	MLR		
	comp=E,118μm,12.0s						
SOC	**Sochi**	**11.64**	**312**	⇑ *i* P	**P**	**12 41 31.6**	**+0.2**
	comp=E,460nm,1.6s						
SOC				*e*S	**S**	**12 43 45.2**	**+3.3**
SVSK	**Karacayir**	**12.04**	**292**	Pn	**P**	**12 41 40.7**	**+3.9**
SVST	**Sivas**	**12.04**	**291**	⇑ *i* P	**P**	**12 41 44.6**	**+7.7**
HILS	**Ha'il**	**12.19**	**226**	P	**P**	**12 41 34.4**	**-4.5**
COBT	**Iskenderun**	**12.36**	**275**	*i* P	**P**	**12 41 56.4**	**+15**
TOKT	**Tokat**	**12.47**	**293**	Pn	**P**	**12 41 43.3**	**+0.7**
HTY	**Hatay**	**12.48**	**274**	Pn	**P**	**12 41 46.7**	**+3.9**
ARSS	**Ar Rass**	**12.62**	**217**	P	**P**	**12 41 39.9**	**-4.8**
CEYT	**Ceyhan**	**12.74**	**278**	Pn	**P**	**12 41 49.7**	**+3.4**
BNN	**Bunyan**	**12.74**	**286**	Pn	**P**	**12 41 50.5**	**+4.2**
ASF	**Jabal al Asfar**	**12.84**	**255**	Pn	**P**	**12 41 46.4**	**-1.2**
	comp=E,6.7nm,0.3s,baz=287,slow=8.5,SNR=29						
ASF				Lg		12 45 30.2	
	comp=E,1.9nm,0.3s,baz=319,slow=20,SNR=2.3						
ASF				LR	LR	12 47 39.4	
	comp=E,444μm,18.2s,baz=296,slow=42						
DUSS	**Damascus Unive**	**12.87**	**262**	*i* P	**P**	**12 41 46.6**	**-1.4**
DUSS				*i* P		12 41 47.1	
DUSS				*i* P		12 41 47.4	
HWQ	**Hawqa**	**12.94**	**266**	*e*P	**P**	**12 41 50.9**	**+1.9**
YOZ	**Yozgat**	**13.26**	**289**	Pn	**P**	**12 41 56.4**	**+3.3**
BHL	**Bhannes**	**13.27**	**264**	*e*P	**P**	**12 41 56.8**	**+3.5**
MZLS	**Mizel**	**13.43**	**206**	P	**P**	**12 41 51.7**	**-3.8**
AVNT	**Avonos**	**13.50**	**285**	⇑ *i* P	**P**	**12 41 57.8**	**+1.5**
MATL	**Matirih**	**13.64**	**263**	*e*P	**P**	**12 42 01.4**	**+3.2**
NIG	**Nigde**	**13.65**	**283**	Pn	**P**	**12 42 02.5**	**+4.2**

SIM *i* S **S** **12 45 20.5 -0.5**
BDAS Al Bad' 15.98 245 P **P** **12 42 28.9 +0.2**
KK31 Karatay Array 16.04 59 ⇓P **P** **12 42 27.6 -1.9**
comp=Z,440nm,0.9s,baz=245,slow=17,SNR=1568
KK31 ⇑S **S** **12 45 24.1 -2.7**
comp=Z,402nm,1.1s,baz=269,slow=10,SNR=3.9
SBDP Sheikh Budin 16.38 99 P **P** **12 42 34.5 +0.8**
ESKT Eskisehir 16.67 287⇑*i*P **P** **12 42 37.9 +0.5**
YNBS Yanbu' al Bahr 16.72 228 P **P** **12 42 37.3 -0.8**
HENT Hendek 16.78 292⇑*i*P **P** **12 42 40.1 +1.3**
CEP Cherat 16.82 93 P **P** **12 42 38.6 -0.8**
CEP S **S** **12 45 43.0 -1.9**
THW Thamme Wali 16.97 96 ⇓P **P** **12 42 41.9 +0.7**
VRSR Storozhevoye 17.34 333*c* *i*P **P** **12 42 41.8 -3.9**
VRSR *e*S **S** **12 45 50.5 -6.0**
VRSR pmax pmax
comp=Z,4μm,0.9s
VRSR pmax pmax
comp=N,8μm,1.1s
VRSR pmax pmax
comp=E,6μm,1.2s
VRSR smax
comp=N,4μm,1.1s
VRSR smax
comp=Z,1μm,1.0s
VRSR smax
comp=E,1μm,0.9s
VRSR MLR MLR
comp=Z,62μm,21.0s
VRSR MLR MLR
comp=N,50μm,26.0s
VRSR MLR MLR
comp=E,23μm,15.0s
VRSR Storozhevoye 17.34 333⇑*i*P **P** **12 42 41.8 -3.9**
comp=E,4μm,0.9s
VRSR *e*S **S** **12 45 50.5 -6.0**
KSL Kastellorizon 17.75 276 *e*P **P** **12 42 52.5 +1.5**
VOR Voronezh 17.75 334 *e*P **P** **12 42 46.5 -4.4**
VOR *e*S **S** **12 45 56.5 -10**
VOR pmax pmax
comp=N,6μm,1.7s
VOR pmax pmax
comp=E,2μm,1.7s
VOR pmax pmax
comp=Z,3μm,1.7s
VOR smax
comp=N,8μm,1.7s
VOR smax
comp=E,9μm,1.7s
VOR smax
comp=Z,3μm,2.2s
CHCP Chirah Chowk 17.96 92 P **P** **12 42 55.0 +1.5**
ULDT Uludag 18.04 289⇑*i*P **P** **12 42 55.2 +0.7**
DNZL Cakiroluk 18.05 281⇑*i*P **P** **12 42 55.4 +0.6**
AML Almayashu 18.06 65 P **P** **12 42 53.1 -1.8**
SNR=132
TATS Tathlith 18.17 205 P **P** **12 42 55.6 -0.8**
EKS2 Erkin-Say 18.23 63 P **P** **12 42 55.5 -1.6**
SNR=95
DST Dursunbey 18.39 287 Pn **P** **12 42 59.4 +0.5**
BLJS Baljurashi 18.58 211 P **P** **12 43 01.2 -0.1**
UCH Uchtor 18.68 65 P **P** **12 43 01.2 -1.2**
SNR=204
CTT Catalca 18.68 292 Pn **P** **12 43 02.8 +0.3**
YER Yerkesik 18.70 279 Pn **P** **12 43 03.6 +0.9**
AAK Ala-Archa 18.75 63 P **P** **12 43 02.2 -1.0**
SNR=85
AAK Ala-Archa 18.75 63⇓*e*P **P** **12 43 01.8 -1.4**
AAK pmax pmax
comp=Z,240nm,1.0s
AAK Ala-Archa 18.75 63⇓*e*P **P** **12 43 01.8 -1.4**
comp=Z,240nm,1.0s
LTHS Al Lith 18.75 214 P **P** **12 43 03.3 -0.1**
FRU Bishkek 18.88 63⇓*e*P **P** **12 43 04.0 -0.8**
FRU *e*S **S** **12 46 40.0 +8.6**
FRU pmax pmax
comp=E,30μm,12.0s
FRU pmax pmax
comp=Z,24μm,12.0s
FRU pmax pmax
comp=Z,4μm,2.3s
FRU smax
comp=E,71μm,13.0s
FRU Bishkek 18.88 63⇓*e*P **P** **12 43 04.0 -0.8**
comp=E,4μm,2.3s
FRU *e*S **S** **12 46 40.0 +8.6**
USP Ospenovka 18.89 61 P **P** **12 43 05.7 +0.8**
SNR=174
JASL Jaisalmer 18.90 114 *e*P **P** **12 43 04.8 -0.4**
JASL *e* 12 43 12.5
comp=Z,857nm,1.6s
ARG Arkhangelos 18.91 277 *e*P **P** **12 43 06.0 +0.7**
ARG Arkhangelos 18.91 277 P **P** **12 43 05.9 +0.6**
BALB Balikesir 18.97 287 Pn **P** **12 43 06.3 +0.4**
NAMS An Nimas 18.97 208 P **P** **12 43 06.5 +0.4**
CHMS Chumysh 19.01 62 P **P** **12 43 07.8 +1.4**
SNR=75
KBK Karagaybulak 19.08 63 P **P** **12 43 07.7 +0.5**
SNR=49
MLSB Milas 19.09 280 Pn **P** **12 43 06.8 -0.5**
KZA Kyzart 19.19 65 P **P** **12 43 08.3 -0.3**
SNR=132
MRMT Marmara Adasi 19.25 290 Pn **P** **12 43 08.5 -0.7**
BDRM Kayabasi 19.37 279⇑*i*P **P** **12 43 08.9 -1.7**
TIRR Tirgusor 19.39 302 P **P** **12 43 11.1 +0.3**
KDAG Bornova 19.43 283⇑*i*P **P** **12 43 11.9 +0.6**
IZM Izmir 19.44 283 Pn **P** **12 43 11.6 +0.2**
KSH Kashi 19.49 73 *i* PR 12 43 11.8
KSH PP PP 12 43 31.8 +2.0
KSH S **S** **12 46 52.5 +7.2**
KSH SS SS 12 47 22.0 +10
KSH PCP PcP 12 47 25.8 -6.5
KSH SCP 12 50 59.0
KSH AMB AMB
comp=Z,2μm,1.6s
KSH AMB AMB
comp=Z,18μm,4.8s
KSH LR LR
comp=N,83μm,13.1s
KSH LR LR
comp=E,83μm,14.6s
TKM2 Tokmak 2 19.60 63 P **P** **12 43 12.6 -0.6**
SNR=143
NISR Nisiros 19.67 278 *e*P **P** **12 43 14.0 0.0**
PRD Provadia 19.79 298 *i*P **P** **12 43 15.0 -0.3**
HARR Harsova 19.79 302⇑*i*P **P** **12 43 14.9 -0.4**
HARR Harsova 19.79 302⇑*i*P **P** **12 43 15.5 +0.2**
KARP Karpathos 19.79 275 *e*P **P** **12 43 14.5 -0.9**
CFR Carcaliu 19.79 304⇑*i*P **P** **12 43 14.2 -1.2**
DJNS Zahran al Janu 19.86 203 P **P** **12 43 18.2 +1.9**
LPK Lapseki 19.87 289 Pn **P** **12 43 17.0 +0.8**
ULHL Ulahol 19.95 65 P **P** **12 43 18.6 +1.6**
SNR=22
KIS Kishinev 20.01 309*c* *i*P **P** **12 43 16.0 -1.7**
KIS *i* S **S** **12 46 56.0 -0.4**
KIS pmax pmax
comp=N,10μm,10.0s
KIS pmax pmax
comp=Z,41μm,10.0s
KIS pmax pmax
comp=E,20μm,11.0s
KIS pmax pmax
comp=Z,19μm,14.0s
KIS smax
comp=N,67μm,12.0s
KIS smax
comp=E,42μm,12.0s
KIS Kishinev 20.01 309⇑*i*P **P** **12 43 16.0 -1.7**
KIS *i* S **S** **12 46 56.0 -0.4**
EDRB Edirne 20.03 294 Pn **P** **12 43 17.8 -0.1**
PRK Paraskevi 20.20 286 *e*P **P** **12 43 20.0 +0.2**
JMB Yambol 20.24 295 *i*P **P** **12 43 21.0 +0.9**
JMB Yambol 20.24 295⇑*i*P **P** **12 43 21.0 +0.9**
PPE Popeni 20.34 307⇓*i*P **P** **12 43 15.6 -5.6**
BOZC Bozcaada 20.38 288⇑*i*P **P** **12 43 21.2 -0.4**
ALN Alexandroupoli 20.45 291 *e*P **P** **12 43 22.5 +0.2**
AAA Alma-Ata 20.64 63*d* *i*P **P** **12 43 24.0 -0.2**
AAA pmax pmax
comp=Z,24μm,7.0s
AAA MLR MLR
comp=Z,200μm,13.0s,MS6.7
AAA Alma-Ata 20.64 63 *i* Pr 12 43 24.0
AAA LR LR
comp=Z,200μm,13.0s,MS6.7
PECR Pechory 20.64 348⇑*i*P **P** **12 43 23.2 -0.9**
PECR pmax pmax
comp=N,21μm,10.0s
PECR pmax pmax
comp=E,12μm,14.0s
PECR MLR MLR
comp=N,55μm,13.0s,MS6.2
PECR MLR MLR
comp=E,51μm,16.0s,MS6.2
ZRNK Zerenda 20.64 31 ⇓P **P** **12 43 23.3 -1.0**
comp=E,2μm,1.5s
ZRNK ⇑S **S** **12 47 08.1 -1.2**
comp=E,328nm,1.2s
ZRNK Zerenda 20.64 31⇓*i*P **P** **12 43 23.2 -1.0**
comp=E,1μm,1.0s
BRD Bordesti 20.65 304⇑*i*P **P** **12 43 26.1 +1.7**
BRD Bordesti 20.65 304⇑*i*P **P** **12 43 26.0 +1.6**
ARU Arti 20.66 11*d* *i*P **P** **12 43 22.6 -1.8**
ARU pmax pmax
comp=Z,3μm,1.0s
ARU Arti 20.66 11 *i* Pr 12 43 22.6
comp=Z,3μm,1.0s
SZH Strazhica 20.85 297 *i*P **P** **12 43 26.5 +0.1**
SZH Strazhica 20.85 297⇑*i*P **P** **12 43 26.5 +0.1**
RDO Rodhopi 20.85 291 *e*P **P** **12 43 27.0 +0.5**
ISR Istrita 20.85 303⇑*i*P **P** **12 43 27.9 +1.4**
ISR Istrita 20.85 303⇑*i*P **P** **12 43 27.9 +1.5**
APE Apeiranthos 20.89 280 *e*P **P** **12 43 26.0 -0.9**
APE Apeiranthos 20.89 280⇑*i*P **P** **12 43 26.5 -0.4**
DIM Dimitrovgrad 20.95 294 *i*P **P** **12 43 28.0 +0.5**
DIM Dimitrovgrad 20.95 294⇑*i*P **P** **12 43 28.0 +0.5**
VRI Vrincioaia 20.95 305⇑*i*P **P** **12 43 27.8 +0.4**
VRI Vrincioaia 20.95 305⇑*i*P **P** **12 43 27.7 +0.3**
KDZ Kurdzhali 20.99 293 *i*P **P** **12 43 28.5 +0.6**
KDZ Kurdzhali 20.99 293⇑*i*P **P** **12 43 28.5 +0.6**
BUC1 Bucharest 21.01 300⇑*i*P **P** **12 43 29.3 +1.2**
SANT Santorini 21.03 278⇑*e*P **P** **12 43 26.7 -1.6**
comp=Z,2μm,1.4s,mb6.2
THR1 Thera Island 21.03 278 *e*P **P** **12 43 27.8 -0.5**
THR4 Thira Island, 21.07 278 *e*P **P** **12 43 28.2 -0.5**
THR3 Thira Island, 21.07 278 *e*P **P** **12 43 28.2 -0.6**
NPS Neapolis 21.08 275 *e*P **P** **12 43 28.5 -0.4**
THR6 Thira Island, 21.08 278 *e*P **P** **12 43 28.5 -0.4**
THR5 Thira Island, 21.11 278 *e*P **P** **12 43 28.9 -0.3**
LOS Limnos 21.13 288 *e*P **P** **12 43 29.3 -0.1**
FRSS Farasan al Kab 21.24 206 P **P** **12 43 31.7 +1.1**
BRVK Borovoye 21.26 32 ⇓P **P** **12 43 29.9 -0.7**
comp=Z,2μm,1.2s,mb6.3
BRVK ⇑S **S** **12 47 23.7 +2.4**
comp=Z,764nm,2.7s
BRVK Borovoye 21.26 32 *e*P **P** **12 43 30.1 -0.5**
PVL Pavlikeni 21.27 297 *i*P **P** **12 43 32.5 +1.8**
PVL Pavlikeni 21.27 297⇑*i*P **P** **12 43 32.5 +1.8**
BVA0 Borovoye Array 21.29 32 ⇓P **P** **12 43 30.5 -0.3**
comp=Z,647nm,1.9s,mb5.6,baz=218,slow=9.3,SNR=5079
BVA0 ⇑S **S** **12 47 23.5 +1.9**
comp=Z,123nm,2.1s,baz=232,slow=24,SNR=4.4
BVAR Borovoye Array 21.29 32 P **P** **12 43 30.6 -0.2**
comp=Z,596nm,0.8s,mb6.0,baz=225,slow=8.4,SNR=494
BVAR S **S** **12 47 25.2 +3.6**
comp=Z,69nm,0.6s,baz=228,slow=24,SNR=6.5
BVAR P3KPbc 13 17 26.0
comp=Z,0.8nm,0.6s,baz=76,slow=6.1,SNR=5.8
VOSK Vostochnaya 21.34 34 ⇓P **P** **12 43 30.6 -0.7**
comp=Z,2μm,0.9s,mb6.3
VOSK ⇑S **S** **12 47 24.2 +1.5**
comp=Z,264nm,1.4s
MLR Muntele Rosu 21.36 303 P **P** **12 43 33.3 +1.7**
comp=Z,2μm,0.8s,mb6.4,baz=113,slow=6.0,SNR=567
MLR S **S** **12 47 31.2 +8.0**
comp=Z,48nm,1.1s,baz=334,slow=22,SNR=1.5
MLR P3KPbc 13 17 26.1
comp=Z,3.1nm,0.6s,baz=109,slow=4.6,SNR=5.6
MLR Muntele Rosu 21.36 303⇑*i*P **P** **12 43 33.6 +2.0**
MLR Muntele Rosu 21.36 303⇑*i*P **P** **12 43 33.6 +2.0**
OBN Obninsk 21.44 336α *i*P **P** **12 43 31.3 -1.0**
OBN *e* 12 43 52.2
OBN *e*S **S** **12 47 21.6 -2.9**
OBN *e*SS SS 12 47 51.0 -8.7
OBN pmax pmax
comp=Z,3μm,1.5s,mb6.3
OBN pmax pmax
comp=Z,13μm,10.6s
OBN MLR MLR
comp=Z,78μm,16.0s,MS6.2
OBN Obninsk 21.44 336 *i* Pcu 12 43 31.3
comp=Z,3μm,1.5s
OBN *e* 12 43 52.2
OBN *e*S **S** **12 47 21.6 -2.9**
OBN *e*SS SS 12 47 51.0 -8.7
OBN LR LR
comp=Z,78μm,16.0s,MS6.2
RZN Rozhen 21.52 293 *i*P **P** **12 43 33.0 -0.2**
RZN Rozhen 21.52 293⇑*i*P **P** **12 43 33.0 -0.2**
PLD Plovdiv 21.57 294 *i*P **P** **12 43 34.0 +0.3**
PLD Plovdiv 21.57 294⇑*i*P **P** **12 43 34.0 +0.3**
MOS Moscow 21.63 338α *i*P **P** **12 43 33.9 -0.3**
MOS *e*PPP PPP 12 44 02.3 -6.3
MOS *e*S **S** **12 47 23.9 -4.1**
MOS *e* 12 47 36.9
MOS *e*SS SS 12 47 56.3 -8.2
MOS *e*SSS SSS 12 48 12.8 -6.1
MOS pmax pmax
comp=N,4μm,1.1s
MOS pmax pmax
comp=E,4μm,1.4s
MOS smax
comp=N,83μm,3.7s
MOS smax
comp=E,68μm,3.8s
MOS Moscow 21.63 338 *i* Pcu 12 43 33.9
MOS *e*PPP PPP 12 44 02.3 -6.3
MOS *e*S **S** **12 47 23.9 -4.1**
MOS *e* 12 47 36.9
MOS *e*SS SS 12 47 56.3 -8.2
MOS *e*SSS SSS 12 48 12.8 -6.1
IDI Anoyia 21.66 275 P **P** **12 43 33.8 -0.9**
comp=E,580nm,0.7s,mb6.1,baz=45,slow=10,SNR=98
IDI S **S** **12 47 38.5 +10**
comp=E,34nm,0.8s,baz=304,slow=23,SNR=2.4
HAJJ Hajjah 21.74 201⇑*e*P **P** **12 43 37.3 +1.7**
HAJJ AMb AMB 12 43 38.0
comp=Z,2μm,1.3s,mb6.3
MTUR Matau 21.89 302⇑*i*P **P** **12 43 38.7 +1.8**
MTUR Matau 21.89 302⇑*i*P **P** **12 43 38.7 +1.8**
AJM Ajmer 21.94 110⇑*i*P **P** **12 43 38.0 +0.4**
OUR Ouranopolis 21.99 289 *e*P **P** **12 43 38.1 +0.1**
PGB Panagyurishte 22.02 295 *i*P **P** **12 43 39.5 +1.3**
PGB Panagyurishte 22.02 295⇑*i*P **P** **12 43 39.5 +1.3**
KKR Kurukshetra 22.03 99 *e*P **P** **12 43 38.4 -0.1**
KKR *e* 12 43 50.8
comp=Z,1μm,1.9s
KHET Khetri 22.04 105 *e*P **P** **12 43 38.6 +0.1**
KHET *e* 12 43 53.8
comp=Z,497nm,1.4s
AOS Alonnisos 22.06 286 *e*P **P** **12 43 38.8 +0.1**
MUKL Al Mukalla 22.07 187⇓*e*P **P** **12 43 37.9 -1.0**
MUKL AMb AMB 12 43 38.4
comp=Z,2μm,0.6s,mb6.6
RTK Rohtak 22.09 102 *e*P **P** **12 43 38.9 -0.1**
RTK *e* 12 43 48.9
comp=Z,1μm,1.6s
PTL Penteli 22.13 283 *e*P **P** **12 43 40.2 +0.9**
VAM Vamos 22.19 276 *e*P **P** **12 43 40.0 0.0**
PAIG Paliouri 22.21 288 *e*P **P** **12 43 40.3 +0.1**
MPAR Parnis Oros 22.22 283 *e*P **P** **12 43 41.0 +0.7**
MMB Musomiste 22.25 292 *i*P **P** **12 43 41.5 +1.0**
MMB Musomiste 22.25 292⇑*i*P **P** **12 43 41.5 +1.0**
ATH Athens Observa 22.25 283 *e*P **P** **12 43 41.0 +0.4**
SRS Serrai 22.32 291 *e*P **P** **12 43 42.0 +0.7**
PLG Polygyros 22.40 289 *e*P **P** **12 43 43.0 +1.0**
NAIG Nisos Aigina 22.45 282 *e*P **P** **12 43 52.0 +9.5**
NSAL Nisos Salamina 22.45 283 *e*P **P** **12 43 43.0 +0.4**
SOH Sokhos 22.48 290 *e*P **P** **12 43 44.1 +1.3**
KUDL Kundal 22.54 104 *e*P **P** **12 43 44.6 +1.0**
NEO Neokhori 22.57 286 *e*P **P** **12 43 44.0 +0.3**
XOR Xorichti 22.59 286 *e*P **P** **12 43 29.3 -15**
MKIT Kithairon Oros 22.59 283 *e*P **P** **12 43 44.5 +0.5**
DHBB Dhamar BB 22.61 198⇑*e*P **P** **12 43 46.6 +2.3**
DHBB AMb AMB 12 43 48.7
comp=Z,957nm,1.2s,mb6.1
BHGR Bahadurgarh 22.65 102 *e*P **P** **12 43 45.2 +0.5**
BHGR *e* 12 44 14.1
comp=Z,1μm,1.2s
VTS Vitosha 22.73 295 *i*P **P** **12 43 46.5 +1.3**
VTS Vitosha 22.73 295⇑*i*P **P** **12 43 46.5 +1.3**
KKB Krupnik 22.75 293 *i*P **P** **12 43 46.0 +0.6**
KKB Krupnik 22.75 293⇑*i*P **P** **12 43 46.0 +0.6**
THE Thessaloniki 22.77 290 *e*P **P** **12 43 46.3 +0.7**
KNT Kendrikon 22.84 291 *e*P **P** **12 43 47.0 +0.6**
NDI New Delhi 22.87 102 *e*P **P** **12 43 46.0 -0.8**
NDI *e*S **S** **12 47 56.0 +5.0**
AYAN Aya Nagar 22.89 103 *e*P **P** **12 43 47.4 +0.4**
AYAN *e* 12 44 01.1
comp=Z,984nm,1.4s
BDHA Al Bayda' 22.90 195⇑*e*P **P** **12 43 49.4 +2.2**
KYTH Kithira 22.98 278 *e*P **P** **12 43 46.0 -1.8**
VLI Velias 23.00 280 *e*P **P** **12 43 47.0 -0.9**
VAY Valandovo 23.10 291⇑*i*P **P** **12 43 49.8 +1.0**
LIT Litokhoron 23.12 288 *e*P **P** **12 43 49.3 +0.2**
GRG Griva 23.21 290 *e*P **P** **12 43 50.6 +0.7**
AGG Agios Georgios 23.27 286 *e*P **P** **12 43 50.6 0.0**
UDYN Al 'Udayn 23.28 199⇑*e*P **P** **12 43 53.6 +2.8**
UDYN AMb AMB 12 43 54.8
comp=Z,2μm,1.1s,mb6.4
ASOR Ausora 23.28 101 *e*P **P** **12 43 51.9 +1.1**
EVR Evrytania 23.68 285 *e*P **P** **12 43 54.3 -0.3**
ITM Ithomi 23.74 281 *e*P **P** **12 43 54.0 -1.1**
BOLS Boljevac 23.79 298⇑*i*P **P** **12 43 57.2 +1.6**
TRBA At Turbah 23.97 198⇑*e*P **P** **12 44 00.2 +2.6**
TRBA AMb AMB 12 44 01.7
comp=Z,1μm,1.0s,mb6.3
SKO Skopje 23.98 293⇑*i*P **P** **12 43 58.7 +1.3**
comp=Z,1.4nm,1.4s
SKO *i* PP PP 12 44 29.0 -2.6
comp=Z,1.7nm,1.4s
SKO *i* S **S** **12 48 17.0 +6.8**
comp=N,12nm,5.5s
SKO Lm 12 53 30.0
comp=E,7.4nm,7.0s
SKO Lm 12 53 50.0
comp=N,22nm,10.0s
FNA Florina 23.98 290 *e*P **P** **12 43 58.8 +1.4**
BIA Bitola 24.02 291⇑*i*P **P** **12 43 57.6 -0.3**
LVV L'vov 24.07 313 *i*P **P** **12 43 59.4 +1.2**
LVV *i* S **S** **12 48 17.6 +5.9**
LVV MLR MLR
comp=Z,20μm,18.0s,MS5.6
MEV Metsovon 24.10 287 *e*P **P** **12 43 58.7 +0.1**
AGRA Agra 24.11 105 *e*P **P** **12 43 59.6 +0.7**
KURK Kurchatov 24.14 45 ⇓P **P** **12 44 01.1 +2.2**
comp=Z,2μm,1.5s,mb6.3
KURK ⇑S **S** **12 48 23.2 +10**
comp=Z,131nm,1.5s
KURK Kurchatov 24.14 45 P **P** **12 44 00.4 +1.5**
SVIS Svilajnac 24.39 298⇑*i*P **P** **12 44 03.0 +1.6**
JAN Janina 24.39 287 *e*P **P** **12 44 03.0 +1.5**
OHR Ohrid 24.42 291⇑*i*P **P** **12 44 02.6 +0.8**
OHR *i* PP PP 12 44 42.2 +4.8
MNK Minsk 24.47 325⇑*i*P **P** **12 44 00.0 -2.1**
MNK *e*S **S** **12 48 19.0 +0.5**
MNK pmax pmax
comp=Z,3μm,1.2s,mb6.6
MNK MLR MLR
comp=Z,134μm,18.0s,MS6.5
MNK MLR MLR
comp=E,72μm,18.0s
MNK Minsk 24.47 325⇑*i*P **P** **12 44 00.0 -2.1**
comp=E,3μm,1.2s,mb6.6
MNK *e*S **S** **12 48 19.0 +0.5**
MNK LR LR
comp=Z,134μm,18.0s,MS6.5
LSK Leskovik 24.57 288 *e*Pn **P** **12 44 04.8 +1.6**
LKD Levkas 24.60 285 *e*P **P** **12 44 02.4 -1.1**
GRUS Gruza 24.69 297⇓*i*P **P** **12 44 05.6 +1.3**
VLS Valsamata 24.69 284 *e*P **P** **12 44 03.2 -1.2**
UZH Uzhgorod 24.70 309 *i*P **P** **12 44 06.0 +1.7**
UZH *i* S **S** **12 48 30.0 +7.6**
KWP Kalwaria 24.79 311⇑*e*P **P** **12 44 05.9 +0.7**
comp=Z,19μm,3.5s
KWP Kalwaria 24.79 311⇑*e*P **P** **12 44 05.9 +0.7**
KWP *e**PP 12 44 15.6
KWP *e*S **S** **12 48 30.2 +6.3**
KWP *e**SS 12 48 40.4
KWP MLR MLR
comp=N,93μm,23.2s,MS6.3
KWP MLR MLR
comp=E,73μm,22.8s,MS6.3
IGT Igoumenitsa 24.80 287 *e*P **P** **12 44 05.4 0.0**
BEO Belgrade 25.01 299⇓*i*P **P** **12 44 08.3 +1.0**
MK31 Makanchi Array 25.10 56 ⇑P **P** **12 44 09.7 +1.5**
comp=E,911nm,1.1s,mb6.2,baz=246,slow=9.5,SNR=2833
MK31 ⇓S **S** **12 48 35.8 +6.7**
comp=E,127nm,1.1s,baz=22,slow=14,SNR=3.3
MKAR Makanchi Array 25.10 56 P **P** **12 44 09.3 +1.2**
comp=E,54nm,0.6s,mb5.2,baz=247,slow=9.3,SNR=198
MKAR S **S** **12 48 34.9 +5.7**
comp=E,18nm,0.9s,baz=241,slow=15,SNR=2.2
MKAR ScS ScS 12 55 11.2 +3.7
comp=E,9.5nm,0.9s,baz=333,slow=3.6,SNR=2.2
MKAR LR LR 12 55 43.8
comp=E,102μm,18.1s,MS6.4,baz=215,slow=41
MKAR P3KPbc 13 17 11.4
comp=E,3.5nm,0.7s,baz=76,slow=5.0,SNR=20
MKAR Makanchi Array 25.10 56 P **P** **12 44 09.3 +1.2**
MKAR 12 55 11.2
MKAR pmax pmax
comp=Z,54nm,0.6s
MKAR MLR MLR
comp=Z,102μm,18.1s
MKAR Makanchi Array 25.10 56 P **P** **12 44 09.3 +1.2**
MKAR *e* 12 55 11.2
PVY Plav 25.11 294⇑*i*P **P** **12 44 08.0 -0.3**
QSH Qafa e Shtames 25.11 292 *e*Pn **P** **12 44 08.6 +0.3**
TIR Tirane 25.13 291 *e*Pn **P** **12 44 09.0 +0.4**
IVA Berane 25.18 295⇑*i*P **P** **12 44 09.2 +0.3**
KEK Kerkira 25.20 287 *e*P **P** **12 44 08.6 -0.6**
KEK Kerkira 25.20 287 P **P** **12 44 09.1 -0.1**
DIVS Divcibare 25.23 298⇓*i*P **P** **12 44 10.4 +1.0**
CRVS Cervenica-Dubn 25.31 309 *i*P **P** **12 44 12.0 +1.9**
NVSS Nova Varos 2 25.38 296⇓*i*P **P** **12 44 11.1 +0.3**
JHNI Jhansi 25.45 108⇑*i*P **P** **12 44 12.0 +0.3**
JHNI *e* 12 44 49.0
IDID Didziasalis 25.47 326⇑*e*P **P** **12 44 12.3 +0.8**
IDID AMPb AMB 12 44 19.4
comp=Z,309nm,1.2s,mb5.7
BOM Bombay 25.50 127 *i*P **P** **12 44 13.5 +1.3**
BOM *e* 12 48 47.1
PLE Pljevlja 25.59 296⇑*i*P **P** **12 44 14.1 +1.3**
ULC Ulcinj 25.61 293⇑*i*P **P** **12 44 12.4 -0.7**
TTG Podgorica 25.62 294⇑*i*P **P** **12 44 12.0 -1.2**
IIGN Ignalina 25.73 326 *e*P **P** **12 44 14.7 +0.7**
IIGN AMPb AMB 12 44 20.4
comp=Z,290nm,1.2s,mb5.7
KECS Kecovo 25.80 308 *i*P **P** **12 44 16.4 +1.7**
NKY Niksic 25.84 295⇑*i*P **P** **12 44 14.3 -0.8**
BHPL Bhopal 25.84 113 *e*P **P** **12 44 16.3 +0.9**
BHPL *i* 12 47 08.4
BUM Brajici-Budva 25.89 293⇑*i*P **P** **12 44 14.5 -1.1**
ISAL Salakas 25.91 326⇑*e*P **P** **12 44 16.4 +0.7**
ISAL AMPb AMB 12 44 27.8
comp=Z,653μm,1.8s
UPM Unac-Piva 25.93 295⇑*i*P **P** **12 44 16.2 +0.2**
IZAR Zarasai 25.96 326⇑*e*P **P** **12 44 16.7 +0.6**
IZAR AMPb AMB 12 44 23.4
comp=Z,610nm,1.3s,mb6.0
PSZ Piszkesteto 26.03 306⇑*i*Pn **P** **12 44 18.4 +1.6**
PSZ Piszkesteto 26.03 306 P **P** **12 44 17.0 +0.2**
PSZ pmax pmax
comp=Z,3μm,1.6s,mb6.6
BRY Bratogost 26.18 295⇑*i*P **P** **12 44 17.9 -0.4**
NIE Niedzica 26.18 310⇑*e*P **P** **12 44 19.1 +0.8**
NIE *e*S **S** **12 49 04.9 +18**
HCY Herceg Novi 26.19 294⇑*i*P **P** **12 44 17.8 -0.6**
POO Poona 26.44 126 *e*P **P** **12 44 21.6 +0.7**
SUW Suwalki 26.45 321⇑*e*P **P** **12 44 21.1 +0.4**
comp=Z,5μm,1.5s,mb6.8
SUW Suwalki 26.45 321⇑*e*P **P** **12 44 21.1 +0.4**
SUW *e*S **S** **12 48 55.7 +4.1**
SUW MLR MLR
comp=E,96μm,22.7s,MS6.3
SUW MLR MLR
comp=Z,103μm,22.2s,MS6.3
SUW MLR MLR
comp=N,64μm,25.8s,MS6.3
SUW Suwalki 26.45 321⇑*e*P **P** **12 44 21.1 +0.4**
SUW *e*PP pP 12 44 23.7 -1.9
SUW *e*S **S** **12 48 55.7 +4.1**

SUW eSS S 12 49 04.7 +13
LCI Lecce 26.47 289 eP P 12 44 19.8 -1.3
BUD Budapest 26.49 305⇑eP P 12 44 22.0 +0.9
PKSM Moragy 26.50 302 P P 12 44 21.9 +0.7
OJC Ojcow 26.76 311⇑iP P 12 44 24.3 +0.8
OJC i pP pP 12 44 35.0 +6.5
OJC i S S 12 49 01.0 +4.3
OJC MLR MLR 13 00 51.5
comp=N,30µm,17.9s,MS5.9
WAR Warsaw 26.79 316⇑eP P 12 44 24.8 +1.0
WAR e*PP pP 12 44 29.6 +0.8
WAR eS S 12 49 02.7 +5.5
WAR MLR MLR
comp=E,61µm,21.9s,MS6.3
WAR MLR MLR
comp=N,87µm,23.3s,MS6.3
WAR Warsaw 26.79 316⇑eP P 12 44 24.8 +1.0
comp=N,7.9nm,2.5s
WAR ePP pP 12 44 29.6 +0.8
WAR eS S 12 49 02.7 +5.5
WAR eSS S 12 49 11.7 +15
WAR LR LR
comp=Z,63µm,20.6s,MS6.2
STON Ston 26.79 295 iP P 12 44 22.9 -1.1
PKS9 Tamasi 26.81 303⇑eP P 12 44 25.3 +1.2
LIKS Likavka 26.83 308 eP P 12 44 25.3 +1.1
VYHS Vyhne 26.86 307 iP P 12 44 25.5 +1.0
VYHS ePCP PcP 12 47 41.4 -5.9
VYHS eS S 12 49 02.1 +3.8
RHK1 Bakonya 26.87 302⇑eP P 12 44 25.3 +0.7
PKSG 26.89 305⇑eP P 12 44 25.8 +1.0
SRO Srobarova 27.03 306 iP P 12 44 27.5 +1.4
SRO ePCP PcP 12 47 42.9 -4.8
AKL Akola 27.11 118 e P 12 44 22.1 -5.0
comp=Z,382nm,1.1s,mb5.8
AKL e 12 48 56.9
BRT Bari-Castellan 27.15 290 eP P 12 44 26.0 -1.2
KOLL Kolacno 27.16 307 eP P 12 44 28.4 +1.2
PUL Pulkovo 27.19 336 eP P 12 44 27.5 +0.1
PUL eS S 12 49 04.9 +1.3
PUL pmax pmax
comp=Z,1µm,2.3s,mb6.0
PUL pmax pmax
comp=N,1µm,1.9s
PUL pmax pmax
comp=E,1µm,1.8s
PUL pmax pmax
comp=E,350nm,0.9s
PUL pmax pmax
comp=Z,300nm,0.9s,mb5.8
PUL pmax pmax
comp=N,480nm,1.0s
PUL smax
comp=Z,6µm,3.3s
PUL smax
comp=N,17µm,2.7s
PUL smax
comp=E,28µm,4.2s
PUL MLR MLR
comp=E,37µm,16.0s,MS6.1
PUL MLR MLR
comp=Z,50nm,16.0s,MS6.2
PUL MLR MLR
comp=N,23µm,14.0s,MS6.1
PUL Pulkovo 27.19 336 eP P 12 44 27.5 +0.1
comp=N,300nm,0.9s,mb5.8
PUL eS S 12 49 04.9 +1.3
PUL LR LR
comp=Z,50µm,16.0s,MS6.2
LTRZ Laterza 27.45 290 P P 12 44 28.3 -1.6
VSU Vasula 27.52 331⇑iP P 12 44 30.2 -0.2
KAD Karad 27.55 127⇑iP P 12 44 31.7 +0.7
KAD i 12 49 17.9
TIP Timpagrande 27.59 287⇑iP P 12 44 30.2 -1.1
OKC Ostrava-Krasne 27.66 310⇑iP P 12 44 32.0 +0.3
OKC epP pP 12 44 41.1 +4.4
OKC eS S 12 49 14.4 +3.3
OKC L 13 00 00.0
comp=Z,34nm,16.8s
RAC Raciborz 27.70 310⇑eP P 12 44 32.9 +0.8
RAC epP pP 12 44 43.7 +6.6
RAC eS S 12 49 16.4 +4.6
RAC LMN 12 59 21.2
comp=Z,106µm,21.5s
RAC LME 12 59 37.1
comp=Z,62µm,21.3s
RAC MLR MLR 13 00 07.9
comp=Z,44µm,22.3s,MS6.0
ORI Oriolo Calabro 27.76 288 eP P 12 44 32.2 -0.6
SMOL Smolenice 27.77 307 eP P 12 44 34.0 +1.2
SMOL eS S 12 49 18.0 +5.0
JBP Jabalpur 27.81 110⇑i P 12 44 36.4 +3.0
JBP i 12 49 18.9
TDS Terranova Siba 27.87 288 eP P 12 44 32.8 -1.0
GRI Girifalco 27.88 286 eP P 12 44 32.9 -1.0
ZST Bratislava 27.91 306 eP P 12 44 34.5 +0.4
ZST eS S 12 49 02.1 -13
SISC Sisak 27.96 300 iP P 12 44 35.2 +0.7
MORC Moravsky Berou 28.01 309⇑iP P 12 44 34.6 -0.4
comp=Z,1µm,1.6s,mb6.3
FGMS Monte Sant'Ang 28.07 292 eP P 12 44 34.4 -1.2
SOP Sopron 28.17 305⇑iP P 12 44 36.9 +0.5
SOP i S S 12 49 23.4 +4.0
DANN Dangsing 28.23 97 eP P 12 44 38.8 +1.7
SOI Samo 28.26 284⇑iP P 12 44 36.8 -0.5
LATR Latur 28.33 122 iP P 12 44 38.9 +0.8
KOLN Koldanda 28.34 98 eP P 12 44 37.9 -0.3
comp=Z,975nm,1.4s,mb6.2
RGNG Rignano Grg 28.35 292 eP P 12 44 36.9 -1.1
SLCN Sala Consilina 28.36 289⇑iP P 12 44 37.9 -0.4
FG4 Candela 28.41 291 eP P 12 44 38.0 -0.7
MGR Morigerati 28.44 289⇑iP P 12 44 38.0 -0.9
VKA Vienna 28.44 306⇑iP P 12 44 39.0 +0.2
comp=Z,6µm,4.0s
VKA LR LR
comp=Z,26µm,19.0s,MS5.8
MRLC Muro Lucano 28.45 290⇑iP P 12 44 38.3 -0.7
WMQ Urumqi 28.46 64 P P 12 44 40.0 +1.0
WMQ AP pP 12 44 47.5 +3.5
WMQ PP PP 12 45 32.0 +1.2
WMQ PCP PcP 12 47 51.5 +0.3
WMQ S S 12 49 24.8 +0.7
WMQ SCS ScS 12 55 21.5 -0.5
WMQ AMB AMB
comp=Z,451nm,1.1s,mb6.0
WMQ AMB AMB
comp=Z,4µm,9.2s
WMQ LR LR
comp=N,48µm,14.0s,MS6.5
WMQ LR LR
comp=E,71µm,17.0s,MS6.5
WMQ LR LR
comp=Z,84µm,14.1s,MS6.5
VRAC Vranov 28.49 308 P P 12 44 39.7 +0.4
comp=Z,150nm,1.2s,mb5.5,baz=99,slow=8.9,SNR=148
VRAC S S 12 49 29.2 +4.6
comp=Z,18nm,1.0s,baz=77,slow=21,SNR=2.4
SCLL Scilla 28.50 285⇑iP P 12 44 39.0 -0.5
NVS Novosibirsk 28.51 39⇑iP P 12 44 38.6 -0.8
NVS pmax pmax
comp=Z,1µm,2.0s,mb6.3
NVS pmax pmax
comp=N,1µm,1.9s
NVS Novosibirsk 28.51 39⇑iP P 12 44 38.6 -0.8
comp=N,1µm,2.0s,mb6.3
MTTG Motta San Giov 28.55 284⇑iP P 12 44 39.5 -0.4
FG5 Orsara di Pugl 28.60 291 eP P 12 44 40.1 -0.2
SGO Sicignano 28.60 290⇑iP P 12 44 40.0 -0.4
MSI Messina ING 28.63 285 P P 12 44 41.3 +0.6
CRES Cresnjevec ost 28.64 301 P P 12 44 40.9 +0.3
DOBS Dobrina 28.66 301 eP P 12 44 41.1 +0.2
GOA Goa 28.69 131⇓iP P 12 44 41.1 -0.3
GOA i 12 49 34.1
ATN Antennamare 28.71 285 P P 12 44 42.0 +0.7
BOJS Bojanci 28.74 300⇑eP P 12 44 42.1 +0.5
ARSA Arzberg 28.78 304⇑iP P 12 44 42.4 +0.5
comp=N,5µm,2.6s,mb6.8
CSSN Cassano Irpino 28.80 290 eP P 12 44 41.9 -0.2
MRB1 Monte Rocchett 28.82 291⇑iP P 12 44 42.6 +0.2
CIGN Sant'Elia a Pi 28.86 292 P P 12 44 42.7 0.0
DPC Dobruska-Polom 28.93 310⇑iP P 12 44 43.4 +0.2
DPC epP pP 12 44 53.4 +5.2
DPC eS S 12 49 34.9 +3.3
DPC L 13 00 10.0
comp=N,34nm,14.6s
NVLJ Novalja 28.94 298 iP P 12 44 42.7 -0.6
ZAL Zalesovo 28.94 42 P P 12 44 42.6 -0.7
comp=N,31nm,0.6s,mb5.2,baz=129,slow=9.1,SNR=81
ZAL S S 12 49 35.4 +3.6
comp=N,16nm,1.0s,baz=106,slow=12,SNR=1.7
ZAL LR LR 12 58 50.7
comp=N,36µm,19.3s,MS6.0,baz=16,slow=42
ZAL Zalesovo 28.94 42 P P 12 44 42.6 -0.7
ZAL S S 12 49 35.4 +3.6
ZAL pmax pmax
comp=Z,31nm,0.6s
ZAL smax
comp=N,16nm,1.0s
ZAL MLR MLR
comp=Z,36µm,19.3s
VISS Visnje 29.06 301⇑eP P 12 44 44.9 +0.5
GKN Gorkha 29.07 97 eP P 12 44 44.9 +0.1
comp=Z,1µm,1.3s,mb6.4
KSP Ksiaz 29.08 311⇑eP P 12 44 44.7 +0.1
comp=Z,7µm,2.6s,mb6.9
KSP Ksiaz 29.08 311⇑eP P 12 44 45.0 +0.4
KSP e*SP sP 12 44 53.7 +1.9
KSP eS S 12 49 36.0 +2.0
KSP Ksiaz 29.08 311⇑eP P 12 44 45.0 +0.4
KSP ePP pP 12 44 50.7 +1.2
KSP eSP sP 12 44 53.7 +1.9
KSP eS S 12 49 36.0 +2.0
KSP LR LR
comp=Z,73µm,21.0s,MS6.3
UPC Upice 29.16 310⇑iP P 12 44 45.6 +0.3
UPC epP pP 12 44 56.6 +6.3
SGG Gregorio Mates 29.26 291⇑iP P 12 44 46.1 -0.3
OVO Vesuviano 29.27 290 eP P 12 44 46.5 0.0
PZI Palazzolo 29.28 283 eP P 12 44 45.9 -0.6
MEU Monte Lauro 29.29 283 P P 12 44 46.8 +0.2
LJU Ljubljana 29.30 301⇑iP P 12 44 47.2 +0.6
LJU epP pP 12 44 56.0 +4.4
LJU ePP PP 12 45 55.0 +13
LJU eS S 12 49 42.6 +4.9
LJU eSP 12 50 16.2
LJU eSS SS 12 51 28.0 +19
LJU e 12 58 13.9
LJU Ljubljana 29.30 301⇑iP P 12 44 47.2 +0.6
LJU eS S 12 49 42.6 +4.9
LJU eSP 12 50 16.2
LJU e 12 58 13.9
CII Carovilli 29.30 292⇑iP P 12 44 47.3 +0.6
GKP Gorka Klasztor 29.31 316 eP P 12 44 46.8 +0.2
comp=Z,4.7nm,3.5s
GKP ePP pP 12 44 52.6 +1.0
GKP eS S 12 49 41.7 +4.0
GKP LR LR
comp=Z,86µm,20.6s,MS6.4
MNO Monte Soro 29.34 284 eP P 12 44 47.5 +0.5
OBKA Obir 29.34 302⇑iP P 12 44 47.4 +0.4
comp=Z,5µm,3.1s
CEY Cerknica 29.34 300⇑eP P 12 44 47.3 +0.3
JOF Joensuu 29.42 341 ep P 12 44 47.0 -0.5
comp=Z,194nm,0.7s,mb5.9
JOF Joensuu 29.42 341 eP P 12 44 47.0 -0.5
JOF pmax pmax
comp=Z,194nm,0.7s,mb5.9
RNI2 Rionero Sannit 29.42 292⇑iP P 12 44 48.5 +0.7
MSC Monte Massico 29.58 291⇑iP P 12 44 48.8 -0.4
JAVS Javornik 29.61 301 eP P 12 44 49.6 +0.2
JAVS eS S 12 49 46.3 +3.7
DMN Daman 29.62 97 eP P 12 44 48.8 -0.9
comp=Z,695nm,0.9s,mb6.4
VAE Valguarnera 29.63 284 P P 12 44 51.3 +1.6
comp=Z,39nm,1.1s,mb5.1,baz=336,slow=4.6,SNR=38
VAE S S 12 49 52.1 +9.1
comp=Z,8.1nm,0.4s,baz=90,slow=23,SNR=1.3
SDI San Donato 29.68 292⇑iP P 12 44 49.5 -0.5
KKN Kakani 29.68 97 eP P 12 44 49.3 -0.9
comp=Z,685nm,1.1s,mb6.3
MOA Molln 29.72 305⇑iP P 12 44 50.2 -0.2
comp=Z,5µm,4.1s
VOY Vojsko 29.74 301⇑eP P 12 44 50.2 -0.4
TERO Teramo 29.81 294⇑iP P 12 44 51.0 -0.2
VVLD Villa Vallelon 29.81 292 P P 12 44 50.9 -0.3
CSLB Castelbuono 29.84 285 eP P 12 44 50.7 -0.8
FINES FINESS Array B 29.84 335 P P 12 44 50.8 -0.5
comp=Z,68nm,1.0s,mb5.3,baz=135,slow=11,SNR=66
FINES Px Px 12 45 16.6
comp=Z,137nm,0.7s,baz=135,slow=16,SNR=17
FINES Sx Sx 12 50 27.0
comp=Z,148nm,1.0s,baz=151,slow=24,SNR=6.0
FINES LR LR 12 59 43.1
comp=Z,25µm,20.7s,MS5.8,baz=124,slow=42
FINES P3KPbc 13 16 46.5
comp=Z,2.3nm,0.9s,slow=1.9,SNR=4.5
GIB Gibilmanna 29.85 285 eP P 12 44 50.8 -0.8
PKI Pulchoki 29.88 97 eP P 12 44 50.9 -1.1
comp=Z,2µm,1.5s,mb6.6
PRU Pruhonice 29.95 309⇑iP P 12 44 51.8 -0.6
comp=Z,952nm,2.4s,mb6.1
PRU epP pP 12 45 02.2 +4.8
PRU eS S 12 49 48.6 +0.8
PRU L 13 00 50.0
comp=Z,32nm,20.0s
PRU Pruhonice 29.95 309⇑iP P 12 44 51.8 -0.6
PRU e*PP pP 12 45 02.2 +4.8
PRU eS S 12 49 48.6 +0.8
PRU pmax pmax
comp=Z,952nm,2.4s,mb6.1
PRU MLR MLR
comp=Z,32µm,20.0s,MS6.0
AQU L'Aquila 29.96 293 P P 12 44 52.4 -0.2
AQU L'Aquila 29.96 293 eP P 12 44 53.1 +0.6
PTQR Pietraquaria 29.97 293⇑iP P 12 44 52.9 +0.2
VENT Ventotene 30.02 290 P P 12 44 53.0 -0.1
BLSP Bilaspur 30.03 110 eP P 12 44 53.0 -0.4
BLSP e 12 45 58.0
ROBS Robic 30.03 301⇑eP P 12 44 52.8 -0.3
PRA Prague 30.03 309 ⇑P P 12 44 54.0 +0.9
PRA ex x 12 50 21.0
PRA L 13 03 20.0
PVCC Panska Ves 30.05 310⇑iP P 12 44 53.1 -0.2
PVCC epP pP 12 45 01.3 +3.0
PVCC eS S 12 49 51.9 +2.3
PVCC L 13 00 50.0
comp=Z,53nm,22.4s
PTCC Patocco-Chiusa 30.15 302⇑iP P 12 44 54.1 -0.1
GMNA Gemona 30.22 301⇑iP P 12 44 54.9 +0.1
KBA Koelnbreinsper 30.23 303⇑iP P 12 44 55.0 +0.1
comp=Z,6µm,3.3s
GEC2 GERESS Array S 30.26 306 eP P 12 44 55.6 +0.5
GEC2 pmax pmax
comp=Z,1µm,1.2s,mb6.4
GERES GERESS Array B 30.26 306 P P 12 44 55.1 0.0
comp=Z,230nm,0.8s,mb5.9,baz=108,slow=8.4,SNR=850
GERES S S 12 49 54.8 +2.1
comp=Z,3.2nm,0.8s,baz=76,slow=5.5,SNR=2.2
GERES P3KPbc 13 16 47.9
comp=Z,0.8nm,0.7s,baz=294,slow=6.8,SNR=3.8
CERT Cerreto 30.29 293⇑iP P 12 44 55.1 -0.3
ARV Arcevia 30.29 296⇑iP P 12 44 55.6 +0.2
SNTG Esanatoglia 30.29 295⇑iP P 12 44 55.5 +0.1
BUA Buia 30.29 301⇑eP P 12 44 55.4 -0.1
PLRO Paularo 30.31 302⇑iP P 12 44 55.7 +0.1
BOO Bordano 30.32 302⇑iP P 12 44 55.1 -0.6
HYB Hyderabad 30.38 121⇑iP P 12 44 56.0 -0.5
comp=Z,140nm,1.0s,mb5.7
HYB ePP PP 12 45 56.0 -0.1
HYB eS S 12 49 58.0 +2.9
HYB eSS SS 12 51 32.0 -2.9
HYB LR LR 12 59 04.0
comp=Z,71nm,14.0s
HYB Hyderabad 30.38 121⇑eP P 12 44 56.0 -0.5
comp=Z,140nm,1.0s,mb5.7
HYB eS S 12 49 58.0 +2.9
KHC Kasperske Hory 30.39 307⇑iP P 12 44 55.9 -0.3
KHC epP pP 12 45 02.9 +1.7
KHC x x 12 46 04.0
KHC eS S 12 49 56.3 +1.5
KHC L 13 01 40.0
comp=Z,54nm,18.7s
KHC Kasperske Hory 30.39 307⇑iP P 12 44 55.9 -0.3
KHC epP pP 12 45 02.9 +1.7
KHC e 12 46 04.0
KHC eS S 12 49 56.3 +1.5
KHC LR LR 13 01 40.0
comp=Z,54µm,18.7s,MS6.2
MPRI Monte Prat 30.39 301⇑iP P 12 44 56.1 -0.2
FSSB Fossombrone 30.41 296⇑iP P 12 44 56.8 +0.3
USI Ustica 30.41 286⇑iP P 12 44 56.0 -0.6
MTCE Montecelio 30.46 293 P P 12 44 56.6 -0.4
MNS Montasola 30.49 294⇑iP P 12 44 57.0 -0.2
BRG Berggiesshubel 30.52 310⇑iP P 12 44 57.7 +0.3
BRG e 12 45 54.0
BRG iS S 12 49 56.0 -1.0
BRG pmax pmax
comp=Z,676nm,1.9s,mb6.2
BRG Berggiesshubel 30.52 310⇑iP P 12 44 57.7 +0.3
comp=Z,676nm,1.9s,mb6.2
BRG ePP PP 12 45 54.0 -3.6
BRG e 12 48 08.8
BRG iS S 12 49 56.0 -1.0
CLTB Caltabellotta 30.55 284 eP P 12 44 57.5 -0.3
FVI Forni Avoltri 30.57 302⇑iP P 12 44 57.7 -0.1
MLNI Malnisio 30.64 301⇑iP P 12 44 58.2 -0.3
RSM Repubblica di 30.65 297⇑iP P 12 44 59.5 +0.8
CRJA Costa Raja 30.68 284 P P 12 44 59.2 +0.2
MMGO Monte Magaggia 30.73 284 P P 12 44 58.2 -1.2
MFNL Monte Finestre 30.75 284 P P 12 44 59.4 -0.1
CAE Caneva 30.75 301⇑iP P 12 44 59.3 -0.2
WET Wettzell 30.84 307 eP P 12 45 00.0 -0.2
WET pmax pmax
comp=Z,625nm,1.4s,mb6.2
MTGR Montagna Grand 30.86 285 eP P 12 44 59.7 -0.8
CAVT Castelvetrano 30.90 284 P P 12 45 00.7 -0.2
ERC Erice 30.97 285 P P 12 45 02.2 +0.7
AFL Alpe Faloria 30.97 302⇑iP P 12 45 02.1 +0.7
CRE Caprese Michel 31.01 296⇑iP P 12 45 02.5 +0.7
TOLF Tolfa 31.01 293⇑iP P 12 45 01.3 -0.5
RUE Ruedersdorf 31.04 313⇑iP P 12 45 01.6 -0.3
comp=Z,662nm,1.2s,mb6.3
FAU Forcella Aurin 31.09 301⇑iP P 12 45 02.5 +0.1
SFI Santa Sofia 31.09 296⇑iP P 12 45 03.5 +1.0
PGD Poggio Sodo 31.18 296⇑iP P 12 45 04.7 +1.4
CLL Collm 31.20 311 P P 12 45 03.7 +0.3
comp=Z,logA/T=2.9,mb6.5
CLL i *SP sP 12 45 13.3 +2.7
CLL ePP PP 12 46 06.0 -0.4
CLL eS S 12 50 11.0 +3.4
CLL eSS SS 12 52 06.0 +12
CLL Collm 31.20 311 iP P 12 45 03.7 +0.3
CLL i 12 45 13.3
CLL eS S 12 50 11.0 +3.4
CLL pmax pmax
comp=Z,861nm,1.0s,mb6.5
CLL MLR MLR
comp=Z,40µm,17.6s,MS6.1
CLL Collm 31.20 311 iP P 12 45 03.7 +0.3
comp=Z,861nm,1.0s,mb6.5
CLL i 12 45 13.3
CLL eS S 12 50 11.0 +3.4
CLL LR LR
comp=Z,40µm,17.6s,MS6.1
BSD Bornholm Skovb 31.26 319⇑iP P 12 45 02.5 -1.4
comp=Z,335nm,0.7s,mb6.3
BSD iS S 12 50 09.4 +1.0
comp=Z,38µm,18.0s
BSD Bornholm Skovb 31.26 319⇑iP P 12 45 02.5 -1.4
BSD iS S 12 50 09.4 +1.0
BSD pmax pmax
comp=Z,340nm,0.7s,mb6.3
BSD MLR MLR
comp=Z,38µm,18.0s,MS6.1
CTI Castel Tesino 31.30 301⇑iP P 12 45 04.2 -0.2
VMG Vicchio 31.30 297 eP P 12 45 05.7 +1.3
NKC Novy Kostel 31.32 309⇑iP P 12 45 04.2 -0.2
NKC epP pP 12 45 14.2 +4.8
NKC eS S 12 50 12.4 +3.0
NKC L 13 01 30.0
comp=Z,51nm,19.0s
WTTA Wattenberg 31.41 303⇑iP P 12 45 04.9 -0.4
comp=Z,6µm,2.2s,mb7.0
SEI Scarperia 31.44 297 eP P 12 45 07.4 +1.8
WATA Walderalm 31.46 303⇓iP P 12 45 05.1 -0.6
comp=Z,2µm,1.6s,mb6.8
CSNT Castellina Chi 31.49 296⇑iP P 12 45 05.5 -0.5
FNVD Fontana Vidola 31.61 297⇑iP P 12 45 08.3 +1.2
MAON Monte Argentar 31.64 294⇑iP P 12 45 06.5 -0.8
SQTA Sankt Quirin 31.70 303⇓iP P 12 45 07.2 -0.6
comp=Z,2µm,1.6s,mb6.7
ZCCA Zocca 31.72 297⇑iP P 12 45 09.5 +1.5
GRFL Gerfalco 31.73 295⇑iP P 12 45 07.3 -0.8
FUR Furstenfeldbru 31.75 305 eP P 12 45 08.0 -0.3
FUR pmax pmax
comp=Z,1µm,1.7s,mb6.5
KGD Kothagudem 31.75 118⇑eP P 12 45 08.8 +0.3
KGD esP sP 12 45 23.3 +7.6
KGD e 12 45 33.3
KGD ePnPn 12 46 14.6
KGD eS S 12 50 19.7 +3.2
KGD eSnSn 12 52 13.5
KGD e 12 53 06.8
KGD e 12 55 06.9
MOTA Moosalm 31.78 303⇓iP P 12 45 07.6 -0.9
comp=Z,1µm,1.4s,mb6.5
MOX Moxa 31.92 309⇑iP P 12 45 09.0 -0.7
comp=Z,logA/T=2.2,mb5.8
MOX S S 12 50 24.0 +5.2
MOX L 13 02 23.0
MOX Moxa 31.92 309 eP P 12 45 09.0 -0.7
MOX pmax pmax
comp=Z,245nm,1.5s,mb5.8
MOX MLR MLR
comp=Z,41µm,22.0s,MS6.1
MOX Moxa 31.92 309⇑eP P 12 45 09.0 -0.7
comp=Z,245nm,1.5s,mb5.8
MOX eS S 12 50 24.0 +5.2
MOX LR LR
comp=Z,41µm,22.0s,MS6.1
RGN Rugen 31.93 317⇑iP P 12 45 10.2 +0.4
comp=Z,2µm,1.3s,mb6.8
BDI Bagni Di Lucca 31.99 297⇑iP P 12 45 10.2 -0.2
GSCL Gusciola 32.00 297⇑iP P 12 45 11.3 +0.9
GRF Grafenberg Arr 32.00 307 eP P 12 45 10.7 +0.3
GRF e 12 46 29.7
GRF eS S 12 50 21.8 +1.7
GRF pmax pmax
comp=Z,568nm,1.3s,mb6.2
PII Pisa 32.04 296⇑iP P 12 45 10.0 -0.9
SAL Salo 32.06 300 eP P 12 45 11.1 0.0
MAIM 32.07 297⇑iP P 12 45 10.7 -0.4
ERBM Eremo 32.12 297⇑iP P 12 45 12.7 +1.2
SARO Sassorosso 32.13 297⇑iP P 12 45 11.6 0.0
VLC Villacollemand 32.14 297⇑iP P 12 45 11.4 -0.3
comp=Z,1µm,1.8s,mb6.4
BRMO Bormio 32.21 301⇑iP P 12 45 12.4 +0.1
VALM 32.24 297⇑iP P 12 45 13.8 +1.3
FUORN Ofenpass 32.30 302⇑iP P 12 45 13.2 +0.2
comp=Z,2µm,1.8s,mb6.7
VINC Vinca 32.31 297⇑iP P 12 45 12.4 -0.8
BACM 32.37 297⇑iP P 12 45 14.0 +0.4
GRAM 32.37 298⇑iP P 12 45 14.6 +0.9
BERNI Berninapass 32.45 301⇑iP P 12 45 14.6 +0.2
comp=Z,2µm,1.7s,mb6.7
UBR Uberruh 32.48 304⇑eP P 12 45 14.1 -0.5
UBR Uberruh 32.48 304 P P 12 45 14.3 -0.3
HDH Heidenheim 32.51 305⇑eP P 12 45 14.0 -0.9
HDH Heidenheim 32.51 305 P P 12 45 14.5 -0.4
CODM 32.52 297⇑P P 12 45 15.5 +0.4
DAVOX Davos 32.57 302 P P 12 45 15.3 -0.1
comp=Z,652nm,1.2s,mb6.5,baz=101,slow=6.7,SNR=294
DAVOX S S 12 50 29.5 +0.5
comp=Z,5.3nm,0.6s,baz=262,slow=17,SNR=3.5
DAVOX Davos 32.57 302⇑iP P 12 45 15.1 -0.3
comp=Z,1µm,1.6s,mb6.6
DAVA Damuels 32.60 303⇑iP P 12 45 15.0 -0.7
comp=Z,4µm,2.0s,mb7.0
CUD Cuddapah 32.60 125⇑eP P 12 45 15.4 -0.6
CUD epP pP 12 45 25.4 +4.4
CUD ePP PP 12 46 28.7 +3.7
CUD ePcP PcP 12 47 57.5 -4.8
CUD eS S 12 50 29.9 +0.1
CUD eSS SS 12 52 51.9 +25
CUD ePKiK 12 55 23.9
COP Copenhagen 32.79 319⇑iP P 12 45 18.1 +0.9
comp=Z,316nm,1.0s,mb6.2
COP iS S 12 50 35.6 +3.3
comp=Z,18µm,18.0s
COP Copenhagen 32.79 319⇑iP P 12 45 18.1 +0.9

COP *i* S **S** **12 50 35.6 +3.3**
COP pmax pmax
comp=Z,320nm,1.0s,mb6.2
COP MLR MLR
comp=Z,18µm,18.0s,MS5.8
BOB Bobbio (Coli) 32.81 298⇑*iP* **P** **12 45 18.1 +0.5**
VDL Val di Lei 32.84 301⇑*iP* **P** **12 45 17.7 0.0**
comp=Z,3µm,2.5s,mb6.8
KAMOR Kamor 32.87 303⇑*iP* **P** **12 45 17.3 -0.7**
comp=Z,3µm,1.5s,mb7.0
PLONS Plons 32.93 302⇑*iP* **P** **12 45 17.7 -0.8**
comp=Z,3µm,1.6s,mb6.9
DGI Dorgali Grotta 32.95 290 P **P** **12 45 18.2 -0.6**
APA Apatity 32.96 347⇓*iP* **P** **12 45 17.7 -0.9**
APA *e* 12 45 27.0
APA *i* S **S** **12 50 38.0 +3.1**
APA pmax pmax
comp=Z,211nm,1.5s,mb5.8
APA Apatity 32.96 347⇓*iP* **P** **12 45 17.7 -0.9**
comp=Z,211nm,1.5s,mb5.8
APA *e* 12 45 27.0
APA *i* S **S** **12 50 38.0 +3.1**
SIND Sindeldorf 32.99 307⇑*eP* **P** **12 45 18.9 -0.2**
SIND Sindeldorf 32.99 307 P **P** **12 45 19.2 +0.1**
LVZ Lovozero 33.05 348*c iP* **P** **12 45 18.9 -0.5**
LVZ pmax pmax
comp=Z,218nm,1.0s,mb6.0
LVZ MLR MLR
comp=Z,84µm,17.0s,MS6.5
LVZ Lovozero 33.05 348⇑*iP* **P** **12 45 18.9 -0.5**
BUCH Bad Urach 33.06 305⇑*eP* **P** **12 45 18.5 -1.1**
BUCH Bad Urach 33.06 305 P **P** **12 45 19.3 -0.3**
MUGIO Muggio 33.11 300⇑*iP* **P** **12 45 19.1 -1.1**
comp=Z,1µm,2.2s,mb6.5
GENL Genova Univers 33.16 297⇑P **P** **12 45 19.5 -1.0**
LLS Linth-Limmern 33.17 302⇑*iP* **P** **12 45 19.9 -0.8**
comp=Z,2µm,2.5s,mb6.6
GUT Gutenstein 33.18 304⇑*eP* **P** **12 45 19.7 -1.0**
GUT Gutenstein 33.18 304 P **P** **12 45 19.9 -0.8**
STU Stuttgart 33.20 305 P **P** **12 45 20.1 -0.7**
STU Stuttgart 33.20 305⇑*iP* **P** **12 45 19.9 -0.9**
comp=Z,968nm,1.4s,mb6.5
PGF Pioggiola 33.21 294⇑*iP* **P** **12 45 20.3 -0.7**
comp=Z,3µm,1.5s,mb6.6
WEIN Weingarten 33.23 303⇑*iP* **P** **12 45 20.2 -0.9**
comp=Z,2µm,1.8s,mb6.8
SISB Singen-Sch Ber 33.25 303 P **P** **12 45 21.2 -0.2**
WILA Wila 33.27 303⇑*iP* **P** **12 45 20.8 -0.7**
comp=Z,3µm,1.6s,mb6.9
VAI Varese 33.30 300⇑*iP* **P** **12 45 20.8 -1.0**
STEIN Stein am Rhein 33.32 303⇑*iP* **P** **12 45 20.8 -1.1**
comp=Z,2µm,1.7s,mb6.7
FUSIO Fusio 33.39 301⇑*iP* **P** **12 45 21.8 -0.8**
comp=Z,2µm,2.0s,mb6.7
SPAK Spaichingen 33.40 304⇑*eP* **P** **12 45 21.9 -0.8**
SPAK Spaichingen 33.40 304⇑*eP* **P** **12 45 21.5 -1.2**
MUO Muotathal 33.43 302⇑*iP* **P** **12 45 22.3 -0.6**
comp=Z,3µm,1.7s,mb6.9
BSEG Bad Segeberg 33.44 315 *eP* **P** **12 45 23.6 +0.7**
BSEG pmax pmax
comp=Z,656nm,1.4s,mb6.4
TRULL Truellikon 33.44 303⇑*iP* **P** **12 45 21.8 -1.2**
comp=Z,1µm,1.5s,mb6.5
LBG Lerchenberg 33.45 305⇑*eP* **P** **12 45 22.1 -0.9**
LBG Lerchenberg 33.45 305 P **P** **12 45 22.7 -0.3**
PCP Pian Castagno 33.46 298⇑P **P** **12 45 22.2 -0.9**
ZUR Zurich 33.49 303⇑*iP* **P** **12 45 22.6 -0.8**
comp=Z,2µm,1.7s,mb6.8
FLACH Flaach 33.51 303⇑*iP* **P** **12 45 22.5 -1.1**
comp=Z,2µm,1.8s,mb6.7
TOD Tromm 33.54 307⇑*eP* **P** **12 45 23.9 0.0**
BNALP Bannalp 33.57 302⇑*iP* **P** **12 45 23.4 -0.7**
comp=Z,2µm,2.5s,mb6.7
SLE Schleitheim 33.58 304⇑*iP* **P** **12 45 22.9 -1.3**
comp=Z,778nm,1.6s,mb6.4
VIS Vishakhapatnam 33.59 115 *i* P **P** **12 45 22.5 -2.1**
SWS Schriesheim 33.60 307⇑*eP* **P** **12 45 24.3 0.0**
SWS Schriesheim 33.60 307 P **P** **12 45 24.6 +0.3**
LSA Lhasa 33.65 90 P **P** **12 45 26.0 +1.0**
LSA AP pP 12 45 35.8 +5.7
LSA XP sP 12 45 48.8 +17
LSA PP PP 12 46 39.0 +1.1
LSA S **S** **12 50 46.0 0.0**
LSA XS 12 51 11.0
LSA SCS ScS 12 55 45.5 -2.2
LSA AMB AMB
comp=Z,220nm,1.2s,mb6.0
LSA LR LR
comp=N,27µm,13.6s,MS6.3
LSA LR LR
comp=E,28µm,11.6s,MS6.3
LSA LR LR
comp=Z,39µm,11.6s,MS6.4
LSA Lhasa 33.65 90⇑*eP* **P** **12 45 26.1 +1.0**
comp=Z,187nm,1.0s,mb6.0
FIN Finale Ligure 33.71 297⇑*iP* **P** **12 45 24.1 -1.3**
BFO Black Forest 33.73 305 *eP* **P** **12 45 24.3 -1.2**
BFO pmax pmax
comp=Z,398nm,1.7s,mb6.1
HASLI Hasliberg 33.76 302⇑*iP* **P** **12 45 24.8 -0.9**
comp=Z,3µm,2.4s,mb6.7
RORO 33.81 297⇑P **P** **12 45 25.5 -0.8**
SULZ Sulz-Cheisache 33.82 303⇑*iP* **P** **12 45 25.0 -1.3**
comp=Z,1µm,1.4s,mb6.6
MCGN Macugnaga 33.85 300 *eP* **P** **12 45 24.5 -2.0**
ORO Oropa 33.85 300 P **P** **12 45 27.0 +0.4**
MMK Mattmark 33.87 300⇑*iP* **P** **12 45 25.6 -1.1**
comp=Z,2µm,2.1s,mb6.6
FELD Feldberg 33.91 304⇑*eP* **P** **12 45 26.0 -1.1**
FELD Feldberg 33.91 304⇑*eP* **P** **12 45 25.8 -1.3**
IMI Imperia 33.95 297⇑*iP* **P** **12 45 27.1 -0.3**
ROB Roburent 33.95 297⇑P **P** **12 45 26.2 -1.2**
HFS Hagfors 33.95 327 P **P** **12 45 27.2 -0.1**
comp=Z,181nm,0.8s,mb6.1,baz=121,slow=8.6,SNR=173
HFS S **S** **12 50 50.6 +0.3**
comp=Z,22nm,0.7s,baz=100,slow=9.0,SNR=2.3
HFS Hagfors 33.95 327 P **P** **12 45 27.2 -0.1**
HFS S **S** **12 50 50.6 +0.3**
HFS pmax pmax
comp=Z,181nm,0.8s
HFS smax
comp=N,22nm,0.7s
KIZ Kirchzarten 33.97 304⇑*eP* **P** **12 45 26.4 -1.2**
KIZ Kirchzarten 33.97 304 P **P** **12 45 26.7 -0.9**
KTD Kalmit 33.98 306⇑*eP* **P** **12 45 27.7 +0.1**
KTD Kalmit 33.98 306⇑*eP* **P** **12 45 27.5 -0.1**
MONE Monesi 34.04 297⇑P **P** **12 45 28.1 -0.1**
NEGI Negi 34.08 296⇑P **P** **12 45 28.6 0.0**
BALST Balsthal 34.09 303⇑*iP* **P** **12 45 27.4 -1.2**
comp=N,3µm,2.6s,mb6.7
LKBD Leukerbad 34.11 301⇑*iP* **P** **12 45 27.9 -0.9**
comp=N,2µm,1.6s,mb6.7
WIMIS Wimmis 34.12 302⇑*iP* **P** **12 45 27.9 -0.9**
comp=N,2µm,1.6s,mb6.7
STR Strasbourg 34.12 305⇑*eP* **P** **12 45 28.2 -0.7**
LANF Langenberg 34.13 306⇑*eP* **P** **12 45 28.2 -0.7**
SAOF Saorge 34.18 297⇑*eP* **P** **12 45 29.6 +0.1**
LIBD Limburg 34.20 304⇑*eP* **P** **12 45 28.8 -0.8**
LIBD Limburg 34.20 304⇑*eP* **P** **12 45 28.6 -1.0**
BBS Basel-Blauen 34.22 303⇑*eP* **P** **12 45 28.6 -1.2**
DIX Grande Dixence 34.25 300⇑*iP* **P** **12 45 29.6 -0.4**
comp=N,2µm,1.7s,mb6.7
ENR Entracque 34.27 297⇑P **P** **12 45 29.8 -0.4**
AUTN L'Aution 34.28 297⇑*eP* **P** **12 45 30.6 +0.3**
SBF Sospel 34.28 297⇑*iP* **P** **12 45 29.9 -0.4**
comp=N,5µm,1.6s,mb6.9
REVF Revere 34.33 296⇑*eP* **P** **12 45 30.6 -0.1**
SENIN Lac Senin 34.33 301⇑*iP* **P** **12 45 30.0 -0.7**
comp=N,2µm,2.2s,mb6.7
STV2 Anna di Valdie 34.34 297⇑P **P** **12 45 29.7 -1.1**
STV Sta Anna Valdi 34.34 297⇑P **P** **12 45 30.0 -0.9**
AURF Auriere 34.35 297⇑*eP* **P** **12 45 31.1 +0.2**
RSP Reno Superiore 34.36 299⇑P **P** **12 45 28.6 -2.4**
BHB Bricherasio 34.37 298⇑P **P** **12 45 29.1 -1.9**
ABH Alteburg 34.38 307⇑*eP* **P** **12 45 31.6 +0.5**
ABH Alteburg 34.38 307⇑*eP* **P** **12 45 31.4 +0.3**
DOI San Damiano 34.39 298⇑*iP* **P** **12 45 29.6 -1.7**
TOUF Mont Tournerai 34.40 297⇑*eP* **P** **12 45 31.6 +0.2**
BOURR Bourrignon 34.41 303⇑*iP* **P** **12 45 30.2 -1.2**
comp=N,1µm,1.8s,mb6.5
LSD Ceresole Reale 34.43 299⇑P **P** **12 45 30.9 -0.7**
CDF Champ du Feu 34.43 305⇑*iP* **P** **12 45 30.1 -1.5**
comp=N,1µm,1.5s,mb6.3
GRYON Gryon 34.46 301⇑*iP* **P** **12 45 30.9 -0.9**
comp=N,1µm,1.7s,mb6.5
MVIF Mont Vial 34.48 297⇑*eP* **P** **12 45 32.4 +0.4**
MOF Molkenrain 34.50 304⇑*eP* **P** **12 45 31.0 -1.1**
ECH Echery 34.50 304⇑*eP* **P** **12 45 31.2 -0.9**
FENE Fenestrelle 34.50 299⇑P **P** **12 45 30.8 -1.4**
SALAN Lac Salanfe 34.56 301⇑*iP* **P** **12 45 31.8 -0.9**
comp=N,1µm,2.4s,mb6.5
AIGLE Aigle 34.57 301⇑*iP* **P** **12 45 31.7 -1.1**
comp=N,3µm,2.4s,mb6.7
TORNY Torny 34.58 302⇑*iP* **P** **12 45 32.2 -0.6**
comp=N,3µm,1.6s,mb7.0
OG22 Abries 34.59 298⇑*eP* **P** **12 45 32.2 -0.8**
CAL Calcutta 34.61 103 *e* **P** **12 45 29.0 -4.3**
CAL *e* 12 46 08.0
CAL *eS* **S** **12 51 04.0 +3.2**
EMV Vieux Emosson 34.61 300⇑*iP* **P** **12 45 32.4 -0.7**
comp=N,2µm,2.5s,mb6.6
MDRS Chennai 34.61 125⇑*iP* **P** **12 45 33.0 -0.4**
MDRS *eS* **S** **12 51 03.0 +2.1**
CALN Calern 34.68 296⇑*eP* **P** **12 45 33.9 +0.2**
LOMF Lomont 34.68 303⇑*eP* **P** **12 45 33.0 -0.7**
RUP Ruppelstein 34.68 307⇑*eP* **P** **12 45 33.7 0.0**
RUP Ruppelstein 34.68 307⇑*eP* **P** **12 45 33.8 +0.1**
HINF Hinteralfeld 34.68 304⇑*iP* **P** **12 45 32.3 -1.4**
comp=N,1µm,1.6s,mb6.2
SURF Saint Ours 34.70 298 *eP* **P** **12 45 33.9 0.0**
RRL Cesana Torines 34.70 298⇑P **P** **12 45 33.8 -0.2**
LPG La Plagne 34.71 299⇑*iP* **P** **12 45 33.5 -0.5**
comp=N,2µm,1.7s,mb6.6
MBDF Montbardon 34.72 298⇑*iP* **P** **12 45 33.5 -0.6**
comp=N,860nm,0.9s,mb6.4
LPL La Plagne 34.73 299⇑*iP* **P** **12 45 33.6 -0.5**
comp=N,1µm,1.2s,mb6.4
OG01 Vacheresse 34.76 301⇑*eP* **P** **12 45 33.8 -0.6**
MUD Monsted U'grnd 34.76 319⇑*iP* **P** **12 45 35.2 +0.9**
comp=N,442nm,1.3s,mb6.2
MUD *i* 12 46 43.4
MUD *i* S **S** **12 51 07.1 +4.2**
comp=Z,38µm,18.0s
MUD Monsted U'grnd 34.76 319⇑*iP* **P** **12 45 35.2 +0.9**
MUD *i* S **S** **12 51 07.1 +4.2**
MUD pmax pmax
comp=Z,440nm,1.3s,mb6.2
MUD MLR MLR
comp=Z,38µm,18.0s,MS6.2
BNI Bardonecchia 34.77 299 P **P** **12 45 33.7 -0.8**
BNI Bardonecchia 34.77 299⇑*iP* **P** **12 45 34.0 -0.6**
comp=Z,918nm,1.3s,mb6.5
FRF La Foret Royal 34.86 296⇑*iP* **P** **12 45 34.5 -0.8**
comp=Z,2µm,1.6s,mb6.6
BRANT Les Verrieres 34.91 302⇑*iP* **P** **12 45 35.3 -0.4**
comp=Z,4µm,1.8s,mb7.0
LMR La Mourre 34.98 296⇑*iP* **P** **12 45 35.4 -0.9**
comp=Z,939nm,1.6s,mb6.2
HAU Haudompre 35.03 304⇑*iP* **P** **12 45 35.5 -1.2**
comp=Z,1µm,1.3s,mb6.4
HAU *eR* 12 46 43.4
comp=Z,33µm,21.8s
GIMEL Gimel 35.05 301⇑*iP* **P** **12 45 36.7 -0.2**
comp=Z,4µm,1.6s,mb7.0
WTSB Winterswijk 35.12 311⇑*iP* **P** **12 45 38.4 +1.0**
comp=Z,353nm,1.6s,mb6.0
GDM Grand'Maison 35.17 299⇑*eP* **P** **12 45 36.9 -1.0**
CABF La Chapelle 35.17 301⇑*iP* **P** **12 45 37.8 -0.1**
comp=Z,7µm,1.5s,mb7.1
OSL Oslo 35.21 325 *eP* **P** **12 45 37.5 -0.6**
OSL AMb AMB 12 45 47.4
comp=Z,230nm,1.2s,mb6.0
OSL Oslo 35.21 325 *eP* **P** **12 45 37.5 -0.6**
comp=Z,230nm,1.2s,mb6.0
OG25 Le Caire 35.23 298⇑*eP* **P** **12 45 37.8 -0.6**
WLF Walferdange 35.26 307 P **P** **12 45 39.0 +0.3**
WLF pmax pmax
comp=Z,320nm,1.1s,mb6.2
WLF Walferdange 35.26 307⇑*iP* **P** **12 45 38.7 +0.1**
comp=Z,322nm,1.1s,mb6.2
THEF They Montfort 35.28 304⇑*eP* **P** **12 45 37.7 -1.1**
TAVF Tavernes 35.29 296⇑*eP* **P** **12 45 38.6 -0.3**
CGMA Guelma 35.33 284 P **P** **12 45 40.0 +0.6**
WIT Witteveen 35.34 312 *eP* **P** **12 45 40.5 +1.2**
ORIF Oris-en-Rattie 35.34 298⇑*iP* **P** **12 45 37.9 -1.5**
comp=Z,495nm,1.1s,mb6.0
ORIF *eR* 12 46 43.4
comp=Z,34µm,23.0s
GRN Grenoble 35.43 299⇑*eP* **P** **12 45 38.9 -1.2**
NB2 NORSAR Subarra 35.45 327 P **P** **12 45 39.1 -1.0**
comp=Z,630nm,1.7s,mb6.3,baz=117,slow=8.6
NB2 NORSAR Subarra 35.45 327 P **P** **12 45 39.1 -1.0**
baz=117,slow=9.3
NOA NORSAR Array B 35.45 327 P **P** **12 45 39.4 -0.8**
comp=Z,85nm,0.9s,mb5.7,baz=119,slow=8.1,SNR=140
NOA S **S** **12 51 13.5 0.0**
comp=Z,14nm,0.8s,baz=14,slow=9.8,SNR=3.1
NOA LR LR 13 02 48.8
comp=Z,56µm,20.8s,MS6.3,baz=115,slow=41
NOA NORSAR Array B 35.45 327 P **P** **12 45 39.4 -0.7**
NOA S **S** **12 51 13.5 0.0**
NOA pmax pmax
comp=Z,85nm,0.9s
NOA smax
comp=N,14nm,0.8s
NOA MLR MLR
comp=Z,56µm,20.8s
NOA NORSAR Array B 35.45 327 P **P** **12 45 39.4 -0.8**
NOA S **S** **12 51 13.5 0.0**
NOA LR LR 13 02 48.8
HGN Heimansgroeve 35.51 309⇑*iP* **P** **12 45 41.6 +0.9**
comp=Z,461nm,1.6s,mb6.2
HGN *ex* x 12 45 48.9
HGN *e*PP PP 12 47 07.7 +6.7
HGN *i* S **S** **12 51 17.8 +3.2**
HGN *e*SS SS 12 53 39.5 +6.0
HGN *ex* x 12 55 34.4
NAO01 NORSAR Array S 35.51 327⇑*eP* **P** **12 45 39.6 -1.1**
comp=Z,22nm,0.6s,mb5.3
NAO01 LR LR
comp=Z,49µm,21.0s,MS6.2
VILF Villemus 35.52 297⇑*eP* **P** **12 45 40.8 -0.1**
PUYF Puyloubier 35.55 296⇑*eP* **P** **12 45 40.8 -0.4**
BERF Bertagne 35.58 296⇑*eP* **P** **12 45 41.0 -0.4**
SMRF Simiane la Rot 35.61 297⇑*iP* **P** **12 45 41.1 -0.6**
comp=Z,3µm,1.9s,mb6.5
KONO Kongsberg 35.62 324 P **P** **12 45 41.2 -0.4**
KONO S **S** **12 51 18.0 +1.7**
KONO Kongsberg 35.62 324⇑*iP* **P** **12 45 41.0 -0.6**
KONO AMb AMB 12 46 03.0
comp=Z,375nm,1.4s,mb6.1
KONO *eS* **S** **12 51 18.6 +2.3**
KONO AMS AMS 13 04 05.7
comp=Z,46µm,18.0s,MS6.3
KONO Kongsberg 35.62 324*c iP* **P** **12 45 41.2 -0.4**
KONO Kongsberg 35.62 324⇑*iP* **P** **12 45 41.0 -0.6**
comp=Z,14µm,1.4s
KONO LR LR
comp=Z,801µm,18.0s
CAEH 'Ain El Ouahch 35.69 284 P **P** **12 45 43.0 +0.5**
GELF Grande-Etoile 35.76 296⇑*eP* **P** **12 45 42.7 -0.3**
OG26 St.-Nazaire-De 35.77 298⇑*eP* **P** **12 45 42.5 -0.5**
TREF Trevaresse 35.77 296⇑*eP* **P** **12 45 43.0 -0.1**
PRAF Pradon 35.92 297⇑*eP* **P** **12 45 44.0 -0.3**
MEZF Maizieres J'vi 35.92 305⇑*iP* **P** **12 45 43.6 -0.6**
comp=Z,3µm,1.7s,mb6.7
SHL Shillong 35.96 96⇑*iP* **P** **12 45 44.5 -0.3**
SHL *e* 12 51 17.5
TRD Trivandrum 36.05 134⇓*i* **P** **12 45 55.2 +9.5**
TRD *i* 12 51 30.2
CASM Ain Smara 36.10 284 P **P** **12 45 46.5 +0.6**
GIVF Givet 36.16 307⇑*iP* **P** **12 45 47.1 +0.9**
comp=Z,6µm,1.8s,mb6.9
ARCES ARCESS Array B 36.18 345 P **P** **12 45 46.2 -0.1**
comp=Z,291nm,1.4s,mb6.0,baz=127,slow=6.1,SNR=45
ARCES Px Px 12 46 43.1
comp=Z,60nm,0.7s,baz=148,slow=11,SNR=4.0
ARCES Sx Sx 12 53 18.4
comp=Z,153nm,1.0s,baz=129,slow=23,SNR=5.8
ARCES ARCESS Array B 36.18 345 P **P** **12 45 46.2 -0.1**
ARE0 ARCESS Array S 36.18 345⇑*iP* **P** **12 45 46.0 -0.3**
VIVF Saint-Julien-l 36.20 298⇑*iP* **P** **12 45 45.8 -0.9**
comp=Z,4µm,1.9s,mb6.7
CTEI Djebel Teioual 36.21 283 P **P** **12 45 47.0 +0.2**
AGT Agartala 36.24 99⇓*iP* **P** **12 45 48.0 +0.8**
AGT ⇓*i* 12 46 19.0
KTK1 Kautokeino 36.27 343⇑*iP* **P** **12 45 47.9 +0.8**
KTK1 AMb AMB 12 46 10.9
comp=Z,678nm,1.3s,mb6.4
DFRA Djebel Bou Aff 36.51 284 P **P** **12 45 50.0 +0.7**
BAIF Baives 36.55 307⇑*iP* **P** **12 45 50.5 +1.0**
comp=Z,5µm,1.6s,mb6.8
LOR Lormes 36.70 303⇑*iP* **P** **12 45 50.0 -0.8**
comp=Z,2µm,1.7s,mb6.4
LOR *eR* 12 46 43.4
comp=Z,36µm,21.0s
CMER Merouana 36.72 283 P **P** **12 45 52.0 +0.9**
SMF Signal de Mont 36.72 301⇑*iP* **P** **12 45 50.5 -0.5**
comp=Z,4µm,1.8s,mb6.7
NSS Namsos 36.80 333⇑*iP* **P** **12 45 50.4 -1.1**
NSS AMb AMB 12 46 11.6
comp=Z,821nm,1.7s,mb6.3
NSS *eS* **S** **12 51 35.3 +1.1**
NSS *e*SS SS 12 54 12.3 +10
NSS AMS AMS 13 03 43.5
comp=Z,31µm,21.2s,MS6.1
NSS Namsos 36.80 333⇑*iP* **P** **12 45 50.4 -1.1**
comp=Z,821nm,1.7s,mb6.3
DOMB Dombas 36.81 328⇑*iP* **P** **12 45 51.7 +0.1**
DOMB AMb AMB 12 46 13.5
comp=Z,783nm,1.5s,mb6.3
DOMB Dombas 36.81 328⇑*iP* **P** **12 45 51.7 +0.1**
comp=Z,783nm,1.5s,mb6.3
MOR8 Moi Rana 36.83 336 *eP* **P** **12 45 51.0 -0.7**
MOR8 AMb AMB 12 46 17.2
comp=Z,641nm,1.4s,mb6.3
MOR8 Moi Rana 36.83 336 *eP* **P** **12 45 51.0 -0.7**
comp=Z,641nm,1.4s,mb6.3
LASF Ste Croix 36.84 297⇑*iP* **P** **12 45 51.4 -0.6**
comp=Z,4µm,1.8s,mb6.7
COLF Collangettes 36.86 300⇑*eP* **P** **12 45 51.8 -0.4**
PLDF La Plantade 36.89 300⇑*eP* **P** **12 45 52.1 -0.3**
SSF Saint Saulge 36.94 302⇑*iP* **P** **12 45 52.2 -0.7**
comp=Z,2µm,1.5s,mb6.4
SET Setif 36.97 284 P **P** **12 45 52.0 -1.2**
BLS5 Blasjo 37.05 323⇑*iP* **P** **12 45 54.8 +1.2**
BLS5 AMb AMB 12 46 03.9
comp=Z,391nm,1.3s,mb6.1
BLS5 Blasjo 37.05 323⇑*iP* **P** **12 45 54.8 +1.2**
comp=Z,391nm,1.3s,mb6.1
LBL Lubilhac 37.19 299⇑*eP* **P** **12 45 54.9 -0.1**
STAV Stavanger 37.27 322⇑*iP* **P** **12 45 56.1 +0.6**
STAV AMb AMB 12 45 58.9
comp=Z,615nm,1.9s,mb6.1
STAV Stavanger 37.27 322⇑*iP* **P** **12 45 56.1 +0.6**
comp=Z,615nm,1.9s,mb6.1
PYM Petit Puy Mans 37.33 300⇑*eP* **P** **12 45 56.0 -0.1**
STOK Stokkvaagen 37.40 336⇑*iP* **P** **12 45 59.1 +2.6**
STOK AMb AMB 12 46 19.6
comp=Z,1µm,1.9s,mb6.4
STOK Stokkvaagen 37.40 336⇑*iP* **P** **12 45 59.1 +2.6**
comp=Z,1µm,1.9s,mb6.4
BGF Bois d'Agland 37.41 301⇑*iP* **P** **12 45 56.2 -0.6**
comp=Z,1µm,1.5s,mb6.2
HYF Humbligny 37.53 303⇑*iP* **P** **12 45 57.9 +0.1**
FRNF Fournols 37.66 299⇑*eP* **P** **12 45 59.3 +0.4**
EJON La Jonquera 37.71 295⇑P **P** **12 45 57.3 -2.1**
comp=Z,2µm,4.9s
EJON LR LR 13 01 20.8
SJAF Saint Jean de 37.71 295⇑*eP* **P** **12 45 57.7 -1.7**
GTA Gaotai 37.84 70⇑P **P** **12 46 02.3 +1.8**
GTA AP pP 12 46 13.8 +8.2
GTA XP sP 12 46 18.0 +10
GTA PP PP 12 47 33.3 +3.3
GTA PCP PcP 12 48 18.0 +0.6
GTA S **S** **12 51 51.8 +1.4**
GTA SCP 12 52 02.0
GTA PCS 12 52 05.3
GTA SS SS 12 54 29.0 +2.7
GTA SCS ScS 12 56 10.0 -0.4
GTA AMB AMB
comp=Z,3µm,7.3s
GTA LR LR
comp=N,27µm,13.8s,MS6.2
GTA LR LR
comp=E,16µm,16.8s,MS6.2
GTA LR LR
comp=Z,21µm,15.3s,MS6.1
TCF Toulx Ste Croi 37.86 301⇑*iP* **P** **12 46 00.5 -0.1**
comp=Z,3µm,1.6s,mb6.5
RUND Rundenannen 37.88 324⇑*iP* **P** **12 46 01.6 +1.0**
RUND AMb AMB 12 46 23.1
comp=Z,1µm,1.5s,mb6.4
BER Bergen 37.89 324 *eP* **P** **12 46 01.8 +1.2**
EGD Espegrend 37.91 324 *eP* **P** **12 46 02.2 +1.4**
LRDF Laroque-de-Fa 37.91 295⇑*eP* **P** **12 45 59.9 -1.1**
MOY Mondy 37.94 50 *eP* **P** **12 46 03.0 +1.8**
FILF Fillols 37.94 295⇑*eP* **P** **12 46 00.7 -0.6**
ASK Askoy 37.98 324 *eP* **P** **12 46 02.7 +1.3**
CAF Calviac 38.05 299⇑*iP* **P** **12 46 02.0 -0.2**
comp=Z,1µm,1.6s,mb6.2
MTLF Montolieu 38.10 296⇑*iP* **P** **12 46 01.8 -0.8**
comp=Z,722nm,1.4s,mb5.9
LOF Lofoten 38.27 338 *eP* **P** **12 46 07.2 +3.4**
LOF AMb AMB 12 47 37.5
comp=Z,651nm,1.5s,mb6.1
LOF Lofoten 38.27 338 *eP* **P** **12 46 07.2 +3.4**
comp=Z,651nm,1.5s,mb6.1
LPEF Le Peyrat 38.37 296⇑*eP* **P** **12 46 04.3 -0.6**
RJF Les Rejaudoux 38.41 299⇑*iP* **P** **12 46 05.4 +0.2**
comp=Z,5µm,1.8s,mb6.6
RJF *eR* 12 46 43.4
comp=Z,36µm,18.8s
FOO Floro 38.41 326⇑*iP* **P** **12 46 05.4 +0.3**
FOO AMb AMB 12 46 30.5
comp=Z,596nm,1.6s,mb6.1
FOO Floro 38.41 326⇑*iP* **P** **12 46 05.4 +0.3**
comp=Z,596nm,1.6s,mb6.1
ABA Alger-Bouzarea 38.66 286 P **P** **12 46 06.0 -1.4**
EMIR Miracle 38.79 294⇑P **P** **12 46 08.0 -0.4**
comp=Z,8µm,3.3s
EMIR LR LR 13 01 54.4
EMHD Djebel Mahouad 38.88 285 P **P** **12 46 09.0 -0.2**
SALF Salau 38.92 295⇑*eP* **P** **12 46 08.0 -1.5**
MLS Moulis 38.96 296⇑*eP* **P** **12 46 08.6 -1.2**
LFF La Frestale 38.99 299⇑*iP* **P** **12 46 09.9 -0.1**
comp=Z,3µm,1.7s,mb6.5
EPOB Poblet 39.21 293⇑P **P** **12 46 10.5 -1.5**
comp=Z,4µm,3.8s
MELF Melles 39.21 296 *eP* **P** **12 46 10.2 -1.8**
ZAK Zakamensk 39.33 52⇑P **P** **12 46 14.5 +1.7**
LDF La Druitiere 39.35 305⇑*iP* **P** **12 46 12.3 -0.8**
comp=Z,871nm,0.7s,mb6.3
EIBI Ibiza 39.45 290⇑P **P** **12 46 12.5 -1.5**
comp=Z,7µm,3.8s
MFF Saint Martin d 39.47 302⇑*iP* **P** **12 46 13.3 -0.7**
comp=Z,4µm,1.7s,mb6.6
EPF Esparros 39.50 296⇑*iP* **P** **12 46 12.2 -2.1**
comp=Z,66nm,1.0s
RESF Ens 39.53 296⇑*eP* **P** **12 46 14.0 -0.6**
KMBO Kilima Mbogo 39.58 203 P **P** **12 46 17.0 +1.7**
comp=Z,65nm,1.1s,mb5.3,baz=17,slow=10,SNR=53
KMBO PP PP 12 47 52.6 +2.5
comp=Z,20nm,1.1s,baz=54,slow=19,SNR=1.6
KMBO S **S** **12 52 27.0 +10**
comp=Z,1.9nm,0.7s,baz=35,slow=18,SNR=2.2
KMBO LR LR 13 03 25.8
comp=Z,65µm,18.4s,MS6.5,baz=25,slow=37
KMBO Kilima Mbogo 39.58 203⇑*eP* **P** **12 46 17.0 +1.7**
comp=Z,141nm,1.5s,mb5.5
KMBO LR LR
comp=Z,35µm,21.0s,MS6.2
TLY Talaya 39.59 50*c iP* **P** **12 46 16.2 +1.2**
TLY *e* 12 47 47.2
TLY *i* S **S** **12 52 16.6 -0.1**
TLY pmax pmax
comp=Z,1µm,1.5s
TLY MLR MLR
comp=Z,564µm,15.0s
TLY Talaya 39.59 50⇑*iP* **P** **12 46 16.2 +1.2**
TLY *e* 12 47 47.2
TLY *i* S **S** **12 52 16.6 -0.1**
FLN La Foliniere 39.59 305⇑*iP* **P** **12 46 14.3 -0.7**
comp=Z,2µm,1.3s,mb6.3
FLN *eR* 12 46 43.4
comp=Z,37µm,22.5s
EGRA Graus 39.64 295⇑P **P** **12 46 14.9 -0.5**
LABF Labassere 39.69 296 *eP* **P** **12 46 14.3 -1.6**
EBR Ebro Roquetas 39.74 293 *iP* **P** **12 46 15.6 -0.8**
VIEF Viey 39.75 296⇑*eP* **P** **12 46 15.6 -0.8**
SKP1 Kophill 39.80 310⇑*iP* **P** **12 46 17.1 +0.3**
GRR Gorron 39.85 304⇑*iP* **P** **12 46 16.6 -0.6**

comp=Z,2µm,1.0s,mb6.5
LCHF La Chataignera 39.87 302⇑eP P 12 46 15.2 -2.2
IRK Irkutsk 39.99 50 eP P 12 46 19.2 +0.9
REYF Montagne du Re 40.02 296 eP P 12 46 17.4 -1.2
ECHF Ech Chlef 40.15 285 P P 12 46 19.0 -0.8
ETSF Etsaut 40.17 296⇑iP P 12 46 19.1 -0.8
comp=Z,201nm,0.9s,mb5.6
ESAC San Caprasio 40.29 294 ⇑P P 12 46 20.4 -0.5
comp=Z,6µm,3.1s
OLEF Ile d'Oleron 40.35 301⇑eP P 12 46 21.6 +0.3
EANR 'Ain N'Sour 40.39 285 P P 12 46 22.0 +0.2
ETRT Tiaret 40.39 284 P P 12 46 22.5 +0.7
ORDF Ordiarp 40.40 296⇑eP P 12 46 20.3 -1.4
HPK Haverah Park 40.40 313⇑eP P 12 46 21.2 -0.4
SWN1 Swindon 40.41 309⇑iP P 12 46 22.6 +0.8
LRYF La Roche-sur-Y 40.43 302⇑eP P 12 46 21.8 -0.2
LARF Larrau 40.46 296⇑eP P 12 46 21.5 -0.7
LHO Holmfirth 40.51 312 iP P 12 46 21.9 -0.6
LHO Holmfirth 40.51 312⇑iP P 12 46 22.1 -0.4
EMOS Mosqueruela 40.55 292 ⇑P P 12 46 22.4 -0.6
comp=Z,6µm,2.9s,mb6.7
SJPF Ste Jean 40.62 296⇑iP P 12 46 22.8 -0.7
comp=Z,161nm,0.9s,mb5.3
SWK Warminster 40.69 309⇑iP P 12 46 24.7 +0.7
EBEN Beniarda 40.72 289 ⇑P P 12 46 24.0 -0.5
comp=Z,3µm,3.1s
EBEN LR LR 13 04 03.8
EALK Alkurruntz 40.81 297 ⇑P P 12 46 24.2 -0.9
comp=Z,4µm,3.4s
EALK LR LR 13 04 39.4
HAE Alders End 40.88 310⇑iP P 12 46 25.6 0.0
HAE AMB AMB 12 46 29.0
comp=Z,1µm,1.9s,mb6.2
LRW Lerwick 40.97 323⇑iP P 12 46 25.9 -0.3
LRW ⇑iP 12 46 26.5
LRW Lerwick 40.97 323 iP P 12 46 26.5 +0.3
SAN1 Sandwick 40.97 322⇑iP P 12 46 26.2 -0.1
SMD Mendips 40.99 309⇑iP P 12 46 26.3 -0.2
SGMF Saint Gilles 40.99 304⇑iP P 12 46 26.3 -0.2
comp=Z,3µm,1.2s,mb6.5
YEL1 Yell 41.00 323⇑iP P 12 46 26.7 +0.2
BTA Talkin 41.08 314⇑iP P 12 46 27.8 +0.6
HLM1 Long Mynd 41.10 311⇑iP P 12 46 27.6 +0.2
HLM1 AMB AMB 12 46 30.0
comp=Z,707nm,1.2s,mb6.2
ESY Stoneypath 41.12 316⇑iP P 12 46 27.4 -0.1
ESY AMB AMB 12 46 31.2
comp=Z,894nm,1.8s,mb6.1
MCH1 Michaelchurch 41.16 310⇑iP P 12 46 27.6 -0.3
MCH1 ⇑iP 12 46 28.3
MCH1 Michaelchurch 41.16 310 P P 12 46 28.3 +0.4
EDR Drumtochty 41.18 318⇑eP P 12 46 27.8 -0.2
WAL1 Walls 41.20 323⇑eP P 12 46 28.2 0.0
BDL Dobcross Hall 41.22 314⇑iP P 12 46 29.2 +0.9
SSP1 Stoney Pound 41.24 311⇑iP P 12 46 28.9 +0.4
BBH Bruntsheil 41.24 315⇑iP P 12 46 28.7 +0.2
BJO Bjornoya 41.30 347 eP P 12 46 31.0 +2.2
BJO eS S 12 52 34.4 -7.5
BJO e 12 55 33.1
BJO AMS AMS 13 07 30.1
comp=Z,23µm,18.8s,MS6.1
HTR Trewern Hill 41.33 310⇑iP P 12 46 28.9 -0.4
HTR AMB AMB 12 46 32.7
comp=Z,963nm,1.7s,mb6.2
EKA Eskdalemuir Ar 41.38 315 P P 12 46 29.7 0.0
comp=Z,88nm,0.6s,mb5.6,baz=102,slow=8.1,SNR=230
EKA S S 12 52 42.2 -1.2
comp=Z,1.3nm,0.7s,baz=177,slow=18,SNR=2.0
EKA Eskdalemuir Ar 41.38 315 P P 12 46 29.7 0.0
EKA S S 12 52 42.2 -1.2
EKA pmax pmax
comp=Z,88nm,0.6s
BBO1 Bothel 41.40 314⇑iP P 12 46 30.2 +0.5
BCC1 Chapelcross 41.40 315⇑eP P 12 46 30.2 +0.4
BHH Howats Hill 41.40 315⇑iP P 12 46 30.1 +0.3
EDU Dundee 41.40 317⇑eP P 12 46 29.4 -0.3
ESK Eskdalemuir 41.41 315⇑iP P 12 46 29.0 -0.8
ESK ⇑iP 12 46 29.8
ESK AMB AMB 12 46 45.5
comp=Z,522nm,1.8s,mb5.8
ESK Eskdalemuir 41.41 315 P P 12 46 29.8 -0.1
ESK AMB AMB 12 46 45.5
comp=Z,522nm,1.8s,mb5.8
ESK Eskdalemuir 41.41 315 P P 12 46 30.0 +0.1
ESK pmax pmax
comp=Z,540nm,1.3s,mb6.0
ESK Eskdalemuir 41.41 315⇑iP P 12 46 29.7 -0.2
comp=Z,538nm,1.4s,mb6.0
ESK LR LR
comp=Z,7µm,19.0s,MS5.6
QUIF Quistinic 41.42 304⇑iP P 12 46 29.5 -0.6
comp=Z,3µm,1.4s,mb6.5
EDI Edinburgh 41.44 316⇑iP P 12 46 30.1 0.0
EDI AMB AMB 12 46 33.1
comp=Z,722nm,1.3s,mb6.1
EDI AMB AMB 12 46 46.2
comp=Z,910nm,1.7s,mb6.1
MME1 Meikle Cairn 41.45 318⇑iP P 12 46 30.7 +0.5
ROSF Rostrenen 41.46 305⇑iP P 12 46 30.1 -0.3
comp=Z,3µm,1.3s,mb6.4
SONM Songino Array 41.46 56 P P 12 46 31.6 +1.2
comp=Z,11nm,0.7s,baz=278,slow=8.7,SNR=46
SONM PP PP 12 48 16.3 +6.9
comp=Z,21nm,1.0s,baz=281,slow=7.3,SNR=2.6
SONM P3KPbc 13 16 00.6
comp=Z,1.0nm,1.0s,baz=90,slow=4.3,SNR=4.4
SONM Songino Array 41.46 56 P P 12 46 31.6 +1.2
SONM PP PP 12 48 16.3 +6.9
OST Stronsay 41.47 321⇑iP P 12 46 30.8 +0.4
MBAR Mbarara 41.54 212 eP P 12 46 31.4 -0.1
comp=Z,38nm,1.1s
MBAR LR LR
comp=Z,6µm,19.0s
EAU Auchinoon 41.58 316⇑iP P 12 46 31.0 -0.2
EAU AMB AMB 12 46 48.5
comp=Z,657nm,1.8s,mb6.0
CART Cartagena 41.59 288⇑iP P 12 46 30.2 -1.4
comp=Z,95nm,0.8s,mb5.5
MCD Coleburn Disti 41.64 318⇑iP P 12 46 32.1 +0.4
EBH Black Hill 41.65 316⇑eP P 12 46 31.6 -0.2
BWH Wardlaw 41.66 315⇑iP P 12 46 32.0 +0.1
EMUR La Murta 41.70 289 ⇑P P 12 46 31.6 -0.8
comp=Z,6µm,3.9s
OBR Brabster 41.72 320⇑iP P 12 46 32.8 +0.5
WPM1 Penmaenmawr 41.73 312⇑iP P 12 46 32.8 +0.4
WPM1 AMB AMB 12 46 35.4
comp=Z,2µm,1.4s,mb6.5
ETOB Tobarra 41.74 290 ⇑P P 12 46 32.5 -0.3
comp=Z,7µm,2.9s,mb6.8
ETOB LR LR 13 04 58.4
USTO Oran 41.74 285 P P 12 46 29.0 -3.8
DCO Combe Farm 41.74 308⇑iP P 12 46 32.6 0.0
OWE Westray 41.75 321⇑eP P 12 46 32.9 +0.4
DYA Yadsworthy 41.78 308⇑iP P 12 46 33.1 +0.2
MLA1 Latheron 41.78 320⇑iP P 12 46 33.0 +0.2
OHO Hoy 41.79 320⇑iP P 12 46 33.4 +0.5
HSA Swansea 41.88 310⇑iP P 12 46 34.0 +0.3
ULN Ulaanbaatar 41.90 56 P P 12 46 35.6 +1.6
ULN S S 12 52 55.6 +4.5
ULN Ulaanbaatar 41.90 56⇑iP P 12 46 35.6 +1.6
ULN Ulaanbaatar 41.90 56⇑eP P 12 46 35.4 +1.4
comp=Z,68nm,0.8s,mb5.3
ULN LR LR
comp=Z,29µm,20.0s,MS6.2
PCOU Corrie 41.96 316⇑eP P 12 46 34.3 0.0
WME Myndd Eilian 41.97 312⇑eP P 12 46 35.0 +0.5
ORE Reay 42.02 320⇑iP P 12 46 35.2 +0.5
WLF1 Llynfaes 42.02 312⇑iP P 12 46 35.3 +0.4
WLF1 AMB AMB 12 46 37.7
comp=Z,680nm,1.4s,mb6.1
PCA1 Carrot 42.03 316⇑iP P 12 46 35.4 +0.5
YRE Yr Eifl 42.04 312⇑iP P 12 46 35.2 +0.2
EAB Aberfoyle 42.11 316⇑iP P 12 46 35.2 -0.3
EAB AMB AMB 12 46 51.3
comp=Z,461nm,1.4s,mb5.9
HTL Hartland 42.11 309⇑iP P 12 46 35.5 -0.1
HTL AMB AMB 12 46 38.4
comp=Z,250nm,1.8s,mb5.5
WCB1 Church Bay 42.12 312⇑iP P 12 46 36.0 +0.4
WCB1 AMB AMB 12 46 39.5
comp=Z,916nm,1.8s,mb6.1
POB1 Observatory 42.13 316⇑eP P 12 46 36.3 +0.5
MVH1 Achvaich 42.17 319⇑iP P 12 46 36.2 +0.2
ELAN Lanestosa 42.20 297 ⇑P P 12 46 35.4 -1.0
comp=Z,4µm,3.4s
WIM Isle of Man 42.20 313⇑eP P 12 46 36.7 +0.3
MDO Dochfour 42.22 318⇑iP P 12 46 36.4 0.0
GAL1 Galloway 42.25 314⇑iP P 12 46 37.0 +0.3
SBD Saint Breward 42.25 308⇑iP P 12 46 29.4 -7.4
HPE Pembroke 42.26 310⇑iP P 12 46 37.0 +0.2
PMSU Muirshiel 42.31 316⇑eP P 12 46 37.4 +0.2
OTO Tongue 42.34 320⇑iP P 12 46 37.7 +0.3
EVIA Vianos 42.47 290 ⇑P P 12 46 38.9 +0.1
EHUE Huescar 42.75 289 ⇑P P 12 46 41.0 0.0
comp=Z,179nm,0.8s,mb5.8
REB Eisghbrachaidh 42.77 319⇑iP P 12 46 41.4 +0.4
GMK Mull of Kintyr 42.77 315⇑eP P 12 46 41.2 +0.2
KSB Sheil Bridge 42.77 318⇑iP P 12 46 41.0 0.0
KPL Plockton 42.91 318⇑iP P 12 46 42.2 +0.1
GMM Mts of Mourne 42.96 313⇑iP P 12 46 42.6 +0.1
KAR1 Arisaig 42.98 317⇑iP P 12 46 43.2 +0.5
RRR Rubha Reidh 43.03 319⇑iP P 12 46 43.3 +0.3
GCL Cushendall 43.07 315⇑iP P 12 46 43.6 +0.2
EQES Quesada 43.12 289 ⇑P P 12 46 43.7 -0.4
comp=Z,4µm,4.0s
EQES LR LR 13 00 36.6
GUD Guadarrama 43.23 293 ⇑P P 12 46 44.4 -0.6
comp=Z,175nm,1.0s,mb5.7
RTO Tolsta 43.28 319⇑iP P 12 46 45.4 +0.3
DLF Lyons Farm 43.31 312⇑iP P 12 46 45.7 +0.3
ESDC Sonseca Array 43.32 292 P P 12 46 45.1 -0.6
comp=Z,178nm,0.6s,mb6.0,baz=66,slow=8.1,SNR=503
ESDC S S 12 53 12.6 +0.7
comp=Z,0.6nm,0.5s,baz=46,slow=6.7,SNR=2.4
ESDC ScS ScS 12 56 40.5 -2.4
comp=Z,0.2nm,0.3s,baz=27,slow=3.3,SNR=2.6
ESDC LR LR 13 07 11.3
comp=Z,10µm,18.2s,MS5.8,baz=65,slow=39
ESDC Sonseca Array 43.32 292 ⇑P P 12 46 45.2 -0.4
comp=Z,150nm,1.0s,mb5.7
ESLA Sonseca Array 43.32 292⇑iP P 12 46 45.0 -0.7
comp=Z,98nm,0.9s,mb5.5
ESLA LR LR
comp=Z,88µm,21.0s,MS6.6
CD2 Chengdu 43.35 81⇑iP P 12 46 47.3 +1.3
CD2 AP pP 12 46 55.5 +4.4
CD2 XP sP 12 47 00.3 +7.0
CD2 S S 12 53 12.0 -0.6
CD2 SS SS 12 56 21.8 +2.2
CD2 AMB AMB
comp=Z,160nm,1.2s,mb5.6
CD2 AMB AMB
comp=Z,5µm,10.9s
CD2 LR LR
comp=N,59µm,21.0s
CD2 LR LR
comp=Z,40µm,20.4s,MS6.3
EARI Arriondas 43.46 297 ⇑P P 12 46 46.4 -0.3
comp=Z,3µm,2.6s,mb6.6
RRH Rhenigidale 43.50 319⇑iP P 12 46 47.1 +0.3
DMUB Kingscourt 43.52 313⇑iP P 12 46 47.2 +0.1
MELI Melilla 43.73 285 P P 12 46 49.3 +0.3
DCN Croghan 43.75 312⇑iP P 12 46 49.4 +0.4
FSV Svinoy 43.80 325⇑eP P 12 46 51.1 +1.9
ERON Agron 43.89 288 ⇑P P 12 46 49.2 -1.1
FSD Sut uroy 43.91 324⇑eP P 12 46 52.2 +2.1
ELUQ Luque 44.09 289 P P 12 46 50.1 -1.8
ELOJ Sierra Loja 44.12 288 ⇑P P 12 46 50.4 -1.8
EADA Adamuz 44.16 290 ⇑P P 12 46 51.6 -0.9
comp=Z,7µm,4.9s
SPITS Spitsbergen Ar 44.51 350 P P 12 46 55.4 +0.6
comp=Z,51nm,0.6s,mb5.5,baz=131,slow=18,SNR=68
SPITS PP PP 12 48 35.3 -4.7
comp=Z,166nm,1.1s,baz=117,slow=22,SNR=1.6
SPITS S S 12 53 31.7 +2.8
comp=Z,25nm,1.0s,baz=333,slow=13,SNR=3.0
SPB4 Spitsbergen Ar 44.52 350⇑eP P 12 46 55.8 +0.9
ECAL Calabor 44.84 296 ⇑P P 12 46 57.4 -0.5
comp=Z,5µm,3.3s
EPON Pontenova 44.84 298 ⇑P P 12 46 57.5 -0.4
comp=Z,4µm,2.7s,mb6.8
PBRG Braganca 44.88 296 iP P 12 46 57.8 -0.4
comp=Z,346nm,2.0s,mb5.8
PBRG eS S 12 53 37.5 +3.0
PBRG Braganca 44.88 296 eP P 12 46 57.6 -0.6
KMI Kunming 44.91 90⇑eP P 12 46 59.0 +0.2
KMI AP pP 12 47 09.8 +5.9
KMI XP sP 12 47 14.5 +8.5
KMI PCP PcP 12 48 39.8 -0.8
KMI PP PP 12 48 45.5 +0.8
KMI S S 12 53 34.8 -0.5
KMI SS SS 12 56 47.5 -0.9
KMI AMB AMB
comp=Z,202nm,1.1s,mb5.9
KMI AMB AMB
comp=Z,3µm,5.7s
KMI LR LR
comp=N,35µm,24.9s,MS6.3
KMI LR LR
comp=E,21µm,22.4s,MS6.3
KMI LR LR
comp=Z,37µm,24.1s,MS6.2
ERUA La Rua 45.03 297 ⇑P P 12 46 58.8 -0.7
comp=Z,808nm,2.4s,mb6.1
CHRT Chiangrai 45.09 98 ⇑P P 12 47 00.0 -0.3
comp=Z,226nm,1.0s,mb6.0
CM31 Chiang Mai Arr 45.18 100⇑eP P 12 47 00.4 -0.6
comp=Z,145nm,0.9s,mb5.8
CM31 LR LR
comp=Z,15µm,20.0s,MS5.9
CMAR Chiang Mai Arr 45.18 100 P P 12 47 01.1 +0.2
comp=Z,69nm,0.9s,mb5.5,baz=301,slow=8.8,SNR=291
CMAR S S 12 53 41.3 +2.1
comp=Z,3.8nm,1.1s,baz=293,slow=6.9,SNR=2.6
CMAR LR LR 13 07 23.6
comp=Z,9µm,19.7s,MS5.7,baz=300,slow=38
CMAR Chiang Mai Arr 45.18 100 P P 12 47 01.1 +0.2
CMAR S S 12 53 41.3 +2.1
CMAR pmax pmax
comp=Z,69nm,0.9s
CMAR smax
comp=N,4.0nm,1.1s
CMAR MLR MLR
comp=Z,9µm,19.7s
BTO Baotou 45.23 66 eP P 12 47 01.5 +0.4
BTO PP PP 12 48 49.3 +1.6
BTO S S 12 53 41.5 +1.8
BTO SS SS 12 57 00.5 +6.5
EJIF Jimena Fronter 45.34 288 P P 12 47 00.6 -1.3
comp=Z,2.8nm,0.5s
ESPR Espera 45.51 289 ⇑P P 12 47 01.4 -1.9
comp=Z,5µm,3.8s
VAL Valentia 45.64 310⇑iP P 12 47 04.6 +0.5
VAL eS S 12 53 48.0 +2.7
KBS Kingsbay 45.67 350⇑iP P 12 47 04.4 +0.3
KBS AMb AMB 12 47 13.7
comp=Z,366nm,1.4s,mb6.1
KBS ePP PP 12 48 50.6 -1.0
KBS eS S 12 53 45.7 +0.3
KBS eSS SS 12 57 10.9 +10
KBS AMS AMS 13 10 18.7
comp=Z,34µm,16.0s,MS6.4
KBS Kingsbay 45.67 350 P P 12 47 04.5 +0.4
KBS pmax pmax
comp=Z,190nm,1.1s,mb5.9
KBS Kingsbay 45.67 350⇑iP P 12 47 04.4 +0.3
comp=Z,366nm,1.4s
KBS LR LR
comp=Z,33791µm,16.0s
BOD Bodaibo 45.71 42⇑iP P 12 47 04.3 -0.3
BOD e pP 12 47 10.4 +0.7
PVRL Vila Real 45.71 295 iP P 12 47 04.7 -0.1
comp=Z,691nm,1.2s,mb6.5
PVRL eS S 12 53 49.4 +2.9
PVRL Vila Real 45.71 295 eP P 12 47 04.6 -0.2
MTE Manteigas 45.80 294 iP P 12 47 05.6 0.0
comp=Z,1µm,0.9s,mb6.8
MTE ePP PP 12 48 53.1 -0.3
MTE eS S 12 53 49.3 +1.5
MTE eLQ 12 57 50.7
MTE Manteigas 45.80 294⇑iP P 12 47 05.4 -0.2
comp=Z,523nm,0.8s,mb6.5
ELOB Lobios 45.82 296 ⇑P P 12 47 05.5 -0.2
comp=Z,3µm,2.0s,mb6.9
EBAD Badajoz 45.84 292 ⇑P P 12 47 04.2 -1.7
comp=Z,5µm,4.9s
EMIN Mina Concepcio 45.87 290 ⇑P P 12 47 04.5 -1.6
comp=Z,6µm,3.8s
BDT Bhumibol Dam 45.89 102 P P 12 47 06.0 -0.6
comp=Z,71nm,1.0s,mb5.5
PCBR Castelo Branco 45.90 293 iP P 12 47 06.1 -0.2
comp=Z,964nm,1.1s,mb6.6
PCBR eS S 12 53 51.1 +1.9
PCBR Castelo Branco 45.90 293 eP P 12 47 06.1 -0.2
SFS San Fernando 45.90 288 eP P 12 47 04.7 -1.7
comp=Z,496nm,0.7s,mb6.5
STS Santiago 45.94 298 ⇑P P 12 47 06.3 -0.3
comp=Z,3µm,2.4s,mb6.8
PVIS Viseu 45.98 294 iP P 12 47 07.1 +0.1
comp=Z,790nm,1.9s,mb6.3
PVIS eS S 12 53 53.5 +3.2
PVIS Viseu 45.98 294 eP P 12 47 07.1 +0.1
EZAM Zamans 46.21 297 ⇑P P 12 47 08.5 -0.3
comp=Z,224nm,1.1s,mb6.0
EMAZ Mazaricos 46.23 298 ⇑P P 12 47 08.9 0.0
comp=Z,7µm,3.2s
HHC Hu-ho-hao-te 46.31 65 ⇑P P 12 47 11.3 +1.7
HHC AP pP 12 47 18.5 +3.8
HHC PCP PcP 12 48 45.0 -0.3
HHC PCS 12 52 40.0
HHC S S 12 53 59.0 +3.9
HHC LR LR
comp=N,10µm,14.5s,MS6.2
HHC LR LR
comp=E,17µm,17.2s,MS6.2
HHC LR LR
comp=Z,18µm,16.2s,MS6.1
XAN Xi'an 46.33 75 P P 12 47 10.3 +0.5
XAN S S 12 53 59.3 +3.9
XAN LR LR
comp=N,32µm,23.7s
XAN LR LR
comp=E,25µm,18.5s
XAN LR LR
comp=Z,39µm,17.6s
JMIC Jan Mayen 46.44 337 P P 12 47 11.1 +0.9
comp=Z,64nm,1.0s,mb5.5,baz=125,slow=8.2,SNR=5.9
JMIC PP PP 12 48 53.6 -5.9
comp=Z,45nm,1.0s,baz=174,slow=9.2,SNR=2.4
JMIC S S 12 53 59.8 +3.2
comp=Z,32nm,0.9s,baz=141,slow=11,SNR=2.1
JMIC Jan Mayen 46.44 337⇑iP P 12 47 11.0 +0.7
JMIC ePP PP 12 49 02.5 +3.1
JMIC eS S 12 53 58.0 +1.4
JMIC eSS SS 12 57 18.8 +3.9
JMIC AMS AMS 13 11 21.8
comp=Z,18µm,22.6s,MS6.0
PCOI Coimbra 46.55 294 eP P 12 47 11.7 +0.2
comp=Z,1µm,1.2s,mb6.7
PCOI Coimbra 46.55 294 eP P 12 47 11.6 +0.1
EGRO El Granado 46.55 290 ⇑P P 12 47 09.9 -1.6
comp=Z,4µm,3.8s
PALC Alcoutim 46.56 290 iP P 12 47 10.7 -0.9
comp=Z,316nm,0.8s,mb6.3
PALC eS S 12 54 00.5 +1.7
PALC Alcoutim 46.56 290 eP P 12 47 10.5 -1.1
PTOM Tomar 46.65 293 iP P 12 47 12.4 +0.1
comp=Z,1µm,1.0s,mb6.8
PTOM eS S 12 54 03.4 +3.4
PTOM Tomar 46.65 293 eP P 12 47 12.2 -0.1
EVO Evora 46.66 292⇑iP P 12 47 12.5 +0.1
comp=Z,425nm,1.2s,mb6.0
EVO eR
comp=Z,23µm,20.0s
PBEJ Beja 46.69 291 iP P 12 47 12.1 -0.6
comp=Z,292nm,1.2s,mb6.1
PBEJ eS S 12 54 02.4 +1.8
PBEJ Beja 46.69 291 eP P 12 47 12.0 -0.7
MOE Montemor 46.91 292 eP P 12 47 14.1 -0.3
MOE Montemor 46.91 292 eP P 12 47 14.4 0.0
PLOU Loures 47.41 292 iP P 12 47 17.1 -1.2
comp=Z,1µm,1.0s,mb6.8
PLOU eS S 12 54 12.8 +2.1
PLOU Loures 47.41 292 eP P 12 47 17.0 -1.3
LIS Lisbon 47.45 292 eP P 12 47 16.0 -2.7
LIS eS S 12 54 09.9 -1.4
LIS eS S 12 54 10.1 -1.2
LIS AMS AMS 13 14 45.3
comp=E,12µm,20.4s
LIS Lisbon 47.45 292 eP P 12 47 16.0 -2.7
LIS eS S 12 54 09.9 -1.5
GYA Guiyang 47.48 86⇑iP P 12 47 19.0 -0.1
GYA AP pP 12 47 29.0 +4.8
GYA XP sP 12 47 33.3 +7.0
GYA S S 12 54 13.5 +1.6
GYA XS 12 54 33.5
GYA AMB AMB
comp=Z,4µm,10.2s
GYA LR LR
comp=N,49µm,23.7s,MS6.4
GYA LR LR
comp=E,29µm,27.9s,MS6.4
PTEO Sao Teotonio 47.49 290 iP P 12 47 18.4 -0.6
comp=E,370nm,0.9s,mb6.3
PTEO eS S 12 54 14.2 +2.4
PTEO Sao Teotonio 47.49 290 eP P 12 47 18.3 -0.7
NST Nakhon Sawan 47.67 102 ⇓P P 12 47 21.0 +0.3
comp=E,117nm,1.0s,mb5.9
DGAR Diego Garcia 47.71 151⇑iP P 12 47 21.1 0.0
comp=E,297nm,0.9s,mb6.3
TIY Taiyuan 47.84 69 ⇑P P 12 47 21.0 -0.7
TIY S S 12 54 18.0 +1.2
TIY LR LR
comp=E,25µm,15.0s
TIY LR LR
comp=Z,21µm,15.0s,MS6.2
ENH Enshi 48.16 80⇑eP P 12 47 24.4 +0.1
comp=Z,256nm,1.5s,mb6.0
NNT Nongplab 49.17 106 P P 12 47 33.0 +0.7
KKTK Khon Kaen 49.43 100 PG P 12 47 34.0 -0.3
comp=Z,1µm,0.5s,mb7.2
KKTK SG x 12 47 51.0
BJI Beijing 49.91 65 P P 12 47 37.5 -0.2
BJI PP PP 12 49 37.8 +4.3
BJI PCS 12 52 49.5
BJI S S 12 54 47.5 +1.7
BJI SCS ScS 12 57 22.8 -2.7
BJI AMB AMB
comp=Z,1µm,3.4s
BJI LR LR
comp=N,29µm,17.5s,MS6.5
BJI LR LR
comp=E,27µm,19.0s,MS6.5
BJI LR LR
comp=Z,28µm,17.8s,MS6.3
BJT Baijiatuau 49.91 65⇑eP P 12 47 37.8 +0.2
comp=Z,48nm,1.0s,mb5.5
BJT eS S 12 54 47.7 +1.9
HIA Hailar 50.03 53⇑eP P 12 47 38.9 +0.5
comp=Z,355nm,1.5s,mb6.2
HIA eS S 12 54 51.3 +4.1
DAG Danmarks Havn 50.45 344j iP P 12 47 41.3 0.0
comp=Z,86nm,0.8s,mb5.8
comp=Z,24µm,19.0s
DAG Danmarks Havn 50.45 344j iP P 12 47 41.3 0.0
DAG pmax pmax
comp=Z,87nm,0.8s,mb5.8
DAG MLR MLR
comp=E,18µm,19.0s,MS6.8
DAG MLR MLR
comp=Z,24µm,19.0s,MS6.2
DAG MLR MLR
comp=N,96µm,18.0s,MS6.8
DAG Danmarks Havn 50.45 344 *i* Pdu 12 47 41.3
comp=N,87nm,0.8s
DAG LR LR
comp=Z,24µm,19.0s,MS6.2
BORG Borgarnes 50.62 328 P P 12 47 44.0 +1.3
comp=Z,108nm,1.1s,mb5.7,baz=98,slow=3.6,SNR=20
BORG S S 12 55 04.3 +9.1
comp=Z,4.2nm,0.4s,baz=242,slow=7.2,SNR=1.5
BORG LR LR 13 12 36.7
comp=Z,30µm,20.8s,MS6.3,baz=103,slow=40
BORG Borgarnes 50.62 328 eP P 12 47 44.2 +1.5
comp=Z,427nm,1.4s,mb6.2
BORG LR LR
comp=Z,9µm,22.0s,MS5.7
SCO Scoresbysund 50.78 335 *i* P **P 12 47 45.1 +1.3**
comp=Z,29nm,0.9s,mb5.2
SCO *i* S **S 12 55 03.9 +6.6**
SCO Scoresbysund 50.78 335 *i* P **P 12 47 45.1 +1.3**
SCO *i* S **S 12 55 03.1 +5.8**
SCO pmax pmax
comp=Z,29nm,0.9s,mb5.2

SCO	**Scoresbysund**	**50.78**	**335**	*i* P		**P**	**12 47 45.1**	**+1.3**
	comp=Z,29nm,0.9s,mb5.2								
SCO				*i* S		**S**	**12 55 03.1**	**+5.8**
CLNS	**Chul'man**	**51.67**	**42**	⇑*i* P		**P**	**12 47 51.5**	**+0.7**
CLNS				*e*			12 49 02.8	
CLNS				*e*			12 49 45.1	
CLNS				*e*S		**S**	**12 55 04.2**	**-5.6**
CLNS					pmax	pmax		
	comp=N,20nm,0.8s								
CLNS					pmax	pmax		
	comp=Z,47nm,0.8s,mb5.5								
CLNS					pmax	pmax		
	comp=E,39nm,0.9s								
CLNS					pmax	pmax		
	comp=Z,41nm,0.8s,mb5.4								
CLNS					pmax	pmax		
	comp=N,83nm,1.1s								
CLNS					pmax	pmax		
	comp=E,40nm,1.2s								
CLNS					smax				
	comp=N,2μm,13.1s								
CLNS					smax				
	comp=E,2μm,13.1s								
CLNS					smax				
	comp=Z,4μm,12.1s								
CLNS					MLR	MLR			
	comp=Z,25μm,14.0s,MS6.4								
CLNS					MLR	MLR			
	comp=N,18μm,15.0s,MS6.3								
CLNS					MLR	MLR			
	comp=E,7μm,12.0s,MS6.3								
UBT	**Ubonrachathani**	**51.79**	**99**	⇓P		**P**	**12 47 52.0**	**-0.2**
TIA	**Tai'an**	**51.88**	**69**	⇑P		**P**	**12 47 53.0**	**+0.3**
TIA				S		**S**	**12 55 13.8**	**+0.8**
TIA				XS			12 55 37.0	
TIA				AMB	AMB			
	comp=Z,2μm,10.0s								
TIA				LR	LR				
	comp=N,25μm,17.0s,MS6.4								
TIA				LR	LR				
	comp=E,11μm,16.0s,MS6.4								
WHN	**Wuhan**	**51.90**	**77**	⇑P		**P**	**12 47 53.0**	**+0.1**
WHN				AP	pP		12 48 03.8	+5.7
WHN				S	**S**		**12 55 16.0**	**+2.7**
WHN				LR	LR				
	comp=N,26μm,18.0s,MS6.7								
WHN				LR	LR				
	comp=E,51μm,17.1s,MS6.7								
WHN				LR	LR				
	comp=Z,75μm,18.4s,MS6.8								
SNG	**Songkhla**	**53.23**	**111**	P		**P**	**12 48 00.0**	**-3.0**
	comp=Z,170nm,1.0s,mb5.9								
YAK	**Yakutsk**	**53.23**	**35**	*e*P		**P**	**12 48 01.1**	**-1.3**
YAK				*e*S		**S**	**12 55 31.4**	**+0.4**
YAK				*e*PS		PS	12 55 46.7	+3.4
YAK				*e*			12 57 50.7	
YAK					pmax	pmax			
	comp=Z,97nm,1.2s,mb5.6								
YAK					pmax	pmax			
	comp=N,36nm,1.4s								
YAK					pmax	pmax			
	comp=E,37nm,1.3s								
YAK					smax				
	comp=N,8.0nm,1.1s								
YAK					smax				
	comp=E,5.0nm,1.2s								
YAK					MLR	MLR			
	comp=Z,10μm,14.0s,MS6.0								
YAK					MLR	MLR			
	comp=N,8μm,13.0s,MS6.1								
YAK					MLR	MLR			
	comp=E,10μm,15.0s,MS6.1								
YAK	**Yakutsk**	**53.23**	**35**	*e*P		**P**	**12 48 01.1**	**-1.3**
	comp=E,97nm,1.2s,mb5.6								
YAK				*e*S		**S**	**12 55 31.4**	**+0.4**
YAK				*e*PS		PS	12 55 46.7	+3.4
YAK				*e*			12 57 50.7	
YAK				LR	LR				
	comp=Z,10μm,14.0s,MS6.0								
QIZ	**Qiongzhong**	**53.62**	**92**	⇑P		**P**	**12 48 05.0**	**-0.8**
QIZ				AP	pP		12 48 15.3	+4.3
QIZ				PP	PP		12 50 06.3	-2.0
QIZ				PCS			12 53 12.0	
QIZ				S	**S**		**12 55 33.3**	**-3.6**
QIZ				SCS	ScS		12 57 49.5	-1.8
QIZ				SS	SS		12 59 18.0	+0.9
QIZ				AMB	AMB				
	comp=Z,4μm,10.5s								
QIZ				LR	LR				
	comp=N,9μm,15.6s,MS6.1								
QIZ				LR	LR				
	comp=E,10μm,18.2s,MS6.1								
QIZ				LR	LR				
	comp=Z,12μm,19.9s,MS5.9								
QIZ	**Qiongzhong**	**53.62**	**92**	⇑*e*P		**P**	**12 48 05.0**	**-0.9**
	comp=Z,106nm,1.2s,mb5.6								
DL2	**Dalian**	**54.27**	**65**	⇑*i* P		**P**	**12 48 10.5**	**+0.2**
DL2				AP	pP		12 48 19.3	+3.8
DL2				S	**S**		**12 55 45.5**	**+0.1**
DL2				SS	SS		12 59 30.3	+3.1
DL2				AMB	AMB				
	comp=Z,2μm,11.0s								
DL2				LR	LR				
	comp=N,9μm,13.9s,MS6.1								
DL2				LR	LR				
	comp=E,9μm,15.3s,MS6.1								
DL2				LR	LR				
	comp=Z,12μm,15.8s,MS6.1								
EFAM	**Famara**	**54.35**	**282**	⇑P		**P**	**12 48 09.7**	**-1.3**
	comp=Z,5μm,4.2s								
GZH	**Guangzhou**	**54.42**	**86**	P		**P**	**12 48 09.5**	**-2.1**
GZH				SP	PP		12 50 30.3	+15
GZH				S	**S**		**12 55 48.5**	**+0.9**
GZH				AMB	AMB				
	comp=Z,6μm,7.5s								
GZH				LR	LR				
	comp=N,42μm,22.1s,MS6.5								
GZH				LR	LR				
	comp=E,22μm,23.3s,MS6.5								
GZH				LR	LR				
	comp=Z,26μm,16.3s								
SNY	**Shenyang**	**54.66**	**61**	⇑P		**P**	**12 48 12.0**	**-1.2**
SNY				AP	pP		12 48 31.3	+13
SNY				S	**S**		**12 55 50.0**	**-0.6**
SNY				LR	LR				
	comp=N,35μm,15.7s,MS6.6								
SNY				LR	LR				
	comp=E,27μm,18.4s,MS6.6								
SNY				LR	LR				
	comp=Z,32μm,17.4s,MS6.5								
NJ2	**Nanjing**	**54.80**	**73**	*e*P		**P**	**12 48 14.5**	**+0.2**
NJ2				PP	PP		12 50 18.3	-0.4
NJ2				S	**S**		**12 55 58.0**	**+5.4**
NJ2				XS			12 56 11.0	
NJ2				AMB	AMB				
	comp=Z,3μm,10.1s								
NJ2				LR	LR				
	comp=N,72μm,19.5s,MS6.8								
NJ2				LR	LR				
	comp=E,27μm,22.4s,MS6.8								
NJ2				LR	LR				
	comp=Z,55μm,23.6s,MS6.5								
CN2	**Changchun**	**55.30**	**58**	*e*P		**P**	**12 48 17.3**	**-0.5**
CN2				PP	PP		12 50 22.0	-1.0
CN2				*e*S	**S**		**12 56 02.0**	**+2.9**
CN2				*e*SS	SS		12 59 43.0	-0.6
CN2				AMB	AMB				
	comp=Z,2μm,10.0s								
CN2				LR	LR				
	comp=N,15μm,19.0s,MS6.2								
CN2				LR	LR				
	comp=E,15μm,19.0s,MS6.2								
CN2				LR	LR				
	comp=Z,21μm,18.0s,MS6.2								
HKC	**Hong Kong**	**55.47**	**86**	⇑*i* P		**P**	**12 48 19.0**	**-0.3**
HKC				*i* S		**S**	**12 56 07.0**	**+5.3**
SUMG	**Summit**	**55.80**	**339**	⇑*i* P		**P**	**12 48 21.7**	**+0.6**
	comp=Z,520nm,1.1s,mb6.5								
SUMG				*e*S		**S**	**12 56 21.1**	**+16**
EOSO	**Osorio**	**56.41**	**282**	⇑P		**P**	**12 48 23.6**	**-2.4**
	comp=Z,5μm,3.0s								
EBAJ	**Bajamar**	**56.82**	**283**	P		**P**	**12 48 27.4**	**-1.5**
	comp=Z,3μm,2.8s,mb6.9								
SSE	**Sheshan**	**57.01**	**73**	⇑P		**P**	**12 48 30.0**	**-0.3**
SSE				AP	pP		12 48 40.3	+4.8
SSE				S	**S**		**12 56 19.0**	**-3.0**
SSE				SCS	ScS		12 58 13.5	-1.8
SSE				SS	SS		13 00 08.5	-3.5
SSE				AMB	AMB				
	comp=Z,149nm,1.0s,mb6.0								
SSE				AMB	AMB				
	comp=Z,2μm,10.9s								
SSE				LR	LR				
	comp=N,23μm,15.0s,MS6.4								
SSE				LR	LR				
	comp=E,10μm,15.0s,MS6.4								
SSE				LR	LR				
	comp=Z,16μm,15.0s,MS6.2								
CCAN	**Las Canadas**	**57.17**	**283**	P		**P**	**12 48 30.5**	**-0.9**
	comp=Z,2μm,3.2s								
KLR	**Kul'dur**	**57.60**	**50**	*d i* P		**P**	**12 48 32.5**	**-1.7**
KLR				*e*PPP	PPP		12 52 03.0	-2.0
KLR				*e*S	**S**		**12 56 27.8**	**-1.8**
KLR				*e*SS	SS		13 00 14.5	-6.8
KLR				pmax	pmax				
	comp=E,78nm,1.8s								
KLR				pmax	pmax				
	comp=Z,110nm,1.8s,mb5.6								
KLR				pmax	pmax				
	comp=N,600nm,12.0s								
KLR				pmax	pmax				
	comp=E,2μm,12.0s								
KLR				pmax	pmax				
	comp=Z,5μm,12.0s								
KLR				smax					
	comp=N,5μm,14.0s								
KLR				smax					
	comp=E,9μm,14.0s								
KLR				MLR	MLR				
	comp=E,31μm,15.0s								
KLR				MLR	MLR				
	comp=Z,36μm,15.0s,MS6.6								
KLR	**Kul'dur**	**57.60**	**50**	*i* Pr			12 48 32.5		
KLR				*e*PPP	PPP		12 52 03.0	-2.0	
KLR				*e*S	**S**		**12 56 27.8**	**-1.8**	
KLR				*e*SS	SS		13 00 14.5	-6.8	
EGOM	**La Gomera**	**57.67**	**283**	⇑P		**P**	**12 48 33.4**	**-1.6**	
	comp=Z,2μm,2.3s,mb6.7								
QZH	**Quanzhou**	**57.74**	**81**	⇑*i* P		**P**	**12 48 34.5**	**-1.0**	
QZH				S	**S**		**12 56 31.0**	**-0.8**	
QZH				AMB	AMB				
	comp=Z,2μm,4.2s								
QZH				LR	LR				
	comp=N,22μm,18.1s,MS6.5								
QZH				LR	LR				
	comp=E,27μm,17.2s,MS6.5								
QZH				LR	LR				
	comp=Z,37μm,19.9s,MS6.5								
MDJ	**Mudanjiang**	**57.81**	**56**	P		**P**	**12 48 33.8**	**-1.9**	
MDJ				PCP	PcP		12 49 25.5	-2.6	
MDJ				PP	PP		12 50 45.0	-0.7	
MDJ				S	**S**		**12 56 32.0**	**-0.5**	
MDJ				SCS	ScS		12 58 17.5	-3.5	
MDJ				SS	SS		13 00 29.0	+4.2	
MDJ				AMB	AMB				
	comp=Z,490nm,5.2s								
MDJ				LR	LR				
	comp=Z,44μm,13.8s,MS6.7								
MDJ	**Mudanjiang**	**57.81**	**56**	⇑*e*P		**P**	**12 48 33.8**	**-2.0**	
	comp=Z,31nm,1.0s,mb5.3								
MDJ				*e*S		**S**	**12 56 33.5**	**+1.0**	
INCN	**Inchon**	**58.46**	**64**	*e*P		**P**	**12 48 39.5**	**-0.8**	
	comp=Z,64nm,0.9s,mb5.7								
INCN				LR	LR				
	comp=Z,20μm,19.0s,MS6.2								
CHIE	**El Hierro**	**58.46**	**283**	⇑P		**P**	**12 48 39.2**	**-1.3**	
	comp=Z,269nm,1.6s,mb6.0								
EHRO	**Hierro**	**58.57**	**283**	⇑P		**P**	**12 48 40.5**	**-0.7**	
	comp=Z,4μm,2.8s,mb6.9								
KGM	**Kluang**	**58.63**	**113**	⇑*e*P		**P**	**12 48 39.5**	**-2.4**	
	comp=Z,122nm,0.9s,mb5.9								
DBIC	**Dimbokro**	**59.24**	**254**	P		**P**	**12 48 44.0**	**-2.1**	
	comp=Z,84nm,0.7s,mb5.9,baz=32,slow=8.4,SNR=82								
DBIC				S		**S**	**12 56 49.8**	**-1.7**	
	comp=Z,6.0nm,1.1s,baz=142,slow=21,SNR=3.9								
DBIC				LR	LR		13 17 35.3		
	comp=Z,66μm,18.4s,MS6.8,baz=34,slow=39								
DBIC	**Dimbokro**	**59.24**	**254**	P		**P**	**12 48 44.0**	**-2.1**	
DBIC				S		**S**	**12 56 49.8**	**-1.7**	
DBIC				pmax	pmax				
	comp=Z,84nm,0.7s								
DBIC				smax					
	comp=N,6.0nm,1.1s								
DBIC				MLR	MLR				
	comp=Z,66μm,18.4s								
DBIC	**Dimbokro**	**59.24**	**254**	⇑*i* P		**P**	**12 48 44.0**	**-2.1**	
DBIC				LR	LR				
	comp=Z,57μm,19.0s,MS6.7								
KIC	**Kosan Boka**	**59.34**	**254**	*e*PKP1		**P**	**12 48 43.5**	**-3.3**	
	comp=Z,1μm,0.9s,mb7.0								
TIC	**Toumodi**	**59.38**	**255**	*e*PKP1		**P**	**12 48 43.7**	**-3.4**	
	comp=Z,2μm,1.5s,mb6.9								
KS15	**Wonju Array Si**	**59.38**	**64**	⇑*e*P		**P**	**12 48 45.9**	**-0.9**	
BART	**Pico Bartolome**	**59.58**	**297**	*e*P		**P**	**12 48 47.1**	**-1.0**	
	comp=Z,981nm,1.2s,mb6.7								
LIC	**Lamto**	**59.65**	**254**	⇑*i* P		**P**	**12 48 47.0**	**-1.9**	
	comp=Z,443nm,0.8s,mb6.2								
LIC				*e*R					
	comp=Z,118μm,18.0s								
LIC	**Lamto**	**59.65**	**254**	*e*PKP1		**P**	**12 48 44.5**	**-4.4**	
	comp=Z,693nm,0.8s,mb6.8								
LIC	**Lamto**	**59.65**	**254**	⇑*i* P		**P**	**12 48 47.0**	**-1.9**	
	comp=Z,221nm,0.8s,mb6.2								
LIC				LR	LR				
	comp=Z,59nm,18.0s,MS6.8								
MIRA	**Miradouro**	**59.66**	**297**	*e*P		**P**	**12 48 49.0**	**+0.3**	
PCNG	**Congro**	**59.75**	**297**	*e*P		**P**	**12 48 49.8**	**+0.5**	
MESC	**Monte Escuro**	**59.77**	**297**	*e*P		**P**	**12 48 50.1**	**+0.6**	
PMAT	**Coroa da Mata**	**59.78**	**297**	*e*P		**P**	**12 48 50.1**	**+0.6**	
VIF	**Vila Franca**	**59.79**	**297**	*e*P		**P**	**12 48 50.0**	**+0.4**	
LFA	**Lagoa do Fogo**	**59.81**	**297**	*e*P		**P**	**12 48 49.0**	**-0.7**	
PRCH	**Ribeira Ch**	**59.83**	**297**	*e*P		**P**	**12 48 50.3**	**+0.5**	
PSMN	**Pico do Norte,**	**59.83**	**296**	*e*P		**P**	**12 48 49.5**	**-0.3**	
CML	**Cha da Macela**	**59.85**	**297**	*e*P		**P**	**12 48 48.8**	**-1.2**	
VLA	**Vladivostok**	**59.92**	**57**	⇓*i* P		**P**	**12 48 47.0**	**-3.4**	
VLA				*i*			12 49 30.0		
VLA				*e*PPP	PPP		12 52 37.0	+6.5	
VLA				*i* S		**S**	**12 56 55.0**	**-4.9**	
VLA				*i* PS		PS	12 57 23.0	+5.8	
VLA				*i*			12 58 30.0		
VLA				*i* SS		SS	13 01 00.0	+2.4	
VLA				pmax	pmax				
	comp=N,2μm,11.0s								
VLA				pmax	pmax				
	comp=E,1μm,11.0s								
VLA				pmax	pmax				
	comp=Z,400nm,11.0s								
VLA				smax					
	comp=N,6μm,13.0s								
VLA				smax					
	comp=E,4μm,15.0s								
VLA				MLR	MLR				
	comp=N,33μm,15.0s,MS6.7								
VLA				MLR	MLR				
	comp=Z,47μm,15.0s,MS6.8								
VLA				MLR	MLR				
	comp=E,17μm,13.5s,MS6.7								
FAC	**Faja de Cima**	**59.93**	**297**	*e*P		**P**	**12 48 49.9**	**-0.6**	
PDA	**Ponta Delgada**	**59.95**	**297**	*e*P		**P**	**12 48 50.0**	**-0.7**	
PSET	**Sete Cidades**	**59.96**	**297**	*e*P		**P**	**12 48 50.3**	**-0.4**	
	comp=E,731nm,1.1s,mb6.6								
SETA	**Sete Cidades**	**59.98**	**297**	*e*P		**P**	**12 48 48.8**	**-2.1**	
TATO	**Taipei**	**60.03**	**80**	P		**P**	**12 48 52.6**	**+1.2**	
TATO	**Taipei**	**60.03**	**80**	*e*P		**P**	**12 48 52.0**	**+0.6**	
	comp=E,265nm,1.4s,mb6.1								
TATO				*e*			12 49 01.5		
TATO				LR	LR				
	comp=Z,16μm,21.0s,MS6.1								
PSCM	**Serra do Cume**	**60.59**	**298**	*e*P		**P**	**12 48 53.1**	**-2.0**	
	comp=Z,377nm,1.0s,mb6.5								
PVNV	**Vila Nova**	**60.60**	**298**	*e*P		**P**	**12 48 55.3**	**+0.2**	
RIB2	**Ribeirinha**	**60.65**	**298**	*e*P		**P**	**12 48 55.3**	**-0.1**	
PBIS	**Biscoitos**	**60.67**	**298**	*e*P		**P**	**12 48 55.3**	**-0.2**	
ADH	**Angra Heroismo**	**60.70**	**298**	*e*P		**P**	**12 48 55.0**	**-0.8**	
ADH				*e*S		**S**	**12 57 16.0**	**+6.1**	
ADH				Q			13 04 00.0		
ADH				*e*R			13 07 00.0		
PPAD	**Pico dos Padre**	**60.72**	**298**	*e*P		**P**	**12 48 56.0**	**+0.1**	
ASBA	**Santa Barbara**	**60.73**	**298**	*e*P		**P**	**12 48 56.4**	**+0.4**	
TOPO	**Topo**	**61.21**	**298**	*e*P		**P**	**12 48 58.9**	**-0.3**	
ROSA	**Rosais**	**61.38**	**299**	*e*P		**P**	**12 49 00.8**	**+0.4**	
PID	**Ribeirinha**	**61.42**	**298**	*e*P		**P**	**12 49 01.2**	**+0.6**	
PICO	**Pico**	**61.61**	**299**	*e*P		**P**	**12 49 02.3**	**+0.4**	
SFJ	**Sondre**	**61.63**	**334**	P		**P**	**12 49 00.6**	**-1.0**	
SFJ				S		**S**	**12 57 24.2**	**+2.8**	
SFJ				ScS	ScS		12 58 52.5	+3.6	
CALA	**Caldeira**	**61.77**	**299**	*e*P		**P**	**12 49 02.1**	**-0.9**	
SEY	**Seymchan**	**62.92**	**30**	*i* P		**P**	**12 49 11.4**	**+1.1**	
SEY							12 49 48.4		
SEY							12 51 31.7		
SEY					PPP	PPP	12 53 05.6	+4.3	
SEY				*e*S		**S**	**12 57 37.5**	**-0.2**	
SEY				*e*			12 58 12.4		
SEY							12 59 02.6		
SEY					SS	SS	13 01 48.8	+3.5	
SEY				*e*SSS		SSS	13 04 33.0	+3.4	
SEY					smax				
	comp=N,16μm,12.0s								
SEY					smax				
	comp=E,57μm,16.2s								
SEY					MLR	MLR			
	comp=Z,63μm,20.0s,MS6.8								
SEY	**Seymchan**	**62.92**	**30**	*i* P		**P**	**12 49 11.4**	**+1.1**	
SEY				*e*			12 49 48.4		
SEY				*e*			12 51 31.7		
SEY					PPP	PPP	12 53 05.6	+4.3	
SEY				*e*S		**S**	**12 57 37.5**	**-0.2**	
SEY				*e*			12 58 12.4		
SEY				*e*			12 59 02.6		
SEY					SS	SS	13 01 48.8	+3.5	
SEY				*e*SSS		SSS	13 04 33.0	+3.4	
SEY					LR	LR			
	comp=Z,63μm,20.0s,MS6.8								
JNU	**Nakatsue**	**63.47**	**67**	P		**P**	**12 49 13.8**	**-0.5**	
	comp=Z,36nm,1.1s,mb5.4,baz=298,slow=9.9,SNR=12								
JNU				S		**S**	**12 57 49.1**	**+4.1**	
	comp=Z,5.3nm,1.0s,baz=268,slow=23,SNR=1.6								
MA2	**Magadan**	**63.77**	**34**	*c i* P		**P**	**12 49 15.5**	**-0.3**	
MA2				*e*			12 49 57.3		
MA2				*e*			12 51 35.2		
MA2				*e*PPP	PPP		12 53 10.1	+0.4	
MA2				*i* S		**S**	**12 57 45.9**	**-2.3**	
MA2				*e*			12 59 06.3		
MA2				*e*SS	SS		13 01 52.3	-5.6	
MA2				*e*SSS	SSS		13 04 42.2	-3.3	
MA2					pmax	pmax			
	comp=N,10.0nm,1.2s								
MA2					pmax	pmax			
	comp=Z,100nm,1.2s,mb5.7								
MA2					pmax	pmax			
	comp=E,30nm,1.3s								
MA2					MLR	MLR			
	comp=Z,42μm,21.0s,MS6.6								
MA2	**Magadan**	**63.77**	**34**	⇑*i* P		**P**	**12 49 15.5**	**-0.3**	
MA2				*e*			12 49 57.3		
MA2				*e*			12 51 35.2		
MA2				*e*PPP	PPP		12 53 10.1	+0.4	
MA2				*i* S		**S**	**12 57 45.9**	**-2.3**	
MA2				*e*			12 59 06.3		
MA2				*e*SS	SS		13 01 52.3	-5.6	
MA2				*e*SSS	SSS		13 04 42.2	-3.3	
MA2				LR	LR				
	comp=Z,42μm,21.0s,MS6.6								
TSUM	**Tsumeb**	**63.90**	**216**	LR		LR	13 18 08.3		
	comp=Z,29μm,19.4s,MS6.5,baz=34,slow=37								
TSUM				PKPPKP			13 18 08.8		
	comp=Z,1.8nm,0.8s,baz=191,slow=5.2,SNR=2.6								
CVP	**Callao Caves**	**63.99**	**87**	*e*P		**P**	**12 49 14.3**	**-3.7**	
COCO	**West Island**	**64.39**	**130**	PFAKE			12 49 30.0	+9.3	
COCO				LR	LR				
	comp=Z,4μm,21.0s,MS5.6								
JOW	**Kunigami**	**64.47**	**74**	P		**P**	**12 49 19.6**	**-1.5**	
	comp=Z,83nm,1.0s,mb5.7,baz=313,slow=8.8,SNR=17								
JOW				LR		LR	13 22 29.1		
	comp=Z,26μm,18.9s,MS6.4,baz=106,slow=41								
BILL	**Bilibino**	**65.19**	**22**	*c i* P		**P**	**12 49 25.0**	**0.0**	
BILL				pmax	pmax				
	comp=Z,166nm,1.1s,mb6.0								
BILL	**Bilibino**	**65.19**	**22**	⇑*i* P		**P**	**12 49 25.0**	**0.0**	
	comp=Z,166nm,1.1s,mb6.0								
TGY	**Tagaytay City**	**65.22**	**90**	P		**P**	**12 49 24.8**	**-1.2**	
	comp=Z,93nm,0.5s,mb6.1,baz=116,slow=22,SNR=2.1								
TGY				S		S	12 58 10.3	+3.4	
	comp=Z,403nm,0.4s,baz=151,slow=14,SNR=2.5								
TGY	**Tagaytay City**	**65.22**	**90**	P		**P**	**12 49 24.8**	**-1.2**	
TGY				S		S	12 58 10.3	+3.4	
TGY				pmax	pmax				
	comp=Z,93nm,0.5s								
TGY				smax					
	comp=N,403nm,0.4s								
YSS	**Yuzh-Sakhalins**	**65.27**	**49**	*αe*P		**P**	**12 49 25.0**	**-0.8**	
YSS				*e*			12 49 42.0		
YSS				*e*S		S	12 58 09.0	+2.0	
YSS				*e*SS		SS	13 02 27.0	+5.3	
YSS				pmax	pmax				
	comp=Z,140nm,1.2s,mb5.9								
YSS				pmax	pmax				
	comp=E,1μm,12.0s								
YSS				pmax	pmax				
	comp=Z,4μm,12.0s								
YSS				smax					
	comp=N,3μm,14.0s								
YSS				smax					
	comp=E,7μm,16.0s								
YSS	**Yuzh-Sakhalins**	**65.27**	**49**	*e*Pcu			12 49 25.0		
	comp=E,140nm,1.2s								
YSS				*e*			12 49 42.0		
YSS				*e*S		S	12 58 09.0	+2.0	
YSS				*e*SS		SS	13 02 27.0	+5.3	
LBTB	**Lobatse**	**65.75**	**206**	⇑*i* P		**P**	**12 49 28.7**	**-0.7**	
	comp=E,160nm,0.9s,mb6.0								
LBTB				LR	LR				
	comp=Z,72nm,19.0s,MS6.9								
KKM	**Kota Kinabalu**	**66.06**	**101**	⇑*e*P		**P**	**12 49 31.2**	**-0.2**	
	comp=Z,189nm,1.1s,mb6.0								
ASAJ	**Asahikawa**	**66.49**	**52**	P		**P**	**12 49 32.5**	**-1.2**	
	comp=Z,19nm,0.9s,mb5.1,baz=279,slow=12,SNR=8.6								
ASAJ				S		S	12 58 23.1	+1.0	
	comp=Z,0.8nm,0.4s,baz=161,slow=19,SNR=2.1								
ASAJ				LR		LR	13 23 51.2		
	comp=Z,12μm,18.4s,MS6.1,baz=303,slow=41								
ASAJ	**Asahikawa**	**66.49**	**52**	P		**P**	**12 49 32.6**	**-1.1**	
ASAJ				S		S	12 58 23.1	+1.1	
ASAJ				pmax	pmax				
	comp=Z,19nm,1.0s								
ASAJ				MLR	MLR				
	comp=Z,12μm,18.4s								
MAJO	**Matsushiro**	**67.17**	**61**	⇑*e*P		**P**	**12 49 36.6**	**-1.6**	
	comp=Z,126nm,1.3s,mb5.8								
MAJO				LR	LR				
	comp=Z,9μm,21.0s,MS5.9								
MAT	**Matsushiro**	**67.17**	**61**	P		**P**	**12 49 36.5**	**-1.7**	
MAT				S		S	12 58 19.0	-11	
MAT	**Matsushiro**	**67.17**	**61**	*e*P		**P**	**12 49 37.0**	**-1.2**	
MAT				*e*S		S	12 58 20.0	-10	
KALP	**Kalibo**	**67.70**	**92**	⇓*e*P		**P**	**12 49 40.8**	**-1.1**	
YUK	**Yuzh-Kuril'sk**	**68.59**	**51**	*e*P		**P**	**12 49 45.0**	**-1.9**	
YUK				*e*			12 50 11.4		
YUK

comp=N,5,0nm,1.0s
JHJ Hachijo jima 2 70.00 63 P **P 12 49 54.9 -0.8**
comp=N,66nm,1.0s,mb5.5,baz=240,slow=9.5,SNR=3.0
TBP Tagbilaran 70.06 93 *e*P **P 12 49 55.1 -1.3**
PET Petropavlovsk 70.92 38 *e*P **P 12 49 59.4 -1.6**
PET *e* 12 52 39.2
PET *e*PPP PPP 12 54 18.7 -2.7
PET *e*S S 12 59 11.3 -3.1
PET *e*SSS SSS 13 06 51.6 -3.7
PET pmax pmax
comp=Z,2μm,10.1s
PET pmax pmax
comp=Z,3μm,14.1s
PET pmax pmax
comp=Z,900nm,4.3s
PET pmax pmax
comp=Z,1μm,18.7s
PET smax
comp=E,2μm,15.0s
PET smax
comp=E,5μm,23.0s
PET MLR MLR
comp=Z,22μm,20.0s,MS6.4
SKR Severo-Kuril's 70.97 41 *e*P **P 12 50 01.2 -0.1**
SKR *e* 12 52 40.0
SKR *e*S S 12 59 14.0 -1.0
SKR *e*PS PS 12 59 46.0 +0.7
SKR *e* 12 59 51.0
SKR *e*SS SS 13 03 44.0 -6.1
SKR pmax pmax
comp=N,2μm,10.0s
SKR pmax pmax
comp=E,3μm,10.0s
SKR pmax pmax
comp=Z,3μm,10.0s
SKR smax
comp=E,7μm,16.0s
SKR smax
comp=N,3μm,20.0s
SKR MLR MLR
comp=N,13μm,16.0s,MS6.4
SKR MLR MLR
comp=E,12μm,16.0s,MS6.4
SKR MLR MLR
comp=Z,12μm,16.0s,MS6.2
BIPH Bislig 72.94 92⇓ *i*P **P 12 50 10.8 -2.9**
TNA Tin City 73.92 16⇑ *i*P **P 12 50 18.7 +0.4**
comp=Z,93nm,1.1s,mb5.6
TNA LR LR
comp=Z,10μm,19.0s,MS6.1
SUR Sutherland 74.17 207 LR LR 13 24 13.5
comp=Z,85μm,18.2s,MS7.1,baz=30,slow=37
SUR Sutherland 74.17 207 *e*P **P 12 50 20.8 +0.3**
comp=Z,124nm,0.9s,mb5.8
SUR LR LR
comp=Z,25μm,19.0s,MS6.5
CBIJ Chichi jima 74.95 67 S S 12 59 55.8 -4.7
comp=Z,28nm,0.6s,baz=245,slow=22,SNR=3.6
CBIJ LR LR 13 27 11.3
comp=Z,6μm,18.1s,MS5.9,baz=134,slow=39
SCHQ Schefferville 75.01 328 P **P 12 50 25.1 +0.1**
comp=Z,122nm,0.9s,mb5.8,baz=46,slow=5.7,SNR=111
SCHQ S S 13 00 02.8 +2.2
comp=Z,2.0nm,0.8s,baz=301,slow=17,SNR=7.7
SCHQ LR LR 13 26 36.0
comp=Z,10μm,20.6s,MS6.1,baz=48,slow=38
SCHQ Schefferville 75.01 328⇑ *i*P **P 12 50 24.9 -0.1**
comp=Z,567nm,1.4s,mb6.3
SCHQ LR LR
comp=Z,15μm,21.0s,MS6.3
INK Inuvik 75.62 2 P **P 12 50 28.1 -0.1**
INK S S 13 00 07.2 +0.2
comp=Z,8.0nm,1.3s,baz=156,slow=19,SNR=4.3
INK LR LR 13 28 06.2
comp=Z,9μm,21.9s,MS6.0,baz=6.5,slow=39
INK Inuvik 75.62 2 P **P 12 50 28.1 0.0**
INK S S 13 00 07.2 +0.2
INK smax
comp=N,8.0nm,1.3s
INK MLR MLR
comp=Z,9μm,21.9s
INK Inuvik 75.62 2⇑ *i*P **P 12 50 27.6 -0.5**
comp=Z,144nm,1.3s,mb5.7
INK *e* 12 50 36.9
IMA Indian Mountai 76.08 10 *e*P **P 12 50 30.9 +0.1**
FX1 Attu Island--F 77.71 32⇑ *e*P **P 12 50 39.8 -0.4**
COLA College 77.99 8 *i* P **P 12 50 40.7 -0.7**
COLA College 77.99 8 *e*P **P 12 50 41.5 +0.1**
COLA LR LR
comp=Z,18μm,20.0s,MS6.4
ILAR Eielson Array 78.20 8 P **P 12 50 42.7 +0.2**
comp=Z,51nm,0.9s,mb5.5,baz=336,slow=3.5,SNR=337
ILAR PP PP 12 53 40.2 -1.3
comp=Z,9.7nm,1.0s,baz=330,slow=6.3,SNR=3.1
ILAR S S 13 00 36.7 +1.6
comp=Z,0.7nm,1.1s,baz=100,slow=8.7,SNR=2.6
ILAR PKKPbc 13 09 38.4
comp=Z,1.7nm,0.8s,baz=200,slow=2.4,SNR=14
ILAR LR LR 13 32 12.8
comp=Z,14μm,19.7s,MS6.3,baz=359,slow=41
SMY Shemya 78.22 32 P **P 12 50 43.5 +0.6**
SMY pmax pmax
comp=Z,540nm,1.5s,mb6.3
SMY Shemya 78.22 32 *e*P **P 12 50 42.6 -0.3**
comp=Z,540nm,1.5s,mb6.3
SMY LR LR
comp=Z,27μm,19.0s,MS6.6
MCK McKinley 78.96 9 P **P 12 50 47.5 +0.8**
MCK pmax pmax
comp=Z,430nm,1.7s,mb6.1
MCK McKinley 78.96 9⇑ *i*P **P 12 50 46.5 -0.2**
comp=Z,430nm,1.8s,mb6.1
MCK LR LR
comp=Z,8μm,20.0s,MS6.1
DAWY Dawson 79.57 5⇑ *i*P **P 12 50 50.2 +0.2**
SVW Sparrevohn 80.41 13 *e*P **P 12 50 55.6 +1.0**
YKW3 Yellowknife Ar 80.83 354⇑ *i*P **P 12 50 56.5 -0.3**
SML Sawmill 80.89 9 P **P 12 50 57.5 +0.4**
SML Sawmill 80.89 9⇑ *i*P **P 12 50 57.2 +0.1**
YKA Yellowknife Ar 80.90 354 P **P 12 50 57.4 +0.3**
comp=Z,73nm,0.9s,mb5.6,baz=6.5,slow=6.6,SNR=651
YKA S S 13 01 05.0 +1.5
comp=Z,0.3nm,0.7s,baz=296,slow=4.0,SNR=2.8
YKA PKKPbc 13 09 32.7
comp=Z,0.5nm,0.6s,baz=178,slow=2.5,SNR=10
YKA PKPPKP 13 17 39.0
comp=Z,1.0nm,1.0s,baz=178,slow=2.3,SNR=5.6
YKA LR LR 13 32 36.7
comp=Z,15μm,20.4s,MS6.3,baz=350,slow=40
YKA Yellowknife Ar 80.90 354 P **P 12 50 57.4 +0.3**
YKA S S 13 01 05.0 +1.5
YKA PKKPbc 13 09 32.7
YKA P'P'[1] 13 17 39.0
YKA LR LR 13 32 36.7
PMR Palmer 80.99 10 P **P 12 50 57.3 -0.3**
PMR pmax pmax
comp=Z,310nm,1.1s,mb6.2
PMR Palmer 80.99 10 *e*P **P 12 50 57.1 -0.5**
PMR LR LR
comp=Z,13μm,19.0s,MS6.3
FCC Fort Churchill 81.04 343 P **P 12 50 58.8 +0.8**
FCC pmax pmax
comp=Z,18nm,0.6s,mb5.2
FCC Fort Churchill 81.04 343⇑ *i*P **P 12 50 58.7 +0.7**
comp=Z,18nm,0.6s,mb5.2
PQI Presque Isle 81.21 323⇑ *i*P **P 12 50 59.8 +0.7**
comp=Z,24nm,0.2s,mb5.8
PQI LR LR
comp=Z,44μm,20.0s,MS6.8
FIB Fire Island 81.25 10 *e*P **P 12 50 60.0 +1.0**
FIB *e* 12 51 08.1
FIB LR LR
comp=Z,29μm,21.0s,MS6.6
PMS Palmer South 81.26 10 *e*P **P 12 50 59.4 +0.3**
DIV Divide 81.86 8 PFAKE 12 51 10.0 +7.8
DIV LR LR
comp=Z,52μm,20.0s,MS6.9
EYAK Cordova Ski Ar 82.43 9⇑ *i*P **P 12 51 06.2 +1.1**
WVL Waterville 83.52 322⇑ *i*P **P 12 51 11.3 +0.3**
comp=Z,793nm,1.4s,mb6.7
WVL LR LR
comp=Z,28μm,20.0s,MS6.6
KDAK Kodiak Island 84.07 13⇑ *i*P **P 12 51 14.4 +0.8**
comp=Z,1μm,1.6s,mb6.8
KDAK *e*P pP 12 51 23.6 +4.6
KDAK LR LR
comp=Z,3μm,21.0s,MS5.6
UNV Unalaska Valle 84.35 22 *e*P **P 12 51 14.1 -0.9**
UNV LR LR
comp=Z,51μm,19.0s,MS6.9
SDPT Sand Point 84.66 18 *e*P **P 12 51 16.8 +0.3**
SDPT LR LR
comp=Z,16μm,17.0s,MS6.5
GUMO Guam 84.68 77 *e*P **P 12 51 17.3 -0.3**
GUMO LR LR
comp=Z,5μm,20.0s,MS5.9
LBNH Lisbon 84.87 323 P **P 12 51 19.3 +1.4**
LBNH pmax pmax
comp=Z,170nm,1.0s,mb6.1
LBNH Lisbon 84.87 323⇑ *i*P **P 12 51 19.1 +1.2**
comp=Z,166nm,1.0s,mb6.1
LBNH LR LR
comp=Z,13μm,22.0s,MS6.3
HNH Hanover 85.44 323⇑ *i*P **P 12 51 21.8 +1.1**
comp=Z,23nm,1.4s,mb5.1
HNH *e*pP pP 12 51 30.7 +4.5
DLBC Dease Lake 85.59 1⇑ *i*P **P 12 51 22.6 +1.5**
DLBC *e*pP pP 12 51 32.1 +5.5
MSNY Massena 85.69 325 *e*P **P 12 51 22.5 +0.6**
WES Weston 85.93 321 P **P 12 51 24.1 +0.9**
WES pmax pmax
comp=Z,810nm,1.8s,mb6.7
WES Weston 85.93 321⇑ *i*P **P 12 51 23.8 +0.6**
comp=Z,813nm,1.8s,mb6.7
WES LR LR
comp=Z,14μm,22.0s,MS6.3
HRV Harvard--Oak R 85.96 322 P **P 12 51 23.9 +0.5**
HRV pmax pmax
comp=Z,74nm,1.0s,mb5.9
HRV Harvard--Oak R 85.96 322⇑ *i*P **P 12 51 23.9 +0.6**
comp=Z,74nm,0.9s,mb5.9
HRV *e*PP PP 12 54 44.4 -0.6
HRV LR LR
comp=Z,7μm,20.0s,MS6.1
PTN Potsdam (NY) 86.07 325 P **P 12 51 25.4 +1.5**
PTN Potsdam (NY) 86.07 325 *e*P **P 12 51 24.9 +1.0**
NCB Newcomb 86.17 324⇑ *i*P **P 12 51 24.6 +0.3**
comp=Z,68nm,1.5s,mb5.7
NCB LR LR
comp=Z,11μm,20.0s,MS6.3
ACCN Adirondack Com 86.34 323⇑ *i*P **P 12 51 25.9 +0.7**
ACCN *e*pP pP 12 51 35.0 +4.3
ACCN *e*PP PP 12 54 47.1 -1.3
FFC Flin Flon 86.51 345⇑ *i*P **P 12 51 25.9 +0.2**
comp=Z,437nm,1.5s
FFC *e*pP pP 12 51 34.5 +3.3
FFC LR LR
comp=Z,796nm,20.0s
QUA2 Belchertown 86.53 322⇑ *i*P **P 12 51 26.9 +0.7**
comp=Z,285nm,1.5s,mb6.3
QUA2 *e*PP PP 12 54 48.5 -1.4
SIT Sitka 86.80 4 P **P 12 51 29.1 +2.0**
SIT pmax pmax
comp=Z,680nm,1.8s,mb6.6
SIT Sitka 86.80 4 *e*P **P 12 51 28.2 +1.1**
SIT LR LR
comp=Z,11μm,19.0s,MS6.3
SADO Sadowa 87.79 327 P **P 12 51 32.2 0.0**
comp=Z,41nm,1.1s,mb5.6,baz=47,slow=4.3,SNR=11
SADO S S 13 02 00.4 -12
comp=Z,2.6nm,0.7s,baz=271,slow=16,SNR=1.8
SADO Sadowa 87.79 327 P **P 12 51 32.2 0.0**
SADO S S 13 02 00.4 -12
PAL Palisades 88.25 322 P **P 12 51 34.7 +0.2**
PAL pmax pmax
comp=Z,74nm,1.0s,mb5.9
PAL Palisades 88.25 322⇑ *i*P **P 12 51 34.4 -0.1**
comp=Z,74nm,1.0s,mb5.9
PAL *e*pP pP 12 51 43.2 +3.3
PAL *e*PP PP 12 55 02.0 -2.3
FITZ Fitzroy Crossi 88.34 114 P **P 12 51 34.8 -0.7**
comp=Z,254nm,0.8s,mb6.5,baz=343,slow=5.2,SNR=153
FITZ Fitzroy Crossi 88.34 114⇑ *i*P **P 12 51 34.6 -0.8**
comp=Z,220nm,0.9s,mb6.4
FITZ *e* 12 51 42.2
FITZ *e*S S 13 02 18.4 +0.7
BINY Binghamton 88.35 324⇑ *i*P **P 12 51 35.2 +0.2**
comp=Z,112nm,1.4s,mb5.9
BINY *e*pP pP 12 51 44.2 +3.8
BINY LR LR
comp=Z,11μm,19.0s,MS6.3
CPNY Central Park 88.44 322 *e*P **P 12 51 35.2 -0.2**
BRNJ Basking Ridge 88.82 322⇑ *i*P **P 12 51 37.6 +0.4**
BRNJ *e*PP PP 12 55 07.0 -1.8
ULM Lac du Bonnet 89.14 340 P **P 12 51 38.5 0.0**
comp=Z,60nm,1.0s,mb5.9,baz=24,slow=4.9,SNR=70
ULM S S 13 02 04.5 -20
comp=Z,4.1nm,0.9s,baz=260,slow=17,SNR=2.0
ULM PKKPbc 13 09 12.8
comp=Z,2.2nm,0.5s,baz=205,slow=4.3,SNR=3.4
ULM LR LR 13 34 59.7
comp=Z,16μm,20.6s,MS6.4,baz=28,slow=38
ULM Lac du Bonnet 89.14 340⇑ *i*P **P 12 51 38.3 -0.2**
comp=Z,393nm,1.5s,mb6.5
ULM *e*pP pP 12 51 47.4 +3.5
ULM *e*S S 13 02 27.0 +2.6
ULM LR LR
comp=Z,24μm,20.0s,MS6.6
BBSR BB Station 89.34 311 *e*P **P 12 51 40.4 +0.5**
BBSR LR LR
comp=Z,4μm,19.0s,MS5.9
KAKA Kakadu 90.17 106⇑ *i*P **P 12 51 43.9 -0.3**
comp=Z,344nm,0.9s,mb6.7
KAKA *e* pP 12 51 50.7 +1.1
MVL Millersville 90.22 323⇑ *i*P **P 12 51 43.8 0.0**
MVL *e*pP pP 12 51 53.0 +3.7
MVL *e*PP PP 12 55 19.6 -0.5
ERPA Erie 90.27 326⇑ *i*P **P 12 51 43.8 -0.3**
comp=Z,216nm,1.4s,mb6.3
ERPA *e*pP pP 12 51 53.0 +3.5
ERPA *e*PP PP 12 55 19.8 -0.7
ERPA LR LR
comp=Z,11μm,22.0s,MS6.2
SSPA Standing Stone 90.47 324⇑ *i*P **P 12 51 44.9 -0.1**
comp=Z,371nm,1.6s,mb6.5
SSPA *e*pP pP 12 51 54.2 +3.8
SSPA LR LR
comp=Z,3μm,20.0s,MS5.8
ALLY Alegheny Colle 90.71 326⇑ *i*P **P 12 51 45.8 -0.2**
ALLY *e*pP pP 12 51 55.0 +3.5
MUN Mundaring 90.95 130⇑ *i*P **P 12 51 46.2 -1.2**
comp=Z,54nm,1.0s,mb5.8
KLBR Kellerberrin 91.66 129⇑ *i*P **P 12 51 48.8 -1.8**
comp=Z,60nm,1.3s,mb5.8
AAM Ann Arbor 91.72 328 *e*P **P 12 51 51.3 +0.6**
AAM LR LR
comp=Z,16μm,20.0s,MS6.5
CBN Corbin 92.11 322 *e*P **P 12 51 52.9 +0.3**
comp=Z,162nm,0.9s,mb6.3
CBN LR LR
comp=Z,15μm,19.0s,MS6.5
NWAO Narrogin (SRO) 92.23 130 P **P 12 51 52.4 -0.8**
NWAO S S 13 02 52.7 +0.1
NWAO Narrogin (SRO) 92.23 130 P **P 12 51 52.5 -0.7**
comp=Z,17nm,0.8s,mb5.5,baz=295,slow=5.3,SNR=3.8
NWAO LR LR 13 31 01.8
comp=Z,8μm,21.8s,MS6.2,baz=326,slow=34
NWAO Narrogin (SRO) 92.23 130 *e*P **P 12 51 51.8 -1.4**
comp=Z,163nm,1.8s,mb6.1
NWAO LR LR
comp=Z,7μm,22.0s,MS6.1
CAUB Caruaru 92.86 262*c i*P **P 12 51 57.1 +0.6**
CAUB *i* 12 52 29.2
CAUB *i* 12 52 44.1
ACSO Alum Creek Sta 93.12 327⇑ *i*P **P 12 51 56.9 -0.3**
comp=Z,127nm,1.0s,mb6.3
ACSO LR LR
comp=Z,11μm,22.0s,MS6.3
JFWS Jewell Farm 93.81 333 P **P 12 52 00.5 +0.2**
JFWS pmax pmax
comp=Z,66nm,1.0s,mb6.0
JFWS Jewell Farm 93.81 333⇑ *i*P **P 12 52 00.1 -0.2**
comp=Z,66nm,1.1s,mb6.0
JFWS LR LR
comp=Z,15μm,20.0s,MS6.5
WALA Waterton Lakes 94.02 350⇑ *i*P **P 12 52 01.5 +0.4**
comp=Z,134nm,1.3s,mb6.2
PNT Penticton 94.38 354 P **P 12 52 03.5 +0.8**
BLA Blacksburg 94.38 323 *e*P **P 12 52 03.0 -0.1**
comp=Z,92nm,1.3s,mb6.0
BLA LR LR
comp=Z,16μm,19.0s,MS6.5
SNB Saturna Island 95.15 357 P **P 12 52 07.7 +1.4**
NEW Newport 95.19 352 P **P 12 52 08.0 +1.5**
comp=Z,109nm,0.9s,mb6.3,baz=359,slow=4.4,SNR=121
NEW S SKS 13 02 43.3 -3.0
comp=Z,0.8nm,0.4s,baz=261,slow=10,SNR=2.3
NEW Newport 95.19 352⇑ *i*P **P 12 52 07.7 +1.2**
comp=Z,192nm,1.1s,mb6.4
NEW *e*pP pP 12 52 16.9 +4.9
NEW LR LR
comp=Z,23μm,22.0s,MS6.6
PGC Sidney 95.29 357⇑ *i*P **P 12 52 07.6 +0.7**
comp=Z,423nm,1.8s,mb6.6
PGC *e*pP pP 12 52 16.8 +4.4
RPW Rockport 95.38 355 *e*P **P 12 52 07.6 +0.3**
JCW Jim Creek 95.66 356 P **P 12 52 09.4 +0.7**
NLW Nelson Butte 95.67 355 *e*P **P 12 52 09.9 +1.2**
DPW Davenport 95.69 353 P **P 12 52 10.2 +1.4**
DPW Davenport 95.69 353 *e*P **P 12 52 10.1 +1.3**
WRA Warramunga Arr 95.97 110 P **P 12 52 09.6 -1.1**
comp=Z,23nm,0.9s,mb5.6,baz=321,slow=3.9,SNR=84
WRA LR LR 13 38 45.5
comp=Z,4μm,21.2s,MS5.9,baz=285,slow=38
WRA Warramunga Arr 95.97 110 P **P 12 52 09.6 -1.1**
WRA pmax pmax
comp=Z,23nm,0.9s
WRA MLR MLR
comp=Z,4μm,21.2s
WRAB Tennant Creek 95.98 110 *e*P **P 12 52 09.2 -1.6**
comp=Z,109nm,1.5s,mb6.1
WRAB LR LR
comp=Z,1μm,22.0s,MS5.4
WB2 Warramunga Arr 95.98 110⇑ *i*P **P 12 52 09.4 -1.4**
WB2 *e* 12 52 16.9
WB2 *e*PKKP PKKP 13 08 58.3 +4.4
HRY Holter Researc 96.01 349 *e*P **P 12 52 11.5 +1.2**
WTV Waterville 96.02 354 P **P 12 52 11.5 +1.2**
CHMT Chamberlain Mo 96.03 350 *e*P **P 12 52 10.6 +0.3**
MSO Missoula 96.21 350⇑ *i*P **P 12 52 11.5 +0.3**
comp=Z,107nm,1.6s,mb6.0
MSO *e*pP pP 12 52 20.6 +3.9
MSO *e*PP PP 12 56 05.2 -1.6
MSO LR LR
comp=Z,19μm,20.0s,MS6.6
OCWA Octopus Mounta 96.22 357⇑ *e*P **P 12 52 13.0 +1.7**
comp=Z,233nm,1.6s,mb6.4
OCWA LR LR
comp=Z,15μm,20.0s,MS6.5
WCI Wyandotte Cave 96.22 328 *e*P **P 12 52 11.8 +0.3**
WCI *e* 12 52 20.2
WCI Wyandotte Cave 96.22 328 *e*P **P 12 52 11.5 +0.1**
WCI *e*pP pP 12 52 20.1 +3.2
WCI LR LR
comp=Z,3μm,19.0s,MS5.9
HDW Hoodsport 96.27 356 P **P 12 52 13.3 +1.9**
GNW Green Mountain 96.34 356⇑ *i*P **P 12 52 13.0 +1.3**
GNW *e*pP pP 12 52 22.1 +4.8
GNW *e*PP PP 12 56 02.1 -5.8
RMW Rattlesnake Mo 96.39 355 P **P 12 52 13.1 +1.1**
RMW Rattlesnake Mo 96.39 355 *e*P **P 12 52 12.8 +0.8**
FMW Mount Fremont 96.90 355 P **P 12 52 15.2 +0.9**
RSSD Black Hills 96.93 343 P **P 12 52 15.3 +0.8**
RSSD PP PP 12 56 09.7 -2.9
RSSD SKSac 13 02 52.2
RSSD ScS ScS 13 03 37.9 +4.5
RSSD SP SP 13 04 58.3 -1.1
RSSD Black Hills 96.93 343 P **P 12 52 15.5 +1.0**
RSSD pmax pmax
comp=Z,110nm,1.7s,mb6.0
RSSD Black Hills 96.93 343⇑ *i*P **P 12 52 15.4 +0.9**
comp=Z,105nm,1.7s,mb6.0
RSSD *e*pP pP 12 52 24.4 +4.4
RSSD LR LR
comp=Z,7μm,20.0s,MS6.2
BOZ Bozeman (W) 97.01 348⇑ *e*P **P 12 52 15.5 +0.7**
comp=Z,144nm,1.4s,mb6.2
BOZ *e* 12 52 24.7
BOZ LR LR
comp=Z,14μm,20.0s,MS6.5
USIN University of 97.03 329 *e*P **P 12 52 15.1 0.0**
comp=Z,44nm,0.8s,mb5.9
LON Longmire 97.09 355 P **P 12 52 16.5 +1.3**
LON Longmire 97.09 355⇑ *e*P **P 12 52 16.0 +0.8**
JSC Jenkinsville 97.13 322 P **P 12 52 16.8 +1.2**
JSC Jenkinsville 97.13 322 *e*P **P 12 52 16.4 +0.8**
HAWA Hanford 97.28 354⇑ *i*P **P 12 52 17.2 +1.2**
comp=Z,9.6nm,1.8s
HAWA *e*pP pP 12 52 25.9 +4.4
HAWA LR LR
comp=Z,1μm,20.0s
WAKE Wake Island 97.45 60 PFAKE 12 52 30.0 +13
WAKE LR LR
comp=Z,4μm,21.0s,MS5.9
BMW Boistfort Moun 97.45 356 P **P 12 52 19.0 +2.2**
BMW Boistfort Moun 97.45 356 *e*P **P 12 52 18.6 +1.8**
COW Cow Castle Cre 97.57 321 *e*P **P 12 52 18.4 +0.8**
SHW Mount Saint He 97.68 356 P **P 12 52 19.9 +2.1**
SHW Mount Saint He 97.68 356 *e*P **P 12 52 19.4 +1.6**
LNOR Lincton Mounta 97.68 353 P **P 12 52 19.5 +1.7**
LNOR Lincton Mounta 97.68 353 *e*P **P 12 52 19.2 +1.4**
CPCT Cooper Cave 97.74 325⇑ *i*P **P 12 52 18.3 -0.1**
CPCT *e*pP pP 12 52 27.1 +3.3
QLMT Earthquake Lak 97.77 348 *e*P **P 12 52 19.7 +1.5**
AS12 Alice Springs 97.84 113⇑ *i*P **P 12 52 17.4 -1.7**
comp=Z,21nm,1.1s,mb5.6
AS12 *e*PKKP PKKP 13 08 53.8 +3.3
ASAR Alice Springs 97.84 113 P **P 12 52 17.6 -1.4**
comp=Z,15nm,0.9s,mb5.5,baz=306,slow=3.9,SNR=33
ASAR PKKPbc 13 08 53.3
comp=Z,2.8nm,0.9s,baz=122,slow=2.9,SNR=9.3
ASAR LR LR 13 37 44.1
comp=Z,4μm,21.8s,MS5.9,baz=307,slow=36
YMR Madison River 97.85 348 *e*P **P 12 52 20.9 +2.3**
MYNC Murphy 97.87 325 *e*P **P 12 52 19.6 +0.7**
MYNC *e* 12 52 27.5
MYNC Murphy 97.87 325 *e*P **P 12 52 19.3 +0.4**
MYNC LR LR
comp=Z,14μm,20.0s,MS6.5
SIUC Southern Illin 97.88 330⇑ *i*P **P 12 52 18.9 0.0**
comp=Z,79nm,1.3s,mb6.1
SIUC *e*pP pP 12 52 28.0 +3.6
FORT Forrest 97.91 122⇓ *i*P **P 12 52 18.4 -0.8**
comp=Z,48nm,0.8s,mb6.1
MCMT McKenzie Canyo 98.01 349 *e*P **P 12 52 20.1 +0.8**
FVM French Village 98.14 331 *e*P **P 12 52 20.7 +0.6**
FVM pmax pmax
comp=Z,83nm,1.5s,mb6.0
FVM French Village 98.14 331 *e*P **P 12 52 20.4 +0.3**
comp=Z,83nm,1.5s,mb6.0
VGB Gordon Butte 98.25 355 *e*P **P 12 52 22.2 +1.8**
CCM Cathedral Cave 98.40 331 PcP PcP 12 52 21.3 -0.3
CCM SKSac 13 02 58.4
CCM ScS ScS 13 03 50.1 +4.3
CCM SP SP 13 05 14.1 -0.6
CCM Cathedral Cave 98.40 331 P **P 12 52 21.5 +0.2**
CCM pmax pmax
comp=Z,6.0nm,0.6s,mb5.3
CCM Cathedral Cave 98.40 331 *e*P **P 12 52 21.2 -0.1**
comp=Z,5.6nm,0.6s,mb5.3
CCM LR LR
comp=Z,3μm,20.0s,MS5.8
WVT Waverly 98.65 328 *e*P **P 12 52 22.1 -0.3**
WVT pmax pmax
comp=Z,9.0nm,1.1s,mb5.2
WVT Waverly 98.65 328 *e*P **P 12 52 20.6 -1.9**
comp=Z,8.1nm,1.1s,mb5.2
WVT LR LR
comp=Z,11μm,20.0s,MS6.3
KSWY Kelly School 98.81 347 *e*P **P 12 52 24.8 +1.8**
WUWY Wally Ulrich 98.91 347 *e*P **P 12 52 25.1 +1.7**
COR Corvallis 99.34 356 PFAKE 12 52 40.0 +15
COR LR LR
comp=Z,3μm,21.0s,MS5.8
KSU1 Kansas State U 99.42 335 *e*P **P 12 52 26.0 +0.2**
BW06 Boulder Array 99.43 346 *e*P **P 12 52 25.7 -0.1**
comp=Z,28nm,2.1s,mb5.4
BW06 LR LR
comp=Z,17μm,19.0s,MS6.6
PDAR Pinedale Array 99.43 346 P **P 12 52 25.3 -0.5**
comp=Z,1.1nm,0.9s,slow=1.5,SNR=9.8
PDAR PP PP 12 56 34.0 +2.3
comp=Z,4.8nm,0.9s,baz=27,slow=3.3,SNR=3.8
PDAR PKKPbc 13 08 46.6
comp=Z,0.9nm,0.7s,baz=168,slow=3.8,SNR=5.8
PDAR LR LR 13 44 21.4

comp=Z,15μm,19.4s,baz=19,slow=40
PDAR Pinedale Array 99.43 346 P **P** 12 52 25.3 **-0.5**
PDAR PP PP 12 56 34.0 +2.3
PDAR PKKPbc 13 08 46.6
PDAR LR LR 13 44 21.4
HLID Hailey 99.48 350 *e*P **P** **12 52 26.6 +0.6**
comp=Z,23nm,1.5s,mb5.5
HLID *e*pP pP 12 52 35.7 +4.2
HLID LR LR
comp=Z,19μm,19.0s,MS6.6
AHID Auburn Hatcher 99.72 347 PFAKE 12 52 40.0 +13
AHID LR LR
comp=Z,14μm,20.0s,MS6.5
PLAL Pickwick Lake 99.73 327 *e*Pdif **P** **12 52 26.4 -0.9**
comp=Z,19nm,1.1s,mb5.4
PLAL *e*PP PP 12 56 30.9 -3.3
PLAL LR LR
comp=Z,12μm,20.0s,MS6.4
PMG Port Moresby 99.97 94 P **P** **12 52 28.4 -0.5**
comp=Z,14nm,0.8s,mb5.4,baz=322,slow=8.7,SNR=4.2
PMG S SKS 13 03 08.8 -3.1
comp=Z,24nm,1.1s,baz=204,slow=12,SNR=2.4
PMG LR LR 13 40 50.8
comp=Z,2μm,21.5s,MS5.5,baz=83,slow=37
PMG Port Moresby 99.97 94 *e*Pdif **P** **12 52 28.5 -0.5**
PMG LR LR
comp=Z,2μm,20.0s,MS5.6
SJG San Juan 100.09 301 P P 12 52 29.1 -0.3
comp=Z,4.3nm,0.3s,baz=334,slow=21,SNR=2.8
SJG San Juan 100.09 301 P P 12 52 29.1 -0.3
SJG LR LR
comp=Z,6μm,20.0s,MS6.1
CBKS Cedar Bluff 100.69 338 *e*Pdif P 12 52 32.1 +0.4
comp=Z,138nm,1.5s
CBKS LR LR
comp=Z,21μm,19.0s,MS6.7
OXF Oxford 100.70 328 PFAKE 12 52 40.0 +8.2
OXF LR LR
comp=Z,11μm,20.0s,MS6.4
LRAL Lakeview Retre 100.88 326 Pdif P 12 52 34.7 +2.0
comp=Z,15nm,1.1s
LRAL LR LR
comp=Z,14μm,21.0s,MS6.5
HWUT Hardware Ranch 100.93 347 *e*Pdif P 12 52 33.5 +0.8
comp=Z,77nm,1.9s
HWUT LR LR
comp=Z,22μm,20.0s,MS6.7
HVU Hansel Valley 100.97 348 P P 12 52 34.5 +1.7
HVU Hansel Valley 100.97 348 *e*Pdif P 12 52 33.7 +0.9
MIDW Midway 100.99 43 PFAKE 12 52 40.0 +6.8
MIDW LR LR
comp=Z,7μm,20.0s,MS6.2
WVOR Wild Horse Val 101.11 353 P P 12 52 35.0 +1.5
WVOR pmax pmax
comp=Z,79nm,1.7s
WVOR Wild Horse Val 101.11 353 *e*Pdif P 12 52 34.8 +1.3
comp=Z,80nm,1.7s
WVOR LR LR
comp=Z,18μm,22.0s,MS6.5
HUMO Hull Mountain 101.29 356 *e*Pdif P 12 52 35.2 +1.0
comp=Z,119nm,1.8s
TCUT Toone Canyon 101.37 347 *e*Pdif P 12 52 35.4 +0.8
ISCO Idaho Springs 101.40 342 P P 12 52 36.1 +1.3
ISCO pmax pmax
comp=Z,20nm,1.4s
ISCO Idaho Springs 101.40 342 *e*Pdif P 12 52 35.8 +1.0
comp=Z,20nm,1.5s
ISCO LR LR
comp=Z,22μm,20.0s,MS6.7
BGU Big Grassy Mou 101.84 348 *e*Pdif P 12 52 37.9 +1.1
CTU Camp Tracy 101.85 347 *e*Pdif P 12 52 37.7 +0.9
JLU Jordanelle 101.88 347 *e*Pdif P 12 52 37.6 +0.6
DAU Daniels Canyon 102.03 347 P Pdif 12 52 39.9 +2.2
DAU Daniels Canyon 102.03 347 *e*Pdif Pdif 12 52 39.1 +1.4
DWPF Disney 102.14 319 PFAKE 12 52 50.0 +12
DWPF LR LR
comp=Z,2μm,22.0s,MS5.6
YBH Yreka Blue Hor 102.15 356 PKKPbc 13 08 41.1
comp=Z,2.4nm,0.8s,baz=204,slow=8.4,SNR=3.6
YBH Yreka Blue Hor 102.15 356 PFAKE 12 52 50.0 +12
YBH LR LR
comp=Z,13μm,20.0s,MS6.5
MIAR Mount Ida 102.37 331 P Pdif 12 52 41.1 +1.7
MIAR pmax pmax
comp=Z,2.0nm,0.3s
MIAR Mount Ida 102.37 331 *e*Pdif Pdif 12 52 40.4 +1.0
comp=Z,28nm,0.3s
MIAR LR LR
comp=Z,227μm,21.0s
NLU North Lily Min 102.62 347 *e*Pdif Pdif 12 52 41.2 +0.9
BMN Battle Mountai 102.93 351 P Pdif 12 52 43.9 +2.2
BMN pmax pmax
comp=Z,43nm,1.8s
BMN Battle Mountai 102.93 351 *e*Pdif Pdif 12 52 43.4 +1.7
comp=Z,43nm,1.9s
BMN LR LR
comp=Z,10μm,19.0s,MS6.4
SRU San Rafael 103.15 346 P Pdif 12 52 43.6 +1.0
SRU San Rafael 103.15 346 *e*Pdif Pdif 12 52 43.2 +0.5
WDC Whiskeytown Da 103.28 355 P Pdif 12 52 44.2 +1.0
WDC pmax pmax
comp=Z,57nm,1.9s
WDC Whiskeytown Da 103.28 355 *e*Pdif Pdif 12 52 43.0 -0.2
comp=Z,57nm,1.9s
WDC LR LR
comp=Z,10μm,21.0s,MS6.3
SDCO Great Sand Dun 103.31 342 *e*Pdif Pdif 12 52 43.8 +0.4
comp=Z,15nm,1.6s
SDCO LR LR
comp=Z,18μm,20.0s,MS6.6
RW3 Ridgway 103.36 343 P Pdif 12 52 45.5 +1.9
RW3 Ridgway 103.36 343 *e*Pdif Pdif 12 52 44.3 +0.7
PV10 Paradox Valley 103.55 344 *e*Pdif Pdif 12 52 45.7 +1.3
PV01 Paradox Valley 103.68 344 *e*Pdif Pdif 12 52 46.1 +1.1
BEKR Beckwourth 103.82 354 *e*Pdif Pdif 12 52 46.5 +0.9
comp=Z,53nm,1.7s
MAW Mawson 103.96 176 *e*PDIF Pdif 12 52 49.5 +4.0
comp=Z,5.7nm,1.0s
MAW *e*SP Sx 13 04 52.7
MAW Mawson 103.96 176 Pdiff Pdif 12 52 46.8 +1.2
comp=Z,4.0nm,0.9s,baz=271,slow=23,SNR=2.2
MAW PP PP 12 57 01.5 -3.8
comp=Z,5.9nm,0.9s,baz=310,slow=9.7,SNR=4.5
MAW Mawson 103.96 176 P Pdif 12 52 46.8 +1.3
MAW 12 57 01.5
MAW pmax pmax
comp=Z,4.0nm,1.0s
MAW pmax pmax
comp=Z,6.0nm,0.9s
MAW Mawson 103.96 176 *e*Pdif Pdif 12 52 46.3 +0.7
comp=Z,18nm,1.3s
MAW *e*SP Sx 13 04 52.7
MAW LR LR
comp=Z,29μm,20.0s,MS6.8
MSU Marysvale 104.04 347 P Pdif 12 52 49.1 +2.5
MSU Marysvale 104.04 347 *e*Pdif Pdif 12 52 48.6 +2.0
MVU Marysvale 104.06 347 *e*Pdif Pdif 12 52 48.3 +1.6
comp=Z,39nm,1.8s
MVU LR LR
comp=Z,13μm,20.0s,MS6.5
MOAC Moa 104.09 309 *e*P Pdif 12 52 45.1 -2.1
WMOK Wichita Mounta 104.10 335 P Pdif 12 52 47.7 +0.7
WMOK pmax pmax
comp=Z,6.0nm,0.9s
WMOK Wichita Mounta 104.10 335 *e*Pdif Pdif 12 52 47.4 +0.5
comp=Z,6.0nm,0.9s
WMOK LR LR
comp=Z,16μm,19.0s,MS6.6
WCN Washoe City 104.33 353 P Pdif 12 52 50.4 +2.6
WCN pmax pmax
comp=Z,83nm,1.8s
WCN Washoe City 104.33 353 *e*Pdif Pdif 12 52 50.0 +2.1
comp=Z,83nm,1.8s
HOPS Hopland 104.90 356 PFAKE 12 53 00.0 +10
HOPS LR LR
comp=Z,10μm,20.0s,MS6.3
MNV Mina 105.02 352 P Pdif 12 52 42.9 -8.0
MNV pmax pmax
comp=Z,2.0nm,0.5s
MNV Mina 105.02 352 PFAKE 12 57 20.0
MNV LR LR
comp=Z,9μm,19.0s,MS6.3
NVAR Mina Array Bea 105.04 352 Pdiff Pdif 12 52 53.0 +2.0
comp=Z,1.0nm,0.3s,baz=190,slow=17,SNR=5.6
NVAR PKKPbc 13 08 31.3
comp=Z,1.4nm,0.6s,baz=181,slow=4.9,SNR=5.4
NVAR Mina Array Bea 105.04 352 Pdif Pdif 12 52 53.0 +2.0
NVAR PKKPbc 13 08 31.3
CTA Charters Tower 105.25 104 *e*S SKS 13 03 32.1 -4.4
CTA Charters Tower 105.25 104 Pdiff Pdif 12 52 53.3 +1.0
comp=Z,7.2nm,0.9s,baz=311,slow=6.2,SNR=4.1
CTA PKiKP
comp=Z,11nm,1.0s,baz=24,slow=2.3,SNR=4.6
CTA Charters Tower 105.25 104 *e*P Pdif 12 52 53.4 +1.1
comp=Z,7.1nm,0.9s
CTA *e* 12 53 00.7
CTA PKPdf 12 57 06.4
CTA *e*S SKS 13 03 32.1 -4.4
CTAO Charters Tower 105.25 104 *e*PKPdf 12 57 06.3
CTAO LR LR
comp=Z,4μm,20.0s,MS6.0
TPH Tonopah 105.25 351 P Pdif 12 52 51.2 -0.7
TPH pmax pmax
comp=Z,26nm,1.3s
TPH Tonopah 105.25 351 *e*Pdif Pdif 12 52 50.8 -1.2
comp=Z,26nm,1.3s
TPH LR LR
comp=Z,8μm,19.0s,MS6.3
SYO Syowa Base 105.39 184 ⇑P Pdif 12 52 49.9 -1.9
SYO Syowa Base 105.39 184⇑ *e*P Pdif 12 52 49.9 -1.9
CCCC Cccc 105.42 312 *e*P Pdif 12 52 45.5 -7.5
CMB Columbia Colle 105.64 353 Pdiff Pdif 12 52 54.6 +1.0
CMB SKSac 13 03 38.1
CMB SKSdf 13 04 24.8
CMB Sdiff 13 04 51.4
CMB SP SP 13 06 28.7 -1.1
CMB PKKSbc 13 12 15.6
CMB Columbia Colle 105.64 353 P Pdif 12 52 55.6 +1.9
CMB pmax pmax
comp=Z,7.0nm,0.5s
CMB Columbia Colle 105.64 353 PFAKE 12 57 20.0
CMB LR LR
comp=Z,11μm,21.0s,MS6.4
MGV Manicaragua 106.04 314 *e*P Pdif 12 52 54.8 -1.0
ANMO Albuquerque 106.20 341 P Pdif 12 52 58.3 +2.1
ANMO pmax pmax
comp=Z,18nm,1.6s
ANMO Albuquerque 106.20 341 *e*Pdif Pdif 12 52 57.4 +1.2
comp=Z,18nm,1.6s
ANMO LR LR
comp=Z,15μm,21.0s,MS6.5
BDFB Brasilia 106.73 263 PP PP 12 57 22.3 -5.3
comp=Z,29nm,0.9s,baz=76,slow=5.8,SNR=11
WUAZ Wupatki 106.79 346 *e*Pdif Pdif 12 53 00.1 +1.3
comp=Z,2.5nm,0.9s
WUAZ LR LR
comp=Z,17μm,20.0s,MS6.6
SAO San Andreas Ge 107.00 354 PFAKE 12 57 20.0
SAO LR LR
comp=Z,13μm,21.0s,MS6.5
BNM Barren Site 107.00 341 *e*Pdif Pdif 12 53 01.2 +1.5
DAC Darwin (Calif) 107.07 351 PFAKE 12 57 20.0
DAC LR LR
comp=Z,14μm,19.0s,MS6.5
CPRX Cap Rock 107.29 339 *e*Pdif Pdif 12 53 02.1 +1.0
NEN Nelson 107.29 348 *e*Pdif Pdif 12 53 02.9 +2.0
HKT Hockley 107.32 331 Pdiff Pdif 12 53 02.4 +1.2
HKT Hockley 107.32 331 PFAKE 12 57 20.0
HKT LR LR
comp=Z,3μm,22.0s,MS5.8
CLNB Carlsbad 108.01 338 *e*Pdif Pdif 12 53 05.1 +0.9
STKA Stephens Creek 108.06 117 Pdiff Pdif 12 53 03.8 -0.7
comp=Z,3.7nm,0.7s,baz=360,slow=5.3,SNR=5.0
STKA PKiKP 12 57 11.3
comp=Z,3.1nm,0.4s,baz=318,slow=8.9,SNR=4.8
STKA Stephens Creek 108.06 117 *e*P Pdif 12 53 03.9 -0.5
comp=Z,4.7nm,1.0s
STKA PKPdf 12 57 11.3
MNTX Cornudas Mount 108.98 339 *e*Pdif Pdif 12 53 09.6 +1.2
MNTX LR LR
comp=Z,17μm,20.0s,MS6.6
PFO Pinyon Flat Ob 109.54 349 PFAKE 12 57 20.0
PFO LR LR
comp=Z,2μm,20.0s,MS5.8
SDV Santo Domingo 109.57 297 PP PP 12 57 43.7 -5.3
SDV PS PS 13 07 14.2 +3.5
TUC Tucson 109.76 344 PFAKE 12 57 20.0
TUC LR LR
comp=Z,11μm,20.0s,MS6.5
LTX Lajitas 110.67 337 PFAKE 12 57 30.0 +11
LTX LR LR
comp=Z,10μm,21.0s,MS6.4
TXAR Lajitas Array 110.67 337 Pdiff Pdif 12 53 17.1 +1.2
comp=Z,0.7nm,0.3s,baz=344,slow=9.1,SNR=2.5
TXAR PKiKP 12 57 18.1
comp=Z,1.2nm,0.3s,baz=50,slow=3.0,SNR=2.3
TXAR PP PP 12 57 52.0 -4.3
comp=Z,1.4nm,0.3s,baz=72,slow=4.0,SNR=5.8
SNAA Sanae 114.25 196 *e*PKIKP PKPdf 12 57 19.4 -5.3
KIP Kipapa 116.11 31 PFAKE 12 57 40.0 +11
KIP LR LR
comp=Z,10μm,20.0s,MS6.4
TAU Tasmania Unive 117.34 125 PFAKE 12 57 40.0 +8.7
TAU LR LR
comp=Z,2μm,22.0s,MS5.7
JTS JuntasÂbangare 118.18 310 PFAKE 12 57 40.0 +6.4
JTS LR LR
comp=Z,977nm,21.0s,MS5.4
POHA Pohakuloa 118.61 29 PFAKE 12 57 40.0 +5.7
POHA LR LR
comp=Z,5μm,20.0s,MS6.2
CPUP Villa Florida 119.68 258 PKP PKPdf 12 57 32.1 -4.1
comp=Z,5.9nm,1.0s,baz=80,slow=3.0,SNR=5.7
CPUP PP PP 12 58 54.5 -5.2
comp=Z,21nm,1.2s,baz=84,slow=6.2,SNR=6.6
CPUP Villa Florida 119.68 258 PKIKP PKPdf 12 57 32.1 -4.1
CPUP 12 58 54.5
CPUP pmax pmax
comp=Z,6.0nm,1.0s
CPUP pmax pmax
comp=Z,21nm,1.2s
OTAV Otavalo 121.14 297 *e*PKPdf PKPdf 12 57 37.3 -2.1
NOUC Port Laguerre 122.26 95 *e*P PKPdf 12 57 38.5 -2.8
DZM Mont Dzumac 122.36 95 *e*P PKPdf 12 57 39.3 -2.2
LPAZ La Paz 123.29 274 PKP PKPdf 12 57 40.5 -3.0
comp=Z,6.0nm,0.8s,baz=45,slow=4.7,SNR=15
LPAZ PP PP 12 59 22.1 -2.8
comp=Z,7.6nm,0.9s,baz=66,slow=2.7,SNR=4.0
LPAZ La Paz 123.29 274 PKIKP PKPdf 12 57 40.5 -2.9
LPAZ 12 59 22.1
LPAZ pmax pmax
comp=Z,6.0nm,0.8s
LPAZ pmax pmax
comp=Z,8.0nm,0.9s
LPAZ La Paz 123.29 274⇑ *e*PKPdf PKPdf 12 57 40.2 -3.2
LPAZ LR LR
comp=Z,15μm,20.0s,MS6.6
ARE Arequipa 126.09 276⇑ *i*P PKPdf 12 57 46.9 -2.0
QSPA South Pole Qui 126.14 180 *e*PKP PKPdf 12 57 43.3 -4.1
LVC Limon Verde 127.17 268⇑ *e*PKPdf PKPdf 12 57 48.4 -2.4
LVC LR LR
comp=Z,8μm,20.0s,MS6.4
TRQA Tornquist 128.09 247 *e*PKPdf PKPdf 12 57 49.0 -3.2
EFI East Falkland 129.09 229 PFAKE 12 58 00.0 +6.2
EFI LR LR
comp=Z,5μm,22.0s,MS6.2
VNDA Vanda 129.53 165 PKP PKPdf 12 57 50.7 -3.3
comp=Z,2.4nm,0.7s,baz=281,slow=5.8,SNR=12
VNDA PP PP 12 59 59.2 -5.3
comp=Z,6.1nm,1.2s,baz=286,slow=3.3,SNR=4.9
VNDA Vanda 129.53 165 *e*PKPdf PKPdf 12 57 50.8 -3.2
VNDA LR LR
comp=Z,17μm,21.0s,MS6.7
SBA Scott Base 130.47 165 PKIKP PKPdf 12 57 53.1 -2.7
SBA Scott Base 130.47 165⇑ *e*PKPdf PKPdf 12 57 52.6 -3.2
SBA LR LR
comp=Z,12μm,20.0s,MS6.6
MDZ Mendoza 131.52 256 *e*P PKPdf 12 57 58.1 -0.8
PMSA Palmer Station 133.04 212 *e*PKPdf PKPdf 12 57 58.2 -2.7
RPZ Rata Peaks 133.96 119 PKP PKPdf 12 57 59.4 -3.7
comp=Z,40nm,0.9s,baz=214,slow=3.1,SNR=3.8
SNZO South Karori 136.07 115 PFAKE 12 58 10.0 +2.9
SNZO LR LR
comp=Z,6μm,22.0s,MS6.3
RAR Rarotonga 148.82 70 PKPbc PKPdf 12 58 31.8 +1.9
comp=Z,148nm,1.1s,baz=232,slow=5.3,SNR=12
RAR Rarotonga 148.82 70 PKP2 PKPab 12 58 32.1 -4.0
RAR Rarotonga 148.82 70 *e*PKPbc PKPdf 12 58 31.7 +1.9
RAR LR LR
comp=Z,6μm,21.0s,MS6.4
PPT Papeete 153.56 51 PKP PKPdf 12 58 33.6 -3.4
comp=Z,126nm,1.3s,baz=47,slow=11,SNR=2.7
PPT PKPbc PKPdf 12 58 44.0 +7.0
comp=Z,150nm,0.9s,baz=197,slow=6.8,SNR=4.5
PPT Papeete 153.56 51 PKIKP PKPdf 12 58 33.6 -3.4
PPT 12 58 44.0
PPT pmax pmax
comp=Z,126nm,1.3s
RPN Rapa Nui 161.39 294 *e*PKPdf PKPdf 12 58 44.3 -2.1
RPN LR LR
comp=Z,1μm,19.0s

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*IDC **28** 13:07:07.6±0.9, 36.38N×51.72E, mb3.8/9, mb1 4.0/10, mb1mx3.8/20, ML3.3/1, Error ellipse: s-maj=20.3km s-min=8.6km az=133.0*
*NEIC **28** 13:07:08.9±0.7, 36.34N×51.71E, h10km, Error ellipse: s-maj=14.4km s-min=7.6km az=156.0*
*THR **28** 13:07:11.2±1.2, 36.34N×51.67E, h0km±18km, ML3.9*
*NNC **28** 13:07:20.9±4.2, 37.51N×52.35E, Error ellipse: s-maj=59.7km s-min=31.8km az=76.0*

ISC 28 13:07:07.4±0.4, 36.42N±0.04×51.72E±0.05, h10km, n28, σ1°05/31, mb3.8/14, 4C-2D, Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THR	**Tehran**	**0.70**	**223**	Pg	**Pg**	**13 07 20.8**	**-0.7**
	150nm,0.3s,baz=21,slow=12,SNR=27						
THR				Lg		13 07 29.9	
	634nm,0.3s,baz=153,slow=16,SNR=57						
DAMV	**Damavand**	**0.81**	**165**	*e*PG	**Pg**	**13 07 24.1**	**+0.4**
DAMV				*e*SG	**Sg**	**13 07 35.0**	**+0.3**
DAMV				AMP		13 07 36.0	
	comp=E,5μm,0.6s						
THKV	**Tehran--Karaj**	**0.84**	**234**	*e*PG	**Pg**	**13 07 24.0**	**-0.4**
THKV				*e*SG	**Sg**	**13 07 34.8**	**-0.9**
SNGE	**Sanandaj**	**3.79**	**251**	*e*PN	**Pn**	**13 08 08.8**	**+1.6**
MAKU	**Maku**	**6.29**	**300**	*e*PN	**Pn**	**13 08 43.9**	**+1.4**
AB31	**Akbulak array**	**14.16**	**23**	⇓P	**P**	**13 10 25.6**	**-4.5**
	comp=E,2.3nm,0.6s,baz=211,slow=14,SNR=30						
AB31				⇑S	**S**	**13 12 54.7**	**-14**
	comp=E,1.3nm,0.5s,baz=182,slow=24,SNR=5.0						
BRTR	**Keskin Array B**	**14.62**	**289**	Pn	**P**	**13 10 37.2**	**+1.1**
	comp=E,0.1nm,0.3s,baz=88,slow=16,SNR=2.2						
KK31	**Karatay Array**	**15.90**	**59**	⇑P	**P**	**13 10 52.1**	**-0.8**
	comp=E,1.1nm,0.4s,baz=248,slow=11,SNR=11						
AAK	**Ala-Archa**	**18.61**	**64**	P	**P**	**13 11 28.0**	**+1.2**
ZRNK	**Zerenda**	**20.51**	**31**	⇑P	**P**	**13 11 48.2**	**0.0**
	comp=E,12nm,1.4s						
ZRNK	**Zerenda**	**20.51**	**31**	*e*P	**P**	**13 11 47.3**	**-0.9**
ARU	**Arti**	**20.55**	**11**	*e*P	**P**	**13 11 47.3**	**-1.3**
	comp=E,26nm,0.8s						
BRVK	**Borovoye**	**21.12**	**32**	⇑P	**P**	**13 11 53.7**	**-0.9**
	comp=E,7.5nm,1.2s,mb3.9						
BRVK	**Borovoye**	**21.12**	**32**	*e*P	**P**	**13 11 53.5**	**-1.1**
BVA0	**Borovoye Array**	**21.15**	**32**	P	**P**	**13 11 54.2**	**-0.5**
	comp=E,2.3nm,1.0s,mb3.5,baz=217,slow=10.0,SNR=25						
BVAR	**Borovoye Array**	**21.15**	**32**	P	**P**	**13 11 54.2**	**-0.5**
	comp=E,5.3nm,0.8s,mb3.9,baz=219,slow=9.5,SNR=20						
VOSK	**Vostochnaya**	**21.20**	**34**	⇓P	**P**	**13 11 54.4**	**-0.8**
	comp=E,11nm,0.7s,mb4.3						
MLR	**Muntele Rosu**	**21.40**	**303**	P	**P**	**13 11 58.1**	**+0.8**
	comp=E,1.6nm,0.3s,mb3.8,baz=182,slow=9.0,SNR=4.3						
IDI	**Anoyia**	**21.75**	**275**	P	**P**	**13 12 01.4**	**+0.4**
	comp=E,7.8nm,0.8s,mb4.2,baz=39,slow=14,SNR=2.4						
KURK	**Kurchatov**	**24.00**	**45**	P	**P**	**13 12 25.2**	**+2.3**
	comp=E,8.2nm,0.8s,mb4.2,baz=261,slow=6.3,SNR=3.4						
KURK	**Kurchatov**	**24.00**	**45**	*e*P	**P**	**13 12 25.2**	**+2.3**
MK31	**Makanchi Array**	**24.96**	**56**	P	**P**	**13 12 38.1**	**+6.0**
	comp=E,3.9nm,0.8s,mb4.0,baz=250,slow=7.1,SNR=18						
MKAR	**Makanchi Array**	**24.96**	**56**	P	**P**	**13 12 33.7**	**+1.5**
	comp=E,4.0nm,1.0s,mb3.9,baz=240,slow=9.8,SNR=13						
FINES	**FINESS Array B**	**29.80**	**335**	P	**P**	**13 13 15.7**	**-0.6**
	comp=E,1.1nm,0.7s,mb3.7,baz=142,slow=13,SNR=2.5						
GERES	**GERESS Array B**	**30.28**	**306**	P	**P**	**13 13 19.5**	**-1.2**
	comp=E,0.3nm,0.3s,mb3.5,baz=106,slow=9.7,SNR=4.8						
NOA	**NORSAR Array B**	**35.43**	**327**	P	**P**	**13 14 06.8**	**+1.4**
	comp=E,0.2nm,0.4s,mb3.4,baz=125,slow=10,SNR=2.3						
ESDC	**Sonseca Array**	**43.38**	**292**	P	**P**	**13 15 10.0**	**-1.6**
	comp=E,3.1nm,0.8s,mb4.1,baz=70,slow=8.1,SNR=5.8						
CMAR	**Chiang Mai Arr**	**45.09**	**100**	P	**P**	**13 15 25.0**	**-0.7**
	comp=E,0.3nm,0.4s,mb3.5,baz=277,slow=7.3,SNR=3.3						

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*IDC **28** 13:11:56.8±0.5, 10.96S×58.57E, mb4.3/18, mb1 4.4/18, mb1mx4.3/21, Error ellipse: s-maj=19.2km s-min=16.6km az=35.0*
*NEIC **28** 13:11:58.5±0.2, 10.91S×58.55E, h10km, mb4.6/4, Error ellipse: s-maj=10.8km s-min=8.4km az=68.0*

ISC 28 13:11:56.8±0.4, 10.91S±0.08×58.57E±0.09, h10km, n64, σ0°89/35, mb4.3/22, 1C-1D, South Indian Ocean

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMBO	**Kilima Mbogo**	**23.30**	**293**	P	**P**	**13 17 07.8**	**+1.7**
	2.3nm,0.8s,mb3.6,baz=77,slow=7.7,SNR=6.1						
TSUM	**Tsumeb**	**40.35**	**253**	P	**P**	**13 19 36.4**	**-0.1**
	7.9nm,1.3s,mb4.3,baz=225,slow=16,SNR=6.2						
CMAR	**Chiang Mai Arr**	**49.37**	**54**	P	**P**	**13 20 49.1**	**+0.2**
	1.8nm,0.7s,mb4.2,baz=244,slow=8.1,SNR=8.2						
CMAR				PcP	PcP	13 22 10.9	-0.8
	0.5nm,0.5s,baz=232,slow=4.7,SNR=4.3						
BRTR	**Keskin Array B**	**55.45**	**337**	P	**P**	**13 21 34.5**	**+0.5**
	1.3nm,0.6s,mb4.1,baz=159,slow=11,SNR=5.4						
MAW	**Mawson**	**56.70**	**178**	P	**P**	**13 21 41.9**	**-0.8**
	4.2nm,1.0s,mb4.4,baz=345,slow=10,SNR=4.4						
MAW	**Mawson**	**56.70**	**178**	*e*P	**P**	**13 21 42.7**	**0.0**
MKAR	**Makanchi Array**	**61.24**	**18**	P	**P**	**13 22 14.3**	**-0.1**
	3.1nm,0.9s,mb4.4,baz=194,slow=5.9,SNR=4.3						
BVAR	**Borovoye Array**	**64.48**	**8**	P	**P**	**13 22 34.8**	**-1.0**
	6.0nm,1.2s,mb4.5,baz=198,slow=9.1,SNR=3.2						
KIC	**Kosan Boka**	**65.31**	**282**	*e*P	**P**	**13 22 41.0**	**-0.9**
	79nm,1.0s						
DBIC	**Dimbokro**	**65.50**	**282**	P	**P**	**13 22 42.4**	**-0.7**
	8.5nm,0.6s,mb4.9,baz=84,slow=7.2,SNR=16						
DBIC	**Dimbokro**	**65.50**	**282**	P	**P**	**13 22 42.4**	**-0.7**
LIC	**Lamto**	**65.55**	**282**	*e*P	**P**	**13 22 42.6**	**-0.8**
	35nm,0.6s						
TIC	**Toumodi**	**65.65**	**282**	*e*P	**P**	**13 22 43.4**	**-0.6**
	31nm,0.7s,mb5.4						
ZAL	**Zalesovo**	**68.33**	**16**	P	**P**	**13 22 58.9**	**-1.4**
	1.2nm,0.5s,mb4.2,baz=158,slow=9.4,SNR=2.8						
ZAL	**Zalesovo**	**68.33**	**16**	P	**P**	**13 22 58.9**	**-1.4**
SNAA	**Sanae**	**70.91**	**197**	*e*P	**P**	**13 23 14.7**	**-1.2**
GERES	**GERESS Array B**	**71.42**	**331**	P	**P**	**13 23 18.4**	**-0.9**
	0.2nm,0.3s,mb3.5,baz=146,slow=4.8,SNR=5.1						
VNA2	**Neumayer--Watz**	**72.00**	**198**	⇓ *i*	**P**	**13 23 24.1**	**+1.7**
SONM	**Songino Array**	**72.22**	**32**	P	**P**	**13 23 24.9**	**+0.8**
	5.0nm,1.1s,mb4.3,baz=227,slow=6.6,SNR=12						
AS12	**Alice Springs**	**72.36**	**111**	*e*P	**P**	**13 23 28.1**	**+2.8**
	5.7nm,1.0s,mb4.5						
ASAR	**Alice Springs**	**72.36**	**111**	P	**P**	**13 23 24.9**	**-0.4**
	3.2nm,0.9s,mb4.2,baz=271,slow=5.8,SNR=22						
BRG	**Berggiesshubel**	**72.70**	**332**	*e*P	**P**	**13 23 27.3**	**+0.4**
	10.0nm,1.0s,mb4.7						
VNA3	**Neumayer Olymp**	**72.80**	**198**	⇑ *i*	**P**	**13 23 28.8**	**+1.7**
WRA	**Warramunga Arr**	**73.08**	**108**	P	**P**	**13 23 29.9**	**+0.1**
	3.3nm,0.9s,mb4.2,baz=274,slow=5.1,SNR=8.4						
WB2	**Warramunga Arr**	**73.09**	**108**	*e*P	**P**	**13 23 29.8**	**0.0**
WRAB	**Tennant Creek**	**73.09**	**108**	*e*P	**P**	**13 23 29.5**	**-0.3**
	16nm,0.8s,mb5.0						
FINES	**FINESS Array B**	**76.52**	**345**	P	**P**	**13 23 48.4**	**-0.2**
	1.8nm,0.8s,mb4.1,baz=153,slow=8.5,SNR=4.4						
QSPA	**South Pole Qui**	**79.16**	**180**	*e*P	**P**	**13 24 02.7**	**-0.1**
	2.6nm,0.8s,mb4.2						
HFS	**Hagfors**	**79.31**	**339**	P	**P**	**13 24 04.5**	**+0.5**
	3.4nm,1.0s,mb4.2,baz=124,slow=5.3,SNR=4.3						
NB2	**NORSAR Subarra**	**80.82**	**339**	P	**P**	**13 24 12.8**	**+0.8**
	1.8nm,0.7s,mb4.1,baz=122,slow=5.6						
NOA	**NORSAR Array B**	**80.82**	**339**	P	**P**	**13 24 12.2**	**+0.1**
	2.9nm,0.8s,mb4.3,baz=122,slow=5.6,SNR=7.1						
VNDA	**Vanda**	**82.27**	**168**	P	**P**	**13 24 19.5**	**+0.1**
	0.8nm,0.7s,mb3.7,baz=282,slow=8.4,SNR=5.5						
VNDA	**Vanda**	**82.27**	**168**	*e*P	**P**	**13 24 19.3**	**-0.1**
SBA	**Scott Base**	**83.17**	**168**	*e*P	**P**	**13 24 23.0**	**-1.1**
ARCES	**ARCESS Array B**	**83.48**	**349**	P	**P**	**13 24 27.0**	**+1.2**
	5.1nm,0.6s,mb4.7,baz=135,slow=3.4,SNR=13						
INK	**Inuvik**	**122.11**	**5**	PKP	PKPdf	13 30 51.8	-2.7
	1.4nm,0.7s,baz=29,slow=2.7,SNR=3.4						
ILAR	**Eielson Array**	**123.36**	**13**	PKP	PKPdf	13 30 54.3	-2.7
	1.2nm,0.7s,baz=318,slow=3.3,SNR=14						
YKA	**Yellowknife Ar**	**128.27**	**356**	PKP	PKPdf	13 31 04.3	-2.3
	0.8nm,0.7s,baz=358,slow=2.3,SNR=16						
YKA				PP	PP	13 33 08.3	-3.6
	0.5nm,1.0s,baz=10,slow=6.7,SNR=4.9						
RSSD	**Black Hills**	**143.66**	**339**	*e*PKP	PKPdf	13 31 31.2	-4.0

BOZ	**Bozeman (W)**	**144.38**	**348**	*e*PKPdf	PKPdf	13 31 34.3	-2.2
SHW	**Mount Saint He**	**144.83**	**1**	*e*PKPdf	PKPdf	13 31 36.0	-1.2
LNOR	**Lincton Mounta**	**145.06**	**356**	*e*PKPdf	PKPdf	13 31 35.7	-2.0
MIAR	**Mount Ida**	**145.38**	**317**	*e*PKPbc	PKPbc	13 31 37.8	+1.7
MCMT	**McKenzie Canyo**	**145.41**	**349**	*e*PKPbc	PKPbc	13 31 37.5	+1.7
BW06	**Boulder Array**	**146.62**	**344**	*e*PKPbc	PKPbc	13 31 40.7	+1.9
PDAR	**Pinedale Array**	**146.62**	**344**	PKPbc	PKPbc	13 31 40.9	+2.1
	4.4nm,0.8s,baz=63,slow=3.3,SNR=34						
HLID	**Hailey**	**146.90**	**351**	*e*PKPbc	PKPbc	13 31 42.0	+2.7
ISCO	**Idaho Springs**	**147.99**	**337**	*e*PKPbc	PKPdf	13 31 44.5	+1.8
HWUT	**Hardware Ranch**	**148.22**	**346**	*e*PKPdf	PKPdf	13 31 41.6	-1.5
HWUT				*e*PKPbc	PKPdf	13 31 45.5	+2.5
WVOR	**Wild Horse Val**	**148.50**	**356**	*e*PKPbc	PKPdf	13 31 46.4	+2.9
WMOK	**Wichita Mounta**	**148.56**	**323**	*e*PKPbc	PKPdf	13 31 45.7	+1.9
TCUT	**Toone Canyon**	**148.64**	**345**	*e*PKPbc	PKPdf	13 31 46.6	+2.9
CTU	**Camp Tracy**	**149.13**	**346**	*e*PKPbc	PKPdf	13 31 47.9	+3.4
DAU	**Daniels Canyon**	**149.27**	**345**	*e*PKPbc	PKPdf	13 31 48.7	+3.9
SDCO	**Great Sand Dun**	**149.69**	**334**	*e*PKPbc	PKPdf	13 31 49.2	+3.7
MPU	**Maple Canyon**	**149.74**	**345**	*e*PKPbc	PKPdf	13 31 49.1	+3.6
NLU	**North Lily Min**	**149.91**	**346**	*e*PKPbc	PKPdf	13 31 49.4	+3.6
SRU	**San Rafael**	**150.28**	**343**	*e*PKPbc	PKPdf	13 31 50.2	+3.8
PV10	**Paradox Valley**	**150.49**	**340**	*e*PKPbc	PKPdf	13 31 51.1	+4.4
PV01	**Paradox Valley**	**150.54**	**339**	*e*PKPdf	PKPdf	13 31 46.1	-0.8
PV01				*e*PKPbc	PKPdf	13 31 50.5	+3.6
JCT	**Junction City**	**152.02**	**317**	*e*PKPbc	PKPdf	13 31 53.8	+4.6
NVAR	**Mina Array Bea**	**152.46**	**355**	PKPbc	PKPdf	13 31 56.7	+7.1
	11nm,0.7s,baz=52,slow=2.0,SNR=53						
NVAR					PKPab	13 32 04.6	-1.6
	10nm,1.1s,baz=52,slow=1.5,SNR=6.6						
ANMO	**Albuquerque**	**152.46**	**333**	*e*PKPbc	PKPdf	13 31 54.7	+4.9
TXAR	**Lajitas Array**	**155.28**	**320**	PKPbk	PKPab	13 32 17.9	-0.4
	1.2nm,0.4s,baz=72,slow=4.0,SNR=4.0						

*NEIC **28** 13:15:06.4±0.5,36.37N×51.50E,h10km,mb4.4/18,Error ellipse: s-maj=9.8km s-min=5.6km az=160.0*
*BJI **28** 13:15:06.2,37.05N×51.65E,h10km,mB4.7,mb4.7,Ms4.8,Msz5.0*
*MOS **28** 13:15:07.9±1.4,36.36N×51.40E,h33km,mb4.6/10,Error ellipse: s-maj=18.4km s-min=8.1km az=111.0*
*IDC **28** 13:15:07.7±0.8,36.28N×51.55E,h21km±4km, mb4.1/15, mb1 4.2/16,mb1mx4.1/21,ML2.9/1,Error ellipse: s-maj=19.4km s-min=8.5km az=133.0*
*THR **28** 13:15:08.9±1.6,36.34N×51.57E,h20km±11km,ML4.7*
*NNC **28** 13:15:15.4±1.8,37.14N×52.26E,Error ellipse: s-maj=25.7km s-min=22.5km az=124.0*

ISC 28 13:15:06.4±0.9,36.45N±0.05×51.51E±0.04,h21km±8km, h22km±2.7km:pP-P,n103,σ1§04/118,mb4.4/36,MS4.8/3, 7C-7D,Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
THR	**Tehran**	**0.63**	**210**	*i* PG		**Pb**	**13 15 19.6**	**+1.1**
THR				*e*SG		**Sb**	**13 15 26.0**	**-0.8**
THR	**Tehran**	**0.63**	**210**	Pg		**Pb**	**13 15 18.1**	**-0.4**
	baz=14,slow=14							
THR				Lg			13 15 26.4	
	758nm,0.3s,baz=258,slow=18,SNR=28							
THR	**Tehran**	**0.63**	**210**	P		**Pb**	**13 15 18.2**	**-0.3**
THR							13 15 26.4	
THR				smax				
	comp=Z,1.0nm,0.3s							
THKV	**Tehran--Karaj**	**0.74**	**224**	*e*PG		**Pb**	**13 15 21.1**	**+0.7**
THKV				*e*SG		**Sb**	**13 15 31.1**	**+1.0**
THKV	**Tehran--Karaj**	**0.74**	**224**	*e*PG		**Pb**	**13 15 20.9**	**+0.4**
THKV				*e*SG		**Sb**	**13 15 31.4**	**+1.2**
THKV				AMP			13 15 32.2	
	comp=N,52μm,0.5s							
DAMV	**Damavand**	**0.90**	**156**	*e*PG		**Pb**	**13 15 22.4**	**-0.7**
DAMV				*e*SG		**Sb**	**13 15 33.7**	**-1.0**
DAMV				AMP			13 15 34.8	
	comp=N,21μm,0.4s							
DAMV	**Damavand**	**0.90**	**156**	*e*PG		**Pb**	**13 15 22.4**	**-0.7**
DAMV				*e*SG		**Sb**	**13 15 33.6**	**-1.0**
DAMV				AMP			13 15 34.8	
	comp=N,21μm,0.4s							
SNGE	**Sanandaj**	**3.65**	**249**	*e*PN		**Pn**	**13 16 05.3**	**+2.2**
SNGE				SN		**Sn**	**13 16 40.0**	**-6.0**
SNGE	**Sanandaj**	**3.65**	**249**	*e*PN		**Pn**	**13 16 03.4**	**+0.3**
SNGE				SN		**Sn**	**13 16 42.8**	**-3.2**
MAK	**Makhachkala**	**7.20**	**336**	*e*P		**Pn**	**13 16 54.0**	**+0.8**
MAK				*e*S		**Sn**	**13 18 14.5**	**-0.7**
MAK				pmax	pmax			
	comp=Z,230nm,1.0s							
MAK				smax				
	comp=N,340nm,0.7s							
MAK				smax				
	comp=E,540nm,0.7s							
ZEI	**Tsey**	**8.62**	**319**	*e*P		**P**	**13 17 13.0**	**-0.1**
KIV	**Kislovodsk**	**10.08**	**321**	*d* iP		**P**	**13 17 34.8**	**+1.6**
KIV	**Kislovodsk**	**10.08**	**321**	*e*P		**P**	**13 17 30.8**	**-2.4**
GOF	**Gofitskoye**	**10.73**	**326**	⇑*i*P		**P**	**13 17 40.0**	**-2.1**
GOF				*i* S		**S**	**13 19 40.0**	**-2.6**
GOF				pmax	pmax			
	comp=Z,20nm,1.2s							
GOF				smax				
	comp=N,80nm,1.2s							
SOC	**Sochi**	**11.51**	**312**	*e*P		**P**	**13 17 58.2**	**+5.6**
SOC				pmax	pmax			
	comp=Z,10.0nm,0.9s							
SOC				pmax	pmax			
	comp=N,9.0nm,0.4s							
SOC				pmax	pmax			
	comp=E,4.0nm,0.2s							
AB31	**Akbulak array**	**14.20**	**23**	⇑P		**P**	**13 18 24.6**	**-3.8**
	comp=E,4.2nm,0.5s,baz=209,slow=14,SNR=25							
AB31				⇑S		**S**	**13 20 55.6**	**-11**
	comp=E,3.3nm,0.5s,baz=196,slow=24,SNR=4.9							
BRTR	**Keskin Array B**	**14.45**	**288**	Pn		**P**	**13 18 33.3**	**+1.6**
	comp=E,0.1nm,0.3s,baz=117,slow=11,SNR=5.3							
BRTR	**Keskin Array B**	**14.45**	**288**	Pn		**P**	**13 18 33.3**	**+1.5**
KK31	**Karatay Array**	**16.03**	**60**	P		**P**	**13 18 49.0**	**-3.3**
	comp=E,3.8nm,0.6s,baz=244,slow=16,SNR=19							
KK31				⇑S		**S**	**13 21 41.9**	**-7.4**
	comp=E,3.1nm,0.6s,baz=245,slow=23,SNR=3.5							
VRSR	**Storozhevoye**	**17.19**	**333**	*d* iP		**P**	**13 19 03.5**	**-3.4**
VRSR				*e*S		**S**	**13 22 10.1**	**-5.9**
VRSR				pmax	pmax			
	comp=Z,40nm,0.6s							
VRSR				pmax	pmax			
	comp=N,40nm,0.7s							
VRSR				pmax	pmax			
	comp=E,30nm,0.6s							
VRSR				smax				
	comp=N,20nm,1.1s							
VRSR				smax				
	comp=Z,8.0nm,0.6s							
VRSR				smax				
	comp=E,20nm,0.9s							
AAK	**Ala-Archa**	**18.74**	**64**	P		**P**	**13 19 26.2**	**+0.1**
	comp=E,6.6nm,0.8s							
KSH	**Kashi**	**19.51**	**74**	*e*P		**P**	**13 19 31.5**	**-3.6**
KSH				*e*AP			13 19 35.5	
KSH				*e*PP		PP	13 19 48.0	-4.9
KSH				*e*S		**S**	**13 23 02.0**	**-6.4**
KSH				*e*PCP		PcP	13 23 53.3	-1.8
KSH				LR		LR		
	comp=N,2μm,11.3s							
KSH				LR		LR		
	comp=E,1μm,9.6s							
ARU	**Arti**	**20.55**	**11**	⇓*i*P		**P**	**13 19 45.5**	**-0.6**
ARU				*e*			13 20 02.3	
ARU				*e*S		**S**	**13 23 34.7**	**+4.7**
ARU				*e*SS		SS	13 23 52.4	-8.2
ARU				pmax	pmax			
	comp=Z,39nm,0.7s							
ARU	**Arti**	**20.55**	**11**	*e*P		**P**	**13 19 45.0**	**-1.1**
	comp=Z,37nm,0.5s							
ZRNK	**Zerenda**	**20.57**	**31**	⇑P		**P**	**13 19 46.1**	**-0.2**
	comp=Z,26nm,1.3s							
ZRNK	**Zerenda**	**20.57**	**31**	*e*P		**P**	**13 19 45.8**	**-0.5**
BRVK	**Borovoye**	**21.19**	**33**	*e*P		**P**	**13 19 52.5**	**-0.2**
BVA0	**Borovoye Array**	**21.21**	**33**	⇓P		**P**	**13 19 53.1**	**+0.2**
	comp=Z,3.6nm,0.7s,mb3.8,baz=220,slow=9.8,SNR=97							
BVAR	**Borovoye Array**	**21.21**	**33**	P		**P**	**13 19 53.1**	**+0.2**
	comp=Z,22nm,0.6s,mb4.7,baz=220,slow=10,SNR=96							
MLR	**Muntele Rosu**	**21.24**	**303**	P		**P**	**13 19 55.7**	**+2.4**
	comp=Z,18nm,0.8s,mb4.5,baz=173,slow=2.3,SNR=24							
MLR	**Muntele Rosu**	**21.24**	**303**	P		**P**	**13 19 55.7**	**+2.4**
MLR				pmax	pmax			
	comp=Z,18nm,0.8s							
VOSK	**Vostochnaya**	**21.27**	**34**	⇓P		**P**	**13 19 53.3**	**-0.1**
	comp=Z,25nm,0.7s,mb4.7							

OBN	**Obninsk**	**21.29**	**336**	⇑*e*P		**P**	**13 19 53.8**	**+0.1**
OBN				*e*S		**S**	**13 23 34.4**	**-10**
OBN				pmax	pmax			
	comp=Z,25nm,1.0s,mb4.5							
OBN				MLR	MLR			
	comp=Z,1μm,15.0s,MS4.5							
MOS	**Moscow**	**21.48**	**338**	*e*P		**P**	**13 19 55.6**	**-0.1**
MOS				pmax	pmax			
	comp=Z,85nm,0.7s,mb5.2							
IDI	**Anoyia**	**21.59**	**275**	P		**P**	**13 19 56.0**	**-0.8**
	comp=Z,8.7nm,0.6s,mb4.4,baz=57,slow=4.9,SNR=7.8							
KURK	**Kurchatov**	**24.09**	**45**	⇓P		**P**	**13 20 23.7**	**+2.4**
	comp=Z,11nm,0.8s,mb4.3							
KURK	**Kurchatov**	**24.09**	**45**	*e*P		**P**	**13 20 23.2**	**+1.9**
MK31	**Makanchi Array**	**25.07**	**56**	⇓P		**P**	**13 20 32.2**	**+1.4**
	comp=Z,12nm,0.9s,mb4.4,baz=247,slow=8.8,SNR=42							
MKAR	**Makanchi Array**	**25.07**	**56**	P		**P**	**13 20 32.0**	**+1.2**
	comp=Z,6.6nm,0.7s,mb4.3,baz=248,slow=9.8,SNR=33							
MKAR	**Makanchi Array**	**25.07**	**56**	P		**P**	**13 20 32.0**	**+1.2**
MKAR				pmax	pmax			
	comp=Z,7.0nm,0.7s							
PSZ	**Piszkesteto**	**25.90**	**306**	P		**P**	**13 20 38.7**	**+0.2**
NIE	**Niedzica**	**26.06**	**310**	*e*P		**P**	**13 20 43.0**	**+3.0**
OJC	**Ojcow**	**26.63**	**311**	*e*P		**P**	**13 20 45.6**	**+0.4**
WMQ	**Urumqi**	**28.45**	**64**	*e*P		**P**	**13 21 03.5**	**+1.7**
WMQ				AP		pP	13 21 06.8	-1.1
WMQ				XP		sP	13 21 09.0	-1.6
WMQ				PP		PP	13 21 55.5	+1.8
WMQ				PCP		PcP	13 24 15.5	+1.5
WMQ				S		**S**	**13 25 49.3**	**+2.7**
WMQ				XS			13 25 56.5	
WMQ				SCP			13 27 55.0	
WMQ				SCS		ScS	13 31 46.5	+2.1
WMQ				AMB		AMB		
	comp=Z,9.0nm,0.8s,mb4.5							
WMQ				AMB		AMB		
	comp=Z,65nm,4.4s							
WMQ				LR		LR		
	comp=N,254nm,14.1s,MS4.0							
WMQ				LR		LR		
	comp=E,128nm,14.3s,MS4.0							
WMQ				LR		LR		
	comp=Z,324nm,15.1s,MS4.0							
FINES	**FINESS Array B**	**29.70**	**335**	P		**P**	**13 21 14.3**	**+1.4**
	comp=Z,0.6nm,0.5s,mb3.6,baz=149,slow=11,SNR=5.5							
FINES	**FINESS Array B**	**29.70**	**335**	P		**P**	**13 21 14.3**	**+1.4**
FINES				pmax	pmax			
	comp=Z,1.0nm,0.5s							
GERES	**GERESS Array B**	**30.13**	**306**	P		**P**	**13 21 17.4**	**+0.5**
	comp=Z,4.2nm,1.0s,mb4.1,baz=106,slow=9.7,SNR=14							
GERES				pP		pP	13 21 23.9	+1.0
	comp=Z,4.4nm,1.0s,baz=98,slow=9.4,SNR=5.7							
GERES	**GERESS Array B**	**30.13**	**306**	P		**P**	**13 21 17.4**	**+0.5**
GERES				*PP		pP	13 21 23.9	+1.0
GERES				pmax	pmax			
	comp=Z,4.0nm,1.0s							
GERES				pmax	pmax			
	comp=Z,4.0nm,1.0s							
CLL	**Collm**	**31.07**	**311**	P		**P**	**13 21 25.9**	**+0.8**
	comp=Z,logA/T=1.0,mb4.6							
CLL	**Collm**	**31.07**	**311**	*i* P		**P**	**13 21 25.9**	**+0.8**
CLL				pmax	pmax			
	comp=Z,8.0nm,0.8s,mb4.6							
CLL	**Collm**	**31.07**	**311**	*i* P		**P**	**13 21 25.9**	**+0.8**
	comp=Z,8.0nm,0.8s,mb4.6							
DAVOX	**Davos**	**32.45**	**302**	P		**P**	**13 21 37.4**	**+0.2**
	comp=Z,3.0nm,0.4s,mb4.5,baz=13,slow=23,SNR=4.3							
PGF	**Pioggiola**	**33.10**	**294**	*e*P		**P**	**13 21 42.3**	**-0.6**
	comp=Z,6.1nm,0.6s,mb4.4							
HFS	**Hagfors**	**33.81**	**327**	P		**P**	**13 21 49.6**	**+0.6**
	comp=Z,3.0nm,0.4s,mb4.6,baz=121,slow=8.6,SNR=23							
HFS	**Hagfors**	**33.81**	**327**	P		**P**	**13 21 49.6**	**+0.7**
HFS				pmax	pmax			
	comp=Z,3.0nm,0.4s							
SBF	**Sospel**	**34.17**	**296**	*e*P		**P**	**13 21 52.0**	**-0.2**
	comp=Z,54nm,1.1s,mb5.1							
LPG	**La Plagne**	**34.60**	**299**	*e*P		**P**	**13 21 55.7**	**-0.2**
MBDF	**Montbardon**	**34.60**	**298**	*e*P		**P**	**13 21 55.6**	**-0.3**
	comp=Z,7.0nm,0.5s,mb4.5							
LPL	**La Plagne**	**34.61**	**299**	*e*P		**P**	**13 21 55.6**	**-0.4**
	comp=Z,3.7nm,0.5s,mb4.3							
LMR	**La Mourre**	**34.87**	**296**	*e*P		**P**	**13 21 57.3**	**-0.9**
CABF	**La Chapelle**	**35.05**	**301**	*e*P		**P**	**13 21 59.9**	**+0.1**
	comp=Z,16nm,0.8s,mb4.7							
NB2	**NORSAR Subarra**	**35.31**	**327**	P		**P**	**13 22 01.6**	**-0.2**
	comp=Z,1.2nm,0.5s,mb4.1,baz=115,slow=7.9							
NOA	**NORSAR Array B**	**35.31**	**327**	P		**P**	**13 22 01.9**	**+0.1**
	comp=Z,1.6nm,0.8s,mb4.0,baz=117,slow=8.2,SNR=7.0							
NOA	**NORSAR Array B**	**35.31**	**327**	P		**P**	**13 22 01.9**	**+0.1**
NOA				pmax	pmax			
	comp=Z,2.0nm,0.8s							
GIVF	**Givet**	**36.03**	**307**	*e*P		**P**	**13 22 09.3**	**+1.3**
ARCES	**ARCESS Array B**	**36.04**	**345**	P		**P**	**13 22 08.8**	**+0.9**
	comp=Z,2.0nm,0.8s,mb4.1,baz=100,slow=7.4,SNR=5.4							
ARCES	**ARCESS Array B**	**36.04**	**345**	P		**P**	**13 22 08.8**	**+0.9**
ARCES				pmax	pmax			
	comp=Z,2.0nm,0.8s							
ARCES	**ARCESS Array B**	**36.04**	**345**	P		**P**	**13 22 08.8**	**+0.9**
BAIF	**Baives**	**36.42**	**307**	*e*P		**P**	**13 22 12.8**	**+1.5**
LOR	**Lormes**	**36.58**	**302**	*e*P		**P**	**13 22 12.0**	**-0.7**
SMF	**Signal de Mont**	**36.60**	**301**	*e*P		**P**	**13 22 12.5**	**-0.3**
AVF	**Avril sur Loir**	**36.94**	**302**	*e*P		**P**	**13 22 15.3**	**-0.3**
	comp=Z,7.5nm,0.7s,mb4.3							
TCF	**Toulx Ste Croi**	**37.74**	**301**	*e*P		**P**	**13 22 22.6**	**+0.2**
	comp=Z,6.4nm,0.8s,mb4.1							
MTLF	**Montolieu**	**37.99**	**296**	*e*P		**P**	**13 22 23.9**	**-0.6**
	comp=Z,7.5nm,0.6s,mb4.3							
RJF	**Les Rejaudoux**	**38.29**	**299**	*e*P		**P**	**13 22 27.5**	**+0.4**
LDF	**La Druitiere**	**39.23**	**305**	*e*P		**P**	**13 22 34.6**	**-0.3**
MFF	**Saint Martin d**	**39.35**	**301**	*e*P		**P**	**13 22 35.5**	**-0.4**
EPF	**Esparros**	**39.39**	**296**	*e*P		**P**	**13 22 34.3**	**-1.9**
FLN	**La Foliniere**	**39.47**	**305**	*e*P		**P**	**13 22 36.5**	**-0.3**
	comp=Z,11nm,0.7s,mb4.4							
GRR	**Gorron**	**39.73**	**304**	*e*P		**P**	**13 22 38.8**	**-0.2**
	comp=Z,19nm,0.8s,mb4.6							
SJPF	**Ste Jean**	**40.51**	**296**	*e*P		**P**	**13 22 45.0**	**-0.5**
SGMF	**Saint Gilles**	**40.87**	**304**	*e*P		**P**	**13 22 48.5**	**+0.1**
	comp=Z,12nm,0.6s,mb4.4							
QUIF	**Quistinic**	**41.30**	**304**	*e*P		**P**	**13 22 51.7**	**-0.2**
	comp=Z,11nm,0.5s,mb4.4							
ROSF	**Rostrenen**	**41.34**	**304**	*e*P		**P**	**13 22 52.4**	**+0.2**
	comp=Z,15nm,0.8s,mb4.4							
SONM	**Songino Array**	**41.44**	**56**	P		**P**	**13 22 54.0**	**+0.9**
	comp=Z,0.2nm,0.5s,baz=280,slow=6.9,SNR=2.5							
SONM				pP		pP	13 23 00.2	+1.0
	comp=Z,0.5nm,0.6s,baz=256,slow=7.3,SNR=3.5							
ULN	**Ulaanbaatar**	**41.88**	**56**	*e*P		**P**	**13 23 05.4**	**+8.8**
ULN	**Ulaanbaatar**	**41.88**	**56**	*e*P		**P**	**13 22 57.4**	**+0.8**
	comp=Z,3.6nm,0.7s,mb4.1							
ESDC	**Sonseca Array**	**43.21**	**292**	P		**P**	**13 23 07.8**	**+0.1**
	comp=Z,4.6nm,0.5s,mb4.5,baz=68,slow=7.9,SNR=11							
KMI	**Kunming**	**44.97**	**90**	*e*P		**P**	**13 23 26.5**	**+4.4**
CMAR	**Chiang Mai Arr**	**45.26**	**100**	pP		pP	13 23 29.7	-0.9
	comp=Z,2.9nm,0.8s,baz=298,slow=8.2,SNR=6.4							
BOD	**Bodaibo**	**45.65**	**42**	*e*P		**P**	**13 23 26.4**	**-0.6**
NJ2	**Nanjing**	**54.82**	**73**	*e*P		**P**	**13 24 36.0**	**-1.3**
NJ2				AP		pP	13 24 46.3	+2.7
NJ2				XP		sP	13 24 50.3	+4.3
NJ2				PP		PP	13 26 40.5	-1.1
NJ2				S		**S**	**13 32 13.0**	**-2.4**
NJ2				PS		PS	13 32 30.0	+1.0
NJ2				XS			13 32 31.0	
NJ2				AMB		AMB		
	comp=Z,20nm,0.8s,mb5.2							
NJ2				LR		LR		
	comp=Z,6μm,17.5s,MS5.7							
CN2	**Changchun**	**55.28**	**58**	*e*P		**P**	**13 24 40.0**	**-0.5**
SSE	**Sheshan**	**57.02**	**74**	⇑P		**P**	**13 24 53.0**	**-0.2**
SSE				AMB		AMB		
	comp=Z,36nm,0.7s							
SSE				LR		LR		
	comp=N,765nm,15.0s							
SSE				LR		LR		
	comp=E,3μm,15.0s							
SSE				LR		LR		
	comp=Z,3μm,14.8s							
DBIC	**Dimbokro**	**59.22**	**254**	P		**P**	**13 25 05.6**	**-3.1**
	comp=Z,1.7nm,0.5s,mb4.3,baz=75,slow=12,SNR=3.7							
DBIC	**Dimbokro**	**59.22**	**254**	P		**P**	**13 25 05.6**	**-3.1**
DBIC				pmax	pmax			
	comp=Z,2.0nm,0.5s							
BILL	**Bilibino**	**65.10**	**22**	*e*P		**P**	**13 25 55.4**	**+8.2**
ILAR	**Eielson Array**	**78.08**	**8**	P		**P**	**13 27 05.4**	**+0.7**
	comp=Z,0.8nm,1.1s,mb3.6,baz=327,slow=5.5,SNR=6.3							
ILAR				pP		pP	13 27 12.0	+0.8
	comp=Z,1.5nm,0.7s,baz=319,slow=4.1,SNR=14							

ILAR	**Eielson Array**	**78.08**	**8**	P		**P**	**13 27 05.4**	**+0.7**
ILAR				*PP		pP	13 27 12.0	+0.8
ILAR				pmax	pmax			
	comp=Z,1.0nm,1.1s							
ILAR				pmax	pmax			
	comp=Z,2.0nm,0.7s							
MCK	**McKinley**	**78.84**	**9**	P		**P**	**13 27 08.0**	**-0.9**
YKA	**Yellowknife Ar**	**80.77**	**354**	P		**P**	**13 27 18.9**	**-0.3**
	comp=Z,0.1nm,0.4s,baz=6.7,slow=5.9,SNR=6.0							
YKA				pP		pP	13 27 26.5	+0.7
	comp=Z,0.7nm,0.8s,baz=5.5,slow=6.2,SNR=9.9							
YKA	**Yellowknife Ar**	**80.77**	**354**	P		**P**	**13 27 18.9**	**-0.3**
YKA				*PP		pP	13 27 26.5	+0.7
YKA				pmax	pmax			
	comp=Z,1.0nm,0.8s							
FITZ	**Fitzroy Crossi**	**88.45**	**114**	pP		pP	13 28 04.6	-0.7
	comp=Z,5.6nm,0.8s,baz=299,slow=1.6,SNR=3.6							

*IDC **28** 13:28:41.1±1.9,36.26N×51.84E,mb3.3/3,mb1 3.5/3, mb1mx3.3/19,Error ellipse: s-maj=60.1km s-min=9.8km az=142.0*
*NEIC **28** 13:28:42.4±1.1,36.25N×51.78E,h10km,Error ellipse: s-maj=35.8km s-min=9.9km az=142.0*

ISC 28 13:28:41.2±1.1,36.4N±0.2×51.7E±0.2,h10km,n6,σ1§41/6, mb3.3/3,Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
THR	**Tehran**	**0.67**	**228**	Pg		**Pg**	**13 28 54.5**	**-0.2**
	19nm,0.3s,baz=42,slow=12,SNR=8.4							
THR				Lg			13 29 03.3	
	98nm,0.3s,baz=6.0,slow=16,SNR=79							
ZRNK	**Zerenda**	**20.55**	**31**	P		**P**	**13 33 21.0**	**-1.4**
BVAR	**Borovoye Array**	**21.18**	**32**	P		**P**	**13 33 28.3**	**-0.6**
	0.8nm,0.5s,mb3.3,baz=221,slow=9.9,SNR=6.2							
KURK	**Kurchatov**	**24.03**	**45**	*e*P		**P**	**13 33 58.8**	**+1.9**
MKAR	**Makanchi Array**	**24.97**	**56**	P		**P**	**13 34 06.0**	**-0.2**
	0.7nm,0.9s,mb3.2,baz=254,slow=10,SNR=4.2							
NOA	**NORSAR Array B**	**35.48**	**327**	P		**P**	**13 35 40.1**	**+0.5**
	0.4nm,0.8s,mb3.4,baz=109,slow=7.7,SNR=2.4							

*NEIC **28** 13:35:55.3±0.5,36.36N×51.52E,h10km,Error ellipse: s-maj=10.3km s-min=6.1km az=155.0*
*THR **28** 13:35:56.0±1.8,36.40N×51.61E,h0km±27km,ML4.4*
*MOS **28** 13:35:56.1±1.1,36.31N×51.45E,h33km,mb4.1/8,Error ellipse: s-maj=19.9km s-min=11.7km az=105.4*
*IDC **28** 13:35:56.2±0.6,36.30N×51.52E,h20km±4km, mb3.8/13, mb1 4.0/14,mb1mx4.0/21,ML3.2/1,Error ellipse: s-maj=15.6km s-min=8.1km az=136.0*
*NNC **28** 13:36:04.0±4.2,37.27N×52.17E,Error ellipse: s-maj=52.1km s-min=47.7km az=176.0*

ISC 28 13:35:53.0±1.5,36.46N±0.07×51.58E±0.05,h3km±13km, h21km±1.5km:pP-P,n53,σ1§07/59,mb3.9/19,6C-3D, Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
THR	**Tehran**	**0.66**	**214**	Pg		**Pg**	**13 36 06.5**	**+0.4**
	818nm,0.3s,baz=17,slow=13,SNR=712							
THR				Lg			13 36 14.4	
	2μm,0.3s,baz=191,slow=5.7,SNR=40							
THR	**Tehran**	**0.66**	**214**	P		**Pg**	**13 36 06.5**	**+0.4**
THR							13 36 14.4	
THR				pmax	pmax			
	comp=Z,818nm,0.3s							
THR				smax				
	comp=Z,2.0nm,0.3s							
THKV	**Tehran--Karaj**	**0.78**	**226**	*e*PG		**Pg**	**13 36 08.7**	**+0.2**
THKV				*e*SG		**Sg**	**13 36 19.5**	**+0.4**
DAMV	**Damavand**	**0.89**	**159**	*e*PG		**Pg**	**13 36 10.0**	**-0.7**
DAMV				*e*SG		**Sg**	**13 36 22.1**	**-0.4**
DAMV				AMP			13 36 22.8	
	comp=E,15μm,0.4s							
SNGE	**Sanandaj**	**3.70**	**250**	*e*PN		**Pn**	**13 36 53.7**	**+1.5**
MAK	**Makhachkala**	**7.21**	**335**	*e*P		**Pn**	**13 37 42.5**	**+0.7**
MAK				*e*S		**Sn**	**13 39 02.0**	**-3.2**
MAK				pmax	pmax			
	comp=Z,130nm,1.

ZAL				pP	pP	13 41 59.7	+4.4
FINES	**FINESS Array B**	**29.71**	**335**	P	**P**	**13 42 02.6**	**+0.5**
	comp=Z,1.5nm,0.9s,mb3.7,baz=138,slow=16,SNR=2.9						
FINES	**FINESS Array B**	**29.71**	**335**	P	**P**	**13 42 02.6**	**+0.5**
FINES				pmax	pmax		
	comp=Z,2.0nm,0.9s						
GERES	**GERESS Array B**	**30.17**	**306**	P	**P**	**13 42 05.8**	**-0.4**
	comp=Z,0.3nm,0.3s,mb3.4,baz=90,slow=8.0,SNR=5.5						
GERES				pP	pP	13 42 11.3	+4.1
	comp=Z,1.1nm,0.8s,baz=98,slow=9.4,SNR=3.1						
GERES	**GERESS Array B**	**30.17**	**306**	P	**P**	**13 42 05.8**	**-0.5**
GERES				*PP	pP	13 42 11.3	+4.1
GERES				pmax	pmax		
	comp=Z,1.0nm,0.8s						
CLL	**Collm**	**31.11**	**311**	P	**P**	**13 42 17.0**	**+2.5**
BNI	**Bardonecchia**	**34.70**	**298**	P	**P**	**13 42 45.1**	**-0.8**
NB2	**NORSAR Subarra**	**35.33**	**327**	P	**P**	**13 42 49.8**	**-1.3**
	comp=Z,0.6nm,0.5s,mb3.8,baz=114,slow=7.9						
NOA	**NORSAR Array B**	**35.33**	**327**	P	**P**	**13 42 50.0**	**-1.1**
	comp=Z,0.7nm,0.5s,mb3.8,baz=116,slow=8.0,SNR=6.0						
NOA	**NORSAR Array B**	**35.33**	**327**	P	**P**	**13 42 50.0**	**-1.1**
NOA				pmax	pmax		
	comp=Z,1.0nm,0.5s						
SONM	**Songino Array**	**41.40**	**56**	P	**P**	**13 43 42.8**	**+0.9**
	comp=Z,0.2nm,0.3s,mb3.2,baz=276,slow=8.1,SNR=3.0						
ESDC	**Sonseca Array**	**43.26**	**292**	P	**P**	**13 43 55.6**	**-1.5**
	comp=Z,2.2nm,0.4s,mb4.2,baz=70,slow=8.2,SNR=9.7						
CMAR	**Chiang Mai Arr**	**45.21**	**100**	P	**P**	**13 44 12.4**	**-0.8**
	comp=Z,0.5nm,0.6s,mb3.5,baz=304,slow=9.8,SNR=3.6						
CMAR				pP	pP	13 44 17.6	+3.5
	comp=Z,1.2nm,0.6s,baz=301,slow=8.2,SNR=7.2						
CMAR	**Chiang Mai Arr**	**45.21**	**100**	P	**P**	**13 44 12.4**	**-0.8**
CMAR				*PP	pP	13 44 17.7	+3.5
CMAR				pmax	pmax		
	comp=Z,1.0nm,0.6s						
CMAR				pmax	pmax		
	comp=Z,1.0nm,0.6s						
BOD	**Bodaibo**	**45.61**	**42**	*e*P	**P**	**13 44 15.3**	**-0.5**
ILAR	**Eielson Array**	**78.06**	**8**	P	**P**	**13 47 54.0**	**+0.1**
	comp=Z,0.8nm,0.9s,mb3.7,baz=342,slow=4.7,SNR=7.9						
ILAR				pP	pP	13 48 00.3	+5.4
	comp=Z,0.6nm,0.7s,baz=320,slow=4.4,SNR=5.7						
ILAR	**Eielson Array**	**78.06**	**8**	P	**P**	**13 47 54.0**	**+0.1**
ILAR				*PP	pP	13 48 00.4	+5.4
ILAR				pmax	pmax		
	comp=Z,1.0nm,0.9s						
ILAR				pmax	pmax		
	comp=Z,1.0nm,0.7s						
YKA	**Yellowknife Ar**	**80.76**	**354**	P	**P**	**13 48 08.1**	**-0.5**
	comp=Z,0.4nm,0.8s,mb3.4,baz=5.5,slow=6.5,SNR=8.2						
YKA				pP	pP	13 48 15.6	+6.0
	comp=Z,0.6nm,1.0s,baz=7.9,slow=6.0,SNR=3.7						
YKA	**Yellowknife Ar**	**80.76**	**354**	P	**P**	**13 48 08.1**	**-0.5**
YKA				*PP	pP	13 48 15.6	+6.0
YKA				pmax	pmax		
	comp=Z,1.0nm,1.0s						

CASC 28 14:29:47.3±2.4, 9.03N×83.01W, h8km±6km, MD3.8, MW3.7, 6C-6D, Fault plane solution: NP1:ϕ_s245.41°, δ60.5°, λ42.39°**, Costa Rica**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BRU2	**Volcan**	**0.39**	**127**	⇓*e*P	Pg	14 29 55.4	+0.2
BRU2				*e*S	Sg	14 30 01.6	+1.1
ACR	**Cerro Adams**	**0.41**	**203**	⇓*i*P	Pg	14 29 55.0	-0.5
ACR				*e*S	Sg	14 30 04.1	+3.0
CNI	**Changuinola**	**0.62**	**51**	⇓*i*P	Pg	14 30 00.3	+0.6
CNI				*i* S	Sg	14 30 09.6	+1.6
DVD	**David**	**0.80**	**137**	⇓*i*P	Pb	14 30 03.1	0.0
DVD				*i* S	Sb	14 30 14.1	+0.3
PTP1	**Petroterminal**	**1.00**	**145**	⇓*i*P	Pb	14 30 03.0	-3.3
PTP1				*e*S	Sb	14 30 11.6	-7.8
LCR2	**La Lucha 2**	**1.21**	**306**	⇑*e*P	Pb	14 30 09.1	-0.9
LCR2				*e*S	Sb	14 30 25.7	0.0
SJS	**Escuela Geolog**	**1.38**	**311**	*e*P	Pn	14 30 11.7	-1.1
SJS				*e*S	Sb	14 30 30.3	-0.1
LAJ	**Bijagual**	**1.38**	**307**	*e*P	Pn	14 30 17.1	+4.2
LAJ				*e*S	Sb	14 30 39.0	+8.5
VPS2	**Volcan Poas 2**	**1.68**	**314**	*e*P	Pn	14 30 17.9	+0.8
TRTC	**Tortuguero**	**1.69**	**336**	⇓*i*P	Pn	14 30 17.5	+0.2
TRTC				*e*S	Sn	14 30 44.9	+5.7
CGA2	**Cerro Gallo 2**	**1.74**	**304**	⇑*e*P	Pn	14 30 17.9	-0.2
CGA2				*e*S	Sn	14 30 40.7	+0.1
JCR	**Jicaral**	**2.23**	**292**	*e*P	Pn	14 30 24.4	-0.7
JCR				*e*S	Sn	14 30 53.6	+0.5
VCR	**Vista de Mar**	**2.81**	**293**	*e*P	Pn	14 30 32.9	-0.5
AZU	**Azuero**	**2.97**	**114**	⇑*e*P	Pn	14 30 33.4	-2.1
AZU				*e*S	Sn	14 31 10.7	-1.0
ACH	**Altos**	**3.06**	**97**	⇑*e*P	Pn	14 30 38.2	+1.3
ACH				*e*S	Sn	14 31 13.4	-0.6
UPA	**Univ. de Panam**	**3.43**	**91**	⇑*i*P	Pn	14 30 42.2	+0.1
UPA				*e*S	Sn	14 31 18.4	-5.0
JEF	**Cerro Jefe**	**3.59**	**87**	⇑*e*P	Pn	14 30 44.2	-0.3
JEF				*e*S	Sn	14 31 25.6	-1.9

CASC 28 14:44:53.0±2.3, 8.28N×82.84W, h5km±12km, MD3.5, 1D, Panama-Costa Rica border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BRU2	**Volcan**	**0.53**	**16**	⇓*i*P	Pg	14 45 03.7	+0.1
BRU2				*e*S	Sg	14 45 12.5	+1.8
LCR2	**La Lucha 2**	**1.85**	**322**	*e*P	Pn	14 45 25.2	-0.5
LCR2				*e*S	Sn	14 45 50.1	+0.3
LAJ	**Bijagual**	**2.02**	**321**	*e*P	Pn	14 45 31.5	+3.4
LAJ				*e*S	Sn	14 46 00.5	+6.4
CGA2	**Cerro Gallo 2**	**2.36**	**317**	*e*P	Pn	14 45 33.2	+0.2
CGA2				*e*S	Sn	14 46 02.3	-0.3

CASC 28 15:35:03.3±1.6, 9.00N×83.00W, h13km±6km, MD3.7, 1C-2D, Panama-Costa Rica border region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BRU2	**Volcan**	**0.36**	**124**	⇑*e*P	Pg	15 35 11.5	+0.5
BRU2				*e*S	Sg	15 35 18.1	+2.0
ACR	**Cerro Adams**	**0.38**	**206**	⇓*i*P	Pg	15 35 11.0	-0.3
BUS	**Buena Vista**	**0.93**	**306**	*e*P	Pb	15 35 20.3	-0.5
BUS				*e*S	Sb	15 35 34.7	+1.8
LCR2	**La Lucha 2**	**1.24**	**307**	*e*P	Pb	15 35 25.3	-0.7
LCR2				*e*S	Sb	15 35 42.5	+0.8
SJS	**Escuela Geolog**	**1.40**	**312**	*e*S	Sb	15 35 46.8	+0.3
LAJ	**Bijagual**	**1.40**	**308**	*e*P	Pn	15 35 33.0	+4.3
LAJ				*e*S	Sb	15 35 55.1	+8.5
TRTC	**Tortuguero**	**1.72**	**336**	⇓*e*P	Pn	15 35 33.4	+0.2
TRTC				*e*S	Sn	15 35 55.2	0.0
CGA2	**Cerro Gallo 2**	**1.77**	**305**	*e*P	Pn	15 35 33.5	-0.4
CGA2				*e*S	Sn	15 35 56.4	0.0
JCR	**Jicaral**	**2.25**	**292**	*e*P	Pn	15 35 41.8	+0.9
JCR				*e*S	Sn	15 36 09.1	+0.4

GUC 28 15:37:43.1±0.8, 32.01S×71.50W, h29km±2km, MD3.5, ML3.4, 8C-6D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ILCH	**Illapel**	**0.46**	**37**	⇑*i*P	Pb	15 37 53.1	+0.3
ILCH				*i* S	Sb	15 38 00.3	+0.7
ILCH				AMP		15 38 00.7	
	comp=E,5μm,0.2s						
PACH	**Papudo**	**0.53**	**175**	⇓*i*P	Pb	15 37 54.0	+0.1
PACH				*i* S	Sb	15 38 02.1	+0.7
PTCH	**Petorca**	**0.54**	**118**	⇑*i*P	Pb	15 37 54.2	0.0
PTCH				*i* S	Sb	15 38 02.3	+0.6
PTCH				AMP		15 38 02.7	
	comp=N,13μm,0.2s						
CMCH	**Combarbala**	**0.93**	**27**	⇓*i*P	Pn	15 38 00.0	-0.3
CMCH				*i* S	Sb	15 38 12.4	-0.3
CMCH				AMP		15 38 14.1	
	comp=N,4μm,0.6s						
JACH	**Jahuel**	**1.02**	**132**	⇑*i*P	Pn	15 38 01.7	+0.2
JACH				*i* S	Sn	15 38 15.4	+0.5
ROCH	**El Roble**	**1.04**	**157**	⇑*i*P	Pn	15 38 01.9	-0.1
PEL	**Peldehue**	**1.32**	**149**	⇓*i*P	Pn	15 38 06.2	+0.2
PEL				*i* S	Sn	15 38 23.3	+0.6
LCCH	**Las Cruces**	**1.47**	**182**	*i* P	Pn	15 38 08.0	0.0
RCDM	**Rinconada Maip**	**1.59**	**159**	⇓*i*P	Pn	15 38 10.2	+0.5
RCDM				*i* S	Sn	15 38 30.8	+1.4
RCDM				AMP		15 38 31.2	
	comp=E,721nm,0.1s						
CLCH	**Cerro Calan**	**1.60**	**150**	*i* P	Pn	15 38 10.8	+0.8
CLCH				*i* S	Sn	15 38 31.2	+1.4
CLCH				AMP		15 38 33.1	
	comp=N,767nm,0.3s						
CLCH				AMP		15 38 33.7	
	comp=N,934nm,0.3s						
FCH	**Farellones**	**1.66**	**143**	⇑*i*P	Pn	15 38 11.1	+0.3
FCH				*i* S	Sn	15 38 32.5	+1.2
FCH				AMP		15 38 32.9	
	comp=E,338nm,0.3s						
TACH	**Talagante**	**1.71**	**164**	⇑*i*P	Pn	15 38 11.7	+0.3
TACH				*i* S	Sn	15 38 34.2	+1.7
ANTU	**Antumapu**	**1.72**	**155**	AMP		15 38 34.9	
	comp=E,374nm,0.3s						
PCH	**Pirque**	**1.81**	**153**	⇑*i*P	Pn	15 38 13.5	+0.6
PCH				*i* S	Sn	15 38 37.1	+2.1
TLL	**Tololo Astrono**	**1.93**	**18**	*i* P	Pn	15 38 15.8	+1.2
TLL				*i* S	Sn	15 38 41.0	+2.9
TLL				AMP		15 38 43.7	
	comp=E,348nm,0.4s						
LNV	**Longovilo**	**1.94**	**178**	⇓*i*P	Pn	15 38 14.2	-0.7
LNV				*i* S	Sn	15 38 38.7	+0.2
CHCH	**Chadas Angostu**	**2.05**	**160**	⇑*i*P	Pn	15 38 16.9	+0.6
CHCH				*i* S	Sn	15 38 43.2	+2.1
LMEL	**Las Melosas**	**2.13**	**150**	*i* P	Pn	15 38 18.2	+0.6
LMEL				*i* S	Sn	15 38 45.1	+1.8
LMEL				AMP		15 38 49.3	
	comp=N,456nm,0.2s						
CACH	**El Canelo**	**2.23**	**161**	*i* P	Pn	15 38 20.3	+1.3
CACH				*i* S	Sn	15 38 48.9	+3.0
CICH	**Cipreses**	**2.48**	**159**	⇓*i*P	Pn	15 38 23.2	+0.8
CICH				*i* S	Sn	15 38 53.3	+1.3
SFDO	**San Fernando**	**2.63**	**171**	*i* P	Pn	15 38 25.0	+0.4
SFDO				*i* S	Sn	15 38 57.1	+1.2

*NEIC **28** 16:30:41.7, 37.66N×21.28E, h5km, ML3.5(ATH), After ATH.*
*ATH **28** 16:30:41.9, 37.75N×21.33E, h12km±5km, MD3.5/4, ML3.4*
*THE **28** 16:30:43.7, 37.48N×21.27E, h20km, ML3.6*
*IDC **28** 16:30:46.3±8.1, 38.37N×22.03E, mb3.4/3, mb1 3.5/3, mb1mx3.2/20, Error ellipse: s-maj=154.0km s-min=44.8km az=38.0*

ISC 28 16:30:42.0±0.7, 37.59N±0.04×21.31E±0.06, h12km, n31, σ1°35/33, mb3.3/3, Southern Greece

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ITM	**Ithomi**	**0.64**	**130**	*e*PB	**Pb**	**16 30 56.0**	**+1.3**
VLS	**Valsamata**	**0.81**	**316**	*e*PB	**Pb**	**16 30 56.0**	**-1.6**
LKD	**Levkas**	**1.23**	**335**	*e*Pb	**Pb**	**16 31 04.4**	**-0.2**
EVR	**Evrytania**	**1.38**	**17**	*e*Pb	**Pb**	**16 31 10.0**	**+2.8**
VLI	**Velíai**	**1.57**	**123**	*e*Pb	**Pb**	**16 31 14.3**	**+3.8**
AGG	**Agios Georgios**	**1.64**	**29**	*e*Pb	**Pb**	**16 31 11.4**	**-0.3**
	comp=Z,10nm,0.6s						
AGG				*e*Sb	**Sb**	**16 31 33.1**	**+0.9**
MKIT	**Kithairon Oros**	**1.66**	**69**	*e*PB	**Pb**	**16 31 12.2**	**+0.2**
NSAL	**Nisos Salamina**	**1.74**	**79**	*e*PB	**Pb**	**16 31 12.0**	**-1.4**
NAIG	**Nisos Aigina**	**1.74**	**84**	*e*PG	**Pg**	**16 31 14.0**	**-2.8**
KYTH	**Kithira**	**1.91**	**133**	*e*PG	**Pg**	**16 31 19.0**	**-1.1**
ATH	**Athens Observa**	**1.95**	**78**	*e*PN	**Pn**	**16 31 15.5**	**+0.2**
MPAR	**Parnis Oros**	**2.00**	**73**	*e*PN	**Pn**	**16 31 17.0**	**+0.9**
PTL	**Penteli**	**2.08**	**77**	*e*PB	**Pb**	**16 31 17.0**	**-2.2**
JAN	**Janina**	**2.09**	**350**	*e*Pg	**Pg**	**16 31 21.0**	**-2.8**
MEV	**Metsovon**	**2.19**	**358**	*e*Pn	**Pn**	**16 31 20.1**	**+1.4**
NEO	**Neokhori**	**2.28**	**41**	*e*PG	**Pg**	**16 31 21.0**	**-6.5**
XOR	**Xorichti**	**2.31**	**39**	*e*Pn	**Pn**	**16 31 21.6**	**+1.2**
AOS	**Alonnisos**	**2.56**	**51**	*e*Pn	**Pn**	**16 31 24.1**	**0.0**
	comp=Z,2.4nm,0.4s						
LIT	**Litokhoron**	**2.67**	**20**	*e*Pn	**Pn**	**16 31 26.9**	**+1.2**
	comp=Z,1.8nm,0.5s						
PAIG	**Paliouri**	**2.98**	**38**	*e*Pn	**Pn**	**16 31 29.2**	**-0.9**
PAIG				*e*Sn	**Sn**	**16 32 06.3**	**+0.3**
FNA	**Florina**	**3.19**	**1**	*e*Pn	**Pn**	**16 31 33.3**	**+0.4**
VAM	**Vamos**	**3.19**	**132**	*e*PN	**Pn**	**16 31 35.0**	**+1.9**
OUR	**Ouranopolis**	**3.44**	**36**	*e*Pn	**Pn**	**16 31 36.7**	**+0.1**
	comp=Z,2.0nm,0.5s						
GRG	**Griva**	**3.46**	**14**	*e*Pn	**Pn**	**16 31 37.0**	**+0.1**
KNT	**Kendrikon**	**3.77**	**19**	*e*Pn	**Pn**	**16 31 42.0**	**+0.7**
TIP	**Timpagrande**	**3.91**	**295**	*e*Pn	**Pn**	**16 31 45.3**	**+2.1**
SRS	**Serrai**	**3.94**	**26**	*e*Pn	**Pn**	**16 31 43.7**	**+0.1**
FINES	**FINESS Array B**	**24.06**	**6**	P	**P**	**16 35 55.3**	**-2.3**
	0.6nm,0.6s,mb3.2,baz=190,slow=12,SNR=6.6						
NB2	**NORSAR Subarra**	**24.32**	**348**	P	**P**	**16 35 59.0**	**-1.1**
	0.3nm,0.6s,mb2.9,baz=153,slow=10						
NOA	**NORSAR Array B**	**24.32**	**348**	P	**P**	**16 35 59.1**	**-1.0**
	1.0nm,0.9s,mb3.2,baz=155,slow=9.8,SNR=3.8						
MKAR	**Makanchi Array**	**45.08**	**58**	P	**P**	**16 38 56.7**	**-2.8**
	0.3nm,0.4s,mb3.5,baz=274,slow=7.2,SNR=10.0						

*NEIC **28** 16:42:06.2, 36.38N×27.25E, h5km, MD3.5(ATH), MD3.4(ISK), After ATH.*
*ATH **28** 16:42:06.3, 36.39N×27.25E, h5km, MD3.5/3*
*ISK **28** 16:42:07.7, 36.43N×27.27E, h13km, MD3.4*

ISC 28 16:42:06.5±0.5, 36.38N±0.04×27.24E±0.05, h5km, n23, σ1°02/32, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
NISR	**Nisiros**	**0.25**	**338**	*e*PG	**Pg**	**16 42 11.5**	**0.0**
BDRM	**Kayabasi**	**0.70**	**13**	*i* P	**Pg**	**16 42 19.9**	**-0.6**
BDRM				*i* S	**Sg**	**16 42 29.6**	**-0.3**
ARG	**Arkhangelos**	**0.73**	**103**	*e*PB	**Pb**	**16 42 20.5**	**-0.9**
KARP	**Karpathos**	**0.84**	**185**	*e*PG	**Pg**	**16 42 22.0**	**-1.2**
MLSB	**Milas**	**1.01**	**25**	*e*PG	**Pg**	**16 42 26.5**	**-0.1**
MLSB				*e*SG	**Sg**	**16 42 40.4**	**+0.3**
YER	**Yerkesik**	**1.12**	**48**	PG	**Pg**	**16 42 28.4**	**-0.6**
AYDN	**Tasoluk**	**1.37**	**22**	*i* P	**Pb**	**16 42 32.5**	**+0.2**
AYDN				*i* S	**Sb**	**16 42 50.9**	**+0.8**
THR1	**Thera Island**	**1.44**	**270**	*e*P	**Pn**	**16 42 33.0**	**-0.4**
THR1				*e*S	**Sb**	**16 42 57.4**	**+5.4**
SANT	**Santorini**	**1.44**	**270**	*e*Pn	**Pn**	**16 42 33.8**	**+0.4**
THR3	**Thira Island,**	**1.49**	**272**	*e*P	**Pn**	**16 42 34.0**	**0.0**
THR3				*e*S	**Sb**	**16 42 57.9**	**+4.5**
THR4	**Thira Island,**	**1.49**	**274**	*e*P	**Pn**	**16 42 33.6**	**-0.5**
THR6	**Thira Island,**	**1.49**	**270**	*e*P	**Pn**	**16 42 33.7**	**-0.4**
THR6				*e*S	**Sb**	**16 42 59.9**	**+6.5**
THR5	**Thira Island,**	**1.53**	**272**	*e*P	**Pn**	**16 42 34.6**	**0.0**
APE	**Apeiranthos**	**1.54**	**297**	*e*PN	**Pn**	**16 42 35.4**	**+0.6**
APE	**Apeiranthos**	**1.54**	**297**	*e*PG	**Pg**	**16 42 35.0**	**-2.2**
NPS	**Neapolis**	**1.73**	**230**	*e*PN	**Pn**	**16 42 40.0**	**+2.4**
DNZL	**Cakiroluk**	**1.94**	**47**	*i* P	**Pn**	**16 42 41.5**	**+0.9**
DNZL				*i* S	**Sn**	**16 43 04.8**	**-0.9**
XRY	**Khrisi**	**1.96**	**220**	*e*PN	**Pn**	**16 42 43.0**	**+2.2**
DENT	**Denizli**	**1.98**	**46**	*e*PN	**Pn**	**16 42 40.8**	**-0.3**
KDAG	**Bornova**	**2.02**	**1**	*i* P	**Pn**	**16 42 45.0**	**+3.3**
KDAG				*i* S	**Sn**	**16 43 15.2**	**+7.7**
ELL	**Elmali**	**2.18**	**80**	*e*PN	**Pn**	**16 42 44.7**	**+0.8**
MANT	**Manisa**	**2.35**	**26**	*i* P	**Pn**	**16 42 51.0**	**+4.6**
MANT				*i* S	**Sn**	**16 43 22.4**	**+6.4**
VAM	**Vamos**	**2.66**	**249**	*e*Pg	**Pg**	**16 42 58.2**	**-1.4**

DJA 28 17:17:15.5±0.8, 9.56S×115.65E, h33km, ML3.7/2, 4C-4D, Error ellipse: s-maj=18.7km s-min=9.4km az=177.0, South of Bali

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RATI	**Rata**	**0.84**	**352**	⇓*i*Pn	Pn	17 17 29.6	-1.5
RATI				⇓*i*Sn	Sn	17 17 40.0	-2.3
INGI	**Ingas**	**0.89**	**326**	⇑*i*Pn	Pn	17 17 30.2	-1.6
	197nm,0.2s						
INGI				⇑*i*Sn	Sn	17 17 40.7	-3.0
KEDI	**Kedomdong**	**1.16**	**23**	⇑*i*Pn	Pn	17 17 34.8	-0.9
	69nm,0.2s						
KEDI	**Kedomdong**	**1.16**	**23**	⇓*i*P	P	17 17 35.0	-0.4
KEDI				⇑*i*Sn	Sn	17 17 49.0	-1.4
KELI	**Kelakatan**	**1.76**	**319**	*e*Pn	Pn	17 17 43.6	-0.7
KELI				⇓*i*Sn	Sn	17 18 03.7	-2.0

*IDC **28** 17:34:48.6±0.9, 36.57N×51.14E, mb3.7/8, mb1 3.9/9, mb1mx3.7/20, ML2.8/1, MS3.7/3, Ms1 3.7/3, ms1mx3.0/28, Error ellipse: s-maj=24.4km s-min=8.4km az=93.0*
*NEIC **28** 17:34:49.8±0.6, 36.52N×51.09E, h10km, mb4.4/1, Error ellipse: s-maj=13.3km s-min=8.6km az=95.0*

ISC 28 17:34:48.5±2.8, 36.6N±0.2×51.1E±0.1, h13km±25km, n19, σ0°96/16, mb3.7/7, MS4.0/2, Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
THR	**Tehran**	**0.65**	**177**	Pg	**Pg**	**17 35 01.9**	**+0.1**
	64nm,0.3s,baz=357,slow=14,SNR=861						
THR				Lg		17 35 10.0	
	1μm,0.3s,baz=297,slow=18,SNR=208						
ASF	**Jabal al Asfar**	**12.51**	**254**	LR	LR	17 43 32.1	
	comp=Z,144nm,20.0s,baz=50,slow=42						
BRTR	**Keskin Array B**	**14.08**	**289**	Pn	**P**	**17 38 19.6**	**+10**
	0.1nm,0.3s,baz=112,slow=13,SNR=6.0						
AAK	**Ala-Archa**	**19.01**	**64**	*e*P	**P**	**17 39 12.7**	**+0.3**
ARU	**Arti**	**20.51**	**12**	*e*P	**P**	**17 39 28.0**	**-0.8**
	12nm,0.6s						
ZRNK	**Zerenda**	**20.65**	**32**	*e*P	**P**	**17 39 29.3**	**-1.1**
MLR	**Muntele Rosu**	**20.89**	**303**	P	**P**	**17 39 38.7**	**+5.8**
	0.8nm,0.5s,baz=39,slow=13,SNR=2.2						
BRVK	**Borovoye**	**21.28**	**33**	*e*P	**P**	**17 39 36.5**	**-0.4**
BVAR	**Borovoye Array**	**21.31**	**33**	P	**P**	**17 39 36.9**	**-0.2**
	4.9nm,0.7s,mb3.9,baz=221,slow=10.0,SNR=42						
KURK	**Kurchatov**	**24.26**	**46**	*e*P	**P**	**17 40 07.9**	**+1.8**
MKAR	**Makanchi Array**	**25.30**	**56**	P	**P**	**17 40 16.9**	**+0.7**
	3.1nm,0.9s,mb3.6,baz=243,slow=7.2,SNR=17						
ZAL	**Zalesovo**	**29.04**	**43**	P	**P**	**17 40 54.4**	**+4.1**
	1.0nm,0.4s,mb3.9,baz=64,slow=3.3,SNR=5.5						
GERES	**GERESS Array B**	**29.78**	**306**	P	**P**	**17 40 57.6**	**+0.6**
	0.2nm,0.3s,mb3.3,baz=45,slow=8.3,SNR=3.4						
NOA	**NORSAR Array B**	**35.02**	**327**	P	**P**	**17 41 41.7**	**-0.9**
	0.4nm,0.9s,mb3.3,baz=74,slow=6.2,SNR=2.7						
NOA	**NORSAR Array B**	**35.02**	**327**	P	**P**	**17 41 41.7**	**-0.9**
CMAR	**Chiang Mai Arr**	**45.63**	**100**	P	**P**	**17 43 09.1**	**-1.5**
	1.1nm,1.0s,mb3.8,baz=293,slow=8.3,SNR=5.7						
ILAR	**Eielson Array**	**78.02**	**8**	P	**P**	**17 46 49.0**	**+1.3**
	0.6nm,0.8s,mb3.6,baz=335,slow=5.4,SNR=5.8						
DLBC	**Dease Lake**	**85.35**	**1**	LR	LR	18 30 34.9	
	comp=Z,73nm,20.3s,MS4.1,baz=132,slow=39						
PDAR	**Pinedale Array**	**99.10**	**346**	LR	LR	18 35 43.6	
	comp=Z,43nm,18.1s,MS4.0,baz=72,slow=37						

*IDC **28** 17:37:41.5±2.4, 29.78S×76.02E, mb3.8/5, mb1 3.9/5, mb1mx3.7/15, MS3.8/4, Ms1 3.8/4, ms1mx3.4/22, Error ellipse: s-maj=77.2km s-min=35.5km az=32.0*

ISC 28 17:37:41.8±2.5, 29.7S±0.4×76.2E±0.4, h10km, n9, σ0°34/5, mb3.7/5, MS3.8/4, Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MAW	**Mawson**	**38.76**	**188**	LR	LR	17 56 46.3	
	comp=Z,120nm,19.4s,MS3.7,baz=246,slow=30						
ASAR	**Alice Springs**	**51.51**	**98**	P	**P**	**17 46 50.0**	**0.0**
	0.6nm,0.7s,mb3.6,baz=254,slow=6.6,SNR=6.3						
CMAR	**Chiang Mai Arr**	**52.68**	**28**	P	**P**	**17 46 59.0**	**+0.2**
	0.6nm,0.7s,mb3.6,baz=214,slow=6.5,SNR=3.8						
CMAR				LR	LR	18 04 55.4	
	comp=Z,43nm,20.0s,MS3.5,baz=57,slow=31						
TSUM	**Tsumeb**	**53.84**	**267**	LR	LR	18 06 19.4	
	comp=Z,176nm,18.7s,MS4.2,baz=64,slow=32						
MKAR	**Makanchi Array**	**76.33**	**4**	P	**P**	**17 49 32.5**	**-0.2**
	2.4nm,1.2s,mb4.0,baz=183,slow=4.7,SNR=4.6						
BRTR	**Keskin Array B**	**79.58**	**328**	P	**P**	**17 49 50.9**	**+0.3**
	0.4nm,0.5s,mb3.6,baz=135,slow=8.2,SNR=2.7						
BVAR	**Borovoye Array**	**82.53**	**356**	P	**P**	**17 50 05.5**	**-0.3**
	0.8nm,0.9s,mb3.8,baz=180,slow=2.9,SNR=4.0						
ZAL	**Zalesovo**	**83.62**	**5**	LR	LR	18 24 53.7	
	comp=Z,56nm,19.8s,MS4.0,baz=5.1,slow=34						
YKA	**Yellowknife Ar**	**146.46**	**9**	PKPbc	PKPbc	17 57 23.4	+1.0
	0.4nm,0.7s,baz=329,slow=3.6,SNR=7.9						

*IDC **28** 17:45:14.2±6.2, 5.68S×151.10E, h56km±54km, mb3.5/6, mb1 3.7/7, mb1mx3.6/15, ML3.0/1, MS3.6/4, Ms1 3.6/4, ms1mx3.3/13, Error ellipse: s-maj=53.4km s-min=33.6km az=121.0*
*NEIC **28** 17:45:15.7±3.1, 5.80S×151.15E, h70km±26km, Error ellipse: s-maj

comp=Z,0.1nm,0.3s,baz=102,slow=13,SNR=6.1
HFS Sn **Sn 17 58 04.8 -7.7**
comp=Z,0.1nm,0.3s,baz=96,slow=28,SNR=4.3
HFS Lg 17 58 43.7
comp=Z,0.3nm,0.3s,baz=84,slow=30,SNR=10
NOA NORSAR Array B 8.22 287 Pn **P 17 57 06.2 -2.5**
comp=Z,0.3nm,0.3s,baz=99,slow=11,SNR=3.0
NOA Sn **Sn 17 58 35.5 -7.9**
comp=Z,0.2nm,0.3s,baz=149,slow=21,SNR=2.5
NOA Lg 17 59 22.0
comp=Z,0.5nm,0.3s,baz=240,slow=24,SNR=5.4
ARA0 ARCESS Array S 10.05 356 Pn **P 17 57 31.1 -2.9**
baz=173,slow=16
ARA0 Sn **S 17 59 19.2 -9.5**
baz=176,slow=28
ARA0 Lg 18 00 19.6
baz=160,slow=37
ARCES ARCESS Array B 10.05 356 Pn **P 17 57 31.4 -2.5**
comp=Z,0.5nm,0.3s,baz=176,slow=13,SNR=19
ARCES Sn **S 17 59 19.2 -9.5**
comp=Z,0.2nm,0.3s,baz=174,slow=25,SNR=4.1
ARCES Lg 18 00 20.6
comp=Z,0.4nm,0.3s,baz=163,slow=33,SNR=4.6

*NEIC **28** 18:01:43.9,35.16N×4.00W,MG3.5(MDD),After MDD.*
MDD 28 18:01:43.4±1.5,35.11N×4.01W,mb3.7/1,Error ellipse: s-maj=17.1km s-min=5.4km az=16.0,AftershockPLICA PRXIMO,Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
EMEL	**Melilla**	**0.89**	**77**	P		Pg	18 01 59.6	-1.5
	66nm,0.1s,SNR=9.2							
EMEL				S		Sg	18 02 11.9	-1.1
	408nm,0.4s,SNR=6.4							
MELI	**Melilla**	**0.90**	**78**	P		Pg	18 02 00.0	-1.4
MELI				S		Sg	18 02 11.0	-2.5
ELOJ	**Sierra Loja**	**2.04**	**357**	P		Pn	18 02 16.6	-2.8
	0.5nm,0.1s,SNR=5.5							
ELOJ	**Sierra Loja**	**2.04**	**357**	P		Pn	18 02 18.6	-0.8
ELOJ				S		Sn	18 02 42.1	-3.8
ESPR	**Espera**	**2.31**	**320**	P		Pn	18 02 22.7	-0.5
	0.3nm,0.1s,SNR=4.0							
ESPR	**Espera**	**2.31**	**320**	P		Pn	18 02 22.5	-0.7
ESPR				S		Sn	18 02 48.8	-4.0
EQES	**Quesada**	**2.79**	**15**	S		Sn	18 03 01.8	-3.4
	4.7nm,0.2s,SNR=7.9							
EQES	**Quesada**	**2.79**	**15**	P		Pn	18 02 28.1	-2.2
EQES				S		Sn	18 03 01.2	-3.9
EHUE	**Huescar**	**2.93**	**23**	P		Pn	18 02 31.5	-0.7
	0.6nm,0.2s,SNR=7.9							
EHUE				S		Sn	18 03 06.0	-2.6
	1.4nm,0.2s,SNR=7.9							
EADA	**Adamuz**	**3.09**	**352**	P		Pn	18 02 33.2	-1.2
	0.1nm,0.0s,SNR=4.0							
EADA				S		Sn	18 03 06.7	-5.8
	1.3nm,0.2s,SNR=7.9							
EADA	**Adamuz**	**3.09**	**352**	P		Pn	18 02 32.8	-1.6
EADA				S		Sn	18 03 06.5	-6.0
ECAB	**El Cabril**	**3.17**	**340**	P		Pn	18 02 32.3	-3.2
	0.3nm,0.2s,SNR=7.9							
ECAB				S		Sn	18 03 10.0	-4.6
	2.8nm,0.4s,SNR=7.9							
EMIN	**Mina Concepcio**	**3.41**	**322**	P		Pn	18 02 36.1	-2.9
	0.2nm,0.1s,SNR=8.7							
EMIN				S		Sn	18 03 14.6	-6.2
	0.1nm,0.1s,SNR=6.8							
EMIN	**Mina Concepcio**	**3.41**	**322**	P		Pn	18 02 36.8	-2.2
EMIN				S		Sn	18 03 15.1	-5.6
EGRO	**El Granado**	**3.70**	**312**	P		Pn	18 02 40.4	-2.7
	0.3nm,0.2s,SNR=7.9							
EGRO				S		Sn	18 03 22.6	-5.5
	3.4nm,0.3s,SNR=7.9							
EGRO	**El Granado**	**3.70**	**312**	P		Pn	18 02 39.0	-4.1
EGRO				S		Sn	18 03 21.3	-6.8
ETOB	**Tobarra**	**4.04**	**29**	P		Pn	18 02 46.6	-1.3
	1.3nm,0.2s,SNR=7.9							
ETOB				S		Sn	18 03 32.3	-4.4
	1.1nm,0.2s,SNR=4.0							
ETOB	**Tobarra**	**4.04**	**29**	P		Pn	18 02 44.9	-3.1
ETOB				S		Sn	18 03 30.9	-5.8
EBAD	**Badajoz**	**4.36**	**327**	P		Pn	18 02 49.9	-2.6
	0.4nm,0.1s,SNR=7.9							
EBAD				S		Sn	18 03 38.5	-6.3
	2.9nm,0.2s,SNR=7.9							
EBAD	**Badajoz**	**4.36**	**327**	P		Pn	18 02 49.3	-3.2
EBAD				S		Sn	18 03 36.8	-8.0

DJA 28 18:02:51.9±1.0,8.46S×116.57E,h33km,ML4.9/2,1C-7D, Error ellipse: s-maj=33.9km s-min=20.0km az=158.0, Sumbawa region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
KEDI	**Kedomdong**	**0.46**	**266**	⇓*i*	P	Pn	18 03 00.8	-1.2
KEDI				⇑*i*	S	Sn	18 03 08.4	-0.6
RATI	**Rata**	**1.06**	**256**	⇓*i*	P	Pn	18 03 09.9	-0.8
	2µm,0.2s							
RATI	**Rata**	**1.06**	**256**	⇓*i*	P	P	18 03 10.2	-0.3
RATI				⇓*i*	S	Sn	18 03 22.6	-1.8
INGI	**Ingas**	**1.46**	**256**	⇓*i*	P	Pn	18 03 15.4	-0.9
	893nm,0.2s							
INGI				⇓*i*	S	Sn	18 03 31.0	-3.4
KELI	**Kelakatan**	**2.08**	**277**	⇓*i*	P	Pn	18 03 24.2	-1.0

*IDC **28** 18:02:48.6±8.7,15.52N×99.68W,mb3.8/3,mb1 4.1/4, mb1mx3.7/18,ML3.2/1,MS3.9/2,Ms1 3.9/2,ms1mx3.0/23, Error ellipse: s-maj=144.0km s-min=131.0km az=177.0*
*NEIC **28** 18:03:19.2,17.95N×101.34W,h56km,MD4.2(MEX),After MEX.*
*MEX **28** 18:03:19.4±1.3,17.95N×101.34W,h55km±14km,MD4.2*
ISC 28 18:03:17.2±0.6,17.94N±0.05×101.34W±0.04,h58km±8km, n20,σ1§08/26,mb3.4/3,MS3.9/2,1D,Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
ZIIG	**Zihuatanejo**	**0.35**	**199**	⇓*i*	P	**P**	**18 03 27.8**	**+0.2**
ZIIG				*i*	S	**S**	**18 03 35.6**	**+0.4**
CAIG	**El Cayaco**	**1.36**	**131**	*i*	P	**P**	**18 03 40.4**	**-0.1**
CAIG				*i*	S	**S**	**18 03 56.8**	**-0.9**
ACX	**Acapulco**	**1.73**	**128**	*i*	P	**P**	**18 03 46.5**	**+0.9**
ACX				*i*	S	**S**	**18 04 04.0**	**-2.5**
MOIG	**Morelia**	**1.74**	**5**	*i*	P	**P**	**18 03 45.5**	**-0.2**
MOIG				*i*	S	**S**	**18 04 05.7**	**-1.0**
IIZ	**Mezontepec**	**2.35**	**58**	*i*	P	**P**	**18 03 55.0**	**+0.7**
YAIG	**Yautepec**	**2.35**	**67**	*i*	P	**P**	**18 03 54.1**	**-0.2**
YAIG				*i*	S	**S**	**18 04 22.3**	**+0.4**
COLM	**Colima**	**2.55**	**299**	*i*	P	**P**	**18 03 57.3**	**+0.2**
COLM				*i*	S	**S**	**18 04 26.4**	**-0.6**
PPM	**Popocatepetl**	**2.81**	**66**	*i*	P	**P**	**18 04 02.0**	**+1.2**
PPM				*i*	S	**S**	**18 04 17.6**	**-16**
SFJM	**Santa Fe**	**3.00**	**328**	*i*	P	**P**	**18 04 03.0**	**-0.4**
IISM	**Ciudad Serdan**	**3.91**	**74**	*i*	P	**P**	**18 04 14.1**	**-2.2**
POHV	**Veracruz**	**4.01**	**73**	*i*	P	**P**	**18 04 19.0**	**+1.2**
OXX	**Oaxaca**	**4.49**	**100**	*i*	P	**P**	**18 04 26.1**	**+1.6**
CMIG	**Matias Romero**	**6.22**	**97**	*i*	P	**P**	**18 04 48.1**	**-0.4**
CMIG				*i*	S	**S**	**18 05 59.0**	**-0.1**
TXAR	**Lajitas Array**	**11.54**	**350**	Pn		**P**	**18 06 14.3**	**+13**
	0.0nm,0.3s,baz=180,slow=14,SNR=4.8							
TXAR	**Lajitas Array**	**11.54**	**350**	Pn		**P**	**18 06 14.3**	**+13**
NVAR	**Mina Array Bea**	**25.22**	**327**	P		**P**	**18 08 42.3**	**+3.1**
	2.3nm,0.6s,mb3.9,baz=137,slow=12,SNR=15							
PDAR	**Pinedale Array**	**25.71**	**346**	P		**P**	**18 08 44.5**	**+0.7**
	1.5nm,0.8s,mb3.6,baz=149,slow=8.6,SNR=12							
BBB	**Bella Bella**	**40.13**	**335**	LR		LR	18 29 24.2	
	comp=Z,52nm,19.4s,MS3.4,baz=226,slow=37							
YKA	**Yellowknife Ar**	**45.46**	**351**	P		**P**	**18 11 30.4**	**-1.8**
	0.1nm,0.5s,mb2.9,baz=149,slow=7.2,SNR=2.9							
VRAC	**Vranov**	**93.47**	**35**	LR		LR	18 59 21.6	
	comp=Z,141nm,20.9s,MS4.4,baz=121,slow=36							

*IDC **28** 18:51:39.6±11.0,17.51S×178.53W,h475km±128km, mb3.1/5,mb1 3.4/5,mb1mx3.1/14,Error ellipse: s-maj=103.0km s-min=45.9km az=157.0*
ISC 28 18:51:38.7±1.6,17.5S±0.6×178.6W±0.4,h475km,n7, σ0§31/5,mb3.5/5,Fiji Islands region

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

STKA Stephens Creek 38.68 241 P **P 18 58 22.0 +0.3**
2.2nm,1.0s,mb3.5,baz=90,slow=12,SNR=3.8
WRA Warramunga Arr 44.53 259 P **P 18 59 08.5 -0.2**
0.9nm,0.6s,mb3.4,baz=95,slow=7.2,SNR=11
ASAR Alice Springs 44.73 254 P **P 18 59 10.1 -0.2**
5.8nm,0.6s,mb4.2,baz=89,slow=8.1,SNR=96
ILAR Eielson Array 85.52 13 P **P 19 03 26.2 +0.2**
0.4nm,0.6s,mb3.3,baz=219,slow=4.9,SNR=4.0
TXAR Lajitas Array 85.92 58 P **P 19 03 28.6 -0.2**
0.2nm,0.5s,mb3.0,baz=254,slow=6.6,SNR=2.6
BRTR Keskin Array B 144.36 315 PKP PKPdf 19 10 20.7 +0.8
0.6nm,0.5s,baz=90,slow=3.7,SNR=3.8
GERES GERESS Array B 147.16 345 PKPbc PKPdf 19 10 28.3 +4.1
0.9nm,0.5s,baz=25,slow=2.8,SNR=13

*BJI **28** 19:06:00.6,12.42N×141.77E,h35km,mB5.1,mb5.1, Ms4.5,Msz4.3*
*MOS **28** 19:06:01.5±0.8,12.53N×141.66E,h33km,mb5.2/22, MS4.5/9,Error ellipse: s-maj=17.9km s-min=8.6km az=112.4*
*NEIC **28** 19:06:02.6±0.2,12.51N×141.66E,mb5.0/29,MS4.4/5, Error ellipse: s-maj=8.1km s-min=5.5km az=91.0*
*IDC **28** 19:06:02.9±0.4,12.48N×141.72E,h29km±2km,mb4.6/22, mb1 4.7/24,mb1mx4.6/29,ML3.9/2,MS4.2/25,Ms1 4.2/25, ms1mx4.2/33,Error ellipse: s-maj=16.2km s-min=8.8km az=78.0*
*SYO **28** 19:06:02.6,12.51N×141.66E,h30km,MB5.0,MS4.4*
*HRVD **28** 19:06:02.6±0.3,12.39N×141.44E,h12km,MW5.0/60, Centroid moment Tensor Solution. LP body waves: s26,c40;Mantle waves: s60,c113; Half duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-3.60±.12; $M_{\theta\theta}$3.28±.10; $M_{\phi\phi}$0.32±.12; $M_{r\theta}$0.50±.34; $M_{\theta\phi}$1.24±.10; $M_{\phi r}$0.08±.42; Best double couple: M_o3.7×10^{16} NP1:φ68°, δ41°,λ-92°. NP2:φ252°,δ49°,λ-88°. Principal axes: T 3.76, Plg4°, Azm340°; N -.13, Plg2°, Azm70°; P -3.64, Plg86°, Azm182°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
ISC 28 19:06:00.1±1.3,12.45N±0.04×141.63E±0.04,h24km±9km, h29km±.7km:pP-P,n187,σ1§01/186,mb5.0/67,MS4.3/43, 26C-8D,South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
GUMO	**Guam**	**3.35**	**70**	*e*P		**Pn**	**19 06 52.6**	**+0.4**
SAPN	**Saipan**	**4.85**	**55**	*e*P		**Pn**	**19 07 21.4**	**+7.9**
ANA2	**Anatahan**	**5.53**	**45**	*e*P		**Pn**	**19 07 32.0**	**+9.0**
CBIJ	**Chichi jima**	**14.58**	**2**	Pn		**P**	**19 09 33.1**	**+6.2**
	2.0nm,0.3s,baz=262,slow=7.7,SNR=4.1							
CBIJ				LR		LR	19 14 21.7	
	comp=Z,411nm,20.4s,baz=351,slow=34							
CNP	**Catarman**	**16.57**	**272**	⇑*e*P		**P**	**19 09 45.2**	**-7.5**
MSLP	**Maasin**	**16.61**	**264**	⇑*e*P		**P**	**19 09 57.7**	**+4.5**
OCLP	**Ormoc**	**16.73**	**267**	⇑*e*P		**P**	**19 09 58.2**	**+3.6**
PVCP	**Virac**	**17.07**	**276**	⇑*e*P		**P**	**19 10 00.9**	**+2.0**
KALP	**Kalibo**	**18.89**	**270**	⇑*e*P		**P**	**19 10 22.8**	**+1.4**
JOW	**Kunigami**	**19.03**	**321**	P		**P**	**19 10 23.4**	**+0.4**
	0.7nm,0.3s,baz=150,slow=11,SNR=5.2							
JOW				LR		LR	19 16 07.3	
	comp=Z,840nm,19.0s,baz=297,slow=32							
JOW	**Kunigami**	**19.03**	**321**	P		**P**	**19 10 23.4**	**+0.4**
JOW				LR		LR	19 16 07.3	
OTRP	**Odiongan**	**19.16**	**272**	⇑*e*P		**P**	**19 10 25.3**	**+0.7**
POLP	**Polilio Island**	**19.28**	**279**	⇑*e*P		**P**	**19 10 25.2**	**-0.8**
BOAC	**Boac**	**19.31**	**275**	⇑*e*P		**P**	**19 10 26.7**	**+0.2**
CAUP	**Cauayan**	**19.67**	**286**	⇑*e*P		**P**	**19 10 31.0**	**+0.5**
BALP	**Baler**	**19.73**	**282**	⇑*e*P		**P**	**19 10 30.6**	**-0.5**
SJMP	**San Jose**	**20.03**	**272**	⇑*e*P		**P**	**19 10 34.4**	**+0.1**
TGY	**Tagaytay City**	**20.21**	**277**	P		**P**	**19 10 37.0**	**+0.8**
	903nm,1.1s,baz=147,slow=7.8,SNR=19							
TGY				LR		LR	19 16 59.6	
	comp=Z,264nm,20.2s,MS3.6,baz=62,slow=32							
TGY	**Tagaytay City**	**20.21**	**277**	P		**P**	**19 10 37.0**	**+0.8**
TGY				pmax		pmax		
	comp=Z,903nm,1.1s							
TGY				MLR		MLR		
	comp=Z,264nm,20.2s							
APYP	**Conner**	**20.40**	**288**	⇑*e*P		**P**	**19 10 38.8**	**+0.6**
JHJ	**Hachijo jima 2**	**20.64**	**356**	LR		LR	19 16 43.0	
	comp=Z,2µm,21.9s,MS4.3,baz=306,slow=31							
ABRA	**Dolores**	**20.85**	**287**	⇑*e*P		**P**	**19 10 42.8**	**0.0**
BUSP	**Coron**	**20.95**	**271**	⇑*e*P		**P**	**19 10 44.0**	**+0.1**
ENPP	**El Nido**	**21.77**	**269**	⇑*e*P		**P**	**19 10 52.8**	**+0.6**
PMG	**Port Moresby**	**22.40**	**166**	P		**P**	**19 10 59.2**	**+0.8**
	comp=Z,25nm,0.8s,mb4.7,baz=20,slow=11,SNR=8.0							
PMG				pP			19 11 07.3	
	comp=Z,59nm,0.8s,baz=350,slow=9.0,SNR=11							
PMG				LR		LR	19 18 42.2	
	comp=Z,428nm,18.3s,MS3.9,baz=20,slow=34							
PMG	**Port Moresby**	**22.40**	**166**	P		**P**	**19 10 59.2**	**+0.8**
PMG				*PP			19 11 07.3	
PMG				pmax		pmax		
	comp=Z,25nm,0.8s							
PMG				pmax		pmax		
	comp=Z,59nm,0.8s							
PMG				MLR		MLR		
	comp=Z,428nm,18.3s							
PMG	**Port Moresby**	**22.40**	**166**	*e*P		**P**	**19 10 57.9**	**-0.5**
	comp=Z,97nm,0.9s,mb5.2							
TATO	**Taipei**	**22.75**	**306**	P		**P**	**19 11 01.9**	**0.0**
JNU	**Nakatsue**	**22.81**	**336**	P		**P**	**19 11 04.3**	**+1.9**
	comp=Z,14nm,0.9s,mb4.4,baz=164,slow=16,SNR=4.3							
JNU				LR		LR	19 18 56.7	
	comp=Z,468nm,19.2s,MS3.9,baz=194,slow=34							
BATP	**Bataraza**	**23.70**	**264**	⇑*e*P		**P**	**19 11 12.4**	**+1.2**
MAJO	**Matsushiro**	**24.19**	**353**	*e*P		**P**	**19 11 14.3**	**-1.5**
	comp=Z,14nm,1.1s,mb4.3							
MAT	**Matsushiro**	**24.19**	**353**	P		**P**	**19 11 14.6**	**-1.2**
MAT				S		**S**	**19 15 35.0**	**+5.5**
MAT	**Matsushiro**	**24.19**	**353**	*e*P		**P**	**19 11 15.0**	**-0.8**
	comp=Z,19nm,1.2s,mb4.4							
MAT				*e*S		**S**	**19 15 36.0**	**+6.5**
SSE	**Sheshan**	**26.46**	**318**	⇑P		**P**	**19 11 38.0**	**+0.7**
SSE				AP		pP	19 11 45.5	+1.1
SSE				S		**S**	**19 16 08.3**	**+0.7**
SSE				XS			19 16 21.3	
SSE				AMB		AMB		
	comp=Z,49nm,0.7s,mb5.2							
SSE				AMB		AMB		
	comp=Z,95nm,7.8s							
SSE				LR		LR		
	comp=N,212nm,15.0s,MS4.1							
SSE				LR		LR		
	comp=E,385nm,15.0s,MS4.1							
SSE				LR		LR		
	comp=Z,507nm,15.0s,MS4.2							
KAKA	**Kakadu**	**26.61**	**200**	*e*P		**P**	**19 11 42.0**	**+3.2**
	comp=Z,14nm,0.7s,mb4.6							
KAKA				*e*pP		pP	19 11 49.0	+3.1
NJ2	**Nanjing**	**28.61**	**317**	*e*P		**P**	**19 11 55.8**	**-1.0**
NJ2				AP		pP	19 12 05.0	+1.1
NJ2				XP		sP	19 12 09.5	+2.4
NJ2				PP		PP	19 12 46.0	-3.3
NJ2				S		**S**	**19 16 37.0**	**-5.3**
NJ2				AMB		AMB		
	comp=Z,10.0nm,0.5s,mb4.8							
NJ2				LR		LR		
	comp=N,830nm,19.1s,MS4.5							
NJ2				LR		LR		
	comp=E,840nm,20.0s,MS4.5							
NJ2				LR		LR		
	comp=Z,770nm,18.0s,MS4.3							
WHN	**Wuhan**	**30.99**	**310**	*e*P		**P**	**19 12 17.3**	**-0.7**
VLA	**Vladivostok**	**31.70**	**346**	*e*P		**P**	**19 12 43.0**	**+19**
VLA				*e*			19 13 45.0	
VLA				*e*			19 17 37.0	
CTA	**Charters Tower**	**32.65**	**172**	*e*P		**P**	**19 12 34.0**	**+1.4**
	comp=Z,18nm,0.9s,mb5.0							
CTA				*e*pP		pP	19 12 42.2	+2.4
CTA	**Charters Tower**	**32.65**	**172**	P		**P**	**19 12 33.5**	**+0.9**
	comp=Z,23nm,1.0s,mb5.1,baz=332,slow=9.7,SNR=10							
CTA				pP		pP	19 12 42.0	+2.2
	comp=Z,29nm,0.8s,baz=349,slow=9.0,SNR=12							
CTA				LR		LR	19 24 48.0	
	comp=Z,733nm,20.5s,MS4.4,baz=347,slow=34							
CTA	**Charters Tower**	**32.65**	**172**	P		**P**	**19 12 33.5**	**+0.9**
CTA				*PP		pP	19 12 42.0	+2.2
CTA				pmax		pmax		
	comp=Z,23nm,1.0s							
CTA				pmax		pmax		
	comp=Z,29nm,0.8s							
CTA				MLR		MLR		
	comp=Z,733nm,20.5s							
CTAO	**Charters Tower**	**32.65**	**172**	*e*P		**P**	**19 12 32.7**	**+0.1**
	comp=Z,50nm,1.0s,mb5.4							
CTAO				LR		LR		
	comp=Z,883nm,22.0s,MS4.4							
WRAB	**Tennant Creek**	**32.97**	**193**	*e*P		**P**	**19 12 33.5**	**-1.9**
	comp=Z,68nm,0.8s,mb5.6							
WB2	**Warramunga Arr**	**32.98**	**193**	*e*P		**P**	**19 12 35.3**	**-0.1**
WB2				*e*pP		pP	19 12 44.0	+1.3
WRA	**Warramunga Arr**	**32.98**	**193**	P		**P**	**19 12 35.1**	**-0.4**
	comp=Z,22nm,0.7s,mb5.2,baz=12,slow=9.4,SNR=52							
WRA				pP		pP	19 12 44.2	+1.5
	comp=Z,27nm,0.6s,baz=12,slow=9.7,SNR=27							
WRA	**Warramunga Arr**	**32.98**	**193**	P		**P**	**19 12 35.1**	**-0.4**
WRA				*PP		pP	19 12 44.2	+1.5
WRA				pmax		pmax		
	comp=Z,22nm,0.7s							
WRA				pmax		pmax		
	comp=Z,27nm,0.6s							
MDJ	**Mudanjiang**	**33.67**	**344**	P		**P**	**19 12 42.8**	**+1.5**
MDJ				AP		pP	19 12 47.5	-1.0
MDJ				XP		sP	19 12 50.8	-0.8
MDJ				PP		PP	19 13 58.5	+4.2
MDJ				S		**S**	**19 18 05.3**	**+3.6**
MDJ				AMB		AMB		
	comp=Z,47nm,3.5s							
MDJ				LR		LR		
	comp=N,452nm,20.6s							
MDJ				LR		LR		
	comp=Z,594nm,21.7s,MS4.3							
CN2	**Changchun**	**34.21**	**339**	*e*P		**P**	**19 12 45.3**	**-0.6**
CN2				*e*XP		sP	19 12 56.0	-0.3
CN2				PP		PP	19 14 00.3	-0.6
CN2				PCP		PcP	19 15 22.0	-0.5
CN2				*e*S		**S**	**19 18 09.3**	**-0.7**
CN2				*e*SS		SS	19 20 18.8	-0.8
CN2				AMB		AMB		
	comp=Z,200nm,4.0s							
CN2				LR		LR		
	comp=N,300nm,17.0s,MS4.2							
CN2				LR		LR		
	comp=E,200nm,17.0s,MS4.2							
CN2				LR		LR		
	comp=Z,300nm,22.0s,MS4.0							
FITZ	**Fitzroy Crossi**	**34.22**	**208**	P		**P**	**19 12 45.4**	**-0.8**
	comp=Z,5.2nm,0.8s,mb4.5,baz=33,slow=7.8,SNR=3.7							
FITZ				pP		pP	19 12 54.6	+1.1
	comp=Z,15nm,1.0s,baz=82,slow=2.4,SNR=5.7							
FITZ				LR		LR	19 27 10.6	
	comp=Z,59nm,21.0s,MS3.3,baz=59,slow=37							
GYA	**Guiyang**	**35.66**	**298**	⇓P		**P**	**19 13 00.0**	**+1.5**
GYA				AP		pP	19 13 08.5	+2.7
GYA				XP		sP	19 13 13.3	+4.4
GYA				S		**S**	**19 18 40.5**	**+7.8**
GYA				AMB		AMB		
	comp=Z,20nm,1.2s,mb4.9							
GYA				AMB		AMB		
	comp=Z,160nm,5.4s							
GYA				LR		LR		
	comp=N,310nm,13.2s,MS4.3							
GYA				LR		LR		
	comp=E,160nm,12.9s,MS4.3							
GYA				LR		LR		
	comp=Z,210nm,11.1s,MS4.2							
AS12	**Alice Springs**	**36.68**	**192**	*e*P		**P**	**19 13 08.1**	**+1.0**
	comp=Z,6.0nm,0.7s,mb4.5							
AS12				*e*pP		pP	19 13 16.9	+2.5
ASAR	**Alice Springs**	**36.68**	**192**	P		**P**	**19 13 07.3**	**+0.2**
	comp=Z,4.5nm,0.8s,mb4.3,baz=18,slow=13,SNR=32							
ASAR				pP		pP	19 13 16.9	+2.5
	comp=Z,5.6nm,0.6s,baz=22,slow=11,SNR=17							
ASAR				PcP		PcP	19 15 32.2	+2.2
	comp=Z,1.2nm,0.8s,baz=27,slow=4.0,SNR=3.7							
ASAR				pPcP			19 15 39.0	
	comp=Z,1.1nm,0.9s,baz=32,slow=3.8,SNR=4.2							
ASAR				LR		LR	19 27 40.3	
	comp=Z,484nm,18.7s,MS4.3,baz=13,slow=35							
KLR	**Kul'dur**	**37.57**	**349**	*e*P		**P**	**19 13 14.2**	**-0.1**
KLR				*e*S		**S**	**19 19 04.0**	**+2.2**
KLR				MLR		MLR		
	comp=Z,500nm,15.0s,MS4.4							
HHC	**Hu-ho-hao-te**	**38.66**	**323**	*e*P		**P**	**19 13 24.0**	**+0.4**
HHC				AP		pP	19 13 31.5	+0.6
HHC				XP		sP	19 13 34.8	+0.9
HHC				PP		PP	19 14 57.8	+1.9
HHC				PCP		PcP	19 15 33.5	-2.4
HHC				SCP			19 19 17.8	
HHC				S		**S**	**19 19 20.3**	**+1.9**
HHC				XS			19 19 32.0	
HHC				SS		SS	19 21 57.3	-3.0
HHC				SCS		ScS	19 23 31.8	+1.5
HHC				AMB		AMB		
	comp=Z,149nm,6.5s							
HHC				LR		LR		
	comp=N,190nm,14.9s,MS4.2							
HHC				LR		LR		
	comp=E,173nm,15.7s,MS4.2							
HHC				LR		LR		
	comp=Z,239nm,14.9s,MS4.1							
KMI	**Kunming**	**38.78**	**295**	*e*P		**P**	**19 13 21.5**	**-3.2**
KMI				AP		pP	19 13 34.5	+2.5
KMI				XP		sP	19 13 38.5	+3.5
KMI				PP		PP	19 14 56.5	-0.9
KMI				S		**S**	**19 19 14.0**	**-6.2**
KMI				XS			19 19 36.3	
KMI				SS		SS	19 22 03.5	+0.5
KMI				AMB		AMB		
	comp=Z,129nm,4.6s							
KMI				LR		LR		
	comp=N,285nm,13.7s,MS4.3							
KMI				LR		LR		
	comp=E,238nm,15.0s,MS4.3							
KMI				LR		LR		
	comp=Z,389nm,23.6s							
BTO	**Baotou**	**39.45**	**321**	*e*P		**P**	**19 13 30.5**	**+0.4**
BTO				AMB		AMB		
	comp=Z,31nm,1.1s,mb5.0							
CD2	**Chengdu**	**39.45**	**304**	P		**P**	**19 13 31.0**	**+0.8**
CD2				AP		pP	19 13 39.8	+2.2
CD2				XP		sP	19 13 42.0	+1.4
CD2				S		**S**	**19 19 30.5**	**+0.1**
CD2				XS			19 19 43.3	
CD2				SS		SS	19 22 17.5	-0.2
CD2				AMB		AMB		
	comp=Z,30nm,0.5s,mb5.3							
CD2				AMB		AMB		
	comp=Z,260

GTA AP pP 19 14 33.0 +5.2
GTA XP sP 19 14 37.5 +6.7
GTA PCP PcP 19 15 59.3 +0.3
GTA PP PP 19 16 08.5 +0.7
GTA PPP PPP 19 16 52.0 +1.6
GTA SCP 19 19 52.3
GTA S **S** **19 21 01.3 +0.5**
GTA XS 19 21 16.0
GTA SS SS 19 24 17.5 +1.0
GTA AMB AMB
comp=Z,16nm,1.3s,mb4.8
GTA AMB AMB
comp=Z,173nm,4.2s
GTA LR LR
comp=N,117nm,19.5s,MS4.1
GTA LR LR
comp=E,184nm,17.6s,MS4.1
GTA LR LR
comp=Z,156nm,19.1s,MS4.0
SONM Songino Array 45.91 327 P **P** **19 14 23.7 +1.1**
comp=Z,3.5nm,0.8s,mb4.4,baz=135,slow=8.7,SNR=16
SONM PcP PcP 19 15 59.3 -0.6
comp=Z,1.3nm,0.8s,baz=90,slow=1.4,SNR=2.4
SONM pPcP 19 16 08.4
comp=Z,1.4nm,0.7s,baz=162,slow=3.9,SNR=3.9
CLNS Chul'man 46.13 347 *e*P **P** **19 14 31.1 +6.9**
CLNS pmax pmax
comp=N,14nm,1.0s
CLNS pmax pmax
comp=E,8.0nm,1.0s
CLNS pmax pmax
comp=Z,22nm,1.0s,mb5.0
MA2 Magadan 47.53 6 *e*P **P** **19 14 41.9 +6.7**
MA2 *e* 19 17 07.2
MA2 *e*S **S** **19 21 34.9 +7.2**
MA2 *e*SS SS 19 24 54.6 +5.1
MA2 *e*SSS SSS 19 26 06.6 +2.9
MA2 pmax pmax
comp=Z,10.0nm,1.2s,mb4.7
MA2 MLR MLR
comp=N,510nm,22.0s
SHL Shillong 48.55 293 *e*P **P** **19 14 44.2 +0.6**
ZAK Zakamensk 49.08 328⇑*e*P **P** **19 14 47.3 -0.1**
KLBR Kellerberrin 49.42 207 *e*P **P** **19 14 49.7 -0.5**
comp=N,10nm,0.8s,mb4.9
TLY Talaya 49.69 330 *e*P **P** **19 14 52.0 0.0**
TLY *i* S **S** **19 22 01.6 +3.5**
TLY pmax pmax
comp=Z,270nm,1.5s
TLY MLR MLR
comp=Z,4μm,20.0s
LSA Lhasa 49.73 298 P **P** **19 14 54.0 +1.3**
TOO Toolangi 49.89 176 *e*P **P** **19 14 54.8 +1.1**
comp=Z,13nm,0.7s,mb5.1
TOO *e*pP pP 19 15 04.2 +3.0
BOD Bodaibo 49.90 341 *e*P **P** **19 14 53.3 -0.3**
YAK Yakutsk 50.25 353 *e*P **P** **19 14 55.4 -0.8**
YAK *e* pP 19 15 04.8 +1.2
YAK pmax pmax
comp=Z,19nm,0.8s,mb5.2
YAK pmax pmax
comp=N,10.0nm,1.2s
YAK pmax pmax
comp=E,2.0nm,1.1s
YAK pmax pmax
comp=Z,63nm,0.9s,mb5.7
YAK pmax pmax
comp=N,23nm,1.0s
YAK pmax pmax
comp=E,5.0nm,0.8s
YAK Yakutsk 50.25 353 *e*P **P** **19 14 54.6 -1.5**
comp=E,52nm,0.9s,mb5.6
YAK *e*pP pP 19 15 04.7 +1.1
MUN Mundaring 50.45 208 *e*P **P** **19 14 58.2 +0.1**
comp=E,7.7nm,0.8s,mb4.8
MOY Mondy 51.01 329 *e*P **P** **19 15 03.2 +1.1**
PKI Pulchoki 54.50 295 *e*P **P** **19 15 27.8 -0.6**
comp=E,120nm,1.5s,mb5.7
KKN Kakani 54.63 295 *e*P **P** **19 15 29.1 -0.3**
comp=E,46nm,1.1s,mb5.4
DMN Daman 54.77 295 *e*P **P** **19 15 30.2 -0.2**
comp=E,87nm,1.2s,mb5.7
GKN Gorkha 55.22 295 *e*P **P** **19 15 32.8 -0.9**
comp=E,171nm,1.6s,mb5.8
WMQ Urumqi 55.67 315 P **P** **19 15 37.5 +0.8**
WMQ AP pP 19 15 47.0 +2.8
WMQ XP sP 19 15 51.0 +3.9
WMQ PCP PcP 19 16 36.8 +0.9
WMQ PP PP 19 17 43.3 +0.8
WMQ SCP 19 20 31.8
WMQ PCS 19 20 35.5
WMQ S **S** **19 23 19.3 -0.3**
WMQ XS 19 23 36.0
WMQ SCS ScS 19 25 20.5 -0.2
WMQ SS SS 19 27 04.5 -0.4
WMQ AMB AMB
comp=Z,18nm,0.8s,mb5.2
WMQ AMB AMB
comp=Z,139nm,5.0s
WMQ LR LR
comp=N,985nm,17.5s,MS5.2
WMQ LR LR
comp=E,1μm,17.6s,MS5.2
WMQ LR LR
comp=Z,2μm,18.5s,MS5.2
KOLN Koldanda 56.12 295 *e*P **P** **19 15 38.8 -1.3**
comp=Z,76nm,1.2s,mb5.6
VIS Vishakhapatnam 56.36 283 *e*P **P** **19 15 40.5 -1.5**
BILL Bilibino 57.83 11⇑*e*P **P** **19 15 51.5 -0.2**
BILL pmax pmax
comp=Z,9.0nm,0.9s,mb4.8
BILL MLR MLR
comp=Z,100nm,20.0s,MS3.9
BILL Bilibino 57.83 11 *e*P **P** **19 15 50.4 -1.3**
comp=Z,7.9nm,0.8s,mb4.8
MKAR Makanchi Array 60.14 317 P **P** **19 16 08.4 +0.4**
comp=Z,11nm,0.8s,mb5.0,baz=96,slow=8.3,SNR=69
MKAR pP pP 19 16 17.6 +1.9
comp=Z,20nm,0.8s,baz=82,slow=8.4,SNR=15
MKAR LR LR 19 43 32.3
comp=Z,279nm,18.7s,MS4.4,baz=117,slow=37
MKAR Makanchi Array 60.14 317 P **P** **19 16 08.4 +0.3**
MKAR *PP pP 19 16 17.6 +1.9
MKAR pmax pmax
comp=Z,11nm,0.8s
MKAR pmax pmax
comp=Z,20nm,0.8s
MKAR MLR MLR
comp=Z,279nm,18.7s
URZ Urewera 60.39 148 P **P** **19 16 08.1 -1.8**
comp=Z,17nm,0.8s,mb5.1,baz=108,slow=10,SNR=2.8
URZ LR LR 19 38 21.4
comp=Z,165nm,20.4s,MS4.2,baz=200,slow=32
KALG Kalgarh 60.45 297 *e* **P** **19 16 04.0 -6.5**
ZAL Zalesovo 60.74 325 P **P** **19 16 11.3 -0.7**
comp=Z,3.3nm,0.6s,mb4.6,baz=279,slow=6.0,SNR=15
ZAL LR LR 19 45 21.9
comp=Z,254nm,18.2s,MS4.4,baz=276,slow=39
ZAL Zalesovo 60.74 325 P **P** **19 16 11.4 -0.7**
ZAL pmax pmax
comp=Z,3.0nm,0.6s
ZAL MLR MLR
comp=Z,254nm,18.2s
HYB Hyderabad 60.93 283 *i* P **P** **19 16 14.0 +0.2**
HYB *e*pP pP 19 16 23.0 +1.6
HYB Hyderabad 60.93 283 *e*P **P** **19 16 14.0 +0.2**
HYB *e* pP 19 16 22.5 +1.1
AGRA Agra 61.12 294 *e*P **P** **19 16 13.7 -1.3**
ASOR Ausora 61.29 296 *e*P **P** **19 16 14.7 -1.5**
BHPL Bhopal 61.64 290 *e*P **P** **19 16 15.2 -3.4**
BHPL *e* pP 19 16 21.8 -4.4
comp=Z,38nm,1.3s
SDN Sand Point 61.80 33 *e*P **P** **19 16 18.9 -0.3**
comp=Z,83nm,0.8s,mb5.9
AYAN Aya Nagar 61.85 296 *e*P **P** **19 16 18.4 -1.6**
AYAN *e* 19 16 22.6
comp=Z,19nm,0.9s
SONA Sohna 61.89 295 *e*P **P** **19 16 18.6 -1.7**
SONA *e* 19 16 23.0
comp=Z,33nm,1.1s
NVS Novosibirsk 61.91 326⇓*i*P **P** **19 16 18.6 -1.4**
NVS *i* 19 18 31.0
NVS pmax pmax
comp=Z,58nm,1.9s,mb5.4
NVS pmax pmax
comp=N,25nm,2.0s
NVS pmax pmax
comp=E,29nm,1.9s
RPZ Rata Peaks 62.00 156 P **P** **19 16 19.6 -1.1**
comp=E,37nm,0.9s,mb5.5,baz=98,slow=7.3,SNR=5.1
RPZ LR LR 19 38 18.0
comp=E,325nm,19.0s,MS4.5,baz=343,slow=31
KKR Kurukshetra 62.15 297 *e*P **P** **19 16 21.5 -0.4**
KUDL Kundal 62.41 295 *e*P **P** **19 16 22.6 -1.1**
KUDL *e* 19 16 26.5
comp=Z,51nm,1.7s
RTK Rohtak 62.49 296 *e*P **P** **19 16 23.8 -0.4**
KHET Khetri 63.02 295 *e*P **P** **19 16 27.4 -0.2**
KSH Kashi 63.44 308 *e*P **P** **19 16 31.0 +0.7**
KSH *e*AP pP 19 16 40.8 +2.9
KSH *e*XP sP 19 16 45.0 +4.4
KSH *e*PCP PcP 19 17 05.0 -1.8
KSH *e*PP PP 19 18 52.0 +0.5
KSH *e*SCP 19 21 05.3
KSH *e*PCS 19 21 09.0
KSH *e*S **S** **19 25 00.8 +0.8**
KSH *e*XS 19 25 16.8
KSH *e*PS PS 19 25 23.5 +1.6
KSH *e*SCS ScS 19 26 18.0 -0.1
KSH *e*SS SS 19 29 09.0 +0.1
KSH AMB AMB
comp=Z,140nm,5.6s
KSH LR LR
comp=N,220nm,5.2s
KSH LR LR
comp=E,130nm,4.8s
KURK Kurchatov 63.44 321 *e*P **P** **19 16 29.7 -0.5**
KURK *e*pP pP 19 16 39.2 +1.5
AJM Ajmer 64.07 293 *e*P **P** **19 16 34.1 -0.7**
AJM *e* 19 16 36.6
comp=Z,44nm,1.4s
FRU Bishkek 64.81 312 *e*P **P** **19 16 39.0 -0.2**
FRU pmax pmax
comp=Z,50nm,2.1s,mb5.2
AAK Ala-Archa 64.88 311 *e*P **P** **19 16 39.1 -0.5**
comp=Z,13nm,1.5s,mb4.7
POO Poona 65.29 285 *e*P **P** **19 16 40.5 -2.2**
POO *e* 19 16 43.3
comp=Z,46nm,1.5s
SVW Sparrevohn 66.14 28 *e*P **P** **19 16 48.5 +1.1**
comp=Z,12nm,0.8s,mb5.0
RAR Rarotonga 66.55 120 LR LR 19 43 22.2
comp=Z,244nm,18.7s,MS4.4,baz=280,slow=34
JASL Jaisalmer 67.40 294 *e*P **P** **19 16 55.8 -0.3**
IMA Indian Mountai 68.53 23 *e*P **P** **19 17 02.5 0.0**
comp=Z,18nm,1.3s,mb4.8
BRVK Borovoye 68.94 322 *e*P **P** **19 17 04.5 -0.6**
PMR Palmer 69.28 29 *e*P **P** **19 17 06.5 -0.6**
comp=Z,14nm,0.5s,mb5.1
PMR LR LR
comp=Z,200nm,21.0s,MS4.3
ZRNK Zerenda 69.70 322 *e*P **P** **19 17 09.3 -0.4**
ZRNK *e*pP pP 19 17 19.0 +1.6
SML Sawmill 69.70 28 *e*P **P** **19 17 09.0 -0.7**
MCK McKinley 69.85 26 *e*P **P** **19 17 09.8 -0.7**
MCK *e*pP pP 19 17 17.6 -0.5
COLA College 70.56 25⇑*e*P **P** **19 17 14.6 -0.3**
COLA College 70.56 25 *e*P **P** **19 17 13.9 -1.0**
comp=Z,11nm,0.9s,mb4.8
COLA LR LR
comp=Z,300nm,21.0s,MS4.5
ILAR Eielson Array 70.94 25 P **P** **19 17 16.1 -1.1**
comp=Z,10nm,0.7s,mb4.9,baz=256,slow=5.1,SNR=57
ILAR LR LR 19 46 57.7
comp=Z,205nm,20.1s,MS4.4,baz=273,slow=35
ILAR Eielson Array 70.94 25 P **P** **19 17 16.1 -1.1**
ILAR pmax pmax
comp=Z,10.0nm,0.7s
ILAR MLR MLR
comp=Z,205nm,20.1s
ARU Arti 75.90 325⇓*i*P **P** **19 17 45.6 -0.7**
ARU *i* 19 17 57.5
ARU *e* 19 26 36.1
ARU *e*S S 19 27 25.1 -0.8
ARU pmax pmax
comp=Z,14nm,0.7s,mb5.0
INK Inuvik 76.62 22 P **P** **19 17 50.3 +0.3**
comp=Z,7.2nm,0.9s,mb4.6,baz=263,slow=6.7,SNR=13
INK Inuvik 76.62 22 P **P** **19 17 50.3 +0.2**
INK pmax pmax
comp=Z,7.0nm,0.9s
INK Inuvik 76.62 22 *e*P **P** **19 17 48.5 -1.6**
comp=Z,22nm,1.3s,mb4.9
DLBC Dease Lake 78.63 32 *e*P **P** **19 18 02.0 +0.6**
SPITS Spitsbergen Ar 84.64 350 LR LR 19 57 33.1
comp=Z,10nm,18.6s,baz=237,slow=36
YKW3 Yellowknife Ar 85.28 27 *e*P **P** **19 18 36.1 +0.3**
YKA Yellowknife Ar 85.31 27 P **P** **19 18 36.9 +0.9**
comp=Z,5.2nm,0.9s,mb4.7,baz=291,slow=5.4,SNR=52
YKA pP pP 19 18 45.6 +1.8
comp=Z,2.0nm,0.7s,baz=289,slow=5.3,SNR=8.8
YKA LR LR 19 57 11.3
comp=Z,126nm,18.9s,MS4.3,baz=300,slow=36
YKA Yellowknife Ar 85.31 27 P **P** **19 18 36.9 +0.9**
YKA *PP pP 19 18 45.6 +1.8
YKA pmax pmax
comp=Z,5.0nm,0.9s
YKA pmax pmax
comp=Z,2.0nm,0.7s
YKA MLR MLR
comp=Z,126nm,18.9s
NLW Nelson Butte 86.13 42 *e*P **P** **19 18 41.8 +1.4**
NLW *e*pP pP 19 18 50.2 +1.9
KEV Kevo 86.61 342 *e*P **P** **19 18 42.5 +0.2**
ARCES ARCESS Array B 87.18 342 P **P** **19 18 45.5 +0.4**
comp=Z,7.3nm,0.7s,mb5.0,baz=66,slow=5.8,SNR=17
ARCES pP pP 19 18 54.8 +1.9
comp=Z,2.0nm,0.6s,baz=59,slow=7.1,SNR=3.7
ARCES LR LR 19 58 23.4
comp=Z,283nm,21.7s,MS4.6,baz=64,slow=36
ARCES ARCESS Array B 87.18 342 P **P** **19 18 45.5 +0.5**
ARCES *PP pP 19 18 54.8 +1.9
ARCES pmax pmax
comp=Z,7.0nm,0.7s
ARCES pmax pmax
comp=Z,2.0nm,0.6s
ARCES MLR MLR
comp=Z,283nm,21.7s
ARCES ARCESS Array B 87.18 342 P **P** **19 18 45.5 +0.4**
ARCES pP pP 19 18 54.8 +1.9
ARCES LR LR 19 58 23.4
ZEI Tsey 87.24 313 *e*P **P** **19 18 44.9 -1.1**
ZEI pmax pmax
comp=Z,50nm,6.0s
ZEI MLR MLR
comp=Z,500nm,17.0s,MS5.0
GOF Gofitskoye 87.27 315⇑*i*P **P** **19 18 47.0 +0.9**
MOS Moscow 87.54 327 *e*P **P** **19 18 46.5 -0.6**
MOS *e*S S 19 29 02.9 -22
MOS *e* 19 29 29.9
MOS pmax pmax
comp=Z,98nm,1.2s,mb5.9
KIV Kislovodsk 87.80 314*d i*P **P** **19 18 48.1 -0.5**
KIV pmax pmax
comp=Z,11nm,1.3s,mb4.9
KIV Kislovodsk 87.80 314 *e*P **P** **19 18 48.4 -0.2**
comp=Z,13nm,1.1s,mb5.1
JOF Joensuu 87.98 335 *e*p **P** **19 18 47.9 -1.1**
comp=Z,0.6nm,0.4s,mb4.2
JOF Joensuu 87.98 335 *e*P **P** **19 18 47.9 -1.1**
JOF pmax pmax
comp=Z,1.0nm,0.4s,mb4.4
VRSR Storozhevoye 88.04 322*d i*P **P** **19 18 48.5 -1.1**
VRSR *e*PP pP 19 18 58.1 +0.7
VRSR *e*SP sP 19 19 01.7 +1.7
VRSR pmax pmax
comp=Z,10.0nm,1.0s,mb5.0
VRSR pmax pmax
comp=N,10.0nm,1.1s
VRSR pmax pmax
comp=E,10.0nm,1.0s
NEW Newport 88.16 41 *e*P **P** **19 18 51.3 +1.1**
NEW LR LR
comp=Z,198nm,20.0s,MS4.5
BEKR Beckwourth 88.16 50 *e*P **P** **19 18 50.6 +0.2**
comp=Z,3.5nm,0.8s,mb4.6
BEKR *e*pP pP 19 19 00.2 +1.9
OBN Obninsk 88.31 326*c i*P **P** **19 18 50.6 -0.2**
OBN *e* 19 22 15.8
OBN *e*S S 19 29 16.5 -16
OBN pmax pmax
OBN MLR MLR
comp=Z,41nm,1.4s,mb5.5
OBN MLR MLR
comp=Z,400nm,21.0s,MS4.8
CMB Columbia Colle 88.60 51 *e*P **P** **19 18 53.5 +0.9**
WVOR Wild Horse Val 88.75 47 *e*P **P** **19 18 54.9 +1.6**
comp=Z,7.7nm,1.1s,mb5.0
SOC Sochi 89.97 315 *e*P **P** **19 18 59.7 +0.8**
SOC *e* 19 22 39.6
SOC *e*S S 19 29 56.4 +8.6
SOC pmax pmax
comp=Z,10.0nm,0.9s,mb5.2
SOC pmax pmax
comp=N,10.0nm,0.8s
SOC pmax pmax
comp=E,20nm,1.1s
SOC MLR MLR
comp=Z,290nm,16.0s,MS4.8
SOC MLR MLR
comp=E,400nm,15.0s
NVAR Mina Array Bea 90.08 51 P **P** **19 19 01.8 +2.2**
comp=E,1.7nm,0.7s,mb4.5,baz=264,slow=4.2,SNR=7.9
NVAR LR LR 19 54 06.0
comp=E,68nm,20.8s,MS4.1,baz=130,slow=32
DAG Danmarks Havn 90.19 356⇑*i*P **P** **19 18 58.9 -0.4**
comp=E,6.7nm,0.9s,mb5.0
DAG Danmarks Havn 90.19 356⇑*e*P **P** **19 18 58.9 -0.4**
DAG pmax pmax
comp=Z,7.0nm,0.9s,mb5.0
DAG Danmarks Havn 90.19 356⇑*e*P **P** **19 18 58.9 -0.4**
comp=Z,6.7nm,0.9s,mb5.0
VNDA Vanda 90.56 176 P **P** **19 19 03.3 +2.4**
comp=Z,3.0nm,1.2s,mb4.5,baz=308,slow=10.0,SNR=4.1
VNDA LR LR 20 00 16.1
comp=Z,139nm,21.9s,MS4.3,baz=336,slow=36
VNDA Vanda 90.56 176 P **P** **19 19 03.3 +2.4**
VNDA pmax pmax
comp=Z,3.0nm,1.3s
VNDA MLR MLR
comp=Z,139nm,21.9s
FINES FINESS Array B 90.84 334 P **P** **19 19 01.8 -0.7**
comp=Z,11nm,0.7s,mb5.3,baz=69,slow=4.9,SNR=50
FINES pP pP 19 19 11.1 +0.8
comp=Z,9.2nm,0.7s,baz=63,slow=4.3,SNR=13
FINES LR LR 20 03 12.0
comp=Z,162nm,18.2s,MS4.5,baz=238,slow=38
FINES FINESS Array B 90.84 334 P **P** **19 19 01.8 -0.7**
FINES *PP pP 19 19 11.1 +0.8
FINES pmax pmax
comp=Z,11nm,0.7s
FINES pmax pmax
comp=Z,9.0nm,0.7s
FINES MLR MLR
comp=Z,163nm,18.3s
FINES FINESS Array B 90.84 334 *e*P **P** **19 19 02.0 -0.5**
HLID Hailey 91.38 45 *e*P **P** **19 19 07.0 +1.6**
HLID LR LR
comp=Z,111nm,19.0s,MS4.3
YMR Madison River 93.35 43 P **P** **19 19 15.6 +1.1**
FFC Flin Flon 94.44 31 *e*P **P** **19 19 19.5 +0.3**
comp=Z,5.1nm,1.1s,mb4.9
FFC *e*pP pP 19 19 27.9 +0.8
PDAR Pinedale Array 94.99 44 LR LR 19 59 08.4
comp=Z,65nm,19.4s,MS4.1,baz=155,slow=34
SUMG Summit 95.17 0 *e*P **P** **19 19 21.2 -1.0**
BRTR Keskin Array B 95.53 313 P **P** **19 19 24.2 -0.4**
comp=Z,0.8nm,0.9s,mb4.2,baz=63,slow=2.8,SNR=5.3
NB2 NORSAR Subarra 96.96 338 P **P** **19 19 28.4 -2.1**
comp=Z,2.8nm,1.0s,mb4.7,baz=50,slow=5.0
NOA NORSAR Array B 96.96 338 P **P** **19 19 29.7 -0.8**
comp=Z,2.9nm,1.0s,mb4.7,baz=50,slow=4.8,SNR=6.1
NOA LR LR 20 07 22.4
comp=Z,104nm,20.4s,MS4.3,baz=25,slow=38
NOA NORSAR Array B 96.96 338 P **P** **19 19 29.7 -0.8**
NOA pmax pmax
comp=Z,3.0nm,1.0s
NOA MLR MLR
comp=Z,105nm,20.4s
ULM Lac du Bonnet 99.94 33 LR LR 20 02 05.0
comp=Z,109nm,19.5s,MS4.4,baz=343,slow=34
GERES GERESS Array B 103.64 328 Pdiff Pdif 19 20 00.5 -0.4
comp=Z,0.6nm,0.7s,baz=90,slow=1.3,SNR=5.3
GERES GERESS Array B 103.64 328 P Pdif 19 20 00.5 -0.3
GERES pmax pmax
comp=Z,1.0nm,0.7s
SYO Syowa Base 105.86 201⇓pPdiff Pdif 19 20 20.2 +10
VNA2 Neumayer--Watz 118.53 191⇓*i* Pdif 19 21 07.1 +1.2
VNA2 Neumayer--Watz 118.53 191 PKPdf 19 24 48.1 -2.0
VNA2 Neumayer--Watz 118.53 191 PKPdf 19 24 49.0 -1.1
VNA3 Neumayer Olymp 118.68 190 Pdif 19 21 10.3 +3.8
VNA3 Neumayer Olymp 118.68 190⇓*i* PKPdf 19 25 00.9 +11
VNA1 Neumayer--Stat 118.92 191⇑*i* Pdif 19 21 09.5 +1.9
LPAZ La Paz 150.93 101 PKP PKPdf 19 25 50.1 -0.3
comp=Z,5.5nm,0.9s,baz=319,slow=5.0,SNR=5.6
LPAZ PKPbc PKPdf 19 25 55.1 +4.7
comp=Z,13nm,0.8s,baz=277,slow=2.2,SNR=19
LPAZ pPKPbc 19 26 04.3
comp=Z,10nm,0.8s,baz=310,slow=2.7,SNR=7.2
LPAZ La Paz 150.93 101 PKIKP PKPdf 19 25 50.1 -0.3
LPAZ 19 25 55.1
LPAZ 19 26 04.4
LPAZ pmax pmax
comp=Z,6.0nm,0.9s
LPAZ pmax pmax
comp=Z,13nm,0.8s
LPAZ pmax pmax
comp=Z,10.0nm,0.8s
LPAZ La Paz 150.93 101 *e*PKPdf PKPdf 19 25 49.1 -1.3
LPAZ *e*PKPbc PKPdf 19 25 54.9 +4.4

NEIC ***28*** *19:12:48.0±0.4, 12.44N×141.76E, Error ellipse: s-maj=17.8km s-min=8.4km az=83.0*
IDC ***28*** *19:12:48.0±0.6, 12.47N×141.77E, h27km±4km, mb3.7/10, mb1 3.9/10, mb1mx3.8/20, Error ellipse: s-maj=23.8km s-min=14.5km az=87.0*
ISC 28 19:12:46.0±0.7, 12.42N±0.09×141.7E±0.2, h28km, h28km±.5km:pP-P, n17, σ0s61/16, mb3.8/10, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
WRAB	**Tennant Creek**	**32.96**	**193**	P	**P**	**P**	**19 19 20.5**	**-0.3**
WRAB				*e*	pP	pP	19 19 28.9	-0.2
WRA	**Warramunga Arr**	**32.97**	**193**	P	**P**	**P**	**19 19 20.2**	**-0.7**
	1.3nm,0.6s,mb4.0,baz=13,slow=9.8,SNR=6.9							
WRA				pP	pP	pP	19 19 28.4	-0.8
	1.6nm,0.5s,baz=12,slow=9.8,SNR=6.5							
ASAR	**Alice Springs**	**36.67**	**192**	P	**P**	**P**	**19 19 53.1**	**+0.6**
	0.4nm,0.8s,mb3.3,baz=17,slow=10,SNR=3.5							
ASAR				pP	pP	pP	19 20 02.1	+1.2
	0.4nm,0.4s,baz=21,slow=11,SNR=3.2							
CMAR	**Chiang Mai Arr**	**41.61**	**284**	P	**P**	**P**	**19 20 34.5**	**+0.9**
	1.5nm,0.8s,mb3.7,baz=86,slow=6.6,SNR=12							
CMAR				pP	pP	pP	19 20 43.0	+0.9
	1.6nm,1.0s,baz=86,slow=6.3,SNR=4.9							
STKA	**Stephens Creek**	**44.04**	**180**	P	**P**	**P**	**19 20 53.5**	**+0.1**
	1.3nm,0.7s,mb3.8,baz=348,slow=9.3,SNR=3.7							
STKA				pP	pP	pP	19 21 02.3	+0.5
	1.4nm,0.6s,baz=331,slow=10,SNR=1.7							
STKA	**Stephens Creek**	**44.04**	**180**	P	**P**	**P**	**19 20 53.5**	**+0.1**
STKA				pP	pP	pP	19 21 02.3	+0.5
ULN	**Ulaanbaatar**	**45.66**	**328**	P	**P**	**P**	**19 21 06.4**	**+0.3**
MKAR	**Makanchi Array**	**60.23**	**317**	P	**P**	**P**	**19 22 53.9**	**-0.2**
	0.7nm,0.7s,mb3.8,baz=94,slow=8.4,SNR=5.6							
MKAR				pP	pP	pP	19 23 02.1	-0.8
	1.5nm,1.0s,baz=79,slow=9.1,SNR=4.8							
ZAL	**Zalesovo**	**60.83**	**325**	P	**P**	**P**	**19 22 57.8**	**-0.3**
	0.5nm,0.5s,mb3.9,baz=95,slow=2.8,SNR=3.8							
KURK	**Kurchatov**	**63.52**	**321**	*e*P		**P**	**19 23 15.7**	**-0.5**
BRVK	**Borovoye**	**69.03**	**322**	*e*P		**P**	**19 23 50.9**	**-0.2**
ZRNK	**Zerenda**	**69.78**	**322**	*e*P		**P**	**19 23 55.5**	**-0.3**
ILAR	**Eielson Array**	**70.93**	**25**	P		**P**	**19 24 01.8**	**-0.7**
	0.7nm,0.6s,mb3.7,baz=237,slow=7.3,SNR=6.8							
ILAR				pP	pP	pP	19 24 10.3	-1.0
	0.6nm,0.6s,baz=253,slow=5.6,SNR=4.0							
YKA	**Yellowknife Ar**	**85.29**	**27**	P		**P**	**19 25 22.7**	**+1.5**
	0.3nm,0.6s,mb3.6,baz=291,slow=5.0,SNR=5.4							
ARCES	**ARCESS Array B**	**87.24**	**342**	P		**P**	**19 25 31.2**	**+0.5**
	1.2nm,0.7s,mb4.2,baz=37,slow=6.1,SNR=3.8							
FINES	**FINESS Array B**	**90.91**	**334**	P		**P**	**19 25 47.5**	**-0.8**
	0.9nm,0.6s,mb4.3,baz=104,slow=7.9,SNR=7.9							
FINES				pP	pP	pP	19 25 56.5	-0.7
	1.2nm,0.8s,baz=90,slow=5.7,SNR=2.6							
LPAZ	**La Paz**	**150.83**	**101**	PKPbc		PKPdf	19 32 40.1	+4.1
	0.4nm,0.5s,baz=287,slow=4.0,SNR=3.9							

LPAZ pPKPbc 19 32 49.4
1.6nm,0.7s,baz=331,slow=2.4,SNR=5.0

LDG ***28*** *19:15:44.8±1.1,16.68S×170.19E,h10km,Error ellipse: s-maj=146.1km s-min=25.4km az=123.0*
IDC ***28*** *19:15:48.4±3.1,15.32S×167.72E,mb4.0/4,mb1 4.1/4, mb1mx3.8/15,Error ellipse: s-maj=114.0km s-min=38.1km az=140.0*
NEIC ***28*** *19:16:04.4±0.5,15.51S×167.45E,h120km,Error ellipse: s-maj=24.0km s-min=11.5km az=100.0*
ISC 28 19:16:02.8±3.0,15.5S±0.2×167.2E±0.3,h106km±42km, n25,σ0°77/12,mb3.8/4,1C,Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
BKM	**Butte a Klehm**	**2.33**	**156**	⇑*i*P		**P**		**19 16 39.8**	**-0.8**
BKM				S		**S**		**19 17 08.8**	**-0.1**
DZM	**Mont Dzumac**	**6.55**	**186**	*e*P		**P**		**19 17 39.0**	**+0.9**
DZM				*e*S		**S**		**19 18 51.3**	**-0.6**
DZM	**Mont Dzumac**	**6.55**	**186**	*e*P		**P**		**19 17 39.0**	**+0.9**
DZM				*e*S		**S**		**19 18 51.3**	**-0.6**
NOUC	**Port Laguerre**	**6.60**	**188**	*e*P		**P**		**19 17 40.1**	**+1.4**
NOUC	**Port Laguerre**	**6.60**	**188**	*e*P		**P**		**19 17 40.1**	**+1.4**
WRA	**Warramunga Arr** 0.3nm,0.3s,mb3.4,baz=84,slow=8.0,SNR=4.2	**31.61**	**257**	P		**P**		**19 22 17.1**	**-0.9**
ASAR	**Alice Springs** 1.1nm,0.4s,mb3.9,baz=73,slow=9.4,SNR=15	**32.37**	**250**	P		**P**		**19 22 24.4**	**-0.2**
SONM	**Songino Array** 1.9nm,1.1s,mb3.9,baz=153,slow=6.4,SNR=4.3	**83.12**	**324**	P		**P**		**19 28 17.8**	**-0.4**
MKAR	**Makanchi Array** 0.2nm,0.4s,mb4.0,baz=90,slow=7.2,SNR=3.7	**97.76**	**316**	P		**P**		**19 29 28.0**	**+0.8**
ARCES	**ARCESS Array B** 3.6nm,0.9s,baz=63,slow=2.7,SNR=12	**121.01**	**345**	PKP		PKPdf		19 34 40.9	-1.7
MEZF	**Maizieres J'vi**	**144.01**	**340**	*e*PKP1		PKPbc		19 35 24.2	-0.9
CABF	**La Chapelle** 12nm,0.8s	**145.25**	**337**	*e*PKP1		PKPbc		19 35 27.8	-0.7
FLN	**La Foliniere**	**145.36**	**346**	*e*PKP1		PKPbc		19 35 27.0	-1.7
LDF	**La Druitiere**	**145.43**	**345**	*e*PKP1		PKPbc		19 35 27.2	-1.7
LOR	**Lormes** 2.3nm,0.5s	**145.47**	**340**	*e*PKP1		PKPbc		19 35 28.4	-0.7
SSF	**Saint Saulge** 5.1nm,0.5s	**145.77**	**340**	*e*PKP1		PKPbc		19 35 29.0	-0.8
GRR	**Gorron** 8.0nm,0.6s	**145.80**	**346**	*e*PKP1		PKPbc		19 35 28.9	-0.9
LPL	**La Plagne** 3.5nm,0.6s	**145.91**	**335**	*e*PKP1		PKPbc		19 35 30.5	+0.3
LPG	**La Plagne** 3.6nm,0.6s	**145.91**	**335**	*e*PKP1		PKPbc		19 35 30.6	+0.4
AVF	**Avril sur Loir** 4.1nm,0.5s	**146.06**	**340**	*e*PKP1		PKPbc		19 35 30.4	-0.1
SGMF	**Saint Gilles**	**146.30**	**348**	*e*PKP1		PKPbc		19 35 29.8	-1.2
BGF	**Bois d'Agland** 11nm,0.7s	**146.43**	**340**	*e*PKP1		PKPbc		19 35 30.7	-0.7
ORIF	**Oris-en-Rattie** 3.6nm,0.6s	**146.74**	**336**	*e*PKP1		PKPbc		19 35 32.7	+0.5
TCF	**Toulx Ste Croi** 2.9nm,0.5s	**146.87**	**341**	*e*PKP1		PKPbc		19 35 32.0	-0.4
MFF	**Saint Martin d** 4.6nm,0.3s	**147.28**	**344**	*e*PKP1		PKPdf		19 35 33.0	+1.6

NEIC ***28*** *19:29:29.1,19.45N×69.05W,h26km,MD3.5(RSPR), After RSPR.*
RSPR 28 19:29:29.1,19.45N×69.05W,h26km±31km,M3.5,5C-3D, Dominican Republic region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
IDE	**Isla Desecheo**	**1.83**	**125**	⇓*e*P		Pn		19 29 54.9	-4.6
IDE				S		Sn		19 30 16.1	-5.8
LSP	**Las Mesas**	**2.26**	**124**	⇓*e*P		Pn		19 30 02.4	-3.1
LSP				S		Sn		19 30 27.9	-5.0
MGP	**Maguayo**	**2.35**	**127**	⇑*e*P		Pn		19 30 03.5	-3.4
MGP				S		Sn		19 30 29.1	-6.2
AOPR	**Arecibo Observ**	**2.44**	**116**	⇓*e*P		Pn		19 30 05.1	-3.2
PORP	**Portuguez**	**2.68**	**121**	⇑*e*P		Pn		19 30 08.6	-3.0
OBIP	**Obispado Ponce**	**2.71**	**121**	⇑*e*P		Pn		19 30 09.1	-3.0
OBIP	**Obispado Ponce**	**2.71**	**121**	S		Sn		19 30 39.0	-5.4
CELP	**Cerrillos**	**2.72**	**120**	⇓*e*P		Pn		19 30 08.9	-3.3
CELP				S		Sn		19 30 39.2	-5.3
HUMP	**Col San Antoni**	**3.30**	**113**	⇑*e*P		Pn		19 30 16.4	-4.0
HUMP				S		Sn		19 30 53.0	-6.4

BJI ***28*** *19:47:01.5,36.40N×51.40E,h10km,mB5.0,mb4.7,Ms4.6, Msz4.3*
NEIC ***28*** *19:47:02.8±0.3,36.45N×51.41E,h10km,mb4.5/18,Error ellipse: s-maj=6.2km s-min=4.9km az=177.0*
ZUR_RM ***28*** *19:47:02,36.45N×51.41E,h30km,Mw4.7/10,Moment Tensor Solution. s10 Moment tensor: Scale 10¹⁶Nm; Mrr0.64; Mθθ-0.88; Mφφ0.23; Mrθ-0.29; Mθφ0.38; Mrφ0.66; Best double couple: M₀1.13×10¹⁶ NP1:φ₁318°,δ68°,λ124°. NP2:φ₂76°,δ40°,λ35°. Principal axes: T 1.1296, Plg54°, Azm270°; N .0019, Plg31°, Azm124°; P -1.1315, Plg17°, Azm23°;*
MOS ***28*** *19:47:03.1±1.1,36.46N×51.34E,h27km,mb4.6/15 Error ellipse: s-maj=14.8km s-min=7.1km az=108.7*
IDC ***28*** *19:47:04.2±2.7,36.38N×51.35E,h20km±22km,mb4.2/18, mb1 4.3/19,mb1mx4.2/25,ML3.0/1,MS3.9/11,Ms1 3.9/11, ms1mx3.8/20,Error ellipse: s-maj=22.3km s-min=13.9km az=175.0*
THR ***28*** *19:47:05.6±1.5,36.37N×51.45E,h2km±19km,ML4.8*
NNC ***28*** *19:47:11.2±1.8,37.26N×51.98E,Error ellipse: s-maj=31.8km s-min=16.3km az=101.0*
SNSN ***28*** *19:47:48.7,33.44N×49.34E,h57km*
ISC 28 19:47:02.7±0.7,36.49N±0.03×51.34E±0.03,h21km±6km, h18km±3.1km:pP-P,n160,σ1°12/171,mb4.5/59,MS4.1/20, 5C-10D,Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
THR	**Tehran** 404nm,0.3s,baz=1.9,slow=12,SNR=5742	**0.60**	**197**	Pg		**Pb**		**19 47 14.4**	**-0.1**
THR				Lg				19 47 22.6	
THR	**Tehran** 2µm,0.3s,baz=209,slow=3.3,SNR=213	**0.60**	**197**	P		**Pb**		**19 47 14.4**	**-0.1**
THR								19 47 22.6	
THR	comp=Z,404nm,0.3s				pmax	pmax			
THR	comp=Z,2.0nm,0.3s				smax				
THKV	**Tehran--Karaj**	**0.68**	**213**	*e*PG		**Pb**		**19 47 16.1**	**+0.3**
THKV				*e*SG		**Sb**		**19 47 25.8**	**+1.0**
THKV	comp=N,47µm,0.6s				AMP			19 47 27.8	
DAMV	**Damavand**	**1.00**	**149**	*e*PG		**Pb**		**19 47 21.7**	**+0.6**
DAMV				*e*SG		**Sb**		**19 47 32.0**	**-1.8**
SNGE	**Sanandaj**	**3.53**	**248**	*e*PN		**Pn**		**19 48 00.8**	**+3.0**
MAKU	**Maku**	**5.99**	**301**	*e*PN		**Pn**		**19 48 35.7**	**+3.1**
MAK	**Makhachkala**	**7.11**	**337**	*e*P		**Pn**		**19 48 48.2**	**-0.1**
MAK				*i* S		**Sn**		**19 50 07.0**	**-2.3**
MAK	comp=Z,130nm,1.3s				pmax	pmax			
MAK	comp=E,1µm,1.5s				smax				
MAK	comp=N,330nm,1.0s				smax				
MAK	comp=E,1µm,1.0s				smax				
ZEI	**Tsey**	**8.50**	**320**	*e*P		**P**		**19 49 07.3**	**-0.4**
ZEI	comp=Z,300nm,15.0s				MLR	MLR			
KIV	**Kislovodsk**	**9.97**	**321**	*c i*P		**P**		**19 49 28.4**	**+0.5**
KIV	**Kislovodsk** comp=Z,25nm,0.8s	**9.97**	**321**	*e*P		**P**		**19 49 27.9**	**0.0**
ZHSF	**Zahedan**	**10.47**	**128**	*e*PN		**P**		**19 49 33.3**	**-1.6**
GOF	**Gofitskoye**	**10.62**	**326**	⇓*i*P		**P**		**19 49 34.5**	**-2.4**
GOF				*i* S		**S**		**19 51 26.5**	**-10**
GOF	comp=Z,30nm,1.2s				pmax	pmax			
GOF	comp=N,140nm,1.4s				smax				
HASS	**Wahat al Ahsa'**	**11.35**	**188**	P		**P**		**19 49 45.7**	**-1.2**
SOC	**Sochi**	**11.38**	**312**	*e*P		**P**		**19 49 46.1**	**-1.1**
SOC				*e*S		**S**		**19 52 01.9**	**+7.2**
SOC	comp=Z,20nm,0.9s				pmax	pmax			
SOC	comp=N,30nm,1.0s				pmax	pmax			
SOC	comp=E,40nm,0.9s				MLR	MLR			
SOC	comp=Z,220nm,12.0s				MLR	MLR			
SOC	comp=N,130nm,10.0s				MLR	MLR			
SOC	comp=E,210nm,11.0s				MLR	MLR			
HILS	**Ha'il**	**12.16**	**224**	P		**P**		**19 49 52.7**	**-5.2**
ASF	**Jabal al Asfar** comp=E,1µm,19.7s,baz=287,slow=41	**12.69**	**254**	LR		LR		19 55 45.1	
MZLS	**Mizel**	**13.50**	**205**	P		**P**		**19 50 11.7**	**-3.9**
AB31	**Akbulak array** comp=E,4.3nm,0.6s	**14.22**	**24**	⇓P		**P**		**19 50 19.7**	**-5.2**
AB31	comp=E,8.1nm,0.8s			⇑S		**S**		**19 52 51.1**	**-12**
BRTR	**Keskin Array B** comp=E,0.1nm,0.3s,baz=63,slow=2.8,SNR=10	**14.31**	**288**	Pn		**P**		**19 50 29.1**	**+2.9**
BRTR	comp=E,510nm,19.1s,baz=130,slow=40				LR	LR		19 56 42.5	
AFFS	**'Afif**	**14.44**	**212**	P		**P**		**19 50 23.1**	**-4.9**
KBRS	**Khaybar**	**14.84**	**227**	P		**P**		**19 50 28.6**	**-4.7**
JMQS	**Jabal Moqyreh**	**15.05**	**244**	P		**P**		**19 50 43.4**	**+7.4**
ALWS	**Ilw as Safayha**	**15.42**	**247**	P		**P**		**19 50 48.1**	**+7.3**
JMOS	**Jabal al Moall**	**15.46**	**246**	P		**P**		**19 50 48.6**	**+7.3**
BDAS	**Al Bad'**	**15.87**	**244**	P		**P**		**19 50 52.6**	**+5.9**
AYUS	**'Aynunah**	**15.89**	**243**	P		**P**		**19 50 53.2**	**+6.3**
KK31	**Karatay Array** comp=E,18nm,0.8s,baz=244,slow=14,SNR=84	**16.13**	**60**	P		**P**		**19 50 46.0**	**-3.8**
KK31	comp=E,2.8nm,0.7s,baz=6.2,slow=54,SNR=2.7			⇑S		**S**		**19 53 40.9**	**-7.1**
YNBS	**Yanbu' al Bahr**	**16.69**	**227**	P		**P**		**19 50 59.9**	**+2.9**
VRSR	**Storozhevoye**	**17.10**	**333**	*d i*P		**P**		**19 50 58.2**	**-3.8**
VRSR				*e*S		**S**		**19 54 07.2**	**-2.9**
VRSR	comp=N,90nm,0.9s				pmax	pmax			
VRSR	comp=E,70nm,0.9s				pmax	pmax			
VRSR	comp=Z,60nm,0.9s				smax				
VRSR	comp=N,50nm,0.9s				smax				
VRSR	comp=Z,20nm,1.2s				smax				
VRSR	comp=E,20nm,1.1s				MLR	MLR			
VRSR	comp=Z,100nm,8.0s				MLR	MLR			
VRSR	comp=N,70nm,13.0s				MLR	MLR			
VRSR	comp=E,80nm,8.0s				MLR	MLR			
VOR	**Voronezh**	**17.52**	**334**	P		**P**		**19 51 07.0**	**-0.2**
VOR	comp=N,80nm,1.4s				pmax	pmax			
VOR	comp=E,50nm,1.4s				pmax	pmax			
VOR	comp=Z,70nm,1.4s				pmax	pmax			
AML	**Almayashu** SNR=8.0	**18.17**	**65**	P		**P**		**19 51 14.5**	**-1.0**
TATS	**Tathlith**	**18.24**	**204**	P		**P**		**19 51 17.0**	**+0.5**
EKS2	**Erkin-Say** SNR=24	**18.34**	**63**	P		**P**		**19 51 16.8**	**-0.7**
BLJS	**Baljurashi**	**18.62**	**210**	P		**P**		**19 51 21.0**	**-0.1**
LTHS	**Al Lith**	**18.77**	**214**	P		**P**		**19 51 20.1**	**-2.9**
UCH	**Uchtor** SNR=15	**18.79**	**65**	P		**P**		**19 51 24.9**	**+1.9**
AAK	**Ala-Archa** SNR=12	**18.85**	**64**	P		**P**		**19 51 23.6**	**-0.1**
AAK	**Ala-Archa** comp=Z,23nm,1.1s	**18.85**	**64**	*e*P		**P**		**19 51 23.0**	**-0.7**
FRU	**Bishkek**	**18.98**	**63**	*e*P		**P**		**19 51 30.0**	**+4.7**
FRU	comp=Z,70nm,1.6s				pmax	pmax			
FRU	comp=E,800nm,15.0s				MLR	MLR			
FRU	comp=Z,1µm,15.0s				MLR	MLR			
USP	**Ospenovka** SNR=17	**18.99**	**62**	P		**P**		**19 51 26.5**	**+1.1**
CHMS	**Chmysh** SNR=19	**19.11**	**63**	P		**P**		**19 51 27.6**	**+0.8**
KBK	**Karagaybulak** SNR=12	**19.18**	**64**	P		**P**		**19 51 27.8**	**+0.1**
KZA	**Kyzart** SNR=11	**19.30**	**66**	P		**P**		**19 51 29.5**	**+0.4**
KSH	**Kashi**	**19.63**	**74**	*e*P		**P**		**19 51 33.5**	**+0.7**
KSH				*e*AP				19 51 36.5	
KSH				*e*XP				19 51 40.3	
KSH				*e*S		**S**		**19 55 07.8**	**+0.4**
KSH				*e*XS				19 55 13.0	
KSH				*e*SS		SS		19 55 35.3	+0.6
KSH				*e*PCP		PcP		19 55 52.5	+0.9
KSH				*e*SCP				19 59 26.5	
KSH				*e*PCS				19 59 28.8	
KSH				*e*SCS		ScS		20 03 06.8	+0.8
KSH	comp=Z,310nm,2.2s				AMB	AMB			
KSH	comp=N,350nm,4.6s				LR	LR			
KSH	comp=E,320nm,5.8s				LR	LR			
TKM2	**Tokmak 2** SNR=39	**19.70**	**64**	P		**P**		**19 51 33.9**	**+0.3**
DJNS	**Zahran al Janu**	**19.94**	**202**	P		**P**		**19 51 37.5**	**+1.1**
ULHL	**Ulahol** SNR=10	**20.06**	**66**	P		**P**		**19 51 38.8**	**+1.4**
ARU	**Arti**	**20.54**	**11**	⇓*i*P		**P**		**19 51 40.4**	**-1.9**
ARU				*i*				19 51 56.8	
ARU				*e*S		**S**		**19 55 29.4**	**+3.3**
ARU				*e*SS		SS		19 55 50.4	-6.3
ARU	comp=Z,72nm,0.8s				pmax	pmax			
ARU	**Arti** comp=Z,76nm,0.8s	**20.54**	**11**	*e*P		**P**		**19 51 40.4**	**-1.9**
ZRNK	**Zerenda** comp=Z,20nm,0.9s	**20.61**	**31**	⇓P		**P**		**19 51 42.2**	**-0.9**
ZRNK	**Zerenda**	**20.61**	**31**	*e*P		**P**		**19 51 41.9**	**-1.2**
MLR	**Muntele Rosu** comp=Z,4.7nm,0.8s,mb3.9,baz=153,slow=5.8,SNR=8.8	**21.11**	**303**	P		**P**		**19 51 51.1**	**+2.9**
MLR	**Muntele Rosu** comp=Z,5.0nm,0.8s	**21.11**	**303**	P		**P**		**19 51 51.1**	**+2.9**
MLR					pmax	pmax			
OBN	**Obninsk**	**21.20**	**336**	*d i*P		**P**		**19 51 48.2**	**-0.9**
OBN				*e*S		**S**		**19 55 40.7**	**+1.7**
OBN	comp=Z,18nm,0.9s,mb4.4				pmax	pmax			
OBN	comp=Z,400nm,21.0s,MS3.8				MLR	MLR			
OBN	**Obninsk** comp=Z,9.9nm,0.6s,mb4.3	**21.20**	**336**	*e*P		**P**		**19 51 46.9**	**-2.3**
BRVK	**Borovoye** comp=Z,30nm,1.2s,mb4.5	**21.23**	**33**	⇓P		**P**		**19 51 49.1**	**-0.3**
BRVK	**Borovoye**	**21.23**	**33**	*e*P		**P**		**19 51 47.9**	**-1.5**
BVA0	**Borovoye Array** comp=Z,5.9nm,0.8s,mb3.9,baz=220,slow=10.0,SNR=194	**21.25**	**33**	P		**P**		**19 51 49.4**	**-0.3**
BVAR	**Borovoye Array** comp=Z,24nm,0.7s,mb4.6,baz=220,slow=9.5,SNR=222	**21.25**	**33**	P		**P**		**19 51 49.3**	**-0.4**
VOSK	**Vostochnaya** comp=Z,36nm,0.8s,mb4.8	**21.31**	**34**	⇑P		**P**		**19 51 49.4**	**-0.9**
MOS	**Moscow**	**21.40**	**338**	*e*P		**P**		**19 51 51.4**	**+0.3**
MOS				*e*				19 52 12.9	
MOS				*e*PPP		PPP		19 52 22.7	-1.9
MOS				*e*S		**S**		**19 55 41.6**	**-1.1**
MOS				*e*SS		SS		19 56 15.3	-2.5
MOS				*e*SSS		SSS		19 56 29.8	-2.5
MOS	comp=Z,139nm,0.8s,mb5.3				pmax	pmax			
MOS	comp=Z,600nm,17.4s,MS4.0				MLR	MLR			
IDI	**Anoyia** comp=Z,15nm,0.7s,mb4.4,baz=53,slow=9.8,SNR=16	**21.45**	**275**	P		**P**		**19 51 52.1**	**+0.3**
KURK	**Kurchatov** comp=Z,41nm,1.0s,mb4.8,baz=249,slow=8.1,SNR=120	**24.16**	**45**	⇓P		**P**		**19 52 20.6**	**+2.2**
KURK	**Kurchatov**	**24.16**	**45**	*e*P		**P**		**19 52 20.1**	**+1.7**
KWP	**Kalwaria** comp=Z,24nm,1.3s,mb4.6	**24.53**	**311**	*e*P		**P**		**19 52 23.6**	**+1.7**
MK31	**Makanchi Array** comp=Z,21nm,0.9s,mb4.7,baz=247,slow=7.0,SNR=102	**25.17**	**56**	P		**P**		**19 52 29.3**	**+1.3**
MKAR	**Makanchi Array** comp=Z,19nm,0.9s,mb4.6,baz=251,slow=7.6,SNR=86	**25.17**	**56**	P		**P**		**19 52 29.3**	**+1.3**
MKAR					LR	LR		20 04 09.5	
MKAR	**Makanchi Array** comp=Z,428nm,18.4s,MS4.0,baz=275,slow=41	**25.17**	**56**	P		**P**		**19 52 29.3**	**+1.3**
MKAR	comp=Z,19nm,0.9s				pmax	pmax			
MKAR	comp=Z,428nm,18.4s				MLR	MLR			
PSZ	**Piszkesteto** comp=Z,9.4nm,1.0s,mb4.3	**25.77**	**306**	*e*P		**P**		**19 52 34.2**	**+0.6**
NIE	**Niedzica**	**25.93**	**310**	*e*P		**P**		**19 52 39.0**	**+3.9**
SUW	**Suwalki**	**26.20**	**321**	*e*P		**P**		**19 52 38.6**	**+1.1**
SUW	**Suwalki**	**26.20**	**321**	*e*P		**P**		**19 52 38.2**	**+0.7**
OJC	**Ojcow**	**26.50**	**311**	*e*P		**P**		**19 52 44.6**	**+4.3**
NVS	**Novosibirsk**	**28.51**	**40**	⇑*i*P		**P**		**19 52 56.7**	**-1.8**
NVS	comp=Z,20nm,1.7s,mb4.6				pmax	pmax			
NVS	comp=N,22nm,1.6s				pmax	pmax			
NVS	comp=E,7.0nm,1.5s				pmax	pmax			
WMQ	**Urumqi**	**28.56**	**64**	*e*P		**P**		**19 53 01.0**	**+1.9**
WMQ					AP	pP		19 53 04.3	-0.9
WMQ					XP	sP		19 53 06.3	-1.6
WMQ					PP	PP		19 53 52.8	+1.4
WMQ					PCP	PcP		19 56 12.8	+2.2
WMQ					S	**S**		**19 57 46.8**	**+2.1**
WMQ					XS			19 57 54.0	
WMQ					SS	SS		19 59 12.0	+1.2
WMQ					SCP			19 59 52.3	
WMQ					SCS	ScS		20 03 44.0	+2.8
WMQ	comp=Z,18nm,0.6s,mb5.0				AMB	AMB			
WMQ	comp=Z,163nm,4.4s				AMB	AMB			
WMQ	comp=N,541nm,14.5s,MS4.4				LR	LR			
WMQ	comp=E,521nm,14.0s,MS4.4				LR	LR			
WMQ	comp=Z,852nm,15.1s,MS4.5				LR	LR			
KOLN	**Koldanda** comp=Z,45nm,1.3s,mb5.0	**28.56**	**98**	*e*P		**P**		**19 52 59.0**	**-0.3**
ZAL	**Zalesovo** comp=Z,3.1nm,0.8s,mb4.1,baz=135,slow=9.7,SNR=8.0	**28.95**	**42**	P		**P**		**19 53 02.8**	**+0.2**
ZAL	comp=Z,140nm,21.9s,MS3.5,baz=146,slow=38				LR	LR		20 05 32.9	
ZAL	**Zalesovo**	**28.95**	**42**	P		**P**		**19 53 02.8**	**+0.3**
ZAL	comp=Z,3.0nm,0.8s				pmax	pmax			
ZAL	comp=Z,140nm,21.9s				MLR	MLR			
GKN	**Gorkha** comp=Z,59nm,1.3s,mb5.2	**29.29**	**97**	*e*P		**P**		**19 53 05.8**	**-0.1**
FINES	**FINESS Array B** comp=Z,1.9nm,0.9s,mb3.8,baz=113,slow=14,SNR=5.7	**29.61**	**335**	P		**P**		**19 53 08.3**	**0.0**
FINES	**FINESS Array B**	**29.61**	**335**	P		**P**		**19 53 08.4**	**0.0**
FINES	comp=Z,2.0nm,0.9s				pmax	pmax			
DMN	**Daman** comp=Z,48nm,1.2s,mb5.1	**29.84**	**98**	*e*P		**P**		**19 53 10.6**	**-0.2**
KKN	**Kakani** comp=Z,42nm,1.3s,mb5.0	**29.90**	**97**	*e*P		**P**		**19 53 11.2**	**-0.1**
GERES	**GERESS Array B** comp=Z,1.4nm,0.8s,mb3.8,baz=106,slow=9.7,SNR=14	**30.00**	**306**	P		**P**		**19 53 12.8**	**+0.8**
GERES	comp=Z,0.5nm,0.6s,baz=135,slow=1.9,SNR=3.5				PcP	PcP		19 56 13.1	-1.1
GERES	**GERESS Array B**	**30.00**	**306**	P		**P**		**19 53 12.8**	**+0.8**
GERES								19 56 13.1	
GERES	comp=Z,1.0nm,0.8s				pmax	pmax			
GERES	comp=Z,1.0nm,0.6s				pmax	pmax			
PKI	**Pulchoki** comp=Z,69nm,1.4s,mb5.2	**30.09**	**97**	*e*P		**P**		**19 53 12.3**	**-0.8**
CLL	**Collm** comp=Z,logA/T=0.9,mb4.5	**30.94**	**311**	P		**P**		**19 53 22.1**	**+1.8**
CLL	**Collm**	**30.94**	**311**	*i* P		**P**		**19 53 22.1**	**+1.8**
CLL	comp=Z,11nm,1.3s,mb4.5				pmax	pmax			
CLL	**Collm** comp=Z,11nm,1.3s,mb4.5	**30.94**	**311**	*i* P		**P**		**19 53 22.1**	**+1.8**
GRF	**Grafenberg Arr** comp=Z,6.0nm,1.2s,mb4.3	**31.74**	**307**	*e*P		**P**		**19 53 33.1**	**+5.8**
GRF	comp=Z,6.0nm,1.2s,mb4.3				pmax	pmax			
DAVOX	**Davos** comp=Z,3.1nm,0.5s,mb4.4,baz=98,slow=6.1,SNR=5.5	**32.31**	**302**	P		**P**		**19 53 32.6**	**+0.3**
PGF	**Pioggiola** comp=Z,2.8nm,1.1s,mb4.6	**32.96**	**294**	*e*P		**P**		**19 53 38.8**	**+0.8**
HFS	**Hagfors** comp=Z,7.6nm,0.9s,mb4.6,baz=121,slow=8.6,SNR=9.8	**33.70**	**327**	P		**P**		**19 53 44.7**	**+0.4**
HFS	**Hagfors**	**33.70**	**327**	P		**P**		**19 53 44.7**	**+0.4**
HFS	comp=Z,8.0nm,0.9s				pmax	pmax			
LSA	**Lhasa** comp=Z,1.8nm,0.8s,mb4.0	**33.85**	**90**	P		**P**		**19 53 47.0**	**+1.1**
LSA	**Lhasa** comp=Z,1.8nm,0.8s,mb4.6	**33.85**	**90**	*e*P		**P**		**19 53 46.1**	**+0.2**
LPG	**La Plagne**	**34.46**	**299**	*e*P		**P**		**19 53 51.0**	**0.0**
MBDF	**Montbardon** comp=Z,3.9nm,0.4s,mb4.3	**34.46**	**298**	*e*P		**P**		**19 53 50.9**	**-0.1**
LPL	**La Plagne**	**34.47**	**299**	*e*P		**P**		**19 53 50.7**	**-0.4**
CABF	**La Chapelle** comp=Z,18nm,0.8s,mb4.7	**34.92**	**301**	*e*P		**P**		**19 53 55.1**	**+0.2**
ORIF	**Oris-en-Rattie**	**35.09**	**298**	*e*P		**P**		**19 53 54.9**	**-1.5**
NB2	**NORSAR Subarra** comp=Z,5.3nm,1.0s,mb4.4,baz=117,slow=7.9	**35.20**	**327**	P		**P**		**19 53 56.4**	**-0.8**
NOA	**NORSAR Array B** comp=Z,2.5nm,0.8s,mb4.2,baz=118,slow=8.1,SNR=8.5	**35.20**	**327**	P		**P**		**19 53 56.9**	**-0.3**
NOA	**NORSAR Array B** comp=Z,3.0nm,0.8s	**35.20**	**327**	P		**P**		**19 53 56.9**	**-0.3**
NOA					pmax	pmax			
NOA	**NORSAR Array B**	**35.20**	**327**	P		**P**		**19 53 56.9**	**-0.3**
SMRF	**Simiane la Rot**	**35.36**	**297**	*e*P		**P**		**19 53 58.4**	**-0.3**
SMF	**Signal de Mont**	**36.46**	**301**	*e*P		**P**		**19 54 07.9**	**-0.1**
SSF	**Saint Saulge**	**36.69**	**302**	*e*P		**P**		**19 54 09.7**	**-0.2**
AVF	**Avril sur Loir** comp=Z,6.4nm,0.9s,mb4.2	**36.80**	**302**	*e*P		**P**		**19 54 10.6**	**-0.2**
TCF	**Toulx Ste Croi**	**37.60**	**301**	*e*P		**P**		**19 54 17.8**	**+0.2**
GTA	**Gaotai**	**37.97**	**70**	*e*P		**P**		**19 54 22.8**	**+2.0**
GTA					AP	pP		19 54 27.0	0.0
GTA					XP	sP		19 54 29.5	-0.1
GTA	comp=Z,5.0nm,1.9s,mb3.9				AMB	AMB			
GTA	comp=Z,74nm,6.1s				AMB	AMB			
GTA	comp=N,110nm,13.4s,MS4.0				LR	LR			
GTA	comp=E,100nm,14.5s,MS4.0				LR	LR			
GTA	comp=Z,104nm,13.8s,MS3.8				LR	LR			
MOY	**Mondy**	**37.98**	**50**	*e*P		**P**		**19 54 27.7**	**+7.0**
RJF	**Les Rejaudoux**	**38.15**	**299**	*e*P		**P**		**19 54 22.8**	**+0.6**
LFF	**La Frestale**	**38.73**	**299**	*e*P		**P**		**19 54 27.3**	**+0.2**
ZAK	**Zakamensk**	**39.38**	**53**	*e*P		**P**		**19 54 33.8**	**+1.3**
ZAK				*e*				19 56 05.8	
TLY	**Talaya**	**39.63**	**51**	*e*P		**P**		**19 54 38.9**	**+4.4**
TLY	comp=Z,42nm,0.9s,mb5.2				pmax	pmax			
TLY	comp=Z,2µm,18.0s,MS5.0				MLR	MLR			
KMBO	**Kilima Mbogo** comp=Z,204nm,18.4s,MS4.0,baz=92,slow=38	**39.65**	**202**	LR		LR		20 11 46.1	
KMBO	**Kilima Mbogo**	**39.65**	**202**	P		**P**		**19 54 34.8**	**-0.2**
EKA	**Eskdalemuir Ar** comp=Z,6.6nm,1.1s,mb4.2,baz=104,slow=9.0,SNR=4.7	**41.12**	**315**	P		**P**		**19 54

	comp=Z,74nm,19.1s								
KBS	**Kingsbay**	**45.47**	**350**		P	**P**	**19 55 21.2**	**-0.4**	
	comp=Z,15nm,0.5s,mb5.1								
BOD	**Bodaibo**	**45.72**	**42**	*e*	P	**P**	**19 55 22.8**	**-1.0**	
BOD				*e*		pP	19 55 28.9	-1.2	
XAN	**Xi'an**	**46.48**	**75**		P	**P**	**19 55 30.0**	**-0.2**	
XAN					AP	pP	19 55 35.0	-1.4	
XAN					AMB	AMB			
	comp=Z,12nm,1.0s,mb4.8								
GYA	**Guiyang**	**47.67**	**86**		P	**P**	**19 55 40.0**	**+0.3**	
GYA					S	**S**	**20 02 34.5**	**+1.1**	
GYA					XS		20 02 48.8		
GYA					AMB	AMB			
	comp=Z,10.0nm,0.8s,mb4.9								
GYA					LR	LR			
	comp=N,170nm,11.4s,MS4.5								
GYA					LR	LR			
	comp=E,230nm,11.4s,MS4.5								
GYA					LR	LR			
	comp=Z,140nm,12.3s,MS4.1								
DGAR	**Diego Garcia**	**47.95**	**151**		P	**P**	**19 55 42.4**	**+0.3**	
WHN	**Wuhan**	**52.05**	**77**	*e*	P	**P**	**19 56 13.5**	**+0.3**	
YAK	**Yakutsk**	**53.21**	**35**⇓	*e*	P	**P**	**19 56 20.7**	**-0.7**	
YAK					pmax	pmax			
	comp=Z,7.0nm,0.9s,mb4.6								
YAK					MLR	MLR			
	comp=Z,100nm,21.0s,MS3.8								
NJ2	**Nanjing**	**54.94**	**73**	*e*	P	**P**	**19 56 34.0**	**-0.5**	
NJ2					AP	pP	19 56 44.0	+3.1	
NJ2					PP	PP	19 58 38.8	-0.3	
NJ2					S	**S**	**20 04 10.0**	**-3.3**	
NJ2					XS		20 04 25.0		
NJ2					AMB	AMB			
	comp=Z,20nm,0.6s,mb5.3								
NJ2					LR	LR			
	comp=N,210nm,20.9s,MS4.5								
NJ2					LR	LR			
	comp=E,430nm,22.1s,MS4.5								
NJ2					LR	LR			
	comp=Z,930nm,28.4s								
CN2	**Changchun**	**55.38**	**58**	*e*	P	**P**	**19 56 36.5**	**-1.0**	
SUMG	**Summit**	**55.57**	**339**	*e*	P	**P**	**19 56 38.2**	**-0.3**	
MDJ	**Mudanjiang**	**57.88**	**56**		P	**P**	**19 56 51.8**	**-3.6**	
MDJ					AMB	AMB			
	comp=Z,4.0nm,0.8s,mb4.5								
MDJ					AMB	AMB			
	comp=Z,71nm,3.7s								
MDJ					LR	LR			
	comp=E,133nm,11.2s								
MDJ					LR	LR			
	comp=Z,174nm,15.2s,MS4.3								
DBIC	**Dimbokro**	**59.09**	**254**		P	**P**	**19 57 02.4**	**-1.8**	
	comp=Z,2.5nm,0.7s,mb4.4,baz=31,slow=7.3,SNR=7.0								
DBIC					LR	LR	20 25 31.3		
	comp=Z,152nm,18.2s,MS4.2,baz=37,slow=39								
DBIC	**Dimbokro**	**59.09**	**254**		P	**P**	**19 57 02.4**	**-1.8**	
DBIC					pmax	pmax			
	comp=Z,3.0nm,0.7s								
DBIC					MLR	MLR			
	comp=Z,152nm,18.2s								
DBIC	**Dimbokro**	**59.09**	**254**		P	**P**	**19 57 02.4**	**-1.8**	
DBIC					LR	LR	20 25 31.3		
KIC	**Kosan Boka**	**59.20**	**254**	*e*	P	**P**	**19 57 03.0**	**-1.9**	
	comp=Z,53nm,1.2s,mb5.4								
TIC	**Toumodi**	**59.23**	**254**	*e*	P	**P**	**19 57 03.0**	**-2.2**	
	comp=Z,36nm,1.0s,mb5.3								
LIC	**Lamto**	**59.50**	**254**	*e*	P	**P**	**19 57 05.0**	**-2.0**	
	comp=Z,42nm,1.6s,mb5.2								
BILL	**Bilibino**	**65.11**	**22**	*d i*	P	**P**	**19 57 43.2**	**-0.4**	
BILL					pmax	pmax			
	comp=Z,15nm,1.1s,mb4.9								
BILL					MLR	MLR			
	comp=Z,100nm,16.0s,MS4.1								
BILL	**Bilibino**	**65.11**	**22**	*e*	P	**P**	**19 57 43.5**	**-0.1**	
	comp=Z,14nm,1.1s,mb4.9								
LBTB	**Lobatse**	**65.82**	**206**		P	**P**	**19 57 47.5**	**-1.4**	
INK	**Inuvik**	**75.46**	**2**	*e*	P	**P**	**19 58 46.6**	**+0.3**	
	comp=Z,2.0nm,0.9s,mb4.0								
COLA	**College**	**77.85**	**8**	*e*	P	**P**	**19 59 00.4**	**+0.6**	
	comp=Z,8.8nm,0.8s,mb4.7								
ILAR	**Eielson Array**	**78.06**	**8**		P	**P**	**19 59 01.7**	**+0.8**	
	comp=Z,2.7nm,0.8s,mb4.2,baz=336,slow=4.5,SNR=26								
ILAR					LR	LR	20 42 12.6		
	comp=Z,53nm,19.5s,MS3.9,baz=12,slow=42								
ILAR	**Eielson Array**	**78.06**	**8**		P	**P**	**19 59 01.7**	**+0.8**	
ILAR					pmax	pmax			
	comp=Z,3.0nm,0.8s								
ILAR					MLR	MLR			
	comp=Z,53nm,19.5s								
MCK	**McKinley**	**78.82**	**9**	*e*	P	**P**	**19 59 05.6**	**+0.5**	
YKA	**Yellowknife Ar**	**80.71**	**353**		P	**P**	**19 59 15.9**	**+0.7**	
	comp=Z,1.3nm,0.9s,mb3.8,baz=7.6,slow=5.8,SNR=22								
YKA					LR	LR	20 40 50.7		
	comp=Z,63nm,19.7s,MS4.0,baz=345,slow=40								
YKA	**Yellowknife Ar**	**80.71**	**353**		P	**P**	**19 59 15.9**	**+0.6**	
YKA					pmax	pmax			
	comp=Z,1.0nm,0.9s								
YKA					MLR	MLR			
	comp=Z,63nm,19.7s								
YKA	**Yellowknife Ar**	**80.71**	**353**		P	**P**	**19 59 15.9**	**+0.7**	
YKA					LR	LR	20 40 50.7		
PMR	**Palmer**	**80.86**	**10**	*e*	P	**P**	**19 59 16.1**	**+0.1**	
	comp=Z,6.6nm,0.7s,mb4.7								
ULM	**Lac du Bonnet**	**88.91**	**340**		LR	LR	20 44 46.7		
	comp=Z,48nm,18.3s,MS4.0,baz=346,slow=39								
WRAB	**Tennant Creek**	**96.22**	**110**		P	**P**	**20 00 30.2**	**-0.8**	
PDAR	**Pinedale Array**	**99.22**	**346**		LR	LR	20 48 41.2		
	comp=Z,59nm,21.3s,MS4.1,baz=162,slow=37								

NEIC ***28*** *19:47:07.8±0.9,21.38S×68.68W,h124km±11km, Error ellipse: s-maj=20.5km s-min=14.4km az=72.0*
IDC ***28*** *19:47:08.0±0.9,21.32S×68.67W,h122km±11km, mb3.5/2, mb1 3.5/4, mb1mx3.4/15, Error ellipse: s-maj=30.9km s-min=12.1km az=95.0*

ISC 28 19:47:07.3±0.9, 21.35S±0.07×68.6W±0.2, h130km±12km, n7, σ0§38/9, mb3.4/1, Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
LVC	**Limon Verde**	**1.28**	**192**	P		P	**P**	**19 47 33.2**	**-0.2**
	39nm,0.3s,baz=8.6,slow=9.5,SNR=400								
LVC				S		**S**	**P**	**19 47 53.3**	**+0.2**
	62nm,0.3s,baz=268,slow=24,SNR=45								
LVC	**Limon Verde**	**1.28**	**192**	P		P	**P**	**19 47 33.2**	**-0.2**
LVC				S		**S**	**S**	**19 47 53.3**	**+0.2**
LPAZ	**La Paz**	**5.06**	**5**	P		P	**P**	**19 48 22.5**	**+0.3**
	0.7nm,0.3s,baz=219,slow=4.8,SNR=12								
LPAZ				S			**S**	**19 49 19.8**	**-0.2**
	0.2nm,0.3s,baz=225,slow=20,SNR=3.3								
CPUP	**Villa Florida**	**11.46**	**118**	P			P	**19 49 47.4**	**-0.6**
	0.1nm,0.3s,baz=322,slow=12,SNR=3.1								
BDFB	**Brasilia**	**20.35**	**77**	P			P	**19 51 36.0**	**+0.7**
	2.9nm,0.5s,baz=276,slow=9.6,SNR=5.0								
YKA	**Yellowknife Ar**	**91.14**	**340**	P			P	**19 59 57.8**	**-0.2**
	0.2nm,0.5s,mb3.4,baz=132,slow=4.5,SNR=5.3								
MKAR	**Makanchi Array**	**145.36**	**36**	PKPbc		PKPbc		20 06 31.1	+1.0
	0.1nm,0.4s,baz=294,slow=3.6,SNR=4.5								

MAN 28 19:56:32.6, 9.55N×125.68E, h3km, mb4.6, ML3.4, MS3.3, 6C, Mindanao

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
BUTP	**Butuan**	**0.58**	**186**⇑	*e*	P		Pg	19 56 43.6	-0.7
BUTP					S		eS	19 56 53.7	+1.6
MSLP	**Maasin**	**0.99**	**306**⇑	*e*	P		Pb	19 56 52.0	-0.1
MSLP					S		eS	19 57 07.6	+2.2
PLP	**Palo**	**1.74**	**337**	*e*	P		Pn	19 56 59.6	-4.4
PLP					S		eS	19 57 22.9	-4.1
TBP	**Tagbilaran**	**1.80**	**274**	*e*	P		Pn	19 57 03.7	-1.0
TBP					S		eS	19 57 27.5	-0.9
BESP	**Borongan**	**2.05**	**353**⇑	*e*	P		Pn	19 57 07.2	-1.2
BESP					S		eS	19 57 34.2	-0.6
PAGZ	**Pagadian**	**2.83**	**233**⇑	*e*	P		Pn	19 57 20.7	+1.1
PAGZ					S		eS	19 57 55.1	+0.4
CNP	**Catarman**	**3.10**	**341**⇑	*e*	P		Pn	19 57 24.0	+0.6
PVCP	**Virac**	**4.29**	**340**⇑	*e*	P		Pn	19 57 40.9	+0.7

GUC 28 20:24:51.8±0.6, 32.01S×71.50W, h29km±1km, MD3.6, ML3.3, 6C-7D, Near coast of central Chile

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

ILCH	**Illapel**	**0.47**	**37**	*i*	P		Pb	20 25 01.8	+0.1
ILCH				*i*	S		Sb	20 25 08.9	+0.6
ILCH					AMP			20 25 09.3	
	comp=E,3μm,0.3s								
PACH	**Papudo**	**0.53**	**174**⇓	*i*	P		Pb	20 25 02.7	+0.1
PACH				*i*	S		Sb	20 25 10.7	+0.7
PTCH	**Petorca**	**0.55**	**118**	*e*	P		Pb	20 25 02.5	-0.4
PTCH				*i*	S		Sb	20 25 11.1	+0.6
PTCH					AMP			20 25 11.5	
	comp=N,11μm,0.2s								
CMCH	**Combarbala**	**0.94**	**27**⇓	*i*	P		Pn	20 25 08.7	-0.4
CMCH				*i*	S		Sb	20 25 21.6	+0.2
CMCH					AMP			20 25 26.8	
	comp=E,2μm,0.6s								
JACH	**Jahuel**	**1.02**	**131**⇓	*i*	P		Pn	20 25 10.3	0.0
JACH				*i*	S		Sn	20 25 24.1	+0.4
PEL	**Peldehue**	**1.32**	**149**⇑	*i*	P		Pn	20 25 14.9	+0.3
PEL				*i*	S		Sn	20 25 32.0	+0.6
PEL					AMP			20 25 33.0	
	comp=E,2μm,0.3s								
LCCH	**Las Cruces**	**1.46**	**182**⇑	*i*	P		Pn	20 25 16.9	+0.3
LCCH				*i*	S		Sn	20 25 35.6	+0.7
RCDM	**Rinconada Maip**	**1.59**	**159**⇓	*i*	P		Pn	20 25 18.9	+0.5
RCDM					AMP			20 25 38.9	
	comp=E,327nm,0.2s								
RCDM				*i*	S		Sn	20 25 39.6	+1.5
CLCH	**Cerro Calan**	**1.60**	**150**⇑	*i*	P		Pn	20 25 19.3	+0.7
CLCH				*i*	S		Sn	20 25 40.1	+1.5
CLCH					AMP			20 25 41.8	
	comp=N,490nm,0.3s								
FCH	**Farellones**	**1.66**	**143**⇑	*i*	P		Pn	20 25 19.8	+0.3
FCH				*i*	S		Sn	20 25 41.3	+1.3
FCH					AMP			20 25 41.6	
	comp=E,273nm,0.3s								
TACH	**Talagante**	**1.71**	**164**⇓	*i*	P		Pn	20 25 20.6	+0.4
TACH				*i*	S		Sn	20 25 43.1	+1.9
PCH	**Pirque**	**1.81**	**153**⇑	*i*	P		Pn	20 25 22.4	+0.8
PCH				*i*	S		Sn	20 25 49.4	+2.1
TLL	**Tololo Astrono**	**1.93**	**18**⇓	*i*	P		Pn	20 25 24.5	+1.2
TLL				*i*	S		Sn	20 25 49.6	+2.7
TLL					AMP			20 25 52.6	
	comp=E,315nm,0.6s								
LNV	**Longovilo**	**1.94**	**178**	*i*	P		Pn	20 25 24.3	+0.8
LNV				*i*	S		Sn	20 25 48.4	+1.3
CHCH	**Chadas Angostu**	**2.05**	**160**⇑	*i*	P		Pn	20 25 25.7	+0.7
CHCH				*i*	S		Sn	20 25 51.4	+1.6
LMEL	**Las Melosas**	**2.13**	**150**⇓	*i*	P		Pn	20 25 26.9	+0.7
LMEL				*i*	S		Sn	20 25 54.1	+2.1
LMEL					AMP			20 25 58.1	
	comp=N,329nm,0.2s								
CACH	**El Canelo**	**2.23**	**160**	*i*	P		Pn	20 25 29.0	+1.4
CACH				*i*	S		Sn	20 25 57.7	+3.2
CICH	**Cipreses**	**2.48**	**159**	*i*	P		Pn	20 25 31.9	+0.8
CICH				*i*	S		Sn	20 26 02.1	+1.4

IDC ***28*** *20:32:54.2±1.4, 36.55N×51.19E, mb3.4/3, mb1 3.6/3, mb1mx3.3/19, Error ellipse: s-maj=26.2km s-min=9.5km az=98.0*
NEIC ***28*** *20:32:55.4±0.7, 36.50N×51.22E, h10km, Error ellipse: s-maj=23.2km s-min=9.3km az=103.0*

ISC 28 20:32:53.8±1.0, 36.57N±0.09×51.2E±0.3, h10km, n6, σ0§90/6, mb3.4/3, Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
THR	**Tehran**	**0.66**	**181**	Pg		Pg	**Pg**	**20 33 06.9**	**-0.2**
	18nm,0.3s,baz=1.7,slow=13,SNR=6.3								
THR				Lg				20 33 15.6	
	213nm,0.3s,baz=170,slow=5.4,SNR=60								
ARU	**Arti**	**20.49**	**12**	P		P	**P**	**20 37 33.7**	**-0.7**
BVAR	**Borovoye Array**	**21.27**	**33**	P		P	**P**	**20 37 41.5**	**-0.9**
	1.1nm,0.7s,mb3.3,baz=202,slow=7.8,SNR=5.3								
KURK	**Kurchatov**	**24.22**	**46**	P		P	**P**	**20 38 12.3**	**+0.9**
MKAR	**Makanchi Array**	**25.25**	**56**	P		P	**P**	**20 38 21.7**	**+0.3**
	0.5nm,0.8s,mb3.1,baz=260,slow=7.4,SNR=5.1								
NOA	**NORSAR Array B**	**35.05**	**327**	P		P	**P**	**20 39 49.0**	**+0.5**
	0.9nm,1.1s,mb3.6,baz=115,slow=8.4,SNR=3.5								

INMG ***28*** *20:41:45.4±1.4, 38.06N×8.97W, ML1.4, Error ellipse: s-maj=6.3km s-min=3.2km az=89.0*
MDD ***28*** *20:41:45.7±0.9, 38.06N×8.95W, mbLg1.4/4, Error ellipse: s-maj=7.9km s-min=3.5km az=94.0, PRXIMO*

ISC 28 20:41:44.5±1.1, 38.07N±0.03×8.95W±0.08, h1km±7km, n11, σ0§87/17, Portugal

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
PTEO	**Sao Teotonio**	**0.55**	**161**	*e*	Pg	**Pg**	**20 41 55.7**	**+0.2**	
PTEO				*e*	Sg	**Sg**	**20 42 03.0**	**+0.2**	
	8.8nm,0.2s								
PTEO	**Sao Teotonio**	**0.55**	**161**	Pg		**Pg**	**20 41 55.7**	**+0.2**	
PTEO				Lg			20 42 03.0		
	4.4nm,0.2s								
MOE	**Montemor**	**0.65**	**46**	*e*	Pg	**Pg**	**20 41 58.2**	**+0.7**	
MOE				*e*	Sg	**Sg**	**20 42 06.9**	**+0.7**	
PLOU	**Loures**	**0.83**	**349**	*e*	S	**Sg**	**20 42 11.5**	**-0.6**	
PBEJ	**Beja**	**0.85**	**93**	*e*	S	**Sg**	**20 42 12.6**	**-0.3**	
	6.5nm,0.2s								
PBEJ	**Beja**	**0.85**	**93**	S		**Sg**	**20 42 12.6**	**-0.3**	
	3.2nm,0.2s								
EGRO	**El Granado**	**1.28**	**114**	Pg		**Pg**	**20 42 07.2**	**-2.7**	
	0.2nm,0.1s,SNR=6.5								
EGRO				Lg			20 42 26.0		
	2.2nm,0.1s,SNR=5.9								
PALC	**Alcoutim**	**1.31**	**117**	*e*	P	**Pb**	**20 42 09.1**	**-0.5**	
PALC				*e*	S	**Sb**	**20 42 27.2**	**+0.3**	
	3.7nm,0.3s								
PALC	**Alcoutim**	**1.31**	**117**	P		**Pb**	**20 42 09.1**	**-0.5**	
PALC				S		**Sb**	**20 42 27.2**	**+0.3**	
	1.9nm,0.3s								
EBAD	**Badajoz**	**1.67**	**65**	Pn		**Pn**	**20 42 16.1**	**+1.1**	
	0.3nm,0.1s,SNR=7.9								
EBAD				Sn		**Sn**	**20 42 36.1**	**-1.2**	
	0.7nm,0.1s,SNR=15								
EMIN	**Mina Concepcio**	**1.82**	**99**	Pn		**Pn**	**20 42 18.1**	**+0.8**	
	0.3nm,0.1s,SNR=4.0								
EMIN				Sn		**Sn**	**20 42 41.5**	**+0.1**	
	1.1nm,0.2s,SNR=5.9								

JMA ***28*** *21:03:26.8±0.2, 23.07N×121.45E, h66km*
TAP ***28*** *21:03:26.6, 23.16N×121.34E, h15km±1km, ML3.2*
TAP Felt II J at Chenggung.

ISC 28 21:03:26.1±0.4, 23.11N±0.02×121.44E±0.02, h19km±4km, n50, σ0§93/82, 9C-1D, Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CHKT	**Chengkung**	**0.07**	**258**⇓	*i*	P		**Pb**	**21 03 30.1**	**+0.4**
CHKT					S		**Sb**	**21 03 32.6**	**+0.5**
TWF1	**Yuli**	**0.27**	**332**⇑	*i*	P		**Pb**	**21 03 31.9**	**-0.4**
TWF1					S		**Sb**	**21 03 35.3**	**-1.1**
ELDTW	**Lidau**	**0.39**	**281**	*i*	P		**Pb**	**21 03 33.2**	**-1.0**
ELDTW					S		**Sb**	**21 03 37.5**	**-2.2**
EHY	**Hungye**	**0.41**	**345**⇑	*i*	P		**Pb**	**21 03 34.0**	**-0.5**
EHY					S		**Sb**	**21 03 39.6**	**-0.6**
TWG	**Pinlang**	**0.44**	**229**	*i*	P		**Pb**	**21 03 35.2**	**+0.1**
TWG					S		**Sb**	**21 03 41.5**	**+0.3**
TTN	**Taitung**	**0.45**	**217**		P		**Pb**	**21 03 36.5**	**+1.3**
TTN					S		**Sb**	**21 03 43.3**	**+2.0**
YUS	**Yu-Shan**	**0.58**	**310**⇑	*i*	P		**Pb**	**21 03 36.8**	**-0.6**
YUS					S		**Sb**	**21 03 42.9**	**-2.2**
STYT	**Tauyuan**	**0.63**	**275**⇑	*i*	P		**Pb**	**21 03 37.5**	**-0.7**
STYT					S		**Sb**	**21 03 45.0**	**-1.5**
ECL	**Taimali**	**0.68**	**221**	*e*	P		**Pb**	**21 03 38.4**	**-0.7**
ESL	**Shilin**	**0.70**	**360**	*e*	P		**Pb**	**21 03 39.7**	**+0.3**
ALS	**Alishan**	**0.70**	**304**⇑	*i*	P		**Pb**	**21 03 39.2**	**-0.3**
ALS					S		**Sb**	**21 03 47.9**	**-0.8**
WTP	**Ta-pu**	**0.77**	**280**⇑	*i*	P		**Pb**	**21 03 40.5**	**-0.1**
WTP					S		**Sb**	**21 03 50.6**	**0.0**
SGST	**Jiashian**	**0.79**	**268**	*e*	P		**Pb**	**21 03 40.8**	**-0.1**
SGST					S		**Sb**	**21 03 51.2**	**+0.1**
CHN4	**Tsaushan**	**0.81**	**287**		P		**Pb**	**21 03 41.4**	**0.0**
CHN4					S		**Sb**	**21 03 51.1**	**-0.7**
SSD	**Sandimen**	**0.83**	**244**	*e*	P		**Pb**	**21 03 41.1**	**-0.5**
SSD					S		**Sb**	**21 03 50.0**	**-2.2**
CHN1	**Nanshi**	**0.84**	**275**	⇑	P		**Pb**	**21 03 42.0**	**+0.3**
CHN1					S		**Sb**	**21 03 53.2**	**+0.6**
CHN5	**Tsauling**	**0.85**	**305**⇑	*i*	P		**Pb**	**21 03 42.0**	**+0.1**
CHN5					S		**Sb**	**21 03 52.7**	**-0.2**

TWK	**Hsinying**	**0.89**	**280**⇑	*i*	P		**Pb**	**21 03 42.6**	**0.0**
TWK					S		**Sb**	**21 03 53.8**	**-0.2**
EAST	**Anshuo**	**0.91**	**217**	*e*	P		**Pb**	**21 03 42.3**	**-0.6**
SMLT	**Sun Moon Lake**	**0.91**	**327**	*e*	P		**Pb**	**21 03 42.6**	**-0.4**
SMLT					S		**Sb**	**21 03 54.0**	**-0.7**
TYC	**Yuchr**	**0.95**	**326**	*e*	P		**Pb**	**21 03 44.0**	**+0.3**
TYC					S		**Sb**	**21 03 56.4**	**+0.6**
TWD	**Chiawan**	**0.97**	**9**	*e*	P		**Pb**	**21 03 44.3**	**+0.2**
TWD					S		**Sb**	**21 03 58.2**	**+1.7**
CHN2	**Minshiung**	**0.98**	**295**	*e*	P		**Pb**	**21 03 44.4**	**+0.3**
WGK	**Gukeng**	**0.98**	**306**	*e*	P		**Pb**	**21 03 44.1**	**-0.1**
WGK					S		**Sb**	**21 03 56.8**	**-0.1**
CHN3	**Shinhua**	**0.99**	**268**	*e*	P		**Pb**	**21 03 44.3**	**0.0**
CHY	**Chiayi**	**1.01**	**293**	*e*	P		**Pb**	**21 03 45.0**	**+0.3**
CHY					S		**Sb**	**21 03 58.3**	**+0.9**
WNT	**Mingjian**	**1.03**	**318**	*e*	P		**Pb**	**21 03 45.2**	**+0.2**
WHF	**Hehuan Shan**	**1.04**	**351**	*e*	P		**Pb**	**21 03 45.0**	**-0.2**
SCZT	**Fangliau**	**1.05**	**226**	*e*	P		**Pb**	**21 03 45.6**	**+0.1**
SCZT					S		**Sb**	**21 04 03.6**	**+4.8**
LAY	**Lan-yu**	**1.07**	**174**	*e*	P		**Pb**	**21 03 46.1**	**+0.3**
CHN8	**Yiju**	**1.15**	**282**	*e*	P		**Pb**	**21 03 47.6**	**+0.5**
CHN8					S		**Sb**	**21 04 02.7**	**+1.1**
TWT	**Tachien**	**1.16**	**348**	*e*	P		**Pb**	**21 03 48.5**	**+1.2**
WSF	**Szhu**	**1.23**	**295**	*e*	P		**Pn**	**21 03 47.7**	**-0.7**
WSF					S		**Sb**	**21 04 04.1**	**+0.1**
TCU	**Taichung**	**1.24**	**326**	*e*	P		**Pn**	**21 03 50.0**	**+1.5**
TCU					S		**Sb**	**21 04 04.4**	**+0.1**
TWK1	**Hengchun**	**1.30**	**207**	*e*	P		**Pn**	**21 03 52.5**	**+3.1**
NNS	**Nan Shan**	**1.32**	**358**	*e*	P		**Pn**	**21 03 51.0**	**+1.3**
TWQ1	**Liyutan**	**1.37**	**334**	*e*	P		**Pn**	**21 03 51.7**	**+1.3**
TWQ1					S		**Sb**	**21 04 09.9**	**+1.9**
NSY	**Sanyi**	**1.44**	**335**	*e*	P		**Pn**	**21 03 52.7**	**+1.3**
NSY					S		**Sn**	**21 04 10.3**	**+0.5**
ENTT	**Nioudou**	**1.52**	**4**	*e*	P		**Pn**	**21 03 52.3**	**-0.3**
TWC	**Suao**	**1.54**	**14**	*e*	P		**Pn**	**21 03 55.3**	**+2.5**
NSK	**Sanguang**	**1.56**	**357**	*e*	P		**Pn**	**21 03 53.9**	**+0.8**
TWE	**Neicheng**	**1.61**	**7**	*e*	P		**Pn**	**21 03 55.2**	**+1.3**
WDGT	**Dungji**	**1.64**	**275**	*e*	P		**Pn**	**21 03 54.6**	**+0.4**
PNG	**Penghu**	**1.79**	**285**	*e*	P		**Pn**	**21 03 56.7**	**+0.3**
PNG					S		**Sn**	**21 04 16.7**	**-2.0**
YOJ	**Yonaguni jima**	**1.97**	**47**	P			**Pn**	**21 03 58.9**	**-0.1**
YOJ				*e*	S		**Sn**	**21 04 22.9**	**-0.5**
HATJ	**Hateruma jima**	**2.37**	**66**	P			**Pn**	**21 04 04.3**	**-0.4**
HATJ				*e*	S		**Sn**	**21 04 32.2**	**-1.3**
IRIF	**Iriomote-Funau**	**2.43**	**59**	*e*	S		**Sn**	**21 04 34.4**	**-0.6**
JKRS	**Kuro-shima**	**2.61**	**64**	P			**Pn**	**21 04 07.9**	**-0.3**
JKRS				*e*	S		**Sn**	**21 04 39.0**	**-0.6**
JJJ	**Ishigaki jima**	**2.78**	**63**	P			**Pn**	**21 04 09.8**	**-0.7**
JJJ				*e*	S		**Sn**	**21 04 41.3**	**-2.5**
JTJ	**Tarama**	**3.35**	**62**	*e*	S		**Sn**	**21 04 57.8**	**-0.6**

THR 28 21:03:35.2±1.0, 36.32N×51.44E, ML3.5, Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
THKV	**Tehran--Karaj**	**0.61**	**228**	*e*	PG	Pg		21 03 45.3	-2.1
THKV				*e*	SG	Sg		21 03 54.1	-1.4
THKV					AMP			21 03 56.5	
	comp=E,2μm,0.6s								
DAMV	**Damavand**	**0.81**	**148**	*e*	PG	Pg		21 03 49.6	-1.8
DAMV				*e*	SG	Sg		21 04 00.9	-1.4
SNGE	**Sanandaj**	**3.55**	**251**	*e*	PN	Pn		21 04 30.3	-2.4
MAKU	**Maku**	**6.14**	**302**	*e*	PN	Pn		21 05 05.8	-3.7

IDC ***28*** *21:04:01.0±4.9, 4.52N×126.90E, h25km±30km, mb3.9/7, mb1 4.1/7, mb1mx3.8/20, Error ellipse: s-maj=92.2km s-min=17.3km az=70.0*
NEIC ***28*** *21:04:07.9±0.8, 4.31N×126.57E, h85km, Error ellipse: s-maj=65.3km s-min=11.3km az=70.0*

ISC 28 21:04:00.3±1.0, 4.5N±0.2×126.8E±0.6, h33km, n9, σ0§63/9, mb4.0/7, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**22.46**	**183**	*e*	P		**P**	**21 08 58.2**	**+0.2**
	7.0nm,0.9s,mb4.1								
FITZ	**Fitzroy Crossi**	**22.46**	**183**		P		**P**	**21 08 58.5**	**+0.5**
	4.9nm,0.5s,mb4.2,baz=8.0,slow=9.8,SNR=15								
WRA	**Warramunga Arr**	**25.38**	**163

KHET e 21 45 42.7
comp=E,30nm,0.4s
BHPL Bhopal 7.41 196 *e* **Pn 21 45 34.0 +10**
BHPL *e* 21 46 58.6
HYB Hyderabad 12.97 185 *i* P **P 21 46 41.0 +1.0**
HYB Hyderabad 12.97 185 *eP* **P 21 46 41.0 +1.0**
MKAR Makanchi Array 16.49 6 Pn **P 21 47 26.2 +0.4**
comp=E,0.2nm,0.3s,baz=191,slow=12,SNR=13
KURK Kurchatov 20.31 358 *eP* **P 21 48 09.6 -2.0**
BVAR Borovoye Array 23.60 346 P **P 21 48 44.9 +0.4**
comp=E,0.5nm,0.5s,mb3.2,baz=157,slow=11,SNR=4.2
BRVK Borovoye 23.66 346 *eP* **P 21 48 44.5 -0.5**
ZAL Zalesovo 23.81 8 P **P 21 48 46.1 -0.3**
comp=E,0.7nm,0.5s,mb3.4,baz=177,slow=4.6,SNR=4.2
ZRNK Zerenda 23.84 344 *eP* **P 21 48 47.5 +0.6**
FINES FINESS Array B 46.53 328 P **P 21 52 00.2 -1.8**
comp=E,1.6nm,0.8s,mb4.0,baz=128,slow=16,SNR=5.3
ARCES ARCESS Array B 49.51 338 P **P 21 52 24.8 -0.3**
comp=E,2.1nm,0.8s,mb4.2,baz=111,slow=7.7,SNR=4.0

*IDC **28** 22:23:02.1±0.6,7.75S×107.02E,mb4.3/14,mb1 4.5/14, mb1mx4.3/19,MS3.3/1,Ms1 3.3/1,ms1mx2.6/26,Error ellipse: s-maj=32.8km s-min=13.5km az=55.0*
*DJA **28** 22:23:05.0±1.3,7.17S×107.28E,h472km±126km,ML6.1/2, Error ellipse: s-maj=640.7km s-min=71.4km az=19.0*
*NEIC **28** 22:23:12.0±1.7,7.78S×107.09E,h76km±15km,mb4.7/1, Error ellipse: s-maj=17.5km s-min=7.3km az=62.0*

ISC 28 22:23:09.7±2.7,7.69S±0.09×107.1E±0.1,h75km±24km, n46,σ1°905/43,mb4.2/17,2C-6D,Jawa

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KELI	**Kelakatan**	**7.33**	**95**	⇓*e*Pn	**P**	**22 24 58.0**	**+1.8**
KELI				⇑*i*Sn	**S**	**22 26 20.8**	**+2.2**
KELI	**Kelakatan**	**7.33**	**95**	⇓*e*Pn	**P**	**22 24 58.1**	**+1.9**
KELI				*i* Sn	**S**	**22 26 22.9**	**+4.3**
INGI	**Ingas**	**8.03**	**99**	⇑*e*Pn	**P**	**22 25 06.4**	**+0.6**
	440nm,0.2s						
INGI	**Ingas**	**8.03**	**99**	⇓*i*Pn	**P**	**22 25 06.4**	**+0.6**
INGI				*i* Sn	**S**	**22 26 35.7**	**-0.2**
RATI	**Rata**	**8.40**	**98**	⇓*i*Pn	**P**	**22 25 10.5**	**-0.3**
	818nm,0.3s						
RATI				⇓*i*Sn	**S**	**22 26 42.3**	**-2.7**
RATI	**Rata**	**8.40**	**98**	⇓*e*Pn	**P**	**22 25 10.6**	**-0.2**
RATI				*i* Sn	**S**	**22 26 42.3**	**-2.7**
FITZ	**Fitzroy Crossi**	**20.80**	**122**	*eP*	**P**	**22 27 46.2**	**-0.9**
	16nm,0.6s						
FITZ	**Fitzroy Crossi**	**20.80**	**122**	P	**P**	**22 27 46.9**	**-0.2**
	18nm,0.6s,baz=306,slow=3.7,SNR=34						
FITZ				LR	LR	22 35 36.4	
	comp=Z,88nm,20.9s,baz=301,slow=36						
CMAR	**Chiang Mai Arr**	**27.20**	**343**	P	**P**	**22 28 48.0**	**-0.7**
	0.9nm,0.4s,mb3.6,baz=179,slow=8.1,SNR=9.2						
WRA	**Warramunga Arr**	**29.05**	**118**	P	**P**	**22 29 04.6**	**-0.7**
	1.5nm,0.5s,mb3.9,baz=287,slow=12,SNR=6.1						
WRAB	**Tennant Creek**	**29.06**	**118**	*eP*	**P**	**22 29 05.0**	**-0.4**
WB2	**Warramunga Arr**	**29.07**	**118**	*eP*	**P**	**22 29 04.8**	**-0.6**
ASAR	**Alice Springs**	**30.20**	**125**	P	**P**	**22 29 15.1**	**-0.4**
	3.0nm,0.9s,mb3.9,baz=301,slow=8.5,SNR=13						
STKA	**Stephens Creek**	**40.10**	**132**	*eP*	**P**	**22 30 40.1**	**+0.4**
	5.0nm,0.5s,mb4.6						
STKA	**Stephens Creek**	**40.10**	**132**	P	**P**	**22 30 40.2**	**+0.6**
	3.9nm,0.6s,mb4.4,baz=310,slow=8.6,SNR=13						
PKI	**Pulchoki**	**40.86**	**330**	*eP*	**P**	**22 30 45.2**	**-0.8**
DMN	**Daman**	**41.05**	**330**	*eP*	**P**	**22 30 46.3**	**-1.2**
KKN	**Kakani**	**41.11**	**330**	*eP*	**P**	**22 30 47.0**	**-1.0**
GKN	**Gorkha**	**41.60**	**329**	*eP*	**P**	**22 30 51.3**	**-0.8**
	4.2nm,0.3s,mb4.7						
KOLN	**Koldanda**	**41.95**	**328**	*eP*	**P**	**22 30 53.8**	**-1.2**
	8.9nm,0.7s,mb4.6						
ULN	**Ulaanbaatar**	**55.31**	**360**	*eP*	**P**	**22 32 38.7**	**+0.8**
	1.0nm,0.4s,mb4.2						
MKAR	**Makanchi Array**	**58.57**	**340**	P	**P**	**22 32 59.8**	**-1.2**
	1.9nm,0.4s,mb4.5,baz=152,slow=6.1,SNR=38						
KURK	**Kurchatov**	**63.18**	**340**	*eP*	**P**	**22 33 32.1**	**-0.1**
ZAL	**Zalesovo**	**64.22**	**346**	P	**P**	**22 33 38.4**	**-0.5**
	2.0nm,0.4s,mb4.3,baz=279,slow=3.5,SNR=6.6						
MAW	**Mawson**	**66.74**	**197**	P	**P**	**22 33 53.0**	**-1.8**
	1.4nm,0.5s,mb4.1,baz=102,slow=20,SNR=4.3						
BVAR	**Borovoye Array**	**68.04**	**337**	P	**P**	**22 34 03.3**	**+0.1**
	1.8nm,0.5s,mb4.2,baz=142,slow=8.3,SNR=18						
BRVK	**Borovoye**	**68.11**	**337**	*eP*	**P**	**22 34 04.2**	**+0.6**
ZRNK	**Zerenda**	**68.53**	**336**	*eP*	**P**	**22 34 06.7**	**+0.5**
VNDA	**Vanda**	**75.27**	**169**	P	**P**	**22 34 45.6**	**-0.2**
	3.3nm,1.1s,mb4.0,baz=301,slow=5.6,SNR=8.8						
SBA	**Scott Base**	**76.35**	**169**	*eP*	**P**	**22 34 52.1**	**+0.2**
ASF	**Jabal al Asfar**	**77.64**	**305**	P	**P**	**22 35 02.3**	**+2.3**
	0.6nm,0.3s,mb3.7,baz=336,slow=10.0,SNR=3.7						
TIXI	**Tiksi**	**80.47**	**7**	*eP*	**P**	**22 35 15.1**	**+0.5**
QSPA	**South Pole Qui**	**82.30**	**180**	*eP*	**P**	**22 35 24.3**	**+0.3**
	3.3nm,0.7s,mb4.3						
BRTR	**Keskin Array B**	**82.36**	**312**	P	**P**	**22 35 26.6**	**+1.5**
	1.4nm,0.6s,mb4.0,baz=141,slow=8.0,SNR=9.6						
SNAA	**Sanae**	**88.90**	**197**	*eP*	**P**	**22 35 57.6**	**+1.0**
FINES	**FINESS Array B**	**92.43**	**332**	P	**P**	**22 36 15.9**	**+2.7**
	1.4nm,1.1s,mb4.1,baz=18,slow=4.4,SNR=5.2						
ARCES	**ARCESS Array B**	**94.22**	**340**	P	**P**	**22 36 22.4**	**+1.3**
	4.1nm,1.1s,mb4.7,baz=117,slow=2.7,SNR=8.1						
ARCES	**ARCESS Array B**	**94.22**	**340**	P		**22 36 22.4**	**+1.3**
YKA	**Yellowknife Ar**	**117.47**	**20**	PKP	PKPdf	22 41 49.5	+2.9
	0.2nm,0.4s,baz=331,slow=1.3,SNR=6.8						
YKA	**Yellowknife Ar**	**117.47**	**20**	PKP	PKPdf	22 41 49.5	+2.9
TXAR	**Lajitas Array**	**143.94**	**49**	PKP	PKPdf	22 42 39.2	+2.1
	0.3nm,0.3s,baz=336,slow=4.1,SNR=6.0						
TXAR	**Lajitas Array**	**143.94**	**49**	PKP	PKPdf	22 42 39.2	+2.1
CCM	**Cathedral Cave**	**145.51**	**26**	*e*PKPbc	PKPbc	22 42 42.9	+2.5
BDFB	**Brasilia**	**146.17**	**227**	PKPbc	PKPbc	22 42 45.7	+3.2
	7.7nm,0.9s,baz=93,slow=3.5,SNR=8.0						
MIAR	**Mount Ida**	**147.19**	**33**	*e*PKPbc	PKPdf	22 42 48.3	+5.8
WVT	**Waverly**	**148.57**	**24**	*e*PKPbc	PKPdf	22 42 51.8	+7.0

*BJI **28** 22:38:20.6,6.52S×127.70E,h413km,mb4.4*
*NEIC **28** 22:38:22.3±0.7,6.52S×127.43E,h402km±8km,mb4.4/15, Error ellipse: s-maj=9.4km s-min=4.8km az=59.0*
*IDC **28** 22:38:22.6±1.5,6.54S×127.46E,h405km±16km,mb3.8/13, mb1 4.0/17,mb1mx3.9/20,Error ellipse: s-maj=18.4km s-min=8.0km az=63.0*

ISC 28 22:38:20.7±1.0,6.54S±0.05×127.45E±0.08,h404km±11km, n85,σ1°903/74,mb4.3/31,4C-1D,Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KAKA	**Kakadu**	**7.83**	**142**	⇑*i*P	**P**	**22 40 16.2**	**+1.5**
	556nm,0.6s						
KAKA				*e*S	**S**	**22 41 40.8**	**-3.8**
FITZ	**Fitzroy Crossi**	**11.63**	**189**	*eP*	**P**	**22 40 58.1**	**-0.5**
	7.6nm,0.9s						
FITZ				*e*S	**S**	**22 43 23.9**	**+20**
FITZ	**Fitzroy Crossi**	**11.63**	**189**	P	**P**	**22 40 58.3**	**-0.3**
	1.1nm,0.3s,baz=13,slow=7.4,SNR=59						
WRAB	**Tennant Creek**	**14.91**	**154**	*e*Pn	**P**	**22 41 33.1**	**-1.3**
	43nm,0.5s						
WRAB				*i* Sn	**S**	**22 44 09.2**	**-0.8**
WRA	**Warramunga Arr**	**14.91**	**154**	P	**P**	**22 41 33.9**	**-0.6**
	7.9nm,0.3s,baz=329,slow=11,SNR=127						
WRA				S	**S**	**22 44 09.5**	**-0.5**
	9.5nm,0.3s,baz=328,slow=19,SNR=28						
WRA	**Warramunga Arr**	**14.91**	**154**	P	**P**	**22 41 33.9**	**-0.6**
WRA				S	**S**	**22 44 09.5**	**-0.5**
WB2	**Warramunga Arr**	**14.91**	**154**	*eP*	**P**	**22 41 33.7**	**-0.8**
WB2				*e*S	**S**	**22 44 08.9**	**-1.2**
KKM	**Kota Kinabalu**	**16.79**	**318**	⇑*e*P	**P**	**22 41 55.0**	**+1.4**
AS12	**Alice Springs**	**18.12**	**161**	*eP*	**P**	**22 42 07.4**	**+0.4**
	36nm,0.6s						
AS12				*e*S	**S**	**22 45 12.0**	**+2.1**
ASAR	**Alice Springs**	**18.12**	**161**	P	**P**	**22 42 08.2**	**+1.2**
	5.5nm,0.3s,baz=348,slow=12,SNR=316						
ASAR				S	**S**	**22 45 12.9**	**+2.9**
	5.4nm,0.3s,baz=339,slow=23,SNR=17						
ASAR				ScP		22 49 16.8	
	baz=42,slow=0.4,SNR=4.2						
ASAR	**Alice Springs**	**18.12**	**161**	P	**P**	**22 42 08.2**	**+1.2**
ASAR				S	**S**	**22 45 12.9**	**+2.9**
ASAR				ScP		22 49 16.8	
PMG	**Port Moresby**	**19.73**	**100**	P	**P**	**22 42 24.7**	**+2.0**
	1.4nm,0.3s,baz=298,slow=4.9,SNR=7.0						
PMG	**Port Moresby**	**19.73**	**100**	*eP*	**P**	**22 42 25.5**	**+2.7**
CTA	**Charters Tower**	**22.68**	**128**	*eP*	**P**	**22 42 52.5**	**+1.7**
	9.9nm,0.8s,mb4.3						
CTA				*e*		22 43 52.6	
CTA	**Charters Tower**	**22.68**	**128**	P	**P**	**22 42 52.1**	**+1.2**
	13nm,0.8s,mb4.4,baz=308,slow=9.7,SNR=8.0						
CTAO	**Charters Tower**	**22.68**	**128**	*eP*	**P**	**22 42 52.4**	**+1.5**
	16nm,0.9s,mb4.5						
FORT	**Forrest**	**24.12**	**179**	*eP*	**P**	**22 43 03.2**	**-0.6**
	111nm,0.7s,mb5.4						
KGM	**Kluang**	**25.54**	**289**	⇓*e*P	**P**	**22 43 18.3**	**+1.5**
KLBR	**Kellerberrin**	**26.52**	**199**	*eP*	**P**	**22 43 25.0**	**-0.4**
	22nm,1.0s,mb4.5						
NWAO	**Narrogin (SRO)**	**27.92**	**199**	P	**P**	**22 43 37.8**	**0.0**
	3.7nm,0.6s,mb3.9,baz=24,slow=8.9,SNR=6.5						
STKA	**Stephens Creek**	**28.46**	**154**	*eP*	**P**	**22 43 41.9**	**-0.6**
	12nm,0.4s,mb4.6						
STKA				*e*		22 44 55.0	
STKA				*eS*	**S**	**22 47 58.9**	**-1.3**
STKA	**Stephens Creek**	**28.46**	**154**	P	**P**	**22 43 42.8**	**+0.3**
	16nm,0.4s,mb4.7,baz=325,slow=8.9,SNR=79						
STKA				pP		22 44 55.1	
	16nm,0.7s,baz=319,slow=11,SNR=9.3						
ARMA	**Armidale**	**32.86**	**139**	*eP*	**P**	**22 44 21.8**	**+1.4**
TOO	**Toolangi**	**34.98**	**155**	*eP*	**P**	**22 44 40.7**	**+2.4**
	18nm,0.9s,mb4.4						
BDT	**Bhumibol Dam**	**36.72**	**310**	P	**P**	**22 44 54.0**	**+1.0**
CM31	**Chiang Mai Arr**	**37.52**	**312**	*eP*	**P**	**22 44 59.7**	**+0.1**
	16nm,1.0s,mb4.3						
CMAR	**Chiang Mai Arr**	**37.52**	**312**	P	**P**	**22 44 59.9**	**+0.3**
	6.5nm,0.9s,mb4.0,baz=138,slow=6.6,SNR=34						
CMAR				ScP		22 50 17.4	
	1.5nm,0.8s,baz=162,slow=3.0,SNR=8.6						
CHRT	**Chiangrai**	**37.81**	**315**	⇑P	**P**	**22 45 03.0**	**+1.0**
GYA	**Guiyang**	**38.29**	**329**	⇑*i*P	**P**	**22 45 07.5**	**-0.1**
GYA				AMB	AMB		
	comp=Z,10.0nm,0.9s,mb4.2						
KMI	**Kunming**	**39.61**	**324**	*eP*	**P**	**22 45 17.8**	**+1.1**
KMI				AMB	AMB		
	comp=Z,9.0nm,1.2s,mb4.0						
ENH	**Enshi**	**40.45**	**336**	*eP*	**P**	**22 45 23.1**	**-0.4**
XAN	**Xi'an**	**44.01**	**338**	P	**P**	**22 45 51.0**	**-0.9**
XAN				AMB	AMB		
	comp=Z,14nm,0.8s,mb4.3						
MAJO	**Matsushiro**	**44.03**	**12**	*eP*	**P**	**22 45 51.1**	**-1.0**
SHL	**Shillong**	**47.04**	**314**	*i P*	**P**	**22 46 15.0**	**-0.7**
LSA	**Lhasa**	**50.14**	**318**	P	**P**	**22 46 39.8**	**+0.7**
LSA	**Lhasa**	**50.14**	**318**	*eP*	**P**	**22 46 39.5**	**+0.4**
	comp=Z,9.1nm,0.6s,mb4.3						
GTA	**Gaotai**	**52.38**	**333**	*eP*	**P**	**22 46 56.0**	**+0.5**
GTA				AMB	AMB		
	comp=Z,14nm,0.9s,mb4.2						
PKI	**Pulchoki**	**52.92**	**312**	*eP*	**P**	**22 46 58.4**	**-1.2**
	comp=Z,21nm,0.6s,mb4.6						
KKN	**Kakani**	**53.13**	**312**	*eP*	**P**	**22 46 59.9**	**-1.3**
	comp=Z,23nm,0.6s,mb4.6						
DMN	**Daman**	**53.16**	**312**	*eP*	**P**	**22 47 00.3**	**-1.1**
	comp=Z,36nm,0.8s,mb4.7						
GKN	**Gorkha**	**53.72**	**312**	*eP*	**P**	**22 47 04.3**	**-1.1**
HYB	**Hyderabad**	**53.84**	**297**	*i P*	**P**	**22 47 04.5**	**-1.9**
HYB	**Hyderabad**	**53.84**	**297**	*eP*	**P**	**22 47 04.5**	**-1.9**
KOLN	**Koldanda**	**54.37**	**311**	*eP*	**P**	**22 47 08.3**	**-1.8**
	comp=Z,50nm,0.8s,mb4.8						
URZ	**Urewera**	**54.83**	**133**	P	**P**	**22 47 12.0**	**-1.1**
	comp=Z,9.7nm,0.8s,mb4.1,baz=298,slow=16,SNR=3.4						
ULN	**Ulaanbaatar**	**57.08**	**344**	*eP*	**P**	**22 47 28.6**	**-0.1**
	comp=Z,3.2nm,0.4s,mb4.0						
SONM	**Songino Array**	**57.24**	**343**	P	**P**	**22 47 30.1**	**+0.3**
	comp=Z,5.6nm,1.0s,mb3.8,baz=172,slow=8.7,SNR=4.7						
MKAR	**Makanchi Array**	**66.47**	**328**	P	**P**	**22 48 30.0**	**-0.2**
	comp=Z,6.9nm,0.5s,mb4.6,baz=122,slow=8.1,SNR=64						
AAK	**Ala-Archa**	**68.57**	**321**	*eP*	**P**	**22 48 43.5**	**+0.5**
	comp=Z,6.8nm,1.1s,mb4.2						
ZAL	**Zalesovo**	**70.07**	**335**	P	**P**	**22 48 51.0**	**-0.9**
	comp=Z,5.1nm,0.4s,mb4.4,baz=247,slow=3.8,SNR=10						
KURK	**Kurchatov**	**70.82**	**330**	*eP*	**P**	**22 48 56.2**	**-0.2**
VNDA	**Vanda**	**73.22**	**173**	P	**P**	**22 49 10.2**	**+0.2**
	comp=Z,2.2nm,0.7s,mb3.8,baz=313,slow=7.3,SNR=18						
SBA	**Scott Base**	**74.13**	**172**	*eP*	**P**	**22 49 16.1**	**+0.9**
	comp=Z,8.2nm,1.0s,mb4.3						
MAW	**Mawson**	**74.46**	**201**	P	**P**	**22 49 19.0**	**+1.8**
	comp=Z,8.6nm,1.2s,mb4.3,baz=25,slow=8.6,SNR=4.9						
BVAR	**Borovoye Array**	**76.34**	**329**	P	**P**	**22 49 28.2**	**+0.2**
	comp=Z,1.9nm,0.5s,mb4.0,baz=129,slow=9.9,SNR=11						
BRVK	**Borovoye**	**76.41**	**329**	*eP*	**P**	**22 49 28.3**	**0.0**
ZRNK	**Zerenda**	**77.02**	**328**	*eP*	**P**	**22 49 31.7**	**0.0**
TIXI	**Tiksi**	**78.04**	**0**	*eP*	**P**	**22 49 37.5**	**+0.7**
	comp=Z,10.0nm,0.1s,mb5.4						
THR	**Tehran**	**82.84**	**307**	P	**P**	**22 50 03.5**	**+0.9**
	comp=Z,0.4nm,0.3s,mb3.6,baz=126,slow=2.8,SNR=3.7						
QSPA	**South Pole Qui**	**83.43**	**180**	*eP*	**P**	**22 50 04.5**	**-0.2**
	comp=Z,10.0nm,0.8s,mb4.6						
SML	**Sawmill**	**92.98**	**28**	*eP*	**P**	**22 50 50.1**	**0.0**
ILAR	**Eielson Array**	**94.02**	**25**	P	**P**	**22 50 53.5**	**-1.2**
	comp=Z,0.8nm,0.9s,mb3.8,baz=251,slow=5.0,SNR=6.1						
SNAA	**Sanae**	**95.50**	**194**	*eP*	**P**	**22 51 02.3**	**+0.9**
INK	**Inuvik**	**99.38**	**22**	*e*Pdif	**P**	**22 51 19.1**	**0.0**
HLID	**Hailey**	**114.73**	**45**	*e*PKPdf	PKPdf	22 56 16.7	+2.7
BOZ	**Bozeman (W)**	**116.03**	**42**	*e*PKPdf	PKPdf	22 56 18.9	+2.4
BW06	**Boulder Array**	**118.36**	**45**	*e*PKPdf	PKPdf	22 56 23.1	+2.0
PDAR	**Pinedale Array**	**118.36**	**45**	PKP	PKPdf	22 56 22.4	+1.3
	comp=Z,1.1nm,0.9s,baz=315,slow=2.1,SNR=6.6						
TUC	**Tucson**	**120.21**	**56**	*e*PKPdf	PKPdf	22 56 27.6	+2.7
RSSD	**Black Hills**	**121.61**	**41**	*e*PKPdf	PKPdf	22 56 29.1	+1.7
ISCO	**Idaho Springs**	**122.15**	**47**	*e*PKPdf	PKPdf	22 56 31.1	+2.5
ANMO	**Albuquerque**	**123.05**	**52**	*e*PKPdf	PKPdf	22 56 33.2	+2.9
ULM	**Lac du Bonnet**	**123.42**	**32**	PKP	PKPdf	22 56 32.0	+1.3
	comp=Z,2.8nm,0.6s,baz=202,slow=5.4,SNR=3.1						
MNTX	**Cornudas Mount**	**124.81**	**56**	*e*PKPdf	PKPdf	22 56 36.3	+2.4
TXAR	**Lajitas Array**	**126.86**	**58**	PKP	PKPdf	22 56 40.0	+2.1
	comp=Z,1.3nm,1.0s,baz=208,slow=0.3,SNR=9.0						
JCT	**Junction City**	**129.74**	**56**	*e*PKPdf	PKPdf	22 56 46.2	+2.8
TRQA	**Tornquist**	**134.77**	**170**	*e*PKPdf	PKPdf	22 56 55.6	+2.9
PLAL	**Pickwick Lake**	**136.77**	**44**	*e*PKPdf	PKPdf	22 56 58.3	+1.8
LRAL	**Lakeview Retre**	**138.56**	**46**	*e*PKPdf	PKPdf	22 57 03.2	+3.5
DWPF	**Disney**	**145.24**	**48**	*e*PKPbc	PKPbc	22 57 14.0	+1.6
LVC	**Limon Verde**	**146.90**	**152**	*e*PKPbc	PKPbc	22 57 20.0	+3.5
CPUP	**Villa Florida**	**147.00**	**172**	PKPbc	PKPdf	22 57 19.2	+4.6
	comp=Z,14nm,0.8s,baz=198,slow=1.3,SNR=15						
CPUP	**Villa Florida**	**147.00**	**172**	*e*PKPbc	PKPdf	22 57 19.2	+4.6
LPAZ	**La Paz**	**152.57**	**146**	PKP	PKPdf	22 57 26.7	+3.4
	comp=Z,1.8nm,1.0s,baz=207,slow=0.2,SNR=6.3						
LPAZ				PKPbc	PKPdf	22 57 34.2	+11
	comp=Z,3.3nm,0.5s,baz=136,slow=1.1,SNR=18						
LPAZ				PKPab	PKPab	22 57 46.1	+0.6
	2.3nm,0.7s,baz=217,slow=4.5,SNR=18						
LPAZ	**La Paz**	**152.57**	**146**	*e*PKPdf	PKPdf	22 57 26.7	+3.4
LPAZ				*e*PKPbc	PKPdf	22 57 33.5	+10
LPAZ				*e*PKPab	PKPab	22 57 46.0	+0.4

NNC 28 22:39:27.0±2.8,50.22N×86.91E,h33km,mpv3.5,10C-3D, Error ellipse: s-maj=26.1km s-min=15.1km az=83.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MK31	**Makanchi Array**	**4.60**	**224**	⇑Pn	Pn	22 40 36.9	+0.8
	5.8nm,0.5s,baz=52,slow=13,SNR=43						
MK31				⇑Pg	P	22 40 49.3	+13
	3.1nm,0.3s						
MK31				⇓Sn	Sn	22 41 34.1	+5.0
	9.8nm,0.5s,baz=56,slow=20,SNR=46						
MK31				⇑Lg		22 41 54.0	
	25nm,0.5s,baz=50,slow=30,SNR=7.7						
KURK	**Kurchatov**	**5.32**	**279**	⇓Pn	Pn	22 40 45.8	-0.5
	2.3nm,0.5s,baz=99,slow=8.3,SNR=18						
KURK				⇓Lg		22 42 17.2	
	34nm,0.8s,baz=80,slow=16,SNR=3.7						
VOSK	**Vostochnaya**	**10.25**	**290**	⇑Pn	P	22 41 50.9	-3.9
	0.8nm,0.7s						
VOSK				⇑Sn	S	22 43 43.7	-5.9
	2.7nm,0.8s						
BVA0	**Borovoye Array**	**10.65**	**292**	⇑Sn	S	22 43 53.2	-6.1
	0.7nm,0.8s,baz=215,slow=38,SNR=4.5						
BRVK	**Borovoye**	**10.72**	**292**	⇑Sn	S	22 43 56.1	-4.9
	1.7nm,0.6s						
ZRNK	**Zerenda**	**11.47**	**291**	⇑Pn	P	22 42 10.4	-0.9
	2.3nm,1.2s						
ZRNK				⇑Sn	S	22 44 14.0	-5.3
	6.3nm,1.1s						
KK31	**Karatay Array**	**13.30**	**244**	⇑Pn	P	22 42 32.6	-3.3
	0.4nm,0.5s,baz=54,slow=13,SNR=8.2						
NDI	**New Delhi**	**22.73**	**203**	*eP*	P	22 44 21.0	-6.0
NDI				*e*		22 44 54.0	

*IDC **28** 23:00:53.8±5.2,37.20N×72.27E,h230km±40km,mb3.2/5, mb1 3.3/9,mb1mx3.1/22,Error ellipse: s-maj=65.3km s-min=22.5km az=154.0*
*NEIC **28** 23:00:54.3±2.6,37.32N×72.19E,h225km±15km,Error ellipse: s-maj=41.3km s-min=13.8km az=151.0*
*NNC **28** 23:01:00.4±1.9,37.83N×71.95E,h236km±78km,mpv4.1, Error ellipse: s-maj=155.6km s-min=13.0km az=64.0*

ISC 28 23:00:51.9±1.0,37.20N±0.07×72.2E±0.1,h225km±12km, n28,σ0°956/30,mb3.4/6,2C-2D,Tajikistan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AML	**Almayashu**	**5.07**	**13**	P	**P**	**23 02 08.6**	**+0.3**
	SNR=96						
UCH	**Uchtor**	**5.34**	**19**	P	**P**	**23 02 11.8**	**0.0**
	SNR=33						
KZA	**Kyzart**	**5.42**	**25**	P	**P**	**23 02 12.6**	**-0.3**
	SNR=11						
EKS2	**Erkin-Say**	**5.59**	**12**	P	**P**	**23 02 15.1**	**0.0**
	SNR=40						
AAK	**Ala-Archa**	**5.72**	**18**	P	**P**	**23 02 17.1**	**+0.5**
	SNR=7.7						
AAK	**Ala-Archa**	**5.72**	**18**	⇓*e*Pn	**P**	**23 02 16.7**	**+0.1**
	20nm,0.6s						
KBK	**Karagaybulak**	**5.86**	**21**	P	**P**	**23 02 19.0**	**+0.6**
	SNR=13						
ULHL	**Ulahol**	**5.94**	**31**	P	**P**	**23 02 19.3**	**-0.2**
	SNR=9.8						
KK31	**Karatay Array**	**6.03**	**348**	⇓P	**P**	**23 02 20.4**	**-0.2**
	8.2nm,0.3s,baz=154,slow=7.0,SNR=239						
KK31				⇑S	**S**	**23 03 24.9**	**-4.8**
	1.7nm,0.3s,baz=167,slow=24						
CHMS	**Chumysh**	**6.12**	**18**	P	**P**	**23 02 22.1**	**+0.3**
	SNR=12						
TKM2	**Tokmak 2**	**6.29**	**24**	P	**P**	**23 02 24.2**	**+0.2**
	SNR=9.8						
USP	**Ospenovka**	**6.32**	**16**	P	**P**	**23 02 24.8**	**+0.5**
	SNR=15						
MKAR	**Makanchi Array**	**12.19**	**35**	P	**P**	**23 03 40.1**	**+0.9**
	0.2nm,0.3s,baz=207,slow=9.6,SNR=6.3						
KOLN	**Koldanda**	**13.47**	**131**	*eP*	**P**	**23 03 54.4**	**-0.9**
	7.9nm,0.6s						
KURK	**Kurchatov**	**14.28**	**17**	*eP*	**P**	**23 04 04.0**	**-1.2**
KKN	**Kakani**	**14.50**	**127**	*eP*	**P**	**23 04 08.7**	**+0.6**
	4.9nm,0.3s						
DMN	**Daman**	**14.52**	**127**	*eP*	**P**	**23 04 08.1**	**-0.2**
PKI	**Pulchoki**	**14.74**	**127**	*eP*	**P**	**23 04 10.3**	**-0.6**
	4.5nm,0.5s						
AB31	**Akbulak array**	**14.95**	**328**	P	**P**	**23 04 13.4**	**0.0**
	0.6nm,0.5s,baz=134,slow=12,SNR=21						
AB31				⇑S	**S**	**23 06 51.9**	**-1.3**
	0.4nm,0.6s						
BVAR	**Borovoye Array**	**15.87**	**356**	P	**P**	**23 04 24.5**	**0.0**
	0.2nm,0.3s,baz=159,slow=13,SNR=6.6						
THR	**Tehran**	**16.95**	**272**	P	**P**	**23 04 37.5**	**+0.4**
	0.2nm,0.3s,baz=146,slow=7.3,SNR=3.2						
ZAL	**Zalesovo**	**18.88**	**24**	P	**P**	**23 04 56.0**	**-1.0**
	2.3nm,0.3s,baz=165,slow=7.8,SNR=19						
JOF	**Joensuu**	**35.73**	**329**	*ep*	**P**	**23 07 30.7**	**+0.3**
	0.7nm,0.3s,mb3.7						
FINES	**FINESS Array B**	**37.43**	**325**	P	**P**	**23 07 44.9**	**+0.2**
	2.2

HFS	**Hagfors**	**77.04**	**336**	P	**P**	**23 20 39.8**	**+0.2**
	1.4nm,0.9s,mb3.9,baz=90,slow=4.4,SNR=5.6						
NOA	**NORSAR Array B**	**77.17**	**338**	P	**P**	**23 20 40.7**	**+0.3**
	0.3nm,0.7s,mb3.3,baz=43,slow=2.4,SNR=3.0						
BRTR	**Keskin Array B**	**81.10**	**312**	P	**P**	**23 21 03.4**	**+1.2**
	0.4nm,0.8s,mb3.4,baz=72,slow=3.9,SNR=3.6						

JMA 29 00:35:38.0±0.2,**43.49N**×**146.51E**,**h50**km±2km,**M3.7, Kuril Islands**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
NEM2	**Nemuro 2**	**0.57**	**258**	P	P	00 35 50.2	0.0
NEM2				*e*S	S	00 35 59.0	0.0
JRA	**Rausu**	**1.10**	**294**	P	P	00 35 57.2	-0.1
JRA				*e*S	S	00 36 11.4	-0.3
JNK	**Nakash**	**1.31**	**275**	P	P	00 35 59.9	-0.5
JNK				*e*S	S	00 36 16.3	-0.6
JAK	**Akkeshi**	**1.41**	**250**	P	P	00 36 01.5	-0.4
JAK				*e*S	S	00 36 19.2	-0.3
JTKR	**Abashiri--Toko**	**1.95**	**285**	P	P	00 36 09.6	+0.3
JAR	**Ashorobuto**	**2.01**	**265**	P	P	00 36 10.4	+0.3
JAR				*e*S	S	00 36 34.6	+0.6
JOB	**Onbets**	**2.04**	**254**	P	P	00 36 10.7	+0.1
JOB				*e*S	S	00 36 35.1	+0.2
JMP	**Maruseppu**	**2.34**	**284**	P	P	00 36 15.2	+0.3
JCH	**Churui**	**2.47**	**250**	P	P	00 36 16.1	-0.6

ATH ***29*** *01:11:37.8, 38.30N×21.74E, h5km*
THE ***29*** *01:11:39.5, 38.27N×21.94E, h2km, ML3.1*
ISC 29 01:11:37.7±0.8,**38.25N**±0.05×**21.84E**±0.06,**h5km, n15,** σ1**9**σ**11/18, Greece**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
EVR	**Evrytania**	**0.67**	**358**	*e*PB	**Pb**	**01 11 50.0**	**-1.5**
AGG	**Agios Georgios**	**0.86**	**27**	*e*Pg	**Pg**	**01 11 54.4**	**-0.6**
	comp=Z,10nm,0.2s						
AGG				*e*Sg	**Sg**	**01 12 06.9**	**+0.3**
VLS	**Valsamata**	**0.98**	**266**	*e*PB	**Pb**	**01 11 55.5**	**-1.3**
MKIT	**Kithairon Oros**	**1.12**	**93**	*e*PN	**Pn**	**01 12 00.0**	**0.0**
NSAL	**Nisos Salamina**	**1.33**	**104**	*e*PG	**Pg**	**01 12 04.0**	**-0.3**
NEO	**Neokhori**	**1.52**	**45**	*e*PG	**Pg**	**01 12 06.0**	**-2.0**
XOR	**Xorichi**	**1.54**	**43**	*e*Pb	**Pb**	**01 12 05.8**	**-0.6**
MEV	**Metsovon**	**1.61**	**343**	*e*Pb	**Pb**	**01 12 08.0**	**+0.5**
PTL	**Penteli**	**1.61**	**96**	*e*PN	**Pn**	**01 12 09.5**	**+2.5**
IGT	**Igoumenitsa**	**1.74**	**318**	*e*Pb	**Pb**	**01 12 10.7**	**+0.9**
VLI	**Veliai**	**1.76**	**150**	*e*PN	**Pn**	**01 12 13.0**	**+3.9**
LIT	**Litokhoron**	**1.92**	**15**	*e*Pb	**Pb**	**01 12 11.3**	**-1.5**
LIT				*e*Sb	**Sb**	**01 12 37.7**	**+0.6**
FNA	**Florina**	**2.56**	**352**	*e*Pn	**Pn**	**01 12 22.0**	**+1.5**
FNA				*e*Sn	**Sn**	**01 12 52.9**	**+0.5**
GRG	**Griva**	**2.74**	**9**	*e*Pn	**Pn**	**01 12 23.7**	**+0.5**
KNT	**Kendrikon**	**3.02**	**15**	*e*Pn	**Pn**	**01 12 27.4**	**+0.2**

IDC ***29*** *01:13:17.6±0.7, 6.71N×72.93W, h158km±7km, mb3.5/7, mb1 3.8/10, mb1mx3.5/21, Error ellipse: s-maj=22.5km s-min=7.5km az=134.0*
NEIC ***29*** *01:13:18.4±0.6, 6.65N×72.96W, h170km±7km, Error ellipse: s-maj=17.5km s-min=8.5km az=141.0*
ISC 29 01:13:17.2±0.6,**6.7N**±0.1×**73.0W**±0.1,**h168km**±8km,**n13,** σ0**89/14,mb3.7/7, Northern Colombia**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ROSC	**El Rosal**	**2.31**	**216**	P	**P**	**01 13 59.1**	**+1.6**
	183nm,0.3s,baz=314,slow=19,SNR=544						
ROSC				S	**S**	**01 14 27.9**	**-0.7**
	100nm,0.3s,baz=129,slow=20,SNR=9.3						
SDV	**Santo Domingo**	**3.15**	**47**	P	**P**	**01 14 08.5**	**+0.7**
	72nm,0.3s,baz=260,slow=11,SNR=235						
SDV				S	**S**	**01 14 45.5**	**-1.2**
	62nm,0.3s,baz=351,slow=15,SNR=29						
OTAV	**Otavalo**	**8.46**	**220**	*e*P	**P**	**01 15 16.2**	**-1.4**
OTAV				*e*Sn	**S**	**01 16 51.9**	**+0.3**
PCRV	**Puerto La Cruz**	**8.92**	**67**	P	**P**	**01 15 24.6**	**+1.0**
	1.7nm,0.3s,baz=87,slow=1.8,SNR=10						
TXAR	**Lajitas Array**	**36.62**	**312**	P	**P**	**01 20 09.5**	**+0.4**
	0.3nm,0.4s,mb3.3,baz=90,slow=10.0,SNR=4.2						
TXAR				PcP	PcP	01 22 30.3	+1.4
	0.2nm,0.6s,baz=158,slow=4.9,SNR=3.2						
SCHQ	**Schefferville**	**48.21**	**5**	P	**P**	**01 21 42.7**	**+0.3**
	6.8nm,0.7s,mb4.4,baz=188,slow=6.3,SNR=18						
PDAR	**Pinedale Array**	**48.23**	**324**	P	**P**	**01 21 42.9**	**+0.1**
	0.3nm,0.4s,mb3.3,baz=122,slow=8.5,SNR=3.3						
YKA	**Yellowknife Ar**	**63.39**	**340**	P	**P**	**01 23 29.5**	**-1.2**
	1.7nm,0.6s,mb4.0,baz=132,slow=6.6,SNR=55						
DBIC	**Dimbokro**	**67.59**	**86**	P	**P**	**01 23 57.4**	**-1.0**
	1.5nm,0.6s,mb3.9,baz=129,slow=23,SNR=4.6						
NOA	**NORSAR Array B**	**81.32**	**29**	P	**P**	**01 25 16.6**	**+0.5**
	0.2nm,0.5s,mb3.0,baz=269,slow=5.4,SNR=3.3						
ARCES	**ARCESS Array B**	**86.69**	**20**	P	**P**	**01 25 43.2**	**+0.5**
	1.8nm,0.9s,mb3.9,baz=288,slow=5.7,SNR=4.0						
MKAR	**Makanchi Array**	**122.35**	**20**	PKP	PKPdf	01 31 53.1	+0.7
	0.3nm,0.4s,baz=345,slow=3.4,SNR=8.8						
ASAR	**Alice Springs**	**149.19**	**234**	PKPbc	PKPdf	01 32 47.8	+5.7
	0.5nm,0.5s,baz=121,slow=3.9,SNR=5.2						

IDC ***29*** *01:25:10.9±1.6, 8.13S×159.25E, mb4.1/6, mb1 4.3/6, mb1mx4.1/13, Error ellipse: s-maj=71.3km s-min=23.9km az=128.0*
ISC 29 01:25:14.4±1.3,**8.3S**±0.3×**159.2E**±0.3,**h33km, n6,** σ0**74/6, mb4.0/6, Bougainville - Solomon Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**28.67**	**212**	P	**P**	**01 31 10.9**	**+0.5**
	1.4nm,0.3s,mb4.1,baz=35,slow=14,SNR=4.9						
ASAR	**Alice Springs**	**28.69**	**235**	P	**P**	**01 31 10.2**	**-0.6**
	0.7nm,0.4s,mb3.7,baz=63,slow=10.0,SNR=7.7						
FITZ	**Fitzroy Crossi**	**34.08**	**250**	P	**P**	**01 31 58.0**	**-0.1**
	4.9nm,1.0s,mb4.4,baz=27,slow=9.0,SNR=4.7						
ILAR	**Eielson Array**	**83.04**	**20**	P	**P**	**01 37 36.9**	**-0.7**
	0.4nm,0.5s,mb3.7,baz=242,slow=5.4,SNR=8.5						
ILAR				pP	pP	01 37 52.8	+4.7
	0.4nm,0.5s,baz=248,slow=4.8,SNR=6.9						
MKAR	**Makanchi Array**	**87.13**	**318**	P	**P**	**01 37 59.0**	**+0.7**
	0.8nm,0.5s,mb4.2,baz=97,slow=5.8,SNR=12						
YKA	**Yellowknife Ar**	**95.48**	**28**	P	**P**	**01 38 37.0**	**+0.2**
	0.5nm,1.0s,mb3.9,baz=263,slow=4.6,SNR=5.9						
YKA				pP	pP	01 38 51.8	+4.4
	0.5nm,0.8s,baz=262,slow=4.7,SNR=9.1						

JMA ***29*** *01:34:23.7±0.1, 32.20N×140.65E, h36km, M4.0*
ISC 29 01:34:23.8±1.6,**32.20N**±0.08×**140.7E**±0.1,**h54km**±32km, **n13,** σ0**99/18, Southeast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHJ2	**Mitsune**	**1.16**	**322**	P	**P**	**01 34 43.8**	**-0.1**
JHJ2				S	**S**	**01 34 58.5**	**-0.5**
JKO	**Kozu shima**	**2.36**	**328**	P	**P**	**01 35 01.4**	**+0.4**
JKO				*e*S	**S**	**01 35 30.1**	**+1.4**
BSO1	**Boso 1**	**2.46**	**6**	P	**P**	**01 35 02.1**	**-0.3**
NJJJ	**Nii jima 2**	**2.48**	**333**	S	**S**	**01 35 33.0**	**+1.1**
BSO2	**Boso 2**	**2.55**	**2**	*e*S	**S**	**01 35 33.4**	**-0.1**
BSO3	**Boso 3**	**2.60**	**357**	P	**P**	**01 35 04.3**	**-0.1**
BSO3				S	**S**	**01 35 34.4**	**-0.4**
JIM2	**Oshima 3**	**2.71**	**338**	S	**S**	**01 35 36.9**	**-0.8**
JOD2	**Odawara 2**	**3.33**	**337**	P	**P**	**01 35 15.7**	**+1.1**
JIE	**Ise**	**3.97**	**304**	P	**P**	**01 35 22.5**	**-1.2**
JRY	**Ryogami san**	**4.08**	**339**	P	**P**	**01 35 26.9**	**+1.7**
JAG	**Ashikaga**	**4.33**	**347**	P	**P**	**01 35 28.4**	**-0.4**
JAG				*e*S	**S**	**01 36 16.4**	**-2.2**
JWY	**Kouya**	**4.70**	**297**	P	**P**	**01 35 32.6**	**-1.4**
MAT	**Matsushiro**	**4.78**	**336**	P	**P**	**01 36 36.5**	**+1.3**
MAT				S	**S**	**01 36 30.2**	**+0.3**

BGR ***29*** *01:35:60.0±0.5, 48.30N×7.74E, h10km, ML0.6/1, Error ellipse: s-maj=4.4km s-min=2.2km az=0.0*
NEIC ***29*** *01:36:00.6, 48.27N×7.71E, h5km, ML2.1(LDG), ML1.6(STR), After LDG.*
LDG ***29*** *01:36:00.6±0.1, 48.27N×7.71E, h5km, Md2.2/2, Ml2.1/8, Error ellipse: s-maj=1.7km s-min=0.9km az=116.0*
STR ***29*** *01:36:00.0±0.2, 48.26N×7.70E, h10km±1km, Ml1.6, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*

ISC 29 01:35:58.9±0.5,**48.28N**±0.03×**7.70E**±0.03,**h10km, n23,** σ0**88/41, France**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CDF	**Champ du Feu**	**0.31**	**296**	*e*Pg	**Pg**	**01 36 06.8**	**+1.4**
CDF				*e*Sg	**Sg**	**01 36 11.3**	**+1.5**
	4.6nm,0.1s						
ECH	**Echery**	**0.37**	**261**	*e*Sg	**Sg**	**01 36 12.9**	**+1.5**
ECH	**Echery**	**0.37**	**261**	Pg	**Pg**	**01 36 07.7**	**+1.2**
ECH				Sg	**Sg**	**01 36 13.0**	**+1.5**
BFO	**Black Forest**	**0.42**	**82**	*e*Pg	**Pg**	**01 36 07.8**	**+0.2**
	SNR=5.2						
BFO				*e*Sg	**Sg**	**01 36 12.8**	**-0.6**
	SNR=2.4						
FELD	**Feldberg**	**0.45**	**153**	*e*Pg	**Pg**	**01 36 08.7**	**+0.6**
FELD	**Feldberg**	**0.45**	**153**	Pg	**Pg**	**01 36 08.6**	**+0.5**
FELD				Sg	**Sg**	**01 36 15.1**	**+0.9**
MOF	**Molkenrain**	**0.57**	**222**	Pg	**Pg**	**01 36 10.6**	**+0.1**
HINF	**Hinteralfeld**	**0.73**	**231**	*e*Pg	**Pg**	**01 36 14.1**	**+0.5**
HINF				*e*Sg	**Sg**	**01 36 23.8**	**+0.4**
	3.0nm,0.2s						
SLE	**Schleitheim**	**0.74**	**133**	*e*Pg	**Pg**	**01 36 13.8**	**0.0**
SLE				*e*Sg	**Sg**	**01 36 23.2**	**-0.5**
SPAK	**Spaichingen**	**0.75**	**103**	Pg	**Pg**	**01 36 14.3**	**+0.3**
BBS	**Basel-Blauen**	**0.82**	**189**	Pg	**Pg**	**01 36 16.3**	**+0.8**
BBS				Sg	**Sg**	**01 36 26.7**	**+0.2**
BOURR	**Bourrignon**	**0.94**	**200**	*e*Pg	**Pg**	**01 36 18.5**	**+0.8**
BOURR				*e*Sg	**Sg**	**01 36 31.2**	**+0.9**
HAU	**Haudompre**	**0.94**	**254**	*e*Pg	**Pg**	**01 36 18.5**	**+0.6**
HAU				*e*Sg	**Sg**	**01 36 30.9**	**+0.4**
	3.3nm,0.3s						
ZUR	**Zurich**	**1.08**	**146**	*e*Sg	**Sg**	**01 36 34.6**	**-0.6**
LOMF	**Lomont**	**1.10**	**213**	*e*Sg	**Sg**	**01 36 36.1**	**+0.6**
THEF	**They Montfort**	**1.15**	**268**	Pg	**Pg**	**01 36 21.3**	**-0.6**
THEF				Sg	**Sg**	**01 36 37.5**	**+0.3**
WILA	**Wila**	**1.19**	**136**	*e*Sg	**Sg**	**01 36 37.9**	**-0.7**
RFYF	**Reffroy**	**1.52**	**284**	*e*Pg	**Pg**	**01 36 28.9**	**-0.5**
RFYF				*e*Sg	**Sg**	**01 36 49.2**	**-0.5**
	5.0nm,0.3s						
MEZF	**Maizieres J'vi**	**1.78**	**278**	*e*Pg	**Pg**	**01 36 33.8**	**-0.7**
MEZF				*e*Sn	**Sn**	**01 36 51.9**	**-1.0**
SFTF	**Sexfontaines**	**1.78**	**269**	*e*Pn	**Pn**	**01 36 30.3**	**+0.2**
SFTF				*e*Pg	**Pg**	**01 36 33.9**	**-0.6**
SFTF				*e*Sn	**Sn**	**01 36 51.9**	**-1.0**
SFTF				*e*Sg	**Sg**	**01 36 57.0**	**-1.3**
	2.3nm,0.2s						
CABF	**La Chapelle**	**1.99**	**214**	*e*Pn	**Pn**	**01 36 33.4**	**+0.3**
CABF				*e*Sn	**Sn**	**01 36 57.0**	**-1.3**
CABF				*e*Sg	**Sg**	**01 37 03.5**	**-1.9**
	0.5nm,0.2s						
LOR	**Lormes**	**2.78**	**250**	*e*Pg	**Pg**	**01 36 52.5**	**-2.0**
LOR				*e*Sg	**Sg**	**01 37 27.7**	**-3.8**
	0.6nm,0.2s						
SMF	**Signal de Mont**	**3.08**	**239**	*e*Sg	**Sg**	**01 37 37.6**	**-4.1**
	0.5nm,0.2s						

NIED ***29*** *01:37:00, 43.00N×147.00E, h32km, Mw3.5 Best double couple: M0 2.09×10^14 NP1:φs55°, δ68°, λ99°. NP2:φs213°, δ24°, λ69°.*
JMA ***29*** *01:37:33.3±0.2, 43.00N×146.99E, h51km±4km, M3.5*
ISC 29 01:37:34.1±1.1,**42.95N**±0.08×**146.9E**±0.1,**h33km, n11,** σ0**61/19, Off southeast coast of Hokkaido**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
NEM2	**Nemuro 2**	**0.95**	**296**	P	**P**	**01 37 50.9**	**-0.2**
NEM2				S	**S**	**01 38 03.9**	**+0.3**
JAK	**Akkeshi**	**1.63**	**272**	P	**P**	**01 38 00.6**	**-0.2**
JAK				*e*S	**S**	**01 38 21.4**	**+0.6**
JRA	**Rausu**	**1.64**	**308**	P	**P**	**01 38 00.4**	**-0.5**
JRA				*e*S	**S**	**01 38 21.2**	**+0.2**
JNK	**Nakash**	**1.73**	**292**	P	**P**	**01 38 01.6**	**-0.5**
JNK				*e*S	**S**	**01 38 22.5**	**-0.7**
JOB	**Onbets**	**2.26**	**270**	P	**P**	**01 38 09.7**	**-0.1**
JOB				*e*S	**S**	**01 38 35.8**	**-1.1**
JAR	**Ashorobuto**	**2.33**	**280**	P	**P**	**01 38 10.5**	**-0.3**
JAR				*e*S	**S**	**01 38 38.7**	**+0.2**
JTKR	**Abashiri--Toko**	**2.42**	**296**	P	**P**	**01 38 11.9**	**-0.1**
JTKR				*e*S	**S**	**01 38 41.9**	**+1.2**
JCH	**Churui**	**2.64**	**264**	P	**P**	**01 38 15.8**	**+0.6**
JCH				*e*S	**S**	**01 38 45.9**	**-0.5**
JMP	**Maruseppu**	**2.79**	**293**	P	**P**	**01 38 17.5**	**+0.1**
JEM	**Erimo**	**2.93**	**253**	P	**P**	**01 38 20.9**	**+1.5**
JNBK	**Urakawa-nobuka**	**3.15**	**259**	P	**P**	**01 38 22.1**	**-0.3**

IDC ***29*** *01:38:09.0±6.0, 0.15N×123.68E, h158km±58km, mb3.6/8, mb1 3.8/9, mb1mx3.6/16, Error ellipse: s-maj=51.8km s-min=13.5km az=61.0*
NEIC ***29*** *01:38:09.8±6.4, 0.09N×123.62E, h169km±64km, mb3.9/1, Error ellipse: s-maj=47.6km s-min=12.4km az=61.0*
ISC 29 01:38:08.1±0.6,**0.1N**±0.1×**123.4E**±0.3,**h169km, n13,** σ0**92/13, mb3.8/9, Minahassa Peninsula, Sulawesi**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**18.17**	**173**	P	**P**	**01 42 08.9**	**-1.6**
	0.7nm,0.3s,baz=359,slow=14,SNR=9.1						
WRA	**Warramunga Arr**	**22.56**	**152**	P	**P**	**01 42 54.7**	**-0.2**
	2.2nm,0.5s,mb3.9,baz=333,slow=10,SNR=15						
WB2	**Warramunga Arr**	**22.57**	**152**	*e*P	**P**	**01 42 54.6**	**-0.3**
ASAR	**Alice Springs**	**25.68**	**157**	P	**P**	**01 43 26.1**	**+1.8**
	0.5nm,0.4s,mb3.5,baz=345,slow=15,SNR=6.6						
ASAR				PcP	PcP	01 46 51.0	+0.4
	1.1nm,0.5s,baz=345,slow=2.1,SNR=12						
CMAR	**Chiang Mai Arr**	**30.22**	**309**	P	**P**	**01 44 06.6**	**+1.4**
	3.2nm,0.9s,mb4.0,baz=134,slow=7.2,SNR=11						
STKA	**Stephens Creek**	**36.11**	**153**	P	**P**	**01 44 55.6**	**+0.1**
	5.0nm,0.8s,mb4.2,baz=325,slow=11,SNR=4.7						
ULN	**Ulaanbaatar**	**49.71**	**346**	*e*P	**P**	**01 46 45.2**	**+0.4**
	2.5nm,0.8s,mb3.9						
SONM	**Songino Array**	**49.85**	**345**	P	**P**	**01 46 46.4**	**+0.5**
	2.5nm,0.7s,mb4.0,baz=160,slow=8.0,SNR=5.1						
MKAR	**Makanchi Array**	**58.80**	**328**	P	**P**	**01 47 50.5**	**-0.4**
	1.8nm,0.4s,mb4.2,baz=124,slow=8.5,SNR=26						
MKAR				PcP	PcP	01 48 37.5	-0.8
	1.6nm,0.8s,baz=126,slow=3.7,SNR=6.7						
KURK	**Kurchatov**	**63.15**	**330**	*e*P	**P**	**01 48 19.0**	**-1.1**
ZRNK	**Zerenda**	**69.35**	**328**	*e*P	**P**	**01 48 58.0**	**-1.2**
VNDA	**Vanda**	**80.24**	**172**	P	**P**	**01 50 01.6**	**+0.8**
	0.3nm,0.6s,mb3.1,baz=336,slow=3.6,SNR=3.8						
ILAR	**Eielson Array**	**89.82**	**25**	P	**P**	**01 50 48.1**	**-0.2**
	0.4nm,0.8s,mb3.4,baz=245,slow=5.5,SNR=6.8						

CASC 29 01:42:20.1±2.4,**11.13N**×**85.88W,h64km**±10km,**MD3.5, ML3.0,4D,Nicaragua**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SSNN	**San Juan del S**	**0.16**	**10**	*e*P	P	01 42 30.2	+0.4
SSNN				*e*S	S	01 42 38.1	+1.1
SSNN				*i*		01 42 38.6	
	comp=Z,622nm,0.1s						
CRZC	**La Cruz**	**0.33**	**123**	↓*e*P	P	01 42 30.9	-0.1
CRZC				*e*S	S	01 42 41.5	+2.6
MADN	**Villa Maderas**	**0.43**	**51**	↓*e*P	P	01 42 32.3	+0.4
CONN	**Concepcion**	**0.49**	**30**	↓*i*P	P	01 42 32.8	+0.3
CONN				*e*S	S	01 42 42.0	+0.5
VCR	**Vista de Mar**	**1.03**	**166**	*e*P	P	01 42 37.5	-1.5
VCR				*e*S	S	01 42 55.0	+2.1
COPN	**Copaltepe**	**1.26**	**326**	↓*e*P	P	01 42 41.4	-0.6
COPN				*e*S	S	01 42 57.7	-0.6
JCR	**Jicaral**	**1.48**	**149**	*e*P	P	01 42 44.1	-1.0
JCR				*e*S	S	01 43 03.5	-0.2
PRS1	**Puriscal**	**1.92**	**126**	*e*P	P	01 42 53.6	+2.5
PRS1				*e*S	S	01 43 16.2	+2.2
LAJ	**Bijagual**	**2.14**	**126**	*e*P	P	01 42 52.5	-1.7
LAJ				*e*S	S	01 43 14.7	-4.8
LCR2	**La Lucha 2**	**2.30**	**127**	*e*P	P	01 42 57.9	+1.3
URSC	**Urasca**	**2.43**	**122**	*e*P	P	01 42 58.5	+0.1

NEIC ***29*** *01:49:23.6±2.2, 5.92S×148.76E, h52km±18km, mb4.7/6, Error ellipse: s-maj=19.4km s-min=14.5km az=121.0*
IDC ***29*** *01:49:24.5±2.5, 6.03S×148.80E, h58km±19km, mb4.0/7, mb1 4.2/8, mb1mx4.0/15, ML3.7/1, MS3.3/2, Ms1 3.3/2, ms1mx3.1/16, Error ellipse: s-maj=32.8km s-min=14.0km az=118.0*
ISC 29 01:49:22.8±3.0,**6.0S**±0.1×**148.7E**±0.2,**h57km**±24km,**n21,** σ0**74/21, mb4.3/10, MS3.1/1,1D, New Britain region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**3.75**	**204**	P	**P**	**01 50 20.2**	**+0.7**
	43nm,0.3s,baz=36,slow=5.5,SNR=65						
PMG				S	**S**	**01 51 02.0**	**-0.8**
	77nm,0.3s,baz=246,slow=23,SNR=11						
PMG	**Port Moresby**	**3.75**	**204**	*e*Pn	**P**	**01 50 19.9**	**+0.3**
PMG				*e*Sn	**S**	**01 51 02.8**	**0.0**
CTA	**Charters Tower**	**14.24**	**189**	LR	LR	01 57 57.8	
	comp=Z,126nm,19.2s,baz=229,slow=36						
KAKA	**Kakadu**	**17.41**	**246**	*e*P	**P**	**01 53 22.6**	**-0.9**
	8.0nm,0.5s						
WRAB	**Tennant Creek**	**19.68**	**224**	*e*P	**P**	**01 53 49.9**	**-0.1**
	52nm,0.7s						
WB2	**Warramunga Arr**	**19.69**	**224**	*e*P	**P**	**01 53 50.0**	**-0.1**
AS12	**Alice Springs**	**22.64**	**217**	*e*P	**P**	**01 54 21.2**	**+1.1**
	9.4nm,0.6s,mb4.4						
ASAR	**Alice Springs**	**22.64**	**217**	P	**P**	**01 54 21.4**	**+1.4**
	5.1nm,0.4s,mb4.3,baz=53,slow=9.5,SNR=115						
ASAR				PcP	PcP	01 58 12.9	+0.2
	0.7nm,0.6s,baz=180,slow=1.4,SNR=4.3						
ASAR				S	**S**	**01 58 25.3**	**+5.9**
	3.4nm,0.8s,baz=31,slow=23,SNR=9.5						
ASAR				LR	LR	02 02 38.3	
	comp=Z,71nm,18.9s,MS3.1,baz=205,slow=35						
FITZ	**Fitzroy Crossi**	**25.54**	**240**	↓*i*P	**P**	**01 54 49.5**	**+1.4**
	11nm,0.5s,mb4.7						
FITZ	**Fitzroy Crossi**	**25.54**	**240**	P	**P**	**01 54 49.5**	**+1.4**
	17nm,0.6s,mb4.8,baz=62,slow=4.3,SNR=38						
STKA	**Stephens Creek**	**26.62**	**194**	P	**P**	**01 54 58.8**	**+0.8**
	1.5nm,0.3s,mb3.9,baz=354,slow=4.8,SNR=4.4						
FORT	**Forrest**	**31.39**	**216**	*e*P	**P**	**01 55 40.0**	**-0.6**
	22nm,0.6s,mb5.2						
KLBR	**Kellerberrin**	**38.57**	**225**	*e*P	**P**	**01 56 40.5**	**-1.4**
	5.8nm,0.5s,mb4.6						
NWAO	**Narrogin (SRO)**	**39.70**	**223**	P	**P**	**01 56 51.5**	**+0.2**
	4.0nm,0.7s,mb4.3,baz=28,slow=12,SNR=4.1						
VNDA	**Vanda**	**71.86**	**177**	P	**P**	**02 00 40.5**	**-0.6**
	1.2nm,0.6s,mb4.0,baz=323,slow=6.2,SNR=11						
MKAR	**Makanchi Array**	**78.55**	**320**	P	**P**	**02 01 20.2**	**+0.4**
	0.2nm,0.3s,mb3.5,baz=100,slow=8.8,SNR=3.9						
QSPA	**South Pole Qui**	**84.00**	**180**	*e*P	**P**	**02 01 47.8**	**+0.1**
	5.6nm,0.7s,mb4.8						
ILAR	**Eielson Array**	**84.79**	**23**	P	**P**	**02 01 51.2**	**-0.6**
	1.3nm,0.9s,mb4.0,baz=252,slow=4.8,SNR=13						
DLBC	**Dease Lake**	**90.48**	**31**	P	**P**	**02 02 19.5**	**+0.1**
LPAZ	**La Paz**	**137.38**	**122**	PKP	PKPdf	02 08 43.4	+2.3
	0.7nm,0.7s,baz=288,slow=4.7,SNR=4.8						
BDFB	**Brasilia**	**152.89**	**143**	PKPbc	PKPdf	02 09 15.8	+8.7
	6.8nm,0.7s,baz=268,slow=2.0,SNR=13						

CASC 29 02:26:58.2±2.5,**7.95N**×**83.00W,MD4.1,MW3.7,4C-4D, South of Panama**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PTP1	**Petroterminal**	**0.62**	**66**	↑*e*P	P	02 27 06.5	-4.0
ACR	**Cerro Adams**	**0.72**	**346**	↓*e*P	P	02 27 12.5	0.0
ACR				*e*S	Sg	02 27 22.9	+0.8
DVD	**David**	**0.72**	**48**	↓*i*P	P	02 27 12.2	-0.5
BRU2	**Volcan**	**0.89**	**20**	↓*e*P	Pg	02 27 15.9	0.0
BRU2				*e*S	Sg	02 27 29.4	+1.6
CNI	**Changuinola**	**1.53**	**18**	↑*e*P	Pn	02 27 26.5	-0.4
BUS	**Buena Vista**	**1.76**	**335**	*e*P	Pn	02 27 29.7	-0.5
BUS				*e*S	Sn	02 27 56.4	+2.7
URSC	**Urasca**	**2.02**	**338**	*e*P	Pn	02 27 33.6	-0.4
LCR2	**La Lucha 2**	**2.04**	**331**	↓*e*P	Pn	02 27 33.4	-0.7
LCR2				*e*S	Sn	02 28 03.0	+2.4
ICR	**Volcan Irazu**	**2.18**	**338**	*e*P	Pn	02 27 36.0	-0.1
LAJ	**Bijagual**	**2.20**	**330**	↑*e*P	Pn	02 27 36.1	-0.3
SJS	**Escuela Geolog**	**2.23**	**332**	*e*P	Pn	02 27 36.9	0.0
SJS				*e*S	Sn	02 28 06.9	+1.3
PRS1	**Puriscal**	**2.40**	**327**	↑*e*P	Pn	02 27 37.1	-2.3
PRS1				*e*S	Sn	02 28 11.2	+1.3
TRTC	**Tortuguero**	**2.70**	**345**	*e*P	Pn	02 27 45.6	+2.0
AZU	**Azuero**

PKI	**Pulchoki**	**23.82**	**87**	*e*P		**P**	**02 39 01.3**	**+0.6**	
	comp=E,15nm,0.8s,mb4.5								
ZRNK	**Zerenda**	**25.09**	**15**	*e*P		**P**	**02 39 12.2**	**-0.6**	
BVAR	**Borovoye Array**	**25.50**	**17**	P		**P**	**02 39 16.9**	**+0.3**	
	comp=E,10nm,0.7s,mb4.5,baz=196,slow=8.4,SNR=31								
BVAR				LR		LR	02 51 00.3		
	comp=E,141nm,20.2s,MS3.5,baz=125,slow=41								
BRVK	**Borovoye**	**25.50**	**17**	*e*P		**P**	**02 39 16.6**	**0.0**	
MKAR	**Makanchi Array**	**25.68**	**40**	P		**P**	**02 39 18.4**	**0.0**	
	comp=E,2.0nm,0.7s,mb3.7,baz=225,slow=6.9,SNR=16								
MKAR	**Makanchi Array**	**25.68**	**40**	P		**P**	**02 39 18.4**	**0.0**	
MKAR				pmax		pmax			
	comp=Z,2.0nm,0.7s								
KURK	**Kurchatov**	**26.43**	**30**	*e*P		**P**	**02 39 26.3**	**+1.0**	
KURK				*e*			02 39 40.1		
IDI	**Anoyia**	**28.92**	**291**	P		**P**	**02 39 49.4**	**+1.3**	
	comp=Z,14nm,1.2s,mb4.5,baz=36,slow=6.5,SNR=2.6								
MLR	**Muntele Rosu**	**30.30**	**312**	P		**P**	**02 40 00.8**	**+0.5**	
	comp=Z,2.0nm,0.7s,mb4.0,baz=50,slow=3.8,SNR=5.6								
MLR	**Muntele Rosu**	**30.30**	**312**	P		**P**	**02 40 00.8**	**+0.5**	
MLR				pmax		pmax			
	comp=Z,2.0nm,0.7s								
OBN	**Obninsk**	**30.37**	**335**	*e*P		**P**	**02 39 59.1**	**-1.6**	
	comp=Z,7.8nm,0.5s,mb4.7								
ZAL	**Zalesovo**	**31.40**	**30**	P		**P**	**02 40 09.0**	**-0.8**	
	comp=Z,1.2nm,0.7s,mb3.9,baz=130,slow=12,SNR=2.8								
ZAL	**Zalesovo**	**31.40**	**30**	P		**P**	**02 40 09.0**	**-0.8**	
ZAL				pmax		pmax			
	comp=Z,1.0nm,0.7s								
ZAL	**Zalesovo**	**31.40**	**30**	P		**P**	**02 40 09.0**	**-0.8**	
OJC	**Ojcow**	**35.88**	**317**	*e*P		**P**	**02 40 47.8**	**-0.9**	
KMBO	**Kilima Mbogo**	**36.22**	**218**	P		**P**	**02 40 52.7**	**+0.8**	
	comp=Z,3.4nm,1.1s,mb4.2,baz=45,slow=5.7,SNR=3.6								
KMBO				LR		LR	02 55 10.2		
	comp=Z,55nm,21.5s,MS3.3,baz=132,slow=35								
JOF	**Joensuu**	**38.11**	**340**	*e*p		**P**	**02 41 06.5**	**-0.8**	
CMAR	**Chiang Mai Arr**	**38.43**	**97**	LR		LR	02 57 54.0		
	comp=Z,91nm,19.6s,MS3.6,baz=109,slow=38								
FINES	**FINESS Array B**	**38.77**	**336**	P		**P**	**02 41 12.0**	**-0.8**	
	comp=Z,1.7nm,0.6s,mb4.0,baz=140,slow=9.0,SNR=24								
FINES				LR		LR	02 57 55.5		
	comp=Z,39nm,20.7s,MS3.2,baz=353,slow=37								
FINES	**FINESS Array B**	**38.77**	**336**	P		**P**	**02 41 12.0**	**-0.8**	
FINES				pmax		pmax			
	comp=Z,2.0nm,0.6s								
FINES				MLR		MLR			
	comp=Z,39nm,20.7s								
GERES	**GERESS Array B**	**39.26**	**313**	P		**P**	**02 41 15.8**	**-1.2**	
	comp=Z,6.0nm,1.2s,mb4.2,baz=108,slow=8.4,SNR=16								
GERES	**GERESS Array B**	**39.26**	**313**	P		**P**	**02 41 15.8**	**-1.3**	
GERES				pmax		pmax			
	comp=Z,6.0nm,1.2s								
KHC	**Kasperske Hory**	**39.41**	**313**	*e*P		**P**	**02 41 16.5**	**-1.8**	
KHC				*ex*		x	02 43 43.6		
CLL	**Collm**	**40.32**	**316**	P		**P**	**02 41 25.2**	**-0.6**	
SBF	**Sospel**	**42.87**	**304**	*e*P		**P**	**02 41 41.5**	**-5.3**	
	comp=Z,14nm,0.8s,mb4.4								
LPG	**La Plagne**	**43.45**	**307**	*e*P		**P**	**02 41 46.7**	**-4.7**	
	comp=Z,7.4nm,0.9s,mb4.1								
LPL	**La Plagne**	**43.47**	**307**	*e*P		**P**	**02 41 46.9**	**-4.7**	
	comp=Z,1.1nm,0.3s,mb3.7								
ORIF	**Oris-en-Rattie**	**44.03**	**306**	*e*P		**P**	**02 41 49.4**	**-6.8**	
NB2	**NORSAR Subarra**	**44.59**	**329**	P		**P**	**02 41 58.6**	**-1.9**	
	comp=Z,0.6nm,0.6s,mb3.6,baz=117,slow=8.6								
NOA	**NORSAR Array B**	**44.59**	**329**	P		**P**	**02 41 59.2**	**-1.2**	
	comp=Z,1.5nm,0.8s,mb3.9,baz=115,slow=8.0,SNR=10.0								
NOA	**NORSAR Array B**	**44.59**	**329**	P		**P**	**02 41 59.3**	**-1.2**	
NOA				pmax		pmax			
	comp=Z,2.0nm,0.8s								
ARCES	**ARCESS Array B**	**44.66**	**344**	P		**P**	**02 41 59.8**	**-1.1**	
	comp=Z,2.8nm,1.0s,mb4.0,baz=143,slow=6.1,SNR=5.0								
ARCES				LR		LR	03 02 45.7		
	comp=Z,64nm,18.3s,MS3.6,baz=83,slow=39								
ARCES	**ARCESS Array B**	**44.66**	**344**	P		**P**	**02 41 59.8**	**-1.1**	
ARCES				pmax		pmax			
	comp=Z,3.0nm,1.0s								
ARCES				MLR		MLR			
	comp=Z,64nm,18.3s								
SMF	**Signal de Mont**	**45.54**	**308**	*e*P		**P**	**02 42 03.1**	**-5.1**	
	comp=Z,6.1nm,0.8s,mb4.3								
SSF	**Saint Saulge**	**45.79**	**309**	*e*P		**P**	**02 42 04.3**	**-5.9**	
BGF	**Bois d'Agland**	**46.22**	**308**	*e*P		**P**	**02 42 08.1**	**-5.5**	
MTLF	**Montolieu**	**46.66**	**304**	*e*P		**P**	**02 42 11.2**	**-5.9**	
BOD	**Bodaibo**	**47.69**	**37**	*e*P		**P**	**02 42 23.9**	**-1.2**	
BORG	**Borgarnes**	**59.73**	**331**	*e*P		**P**	**02 43 52.7**	**-0.9**	
	comp=Z,104nm,0.6s								
DBIC	**Dimbokro**	**63.43**	**263**	P		**P**	**02 44 18.1**	**-1.1**	
	comp=Z,4.8nm,1.1s,mb4.5,baz=42,slow=4.9,SNR=4.9								
DBIC	**Dimbokro**	**63.43**	**263**	P		**P**	**02 44 18.1**	**-1.1**	
DBIC				pmax		pmax			
	comp=Z,5.0nm,1.1s								
ILAR	**Eielson Array**	**84.39**	**11**	P		**P**	**02 46 19.2**	**-0.7**	
	comp=Z,5.5nm,0.9s,mb3.7,baz=270,slow=1.5,SNR=5.5								
ILAR	**Eielson Array**	**84.39**	**11**	P		**P**	**02 46 19.3**	**-0.6**	
ILAR				pmax		pmax			
	comp=Z,1.0nm,0.9s								
YKA	**Yellowknife Ar**	**88.56**	**357**	P		**P**	**02 46 40.2**	**-0.2**	
	comp=Z,0.7nm,0.8s,mb4.1,baz=359,slow=4.9,SNR=11								
YKA	**Yellowknife Ar**	**88.56**	**357**	P		**P**	**02 46 40.2**	**-0.2**	
YKA				pmax		pmax			
	comp=Z,1.0nm,0.8s								
YKA	**Yellowknife Ar**	**88.56**	**357**	P		**P**	**02 46 40.2**	**-0.2**	

IDC ***29*** *02:46:52.8±1.9,32.25N×85.60E,mb3.6/3,mb1 3.8/5, mb1mx3.5/19,ML3.6/2, Error ellipse: s-maj=63.2km s-min=32.5km az=58.0*

ISC 29 02:46:54.8±5.6, 32.3N±0.2×85.6E±0.4, h27km±43km, n6, σ0§50/7, mb3.7/3, Xizang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHL	**Shillong**	**8.63**	**139**	*e*P	**P**	**02 49 01.2**	**0.0**
SHL				*e*S	**Sn**	**02 50 38.5**	**-0.2**
MKAR	**Makanchi Array**	**14.74**	**351**	Pn	**P**	**02 50 23.6**	**+0.2**
	0.1nm,0.3s,baz=174,slow=13,SNR=4.1						
CMAR	**Chiang Mai Arr**	**18.25**	**136**	P	**P**	**02 51 08.3**	**+0.2**
	0.3nm,0.3s,baz=315,slow=12,SNR=4.7						
ZAL	**Zalesovo**	**21.68**	**359**	P	**P**	**02 51 44.8**	**-0.6**
	0.9nm,0.4s,mb3.6,baz=318,slow=11,SNR=3.7						
GERES	**GERESS Array B**	**55.08**	**310**	P	**P**	**02 56 26.5**	**-0.2**
	0.8nm,0.8s,mb3.8,baz=76,slow=5.5,SNR=5.5						
YKA	**Yellowknife Ar**	**84.19**	**9**	P	**P**	**02 59 25.1**	**+0.6**
	0.4nm,0.7s,mb3.6,baz=342,slow=5.1,SNR=10						

LDG ***29*** *02:53:47.9±0.3,21.47S×170.49E,h10km,Mb4.8/1, Error ellipse: s-maj=24.5km s-min=4.2km az=161.0*

NEIC ***29*** *02:53:51.3±2.2,22.20S×170.36E,h36km±18km, mb4.5/11, Error ellipse: s-maj=16.2km s-min=12.0km az=69.0*

BJI ***29*** *02:53:51.2,22.20S×170.40E,h36km, mB5.0, mb4.6*

IDC ***29*** *02:53:58.2±7.2,22.34S×170.29E,h95km±62km, mb4.0/13, mb1 4.1/13,mb1mx4.1/16,MS4.2/10,Ms1 4.2/10, ms1mx4.1/17, Error ellipse: s-maj=27.9km s-min=18.9km az=48.0*

ISC 29 02:53:51.3±1.8, 22.24S±0.08×170.17E±0.09, h45km±14km, n103, σ1§12/40, mb4.5/20, MS4.1/9, 17C-2D, Southeast of Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**3.46**	**272**	*i*P	**P**	**02 54 44.9**	**+0.8**
DZM				*e*S	**S**	**02 55 23.9**	**-0.3**
DZM	**Mont Dzumac**	**3.46**	**272**	*i*P	**P**	**02 54 44.9**	**+0.8**
DZM				*e*S	**S**	**02 55 23.9**	**-0.3**
NOUC	**Port Laguerre**	**3.58**	**272**	*e*P	**P**	**02 54 46.3**	**+0.5**
NOUC				*e*S	**S**	**02 55 26.2**	**-1.2**
NOUC	**Port Laguerre**	**3.58**	**272**	*e*P	**P**	**02 54 46.3**	**+0.5**
NOUC				*e*S	**S**	**02 55 26.2**	**-1.2**
BKM	**Butte a Klehm**	**4.90**	**338**	*i*P	**P**	**02 55 04.2**	**-0.2**
URZ	**Urewera**	**17.04**	**161**	LR	LR	03 03 10.3	
	comp=Z,1μm,18.2s,baz=352,slow=33						
RPZ	**Rata Peaks**	**21.43**	**178**	P	**P**	**02 58 37.6**	**+0.1**
	18nm,1.0s,mb4.4,baz=230,slow=7.9,SNR=2.3						
RPZ				LR	LR	03 05 58.5	
	comp=Z,647nm,20.3s,MS4.0,baz=31,slow=34						
CTA	**Charters Tower**	**22.40**	**271**	*e*P	**P**	**02 58 49.8**	**+2.5**
	8.0nm,0.8s,mb4.2						
CTA	**Charters Tower**	**22.40**	**271**	P	**P**	**02 58 49.8**	**+2.6**
	8.7nm,0.7s,mb4.3,baz=98,slow=11,SNR=8.6						
CTA				LR	LR	03 06 50.4	
	comp=Z,434nm,18.5s,MS3.9,baz=244,slow=34						
CTAO	**Charters Tower**	**22.40**	**271**	*e*P	**P**	**02 58 49.8**	**+2.6**
	9.8nm,0.8s,mb4.3						
PMG	**Port Moresby**	**25.50**	**296**	P	**P**	**02 59 19.8**	**+2.4**
	14nm,0.8s,mb4.5,baz=172,slow=13,SNR=3.9						
PMG				LR	LR	03 08 16.8	
	comp=Z,570nm,18.8s,MS4.1,baz=316,slow=34						
PMG	**Port Moresby**	**25.50**	**296**	P	**P**	**02 59 19.9**	**+2.4**
PMG				LR	LR	03 08 16.8	
STKA	**Stephens Creek**	**27.12**	**243**	*e*P	**P**	**02 59 33.0**	**+0.7**
	3.7nm,0.6s,mb4.1						
STKA	**Stephens Creek**	**27.12**	**243**	P	**P**	**02 59 33.5**	**+1.2**
	3.9nm,0.6s,mb4.1,baz=86,slow=11,SNR=12						
STKA				LR	LR	03 09 45.9	
	comp=Z,654nm,19.4s,MS4.2,baz=61,slow=35						
RAR	**Rarotonga**	**27.92**	**94**	LR	LR	03 08 07.7	
	comp=Z,207nm,20.1s,MS3.7,baz=266,slow=31						
AS12	**Alice Springs**	**33.37**	**260**	*e*P	**P**	**03 00 27.0**	**-0.6**
	18nm,1.7s,mb4.7						
ASAR	**Alice Springs**	**33.37**	**260**	P	**P**	**03 00 27.4**	**-0.2**
	2.4nm,0.6s,mb4.3,baz=79,slow=9.4,SNR=33						
ASAR				PcP	PcP	03 03 07.8	-0.8
	1.1nm,0.7s,baz=98,slow=2.5,SNR=3.8						
ASAR				LR	LR	03 14 59.2	
	comp=Z,296nm,19.0s,MS4.0,baz=191,slow=38						
WB2	**Warramunga Arr**	**33.45**	**267**	*e*P	**P**	**03 00 27.5**	**-0.8**
WRAB	**Tennant Creek**	**33.45**	**267**	*e*P	**P**	**03 00 26.6**	**-1.7**
	3.4nm,0.6s,mb4.5						
FITZ	**Fitzroy Crossi**	**41.89**	**267**	P	**P**	**03 01 39.4**	**+0.2**
	5.2nm,0.9s,mb4.2,baz=164,slow=12,SNR=4.3						
NWAO	**Narrogin (SRO)**	**47.68**	**245**	LR	LR	03 21 43.0	
	comp=Z,586nm,19.0s,MS4.6,baz=93,slow=35						
VNDA	**Vanda**	**55.48**	**182**	P	**P**	**03 03 22.4**	**-1.1**
	0.6nm,0.8s,mb3.7,baz=355,slow=6.8,SNR=2.6						
VNDA				LR	LR	03 24 44.2	
	comp=Z,248nm,18.8s,MS4.3,baz=320,slow=33						
VNDA	**Vanda**	**55.48**	**182**	P	**P**	**03 03 22.0**	**-1.5**
	0.7nm,0.8s,mb3.7						
VNDA				LR	LR	03 24 44.2	
MAJO	**Matsushiro**	**65.80**	**332**	*e*P	**P**	**03 04 33.1**	**-1.2**
	0.1nm,0.6s,mb5.0						
MAT	**Matsushiro**	**65.80**	**332**	P	**P**	**03 04 32.4**	**-1.8**
MAT	**Matsushiro**	**65.80**	**332**	*e*P	**P**	**03 04 32.0**	**-2.2**
	6.3nm,0.5s,mb4.9						
QSPA	**South Pole Qui**	**67.83**	**180**	*e*P	**P**	**03 04 45.6**	**-0.7**
	5.0nm,0.7s,mb4.7						
MAW	**Mawson**	**75.99**	**202**	P	**P**	**03 05 34.8**	**-0.2**
	3.1nm,0.8s,mb4.3,baz=116,slow=13,SNR=4.6						
MAW				LR	LR	03 37 54.1	
	comp=Z,137nm,18.4s,MS4.3,baz=221,slow=35						
MAW	**Mawson**	**75.99**	**202**	P	**P**	**03 05 34.6**	**-0.4**
	4.2nm,0.8s,mb4.4						
MAW				LR	LR	03 37 54.1	
ENH	**Enshi**	**78.25**	**310**	*e*P	**P**	**03 05 48.5**	**+0.2**
	9.4nm,0.6s,mb4.9						
CMAR	**Chiang Mai Arr**	**80.52**	**294**	P	**P**	**03 06 03.0**	**+2.2**
	3.7nm,0.5s,mb4.5,baz=135,slow=4.2,SNR=16						
HHC	**Hu-ho-hao-te**	**83.05**	**319**	*e*P	**P**	**03 06 15.0**	**+1.5**
HHC				AMB	AMB		
	comp=Z,10.0nm,1.4s,mb4.7						
HHC				AMB	AMB		
	comp=Z,65nm,5.3s						
VNA3	**Neumayer Olymp**	**86.77**	**180**	*i*	**P**	**03 06 31.7**	**+0.4**
VNA2	**Neumayer--Watz**	**87.07**	**181**	*i*	**P**	**03 06 33.5**	**+0.7**
YBH	**Yreka Blue Hor**	**88.85**	**44**	P	**P**	**03 06 42.0**	**0.0**
	comp=Z,1.3nm,0.9s,mb4.2,baz=202,slow=5.4,SNR=2.6						
ULN	**Ulaanbaatar**	**89.78**	**323**	*e*P	**P**	**03 06 45.7**	**-0.5**
	comp=Z,2.6nm,0.7s,mb4.7						
SONM	**Songino Array**	**90.13**	**323**	P	**P**	**03 06 48.1**	**+0.2**
	comp=Z,2.1nm,0.7s,mb4.6,baz=124,slow=4.5,SNR=5.8						
NVAR	**Mina Array Bea**	**90.14**	**48**	P	**P**	**03 06 48.6**	**+0.5**
	comp=Z,0.8nm,0.5s,mb4.3,baz=221,slow=8.3,SNR=3.2						
ILAR	**Eielson Array**	**92.83**	**17**	P	**P**	**03 06 56.8**	**-3.2**
	comp=Z,0.5nm,0.6s,mb4.1,baz=244,slow=4.7,SNR=9.5						
YKA	**Yellowknife Ar**	**102.92**	**27**	P	Pdif	03 07 45.6	-0.1
	comp=Z,0.1nm,0.5s,baz=254,slow=4.8,SNR=4.2						
YKA				PKiKP		03 12 03.3	
	comp=Z,0.2nm,0.6s,baz=251,slow=1.4,SNR=7.7						
MKAR	**Makanchi Array**	**104.47**	**315**	Pdiff	Pdif	03 07 53.2	+0.4
	comp=Z,0.3nm,0.5s,baz=104,slow=5.9,SNR=4.7						
MKAR	**Makanchi Array**	**104.47**	**315**	Pdif	Pdif	03 07 53.2	+0.4
SCHQ	**Schefferville**	**126.79**	**37**	PKP	PKPdf	03 12 48.0	-2.0
	comp=Z,1.5nm,0.6s,baz=232,slow=6.4,SNR=5.3						
BDFB	**Brasilia**	**126.93**	**132**	PKP	PKPdf	03 12 50.9	-0.4
	comp=Z,2.8nm,0.6s,baz=312,slow=2.5,SNR=7.6						
ARCES	**ARCESS Array B**	**128.18**	**345**	PKP	PKPdf	03 12 52.2	-0.1
	comp=Z,1.2nm,0.4s,baz=70,slow=1.6,SNR=24						
FINES	**FINESS Array B**	**133.68**	**337**	PKhKP		03 12 51.2	
	comp=Z,1.1nm,0.9s,baz=124,slow=6.9,SNR=4.5						
FINES				PKP	PKPdf	03 13 04.2	+1.3
	comp=Z,0.7nm,0.6s,baz=38,slow=3.5,SNR=8.1						
FINES	**FINESS Array B**	**133.68**	**337**	PKP	PKPdf	03 12 51.2	-12
FINES				PKP	PKPdf	03 13 04.2	+1.3
NOA	**NORSAR Array B**	**138.56**	**345**	PKP	PKPdf	03 13 10.2	-1.7
	comp=Z,0.3nm,0.9s,baz=41,slow=3.6,SNR=3.2						
CRVS	**Cervenica-Dubn**	**143.63**	**325**	*e*	PKPbc	03 13 15.3	-4.5
OKC	**Ostrava-Krasne**	**144.74**	**328**	*e*PKP	PKPdf	03 13 23.2	+0.2
KSP	**Ksiaz**	**144.93**	**331**	*e*P	PKPdf	03 13 23.6	+0.3
KSP				*e*PP		03 13 27.1	
PSZ	**Piszkesteto**	**145.05**	**324**	*e*P	PKPdf	03 13 24.3	+0.7
MORC	**Moravsky Berou**	**145.08**	**329**	*e*PKPdf	PKPdf	03 13 23.9	+0.3
DPC	**Dobruska-Polom**	**145.26**	**330**	*e*PKP	PKPdf	03 13 25.1	+1.2
DPC				*ex*	x	03 13 34.9	
VYHS	**Vyhne**	**145.26**	**326**	*i* PKP	PKPdf	03 13 25.1	+1.1
UPC	**Upice**	**145.29**	**331**	*e*PKP	PKPdf	03 13 25.1	+1.1
KOLL	**Kolacno**	**145.43**	**326**	*e*PKP	PKPdf	03 13 26.1	+1.8
PVCC	**Panska Ves**	**145.92**	**332**	*e*PKP	PKPdf	03 13 26.9	+1.9
BRG	**Berggiesshubel**	**145.93**	**333**	*i* P	PKPdf	03 13 27.4	+2.4
BRG				*i*		03 13 30.8	
BRG				*i*		03 13 40.2	
CLL	**Collm**	**145.99**	**334**	*i*PKP1	PKPbc	03 13 26.7	+0.5
CLL				*e*PPKP		03 13 39.0	
PRU	**Pruhonice**	**146.32**	**331**	*e*PKP	PKPdf	03 13 27.3	+1.5
	comp=Z,8.9nm,0.6s						
ZST	**Bratislava**	**146.34**	**327**	*e*PKP	PKPdf	03 13 29.4	+3.6
BBH	**Bruntsheil**	**146.75**	**353**	*e*P	PKPdf	03 13 29.3	+3.0
BWH	**Wardlaw**	**146.79**	**354**	*i*P	PKPdf	03 13 28.0	+1.6
BWH				AMB	AMB	03 13 28.6	
	comp=Z,27nm,0.6s						
BHH	**Howats Hill**	**146.82**	**353**	*e*P	PKPdf	03 13 28.1	+1.6
BTA	**Talkin**	**146.94**	**352**	*e*P	PKPdf	03 13 28.9	+2.2
BTA				AMB	AMB	03 13 29.8	
	comp=Z,49nm,0.6s						
NKC	**Novy Kostel**	**147.04**	**333**	*e*PKP	PKPdf	03 13 29.8	+2.8
NKC				*ex*	x	03 13 41.3	
MOX	**Moxa**	**147.06**	**335**	*e*P	PKPdf	03 13 29.7	+2.7
BDL	**Dobcross Hall**	**147.08**	**353**	*i*P	PKPdf	03 13 29.3	+2.4
BDL				AMB	AMB	03 13 32.2	
	comp=Z,27nm,1.0s						
BBO1	**Bothel**	**147.18**	**353**	*e*P	PKPdf	03 13 29.1	+2.0
BBO1				AMB	AMB	03 13 41.2	
	comp=Z,42nm,1.5s						
SKO	**Skopje**	**147.27**	**314**	*e*P	PKPdf	03 13 31.0	+3.4
KHC	**Kasperske Hory**	**147.38**	**331**	*e*PKP	PKPdf	03 13 31.0	+3.5
KHC				*ex*	x	03 13 51.5	
KHC	**Kasperske Hory**	**147.38**	**331**	*e*P	PKPdf	03 13 31.0	+3.5
KHC				*e*		03 13 51.5	
GERES	**GERESS Array B**	**147.53**	**331**	PKPbc	PKPdf	03 13 31.3	+3.5
	comp=Z,3.9nm,0.7s,baz=32,slow=3.1,SNR=33						
WTSB	**Winterswijk**	**147.66**	**341**	*e*P	PKPdf	03 13 30.7	+2.8
	comp=Z,6.8nm,0.3s						
MOA	**Molln**	**147.98**	**329**	*i*PKP	PKPdf	03 13 32.5	+4.0
KBA	**Koelnbreinsper**	**148.96**	**329**	*i*PKP	PKPdf	03 13 34.9	+4.8
KBA				*i*		03 13 38.7	
HGN	**Heimansgroeve**	**148.98**	**340**	*e*P	PKPdf	03 13 38.5	+8.4
	comp=Z,8.1nm,1.2s						
VOY	**Vojsko**	**149.42**	**327**	*e*P	PKPdf	03 13 35.7	+4.8
WATA	**Walderalm**	**149.61**	**331**	*i*PKP	PKPdf	03 13 36.1	+4.9
WTTA	**Wattenberg**	**149.63**	**330**	*i*PKP	PKPdf	03 13 36.5	+5.3
MOTA	**Moosalm**	**149.81**	**331**	*i*PKP	PKPdf	03 13 36.9	+5.4
SQTA	**Sankt Quirin**	**149.86**	**331**	*i*PKP	PKPdf	03 13 37.3	+5.7
GIVF	**Givet**	**149.90**	**341**	*e*PKP1	PKPdf	03 13 36.9	+5.4
	comp=Z,24nm,0.7s						
BAIF	**Baives**	**150.12**	**342**	*e*PKP1	PKPdf	03 13 37.5	+5.6
	comp=Z,7.4nm,0.5s						
DAVA	**Damuels**	**150.39**	**332**	*i*PKP	PKPdf	03 13 38.5	+6.1
CDF	**Champ du Feu**	**150.53**	**337**	*e*PKP1	PKPdf	03 13 38.5	+5.9
	comp=Z,8.3nm,0.6s						
HINF	**Hinteralfeld**	**151.18**	**336**	*e*PKP1	PKPdf	03 13 39.9	+6.4
	comp=Z,4.7nm,0.5s						
HAU	**Haudompre**	**151.21**	**337**	*e*PKP1	PKPdf	03 13 39.9	+6.3
	comp=Z,11nm,0.7s						
MEZF	**Maizieres J'vi**	**151.23**	**339**	*e*PKP1	PKPdf	03 13 40.5	+6.9
	comp=Z,22nm,0.7s						
CABF	**La Chapelle**	**152.48**	**336**	*e*PKP1	PKPdf	03 13 43.4	+7.9
	comp=Z,8.9nm,0.6s						
FLN	**La Foliniere**	**152.51**	**347**	*e*PKP1	PKPdf	03 13 42.4	+6.9
LDF	**La Druitiere**	**152.59**	**346**	*e*PKP1	PKPdf	03 13 42.6	+7.0
	comp=Z,4.9nm,0.5s						
LOR	**Lormes**	**152.70**	**339**	*e*PKP1	PKPdf	03 13 43.2	+7.4
	comp=Z,4.7nm,0.7s						
GRR	**Gorron**	**152.94**	**347**	*e*PKP1	PKPdf	03 13 43.7	+7.6
SSF	**Saint Saulge**	**153.00**	**340**	*e*PKP1	PKPdf	03 13 44.3	+8.1
	comp=Z,3.9nm,0.8s						
LPL	**La Plagne**	**153.12**	**334**	*e*PKP1	PKPdf	03 13 44.9	+8.5
LPG	**La Plagne**	**153.13**	**334**	*e*PKP1	PKPdf	03 13 45.0	+8.6
SGMF	**Saint Gilles**	**153.40**	**349**	*e*PKP1	PKPdf	03 13 44.2	+7.5
	comp=Z,5.8nm,0.6s						
ROSF	**Rostrenen**	**153.44**	**350**	*e*PKP1	PKPdf	03 13 44.1	+7.3
	comp=Z,8.5nm,0.8s						
ORIF	**Oris-en-Rattie**	**153.96**	**334**	*e*PKP1	PKPdf	03 13 46.9	+9.3
	comp=Z,6.2nm,0.6s						
PGF	**Pioggiola**	**154.36**	**327**	*e*PKP1	PKPdf	03 13 47.1	+8.9
	comp=Z,16nm,0.9s						
MFF	**Saint Martin d**	**154.46**	**344**	*e*PKP1	PKPdf	03 13 48.4	+10

INMG ***29*** *03:07:08.0±1.4,36.56N×7.45W,h20km±9km, ML1.6, Error ellipse: s-maj=11.8km s-min=10.9km az=51.0*

MDD ***29*** *03:07:08.0±1.6,36.58N×7.46W,h20km±7km, mbLg1.6/4, Error ellipse: s-maj=12.2km s-min=7.1km az=27.0, PRXIMO*

NEIC ***29*** *03:07:09.6,36.66N×7.37W,h13km, MN1.8(MDD), After MDD.*

ISC 29 03:07:07.3±1.2, 36.65N±0.07×7.41W±0.06, h20km, n22, σ1§28/35, Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PALC	**Alcoutim**	**0.81**	**356**	*e*P	**Pb**	**03 07 24.7**	**+2.1**
PALC				*e*S	**Sb**	**03 07 36.2**	**+3.1**
	12nm,0.1s						
PALC	**Alcoutim**	**0.81**	**356**	P	**Pb**	**03 07 24.7**	**+2.1**
PALC				S	**Sb**	**03 07 36.2**	**+3.1**
	6.2nm,0.1s						
EGRO	**El Granado**	**0.89**	**356**	Pg	**Pb**	**03 07 25.6**	**+1.8**
	1.1nm,0.1s,SNR=7.5						
EGRO				Lg		03 07 37.9	
	2.6nm,0.0s,SNR=16						
EGRO	**El Granado**	**0.89**	**356**	Pg	**Pb**	**03 07 25.6**	**+1.8**
EGRO				Lg		03 07 37.7	
EMIN	**Mina Concepcio**	**1.26**	**28**	Pg	**Pn**	**03 07 31.1**	**+1.1**
	0.1nm,0.1s,SNR=9.9						
EMIN				Sn	**Sn**	**03 07 47.2**	**+0.7**
	1.6nm,0.1s,SNR=10						
EMIN	**Mina Concepcio**	**1.26**	**28**	Pg	**Pn**	**03 07 31.9**	**+1.9**
EMIN				Lg		03 07 46.9	
ESPR	**Espera**	**1.27**	**80**	Pg	**Pn**	**03 07 31.1**	**+1.0**
	0.3nm,0.1s,SNR=5.7						
ESPR				Lg		03 07 48.6	
	1.8nm,0.1s,SNR=6.8						
ESPR	**Espera**	**1.27

$M_{\theta\theta}$-3.34±.04; M_{rr}1.61±.07; $M_{\theta\theta}$-1.44±.04; $M_{\theta r}$3.99±.06; Best double couple: $M_0$5.6×10^{17} NP1:ϕ_e198°,δ20°,λ87°. NP2:ϕ_e22°,δ70°,λ91°. Principal axes: T 5.31, Plg65°, Azm294°; N .58, Plg1°, Azm201°; P -5.89, Plg25°, Azm111°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.

JMA ***29*** *03:47:10.1±0.1,37.66N×142.02E,h38km±3km,M5.9*

JMA Felt III J1.

MOS ***29*** *03:47:11.1±0.8,37.95N×141.92E,h34km,mb5.9/61, MS5.7/41,Error ellipse: s-maj=7.0km s-min=4.1km az=98.3*

IDC ***29*** *03:47:11.6±3.6,37.67N×141.92E,h34km±27km,mb5.1/32, mb1 5.2/37,mb1mx5.2/38,ML4.8/5,MS5.3/23,Ms1 5.3/23, ms1mx5.2/26,Error ellipse: s-maj=13.0km s-min=10.0km az=107.0*

BGS ***29*** *03:47:18.6±1.6,38.47N×139.72E,h33km*

ISC 29 03:47:10.1±0.1,37.70N±0.02×142.00E±0.02,h35km, h35km±1.2km:pP-P,n991,σ0.96/980,mb5.7/266,MS5.4/175, 287C-61D,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**0.91**	**326**	⇓P	**P**	**03 47 27.3**	**+0.8**
JIO				*e*S	**S**	**03 47 38.9**	**+0.3**
JFK	**Kawauchi**	**0.96**	**250**	⇓P	**P**	**03 47 27.4**	**+0.3**
JFK				S	**S**	**03 47 39.5**	**-0.2**
JMM	**Marumori**	**0.97**	**280**	⇓P	**P**	**03 47 28.0**	**+0.6**
JMM				S	**S**	**03 47 40.6**	**+0.4**
ONAJ	**Iwakimizuishiy**	**1.13**	**238**	⇓P	**P**	**03 47 29.7**	**+0.1**
ONAJ				S	**S**	**03 47 43.7**	**-0.4**
JOU	**Okura**	**1.25**	**303**	⇓P	**P**	**03 47 32.6**	**+1.4**
JOU				S	**S**	**03 47 48.9**	**+1.7**
JFT	**Otama**	**1.33**	**263**	⇓P	**P**	**03 47 33.9**	**+1.3**
JFT				*e*S	**S**	**03 47 50.6**	**+1.2**
JMK	**Ichinoseki**	**1.39**	**334**	⇓P	**P**	**03 47 34.4**	**+1.0**
JMK				*e*S	**S**	**03 47 51.9**	**+1.1**
OFUJ	**Ofunato**	**1.40**	**349**	⇓P	**P**	**03 47 34.0**	**+0.5**
JHO	**Hitachi**	**1.58**	**227**	⇓P	**P**	**03 47 35.8**	**-0.3**
JYS	**Shirataka**	**1.62**	**289**	⇓P	**P**	**03 47 37.9**	**+1.3**
JYK	**Kaneyama**	**1.77**	**314**	⇓P	**P**	**03 47 40.1**	**+1.3**
JSB	**Shiboa**	**1.81**	**247**	P	**P**	**03 47 42.1**	**+2.7**
JFY	**Yanaizu**	**1.85**	**262**	⇓P	**P**	**03 47 41.0**	**+1.1**
JOM	**Ohasama**	**1.85**	**343**	⇓P	**P**	**03 47 41.2**	**+1.2**
JOM				*e*S	**S**	**03 48 04.1**	**+1.6**
MIYJ	**Miyako 2**	**1.88**	**356**	P	**P**	**03 47 40.4**	**+0.1**
JRG	**Rokugo**	**2.00**	**328**	⇓P	**P**	**03 47 43.7**	**+1.6**
JNS	**Sasagawa**	**2.13**	**274**	⇓P	**P**	**03 47 45.2**	**+1.3**
JAW	**Awa shima**	**2.30**	**290**	⇓P	**P**	**03 47 47.5**	**+1.1**
JYW	**Yuwa**	**2.31**	**323**	⇓P	**P**	**03 47 48.3**	**+1.8**
JKT	**Katashina**	**2.39**	**248**	⇓P	**P**	**03 47 49.8**	**+2.2**
JAG	**Ashikaga**	**2.40**	**239**	P	**P**	**03 47 47.9**	**+0.1**
JAG				S	**S**	**03 48 18.5**	**+2.1**
JHK	**Hiroka**	**2.42**	**260**	⇓P	**P**	**03 47 48.9**	**+0.9**
JIZZ	**Izumozaki**	**2.62**	**267**	⇓P	**P**	**03 47 52.7**	**+1.8**
JAH	**Hinai**	**2.70**	**337**	⇓P	**P**	**03 47 53.7**	**+1.6**
JGK	**Kuni**	**2.92**	**248**	P	**P**	**03 47 58.3**	**+3.1**
JSD	**Sado**	**2.98**	**278**	⇓P	**P**	**03 47 56.6**	**+0.5**
JRY	**Ryogami san**	**3.00**	**237**	P	**P**	**03 47 58.4**	**+2.0**
BSO4	**Boso 4**	**3.02**	**207**	P	**P**	**03 47 57.5**	**+0.9**
JJN	**Nakama**	**3.12**	**260**	P	**P**	**03 48 00.7**	**+2.7**
BSO3	**Boso 3**	**3.13**	**203**	P	**P**	**03 47 58.2**	**-0.1**
MAJO	**Matsushiro**	**3.25**	**250**	*e*P	**P**	**03 48 01.2**	**+1.4**
MAT	**Matsushiro**	**3.25**	**250**	⇓P	**P**	**03 48 01.1**	**+1.2**
MAT				S	**S**	**03 48 39.0**	**+1.2**
MAT	**Matsushiro**	**3.25**	**250**	⇓*i*P	**P**	**03 48 01.1**	**+1.2**
MAT				*e*S	**S**	**03 48 39.0**	**+1.2**
JNG	**Nsakai**	**3.38**	**249**	⇓P	**P**	**03 48 02.7**	**+1.0**
JOD2	**Odawara 2**	**3.38**	**225**	P	**P**	**03 48 03.5**	**+1.7**
JYN	**Shimob**	**3.55**	**233**	P	**P**	**03 48 04.9**	**+0.8**
JNT	**Takato**	**3.60**	**241**	⇓P	**P**	**03 48 06.7**	**+1.9**
JNT				S	**S**	**03 48 54.1**	**+7.4**
JIM2	**Oshima 3**	**3.63**	**216**	P	**P**	**03 48 05.0**	**-0.3**
JSZ	**Suzu**	**3.69**	**268**	P	**P**	**03 48 06.9**	**+0.7**
JTT	**Ttatey**	**3.89**	**255**	P	**P**	**03 48 11.3**	**+2.4**
JHG	**Hegura jima**	**4.03**	**274**	P	**P**	**03 48 11.6**	**+0.6**
JGN	**Niukaw**	**4.03**	**250**	⇓P	**P**	**03 48 14.7**	**+3.7**
SHZ3	**Shizuoka 3**	**4.03**	**230**	P	**P**	**03 48 12.4**	**+1.4**
JNY	**Yasuok**	**4.07**	**236**	⇓P	**P**	**03 48 13.3**	**+1.7**
JJH	**Hakui**	**4.23**	**261**	P	**P**	**03 48 16.0**	**+2.1**
JGF	**Kuroka**	**4.28**	**242**	P	**P**	**03 48 16.4**	**+1.8**
JSG	**Sagara**	**4.32**	**227**	P	**P**	**03 48 17.7**	**+2.6**
HMMJ	**Hamamatsu 2**	**4.47**	**232**	P	**P**	**03 48 18.2**	**+0.9**
JAO	**Obara**	**4.53**	**239**	⇓P	**P**	**03 48 19.8**	**+1.7**
JGM	**Miyama**	**4.69**	**246**	P	**P**	**03 48 23.3**	**+2.9**
JKG	**Kaga**	**4.76**	**254**	P	**P**	**03 48 24.6**	**+3.3**
TK03	**Tokai 3**	**4.81**	**224**	P	**P**	**03 48 25.3**	**+3.2**
JHJ	**Hachijo jima 2**	**4.92**	**202**	Pn	**P**	**03 48 21.8**	**-1.8**
	281nm,0.3s,baz=272,slow=2.4,SNR=53						
JHJ				Sn	**S**	**03 49 15.3**	**-4.7**
	541nm,0.3s,baz=80,slow=23,SNR=12						
JHJ				LR	LR	03 50 27.5	
	comp=Z,21μm,20.8s,baz=315,slow=40						
JAA	**Atsumi**	**4.98**	**234**	P	**P**	**03 48 27.2**	**+2.7**
JFM	**Mihama**	**5.30**	**248**	⇓P	**P**	**03 48 31.4**	**+2.4**
TK01	**Tokai 1**	**5.32**	**224**	P	**P**	**03 48 30.4**	**+1.2**
JKN	**Kiinagashima**	**5.79**	**235**	P	**P**	**03 48 36.6**	**+0.8**
JWT	**Wachi**	**5.84**	**248**	P	**P**	**03 48 37.7**	**+1.2**
JKY	**Yasaka**	**5.92**	**252**	P	**P**	**03 48 39.2**	**+1.6**
JKSM	**Kasumi**	**6.26**	**253**	P	**P**	**03 48 44.1**	**+1.6**
JKS	**Kasai**	**6.38**	**247**	P	**P**	**03 48 45.1**	**+1.0**
ASAJ	**Asahikawa**	**6.42**	**4**	Pn	**P**	**03 48 42.8**	**-2.0**
	36nm,0.3s,baz=244,slow=7.8,SNR=82						
ASAJ				Sn	**S**	**03 49 55.4**	**-2.4**
	38nm,0.3s,baz=94,slow=19,SNR=2.8						
ASAJ	**Asahikawa**	**6.42**	**4**	P	**P**	**03 48 42.8**	**-1.9**
ASAJ						03 49 55.4	
ASAJ				pmax	pmax		
	comp=Z,36nm,0.3s						
ASAJ				smax			
	comp=N,38nm,0.3s						
YUK	**Yuzh-Kuril'sk**	**6.97**	**24**	*e*P	**P**	**03 48 49.4**	**-3.0**
YUK				*i* S	**S**	**03 50 02.2**	**-9.1**
YUK				pmax	pmax		
	comp=Z,570nm,0.5s						
YUK				pmax	pmax		
	comp=Z,3μm,1.8s						
YUK				smax			
	comp=N,12μm,1.5s						
YUK				smax			
	comp=E,20μm,3.0s						
YUK				smax			
	comp=N,6μm,0.5s						
YUK				smax			
	comp=E,3μm,0.5s						
YUK				MLR	MLR		
	comp=N,22μm,15.0s						
YUK				MLR	MLR		
	comp=E,14μm,15.0s						
YUK				MLR	MLR		
	comp=Z,16μm,15.0s						
JHS	**Saijyo**	**7.66**	**252**	P	**P**	**03 49 03.5**	**+1.5**
JHM	**Kurahashi**	**8.46**	**248**	P	**P**	**03 49 13.8**	**+0.6**
JKU	**Kubokawa**	**8.50**	**242**	P	**P**	**03 49 14.6**	**+0.9**
KUR	**Kuril'sk**	**8.72**	**28**	*e*P	**P**	**03 49 14.0**	**-2.7**
KUR				*e*S	**S**	**03 50 42.0**	**-13**
KUR				pmax	pmax		
	comp=Z,340nm,3.0s						
KUR				pmax	pmax		
	comp=N,110nm,0.3s						
KUR				pmax	pmax		
	comp=E,180nm,0.3s						
KUR				smax			
	comp=N,2μm,0.9s						
KUR				smax			
	comp=E,2μm,0.9s						
KUR				smax			
	comp=N,5μm,3.0s						
KUR				smax			
	comp=E,8μm,3.0s						
KUR				MLR	MLR		
	comp=N,14μm,15.0s						
KUR				MLR	MLR		
	comp=E,11μm,15.0s						
YSS	**Yuzh-Sakhalins**	**9.26**	**3***j*	*i*P	**P**	**03 49 22.0**	**-2.2**
YSS				*i* S	**S**	**03 51 04.0**	**-4.4**
YSS				pmax	pmax		
	comp=N,180nm,1.1s						
YSS				pmax	pmax		
	comp=Z,160nm,1.1s						
YSS				pmax	pmax		
	comp=N,1μm,4.0s						
YSS				pmax	pmax		
	comp=Z,1μm,4.0s						
YSS				smax			
	comp=N,880nm,1.5s						
YSS				smax			
	comp=E,610nm,1.5s						
YSS				MLR	MLR		
	comp=N,12μm,20.0s						
YSS				MLR	MLR		
	comp=Z,10μm,20.0s						
YSS				MLR	MLR		
	comp=E,15μm,16.0s						
YSS	**Yuzh-Sakhalins**	**9.26**	**3**	*e*P	**P**	**03 49 21.9**	**-2.4**
	comp=E,95nm,0.7s						
VLA	**Vladivostok**	**9.42**	**308**	⇓*i*P	**P**	**03 49 27.0**	**+0.6**
VLA				*i* S	**S**	**03 51 17.0**	**+4.8**
VLA				pmax	pmax		
	comp=N,6μm,2.0s						
VLA				pmax	pmax		
	comp=Z,6μm,2.0s						
VLA				pmax	pmax		
	comp=E,2μm,2.4s						
VLA				smax			
	comp=Z,7μm,13.0s						
VLA				smax			
	comp=N,6μm,14.0s						
VLA				smax			
	comp=E,6μm,8.0s						
VLA				MLR	MLR		
	comp=Z,30μm,15.0s						
VLA				MLR	MLR		
	comp=N,28μm,16.0s						
VLA				MLR	MLR		
	comp=E,15μm,18.0s						
JTY	**Toyota**	**9.50**	**252**	P	**P**	**03 49 28.8**	**+1.2**
JUS	**Usuki**	**9.56**	**244**	P	**P**	**03 49 28.8**	**+0.5**
OIT2	**Oita 2**	**9.67**	**246**	P	**P**	**03 49 31.8**	**+2.0**
JKIT	**Kitakata**	**10.01**	**243**	P	**P**	**03 49 35.2**	**+0.7**
JNU	**Nakatsue**	**10.16**	**247**	Pn	**P**	**03 49 35.9**	**-0.7**
	comp=E,11nm,0.3s,baz=62,slow=14,SNR=156						
JNU	**Nakatsue**	**10.16**	**247**	P	**P**	**03 49 36.7**	**+0.1**
JTSN	**Tsuno**	**10.19**	**241**	P	**P**	**03 49 36.7**	**-0.2**
JTA	**Tamana**	**10.49**	**247**	P	**P**	**03 49 41.4**	**+0.3**
JIU2	**Izumi 2**	**10.50**	**244**	P	**P**	**03 49 41.5**	**+0.2**
CBIJ	**Chichi jima**	**10.58**	**179**	Pn	**P**	**03 49 36.6**	**-5.8**
	comp=E,42nm,0.3s,baz=103,slow=20,SNR=27						
CBIJ				Sn	**S**	**03 51 27.1**	**-14**
	comp=E,68nm,0.3s,baz=287,slow=19,SNR=5.3						
JTZ	**Takazaki**	**10.67**	**240**	P	**P**	**03 49 43.8**	**+0.2**
JZO	**Okuchi**	**10.88**	**243**	P	**P**	**03 49 46.6**	**+0.2**
JHD	**Hondo**	**11.03**	**245**	P	**P**	**03 49 48.5**	**0.0**
KS15	**Wonju Array Si**	**11.21**	**273**	*e*P	**P**	**03 49 52.3**	**+1.4**
JSU	**Suzuyama**	**11.34**	**240**	P	**P**	**03 49 54.0**	**+1.3**
MDJ	**Mudanjiang**	**11.62**	**310**	*e*P	**P**	**03 49 55.9**	**-0.6**
	comp=E,533nm,1.0s						
INCN	**Inchon**	**12.20**	**274**	*e*P	**P**	**03 50 05.7**	**+1.5**
	comp=E,1μm,1.4s						
TYV	**Tymovskoe**	**13.17**	**2**	*e*P	**P**	**03 50 13.6**	**-3.5**
TYV				*e*S	**S**	**03 52 39.0**	**-4.3**
TYV				pmax	pmax		
	comp=Z,74nm,1.0s						
TYV				MLR	MLR		
	comp=N,10μm,16.0s						
TYV				MLR	MLR		
	comp=E,6μm,16.0s						
TYV				MLR	MLR		
	comp=Z,13μm,16.0s						
KLR	**Kul'dur**	**13.70**	**330**	*e*P	**P**	**03 50 20.5**	**-3.6**
KLR				*e*		03 52 51.5	
KLR				pmax	pmax		
	comp=N,2μm,11.5s						
KLR				pmax	pmax		
	comp=E,2μm,11.5s						
KLR				pmax	pmax		
	comp=Z,4μm,11.5s						
KLR				MLR	MLR		
	comp=Z,21μm,14.0s						
CN2	**Changchun**	**13.94**	**301**	*e*P	**P**	**03 50 25.5**	**-1.7**
CN2				*e*XP		03 50 37.5	
CN2				*e*S	**S**	**03 52 58.5**	**-3.2**
CN2				AMB	AMB		
	comp=Z,500nm,8.0s						
CN2				LR	LR		
	comp=N,5μm,18.0s						
CN2				LR	LR		
	comp=E,8μm,18.0s						
CN2				LR	LR		
	comp=Z,8μm,21.0s						
SNY	**Shenyang**	**14.75**	**292**	⇑P	**P**	**03 50 37.5**	**-0.4**
SNY				AMB	AMB		
	comp=Z,150nm,1.6s						
SNY				LR	LR		
	comp=N,9μm,16.2s						
SNY				LR	LR		
	comp=E,27μm,17.4s						
SNY				LR	LR		
	comp=Z,31μm,17.7s						
JOW	**Kunigami**	**15.86**	**231**	Pn	**P**	**03 50 49.2**	**-3.1**
	comp=Z,0.8nm,0.3s,baz=45,slow=15,SNR=16						
JOW	**Kunigami**	**15.86**	**231**	P	**P**	**03 50 50.0**	**-2.3**
OKH	**Okha**	**15.86**	**2**	*e*P	**P**	**03 50 56.0**	**+3.8**
OKH				*e*S	**S**	**03 53 43.8**	**-3.0**
OKH				pmax	pmax		
	comp=Z,2μm,7.0s						
OKH				smax			
	comp=N,2μm,9.0s						
OKH				MLR	MLR		
	comp=Z,11μm,20.0s						
DL2	**Dalian**	**16.04**	**281**	⇑*i*P	**P**	**03 50 54.5**	**0.0**
DL2				S	**S**	**03 53 55.8**	**+4.8**
DL2				AMB	AMB		
	comp=Z,760nm,1.2s						
DL2				AMB	AMB		
	comp=Z,3μm,7.3s						
DL2				LR	LR		
	comp=E,5μm,20.6s						
DL2				LR	LR		
	comp=Z,7μm,19.5s						
SKR	**Severo-Kuril's**	**16.42**	**33**	*e*P	**P**	**03 51 04.4**	**+5.2**
SKR				*e*S	**S**	**03 53 51.0**	**-8.7**
SKR				pmax	pmax		
	comp=N,90nm,0.7s						
SKR				pmax	pmax		
	comp=E,70nm,0.7s						
SKR				pmax	pmax		
	comp=Z,60nm,0.7s						
SKR				pmax	pmax		
	comp=Z,2μm,4.0s						
SKR				pmax	pmax		
	comp=N,2μm,3.0s						
SKR				pmax	pmax		
	comp=E,2μm,3.0s						
SKR				smax			
	comp=E,2μm,6.0s						
SKR				smax			
	comp=E,70nm,0.7s						
SKR				smax			
	comp=Z,70nm,0.7s						
SKR				MLR	MLR		
	comp=N,6μm,16.0s						
SKR				MLR	MLR		
	comp=Z,101μm,16.0s						
SKR				MLR	MLR		
	comp=E,6μm,14.0s						
JAGN	**Aguni-jima**	**16.68**	**233**	P	**P**	**03 51 00.0**	**-2.7**
JKE	**Kume jima 2**	**17.15**	**233**	P	**P**	**03 51 05.4**	**-3.2**
SSE	**Sheshan**	**18.38**	**255**	P	**P**	**03 51 21.3**	**-2.7**
SSE				XP		03 51 32.5	
SSE				S	**S**	**03 54 41.3**	**-3.2**
SSE				AMB	AMB		
	comp=Z,712nm,1.2s						
SSE				AMB	AMB		
	comp=Z,2μm,10.0s						
SSE				LR	LR		
	comp=N,11μm,21.4s						
SSE				LR	LR		
	comp=E,8μm,21.3s						
SSE				LR	LR		
	comp=Z,13μm,14.8s						
PET	**Petropavlovsk**	**19.20**	**32***c*	*i*P	**P**	**03 51 32.2**	**-1.4**
PET				*i* S	**S**	**03 55 04.9**	**+2.0**
PET				pmax	pmax		
	comp=Z,800nm,5.5s						
PET				pmax	pmax		
	comp=E,400nm,5.2s						
PET				pmax	pmax		
	comp=Z,500nm,7.4s						
PET				pmax	pmax		
	comp=N,500nm,5.0s						
PET				smax			
	comp=N,2μm,6.8s						
PET				smax			
	comp=E,900nm,4.9s						
PET				smax			
	comp=E,4μm,10.1s						
PET				smax			
	comp=N,4μm,18.8s						
PET				MLR	MLR		
	comp=Z,8μm,21.0s						
PET				MLR	MLR		
	comp=Z,6μm,18.0s						
PET	**Petropavlovsk**	**19.20**	**32**	*e*P	**P**	**03 51 30.8**	**-2.8**
	comp=Z,61nm,0.9s						
HIA	**Hailar**	**19.78**	**313**	P	**P**	**03 51 34.9**	**-5.1**
HIA				P		03 51 43.3	
HIA	**Hailar**	**19.78**	**313**	*e*P	**P**	**03 51 34.9**	**-5.0**
HIA				pmax	pmax		
	comp=Z,51nm,1.0s						
HIA	**Hailar**	**19.78**	**313**	*e*P	**P**	**03 51 34.9**	**-5.1**
	comp=Z,51nm,1.0s						
NJ2	**Nanjing**	**19.79**	**260**	*e*P	**P**	**03 51 37.0**	**-3.2**
NJ2				AP		03 51 45.5	
NJ2				XP		03 51 50.0	
NJ2				PP	PP	03 51 55.5	-3.5
NJ2				S	**S**	**03 55 13.0**	**-3.0**
NJ2				XS		03 55 25.0	
NJ2				SS	SS	03 55 40.0	-3.8
NJ2				AMB	AMB		
	comp=Z,620nm,0.9s						
NJ2				AMB	AMB		
	comp=Z,5μm,11.1s						
NJ2				LR	LR		
	comp=N,19μm,21.8s						
NJ2				LR	LR		
	comp=E,15μm,21.1s						
NJ2				LR	LR		
	comp=Z,19μm,18.6s						
BJI	**Beijing**	**20.23**	**285**	P	**P**	**03 51 41.0**	**-3.7**
BJI				S	**S**	**03 55 20.3**	**-4.5**
BJI				AMB	AMB		
	comp=Z,345nm,1.4s						
BJI				LR	LR		
	comp=N,5μm,17.6s,MS5.0						
BJI				LR	LR		
	comp=E,5μm,18.4s,MS5.0						
BJI				LR	LR		
	comp=Z,8μm,25.8s						
JIJ	**Ishigaki jima**	**20.23**	**234**	P	**P**	**03 51 41.0**	**-3.8**
BJT	**Baijiatuau**	**20.23**	**285**	*e*P	**P**	**03 51 41.0**	**-3.8**
	comp=Z,744nm,1.1s						
BJT				LR	LR		
	comp=Z,9μm,20.0s,MS5.1						
TATO	**Taipei**	**21.57**	**240**	*e*P	**P**	**03 51 57.1**	**-1.5**
	comp=Z,273nm,0.9s,mb5.7						
TATO				LR	LR		
	comp=Z,1μm,20.0s,MS4.4						
CLNS	**Chul'man**	**22.27**	**335**	⇑*i*P	**P**	**03 52 04.3**	**-1.0**
CLNS				*e*		03 52 27.3	
CLNS				*e*S	**S**	**03 56 05.0**	**+1.7**
CLNS				*e*		03 56 15.1	
CLNS				*e*SS	SS	03 56 47.7	+3.4
CLNS				pmax	pmax		
	comp=Z,136nm,1.1s,mb5.3						
CLNS				pmax	pmax		
	comp=N,121nm,1.2s						
CLNS				pmax	pmax		
	comp=E,29nm,1.2s						
CLNS				pmax	pmax		
	comp=N,163nm,1.1s						
CLNS				pmax	pmax		
	comp=Z,144nm,1.1s,mb5.3						
CLNS				pmax	pmax		
	comp=E,161nm,0.9s						
CLNS				smax			
	comp=N,2μm,11.6s						
CLNS				smax			
	comp=Z,1μm,15.1s						
CLNS				smax			
	comp=E,1μm,10.5s						
CLNS				MLR	MLR		
	comp=E,3μm,15.0s,MS5.5						
CLNS				MLR	MLR		
	comp=Z,18μm,15.0s,MS5.6						
CLNS				MLR	MLR		
	comp=N,13μm,16.0s,MS5.5						
MA2	**Magadan**	**22.61**	**12***c*	*i*P	**P**	**03 52 08.7**	**+0.2**
MA2				pmax	pmax		
	comp=Z,155nm,1.6s,mb5.2						
MA2				MLR	MLR		
	comp=Z,3μm,18.0s,MS4.8						
MA2	**Magadan**	**22.61**	**12**	*e*P	**P**	**03 52 08.2**	**-0.3**
	comp=Z,178nm,1.3s,mb5.3						
MA2				LR	LR		
	comp=Z,4μm,21.0s,MS4.8						
TIY	**Taiyuan**	**23.35**	**279**	⇓P	**P**	**03 52 12.0**	**-4.1**
TIY				S	**S**	**03 56 29.0**	**+6.3**
TIY				LR	LR		
	comp=N,6μm,14.0s						
TIY				LR	LR		
	comp=Z,8μm,14.0s,MS5.3						
QZH	**Quanzhou**	**23.62**	**244**	P	**P**	**03 52 15.5**	**-3.3**
QZH				S	**S**	**03 56 32.5**	**+4.9**
QZH				AMB	AMB		
	comp=Z,440nm,0.9s,mb5.9						
QZH				AMB	AMB		
	comp=Z,3μm,8.1s						
QZH				LR	LR		
	comp=N,4μm,13.6s,MS5.4						
QZH				LR	LR		
	comp=E,8μm,15.1s,MS5.4						
QZH				LR	LR		
	comp=Z,13μm,19.5s,MS5.4						
HHC	**Hu-ho-hao-te**	**23.71**	**287**	⇑*i*P	**P**	**03 52 17.0**	**-2.5**
HHC				AP		03 52 24.0	
HHC				XP		03 52 28.3	
HHC				PP	PP	03 52 53.5	+0.6
HHC				S	**S**	**03 56 31.8**	**+2.8**
HHC				XS		03 56 42.3	
HHC				PCS		03 59 38.8	
HHC				AMB	AMB		
	comp=Z,226nm,1.5s,mb5.4						
HHC				LR	LR		
	comp=N,3μm,12.9s,MS5.2						
HHC				LR	LR		
	comp=E,5μm,13.9s,MS5.2						
HHC				LR	LR		
	comp=Z,6μm,14.4s,MS5.2						
WHN	**Wuhan**	**23.92**	**261**	⇑P	**P**	**03 52 19.8**	**-1.9**
WHN				S	**S**	**03 56 31.0**	**-1.7**
WHN				LR	LR		
	comp=N,6μm,12.0s,MS5.4						
WHN				LR	LR		
	comp=E,5μm,14.0s,MS5.4						
WHN				LR	LR		
	comp=Z,22μm,19.0s,MS5.7						
GUMO	**Guam**	**24.15**	**173**	*e*P	**P**	**03 52 27.7**	**+3.7**
	comp=Z,184nm,1.0s,mb5.5						
GUMO				LR	LR		
	comp=Z,4μm,22.0s,MS4.8						
BBP	**Basco**	**24.46**	**231**	⇑*e*P	**P**	**03 52 25.8**	**-1.2**
BTO	**Baotou**	**24.90**	**287**	*e*P	**P**	**03 52 28.3**	**-2.7**
BTO				S	**S**	**03 56 45.8**	**-3.4**
BTO				AMB	AMB		
	comp=Z,341nm,1.3s,mb5.7						
YAK	**Yakutsk**	**25.53**	**346***c*	*i*P	**P**	**03 52 35.9**	**-0.8**
YAK				*e*PP	pP	03 52 42.8	-3.7
YAK				*e*PPP	PPP	03 53 17.0	-11
YAK				*e*		03 56 09.1	
YAK				*i* S	**S**	**03 56 57.9**	**-1.5**
YAK				*e*SS	SS	03 57 59.0	-4.3
YAK				*e*SSS	SSS	03 58 15.2	-5.1
YAK				pmax	pmax		
	comp=Z,200nm,1.0s,mb5.6						
YAK				pmax	pmax		
	comp=N,135nm,1.4s						
YAK				pmax	pmax		
	comp=E,69nm,1.3s						
YAK				smax			
	comp=E,53nm,1.5s						
YAK				smax			
	comp=Z,31nm,1.1s						
YAK				smax			

comp=N,36nm,1.7s
YAK MLR MLR
comp=Z,7µm,15.0s,MS5.3
YAK MLR MLR
comp=N,6µm,16.0s,MS5.3
YAK MLR MLR
comp=E,2µm,13.0s,MS5.3
YAK Yakutsk 25.53 346 *eP* **P 03 52 35.5 -1.3**
comp=E,450nm,0.9s,mb6.0
YAK LR LR
comp=Z,8µm,20.0s,MS5.2
SEY Seymchan 26.05 11 *eP* **P 03 52 43.1 +1.5**
SEY *PP pP 03 52 54.1 +2.8
SEY 03 53 20.9
SEY *ePPP PPP 03 53 39.8 +4.4
SEY 03 56 17.1
SEY *eS* **S 03 57 10.3 +2.3**
SEY *e*SS 03 57 30.3
SEY MLR MLR
comp=Z,18µm,18.0s,MS5.7
SEY MLR MLR
comp=N,17µm,19.0s,MS5.7
SEY MLR MLR
comp=E,8µm,15.0s,MS5.7
SGCP Mt. Cagua 26.10 228⇑ *eP* **P 03 52 42.8 +0.2**
FX1 Attu Island--F 26.40 45 P **P 03 52 46.6 +1.7**
comp=E,34nm,0.9s,baz=20,slow=7.0,SNR=4.2
FX1 LR LR 04 01 45.0
comp=E,166nm,18.8s,baz=256,slow=33
FX1 Attu Island--F 26.40 45 P **P 03 52 46.6 +1.7**
FX1 pmax pmax
comp=Z,34nm,0.9s
FX1 MLR MLR
comp=Z,167nm,18.8s
FX1 Attu Island--F 26.40 45 *eP* **P 03 52 46.1 +1.2**
CVP Callao Caves 26.65 227⇓ *eP* **P 03 52 46.0 -1.6**
PALP Palanan 26.82 225⇑ *eP* **P 03 52 47.8 -1.4**
PALP *eS* x 03 53 18.6
SMY Shemya 26.87 46 PFAKE 03 53 00.0 +11
SMY LR LR
comp=Z,7µm,21.0s,MS5.2
APYP Conner 26.87 228⇑ *eP* **P 03 52 46.7 -2.9**
XAN Xi'an 26.98 272 P **P 03 52 48.5 -1.9**
XAN AP pP 03 52 54.0 -6.3
XAN PP PP 03 53 36.5 -0.1
XAN S **S 03 57 14.8 -8.7**
XAN AMB AMB
comp=Z,277nm,1.3s,mb5.6
BOD Bodaibo 27.22 327⇑ *iP* **P 03 52 51.2 -1.3**
BOD *e* pP 03 53 01.2 -1.1
CAUP Cauayan 27.25 226⇑ *eP* **P 03 52 52.8 -0.3**
ABRA Dolores 27.35 229⇑ *eP* **P 03 52 51.3 -2.7**
ULN Ulaanbaatar 27.38 303 *eP* **P 03 52 52.5 -1.5**
comp=Z,182nm,1.0s,mb5.6
ULN LR LR
comp=Z,8µm,19.0s,MS5.3
SONM Songino Array 27.81 303 P **P 03 52 57.8 -0.1**
comp=Z,227nm,1.0s,mb5.8,baz=98,slow=8.7,SNR=125
ENH Enshi 27.86 264 *eP* **P 03 52 56.9 -1.7**
comp=Z,2µm,1.0s,mb6.7
ENH LR LR
comp=Z,8µm,20.0s,MS5.3
WAKE Wake Island 28.25 124 PFAKE 03 53 10.0 +7.8
WAKE LR LR
comp=Z,1µm,21.0s,MS4.5
BALP Baler 28.36 225⇑ *eP* **P 03 53 01.5 -1.6**
BCPH Baguio City Da 28.42 227⇓ *iP* **P 03 53 00.9 -2.8**
GZH Guangzhou 28.55 248 P **P 03 52 59.0 -5.8**
GZH AMB AMB
comp=Z,171nm,1.3s,mb5.6
GZH LR LR
comp=N,7µm,17.2s,MS5.6
GZH LR LR
comp=E,10µm,17.5s,MS5.6
GZH LR LR
comp=Z,17µm,16.4s,MS5.7
PVCP Virac 28.79 218⇑ *eP* **P 03 53 06.4 -0.5**
BOLP Bolinao 28.81 229⇑ *eP* **P 03 53 05.0 -2.1**
POLP Polillo Island 28.98 223⇑ *eP* **P 03 53 07.7 -1.1**
SCZP Santa Cruz 29.29 228⇑ *eP* **P 03 53 09.3 -2.1**
CNP Catarman 29.48 216⇑ *eP* **P 03 53 12.9 -0.3**
BESP Borongan 29.93 214⇑ *eP* **P 03 53 17.6 +0.5**
IRK Irkutsk 30.01 311 *eP* **P 03 53 16.6 -0.8**
IRK *e* 03 53 33.4
TGY Tagaytay City 30.05 224 P **P 03 53 16.9 -1.2**
comp=Z,1µm,1.1s,mb6.5,baz=166,slow=7.2,SNR=35
BOAC Boac 30.09 222⇑ *eP* **P 03 53 17.5 -1.1**
ZAK Zakamensk 30.23 307⇓ *iP* **P 03 53 18.7 -0.8**
ZAK *e* 03 53 33.6
ZAK *e* 03 56 18.0
TLY Talaya 30.26 310*c* *eP* **P 03 53 18.4 -1.3**
TLY *i* 03 56 17.5
TLY *i* S **S 03 58 15.2 -0.5**
TLY *e*SS SS 04 00 09.8 +14
TLY MLR MLR
comp=Z,112µm,18.0s,MS6.5
LZH Lanzhou 30.42 279 ⇑P **P 03 53 19.5 -1.8**
LZH AP pP 03 53 28.5 -2.8
LZH XP sP 03 53 33.0 -2.9
LZH PP PP 03 54 18.5 -2.9
LZH *e*S **S 03 58 16.5 -2.0**
LZH XS 03 58 31.8
LZH SS SS 03 59 54.8 -4.8
LZH AMB AMB
comp=Z,189nm,1.4s,mb5.6
LZH AMB AMB
comp=Z,773nm,7.2s
LZH LR LR
comp=E,6µm,13.0s
LZH LR LR
comp=Z,7µm,16.8s,MS5.4
PLP Palo 30.52 214 *eP* **P 03 53 22.4 0.0**
LUBP Lubang 30.73 225⇑ *eP* **P 03 53 22.0 -2.3**
OCLP Ormoc 30.79 215⇑ *eP* **P 03 53 25.9 +1.1**
OTRP Odiongan 30.91 221⇑ *eP* **P 03 53 25.4 -0.5**
KALP Kalibo 31.33 219⇑ *eP* **P 03 53 28.0 -1.6**
MSLP Maasin 31.49 214⇑ *eP* **P 03 53 30.2 -0.7**
GYA Guiyang 31.80 260⇑ *iP* **P 03 53 31.3 -2.3**
GYA AP pP 03 53 39.8 -3.8
GYA XP sP 03 53 42.5 -5.7
GYA S **S 03 58 35.5 -4.7**
GYA XS 03 58 53.3
GYA LR LR
comp=N,4µm,18.2s,MS5.4
GYA LR LR
comp=E,7µm,21.5s,MS5.4
GYA LR LR
comp=Z,10µm,20.3s,MS5.5
MOY Mondy 31.87 309 *eP* **P 03 53 33.2 -0.8**
CD2 Chengdu 32.15 269 ⇑*iP* **P 03 53 34.5 -2.1**
CD2 AP pP 03 53 41.3 -5.3
CD2 XP sP 03 53 46.0 -5.2
CD2 S **S 03 58 38.0 -7.6**
CD2 AMB AMB
comp=Z,330nm,1.1s,mb6.1
CD2 AMB AMB
comp=Z,930nm,9.3s
CD2 LR LR
comp=N,10µm,16.8s
CD2 LR LR
comp=Z,10µm,17.4s,MS5.6
BUSP Coron 32.18 223⇑ *eP* **P 03 53 35.8 -1.2**
GTA Gaotai 32.82 286 ⇑*iP* **P 03 53 41.3 -1.1**
GTA AP pP 03 53 50.0 -2.4
GTA XP sP 03 53 53.5 -3.5
GTA PP PP 03 54 50.3 -2.3
GTA PPP PPP 03 55 06.0 -2.4
GTA PCP PcP 03 56 27.3 +0.4
GTA S **S 03 58 54.5 -1.6**
GTA XS 03 59 04.0
GTA SCP 04 00 08.5
GTA PCS 04 00 11.0
GTA SS SS 04 00 51.3 -4.4
GTA SCS ScS 04 04 05.8 +0.3
GTA AMB AMB
comp=Z,249nm,1.2s,mb6.0
GTA AMB AMB
comp=Z,867nm,5.7s
GTA LR LR
comp=N,2µm,19.9s,MS5.2
GTA LR LR
comp=E,4µm,17.6s,MS5.2
GTA LR LR
comp=Z,5µm,17.2s,MS5.3

SNPH Sibulan 32.92 216 *eP* **P 03 53 44.5 +1.0**
BILL Bilibino 33.26 16*c* *iP* **P 03 53 44.6 -1.2**
BILL pmax pmax
comp=Z,91nm,1.3s,mb5.5
BILL MLR MLR
comp=Z,3µm,21.0s,MS5.0
BILL Bilibino 33.26 16 *eP* **P 03 53 44.0 -1.8**
comp=Z,86nm,1.3s,mb5.5
QIZ Qiongzhong 33.63 245 P **P 03 53 49.8 +0.3**
QIZ AP pP 03 54 00.3 +0.7
QIZ PP PP 03 55 04.3 +1.7
QIZ S **S 03 59 10.8 +2.0**
QIZ AMB AMB
comp=Z,114nm,1.5s,mb5.6
QIZ AMB AMB
comp=Z,884nm,7.7s
QIZ LR LR
comp=N,5µm,17.5s,MS5.4
QIZ LR LR
comp=E,4µm,17.5s,MS5.4
QIZ LR LR
comp=E,6µm,18.1s,MS5.3
QIZ Qiongzhong 33.63 245 *eP* **P 03 53 49.2 -0.3**
comp=Z,92nm,1.0s,mb5.7
PAGZ Pagadian 34.17 214⇑ *eP* **P 03 53 49.6 -4.6**
TIXI Tiksi 34.69 353 *eP* **P 03 53 55.4 -2.7**
TIXI *e*PP pP 03 54 02.1 -6.1
TIXI *e*SP sP 03 54 08.1 -4.6
TIXI *e* 03 55 08.6
TIXI *eS* **S 03 59 24.2 -0.5**
TIXI pmax pmax
comp=Z,72nm,1.4s,mb5.4
TIXI MLR MLR
comp=Z,8µm,17.0s,MS5.5
TIXI Tiksi 34.69 353 *eP* **P 03 53 56.2 -1.9**
comp=Z,139nm,1.5s,mb5.7
TIXI LR LR
comp=Z,4µm,20.0s,MS5.2
KMI Kunming 35.53 261⇑ *eP* **P 03 54 04.5 -1.2**
KMI AP pP 03 54 15.8 0.0
KMI XP sP 03 54 20.0 -0.4
KMI PP PP 03 55 26.0 -0.4
KMI S **S 03 59 37.3 -0.8**
KMI XS 03 59 54.3
KMI SS SS 04 01 57.5 -0.6
KMI AMB AMB
comp=Z,350nm,1.3s,mb6.1
KMI LR LR
comp=Z,10µm,19.3s,MS5.6
KWAJ Kwajalein Atol 36.91 135 PFAKE 03 54 30.0 +12
KWAJ LR LR
comp=Z,7µm,21.0s,MS5.4
UNV Unalaska Valle 38.45 48 PFAKE 03 54 40.0 +10
UNV LR LR
comp=Z,7µm,20.0s,MS5.5
KKM Kota Kinabalu 39.29 223⇓ *eP* **P 03 54 38.3 +1.0**
KKTK Khon Kaen 40.48 249 ⇑P **P 03 54 44.0 -3.2**
comp=Z,2µm,0.7s
CHRT Chiangrai 40.66 256 ⇑P **P 03 54 49.0 +0.4**
comp=Z,668nm,0.9s,mb6.3
WMQ Urumqi 40.96 296⇑ *iP* **P 03 54 51.5 +0.6**
WMQ AP pP 03 55 00.5 -0.7
WMQ XP sP 03 55 04.5 -1.0
WMQ PP PP 03 56 29.5 +1.1
WMQ PCP PcP 03 56 52.8 +1.4
WMQ SCP 04 00 38.5
WMQ PCS 04 00 42.5
WMQ S **S 04 01 00.0 -0.3**
WMQ XS 04 01 16.3
WMQ SS SS 04 03 57.0 -1.5
WMQ SCS ScS 04 04 52.0 +1.3
WMQ AMB AMB
comp=Z,243nm,1.0s,mb5.8
WMQ AMB AMB
comp=Z,2µm,5.2s
WMQ LR LR
comp=N,5µm,17.2s,MS5.6
WMQ LR LR
comp=E,5µm,17.3s,MS5.6
WMQ LR LR
comp=Z,8µm,18.2s,MS5.6
ZAL Zalesovo 41.83 312 P **P 03 54 57.5 -0.4**
comp=Z,115nm,1.0s,mb5.4,baz=292,slow=8.6,SNR=311
ZAL PcP PcP 03 56 53.0 -1.1
comp=Z,39nm,1.1s,baz=308,slow=9.3,SNR=3.4
ZAL LR LR 04 13 33.9
comp=Z,11µm,18.3s,MS5.8,baz=297,slow=38
ZAL Zalesovo 41.83 312 P **P 03 54 57.5 -0.4**
ZAL 03 56 53.0
ZAL pmax pmax
comp=Z,115nm,1.0s
ZAL MLR MLR
comp=Z,11µm,18.3s
ZAL Zalesovo 41.83 312 P **P 03 54 57.5 -0.4**
ZAL PcP PcP 03 56 53.0 -1.1
ZAL LR LR 04 13 33.9
CM31 Chiang Mai Arr 42.12 255 *eP* **P 03 55 00.5 -0.2**
comp=Z,18nm,0.6s,mb4.9
CM31 LR LR
comp=Z,3µm,20.0s,MS5.1
CMAR Chiang Mai Arr 42.12 255 P **P 03 55 00.3 -0.4**
comp=Z,30nm,0.9s,mb4.9,baz=46,slow=7.1,SNR=96
CMAR PcP PcP 03 56 56.2 +0.8
comp=Z,8.4nm,0.8s,baz=11,slow=4.2,SNR=4.1
CMAR LR LR 04 13 06.2
comp=Z,2µm,20.9s,MS5.0,baz=60,slow=37
CMAR Chiang Mai Arr 42.12 255 P **P 03 55 00.4 -0.3**
CMAR 03 56 56.3
CMAR pmax pmax
comp=Z,30nm,0.9s
CMAR MLR MLR
comp=Z,2µm,20.9s
LSA Lhasa 42.62 275 P **P 03 55 05.5 +0.8**
LSA AP pP 03 55 16.0 +1.1
LSA XP sP 03 55 19.3 0.0
LSA PP PP 03 56 45.0 -1.1
LSA PPP PPP 03 57 18.8 -1.2
LSA S **S 04 01 25.0 +0.1**
LSA XS 04 01 41.0
LSA AMB AMB
comp=Z,350nm,1.3s,mb5.9
LSA Lhasa 42.62 275 *eP* **P 03 55 05.3 +0.6**
comp=Z,377nm,1.1s,mb6.0
LSA LR LR
comp=Z,4µm,22.0s,MS5.2
IMP Imphal 42.64 267 *eP* **P 03 55 03.0 -1.9**
IMP *e* 04 01 32.0
NVS Novosibirsk 42.72 313 *iP* **P 03 55 03.9 -1.3**
NVS *i* pP 03 55 13.0 -2.4
NVS *i* 03 56 47.8
NVS *eS* **S 04 01 17.7 -8.3**
NVS pmax pmax
comp=E,252nm,1.3s
NVS pmax pmax
comp=Z,290nm,1.3s,mb5.8
NVS pmax pmax
comp=N,80nm,1.4s
NVS pmax pmax
comp=Z,65nm,1.3s,mb5.2
NVS pmax pmax
comp=N,44nm,1.1s
NVS pmax pmax
comp=E,75nm,1.8s
NVS smax
comp=E,269nm,2.3s
BDT Bhumibol Dam 42.80 254 P **P 03 55 06.0 -0.3**
comp=E,22nm,1.0s,mb4.8
NST Nakhon Sawan 42.91 251 P **P 03 55 07.0 -0.2**
comp=E,92nm,1.0s,mb5.5
SHL Shillong 43.88 269 *iP* **P 03 55 13.7 -1.3**
comp=E,333nm,1.0s,mb6.0
SHL *e* 04 01 40.0
MKAR Makanchi Array 44.17 302 P **P 03 55 16.7 -0.3**
comp=E,209nm,0.9s,mb5.8,baz=90,slow=8.5,SNR=652
MKAR LR LR 04 14 02.7
comp=E,3µm,20.7s,MS5.2,baz=83,slow=36
MKAR Makanchi Array 44.17 302 P **P 03 55 16.7 -0.3**
MKAR pmax pmax
comp=Z,209nm,0.9s
MKAR MLR MLR
comp=Z,3µm,20.7s
SVW Sparrevohn 44.69 38 *eP* **P 03 55 21.9 +0.9**
NNT Nongplab 45.18 248 P **P 03 55 25.5 0.0**
AGT Agartala 45.21 267⇓ *iP* **P 03 55 25.0 -0.7**
AGT ⇓*i* 03 56 11.0

IMA Indian Mountai 45.88 31 *eP* **P 03 55 30.7 +0.3**
KURK Kurchatov 45.89 308 *eP* **P 03 55 29.9 -0.9**
KDAK Kodiak Island 46.29 42 *eP* **P 03 55 33.4 -0.3**
comp=Z,83nm,1.3s,mb5.5
KDAK LR LR
comp=Z,6µm,21.0s,MS5.5
PMG Port Moresby 47.11 173 P **P 03 55 40.3 -0.4**
comp=Z,4.4nm,0.5s,mb4.7,baz=332,slow=15,SNR=2.1
PMG LR LR 04 13 48.4
comp=Z,1µm,21.8s,MS4.9,baz=182,slow=34
FIB Fire Island 47.33 38 PFAKE 03 55 50.0 +8.1
FIB LR LR
comp=Z,4µm,19.0s,MS5.4
GUN Gumba 47.56 275 *eP* **P 03 55 43.9 -0.3**
comp=Z,1µm,0.9s
PMR Palmer 47.81 37 *eP* **P 03 55 45.0 -0.7**
comp=Z,30nm,1.2s,mb5.2
PMR LR LR
comp=Z,2µm,22.0s,MS5.1
MCK McKinley 47.82 34 *eP* **P 03 55 45.3 -0.5**
comp=Z,8.9nm,1.1s,mb4.7
MCK LR LR
comp=Z,595nm,20.0s,MS4.6
PKI Pulchoki 48.08 275 *eP* **P 03 55 47.5 -0.8**
comp=Z,632nm,1.1s,mb6.5
KKN Kakani 48.09 276 *eP* **P 03 55 47.5 -0.8**
comp=Z,1µm,1.0s
SML Sawmill 48.18 37 *eP* **P 03 55 48.1 -0.4**
CAL Calcutta 48.20 268 *eP* **P 03 55 48.0 -1.2**
CAL *e* 04 01 30.0
CAL *e* 04 03 02.0
SNG Songkhla 48.23 242 P **P 03 55 47.0 -2.6**
COLA College 48.27 33 *eP* **P 03 55 49.9 +0.7**
COLA College 48.27 33 *eP* **P 03 55 49.1 0.0**
comp=Z,30nm,1.4s,mb5.1
COLA LR LR
comp=Z,1µm,20.0s,MS4.9
DMN Daman 48.31 275 *eP* **P 03 55 49.4 -0.6**
comp=Z,3µm,2.0s
GKN Gorkha 48.50 276 *eP* **P 03 55 51.0 -0.5**
comp=Z,2µm,1.1s
ILAR Eielson Array 48.68 33 P **P 03 55 52.1 -0.3**
comp=Z,11nm,0.9s,mb4.9,baz=266,slow=6.1,SNR=73
ILAR PKPPKP 04 26 55.0
comp=Z,1.2nm,1.2s,baz=135,slow=1.3,SNR=5.1
DANN Dangsing 49.03 277 *eP* **P 03 55 56.2 +0.6**
KOLN Koldanda 49.42 276 *eP* **P 03 55 57.9 -0.7**
comp=Z,1µm,1.3s
ULHL Ulahol 49.48 297 P **P 03 55 58.7 -0.2**
SNR=119
EYAK Cordova Ski Ar 49.54 38 *eP* **P 03 55 59.3 +0.3**
TKM2 Tokmak 2 49.73 298 P **P 03 56 01.1 +0.3**
SNR=509
IPM Ipoh 49.81 239⇑ *eP* **P 03 56 02.0 +0.2**
comp=Z,115nm,1.0s,mb5.9
KGM Kluang 50.20 234⇑ *eP* **P 03 56 04.6 -0.2**
comp=Z,534nm,1.1s,mb6.5
KZA Kyzart 50.23 297 P **P 03 56 05.7 +1.1**
SNR=112
KBK Karagaybulak 50.26 298 P **P 03 56 05.0 +0.1**
SNR=241
CHMS Chumysh 50.30 298 P **P 03 56 04.7 -0.4**
SNR=57
USP Ospenovka 50.39 299 P **P 03 56 05.3 -0.4**
SNR=183
FRU Bishkek 50.44 298⇑ *iP* **P 03 56 06.0 -0.2**
FRU *i* pP 03 56 15.0 -1.5
FRU *eS* **S 04 03 10.0 -6.0**
FRU pmax pmax
comp=Z,700nm,2.0s,mb6.3
FRU smax
comp=E,1µm,8.0s
BVAR Borovoye Array 50.47 312 P **P 03 56 05.5 -0.8**
comp=E,24nm,0.6s,mb5.4,baz=76,slow=6.1,SNR=198
BVAR LR LR 04 18 29.8
comp=E,7µm,18.8s,MS5.7,baz=50,slow=37
BRVK Borovoye 50.53 312 *eP* **P 03 56 05.7 -1.0**
KSH Kashi 50.56 294⇑ *iP* **P 03 56 08.0 +0.8**
KSH AP pP 03 56 15.5 -2.0
KSH XP sP 03 56 18.8 -3.0
KSH PCP PcP 03 57 27.7 +2.2
KSH PP PP 03 58 04.0 +0.1
KSH SCP 04 01 19.0
KSH PCS 04 01 22.0
KSH S **S 04 03 18.3 +0.6**
KSH PS PS 04 03 30.5 -0.4
KSH XS 04 03 31.0
KSH SCS ScS 04 05 54.3 +2.2
KSH SS SS 04 06 49.0 -0.2
AAK Ala-Archa 50.59 298 P **P 03 56 07.0 -0.3**
SNR=60
AAK Ala-Archa 50.59 298 *eP* **P 03 56 06.7 -0.6**
comp=E,80nm,0.9s,mb5.7
AAK LR LR
comp=Z,9µm,19.0s,MS5.8
UCH Uchtor 50.70 298 P **P 03 56 08.6 +0.4**
SNR=70
KAKA Kakadu 50.94 192 *eP* **P 03 56 03.9 -6.4**
comp=Z,47nm,0.9s,mb5.4
EKS2 Erkin-Say 51.08 298 P **P 03 56 10.6 -0.4**
SNR=91
PTH Pithoragarh 51.28 280 *eP* **P 03 56 12.0 -0.7**
PTH *e* 04 03 45.0
AML Almayashu 51.31 298 P **P 03 56 13.4 +0.6**
SNR=328
BLSP Bilaspur 53.33 271 *eP* **P 03 56 26.7 -1.4**
INK Inuvik 53.58 27 P **P 03 56 29.4 0.0**
comp=Z,38nm,1.2s,mb5.2,baz=292,slow=6.9,SNR=33
INK Inuvik 53.58 27 P **P 03 56 29.4 0.0**
INK pmax pmax
comp=Z,38nm,1.2s
INK Inuvik 53.58 27 *eP* **P 03 56 28.9 -0.5**
comp=Z,65nm,1.3s,mb5.4
KIP Kipapa 53.78 90 PFAKE 03 56 40.0 +8.5
KIP LR LR
comp=Z,1µm,19.0s,MS5.1
NDI New Delhi 54.01 281⇑ *iP* **P 03 56 30.0 -3.1**
NDI *eS* **S 04 04 06.5 +1.5**
AGRA Agra 54.12 279 *eP* **P 03 56 32.0 -1.9**
AGRA *e* 03 56 34.5
comp=Z,175nm,0.6s
AYAN Aya Nagar 54.17 281 *eP* **P 03 56 32.6 -1.7**
AYAN *e* 03 56 35.0
comp=Z,184nm,1.0s
SONA Sohna 54.31 280 *eP* **P 03 56 33.7 -1.6**
SONA *e* 03 56 37.0
comp=Z,208nm,1.5s
JBP Jabalpur 54.50 273⇑ *i* **P 03 56 38.6 +1.9**
JBP *i* 04 04 17.6
VIS Vishakhapatnam 54.74 266 *iP* **P 03 56 37.6 -0.9**
KUDL Kundal 54.83 281 *eP* **P 03 56 37.2 -1.8**
KUDL *e* 03 56 41.6
comp=Z,148nm,1.5s
SIT Sitka 55.58 41 *eP* **P 03 56 44.8 +0.7**
SIT LR LR
comp=Z,1µm,20.0s,MS5.0
ARU Arti 56.17 318⇑ *iP* **P 03 56 47.5 -0.9**
ARU *e* 03 57 47.9
ARU *e* 03 58 58.4
ARU *i* PPP PPP 04 00 06.2 -5.6
ARU *i* S **S 04 04 33.2 -0.4**
ARU *i* 04 06 30.5
ARU *e*SS SS 04 08 17.4 -2.9
ARU *e*SSS SSS 04 10 29.7 +0.2
ARU pmax pmax
comp=Z,475nm,1.2s,mb6.4
ARU MLR MLR
comp=E,7µm,18.0s,MS5.8
ARU MLR MLR
comp=Z,9µm,18.0s,MS5.9
ARU MLR MLR
comp=N,2µm,21.0s,MS5.8
ARU Arti 56.17 318 *eP* **P 03 56 47.0 -1.4**
comp=N,574nm,1.3s,mb6.5
ARU LR LR
comp=Z,9µm,19.0s,MS5.9
BHPL Bhopal 56.49 275 *eP* **P 03 56 49.2 -1.9**
BHPL *e* 03 56 52.6
comp=Z,257nm,1.2s
POHA Pohakuloa 56.63 90 PFAKE 03 57 00.0 +7.8
POHA LR LR
comp=Z,2µm,20.0s,MS5.2
KGD Kothagudem 56.93 267⇑ *eP* **P 03 56 53.5 -0.9**
KGD *e* pP 03 57 04.4 -0.5
KGD *e* 03 57 58.3

KGD eS S 04 04 48.6 +4.5
KGD eSS SS 04 08 38.7 +4.9
KGD e 04 14 14.8
AJM Ajmer 57.06 280⇑ *i*P **P** **03 56 53.0 -2.2**
FITZ Fitzroy Crossi 57.60 199 eP **P** **03 56 58.1 -1.0**
comp=Z,77nm,1.4s,mb5.5
FITZ eS S 04 04 39.9 -13
CTA Charters Tower 57.62 175 eP **P** **03 56 58.3 -0.9**
comp=Z,12nm,0.9s,mb4.9
CTA eS S 04 04 54.3 +1.3
CTAO Charters Tower 57.62 175 PFAKE 03 57 10.0 +11
CTAO LR LR
comp=Z,1μm,19.0s,MS5.0
WRAB Tennant Creek 57.77 189 eP **P** **03 56 57.9 -2.4**
comp=Z,525nm,1.3s,mb6.4
WRAB LR LR
comp=Z,3μm,22.0s,MS5.3
WB2 Warramunga Arr 57.78 189 eP **P** **03 56 57.6 -2.7**
WB2 eS S 04 04 51.2 -4.0
DLBC Dease Lake 57.81 38 eP **P** **03 57 00.5 +0.5**
AKL Akola 58.13 273 *i*P **P** **03 57 00.4 -2.3**
AKL *i* 03 59 05.6
HYB Hyderabad 58.69 268⇑ *i*P **P** **03 57 05.5 -1.2**
comp=Z,190nm,1.0s,mb6.1
HYB esP sP 03 57 19.0 -2.3
HYB ePcP PcP 03 57 57.0 +0.9
HYB ePP PP 03 59 16.0 -2.3
HYB e 03 59 36.0
HYB eS S **04 05 08.0 +0.9**
HYB Hyderabad 58.69 268⇑ eP **P** **03 57 05.5 -1.2**
comp=Z,190nm,1.0s,mb6.1
LATR Latur 59.72 271 eP **P** **03 57 12.9 -0.9**
JASL Jaisalmer 59.76 282 eP **P** **03 57 12.5 -1.5**
MDRS Chennai 59.83 263 eP **P** **03 57 12.0 -2.6**
MDRS *i* 04 05 31.0
SPITS Spitsbergen Ar 59.96 349 P **P** **03 57 13.9 -0.8**
comp=Z,36nm,1.1s,mb5.3,baz=69,slow=0.7,SNR=26
SPB4 Spitsbergen Ar 59.96 349 eP **P** **03 57 13.5 -1.2**
KBS Kingsbay 60.08 350 eP **P** **03 57 13.7 -1.9**
KBS AMS AMS 04 25 32.7
comp=Z,2μm,20.0s,MS5.1
KBS Kingsbay 60.08 350 eP **P** **03 57 14.8 -0.7**
comp=Z,81nm,1.0s,mb5.7
KBS LR LR
comp=Z,2μm,20.0s,MS5.2
CUD Cuddapah 60.18 265⇑ eP **P** **03 57 15.8 -1.2**
CUD epP pP 03 57 20.9 -6.6
CUD esP sP 03 57 27.7 -3.9
CUD ePP PP 03 59 27.2 -4.6
CUD eS S 04 04 57.4 -29
CUD e 04 15 37.8
CUD ePKKP PKKP 04 18 24.2 +13
AS12 Alice Springs 61.51 188 eP **P** **03 57 24.3 -1.6**
comp=Z,92nm,1.2s,mb5.8
ASAR Alice Springs 61.51 188 P **P** **03 57 24.4 -1.5**
comp=Z,34nm,0.9s,mb5.5,baz=10,slow=5.9,SNR=161
ASAR LR LR 04 24 18.6
comp=Z,975nm,18.2s,MS5.0,baz=358,slow=36
ASAR PKP2bc 04 26 47.8
comp=Z,2.0nm,0.9s,baz=243,slow=2.0,SNR=9.1
ASAR Alice Springs 61.51 188 P **P** **03 57 24.4 -1.5**
ASAR LR LR 04 24 18.6
ASAR ⇑*e* 04 26 47.8
LVZ Lovozero 61.70 336 *i*P **P** **03 57 24.9 -1.6**
LVZ eS S **04 05 42.9 -2.2**
LVZ e 04 07 14.3
LVZ eSS SS 04 09 52.5 +4.1
LVZ pmax pmax
comp=E,10.0nm,1.2s
LVZ pmax pmax
comp=Z,80nm,1.2s,mb5.7
LVZ pmax pmax
comp=N,20nm,1.3s
LVZ smax
comp=Z,230nm,12.6s
LVZ smax
comp=N,780nm,15.2s
LVZ smax
comp=E,130nm,10.0s
LVZ MLR MLR
comp=Z,5μm,18.0s,MS5.8
LVZ MLR MLR
comp=N,2μm,16.0s,MS5.6
LVZ MLR MLR
comp=E,3μm,17.0s,MS5.6
LVZ Lovozero 61.70 336⇑ *i*P **P** **03 57 25.1 -1.4**
POO Poona 61.81 272 eP **P** **03 57 26.8 -1.1**
POO e 03 57 29.3
comp=Z,257nm,1.6s
BJO Bjornoya 61.90 345 AMS AMS 04 28 30.7
comp=Z,3μm,16.9s,MS5.5
KAD Karad 62.22 271 eP **P** **03 57 29.4 -1.3**
KAD e 03 57 32.0
comp=Z,285nm,1.6s
APA Apatity 62.27 336 eP **P** **03 57 22.7 -7.7**
APA *i* 03 57 41.8
APA e 04 06 15.0
APA eSS SS 04 09 59.0 +1.4
APA pmax pmax
comp=Z,130nm,1.2s,mb5.9
APA MLR MLR
comp=Z,7μm,18.0s,MS5.9
BOM Bombay 62.43 273 eP **P** **03 57 31.3 -0.8**
BOM eS S **04 05 56.2 +1.2**
YKW3 Yellowknife Ar 62.96 30 eP **P** **03 57 34.3 -0.8**
KEV Kevo 62.99 339 ep **P** **03 57 34.1 -1.1**
YKA Yellowknife Ar 63.00 30 P **P** **03 57 34.5 -0.8**
comp=Z,11nm,1.0s,mb5.0,baz=303,slow=6.7,SNR=146
YKA LR LR 04 24 25.9
comp=Z,909nm,20.9s,MS4.9,baz=275,slow=35
YKA PKPPKP 04 26 26.9
comp=Z,1.2nm,1.0s,baz=141,slow=2.3,SNR=8.9
GOA Goa 63.52 270 eP **P** **03 57 38.1 -1.2**
GOA e 04 05 51.2
ARCES ARCESS Array B 63.54 339 P **P** **03 57 38.4 -0.2**
comp=Z,45nm,1.1s,mb5.4,baz=63,slow=8.1,SNR=36
ARCES LR LR 04 33 22.2
comp=Z,3μm,18.0s,MS5.5,baz=46,slow=44
ARE0 ARCESS Array S 63.54 339 eP **P** **03 57 37.9 -0.8**
PECR Pechory 63.59 322 eP **P** **03 57 38.0 -1.2**
PECR e 03 59 59.0
PECR eS S **04 06 08.0 -0.9**
PECR ePS PS 04 06 22.0 -10
PECR eSS SS 04 10 17.0 -1.2
PECR pmax pmax
comp=E,700nm,6.0s
PECR pmax pmax
comp=N,300nm,4.0s
PECR smax
comp=N,1μm,11.0s
PECR MLR MLR
comp=N,5μm,15.0s,MS6.2
PECR MLR MLR
comp=E,12μm,16.0s,MS6.2
NOUC Port Laguerre 63.73 155 eP **P** **03 57 39.6 -1.1**
NOUC Port Laguerre 63.73 155 eP **P** **03 57 39.6 -1.1**
DAG Danmarks Havn 65.15 355⇓ *i*P **P** **03 57 47.2 -1.8**
comp=E,83nm,1.0s,mb5.7
DAG Danmarks Havn 65.15 355⇓ *i*P **P** **03 57 47.2 -1.8**
DAG pmax pmax
comp=Z,83nm,1.0s,mb5.7
TRO Tromso 65.24 341 eP **P** **03 57 48.5 -1.2**
OCWA Octopus Mounta 65.56 48 PFAKE 03 58 00.0 +7.9
OCWA LR LR
comp=Z,1μm,21.0s,MS5.2
JOF Joensuu 65.60 332 ep **P** **03 57 51.3 -0.8**
comp=Z,11nm,0.6s,mb5.1
JOF Joensuu 65.60 332 eP **P** **03 57 51.3 -0.8**
JOF pmax pmax
comp=Z,11nm,0.6s,mb5.1
MBW Mount Baker 66.36 46 P **P** **03 57 58.1 +1.0**
GNW Green Mountain 66.45 47 eP **P** **03 57 58.0 +0.3**
RPW Rockport 66.75 46 eP **P** **03 57 59.5 -0.1**
MOS Moscow 67.00 323α *i*P **P** **03 58 00.2 -0.8**
MOS *e**PP pP 03 58 11.1 -0.7
MOS *e* 04 00 25.2
MOS ePPP PPP 04 02 01.0 -6.4
MOS *i* S S 04 06 49.9 -0.6
MOS ePS PS 04 07 12.6 -5.2
MOS eSS SS 04 11 13.2 +2.0
MOS pmax pmax
comp=Z,818nm,1.4s,mb6.6
MOS pmax pmax
comp=N,193nm,0.8s
MOS pmax pmax
comp=E,295nm,1.5s
MOS smax
comp=N,2μm,3.5s
MOS smax
comp=E,700nm,2.3s
MOS MLR MLR
comp=Z,4μm,16.3s,MS5.7
MOS MLR MLR
comp=N,3μm,17.6s,MS5.7
MOS MLR MLR
comp=E,1μm,14.9s,MS5.7
RMW Rattlesnake Mo 67.09 47 eP **P** **03 58 03.3 +1.5**
PNT Penticton 67.37 45 P **P** **03 58 03.3 -0.2**
FMW Mount Fremont 67.44 48 P **P** **03 58 05.3 +1.3**
SHW Mount Saint He 67.50 48 eP **P** **03 58 05.3 +1.0**
NLW Nelson Butte 67.61 46 eP **P** **03 58 05.2 +0.1**
COR Corvallis 67.69 50 PFAKE 03 58 20.0 +14
COR LR LR
comp=Z,6μm,22.0s,MS5.8
OBN Obninsk 67.84 323*c* *i*P **P** **03 58 05.5 -0.9**
OBN *e**PP pP 03 58 19.6 +2.5
OBN *i* S S 04 06 58.8 -1.9
OBN pmax pmax
comp=Z,336nm,1.5s,mb6.2
OBN MLR MLR
comp=Z,4μm,19.0s,MS5.7
OBN Obninsk 67.84 323 eP **P** **03 58 04.5 -1.8**
comp=Z,425nm,1.5s,mb6.2
OBN LR LR
comp=Z,3μm,19.0s,MS5.5
PUL Pulkovo 67.86 329*ce* P **P** **03 58 05.8 -0.6**
PUL *e* 04 00 35.2
PUL eS S 04 07 00.4 -0.4
PUL eSS SS 04 11 23.2 -0.9
PUL pmax pmax
comp=Z,240nm,1.2s,mb6.1
PUL pmax pmax
comp=N,210nm,1.1s
PUL pmax pmax
comp=E,170nm,0.9s
PUL pmax pmax
comp=E,490nm,1.4s
PUL pmax pmax
comp=Z,490nm,1.4s,mb6.3
PUL pmax pmax
comp=N,380nm,1.3s
PUL smax
comp=Z,110nm,10.9s
PUL smax
comp=N,250nm,10.2s
PUL smax
comp=E,190nm,11.7s
PUL MLR MLR
comp=E,2μm,17.0s,MS5.6
PUL MLR MLR
comp=Z,4μm,17.0s,MS5.7
PUL MLR MLR
comp=N,3μm,18.0s,MS5.6
PUL Pulkovo 67.86 329‖ eP **P** **03 58 06.3 -0.1**
ETW Entiat 67.87 46 P **P** **03 58 07.7 +1.0**
ARMA Armidale 68.36 171 eP **P** **03 58 10.7 +0.7**
MAK Makhachkala 68.42 308*d* *i*P **P** **03 58 09.0 -1.2**
MAK *e* 03 58 36.0
MAK *e* 04 00 50.0
MAK ePPP PPP 04 02 17.0 -3.9
MAK ePS PS 04 07 40.0 +2.6
MAK *e* 04 08 06.0
MAK eSS SS 04 11 34.0 +0.8
MAK pmax pmax
comp=Z,1μm,4.0s
MAK pmax pmax
comp=N,400nm,8.0s
MAK pmax pmax
comp=Z,800nm,8.0s
MAK MLR MLR
comp=N,5μm,14.0s,MS6.0
MAK MLR MLR
comp=E,2μm,14.0s,MS6.0
MAK MLR MLR
comp=Z,6μm,14.0s,MS5.9
VOR Voronezh 68.44 319 eP **P** **03 58 08.7 -1.4**
VOR *e* pP 03 58 21.0 +0.1
VOR *e* 04 07 29.0
VOR pmax pmax
comp=N,140nm,1.4s
VOR pmax pmax
comp=E,170nm,1.4s
VOR pmax pmax
comp=Z,270nm,1.4s,mb6.1
FINES FINESS Array B 68.44 332 P **P** **03 58 09.1 -0.9**
comp=Z,183nm,1.1s,mb6.0,baz=45,slow=5.4,SNR=170
FINES LR LR 04 30 27.6
comp=Z,3μm,18.6s,MS5.6,baz=50,slow=38
FINES FINESS Array B 68.44 332 P **P** **03 58 09.1 -0.9**
FINES pmax pmax
comp=Z,183nm,1.1s
FINES MLR MLR
comp=Z,3μm,18.6s
VGB Gordon Butte 68.72 48 P **P** **03 58 14.0 +2.0**
VRSR Storozhevoye 68.73 319 eP **P** **03 58 11.2 -0.7**
VRSR *e**PP pP 03 58 19.9 -2.8
VRSR *e**SP sP 03 58 24.8 -1.8
VRSR *e* 03 58 37.1
VRSR *e* 04 00 41.7
VRSR eS S 04 07 09.7 -1.6
VRSR eSS SS 04 11 31.8 -6.3
VRSR pmax pmax
comp=Z,310nm,1.3s,mb6.1
VRSR pmax pmax
comp=N,170nm,1.0s
VRSR pmax pmax
comp=E,150nm,1.0s
VRSR smax
comp=N,100nm,5.6s
VRSR smax
comp=Z,80nm,4.3s
VRSR smax
comp=E,150nm,3.5s
VRSR MLR MLR
comp=E,4μm,15.0s,MS5.9
VRSR MLR MLR
comp=Z,8μm,15.0s,MS6.1
VRSR MLR MLR
comp=N,4μm,16.0s,MS5.9
MOR8 Moi Rana 68.90 340⇑ *i*P **P** **03 58 10.8 -2.0**
MOR8 AMb AMB 03 58 12.5
comp=Z,181nm,1.3s,mb5.8
MOR8 esP sP 03 58 23.9 -3.5
MOR8 Moi Rana 68.90 340⇑ *i*P **P** **03 58 10.8 -2.0**
comp=Z,181nm,1.3s,mb5.8
DPW Davenport 68.94 45 eP **P** **03 58 12.9 -0.4**
DPW *e**PP pP 03 58 22.7 -1.4
HUMO Hull Mountain 68.94 52 eP **P** **03 58 14.0 +0.6**
HAWA Hanford 68.98 47 eP **P** **03 58 14.1 +0.5**
comp=Z,158nm,2.2s,mb5.6
HAWA LR LR
comp=Z,894nm,21.0s,MS5.0
STKA Stephens Creek 69.22 180 eP **P** **03 58 14.2 -1.1**
comp=Z,13nm,0.8s,mb4.9
STKA eS S 04 07 17.6 +0.1
STKA Stephens Creek 69.22 180 P **P** **03 58 14.7 -0.6**
comp=Z,6.3nm,0.9s,baz=340,slow=4.8,SNR=9.0
STKA LR LR 04 26 23.0
comp=Z,1μm,21.8s,baz=360,slow=34
NEW Newport 69.33 45 eP **P** **03 58 15.5 -0.2**
comp=Z,80nm,1.9s,mb5.3
NEW LR LR
comp=Z,1μm,22.0s,MS5.1
FORT Forrest 69.36 193⇓ *i*P **P** **03 58 15.7 -0.5**
comp=Z,253nm,0.8s,mb6.2
FORT *i* S S 04 07 19.0 -0.2
YBH Yreka Blue Hor 69.57 53 eP **P** **03 58 17.6 +0.4**
comp=Z,21nm,1.4s,mb4.9
YBH LR LR
comp=Z,791nm,20.0s,MS5.0
JMIC Jan Mayen 69.57 350 P **P** **03 58 17.4 +0.6**
comp=Z,35nm,0.8s,mb5.3,baz=128,slow=10,SNR=5.1
JMIC Jan Mayen 69.57 350 eP **P** **03 58 16.4 -0.5**
JMIC ePP PP 04 00 52.9 +0.1
JMIC eS S 04 07 21.4 +0.3
JMIC AMS AMS 04 32 56.0
comp=Z,640nm,18.0s,MS4.9
THR Tehran 69.77 300 P **P** **03 58 19.1 +0.4**
comp=Z,25nm,1.0s,mb5.1,baz=32,slow=2.0,SNR=18
THR LR LR 04 31 52.9
comp=Z,707nm,19.8s,MS4.9,baz=314,slow=38
THR Tehran 69.77 300 P **P** **03 58 19.1 +0.5**
THR pmax pmax
comp=Z,25nm,1.0s
THR MLR MLR
comp=Z,707nm,19.8s
LNOR Lincton Mounta 69.99 47 P **P** **03 58 19.1 -0.7**
GOF Gofitskoye 70.00 312⇓ *i*P **P** **03 58 19.0 -0.9**
GOF *i* 03 58 37.0
GOF *i* S S 04 07 48.0 +21
GOF pmax pmax
comp=N,270nm,1.4s
GOF pmax pmax
comp=E,140nm,1.4s
GOF pmax pmax
comp=Z,340nm,1.4s,mb6.1
GOF pmax pmax
comp=Z,2μm,3.0s
GOF MLR MLR
comp=E,5μm,15.0s,MS5.9
GOF MLR MLR
comp=Z,3μm,15.0s,MS5.7
GOF MLR MLR
comp=N,4μm,19.0s,MS5.9
SUMG Summit 70.02 0 eP **P** **03 58 19.3 -0.2**
VSU Vasula 70.12 330⇑ *i*P **P** **03 58 20.0 -0.3**
WDC Whiskeytown Da 70.30 54 eP **P** **03 58 21.9 +0.2**
comp=N,54nm,1.6s,mb5.2
WDC epP pP 03 58 31.1 -1.4
WDC LR LR
comp=Z,657nm,19.0s,MS4.9
PYA Pyatigorsk 70.56 311*c* *i*P **P** **03 58 22.0 -1.3**
PYA eS S 04 07 37.0 +4.0
PYA MLR MLR
comp=E,5μm,18.0s
PYA MLR MLR
comp=Z,4μm,18.0s,MS5.7
WALA Waterton Lakes 70.63 43 eP **P** **03 58 23.6 0.0**
comp=Z,14nm,0.9s,mb4.9
ZEI Tsey 70.75 309 eP **P** **03 58 23.6 -0.9**
ZEI *i* pP 03 58 36.0 +0.8
ZEI *e* 04 01 00.0
ZEI eS S 04 07 35.0 -0.2
ZEI eSS SS 04 12 05.0 -4.6
ZEI pmax pmax
comp=Z,500nm,8.0s
ZEI MLR MLR
comp=Z,4μm,18.0s,MS5.7
TI2 Plekhanov 70.80 308⇑ *i*P **P** **03 58 24.6 -0.2**
TI2 eS S 04 07 36.0 +0.2
HOPS Hopland 70.82 55 PFAKE 03 58 40.0 +15
HOPS LR LR
comp=Z,2μm,21.0s,MS5.3
KIV Kislovodsk 70.83 311*c* *i*P **P** **03 58 24.8 -0.1**
KIV pmax pmax
comp=Z,467nm,1.2s,mb6.3
KIV MLR MLR
comp=Z,4μm,18.0s,MS5.7
KIV Kislovodsk 70.83 311 eP **P** **03 58 24.8 -0.1**
comp=Z,466nm,1.2s,mb6.3
KIV LR LR
comp=Z,4μm,19.0s,MS5.7
NSS Namsos 70.83 339 eP **P** **03 58 22.7 -1.8**
NSS AMb AMB 03 58 24.3
comp=Z,114nm,1.4s,mb5.6
NSS eS S 04 07 37.6 +1.9
NSS AMS AMS 04 34 20.0
comp=Z,3μm,21.5s,MS5.5
NSS Namsos 70.83 339 eP **P** **03 58 22.7 -1.8**
comp=Z,114nm,1.4s,mb5.6
MOD Modoc 70.98 51 eP **P** **03 58 26.1 +0.2**
comp=Z,5.1nm,0.8s
MOD LR LR
comp=Z,1μm,22.0s
SCO Scoresbysund 71.50 354 *i*P **P** **03 58 28.5 0.0**
comp=Z,22nm,1.0s,mb5.0
SCO Scoresbysund 71.50 354 *i*P **P** **03 58 28.5 0.0**
SCO pmax pmax
comp=Z,22nm,1.0s,mb5.0
OHCM Honcut 71.66 54 P **P** **03 58 30.6 +0.6**
WVOR Wild Horse Val 71.71 50 eP **P** **03 58 30.7 +0.5**
comp=Z,167nm,2.0s,mb5.6
WVOR LR LR
comp=Z,558nm,20.0s,MS4.8
MSO Missoula 71.92 44 eP **P** **03 58 31.2 -0.1**
comp=Z,26nm,1.4s,mb5.0
MSO epP pP 03 58 39.9 -2.2
MSO LR LR
comp=Z,1μm,20.0s,MS5.1
BEKR Beckwourth 72.08 53 eP **P** **03 58 32.5 +0.1**
comp=Z,67nm,1.5s,mb5.3
BEKR epP pP 03 58 41.8 -1.4
IZAR Zarasai 72.10 328 eP **P** **03 58 31.6 -0.6**
IZAR AMPb AMB 03 58 33.7
comp=Z,43nm,1.2s,mb5.2
IDID Didziasalis 72.17 327⇑ eP **P** **03 58 32.4 -0.3**
IDID AMPb AMB 03 58 34.7
comp=Z,45nm,1.3s,mb5.2
MNK Minsk 72.23 326 eP **P** **03 58 31.0 -2.0**
MNK pmax pmax
comp=Z,310nm,1.2s,mb6.1
CHMT Chamberlain Mo 72.25 44 eP **P** **03 58 33.0 -0.3**
ISAL Salakas 72.27 328⇑ eP **P** **03 58 33.0 -0.2**
ISAL AMPb AMB 03 58 35.4
comp=Z,77nm,1.1s,mb5.6
IIGN Ignalina 72.37 327 eP **P** **03 58 33.3 -0.5**
IIGN AMPb AMB 03 58 36.0
comp=Z,55nm,1.1s,mb5.4
KLBR Kellerberrin 72.56 202⇓ *i*P **P** **03 58 34.5 -0.9**
comp=Z,37nm,1.1s,mb5.2
WCN Washoe City 72.79 54 eP **P** **03 58 37.3 +0.7**
WCN *e**PP pP 03 58 47.0 -0.4
WCN pmax pmax
comp=Z,90nm,1.5s,mb5.5
WCN Washoe City 72.79 54 eP **P** **03 58 37.3 +0.7**
comp=Z,90nm,1.6s,mb5.5
WCN epP pP 03 58 47.0 -0.4
PAHR Pah Rah Range 72.79 53 eP **P** **03 58 37.6 +0.9**
SOC Sochi 72.80 312*c* *i*P **P** **03 58 36.2 -0.4**
SOC *e* 03 58 53.6
SOC eS S 04 07 56.1 -2.7
SOC *e* 04 08 40.4
SOC eSS SS 04 12 32.6 -8.7
SOC pmax pmax
comp=N,90nm,1.2s
SOC pmax pmax
comp=Z,170nm,1.2s,mb5.8
SOC pmax pmax
comp=E,210nm,2.0s
SOC pmax pmax
comp=Z,960nm,2.7s,mb6.2
SOC pmax pmax
comp=N,170nm,1.2s
SOC pmax pmax
comp=E,710nm,2.6s
SOC smax
comp=N,270nm,4.0s
SOC smax
comp=E,440nm,5.6s
SOC MLR MLR
comp=Z,3μm,17.0s,MS5.7
SOC MLR MLR
comp=N,2μm,18.0s,MS5.6
SOC MLR MLR
comp=E,2μm,14.0s,MS5.6
FFC Flin Flon 72.89 33 eP **P** **03 58 36.6 -0.4**
comp=E,60nm,1.2s
FFC LR LR
comp=Z,2456μm,20.0s
CMB Columbia Colle 73.10 55 eP **P** **03 58 38.8 +0.2**
comp=Z,22nm,1.2s,mb5.0
CMB epP pP 03 58 46.4 -2.9
CMB LR LR
comp=Z,2μm,22.0s,MS5.3
SAO San Andreas Ge 73.13 56 PFAKE 03 58 50.0 +11
SAO LR LR
comp=Z,1μm,19.0s,MS5.2
HRY Holter Researc 73.15 44 eP **P** **03 58 39.6 +1.0**
FCC Fort Churchill 73.20 27 eP **P** **03 58 37.8 -0.8**
FCC pmax pmax
comp=Z,120nm,1.4s,mb5.6
FCC Fort Churchill 73.20 27 eP **P** **03 58 37.8 -0.9**
comp=Z,120nm,1.4s,mb5.6
MUN Mundaring 73.38 203⇓ *i*P **P** **03 58 39.8 -0.5**
comp=Z,22nm,1.2s,mb5.0
MUN eS S 04 08 09.8 +4.2

ANN **Anapa** 73.41 314*c* *i*P P 03 58 39.4 -0.8
ANN *e**PP pP 03 58 52.0 +1.1
ANN *eS S 04 08 05.0 -0.6
ANN pmax pmax
comp=Z,70nm,1.2s,mb5.5
ANN MLR MLR
comp=N,2µm,19.0s,MS5.5
ANN MLR MLR
comp=E,2µm,21.0s,MS5.5
TVAN **Van** 73.45 306 *i*P P 03 58 41.2 +0.7
HLID **Hailey** 73.58 47 *e*P P 03 58 41.9 +0.7
comp=E,37nm,1.4s,mb5.1
HLID *epP pP 03 58 50.5 -1.4
HLID LR LR
comp=Z,894nm,22.0s,MS5.0
MOL **Molde** 73.59 340⇑ *i*P P 03 58 44.1 +3.2
MOL AMb AMB 03 58 45.8
comp=Z,192nm,1.4s,mb5.8
MOL **Molde** 73.59 340⇑ *i*P P 03 58 44.1 +3.2
comp=Z,192nm,1.4s,mb5.8
DOMB **Dombas** 73.59 339⇑ *i*P P 03 58 40.7 -0.2
DOMB AMb AMB 03 58 43.2
comp=Z,200nm,1.7s,mb5.8
DOMB *esP sP 03 58 53.6 -1.9
DOMB **Dombas** 73.59 339⇑ *i*P P 03 58 40.7 -0.2
comp=Z,200nm,1.7s,mb5.8
HFS **Hagfors** 73.67 336 P P 03 58 40.7 -0.7
comp=E,64nm,0.8s,mb5.6,baz=45,slow=6.3,SNR=121
HFS **Hagfors** 73.67 336 P P 03 58 40.7 -0.7
HFS pmax pmax
comp=E,64nm,0.8s
MCMT **McKenzie Canyo** 73.72 46 *e*P P 03 58 42.5 +0.5
BMN **Battle Mountai** 73.73 51 *e*P P 03 58 42.5 +0.4
comp=Z,71nm,1.4s,mb5.4
BMN LR LR
comp=Z,956nm,21.0s,MS5.1
NB2 **NORSAR Subarra** 73.75 337 P P 03 58 42.0 +0.2
comp=Z,303nm,1.2s,mb6.1,baz=39,slow=5.8
NB2 **NORSAR Subarra** 73.75 337 P P 03 58 42.0 +0.2
baz=39,slow=6.2
NOA **NORSAR Array B** 73.75 337 P P 03 58 41.5 -0.4
comp=Z,54nm,0.8s,mb5.5,baz=39,slow=5.8,SNR=181
NOA LR LR 04 33 40.2
comp=Z,7µm,21.3s,MS5.9,baz=25,slow=38
NOA **NORSAR Array B** 73.75 337 P P 03 58 41.5 -0.3
NOA pmax pmax
comp=Z,54nm,0.8s
NOA MLR MLR
comp=Z,7µm,21.3s
BOZ **Bozeman (W)** 73.91 44 *e*P P 03 58 43.4 +0.3
comp=Z,22nm,1.1s,mb5.0
BOZ LR LR
comp=Z,741nm,22.0s,MS4.9
ERZM **Erzurum** 73.95 308 *i*P P 03 58 44.4 +1.0
NWAO **Narrogin (SRO)** 73.96 202 P P 03 58 42.9 -0.7
comp=Z,28nm,1.1s,mb5.1,baz=29,slow=5.5,SNR=7.3
NWAO **Narrogin (SRO)** 73.96 202 *e*P P 03 58 42.4 -1.3
comp=Z,85nm,1.5s,mb5.5
NWAO LR LR
comp=Z,668nm,21.0s,MS4.9
NAO01 **NORSAR Array S** 74.01 337 *e*P P 03 58 42.9 -0.4
comp=Z,107nm,1.1s,mb5.7
NAO01 LR LR
comp=Z,6µm,21.0s,MS5.8
NVAR **Mina Array Bea** 74.22 54 P P 03 58 46.7 +1.7
comp=Z,7.7nm,0.9s,mb4.7,baz=296,slow=4.9,SNR=25
NVAR LR LR 04 29 53.4
comp=Z,919nm,19.4s,MS5.1,baz=275,slow=34
OMM **Old Mammoth Mi** 74.24 55 *e*P P 03 58 46.2 +1.1
MNV **Mina** 74.31 53 *e*P P 03 58 45.7 +0.1
comp=Z,7.1nm,1.0s
MNV *epP pP 03 58 55.1 -1.2
MNV LR LR
comp=Z,1µm,20.0s
QLMT **Earthquake Lak** 74.52 45 *e*P P 03 58 47.6 +1.0
QLMT *epP pP 03 58 56.6 -0.8
SUW **Suwalki** 74.58 328⇑ *e*P P 03 58 46.4 -0.4
comp=Z,400nm,1.4s,mb6.2
SUW **Suwalki** 74.58 328⇑ *e*P P 03 58 46.4 -0.4
SUW *e**PP pP 03 58 52.6 -4.9
SUW *e pP 03 58 58.9 +1.4
SUW *e 04 01 30.8
SUW *eS S 04 08 17.6 -0.9
SUW MLR MLR
comp=Z,6µm,18.1s,MS5.9
SUW MLR MLR
comp=E,3µm,18.6s,MS5.8
SUW MLR MLR
comp=N,3µm,18.4s,MS5.8
SUW **Suwalki** 74.58 328 *e*P P 03 58 46.0 -0.7
MTUM **Tungsten Hills** 74.67 55 *e*P P 03 58 48.2 +0.5
MTUM *epP pP 03 58 57.1 -1.3
YMR **Madison River** 74.88 45 *e*P P 03 58 49.6 +0.9
KELT **Kelkit** 75.11 309 *i*P P 03 58 50.9 +0.7
TPH **Tonopah** 75.11 53 *e*P P 03 58 51.3 +1.1
comp=N,26nm,1.2s,mb5.0
TPH LR LR
comp=Z,929nm,21.0s,MS5.1
SIM **Simferopol'** 75.18 316⇑ *e*P P 03 58 50.0 -0.4
SIM *eS S 04 08 26.0 +0.6
SIM *e 04 08 48.0
SIM *ePS PS 04 09 26.0 +20
SIM pmax pmax
comp=Z,260nm,1.0s,mb6.1
SIM MLR MLR
comp=Z,2µm,22.0s,MS5.3
BEST **Besiri** 75.19 306 *i*P P 03 58 50.9 +0.2
KONO **Kongsberg** 75.35 337⇑ *i*P P 03 58 50.5 -0.6
KONO AMb AMB 03 59 06.5
comp=Z,125nm,1.5s,mb5.6
KONO AMS AMS 04 34 49.4
comp=Z,5µm,20.0s,MS5.8
KONO **Kongsberg** 75.35 337 *e*P P 03 58 50.1 -0.9
comp=Z,78nm,1.3s,mb5.5
KONO LR LR
comp=Z,5µm,21.0s,MS5.8
HVU **Hansel Valley** 75.62 48 *e*P P 03 58 54.1 +1.1
WUWY **Wally Ulrich** 75.71 46 *e*P P 03 58 54.7 +1.3
KSWY **Kelly School** 75.72 46 *e*P P 03 58 55.3 +1.7
DAC **Darwin (Calif)** 75.94 55 PFAKE 03 59 10.0 +15
DAC LR LR
comp=Z,1µm,22.0s,MS5.2
ASK **Askoy** 75.95 340 *e*P P 03 58 54.8 +0.3
ASK AMb AMB 03 58 56.8
comp=Z,144nm,1.7s,mb5.6
ASK **Askoy** 75.95 340 *e*P P 03 58 54.8 +0.3
comp=Z,144nm,1.7s,mb5.6
RUND **Rundenannen** 75.97 339 *e*P P 03 58 55.2 +0.7
RUND AMb AMB 03 58 56.8
comp=Z,283nm,1.2s,mb6.1
RUND *esP sP 03 59 07.0 -2.2
AHID **Auburn Hatcher** 75.98 47 *e*P P 03 58 56.0 +0.9
comp=Z,24nm,1.3s,mb5.0
AHID LR LR
comp=Z,1µm,22.0s,MS5.2
BGU **Big Grassy Mou** 75.99 49 *e*P P 03 58 55.8 +0.7
BER **Bergen** 76.00 339 *e*P P 03 58 54.4 -0.4
BER AMb AMB 03 58 56.8
comp=Z,63nm,1.2s,mb5.4
BER **Bergen** 76.00 339 *e*P P 03 58 54.4 -0.4
comp=Z,63nm,1.2s,mb5.4
SPUT **South Promonto** 76.10 48 *e*P P 03 58 56.7 +1.0
EGD **Espegrend** 76.12 339 *e*P P 03 58 55.8 +0.3
EGD AMb AMB 03 58 57.7
comp=Z,111nm,1.5s,mb5.6
EGD **Espegrend** 76.12 339 *e*P P 03 58 55.8 +0.3
comp=Z,111nm,1.5s,mb5.6
ELZG **Elazig** 76.27 308 *i*P P 03 58 57.7 +0.9
HWUT **Hardware Ranch** 76.44 48 *e*P P 03 58 58.6 +1.0
comp=Z,110nm,1.5s,mb5.6
HWUT *epP pP 03 59 07.7 -0.7
HWUT LR LR
comp=Z,873nm,21.0s,MS5.0
KIS **Kishinev** 76.69 320*c* *i*P P 03 58 58.0 -1.0
KIS *i pP 03 59 10.0 +0.2
KIS *e 04 03 46.0
KIS *eS S 04 08 40.0 -1.9
KIS *e 04 09 03.0
KIS *ePS PS 04 09 38.0 +13
KIS pmax pmax
comp=Z,1µm,3.0s
KIS MLR MLR
comp=N,8µm,16.0s,MS6.2
KIS MLR MLR
comp=E,7µm,16.0s,MS6.2
KIS MLR MLR
comp=Z,12µm,16.0s,MS6.3
KIS MLR MLR
comp=Z,10µm,16.0s
SVST **Sivas** 76.75 310 *i*P P 03 59 00.1 +0.7
WAR **Warsaw** 76.75 327 *e*P P 03 58 58.7 -0.5
WAR *e**PP pP 03 59 06.5 -3.5
WAR *e pP 03 59 11.3 +1.3
WAR *e 04 01 51.3
WAR *eS S 04 08 44.3 +1.8
WAR *e*SS 04 08 56.7
WAR MLR MLR
comp=N,5µm,16.8s,MS6.0
WAR MLR MLR
comp=E,4µm,17.1s,MS6.0
WAR MLR MLR
comp=Z,5µm,18.1s,MS5.9
TCUT **Toone Canyon** 76.83 48 *e*P P 03 59 00.9 +1.0
TCUT *epP pP 03 59 09.2 -1.5
MWC **Mount Wilson** 76.85 57 *e*P P 03 58 59.8 -0.4
MWC *e**PP pP 03 59 09.0 -2.0
BW06 **Boulder Array** 76.87 46 *e*P P 03 58 60.0 -0.1
comp=Z,11nm,1.0s,mb4.7
BW06 *epP pP 03 59 09.2 -1.6
BW06 LR LR
comp=Z,1µm,21.0s,MS5.2
PDAR **Pinedale Array** 76.87 46 P P 03 59 00.6 +0.5
comp=Z,7.4nm,0.6s,mb4.8,baz=273,slow=1.6,SNR=61
PDAR LR LR 04 32 58.6
comp=Z,973nm,21.1s,MS5.1,baz=333,slow=36
CTU **Camp Tracy** 76.89 49 *e*P P 03 59 00.9 +0.7
BOYT **Boyabat** 76.94 312 *i*P P 03 59 01.1 +0.6
BORG **Borgarnes** 77.05 353 P P 03 59 01.5 +0.8
comp=Z,169nm,1.0s,mb5.9
BORG LR LR
comp=Z,838nm,22.0s,MS5.0
BSD **Bornholm Skovb** 77.08 332⇑ *i*P P 03 59 00.3 -0.7
comp=Z,228nm,1.2s,mb6.0
BSD *i pP 03 59 13.4 +1.6
BSD *i S S 04 08 44.2 -1.8
comp=Z,3µm,20.0s
BSD **Bornholm Skovb** 77.08 332⇑ *i*P P 03 59 00.3 -0.7
BSD *i pP 03 59 13.4 +1.6
BSD *i S S 04 08 44.2 -1.8
BSD pmax pmax
comp=Z,230nm,1.2s,mb6.0
BSD MLR MLR
comp=Z,3µm,20.0s,MS5.6
LVV **L'vov** 77.12 324 *e*P P 03 58 58.7 -2.6
LVV *eS S 04 08 49.0 +2.5
LVV MLR MLR
comp=Z,3µm,18.0s,MS5.6
JLU **Jordanelle** 77.13 48 *e*P P 03 59 02.5 +0.9
JLU *epP pP 03 59 11.5 -0.9
NLU **North Lily Min** 77.16 49 *e*P P 03 59 02.8 +1.0
DAU **Daniels Canyon** 77.36 49 *e*P P 03 59 04.4 +1.5
MPU **Maple Canyon** 77.39 49 *e*P P 03 59 04.1 +1.0
CTKT **Corum** 77.51 312 *i*P P 03 59 04.0 +0.3
COP **Copenhagen** 77.54 333⇑ *i*P P 03 59 03.7 +0.1
comp=Z,85nm,0.9s,mb5.7
COP *i pP 03 59 16.1 +1.8
COP *eS S 04 08 50.1 -0.8
comp=Z,1µm,18.0s
COP **Copenhagen** 77.54 333⇑ *i*P P 03 59 03.7 +0.1
COP *i pP 03 59 16.1 +1.8
COP *eS S 04 08 50.1 -0.8
COP pmax pmax
comp=Z,85nm,0.9s,mb5.7
COP MLR MLR
comp=Z,1µm,18.0s,MS5.3
GKP **Gorka Klasztor** 77.57 330⇑ *e*P P 03 59 03.6 -0.2
comp=Z,0.3nm,1.4s
GKP *ePP PcP 03 59 11.8 -2.5
GKP *ePcP PcP 03 59 17.0 +2.7
GKP *ePP PP 04 01 57.6 -3.0
GKP *eS S 04 08 50.7 -0.6
GKP *eSS Sx 04 09 00.2
GKP *eScS ScS 04 09 14.5 -1.5
GKP LR LR
comp=Z,7µm,20.6s,MS6.0
BALT **Daday** 77.75 313 *i*P P 03 59 05.6 +0.6
GZT **Gaziantep** 77.86 308 *i*P P 03 59 06.5 +0.8
KWP **Kalwaria** 77.86 325⇑ *e*P P 03 59 06.0 +0.6
comp=Z,1µm,1.5s,mb6.5
KWP **Kalwaria** 77.86 325⇑ *e*P P 03 59 06.0 +0.6
KWP *e**PP pP 03 59 13.7 -2.5
KWP *e pP 03 59 19.3 +3.1
KWP *e 04 02 01.3
KWP *eS S 04 08 54.1 -0.4
KWP *e*SS 04 09 03.9
KWP *e 04 09 18.5
KWP MLR MLR
comp=Z,3µm,20.8s,MS5.6
KWP **Kalwaria** 77.86 325 *e*P P 03 59 05.5 +0.1
comp=Z,510nm,1.3s,mb6.3
MVU **Marysvale** 77.98 51 *e*P P 03 59 07.6 +1.3
comp=Z,11nm,1.0s,mb4.8
MVU LR LR
comp=Z,872nm,19.0s,MS5.1
MSU **Marysvale** 78.00 51 *e*P P 03 59 07.7 +1.3
MSU *e**PP pP 03 59 16.7 -0.5
MUD **Monsted U'grnd** 78.05 335⇑ *i*P P 03 59 06.4 +0.1
comp=Z,104nm,1.3s,mb5.6
MUD *i 04 02 00.7
MUD *i S S 04 09 17.1 +21
comp=Z,5µm,19.0s
MUD **Monsted U'grnd** 78.05 335⇑ *i*P P 03 59 06.4 +0.1
MUD *i 04 02 00.7
MUD *i S S 04 09 17.1 +21
MUD pmax pmax
comp=Z,100nm,1.3s,mb5.6
MUD MLR MLR
comp=Z,5µm,19.0s,MS5.9
NEN **Nelson** 78.09 54 *e*P P 03 59 08.0 +1.0
RGN **Rugen** 78.11 332 *e*P P 03 59 05.6 -1.0
CFR **Carcaliu** 78.26 319⇑ *i*P P 03 59 07.3 -0.4
CFR **Carcaliu** 78.26 319⇑ *i*P P 03 59 07.2 -0.5
PFO **Pinyon Flat Ob** 78.29 57 *e*P P 03 59 08.4 +0.3
comp=Z,335nm,2.2s,mb5.9
PFO *epP pP 03 59 17.4 -1.5
PFO LR LR
comp=Z,4µm,21.0s,MS5.7
ELDT **Eldivan** 78.40 312 *i*P P 03 59 08.9 +0.3
VRI **Vrincioaia** 78.52 320⇓ *i*P P 03 59 10.2 +1.1
VRI **Vrincioaia** 78.52 320⇓ *i*P P 03 59 10.2 +1.1
SRU **San Rafael** 78.62 49 *e*P P 03 59 10.5 +0.7
AVNT **Avonos** 78.64 310 *i*P P 03 59 10.1 +0.2
DGAR **Diego Garcia** 78.65 251 *e*P P 03 59 10.1 -0.4
ULM **Lac du Bonnet** 78.69 34 P P 03 59 09.6 -0.4
comp=Z,17nm,1.0s,mb4.9,baz=317,slow=7.0,SNR=19
ULM LR LR 04 34 59.0
comp=Z,708nm,21.7s,MS5.0,baz=198,slow=36
ULM **Lac du Bonnet** 78.69 34 *e*P P 03 59 09.2 -0.8
comp=Z,302nm,2.1s,mb5.9
ULM LR LR
comp=Z,1µm,21.0s,MS5.2
HARR **Harsova** 78.69 318⇓ *i*P P 03 59 10.8 +0.7
HARR **Harsova** 78.69 318⇓ *i*P P 03 59 10.8 +0.7
BAR **Barrett** 78.70 57 *e*P P 03 59 10.7 +0.2
OJC **Ojcow** 78.75 326⇑ *i*P P 03 59 10.5 +0.2
OJC *ePcP PcP 03 59 19.3 -0.1
OJC *esP sP 03 59 24.2 -0.7
OJC *ePP PP 04 02 07.0 -3.5
OJC *eS S 04 09 03.2 -0.7
OJC *eSS SS 04 14 10.4 -1.1
OJC MLR MLR 04 36 58.6
comp=Z,7µm,18.5s,MS6.0
BRTR **Keskin Array B** 78.76 312 P P 03 59 10.6 0.0
comp=Z,46nm,1.0s,mb5.4,baz=90,slow=3.7,SNR=158
BRTR PP PP 04 02 04.2 -6.6
comp=Z,13nm,1.2s,baz=59,slow=6.2,SNR=4.6
BRTR LR LR 04 38 38.5
comp=Z,1µm,19.0s,MS5.3,baz=35,slow=39
UZH **Uzhgorod** 78.76 324 *i*P P 03 59 11.0 +0.6
UZH MLR MLR
comp=Z,2µm,15.0s,MS5.7
CRVS **Cervenica-Dubn** 78.95 325 *i*P P 03 59 12.4 +1.0
CRVS *ePP PP 04 02 11.2 -0.9
RSSD **Black Hills** 79.02 42 *e*P P 03 59 12.0 +0.1
comp=Z,59nm,1.6s,mb5.3
RSSD LR LR
comp=Z,1µm,20.0s,MS5.2
NIE **Niedzica** 79.10 326⇑ *i*P P 03 59 12.3 +0.1
NIE *esP sP 03 59 26.8 -0.1
ISR **Istrita** 79.13 319⇓ *i*P P 03 59 13.9 +1.4
ISR **Istrita** 79.13 319⇓ *i*P P 03 59 13.8 +1.4
MLR **Muntele Rosu** 79.18 320 LR LR 04 36 59.7
comp=Z,5µm,19.8s,MS5.9,baz=48,slow=38
COBT **Iskenderun** 79.20 308 *i*P P 03 59 13.8 +0.7
RUE **Ruedersdorf** 79.54 331 *e*P P 03 59 14.1 -0.4
RUE *epP pP 03 59 27.0 +1.6
RAC **Raciborz** 79.55 327 *e*P P 03 59 15.3 +0.7
RAC *epP pP 03 59 26.5 +1.0
RAC *ePP PP 04 02 15.4 -1.5
RAC *eS S 04 09 11.4 -1.0
RAC LMN 04 37 51.0
comp=Z,5µm,18.4s
RAC LME 04 38 25.2
comp=Z,6µm,18.8s
RAC MLR MLR 04 38 29.9
comp=Z,6µm,19.1s,MS6.0
HENT **Hendek** 79.64 314 *i*P P 03 59 14.7 -0.7
BSEG **Bad Segeberg** 79.68 333 *e*P P 03 59 15.6 +0.3
BSEG pmax pmax
comp=Z,209nm,1.2s,mb5.9
KECS **Kecovo** 79.70 325 *e*P P 03 59 16.4 +0.9
KECS *ePP PP 04 02 14.2 -4.0
OBR **Brabster** 79.74 342⇑ *e*P P 03 59 15.1 -0.4
OKC **Ostrava-Krasne** 79.75 327⇑ *i*P P 03 59 15.9 +0.2
OKC *epP pP 03 59 29.6 +3.0
OKC *eS S 04 09 32.2 +18
OKC L 04 37 40.0
comp=Z,4.5nm,17.3s
KSP **Ksiaz** 79.78 328⇑ *e*P P 03 59 16.2 +0.3
comp=Z,700nm,1.4s,mb6.4
KSP **Ksiaz** 79.78 328⇑ *e*P P 03 59 16.1 +0.2
KSP *e**PP pP 03 59 29.2 +2.5
KSP *eS S 04 09 12.0 -2.8
KSP *e 04 09 25.0
KSP MLR MLR
comp=Z,9µm,18.0s,MS6.2
KSP **Ksiaz** 79.78 328⇑ *e*P P 03 59 16.1 +0.2
KSP *ePP pP 03 59 29.2 +2.5
KSP *eS S 04 09 12.0 -2.8
KSP *eSKS SKS 04 09 25.0 0.0
KSP *eSS SS 04 14 16.0 -11
KSP LR LR
comp=Z,9µm,18.0s,MS6.2
MTUR **Matau** 79.81 320⇑ *i*P P 03 59 16.5 +0.3
LIKS **Likavka** 79.91 326 *e*P P 03 59 17.6 +1.0
BUC1 **Bucharest** 79.92 319⇑ *i*P P 03 59 17.1 +0.3
BUC1 **Bucharest** 79.92 319⇑ *i*P P 03 59 17.1 +0.3
ORE **Reay** 79.94 343⇑ *e*P P 03 59 17.1 +0.5
PV10 **Paradox Valley** 79.98 49 *e*P P 03 59 18.5 +1.3
PRD **Provadia** 79.99 318 *i*P P 03 59 18.0 +0.8
MORC **Moravsky Berou** 80.06 327 *e*P P 03 59 17.3 -0.1
comp=Z,172nm,1.1s,mb5.9
MLA1 **Latheron** 80.06 342 *e*P P 03 59 18.0 +0.8
OTO **Tongue** 80.14 343⇑ *e*P P 03 59 18.3 +0.7
DPC **Dobruska-Polom** 80.14 328⇑ *i*P P 03 59 18.5 +0.7
DPC *epP pP 03 59 31.6 +2.9
DPC *eS S 04 09 17.4 -1.2
DPC *eSKS SKS 04 09 40.9 +13
DPC L 04 37 20.0
comp=Z,4.2nm,16.9s
UPC **Upice** 80.15 328⇑ *i*P P 03 59 18.3 +0.4
UPC *epP pP 03 59 32.0 +3.3
RAR **Rarotonga** 80.17 126 PFAKE 03 59 30.0 +11
RAR LR LR
comp=Z,3µm,19.0s,MS5.7
TAU **Tasmania Unive** 80.38 176 PFAKE 03 59 30.0 +11
TAU LR LR
comp=Z,2µm,20.0s,MS5.5
WUAZ **Wupatki** 80.38 52 *e*P P 03 59 20.2 +0.8
comp=Z,36nm,1.1s,mb5.2
WUAZ *epP pP 03 59 29.3 -1.0
WUAZ LR LR
comp=Z,1µm,22.0s,MS5.2
PSZ **Piszkesteto** 80.39 325⇑ *i*P P 03 59 20.0 +0.8
PSZ **Piszkesteto** 80.39 325 *e*P P 03 59 19.1 -0.1
PSZ *e**PP pP 03 59 31.4 +1.4
PSZ pmax pmax
comp=Z,250nm,1.2s,mb6.0
PSZ **Piszkesteto** 80.39 325 *e*P P 03 59 19.1 -0.1
comp=Z,252nm,1.3s,mb6.0
PSZ *epP pP 03 59 31.4 +1.3
PV01 **Paradox Valley** 80.42 49 *e*P P 03 59 20.3 +0.8
VYHS **Vyhne** 80.44 326 *i*P P 03 59 20.0 +0.5
VYHS *i PP PP 04 02 23.4 -1.1
VYHS *i S S 04 09 23.4 +1.6
ESKT **Eskisehir** 80.53 313 *i*P P 03 59 19.5 -0.6
KOLL **Kolacno** 80.57 326 *i*P P 03 59 21.2 +1.0
MVH1 **Achvaich** 80.60 342⇑ *e*P P 03 59 20.2 +0.1
MOD **Poleburn Disti** 80.68 342⇑ *e*P P 03 59 20.0 -0.5
BRG **Berggiesshubel** 80.72 330 *i*P P 03 59 21.2 +0.3
BRG *i pP 03 59 34.5 +2.8
BRG *i S S 04 09 26.0 +1.4
BRG *i SP SP 04 10 27.0 +16
BRG *i SS SS 04 14 42.0 +0.9
BRG pmax pmax
comp=Z,119nm,1.2s,mb5.7
BRG MLR MLR
comp=N,5µm,19.3s,MS5.9
BRG MLR MLR
comp=E,3µm,19.3s,MS5.9
BRG MLR MLR
comp=Z,8µm,19.3s,MS6.1
BRG **Berggiesshubel** 80.72 330 *i*P P 03 59 21.2 +0.3
comp=Z,119nm,1.2s,mb5.7
BRG *i pP 03 59 34.5 +2.8
BRG *ePP PP 04 02 15.3 -12
BRG *i S S 04 09 26.0 +1.4
BRG *i SP SP 04 10 27.0 +16
BRG *i SS SS 04 14 42.0 +0.9
BRG LR LR
comp=Z,8µm,19.3s,MS6.1
SZH **Strazhica** 80.72 318 *e*P P 03 59 22.0 +0.9
PVCC **Panska Ves** 80.73 329⇑ *i*P P 03 59 21.4 +0.5
PVCC *epP pP 03 59 34.6 +2.8
PVCC L 04 37 50.0
comp=Z,5.9nm,18.9s
CLL **Collm** 80.75 330⇑ *i*P P 03 59 20.8 -0.2
comp=Z,logA/T=2.3,mb6.0
CLL *i *PP pP 03 59 34.8 +2.9
CLL *i PP PP 04 02 23.1 -4.1
CLL *ePPP PPP 04 04 35.0 +17
CLL *eS S 04 09 23.0 -1.9
CLL *e 04 09 43.0
CLL *ePPS PPS 04 10 30.0 -6.4
CLL *eSS SS 04 15 06.0 +24
CLL **Collm** 80.75 330⇑ *i*P P 03 59 20.8 -0.2
CLL *i *PP pP 03 59 34.8 +2.9
CLL *eS S 04 09 23.0 -1.9
CLL pmax pmax
comp=Z,217nm,1.1s,mb6.0
CLL MLR MLR
comp=Z,5µm,16.0s,MS6.0
CLL **Collm** 80.75 330⇑ *i*P P 03 59 20.8 -0.2
comp=Z,217nm,1.1s,mb6.0
CLL *i pP pP 03 59 34.8 +2.9
CLL *eS S 04 09 23.0 -1.9
CLL LR LR
comp=Z,5µm,16.0s,MS6.0
VRAC **Vranov** 80.82 327 P P 03 59 22.0 +0.6
comp=Z,130nm,1.1s,mb5.8,baz=48,slow=5.1,SNR=128
VRAC LR LR 04 39 03.6
comp=Z,4µm,18.6s,MS5.8,baz=23,slow=38
MME1 **Meikle Cairn** 80.84 342⇑ *e*P P 03 59 20.8 -0.7
JMB **Yambol** 80.93 317 *i*P P 03 59 23.5 +1.3
ISCO **Idaho Springs** 81.05 46 *e*P P 03 59 23.2 +0.3
comp=Z,88nm,1.9s,mb5.4
ISCO LR LR
comp=Z,1µm,20.0s,MS5.2
DUSS **Damascus Unive** 81.08 306 *i*P P 03 59 24.3 +1.2
MDO **Dochfour** 81.08 342⇑ *e*P P 03 59 23.0 +0.3
ULDT **Uludag** 81.10 314 *i*P P 03 59 23.4 +0.3
BUD **Budapest** 81.11 325 *e*Pc 03 59 23.5
BUD **Budapest** 81.11 325⇑ *e*P P 03 59 23.5 +0.5
PRA **Prague** 81.14 329 ⇑P P 03 59 24.0 +0.9
PRA pP pP 03 59 36.0 +2.0
PRA L 04 38 00.0
PKSN **Nyarlorinc** 81.15 324⇑ *e*P P 03 59 23.8 +0.6
PRU **Pruhonice** 81.16 329⇑ *i*P P 03 59 23.5 +0.3
comp=Z,215nm,1.3s,mb5.9
PRU *epP pP 03 59 36.1 +2.0
PRU *eS S 04 09 28.6 -0.5
PRU *eSKS SKS 04 09 51.5 +17

PRU L 04 38 00.0
comp=Z,4.0nm,17.0s
PRU Pruhonice 81.16 329⇑ *iP* **P 03 59 23.5 +0.3**
PRU *e**PP pP 03 59 36.1 +2.0
PRU *eS* S 04 09 28.6 -0.5
PRU pmax pmax
comp=Z,215nm,1.3s,mb5.9
PRU MLR MLR
comp=Z,4µm,17.0s,MS5.8
SRO Srobarova 81.18 325 *eP* **P 03 59 24.8 +1.4**
ZST Bratislava 81.44 326 *i* P P **03 59 26.1 +1.4**
ZST *i* S 04 09 34.3 +2.3
ASF Jabal al Asfar 81.52 304 P P **03 59 26.1 +0.6**
comp=Z,44nm,0.9s,mb5.4,baz=258,slow=2.2,SNR=35
HRI Mount Hermon 81.59 306 P P **03 59 26.1 +0.3**
HRI Mount Hermon 81.59 306 ⇑P P **03 59 26.1 +0.3**
KSHT Keshet 81.72 305 P P **03 59 27.0 +0.5**
KSHT Keshet 81.72 305 ⇑P P **03 59 27.0 +0.5**
VKA Vienna 81.73 327⇑ *iP* **P 03 59 26.8 +0.6**
comp=Z,896nm,4.0s
VKA *i* 03 59 40.8
DIM Dimitrovgrad 81.78 318 *i* P P **03 59 28.0 +1.4**
NKC Novy Kostel 81.81 330⇑ *iP* **P 03 59 26.7 +0.1**
NKC *e*pP pP 03 59 39.7 +2.2
NKC *e*SKS SKS 04 10 05.3 +26
NKC L 04 38 30.0
comp=Z,3.2nm,16.3s
NKC Novy Kostel 81.81 330⇑ *iP* **P 03 59 26.7 +0.1**
NKC *e**PP pP 03 59 39.7 +2.2
NKC MLR MLR
comp=Z,3µm,16.3s,MS5.8
MOX Moxa 81.82 331 *i* P P **03 59 26.7 +0.1**
comp=Z,logA/T=2.0,mb5.7
MOX pP pP 03 59 40.0 +2.5
MOX PP PP 04 02 29.0 -7.0
MOX S S 04 09 35.0 -0.9
MOX SS SS 04 15 36.0 +38
MOX L 04 39 00.0
MOX Moxa 81.82 331 *eP* **P 03 59 26.7 +0.1**
MOX *e* pP 03 59 39.9 +2.4
MOX *e* 04 02 28.6
MOX pmax pmax
comp=Z,161nm,1.5s,mb5.7
MOX MLR MLR
comp=Z,3µm,18.0s,MS5.7
MOX Moxa 81.82 331 *eP* **P 03 59 26.7 +0.1**
comp=Z,161nm,1.5s,mb5.7
MOX *e* pP 03 59 39.9 +2.4
MOX *e* 04 02 28.6
MOX LR LR
comp=Z,3µm,18.0s,MS5.7
ISP Isparta 81.84 312⇑ *iP* **P 03 59 26.4 -0.6**
WIT Witteveen 81.86 334 *eP* **P 03 59 27.9 +1.1**
ESY Stoneypath 82.00 341⇑ *eP* **P 03 59 27.6 +0.1**
ESY AMB AMB 03 59 30.8
comp=Z,104nm,1.3s,mb5.6
CSS Prodhromos 82.02 308 *eP* **P 03 59 27.4 -0.6**
SOP Sopron 82.06 326⇑ *iP* **P 03 59 28.9 +1.0**
HNTI Hanita 82.07 306 P P **03 59 28.7 +0.4**
HNTI Hanita 82.07 306 ⇑P P **03 59 28.7 +0.4**
PGB Panagyurishte 82.15 319 *iP* **P 03 59 30.0 +1.5**
PLD Plovdiv 82.18 318 *eP* **P 03 59 30.0 +1.3**
EAB Aberfoyle 82.20 342⇑ *eP* **P 03 59 28.7 +0.3**
EAB AMB AMB 03 59 31.5
comp=Z,149nm,1.3s,mb5.8
KHC Kasperske Hory 82.22 329⇑ *iP* **P 03 59 29.0 +0.3**
KHC *e*pP pP 03 59 42.2 +2.6
KHC *eS* S 04 09 40.2 +0.1
KHC *e*SKS SKS 04 10 02.1 +20
KHC L 04 38 10.0
comp=Z,4.4nm,20.6s
KHC Kasperske Hory 82.22 329⇑ *iP* **P 03 59 29.0 +0.3**
KHC *e**PP pP 03 59 42.2 +2.6
KHC *eS* S 04 09 40.2 +0.1
KHC MLR MLR
comp=Z,4µm,20.6s,MS5.8
EAU Auchinoon 82.28 341⇑ *eP* **P 03 59 29.4 +0.6**
EAU AMB AMB 03 59 31.8
comp=Z,107nm,1.1s,mb5.7
ALN Alexandroupoli 82.30 317 *eP* **P 03 59 29.1 -0.2**
PCOU Corrie 82.32 342⇑ *eP* **P 03 59 29.8 +0.7**
HAF Haifa 82.36 306 P P **03 59 30.0 +0.2**
BOLS Boljevac 82.37 321⇑ *iP* **P 03 59 28.9 -0.7**
HMDT Nahal Hemdat 82.37 305 P P **03 59 30.4 +0.5**
HMDT Nahal Hemdat 82.37 305 ⇑P P **03 59 30.4 +0.5**
BEO Belgrade 82.39 322⇓ *iP* **P 03 59 29.7 0.0**
GEC2 GERESS Array S 82.39 328 *eP* **P 03 59 29.9 +0.3**
GEC2 pmax pmax
comp=Z,92nm,1.2s,mb5.6
GERES GERESS Array B 82.39 328 P P **03 59 29.5 -0.1**
comp=Z,43nm,1.1s,mb5.3,baz=45,slow=3.8,SNR=164
GERES GERESS Array B 82.39 328 P P **03 59 29.5 -0.1**
GERES pmax pmax
comp=Z,43nm,1.1s
SVIS Svilajnac 82.40 322⇑ *iP* **P 03 59 29.6 -0.1**
RZN Rozhen 82.47 318 *iP* **P 03 59 31.0 +0.9**
OFRI 'Ofer 82.48 306 P P **03 59 30.7 +0.3**
OFRI 'Ofer 82.48 306 ⇑P P **03 59 30.7 +0.3**
SDCO Great Sand Dun 82.50 48 *eP* **P 03 59 31.7 +1.3**
comp=Z,118nm,2.0s,mb5.5
SDCO LR LR
comp=Z,1µm,21.0s,MS5.2
WET Wettzell 82.50 329 *eP* **P 03 59 30.9 +0.8**
WET pmax pmax
comp=Z,137nm,1.3s,mb5.7
WTSB Winterswijk 82.52 334⇑ *iP* **P 03 59 30.0 -0.2**
comp=Z,48nm,1.4s,mb5.3
MANT Manisa 82.54 313 *iP* **P 03 59 31.1 +0.5**
RHK1 Bakonya 82.58 324⇓ *eP* **P 03 59 31.1 +0.5**
PCA1 Carrot 82.61 342⇑ *eP* **P 03 59 30.9 +0.3**
VTS Vitosha 82.62 319 *iP* **P 03 59 32.0 +1.1**
EKA Eskdalemuir Ar 82.66 341 P P **03 59 31.1 +0.3**
comp=Z,30nm,1.0s,mb5.3,baz=22,slow=4.5,SNR=36
EKA PP PP 04 02 38.4 -4.3
comp=Z,14nm,1.2s,baz=27,slow=5.6,SNR=5.5
EKA Eskdalemuir Ar 82.66 341 P P **03 59 31.1 +0.3**
EKA 04 02 38.4
EKA pmax pmax
comp=Z,30nm,1.0s
EKA pmax pmax
comp=Z,14nm,1.2s
ESK Eskdalemuir 82.69 341 *eP* **P 03 59 30.9 -0.1**
comp=Z,62nm,1.3s,mb5.5
ESK *e*pP pP 03 59 43.9 +2.0
ESK LR LR
comp=Z,3µm,20.0s,MS5.7
SLTI Sal'it 82.69 305 P P **03 59 32.0 +0.5**
SLTI Sal'it 82.69 305 ⇑P P **03 59 32.0 +0.5**
GRF Grafenberg Arr 82.73 330 *eP* **P 03 59 31.8 +0.5**
GRF *e**PP pP 03 59 45.2 +3.0
GRF pmax pmax
comp=Z,350nm,1.3s,mb6.2
MKRJ Makawir 82.74 304 P P **03 59 32.5 +0.7**
BBH Bruntsheil 82.78 341⇑ *eP* **P 03 59 31.6 +0.2**
DNZL Cakiroluk 82.80 313 *iP* **P 03 59 32.2 +0.2**
TUC Tucson 82.81 55 P P **03 59 33.2 +1.0**
TUC PcP PcP 03 59 42.0 +4.6
TUC S S 04 09 49.1 +2.7
TUC Tucson 82.81 55 *eP* **P 03 59 32.6 +0.5**
comp=Z,59nm,1.7s,mb5.3
TUC LR LR
comp=Z,923nm,20.0s,MS5.2
ARSA Arzberg 82.85 326⇑ *iP* **P 03 59 32.5 +0.5**
comp=Z,686nm,3.7s
DRGI Dragot 82.88 305 P P **03 59 33.0 +0.5**
DRGI Dragot 82.88 305 ⇑P P **03 59 33.0 +0.5**
BHH Howats Hill 82.89 341⇑ *eP* **P 03 59 32.4 +0.4**
BTA Talkin 82.92 340 *eP* **P 03 59 32.9 +0.7**
MOA Molln 82.93 328⇓ *iP* **P 03 59 32.8 +0.4**
comp=Z,278nm,1.7s,mb6.0
BWH Wardlaw 82.93 341⇑ *eP* **P 03 59 32.9 +0.7**
MMB Musomiste 83.06 318 *iP* **P 03 59 34.0 +0.8**
BDL Dobcross Hall 83.08 340⇑ *eP* **P 03 59 33.5 +0.5**
MZDA Masada 83.08 304 P P **03 59 34.0 +0.5**
MZDA Masada 83.08 304 ⇑P P **03 59 34.0 +0.5**
DIVS Divcibare 83.14 322⇓ *iP* **P 03 59 33.6 +0.1**
KKB Krupnik 83.20 319 *iP* **P 03 59 35.0 +1.1**
BBO1 Bothel 83.22 341⇑ *eP* **P 03 59 34.5 +0.8**
GMK Mull of Kintyr 83.26 342⇑ *eP* **P 03 59 34.7 +0.8**
KDAG Bornova 83.34 314 *iP* **P 03 59 34.9 +0.2**
SRS Serrai 83.47 318 *eP* **P 03 59 35.2 0.0**
GAL1 Galloway 83.48 341⇑ *eP* **P 03 59 35.5 +0.5**
LOS Limnos 83.50 316 *eP* **P 03 59 35.7 +0.2**

SIND Sindeldorf 83.63 331⇑ *eP* **P 03 59 36.1 +0.3**
GCL Cushendall 83.64 342⇑ *eP* **P 03 59 36.5 +0.8**
MASH Mash'abbe Sade 83.66 304 P P **03 59 36.7 +0.2**
MASH Mash'abbe Sade 83.66 304 ⇑P P **03 59 36.7 +0.2**
ZFRI Zfri 83.69 304 P P **03 59 37.1 +0.5**
ZFRI Zfri 83.69 304 ⇑P P **03 59 37.1 +0.5**
NVSS Nova Varos 2 83.72 322⇓ *iP* **P 03 59 38.8 +2.3**
TOD Tromm 83.73 332⇑ *eP* **P 03 59 36.7 +0.4**
TOD Tromm 83.73 332⇑ *eP* **P 03 59 36.6 +0.3**
LAZ Ladron 83.75 51 P P **03 59 33.7 -3.1**
ANMO Albuquerque 83.80 50 *eP* **P 03 59 38.4 +1.3**
comp=Z,33nm,1.2s,mb5.3
ANMO LR LR
comp=Z,1µm,22.0s,MS5.2
KNT Kendrikon 83.80 318 *eP* **P 03 59 37.2 +0.2**
SOH Sokhos 83.80 318 *eP* **P 03 59 36.5 -0.4**
SVTA Shivta 83.81 304 P P **03 59 37.5 +0.3**
SVTA Shivta 83.81 304 ⇑P P **03 59 37.5 +0.3**
OUR Ouranopolis 83.81 317 *eP* **P 03 59 36.9 -0.2**
HGN Heimansgroeve 83.82 334⇑ *iP* **P 03 59 36.5 -0.2**
comp=Z,45nm,1.1s,mb5.5
HGN *e*PP tx 04 01 35.9
HGN *e*PPP tx 04 03 01.3
HGN *e*S S 04 09 46.4 -10
HGN *e*SS tx 04 16 03.0
SISC Sisak 83.83 325 *iP* **P 03 59 37.4 +0.5**
OBKA Obir 83.84 327⇑ *iP* **P 03 59 37.0 0.0**
comp=Z,766nm,4.1s
VAY Valandovo 83.86 319⇑ *iP* **P 03 59 37.6 +0.4**
SWS Schriesheim 83.87 331 *eP* **P 03 59 37.3 +0.3**
LHO Holmfirth 83.89 339 *iP* **P 03 59 37.7 +0.6**
FUR Furstenfeldbru 83.92 329 *eP* **P 03 59 38.1 +0.7**
FUR pmax pmax
comp=Z,287nm,1.2s,mb6.3
KBA Koelnbreinsper 83.92 328⇑ *iP* **P 03 59 37.7 +0.3**
comp=Z,281nm,1.8s,mb6.1
PRNI Paran 83.93 304 P P **03 59 38.4 +0.5**
PRNI Paran 83.93 304 ⇑P P **03 59 38.4 +0.5**
KZIT Kziot 83.97 305 P P **03 59 38.4 +0.4**
KZIT Kziot 83.97 305 ⇑P P **03 59 38.4 +0.4**
ABH Alteburg 83.97 332⇑ *eP* **P 03 59 37.9 +0.3**
ABH Alteburg 83.97 332⇑ *eP* **P 03 59 37.7 +0.1**
SKO Skopje 83.97 320⇑ *iP* **P 03 59 38.9 +1.1**
comp=Z,0.3nm,1.2s
SKO ⇓ *i* pP 03 59 51.6 +2.9
PLE Pljevlja 84.00 322⇑ *iP* **P 03 59 38.9 +1.0**
LENM Lemitar 84.00 51 *eP* **P 03 59 39.3 +1.2**
HDH Heidenheim 84.01 330⇑ *eP* **P 03 59 37.8 0.0**
IVA Berane 84.09 321⇑ *iP* **P 03 59 39.0 +0.6**
LPM Los Pinos Moun 84.12 51 P P **03 59 35.9 -2.8**
THE Thessaloniki 84.15 318 *eP* **P 03 59 38.2 -0.5**
BDRM Kayabasi 84.16 313 *iP* **P 03 59 39.0 +0.2**
GRG Griva 84.21 319 *eP* **P 03 59 38.9 -0.1**
LJU Ljubljana 84.22 326 *eP* **P 03 59 38.6 -0.3**
LJU *e*pP pP 03 59 52.0 +2.2
LJU *e*PP PP 04 02 52.5 -2.8
BNM Barren Site 84.23 51 *eP* **P 03 59 40.1 +0.9**
KTD Kalmit 84.23 332 *eP* **P 03 59 39.4 +0.5**
KTD Kalmit 84.23 332 ⇑*eP* **P 03 59 38.9 0.0**
STU Stuttgart 84.26 331 *eP* **P 03 59 38.6 -0.4**
STU *e**PP pP 03 59 51.8 +1.8
PVY Plav 84.26 321⇑ *iP* **P 03 59 39.5 +0.3**
PAIG Paliouri 84.27 317 *eP* **P 03 59 39.2 -0.1**
KMTI Karmit 84.28 304 P P **03 59 39.7 +0.1**
KMTI Karmit 84.28 304 ⇑P P **03 59 39.7 +0.1**
RUP Ruppelstein 84.30 332⇑ *eP* **P 03 59 39.5 +0.3**
RUP Ruppelstein 84.30 332⇑ *eP* **P 03 59 39.4 +0.2**
AQBJ Aqaba 84.30 303 P P **03 59 40.0 +0.3**
BOJS Bojanci 84.31 326 *eP* **P 03 59 39.4 0.0**
BOJS *e*pP pP 03 59 52.2 +1.9
BOJS *e* 04 02 55.2
BOJS *e* 04 10 11.8
BOJS *e* 04 10 23.3
UPM Unac-Piva 84.34 322⇑ *iP* **P 03 59 39.7 +0.1**
MBH Mount Berech 84.35 303 P P **03 59 40.3 +0.3**
GMM Mts of Mourne 84.36 342⇑ *eP* **P 03 59 39.9 +0.5**
BCI Bajram Curri 84.38 321 *i* p P **03 59 40.0 +0.2**
EIL Elat 84.41 303 P P **03 59 40.6 +0.3**
EIL Elat 84.41 303 ⇑P P **03 59 40.6 +0.3**
PTCC Patocco-Chiusa 84.44 327 *eP* **P 03 59 39.0 -1.1**
BUCH Bad Urach 84.46 331⇑ *eP* **P 03 59 40.5 +0.5**
WATA Walderalm 84.46 329⇑ *iP* **P 03 59 40.4 +0.3**
comp=Z,132nm,1.7s,mb5.8
WTTA Wattenberg 84.49 329⇑ *iP* **P 03 59 40.7 +0.5**
comp=Z,505nm,2.8s,mb6.2
LBG Lerchenberg 84.50 331⇑ *eP* **P 03 59 40.6 +0.4**
VOY Vojsko 84.50 327 *eP* **P 03 59 39.3 -1.0**
JAVS Javornik 84.53 326 *eP* **P 03 59 39.9 -0.6**
FVI Forni Avoltri 84.54 328 *eP* **P 03 59 40.3 -0.2**
SCHQ Schefferville 84.57 16 P P **03 59 41.6 +1.2**
comp=Z,13nm,0.7s,mb5.2,baz=353,slow=6.2,SNR=14
SCHQ LR LR 04 42 07.3
comp=Z,809nm,19.8s,MS5.1,baz=341,slow=39
SCHQ Schefferville 84.57 16 *eP* **P 03 59 40.8 +0.4**
comp=Z,91nm,1.5s,mb5.7
SCHQ LR LR
comp=Z,1µm,21.0s,MS5.3
NKY Niksic 84.58 322⇑ *iP* **P 03 59 40.3 -0.5**
GMNA Gemona 84.60 327 *eP* **P 03 59 39.4 -1.4**
LANF Langenberg 84.62 332⇑ *eP* **P 03 59 41.3 +0.5**
MOTA Moosalm 84.65 329⇑ *iP* **P 03 59 41.4 +0.4**
comp=Z,115nm,1.2s,mb5.9
WLF Walferdange 84.66 333 *eP* **P 03 59 41.5 +0.5**
WLF *e**PP pP 03 59 53.2 +1.2
WLF pmax pmax
comp=Z,220nm,1.6s,mb6.0
WLF Walferdange 84.66 333 *eP* **P 03 59 41.5 +0.5**
comp=Z,221nm,1.6s,mb6.0
WLF *e*pP pP 03 59 53.2 +1.2
AOS Alonnisos 84.70 316 *eP* **P 03 59 41.1 -0.4**
SQTA Sankt Quirin 84.70 329⇑ *iP* **P 03 59 41.6 +0.3**
comp=Z,89nm,1.3s,mb5.7
TTG Podgorica 84.74 321⇑ *iP* **P 03 59 40.6 -1.0**
BRY Bratogost 84.74 322⇑ *iP* **P 03 59 40.9 -0.7**
GIVF Givet 84.77 334⇑ *iP* **P 03 59 41.3 -0.2**
comp=Z,378nm,1.6s,mb6.0
LIT Litokhoron 84.78 318 *eP* **P 03 59 41.4 -0.5**
UBR Uberruh 84.78 330⇑ *eP* **P 03 59 41.8 +0.1**
GUT Gutenstein 84.86 330⇑ *eP* **P 03 59 42.2 +0.1**
FNA Florina 84.87 319 *eP* **P 03 59 41.9 -0.5**
DMUB Kingscourt 84.90 342⇑ *iP* **P 03 59 43.1 +1.0**
OHR Ohrid 84.93 320⇑ *iP* **P 03 59 42.5 0.0**
OHR ⇓ *i* pP 03 59 56.0 +2.4
XOR Xorichti 84.93 317 *eP* **P 03 59 42.2 -0.4**
BFO Black Forest 84.95 331 *eP* **P 03 59 43.0 +0.5**
BFO pmax pmax
comp=Z,250nm,1.2s,mb6.2
SPAK Spaichingen 84.96 331⇑ *eP* **P 03 59 42.9 +0.3**
BUM Brajici-Budva 85.01 321⇑ *iP* **P 03 59 42.9 -0.1**
BAIF Baives 85.02 334⇑ *iP* **P 03 59 42.7 -0.1**
comp=Z,167nm,1.2s,mb5.7
CBKS Cedar Bluff 85.03 44 PFAKE 03 59 50.0 +6.9
CBKS LR LR
comp=Z,633nm,20.0s,MS5.0
QSH Qafa e Shtames 85.09 320 *i* p P **03 59 44.0 +0.6**
ULC Ulcinj 85.09 321⇑ *iP* **P 03 59 43.1 -0.3**
HCY Herceg Novi 85.10 322⇑ *iP* **P 03 59 43.5 +0.1**
DAVA Damuels 85.19 330⇑ *iP* **P 03 59 44.1 +0.4**
comp=Z,252nm,1.3s,mb6.2
NVLJ Novalja 85.21 325 *iP* **P 03 59 43.2 -0.6**
MENF Mencas 85.28 336⇑ *eP* **P 03 59 44.1 0.0**
STEIN Stein am Rhein 85.28 330⇑ *iP* **P 03 59 44.0 -0.2**
comp=Z,179nm,1.4s,mb6.0
CDF Champ du Feu 85.28 332⇑ *iP* **P 03 59 44.3 +0.1**
comp=Z,364nm,1.2s,mb6.1
KAMOR Kamor 85.34 330⇑ *iP* **P 03 59 44.6 +0.1**
comp=Z,198nm,1.3s,mb6.1
SLE Schleitheim 85.35 331⇑ *iP* **P 03 59 44.3 -0.2**
comp=Z,161nm,1.4s,mb6.0
WEIN Weingarten 85.35 330⇑ *iP* **P 03 59 44.3 -0.2**
comp=Z,142nm,1.6s,mb5.8
DLF Lyons Farm 85.36 342⇑ *iP* **P 03 59 45.3 +0.9**
TRULL Truellikon 85.37 330⇑ *iP* **P 03 59 44.4 -0.2**
comp=Z,233nm,1.4s,mb6.1
LIBD Limburg 85.38 331⇑ *eP* **P 03 59 45.2 +0.6**
KIZ Kirchzarten 85.42 331⇑ *eP* **P 03 59 44.8 0.0**
FELD Feldberg 85.45 331⇑ *eP* **P 03 59 45.0 0.0**
FELD Feldberg 85.45 331⇑ *eP* **P 03 59 45.2 +0.2**
CTI Castel Tesino 85.45 328 *eP* **P 03 59 44.2 -0.9**
WILA Wila 85.47 330⇑ *iP* **P 03 59 45.0 -0.1**
comp=Z,129nm,1.7s,mb5.8
FLACH Flaach 85.48 330⇑ *iP* **P 03 59 45.0 -0.1**

comp=Z,124nm,1.2s,mb5.9
ECH Echery 85.49 332⇑ *eP* **P 03 59 45.3 +0.1**
DCN Croghan 85.50 342⇑ *iP* **P 03 59 46.1 +1.0**
FUORN Ofenpass 85.57 329⇑ *iP* **P 03 59 46.3 +0.7**
comp=Z,334nm,1.2s,mb6.4
PLONS Plons 85.58 330⇑ *iP* **P 03 59 45.7 +0.1**
comp=Z,221nm,1.3s,mb6.2
DAVOX Davos 85.60 329 P P **03 59 46.4 +0.7**
comp=Z,53nm,1.0s,mb5.7,baz=23,slow=3.3,SNR=53
DAVOX Davos 85.60 329⇑ *iP* **P 03 59 46.2 +0.5**
comp=Z,141nm,1.2s,mb6.1
DAVOX Davos 85.60 329⇑ *iP* **P 03 59 46.1 +0.4**
ZUR Zurich 85.64 330⇑ *iP* **P 03 59 45.7 -0.2**
comp=Z,262nm,2.6s,mb6.0
AGG Agios Georgios 85.64 317 *eP* **P 03 59 45.1 -1.1**
BRMO Bormio 85.64 329 *eP* **P 03 59 46.2 +0.2**
MEV Metsovon 85.68 318 *eP* **P 03 59 46.2 -0.1**
SULZ Sulz-Cheisache 85.69 331⇑ *iP* **P 03 59 46.1 -0.1**
comp=Z,294nm,1.2s,mb6.4
SANT Santorini 85.79 314 *eP* **P 03 59 45.5 -1.4**
MOF Molkenrain 85.80 331⇑ *eP* **P 03 59 46.9 +0.2**
BERNI Berninapass 85.84 329⇑ *iP* **P 03 59 47.4 +0.5**
comp=Z,162nm,1.4s,mb6.1
LLS Linth-Limmern 85.89 330⇑ *iP* **P 03 59 47.3 +0.1**
comp=Z,114nm,1.2s,mb6.0
THEF They Montfort 85.92 332⇑ *eP* **P 03 59 47.6 +0.3**
MABI Malga Bissina 85.92 328 *eP* **P 03 59 46.6 -0.7**
HINF Hinteralfeld 85.94 332⇑ *iP* **P 03 59 47.1 -0.3**
comp=Z,139nm,1.3s,mb5.7
MUO Muotathal 85.94 330⇑ *iP* **P 03 59 47.6 +0.2**
comp=Z,234nm,1.3s,mb5.3
HAU Haudompre 85.97 332⇑ *iP* **P 03 59 47.2 -0.3**
comp=Z,119nm,1.1s,mb5.7
HAU *e*R
comp=Z,4µm,20.2s
BBS Basel-Blauen 85.98 331⇑ *eP* **P 03 59 47.8 +0.2**
BBS Basel-Blauen 85.98 331⇑ *eP* **P 03 59 47.5 -0.1**
VDL Val di Lei 86.00 329⇑ *iP* **P 03 59 48.1 +0.4**
comp=Z,129nm,1.2s,mb6.0
BALST Balsthal 86.01 331⇑ *iP* **P 03 59 47.7 0.0**
comp=Z,220nm,1.3s,mb6.2
MEZF Maizieres J'vi 86.03 333⇑ *iP* **P 03 59 48.2 +0.4**
comp=Z,452nm,1.4s,mb6.2
BNALP Bannalp 86.11 330⇑ *iP* **P 03 59 48.3 +0.1**
comp=Z,168nm,1.3s,mb6.1
BOURR Bourrignon 86.14 331⇑ *iP* **P 03 59 48.4 0.0**
comp=Z,262nm,2.1s,mb6.1
SAL Salo 86.28 328 *eP* **P 03 59 48.6 -0.4**
HASLI Hasliberg 86.31 330⇑ *iP* **P 03 59 49.2 0.0**
comp=Z,274nm,1.2s,mb6.3
IGT Igoumenitsa 86.33 319 *eP* **P 03 59 48.9 -0.6**
LOMF Lomont 86.33 331⇑ *eP* **P 03 59 49.6 +0.3**
FUSIO Fusio 86.35 330⇑ *iP* **P 03 59 49.6 +0.2**
comp=Z,174nm,1.4s,mb6.1
KSU1 Kansas State U 86.50 42 *eP* **P 03 59 50.2 -0.1**
WIMIS Wimmis 86.59 330⇑ *iP* **P 03 59 50.4 -0.2**
comp=Z,112nm,1.3s,mb5.9
MUGIO Muggio 86.64 329⇑ *iP* **P 03 59 50.0 -0.8**
comp=Z,173nm,1.5s,mb6.1
MNTX Cornudas Mount 86.65 52 *eP* **P 03 59 51.6 +0.4**
comp=Z,22nm,1.5s,mb5.2
MNTX *e*pP pP 04 00 00.6 -1.6
MNTX LR LR
comp=Z,710nm,20.0s,MS5.1
CPRX Cap Rock 86.68 50 *eP* **P 03 59 51.8 +0.4**
TORNY Torny 86.76 331⇑ *iP* **P 03 59 51.4 0.0**
comp=Z,225nm,2.2s,mb6.0
JFWS Jewell Farm 86.77 36 *eP* **P 03 59 51.6 0.0**
comp=Z,30nm,1.1s,mb5.4
JFWS LR LR
comp=Z,2µm,22.0s,MS5.4
VAI Varese 86.79 329⇑ *iP* **P 03 59 51.0 -0.6**
BRANT Les Verrieres 86.81 331⇑ *iP* **P 03 59 51.8 +0.1**
comp=Z,203nm,2.8s,mb5.9
LKBD Leukerbad 86.82 330⇑ *iP* **P 03 59 51.6 -0.1**
comp=Z,101nm,1.2s,mb5.9
FSSB Fossombrone 86.83 326 *eP* **P 03 59 51.8 0.0**
LCI Lecce 86.88 321 *eP* **P 03 59 52.0 -0.2**
IDI Anoyia 86.88 313 P P **03 59 51.4 -0.9**
baz=28,slow=14
FGMS Monte Sant'Ang 86.90 323 *eP* **P 03 59 52.0 -0.2**
ARV Arcevia 86.91 326 *eP* **P 03 59 51.8 -0.4**
GDL2 Guadalupe Moun 86.94 51 *eP* **P 03 59 53.4 +0.8**
MMK Mattmark 86.96 330⇑ *iP* **P 03 59 52.8 +0.4**
comp=Z,128nm,2.1s,mb5.8
SENIN Lac Senin 86.97 330⇑ *iP* **P 03 59 52.6 +0.2**
comp=Z,211nm,2.7s,mb5.9
MCGN Macugnaga 87.03 330 *eP* **P 03 59 53.0 +0.3**
SFI Santa Sofia 87.07 326 *eP* **P 03 59 54.0 +1.0**
ZCCA Zocca 87.09 327 *eP* **P 03 59 54.5 +1.4**
RGNG Rignano Grg 87.10 323 *eP* **P 03 59 53.0 -0.2**
SNTG Esanatoglia 87.10 325 *eP* **P 03 59 53.4 +0.3**
AIGLE Aigle 87.12 331⇑ *iP* **P 03 59 53.0 -0.2**
comp=Z,212nm,2.7s,mb5.9
GRYON Gryon 87.13 331⇑ *iP* **P 03 59 53.1 -0.2**
comp=Z,88nm,1.4s,mb5.8
PGD Poggio Sodo 87.15 326 *eP* **P 03 59 54.6 +1.2**
DIX Grande Dixence 87.16 330⇑ *iP* **P 03 59 53.8 +0.4**
comp=Z,97nm,1.9s,mb5.7
SEI Scarperia 87.17 327 *eP* **P 03 59 55.3 +1.9**
CLNB Carlsbad 87.20 51 *eP* **P 03 59 54.6 +0.7**
GIMEL Gimel 87.23 331⇑ *iP* **P 03 59 53.8 +0.1**
comp=Z,61nm,1.2s,mb5.7
CABF La Chapelle 87.23 331⇑ *iP* **P 03 59 53.7 0.0**
comp=Z,194nm,1.6s,mb5.8
GSCL Gusciola 87.26 327 *eP* **P 03 59 54.5 +0.6**
SALAN Lac Salanfe 87.28 331⇑ *iP* **P 03 59 53.9 0.0**
comp=Z,92nm,2.1s,mb5.6
MURB Monte Urbino 87.28 326 *eP* **P 03 59 53.5 -0.5**
GRAM 87.37 328 P P **03 59 54.3 -0.1**
EMV Vieux Emosson 87.37 331⇑ *iP* **P 03 59 54.5 +0.1**
comp=Z,136nm,2.5s,mb5.7
BOB Bobbio (Coli) 87.41 328 *eP* **P 03 59 54.5 -0.1**
SARO Sassorosso 87.47 327 P P **03 59 54.5 -0.5**
LOR Lormes 87.50 333⇑ *iP* **P 03 59 55.0 0.0**
comp=Z,366nm,1.3s,mb6.2
LOR *e*R
comp=Z,4µm,20.0s
BACM 87.54 328 P P **03 59 54.7 -0.5**
CODM 87.54 328 ⇑P P **03 59 54.5 -0.7**
FG5 Orsara di Pugl 87.55 323 *eP* **P 03 59 55.8 +0.4**
AQU L'Aquila 87.60 325 *eP* **P 03 59 55.2 -0.4**
INTR Introdacqua 87.63 324 *eP* **P 03 59 55.3 -0.4**
MAIM 87.65 327 P P **03 59 54.3 -1.5**
CSNT Castellina Chi 87.66 326 *eP* **P 03 59 55.1 -0.8**
CII Carovilli 87.67 324 *eP* **P 03 59 56.1 +0.1**
FLN La Foliniere 87.69 336⇑ *iP* **P 03 59 55.8 -0.1**
comp=Z,287nm,1.4s,mb6.0
FLN *e*R
comp=Z,8µm,19.8s
LDF La Druitiere 87.72 336⇑ *iP* **P 03 59 56.0 0.0**
RNI2 Rionero Sannit 87.76 324 *eP* **P 03 59 57.0 +0.6**
LSD Ceresole Reale 87.77 330 P P **03 59 56.9 +0.6**
SSF Saint Saulge 87.81 333⇑ *iP* **P 03 59 56.5 0.0**
comp=Z,169nm,1.2s,mb5.8
MRLC Muro Lucano 87.85 322 *eP* **P 03 59 56.5 -0.3**
PTQR Pietraquaria 87.86 324 *eP* **P 03 59 56.9 +0.1**
LPL La Plagne 87.89 330⇑ *iP* **P 03 59 57.2 +0.3**
comp=Z,145nm,1.4s,mb5.7
LPG La Plagne 87.90 330⇑ *iP* **P 03 59 57.5 +0.6**
comp=Z,179nm,1.4s,mb5.8
MNS Montasola 87.90 325 *eP* **P 03 59 55.9 -1.2**
ORI Oriolo Calabro 87.91 321 *eP* **P 03 59 57.7 +0.6**
SDI San Donato 87.91 324 *eP* **P 03 59 56.7 -0.4**
HYF Humbligny 87.94 334 *eP* **P 03 59 57.8 +0.7**
PCP Pian Castagno 87.96 329 P P **03 59 56.4 -0.9**
RSP Reno Superiore 87.98 330 P P **03 59 57.5 +0.2**
CSSN Cassano Irpino 88.00 323 *eP* **P 03 59 56.6 -0.9**
SMF Signal de Mont 88.04 333⇑ *iP* **P 03 59 57.5 -0.1**
comp=Z,369nm,1.4s,mb6.1
SLCN Sala Consilina 88.06 322 *eP* **P 03 59 57.7 -0.2**
SGO Sicignano 88.09 322 *eP* **P 03 59 57.6 -0.4**
AVF Avril sur Loir 88.09 333⇑ *iP* **P 03 59 57.8 0.0**
comp=Z,353nm,1.3s,mb6.1
GRR Gorron 88.14 336⇑ *iP* **P 03 59 58.2 +0.2**
comp=Z,369nm,1.3s,mb6.2
BHB Bricherasio 88.24 330 P P **03 59 57.5 -1.0**
TDS Terranova Siba 88.28 321 *eP* **P 03 59 59.2 +0.3**
BNI Bardonecchia 88.30 330 *eP* **P 03 59 58.7 -0.2**
MGR Morigerati 88.30 322 *eP* **P 03 59 58.0 -1.0**
RRL Cesana Torines 88.36 330 P P **03 59 58.9 -0.2**
FIN Finale Ligure 88.38 329 P P **03 59 58.1 -1.2**
GDM Grand'Maison 88.39 331 *eP* **P 03 59 59.7 +0.4**
TIP Timpagrande 88.43 321 *eP* **P 03 59 59.4 -0.2**
ROB Roburent 88.44 329 P P **03 59 58.4 -1.2**

BGF	**Bois d'Agland**	**88.47**	**333**	⇑*iP*		**P**	**03 59 59.9**	**+0.2**
WMOK	**Wichita Mounta**	**88.48**	**46**	*e*P		**P**	**04 00 00.6**	**+0.6**
	comp=Z,47nm,1.5s,mb5.5							
WMOK				LR		LR		
	comp=Z,774nm,19.0s,MS5.1							
GRN	**Grenoble**	**88.50**	**331**	*e*P		**P**	**04 00 00.5**	**+0.7**
RORO		**88.51**	**329**	P		**P**	**03 59 58.4**	**-1.5**
MBDF	**Montbardon**	**88.53**	**330**	⇑*iP*		**P**	**03 59 59.4**	**-0.6**
MONE	**Monesi**	**88.67**	**329**	P		**P**	**03 59 59.1**	**-1.5**
PLDF	**La Plantade**	**88.69**	**332**	⇑*e*P		**P**	**04 00 01.5**	**+0.8**
SURF	**Saint Ours**	**88.72**	**330**	*e*P		**P**	**04 00 00.8**	**-0.1**
ORIF	**Oris-en-Rattie**	**88.72**	**330**	⇑*iP*		**P**	**04 00 01.1**	**+0.2**
	comp=Z,133nm,1.6s,mb5.7							
ORIF				*e*R				
	comp=Z,4μm,21.5s							
IMI	**Imperia**	**88.75**	**329**	P		**P**	**03 59 59.6**	**-1.4**
SGMF	**Saint Gilles**	**88.79**	**337**	⇑*iP*		**P**	**04 00 01.6**	**+0.5**
	comp=Z,210nm,1.4s,mb6.0							
AGO	**Saint Agoulin**	**88.80**	**333**	*e*P		**P**	**04 00 01.5**	**+0.2**
SAOF	**Saorge**	**88.83**	**329**	*e*P		**P**	**04 00 00.9**	**-0.5**
AUTN	**L'Aution**	**88.87**	**329**	⇑*e*P		**P**	**04 00 01.3**	**-0.3**
GRI	**Girifalco**	**88.87**	**321**	*e*P		**P**	**04 00 02.0**	**+0.2**
NEGI	**Negi**	**88.88**	**329**	P		**P**	**03 59 59.9**	**-1.8**
TOUF	**Mont Tournerai**	**88.93**	**329**	*e*P		**P**	**04 00 01.2**	**-0.7**
TCF	**Toulx Ste Croi**	**88.93**	**333**	⇑*iP*		**P**	**04 00 02.3**	**+0.4**
	comp=Z,225nm,1.6s,mb5.9							
ROSF	**Rostrenen**	**88.94**	**338**	⇑*iP*		**P**	**04 00 02.2**	**+0.4**
	comp=Z,296nm,1.5s,mb6.1							
SBF	**Sospel**	**88.98**	**329**	*e*P		**P**	**04 00 01.5**	**-0.7**
	comp=Z,109nm,1.3s,mb5.7							
AURF	**Auriere**	**89.00**	**329**	*e*P		**P**	**04 00 01.6**	**-0.7**
COLF	**Collangettes**	**89.05**	**332**	⇑*e*P		**P**	**04 00 03.0**	**+0.5**
OG25	**Le Caire**	**89.10**	**330**	*e*P		**P**	**04 00 02.4**	**-0.3**
PYM	**Petit Puy Mans**	**89.10**	**333**	*e*P		**P**	**04 00 03.4**	**+0.7**
OG26	**St.-Nazaire-De**	**89.23**	**331**	⇑*e*P		**P**	**04 00 03.6**	**+0.3**
VIVF	**Saint-Julien-l**	**89.24**	**331**	⇑*i*P		**P**	**04 00 03.4**	**0.0**
	comp=Z,139nm,1.6s,mb5.8							
QUIF	**Quistinic**	**89.28**	**337**	*e*P		**P**	**04 00 02.4**	**-1.1**
CALN	**Calern**	**89.29**	**329**	⇑*e*P		**P**	**04 00 03.1**	**-0.5**
LTX	**Lajitas**	**89.34**	**53**	*e*P		**P**	**04 00 05.2**	**+0.9**
	comp=Z,5.7nm,0.8s,mb5.0							
LTX				LR		LR		
	comp=Z,1μm,20.0s,MS5.3							
TXAR	**Lajitas Array**	**89.34**	**53**	P		**P**	**04 00 04.9**	**+0.6**
	comp=Z,5.0nm,0.6s,mb5.1,baz=299,slow=2.7,SNR=102							
TXAR				PKKPbc			04 17 38.4	
	comp=Z,1.1nm,1.1s,baz=135,slow=1.3,SNR=5.2							
TXAR				LR		LR	04 33 30.9	
	comp=Z,1μm,21.8s,MS5.2,baz=300,slow=31							
PGF	**Pioggiola**	**89.40**	**327**	⇑*iP*		**P**	**04 00 03.5**	**-0.7**
	comp=Z,123nm,1.3s,mb5.8							
LBL	**Lubilhac**	**89.46**	**332**	⇑*e*P		**P**	**04 00 04.8**	**+0.4**
MFF	**Saint Martin d**	**89.47**	**335**	⇑*iP*		**P**	**04 00 04.8**	**+0.4**
	comp=Z,256nm,1.4s,mb6.1							
FRF	**La Foret Royal**	**89.55**	**329**	⇑*iP*		**P**	**04 00 04.1**	**-0.8**
	comp=Z,150nm,1.7s,mb5.8							
LCHF	**La Chataignera**	**89.61**	**335**	⇑*e*P		**P**	**04 00 04.0**	**-1.1**
SMRF	**Simiane la Rot**	**89.63**	**330**	⇑*iP*		**P**	**04 00 05.0**	**-0.2**
	comp=Z,143nm,1.8s,mb5.7							
SOI	**Samo**	**89.63**	**320**	⇑*iP*		**P**	**04 00 05.3**	**-0.1**
VILF	**Villemus**	**89.68**	**330**	*e*P		**P**	**04 00 05.8**	**+0.3**
TAVF	**Tavernes**	**89.74**	**330**	⇑*e*P		**P**	**04 00 05.8**	**+0.1**
LMR	**La Mourre**	**89.79**	**329**	⇑*iP*		**P**	**04 00 05.3**	**-0.7**
	comp=Z,286nm,1.8s,mb6.0							
MTTG	**Motta San Giov**	**89.87**	**320**	*e*P		**P**	**04 00 04.9**	**-1.6**
PRAF	**Pradon**	**89.93**	**330**	⇑*e*P		**P**	**04 00 06.8**	**+0.1**
PUYF	**Puyloubier**	**89.95**	**330**	⇑*e*P		**P**	**04 00 06.6**	**-0.1**
LRYF	**La Roche-sur-Y**	**89.96**	**336**	⇑*e*P		**P**	**04 00 07.1**	**+0.4**
RJF	**Les Rejaudoux**	**90.03**	**333**	⇑*iP*		**P**	**04 00 07.3**	**+0.3**
	comp=Z,242nm,1.6s,mb6.0							
RJF				*e*R				
	comp=Z,2μm,18.0s							
CCM	**Cathedral Cave**	**90.05**	**39**	P		**P**	**04 00 07.6**	**+0.3**
CCM				SKSac			04 10 33.6	
CCM				pSKSac			04 10 55.4	
CCM	**Cathedral Cave**	**90.05**	**39**	*e*P		**P**	**04 00 07.1**	**-0.2**
	comp=Z,72nm,1.3s,mb5.8							
CCM				LR		LR		
	comp=Z,792nm,21.0s,MS5.1							
SLM	**Saint Louis**	**90.10**	**38**	P		**P**	**04 00 07.7**	**+0.1**
BERF	**Bertagne**	**90.14**	**330**	*e*P		**P**	**04 00 06.6**	**-1.0**
CAF	**Calviac**	**90.15**	**333**	⇑*iP*		**P**	**04 00 08.3**	**+0.6**
	comp=Z,173nm,1.5s,mb5.9							
AAM	**Ann Arbor**	**90.17**	**32**	*e*P		**P**	**04 00 08.3**	**+0.5**
	comp=Z,8.8nm,0.5s,mb5.3							
AAM				LR		LR		
	comp=Z,870nm,22.0s,MS5.1							
LASF	**Ste Croix**	**90.21**	**331**	⇑*iP*		**P**	**04 00 08.1**	**+0.1**
	comp=Z,138nm,1.5s,mb5.8							
FVM	**French Village**	**90.52**	**39**	*e*P		**P**	**04 00 09.6**	**+0.1**
FVM				pmax		pmax		
	comp=Z,62nm,1.5s,mb5.7							
FVM	**French Village**	**90.52**	**39**	*e*P		**P**	**04 00 09.6**	**+0.1**
	comp=Z,62nm,1.5s,mb5.7							
USI	**Ustica**	**90.56**	**322**	*e*P		**P**	**04 00 09.1**	**-0.7**
LFF	**La Frestale**	**90.62**	**334**	⇑*iP*		**P**	**04 00 10.5**	**+0.7**
	comp=Z,227nm,1.5s,mb6.0							
VAE	**Valguarnera**	**90.92**	**321**	LR		LR	04 41 49.9	
	comp=Z,1μm,20.7s,MS5.3,baz=85,slow=36							
JCT	**Junction City**	**90.93**	**50**	*e*P		**P**	**04 00 11.9**	**+0.2**
	comp=Z,23nm,1.2s,mb5.4							
JCT				LR		LR		
	comp=Z,1μm,22.0s,MS5.3							
MSNY	**Massena**	**91.21**	**25**	*e*P		**P**	**04 00 12.4**	**-0.3**
SIUC	**Southern Illin**	**91.32**	**38**	*e*P		**P**	**04 00 13.8**	**+0.4**
	comp=Z,85nm,1.4s,mb5.9							
BLO	**Bloomington**	**91.45**	**36**	*e*P		**P**	**04 00 13.9**	**0.0**
BLO				*e*'PP		pP	04 00 23.1	-1.8
MTLF	**Montolieu**	**91.46**	**332**	⇑*iP*		**P**	**04 00 14.1**	**+0.3**
	comp=Z,89nm,1.3s,mb5.6							
MIAR	**Mount Ida**	**91.51**	**43**	*e*P		**P**	**04 00 14.6**	**+0.3**
	comp=Z,70nm,1.4s,mb5.8							
MIAR				LR		LR		
	comp=Z,998nm,20.0s,MS5.2							
LRDF	**Laroque-de-Fa**	**91.68**	**331**	*e*P		**P**	**04 00 15.5**	**+0.7**
PQI	**Presque Isle**	**91.80**	**20**	PFAKE			04 00 30.0	+15
PQI				LR		LR		
	comp=Z,4μm,19.0s,MS5.9							
ERPA	**Erie**	**91.82**	**30**	PFAKE			04 00 30.0	+15
ERPA				LR		LR		
	comp=Z,1μm,20.0s,MS5.3							
USIN	**University of**	**91.88**	**37**	P		**P**	**04 00 16.1**	**+0.2**
EJON	**La Jonquera**	**91.97**	**331**	P		**P**	**04 00 13.6**	**-2.6**
	comp=Z,56nm,1.4s,mb5.7							
UALR	**University of**	**92.00**	**42**	*e*P		**P**	**04 00 16.2**	**-0.2**
ACSO	**Alum Creek Sta**	**92.16**	**33**	*e*P		**P**	**04 00 17.2**	**+0.1**
	comp=Z,38nm,1.2s,mb5.6							
ACSO				LR		LR		
	comp=Z,651nm,20.0s,MS5.1							
MLS	**Moulis**	**92.21**	**332**	*e*P		**P**	**04 00 17.4**	**+0.2**
WCI	**Wyandotte Cave**	**92.31**	**36**	*e*P		**P**	**04 00 17.8**	**-0.1**
WCI				*e*pP		pP	04 00 27.0	-1.9
WCI				LR		LR		
	comp=Z,5μm,21.0s,MS5.9							
NCB	**Newcomb**	**92.33**	**25**	PFAKE			04 00 30.0	+12
NCB				LR		LR		
	comp=Z,424nm,20.0s,MS4.9							
EPF	**Esparros**	**92.42**	**333**	⇑*iP*		**P**	**04 00 18.1**	**-0.1**
	comp=Z,44nm,1.3s,mb5.3							
GLAT	**Glass**	**92.42**	**39**	*e*P		**P**	**04 00 19.1**	**+0.7**
GLAT				*e*pP		pP	04 00 29.1	-0.3
RESF	**Ens**	**92.61**	**333**	⇑*e*P		**P**	**04 00 20.3**	**+1.2**
VIEF	**Viey**	**92.66**	**333**	*e*P		**P**	**04 00 20.1**	**+0.8**
LBNH	**Lisbon**	**92.85**	**24**	PFAKE			04 00 30.0	+10
LBNH				LR		LR		
	comp=Z,920nm,20.0s,MS5.2							
ETSF	**Etsaut**	**92.85**	**333**	⇑*iP*		**P**	**04 00 20.9**	**+0.7**
	comp=Z,102nm,1.6s,mb5.7							
LARF	**Larrau**	**92.88**	**334**	*e*P		**P**	**04 00 20.7**	**+0.4**
EALK	**Alkurruntz**	**92.90**	**334**	P		**P**	**04 00 18.2**	**-2.3**
	comp=Z,69nm,1.5s,mb5.9							
WVT	**Waverly**	**93.25**	**38**	*e*P		**P**	**04 00 22.2**	**0.0**
	comp=Z,29nm,1.6s,mb5.5							
WVT				LR		LR		
	comp=Z,918nm,22.0s,MS5.2							
WVL	**Waterville**	**93.25**	**22**	PFAKE			04 00 30.0	+8.0
WVL				LR		LR		
	comp=Z,4μm,21.0s,MS5.9							
BINY	**Binghamton**	**93.27**	**27**	PFAKE			04 00 30.0	+7.9
BINY				LR		LR		
	comp=Z,875nm,20.0s,MS5.2							
ELAN	**Lanestosa**	**93.54**	**335**	P		**P**	**04 00 22.0**	**-1.3**
	comp=Z,54nm,1.6s,mb5.7							
EPOB	**Poblet**	**93.60**	**332**	P		**P**	**04 00 20.8**	**-2.8**
	comp=Z,67nm,1.4s,mb5.9							

HKT	**Hockley**	**93.67**	**47**	*e*P		**P**	**04 00 24.5**	**+0.2**
HKT				*e*pP		pP	04 00 33.7	-1.6
HKT				LR		LR		
	comp=Z,956nm,19.0s,MS5.3							
OXF	**Oxford**	**93.73**	**40**	PFAKE			04 00 40.0	+16
OXF				LR		LR		
	comp=Z,464nm,20.0s,MS4.9							
ESAC	**San Caprasio**	**93.85**	**333**	P		**P**	**04 00 24.5**	**-0.2**
	comp=Z,137nm,1.5s,mb6.2							
SSPA	**Standing Stone**	**93.91**	**29**	PFAKE			04 00 40.0	+15
SSPA				LR		LR		
	comp=Z,3μm,20.0s,MS5.8							
PLAL	**Pickwick Lake**	**94.04**	**39**	PFAKE			04 00 40.0	+14
PLAL				LR		LR		
	comp=Z,819nm,22.0s,MS5.2							
EARI	**Arriondas**	**94.05**	**337**	P		**P**	**04 00 23.8**	**-1.8**
	comp=Z,96nm,1.6s,mb6.0							
EBR	**Ebro Roquetas**	**94.28**	**332**	*e*PCP		PcP	04 00 26.5	-1.0
HRV	**Harvard--Oak R**	**94.52**	**24**	PFAKE			04 00 40.0	+12
HRV				LR		LR		
	comp=Z,316nm,20.0s,MS4.8							
EPON	**Pontenova**	**94.62**	**338**	P		**P**	**04 00 27.2**	**-1.1**
	comp=Z,86nm,1.4s,mb6.0							
WES	**Weston**	**94.71**	**24**	PFAKE			04 00 40.0	+11
WES				LR		LR		
	comp=Z,3μm,20.0s,MS5.8							
SWET	**Sewanee**	**94.91**	**38**	*e*P		**P**	**04 00 29.2**	**-0.6**
EMOS	**Mosqueruela**	**95.04**	**332**	P		**P**	**04 00 28.8**	**-1.4**
	comp=Z,43nm,1.3s,mb5.7							
PWV	**Princeton**	**95.41**	**33**	*e*P		**P**	**04 00 31.7**	**-0.3**
ECAL	**Calabor**	**95.76**	**337**	P		**P**	**04 00 32.4**	**-1.0**
	comp=Z,20nm,1.7s,mb5.3							
BLA	**Blacksburg**	**95.78**	**33**	PFAKE			04 00 50.0	+16
BLA				LR		LR		
	comp=Z,1μm,21.0s,MS5.3							
MYNC	**Murphy**	**95.89**	**36**	PFAKE			04 00 50.0	+16
MYNC				LR		LR		
	comp=Z,1μm,21.0s,MS5.4							
PBRG	**Braganca**	**95.89**	**337**	*e*P		**P**	**04 00 34.5**	**+0.5**
	comp=Z,30nm,1.6s,mb5.5							
GUD	**Guadarrama**	**96.10**	**335**	P		**P**	**04 00 35.1**	**+0.1**
	comp=Z,8.3nm,1.1s,mb5.1							
LRAL	**Lakeview Retre**	**96.13**	**40**	PFAKE			04 00 50.0	+15
LRAL				LR		LR		
	comp=Z,1μm,20.0s,MS5.3							
CBN	**Corbin**	**96.20**	**30**	PFAKE			04 00 50.0	+14
CBN				LR		LR		
	comp=Z,1μm,22.0s,MS5.4							
EBEN	**Beniarda**	**96.39**	**331**	P		**P**	**04 00 34.6**	**-1.7**
ESDC	**Sonseca Array**	**96.90**	**334**	P		**P**	**04 00 39.3**	**+0.6**
	comp=Z,2.3nm,0.8s,mb4.7,baz=26,slow=3.6,SNR=12							
ESDC				LR		LR	04 49 06.4	
	comp=Z,3μm,20.0s,MS5.8,baz=30,slow=38							
ESDC	**Sonseca Array**	**96.90**	**334**	P		**P**	**04 00 36.9**	**-1.8**
	comp=Z,12nm,1.3s,mb5.2							
ETOB	**Tobarra**	**96.94**	**332**	P		**P**	**04 00 37.9**	**-1.1**
	comp=Z,32nm,1.5s,mb5.5							
PVIS	**Viseu**	**97.23**	**337**	*e*P		**P**	**04 00 39.7**	**-0.5**
	comp=Z,23nm,1.3s,mb5.4							
EVIA	**Vianos**	**97.30**	**333**	P		**P**	**04 00 40.5**	**-0.1**
	comp=Z,20nm,1.2s,mb5.4							
MTE	**Manteigas**	**97.42**	**337**	*e*LR		LR	04 35 36.4	
	comp=Z,4μm,20.1s							
PCBR	**Castelo Branco**	**97.91**	**337**	*e*P		**P**	**04 00 42.9**	**-0.3**
EHUE	**Huescar**	**98.06**	**332**	P		**P**	**04 00 41.5**	**-2.5**
	comp=Z,12nm,1.4s,mb5.2							
EQES	**Quesada**	**98.25**	**333**	P		**P**	**04 00 43.5**	**-1.4**
	comp=Z,26nm,1.5s,mb5.5							
EADA	**Adamuz**	**98.46**	**334**	P		**P**	**04 00 41.3**	**-4.4**
	comp=Z,32nm,1.6s,mb5.6							
EADA				P			04 00 44.6	
EBAD	**Badajoz**	**98.75**	**336**	P		**P**	**04 00 45.5**	**-1.6**
	comp=Z,26nm,2.5s,mb5.3							
ELUQ	**Luque**	**98.89**	**333**	P		**P**	**04 00 47.4**	**-0.3**
	comp=Z,14nm,1.2s,mb5.4							
ERON	**Agron**	**99.21**	**333**	P		**P**	**04 00 48.0**	**-1.2**
ELOJ	**Sierra Loja**	**99.22**	**333**	P		**P**	**04 00 48.5**	**-0.8**
	comp=Z,6.3nm,1.0s,mb5.1							
EVO	**Evora**	**99.27**	**337**	*e*P		**P**	**04 00 48.8**	**-0.6**
	comp=Z,24nm,1.2s,mb5.3							
EVO				*e*R				
	comp=Z,3μm,19.0s							
EMIN	**Mina Concepcio**	**99.53**	**335**	P		**P**	**04 00 49.3**	**-1.3**
	comp=Z,26nm,1.4s,mb5.5							
ESPR	**Espera**	**100.07**	**334**	P		P	04 00 52.4	-0.8
	comp=Z,28nm,1.6s							
EJIF	**Jimena Fronter**	**100.31**	**334**	P		P	04 00 52.9	-1.3
KMBO	**Kilima Mbogo**	**102.34**	**278**	P		Pdif	04 01 03.8	-0.1
	comp=Z,3.5nm,0.8s,baz=28,slow=11,SNR=5.5							
KMBO	**Kilima Mbogo**	**102.34**	**278**	*e*Pdif		Pdif	04 01 03.4	-0.5
	comp=Z,1.5nm,0.6s							
KMBO				LR		LR		
	comp=Z,610nm,20.0s,MS5.1							
DWPF	**Disney**	**102.91**	**39**	PFAKE			04 01 20.0	+14
DWPF				LR		LR		
	comp=Z,657nm,20.0s,MS5.2							
BBSR	**BB Station**	**105.97**	**23**	PFAKE			04 05 40.0	
BBSR				LR		LR		
	comp=Z,3μm,21.0s,MS5.8							
MBAR	**Mbarara**	**107.10**	**283**	PFAKE			04 05 50.0	
MBAR				LR		LR		
	comp=Z,2μm,21.0s,MS5.5							
JTS	**JuntasAbangare**	**115.14**	**53**	PFAKE			04 06 00.0	+12
JTS				LR		LR		
	comp=Z,106nm,19.0s,MS4.5							
VNDA	**Vanda**	**115.60**	**175**	PKP		PKPdf	04 05 46.9	-0.7
	comp=Z,1.2nm,0.8s,baz=308,slow=4.9,SNR=4.6							
VNDA	**Vanda**	**115.60**	**175**	PKP		PKPdf	04 05 46.9	-0.8
VNDA				LR		LR		
	comp=Z,487nm,20.0s,MS5.1							
SJG	**San Juan**	**118.49**	**31**	PFAKE			04 06 10.0	+15
SJG				LR		LR		
	comp=Z,744nm,21.0s,MS5.3							
MAW	**Mawson**	**120.34**	**206**	PKP		PKPdf	04 05 57.1	+0.1
	comp=Z,3.9nm,0.9s,baz=102,slow=18,SNR=4.5							
MAW	**Mawson**	**120.34**	**206**	PKIKP		PKPdf	04 05 57.1	+0.1
MAW				pmax		pmax		
	comp=Z,4.0nm,0.9s							
LBTB	**Lobatse**	**125.18**	**264**	*e*PKP		PKPdf	04 06 08.1	+0.7
LBTB				LR		LR		
	comp=Z,697nm,20.0s,MS5.3							
ROSC	**El Rosal**	**125.84**	**47**	PKP		PKPdf	04 06 11.2	+2.3
	comp=Z,7.7nm,0.7s,baz=153,slow=22,SNR=8.7							
DBIC	**Dimbokro**	**126.12**	**318**	PKP		PKPdf	04 06 10.4	+0.9
	comp=Z,21nm,1.1s,baz=358,slow=2.2,SNR=13							
DBIC				PP		PP	04 07 59.0	-9.1
	comp=Z,17nm,1.2s,baz=41,slow=6.5,SNR=4.6							
DBIC	**Dimbokro**	**126.12**	**318**	PKP		PKPdf	04 06 10.4	+0.9
DBIC				PP		PP	04 07 59.0	-9.1
DBIC				LR		LR		
	comp=Z,625nm,19.0s,MS5.3							
TIC	**Toumodi**	**126.23**	**318**	*e*PKIKP		PKPdf	04 06 10.1	+0.4
	comp=Z,202nm,1.3s							
KIC	**Kosan Boka**	**126.32**	**317**	*e*PKIKP		PKPdf	04 06 10.1	+0.2
	comp=Z,180nm,1.2s							
LIC	**Lamto**	**126.58**	**318**	*e*PKIKP		PKPdf	04 06 10.6	+0.2
	comp=Z,96nm,1.2s							
OTAV	**Otavalo**	**126.95**	**54**	*e*PKP		PKPdf	04 06 12.2	+1.1
QSPA	**South Pole Qui**	**127.44**	**180**	*e*PKP		PKPdf	04 06 10.7	+0.3
SNAA	**Sanae**	**141.52**	**197**	*e*PKHKP			04 06 31.0	
VNA2	**Neumayer--Watz**	**143.09**	**196**	*e*P		PKPbc	04 06 42.3	+5.2
VNA2				*e*			04 06 55.1	
VNA3	**Neumayer Olymp**	**143.33**	**195**	*e*P		PKPbc	04 06 43.1	+5.2
VNA3				*e*			04 06 55.6	
VNA1	**Neumayer--Stat**	**143.49**	**196**	*e*P		PKPbc	04 06 43.9	+5.6
VNA1				*e*			04 06 56.7	
LPAZ	**La Paz**	**145.95**	**59**	PKPbc		PKPbc	04 06 48.5	+1.8
	comp=Z,45nm,1.0s,baz=350,slow=4.4,SNR=144							
LPAZ	**La Paz**	**145.95**	**59**	PKP2		PKPab	04 06 48.5	-0.5
LPAZ				pmax		pmax		
	comp=Z,45nm,1.0s							
LPAZ	**La Paz**	**145.95**	**59**	*e*PKP		PKPdf	04 06 47.7	+2.1
LPAZ				LR		LR		
	comp=Z,507nm,22.0s,MS5.3							
LVC	**Limon Verde**	**149.50**	**69**	*e*PKPdf		PKPdf	04 06 53.8	+2.5
LVC				*e*PKPbc		PKPdf	04 06 58.3	+7.0
LVC				LR		LR		
	comp=Z,1μm,22.0s,MS5.7							
CAUB	**Caruaru**	**150.55**	**356**	*c*iP		PKPdf	04 07 00.0	+6.8
CAUB				*i*			04 07 07.2	
CAUB				*i*			04 07 15.0	
BDFB	**Brasilia**	**156.31**	**25**	PKP		PKPdf	04 07 03.5	+2.5
	comp=Z,3.9nm,0.9s,baz=306,slow=7.1,SNR=3.8							
BDFB				PKPab		PKPab	04 07 31.8	0.0
	comp=Z,5.1nm,0.9s,baz=338,slow=3.9,SNR=3.8							
CPUP	**Villa Florida**	**160.11**	**61**	PFAKE			04 07 20.0	+14
CPUP				LR		LR		
	comp=Z,601nm,20.0s							
EFI	**East Falkland**	**160.12**	**141**	PFAKE			04 07 20.0	+15
EFI				LR		LR		
	comp=Z,2μm,22.0s							

NEIC ***29*** *04:04:12.0,38.60N×21.75E,h19km,MD3.3(ATH),After ATH.*
ATH ***29*** *04:04:12.2,38.61N×21.77E,h19km±4km,MD3.3/6*
THE ***29*** *04:04:12.1,38.54N×21.78E,h3km,ML3.1*
ISC 29 04:04:11.5±1.0,38.53N±0.05×21.79E±0.05,h9km±9km, n19,σ0°61/21,Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EVR	**Evrytania**	**0.38**	**2**	*e*PB	**Pb**	**04 04 19.5**	**-0.5**
RLS	**Riolos of Patr**	**0.54**	**208**	*e*PN	**Pn**	**04 04 24.6**	**-0.4**
AGG	**Agios Georgios**	**0.65**	**41**	*e*Pg	**Pg**	**04 04 24.4**	**0.0**
AGG				*e*Sg	**Sg**	**04 04 33.5**	**+0.5**
LKD	**Levkas**	**0.91**	**281**	*e*Pg	**Pg**	**04 04 29.1**	**-0.6**
	comp=Z,18nm,0.1s						
LKD				*e*Sg	**Sg**	**04 04 42.1**	**+0.2**
LKR	**Lokris**	**0.95**	**83**	*e*PN	**Pn**	**04 04 30.3**	**-0.6**
VLS	**Valsamata**	**1.01**	**250**	*e*PB	**Pb**	**04 04 30.8**	**+0.1**
MEV	**Metsovon**	**1.32**	**341**	*e*Pb	**Pb**	**04 04 36.0**	**-0.1**
JAN	**Janina**	**1.34**	**327**	*e*PN	**Pn**	**04 04 36.3**	**-0.1**
ITM	**Ithomi**	**1.36**	**175**	*e*PN	**Pn**	**04 04 40.0**	**+3.4**
NEO	**Neokhori**	**1.36**	**55**	*e*PN	**Pn**	**04 04 37.2**	**+0.5**
XOR	**Xorichti**	**1.37**	**52**	*e*Pb	**Pb**	**04 04 37.6**	**+0.7**
LIT	**Litokhoron**	**1.66**	**19**	*e*Pb	**Pb**	**04 04 41.0**	**-0.7**
	comp=Z,3.6nm,0.7s						
AOS	**Alonnisos**	**1.75**	**68**	*e*Pb	**Pb**	**04 04 42.6**	**-0.7**
KZN	**Kozani**	**1.77**	**359**	*e*PN	**Pn**	**04 04 43.3**	**+0.7**
KEK	**Kerkira**	**1.95**	**308**	*e*Pn	**Pn**	**04 04 50.0**	**+4.9**
PAIG	**Paliouri**	**2.02**	**46**	*e*Pn	**Pn**	**04 04 45.5**	**-0.7**
VLI	**Veliai**	**2.03**	**153**	*e*PB	**Pb**	**04 04 48.2**	**+0.1**
FNA	**Florina**	**2.27**	**352**	*e*Pn	**Pn**	**04 04 50.4**	**+0.7**
KNT	**Kendrikon**	**2.76**	**18**	*e*Pn	**Pn**	**04 04 56.9**	**+0.1**

IDC ***29*** *04:12:33.7±1.0,36.43N×51.63E,mb3.8/9,mb1 4.1/9, mb1mx3.9/20,Error ellipse: s-maj=27.3km s-min=8.4km az=125.0*
NEIC ***29*** *04:12:34.7±0.8,36.39N×51.64E,h10km,mb4.4/1,Error ellipse: s-maj=19.8km s-min=9.0km az=142.0*
THR ***29*** *04:12:35.6±1.0,36.41N×51.71E,ML3.9*
NNC ***29*** *04:12:50.0±15.0,37.26N×52.78E,h26km±100km,Error ellipse: s-maj=93.7km s-min=53.5km az=70.0*
ISC 29 04:12:33.0±0.4,36.44N±0.04×51.69E±0.06,h10km,n27, σ1°08/30,mb3.6/12,2C-5D,Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THR	**Tehran**	**0.70**	**221**	Pg	**Pg**	**04 12 46.7**	**-0.5**
	136nm,0.3s,baz=22,slow=14,SNR=641						
THR				Lg		04 12 55.1	
	429nm,0.3s,baz=197,slow=11,SNR=92						
THR	**Tehran**	**0.70**	**221**	Pg	**Pg**	**04 12 46.7**	**-0.5**
THR				Lg		04 12 55.1	
DAMV	**Damavand**	**0.84**	**164**	*e*PG	**Pg**	**04 12 49.8**	**-0.1**
DAMV				*e*SG	**Sg**	**04 13 01.1**	**-0.1**
THKV	**Tehran--Karaj**	**0.84**	**232**	*e*PG	**Pg**	**04

ZRNK	**Zerenda**	**20.55**	**31**	*e*P	**P**	04 57 40.2	-0.2
BRVK	**Borovoye**	**21.17**	**33**	*e*P	**P**	04 57 46.7	-0.2
BVA0	**Borovoye Array**	**21.20**	**33**	⇓P	**P**	04 57 46.4	-0.7
	comp=E,0.8nm,1.1s,mb3.0,baz=212,slow=8.0,SNR=13						
BVAR	**Borovoye Array**	**21.20**	**33**	P	**P**	04 57 46.6	-0.5
	comp=E,1.9nm,0.6s,mb3.6,baz=217,slow=7.2,SNR=14						
VOSK	**Vostochnaya**	**21.25**	**34**	P	**P**	04 57 46.6	-1.1
KURK	**Kurchatov**	**24.10**	**45**	⇓P	**P**	04 58 17.8	+2.1
	comp=E,4.2nm,1.1s,mb3.8,baz=241,slow=7.8,SNR=10						
KURK	**Kurchatov**	**24.10**	**45**	*e*P	**P**	04 58 17.8	+2.1
MK31	**Makanchi Array**	**25.10**	**56**	P	**P**	04 58 26.4	+1.0
	comp=E,1.4nm,0.8s,mb3.6,baz=252,slow=5.1,SNR=14						
MKAR	**Makanchi Array**	**25.10**	**56**	P	**P**	04 58 26.7	+1.3
	comp=E,2.2nm,0.9s,mb3.7,baz=253,slow=7.5,SNR=14						
ILAR	**Eielson Array**	**78.03**	**8**	P	**P**	05 04 59.4	+0.4
	comp=E,0.4nm,0.8s,mb3.4,baz=341,slow=5.2,SNR=5.8						
YKA	**Yellowknife Ar**	**80.69**	**353**	P	**P**	05 05 13.6	+0.2
	comp=E,0.1nm,0.6s,mb2.9,baz=10,slow=6.9,SNR=4.2						

*IDC **29** 04:54:02.4±3.1, 9.30S×113.25E, mb3.4/3, mb1 3.8/4, mb1mx3.6/15, ML3.6/1, Error ellipse: s-maj=178.0km s-min=24.6km az=47.0*
*DJA **29** 04:54:03.3±1.0, 9.63S×112.74E, h149km±19km, MD5.0/3, ML4.9/3, Error ellipse: s-maj=48.7km s-min=22.2km az=15.0*
ISC 29 04:54:04.6±1.2, 9.84S±0.09×112.83E±0.10, h33km, n10, σ0§89/14, mb3.4/3, 4C-5D, South of Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KELI	**Kelakatan**	**2.31**	**46**	⇓*e*Pn	**Pn**	**04 54 41.3**	**+0.2**
	552nm,0.2s						
KELI	**Kelakatan**	**2.31**	**46**	⇓*e*P	**P**	04 54 41.8	+0.8
KELI				⇑*e*Sn	**Sn**	04 55 09.5	+0.8
RATI	**Rata**	**2.89**	**68**	⇑*i*Pn	**Pn**	04 54 50.0	+0.5
	916nm,0.2s						
RATI	**Rata**	**2.89**	**68**	⇓*i*P	**P**	04 54 50.6	+1.2
RATI				⇓*i*Sn	**Sn**	04 55 23.4	-0.2
KEDI	**Kedomdong**	**3.51**	**68**	⇑*i*Pn	**Pn**	04 54 57.4	-0.9
	170nm,0.3s						
KEDI	**Kedomdong**	**3.51**	**68**	⇑*i*P	**P**	04 54 57.8	-0.4
KEDI				⇓*i*Sn	**Sn**	04 55 37.7	-1.6
FITZ	**Fitzroy Crossi**	**14.89**	**125**	Pn	**P**	04 57 33.9	-0.8
	0.2nm,0.3s,baz=293,slow=5.8,SNR=3.1						
FITZ				Sn	**S**	05 00 05.2	-14
	0.2nm,0.3s,baz=194,slow=19,SNR=4.1						
WRA	**Warramunga Arr**	**23.06**	**118**	P	**P**	04 59 09.1	+0.8
	0.3nm,0.3s,mb3.1,baz=298,slow=12,SNR=8.0						
ASAR	**Alice Springs**	**24.37**	**127**	P	**P**	04 59 21.9	+0.8
	0.5nm,0.7s,mb3.1,baz=301,slow=8.4,SNR=5.3						
MKAR	**Makanchi Array**	**62.62**	**337**	P	**P**	05 04 26.6	-1.4
	0.4nm,0.4s,mb3.9,baz=148,slow=6.9,SNR=8.1						

*IDC **29** 05:19:49.2±1.4, 31.08N×56.61E, mb3.8/8, mb1 4.0/10, mb1mx3.9/20, ML3.8/2, Error ellipse: s-maj=36.5km s-min=17.3km az=25.0*
*NEIC **29** 05:19:55.6±3.1, 31.28N×56.64E, h41km±27km, mb4.0/1, Error ellipse: s-maj=27.8km s-min=15.6km az=183.0*
ISC 29 05:19:49.4±0.8, 31.2N±0.1×56.54E±0.08, h10km, n20, σ0§96/20, mb3.9/10, Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THR	**Tehran**	**6.55**	**318**	Pn	**Pn**	**05 21 29.3**	**+1.1**
	0.8nm,0.3s,baz=107,slow=10.0,SNR=5.0						
THR				Lg		05 23 23.9	
	0.4nm,0.3s,baz=202,slow=18,SNR=4.0						
ASF	**Jabal al Asfar**	**16.75**	**279**	Pn	**P**	**05 23 44.2**	**-1.5**
	0.8nm,0.3s,baz=131,slow=14,SNR=4.5						
AAK	**Ala-Archa**	**18.34**	**46**	*e*P	**P**	**05 24 04.2**	**-1.3**
	18nm,1.4s						
BRTR	**Keskin Array B**	**20.48**	**301**	P	**P**	**05 24 30.4**	**+0.4**
	4.1nm,0.8s,baz=116,slow=12,SNR=21						
ZRNK	**Zerenda**	**23.60**	**19**	P	**P**	**05 25 00.7**	**-0.3**
KOLN	**Koldanda**	**23.78**	**91**	*e*P	**P**	**05 25 03.5**	**+0.5**
	3.9nm,0.6s,mb4.0						
BRVK	**Borovoye**	**24.07**	**21**	P	**P**	**05 25 03.5**	**-2.1**
BVAR	**Borovoye Array**	**24.07**	**21**	P	**P**	**05 25 06.2**	**+0.7**
	1.8nm,0.9s,mb3.5,baz=198,slow=9.4,SNR=7.1						
GKN	**Gorkha**	**24.61**	**90**	*e*P	**P**	**05 25 05.8**	**-5.3**
KKN	**Kakani**	**25.22**	**90**	*e*P	**P**	**05 25 16.2**	**-0.6**
	17nm,0.9s,mb4.6						
MKAR	**Makanchi Array**	**25.24**	**44**	P	**P**	**05 25 16.5**	**-0.3**
	3.7nm,0.8s,mb4.0,baz=228,slow=6.8,SNR=22						
PKI	**Pulchoki**	**25.38**	**91**	*e*P	**P**	**05 25 18.4**	**0.0**
	27nm,1.0s,mb4.7						
KURK	**Kurchatov**	**25.53**	**34**	*e*P	**P**	**05 25 21.6**	**+2.1**
GUN	**Gumba**	**25.70**	**90**	*e*P	**P**	**05 25 22.3**	**+0.9**
GERES	**GERESS Array B**	**36.70**	**311**	P	**P**	**05 26 58.9**	**+0.7**
	0.5nm,0.5s,mb3.6,baz=106,slow=9.7,SNR=5.4						
CMAR	**Chiang Mai Arr**	**40.28**	**98**	P	**P**	**05 27 28.3**	**-0.1**
	2.3nm,1.0s,mb3.9,baz=295,slow=8.8,SNR=8.3						
NOA	**NORSAR Array B**	**42.01**	**329**	P	**P**	**05 27 41.2**	**-0.9**
	0.6nm,0.8s,mb3.3,baz=116,slow=8.0,SNR=3.4						
YKA	**Yellowknife Ar**	**86.41**	**356**	P	**P**	**05 32 33.3**	**+0.6**
	0.4nm,0.7s,mb3.8,baz=358,slow=4.7,SNR=10						
YKA	**Yellowknife Ar**	**86.41**	**356**	P	**P**	**05 32 33.3**	**+0.6**
ASAR	**Alice Springs**	**91.92**	**116**	P	**P**	**05 32 59.6**	**0.0**
	1.2nm,1.1s,mb4.1,baz=299,slow=4.5,SNR=5.3						

*MAN **29** 05:39:13.5, 11.83N×125.26E, h29km, mb4.2, ML3.0, MS2.8*
ISC 29 05:39:14.8±0.9, 11.89N±0.05×125.23E±0.09, h29km, n5, σ1§21/10, 4C, Samar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BESP	**Borongan**	**0.35**	**145**	⇑*e*P	**Pb**	**05 39 22.4**	**-0.5**
BESP				*e*S	**Sb**	05 39 29.3	+0.9
PLP	**Palo**	**0.76**	**199**	*i*P	**Pb**	05 39 27.2	-2.2
PLP				*i*S	**Sb**	05 39 38.9	-0.6
CNP	**Catarman**	**0.83**	**318**	⇑*e*P	**Pb**	05 39 30.2	-0.3
CNP				*e*S	**Sb**	05 39 42.8	+1.4
MSLP	**Maasin**	**1.78**	**192**	⇑*e*P	**Pn**	05 39 44.5	+0.3
MSLP				*e*S	**Sn**	05 40 08.4	+2.3
PVCP	**Virac**	**2.00**	**328**	⇑*e*P	**Pn**	05 39 46.3	-1.0
PVCP				*e*S	**Sn**	05 40 16.5	+5.0

*IDC **29** 06:19:17.8±3.0, 63.61N×149.37W, h100km±21km, mb3.4/6, mb1 3.7/9, mb1mx3.4/22, MS3.5/1, Ms1 3.5/1, ms1mx2.6/17, Error ellipse: s-maj=32.0km s-min=17.8km az=56.0*
*NEIC **29** 06:19:18.5, 63.48N×149.07W, h99km, mb3.5/2, After AEIC.*
ISC 29 06:19:17.0±0.5, 63.54N±0.05×149.1W±0.1, h109km±6km, n24, σ1§02/27, mb3.6/8, Central Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
COLA	**College**	**1.45**	**22**	*e*P	**P**	**06 19 44.8**	**+1.1**
ILAR	**Eielson Array**	**1.58**	**37**	P	**P**	**06 19 45.9**	**+0.7**
	22nm,0.3s,baz=217,slow=12,SNR=480						
ILAR				S	**S**	06 20 05.8	-0.6
	36nm,0.3s,baz=317,slow=23,SNR=26						
ILAR	**Eielson Array**	**1.58**	**37**	P	**P**	06 19 45.9	+0.6
ILAR				S	**S**	06 20 05.8	-0.6
PMR	**Palmer**	**1.95**	**180**	*e*P	**P**	06 19 49.2	-0.7
TOA	**Tolsona**	**1.98**	**135**	*e*P	**P**	06 19 50.1	-0.1
PMS	**Palmer South**	**2.31**	**185**	*e*P	**P**	06 19 54.5	-0.2
IMA	**Indian Mountai**	**3.20**	**325**	*e*P	**P**	06 20 07.7	+1.0
SVW	**Sparrevohn**	**3.89**	**234**	*e*P	**P**	06 20 15.1	-0.9
ANM	**Nome**	**7.20**	**285**	*e*P	**P**	06 21 02.1	+0.9
INK	**Inuvik**	**7.96**	**46**	P	**P**	06 21 10.7	-0.8
	1.0nm,0.3s,baz=237,slow=18,SNR=30						
INK				S	**S**	06 22 40.3	-0.2
	0.3nm,0.3s,baz=335,slow=32,SNR=4.1						
DLBC	**Dease Lake**	**10.57**	**110**	P	**P**	06 21 42.7	-3.6
	0.1nm,0.3s,baz=305,slow=22,SNR=3.0						
DLBC	**Dease Lake**	**10.57**	**110**	P	**P**	06 21 42.7	-3.6
YKA	**Yellowknife Ar**	**15.59**	**78**	P	**P**	06 22 50.7	-0.7
	0.4nm,0.3s,baz=288,slow=11,SNR=39						
YKA				ScP		06 31 10.7	
	0.0nm,0.3s,baz=302,slow=1.9,SNR=4.6						
YKA	**Yellowknife Ar**	**15.59**	**78**	P	**P**	**06 22 50.7**	**-0.7**
YKA				ScP		06 31 10.7	
NEW	**Newport**	**23.22**	**116**	P	**P**	**06 24 16.6**	**+2.1**
	0.6nm,0.3s,mb3.4,baz=315,slow=10.0,SNR=3.9						
NEW				LR	LR	06 34 50.7	
	comp=Z,110nm,19.3s,baz=78,slow=40						
HLID	**Hailey**	**28.16**	**119**	P	**P**	**06 24 59.8**	**-0.9**
	0.6nm,0.8s,mb3.2						

NVAR	**Mina Array Bea**	**31.18**	**129**	P	**P**	**06 25 28.4**	**+1.0**
	0.6nm,0.8s,mb3.4,baz=310,slow=4.6,SNR=3.5						
NVAR				pP	pP	06 25 52.6	+0.7
	0.9nm,0.7s,baz=326,slow=7.1,SNR=3.9						
WMOK	**Wichita Mounta**	**42.05**	**109**	*e*P	**P**	**06 26 59.5**	**+0.5**
	0.8nm,0.6s,mb3.6						
TXAR	**Lajitas Array**	**44.76**	**118**	P	**P**	**06 27 22.4**	**+1.5**
	0.3nm,0.5s,mb3.3,baz=323,slow=5.9,SNR=6.3						
TXAR				pP	pP	06 27 46.6	+0.3
	0.3nm,0.7s,baz=336,slow=6.6,SNR=3.0						
ARCES	**ARCESS Array B**	**47.16**	**3**	P	**P**	**06 27 39.2**	**-0.1**
	1.5nm,0.7s,mb3.8,baz=7.1,slow=7.3,SNR=5.3						
ARCES	**ARCESS Array B**	**47.16**	**3**	P	**P**	06 27 39.2	-0.1
FINES	**FINESS Array B**	**55.28**	**3**	P	**P**	06 28 39.7	-0.9
	1.5nm,0.6s,mb4.2,baz=352,slow=8.3,SNR=12						
FINES	**FINESS Array B**	**55.28**	**3**	P	**P**	**06 28 39.7**	**-0.9**
MKAR	**Makanchi Array**	**62.77**	**323**	P	**P**	**06 29 30.4**	**-2.0**
	0.4nm,0.4s,mb3.7,baz=36,slow=6.7,SNR=6.9						

*MEX **29** 06:23:27.2±1.1, 16.50N×94.46W, h104km±15km, MD4.0*
*NEIC **29** 06:23:28.5, 16.73N×94.40W, h106km, MD4.0(MEX), After MEX.*
ISC 29 06:23:26.1±1.0, 16.51N±0.08×94.46W±0.04, h102km±12km, n11, σ0§95/18, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMIG	**Matias Romero**	**0.71**	**325**	*i*P	**P**	**06 23 44.1**	**+0.3**
CMIG				*i*S	**S**	06 23 56.9	-0.3
TUIG	**Tuzandepetl**	**1.52**	**1**	*i*P	**S**	06 23 52.3	-0.7
TUIG				*i*S	**S**	06 24 12.1	-1.0
TUIG	**Tuzandepetl**	**1.52**	**1**	*i*P	**S**	06 23 52.3	-0.7
TUIG				*i*S	**S**	06 24 08.8	-4.3
HUIG	**Huatulco**	**1.75**	**245**	*i*P	**P**	06 23 54.4	-1.5
HUIG				*i*S	**S**	06 24 17.7	-0.4
SCX	**San Cristobal**	**1.77**	**82**	*i*P	**P**	06 23 56.0	-0.1
SCX				*i*S	**S**	06 24 20.5	+2.0
OXX	**Oaxaca**	**2.24**	**285**	*i*P	**P**	06 24 03.0	+0.6
CCIG	**Comitan**	**2.24**	**95**	*i*P	**P**	06 24 03.0	+0.5
CCIG				*e*S	**S**	06 24 28.5	-1.1
VHO	**Vista Hermosa**	**2.25**	**285**	*e*P	**P**	06 24 04.3	+1.7
VHO				*e*S	**S**	06 24 30.7	+0.9
POHV	**Veracruz**	**3.70**	**314**	*i*P	**P**	06 24 22.0	-0.4
IISM	**Ciudad Serdan**	**3.71**	**312**	*i*P	**P**	06 24 22.0	-0.6
PPM	**Popocatepetl**	**4.71**	**303**	*e*P	**P**	06 24 44.0	+7.8

*NEIC **29** 06:58:25.8, 35.35N×27.64E, h16km, MD3.5(ATH), After ATH.*
*ATH **29** 06:58:25.8, 35.35N×27.64E, h16km±2km, MD3.5/3*
ISC 29 06:58:28.6±1.6, 35.6N±0.1×27.48E±0.09, h17km±13km, n12, σ0§74/13, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KARP	**Karpathos**	**0.26**	**268**	*e*PB	**Pb**	**06 58 34.6**	**0.0**
ARG	**Arkhangelos**	**0.84**	**38**	*e*PN	**Pn**	**06 58 44.0**	**-1.6**
BDRM	**Kayabasi**	**1.51**	**359**	*i*P	**Pn**	**06 58 55.5**	**+0.4**
NPS	**Neapolis**	**1.56**	**260**	*e*PN	**Pn**	**06 58 56.2**	**+0.4**
XRY	**Khrisi**	**1.61**	**246**	*e*PN	**Pn**	**06 58 56.0**	**-0.6**
SANT	**Santorini**	**1.83**	**297**	*e*P	**Pn**	**06 58 59.2**	**-0.6**
SANT				*e*Sn	**Sn**	**06 59 22.2**	**-0.4**
AYDN	**Tasoluk**	**2.12**	**9**	*i*P	**Pn**	**06 59 05.2**	**+1.2**
APE	**Apeiranthos**	**2.18**	**314**	*e*PB	**Pb**	**06 59 07.0**	**-0.3**
DNZL	**Cakiroluk**	**2.47**	**30**	*i*P	**Pn**	**06 59 09.4**	**+0.5**
VAM	**Vamos**	**2.68**	**268**	*e*PN	**Pn**	**06 59 13.0**	**+1.1**
KDAG	**Bornova**	**2.85**	**357**	*i*P	**Pn**	**06 59 20.0**	**+5.8**
MANT	**Manisa**	**3.05**	**16**	*i*P	**Pn**	**06 59 17.0**	**-0.2**

*JMA **29** 06:59:16.6±0.2, 24.91N×122.01E, h30km, M3.1*
*TAP **29** 06:59:18.0, 24.37N×121.92E, h11km, ML3.3*
TAP Felt III J at Nanau.
ISC 29 06:59:16.9±0.5, 24.33N±0.02×122.04E±0.02, h3km±4km, n38, σ0§81/58, 1C-3D, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ENA	**Nanau**	**0.29**	**289**	*i*P	**Pg**	**06 59 22.6**	**0.0**
ENA				S	**Sg**	06 59 26.4	-0.1
TWC	**Suao**	**0.32**	**328**	⇓*i*P	**Pg**	06 59 23.7	+0.3
TWC				S	**Sg**	06 59 27.9	+0.1
TWD	**Chiawan**	**0.47**	**238**	*e*P	**Pg**	06 59 26.1	-0.3
ILA	**Ilan**	**0.50**	**329**	*e*P	**Pg**	06 59 27.4	+0.4
ILA				S	**Sg**	06 59 34.2	+0.5
TWE	**Neicheng**	**0.51**	**319**	*e*P	**Pg**	06 59 27.1	0.0
TWE				S	**Sg**	06 59 33.9	-0.2
ENTT	**Nioudou**	**0.53**	**306**	⇓P	**Pg**	06 59 27.3	-0.1
ENTT				S	**Sg**	06 59 33.9	-0.6
NNS	**Nan Shan**	**0.61**	**280**	*i*P	**Pg**	06 59 28.7	-0.5
NNS				S	**Sg**	06 59 36.3	-1.1
TWB1	**Santiao Chiao**	**0.67**	**356**	*e*P	**Pg**	06 59 31.2	+0.8
TWB1				S	**Sg**	06 59 39.9	+0.5
NSK	**Sanguang**	**0.71**	**299**	⇓*i*P	**Pg**	06 59 30.7	-0.3
NSK				S	**Sg**	06 59 39.3	-1.2
WHF	**Hehuan Shan**	**0.73**	**255**	P	**Pg**	06 59 30.7	-0.8
WHF				S	**Sg**	06 59 40.4	-0.8
ESL	**Shilin**	**0.76**	**227**	*e*P	**Pg**	06 59 32.5	+0.5
NWF	**Wu-fen Shan**	**0.77**	**342**	⇑*i*P	**Pg**	06 59 32.9	+0.6
NWF				S	**Sg**	06 59 42.4	-0.2
TWT	**Tachien**	**0.79**	**264**	P	**Pg**	06 59 32.3	-0.4
TWT				S	**Sg**	06 59 42.2	-1.0
YOJ	**Yonaguni jima**	**0.90**	**82**	P	**Pb**	06 59 34.8	+0.1
YOJ				S	**Sg**	06 59 48.0	+1.2
TWS1	**Kuangyinshan**	**0.95**	**324**	*e*P	**Pb**	06 59 36.3	+0.7
TWS1				S	**Sb**	06 59 48.8	+0.4
NSTT	**Nanjuang**	**0.99**	**288**	*e*P	**Pb**	06 59 36.1	-0.2
NSTT				S	**Sb**	06 59 47.6	-2.0
TWY	**Chenhua**	**1.02**	**337**	*e*P	**Pb**	06 59 37.2	+0.4
TWY				S	**Sb**	06 59 50.2	-0.2
EHY	**Hungye**	**1.05**	**219**	*e*P	**Pb**	06 59 37.3	-0.1
SMLT	**Sun Moon Lake**	**1.13**	**247**	*e*P	**Pb**	06 59 38.3	-0.4
TWQ1	**Liyutan**	**1.15**	**271**	*e*P	**Pb**	06 59 40.5	+1.4
TYC	**Yuchr**	**1.16**	**249**	*e*P	**Pb**	06 59 38.9	-0.3
NSY	**Sanyi**	**1.17**	**274**	*e*P	**Pb**	06 59 41.0	+1.7
TWF1	**Yuli**	**1.19**	**215**	*e*P	**Pb**	06 59 38.6	-1.1
TCU	**Taichung**	**1.26**	**262**	*e*P	**Pb**	06 59 42.4	+1.5
TCU				S	**Sb**	06 59 58.4	+1.1
PCYT	**Pengchaiyu**	**1.29**	**1**	*e*P	**Pb**	06 59 41.1	-0.3
ALS	**Alishan**	**1.39**	**234**	*e*P	**Pb**	06 59 43.6	+0.3
CHN5	**Tsauling**	**1.44**	**240**	*e*P	**Pn**	06 59 44.5	+0.6
IRIF	**Iriomote-Funau**	**1.54**	**90**	P	**Pn**	06 59 44.3	-1.1
IRIF				S	**Sb**	07 00 04.9	-0.7
HATJ	**Hateruma jima**	**1.64**	**99**	P	**Pn**	06 59 47.4	+0.6
HATJ				*e*S	**Sb**	07 00 09.1	+0.7
CHN4	**Tsaushan**	**1.65**	**234**	*e*P	**Pn**	06 59 47.6	+0.8
STYT	**Tauyuan**	**1.65**	**225**	*e*P	**Pn**	06 59 47.0	0.0
WTP	**Ta-pu**	**1.69**	**231**	*e*P	**Pn**	06 59 48.1	+0.5
TWK	**Hsinying**	**1.77**	**234**	*e*P	**Pn**	06 59 49.3	+0.6
CHN1	**Nanshi**	**1.79**	**231**	*e*P	**Pn**	06 59 49.7	+0.7
JKRS	**Kuro-shima**	**1.80**	**93**	P	**Pn**	06 59 48.7	-0.4
JKRS				S	**Sn**	07 00 11.6	-1.1
SGST	**Jiashian**	**1.82**	**227**	*e*P	**Pn**	06 59 50.8	+1.4
JIJ	**Ishigaki jima**	**1.92**	**89**	P	**Pn**	06 59 49.9	-0.9
JIJ				S	**Sn**	07 00 13.5	-2.2
JTJ	**Tarama**	**2.45**	**82**	*e*S	**Sn**	07 00 25.3	-3.8

*HEL **29** 07:31:02.9±0.2, 59.60N×27.51E, ML1.6, ML2.2(NAO), Explosion*
*NAO **29** 07:31:02.4±1.8, 59.58N×27.40E, ML2.2*
*BER **29** 07:31:03.2±3.6, 59.59N×27.55E, h0km±16km, ML2.2(NAO)*
*IDC **29** 07:31:05.4±2.0, 59.71N×27.42E, mb1 3.2/3, mb1mx3.0/20, ML3.0/3, Error ellipse: s-maj=16.1km s-min=9.9km az=125.0*
ISC 29 07:31:00.5±0.7, 59.61N±0.04×27.4E±0.1, n14, σ1§74/25, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VJF	**Virojoki**	**0.94**	**6**	*e*P	**Pg**	**07 31 19.6**	**+0.5**
VJF				*e*S	**Sg**	07 31 32.6	+0.9
VSU	**Vasula**	**1.20**	**196**	*e*P	**Pb**	07 31 24.4	+0.7
VSU				*e*SN	**Sn**	07 31 45.3	+3.6
VSU	**Vasula**	**1.20**	**196**	Pg	**Pg**	07 31 24.3	-0.1
VSU				Lg		07 31 40.7	
PVF	**Pernaja**	**1.20**	**322**	*e*P	**Pb**	**07 31 25.5**	**+1.7**
PVF				*e*S	**Sb**	07 31 42.0	+2.2

MEF	**Metsahovi**	**1.61**	**293**	*e*P	**Pn**	**07 31 33.1**	**+2.8**
MEF				*e*S	**Sb**	07 31 54.0	+2.2
MEF				MSG		07 31 57.2	
	comp=Z,4.2nm,0.1s						
FIA0	**FINESS Array S**	**1.94**	**341**	*e*P	**Pn**	**07 31 37.0**	**+1.9**
FIA0				*e*S	**Sn**	07 32 01.9	+1.2
FIA0				MSG		07 32 06.6	
	comp=Z,3.4nm,0.1s						
FIA0	**FINESS Array S**	**1.94**	**341**	Pn	**Pn**	**07 31 37.0**	**+1.9**
	baz=162,slow=16						
FIA0				Lg		07 32 05.2	
	baz=165,slow=28						
FINES	**FINESS Array B**	**1.94**	**341**	Pg	**Pg**	**07 31 37.2**	**-2.1**
	comp=Z,1.2nm,0.3s,baz=158,slow=16,SNR=63						
FINES				Lg		07 32 04.7	
	comp=Z,1.4nm,0.3s,baz=162,slow=26,SNR=8.8						
JOF	**Joensuu**	**3.83**	**28**	*e*P	**Pn**	**07 32 02.7**	**+0.7**
JOF				*e*S	**Sn**	07 32 47.2	-1.1
HFS	**Hagfors**	**6.90**	**280**	Pn	**Pn**	**07 32 44.9**	**-0.5**
	baz=108,slow=16						
HFS				Sn	**Sn**	**07 34 02.7**	**-3.0**
	baz=89,slow=28						
HFS				Lg		07 34 37.8	
	baz=95,slow=28						
HFS	**Hagfors**	**6.90**	**280**	Pn	**Pn**	**07 32 45.7**	**+0.3**
	comp=Z,0.0nm,0.3s,baz=104,slow=12,SNR=5.8						
HFS				Sn	**Sn**	**07 34 01.9**	**-3.8**
	comp=Z,0.0nm,0.3s,baz=82,slow=22,SNR=3.7						
HFS				Lg		07 34 39.3	
	comp=Z,0.1nm,0.3s,baz=93,slow=27,SNR=7.5						
NOA	**NORSAR Array B**	**8.14**	**287**	Pn	**P**	**07 33 01.3**	**-1.5**
	comp=Z,0.2nm,0.3s,baz=151,slow=19,SNR=2.5						
NOA				Sn	**Sn**	**07 34 30.3**	**-6.3**
	comp=Z,0.1nm,0.3s,baz=162,slow=8.6,SNR=2.2						
NOA				Lg		07 35 21.3	
	comp=Z,0.3nm,0.3s,baz=29,slow=3.5,SNR=3.9						
ARA0	**ARCESS Array S**	**10.00**	**356**	Pn	**P**	**07 33 25.5**	**-2.7**
	baz=171,slow=16						
ARA0				Sn	**Sn**	**07 35 14.1**	**-8.3**
	baz=173,slow=28						
ARA0				Lg		07 36 11.3	
	baz=180,slow=28						
ARCES	**ARCESS Array B**	**10.00**	**356**	Pn	**P**	**07 33 25.4**	**-2.9**
	comp=Z,0.2nm,0.3s,baz=167,slow=14,SNR=18						
ARCES				Sn	**Sn**	**07 35 12.9**	**-10**
	comp=Z,0.2nm,0.3s,baz=173,slow=23,SNR=3.5						

*IDC **29** 08:05:54.1±8.6, 17.25S×178.85W, h486km±100km, mb3.1/7, mb1 3.4/7, mb1mx3.3/14, Error ellipse: s-maj=84.4km s-min=32.9km az=155.0*
ISC 29 08:05:54.5±1.4, 17.2S±0.6×179.0W±0.4, h500km, n10, σ0§15/7, mb3.5/7, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**38.51**	**240**	P	**P**	**08 12 34.1**	**-0.2**
	1.3nm,0.5s,mb3.6,baz=117,slow=15,SNR=5.6						
WRA	**Warramunga Arr**	**44.24**	**259**	P	**P**	**08 13 20.5**	**+0.1**
	0.8nm,0.6s,mb3.3,baz=91,slow=6.8,SNR=8.9						
ASAR	**Alice Springs**	**44.47**	**254**	P	**P**	**08 13 22.3**	**+0.1**
	5.4nm,0.5s,mb4.3,baz=90,slow=8.1,SNR=99						
ILAR	**Eielson Array**	**85.31**	**13**	P	**P**	**08 17 38.4**	**-0.2**
	0.3nm,0.5s,mb3.2,baz=224,slow=5.0,SNR=8.6						
TXAR	**Lajitas Array**	**86.07**	**58**	P	**P**	**08 17 43.2**	**+0.2**
	0.8nm,0.8s,mb3.4,baz=212,slow=5.8,SNR=9.2						
PDAR	**Pinedale Array**	**87.20**	**44**	P	**P**	**08 17 48.0**	**-0.1**
	0.4nm,0.5s,mb3.4,baz=180,slow=3.0,SNR=4.1						
YKA	**Yellowknife Ar**	**93.91**	**25**	P	**P**	**08 18 18.6**	**0.0**
	0.2nm,1.0s,mb3.1,baz=227,slow=3.9,SNR=4.0						
ARCES	**ARCESS Array B**	**125.52**	**350**	PKP	PKPdf	08 23 58.4	+0.7
	2.4nm,1.1s,SNR=3.6						
BRTR	**Keskin Array B**	**143.90**	**315**	PKP	PKPdf	08 24 33.4	+1.1
	0.8nm,0.5s,baz=146,slow=4.5,SNR=4.7						
GERES	**GERESS Array B**	**146.78**	**345**	PKPbc	PKPbc	08 24 41.0	+2.0
	1.2nm,0.6s,baz=45,

0.8nm,0.7s,baz=108,slow=9.4,SNR=4.0
YKA Yellowknife Ar 61.85 335 P P 09 17 58.3 -2.0
0.3nm,0.6s,mb3.5,baz=108,slow=7.3,SNR=9.2
YKA pP pP 09 18 26.5 -4.8
0.1nm,0.5s,baz=106,slow=7.3,SNR=2.9
ILAR Eielson Array 76.25 334 P P **09 19 27.6 -0.7**
0.2nm,0.6s,mb3.0,baz=91,slow=4.5,SNR=7.9

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*NAO **29** 09:14:28.9±5.3,63.17N×33.75E,ML2.2*
HEL 29 09:14:24.1±0.9,62.95N×34.59E,ML2.1,ML2.2(NAO), **Explosion, Baltic States - Belarus - Northwestern Russia**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JOF	**Joensuu**	**1.50**	**270**	*e*P		Pn	09 14 52.5	+0.2
JOF				*e*S		Sb	09 15 10.0	-2.0
KJN	**Kajaani**	**3.28**	**293**	*e*PB		Pb	09 15 19.7	-3.4
KJN				*e*S		Sn	09 15 57.8	-0.4
KJN				MSG			09 16 11.7	
	comp=Z,3.8nm,0.2s							
MSF	**Maaselka**	**3.82**	**324**	*e*P		Pn	09 15 24.9	-0.6
MSF				*e*S		Sn	09 16 06.5	-5.4
VJF	**Virojoki**	**4.12**	**237**	*e*P		Pn	09 15 27.9	-1.9
VJF				*e*S		Sn	09 16 14.1	-5.4
FIA0	**FINESS Array S**	**4.26**	**253**	*e*P		Pn	09 15 30.1	-1.7
FIA0				*e*PG		Pg	09 15 40.9	-8.3
FIA0				*e*SG		Sg	09 16 35.6	-10
FIA0	**FINESS Array S**	**4.26**	**253**	Pn		Pn	09 15 30.1	-1.7
	baz=86,slow=14							
FIA0				Pg		Pg	09 15 40.9	-8.3
	baz=65,slow=14							
FIA0				Lg			09 16 35.6	
	baz=76,slow=28							
KEF	**Keuruu**	**4.56**	**264**	*e*SG		Sg	09 16 42.7	-13
KEF				MSG			09 16 46.3	
	comp=Z,2.4nm,0.3s							
SGF	**Sodankyl**	**5.64**	**327**	*e*SG		Sg	09 17 19.7	-12
ARA0	**ARCESS Array S**	**7.55**	**335**	Pn		Pn	09 16 13.5	-4.6
	baz=140,slow=11							
ARA0				Sn		Sn	09 17 34.6	-11
	baz=153,slow=28							
ARA0				Lg			09 18 15.7	
	baz=146,slow=37							
HFS	**Hagfors**	**10.35**	**264**	Pn		P	09 16 52.5	-4.2
	baz=58,slow=14							
HFS				Sn		S	09 18 39.8	-15
	baz=66,slow=22							
HFS				Lg			09 19 41.9	
	baz=68,slow=28							

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*NEIC **29** 09:18:17.0±0.7,52.58S×18.91E,h10km,mb4.0/2,Error ellipse: s-maj=27.6km s-min=12.0km az=93.0*
*IDC **29** 09:18:17.5±0.9,52.73S×18.06E,mb4.0/5,mb1 4.1/5, mb1mx3.9/15,MS3.7/3,Ms1 3.7/3,ms1mx3.4/21,Error ellipse: s-maj=44.1km s-min=22.6km az=70.0*
ISC 29 09:18:15.9±0.9,52.5S±0.1×18.8E±0.3,h10km,n23, σ1§30/16,mb4.0/5,MS3.6/3,1C-2D,Southwest of Africa

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
SUR	**Sutherland**	**20.15**	**5**	P		**P**	**09 22 58.4**	**+5.5**
	7.3nm,0.7s,baz=181,slow=14,SNR=5.7							
SUR				LR		LR	09 28 31.9	
	comp=Z,192nm,21.7s,MS3.4,baz=116,slow=30							
SUR	**Sutherland**	**20.15**	**5**	P		**P**	**09 22 52.9**	**0.0**
SUR				*e*			09 22 59.4	
SUR				LR		LR	09 28 31.9	
SNAA	**Sanae**	**21.50**	**199**	*e*P		**P**	**09 23 03.2**	**-3.4**
VNA2	**Neumayer--Watz**	**21.93**	**203**	*e*		**P**	**09 23 13.3**	**+2.3**
VNA2	**Neumayer--Watz**	**21.93**	**203**	⇓*i*P		**P**	**09 23 10.2**	**-0.8**
VNA2				*e*			09 23 13.3	
VNA1	**Neumayer--Stat**	**21.96**	**204**	*e*		**P**	**09 23 14.1**	**+2.9**
VNA1	**Neumayer--Stat**	**21.96**	**204**	⇓*i*P		**P**	**09 23 11.3**	**+0.1**
VNA1				*e*			09 23 14.1	
VNA3	**Neumayer Olymp**	**22.70**	**204**	*e*		**P**	**09 23 19.5**	**+1.2**
VNA3	**Neumayer Olymp**	**22.70**	**204**	⇑*i*P		**P**	**09 23 16.7**	**-1.6**
VNA3				*e*			09 23 19.5	
MAW	**Mawson**	**25.94**	**142**	P		**P**	**09 23 51.4**	**+1.9**
	3.3nm,0.9s,mb3.9,baz=315,slow=16,SNR=4.0							
MAW	**Mawson**	**25.94**	**142**	P		**P**	**09 23 46.9**	**-2.6**
	2.7nm,0.8s,mb3.8							
TSUM	**Tsumeb**	**33.23**	**358**	LR		LR	09 35 48.4	
	comp=Z,118nm,22.0s,MS3.6,baz=181,slow=31							
QSPA	**South Pole Qui**	**37.74**	**180**	*e*P		**P**	**09 25 32.1**	**-0.9**
	2.5nm,0.7s,mb4.0							
VNDA	**Vanda**	**48.24**	**170**	P		**P**	**09 26 58.7**	**+0.7**
	1.3nm,1.2s,mb3.8,baz=217,slow=7.1,SNR=3.7							
VNDA				LR		LR	09 45 10.9	
	comp=Z,81nm,19.5s,MS3.7,baz=192,slow=34							
VNDA	**Vanda**	**48.24**	**170**	*e*P		**P**	**09 26 58.7**	**+0.7**
VNDA				LR		LR	09 45 10.9	
DBIC	**Dimbokro**	**62.29**	**333**	P		**P**	**09 28 40.5**	**-0.1**
	3.8nm,0.8s,mb4.5,baz=187,slow=8.0,SNR=4.0							
LPAZ	**La Paz**	**75.42**	**262**	P		**P**	**09 30 01.7**	**+0.1**
	1.0nm,0.9s,mb3.8,baz=190,slow=6.1,SNR=2.5							
PDAR	**Pinedale Array**	**144.58**	**275**	PKP		PKPdf	09 37 51.6	-3.3
	1.5nm,0.8s,baz=121,slow=4.1,SNR=11							
HWUT	**Hardware Ranch**	**145.14**	**272**	*e*PKPdf		PKPdf	09 37 53.1	-2.8
NVAR	**Mina Array Bea**	**147.32**	**262**	*e*PKPbc		PKPdf	09 38 01.1	+1.4
	1.7nm,0.8s,baz=125,slow=5.2,SNR=7.9							
MSO	**Missoula**	**149.35**	**279**	*e*PKPdf		PKPdf	09 38 01.4	-1.2
MSO				*e*PKPbc		PKPdf	09 38 06.8	+4.1
YKA	**Yellowknife Ar**	**153.63**	**311**	PKPbc		PKPdf	09 38 14.5	+6.1
	0.7nm,1.0s,baz=93,slow=2.0,SNR=4.3							
YKA				PKPab		PKPab	09 38 28.2	-0.1
	0.3nm,0.7s,baz=92,slow=5.5,SNR=4.8							
ILAR	**Eielson Array**	**165.66**	**335**	PKPab		PKPab	09 39 21.8	+1.6
	1.4nm,0.9s,baz=9.7,slow=3.4,SNR=7.2							

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*DUSS **29** 09:23:34.1±0.3,35.86N×53.58E,h15km,MS5.6*
*BJI **29** 09:23:45.9,36.52N×50.88E,h28km,mB5.2,mb5.0,Ms5.0, Msz4.8*
*NEIC **29** 09:23:47.8±0.3,36.40N×51.37E,h10km,mb4.7/32, MS4.5/9,Error ellipse: s-maj=8.7km s-min=4.7km az=179.0*
*IDC **29** 09:23:47.3±0.9,36.56N×51.36E,mb4.4/22,mb1 4.5/24, mb1mx4.5/29,ML3.7/3,MS4.5/20,Ms1 4.5/20, ms1mx4.3/33,Error ellipse: s-maj=20.9km s-min=12.1km az=177.0,EIL-Putative Timing Problem*
*ZUR_RM **29** 09:23:47,36.40N×51.37E,h12km,Mw5.2/14,Moment Tensor Solution. s14 Moment tensor: Scale 10¹⁶Nm; Mrr=0.18; Mθθ0.18; Mφφ0.00; Mrθ=5.08; Mθφ 1.00; Mφr4.41; Best double couple: M₀6.75×10¹⁶ NP1:φs311°, δ89°,λ88°. NP2:φs185°,δ3°,λ145°. Principal axes: T 6.212, Plg46°, Azm218°; N 1.066, Plg2°, Azm311°; P -7.278, Plg43°, Azm43°:*
*THR **29** 09:23:51.3±1.0,36.42N×51.35E,h0km,8km,ML4.7*
*MOS **29** 09:23:55.6±1.3,37.32N×51.57E,h33km,mb4.6/17, MS4.4/16,Error ellipse: s-maj=9.3km s-min=5.6km az=117.0*
*NNC **29** 09:23:55.8±4.9,37.10N×52.17E,Error ellipse: s-maj=86.8km s-min=36.5km az=84.0*
ISC 29 09:23:47.2±0.7,36.55N±0.03×51.39E±0.02,h12km±4km, h15km±1.3km:pP-P,n254,σ1§20/287,mb4.8/82,MS4.6/49, 9C-12D,Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
THKV	**Tehran--Karaj**	**0.75**	**213**	*e*PG		**Pg**	**09 24 01.7**	**-0.6**
THKV				*e*SG		**Sg**	**09 24 11.2**	**-1.3**
THKV				AMP			09 24 12.8	
	comp=N,40μm,0.6s							
DAMV	**Damavand**	**1.03**	**152**	*e*PG		**Pg**	**09 24 07.7**	**-0.1**
DAMV				*e*SG		**Sg**	**09 24 20.5**	**-1.1**
DAMV				AMP			09 24 22.5	
	comp=N,26μm,0.5s							
SNGE	**Sanandaj**	**3.59**	**247**	*e*PN		**Pn**	**09 24 45.5**	**+1.6**
SNGE				SN		**Sn**	**09 25 25.3**	**-1.3**
VAN	**Vannovskaya**	**5.54**	**73**	*e*P		**Pn**	**09 25 12.5**	**+1.0**
VAN				*e*S		**Sn**	**09 26 12.5**	**-3.4**
MAKU	**Maku**	**6.00**	**300**	*e*PN		**Pn**	**09 25 20.5**	**+2.6**
MAK	**Makhachkala**	**7.07**	**336**	*c i*P		**Pn**	**09 25 32.0**	**-1.1**
MAK				*i* S		**Sn**	**09 26 48.0**	**-6.2**
MAK				pmax		pmax		
	comp=Z,600nm,2.0s							
MAK				pmax		pmax		
	comp=Z,360nm,1.0s							
MAK				smax				
	comp=N,2μm,4.0s							
MAK				smax				
	comp=E,2μm,3.0s							
MAK				smax				
	comp=N,660nm,1.0s							
MAK				smax				
	comp=E,690nm,1.0s							
MAK				MLR		MLR		
	comp=Z,7μm,13.0s							
MAK				MLR		MLR		
	comp=N,6μm,12.0s							
MAK				MLR		MLR		
	comp=E,3μm,12.0s							
TI2	**Plekhanov**	**7.31**	**317**	*e*P		**Pn**	**09 25 41.2**	**+4.8**
ZEI	**Tsey**	**8.48**	**319**	*e*P		**P**	**09 25 52.0**	**-0.8**
ZEI				*e*S		**Sn**	**09 27 26.0**	**-3.4**
ZEI				pmax		pmax		
	comp=Z,30nm,1.0s							
ZEI				MLR		MLR		
	comp=Z,2μm,17.0s							
ERZM	**Erzurum**	**8.57**	**296**	*i* P		**P**	**09 26 06.8**	**+13**
KIV	**Kislovodsk**	**9.95**	**321**	*e*P		**P**	**09 26 12.5**	**-0.5**
KIV				pmax		pmax		
	comp=Z,46nm,1.8s							
KIV	**Kislovodsk**	**9.95**	**321**	*e*P		**P**	**09 26 13.4**	**+0.4**
ELZG	**Elazig**	**10.04**	**285**	*i* P		**P**	**09 26 25.8**	**+11**
KELT	**Kelkit**	**10.19**	**294**	*i* P		**P**	**09 26 23.5**	**+7.3**
ZHSF	**Zahedan**	**10.47**	**129**	*e*PN		**P**	**09 26 21.1**	**+0.9**
GOF	**Gofitskoye**	**10.60**	**326**	⇑*i*P		**P**	**09 26 20.0**	**-1.9**
GOF				*i* S		**S**	**09 28 18.5**	**-3.0**
GOF				pmax		pmax		
	comp=Z,94nm,1.0s							
GOF				smax				
	comp=E,168nm,1.3s							
GZT	**Gaziantep**	**11.09**	**278**	*i* P		**P**	**09 26 38.6**	**+10**
SOC	**Sochi**	**11.37**	**312**	*e*P		**P**	**09 26 33.8**	**+1.4**
SOC				*e*S		**S**	**09 28 35.7**	**-4.7**
SOC				pmax		pmax		
	comp=Z,4.0nm,0.3s							
SOC				pmax		pmax		
	comp=N,10.0nm,0.7s							
SOC				pmax		pmax		
	comp=E,10.0nm,0.4s							
SOC				MLR		MLR		
	comp=Z,800nm,11.0s							
SOC				MLR		MLR		
	comp=N,920nm,12.0s							
SOC				MLR		MLR		
	comp=E,2μm,11.0s							
HILS	**Ha'il**	**12.23**	**224**	P		**P**	**09 26 39.7**	**-4.4**
ARSS	**Ar'Rass**	**12.71**	**216**	P		**P**	**09 26 45.8**	**-4.7**
ASF	**Jabal al Asfar**	**12.74**	**254**	Pn		**P**	**09 26 55.8**	**+4.9**
	comp=E,0.2nm,0.3s,baz=288,slow=8.6,SNR=4.6							
ASF				Lg			09 30 25.1	
	comp=E,0.2nm,0.3s,baz=300,slow=20,SNR=1.7							
ASF				LR		LR	09 32 31.1	
	comp=E,6μm,19.7s,baz=110,slow=41							
DUSS	**Damascus Unive**	**12.74**	**261**	*i* P		**P**	**09 26 57.7**	**+6.8**
DUSS				*i* P			09 26 59.1	
DUSS				*i* P			09 26 59.8	
DUSS				*e*			09 27 07.5	
	baz=76,slow=4.3							
DUSS				*e*S		S	09 29 38.5	+25
DUSS				AMS		AMS	09 32 10.0	
	comp=N,32μm,20.6s							
DUSS				AMS		AMS	09 32 46.1	
	comp=E,53μm,16.7s							
DUSS				AMS		AMS	09 32 50.0	
	comp=Z,62μm,17.1s							
AVNT	**Avonos**	**13.29**	**285**	*i* P		**P**	**09 27 05.4**	**+7.2**
ANN	**Anapa**	**13.41**	**312**	*e*P		**P**	**09 27 02.0**	**+2.2**
ANN				*e*S		**S**	**09 29 35.0**	**+5.3**
MZLS	**Mizel**	**13.56**	**205**	P		**P**	**09 26 57.1**	**-4.8**
CTKT	**Corum**	**13.61**	**292**	*i* P		**P**	**09 27 07.7**	**+5.3**
AB31	**Akbulak array**	**14.15**	**23**	Pn		**P**	**09 27 04.6**	**-4.9**
	comp=Z,11nm,0.6s,baz=209,slow=13,SNR=164							
AB31				⇓Sn		**S**	**09 29 39.3**	**-8.0**
	comp=Z,19nm,0.7s,baz=26,slow=36,SNR=8.0							
BRTR	**Keskin Array B**	**14.33**	**288**	Pn		**P**	**09 27 14.3**	**+2.5**
	comp=Z,0.1nm,0.3s,baz=112,slow=16,SNR=4.4							
BRTR				Sn		**S**	**09 30 06.2**	**+15**
	comp=Z,0.1nm,0.3s,baz=137,slow=27,SNR=2.4							
BRTR				LR		LR	09 33 28.4	
	comp=Z,3μm,19.1s,baz=190,slow=41							
BRTR	**Keskin Array B**	**14.33**	**288**	Pn		**P**	**09 27 14.3**	**+2.5**
BRTR				Sn		**S**	**09 30 06.2**	**+15**
BRTR				LR		LR	09 33 28.4	
QUE	**Quetta**	**14.46**	**112**	*e*P		**P**	**09 27 21.5**	**+7.9**
QUE				*e*S		x	09 31 49.0	
ELDT	**Eldivan**	**14.60**	**291**	*i* P		**P**	**09 27 24.2**	**+8.7**
CSS	**Prodhromos**	**14.75**	**269**	*e*P		**P**	**09 27 19.9**	**+2.4**
BALT	**Daday**	**14.85**	**295**	*i* P		**P**	**09 27 27.1**	**+8.5**
ALWS	**Ilw as Safayha**	**15.48**	**247**	P		**P**	**09 27 30.5**	**+3.5**
JMOS	**Jabal al Moall**	**15.52**	**246**	P		**P**	**09 27 30.9**	**+3.4**
SIM	**Simferopol'**	**15.53**	**308**	*e*P		**P**	**09 27 45.0**	**+17**
SIM				*e*S		**S**	**09 30 22.0**	**+2.1**
HAQS	**Haql**	**15.71**	**246**	P		**P**	**09 27 33.2**	**+3.2**
BDAS	**Al Bad'**	**15.93**	**244**	P		**P**	**09 27 35.6**	**+2.8**
KK31	**Karatay Array**	**16.07**	**60**	⇑P		**P**	**09 27 30.8**	**-3.7**
	comp=Z,61nm,1.0s,baz=245,slow=16,SNR=270							
KK31				⇓S		**S**	**09 30 19.5**	**-13**
	comp=Z,24nm,0.9s,baz=252,slow=23,SNR=4.5							
HENT	**Hendek**	**16.55**	**291**	*i* P		**P**	**09 27 48.3**	**+7.7**
SBDP	**Sheikh Budin**	**16.57**	**99**	P		**P**	**09 27 43.3**	**+2.4**
YNBS	**Yanbu' al Bahr**	**16.75**	**227**	P		**P**	**09 27 43.3**	**0.0**
CEP	**Cherat**	**16.99**	**93**	P		**P**	**09 27 48.9**	**+2.6**
VRSR	**Storozhevoye**	**17.06**	**333**	*d i*P		**P**	**09 27 42.8**	**-4.2**
VRSR				*e*S		**S**	**09 30 47.0**	**-8.4**
VRSR				pmax		pmax		
	comp=Z,1μm,17.5s							
VRSR				pmax		pmax		
	comp=N,40nm,0.6s							
VRSR				pmax		pmax		
	comp=E,70nm,1.7s							
VRSR				smax				
	comp=Z,8.0nm,0.6s							
VRSR				smax				
	comp=N,20nm,0.7s							
VRSR				smax				
	comp=E,40nm,0.9s							
VRSR				MLR		MLR		
	comp=Z,1μm,18.0s							
VRSR				MLR		MLR		
	comp=N,1μm,29.0s							
VRSR				MLR		MLR		
	comp=E,840nm,20.0s							
THW	**Thamme Wali**	**17.15**	**97**	P		**P**	**09 27 47.7**	**-0.6**
VOR	**Voronezh**	**17.48**	**334**	*e*P		**P**	**09 27 48.5**	**-3.8**
VOR				pmax		pmax		
	comp=N,200nm,1.3s							
VOR				pmax		pmax		
	comp=E,60nm,1.3s							
AML	**Almayashu**	**18.11**	**65**	P		**P**	**09 27 59.7**	**-0.5**
	SNR=21							
EKS2	**Erkin-Say**	**18.28**	**64**	P		**P**	**09 28 01.7**	**-0.6**
	SNR=50							
TATS	**Tathlith**	**18.31**	**204**	P		**P**	**09 28 02.8**	**+0.1**
UCH	**Uchtor**	**18.73**	**65**	P		**P**	**09 28 07.7**	**-0.1**
	SNR=41							
AAK	**Ala-Archa**	**18.79**	**64**	P		**P**	**09 28 08.4**	**-0.1**
	SNR=32							
AAK	**Ala-Archa**	**18.79**	**64**	*e*P		**P**	**09 28 07.5**	**-1.0**
	comp=E,108nm,1.3s							
FRU	**Bishkek**	**18.92**	**63**	*e*P		**P**	**09 28 10.0**	**0.0**
FRU				pmax		pmax		
	comp=Z,400nm,2.0s							
USP	**Ospenovka**	**18.93**	**62**	P		**P**	**09 28 09.6**	**-0.5**
	SNR=64							
CHMS	**Chumysh**	**19.05**	**63**	P		**P**	**09 28 11.5**	**-0.1**
	SNR=19							
KBK	**Karagaybulak**	**19.12**	**64**	P		**P**	**09 28 13.2**	**+0.8**
	SNR=27							
JASL	**Jaisalmer**	**19.14**	**115**	*e*P		**P**	**09 28 11.2**	**-1.6**
KZA	**Kyzart**	**19.25**	**66**	P		**P**	**09 28 14.3**	**+0.3**
	SNR=20							
KSH	**Kashi**	**19.58**	**74**	*i* PR			09 28 17.0	
KSH				PP		PP	09 28 35.8	0.0
KSH				S		**S**	**09 31 51.0**	**-1.4**
KSH				PCP		PcP	09 32 38.8	+1.4
KSH				PCS			09 36 14.8	
KSH				AMB		AMB		
	comp=Z,350nm,1.3s							
KSH				LR		LR		
	comp=N,2μm,9.5s							
KSH				LR		LR		
	comp=E,1μm,13.7s							
TKM2	**Tokmak 2**	**19.64**	**64**	P		**P**	**09 28 19.2**	**+0.7**
	SNR=124							
KIS	**Kishinev**	**19.74**	**309**	*e*P		**P**	**09 28 28.0**	**+8.4**
KIS				*e*S		**S**	**09 31 56.0**	**+0.1**
KIS				MLR		MLR		
	comp=Z,500nm,14.0s							
KIS				MLR		MLR		
	comp=Z,600nm,14.0s							
ULHL	**Ulahol**	**20.00**	**66**	P		**P**	**09 28 23.6**	**+1.2**
	SNR=29							
DJNS	**Zahran al Janu**	**20.00**	**202**	P		**P**	**09 28 23.4**	**+0.8**
ARU	**Arti**	**20.47**	**11**	*d i*P		**P**	**09 28 25.5**	**-1.7**
ARU				pmax		pmax		
	comp=Z,294nm,1.5s							
ARU				MLR		MLR		
	comp=Z,2μm,17.0s,MS4.5							
ARU	**Arti**	**20.47**	**11**	*e*P		**P**	**09 28 25.6**	**-1.6**
	comp=Z,130nm,0.6s							
ZRNK	**Zerenda**	**20.54**	**31**	⇓P		**P**	**09 28 27.2**	**-0.8**
	comp=Z,59nm,1.2s							
ZRNK				⇑S		**S**	**09 32 15.8**	**+3.4**
	comp=Z,33nm,2.1s							
ZRNK	**Zerenda**	**20.54**	**31**	*e*P		**P**	**09 28 26.9**	**-1.0**
KDZ	**Kurdzhali**	**20.76**	**292**	*e*P		**P**	**09 28 47.0**	**+17**
MLR	**Muntele Rosu**	**21.11**	**303**	P		**P**	**09 28 35.8**	**+1.9**
	comp=Z,4.8nm,0.6s,mb4.0,baz=172,slow=6.9,SNR=11							
MLR				S		**S**	**09 32 30.2**	**+6.7**
	comp=Z,4.2nm,1.1s,baz=98,slow=11,SNR=1.7							
MLR	**Muntele Rosu**	**21.11**	**303**	P		**P**	**09 28 35.8**	**+2.0**
MLR				S		**S**	**09 32 30.2**	**+6.7**
MLR				pmax		pmax		
	comp=Z,5.0nm,0.6s							
MLR				smax				
	comp=N,4.0nm,1.1s							
BRVK	**Borovoye**	**21.16**	**33**	*e*P		**P**	**09 28 33.8**	**-0.5**
OBN	**Obninsk**	**21.17**	**336**	*de*P		**P**	**09 28 33.1**	**-1.3**
OBN				*e*S		**S**	**09 32 18.7**	**-5.9**
OBN				*e*SS		SS	09 32 59.8	+1.8
OBN				pmax		pmax		
	comp=Z,103nm,1.9s,mb4.8							
OBN				MLR		MLR		
	comp=Z,1μm,20.0s,MS4.3							
OBN	**Obninsk**	**21.17**	**336**	*e*P		**P**	**09 28 32.2**	**-2.2**
	comp=Z,22nm,0.6s,mb4.7							
BVA0	**Borovoye Array**	**21.18**	**33**	⇑P		**P**	**09 28 34.1**	**-0.5**
	comp=Z,17nm,1.2s,mb4.2,baz=221,slow=9.7,SNR=256							
BVA0				S		**S**	**09 32 29.3**	**+4.4**
	comp=Z,5.3nm,1.8s,baz=230,slow=22,SNR=4.2							
BVAR	**Borovoye Array**	**21.18**	**33**	P		**P**	**09 28 34.8**	**+0.2**
	comp=Z,32nm,0.6s,mb4.8,baz=221,slow=10,SNR=199							
BVAR				S		**S**	**09 32 24.4**	**-0.6**
	comp=Z,2.5nm,0.7s,baz=220,slow=22,SNR=3.3							
VOSK	**Vostochnaya**	**21.24**	**34**	⇓P		**P**	**09 28 34.6**	**-0.6**
	comp=Z,119nm,1.8s,mb4.9							
VOSK				⇑S		**S**	**09 32 32.1**	**+6.0**
	comp=Z,21nm,1.4s							
RZN	**Rozhen**	**21.28**	**292**	*i* P		**P**	**09 28 51.0**	**+15**
MOS	**Moscow**	**21.36**	**338**	*e*P		**P**	**09 28 36.2**	**-0.1**
MOS				*e*			09 28 57.1	
MOS				*e*S		**S**	**09 32 24.9**	**-3.4**
MOS				*e*SS		SS	09 32 59.4	-3.4
MOS				pmax		pmax		
	comp=Z,182nm,0.7s,mb5.5							
MOS				pmax		pmax		
	comp=N,120nm,0.5s							
MOS				pmax		pmax		
	comp=E,109nm,0.9s							
MOS				MLR		MLR		
	comp=Z,2μm,16.0s,MS4.5							
IDI	**Anoyia**	**21.48**	**275**	P		**P**	**09 28 38.4**	**+0.7**
	comp=Z,21nm,0.9s,mb4.5,baz=43,slow=8.9,SNR=9.9							
IDI				S		**S**	**09 32 36.1**	**+5.4**
	comp=Z,4.6nm,0.8s,baz=305,slow=11,SNR=2.4							
PGB	**Panagyurishte**	**21.78**	**294**	*i* P		**P**	**09 28 54.0**	**+13**
KKR	**Kurukshetra**	**22.22**	**100**	*e*P		**P**	**09 28 45.3**	**+0.2**
KHET	**Khetri**	**22.26**	**105**	*e*P		**P**	**09 28 45.4**	**-0.1**
KHET				AMb		AMB	09 28 54.7	
	comp=Z,22nm,0.7s,mb4.7							
RTK	**Rohtak**	**22.29**	**102**	*e*P		**P**	**09 28 45.6**	**-0.3**
RTK				AMb		AMB	09 28 47.4	
	comp=Z,76nm,0.1s							
VTS	**Vitosha**	**22.49**	**294**	*e*P		**P**	**09 28 53.0**	**+5.3**
KKB	**Krupnik**	**22.52**	**292**	*e*P		**P**	**09 28 52.0**	**+4.1**
KUDL	**Kundal**	**22.75**	**104**	*e*P		**P**	**09 28 50.9**	**+0.4**
KUDL				*e*S		**S**	**09 33 00.8**	**+6.6**
NDI	**New Delhi**	**23.08**	**102**	*e*P		**P**	**09 28 53.0**	**-0.6**
	comp=Z,60nm,1.0s,mb5.0							
NDI				*e*S		**S**	**09 33 06.0**	**+6.1**
AYAN	**Aya Nagar**	**23.10**	**103**	*e*P		**P**	**09 28 53.7**	**-0.1**
AYAN				AMb		AMB	09 28 57.2	
	comp=Z,32nm,0.6s,mb4.9							
SONA	**Sohna**	**23.17**	**104**	*e*P		**P**	**09 28 55.2**	**+0.7**
SONA				AMb		AMB	09 29 03.0	
	comp=Z,36nm,0.3s,mb5.2							
SONA				*e*S		**S**	**09 33 08.8**	**+7.2**
ASOR	**Ausora**	**23.48**	**102**	*e*P		**P**	**09 28 58.0**	**+0.4**
ASOR				AMb		AMB	09 28 58.5	
	comp=Z,87nm,0.2s							
KALG	**Kalgarh**	**23.94**	**99**	*e*		**P**	**09 28 57.7**	**-4.3**
KURK	**Kurchatov**	**24.10**	**45**	*e*P		**P**	**09 29 04.7**	**+1.4**
MNK	**Minsk**	**24.20**	**325**	*e*P		**P**	**09 29 04.0**	**-0.2**
KWP	**Kalwaria**	**24.52**	**311**	*e*P		**P**	**09 29 09.6**	**+2.2**
DIVS	**Divcibare**	**24.99**	**297**	⇑*i*P		**P**	**09 29 12.7**	**+0.7**
CRVS	**Cervenica-Dubn**	**25.04**	**309**	*i* P		**P**	**09 29 16.8**	**+4.4**
MK31	**Makanchi Array**	**25.11**	**56**	P		**P**	**09 29 14.9**	**+1.9**
	comp=Z,97nm,1.1s,mb5.2,baz=248,slow=7.3,SNR=100							
MKAR	**Makanchi Array**	**25.11**	**56**	P		**P**	**09 29 14.3**	**+1.3**
	comp=Z,41nm,0.9s,mb5.0,baz=251,slow=7.5,SNR=74							
MKAR				LR		LR	09 40 54.6	
	comp=Z,2μm,18.4s,MS4.7,baz=250,slow=41							
MKAR	**Makanchi Array**	**25.11**	**56**	P		**P**	**09 29 14.3**	**+1.3**
MKAR				pmax		pmax		
	comp=Z,41nm,0.9s							
M

KSP LR LR
comp=Z,2µm,20.4s,MS4.6
ZAL Zalesovo 28.88 42 P **P 09 29 47.3 -0.3**
comp=Z,3.8nm,0.4s,mb4.5,baz=131,slow=7.8,SNR=16
ZAL LR LR 09 44 32.4
comp=Z,628nm,19.5s,MS4.2,baz=154,slow=43
ZAL Zalesovo 28.88 42 P **P 09 29 47.3 -0.3**
ZAL pmax pmax
comp=Z,4.0nm,0.4s
ZAL MLR MLR
comp=Z,628nm,19.5s
UPC Upice 28.89 310 *e*P **P 09 29 55.7 +8.0**
GKN Gorkha 29.26 97 *e*P **P 09 29 51.0 -0.3**
comp=Z,186nm,1.2s,mb5.7
VAE Valguarnera 29.42 283 LR LR 09 41 49.2
comp=Z,302nm,18.2s,MS4.0,baz=346,slow=37
FINES FINESS Array B 29.57 335 P **P 09 29 53.6 -0.1**
comp=Z,2.1nm,0.7s,mb4.0,baz=143,slow=9.5,SNR=7.8
FINES LR LR 09 44 26.0
comp=Z,933nm,19.5s,MS4.4,baz=275,slow=42
FINES FINESS Array B 29.57 335 P **P 09 29 53.6 -0.1**
FINES pmax pmax
comp=Z,2.0nm,0.7s
FINES MLR MLR
comp=Z,933nm,19.5s
PRU Pruhonice 29.68 309 L 09 48 50.0
PVCC Panska Ves 29.79 310 L 09 46 20.0
comp=Z,0.6nm,18.0s
DMN Daman 29.80 98 *e*P **P 09 29 56.3 +0.1**
comp=Z,183nm,1.2s,mb5.7
KKN Kakani 29.87 97 *e*P **P 09 29 56.5 -0.2**
comp=Z,111nm,1.3s,mb5.4
GERES GERESS Array B 29.99 306 P **P 09 29 57.9 +0.3**
comp=Z,2.3nm,0.9s,mb3.9,baz=113,slow=10,SNR=10
GERES PcP PcP 09 32 59.4 -0.6
comp=Z,1.1nm,0.6s,baz=135,slow=1.9,SNR=4.3
GERES GERESS Array B 29.99 306 P **P 09 29 57.9 +0.3**
GERES 09 32 59.4
GERES pmax pmax
comp=Z,2.0nm,0.9s
GERES pmax pmax
comp=Z,1.0nm,0.6s
PKI Pulchoki 30.06 98 *e*P **P 09 29 58.1 -0.4**
comp=Z,279nm,1.4s,mb5.8
KHC Kasperske Hory 30.12 307 *e*P **P 09 30 00.6 +1.8**
KHC L 09 47 00.0
comp=Z,0.7nm,19.3s
BRG Berggiesshubel 30.26 310 *e*P **P 09 30 08.3 +8.4**
BRG *e* 09 30 20.9
BRG *e* 09 35 02.0
BRG pmax pmax
comp=Z,10.0nm,1.7s,mb4.3
BRG MLR MLR
comp=N,590nm,17.1s,MS4.4
BRG MLR MLR
comp=E,530nm,17.1s,MS4.4
BRG MLR MLR
comp=Z,690nm,17.1s,MS4.4
BRG Berggiesshubel 30.26 310 P **P 09 30 08.3 +8.4**
comp=Z,9.7nm,1.7s,mb4.3
BRG *e* 09 30 20.9
BRG *e* 09 35 02.0
BRG LR LR
comp=Z,690nm,17.1s,MS4.4
CLL Collm 30.94 311 P **P 09 30 07.0 +1.1**
CLL *i* *SP sP 09 30 13.3 +2.2
CLL Collm 30.94 311 *e*P **P 09 30 07.0 +1.1**
CLL *i* 09 30 13.3
CLL LR LR
comp=Z,800nm,18.6s,MS4.4
NKC Novy Kostel 31.05 309 L 09 47 10.0
comp=Z,0.5nm,19.6s
MOX Moxa 31.65 309 *e*P **P 09 30 20.0 +7.8**
MOX *e* 09 30 36.0
MOX S **S 09 35 26.0 +6.0**
MOX L 09 47 22.0
GRF Grafenberg Arr 31.74 307 *e*P **P 09 30 20.1 +7.1**
GRF pmax pmax
comp=Z,8.0nm,1.2s,mb4.4
DAVOX Davos 32.32 302 P **P 09 30 17.8 -0.3**
comp=Z,2.6nm,0.5s,mb4.3,baz=86,slow=11,SNR=5.6
APA Apatity 32.71 347 ⇓*i*P **P 09 30 13.5 -7.8**
APA *i* 09 31 35.2
APA *i* S **S 09 35 36.0 -0.3**
APA *e*SS SS 09 37 43.0 +9.1
PGF Pioggiola 32.97 294 *e*P **P 09 30 22.5 -1.3**
comp=Z,21nm,1.0s,mb4.7
HFS Hagfors 33.67 327 P **P 09 30 29.2 -0.6**
comp=Z,6.1nm,0.6s,mb4.7,baz=117,slow=9.9,SNR=18
HFS Hagfors 33.67 327 P **P 09 30 29.2 -0.5**
HFS pmax pmax
comp=Z,6.0nm,0.6s
LSA Lhasa 33.81 90 P **P 09 30 32.8 +1.5**
LSA Lhasa 33.81 90 *e*P **P 09 30 32.1 +0.8**
comp=Z,4.7nm,0.8s,mb4.5
SBF Sospel 34.03 296 *e*P **P 09 30 32.4 -0.6**
comp=Z,50nm,1.0s,mb5.1
CDF Champ du Feu 34.17 304 *e*P **P 09 30 33.1 -1.1**
LPG La Plagne 34.47 299 *e*P **P 09 30 35.7 -1.0**
comp=Z,13nm,0.9s,mb4.6
MBDF Montbardon 34.47 298 *e*P **P 09 30 35.7 -1.1**
comp=Z,20nm,0.7s,mb4.8
LPL La Plagne 34.48 299 *e*P **P 09 30 35.8 -1.0**
comp=Z,6.9nm,0.6s,mb4.4
BNI Bardonecchia 34.53 298 *e*P **P 09 30 36.8 -0.4**
FRF La Foret Royal 34.62 296 *e*P **P 09 30 36.9 -1.2**
comp=Z,13nm,0.9s,mb4.6
LMR La Mourre 34.74 295 *e*P **P 09 30 37.7 -1.4**
HAU Haudompre 34.77 304 *e*P **P 09 30 37.8 -1.5**
HAU *e*R
comp=Z,357nm,21.5s
CABF La Chapelle 34.92 301 *e*P **P 09 30 40.0 -0.6**
comp=Z,56nm,1.0s,mb5.2
ORIF Oris-en-Rattie 35.10 298 *e*P **P 09 30 40.6 -1.5**
ORIF *e*R
comp=Z,355nm,23.0s
NB2 NORSAR Subarra 35.18 327 P **P 09 30 41.9 -0.7**
comp=Z,20nm,1.4s,mb4.8,baz=115,slow=7.9
NOA NORSAR Array B 35.18 327 P **P 09 30 42.1 -0.6**
comp=Z,2.7nm,0.6s,mb4.3,baz=117,slow=8.2,SNR=16
NOA LR LR 09 47 44.9
comp=Z,740nm,21.4s,MS4.4,baz=100,slow=41
NOA NORSAR Array B 35.18 327 P **P 09 30 42.1 -0.5**
NOA pmax pmax
comp=Z,3.0nm,0.6s
NOA MLR MLR
comp=Z,740nm,21.4s
NOA NORSAR Array B 35.18 327 P **P 09 30 42.1 -0.6**
NOA LR LR 09 47 44.9
KONO Kongsberg 35.35 324 *e*S **S 09 36 21.8 +4.5**
KONO AMS AMS 09 48 54.5
comp=Z,831nm,18.0s,MS4.5
ARCES ARCESS Array B 35.92 345 P **P 09 30 48.9 0.0**
comp=Z,2.0nm,0.8s,mb4.1,baz=117,slow=8.1,SNR=9.0
ARCES LR LR 09 50 14.3
comp=Z,668nm,18.1s,MS4.5,baz=131,slow=44
VIVF Saint-Julien-l 35.96 298 *e*P **P 09 30 48.3 -1.1**
SHL Shillong 36.14 96 ⇓*i*P **P 09 30 50.5 -0.7**
SHL *e*S **S 09 36 28.0 -1.9**
BAIF Baives 36.29 307 *e*P **P 09 30 52.8 +0.7**
comp=Z,44nm,1.2s,mb5.0
LOR Lormes 36.44 302 *e*P **P 09 30 52.3 -1.2**
comp=Z,8.1nm,0.9s,mb4.4
LOR *e*R
comp=Z,473nm,19.0s
SMF Signal de Mont 36.47 301 *e*P **P 09 30 52.8 -0.9**
comp=Z,13nm,1.0s,mb4.5
NSS Namsos 36.53 333 AMS AMS 09 48 38.3
comp=Z,931nm,18.9s,MS4.6
LASF Ste Croix 36.60 297 *e*P **P 09 30 53.8 -1.0**
comp=Z,57nm,1.4s,mb4.9
SSF Saint Saulge 36.69 302 *e*P **P 09 30 54.6 -1.0**
AVF Avril sur Loir 36.80 301 *e*P **P 09 30 55.4 -1.1**
comp=Z,9.6nm,0.8s,mb4.4
TCF Toulx Ste Croi 37.61 301 *e*P **P 09 31 02.8 -0.5**
CAF Calviac 37.80 298 *e*P **P 09 31 04.6 -0.3**
GTA Gaotai 37.92 71 *e*P **P 09 31 08.0 +2.0**
GTA AP pP 09 31 11.5 +1.9
GTA XP sP 09 31 15.0 +3.8
GTA PP PP 09 32 34.3 -1.4
GTA S **S 09 36 51.5 -5.5**
GTA SS SS 09 39 37.0 +3.9
GTA AMB AMB
comp=Z,14nm,1.6s,mb4.4
GTA AMB AMB
comp=Z,148nm,4.6s
GTA LR LR
comp=N,401nm,13.0s,MS4.6
GTA LR LR
comp=E,450nm,13.4s,MS4.6
GTA LR LR
comp=Z,524nm,14.5s,MS4.5
MOY Mondy 37.92 51 *e*P **P 09 31 08.8 +2.9**
MOY *e* 09 32 41.6
IMP Imphal 38.15 96 *e* **P 09 31 09.0 +1.0**
RJF Les Rejaudoux 38.16 299 *e*P **P 09 31 07.6 -0.3**
comp=Z,13nm,0.9s,mb4.4
RJF *e*R
comp=Z,638nm,19.0s
LFF La Frestale 38.74 299 *e*P **P 09 31 12.1 -0.7**
LDF La Druitiere 39.09 305 *e*P **P 09 31 14.6 -1.2**
comp=Z,13nm,0.9s,mb4.4
MFF Saint Martin d 39.21 301 *e*P **P 09 31 15.7 -1.1**
comp=Z,33nm,1.2s,mb4.6
ZAK Zakamensk 39.32 53 *e*P **P 09 31 19.1 +1.5**
ZAK *e* 09 32 50.5
TLY Talaya 39.57 51 *d*⇓*i*P **P 09 31 20.2 +0.5**
TLY *e* 09 32 51.7
TLY *e*S **S 09 37 20.6 -1.2**
TLY pmax pmax
comp=Z,118nm,1.4s,mb5.4
TLY MLR MLR
comp=Z,5µm,17.0s,MS5.5
GRR Gorron 39.59 304 *e*P **P 09 31 18.8 -1.1**
KMBO Kilima Mbogo 39.72 202 P **P 09 31 22.6 +1.3**
comp=Z,0.6nm,0.6s,baz=34,slow=9.0,SNR=4.3
KMBO Kilima Mbogo 39.72 202 *e*P **P 09 31 20.5 -0.8**
KMBO LR LR
comp=Z,737nm,19.0s,MS4.5
IRK Irkutsk 39.97 50 *e*P **P 09 31 24.4 +1.4**
SGMF Saint Gilles 40.73 304 *e*P **P 09 31 28.6 -0.7**
comp=Z,28nm,1.0s,mb4.5
BJO Bjornoya 41.04 347 AMS AMS 09 52 46.0
comp=Z,460nm,19.5s,MS4.3
EKA Eskdalemuir Ar 41.11 315 P **P 09 31 32.8 +0.5**
comp=Z,3.1nm,0.9s,mb4.0,baz=107,slow=8.7,SNR=8.0
EKA Eskdalemuir Ar 41.11 315 P **P 09 31 32.8 +0.5**
EKA pmax pmax
comp=Z,3.0nm,0.9s
QUIF Quistinic 41.16 304 *e*P **P 09 31 31.9 -0.9**
comp=Z,46nm,1.2s,mb4.7
SONM Songino Array 41.47 56 P **P 09 31 35.8 +0.4**
comp=Z,3.3nm,0.8s,mb4.0,baz=270,slow=12,SNR=2.8
LZH Lanzhou 41.83 74 ⇓P **P 09 31 39.8 +1.4**
LZH AP pP 09 31 43.5 +1.5
LZH PP PP 09 33 20.3 +1.9
LZH *e*S **S 09 37 58.3 +2.8**
LZH SS SS 09 40 57.5 +1.1
LZH AMB AMB
comp=Z,67nm,1.5s,mb5.0
LZH AMB AMB
comp=Z,206nm,6.0s
LZH LR LR
comp=E,765nm,13.2s
LZH LR LR
comp=Z,986nm,16.7s,MS4.8
ULN Ulaanbaatar 41.91 56 *e*P **P 09 31 40.4 +1.5**
comp=Z,46nm,1.5s,mb4.9
ESDC Sonseca Array 43.09 292 P **P 09 31 48.3 -0.3**
comp=Z,2.6nm,0.7s,mb4.1,baz=67,slow=8.2,SNR=7.7
ESDC LR LR 09 53 07.0
comp=Z,216nm,18.5s,MS4.1,baz=80,slow=41
CD2 Chengdu 43.48 82 ⇑*i*P **P 09 31 53.5 +1.6**
CD2 AP pP 09 31 57.5 +1.9
CD2 XP sP 09 32 02.5 +5.4
CD2 S **S 09 38 22.0 +2.2**
CD2 SS SS 09 41 28.3 +1.2
CD2 AMB AMB
comp=Z,40nm,0.9s,mb5.2
CD2 LR LR
comp=E,890nm,18.0s
CD2 LR LR
comp=Z,1µm,20.4s,MS4.8
SPITS Spitsbergen Ar 44.27 350 P **P 09 31 58.7 +1.0**
comp=Z,15nm,1.0s,mb4.7,baz=141,slow=6.7,SNR=17
KMI Kunming 45.07 90 *e*P **P 09 32 04.8 -0.1**
KMI AP pP 09 32 11.0 +2.5
KMI XP sP 09 32 13.8 +3.7
KMI PP PP 09 33 55.3 +4.1
KMI S **S 09 38 46.5 +3.6**
KMI XS 09 38 56.8
KMI SS SS 09 41 54.5 -2.1
KMI AMB AMB
comp=Z,24nm,1.4s,mb4.8
KMI LR LR
comp=N,501nm,22.8s,MS4.5
KMI LR LR
comp=E,364nm,20.0s,MS4.5
KMI LR LR
comp=Z,605nm,21.9s,MS4.5
CMAR Chiang Mai Arr 45.38 100 P **P 09 32 07.3 0.0**
comp=Z,9.2nm,0.8s,mb4.6,baz=302,slow=8.2,SNR=45
CMAR LR LR 09 56 00.3
comp=Z,110nm,18.8s,MS3.8,baz=280,slow=43
CMAR Chiang Mai Arr 45.38 100 P **P 09 32 07.4 0.0**
CMAR pmax pmax
comp=Z,9.0nm,0.8s
CMAR MLR MLR
comp=Z,110nm,18.8s
KBS Kingsbay 45.42 350 *e*S **S 09 38 51.6 +4.3**
KBS *e*SS SS 09 42 09.6 +7.4
KBS AMS AMS 09 55 57.2
comp=Z,589nm,18.0s,MS4.6
MTE Manteigas 45.56 294 *e*P **P 09 32 07.8 -0.8**
BOD Bodaibo 45.65 42 *e*P **P 09 32 08.5 -0.5**
BDT Bhumibol Dam 46.10 102 P **P 09 32 13.0 -0.1**
JMIC Jan Mayen 46.17 337 LR LR 09 54 44.1
comp=Z,271nm,19.2s,MS4.2,baz=97,slow=40
HHC Hu-ho-hao-te 46.36 65 *e*P **P 09 32 15.8 +0.9**
HHC AP pP 09 32 20.5 +2.0
HHC PCP PcP 09 33 49.5 -0.9
HHC PP PP 09 34 06.5 +2.6
HHC SCP 09 37 41.3
HHC PCS 09 37 43.3
HHC S **S 09 39 06.0 +4.8**
HHC XS 09 39 13.8
HHC SCS ScS 09 42 05.5 -2.1
HHC AMB AMB
comp=Z,18nm,1.4s,mb4.8
HHC AMB AMB
comp=Z,159nm,5.0s
HHC LR LR
comp=N,304nm,13.3s,MS4.6
HHC LR LR
comp=E,333nm,14.3s,MS4.6
HHC LR LR
comp=Z,352nm,12.8s,MS4.5
XAN Xi'an 46.42 75 P **P 09 32 16.0 +0.5**
XAN AP pP 09 32 21.0 +1.9
XAN AMB AMB
comp=Z,30nm,1.3s,mb5.1
GYA Guiyang 47.63 86 ⇑*i*P **P 09 32 25.3 +0.2**
GYA S **S 09 39 19.5 +0.2**
GYA AMB AMB
comp=Z,10.0nm,1.4s,mb4.7
GYA AMB AMB
comp=Z,160nm,4.5s
GYA LR LR
comp=N,510nm,20.1s,MS4.6
GYA LR LR
comp=E,370nm,22.5s,MS4.6
GYA LR LR
comp=Z,630nm,26.1s,MS4.5
NST Nakhon Sawan 47.88 102 P **P 09 32 20.0 -7.2**
NST Nakhon Sawan 47.88 102 P **P 09 32 20.0 -7.2**
ENH Enshi 48.28 80 *e*P **P 09 32 29.8 -0.2**
comp=Z,5.7nm,0.9s,mb4.6
BJI Beijing 49.96 65 P **P 09 32 38.0 -4.9**
BJI AMB AMB
comp=Z,7.0nm,0.7s,mb4.8
BJI LR LR
comp=N,533nm,16.6s,MS4.8
BJI LR LR
comp=E,480nm,16.6s,MS4.6
BJI LR LR
comp=Z,413nm,16.6s,MS4.5
TIXI Tiksi 51.86 23 *e*P **P 09 32 56.0 -0.9**
TIXI *e*S **S 09 40 23.4 +5.8**
TIXI pmax pmax
comp=Z,12nm,1.3s,mb4.7
TIXI Tiksi 51.86 23 *e*P **P 09 32 56.7 -0.2**
comp=Z,4.3nm,0.4s,mb4.7
WHN Wuhan 52.00 77 *e*P **P 09 32 59.0 +0.4**
WHN LR LR
comp=N,211nm,12.0s,MS4.6
WHN LR LR
comp=E,269nm,12.0s,MS4.6
WHN LR LR
comp=Z,2µm,20.9s
QIZ Qiongzhong 53.79 92 *e*P **P 09 33 09.8 -2.1**
QIZ S **S 09 40 45.5 +0.9**
QIZ LR LR
comp=N,343nm,15.6s,MS4.6
QIZ LR LR
comp=E,226nm,17.1s,MS4.6
QIZ LR LR
comp=Z,397nm,15.6s,MS4.6
NJ2 Nanjing 54.89 73 *e*P **P 09 33 19.5 -0.4**
NJ2 PP PP 09 35 24.3 -0.1
NJ2 S **S 09 40 58.0 -1.2**
NJ2 SS SS 09 44 42.0 -0.5
NJ2 AMB AMB
comp=Z,30nm,0.6s,mb5.5
NJ2 AMB AMB
comp=Z,280nm,8.9s
NJ2 LR LR
comp=N,1µm,19.1s,MS5.1
NJ2 LR LR
comp=E,730nm,19.6s,MS5.1
NJ2 LR LR
comp=Z,510nm,18.9s,MS4.6
CN2 Changchun 55.32 58 *e*P **P 09 33 22.5 -0.3**
SUMG Summit 55.53 339 *e*P **P 09 33 21.9 -2.1**
SSE Sheshan 57.10 74 P **P 09 33 35.8 0.0**
SSE S **S 09 41 27.5 -1.0**
SSE SS SS 09 45 16.0 -2.8
SSE AMB AMB
comp=Z,27nm,1.0s,mb5.2
SSE LR LR
comp=N,200nm,15.9s,MS4.6
SSE LR LR
comp=E,373nm,15.9s,MS4.6
SSE LR LR
comp=Z,420nm,15.5s,MS4.7
KLR Kul'dur 57.58 50 *e*P **P 09 33 37.8 -1.1**
DBIC Dimbokro 59.14 254 P **P 09 33 47.9 -2.5**
comp=Z,3.5nm,0.8s,mb4.5,baz=47,slow=7.3,SNR=5.6
DBIC LR LR 10 02 18.0
comp=Z,728nm,19.6s,MS4.8,baz=32,slow=39
DBIC Dimbokro 59.14 254 P **P 09 33 47.9 -2.4**
DBIC pmax pmax
comp=Z,4.0nm,0.8s
DBIC MLR MLR
comp=Z,728nm,19.6s
KIC Kosan Boka 59.25 254 *e*P **P 09 33 48.5 -2.5**
comp=Z,34nm,0.8s,mb5.4
TIC Toumodi 59.29 254 *e*P **P 09 33 48.6 -2.7**
comp=Z,4.2nm,0.2s,mb5.1
KS15 Wonju Array Si 59.43 64 *e*P **P 09 33 50.1 -1.9**
LIC Lamto 59.55 254 *e*P **P 09 33 50.6 -2.5**
comp=Z,12nm,0.7s,mb4.8
LIC *e*R
comp=Z,872nm,17.0s
LIC Lamto 59.55 254 *e*P **P 09 33 50.4 -2.7**
comp=Z,24nm,0.8s,mb5.3
LIC Lamto 59.55 254 *e*P **P 09 33 50.6 -2.5**
comp=Z,6.2nm,0.6s,mb4.8
LIC LR LR
comp=Z,440nm,17.0s,MS4.7
SEY Seymchan 62.81 30 *e*P **P 09 34 15.6 +1.1**
SEY *e* 09 34 52.6
SEY *e* 09 36 38.7
SEY *e*S **S 09 42 46.3 +4.6**
SEY 09 44 02.8
SEY pmax pmax
comp=Z,40nm,1.1s,mb5.5
SEY pmax pmax
comp=N,10.0nm,1.4s
SEY pmax pmax
comp=E,5.0nm,1.4s
SEY MLR MLR
comp=E,680nm,18.0s,MS5.1
SEY MLR MLR
comp=Z,2µm,18.0s,MS5.2
SEY MLR MLR
comp=N,1µm,17.0s,MS5.1
MA2 Magadan 63.67 34 *e*P **P 09 34 19.8 -0.3**
MA2 pmax pmax
comp=Z,7.0nm,1.0s,mb4.7
MA2 MLR MLR
comp=Z,500nm,18.0s,MS4.7
BILL Bilibino 65.05 22 *d*⇓*i*P **P 09 34 29.2 +0.2**
BILL pmax pmax
comp=Z,25nm,1.1s,mb5.2
BILL MLR MLR
comp=Z,800nm,16.0s,MS5.0
BILL Bilibino 65.05 22 *e*P **P 09 34 29.4 +0.5**
comp=Z,50nm,1.5s,mb5.3
YSS Yuzh-Sakhalins 65.25 49 *e*P **P 09 34 29.5 -1.1**
YSS pmax pmax
comp=Z,19µm,1.5s
TGY Tagaytay City 65.38 90 LR LR 10 06 59.8
comp=Z,264nm,18.6s,MS4.5,baz=201,slow=40
LBTB Lobatse 65.89 206 *e*P **P 09 34 31.5 -3.6**
MAT Matsushiro 67.20 61 P **P 09 34 41.5 -1.8**
MAT S S 09 43 43.0 +6.9
MAT Matsushiro 67.20 61 *e*P **P 09 34 42.0 -1.3**
comp=Z,11nm,1.0s,mb4.8
MAT *e*S S 09 43 44.0 +7.9
MAT LR LR
comp=Z,350nm,20.0s,MS4.6
PET Petropavlovsk 70.85 38 *e*P **P 09 34 59.3 -6.1**
PET *e* 09 37 43.7
PET *e*S S 09 44 11.4 -7.5
PET *e*PPS PPS 09 44 50.8 -11
PET smax
comp=N,20nm,12.3s
PET smax
comp=E,10.0nm,10.2s
PET MLR MLR
comp=Z,700nm,15.0s,MS5.0
PET MLR MLR
comp=Z,600nm,17.0s
SUR Sutherland 74.30 207 LR LR 10 08 11.9
comp=Z,830nm,21.1s,MS5.0,baz=7.7,slow=36
SCHQ Schefferville 74.74 328 LR LR 10 12 18.6
comp=Z,171nm,19.2s,MS4.4,baz=41,slow=39
INK Inuvik 75.40 2 P **P 09 35 31.8 0.0**
comp=Z,1.9nm,0.8s,mb4.1,baz=324,slow=4.0,SNR=4.3
INK Inuvik 75.40 2 P **P 09 35 31.8 0.0**
INK pmax pmax
comp=Z,2.0nm,0.8s
COLA College 77.79 8 *e*P **P 09 35 46.8 +1.6**
COLA pmax pmax
comp=Z,3.0nm,0.9s,mb4.2
COLA College 77.79 8 *e*P **P 09 35 46.0 +0.8**
comp=Z,20nm,0.9s,mb5.0
COLA LR LR
comp=Z,433nm,20.0s,MS4.8
ILAR Eielson Array 78.00 8 P **P 09 35 46.6 +0.3**
comp=Z,4.9nm,0.8s,mb4.5,baz=331,slow=4.1,SNR=56
ILAR LR LR 10 14 41.8
comp=Z,266nm,20.7s,MS4.5,baz=1.6,slow=39
ILAR Eielson Array 78.00 8 P **P 09 35 46.7 +0.4**
ILAR pmax pmax
comp=Z,5.0nm,0.8s
ILAR MLR MLR
comp=Z,266nm,20.7s
YKA Yellowknife Ar 80.66 353 P **P 09 36 00.8 +0.1**
comp=Z,1.9nm,0.9s,mb4.0,baz=7.3,slow=6.4,SNR=37
YKA LR LR 10 17 47.1
comp=Z,326nm,20.8s,MS4.7,baz=5.0,slow=40
SML Sawmill 80.69 9 *e*P **P 09 36 01.1 +0.1**
PMR Palmer 80.79 10 *e*P **P 09 36 01.9 +0.3**
comp=Z,11nm,0.8s,mb4.8
ULM Lac du Bonnet 88.87 340 LR LR 10 19 36.6
comp=Z,279nm,19.8s,MS4.7,baz=22,slow=38
WRAB Tennant Creek 96.20 110 *e*P **P 09 37 16.8 +0.1**
ASAR Alice Springs 98.07 113 LR LR 10 29 27.9
comp=Z,95nm,19.9s,MS4.3,baz=108,slow=40
PDAR Pinedale Array 99.17 346 LR LR 10 29 20.2
comp=Z,340nm,18.2s,MS4.9,baz=23,slow=40

*IDC **29** 09:38:59.3± 1.2, 52.26S× 18.80E, mb4.0/3, mb1 4.1/3, mb1mx3.9/14, Error ellipse: s-maj=87.8km s-min=30.7km az=50.0*

*NEIC **29** 09:39:01.2±0.9,52.37S×18.90E,h10km,mb4.2/2,Error ellipse: s-maj=26.9km s-min=19.6km az=101.0*

ISC 29 09:39:02.3±3.9,52.7S±0.5×19.1E±0.5,h10km,n12, σ0§81/8,mb4.0/4,1C-1D,Southwest of Africa

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SNAA	**Sanae**	**21.35**	**199**	*eP*	**P**	**09 43 50.7**	**-0.8**
VNA2	**Neumayer--Watz**	**21.80**	**203**	⇑*i*	**P**	**09 43 57.1**	**+1.1**
VNA3	**Neumayer Olymp**	**22.57**	**204**	⇓*i*	**P**	**09 44 04.0**	**+0.6**
MAW	**Mawson**	**25.68**	**142**	P	**P**	**09 44 34.3**	**+0.9**
	4.4nm,0.9s,mb4.0,baz=275,slow=17,SNR=5.0						
QSPA	**South Pole Qui**	**37.53**	**180**	*eP*	**P**	**09 46 16.8**	**-0.8**
	4.7nm,0.8s,mb4.3						
VNDA	**Vanda**	**48.01**	**170**	P	**P**	**09 47 42.0**	**-0.6**
	1.4nm,1.1s,mb3.9,baz=211,slow=6.6,SNR=3.6						
VNDA	**Vanda**	**48.01**	**170**	*eP*	**P**	**09 47 41.3**	**-1.3**
	1.9nm,1.3s,mb4.0						
ASAR	**Alice Springs**	**85.27**	**123**	P	**P**	**09 51 40.4**	**0.0**
	0.7nm,0.8s,mb3.9,baz=206,slow=4.8,SNR=7.6						
PDAR	**Pinedale Array**	**144.75**	**275**	PKP	PKPdf	09 58 36.0	-5.6
	1.1nm,0.8s,baz=117,slow=4.0,SNR=6.6						
NVAR	**Mina Array Bea**	**147.45**	**261**	PKPbc	PKPdf	09 58 45.9	-0.4
	0.5nm,0.4s,baz=132,slow=5.4,SNR=5.4						
YKA	**Yellowknife Ar**	**153.89**	**310**	PKPbc	PKPdf	09 58 58.9	+3.7
	0.3nm,0.8s,baz=87,slow=2.1,SNR=5.4						
YKA				PKPab	PKPab	09 59 07.7	-8.0
	0.2nm,0.8s,baz=95,slow=1.9,SNR=3.8						
YKA	**Yellowknife Ar**	**153.89**	**310**	PKPbc	PKPdf	09 58 58.9	+3.7
YKA				PKPab	PKPab	09 59 07.7	-8.0

*IDC **29** 09:48:36.8±0.8,55.91N×162.47E,mb3.9/12,mb1 4.2/13, mb1mx4.0/24,ML3.2/1,Error ellipse: s-maj=23.9km s-min=10.6km az=27.0*

*KRSC **29** 09:48:39.3±1.2,56.06N×162.71E,h17km±2km,ML4.4*

*MOS **29** 09:48:40.4±1.5,56.05N×162.74E,h43km,mb4.3/6,Error ellipse: s-maj=16.4km s-min=8.6km az=80.3*

*NEIC **29** 09:48:41.5±2.3,56.04N×162.47E,h29km±17km,mb4.3/2, Error ellipse: s-maj=9.9km s-min=8.3km az=192.0*

ISC 29 09:48:38.6±0.3,56.01N±0.02×162.81E±0.03,h17km,n77, σ1§19/113,mb4.0/15,Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KBTR	**Krutoberegovo**	**0.20**	**2**	P	**Pb**	**09 48 44.2**	**+0.7**
KBTR	**Krutoberegovo**	**0.20**	**2**	*i* P	**Pb**	**09 48 44.3**	**+0.8**
KBTR				*eS*	**Sb**	**09 48 49.6**	**-0.2**
KBG	**Krutoberegovo**	**0.25**	**347**	*i* P	**Pb**	**09 48 45.0**	**+0.6**
KBG				*eS*	**Sb**	**09 48 49.8**	**+1.6**
KBG				Smax			
	30μm,0.9s						
SVLR	**Shiveluch**	**1.05**	**303**	*i* P	**Pb**	**09 48 58.1**	**+0.1**
SVLR				*eS*	**Sb**	**09 49 12.6**	**+1.3**
ZLN	**Zelenaya**	**1.12**	**271**	*i* P	**Pb**	**09 48 59.4**	**+0.2**
ZLN				*eS*	**Sb**	**09 49 15.2**	**+1.8**
CIRR	**Tsirk**	**1.16**	**276**	*i* P	**Pb**	**09 48 59.9**	**+0.1**
CIRR				*eS*	**Sb**	**09 49 14.1**	**-0.3**
LGNR	**Loginova**	**1.19**	**274**	*i* P	**Pb**	**09 49 00.6**	**+0.3**
LGNR				*eS*	**Sb**	**09 49 16.0**	**+0.7**
KLY	**Klyuchi**	**1.24**	**285**	P	**Pb**	**09 48 59.3**	**-1.9**
KLY				S	**Sb**	**09 49 13.1**	**-3.7**
KLY	**Klyuchi**	**1.24**	**285**	*i* P	**Pb**	**09 48 59.2**	**-2.0**
KLY				*eS*	**Sb**	**09 49 13.3**	**-3.5**
KRSR	**Krestovskiy**	**1.27**	**280**	*eP*	**Pb**	**09 49 01.1**	**-0.6**
KRSR				*eS*	**Sb**	**09 49 16.0**	**-1.6**
KPT	**Kopyto**	**1.45**	**269**	*i* P	**Pn**	**09 49 04.4**	**+0.1**
KPT				*eS*	**Sb**	**09 49 23.0**	**+0.1**
KMNR	**Kamenistaya**	**1.47**	**261**	*eP*	**Pn**	**09 49 04.7**	**+0.1**
KMNR				*eS*	**Sb**	**09 49 22.7**	**-0.7**
MKZ	**Mys Kozlova**	**1.58**	**203**	P	**Pn**	**09 49 07.5**	**+1.3**
MKZ				S	**Sn**	**09 49 27.4**	**+1.0**
MKZ	**Mys Kozlova**	**1.58**	**203**	*eP*	**Pn**	**09 49 07.3**	**+1.1**
MKZ				*eS*	**Sn**	**09 49 27.2**	**+0.8**
KOZ	**Kozyrevsk**	**1.65**	**273**	P	**Pn**	**09 49 08.0**	**+0.9**
KOZ				S	**Sn**	**09 49 28.7**	**+0.7**
KOZ	**Kozyrevsk**	**1.65**	**273**	*eP*	**Pn**	**09 49 07.8**	**+0.7**
KOZ				*eS*	**Sn**	**09 49 28.7**	**+0.7**
TUMR	**Tumrok**	**1.67**	**245**	*i* P	**Pn**	**09 49 08.3**	**+0.8**
TUMR				*eS*	**Sn**	**09 49 29.0**	**+0.3**
SRDR	**Sredinnyy**	**1.75**	**281**	*i* P	**Pn**	**09 49 09.2**	**+0.5**
SRDR				*eS*	**Sn**	**09 49 31.1**	**+0.4**
BKI	**Bering**	**1.97**	**113**	*eP*	**Sn**	**09 49 12.8**	**+1.0**
BKI				*eS*	**Sn**	**09 49 37.2**	**+1.0**
BKI				Smax			
	230nm,1.1s						
ESO	**Esso**	**2.31**	**270**	*eP*	**Pn**	**09 49 16.7**	**+0.1**
ESO				*eS*	**Sn**	**09 49 47.0**	**+2.2**
ESO				Smax			
	500nm,1.4s						
KII	**Karymskiy**	**2.77**	**226**	*eP*	**Pn**	**09 49 23.1**	**0.0**
KII				*eS*	**Sn**	**09 49 54.7**	**-1.7**
OSSR	**Ossora**	**3.25**	**2**	*eP*	**Pn**	**09 49 30.7**	**+0.7**
OSSR				*eS*	**Sn**	**09 50 09.5**	**+0.8**
OSSR				Smax			
	140nm,0.9s						
SPN	**Mys Shipunski**	**3.34**	**210**	P	**Pn**	**09 49 30.4**	**-0.9**
SPN				S	**Sn**	**09 50 08.3**	**-2.6**
SPN	**Mys Shipunski**	**3.34**	**210**	*eP*	**Pn**	**09 49 32.2**	**+0.9**
SPN				*eS*	**Sn**	**09 50 10.7**	**-0.2**
NLC	**Nalytchevo**	**3.48**	**217**	P	**Pn**	**09 49 33.9**	**+0.6**
NLC				S	**Sn**	**09 50 13.0**	**-1.6**
NLC	**Nalytchevo**	**3.48**	**217**	*eP*	**Pn**	**09 49 34.0**	**+0.7**
NLC				*eS*	**Sn**	**09 50 12.9**	**-1.7**
SDLR	**Sedlovina**	**3.56**	**221**	*eP*	**Pn**	**09 49 35.9**	**+1.5**
SDLR				*eS*	**Sn**	**09 50 17.7**	**+1.1**
SMAR	**Somma**	**3.60**	**222**	*eP*	**Pn**	**09 49 36.8**	**+1.8**
SMAR				*eS*	**Sn**	**09 50 19.2**	**+1.6**
AVH	**Avacha**	**3.63**	**222**	*eP*	**Pn**	**09 49 35.9**	**+0.6**
AVH				*eS*	**Sn**	**09 50 17.9**	**-0.3**
UGLR	**Uglovaya**	**3.64**	**221**	*eP*	**Pn**	**09 49 33.7**	**+0.2**
UGLR				*eS*	**Sn**	**09 50 16.5**	**-2.0**
GNL	**Ganaly**	**3.65**	**232**	*eP*	**Pn**	**09 49 35.9**	**+0.3**
GNL				*eS*	**Sn**	**09 50 17.1**	**-1.6**
KOK	**Koryaka**	**3.65**	**223**	*eP*	**Pn**	**09 49 36.7**	**+1.1**
KOK				*eS*	**Sn**	**09 50 18.6**	**-0.1**
PET	**Petropavlovsk**	**3.85**	**221**	P	**Pn**	**09 49 38.7**	**+0.2**
PET				S	**Sn**	**09 50 22.2**	**-1.6**
PET	**Petropavlovsk**	**3.85**	**221**	*eP*	**Pn**	**09 49 40.5**	**+2.0**
PET				*eS*	**Sn**	**09 50 24.1**	**+0.3**
PET	**Petropavlovsk**	**3.85**	**221**	*eP*	**Pn**	**09 49 39.0**	**+0.6**
PET				*eS*	**Sn**	**09 50 25.7**	**+1.9**
KRMR	**Karymshinskiy**	**4.20**	**223**	*e*	**Pn**	**09 49 47.8**	**+4.3**
RUS	**Russkaya**	**4.38**	**217**	P	**Pn**	**09 49 45.6**	**-0.5**
RUS				S	**Sn**	**09 50 33.6**	**-3.7**
RUS	**Russkaya**	**4.38**	**217**	*eP*	**Pn**	**09 49 47.1**	**+1.0**
RUS				*eS*	**Sn**	**09 50 35.5**	**-1.8**
GRL	**Gorelyy**	**4.44**	**221**	*eP*	**Pn**	**09 49 46.9**	**+1.5**
GRL				*eS*	**Sn**	**09 50 36.6**	**-0.1**
KAMR	**Kamenskoye**	**6.70**	**14**	*eP*	**Pn**	**09 50 18.7**	**-0.1**
KAMR				*eS*	**Sn**	**09 51 31.6**	**-3.8**
KAMR				Smax			
	30nm,1.3s						
FX1	**Attu Island--F**	**6.80**	**113**	Pn	**Pn**	**09 50 19.4**	**-0.9**
	1.4nm,0.3s,baz=257,slow=18,SNR=14						
FX1				Sn	**Sn**	**09 51 36.6**	**-1.5**
	0.4nm,0.3s,baz=185,slow=21,SNR=2.6						
FX1	**Attu Island--F**	**6.80**	**113**	*eP*	**Pn**	**09 50 20.4**	**+0.1**
MA2	**Magadan**	**7.36**	**304**	P	**Pn**	**09 50 24.1**	**-3.9**
BILL	**Biiibino**	**12.18**	**6**	*e*PN	**P**	**09 51 40.2**	**+6.1**
BILL	**Biiibino**	**12.18**	**6**	*e*P	**P**	**09 51 32.9**	**-1.2**
YAK	**Yakutsk**	**17.93**	**303**	*eP*	**P**	**09 52 45.4**	**-3.1**
TIXI	**Tiksi**	**21.19**	**331**	*eP*	**P**	**09 53 25.4**	**+0.2**
TIXI				pmax	pmax		
	comp=Z,6.0nm,0.8s,mb4.0						
TIXI	**Tiksi**	**21.19**	**331**	*eP*	**P**	**09 53 26.5**	**+1.3**
	comp=Z,9.4nm,0.8s,mb4.2						
ILAR	**Eielson Array**	**25.67**	**50**	P	**P**	**09 54 08.6**	**-0.2**
	comp=Z,1.2nm,1.1s,mb3.4,baz=274,slow=9.8,SNR=13						
ILAR	**Eielson Array**	**25.67**	**50**	P	**P**	**09 54 08.6**	**-0.2**
ILAR				pmax	pmax		
	comp=Z,1.0nm,1.1s						
BOD	**Bodaibo**	**26.25**	**294**	*eP*	**P**	**09 54 13.9**	**-0.2**
YKA	**Yellowknife Ar**	**39.97**	**46**	P	**P**	**09 56 13.9**	**+0.5**
	comp=Z,0.7nm,0.7s,mb3.5,baz=300,slow=8.1,SNR=16						
YKA	**Yellowknife Ar**	**39.97**	**46**	P	**P**	**09 56 13.9**	**+0.6**
YKA				pmax	pmax		
	comp=Z,1.0nm,0.7s						
SPITS	**Spitsbergen Ar**	**44.51**	**351**	P	**P**	**09 56 50.2**	**0.0**
	comp=Z,9.4nm,1.0s,mb4.6,baz=333,slow=4.5,SNR=6.2						
KURK	**Kurchatov**	**47.56**	**301**	*eP*	**P**	**09 57 11.7**	**-3.0**
MKAR	**Makanchi Array**	**48.34**	**295**	P	**P**	**09 57 18.3**	**-2.4**
	comp=Z,1.1nm,0.5s,mb4.2,baz=55,slow=6.1,SNR=18						
MKAR	**Makanchi Array**	**48.34**	**295**	P	**P**	**09 57 18.3**	**-2.4**
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.5s						
BVAR	**Borovoye Array**	**49.83**	**308**	P	**P**	**09 57 29.3**	**-2.8**
	comp=Z,1.3nm,0.7s,mb4.1,baz=59,slow=8.6,SNR=7.2						
BRVK	**Borovoye**	**49.85**	**308**	*eP*	**P**	**09 57 28.4**	**-3.9**
ZRNK	**Zerenda**	**50.49**	**309**	*eP*	**P**	**09 57 35.2**	**-2.0**
PDAR	**Pinedale Array**	**54.77**	**64**	P	**P**	**09 58 10.2**	**+1.0**
	comp=Z,0.9nm,0.5s,mb4.0,baz=336,slow=3.1,SNR=8.8						
AAK	**Ala-Archa**	**55.21**	**296**	*eP*	**P**	**09 58 10.1**	**-2.4**
	comp=Z,4.2nm,0.9s,mb4.5						
JOF	**Joensuu**	**55.58**	**335**	*ep*	**P**	**09 58 12.6**	**-2.2**
	comp=Z,2.5nm,0.6s,mb4.4						
JOF	**Joensuu**	**55.58**	**335**	*eP*	**P**	**09 58 12.6**	**-2.2**
JOF				pmax	pmax		
	comp=Z,3.0nm,0.6s,mb4.5						
FINES	**FINESS Array B**	**58.05**	**337**	P	**P**	**09 58 31.1**	**-1.4**
	comp=Z,2.4nm,0.6s,mb4.4,baz=33,slow=7.5,SNR=25						
FINES	**FINESS Array B**	**58.05**	**337**	P	**P**	**09 58 31.1**	**-1.4**
FINES				pmax	pmax		
	comp=Z,2.0nm,0.6s						
PV10	**Paradox Valley**	**58.28**	**67**	P	**P**	**09 58 35.6**	**+1.2**
NB2	**NORSAR Subarra**	**61.16**	**345**	P	**P**	**09 58 52.2**	**-1.7**
	comp=Z,1.0nm,0.7s,mb4.0,baz=18,slow=7.0						
NOA	**NORSAR Array B**	**61.16**	**345**	P	**P**	**09 58 52.3**	**-1.5**
	comp=Z,1.3nm,0.7s,mb4.2,baz=18,slow=6.9,SNR=7.8						
NOA	**NORSAR Array B**	**61.16**	**345**	P	**P**	**09 58 52.3**	**-1.6**
NOA				pmax	pmax		
	comp=Z,1.0nm,0.7s						
TXAR	**Lajitas Array**	**68.09**	**70**	P	**P**	**09 59 40.4**	**+1.0**
	comp=Z,0.6nm,0.5s,mb3.9,baz=293,slow=5.3,SNR=14						
GERES	**GERESS Array B**	**72.38**	**339**	P	**P**	**10 00 05.3**	**+0.3**
	comp=Z,0.3nm,0.3s,mb3.8,slow=5.3,SNR=3.8						
BRTR	**Keskin Array B**	**75.34**	**322**	P	**P**	**10 00 21.6**	**-0.6**
	comp=Z,0.7nm,0.5s,mb3.8,baz=76,slow=2.9,SNR=4.7						
ASAR	**Alice Springs**	**83.08**	**207**	P	**P**	**10 01 03.0**	**-1.5**
	comp=Z,0.5nm,0.7s,mb3.7,baz=16,slow=6.6,SNR=12						
VNDA	**Vanda**	**133.27**	**180**	PKP	PKPdf	10 07 52.7	-3.4
	comp=Z,0.4nm,0.8s,baz=275,slow=14,SNR=3.5						
VNDA	**Vanda**	**133.27**	**180**	PKP	PKPdf	10 07 52.7	-3.4
QSPA	**South Pole Qui**	**145.76**	**180**	*eP*	PKPbc	10 08 15.0	-0.1

*NIED **29** 10:14:00,36.70N×130.20E,h8km,Mw5.1 Best double couple: M0 4.3×10^16 NP1:φs346°,δ64°,λ80°. NP2:φs186°, δ28°,λ109°.*

*KMA **29** 10:14:23.0±1.6,36.74N×130.25E,h11km±5km,ML5.2, Error ellipse: s-maj=12.9km s-min=3.9km az=82.0*

*BJI **29** 10:14:23.7,36.48N×130.46E,h29km,mB5.2,mb5.3, Ms4.9,Ms2.4.9*

*JMA **29** 10:14:24.9±0.1,36.72N×130.16E,h43km,M5.1*

*NEIC **29** 10:14:28.4±1.0,36.63N×129.93E,h29km±7km,mb5.3/98, MS4.4/5,MW5.3,Error ellipse: s-maj=3.8km s-min=3.0km az=181.0,Moment Tensor Solution. s5 Moment tensor: Scale 10^17Nm; Mrr0.00; Mθθ0.00; Mφφ0.00; Mrθ0.00; Mθφ0.00; Mφr0.00; Best double couple: M0 1×10^17 NP1: φs202°,δ52°,λ139°. NP2:φs320°,δ59°,λ46°. Principal axes: T 1.05, Plg53°, Azm175°; N -.04, Plg37°, Azm347°; P -1.01, Plg4°, Azm80°;*

NEIC Felt in the P'ohang-Seoul-Ulchin area.

*HRVD **29** 10:14:28.4±0.2,36.66N×129.95E,h12km,MW5.1/63, Centroid moment Tensor Solution. LP body waves: s39,c52;Mantle waves: s63,c112; Half duration: 0 Moment tensor: Scale 10^16Nm; Mrr4.54±.10; Mθθ0.28±.10; Mφφ-4.82±.09; Mrθ-0.90±.34; Mθφ0.37±.09; Mφr1.18±.32; Best double couple: M0 4.93×10^16 NP1:φs186°,δ38°,λ106°. NP2:φs346°,δ53°,λ78°. Principal axes: T 4.84, Plg78°, Azm212°; N .16, Plg10°, Azm353°; P -5.01, Plg7°, Azm85°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*MOS **29** 10:14:28.3±0.9,36.78N×129.89E,h33km,mb5.3/39, MS4.8/21 Error ellipse: s-maj=11.1km s-min=5.8km az=103.3*

*IDC **29** 10:14:29.7±3.2,36.68N×130.00E,h38km±27km,mb4.8/27, mb1 4.9/30,mb1mx4.9/33,ML4.0/3,MS4.2/16,Ms1 4.2/16, ms1mx4.0/34,Error ellipse: s-maj=14.2km s-min=12.4km az=82.0*

ISC 29 10:14:24.9±0.5,36.62N±0.02×130.06E±0.02,h16km±3km, h17km±3.7km:pP-P,n515,σ0§97/528,mb5.2/150,MS4.6/36, 63C-11D,Sea of Japan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KSULJ	**Uljin**	**0.53**	**279**	P	**Pb**	**10 14 36.1**	**+0.8**
KSULJ				S	**Sb**	**10 14 44.5**	**+2.1**
KSPOH	**Pohang**	**0.81**	**223**	P	**Pb**	**10 14 42.3**	**+2.2**
KSAND	**Andong**	**1.09**	**268**	P	**Pb**	**10 14 45.9**	**+1.0**
KSDAG	**Daegu**	**1.27**	**228**	P	**Pb**	**10 14 48.7**	**+0.9**
KSDAG				S	**Sb**	**10 15 07.4**	**+3.6**
KSDGY	**Daegwallycong**	**1.54**	**315**	P	**Pn**	**10 14 51.3**	**-0.6**
KSDGY				S	**Sn**	**10 15 11.7**	**0.0**
KSBUS	**Busan**	**1.57**	**210**	P	**Pn**	**10 14 53.1**	**+0.8**
KSCHJ	**Chungju**	**1.69**	**279**	P	**Pn**	**10 14 54.1**	**-0.1**
KS15	**Wonju Array Si**	**1.92**	**296**	*eP*	**Pn**	**10 14 57.1**	**-0.3**
KS15				*eS*	**Sn**	**10 15 24.6**	**+3.2**
KSCHC	**Chuncheon**	**2.13**	**304**	P	**Pn**	**10 14 59.8**	**-0.6**
JTU	**Tsushima**	**2.16**	**195**	⇑P	**Pn**	**10 15 01.3**	**+0.5**
JTU				*eS*	**Sn**	**10 15 27.5**	**+0.1**
JGT	**Gotsu**	**2.44**	**130**	⇓P	**Pn**	**10 15 03.6**	**-1.2**
JGT				S	**Sn**	**10 15 32.2**	**-2.3**
KSCHO	**Jeonju**	**2.48**	**252**	P	**Pn**	**10 15 05.6**	**+0.2**
JTY	**Toyota**	**2.49**	**160**	⇑P	**Pn**	**10 15 05.2**	**-0.4**
JTY				*eS*	**Sn**	**10 15 34.6**	**-1.2**
KSCWO	**Cheorwon**	**2.50**	**307**	P	**Pn**	**10 15 04.9**	**-0.8**
KSSWO	**Suwon**	**2.56**	**286**	P	**Pn**	**10 15 06.5**	**-0.1**
JHIK	**Hikimi**	**2.58**	**143**	⇓P	**Pn**	**10 15 06.0**	**-0.9**
KSSEO	**Seoul**	**2.66**	**290**	P	**Pn**	**10 15 07.4**	**-0.5**
KSKUS	**Gunsan**	**2.67**	**258**	P	**Pn**	**10 15 07.9**	**-0.3**
SAI	**Saigo**	**2.68**	**98**	*eS*	**Sn**	**10 15 36.5**	**-4.1**
JHT	**Toyohira**	**2.74**	**135**	P	**Pn**	**10 15 07.9**	**-1.2**
JHT				*eS*	**Sn**	**10 15 40.3**	**-1.9**
KSJEU	**Jeongeup**	**2.77**	**247**	P	**Pn**	**10 15 09.6**	**0.0**
JII	**Iki**	**2.83**	**185**	⇑P	**Pn**	**10 15 11.1**	**+0.7**
INCN	**Inchon**	**2.87**	**289**	*eP*	**Pn**	**10 15 10.4**	**-0.6**
INCN				*eS*	**Sn**	**10 15 54.3**	**+8.7**
KSKWJ	**Gwangju**	**2.88**	**241**	P	**Pn**	**10 15 11.4**	**+0.3**
KSSES	**Seosan**	**2.90**	**274**	P	**Pn**	**10 15 11.3**	**-0.2**
KSMUS	**Musan**	**2.92**	**297**	P	**Pn**	**10 15 10.8**	**-0.9**
JFA	**Akaike**	**2.96**	**168**	⇑P	**Pn**	**10 15 12.2**	**-0.1**
JHS	**Saijyo**	**2.96**	**122**	P	**Pn**	**10 15 10.7**	**-1.6**
JFI	**Itaya**	**3.19**	**175**	⇑P	**Pn**	**10 15 16.1**	**+0.5**
JUR	**Ureshino**	**3.52**	**181**	P	**Pn**	**10 15 21.1**	**+0.9**
KSWAN	**Wando**	**3.53**	**232**	P	**Pn**	**10 15 20.5**	**+0.2**
JNU	**Nakatsue**	**3.55**	**169**	Pn	**Pn**	**10 15 21.2**	**+0.6**
	26nm,0.3s,baz=27,slow=6.8,SNR=117						
JNU	**Nakatsue**	**3.55**	**169**	⇑P	**Pn**	**10 15 21.2**	**+0.5**
JTA	**Tamana**	**3.67**	**174**	P	**Pn**	**10 15 22.6**	**+0.3**
JET	**Tanbara**	**3.75**	**138**	P	**Pn**	**10 15 23.6**	**+0.2**
NGSJ	**Nagasaki 2**	**3.98**	**183**	⇑P	**Pn**	**10 15 27.5**	**+0.7**
JFU	**Fukue jima 2**	**4.10**	**196**	P	**Pn**	**10 15 29.4**	**+1.0**
JIU2	**Izumi 2**	**4.11**	**171**	⇑P	**Pn**	**10 15 28.9**	**+0.3**
JHD	**Hondo**	**4.14**	**179**	⇑P	**Pn**	**10 15 29.7**	**+0.6**
JKIT	**Kitakata**	**4.15**	**163**	P	**Pn**	**10 15 29.2**	**+0.1**
KSHUK	**Heuksando**	**4.22**	**244**	P	**Pn**	**10 15 29.8**	**-0.3**
JMN	**Monobe**	**4.26**	**132**	P	**Pn**	**10 15 29.8**	**-0.9**
KSJJU	**Jeju**	**4.29**	**223**	P	**Pn**	**10 15 32.2**	**+1.1**
JTO	**Tosashimizu**	**4.38**	**148**	P	**Pn**	**10 15 32.0**	**-0.4**
JZO	**Okuchi**	**4.49**	**174**	P	**Pn**	**10 15 34.7**	**+0.7**
JAI	**Aioi**	**4.57**	**127**	⇓P	**Pn**	**10 15 34.0**	**-1.1**
JFM	**Mihama**	**4.92**	**101**	P	**Pn**	**10 15 38.8**	**-1.3**
JKG	**Kaga**	**5.07**	**92**	P	**Pn**	**10 15 40.8**	**-1.4**
JNAR	**Kushima--Naru**	**5.18**	**168**	P	**Pn**	**10 15 45.1**	**+1.4**
JGM	**Miyama**	**5.47**	**98**	P	**Pn**	**10 15 46.6**	**-1.2**
JGN	**Niukaw**	**5.87**	**92**	P	**Pn**	**10 15 52.1**	**-1.3**
JSZ	**Suzu**	**5.90**	**80**	P	**Pn**	**10 15 52.9**	**-1.0**
JTN	**Tanegashima 3**	**6.00**	**172**	P	**Pn**	**10 15 56.0**	**+0.7**
JNG	**Nsakai**	**6.48**	**89**	P	**Pn**	**10 16 01.7**	**-0.4**
JJN	**Nakama**	**6.52**	**83**	P	**Pn**	**10 16 01.6**	**-1.0**
MAJO	**Matsushiro**	**6.56**	**88**	*eP*	**Pn**	**10 16 02.2**	**-1.0**
	84nm,1.0s						
MAT	**Matsushiro**	**6.56**	**88**	P	**Pn**	**10 16 02.4**	**-0.8**
MAT				S	**Sn**	**10 17 15.8**	**-2.6**
MAT	**Matsushiro**	**6.56**	**88**	*eP*	**Pn**	**10 16 02.0**	**-1.2**
	30nm,1.0s						
MAT				*eS*	**Sn**	**10 17 16.0**	**-2.4**
JNT	**Takato**	**6.57**	**94**	P	**Pn**	**10 16 04.1**	**+0.7**
DL2	**Dalian**	**7.06**	**291**	PG	Px	10 16 35.5	
DL2				SG	Sx	10 18 09.5	
JHK	**Hiroka**	**7.20**	**82**	P	**Pn**	**10 16 10.9**	**-1.4**
SNY	**Shenyang**	**7.23**	**318**	⇑PG	Px	10 16 40.8	
SNY				SG	Sx	10 18 14.3	
JAW	**Awa shima**	**7.53**	**73**	P	**Pn**	**10 16 15.5**	**-1.3**
CN2	**Changchun**	**7.99**	**335**	*eP*	**Pn**	**10 16 21.8**	**-1.5**
CN2				*eS*	**Sn**	**10 17 52.3**	**-1.9**
CN2				LR	LR		
	comp=Z,10μm,11.0s						
MDJ	**Mudanjiang**	**8.00**	**358**	*eP*	**Pn**	**10 16 22.1**	**-1.3**
	comp=Z,29nm,0.6s						
JTK	**Tokunoshima**	**8.86**	**186**	P	**P**	**10 16 38.5**	**+3.2**
SSE	**Sheshan**	**9.20**	**236**	P	**P**	**10 16 39.5**	**-0.6**
SSE				S	**Sn**	**10 18 22.3**	**-2.0**
SSE				AMB	AMB		
	comp=Z,47nm,0.7s						
JOW	**Kunigami**	**9.87**	**189**	Pn	**P**	**10 16 52.9**	**+3.5**
	comp=Z,1.3nm,0.3s,baz=10,slow=9.4,SNR=6.9						
NJ2	**Nanjing**	**10.32**	**247**	*eP*	**P**	**10 16 55.8**	**+0.4**
NJ2				PP	PP	10 17 03.5	0.0
NJ2				S	**S**	**10 18 51.0**	**-0.8**
NJ2				SS	SS	10 19 04.0	-1.5
NJ2				AMB	AMB		
	comp=Z,80nm,1.0s						
NJ2				AMB	AMB		
	comp=Z,440nm,8.0s						
TIA	**Tai'an**	**10.43**	**272**	*eP*	**P**	**10 16 55.8**	**-1.2**
BJI	**Beijing**	**11.43**	**292**	P	**P**	**10 17 10.8**	**+0.3**
BJI				AMB	AMB		
	comp=Z,19nm,0.8s						
BJT	**Baijiatuan**	**11.43**	**291**	*eP*	**P**	**10 17 09.2**	**-1.4**
	comp=Z,27nm,0.8s						
ASAJ	**Asahikawa**	**12.14**	**48**	Pn	**P**	**10 17 22.1**	**+2.0**
	comp=Z,1.4nm,0.3s,baz=257,slow=20,SNR=14						
ASAJ				LR	LR	10 21 15.9	
	comp=Z,1μm,21.2s,baz=192,slow=34						
ASAJ	**Asahikawa**	**12.14**	**48**	P	**P**	**10 17 22.1**	**+2.0**
ASAJ				pmax	pmax		
	comp=Z,1.0nm,0.3s						
ASAJ				MLR	MLR		
	comp=Z,1μm,21.2s						
KLR	**Kul'dur**	**12.67**	**5**	*eP*	**P**	**10 17 28.0**	**+0.8**
KLR				MLR	MLR		
	comp=E,1μm,9.0s						
KLR				MLR	MLR		
	comp=Z,4μm,9.0s						
TATO	**Taipei**	**13.73**	**215**	P	**P**	**10 17 40.6**	**-0.9**
	comp=Z,74nm,0.8s						
YSS	**Yuzh-Sakhalins**	**13.99**	**39**	⇑*i*P	**P**	**10 17 46.2**	**+1.5**
YSS				S	**S**	**10 20 28.0**	**+7.4**
YSS				pmax	pmax		
	comp=Z,20nm,1.0s						
YSS				MLR	MLR		
	comp=Z,2μm,13.0s						
YSS				MLR	MLR		
	comp=N,2μm,14.0s						
YSS				MLR	MLR		
	comp=E,2μm,13.0s						
YSS	**Yuzh-Sakhalins**	**13.99**	**39**	*eP*	**P**	**10 17 46.7**	**+2.0**
	comp=E,116nm,1.1s						
CBIJ	**Chichi jima**	**14.00**	**129**	LR	LR	10 22 38.3	
	comp=E,710nm,19.5s,baz=308,slow=35						
HIA	**Hailar**	**14.71**	**332**	*eP*	**P**	**10 17 54.3**	**+0.3**
	comp=E,100nm,1.0s						
HHC	**Hu-ho-hao-te**	**15.04**	**292**	⇑*i*P	**P**	**10 18 05.8**	**+7.4**
HHC				AP		10 18 11.0	
HHC				XP		10 18 14.5	

QIZ XS 10 24 22.3
QIZ AMB AMB
comp=Z,439nm,8.4s
QIZ Qiongzhong 24.94 231 *e*P **P** **10 19 51.1 +2.1**
YAK Yakutsk 25.44 360 *e*P **P** **10 19 52.7 -0.5**
YAK *e**PP pP 10 19 59.6 +1.8
YAK *e*PPP PPP 10 20 35.6 -8.2
YAK *e* 10 23 21.5
YAK *e*S **S** **10 24 18.6 +1.8**
YAK *e*SS SS 10 25 26.8 +7.6
YAK pmax pmax
comp=Z,33nm,1.0s
YAK pmax pmax
comp=N,19nm,1.1s
YAK pmax pmax
comp=N,4.0nm,0.9s
YAK pmax pmax
comp=Z,5.0nm,0.9s
YAK pmax pmax
comp=E,8.0nm,1.0s
YAK smax
comp=N,2.0nm,1.0s
YAK smax
comp=Z,3.0nm,0.9s
YAK smax
comp=E,2.0nm,1.2s
YAK MLR MLR
comp=N,328nm,11.0s
YAK MLR MLR
comp=Z,337nm,11.0s
YAK MLR MLR
comp=E,143nm,12.0s
YAK Yakutsk 25.44 360 *e*P **P** **10 19 52.0 -1.2**
comp=E,63nm,0.9s,mb5.2
MOY Mondy 25.50 315 *e*P **P** **10 19 54.4 +0.6**
PET Petropavlovsk 25.84 42 *e*P **P** **10 20 03.9 +6.8**
PET *e*S **S** **10 24 30.4 +6.8**
PET pmax pmax
comp=Z,27nm,1.4s,mb4.6
PET pmax pmax
comp=Z,200nm,16.8s
PET smax
comp=E,900nm,17.3s
PET MLR MLR
comp=Z,900nm,17.0s,MS4.4
PET MLR MLR
comp=Z,900nm,10.0s
KMI Kunming 26.01 252⇑ *e*P **P** **10 19 59.0 +0.1**
KMI PP PP 10 20 35.3 -4.9
KMI S **S** **10 24 26.8 +0.2**
KMI XS 10 24 39.8
KMI SS SS 10 25 33.0 -0.3
KMI AMB AMB
comp=Z,102nm,1.0s,mb5.3
MA2 Magadan 26.59 24*d i*P **P** **10 20 04.2 +0.3**
MA2 pmax pmax
comp=Z,92nm,2.6s,mb4.8
MA2 MLR MLR
comp=Z,700nm,16.0s,MS4.3
MA2 Magadan 26.59 24 *e*P **P** **10 20 03.2 -0.8**
comp=E,28nm,0.9s,mb4.8
SEY Seymchan 29.71 21 *e*P **P** **10 20 33.2 +1.1**
SEY 10 21 41.3
SEY pmax pmax
comp=Z,60nm,1.0s,mb5.3
SEY pmax pmax
comp=N,20nm,1.1s
SEY pmax pmax
comp=E,30nm,1.1s
KKTK Khon Kaen 31.48 237 P **P** **10 20 49.0 +0.8**
comp=E,247nm,0.9s,mb6.0
CMAR Chiang Mai Arr 32.79 245 P **P** **10 20 59.5 -0.1**
comp=E,1.9nm,0.5s,mb4.3,baz=40,slow=7.6,SNR=15
CMAR PcP PcP 10 23 44.6 -0.2
comp=E,2.1nm,0.7s,baz=32,slow=1.7,SNR=7.0
CMAR LR LR 10 33 35.6
comp=E,350nm,20.5s,MS4.0,baz=243,slow=35
CMAR Chiang Mai Arr 32.79 245 P **P** **10 20 59.5 -0.1**
CMAR 10 23 44.7
CMAR pmax pmax
comp=Z,2.0nm,0.5s
CMAR pmax pmax
comp=Z,2.0nm,0.7s
CMAR MLR MLR
comp=Z,350nm,20.5s
WMQ Urumqi 32.85 296 P **P** **10 21 00.8 +0.9**
WMQ PP PP 10 22 09.0 -1.0
WMQ PCP PcP 10 23 46.3 +1.5
WMQ S **S** **10 26 15.5 0.0**
WMQ PCS 10 27 30.5
WMQ AMB AMB
comp=Z,55nm,1.1s,mb5.4
WMQ AMB AMB
comp=Z,335nm,5.2s
LSA Lhasa 33.13 269 P **P** **10 21 03.3 +0.8**
LSA Lhasa 33.13 269 *e*P **P** **10 21 03.0 +0.5**
comp=Z,13nm,0.9s,mb4.9
SHL Shillong 34.29 262⇑ *i*P **P** **10 21 11.5 -1.1**
TIXI Tiksi 35.11 359⇓ *e*P **P** **10 21 17.6 -1.5**
TIXI pmax pmax
comp=Z,41nm,1.1s,mb5.3
TIXI MLR MLR
comp=Z,700nm,15.0s,MS4.5
TIXI Tiksi 35.11 359 *e*P **P** **10 21 17.2 -1.9**
comp=Z,41nm,1.0s,mb5.3
ZAL Zalesovo 35.53 314 LR LR 10 35 30.4
comp=Z,750nm,20.7s,MS4.4,baz=281,slow=36
MKAR Makanchi Array 36.58 301 P **P** **10 21 31.4 -0.4**
comp=Z,28nm,0.9s,mb5.1,baz=91,slow=9.5,SNR=126
MKAR PcP PcP 10 23 53.8 -1.7
comp=Z,9.6nm,0.8s,baz=63,slow=2.7,SNR=12
MKAR Makanchi Array 36.58 301 P **P** **10 21 31.4 -0.4**
MKAR 10 23 53.8
MKAR pmax pmax
comp=Z,28nm,0.9s
MKAR pmax pmax
comp=Z,10.0nm,0.8s
MKAR Makanchi Array 36.58 301 P **P** **10 21 31.4 -0.4**
MKAR PcP PcP 10 23 53.8 -1.7
NVS Novosibirsk 36.59 315 *e*P **P** **10 21 31.8 0.0**
NVS pmax pmax
comp=Z,21nm,1.0s,mb4.9
NVS pmax pmax
comp=N,7.0nm,0.9s
NVS pmax pmax
comp=E,19nm,1.0s
BILL Bilibino 37.40 21 *e*P **P** **10 21 38.7 +0.2**
BILL pmax pmax
comp=Z,34nm,2.6s,mb4.7
BILL MLR MLR
comp=Z,600nm,18.0s,MS4.4
BILL Bilibino 37.40 21 *e*P **P** **10 21 37.9 -0.6**
comp=Z,9.4nm,0.9s,mb4.6
PKI Pulchoki 38.60 270 *e*P **P** **10 21 48.9 -0.1**
comp=Z,101nm,1.0s,mb5.5
KKN Kakani 38.61 270 *e*P **P** **10 21 49.1 0.0**
comp=Z,121nm,0.9s,mb5.6
DMN Daman 38.83 270 *e*P **P** **10 21 50.6 -0.3**
comp=Z,92nm,1.0s,mb5.5
KURK Kurchatov 38.99 308 *e*P **P** **10 21 51.1 -0.9**
GKN Gorkha 39.04 271 *e*P **P** **10 21 52.2 -0.5**
comp=Z,262nm,1.0s,mb5.9
DANN Dangsing 39.60 272 *e*P **P** **10 21 57.4 +0.1**
KOLN Koldanda 39.97 271 *e*P **P** **10 22 00.1 -0.3**
comp=Z,191nm,1.0s,mb5.8
ULHL Ulahol 41.37 295 P **P** **10 22 12.3 +0.6**
SNR=6.3
TKM2 Tokmak 2 41.71 296 P **P** **10 22 15.4 +0.9**
SNR=74
KZA Kyzart 42.12 295 P **P** **10 22 19.5 +1.6**
SNR=51
KSH Kashi 42.15 291 P **P** **10 22 19.0 +0.9**
KSH *e*PP PP 10 23 59.0 +0.1
KSH *e*PCP PcP 10 24 15.0 +1.8
KSH *e*PCS 10 28 05.5
KSH *e*S **S** **10 28 39.0 +2.0**
KSH *e*SS SS 10 31 39.5 +0.2
KSH AMB AMB
comp=Z,70nm,1.0s,mb5.2
KBK Karagaybulak 42.23 296 P **P** **10 22 19.5 +0.7**
SNR=21
CHMS Chumysh 42.31 296 P **P** **10 22 19.6 +0.2**
SNR=9.3
USP Ospenovka 42.44 297 P **P** **10 22 20.7 +0.2**
SNR=16
AAK Ala-Archa 42.56 296 P **P** **10 22 21.8 +0.3**
SNR=16
AAK Ala-Archa 42.56 296 *e*P **P** **10 22 21.1 -0.4**
comp=Z,19nm,0.8s,mb4.9
UCH Uchtor 42.63 295 P **P** **10 22 22.8 +0.8**
SNR=38
EKS2 Erkin-Say 43.08 296 P **P** **10 22 25.7 0.0**
SNR=11
KALG Kalgarh 43.16 276 *e* **P** **10 22 20.6 -5.9**
AML Almayashu 43.24 295 P **P** **10 22 28.2 +1.2**
SNR=72
BVAR Borovoye Array 44.05 311 P **P** **10 22 33.0 -0.4**
comp=Z,33nm,0.7s,mb5.2,baz=100,slow=9.0,SNR=149
BVAR PcP PcP 10 24 18.5 -0.9
comp=Z,11nm,0.7s,baz=99,slow=3.4,SNR=9.9
BRVK Borovoye 44.11 311 *e*P **P** **10 22 33.2 -0.7**
ASOR Ausora 44.24 275 *e*P **P** **10 22 34.5 -0.9**
KKR Kurukshetra 44.52 277 *e*P **P** **10 22 37.7 +0.1**
NDI New Delhi 44.72 276 *e*P **P** **10 22 37.5 -1.7**
AGRA Agra 44.75 273 *e*P **P** **10 22 38.4 -1.0**
AYAN Aya Nagar 44.87 275 *e*P **P** **10 22 40.0 -0.4**
AYAN *e* 10 22 42.3
comp=Z,56nm,1.1s
ZRNK Zerenda 44.89 311 *e*P **P** **10 22 39.7 -0.5**
BHGR Bahadurgarh 44.94 276 *e*P **P** **10 22 40.7 -0.2**
JBP Jabalpur 44.97 267⇑ *i*P **P** **10 22 44.0 +2.8**
JBP *i* 10 29 28.1
SONA Sohna 45.01 275 *e*P **P** **10 22 40.7 -0.8**
SONA *e* 10 22 42.5
comp=Z,85nm,1.0s
RTK Rohtak 45.22 276 *e*P **P** **10 22 42.6 -0.5**
KUDL Kundal 45.52 275 *e*P **P** **10 22 44.8 -0.8**
KUDL *e* pP 10 22 48.1 -2.2
comp=Z,34nm,1.3s
ANM Nome 46.78 32 *e*P **P** **10 22 57.0 +2.0**
BHPL Bhopal 46.99 269 *e*P **P** **10 22 55.1 -2.1**
BHPL *e* 10 22 57.5
comp=Z,18nm,0.9s
AJM Ajmer 47.72 274 *e*P **P** **10 23 02.4 -0.6**
AJM *e* 10 23 04.4
comp=Z,30nm,0.6s
HYB Hyderabad 49.10 261 *i* P **P** **10 23 13.0 -0.7**
HYB *e*PcP PcP 10 24 36.0 -1.6
HYB *e*S **S** **10 30 20.0 +3.2**
HYB Hyderabad 49.10 261 *e*P **P** **10 23 13.0 -0.7**
JASL Jaisalmer 50.52 277 *e*P **P** **10 23 23.4 -1.1**
ARU Arti 50.53 317 *e*P **P** **10 23 23.1 -1.0**
ARU pmax pmax
comp=Z,40nm,0.7s,mb5.5
ARU MLR MLR
comp=Z,600nm,14.0s,MS4.8
SVW Sparrevohn 51.34 37 *e*P **P** **10 23 31.5 +1.3**
IMA Indian Mountai 51.67 30 *e*P **P** **10 23 33.4 +0.7**
POO Poona 52.26 266 *e*P **P** **10 23 35.9 -1.8**
POO *e* pP 10 23 41.6 -1.0
comp=Z,40nm,1.2s
MCK McKinley 54.00 33 *e*P **P** **10 23 49.6 -0.3**
comp=Z,17nm,1.2s,mb4.8
PMS Palmer South 54.21 36 *e*P **P** **10 23 51.8 +0.2**
COLA College 54.25 31*ce*P **P** **10 23 52.6 +0.8**
COLA College 54.25 31 *e*P **P** **10 23 51.5 -0.3**
comp=Z,56nm,1.2s,mb5.4
COLA LR LR
comp=Z,166nm,19.0s,MS4.1
PMR Palmer 54.34 36 *e*P **P** **10 23 51.5 -1.1**
comp=Z,27nm,1.1s,mb5.1
PMR LR LR
comp=Z,265nm,20.0s,MS4.3
FITZ Fitzroy Crossi 54.58 185⇑ *i*P **P** **10 23 54.0 -0.9**
comp=Z,12nm,0.8s,mb5.0
FITZ Fitzroy Crossi 54.58 185 LR LR 10 45 16.0
comp=Z,65nm,21.9s,MS3.7,baz=76,slow=34
SML Sawmill 54.66 35 *e*P **P** **10 23 54.8 -0.1**
ILAR Eielson Array 54.67 31 P **P** **10 23 53.8 -1.1**
comp=Z,7.9nm,0.8s,mb4.8,baz=273,slow=5.4,SNR=68
ILAR LR LR 10 48 49.0
comp=Z,96nm,21.2s,MS3.8,baz=132,slow=38
ILAR Eielson Array 54.67 31 P **P** **10 23 53.8 -1.1**
ILAR pmax pmax
comp=Z,8.0nm,0.8s
ILAR MLR MLR
comp=Z,96nm,21.2s
WRAB Tennant Creek 56.39 175 *e*P **P** **10 24 06.2 -1.7**
comp=Z,80nm,1.2s,mb5.6
WB2 Warramunga Arr 56.40 175⇑ *i*P **P** **10 24 06.8 -1.2**
CTA Charters Tower 58.44 162⇑ *i*P **P** **10 24 21.3 -1.1**
comp=Z,10nm,0.9s,mb4.8
INK Inuvik 58.81 26 P **P** **10 24 23.4 -1.0**
comp=Z,15nm,0.8s,mb5.1,baz=302,slow=7.9,SNR=32
INK Inuvik 58.81 26 P **P** **10 24 23.5 -0.9**
INK pmax pmax
comp=Z,15nm,0.8s
INK Inuvik 58.81 26 *e*P **P** **10 24 22.8 -1.6**
comp=Z,22nm,0.9s,mb5.2
SPITS Spitsbergen Ar 59.04 347 P **P** **10 24 25.1 -0.8**
comp=Z,33nm,0.8s,baz=51,slow=13,SNR=19
SPITS LR LR 10 51 09.2
comp=Z,12nm,18.1s,baz=171,slow=37
SPB4 Spitsbergen Ar 59.04 347 *e*P **P** **10 24 24.4 -1.5**
APA Apatity 59.16 334⇑ *i*P **P** **10 24 16.8 -10**
APA pmax pmax
comp=Z,34nm,1.0s,mb5.3
AS12 Alice Springs 60.07 176⇑ *i*P **P** **10 24 32.5 -1.2**
comp=Z,12nm,0.9s,mb4.9
ASAR Alice Springs 60.07 176 P **P** **10 24 32.5 -1.1**
comp=Z,9.3nm,0.9s,mb4.8,baz=3.2,slow=6.5,SNR=54
ASAR PKP2bc 10 54 08.6
comp=Z,0.4nm,0.8s,baz=161,slow=3.2,SNR=4.5
ASAR Alice Springs 60.07 176 P **P** **10 24 32.5 -1.1**
ASAR ⇑ *e* 10 54 08.6
KEV Kevo 60.43 337 *ep* **P** **10 24 33.3 -2.2**
ARCES ARCESS Array B 61.00 337 P **P** **10 24 37.7 -1.7**
comp=Z,13nm,0.9s,mb5.1,baz=56,slow=8.7,SNR=17
ARCES PcP PcP 10 25 22.0 -0.5
comp=Z,5.5nm,0.8s,baz=59,slow=5.3,SNR=6.7
ARCES LR LR 10 55 40.7
comp=Z,499nm,18.2s,MS4.7,baz=268,slow=41
ARCES ARCESS Array B 61.00 337 P **P** **10 24 37.7 -1.7**
ARCES 10 25 22.0
ARCES pmax pmax
comp=Z,13nm,0.9s
ARCES pmax pmax
comp=Z,6.0nm,0.8s
ARCES MLR MLR
comp=Z,499nm,18.2s
THR Tehran 61.83 295 P **P** **10 24 45.8 +0.4**
comp=Z,9.7nm,0.7s,mb5.0,baz=234,slow=8.7,SNR=1.2
THR Tehran 61.83 295 P **P** **10 24 45.8 +0.3**
THR pmax pmax
comp=Z,10.0nm,0.7s
JOF Joensuu 61.83 329 *ep* **P** **10 24 42.9 -2.2**
comp=Z,24nm,0.8s,mb5.4
JOF Joensuu 61.83 329 *e*P **P** **10 24 42.9 -2.2**
JOF pmax pmax
comp=Z,24nm,0.8s,mb5.4
MOS Moscow 61.94 320 *e*P **P** **10 24 43.9 -2.0**
MOS *e* 10 26 56.5
MOS pmax pmax
comp=Z,83nm,0.8s,mb5.9
MOS MLR MLR
comp=Z,1μm,14.9s,MS5.1
OBN Obninsk 62.74 320 *e*P **P** **10 24 50.5 -0.8**
OBN *e* 10 27 03.2
OBN *e*S **S** **10 33 15.6 -2.1**
OBN *e*SS SS 10 37 25.2 +0.5
OBN pmax pmax
comp=Z,38nm,1.5s,mb5.3
OBN MLR MLR
comp=Z,900nm,14.0s,MS5.1
OBN Obninsk 62.74 320 *e*P **P** **10 24 49.6 -1.7**
VRSR Storozhevoye 63.00 315 *e*P **P** **10 24 51.9 -1.1**
VRSR *e**PP pP 10 25 02.7 +4.8
VRSR *e* 10 25 30.0
VRSR pmax pmax
comp=Z,10.0nm,0.6s,mb5.1
VRSR pmax pmax
comp=E,3.0nm,0.4s
VRSR MLR MLR
comp=Z,1μm,13.0s,MS5.2
VRSR MLR MLR
comp=N,300nm,11.0s,MS5.0
VRSR MLR MLR
comp=E,690nm,16.0s,MS5.0
GOF Gofitskoye 63.35 308⇑ *i*P **P** **10 24 54.5 -0.9**
GOF pmax pmax
comp=Z,50nm,1.5s,mb5.4
PUL Pulkovo 63.68 326 *e*P **P** **10 24 56.3 -1.0**
PUL pmax pmax
comp=Z,90nm,0.6s,mb6.0
PUL pmax pmax
comp=N,130nm,0.7s
PUL pmax pmax
comp=E,130nm,0.8s
PUL MLR MLR
comp=Z,720nm,11.0s,MS5.1
ZEI Tsey 63.80 305 *e*P **P** **10 24 56.9 -1.5**
KIV Kislovodsk 64.06 307*c i*P **P** **10 24 59.4 -0.7**
KIV pmax pmax
comp=Z,85nm,1.1s,mb5.7
KIV MLR MLR
comp=Z,300nm,14.0s,MS4.6
KIV Kislovodsk 64.06 307 *e*P **P** **10 24 59.3 -0.8**
comp=Z,83nm,1.0s,mb5.7
DLBC Dease Lake 64.39 35 *e*P **P** **10 25 02.0 0.0**
FINES FINESS Array B 64.69 329 P **P** **10 25 02.2 -1.7**
comp=Z,14nm,0.6s,mb5.2,baz=75,slow=6.1,SNR=84
FINES LR LR 10 55 25.3
comp=Z,249nm,18.1s,MS4.5,baz=172,slow=38
FINES FINESS Array B 64.69 329 P **P** **10 25 02.3 -1.6**
FINES pmax pmax
comp=Z,14nm,0.6s
FINES MLR MLR
comp=Z,249nm,18.1s
DAG Danmarks Havn 65.19 352⇓ *i*P **P** **10 25 05.7 -1.2**
comp=Z,72nm,1.5s,mb5.5
DAG Danmarks Havn 65.19 352⇓ *i*P **P** **10 25 05.7 -1.2**
DAG pmax pmax
comp=Z,72nm,1.5s,mb5.5
SOC Sochi 66.14 307⇑ *i*P **P** **10 25 11.9 -1.6**
SOC *e* 10 25 41.6
SOC *e* 10 27 40.7
SOC *e*S S 10 33 50.1 -10
SOC *e*PS PS 10 34 17.6 -6.2
SOC *e* 10 35 06.4
SOC pmax pmax
comp=Z,10.0nm,0.9s,mb4.8
SOC pmax pmax
comp=N,4.0nm,0.5s
SOC pmax pmax
comp=E,5.0nm,0.3s
SOC MLR MLR
comp=Z,740nm,16.0s,MS5.0
SOC MLR MLR
comp=N,350nm,18.0s,MS5.0
SOC MLR MLR
comp=E,680nm,14.0s,MS5.0
ERZM Erzurum 66.82 303 *i* P **P** **10 25 18.6 +0.7**
ANN Anapa 66.99 309*c i*P **P** **10 25 17.0 -1.9**
ANN *e*S S 10 34 09.0 -1.1
ANN pmax pmax
comp=Z,30nm,1.4s,mb5.1
ANN pmax pmax
comp=Z,3.0nm,0.8s,mb4.4
ANN pmax pmax
comp=Z,30nm,1.1s,mb5.2
FORT Forrest 67.07 182⇑ *i*P **P** **10 25 18.4 -1.2**
comp=Z,175nm,0.8s,mb6.1
YKW3 Yellowknife Ar 68.48 27 *e*P **P** **10 25 27.1 -0.8**
YKW3 ⇑ *i*PcP PcP 10 25 56.9 +3.6
YKA Yellowknife Ar 68.52 27 P **P** **10 25 27.6 -0.6**
comp=Z,24nm,0.9s,mb5.1,baz=307,slow=6.9,SNR=242
YKA LR LR 10 56 40.0
comp=Z,147nm,19.2s,MS4.2,baz=305,slow=37
YKA Yellowknife Ar 68.52 27 P **P** **10 25 27.6 -0.6**
YKA pmax pmax
comp=Z,24nm,0.9s
YKA MLR MLR
comp=Z,147nm,19.2s
JMIC Jan Mayen 68.69 347 LR LR 10 56 24.6
comp=Z,129nm,18.1s,MS4.2,baz=265,slow=37
KLBR Kellerberrin 68.82 191⇑ *i*P **P** **10 25 28.8 -1.8**
comp=Z,22nm,1.0s,mb5.0
STKA Stephens Creek 68.99 169⇑ *i*P **P** **10 25 31.0 -0.6**
comp=Z,3.5nm,0.7s,mb4.4
STKA Stephens Creek 68.99 169 P **P** **10 25 31.0 -0.6**
comp=Z,4.5nm,0.7s,mb4.5,baz=331,slow=7.2,SNR=9.6
STKA LR LR 10 53 27.4
comp=Z,164nm,19.6s,MS4.3,baz=19,slow=34
ELZG Elazig 69.12 303 *i* P **P** **10 25 34.1 +1.7**
SUW Suwalki 70.03 323 *e*P **P** **10 25 37.3 -0.2**
SUW Suwalki 70.03 323 P **P** **10 25 37.2 -0.4**
BOYT Boyabat 70.30 307 *i* P **P** **10 25 38.9 -0.5**
HFS Hagfors 70.41 332 P **P** **10 25 37.7 -2.1**
comp=Z,48nm,1.3s,mb5.3,baz=63,slow=6.6,SNR=21
HFS Hagfors 70.41 332 P **P** **10 25 37.7 -2.1**
HFS pmax pmax
comp=Z,48nm,1.3s
GZT Gaziantep 70.67 302 *i* P **P** **10 25 43.1 +1.3**
NB2 NORSAR Subarra 70.74 333 P **P** **10 25 39.9 -1.9**
comp=Z,16nm,0.9s,mb4.9,baz=48,slow=6.2
NOA NORSAR Array B 70.74 333 P **P** **10 25 39.6 -2.2**
comp=Z,19nm,1.2s,mb4.9,baz=49,slow=6.1,SNR=24
NOA LR LR 11 02 49.3
comp=Z,320nm,18.5s,MS4.6,baz=25,slow=41
CTKT Corum 70.80 307 *i* P **P** **10 25 42.2 -0.2**
SUMG Summit 70.81 356 *e*P **P** **10 25 41.8 -0.2**
NAO01 NORSAR Array S 70.99 333 *e*P **P** **10 25 42.7 -0.6**
comp=Z,44nm,1.6s,mb5.1
KIS Kishinev 71.00 315 *e*P **P** **10 25 42.0 -1.6**
KIS *e* 10 28 24.0
KIS MLR MLR
comp=N,800nm,15.0s,MS5.2
KIS MLR MLR
comp=E,700nm,15.0s,MS5.2
KIS MLR MLR
comp=Z,1μm,15.0s,MS5.2
KIS MLR MLR
comp=Z,1μm,16.0s
BALT Daday 71.21 308 *i* P **P** **10 25 45.1 +0.2**
BRTR Keskin Array B 72.02 306 P **P** **10 25 49.3 -0.6**
comp=Z,8.1nm,0.9s,mb4.6,baz=90,slow=4.9,SNR=31
MZLS Mizel 72.15 287 P **P** **10 25 49.8 -1.1**
ARSS Ar Rass 72.66 290 P **P** **10 25 53.3 -0.6**
KWP Kalwaria 72.83 319 *e*P **P** **10 25 54.7 +0.3**
KWP *e* 10 25 56.0
KWP Kalwaria 72.83 319 *e*P **P** **10 25 54.0 -0.4**
comp=Z,34nm,1.0s,mb5.2
HILS Ha'il 72.94 292 P **P** **10 25 55.4 -0.1**
BSD Bornholm Skovb 73.16 327⇑ *i*P **P** **10 25 55.7 -0.5**
comp=Z,26nm,0.8s,mb5.2
BSD Bornholm Skovb 73.16 327⇑ *i*P **P** **10 25 55.7 -0.5**
BSD pmax pmax
comp=Z,26nm,0.8s,mb5.2
MLR Muntele Rosu 73.49 315 P **P** **10 25 58.3 0.0**
comp=Z,3.8nm,1.0s,mb4.3,baz=51,slow=2.9,SNR=4.8
MLR Muntele Rosu 73.49 315 P **P** **10 25 58.3 -0.1**
MLR pmax pmax
comp=Z,4.0nm,1.0s
COP Copenhagen 73.85 329 *i* P **P** **10 25 59.9 -0.3**
comp=Z,30nm,0.9s,mb5.2
comp=Z,150nm,17.0s
COP Copenhagen 73.85 329 *e*P **P** **10 25 59.9 -0.3**
COP pmax pmax
comp=Z,30nm,0.9s,mb5.2
COP MLR MLR
comp=Z,160nm,17.0s,MS4.4
COP Copenhagen 73.85 329 *e*P **P** **10 25 59.9 -0.3**
comp=Z,30nm,0.9s,mb5.2
COP LR LR
comp=Z,160nm,17.0s,MS4.4
AFFS 'Afif 73.90 288 P **P** **10 26 00.8 -0.4**
CRVS Cervenica-Dubn 73.92 319 *e*P **P** **10 26 01.6 +0.8**
OJC Ojcow 73.97 321 *e*P **P** **10 26 00.7 -0.3**
OJC *e*PP PP 10 28 48.2 +0.3
OJC *e*S S 10 35 31.3 +0.2
OJC MLR MLR 11 02 16.5
comp=Z,800nm,15.3s,MS5.1
RPW Rockport 74.11 41 *e*P **P** **10 26 02.2 +0.4**
NIE Niedzica 74.20 320 *e*P **P** **10 26 03.3 +0.9**
ULDT Uludag 74.66 309 *i* P **P** **10 26 03.7 -1.5**
NLW Nelson Butte 74.96 41 *e*P **P** **10 26 07.3 +0.5**
LON Longmire 74.99 43 *e*P **P** **10 26 07.3 +0.3**
OKC Ostrava-Krasne 75.04 322 *e*P **P** **10 26 07.3 +0.1**
OKC L 11 03 20.0
comp=Z,0.8nm,12.3s
KSP Ksiaz 75.30 323 *e*P **P** **10 26 08.4 -0.3**
KSP *e* 10 26 10.4
KSP Ksiaz 75.30 323⇑ *e*P **P** **10 26 08.6 -0.1**
PSZ Piszkesteto 75.35 319 *e*P **P** **10 26 09.9 +0.8**
comp=Z,13nm,1.1s,mb4.8
MORC Moravsky Berou 75.38 322 *e*P **P** **10 26 08.9 -0.2**
comp=Z,14nm,1.0s,mb4.8

COR	Corvallis	75.47	45	*e*P		P	10 26 10.0	+0.2	
	comp=Z,40nm,0.8s,mb5.4								
VYHS	Vyhne	75.54	320	*i* P		P	10 26 10.6	+0.5	
DPC	Dobruska-Polom	75.61	323	*e*P		P	10 26 10.6	+0.1	
DPC				L			11 03 00.0		
	comp=Z,1.1nm,12.6s								
UPC	Upice	75.66	323	*e*P		P	10 26 10.6	-0.1	
KBRS	Khaybar	75.71	292	P		P	10 26 11.5	0.0	
BSEG	Bad Segeberg	75.94	328	*e*P		P	10 26 12.0	-0.2	
BSEG				pmax	pmax				
	comp=Z,29nm,1.0s,mb5.2								
TATS	Tathlith	75.95	284	P		P	10 26 12.9	-0.1	
VRAC	Vranov	76.15	322	P		P	10 26 13.6	+0.1	
	comp=Z,12nm,0.9s,mb4.8,baz=63,slow=4.9,SNR=17								
DPW	Davenport	76.20	40	*e*P		P	10 26 14.5	+0.7	
SNIWA	Snively Ranch	76.33	42	P		P	10 26 15.8	+1.2	
PVCC	Panska Ves	76.34	324	*e*P		P	10 26 14.4	-0.2	
PVCC				L			11 03 00.0		
	comp=Z,0.9nm,13.7s								
BRG	Berggiesshubel	76.40	324	*e*P		P	10 26 14.8	-0.1	
BRG				pmax	pmax				
	comp=Z,12nm,1.2s,mb4.7								
BRG				MLR	MLR				
	comp=N,680nm,11.0s,MS5.4								
BRG				MLR	MLR				
	comp=E,790nm,11.0s,MS5.4								
BRG				MLR	MLR				
	comp=Z,1µm,14.5s,MS5.4								
BRG	Berggiesshubel	76.40	324	*e*P		P	10 26 14.8	-0.1	
	comp=Z,12nm,1.2s,mb4.7								
BRG				LR	LR				
	comp=Z,1µm,14.5s,MS5.4								
HAWA	Hanford	76.44	42	*e*P		P	10 26 15.7	+0.4	
	comp=Z,40nm,0.9s,mb5.3								
JMQS	Jabal Moqyreh	76.47	296	P		P	10 26 15.5	-0.3	
NEW	Newport	76.51	39	*e*P		P	10 26 16.2	+0.7	
	comp=Z,14nm,0.9s,mb4.9								
CLL	Collm	76.55	325	⇑P		P	10 26 15.3	-0.4	
	comp=Z,logA/T=1.8,mb5.5								
CLL				*e*PP		PP	10 29 10.0	+0.5	
CLL				*e*			10 29 51.0		
CLL	Collm	76.55	325	⇑*i*P		P	10 26 15.3	-0.4	
CLL				pmax	pmax				
	comp=Z,51nm,0.8s,mb5.5								
CLL	Collm	76.55	325	⇑*i*P		P	10 26 15.3	-0.4	
	comp=Z,51nm,0.8s,mb5.5								
ZST	Bratislava	76.62	321	*e*P		P	10 26 17.9	+1.7	
PRU	Pruhonice	76.71	323	*e*P		P	10 26 16.2	-0.5	
	comp=Z,28nm,1.1s,mb5.1								
PRU				L			11 03 40.0		
	comp=Z,1.0nm,12.0s								
PRU	Pruhonice	76.71	323	*e*P		P	10 26 16.2	-0.5	
PRU				pmax	pmax				
	comp=Z,28nm,1.1s,mb5.1								
PRU				MLR	MLR				
	comp=Z,1µm,12.0s,MS5.3								
JMOS	Jabal al Moall	76.86	297	P		P	10 26 17.6	-0.3	
HUMO	Hull Mountain	76.88	46	*e*P		P	10 26 18.7	+1.0	
DJNS	Zahran al Janu	76.93	282	P		P	10 26 18.8	+0.3	
HAQS	Haql	77.06	297	P		P	10 26 18.8	-0.3	
NAMS	An Nimas	77.15	284	P		P	10 26 19.9	+0.2	
BLJS	Baljurashi	77.22	285	P		P	10 26 20.5	+0.4	
BDAS	Al Bad'	77.29	296	P		P	10 26 19.9	-0.5	
LNOR	Lincton Mounta	77.44	42	*e*P		P	10 26 22.1	+1.3	
YNBS	Yanbu' al Bahr	77.47	291	P		P	10 26 21.3	-0.1	
NKC	Novy Kostel	77.54	324	*e*P		P	10 26 21.2	0.0	
NKC				L			11 04 30.0		
	comp=Z,1.7nm,13.7s								
YBH	Yreka Blue Hor	77.56	47	*e*P		P	10 26 22.8	+1.3	
	comp=Z,15nm,1.0s,mb4.9								
WALA	Waterton Lakes	77.58	37	*e*P		P	10 26 22.2	+0.8	
	comp=Z,15nm,0.8s,mb5.0								
MOX	Moxa	77.64	325	*i* P		P	10 26 21.6	-0.2	
	comp=Z,logA/T=1.4,mb5.1								
MOX	Moxa	77.64	325	*e*P		P	10 26 21.6	-0.2	
MOX				pmax	pmax				
	comp=Z,55nm,2.0s,mb5.1								
MOX	Moxa	77.64	325	*e*P		P	10 26 21.6	-0.2	
	comp=Z,55nm,2.0s,mb5.1								
KHC	Kasperske Hory	77.75	323	*e*P		P	10 26 22.1	-0.3	
KHC				L			11 04 20.0		
	comp=Z,0.9nm,11.8s								
GEC2	GERESS Array S	77.88	323	*e*P		P	10 26 23.0	-0.2	
GEC2				pmax	pmax				
	comp=Z,19nm,1.4s,mb4.8								
GERES	GERESS Array B	77.88	323	P		P	10 26 23.2	0.0	
	comp=Z,6.0nm,0.7s,mb4.6,baz=45,slow=5.7,SNR=48								
GERES				PP		PP	10 29 20.0	-1.1	
	comp=Z,0.6nm,0.5s,baz=72,slow=8.4,SNR=3.7								
GERES	GERESS Array B	77.88	323	P		P	10 26 23.2	0.0	
GERES							10 29 20.0		
GERES				pmax	pmax				
	comp=Z,6.0nm,0.7s								
GERES				pmax	pmax				
	comp=Z,1.0nm,0.5s								
LTHS	Al Lith	77.92	286	P		P	10 26 24.0	0.0	
VAY	Valandovo	77.96	313	*i* P		P	10 26 22.8	-1.0	
ARSA	Arzberg	78.04	321	⇓*i*P		P	10 26 23.8	-0.3	
	comp=Z,14nm,1.1s,mb4.8								
WET	Wettzell	78.08	323	*e*P		P	10 26 24.1	-0.1	
WET				pmax	pmax				
	comp=Z,20nm,1.4s,mb4.8								
FCC	Fort Churchill	78.11	22	*e*P		P	10 26 24.1	-0.1	
	comp=Z,84nm,1.0s,mb5.6								
SKO	Skopje	78.22	314	*i* P		P	10 26 26.5	+1.3	
SKO				*i*		pP	10 26 30.0	-0.2	
MOA	Molln	78.28	322	⇑*i*P		P	10 26 25.4	+0.1	
	comp=Z,14nm,1.1s,mb4.8								
GRF	Grafenberg Arr	78.49	325	*e*P		P	10 26 27.0	+0.6	
GRF				pmax	pmax				
	comp=Z,85nm,1.0s,mb5.6								
FFC	Flin Flon	78.66	28	*e*P		P	10 26 27.3	0.0	
	comp=Z,128nm,1.2s,mb5.7								
PERS	Pernice	78.66	320	*i* P		P	10 26 27.6	+0.1	
WTSB	Winterswijk	78.84	328	*e*P		P	10 26 27.5	-0.8	
	comp=Z,9.9nm,1.3s,mb4.6								
MOD	Modoc	78.86	46	*e*P		P	10 26 29.4	+0.8	
	comp=Z,37nm,1.1s,mb5.2								
MSO	Missoula	79.07	39	*e*P		P	10 26 30.0	+0.3	
	comp=Z,21nm,1.0s,mb5.0								
KBA	Koelnbreinsper	79.26	322	⇑*i*P		P	10 26 30.5	-0.2	
	comp=Z,25nm,1.2s,mb5.0								
CHMT	Chamberlain Mo	79.36	39	*e*P		P	10 26 31.6	+0.4	
WVOR	Wild Horse Val	79.47	45	*e*P		P	10 26 33.1	+1.1	
	comp=Z,30nm,1.1s,mb5.1								
SIND	Sindeldorf	79.48	325	*e*P		P	10 26 31.5	-0.4	
FUR	Furstenfeldbru	79.52	323	*e*P		P	10 26 32.1	0.0	
FUR				pmax	pmax				
	comp=Z,45nm,1.0s,mb5.3								
TOD	Tromm	79.66	326	*e*P		P	10 26 32.7	-0.2	
TOD	Tromm	79.66	326	*e*P		P	10 26 33.6	+0.7	
JAVS	Javornik	79.70	320	*e*P		P	10 26 32.7	-0.4	
HDH	Heidenheim	79.74	324	*e*P		P	10 26 32.7	-0.6	
OHCM	Honcut	79.78	48	*e*P		P	10 26 33.8	+0.1	
SWS	Schriesheim	79.80	326	*e*P		P	10 26 34.1	+0.5	
WTTA	Wattenberg	79.98	323	⇑*i*P		P	10 26 34.5	-0.1	
	comp=Z,14nm,1.1s,mb4.8								
ABH	Alteburg	80.03	326	*e*P		P	10 26 34.7	-0.1	
EKA	Eskdalemuir Ar	80.06	335	P		P	10 26 34.0	-0.8	
	comp=Z,6.5nm,0.8s,mb4.6,baz=37,slow=5.7,SNR=15								
EKA	Eskdalemuir Ar	80.06	335	P		P	10 26 34.1	-0.8	
EKA				pmax	pmax				
	comp=Z,7.0nm,0.8s								
HGN	Heimansgroeve	80.09	328	⇓*i*P		P	10 26 34.8	-0.3	
	comp=Z,12nm,0.8s,mb4.9								
BEKR	Beckwourth	80.12	47	*e*P		P	10 26 36.4	+0.8	
	comp=Z,28nm,0.9s,mb5.2								
MOTA	Moosalm	80.18	323	⇓*i*P		P	10 26 35.4	-0.3	
	comp=Z,9.3nm,1.0s,mb4.7								
HRY	Holter Researc	80.21	38	*e*P		P	10 26 36.8	+1.0	
SQTA	Sankt Quirin	80.22	323	⇑*i*P		P	10 26 35.7	-0.2	
	comp=Z,14nm,1.3s,mb4.7								
BUCH	Bad Urach	80.23	324	*e*P		P	10 26 35.7	-0.2	
LBG	Lerchenberg	80.34	325	*e*P		P	10 26 36.4	-0.1	
RUP	Ruppelstein	80.38	326	*e*P		P	10 26 36.3	-0.4	
UBR	Uberruh	80.42	324	*e*P		P	10 26 36.7	-0.3	
LANF	Langenberg	80.57	326	*e*P		P	10 26 37.5	-0.2	
GUT	Gutenstein	80.62	324	*e*P		P	10 26 37.8	-0.2	
SPAK	Spaichingen	80.75	325	*e*P		P	10 26 38.5	-0.2	
SPAK	Spaichingen	80.75	325	*e*P		P	10 26 38.4	-0.3	
LCCM	Lewis and Clar	80.79	39	P		P	10 26 39.9	+0.9	
BFO	Black Forest	80.80	325	*e*P		P	10 26 38.8	-0.1	
BFO				pmax	pmax				
	comp=Z,61nm,1.1s,mb5.4								
WLF	Walferdange	80.81	327	*e*P		P	10 26 38.9	0.0	
	comp=Z,92nm,1.7s,mb5.4								
DAVA	Damuels	80.81	323	⇑*i*P		P	10 26 39.4	+0.4	
	comp=Z,67nm,0.9s,mb5.6								
CTI	Castel Tesino	80.82	322	*e*P		P	10 26 38.2	-0.8	
WCN	Washoe City	80.84	48	*e*P		P	10 26 40.7	+1.4	
	comp=Z,12nm,0.8s,mb4.9								
MCMT	McKenzie Canyo	81.00	40	*e*P		P	10 26 40.3	+0.2	
HLID	Hailey	81.04	42	*e*P		P	10 26 41.6	+1.3	
	comp=Z,43nm,1.1s,mb5.3								
HLID					LR	LR			
	comp=Z,205nm,19.0s,MS4.5								
BOZ	Bozeman (W)	81.05	39	*e*P		P	10 26 41.4	+1.1	
	comp=Z,38nm,0.9s,mb5.3								
GIVF	Givet	81.06	328	*e*P		P	10 26 39.4	-0.9	
DAVOX	Davos	81.17	323	P		P	10 26 41.1	+0.2	
	comp=Z,25nm,0.7s,mb5.2,baz=64,slow=4.2,SNR=29								
WLS	Welschbruch	81.18	325	⇑*e*P		P	10 26 40.7	-0.3	
CDF	Champ du Feu	81.22	325	*e*P		P	10 26 40.8	-0.3	
	comp=Z,77nm,1.0s,mb5.3								
KIZ	Kinzarten	81.26	325	*e*P		P	10 26 40.9	-0.4	
LIBD	Limburg	81.26	325	*e*P		P	10 26 41.3	-0.1	
CMB	Columbia Colle	81.27	49	*e*P		P	10 26 42.2	+0.5	
	comp=Z,38nm,1.1s,mb5.2								
FELD	Feldberg	81.28	325	*e*P		P	10 26 41.0	-0.4	
BAIF	Baives	81.35	328	*e*P		P	10 26 40.8	-1.0	
ECH	Echery	81.42	325	*e*P		P	10 26 41.8	-0.4	
BMN	Battle Mountai	81.58	45	*e*P		P	10 26 44.7	+1.5	
	comp=Z,34nm,0.9s,mb5.3								
MOF	Molkenrain	81.69	325	⇑*e*P		P	10 26 43.1	-0.5	
QLMT	Earthquake Lak	81.72	39	*e*P		P	10 26 45.6	+1.8	
BBS	Basel-Blauen	81.80	325	*e*P		P	10 26 43.7	-0.5	
BBS	Basel-Blauen	81.80	325	⇑*e*P		P	10 26 43.6	-0.6	
HINF	Hinteralfeld	81.85	325	*e*P		P	10 26 43.7	-0.7	
	comp=Z,38nm,1.0s,mb5.0								
HAU	Haudompre	81.94	326	*e*P		P	10 26 44.2	-0.7	
	comp=Z,43nm,1.0s,mb5.0								
HAU				*e*R					
	comp=Z,235nm,17.2s								
THEF	They Montfort	81.94	326	*e*P		P	10 26 44.4	-0.5	
YMR	Madison River	82.07	39	*e*P		P	10 26 47.4	+1.7	
SNTG	Esanatoglia	82.09	319	*e*P		P	10 26 47.1	+1.3	
MEZF	Maizieres J'vi	82.15	327	*e*P		P	10 26 45.9	-0.1	
	comp=Z,114nm,1.1s,mb5.4								
TERO	Teramo	82.17	318	*e*P		P	10 26 46.3	+0.1	
LOMF	Lomont	82.20	325	*e*P		P	10 26 45.9	-0.4	
SFI	Santa Sofia	82.21	320	*e*P		P	10 26 46.5	+0.1	
NVAR	Mina Array Bea	82.27	47	P		P	10 26 48.3	+1.5	
	comp=Z,21nm,0.7s,mb5.2,baz=301,slow=3.3,SNR=129								
NVAR					LR	LR	11 04 48.6		
	comp=Z,51nm,18.2s,MS3.9,baz=5.0,slow=37								
PGD	Poggio Sodo	82.30	320	*e*P		P	10 26 48.5	+1.7	
VMG	Vicchio	82.33	320	*e*P		P	10 26 48.4	+1.4	
ZCCA	Zocca	82.35	321	*e*P		P	10 26 48.5	+1.4	
MNV	Mina	82.35	47	*e*P		P	10 26 48.4	+1.2	
	comp=Z,20nm,0.9s,mb5.1								
SEI	Scarperia	82.36	320	*e*P		P	10 26 49.1	+2.0	
VAI	Varese	82.36	323	*e*P		P	10 26 46.4	-0.7	
OMM	Old Mammoth Mi	82.38	48	*e*P		P	10 26 49.5	+2.1	
CII	Carovilli	82.41	317	*e*P		P	10 26 48.8	+1.3	
AQU	L'Aquila	82.47	318	*e*P		P	10 26 49.2	+1.4	
CPI2	Carpinone	82.50	317	*e*P		P	10 26 48.3	+0.4	
GSCL	Gusciola	82.55	321	*e*P		P	10 26 49.0	+0.9	
TDS	Terranova Siba	82.67	315	*e*P		P	10 26 49.7	+0.8	
MCGN	Macugnaga	82.67	323	*e*P		P	10 26 48.7	-0.1	
SDI	San Donato	82.69	317	*e*P		P	10 26 49.3	+0.4	
GRAM		82.71	321	P		P	10 26 49.2	+0.2	
TIP	Timpagrande	82.74	314	*e*P		P	10 26 49.5	+0.3	
SARO	Sassorosso	82.76	321	P		P	10 26 49.2	0.0	
MTUM	Tungsten Hills	82.81	48	*e*P		P	10 26 50.6	+1.0	
BOB	Bobbio (Coli)	82.82	322	*e*P		P	10 26 49.4	-0.1	
MNS	Montasola	82.83	316	*e*P		P	10 26 49.6	0.0	
BACM		82.86	321	P		P	10 26 49.9	+0.2	
CODM		82.89	321	P		P	10 26 49.8	-0.1	
MAIM		82.90	321	P		P	10 26 49.1	-0.9	
WUWY	Wally Ulrich	82.98	40	*e*P		P	10 26 52.4	+2.0	
KSWY	Kelly School	82.98	40	*e*P		P	10 26 52.6	+2.3	
CABF	La Chapelle	83.09	325	*e*P		P	10 26 50.4	-0.5	
	comp=Z,48nm,1.1s,mb5.1								
TPH	Tonopah	83.14	47	*e*P		P	10 26 52.9	+1.6	
	comp=Z,60nm,0.9s,mb5.6								
TPH				*e*PcP		PcP	10 26 57.5	+1.0	
HVU	Hansel Valley	83.14	42	*e*P		P	10 26 51.4	+0.1	
AHID	Auburn Hatcher	83.34	40	*e*P		P	10 26 53.8	+1.6	
	comp=Z,25nm,0.9s,mb5.2								
PCP	Pian Castagno	83.43	322	P		P	10 26 52.5	-0.1	
LSD	Ceresole Reale	83.44	323	P		P	10 26 53.1	+0.4	
BGU	Big Grassy Mou	83.59	43	*e*P		P	10 26 54.9	+1.4	
LPL	La Plagne	83.60	324	*e*P		P	10 26 53.5	0.0	
	comp=Z,50nm,0.9s,mb5.4								
LPG	La Plagne	83.60	324	*e*P		P	10 26 53.6	+0.1	
	comp=Z,58nm,0.9s,mb5.4								
LOR	Lormes	83.61	326	*e*P		P	10 26 52.7	-0.8	
	comp=Z,59nm,1.1s,mb5.3								
LOR				*e*R					
	comp=Z,232nm,18.5s								
RSP	Reno Superiore	83.61	323	P		P	10 26 52.8	-0.8	
SPUT	South Promonto	83.64	42	*e*P		P	10 26 55.4	+1.6	
FENE	Fenestrelle	83.80	323	P		P	10 26 53.9	-0.6	
FIN	Finale Ligure	83.84	322	P		P	10 26 53.5	-1.2	
BHB	Bricherasio	83.84	323	P		P	10 26 54.6	-0.1	
SOI	Samo	83.89	314	*e*P		P	10 26 56.0	+0.8	
HWUT	Hardware Ranch	83.91	42	*e*P		P	10 26 56.7	+1.5	
	comp=Z,35nm,1.0s,mb5.4								
SSF	Saint Saulge	83.92	326	*e*P		P	10 26 54.3	-0.8	
	comp=Z,38nm,1.0s,mb5.2								
ROB	Roburent	83.94	322	P		P	10 26 54.1	-1.1	
BNI	Bardonecchia	83.97	323	*e*P		P	10 26 55.0	-0.3	
RRL	Cesana Torines	84.01	323	P		P	10 26 55.3	-0.2	
SMF	Signal de Mont	84.09	326	*e*P		P	10 26 55.4	-0.5	
	comp=Z,55nm,1.2s,mb5.3								
BW06	Boulder Array	84.14	40	*e*P		P	10 26 57.2	+0.9	
	comp=Z,30nm,0.9s,mb5.4								
PDAR	Pinedale Array	84.14	40	P		P	10 26 57.4	+1.1	
	comp=Z,25nm,0.9s,mb5.4,baz=315,slow=2.1,SNR=129								
PDAR					LR	LR	11 07 58.0		
	comp=Z,95nm,19.5s,MS4.2,baz=343,slow=38								
HYF	Humbligny	84.15	327	*e*P		P	10 26 56.1	-0.1	
MONE	Monesi	84.16	322	P		P	10 26 55.4	-0.9	
MBDF	Mt Beardon	84.16	323	*e*P		P	10 26 55.5	-0.8	
	comp=Z,35nm,0.8s,mb5.2								
AVF	Avril sur Loir	84.20	326	*e*P		P	10 26 55.8	-0.7	
	comp=Z,72nm,1.2s,mb5.4								
ENR	Entracque	84.21	323	P		P	10 26 55.1	-1.5	
IMI	Imperia	84.21	322	P		P	10 26 55.8	-0.8	
STV2	Anna di Valdie	84.24	323	P		P	10 26 55.3	-1.4	
STV	Sta Anna Valdi	84.25	323	P		P	10 26 55.0	-1.8	
LDF	La Druitiere	84.29	329	*e*P		P	10 26 55.8	-1.1	
	comp=Z,36nm,1.1s,mb5.1								
FLN	La Foliniere	84.30	330	*e*P		P	10 26 56.5	-0.5	
	comp=Z,22nm,1.0s,mb5.0								
FLN				*e*R					
	comp=Z,370nm,17.0s								
SAOF	Saorge	84.32	322	*e*P		P	10 26 56.6	-0.6	
TCUT	Toone Canyon	84.34	42	*e*P		P	10 26 58.9	+1.6	
NEGI	Negi	84.35	322	P		P	10 26 56.1	-1.2	
AUTN	L'Aution	84.38	322	*e*P		P	10 26 57.9	+0.5	
ORIF	Oris-en-Rattie	84.44	324	*e*P		P	10 26 57.4	-0.4	
	comp=Z,33nm,0.9s,mb5.2								
ORIF				*e*R					
	comp=Z,214nm,17.5s								
CTU	Camp Tracy	84.45	42	*e*P		P	10 26 59.0	+1.1	
SBF	Sospel	84.47	322	*e*P		P	10 26 57.1	-0.8	
	comp=Z,112nm,0.9s,mb5.7								
ULM	Lac du Bonnet	84.48	28	P		P	10 26 58.3	+0.5	
	comp=Z,21nm,0.9s,mb5.3,baz=323,slow=6.1,SNR=16								
ULM					LR	LR	11 11 50.4		
	comp=Z,113nm,18.0s,MS4.3,baz=43,slow=41								
ULM	Lac du Bonnet	84.48	28	*e*P		P	10 26 58.0	+0.2	
	comp=Z,43nm,1.1s,mb5.5								
AURF	Auriere	84.51	322	*e*P		P	10 26 57.4	-0.7	
MVIF	Mont Vial	84.58	322	*e*P		P	10 26 57.9	-0.6	
BGF	Bois d'Agland	84.60	326	*e*P		P	10 26 58.0	-0.5	
PGF	Pioggiola	84.64	321	*e*P		P	10 26 58.5	-0.3	
	comp=Z,103nm,1.4s,mb5.5								
JLU	Jordanelle	84.68	42	*e*P		P	10 27 00.5	+1.5	
PLDF	La Plantade	84.70	326	⇑*e*P		P	10 26 59.0	0.0	
GRR	Gorron	84.75	330	*e*P		P	10 26 58.3	-0.9	
OG25	Le Caire	84.76	323	⇑*e*P		P	10 26 59.1	-0.2	
NLU	North Lily Min	84.79	43	*e*P		P	10 27 01.1	+1.4	
CALN	Calern	84.82	322	*e*P		P	10 26 59.2	-0.5	
AGO	Saint Agoulin	84.86	326	⇑*e*P		P	10 26 59.7	-0.1	
DAU	Daniels Canyon	84.92	42	*e*P		P	10 27 02.0	+1.8	
MPU	Maple Canyon	84.99	43	*e*P		P	10 27 01.9	+1.3	
COLF	Collangettes	85.01	325	⇑*e*P		P	10 27 00.5	-0.1	
VIVF	Saint-Julien-l	85.06	324	*e*P		P	10 27 00.5	-0.3	
	comp=Z,97nm,1.0s,mb5.6								
FRF	La Foret Royal	85.08	322	*e*P		P	10 27 00.1	-0.9	
	comp=Z,59nm,1.1s,mb5.3								
TCF	Toulx Ste Croi	85.09	327	*e*P		P	10 27 00.6	-0.3	
	comp=Z,64nm,1.2s,mb5.3								
PYM	Petit Puy Mans	85.15	326	⇑*e*P		P	10 27 01.3	+0.1	
SMRF	Simiane la Rot	85.29	323	*e*P		P	10 27 01.7	-0.3	
	comp=Z,61nm,1.1s,mb5.3								
LMR	La Mourre	85.32	322	*e*P		P	10 27 01.5	-0.6	
	comp=Z,112nm,1.1s,mb5.6								
VILF	Villemus	85.32	323	⇑*e*P		P	10 27 02.9	+0.8	
TAVF	Tavernes	85.33	323	⇑*e*P		P	10 27 02.0	-0.2	
LBL	Lubilhac	85.44	325	⇑*e*P		P	10 27 02.9	+0.2	
SGMF	Saint Gilles	85.54	330	*e*P		P	10 27 02.3	-0.8	
PUYF	Puyloubier	85.56	323	⇑*e*P		P	10 27 04.0	+0.6	
PRAF	Pradon	85.62	323	*e*P		P	10 27 03.5	-0.1	
MVU	Marysvale	85.73	44	*e*P		P	10 27 06.6	+2.2	
	comp=Z,19nm,1.0s,mb5.3								
BERF	Bertagne	85.73	323	⇑*e*P		P	10 27 04.2	0.0	
MSU	Marysvale	85.74	44	*e*P		P	10 27 06.5	+2.1	
ROSF	Rostrenen	85.76	331	*e*P		P	10 27 03.5	-0.7	
	comp=Z,52nm,1.0s,mb5.4								
GELF	Grande-Etoile	85.81	323	⇑*e*P		P	10 27 05.1	+0.5	
RSSD	Black Hills	85.86	36	*e*P		P	10 27 05.8	+1.0	
	comp=Z,30nm,1.2s,mb5.4								
MFF	Saint Martin d	85.87	328	*e*P		P	10 27 04.3	-0.5	
	comp=Z,45nm,1.1s,mb5.3								
LASF	Ste Croix	86.03	324	*e*P		P	10 27 05.5	-0.2	
	comp=Z,78nm,1.1s,mb5.6								
RJF	Les Rejaudoux	86.16	326	*e*P		P	10 27 06.1	-0.2	
RJF				*e*R					
	comp=Z,372nm,17.5s								
NEN	Nelson	86.18	48	*e*P		P	10 27 08.1	+1.5	
CAF	Calviac	86.21	326	*e*P		P	10 27 06.7	+0.2	
	comp=Z,61nm,1.1s,mb5.5								
SRU	San Rafael	86.24	43	*e*P		P	10 27 08.2	+1.3	
PFO	Pinyon Flat Ob	86.58	50	*e*P		P	10 27 09.7	+1.0	
	comp=Z,18nm,1.0s,mb5.3								
LFF	La Frestale	86.79	327	*e*P		P	10 27 09.5	+0.1	
	comp=Z,49nm,1.0s,mb5.4								
MTLF	Montolieu	87.36	325	*e*P		P	10 27 11.7	-0.5	
PV10	Paradox Valley	87.57	42	*e*P		P	10 27 15.4	+2.1	
SCHQ	Schefferville	87.77	10	P		P	10 27 13.1	-0.7	
	comp=Z,10.0nm,0.9s,mb5.0,baz=356,slow=5.4,SNR=9.3								
SCHQ	Schefferville	87.77	10	*e*P		P	10 27 13.4	-0.5	
	comp=Z,18nm,1.0s,mb5.2								
PV01	Paradox Valley	88.00	42	*e*P		P	10 27 16.9	+1.5	
VALF	Valcebollere	88.18	324	⇑*e*P		P	10 27 15.8	-0.3	
WUAZ	Wupatki	88.30	46	*e*P		P	10 27 19.1	+2.2	
	comp=Z,35nm,1.2s,mb5.5								
ISCO	Idaho Springs	88.33	40	*e*P		P	10 27 18.7	+1.7	
	comp=Z,9.6nm,0.9s,mb5.0								

YKA	**Yellowknife Ar**	**99.69**	**25**	P	**P**	**10 47 02.6**	**0.0**
TXAR	**Lajitas Array**	**121.19**	**53**	PKP	PKPdf	10 52 12.9	+1.9
	0.3nm,0.7s,baz=225,slow=1.8,SNR=4.5						

HEL ***29*** *10:47:41.7±0.2,62.90N×18.79E,ML1.9,ML2.2(UPP), ML2.0(NAO),Explosion*
NAO ***29*** *10:47:41.2±1.5,62.91N×18.80E,ML2.0*
BER ***29*** *10:47:42.9±3.4,62.88N×18.88E,h0km±16km, ML2.0(NAO)*
IDC ***29*** *10:47:42.3±0.8,62.84N×18.85E,mb1 2.5/4, mb1mx2.5/22,ML2.3/4,Error ellipse: s-maj=10.5km s-min=6.2km az=157.0*

ISC 29 10:47:38.8±0.6,63.08N±0.04×18.74E±0.08,n11,σ1§34/21, Sweden

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
VAF	**Ylistaro**	**1.79**	**89**	*e*P		**Pn**	**10 48 13.0**	**+1.8**
VAF				*e*S		**Sn**	**10 48 36.6**	**+1.5**
KEF	**Keuruu**	**2.98**	**105**	*e*P		**Pn**	**10 48 29.4**	**+1.3**
KEF				*e*SB		**Sb**	**10 49 07.4**	**-2.3**
KEF				MSG			10 49 09.4	
	comp=Z,3.0nm,0.2s							
OUL	**Oulu**	**3.73**	**54**	*e*SG		**Sg**	**10 49 40.8**	**-2.4**
OUL				MSG			10 49 45.7	
	comp=Z,1.9nm,0.2s							
FIA0	**FINESS Array S**	**3.80**	**112**	Pn		**Pn**	**10 48 40.3**	**+0.4**
	baz=292,slow=14							
FIA0				Lg			10 49 35.7	
	baz=299,slow=28							
FINES	**FINESS Array B**	**3.80**	**112**	Pn		**Pn**	**10 48 41.5**	**+1.5**
	comp=Z,0.1nm,0.3s,baz=293,slow=13,SNR=4.0							
FINES				Sn		**Sn**	**10 49 25.4**	**-0.6**
	comp=Z,0.2nm,0.3s,baz=308,slow=25,SNR=4.2							
FINES				Lg			10 49 36.9	
	comp=Z,0.6nm,0.3s,baz=296,slow=31,SNR=9.6							
HFS	**Hagfors**	**3.81**	**221**	Pn		**Pn**	**10 48 40.2**	**+0.2**
	comp=Z,0.1nm,0.3s,baz=40,slow=14,SNR=6.7							
HFS				Sn		**Sn**	**10 49 24.3**	**-1.9**
	comp=Z,0.1nm,0.3s,baz=48,slow=24,SNR=6.3							
HFS				Lg			10 49 36.3	
	comp=Z,0.2nm,0.3s,baz=47,slow=30,SNR=9.1							
HFS	**Hagfors**	**3.81**	**221**	Pn		**Pn**	**10 48 39.9**	**-0.1**
	baz=32,slow=14							
HFS				Pg		**Pg**	**10 48 46.9**	**-7.9**
	baz=49,slow=16							
HFS				Sn		**Sn**	**10 49 24.2**	**-2.0**
	baz=41,slow=28							
HFS				Lg			10 49 36.5	
	baz=43,slow=37							
NOA	**NORSAR Array B**	**4.09**	**243**	Pn		**Pn**	**10 48 44.5**	**+0.5**
	comp=Z,0.2nm,0.3s,baz=62,slow=7.0,SNR=2.5							
NOA				Sn		**Sn**	**10 49 32.9**	**-0.3**
	comp=Z,0.2nm,0.3s,baz=66,slow=16,SNR=2.4							
NOA				Lg			10 49 47.7	
	comp=Z,0.7nm,0.3s,baz=62,slow=19,SNR=4.9							
KIF	**Kilpisjarvi**	**6.01**	**7**	*e*P		**Pn**	**10 49 14.2**	**+3.0**
KIF				*e*SB		**Sb**	**10 50 44.2**	**+6.3**
ARA0	**ARCESS Array S**	**7.03**	**20**	Pn		**Pn**	**10 49 25.9**	**+0.3**
	baz=204,slow=14							
ARA0				Sn		**Sn**	**10 50 46.4**	**-0.8**
	baz=206,slow=22							
ARA0				Lg			10 51 24.4	
	baz=208,slow=28							
ARCES	**ARCESS Array B**	**7.03**	**20**	Pn		**Pn**	**10 49 26.1**	**+0.5**
	comp=Z,0.1nm,0.3s,baz=206,slow=14,SNR=6.7							
ARCES				Sn		**Sn**	**10 50 46.2**	**-1.1**
	comp=Z,0.2nm,0.3s,baz=201,slow=23,SNR=4.5							

BER ***29*** *10:53:53.8±4.0,56.77N×23.53E,ML2.4(NAO), Suspected explosion*
HEL ***29*** *10:53:54.8±1.0,56.82N×23.43E,ML1.9,Explosion*
NAO ***29*** *10:53:55.0±4.5,56.96N×23.36E,ML2.4*

ISC 29 10:53:54.3±2.2,57.0N±0.1×23.2E±0.1,n7,σ0§75/13, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
VSU	**Vasula**	**2.39**	**52**	*e*P		**Pn**	**10 54 35.2**	**0.0**
VSU				*e*S		**Sn**	**10 55 05.8**	**+0.1**
MEF	**Metsahovi**	**3.25**	**11**	*e*PB		**Pb**	**10 54 54.5**	**+1.8**
MEF				*e*SB		**Sb**	**10 55 37.4**	**+4.4**
MEF				MSG			10 55 40.2	
	comp=Z,2.3nm,0.2s							
VJF	**Virojoki**	**4.19**	**31**	*e*PG		**Pg**	**10 55 10.7**	**-7.1**
VJF				*e*S		**Sn**	**10 55 50.6**	**-0.6**
FIA0	**FINESS Array S**	**4.66**	**18**	Pn		**Pn**	**10 55 06.8**	**-0.8**
	baz=198,slow=12							
FIA0				Pg		**Pg**	**10 55 19.0**	**-8.4**
	baz=191,slow=16							
FIA0				Sn		**Sn**	**10 56 03.2**	**-0.1**
	baz=185,slow=28							
FIA0				Lg			10 56 22.8	
	baz=183,slow=37							
FIA0	**FINESS Array S**	**4.66**	**18**	*e*SG		**Sg**	**10 56 23.0**	**-6.5**
FIA0				MSG			10 56 27.6	
	comp=Z,1.6nm,0.2s							
HFS	**Hagfors**	**5.84**	**306**	Pn		**Pn**	**10 55 24.2**	**0.0**
	baz=131,slow=16							
HFS				Sn		**Sn**	**10 56 32.6**	**-0.2**
	baz=110,slow=28							
HFS				Lg			10 57 02.3	
	baz=117,slow=28							
VAF	**Ylistaro**	**6.03**	**358**	*e*SG		**Sg**	**10 57 06.2**	**-8.8**

HEL ***29*** *11:00:35.1±0.1,68.08N×33.50E,ML2.1,ML1.9(UPP), Explosion*
IDC ***29*** *11:00:38.8±1.7,68.22N×32.85E,mb1 3.3/5, mb1mx3.2/23,ML2.8/4,Error ellipse: s-maj=18.3km s-min=9.1km az=80.0*

ISC 29 11:00:34.9±1.4,67.97N±0.04×33.0E±0.2,n11,σ1§45/18, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
SGF	**Sodankyl**	**2.53**	**261**	*e*P		**Pn**	**11 01 20.2**	**+2.4**
SGF				*e*SB		**Sb**	**11 01 56.9**	**+4.3**
MSF	**Maaselka**	**2.59**	**219**	*e*PB		**Pb**	**11 01 23.1**	**+1.1**
MSF				*e*SG		**Sg**	**11 02 00.8**	**-0.3**
MSF				MSG			11 02 03.3	
	comp=Z,4.6nm,0.3s							
KEV	**Kevo**	**2.82**	**312**	*e*P		**Pn**	**11 01 22.2**	**+0.3**
KEV				*e*SB		**Sb**	**11 01 59.2**	**-1.9**
ARCES	**ARCESS Array B**	**3.15**	**303**	Pn		**Pn**	**11 01 27.1**	**+0.4**
	comp=Z,1.1nm,0.3s,baz=112,slow=15,SNR=40							
ARCES				Sn		**Sn**	**11 02 04.0**	**-1.6**
	comp=Z,0.9nm,0.3s,baz=115,slow=24,SNR=3.9							
ARCES				Lg			11 02 10.8	
	comp=Z,3.0nm,0.3s,baz=116,slow=31,SNR=13							
OUL	**Oulu**	**4.06**	**228**	*e*P		**Pn**	**11 01 41.8**	**+2.2**
OUL				*e*SG		**Sg**	**11 02 44.9**	**-5.0**
OUL				MSG			11 02 48.5	
	comp=Z,3.2nm,0.3s							
KIF	**Kilpisjarvi**	**4.61**	**289**	*e*SB		**Sb**	**11 02 55.4**	**+2.3**
JOF	**Joensuu**	**5.12**	**189**	*e*P		**Pn**	**11 01 54.9**	**+0.2**
JOF				*e*S		**Sn**	**11 02 53.9**	**-1.6**
FINES	**FINESS Array B**	**7.19**	**208**	Pn		**Pn**	**11 02 25.1**	**+1.3**
	comp=Z,0.1nm,0.3s,baz=17,slow=14,SNR=4.3							
FINES				Sn		**Sn**	**11 03 46.2**	**-1.0**
	comp=Z,0.1nm,0.3s,baz=34,slow=20,SNR=2.3							
FINES				Lg			11 04 28.1	
	comp=Z,0.2nm,0.3s,baz=22,slow=30,SNR=3.6							
SPITS	**Spitsbergen Ar**	**11.26**	**342**	Pn		**P**	**11 03 13.3**	**-6.6**
	baz=144,slow=12,SNR=1.9							
HFS	**Hagfors**	**11.49**	**236**	Pn		**P**	**11 03 20.9**	**-2.1**
	comp=Z,0.1nm,0.3s,baz=42,slow=19,SNR=6.2							
NOA	**NORSAR Array B**	**11.62**	**244**	Pn		**P**	**11 03 23.9**	**-0.9**
	comp=Z,0.1nm,0.3s,baz=48,slow=11,SNR=2.0							

IDC ***29*** *11:01:28.8±0.7,36.52N×51.41E,mb4.0/14,mb1 4.1/16, mb1mx4.0/25,ML2.9/2,MS3.8/7,Ms1 3.8/7,ms1mx3.5/27, Error ellipse: s-maj=16.5km s-min=7.6km az=108.0*
NEIC ***29*** *11:01:30.0±0.4,36.47N×51.39E,h10km,mb4.2/3,Error ellipse: s-maj=8.9km s-min=6.7km az=150.0*
MOS ***29*** *11:01:30.7±2.2,36.49N×51.25E,h33km,mb4.1/9,Error ellipse: s-maj=17.5km s-min=10.2km az=103.7*
THR ***29*** *11:01:32.9±1.1,36.42N×51.38E,ML4.2*
NNC ***29*** *11:01:37.9±2.7,37.29N×51.91E,Error ellipse: s-maj=41.6km s-min=28.0km az=170.0*

ISC 29 11:01:28.5±0.3,36.53N±0.03×51.41E±0.05,h10km,n58, σ0§96/60,mb4.0/21,MS3.8/7,1C-5D,Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
THR	**Tehran**	**0.67**	**201**	Pg		**Pb**	**11 01 41.5**	**-0.2**
	167nm,0.3s,baz=359,slow=12,SNR=637							
THR				Lg			11 01 50.4	
	1μm,0.3s,baz=143,slow=20,SNR=152							
THR	**Tehran**	**0.67**	**201**	P		**Pb**	**11 01 41.5**	**-0.2**
THR							11 01 50.4	
THR				pmax	pmax			
	comp=Z,167nm,0.3s							
THR				smax				
	comp=Z,1.0nm,0.3s							
THKV	**Tehran--Karaj**	**0.75**	**215**	*e*PG		**Pg**	**11 01 43.9**	**+0.3**
THKV				*e*SG		**Sg**	**11 01 53.1**	**-0.6**
THKV				AMP			11 01 55.0	
	comp=N,13μm,0.4s							
DAMV	**Damavand**	**1.01**	**153**	*e*PG		**Pg**	**11 01 48.9**	**+0.1**
DAMV				*e*SG		**Sg**	**11 02 02.1**	**-0.1**
SNGE	**Sanandaj**	**3.60**	**248**	*e*PN		**Pn**	**11 02 27.2**	**+1.6**
MAKU	**Maku**	**6.02**	**300**	*e*PN		**Pn**	**11 03 02.5**	**+2.7**
ZEI	**Tsey**	**8.51**	**319**	*e*P		**P**	**11 03 33.8**	**-0.9**
GOF	**Gofitskoye**	**10.62**	**326**	*e*P		**P**	**11 03 59.0**	**-4.8**
GOF				*i* S		**S**	**11 05 56.0**	**-7.8**
GOF				pmax	pmax			
	comp=Z,30nm,1.5s							
GOF				smax				
	comp=N,110nm,1.4s							
ASF	**Jabal al Asfar**	**12.76**	**254**	Pn		**P**	**11 04 31.8**	**-1.0**
	comp=N,0.1nm,0.3s,baz=75,slow=18,SNR=1.9							
ASF				LR	LR		11 10 11.8	
	comp=N,614nm,19.9s,baz=101,slow=41							
AB31	**Akbulak array**	**14.16**	**23**	Pn		**P**	**11 04 45.9**	**-5.2**
	comp=N,1.3nm,0.5s,baz=207,slow=13,SNR=19							
AB31				Sn		**S**	**11 07 15.2**	**-14**
	comp=N,1.0nm,0.4s,baz=189,slow=23,SNR=6.8							
BRTR	**Keskin Array B**	**14.35**	**288**	Pn		**P**	**11 05 03.0**	**+9.3**
	comp=N,0.1nm,0.3s,baz=114,slow=12,SNR=8.9							
KK31	**Karatay Array**	**16.06**	**60**	P		**P**	**11 05 12.8**	**-3.2**
	comp=N,9.2nm,1.1s,baz=243,slow=17,SNR=29							
KK31				⇓S		**S**	**11 08 08.2**	**-5.9**
	comp=N,1.2nm,0.7s,baz=278,slow=11,SNR=2.7							
VRSR	**Storozhevoye**	**17.08**	**333**	*e*P		**P**	**11 05 25.0**	**-3.9**
VRSR				pmax	pmax			
	comp=Z,40nm,1.3s							
VRSR				pmax	pmax			
	comp=N,40nm,0.8s							
VRSR				pmax	pmax			
	comp=E,30nm,0.8s							
AAK	**Ala-Archa**	**18.78**	**64**	*e*P		**P**	**11 05 50.0**	**0.0**
	comp=E,10nm,1.0s							
ZRNK	**Zerenda**	**20.54**	**31**	⇓P		**P**	**11 06 08.7**	**-0.9**
	comp=E,14nm,1.4s							
ZRNK	**Zerenda**	**20.54**	**31**	*e*P		**P**	**11 06 08.6**	**-1.0**
MLR	**Muntele Rosu**	**21.13**	**303**	P		**P**	**11 06 16.5**	**+0.8**
	comp=E,1.5nm,0.6s,mb3.5,baz=134,slow=12,SNR=3.4							
MLR	**Muntele Rosu**	**21.13**	**303**	P		**P**	**11 06 16.5**	**+0.8**
MLR				pmax	pmax			
	comp=Z,2.0nm,0.6s							
BRVK	**Borovoye**	**21.16**	**33**	*e*P		**P**	**11 06 15.5**	**-0.5**
BVA0	**Borovoye Array**	**21.18**	**33**	P		**P**	**11 06 15.6**	**-0.7**
	comp=Z,4.0nm,1.4s,mb3.5,baz=220,slow=8.9,SNR=48							
BVAR	**Borovoye Array**	**21.18**	**33**	P		**P**	**11 06 15.9**	**-0.4**
	comp=Z,3.8nm,0.4s,mb4.1,baz=214,slow=11,SNR=34							
VOSK	**Vostochnaya**	**21.24**	**34**	⇓P		**P**	**11 06 16.1**	**-0.7**
	comp=Z,17nm,1.4s,mb4.2							
IDI	**Anoyia**	**21.50**	**275**	P		**P**	**11 06 19.8**	**+0.3**
	comp=Z,8.5nm,0.9s,mb4.1,baz=38,slow=16,SNR=3.2							
KURK	**Kurchatov**	**24.09**	**45**	⇓P		**P**	**11 06 47.3**	**+2.4**
	comp=Z,14nm,1.0s,mb4.3,baz=254,slow=6.2,SNR=30							
KURK	**Kurchatov**	**24.09**	**45**	*e*P		**P**	**11 06 47.1**	**+2.2**
MK31	**Makanchi Array**	**25.10**	**56**	P		**P**	**11 06 55.9**	**+1.3**
	comp=Z,9.9nm,1.0s,mb4.3,baz=249,slow=6.8,SNR=29							
MKAR	**Makanchi Array**	**25.10**	**56**	P		**P**	**11 06 56.0**	**+1.4**
	comp=Z,11nm,1.1s,mb4.3,baz=252,slow=7.9,SNR=24							
MKAR				LR	LR		11 18 27.3	
	comp=Z,177nm,19.0s,MS3.6,baz=59,slow=41							
MKAR	**Makanchi Array**	**25.10**	**56**	P		**P**	**11 06 56.0**	**+1.4**
MKAR				pmax	pmax			
	comp=Z,11nm,1.1s							
MKAR				MLR	MLR			
	comp=Z,177nm,19.0s							
SUW	**Suwalki**	**26.20**	**321**	P		**P**	**11 07 04.0**	**-0.8**
NVS	**Novosibirsk**	**28.44**	**40**	*e*P		**P**	**11 07 25.0**	**-0.2**
ZAL	**Zalesovo**	**28.88**	**42**	P		**P**	**11 07 29.1**	**-0.1**
	comp=Z,1.9nm,1.0s,mb3.8,baz=131,slow=9.0,SNR=5.9							
ZAL				LR	LR		11 19 42.5	
	comp=Z,90nm,21.5s,MS3.4,baz=331,slow=38							
ZAL	**Zalesovo**	**28.88**	**42**	P		**P**	**11 07 29.1**	**-0.1**
ZAL				pmax	pmax			
	comp=Z,2.0nm,1.0s							
ZAL				MLR	MLR			
	comp=Z,90nm,21.5s							
GERES	**GERESS Array B**	**30.02**	**306**	P		**P**	**11 07 39.4**	**-0.1**
	comp=Z,8nm,1.1s,mb3.9,baz=117,slow=9.0,SNR=5.7							
GERES	**GERESS Array B**	**30.02**	**306**	P		**P**	**11 07 39.4**	**-0.1**
GERES				pmax	pmax			
	comp=Z,3.0nm,1.2s							
DAVOX	**Davos**	**32.34**	**302**	P		**P**	**11 07 58.9**	**-1.0**
	comp=Z,2.2nm,0.8s,mb4.1,baz=139,slow=17,SNR=2.5							
HFS	**Hagfors**	**33.70**	**327**	P		**P**	**11 08 10.6**	**-1.0**
	comp=Z,0.9nm,0.5s,mb4.0,baz=117,slow=13,SNR=4.0							
HFS	**Hagfors**	**33.70**	**327**	P		**P**	**11 08 10.6**	**-1.0**
HFS				pmax	pmax			
	comp=Z,1.0nm,0.5s							
NOA	**NORSAR Array B**	**35.20**	**327**	P		**P**	**11 08 23.9**	**-0.6**
	comp=Z,0.6nm,1.0s,mb3.5,baz=132,slow=9.4,SNR=2.7							
NOA	**NORSAR Array B**	**35.20**	**327**	P		**P**	**11 08 23.9**	**-0.6**
NOA				pmax	pmax			
	comp=Z,1.0nm,1.0s							
NOA	**NORSAR Array B**	**35.20**	**327**	P		**P**	**11 08 23.9**	**-0.6**
ARCES	**ARCESS Array B**	**35.94**	**345**	P		**P**	**11 08 32.4**	**+1.7**
	comp=Z,1.9nm,1.0s,mb4.0,baz=143,slow=9.0,SNR=3.7							
ARCES	**ARCESS Array B**	**35.94**	**345**	P		**P**	**11 08 32.4**	**+1.7**
ARCES				pmax	pmax			
	comp=Z,2.0nm,1.0s							
ZAK	**Zakamensk**	**39.31**	**53**	*e*P		**P**	**11 08 55.1**	**-4.1**
KMBO	**Kilima Mbogo**	**39.71**	**203**	LR	LR		11 25 53.9	
	comp=Z,150nm,19.7s,MS3.8,baz=272,slow=37							
ULN	**Ulaanbaatar**	**41.90**	**56**	*e*P		**P**	**11 09 21.0**	**+0.6**
	comp=Z,7.0nm,1.6s,mb4.0							
SPITS	**Spitsbergen Ar**	**44.28**	**350**	P		**P**	**11 09 40.1**	**+0.6**
	comp=Z,14nm,1.1s,mb4.6,baz=336,slow=8.9,SNR=3.9							
CMAR	**Chiang Mai Arr**	**45.35**	**100**	P		**P**	**11 09 48.6**	**-0.2**
	comp=Z,0.8nm,0.5s,mb3.8,baz=302,slow=8.5,SNR=11							
CMAR	**Chiang Mai Arr**	**45.35**	**100**	P		**P**	**11 09 48.7**	**-0.2**
CMAR				pmax	pmax			
	comp=Z,1.0nm,0.5s							
BOD	**Bodaibo**	**45.65**	**42**	*e*P		**P**	**11 09 49.7**	**-0.9**
JNU	**Nakatsue**	**63.52**	**67**	LR	LR		11 41 59.0	
	comp=Z,72nm,18.3s,MS3.9,baz=52,slow=38							
BILL	**Bilibino**	**65.05**	**22**	⇓P		**P**	**11 12 11.0**	**+0.3**
BILL				*i* *PP		PcP	11 12 40.8	-2.6
BILL				*e*			11 14 41.9	
BILL				*i* S		S	11 21 05.7	+14
BILL				pmax	pmax			
	comp=Z,6.0nm,1.3s,mb4.5							
BILL				MLR	MLR			
	comp=Z,100nm,22.0s,MS4.0							
ASAJ	**Asahikawa**	**66.47**	**52**	LR	LR		11 44 03.1	
	comp=Z,78nm,19.4s,MS3.9,baz=56,slow=38							
COLA	**College**	**77.80**	**8**	*e*P		**P**	**11 13 27.8**	**+0.8**
	comp=Z,7.6nm,1.2s,mb4.5							
ILAR	**Eielson Array**	**78.01**	**8**	P		**P**	**11 13 28.4**	**+0.3**
	comp=Z,1.2nm,0.9s,mb3.8,baz=331,slow=4.1,SNR=12							
ILAR				LR	LR		11 52 11.5	
	comp=Z,52nm,18.2s,MS3.9,baz=193,slow=39							
ILAR	**Eielson Array**	**78.01**	**8**	P		**P**	**11 13 28.4**	**+0.3**
ILAR				pmax	pmax			
	comp=Z,1.0nm,0.9s							
ILAR				MLR	MLR			
	comp=Z,52nm,18.2s							
YKA	**Yellowknife Ar**	**80.67**	**353**	P		**P**	**11 13 42.2**	**-0.4**
	comp=Z,0.5nm,0.8s,mb3.5,baz=7.7,slow=6.3,SNR=9.5							
YKA	**Yellowknife Ar**	**80.67**	**353**	P		**P**	**11 13 42.2**	**-0.4**
YKA				pmax	pmax			
	comp=Z,1.0nm,0.9s							
YKA	**Yellowknife Ar**	**80.67**	**353**	P		**P**	**11 13 42.2**	**-0.4**

IDC 29 11:27:10.0±1.8,4.18S×152.38E,mb3.8/4,mb1 4.1/4, mb1mx3.8/14,MS3.0/1,Ms1 3.0/1,ms1mx2.6/19,Error ellipse: s-maj=162.0km s-min=24.9km az=127.0,New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
PMG	**Port Moresby**	**7.33**	**225**	LR		LR	11 31 55.4	
	comp=Z,96nm,18.1s,baz=35,slow=39							
WRA	**Warramunga Arr**	**23.54**	**227**	P		P	11 32 22.6	-0.5
	2.0nm,0.8s,baz=53,slow=9.9,SNR=5.0							
ASAR	**Alice Springs**	**26.33**	**221**	P		P	11 32 47.5	-2.0
	1.5nm,0.6s,baz=52,slow=8.5,SNR=12							
ILAR	**Eielson Array**	**81.75**	**22**	P		P	11 39 29.7	-2.0
	0.5nm,0.8s,baz=252,slow=5.4,SNR=5.8							
YKA	**Yellowknife Ar**	**95.08**	**28**	P		P	11 40 35.6	-0.3
	0.2nm,0.8s,baz=268,slow=4.2,SNR=5.7							

NEIC ***29*** *11:29:02.6±0.8,34.00N×136.73E,h366km±7km,Error ellipse: s-maj=17.3km s-min=12.7km az=88.0*
JMA ***29*** *11:29:02.0±0.2,33.98N×136.72E,h372km±2km,M2.7*
IDC ***29*** *11:29:02.9±1.4,34.00N×136.73E,h368km±15km,mb3.1/7, mb1 3.2/9,mb1mx3.0/26,Error ellipse: s-maj=30.9km s-min=14.8km az=68.0*

ISC 29 11:29:01.7±0.5,34.02N±0.09×136.75E±0.08,h372km±3km, n28,σ0§65/35,mb3.3/7,Western Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
JIE	**Ise**	**0.37**	**354**	P		**P**	**11 29 49.0**	**+0.6**
JIE				S		**S**	**11 30 25.3**	**+0.2**
JKN	**Kiinagashima**	**0.47**	**299**	P		**P**	**11 29 48.9**	**+0.3**
JKN				S		**S**	**11 30 25.2**	**-0.2**
JWY	**Kouya**	**0.98**	**282**	P		**P**	**11 29 50.3**	**+0.4**
JWY				S		**S**	**11 30 27.4**	**-0.4**
JWZ	**Kozaga**	**0.99**	**241**	S		**S**	**11 30 27.1**	**-0.8**
HMMJ	**Hamamatsu 2**	**1.15**	**44**	P		**P**	**11 29 51.4**	**+0.7**
HMMJ				S		**S**	**11 30 29.6**	**+0.5**
JNY	**Yasuok**	**1.61**	**34**	P		**P**	**11 29 53.7**	**+0.6**
JGM	**Miyama**	**1.67**	**359**	P		**P**	**11 29 54.0**	**+0.6**
JWT	**Wachi**	**1.68**	**319**	P		**P**	**11 29 53.6**	**+0.2**
JWT				S		**S**	**11 30 32.9**	**-1.0**
JKG	**Kaga**	**2.27**	**351**	P		**P**	**11 29 57.6**	**+0.2**
JMN	**Monobe**	**2.41**	**264**	P		**P**	**11 29 58.2**	**-0.2**
JRY	**Ryogami san**	**2.66**	**41**	P		**P**	**11 30 01.5**	**+1.2**
JHJ	**Hachijo jima 2**	**2.69**	**109**	P		**P**	**11 30 01.4**	**+0.9**
	6.6nm,0.3s,baz=36,slow=17,SNR=3.3							
JHU	**Hanno**	**2.76**	**48**	P		**P**	**11 30 01.9**	**+0.8**
JHU				S		**S**	**11 30 47.5**	**-0.3**
MAJO	**Matsushiro**	**2.78**	**25**	P		**P**	**11 30 01.4**	**+0.2**
BSO4	**Boso 4**	**3.11**	**71**	P		**P**	**11 30 04.1**	**0.0**
JHS	**Saijyo**	**3.16**	**289**	P		**P**	**11 30 04.6**	**+0.1**
JAG	**Ashikaga**	**3.26**	**42**	P		**P**	**11 30 05.0**	**-0.4**
JYT	**Yasato**	**3.58**	**51**	P		**P**	**11 30 07.5**	**-0.9**
JYT				S		**S**	**11 30 58.1**	**-2.6**
JHO	**Hitachi**	**4.05**	**49**	P		**P**	**11 30 12.2**	**-0.8**
JNU	**Nakatsue**	**4.99**	**261**	P		**P**	**11 30 22.6**	**-0.2**
	1.5nm,0.3s,baz=60,slow=11,SNR=12							
MKAR	**Makanchi Array**	**42.58**	**304**	P		**P**	**11 36 24.1**	**+0.3**
	1.1nm,0.5s,mb3.2,baz=88,slow=10,SNR=15							
KURK	**Kurchatov**	**44.87**	**310**	*e*P		**P**	**11 36 41.6**	**-0.3**
BVAR	**Borovoye Array**	**49.84**	**314**	P		**P**	**11 37 19.7**	**-0.2**
	0.4nm,0.3s,mb3.1,baz=101,slow=7.6,SNR=4.1							
WRA	**Warramunga Arr**	**53.71**	**183**	P		**P**	**11 37 48.3**	**-0.6**
	0.8nm,0.3s,mb3.5,baz=359,slow=7.7,SNR=6.9							
ASAR	**Alice Springs**	**57.43**	**183**	P		**P**	**11 38 14.2**	**-0.7**
	0.2nm,0.5s,mb2.7,baz=2.3,slow=4.5,SNR=7.0							
ARCES	**ARCESS Array B**	**65.45**	**339**	P		**P**	**11 39 07.6**	**+0.7**
	1.9nm,1.0s,mb3.7,baz=49,slow=8.3,SNR=3.9							
FINES	**FINESS Array B**	**69.67**	**331**	P		**P**	**11 39 33.0**	**-0.1**
	0.7nm,0.6s,mb3.6,baz=50,slow=6.2,SNR=12							
NOA	**NORSAR Array B**	**75.43**	**336**	P		**P**	**11 40 06.5**	**0.0**
	0.6nm,0.7s,mb3.5,baz=44,slow=5.8,SNR=3.5							

WEL 29 12:09:00.3±0.1,40.13S×174.40E,h88km±2km,ML3.6/4, 6C-5D,Error ellipse: s-maj=0.9km s-min=0.5km az=90.0, Cook Strait

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
WAZ	**Wanganui**	**0.58**	**51**	⇓PN		P	12 09 15.7	-0.1
WAZ				SN		S	12 09 27.5	+0.3
KIW	**Kapiti Island**	**0.83**	**152**	PN		P	12 09 18.0	-0.3
KIW				SN		S	12 09 30.7	-0.9
DFE	**Dawson Falls**	**0.83**	**344**	⇓PN		P	12 09 18.0	-0.3
DFE				SN		S	12 09 31.0	-0.6
RAEZ	**Rainy Point**	**0.84**	**359**	PN		P	12 09 18.2	-0.1
NRZ	**Ngariki Road**	**0.87**	**335**	⇑PN		P	12 09 18.1	-0.6
NEZ	**North Egmont**	**0.89**	**344**	PN		P	12 09 18.3	-0.5
NWEZ

MOZ	**McQueen's Vall**	**3.81 199**	PN	P	12 09 53.9	-4.2
MOZ			*e*SN	S	12 10 33.5	-8.4
WVZ	**Waitaha Valley**	**4.03 222**	*e*PN	P	12 09 58.4	-2.7
WCZ	**Waipu Caves**	**4.18 359**	PN	P	12 10 01.3	-1.8
RPZ	**Rata Peaks**	**4.37 214**	*e*PN	P	12 10 02.4	-3.4
ODZ	**Otahua Downs**	**5.64 208**	*e*PN	P	12 10 18.9	-4.3
TUZ	**Tuapeka**	**6.79 209**	*e*PN	P	12 10 35.6	-3.6

NDI ***29*** *12:09:36.1±5.3,28.72N×82.85E,h10km,ML3.6, mb3.9(NEIC)*
NEIC ***29*** *12:09:38.9±3.0,28.50N×82.61E,h32km±24km,mb3.9/1, Error ellipse: s-maj=10.6km s-min=8.9km az=79.0*
IDC ***29*** *12:09:42.6±8.1,28.58N×82.78E,h63km±71km,mb3.6/9, mb1 3.7/11,mb1mx3.6/20,ML4.4/1,Error ellipse: s-maj=44.6km s-min=19.4km az=51.0*

ISC 29 12:09:34.2±0.4,28.48N±0.04×82.72E±0.04,h10km,n28, σ1§20/34,mb3.8/10,Nepal

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
PTH	**Pithoragarh**	**2.43**	**296**	*e*SG		**Sg**	**12 10 55.0**	**-0.3**
KALG	**Kalgarh**	**3.62**	**287**	*e*P		**Pn**	**12 10 30.3**	**-1.2**
KALG				*e*S		**Sn**	**12 11 14.0**	**-0.7**
AGRA	**Agra**	**4.41**	**255**	*e*PG		**Pg**	**12 11 02.9**	**+0.7**
AGRA				*e*			12 11 37.4	
AGRA				*e*			12 12 29.4	
	comp=E,153nm,0.3s							
AGRA				*e*			12 12 29.5	
	comp=N,139nm,0.2s							
NDI	**New Delhi**	**4.84**	**274**	*e*P		**Pn**	**12 10 51.0**	**+2.1**
NDI				*e*S		**Sn**	**12 11 45.5**	**-0.2**
AYAN	**Aya Nagar**	**4.92**	**271**	*i*		**Pn**	**12 10 57.0**	**+7.0**
AYAN				*e*			12 11 48.6	
SONA	**Sohna**	**4.97**	**269**	*e*		**Pn**	**12 10 58.4**	**+7.7**
SONA				*e*S		**Sn**	**12 11 50.9**	**+1.9**
SONA				*e*			12 12 26.0	
	comp=E,73nm,0.3s							
SONA				*e*			12 12 26.0	
	comp=N,86nm,0.3s							
KUDL	**Kundal**	**5.50**	**268**	*e*		**Pn**	**12 11 04.7**	**+6.5**
KUDL				*e*			12 12 16.3	
KHET	**Khetri**	**6.11**	**268**	*i*	P	**Pn**	**12 11 09.6**	**+2.8**
BHPL	**Bhopal**	**7.07**	**224**	*e*	P	**Pn**	**12 11 23.8**	**+3.6**
BHPL				*e*S		**Sn**	**12 12 39.6**	**-1.9**
LSA	**Lhasa**	**7.48**	**79**	*e*	P	**Pn**	**12 11 27.5**	**+1.5**
BWNR	**Bhubaneshwar**	**8.62**	**160**	*e*	P	**P**	**12 12 42.7**	**+0.8**
BWNR				*e*			12 13 17.9	
BWNR				*e*			12 13 19.8	
	comp=E,63nm,0.3s							
BWNR				*e*			12 13 19.8	
	comp=N,52nm,0.4s							
SHL	**Shillong**	**8.67**	**107**	*e*	P	**P**	**12 11 39.5**	**-3.2**
SHL				*e*S		**Sn**	**12 13 11.0**	**-11**
HYB	**Hyderabad**	**11.66**	**200**	*i*	P	**P**	**12 12 22.5**	**-1.3**
HYB				*e*S		**S**	**12 14 34.0**	**-1.1**
HYB	**Hyderabad**	**11.66**	**200**	*e*	P	**P**	**12 12 22.5**	**-1.3**
CMAR	**Chiang Mai Arr**	**17.90**	**120**	P		**P**	**12 13 47.5**	**+2.5**
	baz=297,slow=12,SNR=2.6							
MKAR	**Makanchi Array**	**18.28**	**359**	P		**P**	**12 13 49.1**	**-0.5**
	comp=N,1.4nm,0.3s,baz=180,slow=10,SNR=41							
KURK	**Kurchatov**	**22.42**	**353**	*e*	P	**P**	**12 14 33.3**	**-1.0**
ZAL	**Zalesovo**	**25.48**	**3**	P		**P**	**12 15 03.8**	**0.0**
	comp=N,3.6nm,0.6s,mb4.1,baz=184,slow=7.8,SNR=17							
BVAR	**Borovoye Array**	**26.16**	**343**	P		**P**	**12 15 10.4**	**+0.1**
	comp=N,1.0nm,0.4s,mb3.7,baz=153,slow=11,SNR=9.3							
ZRNK	**Zerenda**	**26.47**	**341**	P		**P**	**12 15 13.2**	**+0.1**
SONM	**Songino Array**	**26.65**	**37**	P		**P**	**12 15 15.1**	**+0.3**
	comp=N,2.5nm,0.8s,mb3.8,baz=230,slow=9.6,SNR=9.3							
ULN	**Ulaanbaatar**	**27.02**	**38**	*e*	P	**P**	**12 15 18.5**	**+0.3**
	comp=N,1.8nm,0.6s,mb3.8							
FINES	**FINESS Array B**	**49.56**	**328**	P		**P**	**12 18 26.6**	**-0.4**
	comp=N,2.2nm,1.0s,mb4.1,baz=117,slow=8.5,SNR=7.3							
ARCES	**ARCESS Array B**	**52.28**	**338**	P		**P**	**12 18 47.0**	**-0.5**
	comp=N,1.2nm,0.5s,mb4.1,baz=98,slow=8.6,SNR=8.5							
NOA	**NORSAR Array B**	**56.61**	**326**	P		**P**	**12 19 18.5**	**-0.8**
	comp=N,0.6nm,0.8s,mb3.7,baz=84,slow=9.3,SNR=4.0							
ASAR	**Alice Springs**	**71.55**	**131**	P		**P**	**12 20 57.3**	**-0.3**
	comp=N,0.7nm,0.7s,mb3.7,baz=313,slow=6.1,SNR=7.3							
ILAR	**Eielson Array**	**79.39**	**19**	P		**P**	**12 21 41.0**	**-0.5**
	comp=N,0.8nm,0.9s,mb3.7,baz=293,slow=5.0,SNR=11							
YKA	**Yellowknife Ar**	**88.28**	**8**	P		**P**	**12 22 26.0**	**-0.5**
	comp=N,0.1nm,0.6s,mb3.2,baz=344,slow=4.3,SNR=4.4							

BJI ***29*** *12:22:12.8,28.51N×82.67E,h26km, mb4.3*
NDI ***29*** *12:22:13.4±4.3,28.67N×82.89E,h10km,MD3.9,ML3.7, mb4.1(NEIC)*
DMN ***29*** *12:22:14.8±0.7,28.55N×82.96E,h35km±2km,Ml4.9/5, Error ellipse: s-maj=13.5km s-min=12.5km az=25.0*
NEIC ***29*** *12:22:15.6±2.5,28.51N×82.70E,h25km±18km,mb4.1/2, Error ellipse: s-maj=10.6km s-min=7.8km az=62.0*
IDC ***29*** *12:22:20.9±6.5,28.64N×82.85E,h67km±57km,mb3.8/12, mb1 4.0/14,mb1mx3.8/21,ML4.3/2,Error ellipse: s-maj=29.3km s-min=15.3km az=45.0*

ISC 29 12:22:12.0±0.2,28.52N±0.03×82.74E±0.02,h10km,n62, σ1§30/77,mb4.1/17,2C-2D,Nepal

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
DANN	**Dangsing**	**0.92**	**100**	*e*Pg		**Pg**	**12 22 29.8**	**-0.5**
DANN				*e*Sg		**Sg**	**12 22 41.4**	**-1.2**
KOLN	**Koldanda**	**1.06**	**134**	*e*Pg		**Pg**	**12 22 33.6**	**+0.3**
KOLN	**Koldanda**	**1.06**	**134**	*e*Sg		**Sg**	**12 22 48.4**	**+0.8**
	4μm,0.6s							
GKN	**Gorkha**	**1.75**	**107**	*e*Pn		**Pn**	**12 22 44.6**	**+1.9**
GKN	**Gorkha**	**1.75**	**107**	*e*Sn		**Sn**	**12 23 05.9**	**+0.7**
	10μm,0.3s							
DMN	**Daman**	**2.28**	**113**	*e*Pn		**Pn**	**12 22 52.0**	**+1.7**
DMN				*e*Sn		**Sn**	**12 23 20.0**	**+1.3**
	574nm,0.3s							
KKN	**Kakani**	**2.36**	**107**	*e*Pn		**Pn**	**12 22 52.0**	**+0.6**
KKN				*e*Pg		**Pg**	**12 22 55.0**	**-4.1**
KKN	**Kakani**	**2.36**	**107**	*e*Sn		**Sn**	**12 23 20.7**	**0.0**
	2μm,0.4s							
PTH	**Pithoragarh**	**2.44**	**296**	*e*PB		**Pb**	**12 22 57.0**	**+1.5**
PTH				*e*SG		**Sg**	**12 23 35.0**	**+1.9**
PKI	**Pulchoki**	**2.54**	**111**	*e*Pn		**Pn**	**12 22 55.3**	**+1.3**
PKI				*e*Pg		**Pg**	**12 22 58.5**	**-4.3**
PKI	**Pulchoki**	**2.54**	**111**	*e*Sn		**Sn**	**12 23 25.7**	**+0.4**
	2μm,0.3s							
KALG	**Kalgarh**	**3.63**	**287**	*e*PB		**Pb**	**12 23 19.4**	**+3.5**
KALG				*e*S		**Sn**	**12 23 50.9**	**-1.8**
AGRA	**Agra**	**4.43**	**254**	*e*		**Pn**	**12 23 38.3**	**+17**
AGRA				*e*			12 24 31.2	
JHNI	**Jhansi**	**4.82**	**232**	⇑*i*P		**Pn**	**12 23 47.0**	**+0.6**
JHNI				*e*			12 23 47.0	
NDI	**New Delhi**	**4.86**	**273**	*e*P		**Pn**	**12 23 29.0**	**+2.1**
NDI				*e*S		**Sn**	**12 24 23.4**	**-0.5**
AYAN	**Aya Nagar**	**4.94**	**271**	*e*		**Pn**	**12 23 36.5**	**+8.4**
AYAN				*e*S		**Sn**	**12 24 26.0**	**0.0**
SONA	**Sohna**	**4.99**	**268**	*e*P		**Pn**	**12 23 31.2**	**+2.4**
SONA				*e*S		**Sn**	**12 24 28.0**	**+0.7**
SONA				*e*			12 24 31.8	
	comp=N,115nm,0.6s							
SONA				*e*			12 24 32.0	
	comp=E,92nm,0.4s							
BHGR	**Bahadurgarh**	**5.10**	**273**	*e*S		**Sn**	**12 24 30.5**	**+0.4**
KUDL	**Kundal**	**5.52**	**268**	*e*		**Pn**	**12 23 53.9**	**+18**
JBP	**Jabalpur**	**5.88**	**206**	⇓*e*P		**Pn**	**12 23 46.2**	**+4.9**
JBP				*e*S		**Sn**	**12 24 52.8**	**+3.3**
KHET	**Khetri**	**6.13**	**268**	*e*P		**Pn**	**12 23 47.0**	**+2.2**
KHET				*e*S		**Sn**	**12 24 53.2**	**-2.5**
KHET				AML		AML	12 24 57.7	
	comp=N,57nm,0.2s							
KHET				AML		AML	12 24 58.9	
	comp=E,98nm,0.4s							
BLSP	**Bilaspur**	**6.38**	**185**	*e*P		**Pn**	**12 23 49.3**	**+0.8**
BLSP				*e*S		**Sn**	**12 25 01.2**	**-1.0**
BHPL	**Bhopal**	**7.11**	**224**	*e*P		**Pn**	**12 23 58.9**	**+0.3**
BHPL				*e*S		**Sn**	**12 25 18.4**	**-1.9**
BHPL				*e*			12 25 19.5	
	comp=E,50nm,0.3s							
BHPL				*e*			12 25 19.9	
	comp=N,73nm,0.4s							
LSA	**Lhasa**	**7.45**	**79**	P		**Pn**	**12 24 03.0**	**-0.5**
LSA	**Lhasa**	**7.45**	**79**	*e*P		**Pn**	**12 24 03.5**	**+0.1**
AJM	**Ajmer**	**7.47**	**256**	⇓*i*S		**Sn**	**12 25 23.0**	**-6.4**
SHL	**Shillong**	**8.67**	**108**	*e*P		**P**	**12 24 17.0**	**-3.4**
SHL				*e*S		**Sn**	**12 25 48.0**	**-11**
VIS	**Vishakhapatnam**	**10.76**	**177**	*e*P		**P**	**12 24 47.0**	**-2.3**
VIS				*e*			12 27 47.5	
LATR	**Latur**	**11.54**	**211**	*e*P		**P**	**12 24 57.2**	**-2.7**
HYB	**Hyderabad**	**11.70**	**200**	*i* P		**P**	**12 24 59.5**	**-2.6**
	comp=N,40nm,0.6s							
HYB				*e*S		**S**	**12 27 05.0**	**-8.8**
HYB	**Hyderabad**	**11.70**	**200**	*e*P		**P**	**12 24 59.5**	**-2.6**
	comp=N,40nm,0.6s							
HYB				*e*S		**S**	**12 27 05.0**	**-8.8**
POO	**Poona**	**12.85**	**221**	*e*		**P**	**12 25 14.0**	**-3.5**
POO				*i* S		**S**	**12 27 31.0**	**-11**
KAD	**Karad**	**13.65**	**217**	*e*		**P**	**12 25 24.0**	**-4.2**
KAD				*i*			12 27 52.0	
AAK	**Ala-Archa**	**15.59**	**337**	*e*P		**P**	**12 25 54.2**	**+0.8**
GTA	**Gaotai**	**17.82**	**48**	*e*P		**P**	**12 26 21.5**	**-0.2**
GTA				AP			12 26 25.8	
GTA				XP			12 26 28.5	
GTA				AMB		AMB		
	comp=Z,6.0nm,0.9s							
CMAR	**Chiang Mai Arr**	**17.90**	**120**	P		**P**	**12 26 24.8**	**+2.0**
	comp=Z,0.2nm,0.3s,baz=315,slow=14,SNR=5.9							
MKAR	**Makanchi Array**	**18.25**	**359**	P		**P**	**12 26 26.4**	**-0.6**
	comp=Z,3.4nm,0.3s,baz=178,slow=11,SNR=108							
GYA	**Guiyang**	**21.32**	**90**	⇑P		**P**	**12 26 59.3**	**-2.0**
GYA				AMB		AMB		
	comp=Z,10.0nm,0.9s,mb4.2							
KURK	**Kurchatov**	**22.39**	**353**	*e*P		**P**	**12 27 10.8**	**-1.0**
ZAL	**Zalesovo**	**25.44**	**3**	P		**P**	**12 27 41.1**	**-0.2**
	comp=Z,7.6nm,0.6s,mb4.4,baz=188,slow=7.4,SNR=33							
BVAR	**Borovoye Array**	**26.13**	**343**	P		**P**	**12 27 47.3**	**-0.5**
	comp=Z,2.6nm,0.5s,mb4.0,baz=154,slow=10,SNR=18							
BRVK	**Borovoye**	**26.19**	**343**	*e*P		**P**	**12 27 49.6**	**+1.3**
ZRNK	**Zerenda**	**26.44**	**341**	*e*P		**P**	**12 27 49.9**	**-0.7**
SONM	**Songino Array**	**26.61**	**37**	P		**P**	**12 27 53.0**	**+0.7**
	comp=Z,4.1nm,0.6s,mb4.1,baz=224,slow=9.7,SNR=19							
ULN	**Ulaanbaatar**	**26.98**	**38**	*e*P		**P**	**12 27 55.8**	**+0.1**
	comp=Z,6.3nm,0.7s,mb4.2							
CN2	**Changchun**	**37.27**	**54**	*e*P		**P**	**12 29 25.0**	**-0.7**
CN2				AMB		AMB		
	comp=Z,10.0nm,0.6s,mb4.8							
BRTR	**Keskin Array B**	**41.69**	**299**	P		**P**	**12 30 04.5**	**+2.1**
	comp=Z,1.2nm,0.7s,mb3.7,baz=121,slow=7.2,SNR=7.2							
JOF	**Joensuu**	**47.67**	**331**	*ep*		**P**	**12 30 49.9**	**-0.2**
	comp=Z,0.6nm,0.3s,mb4.1							
FINES	**FINESS Array B**	**49.54**	**328**	P		**P**	**12 31 04.4**	**-0.2**
	comp=Z,1.0nm,0.5s,mb4.1,baz=111,slow=9.4,SNR=14							
TIXI	**Tiksi**	**49.93**	**17**	*e*P		**P**	**12 31 05.9**	**-1.6**
ARCES	**ARCESS Array B**	**52.26**	**338**	P		**P**	**12 31 23.6**	**-1.6**
	comp=Z,1.5nm,0.4s,mb4.3,baz=101,slow=7.3,SNR=18							
GERES	**GERESS Array B**	**55.63**	**312**	P		**P**	**12 31 50.1**	**-0.1**
	comp=Z,0.2nm,0.3s,mb3.6,baz=130,slow=10,SNR=2.8							
NB2	**NORSAR Subarra**	**56.59**	**326**	P		**P**	**12 31 55.3**	**-1.7**
	comp=Z,0.7nm,0.7s,mb3.8,baz=92,slow=7.0							
NOA	**NORSAR Array B**	**56.59**	**326**	P		**P**	**12 31 55.5**	**-1.4**
	comp=Z,0.8nm,0.7s,mb3.9,baz=92,slow=7.0,SNR=6.2							
WRA	**Warramunga Arr**	**69.32**	**128**	P		**P**	**12 33 21.9**	**-0.1**
	comp=Z,1.7nm,0.8s,mb4.1,baz=322,slow=6.3,SNR=4.1							
ASAR	**Alice Springs**	**71.56**	**131**	P		**P**	**12 33 34.6**	**-0.9**
	comp=Z,2.0nm,0.8s,mb4.1,baz=316,slow=5.8,SNR=11							
ILAR	**Eielson Array**	**79.35**	**19**	P		**P**	**12 34 18.4**	**-0.6**
	comp=Z,2.2nm,1.0s,mb4.1,baz=301,slow=5.0,SNR=26							
INK	**Inuvik**	**79.80**	**13**	*e*P		**P**	**12 34 20.9**	**-0.5**
	comp=Z,0.7nm,0.5s,mb3.9							
YKA	**Yellowknife Ar**	**88.25**	**8**	P		**P**	**12 35 03.5**	**-0.7**
	comp=Z,0.3nm,0.6s,mb3.7,baz=335,slow=5.3,SNR=9.8							
YKA	**Yellowknife Ar**	**88.25**	**8**	P		**P**	**12 35 03.5**	**-0.7**
TXAR	**Lajitas Array**	**122.15**	**7**	PKP		PKPdf	12 41 09.1	-1.4
	comp=Z,0.4nm,0.9s,baz=26,slow=1.2,SNR=4.9							
LPAZ	**La Paz**	**150.53**	**288**	PKPbc		PKPdf	12 42 06.2	+4.0
	comp=Z,1.1nm,0.8s,baz=205,slow=3.7,SNR=3.6							

GUC 29 12:25:20.1±1.0,30.95S×71.63W,h31km±5km,MD3.7, ML3.1,6C-1D,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
OVCH	**Ovalle**	**0.50**	**47**	⇑*i*P		**Pb**	**12 25 30.6**	**0.0**
OVCH				*i* S		Sb	12 25 38.0	+0.3
OVCH				AMP			12 25 38.9	
	comp=E,2μm,0.4s							
CMCH	**Combarbala**	**0.58**	**113**	⇑*i*P		**Pb**	**12 25 32.2**	**+0.4**
CMCH				*i* S		Sb	12 25 40.9	+1.0
CMCH				AMP			12 25 41.3	
	comp=N,5μm,0.2s							
ILCH	**Illapel**	**0.79**	**150**	⇑*i*P		Pn	12 25 34.4	-0.7
ILCH				*i* S		Sb	12 25 45.2	-0.4
ILCH				AMP			12 25 45.7	
	comp=N,988nm,0.2s							
TLL	**Tololo Astrono**	**1.06**	**42**	⇓*i*P		Pn	12 25 39.3	+0.4
TLL				*i* S		Sn	12 25 53.7	+1.0
TLL				AMP			12 26 01.5	
	comp=N,668nm,0.6s							
LSCH	**La Serena**	**1.09**	**18**	⇑*i*P		Pn	12 25 39.9	+0.4
LSCH				*i* S		Sn	12 25 53.6	0.0
LSCH				AMP			12 25 57.0	
	comp=N,511nm,0.3s							
PTCH	**Petorca**	**1.44**	**156**	⇑*i*P		Pn	12 25 44.8	+0.4
PTCH				*i* S		Sn	12 26 03.6	+1.2
PTCH				AMP			12 26 06.9	
	comp=E,1μm,0.2s							
PACH	**Papudo**	**1.59**	**174**	*e*P		Pn	12 25 46.0	-0.6
PACH				*i* S		Sn	12 26 06.7	+0.5
JACH	**Jahuel**	**1.94**	**153**	⇑*i*P		Pn	12 25 52.7	+1.1
JACH				*i* S		Sn	12 26 17.2	+2.1
FCH	**Farellones**	**2.63**	**155**	*i* P		Pn	12 26 02.4	+0.9
CHCH	**Chadas Angostu**	**3.09**	**165**	*e*P		Pn	12 26 08.2	+0.2

LDG ***29*** *12:35:59.6±0.2,38.50N×14.97E,h10km,Mb4.6/10, Ms2.6/5, Error ellipse: s-maj=8.9km s-min=4.0km az=42.0*
IDC ***29*** *12:35:59.5±0.9,38.58N×14.60E,mb3.8/11,mb1 3.9/15, mb1mx3.8/28,ML3.6/4, Error ellipse: s-maj=21.2km s-min=16.0km az=88.0*
NEIC ***29*** *12:36:00.6,38.54N×14.63E,h10km, mb4.1/2, MD3.5(ROM), After ROM.*
ROM ***29*** *12:36:00.5±0.3,38.54N×14.63E,h10km±2km, MD3.5/14, ML3.1/7, Error ellipse: s-maj=1.3km s-min=1.2km az=90.0*

ISC 29 12:35:59.8±0.2,38.57N±0.02×14.65E±0.03,h10km,n77, σ1§29/98,mb3.8/11,2C-2D,Sicily

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
SLNA	**Salina**	**0.14**	**93**	⇑*i*PG		**Pg**	**12 36 05.6**	**+2.5**
SLNA	**Salina**	**0.14**	**93**	⇑*i*Pg		**Pg**	**12 36 05.5**	**+2.4**
MNO	**Monte Soro**	**0.64**	**177**	⇓*i*PG		**Pg**	**12 36 12.9**	**+0.2**
MNO	**Monte Soro**	**0.64**	**177**	⇓*i*Pg		**Pg**	**12 36 12.9**	**+0.2**
PLLN	**Pollina**	**0.70**	**215**	*e*PG		**Pg**	**12 36 13.8**	**-0.2**
PLLN				SG		**Sg**	**12 36 23.8**	**+0.3**
ATN	**Antennamare**	**0.76**	**123**	*e*PG		**Pg**	**12 36 15.1**	**0.0**
ATN				SG		**Sg**	**12 36 28.0**	**+2.7**
ATN	**Antennamare**	**0.76**	**123**	*e*Pg		**Pg**	**12 36 15.1**	**0.0**
ATN				*e*Sg		**Sg**	**12 36 28.0**	**+2.7**
GIB	**Gibilmanna**	**0.76**	**221**	*e*PG		**Pg**	**12 36 14.8**	**-0.3**
GIB				SG		**Sg**	**12 36 25.9**	**+0.5**
	1μm,0.4s							
GIB	**Gibilmanna**	**0.76**	**221**	*e*Pg		**Pg**	**12 36 14.8**	**-0.3**
GIB				*e*Sg		**Sg**	**12 36 25.9**	**+0.5**
CSLB	**Castelbuono**	**0.79**	**217**	*e*PG		**Pg**	**12 36 15.2**	**-0.5**
CSLB				SG		**Sg**	**12 36 26.1**	**-0.1**
CSLB	**Castelbuono**	**0.79**	**217**	*e*Pg		**Pg**	**12 36 15.2**	**-0.5**
CSLB				*e*Sg		**Sg**	**12 36 26.1**	**-0.2**
MSI	**Messina ING**	**0.80**	**117**	*e*PG		**Pg**	**12 36 15.9**	**+0.1**
MSI				SG		**Sg**	**12 36 27.5**	**+1.0**
MSI	**Messina ING**	**0.80**	**117**	*e*Pg		**Pg**	**12 36 15.9**	**+0.1**
MSI				*e*Sg		**Sg**	**12 36 27.5**	**+1.0**
SCLL	**Scilla**	**0.89**	**110**	*e*PG		**Pg**	**12 36 17.0**	**-0.7**
SCLL	**Scilla**	**0.89**	**110**	*e*Pg		**Pg**	**12 36 17.0**	**-0.7**
MTTG	**Motta San Giov**	**1.00**	**124**	*e*PG		**Pg**	**12 36 19.1**	**-0.7**
MTTG				SG		**Sg**	**12 36 34.2**	**+1.1**
MTTG	**Motta San Giov**	**1.00**	**124**	*e*Pg		**Pg**	**12 36 19.1**	**-0.7**
MTTG				*e*Sg		**Sg**	**12 36 34.2**	**+1.1**
GIO	**San Gregorio**	**1.07**	**160**	*e*PN		**Pn**	**12 36 21.6**	**+0.9**
VAE	**Valguarnera**	**1.11**	**190**	Pn		**Pn**	**12 36 23.7**	**+2.3**
	22nm,0.3s,baz=11,slow=2.1,SNR=50							
VAE				Sn		**Sn**	**12 36 50.9**	**+14**
	134nm,0.3s,baz=210,slow=20,SNR=12							
USI	**Ustica**	**1.16**	**277**	*e*PN		**Pn**	**12 36 20.8**	**-1.3**
USI	**Ustica**	**1.16**	**277**	*e*Pg		**Pg**	**12 36 20.8**	**-2.3**
SOI	**Samo**	**1.21**	**114**	*e*PN		**Pn**	**12 36 22.1**	**-0.7**
SOI	**Samo**	**1.21**	**114**	*e*Pg		**Pg**	**12 36 22.1**	**-1.9**
MCT	**Mte Cammarata**	**1.24**	**221**	*e*PN		**Pn**	**12 36 24.6**	**+1.4**
MCT	**Mte Cammarata**	**1.24**	**221**	*e*Pg		**Pg**	**12 36 24.6**	**0.0**
AGST	**Augusta-Monte**	**1.39**	**161**	*e*PN		**Pn**	**12 36 25.1**	**-0.3**
GRI	**Girifalco**	**1.40**	**79**	*e*PN		**Pn**	**12 36 25.5**	**-0.1**
GRI	**Girifalco**	**1.40**	**79**	*e*Pg		**Pg**	**12 36 25.5**	**-2.4**
MEU	**Monte Lauro**	**1.48**	**171**	*e*PN		**Pn**	**12 36 26.4**	**-0.3**
MEU	**Monte Lauro**	**1.48**	**171**	*e*Pg		**Pg**	**12 36 26.4**	**-3.1**
CLTB	**Caltabellotta**	**1.51**	**229**	*e*PN		**Pn**	**12 36 27.8**	**+0.7**
	362nm,0.4s							
CLTB	**Caltabellotta**	**1.51**	**229**	*e*Pg		**Pg**	**12 36 27.8**	**-2.1**
PZI	**Palazzolo**	**1.53**	**171**	*e*PN		**Pn**	**12 36 27.2**	**-0.2**
	623nm,0.5s							
PZI	**Palazzolo**	**1.53**	**171**	*e*Pg		**Pg**	**12 36 27.2**	**-3.2**
TDS	**Terranova Siba**	**1.70**	**50**	*e*PN		**Pn**	**12 36 30.1**	**+0.3**
	116nm,0.5s							
TDS	**Terranova Siba**	**1.70**	**50**	*e*Pg		**Pg**	**12 36 30.1**	**-3.7**
MGR	**Morigerati**	**1.71**	**24**	*e*PN		**Pn**	**12 36 29.7**	**-0.3**
MGR				SN		**Sn**	**12 36 53.0**	**+0.9**
MGR	**Morigerati**	**1.71**	**24**	*e*Pg		**Pg**	**12 36 29.7**	**-4.4**
MGR				*e*Sg		**Sg**	**12 36 53.0**	**-3.9**
TIP	**Timpagrande**	**1.75**	**69**	*e*P		**Pn**	**12 36 31.1**	**+0.5**
TIP				*e*S		**Sn**	**12 36 47.9**	**-5.2**
SLCN	**Sala Consilina**	**1.97**	**22**	*e*PN		**Pn**	**12 36 34.4**	**+0.8**
SLCN				SN		**Sn**	**12 36 58.3**	**-0.3**
	72nm,0.2s							
SLCN	**Sala Consilina**	**1.97**	**22**	*e*Pg		**Pg**	**12 36 34.4**	**-4.8**
SLCN				*e*Sg		**Sg**	**12 36 58.4**	**-7.0**
ORI	**Oriolo Calabro**	**2.04**	**43**	*e*PN		**Pn**	**12 36 35.5**	**+0.8**
	152nm,0.5s							
ORI	**Oriolo Calabro**	**2.04**	**43**	*e*Pg		**Pg**	**12 36 35.5**	**-5.0**
SGO	**Sicignano**	**2.05**	**14**	*e*PN		**Pn**	**12 36 34.9**	**+0.1**
SGO				SN		**Sn**	**12 37 00.6**	**-0.1**
	47nm,0.2s							
SGO	**Sicignano**	**2.05**	**14**	*e*Pg		**Pg**	**12 36 34.9**	**-5.9**
SGO				*e*Sg		**Sg**	**12 37 00.6**	**-7.5**
MRLC	**Muro Lucano**	**2.27**	**16**	*e*PN		**Pn**	**12 36 39.6**	**+1.6**
MRLC	**Muro Lucano**	**2.27**	**16**	*e*Pg		**Pg**	**12 36 39.6**	**-5.7**
CSSN	**Cassano Irpino**	**2.30**	**7**	*e*PN		**Pn**	**12 36 39.8**	**+1.3**
CSSN	**Cassano Irpino**	**2.30**	**7**	*e*Pg		**Pg**	**12 36 39.8**	**-6.1**
CII	**Carovilli**	**3.16**	**355**	*e*P		**Pn**	**12 36 53.9**	**+3.2**
CII				*e*S		**Sn**	**12 37 22.8**	**-6.0**
SBF	**Sospel**	**7.58**	**316**	*e*P		**Pn**	**12 37 56.0**	**+2.8**
	11nm,0.7s							
MBDF	**Montbardon**	**8.52**	**319**	*e*P		**P**	**12 38 08.9**	**+2.7**
	5.2nm,0.6s							
SMRF	**Simiane la Rot**	**8.71**	**311**	*e*P		**P**	**12 38 11.5**	**+2.7**
IDI	**Anoyia**	**8.83**	**109**	Pn		**P**	**12 38 09.7**	**-0.8**
	0.4nm,0.3s,baz=308,slow=17,SNR=2.4							
IDI						Sn	**Sn**	**12 39 41.8**	**-9.2**
	1.4nm,0.3s,baz=319,slow=19,SNR=4.8							
DAVOX	**Davos**	**8.92**	**338**	Pn		**P**	**12 38 09.5**	**-2.3**
	0.1nm,0.3s,baz=163,slow=14,SNR=2.9							
LPG	**La Plagne**	**9.08**	**322**	*e*P		**P**	**12 38 17.9**	**+4.0**
	30nm,1.3s							
LPL	**La Plagne**	**

	comp=Z,3.5nm,0.9s,mb3.8									
ENH	**Enshi**	**85.72**	**304**	*e*P		**P**		**12 47 51.5**	**-0.1**	
	comp=Z,13nm,0.9s,mb4.6									
TXAR	**Lajitas Array**	**86.68**	**57**	P		**P**		**12 47 56.8**	**+0.7**	
	comp=Z,0.4nm,0.7s,mb3.2,baz=202,slow=6.7,SNR=5.0									
COLA	**College**	**87.58**	**12**	*e*P		**P**		**12 47 58.0**	**-1.5**	
COLA				*e*pP		pP		12 50 01.3	-0.2	
ILAR	**Eielson Array**	**87.69**	**13**	P		**P**		**12 47 58.8**	**-1.2**	
	comp=Z,0.7nm,0.5s,mb3.6,baz=219,slow=5.4,SNR=17									
PDAR	**Pinedale Array**	**88.47**	**43**	P		**P**		**12 48 04.0**	**-0.1**	
	comp=Z,0.4nm,0.7s,mb3.3,baz=207,slow=3.3,SNR=3.7									
VNA3	**Neumayer Olymp**	**88.77**	**176**	⇑*i*		**P**		**12 48 07.7**	**+2.8**	
VNA2	**Neumayer--Watz**	**89.21**	**177**	⇑*i*		**P**		**12 48 09.8**	**+2.8**	
CMAR	**Chiang Mai Ar**	**89.94**	**290**	P		**P**		**12 48 13.0**	**+1.4**	
	comp=Z,3.6nm,0.9s,mb4.2,baz=121,slow=2.9,SNR=19									
INK	**Inuvik**	**93.65**	**15**	P		**P**		**12 48 23.6**	**-3.8**	
	comp=Z,8.0nm,1.5s,mb4.6									
MKAR	**Makanchi Array**	**110.79**	**314**	PKiKP				12 53 39.0		
	comp=Z,0.9nm,0.6s,baz=162,slow=0.6,SNR=9.5									
ZRNK	**Zerenda**	**119.46**	**320**	*e*PKP		PKPdf		12 53 55.6	-0.4	
ARCES	**ARCESS Array B**	**128.31**	**350**	PKP		PKPdf		12 54 13.0	+0.3	
	comp=Z,1.1nm,0.4s,baz=17,slow=2.0,SNR=20									
JOF	**Joensuu**	**132.54**	**342**	*e*p		PKPdf		12 54 21.3	+0.5	
	comp=Z,0.6nm,0.4s									
FINES	**FINESS Array B**	**135.18**	**344**	PKP		PKPdf		12 54 27.4	+1.7	
	comp=Z,0.6nm,0.4s,baz=45,slow=3.9,SNR=8.3									
NB2	**NORSAR Subarra**	**138.36**	**353**	PKP				12 54 25.4		
	comp=Z,0.5nm,0.6s,baz=16,slow=3.1									
NOA	**NORSAR Array B**	**138.36**	**353**	PKhKP				12 54 22.2		
	comp=Z,0.4nm,0.6s,baz=22,slow=3.9,SNR=4.0									
NOA				PKP		PKPdf		12 54 33.9	+2.3	
	comp=Z,0.5nm,0.6s,baz=13,slow=4.0,SNR=3.5									
HFS	**Hagfors**	**138.92**	**351**	PKhKP				12 54 23.9		
	comp=Z,1.2nm,0.3s,baz=63,slow=3.3,SNR=14									
EKA	**Eskdalemuir Ar**	**144.37**	**5**	PKP		PKPdf		12 54 42.4	+0.2	
	comp=Z,1.5nm,0.7s,baz=314,slow=3.2,SNR=6.8									
BRTR	**Keskin Array B**	**146.44**	**313**	PKPbc		PKPbc		12 54 49.4	+1.3	
	comp=Z,4.7nm,0.8s,baz=135,slow=3.8,SNR=20									
ASF	**Jabal al Asfar**	**146.52**	**299**	PKPbc		PKPbc		12 54 50.6	+2.1	
	comp=Z,4.2nm,0.6s,baz=312,slow=3.3,SNR=7.1									
OJC	**Ojcow**	**146.59**	**339**	*e*PKP		PKPdf		12 54 49.6	+3.5	
NIE	**Niedzica**	**147.09**	**338**	*e*PKP		PKPdf		12 54 51.5	+4.6	
KSP	**Ksiaz**	**147.10**	**343**	*e*P		PKPdf		12 54 51.2	+4.3	
CLL	**Collm**	**147.46**	**347**	⇓*i*	PKP1	PKPdf		12 54 51.8	+4.3	
CLL				*e*PKP2		PKPab		12 54 55.0	-2.4	
UPC	**Upice**	**147.48**	**343**	⇑*e*	PKPB			12 54 52.2		
DPC	**Dobruska-Polom**	**147.54**	**343**	⇑*e*	PKPB			12 54 52.4		
DPC				*e*	PKPAB	PKPab		12 54 57.0	-0.7	
BRG	**Berggiesshubel**	**147.66**	**346**	*i* P		PKPdf		12 54 52.8	+5.0	
PVCC	**Panska Ves**	**147.83**	**345**	⇑*e*	PKPB			12 54 53.4		
PRU	**Pruhonice**	**148.34**	**345**	⇑*e*	PKPB			12 54 54.2		
	comp=Z,7.9nm,0.7s									
PRU				*e*	PKPAB	PKPab		12 55 00.0	-0.9	
MOX	**Moxa**	**148.36**	**348**	*i* P		PKPdf		12 54 53.4	+4.5	
MOX	**Moxa**	**148.36**	**348**	*e*P		PKPdf		12 54 53.4	+4.5	
NKC	**Novy Kostel**	**148.59**	**347**	⇑*e*	PKPB			12 54 55.7		
EIL	**Elat**	**148.66**	**295**	PKPbc		PKPdf		12 54 56.6	+6.6	
	comp=Z,1.4nm,0.5s,baz=322,slow=38,SNR=3.0									
KHC	**Kasperske Hory**	**149.37**	**345**	⇑*e*	PKPB			12 54 56.8		
KHC				*e*	PKPAB	PKPab		12 55 04.4	-0.8	
GERES	**GERESS Array B**	**149.60**	**345**	PKPbc		PKPdf		12 54 57.3	+6.3	
	comp=Z,4.4nm,0.8s,baz=45,slow=1.9,SNR=29									
GIVF	**Givet**	**149.75**	**356**	*e*	PKP1	PKPdf		12 54 56.8	+5.7	
BAIF	**Baives**	**149.82**	**357**	*e*	PKP1	PKPdf		12 54 57.1	+5.8	
	comp=Z,17nm,0.9s									
FLN	**La Foliniere**	**151.10**	**3**	*e*	PKP1	PKPdf		12 54 59.5	+6.3	
	comp=Z,13nm,0.7s									
CDF	**Champ du Feu**	**151.21**	**353**	*e*	PKP1	PKPdf		12 55 00.1	+6.7	
	comp=Z,9.7nm,0.8s									
ROSF	**Rostrenen**	**151.27**	**7**	*e*	PKP1	PKPdf		12 54 59.5	+6.0	
	comp=Z,7.6nm,0.7s									
LDF	**La Druitiere**	**151.29**	**3**	*e*	PKP1	PKPdf		12 54 59.8	+6.3	
	comp=Z,8.8nm,0.6s									
MEZF	**Maizieres J'vi**	**151.33**	**356**	*e*	PKP1	PKPdf		12 55 00.7	+7.1	
SGMF	**Saint Gilles**	**151.44**	**6**	*e*	PKP1	PKPdf		12 55 00.0	+6.3	
	comp=Z,14nm,0.8s									
GRR	**Gorron**	**151.45**	**4**	*e*	PKP1	PKPdf		12 55 00.4	+6.7	
	comp=Z,4.8nm,0.3s									
QUIF	**Quistinic**	**151.70**	**7**	*e*	PKP1	PKPdf		12 55 00.5	+6.4	
HAU	**Haudompre**	**151.71**	**354**	*e*	PKP1	PKPdf		12 55 01.1	+7.0	
HINF	**Hinteralfeld**	**151.84**	**353**	*e*	PKP1	PKPdf		12 55 01.1	+6.8	
LOR	**Lormes**	**152.62**	**357**	*e*	PKP1	PKPdf		12 55 03.2	+7.8	
SSF	**Saint Saulge**	**152.85**	**358**	*e*	PKP1	PKPdf		12 55 03.7	+8.0	

THR 29 12:56:43.7±0.8,36.51N×51.42E,h0km±13km, ML3.6,
Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op		ISC	h m s	ISC
THKV	**Tehran--Karaj**	**0.74**	**217**	*e*PG		Pg	12 56 56.4	-2.0
THKV				*e*SG		Sg	12 57 06.6	-1.6
THKV				AMP			12 57 07.8	
	comp=E,2μm,0.7s							
DAMV	**Damavand**	**0.98**	**153**	*e*PG		Pg	12 57 01.2	-2.1
DAMV				*e*SG		Sg	12 57 14.5	-1.8
SNGE	**Sanandaj**	**3.60**	**248**	*e*PN		Pn	12 57 39.4	-2.5

*IDC **29** 12:58:11.3±3.2,6.38S×150.28E,h37km±24km,mb3.9/5, mb1 4.2/6,mb1mx3.8/15,ML3.1/1,MS3.8/3,Ms1 3.8/3, ms1mx3.4/17,Error ellipse: s-maj=58.3km s-min=18.1km az=126.0*
*NEIC **29** 12:58:12.9±2.1,6.43S×150.24E,h51km±18km,mb4.4/2, Error ellipse: s-maj=24.8km s-min=13.9km az=112.0*
ISC 29 12:58:12.3±3.3,6.5S±0.1×150.2E±0.2,h60km±28km,n18,
σ0s74/18,mb4.0/4,MS3.8/3,2C,New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op		ISC	h m s	ISC
PMG	**Port Moresby**	**4.18**	**225**	Pn		**P**	**12 59 15.8**	**+0.6**
	7.2nm,0.3s,baz=49,slow=12,SNR=22							
PMG				Sn		**S**	**13 00 03.4**	**+0.2**
	12nm,0.3s,baz=96,slow=20,SNR=10							
PMG	**Port Moresby**	**4.18**	**225**	*e*Pn		**P**	**12 59 15.3**	**+0.1**
PMG				*e*Sn		**S**	**13 00 02.6**	**-0.7**
PMG				Sn		**S**	**13 00 03.4**	**+0.2**
CTAO	**Charters Tower**	**14.08**	**195**	P		**P**	**13 01 29.9**	**-0.4**
	1.0nm,0.6s							
WRAB	**Tennant Creek**	**20.39**	**227**	*e*P		**P**	**13 02 46.1**	**-0.6**
	32nm,0.8s							
WB2	**Warramunga Arr**	**20.39**	**227**	⇑*i*	P	**P**	**13 02 46.6**	**-0.2**
WB2				*i*			13 02 55.9	
WRA	**Warramunga Arr**	**20.40**	**227**	P		**P**	**13 02 46.8**	**-0.1**
	8.4nm,0.7s,baz=52,slow=11,SNR=36							
AS12	**Alice Springs**	**23.18**	**221**	⇑*i*	P	**P**	**13 03 16.7**	**+2.1**
	9.0nm,1.1s,mb4.1							
ASAR	**Alice Springs**	**23.18**	**221**	P		**P**	**13 03 15.7**	**+1.1**
	1.5nm,0.6s,mb3.6,baz=57,slow=8.9,SNR=20							
ASAR				S		**S**	**13 07 27.5**	**+9.4**
	1.0nm,0.8s,baz=43,slow=16,SNR=5.0							
STKA	**Stephens Creek**	**26.54**	**196**	*e*P		**P**	**13 03 46.2**	**-0.3**
	5.2nm,1.1s,mb4.0							
STKA	**Stephens Creek**	**26.54**	**196**	P		**P**	**13 03 45.9**	**-0.6**
	5.1nm,0.9s,mb4.1,baz=18,slow=14,SNR=6.4							
FITZ	**Fitzroy Crossi**	**26.57**	**242**	P		**P**	**13 03 47.1**	**+0.2**
	15nm,1.2s,mb4.4,baz=50,slow=12,SNR=5.6							
CBIJ	**Chichi jima**	**34.22**	**347**	LR		LR	13 16 24.9	
	comp=Z,85nm,20.1s,MS3.5,baz=100,slow=32							
ULN	**Ulaanbaatar**	**66.04**	**330**	P		**P**	**13 08 53.6**	**-1.4**
TIXI	**Tiksi**	**79.19**	**353**	P		**P**	**13 10 13.1**	**+1.0**
ZAL	**Zalesovo**	**81.08**	**327**	LR		LR	13 44 45.9	
	comp=Z,70nm,19.2s,MS4.0,baz=11,slow=34							
ILAR	**Eielson Array**	**84.67**	**23**	P		**P**	**13 10 40.5**	**+0.1**
	0.5nm,0.8s,mb3.7,baz=258,slow=5.1,SNR=6.4							
DLBC	**Dease Lake**	**90.14**	**31**	LR		LR	13 45 57.0	
	comp=Z,57nm,20.3s,MS4.0,baz=262,slow=32							
GERES	**GERESS Array B**	**124.03**	**327**	PKP		PKPdf	13 17 06.1	+2.0
	0.5nm,0.6s,baz=117,slow=2.2,SNR=4.7							

*GUC **29** 13:30:55.9±0.7,20.67S×69.95W,h70km,ML5.1*
*NEIC **29** 13:30:57.0±0.2,20.45S×68.89W,mb4.9/39,Error ellipse: s-maj=8.4km s-min=4.3km az=61.0*
NEIC Felt [IV] at Mamina and [III] at Huara, Iquique, La Tirana, Pisagua and Pozo Almonte.
*SYO **29** 13:30:56.9,20.45S×68.89W,h103km,MB4.9*
*HRVD **29** 13:30:57.0±0.5,20.82S×69.19W,h124km±4km,MW5.0/51, Centroid moment Tensor Solution. LP body waves: s20,c23;Mantle waves: s51,c64; Half duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-2.43±.25; $M_{\theta\theta}$-0.74±.25; $M_{\phi\phi}$3.16±.35; $M_{r\theta}$1.58±.15; $M_{\theta\phi}$0.54±.22; $M_{\phi r}$-2.77±.20; Best double couple: M_o4.32×10^{16} NP1:φs214°,δ30°,λ-40°.*

NP2:φs341°,δ71°,λ-114°. Principal axes: T 4.3, Plg23°, Azm89°; N .03, Plg22°, Azm349°; P -4.34, Plg57°, Azm219°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.
*IDC **29** 13:30:57.2±0.3,20.54S×69.07W,h105km±3km,mb4.5/21, mb1 4.6/24,mb1mx4.6/26,MS3.7/5,Ms1 3.8/5, ms1mx3.5/15 Error ellipse: s-maj=15.1km s-min=6.2km az=83.0*
*BJI **29** 13:30:58.9,20.50S×68.90W,h102km,mB5.0*
*LDG **29** 13:31:18.2±0.9,22.39S×66.21W,h200km,Mb4.7/16, Ms3.8/7,Error ellipse: s-maj=82.1km s-min=34.7km az=100.0*
ISC 29 13:30:55.5±0.2,20.44S±0.04×68.93W±0.06,h102km, h102km±7km:pP-P,n198,σ1s01/157,mb4.8/70,17C-7D, Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op		ISC	h m s	ISC
LVC	**Limon Verde**	**2.16**	**179**	⇓*i*	P	**P**	**13 31 31.6**	**+0.8**
LVC				*i*	S	**S**	**13 31 57.7**	**+0.6**
LVC				AMP			13 32 01.2	
	comp=N,10μm,0.4s							
LVC	**Limon Verde**	**2.16**	**179**	P		**P**	**13 31 31.5**	**+0.7**
	comp=N,388nm,0.3s,baz=347,slow=8.6,SNR=743							
LVC				S		**S**	**13 31 56.9**	**-0.2**
	comp=N,1μm,0.3s,baz=132,slow=20,SNR=39							
LVC	**Limon Verde**	**2.16**	**179**	*e*P		**P**	**13 31 31.4**	**+0.6**
LVC				*e*S		**S**	**13 31 56.2**	**-0.9**
ANCH	**Antofagasta**	**3.50**	**203**	*e*P		**P**	**13 31 45.0**	**-4.1**
ANCH				*i* S		**S**	**13 32 20.8**	**-9.0**
ANCH				AMP			13 32 44.5	
	comp=E,7μm,0.6s							
LPAZ	**La Paz**	**4.20**	**11**	*i* P		**P**	**13 32 03.0**	**+4.4**
LPAZ	**La Paz**	**4.20**	**11**	P		**P**	**13 32 03.4**	**+4.7**
	comp=E,9.0nm,0.3s,baz=183,slow=8.8,SNR=102							
LPAZ				LR		LR	13 33 38.9	
	comp=E,479nm,20.9s,baz=196,slow=37							
LPAZ	**La Paz**	**4.20**	**11**	*e*P		**P**	**13 32 03.1**	**+4.5**
CPN1	**Cerro Paranal**	**4.38**	**198**	*e*P		**P**	**13 31 56.4**	**-4.7**
CPN1				*i* S		**S**	**13 32 42.5**	**-8.8**
TLL	**Tololo Astrono**	**9.83**	**190**	*e*P		**P**	**13 33 14.1**	**-1.2**
CPUP	**Villa Florida**	**12.16**	**121**	P		**P**	**13 33 45.8**	**-0.5**
	comp=E,2.1nm,0.3s,baz=318,slow=11,SNR=47							
CPUP	**Villa Florida**	**12.16**	**121**	*e*P		**P**	**13 33 44.7**	**-1.6**
	comp=E,8.7nm,0.6s							
MDZ	**Mendoza**	**12.39**	**180**	*e*P		**P**	**13 33 59.1**	**+10**
TRQA	**Tornquist**	**18.56**	**163**	*e*P		**P**	**13 35 04.5**	**-2.3**
	comp=E,1.9nm,0.6s							
BDFB	**Brasilia**	**20.45**	**80**	P		**P**	**13 35 26.9**	**0.0**
	comp=E,44nm,0.5s,baz=259,slow=11,SNR=38							
BDFB				LR		LR	13 44 44.7	
	comp=E,688nm,18.1s,baz=189,slow=40							
OTAV	**Otavalo**	**22.57**	**334**	*e*P		**P**	**13 35 50.5**	**+2.5**
	comp=E,23nm,0.9s,mb4.5							
CAM4	**Nova Friburgo**	**24.61**	**99**	*e*P		**P**	**13 36 08.4**	**+0.7**
CAM4				*i*			13 36 09.9	
CAM4				*i*			13 36 20.1	
CAM4				*i*			13 36 22.6	
CAM3	**Guarapari**	**26.59**	**96**	*e*P		**P**	**13 36 26.2**	**+0.1**
CAM3				*i*			13 36 27.1	
CAM3				*i*			13 36 30.7	
SDV	**Santo Domingo**	**29.19**	**357**	P		**P**	**13 36 50.0**	**+0.4**
	comp=E,5.8nm,0.5s,mb4.5,baz=290,slow=2.1,SNR=8.5							
PCRV	**Puerto La Cruz**	**30.72**	**8**	P		**P**	**13 37 03.4**	**+0.3**
	comp=E,10nm,0.6s,mb4.8,baz=323,slow=3.5,SNR=6.4							
PCRV				LR		LR	13 51 51.9	
	comp=E,110nm,18.6s,baz=284,slow=41							
CAUB	**Caruaru**	**34.07**	**74**	*e*P		**P**	**13 37 31.8**	**-0.4**
CAUB				*e*			13 37 33.1	
USHA	**Ushuaia**	**34.34**	**179**	P		**P**	**13 37 31.7**	**-2.3**
	comp=E,21nm,0.7s,mb5.1,baz=14,slow=4.8,SNR=15							
SJG	**San Juan**	**38.41**	**4**	P		**P**	**13 38 07.5**	**-1.1**
	comp=E,22nm,0.5s,mb5.2,baz=279,slow=20,SNR=11							
SJG	**San Juan**	**38.41**	**4**	*e*P		**P**	**13 38 07.6**	**-1.1**
	comp=E,36nm,0.6s,mb5.4							
CPCT	**Cooper Cave**	**57.52**	**345**	*e*P		**P**	**13 40 34.5**	**-2.1**
CPCT				*e*pP		pP	13 41 00.9	-0.8
SWET	**Sewanee**	**57.66**	**344**	*e*P		**P**	**13 40 35.7**	**-1.8**
PLAL	**Pickwick Lake**	**58.04**	**341**	*e*P		**P**	**13 40 37.3**	**-2.9**
	comp=E,14nm,0.9s,mb5.0							
ELN	**Prospectdale**	**58.43**	**349**	*e*P		**P**	**13 40 42.4**	**-0.4**
PWV	**Princeton**	**58.59**	**349**	*e*P		**P**	**13 40 43.3**	**-0.7**
PWV				*e*pP		pP	13 41 08.8	-0.4
JCT	**Junction City**	**58.69**	**329**	*e*P		**P**	**13 40 43.4**	**-1.4**
	comp=E,11nm,0.8s,mb4.9							
WVT	**Waverly**	**59.04**	**342**	*e*P		**P**	**13 40 44.7**	**-2.4**
	comp=E,28nm,0.8s,mb5.3							
WVT				*e*pP		pP	13 41 11.2	-1.2
WVT				*e*sP		sP	13 41 20.6	-3.3
MIAR	**Mount Ida**	**59.49**	**336**	*e*P		**P**	**13 40 48.6**	**-1.6**
	comp=E,31nm,1.2s,mb5.2							
MIAR				*e*pP		pP	13 41 14.0	-1.6
MIAR				*e*PP		PP	13 42 60.0	-4.5
TXAR	**Lajitas Array**	**59.75**	**325**	P		**P**	**13 40 50.7**	**-1.4**
	comp=E,2.8nm,0.7s,mb4.4,baz=149,slow=8.7,SNR=37							
TXAR	**Lajitas Array**	**59.75**	**325**	P		**P**	**13 40 50.7**	**-1.4**
WCI	**Wyandotte Cave**	**60.59**	**344**	*e*P		**P**	**13 40 55.6**	**-2.1**
	comp=E,11nm,0.7s,mb5.0							
WCI				*e*pP		pP	13 41 21.7	-1.4
WCI				*e*sP		sP	13 41 33.6	-1.1
VNA3	**Neumayer Olymp**	**61.08**	**161**	⇑*i*		**P**	**13 41 03.9**	**+3.3**
VNA3	**Neumayer Olymp**	**61.08**	**161**	⇑*i*		**P**	**13 41 04.0**	**+3.4**
VNA3	**Neumayer Olymp**	**61.08**	**161**	⇑*i*		pP	13 41 29.8	+3.8
VNA3	**Neumayer Olymp**	**61.08**	**161**	⇑*i*		pP	13 41 29.9	+3.9
VNA3	**Neumayer Olymp**	**61.08**	**161**	⇑*i*		sP	13 41 40.8	+3.3
VNA3	**Neumayer Olymp**	**61.08**	**161**	⇑*i*		sP	13 41 41.2	+3.7
VNA3	**Neumayer Olymp**	**61.08**	**161**	⇑*i*		sP	13 41 44.8	+7.3
VNA3	**Neumayer Olymp**	**61.08**	**161**	⇑*i*		sP	13 41 44.9	+7.4
FVM	**French Village**	**61.53**	**341**	*e*P		**P**	**13 41 02.2**	**-1.8**
	comp=E,27nm,0.8s,mb5.3							
FVM				*e*pP		pP	13 41 28.9	-0.6
FVM				*e*sP		sP	13 41 39.6	-1.4
VNA2	**Neumayer--Watz**	**61.65**	**161**	⇓*i*		**P**	**13 41 07.4**	**+3.0**
VNA2	**Neumayer--Watz**	**61.65**	**161**	⇓*i*		pP	13 41 33.7	+3.8
VNA2	**Neumayer--Watz**	**61.65**	**161**	⇑*i*		sP	13 41 44.1	+2.7
VNA2	**Neumayer--Watz**	**61.65**	**161**	⇑*i*		sP	13 41 48.6	+7.2
ACSO	**Alum Creek Sta**	**61.76**	**348**	*e*P		**P**	**13 41 04.0**	**-1.6**
	comp=E,39nm,1.0s,mb5.4							
ACSO				*e*pP		pP	13 41 30.1	-1.0
CCM	**Cathedral Cave**	**61.85**	**340**	*e*P		**P**	**13 41 04.0**	**-2.2**
	comp=E,15nm,0.8s,mb5.1							
CCM				*e*pP		pP	13 41 30.9	-0.8
CLNB	**Carlsbad**	**62.17**	**327**	*e*P		**P**	**13 41 07.6**	**-0.8**
CLNB				*e*pP		pP	13 41 34.2	+0.3
GDL2	**Guadalupe Moun**	**62.37**	**326**	*e*P		**P**	**13 41 09.2**	**-0.6**
GDL2				*e*pP		pP	13 41 33.9	-1.4
GDL2				*e*sP		sP	13 41 45.9	-0.8
MNTX	**Cornudas Mount**	**62.52**	**325**	*e*P		**P**	**13 41 08.2**	**-2.5**
	comp=E,18nm,1.1s,mb4.9							
ALLY	**Alegheny Colle**	**62.64**	**351**	*e*P		**P**	**13 41 10.3**	**-1.1**
ALLY				*e*pP		pP	13 41 36.0	-1.0
CPRX	**Cap Rock**	**62.77**	**327**	*e*P		**P**	**13 41 11.1**	**-1.3**
CPRX				*e*pP		pP	13 41 36.6	-1.4
ERPA	**Erie**	**63.08**	**351**	*e*P		**P**	**13 41 12.6**	**-1.6**
	comp=E,26nm,0.7s,mb5.3							
ERPA				*e*pP		pP	13 41 39.2	-0.7
SNAA	**Sanae**	**63.28**	**161**	*e*P		**P**	**13 41 14.0**	**-1.3**
SNAA				*e*pP		pP	13 41 40.2	-0.6
BNM	**Barren Site**	**65.08**	**326**	*e*P		**P**	**13 41 26.8**	**-0.7**
MSNY	**Massena**	**65.34**	**355**	*e*P		**P**	**13 41 28.0**	**-1.0**
MSNY				*e*pP		pP	13 41 54.6	-0.1
SADO	**Sadowa**	**65.56**	**352**	P		**P**	**13 41 29.4**	**-1.0**
	comp=E,3.2nm,0.7s,mb3.4,baz=184,slow=7.6,SNR=3.3							
ANMO	**Albuquerque**	**65.61**	**327**	*e*P		**P**	**13 41 30.3**	**-0.6**
	comp=E,7.3nm,1.0s,mb4.5							
ANMO				*e*pP		pP	13 41 54.3	-2.3
ANMO				*e*sP		sP	13 42 07.2	-0.6
TUC	**Tucson**	**65.99**	**322**	*e*P		**P**	**13 41 33.0**	**-0.4**
	comp=E,12nm,1.0s,mb4.7							
TUC				*e*pP		pP	13 41 59.6	+0.5
TUC				*e*sP		sP	13 42 09.3	-1.0
SDCO	**Great Sand Dun**	**67.33**	**329**	*e*P		**P**	**13 41 41.1**	**-0.6**
	comp=E,42nm,1.3s,mb5.1							
SDCO				*e*pP		pP	13 42 06.3	-1.2
SDCO				*e*sP		sP	13 42 18.7	0.0
MAIT	**Maitri**	**67.79**	**159**	*e*P		**P**	**13 41 44.4**	**+0.4**
MAIT				*e*PcP		PcP	13 42 20.8	+11
LIC	**Lamto**	**68.12**	**74**	⇑*i*	P	**P**	**13 41 46.3**	**-0.6**
	comp=E,33nm,0.6s,mb5.4							
LIC	**Lamto**	**68.12**	**74**	*e*P		**P**	**13 41 46.1**	**-0.8**
	comp=E,28nm,1.0s,mb5.0							
TIC	**Toumodi**	**68.30**	**74**	⇑*i*	P	**P**	**13 41 47.6**	**-0.4**
	comp=E,210nm,1.3s,mb5.8							
KIC	**Kosan Boka**	**68.43**	**74**	⇑*i*	P	**P**	**13 41 48.6**	**-0.3**
	comp=E,170nm,0.7s,mb6.0							
DBIC	**Dimbokro**	**68.46**	**74**	P		**P**	**13 41 48.9**	**-0.1**
	comp=E,38nm,0.7s,mb5.3,baz=224,slow=6.2,SNR=77							
DBIC				pP		pP	13 42 15.3	+0.4
	comp=E,21nm,0.7s,baz=231,slow=6.4,SNR=5.1							
DBIC				LR		LR	14 11 06.3	
	comp=E,59nm,19.0s,baz=294,slow=35							
DBIC	**Dimbokro**	**68.46**	**74**	P		**P**	**13 41 48.9**	**-0.1**
DBIC				pP		pP	13 42 15.3	+0.4
DBIC				LR		LR	14 11 06.3	
WUAZ	**Wupatki**	**68.67**	**324**	*e*P		**P**	**13 41 50.5**	**+0.6**
	comp=E,50nm,1.1s,mb5.2							
WUAZ				*e*pP		pP	13 42 16.2	+0.3
WUAZ				*e*sP		sP	13 42 25.8	-1.1
RW3	**Ridgway**	**68.79**	**328**	*e*P		**P**	**13 41 51.2**	**+0.5**
ISCO	**Idaho Springs**	**69.02**	**330**	*e*P		**P**	**13 41 52.0**	**-0.1**
	comp=E,10nm,1.0s,mb4.6							
PV01	**Paradox Valley**	**69.14**	**327**	*e*P		**P**	**13 41 53.3**	**+0.4**
PV01				*e*pP		pP	13 42 18.5	-0.4
PV01				*e*sP		sP	13 42 30.5	+0.6
PV10	**Paradox Valley**	**69.57**	**327**	*e*P		**P**	**13 41 54.7**	**-0.8**
QSPA	**South Pole Qui**	**69.75**	**180**	⇓*i*	P	**P**	**13 41 56.0**	**+0.1**
	comp=E,22nm,1.0s,mb4.9							
BAR	**Barrett**	**69.80**	**318**	*e*P		**P**	**13 41 57.6**	**+0.6**
PFO	**Pinyon Flat Ob**	**70.29**	**319**	*e*P		**P**	**13 42 00.2**	**+0.3**
	comp=E,35nm,1.1s,mb5.1							
PFO				*e*PcP		PcP	13 42 18.5	-2.5
PFO				*e*pP		pP	13 42 26.3	+0.3
PFO				*e*sP		sP	13 42 37.3	+0.3
NEN	**Nelson**	**70.73**	**322**	*e*P		**P**	**13 42 03.0**	**+0.5**
NEN				*e*pP		pP	13 42 28.2	-0.4
NEN				*e*sP		sP	13 42 39.2	-0.4
SRU	**San Rafael**	**70.88**	**327**	*e*P		**P**	**13 42 03.6**	**+0.3**
SRU				*e*pP		pP	13 42 28.2	-1.3
SRU				*e*sP		sP	13 42 40.4	0.0
MSU	**Marysvale**	**71.30**	**325**	*e*P		**P**	**13 42 06.7**	**+0.9**
MSU				*e*pP		pP	13 42 32.2	+0.1
MSU				*e*sP		sP	13 42 43.6	+0.7
MVU	**Marysvale**	**71.31**	**325**	*e*P		**P**	**13 42 06.6**	**+0.6**
	comp=E,40nm,1.1s,mb5.2							
MVU				*e*pP		pP	13 42 31.9	-0.3
MVU				*e*sP		sP	13 42 43.4	+0.3
**

NEW					pP		pP	13 43 27.2	+1.2
	comp=E,3.5nm,0.8s,baz=109,slow=3.8,SNR=3.6								
OD2	**Odessa Site #2**	**80.98**	**328**		P		**P**	**13 43 00.9**	**+0.7**
DPW	**Davenport**	**81.07**	**329**		*e*P		**P**	**13 43 00.9**	**+0.3**
DPW					*e*pP		pP	13 43 28.2	+0.9
PALC	**Alcoutim**	**81.59**	**45**		*e*P		**P**	**13 43 05.0**	**+1.4**
	comp=E,21nm,1.4s,mb4.8								
FCC	**Fort Churchill**	**81.60**	**347**		*e*P		**P**	**13 43 02.9**	**-0.2**
	comp=E,19nm,0.9s,mb4.9								
FCC					*e*pP		pP	13 43 30.6	+0.7
ASR	**Mount Adams--S**	**81.61**	**326**		P		**P**	**13 43 04.7**	**+1.2**
PBEJ	**Beja**	**81.64**	**44**		*e*P		**P**	**13 43 04.8**	**+1.0**
WTV	**Waterville**	**81.81**	**328**		P		**P**	**13 43 05.2**	**+0.8**
EVO	**Evora**	**81.83**	**44**		*e*P		**P**	**13 43 13.8**	**+9.0**
	comp=E,7.2nm,0.5s,mb4.5								
EVO					*e*R				
	comp=E,118nm,20.7s								
LVP	**Lakeview Peak**	**81.99**	**326**		P		**P**	**13 43 06.4**	**+0.9**
LON	**Longmire**	**82.12**	**326**		*e*P		**P**	**13 43 05.7**	**-0.4**
NLW	**Nelson Butte**	**82.25**	**328**		*e*P		**P**	**13 43 06.9**	**+0.1**
RPW	**Rockport**	**83.09**	**328**		*e*P		**P**	**13 43 10.5**	**-0.4**
FRB	**Frobisher Bay**	**83.91**	**0**		P		**P**	**13 43 14.8**	**+0.1**
	comp=E,2.1nm,0.6s,mb4.1,baz=173,slow=7.2,SNR=3.5								
FRB					pP		pP	13 43 41.2	-0.4
	comp=E,4.7nm,0.7s,baz=163,slow=5.7,SNR=3.3								
PBRG	**Braganca**	**84.46**	**42**		*e*P		**P**	**13 43 19.4**	**+1.4**
ESDC	**Sonseca Array**	**85.10**	**45**		P		**P**	**13 43 22.8**	**+1.5**
	comp=E,0.9nm,0.6s,mb3.9,baz=242,slow=4.6,SNR=8.3								
ESDC					pP		pP	13 43 50.3	+2.0
	comp=E,3.8nm,0.8s,baz=246,slow=4.9,SNR=4.5								
MAW	**Mawson**	**85.35**	**163**		P		**P**	**13 43 22.5**	**+0.7**
	comp=E,5.3nm,0.6s,mb4.7,baz=208,slow=6.3,SNR=18								
MAW					pP		pP	13 43 49.6	+0.8
	comp=E,5.3nm,0.9s,baz=250,slow=4.3,SNR=2.8								
ETSF	**Etsaut**	**88.94**	**43**		*e*P		**P**	**13 43 48.2**	**+8.5**
	comp=E,4.6nm,0.7s,mb4.3								
YKA	**Yellowknife Ar**	**90.19**	**341**		P		**P**	**13 43 45.2**	**+0.1**
	comp=E,15nm,1.0s,mb5.1,baz=134,slow=4.8,SNR=188								
YKA					pP		pP	13 44 12.6	+0.3
	comp=E,16nm,0.6s,baz=130,slow=4.6,SNR=14								
YKA	**Yellowknife Ar**	**90.19**	**341**		P		**P**	**13 43 45.2**	**+0.1**
YKA					pP		pP	13 44 12.7	+0.3
YKW3	**Yellowknife Ar**	**90.24**	**341**		*e*P		**P**	**13 43 45.2**	**-0.1**
YKW3					*e*pP		pP	13 44 12.4	-0.2
MTLF	**Montolieu**	**90.94**	**44**		*e*P		**P**	**13 43 59.9**	**+11**
MFF	**Saint Martin d**	**91.00**	**40**		*e*P		**P**	**13 43 59.8**	**+11**
	comp=E,8.9nm,0.7s,mb4.7								
GRR	**Gorron**	**91.45**	**38**		*e*P		**P**	**13 44 02.2**	**+11**
	comp=E,14nm,0.7s,mb4.9								
CAF	**Calviac**	**91.57**	**42**		*e*P		**P**	**13 44 03.1**	**+11**
	comp=E,4.2nm,0.6s,mb4.5								
LDF	**La Druitiere**	**91.98**	**38**		*e*P		**P**	**13 44 04.8**	**+11**
	comp=E,6.3nm,0.7s,mb4.7								
TCF	**Toulx Ste Croi**	**92.29**	**41**		*e*P		**P**	**13 44 06.2**	**+11**
	comp=E,11nm,1.0s,mb4.8								
BGF	**Bois d'Agland**	**92.80**	**41**		*e*P		**P**	**13 44 08.8**	**+11**
	comp=E,9.8nm,0.7s,mb5.0								
AVF	**Avril sur Loir**	**93.22**	**41**		*e*P		**P**	**13 44 10.4**	**+11**
	comp=E,3.4nm,0.6s,mb4.5								
DLBC	**Dease Lake**	**93.26**	**333**		P		**P**	**13 43 59.5**	**+0.1**
	comp=E,5.6nm,1.0s,mb4.8,baz=143,slow=4.8,SNR=6.2								
DLBC					pP		pP	13 44 27.8	+1.0
	comp=E,7.8nm,1.1s,baz=156,slow=4.9,SNR=5.4								
DLBC	**Dease Lake**	**93.26**	**333**		P		**P**	**13 43 59.5**	**+0.1**
DLBC					pP		pP	13 44 27.8	+1.0
SSF	**Saint Saulge**	**93.44**	**41**		*e*P		**P**	**13 44 11.3**	**+11**
	comp=E,6.2nm,0.6s,mb4.8								
SMF	**Signal de Mont**	**93.46**	**41**		*e*P		**P**	**13 44 11.8**	**+11**
	comp=E,8.7nm,0.6s,mb4.9								
LOR	**Lormes**	**93.74**	**41**		*e*P		**P**	**13 44 12.7**	**+11**
	comp=E,7.0nm,0.6s,mb4.8								
LOR					*e*R				
	comp=E,79nm,22.3s								
MEZF	**Maizieres J'vi**	**95.00**	**40**		*e*P		**P**	**13 44 18.9**	**+11**
	comp=E,11nm,0.6s,mb5.1								
NB2	**NORSAR Subarra**	**103.01**	**29**		P		Pdif	13 44 57.0	+14
	comp=E,0.7nm,0.8s,baz=263,slow=6.2								
BRTR	**Keskin Array B**	**112.24**	**54**		PP		PP	13 50 06.4	-3.5
	comp=E,0.3nm,0.4s,baz=284,slow=5.1,SNR=4.2								
STKA	**Stephens Creek**	**120.32**	**210**		PKP		PKPdf	13 49 36.2	+1.2
	comp=E,2.9nm,0.8s,baz=229,slow=20,SNR=3.8								
THR	**Tehran**	**125.74**	**60**		pPKP			13 50 16.6	
	comp=E,1.3nm,0.7s,baz=274,slow=3.1,SNR=3.4								
TIXI	**Tiksi**	**127.75**	**353**		*e*PKP		PKPdf	13 49 48.9	+0.5
AS12	**Alice Springs**	**130.84**	**208**		*e*P		PKPdf	13 49 56.0	+0.4
	comp=E,4.9nm,0.8s								
ASAR	**Alice Springs**	**130.84**	**208**		PKP		PKPdf	13 49 56.1	+0.6
	comp=E,4.5nm,0.8s,baz=152,slow=2.0,SNR=31								
ASAR					pPKP			13 50 24.8	
	comp=E,2.5nm,0.8s,baz=150,slow=1.9,SNR=4.7								
WB2	**Warramunga Arr**	**133.84**	**211**	⇑	*i*P		PKPdf	13 50 02.4	+1.1
ZRNK	**Zerenda**	**134.24**	**34**		*e*PKP		PKPdf	13 50 03.1	+1.9
ZAL	**Zalesovo**	**141.01**	**25**		PKP		PKPdf	13 50 14.8	+1.3
	comp=E,2.6nm,0.8s,baz=87,slow=3.3,SNR=12								
ZAL					pPKP			13 50 43.5	
	comp=E,2.6nm,0.6s,baz=91,slow=3.1,SNR=2.9								
ZAL					SKPbc			13 53 43.0	
	comp=E,1.1nm,0.7s,baz=69,slow=15,SNR=4.1								
ZAL	**Zalesovo**	**141.01**	**25**		PKP		PKPdf	13 50 14.8	+1.3
ZAL					pPKP			13 50 43.5	
ZAL					SKPbc			13 53 43.0	
AAK	**Ala-Archa**	**142.19**	**46**		*e*PKP		PKPdf	13 50 18.5	+2.7
MKAR	**Makanchi Array**	**144.79**	**35**		PKP		PKPdf	13 50 21.7	+1.5
	comp=E,15nm,0.8s,baz=311,slow=2.1,SNR=34								
MKAR					pPKP			13 50 49.9	
	comp=E,6.8nm,0.6s,baz=320,slow=3.7,SNR=5.4								
MKAR					SKPbc			13 53 53.4	
	comp=E,1.3nm,0.8s,baz=297,slow=3.2,SNR=3.8								
HYB	**Hyderabad**	**149.12**	**90**		*i* PKP		PKPdf	13 50 35.5	+7.3
HYB	**Hyderabad**	**149.12**	**90**		*e*P		PKPdf	13 50 35.5	+7.3
WMQ	**Urumqi**	**149.62**	**35**		*e*PKP		PKPdf	13 50 29.0	+0.8
HIA	**Hailar**	**150.41**	**348**		*e*PKPbc		PKPdf	13 50 36.0	+6.7
MAJO	**Matsushiro**	**151.39**	**310**		*e*PKPbc		PKPdf	13 50 38.5	+7.4
MAT	**Matsushiro**	**151.39**	**310**		PKP		PKPdf	13 50 38.6	+7.4
MAT	**Matsushiro**	**151.39**	**310**		*e*PKP		PKPdf	13 50 39.0	+7.8
SONM	**Songino Array**	**152.41**	**7**		PKP		PKPdf	13 50 35.2	+2.9
	comp=E,2.0nm,0.9s,slow=1.2,SNR=9.8								
SONM					PKPbc		PKPdf	13 50 41.5	+9.2
	comp=E,6.1nm,0.6s,baz=322,slow=1.7,SNR=33								
SONM					PKPab		PKPab	13 50 51.2	-1.0
	comp=E,2.3nm,0.5s,baz=332,slow=2.1,SNR=6.4								
SONM					pPKP			13 51 03.4	
	comp=E,3.8nm,0.7s,baz=305,slow=1.7,SNR=4.7								
SONM					pPKPbc			13 51 10.3	
	comp=E,10.0nm,1.1s,baz=315,slow=1.7,SNR=5.0								
SONM					pPKPab			13 51 19.9	
	comp=E,2.4nm,0.6s,baz=342,slow=3.9,SNR=3.6								
ULN	**Ulaanbaatar**	**152.45**	**6**		*e*PKPdf		PKPdf	13 50 34.8	+2.5
ULN					*e*PKPbc		PKPdf	13 50 41.7	+9.3
CN2	**Changchun**	**153.79**	**336**		*e*PKP		PKPdf	13 50 36.5	+2.2
KOLN	**Koldanda**	**153.93**	**68**		*e*P		PKPab	13 51 02.2	+3.0
	comp=E,11nm,0.9s								
GKN	**Gorkha**	**154.78**	**67**		*e*P		PKPab	13 51 01.9	-0.9
	comp=E,18nm,0.7s								
DMN	**Daman**	**155.27**	**68**		*e*P		PKPab	13 51 04.5	-0.3
	comp=E,23nm,0.8s								
KKN	**Kakani**	**155.38**	**68**		*e*P		PKPab	13 51 03.7	-1.6
	comp=E,15nm,0.6s								
PKI	**Pulchoki**	**155.54**	**68**		*e*P		PKPab	13 51 05.4	-0.6
GTA	**Gaotai**	**158.76**	**25**		PKP		PKPdf	13 50 43.8	+2.9
GTA					APKP			13 51 13.3	
GTA					XPKP			13 51 23.3	
GTA					PP		PP	13 55 05.5	+4.6
GTA					PP		PP		
	comp=Z,58nm,6.5s								
LZH	**Lanzhou**	**163.18**	**21**		*e*PKP		PKPdf	13 50 46.5	+0.9
LZH					APKP			13 51 14.3	
LZH					XPKP			13 51 24.5	
LZH					LR		LR		
	comp=N,217nm,18.2s								
LZH					LR		LR		
	comp=Z,349nm,20.0s								
NJ2	**Nanjing**	**166.50**	**330**		*e*PKP		PKPdf	13 50 50.5	+1.7
NJ2					APKP			13 51 17.5	
NJ2					XPKP			13 51 28.0	
NJ2					PKP2		PKPab	13 51 55.3	+2.0
NJ2					PKS		PKS	13 54 23.0	+2.5
NJ2					PP		PP	13 55 44.0	+2.2
NJ2					SKS		SKS	13 57 47.0	+6.4
NJ2					PP		PP		
	comp=Z,230nm,6.4s								
NJ2					LR		LR		
	comp=N,250nm,21.4s								
NJ2					LR		LR		
	comp=E,240nm,22.0s								
NJ2					LR		LR		
	comp=Z,120nm,25.5s								
CMAR	**Chiang Mai Arr**	**168.39**	**98**		PKP		PKPdf	13 50 52.8	+2.4
	comp=E,1.5nm,0.9s,baz=271,slow=1.7,SNR=10								
CMAR					pPKP			13 51 22.5	
	comp=E,1.0nm,0.9s,baz=248,slow=3.0,SNR=2.9								
CMAR					PKPab		PKPab	13 52 02.5	+0.6
	comp=E,0.2nm,0.4s,baz=209,slow=29,SNR=2.6								
CMAR					pPKPab			13 52 29.1	
	comp=E,1.8nm,0.8s,baz=259,slow=6.0,SNR=6.6								
KMI	**Kunming**	**171.02**	**57**		*e*PKP		PKPdf	13 50 53.3	+1.6
KMI					LR		LR		
	comp=E,115nm,25.3s								
GYA	**Guiyang**	**172.78**	**33**		PKP		PKPdf	13 50 54.5	+1.8
GYA					APKP			13 51 21.8	
GYA					XPKP			13 51 34.3	
GYA					PP		PP		
	comp=Z,160nm,8.7s								

*NEIC **29** 13:43:52.9, 18.28N×72.14W, h25km, MD4.2(RSPR), ML4.4(SSNC), After SSNC.*
*SSNC **29** 13:43:52.9±8.2, 18.28N×72.14W, h25km±999km, MD3.9, ML4.4*
*RSPR **29** 13:43:56.6, 17.44N×72.15W, h22km±31km, M4.2*

ISC 29 13:43:52.2±0.7, 18.35N±0.10×72.11W±0.04, h25km, n17, σ1°64/29, 3C-5D, Haiti region

Code	Station Name	Δ°	AZ°		Phase ID		Op	ISC	Time h m s	Res ISC
MASC	**Masc**	**2.70**	**313**		*e*PG			**Pn**	**13 44 36.1**	**+1.0**
	baz=141									
MASC					*e*SG			**Sn**	**13 45 05.6**	**-1.7**
	comp=N,4μm,1.0s									
	comp=E,2μm,0.6s									
MOAC	**Moa**	**3.53**	**311**		*e*PG			**Pn**	**13 44 47.8**	**+0.9**
	baz=90									
MOAC					*e*SG			**Sn**	**13 45 27.3**	**-1.1**
	comp=N,10μm,0.6s									
	comp=E,10μm,0.6s									
RCC	**Rio Carpintero**	**3.76**	**296**		*e*PG			**Pn**	**13 44 50.3**	**+0.2**
	baz=136									
RCC					*e*SG			**Sn**	**13 45 33.3**	**-0.8**
	comp=N,2μm,0.2s									
	comp=E,2μm,0.1s									
IDE	**Isla Desecheo**	**4.40**	**89**	⇓	*e*P			**Pn**	**13 45 02.3**	**+3.0**
IDE					S			**Sn**	**13 45 48.1**	**-2.3**
HLGC	**Holguin**	**4.50**	**305**		*e*PG			**Pn**	**13 45 03.0**	**+2.4**
	baz=125									
HLGC					*e*SG			**Sn**	**13 45 53.8**	**+1.0**
	comp=N,3μm,0.4s									
	comp=E,3μm,0.4s									
HOL	**Holguin**	**4.66**	**304**		*e*Pg			**Pn**	**13 45 03.0**	**+0.1**
HOL					*e*Sg			**Sn**	**13 45 53.8**	**-3.1**
LSP	**Las Mesas**	**4.78**	**91**	⇑	*e*P			**Pn**	**13 45 07.0**	**+2.3**
MGP	**Maguayo**	**4.79**	**93**	⇓	*i*P			**Pn**	**13 45 05.8**	**+1.0**
MGP					S			**Sn**	**13 45 57.9**	**-2.3**
AOPR	**Arecibo Observ**	**5.09**	**89**	⇓	*e*P			**Pn**	**13 45 11.3**	**+2.2**
AOPR					S			**Sn**	**13 46 07.2**	**-0.6**
PORP	**Portuguez**	**5.21**	**92**	⇓	*i*P			**Pn**	**13 45 13.0**	**+2.2**
PORP					S			**Sn**	**13 46 09.3**	**-1.5**
OBIP	**Obispado Ponce**	**5.24**	**92**	⇓	*e*P			**Pn**	**13 45 12.7**	**+1.6**
OBIP	**Obispado Ponce**	**5.24**	**92**		S			**Sn**	**13 46 11.1**	**-0.5**
CELP	**Cerrillos**	**5.27**	**92**	⇑	*e*P			**Pn**	**13 45 12.8**	**+1.3**
CELP					S			**Sn**	**13 46 10.9**	**-1.2**
SJG	**San Juan**	**5.67**	**91**	⇑	*e*P			**Pn**	**13 45 20.5**	**+3.2**
SJG					S			**Sn**	**13 46 15.6**	**-6.7**
CCCC	**Cccc**	**6.03**	**299**		*e*PG			**Pn**	**13 45 16.8**	**-5.5**
	baz=108									
CCCC					*e*SG			**Sn**	**13 46 21.4**	**-10**
	comp=N,650nm,1.2s									
	comp=E,1μm,0.8s									
JTS	**JuntasAbangare**	**14.79**	**239**		*e*P			**P**	**13 47 16.4**	**-5.5**
	comp=E,1.1nm,1.3s									
OTAV	**Otavalo**	**19.05**	**200**		P			**P**	**13 48 12.7**	**-2.8**
	comp=E,6.0nm,1.5s									
OTAV					*e*				13 48 19.9	

*IDC **29** 14:10:20.7±5.9, 8.48S×118.46E, h92km±52km, mb3.4/4, mb1 3.7/6, mb1mx3.5/18, Error ellipse: s-maj=53.8km s-min=27.1km az=74.0*
*DJA **29** 14:10:22.1±0.9, 8.13S×118.53E, h138km±23km, MD4.7/4, ML5.0/4, Error ellipse: s-maj=73.1km s-min=27.5km az=1.0*
*NEIC **29** 14:10:24.3±0.8, 8.54S×118.48E, h127km±10km, mb4.4/3, Error ellipse: s-maj=17.4km s-min=7.7km az=209.0*

ISC 29 14:10:23.4±1.1, 8.5S±0.1×118.43E±0.10, h145km±15km, n20, σ0°95/30, mb3.7/4, 5C-7D, Sumbawa region

Code	Station Name	Δ°	AZ°		Phase ID		Op	ISC	Time h m s	Res ISC
KEDI	**Kedomdong**	**2.29**	**270**	⇓	*e*Pn			**P**	**14 11 02.2**	**-0.1**
	507nm,0.2s									
KEDI				⇓	*i*Sn			**S**	**14 11 32.0**	**0.0**
KEDI	**Kedomdong**	**2.29**	**270**	⇓	*e*Pn			**P**	**14 11 03.1**	**+0.8**
KEDI					*i* Sn			**S**	**14 11 32.2**	**+0.2**
RATI	**Rata**	**2.88**	**265**	⇓	*e*Pn			**P**	**14 11 10.0**	**+0.3**
	1μm,0.2s									
RATI				⇑	*e*Sn			**S**	**14 11 45.0**	**-0.1**
RATI	**Rata**	**2.88**	**265**	⇓	*e*Pn			**P**	**14 11 10.0**	**+0.3**
RATI					*i* Sn			**S**	**14 11 45.6**	**+0.5**
INGI	**Ingas**	**3.27**	**264**	⇓	*e*Pn			**P**	**14 11 14.9**	**+0.1**
	985nm,0.2s									
INGI				⇑	*e*Sn			**S**	**14 11 53.6**	**-0.5**
INGI	**Ingas**	**3.27**	**264**	⇓	*e*Pn			**P**	**14 11 15.6**	**+0.8**
INGI					*i* Sn			**S**	**14 11 55.7**	**+1.6**
KELI	**Kelakatan**	**3.91**	**274**	⇑	*e*Pn			**P**	**14 11 23.1**	**-0.1**
	132nm,0.3s									
KELI				⇓	*i*Sn			**S**	**14 12 07.2**	**-1.9**
KELI	**Kelakatan**	**3.91**	**274**	⇓	*e*Pn			**P**	**14 11 23.3**	**+0.1**
KELI					*e*Sn			**S**	**14 12 07.5**	**-1.6**
FITZ	**Fitzroy Crossi**	**11.84**	**144**		*e*P			**P**	**14 13 07.8**	**-0.8**
	9.8nm,0.9s									
FITZ					*e*S			**S**	**14 15 11.8**	**-6.4**
FITZ	**Fitzroy Crossi**	**11.84**	**144**		P			**P**	**14 13 07.8**	**-0.8**
	1.0nm,0.3s,baz=347,slow=3.5,SNR=32									
FITZ					S			**S**	**14 15 11.8**	**-6.4**
	1.0nm,0.3s,baz=182,slow=18,SNR=8.1									
KAKA	**Kakadu**	**14.35**	**108**		*e*P			**P**	**14 13 41.8**	**+0.8**
	7.4nm,0.6s									
WRA	**Warramunga Arr**	**19.14**	**128**		P			**P**	**14 14 36.3**	**-1.5**
	0.3nm,0.3s,baz=303,slow=13,SNR=7.0									
WRAB	**Tennant Creek**	**19.14**	**128**		P			**P**	**14 14 37.1**	**-0.7**
	17nm,0.6s									
WB2	**Warramunga Arr**	**19.15**	**128**		*e*P			**P**	**14 14 37.5**	**-0.4**
WB2					*e*S			**S**	**14 18 05.5**	**+3.3**
AS12	**Alice Springs**	**21.14**	**137**		*e*P			**P**	**14 14 55.0**	**-3.1**
	19nm,1.4s,mb4.2									
ASAR	**Alice Springs**	**21.14**	**137**		P			**P**	**14 14 59.1**	**+1.0**
	0.3nm,0.5s,mb2.9,baz=315,slow=9.1,SNR=7.1									
ASAR						PcP	PcP		14 19 00.2	+0.8
	0.5nm,0.5s,baz=331,slow=1.2,SNR=6.4									
NWAO	**Narrogin (SRO)**	**24.34**	**182**		P			**P**	**14 15 29.6**	**+0.6**
	5.2nm,0.7s,mb4.2,baz=360,slow=10,SNR=5.5									
STKA	**Stephens Creek**	**31.70**	**140**		P			**P**	**14 16 36.3**	**+0.8**
	0.9nm,0.5s,mb3.8,baz=335,slow=12,SNR=3.7									
SONM	**Songino Array**	**57.09**	**350**		P			**P**	**14 19 56.9**	**+0.2**
	0.3nm,0.4s,mb3.5,baz=168,slow=8.9,SNR=4.1									
CPUP	**Villa Florida**	**145.14**	**187**		PKPbc		PKPbc		14 29 47.6	+3.0
	2.2nm,0.7s,baz=151,slow=3.0,SNR=4.5									

IDC 29 14:30:54.4±2.5, 5.23S×67.88E, mb3.9/2, mb1 4.0/2, mb1mx3.5/17, MS3.6/2, Ms1 3.6/2, ms1mx3.1/28, Error ellipse: s-maj=93.5km s-min=46.5km az=63.0, Carlsberg Ridge

Code	Station Name	Δ°	AZ°	Phase ID		Op	ISC	Time h m s	Res ISC
KMBO	**Kilima Mbogo**	**30.85**	**277**	LR		LR		14 47 07.2	
	comp=Z,104nm,18.2s,baz=94,slow=32								
SONM	**Songino Array**	**62.73**	**28**	P		P		14 41 21.3	-2.4
	1.4nm,0.7s,baz=220,slow=6.8,SNR=8.5								
ASAR	**Alice Springs**	**65.97**	**113**	P		P		14 41 43.2	-1.9
	0.8nm,0.8s,baz=270,slow=6.3,SNR=5.7								
DBIC	**Dimbokro**	**73.56**	**278**	LR		LR		15 14 51.6	
	comp=Z,43nm,20.3s,baz=148,slow=36								
YKA	**Yellowknife Ar**	**122.83**	**1**	PKP		PKPdf		14 49 50.6	-3.4
	0.1nm,0.6s,baz=340,slow=2.5,SNR=3.9								
NVAR	**Mina Array Bea**	**146.48**	**9**	PKPbc		PKPbc		14 50 39.4	+1.5
	0.6nm,0.9s,baz=27,slow=2.0,SNR=3.5								

*MAN **29** 14:56:06.8, 5.62N×127.40E, h30km, mb5.1, ML4.0, MS4.2*
*IDC **29** 14:56:09.6±2.4, 5.73N×127.21E, h57km±21km, mb4.1/17, mb1 4.1/17, mb1mx4.0/23, MS3.7/12, Ms1 3.7/12, ms1mx3.5/31, Error ellipse: s-maj=23.8km s-min=11.8km az=81.0*
*MOS **29** 14:56:10.0±0.8, 5.79N×127.12E, h73km, mb4.8/13, Error ellipse: s-maj=26.5km s-min=12.3km az=107.1*
*BJI **29** 14:56:12.0, 6.04N×127.17E, h74km, mB4.6, mb4.8, Ms3.7, Msz3.7*
*NEIC **29** 14:56:13.9±3.1, 5.72N×127.12E, h98km±29km, mb4.4/8, Error ellipse: s-maj=17.8km s-min=7.4km az=73.0*

ISC 29 14:56:10.7±1.0, 5.75N±0.05×127.23E±0.08, h84km±7km, n81, σ0°97/76, mb4.4/39, 14C-3D, Philippine Islands region

Code	Station Name	Δ°	AZ°		Phase ID		Op	ISC	Time h m s	Res ISC
KCP	**Kidapawan**	**2.47**	**301**	⇓	*e*P			**P**	**14 56 49.0**	**-0.9**
KCP					*i* S			**S**	**14 57 20.7**	**+1.7**
BIPH	**Bislig**	**2.57**	**340**	⇑	*i*P			**P**	**14 56 50.0**	**-1.3**
CTBH	**Cotabato--PC H**	**3.31**	**296**		*e*P			**P**	**14 57 00.8**	**-0.7**
CTBH									14 57 40.8	
BUTP	**Butuan**	**3.58**	**334**	⇑	*e*P			**P**	**14 57 03.5**	**-1.7**
CGP	**Cagayan de Oro**	**3.69**	**317**	⇓	*e*P			**P**	**14 57 07.6**	**+0.9**
PAGZ	**Pagadian**	**4.36**	**299**	⇑	*e*P			**P**	**14 57 15.9**	**-0.1**
DCPH	**Dipolog City**	**4.77**	**306**		*e*P			**P**	**14 57 24.7**	**+3.0**
MSLP	**Maasin**	**4.95**	**332**	⇑	*e*P			Px	14 57 10.0	
MSLP					*e*S			**S**	**14 58 24.3**	**+3.6**
BESP	**Borongan**	**6.08**	**343**	⇑	*e*P			**P**	**14 57 40.7**	**+1.0**
CNP	**Catarman**	**7.18**	**340**	⇑	*e*P			**P**	**14 57 55.1**	**+0.1**
CNP					*e*S			**S**	**14 59 09.2**	**-6.5**
PVCP	**Virac**	**8.37**	**339**	⇑	*e*P			**P**	**14 58 12.2**	**+1.0**
ENPP	**El Nido**	**9.43**	**306**	⇑	*e*P			**P**	**14 58 25.2**	**-0.4**
TGY	**Tagaytay City**	**10.36**	**324**		LR		LR		15 03 30.1	
	comp=Z,408nm,21.5s,baz=128,slow=42									
JOW	**Kunigami**	**20.99**	**3**		P			**P**	**15 00 50.2**	**+1.0**
	10nm,0.8s,baz=217,slow=8.0,SNR=8.4									
FITZ	**Fitzroy Crossi**	**23.75**	**184**		P			**P**	**15 01 16.2**	**-0.1**
	6.1nm,1.1s,mb3.9,baz=12,slow=11,SNR=9.1									
PMG	**Port Moresby**	**24.92**	**127**		LR		LR		15 11 47.6	
	comp=Z,102nm,18.8s,baz=193,slow=38									
CBIJ	**Chichi jima**	**25.56**	**32**		P			**P**	**15 01 32.8**	**-0.8**
	71nm,0.5s,mb5.4,baz=260,slow=8.0,SNR=12									
SSE	**Sheshan**	**25.85**	**348**		P			**P**	**15 01 35.0**	**-1.3**
SSE						AMB	AMB			
	comp=Z,32nm,0.7s,mb4.9									
SSE						AMB	AMB			
	comp=Z,57nm,4.1s									
SSE						LR	LR			
	comp=N,49nm,21.9s									
SSE						LR	LR			
	comp=E,28nm,21.9s									
SSE						LR	LR			
	comp=Z,66nm,25.0s									
WRAB	**Tennant Creek**	**26.46**	**165**		*e*P			**P**	**15 01 43.5**	**+1.4**
	comp=Z,36nm,0.9s,mb4.8									
JNU	**Nakatsue**	**27.45**	**7**		LR		LR		15 10 56.3	
	comp=Z,75nm,21.9s,baz=233,slow=32									
ENH	**Enshi**	**29.57**	**328**		*e*P			**P**	**15 02 09.6**	**-0.4**
	comp=Z,26nm,1.3s,mb4.7									
ASAR	**Alice Springs**	**29.95**	**168**		P			**P**	**15 02 11.8**	**-1.6**
	comp=Z,0.6nm,0.5s,mb3.5,baz=355,slow=8

KURK	**Kurchatov**	**60.33**	**327**	*e*P		**P**	**15 06 12.9**	**-0.2**
RPZ	**Rata Peaks**	**63.12**	**146**	LR		LR	15 32 04.6	
	comp=Z,164nm,20.8s,baz=67,slow=34							
TIXI	**Tiksi**	**65.83**	**1**⇑	*e*P		**P**	**15 06 49.0**	**-0.1**
TIXI				pmax		pmax		
	comp=Z,2.0nm,0.5s,mb4.2							
TIXI	**Tiksi**	**65.83**	**1**	*e*P		**P**	**15 06 49.0**	**-0.1**
	comp=Z,3.5nm,0.8s,mb4.2							
TIXI				*e*			15 07 00.6	
BRVK	**Borovoye**	**65.99**	**326**	*e*P		**P**	**15 06 50.1**	**-0.3**
BRVK				*e*			15 07 01.9	
ZRNK	**Zerenda**	**66.66**	**326**	*e*P		**P**	**15 06 54.4**	**-0.2**
ZRNK				*e*			15 07 05.9	
ZRNK				*e*		pP	15 07 15.2	-1.1
BILL	**Bilibino**	**67.49**	**15**⇑	*i*P		**P**	**15 06 59.3**	**-0.2**
BILL				*i*		pP	15 07 26.0	+4.7
BILL				*e*			15 09 28.5	
BILL				pmax		pmax		
	comp=Z,4.0nm,1.7s,mb4.0							
ARU	**Arti**	**73.51**	**327**⇑	*i*P		**P**	**15 07 35.7**	**-0.3**
ARU				*e*		pP	15 07 54.3	-3.9
ARU				*e*			15 10 24.8	
ARU				*e*S		S	15 16 49.1	-8.5
ARU				*e*SS		SS	15 21 38.0	-6.3
ARU				pmax		pmax		
	comp=Z,7.0nm,0.8s,mb4.4							
ARU	**Arti**	**73.51**	**327**	*e*P		**P**	**15 07 35.7**	**-0.3**
	comp=Z,8.5nm,1.0s,mb4.4							
ZEI	**Tsey**	**81.24**	**312**	*e*P		**P**	**15 08 19.4**	**+0.2**
KIV	**Kislovodsk**	**82.12**	**313**	*e*P		**P**	**15 08 25.1**	**+1.4**
KIV				pmax		pmax		
	comp=Z,8.0nm,1.0s,mb4.5							
ILAR	**Eielson Array**	**83.08**	**26**	P		**P**	**15 08 29.0**	**+0.8**
	comp=Z,0.7nm,0.5s,mb3.8,baz=250,slow=5.2,SNR=22							
ILAR	**Eielson Array**	**83.08**	**26**	P		**P**	**15 08 29.0**	**+0.8**
ILAR				pmax		pmax		
	comp=Z,1.0nm,0.5s							
MOS	**Moscow**	**85.07**	**325**	*e*P		**P**	**15 08 48.8**	**+10**
MOS				pmax		pmax		
	comp=Z,91nm,0.8s							
VNDA	**Vanda**	**85.35**	**173**	P		**P**	**15 08 39.9**	**+0.6**
	comp=Z,0.6nm,0.7s,mb3.6,baz=316,slow=6.5,SNR=4.1							
VNDA				LR		LR	15 44 21.4	
	comp=Z,56nm,18.2s,baz=109,slow=34							
OBN	**Obninsk**	**85.71**	**325**	*e*P		**P**	**15 08 42.7**	**+1.2**
OBN				*e*S		S	15 18 55.6	-10
OBN				pmax		pmax		
	comp=Z,13nm,0.7s,mb5.0							
OBN				MLR		MLR		
	comp=Z,100nm,19.0s							
ANN	**Anapa**	**85.85**	**314**	*e*P		**P**	**15 08 43.0**	**+0.6**
ANN				pmax		pmax		
	comp=Z,6.0nm,0.6s,mb4.7							
ASF	**Jabal al Asfar**	**87.26**	**302**	P		**P**	**15 08 51.2**	**+1.6**
	comp=Z,7.3nm,0.8s,mb4.7,baz=337,slow=2.0,SNR=10							
ASF				LR		LR	15 49 44.0	
	comp=Z,98nm,20.4s,baz=78,slow=37							
JOF	**Joensuu**	**87.62**	**333**	*e*p		**P**	**15 08 50.2**	**-0.4**
	comp=Z,0.6nm,0.4s,mb4.0							
JOF	**Joensuu**	**87.62**	**333**	*e*P		**P**	**15 08 50.2**	**-0.4**
JOF				pmax		pmax		
	comp=Z,1.0nm,0.4s,mb4.2							
INK	**Inuvik**	**88.12**	**22**	P		**P**	**15 08 52.3**	**-0.5**
	comp=Z,0.7nm,0.7s,mb3.8							
ARCES	**ARCESS Array B**	**88.74**	**340**	P		**P**	**15 08 55.3**	**-0.4**
	comp=Z,4.7nm,0.8s,mb4.6,baz=90,slow=6.1,SNR=8.1							
ARCES	**ARCESS Array B**	**88.74**	**340**	P		**P**	**15 08 55.3**	**-0.5**
ARCES				pmax		pmax		
	comp=Z,5.0nm,0.8s							
BRTR	**Keskin Array B**	**89.13**	**310**	P		**P**	**15 08 58.7**	**+0.4**
	comp=Z,3.5nm,1.1s,mb4.3,baz=117,slow=5.5,SNR=11							
FINES	**FINESS Array B**	**90.30**	**332**	P		**P**	**15 09 02.3**	**-1.0**
	comp=Z,0.4nm,0.4s,mb3.9,baz=80,slow=4.9,SNR=14							
MLR	**Muntele Rosu**	**93.80**	**316**	P		**P**	**15 09 20.5**	**+0.8**
	comp=Z,1.5nm,0.6s,mb4.5,baz=108,slow=19,SNR=3.4							
MLR	**Muntele Rosu**	**93.80**	**316**	P		**P**	**15 09 20.5**	**+0.7**
MLR				pmax		pmax		
	comp=Z,2.0nm,0.6s							
NB2	**NORSAR Subarra**	**97.21**	**334**	P		**P**	**15 09 28.7**	**-6.2**
	comp=Z,0.7nm,0.8s,mb4.1,baz=59,slow=5.0							
NOA	**NORSAR Array B**	**97.21**	**334**	LR		LR	15 55 02.5	
	comp=Z,43nm,20.2s,baz=285,slow=36							
VNA2	**Neumayer--Watz**	**108.89**	**194**⇑	*i*		Pdif	15 10 31.0	+4.4
VNA3	**Neumayer Olymp**	**109.22**	**194**⇑	*i*		Pdif	15 10 27.5	-0.5

THR 29 14:56:46.1±1.5, 36.46N×51.44E, ML3.7, 1C, Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
THKV	**Tehran--Karaj**	**0.70**	**220**	*e*PG		Pg	14 56 57.6	-2.5
THKV				*e*SG		Sg	14 57 08.1	-1.5
THKV				AMP			14 57 09.6	
	comp=E,3μm,0.5s							
DAMV	**Damavand**	**0.93**	**152**	*e*PG		Pg	14 57 02.6	-2.1
DAMV				*e*SG		Sg	14 57 15.3	-1.7
SNGE	**Sanandaj**	**3.59**	**249**⇑	*e*PN		Pn	14 57 42.0	-2.3

*IDC **29** 15:00:58.3±1.8, 7.10S×74.51W, mb3.8/4, mb1 4.0/5, mb1mx3.8/17, ML3.6/1, Error ellipse: s-maj=84.7km s-min=28.0km az=42.0*
ISC 29 15:01:00.7±1.2, 7.3S±0.3×74.7W±0.4, h33km, n5, σ0§77/5, mb3.8/4, Peru-Brazil border region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
LPAZ	**La Paz**	**10.94**	**145**	Pn		**P**	**15 03 38.0**	**-0.1**
	0.2nm,0.3s,baz=317,slow=9.1,SNR=5.5							
TXAR	**Lajitas Array**	**45.93**	**324**	P		**P**	**15 09 22.8**	**+0.3**
	0.3nm,0.4s,mb3.5,baz=145,slow=8.6,SNR=5.0							
NVAR	**Mina Array Bea**	**60.98**	**322**	P		**P**	**15 11 13.7**	**+0.4**
	0.4nm,0.8s,mb3.6,baz=108,slow=11,SNR=2.6							
DBIC	**Dimbokro**	**71.00**	**80**	P		**P**	**15 12 18.0**	**+0.3**
	1.5nm,0.3s,mb4.4,baz=240,slow=9.6,SNR=3.6							
YKA	**Yellowknife Ar**	**76.08**	**342**	P		**P**	**15 12 45.4**	**-1.0**
	0.5nm,0.6s,mb3.6,baz=140,slow=5.9,SNR=17							

*IDC **29** 15:26:17.8±3.2, 12.08S×167.30E, mb4.1/4, mb1 4.2/4, mb1mx3.8/16, Error ellipse: s-maj=158.0km s-min=35.0km az=140.0*
ISC 29 15:26:22.1±3.9, 12.0S±0.9×167.1E±0.9, h33km, n5, σ1§34/4, mb4.1/4, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
ASAR	**Alice Springs**	**33.61**	**245**	P		**P**	**15 33 01.8**	**+0.1**
	0.7nm,0.7s,mb3.7,baz=72,slow=9.3,SNR=5.5							
ILAR	**Eielson Array**	**83.98**	**18**	P		**P**	**15 38 51.0**	**+1.0**
	0.9nm,0.5s,mb4.1,baz=236,slow=5.2,SNR=19							
INK	**Inuvik**	**90.36**	**19**	P		**P**	**15 39 19.9**	**-0.9**
	1.9nm,1.1s,mb4.3,baz=223,slow=5.5,SNR=3.1							
MKAR	**Makanchi Array**	**95.15**	**317**	P		**P**	**15 39 43.2**	**-0.1**
	0.6nm,0.8s,mb4.1,baz=108,slow=4.6,SNR=3.4							
ARCES	**ARCESS Array B**	**117.59**	**346**	PKP		PKPdf	15 45 04.2	-0.2
	0.4nm,0.4s,baz=45,slow=2.6,SNR=7.8							

*IDC **29** 15:41:00.8±1.2, 36.51N×51.40E, mb3.6/3, mb1 3.7/3, mb1mx3.4/17, Error ellipse: s-maj=37.5km s-min=9.5km az=112.0*
*NEIC **29** 15:41:01.6±0.6, 36.51N×51.34E, h10km, mb3.8/3, Error ellipse: s-maj=15.4km s-min=8.8km az=115.0*
*THR **29** 15:41:03.6±1.2, 36.47N×51.42E, ML3.9*
*NNC **29** 15:41:08.6±3.8, 37.52N×51.29E, Error ellipse: s-maj=186.8km s-min=19.5km az=107.0*
ISC 29 15:40:60.0±0.5, 36.55N±0.04×51.43E±0.07, h10km, n16, σ1§04/19, mb3.5/5, 1C-2D, Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
THR	**Tehran**	**0.68**	**201**	Pg		**Pg**	**15 41 13.2**	**-0.5**
	61nm,0.3s,baz=1.2,slow=15,SNR=267							
THR				Lg			15 41 21.9	
	548nm,0.3s,baz=183,slow=12,SNR=161							
THR	**Tehran**	**0.68**	**201**	Pg		**Pg**	**15 41 13.2**	**-0.5**
THR				Lg			15 41 21.9	
THKV	**Tehran--Karaj**	**0.77**	**215**	*e*PG		**Pg**	**15 41 15.3**	**-0.2**
THKV				*e*SG		**Sg**	**15 41 25.6**	**-0.2**
THKV				AMP			15 41 27.2	
	comp=E,5μm,0.5s							
DAMV	**Damavand**	**1.01**	**154**	*e*PG		**Pg**	**15 41 20.5**	**+0.2**
DAMV				*e*SG		**Sg**	**15 41 33.4**	**-0.5**
SNGE	**Sanandaj**	**3.62**	**248**	*e*PN		**Pn**	**15 41 59.2**	**+1.8**
AB31	**Akbulak array**	**14.14**	**23**	⇓Pn		**P**	**15 44 18.4**	**-3.9**
	comp=E,0.2nm,0.4s,baz=199,slow=12,SNR=7.2							
AB31				⇓Sn		**S**	**15 46 48.4**	**-12**
	comp=E,0.4nm,0.5s,baz=209,slow=21,SNR=4.0							
AAK	**Ala-Archa**	**18.76**	**64**	P		**P**	**15 45 21.5**	**+0.3**
	comp=E,1.0nm,0.7s							
ARU	**Arti**	**20.47**	**11**	*e*P		**P**	**15 45 39.2**	**-1.0**
	comp=E,4.9nm,0.7s							
ZRNK	**Zerenda**	**20.52**	**31**	*e*P		**P**	**15 45 39.9**	**-0.9**
ZRNK				*e*			15 46 02.8	
BRVK	**Borovoye**	**21.14**	**33**	*e*P		**P**	**15 45 47.2**	**0.0**
BVA0	**Borovoye Array**	**21.17**	**33**	⇑P		**P**	**15 45 47.1**	**-0.3**
	comp=E,0.6nm,1.1s,mb2.9,baz=223,slow=9.0,SNR=11							
BVAR	**Borovoye Array**	**21.17**	**33**	P		**P**	**15 45 47.2**	**-0.3**
	comp=E,1.2nm,0.5s,mb3.5,baz=220,slow=11,SNR=12							
OBN	**Obninsk**	**21.18**	**336**	*e*P		**P**	**15 45 45.9**	**-1.7**
	comp=E,7.4nm,0.8s,mb4.1							
KURK	**Kurchatov**	**24.07**	**45**	P		**P**	**15 46 18.6**	**+2.4**
MKAR	**Makanchi Array**	**25.08**	**56**	P		**P**	**15 46 27.7**	**+1.8**
	comp=E,1.6nm,0.8s,mb3.6,baz=252,slow=7.7,SNR=12							
GERES	**GERESS Array B**	**30.02**	**306**	P		**P**	**15 47 11.4**	**+0.5**
	comp=E,0.2nm,0.3s,mb3.3,baz=94,slow=13,SNR=4.0							

MAN 29 15:42:53.6, 13.57N×120.71E, h6km, mb4.2, ML3.0, MS2.7, 5C, Mindoro

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
PGP	**Puerto Galera**	**0.24**	**106**	*e*P		Pg	15 42 59.0	+0.4
PGP				*e*S		Sg	15 43 04.0	+2.1
LUBP	**Lubang**	**0.48**	**290**⇑	*e*P		Pg	15 43 03.4	+0.1
LUBP				*e*S		Sg	15 43 09.7	-0.1
BOAC	**Boac**	**1.10**	**96**⇑	*e*P		Pb	15 43 15.5	+0.8
BOAC				*e*S		Sb	15 43 30.6	+1.4
SJMP	**San Jose**	**1.17**	**160**⇑	*e*P		Pb	15 43 16.3	+0.4
BUSP	**Coron**	**1.64**	**198**⇑	*e*P		Pn	15 43 22.4	-0.7
BUSP				*e*S		Sb	15 43 39.2	-5.4
ENPP	**El Nido**	**2.67**	**208**⇑	*e*P		Pn	15 43 36.5	-1.4
ENPP				*e*S		Sn	15 44 07.4	-3.5

*NEIC **29** 15:52:42.8, 45.10S×167.31E, h107km, After WEL.*
WEL 29 15:52:44.4±0.4, 45.24S×167.36E, h100km±3km, ML3.8/7, 2C-2D, Error ellipse: s-maj=3.1km s-min=1.9km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
DCZ	**Deep Cove**	**0.28**	**211**	PN		P	15 52 58.4	-0.6
DCZ				*e*SN		S	15 53 08.7	-1.3
MLZ	**Mavora Lakes**	**0.59**	**101**	⇑PN		P	15 53 00.7	-0.3
MLZ				SN		S	15 53 13.2	-0.2
MLZ	**Mavora Lakes**	**0.59**	**101**	P		P	15 53 00.7	-0.3
MLZ				S		S	15 53 13.3	-0.2
MSZ	**Milford Sound**	**0.70**	**36**	⇑PN		P	15 53 01.7	-0.3
MSZ				SN		S	15 53 14.7	-0.4
WHZ	**Wether Hill Ro**	**0.77**	**148**	PN		P	15 53 02.6	-0.2
WHZ				SN		S	15 53 16.3	0.0
WHZ	**Wether Hill Ro**	**0.77**	**148**	P		P	15 53 02.6	-0.1
WHZ				S		S	15 53 16.3	0.0
AXZ	**Alexandra**	**1.40**	**92**	PN		P	15 53 09.3	-0.5
AXZ				SN		S	15 53 26.8	-1.9
TUZ	**Tuapeka**	**1.75**	**115**	⇓PN		P	15 53 13.6	-0.6
TUZ				SN		S	15 53 34.0	-2.4
TUZ	**Tuapeka**	**1.75**	**115**	P		P	15 53 13.6	-0.6
BWZ	**Berwen**	**1.93**	**69**	PN		P	15 53 14.9	-1.7
ODZ	**Otahua Downs**	**2.33**	**86**	⇓PN		P	15 53 20.1	-1.9
ODZ				SN		S	15 53 45.8	-4.2
RPZ	**Rata Peaks**	**3.06**	**61**	PN		P	15 53 28.2	-3.7
RPZ				SN		S	15 54 03.1	-4.6
RPZ	**Rata Peaks**	**3.06**	**61**	*e*P		P	15 53 28.4	-3.5
WVZ	**Waitaha Valley**	**3.26**	**49**	*e*PN		P	15 53 30.8	-3.8
WVZ				SN		S	15 54 06.0	-6.6
MQZ	**McQueen's Vall**	**4.09**	**70**	*e*PN		P	15 53 42.3	-3.7
MQZ				SN		S	15 54 24.5	-8.6
CRLZ	**Canterbury Las**	**4.12**	**68**	*e*PN		P	15 53 41.9	-4.6
CRLZ				SN		S	15 54 26.4	-7.5
LTZ	**Lake Taylor**	**4.31**	**57**	*e*PN		P	15 53 45.5	-3.6
LTZ				SN		S	15 54 32.0	-6.5
DSZ	**Denniston Nort**	**4.76**	**44**	PN		P	15 53 51.6	-3.6
DSZ				*e*SN		S	15 54 41.5	-8.1
KHZ	**Kahutara**	**5.29**	**60**	*e*PN		P	15 53 59.4	-3.0
THZ	**Tophouse**	**5.33**	**51**	*e*PN		P	15 53 59.0	-3.9
NNZ	**Nelson**	**5.96**	**50**	*e*PN		P	15 54 08.9	-2.6

*IDC **29** 16:06:46.9±4.3, 28.27N×82.60E, mb3.8/6, mb1 4.0/7, mb1mx3.7/19, ML4.3/1, Error ellipse: s-maj=81.3km s-min=43.2km az=4.0*
*NEIC **29** 16:06:50.1±0.7, 28.50N×82.69E, h10km, Error ellipse: s-maj=13.5km s-min=11.1km az=89.0*
*NDI **29** 16:06:52.3±2.2, 28.45N×82.86E, h10km, ML3.2*
ISC 29 16:06:52.3±1.0, 28.33N±0.07×82.80E±0.05, h53km±14km, n23, σ1§30/31, mb3.7/7, Nepal

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
PTH	**Pithoragarh**	**2.57**	**299**	*e*PN		**P**	**16 07 35.0**	**+2.5**
PTH				*e*SB		**S**	**16 08 11.0**	**+8.4**
NDI	**New Delhi**	**4.93**	**275**	*e*P		**P**	**16 08 06.5**	**+0.9**
NDI				*e*S		**S**	**16 09 01.0**	**-1.0**
AYAN	**Aya Nagar**	**5.00**	**273**	*e*P		**P**	**16 08 08.2**	**+1.5**
AYAN				*e*S		**S**	**16 09 02.4**	**-1.5**
SONA	**Sohna**	**5.04**	**270**	*e*P		**P**	**16 08 08.0**	**+0.8**
SONA				*e*S		**S**	**16 09 04.5**	**-0.4**
SONA				AML		AML	16 09 33.4	
	comp=N,38nm,0.0s							
SONA				AML		AML	16 09 33.7	
	comp=E,43nm,0.4s							
KHET	**Khetri**	**6.18**	**269**	*e*P		**P**	**16 08 23.7**	**+0.7**
KHET				*e*S		**S**	**16 09 31.1**	**-2.1**
KHET				AML		AML	16 09 35.0	
	comp=N,29nm,0.5s							
KHET				AML		AML	16 09 35.4	
	comp=E,40nm,0.4s							
BHPL	**Bhopal**	**7.01**	**225**	*e*P		**P**	**16 08 37.7**	**+3.0**
BHPL				*e*S		**S**	**16 09 52.5**	**-1.3**
LSA	**Lhasa**	**7.44**	**77**	*e*P		**P**	**16 08 39.0**	**-1.7**
AJM	**Ajmer**	**7.48**	**258**	*e*P		**P**	**16 08 42.6**	**+1.3**
AJM				*e*S		**S**	**16 10 01.6**	**-3.9**
SHL	**Shillong**	**8.56**	**107**	*e*P		**P**	**16 08 54.0**	**-2.1**
SHL				*e*			16 10 35.0	
HYB	**Hyderabad**	**11.54**	**201**	*i*P		**P**	**16 09 37.0**	**+0.1**
HYB				*e*S		**S**	**16 11 54.0**	**+8.9**
HYB	**Hyderabad**	**11.54**	**201**	*e*P		**P**	**16 09 37.0**	**+0.1**
AAK	**Ala-Archa**	**15.78**	**337**	P		**P**	**16 10 28.5**	**-3.9**
MKAR	**Makanchi Array**	**18.44**	**359**	P		**P**	**16 11 04.2**	**-1.3**
	comp=E,1.0nm,0.3s,baz=178,slow=11,SNR=43							
MKAR	**Makanchi Array**	**18.44**	**359**	P		**P**	**16 11 04.2**	**-1.3**
KURK	**Kurchatov**	**22.58**	**353**	*e*P		**P**	**16 11 48.2**	**-0.7**
ZAL	**Zalesovo**	**25.63**	**3**	P		**P**	**16 12 18.1**	**-0.2**
	comp=E,2.3nm,0.6s,mb3.9,baz=187,slow=8.1,SNR=12							
BVAR	**Borovoye Array**	**26.33**	**343**	P		**P**	**16 12 24.4**	**-0.4**
	comp=E,0.6nm,0.4s,mb3.5,baz=154,slow=10.0,SNR=8.5							
ZRNK	**Zerenda**	**26.64**	**341**	P		**P**	**16 12 28.4**	**+0.7**
SONM	**Songino Array**	**26.73**	**37**	P		**P**	**16 12 30.0**	**+1.5**
	comp=E,1.1nm,0.7s,mb3.5,baz=224,slow=9.5,SNR=12							
ULN	**Ulaanbaatar**	**27.10**	**37**	*e*P		**P**	**16 12 32.9**	**+1.0**
	comp=E,2.0nm,0.8s,mb3.7							
FINES	**FINESS Array B**	**49.73**	**328**	P		**P**	**16 15 40.0**	**-0.8**
	comp=E,0.6nm,0.6s,mb3.8,baz=108,slow=6.0,SNR=6.8							
ARCES	**ARCESS Array B**	**52.45**	**338**	P		**P**	**16 16 01.5**	**+0.2**
	comp=E,1.7nm,0.9s,mb4.0,baz=100,slow=7.4,SNR=6.0							
ILAR	**Eielson Array**	**79.51**	**19**	P		**P**	**16 18 55.4**	**+1.0**
	comp=E,0.5nm,0.8s,mb3.5,baz=294,slow=5.7,SNR=5.6							

MAN 29 16:22:52.0, 13.50N×120.69E, h1km, mb4.0, ML2.8, MS2.5, 5C-1D, Mindoro

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
PGP	**Puerto Galera**	**0.25**	**90**⇓	*e*P		Pg	16 22 56.0	-1.0
PGP				*e*S		Sg	16 23 04.0	+3.6
LUBP	**Lubang**	**0.49**	**298**⇑	*e*P		Pg	16 23 01.9	+0.1
LUBP				*e*S		Sg	16 23 08.5	+0.1
SJMP	**San Jose**	**1.11**	**158**⇑	*e*P		Pb	16 23 14.8	+1.1
SJMP				*e*S		Sb	16 23 31.9	+3.4
BOAC	**Boac**	**1.12**	**92**⇑	*e*P		Pb	16 23 14.3	+0.5
BOAC				*e*S		Sb	16 23 30.6	+1.8
BUSP	**Coron**	**1.56**	**198**⇑	*e*P		Pn	16 23 21.1	+0.1
BUSP				*e*S		Sb	16 23 41.7	0.0
ENPP	**El Nido**	**2.60**	**209**⇑	*e*P		Pn	16 23 35.1	-0.6

*IDC **29** 16:44:03.9±1.6, 22.31S×169.57E, mb4.3/9, mb1 4.5/9, mb1mx4.4/14, MS3.7/6, Ms1 3.7/6, ms1mx3.4/20, Error ellipse: s-maj=70.2km s-min=22.6km az=151.0*
*NEIC **29** 16:44:06.4±0.6, 22.07S×169.40E, h10km, mb4.8/4, Error ellipse: s-maj=19.5km s-min=12.7km az=185.0*
ISC 29 16:44:09.4±2.0, 21.97S±0.08×169.2E±0.1, h37km±16km, n34, σ1§29/32, mb4.3/12, MS3.7/6, 1C-4D, Southeast of Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
DZM	**Mont Dzumac**	**2.57**	**267**	*e*P		**P**	**16 44 50.3**	**+0.7**
DZM				*e*S		**S**	**16 45 19.3**	**-0.5**
DZM	**Mont Dzumac**	**2.57**	**267**	*e*P		**P**	**16 44 50.3**	**+0.7**
DZM				*e*S		**S**	**16 45 19.3**	**-0.5**
NOUC	**Port Laguerre**	**2.70**	**267**	*e*P		**P**	**16 44 52.0**	**+0.5**
NOUC				*e*S		**S**	**16 45 19.8**	**-3.4**
NOUC	**Port Laguerre**	**2.70**	**267**	*e*P		**P**	**16 44 52.0**	**+0.5**
NOUC				*e*S		**S**	**16 45 19.8**	**-3.4**
BKM	**Butte a Klehm**	**4.38**	**348**⇑	*i*P		**P**	**16 45 14.9**	**-0.4**
BKM				S		**S**	**16 46 05.8**	**+0.1**
CTAO	**Charters Tower**	**21.51**	**271**	*e*P		**P**	**16 48 59.1**	**+1.8**
	8.6nm,1.0s,mb4.1							
STKA	**Stephens Creek**	**26.46**	**242**	P		**P**	**16 49 45.0**	**-0.1**
	1.9nm,0.6s,mb3.8,baz=100,slow=5.2,SNR=4.8							
STKA				LR		LR	16 59 39.9	
	comp=Z,128nm,18.4s,MS3.5,baz=23,slow=35							
AS12	**Alice Springs**	**32.54**	**260**	*e*P		**P**	**16 50 39.1**	**-0.3**
	10nm,1.2s,mb4.6							
ASAR	**Alice Springs**	**32.54**	**260**	P		**P**	**16 50 39.0**	**-0.4**
	3.3nm,0.7s,mb4.4,baz=82,slow=9.2,SNR=43							
ASAR				PcP		PcP	16 53 23.8	-1.7
	0.5nm,0.7s,baz=113,slow=2.0,SNR=4.1							
ASAR				LR		LR	17 01 35.4	
	comp=Z,51nm,22.0s,MS3.2,baz=197,slow=32							
ASAR	**Alice Springs**	**32.54**	**260**	P		**P**	**16 50 39.0**	**-0.4**
ASAR				PcP		PcP	16 53 23.8	-1.7
ASAR				LR		LR	17 01 35.4	
WB2	**Warramunga Arr**	**32.57**	**267**	*e*P		**P**	**16 50 39.7**	**0.0**
WRAB	**Tennant Creek**	**32.58**	**267**	P		**P**	**16 50 38.6**	**-1.1**
	4.6nm,0.6s,mb4.6							
WRA	**Warramunga Arr**	**32.59**	**267**	P		**P**	**16 50 38.8**	**-1.0**
	3.1nm,1.0s,mb4.2,baz=97,slow=8.3,SNR=12							
FITZ	**Fitzroy Crossi**	**41.01**	**267**	⇓*i*P		**P**	**16 51 52.0**	**+1.1**
	21nm,0.7s,mb4.9							
FITZ	**Fitzroy Crossi**	**41.01**	**267**	P		**P**	**16 51 51.9**	**+1.0**
	25nm,0.6s,mb5.0,baz=141,slow=6.2,SNR=46							
NWAO	**Narrogin (SRO)**	**46.99**	**245**	P		**P**	**16 52 37.4**	**-1.6**
	9.9nm,0.8s,mb4.8,baz=100,slow=11,SNR=3.6							
NWAO				LR		LR	17 14 05.0	
	comp=Z,141nm,19.5s,MS3.9,baz=317,slow=38							
VNDA	**Vanda**	**55.71**	**182**	LR		LR	17 12 44.4	
	comp=Z,83nm,19.6s,MS3.8,baz=99,slow=31							
VNDA	**Vanda**	**55.71**	**182**	P		**P**	**16 53 39.6**	**-4.6**
QSPA	**South Pole Qui**	**68.09**	**180**	*e*P		**P**	**16 55 04.8**	**-2.2**
	12nm,1.0s,mb4.9							
CMAR	**Chiang Mai Arr**	**79.60**	**295**	P		**P**	**16 56 16.6**	**+1.6**
	0.9nm,0.8s,mb3.8,baz=113,slow=4.4,SNR=6.3							
SNAA	**Sanae**	**86.44**	**183**	*e*P		**P**	**16 56 47.1**	**-1.7**
VNA3	**Neumayer Olymp**	**87.03**	**180**⇓	*i*		**P**	**16 56 53.1**	**+1.4**
VNA2	**Neumayer--Watz**	**87.33**	**181**⇓	*i*		**P**	**16 56 54.8**	**+1.7**
VNA1	**Neumayer--Stat**	**87.61**	**181**⇓	*i*		**P**	**16 56 56.5**	**+2.0**
SONM	**Songino Array**	**89.38**	**323**	P		**P**	**16 57 05.0**	**+1.5**
	1.5nm,0.9s,mb4.3,baz=140,slow=5.0,SNR=10							
NVAR	**Mina Array Bea**	**90.62**	**49**	P		**P**	**16 57 08.8**	**-0.7**
	1.2nm,0.9s,mb4.2,baz=214,slow=6.1,SNR=5.7							
NVAR				LR		LR	17 30 23.9	
	comp=Z,37nm,19.6s,MS3.8,baz=145,slow=31							
NVAR	**Mina Array Bea**	**90.62**	**49**	P		**P**	**16 57 08.8**	**-0.7**
NVAR				LR		LR	17 30 23.9	
ILAR	**Eielson Array**	**92.83**	**17**	P		**P**	**16 57 17.1**	**-2.0**
	0.4nm,0.6s,mb4.0,ba

FIA0	**FINESS Array S**	**1.86**	**24**	*e*P	Pn		17 09 03.6	-0.1
FIA0				*e*S	Sn		17 09 27.1	-1.3
FIA0				MSG			17 09 30.4	
	comp=Z,61nm,0.3s							
FIA0	**FINESS Array S**	**1.86**	**24**	Pn	Pn		17 09 03.5	-0.2
	baz=197,slow=18							
FIA0				Lg			17 09 27.2	
	baz=193,slow=28							
FINES	**FINESS Array B**	**1.86**	**24**	Pg	Pg		17 09 03.6	-3.9
	comp=Z,20nm,0.3s,baz=201,slow=16,SNR=700							
FINES				Lg			17 09 27.9	
	comp=Z,12nm,0.3s,baz=207,slow=26,SNR=5.2							
VAF	**Ylistaro**	**3.41**	**346**	*e*SG	Sg		17 10 14.0	-10
JOF	**Joensuu**	**4.56**	**43**	*e*SB	Sb		17 10 47.0	-0.2
JOF				MSG			17 10 52.1	
	comp=Z,11nm,0.3s							
HFS	**Hagfors**	**5.44**	**279**	Pn	Pn		17 09 52.2	-2.4
	baz=84,slow=16							
HFS				Sn	Sn		17 10 55.5	-3.4
	baz=90,slow=28							
HFS				Lg			17 11 17.1	
	baz=79,slow=37							
HFS	**Hagfors**	**5.44**	**279**	*e*P	Pn		17 09 52.2	-2.4
HFS				*e*S	Sn		17 10 55.5	-3.4
HFS				*e*SG	Sg		17 11 17.1	-14
HFS	**Hagfors**	**5.44**	**279**	Pn	Pn		17 09 52.6	-2.0
	comp=Z,0.1nm,0.3s,baz=90,slow=12,SNR=20							
HFS				Sn	Sn		17 10 53.6	-5.2
	comp=Z,0.5nm,0.3s,baz=90,slow=27,SNR=12							
HFS				Lg			17 11 18.4	
	comp=Z,0.6nm,0.3s,baz=83,slow=34,SNR=8.8							
NOA	**NORSAR Array B**	**6.70**	**287**	Pn	Pn		17 10 09.1	-3.3
	comp=Z,1.1nm,0.3s,baz=94,slow=14,SNR=9.3							
NOA				Sn	Sn		17 11 22.7	-7.7
	comp=Z,1.0nm,0.3s,baz=113,slow=13,SNR=4.5							
NOA				Lg			17 11 57.2	
	comp=Z,1.9nm,0.3s,baz=124,slow=22,SNR=8.9							
ARA0	**ARCESS Array S**	**9.83**	**2**	Pn	P		17 10 50.7	-5.0
	baz=176,slow=16							
ARA0				Sn	Sn		17 12 36.1	-12
	baz=185,slow=28							
ARA0				Lg			17 13 31.7	
	baz=193,slow=37							
ARA0	**ARCESS Array S**	**9.83**	**2**	*e*P	P		17 10 50.7	-5.0
ARA0				*e*S	Sn		17 12 36.1	-12
ARA0				*e*SG	Sg		17 13 31.7	-26
ARCES	**ARCESS Array B**	**9.83**	**2**	Pn	P		17 10 51.2	-4.5
	comp=Z,1.2nm,0.3s,baz=183,slow=14,SNR=75							
ARCES				Sn	Sn		17 12 39.5	-8.5
	comp=Z,0.4nm,0.3s,baz=184,slow=24,SNR=4.0							
MKAR	**Makanchi Array**	**35.71**	**85**	P	P		17 15 28.8	-3.3
	comp=Z,0.2nm,0.3s,baz=322,slow=6.1,SNR=7.4							

MAN 29 17:15:18.1,6.97N×123.72E,h17km,mb4.2,ML3.0,MS2.8, 3C-3D,Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTBH	**Cotabato--PC H**	**0.58**	**65**	⇓*i*P	Pb	17 15 29.6	+0.2
CTBH				*i* S	Sb	17 15 38.2	+1.1
PAGZ	**Pagadian**	**0.93**	**339**	⇑*e*P	Pb	17 15 34.8	-0.6
KCP	**Kidapawan**	**1.36**	**88**	⇓*e*P	Pn	17 15 42.0	-0.6
KCP				*i* S	Sb	17 16 00.2	+0.4
DCPH	**Dipolog City**	**1.64**	**347**	⇓*i*P	Pn	17 15 45.9	-0.6
DCPH				*i* S	Sn	17 16 07.4	+0.1
BUTP	**Butuan**	**2.74**	**43**	⇑*e*P	Pn	17 16 09.3	+7.1
MSLP	**Maasin**	**3.34**	**20**	⇑*e*P	Pn	17 16 10.0	-0.7

*THR **29** 17:30:26.8±1.1,36.50N×51.44E,ML3.9*
*NNC **29** 17:30:36.1±6.2,37.31N×52.55E,Error ellipse: s-maj=96.9km s-min=39.8km az=71.0*
ISC 29 17:30:24.0±1.7,36.53N±0.10×51.46E±0.07,h14km±14km, n10,σ1§18/14,mb3.7/4,4C-1D,Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THKV	**Tehran--Karaj**	**0.77**	**218**	*e*PG	**Pg**	**17 30 39.3**	**-0.2**
THKV				*e*SG	**Sg**	**17 30 49.8**	**-0.1**
THKV				AMP		17 30 50.9	
	comp=E,5μm,0.8s						
DAMV	**Damavand**	**0.99**	**155**	*e*PG	**Pg**	**17 30 43.9**	**0.0**
DAMV				*e*SG	**Sg**	**17 30 57.2**	**0.0**
SNGE	**Sanandaj**	**3.63**	**248**	*e*PN	**Pn**	**17 31 22.9**	**+1.8**
SNGE				SN	**Sn**	**17 32 03.3**	**-1.0**
AB31	**Akbulak array**	**14.15**	**23**	Pn	**P**	**17 33 40.8**	**-5.2**
	comp=E,0.8nm,0.5s,baz=208,slow=13,SNR=8.4						
AB31				⇑Sn	**S**	**17 36 10.5**	**-13**
	comp=E,0.4nm,0.4s,slow=0.1,SNR=5.2						
KK31	**Karatay Array**	**16.03**	**60**	P	**P**	**17 34 08.2**	**-2.4**
	comp=E,1.6nm,0.8s,baz=245,slow=13,SNR=11						
ZRNK	**Zerenda**	**20.52**	**31**	⇑P	**P**	**17 35 03.7**	**-0.7**
	comp=E,2.3nm,0.8s						
BVA0	**Borovoye Array**	**21.17**	**33**	⇓P	**P**	**17 35 10.9**	**-0.1**
	comp=E,0.6nm,0.7s,mb3.0,baz=220,slow=10.0,SNR=30						
VOSK	**Vostochnaya**	**21.23**	**34**	⇑P	**P**	**17 35 11.3**	**-0.2**
	comp=E,3.5nm,0.8s,mb3.8						
KURK	**Kurchatov**	**24.07**	**45**	P	**P**	**17 35 42.4**	**+2.8**
	comp=E,15nm,0.8s,mb4.5,baz=246,slow=6.9,SNR=8.7						
MK31	**Makanchi Array**	**25.07**	**56**	⇑P	**P**	**17 35 51.0**	**+1.7**
	comp=E,1.5nm,0.7s,mb3.6,baz=248,slow=6.9,SNR=9.2						

*CASC **29** 17:58:50.7±2.2,13.07N×91.01W,h0km±7km,MD4.2, ML4.2*
*IDC **29** 17:58:55.2±3.4,14.15N×90.27W,mb3.7/4,mb1 4.1/6, mb1mx3.8/19,ML4.2/2,MS3.2/2,Ms1 3.2/2,ms1mx2.6/30, Error ellipse: s-maj=127.0km s-min=30.1km az=33.0*
ISC 29 17:58:49.3±0.8,12.91N±0.04×91.09W±0.04,h10km,n26, σ0§94/33,mb3.8/4,MS3.1/2,2C-1D,Off coast of central America

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IXG	**Ixpaco**	**1.40**	**26**	*e*P	**Pn**	**17 59 14.4**	**-0.6**
IXG				*e*S	**Sb**	**17 59 33.4**	**+0.6**
IXG				AML	AML	17 59 34.5	
	comp=E,7μm,0.4s						
CUSS	**Cusmapa**	**1.49**	**48**	*e*P	**Pn**	**17 59 15.4**	**-0.8**
CUSS				*e*S	**Sb**	**17 59 35.0**	**-0.5**
JAT	**Jato**	**1.50**	**339**	*e*P	**Pn**	**17 59 16.9**	**+0.6**
JAT				*e*S	**Sb**	**17 59 38.2**	**+2.6**
JAT				AML	AML	17 59 47.3	
	comp=E,2μm,0.4s						
FUG	**Fuego 3**	**1.55**	**9**	*e*P	**Pn**	**17 59 16.7**	**-0.3**
FUG				*e*S	**Sb**	**17 59 35.8**	**-1.3**
PCG	**Pacaya**	**1.55**	**18**	*e*P	**Pn**	**17 59 16.0**	**-1.1**
PCG				*e*S	**Sb**	**17 59 38.5**	**+1.3**
SBLS	**San Blas**	**1.70**	**57**	⇓*e*P	**Pn**	**17 59 19.1**	**-0.1**
RTR	**El Retiro**	**1.72**	**55**	⇓*e*P	**Pn**	**17 59 19.9**	**+0.4**
RTR				*e*S	**Sn**	**17 59 41.7**	**+0.1**
SNJE	**San Jose**	**1.73**	**56**	*e*P	**Pn**	**17 59 19.5**	**-0.2**
RBDL	**Robledal**	**1.82**	**49**	*e*P	**Pn**	**17 59 20.7**	**-0.2**
NBG	**Las Nubes**	**1.82**	**23**	*e*P	**Pn**	**17 59 22.1**	**+1.2**
NBG				*e*S	**Sn**	**17 59 43.7**	**-0.5**
NBG				AML	AML	17 59 51.2	
	comp=N,4μm,0.5s						
TP2	**Tecpan 2**	**1.86**	**2**	*e*P	**Pn**	**17 59 21.7**	**+0.1**
TP2				*e*S	**Sn**	**17 59 44.4**	**-0.9**
TP2				AML	AML	17 59 48.5	
	comp=E,2μm,0.4s						
BOQS	**Boqueron**	**1.94**	**65**	*e*P	**Pn**	**17 59 22.6**	**-0.1**
BOQS				*e*S	**Sn**	**17 59 55.0**	**+7.6**
LFU	**La Fuente**	**2.10**	**66**	⇑*e*P	**Pn**	**17 59 25.7**	**+0.7**
LFRS	**El Faro**	**2.10**	**70**	*e*P	**Pn**	**17 59 25.3**	**+0.3**
LFRS				*e*S	**Sn**	**17 59 51.9**	**+0.6**
LCBS	**La Ceiba**	**2.19**	**70**	*e*P	**Pn**	**17 59 26.4**	**+0.2**
MTO2	**Montecristo 2**	**2.24**	**48**	*e*P	**Pn**	**17 59 26.8**	**-0.2**
CNCH	**Conchagua**	**3.20**	**83**	*e*P	**Pn**	**17 59 40.9**	**+0.3**
TXAR	**Lajitas Array**	**20.09**	**326**	P	**P**	**18 03 26.4**	**+0.5**
	comp=E,0.2nm,0.3s,baz=148,slow=11,SNR=10						
SDV	**Santo Domingo**	**20.48**	**99**	P	**P**	**18 03 30.6**	**+0.5**
	comp=E,0.5nm,0.3s,baz=222,slow=5.1,SNR=3.6						
PCRV	**Puerto La Cruz**	**26.06**	**93**	LR	LR	18 14 07.5	
	comp=E,46nm,19.4s,MS3.0,baz=104,slow=36						
SADO	**Sadowa**	**33.35**	**16**	LR	LR	18 19 22.6	
	comp=E,51nm,22.0s,MS3.2,baz=340,slow=38						
NVAR	**Mina Array Bea**	**35.07**	**321**	P	**P**	**18 05 47.3**	**+2.7**
	comp=E,2.2nm,0.8s,mb4.2,baz=124,slow=9.0,SNR=10						
YKA	**Yellowknife Ar**	**52.28**	**346**	P	**P**	**18 08 00.1**	**-2.7**
	comp=E,0.4nm,0.8s,mb3.4,baz=148,slow=7.5,SNR=6.9						
INK	**Inuvik**	**61.73**	**343**	P	**P**	**18 09 08.0**	**-1.9**
	comp=E,0.8nm,0.7s,mb4.0,baz=147,slow=5.0,SNR=3.9						
ILAR	**Eielson Array**	**64.18**	**337**	P	**P**	**18 09 25.8**	**-0.4**
	comp=E,0.9nm,0.9s,mb3.8,baz=137,slow=3.6,SNR=6.2						
CMAR	**Chiang Mai Arr**	**147.30**	**342**	PKPbc	PKPdf	18 18 37.1	+2.4
	comp=E,1.1nm,0.8s,baz=333,slow=3.5,SNR=8.8						

*IDC **29** 18:00:15.3±2.0,43.61N×105.38W,mb3.9/2,mb1 3.8/6, mb1mx3.5/22,ML3.4/4,Error ellipse: s-maj=51.9km s-min=9.0km az=150.0*
*NEIC **29** 18:00:18.1±0.8,43.72N×105.08W,h5km,ML3.2,Error ellipse: s-maj=12.6km s-min=9.9km az=146.0,Suspected Mining explosion.*
NEIC 70 km [45 miles] SSE of Gillette.
ISC 29 18:00:15.7±0.7,43.61N±0.04×105.00W±0.07,n21, σ1§64/35,mb3.9/2,1C-2D,Wyoming

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RSSD	**Black Hills**	**0.86**	**53**	⇑*i*P	**Pg**	**18 00 35.4**	**+2.5**
RSSD				*e*S	**Sg**	**18 00 50.5**	**+6.1**
BW06	**Boulder Array**	**3.44**	**257**	*e*P	**Pn**	**18 01 10.3**	**-1.3**
BW06				*e*S	**Sn**	**18 01 53.6**	**0.0**
PDAR	**Pinedale Array**	**3.44**	**257**	Pn	**Pn**	**18 01 09.9**	**-1.7**
	2.8nm,0.3s,baz=68,slow=16,SNR=46						
PDAR				Lg		18 01 54.5	
	8.1nm,0.3s,baz=72,slow=29,SNR=8.6						
ISCO	**Idaho Springs**	**3.83**	**187**	*e*P	**Pn**	**18 01 19.7**	**+2.5**
ISCO				*e*S	**Sn**	**18 02 19.3**	**+16**
KSWY	**Kelly School**	**4.09**	**272**	*e*P	**Pn**	**18 01 26.0**	**+5.2**
KSWY				*e*S	**Sn**	**18 02 17.4**	**+7.4**
WUWY	**Wally Ulrich**	**4.17**	**271**	Pn	**Pn**	**18 01 17.8**	**-4.2**
WUWY				*e*P*	**Pb**	**18 01 26.2**	**-3.7**
WUWY				*e*S	**Sn**	**18 02 16.0**	**+3.7**
QLMT	**Earthquake Lak**	**4.78**	**287**	*e*P	**Pn**	**18 01 37.5**	**+6.9**
QLMT				*e*S	**Sn**	**18 02 35.8**	**+8.1**
BOZ	**Bozeman (W)**	**5.15**	**296**	P	**Pn**	**18 01 33.7**	**-2.2**
	2.7nm,0.6s						
BOZ				*e*S	**Sn**	**18 02 41.4**	**+4.4**
HRY	**Holter Researc**	**5.74**	**305**	*e*P	**Pn**	**18 01 45.0**	**+0.8**
PV10	**Paradox Valley**	**6.05**	**212**	⇓*i*P	**Pn**	**18 01 50.5**	**+1.8**
PV10				*e*S	**Sn**	**18 02 58.6**	**-1.0**
PV01	**Paradox Valley**	**6.10**	**208**	⇓*i*P	**Pn**	**18 01 50.0**	**+0.7**
PV01				*e*S	**Sn**	**18 02 58.9**	**-1.9**
MPU	**Maple Canyon**	**6.12**	**236**	*e*P	**Pn**	**18 02 05.1**	**+16**
MPU				*e*S	**Sn**	**18 03 02.3**	**+1.0**
CHMT	**Chamberlain Mo**	**6.70**	**302**	*e*P	**Pn**	**18 01 54.2**	**-3.5**
CHMT				*e*S	**Sn**	**18 03 15.8**	**+0.2**
HLID	**Hailey**	**6.84**	**273**	*e*P	**Pn**	**18 01 58.0**	**-1.7**
	0.8nm,0.6s						
HLID				*e*S	**Sn**	**18 03 21.3**	**+2.1**
MSO	**Missoula**	**7.09**	**300**	*e*P	**Pn**	**18 02 03.4**	**+0.2**
MSO				*e*S	**Sn**	**18 03 26.1**	**+0.7**
ULM	**Lac du Bonnet**	**9.11**	**40**	Pn	**P**	**18 02 28.4**	**-3.0**
	0.9nm,0.3s,baz=235,slow=10,SNR=4.5						
ULM				Lg		18 05 02.9	
	0.6nm,0.3s,baz=131,slow=20,SNR=2.8						
NVAR	**Mina Array Bea**	**11.30**	**247**	Pn	**P**	**18 02 57.4**	**-4.1**
	0.1nm,0.3s,baz=48,slow=14,SNR=3.5						
YKA	**Yellowknife Ar**	**19.74**	**347**	P	**P**	**18 04 44.5**	**-5.0**
	0.1nm,0.3s,baz=161,slow=13,SNR=5.9						
YKA	**Yellowknife Ar**	**19.74**	**347**	P	**P**	**18 04 44.5**	**-5.0**
ARCES	**ARCESS Array B**	**61.48**	**18**	P	**P**	**18 10 33.4**	**-2.5**
	1.3nm,0.9s,mb4.1,baz=344,slow=8.8,SNR=3.6						
MKAR	**Makanchi Array**	**89.75**	**355**	P	**P**	**18 13 15.1**	**-1.6**
	0.5nm,0.7s,mb3.8,baz=14,slow=5.0,SNR=4.8						

*IDC **29** 18:04:57.0±2.4,59.94N×25.60E,mb1 2.9/3, mb1mx2.8/21,ML2.7/2,Error ellipse: s-maj=24.3km s-min=7.6km az=133.0*
*HEL **29** 18:04:59.4±0.1,60.19N×25.19E,ML1.5,ML1.5(UPP), Explosion*
ISC 29 18:04:57.6±0.6,60.23N±0.04×25.18E±0.07,n10,σ1§24/17, Finland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MEF	**Metsahovi**	**0.39**	**269**	*e*P	**Pg**	**18 05 06.4**	**+1.0**
MEF				*e*S	**Sg**	**18 05 11.7**	**+1.0**
VJF	**Virojoki**	**1.22**	**74**	*e*P	**Pb**	**18 05 20.7**	**-0.5**
VJF				*e*S	**Sb**	**18 05 37.1**	**-0.3**
FIA0	**FINESS Array S**	**1.30**	**19**	*e*P	**Pb**	**18 05 23.4**	**+0.8**
FIA0				*e*S	**Sb**	**18 05 40.6**	**+1.0**
FINES	**FINESS Array B**	**1.30**	**19**	Pg	**Pg**	**18 05 23.4**	**-0.1**
	1.8nm,0.3s,baz=190,slow=17,SNR=84						
FINES				Lg		18 05 45.3	
	5.8nm,0.3s,baz=197,slow=22,SNR=47						
VSU	**Vasula**	**1.94**	**155**	*e*P	**Pn**	**18 05 33.9**	**+1.7**
VSU				*e*S	**Sn**	**18 05 57.6**	**-0.1**
KEF	**Keuruu**	**1.95**	**356**	*e*PG	**Pg**	**18 05 35.2**	**-1.4**
KEF				*e*S	**Sn**	**18 05 60.0**	**+2.1**
KEF				MSG		18 06 03.4	
	comp=Z,1.9nm,0.1s						
JOF	**Joensuu**	**3.98**	**45**	*e*SG	**Sg**	**18 07 02.4**	**-7.9**
JOF				MSG		18 07 06.7	
	comp=Z,0.8nm,0.2s						
HFS	**Hagfors**	**5.73**	**274**	Pn	**Pn**	**18 06 25.6**	**-0.4**
	comp=Z,0.0nm,0.3s,baz=104,slow=12,SNR=5.2						
HFS				Sn	**Sn**	**18 07 32.8**	**-0.8**
	comp=Z,0.0nm,0.3s,baz=81,slow=28,SNR=6.4						
HFS				Lg		18 07 57.5	
	comp=Z,0.1nm,0.3s,baz=87,slow=30,SNR=5.8						
NOA	**NORSAR Array B**	**6.92**	**283**	Pn	**Pn**	**18 06 40.2**	**-2.5**
	comp=Z,0.1nm,0.3s,baz=263,slow=16,SNR=2.2						
NOA				Sn	**Sn**	**18 07 57.1**	**-6.1**
	comp=Z,0.1nm,0.3s,baz=69,slow=4.8,SNR=2.5						
NOA				Lg		18 08 32.8	
	comp=Z,0.2nm,0.3s,baz=330,slow=2.6,SNR=3.3						
ARCES	**ARCESS Array B**	**9.35**	**1**	Pn	**P**	**18 07 14.2**	**-2.3**
	comp=Z,0.1nm,0.3s,baz=180,slow=13,SNR=5.8						

*FUNV **29** 18:11:23.6,10.66N×62.33W,h71km,MW2.6*
*TRN **29** 18:11:30.5,10.89N×61.98W,h68km,MD2.8*
ISC 29 18:11:22.4±0.6,10.51N±0.04×62.45W±0.03,h76km±7km, n16,σ1§23/31,1C,Near coast of Venezuela

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUIV	**Guiria**	**0.26**	**58**	*e*P	**P**	**18 11 34.6**	**+0.5**
GUIV				*e*S	**S**	**18 11 41.5**	**-1.3**
GUNV	**Guanoco**	**0.60**	**235**	*e*P	**P**	**18 11 39.9**	**+3.0**
GUNV				*e*S	**S**	**18 11 50.7**	**+3.2**
TCE	**Chacachacare**	**0.71**	**75**	*e*P	**P**	**18 11 42.1**	**+4.1**
TCE				*e*S	**S**	**18 11 48.9**	**-0.7**
CRUV	**Carupano**	**0.79**	**282**	*e*P	**P**	**18 11 40.0**	**+1.0**
CRUV				*e*S	**S**	**18 11 51.2**	**-0.1**
TRN	**Trinidad (W)**	**1.03**	**82**	*e*P	**P**	**18 11 44.3**	**+2.4**
TRN				*e*S	**S**	**18 11 55.7**	**-0.7**
ITEV	**Isla Los Testi**	**1.08**	**321**	⇑*e*P	**P**	**18 11 42.3**	**-0.1**
ITEV				*e*S	**S**	**18 11 55.4**	**-1.9**
TPR	**Prospect**	**1.77**	**68**	*e*P	**P**	**18 11 51.0**	**-0.7**
TPR				*e*S	**S**	**18 12 12.0**	**-1.3**
GRW	**Mount Saint Ca**	**1.81**	**25**	*e*P	**P**	**18 11 53.4**	**+1.2**
GRW				*e*S	**S**	**18 12 15.0**	**+0.8**
RIOV	**Rio Grande**	**2.50**	**166**	*e*P	**P**	**18 12 02.4**	**+0.5**
RIOV				*e*S	**S**	**18 12 31.5**	**+0.2**
PARV	**Pariaguan**	**2.78**	**237**	*e*P	**P**	**18 12 06.9**	**+1.2**
CUPV	**Cœpira**	**3.32**	**262**	*e*P	**P**	**18 12 13.9**	**+0.6**
CUPV				*e*S	**S**	**18 12 51.8**	**+0.1**
BIRV	**Birongo**	**3.76**	**270**	*e*P	**P**	**18 12 20.2**	**+0.8**
BIRV				*e*S	**S**	**18 13 01.3**	**-1.4**
MERV	**Las Mercedes**	**4.00**	**252**	*e*P	**P**	**18 12 23.4**	**+0.7**
MERV				*e*S	**S**	**18 13 07.3**	**-1.2**
LUEV	**Luepa**	**4.74**	**168**	*e*P	**P**	**18 12 33.0**	**0.0**
LUEV				*e*S	**S**	**18 13 24.3**	**-2.8**
CAOV	**Caicara del Or**	**4.97**	**231**	*e*P	**P**	**18 12 36.9**	**+0.7**
CAOV				*e*S	**S**	**18 13 30.8**	**-2.0**
BAUV	**El Baul**	**5.73**	**255**	*e*P	**P**	**18 12 45.8**	**-0.8**
BAUV				*e*S	**S**	**18 13 47.8**	**-4.0**

*IDC **29** 18:37:42.5±0.7,0.94S×134.20E,mb3.9/9,mb1 4.2/11, mb1mx4.1/19,ML3.9/2,Error ellipse: s-maj=35.0km s-min=15.2km az=68.0*
*NEIC **29** 18:37:44.2±0.5,0.94S×134.19E,h10km,mb4.3/6,Error ellipse: s-maj=16.6km s-min=8.4km az=72.0*
ISC 29 18:37:41.0±8.9,1.0S±0.1×134.2E±0.1,h4km±57km,n26, σ0§77/26,mb3.9/9,3D,Irian Jaya region

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

KAKA	**Kakadu**	**11.80**	**189**	*e*P	**P**	**18 40 33.4**	**+0.1**
	18nm,0.5s							
KAKA				*e*S	**S**	**18 42 40.1**	**-6.5**
PMG	**Port Moresby**	**15.37**	**123**	Pn	**P**	**18 41 20.8**	**+0.2**
	0.4nm,0.3s,baz=197,slow=22,SNR=3.2							
PMG	**Port Moresby**	**15.37**	**123**	*e*P	**P**	**18 41 20.5**	**-0.1**
	41nm,1.2s							
WRAB	**Tennant Creek**	**18.85**	**180**	*e*P	**P**	**18 42 04.1**	**-0.4**
	21nm,0.6s							
WB2	**Warramunga Arr**	**18.86**	**180**	*e*P	**P**	**18 42 03.4**	**-1.2**
WB2				*e*S	**S**	**18 45 38.0**	**+5.8**
FITZ	**Fitzroy Crossi**	**19.00**	**206**	⇓*i*P	**P**	**18 42 06.6**	**+0.3**
	29nm,1.8s							
FITZ				*e*S	**S**	**18 45 23.9**	**-11**
FITZ	**Fitzroy Crossi**	**19.00**	**206**	P	**P**	**18 42 06.6**	**+0.3**
	1.3nm,0.3s,baz=19,slow=9.0,SNR=25							
FITZ				S	**S**	**18 45 24.7**	**-11**
	2.5nm,0.3s,baz=180,slow=15,SNR=7.9							
CTA	**Charters Tower**	**22.36**	**149**	⇓*i*P	**P**	**18 42 45.1**	**+3.3**
	6.4nm,0.9s,mb4.0							
CTA	**Charters Tower**	**22.36**	**149**	P	**P**	**18 42 44.7**	**+2.9**
	6.7nm,0.8s,mb4.2,baz=339,slow=9.7,SNR=6.6							
CTAO	**Charters Tower**	**22.36**	**149**	*e*P	**P**	**18 42 44.8**	**+3.0**
	9.0nm,0.8s,mb4.2							
AS12	**Alice Springs**	**22.57**	**181**	⇓*i*P	**P**	**18 42 45.4**	**+1.4**
	20nm,1.0s,mb4.5							
ASAR	**Alice Springs**	**22.57**	**181**	P	**P**	**18 42 44.4**	**+0.4**
	1.3nm,0.5s,mb3.6,baz=0.5,slow=5.2,SNR=44							
STKA	**Stephens Creek**	**31.52**	**168**	*e*P	**P**	**18 44 06.3**	**-0.4**
	4.0nm,1.1s,mb4.2							
STKA	**Stephens Creek**	**31.52**	**168**	P	**P**	**18 44 05.5**	**-1.1**
	1.4nm,0.3s,mb4.2,baz=5.4,slow=11,SNR=9.0							
CMAR	**Chiang Mai Arr**	**39.69**	**301**	P	**P**	**18 45 17.2**	**+0.9**
	1.2nm,0.9s,mb3.6,baz=127,slow=7.5,SNR=10							
SONM	**Songino Array**	**54.31**	**337**	P	**P**	**18 47 11.2**	**+0.4**
	0.2nm,0.5s,mb3.3,baz=151,slow=7.7,SNR=4.7							
MKAR	**Makanchi Array**	**65.70**	**324**	P	**P**	**18 48 28.4**	**-0.7**
	2.5nm,0.7s,mb4.4,baz=115,slow=8.7,SNR=11							
BVAR	**Borovoye Array**	**75.34**	**326**	P	**P**	**18 49 27.3**	**-0.1**
	1.5nm,0.6s,mb4.1,baz=117,slow=6.6,SNR=5.8							
ZRNK	**Zerenda**	**76.09**	**326**	P	**P**	**18 49 31.2**	**-0.5**
VNDA	**Vanda**	**77.93**	**174**	P	**P**	**18 49 41.8**	**+0.2**
	0.4nm,0.6s,mb3.5,baz=300,slow=6.7,SNR=2.7							
ILAR	**Eielson Array**	**86.14**	**25**	P	**P**	**18 50 24.2**	**-0.2**
	0.9nm,0.7s,mb4.1,baz=249,slow=4.3,SNR=6.3							
ILAR	**Eielson Array**	**86.14**	**25**	P	**P**	**18 50 24.2**	**-0.2**
CPUP	**Villa Florida**	**150.66**	**158**	PKPbc	PKPdf	18 57 37.7	+5.7
	2.2nm,0.8s,baz=261,slow=5.2,SNR=3.6							
CPUP	**Villa Florida**	**150.66**	**158**	PKPbc	PKPdf	18 57 37.7	+5.7
LPAZ	**La Paz**	**152.06**	**129**	PKPbc	PKPdf	18 57 42.7	+8.4
	1.7nm,0.7s,baz=138,slow=2.1,SNR=8.8							
LPAZ	**La Paz**	**152.06**	**129**	PKPbc	PKPdf	18 57 42.7	+8.4

*BJI **29** 18:38:04.7,36.91N×51.04E,h10km,mB4.8,mb4.3,Ms4.4, Msz3.8*
*IDC **29** 18:38:04.7±0.6,36.53N×51.31E,mb4.0/19,mb1 4.2/21, mb1mx4.1/26,ML3.9/2,MS3.9/11,Ms1 3.9/11, ms1mx3.6/23,Error ellipse: s-maj=14.6km s-min=7.4km az=101.0*
*NEIC **29** 18:38:05.8±0.4,36.46N×51.32E,h10km,mb4.3/11,Error ellipse: s-maj=7.9km s-min=5.8km az=164.0*
*THR **29** 18:38:07.9±1.2,36.45N×51.39E,h2km±16km,ML4.6*
*MOS **29** 18:38:07.1±1.4,36.45N×51.28E,h33km,mb4.4/15,Error ellipse: s-maj=13.4km s-min=7.4km az=107.8*
*NNC **29** 18:38:17.8±1.9,37.49N×52.23E,Error ellipse: s-maj=33.4km s-min=17.2km az=96.0*
ISC 29 18:38:04.4±0.9,36.52N±0.04×51.36E±0.04,h11km±6km, h18km±3.8km:pP-P,n109,σ1§11/120,mb4.3/45,MS3.9/14, 7C-5D,Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THR	**Tehran**	**0.64**	**197**	Pg	**Pg**	**18 38 17.2**	**-0.3**
	213nm,0.3s,baz=355,slow=14,SNR=395						
THR				Lg		18 38 26.1	
	3μm,0.3s,baz=171,slow=6.8,SNR=209						
THR	**Tehran**	**0.64**	**197**	P	**Pb**	**18 38 17.2**	**-0.1**
THR				S	**Sb**	**18 38 26.1**	**+0.1**
THR				pmax	pmax		
	comp=Z,213nm,0.3s						
THR				smax			
	comp=N,3.0nm,0.3s						
THR	**Tehran**	**0.64**	**197**	Pg	**Pg**	**18 38 17.2**	**-0

KSH eXP 18 42 49.5
KSH AMB AMB
comp=Z,80nm,1.6s
KSH AMB AMB
comp=Z,260nm,3.4s
KSH LR LR
comp=N,260nm,7.6s
KSH LR LR
comp=E,260nm,9.8s
ARU Arti 20.50 11 *d iP* **P 18 42 43.4 -1.6**
ARU pmax pmax
comp=Z,42nm,0.8s
ARU Arti 20.50 11 *e*P **P 18 42 43.0 -1.9**
comp=Z,61nm,1.0s
ZRNK Zerenda 20.57 31 ⇑P **P 18 42 45.1 -0.7**
comp=Z,12nm,1.0s
ZRNK Zerenda 20.57 31 *e*P **P 18 42 44.7 -1.1**
MLR Muntele Rosu 21.10 303 P **P 18 42 50.9 -0.3**
comp=Z,0.5nm,0.5s,mb3.1,baz=156,slow=20,SNR=1.6
MLR Muntele Rosu 21.10 303 P **P 18 42 50.9 -0.3**
MLR pmax pmax
comp=Z,1.0nm,0.5s
OBN Obninsk 21.18 336 *ce*P **P 18 42 51.5 -0.5**
OBN *e**PP 18 43 09.7
OBN *e*S **S 18 46 40.3 -2.2**
OBN pmax pmax
comp=Z,41nm,1.8s,mb4.5
OBN MLR MLR
comp=Z,200nm,20.0s,MS3.5
BRVK Borovoye 21.19 33 *e*P **P 18 42 52.0 -0.1**
BVA0 Borovoye Array 21.21 33 P **P 18 42 52.2 -0.1**
comp=Z,3.7nm,1.0s,mb3.7,baz=220,slow=9.0,SNR=76
BVAR Borovoye Array 21.21 33 P **P 18 42 52.2 -0.1**
comp=Z,12nm,0.7s,mb4.3,baz=221,slow=9.4,SNR=73
VOSK Vostochnaya 21.27 34 ⇑P **P 18 42 52.3 -0.6**
comp=Z,18nm,0.8s,mb4.4
MOS Moscow 21.37 338 *e*P **P 18 42 54.1 +0.2**
MOS *e* 18 43 22.6
MOS *e*S **S 18 46 38.5 -7.6**
MOS *e*SS SS 18 47 22.0 +1.3
MOS pmax pmax
comp=Z,79nm,0.8s,mb5.1
IDI Anoyia 21.46 275 P **P 18 42 55.1 +0.1**
comp=Z,6.5nm,0.7s,mb4.1,baz=32,slow=11,SNR=6.4
KURK Kurchatov 24.13 45 P **P 18 43 23.8 +2.7**
comp=Z,29nm,1.2s,mb4.6,baz=253,slow=6.5,SNR=24
KURK Kurchatov 24.13 45 *e*P **P 18 43 23.9 +2.9**
MK31 Makanchi Array 25.14 56 P **P 18 43 32.3 +1.5**
comp=Z,12nm,1.0s,mb4.4,baz=245,slow=6.2,SNR=41
MKAR Makanchi Array 25.14 56 P **P 18 43 32.4 +1.5**
comp=Z,11nm,1.0s,mb4.3,baz=252,slow=7.7,SNR=31
MKAR LR LR 18 55 12.6
comp=Z,318nm,18.4s,MS3.9,baz=274,slow=41
MKAR Makanchi Array 25.14 56 P **P 18 43 32.4 +1.6**
MKAR pmax pmax
comp=Z,11nm,1.0s
MKAR MLR MLR
comp=Z,319nm,18.4s
SUW Suwalki 26.18 321 *e*P **P 18 43 40.7 +0.2**
OJC Ojcow 26.49 311 *e*P **P 18 43 44.6 +1.2**
NVS Novosibirsk 28.47 40 *e*P **P 18 43 59.7 -1.7**
NVS pmax pmax
comp=N,13nm,1.6s
NVS pmax pmax
comp=Z,12nm,1.6s,mb4.3
KOLN Koldanda 28.55 99 *e*P **P 18 44 02.1 -0.3**
comp=Z,34nm,1.4s,mb4.9
ZAL Zalesovo 28.91 42 P **P 18 44 05.4 +0.1**
comp=Z,1.9nm,0.7s,mb3.9,baz=120,slow=8.6,SNR=10
ZAL LR LR 18 57 15.9
comp=Z,86nm,20.7s,MS3.3,baz=153,slow=40
ZAL Zalesovo 28.91 42 P **P 18 44 05.4 0.0**
ZAL pmax pmax
comp=Z,2.0nm,0.7s
ZAL MLR MLR
comp=Z,86nm,20.7s
GKN Gorkha 29.28 97 *e*P **P 18 44 09.4 +0.4**
comp=Z,42nm,1.4s,mb5.0
FINES FINESS Array B 29.58 335 P **P 18 44 10.4 -0.9**
comp=Z,1.5nm,0.9s,mb3.7,baz=117,slow=6.2,SNR=5.9
FINES LR LR 18 58 33.3
comp=Z,144nm,19.9s,MS3.6,baz=265,slow=42
FINES FINESS Array B 29.58 335 P **P 18 44 10.4 -0.9**
FINES pmax pmax
comp=Z,2.0nm,0.9s
FINES MLR MLR
comp=Z,144nm,19.9s
DMN Daman 29.82 98 *e*P **P 18 44 12.3 -1.5**
comp=Z,52nm,1.5s,mb5.0
KKN Kakani 29.89 97 *e*P **P 18 44 14.7 +0.3**
comp=Z,33nm,1.5s,mb4.8
GERES GERESS Array B 29.99 306 P **P 18 44 15.8 +0.7**
comp=Z,1.5nm,0.8s,mb3.8,baz=106,slow=9.7,SNR=14
GERES GERESS Array B 29.99 306 P **P 18 44 15.8 +0.7**
GERES pmax pmax
comp=Z,2.0nm,0.8s
PKI Pulchoki 30.08 97 *e*P **P 18 44 15.8 -0.3**
CLL Collm 30.93 311 P **P 18 44 24.9 +1.5**
comp=Z,logA/T=0.7,mb4.3
CLL *i **PP pP 18 44 28.7 +2.2
CLL *i *SP sP 18 44 34.8 +7.0
CLL Collm 30.93 311 *i* P **P 18 44 24.9 +1.5**
CLL pmax pmax
comp=Z,4.0nm,0.8s,mb4.3
CLL Collm 30.93 311 *i* P **P 18 44 24.9 +1.5**
comp=Z,4.0nm,0.8s,mb4.3
CLL *i* pP 18 44 28.7 +2.2
DAVOX Davos 32.31 302 P **P 18 44 35.3 -0.2**
comp=Z,3.3nm,0.7s,mb4.3,baz=122,slow=10,SNR=4.1
PGF Pioggiola 32.96 294 *e*P **P 18 44 40.5 -0.7**
HFS Hagfors 33.68 327 P **P 18 44 47.3 0.0**
comp=Z,3.3nm,0.7s,mb4.4,baz=135,slow=8.4,SNR=9.4
HFS Hagfors 33.68 327 P **P 18 44 47.3 0.0**
HFS pmax pmax
comp=Z,3.0nm,0.7s
LPG La Plagne 34.46 299 *e*P **P 18 44 53.9 -0.2**
comp=Z,5.7nm,0.8s,mb4.3
MBDF Montbardon 34.46 298 *e*P **P 18 44 52.8 -1.4**
comp=Z,5.9nm,0.6s,mb4.4
LPL La Plagne 34.47 299 *e*P **P 18 44 53.8 -0.5**
FRF La Foret Royal 34.61 296 *e*P **P 18 44 54.1 -1.4**
comp=Z,8.0nm,0.9s,mb4.3
CABF La Chapelle 34.91 301 *e*P **P 18 44 58.1 +0.1**
comp=Z,26nm,1.0s,mb4.8
NB2 NORSAR Subarra 35.18 327 P **P 18 44 59.7 -0.5**
comp=Z,2.9nm,0.9s,mb4.2,baz=113,slow=8.6
NOA NORSAR Array B 35.18 327 P **P 18 45 00.1 -0.1**
comp=Z,1.7nm,0.8s,mb4.0,baz=118,slow=8.2,SNR=6.5
NOA NORSAR Array B 35.18 327 P **P 18 45 00.1 -0.1**
NOA pmax pmax
comp=Z,2.0nm,0.8s
ARCES ARCESS Array B 35.94 345 P **P 18 45 05.1 -1.4**
comp=Z,0.9nm,0.8s,mb3.8,baz=150,slow=7.3,SNR=3.1
ARCES ARCESS Array B 35.94 345 P **P 18 45 05.1 -1.4**
ARCES pmax pmax
comp=Z,1.0nm,0.8s
BAIF Baives 36.28 307 *e*P **P 18 45 10.8 +1.2**
comp=Z,6.8nm,0.8s,mb4.3
LOR Lormes 36.44 302 *e*P **P 18 45 10.2 -0.8**
AVF Avril sur Loir 36.79 301 *e*P **P 18 45 13.5 -0.4**
comp=Z,3.2nm,0.6s,mb4.0
GTA Gaotai 37.95 71 *e*P **P 18 45 25.8 +2.1**
GTA AP pP 18 45 30.8 +3.9
GTA XP sP 18 45 33.3 +5.1
GTA AMB AMB
comp=Z,2.0nm,1.3s,mb3.7
LDF La Druitiere 39.09 305 *e*P **P 18 45 32.7 -0.5**
ZAK Zakamensk 39.35 53 *e*P **P 18 45 34.9 -0.5**
ZAK *e* 18 47 07.3
GRR Gorron 39.59 304 *e*P **P 18 45 36.1 -1.2**
comp=Z,8.4nm,0.9s,mb4.2
TLY Talaya 39.60 51 *e*P **P 18 45 43.2 +5.8**
TLY pmax pmax
comp=Z,50nm,1.4s,mb5.0
TLY MLR MLR
comp=Z,2μm,16.0s,MS5.0
KMBO Kilima Mbogo 39.69 202 LR LR 19 02 49.7
comp=Z,187nm,18.0s,MS4.0,baz=92,slow=37
EKA Eskdalemuir Ar 41.11 315 P **P 18 45 50.5 +0.7**
comp=Z,1.8nm,0.9s,mb3.7,baz=114,slow=8.6,SNR=4.0
EKA Eskdalemuir Ar 41.11 315 P **P 18 45 50.5 +0.7**
EKA pmax pmax
comp=Z,2.0nm,0.9s
SONM Songino Array 41.50 56 P **P 18 45 53.5 +0.5**
comp=Z,0.7nm,1.1s,mb3.2,baz=278,slow=8.7,SNR=3.6
ESDC Sonseca Array 43.07 292 P **P 18 46 04.5 -1.5**
comp=Z,1.0nm,0.6s,mb3.7,baz=66,slow=7.6,SNR=5.0
SPITS Spitsbergen Ar 44.28 350 P **P 18 46 16.0 +0.6**
comp=Z,12nm,1.1s,mb4.5,baz=202,slow=11,SNR=3.4
CMAR Chiang Mai Arr 45.39 100 P **P 18 46 24.9 -0.2**
comp=Z,1.9nm,1.0s,mb3.9,baz=298,slow=7.9,SNR=9.9
CMAR LR LR 19 10 29.5
comp=Z,75nm,18.8s,MS3.6,baz=277,slow=43
CMAR Chiang Mai Arr 45.39 100 P **P 18 46 24.9 -0.1**
CMAR pmax pmax
comp=Z,2.0nm,1.0s
CMAR MLR MLR
comp=Z,75nm,18.8s
BOD Bodaibo 45.68 42 *e*P **P 18 46 26.4 -0.3**
XAN Xi'an 46.45 75 P **P 18 46 33.5 +0.3**
XAN AP pP 18 46 38.5 +2.1
XAN AMB AMB
comp=Z,7.0nm,1.5s,mb4.4
TIXI Tiksi 51.88 23 ⇑*e*P **P 18 47 14.9 +0.3**
TIXI pmax pmax
comp=Z,9.0nm,1.4s,mb4.5
YAK Yakutsk 53.17 35 *e*P **P 18 47 26.9 +2.6**
YAK pmax pmax
comp=Z,5.0nm,0.7s,mb4.5
NJ2 Nanjing 54.91 73 *e*P **P 18 47 40.0 +2.4**
NJ2 AP pP 18 47 50.0 +9.2
NJ2 PP PP 18 49 44.0 +1.9
NJ2 S **S 18 55 15.0 -2.2**
NJ2 XS 18 55 33.0
NJ2 SS SS 18 58 59.0 -1.6
NJ2 AMB AMB
comp=Z,260nm,6.0s
NJ2 LR LR
comp=N,260nm,16.6s,MS4.5
NJ2 LR LR
comp=E,200nm,17.8s,MS4.5
NJ2 LR LR
comp=Z,160nm,14.2s,MS4.2
SSE Sheshan 57.12 73 P **P 18 47 55.8 +2.3**
SSE XP sP 18 48 09.0 +11
SSE S **S 18 55 46.5 -0.1**
SSE XS 18 56 00.5
SSE AMB AMB
comp=Z,21nm,0.7s,mb5.3
SSE AMB AMB
comp=Z,34nm,8.0s
SSE LR LR
comp=N,31nm,23.1s,MS3.5
SSE LR LR
comp=E,32nm,23.0s,MS3.5
SSE LR LR
comp=Z,33nm,18.2s,MS3.5
DBIC Dimbokro 59.12 254 P **P 18 48 05.0 -2.7**
comp=Z,2.7nm,0.7s,mb4.4,baz=300,slow=15,SNR=4.2
DBIC LR LR 19 16 53.9
comp=Z,138nm,18.8s,MS4.1,baz=28,slow=39
DBIC Dimbokro 59.12 254 P **P 18 48 05.0 -2.6**
DBIC pmax pmax
comp=Z,3.0nm,0.7s
DBIC MLR MLR
comp=Z,138nm,18.8s
DBIC Dimbokro 59.12 254 P **P 18 48 05.0 -2.7**
DBIC LR LR 19 16 53.9
BILL Bilibino 65.08 22 *c iP* **P 18 48 47.5 +0.9**
BILL pmax pmax
comp=Z,10.0nm,1.1s,mb4.8
BILL MLR MLR
comp=Z,100nm,16.0s,MS4.1
COLA College 77.81 8 *de*P **P 18 50 03.6 +0.7**
ILAR Eielson Array 78.02 8 P **P 18 50 04.7 +0.7**
comp=Z,1.6nm,0.8s,mb4.0,baz=329,slow=3.8,SNR=15
ILAR LR LR 19 28 58.1
comp=Z,55nm,19.6s,MS3.9,baz=190,slow=39
ILAR Eielson Array 78.02 8 P **P 18 50 04.7 +0.7**
ILAR pmax pmax
comp=Z,2.0nm,0.8s
ILAR MLR MLR
comp=Z,55nm,19.7s
YKA Yellowknife Ar 80.68 353 P **P 18 50 18.9 +0.5**
comp=Z,0.8nm,0.9s,mb3.6,baz=5.0,slow=6.7,SNR=15
YKA LR LR 19 32 04.4
comp=Z,51nm,18.6s,MS3.9,baz=285,slow=40
YKA Yellowknife Ar 80.68 353 P **P 18 50 18.9 +0.5**
YKA pmax pmax
comp=Z,1.0nm,0.9s
YKA MLR MLR
comp=Z,51nm,18.6s
PDAR Pinedale Array 99.19 346 LR LR 19 39 18.1
comp=Z,54nm,20.3s,MS4.0,baz=248,slow=37

IDC ***29*** *18:42:42.6±1.1,36.45N×51.50E,mb3.8/4,mb1 3.9/5, mb1mx3.6/20,ML3.2/1,Error ellipse: s-maj=27.4km s-min=9.0km az=123.0*
NEIC ***29*** *18:42:43.5±0.6,36.45N×51.44E,h10km,mb4.0/2,Error ellipse: s-maj=11.7km s-min=8.2km az=140.0*
THR ***29*** *18:42:45.1±1.2,36.44N×51.42E,ML3.8*
ISC 29 18:42:42.1±1.4**,36.49N**±0.08×**51.43E**±0.06**,h12**km±11km**,**
n15,σ0°93/18,mb3.7/4,Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
THR	**Tehran**	**0.63**	**203**	Pg		**Pg**	**18 42 54.5**	**-0.2**
	104nm,0.3s,baz=358,slow=12,SNR=43							
THR				Lg			18 43 03.4	
	661nm,0.3s,baz=176,slow=7.3,SNR=179							
THKV	**Tehran--Karaj**	**0.72**	**218**	*e*PG		**Pg**	**18 42 56.3**	**-0.4**
THKV				*e*SG		**Sg**	**18 43 06.3**	**0.0**
THKV				AMP			18 43 08.2	
	comp=N,9μm,0.7s							
DAMV	**Damavand**	**0.96**	**153**	*e*PG		**Pg**	**18 43 01.9**	**+0.6**
DAMV				*e*SG		**Sg**	**18 43 13.9**	**-0.4**
DAMV				AMP			18 43 21.4	
	comp=N,2μm,0.5s							
SNGE	**Sanandaj**	**3.60**	**248**	*e*PN		**Pn**	**18 43 40.2**	**+1.3**
SNGE				SN		**Sn**	**18 44 21.0**	**-0.8**
BRTR	**Keskin Array B**	**14.37**	**288**	Pn		**P**	**18 46 07.9**	**+0.5**
	comp=N,0.1nm,0.3s,baz=227,slow=46,SNR=2.3							
AAK	**Ala-Archa**	**18.79**	**64**	P		**P**	**18 47 03.8**	**+0.3**
	comp=N,3.2nm,0.8s							
ARU	**Arti**	**20.52**	**11**	*e*P		**P**	**18 47 20.8**	**-2.0**
	comp=N,13nm,0.7s							
ZRNK	**Zerenda**	**20.57**	**31**	*e*P		**P**	**18 47 22.0**	**-1.2**
MLR	**Muntele Rosu**	**21.16**	**303**	P		**P**	**18 47 30.5**	**+1.1**
	comp=N,1.2nm,0.5s,mb3.5,baz=92,slow=23,SNR=2.9							
BRVK	**Borovoye**	**21.19**	**33**	*e*P		**P**	**18 47 29.0**	**-0.6**
BVAR	**Borovoye Array**	**21.22**	**33**	P		**P**	**18 47 29.2**	**-0.7**
	comp=N,3.5nm,0.6s,mb3.9,baz=220,slow=12,SNR=9.6							
KURK	**Kurchatov**	**24.12**	**45**	*e*P		**P**	**18 48 00.6**	**+2.2**
MKAR	**Makanchi Array**	**25.11**	**56**	P		**P**	**18 48 09.2**	**+1.1**
	comp=N,4.9nm,1.0s,mb4.0,baz=248,slow=6.5,SNR=12							
SUW	**Suwalki**		**26.24**	**321**	*e*P	**P**	**18 48 18.1**	**-0.4**
CMAR	**Chiang Mai Arr**	**45.34**	**100**	P		**P**	**18 51 01.9**	**-0.1**
	comp=N,0.6nm,0.8s,mb3.5,baz=304,slow=7.9,SNR=5.3							

JMA ***29*** *19:06:46.7±0.3,24.79N×123.14E,h29km,M2.3*
TAP ***29*** *19:07:01.5,24.61N×122.13E,h18km,ML1.6*
ISC 29 19:06:45.4±2.2**,24.9N**±0.1×**123.12E**±0.08**,h22**km±20km**,**
n6,σ0°53/12,Southwestern Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
YOJ	**Yonaguni jima**	**0.42**	**194**	P		**Pb**	**19 06 54.5**	**+0.5**
YOJ				S		**Sb**	**19 06 59.9**	**0.0**
IRIF	**Iriomote-Funau**	**0.77**	**134**	P		**Pb**	**19 06 59.7**	**-0.2**
IRIF				S		**Sb**	**19 07 09.6**	**-0.3**
HATJ	**Hateruma jima**	**1.02**	**142**	P		**Pb**	**19 07 04.3**	**+0.1**
HATJ				S		**Sb**	**19 07 17.1**	**-0.1**
JKRS	**Kuro-shima**	**1.02**	**128**	P		**Pb**	**19 07 03.9**	**-0.4**
JKRS				S		**Sb**	**19 07 17.1**	**-0.2**
JIJ	**Ishigaki jima**	**1.06**	**118**	P		**Pb**	**19 07 04.0**	**-0.9**
JIJ				S		**Sb**	**19 07 19.6**	**+1.4**
JTJ	**Tarama**	**1.46**	**99**	P		**Pn**	**19 07 11.2**	**+0.5**
JTJ				S		**Sn**	**19 07 29.0**	**-0.3**

THR 29 19:58:19.7±1.4**,36.47N**×**51.46E,ML3.5,Northern and central Iran**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
THKV	**Tehran--Karaj**	**0.72**	**221**	*e*PG		Pg	19 58 31.6	-2.5
THKV				*e*SG		Sg	19 58 42.2	-1.5
THKV				AMP			19 58 42.9	
	comp=N,2μm,0.3s							

DAMV Damavand 0.93 153 *e*PG Pg 19 58 36.3 -2.0
DAMV *e*SG Sg 19 58 49.0 -1.7
SNGE Sanandaj 3.61 249 *e*PN Pn 19 59 15.8 -2.3

IDC ***29*** *20:14:15.6±0.8,72.50N×4.12E,mb3.6/7,mb1 3.8/13, mb1mx3.7/27,ML3.4/6,MS3.5/16,Ms1 3.5/16, ms1mx3.4/32,Error ellipse: s-maj=22.7km s-min=12.9km az=45.0*
NEIC ***29*** *20:14:16.8±0.5,72.66N×4.42E,h10km,mb4.4/1,Error ellipse: s-maj=11.1km s-min=7.3km az=67.0*
NAO ***29*** *20:14:20.2±4.9,72.86N×5.49E,ML2.8*
BER ***29*** *20:14:25.1±2.5,72.53N×5.62E,h10km,MD3.2,ML2.4, ML2.8(NAO)*
ISC 29 20:14:15.4±2.9**,72.64N**±0.05×**4.9E**±0.2**,h15**km±24km**,n40,**
σ1°29/34,mb3.6/8,MS3.5/13,Norwegian Sea

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
JMIC	**Jan Mayen**	**4.51**	**255**	Pn		**Pn**	**20 15 21.2**	**-3.6**
	1.5nm,0.3s,baz=351,slow=11,SNR=4.6							
LOF	**Lofoten**	**5.38**	**143**	*e*P		**Pn**	**20 15 41.3**	**+4.1**
LOF				*e*S		**Sn**	**20 16 35.4**	**-4.2**
LOF				AML		AML	20 16 45.2	
	comp=Z,7.6nm,0.6s							
LOF				*e*			20 20 29.1	
TRO	**Tromso**	**5.46**	**117**	*e*P		**Pn**	**20 15 39.9**	**+1.6**
SPB4	**Spitsbergen Ar**	**6.26**	**22**	*e*P		**Pn**	**20 15 48.1**	**-1.5**
SPA0	**Spitsbergen Ar**	**6.26**	**22**	Pn		**Pn**	**20 15 49.0**	**-0.6**
	baz=215,slow=14							
SPITS	**Spitsbergen Ar**	**6.26**	**22**	Pn		**Pn**	**20 15 50.0**	**+0.4**
	comp=Z,1.7nm,0.3s,baz=204,slow=13,SNR=41							
KBS	**Kingsbay**	**6.55**	**12**	*e*P		**Pn**	**20 15 50.7**	**-3.0**
KTK1	**Kautokeino**	**7.04**	**112**	*e*P		**Pn**	**20 16 03.4**	**+2.9**
MOR8	**Moi Rana**	**7.31**	**148**	*e*P		**Pn**	**20 16 04.5**	**+0.2**
MOR8				*e*S		**Sn**	**20 17 18.7**	**-9.1**
MOR8				AML		AML	20 17 26.5	
	comp=Z,6.0nm,0.5s							
ARA0	**ARCESS Array S**	**7.37**	**105**	Pn		**Pn**	**20 16 05.7**	**+0.6**
	baz=300,slow=12							
ARA0				Sn		**Sn**	**20 17 26.3**	**-3.0**
	baz=304,slow=22							
ARCES	**ARCESS Array B**	**7.37**	**105**	Pn		**Pn**	**20 16 05.7**	**+0.5**
	comp=Z,0.6nm,0.3s,baz=306,slow=11,SNR=40							
ARCES				LR		LR	20 19 13.4	
	comp=Z,219nm,21.8s,baz=333,slow=39							
ARE0	**ARCESS Array S**	**7.37**	**105**	*e*P		**Pn**	**20 16 06.1**	**+1.0**
NSS	**Namsos**	**8.54**	**159**	*e*P		**P**	**20 16 20.7**	**-0.8**
NSS				*e*S		**Sn**	**20 17 50.2**	**-8.3**
NSS				AML		AML	20 18 01.4	
	comp=Z,5.6nm,0.6s							
MOL	**Molde**	**10.17**	**173**	*e*P		**P**	**20 16 44.6**	**+0.9**
NOA	**NORSAR Array B**	**11.90**	**165**	Pn		**P**	**20 17 07.5**	**0.0**
	comp=Z,0.2nm,0.3s,baz=351,slow=13,SNR=3.7							
NOA				LR		LR	20 21 41.0	
	comp=Z,122nm,19.2s,baz=335,slow=38							
NAO01	**NORSAR Array S**	**12.07**	**166**	*e*P		**P**	**20 17 07.3**	**-2.4**
HFS	**Hagfors**	**13.02**	**160**	Pn		**P**	**20 17 22.1**	**-0.2**
	baz=353,slow=16							
HFS	**Hagfors**	**13.02**	**160**	Pn		**P**	**20 17 22.4**	**+0.1**
	comp=Z,0.1nm,0.3s,baz=351,slow=14,SNR=17							
JOF	**Joensuu**	**13.80**	**121**	*e*p		**P**	**20 17 31.8**	**-0.6**
	comp=Z,2.0nm,0.7s							
FIA0	**FINESS Array S**	**13.83**	**133**	Pn		**P**	**20 17 33.4**	**+0.6**
	baz=338,slow=14							
FINES	**FINESS Array B**	**13.83**	**133**	Pn		**P**	**20 17 33.5**	**+0.8**
	comp=Z,0.2nm,0.3s,baz=340,slow=11,SNR=12							
FINES				LR		LR	20 22 35.4	
	comp=Z,309nm,18.9s,baz=160,slow=36							
GERES	**GERESS Array B**	**24.21**	**166**	P		**P**	**20 19 36.0**	**+4.2**
	comp=Z,1.3nm,0.8s,mb3.4,slow=9.8,SNR=14							
FRB	**Frobisher Bay**	**26.82**	**289**	LR		LR	20 29 27.3	
	comp=Z,74nm,19.2s,MS3.3,baz=352,slow=34							
MLR	**Muntele Rosu**	**28.95**	**148**	LR		LR	20 32 07.3	
	comp=Z,229nm,18.6s,MS3.8,baz=186,slow=37							
BVAR	**Borovoye Array**	**33.35**	**90**	P		**P**	**20 20 57.8**	**+3.3**
	comp=Z,0.5nm,0.7s,mb3.6,baz=346,slow=5.9,SNR=4.0							
BVAR				LR		LR	20 35 30.1	
	comp=Z,66nm,21.9s,MS3.3,baz=275,slow=38							
SCHQ	**Schefferville**	**33.64**	**277**	LR		LR	20 32 49.4	
	comp=Z,113nm,21.0s,MS3.6,baz=58,slow=33							
BRTR	**Keskin Array B**	**35.89**	**141**	P		**P**	**20 21 17.6**	**+1.3**
	comp=Z,0.8nm,0.8s,mb3.7,baz=338,slow=6.7,SNR=5.1							
BRTR				LR		LR	20 36 58.1	
	comp=Z,51nm,19.1s,MS3.3,baz=240,slow=38							
INK	**Inuvik**	**36.67**	**336**	P		**P**	**20 21 22.8**	**+0.2**
	comp=Z,3.0nm,1.2s,mb4.0,baz=345,slow=5.6,SNR=3.9							
ZAL	**Zalesovo**	**36.84**	**76**	LR		LR	20 38 57.9	
	comp=Z,80nm,21.2s,MS3.5,baz=54,slow=40							
YKA	**Yellowknife Ar**	**39.08**	**320**	P		**P**	**20 21 42.9**	**0.0**
	comp=Z,0.2nm,0.6s,mb3.0,baz=18,slow=9.0,SNR=4.6							
YKA				PcP		PcP	20 23 52.8	-0.5
	comp=Z,0.4nm,0.6s,baz=18,slow=3.1,SNR=10							
YKA				LR		LR	20 37 30.2	
	comp=Z,104nm,19.2s,MS3.7,baz=15,slow=36							
YKA	**Yellowknife Ar**	**39.08**	**320**	P		**P**	**20 21 42.9**	**0.0**
YKA				PcP		PcP	20 23 52.8	-0.5
YKA				LR		LR	20 37 30.2	
ILAR	**Eielson Array**	**41.54**	**342**	P		**P**	**20 22 05.0**	**+2.1**
	comp=Z,0.8nm,0.7s,mb3.5,baz=6.1,slow=6.5,SNR=12							
ILAR				PcP		PcP	20 24 00.8	-0.1
	comp=Z,0.2nm,0.6s,baz=335,slow=3.7,SNR=4.8							
MKAR	**Makanchi Array**	**42.44**	**84**	LR		LR	20 42 40.7	
	comp=Z,56nm,18.3s,MS3.5,baz=305,slow=40							
THR	**Tehran**	**43.49**	**122**	LR		LR	20 42 48.2	
	comp=Z,29nm,18.3s,MS3.2,baz=27,slow=39							
ASF	**Jabal al Asfar**	**43.84**	**140**	LR		LR	20 42 36.7	
	comp=Z,55nm,20.2s,MS3.5,baz=32,slow=39							
EIL	**Elat**	**45.90**	**143**	LR		LR	20 43 28.7	
	comp=Z,38nm,18.3s,MS3.4,baz=125,slow=38							
ULM	**Lac du Bonnet**	**45.94**	**299**	LR		LR	20 41 48.3	
	comp=Z,154nm,18.2s,MS4.0,baz=32,slow=36							
BOZ	**Bozeman (W)**	**54.14**	**309**	*e*P		**P**	**20 23 41.2**	**-0.2**
	comp=Z,4.0nm,1.1s,mb4.3							
PDAR	**Pinedale Array**	**56.37**	**306**	LR		LR	20 47 16.8	
	comp=Z,55nm,18.0s,MS3.7,baz=241,slow=35							
TXAR	**Lajitas Array**	**67.57**	**296**	P		**P**	**20 25 13.0**	**+0.1**
	comp=Z,0.2nm,0.5s,mb3.4,baz=35,slow=5.6,SNR=3.8							

NNC ***29*** *20:39:41.5±0.5,36.98N×70.16E,mpv3.5,Error ellipse: s-maj=30.0km s-min=5.6km az=93.0*
ISC 29 20:39:40.6±1.7**,36.8N**±0.2×**72.0E**±0.4**,h200**km**,n7,**
σ0°71/8,Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
KK31	**Karatay Array**	**6.35**	**350**	P		**P**	**20 41 13.2**	**+0.1**
	1.9nm,0.4s,baz=183,slow=13,SNR=48							
KK31				S		**S**	**20 42 25.2**	**0.0**
	0.5nm,0.3s,baz=183,slow=24,SNR=4.8							
DANN	**Dangsing**	**13.06**	**127**	*e*P		**P**	**20 42 44.6**	**+4.9**
KOLN	**Koldanda**	**13.37**	**129**	*e*P		**P**	**20 42 43.9**	**+0.4**
	2.5nm,0.3s							
GKN	**Gorkha**	**13.86**	**126**	*e*P		**P**	**20 42 51.0**	**+1.3**
	9.2nm,0.5s							
KKN	**Kakani**	**14.43**	**125**	*e*P		**P**	**20 42 56.3**	**-0.5**
DMN	**Daman**	**14.44**	**126**	*e*P		**P**	**20 42 55.6**	**-1.3**
	6.8nm,0.6s							
AB31	**Akbulak array**	**15.17**	**329**	Pn		**P**	**20 43 05.7**	**-0.1**
	0.2nm,0.3s,baz=158,slow=10,SNR=6.2							

IDC 29 20:49:27.7±3.9**,2.00S×102.29E,mb3.5/4,mb1 3.6/4, mb1mx3.4/16,Error ellipse: s-maj=170.0km s-min=23.3km az=56.0,Southern Sumatera**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
WRA	**Warramunga Arr**	**36.04**	**122**	P		P	20 56 30.9	-2.1
	0.3nm,0.7s,baz=316,slow=11,SNR=3.0							
ASAR	**Alice Springs**	**37.42**	**128**	P		P	20 56 42.9	-1.7
	0.4nm,0.7s,baz=306,slow=7.8,SNR=5.8							
SONM	**Songino Array**	**49.76**	**4**	P		P	20 58 23.5	-0.5
	0.3nm,0.4s,baz=182,slow=11,SNR=5.7							
MKAR	**Makanchi Array**	**51.68**	**343**	P		P	20 58 35.3	-3.2
	0.4nm,0.4s,baz=154,slow=8.9,SNR=10							

NIED ***29*** *20:56:00,34.10N×141.90E,h5km,Mw6.2 Best double couple: M0 2.24×10^18 NP1:φs 39°,δ73°,λ109°. NP2:φs 169°, δ25°,λ43°.*
IGIL ***29*** *20:56:04.4,34.30N×141.33E,h2km,MS6.8*
JMA ***29*** *20:56:06.0±0.6,34.11N×141.86E,h23km±3km,M6.7*

JMA Felt I J1.

IDC ***29*** *20:56:06.6±0.4,34.21N×141.64E,mb5.1/28,mb1 5.1/32, mb1mx5.1/33,ML4.4/4,MS6.5/25,Ms1 6.6/25, ms1mx6.4/37,Error ellipse: s-maj=11.1km s-min=8.3km az=111.0*

BJI ***29*** *20:56:06.8,34.26N×141.49E,h22km,mB5.8,mb5.3, Ms6.9,Msz6.7*

NEIC ***29*** *20:56:09.6±0.1,34.25N×141.41E,h16km,mb5.6/134, ME6.3,MS6.6/106,MW6.5,Error ellipse: s-maj=4.3km s-min=3.4km az=170.0 Broadband fault plane solution: P waves. NP1:φs5°,δ85°,λ90°. NP2:φs185°,δ5°,λ90°. Principal axes: T Plg50°, Azm275°; N Plg0°, Azm0°; P Plg40°, Azm95°; Moment Tensor Solution. s50 Moment tensor: Scale 10¹⁸ Nm; Mrr-0.87; Mθθ-0.24; Mφφ 1.11; Mrθ 1.18; Mθφ-1.83; Mφr 6.50; Best double couple: M₀6.9×10¹⁸ NP1:φs289°,δ17°,λ-169°. NP2:φs188°,δ87°, λ-74°. Principal axes: T 6.75, Plg40°, Azm263°; N .34, Plg16°, Azm7°; P -7.09, Plg46°, Azm115°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism.*

NEIC Felt along the coast of eastern Honshu. Recorded [1 JMA] in Chiba, Kanagawa, Miyagi and Shizuoka Prefectures.

HRVD ***29*** *20:56:09.6±0.1,34.20N×141.87E,h12km,MW6.3/73, Centroid moment Tensor Solution. LP body waves: s73,c184;Mantle waves: s69,c117; Half duration: 3s2 Moment tensor: Scale 10¹⁸Nm; Mrr1.66±.01; Mθθ0.06±.02; Mφφ-1.72±.01; Mrθ0.37±.07; Mθφ-0.17±.01; Mφr2.65±.08; Best double couple: M₀3.17×10¹⁸ NP1:φs183°,δ16°,λ86°. NP2:φs8°,δ74°,λ91°. Principal axes: T 3.13, Plg61°, Azm279°; N .07, Plg1°, Azm187°; P -3.21, Plg29°, Azm97°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to mantle waves, cutoff=125s.*

MOS ***29*** *20:56:11.8±1.1,34.48N×141.40E,h33km,mb5.7/56, MS6.7/55 Error ellipse: s-maj=7.5km s-min=4.6km az=101.0*

DUSS ***29*** *20:56:17.5±0.3,35.91N×140.81E,h15km,MS8.1*

ISC 29 20:56:10.9±0.4,34.17N±0.02×141.43E±0.02,h35km±2km, h29km±2.1km:pP-P,n823,σ1§14/796,mb5.5/192,MS6.7/173, 140C-37D,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BSO1	**Boso 1**	**0.61**	**322**	⇑P	**P**	**20 56 22.8**	**-0.1**
BSO3	**Boso 3**	**0.98**	**310**	⇑P	**P**	**20 56 29.2**	**+0.9**
BSO4	**Boso 4**	**1.21**	**312**	⇑P	**P**	**20 56 32.8**	**+1.2**
BSO4				S	**S**	**20 56 53.6**	**+6.5**
KTR	**Katsuura**	**1.34**	**317**	P	**P**	**20 56 34.6**	**+1.2**
TATJ	**Tateyama 2**	**1.53**	**304**	P	**P**	**20 56 37.7**	**+1.5**
TATJ				S	**S**	**20 57 03.9**	**+8.8**
JMY	**Miyake jima 2**	**1.59**	**267**	P	**P**	**20 56 38.5**	**+1.5**
CHOJ	**Chosi**	**1.60**	**343**	⇑P	**P**	**20 56 37.6**	**+0.5**
CHOJ				S	**S**	**20 56 57.2**	**+0.5**
JHJ2	**Mitsune**	**1.71**	**232**	P	**P**	**20 56 40.0**	**+1.2**
JHJ2				S	**S**	**20 57 05.1**	**+5.5**
JHJ	**Hachijo jima 2**	**1.73**	**233**	Pn	**P**	**20 56 40.1**	**+1.2**
	936nm,0.3s,baz=67,slow=5.5,SNR=178						
JHJ				Sn	**S**	**20 57 05.9**	**+5.8**
	4μm,0.3s,baz=257,slow=22,SNR=12						
JIM2	**Oshima 3**	**1.74**	**289**	P	**P**	**20 56 39.5**	**+0.4**
JIZS	**Izushimoda**	**2.18**	**285**	⇑P	**P**	**20 56 46.8**	**+1.4**
JOD2	**Odawara 2**	**2.21**	**300**	⇑P	**P**	**20 56 46.7**	**+0.8**
JHO	**Hitachi**	**2.53**	**344**	⇑P	**P**	**20 56 47.8**	**-2.7**
JYN	**Shimob**	**2.72**	**300**	⇑P	**P**	**20 56 54.5**	**+1.4**
JYN				S	**S**	**20 57 32.6**	**+7.5**
JAG	**Ashikaga**	**2.77**	**325**	⇑P	**P**	**20 56 53.5**	**-0.4**
JRY	**Ryogami san**	**2.77**	**312**	⇑P	**P**	**20 56 54.7**	**+0.8**
JRY				S	**S**	**20 57 33.5**	**+7.0**
SHZ3	**Shizuoka 3**	**2.80**	**289**	P	**P**	**20 56 56.3**	**+2.0**
JNY	**Yasuok**	**3.17**	**293**	⇑P	**P**	**20 57 00.6**	**+1.1**
JNT	**Takato**	**3.19**	**303**	P	**P**	**20 57 00.3**	**+0.4**
JFK	**Kawauchi**	**3.22**	**352**	P	**P**	**20 56 58.6**	**-1.7**
JFK				S	**S**	**20 57 32.9**	**-5.0**
JNG	**Nsakai**	**3.52**	**310**	⇑P	**P**	**20 57 04.5**	**0.0**
MAJO	**Matsushiro**	**3.54**	**313**	⇑eP	**P**	**20 57 04.8**	**0.0**
MAT	**Matsushiro**	**3.54**	**313**	P	**P**	**20 57 04.6**	**-0.2**
MAT				S	**S**	**20 57 48.8**	**+2.8**
MAT	**Matsushiro**	**3.54**	**313**	eP	**P**	**20 57 05.0**	**+0.2**
MAT				eS	**S**	**20 57 49.0**	**+3.0**
JGF	**Kuroka**	**3.64**	**294**	⇑P	**P**	**20 57 07.6**	**+1.4**
JGN	**Niukaw**	**3.94**	**302**	P	**P**	**20 57 11.6**	**+1.1**
JIZZ	**Izumozaki**	**4.01**	**327**	P	**P**	**20 57 12.2**	**+0.6**
JSZ	**Suzu**	**4.65**	**316**	P	**P**	**20 57 20.3**	**-0.3**
JHG	**Hegura jima**	**5.18**	**316**	P	**P**	**20 57 26.8**	**-1.2**
CBIJ	**Chichi jima**	**7.09**	**175**	Pn	**P**	**20 57 50.5**	**-4.3**
	76nm,0.3s,baz=324,slow=5.4,SNR=57						
CBIJ				Sn	**S**	**20 59 08.1**	**-6.9**
	226nm,0.3s,baz=116,slow=22,SNR=7.8						
JNU	**Nakatsue**	**8.86**	**266**	Pn	**P**	**20 58 20.8**	**+1.4**
	1.9nm,0.3s,baz=66,slow=17,SNR=22						
ASAJ	**Asahikawa**	**9.97**	**5**	Pn	**P**	**20 58 27.9**	**-6.8**
	10nm,0.3s,baz=278,slow=5.2,SNR=32						
ASAJ				Sn	**S**	**21 00 20.6**	**-6.0**
	11nm,0.3s,baz=358,slow=31,SNR=9.3						
ASAJ	**Asahikawa**	**9.97**	**5**	P	**P**	**20 58 28.0**	**-6.8**
ASAJ						21 00 20.6	
ASAJ				pmax	pmax		
	comp=Z,10.0nm,0.3s						
ASAJ				smax			
	comp=N,11nm,0.3s						
YUK	**Yuzh-Kuril'sk**	**10.43**	**18**	*e*P	**P**	**20 58 32.5**	**-8.6**
YUK				pmax	pmax		
	comp=Z,3μm,1.8s						
YUK				pmax	pmax		
	comp=N,6μm,2.0s						
YUK				pmax	pmax		
	comp=E,2μm,1.6s						
YUK				pmax	pmax		
	comp=E,150nm,0.6s						
YUK				pmax	pmax		
	comp=Z,290nm,0.6s						
YUK				pmax	pmax		
	comp=N,210nm,0.4s						
YUK				MLR	MLR		
	comp=Z,476μm,14.5s						
YUK				MLR	MLR		
	comp=N,253μm,16.0s						
YUK				MLR	MLR		
	comp=E,164μm,16.5s						
VLA	**Vladivostok**	**11.63**	**323**	⇓*i*P	**P**	**20 58 54.5**	**-2.8**
VLA				pmax	pmax		
	comp=Z,22μm,12.0s						
VLA				pmax	pmax		
	comp=N,12μm,9.0s						
VLA				pmax	pmax		
	comp=E,7μm,10.0s						
KUR	**Kuril'sk**	**12.10**	**22**	P	**P**	**20 59 00.5**	**-3.2**
KUR				pmax	pmax		
	comp=N,470nm,1.0s						
KUR				pmax	pmax		
	comp=E,190nm,1.0s						
JMZ	**Minamidaito 2**	**12.14**	**229**	P	**P**	**20 59 04.4**	**+0.1**
INCN	**Inchon**	**12.45**	**290**	⇑eP	**P**	**20 59 08.6**	**+0.1**
YSS	**Yuzh-Sakhalins**	**12.81**	**4**	⇓*i*P	**P**	**20 59 05.6**	**-7.6**
YSS				*e*		21 01 30.0	
YSS				pmax	pmax		
	comp=Z,80nm,1.2s						
YSS				pmax	pmax		
	comp=N,90nm,1.3s						
YSS				MLR	MLR		
	comp=Z,291μm,15.0s						
YSS				MLR	MLR		
	comp=N,278μm,14.0s						
YSS	**Yuzh-Sakhalins**	**12.81**	**4**	⇑e*i*P	**P**	**20 59 05.4**	**-7.8**
JOW	**Kunigami**	**13.49**	**241**	Pn	**P**	**20 59 21.9**	**-0.2**
	comp=N,0.8nm,0.3s,baz=68,slow=10,SNR=13						
JOW	**Kunigami**	**13.49**	**241**	P	**P**	**20 59 24.3**	**+2.1**
JIH	**Iheya**	**13.60**	**242**	P	**P**	**20 59 30.5**	**+6.9**
MDJ	**Mudanjiang**	**13.86**	**322**	eP	**P**	**20 59 24.7**	**-2.2**
	comp=N,104nm,1.3s						
JAGN	**Aguni-jima**	**14.38**	**242**	P	**P**	**20 59 34.3**	**+0.4**
JKE	**Kume jima 2**	**14.87**	**242**	P	**P**	**20 59 41.8**	**+1.5**
CN2	**Changchun**	**15.69**	**312**	eP	**P**	**20 59 48.3**	**-2.5**
CN2				*e*XP		21 00 02.3	
CN2				eS	**S**	**21 02 40.0**	**-3.6**
SNY	**Shenyang**	**15.99**	**304**	⇑P	**P**	**20 59 54.8**	**+0.1**
SNY				S	**S**	**21 02 48.0**	**-2.7**
SNY				LR	LR		
	comp=N,148μm,12.3s						
SNY				LR	LR		
	comp=Z,175μm,13.5s						
DL2	**Dalian**	**16.59**	**292**	⇑*i*P	**P**	**21 00 02.5**	**+0.2**
DL2				S	**S**	**21 03 01.5**	**-3.1**
DL2				AMB	AMB		
	comp=Z,90nm,1.0s						
DL2				LR	LR		
	comp=N,70μm,13.5s						
DL2				LR	LR		
	comp=E,69μm,19.0s						
DL2				LR	LR		
	comp=Z,153μm,14.5s						
KLR	**Kul'dur**	**16.67**	**337**	*d*iP	**P**	**20 59 55.5**	**-7.7**
TYV	**Tymovskoe**	**16.70**	**3**	eP	**P**	**21 00 00.0**	**-3.6**
TYV				pmax	pmax		
	comp=Z,5μm,6.0s						
TYV				pmax	pmax		
	comp=Z,281nm,1.0s						
TYV				MLR	MLR		
	comp=Z,188μm,19.0s						
SSE	**Sheshan**	**17.32**	**265**	P	**P**	**21 00 11.0**	**-0.5**
SSE				S	**S**	**21 03 20.0**	**-1.3**
SSE				LR	LR		
	comp=N,152μm,16.1s						
SSE				LR	LR		
	comp=E,190μm,16.1s						
SSE				LR	LR		
	comp=Z,219μm,15.7s						
JTJ	**Tarama**	**17.38**	**241**	P	**P**	**21 00 15.4**	**+3.2**
SARN	**Sarigan**	**17.83**	**166**	eP	**P**	**21 00 23.8**	**+5.9**
JIJ	**Ishigaki jima**	**17.95**	**242**	P	**P**	**21 00 19.6**	**+0.2**
JIJ				S	**S**	**21 03 50.0**	**+14**
JKRS	**Kuro-shima**	**18.12**	**241**	P	**P**	**21 00 21.8**	**+0.2**
JKRS				S	**S**	**21 03 54.9**	**+15**
IRIF	**Iriomote-Funau**	**18.27**	**242**	P	**P**	**21 00 23.6**	**+0.2**
IRIF				S	**S**	**21 03 57.3**	**+15**
NJ2	**Nanjing**	**19.03**	**270**	eP	**P**	**21 00 31.5**	**-1.0**
NJ2				AP		21 00 39.5	
NJ2				XP		21 00 44.0	
NJ2				PP	PP	21 00 48.0	-1.2
NJ2				S	**S**	**21 04 02.0**	**+2.2**
NJ2				XS		21 04 15.0	
NJ2				AMB	AMB		
	comp=Z,140nm,0.8s						
NJ2				LR	LR		
	comp=Z,309μm,19.9s						
TATO	**Taipei**	**19.59**	**247**	⇑eP	**P**	**21 00 35.7**	**-3.1**
	comp=Z,107nm,0.6s						
SKR	**Severo-Kuril's**	**19.68**	**29**	⇓*i*P	**P**	**21 00 36.0**	**-3.6**
SKR				pmax	pmax		
	comp=E,800nm,1.5s						
SKR				pmax	pmax		
	comp=Z,960nm,1.5s						
SKR	**Severo-Kuril's**	**19.68**	**29**	*e*P	**P**	**21 00 36.0**	**-3.6**
TIA	**Tai'an**	**19.96**	**283**	⇑P	**P**	**21 00 39.0**	**-3.7**
TIA				LR	LR		
	comp=N,187μm,15.0s						
TIA				LR	LR		
	comp=E,77μm,16.0s						
GUMO	**Guam**	**20.73**	**171**	P	**P**	**21 00 50.7**	**-0.2**
GUMO				S	**S**	**21 04 45.0**	**+9.5**
BJI	**Beijing**	**20.94**	**294**	P	**P**	**21 00 48.8**	**-4.2**
BJI				S	**S**	**21 04 34.8**	**-4.6**
BJI				AMB	AMB		
	comp=Z,58nm,2.7s						
BJI				LR	LR		
	comp=N,154μm,11.6s,MS6.8						
BJI				LR	LR		
	comp=E,157μm,11.6s,MS6.8						
BJI				LR	LR		
	comp=Z,83μm,18.1s						
BJT	**Baijiatuau**	**20.94**	**294**	*e*P	**P**	**21 00 51.9**	**-1.0**
	comp=Z,54nm,0.8s						
QZH	**Quanzhou**	**21.85**	**251**	⇑*i*P	**P**	**21 00 58.8**	**-3.4**
QZH				AMB	AMB		
	comp=Z,4μm,7.6s						
QZH				LR	LR		
	comp=N,185μm,14.6s,MS6.7						
QZH				LR	LR		
	comp=E,113μm,12.1s,MS6.7						
QZH				LR	LR		
	comp=Z,246μm,15.3s,MS6.7						
BBP	**Basco**	**22.00**	**237**	⇑eP	**P**	**21 01 05.2**	**+1.6**
HIA	**Hailar**	**22.01**	**320**	eP	**P**	**21 01 00.7**	**-2.9**
	comp=Z,71nm,0.8s,mb5.2						
PET	**Petropavlovsk**	**22.49**	**28**	*d*iP	**P**	**21 01 06.2**	**-2.1**
PET				*e*		21 01 34.8	
PET				*i*S	**S**	**21 05 04.4**	**-3.6**
PET				pmax	pmax		
	comp=Z,13μm,15.2s						
PET				pmax	pmax		
	comp=Z,263nm,1.4s,mb5.5						
PET				pmax	pmax		
	comp=Z,12μm,13.0s						
PET				pmax	pmax		
	comp=Z,15μm,12.8s						
PET				pmax	pmax		
	comp=Z,19μm,13.1s						
PET				pmax	pmax		
	comp=Z,380nm,1.8s,mb5.5						
PET				smax			
	comp=N,34μm,13.5s						
PET				smax			
	comp=E,44μm,15.5s						
PET				smax			
	comp=N,65μm,16.7s						
PET				smax			
	comp=E,81μm,18.1s						
PET	**Petropavlovsk**	**22.49**	**28**	eP	**P**	**21 01 05.8**	**-2.5**
	comp=E,2μm,1.8s,mb6.2						
PET				LR	LR		
	comp=Z,83μm,19.0s,MS6.2						
WHN	**Wuhan**	**23.13**	**269**	P	**P**	**21 01 14.3**	**-0.5**
WHN				AMB	AMB		
	comp=Z,3μm,9.0s						
WHN				LR	LR		
	comp=N,224μm,14.0s,MS6.8						
WHN				LR	LR		
	comp=E,88μm,12.0s,MS6.8						
WHN				LR	LR		
	comp=Z,317μm,15.7s,MS6.9						
TIY	**Taiyuan**	**23.70**	**287**	⇑P	**P**	**21 01 17.0**	**-3.2**
TIY				S	**S**	**21 05 38.0**	**+8.5**
TIY				LR	LR		
	comp=N,79μm,13.0s						
TIY				LR	LR		
	comp=Z,393μm,15.0s,MS7.0						
CVP	**Callao Caves**	**24.01**	**232**	eP	**P**	**21 01 26.3**	**+2.9**
PALP	**Palanan**	**24.09**	**230**	⇑eP	**P**	**21 01 26.0**	**+1.7**
APYP	**Conner**	**24.28**	**233**	⇑eP	**P**	**21 01 23.5**	**-2.5**
HHC	**Hu-ho-hao-te**	**24.53**	**295**	eP	**P**	**21 01 24.0**	**-4.3**
HHC				AP		21 01 34.5	
HHC				XP		21 01 37.0	
HHC				PP	PP	21 02 02.8	-1.9
HHC				S	**S**	**21 05 43.0**	**-0.9**
HHC				SS	SS	21 06 42.3	+2.3
HHC				SCS	ScS	21 12 22.8	-5.4
HHC				LR	LR		
	comp=N,69μm,13.2s,MS6.4						
HHC				LR	LR		
	comp=E,53μm,12.7s,MS6.4						
HHC				LR	LR		
	comp=Z,82μm,13.0s,MS6.4						
CAUP	**Cauayan**	**24.57**	**231**	⇑eP	**P**	**21 01 29.4**	**+0.5**
ABRA	**Dolores**	**24.78**	**234**	⇑eP	**P**	**21 01 29.3**	**-1.6**
CLNS	**Chul'man**	**25.32**	**339**	⇑*i*P	**P**	**21 01 35.5**	**-0.2**
CLNS				*e*		21 02 08.5	
CLNS				*e*		21 05 06.6	
CLNS				eS	**S**	**21 05 59.7**	**+2.8**
CLNS				eSS	SS	21 07 04.7	+5.5
CLNS				pmax	pmax		
	comp=E,28nm,1.0s						
CLNS				pmax	pmax		
	comp=Z,108nm,1.0s,mb5.3						
CLNS				pmax	pmax		
	comp=N,39nm,0.7s						
CLNS				pmax	pmax		
	comp=Z,100nm,0.9s,mb5.3						
CLNS				pmax	pmax		
	comp=N,230nm,1.3s						
CLNS				pmax	pmax		
	comp=E,108nm,0.8s						
CLNS				smax			
	comp=N,68μm,14.0s						
CLNS				smax			
	comp=Z,49μm,12.9s						
CLNS				smax			
	comp=E,15μm,13.8s						
CLNS				MLR	MLR		
	comp=N,117μm,14.0s,MS6.7						
CLNS				MLR	MLR		
	comp=Z,118μm,14.0s,MS6.6						
CLNS				MLR	MLR		
	comp=E,87μm,13.0s,MS6.7						
BALP	**Baler**	**25.62**	**229**	⇑eP	**P**	**21 01 38.2**	**-0.7**
BTO	**Baotou**	**25.68**	**294**	eP	**P**	**21 01 38.5**	**-0.7**
BTO				AMB	AMB		
	comp=Z,322nm,1.0s,mb5.8						
BCPH	**Baguio City Da**	**25.78**	**232**	⇓*i*P	**P**	**21 01 37.2**	**-3.2**
PVCP	**Virac**	**25.79**	**222**	⇑eP	**P**	**21 01 40.9**	**+0.4**
MA2	**Magadan**	**26.15**	**11**	eP	**P**	**21 01 40.6**	**-2.8**
MA2				eS	**S**	**21 06 03.5**	**-7.0**
MA2				eSS	SS	21 07 13.8	-5.3
MA2				pmax	pmax		
	comp=Z,100nm,1.4s,mb5.2						
MA2				pmax	pmax		
	comp=N,100nm,1.5s						
MA2				pmax	pmax		
	comp=E,50nm,1.5s						
MA2				MLR	MLR		
	comp=Z,190μm,18.9s,MS6.7						
MA2				MLR	MLR		
	comp=E,311μm,17.9s,MS6.9						
MA2				MLR	MLR		
	comp=N,117μm,22.9s,MS6.9						
MA2	**Magadan**	**26.15**	**11**	*e*P	**P**	**21 01 42.5**	**-0.8**
	comp=N,431nm,1.4s,mb5.8						
MA2				LR	LR		
	comp=Z,75μm,20.0s,MS6.2						
BOLP	**Bolinao**	**26.22**	**233**	⇑eP	**P**	**21 01 45.8**	**+1.3**
CNP	**Catarman**	**26.42**	**219**	⇑eP	**P**	**21 01 38.5**	**-7.8**
SCZP	**Santa Cruz**	**26.66**	**232**	⇑eP	**P**	**21 01 47.1**	**-1.4**
HKC	**Hong Kong**	**26.68**	**251**	⇑*i*P	**P**	**21 01 47.0**	**-1.7**
BESP	**Borongan**	**26.79**	**217**	⇑eP	**P**	**21 01 47.9**	**-1.9**
XAN	**Xi'an**	**26.86**	**279**	P	**P**	**21 01 49.0**	**-1.2**
XAN				AP	pP	21 01 56.0	-4.1
XAN				LR	LR		
	comp=N,102μm,15.5s,MS6.8						
XAN				LR	LR		
	comp=E,191μm,15.8s,MS6.8						
XAN				LR	LR		
	comp=Z,287μm,17.1s,MS6.9						
BOAC	**Boac**	**27.22**	**225**	⇑eP	**P**	**21 01 52.8**	**-0.9**
ENH	**Enshi**	**27.24**	**271**	eP	**P**	**21 01 52.3**	**-1.5**
	comp=Z,114nm,0.8s,mb5.5						
TGY	**Tagaytay City**	**27.27**	**228**	P	**P**	**21 01 55.7**	**+1.7**
	comp=Z,60nm,0.3s,mb5.6,baz=141,slow=18,SNR=6.3						
TGY	**Tagaytay City**	**27.27**	**228**	P	**P**	**21 01 55.7**	**+1.6**
TGY				pmax	pmax		
	comp=Z,60nm,0.3s						
OTRP	**Odiongan**	**27.99**	**224**	⇑eP	**P**	**21 01 57.3**	**-3.4**
MSLP	**Maasin**	**28.34**	**216**	⇑eP	**P**	**21 02 02.6**	**-1.2**
SJMP	**San Jose**	**28.44**	**225**	⇑eP	**P**	**21 02 03.7**	**-0.9**
YAK	**Yakutsk**	**28.86**	**349**	*c i*P	**P**	**21 02 05.6**	**-2.4**
YAK				*e*PPP	PPP	21 02 59.1	-16
YAK				*e*		21 05 17.4	
YAK				eS	**S**	**21 06 49.9**	**-4.4**
YAK				eSS	SS	21 08 16.8	-6.5
YAK				eSSS	SSS	21 08 36.2	-7.1
YAK				*e*		21 12 47.0	
YAK				pmax	pmax		
	comp=N,31nm,1.0s						
YAK				pmax	pmax		
	comp=E,23nm,1.0s						
YAK				pmax	pmax		
	comp=Z,69nm,1.0s,mb5.3						
YAK				smax			
	comp=N,50nm,1.3s						
YAK				smax			
	comp=E,26nm,1.3s						
YAK				smax			
	comp=Z,22nm,1.2s						
YAK				MLR	MLR		
	comp=N,71μm,14.0s,MS6.5						
YAK				MLR	MLR		
	comp=E,40μm,14.0s,MS6.5						
YAK				MLR	MLR		
	comp=Z,96μm,14.0s,MS6.6						
YAK	**Yakutsk**	**28.86**	**349**	*e*P	**P**	**21 02 05.3**	**-2.7**
	comp=Z,204nm,0.9s,mb5.9						
YAK				LR	LR		
	comp=Z,131μm,19.0s,MS6.6						
BUTP	**Butuan**	**28.99**	**214**	⇑eP	**P**	**21 02 02.2**	**-7.3**
ULN	**Ulaanbaatar**	**29.06**	**308**	P	**P**	**21 02 09.5**	**-0.4**
ULN				P'P'ab		21 38 33.7	
ULN	**Ulaanbaatar**	**29.06**	**308**	⇑eP	**P**	**21 02 09.2**	**-0.6**
ULN				pmax	pmax		
	comp=Z,170nm,0.8s,mb5.8						
ULN				MLR	MLR		
	comp=Z,220μm,19.0s,MS6.8						
ULN	**Ulaanbaatar**	**29.06**	**308**	⇑eP	**P**	**21 02 09.2**	**-0.7**
	comp=Z,175nm,0.8s,mb5.8						
ULN				LR	LR		
	comp=Z,219μm,19.0s,MS6.8						
FX1	**Attu Island--F**	**29.30**	**41**	P	**P**	**21 02 11.0**	**-0.9**
	comp=Z,38nm,1.0s,baz=284,slow=8.3,SNR=4.4						
FX1				LR	LR	21 12 35.4	
	comp=Z,5μm,19.6s,baz=251,slow=34						
FX1	**Attu Island--F**	**29.30**	**41**	P	**P**	**21 02 11.0**	**-0.9**
FX1				pmax	pmax		
	comp=Z,38nm,1.0s						
FX1				MLR	MLR		
	comp=Z,5μm,19.6s						
FX1	**Attu Island--F**	**29.30**	**41**	eP	**P**	**21 02 09.0**	**-2.9**
BUSP	**Coron**	**29.34**	**226**	⇑eP	**P**	**21 02 11.9**	**-0.9**
BIPH	**Bislig**	**29.35**	**212**	⇑eP	**P**	**21 02 08.0**	**-4.8**
SONM	**Songino Array**	**29.48**	**308**	P	**P**	**21 02 13.8**	**+0.2**
	comp=Z,48nm,0.9s,mb5.2,baz=108,slow=7.8,SNR=90						
SONM				S	**S**	**21 07 17.9**	**+14**
	comp=Z,2.2nm,1.0s,baz=350,slow=34,SNR=1.9						
SEY	**Seymchan**	**29.59**	**10**	eP	**P**	**21 02 15.3**	**+0.8**
SEY						21 03 16.8	
SEY						21 05 18.8	
SEY				eS	**S**	**21 07 07.3**	**+1.3**
SEY				*e*		21 12 56.3	
SEY				pmax	pmax		
	comp=N,110nm,1.0s						
SEY				pmax	pmax		
	comp=Z,320nm,1.0s,mb6.0						
SEY				pmax	pmax		
	comp=E,120nm,1.3s						
SEY				smax			
	comp=N,109μm,17.5s						
SEY				smax			
	comp=E,36μm,18.8s						
SEY				MLR	MLR		
	comp=N,363μm,15.0s,MS7.3						
SEY				MLR	MLR		
	comp=Z,497μm,15.0s,MS7.3						
SEY				MLR	MLR		
	comp=E,496μm,16.0s,MS7.3						
SMY	**Shemya**	**29.74**	**41**	PFAKE		21 02 30.0	+14
SMY				LR	LR		
	comp=Z,198μm,20.0s,MS6.7						
BOD	**Bodaibo**	**29.99**	**330**	eP	**P**	**21 02 16.4**	**-1.6**
LZH	**Lanzhou**	**30.68**	**284**	⇑P	**P**	**21 02 22.8**	**-1.6**
LZH				AP	pP	21 02 27.0	-7.5
LZH				XP	sP	21 02 29.8	-9.3
LZH				PP	PP	21 03 22.5	-3.1
LZH				S	**S**	**21 07 23.0**	**-0.3**
LZH				AMB	AMB		
	comp=Z,81nm,1.5s,mb5.3						
LZH				AMB	AMB		
	comp=Z,778nm,9.2s						
LZH				LR	LR		
	comp=E,80μm,14.8s						
LZH				LR	LR		
	comp=Z,152μm,18.6s,MS6.7						
GYA	**Guiyang**	**30.87**	**265**	P	**P**	**21 02 24.0**	**-2.2**
GYA				AP	pP	21 02 33.3	-3.0
GYA				XP	sP	21 02 37.5	-3.4
GYA				S	**S**	**21 07 31.3**	**+4.9**
GYA				AMB	AMB		
	comp=Z,40nm,1.1s,mb5.2						
GYA				LR	LR		
	comp=N,150μm,15.9s,MS6.8						
GYA				LR	LR		
	comp=E,41μm,15.3s,MS6.8						
GYA				LR	LR		
	comp=Z,76μm,16.7s,MS6.4						
CD2	**Chengdu**	**31.81**	**275**	P	**P**	**21 02 32.5**	**-1.9**

CD2 AP pP 21 02 39.3 -5.2
CD2 XP sP 21 02 44.0 -5.1
CD2 S **S** **21 07 36.5 -4.6**
CD2 XS 21 07 50.8
CD2 AMB AMB
comp=Z,30nm,0.5s,mb5.4
QIZ Qiongzhong 31.86 250⇑*i*P **P** **21 02 33.0 -2.0**
QIZ S **S** **21 07 43.8 +1.8**
QIZ XS 21 07 59.5
QIZ LR LR
comp=N,82μm,15.0s,MS6.7
QIZ LR LR
comp=E,84μm,15.5s,MS6.7
QIZ LR LR
comp=Z,64μm,16.0s,MS6.4
PPR Puerto Princes 31.98 226 *e*P **P** **21 02 33.1 -2.9**
IRK Irkutsk 32.09 316 *e*P **P** **21 02 37.4 +0.7**
ZAK Zakamensk 32.12 312 *e*P **P** **21 02 36.6 -0.3**
TLY Talaya 32.28 314*c i*P **P** **21 02 37.7 -0.6**
TLY *i* S **S** **21 07 53.6 +5.4**
TLY pmax pmax
comp=Z,1μm,1.7s,mb6.5
TLY MLR MLR
comp=Z,15μm,15.0s,MS5.8
BATP Bataraza 33.31 226⇓*e*P **P** **21 02 46.3 -1.3**
GTA Gaotai 33.52 291 P **P** **21 02 48.0 -1.1**
GTA AP pP 21 02 59.5 +0.2
GTA XP sP 21 03 03.8 -0.1
GTA PP PP 21 04 03.0 +1.1
GTA S **S** **21 08 11.5 +3.9**
GTA LR LR
comp=N,146μm,14.0s,MS6.8
GTA LR LR
comp=E,39μm,15.3s,MS6.8
GTA LR LR
comp=Z,60μm,15.3s,MS6.4
MOY Mondy 33.85 314 *e*P **P** **21 02 51.8 -0.1**
KMI Kunming 34.64 265⇑*e*P **P** **21 02 56.8 -2.2**
KMI AP pP 21 03 04.5 -4.7
KMI XP sP 21 03 11.8 -1.9
KMI PP PP 21 04 12.5 -3.7
KMI PPP PPP 21 04 31.0 -3.2
KMI S **S** **21 08 23.0 -2.3**
KMI XS 21 08 39.8
KMI SS SS 21 10 35.5 -3.1
KMI AMB AMB
comp=Z,2μm,7.7s
KMI LR LR
comp=N,116μm,14.2s,MS6.9
KMI LR LR
comp=E,142μm,16.4s,MS6.9
KMI LR LR
comp=Z,153μm,17.5s,MS6.8
KWAJ Kwajalein Atol 34.88 130 PFAKE 21 03 10.0 +8.9
KWAJ LR LR
comp=Z,112μm,20.0s,MS6.6
MIDW Midway 35.56 88 PFAKE 21 03 20.0 +13
MIDW LR LR
comp=Z,877μm,20.0s,MS7.5
KKM Kota Kinabalu 36.44 226⇓*e*P **P** **21 03 19.6 +5.2**
BILL Bilibino 36.77 15*ce*P **P** **21 03 14.0 -2.6**
BILL pmax pmax
comp=Z,132nm,1.7s,mb5.5
BILL MLR MLR
comp=Z,74μm,16.0s,MS6.6
BILL Bilibino 36.77 15 *e*P **P** **21 03 13.9 -2.7**
comp=Z,98nm,1.1s,mb5.5
TIXI Tiksi 38.13 354 *e*P **P** **21 03 25.0 -2.9**
TIXI *e*S **S** **21 09 17.0 -1.2**
TIXI *e*SS SS 21 11 58.6 +1.5
TIXI *e*SSS SSS 21 12 26.8 -2.6
TIXI pmax pmax
comp=Z,22nm,0.7s,mb5.0
TIXI Tiksi 38.13 354⇑*e*P **P** **21 03 25.6 -2.3**
comp=Z,33nm,0.7s,mb5.2
TIXI LR LR
comp=Z,123μm,19.0s,MS6.7
KKTK Khon Kaen 38.89 253 P **P** **21 03 34.6 -0.2**
comp=Z,370nm,0.7s,mb6.2
CHRT Chiangrai 39.46 260 ⇓P **P** **21 03 39.0 -0.5**
comp=Z,224nm,0.9s,mb5.9
CM31 Chiang Mai Arr 40.86 258 *e*P **P** **21 03 49.4 -1.7**
comp=Z,26nm,0.6s,mb5.0
CM31 *e* 21 04 08.1
CM31 LR LR
comp=Z,32μm,19.0s,MS6.2
CMAR Chiang Mai Arr 40.86 258 P **P** **21 03 50.4 -0.8**
comp=Z,15nm,0.7s,mb4.8,baz=48,slow=7.3,SNR=98
CMAR LR LR 21 21 39.1
comp=Z,24μm,19.0s,MS6.1,baz=65,slow=37
CMAR Chiang Mai Arr 40.86 258 P **P** **21 03 50.4 -0.8**
CMAR pmax pmax
comp=Z,15nm,0.7s
CMAR MLR MLR
comp=Z,24μm,19.0s
UNV Unalaska Valle 41.20 45 PFAKE 21 04 00.0 +6.4
UNV LR LR
comp=Z,171μm,20.0s,MS6.9
NST Nakhon Sawan 41.40 254 P **P** **21 03 54.0 -1.6**
comp=Z,58nm,1.2s,mb5.1
BDT Bhumibol Dam 41.45 257 P **P** **21 03 56.0 0.0**
comp=Z,27nm,0.8s,mb4.9
WMQ Urumqi 42.20 300 *e*P **P** **21 04 02.8 +0.9**
WMQ AP pP 21 04 12.5 +0.3
WMQ XP sP 21 04 16.5 -0.1
WMQ PP PP 21 05 43.8 +1.2
WMQ PCP PcP 21 05 57.5 +1.2
WMQ SCP 21 09 44.3
WMQ PCS 21 09 48.0
WMQ S **S** **21 10 19.8 +0.4**
WMQ XS 21 10 36.0
WMQ SS SS 21 13 22.3 -0.1
WMQ SCS ScS 21 14 00.3 +1.4
WMQ LR LR
comp=N,31μm,17.2s,MS6.4
WMQ LR LR
comp=E,30μm,17.3s,MS6.4
WMQ LR LR
comp=Z,49μm,18.2s,MS6.4
LSA Lhasa 42.56 278 P **P** **21 04 05.5 +0.5**
LSA PP PP 21 05 48.0 +1.6
LSA PCP PcP 21 05 55.8 -1.8
LSA S **S** **21 10 23.5 -1.3**
LSA LR LR
comp=N,100μm,18.0s,MS6.8
LSA LR LR
comp=E,58μm,18.0s,MS6.8
LSA LR LR
comp=Z,36μm,16.6s,MS6.3
LSA Lhasa 42.56 278 *e*P **P** **21 04 05.9 +0.9**
comp=Z,25nm,0.8s,mb5.0
TNA Tin City 43.35 28 *e*P **P** **21 04 11.0 0.0**
comp=Z,91nm,1.5s,mb5.3
TNA LR LR
comp=Z,35μm,19.0s,MS6.3
SHL Shillong 43.46 272 *e*P **P** **21 04 10.0 -2.4**
SHL *e*S **S** **21 10 40.0 +2.0**
NNT Nongplab 43.49 251 P **P** **21 04 13.5 +0.7**
PMG Port Moresby 43.68 172 P **P** **21 04 16.7 +2.4**
comp=Z,48nm,1.1s,mb5.2,baz=360,slow=5.1,SNR=4.0
PMG Port Moresby 43.68 172 P **P** **21 04 16.7 +2.4**
PMG LR LR
comp=Z,15μm,19.0s,MS5.9
ZAL Zalesovo 43.90 315 P **P** **21 04 14.6 -1.0**
comp=Z,11nm,0.6s,mb4.8,baz=287,slow=6.8,SNR=30
ZAL LR LR 21 24 30.1
comp=Z,48μm,18.8s,MS6.4,baz=292,slow=39
ZAL Zalesovo 43.90 315 P **P** **21 04 14.6 -1.0**
ZAL pmax pmax
comp=Z,11nm,0.6s
ZAL MLR MLR
comp=Z,48μm,18.8s
ZAL Zalesovo 43.90 315 *i* P **P** **21 04 14.6 -1.0**
ANM Nome 44.05 30 *e*P **P** **21 04 18.0 +1.4**
AGT Agartala 44.67 270⇑*i*P **P** **21 04 24.0 +1.8**
AGT ⇑*i* 21 04 58.0
NVS Novosibirsk 44.86 316 *e*P **P** **21 04 21.6 -1.6**
NVS *e*S **S** **21 10 55.9 -2.0**
NVS *e* 21 14 16.7
NVS pmax pmax
comp=E,453nm,2.2s
NVS pmax pmax
comp=Z,402nm,2.2s,mb5.9
NVS smax
comp=E,904nm,3.0s
NVS smax
comp=N,383nm,2.7s
MKAR Makanchi Array 45.70 304 P **P** **21 04 29.6 -0.5**
comp=N,13nm,0.6s,mb5.0,baz=90,slow=9.1,SNR=64
MKAR S **S** **21 11 15.8 +5.9**
comp=N,5.9nm,1.2s,baz=97,slow=9.8,SNR=2.2
MKAR LR LR 21 25 57.0
comp=N,72μm,18.0s,MS6.7,baz=88,slow=39
MKAR Makanchi Array 45.70 304 P **P** **21 04 29.6 -0.5**
MKAR S **S** **21 11 15.9 +5.9**
MKAR pmax pmax
comp=Z,13nm,0.6s
MKAR smax
comp=N,6.0nm,1.2s
MKAR MLR MLR
comp=Z,72μm,18.0s
MKAR Makanchi Array 45.70 304 *i* P **P** **21 04 29.6 -0.5**
SNG Songkhla 46.21 244 P **P** **21 04 31.0 -3.5**
comp=Z,80nm,1.0s,mb5.6
KAKA Kakadu 47.40 192⇑*i*P **P** **21 04 43.1 -0.8**
comp=Z,209nm,1.0s,mb6.0
IPM Ipoh 47.65 241⇑*e*P **P** **21 04 46.0 +0.1**
CAL Calcutta 47.67 270 *e* **P** **21 04 48.0 +2.0**
CAL *e* 21 10 10.0
KURK Kurchatov 47.74 310 *e*P **P** **21 04 44.9 -1.2**
SVW Sparrevohn 47.79 36 *e*P **P** **21 04 45.2 -1.1**
KGM Kluang 47.82 236⇑*e*P **P** **21 04 47.0 -0.2**
PKI Pulchoki 48.03 278 *e*P **P** **21 04 47.9 -0.8**
comp=Z,228nm,0.8s,mb6.2
KKN Kakani 48.05 278 *e*P **P** **21 04 47.9 -0.9**
comp=Z,344nm,0.8s,mb6.4
DMN Daman 48.26 278 *e*P **P** **21 04 49.5 -1.0**
comp=Z,327nm,1.1s,mb6.3
GKN Gorkha 48.50 279 *e*P **P** **21 04 51.7 -0.6**
comp=Z,768nm,1.0s
DANN Dangsing 49.09 280 *e*P **P** **21 04 57.1 +0.3**
IMA Indian Mountai 49.16 29 *e*P **P** **21 04 57.5 +0.7**
KDAK Kodiak Island 49.24 40 *e*P **P** **21 04 55.6 -2.0**
comp=Z,264nm,1.2s,mb6.1
KDAK LR LR
comp=Z,89μm,20.0s,MS6.8
KOLN Koldanda 49.44 279 *e*P **P** **21 04 57.8 -1.7**
comp=Z,782nm,1.4s,mb6.5
FIB Fire Island 50.43 36 PFAKE 21 05 20.0 +13
FIB LR LR
comp=Z,59μm,20.0s,MS6.6
PMS Palmer South 50.73 36 *e*P **P** **21 05 08.7 -0.2**
PMR Palmer 50.93 35 *e*P **P** **21 05 09.1 -1.4**
PMR pmax pmax
comp=Z,250nm,1.3s,mb6.0
PMR MLR MLR
comp=Z,43μm,19.0s,MS6.5
PMR Palmer 50.93 35 *e*P **P** **21 05 09.1 -1.3**
comp=Z,250nm,1.4s,mb6.0
PMR LR LR
comp=Z,43μm,19.0s,MS6.5
MCK McKinley 51.02 32⇑*e*P **P** **21 05 09.2 -1.9**
MCK pmax pmax
comp=Z,100nm,1.4s,mb5.5
MCK MLR MLR
comp=Z,22μm,19.0s,MS6.2
MCK McKinley 51.02 32⇑*e*P **P** **21 05 09.2 -1.9**
comp=Z,100nm,1.4s,mb5.5
MCK LR LR
comp=Z,22μm,19.0s,MS6.2
TKM2 Tokmak 2 51.05 300 P **P** **21 05 12.1 +0.5**
SNR=36
SML Sawmill 51.31 35 P **P** **21 05 12.9 -0.4**
SML Sawmill 51.31 35 *e*P **P** **21 05 12.7 -0.6**
SML *e* 21 05 35.6
KZA Kyzart 51.50 300 P **P** **21 05 16.2 +1.2**
SNR=23
COLA College 51.50 31*de*P **P** **21 05 13.7 -1.0**
COLA College 51.50 31 *e*P **P** **21 05 15.0 +0.3**
comp=Z,18nm,0.7s,mb5.1
COLA *e* 21 05 34.5
COLA LR LR
comp=Z,38μm,20.0s,MS6.4
PTH Pithoragarh 51.52 283 *e*P **P** **21 05 14.0 -1.3**
PTH *e*S **S** **21 12 35.0 +3.2**
KBK Karagaybulak 51.57 300 P **P** **21 05 15.4 -0.2**
SNR=16
CHMS Chumysh 51.63 301 P **P** **21 05 15.5 -0.5**
SNR=14
KSH Kashi 51.63 296⇑*i*P **P** **21 05 17.3 +1.3**
KSH AP pP 21 05 27.0 +0.5
KSH XP sP 21 05 31.3 +0.6
KSH PCP PcP 21 06 31.5 +1.9
KSH PP PP 21 07 15.0 +0.7
KSH SCP 21 10 24.3
KSH PCS 21 10 27.5
KSH S **S** **21 12 33.5 +0.3**
KSH PS PS 21 12 46.3 -1.0
KSH XS 21 12 49.5
KSH SCS ScS 21 15 01.5 +1.3
KSH SS SS 21 16 06.8 -0.7
KSH AMB AMB
comp=Z,40nm,0.5s,mb5.6
USP Ospenovka 51.74 301 P **P** **21 05 16.5 -0.3**
SNR=28
FRU Bishkek 51.77 301*c i*P **P** **21 05 18.0 +1.0**
FRU *i* S **S** **21 12 38.0 +3.0**
FRU pmax pmax
comp=Z,4μm,5.0s
FRU smax
comp=E,13μm,16.0s
AAK Ala-Archa 51.90 300 P **P** **21 05 17.9 -0.1**
SNR=12
AAK Ala-Archa 51.90 300⇑*i*P **P** **21 05 17.5 -0.5**
AAK pmax pmax
comp=Z,37nm,0.9s,mb5.3
AAK MLR MLR
comp=Z,96μm,19.0s,MS6.8
AAK Ala-Archa 51.90 300⇑*i*P **P** **21 05 17.5 -0.5**
comp=Z,37nm,0.9s,mb5.3
AAK LR LR
comp=Z,96μm,19.0s,MS6.8
ILAR Eielson Array 51.92 31 P **P** **21 05 15.8 -2.0**
comp=Z,17nm,0.9s,mb5.0,baz=268,slow=3.7,SNR=95
ILAR S **S** **21 12 41.0 +4.3**
comp=Z,0.1nm,0.6s,baz=304,slow=29,SNR=2.9
ILAR LR LR 21 27 24.8
comp=Z,40μm,19.0s,MS6.5,baz=288,slow=36
ILAR Eielson Array 51.92 31 P **P** **21 05 15.9 -1.9**
ILAR S **S** **21 12 41.1 +4.3**
ILAR pmax pmax
comp=Z,17nm,0.9s
ILAR MLR MLR
comp=Z,40μm,19.0s
UCH Uchtor 51.99 300 P **P** **21 05 19.2 +0.5**
SNR=18
TOA Tolsona 52.31 35 *e*P **P** **21 05 26.3 +5.5**
EKS2 Erkin-Say 52.41 301 P **P** **21 05 21.5 -0.3**
SNR=16
BVAR Borovoye Array 52.53 314 P **P** **21 05 22.3 -0.3**
comp=Z,5.9nm,0.3s,mb4.9,baz=104,slow=8.4,SNR=66
BVAR S **S** **21 12 53.5 +8.1**
comp=Z,0.8nm,0.8s,baz=113,slow=11,SNR=2.3
DIV Divide 52.57 36 PFAKE 21 05 30.0 +7.3
DIV LR LR
comp=Z,141μm,20.0s,MS7.0
BRVK Borovoye 52.59 314 *e*P **P** **21 05 22.2 -0.9**
AML Almayashu 52.60 300 P **P** **21 05 23.7 +0.4**
SNR=39
EYAK Cordova Ski Ar 52.62 36 *e*P **P** **21 05 22.8 -0.3**
BLSP Bilaspur 52.99 273 *i* P **P** **21 05 25.0 -1.5**
ZRNK Zerenda 53.37 314 *e*P **P** **21 05 27.7 -1.1**
VIS Vishakhapatnam 54.07 268 *e*P **P** **21 05 35.4 +0.9**
VIS *e*S **S** **21 13 06.7 -0.1**
VIS AMS AMS 21 18 32.4
comp=Z,4μm,19.7s
FITZ Fitzroy Crossi 54.12 199⇑*i*P **P** **21 05 34.8 0.0**
comp=Z,52nm,0.6s,mb5.6
FITZ *e*S **S** **21 13 04.1 -3.2**
FITZ Fitzroy Crossi 54.12 199 P **P** **21 05 35.2 +0.4**
comp=Z,46nm,0.6s,mb5.6,baz=19,slow=6.4,SNR=51
FITZ S **S** **21 13 08.3 +1.0**
comp=Z,8.2nm,1.0s,baz=163,slow=17,SNR=2.3
CTA Charters Tower 54.15 174⇓*i*P **P** **21 05 35.5 +0.4**
comp=Z,53nm,1.7s,mb5.2
CTA *e*S **S** **21 13 07.8 0.0**
CTAO Charters Tower 54.15 174 *e*P **P** **21 05 35.0 -0.1**
CTAO pmax pmax
comp=Z,170nm,1.4s,mb5.8
CTAO MLR MLR
comp=Z,22μm,19.0s,MS6.2
CTAO Charters Tower 54.15 174 *e*P **P** **21 05 35.0 -0.1**
comp=Z,171nm,1.5s,mb5.8
CTAO LR LR
comp=Z,22μm,19.0s,MS6.2
WRAB Tennant Creek 54.22 188 *e*P **P** **21 05 33.5 -2.0**
comp=Z,1μm,1.5s,mb6.6
WRAB LR LR
comp=Z,24μm,20.0s,MS6.2
WB2 Warramunga Arr 54.23 188⇑*i*P **P** **21 05 33.6 -2.0**
WB2 *e*S **S** **21 13 09.3 +0.4**
NDI New Delhi 54.28 283 *i* P **P** **21 05 34.0 -1.9**
NDI *e* 21 13 08.0
JBP Jabalpur 54.31 276⇑*i*P **P** **21 05 38.2 +2.0**
JBP *i* S **S** **21 13 10.5 +0.7**
KIP Kipapa 54.36 87 PFAKE 21 05 50.0 +13
KIP LR LR
comp=Z,33μm,19.0s,MS6.4
JHNI Jhansi 54.51 279⇑*i*P **P** **21 05 35.0 -2.6**
JHNI *e* 21 06 04.0
KGD Kothagudem 56.36 269⇑*e*P **P** **21 05 50.4 -0.6**
KGD *e*sP sP 21 06 03.3 -2.5
KGD *e*S **S** **21 13 40.1 +2.8**
KGD *e*SS SS 21 17 29.7 +4.9
KGD *e* 21 29 27.5
KGD *e* 21 33 36.8
BHPL Bhopal 56.38 277⇑*i*P **P** **21 05 50.9 -0.3**
BHPL *e*S **S** **21 13 43.5 +5.9**
BHPL AMS AMS 21 30 23.5
comp=Z,7μm,19.7s,MS5.8
INK Inuvik 56.93 26 S **S** **21 13 46.5 +2.3**
comp=Z,1.3nm,1.0s,baz=212,slow=27,SNR=3.5
INK Inuvik 56.93 26 *e*P **P** **21 05 51.8 -2.7**
INK pmax pmax
comp=Z,69nm,1.2s
INK Inuvik 56.93 26 *e*P **P** **21 05 51.8 -2.7**
comp=Z,69nm,1.3s,mb5.5
POHA Pohakuloa 57.19 87 *e*P **P** **21 05 56.2 -0.8**
comp=Z,335nm,1.4s,mb6.2
POHA LR LR
comp=Z,57μm,20.0s,MS6.7
AJM Ajmer 57.26 282⇑*i*P **P** **21 05 56.0 -1.4**
AKL Akola 57.88 274 *i* P **P** **21 05 58.4 -3.4**
AKL *i* 21 13 56.4
AS12 Alice Springs 57.96 188⇓*i*P **P** **21 06 01.0 -1.3**
comp=Z,31nm,0.6s,mb5.5
AS12 *e*S **S** **21 14 10.5 +12**
ASAR Alice Springs 57.96 188 P **P** **21 06 00.5 -1.9**
comp=Z,27nm,0.9s,mb5.3,baz=7.3,slow=5.3,SNR=88
ASAR S **S** **21 14 07.6 +9.3**
comp=Z,2.4nm,1.0s,baz=18,slow=17,SNR=4.4
ASAR LR LR 21 30 22.1
comp=Z,19μm,20.9s,MS6.2,baz=356,slow=35
ASAR PKP2bc 21 35 54.9
comp=Z,1.3nm,1.0s,baz=169,slow=4.6,SNR=4.1
ASAR PKP2ab 21 36 09.4
comp=Z,1.1nm,0.9s,baz=169,slow=3.4,SNR=4.0
ASAR Alice Springs 57.96 188 P **P** **21 06 00.5 -1.9**
ASAR S **S** **21 14 07.6 +9.3**
ASAR LR LR 21 30 22.1
ASAR ⇑*e* 21 35 54.9
ASAR P'P'ab 21 36 09.4
HYB Hyderabad 58.18 270⇑*i*P **P** **21 06 03.5 -0.4**
comp=Z,100nm,1.0s,mb5.8
HYB *e*PcP PcP 21 06 56.0 +1.1
HYB *e*PP PP 21 08 10.0 -4.5
HYB *e*S **S** **21 14 10.0 +8.8**
HYB *e*ScS ScS 21 15 56.0 +9.0
HYB LR LR 21 34 50.0
comp=Z,27nm,18.0s
HYB Hyderabad 58.18 270⇑*e*P **P** **21 06 03.5 -0.4**
comp=Z,100nm,1.0s,mb5.8
HYB *e*S **S** **21 14 12.0 +11**
ARU Arti 58.53 320⇓*i*P **P** **21 06 04.1 -1.7**
ARU *i* 21 06 49.4
ARU *i* 21 08 13.7
ARU *i* S **S** **21 14 05.4 +0.1**
ARU *i* 21 15 50.8
ARU *i* SS SS 21 17 54.8 -4.8
ARU pmax pmax
comp=Z,97nm,0.9s,mb5.8
ARU MLR MLR
comp=E,109μm,16.0s,MS7.1
ARU MLR MLR
comp=Z,122μm,16.0s,MS7.1
ARU MLR MLR
comp=N,15μm,15.0s,MS7.1
ARU Arti 58.53 320 *e*P **P** **21 06 04.1 -1.7**
comp=N,117nm,1.0s,mb5.9
ARU LR LR
comp=Z,97μm,19.0s,MS6.9
SIT Sitka 58.56 39 PFAKE 21 06 20.0 +14
SIT LR LR
comp=Z,70μm,20.0s,MS6.8
MDRS Chennai 59.00 265 *e*P **P** **21 06 07.0 -2.7**
MDRS *e* 21 14 17.0
MDRS *e* 21 20 26.0
LATR Latur 59.35 272 *e*P **P** **21 06 11.5 -0.6**
CUD Cuddapah 59.49 267 *e*P **P** **21 06 10.7 -2.4**
CUD *e*PP x 21 08 47.0
CUD *e*PcP x 21 10 32.7
CUD *e*S **S** **21 14 20.7 +2.4**
CUD *e*ScS ScS 21 15 59.7 +3.1
CUD *e* 21 21 04.4
NOUC Port Laguerre 60.76 153 *e*P **P** **21 06 20.4 -1.3**
NOUC Port Laguerre 60.76 153 *e*P **P** **21 06 20.4 -1.3**
DZM Mont Dzumac 60.79 153 *e*P **P** **21 06 19.8 -2.0**
DZM Mont Dzumac 60.79 153 *e*P **P** **21 06 19.8 -2.0**
DLBC Dease Lake 60.88 37 *e*P **P** **21 06 21.6 -0.4**
POO Poona 61.53 274⇑*i*P **P** **21 06 26.4 -0.5**
POO *e* 21 14 43.0
POO *i* S **S** **21 14 52.5 +8.1**
POO AMS AMS 21 25 45.3
comp=Z,2μm,10.8s
QUE Quetta 61.85 289 *e*P **P** **21 06 28.5 -0.4**
QUE *e*S **S** **21 14 54.0 +5.7**
COCO West Island 62.62 231 PFAKE 21 06 50.0 +16
COCO LR LR
comp=Z,12μm,21.0s,MS6.0
BHUJ Bhuj 62.74 281⇑*i*P **P** **21 06 31.7 -3.2**
BHUJ *e*S **S** **21 14 59.7 0.0**
BHUJ AMS AMS 21 23 56.1
comp=Z,5μm,12.9s,MS5.8
GOA Goa 63.07 271⇑*i*P **P** **21 06 35.4 -1.8**
GOA *i* S **S** **21 15 08.3 +4.6**
SPITS Spitsbergen Ar 63.33 349 P **P** **21 06 37.6 -0.6**
comp=Z,8.5nm,0.7s,mb5.0,baz=113,slow=15,SNR=8.2
SPB4 Spitsbergen Ar 63.33 349 *e*P **P** **21 06 36.6 -1.6**
KBS Kingsbay 63.47 350 *e*P **P** **21 06 37.7 -1.4**
KBS *e*S **S** **21 15 11.1 +3.1**
KBS AMS AMS 21 38 02.4
comp=Z,25μm,18.0s,MS6.4
KBS Kingsbay 63.47 350 *e*P **P** **21 06 28.6 -10**
KBS LR LR
comp=Z,24985μm,18.0s
TRD Trivandrum 64.17 263 *i* **P** **21 06 50.2 +5.7**
LVZ Lovozero 64.73 336 *i* P **P** **21 06 45.9 -1.3**
LVZ *e* 21 09 12.8
LVZ *e*S **S** **21 15 25.5 +2.0**
LVZ pmax pmax
comp=Z,40nm,1.4s,mb5.3
LVZ pmax pmax
comp=N,7.0nm,0.9s
LVZ pmax pmax
comp=E,6.0nm,1.0s
LVZ pmax pmax
comp=Z,2μm,7.4s
LVZ pmax pmax
comp=N,200nm,3.1s
LVZ pmax pmax
comp=E,660nm,5.8s
LVZ smax
comp=Z,1μm,12.0s
LVZ smax
comp=N,8μm,15.7s
LVZ smax
comp=E,6μm,14.1s
LVZ smax
comp=N,8μm,15.5s
LVZ smax
comp=Z,3μm,11.2s
LVZ smax
comp=E,8μm,13.8s
LVZ MLR MLR
comp=Z,67μm,17.0s,MS6.9

LVZ MLR MLR
comp=N,30µm,15.0s,MS7.0
LVZ MLR MLR
comp=E,67µm,18.0s,MS7.0
LVZ Lovozero 64.73 336⇑ *i*P **P 21 06 45.9 -1.3**
BJO Bjornoya 65.19 345 *e*P **P 21 06 52.8 +2.6**
BJO *e*S S 21 15 27.9 -1.2
BJO *e*SS SS 21 19 50.5 +6.8
BJO AMS AMS 21 41 59.1
comp=Z,62µm,16.0s,MS6.9
APA Apatity 65.30 336⇑ *i*P **P 21 06 50.0 -0.9**
APA *i* pP 21 06 58.8 -2.9
APA *i* 21 07 21.0
APA *i* S S 21 15 31.0 +0.4
APA *i* 21 16 39.0
APA *e*SS SS 21 19 50.0 +4.5
APA pmax pmax
comp=Z,2µm,6.0s
APA MLR MLR
comp=Z,133µm,18.0s,MS7.2
STKA Stephens Creek 65.70 180⇓ *i*P **P 21 06 55.0 +0.9**
comp=Z,20nm,0.8s,mb5.2
STKA *e*S S 21 15 34.8 -1.2
STKA Stephens Creek 65.70 180 P **P 21 06 52.3 -1.8**
comp=Z,26nm,1.2s,mb5.2,baz=350,slow=8.0,SNR=18
STKA LR LR 21 34 54.5
comp=Z,29µm,20.4s,MS6.5,baz=352,slow=35
FORT Forrest 65.82 193⇑ *i*P **P 21 06 54.6 -0.3**
comp=Z,383nm,0.7s,mb6.5
FORT *e*S S 21 15 39.0 +1.4
KEV Kevo 66.12 340 *e*p **P 21 07 00.1 +4.0**
YKW3 Yellowknife Ar 66.24 29 *e*P **P 21 06 56.6 -0.4**
YKW3 *e*sP sP 21 07 11.7 -0.1
YKW3 *e*PcP PcP 21 07 26.0 -0.9
YKA Yellowknife Ar 66.28 29 P **P 21 06 54.5 -2.7**
comp=Z,5.0nm,0.8s,mb4.6,baz=298,slow=6.3,SNR=58
YKA S S 21 15 41.9 -0.7
comp=Z,0.9nm,1.2s,baz=297,slow=43,SNR=3.0
YKA PKP2bc 21 35 31.8
comp=Z,0.2nm,0.7s,baz=123,slow=3.6,SNR=4.2
YKA LR LR 21 39 03.7
comp=Z,20µm,18.3s,MS6.4,baz=300,slow=39
YKA Yellowknife Ar 66.28 29 *i*P **P 21 06 54.5 -2.7**
ARCES ARCESS Array B 66.68 340 P **P 21 06 57.5 -2.2**
comp=Z,5.3nm,0.7s,mb4.7,baz=56,slow=7.1,SNR=16
ARCES LR LR 21 43 06.8
comp=Z,63µm,18.1s,MS6.9,baz=49,slow=42
ARE0 ARCESS Array S 66.68 340 *e*P **P 21 06 56.7 -3.0**
KTK1 Kautokeino 67.64 340 *e*P **P 21 07 06.0 +0.4**
OCWA Octopus Mounta 68.30 46 *e*P **P 21 07 08.8 -1.4**
comp=Z,216nm,1.4s,mb6.0
OCWA LR LR
comp=Z,21µm,20.0s,MS6.4
PGC Sidney 68.32 45 *e*P **P 21 07 10.5 +0.2**
comp=Z,70nm,0.8s,mb5.7
PGC *e*PcP PcP 21 07 35.4 -0.4
STW Striped Peak 68.42 46 P **P 21 07 14.7 +3.7**
TRO Tromso 68.42 341 *e*P **P 21 07 12.0 +1.4**
JOF Joensuu 68.50 332 *e*p **P 21 07 11.5 +0.4**
comp=Z,3.5nm,0.4s,mb4.7
DAG Danmarks Havn 68.62 355 *c i*P **P 21 07 12.4 +0.7**
comp=Z,29nm,1.1s,mb5.1
comp=Z,28µm,17.0s
DAG Danmarks Havn 68.62 355 *e*P **P 21 07 12.4 +0.7**
DAG pmax pmax
comp=Z,29nm,1.1s,mb5.1
DAG MLR MLR
comp=N,16µm,17.0s,MS6.5
DAG MLR MLR
comp=E,22µm,17.0s,MS6.5
DAG MLR MLR
comp=Z,29µm,17.0s,MS6.6
DAG Danmarks Havn 68.62 355 *e*Pu 21 07 12.4
comp=Z,29nm,1.1s
DAG LR LR
comp=Z,29µm,17.0s,MS6.6
KLBR Kellerberrin 69.11 202 *e*P **P 21 07 16.4 +0.9**
comp=Z,54nm,1.0s,mb5.4
GNW Green Mountain 69.20 46 *e*P **P 21 07 15.9 +0.1**
JCW Jim Creek 69.43 45 P **P 21 07 17.5 +0.4**
BMW Boistfort Moun 69.47 47 *e*P **P 21 07 17.0 -0.4**
CNB Canberra Magne 69.52 173 *e*P **P 21 07 19.2 +1.2**
comp=Z,35nm,1.1s,mb5.2
RPW Rockport 69.55 45 *e*P **P 21 07 17.3 -0.6**
MOS Moscow 69.56 324α *i*P **P 21 07 16.1 -1.7**
MOS *e* 21 07 36.1
MOS *e* 21 09 48.5
MOS *e*PPP PPP 21 11 27.7 -5.2
MOS *i* S S 21 16 23.3 +1.4
MOS *e* 21 17 16.5
MOS *e*SS SS 21 20 54.1 +2.5
MOS *e*SSS SSS 21 23 56.5 +1.2
MOS pmax pmax
comp=Z,4µm,4.4s
MOS pmax pmax
comp=N,2µm,4.9s
MOS pmax pmax
comp=E,2µm,4.3s
MOS pmax pmax
comp=N,205nm,2.0s
MOS pmax pmax
comp=Z,617nm,2.0s,mb6.2
MOS pmax pmax
comp=E,214nm,2.2s
MOS smax
comp=N,15µm,10.4s
MOS smax
comp=E,33µm,14.2s
MOS MLR MLR
comp=Z,156µm,15.3s,MS7.4
MOS MLR MLR
comp=N,67µm,16.6s,MS7.3
MOS MLR MLR
comp=E,107µm,14.9s,MS7.3
RMW Rattlesnake Mo 69.86 46 *e*P **P 21 07 19.4 -0.3**
RVW Rose Valley 69.92 47 P **P 21 07 23.8 +3.7**
MUN Mundaring 69.95 203 *e*P **P 21 07 24.8 +4.2**
comp=E,17nm,1.1s,mb4.9
MUN *e*S S 21 16 28.5 +1.5
FMW Mount Fremont 70.19 46 P **P 21 07 22.7 +0.9**
LON Longmire 70.19 47 P **P 21 07 23.4 +1.6**
LON Longmire 70.19 47 *e*P **P 21 07 22.8 +1.0**
SHW Mount Saint He 70.21 47 P **P 21 07 23.8 +1.9**
SHW Mount Saint He 70.21 47 *e*P **P 21 07 23.1 +1.2**
MAK Makhachkala 70.25 309⇓ *i*P **P 21 07 22.0 -0.2**
MAK *i* S S 21 16 38.0 +7.8
MAK Makhachkala 70.25 309 *e*P **P 21 07 22.0 -0.2**
COR Corvallis 70.32 49 PFAKE 21 07 30.0 +7.4
COR LR LR
comp=Z,18µm,19.0s,MS6.3
OBN Obninsk 70.40 324 *c i*P **P 21 07 21.5 -1.4**
OBN *e* 21 10 02.1
OBN *i* S S 21 16 38.8 +7.0
OBN *e*SS SS 21 21 02.8 -1.8
OBN pmax pmax
comp=Z,223nm,1.9s,mb5.8
OBN MLR MLR
comp=Z,134µm,16.0s,MS7.3
OBN Obninsk 70.40 324 *e*P **P 21 07 21.5 -1.4**
comp=Z,123nm,1.2s,mb5.7
OBN LR LR
comp=Z,50µm,20.0s,MS6.8
NLW Nelson Butte 70.42 45 *e*P **P 21 07 23.2 +0.1**
KEBM Edson Butte 70.49 51 *e*P **P 21 07 25.1 +1.4**
NWAO Narrogin (SRO) 70.51 201 P **P 21 07 25.8 +1.8**
NWAO pmax pmax
comp=Z,35nm,0.7s
NWAO MLR MLR
comp=Z,10µm,21.0s
NWAO Narrogin (SRO) 70.51 201 *e*P **P 21 07 24.2 +0.2**
comp=Z,34nm,0.6s,mb5.5
NWAO LR LR
comp=Z,10µm,21.0s,MS6.0
PUL Pulkovo 70.67 330 *e*P **P 21 07 23.7 -0.8**
PUL *e*S S 21 16 37.3 +2.6
PUL *e*SS SS 21 21 08.0 -0.7
PUL pmax pmax
comp=Z,30nm,0.7s,mb5.3
PUL pmax pmax
comp=N,70nm,1.0s
PUL pmax pmax
comp=E,30nm,0.6s
PUL pmax pmax
comp=Z,2µm,6.7s
PUL pmax pmax
comp=N,560nm,3.5s
PUL pmax pmax
comp=E,270nm,1.3s
PUL smax
comp=Z,3µm,14.2s
PUL smax
comp=N,7µm,15.9s
PUL smax
comp=E,11µm,13.7s
PUL smax
comp=N,7µm,9.9s
PUL smax
comp=Z,4µm,12.6s
PUL smax
comp=E,15µm,12.5s
PUL Pulkovo 70.67 330 *e*P **P 21 07 23.8 -0.7**
SSOR Sweet Springs 70.72 49 P **P 21 07 26.8 +1.8**
SSOR Sweet Springs 70.72 49 *e*P **P 21 07 25.1 +0.1**
SSOR P 21 07 29.4
EBG Ellensburg 70.86 46 P **P 21 07 25.8 -0.1**
HSO Harness Mounta 70.97 50 *e*P **P 21 07 24.8 -1.8**
VRSR Storozhevoye 71.09 319 *c i*P **P 21 07 26.0 -1.2**
VRSR *e**SP sP 21 07 37.7 -4.2
VRSR *e* 21 07 47.4
VRSR *e*S S 21 16 39.3 -0.5
VRSR *e*SS SS 21 21 08.3 -7.2
VRSR pmax pmax
comp=Z,20nm,0.7s,mb5.2
VRSR pmax pmax
comp=N,10.0nm,0.8s
VRSR pmax pmax
comp=E,70nm,2.6s
VRSR smax
comp=N,2µm,6.7s
VRSR smax
comp=Z,680nm,6.5s
VRSR MLR MLR
comp=N,34µm,15.0s,MS6.9
VRSR MLR MLR
comp=E,42µm,15.0s,MS6.9
VRSR MLR MLR
comp=Z,66µm,15.0s,MS7.0
THR Tehran 71.16 301 P **P 21 07 29.2 +1.4**
comp=Z,11nm,1.0s,mb4.8,baz=94,slow=3.3,SNR=18
THR LR LR 21 43 20.8
comp=Z,13µm,18.9s,MS6.2,baz=330,slow=40
THR Tehran 71.16 301 P **P 21 07 29.3 +1.4**
THR pmax pmax
comp=Z,11nm,1.0s
THR MLR MLR
comp=Z,13µm,18.9s
FINES FINESS Array B 71.35 333 P **P 21 07 27.2 -1.3**
comp=Z,7.0nm,0.5s,mb4.8,baz=90,slow=5.7,SNR=31
FINES LR LR 21 44 23.4
comp=Z,44µm,18.4s,MS6.8,baz=227,slow=41
FINES FINESS Array B 71.35 333 P **P 21 07 27.2 -1.4**
FINES pmax pmax
comp=Z,7.0nm,0.5s
FINES MLR MLR
comp=Z,44µm,18.4s
VGB Gordon Butte 71.43 47 P **P 21 07 29.6 +0.3**
VGB *e* 21 07 47.6
VGB Gordon Butte 71.43 47 *e*P **P 21 07 29.3 0.0**
TOO Toolangi 71.48 177 *e*P **P 21 07 31.5 +1.8**
comp=Z,18nm,0.9s,mb5.0
TOO *e*S S 21 16 48.2 +3.7
HUMO Hull Mountain 71.50 51 *e*P **P 21 07 28.1 -1.7**
HUMO *e*PcP PcP 21 07 49.9 +0.6
CROR Criterion Ridg 71.56 48 P **P 21 07 31.5 +1.4**
HAWA Hanford 71.74 46 *e*P **P 21 07 31.0 -0.1**
comp=Z,47nm,1.2s,mb5.3
HAWA LR LR
comp=Z,24µm,19.0s,MS6.5
DPW Davenport 71.77 44 P **P 21 07 32.2 +1.0**
KHMM Horse Mountain 71.86 53 *e*P **P 21 07 32.8 +0.9**
GOF Gofitskoye 72.02 313⇑ *i*P **P 21 07 33.0 +0.2**
GOF *e* 21 10 16.0
GOF *i* S S 21 16 57.0 +6.3
GOF pmax pmax
comp=Z,300nm,1.5s,mb6.0
GOF smax
comp=E,18µm,13.0s
GOF MLR MLR
comp=N,130µm,17.0s,MS7.5
GOF MLR MLR
comp=E,150µm,17.0s,MS7.5
VIPM Ingram Point 72.03 48 P **P 21 07 33.5 +0.6**
MOR8 Moi Rana 72.05 340 *e*P **P 21 07 30.2 -2.4**
MOR8 AMb AMB 21 07 43.1
comp=Z,105nm,1.9s,mb5.5
MOR8 Moi Rana 72.05 340 *e*P **P 21 07 30.2 -2.4**
comp=Z,105nm,1.9s,mb5.4
YBH Yreka Blue Hor 72.10 51 P **P 21 07 33.2 -0.1**
YBH pmax pmax
comp=Z,48nm,1.4s
YBH MLR MLR
comp=Z,27µm,20.0s
YBH Yreka Blue Hor 72.10 51 *e*P **P 21 07 33.3 0.0**
comp=Z,48nm,1.4s,mb5.2
YBH LR LR
comp=Z,27µm,20.0s,MS6.5
NEW Newport 72.18 43 P **P 21 07 32.4 -1.3**
NEW pmax pmax
comp=Z,42nm,1.1s
NEW MLR MLR
comp=Z,23µm,20.0s
NEW Newport 72.18 43 *e*P **P 21 07 32.3 -1.4**
comp=Z,75nm,1.1s,mb5.5
NEW LR LR
comp=Z,23µm,20.0s,MS6.4
PYA Pyatigorsk 72.53 312 *c i*P **P 21 07 35.0 -0.8**
PYA *e* 21 10 16.0
PYA *e*S S 21 16 59.0 +2.5
PYA pmax pmax
comp=Z,5µm,12.0s
PYA smax
comp=E,12µm,14.0s
PYA MLR MLR
comp=N,64µm,17.0s
PYA MLR MLR
comp=Z,70µm,15.5s,MS7.0
PYA Pyatigorsk 72.53 312 *e*P **P 21 07 35.0 -0.8**
TI2 Plekhanov 72.63 309⇑ *i*P **P 21 07 36.2 -0.3**
TI2 *i* S S 21 17 03.0 +5.3
TI2 pmax pmax
comp=E,4µm,7.0s
TI2 MLR MLR
comp=Z,85µm,17.0s,MS7.1
TI2 MLR MLR
comp=N,40µm,16.0s,MS7.0
TI2 MLR MLR
comp=E,60µm,16.0s,MS7.0
ZEI Tsey 72.65 310 *c i*P **P 21 07 36.0 -0.5**
ZEI *i* 21 10 20.0
ZEI *e*S S 21 16 55.0 -2.9
ZEI pmax pmax
comp=Z,3µm,14.0s
ZEI pmax pmax
comp=Z,4µm,16.0s
ZEI smax
comp=N,3µm,15.0s
ZEI smax
comp=E,16µm,14.0s
ZEI MLR MLR
comp=N,70µm,15.0s
ZEI MLR MLR
comp=Z,40µm,15.0s,MS6.8
LNOR Lincton Mounta 72.75 46 P **P 21 07 38.2 +1.1**
LNOR Lincton Mounta 72.75 46 *e*P **P 21 07 37.7 +0.6**
WDC Whiskeytown Da 72.79 52 P **P 21 07 38.8 +1.4**
WDC pmax pmax
comp=Z,41nm,1.3s,mb5.2
WDC MLR MLR
comp=Z,24µm,20.0s,MS6.5
WDC Whiskeytown Da 72.79 52 *e*P **P 21 07 38.7 +1.3**
comp=Z,32nm,1.2s,mb5.1
WDC LR LR
comp=Z,24µm,20.0s,MS6.5
KIV Kislovodsk 72.80 312 P **P 21 07 37.0 -0.4**
KIV pmax pmax
comp=Z,99nm,0.8s,mb5.8
KIV Kislovodsk 72.80 312 *e*P **P 21 07 37.6 +0.1**
comp=Z,92nm,0.8s,mb5.8
KIV LR LR
comp=Z,34µm,19.0s,MS6.7
VSU Vasula 72.93 330⇑ *i*P **P 21 07 37.0 -0.9**
JMIC Jan Mayen 72.96 350 P **P 21 07 38.7 +0.8**
comp=Z,23nm,0.9s,mb5.1,baz=31,slow=9.5,SNR=2.6
JMIC LR LR 21 43 39.3
comp=Z,11µm,18.1s,MS6.2,baz=220,slow=39
JMIC Jan Mayen 72.96 350 *e*P **P 21 07 38.2 +0.4**
JMIC *e*S S 21 17 00.9 +0.1
JMIC AMS AMS 21 43 20.4
comp=Z,14µm,18.1s,MS6.3
HOPS Hopland 73.23 54 PFAKE 21 07 50.0 +10
HOPS LR LR
comp=Z,87µm,20.0s,MS7.0
SUMG Summit 73.54 360 *e*P **P 21 07 41.3 0.0**
WALA Waterton Lakes 73.56 42 *e*P **P 21 07 41.8 0.0**
comp=Z,20nm,0.7s,mb5.2
MOD Modoc 73.56 50 *e*P **P 21 07 41.7 -0.3**
comp=Z,36nm,1.1s,mb5.2
MOD LR LR
comp=Z,23µm,19.0s,MS6.5
NSHM Saint Helena R 73.79 54 P **P 21 07 44.0 +0.7**
NSS Namsos 73.96 340 *e*P **P 21 07 39.7 -4.1**
NSS *e*S S 21 17 08.9 -3.3
NSS *e*SS SS 21 21 59.8 +0.5
NSS AMS AMS 21 47 12.3
comp=Z,51µm,15.9s,MS6.9
OHCM Honcut 74.12 53 *e*P **P 21 07 44.7 -0.6**
WVOR Wild Horse Val 74.34 49 P **P 21 07 46.7 +0.3**
WVOR pmax pmax
comp=Z,68nm,1.3s,mb5.4
WVOR MLR MLR
comp=Z,24µm,19.0s,MS6.5
WVOR Wild Horse Val 74.34 49 *e*P **P 21 07 46.4 0.0**
comp=Z,65nm,1.3s,mb5.4
WVOR LR LR
comp=Z,24µm,19.0s,MS6.5
LKC Lake Chabot 74.56 55 *e*P **P 21 07 45.9 -1.9**
BEKR Beckwourth 74.58 52 *e*P **P 21 07 46.9 -1.0**
comp=Z,30nm,0.8s,mb5.3
MSO Missoula 74.77 44 *e*P **P 21 07 49.1 +0.2**
comp=Z,110nm,1.8s,mb5.5
MSO LR LR
comp=Z,21µm,20.0s,MS6.4
SOC Sochi 74.83 313 *c i*P **P 21 07 49.1 -0.1**
SOC *e* pP 21 08 02.9 +2.8
SOC *i* S S 21 17 24.6 +2.3
SOC *e* 21 17 52.4
SOC *e*SS SS 21 22 15.7 +3.0
SOC pmax pmax
comp=Z,3µm,6.4s
SOC pmax pmax
comp=N,590nm,2.4s
SOC pmax pmax
comp=E,3µm,6.2s
SOC pmax pmax
comp=Z,180nm,1.5s,mb5.8
SOC pmax pmax
comp=N,180nm,2.2s
SOC pmax pmax
comp=E,210nm,1.4s
SOC smax
comp=N,1µm,5.2s
SOC smax
comp=E,16µm,13.6s
SOC MLR MLR
comp=Z,77µm,18.0s,MS7.0
SOC MLR MLR
comp=N,64µm,17.0s,MS7.2
SOC MLR MLR
comp=E,87µm,17.0s,MS7.2
MNK Minsk 74.90 326 *e*P **P 21 07 47.0 -2.4**
MNK *e*S S 21 17 23.0 +0.1
SCO Scoresbysund 74.96 354 *i*P **P 21 07 49.8 +0.3**
comp=E,9.7nm,0.8s,mb4.8
SCO *i* S S 21 17 25.9 +2.7
SCO Scoresbysund 74.96 354 *i*P **P 21 07 49.8 +0.3**
SCO *i* S S 21 17 25.9 +2.7
SCO pmax pmax
comp=Z,10.0nm,0.8s,mb4.8
CHMT Chamberlain Mo 75.11 43 *e*P **P 21 07 51.4 +0.6**
TVAN Van 75.16 307 *i*P **P 21 07 54.0 +2.7**
WCN Washoe City 75.28 52 P **P 21 07 53.8 +1.8**
WCN pmax pmax
comp=Z,130nm,1.8s,mb5.6
WCN Washoe City 75.28 52 *e*P **P 21 07 53.6 +1.6**
comp=Z,19nm,0.8s,mb5.1
PAHR Pah Rah Range 75.31 52 P **P 21 07 50.4 -1.7**
comp=Z,18nm,1.0s,mb5.0
SAO San Andreas Ge 75.49 55 PFAKE 21 08 00.0 +6.8
SAO LR LR
comp=Z,45µm,20.0s,MS6.8
ANN Anapa 75.53 314 *c i*P **P 21 07 52.2 -1.1**
ANN *e**PP pP 21 07 59.0 -5.1
ANN pmax pmax
comp=Z,110nm,1.9s,mb5.5
CMB Columbia Colle 75.53 54 *e*P **P 21 07 52.1 -1.3**
CMB pmax pmax
comp=Z,150nm,1.4s,mb5.7
CMB MLR MLR
comp=Z,50µm,20.0s,MS6.8
CMB Columbia Colle 75.53 54 *e*P **P 21 07 52.1 -1.3**
comp=Z,150nm,1.4s,mb5.7
CMB LR LR
comp=Z,50µm,20.0s,MS6.8
ERZM Erzurum 75.77 309 *i*P **P 21 07 56.7 +2.0**
HRY Holter Researc 76.03 43 *e*P **P 21 07 55.9 -0.2**
FFC Flin Flon 76.11 32 *e*P **P 21 07 55.1 -1.3**
comp=Z,60nm,1.0s,mb5.5
FFC *e* 21 08 12.6
FFC LR LR
comp=Z,24µm,19.0s,MS6.5
BMN Battle Mountai 76.31 50 P **P 21 07 58.3 +0.5**
BMN pmax pmax
comp=Z,87nm,1.3s,mb5.5
BMN MLR MLR
comp=Z,30µm,20.0s,MS6.6
BMN Battle Mountai 76.31 50 *e*P **P 21 07 58.0 +0.2**
comp=Z,76nm,1.3s,mb5.5
BMN *e* 21 08 13.9
BMN LR LR
comp=Z,30µm,20.0s,MS6.6
HLID Hailey 76.32 47 *e*P **P 21 07 57.0 -0.8**
comp=Z,32nm,1.2s,mb5.1
HLID LR LR
comp=Z,27µm,20.0s,MS6.5
MCMT McKenzie Canyo 76.53 45 *e*P **P 21 07 57.6 -1.4**
FCC Fort Churchill 76.55 26 P **P 21 07 57.8 -1.0**
FCC pmax pmax
comp=Z,100nm,1.3s,mb5.6
FCC Fort Churchill 76.55 26 *e*P **P 21 07 57.3 -1.5**
comp=Z,73nm,1.1s,mb5.5
FCC *e* 21 08 15.0
HFS Hagfors 76.70 336 P **P 21 07 59.0 -0.6**
comp=Z,11nm,0.6s,mb5.0,baz=80,slow=3.9,SNR=27
HFS Hagfors 76.70 336 P **P 21 07 59.0 -0.6**
HFS pmax pmax
comp=Z,11nm,0.6s
NVAR Mina Arag Bea 76.70 53 P **P 21 08 00.0 -0.1**
comp=Z,8.4nm,0.7s,mb4.8,baz=292,slow=5.1,SNR=25
NVAR LR LR 21 36 58.3
comp=Z,52µm,20.2s,MS6.8,baz=280,slow=32
MOL Molde 76.74 340 *e*P **P 21 08 01.6 +1.8**
MOL AMb AMB 21 08 23.1
comp=Z,110nm,1.6s,mb5.5
MOL Molde 76.74 340 *e*P **P 21 08 01.6 +1.8**
comp=Z,110nm,1.6s,mb5.5
BOZ Bozeman (W) 76.76 44 P **P 21 07 59.8 -0.5**
BOZ pmax pmax
comp=Z,110nm,1.6s,mb5.5
BOZ MLR MLR
comp=Z,18µm,20.0s,MS6.4
BOZ Bozeman (W) 76.76 44 *e*P **P 21 07 59.9 -0.4**
comp=Z,46nm,1.2s,mb5.3
BOZ *e* 21 08 16.6
BOZ LR LR
comp=Z,18µm,20.0s,MS6.4
MNV Mina 76.80 53 P **P 21 08 01.6 +1.0**
MNV pmax pmax
comp=Z,89nm,1.8s,mb5.4
MNV Mina 76.80 53 *e*P **P 21 08 01.7 +1.1**
comp=Z,68nm,1.7s,mb5.3
MNV LR LR
comp=Z,54µm,20.0s,MS6.9
NB2 NORSAR Subarra 76.83 338 P **P 21 07 59.0 -1.3**
comp=Z,453nm,2.0s,mb6.0,baz=41,slow=5.6
NB2 NORSAR Subarra 76.83 338 P **P 21 07 59.0 -1.3**
baz=40,slow=5.9
NOA NORSAR Array B 76.83 338 P **P 21 07 59.2 -1.1**

comp=Z,8.3nm,0.6s,mb4.8,baz=40,slow=5.7,SNR=55
NOA LR LR 21 44 26.5
comp=Z,48µm,21.6s,MS6.8,baz=15,slow=38
NOA NORSAR Array B 76.83 338 P **P** **21 07 59.3 -1.0**
NOA pmax pmax
comp=Z,8.0nm,0.6s
NOA MLR MLR
comp=Z,48µm,21.7s
TAU Tasmania Unive 76.90 176 PFAKE 21 08 10.0 +8.9
TAU LR LR
comp=Z,26µm,19.0s,MS6.6
BEST Besiri 76.92 307 *i* P **P** **21 08 03.1 +1.8**
NAO01 NORSAR Array S 77.08 338 *eP* **P** **21 08 01.0 -0.8**
comp=Z,11nm,0.7s,mb4.9
NAO01 *e* 21 08 15.9
NAO01 LR LR
comp=Z,43µm,19.0s,MS6.8
DGAR Diego Garcia 77.09 252 P **P** **21 08 00.3 -2.4**
MTUM Tungsten Hills 77.12 54 *eP* **P** **21 08 03.0 +0.6**
SUW Suwalki 77.31 328⇓ *eP* **P** **21 08 02.0 -1.1**
comp=Z,2µm,6.1s
SUW Suwalki 77.31 328⇑ *eP* **P** **21 08 02.0 -1.1**
SUW *e**PP pP 21 08 09.4 -4.6
SUW *e*S S 21 17 51.5 +2.3
SUW *e**SS 21 18 08.2
SUW *e* 21 18 12.5
SUW MLR MLR
comp=Z,93µm,16.5s,MS7.2
SUW Suwalki 77.31 328 *eP* **P** **21 08 01.9 -1.2**
QLMT Earthquake Lak 77.35 44 *eP* **P** **21 08 03.9 +0.3**
SIM Simferopol' 77.38 316⇓ *eP* **P** **21 08 04.0 +0.3**
SIM *i* S S 21 17 52.0 +1.7
SIM *e*PS PS 21 18 46.0 +11
SIM *e*SS SS 21 22 50.0 -2.0
SIM pmax pmax
comp=Z,130nm,1.0s,mb5.8
SIM pmax pmax
comp=Z,4µm,16.0s
TPH Tonopah 77.61 52 P **P** **21 08 06.8 +1.7**
TPH pmax pmax
comp=Z,120nm,1.7s,mb5.5
TPH MLR MLR
comp=Z,58µm,20.0s,MS6.9
TPH Tonopah 77.61 52 *eP* **P** **21 08 06.5 +1.4**
comp=Z,68nm,1.4s,mb5.4
TPH LR LR
comp=Z,58µm,20.0s,MS6.9
HASS Wahat al Ahsa' 77.65 292 P **P** **21 08 05.9 +0.2**
YMR Madison River 77.72 44 *eP* **P** **21 08 06.0 +0.5**
ELZG Elazig 78.09 308 *i* P **P** **21 08 10.7 +3.0**
HVU Hansel Valley 78.33 47 P **P** **21 08 09.2 +0.2**
HVU Hansel Valley 78.33 47 *eP* **P** **21 08 08.8 -0.2**
HVU *e* 21 08 24.2
DAC Darwin (Calif) 78.36 54 PFAKE 21 08 20.0 +11
DAC LR LR
comp=Z,35µm,20.0s,MS6.7
KONO Kongsberg 78.42 337 *eP* **P** **21 08 08.1 -1.0**
KONO *e*S S 21 18 00.9 -0.1
KONO AMS AMS 21 49 33.7
comp=Z,48µm,18.0s,MS6.9
KONO Kongsberg 78.42 337 P **P** **21 08 07.2 -1.9**
KONO pmax pmax
comp=Z,81nm,1.4s,mb5.5
KONO MLR MLR
comp=Z,63µm,19.0s,MS7.0
KONO Kongsberg 78.42 337 P **P** **21 08 07.2 -1.9**
comp=Z,81nm,1.4s,mb5.5
KONO LR LR
comp=Z,63µm,19.0s,MS7.0
RAR Rarotonga 78.48 125 PFAKE 21 08 20.0 +10
RAR LR LR
comp=Z,27µm,21.0s,MS6.5
KSWY Kelly School 78.53 45 *eP* **P** **21 08 11.0 +1.0**
KSWY *e* 21 08 27.9
BGU Big Grassy Mou 78.67 48 *eP* **P** **21 08 10.7 -0.2**
SVST Sivas 78.67 310 *i* P **P** **21 08 17.1 +6.2**
AHID Auburn Hatcher 78.76 46 *eP* **P** **21 08 12.7 +1.3**
comp=Z,15nm,0.4s,mb5.3
AHID LR LR
comp=Z,18µm,19.0s,MS6.4
SPUT South Promonto 78.80 48 *eP* **P** **21 08 11.1 -0.5**
BOYT Boyabat 78.98 313 *i* P **P** **21 08 14.1 +1.5**
KIS Kishinev 79.08 320 *ce* **P** **21 08 12.0 -1.0**
KIS *i* S S 21 18 06.0 -2.3
KIS pmax pmax
comp=Z,3µm,12.0s
KIS pmax pmax
comp=Z,3µm,12.0s
KIS smax
comp=N,4µm,14.0s
KIS smax
comp=E,8µm,12.0s
HWUT Hardware Ranch 79.16 47 *eP* **P** **21 08 13.3 -0.3**
comp=E,142nm,1.1s,mb5.8
HWUT *e* 21 08 31.6
HWUT LR LR
comp=Z,22µm,19.0s,MS6.5
MWC Mount Wilson 79.18 56⇑ *eP* **P** **21 08 16.4 +2.5**
WAR Warsaw 79.46 327 *eP* **P** **21 08 16.7 +1.7**
WAR *e**PP pP 21 08 26.0 +0.1
WAR *e*S S 21 18 16.3 +4.1
WAR *e* 21 18 21.9
WAR *e**SS 21 18 27.9
WAR MLR MLR
comp=E,100µm,16.5s,MS7.3
WAR MLR MLR
comp=N,50µm,16.2s,MS7.3
WAR MLR MLR
comp=Z,60µm,16.8s,MS7.0
CTKT Corum 79.52 312 *i* P **P** **21 08 17.1 +1.6**
TCUT Toone Canyon 79.55 47 *eP* **P** **21 08 16.4 +0.7**
TCUT *e* 21 08 32.9
FRB Frobisher Bay 79.55 13 LR LR 21 48 09.1
comp=Z,46µm,19.1s,MS6.8,baz=342,slow=39
CTU Camp Tracy 79.59 48 *eP* **P** **21 08 16.1 +0.2**
CTU *e* 21 08 33.5
GZT Gaziantep 79.66 308 *i* P **P** **21 08 17.5 +1.1**
BW06 Boulder Array 79.67 45 PFAKE 21 08 30.0 +14
BW06 LR LR
comp=Z,18µm,20.0s,MS6.4
PDAR Pinedale Array 79.67 45 P **P** **21 08 15.2 -1.1**
comp=Z,14nm,0.7s,mb5.0,baz=278,slow=2.0,SNR=62
NLU North Lily Min 79.83 48 *eP* **P** **21 08 17.5 +0.3**
JLU Jordanelle 79.83 48 *eP* **P** **21 08 17.6 +0.4**
JLU *e* 21 08 36.0
BALT Daday 79.83 314 *i* P **P** **21 08 18.8 +1.6**
BSD Bornholm Skovb 79.97 332 *i* P **P** **21 08 16.4 -1.2**
comp=Z,41nm,0.8s,mb5.4
BSD *i* 21 08 35.4
BSD *i* S S 21 18 18.3 +0.8
BSD Bornholm Skovb 79.97 332 *eP* **P** **21 08 16.4 -1.2**
BSD *i* S S 21 18 18.3 +0.8
BSD pmax pmax
comp=Z,41nm,0.8s,mb5.4
BSD Bornholm Skovb 79.97 332 *eP* **P** **21 08 16.4 -1.2**
comp=Z,41nm,0.8s,mb5.4
BSD *i* 21 08 35.4
BSD *i* S S 21 18 18.3 +0.8
DAU Daniels Canyon 80.06 48 P **P** **21 08 18.7 +0.3**
DAU Daniels Canyon 80.06 48 *eP* **P** **21 08 18.5 0.0**
MPU Maple Canyon 80.06 48 *eP* **P** **21 08 18.8 +0.3**
GKP Gorka Klasztor 80.38 330⇑ *eP* **P** **21 08 19.0 -0.9**
comp=Z,2.4nm,6.4s
GKP *e*PP PcP 21 08 26.9 -0.3
GKP *e*S S 21 18 25.4 +3.6
GKP *e*SKS SKS 21 18 34.7 +4.7
GKP LR LR
comp=Z,118µm,16.8s,MS7.3
ELDT Eldivan 80.43 313 *i* P **P** **21 08 22.1 +1.6**
KWP Kalwaria 80.46 325⇑ *eP* **P** **21 08 19.9 -0.5**
comp=Z,4µm,6.9s
KWP Kalwaria 80.46 325⇑ *eP* **P** **21 08 19.9 -0.5**
KWP *e**PP pP 21 08 28.2 -3.1
KWP *e*S S 21 18 27.8 +5.1
KWP *e* 21 18 32.1
KWP MLR MLR
comp=E,143µm,16.7s,MS7.5
KWP MLR MLR
comp=Z,147µm,17.2s,MS7.4
KWP MLR MLR
comp=N,114µm,18.1s,MS7.5
KWP Kalwaria 80.46 325 *eP* **P** **21 08 21.0 +0.6**
comp=N,310nm,1.5s,mb6.0
BORG Borgarnes 80.48 353 PFAKE 21 08 30.0 +10
BORG LR LR
comp=Z,29µm,19.0s,MS6.7
COP Copenhagen 80.48 333⇑ *iP* **P** **21 08 20.0 -0.4**
comp=Z,17nm,0.7s,mb5.1
COP *i* 21 09 25.5
COP *i* S S 21 18 21.4 -1.4
comp=Z,8µm,18.0s
COP Copenhagen 80.48 333⇑ *eP* **P** **21 08 20.0 -0.4**
COP *i* S S 21 18 21.4 -1.4
COP pmax pmax
comp=Z,17nm,0.7s,mb5.1
COP MLR MLR
comp=Z,8µm,18.0s,MS6.1
COP Copenhagen 80.48 333⇑ *eP* **P** **21 08 20.0 -0.4**
comp=Z,17nm,0.7s,mb5.1
COP *i* 21 09 25.5
COP *i* S S 21 18 21.4 -1.4
COP LR LR
comp=Z,8µm,18.0s,MS6.1
NEN Nelson 80.55 53 *eP* **P** **21 08 21.9 +0.8**
NEN *e* 21 08 37.2
AVNT Avonos 80.57 311 *i* P **P** **21 08 22.4 +1.3**
MVU Marysvale 80.59 50 *eP* **P** **21 08 21.7 +0.3**
comp=Z,67nm,1.3s,mb5.4
MVU *e* 21 08 39.4
MVU LR LR
comp=Z,18µm,20.0s,MS6.4
CFR Carcaliu 80.60 319⇓ *iP* **P** **21 08 21.2 0.0**
CFR Carcaliu 80.60 319⇓ *iP* **P** **21 08 21.3 +0.1**
MSU Marysvale 80.61 50 P **P** **21 08 21.9 +0.5**
MSU Marysvale 80.61 50 *eP* **P** **21 08 22.1 +0.6**
PFO Pinyon Flat Ob 80.63 56 P **P** **21 08 22.2 +0.6**
PFO pmax pmax
comp=Z,61nm,1.2s,mb5.4
PFO MLR MLR
comp=Z,120µm,20.0s,MS7.2
PFO Pinyon Flat Ob 80.63 56 *eP* **P** **21 08 21.5 -0.1**
comp=Z,30nm,0.9s,mb5.2
PFO *e* 21 08 39.1
PFO LR LR
comp=Z,118µm,20.0s,MS7.2
BRTR Keskin Array B 80.76 312 P **P** **21 08 22.0 -0.2**
comp=Z,10nm,0.8s,mb4.8,baz=108,slow=3.9,SNR=47
BRTR PKKPbc 21 27 03.9
comp=Z,0.7nm,0.9s,baz=198,slow=5.1,SNR=4.7
BRTR LR LR 21 49 43.1
comp=Z,33µm,18.1s,MS6.7,baz=145,slow=40
VRI Vrincioaia 80.92 320⇓ *iP* **P** **21 08 23.7 +0.8**
BRD Bordesti 80.96 320⇓ *iP* **P** **21 08 25.9 +2.8**
COBT Iskenderun 81.00 308 *i* P **P** **21 08 29.7 +6.2**
BAR Barrett 81.01 57 *eP* **P** **21 08 23.8 +0.2**
BAR *e* 21 08 40.5
HARR Harsova 81.02 319⇓ *iP* **P** **21 08 23.4 0.0**
HARR Harsova 81.02 319⇓ *iP* **P** **21 08 23.4 -0.1**
MUD Monsted U'grnd 81.06 335⇑ *iP* **P** **21 08 22.9 -0.5**
comp=Z,16nm,0.9s,mb4.9
MUD *i* 21 11 46.0
MUD *i* S S 21 18 30.2 +1.5
comp=Z,7µm,20.0s
MUD Monsted U'grnd 81.06 335⇑ *iP* **P** **21 08 22.9 -0.5**
MUD *i* S S 21 18 30.2 +1.5
MUD pmax pmax
comp=Z,16nm,0.9s,mb5.0
MUD MLR MLR
comp=Z,7µm,20.0s,MS6.0
SNZO South Karori 81.11 155 PFAKE 21 08 40.0 +16
SNZO LR LR
comp=Z,24µm,22.0s,MS6.5
SRU San Rafael 81.29 48 P **P** **21 08 24.9 -0.1**
SRU San Rafael 81.29 48 *eP* **P** **21 08 24.6 -0.4**
SRU *e* 21 08 43.5
OJC Ojcow 81.42 326 *eP* **P** **21 08 24.9 -0.5**
OJC *e*PcP PcP 21 08 31.2 -0.6
OJC *e*pP pP 21 08 35.7 -0.7
OJC *e* 21 11 40.4
OJC *e*S S 21 18 33.2 +0.5
OJC *e*SKS SKS 21 18 45.4 +8.0
OJC *e*SS SS 21 23 55.2 +2.7
OJC MLR MLR 21 47 38.8
comp=Z,43µm,20.3s,MS6.8
OJC Ojcow 81.42 326 *eP* **P** **21 08 24.9 -0.5**
OJC *e**PP pP 21 08 35.7 -0.7
OJC *e* 21 11 40.4
OJC *e*S S 21 18 33.2 +0.5
OJC *e*SS SS 21 23 55.2 +2.7
OJC MLR MLR
comp=Z,43µm,20.3s,MS6.8
ISR Istrita 81.50 320⇑ *iP* **P** **21 08 27.0 +1.1**
ISR Istrita 81.50 320⇓ *iP* **P** **21 08 27.0 +1.1**
CRVS Cervenica-Dubn 81.56 325 *eP* **P** **21 08 27.1 +1.0**
CRVS *e*PP PP 21 11 33.4 -1.4
CRVS *e*S S 21 18 42.0 +7.9
MLR Muntele Rosu 81.58 320 LR LR 21 49 39.6
comp=Z,127µm,18.1s,MS7.3,baz=40,slow=39
MZLS Mizel 81.71 293 P **P** **21 08 27.9 +0.4**
NIE Niedzica 81.74 326 *eP* **P** **21 08 27.5 +0.4**
HENT Hendek 81.75 314 *i* P **P** **21 08 33.7 +6.4**
ULM Lac du Bonnet 81.89 33 P **P** **21 08 26.8 -1.0**
comp=Z,18nm,1.1s,mb4.9,baz=298,slow=6.8,SNR=7.8
ULM LR LR 21 43 29.2
comp=Z,29µm,20.3s,MS6.6,baz=337,slow=35
ULM Lac du Bonnet 81.89 33 *eP* **P** **21 08 27.6 -0.2**
comp=Z,150nm,1.6s,mb5.7
ULM *e* 21 08 44.5
RSSD Black Hills 81.96 41 P **P** **21 08 27.8 -0.5**
RSSD pmax pmax
comp=Z,30nm,1.2s,mb5.1
RSSD MLR MLR
comp=Z,4µm,20.0s,MS5.8
RSSD Black Hills 81.96 41 *eP* **P** **21 08 27.4 -0.9**
comp=Z,76nm,1.5s,mb5.4
RSSD LR LR
comp=Z,4µm,20.0s,MS5.8
RAC Raciborz 82.25 327 *eP* **P** **21 08 29.7 0.0**
RAC *e*PcP PcP 21 08 36.0 +0.6
RAC *e*S S 21 18 44.8 +3.7
RAC *e*SKS(ac) 21 18 51.0
RAC *e*SS SS 21 24 04.7 -0.2
RAC LMN 21 43 26.5
comp=Z,114µm,16.0s
RAC MLR MLR 21 49 57.3
comp=Z,84µm,18.7s,MS7.1
RAC LME 21 50 42.9
comp=Z,134µm,15.3s
RAC Raciborz 82.25 327 *eP* **P** **21 08 29.7 0.0**
RAC *e* 21 08 36.0
RAC *e*S S 21 18 44.8 +3.7
RAC *e*SS SS 21 24 04.7 -0.2
RAC MLR MLR
comp=N,114µm,16.0s,MS7.5
RAC MLR MLR
comp=Z,84µm,18.7s,MS7.1
RAC MLR MLR
comp=E,134µm,15.3s,MS7.5
PRD Provadia 82.27 318 *eP* **P** **21 08 33.0 +3.0**
BUC1 Bucharest 82.28 319⇓ *iP* **P** **21 08 31.7 +1.7**
BUC1 Bucharest 82.28 319⇓ *iP* **P** **21 08 31.7 +1.7**
RUE Ruedersdorf 82.38 331 *eP* **P** **21 08 30.8 +0.4**
HILS Ha'il 82.39 298 P **P** **21 08 31.1 +0.2**
OKC Ostrava-Krasne 82.44 327⇑ *eP* **P** **21 08 30.4 -0.3**
OKC *ex* x 21 08 48.2
OKC *e*SKS SKS 21 18 47.7 +3.1
OKC L 21 50 40.0
comp=E,106nm,15.0s
KSP Ksiaz 82.54 328⇑ *eP* **P** **21 08 30.5 -0.7**
comp=E,3µm,6.5s
KSP Ksiaz 82.54 328 *eP* **P** **21 08 30.8 -0.4**
KSP *e**PP pP 21 08 36.9 -5.3
KSP *e* 21 11 40.0
KSP *e*S S 21 18 42.0 -2.1
KSP *e*SS SS 21 24 13.0 +3.8
KSP MLR MLR
comp=Z,144µm,15.7s,MS7.5
ESKT Eskisehir 82.59 313 *i* P **P** **21 08 32.4 +0.7**
BSEG Bad Segeberg 82.61 333 *eP* **P** **21 08 31.2 -0.3**
BSEG pmax pmax
comp=Z,306nm,2.2s,mb5.9
PV10 Paradox Valley 82.66 48 *eP* **P** **21 08 32.2 +0.2**
DUSS Damascus Unive 82.74 306 *i* P **P** **21 08 33.6 +1.1**
DUSS *i* P 21 08 33.7
DUSS *i* P 21 08 33.8
DUSS *e* 21 08 37.5
baz=52,slow=5.6
DUSS *e*S S 21 18 44.7 -1.8
DUSS AMS AMS 21 50 32.1
comp=Z,801µm,17.9s
DUSS AMS AMS 21 50 46.3
comp=E,755µm,17.4s
DUSS AMS AMS 21 50 53.4
comp=N,545µm,17.9s
MORC Moravsky Berou 82.76 327 *eP* **P** **21 08 32.0 -0.3**
comp=N,322nm,2.1s,mb6.0
MORC *e* 21 08 50.5
DPC Dobruska-Polom 82.89 328⇑ *iP* **P** **21 08 33.1 +0.2**
DPC *e*SKS SKS 21 18 49.9 +2.3
DPC L 21 51 00.0
comp=N,80nm,13.6s
UPC Upice 82.91 328⇑ *iP* **P** **21 08 33.1 +0.1**
UPC *ex* x 21 08 52.7
UPC *e*PP PP 21 11 51.1 +5.5
UPC Upice 82.91 328⇑ *iP* **P** **21 08 33.1 +0.1**
UPC *e* 21 11 51.1
WUAZ Wupatki 82.91 52 *eP* **P** **21 08 33.7 +0.3**
WUAZ LR LR
comp=Z,34µm,20.0s,MS6.7
PSZ Piszkesteto 82.99 325⇑ *eP* **P** **21 08 33.9 +0.4**
PSZ Piszkesteto 82.99 325 P **P** **21 08 33.6 +0.1**
PSZ pmax pmax
comp=Z,510nm,1.9s,mb6.2
PSZ Piszkesteto 82.99 325 *eP* **P** **21 08 33.5 0.0**
comp=Z,419nm,1.8s,mb6.2
SZH Strazhica 83.04 318 *eP* **P** **21 08 46.0 +12**
VYHS Vyhne 83.09 326 *i* P **P** **21 08 34.2 +0.2**
VYHS *e*PP PP 21 11 49.4 +2.3
VYHS *e*S S 21 18 49.5 -0.1
VYHS *e*SS SS 21 24 23.4 +6.0
PV01 Paradox Valley 83.10 48 *eP* **P** **21 08 34.4 +0.1**
PV01 *e* 21 08 53.5
ASF Jabal al Asfar 83.12 304 LR LR 21 50 08.7
comp=Z,30µm,19.0s,MS6.7,baz=268,slow=39
JMB Yambol 83.20 317 *eP* **P** **21 08 36.0 +1.3**
KOLL Kolacno 83.23 326 *eP* **P** **21 08 34.0 -0.7**
ULDT Uludag 83.23 314 *i* P **P** **21 08 35.7 +0.8**
HRI Mount Hermon 83.26 306 P **P** **21 08 35.3 +0.1**
KSHT Keshet 83.38 305 P **P** **21 08 36.2 +0.4**
AFFS 'Afif 83.44 294 P **P** **21 08 37.1 +0.8**
PVCC Panska Ves 83.51 329⇑ *iP* **P** **21 08 36.2 +0.1**
PVCC *ex* x 21 08 55.5
PVCC *e*SKS SKS 21 18 56.3 +4.5
PVCC L 21 51 50.0
comp=Z,89nm,15.4s
PVCC Panska Ves 83.51 329⇑ *iP* **P** **21 08 36.2 +0.1**
PVCC *e* 21 18 56.3
PVCC MLR MLR
comp=Z,89µm,15.4s,MS7.2
BRG Berggiesshubel 83.52 330 *eP* **P** **21 08 36.4 +0.3**
BRG *i* *PP pP 21 08 46.9 -0.2
BRG *i* *SP sP 21 08 54.0 +3.1
BRG *e* 21 11 47.1
BRG *i* S S 21 18 58.0 +4.2
BRG *i* SS SS 21 24 19.0 -4.4
BRG pmax pmax
comp=Z,424nm,2.2s,mb6.2
BRG MLR MLR
comp=N,50µm,14.6s,MS7.1
BRG MLR MLR
comp=E,41µm,14.6s,MS7.1
BRG MLR MLR
comp=Z,54µm,14.6s,MS7.0
BRG Berggiesshubel 83.52 330 *eP* **P** **21 08 36.4 +0.3**
comp=Z,424nm,2.2s,mb6.2
BRG *i* pP pP 21 08 46.9 -0.2
BRG *i* sP sP 21 08 54.0 +3.1
BRG *e*PP PP 21 11 47.1 -3.3
BRG *i* S S 21 18 58.0 +4.2
BRG *i* SS SS 21 24 19.0 -4.4
BRG LR LR
comp=Z,54µm,14.6s,MS7.0
VRAC Vranov 83.53 327 LR LR 21 48 36.8
comp=Z,22µm,19.3s,MS6.5,baz=188,slow=38
RW3 Ridgway 83.57 48 P **P** **21 08 37.2 +0.5**
RW3 Ridgway 83.57 48 *eP* **P** **21 08 37.6 +0.9**
RW3 *e* 21 08 56.5
CLL Collm 83.58 330 P **P** **21 08 35.7 -0.7**
comp=Z,logA/T=1.0,mb4.9
CLL *i* *PP pP 21 08 41.7 -5.7
CLL *i* *SP sP 21 08 45.8 -5.4
CLL *e**SP sP 21 09 12.0 +21
CLL *i* 21 09 23.0
CLL *e* 21 09 45.0
CLL *e* 21 10 07.0
CLL *e*PP PP 21 12 04.0 +13
CLL *e*PPP PPP 21 13 53.0 +7.9
CLL *e* 21 14 56.0
CLL *e*S S 21 18 56.0 +1.5
CLL *e*SCS ScS 21 19 18.0 +12
CLL *e*PS PS 21 19 58.0 +5.7
CLL *e*SS SS 21 24 33.0 +8.8
CLL Collm 83.58 330 *i* P **P** **21 08 41.7 +5.3**
CLL *i* *PP pP 21 08 54.3 +6.9
CLL *e*S S 21 18 56.0 +1.5
CLL pmax pmax
comp=Z,293nm,1.9s,mb6.1
CLL MLR MLR
comp=Z,71µm,17.8s,MS7.1
CLL Collm 83.58 330 *i* P **P** **21 08 35.7 -0.7**
comp=Z,13nm,1.2s,mb4.9
CLL *i* P 21 08 41.7
CLL *i* pP pP 21 08 54.3 +6.9
CLL *e*S S 21 18 56.0 +1.5
CLL LR LR
comp=Z,71µm,17.8s,MS7.1
SMOL Smolenice 83.72 326 *eP* **P** **21 08 38.9 +1.7**
HNTI Hanita 83.75 306 P **P** **21 08 37.6 -0.1**
SRO Srobarova 83.82 325 *eP* **P** **21 08 39.9 +2.2**
CSS Prodhromos 83.83 308 *eP* **P** **21 08 37.9 -0.2**
ISCO Idaho Springs 83.84 46 P **P** **21 08 38.6 +0.6**
ISCO pmax pmax
comp=Z,120nm,1.7s,mb5.8
ISCO MLR MLR
comp=Z,21µm,20.0s,MS6.5
ISCO Idaho Springs 83.84 46 *eP* **P** **21 08 38.7 +0.7**
comp=Z,60nm,1.3s,mb5.6
ISCO LR LR
comp=Z,21µm,20.0s,MS6.5
PRA Prague 83.91 329⇑ P **P** **21 08 40.0 +1.9**
PRA *ex* x 21 09 50.0
PRA PP PP 21 12 08.0 +14
PRA L 21 52 50.0
PRU Pruhonice 83.93 329⇑ *iP* **P** **21 08 38.0 -0.2**
comp=Z,301nm,2.0s,mb6.1
PRU *ex* x 21 11 50.5
PRU *e*PP PP 21 12 09.2 +16
PRU *e*SKS SKS 21 19 01.3 +6.7
PRU L 21 51 50.0
comp=Z,94nm,14.0s
PRU Pruhonice 83.93 329⇑ *iP* **P** **21 08 38.0 -0.2**
PRU *e* 21 11 50.5
PRU *e* 21 19 01.3
PRU pmax pmax
comp=Z,301nm,2.0s,mb6.1
PRU MLR MLR
comp=Z,94µm,14.0s,MS7.3
HMDT Nahal Hemdat 84.00 305 P **P** **21 08 39.1 +0.1**
DIM Dimitrovgrad 84.07 318 *eP* **P** **21 08 37.0 -2.1**
ZST Bratislava 84.11 326 *i* P **P** **21 08 40.4 +1.3**
ZST *e* 21 12 04.6
ZST *e*S S 21 19 02.4 +2.6
ZST *e*SS SS 21 24 42.1 +10
ZST Bratislava 84.11 326 *i* P **P** **21 08 40.4 +1.3**
ZST *e*S S 21 19 02.4 +2.6
OFRI 'Ofer 84.15 306 P **P** **21 08 39.9 +0.1**
KAMS Al Khamasin 84.25 291 P **P** **21 08 40.4 -0.2**
SLTI Sal'it 84.34 305 P **P** **21 08 41.0 +0.3**
MKRJ Makawir 84.34 304 P **P** **21 08 41.5 +0.7**
MKRA Kurdzhali 84.40 317 *eP* **P** **21 08 49.0 +8.2**
VKA Vienna 84.41 327 *eP* **P** **21 08 36.0 -4.7**
comp=Z,2µm,4.5s
VKA LR LR
comp=Z,46µm,14.0s,MS7.0
PGB Panagyurishte 84.49 319 *eP* **P** **21 08 48.0 +6.8**
DRGI Dragot 84.49 305 P **P** **21 08 41.5 0.0**
PLD Plovdiv 84.49 318 *eP* **P** **21 08 40.0 -1.2**
MANT Manisa 84.63 313 *i* P **P** **21 08 43.0 +1.0**
NKC Novy Kostel 84.63 330⇑ *iP* **P** **21 08 40.1 -1.6**
NKC *e*SKS SKS 21 19 07.4 +8.1
NKC L 21 51 20.0

comp=Z,69nm,14.0s
MOX Moxa 84.66 331 *i* P **P** **21 08 42.0 +0.2**
comp=Z,logA/T=2.1,mb6.0
MOX PP PP 21 12 09.0 +9.5
MOX S S 21 19 12.0 +6.9
MOX SS SS 21 25 24.0 +44
MOX L 21 52 27.0
MOX Moxa 84.66 331 *eP* **P** **21 08 42.0 +0.2**
MOX pmax pmax
comp=Z,261nm,2.0s,mb6.0
MOX MLR MLR
comp=Z,44µm,19.0s,MS6.9
MOX Moxa 84.66 331 *eP* **P** **21 08 42.0 +0.2**
comp=Z,261nm,2.0s,mb6.0
MOX LR LR
comp=Z,44µm,19.0s,MS6.9
MZDA Masada 84.68 304 P **P** **21 08 44.1 +1.7**
SOP Sopron 84.73 326 ⇑*iP* **P** **21 08 42.8 +0.5**
RZN Rozhen 84.76 318 *iP* **P** **21 08 44.0 +1.4**
WIT Witteveen 84.84 334 *eP* **P** **21 08 49.1 +6.5**
comp=Z,86nm,4.7s
WIT *ex* x 21 09 01.2
DNZL Cakiroluk 84.84 313 *iP* **P** **21 08 43.4 +0.3**
SVIS Svilajnac 84.86 321 ⇑*iP* **P** **21 08 42.2 -0.8**
VTS Vitosha 84.98 319 *iP* **P** **21 08 44.5 +0.8**
KHC Kasperske Hory 84.99 329 ⇑*iP* **P** **21 08 42.8 -0.7**
KHC x x 21 08 53.0
KHC *ex* x 21 09 01.2
KHC *e*PP PP 21 12 06.6 +4.4
KHC *e*SKS SKS 21 19 10.5 +8.7
KHC L 21 52 20.0
comp=Z,115nm,14.3s
KHC Kasperske Hory 84.99 329 ⇑*iP* **P** **21 08 42.8 -0.7**
KHC *e* pP 21 08 53.0 -1.6
KHC *e* 21 09 01.2
KHC *e*PP PP 21 12 06.6 +4.4
KHC *e*SKS SKS 21 19 10.5 +8.7
KHC LR LR
comp=Z,115µm,14.3s,MS7.4
GEC2 GERESS Array S 85.15 328 *eP* **P** **21 08 44.3 0.0**
GERES GERESS Array B 85.15 328 P **P** **21 08 43.9 -0.5**
comp=Z,7.0nm,0.7s,mb4.9,baz=42,slow=4.5,SNR=47
GERES PKKPbc 21 26 55.0
comp=Z,1.2nm,1.0s,baz=270,slow=1.0,SNR=5.0
KBRS Khaybar 85.16 298 P **P** **21 08 46.6 +1.7**
RHK1 Bakonya 85.17 324 *eP* **P** **21 08 45.0 +0.5**
ESY Stoneypath 85.17 341 *eP* **P** **21 08 44.9 +0.7**
ESY AMB AMB 21 09 06.8
comp=Z,93nm,1.5s,mb5.7
SDCO Great Sand Dun 85.22 47 *eP* **P** **21 08 45.4 +0.4**
comp=Z,58nm,1.2s,mb5.6
SDCO *e* 21 09 03.4
SDCO LR LR
comp=Z,20µm,19.0s,MS6.5
TUC Tucson 85.24 54 P **P** **21 08 45.6 +0.4**
TUC pmax pmax
comp=Z,37nm,1.4s,mb5.3
TUC MLR MLR
comp=Z,61µm,20.0s,MS7.0
TUC Tucson 85.24 54 *eP* **P** **21 08 45.1 -0.1**
comp=Z,15nm,1.0s,mb5.1
TUC *e* 21 09 03.2
TUC LR LR
comp=Z,61µm,20.0s,MS7.0
ZFRI Zfri 85.26 304 P **P** **21 08 45.2 -0.1**
MASH Mash'abbe Sade 85.26 304 P **P** **21 08 45.0 -0.3**
WET Wettzell 85.28 329 *eP* **P** **21 08 45.2 +0.3**
EDI Edinburgh 85.32 341 *eP* **P** **21 08 44.4 -0.5**
EDI AMB AMB 21 08 58.7
comp=Z,90nm,2.1s,mb5.5
MMB Musomiste 85.38 318 *iP* **P** **21 08 48.0 +2.4**
EAB Aberfoyle 85.39 342 *eP* **P** **21 08 46.0 +0.6**
EAB AMB AMB 21 09 07.4
comp=Z,132nm,2.2s,mb5.7
GRUS Gruza 85.41 321 ⇓*iP* **P** **21 08 45.4 -0.3**
KDAG Bornova 85.46 314 *iP* **P** **21 08 49.5 +3.4**
EAU Auchinoon 85.46 341 *eP* **P** **21 08 46.8 +1.1**
EAU AMB AMB 21 09 12.4
comp=Z,263nm,1.6s,mb6.1
WTSB Winterswijk 85.48 334 *eP* **P** **21 08 44.6 -1.2**
comp=Z,6.8nm,3.0s
WTSB *ex* x 21 09 03.6
PRNI Paran 85.50 304 P **P** **21 08 46.5 0.0**
ARSA Arzberg 85.52 326 ⇓*iP* **P** **21 08 47.0 +0.8**
comp=Z,59nm,1.7s,mb5.5
TATS Tathlith 85.54 290 P **P** **21 08 47.5 +0.6**
KKB Krupnik 85.54 319 *eP* **P** **21 08 47.0 +0.6**
GRF Grafenberg Arr 85.55 330 *eP* **P** **21 08 45.9 -0.4**
GRF *e* 21 12 07.6
GRF *e*S S 21 19 16.1 +2.2
GRF pmax pmax
comp=Z,486nm,1.8s,mb6.4
KZIT Kziot 85.58 304 P **P** **21 08 47.7 +0.8**
DIVS Divcibare 85.63 322 ⇓*iP* **P** **21 08 46.3 -0.5**
MOA Molln 85.65 327 ⇑*iP* **P** **21 08 46.7 -0.1**
comp=Z,86nm,1.9s,mb5.7
TBKS Tabuk 85.69 301 P **P** **21 08 48.1 +0.6**
JMQS Jabal Moqyreh 85.77 302 P **P** **21 08 48.6 +0.7**
ESK Eskdalemuir 85.86 341 *eP* **P** **21 08 48.2 +0.6**
ESK AMB AMB 21 09 09.6
comp=Z,112nm,2.1s,mb5.7
ESK Eskdalemuir 85.86 341 *eP* **P** **21 08 47.8 +0.2**
ESK pmax pmax
comp=Z,32nm,1.0s,mb5.5
ESK MLR MLR
comp=Z,36µm,20.0s,MS6.8
ESK Eskdalemuir 85.86 341 *eP* **P** **21 08 47.8 +0.2**
comp=Z,32nm,1.0s,mb5.5
ESK *e* 21 09 06.3
ESK LR LR
comp=Z,36µm,20.0s,MS6.8
BBH Bruntsheil 85.94 340 *eP* **P** **21 08 48.8 +0.8**
EIL Elat 85.95 303 P **P** **21 08 49.2 +0.5**
EIL Elat 85.95 303 LR LR 21 51 10.0
comp=Z,10µm,18.6s,MS6.2,baz=40,slow=38
BHH Howats Hill 86.06 341 *eP* **P** **21 08 49.2 +0.6**
BTA Talkin 86.07 340 *eP* **P** **21 08 49.5 +0.9**
ALWS Ilw as Safayha 86.08 303 P **P** **21 08 50.0 +0.7**
BWH Wardlaw 86.10 341 *eP* **P** **21 08 50.4 +1.6**
JMOS Jabal al Moall 86.14 303 P **P** **21 08 51.8 +2.1**
VAY Valandovo 86.20 319 ⇑*iP* **P** **21 08 48.9 -0.7**
VAY *i* 21 10 02.6
NVSS Nova Varos 2 86.20 322 ⇑*iP* **P** **21 08 51.2 +1.6**
BDRM Kayabasi 86.22 313 *iP* **P** **21 08 50.9 +1.0**
BDL Dobcross Hall 86.23 340 *eP* **P** **21 08 49.9 +0.4**
HAQS Haql 86.33 303 P **P** **21 08 50.3 -0.4**
LAZ Ladron 86.33 50 *eP* **P** **21 08 50.9 +0.4**
LAZ *e* pP 21 09 02.6 +1.0
SKO Skopje 86.36 320 ⇑*iP* **P** **21 08 51.1 +0.7**
comp=Z,0.4nm,2.2s
BBO1 Bothel 86.38 340 *eP* **P** **21 08 51.2 +1.0**
ANMO Albuquerque 86.42 50 *dP* **P** **21 08 50.1 -0.8**
ANMO Albuquerque 86.42 50 *eP* **P** **21 08 51.3 +0.4**
comp=Z,50nm,1.7s,mb5.5
ANMO *e* pP 21 09 03.1 +1.1
ANMO LR LR
comp=Z,36µm,20.0s,MS6.8
SISC Sisak 86.44 325 *iP* **P** **21 08 50.9 +0.2**
DJNS Zahran al Janu 86.53 289 P **P** **21 08 55.6 +3.9**
BDAS Al Bad' 86.59 302 P **P** **21 08 51.5 -0.4**
LENM Lemitar 86.59 51 *eP* **P** **21 08 53.7 +1.9**
LENM *e* 21 09 00.4
LENM *e* 21 09 16.7
AYUS 'Aynunah 86.62 302 P **P** **21 08 53.2 +1.2**
KBA Koelnbreinsper 86.64 327 ⇑*iP* **P** **21 08 53.2 +1.5**
comp=Z,100nm,2.0s,mb5.7
FUR Furstenfeldbru 86.71 329 *eP* **P** **21 08 52.8 +0.8**
FUR pmax pmax
comp=Z,661nm,2.3s,mb6.5
LPM Los Pinos Moun 86.72 50 *eP* **P** **21 08 54.0 +1.7**
NAMS An Nimas 86.74 291 P **P** **21 08 56.0 +3.2**
HGN Heimansgroeve 86.77 334 *eP* **P** **21 08 50.9 -1.3**
comp=Z,6.0nm,0.4s,mb5.1
HGN *ex* x 21 09 10.5
HGN *e*PP PP 21 12 17.1 -0.1
HGN *e*PPP PPP 21 14 15.1 +0.9
HGN *i* S 21 19 11.1 -14
HGN *e*SS SS 21 25 03.5 -7.3
BLJS Baljurashi 86.80 292 P **P** **21 08 56.7 +3.6**
BNM Barren Site 86.82 50 *eP* **P** **21 08 54.8 +1.9**
BNM *e* pP 21 09 04.5 +0.6
LJU Ljubljana 86.88 326 *eP* **P** **21 08 52.8 0.0**
LJU *e* 21 09 10.9
LJU *e*PP PP 21 12 19.1 +0.8
LJU *e* 21 12 53.4
LJU *e* 21 13 31.3
LJU *e* 21 15 11.8
LJU *e* 21 16 53.3
LJU *e*S S 21 19 24.2 -2.6
LJU *e* 21 20 35.0
LJU *e*SS SS 21 25 12.5 0.0
LJU *e* 21 32 00.9
VISS Visnje 86.92 326 *eP* **P** **21 08 53.0 -0.1**
LHO Holmfirth 87.02 339 *eP* **P** **21 08 53.4 +0.1**
STU Stuttgart 87.10 331 P **P** **21 08 54.7 +0.8**
STU Stuttgart 87.10 331 *eP* **P** **21 08 54.3 +0.5**
STU *e* 21 09 12.3
PTCC Patocco-Chiusa 87.15 327 *eP* **P** **21 08 56.8 +2.7**
VOY Vojsko 87.18 326 *eP* **P** **21 08 55.8 +1.5**
VOY *e* 21 09 00.8
RUP Ruppelstein 87.20 332 *eP* **P** **21 08 54.9 +0.5**
JAVS Javornik 87.21 326 *eP* **P** **21 08 54.5 0.0**
JAVS *e* 21 09 12.0
JAVS *e* 21 20 38.4
WATA Walderalm 87.22 328 ⇓*iP* **P** **21 08 55.7 +1.2**
comp=Z,18nm,1.3s,mb5.1
WTTA Wattenberg 87.25 328 ⇑*iP* **P** **21 08 55.0 +0.4**
comp=Z,50nm,2.1s,mb5.4
FVI Forni Avoltri 87.26 327 *eP* **P** **21 08 58.7 +4.0**
GMNA Gemona 87.30 327 *eP* **P** **21 09 01.1 +6.2**
OHR Ohrid 87.31 319 ⇑*iP* **P** **21 08 54.1 -1.0**
MOTA Mosaslm 87.42 329 ⇑*iP* **P** **21 08 54.8 -0.7**
comp=Z,16nm,1.2s,mb5.1
LANF Langenberg 87.49 331 *eP* **P** **21 08 56.0 +0.2**
WLF Walferdange 87.58 333 P **P** **21 08 55.9 -0.3**
WLF pmax pmax
comp=Z,280nm,1.8s,mb6.2
WLF Walferdange 87.58 333 *eP* **P** **21 08 55.6 -0.5**
comp=Z,280nm,1.8s,mb6.2
STON Ston 87.68 322 *iP* **P** **21 08 54.9 -1.9**
GIVF Givet 87.72 334 *eP* **P** **21 08 56.7 -0.1**
SPAK Spaichingen 87.80 330 *eP* **P** **21 08 56.8 -0.4**
BFO Black Forest 87.80 331 *eP* **P** **21 08 56.6 -0.7**
BFO pmax pmax
comp=Z,211nm,2.0s,mb6.0
NVLJ Novalja 87.83 325 *iP* **P** **21 08 56.9 -0.6**
CBKS Cedar Bluff 87.90 43 PFAKE 21 09 10.0 +12
CBKS LR LR
comp=Z,15µm,20.0s,MS6.4
BAIF Baives 87.98 334 *eP* **P** **21 08 58.0 -0.1**
comp=Z,185nm,1.5s,mb5.8
DAVA Damuels 87.99 329 ⇑*iP* **P** **21 08 57.4 -0.8**
comp=Z,47nm,1.5s,mb5.5
SCHQ Schefferville 88.08 16 P **P** **21 08 59.6 +1.2**
comp=Z,7.0nm,0.7s,mb5.0,baz=332,slow=9.8,SNR=8.5
SCHQ LR LR 21 54 27.7
comp=Z,30µm,18.3s,MS6.7,baz=352,slow=40
SCHQ Schefferville 88.08 16 *eP* **P** **21 08 59.4 +1.0**
comp=Z,14nm,0.8s,mb5.2
SCHQ *e* 21 09 13.9
SCHQ LR LR
comp=Z,46µm,20.0s,MS6.9
WLS Welschbruch 88.13 331 *eP* **P** **21 08 59.6 +0.8**
CDF Champ du Feu 88.16 331 *eP* **P** **21 08 59.1 +0.1**
comp=Z,209nm,1.6s,mb5.8
CTI Castel Tesino 88.18 328 *eP* **P** **21 08 59.8 +0.7**
LIBD Limburg 88.24 331 *eP* **P** **21 08 59.9 +0.5**
MENF Mencas 88.29 335 *eP* **P** **21 08 59.1 -0.4**
FELD Feldberg 88.30 331 *eP* **P** **21 08 58.8 -0.8**
ECH Echery 88.36 331 *eP* **P** **21 09 00.3 +0.4**
MOF Molkenrain 88.67 331 *eP* **P** **21 09 01.8 +0.4**
HINF Hinteralfeld 88.81 331 *eP* **P** **21 09 01.8 -0.3**
comp=Z,208nm,1.9s,mb5.8
THEF They Montfort 88.81 332 *eP* **P** **21 09 00.3 -1.8**
BBS Basel-Blauen 88.83 331 *eP* **P** **21 09 02.7 +0.5**
HAU Haudompre 88.85 332 *eP* **P** **21 09 02.2 -0.1**
comp=Z,225nm,1.9s,mb5.9
HAU *eR*
comp=Z,60µm,19.2s
IDI Anoyia 88.94 313 P **P** **21 09 05.0 +1.9**
comp=Z,10nm,0.7s,mb5.3,baz=31,slow=8.6,SNR=10.0
MEZF Maizieres J'vi 88.95 333 *eP* **P** **21 09 03.1 +0.3**
comp=Z,503nm,1.9s,mb6.2
LOMF Lomont 89.19 331 *eP* **P** **21 09 03.7 -0.2**
MNTX Cornudas Mount 89.19 52 P **P** **21 09 05.3 +1.0**
comp=Z,4.0nm,0.9s,mb4.8
MNTX *e* 21 09 22.7
MNTX LR LR
comp=Z,21µm,20.0s,MS6.6
KSU1 Kansas State U 89.45 41 ⇑*eP* **P** **21 09 06.2 +0.9**
GDL2 Guadalupe Moun 89.53 51 *eP* **P** **21 09 07.7 +1.8**
GDL2 *e* 21 09 23.9
VAI Varese 89.58 329 *eP* **P** **21 09 05.1 -0.7**
SNTG Esanatoglia 89.73 325 *eP* **P** **21 09 07.1 +0.5**
SFI Santa Sofia 89.74 326 *eP* **P** **21 09 08.2 +1.6**
PGD Poggio Sodo 89.82 326 *eP* **P** **21 09 08.6 +1.6**
MCGN Macugnaga 89.83 330 *eP* **P** **21 09 08.0 +1.0**
FNVD Fontana Vidola 89.87 327 *eP* **P** **21 09 07.6 +0.4**
JFWS Jewell Farm 89.91 35 P **P** **21 09 12.2 +4.8**
JFWS pmax pmax
comp=Z,76nm,1.7s,mb5.8
JFWS MLR MLR
comp=Z,26µm,20.0s,MS6.7
JFWS Jewell Farm 89.91 35 *eP* **P** **21 09 08.5 +1.1**
comp=Z,70nm,1.6s,mb5.7
JFWS *e* 21 09 25.3
JFWS LR LR
comp=Z,26µm,20.0s,MS6.7
GSCL Gusciola 89.97 327 *eP* **P** **21 09 08.3 +0.6**
ERBM Eremo 90.00 327 *eP* **P** **21 09 09.1 +1.3**
CABF La Chapelle 90.09 331 *eP* **P** **21 09 08.2 0.0**
comp=Z,229nm,1.9s,mb5.9
BOB Bobbio (Coli) 90.15 328 *eP* **P** **21 09 08.1 -0.4**
AQU L'Aquila 90.19 324 P **P** **21 09 10.1 +1.4**
AQU L'Aquila 90.19 324 *eP* **P** **21 09 09.5 +0.7**
AQU *e* 21 09 27.0
VLC Villacollemand 90.21 327 P **P** **21 09 09.8 +1.1**
VLC *e* 21 09 17.6
CII Carovilli 90.22 323 P **P** **21 09 05.7 -3.2**
LOR Lormes 90.42 333 *eP* **P** **21 09 09.5 -0.2**
comp=Z,303nm,1.7s,mb6.0
LOR *eR*
comp=Z,65µm,17.2s
SLCN Sala Consilina 90.55 322 *eP* **P** **21 09 16.7 +6.2**
LPL La Plagne 90.71 330 *eP* **P** **21 09 11.3 +0.2**
comp=Z,86nm,1.3s,mb5.6
TDS Terranova Siba 90.72 321 *eP* **P** **21 09 13.0 +1.7**
FLN La Foliniere 90.72 336 *eP* **P** **21 09 10.8 -0.3**
comp=Z,156nm,1.4s,mb5.8
FLN *eR*
comp=Z,61µm,21.0s
LPG La Plagne 90.72 330 *eP* **P** **21 09 11.4 +0.2**
comp=Z,76nm,1.0s,mb5.7
SSF Saint Saulge 90.73 333 *eP* **P** **21 09 11.0 -0.2**
comp=Z,220nm,1.9s,mb5.8
VAL Valentia 90.73 343 ⇓*iS* S 21 20 04.0 +1.8
TIP Timpagrande 90.85 320 *eP* **P** **21 09 14.2 +2.3**
TIP *e* pP 21 09 23.3 +0.2
HYF Humbligny 90.88 333 *eP* **P** **21 09 12.2 +0.3**
SMF Signal de Mont 90.94 332 *eP* **P** **21 09 11.9 -0.3**
comp=Z,271nm,1.8s,mb6.0
AVF Avril sur Loir 91.01 333 *eP* **P** **21 09 12.1 -0.4**
comp=Z,36nm,0.8s,mb5.4
TOLF Tolfa 91.08 325 *eP* **P** **21 09 11.9 -1.1**
BNI Bardonecchia 91.11 330 P **P** **21 09 14.8 +1.8**
BNI Bardonecchia 91.11 330 *eP* **P** **21 09 14.2 +1.2**
BNI *e* 21 09 32.8
FIN Finale Ligure 91.14 328 *eP* **P** **21 09 11.4 -1.7**
GRR Gorron 91.17 336 *eP* **P** **21 09 12.9 -0.3**
comp=Z,153nm,1.1s,mb5.9
WMOK Wichita Mounta 91.27 46 P **P** **21 09 14.9 +0.9**
WMOK pmax pmax
comp=Z,35nm,1.5s,mb5.5
WMOK Wichita Mounta 91.27 46 *eP* **P** **21 09 13.6 -0.4**
comp=Z,19nm,1.1s,mb5.3
WMOK *e* 21 09 31.6
MBDF Montbardon 91.33 330 *eP* **P** **21 09 14.0 0.0**
comp=Z,54nm,0.9s,mb5.6
BGF Bois d'Agland 91.40 333 *eP* **P** **21 09 14.4 +0.1**
comp=Z,90nm,1.4s,mb5.6
IMI Imperia 91.51 328 *eP* **P** **21 09 15.2 +0.3**
ORIF Oris-en-Rattie 91.55 330 *eP* **P** **21 09 15.1 +0.1**
comp=Z,100nm,1.3s,mb5.7
ORIF *eR*
comp=Z,54nm,18.5s
PLDF La Plantade 91.59 332 *eP* **P** **21 09 13.2 -2.0**
SAOF Saorge 91.60 329 *eP* **P** **21 09 12.0 -3.3**
AUTN L'Aution 91.64 329 *eP* **P** **21 09 14.6 -0.9**
TOUF Mont Tournerai 91.71 329 *eP* **P** **21 09 14.8 -1.0**
AGO Saint Agoulin 91.71 332 *eP* **P** **21 09 14.6 -1.1**
SBF Sospel 91.75 329 *eP* **P** **21 09 16.1 +0.1**
comp=Z,58nm,0.9s,mb5.6
AURF Auriere 91.77 329 *eP* **P** **21 09 13.9 -2.2**
MVIF Mont Vial 91.84 329 *eP* **P** **21 09 15.5 -0.9**
SGMF Saint Gilles 91.85 337 *eP* **P** **21 09 16.4 +0.1**
comp=Z,150nm,1.4s,mb5.8
LTX Lajitas 91.86 52 P **P** **21 09 18.7 +1.9**
LTX pmax pmax
comp=Z,52nm,1.6s,mb5.6
LTX MLR MLR
comp=Z,53µm,20.0s,MS7.0
LTX Lajitas 91.86 52 *eP* **P** **21 09 16.9 +0.1**
comp=Z,50nm,1.3s,mb5.7
LTX *e* 21 09 34.3
LTX LR LR
comp=Z,53µm,20.0s,MS7.0
TXAR Lajitas Array 91.86 52 P **P** **21 09 17.0 +0.2**
comp=Z,2.6nm,0.6s,mb4.8,baz=310,slow=2.8,SNR=22
TXAR LR LR 21 46 31.4
comp=Z,48µm,19.8s,MS6.9,baz=260,slow=33
TCF Toulx Ste Croi 91.86 333 *eP* **P** **21 09 16.5 +0.1**
comp=Z,165nm,1.6s,mb5.8
COLF Collangettes 91.94 332 *eP* **P** **21 09 16.2 -0.6**
PYM Petit Puy Mans 92.01 332 *eP* **P** **21 09 16.6 -0.5**
ROSF Rostrenen 92.01 337 *eP* **P** **21 09 17.0 0.0**
comp=Z,65nm,1.2s,mb5.5
SOI Samo 92.03 320 *eP* **P** **21 09 17.5 +0.1**
OG26 St.-Nazaire-De 92.07 330 *eP* **P** **21 09 18.1 +0.7**
CALN Calern 92.07 329 *eP* **P** **21 09 14.1 -3.3**
VIVF Saint-Julien-l 92.09 331 *eP* **P** **21 09 17.3 -0.2**
comp=Z,192nm,1.5s,mb5.9
PGF Pioggiola 92.10 327 *eP* **P** **21 09 17.2 -0.4**
comp=Z,165nm,1.8s,mb5.8
FRF La Foret Royal 92.33 329 *eP* **P** **21 09 17.8 -0.8**
comp=Z,62nm,1.2s,mb5.5
QUIF Quistinic 92.34 337 *eP* **P** **21 09 18.5 -0.1**
comp=Z,238nm,1.9s,mb5.9
LBL Lubilhac 92.35 332 *eP* **P** **21 09 13.9 -4.8**
SMRF Simiane la Rot 92.44 330 *eP* **P** **21 09 19.0 -0.2**
comp=Z,59nm,1.3s,mb5.5
MFF Saint Martin d 92.46 335 *eP* **P** **21 09 19.2 0.0**
comp=Z,188nm,1.3s,mb6.0
VILF Villemus 92.49 330 *eP* **P** **21 09 20.8 +1.4**
TAVF Tavernes 92.53 329 *eP* **P** **21 09 20.6 +1.0**
LMR La Mourre 92.57 329 *eP* **P** **21 09 19.1 -0.7**
comp=Z,72nm,1.2s,mb5.7
PRAF Pradon 92.75 330 *eP* **P** **21 09 20.4 -0.2**
PUYF Puyloubier 92.75 329 *eP* **P** **21 09 19.8 -0.8**
TREF Trevaresse 92.81 330 *eP* **P** **21 09 21.3 +0.4**
RJF Les Rejaudoux 92.95 333 *eP* **P** **21 09 21.7 +0.2**
comp=Z,143nm,1.4s,mb5.9
RJF *eR*
comp=Z,36µm,18.0s
GELF Grande-Etoile 92.99 330 *eP* **P** **21 09 22.1 +0.4**
CAF Calviac 93.06 332 *eP* **P** **21 09 22.5 +0.5**
comp=Z,123nm,1.4s,mb5.8
LASF Ste Croix 93.07 331 *eP* **P** **21 09 22.1 +0.1**
comp=Z,183nm,1.5s,mb6.0
CCM Cathedral Cave 93.08 39 *eP* **P** **21 09 23.1 +0.9**
CCM pmax pmax
comp=Z,37nm,1.3s,mb5.7
CCM MLR MLR
comp=Z,5µm,20.0s,MS6.0
CCM Cathedral Cave 93.08 39 *eP* **P** **21 09 22.7 +0.5**
comp=Z,41nm,1.3s,mb5.7
CCM LR LR
comp=Z,5µm,20.0s,MS5.9
SADO Sadowa 93.22 28 LR LR 21 56 36.4
comp=Z,18µm,19.3s,MS6.5,baz=354,slow=39
VAE Valguarnera 93.35 320 LR LR 21 56 03.1
comp=Z,46µm,18.3s,MS7.0,baz=93,slow=38
AAM Ann Arbor 93.41 32 PFAKE 21 09 40.0 +16
AAM LR LR
comp=Z,18µm,20.0s,MS6.5
FVM French Village 93.56 39 P **P** **21 09 29.1 +4.7**
FVM pmax pmax
comp=Z,37nm,1.4s,mb5.6
FVM French Village 93.56 39 *eP* **P** **21 09 24.6 +0.2**
comp=Z,21nm,1.1s,mb5.5
LFF La Frestale 93.56 333 *eP* **P** **21 09 24.6 +0.4**
comp=Z,163nm,1.4s,mb6.0
JCT Junction City 93.57 49 P **P** **21 09 29.4 +4.8**
JCT pmax pmax
comp=Z,14nm,1.0s,mb5.3
JCT MLR MLR
comp=Z,33µm,19.0s,MS6.8
JCT Junction City 93.57 49 *eP* **P** **21 09 24.8 +0.2**
comp=Z,13nm,0.8s,mb5.4
JCT LR LR
comp=Z,33µm,19.0s,MS6.8
MTLF Montolieu 94.34 331 *eP* **P** **21 09 28.1 +0.3**
comp=Z,202nm,1.9s,mb5.9
MIAR Mount Ida 94.41 43 P **P** **21 09 29.8 +1.5**
MIAR pmax pmax
comp=Z,16nm,1.0s,mb5.4
MIAR MLR MLR
comp=Z,32µm,20.0s,MS6.8
MIAR Mount Ida 94.41 43 *eP* **P** **21 09 27.7 -0.6**
comp=Z,14nm,0.9s,mb5.4
MIAR LR LR
comp=Z,32µm,20.0s,MS6.8
ERPA Erie 95.11 30 PFAKE 21 09 40.0 +8.7
ERPA LR LR
comp=Z,24µm,20.0s,MS6.7
PQI Presque Isle 95.27 20 PFAKE 21 09 40.0 +8.1
PQI LR LR
comp=Z,110µm,19.0s,MS7.3
EPF Esparros 95.33 332 *eP* **P** **21 09 32.2 -0.1**
ACSO Alum Creek Sta 95.38 33 PFAKE 21 09 40.0 +7.4
ACSO LR LR
comp=Z,24µm,20.0s,MS6.7
WCI Wyandotte Cave 95.44 36 PFAKE 21 09 40.0 +7.1
WCI LR LR
comp=Z,29µm,20.0s,MS6.8
NCB Newcomb 95.72 25 PFAKE 21 09 50.0 +16
NCB LR LR
comp=Z,46µm,19.0s,MS7.0
ETSF Etsaut 95.79 333 *eP* **P** **21 09 35.2 +0.8**
WVT Waverly 96.31 38 P **P** **21 09 38.9 +1.9**
comp=Z,9.7nm,1.3s,mb5.1
WVT LR LR
comp=Z,18µm,20.0s,MS6.5
HKT Hockley 96.40 47 *eP* **P** **21 09 37.5 0.0**
HKT LR LR
comp=Z,10µm,20.0s,MS6.3
BINY Binghamton 96.61 27 PFAKE 21 09 50.0 +12
BINY LR LR
comp=Z,28µm,20.0s,MS6.7
WVL Waterville 96.69 22 PFAKE 21 09 50.0 +12
WVL LR LR
comp=Z,65µm,19.0s,MS7.1
OXF Oxford 96.72 40 PFAKE 21 09 50.0 +11
OXF LR LR
comp=Z,20µm,19.0s,MS6.6
PLAL Pickwick Lake 97.07 39 PFAKE 21 09 50.0 +10
PLAL LR LR
comp=Z,23µm,20.0s,MS6.7
SSPA Standing Stone 97.21 29 PFAKE 21 09 50.0 +9.1
SSPA LR LR
comp=Z,17µm,20.0s,MS6.5
HRV Harvard--Oak R 97.92 24 PFAKE 21 10 00.0 +16
HRV LR LR
comp=Z,6µm,19.0s,MS6.1
WES Weston 98.11 24 PFAKE 21 10 00.0 +15
WES LR LR
comp=Z,35µm,22.0s,MS6.8
PAL Palisades 98.42 26 P **P** **21 09 38.1 -8.3**
PAL Palisades 98.42 26 *eP* **P** **21 09 44.0 -2.4**
comp=Z,17nm,0.9s,mb5.6
MYNC Murphy 99.00 36 PFAKE 21 10 00.0 +11
MYNC LR LR
comp=Z,33µm,20.0s,MS6.8
BLA Blacksburg 99.00 33 PFAKE 21 10 00.0 +11
BLA LR LR
comp=Z,34µm,20.0s,MS6.8
LRAL Lakeview Retre 99.14 40 PFAKE 21 10 00.0 +10
LRAL LR LR
comp=Z,27µm,20.0s,MS6.7
CBN Corbin 99.48 30 PFAKE 21 10 00.0 +8.7
CBN LR LR
comp=Z,30µm,20.0s,MS6.8
ESDC Sonseca Array 99.86 334 PP PP 21 13 45.2 -15
comp=Z,1.7nm,0.8s,baz=27,slow=7.5,SNR=4.5

ESDC				LR	LR	22 01 44.8		
	comp=Z,35µm,18.6s,MS6.9,baz=30,slow=39							
ESLA	**Sonseca Array**	**99.86**	**334**	PFAKE		21 10 00.0	+7.0	
ESLA				LR	LR			
	comp=Z,243µm,20.0s,MS7.7							
MTE	**Manteigas**	**100.47**	**336**	*e*PP	PP	21 14 02.9	-2.4	
MTE				*e*-		21 49 55.2		
	comp=Z,39µm,18.0s							
PCBR	**Castelo Branco**	**100.95**	**336**	*e*PP	PP	21 14 04.2	-4.9	
PTOM	**Tomar**	**101.46**	**337**	*e*PP	PP	21 14 11.2	-1.5	
KMBO	**Kilima Mbogo**	**102.35**	**277**	P	Pdif	21 10 05.9	+1.2	
	comp=Z,1.0nm,0.8s,baz=48,slow=19,SNR=2.7							
KMBO				PP	PP	21 14 23.4	+3.4	
	comp=Z,1.3nm,0.9s,baz=54,slow=11,SNR=3.6							
KMBO	**Kilima Mbogo**	**102.35**	**277**	P	Pdif	21 10 05.9	+1.2	
KMBO				PP	PP	21 14 23.4	+3.4	
KMBO				LR	LR			
	comp=Z,6µm,20.0s,MS6.1							
LIS	**Lisbon**	**102.52**	**337**	*e*PP	PP	21 14 17.1	-3.6	
LIS				*e*S	Sx	21 20 40.0		
LIS				*e*S	Sx	21 20 40.3		
LIS				*e*SS	SS	21 28 53.0	-1.6	
LIS				AMS	AMS	21 55 51.5		
	comp=E,32µm,24.1s							
LIS	**Lisbon**	**102.52**	**337**	*e*PP	PP	21 14 17.1	-3.6	
LIS				*e*S	S	21 20 40.0	-63	
LIS				*e*SS	SS	21 28 53.0	-1.6	
PBEJ	**Beja**	**102.71**	**336**	*e*PP	PP	21 14 19.7	-2.6	
PALC	**Alcoutim**	**103.08**	**335**	*e*PP	PP	21 14 23.6	-1.6	
DWPF	**Disney**	**105.95**	**39**	PFAKE		21 14 40.0		
DWPF				LR	LR			
	comp=Z,7µm,19.0s,MS6.2							
ADH	**Angra Heroismo**	**106.78**	**351**	*e*-		21 49 05.0		
MBAR	**Mbarara**	**107.38**	**281**	PFAKE		21 14 50.0		
MBAR				LR	LR			
	comp=Z,11µm,19.0s,MS6.5							
PDA	**Ponta Delgada**	**107.45**	**349**	*e*-		21 24 45.0		
BBSR	**BB Station**	**109.39**	**23**	PFAKE		21 14 50.0		
BBSR				LR	LR			
	comp=Z,51µm,20.0s,MS7.1							
VNDA	**Vanda**	**112.13**	**175**	PP	PP	21 15 29.0	-1.8	
	comp=Z,3.6nm,1.1s,baz=264,slow=3.9,SNR=4.3							
VNDA	**Vanda**	**112.13**	**175**	PFAKE		21 14 50.0	+8.3	
VNDA				LR	LR			
	comp=Z,6µm,19.0s,MS6.2							
SBA	**Scott Base**	**112.81**	**174**	PFAKE		21 15 00.0	+17	
SBA				LR	LR			
	comp=Z,5µm,19.0s,MS6.1							
MAW	**Mawson**	**116.96**	**205**	PKP	PKPdf	21 14 53.9	+2.7	
	comp=Z,4.2nm,0.8s,baz=13,slow=2.0,SNR=3.7							
MAW	**Mawson**	**116.96**	**205**	PKP	PKPdf	21 14 53.9	+2.6	
MAW				LR	LR			
	comp=Z,9µm,20.0s,MS6.4							
QSPA	**South Pole Qui**	**123.92**	**180**	*e*PKPdf	PKPdf	21 15 04.2	-0.4	
SDV	**Santo Domingo**	**127.48**	**41**	PKP	PKPdf	21 15 14.8	+1.8	
	comp=Z,12nm,0.6s,baz=72,slow=1.2,SNR=11							
DBIC	**Dimbokro**	**128.36**	**315**	PKP	PKPdf	21 15 15.1	+0.5	
	comp=Z,3.6nm,1.0s,baz=333,slow=10,SNR=3.0							
DBIC	**Dimbokro**	**128.36**	**315**	PKIKP	PKPdf	21 15 15.1	+0.5	
DBIC				pmax	pmax			
	comp=Z,4.0nm,1.0s							
TIC	**Toumodi**	**128.47**	**315**	*e*P	PKPdf	21 15 17.5	+2.6	
	comp=Z,194nm,1.6s							
KIC	**Kosan Boka**	**128.54**	**315**	*e*P	PKPdf	21 15 16.7	+1.7	
	comp=Z,156nm,1.4s							
LIC	**Lamto**	**128.81**	**315**	*e*P	PKPdf	21 15 14.9	-0.6	
	comp=Z,79nm,1.5s							
OTAV	**Otavalo**	**129.34**	**56**	*e*PKPdf	PKPdf	21 15 19.9	+3.4	
SNAA	**Sanae**	**138.01**	**196**	*e*PKHKP		21 15 23.1		
SNAA				*e*		21 15 32.9		
VNA2	**Neumayer--Watz**	**139.57**	**195**	⇑*i*	PKPdf	21 15 41.6	+7.6	
VNA2	**Neumayer--Watz**	**139.57**	**195**	⇑*i*	PKPdf	21 15 54.6	+21	
VNA2	**Neumayer--Watz**	**139.57**	**195**	⇑*i*	PKPdf	21 16 03.8	+30	
VNA2	**Neumayer--Watz**	**139.57**	**195**	⇑*i*P	PKPdf	21 15 32.6	-1.4	
VNA2				⇑*i*P		21 15 41.6		
VNA2				⇑*i*P		21 15 54.6		
VNA2				⇑*i*P		21 16 03.8		
VNA3	**Neumayer Olymp**	**139.80**	**194**	⇓*i*	PKPdf	21 15 41.4	+7.0	
VNA3	**Neumayer Olymp**	**139.80**	**194**	⇑*i*	PKPdf	21 15 55.7	+21	
VNA3	**Neumayer Olymp**	**139.80**	**194**	⇓*i*	PKPdf	21 16 03.1	+29	
VNA3	**Neumayer Olymp**	**139.80**	**194**	P	PKPdf	21 15 31.7	-2.7	
VNA3				⇓*i*P		21 15 41.4		
VNA3				⇑*i*P		21 15 55.7		
VNA3				⇓*i*P		21 16 03.1		
VNA1	**Neumayer--Stat**	**139.97**	**195**	⇑*i*	PKPdf	21 15 41.8	+7.1	
VNA1	**Neumayer--Stat**	**139.97**	**195**	⇓*i*	PKPdf	21 15 54.5	+20	
VNA1	**Neumayer--Stat**	**139.97**	**195**	⇓*i*	PKPdf	21 15 57.8	+23	
VNA1	**Neumayer--Stat**	**139.97**	**195**	⇑*i*P	PKPdf	21 15 33.4	-1.3	
VNA1				⇑*i*P		21 15 41.8		
VNA1				⇓*i*P		21 15 54.5		
VNA1				⇓*i*P		21 15 57.8		
LPAZ	**La Paz**	**148.04**	**64**	PKPbc	PKPdf	21 15 54.5	+4.6	
	comp=Z,17nm,1.0s,baz=359,slow=6.5,SNR=36							
LPAZ	**La Paz**	**148.04**	**64**	PKP2	PKPab	21 15 54.6	-3.4	
LPAZ				pmax	pmax			
	comp=Z,17nm,1.0s							
LPAZ	**La Paz**	**148.04**	**64**	*e*PKP	PKPdf	21 15 54.6	+4.6	
LVC	**Limon Verde**	**151.04**	**75**	PKPbc	PKPdf	21 16 02.9	+8.4	
	comp=Z,20nm,0.8s,baz=266,slow=3.8,SNR=15							
LVC	**Limon Verde**	**151.04**	**75**	*e*PKPbc	PKPdf	21 16 02.5	+7.9	
TLL	**Tololo Astrono**	**152.49**	**91**	*e*P	PKPdf	21 16 02.9	+6.4	
BDFB	**Brasilia**	**159.68**	**27**	PKPab	PKPab	21 16 45.2	-1.9	
	comp=Z,5.0nm,0.9s,baz=252,slow=0.7,SNR=3.9							
BDFB	**Brasilia**	**159.68**	**27**	PKP2	PKPab	21 16 45.3	-1.9	
BDFB				pmax	pmax			
	comp=Z,5.0nm,0.9s							
CPUP	**Villa Florida**	**162.03**	**69**	PKPab	PKPab	21 16 53.7	-3.4	
	comp=Z,3.3nm,1.0s,baz=272,slow=5.9,SNR=2.4							
CPUP	**Villa Florida**	**162.03**	**69**	PKP2	PKPab	21 16 53.7	-3.4	
CPUP				pmax	pmax			
	comp=Z,3.0nm,1.0s							
LPA	**La Plata**	**164.03**	**98**	*ce*PKP	PKPdf	21 16 11.0	+0.9	
LPA				*ep*PKP		21 16 25.0		
LPA				*es*SKS		21 23 33.0		
LPA				*e*SKKS		21 27 36.0		
	comp=Z,26µm,20.0s							

*NEIC **29** 21:03:58.2,43.12N×0.49W,h3km,ML2.5(LDG),*
ML2.4(STR),MN2.0(MDD), After LDG.
*LDG **29** 21:03:58.2±0.1,43.12N×0.49W,h3km,Md2.7/2,Ml2.5/14,*
Error ellipse: s-maj=1.3km s-min=1.0km az=156.0
*STR **29** 21:03:58.0±0.1,43.11N×0.48W,h5km±1km,Ml2.4,Error*
ellipse: s-maj=0.0km s-min=0.0km az=1.0
*MDD **29** 21:03:58.4±0.2,43.10N×0.48W,h8km±3km,mbLg1.8/8,*
Error ellipse: s-maj=2.7km s-min=1.6km az=8.0,PRXIMO
ISC 29 21:03:56.2±0.3,43.27N±0.02×0.42W±0.02,h3km,n47,
σ1§26/92,Pyrenees

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
REYF	**Montagne du Re**	**0.20**	**173**	Pg	**Pg**	**21 04 00.0**	**-0.3**
REYF				Sg	**Sg**	**21 04 01.5**	**-1.5**
REYF	**Montagne du Re**	**0.20**	**173**	P	**Pg**	**21 04 00.1**	**-0.2**
REYF				S	**Sg**	**21 04 01.5**	**-1.4**
ATE	**Arette**	**0.27**	**228**	P	**Pg**	**21 04 01.5**	**-0.2**
ATE				S	**Sg**	**21 04 04.3**	**-1.0**
ORDF	**Ordiarp**	**0.38**	**262**	Pg	**Pg**	**21 04 04.9**	**+1.1**
ORDF				Sg	**Sg**	**21 04 10.7**	**+1.9**
ORDF	**Ordiarp**	**0.38**	**262**	P	**Pg**	**21 04 05.0**	**+1.2**
ORDF				S	**Sg**	**21 04 10.3**	**+1.5**
ETSF	**Etsaut**	**0.38**	**195**	*e*Pg	**Pg**	**21 04 02.4**	**-1.5**
ETSF				*e*Sg	**Sg**	**21 04 04.5**	**-4.5**
	152nm,0.2s						
LABF	**Labassere**	**0.43**	**121**	Pg	**Pg**	**21 04 06.0**	**+1.3**
LABF				Sg	**Sg**	**21 04 12.2**	**+1.8**
LABF	**Labassere**	**0.43**	**121**	P	**Pg**	**21 04 05.8**	**+1.1**
LABF				S	**Sg**	**21 04 12.2**	**+1.7**
FDAF	**Les Forges d'A**	**0.46**	**193**	P	**Pg**	**21 04 04.0**	**-1.5**
FDAF				S	**Sg**	**21 04 07.5**	**-4.2**
LARF	**Larrau**	**0.47**	**241**	Pg	**Pg**	**21 04 05.5**	**-0.2**
LARF				Sg	**Sg**	**21 04 11.6**	**-0.4**
LARF	**Larrau**	**0.47**	**241**	P	**Pg**	**21 04 05.7**	**0.0**
LARF				S	**Sg**	**21 04 11.6**	**-0.4**
VIEF	**Viey**	**0.51**	**139**	Pg	**Pg**	**21 04 06.2**	**-0.1**
VIEF				Sg	**Sg**	**21 04 12.6**	**-0.5**
VIEF	**Viey**	**0.51**	**139**	P	**Pg**	**21 04 06.4**	**0.0**
VIEF				S	**Sg**	**21 04 12.8**	**-0.3**
EPF	**Esparros**	**0.61**	**113**	*e*Pg	**Pg**	**21 04 09.8**	**+1.4**
EPF				*e*Sg	**Sg**	**21 04 17.6**	**+1.1**
	13nm,0.2s						
OSSF	**Osses**	**0.61**	**269**	Pg	**Pg**	**21 04 09.0**	**+0.6**
OSSF				Sg	**Sg**	**21 04 17.0**	**+0.4**
OSSF	**Osses**	**0.61**	**269**	P	**Pg**	**21 04 08.6**	**+0.2**
OSSF				S	**Sg**	**21 04 17.1**	**+0.5**
OSSF	**Osses**	**0.61**	**269**	Pg	**Pg**	**21 04 08.7**	**+0.3**
RESF	**Ens**	**0.72**	**129**	Pg	**Pg**	**21 04 10.5**	**-0.2**
RESF				Sg	**Sg**	**21 04 20.1**	**-0.3**
RESF	**Ens**	**0.72**	**129**	P	**Pg**	**21 04 10.6**	**-0.1**
RESF				S	**Sg**	**21 04 19.1**	**-1.3**
EALK	**Alkurruntz**	**0.79**	**267**	Pg	**Pg**	**21 04 12.2**	**+0.1**
	0.3nm,0.0s,SNR=10						
EALK				Lg		21 04 22.5	
	3.4nm,0.2s,SNR=17						
EALK	**Alkurruntz**	**0.79**	**267**	Pg	**Pg**	**21 04 12.2**	**+0.1**
EALK				Lg		21 04 22.1	
MELF	**Melles**	**0.95**	**114**	Pg	**Pg**	**21 04 16.2**	**+0.9**
MELF				Sg	**Sg**	**21 04 28.7**	**+0.7**
MELF	**Melles**	**0.95**	**114**	P	**Pb**	**21 04 16.1**	**+1.0**
MELF				S	**Sb**	**21 04 28.1**	**+0.3**
SALF	**Salau**	**1.29**	**113**	Pg	**Pg**	**21 04 23.0**	**+1.1**
SALF	**Salau**	**1.29**	**113**	S	**Sb**	**21 04 38.0**	**+0.5**
ESAC	**San Caprasio**	**1.55**	**181**	Pg	**Pg**	**21 04 25.1**	**-2.0**
	8.4nm,0.2s,SNR=14						
ESAC				Lg		21 04 43.2	
	27nm,0.2s,SNR=7.4						
ESAC	**San Caprasio**	**1.55**	**181**	Pg	**Pg**	**21 04 24.9**	**-2.2**
ESAC				Lg		21 04 43.7	
LFF	**La Frestale**	**1.87**	**26**	*e*Pn	**Pn**	**21 04 31.4**	**+2.0**
LFF				*e*Pg	**Pg**	**21 04 35.8**	**+2.3**
LFF				*e*Sg	**Sg**	**21 05 01.9**	**+3.5**
	11nm,0.3s						
MTLF	**Montolieu**	**1.93**	**87**	*e*Pn	**Pn**	**21 04 30.8**	**+0.5**
MTLF				*e*Pg	**Pg**	**21 04 35.3**	**+0.6**
MTLF				*e*Sg	**Sg**	**21 05 00.4**	**-0.1**
	6.8nm,0.3s						
ELAN	**Lanestosa**	**2.20**	**270**	Pg	**Pg**	**21 04 39.6**	**-0.6**
ELAN				Lg		21 05 04.6	
EPOB	**Poblet**	**2.22**	**149**	Pg	**Pg**	**21 04 37.0**	**-3.4**
	0.5nm,0.1s,SNR=7.9						
EPOB				Lg		21 05 05.0	
	0.5nm,0.1s,SNR=4.0						
EPOB	**Poblet**	**2.22**	**149**	Pg	**Pg**	**21 04 36.7**	**-3.8**
EPOB				Lg		21 05 04.5	
CAF	**Calviac**	**2.44**	**46**	*e*Pn	**Pn**	**21 04 38.6**	**+1.0**
CAF				*e*Pg	**Pg**	**21 04 46.1**	**+1.2**
CAF				*e*Sg	**Sg**	**21 05 19.5**	**+2.0**
	3.1nm,0.2s						
RJF	**Les Rejaudoux**	**2.47**	**34**	*e*Pn	**Pn**	**21 04 39.5**	**+1.6**
RJF				*e*Pg	**Pg**	**21 04 47.1**	**+1.7**
RJF				*e*Sg	**Sg**	**21 05 19.5**	**+1.2**
	5.2nm,0.2s						
EMOS	**Mosqueruela**	**2.90**	**181**	Pn	**Pn**	**21 04 45.2**	**+1.0**
	0.3nm,0.2s,SNR=7.9						
EMOS				Pg	**Pg**	**21 04 49.5**	**-4.6**
	0.2nm,0.2s,SNR=7.9						
EMOS				Sn	**Sn**	**21 05 15.2**	**-4.9**
	0.2nm,0.1s,SNR=7.9						
EMOS				Lg		21 05 24.5	
	1.6nm,0.2s,SNR=7.9						
EMOS	**Mosqueruela**	**2.90**	**181**	Pn	**Pn**	**21 04 44.6**	**+0.4**
EMOS				Pg	**Pg**	**21 04 51.3**	**-2.9**
EMOS				Sn	**Sn**	**21 05 15.0**	**-5.1**
EMOS				Lg		21 05 22.8	
LASF	**Ste Croix**	**3.21**	**74**	*e*Pn	**Pn**	**21 04 48.8**	**+0.3**
LASF				*e*Pg	**Pg**	**21 04 59.3**	**-1.0**
LASF				*e*Sg	**Sg**	**21 05 41.4**	**-1.6**
	2.6nm,0.3s						
MFF	**Saint Martin d**	**3.34**	**3**	*e*Pg	**Pg**	**21 05 03.0**	**+0.1**
MFF				*e*Sg	**Sg**	**21 05 47.1**	**-0.2**
	1.8nm,0.3s						
TCF	**Toulx Ste Croi**	**3.55**	**31**	*e*Pn	**Pn**	**21 04 54.4**	**+1.0**
TCF				*e*Pg	**Pg**	**21 05 06.9**	**-0.2**
TCF				*e*Sg	**Sg**	**21 05 53.7**	**-0.8**
	2.6nm,0.3s						
VIVF	**Saint-Julien-l**	**4.00**	**65**	*e*Pn	**Pn**	**21 04 59.9**	**+0.1**
VIVF				*e*Pg	**Pg**	**21 05 14.3**	**-1.8**
VIVF				*e*Sg	**Sg**	**21 06 06.4**	**-3.0**
	1.4nm,0.4s						
BGF	**Bois d'Agland**	**4.03**	**34**	*e*Pn	**Pn**	**21 05 00.7**	**+0.6**
BGF				*e*Pg	**Pg**	**21 05 15.3**	**-1.3**
BGF				*e*Sg	**Sg**	**21 06 08.3**	**-1.9**
	7.0nm,0.3s						
AVF	**Avril sur Loir**	**4.42**	**36**	*e*Pg	**Pg**	**21 05 22.5**	**-2.0**
AVF				*e*Sg	**Sg**	**21 06 21.4**	**-2.0**
	1.8nm,0.4s						
SMF	**Signal de Mont**	**4.53**	**40**	*e*Sg	**Sg**	**21 06 25.0**	**-2.1**
	1.1nm,0.3s						
HYF	**Humbligny**	**4.55**	**27**	*e*Sg	**Sg**	**21 06 24.1**	**-3.4**
SSF	**Saint Saulge**	**4.70**	**35**	*e*Pn	**Pn**	**21 05 10.2**	**+0.5**
SSF				*e*Pg	**Pg**	**21 05 27.9**	**-2.1**
SSF				*e*Sg	**Sg**	**21 06 29.3**	**-3.4**
	1.1nm,0.4s						
LOR	**Lormes**	**5.01**	**36**	*e*Pn	**Pn**	**21 05 14.4**	**+0.3**
LOR				*e*Sg	**Sg**	**21 06 40.1**	**-3.0**
	1.1nm,0.3s						
GRR	**Gorron**	**5.13**	**357**	*e*Pn	**Pn**	**21 05 15.6**	**-0.2**

*IDC **29** 21:06:44.5±20.0,1.72S×14.55W,mb3.7/5,mb1 3.8/5,*
mb1mx3.7/21,Error ellipse: s-maj=462.0km
s-min=142.8km az=20.0
ISC 29 21:07:04.5±1.6,1.3N±0.2×13.5W±0.8,h10km,n7,σ0§96/7,
mb3.8/5,1C,North of Ascension Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GERES	**GERESS Array B**	**52.85**	**22**	P	**P**	**21 16 24.9**	**+2.3**
	0.9nm,0.8s,mb3.8,baz=225,slow=5.6,SNR=4.2						
BRTR	**Keskin Array B**	**57.43**	**42**	P	**P**	**21 16 55.5**	**-0.5**
	0.4nm,0.7s,mb3.5,baz=297,slow=3.2,SNR=2.9						
HFS	**Hagfors**	**62.34**	**15**	P	**P**	**21 17 29.4**	**-0.1**
	1.2nm,0.7s,mb4.2,baz=207,slow=6.4,SNR=3.0						
NOA	**NORSAR Array B**	**62.53**	**13**	P	**P**	**21 17 30.3**	**-0.4**
	0.5nm,0.9s,mb3.6,baz=201,slow=7.7,SNR=2.6						
FINES	**FINESS Array B**	**67.07**	**19**	P	**P**	**21 17 59.1**	**-1.0**
	1.0nm,0.8s,mb3.9,baz=231,slow=8.9,SNR=3.1						
VNA2	**Neumayer--Watz**	**72.19**	**178**	⇑*i*	**P**	**21 18 36.9**	**+5.6**
VNA3	**Neumayer Olymp**	**72.44**	**179**		**P**	**21 18 32.9**	**+0.1**

*IDC **29** 21:09:30.3±1.9,34.17N×141.76E,mb3.7/4,mb1 3.7/4,*
mb1mx3.5/21,Error ellipse: s-maj=39.8km s-min=26.2km
az=100.0
*NEIC **29** 21:09:31.3±0.9,34.24N×141.94E,h10km,mb4.2/1,Error*
ellipse: s-maj=23.9km s-min=14.5km az=46.0
*JMA **29** 21:09:31.7±0.7,34.14N×141.83E,h34km,M4.0*
ISC 29 21:09:32.5±0.9,34.18N±0.06×141.80E±0.09,h34km,n26,
σ0§91/29,mb4.1/7,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**0.83**	**305**	P	**P**	**21 09 47.6**	**-0.1**
BSO3	**Boso 3**	**1.23**	**300**	P	**P**	**21 09 54.5**	**+1.0**
BSO4	**Boso 4**	**1.45**	**304**	P	**P**	**21 09 58.1**	**+1.4**
CHOJ	**Chosi**	**1.70**	**333**	P	**P**	**21 10 00.9**	**+0.6**
TATJ	**Tateyama 2**	**1.79**	**299**	P	**P**	**21 10 02.4**	**+0.9**
JHJ2	**Mitsune**	**1.97**	**238**	P	**P**	**21 10 04.8**	**+0.7**
JHJ	**Hachijo jima 2**	**1.99**	**238**	Pn	**P**	**21 10 04.8**	**+0.4**
	61nm,0.3s,baz=329,slow=23,SNR=19						
JHJ				Sn	**S**	**21 10 28.6**	**+0.2**
	104nm,0.3s,baz=90,slow=23,SNR=7.0						
JIM2	**Oshima 3**	**2.03**	**286**	P	**P**	**21 10 04.1**	**-0.9**
JIZS	**Izushimoda**	**2.48**	**283**	P	**P**	**21 10 10.7**	**-0.6**
JOD2	**Odawara 2**	**2.48**	**296**	P	**P**	**21 10 10.6**	**-0.8**
JAG	**Ashikaga**	**2.95**	**320**	P	**P**	**21 10 18.3**	**+0.2**
JRY	**Ryogami san**	**3.00**	**308**	P	**P**	**21 10 18.7**	**-0.1**
SHZ3	**Shizuoka 3**	**3.09**	**288**	P	**P**	**21 10 20.8**	**+0.7**
MAJO	**Matsushiro**	**3.77**	**310**	*e*Pn	**P**	**21 10 30.2**	**+0.5**
MAT	**Matsushiro**	**3.77**	**310**	P	**P**	**21 10 29.9**	**+0.2**
MAT				S	**S**	**21 11 12.3**	**-1.1**
MAT	**Matsushiro**	**3.77**	**310**	*e*P	**P**	**21 10 30.0**	**+0.3**
MAT				*e*S	**S**	**21 11 12.0**	**-1.4**
SONM	**Songino Array**	**29.72**	**308**	P	**P**	**21 15 38.6**	**+1.2**
	1.2nm,0.7s,mb3.8,baz=104,slow=8.7,SNR=6.4						
MKAR	**Makanchi Array**	**45.95**	**305**	P	**P**	**21 17 54.6**	**+0.8**
	0.9nm,0.6s,mb3.9,baz=93,slow=8.7,SNR=6.3						
KURK	**Kurchatov**	**47.98**	**310**	*e*P	**P**	**21 18 09.6**	**-0.1**
KKN	**Kakani**	**48.36**	**279**	*e*P	**P**	**21 18 11.9**	**-1.1**
DMN	**Daman**	**48.57**	**278**	*e*P	**P**	**21 18 12.7**	**-1.9**
GKN	**Gorkha**	**48.80**	**279**	*e*P	**P**	**21 18 15.4**	**-1.0**
	17nm,1.0s,mb5.0						
KOLN	**Koldanda**	**49.74**	**279**	*e*P	**P**	**21 18 20.8**	**-2.8**
	46nm,2.0s,mb5.2						
INK	**Inuvik**	**56.79**	**26**	*e*P	**P**	**21 19 14.5**	**-0.7**
	3.5nm,1.3s,mb4.2						
ASAR	**Alice Springs**	**58.02**	**189**	P	**P**	**21 19 24.9**	**+0.4**
	0.1nm,0.5s,mb3.1,baz=2.7,slow=5.3,SNR=5.4						
FINES	**FINESS Array B**	**71.48**	**333**	P	**P**	**21 20 51.8**	**+0.6**
	1.0nm,0.9s,mb3.8,baz=117,slow=4.3,SNR=3.4						

OTT 29 21:21:16.2±0.1,47.44N×70.17W,h6km±1km,MN3.3/20,
2C-5D,Southern Quebec

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
A16	**Riviere Ouelle**	**0.11**	**75**	⇓PG	Pg	21 21 18.4	-0.3
A16				SG	Sg	21 21 20.2	-0.3
LMQ	**La Malbaie**	**0.15**	**315**	⇓PG	Pg	21 21 19.1	-0.3
LMQ				SG	Sg	21 21 21.4	-0.3
LMQ				Trac		21 21 21.6	
	comp=Z,4µm,0.1s						
A54	**Misere**	**0.17**	**276**	⇓PG	Pg	21 21 19.4	-0.3
A54				SG	Sg	21 21 21.8	-0.2
A54				Trac		21 21 22.1	
	comp=Z,1µm,0.1s						
A11	**Saint Roch-des**	**0.20**	**186**	⇑PG	Pg	21 21 19.9	-0.4
A11				SG	Sg	21 21 22.7	-0.4
A11				Trac		21 21 22.8	
	comp=Z,275nm,0.0s						
A61	**Sainte Mathild**	**0.26**	**12**	⇑PG	Pg	21 21 20.9	-0.5
A61				SG	Sg	21 21 24.4	-0.6
A61				Trac		21 21 27.7	
	comp=Z,269nm,0.1s						
A21	**Saint Andre**	**0.42**	**51**	⇓PG	Pg	21 21 23.9	-0.7
A21				SG	Sg	21 21 29.6	-0.7
A21				Trac		21 21 29.7	
	comp=Z,602nm,0.2s						
A64	**Saint Simeon**	**0.43**	**26**	PG	Pg	21 21 23.8	-1.0
A64				SG	Sg	21 21 29.6	-1.0
A64				Trac		21 21 29.8	
	comp=Z,248nm,0.1s						
DAQ	**Lac Daran**	**0.90**	**306**	⇓PG	Pg	21 21 31.6	-2.5
DAQ				SG	Sg	21 21 44.0	-2.1
DAQ				Trac		21 21 48.2	
	comp=Z,125nm,0.1s						
QCQ	**Quebec**	**1.00**	**229**	PG	Pg	21 21 33.6	-2.7
QCQ				SG	Sg	21 21 47.4	-2.4
QCQ				Trac		21 21 53.7	
	comp=Z,40nm,0.1s						
DPQ	**Saint Jean**	**1.94**	**248**	PN	Pn	21 21 49.0	-1.0
DPQ				SN	Sn	21 22 13.1	-1.8
DPQ				Trac		21 22 18.1	
	comp=Z,44nm,0.1s						
CNQ	**Baie Comeau**	**2.33**	**36**	PN	Pn	21 21 53.8	-1.7
CNQ				SN	Sn	21 22 22.1	-2.6
CNQ				Trac		21 22 27.7	
	comp=Z,68nm,0.2s						
GSQ	**Grosses Roches**	**2.52**	**53**	PN	Pn	21 21 57.4	-0.9
GSQ				SN	Sn	21 22 27.0	-2.7
GSQ				Trac		21 22 35.2	
	comp=Z,42nm,0.2s						
MOQ	**Mont Orford**	**2.57**	**215**	PN	Pn	21 21 57.8	-1.3
MOQ				SN	Sn	21 22 27.8	-3.2
MOQ				Trac		21 22 36.5	
	comp=Z,34nm,0.2s						
ICQ	**Pointe Anglais**	**2.84**	**42**	PN	Pn	21 22 00.9	-1.9
ICQ				SN	Sn	21 22 34.5	-3.2
ICQ				Trac		21 22 45.4	
	comp=Z,31nm,0.1s						
MNT	**Montreal**	**3.08**	**232**	PN	Pn	21 22 04.5	-1.7
MNQ	**Manicouagan**	**3.23**	**16**	PN	Pn	21 22 06.1	-2.3
MNQ				SN	Sn	21 22 45.4	-2.2
MNQ				Trac		21 22 57.8	
	comp=Z,16nm,0.1s						
TRQ	**Mont Tremblant**	**3.25**	**250**	PN	Pn	21 22 06.1	-2.6
TRQ				SN	Sn	21 22 44.1	-4.0
TRQ				Trac		21 23 00.6	
	comp=Z,25nm,0.2s						
GGN	**Saint George**	**3.27**	**134**	PN	Pn	21 22 06.5	-2.6
GGN				SN	Sn	21 22 44.8	-4.0
GGN				Trac		21 22 46.6	
	comp=Z,23nm,0.1s						
SMQ	**Clarke City**	**3.60**	**38**	PN	Pn	21 22 11.5	-2.2
SMQ				SN	Sn	21 22 52.3	-4.8
SMQ				Trac		21 23 06.8	
	comp=Z,15nm,0.1s						
ALFO	**Alfred**	**3.73**	**243**	PN	Pn	21 22 13.0	-2.4
ALFO			

EMIN Lg 21 31 28.7
0.5nm,0.1s,SNR=5.0
EBAD Badajoz 1.38 32 Pg **Pg** **21 31 22.1 -0.6**
1.0nm,0.1s,SNR=5.7
EBAD Lg 21 31 40.0
1.9nm,0.1s,SNR=7.1

*JMA **29** 21:32:29.9±0.5,34.23N×141.97E,h70km,M4.3*
*BJI **29** 21:32:29.9,34.45N×141.46E,h10km,mb4.7*
*IDC **29** 21:32:29.5±0.7,34.28N×141.70E,mb4.3/22,mb1 4.4/25, mb1mx4.4/30,ML3.9/3,Error ellipse: s-maj=18.2km s-min=13.9km az=144.0*
*NEIC **29** 21:32:30.9±0.3,34.21N×141.62E,h10km,mb4.8/21,Error ellipse: s-maj=8.5km s-min=6.3km az=176.0*
*MOS **29** 21:32:36.7±0.9,34.97N×141.47E,h33km,mb4.5/11,Error ellipse: s-maj=20.7km s-min=8.2km az=107.7*
ISC 29 21:32:33.6±0.8,34.20N±0.05×141.59E±0.06,h40km±5km, h42km±1.2km:pP-P,n151,σ0§97/159,mb4.6/55,MS5.7/3, 7C-4D,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
BSO3	**Boso 3**	**1.07**	**304**	⇑P		**P**		**21 32 53.0**	**+0.6**
BSO4	**Boso 4**	**1.30**	**308**	⇓P		**P**		**21 32 56.7**	**+1.1**
KTR	**Katsuura**	**1.41**	**312**	P		P		**21 32 57.5**	**+0.2**
KTR				*e*S		**S**		**21 33 20.2**	**+5.3**
CHOJ	**Chosi**	**1.61**	**338**	P		P		**21 32 58.1**	**-2.0**
JCN	**Nagara**	**1.67**	**317**	⇑P		**P**		**21 33 01.2**	**+0.3**
JCN				*e*S		**S**		**21 33 24.1**	**+2.9**
JMY	**Miyake jima 2**	**1.73**	**266**	*e*S		**S**		**21 33 27.9**	**+5.2**
JHJ2	**Mitsune**	**1.84**	**234**	P		**P**		**21 33 04.7**	**+1.4**
JHJ2				*e*S		**S**		**21 33 30.0**	**+4.5**
JHJ	**Hachijo jima 2**	**1.86**	**235**	Pn		**P**		**21 33 04.4**	**+0.8**
	60nm,0.3s,baz=91,slow=7.3,SNR=11								
JHJ				Sn		**S**		**21 33 31.7**	**+5.7**
	395nm,0.3s,baz=198,slow=23,SNR=16								
JHJ				LR		LR		21 33 38.5	
	comp=Z,28μm,18.2s,baz=170,slow=36								
JIM2	**Oshima 2**	**1.86**	**287**	P		**P**		**21 33 03.5**	**-0.1**
JIZS	**Izushimoda**	**2.30**	**284**	⇑P		**P**		**21 33 09.9**	**0.0**
JOD2	**Odawara 2**	**2.32**	**298**	P		**P**		**21 33 09.7**	**-0.5**
JOD2				*e*S		**S**		**21 33 42.7**	**+5.1**
JYN	**Shimob**	**2.82**	**298**	P		**P**		**21 33 17.3**	**0.0**
JAG	**Ashikaga**	**2.82**	**322**	P		**P**		**21 33 16.4**	**-1.0**
JRY	**Ryogami san**	**2.85**	**310**	P		**P**		**21 33 17.3**	**-0.5**
SHZ3	**Shizuoka 3**	**2.92**	**288**	P		**P**		**21 33 20.0**	**+1.3**
MAJO	**Matsushiro**	**3.62**	**311**	*e*Pn		**P**		**21 33 28.3**	**-0.3**
MAJO				*e*Pb		**P**		**21 33 35.5**	**+6.8**
MAJO				*e*S		**S**		**21 34 17.4**	**+6.8**
MAT	**Matsushiro**	**3.62**	**311**	P		**P**		**21 33 28.3**	**-0.4**
MAT				S		**S**		**21 34 11.5**	**+0.8**
MAT	**Matsushiro**	**3.62**	**311**	*e*P		**P**		**21 33 28.0**	**-0.7**
MAT				*e*S		**S**		**21 34 12.0**	**+1.3**
CBIJ	**Chichi jima**	**7.11**	**176**	Pn		**P**		**21 34 16.4**	**-1.3**
	8.1nm,0.3s,baz=255,slow=21,SNR=6.7								
CBIJ				Sn		**S**		**21 35 30.1**	**-8.0**
	13nm,0.3s,baz=97,slow=22,SNR=5.9								
JNU	**Nakatsue**	**9.00**	**266**	Pn		**P**		**21 34 43.5**	**-0.4**
	0.5nm,0.3s,baz=48,slow=20,SNR=4.9								
ASAJ	**Asahikawa**	**9.93**	**4**	Pn		**P**		**21 34 49.2**	**-7.5**
	2.0nm,0.3s,baz=215,slow=9.7,SNR=11								
ASAJ				Sn		**S**		**21 36 37.5**	**-10**
	3.3nm,0.3s,baz=299,slow=31,SNR=8.7								
ASAJ	**Asahikawa**	**9.93**	**4**	P		**P**		**21 34 49.2**	**-7.5**
ASAJ								21 36 37.6	
ASAJ				pmax	pmax				
	comp=Z,2.0nm,0.3s								
ASAJ				smax					
	comp=Z,3.0nm,0.3s								
YSS	**Yuzh-Sakhalins**	**12.77**	**4**	*e*P		**P**		**21 35 28.0**	**-7.1**
YSS	**Yuzh-Sakhalins**	**12.77**	**4**	*e*P		**P**		**21 35 28.4**	**-6.7**
SSE	**Sheshan**	**17.46**	**265**	P		**P**		**21 36 32.5**	**-3.2**
SSE				AMB		AMB			
	comp=Z,34nm,0.7s								
NJ2	**Nanjing**	**19.16**	**270**	*e*P		**P**		**21 36 53.0**	**-3.4**
NJ2				AP				21 37 00.5	
NJ2				XP				21 37 05.0	
NJ2				PP		PP		21 37 07.5	-6.1
NJ2				AMB		AMB			
	comp=Z,30nm,0.7s								
HIA	**Hailar**	**22.07**	**320**	*e*P		**P**		**21 37 23.8**	**-2.7**
	comp=Z,38nm,1.2s,mb4.7								
HIA				*e*				21 37 28.5	
PET	**Petropavlovsk**	**22.40**	**28**	P		**P**		**21 37 30.5**	**+0.8**
	comp=Z,87nm,1.5s,mb5.0								
WHN	**Wuhan**	**23.27**	**269**	P		**P**		**21 37 38.5**	**+0.1**
HHC	**Hu-ho-hao-te**	**24.64**	**294**	*e*P		**P**		**21 37 52.8**	**+1.2**
HHC				AMB		AMB			
	comp=Z,28nm,1.2s,mb4.7								
ENH	**Enshi**	**27.38**	**271**	*e*P		**P**		**21 38 15.5**	**-1.7**
	comp=Z,15nm,1.0s,mb4.5								
ENH				LR		LR			
	comp=Z,10μm,18.3s,MS5.4								
YAK	**Yakutsk**	**28.86**	**348**	*e*P		**P**		**21 38 27.1**	**-3.1**
YAK				pmax	pmax				
	comp=Z,8.0nm,1.0s,mb4.4								
YAK				pmax	pmax				
	comp=N,4.0nm,1.1s								
YAK				pmax	pmax				
	comp=E,4.0nm,1.1s								
YAK	**Yakutsk**	**28.86**	**348**	⇑*e*P		**P**		**21 38 28.4**	**-1.8**
	comp=E,38nm,1.5s,mb4.9								
ULN	**Ulaanbaatar**	**29.14**	**308**	⇑*e*P		**P**		**21 38 33.8**	**+1.0**
	comp=E,22nm,1.2s,mb4.8								
SONM	**Songino Array**	**29.57**	**308**	P		**P**		**21 38 37.3**	**+0.7**
	comp=E,13nm,1.1s,mb4.6,baz=113,slow=9.4,SNR=50								
BOD	**Bodaibo**	**30.03**	**330**	*e*P		**P**		**21 38 38.8**	**-1.8**
BOD				*e*		pP		21 38 50.4	-1.2
LZH	**Lanzhou**	**30.80**	**284**	⇑P		**P**		**21 38 44.0**	**-3.7**
LZH				PP		PP		21 39 44.5	-5.1
LZH				AMB		AMB			
	comp=Z,39nm,1.5s,mb5.0								
ZAK	**Zakamensk**	**32.20**	**312**	⇓*i*P		**P**		**21 38 59.4**	**-0.5**
TLY	**Talaya**	**32.35**	**314**	*e*P		**P**		**21 38 59.8**	**-1.4**
TLY				pmax	pmax				
	comp=Z,151nm,1.6s,mb5.6								
GTA	**Gaotai**	**33.63**	**291**	*e*P		**P**		**21 39 12.0**	**-0.4**
GTA				AP		pP		21 39 16.0	-7.5
GTA				XP		sP		21 39 18.8	-10
GTA				AMB		AMB			
	comp=Z,9.0nm,1.2s,mb4.6								
BILL	**Bilibino**	**36.70**	**15**	⇓*i*P		**P**		**21 39 49.0**	**+11**
BILL				*i*				21 40 07.7	
BILL				*e*				21 41 14.9	
BILL				*e*				21 42 09.0	
BILL				pmax	pmax				
	comp=Z,22nm,1.4s,mb4.8								
BILL				MLR	MLR				
	comp=Z,8μm,16.0s,MS5.6								
BILL	**Bilibino**	**36.70**	**15**	*e*P		**P**		**21 39 49.2**	**+11**
TIXI	**Tiksi**	**38.11**	**354**	⇓*e*P		**P**		**21 39 48.9**	**-1.1**
TIXI				pmax	pmax				
	comp=Z,6.0nm,1.2s,mb4.2								
CM31	**Chiang Mai Arr**	**41.00**	**259**	*e*P		**P**		**21 40 13.9**	**-0.6**
	comp=Z,9.0nm,1.2s,mb4.3								
CMAR	**Chiang Mai Arr**	**41.00**	**259**	P		**P**		**21 40 14.1**	**-0.4**
	comp=Z,2.9nm,0.8s,mb3.9,baz=48,slow=6.9,SNR=16								
CMAR	**Chiang Mai Arr**	**41.00**	**259**	P		**P**		**21 40 14.1**	**-0.4**
CMAR				pmax	pmax				
	comp=Z,3.0nm,0.8s								
WMQ	**Urumqi**	**42.30**	**300**	P		**P**		**21 40 26.5**	**+1.6**
LSA	**Lhasa**	**42.69**	**278**	P		**P**		**21 40 29.0**	**+0.7**
LSA	**Lhasa**	**42.69**	**278**	*e*P		**P**		**21 40 29.1**	**+0.8**
	comp=Z,3.7nm,0.8s,mb4.2								
ZAL	**Zalesovo**	**43.98**	**315**	P		**P**		**21 40 37.7**	**-0.7**
	comp=Z,3.1nm,1.0s,mb4.0,baz=288,slow=7.9,SNR=11								
ZAL	**Zalesovo**	**43.98**	**315**	P		**P**		**21 40 37.7**	**-0.7**
ZAL				pmax	pmax				
	comp=Z,3.0nm,1.0s								
NVS	**Novosibirsk**	**44.93**	**316**	*i* P		**P**		**21 40 44.7**	**-1.3**
NVS				pmax	pmax				
	comp=Z,18nm,1.1s,mb4.8								
NVS				pmax	pmax				
	comp=E,15nm,1.0s								
MKAR	**Makanchi Array**	**45.79**	**304**	P		**P**		**21 40 53.0**	**0.0**
	comp=Z,2.6nm,0.7s,mb4.3,baz=87,slow=10,SNR=24								
MKAR	**Makanchi Array**	**45.79**	**304**	P		**P**		**21 40 53.0**	**0.0**
MKAR				pmax	pmax				
	comp=Z,3.0nm,0.7s								
KURK	**Kurchatov**	**47.83**	**310**	*e*P		**P**		**21 41 08.5**	**-0.5**
PKI	**Pulchoki**	**48.16**	**278**	*e*P		**P**		**21 41 11.4**	**-0.5**
	comp=Z,43nm,0.9s,mb5.5								
KKN	**Kakani**	**48.18**	**278**	*e*P		**P**		**21 41 11.7**	**-0.3**
	comp=Z,64nm,1.1s,mb5.6								
DMN	**Daman**	**48.39**	**278**	*e*P		**P**		**21 41 13.3**	**-0.4**
	comp=Z,47nm,1.2s,mb5.4								
GKN	**Gorkha**	**48.63**	**279**	*e*P		**P**		**21 41 15.2**	**-0.3**
	comp=Z,144nm,1.2s								
DANN	**Dangsing**	**49.21**	**280**	*e*P		**P**		**21 41 20.3**	**+0.3**
KOLN	**Koldanda**	**49.56**	**279**	*e*P		**P**		**21 41 22.5**	**-0.2**
	comp=Z,79nm,1.3s,mb5.6								
ILAR	**Eielson Array**	**51.82**	**31**	P		P		**21 41 37.9**	**-1.4**
	comp=Z,2.5nm,0.9s,mb4.2,baz=269,slow=6.5,SNR=13								
ILAR	**Eielson Array**	**51.82**	**31**	P		**P**		**21 41 37.9**	**-1.4**
ILAR				pmax	pmax				
	comp=Z,3.0nm,0.9s								
AAK	**Ala-Archa**	**52.00**	**300**	*e*P		**P**		**21 41 40.9**	**-0.1**
	comp=Z,7.1nm,1.1s,mb4.5								
DIV	**Divide**	**52.46**	**36**	P		**P**		**21 41 42.3**	**-1.9**
	comp=Z,6μm,0.4s								
BVAR	**Borovoye Array**	**52.61**	**314**	P		**P**		**21 41 44.7**	**-0.6**
	comp=Z,3.6nm,0.9s,mb4.3,baz=90,slow=7.4,SNR=23								
BRVK	**Borovoye**	**52.67**	**314**	*e*P		**P**		**21 41 45.4**	**-0.4**
ZRNK	**Zerenda**	**53.45**	**314**	*e*P		**P**		**21 41 50.5**	**-1.1**
WB2	**Warramunga Arr**	**54.28**	**188**	*e*P		**P**		**21 41 57.1**	**-1.1**
NDI	**New Delhi**	**54.40**	**283**	*e*		**P**		**21 42 01.0**	**+2.0**
INK	**Inuvik**	**56.84**	**26**	P		**P**		**21 42 15.7**	**-0.4**
	comp=Z,1.4nm,0.6s,mb4.2,baz=326,slow=9.2,SNR=4.4								
INK	**Inuvik**	**56.84**	**26**	P		**P**		**21 42 15.7**	**-0.4**
INK				pmax	pmax				
	comp=Z,1.0nm,0.6s								
INK	**Inuvik**	**56.84**	**26**	P		**P**		**21 42 17.6**	**+1.6**
	comp=Z,5.3nm,0.8s,mb4.6								
INK				*e*		pP		21 42 28.2	+0.4
AS12	**Alice Springs**	**58.01**	**188**	*e*P		**P**		**21 42 24.1**	**-0.8**
	comp=Z,34nm,1.7s,mb5.1								
ASAR	**Alice Springs**	**58.01**	**188**	P		**P**		**21 42 24.1**	**-0.8**
	comp=Z,3.0nm,0.7s,mb4.5,baz=15,slow=11,SNR=25								
HYB	**Hyderabad**	**58.32**	**270**	*i* P		**P**		**21 42 27.0**	**-0.1**
HYB	**Hyderabad**	**58.32**	**270**	*e*P		**P**		**21 42 27.0**	**-0.1**
ARU	**Arti**	**58.59**	**320**	⇑*i*P		**P**		**21 42 27.6**	**-0.9**
ARU				*e*				21 43 24.4	
ARU				*e*				21 44 32.0	
ARU				*e*S		**S**		**21 50 15.3**	**-13**
ARU				pmax	pmax				
	comp=Z,15nm,1.0s,mb5.0								
POO	**Poona**	**61.67**	**274**	*e*P		**P**		**21 42 43.0**	**-7.0**
KEV	**Kevo**	**66.14**	**340**	*e*p		**P**		**21 43 19.4**	**+1.0**
YKA	**Yellowknife Ar**	**66.19**	**30**	P		**P**		**21 43 17.2**	**-1.6**
	comp=Z,0.3nm,0.6s,baz=295,slow=6.1,SNR=5.6								
YKA	**Yellowknife Ar**	**66.19**	**30**	P		**P**		**21 43 17.2**	**-1.6**
ARCES	**ARCESS Array B**	**66.69**	**340**	P		**P**		**21 43 21.8**	**-0.2**
	comp=Z,1.0nm,0.7s,mb4.0,baz=53,slow=6.1,SNR=4.5								
ARCES	**ARCESS Array B**	**66.69**	**340**	P		**P**		**21 43 21.8**	**-0.1**
ARCES				pmax	pmax				
	comp=Z,1.0nm,0.7s								
ARCES	**ARCESS Array B**	**66.69**	**340**	P		**P**		**21 43 21.8**	**-0.2**
JOF	**Joensuu**	**68.53**	**333**	*e*p		**P**		**21 43 30.1**	**-3.4**
OBN	**Obninsk**	**70.45**	**324**	*e*P		**P**		**21 43 45.8**	**+0.4**
OBN				*e*		PP		21 46 16.1	-7.6
OBN				*e*S		tx		21 52 40.4	
OBN				*e*SS		tx		21 53 12.4	
OBN				pmax	pmax				
	comp=Z,11nm,0.9s,mb4.8								
VRSR	**Storozhevoye**	**71.15**	**320**	*e*P		**P**		**21 43 49.4**	**-0.3**
VRSR				pmax	pmax				
	comp=Z,10.0nm,1.4s,mb4.5								
VRSR				pmax	pmax				
	comp=N,9.0nm,0.7s								
VRSR				pmax	pmax				
	comp=E,8.0nm,1.0s								
THR	**Tehran**	**71.26**	**301**	P		**P**		**21 43 51.5**	**+0.8**
	comp=E,2.3nm,1.0s,mb4.0,baz=358,slow=4.7,SNR=2.4								
THR	**Tehran**	**71.26**	**301**	P		**P**		**21 43 51.5**	**+0.8**
THR				pmax	pmax				
	comp=Z,2.0nm,1.0s								
THR	**Tehran**	**71.26**	**301**	P		**P**		**21 43 51.5**	**+0.8**
FINES	**FINESS Array B**	**71.39**	**333**	P		**P**		**21 43 50.4**	**-0.5**
	comp=Z,42nm,1.5s,mb5.2,baz=63,slow=4.3,SNR=9.1								
FINES	**FINESS Array B**	**71.39**	**333**	P		**P**		**21 43 50.4**	**-0.5**
FINES				pmax	pmax				
	comp=Z,42nm,1.5s								
GOF	**Gofitskoye**	**72.10**	**313**	*e*P		**P**		**21 43 56.0**	**+0.5**
ZEI	**Tsey**	**72.73**	**310**	*e*P		**P**		**21 43 57.5**	**-1.7**
KIV	**Kislovodsk**	**72.88**	**312**	*e*P		**P**		**21 44 01.0**	**+0.9**
KIV				pmax	pmax				
	comp=Z,19nm,1.0s,mb5.0								
KIV	**Kislovodsk**	**72.88**	**312**	*e*P		**P**		**21 44 00.6**	**+0.5**
	comp=Z,34nm,1.4s,mb5.1								
SOC	**Sochi**	**74.90**	**313**	*e*P		**P**		**21 44 11.0**	**-0.9**
SOC				*e*S		S		21 53 34.7	-10
SOC				MLR	MLR				
	comp=Z,5μm,18.0s,MS5.9								
SOC				MLR	MLR				
	comp=N,4μm,15.0s,MS6.0								
SOC				MLR	MLR				
	comp=E,4μm,14.0s,MS6.0								
NVAR	**Mina Array Bea**	**76.58**	**53**	P		**P**		**21 44 22.6**	**+1.1**
	comp=E,1.1nm,0.8s,mb5.9,baz=302,slow=4.0,SNR=4.4								
MNV	**Mina**	**76.67**	**53**	P		**P**		**21 44 24.0**	**+1.9**
	comp=E,7.0nm,1.3s,mb4.4								
HFS	**Hagfors**	**76.72**	**336**	P		**P**		**21 44 21.5**	**-0.4**
	comp=E,2.3nm,0.8s,mb4.2,baz=117,slow=3.3,SNR=5.2								
HFS	**Hagfors**	**76.72**	**336**	P		**P**		**21 44 21.5**	**-0.4**
HFS				pmax	pmax				
	comp=Z,2.0nm,0.8s								
NB2	**NORSAR Subarra**	**76.85**	**338**	P		**P**		**21 44 21.8**	**-0.8**
	comp=Z,1.6nm,0.7s,mb4.1,baz=40,slow=5.6								
NOA	**NORSAR Array B**	**76.85**	**338**	P		**P**		**21 44 22.4**	**-0.2**
	comp=Z,2.5nm,0.8s,mb4.2,baz=40,slow=5.7,SNR=10.0								
NOA	**NORSAR Array B**	**76.85**	**338**	P		**P**		**21 44 22.4**	**-0.2**
NOA				pmax	pmax				
	comp=Z,3.0nm,0.8s								
NOA	**NORSAR Array B**	**76.85**	**338**	P		**P**		**21 44 22.4**	**-0.2**
SUW	**Suwalki**	**77.35**	**328**	*e*P		**P**		**21 44 25.6**	**+0.1**
SUW				*e*pwP		pP		21 44 38.5	+0.9
HWUT	**Hardware Ranch**	**79.04**	**47**	*e*P		**P**		**21 44 35.6**	**+0.5**
	comp=Z,19nm,1.2s,mb4.9								
HWUT				*e*pwP		pP		21 44 49.5	+2.3
FRB	**Frobisher Bay**	**79.49**	**13**	P		**P**		**21 44 36.6**	**-0.4**
	comp=Z,4.4nm,0.9s,mb4.4,baz=4.5,slow=9.2,SNR=3.8								
FRB	**Frobisher Bay**	**79.49**	**13**	P		**P**		**21 44 36.7**	**-0.3**
FRB				pmax	pmax				
	comp=Z,4.0nm,0.9s								
PDAR	**Pinedale Array**	**79.55**	**45**	P		**P**		**21 44 37.7**	**-0.1**
	comp=Z,0.8nm,0.8s,mb3.7,baz=270,slow=1.5,SNR=7.5								
DAU	**Daniels Canyon**	**79.94**	**48**	P		**P**		**21 44 46.0**	**+6.0**
DAU				*e*				21 44 54.7	
MSU	**Marysvale**	**80.49**	**50**	*e*P		**P**		**21 44 44.4**	**+1.4**
MSU				*e*pwP		pP		21 44 55.8	+0.8
BRTR	**Keskin Array B**	**80.84**	**312**	P		**P**		**21 44 45.7**	**+0.9**
	comp=Z,3.4nm,0.9s,mb4.3,baz=108,slow=3.9,SNR=21								
SRU	**San Rafael**	**81.17**	**49**	*e*P		**P**		**21 44 45.9**	**-0.6**
SRU				*e*pwP		pP		21 44 59.1	+0.5
OKC	**Ostrava-Krasne**	**82.49**	**327**	*e*P		**P**		**21 44 53.4**	**+0.3**
OKC				*ex*		x		21 45 04.3	
PV10	**Paradox Valley**	**82.54**	**48**	*e*P		**P**		**21 44 55.0**	**+1.5**
PV10				*e*pwP		pP		21 45 08.8	+3.0
KSP	**Ksiaz**	**82.58**	**329**	*e*P		**P**		**21 44 50.2**	**-3.3**
MORC	**Moravsky Berou**	**82.81**	**327**	*e*P		**P**		**21 44 55.1**	**+0.4**
	comp=Z,9.6nm,1.5s,mb4.6								
DPC	**Dobruska-Polom**	**82.93**	**328**	*e*P		**P**		**21 44 56.2**	**+0.9**
DPC				*ex*		x		21 45 09.8	
PV01	**Paradox Valley**	**82.98**	**48**	*e*P		**P**		**21 44 57.1**	**+1.3**
PV01				*e*pwP		pP		21 45 10.2	+2.2
ASF	**Jabal al Asfar**	**83.21**	**304**	P		**P**		**21 44 58.5**	**+1.4**
	comp=Z,2.5nm,0.7s,mb4.3,baz=249,slow=4.5,SNR=5.3								
RW3	**Ridgway**	**83.45**	**48**	*e*P		**P**		**21 45 00.1**	**+1.9**
RW3				*e*pwP		pP		21 45 11.5	+1.1
VRAC	**Vranov**	**83.57**	**327**	P		**P**		**21 44 59.9**	**+1.4**
	comp=Z,13nm,1.4s,mb4.9,baz=52,slow=5.4,SNR=6.8								
CLL	**Collm**	**83.62**	**330**	P		**P**		**21 44 59.0**	**+0.3**
CLL				*e**SP		pP		21 45 12.0	+1.0
CLL	**Collm**	**83.62**	**330**	*e*P		**P**		**21 44 59.0**	**+0.3**
CLL				*e*		pP		21 45 12.0	+1.0
CSS	**Prodhromos**	**83.92**	**308**	P		**P**		**21 45 00.8**	**+0.1**
CSS				*e*pwP		pP		21 45 12.7	-0.2
PRU	**Pruhonice**	**83.97**	**329**	*e*P		**P**		**21 45 01.3**	**+0.8**
PRU				*ex*		x		21 45 15.4	
KHC	**Kasperske Hory**	**85.03**	**329**	*e*P		**P**		**21 45 06.3**	**+0.4**
KHC				*ex*		x		21 45 19.5	
GERES	**GERESS Array B**	**85.19**	**328**	P		**P**		**21 45 06.8**	**+0.1**
	comp=Z,0.9nm,0.7s,mb4.0,baz=34,slow=4.8,SNR=13								
GERES	**GERESS Array B**	**85.19**	**328**	P		**P**		**21 45 06.8**	**+0.1**
GERES				pmax	pmax				
	comp=Z,1.0nm,0.7s								
GRF	**Grafenberg Arr**	**85.59**	**330**	*e*P		**P**		**21 45 09.4**	**+0.8**
GRF				pmax	pmax				
	comp=Z,34nm,1.6s,mb5.3								
LOR	**Lormes**	**90.46**	**333**	*e*P		**P**		**21 45 31.9**	**-0.1**
LPL	**La Plagne**	**90.75**	**330**	*e*P		**P**		**21 45 33.5**	**+0.1**
LPG	**La Plagne**	**90.76**	**330**	*e*P		**P**		**21 45 33.6**	**+0.1**
SSF	**Saint Saulge**	**90.76**	**333**	*e*P		**P**		**21 45 33.5**	**+0.1**
	comp=Z,7.8nm,1.2s,mb4.6								
SMF	**Signal de Mont**	**90.98**	**332**	*e*P		**P**		**21 45 34.5**	**0.0**
AVF	**Avril sur Loir**	**91.05**	**333**	*e*P		**P**		**21 45 34.8**	**0.0**
	comp=Z,12nm,1.2s,mb4.8								
GRR	**Gorron**	**91.20**	**336**	*e*P		**P**		**21 45 35.5**	**+0.1**
ORIF	**Oris-en-Rattie**	**91.59**	**330**	*e*P		**P**		**21 45 37.4**	**+0.1**
	comp=Z,11nm,1.1s,mb4.8								
LTX	**Lajitas**	**91.73**	**53**	*e*P		**P**		**21 45 38.9**	**+0.5**
	comp=Z,7.8nm,1.4s,mb4.8								
LTX				*e*pwP		pP		21 45 51.4	+0.6
TXAR	**Lajitas Array**	**91.73**	**53**	P		**P**		**21 45 39.1**	**+0.8**
	comp=Z,0.4nm,0.6s,mb3.9,baz=315,slow=3.5,SNR=5.6								
SGMF	**Saint Gilles**	**91.88**	**337**	*e*P		**P**		**21 45 39.0**	**+0.4**
VIVF	**Saint-Julien-l**	**92.13**	**331**	*e*P		**P**		**21 45 39.9**	**+0.1**
MFF	**Saint Martin d**	**92.49**	**335**	*e*P		**P**		**21 45 41.6**	**+0.2**
	comp=Z,21nm,1.3s,mb5.0								
LMR	**La Mourre**	**92.61**	**329**	*e*P		**P**		**21 45 41.8**	**-0.3**
	comp=Z,19nm,1.3s,mb5.0								
RJF	**Les Rejaudoux**	**92.99**	**333**	*e*P		**P**		**21 45 44.0**	**+0.2**
	comp=Z,19nm,1.3s,mb5.1								
QSPA	**South Pole Qui**	**123.95**	**180**	*e*PKP		PKPdf		21 51 27.4	+0.7
LPAZ	**La Paz**	**147.91**	**64**	PKPbc		PKPdf		21 52 17.2	+5.4
	comp=Z,2.7nm,0.7s,baz=13,slow=9.0,SNR=8.4								
LPAZ	**La Paz**	**147.91**	**64**	PKIKP		PKPdf		21 52 17.3	+5.4
LPAZ				pmax	pmax				
	comp=Z,3.0nm,0.7s								
LPAZ	**La Paz**	**147.91**	**64**	*e*PKP		PKPdf		21 52 16.6	+4.8

NNC 29 21:33:17.0±12.0,36.79N×69.14E,h127km±177km, mpv3.8,1C-3D,Error ellipse: s-maj=112.4km s-min=79.5km az=33.0,Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
KK31	**Karatay Array**	**6.39**	**9**	⇓P		P		21 34 48.4	-1.5
	2.9nm,0.3s,baz=196,slow=16,SNR=53								
KK31				⇑S		S		21 36 01.4	-0.6
	1.4nm,0.3s,baz=192,slow=24,SNR=9.4								
MK31	**Makanchi Array**	**13.98**	**40**	P		P		21 36 28.0	-2.4
	2.0nm,0.8s,baz=215,slow=10,SNR=11								
AB31	**Akbulak array**	**14.14**	**335**	⇓P		P		21 36 34.0	+1.7
	1.0nm,0.7s								
AB31				⇓S		S		21 39 05.6	-0.7
	0.4nm,0.5s								

*HEL **29** 21:34:47.4±0.4,59.47N×27.86E,ML1.9,ML2.1(UPP), ML2.6(NAO),Explosion*
*NAO **29** 21:34:47.6±2.4,59.52N×27.77E,ML2.6*
*BER **29** 21:34:47.3±3.8,59.51N×27.95E,ML2.6(NAO)*
*IDC **29** 21:34:50.9±1.8,59.69N×27.57E,mb1 3.1/3, mb1mx3.0/21,ML3.1/3,Error ellipse: s-maj=14.6km s-min=9.5km az=123.0*
ISC 29 21:34:44.8±1.0,59.56N±0.06×27.3E±0.1,n14,σ1§46/26, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
VJF	**Virojoki**	**0.99**	**6**	*e*P		**Pb**		**21 35 06.6**	**+

BUSP				*e*S		**S**	**22 13 08.1 -0.4**
SCZP	**Santa Cruz**	**2.03**	**341**⇑	*e*P		**P**	**22 12 43.4 +0.7**
SCZP				*e*S		**S**	**22 13 09.8 -1.6**
OTRP	**Odiongan**	**2.03**	**136**⇑	*e*P		**P**	**22 12 43.5 +0.7**
BALP	**Baler**	**2.11**	**27**⇑	*e*P		**P**	**22 12 45.1 +1.4**
BALP				*e*S		**S**	**22 13 14.1 +0.9**
BCPH	**Baguio City Da**	**2.52**	**360**⇑	*i*P		**P**	**22 12 48.6 +0.1**
BCPH				*i* S		**S**	**22 13 18.8 -2.9**
BOLP	**Bolinao**	**2.60**	**346**⇑	*e*P		**P**	**22 12 50.4 +0.9**
BOLP				*e*S		**S**	**22 13 22.4 -1.1**
KALP	**Kalibo**	**2.75**	**141**⇓	*i*P		**P**	**22 12 52.8 +1.6**
ENPP	**El Nido**	**2.86**	**203**⇑	*e*P		**P**	**22 12 54.8 +2.2**
ENPP				*e*S		**S**	**22 13 25.1 -3.8**
CUYO	**Cuyo Island**	**3.01**	**172**⇑	*e*P		**P**	**22 12 55.8 +1.4**
CAUP	**Cauayan**	**3.30**	**21**⇑	*e*P		**P**	**22 12 59.6 +1.5**
PVCP	**Virac**	**3.48**	**94**⇑	*e*P		**P**	**22 12 58.2 -2.1**
PVCP				*e*S		S	22 13 02.3 -40
PALP	**Palanan**	**3.66**	**29**⇑	*e*P		**P**	**22 13 04.0 +1.4**
CNP	**Catarman**	**4.19**	**108**⇑	*e*P		**P**	**22 13 11.7 +2.2**
PMG	**Port Moresby** 48nm,1.3s,mb5.0	**35.06**	**130**	P		**P**	**22 18 41.6 -2.0**
SONM	**Songino Array** 1.9nm,0.5s,mb4.0,baz=161,slow=9.4,SNR=20	**35.89**	**344**	P		**P**	**22 18 50.9 +0.7**
WRAB	**Tennant Creek** 41nm,1.3s,mb4.9	**36.20**	**158**	*e*P		**P**	**22 18 50.5 -2.5**
WB2	**Warramunga Arr**	**36.21**	**158**	*e*P		**P**	**22 18 51.8 -1.3**
AS12	**Alice Springs** 40nm,1.9s,mb4.7	**39.49**	**161**	*e*P		**P**	**22 19 20.5 0.0**
ASAR	**Alice Springs** 2.3nm,0.4s,mb4.1,baz=337,slow=6.7,SNR=50	**39.49**	**161**	P		**P**	**22 19 20.0 -0.5**
MKAR	**Makanchi Array** 3.8nm,0.8s,mb4.1,baz=132,slow=9.1,SNR=31	**45.85**	**324**	P		**P**	**22 20 13.0 +1.4**
MKAR	**Makanchi Array**	**45.85**	**324**	P		**P**	**22 20 13.0 +1.4**
ZAL	**Zalesovo** 2.3nm,0.5s,mb4.1,baz=274,slow=4.0,SNR=10	**48.88**	**333**	P		**P**	**22 20 34.6 -0.4**
STKA	**Stephens Creek** 0.7nm,0.5s,mb3.5,baz=316,slow=13,SNR=4.2	**49.73**	**156**	P		**P**	**22 20 40.9 -0.9**
KURK	**Kurchatov**	**50.01**	**326**	*e*P		**P**	**22 20 44.4 +0.8**
BVAR	**Borovoye Array** 0.7nm,0.6s,mb3.7,baz=117,slow=6.4,SNR=5.2	**55.59**	**326**	P		**P**	**22 21 25.0 +0.2**
ZRNK	**Zerenda**	**56.32**	**325**	*e*P		**P**	**22 21 30.1 +0.1**
JOF	**Joensuu** 1.6nm,0.4s,mb4.0	**77.46**	**332**	*e*p		**P**	**22 23 42.2 -0.3**
KEV	**Kevo**	**78.36**	**339**	*e*p		**P**	**22 23 46.8 -0.5**
ARCES	**ARCESS Array B** 1.1nm,0.5s,mb3.7,baz=79,slow=6.2,SNR=16	**78.91**	**339**	P		**P**	**22 23 48.8 -1.5**
SPITS	**Spitsbergen Ar** 16nm,1.1s,mb4.5,baz=316,slow=1.1,SNR=4.4	**79.43**	**348**	P		**P**	**22 23 53.4 +0.5**
FINES	**FINESS Array B** 0.8nm,0.9s,mb3.4,baz=56,slow=6.9,SNR=5.2	**80.10**	**331**	P		**P**	**22 23 56.7 -0.1**
FINES	**FINESS Array B**	**80.10**	**331**	P		**P**	**22 23 56.7 -0.1**
INK	**Inuvik** 1.8nm,0.9s,mb3.8,baz=290,slow=6.7,SNR=3.6	**83.00**	**21**	P		**P**	**22 24 12.1 +0.3**
HFS	**Hagfors** 1.0nm,0.6s,mb3.7,baz=127,slow=7.4,SNR=4.8	**86.29**	**331**	P		**P**	**22 24 28.0 -0.2**
NOA	**NORSAR Array B** 1.0nm,0.5s,mb3.6,baz=67,slow=4.6,SNR=3.5	**87.08**	**333**	P		**P**	**22 24 30.9 -1.0**
NOA	**NORSAR Array B**	**87.08**	**333**	P		**P**	**22 24 30.9 -1.0**
YKA	**Yellowknife Ar** 0.3nm,0.5s,mb3.6,baz=309,slow=4.4,SNR=8.2	**92.69**	**22**	P		**P**	**22 24 58.4 +0.3**
YKA	**Yellowknife Ar**	**92.69**	**22**	P		**P**	**22 24 58.4 +0.3**

JMA ***29*** *22:16:15.6±0.4,34.12N×141.90E,h40km,M3.4*
IDC ***29*** *22:16:27.2±1.3,33.08N×138.54E,mb3.5/3,mb1 3.5/3, mb1mx3.3/21,Error ellipse: s-maj=38.2km s-min=21.7km az=17.0*

ISC 29 22:16:18.8±1.6,34.17N±0.05×141.82E±0.09,h29km±10km, n16,σ0s75/21,mb3.5/3,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**0.85**	**305**	P	**Pb**	**22 16 32.3**	**-0.6**
BSO1				*e*S	**Sb**	**22 16 45.3**	**+1.3**
BSO3	**Boso 3**	**1.26**	**301**	P	**Pn**	**22 16 38.5**	**-0.2**
BSO4	**Boso 4**	**1.48**	**304**	P	**Pn**	**22 16 42.4**	**+0.5**
KTR	**Katsuura**	**1.58**	**309**	*e*S	**Sn**	**22 17 03.7**	**+0.6**
CHOJ	**Chosi**	**1.73**	**333**	P	**Pn**	**22 16 45.1**	**-0.3**
JHJ2	**Mitsune**	**1.98**	**238**	P	**Pn**	**22 16 49.4**	**+0.4**
JHJ2				S	**Sn**	**22 17 13.2**	**+0.1**
JHJ	**Hachijo jima 2** 51nm,0.3s,baz=304,slow=0.6,SNR=53	**2.00**	**239**	Pn	**Pn**	**22 16 49.5**	**+0.2**
JHJ	157nm,0.3s,baz=75,slow=22,SNR=19			Sn	**Sn**	**22 17 12.8**	**-0.8**
JIM2	**Oshima 3**	**2.05**	**286**	P	**Pn**	**22 16 48.9**	**-1.2**
JOD2	**Odawara 2**	**2.50**	**297**	P	**Pn**	**22 16 55.3**	**-1.3**
JOD2				*e*S	**Sn**	**22 17 27.0**	**+0.5**
JAG	**Ashikaga**	**2.97**	**320**	P	**Pn**	**22 17 02.7**	**-0.6**
JRY	**Ryogami san**	**3.02**	**308**	P	**Pn**	**22 17 03.9**	**-0.1**
SHZ3	**Shizuoka 3**	**3.11**	**288**	P	**Pn**	**22 17 05.0**	**-0.2**
MAT	**Matsushiro**	**3.79**	**310**	P	**Pn**	**22 17 15.1**	**+0.3**
MAT				S	**Sn**	**22 17 59.0**	**0.0**
SONM	**Songino Array** 0.7nm,0.8s,mb3.5,baz=119,slow=7.2,SNR=5.1	**29.74**	**308**	P	**P**	**22 22 22.9**	**+0.1**
MKAR	**Makanchi Array** 0.4nm,0.6s,mb3.5,baz=87,slow=7.8,SNR=4.6	**45.97**	**305**	P	**P**	**22 24 38.5**	**-0.5**
ASAR	**Alice Springs** 0.3nm,0.6s,mb3.5,baz=0.5,slow=6.0,SNR=5.0	**58.00**	**189**	P	**P**	**22 26 11.8**	**+2.4**

TRN ***29*** *22:23:49.6,11.49N×61.54W,h56km,MD3.1*
FUNV ***29*** *22:23:49.2,11.47N×61.62W,h66km,MW2.6*

ISC 29 22:23:48.5±0.8,11.46N±0.03×61.68W±0.05,h79km±9km, n17,σ1s04/29,1C,Windward Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GRW	**Mount Saint Ca**	**0.69**	**2**	*e*P	**P**	**22 24 04.6**	**+0.4**
GRW				*e*S	**S**	**22 24 16.5**	**+0.7**
GRHS	**Sauteurs**	**0.76**	**3**	*e*P	**P**	**22 24 04.4**	**-0.5**
GRHS				*e*S	**S**	**22 24 16.5**	**-0.6**
TCE	**Chacachacare**	**0.76**	**185**	*e*P	**P**	**22 24 06.3**	**+1.4**
TCE				*e*S	**S**	**22 24 18.9**	**+1.8**
GRIC	**Isle de Caille**	**0.82**	**7**	*e*S	**S**	**22 24 18.1**	**-0.3**
TRN	**Trinidad (W)**	**0.85**	**161**	*e*P	**P**	**22 24 07.4**	**+1.5**
TRN				*e*S	**S**	**22 24 19.3**	**+0.3**
TPR	**Prospect**	**0.93**	**107**	*e*P	**P**	**22 24 05.5**	**-1.3**
TPR				*e*S	**S**	**22 24 18.0**	**-2.6**
GUIV	**Guiria**	**0.97**	**213**⇑	*e*P	**P**	**22 24 07.3**	**0.0**
GUIV				*e*S	**S**	**22 24 20.8**	**-0.6**
BOT	**Bacolet**	**0.99**	**107**	*e*P	**P**	**22 24 07.8**	**+0.3**
GRCU	**Cariacou**	**1.03**	**13**	*e*P	**P**	**22 24 07.2**	**-0.8**
GRCU				*e*S	**S**	**22 24 21.1**	**-1.6**
TPP	**Pointe-a-Pierr**	**1.16**	**169**	*e*P	**P**	**22 24 14.9**	**+5.3**
ITEV	**Isla Los Testi**	**1.43**	**266**	*e*P	**P**	**22 24 12.9**	**-0.3**
ITEV				*e*S	**S**	**22 24 30.5**	**-1.1**
CRUV	**Carupano**	**1.71**	**243**	*e*P	**P**	**22 24 17.3**	**+0.2**
GUNV	**Guanoco**	**1.79**	**224**	*e*P	**P**	**22 24 18.4**	**+0.3**
GUNV				*e*S	**S**	**22 24 40.0**	**+0.2**
SVV	**Soufriere Volc**	**1.90**	**14**	*e*P	**P**	**22 24 19.4**	**-0.1**
SVV				*e*S	**S**	**22 24 44.5**	**+2.1**
SSV	**Crater Summit**	**1.92**	**14**	*e*P	**P**	**22 24 19.7**	**-0.1**
SSV				*e*S	**S**	**22 24 44.8**	**+1.9**
IBAV	**Isla La Blanqu**	**2.86**	**278**	*e*P	**P**	**22 24 32.7**	**-0.3**
RIOV	**Rio Grande**	**3.37**	**182**	*e*P	**P**	**22 24 38.6**	**-1.5**
RIOV				*e*S	**S**	**22 25 14.4**	**-4.8**

BJI ***29*** *22:25:06.7,34.16N×141.99E,h32km,mb4.5*
IDC ***29*** *22:25:07.5±0.5,34.22N×141.50E,mb4.2/24,mb1 4.4/27, mb1mx4.4/31,ML4.2/3,Error ellipse: s-maj=16.0km s-min=12.1km az=137.0*
NEIC ***29*** *22:25:08.5±0.3,34.13N×141.54E,h10km,mb4.8/15,Error ellipse: s-maj=8.3km s-min=6.8km az=72.0*
JMA ***29*** *22:25:09.4±0.5,34.17N×141.71E,h35km±3km,M4.4*
MOS ***29*** *22:25:14.4±1.0,34.83N×141.39E,h33km,mb4.6/18,Error ellipse: s-maj=18.6km s-min=8.7km az=102.7*

ISC 29 22:25:11.5±0.8,34.13N±0.04×141.53E±0.06,h43km±5km, n135,σ0s98/137,mb4.6/51,8C-4D,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**0.69**	**319**	P	**P**	**22 25 23.9**	**-1.0**
BSO3	**Boso 3**	**1.07**	**309**	P	**P**	**22 25 30.6**	**+0.4**
BSO4	**Boso 4**	**1.30**	**311**	⇑P	**P**	**22 25 34.2**	**+0.6**
KTR	**Katsuura**	**1.42**	**316**	P	**P**	**22 25 35.6**	**+0.3**
CHOJ	**Chosi**	**1.66**	**341**	P	**P**	**22 25 37.3**	**-1.4**
CHOJ				*e*S	**S**	**22 25 58.8**	**-0.1**
JHJ2	**Mitsune**	**1.75**	**235**	P	**P**	**22 25 41.8**	**+1.8**
JHJ	**Hachijo jima 2** 211nm,0.3s,baz=166,slow=6.2,SNR=55	**1.77**	**236**	Pn	**P**	**22 25 41.4**	**+1.1**
JHJ				Sn	**S**	**22 26 03.4**	**+1.6**
JIM2	**Oshima 3**	**1.83**	**289**	⇑P	**P**	**22 25 40.6**	**-0.5**
JIZS	**Izushimoda**	**2.27**	**286**	⇑P	**P**	**22 25 47.0**	**-0.3**
JOD2	**Odawara 2**	**2.30**	**300**	⇑P	**P**	**22 25 47.2**	**-0.6**
JAG	**Ashikaga**	**2.85**	**324**	⇑P	**P**	**22 25 54.9**	**-0.7**
JAG				*e*S	**S**	**22 26 28.5**	**-0.4**
JRY	**Ryogami san**	**2.86**	**312**	P	**P**	**22 25 54.9**	**-0.8**
SHZ3	**Shizuoka 3**	**2.89**	**290**	P	**P**	**22 25 56.5**	**+0.3**
TK04	**Tokai 4**	**3.04**	**276**	P	**P**	**22 25 59.1**	**+0.8**
MAJO	**Matsushiro**	**3.62**	**312**	*e*P	**P**	**22 26 06.5**	**-0.1**
MAT	**Matsushiro**	**3.62**	**312**	P	**P**	**22 26 05.9**	**-0.7**
MAT				S	**S**	**22 26 50.9**	**+2.2**
MAT	**Matsushiro**	**3.62**	**312**	*e*P	**P**	**22 26 06.0**	**-0.6**
MAT				*e*S	**S**	**22 26 51.0**	**+2.3**
CBIJ	**Chichi jima** 32nm,0.3s,baz=74,slow=16,SNR=22	**7.04**	**175**	Pn	**P**	**22 26 51.9**	**-2.7**
CBIJ	29nm,0.3s,baz=52,slow=22,SNR=7.5			Sn	**S**	**22 28 06.8**	**-7.5**
JNU	**Nakatsue** 0.7nm,0.3s,baz=59,slow=25,SNR=5.9	**8.94**	**266**	Pn	**P**	**22 27 21.8**	**+0.9**
ASAJ	**Asahikawa** 2.3nm,0.3s,baz=248,slow=6.8,SNR=10	**10.00**	**4**	Pn	**P**	**22 27 29.2**	**-6.3**
ASAJ	**Asahikawa**	**10.00**	**4**	P	**P**	**22 27 29.2**	**-6.3**
ASAJ	comp=Z,2.0nm,0.3s			pmax	pmax		
KS15	**Wonju Array Si**	**11.56**	**290**	*e*P	**P**	**22 27 57.9**	**+1.2**
YSS	**Yuzh-Sakhalins**	**12.84**	**4**	*e*P	**P**	**22 28 08.0**	**-5.9**
CN2	**Changchun**	**15.77**	**312**	*e*P	**P**	**22 28 55.3**	**+3.2**
CN2	comp=Z,10.0nm,0.6s			AMB	AMB		
WHN	**Wuhan**	**23.21**	**269**	*e*P	**P**	**22 30 14.5**	**-1.0**
HHC	**Hu-ho-hao-te**	**24.62**	**295**	*e*P	**P**	**22 30 31.8**	**+2.7**
HHC	comp=Z,22nm,1.3s,mb4.5			AMB	AMB		
XAN	**Xi'an**	**26.95**	**279**	P	**P**	**22 30 48.5**	**-2.4**
ENH	**Enshi**	**27.32**	**271**	*e*P	**P**	**22 30 52.6**	**-1.7**
YAK	**Yakutsk**	**28.92**	**348**	*e*P	**P**	**22 31 05.7**	**-2.7**
FX1	**Attu Island--F**	**29.28**	**41**	P	**P**	**22 31 12.7**	**+1.1**
FX1	comp=Z,11nm,0.7s,mb4.7,baz=172,slow=7.1,SNR=2.7 **Attu Island--F** comp=Z,11nm,0.7s	**29.28**	**41**	P pmax	**P** pmax	**22 31 12.7**	**+1.1**
SONM	**Songino Array** comp=Z,6.9nm,0.7s,mb4.5,baz=104,slow=8.8,SNR=65	**29.57**	**308**	P	**P**	**22 31 14.5**	**+0.2**
BOD	**Bocaibo**	**30.06**	**330**	*e*P	**P**	**22 31 17.8**	**-0.8**
GYA	**Guiyang**	**30.95**	**265**	P	**P**	**22 31 24.8**	**-2.0**
GYA	comp=Z,10.0nm,0.8s,mb4.7			AMB	AMB		
CD2	**Chengdu**	**31.89**	**275**	P	**P**	**22 31 33.3**	**-1.7**
CD2	comp=Z,30nm,0.6s,mb5.3			AMB	AMB		
ZAK	**Zakamensk**	**32.21**	**312**⇑	*i*P	**P**	**22 31 38.2**	**+0.6**
TLY	**Talaya**	**32.36**	**314**	*e*P	**P**	**22 31 38.0**	**-0.9**
TLY	comp=Z,129nm,1.3s,mb5.6			pmax	pmax		
GTA	**Gaotai**	**33.60**	**291**	*e*P	**P**	**22 31 50.5**	**+0.7**
GTA				AP	pP	22 31 54.5	-6.9
GTA	comp=Z,6.0nm,0.7s,mb4.6			AMB	AMB		
BILL	**Bilibino**	**36.78**	**15**⇓	*i*P	**P**	**22 32 23.4**	**+6.8**
BILL				*i*		22 34 45.3	
BILL	comp=Z,3.0nm,0.7s,mb4.2			pmax	pmax		
TIXI	**Tiksi**	**38.17**	**354**⇓	*e*P	**P**	**22 32 27.9**	**-0.3**
CMAR	**Chiang Mai Arr** comp=Z,1.8nm,0.6s,mb3.9,baz=50,slow=7.8,SNR=12	**40.93**	**259**	P	**P**	**22 32 50.8**	**-0.8**
CMAR	**Chiang Mai Arr**	**40.93**	**259**	P	**P**	**22 32 50.8**	**-0.8**
CMAR	comp=Z,2.0nm,0.6s			pmax	pmax		
WMQ	**Urumqi**	**42.29**	**300**	*e*P	**P**	**22 33 02.8**	**+0.3**
SHL	**Shillong**	**43.54**	**272**	*e*P	**P**	**22 33 13.0**	**+0.1**
ZAL	**Zalesovo** comp=Z,3.7nm,0.7s,mb4.2,baz=290,slow=7.6,SNR=17	**43.99**	**315**	P	**P**	**22 33 15.7**	**-0.4**
ZAL	**Zalesovo**	**43.99**	**315**	P	**P**	**22 33 15.7**	**-0.4**
ZAL	comp=Z,4.0nm,0.7s			pmax	pmax		
NVS	**Novosibirsk**	**44.95**	**316**	*e*P	**P**	**22 33 22.7**	**-1.1**
NVS	comp=Z,5.0nm,0.7s,mb4.5			pmax	pmax		
NVS	comp=E,3.0nm,0.5s			pmax	pmax		
MKAR	**Makanchi Array** comp=E,6.0nm,0.6s,mb4.7,baz=88,slow=9.3,SNR=38	**45.79**	**305**	P	**P**	**22 33 31.0**	**+0.4**
MKAR	**Makanchi Array**	**45.79**	**305**	P	**P**	**22 33 31.0**	**+0.4**
MKAR	comp=Z,6.0nm,0.6s			pmax	pmax		
KAKA	**Kakadu** comp=Z,11nm,0.7s,mb4.9	**47.38**	**192**	*e*P	**P**	**22 33 43.0**	**-0.5**
KURK	**Kurchatov**	**47.83**	**310**	*e*P	**P**	**22 33 46.5**	**-0.1**
PKI	**Pulchoki** comp=Z,43nm,1.0s,mb5.4	**48.12**	**278**	*e*P	**P**	**22 33 49.0**	**-0.2**
KKN	**Kakani** comp=Z,53nm,1.0s,mb5.5	**48.14**	**278**	*e*P	**P**	**22 33 49.2**	**-0.2**
DMN	**Daman** comp=Z,31nm,0.9s,mb5.3	**48.35**	**278**	*e*P	**P**	**22 33 50.8**	**-0.2**
GKN	**Gorkha** comp=Z,96nm,1.0s	**48.59**	**279**	*e*P	**P**	**22 33 52.7**	**-0.1**
DANN	**Dangsing**	**49.17**	**280**	*e*P	**P**	**22 33 57.9**	**+0.6**
KOLN	**Koldanzi** comp=Z,72nm,1.3s,mb5.6	**49.52**	**279**	*e*P	**P**	**22 34 00.2**	**+0.2**
ILAR	**Eielson Array** comp=Z,1.7nm,0.7s,mb4.1,baz=268,slow=6.3,SNR=25	**51.91**	**31**	P	**P**	**22 34 17.2**	**-0.4**
ILAR	**Eielson Array**	**51.91**	**31**	P	**P**	**22 34 17.2**	**-0.4**
ILAR	comp=Z,2.0nm,0.7s			pmax	pmax		
BVAR	**Borovoye Array** comp=Z,5.1nm,0.9s,mb4.5,baz=90,slow=7.4,SNR=31	**52.62**	**314**	P	**P**	**22 34 22.9**	**-0.2**
BRVK	**Borovoye**	**52.68**	**314**	*e*P	**P**	**22 34 23.4**	**-0.2**
KALG	**Kalgarh**	**52.81**	**283**	*e*P	**P**	**22 34 21.1**	**-3.8**
ZRNK	**Zerenda**	**53.46**	**314**	*e*P	**P**	**22 34 29.1**	**-0.2**
FITZ	**Fitzroy Crossi** comp=Z,10nm,1.3s,mb4.6	**54.10**	**199**⇓	*i*P	**P**	**22 34 35.0**	**+0.4**
FITZ	**Fitzroy Crossi** comp=Z,5.3nm,0.7s,mb4.6,baz=12,slow=11,SNR=10	**54.10**	**199**	P	**P**	**22 34 34.9**	**+0.4**
WRAB	**Tennant Creek**	**54.20**	**188**	*e*P	**P**	**22 34 33.8**	**-1.4**
WB2	**Warramunga Arr**	**54.21**	**188**	*e*P	**P**	**22 34 34.8**	**-0.5**
NDI	**New Delhi**	**54.37**	**283**	*e*P	**P**	**22 34 35.5**	**-0.8**
NDI				*e*		22 36 06.0	
AYAN	**Aya Nagar**	**54.52**	**283**	*e*P	**P**	**22 34 36.7**	**-0.8**
AYAN				*e*		22 36 07.5	
AYAN	comp=Z,26nm,0.9s			*e*		22 36 09.4	
SONA	**Sohna**	**54.64**	**283**	*e*P	**P**	**22 34 37.8**	**-0.6**
SONA				*e*		22 36 08.9	
SONA	comp=E,21nm,0.7s			*e*		22 36 11.8	
INK	**Inuvik** comp=E,2.0nm,0.6s,mb4.3,baz=288,slow=5.3,SNR=7.3	**56.93**	**26**	P	**P**	**22 34 53.6**	**-0.7**
INK	**Inuvik**	**56.93**	**26**	P	**P**	**22 34 53.7**	**-0.6**
INK	comp=Z,2.0nm,0.6s			pmax	pmax		
AS12	**Alice Springs** comp=Z,27nm,1.5s,mb5.0	**57.94**	**188**	*e*P	**P**	**22 35 02.0**	**0.0**
ASAR	**Alice Springs** comp=Z,1.8nm,0.5s,mb4.3,baz=5.7,slow=6.6,SNR=18	**57.94**	**188**	P	**P**	**22 35 01.6**	**-0.4**
HYB	**Hyderabad**	**58.26**	**270**	*i* P	**P**	**22 35 03.5**	**-0.8**
HYB	**Hyderabad**	**58.26**	**270**	*e*P	**P**	**22 35 03.5**	**-0.8**
ARU	**Arti**	**58.61**	**320**⇑	*i*P	**P**	**22 35 05.4**	**-0.8**
ARU	comp=Z,13nm,1.2s,mb4.8			pmax	pmax		
POO	**Poona**	**61.62**	**274**	*e*	**P**	**22 35 35.0**	**+7.7**
STKA	**Stephens Creek** comp=Z,3.9nm,1.5s,mb4.2	**65.66**	**180**	*e*P	**P**	**22 35 58.7**	**+5.1**
STKA	**Stephens Creek** comp=Z,1.3nm,0.5s,mb4.2,baz=50,slow=12,SNR=4.4	**65.66**	**180**	P	**P**	**22 35 58.0**	**+4.3**
FORT	**Forrest** comp=Z,34nm,0.6s,mb5.5	**65.80**	**193**⇓	*i*P	**P**	**22 35 55.0**	**+0.4**
YKA	**Yellowknife Ar** comp=Z,0.4nm,0.6s,mb3.6,baz=298,slow=6.1,SNR=9.0	**66.27**	**29**	P	**P**	**22 35 56.5**	**-0.5**
YKA	**Yellowknife Ar**	**66.27**	**29**	P	**P**	**22 35 56.5**	**-0.5**
ARCES	**ARCESS Array B** comp=Z,1.6nm,0.9s,mb4.0,baz=53,slow=6.1,SNR=6.0	**66.74**	**340**	P	**P**	**22 35 58.1**	**-1.8**
ARCES	**ARCESS Array B**	**66.74**	**340**	P	**P**	**22 35 58.1**	**-1.8**
ARCES	comp=Z,2.0nm,0.9s			pmax	pmax		
JOF	**Joensuu** comp=Z,0.9nm,0.3s,mb4.2	**68.57**	**333**	*e*p	**P**	**22 36 11.0**	**-0.4**
JOF	**Joensuu**	**68.57**	**333**	*e*P	**P**	**22 36 11.0**	**-0.4**
JOF	comp=Z,1.0nm,0.3s,mb4.2			pmax	pmax		
VRSR	**Storozhevoye**	**71.17**	**320**	*e*P	**P**	**22 36 27.9**	**+0.5**
VRSR	comp=Z,6.0nm,0.5s,mb4.8			pmax	pmax		
VRSR	comp=N,10.0nm,0.7s			pmax	pmax		
VRSR	comp=E,10.0nm,1.0s			pmax	pmax		
THR	**Tehran** comp=E,0.5nm,0.6s,mb3.6,baz=66,slow=10.0,SNR=2.2	**71.25**	**301**	P	**P**	**22 36 27.9**	**-0.3**
THR	**Tehran**	**71.25**	**301**	P	**P**	**22 36 27.9**	**-0.3**
THR	comp=Z,1.0nm,0.6s			pmax	pmax		
FINES	**FINESS Array B** comp=Z,3.7nm,0.8s,mb4.3,baz=63,slow=8.5,SNR=14	**71.42**	**333**	P	**P**	**22 36 28.4**	**-0.4**
FINES	**FINESS Array B**	**71.42**	**333**	P	**P**	**22 36 28.4**	**-0.4**
FINES	comp=Z,4.0nm,0.9s			pmax	pmax		
YBH	**Yreka Blue Hor** comp=Z,1.9nm,0.8s,mb4.1,baz=306,slow=14,SNR=3.6	**72.06**	**52**	P	**P**	**22 36 33.4**	**+0.6**
YBH	**Yreka Blue Hor**	**72.06**	**52**	P	**P**	**22 36 33.4**	**+0.5**
YBH	comp=Z,2.0nm,0.8s			pmax	pmax		
NEW	**Newport** comp=Z,2.3nm,0.9s,mb4.1,baz=297,slow=14,SNR=3.0	**72.16**	**43**	P	**P**	**22 36 34.8**	**+1.4**
NEW	**Newport**	**72.16**	**43**	P	**P**	**22 36 34.8**	**+1.5**
NEW	comp=Z,2.0nm,0.9s			pmax	pmax		
ZEI	**Tsey**	**72.73**	**310**	*e*P	**P**	**22 36 34.8**	**-2.1**
KIV	**Kislovodsk**	**72.89**	**312**	*e*P	**P**	**22 36 38.8**	**+1.1**
KIV	**Kislovodsk** comp=Z,17nm,1.2s,mb4.8	**72.89**	**312**	*e*P	**P**	**22 36 38.5**	**+0.8**
SUMG	**Summit**	**73.58**	**360**	*e*P	**P**	**22 36 42.9**	**+1.6**
NVAR	**Mina Array Bea** comp=Z,0.6nm,0.6s,mb3.7,baz=315,slow=7.7,SNR=2.2	**76.66**	**53**	P	**P**	**22 36 59.1**	**-0.5**
NB2	**NORSAR Subarra** comp=Z,9.3nm,1.2s,mb4.6,baz=41,slow=5.6	**76.89**	**338**	P	**P**	**22 37 00.8**	**+0.4**
NOA	**NORSAR Array B** comp=Z,2.8nm,0.8s,mb4.3,baz=40,slow=5.7,SNR=14	**76.89**	**338**	P	**P**	**22 37 00.5**	**+0.1**
NOA	**NORSAR Array B**	**76.89**	**338**	P	**P**	**22 37 00.5**	**+0.1**
NOA	comp=Z,3.0nm,0.8s			pmax	pmax		
HWUT	**Hardware Ranch** comp=Z,3.7nm,0.8s,mb4.4	**79.13**	**47**	P	**P**	**22 37 15.4**	**+2.3**
PDAR	**Pinedale Array** comp=Z,0.8nm,0.6s,mb3.8,baz=226,slow=2.2,SNR=8.0	**79.64**	**45**	P	**P**	**22 37 17.1**	**+1.3**
BRTR	**Keskin Array B** comp=Z,2.3nm,0.9s,mb4.1,baz=108,slow=3.9,SNR=16	**80.85**	**312**	P	**P**	**22 37 23.7**	**+1.3**
DPC	**Dobruska-Polom**	**82.96**	**328**	*e*P	**P**	**22 37 34.8**	**+1.7**
ASF	**Jabal al Asfar** comp=Z,2.5nm,0.8s,mb4.3,baz=17,slow=3.8,SNR=4.3	**83.21**	**304**	P	**P**	**22 37 35.5**	**+0.8**
BRG	**Berggiesshubel**	**83.59**	**330**	*e*P	**P**	**22 37 37.8**	**+1.6**
BRG	comp=Z,8.0nm,1.1s,mb4.8			pmax	pmax		
BRG	**Berggiesshubel** comp=Z,8.1nm,1.1s,mb4.8	**83.59**	**330**	*e*P	**P**	**22 37 37.8**	**+1.6**
BRG				*e*		22 39 09.7	
CLL	**Collm**	**83.66**	**330**	P	**P**	**22 37 37.0**	**+0.5**
CLL	**Collm**	**83.66**	**330**	*e*P	**P**	**22 37 37.0**	**+0.5**
PRU	**Pruhonice**	**84.00**	**329**	*e*P	**P**	**22 37 40.2**	**+1.9**
KHC	**Kasperske Hory**	**85.06**	**329**	*e*P	**P**	**22 37 45.0**	**+1.4**
GERES	**GERESS Array B** comp=Z,1.2nm,0.6s,mb4.2,baz=34,slow=4.8,SNR=16	**85.22**	**328**	P	**P**	**22 37 44.8**	**+0.3**
GERES	**GERESS Array B**	**85.22**	**328**	P	**P**	**22 37 44.8**	**+0.4**
GERES	comp=Z,1.0nm,0.6s			pmax	pmax		
LOR	**Lormes**	**90.49**	**333**	*e*P	**P**	**22 38 09.9**	**+0.1**
LPL	**La Plagne**	**90.79**	**330**	*e*P	**P**	**22 38 11.5**	**+0.3**
LPG	**La Plagne** comp=Z,6.7nm,0.9s,mb4.7	**90.80**	**330**	*e*P	**P**	**22 38 11.4**	**+0.2**
GRR	**Gorron** comp=Z,7.5nm,0.8s,mb4.8	**91.24**	**336**	*e*P	**P**	**22 38 13.5**	**+0.3**
ORIF	**Oris-en-Rattie**	**91.62**	**330**	*e*P	**P**	**22 38 15.1**	**0.0**
TXAR	**Lajitas Array** comp=Z,0.3nm,0.6s,mb3.8,baz=288,slow=3.1,SNR=4.5	**91.81**	**52**	P	**P**	**22 38 17.1**	**+0.8**
VIVF	**Saint-Julien-l**	**92.17**	**331**	*e*P	**P**	**22 38 18.2**	**+0.6**
FRF	**La Foret Royal** comp=Z,14nm,1.1s,mb4.9	**92.41**	**329**	*e*P	**P**	**22 38 18.7**	**0.0**
SMRF	**Simiane la Rot**	**92.52**	**330**	*e*P	**P**	**22 38 19.2**	**0.0**
MFF	**Sa

BJI AMB AMB
comp=Z,6.0nm,0.7s,mb4.0
PET Petropavlovsk 22.43 28 *eP* **P 22 31 37.2 -1.7**
comp=Z,100nm,1.6s,mb5.0
ENH Enshi 27.42 271 P **P 22 32 18.2 -8.3**
comp=Z,13nm,0.7s,mb4.6
ULN Ulaanbaatar 29.21 308 *eP* **P 22 32 42.0 -0.5**
comp=Z,11nm,0.8s,mb4.6
SONM Songino Array 29.63 308 P **P 22 32 45.9 -0.4**
comp=Z,6.1nm,0.8s,mb4.4,baz=105,slow=8.7,SNR=9.2
BOD Bodaibo 30.09 330 *eP* **P 22 32 49.4 -0.9**
LZH Lanzhou 30.86 285 *eP* **P 22 32 56.8 -0.4**
LZH AP pP 22 33 00.8 0.0
LZH XP sP 22 33 03.8 +1.4
LZH AMB AMB
comp=Z,26nm,1.2s,mb4.9
ZAK Zakamensk 32.27 312⇑ *iP* **P 22 33 09.4 -0.1**
TLY Talaya 32.42 314 *eP* **P 22 33 06.8 -4.0**
TLY pmax pmax
comp=Z,170nm,1.1s,mb5.8
GTA Gaotai 33.69 291 *eP* **P 22 33 21.3 -0.6**
GTA AP pP 22 33 32.8 +7.3
GTA AMB AMB
comp=Z,5.0nm,0.7s,mb4.5
MOY Mondy 34.00 313 *eP* **P 22 33 24.3 -0.2**
BILL Bilibino 36.74 15⇑ *iP* **P 22 33 47.0 -0.7**
BILL *e**PP pP 22 34 01.4 +10
BILL *e* 22 35 11.6
BILL *e* 22 35 27.4
BILL *i* 22 36 07.7
BILL pmax pmax
comp=Z,16nm,1.4s,mb4.7
BILL MLR MLR
comp=Z,2µm,18.0s,MS4.9
CMAR Chiang Mai Arr 41.03 259 P **P 22 34 21.9 -1.9**
comp=Z,1.8nm,0.6s,mb3.9,baz=50,slow=7.6,SNR=6.3
CMAR Chiang Mai Arr 41.03 259 P **P 22 34 22.0 -1.9**
CMAR pmax pmax
comp=Z,2.0nm,0.6s
WMQ Urumqi 42.37 300 P **P 22 34 37.8 +3.2**
LSA Lhasa 42.74 278 P **P 22 34 38.3 +0.5**
LSA Lhasa 42.74 278 *eP* **P 22 34 38.0 +0.2**
comp=Z,2.2nm,0.6s,mb4.1
ZAL Zalesovo 44.04 315 P **P 22 34 47.1 -0.9**
comp=Z,3.8nm,0.6s,mb4.3,baz=274,slow=8.0,SNR=9.4
ZAL Zalesovo 44.04 315 P **P 22 34 47.1 -0.9**
ZAL pmax pmax
comp=Z,4.0nm,0.6s
MKAR Makanchi Array 45.86 305 P **P 22 35 02.1 -0.5**
comp=Z,4.3nm,0.5s,mb4.6,baz=92,slow=9.1,SNR=6.8
MKAR PP PP 22 36 39.6 -11
comp=Z,3.2nm,0.8s,baz=98,slow=10,SNR=1.8
MKAR Makanchi Array 45.86 305 P **P 22 35 02.2 -0.4**
MKAR 22 36 39.6
MKAR pmax pmax
comp=Z,4.0nm,0.5s
MKAR pmax pmax
comp=Z,3.0nm,0.8s
KAKA Kakadu 47.41 192 *eP* **P 22 35 15.0 -0.4**
comp=Z,30nm,0.8s,mb5.3
KURK Kurchatov 47.90 310 *eP* **P 22 35 17.5 -1.2**
PKI Pulchoki 48.21 278 *eP* **P 22 35 19.8 -1.6**
comp=Z,27nm,0.8s,mb5.3
KKN Kakani 48.23 279 *eP* **P 22 35 20.4 -1.2**
comp=Z,42nm,0.9s,mb5.5
DMN Daman 48.44 278 *eP* **P 22 35 22.1 -1.1**
comp=Z,32nm,1.0s,mb5.3
GKN Gorkha 48.68 279 *eP* **P 22 35 23.7 -1.4**
comp=Z,94nm,1.1s,mb5.7
KOLN Koldanda 49.62 279 *eP* **P 22 35 30.5 -1.8**
comp=Z,30nm,0.8s,mb5.4
MCK McKinley 50.94 32 *eP* **P 22 35 42.1 +0.2**
comp=Z,4.8nm,0.8s,mb4.5
MCK *e* 22 35 56.7
ILAR Eielson Array 51.84 31 P **P 22 35 48.0 -0.8**
comp=Z,3.5nm,0.7s,mb4.4,baz=262,slow=5.7,SNR=11
ILAR Eielson Array 51.84 31 P **P 22 35 48.0 -0.7**
ILAR pmax pmax
comp=Z,4.0nm,0.7s
BVAR Borovoye Array 52.68 314 P **P 22 35 54.8 -0.4**
comp=Z,5.1nm,0.9s,mb4.5,baz=90,slow=7.4,SNR=7.5
BRVK Borovoye 52.74 314 *eP* **P 22 35 55.6 +0.1**
ZRNK Zerenda 53.52 314 *eP* **P 22 36 01.0 -0.4**
FITZ Fitzroy Crossi 54.15 199⇑ *iP* **P 22 36 06.1 -0.3**
comp=Z,17nm,1.0s,mb4.9
FITZ Fitzroy Crossi 54.15 199 P **P 22 36 05.9 -0.6**
comp=Z,10nm,0.5s,mb5.0,baz=7.9,slow=9.7,SNR=18
WRAB Tennant Creek 54.23 188 *eP* **P 22 36 05.5 -1.5**
comp=Z,31nm,0.8s,mb5.3
WRAB *e* 22 36 16.0
WB2 Warramunga Arr 54.24 188 *eP* **P 22 36 05.5 -1.6**
INK Inuvik 56.87 26 P **P 22 36 24.6 -0.9**
comp=Z,4.6nm,0.9s,mb4.5,baz=293,slow=6.1,SNR=6.9
INK Inuvik 56.87 26 P **P 22 36 24.6 -1.0**
INK pmax pmax
comp=Z,5.0nm,0.9s
AS12 Alice Springs 57.97 188 *eP* **P 22 36 34.9 +1.1**
comp=Z,7.6nm,0.5s,mb5.0
ASAR Alice Springs 57.97 188 P **P 22 36 32.3 -1.5**
comp=Z,5.2nm,0.7s,mb4.7,baz=14,slow=8.2,SNR=13
HYB Hyderabad 58.36 270 *iP* **P 22 36 34.5 -2.1**
HYB *es*P sP 22 36 48.0 +6.2
HYB Hyderabad 58.36 270 *eP* **P 22 36 34.5 -2.1**
DLBC Dease Lake 60.79 37 P **P 22 36 52.0 -0.8**
comp=Z,1.0nm,0.4s,mb4.3,baz=296,slow=13,SNR=5.3
APA Apatity 65.39 336⇑ *iP* **P 22 37 21.8 -1.3**
APA *i* 22 37 35.8
STKA Stephens Creek 65.67 180 *eP* **P 22 37 25.7 +0.2**
comp=Z,4.3nm,0.7s,mb4.6
STKA Stephens Creek 65.67 180 P **P 22 37 25.0 -0.5**
comp=Z,3.6nm,1.1s,mb4.3,baz=334,slow=12,SNR=2.8
FORT Forrest 65.84 193 *eP* **P 22 37 25.9 -0.6**
comp=Z,92nm,0.6s
KEV Kevo 66.20 340 *ep* **P 22 37 40.0 +12**
YKA Yellowknife Ar 66.21 30 P **P 22 37 27.0 -1.4**
comp=Z,0.5nm,0.6s,mb3.8,baz=300,slow=6.3,SNR=7.2
YKA Yellowknife Ar 66.21 30 P **P 22 37 27.0 -1.3**
YKA pmax pmax
comp=Z,1.0nm,0.6s
ARCES ARCESS Array B 66.76 340 P **P 22 37 29.0 -2.8**
comp=Z,2.2nm,0.8s,mb4.2,baz=72,slow=7.7,SNR=4.4
ARCES ARCESS Array B 66.76 340 P **P 22 37 29.0 -2.8**
ARCES pmax pmax
comp=Z,2.0nm,0.9s
JOF Joensuu 68.60 333 *ep* **P 22 37 41.8 -1.6**
comp=Z,2.4nm,0.6s,mb4.3
JOF Joensuu 68.60 333 *eP* **P 22 37 41.8 -1.6**
JOF pmax pmax
comp=Z,2.0nm,0.6s,mb4.2
MOS Moscow 69.68 324 *eP* **P 22 37 50.5 +0.3**
MOS pmax pmax
comp=Z,119nm,2.4s,mb5.4
NWAO Narrogin (SRO) 70.56 202 P **P 22 37 55.4 -0.5**
comp=Z,4.9nm,0.6s,mb4.6,baz=353,slow=3.6,SNR=4.9
NWAO Narrogin (SRO) 70.56 202 P **P 22 37 55.4 -0.5**
NWAO pmax pmax
comp=Z,5.0nm,0.6s
THR Tehran 71.33 301 P **P 22 38 00.7 +0.2**
comp=Z,1.3nm,1.0s,mb3.8,baz=130,slow=4.4,SNR=2.7
THR Tehran 71.33 301 P **P 22 38 00.7 +0.2**
THR pmax pmax
comp=Z,1.0nm,1.0s
FINES FINESS Array B 71.45 333 P **P 22 37 59.6 -1.3**
comp=Z,7.0nm,0.8s,mb4.6,baz=56,slow=6.9,SNR=13
FINES FINESS Array B 71.45 333 P **P 22 37 59.6 -1.2**
FINES pmax pmax
comp=Z,7.0nm,0.9s
YBH Yreka Blue Hor 71.97 52 P **P 22 38 04.4 +0.1**
comp=Z,1.8nm,0.7s,mb4.1,baz=93,slow=1.4,SNR=4.0
YBH Yreka Blue Hor 71.97 52 P **P 22 38 04.4 +0.1**
YBH pmax pmax
comp=Z,2.0nm,0.7s
NEW Newport 72.08 44 P **P 22 38 04.3 -0.5**
comp=Z,2.6nm,0.8s,mb4.2,baz=247,slow=15,SNR=5.3
NEW Newport 72.08 44 P **P 22 38 04.3 -0.5**
NEW pmax pmax
comp=Z,3.0nm,0.8s
NEW Newport 72.08 44 *eP* **P 22 38 05.5 +0.7**
comp=Z,32nm,1.9s,mb4.9
GOF Gofitskoye 72.17 313 *eP* **P 22 38 06.0 +0.6**
ZEI Tsey 72.80 310 *eP* **P 22 38 08.5 -0.6**
KIV Kislovodsk 72.95 312 *cP* **P 22 38 10.5 +0.5**
KIV *eS* S 22 47 27.9 -7.1
KIV pmax pmax
comp=Z,24nm,1.1s,mb5.0
KIV Kislovodsk 72.95 312 *eP* **P 22 38 11.6 +1.7**
comp=Z,21nm,0.8s,mb5.1
SUMG Summit 73.56 0 *eP* **P 22 38 12.0 -1.0**
ERZM Erzurum 75.92 309 *iP* **P 22 38 29.2 +2.0**
NVAR Mina Array Bea 76.58 53 P **P 22 38 31.2 +0.3**
comp=Z,0.7nm,0.5s,mb3.9,baz=321,slow=5.0,SNR=3.7
NB2 NORSAR Subarra 76.92 338 P **P 22 38 31.7 -0.6**
comp=Z,7.6nm,0.8s,mb4.7,baz=40,slow=5.6
NOA NORSAR Array B 76.92 338 P **P 22 38 32.0 -0.3**
comp=Z,4.1nm,0.7s,mb4.5,baz=39,slow=5.7,SNR=12
NOA NORSAR Array B 76.92 338 P **P 22 38 32.0 -0.3**
NOA pmax pmax
comp=Z,4.0nm,0.7s
QLMT Earthquake Lak 77.24 44 *eP* **P 22 38 36.1 +1.6**
MALT Malatya 78.71 309 *eP* **P 22 38 22.8 -20**
HWUT Hardware Ranch 79.05 47 *eP* **P 22 38 46.0 +1.5**
comp=Z,61nm,1.8s,mb5.2
BOYT Boyabat 79.13 313 *iP* **P 22 38 45.8 +0.9**
PDAR Pinedale Array 79.56 45 P **P 22 38 47.7 +0.5**
comp=Z,1.3nm,0.7s,mb4.0,baz=263,slow=2.6,SNR=7.7
CTKT Cerum 79.67 312 *iP* **P 22 38 48.9 +1.1**
GZT Gaziantep 79.81 308 *iP* **P 22 38 50.1 +1.4**
BALT Daday 79.98 314 *iP* **P 22 38 50.8 +1.3**
MSU Marysvale 80.49 50 *eP* **P 22 38 54.2 +1.9**
ELDT Eldivan 80.58 313 *iP* **P 22 38 54.1 +1.4**
AVNT Avonos 80.72 311 *iP* **P 22 38 51.6 -1.8**
BRTR Keskin Array B 80.91 312 P **P 22 38 54.1 -0.4**
comp=Z,2.4nm,0.8s,mb4.2,baz=117,slow=2.8,SNR=7.8
OJC Ojcow 81.54 327 *eP* **P 22 38 58.5 +1.0**
RSSD Black Hills 81.86 42 *eP* **P 22 38 58.3 -1.0**
comp=Z,5.5nm,0.4s,mb4.8
NIE Niedzica 81.86 326 *eP* **P 22 39 01.5 +2.3**
PV10 Paradox Valley 82.54 48 *eP* **P 22 39 05.0 +2.0**
OKC Ostrava-Krasne 82.56 327 *eP* **P 22 39 03.0 +0.2**
OKC L 23 22 20.0
comp=Z,1.9nm,15.4s
MORC Moravsky Berou 82.88 327 *eP* **P 22 39 06.1 +1.6**
comp=Z,1.6nm,0.7s,mb4.2
PV01 Paradox Valley 82.98 48 *eP* **P 22 39 06.7 +1.4**
DPC Dobruska-Polom 83.00 328 *eP* **P 22 39 05.8 +0.7**
DPC L 23 21 50.0
comp=Z,2.3nm,20.5s
UPC Upice 83.02 328 *eP* **P 22 39 06.3 +1.1**
PSZ Piszkesteto 83.11 325 *eP* **P 22 39 07.6 +1.9**
comp=Z,8.6nm,1.1s,mb4.7
VYHS Vyhne 83.20 326 *iP* **P 22 39 07.9 +1.7**
ASF Jabal al Asfar 83.28 304 P **P 22 39 07.6 +0.7**
comp=Z,4.9nm,0.9s,mb4.5,baz=106,slow=1.0,SNR=6.8
ULDT Uludag 83.37 315 *iP* **P 22 39 06.9 -0.4**
RW3 Ridgway 83.45 48 *eP* **P 22 39 09.8 +2.1**
PVCC Panska Ves 83.62 329 *eP* **P 22 39 09.7 +1.5**
PVCC L 23 21 30.0
PVCC L 23 24 00.0
comp=Z,2.6nm,17.6s
PVCC Panska Ves 83.62 329 *eP* **P 22 39 09.7 +1.5**
PVCC LR LR
comp=Z,3µm,17.6s,MS5.7
CLL Collm 83.69 330⇓ *iP* **P 22 39 09.4 +0.8**
CLL *e**SP sP 22 39 21.0 +7.3
CLL *e* 22 39 39.0
CLL Collm 83.69 330 *iP* **P 22 39 09.4 +0.8**
CLL MLR MLR
comp=Z,3µm,18.2s,MS5.7
PRU Pruhonice 84.04 329 *eP* **P 22 39 10.0 -0.4**
PRU pmax pmax
comp=Z,11nm,1.0s,mb4.9
PRU MLR MLR
comp=Z,3µm,18.0s,MS5.7
PRU Pruhonice 84.04 329 *eP* **P 22 39 10.0 -0.4**
comp=Z,11nm,1.0s,mb5.0
PRU LR LR
comp=Z,3µm,18.0s,MS5.7
ZST Bratislava 84.22 326 *iP* **P 22 39 12.1 +0.8**
NKC Novy Kostel 84.74 330 *eP* **P 22 39 15.1 +1.2**
NKC L 23 23 40.0
comp=Z,2.5nm,18.2s
MOX Moxa 84.76 331 *iP* **P 22 39 14.7 +0.7**
comp=Z,logA/T=1.0,mb4.9
MOX pP pP 22 39 38.0 +20
MOX Moxa 84.76 331 *eP* **P 22 39 14.7 +0.7**
MOX pmax pmax
comp=Z,18nm,1.7s,mb4.9
MOX Moxa 84.76 331 *eP* **P 22 39 14.7 +0.7**
comp=Z,18nm,1.7s,mb4.9
MOX *e* 22 39 37.5
RZN Rozhen 84.90 318 *iP* **P 22 39 17.0 +2.1**
KHC Kasperske Hory 85.10 329 *eP* **P 22 39 15.6 -0.1**
KHC L 23 22 00.0
comp=Z,3.4nm,18.0s
VTS Vitosha 85.11 319 *iP* **P 22 39 18.0 +2.1**
GERES GERESS Array B 85.26 328 P **P 22 39 16.5 0.0**
comp=Z,2.5nm,0.7s,mb4.5,baz=34,slow=4.8,SNR=16
GERES GERESS Array B 85.26 328 P **P 22 39 16.5 0.0**
GERES pmax pmax
comp=Z,3.0nm,0.7s
MMB Musomiste 85.51 318 *eP* **P 22 39 23.0 +5.1**
GRF Grafenberg Arr 85.66 330 *eP* **P 22 39 18.1 -0.4**
GRF pmax pmax
comp=Z,50nm,1.8s,mb5.4
KKB Krupnik 85.68 319 *eP* **P 22 39 21.0 +2.2**
MOA Molln 85.76 328⇑ *iP* **P 22 39 20.0 +1.0**
comp=Z,4.9nm,0.9s,mb4.7
GIVF Givet 87.82 334 *eP* **P 22 39 29.2 +0.2**
SCHQ Schefferville 88.05 16 P **P 22 39 28.6 -1.4**
comp=Z,3.2nm,0.9s,mb4.5,baz=325,slow=12,SNR=2.6
BAIF Baives 88.08 334 *eP* **P 22 39 30.4 +0.2**
CDF Champ du Feu 88.26 332 *eP* **P 22 39 31.0 -0.2**
comp=Z,5.4nm,0.8s,mb4.5
HAU Haudompre 88.96 332 *eP* **P 22 39 34.3 -0.2**
LOR Lormes 90.52 333 *eP* **P 22 39 41.7 -0.1**
FLN La Foliniere 90.81 336 *eP* **P 22 39 43.1 0.0**
LPL La Plagne 90.82 330 *eP* **P 22 39 43.4 +0.1**
LPG La Plagne 90.83 330 *eP* **P 22 39 43.5 +0.2**
comp=Z,11nm,0.9s,mb4.9
SMF Signal de Mont 91.05 332 *eP* **P 22 39 43.9 -0.4**
AVF Avril sur Loir 91.11 333 *eP* **P 22 39 44.1 -0.5**
comp=Z,14nm,1.0s,mb5.0
GRR Gorron 91.26 336 *eP* **P 22 39 45.1 -0.1**
comp=Z,16nm,1.0s,mb5.0
MBDF Montbardon 91.44 330 *eP* **P 22 39 46.1 0.0**
ORIF Oris-en-Rattie 91.66 330 *eP* **P 22 39 47.1 0.0**
comp=Z,15nm,1.1s,mb4.9
TXAR Lajitas Array 91.73 53 P **P 22 39 47.6 -0.2**
comp=Z,0.6nm,0.7s,mb4.1,baz=314,slow=2.8,SNR=5.5
SBF Sospel 91.86 329 *eP* **P 22 39 47.3 -0.8**
comp=Z,19nm,0.9s,mb5.1
SGMF Saint Gilles 91.94 337 *eP* **P 22 39 48.3 0.0**
TCF Toulx Ste Croi 91.97 333 *eP* **P 22 39 48.3 -0.2**
comp=Z,2.5nm,0.6s,mb4.4
VIVF Saint-Julien-l 92.20 331 *eP* **P 22 39 49.6 0.0**
comp=Z,19nm,1.1s,mb5.0
FRF La Foret Royal 92.44 329 *eP* **P 22 39 50.0 -0.7**
SMRF Simiane la Rot 92.55 330 *eP* **P 22 39 50.8 -0.5**
MFF Saint Martin d 92.56 335 *eP* **P 22 39 51.2 0.0**
comp=Z,23nm,1.2s,mb5.2
LMR La Mourre 92.68 329 *eP* **P 22 39 51.2 -0.7**
comp=Z,14nm,1.0s,mb5.0
RJF Les Rejaudoux 93.06 333 *eP* **P 22 39 53.5 0.0**
comp=Z,9.1nm,0.9s,mb4.9
LASF Ste Croix 93.17 331 *eP* **P 22 39 53.3 -0.8**
comp=Z,17nm,1.2s,mb5.1
MTLF Montolieu 94.44 332 *eP* **P 22 39 58.4 -1.6**
comp=Z,5.9nm,1.0s,mb4.7
QSPA South Pole Qui 123.90 180 *eP* PKPdf 22 45 37.8 -1.8
LPAZ La Paz 147.89 64 PKPbc PKPdf 22 46 24.6 -0.2
comp=Z,3.0nm,0.6s,baz=332,slow=5.6,SNR=8.6
LPAZ La Paz 147.89 64 PKIKP PKPdf 22 46 24.6 -0.2
LPAZ pmax pmax
comp=Z,3.0nm,0.6s

IDC ***29*** *22:37:05.4±6.4, 7.11S×111.23E, h236km±70km, mb3.3/5, mb1 3.5/6, mb1mx3.2/16, MS4.2/1, Ms1 4.4/1, ms1mx4.0/13, Error ellipse: s-maj=89.0km s-min=13.9km az=51.0*
ISC 29 22:37:05.2±2.6, 7.0S±0.5×111.4E±0.8, h250km, n7, σ0§37/7, mb3.6/5, **Jawa**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
FITZ	**Fitzroy Crossi**	**17.73**	**130**	P		**P**	**22 40 57.3**	**+0.1**
	0.2nm,0.3s,baz=333,slow=9.0,SNR=6.3							
FITZ				S		**S**	**22 44 09.9**	**+6.3**
	0.1nm,0.3s,baz=270,slow=20,SNR=3.8							
WRA	**Warramunga Arr**	**25.71**	**122**	P		**P**	**22 42 14.3**	**-0.3**
	0.5nm,0.4s,mb3.5,baz=296,slow=11,SNR=4.0							
ASAR	**Alice Springs**	**27.23**	**130**	P		**P**	**22 42 28.1**	**-0.3**
	1.7nm,0.5s,mb3.9,baz=303,slow=7.9,SNR=23							
CMAR	**Chiang Mai Arr**	**28.15**	**334**	LR		LR	22 56 28.7	
	comp=Z,463nm,19.3s,baz=20,slow=41							
STKA	**Stephens Creek**	**37.47**	**135**	P		**P**	**22 43 57.2**	**+0.6**
	2.1nm,0.3s,mb4.1,baz=319,slow=9.4,SNR=12							
SONM	**Songino Array**	**54.81**	**356**	P		**P**	**22 46 11.7**	**+0.4**
	0.2nm,0.3s,mb3.1,baz=169,slow=7.3,SNR=3.7							
MKAR	**Makanchi Array**	**59.50**	**337**	P		**P**	**22 46 43.8**	**-0.4**
	0.5nm,0.4s,mb3.5,baz=148,slow=6.2,SNR=9.6							

IDC ***29*** *22:53:28.0±0.8, 34.22N×141.73E, mb3.6/6, mb1 3.9/8, mb1mx3.7/24, ML4.0/2, Error ellipse: s-maj=28.6km s-min=16.3km az=117.0*
NEIC ***29*** *22:53:29.3±0.6, 34.25N×141.82E, h10km, Error ellipse: s-maj=15.8km s-min=11.7km az=220.0*
JMA ***29*** *22:53:30.1±0.3, 34.20N×141.78E, h46km±4km, M3.7*
ISC 29 22:53:30.6±1.3, 34.21N±0.05×141.76E±0.06, h33km±9km, n29, σ0§89/37, mb3.5/6, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
BSO1	**Boso 1**	**0.78**	**304**	P		**Pn**	**22 53 45.1**	**-0.3**
BSO1				*e*S		**Sb**	**22 53 56.7**	**+0.6**
BSO2	**Boso 2**	**0.99**	**303**	*e*S		**Sn**	**22 54 00.5**	**-0.8**
BSO3	**Boso 3**	**1.19**	**300**	P		**Pn**	**22 53 51.4**	**+0.2**
BSO3				*e*S		**Sn**	**22 54 06.5**	**+0.2**
BSO4	**Boso 4**	**1.41**	**304**	P		**Pn**	**22 53 55.0**	**+0.7**
BSO4				*e*S		**Sn**	**22 54 12.3**	**+0.4**
CHOJ	**Chosi**	**1.66**	**334**	P		**Pn**	**22 53 57.8**	**-0.1**
TATJ	**Tateyama 2**	**1.75**	**298**	P		**Pn**	**22 53 59.5**	**+0.3**
JHJ2	**Mitsune**	**1.96**	**236**	P		**Pn**	**22 54 02.9**	**+0.7**
JHJ	**Hachijo jima 2**	**1.98**	**237**	Pn		**Pn**	**22 54 02.4**	**-0.2**
	32nm,0.3s,baz=99,slow=22,SNR=12							
JHJ				Sn		**Sn**	**22 54 26.3**	**-0.1**
	106nm,0.3s,baz=199,slow=22,SNR=14							
JIM2	**Oshima 3**	**1.99**	**285**	P		**Pn**	**22 54 01.8**	**-0.9**
JIM2				*e*S		**Sn**	**22 54 25.7**	**-1.0**
JIZS	**Izushimoda**	**2.44**	**283**	P		**Pn**	**22 54 08.3**	**-0.8**
JOD2	**Odawara 2**	**2.44**	**296**	P		**Pn**	**22 54 08.2**	**-0.9**
JAG	**Ashikaga**	**2.90**	**320**	P		**Pn**	**22 54 15.5**	**-0.2**
JAG				*e*S		**Sn**	**22 54 49.2**	**-0.7**
JYN	**Shimob**	**2.94**	**297**	P		**Pn**	**22 54 15.9**	**-0.3**
JYN				*e*S		**Sn**	**22 54 50.1**	**-0.7**
MAJO	**Matsushiro**	**3.72**	**310**	*e*Pn		**Pn**	**22 54 27.5**	**+0.2**
MAT	**Matsushiro**	**3.72**	**310**	P		**Pn**	**22 54 27.3**	**0.0**
MAT				S		**Sn**	**22 55 07.4**	**-3.1**
MAT	**Matsushiro**	**3.72**	**310**	*e*P		**Pn**	**22 54 27.0**	**-0.3**
MAT				*e*S		**Sn**	**22 55 07.0**	**-3.5**
CBIJ	**Chichi jima**	**7.11**	**177**	Pn		**Pn**	**22 55 12.6**	**-2.5**
	8.7nm,0.3s,baz=90,slow=21,SNR=6.7							
CBIJ				Sn		**Sn**	**22 56 26.7**	**-8.9**
	1.5nm,0.3s,baz=103,slow=23,SNR=2.1							
ASAJ	**Asahikawa**	**9.91**	**3**	Pn		**P**	**22 55 50.4**	**-3.4**
	1.1nm,0.3s,baz=238,slow=8.9,SNR=4.8							
SONM	**Songino Array**	**29.67**	**308**	P		**P**	**22 59 35.7**	**+0.4**
	0.8nm,0.7s,mb3.6,baz=110,slow=8.7,SNR=8.0							
ILAR	**Eielson Array**	**51.74**	**31**	P		**P**	**23 02 37.1**	**+0.7**
	0.7nm,0.7s,mb3.7,baz=269,slow=6.1,SNR=10.0							
BRVK	**Borovoye**	**52.76**	**314**	*e*P		**P**	**23 02 43.0**	**-1.3**
ZRNK	**Zerenda**	**53.54**	**314**	P		**P**	**23 02 50.2**	**+0.1**
WRA	**Warramunga Arr**	**54.32**	**189**	P		**P**	**23 02 56.0**	**-0.3**
	0.5nm,0.4s,mb3.8,baz=6.6,slow=7.5,SNR=6.4							
INK	**Inuvik**	**56.77**	**26**	P		**P**	**23 03 11.0**	**-2.4**
ASAR	**Alice Springs**	**58.04**	**188**	P		**P**	**23 03 23.1**	**+0.2**
	0.4nm,0.6s,mb3.6,baz=4.2,slow=6.6,SNR=7.6							
YKA	**Yellowknife Ar**	**66.11**	**30**	P		**P**	**23 04 16.1**	**0.0**
	0.3nm,0.9s,mb3.3,baz=298,slow=5.9,SNR=4.6							
PDAR	**Pinedale Array**	**79.44**	**45**	P		**P**	**23 05 36.4**	**+1.3**
	0.2nm,0.5s,mb3.3,baz=315,slow=2.1,SNR=3.5							
LPAZ	**La Paz**	**147.78**	**64**	PKPbc		PKPdf	23 13 16.0	+6.4
	1.0nm,0.9s,baz=359,slow=14,SNR=2.6							
LPAZ	**La Paz**	**147.78**	**64**	PKPbc		PKPdf	23 13 16.0	+6.4

IDC ***29*** *22:55:15.3±0.7, 36.52N×51.43E, mb3.7/12, mb1 4.0/12, mb1mx3.9/20, ML2.7/1, Error ellipse: s-maj=17.3km s-min=7.8km az=112.0*
NEIC ***29*** *22:55:16.8±0.5, 36.47N×51.43E, h10km, mb4.3/4, Error ellipse: s-maj=9.8km s-min=7.6km az=163.0*
THR ***29*** *22:55:19.3±1.3, 36.44N×51.37E, ML3.9*
NNC ***29*** *22:55:26.5±4.0, 37.19N×52.36E, Error ellipse: s-maj=55.8km s-min=36.0km az=61.0*
ISC 29 22:55:15.2±0.3, 36.54N±0.03×51.42E±0.05, h10km, n36, σ1§08/39, mb3.8/18, **4C-3D, Northern and central Iran**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
THR	**Tehran**	**0.67**	**200**	Pg		**Pg**	**22 55 28.4**	**-0.4**
	87nm,0.3s,baz=356,slow=13,SNR=1350							
THR				Lg			22 55 37.0	
	272nm,0.3s,baz=194,slow=3.9,SNR=147							
THKV	**Tehran--Karaj**	**0.76**	**215**	*e*PG		**Pg**	**22 55 30.2**	**-0.2**
THKV				*e*SG		**Sg**	**22 55 39.8**	**-0.9**
THKV				AMP			22 55 41.7	
	comp=N,5µm,0.7s							
DAMV	**Damavand**	**1.01**	**154**	*e*PG		**Pg**	**22 55 35.9**	**+0.4**
DAMV				*e*SG		**Sg**	**22 55 49.1**	**0.0**
SNGE	**Sanandaj**	**3.61**	**248**	*e*PN		**Pn**	**22 56 14.3**	**+2.0**
KIV	**Kislovodsk**	**9.96**	**321**	*e*P		**P**	**22 57 40.3**	**-1.2**
AB31	**Akbulak array**	**14.15**	**23**⇑	Pn		**P**	**22 58 33.7**	**-3.9**
	comp=N,1.4nm,0.6s,baz=209,slow=12							
AB31				⇑Sn		**S**	**23 01 06.8**	**-8.9**
	comp=N,1.2nm,0.5s,baz=218,slow=24							
BRTR	**Keskin Array B**	**14.35**	**288**	Pn		**P**	**22 58 42.1**	**+1.7**
	comp=N,0.0nm,0.3s,baz=72,slow=14,SNR=2.4							
KK31	**Karatay Array**	**16.05**	**60**⇓	P		**P**	**22 59 00.3**	**-2.2**
	comp=N,4.7nm,0.8s,baz=313,slow=12,SNR=15							
AAK	**Ala-Archa**	**18.77**	**64**	*e*P		**P**	**22 59 37.5**	**+0.9**
	comp=N,5.2nm,1.0s							
ARU	**Arti**	**20.47**	**11**	*e*P		**P**	**22 59 54.5**	**-1.0**
	comp=N,16nm,0.8s							
ZRNK	**Zerenda**	**20.53**	**31**⇑	P		**P**	**22 59 56.1**	**0.0**
	comp=N,4.1nm,1.1s							
ZRNK	**Zerenda**	**20.53**	**31**	*e*P		**P**	**22 59 55.9**	**-0.2**
MLR	**Muntele Rosu**	**21.13**	**303**	P		**P**	**23 00 03.5**	**+1.1**
	comp=N,0.7nm,0.4s,mb3.3,baz=145,slow=16,SNR=1.7							
BRVK	**Borovoye**	**21.15**	**33**	*e*P		**P**	**23 00 01.9**	**-0.6**
BVA0	**Borovoye Array**	**21.18**	**33**⇑	P		**P**	**23 00 03.1**	**+0.4**
	comp=N,1.2nm,0.9s,mb3.2,baz=222,slow=40,SNR=26							
BVAR	**Borovoye Array**	**21.18**	**33**	P		**P**	**23 00 03.0**	**+0.2**
	comp=N,6.1nm,0.8s,mb4.0,baz=225,slow=10,SNR=24							
OBN	**Obninsk**	**21.18**	**336**	*e*P		**P**	**23 00 02.0**	**-0.8**
	comp=N,10nm,0.7s,mb4.4							
VOSK	**Vostochnaya**	**21.23**	**34**⇓	P		**P**	**23 00 03.4**	**0.0**
	comp=N,6.1nm,0.9s,mb3.9							
IDI	**Anoyia**	**21.50**	**275**	P		**P**	**23 00 06.0**	**-0.2**
	comp=N,8.9nm,1.1s,mb4.1,baz=68,slow=17,SNR=3.0							
KURK	**Kurchatov**	**24.09**	**45**⇓	P		**P**	**23 00 34.5**	**+3.0**
	comp=N,6.6nm,0.8s,mb4.1,baz=257,slow=6.6,SNR=9.7							
KURK	**Kurchatov**	**24.09**	**45**	*e*P		**P**	**23 00 34.7**	**+3.3**
MK31	**Makanchi Array**	**25.09**	**56**	P		**P**	**23 00 43.2**	**+2.1**
	comp=N,6.3nm,0.9s,mb4.1,baz=245,slow=7.3,SNR=38							
MKAR	**Makanchi Array**	**25.09**	**56**	P		**P**	**23 00 42.9**	**+1.7**
	comp=N,5.6nm,0.9s,mb4.1,baz=250,slow=7.0,SNR=30							
MKAR	**Makanchi Array**	**25.09**	**56**	P		**P**	**23 00 42.9**	**+1.7**
ZAL	**Zalesovo**	**28.87**	**42**	P		**P**	**23 01 16.4**	**+0.6**
	comp=N,0.6nm,0.5s,mb3.6,baz=18,slow=4.1,SNR=3.3							
FINES	**FINESS Array B**	**29.58**	**335**	P		**P**	**23 01 21.1**	**-1.0**
	comp

*BJI **29** 23:15:36.0,34.38N×141.50E,h7km,mb4.5*
*NEIC **29** 23:15:37.0±0.5,34.17N×141.55E,h10km,mb4.5/7,Error ellipse: s-maj=11.8km s-min=10.6km az=51.0*
*JMA **29** 23:15:37.2±0.3,34.11N×141.80E,h44km±4km,M4.1*
*MOS **29** 23:15:39.7±1.2,34.51N×141.50E,h33km,mb4.3/14,Error ellipse: s-maj=20.7km s-min=10.0km az=103.5*

ISC 29 23:15:38.4±0.9,34.11N±0.04×141.74E±0.06,h40km±6km, n91,σ1§07/100,mb4.3/33,2C-2D,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BSO1	**Boso 1**	**0.83**	**311**	P	**P**	**23 15 53.2**	**-0.5**
BSO1				S	**S**	**23 16 05.5**	**+0.5**
BSO3	**Boso 3**	**1.23**	**305**	P	**P**	**23 15 59.2**	**-0.1**
BSO4	**Boso 4**	**1.46**	**308**	P	**P**	**23 16 02.9**	**+0.3**
BSO4				S	**S**	**23 16 23.9**	**+3.2**
CHOJ	**Chosi**	**1.75**	**336**	P	**P**	**23 16 06.2**	**-0.6**
JHJ2	**Mitsune**	**1.89**	**239**	P	**P**	**23 16 09.1**	**+0.4**
JHJ2				S	**S**	**23 16 32.6**	**+1.2**
JHJ	**Hachijo jima 2**	**1.91**	**239**	Pn	**P**	**23 16 09.2**	**+0.2**
	251nm,0.3s,baz=126,slow=4.8,SNR=34						
JHJ				Sn	**S**	**23 16 31.8**	**-0.1**
	397nm,0.3s,baz=247,slow=23,SNR=15						
JIM2	**Oshima 3**	**2.00**	**288**	P	**P**	**23 16 09.0**	**-1.4**
JIZS	**Izushimoda**	**2.44**	**285**	P	**P**	**23 16 15.7**	**-1.0**
JOD2	**Odawara 2**	**2.47**	**299**	P	**P**	**23 16 15.9**	**-1.2**
JOD2				S	**S**	**23 16 48.4**	**+2.1**
JYN	**Shimob**	**2.97**	**299**	P	**P**	**23 16 23.4**	**-0.9**
JYN				S	**S**	**23 17 01.0**	**+2.0**
JAG	**Ashikaga**	**2.98**	**322**	P	**P**	**23 16 23.7**	**-0.6**
JAG				S	**S**	**23 16 59.8**	**+0.7**
JRY	**Ryogami san**	**3.01**	**310**	P	**P**	**23 16 25.3**	**+0.5**
SHZ3	**Shizuoka 3**	**3.06**	**289**	P	**P**	**23 16 26.0**	**+0.4**
MAJO	**Matsushiro**	**3.78**	**311**	*eP*	**P**	**23 16 35.4**	**-0.2**
MAT	**Matsushiro**	**3.78**	**311**	P	**P**	**23 16 35.2**	**-0.4**
MAT				*eS*	**S**	**23 17 18.6**	**-0.8**
MAT	**Matsushiro**	**3.78**	**311**	*eP*	**P**	**23 16 35.0**	**-0.6**
MAT				*eS*	**S**	**23 17 19.0**	**-0.4**
CBIJ	**Chichi jima**	**7.00**	**177**	Pn	**P**	**23 17 20.6**	**-0.4**
	9.8nm,0.3s,baz=98,slow=18,SNR=12						
CBIJ				Sn	**S**	**23 18 32.5**	**-7.7**
	5.1nm,0.3s,baz=273,slow=22,SNR=4.5						
JNU	**Nakatsue**	**9.11**	**267**	Pn	**P**	**23 17 50.6**	**+0.4**
	0.4nm,0.3s,baz=54,slow=10,SNR=5.4						
ASAJ	**Asahikawa**	**10.02**	**4**	Pn	**P**	**23 17 57.9**	**-4.8**
	1.7nm,0.3s,baz=212,slow=9.4,SNR=8.7						
ASAJ				Sn	**S**	**23 19 44.0**	**-11**
	1.4nm,0.3s,baz=40,slow=26,SNR=8.1						
ASAJ	**Asahikawa**	**10.02**	**4**	P	**P**	**23 17 57.9**	**-4.8**
ASAJ						23 19 44.1	
ASAJ				pmax	pmax		
	comp=Z,2.0nm,0.3s						
ASAJ				smax			
	comp=N,1.0nm,0.3s						
KS15	**Wonju Array Si**	**11.74**	**290**	*eP*	**P**	**23 18 26.5**	**+0.4**
YSS	**Yuzh-Sakhalins**	**12.86**	**3**	*eP*	**P**	**23 18 36.0**	**-5.1**
YSS	**Yuzh-Sakhalins**	**12.86**	**3**	P	**P**	**23 18 36.7**	**-4.4**
	comp=N,15nm,0.7s						
CN2	**Changchun**	**15.92**	**312**	*eP*	**P**	**23 19 22.0**	**+1.0**
HIA	**Hailar**	**22.23**	**320**	*eP*	**P**	**23 20 30.6**	**-2.2**
	comp=N,30nm,1.6s,mb4.5						
WHN	**Wuhan**	**23.39**	**269**	⇑P	**P**	**23 20 44.0**	**-0.3**
HHC	**Hu-ho-hao-te**	**24.80**	**295**	*eP*	**P**	**23 20 59.5**	**+1.6**
HHC				AMB	AMB		
	comp=Z,19nm,1.2s,mb4.5						
XAN	**Xi'an**	**27.12**	**279**	P	**P**	**23 21 17.0**	**-2.6**
XAN				AMB	AMB		
	comp=Z,3.0nm,0.9s,mb3.8						
ENH	**Enshi**	**27.50**	**271**	*eP*	**P**	**23 21 20.4**	**-2.6**
ULN	**Ulaanbaatar**	**29.30**	**308**	*eP*	**P**	**23 21 40.0**	**+1.0**
	comp=Z,11nm,1.2s,mb4.5						
SONM	**Songino Array**	**29.72**	**308**	P	**P**	**23 21 43.0**	**+0.3**
	comp=Z,4.9nm,0.6s,mb4.4,baz=107,slow=8.2,SNR=38						
BOD	**Bodaibo**	**30.17**	**330**	*eP*	**P**	**23 21 45.5**	**-1.2**
ZAK	**Zakamensk**	**32.36**	**312**	*eP*	**P**	**23 22 05.8**	**-0.2**
TLY	**Talaya**	**32.51**	**314**	*eP*	**P**	**23 22 06.7**	**-0.6**
TLY				pmax	pmax		
	comp=Z,59nm,1.2s,mb5.4						
GTA	**Gaotai**	**33.78**	**291**	*eP*	**P**	**23 22 18.3**	**-0.1**
GTA				AMB	AMB		
	comp=Z,6.0nm,0.9s,mb4.5						
BILL	**Bilibino**	**36.77**	**15**	⇑*iP*	**P**	**23 22 42.8**	**-0.7**
BILL				*e*		23 24 06.1	
BILL				*i*		23 25 09.6	
BILL				pmax	pmax		
	comp=Z,3.0nm,0.9s,mb4.1						
CMAR	**Chiang Mai Arr**	**41.10**	**259**	P	**P**	**23 23 19.0**	**-1.1**
	comp=Z,2.7nm,1.0s,mb3.8,baz=47,slow=7.7,SNR=14						
CMAR	**Chiang Mai Arr**	**41.10**	**259**	P	**P**	**23 23 19.0**	**-1.1**
CMAR				pmax	pmax		
	comp=Z,3.0nm,1.0s						
WMQ	**Urumqi**	**42.46**	**300**	*eP*	**P**	**23 23 33.5**	**+2.5**
LSA	**Lhasa**	**42.82**	**279**	*eP*	**P**	**23 23 32.6**	**-1.5**
	comp=Z,5.4nm,1.3s,mb4.1						
ZAL	**Zalesovo**	**44.13**	**315**	P	**P**	**23 23 43.9**	**-0.5**
	comp=Z,2.1nm,0.6s,mb4.0,baz=289,slow=11,SNR=10						
ZAL	**Zalesovo**	**44.13**	**315**	P	**P**	**23 23 43.9**	**-0.5**
ZAL				pmax	pmax		
	comp=Z,2.0nm,0.6s						
NVS	**Novosibirsk**	**45.09**	**316**	*eP*	**P**	**23 23 51.0**	**-1.0**
NVS				pmax	pmax		
	comp=Z,7.0nm,1.2s,mb4.4						
NVS				pmax	pmax		
	comp=E,6.0nm,1.0s						
MKAR	**Makanchi Array**	**45.95**	**305**	P	**P**	**23 23 58.5**	**-0.5**
	comp=E,3.9nm,0.6s,mb4.5,baz=89,slow=9.8,SNR=27						
MKAR	**Makanchi Array**	**45.95**	**305**	P	**P**	**23 23 58.5**	**-0.5**
MKAR				pmax	pmax		
	comp=Z,4.0nm,0.6s						
KURK	**Kurchatov**	**47.98**	**310**	*eP*	**P**	**23 24 15.1**	**+0.1**
PKI	**Pulchoki**	**48.29**	**278**	*eP*	**P**	**23 24 16.8**	**-0.8**
	comp=Z,24nm,1.1s,mb5.2						
KKN	**Kakani**	**48.32**	**279**	*eP*	**P**	**23 24 17.6**	**-0.2**
	comp=Z,38nm,1.0s,mb5.4						
GKN	**Gorkha**	**48.76**	**279**	*eP*	**P**	**23 24 21.0**	**-0.3**
	comp=Z,66nm,1.1s						
DANN	**Dangsing**	**49.35**	**280**	*eP*	**P**	**23 24 26.1**	**+0.3**
KOLN	**Koldanda**	**49.70**	**279**	*eP*	**P**	**23 24 28.2**	**-0.3**
	comp=Z,49nm,1.3s,mb5.4						
ILAR	**Eielson Array**	**51.84**	**31**	P	**P**	**23 24 44.6**	**+0.5**
	comp=Z,1.6nm,0.9s,mb3.9,baz=276,slow=6.4,SNR=16						
ILAR	**Eielson Array**	**51.84**	**31**	P	**P**	**23 24 44.7**	**+0.5**
ILAR				pmax	pmax		
	comp=Z,2.0nm,0.9s						
BVAR	**Borovoye Array**	**52.77**	**314**	P	**P**	**23 24 51.1**	**-0.2**
	comp=Z,1.3nm,0.6s,mb4.1,baz=90,slow=7.4,SNR=12						
BRVK	**Borovoye**	**52.82**	**314**	*eP*	**P**	**23 24 51.1**	**-0.6**
ZRNK	**Zerenda**	**53.60**	**314**	*eP*	**P**	**23 24 57.5**	**0.0**
WRAB	**Tennant Creek**	**54.20**	**189**	*eP*	**P**	**23 25 03.0**	**+0.7**
	comp=Z,9.7nm,0.8s,mb4.8						
WB2	**Warramunga Arr**	**54.20**	**189**	*eP*	**P**	**23 25 03.3**	**+0.9**
NDI	**New Delhi**	**54.54**	**283**	*eP*	**P**	**23 25 03.5**	**-1.2**
INK	**Inuvik**	**56.88**	**26**	P	**P**	**23 25 22.1**	**+1.1**
	comp=Z,1.2nm,0.7s,mb4.0,baz=223,slow=4.0,SNR=5.7						
INK	**Inuvik**	**56.88**	**26**	P	**P**	**23 25 22.1**	**+1.0**
INK				pmax	pmax		
	comp=Z,1.0nm,0.7s						
INK	**Inuvik**	**56.88**	**26**	*eP*	**P**	**23 25 21.1**	**0.0**
	comp=Z,1.5nm,0.7s,mb4.1						
AS12	**Alice Springs**	**57.93**	**188**	*eP*	**P**	**23 25 30.4**	**+1.4**
	comp=Z,26nm,2.0s,mb4.9						
ASAR	**Alice Springs**	**57.93**	**188**	P	**P**	**23 25 29.8**	**+0.7**
	comp=Z,1.2nm,0.7s,mb4.1,baz=17,slow=11,SNR=7.5						
ASAR	**Alice Springs**	**57.93**	**188**	P	**P**	**23 25 29.8**	**+0.7**
ARU	**Arti**	**58.75**	**320**	⇓*iP*	**P**	**23 25 33.4**	**-0.9**
ARU				pmax	pmax		
	comp=Z,6.0nm,0.8s,mb4.7						
YKA	**Yellowknife Ar**	**66.21**	**30**	P	**P**	**23 26 24.3**	**+0.6**
	comp=Z,1.1nm,1.1s,mb3.8,baz=293,slow=6.0,SNR=6.7						
YKA	**Yellowknife Ar**	**66.21**	**30**	P	**P**	**23 26 24.3**	**+0.6**
YKA				pmax	pmax		
	comp=Z,1.0nm,1.1s						
ARCES	**ARCESS Array B**	**66.83**	**340**	P	**P**	**23 26 25.8**	**-1.7**
	comp=Z,1.7nm,1.0s,mb4.0,baz=43,slow=17,SNR=2.6						
ARCES	**ARCESS Array B**	**66.83**	**340**	P	**P**	**23 26 25.8**	**-1.7**
ARCES				pmax	pmax		
	comp=Z,2.0nm,1.0s						
FINES	**FINESS Array B**	**71.53**	**333**	P	**P**	**23 26 56.7**	**+0.2**
	comp=Z,2.1nm,0.9s,mb4.1,baz=72,slow=6.0,SNR=7.3						
FINES	**FINESS Array B**	**71.53**	**333**	P	**P**	**23 26 56.7**	**+0.2**
FINES				pmax	pmax		
	comp=Z,2.0nm,0.9s						
DPW	**Davenport**	**71.63**	**44**	P	**P**	**23 26 58.3**	**+1.0**
ZEI	**Tsey**	**72.89**	**310**	*eP*	**P**	**23 27 02.9**	**-2.0**
KIV	**Kislovodsk**	**73.04**	**312**	*d iP*	**P**	**23 27 07.5**	**+1.7**
KIV				pmax	pmax		
	comp=Z,11nm,1.2s,mb4.7						
KIV	**Kislovodsk**	**73.04**	**312**	*eP*	**P**	**23 27 07.7**	**+2.0**
	comp=Z,11nm,1.1s,mb4.7						
NVAR	**Mina Array Bea**	**76.54**	**53**	P	**P**	**23 27 28.9**	**+2.8**
	comp=Z,1.0nm,1.0s,mb3.7,baz=270,slow=8.1,SNR=3.1						
HFS	**Hagfors**	**76.87**	**336**	P	**P**	**23 27 28.7**	**+1.2**
	comp=Z,1.3nm,0.6s,mb4.0,baz=356,slow=5.3,SNR=5.7						
HFS	**Hagfors**	**76.87**	**336**	P	**P**	**23 27 28.7**	**+1.3**
HFS				pmax	pmax		
	comp=Z,1.0nm,0.6s						
NB2	**NORSAR Subarra**	**76.99**	**338**	P	**P**	**23 27 28.9**	**+0.8**
	comp=Z,0.8nm,0.7s,mb3.8,baz=40,slow=5.6						
NOA	**NORSAR Array B**	**76.99**	**338**	P	**P**	**23 27 28.8**	**+0.7**
	comp=Z,1.4nm,0.7s,mb4.0,baz=39,slow=5.7,SNR=6.3						
NOA	**NORSAR Array B**	**76.99**	**338**	P	**P**	**23 27 28.8**	**+0.7**
NOA				pmax	pmax		
	comp=Z,1.0nm,0.7s						
HWUT	**Hardware Ranch**	**79.02**	**47**	*eP*	**P**	**23 27 43.5**	**+3.8**
	comp=Z,4.2nm,1.0s,mb4.3						
PDAR	**Pinedale Array**	**79.53**	**45**	P	**P**	**23 27 45.5**	**+3.0**
	comp=Z,0.9nm,0.9s,mb3.7,baz=297,slow=3.3,SNR=6.7						
BRTR	**Keskin Array B**	**81.00**	**312**	P	**P**	**23 27 51.7**	**+1.4**
	comp=Z,2.0nm,1.0s,mb4.0,baz=108,slow=3.9,SNR=10						
PV10	**Paradox Valley**	**82.51**	**48**	*eP*	**P**	**23 28 03.1**	**+4.9**
KHC	**Kasperske Hory**	**85.18**	**329**	*eP*	**P**	**23 28 10.5**	**-0.8**
GERES	**GERESS Array B**	**85.34**	**329**	P	**P**	**23 28 12.8**	**+0.6**
	comp=Z,1.1nm,0.8s,mb4.0,baz=56,slow=4.8,SNR=11						
GERES	**GERESS Array B**	**85.34**	**329**	P	**P**	**23 28 12.8**	**+0.7**
GERES				pmax	pmax		
	comp=Z,1.0nm,0.8s						
LPAZ	**La Paz**	**147.84**	**64**	PKPbc	PKPdf	23 35 24.6	+8.0
	comp=Z,1.8nm,0.8s,baz=16,slow=9.0,SNR=7.3						
LPAZ	**La Paz**	**147.84**	**64**	PKP2	PKPab	23 35 24.6	+0.5
LPAZ				pmax	pmax		
	comp=Z,2.0nm,0.8s						

*BJI **29** 23:26:02.6,34.10N×141.50E,h10km,mb4.2*
*IDC **29** 23:26:04.0±0.8,34.16N×141.46E,mb3.9/14,mb1 4.1/17, mb1mx4.0/26,ML3.7/3,Error ellipse: s-maj=20.3km s-min=14.9km az=136.0*
*NEIC **29** 23:26:05.6±0.5,34.13N×141.49E,h10km,mb4.3/3,Error ellipse: s-maj=12.2km s-min=10.5km az=213.0*
*JMA **29** 23:26:10.7±0.4,34.24N×141.24E,h27km±3km,M3.3*

ISC 29 23:26:06.1±1.5,34.10N±0.05×141.63E±0.07,h30km±10km, n45,σ1§04/50,mb4.1/22,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BSO1	**Boso 1**	**0.77**	**316**	P	**Pb**	**23 26 20.4**	**-0.5**
BSO1				S	**Sb**	**23 26 26.7**	**-4.4**
BSO3	**Boso 3**	**1.16**	**308**	P	**Pn**	**23 26 26.9**	**+0.4**
BSO4	**Boso 4**	**1.39**	**310**	P	**Pn**	**23 26 30.5**	**+0.8**
TATJ	**Tateyama 2**	**1.71**	**304**	P	**Pn**	**23 26 35.2**	**+0.9**
JHJ2	**Mitsune**	**1.80**	**237**	P	**Pn**	**23 26 37.4**	**+1.7**
JHJ2				S	**Sn**	**23 26 59.0**	**+1.3**
JHJ	**Hachijo jima 2**	**1.82**	**238**	Pn	**Pn**	**23 26 37.2**	**+1.3**
	122nm,0.3s,baz=156,slow=6.7,SNR=39						
JHJ				Sn	**Sn**	**23 26 58.6**	**+0.4**
	288nm,0.3s,baz=82,slow=22,SNR=10						
JIM2	**Oshima 3**	**1.92**	**289**	P	**Pn**	**23 26 36.9**	**-0.4**
KTJJ	**Kamata 2**	**2.27**	**292**	P	**Pn**	**23 26 41.5**	**-0.9**
MAJO	**Matsushiro**	**3.71**	**312**	*eP*	**Pn**	**23 27 03.1**	**+0.2**
MAT	**Matsushiro**	**3.71**	**312**	P	**Pn**	**23 27 03.0**	**+0.1**
MAT				S	**Sn**	**23 27 47.0**	**+0.9**
MAT	**Matsushiro**	**3.71**	**312**	*eP*	**Pn**	**23 27 03.0**	**+0.1**
MAT				*eS*	**Sn**	**23 27 47.0**	**+0.9**
CBIJ	**Chichi jima**	**7.00**	**176**	Pn	**Pn**	**23 27 48.0**	**-1.3**
	8.0nm,0.3s,baz=67,slow=21,SNR=8.4						
CBIJ				Sn	**Sn**	**23 29 00.7**	**-7.9**
	8.6nm,0.3s,baz=66,slow=24,SNR=5.7						
JNU	**Nakatsue**	**9.02**	**267**	Pn	**P**	**23 28 14.3**	**-3.0**
	0.2nm,0.3s,baz=90,slow=15,SNR=3.3						
ASAJ	**Asahikawa**	**10.03**	**4**	Pn	**P**	**23 28 25.9**	**-5.4**
	1.3nm,0.3s,baz=197,slow=20,SNR=3.7						
HHC	**Hu-ho-hao-te**	**24.71**	**295**	*eP*	**P**	**23 31 28.0**	**+2.1**
HHC				AMB	AMB		
	comp=Z,10.0nm,1.1s,mb4.3						
ULN	**Ulaanbaatar**	**29.23**	**309**	*eP*	**P**	**23 32 07.8**	**+0.5**
	comp=Z,4.6nm,0.8s,mb4.3						
SONM	**Songino Array**	**29.65**	**308**	P	**P**	**23 32 11.2**	**+0.1**
	comp=Z,2.8nm,0.7s,mb4.1,baz=103,slow=8.7,SNR=27						
CMAR	**Chiang Mai Arr**	**41.01**	**259**	P	**P**	**23 33 47.1**	**-1.1**
	comp=Z,1.0nm,0.6s,mb3.6,baz=50,slow=7.6,SNR=7.7						
ZAL	**Zalesovo**	**44.07**	**315**	P	**P**	**23 34 12.1**	**-0.8**
	comp=Z,1.3nm,0.4s,mb4.0,baz=267,slow=9.7,SNR=9.2						
MKAR	**Makanchi Array**	**45.88**	**305**	P	**P**	**23 34 26.7**	**-0.6**
	comp=Z,1.6nm,0.5s,mb4.2,baz=86,slow=8.7,SNR=22						
KURK	**Kurchatov**	**47.92**	**310**	*eP*	**P**	**23 34 42.8**	**-0.6**
PKI	**Pulchoki**	**48.20**	**278**	*eP*	**P**	**23 34 45.0**	**-0.9**
	comp=Z,23nm,1.3s,mb5.0						
KKN	**Kakani**	**48.23**	**279**	*eP*	**P**	**23 34 45.1**	**-1.0**
	comp=Z,19nm,0.9s,mb5.1						
GKN	**Gorkha**	**48.67**	**279**	*eP*	**P**	**23 34 48.9**	**-0.6**
	comp=Z,34nm,1.0s						
KOLN	**Koldanda**	**49.61**	**279**	*eP*	**P**	**23 34 55.3**	**-1.4**
	comp=Z,29nm,1.3s,mb5.2						
ILAR	**Eielson Array**	**51.90**	**31**	P	**P**	**23 35 14.4**	**+0.8**
	comp=Z,0.7nm,0.7s,mb3.7,baz=266,slow=6.2,SNR=9.0						
BVAR	**Borovoye Array**	**52.70**	**314**	P	**P**	**23 35 19.2**	**-0.6**
	comp=Z,1.9nm,0.9s,mb4.0,baz=68,slow=8.0,SNR=9.0						
BRVK	**Borovoye**	**52.76**	**314**	*eP*	**P**	**23 35 19.4**	**-0.9**
ZRNK	**Zerenda**	**53.54**	**314**	*eP*	**P**	**23 35 25.3**	**-0.7**
WB2	**Warramunga Arr**	**54.18**	**188**	*eP*	**P**	**23 35 30.5**	**-0.6**
INK	**Inuvik**	**56.93**	**26**	P	**P**	**23 35 51.7**	**+1.3**
	comp=Z,0.7nm,0.6s,mb3.9,baz=117,slow=8.0,SNR=4.0						
INK	**Inuvik**	**56.93**	**26**	P	**P**	**23 35 51.7**	**+1.3**
AS12	**Alice Springs**	**57.91**	**188**	*eP*	**P**	**23 36 00.9**	**+3.0**
	comp=Z,23nm,1.7s,mb4.9						
ASAR	**Alice Springs**	**57.91**	**188**	P	**P**	**23 35 57.7**	**-0.1**
	comp=Z,0.9nm,0.8s,mb3.9,baz=19,slow=9.1,SNR=7.0						
ARU	**Arti**	**58.69**	**320**	*eP*	**P**	**23 36 00.4**	**-2.4**
	comp=Z,6.0nm,1.0s,mb4.6						
YKA	**Yellowknife Ar**	**66.26**	**30**	P	**P**	**23 36 54.2**	**+1.1**
	comp=Z,0.1nm,0.5s,mb3.1,baz=305,slow=7.2,SNR=3.0						
JOF	**Joensuu**	**68.64**	**333**	*ep*	**P**	**23 37 07.3**	**-0.7**
	comp=Z,0.3nm,0.3s,mb3.7						
FINES	**FINESS Array B**	**71.50**	**333**	P	**P**	**23 37 24.5**	**-0.9**
	comp=Z,2.0nm,0.9s,mb4.0,baz=56,slow=6.9,SNR=6.7						
NB2	**NORSAR Subarra**	**76.96**	**338**	P	**P**	**23 37 57.0**	**+0.1**
	comp=Z,0.7nm,0.6s,mb3.8,baz=40,slow=5.6						
NOA	**NORSAR Array B**	**76.96**	**338**	P	**P**	**23 37 56.9**	**0.0**
	comp=Z,1.3nm,0.8s,mb3.9,baz=39,slow=5.6,SNR=6.4						
HWUT	**Hardware Ranch**	**79.09**	**47**	P	**P**	**23 38 11.0**	**+1.9**
	comp=Z,0.9nm,0.5s,mb4.0						
PDAR	**Pinedale Array**	**79.61**	**45**	P	**P**	**23 38 12.9**	**+1.1**
	comp=Z,0.2nm,0.5s,mb3.3,baz=315,slow=1.3,SNR=2.9						
BRTR	**Keskin Array B**	**80.34**	**312**	P	**P**	**23 38 19.7**	**+0.8**
	comp=Z,1.9nm,1.1s,mb4.0,baz=117,slow=2.8,SNR=8.2						
GERES	**GERESS Array B**	**85.30**	**328**	P	**P**	**23 38 41.1**	**+0.1**
	comp=Z,1.0nm,0.9s,mb4.0,baz=45,slow=3.8,SNR=8.5						
LPAZ	**La Paz**	**147.93**	**64**	PKPbc	PKPdf	23 45 53.4	+2.5
	comp=Z,0.8nm,1.0s,baz=38,slow=9.9,SNR=3.1						

*IDC **29** 23:26:38.8±0.9,34.24N×141.75E,mb4.0/10,mb1 4.3/12, mb1mx4.1/24,ML4.1/2,Error ellipse: s-maj=31.1km s-min=21.7km az=98.0*
*NEIC **29** 23:26:40.2±0.9,34.26N×141.58E,h10km,mb4.2/1,Error ellipse: s-maj=23.8km s-min=16.7km az=198.0*

ISC 29 23:26:38.3±0.6,34.21N±0.07×141.68E±0.10,h10km,n18, σ1§05/19,mb4.0/11,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHJ	**Hachijo jima 2**	**1.92**	**236**	Sn	**Sn**	**23 27 35.7**	**-0.1**
	200nm,0.3s,baz=236,slow=24,SNR=2.7						
MAJO	**Matsushiro**	**3.67**	**310**	P	**Pn**	**23 27 36.5**	**+0.1**
CBIJ	**Chichi jima**	**7.11**	**176**	Pn	**Pn**	**23 28 24.1**	**-0.8**
	13nm,0.3s,baz=121,slow=23,SNR=3.4						
CBIJ				Sn	**Sn**	**23 29 39.8**	**-6.9**
	6.3nm,0.3s,baz=77,slow=22,SNR=2.3						
ASAJ	**Asahikawa**	**9.92**	**4**	Pn	**P**	**23 29 01.6**	**-2.4**
	1.6nm,0.3s,baz=233,slow=7.2,SNR=4.2						
ULN	**Ulaanbaatar**	**29.20**	**308**	*eP*	**P**	**23 32 38.4**	**-3.6**
	4.9nm,1.2s,mb4.1						
ZAL	**Zalesovo**	**44.02**	**315**	P	**P**	**23 34 47.5**	**-0.1**
	1.3nm,0.9s,mb3.6,baz=279,slow=6.9,SNR=3.2						
KURK	**Kurchatov**	**47.88**	**310**	P	**P**	**23 35 17.4**	**-0.8**
ILAR	**Eielson Array**	**51.78**	**31**	P	**P**	**23 35 48.1**	**+0.2**
	2.9nm,0.8s,mb4.3,baz=269,slow=6.5,SNR=14						
INK	**Inuvik**	**56.81**	**26**	P	**P**	**23 36 25.1**	**+0.4**
	2.0nm,0.7s,mb4.3,baz=295,slow=5.9,SNR=6.0						
ASAR	**Alice Springs**	**58.03**	**188**	P	**P**	**23 36 33.8**	**-0.1**
	1.2nm,0.8s,mb4.0,baz=1.9,slow=6.9,SNR=4.6						
YKA	**Yellowknife Ar**	**66.15**	**30**	P	**P**	**23 37 25.4**	**-2.2**
	0.8nm,0.9s,mb3.7,baz=290,slow=6.1,SNR=5.9						
YKA	**Yellowknife Ar**	**66.15**	**30**	P	**P**	**23 37 25.4**	**-2.2**
FINES	**FINESS Array B**	**71.42**	**333**	P	**P**	**23 38 00.6**	**+0.4**
	1.4nm,0.9s,mb3.9,baz=104,slow=7.9,SNR=3.9						
NVAR	**Mina Array Bea**	**76.52**	**53**	P	**P**	**23 38 31.3**	**+1.0**
	0.9nm,0.8s,mb3.8,baz=306,slow=7.8,SNR=3.1						
NOA	**NORSAR Array B**	**76.87**	**338**	P	**P**	**23 38 32.6**	**+0.9**
	1.0nm,0.7s,mb3.9,baz=39,slow=5.7,SNR=4.1						
PDAR	**Pinedale Array**	**79.50**	**45**	P	**P**	**23 38 46.9**	**+0.3**
	1.8nm,1.1s,mb3.9,baz=315,slow=2.1,SNR=5.6						
KHC	**Kasperske Hory**	**85.06**	**329**	*eP*	**P**	**23 39 16.0**	**+0.8**
GERES	**GERESS Array B**	**85.22**	**328**	P	**P**	**23 39 18.0**	**+2.0**
	0.7nm,0.3s,mb4.2,baz=45,slow=4.2,SNR=8.5						

JMA 29 23:34:47.0±0.4,34.20N×141.84E,h30km±3km,M2.6,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BSO1	**Boso 1**	**0.84**	**303**	P	Pn	23 35 02.5	-0.4
BSO3	**Boso 3**	**1.25**	**299**	P	Pn	23 35 09.3	+0.6
BSO4	**Boso 4**	**1.47**	**303**	P	Pn	23 35 12.5	+0.7
BSO4				S	Sn	23 35 30.1	-0.1
JHJ2	**Mitsune**	**2.01**	**238**	P	Pn	23 35 20.2	+0.7
JHJ2				S	Sn	23 35 44.5	+0.6
MAT	**Matsushiro**	**3.78**	**309**	P	Pn	23 35 45.7	+1.0
MAT				S	Sn	23 36 28.3	-0.4

*JMA **29** 23:34:53.9±0.6,46.94N×142.56E,h31km,M3.5*
*MOS **29** 23:34:54.8±1.7,47.12N×142.29E,h17km,mb4.0/1,Error ellipse: s-maj=39.9km s-min=21.2km az=105.2*
MOS Felt (III-IV) at Ogon'ki, Taranay; (II) at Holmsk.
*IDC **29** 23:34:54.7±1.1,47.09N×142.19E,mb3.4/7,mb1 3.7/8, mb1mx3.6/23,ML4.0/1,Error ellipse: s-maj=25.5km s-min=23.9km az=113.0*
*SKHL **29** 23:34:54.4±0.8,46.91N×142.20E,h10km,mb4.2/2*

ISC 29 23:34:52.6±3.0,46.86N±0.04×142.4E±0.1,h7km±20km, n16,σ0§70/20,mb3.4/7,1C,Sakhalin Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
YSS	**Yuzh-Sakhalins**	**0.26**	**68**	⇑*iPN*	**Pn**	**23 35 02.0**	**-0.3**
YSS				*e*		23 35 07.3	
YSS				pmax	pmax		
	comp=Z,200nm,0.2s						
YSS				smax			
	comp=N,2μm,0.3s						
YSS				smax			
	comp=E,2μm,0.3s						
JWK2	**Keihoku**	**1.58**	**193**	P	**Pn**	**23 35 22.0**	**+0.7**
JWK2				*eS*	**Sb**	**23 35 42.6**	**+0.5**
JSE	**Soyaes**	**1.91**	**176**	P	**Pn**	**23 35 25.7**	**-0.2**
JSE				*eS

WATA				*i* SN	**Sn**	**23 38 30.7**	**+0.4**
KBA	**Koelnbreinsper**	**2.42**	**55**	*i* PN	**Pn**	**23 38 17.6**	**+1.2**
KBA				*i* SN	**Sn**	**23 38 47.8**	**+1.2**
LPG	**La Plagne**	**2.59**	**266**	*e*Pn	**Pn**	**23 38 20.5**	**+1.6**
LPG				*e*Sn	**Sn**	**23 38 53.2**	**+2.3**
	2.4nm,0.4s						
LPL	**La Plagne**	**2.60**	**266**	*e*Pn	**Pn**	**23 38 20.8**	**+1.8**
MBDF	**Montbardon**	**2.77**	**250**	*e*Pn	**Pn**	**23 38 22.7**	**+1.2**
SBF	**Sospel**	**2.84**	**230**	*e*Pn	**Pn**	**23 38 22.9**	**+0.5**
SBF				*e*Sn	**Sn**	**23 38 56.6**	**-0.6**
	2.8nm,0.2s						
CABF	**La Chapelle**	**3.14**	**288**	*e*Pn	**Pn**	**23 38 27.2**	**+0.6**
CABF				*e*Sn	**Sn**	**23 39 04.9**	**+0.2**
CABF				*e*Sg	**Sg**	**23 39 22.0**	**+1.7**
HINF	**Hinteralfeld**	**3.21**	**311**	*e*Pn	**Pn**	**23 38 27.0**	**-0.7**
HINF				*e*Sn	**Sn**	**23 39 05.8**	**-0.9**
	0.6nm,0.2s						
ORIF	**Oris-en-Rattie**	**3.31**	**257**	*e*Pn	**Pn**	**23 38 30.0**	**+0.9**
ORIF				*e*Sn	**Sn**	**23 39 09.8**	**+0.7**
	1.3nm,0.3s						
PGF	**Pioggiola**	**3.35**	**198**	*e*Pn	**Pn**	**23 38 28.0**	**-1.8**
PGF				*e*Sn	**Sn**	**23 39 05.6**	**-4.7**
	0.5nm,0.2s						
CDF	**Champ du Feu**	**3.43**	**322**	*e*Pn	**Pn**	**23 38 31.1**	**+0.3**
CDF				*e*Sn	**Sn**	**23 39 09.6**	**-2.5**
	0.8nm,0.3s						
FRF	**La Foret Royal**	**3.47**	**232**	*e*Pn	**Pn**	**23 38 31.4**	**0.0**
FRF				*e*Sn	**Sn**	**23 39 11.8**	**-1.3**
	0.6nm,0.2s						
HAU	**Haudompre**	**3.60**	**310**	*e*Pn	**Pn**	**23 38 32.9**	**-0.3**
HAU				*e*Sn	**Sn**	**23 39 15.0**	**-1.4**
HAU				*e*Sg	**Sg**	**23 39 34.2**	**-1.5**
LMR	**La Mourre**	**3.69**	**231**	*e*Pn	**Pn**	**23 38 34.3**	**-0.3**
LMR				*e*Sn	**Sn**	**23 39 17.7**	**-1.1**
	0.5nm,0.3s						
SMF	**Signal de Mont**	**4.66**	**284**	*e*Pn	**Pn**	**23 38 47.5**	**-0.8**
SMF				*e*Sn	**Sn**	**23 39 41.3**	**-2.0**
	1.6nm,0.2s						
LOR	**Lormes**	**4.78**	**291**	*e*Pn	**Pn**	**23 38 49.5**	**-0.5**
LOR				*e*Sn	**Sn**	**23 39 44.6**	**-1.8**
	0.8nm,0.3s						
SSF	**Saint Saulge**	**4.96**	**288**	*e*Pn	**Pn**	**23 38 51.7**	**-0.9**
BGF	**Bois d'Agland**	**5.33**	**282**	*e*Pn	**Pn**	**23 38 57.0**	**-0.8**
TCF	**Toulx Ste Croi**	**5.75**	**278**	*e*Pn	**Pn**	**23 39 02.8**	**-0.9**
TCF				*e*Sn	**Sn**	**23 40 07.5**	**-3.2**
	0.4nm,0.2s						

*LDG **29** 23:52:03.4±0.5, 17.95S×168.81E, h33km, Mb4.3/2, Error ellipse: s-maj=65.1km s-min=38.7km az=32.0*
*NEIC **29** 23:52:22.7±1.8, 18.46S×169.04E, h210km±15km, mb4.6/8, Error ellipse: s-maj=20.1km s-min=14.2km az=194.0*
*IDC **29** 23:52:25.6±6.7, 18.45S×169.03E, h233km±62km, mb3.7/7, mb1 3.8/7, mb1mx3.6/12, Error ellipse: s-maj=34.0km s-min=19.8km az=21.0*

ISC 29 23:52:22.8±1.0, 18.48S±0.09×168.9E±0.1, h218km±5km, n45, σ1s01/26, mb4.3/12, 1C-2D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
BKM	**Butte a Klehm**	**1.05**	**320**	⇓*i*P		**P**	**23 52 55.2**	**+0.3**
BKM				S		**S**	**23 53 19.8**	**-0.1**
DZM	**Mont Dzumac**	**4.27**	**213**	⇑*e*P		**P**	**23 53 28.2**	**-0.9**
DZM				*e*S		**S**	**23 54 15.5**	**-5.2**
NOUC	**Port Laguerre**	**4.37**	**214**	⇑*i*P		**P**	**23 53 30.4**	**0.0**
NOUC				*e*S		**S**	**23 54 26.4**	**+3.5**
NOUC	**Port Laguerre**	**4.37**	**214**	⇑*i*P		**P**	**23 53 30.4**	**0.0**
NOUC				*e*S		**S**	**23 54 26.4**	**+3.5**
URZ	**Urewera**	**20.96**	**162**	P		**P**	**23 56 51.0**	**+1.4**
	11nm,0.8s,baz=343,slow=6.1,SNR=5.5							
CTA	**Charters Tower**	**21.48**	**262**	P		**P**	**23 56 57.2**	**+2.4**
	3.8nm,0.5s,mb4.2,baz=72,slow=13,SNR=6.1							
CTAO	**Charters Tower**	**21.48**	**262**	*e*P		**P**	**23 56 56.1**	**+1.3**
	97nm,2.4s,mb4.9							
STKA	**Stephens Creek**	**28.02**	**236**	*e*P		**P**	**23 57 55.9**	**+0.1**
	1.8nm,0.4s,mb4.0							
STKA	**Stephens Creek**	**28.02**	**236**	P		**P**	**23 57 55.8**	**0.0**
	2.3nm,0.4s,mb4.1,baz=62,slow=9.5,SNR=7.8							
WB2	**Warramunga Arr**	**32.67**	**262**	*e*P		**P**	**23 58 35.5**	**-1.1**
WRAB	**Tennant Creek**	**32.67**	**262**	*e*P		**P**	**23 58 35.2**	**-1.4**
	8.0nm,0.4s,mb4.6							
AS12	**Alice Springs**	**33.05**	**255**	⇓*i*P		**P**	**23 58 39.3**	**-0.5**
	26nm,0.3s,mb5.2							
ASAR	**Alice Springs**	**33.05**	**255**	P		**P**	**23 58 39.4**	**-0.4**
	21nm,0.4s,mb5.0,baz=82,slow=8.6,SNR=616							
KAKA	**Kakadu**	**35.62**	**274**	*e*P		**P**	**23 59 01.3**	**-0.4**
	18nm,1.0s,mb4.6							
FORT	**Forrest**	**38.92**	**244**	*e*P		**P**	**23 59 29.0**	**-0.1**
	28nm,0.9s,mb4.8							
FITZ	**Fitzroy Crossi**	**41.05**	**263**	*e*P		**P**	**23 59 47.4**	**+0.8**
	15nm,1.0s,mb4.4							
QSPA	**South Pole Qui**	**71.57**	**180**	*e*P		**P**	**00 03 20.2**	**-1.1**
	6.5nm,0.8s,mb4.3							
CMAR	**Chiang Mai Arr**	**77.94**	**294**	P		**P**	**00 04 00.1**	**+1.5**
	1.0nm,0.5s,mb3.7,baz=134,slow=4.7,SNR=6.3							
MAW	**Mawson**	**79.03**	**202**	P		**P**	**00 04 04.4**	**+0.8**
	5.1nm,0.8s,mb4.2,baz=107,slow=8.4,SNR=5.5							
MAW	**Mawson**	**79.03**	**202**	*e*P		**P**	**00 04 02.8**	**-0.8**
	6.1nm,0.8s,mb4.3							
SONM	**Songino Array**	**86.45**	**323**	P		**P**	**00 04 42.9**	**+1.1**
	1.3nm,0.7s,mb3.8,baz=154,slow=6.2,SNR=9.3							
ILAR	**Eielson Array**	**89.59**	**17**	P		**P**	**00 04 54.8**	**-1.4**
	0.2nm,0.4s,mb3.3,baz=235,slow=5.0,SNR=6.1							
YKA	**Yellowknife Ar**	**100.13**	**27**	P		P	00 05 45.1	+0.6
	0.4nm,0.8s,baz=254,slow=4.9,SNR=5.3							
ARCES	**ARCESS Array B**	**124.27**	**345**	PKP		PKPdf	00 10 55.1	+0.1
	0.5nm,0.3s,baz=70,slow=2.0,SNR=19							
FINES	**FINESS Array B**	**129.78**	**338**	PKP		PKPdf	00 11 06.4	+0.7
	1.6nm,1.0s,slow=5.6,SNR=2.7							
GERES	**GERESS Array B**	**143.69**	**332**	PKP		PKPdf	00 11 30.2	-1.2
	0.9nm,0.9s,baz=45,slow=1.9,SNR=6.6							
BAIF	**Baives**	**146.21**	**342**	*e*PKP1		PKPbc	00 11 38.7	+1.6
	3.6nm,0.7s							
CDF	**Champ du Feu**	**146.64**	**338**	*e*PKP1		PKPbc	00 11 39.9	+1.8
	2.6nm,0.5s							
MEZF	**Maizieres J'vi**	**147.32**	**340**	*e*PKP1		PKPdf	00 11 42.2	+4.6
	2.5nm,0.5s							
CABF	**La Chapelle**	**148.59**	**337**	*e*PKP1		PKPdf	00 11 45.6	+5.9
	3.0nm,0.6s							
FLN	**La Foliniere**	**148.60**	**347**	*e*PKP1		PKPdf	00 11 44.7	+5.1
	3.7nm,0.5s							
LOR	**Lormes**	**148.79**	**340**	*e*PKP1		PKPdf	00 11 45.6	+5.6
	2.6nm,0.5s							
GRR	**Gorron**	**149.04**	**347**	*e*PKP1		PKPdf	00 11 45.9	+5.6
	2.9nm,0.4s							
SSF	**Saint Saulge**	**149.09**	**340**	*e*PKP1		PKPdf	00 11 46.4	+5.9
	2.2nm,0.5s							
LPL	**La Plagne**	**149.25**	**335**	*e*PKP1		PKPdf	00 11 47.3	+6.5
LPG	**La Plagne**	**149.26**	**335**	*e*PKP1		PKPdf	00 11 47.5	+6.7
SGMF	**Saint Gilles**	**149.51**	**349**	*e*PKP1		PKPdf	00 11 46.9	+5.8
	3.8nm,0.6s							
ROSF	**Rostrenen**	**149.56**	**350**	*e*PKP1		PKPdf	00 11 46.8	+5.6
	3.4nm,0.5s							
QUIF	**Quistinic**	**149.94**	**349**	*e*PKP1		PKPdf	00 11 47.7	+5.9
ORIF	**Oris-en-Rattie**	**150.09**	**335**	*e*PKP1		PKPdf	00 11 49.0	+6.9
	2.1nm,0.5s							
TCF	**Toulx Ste Croi**	**150.18**	**341**	*e*PKP1		PKPdf	00 11 48.8	+6.6
SBF	**Sospel**	**150.30**	**332**	*e*PKP1		PKPdf	00 11 51.1	+8.6
PGF	**Pioggiola**	**150.59**	**329**	*e*PKP1		PKPdf	00 11 50.0	+7.0
	23nm,0.9s							
SMRF	**Simiane la Rot**	**150.99**	**335**	*e*PKP1		PKPdf	00 11 51.2	+7.7
LMR	**La Mourre**	**151.12**	**333**	*e*PKP1		PKPdf	00 11 50.8	+7.1

*IDC **29** 23:57:45.7±1.2, 34.97N×138.84E, mb3.5/4, mb1 3.7/5, mb1mx3.4/23, ML3.4/1, MS4.0/1, Ms1 4.0/1, ms1mx3.5/29, Error ellipse: s-maj=42.5km s-min=21.3km az=75.0*
*JMA **29** 23:57:55.8±0.4, 34.26N×141.29E, h28km±4km, M2.6*

ISC 29 23:57:52.5±2.0, 34.20N±0.07×141.6E±0.2, h36km±21km, n10, σ0s97/14, mb3.6/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
BSO1	**Boso 1**	**0.69**	**311**	P		**P**	**23 58 05.5**	**-0.2**
BSO1				S		**S**	**23 58 12.1**	**-3.2**
BSO3	**Boso 3**	**1.08**	**304**	P		**P**	**23 58 11.9**	**+0.5**
BSO3				S		**S**	**23 58 23.9**	**-1.5**
BSO4	**Boso 4**	**1.31**	**307**	Pn		**P**	**23 58 15.6**	**+1.0**
BSO4				S		**S**	**23 58 27.0**	**-4.1**
JHJ	**Hachijo jima 2**	**1.86**	**235**	Pn		**P**	**23 58 22.0**	**-0.6**
	30nm,0.3s,baz=83,slow=17,SNR=9.9							
JHJ				Sn		**S**	**23 58 45.9**	**+0.8**
	82nm,0.3s,baz=86,slow=22,SNR=12							
JIM2	**Oshima 3**	**1.87**	**287**	P		**P**	**23 58 22.5**	**-0.1**
MAT	**Matsushiro**	**3.63**	**311**	P		**P**	**23 58 48.5**	**+0.8**
MAT				S		**S**	**23 59 31.1**	**+1.2**
JNU	**Nakatsue**	**9.01**	**266**	LR		LR	00 01 50.3	
	comp=Z,1μm,19.5s,baz=230,slow=36							
ILAR	**Eielson Array**	**51.82**	**31**	P		**P**	**00 06 58.9**	**+0.3**
	0.5nm,0.7s,mb3.6,baz=257,slow=6.0,SNR=5.3							
WRA	**Warramunga Arr**	**54.28**	**188**	P		**P**	**00 07 17.0**	**-0.6**
	0.4nm,0.4s,mb3.7,baz=6.9,slow=7.6,SNR=4.3							
ASAR	**Alice Springs**	**58.01**	**188**	P		**P**	**00 07 43.7**	**-0.5**
	0.2nm,0.5s,mb3.4,baz=7.6,slow=6.0,SNR=3.8							

*NEIC **30** 00:21:15.7±0.9, 34.05N×141.79E, h10km, Error ellipse: s-maj=27.0km s-min=13.9km az=59.0*
*JMA **30** 00:21:16.0±0.3, 34.17N×141.89E, h33km±4km, M3.0*
*IDC **30** 00:21:19.9±4.0, 34.05N×141.75E, h40km±36km, mb3.3/5, mb1 3.6/6, mb1mx3.4/22, ML3.7/1, Error ellipse: s-maj=33.1km s-min=21.4km az=74.0*

ISC 30 00:21:16.5±2.3, 34.14N±0.05×141.86E±0.07, h32km±18km, n16, σ0s69/25, mb3.5/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
BSO1	**Boso 1**	**0.89**	**306**	P		**Pn**	**00 21 32.4**	**-0.5**
BSO1				S		**Sn**	**00 21 44.1**	**-0.7**
BSO3	**Boso 3**	**1.29**	**301**	P		**Pn**	**00 21 38.0**	**+0.1**
BSO3				S		**Sn**	**00 21 55.9**	**+0.9**
BSO4	**Boso 4**	**1.52**	**305**	P		**Pn**	**00 21 42.3**	**+0.5**
BSO4				S		**Sn**	**00 22 00.9**	**+0.3**
JHJ2	**Mitsune**	**1.98**	**240**	P		**Pn**	**00 21 49.5**	**+1.0**
JHJ2				S		**Sn**	**00 22 12.9**	**+0.4**
JHJ	**Hachijo jima 2**	**2.00**	**240**	Pn		**Pn**	**00 21 48.9**	**0.0**
	49nm,0.3s,baz=61,slow=10,SNR=24							
JHJ				Sn		**Sn**	**00 22 12.9**	**-0.1**
	72nm,0.3s,baz=244,slow=23,SNR=13							
JOD2	**Odawara 2**	**2.54**	**297**	P		**Pn**	**00 21 55.8**	**-0.7**
MAJO	**Matsushiro**	**3.83**	**310**	*e*Pn		**Pn**	**00 22 14.8**	**0.0**
MAJO				*e*Sn		**Sn**	**00 22 59.3**	**0.0**
MAT	**Matsushiro**	**3.83**	**310**	P		**Pn**	**00 22 14.7**	**-0.1**
MAT				S		**Sn**	**00 22 58.3**	**-1.0**
MAT	**Matsushiro**	**3.83**	**310**	*e*P		**Pn**	**00 22 15.0**	**+0.2**
MAT				*e*S		**Sn**	**00 22 58.0**	**-1.3**
CBIJ	**Chichi jima**	**7.03**	**178**	Pn		**Pn**	**00 22 59.4**	**-0.6**
	4.5nm,0.3s,baz=259,slow=22,SNR=4.2							
CBIJ				Sn		**Sn**	**00 24 15.1**	**-4.5**
	3.1nm,0.3s,baz=215,slow=20,SNR=2.8							
SONM	**Songino Array**	**29.78**	**308**	P		**P**	**00 27 23.1**	**+0.7**
	0.5nm,0.7s,mb3.4,baz=98,slow=7.9,SNR=4.3							
MKAR	**Makanchi Array**	**46.01**	**305**	P		**P**	**00 29 38.2**	**-0.3**
	0.3nm,0.6s,mb3.4,baz=90,slow=8.6,SNR=3.5							
MKAR	**Makanchi Array**	**46.01**	**305**	P		**P**	**00 29 38.2**	**-0.3**
ILAR	**Eielson Array**	**51.77**	**31**	P		**P**	**00 30 23.9**	**+1.0**
	0.3nm,0.7s,mb3.3,baz=263,slow=6.1,SNR=4.0							
WRA	**Warramunga Arr**	**54.25**	**189**	P		**P**	**00 30 40.1**	**-1.7**
	0.3nm,0.3s,mb3.7,baz=4.0,slow=7.4,SNR=4.1							
ASAR	**Alice Springs**	**57.98**	**189**	P		**P**	**00 31 09.1**	**+0.6**
	1.0nm,1.1s,mb3.8,baz=14,slow=10.0,SNR=4.3							

*BJI **30** 00:23:51.1, 28.71N×139.71E, h484km, mb4.5*
*NEIC **30** 00:23:53.0±0.8, 28.85N×139.61E, h473km±8km, mb4.3/9, Error ellipse: s-maj=12.6km s-min=7.7km az=85.0*
*JMA **30** 00:23:52.8±0.1, 28.94N×139.96E, h473km, M4.0*
*IDC **30** 00:23:52.3±0.6, 28.84N×139.66E, h462km±7km, mb3.2/14, mb1 3.4/18, mb1mx3.3/26, Error ellipse: s-maj=16.3km s-min=9.2km az=75.0*

ISC 30 00:23:51.6±0.3, 28.81N±0.04×139.65E±0.08, h473km±4km, n58, σ0s96/67, mb4.0/29, 2C-2D, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
CBIJ	**Chichi jima**	**2.82**	**127**	P		**P**	**00 24 59.6**	**-0.1**
	150nm,0.3s,baz=44,slow=3.2,SNR=80							
CBIJ				S		**S**	**00 25 53.1**	**-0.5**
	232nm,0.3s,baz=274,slow=22,SNR=18							
CBIJ	**Chichi jima**	**2.82**	**127**	P		**P**	**00 24 59.8**	**+0.1**
CBIJ				S		**S**	**00 25 52.0**	**-1.6**
JHHJ	**Haha-jima-NKT**	**3.12**	**133**	P		**P**	**00 25 02.4**	**+0.5**
JHHJ				S		**S**	**00 25 57.9**	**+0.4**
JHJ2	**Mitsune**	**4.29**	**2**	P		**P**	**00 25 11.7**	**+0.3**
JHJ2				S		**S**	**00 25 33.3**	**-1.3**
JHJ	**Hachijo jima 2**	**4.30**	**2**	P		**P**	**00 25 11.9**	**+0.5**
	95nm,0.3s,baz=58,slow=21,SNR=16							
JHJ				S		**S**	**00 26 13.2**	**-1.4**
	18nm,0.3s,baz=64,slow=23,SNR=3.2							
JWZ	**Kozaga**	**5.79**	**325**	P		**P**	**00 25 26.8**	**+1.1**
JIE	**Ise**	**6.11**	**336**	P		**P**	**00 25 30.6**	**+1.8**
JKN	**Kiinagashima**	**6.15**	**333**	P		**P**	**00 25 30.4**	**+1.2**
JKN				S		**S**	**00 26 47.3**	**+0.9**
HMMJ	**Hamamatsu 2**	**6.25**	**345**	P		**P**	**00 25 30.7**	**+0.4**
JOD2	**Odawara 2**	**6.45**	**356**	P		**P**	**00 25 33.0**	**+0.6**
JNY	**Yasuok**	**6.71**	**347**	P		**P**	**00 25 35.4**	**+0.5**
JAO	**Obara**	**6.75**	**343**	P		**P**	**00 25 37.4**	**+2.0**
JHJ	**Hanno**	**7.03**	**358**	P		**P**	**00 25 37.1**	**-1.2**
JHJ				S		**S**	**00 26 10.5**	**-2.4**
JRY	**Ryogami san**	**7.22**	**355**	P		**P**	**00 25 39.9**	**-0.4**
JAG	**Ashikaga**	**7.60**	**359**	P		**P**	**00 25 43.0**	**-1.3**
MAJO	**Matsushiro**	**7.81**	**351**	*e*P		**P**	**00 25 46.0**	**-0.6**
	26nm,0.6s							
MAT	**Matsushiro**	**7.81**	**351**	P		**P**	**00 25 45.4**	**-1.2**
MAT				S		**S**	**00 27 20.0**	**+2.2**
MAT	**Matsushiro**	**7.81**	**351**	P		**P**	**00 25 46.2**	**-0.4**
MAT	**Matsushiro**	**7.81**	**351**	*e*P		**P**	**00 25 45.0**	**-1.6**
	22nm,0.8s							
MAT				*e*S		**S**	**00 27 20.0**	**+2.2**
JNU	**Nakatsue**	**8.67**	**302**	P		**P**	**00 25 57.2**	**+1.3**
	1.2nm,0.3s,baz=145,slow=3.0,SNR=9.2							
JOW	**Kunigami**	**10.26**	**262**	P		**P**	**00 26 13.1**	**0.0**
	12nm,0.3s,baz=227,slow=18,SNR=34							
KS15	**Wonju Array Si**	**13.08**	**314**	P		**P**	**00 26 42.1**	**-0.9**
WHN	**Wuhan**	**22.04**	**281**	⇑P		**P**	**00 28 11.5**	**+0.3**
BJT	**Baijiatuau**	**22.30**	**306**	P		**P**	**00 28 11.1**	**-2.5**
	8.3nm,0.7s,mb4.4							
ENH	**Enshi**	**26.25**	**281**	*e*P		**P**	**00 28 48.1**	**-1.0**
	41nm,0.7s,mb5.0							
XAN	**Xi'an**	**26.68**	**289**	P		**P**	**00 28 52.5**	**-0.4**
XAN				AMB		AMB		
	comp=Z,21nm,0.5s,mb4.8							
GYA	**Guiyang**	**29.27**	**273**	⇓P		**P**	**00 29 15.3**	**-0.3**
GYA				AMB		AMB		
	comp=Z,10.0nm,0.6s,mb4.4							
ULN	**Ulaanbaatar**	**31.54**	**316**	*e*P		**P**	**00 29 35.5**	**+0.6**
	comp=Z,3.3nm,0.5s,mb4.0							
SONM	**Songino Array**	**31.93**	**316**	P		**P**	**00 29 38.7**	**+0.4**
	comp=Z,2.7nm,0.4s,mb4.0,baz=125,slow=8.3,SNR=50							
GTA	**Gaotai**	**34.39**	**299**	*e*P		**P**	**00 29 59.0**	**0.0**
GTA				AMB		AMB		
	comp=Z,8.0nm,0.8s,mb4.2							
CMAR	**Chiang Mai Arr**	**38.52**	**264**	P		**P**	**00 30 33.8**	**+0.3**
	comp=Z,1.6nm,0.7s,mb3.6,baz=46,slow=9.9,SNR=8.6							
LSA	**Lhasa**	**42.08**	**283**	P		**P**	**00 31 03.6**	**+1.5**
	comp=Z,4.6nm,0.6s,mb4.1							
ZAL	**Zalesovo**	**46.74**	**318**	P		**P**	**00 31 37.0**	**-1.1**
	comp=Z,1.6nm,0.9s,mb3.5,baz=283,slow=8.5,SNR=5.0							
PKI	**Pulchoki**	**47.47**	**282**	*e*P		**P**	**00 31 43.5**	**-0.6**
	comp=Z,9.8nm,0.5s,mb4.5							
KKN	**Kakani**	**47.52**	**282**	*e*P		**P**	**00 31 43.1**	**-1.4**
	comp=Z,8.9nm,0.4s,mb4.5							
MKAR	**Makanchi Array**	**47.66**	**308**	P		**P**	**00 31 45.0**	**-0.3**
	comp=Z,2.5nm,0.4s,mb3.9,baz=93,slow=9.0,SNR=31							
MKAR				ScP			00 36 13.6	
	comp=Z,0.4nm,0.6s,baz=87,slow=4.6,SNR=6.3							
DMN	**Daman**	**47.72**	**282**	*e*P		**P**	**00 31 46.0**	**0.0**
	comp=Z,14nm,0.4s,mb4.6							
GKN	**Gorkha**	**48.02**	**283**	*e*P		**P**	**00 31 48.4**	**+0.1**
	comp=Z,15nm,0.6s,mb4.5							
FITZ	**Fitzroy Crossi**	**48.56**	**198**	⇓*i*P		**P**	**00 31 52.9**	**+0.5**
	comp=Z,11nm,1.5s,mb4.0							
FITZ	**Fitzroy Crossi**	**48.56**	**198**	P		**P**	**00 31 52.5**	**+0.1**
	comp=Z,6.7nm,0.9s,mb4.0,baz=7.8,slow=9.8,SNR=9.4							
WRAB	**Tennant Creek**	**48.72**	**187**	*e*P		**P**	**00 31 53.4**	**-0.3**
	comp=Z,7.9nm,0.5s,mb4.3							
WB2	**Warramunga Arr**	**48.73**	**187**	⇑*i*P		**P**	**00 31 53.5**	**-0.2**
WRA	**Warramunga Arr**	**48.73**	**187**	P		**P**	**00 31 53.4**	**-0.3**
	comp=Z,4.8nm,0.5s,mb4.1,baz=3.1,slow=7.8,SNR=42							
KOLN	**Koldanda**	**48.97**	**283**	*e*P		**P**	**00 31 55.5**	**+0.1**
	comp=Z,17nm,0.8s,mb4.4							
KURK	**Kurchatov**	**50.19**	**314**	*e*P		**P**	**00 32 03.4**	**-0.8**
AS12	**Alice Springs**	**52.46**	**187**	*e*P		**P**	**00 32 20.8**	**-0.4**
	comp=Z,11nm,1.5s,mb4.0							
ASAR	**Alice Springs**	**52.46**	**187**	P		**P**	**00 32 21.4**	**+0.2**
	comp=Z,1.5nm,0.6s,mb3.5,baz=16,slow=13,SNR=18							
BRVK	**Borovoye**	**55.33**	**317**	*e*P		**P**	**00 32 39.7**	**-1.5**
ARU	**Arti**	**61.70**	**321**	*e*P		**P**	**00 33 23.3**	**-0.8**
	comp=Z,3.7nm,0.5s,mb4.1							
ARCES	**ARCESS Array B**	**71.19**	**340**	P		**P**	**00 34 23.2**	**+0.7**
	comp=Z,0.5nm,0.4s,mb3.4,baz=67,slow=8.3,SNR=14							
YKA	**Yellowknife Ar**	**71.70**	**28**	P		**P**	**00 34 26.7**	**+1.2**
	comp=Z,0.2nm,0.3s,mb3.1,baz=299,slow=6.1,SNR=5.4							
JOF	**Joensuu**	**72.55**	**333**	*e*p		**P**	**00 34 30.5**	**+0.1**
	comp=Z,0.6nm,0.3s,mb3.6							
FINES	**FINESS Array B**	**75.42**	**333**	P		**P**	**00 34 47.1**	**+0.4**
	comp=Z,1.0nm,0.3s,mb3.8,baz=73,slow=5.0,SNR=40							
NB2	**NORSAR Subarra**	**81.19**	**337**	P		**P**	**00 35 17.7**	**+0.3**
	comp=Z,0.8nm,0.7s,mb3.4,baz=46,slow=5.0							
NOA	**NORSAR Array B**	**81.19**	**337**	P		**P**	**00 35 17.8**	**+0.4**
	comp=Z,0.2nm,0.6s,baz=56,slow=4.1,SNR=3.2							
NVAR	**Mina Array Bea**	**81.21**	**51**	P		**P**	**00 35 19.6**	**+1.5**
	comp=Z,1.2nm,0.8s,mb3.5,baz=270,slow=5.4,SNR=3.5							
BRTR	**Keskin Array B**	**83.20**	**312**	P		**P**	**00 35 29.0**	**+1.0**
	comp=Z,0.5nm,0.5s,mb3.3,baz=104,slow=3.5,SNR=4.7							
GERES	**GERESS Array B**	**88.88**	**328**	P		**P**	**00 35 55.4**	**+0.2**
	comp=Z,0.2nm,0.5s,mb3.2,baz=14,slow=4.0,SNR=3.3							

ISC 30 00:24:08.6±2.2, 39.02N±0.07×26.8E±0.2, h4km±14km, n7, σ0s54/10, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
KDAG	**Bornova**	**0.72**	**148**	*i* P		**Pg**	**00 24 22.6**	**-0.5**
KDAG				*i* S		**Sg**	**00 24 33.1**	**+0.4**
IZM	**Izmir**	**0.73**	**148**	*e*PN		**Pn**	**00 24 19.7**	**-5.6**
AKS	**Akhisar**	**0.82**	**99**	*e*PN		**Pn**	**00 24 26.3**	**-0.4**
BALB	**Balikesir**	**1.06**	**54**	*e*PN		**Pn**	**00 24 30.4**	**+0.4**
MANT	**Manisa**	**1.49**	**110**	*i* P		**Pn**	**00 24 35.4**	**-0.8**
MANT				*i* S		**Sb**	**00 24 56.0**	**+0.3**
DST	**Dursunbey**	**1.55**	**67**	*e*P		**Pn**	**00 24 37.1**	**0.0**
AYDN	**Tasoluk**	**1.61**	**147**	*i* P		**Pn**	**00 24 39.0**	**+1.0**
AYDN				*i* S		**Sb**	**00 24 58.6**	**-0.5**

*IDC **30** 00:26:30.6±0.5, 52.57S×18.17E, mb4.4/12, mb1 4.5/12, mb1mx4.3/18, MS4.2/6, Ms1 4.2/6, ms1mx3.9/22, Error ellipse: s-maj=22.8km s-min=16.8km az=59.0*
*NEIC **30** 00:26:32.3±0.3, 52.54S×18.22E, h10km, mb4.7/16, Error ellipse: s-maj=13.6km s-min=7.3km az=89.0*
*SYO **30** 00:26:32.3, 52.545S×18.22E, h10km, MB4.7*

ISC 30 00:26:31.4±0.4, 52.60S±0.06×18.2E±0.2, h10km, n72, σ1s24/42, mb4.6/23, MS4.1/6, 4C-2D, Southwest of Africa

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

OHCM	**Honcut**	**149.42**	**261**	*e*PKPbc	PKPdf	00 46 20.8	+2.3
WVOR	**Wild Horse Val**	**149.55**	**268**	*e*PKPdf	PKPdf	00 46 16.2	-2.4
WVOR				*e*PKPbc	PKPdf	00 46 22.4	+3.8
WVOR				*e*PKPab	PKPab	00 46 29.0	+1.6
WALA	**Waterton Lakes**	**149.98**	**283**	*e*PKPbc	PKPdf	00 46 20.5	+1.4
MOD	**Modoc**	**150.26**	**266**	*e*PKPdf	PKPdf	00 46 17.6	-2.2
MOD				*e*PKPbc	PKPdf	00 46 23.6	+3.9
WDC	**Whiskeytown Da**	**150.83**	**261**	*e*PKPbc	PKPdf	00 46 23.1	+2.5
YBH	**Yreka Blue Hor**	**151.62**	**263**	PKP	PKPdf	00 46 20.8	-0.9
	1.8nm,1.0s,baz=185,slow=2.7,SNR=3.1						
YBH				PKPbc	PKPdf	00 46 26.0	+4.3
	1.5nm,0.9s,baz=39,slow=8.8,SNR=2.5						
YBH				PKPab	PKPab	00 46 33.0	-3.0
	2.7nm,0.8s,baz=114,slow=8.8,SNR=5.8						
YKA	**Yellowknife Ar**	**153.41**	**310**	PKPbc	PKPdf	00 46 28.5	+4.9
	2.5nm,0.9s,baz=90,slow=2.2,SNR=36						
YKA				PKPab	PKPab	00 46 41.4	-1.5
	2.4nm,0.8s,baz=93,slow=5.0,SNR=16						
YKW3	**Yellowknife Ar**	**153.42**	**311**	*e*PKPbc	PKPdf	00 46 27.7	+4.1
INK	**Inuvik**	**159.28**	**330**	PKPab	PKPab	00 47 07.8	0.0
	3.0nm,0.9s,baz=51,slow=5.6,SNR=6.3						
ILAR	**Eielson Array**	**165.60**	**334**	PKPab	PKPab	00 47 35.3	0.0
	2.8nm,0.8s,baz=2.1,slow=4.1,SNR=29						

NEIC ***30*** *00:35:00.6±0.9,52.31S×18.06E,h10km, Error ellipse: s-maj=32.0km s-min=19.8km az=102.0*
IDC ***30*** *00:35:00.3±1.3,52.82S×17.88E,mb3.8/2,mb1 4.1/2, mb1mx3.6/14, Error ellipse: s-maj=94.4km s-min=41.4km az=15.0*

ISC 30 00:34:59.1±1.7, 52.3S±0.2×17.8E±0.4, h10km, n12, σ0§85/6, mb3.6/3, Southwest of Africa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SNAA	**Sanae**	**21.52**	**198**	*e*P	**P**	**00 39 49.2**	**-0.8**
VNA2	**Neumayer--Watz**	**21.90**	**202**	*e*P	**P**	**00 39 54.9**	**+1.1**
VNA2				*e*		00 40 04.6	
VNA3	**Neumayer Olymp**	**22.66**	**203**	*e*P	**P**	**00 40 00.8**	**-0.3**
VNA3				*e*		00 40 10.4	
TRQA	**Tornquist**	**55.25**	**251**	P	**P**	**00 44 34.8**	**+0.4**
	0.1nm,0.6s,mb3.0						
CPUP	**Villa Florida**	**60.71**	**264**	P	**P**	**00 45 12.6**	**-0.4**
	1.5nm,0.7s,mb4.2,baz=157,slow=7.7,SNR=2.8						
ASAR	**Alice Springs**	**86.14**	**124**	P	**P**	**00 47 41.5**	**+0.1**
	0.2nm,0.5s,mb3.6,baz=203,slow=5.6,SNR=4.5						
BW06	**Boulder Array**	**143.96**	**276**	*e*PKPdf	PKPdf	00 54 34.4	-2.6
PDAR	**Pinedale Array**	**143.96**	**276**	PKP	PKPdf	00 54 34.9	-2.1
	1.4nm,0.5s,baz=127,slow=4.7,SNR=13						
HWUT	**Hardware Ranch**	**144.53**	**273**	*e*PKPdf	PKPdf	00 54 37.0	-1.1
NVAR	**Mina Array Bea**	**146.76**	**263**	PKPbc	PKPbc	00 54 45.0	+4.6
	2.1nm,0.8s,baz=127,slow=4.5,SNR=6.1						
YKA	**Yellowknife Ar**	**153.04**	**311**	PKPbc	PKPdf	00 54 58.0	+7.1
	0.2nm,0.7s,baz=87,slow=2.7,SNR=6.3						
YKA				PKPab	PKPab	00 55 11.4	+2.3
	0.4nm,0.7s,baz=93,slow=5.2,SNR=8.7						
YKA	**Yellowknife Ar**	**153.04**	**311**	PKPbc	PKPdf	00 54 58.0	+7.1
YKA				PKPab	PKPab	00 55 11.4	+2.3

IDC ***30*** *00:39:09.2±0.6,52.61S×18.06E,mb4.4/11,mb1 4.5/11, mb1mx4.3/17,MS4.1/6,Ms1 4.1/6,ms1mx3.8/23, Error ellipse: s-maj=25.2km s-min=17.9km az=50.0*
NEIC ***30*** *00:39:10.5±0.3,52.47S×18.19E,h10km,mb4.5/5, Error ellipse: s-maj=12.7km s-min=7.5km az=94.0*

ISC 30 00:39:09.0±0.5, 52.48S±0.07×18.1E±0.2, h10km, n45, σ0§92/26, mb4.4/13, MS4.0/6, 1C-2D, Southwest of Africa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SUR	**Sutherland**	**20.19**	**7**	P	**P**	**00 43 48.4**	**+1.9**
	26nm,1.3s,baz=296,slow=2.2,SNR=3.1						
SUR				S	**S**	**00 47 20.3**	**-7.4**
	6.2nm,0.9s,baz=359,slow=16,SNR=2.0						
SUR				LR	LR	00 49 38.0	
	comp=Z,466nm,20.2s,MS3.8,baz=169,slow=31						
SUR	**Sutherland**	**20.19**	**7**	P	**P**	**00 43 45.8**	**-0.7**
	35nm,1.0s						
SUR				S	**S**	**00 47 20.3**	**-7.4**
SUR				LR	LR	00 49 38.0	
SNAA	**Sanae**	**21.36**	**198**	*e*P	**P**	**00 43 57.5**	**-0.7**
VNA2	**Neumayer--Watz**	**21.76**	**202**	⇑*i*P	**P**	**00 44 03.8**	**+1.5**
VNA2				*e*		00 44 16.8	
VNA1	**Neumayer--Stat**	**21.78**	**203**	*e*	**P**	**00 44 11.2**	**+8.7**
VNA1	**Neumayer--Stat**	**21.78**	**203**	⇓*i*P	**P**	**00 44 03.7**	**+1.2**
VNA1				*e*		00 44 11.2	
VNA3	**Neumayer Olymp**	**22.52**	**203**	*e*	**P**	**00 44 18.8**	**+9.1**
VNA3	**Neumayer Olymp**	**22.52**	**203**	⇓*i*P	**P**	**00 44 11.5**	**+1.8**
VNA3				*e*		00 44 18.8	
MAW	**Mawson**	**26.22**	**142**	P	**P**	**00 44 45.0**	**-0.3**
	28nm,1.1s,mb4.7,baz=289,slow=9.4,SNR=13						
MAW				LR	LR	00 53 36.3	
	comp=Z,254nm,19.8s,MS3.8,baz=154,slow=33						
LBTB	**Lobatse**	**28.02**	**15**	*e*P	**P**	**00 45 01.5**	**-0.6**
	0.3nm,0.6s						
TSUM	**Tsumeb**	**33.22**	**359**	LR	LR	00 57 23.0	
	comp=Z,222nm,19.0s,MS3.9,baz=136,slow=33						
QSPA	**South Pole Qui**	**37.75**	**180**	*e*P	**P**	**00 46 26.1**	**0.0**
	19nm,0.8s,mb4.9						
USHA	**Ushuaia**	**48.17**	**231**	P	**P**	**00 47 50.5**	**-0.4**
	5.5nm,0.9s,mb4.6,baz=309,slow=11,SNR=3.7						
VNDA	**Vanda**	**48.32**	**170**	P	**P**	**00 47 51.2**	**-0.5**
	3.6nm,0.9s,mb4.4,baz=242,slow=8.4,SNR=12						
VNDA				LR	LR	01 07 09.1	
	comp=Z,272nm,19.4s,MS4.2,baz=301,slow=35						
VNDA	**Vanda**	**48.32**	**170**	P	**P**	**00 47 51.2**	**-0.6**
VNDA				LR	LR	01 07 09.1	
SBA	**Scott Base**	**48.50**	**172**	*e*P	**P**	**00 47 52.6**	**-0.6**
	9.7nm,1.0s,mb4.8						
KMBO	**Kilima Mbogo**	**53.63**	**24**	LR	LR	01 08 33.8	
	comp=Z,184nm,20.6s,MS4.1,baz=100,slow=33						
TRQA	**Tornquist**	**55.31**	**251**	*e*P	**P**	**00 48 43.6**	**-1.2**
	1.1nm,1.1s,mb3.8						
CPUP	**Villa Florida**	**60.83**	**264**	P	**P**	**00 49 22.5**	**-1.2**
	5.6nm,0.7s,mb4.8,baz=147,slow=5.3,SNR=13						
DBIC	**Dimbokro**	**62.08**	**334**	P	**P**	**00 49 31.8**	**-0.5**
	2.2nm,0.7s,mb4.4,baz=244,slow=11,SNR=3.3						
BDFB	**Brasilia**	**63.20**	**279**	P	**P**	**00 49 39.8**	**+0.2**
	3.6nm,0.9s,mb4.5,baz=227,slow=4.0,SNR=4.6						
LPAZ	**La Paz**	**74.97**	**263**	P	**P**	**00 50 53.0**	**+0.9**
	1.3nm,0.6s,mb4.0,baz=103,slow=6.3,SNR=7.8						
LPAZ				LR	LR	01 18 57.2	
	comp=Z,108nm,19.1s,MS4.2,baz=199,slow=32						
LPAZ	**La Paz**	**74.97**	**263**	*e*P	**P**	**00 50 52.9**	**+0.7**
	2.1nm,1.1s,mb4.0						
LPAZ				LR	LR	01 18 57.2	
STKA	**Stephens Creek**	**82.62**	**134**	P	**P**	**00 51 33.4**	**-0.1**
	3.8nm,0.9s,mb4.4,baz=239,slow=7.4,SNR=4.5						
ASAR	**Alice Springs**	**85.90**	**124**	P	**P**	**00 51 50.5**	**+0.2**
	1.5nm,0.7s,mb4.3,baz=206,slow=4.5,SNR=20						
ESDC	**Sonseca Array**	**93.76**	**343**	P	**P**	**00 52 28.8**	**+1.9**
	0.3nm,0.7s,mb3.9,baz=148,slow=4.5,SNR=4.1						
ARCES	**ARCESS Array B**	**121.83**	**3**	PKP	PKPdf	00 58 03.0	-2.3
	2.8nm,0.8s,slow=2.4,SNR=8.2						
SONM	**Songino Array**	**124.93**	**55**	PKP	PKPdf	00 58 09.2	-2.5
	0.7nm,0.7s,baz=212,slow=2.0,SNR=6.3						
TXAR	**Lajitas Array**	**131.80**	**265**	PKP	PKPdf	00 58 24.4	-1.0
	0.9nm,1.0s,baz=162,slow=4.0,SNR=5.5						
PDAR	**Pinedale Array**	**144.12**	**276**	PKP	PKPdf	00 58 43.3	-3.9
	7.9nm,0.6s,baz=123,slow=5.3,SNR=75						
TIXI	**Tiksi**	**145.01**	**31**	*e*PKPdf	PKPdf	00 58 45.4	-2.5
AHID	**Auburn Hatcher**	**145.06**	**275**	*e*PKPdf	PKPdf	00 58 46.9	-2.0
BGU	**Big Grassy Mou**	**145.18**	**270**	*e*PKPdf	PKPdf	00 58 47.6	-1.5
BGU				*e*		00 58 53.0	
FFC	**Flin Flon**	**145.30**	**298**	*e*PKPdf	PKPdf	00 58 48.2	-0.6
FFC				*e*		00 58 54.8	
TPH	**Tonopah**	**145.99**	**263**	*e*PKPab	PKPab	00 58 50.7	-0.2
TPH				*e*		00 58 56.8	
NVAR	**Mina Array Bea**	**146.87**	**263**	PKPbc	PKPbc	00 58 53.1	+2.5
	12nm,0.7s,baz=128,slow=5.0,SNR=45						
BOZ	**Bozeman (W)**	**146.92**	**279**	*e*PKPbc	PKPbc	00 58 52.5	+2.0
HLID	**Hailey**	**147.52**	**273**	*e*PKPbc	PKPdf	00 58 54.9	+1.9
CHMT	**Chamberlain Mo**	**148.53**	**280**	*e*PKPbc	PKPdf	00 58 57.0	+2.6
MSO	**Missoula**	**148.90**	**279**	*e*PKPbc	PKPdf	00 58 57.6	+2.5
MSO				*e*		00 59 04.6	
WVOR	**Wild Horse Val**	**149.48**	**268**	*e*PKPbc	PKPdf	00 59 00.2	+4.1
WVOR				*e*		00 59 07.3	
MOD	**Modoc**	**150.19**	**266**	*e*PKPbc	PKPdf	00 59 01.4	+4.2
MOD				*e*PKPab	PKPab	00 59 07.4	-0.3
YBH	**Yreka Blue Hor**	**151.56**	**264**	PKPbc	PKPdf	00 59 02.4	+3.1
	1.6nm,0.9s,baz=120,slow=6.0,SNR=3.9						
YKA	**Yellowknife Ar**	**153.28**	**311**	PKPbc	PKPdf	00 59 06.8	+5.7
	2.2nm,0.9s,baz=88,slow=2.4,SNR=31						
YKA				PKPab	PKPab	00 59 20.0	+0.1
	1.8nm,0.7s,baz=96,slow=5.0,SNR=16						
ILAR	**Eielson Array**	**165.46**	**334**	PKPab	PKPab	01 00 13.7	+1.3
	2.7nm,0.8s,baz=12,slow=3.6,SNR=30						

IDC ***30*** *00:55:13.7±7.8, 19.06S×177.97W,h567km±82km, mb2.7/4, mb1 3.1/4,mb1mx2.9/14, Error ellipse: s-maj=105.0km s-min=35.7km az=150.0*
NEIC ***30*** *00:55:15.5±4.2, 19.11S×178.04W,h591km±47km, mb4.1/2, Error ellipse: s-maj=69.5km s-min=19.8km az=154.0*

ISC 30 00:55:14.5±1.8, 19.1S±0.6×178.1W±0.4, h591km, n12, σ0§17/8, mb3.5/6, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRAB	**Tennant Creek**	**44.70**	**261**	P	**P**	**01 02 37.7**	**-0.3**
WRA	**Warramunga Arr**	**44.70**	**261**	P	**P**	**01 02 38.1**	**+0.1**
	0.7nm,0.8s,mb3.2,baz=97,slow=8.4,SNR=4.2						
ASAR	**Alice Springs**	**44.76**	**255**	P	**P**	**01 02 38.5**	**+0.2**
	0.7nm,0.5s,mb3.4,baz=88,slow=7.7,SNR=18						
ASAR				PcP	PcP	01 04 07.7	-0.1
	0.2nm,0.4s,baz=111,slow=4.6,SNR=3.4						
ASAR	**Alice Springs**	**44.76**	**255**	P	**P**	**01 02 38.5**	**+0.2**
ASAR				PcP	PcP	01 04 07.7	-0.1
TPH	**Tonopah**	**80.58**	**44**	*e*P	**P**	**01 06 27.5**	**0.0**
	3.5nm,0.7s,mb3.9						
TXAR	**Lajitas Array**	**86.38**	**57**	P	**P**	**01 06 56.5**	**0.0**
	0.3nm,0.8s,mb3.0,baz=214,slow=6.5,SNR=3.7						
COLA	**College**	**86.83**	**12**	P	**P**	**01 06 58.0**	**+0.2**
	3.0nm,0.5s,mb4.3						
ILAR	**Eielson Array**	**86.94**	**13**	P	**P**	**01 06 58.1**	**-0.2**
	0.3nm,0.6s,mb3.2,baz=229,slow=5.4,SNR=7.9						
BVAR	**Borovoye Array**	**117.91**	**321**	PKP	PKPdf	01 12 55.2	+0.8
	0.3nm,0.4s,baz=120,slow=5.6,SNR=4.1						
ARCES	**ARCESS Array B**	**127.49**	**350**	PKP	PKPdf	01 13 13.6	+1.0
	1.5nm,1.0s,baz=34,slow=4.4,SNR=6.6						
BRTR	**Keskin Array B**	**145.78**	**314**	PKPbc	PKPbc	01 13 50.6	+2.6
	0.4nm,0.5s,baz=108,slow=4.6,SNR=4.3						
GERES	**GERESS Array B**	**148.79**	**345**	PKPbc	PKPdf	01 13 57.5	+6.5
	0.4nm,0.5s,baz=27,slow=2.2,SNR=7.8						

NEIC ***30*** *01:14:28.7±3.1,6.44S×152.49E,h44km±24km, mb4.5/3, Error ellipse: s-maj=30.9km s-min=14.3km az=106.0*
IDC ***30*** *01:14:30.5±6.3,6.45S×152.43E,h60km±52km, mb3.9/8, mb1 4.1/9,mb1mx3.9/16,ML3.5/1,MS3.2/2,Ms1 3.2/2, ms1mx3.0/17, Error ellipse: s-maj=47.6km s-min=26.3km az=106.0*

ISC 30 01:14:29.1±4.6, 6.4S±0.2×152.4E±0.2, h59km±36km, n16, σ0§60/19, mb4.1/9,2D, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**5.94**	**240**	P	**P**	**01 15 57.6**	**+1.2**
	8.2nm,0.3s,baz=57,slow=8.2,SNR=14						
PMG				S	**S**	**01 17 03.2**	**-0.6**
	5.4nm,0.3s,baz=201,slow=3.0,SNR=4.1						
PMG				LR	LR	01 17 50.5	
	comp=Z,143nm,21.2s,baz=295,slow=33						
PMG	**Port Moresby**	**5.94**	**240**	*e*Pn	**P**	**01 15 55.7**	**-0.7**
PMG				Sn	**S**	**01 16 58.9**	**-5.0**
PMG				S	**S**	**01 17 03.2**	**-0.6**
PMG				LR	LR	01 17 50.5	
KAKA	**Kakadu**	**20.63**	**251**	*e*P	**P**	**01 19 05.6**	**-0.6**
	12nm,0.4s						
WRAB	**Tennant Creek**	**22.05**	**231**	*e*P	**P**	**01 19 20.0**	**-0.3**
	3.1nm,0.5s,mb4.0						
WB2	**Warramunga Arr**	**22.05**	**231**	⇓*i*P	**P**	**01 19 21.0**	**+0.7**
WRA	**Warramunga Arr**	**22.06**	**231**	P	**P**	**01 19 21.0**	**+0.6**
	4.6nm,0.8s,mb4.0,baz=56,slow=9.7,SNR=13						
AS12	**Alice Springs**	**24.67**	**224**	*e*P	**P**	**01 19 46.9**	**+1.0**
	36nm,1.9s,mb4.6						
ASAR	**Alice Springs**	**24.67**	**224**	P	**P**	**01 19 46.5**	**+0.6**
	6.2nm,0.7s,mb4.3,baz=60,slow=8.9,SNR=38						
STKA	**Stephens Creek**	**27.24**	**200**	P	**P**	**01 20 09.3**	**-0.5**
	11nm,1.4s,mb4.2,baz=4.1,slow=14,SNR=2.5						
STKA	**Stephens Creek**	**27.24**	**200**	P	**P**	**01 20 09.3**	**-0.5**
FITZ	**Fitzroy Crossi**	**28.52**	**244**	⇓*i*P	**P**	**01 20 21.0**	**-0.4**
	8.7nm,0.5s,mb4.7						
FITZ	**Fitzroy Crossi**	**28.52**	**244**	P	**P**	**01 20 21.1**	**-0.3**
	9.6nm,0.5s,mb4.8,baz=59,slow=5.5,SNR=35						
SONM	**Songino Array**	**67.46**	**328**	P	**P**	**01 25 21.5**	**+0.7**
	0.8nm,0.8s,mb3.8,baz=135,slow=5.2,SNR=6.0						
MKAR	**Makanchi Array**	**81.26**	**319**	P	**P**	**01 26 40.5**	**0.0**
	2.5nm,1.1s,mb4.1,baz=90,slow=4.9,SNR=9.7						
ILAR	**Eielson Array**	**83.82**	**22**	P	**P**	**01 26 52.4**	**-0.7**
	0.6nm,0.6s,mb3.9,baz=248,slow=5.5,SNR=7.4						
BVAR	**Borovoye Array**	**90.27**	**323**	P	**P**	**01 27 24.5**	**-0.2**
	0.5nm,0.8s,mb3.9,baz=90,slow=5.9,SNR=4.0						

NEIC ***30*** *01:22:21.6,36.46N×7.74W,h13km,MG3.3(MDD), After MDD.*
MDD ***30*** *01:22:21.6±1.2,36.45N×7.77W,h19km±5km,mbLg2.4/5, Error ellipse: s-maj=10.0km s-min=5.9km az=34.0, PRXIMO*
INMG ***30*** *01:22:22.0±0.9,36.42N×7.83W,h20km±8km,ML2.3, Error ellipse: s-maj=6.9km s-min=2.7km az=39.0*

ISC 30 01:22:22.3±0.8, 36.69N±0.05×7.62W±0.04, h19km, n49, σ1§25/88, 3C-3D, Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ERIP	**Rio Piedras**	**0.75**	**23**	⇓Pg	**Pb**	**01 22 40.0**	**+3.5**
	10nm,0.1s,SNR=18						
ERIP				Lg		01 22 53.4	
	58nm,0.1s,SNR=7.9						
PALC	**Alcoutim**	**0.79**	**8**	*e*P	**Pb**	**01 22 40.5**	**+3.3**
PALC				*e*S	**Sb**	**01 22 54.5**	**+7.1**
	67nm,0.2s						
PALC	**Alcoutim**	**0.79**	**8**	P	**Pb**	**01 22 40.5**	**+3.3**
PALC				S	**Sb**	**01 22 54.5**	**+7.1**
	34nm,0.2s						
EGRO	**El Granado**	**0.85**	**7**	⇓Pg	**Pb**	**01 22 41.3**	**+3.0**
	3.1nm,0.1s,SNR=18						
EGRO				Lg		01 22 55.4	
	44nm,0.2s,SNR=7.9						
EGRO	**El Granado**	**0.85**	**7**	⇓P	**Pb**	**01 22 41.4**	**+3.0**
EGRO				S	**Sb**	**01 22 55.7**	**+6.4**
PTEO	**Sao Teotonio**	**1.23**	**315**	*e*P	**Pn**	**01 22 43.6**	**-1.1**
PTEO				*e*S	**Sb**	**01 23 00.2**	**0.0**
	22nm,0.2s						
PTEO	**Sao Teotonio**	**1.23**	**315**	P	**Pn**	**01 22 43.6**	**-1.1**
PTEO				S	**Sb**	**01 23 00.2**	**0.0**
	11nm,0.2s						
EMIN	**Mina Concepcio**	**1.32**	**35**	Pn	**Pn**	**01 22 47.5**	**+1.6**
	0.3nm,0.1s,SNR=7.9						
EMIN				Sn	**Sn**	**01 23 06.5**	**+3.4**
	3.6nm,0.1s,SNR=7.9						
PBEJ	**Beja**	**1.35**	**352**	*e*P	**Pn**	**01 22 47.5**	**+1.0**
PBEJ				*e*S	**Sb**	**01 23 06.7**	**+3.0**
	12nm,0.2s						
PBEJ	**Beja**	**1.35**	**352**	P	**Pn**	**01 22 47.5**	**+1.0**
PBEJ				S	**Sb**	**01 23 06.7**	**+3.0**
	5.8nm,0.2s						
ESPR	**Espera**	**1.43**	**82**	⇑Pn	**Pn**	**01 22 47.5**	**-0.1**
	4.0nm,0.1s,SNR=18						
ESPR				Sn	**Sn**	**01 23 06.3**	**+0.4**
	58nm,0.3s,SNR=7.9						
ESPR	**Espera**	**1.43**	**82**	⇑P	**Pn**	**01 22 47.5**	**-0.1**
ESPR				S	**Sn**	**01 23 06.3**	**+0.4**
EJIF	**Jimena Fronter**	**1.75**	**97**	Pn	**Pn**	**01 22 51.8**	**-0.4**
	3.2nm,0.2s,SNR=7.0						
EJIF	**Jimena Fronter**	**1.75**	**97**	P	**Pn**	**01 22 51.7**	**-0.5**
EJIF				S	**Sn**	**01 23 14.5**	**+0.4**
ELIJ	**Sierra de Lija**	**1.81**	**82**	P	**Pn**	**01 22 54.5**	**+1.5**
MOE	**Montemor**	**1.92**	**343**	*e*Pn	**Pn**	**01 22 55.3**	**+0.7**
MOE				*e*Sn	**Sn**	**01 23 19.9**	**+1.4**
EBAD	**Badajoz**	**2.12**	**13**	Pn	**Pn**	**01 22 58.5**	**+1.0**
	0.5nm,0.1s,SNR=15						
EBAD				Sn	**Sn**	**01 23 26.6**	**+3.0**
	4.7nm,0.1s,SNR=7.9						
EBAD	**Badajoz**	**2.12**	**13**	P	**Pn**	**01 22 58.5**	**+1.0**
EBAD				S	**Sn**	**01 23 26.5**	**+3.0**
ELOJ	**Sierra Loja**	**2.82**	**80**	Sn	**Sn**	**01 23 42.0**	**+0.7**
	0.7nm,0.2s,SNR=4.0						
ELUQ	**Luque**	**2.82**	**71**	Pn	**Pn**	**01 23 08.3**	**+0.9**
	0.9nm,0.2s,SNR=7.9						
ELUQ				Sn	**Sn**	**01 23 40.3**	**-0.9**
	1.4nm,0.2s,SNR=7.9						
ELUQ	**Luque**	**2.82**	**71**	P	**Pn**	**01 23 08.3**	**+0.9**
ELUQ				S	**Sn**	**01 23 42.0**	**+0.7**
EADA	**Adamuz**	**2.84**	**58**	Pn	**Pn**	**01 23 07.8**	**+0.1**
	0.2nm,0.1s,SNR=8.8						
EADA				Sn	**Sn**	**01 23 41.4**	**-0.4**
	2.1nm,0.1s						
EADA	**Adamuz**	**2.84**	**58**	P	**Pn**	**01 23 08.3**	**+0.6**
EADA				S	**Sn**	**01 23 42.9**	**+1.1**
PTOM	**Tomar**	**2.99**	**348**	*i* Pn	**Pn**	**01 23 10.2**	**+0.3**
PTOM				*e*Sn	**Sn**	**01 23 45.3**	**-0.3**
	7.0nm,0.2s						
PTOM	**Tomar**	**2.99**	**348**	⇑Pn	**Pn**	**01 23 10.2**	**+0.3**
PTOM				Sn	**Sn**	**01 23 45.3**	**-0.3**
	3.5nm,0.2s						
PCBR	**Castelo Branco**	**3.15**	**2**	*e*Pn	**Pn**	**01 23 12.6**	**+0.4**
PCBR				*e*Sn	**Sn**	**01 23 50.2**	**+0.5**
	4.7nm,0.2s						
PCBR	**Castelo Branco**	**3.15**	**2**	Pn	**Pn**	**01 23 12.6**	**+0.4**
PCBR				Sn	**Sn**	**01 23 50.2**	**+0.5**
	2.3nm,0.2s						
MTE	**Manteigas**	**3.71**	**1**	*e*Pn	**Pn**	**01 23 20.1**	**0.0**
MTE				*e*Sn	**Sn**	**01 24 03.6**	**-0.2**
	3.8nm,0.3s						
MTE	**Manteigas**	**3.71**	**1**	Pn	**Pn**	**01 23 20.1**	**0.0**
MTE				Sn	**Sn**	**01 24 03.6**	**-0.2**
	1.9nm,0.3s						
EQES	**Quesada**	**3.80**	**72**	Pn	**Pn**	**01 23 20.5**	**-0.8**
	0.3nm,0.1s,SNR=7.9						
EQES				Sn	**Sn**	**01 24 04.6**	**-1.4**
	0.7nm,0.1s,SNR=7.9						
EQES	**Quesada**	**3.80**	**72**	P	**Pn**	**01 23 21.1**	**-0.3**
EQES				S	**Sn**	**01 24 04.8**	**-1.2**
PVIS	**Viseu**	**4.03**	**357**	*e*Pn	**Pn**	**01 23 24.6**	**0.0**
PVIS				*e*Sn	**Sn**	**01 24 10.6**	**-1.3**
	2.4nm,0.2s						
PVIS	**Viseu**	**4.03**	**357**	Pn	**Pn**	**01 23 24.6**	**0.0**
PVIS				Sn	**Sn**	**01 24 10.6**	**-1.3**
	1.2nm,0.2s						
EHUE	**Huescar**	**4.17**	**73**	Pn	**Pn**	**01 23 25.9**	**-0.7**
	1.1nm,0.2s,SNR=8.2						
EHUE				Sn	**Sn**	**01 24 13.0**	**-2.3**
	0.4nm,0.2s,SNR=5.0						
EHUE	**Huescar**	**4.17**	**73**	P	**Pn**	**01 23 25.9**	**-0.7**
EHUE				S	**Sn**	**01 24 13.7**	**-1.7**
EVIA	**Vianos**	**4.50**	**63**	Sn	**Sn**	**01 24 23.5**	**-0.4**
	0.6nm,0.1s,SNR=7.9						
PVRL	**Vila Real**	**4.58**	**359**	*e*Pn	**Pn**	**01 23 32.3**	**-0.2**
PVRL				*e*Sn	**Sn**	**01 24 24.2**	**-1.7**
	4.1nm,0.1s						
PVRL	**Vila Real**	**4.58**	**359**	Pn	**Pn**	**01 23 32.3**	**-0.2**
PVRL				Sn	**Sn**	**01 24 24.2**	**-1.7**
	2.0nm,0.1s						
GUD	**Guadarrama**	**4.79**	**33**	Sn	**Sn**	**01 24 31.6**	**+0.4**
	0.3nm,0.1s,SNR=4.0						
PBRG	**Braganca**	**5.16**	**7**	*e*Sn	**Sn**	**01 24 38.8**	**-1.5**
	3.8nm,0.1s						
PBRG	**Braganca**	**5.16**	**7**	Sn	**Sn**	**01 24 38.8**	**-1.5**
	1.9nm,0.1s						
ELOB	**Lobios**	**5.19**	**356**	Pn	**Pn**	**01 23 40.1**	**-0.9**
	0.6nm,0.1s,SNR=7.9						
ELOB				Sn	**Sn**	**01 24 39.3**	**-1.8**
	0.7nm,0.1s,SNR=7.9						
ELOB	**Lobios**	**5.19**	**356**	P	**Pn**	**01 23 40.0**	**-1.0**
ELOB				S	**Sn**	**01 24 39.3**	**-1.8**
ETOB	**Tobarra**	**5.20**	**66**	Pn	**Pn**	**01 23 38.9**	**-2.3**
	0.5nm,0.2s,SNR=7.9						
ETOB				Sn	**Sn**	**01 24 36.5**	**-4.9**
	0.2nm,0.2s,SNR=7.9						
ETOB	**Tobarra**	**5.20**	**66**	P	**Pn**	**01 23 39.2**	**-2.0**
ETOB				S	**Sn**	**01 24 37.0**	**-4.4**
EMUR	**La Murta**	**5.22**	**75**	Sn	**Sn**	**01 24 38.1**	**-3.8**
	0.9nm,0.4s,SNR=7.9						
ECAL	**Calabor**	**5.29**	**7**	Pn	**Pn**	**01

TBKS	Tabuk	15.11	241	P		P		01 46 13.9	+0.8
JMQS	Jabal Moqyreh	15.21	245	P		P		01 46 16.0	+1.6
EIL	Elat	15.48	249	P		P		01 46 15.9	-2.0
EIL				*e*				01 47 47.0	
JMOS	Jabal al Moall	15.62	247	P		P		01 46 23.2	+3.5
HAQS	Haql	15.82	247	P		P		01 46 24.8	+2.6
KK31	Karatay Array	15.98	60	⇓P		P		01 46 20.8	-3.4
	comp=N,2.6nm,0.5s,baz=248,slow=15,SNR=46								
KK31				⇑S		S		01 49 08.7	-12
	comp=N,1.4nm,0.5s								
BDAS	Al Bad'	16.03	245	P		P		01 46 26.6	+1.7
AYUS	'Aynumah	16.05	244	P		P		01 46 27.7	+2.5
YNBS	Yanbu' al Bahr	16.82	228	P		P		01 46 35.3	+0.4
VRSR	Storozhevoye	17.18	333	*d iP*		P		01 46 34.7	-4.5
VRSR				*e*S		S		01 49 45.7	-2.2
VRSR				pmax	pmax				
	comp=Z,10.0nm,0.9s								
VRSR				pmax	pmax				
	comp=N,50nm,1.0s								
VRSR				pmax	pmax				
	comp=E,40nm,0.9s								
VRSR				smax					
	comp=N,10.0nm,1.0s								
VRSR				smax					
	comp=Z,3.0nm,0.8s								
VRSR				smax					
	comp=E,10.0nm,0.9s								
TATS	Tathlith	18.31	205	P		P		01 46 52.9	-0.7
AAK	Ala-Archa	18.69	64	*e*P		P		01 46 59.0	+0.9
	comp=E,11nm,1.1s								
BLJS	Baljurashi	18.71	210	P		P		01 46 58.1	-0.3
FRU	Bishkek	18.82	63	*e*P		P		01 47 02.0	+2.4
LTHS	Al Lith	18.87	214	P		P		01 47 00.5	+0.1
NAMS	An Nimas	19.11	208	P		P		01 47 03.7	+0.5
ARU	Arti	20.50	11	⇓*iP*		P		01 47 16.6	-1.5
ARU				*i*				01 47 32.0	
ARU				*e*S		S		01 51 02.9	+1.7
ARU				*e*SS		SS		01 51 19.8	-12
ARU				pmax	pmax				
	comp=Z,87nm,0.8s								
ARU				MLR	MLR				
	comp=N,100nm,19.0s,MS3.3								
ARU				MLR	MLR				
	comp=Z,200nm,19.0s,MS3.5								
ARU				MLR	MLR				
	comp=E,100nm,20.0s,MS3.3								
ARU	Arti	20.50	11	*e*Pn		P		01 47 16.6	-1.5
	comp=E,81nm,0.8s								
ZRNK	Zerenda	20.52	31	⇑P		P		01 47 17.3	-1.0
	comp=E,15nm,0.8s								
ZRNK	Zerenda	20.52	31	*e*P		P		01 47 17.2	-1.1
BRVK	Borovoye	21.14	33	*e*P		P		01 47 23.9	-0.7
BVA0	Borovoye Array	21.16	33	⇓P		P		01 47 24.6	-0.3
	comp=E,4.6nm,1.1s,mb3.7								
BVAR	Borovoye Array	21.16	33	P		P		01 47 24.5	-0.3
	comp=E,16nm,0.8s,mb4.4,baz=219,slow=9.5,SNR=100								
BVAR				S		S		01 51 11.8	-2.1
	comp=E,0.3nm,0.4s,baz=92,slow=40,SNR=2.6								
BVAR				LR		LR		01 57 19.2	
	comp=E,131nm,18.8s,MS3.3,baz=115,slow=41								
VOSK	Vostochnaya	21.21	34	⇓P		P		01 47 24.8	-0.6
	comp=E,32nm,0.9s,mb4.6								
MLR	Muntele Rosu	21.25	303	P		P		01 47 27.5	+1.6
OBN	Obninsk	21.27	336	*e*P		P		01 47 25.5	-0.5
OBN				pmax	pmax				
	comp=Z,27nm,1.3s,mb4.4								
OBN				MLR	MLR				
	comp=Z,100nm,17.0s,MS3.3								
OBN	Obninsk	21.27	336	*e*P		P		01 47 25.2	-0.8
	comp=Z,7.0nm,0.6s,mb4.2								
OBN				*e*				01 47 33.2	
MOS	Moscow	21.46	338	*e*P		P		01 47 27.6	-0.3
MOS				*e*				01 47 44.2	
MOS				*e*				01 51 19.1	
MOS				*e*				01 51 52.0	
MOS				*e*				01 52 06.9	
MOS				pmax	pmax				
	comp=Z,91nm,0.8s,mb5.2								
IDI	Anoyia	21.62	275	P		P		01 47 31.1	+1.4
	comp=Z,27nm,1.2s,mb4.5,baz=109,slow=7.1,SNR=6.5								
KURK	Kurchatov	24.04	45	⇓P		P		01 47 55.4	+2.2
	comp=Z,14nm,1.1s,mb4.3,baz=250,slow=6.8,SNR=16								
KURK	Kurchatov	24.04	45	*e*P		P		01 47 55.6	+2.3
KWP	Kalwaria	24.66	311	*e*P		P		01 48 01.2	+1.9
	comp=Z,7.0nm,0.9s,mb4.2								
MK31	Makanchi Array	25.02	56	⇓P		P		01 48 04.1	+1.3
	comp=Z,13nm,1.0s,mb4.4,baz=251,slow=6.2,SNR=45								
MKAR	Makanchi Array	25.02	56	P		P		01 48 04.0	+1.2
	comp=Z,12nm,1.1s,mb4.3,baz=248,slow=6.5,SNR=34								
MKAR				LR		LR		01 58 53.9	
	comp=Z,54nm,21.7s,MS3.0,baz=44,slow=39								
MKAR	Makanchi Array	25.02	56	P		P		01 48 04.0	+1.2
MKAR				pmax	pmax				
	comp=Z,12nm,1.1s								
MKAR				MLR	MLR				
	comp=Z,54nm,21.7s								
PSZ	Piszkesteto	25.91	306	*e*P		P		01 48 11.5	+0.5
NIE	Niedzica	26.06	310	*e*P		P		01 48 22.8	+10
SUW	Suwalki	26.31	321	*e*P		P		01 48 17.8	+3.1
OJC	Ojcow	26.63	311	*e*P		P		01 48 20.9	+3.2
ZAL	Zalesovo	28.83	42	P		P		01 48 37.3	-0.3
	comp=Z,1.7nm,0.5s,mb4.1,baz=160,slow=5.1,SNR=6.9								
ZAL	Zalesovo	28.83	42	P		P		01 48 37.3	-0.3
ZAL				pmax	pmax				
	comp=Z,2.0nm,0.5s								
FINES	FINESS Array B	29.68	335	P		P		01 48 46.2	+1.0
	comp=Z,1.4nm,1.0s,mb3.6,baz=162,slow=12,SNR=7.2								
FINES	FINESS Array B	29.68	335	P		P		01 48 46.2	+1.0
FINES				pmax	pmax				
	comp=Z,1.0nm,1.0s								
FINES	FINESS Array B	29.68	335	P		P		01 48 46.1	+1.0
GERES	GERESS Array B	30.14	306	P		P		01 48 49.7	+0.4
	comp=Z,1.6nm,0.9s,mb3.8,baz=106,slow=9.7,SNR=16								
GERES	GERESS Array B	30.14	306	P		P		01 48 49.7	+0.4
GERES				pmax	pmax				
	comp=Z,2.0nm,0.9s								
BRG	Berggiesshubel	30.40	310	*e*P		P		01 48 53.1	+1.5
BRG				pmax	pmax				
	comp=Z,6.0nm,1.6s,mb4.1								
BRG	Berggiesshubel	30.40	310	*e*PKP		P		01 48 53.1	+1.5
	comp=Z,6.0nm,1.6s,mb4.1								
CLL	Collm	31.08	311	P		P		01 48 59.0	+1.4
CLL				*i* *SP		sP		01 49 05.5	-3.1
CLL	Collm	31.08	311	*e*PKP		P		01 48 53.0	-4.6
CLL				*i* PKP		P		01 49 05.5	+7.9
CLL				LR		LR			
	comp=Z,300nm,17.5s,MS4.0								
DAVOX	Davos	32.46	302	P		P		01 49 10.0	+0.3
	comp=Z,5.9nm,0.8s,mb4.5,baz=114,slow=6.8,SNR=8.0								
PGF	Pioggiola	33.12	294	*e*P		P		01 49 15.3	-0.2
	comp=Z,40nm,1.5s,mb4.8								
SBF	Sospel	34.18	296	*e*P		P		01 49 24.8	+0.1
	comp=Z,48nm,1.3s,mb5.0								
CDF	Champ du Feu	34.32	304	*e*P		P		01 49 24.8	-1.1
	comp=Z,10.0nm,1.3s,mb4.3								
HINF	Hinteralfeld	34.57	303	*e*P		P		01 49 26.9	-1.1
LPG	La Plagne	34.61	299	*e*P		P		01 49 28.4	0.0
	comp=Z,7.7nm,0.7s,mb4.4								
MBDF	Montbardon	34.62	298	*e*P		P		01 49 28.4	-0.1
	comp=Z,11nm,0.7s,mb4.6								
LPL	La Plagne	34.62	299	*e*P		P		01 49 28.4	-0.1
	comp=Z,6.4nm,0.8s,mb4.3								
BNI	Bardonecchia	34.67	298	*e*P		P		01 49 29.0	0.0
FRF	La Foret Royal	34.77	296	*e*P		P		01 49 29.5	-0.3
	comp=Z,23nm,1.2s,mb4.7								
LMR	La Mourre	34.88	295	*e*P		P		01 49 30.2	-0.6
	comp=Z,8.3nm,1.0s,mb4.3								
HAU	Haudompre	34.92	304	*e*P		P		01 49 30.1	-0.9
	comp=Z,8.9nm,1.0s,mb4.3								
CABF	La Chapelle	35.07	301	*e*P		P		01 49 32.6	+0.3
	comp=Z,47nm,1.0s,mb5.1								
NB2	NORSAR Subarra	35.30	327	P		P		01 49 32.3	-1.8
	comp=Z,2.1nm,1.1s,mb4.0,baz=117,slow=8.6								
NOA	NORSAR Array B	35.30	327	P		P		01 49 35.0	+0.9
	comp=Z,0.5nm,0.7s,mb3.6,baz=118,slow=8.0,SNR=3.4								
NOA	NORSAR Array B	35.30	327	P		P		01 49 35.0	+0.9
NOA				pmax	pmax				
	comp=Z,1.0nm,0.7s								
MEZF	Maizieres J'vi	35.80	304	*e*P		P		01 49 38.6	+0.1
ARCES	ARCESS Array B	36.01	345	P		P		01 49 40.3	+0.2
	comp=Z,1.9nm,0.9s,mb4.0,baz=135,slow=5.1,SNR=5.3								
ARCES				LR		LR		02 09 28.0	
	comp=Z,65nm,19.0s,MS3.4,baz=336,slow=44								
GIVF	Givet	36.04	307	*e*P		P		01 49 41.8	+1.3
VIVF	Saint-Julien-l	36.10	298	*e*P		P		01 49 40.5	-0.6
	comp=Z,21nm,1.5s,mb4.5								
BAIF	Baives	36.43	307	*e*P		P		01 49 45.3	+1.5
	comp=Z,15nm,1.1s,mb4.6								
LOR	Lormes	36.59	302	*e*P		P		01 49 44.7	-0.5
	comp=Z,20nm,1.2s,mb4.5								
SMF	Signal de Mont	36.61	301	*e*P		P		01 49 45.3	-0.1
	comp=Z,18nm,1.1s,mb4.5								
LASF	Ste Croix	36.74	297	*e*P		P		01 49 46.2	-0.3
	comp=Z,34nm,1.4s,mb4.7								
SSF	Saint Saulge	36.83	302	*e*P		P		01 49 47.0	-0.2
BGF	Bois d'Agland	37.30	301	*e*P		P		01 49 51.0	-0.1
HYF	Humbligny	37.42	302	*e*P		P		01 49 52.7	+0.6
TCF	Toulx Ste Croi	37.75	301	*e*P		P		01 49 55.4	+0.5
	comp=Z,9.4nm,0.9s,mb4.2								
CAF	Calviac	37.95	299	*e*P		P		01 49 56.1	-0.5
	comp=Z,3.5nm,0.7s,mb3.9								
MTLF	Montolieu	38.00	296	*e*P		P		01 49 56.8	-0.3
	comp=Z,6.7nm,1.0s,mb4.0								
RJF	Les Rejaudoux	38.30	299	*e*P		P		01 50 00.2	+0.6
	comp=Z,10nm,0.9s,mb4.3								
LFF	La Frestale	38.88	299	*e*P		P		01 50 04.6	+0.1
	comp=Z,8.1nm,0.7s,mb4.3								
MFF	Saint Martin d	39.36	301	*e*P		P		01 50 08.2	-0.2
	comp=Z,24nm,1.1s,mb4.5								
FLN	La Foliniere	39.47	305	*e*P		P		01 50 09.2	-0.1
	comp=Z,9.2nm,1.1s,mb4.1								
KMBO	Kilima Mbogo	39.72	203	LR		LR		02 07 14.4	
	comp=Z,146nm,19.3s,MS3.8,baz=276,slow=37								
GRR	Gorron	39.74	304	*e*P		P		01 50 11.4	-0.1
	comp=Z,25nm,1.1s,mb4.6								
EBEN	Beniarda	40.64	289	P		P		01 50 19.9	+0.8
	comp=Z,2.0nm,0.6s,mb3.9								
SGMF	Saint Gilles	40.88	304	*e*P		P		01 50 21.1	+0.2
	comp=Z,14nm,0.8s,mb4.3								
QUIF	Quistinic	41.31	304	*e*P		P		01 50 24.4	0.0
	comp=Z,20nm,0.8s,mb4.5								
ROSF	Rostrenen	41.35	304	*e*P		P		01 50 24.9	+0.2
	comp=Z,24nm,0.9s,mb4.5								
SONM	Songino Array	41.39	56	P		P		01 50 26.5	+1.4
	comp=Z,0.6nm,0.9s,mb3.2,baz=304,slow=4.5,SNR=4.3								
ETOB	Tobarra	41.66	290	P		P		01 50 26.7	-0.7
	comp=Z,2.4nm,0.7s,mb3.9								
ULN	Ulaanbaatar	41.83	56	*e*P		P		01 50 27.9	-0.7
	comp=Z,4.2nm,0.9s,mb4.1								
EVIA	Vianos	42.39	290	P		P		01 50 32.9	-0.5
	comp=Z,2.7nm,0.6s,mb4.0								
EHUE	Huescar	42.67	289	P		P		01 50 35.9	+0.2
	comp=Z,0.8nm,0.6s,mb3.6								
EQES	Quesada	43.04	289	P		P		01 50 37.7	-0.9
	comp=Z,1.4nm,0.6s,mb3.9								
GUD	Guadarrama	43.15	293	P		P		01 50 38.7	-0.8
ESDC	Sonseca Array	43.23	292	P		P		01 50 40.1	-0.2
	comp=Z,4.1nm,0.7s,mb4.3,baz=68,slow=8.2,SNR=20								
ESDC	Sonseca Array	43.23	292	P		P		01 50 39.7	-0.5
	comp=Z,0.1nm,0.6s								
ERON	Agron	43.82	288	P		P		01 50 44.1	-0.9
ELOJ	Sierra Loja	44.05	288	P		P		01 50 45.9	-1.0
CMAR	Chiang Mai Arr	45.23	100	P		P		01 50 56.7	+0.1
	comp=Z,1.0nm,0.6s,mb3.8,baz=306,slow=7.8,SNR=3.5								
CMAR	Chiang Mai Arr	45.23	100	P		P		01 50 56.7	+0.1
CMAR				pmax	pmax				
	comp=Z,1.0nm,0.6s								
BOD	Bodaibo	45.60	42	*e*P		P		01 50 55.1	-3.9
ELOB	Lobios	45.73	296	P		P		01 50 57.9	-2.3
EBAD	Badajoz	45.76	291	P		P		01 50 58.5	-2.0
	comp=Z,0.5nm,0.4s,mb3.8								
EMIN	Mina Concepcio	45.79	290	P		P		01 51 00.3	-0.4
	comp=Z,0.4nm,0.5s,mb3.6								
DBIC	Dimbokro	59.26	254	P		P		01 52 39.5	-2.0
	comp=Z,3.7nm,0.9s,mb4.4,baz=120,slow=8.6,SNR=3.4								
DBIC	Dimbokro	59.26	254	P		P		01 52 39.5	-1.9
DBIC				pmax	pmax				
	comp=Z,4.0nm,0.9s								
KIC	Kosan Boka	59.36	254	*e*PKP2		P		01 52 39.9	-2.3
	comp=Z,229nm,2.0s								
TIC	Toumodi	59.40	254	*e*PKP2		P		01 52 38.5	-3.9
	comp=Z,133nm,1.6s								
LIC	Lamto	59.67	254	*e*PKP2		P		01 52 39.2	-5.1
	comp=Z,74nm,1.5s								
COLA	College	77.83	8	*e*P		P		01 54 37.4	+1.7
	comp=Z,5.6nm,0.9s,mb4.5								
ILAR	Eielson Array	78.04	8	P		P		01 54 37.8	+1.0
	comp=Z,0.9nm,0.9s,mb3.7,baz=336,slow=4.8,SNR=8.2								
ILAR	Eielson Array	78.04	8	P		P		01 54 37.8	+1.0
ILAR				pmax	pmax				
	comp=Z,1.0nm,0.9s								
YKA	Yellowknife Ar	80.73	354	P		P		01 54 51.6	+0.2
	comp=Z,0.6nm,0.9s,mb3.5,baz=5.6,slow=6.5,SNR=13								
YKA	Yellowknife Ar	80.73	354	P		P		01 54 51.6	+0.2
YKA				pmax	pmax				
	comp=Z,1.0nm,0.9s								

NEIC ***30*** *01:47:32.9±3.8,57.42S×25.58W,h84km±34km, mb3.8/1, Error ellipse: s-maj=50.1km s-min=17.4km az=61.0*

IDC ***30*** *01:47:34.5±15.0,57.47S×25.80W,h94km±127km, mb3.6/3, mb1 3.7/3, mb1mx3.6/12, Error ellipse: s-maj=105.0km s-min=26.7km az=68.0*

ISC 30 01:47:33.0±1.7, 57.4S±0.3×2 6W±, h100km, n11, σ0°44/6, mb3.8/3, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
SNAA	Sanae	17.09	155	*e*P		P	01 51 26.3	-0.2
BDFB	Brasilia	45.03	329	P		P	01 55 40.4	+0.2
	1.6nm,0.7s,mb3.9,baz=352,slow=19,SNR=3.1							
VNDA	Vanda	45.22	182	P		P	01 55 41.1	+0.2
	1.1nm,0.7s,mb3.7,baz=192,slow=7.1,SNR=5.9							
VNDA	Vanda	45.22	182	*e*P		P	01 55 41.4	+0.5
LPAZ	La Paz	51.92	304	P		P	01 56 33.2	-0.2
	0.9nm,0.5s,mb4.0,baz=130,slow=6.3,SNR=10							
LPAZ	La Paz	51.92	304	*e*P		P	01 56 33.0	-0.5
	0.5nm,0.5s,mb3.8							
FINES	FINESS Array B	125.19	27	PKP		PKPdf	02 06 22.1	+1.5
	0.9nm,0.9s,baz=180,slow=1.4,SNR=5.3							
FINES				pPKP			02 06 39.6	
	0.8nm,0.8s,baz=141,slow=24,SNR=2.0							
YKA	Yellowknife Ar	137.81	316	PKP		PKPdf	02 06 45.8	+1.5
	0.7nm,0.7s,baz=133,slow=2.0,SNR=18							
YKA				pPKP			02 07 02.1	
	0.2nm,0.5s,baz=126,slow=2.3,SNR=4.7							
INK	Inuvik	147.46	319	PKPbc		PKPdf	02 07 05.1	+4.4
	1.3nm,0.6s,baz=86,slow=4.1,SNR=7.7							
INK	Inuvik	147.46	319	*e*PKPbc		PKPdf	02 07 04.5	+3.8
ILAR	Eielson Array	151.72	309	PKPbc		PKPdf	02 07 15.9	+8.5
	3.1nm,0.9s,baz=112,slow=1.0,SNR=30							

MOS ***30*** *01:55:56.8±1.0,4.51N×128.13E,h33km,mb5.4/31, MS4.5/20, Error ellipse: s-maj=15.8km s-min=7.6km az=107.4*

BJI ***30*** *01:55:57.4,4.01N×128.34E,h61km,mB5.2,mb5.2,Ms4.8, Msz4.7*

NEIC ***30*** *01:56:01.4±0.9,4.40N×128.21E,h62km±8km,mb5.2/40, Error ellipse: s-maj=6.7km s-min=4.0km az=71.0*

IDC ***30*** *01:56:01.0±1.6,4.40N×128.13E,h55km±13km,mb4.9/35, mb1 4.9/35,mb1mx4.9/36,MS4.6/26,Ms1 4.6/26, ms1mx4.5/31, Error ellipse: s-maj=13.1km s-min=7.4km az=77.0, Putative timing error at EIL*

SYO ***30*** *01:56:01.3,4.40N×128.21E,h62km,MB5.2*

HRVD ***30*** *01:56:01.4±0.2,4.62N×128.29E,h47km,MW5.4/69, Centroid moment Tensor Solution. LP body waves: s60,c96;Mantle waves: s69,c147; Half duration: 1s2 Moment tensor: Scale 10^17Nm; Mrr 1.09±.03; Mθθ 0.19±.02; Mφφ -1.28±.02; Mrθ -0.25±.02; Mθφ 0.67±.02; Mφr -0.46±.03; Best double couple: M0 1.45×10^17 NP1:φs315°,δ43°,λ53°. NP2:φs181°,δ57°,λ119°. Principal axes: T 1.31, Plg65°, Azm144°; N .27, Plg24°, Azm344°; P -1.58, Plg7°, Azm250°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 30 01:55:57.6±0.2, 4.37N±0.03×128.29E±0.03, h41km, h41km±2.5km: pP-P, n344, σ1°§16/309, mb5.2/96, MS4.6/54, 33C-16D, North of Halmahera

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
GSPH	General Santos	3.74	297	*e*P		P	01 56 54.6	+0.3
GSPH				*e*S		S	01 57 41.0	+3.3
DMPH	Davao City--Mi	3.87	314	⇓*e*P		P	01 57 00.4	+4.3
DMPH				*i* S		S	01 57 41.9	+1.1
KCP	Kidapawan	4.13	310	⇑*e*P		P	01 57 01.2	+1.4
KCP				*i* S		S	01 57 54.5	+7.1
BIPH	Bislig	4.25	333	⇓*i*P		P	01 57 02.3	+0.8
BIPH				*i* S		S	01 57 42.9	-7.7
CTBH	Cotabato--PC H	4.92	305	*e*P		P	01 57 13.1	+2.1
CTBH				*i* S		S	01 57 55.4	-12
BUTP	Butuan	5.29	330	⇑*e*P		P	01 57 19.1	+3.0
BUTP				*e*S		S	01 58 15.9	-0.7
CGP	Cagayan de Oro	5.41	319	⇓*e*P		P	01 57 20.5	+2.7
CGP				*e*S		S	01 58 16.2	-3.5
PAGZ	Pagadian	5.98	306	⇑*e*P		P	01 57 27.4	+1.6
SCPH	Surigao	6.05	333	*e*P		P	01 57 27.8	+1.0
SCPH				*e*S		S	01 58 26.5	-9.3
DCPH	Dipolog City	6.45	311	⇑*e*P		P	01 57 34.5	+2.0
MSLP	Maasin	6.66	329	⇑*e*P		P	01 57 36.0	+0.5
MSLP				*e*S		S	01 58 45.7	-5.2
ZMPH	Zamboanga City	6.71	293	*e*P		P	01 57 36.0	-0.1
TBP	Tagbilaran	6.88	321	*e*P		P	01 57 39.5	+1.1
TBP				*e*S		S	01 58 50.0	-6.3
SNPH	Sibulan	7.04	315	*e*P		P	01 57 44.0	+3.2
LLP	Lapu-Lapu	7.30	324	*e*P		P	01 57 58.6	+14
LLP				*e*S		S	01 59 02.9	-4.0
PLP	Palo	7.51	334	*e*P		P	01 57 46.5	-0.7
PLP				*e*S		S	01 59 05.5	-6.4
OCLP	Ormoc	7.58	331	⇑*e*P		P	01 57 49.0	+0.8
BESP	Borongan	7.72	339	⇑*e*P		P	01 57 52.6	+2.4
BESP				*e*S		S	01 59 07.6	-10
CNP	Catarman	8.85	336	⇑*e*P		P	01 58 06.5	+0.7
CNP				*e*S		S	01 59 35.4	-10
RCP	Roxas	9.01	323	⇑*e*P		P	01 58 09.8	+1.7
KALP	Kalibo	9.35	321	*e*P		P	01 58 15.8	+3.0
CUYO	Cuyo Island	9.66	312	⇑*e*P		P	01 58 19.5	+2.3
PVCP	Virac	10.04	336	⇑*e*P		P	01 58 23.2	+0.9
OTRP	Odiongan	10.07	322	⇑*e*P		P	01 58 25.4	+2.5
SJMP	San Jose	10.72	319	⇑*e*P		P	01 58 32.8	+1.1
BUSP	Coron	11.03	314	⇑*e*P		P	01 58 39.5	+3.7
TGY	Tagaytay City	12.09	324	P		P	01 58 52.2	+2.1
	76nm,0.3s,baz=113,slow=2.4,SNR=9.1							
TGY				LR		LR	02 04 57.0	
	comp=Z,2μm,18.3s,baz=20,slow=45							
TGY	Tagaytay City	12.09	324	P		P	01 58 52.2	+2.1
TGY				pmax	pmax			
	comp=Z,76nm,0.3s							
TGY				MLR	MLR			
	comp=Z,2μm,18.3s							
KKM	Kota Kinabalu	12.14	278	⇑*e*P		P	01 58 51.0	+0.2
BCPH	Baguio City Da	14.14	328	⇓*iP*		P	01 59 21.2	+4.0
KAKA	Kakadu	17.44	167	⇓*iP*		P	02 00 00.1	+0.5
	comp=Z,148nm,0.9s							
KAKA				*e*S		S	02 03 25.9	+16
GUMO	Guam	18.75	60	*e*P		P	02 00 15.5	-0.2
	comp=Z,232nm,1.5s							
SAPN	Saipan	20.28	57	*e*P		P	02 00 36.1	+3.5
JOW	Kunigami	22.34	360	P		P	02 00 54.8	+1.5
	comp=Z,54nm,0.7s,mb5.1,baz=188,slow=9.0,SNR=26							
JOW				S		S	02 04 53.6	+2.3
	comp=Z,2.4nm,0.3s,baz=133,slow=23,SNR=2.1							
JOW				LR		LR	02 09 04.6	
	comp=Z,3μm,20.3s,MS4.7,baz=167,slow=35							
FITZ	Fitzroy Crossi	22.48	187	⇓*iP*		P	02 00 54.4	-0.3
	comp=Z,39nm,0.9s,mb4.8							
FITZ				*e*S		S	02 04 55.8	+1.9
FITZ	Fitzroy Crossi	22.48	187	P		P	02 00 54.8	+0.1
	comp=Z,22nm,0.5s,mb4.9,baz=14,slow=8.0,SNR=39							
FITZ				S		S	02 04 58.3	+4.4
	comp=Z,13nm,0.9s,baz=197,slow=14,SNR=2.3							
FITZ				LR		LR	02 10 35.8	
	comp=Z,513nm,19.7s,MS4.0,baz=60,slow=39							
QZH	Quanzhou	22.48	336	P		P	02 00 56.5	+1.8
QZH				S		S	02 04 57.0	+3.1
QZH				AMB	AMB			
	comp=Z,100nm,1.2s,mb5.1							
QZH				LR	LR			
	comp=N,450nm,10.0s							
QZH				LR	LR			
	comp=E,1μm,18.2s							
QZH				LR	LR			
	comp=Z,2μm,24.9s							
QIZ	Qiongzhong	23.17	310	P		P	02 01 01.0	-0.6
QIZ				AP			02 01 11.8	
QIZ				XP			02 01 18.8	
QIZ				S		S	02 05 02.0	-4.3
QIZ				XS			02 05 27.3	
QIZ				AMB	AMB			
	comp=Z,107nm,1.0s,mb5.2							
QIZ				AMB	AMB			
	comp=Z,170nm,5.3s							
QIZ				LR	LR			
	comp=N,2μm,15.2s,MS4.6							
QIZ				LR	LR			
	comp=E,882nm,19.2s,MS4.6							

ASAR ScS ScS 02 12 28.0 -2.5
comp=Z,1.6nm,1.1s,baz=344,slow=6.6,SNR=4.1
ASAR PKiKP 02 12 36.3
comp=Z,0.4nm,0.4s,baz=9.7,slow=1.4,SNR=8.8
ASAR LR LR 02 14 26.7
comp=Z,925nm,19.8s,MS4.4,baz=357,slow=39
JNU Nakatsue 28.71 5 P **P 02 01 52.0 -1.2**
comp=Z,34nm,0.8s,mb5.2,baz=122,slow=2.7,SNR=27
JNU LR LR 02 12 35.7
comp=Z,2μm,20.2s,MS4.6,baz=184,slow=35
JNU Nakatsue 28.71 5 P **P 02 01 52.0 -1.2**
JNU LR LR 02 12 35.7
NJ2 Nanjing 28.93 343 *e*P **P 02 02 01.3 +6.1**
NJ2 AP pP 02 02 14.5 +8.2
NJ2 S **S 02 06 35.0 -6.5**
NJ2 AMB AMB
comp=Z,50nm,0.9s,mb5.2
NJ2 AMB AMB
comp=Z,250nm,11.2s
NJ2 LR LR
comp=N,1μm,20.7s,MS4.5
NJ2 LR LR
comp=E,770nm,24.9s,MS4.5
NJ2 LR LR
comp=Z,1μm,16.4s
WHN Wuhan 29.17 335 *e*P **P 02 01 58.0 +0.7**
NNT Nongplab 29.37 288 P **P 02 02 02.0 +2.7**
NST Nakhon Sawan 29.87 294 ⇑P **P 02 02 03.0 -0.7**
comp=Z,100nm,0.8s,mb5.6
CTA Charters Tower 30.04 145 *e*P **P 02 02 07.0 +1.9**
comp=Z,13nm,0.6s,mb4.8
CTA Charters Tower 30.04 145 P **P 02 02 06.1 +1.0**
comp=Z,15nm,0.9s,mb4.7,baz=320,slow=12,SNR=12
CTA LR LR 02 15 05.6
comp=Z,2μm,19.2s,MS4.7,baz=330,slow=38
CTA Charters Tower 30.04 145 P **P 02 02 06.1 +1.0**
CTA pmax pmax
comp=Z,15nm,0.9s
CTA MLR MLR
comp=Z,2μm,19.2s
CTAO Charters Tower 30.04 145 *e*P **P 02 02 05.5 +0.4**
comp=Z,26nm,1.1s,mb4.9
CTAO LR LR
comp=Z,2μm,21.0s,MS4.6
GYA Guiyang 30.18 319 ⇓*i*P **P 02 02 06.5 +0.2**
GYA AP pP 02 02 19.0 +1.5
GYA XP sP 02 02 23.8 +1.0
GYA PCP PcP 02 05 07.3 +0.4
GYA S **S 02 07 00.0 -1.4**
GYA SCP 02 08 43.3
GYA SCS ScS 02 12 36.5 -2.3
GYA AMB AMB
comp=Z,20nm,0.7s,mb5.0
GYA AMB AMB
comp=Z,180nm,6.0s
GYA LR LR
comp=N,1μm,18.3s,MS4.7
GYA LR LR
comp=E,1μm,18.6s,MS4.7
GYA LR LR
comp=Z,1μm,21.0s,MS4.5
JHJ Hachijo jima 2 30.55 19 LR LR 02 11 57.1
comp=Z,923nm,21.4s,MS4.4,baz=313,slow=31
ENH Enshi 31.29 328 *e*P **P 02 02 15.4 -0.8**
comp=Z,62nm,0.8s,mb5.5
BDT Bhumibol Dam 31.42 296 P **P 02 02 17.0 -0.4**
CM31 Chiang Mai Arr 31.92 298 *e*P **P 02 02 20.8 -0.9**
comp=Z,16nm,0.6s,mb5.0
CMAR Chiang Mai Arr 31.92 298 P **P 02 02 21.4 -0.4**
comp=Z,14nm,0.7s,mb4.9,baz=121,slow=7.6,SNR=72
CMAR PcP PcP 02 05 12.2 +0.6
comp=Z,4.9nm,0.9s,baz=166,slow=0.7,SNR=6.3
CMAR S **S 02 07 26.3 -2.5**
comp=Z,0.6nm,0.4s,baz=27,slow=3.2,SNR=2.9
CMAR ScP 02 08 49.5
comp=Z,4.3nm,1.1s,baz=137,slow=1.9,SNR=7.9
CMAR LR LR 02 16 18.8
comp=Z,541nm,19.3s,MS4.2,baz=105,slow=38
CMAR Chiang Mai Arr 31.92 298 P **P 02 02 21.4 -0.4**
CMAR 02 05 12.2
CMAR S **S 02 07 26.3 -2.5**
CMAR pmax pmax
comp=Z,15nm,0.7s
CMAR pmax pmax
comp=Z,5.0nm,0.9s
CMAR smax
comp=Z,1.0nm,0.4s
CMAR pmax pmax
comp=Z,4.0nm,1.1s
CMAR MLR MLR
comp=Z,541nm,19.3s
KMI Kunming 32.07 313 *e*P **P 02 02 23.0 0.0**
KMI PCP PcP 02 05 11.8 -0.1
KMI S **S 02 07 29.8 -1.3**
KMI SSS SSS 02 09 48.5 -0.6
KMI AMB AMB
comp=Z,45nm,1.3s,mb5.1
KMI LR LR
comp=N,824nm,19.5s,MS4.5
KMI LR LR
comp=E,916nm,24.5s,MS4.5
KMI LR LR
comp=Z,2μm,25.9s,MS4.6
KS15 Wonju Array Si 32.92 359 *e*P **P 02 02 29.8 -0.5**
MAJO Matsushiro 33.30 15 *e*P **P 02 02 31.9 -1.7**
comp=Z,20nm,0.8s,mb5.1
MAT Matsushiro 33.30 15 P **P 02 02 31.9 -1.7**
MAT S **S 02 07 46.0 -4.1**
MAT Matsushiro 33.30 15 *e*P **P 02 02 32.0 -1.6**
comp=Z,16nm,1.0s,mb4.9
MAT *e*S **S 02 07 46.0 -4.1**
MAT LR LR
comp=Z,2μm,20.0s,MS4.9
XAN Xi'an 34.58 331 P **P 02 02 44.5 -0.2**
XAN AMB AMB
comp=Z,93nm,1.0s,mb5.7
FORT Forrest 34.95 180 ⇓*i*P **P 02 02 47.8 0.0**
comp=Z,328nm,0.6s
CD2 Chengdu 35.08 322 P **P 02 02 48.8 -0.2**
CD2 PP PP 02 04 07.5 -0.8
CD2 S **S 02 08 17.5 -0.3**
CD2 AMB AMB
comp=Z,40nm,0.9s,mb5.3
CD2 AMB AMB
comp=Z,200nm,8.6s
CD2 LR LR
comp=E,1μm,21.5s
CD2 LR LR
comp=Z,2μm,22.3s,MS4.7
KLBR Kellerberrin 37.14 195 ⇑*i*P **P 02 03 06.5 +0.1**
comp=Z,49nm,0.6s,mb5.5
BJT Baijiatuau 37.14 345 *e*P **P 02 03 06.1 -0.2**
comp=Z,26nm,0.8s,mb5.1
BJI Beijing 37.16 345 P **P 02 03 06.3 -0.1**
BJI S **S 02 08 50.5 +0.8**
BJI AMB AMB
comp=Z,36nm,0.7s,mb5.3
BJI LR LR
comp=N,275nm,20.1s
BJI LR LR
comp=E,299nm,26.1s
BJI LR LR
comp=Z,563nm,21.4s,MS4.3
MUN Mundaring 37.93 197 ⇑*i*P **P 02 03 13.3 +0.4**
comp=Z,21nm,0.4s,mb5.2
STKA Stephens Creek 38.20 162 ⇓*i*P **P 02 03 15.5 +0.3**
comp=Z,29nm,0.4s,mb5.4
STKA Stephens Creek 38.20 162 P **P 02 03 15.2 0.0**
comp=Z,31nm,0.4s,mb5.4,baz=338,slow=8.2,SNR=91
STKA PP PP 02 04 42.6 -3.8
comp=Z,28nm,1.1s,baz=343,slow=14,SNR=2.1
STKA PcP PcP 02 05 29.8 +0.1
comp=Z,12nm,0.5s,baz=332,slow=4.2,SNR=4.1
STKA LR LR 02 20 16.4
comp=Z,1μm,19.9s,MS4.7,baz=345,slow=38
NWAO Narrogin (SRO) 38.54 195 P **P 02 03 18.8 +0.8**
comp=Z,45nm,0.8s,mb5.2,baz=22,slow=9.1,SNR=28
NWAO PcP PcP 02 05 29.8 -1.0
comp=Z,19nm,0.8s,baz=2.5,slow=5.2,SNR=2.3
NWAO LR LR 02 18 43.8
comp=Z,424nm,20.7s,MS4.2,baz=246,slow=35
NWAO Narrogin (SRO) 38.54 195 P **P 02 03 18.8 +0.8**
NWAO 02 05 29.8
NWAO pmax pmax
comp=Z,45nm,0.8s
NWAO pmax pmax
comp=Z,19nm,0.9s
NWAO MLR MLR
comp=Z,424nm,20.7s
NWAO Narrogin (SRO) 38.54 195 *e*P **P 02 03 17.0 -1.0**
comp=Z,60nm,1.0s,mb5.3
LZH Lanzhou 38.77 328 ⇓P **P 02 03 21.5 +1.6**
LZH AP pP 02 03 33.5 +2.1
LZH XP sP 02 03 39.0 +2.5
LZH PP PP 02 04 55.5 +2.6
LZH *e*S **S 02 09 14.0 -0.2**
LZH SS SS 02 11 59.5 +1.7
LZH AMB AMB
comp=Z,64nm,1.3s,mb5.2
LZH AMB AMB
comp=Z,237nm,5.1s
LZH LR LR
comp=E,837nm,12.7s
LZH LR LR
comp=Z,1μm,16.8s,MS4.8
HHC Hu-ho-hao-te 39.31 340 *e*P **P 02 03 25.5 +1.2**
HHC AP pP 02 03 37.5 +1.7
HHC XP sP 02 03 43.3 +2.4
HHC PP PP 02 04 59.8 +1.0
HHC PCP PcP 02 05 34.0 +0.9
HHC S **S 02 09 22.3 0.0**
HHC PCS 02 09 23.5
HHC SCS ScS 02 13 27.5 +0.1
HHC AMB AMB
comp=Z,22nm,1.3s,mb4.7
HHC AMB AMB
comp=Z,160nm,4.7s
HHC LR LR
comp=N,1μm,20.2s,MS4.9
HHC LR LR
comp=E,1μm,21.0s,MS4.9
HHC LR LR
comp=Z,611nm,19.6s,MS4.4
CN2 Changchun 39.35 357 *e*P **P 02 03 25.8 +1.2**
CN2 *e*AP pP 02 03 38.0 +1.9
CN2 XP sP 02 03 43.5 +2.3
CN2 PCP PcP 02 05 32.8 -0.4
CN2 *e*S **S 02 09 24.8 +1.9**
CN2 AMB AMB
comp=Z,110nm,8.0s
CN2 LR LR
comp=N,410nm,20.0s,MS4.3
CN2 LR LR
comp=E,290nm,20.0s,MS4.3
CN2 LR LR
comp=Z,370nm,21.0s,MS4.2
BTO Baotou 39.65 338 *e*P **P 02 03 26.5 -0.7**
MDJ Mudanjiang 40.10 1 *e*P **P 02 03 31.0 +0.1**
comp=Z,11nm,0.8s,mb4.6
SHL Shillong 40.77 305 *i* P **P 02 03 35.5 -1.1**
SHL *e* 02 09 35.0
ASAJ Asahikawa 41.55 16 P **P 02 03 44.4 +1.6**
comp=Z,35nm,0.8s,mb5.1,baz=218,slow=11,SNR=16
ASAJ PcP PcP 02 05 40.6 +0.3
comp=Z,14nm,0.9s,baz=86,slow=32,SNR=2.7
ASAJ LR LR 02 19 27.9
comp=Z,1μm,20.9s,MS4.8,baz=330,slow=34
ASAJ Asahikawa 41.55 16 P **P 02 03 44.4 +1.6**
ASAJ 02 05 40.6
ASAJ pmax pmax
comp=Z,35nm,0.8s
ASAJ pmax pmax
comp=Z,14nm,0.9s
LSA Lhasa 43.21 310 P **P 02 03 58.0 +1.4**
LSA Lhasa 43.21 310 *e*P **P 02 03 57.8 +1.1**
comp=Z,62nm,1.3s,mb5.2
GTA Gaotai 43.38 327 *e*P **P 02 03 58.8 +0.9**
GTA AP pP 02 04 14.3 +4.9
GTA XP sP 02 04 21.5 +7.1
GTA PP PP 02 05 41.8 +0.9
GTA PCP PcP 02 05 46.8 +0.3
GTA SCP 02 09 31.8
GTA S **S 02 10 22.0 -0.5**
GTA XS 02 10 47.5
GTA SS SS 02 13 30.5 +0.6
GTA SCS ScS 02 13 50.3 -1.5
GTA AMB AMB
comp=Z,39nm,0.5s,mb5.4
GTA AMB AMB
comp=Z,117nm,5.3s
GTA LR LR
comp=N,298nm,17.6s,MS4.3
GTA LR LR
comp=E,256nm,19.5s,MS4.3
GTA LR LR
comp=Z,413nm,21.8s,MS4.3
CNB Canberra Magne 44.16 155 ⇓*i*P **P 02 04 06.1 +1.8**
comp=Z,58nm,1.2s,mb5.2
YSS Yuzh-Sakhalins 44.23 14 ⇑*e*P **P 02 04 04.0 -0.7**
YSS *e* pP 02 04 18.2 +2.0
YSS pmax pmax
comp=Z,30nm,1.0s,mb5.0
TOO Toolangi 44.69 160 *e*P **P 02 04 10.8 +2.3**
comp=Z,16nm,0.9s,mb4.8
KLR Kul'dur 44.80 3 *e*P **P 02 04 08.2 -1.0**
HIA Hailar 45.33 352 *e*P **P 02 04 12.9 -0.5**
comp=Z,4.3nm,0.3s,mb4.8
DZM Mont Dzumac 45.65 127 *e*P **P 02 04 16.7 +0.4**
VIS Vishakhapatnam 45.94 290 *e*P **P 02 04 18.9 +0.1**
VIS *e* 02 04 20.4
comp=Z,33nm,1.0s
GUN Gumba 46.63 305 *e*P **P 02 04 24.0 0.0**
comp=Z,255nm,0.9s,mb6.2
PKI Pulchoki 46.89 304 *e*P **P 02 04 25.6 -0.4**
comp=Z,83nm,1.0s,mb5.6
ULN Ulaanbaatar 47.02 341 *e*P **P 02 04 26.6 -0.1**
comp=Z,25nm,0.6s,mb5.3
KKN Kakani 47.07 304 *e*P **P 02 04 27.0 -0.5**
comp=Z,251nm,1.3s,mb6.0
DMN Daman 47.15 304 *e*P **P 02 04 27.5 -0.6**
comp=Z,102nm,0.9s,mb5.8
SONM Songino Array 47.21 340 P **P**
comp=Z,10nm,0.6s,mb5.0,baz=155,slow=8.6,SNR=71
SONM PcP PcP 02 05 59.3 -0.3
comp=Z,15nm,0.8s,baz=154,slow=3.3,SNR=7.6
SONM S **S 02 11 13.6 -3.8**
comp=Z,1.1nm,1.2s,baz=190,slow=7.5,SNR=2.6
GKN Gorkha 47.68 304 *e*P **P 02 04 31.5 -0.8**
comp=Z,164nm,1.1s,mb6.0
KGD Kothagudem 48.42 290 *e*P **P 02 04 37.5 -0.6**
KGD *e*S **S 02 11 32.4 -2.3**
KOLN Koldanda 48.45 304 *e*P **P 02 04 37.8 -0.5**
comp=Z,300nm,1.0s,mb6.3
DANN Dangsing 48.53 304 *e*P **P 02 04 38.6 -0.2**
HYB Hyderabad 50.37 289 *i* P **P 02 04 52.0 -1.1**
HYB Hyderabad 50.37 289 *e*P **P 02 04 52.0 -1.1**
HYB *e* pP 02 05 01.0 -3.8
ZAK Zakamensk 50.46 339 *e*P **P 02 04 52.4 -1.0**
ZAK *e* 02 06 11.0
TLY Talaya 51.43 341 *e*P **P 02 05 00.1 -0.6**
TLY *e* 02 06 14.0
TLY *e*S **S 02 12 23.5 +7.4**
TLY pmax pmax
comp=Z,115nm,1.1s,mb5.7
TLY MLR MLR
comp=Z,3μm,18.0s,MS5.4
MOY Mondy 52.34 339 *e*P **P 02 05 07.9 +0.4**
CLNS Chul'man 52.39 358 *e*P **P 02 05 00.0 -7.8**
CLNS *e**PP pP 02 05 08.1 -11
CLNS *e* 02 06 15.6
CLNS pmax pmax
comp=N,4.0nm,0.9s
CLNS pmax pmax
comp=E,6.0nm,0.9s
CLNS pmax pmax
comp=Z,5.0nm,0.9s,mb4.4
CLNS pmax pmax
comp=Z,10.0nm,1.0s,mb4.7
CLNS pmax pmax
comp=N,8.0nm,0.9s
CLNS pmax pmax
comp=E,8.0nm,0.9s
CLNS MLR MLR
comp=Z,500nm,15.0s,MS4.7
CLNS MLR MLR
comp=N,400nm,16.0s,MS4.6
CLNS MLR MLR
comp=E,100nm,14.0s,MS4.6
BHPL Bhopal 52.52 296 *e*P **P 02 05 08.4 -0.8**
BHPL *e* 02 05 09.9
comp=Z,49nm,1.0s
WMQ Urumqi 53.11 324 ⇑*i*P **P 02 05 13.5 +0.1**
WMQ AP pP 02 05 26.0 +0.9
WMQ XP sP 02 05 31.5 +1.5
WMQ PCP PcP 02 06 21.3 +0.1
WMQ PP PP 02 07 15.3 +0.3
WMQ SCP 02 10 13.8
WMQ PCS 02 10 18.5
WMQ S **S 02 12 39.0 -0.2**
WMQ PS PS 02 12 55.5 +0.3
WMQ SCS ScS 02 14 55.8 -0.3
WMQ SS SS 02 16 17.8 -0.3
WMQ AMB AMB
comp=Z,19nm,1.3s,mb4.9
WMQ AMB AMB
comp=Z,141nm,7.5s
WMQ LR LR
comp=N,1μm,20.0s,MS5.3
WMQ LR LR
comp=E,3μm,19.5s,MS5.3
WMQ LR LR
comp=Z,3μm,20.2s,MS5.3
RTUL Rataul 54.02 303 *e*P **P 02 05 18.1 -2.2**
SONA Sohna 54.07 302 *e*P **P 02 05 18.9 -1.8**
AYAN Aya Nagar 54.10 302 *e*P **P 02 05 18.3 -2.6**
BOD Bodaibo 54.48 351 *e*P **P 02 05 21.3 -1.9**
KUDL Kundal 54.55 302 *e*P **P 02 05 22.4 -1.8**
KUDL *e* 02 05 50.3
comp=Z,34nm,1.1s
PET Petropavlovsk 54.55 22 *e*P **P 02 05 24.4 +0.6**
PET *e*S **S 02 13 01.4 +2.9**
PET *e*SS SS 02 16 45.0 +4.0
PET pmax pmax
comp=Z,47nm,1.0s,mb5.5
PET pmax pmax
comp=Z,174nm,17.2s
PET smax
comp=N,371nm,45.4s
PET MLR MLR
comp=Z,399nm,21.0s,MS4.5
POO Poona 54.96 289 *e*P **P 02 05 37.0 +10**
KHET Khetri 55.11 301 *e*P **P 02 05 26.4 -1.8**
AJM Ajmer 55.72 299 *e*P **P 02 05 30.0 -2.6**
AJM *e* 02 05 33.6
comp=Z,36nm,1.4s
YAK Yakutsk 57.54 1 *c i*P **P 02 05 43.0 -2.2**
YAK *e**PP pP 02 05 53.4 -3.7
YAK *e* 02 07 50.0
YAK *e*PPP PPP 02 09 13.2 -3.0
YAK *e*S **S 02 13 55.4 +17**
YAK *e* 02 15 27.9
YAK pmax pmax
comp=Z,21nm,0.9s,mb5.2
YAK pmax pmax
comp=N,6.0nm,1.0s
YAK pmax pmax
comp=Z,3.0nm,0.9s,mb4.3
YAK pmax pmax
comp=N,3.0nm,1.1s
YAK pmax pmax
comp=E,2.0nm,1.0s
YAK MLR MLR
comp=Z,544nm,24.0s,MS4.6
YAK MLR MLR
comp=N,202nm,19.0s,MS4.3
YAK MLR MLR
comp=E,94nm,17.0s,MS4.3
YAK Yakutsk 57.54 1 *e*P **P 02 05 43.5 -1.7**
comp=E,42nm,0.8s,mb5.5
MKAR Makanchi Array 57.94 324 P **P 02 05 47.5 -0.6**
comp=E,42nm,0.6s,mb5.7,baz=120,slow=8.1,SNR=353
MKAR ScP 02 10 33.0
comp=E,1.0nm,0.7s,baz=104,slow=5.9,SNR=3.0
MKAR S **S 02 13 40.6 -2.9**
comp=E,2.0nm,0.9s,baz=115,slow=17,SNR=6.7
MKAR LR LR 02 32 39.5
comp=E,329nm,19.8s,MS4.5,baz=124,slow=38
MKAR PKPPKP 02 35 23.6
comp=E,1.4nm,1.0s,baz=270,slow=2.9,SNR=5.6
MKAR Makanchi Array 57.94 324 P **P 02 05 47.5 -0.6**
MKAR S **S 02 13 40.6 -2.8**
MKAR pmax pmax
comp=Z,42nm,0.6s
MKAR pmax pmax
comp=Z,1.0nm,0.7s
MKAR smax
comp=Z,2.0nm,1.0s
MKAR MLR MLR
comp=Z,329nm,19.8s
MKAR pmax pmax
comp=Z,1.0nm,1.0s
MKAR Makanchi Array 57.94 324 P **P 02 05 47.5 -0.6**
MKAR ScP 02 10 33.0
MKAR S **S 02 13 40.6 -2.9**
MKAR LR LR 02 32 39.5
MKAR P'P' 02 35 23.6
KSH Kashi 58.70 314 P **P 02 05 54.3 +0.7**
KSH *e*AP pP 02 06 07.0 +1.5
KSH *e*XP sP 02 06 12.0 +1.7
KSH *e*PCP PcP 02 06 43.0 +0.1
KSH *e*PP PP 02 08 06.0 +0.6
KSH *e*SCP 02 10 38.3
KSH *e*PCS 02 10 43.3
KSH *e*S **S 02 13 54.0 +0.4**
KSH *e*SCS ScS 02 15 36.0 -0.3
KSH AMB AMB
comp=Z,130nm,1.6s,mb5.7
KSH LR LR
comp=N,320nm,13.6s,MS4.8
KSH LR LR
comp=E,410nm,18.4s,MS4.8
JASL Jaisalmer 59.08 299 *e*P **P 02 05 54.9 -1.5**
JASL *e* 02 05 58.5
comp=Z,564nm,0.1s
KZA Kyzart 60.21 317 P **P 02 06 04.9 +0.9**
SNR=38
TKM2 Tokmak 2 60.31 318 P **P 02 06 05.0 +0.4**
SNR=5.8
ZAL Zalesovo 60.74 332 P **P 02 06 05.2 -2.2**
comp=Z,14nm,0.6s,mb5.3,baz=261,slow=5.8,SNR=88
ZAL PKPPKP 02 35 24.9
comp=Z,0.7nm,0.5s,baz=209,slow=8.8,SNR=2.1
ZAL LR LR 02 35 42.5
comp=Z,431nm,20.1s,MS4.6,baz=247,slow=39
ZAL Zalesovo 60.74 332 P **P 02 06 05.3 -2.1**
ZAL pmax pmax
comp=Z,14nm,0.6s
ZAL pmax pmax
comp=Z,1.0nm,0.5s
ZAL MLR MLR
comp=Z,431nm,20.1s
ZAL Zalesovo 60.74 332 P **P 02 06 05.2 -2.2**
ZAL P'P' 02 35 24.9
ZAL LR LR 02 35 42.5
FX1 Attu Island--F 60.77 29 LR LR 02 29 37.9
comp=Z,27nm,18.8s,MS3.4,baz=294,slow=33
FX1 Attu Island--F 60.77 29 *e*P **P 02 06 07.0 -0.6**
UCH Uchtor 60.77 317 P **P 02 06 08.6 +0.8**
SNR=56
CHMS Chumysh 60.91 318 P **P 02 06 08.2 -0.5**
SNR=9.1
AAK Ala-Archa 60.94 317 P **P 02 06 09.3 +0.4**
SNR=9.1
AAK Ala-Archa 60.94 317 *e*P **P 02 06 08.3 -0.6**
comp=Z,13nm,0.9s,mb5.1
SEY Seymchan 61.07 12 *e*P **P 02 06 10.2 +0.7**
SEY *SP sP 02 06 27.3 +1.0
SEY *e* 02 06 57.8
SEY *e* 02 08 27.8
SEY *e*PPP PPP 02 09 57.9 +3.4
SEY *e*S **S 02 14 27.0 +3.2**
SEY *SS 02 14 45.0
SEY *e*PS PS 02 14 54.3 +9.2
SEY pmax pmax
comp=Z,40nm,0.9s,mb5.5
SEY smax
comp=N,170nm,4.1s
SEY smax
comp=E,70nm,3.3s
SEY MLR MLR
comp=Z,720nm,22.0s,MS4.8
SEY MLR MLR
comp=N,110nm,17.0s
SEY MLR MLR
comp=E,880nm,25.0s
USP Ospenovka 61.19 318 P **P 02 06 10.3 -0.3**

SNR=44
AML Almayashu 61.30 316 P P 02 06 12.0 +0.7
SNR=26
RPZ Rata Peaks 61.40 146 P P 02 06 12.8 +0.8
comp=E,25nm,0.6s,mb5.5,baz=5.4,slow=2.3,SNR=17
RPZ LR LR 02 32 56.4
comp=E,1μm,18.6s,MS5.0,baz=348,slow=36
EKS2 Erkin-Say 61.44 317 P P 02 06 12.6 +0.3
SNR=45
URZ Urewera 61.95 138 P P 02 06 15.6 -0.2
comp=E,16nm,0.9s,mb5.2,baz=168,slow=23,SNR=4.0
NVS Novosibirsk 62.02 332 *i* P **P 02 06 13.1 -2.9**
NVS *i* 02 14 30.1
NVS *i* 02 14 52.1
NVS pmax pmax
comp=N,21nm,0.8s
NVS pmax pmax
comp=E,21nm,0.8s
NVS pmax pmax
comp=Z,30nm,0.8s,mb5.5
KURK Kurchatov 62.05 327 *eP* **P 02 06 15.4 -0.9**
TIXI Tiksi 67.20 0 *eP* **P 02 06 47.3 -1.9**
TIXI *eS* S 02 15 35.3 -4.1
TIXI pmax pmax
comp=Z,20nm,0.9s,mb5.2
TIXI MLR MLR
comp=Z,520nm,17.0s,MS4.8
TIXI Tiksi 67.20 0 *eP* **P 02 06 47.4 -1.9**
comp=Z,8.6nm,0.5s,mb5.0
BVAR Borovoye Array 67.64 326 P **P 02 06 51.7 -0.7**
comp=Z,35nm,0.7s,mb5.5,baz=122,slow=8.4,SNR=220
BVAR S S 02 15 40.4 -4.6
comp=Z,3.9nm,1.2s,baz=144,slow=13,SNR=6.2
BRVK Borovoye 67.72 326 *eP* **P 02 06 52.2 -0.6**
ZRNK Zerenda 68.38 326 *eP* **P 02 06 56.1 -0.8**
BILL Bilibino 68.55 14 *eP* **P 02 06 56.9 -0.8**
BILL *e* 02 09 36.1
BILL *eS* S 02 15 59.1 +3.5
BILL *eSS* SS 02 20 17.8 -3.9
BILL pmax pmax
comp=Z,15nm,1.3s,mb4.8
BILL Bilibino 68.55 14 *eP* **P 02 06 56.6 -1.1**
comp=Z,4.3nm,0.8s,mb4.4
UNV Unalaska Valle 72.02 34 *eP* **P 02 07 18.7 -0.3**
comp=Z,104nm,0.9s,mb5.8
RAR Rarotonga 74.86 113 P **P 02 07 38.0 +1.7**
comp=Z,11nm,0.8s,mb4.9,baz=213,slow=7.6,SNR=3.7
RAR Rarotonga 74.86 113 P **P 02 07 38.0 +1.7**
RAR pmax pmax
comp=Z,11nm,0.8s
MIR Mirnyy 75.14 194⇑ *eP* **P 02 07 38.8 +1.8**
MIR pmax pmax
comp=Z,60nm,1.2s,mb5.4
ARU Arti 75.24 327⇑ *iP* **P 02 07 36.5 -1.2**
ARU *i* 02 07 52.6
ARU *eS* S 02 17 02.6 -10
ARU *e* 02 17 35.1
ARU *eSS* SS 02 21 57.5 -7.3
ARU pmax pmax
comp=Z,39nm,0.8s,mb5.4
ARU MLR MLR
comp=Z,200nm,23.0s,MS4.3
ARU MLR MLR
comp=N,100nm,18.0s,MS4.5
ARU MLR MLR
comp=E,200nm,20.0s,MS4.5
ARU Arti 75.24 327 *eP* **P 02 07 36.2 -1.5**
comp=E,37nm,0.8s,mb5.4
ARU LR LR
comp=Z,310nm,20.0s,MS4.6
THR Tehran 77.06 306 P **P 02 07 48.8 +0.2**
comp=Z,7.2nm,0.8s,mb4.7,baz=79,slow=4.3,SNR=20
THR LR LR 02 45 13.4
comp=Z,118nm,20.2s,MS4.2,baz=78,slow=38
THR Tehran 77.06 306 P **P 02 07 48.8 +0.3**
THR pmax pmax
comp=Z,7.0nm,0.8s
THR MLR MLR
comp=Z,118nm,20.2s
HASS Wahat al Ahsa' 77.84 295 P **P 02 07 51.6 -1.5**
SVW Sparrevohn 79.48 29 *eP* **P 02 08 02.8 +1.5**
MIB Mutribah 80.00 299 *eP* **P 02 08 04.0 -0.7**
MIB AMb AMB 02 08 05.1
comp=Z,65nm,0.8s,mb5.6
RST Umm Al-Ruwaisa 80.29 299 *eP* **P 02 08 05.2 -1.1**
RST AMb AMB 02 08 06.2
comp=Z,49nm,0.6s,mb5.6
KDAK Kodiak Island 80.53 32 *eP* **P 02 08 06.8 -0.2**
comp=Z,45nm,0.9s,mb5.4
IMA Indian Mountai 81.18 24 *eP* **P 02 08 11.5 +1.3**
MZLS Mizel 81.93 294 P **P 02 08 15.1 +0.2**
KAMS Al Khamasin 82.61 290 P **P 02 08 18.0 -0.6**
PMR Palmer 82.65 29 *eP* **P 02 08 18.0 +0.1**
PMR LR LR
comp=Z,300nm,23.0s,MS4.6
MCK McKinley 82.91 26 *eP* **P 02 08 19.1 -0.1**
comp=Z,114nm,1.6s,mb5.7
ZEI Tsey 82.94 312 *eP* **P 02 08 19.8 0.0**
SML Sawmill 83.04 28 *eP* **P 02 08 20.1 +0.2**
COLA College 83.46 25 *eP* **P 02 08 22.4 +0.5**
COLA MLR MLR
comp=Z,400nm,20.0s,MS4.8
GOF Gofitskoye 83.58 315 *eP* **P 02 08 21.0 -2.0**
ARSS Ar Rass 83.67 295 P **P 02 08 24.0 +0.1**
TATS Tathlith 83.67 289 P **P 02 08 24.9 +0.9**
KIV Kislovodsk 83.83 314 *eP* **P 02 08 24.3 0.0**
KIV *e* 02 11 36.6
KIV *eS* S 02 18 40.7 -2.3
KIV *eSS* SS 02 24 08.2 -5.7
KIV pmax pmax
comp=Z,9.0nm,0.8s,mb5.0
KIV pmax pmax
comp=N,2.0nm,0.6s
KIV MLR MLR
comp=Z,240nm,22.0s,MS4.5
KIV MLR MLR
comp=N,170nm,20.0s
KIV Kislovodsk 83.83 314 *eP* **P 02 08 24.7 +0.4**
comp=N,8.2nm,0.8s,mb4.9
VNDA Vanda 83.86 173 P **P 02 08 24.6 +0.8**
comp=N,7.3nm,0.5s,mb5.0,baz=320,slow=6.5,SNR=46
VNDA LR LR 02 45 44.3
comp=N,605nm,19.3s,MS5.0,baz=345,slow=36
VNDA Vanda 83.86 173 P **P 02 08 24.6 +0.9**
VNDA pmax pmax
comp=Z,7.0nm,0.5s
VNDA MLR MLR
comp=Z,605nm,19.3s
VNDA Vanda 83.86 173 *eP* **P 02 08 23.9 +0.1**
comp=Z,5.3nm,0.8s,mb4.7
VNDA LR LR
comp=Z,372nm,20.0s,MS4.8
ILAR Eielson Array 83.86 25 P **P 02 08 23.4 -0.6**
comp=Z,13nm,0.8s,mb5.1,baz=246,slow=5.4,SNR=59
ILAR PKKPbc 02 26 40.1
comp=Z,1.1nm,1.0s,baz=111,slow=2.3,SNR=6.8
ILAR LR LR 02 45 18.0
comp=Z,334nm,20.2s,MS4.7,baz=277,slow=35
ILAR Eielson Array 83.86 25 P **P 02 08 23.4 -0.6**
ILAR pmax pmax
comp=Z,13nm,0.9s
ILAR pmax pmax
comp=Z,1.0nm,1.0s
ILAR MLR MLR
comp=Z,334nm,20.2s
AFFS 'Afif 83.95 293 P **P 02 08 25.6 +0.3**
TOA Tolsona 84.08 28 *eP* **P 02 08 26.8 +1.7**
SBA Scott Base 84.75 172 *eP* **P 02 08 28.4 +0.2**
comp=Z,40nm,1.5s,mb5.3
ERZM Erzurum 84.87 310 *iP* **P 02 08 30.5 +0.9**
MAW Mawson 84.89 200 P **P 02 08 30.6 +1.5**
comp=Z,16nm,0.9s,mb5.1,baz=56,slow=8.0,SNR=13
MAW Mawson 84.89 200 P **P 02 08 30.6 +1.6**
MAW pmax pmax
comp=Z,16nm,0.9s
NAMS An Nimas 84.89 289 P **P 02 08 31.7 +1.5**
HILS Ha'il 84.91 297 P **P 02 08 31.0 +0.9**
BEST Besiri 84.99 308 *iP* **P 02 08 31.0 +0.8**
FRSS Farasan al Kab 85.10 286 P **P 02 08 32.0 +0.7**
BLJS Baljurashi 85.43 290 P **P 02 08 34.2 +1.4**
VRSR Storozhevoye 86.06 321 *eP* **P 02 08 34.4 -0.8**
VRSR pmax pmax
comp=Z,170nm,0.7s
VRSR pmax pmax
comp=N,30nm,0.4s
VRSR pmax pmax
comp=E,140nm,0.9s
ELZG Elazig 86.77 308 *iP* **P 02 08 48.7 +10**
MOS Moscow 86.80 326 *eP* **P 02 08 38.6 -0.1**
MOS *e* 02 19 04.2
MOS pmax pmax
comp=Z,91nm,0.9s,mb6.0
KBRS Khaybar 87.25 296 P **P 02 08 42.6 +1.0**
OBN Obninsk 87.44 325 *iP* **P 02 08 40.7 -1.1**
OBN *iS* S 02 19 26.7 +8.9
OBN *eSS* SS 02 25 01.3 -5.3
OBN pmax pmax
comp=Z,36nm,0.9s,mb5.6
OBN MLR MLR
comp=Z,500nm,21.0s,MS4.9
OBN Obninsk 87.44 325 *eP* **P 02 08 40.2 -1.6**
comp=Z,37nm,0.9s,mb5.6
APA Apatity 87.86 338⇑ *iP* **P 02 08 42.5 -1.1**
APA *i* pP 02 08 52.6 -3.5
APA pmax pmax
comp=Z,25nm,1.2s,mb5.3
GZT Gaziantep 87.96 307 *iP* **P 02 08 45.3 +0.6**
ASF Jabal al Asfar 88.88 302 P **P 02 08 49.8 +0.5**
comp=Z,6.6nm,0.7s,mb5.1,baz=7.0,slow=3.0,SNR=9.7
INK Inuvik 89.00 22 P **P 02 08 48.8 -0.2**
comp=Z,7.4nm,0.9s,mb5.0,baz=264,slow=6.5,SNR=12
INK PKKPbc 02 26 26.8
comp=Z,1.7nm,0.5s,baz=90,slow=3.8,SNR=14
INK Inuvik 89.00 22 P **P 02 08 48.8 -0.2**
INK pmax pmax
comp=Z,7.0nm,0.9s
INK pmax pmax
comp=Z,2.0nm,0.5s
INK Inuvik 89.00 22 *eP* **P 02 08 48.1 -0.9**
comp=Z,14nm,1.1s,mb5.2
JOF Joensuu 89.32 333 *ep* **P 02 08 48.8 -1.8**
comp=Z,5.9nm,0.6s,mb5.1
JOF Joensuu 89.32 333 *eP* **P 02 08 48.8 -1.8**
JOF pmax pmax
comp=Z,6.0nm,0.6s,mb5.1
TBKS Tabuk 89.49 298 P **P 02 08 52.9 +0.6**
KEV Kevo 89.83 340 *ep* **P 02 08 51.2 -1.6**
CTKT Corum 89.84 311 *iP* **P 02 08 53.7 +0.1**
SIM Simferopol' 89.90 315*c iP* **P 02 08 53.0 -0.8**
SIM 02 19 16.0
SIM 02 19 36.0
SIM pmax pmax
comp=Z,60nm,0.9s,mb5.9
AVNT Avonos 89.97 309 *iP* **P 02 08 53.7 -0.5**
JMQS Jabal Moqyreh 90.03 299 P **P 02 08 55.2 +0.5**
SPITS Spitsbergen Ar 90.16 349 P **P 02 08 53.4 -0.8**
comp=Z,10nm,0.9s,mb5.2,baz=209,slow=21,SNR=18
ARCES ARCESS Array B 90.39 340 P **P 02 08 54.3 -1.2**
comp=Z,17nm,0.7s,mb5.5,baz=87,slow=5.6,SNR=71
ARCES LR LR 02 56 11.2
comp=Z,316nm,18.6s,MS4.8,baz=80,slow=40
ARE0 ARCESS Array S 90.39 340 *eP* **P 02 08 53.2 -2.2**
AYUS 'Aynunah 90.62 298 P **P 02 08 57.6 +0.1**
JMOS Jabal al Moall 90.67 299 P **P 02 08 58.0 +0.3**
BDAS Al Bad' 90.75 298 P **P 02 08 58.0 -0.1**
BALT Daday 90.80 312 *iP* **P 02 08 53.7 -4.4**
BRTR Keskin Array B 90.81 310 P **P 02 08 57.0 -1.2**
comp=Z,3.0nm,0.6s,mb4.8,baz=107,slow=4.2,SNR=24
BRTR LR LR 02 56 30.8
comp=Z,189nm,22.0s,MS4.5,baz=320,slow=40
BRTR Keskin Array B 90.81 310 P **P 02 08 57.0 -1.2**
BRTR LR LR 02 56 30.8
HAQS Haql 90.84 299 P **P 02 08 58.9 +0.3**
KMBO Kilima Mbogo 91.12 269 P **P 02 09 00.3 0.0**
comp=Z,2.4nm,0.9s,mb4.5,baz=23,slow=4.2,SNR=4.8
KMBO LR LR 02 45 04.9
comp=Z,208nm,19.8s,MS4.6,baz=100,slow=32
KMBO Kilima Mbogo 91.12 269 *eP* **P 02 08 59.4 -0.8**
comp=Z,6.4nm,1.3s,mb4.8
FINES FINESS Array B 92.01 332 P **P 02 09 01.6 -1.5**
comp=Z,3.1nm,0.4s,mb5.0,baz=83,slow=4.1,SNR=66
FINES PKKPbc 02 26 20.4
comp=Z,0.7nm,0.8s,baz=333,slow=3.1,SNR=4.0
FINES LR LR 02 57 46.0
comp=Z,228nm,19.8s,MS4.6,baz=224,slow=40
FINES FINESS Array B 92.01 332 P **P 02 09 01.6 -1.5**
FINES 02 26 20.4
FINES pmax pmax
comp=Z,3.0nm,0.4s
FINES pmax pmax
comp=Z,1.0nm,0.8s
DLBC Dease Lake 92.40 31 P **P 02 09 06.3 +1.2**
DLBC LR LR 02 45 32.8
comp=Z,363nm,20.4s,MS4.8,baz=318,slow=32
ESKT Eskisehir 92.98 310 *iP* **P 02 09 06.5 -1.7**
SYO Syowa Base 93.58 201⇑ P **P 02 09 12.1 +1.9**
SYO Syowa Base 93.58 201⇓ *pP* pP 02 09 23.1 +0.3
SYO Syowa Base 93.58 201⇑ *eP* **P 02 09 12.1 +1.9**
SYO *epP* pP 02 09 23.1 +0.3
ULDT Uludag 94.19 311 *iP* **P 02 09 12.8 -0.9**
QSPA South Pole Qui 94.27 180⇑ *iP* **P 02 09 14.6 +1.5**
comp=Z,35nm,0.9s,mb5.8
SUW Suwalki 95.30 325 *eP* **P 02 09 16.9 -1.4**
MLR Muntele Rosu 95.52 316 P **P 02 09 18.9 -0.7**
comp=Z,7.5nm,0.8s,mb5.2,baz=53,slow=1.0,SNR=19
MLR Muntele Rosu 95.52 316 P **P 02 09 18.9 -0.7**
MLR pmax pmax
comp=Z,8.0nm,0.8s
KWP Kalwaria 96.70 321 *eP* **P 02 09 24.3 -0.5**
HFS Hagfors 98.18 333 P **P 02 09 29.8 -1.4**
comp=Z,7.2nm,0.6s,mb5.4,baz=108,slow=4.7,SNR=28
HFS Hagfors 98.18 333 P **P 02 09 29.8 -1.4**
HFS pmax pmax
comp=Z,7.0nm,0.6s
YKA Yellowknife Ar 98.28 25 P **P 02 09 31.4 -0.2**
comp=Z,3.7nm,0.8s,mb5.0,baz=300,slow=4.6,SNR=64
YKA PKiKP 02 14 04.2
comp=Z,0.2nm,0.5s,baz=292,slow=2.0,SNR=7.0
YKA PKKPbc 02 26 02.0
comp=Z,0.2nm,0.5s,baz=121,slow=3.5,SNR=5.8
YKA LR LR 02 56 59.8
comp=Z,231nm,19.1s,MS4.7,baz=275,slow=37
YKA Yellowknife Ar 98.28 25 P **P 02 09 31.4 -0.2**
IDI Anoyia 98.37 306 PKiKP 02 14 05.5
comp=Z,9.7nm,1.1s,baz=51,slow=9.6,SNR=3.3
NB2 NORSAR Subarra 98.91 334 P **P 02 09 32.2 -2.3**
comp=Z,7.0nm,1.0s,mb5.2,baz=66,slow=4.5
NB2 NORSAR Subarra 98.91 334 P **P 02 09 32.2 -2.3**
baz=66,slow=4.6
NOA NORSAR Array B 98.91 334 P **P 02 09 32.8 -1.7**
comp=Z,2.7nm,0.7s,mb4.9,baz=65,slow=4.5,SNR=19
NOA PKKPbc 02 26 00.1
comp=Z,1.3nm,0.9s,baz=309,slow=3.3,SNR=4.5
NOA LR LR 03 01 21.9
comp=Z,309nm,21.0s,MS4.8,baz=90,slow=40
KSP Ksiaz 100.27 323 *eP* P 02 09 40.8 -0.2
VRAC Vranov 100.61 322 P P 02 09 42.3 -0.2
comp=Z,0.7nm,0.4s,baz=90,slow=4.4,SNR=7.1
BRG Berggiesshubel 101.65 324 *eP* P 02 09 47.4 +0.2
BRG *e* 02 14 04.1
BRG pmax pmax
comp=Z,2.0nm,0.8s
BRG MLR MLR
comp=N,380nm,20.3s,MS5.0
BRG MLR MLR
comp=E,350nm,20.3s,MS5.0
BRG MLR MLR
comp=Z,370nm,20.3s,MS4.9
BRG Berggiesshubel 101.65 324 *ePdif* P 02 09 47.4 +0.2
comp=Z,2.4nm,0.8s
BRG *ePP* PP 02 14 04.1 +3.8
BRG LR LR
comp=Z,370nm,20.3s,MS4.9
CLL Collm 102.03 325 *ePDIF* Pdif 02 09 48.0 -0.9
CLL *ePP* PP 02 14 10.0 +7.0
GERES GERESS Array B 102.55 322 P Pdif 02 09 50.7 -0.6
comp=Z,1.2nm,0.9s,baz=76,slow=5.5,SNR=10
GERES PKiKP 02 14 13.0
comp=Z,1.0nm,0.6s,baz=88,slow=2.0,SNR=13
GERES GERESS Array B 102.55 322 P Pdif 02 09 50.7 -0.5
GERES *i* 02 14 13.0
GERES pmax pmax
comp=Z,1.0nm,0.9s
GERES pmax pmax
comp=Z,1.0nm,0.6s
NEW Newport 102.77 39 P Pdif 02 09 53.0 +0.8
comp=Z,1.6nm,0.7s,baz=1.7,slow=7.1,SNR=4.5
NEW Newport 102.77 39 P Pdif 02 09 53.1 +0.9
NEW pmax pmax
comp=Z,2.0nm,0.7s
NVAR Mina Array Bea 105.33 48 Pdiff Pdif 02 10 05.8 +2.1
comp=Z,1.2nm,0.8s,baz=263,slow=4.8,SNR=5.2
NVAR Mina Array Bea 105.33 48 Pdif Pdif 02 10 05.8 +2.1
DAVOX Davos 105.73 321 Pdiff Pdif 02 10 04.9 -0.4
comp=Z,1.9nm,0.6s,baz=161,slow=15,SNR=3.2
DAVOX PKiKP 02 14 18.2
comp=Z,2.1nm,0.9s,baz=57,slow=3.9,SNR=3.3
HINF Hinteralfeld 107.14 323 *e*PKP1 02 14 20.3
HAU Haudompre 107.35 323 *e*PKP1 02 14 21.0
HAU *e*R
comp=Z,395nm,22.2s
CABF La Chapelle 108.15 322 *e*PKP1 02 14 23.0
LPG La Plagne 108.25 321 *e*PKP1 02 14 22.4
LPL La Plagne 108.25 321 *e*PKP1 02 14 22.3
comp=Z,2.4nm,0.4s
EKA Eskdalemuir Ar 108.37 333 PKKPbc 02 25 34.4
comp=Z,1.0nm,0.5s,baz=238,slow=3.4,SNR=6.4
EKA PKKPab 02 25 47.4
comp=Z,1.4nm,0.9s,baz=233,slow=3.5,SNR=3.5
LOR Lormes 109.18 324 *e*PKP1 02 14 25.3
comp=Z,4.6nm,0.9s
LOR *e*R
comp=Z,228nm,21.5s
SSF Saint Saulge 109.49 323 *e*PKP1 02 14 26.0
comp=Z,6.7nm,0.9s
SMF Signal de Mont 109.50 323 *e*PKP1 02 14 24.9
comp=Z,23nm,1.4s
PDAR Pinedale Array 109.85 42 PKKPab 02 25 40.6
comp=Z,0.8nm,0.7s,baz=117,slow=3.3,SNR=5.0
BGF Bois d'Agland 110.14 323 *e*PKP1 PKPdf 02 14 26.6 +1.8
comp=Z,8.5nm,0.8s
TCF Toulx Ste Croi 110.65 323 *e*PKP1 PKPdf 02 14 27.5 +1.7
comp=Z,8.4nm,0.8s
FLN La Foliniere 110.88 326 *e*PKP1 PKPdf 02 14 28.4 +2.2
FLN *e*R
comp=Z,268nm,21.5s
RJF Les Rejaudoux 111.57 323 *e*PKP1 PKPdf 02 14 30.0 +2.3
RJF *e*R
comp=Z,354nm,22.8s
MFF Saint Martin d 111.88 324 *e*PKP1 PKPdf 02 14 29.4 +1.1
comp=Z,7.6nm,0.8s
PV10 Paradox Valley 112.11 46 *e*PKP PKPdf 02 14 31.2 +2.3
MTLF Montolieu 112.12 320 *e*PKP1 PKPdf 02 14 30.2 +1.4
LFF La Frestale 112.23 323 *e*PKP1 PKPdf 02 14 30.8 +1.8
ULM Lac du Bonnet 113.66 29 PKiKP 02 14 32.8
comp=Z,3.3nm,0.5s,baz=62,slow=2.1,SNR=3.2
ESAC San Caprasio 114.66 320 PKP PKPdf 02 14 36.1 +2.3
EMOS Mosqueruela 115.36 319 PKP PKPdf 02 14 36.2 +0.9
EBEN Beniarda 116.02 317 PKP PKPdf 02 14 37.7 +1.2
ETOB Tobarra 116.95 318 PKP PKPdf 02 14 39.0 +0.6
GUD Guadarrama 117.58 321 PKP PKPdf 02 14 41.4 +1.9
EVIA Vianos 117.59 318 PKP PKPdf 02 14 39.5 0.0
ESDC Sonseca Array 117.99 320 PKP PKPdf 02 14 42.4 +2.1
EHUE Huescar 118.08 317 PKP PKPdf 02 14 41.6 +1.1
EQES Quesada 118.41 317 PKP PKPdf 02 14 42.3 +1.1
EADA Adamuz 119.22 319 PKP PKPdf 02 14 44.1 +1.4
ERON Agron 119.32 317 PKP PKPdf 02 14 43.8 +0.8
ELUQ Luque 119.34 318 PKP PKPdf 02 14 44.7 +1.7
ELOJ Sierra Loja 119.49 317 PKP PKPdf 02 14 42.9 -0.5
SCHQ Schefferville 119.69 10 PKP PKPdf 02 14 49.4 +1.6
comp=Z,2.8nm,0.4s,baz=312,slow=1.1,SNR=16
SCHQ Schefferville 119.69 10 PKP PKPdf 02 14 49.4 +1.6
TXAR Lajitas Array 119.98 53 PKP PKPdf 02 14 46.6 +2.1
comp=Z,1.1nm,0.7s,baz=245,slow=1.3,SNR=18
EBAD Badajoz 120.47 320 PKP PKPdf 02 14 47.2 +2.0
ESPR Espera 120.78 318 PKP PKPdf 02 14 43.9 -2.0
EMIN Mina Concepcio 120.82 319 PKP PKPdf 02 14 45.9 0.0
EVO Evora 121.23 321 *e*PKP2 PKPdf 02 14 48.6 +1.9
comp=Z,24nm,1.0s
EVO *e*R
comp=Z,327nm,22.5s
JCT Junction City 122.47 50 *e*PKP PKPdf 02 14 50.9 +1.7
MIAR Mount Ida 124.77 42 *e*PKP PKPdf 02 14 55.2 +1.5
WVT Waverly 127.42 37 *e*PKP PKPdf 02 15 00.0 +1.3
USHA Ushuaia 127.89 168 PKP PKPdf 02 15 00.3 +1.2
comp=Z,15nm,0.8s,baz=157,slow=1.6,SNR=18
KIC Kosan Boka 131.91 282 *e*PKP1 PKPdf 02 15 09.1 +1.2
comp=Z,108nm,0.8s
DBIC Dimbokro 131.96 283 PKP PKPdf 02 15 09.4 +1.4
comp=Z,13nm,0.8s,baz=50,slow=1.8,SNR=13
DBIC Dimbokro 131.96 283 PKIKP PKPdf 02 15 09.4 +1.4
DBIC pmax pmax
comp=Z,13nm,0.8s
TIC Toumodi 132.12 283 *e*PKP1 PKPdf 02 15 10.0 +1.7
comp=Z,52nm,0.8s
LIC Lamto 132.22 282 *e*PKP2 PKPdf 02 15 10.3 +1.8
comp=Z,52nm,0.9s
LIC *e*R
comp=Z,278nm,22.8s
LIC Lamto 132.22 282 *e*PKP1 PKPdf 02 15 09.6 +1.1
comp=Z,68nm,0.8s
LIC Lamto 132.22 282 *e*PKPab PKPdf 02 15 10.3 +1.8
LIC LR LR
comp=Z,140nm,22.8s,MS4.6
JTS JuntasAbangare 143.83 66 *e*PKP PKPdf 02 15 29.9 +0.5
JCR Jicaral 143.85 67 *e*P PKPbc 02 15 32.1 +3.6
VPS2 Volcan Poas 2 144.53 66 *e*P PKPbc 02 15 34.7 +4.3
LAJ Bijagual 144.75 66 *e*P PKPbc 02 15 34.2 +3.1
TRTC Tortuguero 144.85 65 *e*P PKPdf 02 15 32.5 +1.2
LCR2 La Lucha 2 144.91 66⇑ *e*P PKPdf 02 15 35.5 +4.1
TRQA Tornquist 145.18 166 *e*PKP PKPdf 02 15 36.8 +4.9
BUE Buena Vista 145.20 66⇑ *e*P PKPdf 02 15 36.8 +4.9
LMEL Las Melosas 145.99 152⇑ *iP* PKPdf 02 15 36.1 +3.5
SACV Santiago Islan 146.17 305 *e*PKP PKPdf 02 15 35.6 +2.1
FCH Farellones 146.38 151⇑ *iP* PKPdf 02 15 37.3 +3.9
MDZ Mendoza 147.42 153 *e*P PKPdf 02 15 40.5 +5.4
OTAV Otavalo 152.90 81 *e*PKPdf PKPdf 02 15 46.8 +2.7
OTAV *e*PKPbc PKPdf 02 15 53.9 +10
ROSC El Rosal 155.62 68 PKP PKPdf 02 15 51.5 +3.8
comp=Z,1.8nm,0.3s,baz=147,slow=20,SNR=3.7
ROSC PKPab PKPab 02 16 18.7 +2.3
comp=Z,20nm,1.1s,baz=160,slow=10,SNR=8.2
CPUP Villa Florida 157.51 167 PKP PKPdf 02 15 52.6 +2.7
comp=Z,4.7nm,1.0s,baz=63,slow=1.8,SNR=6.4
CPUP PKPbc PKPdf 02 16 03.5 +14
comp=Z,7.3nm,0.9s,baz=193,slow=1.8,SNR=7.0
CPUP PKPab PKPab 02 16 24.1 0.0
comp=Z,13nm,1.0s,baz=209,slow=3.0,SNR=7.1
CPUP Villa Florida 157.51 167 PKIKP PKPdf 02 15 52.6 +2.7
CPUP 02 16 03.5
CPUP 02 16 24.1
CPUP pmax pmax
comp=Z,5.0nm,1.0s
CPUP pmax pmax
comp=Z,7.0nm,0.9s
CPUP pmax pmax
comp=Z,13nm,1.0s
LPAZ La Paz 159.99 127 PKP PKPdf 02 15 56.9 +3.8
comp=Z,5.4nm,1.1s,baz=15,slow=3.0,SNR=15
LPAZ PKPab PKPab 02 16 37.3 +2.2
comp=Z,9.9nm,0.9s,baz=231,slow=2.1,SNR=14
LPAZ La Paz 159.99 127 PKIKP PKPdf 02 15 56.9 +3.9
LPAZ pmax pmax
comp=Z,5.0nm,1.1s
LPAZ pmax pmax
comp=Z,10.0nm,0.9s
BDFB Brasilia 168.22 198 PKP PKPdf 02 16 02.1 +1.7
comp=Z,6.2nm,1.0s,baz=5.6,slow=2.8,SNR=5.9
BDFB PKPab PKPab 02 17 12.1 +1.2
comp=Z,4.3nm,1.0s,baz=221,slow=2.0,SNR=3.4
BDFB Brasilia 168.22 198 PKIKP PKPdf 02 16 02.1 +1.7
BDFB pmax pmax
comp=Z,6.0nm,1.0s
BDFB pmax pmax
comp=Z,4.0nm,1.0s

*IDC **30** 01:57:54.4±1.1,34.21N×141.63E,mb3.7/6,mb1 4.0/7, mb1mx3.9/24,ML4.1/1, Error ellipse: s-maj=36.3km s-min=18.5km az=136.0*
*JMA **30** 01:57:55.9±0.3,34.21N×141.66E,h29km±2km,M3.7*
*NEIC **30** 01:57:57.6±2.4,34.50N×141.72E,h10km,Error ellipse: s-maj=64.7km s-min=11.6km az=192.0*
ISC 30 01:57:55.4±1.6,34.19N±0.05×141.65E±0.08,h17km±11km, **n24,σ0°80/29,mb3.6/6,Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BSO1	**Boso 1**	**0.72**	**310**	P	**Pb**	**01 58 09.5**	**+0.4**
BSO3	**Boso 3**	**1.12**	**303**	P	**Pb**	**01 58 15.8**	**-0.1**
BSO4	**Boso 4**	**1.34**	**307**	P	**Pn**	**01 58 19.7**	**+0.1**
BSO4				*eS*	**Sb**	**01 58 36.9**	**+0.4**
CHOJ	**Chosi**	**1.64**	**337**	P	**Pn**	**01 58 23.5**	**-0.3**
JHJ2	**Mitsune**	**1.87**	**235**	P	**Pn**	**01 58 28.1**	**+1.0**
JHJ	**Hachijo jima 2**	**1.89**	**236**	Pn	**Pn**	**01 58 27.9**	**+0.6**

37nm,0.3s,baz=120,slow=18,SNR=18

JHJ				Sn	**Sn**	01 58 50.7	-0.3
	141nm,0.3s,baz=259,slow=23,SNR=9.4						
JOD2	**Odawara 2**	**2.37**	**298**	P	**Pn**	01 58 34.1	-0.1
JAG	**Ashikaga**	**2.86**	**322**	P	**Pn**	01 58 41.0	-0.3
JYN	**Shimob**	**2.87**	**298**	P	**Pn**	01 58 41.5	+0.2
JRY	**Ryogami san**	**2.90**	**310**	P	**Pn**	01 58 41.7	-0.1
MAJO	**Matsushiro**	**3.66**	**311**	*e*Pn	**Pn**	01 58 52.5	-0.1
MAT	**Matsushiro**	**3.66**	**311**	P	**Pn**	01 58 52.4	-0.2
MAT				S	**Sn**	01 59 35.4	-0.5
MAT	**Matsushiro**	**3.66**	**311**	*e*P	**Pn**	01 58 52.0	-0.6
MAT				*e*S	**Sn**	01 59 35.0	-0.9
CBIJ	**Chichi jima**	**7.09**	**176**	Pn	**Pn**	01 59 39.4	-1.8
	11nm,0.3s,baz=303,slow=17,SNR=9.9						
CBIJ				Sn	**Sn**	02 00 54.2	-7.9
	8.0nm,0.3s,baz=227,slow=21,SNR=3.2						
SONM	**Songino Array**	**29.61**	**308**	P	**P**	02 04 01.5	-0.2
	0.6nm,0.8s,mb3.4,baz=102,slow=8.7,SNR=4.2						
ILAR	**Eielson Array**	**51.80**	**31**	P	**P**	02 07 03.0	-1.0
	0.9nm,0.7s,mb3.8,baz=272,slow=6.5,SNR=13						
INK	**Inuvik**	**56.83**	**26**	P	**P**	02 07 40.3	-0.6
	1.3nm,0.7s,mb4.1,baz=286,slow=4.7,SNR=4.2						
YKA	**Yellowknife Ar**	**66.17**	**30**	P	**P**	02 08 42.3	-1.4
	0.2nm,0.6s,mb3.3,baz=303,slow=6.3,SNR=4.6						
NVAR	**Mina Array Bea**	**76.54**	**53**	P	**P**	02 09 47.9	+1.6
	0.7nm,0.6s,mb3.8,baz=304,slow=6.5,SNR=3.9						
NVAR	**Mina Array Bea**	**76.54**	**53**	P	**P**	02 09 47.9	+1.6
PDAR	**Pinedale Array**	**79.52**	**45**	P	**P**	02 10 03.4	+0.7
	0.2nm,0.5s,mb3.3,baz=270,slow=1.5,SNR=3.7						
PV10	**Paradox Valley**	**82.50**	**48**	*e*P	**P**	02 10 20.4	+2.0
CLL	**Collm**	**83.66**	**330**	P	**P**	02 10 25.0	+1.0
KSU1	**Kansas State U**	**89.31**	**41**	*e*P	**P**	02 10 51.7	-0.3

*IDC **30** 02:02:37.8±5.0,24.68N×108.98W,mb3.7/2,mb1 4.0/4, mb1mx3.7/18,ML3.5/3,Error ellipse: s-maj=74.8km s-min=26.4km az=158.0*

ISC 30 02:02:36.2±5.8,24.5N±0.6×108.8W±0.2,h10km,n5, σ0§42/5,mb3.7/2,Gulf of California

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TXAR	**Lajitas Array**	**6.66**	**42**	Pn	**Pn**	**02 04 16.7**	**+0.1**
	0.1nm,0.3s,baz=224,slow=13,SNR=5.3						
TXAR				Lg		02 06 07.2	
	0.4nm,0.3s,baz=222,slow=30,SNR=6.6						
NVAR	**Mina Array Bea**	**16.07**	**332**	Pn	**P**	**02 06 24.1**	**+0.2**
	0.1nm,0.3s,baz=155,slow=12,SNR=6.1						
PDAR	**Pinedale Array**	**18.24**	**358**	P	**P**	**02 06 50.8**	**-0.4**
	0.1nm,0.3s,baz=169,slow=14,SNR=3.8						
NEW	**Newport**	**24.62**	**347**	P	**P**	**02 07 58.2**	**+0.3**
	2.1nm,0.7s,mb3.8,baz=164,slow=8.9,SNR=3.3						
ILAR	**Eielson Array**	**47.17**	**339**	P	**P**	**02 11 10.2**	**-0.3**
	0.6nm,0.7s,mb3.7,baz=146,slow=6.2,SNR=5.3						

*THE **30** 02:03:05.6,37.74N×20.59E,h10km,ML3.3*
*ATH **30** 02:03:07.8,37.89N×20.75E,h7km±5km,MD3.6/4*
*NEIC **30** 02:03:08.0,37.90N×20.82E,h5km,MD3.6(ATH),After ATH.*

ISC 30 02:03:07.1±2.0,37.9N±0.1×20.7E±0.2,h7km,n15, σ1§02/16,Ionian Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VLS	**Valsamata**	**0.32**	**348**	*e*PB	**Pb**	**02 03 14.0**	**-0.8**
LKD	**Levkas**	**0.85**	**359**	*e*Pg	**Pg**	**02 03 22.6**	**-1.5**
ITM	**Ithomi**	**1.21**	**124**	*e*PB	**Pb**	**02 03 30.0**	**+0.1**
EVR	**Evrytania**	**1.38**	**40**	*e*PB	**Pb**	**02 03 32.5**	**-0.4**
IGT	**Igoumenitsa**	**1.69**	**351**	*e*Pb	**Pb**	**02 03 37.3**	**-0.8**
IGT				*e*Sb	**Sb**	**02 04 02.4**	**+2.8**
AGG	**Agios Georgios**	**1.75**	**48**	*e*Pb	**Pb**	**02 03 38.7**	**-0.4**
	comp=Z,2.8nm,0.4s						
JAN	**Janina**	**1.80**	**4**	*e*PN	**Pn**	**02 03 41.5**	**+2.6**
KEK	**Kerkira**	**1.97**	**340**	*e*Pn	**Pn**	**02 03 47.0**	**+5.7**
NSAL	**Nisos Salamina**	**2.21**	**88**	*e*PN	**Pn**	**02 03 46.0**	**+1.3**
AOS	**Alonnisos**	**2.84**	**62**	*e*Pn	**Pn**	**02 03 53.5**	**-0.2**
FNA	**Florina**	**2.97**	**10**	*e*Pn	**Pn**	**02 03 55.8**	**+0.2**
PAIG	**Paliouri**	**3.13**	**48**	*e*Pn	**Pn**	**02 03 57.3**	**-0.5**
OUR	**Ouranopolis**	**3.57**	**45**	*e*Pn	**Pn**	**02 04 03.8**	**-0.3**
SOH	**Sokhos**	**3.62**	**34**	*e*Pn	**Pn**	**02 04 05.1**	**+0.3**
KNT	**Kendrikon**	**3.72**	**27**	*e*Pn	**Pn**	**02 04 05.8**	**-0.4**

*BUG **30** 02:04:06.7,51.67N×7.75E,h1km,ML2.0*
*BNS **30** 02:04:07.9±0.6,51.70N×7.66E,h1km,ML2.0*
*BGR **30** 02:04:07.5±0.3,51.55N×7.76E,h1km,ML2.0/3,Error ellipse: s-maj=5.6km s-min=3.3km az=160.0*
*LDG **30** 02:04:09.9±0.3,51.56N×7.69E,h1km,Ml2.4/10,Error ellipse: s-maj=5.1km s-min=3.9km az=83.0,Suspected Mining induced.*

ISC 30 02:04:05.8±0.3,51.52N±0.02×7.80E±0.03,n30,σ1§54/53, 1C,Germany

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BAHL	**Ahlen**	**0.22**	**3**	Pg	**Pg**	**02 04 09.9**	**-0.3**
BAHL				Sg	**Sg**	**02 04 12.3**	**-0.8**
BUG	**Bochum--Univer**	**0.34**	**257**	⇑*i*Pg	**Pg**	**02 04 14.8**	**+2.2**
BUG				Sg	**Sg**	**02 04 20.7**	**+3.5**
BNS	**Bensberg**	**0.68**	**216**	*e*Pg	**Pg**	**02 04 23.1**	**+3.8**
WTSB	**Winterswijk**	**0.77**	**306**	*e*Pg	**Pg**	**02 04 22.9**	**+1.8**
WTSB				*e*Sg	**Sg**	**02 04 29.6**	**-1.7**
IBBN	**Ibbenburen**	**0.79**	**358**	*e*Pg	**Pg**	**02 04 21.3**	**-0.3**
	SNR=0.6						
IBBN				*e*Sg	**Sg**	**02 04 30.4**	**-1.7**
STB	**Steinbach**	**1.10**	**214**	*e*Pg	**Pg**	**02 04 30.3**	**+2.4**
STB				*e*Sg	**Sg**	**02 04 46.8**	**+4.2**
	36nm,0.4s						
KLL	**Kalltalsperre**	**1.28**	**228**	*e*Pg	**Pg**	**02 04 32.4**	**+1.0**
KLL				*e*Sg	**Sg**	**02 04 50.5**	**+2.0**
	24nm,0.2s						
BGG	**Burgeitz**	**1.35**	**193**	*e*Pg	**Pg**	**02 04 35.0**	**+2.4**
BGG				*e*Sg	**Sg**	**02 04 53.9**	**+3.3**
	14nm,0.5s						
HGN	**Heimansgroeve**	**1.40**	**238**	*e*Pg	**Pg**	**02 04 33.8**	**+0.1**
	2.6nm,0.3s						
HGN				*e*Sg	**Sg**	**02 04 53.6**	**+1.3**
CLZ	**Clausthal**	**1.63**	**78**	*e*Pn	**Pn**	**02 04 36.7**	**+0.8**
	SNR=17						
CLZ				*e*Pg	**Pg**	**02 04 38.5**	**+0.1**
	SNR=17						
CLZ				*e*Sg	**Sg**	**02 05 01.0**	**+0.8**
WLF	**Walferdange**	**2.13**	**210**	*e*Pg	**Pg**	**02 04 48.2**	**-0.1**
	SNR=3.3						
WLF				*e*Sg	**Sg**	**02 05 13.8**	**-3.0**
GIVF	**Givet**	**2.36**	**234**	*e*Pn	**Pn**	**02 04 47.9**	**+1.5**
GIVF				*e*Sn	**Sn**	**02 05 15.0**	**-1.5**
GIVF				*e*Sg	**Sg**	**02 05 23.1**	**-1.3**
	8.2nm,0.3s						
MOX	**Moxa**	**2.56**	**108**	*e*Pn	**Pn**	**02 04 51.6**	**+2.4**
	SNR=1.9						
MOX				*e*Pg	**Pg**	**02 04 56.3**	**-0.5**
	SNR=1.2						
MOX				*e*Sg	**Sg**	**02 05 29.5**	**-1.4**
BAIF	**Baives**	**2.71**	**239**	*e*Pn	**Pn**	**02 04 52.3**	**+1.0**
BAIF				*e*Sn	**Sn**	**02 05 22.2**	**-3.1**
BAIF				*e*Sg	**Sg**	**02 05 32.4**	**-3.5**
	3.7nm,0.4s						
CDF	**Champ du Feu**	**3.13**	**186**	*e*Pn	**Pn**	**02 04 58.5**	**+1.2**
CDF				*e*Sg	**Sg**	**02 05 48.7**	**-1.2**
	1.5nm,0.3s						
RFYF	**Reffroy**	**3.26**	**208**	*e*Pn	**Pn**	**02 05 00.7**	**+1.6**
RFYF				*e*Sg	**Sg**	**02 05 51.8**	**-2.4**
	2.7nm,0.3s						
CLL	**Collm**	**3.26**	**92**	*e*Pg	**Pg**	**02 05 09.1**	**-1.8**
	SNR=1.4						
CLL				*e*Sg	**Sg**	**02 05 51.0**	**-3.4**
MEZF	**Maizieres J'vi**	**3.50**	**212**	*e*Pn	**Pn**	**02 05 04.1**	**+1.5**
MEZF				*e*Sg	**Sg**	**02 05 58.9**	**-3.4**
	2.6nm,0.3s						
HAU	**Haudompre**	**3.64**	**196**	*e*Sg	**Sg**	**02 06 04.3**	**-2.6**
	3.2nm,0.4s						
HINF	**Hinteralfeld**	**3.76**	**190**	*e*Sg	**Sg**	**02 06 09.4**	**-1.4**
	1.4nm,0.4s						
SFTF	**Sexfontaines**	**3.77**	**209**	*e*Pn	**Pn**	**02 05 07.5**	**+1.1**
LOR	**Lormes**	**4.97**	**213**	*e*Pn	**Pn**	**02 05 23.1**	**-0.4**
LOR				*e*Sn	**Sn**	**02 06 19.4**	**-3.1**
	1.1nm,0.3s						
CABF	**La Chapelle**	**5.04**	**194**	*e*Pn	**Pn**	**02 05 26.2**	**+1.8**
SSF	**Saint Saulge**	**5.27**	**214**	*e*Pn	**Pn**	**02 05 27.3**	**-0.4**
HYF	**Humbligny**	**5.43**	**220**	*e*Pn	**Pn**	**02 05 31.0**	**+1.1**
SMF	**Signal de Mont**	**5.53**	**210**	*e*Pn	**Pn**	**02 05 31.2**	**-0.1**
BGF	**Bois d'Agland**	**5.94**	**215**	*e*Pn	**Pn**	**02 05 36.7**	**-0.4**
FLN	**La Foliniere**	**6.00**	**246**	*e*Pn	**Pn**	**02 05 36.8**	**-1.1**
TCF	**Toulx Ste Croi**	**6.40**	**217**	*e*Sn	**Sn**	**02 06 51.9**	**-6.5**
	0.3nm,0.3s						
GRR	**Gorron**	**6.41**	**244**	*e*Pn	**Pn**	**02 05 42.4**	**-1.3**
GRR				*e*Sn	**Sn**	**02 06 50.8**	**-7.7**
	2.0nm,0.3s						

*IDC **30** 02:13:25.1±1.7,29.76S×176.40W,mb4.3/4,mb1 4.4/6, mb1mx4.2/16,ML3.7/2,MS4.6/4,Ms1 4.5/4,ms1mx3.9/17, Error ellipse: s-maj=49.9km s-min=28.9km az=130.0*
*NEIC **30** 02:13:26.4±1.2,29.75S×176.36W,h10km,mb4.2/2,Error ellipse: s-maj=28.6km s-min=16.8km az=110.0*

ISC 30 02:13:29.2±4.0,29.9S±0.1×176.6W±0.6,h33km,n16, σ1§27/10,mb4.4/5,MS4.6/4,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**9.88**	**210**	Pn	**P**	**02 15 50.3**	**-1.7**
	0.2nm,0.3s,baz=348,slow=15,SNR=2.4						
URZ				Sn	**Sn**	**02 17 42.8**	**-0.1**
	2.0nm,0.3s,baz=180,slow=21,SNR=7.9						
RPZ	**Rata Peaks**	**16.98**	**212**	P	**P**	**02 17 27.4**	**+1.7**
	0.7nm,0.3s,baz=28,slow=16,SNR=3.8						
CTA	**Charters Tower**	**34.94**	**277**	P	**P**	**02 20 21.1**	**+0.9**
	2.5nm,0.5s,mb4.4,baz=126,slow=13,SNR=2.7						
CTAO	**Charters Tower**	**34.94**	**277**	*e*P	**P**	**02 20 21.6**	**+1.4**
	1.2nm,0.5s,mb4.1						
STKA	**Stephens Creek**	**35.80**	**256**	*e*P	**P**	**02 20 29.2**	**+1.8**
	5.8nm,1.1s,mb4.4						
STKA	**Stephens Creek**	**35.80**	**256**	P	**P**	**02 20 28.9**	**+1.5**
	5.1nm,0.8s,mb4.5,baz=84,slow=11,SNR=7.1						
STKA				LR	LR	02 34 56.7	
	comp=Z,555nm,19.0s,MS4.3,baz=29,slow=36						
ASAR	**Alice Springs**	**44.37**	**266**	P	**P**	**02 21 38.0**	**-0.4**
	2.3nm,0.8s,mb4.0,baz=96,slow=8.2,SNR=23						
ASAR				LR	LR	02 40 32.6	
	comp=Z,498nm,19.4s,MS4.4,baz=38,slow=36						
WRAB	**Tennant Creek**	**45.31**	**271**	*e*P	**P**	**02 21 44.4**	**-1.6**
	44nm,1.2s,mb5.2						
WRA	**Warramunga Arr**	**45.31**	**271**	P	**P**	**02 21 45.2**	**-0.8**
	5.2nm,1.0s,mb4.3,baz=108,slow=7.7,SNR=7.7						
MAW	**Mawson**	**73.24**	**200**	LR	LR	02 58 19.6	
	comp=Z,174nm,18.2s,MS4.4,baz=320,slow=37						
ASAJ	**Asahikawa**	**82.54**	**332**	LR	LR	02 55 31.0	
	comp=Z,1μm,20.1s,MS5.2,baz=145,slow=31						
MKAR	**Makanchi Array**	**118.37**	**310**	PKP	PKPdf	02 32 14.1	+0.8
	0.4nm,0.7s,SNR=3.3						
BVAR	**Borovoye Array**	**126.87**	**316**	PKP	PKPdf	02 32 30.6	+1.1
	0.3nm,0.5s,baz=135,slow=2.0,SNR=4.1						
FINES	**FINESS Array B**	**145.05**	**341**	PKPbc	PKPbc	02 33 02.1	-0.6
	1.9nm,0.9s,baz=63,slow=3.1,SNR=6.5						
NB2	**NORSAR Subarra**	**148.39**	**353**	PKP		02 33 11.6	
	3.3nm,1.2s,baz=10.0,slow=3.1						
BRTR	**Keskin Array B**	**153.41**	**300**	PKPbc	PKPdf	02 33 25.6	+9.4
	0.9nm,0.9s,baz=90,slow=1.4,SNR=5.2						

MAN 30 02:15:23.2,9.76N×125.14E,h25km,mb3.7,ML2.4,MS1.9, 1C,Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SCPH	**Surigao**	**0.35**	**86**	*e*P	Pb	02 15 31.9	+1.0
MSLP	**Maasin**	**0.47**	**324**	⇑*e*P	Pb	02 15 33.3	+0.5
TBP	**Tagbilaran**	**1.26**	**267**	*e*P	Pn	02 15 45.5	0.0
TBP				*i* S	Sn	02 16 01.5	-0.3
PLP	**Palo**	**1.41**	**354**	*e*P	Pn	02 15 47.5	-0.1
PLP				*e*S	Sn	02 16 05.5	0.0

*NEIC **30** 02:16:24.8±0.9,51.66N×176.70W,h51km±4km, ML3.5(AEIC),Error ellipse: s-maj=23.3km s-min=6.5km az=175.0*
*IDC **30** 02:16:25.4±4.2,51.76N×176.62W,h50km±35km,mb3.4/9, mb1 3.7/10,mb1mx3.5/25,ML3.6/1,Error ellipse: s-maj=40.8km s-min=17.5km az=5.0*

ISC 30 02:16:23.7±1.0,51.7N±0.2×176.7W±0.07,h61km±4km, n22,σ0§77/28,mb3.7/8,Andreanof Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ETKA	**Kagalaska Isla**	**0.30**	**46**	P	**P**	**02 16 33.5**	**-0.5**
ETKA				S	**S**	**02 16 40.4**	**-1.1**
KIMD	**Kanaga Island**	**0.32**	**290**	P	**P**	**02 16 33.9**	**-0.2**
KIMD				S	**S**	**02 16 40.7**	**-1.0**
KIWB	**Kanaga Island**	**0.32**	**309**	P	**P**	**02 16 34.4**	**+0.3**
KIWB				S	**S**	**02 16 42.1**	**+0.4**
ADAG	**Mount Adagdak**	**0.34**	**16**	P	**P**	**02 16 35.0**	**+0.7**
KIKV	**Kanaga Island**	**0.34**	**311**	P	**P**	**02 16 34.8**	**+0.5**
KIKV				S	**S**	**02 16 42.6**	**+0.5**
GSTD	**Great Sitkin T**	**0.55**	**43**	P	**P**	**02 16 37.0**	**+0.6**
GSTD				S	**S**	**02 16 46.2**	**+0.5**
GSMY	**Great Sitkin M**	**0.58**	**48**	P	**P**	**02 16 37.2**	**+0.5**
GSIG	**Igitkin Island**	**0.61**	**57**	P	**P**	**02 16 37.1**	**0.0**
ATKA	**Atka Island**	**1.68**	**70**	P	**P**	**02 16 51.1**	**-0.2**
ATKA				S	**S**	**02 17 12.0**	**+0.1**
FX1	**Attu Island--F**	**6.31**	**285**	P	**P**	**02 17 55.8**	**-0.4**
	4.2nm,0.3s,baz=78,slow=22,SNR=12						
FX1				S	**S**	**02 19 03.2**	**-4.5**
	baz=159,slow=20,SNR=2.6						
FX1	**Attu Island--F**	**6.31**	**285**	*e*P	**P**	**02 17 55.4**	**-0.8**
ILAR	**Eielson Array**	**20.23**	**38**	P	**P**	**02 20 55.1**	**-0.8**
	0.4nm,0.5s,baz=237,slow=8.2,SNR=16						
ILAR				PcP	PcP	02 25 06.2	-1.6
	0.2nm,0.4s,baz=288,slow=4.3,SNR=4.4						
INK	**Inuvik**	**26.50**	**35**	P	**P**	**02 21 55.5**	**-1.2**
	0.7nm,0.4s,mb3.5,baz=194,slow=9.6,SNR=6.7						
INK				PcP	PcP	02 25 19.8	-0.8
	0.6nm,0.6s,baz=326,slow=10,SNR=3.1						
YKA	**Yellowknife Ar**	**34.11**	**47**	P	**P**	**02 23 02.3**	**-1.8**
	0.3nm,0.6s,mb3.4,baz=282,slow=8.2,SNR=6.6						
YKA				PcP	PcP	02 25 40.0	-0.4
	0.4nm,0.6s,baz=289,slow=3.1,SNR=12						
YKA	**Yellowknife Ar**	**34.11**	**47**	P	**P**	**02 23 02.3**	**-1.8**
YKA				PcP	PcP	02 25 40.0	-0.4
NEW	**Newport**	**37.59**	**71**	P	**P**	**02 23 34.9**	**+1.3**
	1.3nm,0.4s,mb4.0,baz=348,slow=9.3,SNR=4.3						
PDAR	**Pinedale Array**	**45.01**	**74**	P	**P**	**02 24 35.3**	**+0.8**
	0.9nm,0.5s,mb3.8,baz=318,slow=3.3,SNR=9.2						
SONM	**Songino Array**	**47.66**	**297**	PcP	PcP	02 26 24.2	-0.2
	0.5nm,0.6s,baz=45,slow=3.4,SNR=4.6						
TXAR	**Lajitas Array**	**57.35**	**83**	P	**P**	**02 26 07.4**	**-0.3**
	0.4nm,0.5s,mb3.7,baz=302,slow=5.6,SNR=11						
ARCES	**ARCESS Array B**	**58.03**	**351**	P	**P**	**02 26 12.2**	**+0.3**
	0.9nm,0.9s,mb3.8,baz=34,slow=6.5,SNR=15						
MKAR	**Makanchi Array**	**60.85**	**309**	P	**P**	**02 26 33.1**	**+1.4**
	0.1nm,0.5s,mb3.2,baz=51,slow=7.0,SNR=3.8						
BVAR	**Borovoye Array**	**61.50**	**321**	P	**P**	**02 26 35.8**	**-0.1**
	1.1nm,0.7s,mb4.1,baz=45,slow=6.3,SNR=5.5						

CASC 30 02:16:31.3±1.9,12.89N×90.33W,h16km±8km,MD3.7, ML3.7,5C-2D,Off coast of central America

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CUSS	**Cusmapa**	**1.08**	**20**	*e*P	Pb	02 16 50.5	-0.5
SBLS	**San Blas**	**1.17**	**36**	*e*P	Pb	02 16 52.3	-0.3
SBLS				*e*S	Sb	02 17 09.3	+2.1
SNJE	**San Jose**	**1.20**	**36**	⇑*e*P	Pb	02 16 53.0	-0.1
SNJE				*e*S	Sb	02 17 10.4	+2.2
RTR	**El Retiro**	**1.20**	**34**	⇑*e*P	Pb	02 16 53.0	-0.1
RTR				*e*S	Sb	02 17 09.9	+1.6
IXG	**Ixpaco**	**1.28**	**355**	*e*P	Pb	02 16 53.1	-1.4
IXG				*e*S	Sb	02 17 10.0	-0.6
IXG				AML	AML	02 17 14.4	
	comp=E,3μm,0.4s						
BOQS	**Boqueron**	**1.32**	**51**	⇓*e*P	Pn	02 16 54.6	-0.6
BOQS				*e*S	Sb	02 17 13.2	+1.4
PICS	**Picacho**	**1.34**	**51**	*e*P	Pn	02 16 58.0	+2.6
RBDL	**Robledal**	**1.36**	**27**	⇑*e*P	Pn	02 16 55.7	-0.1
RBDL				*e*S	Sb	02 17 14.0	+1.0
LFRS	**El Faro**	**1.43**	**59**	⇑*e*P	Pn	02 16 55.6	-1.2
LFRS				*e*S	Sb	02 17 15.9	+0.9
LFU	**La Fuente**	**1.46**	**54**	*e*P	Pn	02 16 56.5	-0.6
LFU				*e*S	Sb	02 17 12.7	-3.0
LBRS	**Las Brisas**	**1.51**	**56**	*e*P	Pn	02 16 57.4	-0.5
LBRS				*e*S	Sb	02 17 17.4	+0.2
LCBS	**La Ceiba**	**1.52**	**60**	⇑*e*P	Pn	02 16 56.8	-1.2
NBG	**Las Nubes**	**1.68**	**359**	*e*P	Pn	02 17 00.4	+0.1
NBG				AML	AML	02 17 30.3	
	comp=N,1μm,0.4s						
MTO2	**Montecristo 2**	**1.77**	**32**	⇓*e*P	Pn	02 17 01.4	-0.2
JAT	**Jato**	**1.90**	**318**	*e*P	Pn	02 17 03.0	-0.5
JAT				*e*S	Sn	02 17 28.5	+1.2
JAT				AML	AML	02 17 38.2	
	comp=N,297nm,0.3s						

*JMA **30** 02:39:13.6±0.4,25.30N×127.66E,h61km,M3.0*
*IDC **30** 02:40:06.7±29.0,26.90N×125.73E,h386km±229km, mb2.9/4,mb1 3.0/4,mb1mx2.7/21,Error ellipse: s-maj=235.0km s-min=58.2km az=170.0*

ISC 30 02:39:13.6±0.7,25.30N±0.05×127.71E±0.05,h61km,n15, σ0§97/22,mb3.4/4,Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JJT2	**Tamagusuku 2**	**0.84**	**3**	P	**P**	**02 39 30.1**	**+0.4**
JJT2				S	**S**	**02 39 42.1**	**+0.3**
NAH1	**Naha**	**0.90**	**359**	P	**P**	**02 39 30.0**	**-0.6**
NAH1				S	**S**	**02 39 43.3**	**+0.1**
JKE	**Kume jima 2**	**1.32**	**321**	P	**P**	**02 39 35.6**	**-0.8**
JKE				S	**S**	**02 39 52.1**	**-1.2**
JAGN	**Aguni-jima**	**1.35**	**342**	P	**P**	**02 39 37.0**	**+0.1**
JAGN				S	**S**	**02 39 53.2**	**-0.9**
JOW	**Kunigami**	**1.61**	**18**	P	**P**	**02 39 40.7**	**+0.3**
JIH	**Iheya**	**1.75**	**8**	P	**P**	**02 39 42.2**	**0.0**
JIH				S	**S**	**02 40 03.2**	**-0.2**
JOGS	**Gusukube**	**2.15**	**256**	P	**P**	**02 39 47.7**	**-0.2**
JOGS				S	**S**	**02 40 13.2**	**-0.2**
JTK	**Tokunoshima**	**2.72**	**24**	P	**P**	**02 39 57.0**	**+1.1**
JTJ	**Tarama**	**2.80**	**257**	P	**P**	**02 39 56.3**	**-0.8**
JMZ	**Minamidaito 2**	**3.22**	**80**	P	**P**	**02 40 02.8**	**-0.2**
JMZ				S	**S**	**02 40 38.6**	**-1.7**
JAM	**Amami Oshima**	**3.54**	**28**	P	**P**	**02 40 07.9**	**+0.5**
SONM	**Songino Array**	**28.09**	**329**	P	**P**	**02 45 04.4**	**+2.8**
	0.5nm,0.8s,mb3.2,baz=146,slow=5.2,SNR=3.5						
MKAR	**Makanchi Array**	**41.81**	**313**	P	**P**	**02 47 00.8**	**+2.1**
	0.9nm,0.4s,mb3.7,baz=108,slow=9.1,SNR=18						
FINES	**FINESS Array B**	**73.44**	**331**	P	**P**	**02 50 44.2**	**+3.5**
	0.5nm,0.6s,mb3.6,baz=72,slow=4.4,SNR=6.7						
YKA	**Yellowknife Ar**	**79.57**	**25**	P	**P**	**02 51 27.8**	**+13**
	0.2nm,0.6s,mb3.2,baz=305,slow=5.6,SNR=6.0						

*THR **30** 02:41:27.7±1.2,36.46N×51.45E,ML3.6*

ISC 30 02:41:24.9±3.6,36.5N±0.2×51.47E±0.09,h2km±22km,n4, σ0§45/6,Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THKV	**Tehran--Karaj**	**0.75**	**219**	*e*PG	**Pg**	**02 41 39.5**	**-0.4**
THKV				*e*SG	**Sg**	**02 41 50.0**	**+0.1**
THKV				AMP		02 41 51.4	
	comp=N,2μm,0.4s						
DAMV	**Damavand**	**0.96**	**155**	*e*PG	**Pg**	**02 41 44.3**	**+0.2**
DAMV				*e*SG	**Sg**	**02 41 56.9**	**+0.1**
SNGE	**Sanandaj**	**3.63**	**248**	*e*PN	**Pn**	**02 42 23.6**	**+0.3**
NASN	**Na'in**	**3.85**	**163**	*e*PN	**Pn**	**02 42 26.1**	**-0.3**

*NIED **30** 02:52:00,47.60N×142.30E,h8km,Mw4.8 Best double couple: M0 1.75×10^16 NP1:φs330°,δ46°,λ76°. NP2:φs170°,δ46°,λ104°.*
*MOS **30** 02:52:10.5±0.9,47.38N×142.12E,h12km,mb4.9/21, MS4.3/15,Error ellipse: s-maj=10.9km s-min=5.5km az=106.2*
MOS Felt (V-VI) at Kostromskoe; (V) at Pioneri; (IV-V) at Chehov; (III) at Holmsk; (II) at Yuzhno-Sakhalinsk.
*JMA **30** 02:52:10.6±0.4,47.57N×142.31E,h57km,M5.3*
*SKHL **30** 02:52:10.7±0.5,47.40N×142.16E,h15km±3km,mb4.7/5, Ms4.8/9,msh5.1/1*
SKHL Felt (VI-V) at Kostromskoe, (V) at Pionery, (IV-V) at Chehov.
*NEIC **30** 02:52:12.3±0.1,47.31N×142.12E,mb4.9/90,Error ellipse: s-maj=3.4km s-min=2.5km az=165.0*
NEIC Forty-six houses damaged in the Yuzhno-Sakhalinsk area. Felt [VI] at Kostromskoye; [V] at Chekhov and Pionery; [III] at Kholmsk.
*IDC **30** 02:52:12.3±0.5,47.32N×142.11E,h14km±2km,mb4.5/24, mb1 4.7/26,mb1mx4.7/27,ML4.5/2,MS3.8/5,Ms1 3.8/5, ms1mx3.5/27,Error ellipse: s-maj=12.2km s-min=10.4km az=117.0*
*BJI **30** 02:52:12.3,47.50N×142.59E,h42km,mB4.9,mb4.8, ML5.3,Ms4.8,Msz4.6*
*HRVD **30** 02:52:12.3±0.4,47.34N×142.01E,h19km±1km,MW4.9/50, Centroid moment Tensor Solution. LP body waves: s20,c25;Mantle waves: s50,c80; Moment tensor: Scale 10^16Nm; Mrr2.76±.21; Mθθ-0.43±.13; Mφφ-2.33±.14; Mrθ

TYV comp=N,40nm,0.6s AMB AMB 02 53 19.0
TYV comp=N,70nm,0.6s AMB AMB 02 53 19.0
TYV comp=N,140nm,0.6s eSn Sn 02 53 45.0 -3.3
TYV eSb Sb 02 53 53.0 -2.0
TYV eSg Sg 02 54 06.4 +0.2
TYV A 02 54 08.0
TYV comp=N,6µm,6.0s A 02 54 12.0
TYV comp=N,320nm,0.8s A 02 54 12.0
TYV comp=N,440nm,0.8s A 02 54 12.0
TYV comp=N,120nm,0.8s AMS AMS 02 55 08.0
TYV comp=N,9µm,12.0s
TYV Tymovskoe 3.50 5 ePN **Pn Pn 02 53 06.0 +0.1**
TYV pmax pmax
TYV comp=Z,14nm,0.8s MLR MLR
TYV comp=Z,9µm,12.0s
JKK2 Kamakawa 2 3.53 173 ⇑P **Pn 02 53 06.7 +0.4**
JTKR Abashiri--Toko 3.62 160 P **Pn 02 53 06.6 -1.0**
JTKR eS **Sn 02 53 49.6 -1.6**
JHR Hokuryu 3.65 185 P **Pn 02 53 09.3 +1.2**
JRA Rausu 4.01 148 P **Pn 02 53 12.8 -0.4**
JSK Shakotan 4.20 197 P **Pn 02 53 16.2 +0.3**
YUK Yuzh-Kuril'sk 4.22 141 ePn **Pn 02 53 15.6 -0.6**
YUK eSn **Sn 02 54 00.5 -6.0**
YUK AMS AMS 02 55 27.0
YUK comp=Z,8µm,12.0s AMS AMS 02 55 27.0
YUK comp=Z,6µm,12.0s AMS AMS 02 55 27.0
YUK comp=Z,8µm,12.0s
YUK Yuzh-Kuril'sk 4.22 141 ePN **Pn 02 53 15.6 -0.6**
YUK pmax pmax
YUK comp=Z,2µm,1.0s pmax pmax
YUK comp=Z,250nm,0.5s pmax pmax
YUK comp=N,180nm,0.3s pmax pmax
YUK comp=E,210nm,0.6s MLR MLR
YUK comp=Z,8µm,12.0s MLR MLR
YUK comp=N,8µm,11.0s MLR MLR
YUK comp=E,6µm,12.0s
JFR Furan 4.23 176 P **Pn 02 53 16.8 +0.6**
JAR Ashorobuto 4.23 164 P **Pn 02 53 16.0 -0.3**
JAR eS **Sn 02 54 05.8 -1.0**
KUR Kuril'sk 4.48 117 ePn **Pn 02 53 22.0 +2.1**
KUR eSn **Sn 02 54 09.5 -3.7**
KUR Kuril'sk 4.48 117⇓ePN **Pn 02 53 23.0 +3.1**
KUR pmax pmax
KUR comp=N,250nm,1.2s pmax pmax
KUR comp=E,320nm,1.2s pmax pmax
KUR comp=Z,470nm,1.2s
TEY Ternei 4.53 241⇑*i*Pn **Pn 02 53 21.0 +0.4**
TEY ePg **Pg 02 53 39.0 -1.1**
TEY AMB AMB 02 53 40.0
TEY comp=Z,90nm,0.5s AMB AMB 02 53 40.0
TEY comp=Z,110nm,0.5s AMB AMB 02 53 40.0
TEY comp=Z,160nm,0.5s *i* Sn **Sn 02 54 12.5 -1.9**
TEY eSg **Sg 02 54 41.6 +1.1**
TEY A 02 54 44.0
TEY comp=Z,430nm,0.6s A 02 54 44.0
TEY comp=Z,200nm,0.6s AMS AMS 02 55 47.0
TEY comp=Z,3µm,10.0s AMS AMS 02 55 47.0
TEY comp=Z,3µm,10.0s
JEW Eniwo 4.57 187 P **Pn 02 53 22.5 +1.4**
NEM2 Nemuro 2 4.73 147 P **Pn 02 53 23.3 -0.1**
NEM2 eS **Sn 02 54 16.7 -2.8**
JCH Churui 4.84 170 P **Pn 02 53 25.0 +0.1**
GRNR Gornyy 5.09 314⇑ePn **Pn 02 53 28.0 -0.4**
GRNR ePg **Pg 02 53 51.8 +0.6**
GRNR AMB AMB 02 53 54.4
GRNR comp=Z,40nm,0.5s AMB AMB 02 53 54.4
GRNR comp=Z,50nm,0.5s
GRNR eSn **Sn 02 54 24.4 -4.0**
GRNR eSb **Sb 02 54 36.0 -5.0**
GRNR eSg **Sg 02 55 01.8 +2.8**
GRNR A 02 55 03.8
GRNR comp=Z,250nm,0.5s A 02 55 03.8
GRNR comp=Z,200nm,0.5s
JNBK Urakawa-nobuka 5.12 175 P **Pn 02 53 30.1 +1.3**
JKB Kayabe 5.55 189 P **Pn 02 53 36.7 +1.7**
JOSM Okushiri--Mats 5.64 201 P **Pn 02 53 36.3 +0.1**
NKL Nikolayevsk 5.86 351 *i* Pn **Pn 02 53 36.5 -2.8**
NKL ePb **Pb 02 53 56.5 +4.3**
NKL *i* Pg **Pg 02 54 05.8 -0.8**
NKL AMB AMB 02 54 07.4
NKL comp=Z,140nm,1.0s AMB AMB 02 54 07.4
NKL comp=Z,90nm,1.0s AMB AMB 02 54 07.4
NKL comp=Z,170nm,1.0s
NKL eSn **Sn 02 54 42.5 -5.3**
NKL eSg **Sg 02 55 27.5 +2.8**
NKL A 02 55 35.0
NKL comp=Z,50nm,0.6s A 02 55 35.0
NKL comp=Z,150nm,0.6s AMS AMS 02 56 24.0
NKL comp=Z,2µm,9.0s AMS AMS 02 56 24.0
NKL comp=Z,4µm,12.0s AMS AMS 02 56 24.0
NKL comp=Z,5µm,12.0s
OKH Okha 6.20 4 ePn **Pn 02 53 44.8 +0.7**
OKH eSn **Sn 02 54 56.1 -0.1**
OKH AMS AMS 02 57 16.0
OKH comp=Z,5µm,10.0s AMS AMS 02 57 16.0
OKH comp=Z,4µm,10.0s AMS AMS 02 57 16.0
OKH comp=Z,3µm,8.0s
JANG Nango 7.02 184 P **Pn 02 53 55.4 -0.3**
KLR Kul'dur 7.21 289 eP **Pn 02 54 02.2 +3.9**
KLR erx rx 02 54 07.5
KLR erx rx 02 54 36.8
KLR erx rx 02 55 06.8
KLR AMS AMS 02 57 26.5
KLR comp=Z,3µm,11.0s AMS AMS 02 57 26.5
KLR comp=Z,7µm,11.0s
KLR Kul'dur 7.21 289 ePN **Pn 02 54 02.2 +3.9**
KLR MLR MLR
KLR comp=E,3µm,11.0s MLR MLR
KLR comp=Z,7µm,11.0s
EKMR Ekimchan 8.21 317 eP **P 02 54 10.2 -2.2**
EKMR eS **Sn 02 55 45.5 -1.2**
VLA Vladivostok 8.42 243 eP **P 02 54 15.0 -0.3**
VLA erx rx 02 55 15.0
VLA *i* rx rx 02 56 10.0
VLA *i* rx rx 02 56 35.0
VLA *i* rx rx 02 57 07.0
VLA AMS AMS 02 58 10.0
VLA comp=Z,2µm,11.0s AMS AMS 02 58 10.0
VLA comp=Z,2µm,11.0s AMS AMS 02 58 10.0
VLA comp=Z,4µm,11.0s AMS AMS 02 58 10.0
VLA comp=Z,5µm,12.0s
VLA Vladivostok 8.42 243 ePN **P 02 54 15.0 -0.3**
VLA MLR MLR
VLA comp=Z,5µm,12.0s MLR MLR
VLA comp=N,2µm,11.0s

VLA comp=E,2µm,12.0s MLR MLR
MDJ Mudanjiang 9.19 257 eP **P 02 54 22.1 -3.9**
SKR Severo-Kuril's 9.73 65 erx rx 02 56 46.0
SKR AMS AMS 02 58 52.0
SKR comp=E,3µm,14.0s
YASR Yasnyy 10.83 308⇓eP **P 02 54 47.5 -0.9**
YASR eS **S 02 56 57.1 +5.9**
BMKR Bomnak 11.14 316 eP **P 02 54 50.6 -2.0**
BMKR sP 02 54 58.8
BMKR eS **S 02 57 01.9 +3.1**
MAT Matsushiro 11.22 197 P **P 02 54 51.5 -2.3**
MAT eS **S 02 57 03.0 +2.1**
ZEA Zeya 11.43 309⇓eP **P 02 54 56.4 -0.1**
ZEA sP 02 55 04.2
ZEA eS **S 02 57 07.5 +1.8**
ZEA AMS AMS 02 59 55.0
ZEA comp=E,3µm,14.0s AMS AMS 02 59 55.0
ZEA comp=E,3µm,13.0s AMS AMS 02 59 55.0
ZEA comp=E,2µm,12.0s
KROS Kirovskiy 11.91 312 eP **P 02 55 00.5 -2.5**
KROS eS **S 02 57 19.0 +1.6**
PET Petropavlovsk 11.96 56 erx rx 02 55 12.8
PET erx rx 02 57 35.2
PET AMS AMS 03 00 42.0
PET comp=E,3µm,12.0s
PET Petropavlovsk 11.96 56 ePN **P 02 55 02.4 -1.3**
PET pmax pmax
PET comp=Z,67µm,1.7s
CN2 Changchun 12.26 259 eP **P 02 55 08.0 +0.2**
CN2 eS **S 02 57 25.0 -1.1**
CN2 AMB AMB
CN2 comp=Z,10.0nm,0.6s AMB AMB
CN2 comp=Z,120nm,9.0s LR LR
CN2 comp=N,730nm,13.0s LR LR
CN2 comp=E,720nm,13.0s LR LR
CN2 comp=Z,1µm,13.0s
MA2 Magadan 13.23 19 ePN **P 02 55 20.1 -0.6**
MA2 pmax pmax
MA2 comp=Z,106µm,2.9s
SNY Shenyang 14.36 254 ⇑P **P 02 55 43.8 +8.2**
SNY AMB AMB
SNY comp=Z,10.0nm,0.9s LR LR
SNY comp=N,900nm,12.7s LR LR
SNY comp=E,2µm,11.0s LR LR
SNY comp=Z,2µm,11.6s
JJG Jouge 14.42 211 P **P 02 55 38.3 +1.8**
KS15 Wonju Array Si 14.48 232 eP **P 02 55 34.8 -2.4**
HIA Hailar 15.04 286 eP **P 02 55 44.6 +0.1**
INCN Inchon 15.13 235 P **P 02 55 46.2 +0.5**
YAK Yakutsk 16.32 339*d* iP **P 02 56 00.6 -0.2**
YAK pmax pmax
YAK comp=Z,107µm,1.0s
YAK Yakutsk 16.32 339 eP **P 02 56 00.8 0.0**
comp=Z,107nm,1.0s
SEY Seymchan 16.60 16 eP **P 02 56 10.2 +5.7**
SEY pmax pmax
SEY comp=N,50nm,1.5s pmax pmax
SEY comp=E,40nm,1.5s pmax pmax
SEY comp=Z,70nm,1.5s
JNU Nakatsue 16.63 215 Pn **P 02 56 04.0 -1.0**
comp=Z,0.3nm,0.3s,baz=17,slow=13,SNR=5.2
JNU LR LR 03 01 40.5
comp=Z,233nm,18.4s,baz=250,slow=34
DL2 Dalian 17.19 248 P **P 02 56 18.8 +6.7**
DL2 S **S 02 59 31.5 +9.1**
DL2 AMB AMB
DL2 comp=Z,20nm,1.6s AMB AMB
DL2 comp=Z,320nm,9.3s LR LR
DL2 comp=N,560nm,13.2s LR LR
DL2 comp=E,560nm,12.0s LR LR
DL2 comp=Z,940nm,13.2s
BOD Bodaibo 19.90 312⇑*i*P **P 02 56 43.7 -1.0**
BJI Beijing 20.12 258 P **P 02 56 44.5 -2.7**
BJI AMB AMB
BJI comp=Z,9.0nm,0.9s LR LR
BJI comp=N,950nm,15.6s,MS4.5 LR LR
BJI comp=E,1µm,11.3s,MS4.5 LR LR
BJI comp=Z,545nm,15.0s,MS4.0
BJT Baijiatuau 20.14 258 P **P 02 56 44.4 -3.0**
CBIJ Chichi jima 20.25 180 P **P 02 56 46.9 -1.7**
comp=Z,44nm,0.7s,baz=283,slow=22,SNR=3.7
FX1 Attu Island--F 20.50 63 P **P 02 56 51.6 +0.5**
comp=Z,22nm,0.8s,baz=75,slow=18,SNR=2.9
FX1 LR LR 03 03 56.7
comp=Z,8.9nm,18.6s,baz=278,slow=34
FX1 Attu Island--F 20.50 63 P **P 02 56 51.6 +0.5**
FX1 pmax pmax
FX1 comp=Z,22nm,0.8s MLR MLR
comp=Z,9.0nm,18.6s
FX1 Attu Island--F 20.50 63 eP **P 02 56 51.1 +0.1**
TIA Tai'an 21.67 248 eP **P 02 57 03.8 +0.7**
TIA AMB AMB
comp=Z,30nm,1.2s,mb4.6
HHC Hu-ho-hao-te 22.84 265 eP **P 02 57 15.8 +1.2**
HHC PCP PcP 03 00 59.5 -7.7
HHC S **S 03 01 28.5 +8.7**
HHC SCP 03 04 38.0
HHC AMB AMB
HHC comp=Z,15nm,1.1s,mb4.3 AMB AMB
HHC comp=Z,198nm,6.9s LR LR
HHC comp=N,685nm,11.8s,MS4.5 LR LR
HHC comp=E,649nm,11.3s,MS4.5 LR LR
HHC comp=Z,472nm,11.5s,MS4.2
SSE Sheshan 22.89 232 P **P 02 57 15.0 -0.2**
SSE S **S 03 01 19.5 -1.3**
SSE AMB AMB
SSE comp=Z,40nm,0.9s,mb4.8 AMB AMB
SSE comp=Z,37nm,5.9s LR LR
SSE comp=N,267nm,11.8s,MS4.1 LR LR
SSE comp=E,277nm,11.9s,MS4.1 LR LR
SSE comp=Z,313nm,11.6s,MS4.0
JOW Kunigami 23.25 213 P **P 02 57 17.4 -1.4**
comp=Z,9.2nm,0.8s,mb4.2,baz=47,slow=30,SNR=2.9
NJ2 Nanjing 23.46 238 eP **P 02 57 22.5 +1.7**
NJ2 PP PP 02 57 56.5 +4.0
NJ2 S **S 03 01 36.0 +5.0**
NJ2 AMB AMB
NJ2 comp=Z,10.0nm,0.7s,mb4.3 AMB AMB
NJ2 comp=Z,190nm,10.5s LR LR
NJ2 comp=N,2µm,10.1s,MS4.8 LR LR
NJ2 comp=E,890nm,14.8s,MS4.8 LR LR
NJ2 comp=Z,1µm,14.4s,MS4.5
ULN Ulaanbaatar 23.57 284 eP **P 02 57 21.2 -0.4**
ULN comp=Z,25nm,1.2s,mb4.5 LR LR
ULN comp=Z,414nm,19.0s,MS3.9
SONM Songino Array 24.01 284 P **P 02 57 26.3 +0.4**
comp=Z,7.7nm,1.0s,mb4.1,baz=81,slow=8.6,SNR=46
SONM PcP PcP 03 01 07.8 -1.8
comp=Z,1.5nm,0.8s,baz=91,slow=1.2,SNR=3.6
BILL Bilibino 24.07 22*c* iP **P 02 57 28.0 +1.8**
BILL pmax pmax
comp=Z,86nm,2.2s,mb4.8

BILL MLR MLR
comp=Z,500nm,12.0s,MS4.2
BILL Bilibino 24.07 22 eP **P 02 57 27.2 +0.9**
comp=Z,35nm,1.1s,mb4.7
IRK Irkutsk 24.75 295 eP **P 02 57 33.7 +0.7**
IRK *e* 02 58 11.7
TIXI Tiksi 25.14 350 eP **P 02 57 35.8 -0.8**
TIXI pmax pmax
TIXI comp=Z,29nm,0.7s,mb4.9 MLR MLR
TIXI comp=Z,627nm,12.0s,MS4.3
TIXI Tiksi 25.14 350 eP **P 02 57 35.8 -0.8**
comp=Z,30nm,0.7s,mb4.9
TLY Talaya 25.18 294⇓*i*P **P 02 57 35.1 -2.1**
TLY *e* 02 58 10.4
TLY *e* 03 01 09.5
TLY eS **S 03 02 05.2 +5.2**
TLY pmax pmax
TLY comp=Z,90nm,0.9s,mb5.3 MLR MLR
comp=Z,14µm,16.0s,MS5.5
ZAK Zakamensk 25.57 291⇑*i*P **P 02 57 41.4 +0.6**
MOY Mondy 26.82 295 eP **P 02 57 52.8 +0.4**
WHN Wuhan 27.20 242 P **P 02 58 01.5 +5.4**
WHN S **S 03 02 36.3 +2.6**
WHN LR LR
WHN comp=N,1µm,11.5s,MS4.8 LR LR
WHN comp=E,1µm,14.5s,MS4.8 LR LR
WHN comp=Z,1µm,11.0s,MS4.8
LZH Lanzhou 30.47 262 ⇑P **P 02 58 25.0 -0.4**
LZH PP PP 02 59 23.5 -1.5
LZH eS **S 03 03 23.3 -2.6**
LZH AMB AMB
LZH comp=Z,45nm,1.3s,mb5.0 AMB AMB
LZH comp=Z,201nm,5.2s LR LR
LZH comp=E,798nm,10.2s LR LR
LZH comp=Z,1µm,12.9s,MS4.8
GTA Gaotai 31.48 271 eP **P 02 58 34.3 0.0**
GTA AMB AMB
GTA comp=Z,14nm,1.1s,mb4.7 AMB AMB
GTA comp=Z,76nm,4.2s LR LR
GTA comp=N,443nm,15.3s,MS4.5 LR LR
GTA comp=E,685nm,13.4s,MS4.5 LR LR
GTA comp=Z,763nm,12.2s,MS4.6
CD2 Chengdu 33.64 255 P **P 02 58 52.8 -0.4**
CD2 PP PP 03 00 03.8 -1.9
CD2 PPP PPP 03 00 21.0 -2.0
CD2 S **S 03 04 16.5 +1.0**
CD2 AMB AMB
CD2 comp=Z,40nm,0.8s,mb5.4 AMB AMB
CD2 comp=Z,170nm,6.5s LR LR
CD2 comp=N,670nm,11.2s,MS4.7 LR LR
CD2 comp=E,490nm,13.1s,MS4.7
GYA Guiyang 34.82 246⇑*i*P **P 02 59 02.5 -1.0**
GYA PP PP 03 00 22.5 +1.7
GYA S **S 03 04 34.5 +0.7**
GYA SS SS 03 06 51.3 +4.6
GYA AMB AMB
GYA comp=Z,20nm,1.0s,mb5.0 AMB AMB
GYA comp=Z,170nm,6.4s LR LR
GYA comp=N,430nm,12.0s,MS4.5 LR LR
GYA comp=E,380nm,13.2s,MS4.5 LR LR
GYA comp=Z,680nm,12.3s,MS4.6
ZAL Zalesovo 36.08 302 P **P 02 59 12.6 -1.3**
comp=Z,3.9nm,0.9s,mb4.3,baz=308,slow=7.3,SNR=18
ZAL PcP PcP 03 01 38.4 -2.0
comp=Z,3.7nm,0.7s,baz=305,slow=4.1,SNR=7.7
ZAL LR LR 03 14 55.7
comp=Z,237nm,19.2s,MS4.0,baz=306,slow=38
ZAL Zalesovo 36.08 302 P **P 02 59 12.6 -1.3**
ZAL 03 01 38.4
ZAL pmax pmax
ZAL comp=Z,4.0nm,1.0s pmax pmax
ZAL comp=Z,4.0nm,0.7s MLR MLR
ZAL comp=Z,237nm,19.2s
ZAL Zalesovo 36.08 302 P **P 02 59 12.6 -1.3**
ZAL PcP PcP 03 01 38.4 -1.9
ZAL LR LR 03 14 55.7
NVS Novosibirsk 36.76 304 *i* P **P 02 59 18.6 -1.0**
NVS pmax pmax
NVS comp=Z,14nm,1.2s,mb4.7 pmax pmax
NVS comp=N,10.0nm,1.1s pmax pmax
NVS comp=E,11nm,1.1s
SVW Sparrevohn 37.32 45 eP **P 02 59 24.7 +0.5**
WMQ Urumqi 37.64 285 eP **P 02 59 28.0 +0.9**
WMQ PP PP 03 00 56.5 +0.9
WMQ PCP PcP 03 01 46.0 +0.8
WMQ S **S 03 05 16.5 -0.5**
WMQ PCS 03 05 33.5
WMQ SS SS 03 07 50.0 -0.3
WMQ AMB AMB
WMQ comp=Z,12nm,0.6s,mb4.8 AMB AMB
WMQ comp=Z,134nm,5.6s LR LR
WMQ comp=N,711nm,16.2s,MS4.7 LR LR
WMQ comp=E,745nm,15.4s,MS4.7 LR LR
WMQ comp=Z,1µm,18.1s,MS4.8
IMA Indian Mountai 37.75 37 eP **P 02 59 27.8 0.0**
KMI Kunming 38.24 249 eP **P 02 59 32.0 -0.3**
KMI PP PP 03 01 02.3 -0.6
KMI S **S 03 05 21.5 -4.8**
KMI AMB AMB
KMI comp=Z,28nm,1.3s,mb4.8 AMB AMB
KMI comp=Z,196nm,4.1s LR LR
KMI comp=N,319nm,12.5s,MS4.5 LR LR
KMI comp=E,315nm,11.7s,MS4.5 LR LR
KMI comp=Z,418nm,12.2s,MS4.5
QIZ Qiongzhong 38.66 234 P **P 02 59 37.3 +1.4**
QIZ S **S 03 05 30.0 -2.6**
QIZ LR LR
QIZ comp=E,291nm,10.8s LR LR
QIZ comp=Z,252nm,12.1s,MS4.2
MKAR Makanchi Array 39.90 292 P **P 02 59 45.6 -0.3**
comp=Z,5.8nm,0.8s,mb4.4,baz=73,slow=7.9,SNR=45
MKAR PcP PcP 03 01 50.4 -1.9
comp=Z,2.0nm,0.6s,baz=25,slow=1.6,SNR=9.3
MKAR Makanchi Array 39.90 292 P **P 02 59 45.7 -0.2**
MKAR 03 01 50.4
MKAR pmax pmax
MKAR comp=Z,6.0nm,0.8s pmax pmax
MKAR comp=Z,2.0nm,0.6s
PMS Palmer South 40.19 44 eP **P 02 59 48.7 +0.5**
COLA College 40.29 38 eP **P 02 59 49.3 +0.3**
PMR Palmer 40.32 44 eP **P 02 59 50.3 +1.0**
PMR LR LR
comp=Z,234nm,20.0s,MS4.0
KURK Kurchatov 40.66 299 eP **P 02 59 51.3 -0.9**
ILAR Eielson Array 40.71 38 P **P 02 59 52.1 -0.4**
comp=Z,4.7nm,0.6s,mb4.3,baz=281,slow=10,SNR=72
ILAR PcP PcP 03 01 52.2 -2.4
comp=Z,1.4nm,0.9s,baz=278,slow=4.8,SNR=4.2
ILAR Eielson Array 40.71 38 P **P 02 59 52.1 -0.4**
ILAR 03 01 52.3
ILAR pmax pmax
ILAR comp=Z,5.0nm,0.6s pmax pmax
ILAR comp=Z,1.0nm,0.9s

EYAK Cordova Ski Ar 42.17 44 *e*P P **03 00 04.9 +0.6**
LSA Lhasa 42.83 264 P P **03 00 11.5 +1.4**
BRVK Borovoye 44.58 305 *e*P P **03 00 23.7 -0.3**
INK Inuvik 45.08 31 *e*P P **03 00 27.4 -0.5**
comp=Z,8.7nm,0.6s,mb4.8
ZRNK Zerenda 45.33 305 *e*P P **03 00 30.0 0.0**
CMAR Chiang Mai Arr 45.51 246 P P **03 00 31.1 -0.8**
comp=Z,1.9nm,0.6s,mb4.2,baz=33,slow=7.6,SNR=14
CMAR PcP PcP
03 02 10.0 -1.2
comp=Z,3.1nm,0.9s,baz=9.4,slow=2.7,SNR=7.4
CMAR Chiang Mai Arr 45.51 246 P P **03 00 31.2 -0.7**
CMAR 03 02 10.0
CMAR pmax pmax
comp=Z,2.0nm,0.6s
CMAR pmax pmax
comp=Z,3.0nm,0.9s
AAK Ala-Archa 46.73 290 *e*P P **03 00 41.1 -0.2**
GUN Gumba 47.53 267 *e*P P **03 00 47.2 -0.6**
KKN Kakani 48.02 267 *e*P P **03 00 50.7 -0.9**
comp=Z,18nm,0.7s,mb5.2
PKI Pulchoki 48.07 267 *e*P P **03 00 50.9 -1.1**
DMN Daman 48.25 267 *e*P P **03 00 53.0 -0.4**
GKN Gorkha 48.31 268 *e*P P **03 00 52.9 -1.0**
comp=Z,35nm,0.8s,mb5.4
KOLN Koldanda 49.17 268 *e*P P **03 00 59.7 -0.8**
comp=Z,39nm,1.1s,mb5.3
ARU Arti 49.32 313⇑ *i*P P **03 01 00.8 -0.4**
ARU *i* 03 02 19.1
ARU *e* 03 02 55.0
ARU *e*S S **03 08 09.2 +2.2**
ARU *e*SS SS 03 11 40.4 +6.0
ARU pmax pmax
comp=Z,34nm,0.9s,mb5.4
ARU MLR MLR
comp=N,100nm,16.0s,MS4.3
ARU MLR MLR
comp=E,200nm,16.0s,MS4.3
ARU MLR MLR
comp=Z,200nm,16.0s,MS4.2
ARU Arti 49.32 313 *e*P P **03 01 00.4 -0.8**
comp=Z,34nm,0.9s,mb5.4
DLBC Dease Lake 50.38 43 *e*P P **03 01 09.9 +0.6**
KEV Kevo 54.05 337 *e*p P **03 01 35.9 -0.8**
ARCES ARCESS Array B 54.59 337 P P **03 01 40.6 -0.1**
comp=Z,5.9nm,1.0s,mb4.6,baz=53,slow=6.1,SNR=8.2
ARCES PcP PcP 03 02 42.8 -1.0
comp=Z,4.2nm,0.9s,baz=23,slow=6.9,SNR=5.1
ARCES LR LR 03 29 39.8
comp=Z,162nm,19.5s,MS4.1,baz=236,slow=41
ARCES ARCESS Array B 54.59 337 P P **03 01 40.6 -0.1**
ARCES 03 02 42.8
ARCES pmax pmax
comp=Z,6.0nm,1.0s
ARCES pmax pmax
comp=Z,4.0nm,1.0s
ARCES MLR MLR
comp=Z,162nm,19.5s
ARCES ARCESS Array B 54.59 337 P P **03 01 40.6 -0.1**
ARCES PcP PcP 03 02 42.8 -0.9
ARCES LR LR 03 29 39.8
YKW3 Yellowknife Ar 54.67 34 *e*P P **03 01 40.0 -1.3**
YKA Yellowknife Ar 54.72 34 P P **03 01 41.0 -0.7**
comp=Z,6.5nm,0.6s,mb4.8,baz=305,slow=6.9,SNR=207
YKA PcP PcP
03 02 43.4 -0.9
comp=Z,1.5nm,0.7s,baz=313,slow=3.3,SNR=8.9
YKA Yellowknife Ar 54.72 34 P P **03 01 41.0 -0.7**
YKA 03 02 43.4
YKA pmax pmax
comp=Z,7.0nm,0.6s
YKA pmax pmax
comp=Z,2.0nm,0.7s
YKA Yellowknife Ar 54.72 34 P P **03 01 41.0 -0.7**
YKA PcP PcP 03 02 43.4 -0.9
DAG Danmarks Havn 55.53 355 *i* P P **03 01 46.4 -1.0**
comp=Z,8.0nm,1.0s,mb4.7
DAG *i* 03 07 26.0
DAG Danmarks Havn 55.53 355 *e*P P **03 01 46.4 -1.0**
DAG pmax pmax
comp=Z,8.0nm,1.0s,mb4.7
DAG Danmarks Havn 55.53 355 *e*P P **03 01 46.4 -1.0**
comp=Z,8.0nm,1.0s,mb4.7
DAG *i* 03 07 26.0
JOF Joensuu 57.22 329 *e*p P **03 01 58.4 -1.3**
comp=Z,7.7nm,0.6s,mb4.9
JOF Joensuu 57.22 329 *e*P P **03 01 58.4 -1.3**
JOF pmax pmax
comp=Z,8.0nm,0.6s,mb4.9
MOS Moscow 59.45 321 *e*P P **03 02 14.1 -1.2**
MOS pmax pmax
comp=Z,121nm,1.2s,mb5.8
MBW Mount Baker 59.74 50 P P **03 02 17.4 -0.1**
FINES FINESS Array B 60.03 330 P P **03 02 18.3 -0.9**
comp=Z,11nm,0.6s,mb5.1,baz=50,slow=8.1,SNR=120
FINES pP pP 03 02 22.1 +1.3
comp=Z,11nm,0.6s,baz=48,slow=8.2,SNR=21
FINES PcP PcP 03 03 03.5 -1.5
comp=Z,5.1nm,0.8s,baz=56,slow=6.9,SNR=4.8
FINES FINESS Array B 60.03 330 P P **03 02 18.3 -0.9**
FINES *PP pP 03 02 22.1 +1.4
FINES 03 03 03.5
FINES pmax pmax
comp=Z,11nm,0.6s
FINES pmax pmax
comp=N,11nm,0.6s
FINES pmax pmax
comp=Z,5.0nm,0.8s
RPW Rockport 60.15 50 P P **03 02 20.0 -0.3**
OBN Obninsk 60.31 320 *c* *i*P P **03 02 20.0 -1.3**
OBN 03 03 03.9
OBN *e* 03 03 03.9
OBN *e*S S **03 10 37.4 +2.9**
OBN pmax pmax
comp=Z,58nm,1.2s,mb5.5
OBN MLR MLR
comp=Z,400nm,12.0s,MS4.8
OBN Obninsk 60.31 320 *e*P P **03 02 19.8 -1.5**
comp=Z,32nm,0.8s,mb5.4
SUMG Summit 60.35 0 *e*P P **03 02 20.5 -0.8**
KAKA Kakadu 60.44 191 *e*P P **03 02 20.8 -1.9**
NLW Nelson Butte 60.99 49 *e*P P **03 02 25.6 -0.4**
FMW Mount Fremont 61.03 51 P P **03 02 26.9 +0.6**
ETW Entiat 61.30 50 P P **03 02 28.3 +0.2**
VRSR Storozhevoye 61.70 316 *c* *i*P P **03 02 29.7 -1.0**
VRSR pmax pmax
comp=Z,230nm,0.6s
VRSR pmax pmax
comp=N,140nm,0.8s
VRSR pmax pmax
comp=E,120nm,0.8s
HSO Harness Mounta 62.44 55 *e*P P **03 02 36.3 +0.5**
NEW Newport 62.52 48 *e*P P **03 02 35.6 -0.7**
comp=E,8.0nm,0.9s,mb4.8
BUOR Burton Butte 63.72 55 P P **03 02 45.4 +1.2**
YBH Yreka Blue Hor 63.82 56 *e*P P **03 02 45.3 +0.5**
comp=E,36nm,1.6s,mb5.2
GOF Gofitskoye 63.84 309⇓ *i*P P **03 02 45.0 0.0**
GOF pmax pmax
comp=Z,60nm,1.4s,mb5.4
GOF MLR MLR
comp=N,2μm,18.0s
GOF MLR MLR
comp=Z,2μm,18.0s,MS5.4
BSMT Bassoo Peak 63.96 47 P P **03 02 46.3 +0.6**
FCC Fort Churchill 64.57 29 *e*P P **03 02 48.3 -1.2**
comp=Z,34nm,1.2s,mb5.2
FCC *e* 03 02 52.7
KIV Kislovodsk 64.76 308 *i*P P **03 02 51.3 +0.3**
KIV *e* 03 05 13.8
KIV *e*PPP PPP 03 06 42.4 -6.6
KIV *e*SS SS 03 15 48.9 +5.5
KIV pmax pmax
comp=Z,60nm,0.9s,mb5.6
KIV MLR MLR
comp=Z,220nm,18.0s,MS4.4
KIV MLR MLR
comp=N,90nm,17.0s,MS4.1
KIV MLR MLR
comp=E,50nm,16.0s,MS4.1
KIV Kislovodsk 64.76 308 *e*P P **03 02 51.3 +0.3**
comp=E,123nm,1.3s,mb5.8
FFC Flin Flon 64.80 35 *e*P P **03 02 50.5 -0.6**
comp=E,34nm,0.8s,mb5.4
ZEI Tsey 64.90 306 *e*P P **03 02 51.0 -0.9**
ZEI MLR MLR
comp=Z,300nm,15.0s,MS4.6
NB2 NORSAR Subarra 64.92 336 P P **03 02 50.9 -0.8**
comp=Z,9.9nm,0.8s,mb4.9,baz=34,slow=6.2
NOA NORSAR Array B 64.92 336 P P **03 02 51.0 -0.7**
comp=Z,7.4nm,0.7s,mb4.8,baz=34,slow=6.4,SNR=44
NOA NORSAR Array B 64.92 336 P P **03 02 51.0 -0.7**
NOA pmax pmax
comp=Z,7.0nm,0.7s
MOD Modoc 65.05 55 *e*P P **03 02 52.6 -0.3**
comp=Z,20nm,1.3s,mb5.0
MSO Missoula 65.07 47 *e*P P **03 02 51.9 -1.1**
comp=Z,24nm,1.2s,mb5.1
THR Tehran 65.29 297 P P **03 02 54.8 +0.2**
comp=Z,0.8nm,0.6s,mb3.9,baz=107,slow=4.2,SNR=5.4
THR LR LR
03 31 42.8
comp=Z,48nm,18.3s,MS3.7,baz=150,slow=36
THR Tehran 65.29 297 P P **03 02 54.8 +0.3**
THR pmax pmax
comp=Z,1.0nm,0.6s
THR MLR MLR
comp=Z,48nm,18.3s
CHMT Chamberlain Mo 65.36 47 *e*P P **03 02 54.5 -0.3**
WVOR Wild Horse Val 65.61 53 *e*P P **03 02 56.7 +0.2**
comp=Z,14nm,1.1s,mb4.9
OHCM Honcut 66.11 57 *e*P P **03 02 59.0 -0.7**
HRY Holter Researc 66.20 46 *e*P P **03 03 00.3 +0.2**
BEKR Beckwourth 66.39 56 *e*P P **03 03 01.4 -0.1**
comp=Z,12nm,0.8s,mb5.0
KONO Kongsberg 66.52 336 AMS AMS 03 02 24.3
comp=Z,218nm,22.0s,MS4.3
SUW Suwalki 66.57 326 *e*P P **03 03 00.8 -1.6**
SOC Sochi 66.59 309⇑ *i*P P **03 03 02.4 -0.3**
SOC *e*S S 03 11 47.9 -5.1
SOC pmax pmax
comp=Z,50nm,1.5s,mb5.3
SOC pmax pmax
comp=N,10.0nm,0.8s
SOC pmax pmax
comp=E,10.0nm,1.1s
SOC pmax pmax
comp=Z,80nm,1.6s,mb5.5
SOC pmax pmax
comp=N,10.0nm,0.9s
SOC pmax pmax
comp=E,60nm,1.8s
SOC MLR MLR
comp=N,250nm,20.0s,MS4.7
SOC MLR MLR
comp=Z,390nm,20.0s,MS4.6
SOC MLR MLR
comp=E,350nm,17.0s,MS4.7
LCCM Lewis and Clar 66.79 47 P P **03 03 04.5 +0.6**
ANN Anapa 66.93 312 *e*P P **03 03 04.1 -0.8**
ANN *e*PP pP 03 03 08.5 +2.2
ANN *e*S S 03 11 54.2 -2.8
ANN pmax pmax
comp=Z,8.0nm,0.7s,mb4.9
BOZ Bozeman (W) 67.05 47 *e*P P **03 03 05.5 -0.1**
comp=Z,12nm,1.0s,mb4.9
HLID Hailey 67.09 50 *e*P P **03 03 06.1 +0.2**
comp=Z,18nm,1.6s,mb4.9
WCN Washoe City 67.11 57 *e*P P **03 03 06.4 +0.3**
comp=Z,40nm,1.5s,mb5.2
WB2 Warramunga Arr 67.38 188⇓ *i*P P **03 03 06.1 -2.0**
WRA Warramunga Arr 67.38 188 P P **03 03 05.5 -2.6**
comp=Z,5.8nm,0.9s,mb4.6,baz=3.6,slow=6.7,SNR=15
WRA Warramunga Arr 67.38 188 P P **03 03 05.5 -2.6**
WRA pmax pmax
comp=Z,6.0nm,1.0s
CMB Columbia Colle 67.62 58 *e*P P **03 03 09.0 -0.3**
comp=Z,21nm,1.1s,mb5.1
QLMT Earthquake Lak 67.73 48 *e*P P **03 03 10.1 +0.2**
BMN Battle Mountai 67.76 54 *e*P P **03 03 10.5 +0.3**
comp=Z,12nm,1.0s,mb4.9
BMN *e*pP pP 03 03 14.5 +2.9
TVAN Van 68.06 303 *i*P P **03 03 13.5 +1.4**
YMR Madison River 68.07 47 *e*P P **03 03 12.4 +0.4**
SIM Simferopol' 68.48 313 *e*P P **03 03 14.5 -0.1**
SIM pmax pmax
comp=Z,40nm,0.8s,mb5.5
SIM MLR MLR
comp=Z,340nm,19.0s,MS4.6
NVAR Mina Array Bea 68.54 56 P P **03 03 15.6 +0.5**
comp=Z,12nm,0.8s,mb4.9,baz=306,slow=4.1,SNR=61
NVAR pP pP 03 03 20.1 +3.6
comp=Z,13nm,0.9s,baz=313,slow=3.6,SNR=20
NVAR LR LR 03 28 46.1
comp=Z,41nm,19.8s,MS3.7,baz=90,slow=32
NVAR Mina Array Bea 68.54 56 P P **03 03 15.6 +0.5**
NVAR pP pP 03 03 20.1 +3.6
NVAR LR LR 03 28 46.1
BSD Bornholm Skovb 68.66 331⇑ *i*P P **03 03 14.4 -1.1**
comp=Z,16nm,0.8s,mb5.0
BSD Bornholm Skovb 68.66 331⇑ *i*P P **03 03 14.4 -1.1**
BSD pmax pmax
comp=Z,16nm,0.8s,mb5.0
KSWY Kelly School 68.99 48 *e*P P **03 03 18.8 +1.0**
MTUM Tungsten Hills 69.14 57 P P **03 03 19.6 +0.8**
GKP Gorka Klasztor 69.35 328 *e*P P **03 03 18.4 -1.4**
TPH Tonopah 69.39 56 *e*P P **03 03 20.4 +0.1**
comp=Z,20nm,1.0s,mb5.0
TPH *e*pP pP 03 03 24.8 +3.0
HWUT Hardware Ranch 69.96 50 *e*P P **03 03 24.0 +0.3**
comp=Z,12nm,0.9s,mb4.8
KWP Kalwaria 70.13 323 *e*P P **03 03 24.7 +0.1**
PDAR Pinedale Array 70.15 48 P P **03 03 25.1 +0.3**
comp=Z,8.5nm,0.7s,mb4.8,baz=322,slow=2.2,SNR=60
PDAR pP pP 03 03 29.4 +3.1
comp=Z,6.5nm,0.8s,baz=321,slow=5.8,SNR=16
TCUT Toone Canyon 70.39 50 *e*P P **03 03 26.3 -0.1**
ULM Lac du Bonnet 70.63 35 P P **03 03 26.8 -0.9**
comp=Z,12nm,0.6s,mb5.0,baz=314,slow=7.2,SNR=11
JLU Jordanelle 70.74 51 *e*P P **03 03 28.7 +0.2**
OJC Ojcow 70.83 325 *e*P P **03 03 28.5 -0.4**
NLU North Lily Min 70.88 52 *e*P P **03 03 29.4 +0.1**
DAU Daniels Canyon 70.98 51 *e*P P **03 03 30.4 +0.4**
MPU Maple Canyon 71.07 51 *e*P P **03 03 30.9 +0.4**
MPU *e*pP pP 03 03 35.2 +3.2
AS12 Alice Springs 71.11 188⇓ *i*P P **03 03 30.3 -0.7**
comp=Z,18nm,1.1s,mb4.9
ASAR Alice Springs 71.11 188 P P **03 03 30.0 -1.0**
comp=Z,21nm,1.1s,mb5.0,baz=2.7,slow=6.1,SNR=74
ASAR pP pP 03 03 34.2 +1.8
comp=Z,10nm,0.9s,baz=2.5,slow=6.1,SNR=14
NIE Niedzica 71.27 324⇓ *e*P P **03 03 31.3 -0.2**
BALT Daday 71.33 311 *i*P P **03 03 32.7 +0.6**
KSP Ksiaz 71.66 327 *e*P P **03 03 33.8 -0.1**
KSP Ksiaz 71.66 327 *e*P P **03 03 33.9 0.0**
OKC Ostrava-Krasne 71.78 326 *e*P P **03 03 35.7 +1.1**
RSSD Black Hills 71.84 44 *e*P P **03 03 34.8 -0.3**
comp=Z,60nm,1.4s,mb5.3
MSU Marysvale 71.87 53 *e*P P **03 03 36.2 +0.8**
MSU *e*pP pP 03 03 40.3 +3.5
UPC Upice 72.04 327 *e*P P **03 03 36.3 +0.2**
DPC Dobruska-Polom 72.05 327 *e*P P **03 03 36.5 +0.3**
MORC Moravsky Berou 72.06 326 *e*P P **03 03 36.0 -0.2**
comp=Z,13nm,1.2s,mb4.7
ELDT Eldivan 72.08 311 *i*P P **03 03 36.8 +0.3**
GZT Gaziantep 72.15 306 *i*P P **03 03 38.0 +0.9**
SRU San Rafael 72.32 51 *e*P P **03 03 38.0 0.0**
CLL Collm 72.45 329⇑ *i*P P **03 03 38.0 -0.6**
comp=Z,logA/T=1.0,mb4.7
CLL *i* *PP pP 03 03 40.3 +0.3
CLL *e*PCP PcP 03 03 56.0 -0.6
CLL *e* 03 04 08.0
CLL Collm 72.45 329⇑ *i*P P **03 03 38.0 -0.6**
CLL pmax pmax
comp=Z,10.0nm,0.9s,mb4.8
CLL Collm 72.45 329⇑ *i*P P **03 03 38.0 -0.6**
comp=Z,10.0nm,0.9s,mb4.8
NEN Nelson 72.46 56 *e*P P **03 03 39.1 +0.2**
BRG Berggiesshubel 72.48 329 *e*P P **03 03 39.0 +0.2**
BRG pmax pmax
comp=Z,3.0nm,1.2s,mb4.1
BRG Berggiesshubel 72.48 329 *e*P P **03 03 39.0 +0.2**
comp=Z,3.0nm,1.1s,mb4.1
BRTR Keskin Array B 72.53 310 P P **03 03 39.0 -0.1**
comp=Z,7.9nm,0.8s,mb4.7,baz=69,slow=4.4,SNR=47
BRTR pP pP 03 03 43.4 +2.8
comp=Z,4.5nm,0.8s,baz=135,slow=3.5,SNR=10
PVCC Panska Ves 72.55 328 *e*P P **03 03 39.1 +0.1**
AVNT Avonos 72.58 309 *i*P P **03 03 39.4 -0.2**
VYHS Vyhne 72.59 324 *i*P P **03 03 39.8 +0.4**
VYHS *e*PCP PcP 03 03 55.4 -1.7
LDFC Landfair 72.72 57 *e*P P **03 03 40.1 -0.3**
PRU Pruhonice 73.00 328 *e*P P **03 03 41.8 +0.1**
comp=Z,18nm,1.5s,mb4.8
PRU Pruhonice 73.00 328 *e*P P **03 03 41.8 +0.1**
PRU pmax pmax
comp=Z,18nm,1.5s,mb4.8
SMOL Smolenice 73.13 325 *e*P P **03 03 43.2 +0.7**
WIT Witteveen 73.22 334 *e*P P **03 03 43.7 +0.8**
COBT Iskenderun 73.48 306 *i*P P **03 03 46.0 +1.1**
MOX Moxa 73.49 330 *i*P P **03 03 43.3 -1.2**
comp=Z,logA/T=0.9,mb4.6
MOX QM 03 37 34.0
MOX RM 03 42 53.0
MOX Moxa 73.49 330 *e*P P **03 03 43.3 -1.2**
MOX pmax pmax
comp=Z,12nm,1.5s,mb4.6
MOX MLR MLR
comp=Z,200nm,14.0s,MS4.5
MOX Moxa 73.49 330 *e*P P **03 03 43.3 -1.2**
comp=Z,12nm,1.5s,mb4.6
MOX LR LR
comp=Z,200nm,14.0s,MS4.5
ZST Bratislava 73.51 325 *i*P P **03 03 45.4 +0.7**
PV10 Paradox Valley 73.64 51 *e*P P **03 03 46.5 +0.8**
WTSB Winterswijk 73.92 333 *e*P P **03 03 46.7 -0.3**
comp=Z,10nm,0.4s,mb5.1
KHC Kasperske Hory 74.06 328 *e*P P **03 03 48.1 +0.2**
KHC *e*pP pP 03 03 53.0 +3.6
PV01 Paradox Valley 74.07 51 *e*P P **03 03 48.5 +0.3**
ESKT Eskisehir 74.12 311 *i*P P **03 03 48.5 +0.1**
GERES GERESS Array B 74.26 328 P P **03 03 48.5 -0.5**
comp=Z,1.7nm,0.6s,mb4.2,baz=34,slow=4.8,SNR=27
GERES GERESS Array B 74.26 328 P P **03 03 48.5 -0.5**
GERES pmax pmax
comp=Z,2.0nm,0.6s
ISCO Idaho Springs 74.34 48 *e*P P **03 03 50.3 +0.6**
comp=Z,24nm,1.5s,mb4.9
GRF Grafenberg Arr 74.43 329 *e*P P **03 03 50.1 +0.1**
GRF pmax pmax
comp=Z,20nm,1.2s,mb4.9
ULDT Uludag 74.51 313 *i*P P **03 03 51.1 +0.4**
MOA Molln 74.88 327⇑ *i*P P **03 03 53.0 +0.3**
comp=Z,3.7nm,0.9s,mb4.3
ARSA Arzberg 74.90 326⇑ *i*P P **03 03 53.5 +0.7**
comp=Z,6.3nm,1.2s,mb4.4
HGN Heimansgroeve 75.24 333 *e*P P **03 03 54.3 -0.3**
comp=Z,4.4nm,1.0s,mb4.3
SCHQ Schefferville 75.26 17 P P **03 03 54.2 -0.4**
comp=Z,4.0nm,0.7s,mb4.5,baz=12,slow=7.1,SNR=9.5
KBA Koelnbreinsper 75.87 327⇑ *i*P P **03 03 59.2 +0.9**
comp=Z,21nm,1.1s,mb5.0
SDCO Great Sand Dun 75.96 49 *e*P P **03 03 59.0 0.0**
comp=Z,14nm,1.3s,mb4.7
SDCO *e*pP pP 03 04 03.6 +3.1
GIVF Givet 76.16 333 *e*P P **03 03 59.5 -0.4**
WATA Walderalm 76.30 328⇑ *i*P P **03 04 01.3 +0.5**
comp=Z,14nm,1.2s,mb4.8
WTTA Wattenberg 76.34 328⇑ *i*P P **03 04 01.8 +0.8**
comp=Z,22nm,1.1s,mb5.0
BAIF Baives 76.38 334 *e*P P **03 04 00.8 -0.4**
MOTA Moosalm 76.46 328⇑ *i*P P **03 04 02.2 +0.5**
comp=Z,24nm,1.3s,mb5.0
SQTA Sankt Quirin 76.53 328⇑ *i*P P **03 04 02.8 +0.7**
comp=Z,14nm,1.2s,mb4.8
SKO Skopje 76.72 319 *i*P P **03 04 04.0 +0.7**
KDAG Bornova 76.77 313 *i*P P **03 04 03.6 0.0**
CDF Champ du Feu 76.86 331⇑ *i*P P **03 04 03.9 0.0**
comp=Z,9.6nm,0.9s,mb4.4
HILS Ha'il 76.91 296 P P **03 04 05.1 +0.5**
DAVA Damuels 76.94 329⇑ *i*P P **03 04 01.7 -2.7**
comp=Z,9.6nm,0.8s,mb4.8
ARSS Ar Rass 77.10 294 P P **03 04 05.5 -0.2**
MZLS Mizel 77.20 291 P P **03 04 06.0 -0.3**
HAU Haudompre 77.52 331⇑ *i*P P **03 04 07.3 -0.2**
comp=Z,8.9nm,0.9s,mb4.4
HINF Hinteralfeld 77.52 331 *e*P P **03 04 07.2 -0.3**
comp=Z,4.8nm,0.6s,mb4.3
ANMO Albuquerque 77.58 52 *ce*P P **03 04 09.2 +1.1**
ANMO Albuquerque 77.58 52 *e*P P **03 04 08.8 +0.6**
comp=Z,12nm,1.2s,mb4.7
LAZ Ladron 77.63 52 *e*P P **03 04 09.4 +1.0**
LAZ *e*pP pP 03 04 14.0 +4.0
BDRM Kayabasi 77.72 312 *i*P P **03 04 09.6 +0.8**
LPM Los Pinos Moun 77.97 52 *e*P P **03 04 11.1 +0.8**
LPM *e*pP pP 03 04 15.3 +3.5
BNM Barren Site 78.10 52 *e*P P **03 04 12.0 +1.0**
AFFS 'Afif 78.67 293 P P **03 04 14.3 0.0**
CABF La Chapelle 78.83 331⇑ *i*P P **03 04 14.8 +0.1**
comp=Z,8.4nm,1.0s,mb4.3
FORT Forrest 78.83 192 *e*P P **03 04 14.3 -0.8**
comp=Z,19nm,0.7s,mb5.7
STKA Stephens Creek 78.89 181 P P **03 04 15.0 -0.4**
comp=Z,5.1nm,1.0s,mb4.4,baz=351,slow=12,SNR=4.2
STKA Stephens Creek 78.89 181 P P **03 04 15.0 -0.4**
FLN La Foliniere 78.91 336⇑ *i*P P **03 04 14.8 -0.3**
comp=Z,23nm,1.1s,mb4.7
LOR Lormes 78.96 333⇑ *i*P P **03 04 15.2 -0.3**
comp=Z,18nm,0.8s,mb4.7
SSF Saint Saulge 79.26 333⇑ *i*P P **03 04 16.8 -0.3**
comp=Z,9.6nm,0.8s,mb4.5
JMQS Jabal Moqyreh 79.33 301 P P **03 04 18.6 +0.7**
GRR Gorron 79.35 336⇑ *i*P P **03 04 17.5 0.0**
comp=Z,15nm,0.9s,mb4.6
TBKS Tabuk 79.43 300 P P **03 04 19.0 +0.6**
SMF Signal de Mont 79.52 332⇑ *i*P P **03 04 18.4 -0.1**
comp=Z,40nm,1.0s,mb5.0
JMOS Jabal al Moall 79.56 302 P P **03 04 19.8 +0.7**
LPL La Plagne 79.57 330⇑ *i*P P **03 04 19.5 +0.7**
comp=Z,12nm,0.9s,mb4.5
LPG La Plagne 79.58 330⇑ *i*P P **03 04 19.6 +0.8**
comp=Z,14nm,0.9s,mb4.5
KBRS Khaybar 79.61 297 P P **03 04 20.3 +0.9**
HAQS Haql 79.75 302 P P **03 04 20.7 +0.6**
BGF Bois d'Agland 79.91 333⇑ *i*P P **03 04 20.7 +0.1**
comp=Z,9.9nm,0.9s,mb4.4
SGMF Saint Gilles 79.93 337⇑ *i*P P **03 04 21.0 +0.3**
comp=Z,15nm,0.8s,mb4.6
ROSF Rostrenen 80.05 337 *e*P P **03 04 21.6 +0.3**
comp=Z,38nm,1.1s,mb4.9
BDAS Al Bad' 80.12 301 P P **03 04 22.8 +0.6**
AYUS 'Ayunah 80.21 301 P P **03 04 23.1 +0.6**
MBDF Montbardon 80.25 329 *e*P P **03 04 22.3 -0.1**
TCF Toul Ste Croi 80.35 333⇑ *i*P P **03 04 23.2 +0.2**
comp=Z,9.4nm,0.8s,mb4.5
ORIF Oris-en-Rattie 80.38 330⇑ *i*P P **03 04 23.6 +0.4**
comp=Z,11nm,0.8s,mb4.5
QUIF Quistinic 80.41 337⇑ *i*P P **03 04 23.4 +0.2**
comp=Z,20nm,1.0s,mb4.7
CPRX Cap Rock 80.43 51 *e*P P **03 04 24.1 +0.5**
MNTX Cornudas Mount 80.64 53 *e*P P **03 04 25.0 +0.1**
comp=Z,11nm,1.3s,mb4.6
MFF Saint Martin d 80.77 335⇑ *i*P P **03 04 25.5 +0.3**
comp=Z,19nm,1.0s,mb4.7
GDL2 Guadalupe Mon 80.81 52 *e*P P **03 04 26.1 +0.4**
VIVF Saint-Julien-l 80.84 331⇑ *i*P P **03 04 26.0 +0.4**
comp=Z,14nm,1.0s,mb4.5
TIP Timpagrande 81.06 320 *e*P P **03 04 26.9 +0.1**
RJF Les Rejaudoux 81.45 333⇑ *i*P P **03 04 29.2 +0.4**
comp=Z,11nm,1.0s,mb4.5
YNBS Yanbu' al Bahr 81.45 297 N 03 04 29.7
LMR La Mourre 81.56 329 *e*P P **03 04 29.9 +0.5**
TATS Tathlith 81.56 290 P P **03 04 30.7 +0.8**
CAF Calviac 81.62 333⇑ *i*P P **03 04 30.6 +1.0**
comp=Z,11nm,0.9s,mb4.5
WMOK Wichita Mounta 81.69 47 *e*P P **03 04 30.3 0.0**
comp=Z,21nm,1.4s,mb4.9
WMOK *e*pP pP 03 04 33.9 +2.2
LASF Ste Croix 81.80 331⇑ *i*P P **03 04 31.3 +0.7**
comp=Z,17nm,1.1s,mb4.6
LFF La Frestale 82.01 333⇑ *i*P P **03 04 32.6 +0.9**
comp=Z,17nm,1.0s,mb4.6
BLJS Baljurashi 82.50 291 P P **03 04 35.7 +1.0**
NAMS An Nimas 82.64 290 P P **03 04 36.4 +0.9**
FVM French Village 82.91 39 *e*P P **03 04 35.8 -0.7**
comp=Z,12nm,1.0s,mb4.9
LTHS Al Lith 82.97 292 P P **03 04 37.5 +0.4**
MTLF Montolieu 82.99 332⇑ *i*P P **03 04 37.6 +0.8**
comp=Z,4.5nm,0.8s,mb4.3
ERPA Erie 83.37 30 *e*P P **03 04 38.4 -0.4**
comp=Z,7.1nm,0.7s,mb4.8
LTX Lajitas 83.41 53 *e*P P **03 04 39.9 +0.7**
comp=Z,31nm,1.4s,mb5.1
TXAR Lajitas Array 83.41 53 P P **03 04 40.1 +0.9**
comp=Z,7.6nm,0.8s,mb4.8,baz=290,slow=3.8,SNR=82
TXAR pP pP 03 04 44.4 +3.7
comp=Z,5.6nm,0.7s,baz=305,slow=4.4,SNR=18
TXAR Lajitas Array 83.41 53 P P **03 04 40.1 +0.9**
TXAR pP pP 03 04 44.4 +3.7

NCB	Newcomb	83.53	26	*e*P		P		03 04 38.6	-0.9
SIUC	Southern Illin	83.65	39	*e*P		P		03 04 39.5	-0.7
	comp=Z,17nm,0.6s,mb5.3								
ALLY	Alegheny Colle	83.73	31	*e*P		P		03 04 40.1	-0.5
EPF	Esparros	83.86	333	⇑*i*P		P		03 04 41.6	+0.4
	comp=Z,8.2nm,0.9s,mb4.5								
ACSO	Alum Creek Sta	83.97	33	*e*P		P		03 04 41.4	-0.4
	comp=Z,17nm,0.8s,mb5.2								
ETSF	Etsaut	84.26	333	⇑*i*P		P		03 04 44.5	+1.3
	comp=Z,8.0nm,0.6s,mb4.7								
MIAR	Mount Ida	84.35	43	*e*P		P		03 04 43.8	-0.1
	comp=Z,8.4nm,0.9s,mb4.9								
WCI	Wyandotte Cave	84.42	36	*e*P		P		03 04 43.8	-0.3
	comp=Z,15nm,0.8s,mb5.2								
FRSS	Farasan al Kab	84.49	289	P		P		03 04 44.6	-0.3
JCT	Junction City	84.57	50	*e*P		P		03 04 45.0	0.0
	comp=Z,15nm,1.1s,mb5.0								
TOO	Toolangi	84.62	177	*e*P		P		03 04 45.4	+0.2
	comp=Z,3.4nm,0.7s,mb4.6								
EPOB	Poblet	85.15	332	P		P		03 04 48.2	+0.5
	comp=Z,1.0nm,0.5s,mb4.2								
ESAC	San Caprasio	85.30	333	P		P		03 04 50.3	+1.8
	comp=Z,2.8nm,0.3s,mb4.9								
WVT	Waverly	85.58	38	*e*P		P		03 04 49.8	-0.2
	comp=Z,12nm,1.1s,mb5.0								
EPON	Pontenova	85.70	338	P		P		03 04 50.9	+0.5
	comp=Z,1.6nm,0.6s,mb4.4								
NATX	Nacogdoches	86.12	46	*e*P		P		03 04 53.5	+0.8
PLAL	Pickwick Lake	86.45	39	*e*P		P		03 04 53.5	-0.8
	comp=Z,6.4nm,0.8s,mb4.9								
EMOS	Mosqueruela	86.54	332	P		P		03 04 56.0	+1.4
	comp=Z,0.7nm,0.4s,mb4.2								
SWET	Sewanee	87.15	38	*e*P		P		03 04 57.3	-0.4
EIBI	Ibiza	87.16	330	P		P		03 04 59.1	+1.4
	comp=Z,1.1nm,0.6s,mb4.3								
PWV	Princeton	87.23	33	*e*P		P		03 04 58.4	+0.3
GUD	Guadarrama	87.39	335	P		P		03 04 59.1	+0.3
ELN	Prospectdale	87.43	33	*e*P		P		03 04 58.6	-0.4
CPCT	Cooper Cave	87.53	37	*e*P		P		03 04 59.3	-0.2
EBEN	Beniarda	87.97	331	P		P		03 05 02.6	+1.0
	comp=Z,0.6nm,0.6s,mb4.0								
ESDC	Sonseca Array	88.23	335	P		P		03 05 03.3	+0.5
	comp=Z,3.1nm,0.6s,mb4.8,baz=18,slow=4.2,SNR=44								
ESDC	Sonseca Array	88.23	335	P		P		03 05 03.5	+0.7
	comp=Z,3.7nm,0.5s,mb4.9								
EVIA	Vianos	88.75	333	P		P		03 05 06.1	+0.8
	comp=Z,0.5nm,0.2s,mb4.5								
EHUE	Huescar	89.53	333	P		P		03 05 09.3	+0.3
EQES	Quesada	89.69	333	P		P		03 05 10.0	+0.2
	comp=Z,0.4nm,0.5s,mb4.0								
EADA	Adamuz	89.81	334	P		P		03 05 10.2	-0.1
EBAD	Badajoz	89.95	336	P		P		03 05 12.3	+1.3
ELUQ	Luque	90.28	334	P		P		03 05 13.6	+1.1
ELOJ	Sierra Loja	90.62	334	P		P		03 05 13.4	-0.7
ERON	Agron	90.64	333	P		P		03 05 13.6	-0.6
EMIN	Mina Concepcio	90.78	336	P		P		03 05 13.6	-1.2
ESPR	Espera	91.39	335	P		P		03 05 16.6	-1.0
EBAJ	Bajamar	101.99	341	P		P		03 06 03.7	-2.4
DBIC	Dimbokro	118.80	322	PKP	PKPdf			03 10 59.2	-2.6
	comp=Z,2.1nm,0.7s,baz=334,slow=15,SNR=6.0								
DBIC	Dimbokro	118.80	322	PKIKP	PKPdf			03 10 59.2	-2.6
DBIC				pmax	pmax				
	comp=Z,2.0nm,0.7s								
DBIC	Dimbokro	118.80	322	PKP	PKPdf			03 10 59.2	-2.6
VNDA	Vanda	125.22	175	PKP	PKPdf			03 11 09.7	-3.0
	comp=Z,2.0nm,1.1s,baz=194,slow=1.4,SNR=4.9								
VNDA	Vanda	125.22	175	PKIKP	PKPdf			03 11 09.7	-3.0
VNDA				pmax	pmax				
	comp=Z,2.0nm,1.1s								
QSPA	South Pole Qui	137.11	180	*e*PKP	PKPdf			03 11 34.5	-0.4
LPAZ	La Paz	140.16	49	PKP	PKPdf			03 11 41.8	-0.3
	comp=Z,0.9nm,0.6s,baz=24,slow=7.6,SNR=6.2								
LPAZ	La Paz	140.16	49	PKIKP	PKPdf			03 11 41.8	-0.3
LPAZ				pmax	pmax				
	comp=Z,1.0nm,0.6s								
LVC	Limon Verde	144.90	56	PKP	PKPdf			03 11 49.4	-0.8
	comp=Z,5.7nm,0.8s,baz=304,slow=4.7,SNR=3.8								
MAIT	Maitri	146.95	208	*e*P	PKPbc			03 11 52.9	+1.5
MAIT				*e*PP	PP			03 15 21.5	+1.3
BDFB	Brasilia	147.24	18	PKPbc	PKPdf			03 11 55.5	+1.2
	comp=Z,16nm,0.7s,baz=279,slow=1.1,SNR=30								
BDFB	Brasilia	147.24	18	PKP2	PKPab			03 11 55.5	-2.6
BDFB				pmax	pmax				
	comp=Z,16nm,0.7s								
SNAA	Sanae	150.70	202	*e*PKPbc	PKPdf			03 12 00.9	+2.7
VNA2	Neumayer--Watz	152.31	201	*e*	PKPdf			03 12 12.8	+12
VNA2	Neumayer--Watz	152.31	201	*e*	PKPdf			03 12 18.2	+18
VNA2	Neumayer--Watz	152.31	201	P	PKPdf			03 12 07.9	+7.3
VNA2				*e*				03 12 12.8	
VNA2				*e*				03 12 18.2	
VNA2				*e*				03 15 49.3	
VNA3	Neumayer Olymp	152.62	199	*e*	PKPdf			03 12 13.3	+12
VNA3	Neumayer Olymp	152.62	199	*e*	PKPdf			03 12 18.6	+18
VNA3	Neumayer Olymp	152.62	199	⇑*i*P	PKPdf			03 12 08.3	+7.3
VNA3				*e*				03 12 13.3	
VNA3				*e*				03 12 18.6	
VNA3				*e*				03 15 49.7	
VNA1	Neumayer--Stat	152.71	201	*e*	PKPdf			03 12 15.6	+14
VNA1	Neumayer--Stat	152.71	201	*e*	PKPdf			03 12 20.0	+19
VNA1	Neumayer--Stat	152.71	201	⇓*i*P	PKPdf			03 12 09.6	+8.4
VNA1				*e*				03 12 15.6	
VNA1				*e*				03 12 20.0	
VNA1				*e*				03 15 51.0	
CPUP	Villa Florida	153.96	43	PKPab	PKPab			03 12 24.4	-1.2
	comp=Z,3.9nm,1.1s,baz=202,slow=12,SNR=4.9								
CPUP	Villa Florida	153.96	43	PKP2	PKPab			03 12 24.4	-1.2
CPUP				pmax	pmax				
	comp=Z,4.0nm,1.1s								

*MOS **30** 02:53:29.2±1.0,47.39N×142.00E,h10km,mb4.3/8,Error ellipse: s-maj=30.6km s-min=15.0km az=105.7*
*SKHL **30** 02:53:29.4±0.4,47.41N×142.12E,h10km*
*NEIC **30** 02:53:31.7±0.3,47.36N×142.20E,mb4.6/7, Error ellipse: s-maj=8.5km s-min=7.3km az=76.0*
*IDC **30** 02:53:31.6±0.6,47.36N×142.11E,h12km±3km,mb4.2/17, mb1 4.4/18,mb1mx4.4/22,ML4.2/1,MS4.1/1,Ms1 4.1/1, ms1mx3.1/28,Error ellipse: s-maj=17.0km s-min=15.3km az=131.0*

ISC 30 02:53:29.9±0.8,47.40N±0.03×142.16E±0.08,h12km±5km, h12km±.4km:pP-P,n48,σ0s94/50,mb4.3/24,MS4.1/1,1C-1D, Sakhalin Island

Code	Station Name	Δ°	AZ°	Phase ID		ISC	Time	Res
				Op			h m s	ISC
YSS	Yuzh-Sakhalins	0.61	137	⇑*i*P		Pg	02 53 42.0	-0.2
YSS				*e*Rx		Rx	02 53 44.6	
YSS				*e*Sg		Sg	02 53 50.8	+0.4
YSS				AMS		AMS	02 54 08.0	
	12μm,6.0s							
YSS	Yuzh-Sakhalins	0.61	137	*e*PN		Pn	02 53 43.2	-0.9
YSS				*e*SG		Sg	02 53 50.4	0.0
YSS	Yuzh-Sakhalins	0.61	137	*e*Pg		Pg	02 53 42.5	+0.3
YSS				*e*Sg		Sg	02 53 50.8	+0.4
UGL	Uglegorsk	1.68	358	⇓*i*Pg		Pg	02 54 02.8	-0.7
UGL				AMB		AMB	02 54 06.0	
	9μm,0.8s							
UGL				*e*Sg		Sg	02 54 27.0	+1.1
UGL				A			02 54 30.0	
	3μm,0.5s							
UGL				A			02 54 30.0	
	2μm,0.5s							
UGL				A			02 54 30.0	
	3μm,0.5s							
ASAJ	Asahikawa	3.30	174	Pn		Pn	02 54 23.0	+0.5
	19nm,0.3s,baz=48,slow=30,SNR=3.9							
ASAJ				Sn		Sn	02 55 02.7	+0.6
	baz=14,slow=29,SNR=1.0							
ASAJ	Asahikawa	3.30	174	PN		Pn	02 54 23.0	+0.5
ASAJ							02 55 02.7	
ASAJ				pmax	pmax			
	comp=Z,19nm,0.3s							
TYV	Tymovskoe	3.48	5	*e*Sb		Sb	02 55 10.0	-3.7
TYV				*e*Sg		Sg	02 55 25.2	-0.6
TYV				A			02 55 33.0	
	comp=Z,260nm,0.8s							
TYV				A			02 55 33.0	
	comp=Z,100nm,0.8s							
GRNR	Gornyy	5.05	314	*e*Sg		Sg	02 56 17.8	-0.4
GRNR				A			02 56 22.5	
	comp=Z,250nm,1.0s							
GRNR				A			02 56 22.5	
	comp=Z,310nm,1.0s							

MAJO	Matsushiro	11.24	197	P		P		02 56 13.4	0.0
	comp=Z,30nm,0.9s								
YAK	Yakutsk	16.29	339	P		P		02 57 22.0	+2.2
	comp=Z,36nm,0.9s								
SONM	Songino Array	23.98	284	P		P		02 58 47.0	+2.1
	comp=Z,2.0nm,0.8s,mb3.6,baz=88,slow=9.4,SNR=2.0								
SONM				PcP		PcP		03 02 27.7	-0.9
	comp=Z,0.8nm,0.8s,baz=45,slow=1.7,SNR=2.7								
ZAL	Zalesovo	36.05	302	pP		pP		03 00 36.3	0.0
	comp=Z,1.3nm,0.8s,baz=300,slow=8.0,SNR=2.5								
ZAL				PcP		PcP		03 02 57.6	-1.7
	comp=Z,1.2nm,0.5s,baz=327,slow=3.6,SNR=2.7								
MKAR	Makanchi Array	39.87	292	P		P		03 01 04.6	-0.3
	comp=Z,1.8nm,0.8s,mb3.9,baz=86,slow=6.2,SNR=2.2								
MKAR	Makanchi Array	39.87	292	P		P		03 01 04.6	-0.3
MKAR				pmax		pmax			
	comp=Z,2.0nm,0.8s								
COLA	College	40.29	38	P		P		03 01 09.7	+1.5
	comp=Z,4.9nm,0.9s,mb4.2								
ILAR	Eielson Array	40.71	38	P		P		03 01 12.2	+0.5
	comp=Z,2.5nm,0.7s,mb4.0,baz=280,slow=9.8,SNR=6.0								
ILAR	Eielson Array	40.71	38	P		P		03 01 12.2	+0.6
ILAR				pmax		pmax			
	comp=Z,3.0nm,0.7s								
CMAR	Chiang Mai Arr	45.50	246	P		P		03 01 50.0	-1.0
	comp=Z,0.6nm,0.4s,mb3.9,baz=34,slow=5.6,SNR=4.1								
CMAR	Chiang Mai Arr	45.50	246	P		P		03 01 50.0	-1.0
CMAR				pmax		pmax			
	comp=Z,1.0nm,0.4s								
YKA	Yellowknife Ar	54.71	34	P		P		03 03 00.3	-0.4
	comp=Z,2.7nm,0.6s,mb4.5,baz=304,slow=6.7,SNR=6.0								
YKA				pP		pP		03 03 04.0	-0.3
	comp=Z,2.7nm,0.6s,baz=304,slow=6.9,SNR=7.3								
YKA	Yellowknife Ar	54.71	34	P		P		03 03 00.3	-0.5
YKA				*PP		pP		03 03 04.0	-0.3
YKA				pmax		pmax			
	comp=Z,3.0nm,0.6s								
YKA				pmax		pmax			
	comp=N,3.0nm,0.6s								
YKA	Yellowknife Ar	54.71	34	P		P		03 03 00.3	-0.4
YKA				pP		pP		03 03 04.0	-0.3
FINES	FINESS Array B	60.00	330	P		P		03 03 37.4	-0.8
	comp=N,3.8nm,0.6s,mb4.6,baz=48,slow=7.4,SNR=7.5								
FINES				pP		pP		03 03 40.9	-0.9
	comp=N,3.8nm,0.6s,baz=53,slow=7.5,SNR=4.7								
FINES	FINESS Array B	60.00	330	P		P		03 03 37.4	-0.8
FINES				*PP		pP		03 03 40.9	-0.9
FINES				pmax		pmax			
	comp=Z,4.0nm,0.6s								
FINES				pmax		pmax			
	comp=N,4.0nm,0.6s								
NEW	Newport	62.52	48	*e*P		P		03 03 54.4	-1.0
	comp=N,2.9nm,0.8s,mb4.5								
KIV	Kislovodsk	64.73	308	*e*P		P		03 04 10.7	+0.8
KIV				pmax		pmax			
	comp=Z,10.0nm,0.8s,mb4.9								
FFC	Flin Flon	64.80	35	*e*P		P		03 04 09.9	-0.2
	comp=Z,11nm,0.9s,mb4.9								
NB2	NORSAR Array B	64.89	336	P		P		03 04 09.9	-0.7
	comp=Z,2.0nm,0.7s,mb4.3,baz=35,slow=6.5								
NOA	NORSAR Array B	64.89	336	P		P		03 04 10.2	-0.4
	comp=Z,2.7nm,0.7s,mb4.4,baz=35,slow=6.4,SNR=4.8								
NOA				pP		pP		03 04 13.8	-0.4
	comp=Z,2.5nm,0.8s,baz=35,slow=6.5,SNR=3.8								
NOA	NORSAR Array B	64.89	336	P		P		03 04 10.3	-0.3
NOA				*PP		pP		03 04 13.9	-0.4
NOA				pmax		pmax			
	comp=N,3.0nm,0.7s								
NOA				pmax		pmax			
	comp=N,3.0nm,0.8s								
HLID	Hailey	67.09	50	*e*P		P		03 04 24.1	-0.9
	comp=N,1.1nm,0.8s,mb3.9								
WRA	Warramunga Arr	67.40	188	P		P		03 04 25.5	-1.9
	comp=N,0.9nm,0.7s,mb3.9,baz=1.3,slow=6.7,SNR=2.7								
WRA	Warramunga Arr	67.40	188	P		P		03 04 25.5	-1.9
WRA				pmax		pmax			
	comp=Z,1.0nm,0.7s								
NVAR	Mina Array Bea	68.54	56	P		P		03 04 35.0	+0.8
	comp=Z,4.8nm,0.8s,mb4.5,baz=294,slow=3.6,SNR=4.9								
NVAR				pP		pP		03 04 39.2	+1.4
	comp=Z,11nm,1.1s,baz=293,slow=6.6,SNR=5.2								
TPH	Tonopah	69.40	56	*e*P		P		03 04 40.3	+0.8
	comp=Z,7.2nm,1.0s,mb4.6								
PDAR	Pinedale Array	70.15	48	P		P		03 04 44.2	+0.2
	comp=Z,2.9nm,0.8s,mb4.3,baz=347,slow=3.2,SNR=4.3								
PDAR				pP		pP		03 04 48.4	+0.7
	comp=Z,3.0nm,0.8s,baz=333,slow=3.3,SNR=4.5								
ULM	Lac du Bonnet	70.63	35	P		P		03 04 45.6	-1.2
	comp=Z,6.6nm,0.8s,mb4.6,baz=334,slow=3.7,SNR=3.3								
ASAR	Alice Springs	71.12	188	P		P		03 04 49.4	-0.8
	comp=Z,3.6nm,0.8s,mb4.3,baz=5.4,slow=6.3,SNR=5.0								
CLL	Collm	72.42	329	P		P		03 04 56.3	-1.2
	comp=Z,logA/T=0.7,mb4.4								
CLL				*i* *PP		pP		03 04 59.7	-1.4
BRTR	Keskin Array B	72.50	310	P		P		03 04 58.5	+0.4
	comp=Z,2.9nm,0.9s,mb4.2,baz=68,slow=4.2,SNR=5.4								
BRTR				pP		pP		03 05 02.5	+0.7
	comp=Z,1.3nm,0.6s,baz=55,slow=4.1,SNR=4.1								
GERES	GERESS Array B	74.23	327	P		P		03 05 08.8	+0.8
	comp=Z,0.7nm,0.6s,mb3.8,baz=45,slow=5.7,SNR=4.0								
GERES	GERESS Array B	74.23	327	P		P		03 05 08.8	+0.8
GERES				pmax		pmax			
	comp=Z,1.0nm,0.6s								
SCHQ	Schefferville	75.24	17	P		P		03 05 13.5	-0.2
	comp=Z,1.7nm,0.6s,mb4.1,slow=6.1,SNR=3.1								
EIL	Elat	79.25	302	LR		LR		03 43 03.9	
	comp=Z,90nm,18.3s,MS4.1,baz=229,slow=38								
TXAR	Lajitas Array	83.41	53	P		P		03 05 59.5	+1.1
	comp=Z,2.0nm,0.7s,mb4.2,baz=299,slow=3.7,SNR=4.2								
TXAR				pP		pP		03 06 03.5	+1.4
	comp=Z,3.6nm,1.0s,baz=280,slow=4.6,SNR=3.8								
ESDC	Sonseca Array	88.20	335	P		P		03 06 22.2	+0.4
	comp=Z,0.8nm,0.5s,mb4.2,baz=19,slow=4.3,SNR=7.8								
BDFB	Brasilia	147.23	18	PKPbc	PKPdf			03 13 14.6	+0.4
	comp=Z,3.6nm,0.6s,baz=148,slow=1.3,SNR=3.3								
BDFB	Brasilia	147.23	18	PKP2	PKPab			03 13 14.6	-2.5
BDFB				pmax	pmax				
	comp=Z,4.0nm,0.6s								

*IDC **30** 03:06:30.9±1.6,29.65S×176.41W,mb4.2/4,mb1 4.3/6, mb1mx4.1/16,ML3.7/2,MS3.7/1,Ms1 3.7/1,ms1mx3.1/17, Error ellipse: s-maj=48.1km s-min=29.2km az=131.0*
*NEIC **30** 03:06:32.7±0.7,29.58S×176.47W,h10km,mb4.4/2, Error ellipse: s-maj=20.0km s-min=13.8km az=111.0*

ISC 30 03:06:34.5±5.9,29.8S±0.1×176.7W±0.3,h20km±43km,n16, σ0s84/9,mb4.2/6,MS3.7/1,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID		ISC	Time	Res
				Op			h m s	ISC
URZ	Urewera	9.91	209	Pn		P	03 08 58.2	-0.8
	0.3nm,0.3s,baz=317,slow=23,SNR=2.5							
URZ				Sn		Sn	03 10 50.7	-0.1
	0.2nm,0.3s,baz=269,slow=21,SNR=2.4							
RPZ	Rata Peaks	17.01	212	P		P	03 10 33.8	+1.0
	0.6nm,0.3s,baz=20,slow=16,SNR=3.2							
CTA	Charters Tower	34.80	277	P		P	03 13 26.9	+0.8
	2.7nm,0.7s,mb4.3,baz=90,slow=11,SNR=3.1							
CTA				LR		LR	03 24 28.2	
	comp=Z,118nm,18.3s,MS3.7,baz=42,slow=31							
STKA	Stephens Creek	35.71	256	P		P	03 13 34.8	+1.1
	5.4nm,0.9s,mb4.5,baz=93,slow=11,SNR=7.1							
ASAR	Alice Springs	44.26	266	P		P	03 14 43.9	-0.6
	1.5nm,0.6s,mb3.9,baz=98,slow=7.9,SNR=22							
WRAB	Tennant Creek	45.18	271	P		P	03 14 52.1	+0.1
	3.4nm,0.7s,mb4.3							
WRA	Warramunga Arr	45.19	271	P		P	03 14 50.4	-1.6
	2.9nm,0.9s,mb4.1,baz=107,slow=8.3,SNR=6.3							
QSPA	South Pole Qui	60.36	180	P		P	03 16 44.0	0.0
	3.4nm,1.0s,mb4.3							
MKAR	Makanchi Array	118.20	310	PKP	PKPdf		03 25 19.7	-4.6
	0.6nm,0.9s,baz=90,slow=1.4,SNR=4.4							
MKAR	Makanchi Array	118.20	310	PKP	PKPdf		03 25 19.7	-4.6
BVAR	Borovoye Array	126.71	316	PKP	PKPdf		03 25 36.3	-4.2
	0.6nm,0.7s,baz=117,slow=3.2,SNR=3.9							
FINES	FINESS Array B	144.90	341	PKP	PKPdf		03 26 08.1	-5.5
	0.7nm,0.6s,baz=45,slow=3.9,SNR=5.9							
FINES	FINESS Array B	144.90	341	PKP	PKPdf		03 26 08.1	-5.5
KONO	Kongsberg	149.79	354	PKPdf	PKPdf		03 26 17.8	-3.9
ASF	Jabal al Asfar	151.13	283	PKPbc	PKPdf		03 26 26.7	+2.1
	0.9nm,0.4s,baz=44,slow=3.6,SNR=3.0							
BRTR	Keskin Array B	153.25	300	PKPbc	PKPdf		03 26 31.1	+3.7
	0.3nm,0.5s,baz=135,slow=2.0,SNR=3.6							
BRTR				PKPab	PKPab		03 26 44.1	-0.9
	1.4nm,0.9s,baz=99,slow=4.1,SNR=6.6							

*IDC **30** 03:13:30.4±3.0,20.08S×179.23W,h695km±42km,mb3.0/6, mb1 3.2/6,mb1mx3.0/14,Error ellipse: s-maj=33.9km s-min=21.4km az=161.0*

ISC 30 03:13:29.4±4.1,20.2S±0.3×179.2W±0.2,h702km±57km, n10,σ0s37/11,mb3.7/6,1C,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID		ISC	Time	Res
				Op			h m s	ISC
CTA	Charters Tower	32.38	264	⇑*i*P		P	03 19 08.6	+0.6
	3.3nm,0.4s,mb4.2							
CTA	Charters Tower	32.38	264	P		P	03 19 08.2	+0.3
	4.4nm,0.4s,mb4.3,baz=86,slow=12,SNR=13							
STKA	Stephens Creek	36.90	244	*e*P		P	03 19 45.3	+0.4
	2.0nm,0.8s,mb3.7							
STKA	Stephens Creek	36.90	244	P		P	03 19 45.2	+0.3
	1.5nm,0.4s,mb3.9,baz=92,slow=11,SNR=5.7							
AS12	Alice Springs	43.48	257	*e*P		P	03 20 37.0	0.0
	4.3nm,0.7s,mb4.1							
ASAR	Alice Springs	43.48	257	P		P	03 20 37.1	+0.2
	3.1nm,0.5s,mb4.1,baz=88,slow=8.4,SNR=66							
ASAR				S		S	03 26 19.6	+0.3
	1.4nm,0.8s,baz=92,slow=16,SNR=12							
WB2	Warramunga Arr	43.50	262	*e*P		P	03 20 36.7	-0.5
WRA	Warramunga Arr	43.51	262	P		P	03 20 36.7	-0.6
	1.4nm,0.3s,mb3.9,baz=97,slow=7.0,SNR=33							
VNDA	Vanda	58.14	185	P		P	03 22 21.2	0.0
	0.6nm,0.8s,mb2.9,baz=2.7,slow=9.7,SNR=3.3							
ILAR	Eielson Array	88.25	13	P		P	03 25 10.1	+0.1
	0.3nm,0.5s,mb3.1,baz=226,slow=5.6,SNR=8.3							

*IDC **30** 03:15:14.2±0.7,6.65S×28.46E,mb4.1/10,mb1 4.2/12, mb1mx4.0/23,ML2.0/1,MS2.9/1,Ms1 2.9/1,ms1mx2.6/28, Error ellipse: s-maj=23.4km s-min=16.1km az=111.0*
*NEIC **30** 03:15:15.7±0.4,6.65S×28.51E,h10km,Error ellipse: s-maj=15.6km s-min=8.4km az=112.0*

ISC 30 03:15:13.7±0.5,6.62S±0.07×28.6E±0.1,h10km,n20, σ1s00/22,mb4.1/10,Lake Tanganyika region

Code	Station Name	Δ°	AZ°	Phase ID		ISC	Time	Res
				Op			h m s	ISC
MBAR	Mbarara	6.36	20	*e*Pn		Pn	03 16 49.7	-0.1
	4.7nm,0.4s							
MBAR				*e*Pg		Pg	03 17 15.4	-5.2
MBAR				*e*Sn		Sn	03 18 02.4	-0.9
KMBO	Kilima Mbogo	10.23	58	Pn		P	03 17 42.8	-1.1
	2.9nm,0.3s,baz=229,slow=16,SNR=30							
KMBO				Sn		S	03 19 34.9	-4.8
	0.9nm,0.3s,baz=326,slow=24,SNR=4.1							
KMBO				Lg			03 20 38.7	
	2.5nm,0.3s,baz=326,slow=21,SNR=7.7							
KMBO				LR		LR	03 22 01.6	
	comp=Z,69nm,19.4s,baz=226,slow=39							
KMBO	Kilima Mbogo	10.23	58	*e*Pn		P	03 17 42.6	-1.3
KMBO				*e*Sn		S	03 19 33.8	-6.0
KMBO				Lg			03 20 38.7	
KMBO				LR		LR	03 22 01.6	
TSUM	Tsumeb	16.45	219	Pn		P	03 19 06.1	-0.3
	0.3nm,0.3s,baz=40,slow=13,SNR=3.2							
TSUM				Sn		S	03 21 48.1	-21
	0.5nm,0.3s,baz=305,slow=18,SNR=2.0							
TSUM				Lg			03 23 52.2	
	0.9nm,0.3s,baz=307,slow=19,SNR=3.0							
LBTB	Lobatse	18.51	189	*e*P		P	03 19 31.9	-0.3
SUR	Sutherland	26.63	195	P		P	03 20 54.3	-0.2
	12nm,1.2s,mb4.3,baz=196,slow=16,SNR=2.4							
SUR	Sutherland	26.63	195	P		P	03 20 54.3	-0.2
DBIC	Dimbokro	35.87	291	P		P	03 22 13.6	-2.5
	2.8nm,0.8s,mb4.3,baz=84,slow=22,SNR=4.2							
DBIC	Dimbokro	35.87	291	P		P	03 22 13.6	-2.5
IDI	Anoyia	41.82	355	P		P	03 23 07.4	+1.9
	2.7nm,0.6s,mb4.1,baz=249,slow=23,SNR=3.5							
BRTR	Keskin Array B	46.35	5	P		P	03 23 42.5	+0.6
	1.2nm,0.8s,mb3.9,baz=194,slow=8.5,SNR=7.8							
DA

TEL3	**Telica 3**	**2.21**	**347**	*e*P		**Pn**	03 42 04.6	**+1.8**	
LAJ	**Bijagual**	**2.26**	**103**	*e*P		**Pn**	03 41 59.0	**-4.4**	
SJS	**Escuela Geolog**	**2.31**	**101**⇑	*e*P		**Pn**	03 42 05.5	**+1.4**	
LCR2	**La Lucha 2**	**2.40**	**106**	*e*P		**Pn**	03 42 05.8	**+0.4**	
TRTC	**Tortuguero**	**2.60**	**86**	*e*P		**Pn**	03 42 07.4	**-0.8**	
TXAR	**Lajitas Array**	**24.84**	**322**	P		**P**	03 46 48.3	**-1.3**	
	0.8nm,0.6s,mb3.4,baz=139,slow=9.0,SNR=8.8								
SADO	**Sadowa**	**34.80**	**9**	P		**P**	03 48 09.3	**-9.2**	
	3.6nm,1.1s,mb4.2,baz=201,slow=14,SNR=3.2								
SADO	**Sadowa**	**34.80**	**9**	P		**P**	03 48 09.3	**-9.3**	
NVAR	**Mina Array Bea**	**39.95**	**320**	P		**P**	03 49 02.2	**+0.3**	
	0.2nm,0.3s,mb3.3,baz=105,slow=10,SNR=2.9								
NVAR				PcP		PcP	03 51 08.0	0.0	
	0.9nm,0.9s,baz=138,slow=6.0,SNR=3.9								
SCHQ	**Schefferville**	**46.94**	**15**	P		**P**	03 49 51.8	**-6.4**	
	2.9nm,1.0s,mb4.2,baz=230,slow=12,SNR=3.6								
YKA	**Yellowknife Ar**	**55.86**	**345**	P		**P**	03 51 00.6	**-4.9**	
	0.1nm,0.5s,mb3.1,baz=139,slow=7.2,SNR=4.4								
YKA				PcP		PcP	03 52 00.6	-3.6	
	0.2nm,0.7s,baz=138,slow=3.7,SNR=8.7								
YKA	**Yellowknife Ar**	**55.86**	**345**	P		**P**	03 51 00.6	**-4.9**	
YKA				PcP		PcP	03 52 00.6	-3.6	

*CASC **30** 03:44:12.8±1.9, 10.37N×86.45W, MD4.1, ML3.5, mb3.9(NEIC)*
*IDC **30** 03:44:14.7±2.2, 11.14N×85.69W, mb3.7/5, mb1 4.0/5, mb1mx3.7/17, Error ellipse: s-maj=60.7km s-min=48.2km az=40.0*
*NEIC **30** 03:44:21.2±1.3, 10.52N×85.67W, h93km±17km, mb3.9/8, Error ellipse: s-maj=30.5km s-min=26.8km az=48.0*
ISC 30 03:44:13.0±0.7, 10.33N±0.05×86.51W±0.05, h10km, n45, σ1§20/50, mb3.8/12, 8C-6D, Off coast of Costa Rica

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
VCR	**Vista de Mar**	**0.89**	**103**⇑	*e*P		**Pb**	**03 44 30.2**	**+0.2**
VCR				*e*S		**Sb**	**03 44 43.2**	**+1.5**
CRZC	**La Cruz**	**1.09**	**55**⇑	*e*P		**Pb**	**03 44 33.4**	**-0.1**
SSNI	**San Juan del S**	**1.15**	**34**⇑	*e*P		**Pb**	**03 44 33.6**	**-0.9**
MADN	**Villa Maderas**	**1.43**	**42**⇑	*i*P		**Pn**	**03 44 38.1**	**-1.1**
JCR	**Jicaral**	**1.45**	**109**⇓	*e*P		**Pn**	**03 44 38.5**	**-0.9**
CONN	**Concepcion**	**1.50**	**35**⇑	*e*P		**Pn**	**03 44 38.6**	**-1.5**
JTS	**JuntasAbangare**	**1.53**	**91**⇑	*i*Pg		**Pg**	**03 44 38.5**	**-5.1**
JTS				*e*S		**Sb**	**03 45 09.8**	**+9.5**
APON	**Apoyo**	**1.63**	**15**	*e*P		**Pn**	**03 44 41.5**	**-0.5**
CRUN	**El Crucero**	**1.65**	**7**	*e*P		**Pn**	**03 44 42.4**	**0.0**
TICN	**Ticuantepe**	**1.71**	**9**	*e*P		**Pn**	**03 44 42.6**	**-0.5**
FORC	**Fortuna**	**1.81**	**85**	*e*P		**Pn**	**03 44 44.2**	**-0.4**
XAVN	**Gruta Xavier**	**1.81**	**6**	*e*P		**Pn**	**03 44 44.5**	**-0.1**
MGAN	**Managua**	**1.82**	**8**⇑	*e*P		**Pn**	**03 44 44.3**	**-0.5**
MGAN				*e*S		**Sn**	**03 45 13.0**	**+5.0**
MGAN				*i*			03 45 18.4	
	comp=N,609nm,0.6s							
COPN	**Copaltepe**	**1.84**	**357**⇓	*e*P		**Pn**	**03 44 44.9**	**-0.1**
COPN				*e*S		**Sn**	**03 45 10.8**	**+2.4**
WILN	**Americas 2**	**1.84**	**10**⇓	*e*P		**Pn**	**03 44 44.5**	**-0.6**
WILN				*e*S		**Sn**	**03 45 12.5**	**+3.9**
COFN	**Cofrada**	**1.85**	**12**⇓	*e*P		**Pn**	**03 44 44.4**	**-0.7**
CGA2	**Cerro Gallo 2**	**2.03**	**99**	*e*P		**Pn**	**03 44 48.4**	**+0.6**
MOMJ	**Momotombo**	**2.06**	**359**⇓	*e*P		**Pn**	**03 44 48.2**	**0.0**
PYN	**Poneloya**	**2.10**	**346**	*e*P		**Pn**	**03 44 49.1**	**+0.4**
LEON	**Leon**	**2.10**	**350**⇓	*e*P		**Pn**	**03 44 48.9**	**+0.1**
CNGN	**Cerro Negro**	**2.16**	**355**	*e*P		**Pn**	**03 44 52.0**	**+2.4**
PYTN	**Playitas**	**2.23**	**11**⇑	*e*P		**Pn**	**03 44 49.5**	**-1.1**
PYTN				*e*S		**Sn**	**03 45 21.6**	**+3.0**
VPS2	**Volcan Poas 2**	**2.24**	**93**	*e*P		**Pn**	**03 44 50.6**	**-0.1**
TEL3	**Telica 3**	**2.25**	**352**	*e*P		**Pn**	**03 44 50.9**	**0.0**
LAJ	**Bijagual**	**2.39**	**101**	*e*P		**Pn**	**03 44 47.4**	**-5.5**
SJS	**Escuela Geolog**	**2.44**	**99**	*e*P		**Pn**	**03 44 55.4**	**+1.8**
LCR2	**La Lucha 2**	**2.53**	**103**	*e*P		**Pn**	**03 44 55.8**	**+0.9**
TRTC	**Tortuguero**	**2.76**	**85**	*e*P		**Pn**	**03 44 56.8**	**-1.4**
SWET	**Sewanee**	**24.77**	**1**	*e*P		**P**	**03 49 33.4**	**-3.0**
LTX	**Lajitas**	**24.80**	**322**	P		**P**	**03 49 37.8**	**+1.1**
	comp=N,4.3nm,0.8s,mb4.0							
LTX				*e*			03 49 49.1	
TXAR	**Lajitas Array**	**24.80**	**322**	P		**P**	**03 49 37.0**	**+0.3**
	comp=N,1.5nm,0.6s,mb3.7,baz=137,slow=9.9,SNR=18							
TXAR				PcP		PcP	03 53 15.1	+0.8
	comp=N,0.5nm,0.8s,baz=143,slow=4.5,SNR=5.3							
TXAR	**Lajitas Array**	**24.80**	**322**	P		**P**	**03 49 37.0**	**+0.3**
TXAR				PcP		PcP	03 53 15.1	+0.8
MIAR	**Mount Ida**	**24.95**	**346**	*e*P		**P**	**03 49 34.9**	**-3.2**
	comp=N,5.9nm,1.1s,mb4.0							
WMOK	**Wichita Mounta**	**26.76**	**337**	*e*P		**P**	**03 49 55.9**	**+1.0**
	comp=N,4.5nm,0.9s,mb4.0							
ACSO	**Alum Creek Sta**	**29.94**	**5**	*e*P		**P**	**03 50 18.1**	**-5.5**
	comp=N,11nm,1.0s,mb4.5							
SDCO	**Great Sand Dun**	**32.20**	**331**	*e*P		**P**	**03 50 42.1**	**-1.4**
	comp=N,1.0nm,0.8s,mb3.7							
PDAR	**Pinedale Array**	**38.06**	**332**	P		**P**	**03 51 32.3**	**-1.2**
	comp=N,0.3nm,0.5s,mb3.3,baz=122,slow=8.5,SNR=3.4							
PDAR				PcP		PcP	03 53 48.0	-1.3
	comp=N,0.7nm,1.1s,baz=135,slow=6.4,SNR=3.0							
MNV	**Mina**	**39.81**	**320**	*e*P		**P**	**03 51 49.9**	**+1.7**
	comp=N,3.8nm,1.2s,mb4.0							
NVAR	**Mina Array Bea**	**39.90**	**320**	P		**P**	**03 51 51.3**	**+2.4**
	comp=N,0.9nm,0.7s,mb3.6,baz=127,slow=7.9,SNR=6.6							
NVAR				PcP		PcP	03 53 56.9	+1.7
	comp=N,2.4nm,1.0s,baz=143,slow=4.5,SNR=8.2							
HLID	**Hailey**	**41.02**	**329**	P		**P**	**03 51 56.9**	**-1.1**
	comp=N,0.9nm,0.9s,mb3.4							
SCHQ	**Schefferville**	**47.05**	**15**	P		**P**	**03 52 41.1**	**-5.3**
	comp=N,1.9nm,0.6s,mb4.2,baz=204,slow=12,SNR=3.8							
SCHQ	**Schefferville**	**47.05**	**15**	*e*P		**P**	**03 52 40.5**	**-6.0**
	comp=N,1.0nm,0.5s,mb4.0							
YKA	**Yellowknife Ar**	**55.89**	**345**	P		**P**	**03 53 48.6**	**-4.5**
	comp=N,0.3nm,0.8s,mb3.4,baz=143,slow=6.8,SNR=7.7							
YKA				PcP		PcP	03 54 49.9	-1.8
	comp=N,0.7nm,0.9s,baz=144,slow=4.2,SNR=14							
YKA	**Yellowknife Ar**	**55.89**	**345**	P		**P**	**03 53 48.6**	**-4.5**
YKA				PcP		PcP	03 54 49.9	-1.8
WRAB	**Tennant Creek**	**139.52**	**251**	*e*PKPdf		PKPdf	04 03 40.2	-4.7

*NEIC **30** 03:55:23.1±0.6, 29.39S×176.84W, h10km, mb4.9/3, Error ellipse: s-maj=21.1km s-min=12.3km az=143.0*
*IDC **30** 03:55:28.7±5.1, 29.76S×176.68W, h56km±48km, mb4.0/6, mb1 4.3/9, mb1mx4.1/17, ML4.0/3, MS4.1/4, Ms1 4.0/4, ms1mx3.7/14, Error ellipse: s-maj=49.3km s-min=20.3km az=162.0*
ISC 30 03:55:28.3±2.4, 29.9S±0.1×176.6W±0.1, h70km±25km, n28, σ1§27/20, mb4.3/9, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
URZ	**Urewera**	**9.82**	**210**	P		**P**	**03 57 47.8**	**-1.0**
	0.6nm,0.3s,baz=70,slow=10,SNR=2.9							
URZ				S		**S**	**03 59 38.2**	**-0.2**
	1.8nm,0.3s,baz=139,slow=17,SNR=6.1							
RPZ	**Rata Peaks**	**16.92**	**212**	P		**P**	**03 59 23.4**	**+1.7**
	1.2nm,0.3s,baz=27,slow=19,SNR=5.4							
RPZ				S		**S**	**04 02 14.7**	**-12**
	0.6nm,0.3s,baz=36,slow=17,SNR=2.8							
NOUC	**Port Laguerre**	**17.19**	**293**	*e*P		**P**	**03 59 27.7**	**+2.4**
RAR	**Rarotonga**	**17.48**	**64**	P		**P**	**03 59 28.0**	**-0.9**
	0.5nm,0.3s,baz=246,slow=5.1,SNR=3.4							
CTA	**Charters Tower**	**34.91**	**278**	P		**P**	**04 02 15.2**	**-0.1**
	2.3nm,0.6s,mb4.2,baz=103,slow=14,SNR=4.4							
STKA	**Stephens Creek**	**35.76**	**256**	P		**P**	**04 02 23.3**	**+0.9**
	10.0nm,0.8s,mb4.8,baz=94,slow=7.5,SNR=12							
STKA				LR		LR	04 16 40.9	
	comp=Z,295nm,18.1s,baz=32,slow=36							
STKA	**Stephens Creek**	**35.76**	**256**	P		**P**	**04 02 23.3**	**+0.9**
STKA				LR		LR	04 16 40.9	
AS12	**Alice Springs**	**44.33**	**266**	*e*P		**P**	**04 03 32.2**	**-1.1**
	11nm,1.2s,mb4.5							
ASAR	**Alice Springs**	**44.33**	**266**	P		**P**	**04 03 32.9**	**-0.4**
	3.4nm,0.7s,mb4.2,baz=101,slow=8.0,SNR=27							
ASAR				LR		LR	04 22 26.3	
	comp=Z,289nm,18.8s,baz=298,slow=36							
WB2	**Warramunga Arr**	**45.27**	**271**	*e*P		**P**	**04 03 40.0**	**-0.8**
WRA	**Warramunga Arr**	**45.28**	**271**	P		**P**	**04 03 39.9**	**-1.0**
	8.9nm,0.9s,mb4.5,baz=110,slow=7.9,SNR=13							
QSPA	**South Pole Qui**	**60.20**	**180**	*e*P		**P**	**04 05 37.0**	**+6.2**
	12nm,1.1s,mb4.8							
MAT	**Matsushiro**	**78.53**	**324**	P		**P**	**04 07 20.9**	**-2.7**
MAT	**Matsushiro**	**78.53**	**324**	*e*P		**P**	**04 07 21.0**	**-2.6**
	8.0nm,0.6s,mb4.7							
NVAR	**Mina Array Bea**	**87.07**	**42**	P		**P**	**04 08 08.7**	**+1.3**
	2.6nm,1.2s,mb4.0,baz=229,slow=8.3,SNR=4.4							
TPH	**Tonopah**	**87.47**	**43**	*e*P		**P**	**04 08 08.7**	**-0.6**
	4.2nm,1.2s,mb4.2							

TXAR	**Lajitas Array**	**91.12**	**57**	P		**P**	**04 08 28.8**	**+2.0**	
	0.3nm,0.9s,mb3.4,baz=191,slow=4.6,SNR=3.7								
TXAR				LR		LR	04 41 43.8		
	comp=Z,59nm,18.7s,baz=150,slow=30								
TXAR	**Lajitas Array**	**91.12**	**57**	P		**P**	**04 08 28.8**	**+2.0**	
TXAR				LR		LR	04 41 43.8		
PDAR	**Pinedale Array**	**94.96**	**43**	LR		LR	04 47 58.0		
	comp=Z,55nm,18.8s,baz=62,slow=33								
MKAR	**Makanchi Array**	**118.37**	**310**	PKP		PKPdf	04 14 09.0	+1.4	
	1.4nm,1.0s,baz=90,slow=1.4,SNR=5.8								
MKAR	**Makanchi Array**	**118.37**	**310**	PKP		PKPdf	04 14 09.0	+1.4	
ZRNK	**Zerenda**	**127.72**	**316**	*e*P		PKPdf	04 14 27.4	+1.9	
FINES	**FINESS Array B**	**145.08**	**341**	PKP		PKPdf	04 14 57.1	+0.2	
	2.4nm,0.8s,baz=34,slow=5.0,SNR=9.4								
NB2	**NORSAR Subarra1**	**148.43**	**353**	PKPab		PKPab	04 15 06.7	-5.0	
	6.3nm,1.2s,baz=12,slow=4.6								
NOA	**NORSAR Array B**	**148.43**	**353**	PKPbc		PKPdf	04 15 06.0	+3.6	
	1.3nm,1.1s,baz=29,slow=2.5,SNR=2.6								
HFS	**Hagfors**	**148.98**	**350**	PKPbc		PKPdf	04 15 07.0	+3.7	
	3.0nm,1.5s,baz=346,slow=5.9,SNR=2.8								
BRTR	**Keskin Array B**	**153.40**	**300**	PKPbc		PKPdf	04 15 21.3	+11	
	1.2nm,0.9s,baz=99,slow=1.2,SNR=9.4								
CLL	**Collm**	**157.45**	**344**	*e*PKP2		PKPab	04 15 50.0	+0.1	

*MOS **30** 04:13:20.5±0.8, 54.13N×110.54E, h10km, mb4.0/1, Error ellipse: s-maj=21.1km s-min=9.4km az=74.5*
*BYKL **30** 04:13:21.4±0.2, 54.18N×110.47E, h9km±18km*
ISC 30 04:13:16.0±0.3, 54.11N±0.02×110.53E±0.04, h9km, n40, σ1§32/92, 16C-5D, Lake Baykal region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
SYVR	**Suvo**	**0.55**	**215**	*e*Pg		**Pg**	**04 13 33.4**	**+6.2**
SYVR				*e*Sg		**Sg**	**04 13 41.8**	**+7.2**
SYVR				*e*Sb		**Sb**	**04 13 47.1**	**+12**
SYVR				Pmax				
	147nm,0.2s							
SYVR				max				
	1µm,0.3s							
SYVR	**Suvo**	**0.55**	**215**	*e*PG		**Pg**	**04 13 33.3**	**+6.1**
SYVR				*e*			04 13 42.0	
SYVR				pmax		pmax		
	comp=Z,146nm,0.1s							
SYVR				smax				
	comp=N,1µm,0.1s							
YLYR	**Ulyunkhan**	**0.85**	**25**⇑	*i*Pg		**Pg**	**04 13 36.2**	**+3.1**
	comp=N,29nm,0.5s							
YLYR				⇑*i*Pg		**Pg**	**04 13 36.2**	**+3.1**
	comp=N,35nm,0.5s							
YLYR				⇑*i*Pg		**Pg**	**04 13 36.2**	**+3.1**
	comp=N,66nm,0.5s							
YLYR				*e*Sg		**Sg**	**04 13 47.1**	**+2.7**
YLYR				Pmax				
	comp=N,147nm,0.2s							
YLYR				Smax				
	comp=N,1µm,0.5s							
YLYR	**Ulyunkhan**	**0.85**	**25**⇑	*i*PG		**Pg**	**04 13 36.2**	**+3.1**
YLYR				*e*			04 13 46.9	
YLYR				pmax		pmax		
	comp=Z,145nm,0.2s							
YLYR				smax				
	comp=E,1µm,0.2s							
NIZ	**Nizh Angarsk**	**1.76**	**341**⇑	*i*Pg		**Pg**	**04 13 51.9**	**+0.6**
NIZ				*e*Sg		**Sg**	**04 14 14.5**	**-0.3**
NIZ				Pmax				
	comp=E,218nm,0.3s							
NIZ				Smax				
	comp=E,2µm,0.5s							
NIZ	**Nizh Angarsk**	**1.76**	**341**	*e*PN		**Pg**	**04 13 51.9**	**+0.6**
NIZ				*e*			04 14 14.7	
NIZ				pmax		pmax		
	comp=Z,183nm,0.3s							
NIZ				smax				
	comp=N,2µm,0.5s							
OGRR	**Ongureny**	**1.80**	**256**	*e*Pg		**Pg**	**04 13 52.6**	**+0.6**
OGRR				*e*			04 13 54.1	
OGRR				*e*			04 13 55.1	
OGRR				*e*Sg		**Sg**	**04 14 15.9**	**-0.2**
OGRR				max				
	comp=N,97nm,0.2s							
OGRR				Smax				
	comp=N,480nm,0.2s							
OGRR	**Ongureny**	**1.80**	**256**	*e*PN		**Pg**	**04 13 52.6**	**+0.6**
OGRR				*e*			04 13 53.3	
OGRR				*e*			04 14 15.9	
OGRR				pmax		pmax		
	comp=Z,102nm,0.3s							
OGRR				smax				
	comp=E,476nm,0.2s							
KMO	**Kumora**	**1.82**	**12**⇑	*i*Pg		**Pg**	**04 13 52.9**	**+0.5**
KMO				*e*Sg		**Sg**	**04 14 16.4**	**-0.3**
KMO				Pmax				
	comp=E,209nm,0.4s							
KMO				Smax				
	comp=E,601nm,0.9s							
KMO	**Kumora**	**1.82**	**12**⇑	*i*PN		**Pn**	**04 13 53.0**	**+5.2**
KMO				*e*			04 14 16.5	
KMO				pmax		pmax		
	comp=Z,215nm,0.3s							
KMO				smax				
	comp=N,610nm,1.3s							
YOA	**Uoyan**	**2.14**	**18**⇑	*i*Pg		**Pg**	**04 13 58.6**	**-0.1**
YOA				*e*Sg		**Sg**	**04 14 27.3**	**0.0**
YOA				Pmax				
	comp=N,204nm,0.4s							
YOA				Smax				
	comp=N,2µm,1.2s							
YOA	**Uoyan**	**2.14**	**18**⇑	*i*PN		**Pn**	**04 13 58.8**	**+6.4**
YOA				*i*			04 14 27.0	
YOA				pmax		pmax		
	comp=Z,158nm,0.4s							
YOA				smax				
	comp=E,2µm,0.6s							
UKT	**Uakit**	**2.26**	**51**⇓	*i*Pg		**Pg**	**04 14 00.8**	**-0.4**
UKT				*e*			04 14 04.2	
UKT				*e*Sg		**Sg**	**04 14 31.2**	**-0.1**
UKT				max				
	comp=E,69nm,0.7s							
UKT				Smax				
	comp=E,171nm,0.5s							
ZRHB	**Zarechye**	**2.56**	**234**	*e*Pg		**Pg**	**04 14 07.6**	**+0.5**
ZRHB				*e*Sn		**Sn**	**04 14 36.0**	**+6.1**
ZRHB				*e*Sg		**Sg**	**04 14 42.0**	**+0.8**
ZRHB				Pmax				
	comp=E,12nm,0.2s							
ZRHB				Smax				
	comp=E,811nm,0.6s							
TRTB	**Turuntaevo**	**2.57**	**224**	*e*Pn		**Pn**	**04 14 04.0**	**+5.5**
TRTB				*e*Pg		**Pg**	**04 14 07.5**	**+0.2**
TRTB				*e*Sn		**Sn**	**04 14 36.0**	**+5.8**
TRTB				*e*Sg		**Sg**	**04 14 42.9**	**+1.3**
TRTB				Pmax				
	comp=E,37nm,0.5s							
TRTB				Smax				
	comp=E,198nm,0.8s							
SVKR	**Severomuysk**	**2.66**	**40**	*e*Pg		**Pg**	**04 14 07.5**	**-1.6**
SVKR				*e*Sg		**Sg**	**04 14 43.2**	**-1.3**
SVKR				Pmax				
	comp=E,76nm,0.2s							
SVKR				Smax				
	comp=E,490nm,0.6s							
CIT	**Chita**	**2.77**	**138**	*e*Pn		**Pn**	**04 14 05.6**	**+4.1**
CIT				⇑*i*Pg		**Pg**	**04 14 11.2**	**-0.2**
CIT				*e*Sn		**Sn**	**04 14 40.3**	**+4.9**
CIT				*e*Sg		**Sg**	**04 14 48.9**	**+0.5**
CIT				Pmax				
	comp=E,76nm,0.6s							
CIT				Smax				
	comp=E,175nm,0.3s							
CIT	**Chita**	**2.77**	**138**	*e*PN		**Pg**	**04 14 11.2**	**-0.2**
CIT				*e*S		**Sn**	**04 14 40.3**	**+4.9**
CIT				*e*			04 14 49.0	
CIT				pmax		pmax		
	comp=Z,81nm,0.6s							
CIT				smax				
	comp=E,181nm,0.5s							
TRG	**Tyrgan**	**2.85**	**243**⇓	*i*Pn		**Pn**	**04 14 07.1**	**+4.6**
TRG				*e*Pg		**Pg**	**04 14 12.3**	**-0.5**
TRG				*e*Sn		**Sn**	**04 14 41.2**	**+3.9**
TRG				*e*Sg		**Sg**	**04 14 49.5**	**-1.3**
TRG				Pmax				
	comp=E,29nm,0.2s							
TRG				Smax				
	comp=E,189nm,0.2s							

TRG	**Tyrgan**	**2.85**	**243**	*e*PN		**Pn**	**04 14 07.2**	**+4.7**	
TRG				*e*S		**Sn**	**04 14 41.7**	**+4.4**	
TRG				*e*S		**Sg**	**04 14 49.5**	**-1.3**	
TRG				smax					
	comp=N,188nm,0.2s								
KAB	**Kabansk**	**3.12**	**230**	*e*Sg		**Sg**	**04 14 59.3**	**-0.6**	
KAB				Smax					
	comp=N,562nm,1.4s								
STDB	**Stepnoy Dvoret**	**3.17**	**234**	*e*Sg		**Sg**	**04 15 01.8**	**0.0**	
STDB				Smax					
	comp=N,493nm,0.8s								
HRMR	**Khuramsha**	**3.30**	**223**⇑	*i*Pn		**Pn**	**04 14 14.2**	**+5.3**	
HRMR				*e*Pg		**Pg**	**04 14 21.0**	**-0.9**	
HRMR				*e*Sn		**Sn**	**04 14 53.8**	**+5.1**	
HRMR				*e*Sg		**Sg**	**04 15 06.0**	**+0.1**	
HRMR				Pmax					
	comp=N,67nm,0.6s								
HRMR				Smax					
	comp=N,742nm,0.5s								
NLYR	**Nelyaty**	**3.80**	**49**	*e*Pn		**Pn**	**04 14 20.2**	**+4.2**	
NLYR				*e*Pg		**Pg**	**04 14 29.8**	**-2.0**	
NLYR				*e*Sg		**Sg**	**04 15 19.8**	**-2.7**	
NLYR				Pmax					
	comp=N,17nm,0.7s								
NLYR				Smax					
	comp=N,136nm,1.1s								
BOD	**Bodaibo**	**4.20**	**26**	*e*Pn		**Pn**	**04 14 26.8**	**+5.1**	
BOD				*e*Pg		**Pg**	**04 14 36.7**	**-3.1**	
BOD				*e*Sn		**Sn**	**04 15 12.9**	**+1.4**	
BOD				*e*Sg		**Sg**	**04 15 29.3**	**-6.5**	
BOD				Pmax					
	comp=N,8.0nm,0.4s								
BOD				Smax					
	comp=N,57nm,0.8s								
IRK	**Irkutsk**	**4.21**	**246**	*e*Sg		**Sg**	**04 15 29.9**	**-6.2**	
IRK				Smax					
	comp=N,294nm,0.7s								
KPC	**Khapcheranga**	**4.56**	**165**⇓	*i*Pn		**Pn**	**04 14 32.6**	**+5.8**	
KPC				*e*Pg		**Pg**	**04 14 45.4**	**-1.6**	
KPC				*e*Sn		**Sn**	**04 15 25.0**	**+4.4**	
KPC				*e*Sg		**Sg**	**04 15 45.2**	**-2.6**	
KPC				Pmax					
	comp=N,14nm,0.3s								
KPC				Smax					
	comp=N,115nm,0.8s								
KPC	**Khapcheranga**	**4.56**	**165**	*e*PN		**Pn**	**04 14 32.5**	**+5.7**	
KPC				*e*			04 14 45.6		
KPC				*e*			04 15 45.7		
KPC				pmax		pmax			
	comp=Z,16nm,0.6s								
KPC				smax					
	comp=E,82nm,0.7s								
TLY	**Talaya**	**4.83**	**243**⇓	*i*Pn		**Pn**	**04 14 33.9**	**+3.2**	
TLY				*e*Pg		**Pg**	**04 14 47.6**	**-4.8**	
TLY				*e*Sn		**Sn**	**04 15 27.5**	**+0.1**	
TLY				*e*Sg		**Sg**	**04 15 50.3**	**-6.5**	
TLY				Pmax					
	comp=E,5.0nm,0.4s								
TLY				Smax					
	comp=E,58nm,0.5s								
CRS	**Chara**	**5.21**	**54**	*e*Pn		**Pn**	**04 14 41.1**	**+5.1**	
CRS				⇑*i*Pg		**Pg**	**04 14 54.6**	**-5.4**	
CRS				*e*Sg		**Sg**	**04 16 02.5**	**-7.0**	
CRS				Pmax					
	comp=E,11nm,0.9s								
CRS				Smax					
	comp=E,84nm,1.6s								
CRS	**Chara**	**5.21**	**54**	*e*PN		Px	04 14 56.9		
CRS				*e*			04 16 03.0		
CRS				pmax		pmax			
	comp=Z,11nm,1.2s								
CRS				smax					
	comp=E,84nm,1.5s								
ARS	**Arshan**	**5.37**	**249**	*e*Pn		**Pn**	**04 14 43.2**	**+5.0**	
ARS				*e*Pg		**Pg**	**04 14 57.4**	**-5.7**	
ARS				*e*Sn		**Sn**	**04 15 40.2**	**-0.7**	
ARS				*e*Sg		**Sg**	**04 16 05.4**	**-9.2**	
ARS				Pmax					
	comp=E,14nm,0.7s								
ARS				Smax					
	comp=E,189nm,0.8s								
TUP	**Tupik**	**5.53**	**83**⇑	*i*Pn		**Pn**	**04 14 43.5**	**+2.9**	
TUP				*e*Pg		**Pg**	**04 15 00.9**	**-5.5**	
TUP				*e*Sn		**Sn**	**04 15 46.1**	**+1.0**	
TUP				*e*Sg		**Sg**	**04 16 13.1**	**-7.0**	
TUP				Pmax					
	comp=E,6.0nm,0.5s								
TUP				Smax					
	comp=E,141nm,1.2s								
TUP	**Tupik**	**5.53**	**83**	*e*PN		**Pn**	**04 14 43.8**	**+3.2**	
TUP				*e*			04 15 00.8		
TUP				*e*			04 16 12.1		
TUP				pmax		pmax			
	comp=Z,5.0nm,0.4s								
TUP				smax					
	comp=N,110nm,0.6s								
ZAK	**Zakamensk**	**5.81**	**233**⇑	*i*Pg		**

IRIF	**Iriomote-Funau**	**1.32**	**100**	P	**P**	**04 30 53.1**	**-0.5**
IRIF				S	**S**	**04 31 10.0**	**-0.6**
HATJ	**Hateruma jima**	**1.47**	**110**	P	**P**	**04 30 55.8**	**+0.3**
HATJ				S	**S**	**04 31 14.1**	**+0.2**
JKRS	**Kuro-shima**	**1.59**	**102**	P	**P**	**04 30 57.4**	**+0.2**
JKRS				S	**S**	**04 31 17.4**	**+0.6**
JIJ	**Ishigaki jima**	**1.69**	**97**	P	**P**	**04 30 58.2**	**-0.4**
JIJ				S	**S**	**04 31 18.4**	**-0.8**
JTJ	**Tarama**	**2.19**	**88**	P	**P**	**04 31 05.8**	**+0.4**
JTJ				S	**S**	**04 31 31.7**	**+0.4**

*IDC **30** 04:36:40.3±1.6, 18.11S×173.48W, mb4.2/6, mb1 4.4/6, mb1mx4.0/18, Error ellipse: s-maj=55.9km s-min=27.8km az=130.0*
*NEIC **30** 04:36:42.5±1.1, 17.95S×173.63W, h10km, mb4.6/1, Error ellipse: s-maj=30.6km s-min=19.6km az=116.0*
ISC 30 04:36:40.2±1.5,**18.0S**±0.2×**173.6W**±0.3,**h10**km,**n11**, σ0**§97**/9,**mb4.3**/7,**Tonga Islands**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**21.79**	**200**	P	**P**	**04 41 32.6**	**-1.6**
	4.8nm,0.4s,mb4.3,baz=327,slow=13,SNR=6.6						
RPZ	**Rata Peaks**	**28.75**	**204**	P	**P**	**04 42 42.5**	**+2.5**
	4.5nm,0.4s,mb4.5,baz=281,slow=5.2,SNR=5.3						
CTA	**Charters Tower**	**37.98**	**260**	P	**P**	**04 44 00.6**	**+0.4**
	5.2nm,0.8s,mb4.3,baz=95,slow=12,SNR=4.0						
WB2	**Warramunga Arr**	**49.13**	**259**	*e*P	**P**	**04 45 30.3**	**-0.1**
WRAB	**Tennant Creek**	**49.14**	**259**	*e*P	**P**	**04 45 29.7**	**-0.7**
	3.0nm,0.5s,mb4.6						
WRA	**Warramunga Arr**	**49.15**	**259**	P	**P**	**04 45 30.6**	**+0.1**
	1.2nm,0.5s,mb4.2,baz=96,slow=8.6,SNR=13						
AS12	**Alice Springs**	**49.20**	**254**	*e*P	**P**	**04 45 30.8**	**-0.1**
	5.9nm,1.1s,mb4.5						
ASAR	**Alice Springs**	**49.20**	**254**	P	**P**	**04 45 30.9**	**+0.1**
	2.0nm,0.6s,mb4.4,baz=89,slow=7.3,SNR=34						
ILAR	**Eielson Array**	**85.00**	**11**	P	**P**	**04 49 16.6**	**0.0**
	0.4nm,0.7s,mb3.7,baz=233,slow=6.1,SNR=7.8						
BRTR	**Keskin Array B**	**148.01**	**318**	PKPbc	PKPdf	04 56 29.6	+3.6
	1.1nm,1.0s,baz=45,slow=1.7,SNR=3.8						
GERES	**GERESS Array B**	**148.65**	**351**	PKPbc	PKPdf	04 56 30.0	+3.2
	0.3nm,0.8s,baz=11,slow=5.0,SNR=3.8						

*JMA **30** 04:46:39.7±0.4, 34.10N×141.77E, h39km±4km, M3.1*
*IDC **30** 04:46:46.8±10.0, 33.43N×139.42E, mb3.6/4, mb1 3.8/4, mb1mx3.5/21, Error ellipse: s-maj=380.0km s-min=25.8km az=64.0*
ISC 30 04:46:41.7±1.7,**34.22N**±0.07×**141.8E**±0.1,**h36**km±15km, **n13**,σ0**§79**/17,**mb3.6**/4,**Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BSO1	**Boso 1**	**0.78**	**304**	P	**P**	**04 46 55.6**	**-0.6**
BSO1				*e*S	**S**	**04 47 07.1**	**+0.2**
BSO3	**Boso 3**	**1.19**	**300**	P	**P**	**04 47 01.8**	**-0.2**
BSO4	**Boso 4**	**1.40**	**304**	P	**P**	**04 47 05.4**	**+0.2**
CHOJ	**Chosi**	**1.66**	**334**	P	**P**	**04 47 09.0**	**+0.2**
TATJ	**Tateyama 2**	**1.74**	**298**	P	**P**	**04 47 11.8**	**+1.8**
TATJ				*e*S	**S**	**04 47 35.1**	**+3.9**
JHJ2	**Mitsune**	**1.96**	**236**	P	**P**	**04 47 13.3**	**+0.2**
JHJ2				*e*S	**S**	**04 47 36.5**	**-0.2**
JIZS	**Izushimoda**	**2.43**	**283**	P	**P**	**04 47 19.2**	**-0.7**
JOD2	**Odawara 2**	**2.44**	**296**	P	**P**	**04 47 18.5**	**-1.4**
MAT	**Matsushiro**	**3.72**	**310**	P	**P**	**04 47 37.7**	**-0.4**
MAT				S	**S**	**04 48 22.0**	**+0.7**
SONM	**Songino Array**	**29.67**	**308**	P	**P**	**04 52 45.0**	**-1.0**
	1.0nm,0.8s,mb3.6,baz=90,slow=7.4,SNR=5.1						
MKAR	**Makanchi Array**	**45.90**	**304**	P	**P**	**04 55 01.9**	**-0.5**
	0.4nm,0.6s,mb3.5,baz=90,slow=7.3,SNR=5.1						
WRA	**Warramunga Arr**	**54.32**	**189**	P	**P**	**04 56 07.9**	**+0.9**
	0.4nm,0.4s,mb3.7,baz=4.0,slow=7.4,SNR=3.8						
ASAR	**Alice Springs**	**58.05**	**188**	P	**P**	**04 56 34.0**	**+0.4**
	0.3nm,0.6s,mb3.5,baz=2.9,slow=6.6,SNR=5.3						

*MOS **30** 04:51:06.6±0.4, 45.46N×145.51E, h10km, mb4.0/2, Error ellipse: s-maj=64.3km s-min=28.7km az=110.0*
ISC 30 04:51:05.9±4.1,**45.4N**±0.4×**145.6E**±0.4,**h10**km,**n5**, σ0**§46**/5,**mb3.3**/1,**MS4.0**/1,**1D**,**Hokkaido region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
YSS	**Yuzh-Sakhalins**	**2.53**	**310**	⇓*i* P	**Pn**	**04 51 47.8**	**0.0**
YSS				pmax	pmax		
	comp=Z,120nm,0.2s						
MA2	**Magadan**	**14.56**	**10**	*e*P	**P**	**04 54 33.3**	**-0.3**
TIXI	**Tiksi**	**27.55**	**349**	*e*P	**P**	**04 56 54.7**	**+0.4**
TIXI				pmax	pmax		
	comp=Z,1.0nm,1.2s,mb3.3						
TLY	**Talaya**	**28.19**	**298**	P	**P**	**04 56 59.8**	**-0.4**
TLY				MLR	MLR		
	comp=Z,300nm,17.0s,MS4.0						
ZAL	**Zalesovo**	**39.16**	**305**	*i* P	**P**	**04 58 35.4**	**+0.2**
ZAL				pmax	pmax		
	comp=Z,1.0nm,0.4s						

*IDC **30** 04:54:55.1±0.8, 52.93N×161.16E, mb3.7/14, mb1 3.9/15, mb1mx3.8/25, ML3.4/1, Error ellipse: s-maj=24.9km s-min=13.0km az=4.0*
*KRSC **30** 04:54:55.5±0.8, 52.80N×161.50E, h14km±3km, ML4.3*
*MOS **30** 04:54:57.1±0.9, 52.80N×161.49E, h33km, mb4.1/7, Error ellipse: s-maj=16.2km s-min=9.1km az=99.9*
*NEIC **30** 04:55:01.6±1.8, 52.97N×161.06E, h46km±16km, mb4.1/2, Error ellipse: s-maj=18.4km s-min=11.3km az=170.0*
ISC 30 04:54:57.0±0.6,**52.77N**±0.03×**161.59E**±0.05,**h37**km±6km, **n70**,σ1**§02**/107,**mb3.7**/17,**1C**,**Off east coast of Kamchatka Peninsula**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SPN	**Mys Shipunski**	**1.00**	**290**	P	**P**	**04 55 13.3**	**-1.5**
SPN				S	**S**	**04 55 27.0**	**-0.9**
SPN	**Mys Shipunski**	**1.00**	**290**	*e*P	**P**	**04 55 13.3**	**-1.5**
SPN				*e*S	**S**	**04 55 26.8**	**-1.1**
NLC	**Nalytchevo**	**1.42**	**287**	P	**P**	**04 55 19.9**	**-0.8**
NLC				S	**S**	**04 55 38.1**	**-0.2**
NLC	**Nalytchevo**	**1.42**	**287**	*e*P	**P**	**04 55 19.6**	**-1.1**
NLC				*e*S	**S**	**04 55 37.9**	**-0.4**
SDLR	**Sedlovina**	**1.71**	**288**	*e*P	**P**	**04 55 24.8**	**-0.1**
SDLR				*e*S	**S**	**04 55 46.0**	**+0.3**
UGLR	**Uglovaya**	**1.73**	**286**	*e*P	**P**	**04 55 25.1**	**0.0**
UGLR				*e*S	**S**	**04 55 46.8**	**+0.6**
SMAR	**Somma**	**1.75**	**287**	*e*P	**P**	**04 55 25.4**	**-0.1**
SMAR				*e*S	**S**	**04 55 47.1**	**+0.2**
MKZ	**Mys Kozlova**	**1.79**	**3**	P	**P**	**04 55 26.6**	**-0.4**
MKZ				S	**S**	**04 55 47.2**	**-0.5**
MKZ	**Mys Kozlova**	**1.79**	**3**	*e*P	**P**	**04 55 25.5**	**-0.5**
MKZ				*e*S	**S**	**04 55 47.1**	**-0.6**
AVH	**Avacha**	**1.79**	**287**	*e*P	**P**	**04 55 26.1**	**+0.1**
AVH				*e*S	**S**	**04 55 48.5**	**+0.7**
PET	**Petropavlovsk**	**1.80**	**279**	P	**P**	**04 55 25.7**	**-0.4**
PET				S	**S**	**04 55 48.1**	**+0.2**
PET	**Petropavlovsk**	**1.80**	**279**	*e*P	**P**	**04 55 25.5**	**-0.6**
PET				*e*S	**S**	**04 55 47.9**	**0.0**
PET	**Petropavlovsk**	**1.80**	**279**	⇑*i* PN	**P**	**04 55 25.8**	**-0.3**
PET				*e*S	**S**	**04 55 48.6**	**+0.7**
PET				pmax	pmax		
	comp=Z,257nm,0.4s						
PET				pmax	pmax		
	comp=E,138nm,0.4s						
PET				pmax	pmax		
	comp=Z,236nm,0.3s						
PET				pmax	pmax		
	comp=N,60nm,0.4s						
PET				smax			
	comp=E,437nm,0.7s						
PET	**Petropavlovsk**	**1.80**	**279**	*e*Pn	**P**	**04 55 25.8**	**-0.4**
KII	**Karymskiy**	**1.80**	**315**	*e*P	**P**	**04 55 25.9**	**-0.3**
KOK	**Koryaka**	**1.86**	**287**	*e*P	**P**	**04 55 27.0**	**0.0**
KOK				*e*S	**S**	**04 55 49.7**	**+0.2**
RUS	**Russkaya**	**1.91**	**261**	P	**P**	**04 55 27.6**	**-0.1**
RUS				S	**S**	**04 55 50.7**	**0.0**
RUS	**Russkaya**	**1.91**	**261**	*e*P	**P**	**04 55 27.6**	**-0.1**
RUS				*e*S	**S**	**04 55 50.5**	**-0.2**
GRL	**Gorelyy**	**2.15**	**265**	*e*P	**P**	**04 55 31.6**	**+0.4**
GRL				*e*S	**S**	**04 55 57.9**	**+1.0**
GNL	**Ganaly**	**2.38**	**294**	*e*P	**P**	**04 55 34.8**	**+0.4**
GNL				*e*S	**S**	**04 56 03.0**	**+0.3**
TUMR	**Tumrok**	**2.66**	**342**	*e*P	**P**	**04 55 38.9**	**+0.5**
TUMR				*e*S	**S**	**04 56 09.9**	**+0.2**
APC	**Apacha**	**2.69**	**275**	*e*P	**P**	**04 55 39.3**	**+0.4**
APC				*e*S	**S**	**04 56 09.5**	**-1.1**
APC				Smax			
	comp=E,250nm,0.6s						
MIPR	**Malaya Ipel'ka**	**2.99**	**262**	*e*P	**P**	**04 55 43.9**	**+0.7**
MIPR				*e*S	**S**	**04 56 19.2**	**+0.9**
KMNR	**Kamenistaya**	**3.09**	**346**	*e*P	**P**	**04 55 45.6**	**+1.0**
KMNR				*e*S	**S**	**04 56 22.2**	**+1.4**
PAU	**Pauzhetka**	**3.22**	**248**	*e*P	**P**	**04 55 46.6**	**+0.1**
PAU				*e*S	**S**	**04 56 24.3**	**+0.2**
PAU				Smax			
	comp=E,200nm,0.4s						
ZLN	**Zelenaya**	**3.28**	**352**	*e*P	**P**	**04 55 47.6**	**+0.3**
ZLN				*e*S	**S**	**04 56 25.9**	**+0.3**
KPT	**Kopyto**	**3.30**	**347**	*e*P	**P**	**04 55 48.9**	**+1.4**
KPT				*e*S	**S**	**04 56 27.5**	**+1.5**
LGNR	**Loginova**	**3.36**	**351**	*e*P	**P**	**04 55 49.2**	**+0.8**
LGNR				*e*S	**S**	**04 56 28.7**	**+1.1**
CIRR	**Tsirk**	**3.38**	**352**	*e*P	**P**	**04 55 49.2**	**+0.4**
CIRR				*e*S	**S**	**04 56 28.1**	**-0.1**
KOZ	**Kozyrevsk**	**3.44**	**344**	P	**P**	**04 55 50.0**	**+0.4**
KOZ	**Kozyrevsk**	**3.44**	**344**	*e*P	**P**	**04 55 49.9**	**+0.3**
KOZ				*e*S	**S**	**04 56 29.7**	**0.0**
KRSR	**Krestovskiy**	**3.50**	**351**	*e*P	**P**	**04 55 50.9**	**+0.5**
KRSR				*e*S	**S**	**04 56 32.0**	**+0.8**
KBTR	**Krutoberegovo**	**3.52**	**11**	*e*P	**P**	**04 55 50.5**	**-0.1**
KBTR				*e*S	**S**	**04 56 30.9**	**-0.7**
KBG	**Krutoberegovo**	**3.55**	**10**	*e*P	**P**	**04 55 50.3**	**-0.8**
KBG				*e*S	**S**	**04 56 31.7**	**-0.7**
KBG				Smax			
	comp=E,180nm,0.4s						
BKI	**Bering**	**3.55**	**45**	*e*P	**P**	**04 55 49.9**	**-1.2**
BKI				*e*S	**S**	**04 56 29.7**	**-2.8**
ESO	**Esso**	**3.58**	**333**	*i* P	**P**	**04 55 52.0**	**+0.4**
ESO				Smax			
	comp=E,50nm,0.9s						
KLY	**Klyuchi**	**3.59**	**352**	P	**P**	**04 55 51.4**	**-0.3**
KLY				S	**S**	**04 56 32.2**	**-1.2**
KLY	**Klyuchi**	**3.59**	**352**	*e*P	**P**	**04 55 51.5**	**-0.2**
KLY				*e*S	**S**	**04 56 32.2**	**-1.2**
SRDR	**Sredinnyy**	**3.71**	**344**	*e*P	**P**	**04 55 53.1**	**-0.3**
SRDR				*e*S	**S**	**04 56 35.1**	**-1.5**
SKR	**Severo-Kuril's**	**4.00**	**241**	*e*P	**P**	**04 55 55.5**	**-1.9**
FX1	**Attu Island--F**	**7.02**	**85**	Pn	**P**	**04 56 40.8**	**+0.9**
	comp=E,2.3nm,0.3s,baz=253,slow=13,SNR=36						
FX1				Sn	**S**	**04 57 55.1**	**-4.3**
	comp=E,9.7nm,0.3s,baz=35,slow=12,SNR=9.9						
FX1	**Attu Island--F**	**7.02**	**85**	*e*Pn	**P**	**04 56 40.1**	**+0.2**
FX1				*e*Sn	**S**	**04 57 54.7**	**-4.7**
HIA	**Hailar**	**26.29**	**279**	*e*P	**P**	**05 00 27.7**	**-2.8**
	comp=E,5.3nm,0.5s,mb4.3						
SONM	**Songino Array**	**34.86**	**285**	P	**P**	**05 01 45.8**	**-0.6**
	comp=E,0.3nm,0.4s,mb3.6,baz=45,slow=6.1,SNR=3.1						
YKA	**Yellowknife Ar**	**42.78**	**43**	P	**P**	**05 02 54.1**	**+1.9**
	comp=E,0.2nm,0.8s,mb2.9,baz=295,slow=7.8,SNR=3.7						
KURK	**Kurchatov**	**48.67**	**303**	*e*P	**P**	**05 03 37.6**	**-1.4**
MKAR	**Makanchi Array**	**49.11**	**297**	P	**P**	**05 03 40.4**	**-2.0**
	comp=E,0.5nm,0.4s,mb3.9,baz=61,slow=6.1,SNR=5.8						
MKAR	**Makanchi Array**	**49.11**	**297**	P	**P**	**05 03 40.4**	**-2.1**
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.4s						
MKAR	**Makanchi Array**	**49.11**	**297**	P	**P**	**05 03 40.4**	**-2.0**
BVAR	**Borovoye Array**	**51.30**	**309**	P	**P**	**05 03 57.5**	**-1.5**
	comp=Z,0.7nm,0.4s,mb3.9,baz=54,slow=7.7,SNR=6.0						
BRVK	**Borovoye**	**51.33**	**309**	*e*P	**P**	**05 03 56.8**	**-2.5**
ARCES	**ARCESS Array B**	**53.87**	**342**	P	**P**	**05 04 17.4**	**-0.6**
	comp=Z,1.9nm,0.9s,mb4.0,baz=49,slow=7.8,SNR=8.6						
ARCES	**ARCESS Array B**	**53.87**	**342**	P	**P**	**05 04 17.5**	**-0.6**
ARCES				pmax	pmax		
	comp=Z,2.0nm,1.0s						
BW06	**Boulder Array**	**56.88**	**62**	P	**P**	**05 04 42.6**	**+2.3**
	comp=Z,0.5nm,0.5s,mb3.8						
PDAR	**Pinedale Array**	**56.88**	**62**	P	**P**	**05 04 42.9**	**+2.6**
	comp=Z,0.3nm,0.8s,mb3.4,baz=326,slow=5.3,SNR=3.5						
JOF	**Joensuu**	**58.24**	**336**	*e*p	**P**	**05 04 48.0**	**-1.4**
	comp=Z,0.3nm,0.3s,mb3.8						
CMAR	**Chiang Mai Arr**	**59.01**	**260**	P	**P**	**05 04 55.5**	**+0.1**
	comp=Z,0.6nm,0.4s,mb4.0,baz=34,slow=6.5,SNR=4.9						
CMAR	**Chiang Mai Arr**	**59.01**	**260**	P	**P**	**05 04 55.5**	**+0.1**
CMAR				pmax	pmax		
	comp=Z,1.0nm,0.4s						
FINES	**FINESS Array B**	**60.77**	**337**	P	**P**	**05 05 06.3**	**-0.6**
	comp=Z,0.7nm,0.4s,mb4.1,baz=32,slow=6.3,SNR=13						
FINES	**FINESS Array B**	**60.77**	**337**	P	**P**	**05 05 06.3**	**-0.6**
FINES				pmax	pmax		
	comp=Z,1.0nm,0.4s						
NB2	**NORSAR Subarra**	**64.10**	**344**	P	**P**	**05 05 28.9**	**0.0**
	comp=Z,0.5nm,0.5s,mb3.8,baz=23,slow=6.5						
NOA	**NORSAR Array B**	**64.10**	**344**	P	**P**	**05 05 28.9**	**0.0**
	comp=Z,0.6nm,0.6s,mb3.8,baz=21,slow=6.5,SNR=4.7						
NOA	**NORSAR Array B**	**64.10**	**344**	P	**P**	**05 05 28.9**	**0.0**
NOA				pmax	pmax		
	comp=Z,1.0nm,0.6s						
NOA	**NORSAR Array B**	**64.10**	**344**	P	**P**	**05 05 28.9**	**0.0**
HFS	**Hagfors**	**64.53**	**343**	P	**P**	**05 05 31.0**	**-0.7**
	comp=Z,0.7nm,0.5s,mb4.0,baz=18,slow=4.7,SNR=6.6						
HFS	**Hagfors**	**64.53**	**343**	P	**P**	**05 05 31.0**	**-0.7**
HFS				pmax	pmax		
	comp=Z,1.0nm,0.5s						
TXAR	**Lajitas Array**	**69.92**	**68**	P	**P**	**05 06 09.3**	**+3.1**
	comp=Z,0.3nm,0.6s,mb3.4,baz=299,slow=4.5,SNR=4.8						
EKA	**Eskdalemuir Ar**	**71.52**	**351**	P	**P**	**05 06 17.4**	**+2.1**
	comp=Z,0.4nm,0.4s,mb3.7,baz=22,slow=4.7,SNR=4.4						
GERES	**GERESS Array B**	**75.15**	**339**	P	**P**	**05 06 37.9**	**+1.4**
	comp=Z,0.2nm,0.4s,mb3.4,baz=34,slow=4.8,SNR=4.6						
ASAR	**Alice Springs**	**79.85**	**206**	P	**P**	**05 07 05.2**	**+2.0**
	comp=Z,0.3nm,0.5s,mb3.5,baz=20,slow=4.6,SNR=7.9						

*MDD **30** 05:10:33.7±0.3, 42.23N×1.87E, mbLg1.2/10, Error ellipse: s-maj=2.6km s-min=1.8km az=162.0, PRXIMO*
*LDG **30** 05:10:34.0±0.3, 42.26N×1.90E, h2km, Md2.0/2, Ml1.9/4, Error ellipse: s-maj=5.8km s-min=2.5km az=148.0*
ISC 30 05:10:32.3±0.7,**42.24N**±0.04×**1.85E**±0.04,**h10**km±12km, **n19**,σ0**§69**/21,**Pyrenees**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
VALF	**Valcebollere**	**0.20**	**37**	P	**Pg**	**05 10 37.0**	**+0.3**
VALF				S	**Sg**	**05 10 39.8**	**+0.2**
CBRU	**Bruguera**	**0.25**	**79**	Pg	**Pg**	**05 10 37.8**	**+0.2**
CBRU				Lg		05 10 42.1	
	3.0nm,0.1s						
CLLI	**Llivia**	**0.26**	**21**	Pg	**Pg**	**05 10 38.3**	**+0.6**
CLLI				Lg		05 10 42.1	
	5.2nm,0.2s						
CORG	**Organya**	**0.40**	**269**	Pg	**Pg**	**05 10 41.1**	**+0.8**
CORG				Lg		05 10 47.2	
	1.6nm,0.1s						
CARF	**Carcanieres**	**0.51**	**22**	S	**Sg**	**05 10 50.0**	**+0.4**
CSOR	**Sort**	**0.55**	**285**	Pg	**Pg**	**05 10 43.7**	**+0.4**
CSOR				Lg		05 10 52.2	
	3.7nm,0.2s						
CFON	**Fontmartina**	**0.65**	**137**	Pg	**Pg**	**05 10 45.2**	**-0.1**
CFON				Lg		05 10 54.0	
	1.4nm,0.1s						
EJON	**La Jonquera**	**0.80**	**74**	Pg	**Pg**	**05 10 47.8**	**-0.5**
	0.5nm,0.1s,SNR=7.9						
EJON				Lg		05 10 58.8	
	0.3nm,0.1s,SNR=5.9						
CAVN	**Les Avellanes**	**0.89**	**247**	Pg	**Pg**	**05 10 50.3**	**+0.1**
CAVN				Lg		05 11 02.3	
	2.2nm,0.1s						
EPOB	**Poblet**	**1.06**	**213**	Pg	**Pg**	**05 10 53.1**	**-0.3**
	1.6nm,0.1s,SNR=15						
EPOB				Lg		05 11 07.1	
	1.2nm,0.1s,SNR=9.1						
CGAR	**Garraf**	**1.09**	**210**	Lg		05 11 02.8	
	1.1nm,0.1s						
MTLF	**Montolieu**	**1.13**	**14**	*e*Pg	**Pg**	**05 10 54.8**	**-0.2**
MTLF				*e*Sg	**Sg**	**05 11 09.1**	**-1.0**
	3.9nm,0.3s						
EPF	**Esparros**	**1.37**	**306**	*e*Pg	**Pg**	**05 11 00.2**	**+0.6**
EPF				*e*Sg	**Sg**	**05 11 18.3**	**+0.5**
	6.2nm,0.2s						
ESAC	**San Caprasio**	**1.81**	**254**	Pg	**Pg**	**05 11 07.1**	**-1.2**
	1.5nm,0.2s,SNR=8.8						
ESAC				Lg		05 11 30.8	
	7.7nm,0.3s,SNR=7.9						
ETSF	**Etsaut**	**1.90**	**291**	*e*Pn	**Pn**	**05 11 05.9**	**+0.8**
ETSF				*e*Sg	**Sg**	**05 11 34.3**	**-1.2**
LASF	**Ste Croix**	**2.35**	**38**	*e*Sg	**Sg**	**05 11 47.0**	**-3.6**
	0.7nm,0.2s						
EALK	**Alkurruntz**	**2.66**	**293**	Lg		05 11 58.9	
	0.8nm,0.3s,SNR=7.9						
CAF	**Calviac**	**2.69**	**3**	*e*Sg	**Sg**	**05 11 57.3**	**-4.6**
RJF	**Les Rejaudoux**	**3.07**	**356**	*e*Sg	**Sg**	**05 12 10.0**	**-4.6**
	0.8nm,0.2s						

DJA 30 05:21:33.7±1.8,**7.28S**×**117.32E**,**h242**km±37km,**MD4.6**/4, **ML4.1**/4,**7D**,**Error ellipse: s-maj=143.0km s-min=35.0km az=169.0**,**Bali Sea**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KEDI	**Kedomdong**	**1.69**	**225**	⇓*i* Pn	P	05 22 13.5	+0.4
	65nm,0.2s						
KEDI				⇓*i* Sn	S	05 22 42.6	-1.1
RATI	**Rata**	**2.28**	**231**	⇓*i* Pn	P	05 22 16.8	-1.7
	135nm,0.2s						
RATI				⇓*i* Sn	S	05 22 52.0	-1.3
INGI	**Ingas**	**2.64**	**235**	⇓*i* Pn	P	05 22 27.2	+4.9
	330nm,0.2s						
INGI				⇓*i* Sn	S	05 22 58.6	-1.3
KELI	**Kelakatan**	**2.96**	**252**	⇓*i* Pn	P	05 22 26.3	+0.7
	21nm,0.1s						

*NSSC **30** 05:38:03.0, 32.95N×35.72E, h18km*
*GII **30** 05:38:02.5±0.1, 32.93N×35.63E, h11km±2km, ML2.8/9, Mw2.7/1*
*GRAL **30** 05:38:02.5±1.0, 32.91N×35.65E, h14km±12km, MD3.2*
ISC 30 05:38:02.0±0.4,**32.95N**±0.02×**35.64E**±0.04,**h12**km±4km, **n23**,σ0**§75**/33,**1D**,**Dead Sea region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KSHT	**Keshet**	**0.15**	**77**	Pg	**Pg**	**05 38 07.1**	**+1.5**
GLH	**Golan-Tel Qazi**	**0.23**	**178**	Pg	**Pg**	**05 38 07.7**	**+0.5**
KSDI	**Kefar Szold**	**0.24**	**4**	Pg	**Pg**	**05 38 08.4**	**+1.1**
HRI	**Mount Hermon**	**0.33**	**14**	Pg	**Pg**	**05 38 09.6**	**+0.8**
TCHB	**Talchebab**	**0.39**	**135**	⇓P	**Pg**	**05 38 10.5**	**+0.4**
HNTI	**Hanita**	**0.41**	**289**	Pg	**Pg**	**05 38 11.0**	**+0.5**
HNTI				Sg	**Sg**	**05 38 17.2**	**+1.0**
BRBR	**Barbar**	**0.53**	**29**	⇑P	**Pb**	**05 38 13.0**	**+0.3**
BRBR				⇑S	**Sb**	**05 38 20.3**	**+0.3**
HAF	**Haifa**	**0.55**	**252**	Pg	**Pg**	**05 38 12.9**	**-0.2**
MATL	**Matirih**	**0.60**	**334**	*i* PG	**Pg**	**05 38 14.5**	**+0.3**
OFRI	**'Ofer**	**0.64**	**240**	Pg	**Pg**	**05 38 14.5**	**-0.5**
HMDT	**Nahal Hemdat**	**0.70**	**188**	Pg	**Pg**	**05 38 15.3**	**-0.8**
TOTH	**TOTAH**	**0.78**	**58**	⇑P	**Pb**	**05 38 17.0**	**0.0**
TOTH				⇑S	**Sb**	**05 38 27.1**	**-0.1**
QASN	**Qassioun**	**0.79**	**42**	⇑P	**Pb**	**05 38 17.2**	**+0.1**
QASN				⇑S	**Sb**	**05 38 27.6**	**+0.1**
SLTI	**Sal'it**	**0.87**	**216**	Pg	**Pg**	**05 38 18.3**	**-1.1**
SLTI				Sg	**Sg**	**05 38 30.3**	**-0.9**
SALA	**Sala**	**0.95**	**104**	⇑P	**Pb**	**05 38 19.6**	**-0.2**
SALA				⇑S	**Sb**	**05 38 31.7**	**-0.4**
BHL	**Bhannes**	**0.95**	**1**	*i* PG	**Pg**	**05 38 20.4**	**-0.7**
BHL				*i* SG	**Sg**	**05 38 33.5**	**-0.4**
HWQ	**Hawqa**	**1.35**	**11**	*i* PG	**Pg**	**05 38 27.9**	**-1.1**
HWQ				*i* SG	**Sg**	**05 38 45.9**	**-1.2**
DRGI	**Dragot**	**1.37**	**189**	Pn	**Pn**	**05 38 26.1**	**-0.8**
MKRJ	**Makawir**	**1.39**	**180**	Pn	**Pn**	**05 38 26.9**	**-0.5**
MZDA	**Masada**	**1.65**	**188**	Pn	**Pn**	**05 38 30.8**	**-0.3**
MZDA				Sn	**Sn**	**05 38 52.9**	**+0.6**
MASH	**Mash'abbe Sade**	**2.08**	**201**	Pn	**Pn**	**05 39 06.9**	**+0.2**
SVTA	**Shivta**	**2.19**	**204**	Pn	**Pn**	**05 38 39.4**	**+0.6**
PRNI	**Paran**	**2.65**	**192**	Pn	**Pn**	**05 38 44.8**	**-0.4**
PRNI				Sn	**Sn**	**05 39 19.9**	**+2.4**

*JMA **30** 06:10:16.7±0.2, 37.26N×142.56E, h64km, M4.0*
ISC 30 06:10:15.6±1.1,**37.26N**±0.04×**142.61E**±0.09,**h76**km±30km, **n15**,σ0**§86**/28,**3C-6D**,**Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**1.38**	**275**	⇓P	**P**	**06 10 40.0**	**+0.2**
ONAJ	**Iwakimizuishiy**	**1.45**	**264**	⇓P	**P**	**06 10 40.9**	**+0.3**
ONAJ				S	**S**	**06 10 58.1**	**-1.0**
JIO	**Ouri**	**1.55**	**321**	P	**P**	**06 10 42.5**	**+0.5**
JIO				*e*S	**S**	**06 11 00.8**	**-0.6**
JMM	**Marumori**	**1.56**	**293**	⇓P	**P**	**06 10 42.7**

VJF	**Virojoki**	**2.00**	**63**	*e*P		**Pn**	**06 31 31.9**	**+0.2**
VJF				*e*S		**Sn**	**06 31 57.1**	**-0.8**
FIA0	**FINESS Array S**	**2.06**	**30**	*e*PB		**Pb**	**06 31 34.6**	**+0.3**
FIA0				*e*S		**Sn**	**06 31 59.6**	**+0.3**
FIA0				MSG			06 32 02.5	
	comp=Z,21nm,0.2s							
FIA0	**FINESS Array S**	**2.06**	**30**	Pn		**Pn**	**06 31 34.5**	**+2.0**
	baz=198,slow=16							
FIA0				Lg			06 32 01.0	
	baz=212,slow=28							
FINES	**FINESS Array B**	**2.06**	**30**	Pn		**Pn**	**06 31 34.4**	**+1.8**
	comp=Z,20nm,0.3s,baz=203,slow=15,SNR=714							
FINES				Sn		**Sn**	**06 32 00.2**	**+0.9**
	comp=Z,6.0nm,0.3s,baz=204,slow=23,SNR=3.7							
KEF	**Keuruu**	**2.54**	**10**	*e*PB		**Pb**	**06 31 42.9**	**+0.4**
KEF				*e*SB		**Sb**	**06 32 14.9**	**+0.5**
KEF				MSG			06 32 17.6	
	comp=Z,15nm,0.2s							
SUF	**Sumiainen**	**3.23**	**18**	*e*P		**Pn**	**06 31 51.2**	**+1.9**
SUF				*e*SB		**Sb**	**06 32 34.1**	**-0.5**
SUF				MSG			06 32 47.6	
	comp=Z,7.2nm,0.3s							
HFS	**Hagfors**	**5.18**	**279**	Pn		**Pn**	**06 32 19.5**	**+2.5**
	baz=101,slow=12							
HFS				Sn		**Sn**	**06 33 19.0**	**+0.6**
	baz=84,slow=28							
HFS				Lg			06 33 40.0	
	baz=95,slow=37							
HFS	**Hagfors**	**5.18**	**279**	*e*P		**Pn**	**06 32 19.5**	**+2.5**
HFS				*e*S		**Sn**	**06 33 19.0**	**+0.6**
HFS				*e*SG		**Sg**	**06 33 40.0**	**-8.9**
HFS	**Hagfors**	**5.18**	**279**	Pn		**Pn**	**06 32 19.7**	**+2.7**
	comp=Z,0.1nm,0.3s,baz=97,slow=12,SNR=20							
HFS				Sn		**Sn**	**06 33 20.2**	**+1.8**
	comp=Z,0.2nm,0.3s,baz=101,slow=24,SNR=9.9							
NOA	**NORSAR Array B**	**6.46**	**288**	Pn		**Pn**	**06 32 35.0**	**0.0**
	comp=Z,0.6nm,0.3s,baz=96,slow=12,SNR=5.6							
NOA				Sn		**Sn**	**06 33 47.7**	**-2.9**
	comp=Z,0.5nm,0.3s,baz=122,slow=22,SNR=3.6							
MOR8	**Moi Rana**	**7.81**	**330**	*e*P		**Pn**	**06 32 54.5**	**+0.4**
MOR8				AMb		AMB	06 32 59.0	
	comp=Z,4.6nm,0.9s							
APA0	**Apatity Array**	**8.90**	**23**	Pn		**P**	**06 33 06.7**	**-2.5**
	baz=217,slow=18							
APA0	**Apatity Array**	**8.90**	**23**	*e*P		**P**	**06 33 06.7**	**-2.5**
KTK1	**Kautokeino**	**9.37**	**358**	*e*P		**P**	**06 33 15.9**	**+0.2**
KTK1				AMb		AMB	06 33 20.6	
	comp=Z,16nm,1.9s							
ARA0	**ARCESS Array S**	**9.92**	**3**	Pn		**P**	**06 33 20.7**	**-2.3**
	baz=175,slow=16							
ARA0				Sn		**Sn**	**06 35 05.7**	**-11**
	baz=188,slow=28							
ARA0	**ARCESS Array S**	**9.92**	**3**	*e*P		**P**	**06 33 20.7**	**-2.3**
ARA0				*e*S		**Sn**	**06 35 05.7**	**-11**
ARCES	**ARCESS Array B**	**9.92**	**3**	Pn		**P**	**06 33 20.6**	**-2.4**
	comp=Z,0.6nm,0.3s,baz=189,slow=11,SNR=40							
ARCES				Sn		**Sn**	**06 35 09.2**	**-7.1**
	comp=Z,0.5nm,0.3s,baz=188,slow=23,SNR=6.0							
MKAR	**Makanchi Array**	**35.99**	**84**	P		**P**	**06 37 58.5**	**-2.0**
	comp=Z,0.1nm,0.3s,mb3.1,baz=308,slow=6.3,SNR=4.2							

IGQ 30 06:34:43.9, 1.60S×78.19W, h159km±4km, mb4.0, 2C-10D, Error ellipse: s-maj=7.9km s-min=3.7km az=1.3, Ecuador

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
PATA	**Patacocha**	**0.27**	**291**	⇓P		P	06 35 06.2	+0.4
PATA				S		S	06 35 22.8	+0.2
ULBA	**Ulba**	**0.27**	**304**	⇓P		P	06 35 05.9	+0.1
ARRY	**Arrayan**	**0.29**	**289**	⇑P		P	06 35 05.8	-0.1
ARRY				S		S	06 35 20.7	-2.1
RETU	**Refugio**	**0.30**	**300**	P		P	06 35 06.4	+0.4
JUIV	**Juive**	**0.33**	**302**	⇑P		P	06 35 06.2	+0.2
IGUA	**Igualata**	**0.47**	**284**	P		P	06 35 07.1	+0.6
PISA	**Pisayambo**	**0.58**	**340**	P		P	06 35 07.5	+0.4
MARY	**Rancho Maria**	**0.91**	**341**	P		P	06 35 10.1	+1.1
TAMB	**Tambo**	**0.92**	**349**	⇓P		P	06 35 10.1	+1.0
VC1	**Cotopaxi 1**	**0.98**	**347**	⇓P		P	06 35 10.6	+1.1
NAS1	**Nasa**	**1.00**	**343**	⇓P		P	06 35 11.2	+1.5
QIL1	**Quilotoa**	**1.06**	**315**	P		P	06 35 11.1	+0.9
ANTI	**Antisana**	**1.15**	**1**	⇓P		P	06 35 11.8	+0.8
JUA2	**San Juan 2**	**1.44**	**343**	⇓P		P	06 35 14.4	+0.5
GGP	**Refugio Guagua**	**1.48**	**344**	P		P	06 35 16.0	+1.7
CGGP	**Crater GGP**	**1.48**	**343**	⇓P		P	06 35 15.0	+0.8
PINO	**Pino**	**1.50**	**344**	⇓P		P	06 35 15.1	+0.7
YANA	**Yana**	**1.52**	**345**	P		P	06 35 15.1	+0.3
JOR1	**San Jorge 1**	**1.66**	**344**	⇓P		P	06 35 14.3	-1.7

*NEIC **30** 06:37:57.8±0.6, 34.38N×89.28E, h10km, mb4.6/2, Error ellipse: s-maj=15.2km s-min=9.1km az=62.0*
*IDC **30** 06:38:01.4±4.0, 34.34N×89.36E, h41km±37km, mb3.7/8, mb1 3.9/11, mb1mx3.7/22, ML3.8/3, MS3.0/2, Ms1 3.2/2, ms1mx2.9/22, Error ellipse: s-maj=32.3km s-min=23.9km az=15.0*

ISC 30 06:37:58.0±3.3, 34.28N±0.07×89.3E±0.1, h30km±28km, n25, σ1§27/25, mb3.9/9, MS2.7/1, Xizang

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
LSA	**Lhasa**	**4.83**	**161**	*e*Pn		**Pn**	**06 39 13.8**	**+3.2**
KKN	**Kakani**	**7.33**	**209**	*e*P		**Pn**	**06 39 46.8**	**+0.9**
	14nm,0.5s							
GKN	**Gorkha**	**7.42**	**214**	*e*P		**Pn**	**06 39 50.1**	**+2.9**
	8.5nm,0.4s							
PKI	**Pulchoki**	**7.47**	**208**	*e*P		**Pn**	**06 39 45.9**	**-2.0**
	19nm,0.7s							
DMN	**Daman**	**7.56**	**210**	*e*P		**Pn**	**06 39 48.2**	**-0.9**
	16nm,0.5s							
KOLN	**Koldanda**	**8.12**	**219**	*e*P		**P**	**06 39 56.2**	**-0.7**
SHL	**Shillong**	**8.96**	**165**	*e*P		**P**	**06 40 06.7**	**-1.9**
SHL				*e*S		Sn	06 42 34.0	+44
MKAR	**Makanchi Array**	**13.58**	**339**	P		**P**	**06 41 08.9**	**-2.2**
	0.1nm,0.3s,baz=141,slow=12,SNR=5.0							
CMAR	**Chiang Mai Arr**	**17.95**	**149**	P		**P**	**06 42 08.1**	**+0.9**
	0.3nm,0.3s,baz=328,slow=12,SNR=14							
CMAR				LR		LR	06 49 44.1	
	comp=Z,66nm,19.3s,baz=135,slow=39							
SONM	**Songino Array**	**18.64**	**38**	P		**P**	**06 42 16.4**	**+0.9**
	0.2nm,0.3s,baz=222,slow=12,SNR=19							
ULN	**Ulaanbaatar**	**19.00**	**39**	*e*P		**P**	**06 42 19.7**	**-0.2**
	2.0nm,0.8s							
BVAR	**Borovoye Array**	**23.08**	**330**	P		**P**	**06 43 03.1**	**+1.2**
	1.1nm,0.6s,mb3.5,baz=141,slow=9.5,SNR=11							
BVAR				LR		LR	06 52 52.7	
	comp=Z,28nm,18.6s,MS2.7,baz=290,slow=39							
BRVK	**Borovoye**	**23.15**	**330**	*e*P		**P**	**06 43 03.6**	**+1.1**
ZRNK	**Zerenda**	**23.61**	**328**	*e*P		**P**	**06 43 08.4**	**+1.3**
BRTR	**Keskin Array B**	**44.19**	**294**	P		**P**	**06 46 06.5**	**+0.6**
	0.8nm,0.7s,mb3.6,baz=97,slow=10.0,SNR=4.3							
MLR	**Muntele Rosu**	**48.73**	**303**	P		**P**	**06 46 42.4**	**+0.7**
	4.8nm,0.8s,mb4.6,baz=96,slow=9.2,SNR=6.4							
NB2	**NORSAR Subarra**	**55.05**	**324**	P		**P**	**06 47 27.3**	**-1.6**
	0.9nm,0.7s,mb3.9,baz=82,slow=7.4							
NOA	**NORSAR Array B**	**55.05**	**324**	P		**P**	**06 47 28.2**	**-0.7**
	1.3nm,0.7s,mb4.1,baz=82,slow=7.3,SNR=6.7							
GERES	**GERESS Array B**	**56.16**	**310**	P		**P**	**06 47 36.9**	**-0.2**
	0.4nm,0.6s,mb3.6,baz=72,slow=4.2,SNR=5.8							
COLA	**College**	**71.63**	**22**	*e*P		**P**	**06 49 16.8**	**-1.4**
	5.1nm,0.9s,mb4.5							
ILAR	**Eielson Array**	**72.00**	**22**	P		**P**	**06 49 19.6**	**-0.8**
	1.8nm,0.9s,mb4.0,baz=293,slow=4.6,SNR=21							
INK	**Inuvik**	**72.87**	**15**	P		**P**	**06 49 25.6**	**+0.3**
	2.2nm,0.9s,mb4.1,baz=354,slow=9.4,SNR=5.6							
INK	**Inuvik**	**72.87**	**15**	P		**P**	**06 49 25.2**	**-0.2**
	5.1nm,0.9s,mb4.5							
YKA	**Yellowknife Ar**	**81.66**	**11**	P		**P**	**06 50 14.0**	**-0.2**
	0.6nm,1.0s,mb3.5,baz=334,slow=5.1,SNR=8.7							
YKA	**Yellowknife Ar**	**81.66**	**11**	P		**P**	**06 50 14.0**	**-0.3**

DJA 30 06:39:58.6±0.9, 8.61S×117.44E, h33km, MD4.6/2, 2C-6D, Error ellipse: s-maj=45.6km s-min=17.9km az=0.0, Sumbawa region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
KEDI	**Kedomdong**	**1.31**	**275**	⇑*i*Pg		P	06 40 19.6	-1.2
KEDI				⇓*e*Sg		S	06 40 35.7	-1.6
RATI	**Rata**	**1.89**	**266**	⇓*e*Pn		Pn	06 40 27.5	-1.6
RATI				⇓*e*Sn		Sn	06 40 48.6	-3.4
INGI	**Ingas**	**2.27**	**265**	⇓*e*Pn		Pn	06 40 33.7	-1.0
INGI				⇓*e*Sn		Sn	06 40 58.2	-3.7
KELI	**Kelakatan**	**2.94**	**277**	⇑*e*Pn		Pn	06 40 42.8	-1.4
KELI				⇓*e*Sn		Sn	06 41 15.5	-3.2

*NAO **30** 06:41:20.8±1.3, 59.75N×24.46E, ML2.2*
*HEL **30** 06:41:21.2±0.0, 59.74N×24.47E, ML2.1, ML2.2(UPP), ML2.2(NAO), Explosion*
*BER **30** 06:41:22.1±3.0, 59.77N×24.57E, ML2.2(NAO)*
*IDC **30** 06:41:22.1±2.3, 59.87N×24.51E, mb1 3.2/3, mb1mx3.0/20, ML3.2/3, Error ellipse: s-maj=29.4km s-min=9.1km az=155.0*

ISC 30 06:41:18.4±0.7, 59.73N±0.04×24.30E±0.08, n15, σ1§32/25, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
MEF	**Metsahovi**	**0.49**	**6**	*e*P		**Pg**	**06 41 29.6**	**+1.4**
MEF				*e*S		**Sg**	**06 41 36.0**	**+1.2**
VSU	**Vasula**	**1.79**	**134**	*e*P		**Pn**	**06 41 51.9**	**+1.1**
VSU				*e*S		**Sn**	**06 42 14.4**	**-0.2**
VSU	**Vasula**	**1.79**	**134**	Pn		**Pn**	**06 41 51.9**	**+1.1**
VSU				Lg			06 42 14.7	
VJF	**Virojoki**	**1.82**	**62**	*e*P		**Pn**	**06 41 51.7**	**+0.4**
VJF				*e*S		**Sn**	**06 42 14.3**	**-1.1**
FIA0	**FINESS Array S**	**1.93**	**26**	*e*PG		**Pg**	**06 41 54.8**	**-2.2**
FIA0				*e*SN		**Sn**	**06 42 18.8**	**+0.6**
FIA0				MSG			06 42 22.1	
	comp=Z,11nm,0.2s							
FIA0	**FINESS Array S**	**1.93**	**26**	Pn		**Pn**	**06 41 55.0**	**+2.1**
	baz=201,slow=18							
FIA0				Lg			06 42 18.9	
	baz=207,slow=28							
FINES	**FINESS Array B**	**1.93**	**26**	Pn		**Pn**	**06 41 54.8**	**+2.0**
	comp=Z,5.1nm,0.3s,baz=204,slow=16,SNR=294							
FINES				Sn		**Sn**	**06 42 18.5**	**+0.3**
	comp=Z,2.1nm,0.3s,baz=209,slow=29,SNR=8.2							
KEF	**Keuruu**	**2.46**	**6**	*e*PB		**Pb**	**06 42 03.6**	**+0.3**
KEF				*e*SG		**Sg**	**06 42 36.5**	**-4.0**
KEF				MSG			06 42 37.4	
	comp=Z,6.7nm,0.3s							
HFS	**Hagfors**	**5.35**	**279**	Pn		**Pn**	**06 42 42.1**	**+0.7**
	baz=80,slow=11							
HFS				Sn		**Sn**	**06 43 43.8**	**-0.9**
	baz=92,slow=28							
HFS	**Hagfors**	**5.35**	**279**	*e*P		**Pn**	**06 42 42.1**	**+0.7**
HFS				*e*S		**Sn**	**06 43 43.8**	**-0.9**
HFS	**Hagfors**	**5.35**	**279**	Pn		**Pn**	**06 42 42.1**	**+0.6**
	comp=Z,0.1nm,0.3s,baz=85,slow=12,SNR=19							
HFS				Sn		**Sn**	**06 43 45.3**	**+0.6**
	comp=Z,0.1nm,0.3s,baz=96,slow=27,SNR=9.7							
HFS				Lg			06 44 08.6	
	comp=Z,0.2nm,0.3s,baz=93,slow=31,SNR=7.5							
NOA	**NORSAR Array B**	**6.62**	**287**	Pn		**Pn**	**06 42 59.0**	**-0.4**
	comp=Z,0.3nm,0.3s,baz=90,slow=8.3,SNR=3.3							
NOA				Sn		**Sn**	**06 44 11.3**	**-5.1**
	comp=Z,0.2nm,0.3s,baz=135,slow=26,SNR=2.5							
NOA				Lg			06 44 47.1	
	comp=Z,0.4nm,0.3s,baz=30,slow=21,SNR=2.6							
ARA0	**ARCESS Array S**	**9.86**	**2**	Pn		**P**	**06 43 41.1**	**-3.2**
	baz=176,slow=16							
ARA0	**ARCESS Array S**	**9.86**	**2**	*e*P		**P**	**06 43 41.1**	**-3.2**
ARCES	**ARCESS Array B**	**9.86**	**2**	Pn		**P**	**06 43 41.6**	**-2.7**
	comp=Z,0.6nm,0.3s,baz=182,slow=12,SNR=59							

*HEL **30** 06:44:20.7±0.3, 59.55N×28.31E, ML1.9, ML2.2(UPP), Explosion*
*IDC **30** 06:44:25.0±2.1, 59.59N×27.90E, mb1 3.1/4, mb1mx3.0/21, ML3.2/3, Error ellipse: s-maj=17.3km s-min=11.9km az=125.0*

ISC 30 06:44:20.1±1.3, 59.60N±0.04×28.1E±0.2, n10, σ1§40/21, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
VJF	**Virojoki**	**0.98**	**345**	*e*PN		**Pn**	**06 44 42.7**	**+1.8**
VJF				*e*S		**Sg**	**06 44 54.1**	**+1.5**
VSU	**Vasula**	**1.34**	**212**	*e*P		**Pb**	**06 44 45.1**	**-0.6**
VSU				*e*SN		**Sn**	**06 45 06.0**	**+1.2**
MEF	**Metsahovi**	**1.96**	**290**	*e*PB		**Pb**	**06 44 57.6**	**+1.3**
MEF				*e*S		**Sn**	**06 45 22.4**	**+2.0**
MEF				MSG			06 45 24.3	
	comp=Z,8.0nm,0.2s							
FIA0	**FINESS Array S**	**2.10**	**333**	*e*PG		**Pg**	**06 45 00.4**	**-1.5**
FIA0				*e*SG		**Sg**	**06 45 28.6**	**-1.3**
FIA0				MSG			06 45 31.4	
	comp=Z,8.3nm,0.1s							
FINES	**FINESS Array B**	**2.10**	**333**	Pn		**Pn**	**06 45 00.4**	**+3.6**
	comp=Z,6.3nm,0.3s,baz=156,slow=16,SNR=113							
FINES				Pg		**Pg**	**06 45 01.3**	**-0.6**
	comp=Z,6.3nm,0.3s,baz=155,slow=16,SNR=78							
FINES				Sn		**Sn**	**06 45 29.1**	**+5.0**
	comp=Z,3.6nm,0.3s,baz=154,slow=28,SNR=18							
FINES				Lg			06 45 31.0	
	comp=Z,5.2nm,0.3s,baz=153,slow=28,SNR=17							
FINES				Rg			06 45 45.3	
	comp=Z,18nm,0.9s,baz=155,slow=36,SNR=11							
KEF	**Keuruu**	**3.02**	**330**	*e*PB		**Pb**	**06 45 14.2**	**-0.2**
KEF				*e*SG		**Sg**	**06 45 55.9**	**-4.5**
KEF				MSG			06 46 01.4	
	comp=Z,2.4nm,0.2s							
SUF	**Sumiainen**	**3.27**	**344**	*e*PB		**Pb**	**06 45 17.8**	**-0.9**
SUF				*e*SB		**Sb**	**06 46 00.2**	**+0.9**
SUF				MSG			06 46 02.1	
	comp=Z,0.9nm,0.2s							
HFS	**Hagfors**	**7.26**	**280**	Pn		**Pn**	**06 46 08.9**	**-1.2**
	comp=Z,0.0nm,0.3s,baz=84,slow=14,SNR=3.0							
HFS				Sn		**Sn**	**06 47 27.4**	**-6.8**
	comp=Z,0.0nm,0.3s,baz=97,slow=23,SNR=2.4							
HFS				Lg			06 48 02.5	
	comp=Z,0.1nm,0.3s,baz=88,slow=33,SNR=5.3							
NOA	**NORSAR Array B**	**8.49**	**287**	Pn		**P**	**06 46 24.9**	**-2.3**
	comp=Z,0.2nm,0.3s,baz=99,slow=11,SNR=2.7							
NOA				Sn		**Sn**	**06 47 56.4**	**-8.5**
	comp=Z,0.1nm,0.3s,baz=322,slow=20,SNR=2.3							
NOA				Lg			06 48 44.1	
	comp=Z,0.3nm,0.3s,baz=277,slow=16,SNR=3.3							
ARCES	**ARCESS Array B**	**10.04**	**355**	Pn		**P**	**06 46 47.7**	**-0.7**
	comp=Z,0.3nm,0.3s,baz=172,slow=13,SNR=8.9							
ARCES				Sn		**S**	**06 48 34.9**	**-8.0**
	comp=Z,0.1nm,0.3s,baz=173,slow=24,SNR=3.6							

*BJI **30** 06:59:04.2, 36.84N×20.92E, h38km, mb4.6, Ms5.3, Msz5.0*
*NEIC **30** 06:59:08.9±0.3, 37.14N×21.52E, h10km, mb4.2/30, MD4.4(PDG), ML4.7(THE), ML4.6(ATH), Error ellipse: s-maj=5.0km s-min=2.7km az=196.0*
*ZUR_RM **30** 06:59:08, 37.14N×21.52E, h36km, Mw4.7/18, Moment Tensor Solution. s18 Moment tensor: Scale 10^16 Nm; Mrr0.16; Mθθ0.28; Mϕϕ-0.44; Mrθ0.52; Mθϕ0.91; Mϕr-0.21; Best double couple: M0 1.13×10^16 NP1:φs102°, δ88°, λ30°. NP2:φs11°, δ60°, λ178°. Principal axes: T 1.0311, Plg22°, Azm331°; N 1.902, Plg60°, Azm106°; P -1.2213, Plg19°, Azm233°;*
*ATH **30** 06:59:08.0, 37.10N×21.50E, h16km±1km, MD4.4/16, ML4.6*
*MED_RC **30** 06:59:08.9±0.5, 37.13N×21.38E, h23km±3km, MW4.3/17, Moment Tensor Solution. Body waves: s17,c17; Duration: 1§0 Moment tensor: Scale 10^15 Nm; Mrr0.39±.43; Mθθ0.03±.39; Mϕϕ-0.42±.24; Mrθ0.02±1.32; Mθϕ3.57±.40; Mϕr-1.89±.42; Best double couple: M0 4.05×10^15 NP1: φs272°, δ62°, λ3°. NP2:φs181°, δ87°, λ152°. Principal axes: T 3.89, Plg21°, Azm133°; N .33, Plg62°, Azm356°; P -4.22, Plg18°, Azm230°; nsta1 refers to waves, cutoff=35s.*
*MOS **30** 06:59:09.3±1.2, 37.22N×21.54E, h33km, mb4.8/16 Error ellipse: s-maj=10.5km s-min=4.5km az=90.6*
*THE **30** 06:59:09.8, 37.16N×21.59E, h10km, ML4.7*
*IDC **30** 06:59:11.0±3.1, 37.30N×21.66E, h29km±22km, mb4.1/18, mb1 4.2/26, mb1mx4.1/34, ML3.9/8, MS4.0/10, Ms1 4.1/10, ms1mx3.7/28, Error ellipse: s-maj=15.9km s-min=12.1km az=38.0, putative timing error at EIL*

ISC 30 06:59:08.2±0.2, 37.19N±0.02×21.43E±0.02, h16km, n338, σ1§50/392, mb4.5/36, MS4.2/18, 25C-20D, Southern Greece

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
ITM	**Ithomi**	**0.40**	**92**	*e*PB		**Pb**	**06 59 15.6**	**-0.8**
ITM				*e*SB		**Sb**	**06 59 20.5**	**-1.4**
RLS	**Riolos of Patr**	**0.86**	**2**	⇑*i*PN		**Pn**	**06 59 26.7**	**+1.1**
VLS	**Valsamata**	**1.19**	**326**	*e*PN		**Pn**	**06 59 32.2**	**+2.0**
VLS				*e*SN		**Sn**	**06 59 51.0**	**+4.9**
VLI	**Veliai**	**1.30**	**111**	*e*PN		**Pn**	**06 59 31.3**	**-0.5**
KYTH	**Kithira**	**1.58**	**125**	*e*PN		**Pn**	**06 59 36.3**	**+0.5**
LKD	**Levkas**	**1.63**	**338**	*e*Pb		**Pb**	**06 59 39.8**	**+2.3**
LKD	**Levkas**	**1.63**	**338**	P		**Pn**	**06 59 39.8**	**+3.2**
NAIG	**Nisos Aigina**	**1.73**	**70**	*e*PN		**Pn**	**06 59 39.3**	**+1.3**
EVR	**Evrytania**	**1.75**	**10**	⇑*i*PN		**Pn**	**06 59 42.2**	**+4.0**
MKIT	**Kithairon Oros**	**1.76**	**55**	*e*PN		**Pn**	**06 59 39.7**	**+1.3**
NSAL	**Nisos Salamina**	**1.77**	**66**	*e*PN		**Pn**	**06 59 40.2**	**+1.7**
LKR	**Lokris**	**1.91**	**40**	⇑*e*PN		**Pn**	**06 59 42.7**	**+2.1**
AGG	**Agios Georgios**	**1.96**	**21**	*e*Pb		**Pb**	**06 59 45.1**	**+2.1**
AGG	**Agios Georgios**	**1.96**	**21**	P		**Pn**	**06 59 45.2**	**+3.9**
ATH	**Athens Observa**	**1.98**	**66**	*e*PN		**Pn**	**06 59 42.3**	**+0.8**
ATH				*e*SN		**Sn**	**07 00 08.6**	**+2.5**
MPAR	**Parnis Oros**	**2.06**	**62**	*e*PB		**Pb**	**06 59 43.3**	**-1.6**
PTL	**Penteli**	**2.11**	**65**	*e*PN		**Pn**	**06 59 44.3**	**+0.8**
IGT	**Igoumenitsa**	**2.49**	**340**	*e*Pn		**Pn**	**06 59 51.9**	**+3.1**
IGT	**Igoumenitsa**	**2.49**	**340**	P		**Pn**	**06 59 51.8**	**+2.9**
JAN	**Janina**	**2.50**	**350**	*e*PB		**Pb**	**06 59 52.5**	**+0.2**
NEO	**Neokhori**	**2.54**	**33**	⇑*i*PN		**Pn**	**06 59 51.6**	**+2.0**
NEO				*e*SN		**Sn**	**07 00 24.0**	**+3.6**
XOR	**Xorichti**	**2.58**	**32**	*e*Pn		**Pn**	**06 59 51.8**	**+1.7**
MEV	**Metsovon**	**2.59**	**357**	*e*Pn		**Pn**	**06 59 54.2**	**+3.9**
MEV	**Metsovon**	**2.59**	**357**	P		**Pn**	**06 59 54.2**	**+3.9**
AOS	**Alonnisos**	**2.76**	**44**	*e*Pn		**Pn**	**06 59 54.0**	**+1.3**
AOS	**Alonnisos**	**2.76**	**44**	P		**Pn**	**06 59 54.0**	**+1.3**
KEK	**Kerkira**	**2.82**	**334**	*e*PN		**Pn**	**06 59 55.3**	**+1.7**
VAM	**Vamos**	**2.86**	**128**	*e*PB		**Pb**	**06 59 54.5**	**-3.9**
LIT	**Litokhoron**	**3.02**	**16**	*e*Pn		**Pn**	**06 59 58.5**	**+2.1**
	comp=Z,32nm,0.2s							
KZN	**Kozani**	**3.12**	**5**	*e*PN		**Pn**	**07 00 00.4**	**+2.6**
THR5	**Thira Island,**	**3.24**	**103**	*e*Pn		**Pn**	**06 59 60.0**	**+0.5**
THR5	**Thira Island,**	**3.24**	**103**	P		**Pn**	**06 59 59.8**	**+0.3**
PAIG	**Paliouri**	**3.25**	**32**	*e*Pn		**Pn**	**07 00 00.9**	**+1.2**
THR4	**Thira Island,**	**3.27**	**102**	*e*Pn		**Pn**	**07 00 00.1**	**+0.2**
THR4	**Thira Island,**	**3.27**	**102**	P		**Pn**	**07 00 00.1**	**+0.1**
APE	**Apeiranthos**	**3.28**	**91**	*e*Pn		**Pn**	**06 59 59.0**	**-1.1**
THR3	**Thira Island,**	**3.28**	**103**	*e*Pn		**Pn**	**07 00 00.9**	**+0.8**
THR3	**Thira Island,**	**3.28**	**103**	P		**Pn**	**07 00 00.8**	**+0.6**
THR6	**Thira Island,**	**3.29**	**103**	*e*Pn		**Pn**	**07 00 00.7**	**+0.4**
THR6	**Thira Island,**	**3.29**	**103**	P		**Pn**	**07 00 00.6**	**+0.3**
SANT	**Santorini**	**3.34**	**103**	*e*Pn		**Pn**	**07 00 00.6**	**-0.3**
THR1	**Thera Island**	**3.34**	**103**	*e*Pn		**Pn**	**07 00 01.1**	**+0.2**
IDI	**Anoyia**	**3.38**	**123**	Pn		**Pn**	**07 00 00.3**	**-1.3**
	3.2nm,0.3s,baz=291,slow=15,SNR=50							
IDI				Sn		**Sn**	**07 00 40.6**	**-1.2**
	20nm,0.3s,baz=336,slow=18,SNR=7.2							
PLG	**Polygyros**	**3.55**	**26**	⇑*i*PN		**Pn**	**07 00 05.2**	**+1.3**
FNA	**Florina**	**3.59**	**359**	*e*Pn		**Pn**	**07 00 06.8**	**+2.3**
	comp=Z,9.0nm,0.4s							
FNA	**Florina**	**3.59**	**359**	P		**Pn**	**07 00 06.8**	**+2.3**
OUR	**Ouranopolis**	**3.72**	**32**	*e*Pn		**Pn**	**07 00 07.6**	**+1.3**
	comp=Z,25nm,0.2s							
OUR	**Ouranopolis**	**3.72**	**32**	P		**Pn**	**07 00 07.4**	**+1.1**
BIA	**Bitola**	**3.82**	**359**	*i* Pn		**Pn**	**07 00 08.4**	**+0.6**
BIA				*i*			07 00 22.1	
BIA				*i* Sn		**Sn**	**07 00 57.2**	**+4.3**
BIA				*i*			07 01 02.9	
BIA				*i*			07 01 09.8	
GRG	**Griva**	**3.83**	**11**	*e*Pn		**Pn**	**07 00 09.6**	**+1.6**
GRG	**Griva**	**3.83**	**11**	P		**Pn**	**07 00 09.4**	**+1.5**
NPS	**Neapolis**	**3.89**	**118**	*e*PN		**Pn**	**07 00 08.6**	**-0.2**
SOH	**Sokhos**	**3.92**	**22**	*e*Pn		**Pn**	**07 00 11.0**	**+1.8**
SOH	**Sokhos**	**3.92**	**22**	P		**Pn**	**07 00 11.1**	**+1.8**
OHR	**Ohrid**	**3.94**	**353**	⇑*i*Pn

SGO	Sicignano	5.84	307	ePn		Pn	07 00 38.5	+2.1
NKY	Niksic	5.92	342	⇓iPn		Pn	07 00 37.2	-0.2
NKY				eSn		Sn	07 01 44.4	-1.2
GIB	Gibilmanna	5.93	280	ePn		Pn	07 00 40.8	+3.1
FG4	Candela	6.05	312	ePn		Pn	07 00 40.7	+1.4
DENT	Denizli	6.07	82	P		Pn	07 00 46.3	+6.7
DNZL	Cakiroluk	6.08	83	iP		Pn	07 00 41.2	+1.4
BRY	Bratogost	6.12	340	⇓iPn		Pn	07 00 39.5	-0.8
BRY				eSn		Sn	07 01 48.7	-1.9
CSSN	Cassano Irpino	6.19	308	ePn		Pn	07 00 43.2	+1.9
CSSN				eSn		Sn	07 01 50.3	-2.1
EDRB	Edirne	6.20	40	P		Pn	07 00 44.0	+2.5
FG5	Orsara di Pugl	6.29	312	ePn		Pn	07 00 44.1	+1.4
UPM	Unac-Piva	6.31	345	⇓iPn		Pn	07 00 42.8	-0.1
UPM				eSn		Sn	07 01 53.8	-1.5
PLE	Pljevlja	6.33	346	⇓iPn		Pn	07 00 43.2	0.0
PLE				eSn		Sn	07 01 55.0	-0.8
STON	Ston	6.35	334	iPn		Pn	07 00 42.2	-1.4
STON				iSn		Sn	07 01 53.0	-3.5
RGNG	Rignano Grg	6.36	317	ePn		Pn	07 00 43.8	0.0
RGNG				eSn		Sn	07 01 55.4	-1.4
NVSS	Nova Varos 2	6.45	349	⇓iPn		Pn	07 00 44.0	-0.9
NVSS				Sn		Sn	07 01 55.5	-3.4
BOLS	Boljevac	6.64	3	⇑iPn		Pn	07 00 47.0	-0.7
BOLS				Sn		Sn	07 02 13.0	+9.2
FG2	Serracapriola	6.69	315	ePn		Pn	07 00 48.9	+0.6
ULDT	Uludag	6.71	62	iP		Pn	07 00 48.7	0.0
GRUS	Gruza	6.71	356	⇑iPn		Pn	07 00 47.2	-1.4
CTT	Catalca	6.72	52	P		Pn	07 00 46.3	-2.5
ELL	Elmali	6.80	91	P		Pn	07 00 51.0	+1.1
DIVS	Divcibare	6.99	351	⇓iPn		Pn	07 00 51.1	-1.4
DIVS				Sn		Sn	07 02 07.7	-4.6
CPI2	Carpinone	7.04	311	ePn		Pn	07 00 54.8	+1.5
SVIS	Svilajnac	7.10	359	⇑iPn		Pn	07 00 52.4	-1.7
CII	Carovilli	7.13	312	ePn		Pn	07 00 56.4	+1.8
RNI2	Rionero Sannit	7.21	311	ePn		Pn	07 00 58.1	+2.4
ISP	Isparta	7.25	82	P		Pn	07 00 58.9	+2.8
HRT	Hereke	7.37	58	P		Pn	07 00 58.1	+0.3
INTR	Introdacqua	7.54	312	ePn		Pn	07 01 01.1	+0.8
ESKT	Eskisehir	7.76	70	iP		Pn	07 01 04.0	+0.7
ESKT	Eskisehir	7.76	70	P		Pn	07 01 01.3	-2.0
AQU	L'Aquila	8.05	312	ePn		P	07 01 10.1	+2.7
KIZT	Kizilcal	8.42	75	P		P	07 01 10.0	-2.5
MNS	Montasola	8.50	310	ePn		P	07 01 14.5	+0.9
HDMB	Hadim	8.84	88	P		P	07 01 21.8	+3.4
MLR	Muntele Rosu	8.96	21	Pn		P	07 01 20.2	+0.2
	comp=Z,0.5nm,0.3s,baz=202,slow=6.2,SNR=24							
MLR	Muntele Rosu	8.96	21	P		P	07 01 20.2	+0.2
MLR				pmax	pmax			
	comp=Z,1.0nm,0.3s							
ARV	Arcevia	9.03	317	ePn		P	07 01 21.4	+0.3
RHK1	Bakonya	9.24	345	eP		P	07 01 21.2	-2.7
FSSB	Fossombrone	9.25	317	ePn		P	07 01 23.9	-0.1
ANTO	Ankara	9.30	70	P		P	07 01 21.8	-2.9
BOJS	Bojanci	9.51	333	ePn		P	07 01 26.3	-1.3
BRTR	Keskin Array B	9.90	71	Pn		P	07 01 33.9	+0.9
	comp=Z,0.4nm,0.3s,baz=252,slow=12,SNR=9.2							
BRTR				LR		LR	07 05 36.8	
	comp=Z,344nm,19.3s,baz=190,slow=40							
ELDT	Eldivan	9.92	67	iP		P	07 01 38.0	+4.7
CEY	Cerknica	10.02	331	ePn		P	07 01 33.5	-1.1
CEY				eSn		S	07 03 22.4	-5.4
BALT	Daday	10.22	61	iP		P	07 01 39.9	+2.5
LJU	Ljubljana	10.24	332	ePn		P	07 01 36.4	-1.2
VOY	Vojsko	10.47	330	ePn		P	07 01 39.0	-1.8
VOY				eSn		S	07 03 32.8	-6.0
PERS	Pernice	10.54	336	ePn		P	07 01 39.3	-2.4
AVNT	Avonos	10.72	77	iP		P	07 01 51.1	+7.0
PSZ	Piszkesteto	10.78	354	⇑iPn		P	07 01 43.7	-1.3
ROBS	Robic	10.80	329	iPn		P	07 01 43.1	-2.2
PGF	Pioggiola	10.95	303	eP		P	07 01 47.1	-0.2
	comp=Z,38nm,1.2s							
ARSA	Arzberg	10.96	338	⇑iPN		P	07 01 45.2	-2.2
ARSA				iSN		S	07 03 43.5	-7.2
KIS	Kishinev	11.22	27	eP		P	07 01 55.0	+3.9
KIS				eS		S	07 04 04.0	+6.8
KIS				MLR	MLR			
	comp=Z,800nm,15.0s							
FVI	Forni Avoltri	11.39	328	ePn		P	07 01 53.6	+0.3
CTI	Castel Tesino	11.47	324	ePn		P	07 01 53.8	-0.7
MOA	Molln	11.88	336	⇑iPn		P	07 01 58.3	-1.7
MOA				iSn		S	07 04 06.5	-6.7
COBT	Iskenderun	11.90	89	iP		P	07 02 01.2	+1.0
NIE	Niedzica	12.25	357	eP		P	07 02 03.2	-1.7
SIM	Simferopol'	12.31	47	P		P	07 02 06.0	+0.3
SIM				S		S	07 04 11.0	-12
SIM				pmax	pmax			
	comp=Z,40nm,1.0s							
SIM				MLR	MLR			
	comp=Z,390nm,14.0s							
WTTA	Wattenberg	12.40	327	⇑iPn		P	07 02 05.8	-1.1
WTTA				iSn		S	07 04 18.9	-6.8
WATA	Walderalm	12.48	327	⇓iPn		P	07 02 07.0	-1.0
WATA				iSn		S	07 04 21.3	-6.4
SQTA	Sankt Quirin	12.55	326	⇑iPn		P	07 02 08.1	-0.9
SQTA				iSn		S	07 04 23.4	-6.0
SBF	Sospel	12.55	306	eP		P	07 02 07.9	-1.1
	comp=Z,48nm,1.3s							
VRAC	Vranov	12.61	345	Pn		P	07 02 07.4	-2.3
	comp=Z,0.2nm,0.3s,baz=157,slow=14,SNR=5.0							
MOTA	Moosalm	12.69	326	⇓iPn		P	07 02 10.3	-0.5
MOTA				iSn		S	07 04 27.0	-5.8
DAVOX	Davos	12.86	322	Pn		P	07 02 15.7	+2.7
	comp=Z,0.3nm,0.3s,baz=164,slow=18,SNR=4.2							
DAVOX				Sn		S	07 04 37.3	+0.6
	comp=Z,0.6nm,0.3s,baz=116,slow=23,SNR=3.9							
GZT	Gaziantep	12.86	84	iP		P	07 02 23.6	+11
OKC	Ostrava-Krasne	12.86	350	eP		P	07 02 10.9	-2.2
OKC				ex		x	07 02 24.2	
OKC				L			07 08 00.0	
MORC	Moravsky Berou	12.89	349	ePn		P	07 02 12.4	-1.0
GERES	GERESS Array B	12.94	337	Pn		P	07 02 11.9	-2.1
	comp=Z,0.5nm,0.3s,baz=149,slow=7.8,SNR=26							
GERES				Sn		S	07 04 31.6	-7.1
	comp=Z,0.2nm,0.3s,baz=152,slow=21,SNR=3.0							
GERES	GERESS Array B	12.94	337	P		P	07 02 11.9	-2.2
GERES							07 04 31.6	
GERES				pmax	pmax			
	comp=Z,1.0nm,0.3s							
OJC	Ojcow	13.08	355	eP		P	07 02 25.6	+10
OJC				eS		S	07 04 52.0	+10
OJC				MLR	MLR		07 08 07.8	
	comp=Z,1μm,17.5s							
OJC	Ojcow	13.08	355	eP		P	07 02 25.6	+10
OJC				MLR	MLR			
	comp=Z,1μm,17.5s							
KHC	Kasperske Hory	13.23	337	eP		P	07 02 19.0	+1.1
KHC				ex		x	07 02 28.6	
KHC				L			07 08 10.0	
	comp=Z,2.9nm,14.2s							
KHC	Kasperske Hory	13.23	337	eP		P	07 02 19.0	+1.1
KHC				MLR	MLR			
	comp=Z,3μm,14.2s							
FUR	Furstenfeldbru	13.25	329	eP		P	07 02 28.0	+10
FUR				pmax	pmax			
	comp=Z,36nm,1.0s							
MBDF	Montbardon	13.38	309	eP		P	07 02 23.4	+3.4
	comp=Z,30nm,1.2s							
WET	Wettzell	13.46	335	eP		P	07 02 30.7	+10
DPC	Dobruska-Polom	13.66	346	eP		P	07 02 20.3	-3.2
DPC				ex		x	07 02 29.8	
DPC				L			07 08 40.0	
	comp=Z,2.2nm,15.0s							
DPC	Dobruska-Polom	13.66	346	eP		P	07 02 20.3	-3.2
DPC				MLR	MLR			
	comp=Z,2μm,15.0s							
PRU	Pruhonice	13.72	341	eP		P	07 02 21.7	-2.7
PRU				ex		x	07 02 32.2	
PRU				L			07 08 30.0	
	comp=Z,2.1nm,11.0s							
PRU	Pruhonice	13.72	341	eP		P	07 02 21.7	-2.7
PRU				MLR	MLR			
	comp=Z,2μm,11.0s							
LPG	La Plagne	13.79	312	eP		P	07 02 23.2	-2.0
LPL	La Plagne	13.81	312	eP		P	07 02 23.0	-2.5
PRA	Prague	13.82	341	L			07 08 30.0	
UPC	Upice	13.87	345	eP		P	07 02 24.1	-2.2
KSP	Ksiaz	14.13	347	eP		P	07 02 38.0	+8.2
KSP				MLR	MLR		07 09 08.3	
	comp=Z,4μm,16.8s							
KSP	Ksiaz	14.13	347	eP		P	07 02 29.4	-0.4
KSP				ePP		PP	07 02 38.0	-3.0
PVCC	Panska Ves	14.21	342	eP		P	07 02 30.7	-0.1
PVCC				ex		x	07 02 38.7	
PVCC				L			07 08 50.0	
	comp=Z,2.3nm,12.4s							
PVCC	Panska Ves	14.21	342	eP		P	07 02 30.7	-0.1
PVCC				MLR	MLR			
	comp=Z,2μm,12.4s							
ANN	Anapa	14.26	53	eP		P	07 02 35.0	+3.5
ANN				eS		S	07 05 06.0	-4.2
ANN				pmax	pmax			
	comp=Z,10.0nm,2.1s							
GRF	Grafenberg Arr	14.51	333	eP		P	07 02 42.8	+8.1
GRF				pmax	pmax			
	comp=Z,74nm,1.2s							
NKC	Novy Kostel	14.55	336	eP		P	07 02 36.0	+0.8
NKC				ex		x	07 02 42.4	
NKC				L			07 08 50.0	
	comp=Z,2.5nm,14.2s							
NKC	Novy Kostel	14.55	336	eP		P	07 02 36.0	+0.8
NKC				MLR	MLR			
	comp=Z,2μm,14.2s							
STU	Stuttgart	14.61	326	ePn		P	07 02 36.0	-0.1
STU				eP			07 02 45.2	
BRG	Berggiesshubel	14.69	341	eP		P	07 02 37.1	+0.1
BRG				pmax	pmax			
	comp=Z,19nm,1.4s							
BRG				MLR	MLR			
	comp=N,2μm,12.5s							
BRG				MLR	MLR			
	comp=E,780nm,12.5s							
BRG				MLR	MLR			
	comp=Z,3μm,12.5s							
BRG	Berggiesshubel	14.69	341	eP		P	07 02 37.1	+0.1
	comp=Z,19nm,1.4s							
BRG				e			07 02 44.6	
VIVF	Saint-Julien-l	14.77	306	eP		P	07 02 36.3	-1.9
	comp=Z,4.2nm,0.9s							
CABF	La Chapelle	14.78	314	eP		P	07 02 38.8	+0.5
	comp=Z,17nm,0.8s							
LOMF	Lomont	14.80	318	eP		P	07 02 46.2	+7.6
MOF	Molkenrain	14.96	320	eP		P	07 02 41.3	+0.7
LASF	Ste Croix	15.00	303	eP		P	07 02 39.1	-2.0
HINF	Hinteralfeld	15.08	319	eP		P	07 02 42.6	+0.4
	comp=Z,9.5nm,0.7s							
MOX	Moxa	15.17	336	iP		P	07 02 44.4	+1.0
	comp=Z,logA/T=1.1							
MOX				L			07 09 39.0	
MOX	Moxa	15.17	336	eP		P	07 02 44.4	+1.0
MOX				pmax	pmax			
	comp=Z,14nm,1.0s							
MOX				MLR	MLR			
	comp=Z,2μm,17.0s							
MOX	Moxa	15.17	336	eP		P	07 02 44.4	+1.0
	comp=Z,14nm,1.0s							
ECH	Echery	15.19	321	eP		P	07 02 44.3	+0.7
CDF	Champ du Feu	15.26	322	eP		P	07 02 44.4	-0.1
	comp=Z,26nm,1.1s							
SOC	Sochi	15.31	60	eP		P	07 02 47.2	+1.9
SOC				eS		S	07 05 30.9	-4.2
SOC				pmax	pmax			
	comp=Z,9.0nm,0.7s							
SOC				pmax	pmax			
	comp=N,10.0nm,0.9s							
SOC				pmax	pmax			
	comp=E,20nm,0.9s							
SOC				MLR	MLR			
	comp=Z,210nm,14.0s							
SOC				MLR	MLR			
	comp=N,60nm,10.0s							
SOC				MLR	MLR			
	comp=E,300nm,13.0s							
CLL	Collm	15.33	340	⇑P		P	07 02 45.5	0.0
	comp=E,logA/T=1.0							
CLL				i			07 02 51.4	
CLL				i			07 03 04.9	
CLL				i			07 03 15.3	
CLL	Collm	15.33	340	⇑iP		P	07 02 45.5	0.0
CLL				pmax	pmax			
	comp=Z,51nm,1.4s							
CLL	Collm	15.33	340	⇑iP		P	07 02 45.5	0.0
	comp=Z,51nm,1.4s							
CLL				i			07 02 51.4	
LANF	Langenberg	15.39	324	eP		P	07 02 53.6	+7.3
HAU	Haudompre	15.46	319	eP		P	07 02 46.9	-0.3
	comp=Z,30nm,0.7s							
HAU				eR				
	comp=Z,262nm,19.2s							
THEF	They Montfort	15.79	319	eP		P	07 02 52.1	+0.6
SMF	Signal de Mont	16.11	311	eP		P	07 02 56.6	+1.0
	comp=Z,13nm,0.9s							
RUE	Ruedersdorf	16.20	343	eP		P	07 03 00.5	+3.8
PYM	Petit Puy Mans	16.21	308	eP		P	07 02 57.6	+0.7
GKP	Gorka Klasztor	16.34	351	eP		P	07 03 03.0	+4.6
GKP				e			07 03 04.7	
GKP				MLR	MLR		07 10 37.4	
	comp=Z,1μm,14.1s							
GKP	Gorka Klasztor	16.34	351	eP		P	07 03 03.0	+4.6
GKP				MLR	MLR			
	comp=Z,1μm,14.1s							
LOR	Lormes	16.42	313	eP		P	07 03 03.3	+3.8
	comp=Z,23nm,1.2s							
LOR				eR				
	comp=Z,184nm,21.8s							
MEZF	Maizieres J'vi	16.45	319	eP		P	07 03 02.3	+2.4
	comp=Z,55nm,1.0s							
CAF	Calviac	16.50	304	eP		P	07 03 03.4	+2.9
SSF	Saint Saulge	16.52	312	eP		P	07 03 04.7	+4.0
	comp=Z,24nm,1.0s							
WLF	Walferdange	16.65	323	eP		P	07 03 06.4	+4.1
	comp=Z,17nm,1.0s							
BGF	Bois d'Agland	16.67	310	eP		P	07 03 05.1	+2.4
	comp=Z,26nm,1.2s							
SUW	Suwalki	16.87	4	eP		P	07 03 03.8	-1.3
SUW				e			07 03 06.8	
SUW				MLR	MLR		07 10 20.1	
	comp=Z,700nm,18.8s							
SUW	Suwalki	16.87	4	eP		P	07 03 03.8	-1.3
SUW				MLR	MLR			
	comp=Z,700nm,18.8s							
TCF	Toulx Ste Croi	16.95	308	eP		P	07 03 05.9	-0.2
	comp=Z,23nm,1.4s							
RJF	Les Rejaudoux	17.00	305	eP		P	07 03 07.3	+0.5
	comp=Z,40nm,1.7s							
RJF				eR				
	comp=Z,181nm,19.2s							
LFF	La Frestale	17.39	303	eP		P	07 03 11.9	+0.2
KIV	Kislovodsk	17.48	61	eP		P	07 03 12.9	+0.1
KIV				eS		S	07 06 23.2	-2.0
KIV				pmax	pmax			
	comp=Z,10.0nm,0.9s							
KIV				MLR	MLR			
	comp=Z,160nm,19.0s							
KIV				MLR	MLR			
	comp=N,80nm,17.0s							
KIV				MLR	MLR			
	comp=E,150nm,22.0s							
HGN	Heimansgroeve	17.51	326	eP		P	07 03 15.2	+2.0
	comp=E,6.4nm,1.0s							
HGN				eS		S	07 05 21.9	-64
GIVF	Givet	17.58	322	eP		P	07 03 16.7	+2.6
	comp=E,92nm,1.2s							
BAIF	Baives	17.86	322	eP		P	07 03 19.1	+1.6
	comp=E,23nm,1.0s							
WTSB	Winterswijk	18.02	330	eP		P	07 03 22.2	+2.6
	comp=E,1.7nm,1.4s							
GOF	Gofitskoye	18.04	57	eP		P	07 03 19.0	-0.8
ZEI	Tsey	18.08	65	eP		P	07 03 19.5	-0.8
ZEI				eS		S	07 06 34.0	-4.8
ZEI				MLR	MLR			
	comp=Z,400nm,12.0s							
BSEG	Bad Segeberg	18.42	339	eP		P	07 03 24.3	-0.2
BSEG				pmax	pmax			
	comp=Z,17nm,1.0s							
BSD	Bornholm Skovb	18.47	348	⇓iP		P	07 03 23.6	-1.5
	comp=Z,30nm,1.0s							
	comp=Z,670nm,17.0s							
BSD	Bornholm Skovb	18.47	348	⇓iP		P	07 03 23.6	-1.5
BSD				pmax	pmax			
	comp=Z,30nm,1.0s							
BSD				MLR	MLR			
	comp=Z,680nm,17.0s							
MFF	Saint Martin d	18.56	307	eP		P	07 03 27.9	+1.6
	comp=Z,6.6nm,0.7s							
VOR	Voronezh	19.21	35	eP		P	07 03 30.5	-3.5
VOR				pmax	pmax			
	comp=N,70nm,1.5s							
VOR				pmax	pmax			
	comp=E,110nm,1.5s							
VOR				pmax	pmax			
	comp=Z,50nm,1.5s							
LDF	La Druitiere	19.40	313	eP		P	07 03 37.7	+1.5
	comp=Z,7.7nm,0.5s							
COP	Copenhagen	19.48	345	iP		P	07 03 36.5	-0.5
	comp=Z,1.3nm,1.1s							
	comp=Z,290nm,16.0s							
COP	Copenhagen	19.48	345	iP		P	07 03 36.5	-0.5
COP				pmax	pmax			
	comp=Z,13nm,1.1s							
COP				MLR	MLR			
	comp=Z,290nm,16.0s							
FLN	La Foliniere	19.69	313	eP		P	07 03 40.1	+0.6
	comp=Z,16nm,0.8s							
FLN				eR				
	comp=Z,130nm,17.2s							
GRR	Gorron	19.74	312	eP		P	07 03 41.1	+1.0
ESDC	Sonseca Array	20.03	285	P		P	07 03 43.7	+0.5
	comp=Z,1.5nm,0.6s,baz=82,slow=11,SNR=5.5							
OBN	Obninsk	20.68	25	ceP		P	07 03 46.5	-3.4
OBN				pmax	pmax			
	comp=Z,89nm,0.9s							
OBN				MLR	MLR			
	comp=Z,200nm,15.0s,MS3.6							
OBN	Obninsk	20.68	25	eP		P	07 03 46.2	-3.8
	comp=Z,77nm,0.8s							
SGMF	Saint Gilles	20.72	310	eP		P	07 03 50.7	+0.4
	comp=Z,12nm,0.7s							
MUD	Monsted U'grnd	20.95	341	iP		P	07 03 54.9	+2.2
	comp=Z,8.3nm,0.5s							
	comp=Z,550nm,20.0s							
MUD	Monsted U'grnd	20.95	341	eP		P	07 03 54.9	+2.2
MUD				pmax	pmax			
	comp=Z,8.0nm,0.5s							
MUD				MLR	MLR			
	comp=Z,560nm,20.0s,MS3.9							
MUD	Monsted U'grnd	20.95	341	eP		P	07 03 54.9	+2.2
	comp=Z,8.3nm,0.5s							
QUIF	Quistinic	20.96	308	eP		P	07 03 52.3	-0.6
ROSF	Rostrenen	21.19	310	eP		P	07 03 54.1	-1.0
	comp=Z,17nm,0.7s,mb4.2							
MOS	Moscow	21.55	25	kiP		P	07 03 57.2	-1.5
MOS				i			07 04 06.9	
MOS				e			07 04 17.6	
MOS				ePPP		PPP	07 04 27.1	-5.7
MOS				eS		S	07 07 50.6	-1.3
MOS				i			07 07 55.9	
MOS				pmax	pmax			
	comp=Z,180nm,0.7s,mb5.6							
PUL	Pulkovo	23.30	11	eP		P	07 04 14.2	-1.8
PUL				pmax	pmax			
	comp=Z,50nm,0.7s,mb5.0							
PUL				MLR	MLR			
	comp=Z,720nm,19.0s,MS4.2							
HFS	Hagfors	23.49	350	P		P	07 04 17.2	-0.6
	comp=Z,9.4nm,0.6s,mb4.4,baz=164,slow=11,SNR=57							
HFS	Hagfors	23.49	350	P		P	07 04 17.2	-0.5
HFS				pmax	pmax			
	comp=Z,9.0nm,0.6s							
THR	Tehran	23.85	84	P		P	07 04 20.6	-0.9
	comp=Z,4.4nm,1.1s,mb3.8,baz=282,slow=5.3,SNR=7.2							
THR	Tehran	23.85	84	P		P	07 04 20.6	-0.9
THR				pmax	pmax			
	comp=Z,4.0nm,1.1s							
FINES	FINESS Array B	24.45	5	P		P	07 04 25.5	-1.6
	comp=Z,21nm,0.9s,mb4.5,baz=158,slow=10,SNR=41							
FINES				S		S	07 08 42.8	-0.7
	comp=Z,1.8nm,0.8s,baz=196,slow=14,SNR=4.0							
FINES				LR		LR	07 15 03.0	
	comp=Z,631nm,18.3s,MS4.1,baz=182,slow=39							
FINES	FINESS Array B	24.45	5	P		P	07 04 25.5	-1.6
FINES				S		S	07 08 42.8	-0.6
FINES				pmax	pmax			
	comp=Z,21nm,0.9s							
FINES				smax				
	comp=Z,2.0nm,0.8s							
FINES				MLR	MLR			
	comp=Z,631nm,18.3s							
NAO01	NORSAR Array S	24.60	348	eP		P	07 04 27.5	-1.0
	comp=Z,11nm,0.8s,mb4.4							
EKA	Eskdalemuir Ar	24.65	325	P		P	07 04 30.1	+1.1
	comp=Z,8.5nm,0.8s,mb4.3,baz=122,slow=8.7,SNR=24							
EKA	Eskdalemuir Ar	24.65	325	P		P	07 04 30.2	+1.1
EKA				pmax	pmax			
	comp=Z,9.0nm,0.8s							
ESK	Eskdalemuir	24.66	325	eP		P	07 04 30.1	+0.9
	comp=Z,28nm,1.3s,mb4.6							
NB2	NORSAR Subarra	24.73	348	P		P	07 04 28.7	-1.1
	comp=Z,1.0nm,0.7s,mb3.5,baz=153,slow=9.3							
NOA	NORSAR Array B	24.73	348	P		P	07 04 28.8	-1.0
	comp=Z,7.2nm,0.8s,mb4.3,baz=156,slow=9.0,SNR=32							
NOA				LR		LR	07 15 06.5	
	comp=Z,224nm,19.9s,MS3.7,baz=185,slow=39							
NOA	NORSAR Array B	24.73	348	P		P	07 04 28.8	-1.0
NOA				pmax	pmax			
	comp=Z,7.0nm,0.8s							
NOA				MLR	MLR			
	comp=Z,224nm,19.9s							
NOA	NORSAR Array B	24.73	348	P		P	07 04 28.8	-1.0
NOA				LR		LR	07 15 06.5	
JOF	Joensuu	26.46	10	ep		P	07 04 43.7	-2.3
APA	Apatity	31.17	9	⇑iP		P	07 05 26.3	-2.0
APA				MLR	MLR			
	comp=Z,600nm,12.0s,MS4.5							
ARU	Arti	31.33	40	⇑eP		P	07 05 26.0	-3.8
ARU				pmax	pmax			
	comp=Z,17nm,1.3s,mb4.7							
ARU				MLR	MLR			
	comp=Z,200nm,15.0s,MS3.9							
ARU	Arti	31.33	40	eP		P	07 05 26.5	-3.3
	comp=Z,22nm,1.3s,mb4.8							
LVZ	Lovozero	31.64	9	iP		P	07 05 30.2	-2.2
LVZ				pmax	pmax			
	comp=Z,39nm,2.2s,mb4.8							
LVZ				MLR	MLR			
	comp=Z,600nm,18.0s,MS4.3							
ARCES	ARCESS Array B	32.48	3	P		P	07 05 37.8	-1.9
	comp=Z,7.3nm,0.9s,mb4.5,baz=192,slow=11,SNR=55							
ARCES				LR		LR	07 20 03.1	
	comp=Z,500nm,19.4s,MS4.2,baz=212,slow=39							
ARCES	ARCESS Array B	32.48	3	P		P	07 05 37.8	-1.9
ARCES				pmax	pmax			
	comp=Z,7.0nm,0.9s							
ARCES				MLR	MLR			
	comp=Z,500nm,19.4s							
ARE0	ARCESS Array S	32.48	3	eP		P	07 05 37.4	-2.3
KEV	Kevo	32.76	4	ep		P	07 05 40.7	-1.5
ZRNK	Zerenda	36.37	49	eP		P	07 06 10.8	-2.5
BRVK	Borovoye	37.15	49	eP		P	07 06 17.1	-2.8
BVAR	Borovoye Array	37.21	49	P		P	07 06 18.2	-

KOLN	**Kolanda**	**52.46**	**81**	*e*P		**P**	**07 08 18.9**	**-3.6**
	comp=Z,15nm,0.8s,mb5.0							
GKN	**Gorkha**	**53.17**	**80**	*e*P		**P**	**07 08 24.1**	**-3.7**
	comp=Z,14nm,0.6s,mb5.1							
DMN	**Daman**	**53.72**	**81**	*e*P		**P**	**07 08 28.4**	**-3.4**
KKN	**Kakani**	**53.77**	**80**	*e*P		**P**	**07 08 27.6**	**-4.6**
PKI	**Pulchoki**	**53.98**	**81**	*e*P		**P**	**07 08 29.4**	**-4.2**
	comp=Z,10nm,0.6s,mb4.9							
FRB	**Frobisher Bay**	**57.37**	**328**	P		**P**	**07 08 56.8**	**-0.9**
	comp=Z,3.3nm,1.1s,mb4.3,baz=121,slow=5.9,SNR=4.7							
FRB	**Frobisher Bay**	**57.37**	**328**	P		**P**	**07 08 56.8**	**-0.9**
FRB				pmax	pmax			
	comp=Z,3.0nm,1.1s							
TLY	**Talaya**	**57.43**	**47**	⇓*i*P		**P**	**07 08 55.6**	**-2.6**
TLY				*e*			07 09 48.9	
TLY				pmax	pmax			
	comp=Z,45nm,1.2s,mb5.4							
TLY				MLR	MLR			
	comp=Z,2¡m,15.0s,MS5.2							
ZAK	**Zakamensk**	**57.67**	**49**	⇑*i*P		**P**	**07 08 56.8**	**-3.1**
SCHQ	**Schefferville**	**59.67**	**318**	P		**P**	**07 09 12.5**	**-1.3**
	comp=Z,3.2nm,1.0s,mb4.3,baz=40,slow=14,SNR=5.8							
SCHQ	**Schefferville**	**59.67**	**318**	P		**P**	**07 09 12.5**	**-1.3**
TIXI	**Tiksi**	**60.32**	**20**	*e*P		**P**	**07 09 16.1**	**-2.0**
TIXI				pmax	pmax			
	comp=Z,2.0nm,0.9s,mb4.2							
TIXI				MLR	MLR			
	comp=Z,371nm,16.0s,MS4.6							
SONM	**Songino Array**	**60.53**	**50**	P		**P**	**07 09 16.7**	**-3.1**
	comp=Z,2.6nm,0.9s,mb4.3,baz=286,slow=9.0,SNR=12							
BOD	**Bodaibo**	**60.71**	**38**	*e*P		**P**	**07 09 16.5**	**-4.4**
ULN	**Ulaanbaatar**	**60.92**	**50**	*e*P		**P**	**07 09 18.7**	**-3.7**
	comp=Z,1.2nm,0.6s,mb4.2							
YAK	**Yakutsk**	**65.61**	**29**	*de*P		**P**	**07 09 51.8**	**-1.3**
YAK				pmax	pmax			
	comp=Z,6.0nm,0.6s,mb4.8							
YAK				MLR	MLR			
	comp=Z,100nm,16.0s,MS4.1							
CMAR	**Chiang Mai Arr**	**69.31**	**82**	P		**P**	**07 10 14.1**	**-3.0**
	comp=Z,0.6nm,0.4s,mb3.9,baz=288,slow=8.1,SNR=4.8							
CMAR	**Chiang Mai Arr**	**69.31**	**82**	P		**P**	**07 10 14.1**	**-3.0**
CMAR				pmax	pmax			
	comp=Z,1.0nm,0.4s							
BILL	**Bilibino**	**71.81**	**13**	⇑*e*P		**P**	**07 10 29.5**	**-1.9**
BILL				pmax	pmax			
	comp=Z,8.0nm,1.5s,mb4.4							
CN2	**Changchun**	**74.03**	**47**	*e*P		**P**	**07 10 42.8**	**-2.0**
CN2				AMB	AMB			
	comp=Z,10.0nm,1.0s,mb4.7							
YKA	**Yellowknife Ar**	**74.56**	**340**	P		**P**	**07 10 46.8**	**-0.6**
	comp=Z,0.6nm,0.9s,mb3.5,baz=32,slow=5.4,SNR=9.3							
YKA				LR	LR		07 46 13.4	
	comp=Z,137nm,18.8s,MS4.3,baz=60,slow=38							
YKA	**Yellowknife Ar**	**74.56**	**340**	P		**P**	**07 10 46.8**	**-0.7**
YKA				pmax	pmax			
	comp=Z,1.0nm,0.9s							
YKA				MLR	MLR			
	comp=Z,137nm,18.8s							
NJ2	**Nanjing**	**76.69**	**60**	*e*P		**P**	**07 10 54.5**	**-5.7**
NJ2				AP	pP		07 11 11.3	+6.0
NJ2				XP	sP		07 11 18.0	+11
NJ2				PP	PP		07 13 48.5	-5.8
NJ2				S	S		07 20 33.0	-12
NJ2				LR	LR			
	comp=N,430nm,11.7s							
NJ2				LR	LR			
	comp=E,420nm,19.8s							
NJ2				LR	LR			
	comp=Z,450nm,12.2s,MS5.0							
COLA	**College**	**77.92**	**355**	*e*P		**P**	**07 11 04.2**	**-2.1**
ILAR	**Eielson Array**	**77.96**	**355**	P		**P**	**07 11 07.1**	**+0.6**
	comp=Z,0.4nm,0.8s,baz=358,slow=4.6,SNR=5.5							
ILAR				LR	LR		07 46 07.4	
	comp=Z,60nm,19.0s,baz=69,slow=36							
PET	**Petropavlovsk**	**82.78**	**24**	*e*P		**P**	**07 11 28.6**	**-3.9**
BDFB	**Brasilia**	**83.75**	**245**	LR	LR		07 48 49.2	
	comp=Z,153nm,21.2s,MS4.3,baz=296,slow=36							
PDAR	**Pinedale Array**	**88.77**	**326**	P		**P**	**07 12 02.0**	**-0.2**
	comp=Z,0.5nm,0.8s,mb3.9,baz=27,slow=6.6,SNR=5.0							
NVAR	**Mina Array Bea**	**96.09**	**329**	LR	LR		07 58 00.6	
	comp=Z,108nm,18.1s,MS4.4,baz=275,slow=37							
CPUP	**Villa Florida**	**97.23**	**243**	LR	LR		07 56 07.3	
	comp=Z,122nm,18.2s,MS4.4,baz=125,slow=35							
ASAR	**Alice Springs**	**121.34**	**97**	PKP		PKPdf	07 18 00.4	-4.4
	comp=Z,0.4nm,0.6s,baz=317,slow=1.3,SNR=6.5							

*STR **30** 07:17:38.5±2.3,46.33N×6.73E,h5km±1km,MI1.8,Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
*NEIC **30** 07:17:39.5,46.30N×7.20E,h8km,ML2.0(LDG), ML1.8(STR),ML1.3(ZUR),After ZUR.*
*LDG **30** 07:17:39.6±0.1,46.29N×7.20E,h5km,Md2.0/2,MI2.0/7, Error ellipse: s-maj=3.5km s-min=1.5km az=97.0*
*ZUR **30** 07:17:39.5,46.28N×7.19E,h8km,ML1.3/7*
ISC 30 07:17:38.8±0.3,46.32N±0.02×7.12E±0.03,h8km,n20,
σ1§26/39,4C-2D,Switzerland

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
GRYON	**Gryon**	**0.07**	**186**	⇑*i*Pg		**Pg**	**07 17 41.8**	**+1.0**
	5.7nm,0.1s							
GRYON				*i* Sg		**Sg**	**07 17 43.2**	**+1.1**
	5.7nm,0.1s							
AIGLE	**Aigle**	**0.12**	**282**	⇓*i*Pg		**Pg**	**07 17 43.4**	**+1.8**
	2.4nm,0.5s							
AIGLE				*i* Sg		**Sg**	**07 17 46.0**	**+2.6**
	2.4nm,0.5s							
SENIN	**Lac Senin**	**0.13**	**69**	⇑*i*Pg		**Pg**	**07 17 42.5**	**+0.7**
	3.5nm,0.2s							
SENIN				*i* Sg		**Sg**	**07 17 44.5**	**+0.7**
	3.5nm,0.2s							
SALAN	**Lac Salanfe**	**0.20**	**211**	⇑*i*Pg		**Pg**	**07 17 44.1**	**+1.1**
	3.3nm,0.3s							
SALAN				*e*Sg		**Sg**	**07 17 47.0**	**+1.1**
	3.3nm,0.3s							
EMV	**Vieux Emosson**	**0.30**	**211**	⇑*i*Pg		**Pg**	**07 17 45.7**	**+0.8**
	1.3nm,0.2s							
EMV				*e*Sg		**Sg**	**07 17 50.2**	**+1.2**
	1.3nm,0.2s							
DIX	**Grande Dixence**	**0.31**	**139**	⇓*i*Pg		**Pg**	**07 17 45.3**	**+0.2**
	1.5nm,0.4s							
DIX				*i* Sg		**Sg**	**07 17 48.8**	**-0.6**
	1.5nm,0.4s							
LKBD	**Leukerbad**	**0.36**	**78**	*e*Pg		**Pg**	**07 17 46.1**	**+0.1**
	4.1nm,0.5s							
LKBD				*e*Sg		**Sg**	**07 17 50.8**	**-0.1**
	4.1nm,0.5s							
CABF	**La Chapelle**	**0.77**	**293**	*e*Pg		**Pg**	**07 17 55.6**	**+1.4**
CABF				*e*Pn		**Pn**	**07 17 56.6**	**+0.9**
CABF				*e*Sg		**Sg**	**07 18 06.3**	**+1.7**
	3.8nm,0.2s							
LPL	**La Plagne**	**0.84**	**199**	*e*Pg		**Pg**	**07 17 55.3**	**-0.4**
LPL				*e*Sg		**Sg**	**07 18 06.7**	**-0.3**
	1.8nm,0.2s							
LPG	**La Plagne**	**0.86**	**198**	*e*Pg		**Pg**	**07 17 55.8**	**-0.2**
LPG				*e*Sg		**Sg**	**07 18 07.3**	**-0.2**
	1.8nm,0.3s							
LOMF	**Lomont**	**1.05**	**349**	Pg		**Pg**	**07 17 57.6**	**-2.2**
LOMF	**Lomont**	**1.05**	**349**	Pg		**Sg**	**07 18 14.6**	**+0.7**
BBS	**Basel-Blauen**	**1.18**	**13**	Pg		**Pg**	**07 18 03.0**	**+0.7**
BBS				Sg		**Sg**	**07 18 19.5**	**+1.4**
HINF	**Hinteralfeld**	**1.51**	**353**	*e*Pg		**Pg**	**07 18 08.3**	**-0.7**
HINF				*e*Sn		**Sn**	**07 18 25.8**	**-0.4**
HINF				*e*Sg		**Sg**	**07 18 28.5**	**-0.6**
	5.4nm,0.3s							
MBDF	**Montbardon**	**1.61**	**189**	*e*Sg		**Sg**	**07 18 30.0**	**-2.4**
	1.6nm,0.2s							
ORIF	**Oris-en-Rattie**	**1.65**	**212**	*e*Pg		**Pg**	**07 18 10.2**	**-1.5**
ORIF				*e*Sg		**Sg**	**07 18 32.4**	**-1.3**
	1.2nm,0.3s							
HAU	**Haudompre**	**1.77**	**343**	*e*Pn		**Pn**	**07 18 10.6**	**+0.7**
HAU				*e*Sg		**Sg**	**07 18 34.9**	**-2.8**
	2.7nm,0.2s							
CDF	**Champ du Feu**	**2.10**	**3**	*e*Pg		**Pg**	**07 18 19.5**	**-1.2**
CDF				*e*Sg		**Sg**	**07 18 45.9**	**-2.8**
	1.0nm,0.3s							
VIVF	**Saint-Julien-l**	**2.26**	**231**	*e*Sn		**Sn**	**07 18 43.5**	**-1.6**
VIVF				*e*Sg		**Sg**	**07 18 50.1**	**-3.8**
	1.4nm,0.2s							
SMF	**Signal de Mont**	**2.29**	**279**	*e*Pg		**Pg**	**07 18 23.5**	**-1.0**
SMF				*e*Sg		**Sg**	**07 18 52.4**	**-2.6**
	1.2nm,0.2s							

*NEIC **30** 07:20:15.5,46.30N×7.20E,h9km,ML3.1(LDG),*

ML2.8(STR),ML2.7(ZUR),ML2.7(GEN),After ZUR.
*ZUR **30** 07:20:15.5,46.28N×7.19E,h9km,ML2.7/7*
*LDG **30** 07:20:16.3±0.1,46.28N×7.19E,h5km,Md2.9/2,MI3.1/38, Error ellipse: s-maj=1.7km s-min=1.2km az=122.0*
*STR **30** 07:20:18.0±0.6,46.37N×7.06E,h10km±1km,MI2.8,Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
ISC 30 07:20:14.7±0.2,46.312N±0.009×7.04E±0.02,h9km,n94,
σ1§32/193,11C-10D,Switzerland

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
AIGLE	**Aigle**	**0.06**	**298**	⇓*i*Pg		**Pg**	**07 20 19.5**	**+2.8**
	70nm,0.6s							
AIGLE				*e*Sg		**Sg**	**07 20 22.1**	**+4.0**
	70nm,0.6s							
GRYON	**Gryon**	**0.08**	**139**	⇑*i*Pg		**Pg**	**07 20 17.9**	**+0.9**
	204nm,0.3s							
GRYON				*i* Sg		**Sg**	**07 20 19.3**	**+0.8**
	204nm,0.3s							
SALAN	**Lac Salanfe**	**0.17**	**194**	⇑*i*Pg		**Pg**	**07 20 20.2**	**+1.7**
	72nm,0.3s							
SALAN				*e*Sg		**Sg**	**07 20 23.1**	**+2.0**
	72nm,0.3s							
SENIN	**Lac Senin**	**0.19**	**74**	⇑*i*Pg		**Pg**	**07 20 18.6**	**-0.2**
	135nm,0.2s							
SENIN				*i* Sg		**Sg**	**07 20 20.6**	**-1.0**
	135nm,0.2s							
EMV	**Vieux Emosson**	**0.27**	**201**	⇑*i*Pg		**Pg**	**07 20 21.8**	**+1.5**
	41nm,0.4s							
EMV				*e*Sg		**Sg**	**07 20 25.9**	**+1.9**
	41nm,0.4s							
DIX	**Grande Dixence**	**0.35**	**131**	⇓*i*Pg		**Pg**	**07 20 21.4**	**-0.5**
	22nm,0.3s							
DIX				*i* Sg		**Sg**	**07 20 24.9**	**-1.7**
	22nm,0.3s							
LKBD	**Leukerbad**	**0.42**	**79**	⇑*i*Pg		**Pg**	**07 20 22.1**	**-1.1**
	86nm,0.4s							
LKBD				*e*Sg		**Sg**	**07 20 26.6**	**-2.2**
	86nm,0.4s							
TORNY	**Torny**	**0.47**	**354**	⇓*i*Pg		**Pg**	**07 20 26.1**	**+2.0**
	33nm,0.5s							
WIMIS	**Wimmis**	**0.54**	**49**	⇑*i*Pg		**Pg**	**07 20 25.2**	**-0.4**
	10nm,0.4s							
GIMEL	**Gimel**	**0.58**	**293**	⇓*i*Pg		**Pg**	**07 20 29.7**	**+3.4**
	7.9nm,0.4s							
MMK	**Mattmark**	**0.70**	**112**	⇓*i*Pg		**Pg**	**07 20 26.8**	**-1.9**
	3.4nm,0.4s							
CABF	**La Chapelle**	**0.72**	**295**	*e*Pg		**Pg**	**07 20 31.8**	**+2.6**
CABF				*e*Sg		**Sg**	**07 20 42.7**	**+3.9**
	93nm,0.3s							
CABF				*e*Sn		**Sn**	**07 20 45.2**	**+3.2**
BRANT	**Les Verrieres**	**0.74**	**328**	⇓*i*Pg		**Pg**	**07 20 31.8**	**+2.3**
	11nm,0.3s							
BRANT				*i* PmP			07 20 34.0	
	11nm,0.3s							
MCGN	**Macugnaga**	**0.75**	**118**	*e*Pg		**Pg**	**07 20 28.0**	**-1.8**
MCGN				*e*Sg		**Sg**	**07 20 33.5**	**-6.4**
LPL	**La Plagne**	**0.82**	**195**	*e*Pg		**Pg**	**07 20 31.7**	**+0.5**
LPL				*e*Sg		**Sg**	**07 20 42.8**	**+0.5**
	22nm,0.3s							
LPG	**La Plagne**	**0.84**	**194**	*e*Pg		**Pg**	**07 20 32.0**	**+0.5**
LPG				*e*Sg		**Sg**	**07 20 43.4**	**+0.7**
	44nm,0.4s							
LSD	**Ceresole Reale**	**0.86**	**174**	P		**Pb**	**07 20 31.6**	**+0.3**
LSD				S		**Sb**	**07 20 42.7**	**0.0**
HASLI	**Hasliberg**	**0.89**	**60**	*e*Pg		**Pg**	**07 20 31.4**	**-1.1**
	11nm,0.4s							
ORO	**Oropa**	**0.95**	**136**	*e*Pg		**Pg**	**07 20 32.1**	**-1.6**
ORO				*e*Sg		**Sg**	**07 20 41.1**	**-5.4**
APL	**Alpnach**	**1.05**	**52**	*e*Pg		**Pg**	**07 20 34.8**	**-0.9**
	82nm,0.3s							
LOMF	**Lomont**	**1.05**	**352**	Pg		**Pg**	**07 20 37.5**	**+1.8**
LOMF				Sg		**Sg**	**07 20 51.4**	**+1.7**
BOURR	**Bourrignon**	**1.09**	**7**	*e*Pg		**Pg**	**07 20 37.1**	**+0.6**
	13nm,0.7s							
BNALP	**Bannalp**	**1.11**	**59**	*e*Pg		**Pg**	**07 20 35.3**	**-1.6**
	6.3nm,0.3s							
BALST	**Balsthal**	**1.12**	**24**	*e*Pg		**Pg**	**07 20 36.9**	**-0.2**
	12nm,0.4s							
FUSIO	**Fusio**	**1.14**	**82**	⇓*i*Pg		**Pg**	**07 20 35.3**	**-2.1**
	5.3nm,0.6s							
RSP	**Reno Superiore**	**1.17**	**172**	P		**Pb**	**07 20 37.2**	**+0.5**
RSP				S		**Sb**	**07 20 51.7**	**-0.1**
BBS	**Basel-Blauen**	**1.20**	**16**	Pg		**Pg**	**07 20 39.0**	**+0.3**
BBS				Sg		**Sg**	**07 20 55.5**	**+0.8**
FENE	**Fenestrelle**	**1.28**	**179**	P		**Pb**	**07 20 39.5**	**+0.9**
FENE				S		**Sb**	**07 20 54.9**	**-0.1**
MUO	**Muotathal**	**1.28**	**59**	*e*Pg		**Pg**	**07 20 39.0**	**-1.4**
	19nm,0.6s							
BNI	**Bardonecchia**	**1.28**	**191**	*e*Pg		**Pg**	**07 20 39.5**	**-0.9**
VAI	**Varese**	**1.29**	**110**	*e*Pg		**Pg**	**07 20 37.8**	**-2.7**
VAI				*e*Sg		**Sg**	**07 20 50.9**	**-6.7**
GRN	**Grenoble**	**1.40**	**221**	Pn		**Pn**	**07 20 42.2**	**+1.7**
GRN				Pg		**Pg**	**07 20 44.5**	**+1.8**
RRL	**Cesana Torines**	**1.40**	**187**	P		**Pn**	**07 20 42.0**	**+1.4**
RRL				S		**Sb**	**07 20 59.0**	**+0.5**
MUGIO	**Muggio**	**1.45**	**105**	*e*Pg		**Pg**	**07 20 40.8**	**-2.9**
	2.1nm,0.4s							
LLS	**Linth-Limmern**	**1.46**	**68**	⇑*i*Pg		**Pg**	**07 20 41.6**	**-2.4**
	3.0nm,0.7s							
BHB	**Bricherasio**	**1.48**	**174**	P		**Pn**	**07 20 42.1**	**+0.5**
BHB				S		**Sb**	**07 20 59.4**	**-1.3**
ZUR	**Zurich**	**1.50**	**45**	*e*Pn		**Pn**	**07 20 43.3**	**+1.4**
	12nm,0.5s							
HINF	**Hinteralfeld**	**1.51**	**355**	*e*Pg		**Pg**	**07 20 44.6**	**-0.3**
HINF				*e*Sn		**Sn**	**07 21 01.7**	**-0.3**
HINF				*e*Sg		**Sg**	**07 21 04.7**	**-0.4**
	84nm,0.2s							
MOF	**Molkenrain**	**1.54**	**2**	Pn		**Pn**	**07 20 45.5**	**+2.9**
MOF				Sg		**Sg**	**07 21 06.4**	**+0.3**
MBDF	**Montbardon**	**1.60**	**187**	*e*Pn		**Pn**	**07 20 44.4**	**+1.1**
MBDF				*e*Pg		**Pg**	**07 20 45.3**	**-1.3**
MBDF				*e*Sg		**Sg**	**07 21 06.1**	**-1.8**
	31nm,0.5s							
ORIF	**Oris-en-Rattie**	**1.61**	**211**	*e*Pg		**Pg**	**07 20 46.5**	**-0.4**
ORIF				*e*Sg		**Sg**	**07 21 08.4**	**-0.1**
	29nm,0.4s							
WILA	**Wila**	**1.69**	**49**	⇓*i*Pn		**Pn**	**07 20 46.9**	**+2.2**
	29nm,0.4s							
WILA				*i* Pn		**Pn**	**07 20 47.5**	**+2.8**
	29nm,0.4s							
FELD	**Feldberg**	**1.70**	**23**	Pn		**Pn**	**07 20 47.3**	**+2.5**
FELD				Sg		**Sg**	**07 21 10.3**	**-1.0**
HAU	**Haudompre**	**1.76**	**345**	*e*Pn		**Pn**	**07 20 46.9**	**+1.3**
HAU				*e*Pg		**Pg**	**07 20 50.3**	**+0.5**
HAU				*e*Sg		**Sg**	**07 21 08.5**	**-4.8**
	76nm,0.3s							
SLE	**Schleitheim**	**1.76**	**34**	⇑*i*Pn		**Pn**	**07 20 45.0**	**-0.7**
	5.9nm,0.3s							
SLE				*e*Pn		**Pn**	**07 20 48.3**	**+2.6**
	5.9nm,0.3s							
PLONS	**Plons**	**1.77**	**65**	⇓*i*Pn		**Pn**	**07 20 47.5**	**+1.6**
	4.6nm,0.4s							
DOI	**San Damiano**	**1.81**	**175**	*e*Pg		**Pg**	**07 20 48.9**	**-2.1**
DOI				*e*Sg		**Sg**	**07 21 09.3**	**-5.9**
ECH	**Echery**	**1.91**	**2**	Pn		**Pn**	**07 20 49.0**	**+1.2**
ECH				Sg		**Sg**	**07 21 17.4**	**-0.8**
PCP	**Pian Castagno**	**2.06**	**148**	P		**Pn**	**07 20 50.8**	**+0.8**
STV2	**Anna di Valdie**	**2.08**	**174**	P		**Pn**	**07 20 51.0**	**+0.8**
STV	**Sta Anna Valdi**	**2.08**	**174**	P		**Pn**	**07 20 50.9**	**+0.7**
ROB	**Roburent**	**2.10**	**163**	P		**Pn**	**07 20 51.2**	**+0.6**
ENR	**Entracque**	**2.10**	**172**	P		**Pn**	**07 20 51.4**	**+0.8**
CDF	**Champ du Feu**	**2.11**	**4**	*e*Pn		**Pn**	**07 20 50.7**	**0.0**
CDF				*e*Pg		**Pg**	**07 20 55.8**	**-1.0**
CDF				*e*Sg		**Sg**	**07 21 22.3**	**-2.6**
	32nm,0.4s							
DAVA	**Damuels**	**2.18**	**62**	⇑*i*PN		**Pn**	**07 20 53.7**	**+1.9**
DAVA				*i* SN		**Sn**	**07 21 24.1**	**+4.9**
VIVF	**Saint-Julien-l**	**2.21**	**230**	*e*Pn		**Pn**	**07 20 53.6**	**+1.5**
VIVF				*e*Pg		**Pg**	**07 20 58.8**	**0.0**
VIVF				*e*Sg		**Sg**	**07 21 26.5**	**-1.7**
	40nm,0.3s							
SMF	**Signal de Mont**	**2.23**	**280**	*e*Pn		**Pn**	**07 20 54.4**	**+2.0**
SMF				*e*Pg		**Pg**	**07 20 59.7**	**+0.4**
SMF				*e*Sn		**Sn**	**07 21 21.2**	**+0.8**
SMF				*e*Sg		**Sg**	**07 21 29.0**	**-0.1**
	32nm,0.3s							
FIN	**Finale Ligure**	**2.26**	**158**	*e*Pg		**Pg**	**07 20 53.8**	**-6.1**
MONE	**Monesi**	**2.29**	**167**	P		**Pn**	**07 20 54.0**	**+0.7**
BRMO	**Bormio**	**2.32**	**85**	*e*Pg		**Pg**	**07 20 55.8**	**-5.1**
RORO		**2.32**	**161**	P		**Pn**	**07 20 53.4**	**-0.3**
SFTF	**Sexfontaines**	**2.33**	**325**	*e*Pg		**Pg**	**07 21 01.1**	**-0.2**
SFTF				*e*Sn		**Sn**	**07 21 22.9**	**0.0**
SFTF				*e*Sg		**Sg**	**07 21 31.2**	**-1.2**
	38nm,0.4s							
LOR	**Lormes**	**2.38**	**295**	*e*Pn		**Pn**	**07 20 56.3**	**+1.7**
	baz=115							
LOR				*e*Pg		**Pg**	**07 21 02.3**	**0.0**
LOR				*e*Sn		**Sn**	**07 21 24.6**	**+0.4**
LOR				*e*Sg		**Sg**	**07 21 33.8**	**-0.3**
	13nm,0.2s,baz=119							
SBF	**Sospel**	**2.46**	**173**	*e*Pn		**Pn**	**07 20 57.4**	**+1.6**
SBF				*e*Pg		**Pg**	**07 21 03.8**	**-0.2**
SBF				*e*Sg		**Sg**	**07 21 32.7**	**-4.1**
	34nm,0.5s							
IMI	**Imperia**	**2.48**	**166**	P		**Pn**	**07 20 55.8**	**-0.2**
IMI				*e*Pn		**Pn**	**07 20 58.9**	**+2.9**
NEGI	**Negi**	**2.51**	**169**	P		**Pn**	**07 20 56.2**	**-0.2**
SSF	**Saint Saulge**	**2.54**	**288**	*e*Pn		**Pn**	**07 20 58.5**	**+1.6**
SSF				*e*Pg		**Pg**	**07 21 05.9**	**+0.4**
SSF				*e*Sn		**Sn**	**07 21 28.5**	**+0.2**
SSF				*e*Sg		**Sg**	**07 21 38.7**	**-0.7**
	12nm,0.4s							
RFYF	**Reffroy**	**2.55**	**336**	*e*Pg		**Pg**	**07 21 04.8**	**-0.8**
RFYF				*e*Sn		**Sn**	**07 21 27.0**	**-1.4**
RFYF				*e*Sg		**Sg**	**07 21 38.9**	**-0.7**
	37nm,0.3s							
SMRF	**Simiane la Rot**	**2.55**	**204**	*e*Pn		**Pn**	**07 20 57.6**	**+0.6**
SMRF				*e*Pg		**Pg**	**07 21 04.6**	**-1.1**
SMRF				*e*Sg		**Sg**	**07 21 37.2**	**-2.6**
	4.2nm,0.4s							
MEZF	**Maizieres J'vi**	**2.57**	**329**	*e*Pg		**Pg**	**07 21 05.2**	**-0.9**
	baz=148							
MEZF				*e*Sn		**Sn**	**07 21 28.2**	**-0.8**
MEZF				*e*Sg		**Sg**	**07 21 40.0**	**-0.4**
	24nm,0.4s							
FRF	**La Foret Royal**	**2.77**	**186**	*e*Pn		**Pn**	**07 21 00.8**	**+0.7**
FRF				*e*Pg		**Pg**	**07 21 06.8**	**-3.1**
FRF				*e*Sg		**Sg**	**07 21 42.8**	**-4.0**
	16nm,0.5s							
BGF	**Bois d'Agland**	**2.91**	**276**	*e*Pn		**Pn**	**07 21 03.8**	**+1.7**
BGF				*e*Pg		**Pg**	**07 21 11.7**	**-1.1**
BGF				*e*Sn		**Sn**	**07 21 37.4**	**-0.1**
BGF				*e*Sg		**Sg**	**07 21 50.4**	**-1.1**
	32nm,0.4s							
MOTA	**Moosalm**	**2.98**	**68**	⇑*i*PN		**Pn**	**07 21 04.0**	**+0.9**
MOTA				*i* SN		**Sn**	**07 21 43.6**	**+4.3**
LMR	**La Mourre**	**3.00**	**187**	*e*Pn		**Pn**	**07 21 03.1**	**-0.3**
LMR				*e*Pg		**Pg**	**07 21 11.5**	**-3.1**
LMR				*e*Sg		**Sg**	**07 21 49.9**	**-4.8**
	7.8nm,0.6s							
SQTA	**Sankt Quirin**	**3.01**	**71**	⇓*i*PN		**Pn**	**07 21 04.9**	**+1.4**
SQTA				*i* SN		**Sn**	**07 21 43.1**	**+3.0**
HYF	**Humbligny**	**3.17**	**289**	*e*Pn		**Pn**	**07 21 07.9**	**+2.1**
HYF				*e*Pg		**Pg**	**07 21 17.1**	**-0.9**
HYF				*e*Sn		**Sn**	**07 21 43.5**	**-0.6**
HYF				*e*Sg		**Sg**	**07 21 58.3**	**-1.9**
LASF	**Ste Croix**	**3.17**	**226**	*e*Pn		**Pn**	**07 21 06.0**	**+0.2**
LASF				*e*Pg		**Pg**	**07 21 16.0**	**-2.0**
LASF				*e*Sg		**Sg**	**07 21 55.7**	**-4.6**
	16nm,0.4s							
WTTA	**Wattenberg**	**3.30**	**72**	⇑*i*PN		**Pn**	**07 21 08.5**	**+0.8**
WTTA				*i* SN		**Sn**	**07 21 50.2**	**+2.7**
TCF	**Toulx Ste Croi**	**3.34**	**271**	*e*Pn		**Pn**	**07 21 09.7**	**+1.4**
TCF				*e*Pg		**Pg**	**07 21 20.5**	**-1.0**
TCF				*e*Sn		**Sn**	**07 21 48.1**	**-0.5**
TCF				*e*Sg		**Sg**	**07 22 04.0**	**-2.1**
	14nm,0.6s							
CAF	**Calviac**	**3.75**	**250**	*e*Pn		**Pn**	**07 21 14.6**	**+0.5**
CAF				*e*Pg		**Pg**	**07 21 27.4**	**-2.2**
CAF				*e*Sg		**Sg**	**07 22 16.6**	**-3.1**
	24nm,0.6s							
RJF	**Les Rejaudoux**	**3.99**	**257**	*e*Pn		**Pn**	**07 21 17.6**	**+0.2**
RJF				*e*Sg		**Sg**	**07 22 22.3**	**-5.2**
	7.3nm,0.4s							
PGF	**Pioggiola**	**4.02**	**159**	*e*Pn		**Pn**	**07 21 18.1**	**+0.2**
PGF				*e*Sn		**Sn**	**07 22

GERES	**GERESS Array B**	45.53	50	P	P	07 36 33.2	-0.1	
	0.5nm,0.7s,mb3.6,baz=243,slow=6.0,SNR=3.7							
PDAR	**Pinedale Array**	54.34	303	P	P	07 37 40.1	-0.7	
	1.3nm,0.7s,mb4.0,baz=80,slow=7.0,SNR=11							
YKA	**Yellowknife Ar**	55.54	327	P	P	07 37 48.6	-0.7	
	0.4nm,0.9s,mb3.5,baz=87,slow=7.4,SNR=9.3							
YKA				PcP	PcP	07 38 47.5	-1.7	
	0.3nm,0.7s,baz=91,slow=4.8,SNR=8.9							
YKA				LR	LR	08 01 42.5		
	comp=Z,49nm,18.8s,MS3.6,baz=85,slow=36							
YKA	**Yellowknife Ar**	55.54	327	P	P	07 37 48.6	-0.7	
YKA				PcP	PcP	07 38 47.5	-1.7	
YKA				LR	LR	08 01 42.5		
BRTR	**Keskin Array B**	60.86	59	P	P	07 38 26.1	-0.9	
	1.7nm,0.8s,mb4.2,baz=270,slow=6.2,SNR=7.6							
NVAR	**Mina Array Bea**	61.85	300	P	P	07 38 34.2	+0.5	
	0.3nm,0.5s,mb3.6,baz=72,slow=5.7,SNR=3.6							
INK	**Inuvik**	62.68	335	*eP*	P	07 38 38.7	0.0	
	3.8nm,0.9s,mb4.5							
ILAR	**Eielson Array**	68.91	334	P	P	07 39 19.4	+0.7	
	1.6nm,1.0s,mb3.9,baz=59,slow=4.1,SNR=10							
BVAR	**Borovoye Array**	78.25	35	P	P	07 40 14.2	+1.0	
	1.8nm,0.9s,mb4.0,baz=225,slow=8.2,SNR=5.5							
KMBO	**Kilima Mbogo**	81.24	96	LR	LR	08 14 44.5		
	comp=Z,75nm,18.6s,MS4.1,baz=285,slow=34							
KURK	**Kurchatov**	83.68	33	*eP*	P	07 40 42.1	+0.2	
MKAR	**Makanchi Array**	88.13	35	P	P	07 41 04.0	0.0	
	0.8nm,0.9s,mb3.9,baz=326,slow=4.4,SNR=4.9							
MKAR	**Makanchi Array**	88.13	35	P	P	07 41 04.0	0.0	

*BJI **30** 07:39:26.5, 32.72N×93.86E, h31km, mb4.2, ML3.3, Ms4.1, Msz3.3*
*NEIC **30** 07:39:27.4±4.7, 32.83N×93.96E, h32km±38km, mb4.0/2, Error ellipse: s-maj=19.7km s-min=13.0km az=74.0*
*IDC **30** 07:39:27.8±6.3, 32.71N×93.88E, h36km±53km, mb3.3/6, mb1 3.5/9, mb1mx3.4/20, ML3.7/2, MS3.4/5, Ms1 3.5/5, ms1mx3.1/24, Error ellipse: s-maj=44.2km s-min=21.6km az=60.0*

ISC 30 07:39:24.0±0.4, 32.76N±0.04×93.84E±0.07, h31km, n27, σ1§19/27, mb3.6/7, MS3.4/5, 1C, Xizang

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
LSA	**Lhasa**	3.82	218	*eP*		Pb	07 40 27.4	-3.3
LSA				*eSn*		Sb	07 41 17.8	+1.0
SHL	**Shillong**	7.37	194	⇑*iP*		Pn	07 41 12.0	-0.3
SHL				*i* S		Sn	07 42 36.0	+0.3
GTA	**Gaotai**	8.21	34	*eP*		P	07 41 24.5	+0.4
GTA				AP			07 41 35.8	
GTA				XP			07 41 41.0	
GTA				S		Sn	07 42 54.5	-2.3
GTA				AMB		AMB		
	comp=Z,7.0nm,0.7s							
GTA				LR		LR		
	comp=N,171nm,11.1s							
GTA				LR		LR		
	comp=E,247nm,8.0s							
GTA				LR		LR		
	comp=Z,219nm,13.0s							
GUN	**Gumba**	8.40	237	*eP*		P	07 41 27.1	+0.3
	comp=Z,22nm,0.4s							
KKN	**Kakani**	8.90	238	*eP*		P	07 41 33.5	-0.2
	comp=Z,19nm,0.4s							
PKI	**Pulchoki**	8.94	237	*eP*		P	07 41 33.7	-0.5
	comp=Z,43nm,0.4s							
DMN	**Daman**	9.13	238	*eP*		P	07 41 36.6	-0.2
	comp=Z,18nm,0.5s							
GKN	**Gorkha**	9.25	242	*eP*		P	07 41 37.7	-0.8
	comp=Z,8.5nm,0.3s							
KOLN	**Koldanda**	10.15	243	*eP*		P	07 41 49.7	-1.2
	comp=Z,11nm,0.6s							
GYA	**Guiyang**	12.80	116	P		P	07 42 24.5	-2.2
GYA				AMB		AMB		
	comp=Z,10.0nm,0.8s							
CMAR	**Chiang Mai Arr**	14.96	161	Pn		P	07 42 55.9	+0.7
	baz=334,slow=13,SNR=6.2							
MKAR	**Makanchi Array**	16.57	331	Pn		P	07 43 14.8	-0.9
	comp=Z,0.2nm,0.3s,baz=147,slow=13,SNR=10							
SONM	**Songino Array**	17.81	29	P		P	07 43 32.7	+1.5
	comp=Z,0.1nm,0.3s,baz=213,slow=12,SNR=6.9							
AAK	**Ala-Archa**	18.17	308	*eP*		P	07 43 38.7	+2.9
	comp=Z,12nm,1.4s							
KURK	**Kurchatov**	21.16	332	*eP*		P	07 44 07.7	-1.1
HIA	**Hailar**	25.39	42	P		P	07 44 50.5	+0.3
	comp=Z,9.4nm,1.4s,mb4.1							
BVAR	**Borovoye Array**	26.35	327	P		P	07 45 02.7	+3.8
	comp=Z,0.9nm,0.8s,mb3.4,baz=144,slow=12,SNR=3.3							
BVAR				LR		LR	07 56 29.7	
	comp=Z,73nm,18.0s,MS3.3,baz=100,slow=39							
THR	**Tehran**	35.21	287	LR		LR	08 03 27.6	
	comp=Z,39nm,19.8s,MS3.2,baz=292,slow=41							
ASF	**Jabal al Asfar**	47.53	286	LR		LR	08 10 21.5	
	comp=Z,53nm,20.1s,MS3.5,baz=84,slow=39							
EIL	**Elat**	49.90	283	LR		LR	08 13 17.2	
	comp=Z,58nm,19.6s,MS3.6,baz=311,slow=41							
FINES	**FINESS Array B**	51.28	325	P		P	07 48 27.4	+0.6
	comp=Z,0.5nm,0.8s,mb3.5,baz=124,slow=6.9,SNR=4.0							
FINES	**FINESS Array B**	51.28	325	P		P	07 48 27.4	+0.6
NB2	**NORSAR Subarra**	58.46	326	P		P	07 49 18.1	-1.0
	comp=Z,0.6nm,0.7s,mb3.7,baz=79,slow=7.0							
NOA	**NORSAR Array B**	58.46	326	P		P	07 49 18.5	-0.6
	comp=Z,0.3nm,0.7s,mb3.4,baz=85,slow=6.2,SNR=3.4							
NOA				LR		LR	08 17 59.1	
	comp=Z,37nm,18.2s,MS3.5,baz=70,slow=40							
ASAR	**Alice Springs**	67.89	140	P		P	07 50 22.4	+0.5
	comp=Z,0.8nm,0.7s,mb3.9,baz=326,slow=6.8,SNR=7.6							
ILAR	**Eielson Array**	71.94	23	P		P	07 50 47.2	+1.3
	comp=Z,0.5nm,0.7s,mb3.5,baz=294,slow=5.5,SNR=8.1							
YKA	**Yellowknife Ar**	82.36	13	P		P	07 51 46.1	+2.4
	comp=Z,0.2nm,0.8s,mb3.1,baz=337,slow=5.3,SNR=6.7							

PRE 30 07:47:42.8±2.1, 26.47S×27.42E, h2km, ML3.5, South Africa

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
KSR	**Koster**	0.76	322	*eP*		Pg	07 47 55.7	-2.3
KSR				*eS*		Sg	07 48 07.1	-1.1
KSR				*e*			07 48 12.9	
	comp=Z,214nm,0.1s							
SLR	**Silverton**	1.07	47	*eP*		Pb	07 48 01.1	-2.5
SLR				*eS*		Sb	07 48 15.4	-2.5
SLR				*e*			07 48 20.3	
	comp=Z,444nm,0.4s							
SEK	**Senekal**	1.86	174	*eP*		Pn	07 48 15.6	-0.4
SEK				*eS*		Sn	07 48 38.9	-1.4
SEK				*e*			07 48 40.4	
	comp=Z,433nm,0.3s							
NWL	**Newcastle**	2.58	119	*eP*		Pn	07 48 24.6	-1.7
NWL				*eS*		Sn	07 48 56.1	-2.6
NWL				*e*			07 49 09.0	
	comp=Z,494nm,0.5s							
MSNA	**Messina**	4.74	31	*eS*		Sn	07 49 48.1	-5.3
MSNA				*e*			07 50 08.9	
	comp=Z,40nm,0.6s							
CVNA	**Calvinia**	8.36	232	*eP*		P	07 49 36.9	-11
CVNA				*eS*		Sn	07 51 38.6	+15
CVNA				*e*			07 52 04.5	
	comp=Z,34nm,0.5s							

THR 30 07:48:53.1±0.5, 36.46N×51.38E, ML3.5, Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
THKV	**Tehran--Karaj**	0.68	217	*ePG*		Pg	07 49 05.2	-1.5
THKV				*eSG*		Sg	07 49 14.1	-1.7
THKV				AMP			07 49 17.4	
	comp=N,2μm,0.6s							
DAMV	**Damavand**	0.96	150	*ePG*		Pg	07 49 10.0	-2.2
DAMV				*eSG*		Sg	07 49 23.2	-1.8
SNGE	**Sanandaj**	3.56	249	*ePN*		Pn	07 49 47.9	-2.8
NASN	**Na'in**	3.84	162	*ePN*		Pn	07 49 51.7	-3.0

CASC 30 07:57:37.3±2.3, 8.31N×82.87W, h6km±10km, MD3.6, 2C-2D, Panama-Costa Rica border region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
ACR	**Cerro Adams**	0.45	320	⇑*eP*		Pg	07 57 46.3	0.0
ACR				*eS*		Sg	07 57 53.1	+0.7
BRU2	**Volcan**	0.52	20	⇓*eP*		Pg	07 57 48.2	+0.5
BRU2				*eS*		Sg	07 57 56.8	+2.3
BUS	**Buena Vista**	1.52	325	*eP*		Pn	07 58 03.9	-1.3
BUS				*eS*		Sb	07 58 22.1	-2.8
LCR2	**La Lucha 2**	1.81	322	⇑*eP*		Pn	07 58 08.0	-1.4
LCR2				*eS*		Sn	07 58 34.5	+1.6
LAJ	**Bijagual**	1.98	322	*eP*		Pn	07 58 13.2	+1.4
LAJ				*eS*		Sn	07 58 44.6	+7.4
SJS	**Escuela Geolog**	2.00	324	*eP*		Pn	07 58 11.3	-0.8
SJS				*eS*		Sn	07 58 38.0	+0.4
PRS1	**Puriscal**	2.19	320	*eP*		Pn	07 58 13.3	-1.5
PRS1				*eS*		Sn	07 58 42.7	+0.2
VPS2	**Volcan Poas 2**	2.30	324	*eP*		Pn	07 58 17.8	+1.4
CGA2	**Cerro Gallo 2**	2.31	317	⇓*eP*		Pn	07 58 17.8	+1.2
JCR	**Jicaral**	2.69	305	*eP*		Pn	07 58 21.1	-0.9

*IDC **30** 08:06:02.5±9.9, 6.62S×129.75E, h91km±96km, mb3.8/2, mb1 4.0/5, mb1mx3.6/14, ML3.9/3, Error ellipse: s-maj=100.0km s-min=32.4km az=53.0*
*NEIC **30** 08:06:07.0±3.2, 6.81S×129.52E, h133km±32km, mb4.3/1, Error ellipse: s-maj=43.2km s-min=23.1km az=61.0*

ISC 30 08:06:11.2±1.8, 7.15S±0.09×129.6E±0.1, h200km±19km, n11, σ1§24/18, mb3.8/2, 2C, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
KAKA	**Kakadu**	6.18	153	⇑*iP*		P	08 07 41.8	+0.2
	17nm,0.2s							
KAKA				*i* S		S	08 08 51.0	-0.9
FITZ	**Fitzroy Crossi**	11.54	199	*eP*		P	08 08 51.6	+0.5
	9.9nm,1.1s							
FITZ				*i* S		S	08 10 57.7	+1.0
FITZ	**Fitzroy Crossi**	11.54	199	P		P	08 08 51.0	0.0
	0.4nm,0.3s,baz=13,slow=12,SNR=31							
FITZ				S		S	08 10 54.1	-2.5
	0.6nm,0.3s,baz=15,slow=12,SNR=3.8							
WRAB	**Tennant Creek**	13.53	160	*ePn*		P	08 09 15.7	-0.7
	9.2nm,0.4s							
WRAB				*eP*			08 09 22.2	
WRAB				*eSn*		S	08 11 40.9	-1.5
WRA	**Warramunga Arr**	13.54	160	P		P	08 09 16.5	0.0
	0.8nm,0.3s,baz=341,slow=10,SNR=18							
WRA				S		S	08 11 41.6	-0.9
	1.2nm,0.3s,baz=338,slow=23,SNR=8.7							
WB2	**Warramunga Arr**	13.54	160	*eP*		P	08 09 17.9	+1.4
WB2				*eS*		S	08 11 43.6	+1.0
AS12	**Alice Springs**	16.94	166	⇑*iP*		P	08 10 01.3	+3.2
	18nm,1.4s							
AS12				*e*			08 13 05.3	
ASAR	**Alice Springs**	16.94	166	P		P	08 10 00.9	+2.8
	0.9nm,0.3s,baz=341,slow=9.0,SNR=58							
ASAR				S		S	08 13 05.0	+6.2
	0.2nm,0.3s,baz=356,slow=27,SNR=4.3							
STKA	**Stephens Creek**	27.04	157	P		P	08 11 39.5	+2.4
	1.0nm,0.4s,mb3.8,baz=336,slow=12,SNR=3.6							
MKAR	**Makanchi Array**	68.11	327	P		P	08 16 50.6	-0.9
	0.8nm,0.3s,mb3.8,baz=118,slow=7.9,SNR=21							
KURK	**Kurchatov**	72.42	329	P		P	08 17 16.4	-1.0

*BJI **30** 08:24:26.1, 23.90N×118.88E, h27km, ML4.8, Ms3.8, Msz3.6*
*NEIC **30** 08:24:28.7±4.3, 24.06N×118.86E, h12km±29km, Error ellipse: s-maj=13.2km s-min=9.5km az=154.0*
*IDC **30** 08:24:32.7±5.5, 24.11N×118.92E, h41km±52km, mb3.5/5, mb1 3.8/6, mb1mx3.5/20, ML3.6/1, MS2.9/2, Ms1 2.9/2, ms1mx2.7/23, Error ellipse: s-maj=45.1km s-min=20.2km az=66.0*

ISC 30 08:24:26.5±2.2, 24.05N±0.09×118.77E±0.08, h13km±14km, n16, σ0§93/18, mb3.7/5, 1C, Near coast of southeastern China

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
QZH	**Quanzhou**	0.91	350	⇑*iPG*		Pg	08 24 45.5	+0.7
QZH				SG		Sg	08 24 56.8	-0.1
QZH				S		Sb		
	comp=N,18μm,0.3s							
QZH				S		Sb		
	comp=E,20μm,0.2s							
TATO	**Taipei**	2.64	69	*ePn*		Pn	08 25 09.8	+0.1
TATO				*e*			08 25 17.1	
GZH	**Guangzhou**	5.07	260	P		Pn	08 25 39.5	-4.6
GZH				S		Sn		
	comp=N,1μm,0.7s							
GZH				S		Sn		
	comp=E,835nm,0.7s							
SSE	**Sheshan**	7.34	16	P		Pn	08 26 15.3	-0.8
SSE				SG		Sg	08 28 17.3	-14
SSE				LR		LR		
	comp=N,275nm,7.2s							
SSE				LR		LR		
	comp=E,140nm,7.2s							
SSE				LR		LR		
	comp=Z,420nm,8.1s							
JOW	**Kunigami**	9.03	70	P		P	08 26 38.0	-1.5
	comp=Z,1.5nm,0.3s,baz=266,slow=15,SNR=6.5							
QIZ	**Qiongzhong**	9.69	241	*eP*		P	08 26 49.3	+0.5
QIZ				*eS*		Sn	08 28 35.3	-3.3
QIZ				LR		LR		
	comp=E,204nm,9.8s							
QIZ				LR		LR		
	comp=Z,245nm,8.7s							
QIZ	**Qiongzhong**	9.69	241	*ePn*		P	08 26 49.1	+0.3
GYA	**Guiyang**	11.22	285	P		P	08 27 08.0	-1.7
GYA				S		S	08 29 22.0	+6.1
GYA				LR		LR		
	comp=N,440nm,7.8s							
GYA				LR		LR		
	comp=E,550nm,7.8s							
GYA				LR		LR		
	comp=Z,200nm,8.4s							
JNU	**Nakatsue**	13.95	47	LR		LR	08 33 49.1	
	comp=Z,89nm,18.9s,baz=64,slow=40							
CBIJ	**Chichi jima**	21.33	77	LR		LR	08 37 36.4	
	comp=Z,22nm,20.9s,baz=351,slow=37							
SONM	**Songino Array**	25.70	341	P		P	08 29 58.7	+0.8
	comp=Z,0.4nm,0.6s,mb3.1,baz=158,slow=7.8,SNR=3.0							
MKAR	**Makanchi Array**	36.92	317	P		P	08 31 37.6	+0.8
	comp=Z,2.5nm,1.0s,mb4.0,baz=108,slow=9.0,SNR=11							
WRA	**Warramunga Arr**	46.28	160	P		P	08 32 54.1	+0.2
	comp=Z,1.8nm,0.9s,mb4.0,baz=343,slow=9.0,SNR=5.0							
ASAR	**Alice Springs**	49.65	162	P		P	08 33 20.6	+0.5
	comp=Z,1.0nm,0.8s,mb3.9,baz=345,slow=7.5,SNR=9.1							
YKA	**Yellowknife Ar**	83.94	22	P		P	08 36 58.0	+0.9
	comp=Z,0.3nm,0.7s,mb3.5,baz=319,slow=5.0,SNR=13							
YKA	**Yellowknife Ar**	83.94	22	P		P	08 36 58.0	+0.9

*IDC **30** 08:32:47.4±5.0, 22.36N×94.33E, h77km±42km, mb3.1/3, mb1 3.4/4, mb1mx3.1/18, ML4.2/1, Error ellipse: s-maj=91.9km s-min=25.8km az=60.0*

ISC 30 08:32:43.2±1.4, 22.0N±0.2×93.8E±0.2, h67km±19km, n10, σ0§52/11, mb3.3/3, Myanmar

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
SHL	**Shillong**	3.95	334	*eP*		P	08 33 43.0	+0.2
SHL				*eS*		S	08 34 20.0	-8.3
CMAR	**Chiang Mai Arr**	6.00	125	P		P	08 34 11.1	-0.1
	1.5nm,0.3s,baz=307,slow=14,SNR=29							
PKI	**Pulchoki**	9.41	308	*eP*		P	08 34 58.5	+0.3
	18nm,0.4s							
KKN	**Kakani**	9.62	309	*eP*		P	08 35 01.3	0.0
	13nm,0.2s							
DMN	**Daman**	9.65	307	*eP*		P	08 35 01.8	+0.2
	10nm,0.2s							
GKN	**Gorkha**	10.21	308	*eP*		P	08 35 09.1	-0.2
	27nm,0.3s							
KOLN	**Koldanda**	10.87	304	*eP*		P	08 35 17.9	-0.3
	16nm,0.2s							
MKAR	**Makanchi Array**	26.43	342	P		P	08 38 15.3	-0.1
	0.6nm,0.7s,mb3.1,baz=150,slow=9.8,SNR=3.5							
WRA	**Warramunga Arr**	57.52	134	P		P	08 42 27.3	-1.0
	0.4nm,0.9s,mb3.5,baz=319,slow=7.5,SNR=6.2							
ASAR	**Alice Springs**	59.87	137	P		P	08 42 45.8	+1.2
	0.3nm,0.7s,mb3.4,baz=315,slow=6.3,SNR=4.6							

IGQ 30 08:42:12.9, 1.23N×79.52W, h6km±4km, mb4.0, 1C-2D, Error ellipse: s-maj=5.7km s-min=3.7km az=159.5, Near coast of Ecuador

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
COTA	**Cotacachi**	1.48	127	P		Pn	08 42 41.4	+1.3
COTA				S		Sb	08 43 04.3	+5.0
JOR1	**San Jorge 1**	1.51	144	⇑P		Pn	08 42 44.2	+3.7
JOR1				S		Sb	08 43 08.4	+8.3
YANA	**Yana**	1.64	145	⇓P		Pn	08 42 43.9	+1.5
YANA				S		Sb	08 43 07.7	+3.7
PINO	**Pino**	1.65	146	P		Pn	08 42 44.1	+1.5
CGGP	**Crater GGP**	1.67	147	P		Pn	08 42 44.5	+1.6
GGP	**Refugio Guagua**	1.67	146	⇓P		Pn	08 42 44.6	+1.7
CAYA	**Cayambe**	1.92	127	P		Pn	08 42 48.9	+2.5
CAYR	**Refugio Cayamb**	1.94	128	P		Pn	08 42 49.9	+3.2
NAS1	**Nasa**	2.12	151	P		Pn	08 42 52.6	+3.2
ANTI	**Antisana**	2.15	141	P		Pn	08 42 52.6	+2.8
ANTI				S		Sn	08 43 23.8	+6.7
VC1	**Cotopaxi 1**	2.17	149	P		Pn	08 42 52.9	+2.9
MARY	**Rancho Maria**	2.21	152	P		Pn	08 42 53.1	+2.5
MARY				S		Sn	08 43 24.8	+6.3
TAMB	**Tambo**	2.23	149	P		Pn	08 42 54.5	+3.5

*NAO **30** 09:24:34.7±1.5, 59.53N×27.42E, ML2.4*
*HEL **30** 09:24:35.3±0.1, 59.55N×27.62E, ML2.1, ML2.3(UPP), ML2.4(NAO), Explosion*
*BER **30** 09:24:35.3±2.6, 59.53N×27.50E, ML2.4(NAO), Suspected explosion*

ISC 30 09:24:33.1±0.8, 59.54N±0.04×27.7E±0.1, n18, σ1§26/28, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
VJF	**Virojoki**	1.00	356	*eP*		Pb	09 24 53.2	+0.2
VJF				*eSB*		Sb	09 25 07.0	+0.4
VSU	**Vasula**	1.19	205	Pg		Pg	09 24 56.0	-0.9
VSU				Lg			09 25 10.5	
VSU	**Vasula**	1.19	205	*eP*		Pb	09 24 56.3	0.0
VSU				*eSN*		Sn	09 25 16.7	+2.6
MEF	**Metsahovi**	1.80	294	*eP*		Pn	09 25 06.2	+0.6
MEF				*eS*		Sn	09 25 29.2	-0.3
MEF				MSG			09 25 32.5	
	comp=Z,12nm,0.1s							
FIA0	**FINESS Array S**	2.07	338	*eP*		Pn	09 25 10.4	+0.8
FIA0				*eS*		Sn	09 25 37.4	+0.9
FIA0				MSG			09 25 41.7	
	comp=Z,13nm,0.1s							
FIA0	**FINESS Array S**	2.07	338	Pn		Pn	09 25 10.3	+0.8
	baz=155,slow=18							
FIA0				Lg			09 25 39.1	
	baz=170,slow=28							
FIA0				Rg			09 25 51.6	
	baz=154,slow=37							
KEF	**Keuruu**	2.98	334	*eP*		Pn	09 25 23.7	+1.3
KEF				*eS*		Sn	09 25 58.1	-1.3
SUF	**Sumiainen**	3.28	347	*eP*		Pn	09 25 27.9	+1.1
JOF	**Joensuu**	3.81	26	*eP*		Pn	09 25 35.6	+1.2
VAF	**Ylistaro**	4.27	328	*eP*		Pn	09 25 41.5	+0.6
OUL	**Oulu**	5.63	352	*eP*		Pn	09 25 59.9	-0.2
MSF	**Maaselka**	6.42	5	*eP*		Pn	09 26 09.7	-1.6
HFS	**Hagfors**	7.08	281	Pn		Pn	09 26 17.4	-3.1
	baz=95,slow=12							
HFS				Sn		Sn	09 27 33.4	-9.4
	baz=87,slow=28							
HFS				Lg			09 28 09.3	
	baz=86,slow=37							
HFS	**Hagfors**	7.08	281	*eP*		Pn	09 26 17.4	-3.1
HFS				*eS*		Sn	09 27 33.4	-9.4
HFS				*eSG*		Sg	09 28 09.3	-20
APA0	**Apatity Array**	8.43	14	Pn		P	09 26 36.9	-2.5
	baz=209,slow=16							
APA0	**Apatity Array**	8.43	14	*eP*		P	09 26 36.9	-2.5
ARA0	**ARCESS Array S**	10.08	356	Pn		P	09 26 58.6	-3.4
	baz=174,slow=16							
ARA0				Sn		S	09 28 47.0	-10
	baz=170,slow=28							
ARA0				Lg			09 29 45.6	
	baz=164,slow=37							
ARA0	**ARCESS Array S**	10.08	356	*eP*		P	09 26 58.6	-3.4
ARA0				*eS*		S	09 28 47.0	-10
ARA0				*eSG*		S	09 29 45.6	+49

WEL 30 09:36:13.8±0.7, 36.75S×178.18E, h12km, ML3.7/1, Error ellipse: s-maj=5.0km s-min=4.8km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
MXZ	**Matakaoa Point**	0.82	173	P*		Pb	09 36 28.8	-0.8
MXZ				S*		Sb	09 36 39.4	-0.9
PUZ	**Puketiti**	1.33	177	PN		Pn	09 36 36.9	-1.3
PUZ				SN		Sn	09 36 54.8	-1.1
MWZ	**Matawai**	1.67	198	P*		Pb	09 36 41.2	-2.8
URZ	**Urewera**	1.74	209	P*		Pb	09 36 42.1	-3.0
URZ				S*		Sb	09 37 02.6	-4.3
BKZ	**Black Stump Fm**	2.76	208	P*		Pb	09 36 55.6	-7.1

GUC 30 09:42:03.8±1.1, 29.92S×71.64W, h60km±11km, MD3.5, ML3.5, 1C-3D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
LSCH	**La Serena**	0.34	88	⇓*iP*		P	09 42 14.4	+0.1
LSCH				*i* S		S	09 42 22.1	0.0
LSCH				AMP			09 42 22.5	
	comp=N,3μm,0.3s							
TLL	**Tololo Astrono**	0.76	109	⇓*iP*		P	09 42 20.1	+1.1
TLL				*i* S		S	09 42 31.9	+1.7
TLL				AMP			09 42 33.4	
	comp=E,1μm,0.3s							
CMCH	**Combarbala**	1.37	156	⇓*iP*		P	09 42 27.5	+0.3
CMCH				*i* S		S	09 42 44.8	+0.2
CMCH				AMP			09 42 47.9	
	comp=E,987nm,0.5s							
VACH	**Vallenar**	1.54	30	*i* P		P	09 42 29.9	+0.2
VACH				*i* S		S	09 42 49.4	+0.6
VACH				AMP			09 42 51.6	
	comp=N,3μm,0.1s							
ILCH	**Illapel**	1.76	167	*eP*		P	09 42 31.9	-0.7
ILCH				*i* S		S	09 42 53.7	-0.2
ILCH				AMP			09 42 55.8	
	comp=E,140nm,0.1s							
PTCH	**Petorca**	2.42	166	⇑*iP*		P	09 42 41.8	-0.1
PTCH				*i* S		S	09 43 09.8	-0.4
PT

107nm,0.8s
DIX Grande Dixence 0.34 132⇓ *i*Pg Pg 09 46 23.2 -0.1
31nm,0.3s
DIX *i* Sg Sg 09 46 26.8 -1.2
31nm,0.3s
LKBD Leukerbad 0.41 79⇑ *i*Pg Pg 09 46 23.9 -0.8
140nm,0.5s
LKBD *e*Sg Sg 09 46 28.5 -1.7
140nm,0.5s
TORNY Torny 0.47 353 *e*Pg Pg 09 46 28.1 +2.3
55nm,0.6s
WIMIS Wimmis 0.53 48⇑ *i*Pg Pg 09 46 27.0 -0.1
8.4nm,0.3s
WIMIS *e*Sg Sg 09 46 34.0 -0.3
8.4nm,0.3s
GIMEL Gimel 0.59 293⇓ *i*Pg Pg 09 46 31.6 +3.5
9.1nm,0.3s
MMK Mattmark 0.69 112⇓ *i*Pg Pg 09 46 28.7 -1.5
5.6nm,0.4s
MMK *e*Sg Sg 09 46 37.1 -2.3
5.6nm,0.4s
CABF La Chapelle 0.73 295 *e*Pg Pg 09 46 33.9 +2.9
SNR=1.0
CABF *e*Sg Sg 09 46 44.6 +3.8
144nm,0.3s,SNR=1.0
BRANT Les Verrieres 0.74 328⇓ *i*Pg Pg 09 46 33.7 +2.4
18nm,0.3s
BRANT *i* PmP 09 46 35.9
18nm,0.3s
MCGN Macugnaga 0.74 118⇓ *i*Pg Pg 09 46 29.9 -1.4
MCGN *e*Sg Sg 09 46 36.0 -5.2
LPL La Plagne 0.82 196 *e*Pg Pg 09 46 33.4 +0.6
SNR=1.0
LPL *e*Sg Sg 09 46 45.1 +1.2
46nm,0.3s,SNR=1.0
LPG La Plagne 0.84 194 *e*Pg Pg 09 46 33.6 +0.5
SNR=1.0
LPG *e*Sg Sg 09 46 44.9 +0.5
33nm,0.2s,SNR=1.0
LSD Ceresole Reale 0.85 175 P Pb 09 46 33.6 +0.6
LSD S Sb 09 46 43.6 -0.7
HASLI Hasliberg 0.88 59⇑ *i*Pg Pg 09 46 33.1 -0.9
23nm,0.4s
ORO Oropa 0.94 136 *e*Pg Pg 09 46 33.9 -1.4
ORO *e*Sg Sg 09 46 43.2 -4.6
APL Alpnach 1.04 52⇓ *i*Pg Pg 09 46 36.7 -0.5
174nm,0.3s
LOMF Lomont 1.05 352 Pg Pg 09 46 39.2 +1.8
LOMF Sg Sg 09 46 53.5 +2.0
BOURR Bourrignon 1.09 7⇑ *i*Pg Pg 09 46 39.0 +0.8
12nm,0.4s
BNALP Bannalp 1.10 59⇑ *i*Pg Pg 09 46 37.2 -1.2
12nm,0.4s
BALST Balsthal 1.12 23⇓ *i*Pg Pg 09 46 38.7 0.0
32nm,0.5s
FUSIO Fusio 1.13 82⇓ *i*Pg Pg 09 46 37.2 -1.7
10nm,0.5s
RSP Reno Superiore 1.17 173 P Pb 09 46 39.0 +0.8
RSP S Sb 09 46 52.9 -0.4
BBS Basel-Blauen 1.20 15 Pg Pg 09 46 41.0 +0.7
BBS Sg Sg 09 46 56.9 +0.6
VAI Varese 1.28 110 *e*Pg Pg 09 46 39.7 -2.2
VAI *e*Sg Sg 09 46 55.1 -3.9
FENE Fenestrelle 1.28 180 P Pb 09 46 41.2 +1.0
FENE S Sb 09 46 55.9 -0.7
BNI Bardonecchia 1.28 192 *e*Pg Pg 09 46 41.3 -0.7
RRL Cesana Torines 1.40 188 P Pn 09 46 43.8 +1.6
RRL S Sb 09 47 00.3 +0.2
GRN Grenoble 1.40 221 Pn Pn 09 46 45.0 +2.8
GRN Pg Pg 09 46 46.4 +2.0
SULZ Sulz-Cheisache 1.42 31⇑ *i*P* Pb 09 46 42.8 +0.2
14nm,0.3s
LLS Linth-Limmern 1.46 68⇑ *i*Pg Pg 09 46 43.5 -2.0
5.4nm,0.6s
BHB Bricherasio 1.48 174 P Pn 09 46 44.7 +1.5
BHB S Sb 09 47 01.3 -1.0
ZUR Zurich 1.49 44⇑ *i*P* Pb 09 46 45.2 +1.4
12nm,0.3s
HINF Hinteralfeld 1.51 355 *e*Pn Pn 09 46 45.3 +1.5
SNR=1.0
HINF *e*Pg Pg 09 46 47.0 +0.4
HINF *e*Sg Sg 09 47 06.6 -0.2
122nm,0.2s
MOF Molkenrain 1.54 2 Pn Pn 09 46 45.3 +1.1
MOF Pg Pg 09 46 47.6 +0.4
MBDF Montbardon 1.59 187 *e*Pn Pn 09 46 45.2 +0.2
MBDF *e*Pg Pg 09 46 47.2 -1.0
MBDF *e*Sg Sg 09 47 08.1 -1.4
92nm,0.6s,SNR=1.0
ORIF Oris-en-Rattie 1.61 211 *e*Pg Pg 09 46 48.0 -0.6
ORIF *e*Sg Sg 09 47 09.4 -0.8
32nm,0.3s,SNR=1.0
WILA Wila 1.69 48 *e*Pn Pn 09 46 48.7 +2.4
44nm,0.3s
WILA *i* Pn Pn 09 46 49.4 +3.1
44nm,0.3s
WILA Wila 1.69 48 *i* P Pn 09 46 49.4 +3.1
FELD Feldberg 1.70 22 Pn Pn 09 46 46.2 -0.2
FELD Pg Pg 09 46 49.5 -0.8
FELD Sg Sg 09 47 12.2 -0.7
SLE Schleitheim 1.76 34⇑ *i*Pn Pn 09 46 46.9 -0.4
7.5nm,0.3s
SLE *i* Pn Pn 09 46 50.4 +3.1
7.5nm,0.3s
HAU Haudompre 1.76 345 *e*Pn Pn 09 46 48.9 +1.5
SNR=1.0
HAU *e*Pg Pg 09 46 52.2 +0.6
SNR=1.0
HAU *e*Sg Sg 09 47 15.0 -0.1
140nm,0.3s
DOI San Damiano 1.81 175 *e*Pg Pg 09 46 51.1 -1.4
DOI *e*Sg Sg 09 47 11.4 -5.2
SURF Saint Ours 1.84 185 Pn Pn 09 46 51.8 +3.4
ECH Echery 1.91 2 Pn Pn 09 46 49.6 +0.2
ECH Pg Pg 09 46 54.3 -0.2
ECH Sg Sg 09 47 19.4 -0.5
THEF They Montfort 2.05 340 Pn Pn 09 46 51.6 +0.1
PCP Pian Castagno 2.06 149 P Pn 09 46 52.8 +1.2
STV2 Anna di Valdie 2.07 174 P Pn 09 46 52.4 +0.6
STV Stv Anna Valdi 2.08 174 P Pn 09 46 52.4 +0.6
ROB Roburent 2.10 164 P Pn 09 46 53.5 +1.4
ENR Entracque 2.10 173 P Pn 09 46 53.0 +0.8
CDF Champ du Feu 2.11 4 *e*Pn Pn 09 46 52.8 +0.5
SNR=1.0
CDF *e*Pg Pg 09 46 57.6 -0.9
SNR=1.0
CDF *e*Sg Sg 09 47 24.6 -2.0
36nm,0.3s,SNR=1.0
WLS Welschbruch 2.12 6 Pn Pn 09 46 52.7 +0.3
SPAK Spaichingen 2.15 33 Pg Pg 09 46 57.4 -1.9
DAVA Damuels 2.18 62⇓ *i*PN Pn 09 46 55.8 +2.5
DAVA *i* SN Sn 09 47 26.0 +5.3
BFO Black Forest 2.20 23 *e*Pn Pn 09 46 52.5 -1.1
BFO *e*Sg Sg 09 47 27.9 -1.8
VIVF Saint-Julien-l 2.21 230 *e*Pn Pn 09 46 55.3 +1.5
SNR=1.0
VIVF *e*Pg Pg 09 46 59.2 -1.3
VIVF *e*Sn Sn 09 47 19.9 -1.6
SNR=1.0
VIVF *e*Sg Sg 09 47 28.1 -1.9
62nm,0.4s,SNR=1.0
SMF Signal de Mont 2.24 280 *e*Pn Pn 09 46 56.3 +2.1
SNR=1.0
SMF *e*Pg Pg 09 47 01.6 +0.5
SMF *e*Sg Sg 09 47 31.4 +0.4
42nm,0.2s
FIN Finale Ligure 2.25 158 *e*Pn Pn 09 46 57.7 +3.3
MONE Monesi 2.29 167 P Pn 09 46 55.5 +0.7
BRMO Bormio 2.31 85 *e*Pn Pn 09 46 58.6 +3.5
RORO 2.31 161 P Pn 09 46 55.4 +0.2
SFTF Sexfontaines 2.34 325 *e*Pn Pn 09 46 57.6 +2.0
baz=137
SFTF *e*Pg Pg 09 47 02.4 -0.7
baz=137
SFTF *e*Sn Sn 09 47 25.5 +0.8
SFTF *e*Sg Sg 09 47 33.7 -0.5
60nm,0.3s
LOR Lormes 2.39 295 *e*Pn Pn 09 46 58.5 +2.1
baz=118,SNR=1.0
LOR *e*Pg Pg 09 47 03.7 -0.4
baz=120,SNR=1.0
LOR *e*Sg Sg 09 47 35.5 -0.5
15nm,0.2s,SNR=1.0
PLDF La Plantade 2.41 263 Pg Pg 09 47 04.4 0.0
AURF Auriere 2.43 175 Pn Pn 09 47 00.1 +3.2
SBF Sospel 2.46 173 *e*Pn Pn 09 46 57.3 -0.1
SNR=1.0
SBF *e*Pg Pg 09 47 03.1 -2.4
SNR=1.0
SBF *e*Sg Sg 09 47 34.0 -4.3
58nm,0.5s,SNR=1.0
IMI Imperia 2.47 166 P Pn 09 46 57.6 +0.1
IMI *e*Pn Pn 09 47 00.9 +3.4
NEGI Negi 2.50 169 P Pn 09 46 58.1 +0.1
SSF Saint Saulge 2.55 288 *e*Pn Pn 09 47 00.6 +2.0
SNR=1.0
SSF *e*Pg Pg 09 47 07.0 -0.3
SNR=1.0
SSF *e*Sg Sg 09 47 40.0 -1.3
13nm,0.3s,SNR=1.0
RFYF Reffroy 2.55 336 *e*Pn Pn 09 47 00.7 +2.0
RFYF *e*Pg Pg 09 47 07.2 -0.2
baz=150
RFYF *e*Sg Sg 09 47 40.5 -0.9
65nm,0.3s
SMRF Simiane la Rot 2.56 205 *e*Pg Pg 09 47 06.6 -0.8
SMRF *e*Sg Sg 09 47 38.6 -2.9
13nm,0.5s
CALN Calern 2.56 183 Pn Pn 09 47 00.9 +2.1
CALN Pg Pg 09 47 06.9 -0.6
MEZF Maizieres J'vi 2.58 329 *e*Pn Pn 09 47 00.4 +1.4
MEZF *e*Pg Pg 09 47 07.6 -0.2
baz=146
MEZF *e*Sg Sg 09 47 40.3 -1.9
40nm,0.3s,SNR=1.0
FRF La Foret Royal 2.76 186 *e*Pn Pn 09 47 03.2 +1.5
SNR=1.0
FRF *e*Pg Pg 09 47 08.8 -2.7
SNR=1.0
FRF *e*Sn Sn 09 47 34.5 -1.0
SNR=1.0
FRF *e*Sg Sg 09 47 44.0 -4.4
24nm,0.5s,SNR=1.0
GRAM 2.80 129 P Pn 09 47 03.5 +1.4
STU Stuttgart 2.86 30 *e*Sg Sg 09 47 49.7 -1.9
STU Stuttgart 2.86 30 P Pn 09 47 10.4 +7.3
PYM Petit Puy Mans 2.87 260 Pn Pn 09 47 05.0 +1.8
PYM Pg Pg 09 47 14.3 +0.7
LBL Lubilhac 2.87 249 Pn Pn 09 47 04.3 +1.1
LBL Pg Pg 09 47 13.6 0.0
BGF Bois d'Agland 2.92 276 *e*Pn Pn 09 47 05.6 +1.8
BGF *e*Pg Pg 09 47 13.9 -0.7
SNR=1.0
BGF *e*Sn Sn 09 47 37.8 -1.6
SNR=1.0
BGF *e*Sg Sg 09 47 52.3 -1.1
47nm,0.4s,SNR=1.0
MOTA Moosalm 2.97 68⇑ *i*PN Pn 09 47 05.6 +1.0
MOTA *i* SN Sn 09 47 43.3 +2.5
LMR La Mourre 3.00 188 *e*Pn Pn 09 47 06.4 +1.4
SNR=1.0
LMR *e*Pg Pg 09 47 13.1 -3.1
SNR=1.0
LMR *e*Sg Sg 09 47 51.6 -4.7
10nm,0.5s
SQTA Sankt Quirin 3.00 71⇑ *i*PN Pn 09 47 05.9 +0.8
SQTA *i* SN Sn 09 47 43.1 +1.5
LASF Ste Croix 3.17 226 *e*Pn Pn 09 47 08.8 +1.3
SNR=1.0
LASF *e*Pg Pg 09 47 17.4 -2.3
SNR=1.0
LASF *e*Sg Sg 09 47 57.2 -4.8
16nm,0.3s,SNR=1.0
SARO Sassorosso 3.18 131 P Pn 09 47 08.8 +1.2
WTTA Wattenberg 3.29 71⇑ *i*PN Pn 09 47 09.5 +0.3
WTTA *i* SN Sn 09 47 49.8 +0.8
TCF Toulx Ste Croi 3.35 271 *e*Pn Pn 09 47 11.6 +1.5
SNR=1.0
TCF *e*Pg Pg 09 47 22.0 -1.3
SNR=1.0
TCF *e*Sn Sn 09 47 49.4 -1.1
14nm,0.4s,SNR=1.0
TCF *e*Sg Sg 09 48 06.2 -1.8
9.9nm,0.3s
WLF Walferdange 3.41 350 *e*Sg Sg 09 48 06.0 -3.9
FUR Furstenfeldbru 3.43 56 *e*Pg Pg 09 47 21.0 -3.8
FUR *e*Sg Sg 09 48 05.2 -5.3
CAF Calviac 3.76 250 *e*Pn Pn 09 47 16.1 +0.3
SNR=1.0
CAF *e*Pg Pg 09 47 30.0 -1.4
SNR=1.0
CAF *e*Sg Sg 09 48 16.5 -5.1
30nm,0.5s,SNR=1.0
RJF Les Rejaudoux 4.00 257 *e*Pg Pg 09 47 33.7 -2.4
RJF *e*Sg Sg 09 48 24.2 -5.2
11nm,0.4s,SNR=1.0
PGF Pioggiola 4.01 159 *e*Pn Pn 09 47 17.9 -1.5
PGF *e*Sn Sn 09 48 01.8 -5.3
2.1nm,0.3s
GIVF Givet 4.08 339 *e*Pn Pn 09 47 19.6 -0.7
GIVF *e*Sg Sg 09 48 27.9 -4.2
7.7nm,0.3s
BAIF Baives 4.21 334 *e*Pn Pn 09 47 23.5 +1.3
SNR=1.0
BAIF *e*Sn Sn 09 48 08.6 -3.4
SNR=1.0
BAIF *e*Sg Sg 09 48 31.9 -4.5
3.8nm,0.3s,SNR=1.0
GRF Grafenberg Arr 4.39 38 *e*Pg Pg 09 47 38.6 -5.5
GRF *e*Sg Sg 09 48 35.8 -6.8
MTLF Montolieu 4.54 231 *e*Pn Pn 09 47 26.3 -0.6
MTLF *e*Pg Pg 09 47 43.5 -3.5
SNR=1.0
MTLF *e*Sg Sg 09 48 41.5 -6.0
5.0nm,0.3s
LFF La Frestale 4.63 255 *e*Pg Pg 09 47 45.6 -3.2
LFF *e*Sg Sg 09 48 46.5 -4.1
12nm,0.5s,SNR=1.0
MFF Saint Martin d 4.98 276 *e*Pn Pn 09 47 34.4 +1.2
SNR=1.0
MFF *e*Sn Sn 09 48 28.2 -3.4
MFF *e*Sg Sg 09 48 56.8 -5.4
2.2nm,0.3s
KHC Kasperske Hory 5.23 55 *e*PN Pn 09 47 35.4 -1.3
KHC *e*PG Pg 09 47 53.8 -7.0
KHC *e*SN Sn 09 48 32.0 -6.0
KHC *e*SG Sg 09 48 59.8 -11
MOX Moxa 5.29 33 Pn Pb 09 47 48.2 -0.7
MOX *e*Sg Sg 09 49 06.3 -6.3
NKC Novy Kostel 5.33 41 *e*PG Pg 09 47 56.7 -6.0
NKC *e*SG Sg 09 49 05.3 -8.5
LDF La Druitiere 5.37 298 *e*Pn Pn 09 47 38.4 -0.3
LDF *e*Sn Sn 09 48 38.2 -3.3
LDF *e*Sg Sg 09 49 09.2 -6.0
3.1nm,0.3s
FLN La Foliniere 5.66 298 *e*Pn Pn 09 47 43.0 +0.3
FLN *e*Sn Sn 09 48 45.5 -3.1
FLN *e*Sg Sg 09 49 18.2 -6.5
4.3nm,0.3s
GRR Gorron 5.76 294 *e*Pn Pn 09 47 43.8 -0.4
SNR=1.0
GRR *e*Sn Sn 09 48 48.0 -3.2
2.8nm,0.2s,SNR=1.0
EPF Esparros 5.80 238 *e*Sg Sg 09 49 21.8 -7.6
4.2nm,0.3s
PRU Pruhonice 6.22 51 *e*SG Sg 09 49 33.7 -10
CLL Collm 6.36 36 *e*SG Sg 09 49 39.0 -9.1
SGMF Saint Gilles 6.82 290 *e*Pn Pn 09 47 58.6 -0.5
SGMF *e*Sn Sn 09 49 10.8 -6.8
2.0nm,0.3s
QUIF Quistinic 7.15 287 *e*Pn Pn 09 48 02.5 -1.3
QUIF *e*Sn Sn 09 49 20.2 -5.8
0.8nm,0.2s
UPC Upice 7.29 52 *e*SG Sg 09 50 06.5 -13
ROSF Rostrenen 7.30 290 *e*Pn Pn 09 48 04.8 -1.1
ROSF *e*Sn Sn 09 49 24.4 -5.4
0.9nm,0.2s
31nm,0.3s,baz=26,slow=11,SNR=87
PMG S S 09 56 05.6 +0.7
36nm,0.3s,baz=176,slow=13,SNR=11
PMG LR LR 09 56 20.7
comp=Z,176nm,20.2s,baz=40,slow=30
PMG Port Moresby 3.69 203 *e*Pn P 09 55 22.7 +0.4
PMG *e*Sn S 09 56 04.2 -0.7
PMG LR LR 09 56 20.7
CTA Charters Tower 14.20 189 P P 09 57 44.7 -0.7
0.2nm,0.3s,baz=29,slow=19,SNR=2.4
CTA Charters Tower 14.20 189 P P 09 57 44.7 -0.7
WRAB Tennant Creek 19.61 224 *e*P P 09 58 51.2 -0.6
12nm,0.6s
WB2 Warramunga Arr 19.62 224⇓ *i*P P 09 58 51.5 -0.3
WB2 *i* 10 02 38.3
WRA Warramunga Arr 19.63 224 P P 09 58 51.4 -0.5
1.1nm,0.3s,baz=51,slow=11,SNR=69
AS12 Alice Springs 22.57 217 *e*P P 09 59 22.8 +1.0
4.4nm,0.7s,mb3.9
AS12 *e*S S 10 03 25.7 +6.0
ASAR Alice Springs 22.57 217 P P 09 59 22.9 +1.1
1.4nm,0.5s,mb3.6,baz=50,slow=9.1,SNR=26
ASAR S S 10 03 25.2 +5.5
2.3nm,0.7s,baz=34,slow=22,SNR=11
FITZ Fitzroy Crossi 25.46 240⇓ *i*P P 09 59 50.1 +0.4
4.9nm,0.3s,mb4.4
FITZ Fitzroy Crossi 25.46 240 P P 09 59 50.1 +0.4
4.6nm,0.3s,mb4.3,baz=37,slow=7.3,SNR=43
STKA Stephens Creek 26.58 193 P P 10 00 00.3 +0.4
3.2nm,1.0s,mb3.8,baz=350,slow=12,SNR=2.3
MKAR Makanchi Array 78.53 320 P P 10 06 21.5 -0.2
0.3nm,0.5s,mb3.4,baz=106,slow=8.8,SNR=5.0
MKAR Makanchi Array 78.53 320 P P 10 06 21.5 -0.2
ILAR Eielson Array 84.84 23 P P 10 06 54.2 0.0
1.1nm,0.7s,mb3.9,baz=252,slow=4.8,SNR=24

NAO ***30*** *09:54:33.9±1.3,59.76N×24.36E,ML2.2*
IDC ***30*** *09:54:33.3±2.2,59.69N×24.59E,mb1 3.0/3, mb1mx2.8/20,ML3.1/3,Error ellipse: s-maj=25.1km s-min=9.2km az=154.0*
BER ***30*** *09:54:34.8±3.5,59.78N×24.42E,ML2.2(NAO), Suspected explosion*
HEL 30 09:54:34.1±0.1,59.74N×24.45E,ML2.1,ML2.2(UPP), **ML2.2**(NAO)**,Explosion,Baltic States - Belarus - Northwestern Russia**

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
MEF	**Metsahovi**	**0.48**	**357**	*e*P		Pg	09 54 42.6	-1.2
MEF				*e*S		Sg	09 54 49.1	-1.1
VSU	**Vasula**	**1.74**	**136**	*e*P		Pn	09 55 04.9	-0.8
VSU				*e*S		Sn	09 55 27.1	-1.8
VSU	**Vasula**	**1.74**	**136**	Pn		Pn	09 55 04.9	-0.8
VSU				Lg			09 55 29.6	
VJF	**Virojoki**	**1.75**	**61**	*e*P		Pn	09 55 04.9	-1.1
VJF				*e*S		Sn	09 55 27.9	-1.4
FIA0	**FINESS Array S**	**1.89**	**24**	*e*PG		Pg	09 55 07.9	-4.0
FIA0				*e*S		Sn	09 55 32.0	-0.9
FIA0				MSG			09 55 35.8	
	comp=Z,12nm,0.2s							
FIA0	**FINESS Array S**	**1.89**	**24**	Pn		Pn	09 55 07.9	-0.1
	baz=202,slow=16							
FIA0				Lg			09 55 32.0	
	baz=192,slow=37							
FINES	**FINESS Array B**	**1.89**	**24**	Pn		Pn	09 55 07.9	0.0
	comp=Z,3.8nm,0.3s,baz=205,slow=15,SNR=190							
FINES				Sn		Sn	09 55 32.0	-0.9
	comp=Z,1.1nm,0.3s,baz=205,slow=29,SNR=4.0							
KEF	**Keuruu**	**2.45**	**5**	*e*PB		Pb	09 55 16.8	-2.0
KEF				*e*SG		Sg	09 55 48.9	-6.7
KEF				MSG			09 55 50.3	
	comp=Z,7.6nm,0.3s							
HFS	**Hagfors**	**5.42**	**279**	Pn		Pn	09 55 54.8	-3.4
	baz=93,slow=11							
HFS				Sn		Sn	09 56 56.8	-5.4
	baz=88,slow=28							
HFS				Lg			09 57 18.7	
	baz=88,slow=37							
HFS	**Hagfors**	**5.42**	**279**	*e*P		Pn	09 55 54.8	-3.4
HFS				*e*S		Sn	09 56 56.8	-5.4
HFS				*e*SG		Sg	09 57 18.7	-16
HFS	**Hagfors**	**5.42**	**279**	Pn		Pn	09 55 54.8	-3.4
	comp=Z,0.1nm,0.3s,baz=97,slow=12,SNR=10							
HFS				Sn		Sn	09 56 56.8	-5.4
	comp=Z,0.2nm,0.3s,baz=90,slow=27,SNR=11							
NOA	**NORSAR Array B**	**6.69**	**287**	Pn		Pn	09 56 11.2	-4.9
	comp=Z,0.3nm,0.3s,baz=62,slow=14,SNR=2.9							
NOA				Sn		Sn	09 57 25.5	-8.4
	comp=Z,0.2nm,0.3s,baz=74,slow=22,SNR=2.3							
NOA				Lg			09 58 04.3	
	comp=Z,0.4nm,0.3s,baz=262,slow=16,SNR=3.0							
APA0	**Apatity Array**	**8.76**	**22**	Pn		P	09 56 40.0	-4.9
	baz=223,slow=16							
APA0	**Apatity Array**	**8.76**	**22**	*e*P		P	09 56 40.0	-4.9
ARA0	**ARCESS Array S**	**9.85**	**2**	Pn		P	09 56 54.5	-5.4
	baz=182,slow=14							
ARA0				Sn		Sn	09 58 39.1	-13
	baz=189,slow=28							
ARA0	**ARCESS Array S**	**9.85**	**2**	*e*P		P	09 56 54.5	-5.4
ARA0				*e*S		Sn	09 58 39.1	-13
ARCES	**ARCESS Array B**	**9.85**	**2**	Pn		P	09 56 54.5	-5.4
	comp=Z,0.4nm,0.3s,baz=183,slow=12,SNR=38							
ARCES				Sn		Sn	09 58 42.2	-10
	comp=Z,0.1nm,0.3s,baz=183,slow=20,SNR=3.4							

NEIC ***30*** *10:01:03.1±2.6,14.03S×76.55W,h55km±27km,mb4.0/1, Error ellipse: s-maj=39.2km s-min=22.2km az=48.0*
IDC ***30*** *10:01:03.8±4.2,13.82S×76.38W,h57km±42km,mb3.5/5, mb1 3.8/7,mb1mx3.6/16,ML4.4/2,MS3.1/2,Ms1 3.1/2, ms1mx2.8/15,Error ellipse: s-maj=69.3km s-min=29.9km az=36.0*
ISC 30 10:01:01.7±3.8,14.4S±0.3×76.9W±0.1,h75km±43km,n15, σ0s77/14,mb3.6/6,Near coast of Peru

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
LPAZ	**La Paz**	**8.62**	**104**	P		P	**10 03 04.4**	**-1.4**
	1.6nm,0.3s,baz=294,slow=9.9,SNR=50							
LPAZ				S		S	**10 04 43.5**	**+1.1**
	baz=243,slow=18,SNR=1.8							
LPAZ	**La Paz**	**8.62**	**104**	*e*P		P	**10 03 04.6**	**-1.2**
LPAZ				S		S	**10 04 43.5**	**+1.1**
LVC	**Limon Verde**	**11.11**	**138**	P		P	**10 03 40.4**	**+0.8**
	0.4nm,0.3s,baz=330,slow=10.0,SNR=5.2							
LVC				LR		LR	10 08 37.0	
	comp=Z,80nm,18.6s,baz=320,slow=40							
LVC	**Limon Verde**	**11.11**	**138**	*e*P		P	**10 03 39.3**	**-0.2**
LVC				LR		LR	10 08 37.0	
CPUP	**Villa Florida**	**21.78**	**126**	LR		LR	10 15 07.2	
	comp=Z,62nm,20.9s,baz=71,slow=39							
TXAR	**Lajitas Array**	**50.61**	**329**	P		P	**10 09 55.4**	**+0.2**
	0.6nm,0.7s,mb3.8,baz=146,slow=8.7,SNR=8.2							
TXAR	**Lajitas Array**	**50.61**	**329**	P		P	**10 09 55.4**	**+0.2**
CPRX	**Cap Rock**	**53.77**	**332**	*e*P		P	**10 10 19.5**	**+0.6**
ANMO	**Albuquerque**	**56.56**	**331**	*e*P		P	**10 10 38.9**	**-0.1**
	1.5nm,0.9s,mb4.0							
PDAR	**Pinedale Array**	**64.33**	**334**	P		P	**10 11 31.4**	**-0.3**
	0.3nm,0.7s,mb3.2,baz=130,slow=7.0,SNR=3.2							
NVAR	**Mina Array Bea**	**65.33**	**325**	P		P	**10 11 39.1**	**+0.8**
	0.5nm,0.8s,mb3.4,baz=119,slow=6.1,SNR=4.1							
DBIC	**Dimbokro**	**74.40**	**79**	P		P	**10 12 32.7**	**-1.3**
	2.5nm,0.7s,mb4.0,baz=11,slow=22,SNR=4.3							
YKA	**Yellowknife Ar**	**82.14**	**343**	P		P	**10 13 15.3**	**0.0**
	0.7nm,1.0s,mb3.5,baz=145,slow=5.9,SNR=12							
WRA	**Warramunga Arr**	**134.10**	**223**	PKP		PKPdf	10 20 18.3	+6.8
	0.6nm,0.9s,baz=128,slow=1.9,SNR=5.3							
SONM	**Songino Array**	**146.56**	**356**	PKPbc		PKPbc	10 20 37.0	+2.7
	0.5nm,0.5s,baz=326,slow=2.1,SNR=5.5							

NEIC ***30*** *09:54:26.8±2.3,5.97S×148.73E,h61km±21km,mb4.4/2, Error ellipse: s-maj=26.2km s-min=16.0km az=125.0*
IDC ***30*** *09:54:28.5±2.3,6.03S×148.67E,h77km±20km,mb3.8/5, mb1 4.0/8,mb1mx3.8/16,MS2.9/1,Ms1 2.9/1,ms1mx2.5/18, Error ellipse: s-maj=45.7km s-min=14.3km az=116.0*
ISC 30 09:54:26.3±3.4,6.0S±0.2×148.6E±0.2,h70km±30km,n15, σ0s55/19,mb3.9/5,2D,New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
PMG	**Port Moresby**	**3.69**	**203**	P		**P**	**09 55 22.8**	**+0.5**

NIED ***30*** *10:21:00,34.20N×141.60E,h8km,Mw4.3 Best double couple: M0 3.09×10^15 NP1:φs354°,δ59°,λ50°. NP2:φs231°, δ49°,λ136°.*
IDC ***30*** *10:21:06.5±0.6,34.12N×141.62E,mb4.0/16,mb1 4.2/19, mb1mx4.1/26,ML3.9/3,MS3.2/4,Ms1 3.3/4,ms1mx2.9/32, Error ellipse: s-maj=18.7km s-min=13.3km az=124.0*
BJI ***30*** *10:21:07.9,34.10N×141.60E,h10km,mb4.7,mb4.4, Ms4.1,Msz3.9*
NEIC ***30*** *10:21:08.5±0.3,34.14N×141.62E,h10km,mb4.3/2,Error ellipse: s-maj=7.7km s-min=6.2km az=73.0*

*JMA **30** 10:21:09.3±0.7,34.16N×141.62E,h29km±3km,M3.8*
ISC 30 10:21:08.1±1.5,**34.12N**±0.04×**141.67E**±0.06,**h21**km±10km,
n53,σ1803/60,mb4.2/24,MS3.4/2,1D,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BSO1	**Boso 1**	**0.78**	**313**	P	**Pb**	**10 21 23.0**	**+0.2**
BSO3	**Boso 3**	**1.17**	**306**	P	**Pn**	**10 21 29.4**	**0.0**
BSO4	**Boso 4**	**1.40**	**309**	P	**Pn**	**10 21 33.3**	**+0.7**
TATJ	**Tateyama 2**	**1.73**	**302**	P	**Pn**	**10 21 38.6**	**+1.3**
TATJ				S	**Sn**	**10 22 00.0**	**+1.1**
JHJ2	**Mitsune**	**1.84**	**237**	P	**Pn**	**10 21 40.4**	**+1.5**
JHJ2				S	**Sn**	**10 22 03.0**	**+1.2**
JHJ	**Hachijo jima 2**	**1.86**	**238**	Pn	**Pn**	**10 21 39.5**	**+0.3**
	158nm,0.3s,baz=54,slow=3.3,SNR=73						
JHJ				Sn	**Sn**	**10 22 03.2**	**+0.9**
	853nm,0.3s,baz=84,slow=23,SNR=21						
JIM2	**Oshima 3**	**1.94**	**289**	P	**Pn**	**10 21 39.8**	**-0.6**
JKO	**Kozu shima**	**2.10**	**273**	P	**Pn**	**10 21 43.8**	**+1.2**
KTJJ	**Kamata 2**	**2.29**	**291**	P	**Pn**	**10 21 44.3**	**-1.1**
JIZS	**Izushimoda**	**2.38**	**285**	P	**Pn**	**10 21 47.1**	**+0.4**
JOD2	**Odawara 2**	**2.41**	**299**	P	**Pn**	**10 21 46.3**	**-0.8**
MAJO	**Matsushiro**	**3.72**	**312**	*eP*	**Pn**	**10 22 05.8**	**+0.1**
MAT	**Matsushiro**	**3.72**	**312**	P	**Pn**	**10 22 05.5**	**-0.2**
MAT				S	**Sn**	**10 22 49.5**	**0.0**
MAT	**Matsushiro**	**3.72**	**312**	*eP*	**Pn**	**10 22 06.0**	**+0.3**
MAT				*eS*	**Sn**	**10 22 50.0**	**+0.5**
CBIJ	**Chichi jima**	**7.02**	**176**	Pn	**Pn**	**10 22 51.3**	**-1.0**
	20nm,0.3s,baz=297,slow=21,SNR=14						
CBIJ				Sn	**Sn**	**10 24 04.0**	**-8.2**
	14nm,0.3s,baz=82,slow=23,SNR=3.1						
CBIJ				LR	LR	10 25 18.7	
	comp=Z,197nm,20.9s,baz=39,slow=36						
JNU	**Nakatsue**	**9.05**	**267**	Pn	**P**	**10 23 19.1**	**-1.5**
	0.3nm,0.3s,baz=79,slow=3.7,SNR=3.8						
JNU				LR	LR	10 25 55.2	
	comp=Z,62nm,21.8s,baz=78,slow=32						
ASAJ	**Asahikawa**	**10.01**	**4**	Pn	**P**	**10 23 29.6**	**-4.2**
	1.6nm,0.3s,baz=228,slow=8.6,SNR=10.0						
ASAJ				Sn	**S**	**10 25 14.1**	**-12**
	0.3nm,0.3s,baz=13,slow=31,SNR=3.0						
ULN	**Ulaanbaatar**	**29.25**	**308**	*eP*	**P**	**10 27 10.2**	**-0.4**
	2.3nm,0.6s,mb4.1						
SONM	**Songino Array**	**29.67**	**308**	P	**P**	**10 27 14.5**	**+0.2**
	1.5nm,0.5s,mb4.0,baz=107,slow=8.8,SNR=19						
GYA	**Guiyang**	**31.06**	**265**	⇓*iP*	**P**	**10 27 23.5**	**-3.4**
GYA				AMB	AMB		
	comp=Z,10.0nm,1.0s,mb4.6						
CMAR	**Chiang Mai Arr**	**41.04**	**259**	P	**P**	**10 28 50.1**	**-1.5**
	comp=Z,1.1nm,0.4s,mb3.8,baz=44,slow=8.0,SNR=7.6						
CMAR				LR	LR	10 48 55.0	
	comp=Z,43nm,18.7s,MS3.3,baz=70,slow=41						
WMQ	**Urumqi**	**42.40**	**300**	*eP*	**P**	**10 29 02.0**	**-0.6**
MKAR	**Makanchi Array**	**45.89**	**305**	P	**P**	**10 29 30.5**	**-0.2**
	comp=Z,1.9nm,0.6s,mb4.2,baz=90,slow=9.5,SNR=22						
MKAR				LR	LR	10 49 23.9	
	comp=Z,43nm,19.2s,MS3.4,baz=271,slow=37						
KAKA	**Kakadu**	**47.38**	**192**	*eP*	**P**	**10 29 43.7**	**+0.8**
	comp=Z,13nm,0.7s,mb5.0						
GUN	**Gumba**	**47.72**	**278**	*eP*	**P**	**10 29 44.9**	**-0.4**
	comp=Z,22nm,0.8s,mb5.2						
KURK	**Kurchatov**	**47.93**	**310**	*eP*	**P**	**10 29 45.9**	**-0.8**
PKI	**Pulchoki**	**48.23**	**278**	*eP*	**P**	**10 29 47.6**	**-1.7**
	comp=Z,17nm,0.9s,mb5.0						
KKN	**Kakani**	**48.25**	**279**	*eP*	**P**	**10 29 47.7**	**-1.8**
DMN	**Daman**	**48.46**	**278**	*eP*	**P**	**10 29 49.4**	**-1.7**
GKN	**Gorkha**	**48.70**	**279**	*eP*	**P**	**10 29 52.1**	**-0.8**
KOLN	**Koldanda**	**49.64**	**279**	*eP*	**P**	**10 29 59.1**	**-1.1**
	comp=Z,6.6nm,0.6s,mb4.8						
ILAR	**Eielson Array**	**51.86**	**31**	P	**P**	**10 30 15.8**	**-0.8**
	comp=Z,1.3nm,0.7s,mb3.9,baz=261,slow=5.7,SNR=23						
ZRNK	**Zerenda**	**53.55**	**314**	*eP*	**P**	**10 30 28.7**	**-0.6**
FITZ	**Fitzroy Crossi**	**54.13**	**199**	*eP*	**P**	**10 30 34.0**	**0.0**
	comp=Z,9.1nm,1.6s,mb4.5						
WRAB	**Tennant Creek**	**54.20**	**188**	*eP*	**P**	**10 30 34.5**	**+0.1**
	comp=Z,7.5nm,0.6s,mb4.8						
WB2	**Warramunga Array**	**54.21**	**188**	*eP*	**P**	**10 30 34.9**	**+0.4**
WRA	**Warramunga Arr**	**54.21**	**189**	P	**P**	**10 30 33.7**	**-0.8**
	comp=Z,3.7nm,0.7s,mb4.4,baz=6.1,slow=7.5,SNR=41						
INK	**Inuvik**	**56.90**	**26**	P	**P**	**10 30 52.8**	**-0.7**
	comp=Z,1.5nm,0.9s,mb4.0,baz=317,slow=7.2,SNR=5.7						
AS12	**Alice Springs**	**57.94**	**188**	*eP*	**P**	**10 31 01.2**	**-0.1**
	comp=Z,18nm,1.7s,mb4.8						
ASAR	**Alice Springs**	**57.94**	**188**	P	**P**	**10 31 00.2**	**-1.0**
	comp=Z,1.5nm,0.6s,mb4.2,baz=359,slow=5.6,SNR=21						
FORT	**Forrest**	**65.81**	**193**	*eP*	**P**	**10 31 54.6**	**+0.6**
	comp=Z,52nm,0.9s						
YKA	**Yellowknife Ar**	**66.23**	**30**	P	**P**	**10 31 55.6**	**-0.6**
	comp=Z,0.2nm,0.6s,mb3.3,baz=301,slow=6.1,SNR=6.2						
FINES	**FINESS Array B**	**71.49**	**333**	P	**P**	**10 32 28.1**	**-0.6**
	comp=Z,1.4nm,0.8s,mb3.9,baz=63,slow=4.3,SNR=4.7						
NVAR	**Mina Array Bea**	**76.58**	**53**	P	**P**	**10 33 00.4**	**+1.8**
	comp=Z,0.5nm,0.6s,mb3.6,baz=301,slow=3.9,SNR=5.1						
HFS	**Hagfors**	**76.83**	**336**	P	**P**	**10 33 00.1**	**+0.6**
	comp=Z,2.0nm,0.9s,mb4.0,baz=18,slow=4.7,SNR=4.9						
NB2	**NORSAR Subarra**	**76.95**	**338**	P	**P**	**10 33 01.0**	**+0.8**
	comp=Z,3.7nm,1.2s,mb4.2,baz=40,slow=5.6						
NOA	**NORSAR Array B**	**76.95**	**338**	P	**P**	**10 33 00.3**	**+0.2**
	comp=Z,0.8nm,0.7s,mb3.8,baz=39,slow=5.7,SNR=4.4						
PDAR	**Pinedale Array**	**79.57**	**45**	P	**P**	**10 33 16.2**	**+1.3**
	comp=Z,0.8nm,0.8s,mb3.7,baz=252,slow=1.6,SNR=6.1						
BRTR	**Keskin Array B**	**80.94**	**312**	P	**P**	**10 33 23.0**	**+0.7**
	comp=Z,0.9nm,0.8s,mb3.8,baz=69,slow=1.8,SNR=3.8						
PV10	**Paradox Valley**	**82.55**	**48**	*eP*	**P**	**10 33 33.3**	**+2.6**
CLL	**Collm**	**83.73**	**330**	P	**P**	**10 33 39.0**	**+2.6**
GERES	**GERESS Array B**	**85.30**	**328**	P	**P**	**10 33 45.3**	**+1.0**
	comp=Z,0.5nm,0.7s,mb3.8,baz=27,slow=3.0,SNR=4.2						
TXAR	**Lajitas Array**	**91.73**	**53**	P	**P**	**10 34 16.9**	**+1.4**
	comp=Z,0.3nm,0.8s,mb3.7,baz=291,slow=4.2,SNR=3.9						

*IDC **30** 10:28:05.4±0.7,34.27N×141.51E,mb3.6/10,mb1 3.9/12, mb1mx3.8/24,ML3.8/2,Error ellipse: s-maj=24.9km s-min=14.6km az=116.0*
*NEIC **30** 10:28:06.9±0.5,34.19N×141.54E,h10km,mb4.3/4,Error ellipse: s-maj=12.9km s-min=9.8km az=22.0*
*JMA **30** 10:28:07.6±0.6,34.16N×141.57E,h24km±3km,M3.8*
ISC 30 10:28:07.3±1.4,**34.19N**±0.05×**141.63E**±0.05,**h25**km±10km,
n33,σ0995/42,mb3.7/13,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BSO1	**Boso 1**	**0.71**	**311**	P	**Pb**	**10 28 20.9**	**-0.1**
BSO3	**Boso 3**	**1.11**	**304**	P	**Pn**	**10 28 27.5**	**0.0**
BSO4	**Boso 4**	**1.33**	**307**	P	**Pn**	**10 28 30.9**	**+0.2**
BSO4				S	**Sn**	**10 28 49.2**	**+1.4**
TATJ	**Tateyama 2**	**1.67**	**301**	P	**Pn**	**10 28 37.7**	**+2.2**
JHJ2	**Mitsune**	**1.86**	**235**	P	**Pn**	**10 28 39.5**	**+1.3**
JHJ	**Hachijo jima 2**	**1.88**	**236**	Pn	**Pn**	**10 28 38.8**	**+0.3**
	22nm,0.3s,baz=106,slow=23,SNR=15						
JHJ				Sn	**Sn**	**10 29 02.5**	**+0.9**
	66nm,0.3s,baz=104,slow=22,SNR=7.7						
JIM2	**Oshima 3**	**1.90**	**287**	P	**Pn**	**10 28 37.9**	**-0.8**
JIM2				S	**Sn**	**10 29 01.4**	**-0.7**
JOD2	**Odawara 2**	**2.35**	**298**	P	**Pn**	**10 28 44.7**	**-0.6**
JAG	**Ashikaga**	**2.86**	**322**	P	**Pn**	**10 28 52.2**	**-0.3**
JYN	**Shimob**	**2.86**	**298**	P	**Pn**	**10 28 53.1**	**+0.6**
JYN				S	**Sn**	**10 29 26.7**	**+0.2**
JRY	**Ryogami san**	**2.89**	**310**	P	**Pn**	**10 28 53.0**	**+0.1**
MAJO	**Matsushiro**	**3.65**	**311**	*ePn*	**Pn**	**10 29 03.7**	**-0.1**
MAJO				*eSn*	**Sn**	**10 29 46.5**	**-0.1**
MAT	**Matsushiro**	**3.65**	**311**	P	**Pn**	**10 29 03.8**	**0.0**
MAT				S	**Sn**	**10 29 46.3**	**-0.3**
MAT	**Matsushiro**	**3.65**	**311**	*eP*	**Pn**	**10 29 04.0**	**+0.2**
MAT				*eS*	**Sn**	**10 29 46.0**	**-0.6**
CBIJ	**Chichi jima**	**7.09**	**176**	Pn	**Pn**	**10 29 51.0**	**-1.4**
	6.5nm,0.3s,baz=296,slow=15,SNR=7.6						
CBIJ				Sn	**Sn**	**10 31 06.0**	**-7.0**
	5.9nm,0.3s,baz=309,slow=21,SNR=3.6						
ASAJ	**Asahikawa**	**9.94**	**4**	Pn	**P**	**10 30 26.6**	**-5.3**
	0.9nm,0.3s,baz=80,slow=25,SNR=5.6						
ASAJ				Sn	**Sn**	**10 32 14.1**	**-10**
	0.4nm,0.3s,baz=96,slow=31,SNR=4.1						
BJT	**Baijiatuau**	**21.09**	**293**	P	**P**	**10 32 49.3**	**-3.0**
	4.0nm,0.6s,mb3.9						
MA2	**Magadan**	**26.10**	**11**	*eP*	**P**	**10 33 40.7**	**0.0**
	11nm,0.8s,mb4.4						
SONM	**Songino Array**	**29.60**	**308**	P	**P**	**10 34 12.1**	**-0.5**
	0.5nm,0.8s,mb3.3,baz=83,slow=10.0,SNR=3.8						
MKAR	**Makanchi Array**	**45.83**	**305**	P	**P**	**10 36 27.4**	**-1.6**
	0.5nm,0.7s,mb3.6,baz=85,slow=11,SNR=5.0						
KURK	**Kurchatov**	**47.86**	**310**	*eP*	**P**	**10 36 43.5**	**-1.5**
ILAR	**Eielson Array**	**51.81**	**31**	P	**P**	**10 37 14.6**	**-0.5**
	0.8nm,0.7s,mb3.7,baz=267,slow=5.8,SNR=11						
WRA	**Warramunga Arr**	**54.28**	**188**	P	**P**	**10 37 33.3**	**-0.6**
	0.8nm,0.9s,mb3.6,baz=4.6,slow=7.5,SNR=10						
INK	**Inuvik**	**56.84**	**26**	P	**P**	**10 37 51.2**	**-0.7**
	1.4nm,0.7s,mb4.1,baz=319,slow=3.6,SNR=5.7						
INK	**Inuvik**	**56.84**	**26**	*eP*	**P**	**10 37 51.5**	**-0.4**
	1.8nm,0.8s,mb4.2						
ASAR	**Alice Springs**	**58.00**	**188**	P	**P**	**10 38 00.4**	**-0.1**
	0.5nm,0.6s,mb3.7,baz=4.4,slow=6.3,SNR=7.4						
YKA	**Yellowknife Ar**	**66.18**	**30**	P	**P**	**10 38 54.2**	**-0.4**
	0.2nm,0.7s,mb3.3,baz=294,slow=6.4,SNR=4.7						
YKA	**Yellowknife Ar**	**66.18**	**30**	P	**P**	**10 38 54.2**	**-0.5**
NVAR	**Mina Array Bea**	**76.56**	**53**	P	**P**	**10 39 59.3**	**+2.0**
	0.5nm,0.8s,mb3.5,baz=310,slow=4.7,SNR=4.0						
NOA	**NORSAR Array B**	**76.88**	**338**	P	**P**	**10 39 58.0**	**-0.5**
	0.6nm,0.8s,mb3.6,baz=38,slow=5.8,SNR=3.3						
HWUT	**Hardware Ranch**	**79.03**	**47**	*eP*	**P**	**10 40 12.1**	**+1.3**
	5.1nm,1.3s,mb4.3						
PDAR	**Pinedale Array**	**79.54**	**45**	P	**P**	**10 40 14.7**	**+1.1**
	0.6nm,1.0s,mb3.5,baz=342,slow=4.7,SNR=3.5						
PV10	**Paradox Valley**	**82.52**	**48**	*eP*	**P**	**10 40 30.5**	**+1.2**

*NIED **30** 10:39:00,44.00N×147.60E,h62km,Mw4.9 Best double couple: $M_0$2.43×10^{16} NP1:ϕ_s214°,δ65°,λ.86°. NP2:ϕ_s42°, δ.25°,λ98°.*
*BJI **30** 10:39:50.2,44.28N×147.55E,h66km,mB5.2,mb5.1, Ms4.4,Ms2.4*
*NEIC **30** 10:39:51.5±0.1,44.30N×147.55E,mb5.1/120,Error ellipse: s-maj=3.7km s-min=2.3km az=163.0*
NEIC Felt [III] on Shikotan and at Yuzhno-Kuril'sk, Kunashir. Recorded [2 JMA] in the Bekkai area and [1 JMA] in other parts of eastern Hokkaido.
*HRVD **30** 10:39:51.5±0.4,44.31N×147.65E,h74km±3km,MW4.9/51, Centroid moment Tensor Solution. LP body waves: s23,c29;Mantle waves: s51,c85; Half duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}1.68±.15; $M_{\theta\theta}$0.35±.14; $M_{\phi\phi}$-2.04±.12; $M_{r\theta}$-1.03±.09; $M_{\theta\phi}$-1.22±.11; $M_{\phi r}$-1.75±.07; Best double couple: $M_0$2.94×10^{16} NP1:ϕ_s10°,δ24°,λ71°. NP2:ϕ_s210°,δ67°,λ98°. Principal axes: T 2.52, Plg67°, Azm135°; N .83, Plg8°, Azm27°; P -3.36, Plg22°, Azm294°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*IDC **30** 10:39:51.7±0.5,44.36N×147.56E,h65km±4km,mb4.6/26, mb1 4.7/31,mb1mx4.7/32,MS3.9/11,Ms1 3.9/11, ms1mx3.6/34 Error ellipse: s-maj=11.8km s-min=8.5km az=119.0*
*SYO **30** 10:39:51.4,44.30N×147.55E,h62km,MB5.1*
*MOS **30** 10:39:52.5±1.1,44.34N×147.62E,h84km,mb4.9/29,Error ellipse: s-maj=10.3km s-min=6.1km az=105.1*
MOS Felt (III) at Malokuril'skoe; (II-III) at Yuzhno-Kuril'sk.
*JMA **30** 10:39:52.0±0.2,44.01N×147.64E,h24km,M5.0*
JMA Felt II J1.
*SKHL **30** 10:39:52.3±1.1,44.24N×147.72E,h62km±21km,mb5.8/3, mbh5.3/1,Ms4.0/3,msh5.2/3*
SKHL Felt (III) at Malokurilskoe, (II-III) at Yushno-Kurilsk.
ISC 30 10:39:51.4±0.3,**44.19N**±0.02×**147.66E**±0.03,**h76**km±2km,
h67km±1.9km:**pP-P,n528,σ090/552,mb5.0/174,64C-30D,**
Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KUR	**Kuril'sk**	**1.06**	**8**	⇑*iP*	**P**	**10 40 10.5**	**-0.7**
KUR				⇑*iP*		10 40 10.5	
KUR				AMB	AMB	10 40 11.2	
	980nm,0.4s						
KUR				AMB	AMB	10 40 11.2	
	410nm,0.4s						
KUR				AMB	AMB	10 40 11.2	
	4μm,0.4s						
KUR				AMB	AMB	10 40 12.0	
	25μm,1.0s						
KUR				AMB	AMB	10 40 12.0	
	10μm,1.0s						
KUR				*i* S	**S**	**10 40 25.0**	**-1.1**
KUR				A		10 40 26.0	
	55μm,1.0s						
KUR				A		10 40 26.0	
	62μm,1.0s						
KUR				A		10 40 26.0	
	145μm,1.0s						
KUR				A		10 40 26.0	
	90μm,1.0s						
KUR	**Kuril'sk**	**1.06**	**8**	*i* PN	**P**	**10 40 10.5**	**-0.7**
KUR				*i* S	**S**	**10 40 25.0**	**-1.1**
KUR				pmax	pmax		
	comp=N,980nm,0.4s						
KUR				pmax	pmax		
	comp=E,410nm,0.4s						
KUR				pmax	pmax		
	comp=Z,4μm,0.4s						
KUR				pmax	pmax		
	comp=N,10μm,1.0s						
KUR				pmax	pmax		
	comp=Z,25μm,1.0s						
KUR				smax			
	comp=N,145μm,1.0s						
KUR				smax			
	comp=E,90μm,1.0s						
YUK	**Yuzh-Kuril'sk**	**1.30**	**264**	⇓*iP*	**P**	**10 40 14.0**	**-0.5**
YUK				AMB	AMB	10 40 15.5	
	comp=E,4μm,0.2s						
YUK				AMB	AMB	10 40 15.5	
	comp=E,5μm,0.4s						
YUK				AMB	AMB	10 40 15.5	
	comp=E,20μm,0.4s						
YUK				AMB	AMB	10 40 18.0	
	comp=E,10μm,0.4s						
YUK				AMB	AMB	10 40 18.0	
	comp=E,13μm,0.4s						
YUK				AMB	AMB	10 40 18.0	
	comp=E,19μm,0.5s						
YUK				*i* S	**S**	**10 40 29.5**	**-2.1**
YUK				A		10 40 40.0	
	comp=E,180μm,0.8s						
YUK				A		10 40 40.0	
	comp=E,130μm,1.0s						
YUK				AMS	AMS	10 40 44.0	
	comp=E,31μm,20.0s						
YUK	**Yuzh-Kuril'sk**	**1.30**	**264**	⇓*iP*	**P**	**10 40 14.0**	**-0.5**
YUK				*i* S	**S**	**10 40 29.5**	**-2.1**
YUK				pmax	pmax		
	comp=Z,20μm,0.4s						
YUK				pmax	pmax		
	comp=N,4μm,0.2s						
YUK				pmax	pmax		
	comp=E,5μm,0.4s						
YUK				pmax	pmax		
	comp=Z,19μm,0.5s						
YUK				pmax	pmax		
	comp=N,10μm,0.4s						
YUK				pmax	pmax		
	comp=E,13μm,0.4s						
YUK				smax			
	comp=N,180μm,0.8s						
NEM2	**Nemuro 2**	**1.61**	**240**	P	**P**	**10 40 18.4**	**-0.2**
NEM2				*eS*	**S**	**10 40 37.2**	**-1.4**
JRA	**Rausu**	**1.84**	**263**	P	**P**	**10 40 23.0**	**+1.3**
JRA				*eS*	**S**	**10 40 45.9**	**+1.9**
JNK	**Nakash**	**2.21**	**255**	P	**P**	**10 40 27.6**	**+0.9**
JNK				*eS*	**S**	**10 40 53.5**	**+0.6**
JAK	**Akkeshi**	**2.46**	**242**	P	**P**	**10 40 30.2**	**0.0**
JAK				*eS*	**S**	**10 40 58.1**	**-1.0**
JTKR	**Abashiri--Toko**	**2.71**	**267**	P	**P**	**10 40 34.7**	**+0.9**
JTKR				*eS*	**S**	**10 41 08.6**	**+3.1**
JAR	**Ashorobuto**	**2.95**	**254**	P	**P**	**10 40 38.5**	**+1.3**
JAR				*eS*	**S**	**10 41 12.8**	**+1.2**
JOB	**Onbets**	**3.06**	**247**	P	**P**	**10 40 39.2**	**+0.5**
JOB				*eS*	**S**	**10 41 14.2**	**0.0**
JMP	**Maruseppu**	**3.10**	**268**	P	**P**	**10 40 40.4**	**+1.2**
JCH	**Churui**	**3.50**	**245**	P	**P**	**10 40 44.3**	**-0.5**
JCH				*eS*	**S**	**10 41 23.4**	**-1.8**
JKK2	**Kamakawa 2**	**3.55**	**267**	P	**P**	**10 40 46.9**	**+1.4**
ASAJ	**Asahikawa**	**3.64**	**271**	P	**P**	**10 40 48.3**	**+1.5**
	comp=N,68nm,0.3s,baz=83,slow=18,SNR=366						
ASAJ				LR	LR	10 42 26.0	
	comp=N,3μm,20.7s,baz=84,slow=43						
ASAJ	**Asahikawa**	**3.64**	**271**	P	**P**	**10 40 48.2**	**+1.4**
ASAJ	**Asahikawa**	**3.64**	**271**	PN	**P**	**10 40 48.3**	**+1.5**
ASAJ				pmax	pmax		
	comp=Z,68nm,0.3s						
ASAJ				MLR	MLR		
	comp=Z,3μm,20.7s						
JSE	**Soyaes**	**3.71**	**284**	P	**P**	**10 40 48.6**	**+0.9**
JFR	**Furan**	**3.81**	**256**	P	**P**	**10 40 50.5**	**+1.4**
JFR				*eS*	**S**	**10 41 33.4**	**+0.4**
JAB	**Ashibetsu**	**3.99**	**262**	P	**P**	**10 40 53.9**	**+2.3**
JNBK	**Urakawa-nobuka**	**4.06**	**244**	P	**P**	**10 40 51.8**	**-0.7**
JNBK				*eS*	**S**	**10 41 38.0**	**-1.1**
JBT2	**Biratori 2**	**4.10**	**252**	P	**P**	**10 40 53.3**	**+0.2**
JSS	**Shosan**	**4.17**	**275**	P	**P**	**10 40 56.3**	**+2.2**
JWK2	**Keihoku**	**4.25**	**287**	P	**P**	**10 40 57.5**	**+2.2**
JHR	**Hokuryu**	**4.30**	**266**	P	**P**	**10 40 58.1**	**+2.1**
YSS	**Yuzh-Sakhalins**	**4.42**	**311**	⇓*iP*	**P**	**10 40 57.8**	**+0.3**
YSS				⇓*iP*		10 40 57.8	
YSS				AMB	AMB	10 40 58.5	
	comp=Z,490nm,0.5s						
YSS				AMB	AMB	10 40 58.5	
	comp=Z,780nm,0.7s						
YSS				*i* S	**S**	**10 41 45.0**	**-3.1**
YSS				A		10 41 48.0	
	comp=Z,2μm,2.0s						
YSS				A		10 41 48.0	
	comp=Z,2μm,2.0s						
YSS				AMS	AMS	10 43 00.0	
	comp=Z,1μm,15.0s						
YSS				AMS	AMS	10 43 00.0	
	comp=Z,1μm,15.0s						
YSS	**Yuzh-Sakhalins**	**4.42**	**311**	*i* PN	**P**	**10 40 57.8**	**+0.3**
YSS				*i* S	**S**	**10 41 45.0**	**-3.1**
YSS				pmax	pmax		
	comp=Z,780nm,0.7s						
YSS				pmax	pmax		
	comp=N,490nm,0.5s						
YSS				smax			
	comp=N,570nm,0.9s						
YSS				smax			
	comp=E,2μm,1.0s						
YSS				smax			
	comp=N,2μm,2.0s						
YSS				smax			
	comp=E,2μm,2.0s						
YSS				MLR	MLR		
	comp=E,1μm,15.0s						
YSS				MLR	MLR		
	comp=Z,1μm,15.0s						
YSS	**Yuzh-Sakhalins**	**4.42**	**311**	*eP*	**P**	**10 40 57.5**	**0.0**
JYG	**Yagishiri**	**4.48**	**275**	P	**P**	**10 41 00.0**	**+1.6**
JEW	**Eniwo**	**4.71**	**256**	P	**P**	**10 41 02.9**	**+1.3**
JEW				*eS*	**S**	**10 41 55.4**	**0.0**
JKB	**Kayabe**	**5.37**	**247**	P	**P**	**10 41 10.3**	**-0.4**
JOT	**Ohata**	**5.61**	**242**	P	**P**	**10 41 12.6**	**-1.4**
JSI2	**Shiura 2**	**6.19**	**242**	P	**P**	**10 41 20.7**	**-1.3**
UGL	**Uglegorsk**	**6.22**	**324**	*eP*	**P**	**10 41 22.0**	**-0.5**
UGL				AMB	AMB	10 41 24.0	
	comp=Z,212nm,0.7s						
UGL				*eS*	**S**	**10 42 33.0**	**0.0**
UGL				A		10 42 36.0	
	comp=Z,434nm,0.8s						
UGL				A		10 42 36.0	
	comp=Z,362nm,0.8s						
UGL				A		10 42 36.0	
	comp=Z,312nm,0.8s						
TYV	**Tymovskoe**	**7.49**	**335**	*eP*	**P**	**10 41 38.8**	**-1.2**
TYV				*eS*	**S**	**10 43 00.0**	**-4.1**
TEY	**Ternei**	**7.93**	**280**	*i* P	**P**	**10 41 48.0**	**+1.9**
TEY				AMB	AMB	10 41 49.0	
	comp=Z,1μm,3.0s						
TEY				AMB	AMB	10 41 49.0	
	comp=Z,800nm,2.0s						
TEY				AMB	AMB	10 41 49.0	
	comp=Z,110nm,1.1s						
TEY				AMB	AMB	10 41 49.0	
	comp=Z,50nm,0.9s						
TEY				AMB	AMB	10 41 49.0	
	comp=Z,70nm,1.0s						
TEY				*i* S	**S**	**10 43 17.0**	**+1.9**
TEY				A		10 43 22.0	
	comp=Z,700nm,3.0s						
TEY				A		10 43 22.0	
	comp=Z,1μm,3.0s						
TEY				AMS	AMS	10 45 15.0	
	comp=Z,700nm,11.0s						
TEY				AMS	AMS	10 45 15.0	
	comp=Z,2μm,12.0s						
JSD	**Sado**	**9.38**	**232**	P	**P**	**10 42 04.1**	**-1.7**
JHK	**Hiroka**	**9.54**	**226**	P	**P**	**10 42 05.9**	**-2.0**
OKH	**Okha**	**9.87**	**343**	*eP*	**P**	**10 42 12.1**	**-0.3**
OKH				*eS*	**S**	**10 44 04.9**	**+2.5**
NKL	**Nikolayevsk**	**10.08**	**335**	*eP*	**P**	**10 42 12.0**	**-3.3**
NKL				AMB	AMB	10 42 14.2	
	comp=Z,240nm,1.2s						
NKL				AMB	AMB	10 42 14.2	
	comp=Z,140nm,1.2s						
NKL				AMB	AMB	10 42 14.2	
	comp=Z,480nm,1.2s						
NKL				AMB	AMB	10 42 14.5	
	comp=Z,1μm,2.0s						
NKL				*e*L		10 44 55.0	
NKL				AMS	AMS	10 46 32.0	
	comp=Z,500nm,16.0s						
NKL				AMS	AMS	10 46 32.0	
	comp=Z,800nm,16.0s						
MAJO	**Matsushiro**	**10.49**	**227**	*eP*	**P**	**10 42 18.6**	**-2.3**
	comp=Z,41nm,0.6s						
MAT	**Matsushiro**	**10.49**	**227**	P	**P**	**10 42 18.9**	**-2.0**
MAT				S	**S**	**10 44 13.2**	**-4.3**
MAT	**Matsushiro**	**10.49**	**227**	P	**P**	**10 42 18.8**	**-2.1**
MAT

comp=Z,93nm,1.4s
ZEA AMB AMB 10 43 39.7
comp=Z,100nm,1.4s
ZEA AMB AMB 10 43 39.7
comp=Z,98nm,1.6s
ZEA AMB AMB 10 43 40.0
comp=Z,300nm,4.0s
ZEA AMB AMB 10 43 40.0
comp=Z,300nm,4.0s
ZEA A 10 46 58.0
comp=Z,200nm,10.0s
JNU Nakatsue 17.10 235 P **P** **10 43 45.7 -1.1**
comp=Z,1.4nm,0.3s,baz=56,slow=15,SNR=19
JNU LR LR 10 51 05.3
comp=Z,141nm,19.0s,baz=264,slow=39
INCN Inchon 17.24 254 *e*P **P** **10 43 48.7 +0.3**
comp=Z,50nm,0.8s
CBIJ Chichi jima 17.62 196 P **P** **10 43 54.4 +1.1**
comp=Z,4.6nm,0.3s,baz=277,slow=19,SNR=3.9
CBIJ S **S** **10 46 53.5 -11**
comp=Z,8.9nm,0.3s,baz=283,slow=22,SNR=4.9
CBIJ LR LR 10 49 17.7
comp=Z,116nm,20.7s,baz=8.3,slow=32
SNY Shenyang 17.75 271 PR 10 43 52.3
SNY S **S** **10 47 14.8 +7.6**
SNY AMB AMB
comp=Z,50nm,0.9s
SNY LR LR
comp=N,230nm,16.3s
SNY LR LR
comp=E,360nm,18.4s
SNY LR LR
comp=Z,630nm,28.4s
FX1 Attu Island--F 18.92 54 P **P** **10 44 07.6 -0.8**
comp=Z,14nm,0.3s,baz=325,slow=3.4,SNR=28
FX1 S **S** **10 47 24.4 -8.7**
comp=Z,2.9nm,0.3s,baz=55,slow=22,SNR=5.9
FX1 Attu Island--F 18.92 54 P **P** **10 44 07.6 -0.8**
FX1 S **S** **10 47 24.4 -8.7**
FX1 pmax pmax
comp=Z,15nm,0.3s
FX1 smax
comp=N,3.0nm,0.3s
FX1 Attu Island--F 18.92 54 *e*P **P** **10 44 07.8 -0.6**
SEY Seymchan 18.98 7 *e*P **P** **10 44 07.4 -1.6**
SEY *e*S **S** **10 47 37.3 +2.9**
SEY pmax pmax
comp=N,50nm,1.0s
SEY pmax pmax
comp=E,10.0nm,1.0s
SEY pmax pmax
comp=Z,70nm,1.0s
SEY MLR MLR
comp=Z,1µm,20.0s
SEY MLR MLR
comp=N,790nm,18.0s
SEY MLR MLR
comp=E,500nm,23.0s
CLNS Chul'man 19.11 320 *e*P **P** **10 44 09.1 -1.4**
CLNS *e*S **S** **10 47 42.3 +5.0**
CLNS pmax pmax
comp=Z,16nm,1.1s
CLNS pmax pmax
comp=N,9.0nm,1.0s
CLNS pmax pmax
comp=E,10.0nm,1.0s
CLNS pmax pmax
comp=Z,28nm,0.8s
CLNS pmax pmax
comp=N,13nm,0.9s
CLNS pmax pmax
comp=E,16nm,0.8s
CLNS smax
comp=N,13nm,1.0s
CLNS smax
comp=E,33nm,1.0s
CLNS smax
comp=Z,9.0nm,1.0s
CLNS MLR MLR
comp=N,200nm,14.0s
CLNS MLR MLR
comp=Z,300nm,14.0s
CLNS MLR MLR
comp=E,100nm,12.0s
SMY Shemya 19.42 55 *e*P **P** **10 44 13.7 -0.2**
HIA Hailar 19.74 295 *e*P **P** **10 44 12.8 -4.5**
comp=E,14nm,0.6s
DL2 Dalian 20.14 264 P **P** **10 44 20.0 -1.6**
DL2 AP 10 44 34.3
DL2 XP 10 44 40.0
DL2 S **S** **10 48 06.8 +8.3**
DL2 AMB AMB
comp=Z,40nm,1.1s
DL2 AMB AMB
comp=Z,150nm,4.1s
YAK Yakutsk 20.75 336 *e*P **P** **10 44 28.3 +0.7**
YAK *e*S **S** **10 48 05.5 -4.4**
YAK *e*'SS 10 48 37.9
YAK *e* 10 55 41.7
YAK pmax pmax
comp=Z,69nm,0.9s
YAK pmax pmax
comp=N,27nm,1.3s
YAK pmax pmax
comp=E,27nm,0.9s
YAK smax
comp=E,8.0nm,0.9s
YAK smax
comp=N,17nm,1.0s
YAK Yakutsk 20.75 336 *e*P **P** **10 44 23.8 -3.9**
comp=N,59nm,0.8s
JOW Kunigami 23.33 228 P **P** **10 44 56.0 +2.7**
comp=N,17nm,0.7s,mb4.5,baz=14,slow=9.1,SNR=8.8
BJI Beijing 23.64 271 P **P** **10 44 56.0 -0.1**
BJI S **S** **10 49 00.8 -1.1**
BJI AMB AMB
comp=Z,134nm,0.9s,mb5.3
BJI LR LR
comp=N,180nm,22.0s
BJI LR LR
comp=E,396nm,22.2s
BJI LR LR
comp=Z,595nm,34.2s
BJT Baijiatuau 23.65 271 *e*P **P** **10 44 55.6 -0.6**
comp=Z,127nm,0.9s,mb5.2
TIA Tai'an 24.54 262 *e*P **P** **10 45 05.3 +0.4**
TIA AMB AMB
comp=Z,58nm,1.0s,mb5.0
SSE Sheshan 24.57 247 P **P** **10 45 05.5 +0.1**
SSE AP 10 45 23.0
SSE XP 10 45 32.5
SSE S **S** **10 49 17.0 -0.9**
SSE XS 10 49 47.3
SSE AMB AMB
comp=Z,24nm,0.7s,mb4.7
BOD Bodaibo 24.88 315 *e*P **P** **10 45 03.1 -4.9**
NJ2 Nanjing 25.56 251 *e*P **P** **10 45 16.3 +1.7**
NJ2 AP pP 10 45 30.8 -1.3
NJ2 XP sP 10 45 38.0 -3.5
NJ2 S **S** **10 49 30.0 -4.3**
NJ2 AMB AMB
comp=Z,50nm,0.7s,mb5.0
NJ2 AMB AMB
comp=Z,190nm,4.5s
NJ2 LR LR
comp=N,340nm,13.8s
NJ2 LR LR
comp=E,810nm,22.0s
NJ2 LR LR
comp=Z,610nm,21.8s
BILL Bilibino 25.84 16 *e*P **P** **10 45 16.0 -0.9**
BILL pmax pmax
comp=Z,5.0nm,0.7s,mb4.0
BILL MLR MLR
comp=Z,200nm,18.0s
BILL Bilibino 25.84 16 *e*P **P** **10 45 14.9 -2.0**
comp=Z,6.2nm,0.8s,mb4.1
HHC Hu-ho-hao-te 26.68 275 *e*P **P** **10 45 25.0 +0.1**
HHC AP pP 10 45 42.5 0.0
HHC XP sP 10 45 50.8 -1.0
HHC S **S** **10 49 57.8 +5.2**
HHC PCS 10 52 24.8
HHC AMB AMB
comp=Z,47nm,1.2s,mb4.9
HHC LR LR
comp=N,141nm,11.4s
HHC LR LR
comp=E,219nm,14.1s
HHC LR LR
comp=Z,212nm,19.0s
BTO Baotou 27.86 276 *e*P **P** **10 45 34.5 -1.2**
BTO AMB AMB
comp=Z,123nm,1.1s,mb5.3
ULN Ulaanbaatar 28.20 292 *e*P **P** **10 45 36.8 -1.8**
comp=Z,8.3nm,0.8s,mb4.3
TATO Taipei 28.64 237 P **P** **10 45 40.4 -2.4**
comp=Z,97nm,1.1s,mb5.3
SONM Songino Array 28.64 292 P **P** **10 45 41.0 -1.6**
comp=Z,7.0nm,0.5s,mb4.5,baz=82,slow=8.3,SNR=51
SONM ScP 10 52 25.1
comp=Z,1.7nm,1.0s,baz=90,slow=1.2,SNR=5.2
TIXI Tiksi 29.01 348⇑ *e*P **P** **10 45 40.9 -4.7**
TIXI pmax pmax
comp=Z,4.0nm,0.8s,mb4.1
TIXI MLR MLR
comp=Z,100nm,16.0s
WHN Wuhan 29.55 254 ⇓P **P** **10 45 50.3 -0.6**
TLY Talaya 30.04 300 *e*P **P** **10 45 52.5 -2.5**
TLY *e*'PP pP 10 46 09.9 -3.1
TLY *e*'SP sP 10 46 18.3 -3.7
TLY *e* 10 48 55.5
TLY *e*S **S** **10 50 49.4 +3.1**
TLY pmax pmax
comp=Z,23nm,0.8s,mb4.9
TLY MLR MLR
comp=Z,3µm,15.0s
ZAK Zakamensk 30.37 298⇑ *i*P **P** **10 45 55.4 -2.5**
XAN Xi'an 31.46 265 P **P** **10 46 06.0 -1.7**
XAN AMB AMB
comp=Z,28nm,0.8s,mb5.0
ANM Nome 33.02 35 *e*P **P** **10 46 20.5 -0.5**
ENH Enshi 33.10 258 *e*P **P** **10 46 20.6 -1.4**
comp=Z,16nm,0.7s,mb5.0
LZH Lanzhou 34.12 272 ⇓P **P** **10 46 31.0 +0.3**
LZH AP pP 10 46 49.3 +0.2
LZH XP sP 10 46 58.5 0.0
LZH *e*S **S** **10 51 50.3 +0.1**
LZH XS 10 52 20.8
LZH SS SS 10 54 01.8 -1.2
LZH AMB AMB
comp=Z,53nm,1.3s,mb5.2
LZH AMB AMB
comp=Z,197nm,5.3s
LZH LR LR
comp=E,1µm,12.9s
LZH LR LR
comp=Z,2µm,16.8s
GTA Gaotai 35.58 279 ⇓P **P** **10 46 43.3 +0.2**
GTA AP pP 10 47 01.8 +0.2
GTA XP sP 10 47 11.0 +0.1
GTA PP PP 10 48 05.0 -0.5
GTA PPP PPP 10 48 25.5 +0.5
GTA PCP PcP 10 49 11.5 +0.7
GTA S **S** **10 52 12.0 -0.7**
GTA SCP 10 52 50.5
GTA SS SS 10 54 34.3 -1.7
GTA SCS ScS 10 56 54.8 +2.7
GTA AMB AMB
comp=Z,24nm,1.3s,mb5.0
GTA AMB AMB
comp=Z,114nm,6.5s
GTA LR LR
comp=N,126nm,12.2s
GTA LR LR
comp=E,137nm,13.3s
GTA LR LR
comp=Z,128nm,12.2s
CD2 Chengdu 36.81 264 ⇓ *i*P **P** **10 46 53.5 -0.1**
CD2 PP PP 10 48 24.0 +3.4
CD2 PPP PPP 10 49 01.8 +20
CD2 S **S** **10 52 35.3 +3.7**
CD2 XS 10 53 05.3
CD2 AMB AMB
comp=Z,100nm,5.4s
CD2 LR LR
comp=E,230nm,13.8s
CD2 LR LR
comp=Z,240nm,24.6s
SVW Sparrevohn 36.98 42 *e*P **P** **10 46 55.2 +0.5**
GYA Guiyang 37.38 256⇑ *i*P **P** **10 46 58.3 -0.1**
GYA AP pP 10 47 17.3 +0.3
GYA XP sP 10 47 25.8 -0.3
GYA PP PP 10 48 28.5 +1.2
GYA S **S** **10 52 38.5 -1.8**
GYA XS 10 53 11.3
GYA SS SS 10 55 14.8 -1.6
GYA AMB AMB
comp=Z,10.0nm,0.5s,mb5.0
TGY Tagaytay City 37.66 226 P **P** **10 47 03.0 +2.2**
comp=Z,94nm,0.3s,baz=342,slow=6.4,SNR=4.8
TGY Tagaytay City 37.66 226 P **P** **10 47 03.0 +2.2**
TGY pmax pmax
comp=Z,94nm,0.3s
IMA Indian Mountai 38.12 34 *e*P **P** **10 47 03.2 -0.9**
KDAK Kodiak Island 38.69 48⇑ *e*P **P** **10 47 08.1 -0.8**
comp=Z,141nm,0.8s,mb5.8
PMS Palmer South 39.91 42 *e*P **P** **10 47 18.7 -0.3**
MCK McKinley 40.07 38⇑ *e*P **P** **10 47 19.9 -0.4**
comp=Z,17nm,0.7s,mb5.0
PMR Palmer 40.09 42 *e*P **P** **10 47 20.3 -0.2**
PMR LR LR
comp=Z,3µm,20.0s
SML Sawmill 40.45 41 *e*P **P** **10 47 23.2 -0.3**
COLA College 40.51 36 *e*P **P** **10 47 24.1 +0.2**
COLA MLR MLR
comp=Z,2µm,18.0s
ILAR Eielson Array 40.92 37 P **P** **10 47 26.6 -0.7**
comp=Z,11nm,0.7s,mb4.8,baz=257,slow=4.4,SNR=152
ILAR PcP PcP 10 49 25.1 -2.1
comp=Z,4.3nm,0.7s,baz=284,slow=3.4,SNR=8.1
ILAR ScP 10 53 07.7
comp=Z,1.1nm,0.8s,baz=292,slow=4.9,SNR=6.1
ILAR Eielson Array 40.92 37 P **P** **10 47 26.6 -0.7**
ILAR 10 49 25.1
ILAR pmax pmax
comp=Z,11nm,0.7s
ILAR pmax pmax
comp=Z,4.0nm,0.7s
ILAR pmax pmax
comp=N,1.0nm,0.8s
KMI Kunming 40.97 257 *e*P **P** **10 47 28.3 +0.2**
KMI AP pP 10 47 41.0 -5.8
KMI PP PP 10 49 05.0 -1.7
KMI S **S** **10 53 34.0 -0.1**
KMI AMB AMB
comp=Z,22nm,0.9s,mb5.0
KMI LR LR
comp=N,128nm,11.3s
KMI LR LR
comp=E,111nm,11.3s
KMI LR LR
comp=Z,183nm,18.4s
NVS Novosibirsk 41.73 308 *e*P **P** **10 47 31.2 -2.8**
NVS *e* pP 10 47 48.4 -4.3
NVS *e*SSS SSS 10 57 27.0 -6.6
NVS pmax pmax
comp=N,3.0nm,0.7s
NVS pmax pmax
comp=E,5.0nm,0.7s
NVS pmax pmax
comp=Z,7.0nm,0.7s,mb4.5
EYAK Cordova Ski Ar 41.84 43⇑ *e*P **P** **10 47 35.0 +0.3**
WMQ Urumqi 42.28 291 P **P** **10 47 38.5 -0.1**
WMQ AP pP 10 47 56.8 -0.5
WMQ XP sP 10 48 05.8 -0.5
WMQ PP PP 10 49 20.0 -0.5
WMQ PCP PcP 10 49 32.5 +0.7
WMQ SCP 10 53 15.0
WMQ PCS 10 53 23.3
WMQ S **S** **10 53 52.0 -1.2**
WMQ XS 10 54 23.3
WMQ SS SS 10 56 55.5 -2.3
WMQ SCS ScS 10 57 31.0 +0.3
WMQ AMB AMB
comp=Z,84nm,1.1s,mb5.4
WMQ AMB AMB
comp=Z,306nm,5.5s
WMQ LR LR
comp=N,1µm,15.5s
WMQ LR LR
comp=E,1µm,16.4s
WMQ LR LR
comp=Z,2µm,17.3s
MKAR Makanchi Array 44.71 297 P **P** **10 47 57.0 -1.2**
comp=Z,13nm,0.8s,mb4.7,baz=77,slow=8.5,SNR=101
MKAR PcP PcP 10 49 38.1 -1.8
comp=Z,5.6nm,0.7s,baz=67,slow=0.6,SNR=2.8
MKAR pPcP 10 49 56.5
comp=Z,7.2nm,0.9s,baz=72,slow=3.8,SNR=4.0
MKAR ScP 10 53 23.7
comp=Z,1.2nm,0.6s,baz=72,slow=3.8,SNR=3.7
MKAR LR LR 11 07 58.2
comp=Z,485nm,18.5s,baz=66,slow=38
MKAR Makanchi Array 44.71 297 P **P** **10 47 57.0 -1.3**
MKAR 10 49 38.1
MKAR pmax pmax
comp=Z,13nm,0.8s
MKAR pmax pmax
comp=Z,6.0nm,0.7s
MKAR pmax pmax
comp=N,7.0nm,0.9s
MKAR pmax pmax
comp=N,1.0nm,0.6s
MKAR MLR MLR
comp=Z,485nm,18.5s
MKAR Makanchi Array 44.71 297 P **P** **10 47 57.0 -1.2**
MKAR PcP PcP 10 49 38.1 -1.8
MKAR pPcP 10 49 56.5
MKAR ScP 10 53 23.7
MKAR LR LR 11 07 58.2
KURK Kurchatov 45.59 304 *e*P **P** **10 48 03.5 -1.7**
INK Inuvik 45.84 31 P **P** **10 48 06.2 -0.8**
comp=Z,11nm,0.5s,mb4.8,baz=292,slow=6.5,SNR=111
INK PcP PcP 10 49 42.2 -1.4
comp=Z,4.9nm,0.6s,baz=314,slow=5.5,SNR=2.7
INK ScP 10 53 28.6
comp=Z,2.5nm,0.9s,baz=310,slow=3.3,SNR=3.8
INK Inuvik 45.84 31 P **P** **10 48 06.2 -0.8**
INK 10 49 42.3
INK pmax pmax
comp=Z,11nm,0.5s
INK pmax pmax
comp=Z,5.0nm,0.6s
INK pmax pmax
comp=N,3.0nm,0.9s
INK Inuvik 45.84 31 *e*P **P** **10 48 06.5 -0.5**
comp=N,21nm,0.9s,mb4.9
INK *e*PcP PcP 10 49 42.4 -1.2
LSA Lhasa 46.54 272 P **P** **10 48 15.0 +2.0**
LSA Lhasa 46.54 272 *e*P **P** **10 48 14.1 +1.0**
comp=N,29nm,1.0s,mb5.0
KKTK Khon Kaen 46.84 248 P **P** **10 48 16.0 +0.5**
SIT Sitka 47.93 46 *e*P **P** **10 48 24.4 +0.9**
SIT LR LR
comp=Z,300nm,18.0s
CM31 Chiang Mai Arr 48.00 254 *e*P **P** **10 48 25.3 +0.7**
comp=Z,11nm,0.8s,mb4.7
CMAR Chiang Mai Arr 48.00 254 P **P** **10 48 24.9 +0.4**
comp=Z,12nm,0.7s,mb4.8,baz=44,slow=7.4,SNR=78
CMAR pP pP 10 48 39.7 -3.9
comp=Z,6.4nm,0.8s,baz=52,slow=7.9,SNR=7.3
CMAR LR LR 11 07 08.7
comp=Z,109nm,20.7s,baz=55,slow=34
SHL Shillong 48.42 267 ⇓ *i*P **P** **10 48 27.5 -0.3**
BDT Bhumibol Dam 48.79 252 P **P** **10 48 31.0 +0.3**
BVAR Borovoye Array 49.51 309 P **P** **10 48 35.0 -0.8**
comp=Z,4.6nm,0.6s,mb4.6,baz=74,slow=10,SNR=34
BVAR PcP PcP 10 49 56.8 -0.1
comp=Z,3.3nm,0.7s,baz=108,slow=4.6,SNR=2.7
BVAR pPcP 10 50 13.5
comp=Z,2.8nm,0.5s,baz=90,slow=4.4,SNR=3.7
BVAR ScP 10 53 43.1
comp=Z,1.0nm,0.8s,baz=63,slow=6.4,SNR=2.6
BRVK Borovoye 49.56 309 *e*P **P** **10 48 35.5 -0.7**
DLBC Dease Lake 50.11 43⇑ *e*P **P** **10 48 41.3 +1.0**
ZRNK Zerenda 50.31 310 *e*P **P** **10 48 41.0 -0.9**
ULHL Ulahol 50.54 294 P **P** **10 48 44.1 +0.2**
SNR=15
TKM2 Tokmak 2 50.65 295 P **P** **10 48 44.8 +0.2**
SNR=18
CHMS Chumysh 51.16 296 P **P** **10 48 48.2 -0.3**
SNR=5.4
KBK Karagaybulak 51.20 295 P **P** **10 48 49.0 +0.3**
SNR=12
USP Ospenovka 51.20 296 P **P** **10 48 48.8 +0.1**
SNR=18
KZA Kyzart 51.27 295 P **P** **10 48 50.5 +1.2**
SNR=8.6
GUN Gumba 51.35 273 *e*P **P** **10 48 50.0 -0.2**
comp=Z,162nm,0.7s
AAK Ala-Archa 51.50 296 P **P** **10 48 51.0 -0.1**
SNR=12
AAK Ala-Archa 51.50 296 *e*P **P** **10 48 50.1 -1.0**
comp=Z,8.4nm,0.6s,mb5.0
UCH Uchtor 51.68 295 P **P** **10 48 52.6 +0.2**
SNR=6.8
KKN Kakani 51.85 274 *e*P **P** **10 48 53.8 -0.1**
comp=Z,120nm,0.9s,mb5.9
PKI Pulchoki 51.89 273 *e*P **P** **10 48 53.9 -0.3**
comp=Z,63nm,0.7s,mb5.8
EKS2 Erkin-Say 51.95 296 P **P** **10 48 54.5 +0.1**
SNR=22
KSH Kashi 52.04 291 P **P** **10 48 55.3 +0.2**
KSH AP pP 10 49 14.0 -0.4
KSH PCP PcP 10 50 07.0 +0.6
KSH PP PP 10 50 54.0 -0.5
KSH SCP 10 53 56.0
KSH PCS 10 54 04.5
KSH XS 10 56 42.5
KSH SCS ScS 10 58 34.0 -0.4
KSH SS SS 10 59 46.8 -0.6
KSH AMB AMB
comp=Z,130nm,3.2s
KSH LR LR
comp=N,150nm,5.2s
KSH LR LR
comp=E,200nm,8.0s
DMN Daman 52.09 273 *e*P **P** **10 48 55.6 0.0**
comp=E,165nm,0.8s
GKN Gorkha 52.19 274 *e*P **P** **10 48 56.1 -0.3**
comp=E,124nm,0.7s
AML Almayashu 52.26 295 P **P** **10 48 57.5 +0.7**
SNR=15
DANN Dangsing 52.62 275 *e*P **P** **10 49 00.1 +0.5**
KOLN Koldanda 53.07 275 *e*P **P** **10 49 02.9 -0.1**
comp=E,114nm,0.8s,mb6.0
ARU Arti 54.28 317⇑ *i*P **P** **10 49 09.8 -1.6**
ARU *i* 10 51 09.8
ARU *e*S **S** **10 56 47.0 +5.6**
ARU *e* 10 58 49.7
ARU pmax pmax
comp=Z,9.0nm,0.6s,mb5.0
YKW3 Yellowknife Ar 55.20 34⇑ *e*P **P** **10 49 17.1 -1.0**
YKA Yellowknife Ar 55.24 34 P **P** **10 49 17.2 -1.1**
comp=Z,8.8nm,0.6s,mb5.0,baz=298,slow=6.9,SNR=180
YKA PcP PcP 10 50 17.4 -0.7
comp=Z,3.1nm,0.6s,baz=307,slow=3.9,SNR=6.4
YKA Yellowknife Ar 55.24 34 P **P** **10 49 17.2 -1.2**
YKA 10 50 17.4
YKA pmax pmax
comp=Z,9.0nm,0.6s
YKA pmax pmax
comp=Z,3.0nm,0.6s
YKA Yellowknife Ar 55.24 34 P **P** **10 49 17.2 -1.1**
YKA PcP PcP 10 50 17.4 -0.7
KALG Kalgarh 55.52 279 *e* **P** **10 49 14.2 -6.7**
NDI New Delhi 57.09 280 *e*P **P** **10 49 30.0 -2.1**
AYAN Aya Nagar 57.27 279 *e*P **P** **10 49 32.1 -1.3**
AYAN *e* 10 49 33.1
comp=Z,45nm,0.6s
AGRA Agra 57.44 278 *e*P **P** **10 49 32.6 -1.9**
AGRA *e* 10 49 34.0
comp=Z,45nm,0.4s
SONA Sohna 57.44 279 *e*P **P** **10 49 33.0 -1.6**
SONA *e* 10 49 34.2
comp=Z,42nm,0.4s
KUDL Kundal 57.93 279 *e*P **P** **10 49 36.3 -1.6**
KUDL *e* 10 49 38.2
comp=Z,27nm,0.2s
KAKA Kakadu 58.29 198 *e*P **P** **10 49 40.1 -0.5**
comp=Z,40nm,1.0s,mb5.4
KEV Kevo 58.44 339 *e*p **P** **10 49 35.8 -5.1**
KHET Khetri 58.45 280 *e*P **P** **10 49 40.7 -0.9**
KHET *e* 10 49 41.1
comp=Z,28nm,0.5s
ARCES ARCESS Array B 58.97 340 P **P** **10 49 40.9 -3.7**
comp=Z,4.1nm,0.9s,mb4.5,baz=41,slow=7.0,SNR=13

ARCES PcP PcP 10 50 32.2 -0.5
comp=Z,3.1nm,0.7s,baz=23,slow=9.2,SNR=3.8
ARCES ARCESS Array B 58.97 340 P **P** **10 49 40.9 -3.7**
ARCES 10 50 32.2
ARCES pmax pmax
comp=Z,4.0nm,0.9s
ARCES pmax pmax
comp=Z,3.0nm,0.7s
JCW Jim Creek 59.16 51 P **P** **10 49 46.1 -0.1**
RPW Rockport 59.25 51 *eP* **P** **10 49 46.1 -0.7**
FMW Mount Fremont 60.00 52 P **P** **10 49 52.0 0.0**
LON Longmire 60.02 53 *eP* **P** **10 49 51.7 -0.4**
SHW Mount Saint He 60.09 53 *eP* **P** **10 49 53.5 +0.8**
NLW Nelson Butte 60.11 51 *eP* **P** **10 49 52.5 -0.2**
BHPL Bhopal 60.24 274 *eP* **P** **10 49 52.8 -1.2**
BHPL *e* 10 49 53.7
comp=Z,39nm,0.8s
COR Corvallis 60.36 55 *eP* **P** **10 49 55.3 +0.7**
ASR Mount Adams--S 60.48 53 P **P** **10 49 55.4 +0.1**
WTV Waterville 60.54 51 P **P** **10 49 55.0 -0.6**
EBG Ellensburg 60.64 52 P **P** **10 49 56.6 +0.2**
KEBM Edson Butte 60.71 57 *eP* **P** **10 49 57.3 +0.4**
HSO Harness Mounta 61.09 56 *eP* **P** **10 50 00.0 +0.5**
KBO Bosley Butte 61.15 58 *eP* **P** **10 50 00.5 +0.5**
WAH2 Wahluke Slope 61.29 52 P **P** **10 50 00.6 -0.2**
CROR Criterion Ridg 61.50 54 P **P** **10 50 02.4 +0.3**
HAWA Hanford 61.52 52 *eP* **P** **10 50 02.1 -0.2**
comp=Z,53nm,1.5s,mb5.3
HUMO Hull Mountain 61.70 57 *eP* **P** **10 50 03.7 +0.2**
NEW Newport 61.77 49 *eP* **P** **10 50 03.1 -0.8**
comp=Z,44nm,1.0s,mb5.4
JOF Joensuu 61.87 332 *ep* **P** **10 50 01.0 -3.4**
comp=Z,1.6nm,0.3s,mb4.5
JOF Joensuu 61.87 332 *eP* **P** **10 50 01.0 -3.4**
JOF pmax pmax
comp=Z,2.0nm,0.3s,mb4.6
VIPM Ingram Point 61.98 54 P **P** **10 50 05.7 +0.2**
YBH Yreka Blue Hor 62.35 58 *eP* **P** **10 50 08.4 +0.5**
comp=Z,16nm,0.8s,mb5.1
LNOR Lincton Mounta 62.53 52 P **P** **10 50 09.2 +0.1**
JASL Jaisalmer 62.61 282 *eP* **P** **10 50 07.4 -2.5**
WALA Waterton Lakes 63.02 47 *eP* **P** **10 50 11.9 -0.4**
comp=Z,46nm,1.1s,mb5.3
WDC Whiskeytown Da 63.13 59 *eP* **P** **10 50 13.1 -0.1**
comp=Z,8.9nm,0.7s,mb4.8
HYB Hyderabad 63.15 269 *i* P **P** **10 50 12.0 -1.6**
HYB *epP* pP 10 50 28.5 -5.0
HYB Hyderabad 63.15 269 *eP* **P** **10 50 12.0 -1.6**
HYB *e* pP 10 50 28.5 -5.0
SUMG Summit 63.46 2 *eP* **P** **10 50 12.2 -2.7**
MOD Modoc 63.70 56 *eP* **P** **10 50 16.4 -0.4**
comp=Z,14nm,0.6s,mb5.0
CTA Charters Tower 63.97 181 *eP* **P** **10 50 18.6 -0.3**
comp=Z,6.6nm,0.6s,mb4.6
CTA Charters Tower 63.97 181 P **P** **10 50 18.5 -0.4**
comp=Z,8.4nm,0.6s,mb4.7,baz=13,slow=6.6,SNR=13
CTA Charters Tower 63.97 181 P **P** **10 50 18.5 -0.4**
CTA pmax pmax
comp=Z,8.0nm,0.6s
MSO Missoula 64.36 49⇑ *eP* **P** **10 50 20.6 -0.4**
comp=Z,49nm,0.9s,mb5.3
WVOR Wild Horse Val 64.38 55⇑ *iP* **P** **10 50 21.1 0.0**
comp=Z,19nm,0.9s,mb4.9
OHCM Honcut 64.53 59 *eP* **P** **10 50 21.8 -0.5**
FINES FINESS Array B 64.65 333 P **P** **10 50 19.3 -3.3**
comp=Z,11nm,0.5s,mb4.9,baz=44,slow=7.4,SNR=84
FINES LR LR 11 22 57.1
comp=Z,115nm,19.0s,baz=40,slow=40
FINES FINESS Array B 64.65 333 P **P** **10 50 19.3 -3.3**
FINES pmax pmax
comp=Z,11nm,0.5s
FINES MLR MLR
comp=Z,115nm,19.0s
CHMT Chamberlain Mo 64.68 48 *eP* **P** **10 50 22.6 -0.5**
BEKR Beckwourth 64.90 58⇑ *iP* **P** **10 50 24.4 -0.2**
comp=Z,30nm,0.8s,mb5.2
WRAB Tennant Creek 64.96 194 *eP* **P** **10 50 24.4 -0.9**
comp=Z,154nm,1.3s,mb5.7
WB2 Warramunga Arr 64.97 194⇓ *iP* **P** **10 50 24.7 -0.7**
WRA Warramunga Arr 64.97 194 P **P** **10 50 24.5 -0.8**
comp=Z,25nm,0.9s,mb5.0,baz=9.9,slow=6.8,SNR=76
WRA pP pP 10 50 42.1 -3.2
comp=Z,4.6nm,0.6s,baz=8.4,slow=6.9,SNR=3.9
WRA Warramunga Arr 64.97 194 P **P** **10 50 24.5 -0.9**
WRA *PP pP 10 50 42.1 -3.3
WRA pmax pmax
comp=Z,25nm,0.9s
WRA pmax pmax
comp=N,5.0nm,0.6s
LKC Lake Chabot 65.13 61 *eP* **P** **10 50 26.1 -0.1**
FFC Flin Flon 65.13 37⇑ *iP* **P** **10 50 25.5 -0.4**
comp=N,42nm,0.8s,mb5.3
FFC pP pP 10 50 40.7 -5.2
FITZ Fitzroy Crossi 65.17 203 *eP* **P** **10 50 26.9 +0.2**
comp=N,8.8nm,0.8s,mb4.6
FITZ Fitzroy Crossi 65.17 203 P **P** **10 50 26.2 -0.5**
comp=N,9.9nm,0.7s,mb4.7,baz=78,slow=2.3,SNR=9.4
OBN Obninsk 65.18 324 *ceP* **P** **10 50 24.3 -1.9**
OBN *eS* S 10 59 00.2 -1.3
OBN pmax pmax
comp=Z,7.0nm,0.5s,mb4.8
OBN MLR MLR
comp=Z,100nm,15.0s
FCC Fort Churchill 65.46 30⇑ *eP* **P** **10 50 26.5 -1.4**
comp=Z,17nm,0.4s,mb5.2
HRY Holter Researc 65.57 48 *eP* **P** **10 50 28.9 +0.1**
WCN Washoe City 65.61 58⇑ *iP* **P** **10 50 29.4 +0.2**
comp=Z,33nm,1.0s,mb5.1
CMB Columbia Colle 66.00 60⇑ *iP* **P** **10 50 31.5 -0.2**
comp=Z,26nm,0.8s,mb5.1
HLID Hailey 66.12 52⇑ *iP* **P** **10 50 32.5 +0.1**
comp=Z,14nm,0.9s,mb4.8
MCMT McKenzie Canyo 66.20 50 *eP* **P** **10 50 32.2 -0.6**
BOZ Bozeman (W) 66.35 49⇑ *iP* **P** **10 50 34.1 +0.4**
comp=Z,49nm,0.6s,mb5.5
BMN Battle Mountai 66.44 56⇑ *iP* **P** **10 50 34.8 +0.3**
comp=Z,44nm,1.3s,mb5.1
VRSR Storozhevoye 66.63 319 *eP* **P** **10 50 34.3 -1.1**
VRSR *e* 10 51 02.9
VRSR pmax pmax
comp=Z,30nm,1.2s,mb5.0
VRSR pmax pmax
comp=N,20nm,0.9s
VRSR pmax pmax
comp=E,10.0nm,0.9s
VRSR MLR MLR
comp=Z,140nm,16.0s
VRSR MLR MLR
comp=N,160nm,18.0s
VRSR MLR MLR
comp=E,80nm,19.0s
QLMT Earthquake Lak 66.98 49 *eP* **P** **10 50 38.1 +0.3**
NVAR Mina Array Bea 67.04 58 P **P** **10 50 38.4 +0.2**
comp=E,28nm,0.5s,mb5.3,baz=293,slow=8.0,SNR=325
MNV Mina 67.13 58⇑ *iP* **P** **10 50 38.8 0.0**
comp=E,31nm,0.9s,mb5.1
YMR Madison River 67.34 49⇑ *iP* **P** **10 50 40.6 +0.6**
MTUM Tungsten Hills 67.55 59 *eP* **P** **10 50 41.9 +0.4**
TPH Tonopah 67.92 58⇑ *iP* **P** **10 50 44.0 +0.2**
comp=E,41nm,0.7s,mb5.4
HVU Hansel Valley 68.19 53 *eP* **P** **10 50 45.7 +0.3**
KSWY Kelly School 68.20 50 *eP* **P** **10 50 46.3 +1.0**
AHID Auburn Hatcher 68.50 51 *eP* **P** **10 50 47.1 -0.1**
comp=E,18nm,0.9s,mb4.9
BGU Big Grassy Mou 68.59 53⇑ *eP* **P** **10 50 47.9 +0.1**
AS12 Alice Springs 68.68 194⇑ *iP* **P** **10 50 48.9 +0.2**
comp=E,9.2nm,0.6s,mb4.8
ASAR Alice Springs 68.68 194 P **P** **10 50 49.0 +0.3**
comp=E,11nm,0.7s,mb4.8,baz=10,slow=5.3,SNR=147
ASAR PKPPKP 11 19 01.5
comp=E,1.3nm,0.8s,baz=153,slow=2.5,SNR=5.0
GOF Gofitskoye 68.82 313⇓ *iP* **P** **10 50 49.0 -0.2**
GOF pmax pmax
comp=Z,80nm,1.4s,mb5.4
HWUT Hardware Ranch 68.99 52⇑ *eP* **P** **10 50 50.6 +0.3**
comp=Z,41nm,1.0s,mb5.2
NB2 NORSAR Subarra 69.33 339 P **P** **10 50 49.2 -2.8**
comp=Z,9.4nm,0.7s,mb4.7,baz=32,slow=6.5
NOA NORSAR Array B 69.33 339 P **P** **10 50 49.0 -3.1**
comp=Z,7.0nm,0.7s,mb4.6,baz=32,slow=6.1,SNR=30
NOA LR LR 11 26 16.5
comp=Z,88nm,20.4s,baz=35,slow=40
NOA NORSAR Array B 69.33 339 P **P** **10 50 49.0 -3.0**
NOA pmax pmax
comp=Z,7.0nm,0.7s
NOA MLR MLR
comp=Z,88nm,20.4s
NOA NORSAR Array B 69.33 339 P **P** **10 50 49.0 -3.1**
NOA LR LR 11 26 16.5
PDAR Pinedale Array 69.35 50 P **P** **10 50 52.4 -0.2**
comp=Z,23nm,0.8s,mb5.1,baz=264,slow=2.0,SNR=177
TCUT Toone Canyon 69.40 52 *eP* **P** **10 50 53.2 +0.4**
CTU Camp Tracy 69.48 53 *eP* **P** **10 50 53.4 0.0**
NAO01 NORSAR Array S 69.58 339 *eP* **P** **10 50 51.8 -1.8**
comp=Z,4.4nm,0.7s,mb4.4
JLU Jordanelle 69.71 53⇑ *eP* **P** **10 50 54.8 +0.1**
KIV Kislovodsk 69.75 312 *eP* **P** **10 50 54.7 -0.2**
KIV *eS* S 10 59 59.4 +2.9
KIV *eSS* SS 11 04 32.0 +4.3
KIV pmax pmax
comp=Z,60nm,0.7s,mb5.5
KIV MLR MLR
comp=Z,200nm,23.0s
KIV MLR MLR
comp=N,160nm,22.0s
KIV Kislovodsk 69.75 312 *eP* **P** **10 50 54.6 -0.3**
comp=N,68nm,0.8s,mb5.5
NLU North Lily Min 69.78 54⇑ *eP* **P** **10 50 55.5 +0.3**
MWC Mount Wilson 69.86 62 *eP* **P** **10 50 55.2 -0.6**
ZEI Tsey 69.88 310 *eP* **P** **10 50 55.4 -0.3**
ZEI MLR MLR
comp=Z,200nm,20.0s
DAU Daniels Canyon 69.95 53 *eP* **P** **10 50 56.5 +0.3**
MPU Maple Canyon 69.99 53⇑ *iP* **P** **10 50 56.8 +0.4**
THR Tehran 70.18 301 P **P** **10 50 57.6 -0.1**
comp=Z,5.7nm,0.8s,mb4.5,baz=26,slow=3.3,SNR=16
THR LR LR 11 24 42.6
comp=Z,29nm,20.2s,baz=190,slow=38
THR Tehran 70.18 301 P **P** **10 50 57.6 0.0**
THR pmax pmax
comp=Z,6.0nm,0.8s
THR MLR MLR
comp=Z,29nm,20.2s
MVU Marysvale 70.65 55 *eP* **P** **10 51 01.1 +0.6**
comp=Z,16nm,0.9s,mb4.8
MSU Marysvale 70.67 55⇑ *eP* **P** **10 51 01.5 +1.0**
ULM Lac du Bonnet 70.93 37 P **P** **10 51 01.2 -0.8**
comp=Z,1.1nm,0.5s,mb5.0,baz=316,slow=7.8,SNR=12
ULM Lac du Bonnet 70.93 37 *eP* **P** **10 51 00.9 -1.0**
comp=Z,9.8nm,0.6s,mb4.8
NEN Nelson 70.94 59⇑ *eP* **P** **10 51 02.4 +0.1**
LDFC Landfair 71.15 59 *eP* **P** **10 51 03.4 -0.1**
SRU San Rafael 71.23 54⇑ *iP* **P** **10 51 04.3 +0.3**
PFO Pinyon Flat Ob 71.27 61⇑ *eP* **P** **10 51 03.8 -0.5**
comp=Z,27nm,0.9s,mb5.1
SOC Sochi 71.57 313 *c iP* **P** **10 51 05.8 -0.1**
SOC *e* pP 10 51 29.4 +3.1
SOC *e* 10 53 53.8
SOC *eS* S 11 00 21.2 +3.6
SOC *e* 11 01 10.1
SOC *eSSS* SSS 11 08 03.5 -0.9
SOC pmax pmax
comp=Z,30nm,0.6s,mb5.3
SOC pmax pmax
comp=N,2.0nm,0.3s
SOC pmax pmax
comp=E,7.0nm,0.4s
SOC MLR MLR
comp=N,250nm,25.0s
SOC MLR MLR
comp=Z,350nm,25.0s
SOC MLR MLR
comp=E,310nm,19.0s
BAR Barrett 71.74 62 *eP* **P** **10 51 06.9 -0.2**
BCA Borcka 72.03 311 P **P** **10 51 08.7 0.0**
PV10 Paradox Valley 72.59 53⇑ *eP* **P** **10 51 12.8 +0.8**
PV01 Paradox Valley 73.02 53 *eP* **P** **10 51 14.8 +0.3**
TVAN Van 73.02 307 *i* P **P** **10 51 15.7 +1.2**
WUAZ Wupatki 73.14 57 *eP* **P** **10 51 15.8 +0.6**
comp=E,35nm,1.1s,mb5.1
BSD Bornholm Skovb 73.27 334 *i* P **P** **10 51 14.3 -1.2**
comp=E,9.0nm,0.8s,mb4.7
BSD Bornholm Skovb 73.27 334 *eP* **P** **10 51 14.3 -1.2**
BSD pmax pmax
comp=Z,9.0nm,0.8s,mb4.7
BSD Bornholm Skovb 73.27 334 *eP* **P** **10 51 14.3 -1.2**
comp=Z,9.0nm,0.8s,mb4.7
SIM Simferopol' 73.44 317 *c iP* **P** **10 51 16.5 -0.3**
SIM pmax pmax
comp=Z,40nm,0.8s,mb5.3
ISCO Idaho Springs 73.55 50⇑ *eP* **P** **10 51 18.1 +0.6**
comp=Z,21nm,0.8s,mb4.9
GUMT Gumushane 73.88 311 P **P** **10 51 20.3 +0.9**
KELT Kelkit 74.22 311 *iP* **P** **10 51 23.6 +2.1**
BEST Besiri 74.68 308 *iP* **P** **10 51 25.2 +1.1**
KWP Kalwaria 74.95 327 *eP* **P** **10 51 25.5 +0.1**
SDCO Great Sand Dun 75.04 52 *eP* **P** **10 51 26.4 +0.2**
comp=Z,17nm,1.0s,mb4.7
OJC Ojcow 75.60 328⇓ *iP* **P** **10 51 28.7 -0.4**
OJC *eS* S 11 00 58.3 -4.2
OJC MLR MLR 11 31 22.0
comp=Z,100nm,19.7s
BOYT Boyabat 75.61 314 *i* P **P** **10 51 30.3 +0.9**
TUC Tucson 75.68 59 *eP* **P** **10 51 30.2 +0.3**
comp=Z,14nm,0.9s,mb4.7
BSEG Bad Segeberg 75.68 336 *eP* **P** **10 51 29.0 -0.5**
BSEG pmax pmax
comp=Z,13nm,0.9s,mb4.7
STKA Stephens Creek 75.90 185⇑ *iP* **P** **10 51 32.2 +1.0**
comp=Z,7.8nm,0.9s,mb4.4
STKA Stephens Creek 75.90 185 P **P** **10 51 32.1 +0.9**
comp=Z,8.2nm,0.8s,mb4.5,baz=335,slow=6.5,SNR=11
STKA pP pP 10 51 49.7 -2.0
comp=Z,12nm,1.1s,baz=334,slow=7.4,SNR=2.0
STKA LR LR 11 23 48.3
comp=Z,115nm,20.1s,baz=24,slow=35
MYA Malataya 75.96 310 P **P** **10 51 33.2 +1.7**
CRVS Cervenica-Dubn 76.02 327 *iP* **P** **10 51 31.2 -0.3**
NIE Niedzica 76.05 328 *eP* **P** **10 51 31.9 +0.2**
CTKT Corum 76.25 314 *iP* **P** **10 51 34.0 +0.9**
BALT Daday 76.30 315 *iP* **P** **10 51 34.3 +1.0**
KSP Ksiaz 76.37 331 *eP* **P** **10 51 32.9 -0.5**
KSP Ksiaz 76.37 331⇓ *eP* **P** **10 51 33.2 -0.2**
KSP *e*PP pP 10 51 55.2 +1.2
ANMO Albuquerque 76.45 54 *c iP* **P** **10 51 35.2 +0.9**
ANMO Albuquerque 76.45 54 *eP* **P** **10 51 34.9 +0.6**
comp=Z,22nm,1.1s,mb4.8
OKC Ostrava-Krasne 76.53 329⇓ *iP* **P** **10 51 34.2 -0.2**
LENM Lemitar 76.69 55 *eP* **P** **10 51 36.4 +0.8**
FORT Forrest 76.72 197 *eP* **P** **10 51 36.5 +0.6**
comp=Z,66nm,0.7s,mb5.5
UPC Upice 76.75 331⇓ *ex* x 10 51 55.7
DPC Dobruska-Polom 76.77 330⇓ *iP* **P** **10 51 35.5 -0.2**
MORC Moravsky Berou 76.80 329 *eP* **P** **10 51 35.8 -0.1**
comp=Z,19nm,0.8s,mb4.9
SAFT Safranbolu 76.87 315 P **P** **10 51 37.6 +1.1**
BNM Barren Site 76.91 55 *eP* **P** **10 51 37.6 +0.8**
QRN Al-Qurain 76.97 297 *eP* **P** **10 51 37.2 -0.1**
QRN Al-Qurain 76.97 297 *eP* **P** **10 51 37.2 -0.1**
QRN AMb AMB 10 51 38.5
comp=Z,118nm,0.6s,mb5.8
BNN Bunyan 76.98 312 P **P** **10 51 38.2 +1.0**
RST Umm Al-Ruwaisa 77.04 298 *eP* **P** **10 51 37.0 -0.7**
RST AMb AMB 10 51 38.6
comp=Z,120nm,0.7s,mb5.7
RST Umm Al-Ruwaisa 77.04 298 *eP* **P** **10 51 37.1 -0.6**
RST AMb AMB 10 51 38.6
comp=Z,112nm,0.7s,mb5.7
ELDT Eldivan 77.05 314 *i* P **P** **10 51 38.2 +0.7**
RDF Al-Radifah 77.08 298 *eP* **P** **10 51 37.8 -0.2**
RDF AMb AMB 10 51 39.3
comp=Z,147nm,0.6s,mb5.9
RDF Al-Radifah 77.08 298 *eP* **P** **10 51 37.9 -0.1**
RDF AMb AMB 10 51 38.6
comp=Z,159nm,0.6s,mb5.9
SCHQ Schefferville 77.09 20 P **P** **10 51 36.8 -0.6**
comp=Z,8.0nm,0.6s,mb4.6,baz=334,slow=5.9,SNR=24
SCHQ pP pP 10 51 54.4 -3.6
comp=Z,5.8nm,0.6s,baz=0.3,slow=8.7,SNR=3.8
SCHQ Schefferville 77.09 20 *eP* **P** **10 51 36.9 -0.5**
comp=Z,8.2nm,0.6s,mb4.6
CLL Collm 77.10 333 P **P** **10 51 36.9 -0.6**
comp=Z,logA/T=1.8,mb5.3
CLL *e*PP pP 10 51 55.0 -3.1
CLL *e*SP sP 10 52 09.0 +2.5
CLL Collm 77.10 333 *i* P **P** **10 51 36.9 -0.6**
CLL *e*PP pP 10 51 55.0 -3.1
CLL pmax pmax
comp=Z,45nm,0.7s,mb5.3
CLL Collm 77.10 333 *i* P **P** **10 51 36.9 -0.6**
comp=Z,45nm,0.7s,mb5.3
CLL *ep*P pP 10 51 55.0 -3.1
GZT Gaziantep 77.13 310 *i* P **P** **10 51 39.1 +1.1**
BRG Berggiesshubel 77.15 332 *eP* **P** **10 51 37.5 -0.3**
BRG pmax pmax
comp=Z,9.0nm,0.9s,mb4.5
BRG Berggiesshubel 77.15 332 *eP* **P** **10 51 37.5 -0.3**
comp=Z,8.8nm,0.9s,mb4.5
PVCC Panska Ves 77.23 331⇓ *iP* **P** **10 51 38.2 -0.1**
VYHS Vyhne 77.37 328 *iP* **P** **10 51 39.2 +0.1**
PSZ Piszkesteto 77.43 327⇑ *iP* **P** **10 51 40.0 +0.5**
BRTR Keskin Array B 77.51 314 P **P** **10 51 40.1 +0.1**
comp=Z,13nm,0.8s,mb4.7,baz=79,slow=3.7,SNR=62
BRTR pP pP 10 51 58.1 -2.6
comp=Z,4.6nm,0.9s,baz=45,slow=7.0,SNR=4.3
BRTR LR LR 11 32 51.5
comp=Z,75nm,18.0s,baz=185,slow=41
PRU Pruhonice 77.70 331⇓ *iP* **P** **10 51 40.5 -0.4**
comp=Z,18nm,0.7s,mb4.9
PRU *ex* x 10 51 59.3
PRU Pruhonice 77.70 331⇓ *iP* **P** **10 51 40.5 -0.4**
PRU *e* pP 10 51 59.3 -2.2
PRU pmax pmax
comp=Z,19nm,0.7s,mb4.9
KAMT Kaman 77.73 314 P **P** **10 51 41.8 +0.5**
LOD Lodumlu 77.84 314 P **P** **10 51 42.8 +1.0**
SMOL Smolenice 77.89 329 *iP* **P** **10 51 42.8 +0.9**
MOX Moxa 78.12 333 *iP* **P** **10 51 42.8 -0.4**
comp=Z,logA/T=1.2,mb4.7
MOX Moxa 78.12 333 *eP* **P** **10 51 42.8 -0.4**
MOX pmax pmax
comp=Z,19nm,1.1s,mb4.7
MOX Moxa 78.12 333 *eP* **P** **10 51 42.8 -0.4**
comp=Z,19nm,1.1s,mb4.7
SRO Srobarova 78.13 328 *eP* **P** **10 51 43.8 +0.5**
NIG Nigde 78.19 312 P **P** **10 51 45.4 +1.6**
MDU Mudurnu 78.19 316 P **P** **10 51 44.7 +0.9**
NKC Novy Kostel 78.20 332⇓ *eP* **P** **10 51 43.4 -0.2**
NKC *ex* x 10 52 02.5
HASS Wahat al Ahsa' 78.25 294 P **P** **10 51 44.4 0.0**
ZST Bratislava 78.27 329 *eP* **P** **10 51 44.9 +0.8**
WTSB Winterswijk 78.44 337⇑ *iPKP* **P** **10 51 44.4 -0.5**
comp=Z,24nm,0.9s,mb4.9
COBT Iskenderun 78.46 310 *iP* **P** **10 51 46.7 +1.4**
HRT Hereke 78.69 317 P **P** **10 51 47.3 +0.8**
KHC Kasperske Hory 78.76 331⇓ *eP* **P** **10 51 46.8 +0.1**
KHC *ex* x 10 52 04.0
KSU1 Kansas State U 78.86 46 *eP* **P** **10 51 46.6 -0.9**
GEC2 GERESS Array S 78.96 331 *eP* **P** **10 51 47.4 -0.4**
GEC2 pmax pmax
comp=Z,10.0nm,0.7s,mb4.8
GERES GERESS Array B 78.96 331 P **P** **10 51 47.3 -0.5**
comp=Z,6.2nm,0.5s,mb4.7,baz=35,slow=5.6,SNR=65
GERES pP pP 10 52 04.6 -3.9
comp=Z,1.7nm,0.5s,baz=360,slow=4.0,SNR=4.2
GERES GERESS Array B 78.96 331 P **P** **10 51 47.3 -0.5**
GERES *PP pP 10 52 04.6 -3.9
GERES pmax pmax
comp=Z,6.0nm,0.5s
GERES pmax pmax
comp=N,2.0nm,0.5s
WET Wettzell 78.99 332 *eP* **P** **10 51 48.0 0.0**
WET pmax pmax
comp=Z,26nm,1.0s,mb5.0
KIZT Kizilcal 79.05 314 P **P** **10 51 49.0 +0.5**
GRF Grafenberg Arr 79.07 333 *eP* **P** **10 51 48.7 +0.3**
GRF pmax pmax
comp=Z,49nm,0.8s,mb5.4
ESKT Eskisehir 79.09 315 *iP* **P** **10 51 48.5 -0.3**
ESKT Eskisehir 79.09 315 P **P** **10 51 48.9 +0.2**
CPRX Cap Rock 79.32 54 *eP* **P** **10 51 50.4 +0.2**
MNTX Cornudas Mount 79.38 56⇑ *iP* **P** **10 51 50.8 +0.3**
comp=Z,26nm,0.8s,mb5.1
ULDT Uludag 79.47 317 *iP* **P** **10 51 51.4 +0.6**
MOA Molln 79.60 330⇑ *iP* **P** **10 51 51.4 +0.1**
comp=Z,10nm,0.8s,mb4.7
GDL2 Guadalupe Moun 79.63 55 *eP* **P** **10 51 52.2 +0.4**
RHK1 Bakonya 79.64 327⇑ *iP* **P** **10 51 51.1 -0.5**
ARSA Arzberg 79.65 329⇑ *iP* **P** **10 51 51.4 -0.2**
comp=Z,8.1nm,1.0s,mb4.5
DIM Dimitrovgrad 79.72 320 *iP* **P** **10 51 57.2 +5.1**
HGN Heimansgroeve 79.76 336⇑ *iPKP* **P** **10 51 51.7 -0.4**
comp=Z,16nm,0.9s,mb4.9
CLNB Carlsbad 79.87 55 *eP* **P** **10 51 53.2 +0.1**
TOD Tromm 79.92 334 *eP* **P** **10 51 52.5 -0.5**
IKL Isikli 80.07 311 P **P** **10 51 54.3 +0.3**
PERS Pernice 80.32 329 *iP* **P** **10 51 54.9 -0.3**
FUR Furstenfeldbru 80.37 332 *eP* **P** **10 51 55.6 +0.2**
FUR pmax pmax
comp=Z,36nm,1.0s,mb5.2
STU Stuttgart 80.53 334 *eP* **P** **10 51 56.1 -0.2**
KBA Koelnbreinsper 80.59 330⇑ *iP* **P** **10 51 57.1 +0.5**
comp=Z,25nm,0.7s,mb5.2
OBKA Obir 80.64 329⇓ *iP* **P** **10 51 56.5 -0.4**
comp=Z,13nm,0.7s,mb4.9
GIVF Givet 80.67 337 *eP* **P** **10 51 56.0 -1.0**
comp=Z,18nm,0.9s,mb4.6
LANF Langenberg 80.78 335 *eP* **P** **10 51 57.3 -0.3**
BAIF Baives 80.88 337 *eP* **P** **10 51 57.1 -1.0**
comp=Z,13nm,0.8s,mb4.5
MMB Musomiste 80.91 321 *iP* **P** **10 51 58.5 +0.1**
WMOK Wichita Mounta 80.96 50 *eP* **P** **10 51 58.7 -0.1**
comp=Z,22nm,0.7s,mb5.1
KKB Krupnik 80.97 321 *iP* **P** **10 51 59.5 +0.7**
WATA Walderalm 80.99 331⇓ *iP* **P** **10 51 58.9 +0.2**
comp=Z,23nm,0.5s,mb5.3
WTTA Wattenberg 81.03 331⇑ *iP* **P** **10 51 59.4 +0.5**
comp=Z,30nm,0.5s,mb5.4
LJU Ljubljana 81.04 329 *eP* **P** **10 51 58.1 -0.9**
MOTA Moosalm 81.14 332⇑ *iP* **P** **10 51 59.7 +0.2**
comp=Z,29nm,0.9s,mb5.1
BFO Black Forest 81.19 334 *eP* **P** **10 51 59.4 -0.4**
BFO pmax pmax
comp=Z,13nm,0.9s,mb4.8
SQTA Sankt Quirin 81.21 332⇓ *iP* **P** **10 52 00.2 +0.3**
comp=Z,19nm,0.6s,mb5.1
BOJS Bojanci 81.22 328 *eP* **P** **10 51 59.3 -0.6**
SPAK Spaichingen 81.25 334 *eP* **P** **10 51 59.9 -0.2**
ASF Jabal al Asfar 81.27 307 P **P** **10 52 00.8 +0.3**
comp=Z,13nm,0.7s,mb4.9,baz=266,slow=3.8,SNR=20
CEY Cerknica 81.33 329 *iP* **P** **10 51 59.7 -0.9**
TOO Toolangi 81.40 182⇓ *iP* **P** **10 52 03.4 +2.3**
comp=Z,6.7nm,0.7s,mb4.6
WLS Welschbruch 81.42 335 *eP* **P** **10 52 00.7 -0.3**
CDF Champ du Feu 81.45 335 *eP* **P** **10 52 00.4 -0.7**
comp=Z,31nm,0.9s,mb4.9
DAVA Damuels 81.60 332⇑ *iP* **P** **10 52 02.1 +0.2**
comp=Z,15nm,0.6s,mb5.0
NWAO Narrogin (SRO) 81.60 205 P **P** **10 52 02.5 +0.2**
comp=Z,15nm,0.8s,mb4.9,baz=49,slow=8.6,SNR=8.2
NWAO Narrogin (SRO) 81.60 205 P **P** **10 52 02.5 +0.3**
NWAO pmax pmax
comp=Z,15nm,0.8s
NWAO Narrogin (SRO) 81.60 205 P **P** **10 52 02.5 +0.2**
SKO Skopje 81.62 323⇑ *iP* **P** **10 52 03.0 +0.9**
comp=Z,0.0nm,0.7s
ECH Echery 81.66 335 *eP* **P** **10 52 02.2 0.0**
HILS Ha'il 81.78 300 P **P** **10 52 04.2 +0.9**
MZLS Mizel 81.99 296 P **P** **10 52 05.1 +0.7**
MOF Molkenrain 81.99 334 *eP* **P** **10 52 03.3 -0.6**
THEF They Montfort 82.01 335 *eP* **P** **10 52 03.5 -0.5**
MEZF Maizieres J'vi 82.04 336 *eP* **P** **10 52 03.8 -0.3**
comp=Z,20nm,0.7s,mb4.8
HAU Haudompre 82.09 335 *eP* **P** **10 52 03.6 -0.8**
comp=Z,16nm,0.8s,mb4.6
HAU *eR*
comp=Z,98nm,18.1s
LTX Lajitas 82.11 57 *eP* **P** **10 52 05.2 +0.3**
comp=Z,54nm,0.7s,mb5.5
TXAR Lajitas Array 82.11 57 P **P** **10 52 05.4 +0.5**
comp=Z,47nm,0.6s,mb5.5,baz=297,slow=4.1,SNR=734
TXAR PKKPbc 11 10 33.3
comp=Z,0.3nm,0.6s,baz=146,slow=4.5,SNR=5.5
HINF Hinteralfeld 82.11 335 *eP* **P** **10 52 03.5 -1.0**
comp=Z,14nm,0.6s,mb4.6
BRMO Bormio 82.14 332 *eP* **P** **10 52 05.1 +0.4**
BBS Basel-Blauen 82.22 334 *eP* **P** **10 52 04.8 -0.3**
CCM Cathedral Cave 82.36 43 *eP* **P** **10 52 05.5 -0.5**
comp=Z,48nm,0.8s,mb5.4
SLM Saint Louis 82.39 42 *eP* **P** **10 52 05.5 -0.7**
comp=Z,53nm,0.9s,mb5.4
LOMF Lomont 82.53 334 *eP* **P** **10 52 06.6 -0.1**
FVM French Village 82.81 43 *eP* **P** **10 52 08.2 -0.1**
comp=Z,47nm,1.4s,mb5.1
VAI Varese 83.22 332⇓ *iP* **P** **10 52 09.7 -0.5**

FLN	**La Foliniere**	**83.31**	**339**	*e*P		**P**	**10 52 10.1**	**-0.5**
	comp=Z,29nm,0.6s,mb5.0							
FLN				*e*R				
	comp=Z,89nm,19.2s							
LDF	**La Druitiere**	**83.38**	**339**	*e*P		**P**	**10 52 10.3**	**-0.7**
	comp=Z,23nm,0.7s,mb4.8							
CABF	**La Chapelle**	**83.42**	**334**	*e*P		**P**	**10 52 10.9**	**-0.3**
	comp=Z,12nm,0.8s,mb4.5							
AFFS	**'Afif**	**83.48**	**297**	P		**P**	**10 52 13.2**	**+1.2**
LOR	**Lormes**	**83.50**	**336**	*e*P		**P**	**10 52 11.0**	**-0.6**
	comp=Z,31nm,0.9s,mb4.8							
LOR				*e*R				
	comp=Z,185nm,20.5s							
JCT	**Junction City**	**83.55**	**53**⇑	*i*P		**P**	**10 52 12.4**	**+0.3**
	comp=Z,47nm,0.9s,mb5.3							
SIUC	**Southern Illin**	**83.61**	**42**	*e*P		**P**	**10 52 12.4**	**+0.1**
	comp=Z,93nm,1.0s,mb5.6							
SIUC				*e*pP		pP	10 52 28.1	-5.0
FSSB	**Fossombrone**	**83.69**	**329**	‖*i*P		**P**	**10 52 12.9**	**+0.4**
BLO	**Bloomington**	**83.71**	**39**	*e*P		**P**	**10 52 12.3**	**-0.5**
	comp=Z,17nm,0.7s,mb5.0							
BLO				*e*pP		pP	10 52 29.5	-4.1
GRR	**Gorron**	**83.75**	**339**	*e*P		**P**	**10 52 12.6**	**-0.2**
	comp=Z,40nm,0.6s,mb5.1							
SSF	**Saint Saulge**	**83.79**	**336**	*e*P		**P**	**10 52 12.5**	**-0.5**
	comp=Z,13nm,0.7s,mb4.5							
MIAR	**Mount Ida**	**83.90**	**47**⇑	*e*P		**P**	**10 52 14.0**	**+0.1**
	comp=Z,55nm,0.9s,mb5.4							
GSCL	**Guseciola**	**83.92**	**331**	*e*P		**P**	**10 52 14.5**	**+0.8**
PGD	**Poggio Sodo**	**83.92**	**330**	*e*P		**P**	**10 52 15.1**	**+1.3**
BOB	**Bobbio (Coli)**	**83.95**	**331**	*e*P		**P**	**10 52 14.2**	**+0.4**
GRAM		**83.98**	**331**	P		**P**	**10 52 13.4**	**-0.6**
SNTG	**Esanatoglia**	**84.01**	**329**	*e*P		**P**	**10 52 14.3**	**+0.1**
ERPA	**Erie**	**84.06**	**34**	*e*P		**P**	**10 52 14.5**	**0.0**
	comp=Z,48nm,1.1s,mb5.2							
SMF	**Signal de Mont**	**84.07**	**336**	*e*P		**P**	**10 52 14.2**	**-0.2**
	comp=Z,50nm,0.9s,mb5.1							
LSD	**Ceresole Reale**	**84.11**	**333**	P		**P**	**10 52 15.3**	**+0.7**
SARO	**Sassorosso**	**84.13**	**331**	P		**P**	**10 52 15.0**	**+0.3**
CODM		**84.14**	**331**	P		**P**	**10 52 14.8**	**0.0**
USIN	**University of**	**84.15**	**41**	*e*P		**P**	**10 52 15.3**	**+0.3**
BACM		**84.16**	**331**	P		**P**	**10 52 15.2**	**+0.3**
LPL	**La Plagne**	**84.19**	**334**	*e*P		**P**	**10 52 15.5**	**+0.5**
	comp=Z,29nm,0.7s,mb4.9							
LPG	**La Plagne**	**84.20**	**334**	*e*P		**P**	**10 52 15.7**	**+0.6**
	comp=Z,35nm,0.7s,mb5.0							
VINC	**Vinca**	**84.25**	**331**	P		**P**	**10 52 15.3**	**-0.1**
JMQS	**Jabal Moqyreh**	**84.28**	**305**	P		**P**	**10 52 17.2**	**+1.3**
SGMF	**Saint Gilles**	**84.30**	**341**	*e*P		**P**	**10 52 15.7**	**+0.2**
	comp=Z,28nm,0.7s,mb4.9							
MAIM		**84.33**	**330**	P		**P**	**10 52 14.4**	**-1.4**
RSP	**Reno Superiore**	**84.35**	**333**	P		**P**	**10 52 15.1**	**-0.7**
TBKS	**Tabuk**	**84.37**	**304**	P		**P**	**10 52 17.9**	**+1.6**
ROSF	**Rostrenen**	**84.39**	**341**	*e*P		**P**	**10 52 16.2**	**+0.2**
	comp=Z,47nm,0.9s,mb5.0							
ALLY	**Alegheny Colle**	**84.40**	**34**	*e*P		**P**	**10 52 16.4**	**+0.3**
ACSO	**Alum Creek Sta**	**84.40**	**36**	*e*P		**P**	**10 52 16.1**	**-0.1**
	comp=Z,23nm,1.0s,mb5.0							
BGF	**Bois d'Agland**	**84.44**	**336**	*e*P		**P**	**10 52 16.1**	**-0.1**
	comp=Z,19nm,0.8s,mb4.7							
ALWS	**Ilw as Safayha**	**84.44**	**306**	P		**P**	**10 52 17.9**	**+1.2**
PCP	**Pian Castagno**	**84.46**	**332**	P		**P**	**10 52 15.9**	**-0.5**
KBRS	**Khaybar**	**84.50**	**301**	P		**P**	**10 52 18.3**	**+1.2**
FENE	**Fenestrelle**	**84.52**	**333**	P		**P**	**10 52 16.9**	**+0.2**
JMOS	**Jabal al Moall**	**84.52**	**306**	P		**P**	**10 52 18.2**	**+1.2**
WCI	**Wyandotte Cave**	**84.57**	**40**‖	*e*P		**P**	**10 52 17.4**	**+0.2**
	comp=Z,32nm,1.0s,mb5.2							
BHB	**Bricherasio**	**84.62**	**333**	P		**P**	**10 52 15.7**	**-1.5**
BNI	**Bardonecchia**	**84.62**	**333**‖	*e*P		**P**	**10 52 17.7**	**+0.5**
RRL	**Cesana Torines**	**84.70**	**333**	P		**P**	**10 52 18.4**	**+0.8**
HAQS	**Haql**	**84.71**	**306**	P		**P**	**10 52 19.4**	**+1.4**
PLDF	**La Plantade**	**84.74**	**336**	*e*P		**P**	**10 52 18.5**	**+0.7**
QUIF	**Quistinic**	**84.76**	**341**	*e*P		**P**	**10 52 17.8**	**0.0**
	comp=Z,17nm,0.7s,mb4.8							
AGO	**Saint Agoulin**	**84.81**	**336**	*e*P		**P**	**10 52 18.8**	**+0.7**
TCF	**Toulx Ste Croi**	**84.86**	**337**	*e*P		**P**	**10 52 18.4**	**0.0**
	comp=Z,16nm,0.8s,mb4.7							
FIN	**Finale Ligure**	**84.86**	**332**	P		**P**	**10 52 17.5**	**-0.9**
UTMT	**University of**	**84.87**	**43**	*e*P		**P**	**10 52 19.8**	**+1.1**
	comp=Z,23nm,0.3s,mb5.6							
MBDF	**Montbardon**	**84.88**	**333**	*e*P		**P**	**10 52 18.3**	**-0.2**
	comp=Z,17nm,0.5s,mb5.0							
ROB	**Roburent**	**84.90**	**332**	P		**P**	**10 52 18.0**	**-0.6**
ORIF	**Oris-en-Rattie**	**85.00**	**334**	*e*P		**P**	**10 52 19.4**	**+0.3**
	comp=Z,32nm,0.6s,mb5.1							
ORIF				*e*R				
	comp=Z,95nm,20.0s							
RORO		**85.00**	**332**	P		**P**	**10 52 17.9**	**-1.2**
KAMS	**Al Khamasin**	**85.02**	**293**	P		**P**	**10 52 20.9**	**+1.2**
BDAS	**Al Bad'**	**85.07**	**305**	P		**P**	**10 52 21.0**	**+1.2**
PYM	**Petit Puy Mans**	**85.12**	**336**	*e*P		**P**	**10 52 20.4**	**+0.7**
MONE	**Monesi**	**85.13**	**332**	P		**P**	**10 52 18.8**	**-1.0**
MFF	**Saint Martin d**	**85.22**	**338**	*e*P		**P**	**10 52 20.5**	**+0.4**
	comp=Z,35nm,0.8s,mb5.1							
IMI	**Imperia**	**85.24**	**332**	*e*P		**P**	**10 52 20.2**	**-0.1**
SAOF	**Saorge**	**85.28**	**332**	*e*P		**P**	**10 52 20.2**	**-0.3**
ACCN	**Adirondack Com**	**85.33**	**29**	*e*P		**P**	**10 52 20.5**	**-0.2**
NEGI	**Negi**	**85.35**	**332**	P		**P**	**10 52 20.5**	**-0.4**
SBF	**Sospel**	**85.43**	**332**	*e*P		**P**	**10 52 20.6**	**-0.6**
	comp=Z,18nm,0.5s,mb5.0							
VIVF	**Saint-Julien-l**	**85.43**	**335**	*e*P		**P**	**10 52 21.5**	**+0.3**
	comp=Z,15nm,0.6s,mb4.8							
AURF	**Auriere**	**85.44**	**332**	*e*P		**P**	**10 52 22.0**	**+0.7**
NATX	**Nacogdoches**	**85.46**	**49**	*e*P		**P**	**10 52 21.9**	**+0.1**
MVIF	**Mont Vial**	**85.50**	**333**	*e*P		**P**	**10 52 21.5**	**-0.1**
BINY	**Binghamton**	**85.53**	**31**	*e*P		**P**	**10 52 21.8**	**0.0**
	comp=Z,16nm,1.0s,mb4.9							
WVT	**Waverly**	**85.54**	**42**⇑	*e*P		**P**	**10 52 22.4**	**+0.4**
	comp=Z,20nm,0.8s,mb5.1							
SMRF	**Simiane la Rot**	**85.94**	**334**	*e*P		**P**	**10 52 24.4**	**+0.7**
	comp=Z,19nm,0.9s,mb4.7							
RJF	**Les Rejaudoux**	**85.96**	**337**	*e*P		**P**	**10 52 24.1**	**+0.3**
	comp=Z,16nm,0.8s,mb4.7							
RJF				*e*R				
	comp=Z,124nm,21.0s							
FRF	**La Foret Royal**	**85.96**	**333**	*e*P		**P**	**10 52 23.3**	**-0.5**
	comp=Z,20nm,1.0s,mb4.7							
PGF	**Pioggiola**	**86.05**	**331**	*e*P		**P**	**10 52 23.9**	**-0.4**
	comp=Z,18nm,0.6s,mb4.8							
TAVF	**Tavernes**	**86.10**	**333**	*e*P		**P**	**10 52 25.2**	**+0.7**
CAF	**Calviac**	**86.15**	**336**	*e*P		**P**	**10 52 25.7**	**+1.0**
	comp=Z,24nm,0.7s,mb4.9							
SSPA	**Standing Stone**	**86.15**	**33**	*e*P		**P**	**10 52 25.0**	**+0.2**
	comp=Z,16nm,0.8s,mb5.0							
LMR	**La Mourre**	**86.21**	**333**	*e*P		**P**	**10 52 24.9**	**-0.2**
	comp=Z,25nm,0.7s,mb4.9							
TATS	**Tathlith**	**86.29**	**294**	P		**P**	**10 52 27.8**	**+1.8**
LASF	**Ste Croix**	**86.39**	**335**	*e*P		**P**	**10 52 26.6**	**+0.7**
	comp=Z,10nm,0.7s,mb4.6							
BERF	**Bertagne**	**86.50**	**333**	*e*P		**P**	**10 52 27.1**	**+0.6**
LFF	**La Frestale**	**86.51**	**337**	*e*P		**P**	**10 52 27.3**	**+0.8**
	comp=Z,34nm,0.6s,mb5.1							
SWET	**Sewanee**	**87.19**	**41**⇑	*i*P		**P**	**10 52 30.1**	**0.0**
BLJS	**Baljurashi**	**87.28**	**295**	P		**P**	**10 52 32.6**	**+1.8**
MVL	**Millersville**	**87.30**	**32**	*e*P		**P**	**10 52 30.6**	**+0.1**
PAL	**Palisades**	**87.33**	**30**	*e*P		**P**	**10 52 30.6**	**0.0**
NAMS	**An Nimas**	**87.39**	**294**	P		**P**	**10 52 33.0**	**+1.6**
FWV	**Forest Hill**	**87.55**	**37**⇑	*e*P		**P**	**10 52 32.0**	**+0.3**
DJNS	**Zahran al Janu**	**87.55**	**292**	P		**P**	**10 52 34.0**	**+1.9**
MTLF	**Montolieu**	**87.55**	**336**	*e*P		**P**	**10 52 32.4**	**+0.8**
	comp=Z,8.9nm,0.8s,mb4.6							
CPCT	**Cooper Cave**	**87.66**	**40**	*e*P		**P**	**10 52 32.5**	**+0.2**
ELN	**Prospectdale**	**87.87**	**37**	*e*P		**P**	**10 52 33.4**	**+0.1**
MLS	**Moulis**	**88.23**	**336**	*e*P		**P**	**10 52 36.1**	**+1.2**
EPF	**Esparros**	**88.38**	**337**	*e*P		**P**	**10 52 35.9**	**+0.3**
	comp=Z,8.5nm,0.7s,mb4.6							
LRAL	**Lakeview Retre**	**88.44**	**43**	*e*P		**P**	**10 52 35.4**	**-0.7**
	comp=Z,17nm,1.2s,mb5.0							
VALF	**Valcebollere**	**88.47**	**335**	*e*P		**P**	**10 52 37.3**	**+1.3**
ETSF	**Etsaut**	**88.76**	**337**	*e*P		**P**	**10 52 38.7**	**+1.4**
	comp=Z,13nm,0.7s,mb4.8							
ESDC	**Sonseca Array**	**92.69**	**338**	P		**P**	**10 52 55.2**	**-0.5**
	comp=Z,0.9nm,0.5s,mb4.3,baz=15,slow=4.1,SNR=6.4							
ESDC				pP		pP	10 53 14.3	-2.6
	comp=Z,0.9nm,0.6s,baz=52,slow=2.2,SNR=2.9							
ESDC				LR		LR	11 37 50.4	
	comp=Z,91nm,19.2s,baz=145,slow=38							
SDV	**Santo Domingo**	**116.83**	**43**	PKP		PKPdf	10 58 28.5	+1.2
	comp=Z,2.0nm,0.3s,baz=41,slow=5.4,SNR=4.9							
SDV				pPKP			10 58 47.5	
	comp=Z,2.5nm,0.3s,baz=267,slow=10.0,SNR=3.1							
VNDA	**Vanda**	**121.75**	**176**	PKP		PKPdf	10 58 37.0	+1.5
	comp=Z,2.4nm,0.6s,baz=307,slow=4.2,SNR=16							
VNDA	**Vanda**	**121.75**	**176**	PKIKP		PKPdf	10 58 37.0	+1.5
VNDA				pmax		pmax		
	comp=Z,2.0nm,0.6s							
DBIC	**Dimbokro**	**123.63**	**327**	PKP		PKPdf	10 58 41.3	+0.8
	comp=Z,4.8nm,0.7s,baz=33,slow=3.9,SNR=10							
DBIC				pPKP			10 58 59.5	
	comp=Z,3.2nm,0.6s,baz=313,slow=1.7,SNR=2.5							
DBIC	**Dimbokro**	**123.63**	**327**	PKIKP		PKPdf	10 58 41.3	+0.8
DBIC							10 58 59.5	
DBIC				pmax		pmax		
	comp=Z,5.0nm,0.7s							
DBIC				pmax		pmax		
	comp=N,3.0nm,0.6s							
QSPA	**South Pole Qui**	**133.92**	**180**	*e*PKP		PKPdf	10 59 01.0	+2.5
SYO	**Syowa Base**	**136.74**	**210**	⇑Pdiff		Pdif	10 56 14.8	+4.9
SYO	**Syowa Base**	**136.74**	**210**	*e*Pdif		Pdif	10 56 14.8	+4.9
LPAZ	**La Paz**	**138.94**	**59**	PKP		PKPdf	10 59 11.4	+2.1
	comp=N,2.6nm,0.8s,baz=333,slow=2.3,SNR=3.5							
LPAZ	**La Paz**	**138.94**	**59**	PKIKP		PKPdf	10 59 11.4	+2.1
LPAZ				pmax		pmax		
	comp=Z,3.0nm,0.8s							
MAIT	**Maitri**	**145.75**	**204**	*e*PKPdf		PKPdf	10 59 22.6	+3.0
BDFB	**Brasilia**	**148.59**	**30**	PKP		PKPdf	10 59 27.2	+1.4
	comp=Z,7.0nm,0.6s,baz=270,slow=2.0,SNR=3.8							
BDFB				PKPbc		PKPdf	10 59 31.8	+5.9
	comp=Z,33nm,0.7s,baz=308,slow=2.0,SNR=42							
BDFB	**Brasilia**	**148.59**	**30**	PKIKP		PKPdf	10 59 27.3	+1.4
BDFB							10 59 31.8	
BDFB				pmax		pmax		
	comp=Z,7.0nm,0.6s							
BDFB				pmax		pmax		
	comp=Z,33nm,0.7s							
SNAA	**Sanae**	**148.98**	**198**	*e*PKPdf		PKPdf	10 59 26.5	+1.6
SNAA				*e*PKPbc		PKPdf	10 59 30.5	+5.6
VNA2	**Neumayer--Watz**	**150.50**	**196**⇑	*i*P		PKPdf	10 59 37.3	+10
VNA2				*e*			10 59 58.6	
VNA3	**Neumayer Olymp**	**150.69**	**195**	*e*		PKPab	10 59 45.0	+2.4
VNA3	**Neumayer Olymp**	**150.69**	**195**⇑	*i*P		PKPdf	10 59 37.6	+10
VNA3				*e*			10 59 45.0	
VNA3				*e*			10 59 59.1	
VNA1	**Neumayer--Stat**	**150.90**	**196**⇑	*i*P		PKPdf	10 59 38.2	+10
VNA1				*e*			10 59 59.4	
CPUP	**Villa Florida**	**153.08**	**57**	PKP		PKPdf	10 59 34.4	+1.9
	comp=Z,3.4nm,0.9s,baz=344,slow=8.2,SNR=3.0							
CPUP				PKPbc		PKPdf	10 59 41.4	+9.0
	comp=Z,4.0nm,0.6s,baz=20,slow=1.5,SNR=9.2							
CPUP				PKPab		PKPab	10 59 53.5	-0.5
	comp=Z,8.1nm,0.6s,baz=320,slow=2.7,SNR=14							
CPUP	**Villa Florida**	**153.08**	**57**	PKIKP		PKPdf	10 59 34.4	+2.0
CPUP							10 59 53.5	
CPUP				pmax		pmax		
	comp=Z,3.0nm,1.0s							
CPUP				pmax		pmax		
	comp=Z,4.0nm,0.6s							
CPUP				pmax		pmax		
	comp=Z,8.0nm,0.6s							

IDC 30 10:41:42.1±15.0,**1.54N**×**127.22E,h211**km±160km, **mb3.4**/5,**mb1 3.6**/6,**mb1mx3.4**/16,**1D, Error ellipse: s-maj=93.0km s-min=20.6km az=62.0, Halmahera**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**19.58**	**184**	*e*P	P	10 45 55.1	-0.8
	10nm,1.8s						
FITZ	**Fitzroy Crossi**	**19.58**	**184**	P	P	10 45 54.4	-1.5
	0.3nm,0.3s,baz=359,slow=6.9,SNR=7.6						
WRA	**Warramunga Arr**	**22.47**	**162**	P	P	10 46 23.6	-0.7
	2.5nm,0.4s,baz=340,slow=11,SNR=78						
WB2	**Warramunga Arr**	**22.47**	**162**	‖*i*P	P	10 46 23.6	-0.7
AS12	**Alice Springs**	**25.89**	**166**	*e*P	P	10 46 55.2	-1.3
	4.9nm,1.1s						
ASAR	**Alice Springs**	**25.89**	**166**	P	P	10 46 54.8	-1.7
	0.7nm,0.4s,baz=345,slow=7.6,SNR=24						
STKA	**Stephens Creek**	**35.92**	**159**	P	P	10 48 22.8	-1.3
	2.5nm,0.8s,baz=357,slow=8.8,SNR=3.5						
SONM	**Songino Array**	**49.51**	**342**	P	P	10 50 10.8	-2.2
	0.4nm,0.5s,baz=162,slow=9.1,SNR=2.1						
MKAR	**Makanchi Array**	**59.62**	**326**	P	P	10 51 24.3	-1.7
	1.0nm,0.4s,baz=110,slow=7.4,SNR=6.0						

*SNSN **30** 10:46:59.8,29.14N×34.65E,h12km, MI1.6*
*GII **30** 10:47:00.4±1.2,29.13N×34.74E,h10km±30km*
ISC 30 10:46:59.2±2.3,**29.15N**±0.08×**34.6E**±0.2,**h10**km±14km**, n8, σ0$28/9, Egypt**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
HAQS	**Haql**	**0.29**	**110**	P	**Pg**	**10 47 05.2**	**0.0**
ALWS	**Ilw as Safayha**	**0.42**	**68**	P	**Pg**	**10 47 07.7**	**0.0**
JMOS	**Jabal al Moall**	**0.43**	**88**	P	**Pg**	**10 47 07.8**	**-0.1**
BDAS	**Al Bad'**	**0.83**	**149**	P	**Pb**	**10 47 15.4**	**+0.1**
KMTI	**Karmit**	**0.95**	**5**	Pg	**Pg**	**10 47 18.7**	**+0.4**
JMQS	**Jabal Moqyreh**	**1.13**	**103**	P	**Pb**	**10 47 20.7**	**+0.3**
PRNI	**Paran**	**1.24**	**15**	Pg	**Pg**	**10 47 23.4**	**-0.6**
PRNI				Sg	**Sg**	**10 47 40.7**	**+0.1**
TBKS	**Tabuk**	**1.93**	**118**	P	**Pn**	**10 47 32.2**	**-0.3**

IGQ 30 10:51:36.1,0.27N×78.73W,h111km±3km**, mb4.1, 4C-15D, Error ellipse: s-maj=2.3km s-min=1.5km az=96.5, Colombia-Ecuador border region**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JOR1	**San Jorge 1**	**0.28**	**160**	‖P	P	10 51 53.0	+0.9
COTA	**Cotacachi**	**0.40**	**81**	‖P	P	10 51 53.3	+0.7
COTA				S	S	10 52 08.3	+1.2
YANA	**Yana**	**0.42**	**157**	‖P	P	10 51 52.9	+0.1
PINO	**Pino**	**0.44**	**163**	‖P	P	10 51 53.2	+0.3
GGP	**Refugio Guagua**	**0.46**	**162**	‖P	P	10 51 53.2	+0.2
CAYA	**Cayambe**	**0.77**	**105**	⇑P	P	10 51 56.2	+0.8
CAYR	**Refugio Cayamb**	**0.77**	**109**	⇑P	P	10 51 56.4	+1.0
CAYR				S	S	10 52 11.1	+1.2
CUPA	**Cupa**	**0.77**	**277**	⇑P	P	10 51 55.6	+0.2
ANTI	**Antisana**	**0.92**	**141**	‖P	P	10 51 58.0	+1.1
NAS1	**Nasa**	**0.93**	**164**	‖P	P	10 51 57.8	+0.7
VC1	**Cotopaxi 1**	**0.96**	**160**	‖P	P	10 51 58.0	+0.7
TAMB	**Tambo**	**1.02**	**159**	‖P	P	10 51 58.8	+0.8
TAMB				S	S	10 52 16.4	+2.0
MARY	**Rancho Maria**	**1.03**	**166**	‖P	P	10 51 58.8	+0.8
QIL1	**Quilotoa**	**1.12**	**190**	‖P	P	10 51 59.2	+0.1
CONE	**Cono NE Rev Vo**	**1.14**	**107**	‖P	P	10 52 00.5	+1.1
PISA	**Pisayambo**	**1.36**	**165**	‖P	P	10 52 02.9	+1.0
JAMA	**Jama**	**1.56**	**250**	P	P	10 52 04.1	-0.1
JAMA				S	S	10 52 24.5	-0.8
ULBA	**Ulba**	**1.74**	**169**	⇑P	P	10 52 07.0	+0.7
IGUA	**Igualata**	**1.75**	**177**	‖P	P	10 52 07.6	+1.1
ARRY	**Arrayan**	**1.79**	**171**	‖P	P	10 52 07.4	+0.5
PATA	**Patacocha**	**1.79**	**170**	P	P	10 52 07.9	+1.0

*IDC **30** 10:52:09.2±0.6,55.93N×163.36E, mb3.8/17,mb1 4.0/19, mb1mx4.0/26,ML3.7/2,Error ellipse: s-maj=16.6km s-min=9.9km az=15.0*
*MOS **30** 10:52:12.9±1.4,55.87N×163.54E,h44km,mb4.1/10,Error ellipse: s-maj=15.3km s-min=9.3km az=75.8*
*KRSC **30** 10:52:12.6±1.0,55.90N×163.45E,h19km±2km,ML4.6*
*NEIC **30** 10:52:14.2±3.7,55.89N×163.40E,h35km±28km, mb4.4/4, Error ellipse: s-maj=11.6km s-min=7.5km az=159.0*
ISC 30 10:52:10.7±0.3,**55.85N**±0.02×**163.65E**±0.03,**h19**km**, n82,** σ1$**24**/118,**mb3.9**/23,**1C, Off east coast of Kamchatka Peninsula**

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
KBTR	**Krutoberegovo**	**0.59**	**308**	P	**Pb**	**10 52 21.7**	**-0.5**
KBTR				S	**Sb**	**10 52 28.7**	**-1.3**
KBTR	**Krutoberegovo**	**0.59**	**308**	*i*P	**Pb**	**10 52 21.7**	**-0.5**
KBTR				*e*S	**Sb**	**10 52 28.8**	**-1.2**
KBG	**Krutoberegovo**	**0.67**	**308**	*i*P	**Pb**	**10 52 23.4**	**-0.1**
KBG				*e*S	**Sb**	**10 52 32.0**	**-0.3**
KBG				Smax			
	16μm,0.9s						
BKI	**Bering**	**1.47**	**115**	*e*P	**Pn**	**10 52 38.2**	**+1.7**
BKI				*e*S	**Sn**	**10 52 57.2**	**+1.8**
BKI				Smax			
	660nm,0.5s						
SVLR	**Shiveluch**	**1.54**	**299**	*e*P	**Pn**	**10 52 38.8**	**+1.3**
SVLR				*e*S	**Sn**	**10 52 57.2**	**+0.1**
ZLN	**Zelenaya**	**1.61**	**277**	*i*P	**Pn**	**10 52 39.8**	**+1.3**
ZLN				*e*S	**Sn**	**10 52 58.8**	**-0.1**
CIRR	**Tsirk**	**1.65**	**280**	*i*P	**Pn**	**10 52 40.4**	**+1.3**
CIRR				*e*S	**Sn**	**10 53 00.4**	**+0.4**
LGNR	**Loginova**	**1.68**	**279**	*i*P	**Pn**	**10 52 41.1**	**+1.6**
LGNR				*e*S	**Sn**	**10 53 01.8**	**+1.1**
MKZ	**Mys Kozlova**	**1.70**	**221**	P	**Pn**	**10 52 40.2**	**+0.4**
MKZ				S	**Sn**	**10 53 00.2**	**-1.0**
MKZ	**Mys Kozlova**	**1.70**	**221**	*e*P	**Pn**	**10 52 40.2**	**+0.4**
MKZ				*e*S	**Sn**	**10 53 00.4**	**-0.8**
KLY	**Klyuchi**	**1.74**	**287**	*i*P	**Pn**	**10 52 39.7**	**-0.7**
KLY				*e*S	**Sn**	**10 52 58.5**	**-3.8**
KRSR	**Krestovskiy**	**1.77**	**283**	*e*P	**Pn**	**10 52 41.3**	**+0.5**
KRSR				*e*S	**Sn**	**10 53 02.0**	**-0.9**
KMNR	**Kamenistaya**	**1.93**	**269**	*i*P	**Pn**	**10 52 44.3**	**+1.2**
KMNR				*e*S	**Sn**	**10 53 07.1**	**+0.1**
KPT	**Kopyto**	**1.93**	**275**	*i*P	**Pn**	**10 52 44.6**	**+1.5**
KPT				*e*S	**Sn**	**10 53 07.3**	**+0.2**
TUMR	**Tumrok**	**2.07**	**256**	*i*P	**Pn**	**10 52 46.9**	**+1.8**
TUMR				*e*S	**Sn**	**10 53 11.4**	**+0.8**
KOZ	**Kozyrevsk**	**2.13**	**277**	P	**Pn**	**10 52 48.1**	**+2.1**
KOZ				S	**Sn**	**10 53 13.2**	**+1.0**
KOZ	**Kozyrevsk**	**2.13**	**277**	*i*P	**Pn**	**10 52 47.9**	**+1.9**
KOZ				*e*S	**Sn**	**10 53 13.3**	**+1.1**
SRDR	**Sredinnyy**	**2.25**	**284**	*e*P	**Pn**	**10 52 49.2**	**+1.5**
SRDR				*e*S	**Sn**	**10 53 16.1**	**+0.9**
ESO	**Esso**	**2.79**	**274**	*i*P	**Pn**	**10 52 56.0**	**+0.6**
ESO				*e*S	**Sn**	**10 53 30.1**	**+1.3**
ESO				Smax			
	540nm,1.0s						
OSSR	**Ossora**	**3.42**	**355**	*e*P	**Pn**	**10 53 04.8**	**+0.4**
SPN	**Mys Shipunski**	**3.48**	**219**	P	**Pn**	**10 53 04.8**	**-0.3**
SPN				S	**Sn**	**10 53 41.9**	**-4.3**
SPN	**Mys Shipunski**	**3.48**	**219**	*e*P	**Pn**	**10 53 05.3**	**+0.2**
SPN				*e*S	**Sn**	**10 53 43.2**	**-3.0**
NLC	**Nalytchevo**	**3.67**	**225**	P	**Pn**	**10 53 08.3**	**+0.4**
NLC				S	**Sn**	**10 53 48.9**	**-2.3**
NLC	**Nalytchevo**	**3.67**	**225**	*e*P	**Pn**	**10 53 08.1**	**+0.2**
NLC				*e*S	**Sn**	**10 53 48.9**	**-2.3**
SDLR	**Sedlovina**	**3.79**	**229**	*i*P	**Pn**	**10 53 10.7**	**+1.2**
SDLR				*e*S	**Sn**	**10 53 53.8**	**-0.2**
SMAR	**Somma**	**3.83**	**229**	*e*P	**Pn**	**10 53 11.8**	**+1.6**
SMAR				*e*S	**Sn**	**10 53 54.8**	**-0.4**
AVH	**Avacha**	**3.86**	**230**	*e*P	**Pn**	**10 53 11.8**	**+1.3**
AVH				*e*S	**Sn**	**10 53 54.9**	**-1.0**
UGLR	**Uglovaya**	**3.86**	**229**	*e*P	**Pn**	**10 53 11.9**	**+1.3**
UGLR				*e*S	**Sn**	**10 53 55.0**	**-0.9**
KOK	**Koryaka**	**3.88**	**231**	*e*P	**Pn**	**10 53 12.2**	**+1.3**
KOK				*e*S	**Sn**	**10 53 56.0**	**-0.5**
GNL	**Ganaly**	**3.95**	**239**	*e*P	**Pn**	**10 53 13.2**	**+1.4**
GNL				*e*S	**Sn**	**10 53 56.4**	**-1.7**
PET	**Petropavlovsk**	**4.06**	**228**	P	**Pn**	**10 53 14.5**	**+1.0**
PET				S	**Sn**	**10 53 59.7**

Error ellipse: s-maj=9.2km s-min=4.4km az=95.0

ISC 30 10:53:12.8±0.4,**41 24.N**±0.04×**29.27W**±0.08,**h10**km,**n48,**
σ1**9**06/58,**mb4.0**/9,**MS3.4**/1,**Azores Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STGR	**Santa Cruz**	**2.37**	**155**	*e*P	**Pn**	**10 53 53.2**	**+0.9**
STGR				*e*S	**Sn**	**10 54 20.3**	**-1.4**
ROSA	**Rosais**	**2.64**	**162**	*e*S	**Sn**	**10 54 27.9**	**-0.7**
PCED	**Cedros**	**2.65**	**170**	*e*P	**Pn**	**10 53 58.9**	**+2.6**
PCED				*e*S	**Sn**	**10 54 28.8**	**0.0**
	56nm,0.4s						
CALA	**Caldeira**	**2.69**	**170**	*e*P	**Pn**	**10 53 59.5**	**+2.5**
CALA				*e*S	**Sn**	**10 54 30.1**	**+0.2**
PMAN	**Manadas**	**2.76**	**160**	*e*P	**Pn**	**10 53 59.6**	**+1.7**
PICO	**Pico**	**2.81**	**166**	*e*S	**Sn**	**10 54 32.8**	**-0.2**
TOPO	**Topo**	**2.84**	**158**	*e*P	**Pn**	**10 54 00.1**	**+1.0**
TOPO				*e*S	**Sn**	**10 54 32.5**	**-1.3**
PSBA	**Serra de Santa**	**2.89**	**148**	*i* P	**Pn**	**10 53 59.8**	**0.0**
PSBA				*e*S	**Sn**	**10 54 32.4**	**-2.5**
	58nm,0.4s						
PBIS	**Biscoitos**	**2.92**	**147**	*i* P	**Pn**	**10 54 00.3**	**0.0**
ASBA	**Santa Barbara**	**2.93**	**149**	*e*P	**Pn**	**10 54 00.6**	**+0.2**
ASBA				*i* S	**Sn**	**10 54 33.5**	**-2.4**
PID	**Ribeirinha**	**2.93**	**162**	*e*P	**Pn**	**10 54 02.3**	**+1.9**
PID				*e*S	**Sn**	**10 54 35.6**	**-0.4**
PPAD	**Pico dos Padre**	**2.96**	**148**	*i* P	**Pn**	**10 54 01.0**	**+0.2**
PVNV	**Vila Nova**	**2.96**	**146**	*i* P	**Pn**	**10 54 01.0**	**+0.2**
PSCM	**Serra do Cume**	**3.03**	**146**	*i* P	**Pn**	**10 54 01.7**	**-0.1**
RIB2	**Ribeirinha**	**3.03**	**147**	*e*P	**Pn**	**10 54 01.9**	**+0.1**
SCUM	**Serra do Cume**	**3.03**	**146**	*e*P	**Pn**	**10 54 01.9**	**+0.1**
SET4	**Mosteiros**	**4.30**	**140**	*e*P	**Pn**	**10 54 19.9**	**0.0**
SET2	**Ginetes**	**4.32**	**141**	*e*P	**Pn**	**10 54 20.5**	**+0.3**
SETA	**Sete Cidades**	**4.37**	**140**	*e*P	**Pn**	**10 54 21.5**	**+0.6**
SETA				*e*S	**Sn**	**10 54 08.5**	**-4.0**
PSET	**Sete Cidades**	**4.38**	**140**	*e*P	**Pn**	**10 54 21.1**	**+0.1**
FAC	**Faja de Cima**	**4.45**	**140**	*e*P	**Pn**	**10 54 22.4**	**+0.4**
FAC				*e*-		10 55 10.8	
PVER	**Pico Vermelho**	**4.50**	**139**	*e*P	**Pn**	**10 54 23.2**	**+0.5**
CML	**Cha da Macela**	**4.51**	**139**	*e*P	**Pn**	**10 54 22.9**	**+0.1**
CML				*e*-		10 55 13.2	
PMAT	**Coroa da Mata**	**4.51**	**138**	*e*P	**Pn**	**10 54 23.2**	**+0.4**
LFA	**Lagoa do Fogo**	**4.54**	**139**	*e*P	**Pn**	**10 54 23.2**	**0.0**
LFA				*e*-		10 55 17.6	
MESC	**Monte Escuro**	**4.54**	**138**	*e*P	**Pn**	**10 54 23.2**	**0.0**
PRCH	**Ribeira Ch**	**4.57**	**139**	*e*P	**Pn**	**10 54 24.1**	**+0.4**
VIF	**Vila Franca**	**4.58**	**138**	*e*P	**Pn**	**10 54 24.3**	**+0.5**
PCNG	**Congro**	**4.58**	**138**	*e*P	**Pn**	**10 54 23.9**	**0.0**
MIRA	**Miradouro**	**4.63**	**137**	*e*P	**Pn**	**10 54 24.4**	**-0.1**
MIRA				*e*S	**Sn**	**10 55 14.9**	**-4.1**
BART	**Pico Bartolome**	**4.69**	**136**	*e*P	**Pn**	**10 54 25.3**	**-0.1**
BART				*e*S	**Sn**	**10 55 15.2**	**-5.4**
	19nm,0.2s						
PSMN	**Pico do Norte,**	**5.35**	**141**	*e*P	**Pn**	**10 54 34.6**	**-0.1**
PSMN				*e*S	**Sn**	**10 55 32.3**	**-4.8**
ESDC	**Sonseca Array**	**19.31**	**86**	P	**P**	**10 57 38.7**	**-1.9**
	0.1nm,0.3s,baz=309,slow=10.0,SNR=3.8						
ESDC				LR	LR	11 03 31.0	
	comp=Z,126nm,21.0s,baz=265,slow=32						
EKA	**Eskdalemuir Ar**	**22.20**	**42**	P	**P**	**10 58 12.9**	**+2.3**
	0.9nm,0.8s,mb3.3,baz=219,slow=5.3,SNR=5.4						
SCHQ	**Schefferville**	**28.18**	**312**	LR	LR	11 08 23.4	
	comp=Z,106nm,20.4s,MS3.4,baz=87,slow=32						
YKA	**Yellowknife Ar**	**52.40**	**324**	P	**P**	**11 02 29.2**	**+2.3**
	0.4nm,0.9s,mb3.3,baz=66,slow=7.2,SNR=5.4						
WMOK	**Wichita Mounta**	**53.85**	**287**	*e*P	**P**	**11 02 37.1**	**-0.9**
	2.6nm,1.0s,mb4.1						
BOZ	**Bozeman (W)**	**57.43**	**304**	*e*P	**P**	**11 03 03.3**	**-0.5**
	2.1nm,0.8s,mb4.2						
PDAR	**Pinedale Array**	**57.45**	**301**	P	**P**	**11 03 02.5**	**-1.5**
	1.4nm,0.9s,mb4.0,baz=51,slow=9.5,SNR=5.4						
CHMT	**Chamberlain Mo**	**57.84**	**306**	*e*P	**P**	**11 03 05.7**	**-0.9**
GDL2	**Guadalupe Moun**	**59.15**	**287**	*e*P	**P**	**11 03 15.9**	**-0.2**
HWUT	**Hardware Ranch**	**59.32**	**300**	*e*P	**P**	**11 03 16.4**	**-0.6**
	4.2nm,0.8s,mb4.5						
NEW	**Newport**	**59.50**	**309**	P	**P**	**11 03 16.0**	**-2.2**
	2.3nm,0.8s,mb4.3,baz=40,slow=7.9,SNR=3.0						
NEW	**Newport**	**59.50**	**309**	P	**P**	**11 03 16.0**	**-2.2**
DAU	**Daniels Canyon**	**59.71**	**299**	P	**P**	**11 03 18.5**	**-1.3**
WVOR	**Wild Horse Val**	**63.41**	**304**	*e*P	**P**	**11 03 44.5**	**-0.1**
	5.4nm,1.0s,mb4.6						
WVOR				*e*		11 03 50.0	
LPAZ	**La Paz**	**67.61**	**221**	*e*P	**P**	**11 04 14.3**	**+2.3**
MKAR	**Makanchi Array**	**73.34**	**42**	P	**P**	**11 04 45.8**	**-0.4**
	0.9nm,0.8s,mb3.8,baz=323,slow=6.1,SNR=5.8						

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*CSEM **30** 11:03:09.8,60.79N×151.29W,h21km,mb5.7*
*BJI **30** 11:03:22.6,61.07N×152.42W,h122km,mB5.1,mb5.3*
*NEIC **30** 11:03:26.8,61.06N×152.21W,h127km,mb5.3/160,After AEIC.*
NEIC Felt [V] at Kenai, Seward, Sterling and Talkeetna; [IV] at Anchorage; [III] at Chickaloon, Chugiak, Eagle River, Girdwood and Soldotna; [II] at Valdez.
*MOS **30** 11:03:26.3±0.8,61.31N×152.48W,h137km,mb5.5/38, Error ellipse: s-maj=16.6km s-min=5.4km az=91.0*
*HRVD **30** 11:03:26.8±0.2,61.17N×152.31W,h132km±1km, MW5.3/71,Centroid moment Tensor Solution. LP body waves: s53,c86;Mantle waves: s71,c144; Half duration: 1s1 Moment tensor: Scale 10^17^Nm; Mrr-0.07±.02; Mθθ-0.78±.02; Mφφ0.86±.02; Mrθ-0.40±.01; Mθφ0.14±.02; Mφr0.35±.02; Best double couple: Mo.99×10^17^ NP1:φs48°, δ58°,λ-6°. NP2:φs141°,δ85°,λ-148°. Principal axes: T .97, Plg18°, Azm270°; N .03, Plg58°, Azm149°; P -1, Plg26°, Azm10°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*BGS **30** 11:03:27.5±1.6,61.28N×151.87W,h130km*
*IDC **30** 11:03:27.3±0.5,61.31N×152.34W,h134km±3km,mb4.8/23, mb1 5.0/27,mb1mx5.0/28,MS4.0/7,Ms1 4.0/7, ms1mx3.5/31,Error ellipse: s-maj=9.7km s-min=7.6km az=32.0*

ISC 30 11:03:25.1±0.1,**61.15N**±0.01×**152.39W**±0.03,**h131**km,
h131km±.9km**:pP-P,n803,**σ0**93**/820,**mb5.2**/260,**23C-235D,**
Southern Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CKL	**Chakachamna La**	**0.06**	**29**	P	**P**	**11 03 43.8**	**+0.8**
CKL				S	**S**	**11 03 57.1**	**+0.6**
BKG	**Blockade Glaci**	**0.10**	**141**	P	**P**	**11 03 43.3**	**+0.3**
BKG				S	**S**	**11 03 55.8**	**-0.7**
CP2	**Crater Peak Tw**	**0.14**	**32**	P	**P**	**11 03 44.2**	**+1.2**
CP2				S	**S**	**11 03 57.7**	**+1.0**
RDT	**Redoubt**	**0.58**	**181**	P	**P**	**11 03 44.9**	**0.0**
NCT	**North Crescent**	**0.65**	**204**	P	**P**	**11 03 45.7**	**+0.4**
REF	**Redoubt East F**	**0.68**	**193**	P	**P**	**11 03 45.6**	**0.0**
RED	**Redoubt Volcan**	**0.76**	**194**	P	**P**	**11 03 46.0**	**-0.1**
FIB	**Fire Island**	**1.08**	**88**	P	**P**	**11 03 47.8**	**-1.2**
FIB				S	**S**	**11 04 06.0**	**-1.2**
ILIM	**Iliamna**	**1.11**	**195**	P	**P**	**11 03 49.0**	**-0.4**
ILW	**Iliamna West**	**1.15**	**199**	P	**P**	**11 03 49.7**	**-0.2**
ILS	**Iliamna Low So**	**1.24**	**196**	P	**P**	**11 03 50.5**	**-0.3**
RC01	**Rabbit Creek A**	**1.29**	**91**	P	**P**	**11 03 50.9**	**-0.5**
RC01				S	**S**	**11 04 10.9**	**-0.4**
PWA	**Palmer West**	**1.31**	**66**	P	**P**	**11 03 51.3**	**-0.3**
PMS	**Palmer South**	**1.38**	**85**	P	**P**	**11 03 51.9**	**-0.4**
HOM	**Homer**	**1.54**	**166**	P	**P**	**11 03 53.6**	**-0.5**
SVW	**Sparrevohn**	**1.57**	**270**	P	**P**	**11 03 55.2**	**+0.8**
BRLK	**Bradley Lake**	**1.58**	**151**	P	**P**	**11 03 53.3**	**-1.3**
CUT	**Chulitna**	**1.61**	**38**	P	**P**	**11 03 55.7**	**+0.7**
MPA	**Moose Pass**	**1.63**	**113**	P	**P**	**11 03 54.2**	**-0.9**
PMR	**Palmer**	**1.63**	**73**	P	**P**	**11 03 54.1**	**-1.1**
CNPM	**China Poot**	**1.73**	**160**	P	**P**	**11 03 55.1**	**-1.2**
XLV	**Seldovia**	**1.73**	**169**	P	**P**	**11 03 55.2**	**-1.1**
GHO	**Glory Hole Cre**	**1.78**	**68**	P	**P**	**11 03 56.2**	**-0.7**
SEW	**Seward**	**1.79**	**125**	P	**P**	**11 03 55.7**	**-1.3**
AUL	**Augustine Lava**	**1.85**	**197**	P	**P**	**11 03 57.3**	**-0.4**
AUE	**Augustine Isla**	**1.86**	**196**	P	**P**	**11 03 57.2**	**-0.6**
AGU	**Augustine-Summ**	**1.87**	**197**	P	**P**	**11 03 57.6**	**-0.3**
KNK	**Knik Glacier**	**1.92**	**80**	P	**P**	**11 03 57.6**	**-0.9**
SML	**Sawmill**	**2.06**	**69**	P	**P**	**11 03 59.4**	**-0.9**
MCNL	**McNeil River**	**2.20**	**207**	P	**P**	**11 04 01.6**	**-0.5**
HUR	**Hurricane**	**2.25**	**34**	P	**P**	**11 04 03.3**	**+0.3**
TTO1	**Tatalina**	**2.46**	**317**	P	**P**	**11 04 06.8**	**+1.3**
KTH	**Kantishna Hill**	**2.51**	**15**	P	**P**	**11 04 06.4**	**+0.3**
TRF	**Thorofare Moun**	**2.51**	**22**	P	**P**	**11 04 06.8**	**+0.6**
SCM	**Sheep Creek Mo**	**2.52**	**72**	P	**P**	**11 04 05.4**	**-0.9**
SYI	**Shuyak Island**	**2.55**	**180**	P	**P**	**11 04 05.4**	**-1.3**
KAPH	**Katmai Pasha**	**2.74**	**202**	P	**P**	**11 04 08.6**	**-0.6**
RND	**Reindeer**	**2.81**	**35**	P	**P**	**11 04 10.4**	**+0.4**
JPK	**Jack Peak**	**2.82**	**89**	P	**P**	**11 04 08.3**	**-1.9**
KAHG	**Katmai Hook Gl**	**2.88**	**203**	P	**P**	**11 04 10.3**	**-0.6**
VLZ	**Valdez**	**2.94**	**88**	P	**P**	**11 04 10.0**	**-1.7**
HIN	**Hinchinbrook I**	**2.99**	**102**	P	**P**	**11 04 09.8**	**-2.6**
DHY	**Denali Highway**	**3.05**	**48**	P	**P**	**11 04 13.2**	**0.0**
MCK	**McKinley**	**3.05**	**30**	P	**P**	**11 04 13.9**	**+0.6**
TOA	**Tolsona**	**3.12**	**69**	P	**P**	**11 04 13.3**	**-0.9**
KLU	**Klutina**	**3.14**	**81**	P	**P**	**11 04 12.8**	**-1.6**
DIV	**Divide**	**3.21**	**87**	P	**P**	**11 04 13.7**	**-1.6**
KABR	**Katmai Barrier**	**3.30**	**204**	P	**P**	**11 04 15.4**	**-1.1**
ACHA	**Angle Creek He**	**3.30**	**208**	P	**P**	**11 04 15.8**	**-0.7**
MGLS	**Mageik LS**	**3.30**	**208**	P	**P**	**11 04 16.4**	**-0.1**
CVA	**Cordova**	**3.31**	**98**	P	**P**	**11 04 14.1**	**-2.5**
EYAK	**Cordova Ski Ar**	**3.31**	**98**	P	**P**	**11 04 14.3**	**-2.3**
BWN	**Browne**	**3.32**	**23**	P	**P**	**11 04 17.2**	**+0.4**
ANCK	**Angle Creek**	**3.35**	**209**	P	**P**	**11 04 16.6**	**-0.6**
KDAK	**Kodiak Island**	**3.38**	**182**	P	**P**	**11 04 14.4**	**-3.2**
CAHL	**Cahill**	**3.44**	**207**	P	**P**	**11 04 17.7**	**-0.7**
MID	**Middleton Isla**	**3.47**	**117**	P	**P**	**11 04 17.5**	**-1.4**
KJL	**Kejulik**	**3.50**	**209**	P	**P**	**11 04 18.8**	**-0.4**
PAX	**Paxson**	**3.74**	**58**	P	**P**	**11 04 22.2**	**-0.1**
NEA	**Nenana**	**3.76**	**22**	P	**P**	**11 04 22.6**	**-0.1**
BMRM	**Bremner River**	**3.79**	**89**	P	**P**	**11 04 20.9**	**-2.2**
WACK	**Wrangell Chich**	**3.95**	**74**	P	**P**	**11 04 24.6**	**-0.6**
MLY	**Manley**	**3.97**	**10**	P	**P**	**11 04 25.1**	**-0.3**
CCB	**Clear Creek Bu**	**4.09**	**29**	P	**P**	**11 04 27.1**	**0.0**
HDA	**Harding Lake**	**4.11**	**35**	P	**P**	**11 04 27.6**	**+0.3**
KAIM	**Kayak Island**	**4.13**	**104**	P	**P**	**11 04 24.6**	**-2.9**
GLB	**Gilahina Butte**	**4.15**	**82**	P	**P**	**11 04 26.2**	**-1.6**
MDM	**Murphy Dome**	**4.27**	**25**	P	**P**	**11 04 29.4**	**0.0**
COLA	**College**	**4.27**	**27**	*e*P	**P**	**11 04 28.7**	**-0.8**
COLA	**College**	**4.27**	**27**	P	**P**	**11 04 29.8**	**+0.3**
ILAR	**Eielson Array**	**4.42**	**32**	P	**P**	**11 04 30.6**	**-0.8**
	1μm,0.3s,baz=220,slow=12,SNR=3937						
ILAR				S	**S**	**11 05 17.8**	**-4.7**
	659nm,0.3s,baz=197,slow=13,SNR=11						
ILAR				ScP		11 14 56.8	
	0.3nm,0.3s,baz=300,slow=2.8,SNR=12						
IL1	**Eielson Array**	**4.42**	**32**	P	**P**	**11 04 31.8**	**+0.3**
DOT	**Dot Lake**	**4.62**	**53**	P	**P**	**11 04 33.8**	**-0.3**
SNH	**Sunshine Point**	**4.80**	**97**	P	**P**	**11 04 34.0**	**-2.5**
BALM	**Baldy**	**4.88**	**87**	P	**P**	**11 04 35.9**	**-1.7**
IM3	**Indian Mountai**	**4.89**	**353**	P	**P**	**11 04 38.2**	**+0.4**
IMA	**Indian Mountai**	**4.97**	**354**	*e*P	**P**	**11 04 39.0**	**+0.1**
WRG	**White River Gl**	**5.23**	**98**	P	**P**	**11 04 39.8**	**-2.5**
YAH	**Yahtse**	**5.28**	**94**	P	**P**	**11 04 41.3**	**-1.7**
BCA3	**Beaver Creek A**	**5.34**	**64**	P	**P**	**11 04 42.9**	**-0.9**
PRP	**Porcupine Dome**	**5.37**	**32**	P	**P**	**11 04 44.4**	**+0.3**
CTGM	**Chitina Glacie**	**5.38**	**87**	P	**P**	**11 04 41.8**	**-2.5**
CHX	**Chaix Hills**	**5.66**	**96**	P	**P**	**11 04 46.6**	**-1.5**
PCA	**Pinnacle**	**6.07**	**95**	P	**P**	**11 04 51.7**	**-1.9**
COLD	**Coldfoot**	**6.18**	**8**	P	**P**	**11 04 54.6**	**-0.4**
FYU	**Fort Yukon**	**6.29**	**27**	P	**P**	**11 04 55.8**	**-0.8**
PNL	**Peninsula**	**6.61**	**97**	P	**P**	**11 04 58.5**	**-2.4**
ANM	**Nome**	**6.85**	**306**	P	**P**	**11 05 04.2**	**-0.1**
BM3	**Burnt Mountain**	**7.14**	**25**	P	**P**	**11 05 07.1**	**-1.1**
SDPT	**Sand Point**	**7.21**	**220**	P	**P**	**11 05 06.2**	**-2.9**
SDN	**Sand Point**	**7.22**	**220**	*e*P	**P**	**11 05 07.2**	**-2.0**
BLHA	**Black Hill**	**7.45**	**227**	P	**P**	**11 05 10.4**	**-1.9**
PN7A	**Pavlof North-7**	**7.64**	**226**	P	**P**	**11 05 12.9**	**-2.0**
HAG	**Hague Volcano**	**7.70**	**225**	P	**P**	**11 05 13.9**	**-1.8**
DTNA	**Dutton South F**	**7.95**	**225**	P	**P**	**11 05 17.4**	**-1.7**
TNA	**Tin City**	**8.25**	**309**	P	**P**	**11 05 23.4**	**+0.3**
WHY	**Whitehorse**	**8.55**	**86**	P	**P**	**11 05 25.0**	**-2.0**
BESE	**Bessie Mountai**	**9.19**	**99**	P	**P**	**11 05 32.1**	**-3.4**
SIT	**Sitka**	**9.68**	**107**	P	**P**	**11 05 39.4**	**-2.5**
UNV	**Unalaska Valle**	**10.53**	**232**	*e*P	**P**	**11 05 51.9**	**-1.3**
INK	**Inuvik**	**10.75**	**40**	P	**P**	**11 05 54.8**	**-1.3**
	22nm,0.3s,baz=230,slow=17,SNR=317						
INK				S	**S**	**11 07 49.6**	**-4.9**
	13nm,0.3s,baz=267,slow=24,SNR=4.7						
INK				LR	LR	11 09 44.7	
	comp=Z,831nm,19.8s,baz=238,slow=36						
INK				ScP		11 15 03.8	
	0.8nm,0.3s,baz=190,slow=1.5,SNR=8.8						
INK	**Inuvik**	**10.75**	**40**	P	**P**	**11 05 54.8**	**-1.3**
INK				S	**S**	**11 07 49.6**	**-4.9**
INK				pmax	pmax		
	comp=Z,22nm,0.3s						
INK				smax			
	comp=Z,13nm,0.3s						
INK				MLR	MLR		
	comp=Z,831nm,19.8s						
INK				pmax	pmax		
	comp=Z,800nm,0.3s						
INK	**Inuvik**	**10.75**	**40**	*e*P	**P**	**11 05 54.6**	**-1.5**
DLBC	**Dease Lake**	**11.57**	**94**	P	**P**	**11 06 07.2**	**+0.3**
	comp=Z,24nm,0.3s,baz=288,slow=14,SNR=160						
DLBC				LR	LR	11 11 43.5	
	comp=Z,592nm,18.9s,baz=289,slow=43						
DLBC				ScP		11 15 06.3	
	comp=Z,0.4nm,0.3s,baz=311,slow=6.8,SNR=3.9						
DLBC	**Dease Lake**	**11.57**	**94**	*e*P	**P**	**11 06 06.0**	**-0.8**
NIKO	**Nikolski**	**12.11**	**235**	*e*P	**P**	**11 06 14.1**	**+0.1**
VIB	**Van Inlet**	**13.31**	**118**	P	**P**	**11 06 29.1**	**-0.4**
VIB				S	**S**	**11 08 54.8**	**+0.1**
	SNR=68						
BBB	**Bella Bella**	**15.99**	**113**	P	**P**	**11 07 04.4**	**+1.0**
	comp=Z,7.3nm,0.3s,baz=312,slow=13,SNR=30						
BBB				S	**S**	**11 09 58.4**	**+2.2**
	comp=Z,2.9nm,0.3s,baz=90,slow=14,SNR=12						
BBB	**Bella Bella**	**15.99**	**113**	P	**P**	**11 07 04.4**	**+1.0**
BBB				S	**S**	**11 09 58.4**	**+2.2**
YKW3	**Yellowknife Ar**	**17.71**	**69**	*e*P	**P**	**11 07 23.8**	**-0.6**
YKA	**Yellowknife Ar**	**17.73**	**69**	P	**P**	**11 07 24.3**	**-0.3**
	comp=Z,5.8nm,0.3s,baz=282,slow=9.9,SNR=697						
YKA				S	**S**	**11 10 36.0**	**+0.7**
	baz=161,slow=16,SNR=2.5						
YKA				PcP	PcP	11 11 54.5	-1.6
	comp=Z,1.3nm,0.3s,baz=287,slow=1.2,SNR=7.1						
YKA				ScP		11 15 16.6	
	comp=Z,2.3nm,0.3s,baz=289,slow=2.3,SNR=28						
YKA	**Yellowknife Ar**	**17.73**	**69**	P	**P**	**11 07 24.3**	**-0.3**
YKA				S	**S**	**11 10 36.0**	**+0.8**
YKA				pmax	pmax		
	comp=Z,6.0nm,0.3s						
YKA				pmax	pmax		
	comp=Z,1.0nm,0.3s						
YKA				pmax	pmax		
	comp=Z,2.0nm,0.3s						
YKA	**Yellowknife Ar**	**17.73**	**69**	P	**P**	**11 07 24.3**	**-0.3**
YKA				S	**S**	**11 10 36.0**	**+0.7**
YKA				PcP	PcP	11 11 54.5	-1.6
YKA				ScP		11 15 16.6	
BILL	**Bilibino**	**18.69**	**309**	*i* P	**P**	**11 07 35.6**	**+0.4**
BILL				pmax	pmax		
	comp=Z,24nm,1.1s						
BILL				MLR	MLR		
	comp=Z,200nm,14.0s						
BILL	**Bilibino**	**18.69**	**309**	*e*P	**P**	**11 07 34.7**	**-0.5**
	comp=Z,23nm,0.7s						
SMY	**Shemya**	**19.92**	**260**	*e*P	**P**	**11 07 47.7**	**-0.5**
FX1	**Attu Island--F**	**20.28**	**261**	P	**P**	**11 07 50.9**	**-0.9**
	comp=Z,287nm,0.7s,baz=316,slow=2.1,SNR=36						
FX1	**Attu Island--F**	**20.28**	**261**	P	**P**	**11 07 50.9**	**-0.9**
FX1				pmax	pmax		
	comp=Z,287nm,0.7s						
FX1	**Attu Island--F**	**20.28**	**261**	*e*P	**P**	**11 07 51.1**	**-0.7**
PGC	**Sidney**	**20.61**	**114**	*e*P	**P**	**11 07 55.5**	**+0.3**
	comp=Z,154nm,0.8s						
PGC				*e*pP		11 08 23.8	
MCW	**Mount Constitu**	**20.86**	**113**	P	**P**	**11 07 60.0**	**+2.3**
STW	**Striped Peak**	**20.89**	**115**	P	**P**	**11 08 00.1**	**+2.2**
OCWA	**Octopus Mounta**	**20.97**	**117**	*e*P	**P**	**11 08 00.1**	**+1.3**
	comp=Z,117nm,1.0s						
RPW	**Rockport**	**21.62**	**112**	*e*P	**P**	**11 08 07.0**	**+1.8**
RPW				*e*pP		11 08 28.2	
GNW	**Green Mountain**	**21.70**	**115**	*e*P	**P**	**11 08 08.0**	**+2.0**
GNW				*e*pP		11 08 30.2	
RMW	**Rattlesnake Mo**	**22.23**	**114**	*e*P	**P**	**11 08 13.8**	**+2.6**
RMW				*e*pP		11 08 36.8	
BMW	**Boistfort Moun**	**22.37**	**118**	P	**P**	**11 08 15.5**	**+3.0**
NLW	**Nelson Butte**	**22.42**	**111**	*e*P	**P**	**11 08 15.6**	**+2.5**
FMW	**Mount Fremont**	**22.69**	**115**	P	**P**	**11 08 18.7**	**+3.2**
LON	**Longmire**	**22.77**	**115**	*e*P	**P**	**11 08 18.7**	**+2.4**
KMOR	**Kings Mountain**	**22.92**	**119**	P	**P**	**11 08 20.8**	**+3.0**
SHW	**Mount Saint He**	**23.02**	**117**	*e*P	**P**	**11 08 19.8**	**+1.1**
DPW	**Davenport**	**23.55**	**109**	*e*P	**P**	**11 08 25.6**	**+1.8**
NEW	**Newport**	**23.77**	**107**	P	**P**	**11 08 27.9**	**+2.0**
	comp=Z,8.3nm,0.7s,mb4.4,baz=329,slow=8.3,SNR=13						
NEW				pP		11 08 53.6	
	comp=Z,109nm,0.7s,baz=306,slow=13,SNR=19						
NEW				ScP		11 15 31.5	
	comp=Z,11nm,1.1s,baz=343,slow=3.2,SNR=6.9						
NEW	**Newport**	**23.77**	**107**	P	**P**	**11 08 27.9**	**+2.0**
NEW				*PP		11 08 53.6	
NEW				pmax	pmax		
	comp=Z,8.0nm,0.7s						
NEW				pmax	pmax		
	comp=Z,109nm,0.7s						
NEW				pmax	pmax		
	comp=Z,11nm,1.1s						
NEW	**Newport**	**23.77**	**107**	*e*P	**P**	**11 08 27.5**	**+1.6**
	comp=Z,25nm,1.2s,mb4.6						
HAWA	**Hanford**	**24.05**	**113**	*e*P	**P**	**11 08 31.4**	**+2.8**
	comp=Z,30nm,1.0s,mb4.8						
HAWA				*e*pP		11 08 54.6	
VGB	**Gordon Butte**	**24.18**	**116**	*e*P	**P**	**11 08 32.0**	**+2.1**
VGB				*e*pP		11 08 57.7	
CROR	**Criterion Ridg**	**24.51**	**117**	P	**P**	**11 08 35.4**	**+2.4**
WALA	**Waterton Lakes**	**24.71**	**102**	P	**P**	**11 08 36.1**	**+1.2**
	comp=Z,8.2nm,0.8s,mb4.3						
WALA				*e*pP		11 09 05.8	
HSO	**Harness Mounta**	**24.80**	**122**	*e*P	**P**	**11 08 37.2**	**+1.4**
KEBM	**Edson Butte**	**24.84**	**125**	*e*P	**P**	**11 08 36.0**	**-0.2**
LNOR	**Lincton Mounta**	**25.01**	**112**	*e*P	**P**	**11 08 39.0**	**+1.3**
LNOR				*e*pP	pP	11 09 05.9	+0.7
VIPM	**Ingram Point**	**25.05**	**117**	P	**P**	**11 08 40.5**	**+2.3**
SEY	**Seymchan**	**25.29**	**298**	*e*P	**P**	**11 08 40.3**	**+0.1**
SEY				*e*	pP	11 09 08.4	+0.8
SEY				*e*		11 12 55.4	
SEY				*e*		11 13 45.5	
SEY				pmax	pmax		
	comp=N,40nm,1.0s						
SEY				pmax	pmax		
	comp=E,40nm,1.0s						
SEY				pmax	pmax		
	comp=Z,60nm,1.0s,mb5.1						
HUMO	**Hull Mountain**	**25.62**	**123**	*e*P	**P**	**11 08 45.0**	**+1.6**
HUMO				*e*pP	pP	11 09 11.9	+0.9
MSO	**Missoula**	**26.29**	**105**	*e*P	**P**	**11 08 49.9**	**+0.3**
	comp=Z,8.7nm,0.9s,mb8.4						
YBH	**Yreka Blue Hor**	**26.45**	**124**	P	**P**	**11 08 53.1**	**+2.0**
	comp=Z,6.1nm,0.8s,baz=300,slow=4.7,SNR=14						
YBH				pP	pP	11 09 20.3	+1.5
	comp=Z,37nm,1.1s,baz=317,slow=2.1,SNR=11						
YBH				ScP		11 15 39.3	
	comp=Z,2.7nm,0.7s,baz=60,slow=4.6,SNR=4.5						
YBH	**Yreka Blue Hor**	**26.45**	**124**	P	**P**	**11 08 53.1**	**+2.0**
YBH				*PP	pP	11 09 20.3	+1.5
YBH				pmax	pmax		
	comp=Z,6.0nm,0.8s						
YBH				pmax	pmax		
	comp=Z,37nm,1.1s						
YBH				pmax	pmax		
	comp=Z,3.0nm,0.7s						
YBH	**Yreka Blue Hor**	**26.45**	**124**	*e*P	**P**	**11 08 53.5**	**+2.3**
	comp=Z,5.2nm,0.8s						
CHMT	**Chamberlain Mo**	**26.55**	**104**	*e*P	**P**	**11 08 51.8**	**-0.1**
FFC	**Flin Flon**	**26.92**	**81**	*e*P	**P**	**11 08 55.2**	**-0.1**
	comp=Z,23nm,0.8s,mb4.8						
PET	**Petropavlovsk**	**27.21**	**275**	*e*P	**P**	**11 09 02.5**	**+4.5**
PET				*e*PP	pP	11 09 33.4	+7.6
PET				*e*		11 09 57.2	

ULM sP sP 11 10 30.7 +0.9
comp=Z,20nm,0.6s,baz=298,slow=8.8,SNR=3.4
ULM PcP PcP 11 12 26.5 -2.5
comp=Z,12nm,0.6s,baz=329,slow=8.5,SNR=3.5
ULM ScP 11 15 59.0
comp=Z,17nm,0.7s,baz=337,slow=3.9,SNR=9.1
ULM LR LR 11 24 53.8
comp=Z,256nm,18.3s,baz=347,slow=40
ULM Lac du Bonnet 32.62 83 *e*P **P 11 09 45.8 -0.1**
comp=Z,62nm,1.0s,mb5.3
MVU Marysvale 33.60 114 *e*P **P 11 09 56.2 +1.8**
comp=Z,5.7nm,0.8s,mb4.3
MSU Marysvale 33.61 114 *e*P **P 11 09 56.7 +2.3**
SRU San Rafael 33.86 111 *e*P **P 11 09 58.1 +1.6**
MWC Mount Wilson 34.77 125 *e*P **P 11 10 02.6 -1.8**
MWC *e*pP pP 11 10 35.6 +2.2
NEN Nelson 34.85 120 *e*P **P 11 10 07.2 +2.1**
YAK Yakutsk 35.01 307 *e*P **P 11 10 05.0 -1.1**
YAK *e*PPP PPP 11 11 34.0 -14
YAK *e* 11 12 43.9
YAK *e*S **S 11 15 24.9 -2.7**
YAK *e* 11 20 05.1
YAK pmax pmax
comp=N,6.0nm,0.9s
YAK pmax pmax
comp=Z,25nm,0.9s,mb4.8
YAK pmax pmax
comp=E,11nm,1.0s
YAK pmax pmax
comp=Z,11nm,0.9s,mb4.5
YAK pmax pmax
comp=N,5.0nm,1.1s
YAK smax
comp=N,14nm,1.2s
YAK smax
comp=Z,6.0nm,0.9s
YAK smax
comp=E,8.0nm,1.0s
YAK Yakutsk 35.01 307 *e*P **P 11 10 05.2 -1.0**
comp=E,45nm,0.6s,mb5.3
PV10 Paradox Valley 35.13 110 *e*P **P 11 10 09.8 +2.4**
PV01 Paradox Valley 35.54 110 *e*P **P 11 10 12.4 +1.6**
ISCO Idaho Springs 35.57 105 *e*P **P 11 10 13.0 +1.9**
comp=E,2.6nm,0.8s
ISCO *e*pP pP 11 10 38.9 -1.4
PFO Pinyon Flat Ob 35.95 123 P **P 11 10 15.4 +1.1**
comp=E,32nm,0.8s,mb5.0
PFO *e*pP pP 11 10 43.4 -0.2
WUAZ Wupatki 36.46 116 *e*P **P 11 10 20.8 +2.2**
comp=E,9.0nm,0.7s,mb4.5
BAR Barrett 36.68 124 *e*P **P 11 10 20.8 +0.4**
BAR *e*pP pP 11 10 48.6 -1.1
SDCO Great Sand Dun 37.27 107 *e*P **P 11 10 26.9 +1.6**
comp=E,4.0nm,0.7s,mb4.2
SDCO *e*pP pP 11 10 55.0 +0.3
YSS Yuzh-Sakhalins 38.90 279 *e*P **P 11 10 38.9 +0.1**
YSS pmax pmax
comp=Z,53nm,1.5s,mb5.0
ANMO Albuquerque 39.12 111 *e*P **P 11 10 43.0 +2.2**
ANMO Albuquerque 39.12 111 *e*P **P 11 10 42.4 +1.6**
comp=Z,3.2nm,0.9s
SUMG Summit 39.23 26 *e*P **P 11 10 42.2 +0.8**
DAG Danmarks Havn 39.31 15⇑ *i*P **P 11 10 41.7 -0.3**
comp=Z,37nm,1.0s,mb5.8
DAG Danmarks Havn 39.31 15⇑ *i*P **P 11 10 41.7 -0.3**
DAG pmax pmax
comp=Z,240nm,1.0s,mb5.8
TUC Tucson 39.44 118 *e*P **P 11 10 45.1 +1.5**
comp=Z,2.3nm,0.8s
BNM Barren Site 39.71 112 *e*P **P 11 10 48.0 +2.3**
BNM *e*pP pP 11 11 15.1 -0.1
KBS Kingsbay 39.85 5 *e*P **P 11 10 47.3 +0.9**
KBS AMb AMB 11 10 48.7
comp=Z,101nm,1.2s,mb5.3
KBS *e*SS SS 11 19 46.7 +10
KBS AMS AMS 11 21 16.5
comp=Z,115nm,20.0s
KBS Kingsbay 39.85 5 *e*P **P 11 10 47.3 +0.9**
comp=Z,101nm,1.2s,mb5.3
KBS LR LR
comp=Z,115µm,20.0s
CLNS Chul'man 40.15 302 *e*P **P 11 10 49.1 +0.1**
CLNS pmax pmax
comp=Z,36nm,0.9s,mb5.0
CLNS pmax pmax
comp=N,14nm,0.8s
CLNS pmax pmax
comp=E,22nm,0.9s
JFWS Jewell Farm 40.55 87 *e*P **P 11 10 52.6 +0.1**
comp=E,54nm,0.7s,mb5.3
SPB4 Spitsbergen Ar 40.74 4 *e*P **P 11 10 53.2 -0.5**
ASAJ Asahikawa 41.04 276 P **P 11 10 55.5 -1.0**
comp=E,4.7nm,0.6s,mb4.3,baz=62,slow=2.0,SNR=8.9
ASAJ Asahikawa 41.04 276 P **P 11 10 55.5 -1.0**
ASAJ pmax pmax
comp=Z,5.0nm,0.6s
CPRX Cap Rock 41.90 110 *e*P **P 11 11 04.6 +1.0**
CPRX *e*pP pP 11 11 33.7 +0.4
MNTX Cornudas Mount 42.34 112 *e*P **P 11 11 08.7 +1.5**
comp=Z,4.4nm,0.7s,mb4.2
MNTX *e*pP pP 11 11 36.7 -0.2
GDL2 Guadalupe Moun 42.38 111 *e*P **P 11 11 08.7 +1.2**
KLR Kul'dur 42.43 290 *e*P **P 11 11 07.0 -0.7**
KLR *e* 11 11 51.9
CLNB Carlsbad 42.54 110 *e*P **P 11 11 10.5 +1.6**
CLNB *e*pP pP 11 11 38.5 0.0
SCHQ Schefferville 42.69 58 P **P 11 11 09.7 -0.1**
comp=Z,64nm,0.7s,mb5.4,baz=318,slow=7.9,SNR=144
SCHQ pP pP 11 11 38.9 -0.6
comp=Z,26nm,0.9s,baz=294,slow=12,SNR=2.8
SCHQ Schefferville 42.69 58 *e*P **P 11 11 09.6 -0.2**
comp=Z,118nm,0.9s,mb5.5
WMOK Wichita Mounta 42.86 103 *e*P **P 11 11 11.8 +0.4**
comp=Z,32nm,0.9s,mb5.0
BOD Bodaibo 43.75 309 *e*P **P 11 11 17.6 -0.6**
CCM Cathedral Cave 43.82 93 *e*P **P 11 11 18.0 -1.0**
comp=Z,9.2nm,0.8s,mb4.5
SCO Scoresbysund 44.12 22 *i* P **P 11 11 20.9 -0.1**
AAM Ann Arbor 44.20 83 *e*P **P 11 11 22.4 +0.4**
comp=Z,29nm,0.6s,mb5.1
FVM French Village 44.27 92 *e*P **P 11 11 22.2 -0.4**
comp=Z,19nm,0.6s,mb4.9
FVM *e*pP pP 11 11 52.0 -0.6
SIUC Southern Illin 45.07 91 *e*P **P 11 11 28.4 -0.6**
comp=Z,56nm,1.0s,mb5.2
SIUC *e*pP pP 11 11 56.4 -2.6
LTX Lajitas 45.12 112 *e*P **P 11 11 29.3 -0.3**
comp=Z,26nm,1.2s,mb4.7
LTX *e*pP pP 11 11 57.8 -1.8
TXAR Lajitas Array 45.12 112 P **P 11 11 31.3 +1.7**
comp=Z,8.3nm,0.8s,mb4.4,baz=333,slow=6.1,SNR=95
TXAR pP pP 11 11 59.0 -0.5
comp=Z,11nm,0.7s,baz=345,slow=6.0,SNR=6.2
TXAR ScP 11 16 47.5
comp=Z,2.2nm,0.8s,baz=321,slow=2.6,SNR=3.9
TXAR Lajitas Array 45.12 112 P **P 11 11 31.3 +1.7**
TXAR pP pP 11 11 59.0 -0.5
TXAR ScP 11 16 47.5
BLO Bloomington 45.23 88 *e*P **P 11 11 29.5 -0.8**
comp=Z,60nm,0.8s,mb5.3
MIAR Mount Ida 45.50 98 *e*P **P 11 11 32.2 -0.4**
comp=Z,16nm,0.8s,mb4.7
USIN University of 45.62 90 *e*P **P 11 11 33.1 -0.3**
comp=Z,51nm,0.6s,mb5.3
PVMO Portageville 45.87 93 P **P 11 11 33.9 -1.5**
JCT Junction City 45.91 107 *e*P **P 11 11 36.7 +0.8**
comp=Z,1.9nm,0.6s
WCI Wyandotte Cave 46.08 88 *e*P **P 11 11 36.4 -0.7**
comp=Z,42nm,0.8s,mb5.1
HBAR Harrisburg 46.09 95 P **P 11 11 36.1 -1.0**
ERPA Erie 46.10 80 *e*P **P 11 11 36.8 -0.3**
comp=Z,65nm,0.6s,mb5.4
ACSO Alum Creek Sta 46.12 84 *e*P **P 11 11 36.8 -0.6**
comp=Z,90nm,1.3s,mb5.2
MSNY Massena 46.33 73 *e*P **P 11 11 37.9 -1.0**
UTMT University of 46.33 92 *e*P **P 11 11 38.6 -0.5**
comp=Z,52nm,0.8s,mb5.2
ALLY Alegheny Colle 46.39 80 *e*P **P 11 11 39.6 +0.2**
MET Memphis--Engin 46.79 94 P **P 11 11 42.2 -0.5**
MDJ Mudanjiang 46.84 287 *e*P **P 11 11 42.1 -0.8**
comp=Z,7.5nm,0.8s,mb4.4
WVT Waverly 47.00 92 *e*P **P 11 11 43.6 -0.7**
comp=Z,12nm,0.6s,mb4.7
NATX Nacogdoches 47.26 101 *e*P **P 11 11 47.1 +0.7**
NATX *e*pP pP 11 12 14.7 -1.9

NCB Newcomb 47.40 74 *e*P **P 11 11 46.5 -0.8**
comp=Z,33nm,1.1s,mb4.9
HIA Hailar 47.73 298 *e*P **P 11 11 49.6 -0.3**
comp=Z,9.4nm,0.7s,mb4.5
PLAL Pickwick Lake 47.80 93 *e*P **P 11 11 49.7 -0.9**
comp=Z,94nm,1.2s,mb5.3
PLAL *e*pP pP 11 12 20.3 -0.5
BINY Binghamton 47.94 77 *e*P **P 11 11 51.2 -0.3**
comp=Z,75nm,0.6s,mb5.5
ACCN Adirondack Com 48.11 74 *e*P **P 11 11 51.9 -1.0**
HKT Hockley 48.21 104 *e*P **P 11 11 53.9 +0.1**
HKT *e*pP pP 11 12 22.7 -1.5
SSPA Standing Stone 48.25 79 *e*P **P 11 11 53.9 -0.1**
comp=Z,46nm,0.6s,mb5.3
HNH Hanover 48.51 73 *e*P **P 11 11 55.2 -0.7**
comp=Z,4.8nm,1.0s,mb4.1
SWET Sewanee 48.65 91 *e*P **P 11 11 56.1 -1.1**
MAJO Matsushiro 49.02 273 *e*P **P 11 11 59.0 -0.9**
comp=Z,7.6nm,0.6s,mb4.5
MAT Matsushiro 49.02 273 P **P 11 11 58.6 -1.3**
MAT *e*S **S 11 18 56.0 +3.1**
MAT Matsushiro 49.02 273 *e*P **P 11 11 59.0 -0.9**
comp=Z,15nm,0.8s,mb4.7
MAT S **S 11 18 56.0 +3.1**
CPCT Cooper Cave 49.15 89 *e*P **P 11 12 00.1 -0.8**
BORG Borgarnes 49.21 25 P **P 11 12 00.8 -0.2**
comp=Z,86nm,0.8s,mb5.4,baz=342,slow=3.1,SNR=15
BORG Borgarnes 49.21 25 *e*P **P 11 12 01.4 +0.4**
comp=Z,167nm,0.9s,mb5.7
FWV Forest Hill 49.24 84 *e*P **P 11 12 01.0 -0.6**
PWV Princeton 49.33 85 *e*P **P 11 12 01.9 -0.3**
TRO Tromso 49.36 4 *e*P **P 11 12 01.7 -0.4**
CN2 Changchun 49.38 289⇑ P **P 11 12 02.3 -0.3**
CN2 *e*AP pP 11 12 33.3 +0.3
CN2 *e*S **S 11 18 57.0 -0.8**
CN2 AMB AMB
comp=Z,50nm,1.1s,mb5.1
CN2 AMB AMB
comp=Z,160nm,6.0s
KEV Kevo 49.38 0 *e*p **P 11 12 00.5 -1.8**
MVL Millersville 49.48 79 *e*P **P 11 12 02.5 -0.9**
ELN Prospectdale 49.55 85 *e*P **P 11 12 03.3 -0.7**
ARCES ARCESS Array B 49.60 1 P **P 11 12 02.8 -1.1**
comp=Z,31nm,0.5s,mb5.2,baz=1.8,slow=7.5,SNR=363
ARCES PcP PcP 11 13 21.1 -2.7
comp=Z,22nm,0.6s,slow=2.4,SNR=9.5
ARCES ARCESS Array B 49.60 1 P **P 11 12 02.8 -1.1**
ARCES
ARCES 11 13 21.1
ARCES pmax pmax
comp=Z,31nm,0.5s
ARCES pmax pmax
comp=Z,22nm,0.6s
ARE0 ARCESS Array S 49.60 1 *e*P **P 11 12 02.0 -1.9**
MYNC Murphy 49.64 89 *e*P **P 11 12 03.9 -0.9**
comp=Z,42nm,1.0s,mb5.0
PAL Palisades 49.84 76 *e*P **P 11 12 05.3 -0.8**
comp=Z,24nm,0.8s,mb4.9
PAL *e*pP pP 11 12 34.7 -1.9
LRAL Lakeview Retre 49.90 93 *e*P **P 11 12 05.3 -1.4**
comp=Z,17nm,0.9s,mb4.7
CPNY Central Park 49.99 76 *e*P **P 11 12 06.6 -0.7**
CPNY *e*pP pP 11 12 37.1 -0.7
KTK1 Kautokeino 50.09 2⇓ *i*P **P 11 12 07.5 -0.2**
KTK1 AMb AMB 11 12 08.9
comp=Z,127nm,1.4s,mb5.3
KTK1 Kautokeino 50.09 2⇓ *i*P **P 11 12 07.5 -0.2**
comp=Z,127nm,1.4s,mb5.4
CBN Corbin 50.40 81 *e*P **P 11 12 10.2 -0.3**
comp=Z,37nm,0.6s,mb5.2
LOF Lofoten 50.62 7⇓ *i*P **P 11 12 12.5 +0.8**
LOF AMb AMB 11 12 14.2
comp=Z,162nm,0.8s,mb5.7
LOF Lofoten 50.62 7⇓ *i*P **P 11 12 12.5 +0.8**
comp=Z,162nm,0.8s,mb5.7
LVZ Lovozero 51.15 357 *d i*P **P 11 12 15.1 -0.6**
LVZ *e**PP pP 11 12 46.6 +0.2
LVZ pmax pmax
comp=Z,119nm,1.3s,mb5.4
APA Apatity 51.51 357⇑ *i*P **P 11 12 17.5 -1.0**
APA *i* pP 11 12 47.8 -1.3
APA pmax pmax
comp=Z,46nm,0.9s,mb5.1
APA MLR MLR
comp=Z,300nm,14.0s
JSC Jenkinsville 51.67 87 *e*P **P 11 12 19.6 -0.6**
JSC *e*pP pP 11 12 48.8 -2.0
SNY Shenyang 51.78 289⇓ P **P 11 12 21.0 +0.2**
SNY S **S 11 19 33.0 +2.1**
SNY AMB AMB
comp=Z,30nm,0.9s,mb4.9
SNY LR LR
comp=N,340nm,13.1s
SNY LR LR
comp=E,310nm,14.7s
SNY LR LR
comp=Z,340nm,15.4s
TLY Talaya 52.31 310 *e*P **P 11 12 23.0 -1.6**
TLY *e**PP pP 11 12 57.7 +2.4
TLY *i* *SP sP 11 13 13.3 +3.5
TLY *e* 11 14 22.0
TLY *e*S **S 11 19 37.3 -0.6**
TLY pmax pmax
comp=Z,347nm,1.4s,mb5.8
TLY MLR MLR
comp=Z,600nm,10.0s
MOR8 Moi Rana 52.61 7⇓ *i*P **P 11 12 24.6 -2.1**
MOR8 AMb AMB 11 12 25.7
comp=Z,102nm,0.8s,mb5.6
MOR8 Moi Rana 52.61 7⇓ *i*P **P 11 12 24.6 -2.1**
comp=Z,102nm,0.8s,mb5.6
COW Cow Castle Cre 52.67 87 *e*P **P 11 12 26.9 -0.7**
COW *e*pP pP 11 12 55.9 -2.5
KS15 Wonju Array Si 53.25 282 *e*P **P 11 12 31.5 -0.3**
MOY Mondy 53.29 312 *e*P **P 11 12 33.2 +1.3**
ZAK Zakamensk 53.49 309⇑ *i*P **P 11 12 34.0 +0.6**
ULN Ulaanbaatar 54.08 305 *e*P **P 11 12 37.7 0.0**
comp=Z,37nm,0.8s,mb5.2
NSS Namsos 54.09 8⇓ *i*P **P 11 12 35.1 -2.4**
NSS AMb AMB 11 12 36.5
comp=Z,182nm,0.9s,mb5.8
NSS Namsos 54.09 8⇓ *i*P **P 11 12 35.1 -2.4**
comp=Z,182nm,0.9s,mb5.8
SONM Songjino Array 54.36 306 P **P 11 12 40.3 +0.5**
comp=Z,46nm,0.7s,mb5.3,baz=44,slow=6.8,SNR=187
SONM PcP PcP 11 13 41.6 -0.2
comp=Z,16nm,0.8s,baz=35,slow=6.1,SNR=2.8
MOL Molde 55.66 11⇓ *i*P **P 11 12 50.1 +1.1**
MOL AMb AMB 11 12 52.4
comp=Z,134nm,1.4s,mb5.6
MOL Molde 55.66 11⇓ *i*P **P 11 12 50.1 +1.1**
comp=Z,134nm,1.4s,mb5.6
JOF Joensuu 56.22 358 *e*p **P 11 12 51.2 -1.8**
comp=Z,7.6nm,0.4s,mb4.9
JOF Joensuu 56.22 358 *e*P **P 11 12 51.2 -1.8**
JOF pmax pmax
comp=Z,8.0nm,0.4s,mb4.9
NVS Novosibirsk 56.29 325 *i* P **P 11 12 51.1 -2.5**
NVS *e**PP pP 11 13 25.6 +0.8
NVS *i* S **S 11 20 25.0 -6.4**
NVS pmax pmax
comp=N,40nm,0.8s
NVS pmax pmax
comp=E,45nm,0.8s
NVS pmax pmax
comp=Z,120nm,0.8s,mb5.8
NVS smax
comp=N,41nm,1.7s
NVS smax
comp=E,35nm,1.7s
DOMB Dombas 56.32 10⇓ *i*P **P 11 12 52.1 -1.6**
DOMB AMb AMB 11 12 53.0
comp=Z,106nm,0.8s,mb5.7
DOMB Dombas 56.32 10⇓ *i*P **P 11 12 52.1 -1.6**
comp=Z,106nm,0.8s,mb5.7
FOO Floro 56.37 13 *e*P **P 11 12 52.4 -1.6**
FOO AMb AMB 11 12 53.4
comp=Z,44nm,2.4s,mb4.9
FOO Floro 56.37 13 *e*P **P 11 12 52.4 -1.6**
comp=Z,44nm,2.4s,mb4.9
BJI Beijing 56.56 293 P **P 11 12 55.3 -0.4**
BJI S **S 11 20 33.8 -1.3**
BJI AMB AMB
comp=Z,22nm,0.9s,mb5.0
BJI LR LR
comp=Z,103nm,40.6s

YEL1 Yell 56.63 17⇓ *e*P **P 11 12 54.8 -1.2**
WAL1 Walls 56.84 17⇓ *e*P **P 11 12 55.2 -2.2**
LRW Lerwick 57.02 17⇓ *e*P **P 11 12 57.2 -1.5**
SAN1 Sandwick 57.12 17⇓ *e*P **P 11 12 57.9 -1.5**
NB2 NORSAR Subarra 57.49 9 P pP 11 13 33.7 +0.5
comp=Z,6.8nm,0.7s,baz=349,slow=7.0
NB2 NORSAR Subarra 57.49 9 P pP 11 13 33.7 +0.5
baz=349,slow=6.9
NOA NORSAR Array B 57.49 9 P **P 11 13 00.5 -1.4**
comp=Z,88nm,0.7s,mb5.7,baz=351,slow=7.0,SNR=470
NOA pP pP 11 13 32.8 -0.4
comp=Z,9.0nm,0.7s,baz=351,slow=7.0,SNR=2.5
NOA NORSAR Array B 57.49 9 P **P 11 13 00.5 -1.4**
NOA *PP pP 11 13 32.8 -0.4
NOA pmax pmax
comp=Z,89nm,0.7s
NOA pmax pmax
comp=Z,9.0nm,0.7s
NOA NORSAR Array B 57.49 9 P **P 11 13 00.5 -1.4**
NOA pP pP 11 13 32.8 -0.4
NAO01 NORSAR Array S 57.66 10 *e*P **P 11 13 01.1 -2.0**
comp=Z,81nm,0.8s,mb5.6
FINES FINESS Array B 57.73 1 P **P 11 13 02.4 -1.2**
comp=Z,73nm,0.7s,mb5.6,baz=2.9,slow=8.3,SNR=520
FINES ScP 11 17 39.1
comp=Z,3.0nm,0.8s,slow=1.9,SNR=3.9
FINES FINESS Array B 57.73 1 P **P 11 13 02.4 -1.2**
FINES pmax pmax
comp=Z,73nm,0.7s
FINES pmax pmax
comp=Z,3.0nm,0.8s
HHC Hu-ho-hao-te 57.92 297⇓ P **P 11 13 05.8 +0.6**
HHC AP pP 11 13 36.3 -0.2
HHC XP sP 11 13 47.3 -3.7
HHC PCP PcP 11 13 56.3 +0.5
HHC SCP 11 17 44.8
HHC PCS 11 17 57.5
HHC S **S 11 20 55.0 +2.1**
HHC XS 11 21 46.0
HHC AMB AMB
comp=Z,96nm,4.3s
BLS5 Blasjo 58.65 12⇓ *i*P **P 11 13 09.5 -0.5**
BLS5 AMb AMB 11 13 10.4
comp=Z,48nm,0.8s,mb5.4
BLS5 Blasjo 58.65 12⇓ *i*P **P 11 13 09.5 -0.5**
comp=Z,48nm,0.8s,mb5.4
KONO Kongsberg 58.73 11 *e*P **P 11 13 09.2 -1.3**
KONO AMb AMB 11 13 10.8
comp=Z,126nm,1.0s,mb5.7
KONO AMS AMS 11 25 17.2
comp=Z,94nm,22.0s
KONO Kongsberg 58.73 11 *e*P **P 11 13 09.2 -1.3**
comp=Z,3µm,1.0s
KONO LR LR
comp=Z,1µm,22.0s
KPL Plockton 59.01 20⇓ *e*P **P 11 13 11.2 -1.4**
KSB Sheil Bridge 59.17 20⇓ *e*P **P 11 13 12.3 -1.4**
KSB AMB AMB 11 13 13.8
comp=Z,40nm,1.2s,mb5.1
KAR1 Arisaig 59.38 21⇓ *e*P **P 11 13 13.7 -1.4**
PUL Pulkovo 59.40 358 *de*P **P 11 13 14.6 -0.6**
PUL pmax pmax
comp=Z,220nm,0.8s,mb6.0
PUL pmax pmax
comp=N,290nm,1.1s
PUL pmax pmax
comp=E,80nm,0.7s
TEIG Tepich 60.04 103 P **P 11 13 19.9 -0.2**
comp=E,19nm,0.6s,mb5.1,baz=180,slow=5.1,SNR=2.7
TEIG pP pP 11 13 51.0 -0.7
comp=E,114nm,0.9s,baz=229,slow=2.9,SNR=4.9
ARU Arti 60.26 341⇓ *i*P **P 11 13 19.9 -1.2**
ARU *i* 11 14 02.1
ARU *e* 11 15 35.4
ARU *e*PPP PPP 11 16 59.9 -5.0
ARU *e*S **S 11 21 22.9 0.0**
ARU *e*SS SS 11 25 28.8 +5.3
ARU pmax pmax
comp=Z,50nm,0.7s,mb5.5
ARU Arti 60.26 341 *e*P **P 11 13 19.4 -1.8**
comp=Z,61nm,0.6s,mb5.6
GCL Cushendall 61.09 21⇓ *e*P **P 11 13 25.3 -1.5**
BRVK Borovoye 61.19 332 *e*P **P 11 13 25.7 -1.7**
BVAR Borovoye Array 61.19 332 LR LR 11 41 13.0
comp=Z,99nm,18.4s,baz=80,slow=37
KURK Kurchatov 61.25 326 *e*P **P 11 13 26.7 -1.3**
EKA Eskdalemuir Ar 61.34 19 P **P 11 13 27.1 -1.4**
comp=Z,23nm,0.5s,mb5.3,baz=328,slow=4.9,SNR=184
EKA pP pP 11 13 58.5 -1.7
comp=Z,11nm,0.5s,baz=335,slow=5.4,SNR=4.3
EKA Eskdalemuir Ar 61.34 19 P **P 11 13 27.2 -1.3**
EKA *PP pP 11 13 58.5 -1.7
EKA pmax pmax
comp=Z,23nm,0.5s
EKA pmax pmax
comp=Z,11nm,0.5s
ESK Eskdalemuir 61.35 19 *e*P **P 11 13 26.6 -1.9**
comp=Z,58nm,0.9s,mb5.4
BWH Wardlaw 61.42 20⇓ *e*P **P 11 13 27.6 -1.4**
BWH AMB AMB 11 13 29.6
comp=Z,73nm,1.2s,mb5.4
GAL1 Galloway 61.54 21⇓ *e*P **P 11 13 28.5 -1.3**
GAL1 AMB AMB 11 13 31.0
comp=Z,112nm,1.4s,mb5.5
BHH Howats Hill 61.57 20⇓ *e*P **P 11 13 28.7 -1.3**
ZRNK Zerenda 61.57 333 *e*P **P 11 13 28.5 -1.5**
BBH Bruntsheil 61.58 19⇓ *e*P **P 11 13 28.9 -1.2**
BBH AMB AMB 11 13 30.7
comp=Z,56nm,0.8s,mb5.4
SSE Sheshan 61.62 283 P **P 11 13 30.8 +0.1**
SSE AP pP 11 14 01.8 -0.6
SSE XP sP 11 14 15.5 -1.3
SSE S **S 11 21 40.5 +0.1**
SSE XS 11 22 33.8
SSE SS SS 11 25 46.0 +0.5
SSE AMB AMB
comp=Z,15nm,1.2s,mb4.7
SSE LR LR
comp=N,61nm,29.0s
SSE LR LR
comp=E,66nm,29.0s
SSE LR LR
comp=Z,105nm,29.1s
BTA Talkin 61.83 19⇓ *e*P **P 11 13 30.3 -1.5**
MUD Monsted U'grnd 61.84 11⇓ *i*P **P 11 13 31.2 -0.6**
comp=Z,103nm,1.2s,mb5.5
MUD Monsted U'grnd 61.84 11⇓ *i*P **P 11 13 31.2 -0.6**
MUD pmax pmax
comp=Z,100nm,1.2s,mb5.5
BBO1 Bothel 61.91 20⇓ *e*P **P 11 13 30.9 -1.4**
NJ2 Nanjing 61.91 286 *e*P **P 11 13 30.8 -1.8**
NJ2 AP pP 11 14 04.5 +0.1
NJ2 XP sP 11 14 20.0 +1.2
NJ2 PP PP 11 15 51.8 -0.8
NJ2 AMB AMB
comp=Z,20nm,0.5s,mb5.2
NJ2 AMB AMB
comp=Z,190nm,4.5s
NJ2 LR LR
comp=N,700nm,16.4s
NJ2 LR LR
comp=E,610nm,19.0s
NJ2 LR LR
comp=Z,750nm,17.6s
GMM Mts of Mourne 61.92 22⇓ *e*P **P 11 13 30.9 -1.4**
COP Copenhagen 62.90 10⇓ *i*P **P 11 13 38.0 -0.8**
comp=Z,93nm,0.6s,mb5.8
COP Copenhagen 62.90 10⇓ *i*P **P 11 13 38.0 -0.8**
COP pmax pmax
comp=Z,93nm,0.6s,mb5.8
MOS Moscow 63.19 354ĸ *i*P **P 11 13 40.4 -0.3**
MOS *e**PP pP 11 14 10.4 -2.2
MOS *e* 11 14 19.0
MOS *e* 11 15 58.2
MOS *e*S **S 11 22 01.9 +2.1**
MOS pmax pmax
comp=Z,130nm,0.5s,mb6.0
BSD Bornholm Skovb 63.65 8⇓ *i*P **P 11 13 43.0 -0.6**
comp=Z,96nm,0.8s,mb5.7
BSD Bornholm Skovb 63.65 8⇓ *i*P **P 11 13 43.0 -0.6**
BSD pmax pmax
comp=Z,96nm,0.8s,mb5.7
MKAR Makanchi Array 63.72 321 P **P 11 13 43.1 -1.1**
comp=Z,33nm,0.7s,mb5.3,baz=45,slow=6.4,SNR=251
MKAR PcP PcP 11 14 15.9 -3.0

comp=Z,5.5nm,0.6s,baz=39,slow=7.8,SNR=4.5
MKAR Makanchi Array 63.72 321 P **P** **11 13 43.2 -1.0**
MKAR pP 11 14 15.9 -0.2
MKAR pmax pmax
comp=Z,33nm,0.7s
MKAR pmax pmax
comp=Z,6.0nm,0.6s
OBN Obninsk 63.87 354 *d* *i*P **P** **11 13 44.3 -0.7**
OBN *e**PP pP 11 14 16.9 0.0
OBN *e* 11 16 08.1
OBN pmax pmax
comp=Z,78nm,0.5s,mb5.8
OBN MLR MLR
comp=Z,100nm,20.0s
OBN Obninsk 63.87 354 *e*P **P** **11 13 43.8 -1.2**
comp=Z,116nm,0.4s,mb6.1
GTA Gaotai 64.02 305 ⇓P **P** **11 13 47.0 +0.8**
GTA AP pP 11 14 19.0 +0.9
GTA XP sP 11 14 34.8 +2.3
GTA PP PP 11 16 10.0 -0.2
GTA S **S** **11 22 12.3 +2.1**
GTA XS 11 23 03.0
GTA SS SS 11 26 23.5 +0.8
GTA AMB AMB
comp=Z,38nm,0.8s,mb5.3
GTA AMB AMB
comp=Z,71nm,3.8s
GTA LR LR
comp=N,100nm,8.4s
GTA LR LR
comp=E,149nm,8.4s
GTA LR LR
comp=Z,83nm,14.8s
RGN Rugen 64.09 9 *e*P **P** **11 13 46.1 -0.4**
BSEG Bad Segeberg 64.44 11 *i*P **P** **11 13 48.7 -0.1**
BSEG pmax pmax
comp=Z,107nm,0.9s,mb5.7
WMQ Urumqi 64.64 316 P **P** **11 13 52.0 +1.8**
WMQ AP pP 11 14 22.5 +0.4
WMQ PCP PcP 11 14 24.3 +1.6
WMQ XP sP 11 14 36.5 0.0
WMQ PP PP 11 16 17.5 +1.8
WMQ SCP 11 18 13.8
WMQ PCS 11 18 27.0
WMQ S **S** **11 22 20.5 +2.7**
WMQ PS PS 11 22 59.5 +1.5
WMQ XS 11 23 13.5
WMQ SCS ScS 11 23 30.5 +2.5
WMQ SS SS 11 26 35.3 +2.7
WMQ AMB AMB
comp=Z,26nm,1.4s,mb4.9
WMQ AMB AMB
comp=Z,111nm,4.8s
MNK Minsk 64.70 360 *e*P **P** **11 13 48.0 -2.4**
MNK pmax pmax
comp=Z,490nm,1.0s
MNK pmax pmax
comp=N,450nm,1.5s
SUW Suwalki 65.13 3⇓*e*P **P** **11 13 52.3 -0.9**
WIT Witteveen 65.17 14 *e*P **P** **11 13 53.5 0.0**
LZH Lanzhou 65.21 300 ⇓P **P** **11 13 54.5 +0.5**
LZH AP pP 11 14 25.8 -0.2
LZH XP sP 11 14 39.5 -0.9
LZH PP PP 11 16 21.5 +0.6
LZH *e*S S 11 22 24.8 -0.1
LZH XS 11 23 19.3
LZH AMB AMB
comp=Z,39nm,1.4s,mb5.0
LZH AMB AMB
comp=Z,217nm,5.3s
LZH LR LR
comp=E,339nm,14.9s
LZH LR LR
comp=Z,589nm,17.8s
WHN Wuhan 65.27 288 P **P** **11 13 54.3 -0.2**
GKP Gorka Klasztor 65.63 7⇓*i*P **P** **11 13 56.3 -0.2**
WTSB Winterswijk 66.01 14⇓*i*P **P** **11 13 58.4 -0.5**
comp=Z,58nm,0.6s,mb5.6
RUE Ruedersdorf 66.18 9 *e*P **P** **11 13 59.4 -0.5**
MENF Mencas 66.79 17⇓*e*P **P** **11 14 03.2 -0.6**
WAR Warsaw 66.84 4 *e*P **P** **11 14 04.5 +0.4**
VOR Voronezh 67.09 352 *e*P **P** **11 14 04.0 -1.7**
VOR pmax pmax
comp=N,50nm,1.0s
VOR pmax pmax
comp=Z,60nm,1.0s,mb5.4
HGN Heimansgroeve 67.09 15⇓*i*P **P** **11 14 05.0 -0.7**
comp=Z,35nm,1.1s,mb5.1
HGN *e*PP Px 11 16 15.4
HGN *e*S x 11 21 40.7
CLL Collm 67.29 10 ⇓P **P** **11 14 06.4 -0.5**
comp=Z,logA/T=2.0,mb5.6
CLL *i* PCP PcP 11 14 33.0 -0.6
CLL Collm 67.29 10⇓*i*P **P** **11 14 06.4 -0.5**
CLL *i* 11 14 33.0
CLL pmax pmax
comp=Z,78nm,0.7s,mb5.7
CLL Collm 67.29 10⇓*i*P **P** **11 14 06.4 -0.5**
comp=Z,78nm,0.7s,mb5.7
CLL *i* 11 14 33.0
BAIF Baives 67.56 16⇓*i*P **P** **11 14 08.3 -0.3**
comp=Z,139nm,1.0s,mb5.3
BAIF *e*pP pP 11 14 42.1 +1.3
GIVF Givet 67.60 16⇓*i*P **P** **11 14 08.5 -0.4**
comp=Z,178nm,1.1s,mb5.4
VRSR Storozhevoye 67.60 352 *d* *i*P **P** **11 14 07.8 -1.1**
VRSR *e* 11 14 34.5
VRSR *e**PP pP 11 14 41.9 +0.8
VRSR *e**SP sP 11 14 56.8 +1.4
VRSR *e*S S 11 22 49.5 -4.0
VRSR *e*SS SS 11 27 14.8 -3.5
VRSR *e*SSS SSS 11 30 15.3 -4.0
VRSR pmax pmax
comp=Z,50nm,0.5s,mb5.5
VRSR pmax pmax
comp=N,4.0nm,0.4s
VRSR pmax pmax
comp=E,2.0nm,0.5s
VRSR smax
comp=N,60nm,3.4s
VRSR smax
comp=Z,40nm,5.3s
VRSR smax
comp=E,30nm,4.5s
ENH Enshi 67.71 292 *e*P **P** **11 14 09.0 -0.9**
comp=E,46nm,1.3s,mb5.0
BRG Berggiesshubel 67.79 9 *i*P **P** **11 14 09.9 -0.2**
BRG *i**PP pP 11 14 41.2 -1.0
BRG pmax pmax
comp=Z,98nm,0.9s,mb5.5
BRG Berggiesshubel 67.79 9 *i*P **P** **11 14 09.9 -0.2**
comp=Z,98nm,0.9s,mb5.5
BRG *i* pP pP 11 14 41.2 -1.0
MOX Moxa 67.82 11⇓*i*P **P** **11 14 10.0 -0.3**
comp=Z,logA/T=2.4,mb5.9
MOX Moxa 67.82 11⇓*i*P **P** **11 14 10.0 -0.3**
MOX pmax pmax
comp=Z,252nm,1.1s,mb5.9
MOX Moxa 67.82 11⇓*i*P **P** **11 14 10.0 -0.3**
comp=Z,252nm,1.1s,mb5.9
KSP Ksiaz 67.99 8⇓*i*P **P** **11 14 11.3 0.0**
KSP Ksiaz 67.99 8⇓*e*P **P** **11 14 11.2 -0.1**
KSP *e**PP pP 11 14 45.3 +1.8
ROSF Rostrenen 68.06 22⇓*i*P **P** **11 14 11.3 -0.5**
comp=Z,90nm,0.9s,mb5.2
FLN La Foliniere 68.13 20⇓*i*P **P** **11 14 11.4 -0.8**
comp=Z,197nm,1.0s,mb5.5
FLN *e*pP pP 11 14 45.3 +0.9
FLN *e*R
comp=Z,85nm,19.2s
ABH Alteburg 68.15 14⇓*e*P **P** **11 14 12.1 -0.2**
ABH Alteburg 68.15 14⇓*e*P **P** **11 14 12.0 -0.3**
PVCC Panska Ves 68.19 9⇓*i*P **P** **11 14 12.5 0.0**
WLF Walferdange 68.20 15 *e*P **P** **11 14 12.1 -0.5**
comp=Z,74nm,1.0s,mb5.4
SGMF Saint Gilles 68.27 21⇓*i*P **P** **11 14 12.5 -0.6**
comp=Z,115nm,0.9s,mb5.3
RUP Ruppelstein 68.27 14⇓*e*P **P** **11 14 12.8 -0.2**
RUP Ruppelstein 68.27 14⇓*e*P **P** **11 14 12.6 -0.4**
UPC Upice 68.31 8⇓*i*P **P** **11 14 13.3 +0.1**
LDF La Druitiere 68.35 19⇓*i*P **P** **11 14 12.7 -0.8**
comp=Z,85nm,0.8s,mb5.2
GRR Gorron 68.43 20⇓*i*P **P** **11 14 13.5 -0.5**
comp=Z,124nm,0.9s,mb5.4
DPC Dobruska-Polom 68.48 8⇓*i*P **P** **11 14 14.7 +0.4**
DPC *e*pP pP 11 14 46.2 -0.4
DPC *e*S S 11 23 04.0 0.0
QUIF Quistinic 68.49 22⇓*i*P **P** **11 14 13.9 -0.5**
comp=Z,48nm,0.8s,mb5.0
TOD Tromm 68.57 13⇓*e*P **P** **11 14 14.9 0.0**
TOD Tromm 68.57 13⇓*e*P **P** **11 14 14.8 -0.1**
SWS Schriesheim 68.67 13⇓*e*P **P** **11 14 15.3 -0.2**
PRU Pruhonice 68.72 9⇓*i*P **P** **11 14 15.8 0.0**
comp=Z,66nm,0.8s,mb5.4
PRU Pruhonice 68.72 9⇓*i*P **P** **11 14 15.8 0.0**
PRU pmax pmax
comp=Z,66nm,0.8s,mb5.4
GRF Grafenberg Arr 68.73 11 *i*P **P** **11 14 16.2 +0.4**
GRF pmax pmax
comp=Z,80nm,0.8s,mb5.5
KTD Kalmit 68.77 14 *e*P **P** **11 14 16.1 0.0**
OJC Ojcow 68.81 5⇓*i*P **P** **11 14 16.3 0.0**
RAC Raciborz 68.86 6 *e*P **P** **11 14 17.0 +0.3**
RAC *e*PcP PcP 11 14 40.9 +0.7
SIND Sindeldorf 68.91 13⇓*e*P **P** **11 14 16.8 -0.1**
LANF Langenberg 69.07 14⇓*e*P **P** **11 14 17.8 -0.1**
OKC Ostrava-Krasne 69.11 7⇓*i*P **P** **11 14 18.1 0.0**
OKC *e*pP pP 11 14 51.9 +1.5
OKC *e*S S 11 23 14.2 +2.9
MORC Moravsky Berou 69.13 7 *e*P **P** **11 14 17.9 -0.4**
comp=Z,55nm,0.8s,mb5.3
MEZF Maizieres J'vi 69.20 16⇓*i*P **P** **11 14 18.5 -0.2**
comp=Z,140nm,1.0s,mb5.4
MEZF *e*pP pP 11 14 52.6 +1.6
USP Ospenovka 69.20 325 P **P** **11 14 18.8 -0.1**
SNR=19
TKM2 Tokmak 2 69.21 324 P **P** **11 14 19.3 +0.3**
SNR=29
CHMS Chumysh 69.38 325 P **P** **11 14 20.2 +0.2**
SNR=29
WET Wettzell 69.42 10 *i*P **P** **11 14 20.6 +0.5**
WET pmax pmax
comp=Z,58nm,1.0s,mb5.3
STU Stuttgart 69.43 13 *e*P **P** **11 14 19.2 -1.0**
LBG Lerchenberg 69.49 13⇓*e*P **P** **11 14 20.5 0.0**
KHC Kasperske Hory 69.50 10⇓*i*P **P** **11 14 20.9 +0.4**
KHC *ex* x 11 14 30.0
KHC *e*pP pP 11 14 55.2 +2.3
KHC *e*S S 11 23 19.6 +3.7
KHC Kasperske Hory 69.50 10⇓*i*P **P** **11 14 20.9 +0.4**
KHC *e**PP pP 11 14 55.2 +2.3
KHC *e*S S 11 23 19.6 +3.7
KWP Kalwaria 69.50 3⇓*i*P **P** **11 14 20.9 +0.3**
CDF Champ du Feu 69.57 14⇓*i*P **P** **11 14 20.9 -0.1**
comp=Z,68nm,0.8s,mb5.1
FRU Bishkek 69.57 325 *i*P **P** **11 14 22.0 +0.9**
FRU pmax pmax
comp=Z,70nm,1.7s,mb5.1
WLS Welschbruch 69.58 14⇓*e*P **P** **11 14 21.1 +0.1**
THEF They Montfort 69.59 15⇓*e*P **P** **11 14 21.1 0.0**
NIE Niedzica 69.63 5⇓*e*P **P** **11 14 21.2 -0.2**
KBK Karagaybulak 69.64 325 P **P** **11 14 22.1 +0.5**
SNR=15
ULHL Ulahol 69.65 324 P **P** **11 14 21.8 +0.2**
SNR=6.5
CD2 Chengdu 69.68 297 *e*P **P** **11 14 21.5 -0.5**
CD2 PP PP 11 17 00.0 +0.7
CD2 PPP PPP 11 18 37.0 -2.3
CD2 S S 11 23 20.8 +2.4
CD2 SKS SKS 11 24 04.3 -1.4
CD2 SS SS 11 27 53.3 +2.4
CD2 AMB AMB
comp=Z,30nm,1.1s,mb4.9
CD2 AMB AMB
comp=Z,130nm,5.0s
CD2 LR LR
comp=E,200nm,10.9s
CD2 LR LR
comp=Z,170nm,16.2s
HDH Heidenheim 69.72 12⇓*e*P **P** **11 14 21.8 -0.1**
ECH Echery 69.75 14⇓*e*P **P** **11 14 22.1 0.0**
BUCH Bad Urach 69.77 13⇓*e*P **P** **11 14 22.5 +0.3**
BFO Black Forest 69.77 14 *i*P **P** **11 14 22.2 0.0**
BFO pmax pmax
comp=Z,67nm,1.2s,mb5.2
AAK Ala-Archa 69.79 325 P **P** **11 14 22.7 +0.3**
SNR=24
AAK Ala-Archa 69.79 325 *e*P **P** **11 14 22.3 -0.1**
comp=Z,29nm,0.6s,mb5.2
GEC2 GERESS Array S 69.79 10 *i*P **P** **11 14 22.6 +0.3**
GEC2 pmax pmax
comp=Z,48nm,0.8s,mb5.3
GERES GERESS Array B 69.79 10 P **P** **11 14 22.3 -0.1**
comp=Z,28nm,0.7s,mb5.1,baz=342,slow=4.2,SNR=249
GERES pP pP 11 14 54.8 +0.1
comp=Z,7.6nm,0.7s,baz=346,slow=5.5,SNR=3.6
GERES GERESS Array B 69.79 10 P **P** **11 14 22.3 0.0**
GERES *e**PP pP 11 14 54.8 +0.1
GERES pmax pmax
comp=Z,28nm,0.7s
GERES pmax pmax
comp=Z,8.0nm,0.7s
HAU Haudompre 69.85 15⇓*i*P **P** **11 14 22.5 -0.2**
comp=Z,94nm,0.7s,mb5.3
HAU *e*R
comp=Z,94nm,22.0s
LIBD Limburg 69.86 14⇓*e*P **P** **11 14 23.0 +0.2**
LIKS Likovka 69.94 6 *i*P **P** **11 14 24.1 +0.8**
EKS2 Erkin-Say 69.96 325 P **P** **11 14 23.9 +0.4**
SNR=38
SPAK Spaichingen 70.05 13 *e*P **P** **11 14 24.0 +0.1**
SPAK Spaichingen 70.05 13⇓*e*P **P** **11 14 23.9 0.0**
HYF Humbligny 70.07 18 *e*P **P** **11 14 24.0 -0.1**
KZA Kyzart 70.09 324 P **P** **11 14 24.9 +0.6**
SNR=14
KIZ Kirchzarten 70.09 14⇓*e*P **P** **11 14 23.7 -0.5**
HINF Hinteralfeld 70.10 15⇓*i*P **P** **11 14 23.9 -0.4**
comp=Z,64nm,0.7s,mb5.2
MOF Molkenrain 70.10 15⇓*e*P **P** **11 14 23.9 -0.4**
GUT Gutenstein 70.12 13⇓*e*P **P** **11 14 24.4 +0.1**
UCH Uchor 70.16 325 P **P** **11 14 25.3 +0.6**
SNR=9.6
FELD Feldberg 70.18 14⇓*e*P **P** **11 14 24.4 -0.3**
FELD Feldberg 70.18 14⇓*e*P **P** **11 14 24.1 -0.6**
CRVS Cervenica-Dubn 70.19 4 *i*P **P** **11 14 25.1 +0.3**
LOR Lormes 70.25 17⇓*i*P **P** **11 14 24.8 -0.3**
comp=Z,198nm,0.9s,mb5.6
LOR *e*pP pP 11 14 58.8 +1.3
LOR *e*R
comp=Z,89nm,23.0s
FUR Furstenfeldbru 70.25 12 *i*P **P** **11 14 25.3 +0.2**
FUR pmax pmax
comp=Z,154nm,0.7s,mb5.8
MFF Saint Martin d 70.28 20⇓*i*P **P** **11 14 25.0 -0.3**
comp=Z,104nm,0.8s,mb5.3
SLE Schleitheim 70.35 14⇓*i*P **P** **11 14 25.3 -0.4**
comp=Z,121nm,1.2s,mb5.5
KOLL Kolacno 70.38 6 *i*P **P** **11 14 26.6 +0.7**
SMOL Smolenice 70.38 7 *i*P **P** **11 14 26.7 +0.8**
SSF Saint Saulge 70.40 17⇓*i*P **P** **11 14 25.8 -0.2**
comp=Z,238nm,0.9s,mb5.6
AML Almayashu 70.47 325 P **P** **11 14 27.7 +1.1**
SNR=42
VYHS Vyhne 70.48 6 *i*P **P** **11 14 26.9 +0.4**
VYHS *e* 11 16 57.1
STEIN Stein am Rhein 70.48 13⇓*i*P **P** **11 14 26.3 -0.3**
comp=Z,98nm,0.7s,mb5.7
BBS Basel-Blauen 70.53 14⇓*e*P **P** **11 14 26.7 -0.1**
SULZ Sulz-Cheisache 70.54 14⇓*i*P **P** **11 14 26.6 -0.3**
comp=Z,158nm,1.0s,mb5.7
SULZ Sulz-Cheisache 70.54 14⇓*i*P **P** **11 14 26.7 -0.2**
LOMF Lomont 70.56 15⇓*e*P **P** **11 14 27.1 +0.1**
BOURR Bourrignon 70.57 15⇓*i*P **P** **11 14 27.1 +0.1**
comp=Z,120nm,1.1s,mb5.6
UBR Uberruh 70.61 12⇓*e*P **P** **11 14 27.5 +0.2**
BALST Balsthal 70.68 14⇓*i*P **P** **11 14 27.6 -0.1**
comp=Z,125nm,1.2s,mb5.5
BALST Balsthal 70.68 14⇓*i*P **P** **11 14 27.7 0.0**
ZST Bratislava 70.68 7 *i*P **P** **11 14 28.4 +0.7**
BGF Bois d'Agland 70.79 18⇓*i*P **P** **11 14 28.0 -0.4**
comp=Z,168nm,0.8s,mb5.5
MOA Molln 70.82 9⇓*i*P **P** **11 14 28.5 -0.1**
comp=Z,72nm,1.4s,mb5.2
SMF Signal de Mont 70.85 17⇓*i*P **P** **11 14 28.2 -0.6**
comp=Z,194nm,1.0s,mb5.5
BRANT Les Verrieres 70.92 15⇓*i*P **P** **11 14 29.2 0.0**
comp=Z,65nm,1.1s,mb5.3
KAMOR Kamor 70.93 13⇓*i*P **P** **11 14 29.6 +0.4**
comp=Z,160nm,1.2s,mb5.6
TCF Toulx Ste Croi 70.96 18⇓*i*P **P** **11 14 28.9 -0.5**
comp=Z,68nm,0.9s,mb5.1
DAVA Damuels 70.97 13⇑*i*P **P** **11 14 29.6 +0.1**
comp=Z,56nm,1.5s,mb5.1
MOTA Moosalm 71.04 12⇑*i*P **P** **11 14 30.1 +0.2**
comp=Z,61nm,1.2s,mb5.2
WATA Walderalm 71.10 11⇑*i*P **P** **11 14 30.5 +0.3**
comp=Z,75nm,1.0s,mb5.4
PSZ Piszkesteto 71.11 5⇓*i*P **P** **11 14 31.1 +0.8**
SRO Srobarova 71.13 7 *i*P **P** **11 14 31.0 +0.6**
TORNY Torny 71.14 15⇓*i*P **P** **11 14 30.7 +0.2**
comp=Z,117nm,1.1s,mb5.5
MUO Muotathal 71.15 14⇓*i*P **P** **11 14 31.0 +0.5**
comp=Z,143nm,1.4s,mb5.5
PLONS Plons 71.15 13⇓*i*P **P** **11 14 30.8 +0.2**
comp=Z,144nm,1.2s,mb5.6
WTTA Wattenberg 71.17 11⇑*i*P **P** **11 14 31.2 +0.5**
comp=Z,170nm,1.2s,mb5.7
SQTA Sankt Quirin 71.17 12⇑*i*P **P** **11 14 31.1 +0.4**
comp=Z,93nm,1.0s,mb5.5
CABF La Chapelle 71.19 15⇓*i*P **P** **11 14 31.0 +0.2**
comp=Z,106nm,0.8s,mb5.3
CABF *e*pP pP 11 15 05.2 +1.9
BNALP Bannalp 71.22 14⇓*i*P **P** **11 14 31.5 +0.5**
comp=Z,99nm,1.3s,mb5.4
GIMEL Gimel 71.29 15⇓*i*P **P** **11 14 31.6 +0.2**
comp=Z,95nm,1.6s,mb5.3
HASLI Hasliberg 71.30 14⇓*i*P **P** **11 14 31.9 +0.4**
comp=Z,100nm,1.3s,mb5.4
LLS Linth-Limmern 71.31 13⇓*i*P **P** **11 14 32.0 +0.5**
comp=Z,65nm,0.7s,mb5.5
AGO Saint Agoulin 71.33 18 *e*P **P** **11 14 31.9 +0.3**
WIMIS Wimmis 71.33 14⇓*i*P **P** **11 14 31.9 +0.3**
comp=Z,86nm,1.2s,mb5.3
DAVOX Davos 71.47 13 P **P** **11 14 33.3 +0.9**
comp=Z,47nm,0.7s,mb5.3,baz=340,slow=5.8,SNR=64
DAVOX Davos 71.47 13⇓*i*P **P** **11 14 33.3 +0.8**
comp=Z,108nm,1.0s,mb5.5
PLDF La Plantade 71.48 17 *e*P **P** **11 14 32.9 +0.4**
KBA Koelnbreinsper 71.51 10⇑*i*P **P** **11 14 33.5 +0.8**
comp=Z,197nm,1.0s,mb5.8
ARSA Arzberg 71.52 9⇑*i*P **P** **11 14 33.1 +0.4**
comp=Z,95nm,1.3s,mb5.4
PKSG 71.56 7⇓*e*P **P** **11 14 33.6 +0.6**
AIGLE Aigle 71.57 15⇓*i*P **P** **11 14 33.2 +0.2**
comp=Z,104nm,1.2s,mb5.4
SENIN Lac Senin 71.59 15⇓*i*P **P** **11 14 33.7 +0.5**
comp=Z,87nm,1.3s,mb5.3
LKBD Leukerbad 71.61 14⇓*i*P **P** **11 14 33.7 +0.5**
comp=Z,33nm,1.0s,mb5.0
LKBD Leukerbad 71.61 14⇓*i*P **P** **11 14 33.6 +0.4**
PYM Petit Puy Mans 71.61 18 *e*P **P** **11 14 33.1 -0.2**
FUSIO Fusio 71.66 14⇓*i*P **P** **11 14 34.3 +0.7**
comp=Z,112nm,1.1s,mb5.5
FUORN Ofenpass 71.67 12⇓*i*P **P** **11 14 34.6 +1.0**
comp=Z,143nm,1.1s,mb5.6
VDL Val di Lei 71.72 13⇓*i*P **P** **11 14 34.8 +0.9**
comp=Z,70nm,0.8s,mb5.5
SALAN Lac Salanfe 71.76 15⇓*i*P **P** **11 14 34.5 +0.3**
comp=Z,56nm,1.1s,mb5.2
RJF Les Rejaudoux 71.81 19⇓*i*P **P** **11 14 33.7 -0.8**
comp=Z,17nm,0.6s,mb4.7
RJF *e*R
comp=Z,142nm,20.8s
BRMO Bormio 71.83 12⇓*i*P **P** **11 14 35.3 +0.7**
EMV Vieux Emosson 71.83 15⇓*i*P **P** **11 14 35.2 +0.6**
comp=Z,70nm,0.8s,mb5.4
BERNI Berninapass 71.85 13⇓*i*P **P** **11 14 35.6 +0.9**
comp=Z,70nm,1.4s,mb5.2
FVI Forni Avoltri 71.94 11⇓*i*P **P** **11 14 35.1 -0.2**
MMK Mattmark 71.98 14⇓*i*P **P** **11 14 36.5 +1.1**
comp=Z,70nm,1.5s,mb5.2
LFF La Frestale 72.04 20⇓*i*P **P** **11 14 35.7 -0.2**
comp=Z,138nm,0.8s,mb5.4
MCGN Macugnaga 72.07 14⇓*i*P **P** **11 14 37.0 +1.0**
EMAZ Mazaricos 72.08 27 P **P** **11 14 35.4 -0.7**
comp=Z,53nm,0.7s,mb5.4
PERS Pernice 72.10 9 *i*P **P** **11 14 36.3 +0.2**
EPON Pontenova 72.12 26 P **P** **11 14 36.2 -0.1**
comp=Z,47nm,0.6s,mb5.4
PKSN Nyarlorinc 72.13 6⇓*e*P **P** **11 14 37.5 +1.2**
LBL Lubilhac 72.15 18 *e*P **P** **11 14 36.4 -0.1**
OBKA Obir 72.18 9⇑*i*P **P** **11 14 36.9 +0.3**
comp=Z,225nm,0.9s,mb5.9
PTCC Patocco-Chiusa 72.18 10⇓*i*P **P** **11 14 35.9 -0.7**
KIS Kishinev 72.20 359 *d* *i*P **P** **11 14 37.0 +0.2**
KIS *e* 11 14 57.0
KIS *i*S S 11 23 48.0 +0.9
KIS pmax pmax
comp=Z,300nm,1.4s,mb5.8
KIS MLR MLR
comp=Z,300nm,20.0s
MUGIO Muggio 72.23 13⇓*i*P **P** **11 14 37.0 +0.1**
comp=Z,137nm,1.0s,mb5.6
GYA Guiyang 72.24 292⇑*i*P **P** **11 14 37.3 -0.1**
GYA AP pP 11 15 09.5 -0.5
GYA XP sP 11 15 22.5 -1.7
GYA S S 11 23 46.8 -1.1
GYA SKS SKS 11 24 24.3 -0.3
GYA XS 11 24 42.5
KSH Kashi 72.25 323 *e*P **P** **11 14 37.5 +0.3**
KSH *e*PCP PcP 11 14 55.8 +1.1
KSH *e*AP pP 11 15 08.8 -1.0
KSH *e*XP sP 11 15 23.0 -1.0
KSH *e*PP PP 11 17 20.5 -0.3
KSH *e*S S 11 23 46.3 -1.4
KSH *e*SKS SKS 11 24 25.0 +0.6
KSH *e*SCS ScS 11 24 28.0 +0.5
KSH *e*PS PS 11 24 36.8 -1.5
KSH *e*XS 11 24 41.5
KSH *e*SS SS 11 28 28.3 -1.9
KSH AMB AMB
comp=Z,110nm,4.4s
KSH LR LR
comp=N,190nm,7.6s
KSH LR LR
comp=E,200nm,5.8s
VAI Varese 72.25 14⇓*i*P **P** **11 14 37.3 +0.2**
MABI Malga Bissina 72.26 12 *e*P **P** **11 14 37.1 0.0**
CAF Calviac 72.27 19⇓*i*P **P** **11 14 36.9 -0.3**
comp=E,80nm,0.9s,mb5.2
CAF *e*pP pP 11 15 11.0 +1.2
GMNA Gemona 72.30 10 *e*P **P** **11 14 36.3 -1.0**
LPL La Plagne 72.35 15⇓*i*P **P** **11 14 38.7 +1.0**
comp=E,42nm,0.6s,mb5.0
PKS9 Tamasi 72.36 7⇓*e*P **P** **11 14 38.0 +0.3**
ROBS Robic 72.36 10 *e*P **P** **11 14 36.5 -1.1**
LPG La Plagne 72.37 15⇓*i*P **P** **11 14 38.9 +1.1**
comp=E,146nm,1.2s,mb5.3
CTI Castel Tesino 72.38 12 *e*P **P** **11 14 37.4 -0.4**
ORO Oropa 72.40 14 *e*P **P** **11 14 38.7 +0.8**
LSD Ceresole Reale 72.46 15 P **P** **11 14 39.4 +1.1**
GRN Grenoble 72.49 16⇓*e*P **P** **11 14 38.7 +0.2**
SJG San Juan 72.52 84 *e*P **P** **11 14 37.1 -1.9**
comp=E,31nm,0.6s,mb5.2
EARI Arriondas 72.54 25 P **P** **11 14 39.1 +0.4**
comp=E,151nm,1.2s,mb5.6
GDM Grand'Maison 72.58 16⇓*e*P **P** **11 14 39.4 +0.5**
VOY Vojsko 72.60 10⇓*e*P **P** **11 14 37.9 -1.1**
VOY *e* 11 14 43.5
VOY *e* 11 15 21.3
LJU Ljubljana 72.64 10 *e*P **P** **11 14 38.7 -0.5**
VIVF Saint-Julien-I 72.72 17⇓*i*P **P** **11 14 39.9 +0.2**
comp=E,90nm,0.7s,mb5.3
VIVF *e*pP pP 11 15 14.1 +1.7
RSP Reno Superiore 72.78 15 P **P** **11 14 40.8 +0.7**
BNI Bardonecchia 72.80 15 *e*P **P** **11 14 40.9 +0.7**
ORIF Oris-en-Rattie 72.83 16⇓*i*P **P** **11 14 40.8 +0.5**
comp=E,48nm,0.6s,mb5.1
ORIF *e*R
comp=E,87nm,18.2s
RHK1 Bakonya 72.83 7⇓*e*P **P** **11 14 40.6 +0.3**
FENE Fenestrelle 72.87 15 P **P** **11 14 41.0 +0.4**
EZAM Zamans 72.90 27 P **P** **11 14 41.4 +0.5**
comp=E,24nm,0.6s,mb5.1
CEY Cerknica 72.93 10 *i*P **P** **11 14 40.3 -0.6**
RRL Cesana Torines 72.94 15 P **P** **11 14 42.6 +1.6**
ELAN Lanestosa 72.96 23 P **P** **11 14 41.2 +0.1**
comp=E,76nm,0.7s,mb5.5
BHB Bricherasio 73.08 15 P **P** **11 14 41.5 -0.3**
MBDF Montbardon 73.13 15⇓*i*P **P** **11 14 43.3 +1.2**
comp=E,73nm,0.7s,mb5.2
BOJS Bojanci 73.23 9 *e*P **P** **11 14 42.5 -0.2**
ELOB Lobios 73.31 27 P **P** **11 14 43.5 +0.3**

comp=E,54nm,0.9s,mb5.3
EALK **Alkurruntz** 73.33 22 P P 11 14 42.9 -0.4
comp=E,82nm,1.4s,mb5.3
VRI **Vrincioaia** 73.34 1 ⇓*i*P P 11 14 43.7 +0.4
VRI **Vrincioaia** 73.34 1 ⇓*i*P P 11 14 43.6 +0.3
LASF **Ste Croix** 73.37 18 ⇓*i*P P 11 14 43.9 +0.4
comp=E,75nm,1.1s,mb5.0
SURF **Saint Ours** 73.38 15 ⇓*e*P P 11 14 45.4 +1.8
GOF **Gofitskoye** 73.41 349 ⇑*i*P P 11 14 43.0 -0.7
GOF pmax pmax
comp=Z,80nm,1.2s,mb5.3
DOI **San Damiano** 73.41 15 *e*P P 11 14 43.3 -0.4
BOB **Bobbio (Coli)** 73.42 13 ⇓*i*P P 11 14 44.6 +0.8
ECAL **Calabor** 73.53 26 P P 11 14 44.9 +0.3
comp=Z,82nm,1.5s,mb5.2
PCP **Pian Castagno** 73.53 14 P P 11 14 43.9 -0.5
BRD **Bordesti** 73.65 0 ⇑*i*P P 11 14 46.7 +1.6
BRD **Bordesti** 73.65 0 ⇑*i*P P 11 14 46.7 +1.6
PBRG **Braganca** 73.66 26 *e*P P 11 14 45.4 +0.1
comp=Z,48nm,1.6s,mb5.0
STV2 **Anna di Valdie** 73.68 15 P P 11 14 44.1 -1.2
STV **Sta Anna Valdi** 73.68 15 P P 11 14 44.2 -1.1
ROB **Roburent** 73.70 15 P P 11 14 45.0 -0.4
ENR **Entracque** 73.71 15 P P 11 14 44.2 -1.3
SMRF **Simiane la Rot** 73.71 16 ⇓*i*P P 11 14 46.5 +1.0
comp=Z,105nm,0.8s,mb5.3
GENL **Genova Univers** 73.72 14 P P 11 14 45.4 -0.2
GRAM 73.76 13 P P 11 14 46.0 +0.3
ETSF **Etsaut** 73.81 21 ⇓*i*P P 11 14 46.7 +0.6
comp=Z,109nm,0.8s,mb5.3
FIN **Finale Ligure** 73.82 14 *e*P P 11 14 45.6 -0.5
PRAF **Pradon** 73.82 17 ⇓*e*P P 11 14 47.3 +1.1
CODM 73.83 13 P P 11 14 46.5 +0.2
EPF **Esparros** 73.83 20 ⇓*i*P P 11 14 45.6 -0.6
comp=Z,38nm,0.8s,mb4.9
MTLF **Montolieu** 73.84 19 ⇓*i*P P 11 14 46.4 +0.1
comp=Z,144nm,0.8s,mb5.4
VILF **Villemus** 73.85 16 ⇓*e*P P 11 14 47.3 +1.0
ERBM **Eremo** 73.86 13 *e*P P 11 14 47.6 +1.2
MONE **Monesi** 73.89 15 P P 11 14 45.5 -1.1
TOUF **Mont Tournerai** 73.89 15 ⇓*e*P P 11 14 47.4 +0.8
RORO 73.90 15 P P 11 14 45.7 -1.0
VALM 73.92 13 P P 11 14 46.6 -0.1
VIEF **Viey** 73.92 21 ⇓*e*P P 11 14 47.5 +0.7
AUTN **L'Aution** 73.94 15 ⇓*e*P P 11 14 47.4 +0.6
GSCL **Gusciola** 73.95 13 *e*P P 11 14 48.0 +1.1
PVRL **Vila Real** 73.95 27 *e*P P 11 14 47.5 +0.5
comp=Z,56nm,2.3s,mb4.9
PVRL *e*pP pP 11 15 21.8 +2.0
SAOF **Saorge** 73.96 15 ⇓*e*P P 11 14 47.4 +0.4
BACM 73.97 13 P P 11 14 47.0 0.0
ZCCA **Zocca** 73.99 12 *e*P P 11 14 48.4 +1.2
MVIF **Mont Vial** 74.00 15 ⇓*e*P P 11 14 47.8 +0.6
AURF **Auriere** 74.03 15 ⇓*e*P P 11 14 47.5 +0.1
CFR **Carcaliu** 74.03 360 ⇓*i*P P 11 14 47.4 +0.1
CFR **Carcaliu** 74.03 360 ⇓*i*P P 11 14 47.4 0.0
MLS **Moulis** 74.03 20 ⇓*e*P P 11 14 47.2 -0.2
TREF **Trevaresse** 74.03 17 ⇓*e*P P 11 14 48.5 +1.1
RESF **Ens** 74.05 21 ⇓*e*P P 11 14 48.2 +0.7
SBF **Sospel** 74.07 15 ⇓*i*P P 11 14 47.8 +0.2
comp=Z,211nm,0.8s,mb5.6
IMI **Imperia** 74.08 15 *e*P P 11 14 47.5 -0.1
SARO **Sassorosso** 74.09 13 P P 11 14 47.5 -0.2
ANN **Anapa** 74.11 353 *e*P P 11 14 47.0 -0.8
ANN pmax pmax
comp=Z,10.0nm,1.0s,mb4.5
CALN **Calern** 74.11 15 ⇓*e*P P 11 14 48.2 +0.4
VINC **Vinca** 74.11 13 P P 11 14 46.9 -1.0
NEGI **Negi** 74.11 15 P P 11 14 47.1 -0.8
VLC **Villacollemand** 74.12 13 *e*P P 11 14 48.0 +0.1
SIM **Simferopol'** 74.13 355 *e*P P 11 14 48.0 +0.1
SIM pmax pmax
comp=Z,50nm,1.0s,mb5.2
PUYF **Puyloubier** 74.16 16 ⇓*e*P P 11 14 49.0 +0.8
LPEF **Le Peyrat** 74.17 19 ⇓*e*P P 11 14 48.4 +0.2
REVF **Revere** 74.18 15 ⇓*e*P P 11 14 48.5 +0.3
BEO **Belgrade** 74.23 5 *e*P P 11 14 48.4 -0.1
BDI **Bagni Di Lucca** 74.24 13 *e*P P 11 14 48.1 -0.5
FRF **La Foret Royal** 74.26 16 ⇓*i*P P 11 14 48.8 +0.1
comp=Z,152nm,1.2s,mb5.3
GELF **Grande-Etoile** 74.27 17 ⇓*e*P P 11 14 49.6 +0.8
LRDF **Laroque-de-Fa** 74.28 19 ⇓*e*P P 11 14 49.1 +0.3
SEI **Scarperia** 74.32 12 *e*P P 11 14 50.4 +1.4
MAIM 74.37 13 P P 11 14 47.8 -1.6
BERF **Bertagne** 74.38 16 ⇓*e*P P 11 14 50.5 +1.1
VMG **Vicchio** 74.43 12 ⇓*i*P P 11 14 50.8 +1.1
PVIS **Viseu** 74.45 27 *e*P P 11 14 50.2 +0.3
comp=Z,66nm,0.9s,mb5.4
PVIS *e*pP pP 11 15 22.3 -0.4
LMR **La Mourre** 74.47 16 ⇓*i*P P 11 14 50.2 +0.3
comp=Z,37nm,0.7s,mb5.0
HARR **Harsova** 74.52 360 ⇓*i*P P 11 14 50.3 +0.1
HARR **Harsova** 74.52 360 ⇓*i*P P 11 14 50.3 +0.1
SFI **Santa Sofia** 74.52 12 *e*P P 11 14 51.1 +0.9
KIV **Kislovodsk** 74.54 349 *i*P P 11 14 50.3 0.0
KIV *e**PP pP 11 15 24.4 +1.3
KIV *e* 11 17 37.8
KIV *e*PPP PPP 11 19 22.1 -3.8
KIV *e*S S 11 24 13.6 +0.5
KIV pmax pmax
comp=N,20nm,0.8s
KIV pmax pmax
comp=E,20nm,0.8s
KIV pmax pmax
comp=Z,60nm,0.8s,mb5.3
KIV **Kislovodsk** 74.54 349 *e*P P 11 14 50.3 0.0
comp=Z,73nm,1.0s,mb5.3
PGD **Poggio Sodo** 74.54 12 ⇓*i*P P 11 14 51.7 +1.4
FILF **Fillols** 74.65 19 ⇓*e*P P 11 14 50.9 -0.1
VALF **Valcebollere** 74.72 19 ⇓*e*P P 11 14 51.8 +0.4
SJAF **Saint Jean de** 74.78 19 ⇓*e*P P 11 14 51.6 -0.1
SVIS **Svilajnac** 74.78 5 ⇓*i*P P 11 14 51.8 +0.1
CRE **Caprese Michel** 74.81 12 *e*P P 11 14 52.2 +0.3
EJON **La Jonquera** 74.81 19 P P 11 14 52.0 +0.1
comp=Z,60nm,1.8s,mb4.9
FSSB **Fossombrone** 74.82 11 ⇓*i*P P 11 14 52.4 +0.5
MTE **Manteigas** 74.83 27 *e*P P 11 14 52.5 +0.5
comp=Z,109nm,1.3s,mb5.3
MTE *e*pP pP 11 15 25.2 +0.3
MTE **Manteigas** 74.83 27 *e*P P 11 14 52.1 +0.1
BUC1 **Bucharest** 74.85 1 ⇑*i*P P 11 14 51.9 -0.2
CSNT **Castellina Chi** 74.89 12 ⇓*i*P P 11 14 51.8 -0.5
DIVS **Divcibare** 74.93 6 ⇑*i*P P 11 14 52.5 0.0
ESAC **San Caprasio** 74.96 21 P P 11 14 53.1 +0.4
comp=Z,123nm,0.8s,mb5.6
ARV **Arcevia** 75.03 11 ⇓*i*P P 11 14 53.5 +0.4
KMI **Kunming** 75.14 295 *e*P P 11 14 53.0 -1.1
KMI LR LR
comp=Z,58nm,21.3s
SOC **Sochi** 75.16 351 *d*iP P 11 14 53.5 -0.3
SOC *e* 11 15 05.7
SOC *e**PP pP 11 15 28.2 +1.5
SOC *e* 11 17 51.1
SOC *e*PPP PPP 11 19 33.7 +2.1
SOC *e*S S 11 24 14.2 -5.8
SOC *e* 11 24 43.3
SOC *e*SS SS 11 29 19.5 +5.2
SOC *e*SSS SSS 11 32 22.5 -7.5
SOC pmax pmax
comp=Z,40nm,0.8s,mb5.1
SOC pmax pmax
comp=N,10.0nm,0.9s
SOC pmax pmax
comp=E,20nm,0.8s
GRUS **Gruza** 75.17 5 ⇑*i*P P 11 14 54.1 +0.3
GRFL **Gerfalco** 75.18 13 *e*P P 11 14 53.9 -0.1
SNTG **Esanatoglia** 75.27 11 ⇓*i*P P 11 14 54.9 +0.4
BOLS **Boljevac** 75.28 4 ⇓*i*P P 11 14 54.2 -0.3
GUD **Guadarrama** 75.31 24 P P 11 14 55.2 +0.5
comp=E,20nm,0.7s,mb4.8
PCBR **Castelo Branco** 75.38 27 *e*P P 11 14 55.4 +0.3
comp=E,70nm,1.5s,mb5.1
PCBR *e*pP pP 11 15 29.0 +0.9
PTOM **Tomar** 75.38 28 *e*P P 11 14 55.2 0.0
comp=E,46nm,0.9s,mb5.1
NVSS **Nova Varos 2** 75.50 6 ⇑*i*P P 11 14 54.6 -1.1
PGF **Pioggiola** 75.55 14 ⇓*i*P P 11 14 56.4 +0.3
comp=E,202nm,0.8s,mb5.5
EPOB **Poblet** 75.59 20 P P 11 14 56.4 +0.1
comp=E,87nm,1.0s,mb5.3
ZEI **Tsey** 75.59 348 *e*P P 11 14 57.1 +0.8
PLE **Pljevlja** 75.66 6 ⇓*i*P P 11 14 57.5 +0.8
UPM **Unac-Piva** 75.76 7 ⇓*i*P P 11 14 57.5 +0.2
SZH **Strazhica** 75.93 1 *i*P P 11 14 58.5 +0.3
LSA **Lhasa** 75.93 307 P P 11 15 01.0 +2.5
LSA **Lhasa** 75.93 307 *e*P P 11 15 00.1 +1.6
comp=E,13nm,0.6s,mb4.7
PRD **Provadia** 76.01 0 *i*P P 11 14 59.5 +0.9
EBR **Ebro Roquetas** 76.01 21 *e*P P 11 14 58.5 -0.2
STON **Ston** 76.02 7 *i*P P 11 14 57.9 -0.7
BRY **Bratogost** 76.04 7 ⇓*i*P P 11 14 58.7 -0.1
MNS **Montasola** 76.11 11 ⇓*i*P P 11 14 59.0 -0.2
IVA **Berane** 76.15 6 ⇓*i*P P 11 14 59.2 -0.2
NKY **Niksic** 76.16 7 ⇓*i*P P 11 14 59.4 -0.1
AQU **L'Aquila** 76.21 11 *e*P P 11 14 59.5 -0.2
EMOS **Mosqueruela** 76.28 22 P P 11 15 00.8 +0.6
comp=E,80nm,0.9s,mb5.3
ESDC **Sonseca Array** 76.28 25 P P 11 15 00.2 0.0
comp=E,35nm,0.8s,mb5.0,baz=341,slow=5.5,SNR=113
ESDC pP pP 11 15 34.1 +0.9
comp=E,15nm,0.7s,baz=342,slow=5.8,SNR=7.1
ESDC **Sonseca Array** 76.28 25 P P 11 15 00.5 +0.3
comp=E,48nm,0.9s,mb5.1
ESDC pP pP 11 15 35.6 +2.4
ESLA **Sonseca Array** 76.28 25 *e*P P 11 15 00.1 -0.1
comp=E,11nm,0.9s,mb4.5
ESLA *e*pP pP 11 15 32.6 -0.6
PVY **Plav** 76.42 6 ⇓*i*P P 11 15 00.4 -0.5
MOE **Montemor** 76.44 28 *e*P P 11 15 01.4 +0.3
MOE *e*pP pP 11 15 34.1 0.0
HCY **Herceg Novi** 76.49 7 ⇓*i*P P 11 15 00.8 -0.6
EVO **Evora** 76.51 28 ⇓*i*P P 11 15 01.6 +0.1
comp=E,81nm,0.9s,mb5.0
EBAD **Badajoz** 76.52 27 P P 11 15 01.4 -0.2
comp=E,82nm,0.6s,mb5.5
EBAD pP pP 11 15 35.4 +0.8
PTQR **Pietraquaria** 76.53 11 ⇓*i*P P 11 15 02.1 +0.6
TTG **Podgorica** 76.55 6 ⇓*i*P P 11 15 01.1 -0.6
VTS **Vitosha** 76.55 3 *i*P P 11 15 01.5 -0.2
PGB **Panagyurishte** 76.62 3 *i*P P 11 15 02.5 +0.5
BUM **Brajici-Budva** 76.66 7 ⇓*i*P P 11 15 02.0 -0.3
JMB **Yambol** 76.74 1 *i*P P 11 15 03.0 +0.3
SDI **San Donato** 76.88 11 ⇓*i*P P 11 15 03.3 -0.2
CII **Carovilli** 76.91 10 *e*P P 11 15 04.4 +0.7
ULC **Ulcinj** 77.02 6 ⇓*i*P P 11 15 04.3 0.0
PBEJ **Beja** 77.03 28 *e*P P 11 15 04.5 +0.1
comp=E,40nm,1.2s,mb4.9
PBEJ *e*pP pP 11 15 38.9 +1.4
PLD **Plovdiv** 77.08 2 *i*P P 11 15 04.5 -0.1
SKO **Skopje** 77.11 5 ⇓*i*P P 11 15 05.4 +0.6
comp=Z,0.2nm,0.9s
DIM **Dimitrovgrad** 77.14 2 *i*P P 11 15 06.0 +1.0
KKB **Krupnik** 77.27 3 *i*P P 11 15 06.5 +0.8
PTEO **Sao Teotonio** 77.29 29 *e*P P 11 15 06.1 +0.2
comp=Z,81nm,1.0s,mb5.3
PTEO *e*pP pP 11 15 40.5 +1.6
RZN **Rozhen** 77.49 2 *i*P P 11 15 07.8 +0.9
KDZ **Kurdzhali** 77.54 2 *i*P P 11 15 08.0 +0.8
EMIN **Mina Concepcio** 77.54 27 P P 11 15 07.5 +0.2
comp=Z,84nm,1.1s,mb5.3
MMB **Musomiste** 77.57 3 *i*P P 11 15 08.0 +0.7
EVIA **Vianos** 77.57 24 P P 11 15 08.3 +0.9
comp=Z,23nm,0.7s,mb4.9
EGRO **El Granado** 77.58 28 P P 11 15 07.7 +0.2
comp=Z,76nm,1.1s,mb5.2
EADA **Adamuz** 77.61 25 P P 11 15 08.3 +0.7
comp=Z,53nm,1.2s,mb5.0
PALC **Alcoutim** 77.65 28 *e*P P 11 15 08.6 +0.7
comp=Z,65nm,0.9s,mb5.3
PALC *e*pP pP 11 15 42.4 +1.4
ETOB **Tobarra** 77.75 23 P P 11 15 09.2 +0.8
comp=Z,29nm,1.3s,mb4.7
VAY **Valandovo** 77.80 4 ⇓*i*P P 11 15 09.2 +0.6
CSSN **Cassano Irpino** 77.83 10 *e*P P 11 15 08.7 -0.1
SAFT **Safranbolu** 77.88 356 P P 11 15 09.5 +0.4
EIBI **Ibiza** 77.90 21 P P 11 15 09.3 +0.1
comp=Z,23nm,0.9s,mb4.8
EBEN **Beniarda** 77.94 22 P P 11 15 10.7 +1.2
comp=Z,37nm,0.6s,mb5.2
OHR **Ohrid** 77.94 5 ⇓*i*P P 11 15 09.6 +0.2
MRLC **Muro Lucano** 77.97 9 *e*P P 11 15 09.2 -0.3
KNT **Kendrikon** 77.97 4 *e*P P 11 15 10.4 +0.8
SRS **Serrai** 78.04 3 *e*P P 11 15 10.3 +0.4
BIA **Bitola** 78.06 5 ⇓*i*P P 11 15 08.1 -1.9
SGO **Sicignano** 78.15 10 *e*P P 11 15 10.3 -0.2
GRG **Griva** 78.16 4 *e*P P 11 15 11.6 +1.0
ELUQ **Luque** 78.26 25 P P 11 15 12.1 +0.9
comp=Z,12nm,0.6s,mb4.7
EQES **Quesada** 78.27 24 P P 11 15 11.5 +0.2
comp=Z,16nm,1.3s,mb4.5
FNA **Florina** 78.30 5 *e*P P 11 15 11.6 +0.2
ALN **Alexandroupoli** 78.30 1 *e*P P 11 15 11.8 +0.4
SOH **Sokhos** 78.33 3 *e*P P 11 15 12.2 +0.7
EHUE **Huescar** 78.35 24 P P 11 15 12.5 +0.8
comp=Z,23nm,1.1s,mb4.7
CANT **Cankiri** 78.48 355 P P 11 15 13.9 +1.5
ESPR **Espera** 78.58 27 P P 11 15 13.9 +0.9
comp=Z,118nm,1.1s,mb5.4
EMUR **La Murta** 78.59 23 P P 11 15 13.6 +0.7
comp=Z,39nm,0.9s,mb5.0
MGR **Morigerati** 78.59 9 ⇓*i*P P 11 15 12.6 -0.3
ELOJ **Sierra Loja** 78.68 25 P P 11 15 14.9 +1.4
comp=Z,7.8nm,0.6s,mb4.5
MDU **Mudurnu** 78.70 357 P P 11 15 14.5 +1.0
ORI **Oriolo Calabro** 78.73 9 *e*P P 11 15 14.8 +1.1
OUR **Ouranopolis** 78.83 3 *e*P P 11 15 14.3 +0.1
ERON **Agron** 78.88 25 P P 11 15 15.7 +1.2
comp=Z,33nm,0.5s,mb5.2
ERON *e*pP pP 11 15 50.9 +3.2
CART **Cartagena** 78.88 23 *e*P P 11 15 13.6 -1.0
EZC **Erzincan** 78.96 350 P P 11 15 16.8 +1.8
SVSK **Karacayir** 79.00 353 P P 11 15 16.6 +1.5
LIT **Litokhoron** 79.02 4 *e*P P 11 15 15.5 +0.2
TDS **Terranova Siba** 79.12 9 *e*P P 11 15 16.1 +0.3
LOS **Limnos** 79.25 2 *e*P P 11 15 16.5 0.0
MEV **Metsovon** 79.28 5 *e*P P 11 15 17.8 +1.0
BRTR **Keskin Array B** 79.36 355 P P 11 15 17.1 0.0
comp=Z,22nm,0.8s,mb4.8,baz=27,slow=2.8,SNR=108
BRTR pP pP 11 15 51.7 +1.4
comp=Z,6.5nm,0.9s,baz=7.1,slow=5.5,SNR=2.3
YOZ **Yozgat** 79.37 354 P P 11 15 18.2 +1.0
IGT **Igoumenitsa** 79.50 6 *e*P P 11 15 18.3 +0.4
GUN **Gumba** 79.55 310 *e*P P 11 15 19.6 +1.2
comp=Z,101nm,1.0s,mb5.4
TIP **Timpgrande** 79.63 9 *e*P P 11 15 17.7 -0.9
ESKT **Eskisehir** 79.65 357 P P 11 15 19.1 +0.4
KAMT **Kaman** 79.71 355 P P 11 15 19.3 +0.3
XOR **Xorichti** 79.77 3 *e*P P 11 15 19.4 0.0
KKN **Kakani** 79.88 310 *e*P P 11 15 21.0 +0.8
comp=Z,32nm,0.7s,mb5.1
GKN **Gorkha** 79.92 311 *e*P P 11 15 21.1 +0.7
comp=Z,108nm,0.8s,mb5.5
DANN **Dangsing** 79.92 312 *e*P P 11 15 21.8 +1.4
GRI **Girifalco** 79.96 9 *e*P P 11 15 20.1 -0.3
ROSC **El Rosal** 80.01 98 P P 11 15 21.9 +0.7
comp=Z,11nm,0.8s,mb4.5,baz=0.7,slow=22,SNR=4.8
ROSC LR LR 11 49 05.4
comp=Z,90nm,21.8s,baz=225,slow=34
PKI **Pulchoki** 80.03 310 *e*P P 11 15 21.7 +0.7
comp=Z,62nm,1.1s,mb5.2
AGG **Agios Georgios** 80.09 4 *e*P P 11 15 20.8 -0.3
DMN **Daman** 80.10 311 *e*P P 11 15 22.5 +1.1
comp=Z,62nm,0.7s,mb5.3
BNN **Bunyan** 80.12 353 P P 11 15 22.5 +1.2
KIZT **Kizilcal** 80.26 357 P P 11 15 22.1 +0.1
LKD **Levkas** 80.33 6 *e*P P 11 15 22.3 -0.1
MYA **Malataya** 80.48 351 P P 11 15 24.4 +1.2
KOLN **Koldanda** 80.51 312 *e*P P 11 15 24.2 +0.7
comp=Z,80nm,0.9s,mb5.4
SOI **Samo** 80.68 9 *e*P P 11 15 22.8 -1.4
EANR **'Ain N'Sour** 80.86 22 P P 11 15 26.5 +1.3
CLTB **Caltabellotta** 80.92 12 *e*P P 11 15 25.9 +0.4
NIG **Nigde** 80.93 354 P P 11 15 26.8 +1.2
EMHD **Djebel Mahouad** 80.93 20 P P 11 15 27.0 +1.4
KONT **Konya--Tatoy** 81.18 356 P P 11 15 27.5 +0.6
THR **Tehran** 81.40 341 P P 11 15 29.0 +0.9
comp=Z,10.0nm,1.2s,mb4.3,baz=320,slow=2.9,SNR=12
THR LR LR 11 52 50.4
comp=Z,82nm,21.4s,baz=102,slow=36
THR **Tehran** 81.40 341 P P 11 15 29.0 +0.9
THR pmax pmax
comp=Z,10.0nm,1.3s
THR MLR MLR
comp=Z,82nm,21.4s
ETRT **Tiaret** 81.44 21 P P 11 15 26.9 -1.4
GAZ **Gaziantep** 81.71 352 P P 11 15 31.1 +1.4
OTAV **Otavalo** 82.08 104 *e*P P 11 15 32.1 0.0
comp=Z,9.5nm,0.6s,mb4.6
CM31 **Chiang Mai Arr** 82.65 295 *e*P P 11 15 34.3 -0.5
comp=Z,14nm,0.8s,mb4.7
CMAR **Chiang Mai Arr** 82.65 295 P P 11 15 34.6 -0.2
comp=Z,12nm,0.8s,mb4.7,baz=12,slow=6.0,SNR=50
CMAR pP pP 11 16 08.8 +0.6
comp=Z,6.9nm,1.0s,baz=10,slow=6.2,SNR=2.7
CMAR LR LR 11 55 01.0
comp=Z,55nm,19.4s,baz=70,slow=38
CMAR **Chiang Mai Arr** 82.65 295 P P 11 15 34.7 -0.1
CMAR *PP pP 11 16 08.8 +0.6
CMAR pmax pmax
comp=Z,12nm,0.8s
CMAR pmax pmax
comp=Z,7.0nm,1.0s
CMAR MLR MLR
comp=Z,55nm,19.4s
IKL **Isikli** 82.83 355 P P 11 15 35.0 -0.5
LEF **Lefka** 83.98 356 P P 11 15 41.3 +0.2
CSS **Prodhromos** 84.12 355 *e*P P 11 15 40.7 -1.1
ASAR **Alice Springs** 102.96 245 PKKPbc 11 33 03.6
comp=Z,0.6nm,0.6s,baz=202,slow=2.3,SNR=14
KMBO **Kilima Mbogo** 119.68 349 PKP PKPdf 11 22 00.3 +1.0
comp=Z,1.7nm,0.5s,baz=9.5,slow=4.4,SNR=6.7
LBTB **Lobatse** 143.85 3 *e*PKP PKPdf 11 22 43.3 -0.7
SUR **Sutherland** 150.88 12 *e*PKPdf PKPdf 11 22 56.7 +1.4
SUR *e*PKPbc PKPdf 11 23 02.9 +7.6
QSPA **South Pole Qui** 150.95 180 *e*PKP PKPdf 11 23 01.3 +7.3
VNA3 **Neumayer Olymp** 162.24 140 ⇑*i* 11 24 35.8
VNA1 **Neumayer--Stat** 162.84 139 ⇓*i* 11 24 37.8
VNA2 **Neumayer--Watz** 163.04 140 *e* 11 24 39.0
MAW **Mawson** 163.64 232 PKPab PKPab 11 24 03.6 -1.1
comp=Z,3.3nm,0.6s,baz=116,slow=12,SNR=3.8
MAW **Mawson** 163.64 232 PKP2 PKPab 11 24 03.6 -1.1
MAW pmax pmax
comp=Z,3.0nm,0.6s

NEIC ***30*** *11:31:14.8±1.8, 6.79S×129.54E, h127km±17km, mb4.5/2, Error ellipse: s-maj=17.9km s-min=12.1km az=54.0*
IDC ***30*** *11:31:14.6±4.3, 6.77S×129.55E, h125km±39km, mb3.9/6, mb1 4.2/9, mb1mx4.0/15, Error ellipse: s-maj=45.9km s-min=15.3km az=58.0*
ISC 30 11:31:13.3±1.9, 6.80S±0.07×129.6E±0.1, h132km±19km, n25, σ1821/28, mb4.2/6, 2D, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KAKA	**Kakadu**	**6.48**	**155**	⇓*i*P	**P**	**11 32 50.3**	**+3.0**
	169nm,0.3s						
KAKA				*e*S	**S**	**11 33 59.1**	**-1.2**
FITZ	**Fitzroy Crossi**	**11.88**	**199**	*e*P	**P**	**11 34 00.5**	**+1.0**
	6.3nm,0.4s						
FITZ				*e*S	**S**	**11 36 06.0**	**-3.7**
FITZ	**Fitzroy Crossi**	**11.88**	**199**	P	**P**	**11 34 00.4**	**+0.9**
	0.9nm,0.3s,baz=20,slow=9.4,SNR=57						
FITZ				S	**S**	**11 36 05.3**	**-4.4**
	8.5nm,0.3s,baz=162,slow=21,SNR=8.7						
WRAB	**Tennant Creek**	**13.85**	**161**	*e*Pn	**P**	**11 34 24.1**	**-0.8**
	39nm,0.6s						
WRAB				*e*P		11 34 31.1	
WRAB				*e*Sn	**S**	**11 36 49.2**	**-6.6**
WRA	**Warramunga Arr**	**13.85**	**161**	P	**P**	**11 34 24.4**	**-0.6**
	5.0nm,0.3s,baz=339,slow=10,SNR=191						
WB2	**Warramunga Arr**	**13.85**	**161**	*e*P	**P**	**11 34 24.5**	**-0.6**
WB2				*e*		11 34 31.3	
WB2				*e*S	**S**	**11 36 53.2**	**-2.7**
WB2				*i* SCS	ScS	11 46 29.9	-4.9
AS12	**Alice Springs**	**17.27**	**167**	*e*P	**P**	**11 35 09.1**	**+1.2**
	33nm,0.9s						
AS12				*e*S	**S**	**11 38 14.9**	**+1.1**
ASAR	**Alice Springs**	**17.27**	**167**	P	**P**	**11 35 09.2**	**+1.3**
	5.7nm,0.3s,baz=344,slow=9.3,SNR=362						
ASAR				S	**S**	**11 38 14.9**	**+1.1**
	1.6nm,0.3s,baz=319,slow=20,SNR=5.9						
PMG	**Port Moresby**	**17.57**	**100**	P	**P**	**11 35 11.5**	**+0.1**
CTA	**Charters Tower**	**20.86**	**131**	P	**P**	**11 35 48.2**	**+1.8**
	7.6nm,0.6s,baz=306,slow=12,SNR=9.8						
CTAO	**Charters Tower**	**20.86**	**131**	*e*P	**P**	**11 35 47.9**	**+1.5**
	13nm,0.9s						
FORT	**Forrest**	**23.90**	**183**	*e*P	**P**	**11 36 17.7**	**+1.7**
	39nm,0.7s,mb5.0						
STKA	**Stephens Creek**	**27.35**	**157**	⇓*i*P	**P**	**11 36 48.4**	**+0.3**
	5.9nm,0.3s,mb4.7						
STKA	**Stephens Creek**	**27.35**	**157**	P	**P**	**11 36 48.3**	**+0.2**
	7.9nm,0.3s,mb4.8,baz=332,slow=8.6,SNR=42						
CMAR	**Chiang Mai Arr**	**39.30**	**310**	P	**P**	**11 38 31.6**	**+0.5**
	0.7nm,0.4s,mb3.7,baz=134,slow=7.5,SNR=6.9						
SONM	**Songino Array**	**58.13**	**342**	P	**P**	**11 40 54.2**	**-1.1**
	0.5nm,0.4s,mb3.7,baz=166,slow=5.1,SNR=4.7						
MKAR	**Makanchi Array**	**67.84**	**327**	P	**P**	**11 41 58.9**	**-0.5**
	1.5nm,0.3s,mb4.2,baz=117,slow=8.2,SNR=48						
MKAR				pP	pP	11 42 41.2	+10
	1.1nm,0.8s,baz=127,slow=6.1,SNR=2.5						
KURK	**Kurchatov**	**72.14**	**329**	*e*P	**P**	**11 42 25.1**	**-0.2**
VNDA	**Vanda**	**72.69**	**173**	P	**P**	**11 42 28.0**	**0.0**
	1.0nm,0.6s,mb3.7,baz=307,slow=8.3,SNR=4.3						
VNDA	**Vanda**	**72.69**	**173**	P	**P**	**11 42 28.0**	**0.0**
BRVK	**Borovoye**	**77.76**	**328**	*e*P	**P**	**11 42 56.3**	**-0.9**
TEIG	**Tepich**	**140.94**	**66**	*e*PKPdf	PKPdf	11 50 32.2	+3.5
CPUP	**Villa Florida**	**146.39**	**169**	PKPbc	PKPbc	11 50 41.4	+2.1
	1.5nm,0.6s,baz=62,slow=5.7,SNR=3.4						
LPAZ	**La Paz**	**151.12**	**143**	PKPbc	PKPdf	11 50 54.9	+9.3
	1.0nm,0.4s,baz=41,slow=5.4,SNR=14						
LPAZ	**La Paz**	**151.12**	**143**	*e*PKPbc	PKPdf	11 50 54.5	+8.9

NEIC ***30*** *11:40:53.2±0.5, 34.15N×141.57E, h10km, Error ellipse: s-maj=14.8km s-min=10.4km az=69.0*
JMA ***30*** *11:40:53.6±0.3, 34.14N×141.67E, h42km±3km, M3.2*
IDC ***30*** *11:40:57.3±4.0, 34.16N×141.58E, h38km±36km, mb3.4/7, mb1 3.7/9, mb1mx3.5/24, ML3.7/2, Error ellipse: s-maj=29.3km s-min=19.4km az=90.0*
ISC 30 11:40:53.8±1.4, 34.17N±0.05×141.67E±0.08, h29km±9km, n21, σ0867/25, mb3.6/7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BSO1	**Boso 1**	**0.75**	**311**	P	**Pb**	**11 41 08.1**	**-0.1**
BSO1				S	**Sb**	**11 41 18.5**	**+0.4**
BSO3	**Boso 3**	**1.15**	**304**	P	**Pn**	**11 41 14.0**	**-0.1**
BSO4	**Boso 4**	**1.37**	**307**	P	**Pn**	**11 41 17.6**	**+0.3**
CHOJ	**Chosi**	**1.67**	**337**	S	**Sn**	**11 41 42.4**	**+0.1**
JHJ	**Hachijo jima 2**	**1.89**	**237**	Pn	**Pn**	**11 41 25.6**	**+0.9**
	34nm,0.3s,baz=80,slow=23,SNR=8.9						
JHJ				Sn	**Sn**	**11 41 48.8**	**+1.0**
	50nm,0.3s,baz=243,slow=23,SNR=6.6						
JIZS	**Izushimoda**	**2.37**	**284**	P	**Pn**	**11 41 30.9**	**-0.8**
JOD2	**Odawara 2**	**2.39**	**298**	P	**Pn**	**11 41 31.8**	**-0.1**
MAT	**Matsushiro**	**3.69**	**311**	P	**Pn**	**11 41 50.1**	**-0.3**
MAT				S	**Sn**	**11 42 33.1**	**-0.4**
MAT	**Matsushiro**	**3.69**	**311**	*e*P	**Pn**	**11 41 50.0**	**-0.4**
MAT				*e*S	**Sn**	**11 42 33.0**	**-0.5**
CBIJ	**Chichi jima**	**7.07**	**176**	Pn	**Pn**	**11 42 37.2**	**-0.8**
	4.4nm,0.3s,baz=275,slow=18,SNR=3.8						
ASAJ	**Asahikawa**	**9.96**	**4**	Pn	**P**	**11 43 13.6**	**-4.7**
	0.7nm,0.3s,baz=260,slow=9.1,SNR=5.3						
SONM	**Songino Array**	**29.64**	**308**	P	**P**	**11 46 58.9**	**0.0**
	0.6nm,0.8s,mb3.4,baz=104,slow=8.4,SNR=3.3						
MKAR	**Makanchi Array**	**45.86**	**305**	P	**P**	**11 49 14.7**	**-0.5**
	0.4nm,0.5s,mb3.6,baz=84,slow=8.9,SNR=4.6						
KURK	**Kurchatov**	**47.90**	**310**	*e*P	**P**	**11 49 30.4**	**-0.8**
ILAR	**Eielson Array**	**51.82**	**31**	P	**P**	**11 50 01.1**	**0.0**
	0.5nm,0.7s,mb3.6,baz=260,slow=5.6,SNR=6.7						
WB2	**Warramunga Arr**	**54.26**	**188**	*e*P	**P**	**11 50 19.5**	**-0.1**
WRA	**Warramunga Arr**	**54.26**	**188**	P	**P**	**11 50 19.6**	**-0.1**
	0.4nm,0.4s,mb3.7,baz=6.0,slow=7.5,SNR=15						
INK	**Inuvik**	**56.85**	**26**	P	**P**	**11 50 38.4**	**+0.6**
	1.0nm,1.0s,mb3.8,baz=259,slow=5.

ellipse: s-maj=9.6km s-min=7.0km az=65.0
*JMA **30** 11:45:26.2±0.5,34.15N×141.62E,h26km±2km,M3.9*
ISC 30 11:45:24.9±1.4,**34.14N**±0.04×**141.70E**±0.06,**h18**km±9km,
n44,σ0**95**/49,**mb3.9**/16,**MS3.9**/6,**Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**0.78**	**311**	P		**Pb**	**11 45 40.0**	**+0.4**
BSO3	**Boso 3**	**1.18**	**304**	P		**Pb**	**11 45 46.5**	**+0.1**
BSO4	**Boso 4**	**1.41**	**307**	P		**Pn**	**11 45 50.6**	**+0.8**
CHOJ	**Chosi**	**1.70**	**336**	P		**Pn**	**11 45 54.3**	**+0.2**
CHOJ				S		**Sn**	**11 46 15.9**	**+0.4**
JHJ2	**Mitsune**	**1.87**	**237**	P		**Pn**	**11 45 57.8**	**+1.3**
JHJ2				S		**Sn**	**11 46 21.3**	**+1.4**
JHJ	**Hachijo jima 2**	**1.89**	**238**	Pn		**Pn**	**11 45 57.5**	**+0.7**
	167nm,0.3s,baz=227,slow=2.0,SNR=44							
JHJ				Sn		**Sn**	**11 46 21.1**	**+0.7**
	471nm,0.3s,baz=99,slow=22,SNR=17							
JHJ				LR		LR	11 46 45.6	
	comp=Z,559nm,20.6s,baz=129,slow=44							
JIM2	**Oshima 3**	**1.96**	**288**	P		**Pn**	**11 45 57.1**	**-0.6**
JKO	**Kozu shima**	**2.12**	**272**	P		**Pn**	**11 46 00.2**	**+0.1**
JIZS	**Izushimoda**	**2.40**	**285**	P		**Pn**	**11 46 02.9**	**-1.1**
JIZS				S		**Sn**	**11 46 31.7**	**-1.5**
JOD2	**Odawara 2**	**2.42**	**298**	P		**Pn**	**11 46 03.5**	**-0.9**
MAJO	**Matsushiro**	**3.73**	**311**	*e*Pn		**Pn**	**11 46 22.7**	**-0.2**
MAT	**Matsushiro**	**3.73**	**311**	P		**Pn**	**11 46 23.3**	**+0.4**
MAT				S		**Sn**	**11 47 07.7**	**+0.9**
MAT	**Matsushiro**	**3.73**	**311**	*e*P		**Pn**	**11 46 23.0**	**+0.1**
MAT				*e*S		**Sn**	**11 47 08.0**	**+1.2**
CBIJ	**Chichi jima**	**7.04**	**176**	Pn		**Pn**	**11 47 08.0**	**-1.7**
	22nm,0.3s,baz=114,slow=18,SNR=18							
CBIJ				Sn		**Sn**	**11 48 22.6**	**-7.5**
	19nm,0.3s,baz=314,slow=22,SNR=6.2							
ASAJ	**Asahikawa**	**9.99**	**4**	Pn		**P**	**11 47 46.1**	**-4.5**
	1.0nm,0.3s,baz=238,slow=9.9,SNR=6.7							
ASAJ				Sn		**Sn**	**11 49 33.8**	**-9.5**
	0.3nm,0.3s,baz=87,slow=28,SNR=3.0							
ULN	**Ulaanbaatar**	**29.25**	**308**	*e*P		**P**	**11 51 28.9**	**+1.0**
	3.5nm,0.8s,mb4.1							
SONM	**Songino Array**	**29.67**	**308**	P		**P**	**11 51 30.9**	**-0.7**
	1.9nm,0.5s,mb4.0,baz=107,slow=8.5,SNR=15							
MKAR	**Makanchi Array**	**45.90**	**305**	P		**P**	**11 53 47.4**	**-0.5**
	1.3nm,0.5s,mb4.1,baz=88,slow=9.0,SNR=18							
MKAR				LR		LR	12 13 20.0	
	comp=Z,79nm,19.1s,MS3.7,baz=96,slow=37							
MKAR	**Makanchi Array**	**45.90**	**305**	P		**P**	**11 53 47.4**	**-0.5**
MKAR				LR		LR	12 13 20.1	
KURK	**Kurchatov**	**47.94**	**310**	*e*P		**P**	**11 54 02.0**	**-1.9**
ILAR	**Eielson Array**	**51.83**	**31**	P		**P**	**11 54 33.5**	**0.0**
	0.6nm,0.6s,mb3.7,baz=262,slow=6.1,SNR=11							
BVAR	**Borovoye Array**	**52.72**	**314**	P		**P**	**11 54 39.3**	**-1.1**
	0.5nm,0.5s,mb3.7,baz=79,slow=7.6,SNR=3.6							
BVAR				LR		LR	12 18 07.8	
	comp=Z,68nm,20.0s,MS3.7,baz=115,slow=37							
ZRNK	**Zerenda**	**53.55**	**314**	P		**P**	**11 54 45.6**	**-1.0**
FITZ	**Fitzroy Crossi**	**54.16**	**199**	*e*P		**P**	**11 54 51.4**	**-0.1**
	7.1nm,1.5s,mb4.4							
FITZ	**Fitzroy Crossi**	**54.16**	**199**	P		**P**	**11 54 51.5**	**+0.1**
	3.9nm,0.6s,mb4.5,baz=358,slow=9.0,SNR=7.4							
WB2	**Warramunga Arr**	**54.23**	**189**	*e*P		**P**	**11 54 51.3**	**-0.7**
WRA	**Warramunga Arr**	**54.24**	**189**	P		**P**	**11 54 51.3**	**-0.7**
	2.4nm,0.5s,mb4.4,baz=3.8,slow=7.5,SNR=44							
INK	**Inuvik**	**56.86**	**26**	*e*P		**P**	**11 55 10.5**	**+0.1**
	1.0nm,0.8s,mb3.9,baz=343,slow=4.9,SNR=10.0							
INK	**Inuvik**	**56.86**	**26**	*e*P		**P**	**11 55 10.6**	**+0.2**
AS12	**Alice Springs**	**57.96**	**188**	*e*P		**P**	**11 55 18.7**	**-0.1**
	15nm,1.6s,mb4.8							
ASAR	**Alice Springs**	**57.96**	**188**	P		**P**	**11 55 18.1**	**-0.7**
	0.7nm,0.5s,mb4.0,baz=5.7,slow=6.3,SNR=20							
FORT	**Forrest**	**65.84**	**193**	*e*P		**P**	**11 56 11.8**	**+0.3**
	16nm,0.5s							
YKA	**Yellowknife Ar**	**66.20**	**30**	P		**P**	**11 56 12.3**	**-0.9**
	0.2nm,0.7s,mb3.2,baz=303,slow=6.1,SNR=6.4							
ARCES	**ARCESS Array B**	**66.78**	**340**	LR		LR	12 29 30.5	
	comp=Z,68nm,19.4s,MS3.9,baz=354,slow=40							
FINES	**FINESS Array B**	**71.48**	**333**	P		**P**	**11 56 44.8**	**-1.1**
	0.8nm,0.6s,mb3.8,baz=72,slow=6.0,SNR=3.4							
FINES				LR		LR	12 31 13.4	
	comp=Z,38nm,18.5s,MS3.7,baz=105,slow=38							
NOA	**NORSAR Array B**	**76.94**	**338**	P		**P**	**11 57 17.4**	**-0.1**
	0.6nm,0.6s,mb3.7,baz=42,slow=5.4,SNR=4.6							
NOA				LR		LR	12 35 17.4	
	comp=Z,70nm,18.4s,MS4.0,baz=15,slow=39							
PDAR	**Pinedale Array**	**79.53**	**45**	P		**P**	**11 57 32.5**	**+0.5**
	0.9nm,0.9s,mb3.7,baz=279,slow=2.9,SNR=5.4							
BRTR	**Keskin Array B**	**80.95**	**312**	P		**P**	**11 57 40.2**	**+0.6**
	0.6nm,0.8s,mb3.6,baz=90,slow=2.5,SNR=4.6							
SRU	**San Rafael**	**81.15**	**49**	*e*P		**P**	**11 57 42.2**	**+1.6**
PV10	**Paradox Valley**	**82.51**	**48**	*e*P		**P**	**11 57 50.3**	**+2.5**
GERES	**GERESS Array B**	**85.29**	**329**	P		**P**	**11 58 01.7**	**+0.1**
	1.0nm,1.0s,mb3.9,baz=45,slow=5.7,SNR=4.8							
TXAR	**Lajitas Array**	**91.70**	**53**	P		**P**	**11 58 34.5**	**+1.9**
	0.2nm,0.6s,mb3.6,baz=326,slow=4.5,SNR=3.8							
TXAR				LR		LR	12 36 06.1	
	comp=Z,72nm,19.2s,MS4.1,baz=320,slow=33							
LPAZ	**La Paz**	**147.86**	**64**	PKPbc		PKPbc	12 05 12.8	+2.6
	0.7nm,0.5s,baz=257,slow=17,SNR=6.2							
LPAZ	**La Paz**	**147.86**	**64**	PKPbc		PKPdf	12 05 12.8	+2.6

*KISR **30** 11:49:10.0±4.6,33.22N×48.92E*
*IDC **30** 11:49:15.1±4.3,32.88N×46.41E,mb4.2/3,mb1 4.1/4, mb1mx3.6/17,Error ellipse: s-maj=83.0km s-min=50.4km az=101.0*
ISC 30 11:49:15.6±1.6,**33.06N**±0.07×**46.3E**±0.2,**h10**km,**n9,**
σ0**79**/**11**,**mb4.1**/3,**Iran-Iraq border region**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
MIB	**Mutribah**	**3.37**	**164**	*e*P		**Pn**	**11 50 10.4**	**+1.0**
RST	**Umm Al-Ruwaisa**	**3.60**	**170**	*e*P		**Pn**	**11 50 13.3**	**+0.6**
RST				*e*S		**Sn**	**11 51 07.7**	**+12**
RDF	**Al-Radifah**	**4.26**	**165**	*e*P		**Pn**	**11 50 22.7**	**+0.6**
RDF				*e*S		**Sn**	**11 51 11.9**	**-0.6**
QRN	**Al-Qurain**	**4.53**	**162**	*e*P		**Pn**	**11 50 25.2**	**-0.6**
THR	**Tehran**	**4.89**	**53**	Pn		**Pn**	**11 50 31.6**	**+0.6**
	baz=205,slow=10,SNR=0.8							
THR				Sn		**Sn**	**11 51 28.8**	**+0.4**
	0.8nm,0.3s,baz=312,slow=4.1,SNR=4.6							
ASF	**Jabal al Asfar**	**7.98**	**266**	Pg		Px	11 51 59.1	
	0.3nm,0.3s,baz=272,slow=5.7,SNR=3.9							
ASF				Lg			11 53 47.3	
	0.3nm,0.3s,baz=232,slow=18,SNR=3.1							
BVAR	**Borovoye Array**	**26.39**	**34**	P		**P**	**11 54 53.9**	**+0.2**
	5.6nm,1.1s,mb4.0,baz=230,slow=12,SNR=5.8							
MKAR	**Makanchi Array**	**30.53**	**53**	P		**P**	**11 55 30.4**	**-0.7**
	3.5nm,1.1s,mb4.1,baz=243,slow=8.1,SNR=5.4							
CMAR	**Chiang Mai Arr**	**49.12**	**94**	P		**P**	**11 58 03.8**	**-1.7**
	0.9nm,0.4s,mb4.1,baz=292,slow=8.4,SNR=5.8							

*TAP **30** 11:51:45.2,24.71N×122.37E,h95km±1km,ML3.2*
*JMA **30** 11:51:45.5±0.2,24.78N×122.36E,h94km±2km,M2.2*
ISC 30 11:51:45.2±2.2,**24.8N**±0.3×**122.3E**±0.1,**h94**km±21km,**n7,**
σ0**28**/**13**,**Taiwan region**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**0.69**	**117**	P		**P**	**11 52 02.2**	**0.0**
YOJ				*e*S		**S**	**11 52 14.8**	**+0.1**
IRIF	**Iriomote-Funau**	**1.34**	**109**	P		**P**	**11 52 09.3**	**-0.3**
IRIF				S		**S**	**11 52 27.6**	**-0.1**
HATJ	**Hateruma jima**	**1.51**	**118**	P		**P**	**11 52 11.8**	**0.0**
HATJ				*e*S		**S**	**11 52 31.4**	**0.0**
JKRS	**Kuro-shima**	**1.61**	**109**	P		**P**	**11 52 13.2**	**+0.2**
JKRS				S		**S**	**11 52 34.1**	**+0.6**
JIJ	**Ishigaki jima**	**1.69**	**103**	P		**P**	**11 52 13.8**	**-0.2**
JIJ				S		**S**	**11 52 34.7**	**-0.6**
JTJ	**Tarama**	**2.15**	**93**	P		**P**	**11 52 20.5**	**+0.3**
JTJ				*e*S		**S**	**11 52 46.2**	**+0.1**
JOGS	**Gusukube**	**2.79**	**90**	*e*S		**S**	**11 53 01.7**	**0.0**

DJA 30 12:31:05.1±1.0,**9.30S**×**116.86E**,**h82**km±20km,**MD4.6**/3,
ML4.6/2,**5C-2D**,**Error ellipse: s-maj=54.6km s-min=22.6km az=162.0**,**Sumbawa region**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
KEDI	**Kedomdong**	**1.09**	**317**	⇓*e*Pg		P	12 31 25.4	-0.2
	816nm,0.1s							
KEDI				⇓*e*Sg		S	12 31 40.6	-0.4
RATI	**Rata**	**1.43**	**293**	⇑*e*Pg		P	12 31 29.1	-1.0
RATI				⇑*e*Sg		S	12 31 46.7	-1.8
INGI	**Ingas**	**1.76**	**286**	⇑*i*Pg		P	12 31 33.9	-0.5
	476nm,0.1s							
INGI				⇑*e*Sg		S	12 31 54.8	-1.1
KELI	**Kelakatan**	**2.58**	**294**	⇑*e*Pn		P	12 31 44.8	-0.9

*KRSC **30** 12:32:37.4±1.7,48.63N×157.12E,h40km±8km,ML5.0*
*SKHL **30** 12:32:39.9±3.0,49.04N×156.05E,h47km±19km, mb5.2/2, msh5.3/2*
*NEIC **30** 12:32:40.9±0.3,49.18N×155.68E,mb4.6/40,Error ellipse: s-maj=8.0km s-min=4.6km az=148.0*
*MOS **30** 12:32:40.6±1.2,49.30N×155.63E,h51km,mb4.5/12,Error ellipse: s-maj=12.8km s-min=6.3km az=80.2*
*BJI **30** 12:32:40.9,49.20N×155.70E,h37km,mB4.8,mb5.0, Ms4.0,Msz3.8*
*IDC **30** 12:32:45.4±3.9,49.26N×155.59E,h77km±36km, mb3.7/20, mb1 4.0/21,mb1mx3.9/25,MS3.7/7,Ms1 3.7/7, ms1mx3.4/30,Error ellipse: s-maj=18.3km s-min=12.2km az=148.0*
ISC 30 12:32:40.1±0.6,**49.15N**±0.04×**155.73E**±0.06,**h45**km±4km,
h37km±.8km:**pP-P,n188,**σ1**21**/225,**mb4.5**/64,**MS3.8**/11,
4C-10D,Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**1.56**	**9**	*e*P		**P**	**12 33 05.1**	**-0.8**
SKR				AMB		AMB	12 33 07.5	
	450nm,0.5s							
SKR				*e*S		**S**	**12 33 24.0**	**-1.0**
SKR				A			12 33 32.0	
	5μm,3.0s							
SKR				A			12 33 32.0	
	8μm,3.0s							
SKR				A			12 33 37.5	
	3μm,0.5s							
SKR				A			12 33 37.5	
	1μm,0.5s							
SKR				A			12 33 37.5	
	1μm,0.5s							
SKR	**Severo-Kuril's**	**1.56**	**9**	*e*PN		**P**	**12 33 05.1**	**-0.8**
SKR				*e*S		**S**	**12 33 24.0**	**-1.0**
SKR				pmax		pmax		
	comp=Z,450nm,0.5s							
SKR				smax				
	comp=N,3μm,0.5s							
SKR				smax				
	comp=E,1μm,0.5s							
PAU	**Pauzhetka**	**2.42**	**16**	*e*P		**P**	**12 33 20.5**	**+2.3**
PAU				*e*S		**S**	**12 33 53.9**	**+7.1**
GRL	**Gorelyy**	**3.72**	**23**	*e*P		**P**	**12 33 37.2**	**+0.7**
GRL				*e*S		**S**	**12 34 19.6**	**0.0**
RUS	**Russkaya**	**3.73**	**27**	P		**P**	**12 33 35.5**	**-1.2**
RUS				S		**S**	**12 34 15.9**	**-4.1**
RUS	**Russkaya**	**3.73**	**27**	*e*P		**P**	**12 33 35.5**	**-1.2**
RUS				*e*S		**S**	**12 34 18.4**	**-1.6**
APC	**Apacha**	**3.89**	**13**	*e*P		**P**	**12 33 41.2**	**+2.3**
APC				*e*S		**S**	**12 34 31.9**	**+8.0**
APC				Smax				
	comp=E,260nm,1.0s							
PET	**Petropavlovsk**	**4.30**	**24**	P		**P**	**12 33 43.4**	**-1.3**
PET				S		**S**	**12 34 31.5**	**-2.7**
PET	**Petropavlovsk**	**4.30**	**24**	*e*P		**P**	**12 33 43.6**	**-1.1**
PET				*e*S		**S**	**12 34 32.6**	**-1.6**
PET	**Petropavlovsk**	**4.30**	**24**	⇑*i*PN		**P**	**12 33 44.9**	**+0.2**
PET				*e*S		**S**	**12 34 33.8**	**-0.4**
PET				pmax		pmax		
	comp=Z,66nm,1.0s							
PET				smax				
	comp=N,475nm,1.3s							
PET				smax				
	comp=N,1μm,2.6s							
PET				MLR		MLR		
	comp=E,476nm,23.0s							
PET				MLR		MLR		
	comp=Z,225nm,23.0s							
PET				MLR		MLR		
	comp=N,136nm,24.0s							
PET	**Petropavlovsk**	**4.30**	**24**	*e*Pn		**P**	**12 33 44.6**	**-0.1**
PET				*e*Sn		**S**	**12 34 32.4**	**-1.8**
UGLR	**Uglovaya**	**4.51**	**24**	*e*P		**P**	**12 33 48.7**	**+1.0**
UGLR				*e*S		**S**	**12 34 40.7**	**+1.2**
KOK	**Koryaka**	**4.53**	**23**	*e*P		**P**	**12 33 50.1**	**+2.0**
KOK				*e*S		**S**	**12 34 42.0**	**+1.8**
AVH	**Avacha**	**4.54**	**23**	*e*P		**P**	**12 33 49.7**	**+1.6**
AVH				*e*S		**S**	**12 34 42.0**	**+1.8**
SMAR	**Somma**	**4.55**	**24**	*e*P		**P**	**12 33 49.2**	**+0.9**
SMAR				*e*S		**S**	**12 34 40.2**	**-0.4**
SDLR	**Sedlovina**	**4.59**	**24**	*e*P		**P**	**12 33 48.8**	**0.0**
SDLR				*e*S		**S**	**12 34 40.4**	**-1.1**
NLC	**Nalytchevo**	**4.63**	**28**	P		**P**	**12 33 49.0**	**-0.4**
NLC				S		**S**	**12 34 38.1**	**-4.4**
NLC	**Nalytchevo**	**4.63**	**28**	*e*P		**P**	**12 33 47.7**	**-1.7**
NLC				*e*S		**S**	**12 34 38.2**	**-4.3**
GNL	**Ganaly**	**4.76**	**16**	*i* P		**P**	**12 33 53.8**	**+2.5**
GNL				*e*S		**S**	**12 34 50.1**	**+4.2**
SPN	**Mys Shipunski**	**4.79**	**33**	P		**P**	**12 33 50.5**	**-1.2**
SPN				S		**S**	**12 34 42.4**	**-4.2**
SPN	**Mys Shipunski**	**4.79**	**33**	*e*P		**P**	**12 33 50.4**	**-1.3**
SPN				*e*S		**S**	**12 34 42.3**	**-4.3**
KII	**Karymskiy**	**5.42**	**24**	*e*P		**P**	**12 34 01.3**	**+0.9**
KII				*e*S		**S**	**12 35 02.4**	**+0.1**
MKZ	**Mys Kozlova**	**6.57**	**32**	P		**P**	**12 34 13.8**	**-2.8**
MKZ				S		**S**	**12 35 24.6**	**-6.4**
MKZ	**Mys Kozlova**	**6.57**	**32**	*e*P		**P**	**12 34 13.3**	**-3.3**
MKZ				*e*S		**S**	**12 35 24.0**	**-7.0**
KUR	**Kuril'sk**	**6.64**	**237**	*e*P		**P**	**12 34 19.0**	**+1.5**
KUR				AMB		AMB	12 34 22.0	
	comp=N,70nm,0.5s							
KUR				*e*S		**S**	**12 35 38.0**	**+5.3**
KUR				A			12 35 43.0	
	comp=N,2μm,2.0s							
KUR				A			12 35 43.0	
	comp=N,110nm,0.5s							
KUR				A			12 35 43.0	
	comp=N,120nm,0.5s							
TUMR	**Tumrok**	**6.72**	**22**	*e*P		**P**	**12 34 18.9**	**+0.2**
TUMR				*e*S		**S**	**12 35 34.5**	**-0.2**
KMNR	**Kamenistaya**	**7.17**	**21**	*e*P		**P**	**12 34 26.5**	**+1.5**
KMNR				*e*S		**S**	**12 35 46.7**	**+0.8**
KPT	**Kopyto**	**7.36**	**20**	*e*P		**P**	**12 34 28.3**	**+0.7**
KPT				*e*S		**S**	**12 35 49.4**	**-1.2**
KOZ	**Kozyrevsk**	**7.37**	**18**	*e*P		**P**	**12 34 28.8**	**+1.1**
KOZ				*e*S		**S**	**12 35 48.7**	**-2.2**
ZLN	**Zelenaya**	**7.54**	**22**	*e*P		**P**	**12 34 29.8**	**-0.3**
ZLN				*e*S		**S**	**12 35 51.7**	**-3.5**
LGNR	**Loginova**	**7.57**	**22**	*e*P		**P**	**12 34 30.3**	**-0.3**
LGNR				*e*S		**S**	**12 35 52.0**	**-4.0**
SRDR	**Sredinnyy**	**7.58**	**17**	*e*P		**P**	**12 34 31.1**	**+0.5**
CIRR	**Tsirk**	**7.62**	**22**	*e*P		**P**	**12 34 32.5**	**+1.3**
CIRR				*e*S		**S**	**12 35 55.7**	**-1.4**
KLY	**Klyuchi**	**7.77**	**21**	*e*P		**P**	**12 34 33.8**	**+0.5**
KLY				*e*S		**S**	**12 35 57.5**	**-3.5**
KBTR	**Krutoberegovo**	**8.28**	**29**	P		**P**	**12 34 36.9**	**-3.4**
KBTR				S		**S**	**12 36 05.4**	**-8.1**
KBTR	**Krutoberegovo**	**8.28**	**29**	*e*P		**P**	**12 34 37.9**	**-2.4**
KBTR				*e*S		**S**	**12 36 06.7**	**-6.8**
YUK	**Yuzh-Kuril'sk**	**8.50**	**237**	*e*P		**P**	**12 34 41.5**	**-1.9**
YUK				AMB		AMB	12 34 48.0	
	comp=N,110nm,0.3s							
YUK				AMB		AMB	12 34 48.0	
	comp=N,260nm,0.3s							
YUK				AMB		AMB	12 34 48.0	
	comp=N,210nm,0.4s							
YUK				*e*S		**S**	**12 36 15.6**	**-3.5**
YUK				A			12 36 30.5	
	comp=N,80nm,0.6s							
YUK				A			12 36 30.5	
	comp=N,190nm,0.5s							
TYV	**Tymovskoe**	**8.60**	**286**	*e*P		**P**	**12 34 47.0**	**+2.2**
BKI	**Bering**	**8.73**	**42**	*e*P		**P**	**12 34 38.4**	**-8.2**
BKI				*e*S		**S**	**12 36 07.5**	**-17**
YSS	**Yuzh-Sakhalins**	**8.97**	**261**	*e*P		**P**	**12 34 51.0**	**+1.1**
YSS				*e*S		**S**	**12 36 29.8**	**-0.8**
YSS				A			12 36 35.0	
	comp=N,50nm,0.5s							
YSS				A			12 36 35.0	
	comp=N,30nm,0.5s							
YSS				eLQ			12 37 18.0	
YSS	**Yuzh-Sakhalins**	**8.97**	**261**	*e*Pn		**P**	**12 34 49.3**	**-0.6**
	comp=N,35nm,1.0s							
UGL	**Uglegorsk**	**8.97**	**275**	*e*P		**P**	**12 34 52.0**	**+2.1**
UGL				AMB		AMB	12 34 56.0	
	comp=N,82nm,0.9s							
UGL				AMS		AMS	12 38 18.0	
	comp=N,1μm,18.0s							
UGL				AMS		AMS	12 38 18.0	
	comp=N,800nm,18.0s							
ASAJ	**Asahikawa**	**10.34**	**246**	P		**P**	**12 35 09.9**	**+1.3**
	comp=N,3.9nm,0.3s,baz=87,slow=16,SNR=21							
ASAJ				LR		LR	12 38 38.1	
	comp=N,311nm,20.4s,baz=162,slow=34							
ASAJ	**Asahikawa**	**10.34**	**246**	PN		**P**	**12 35 09.9**	**+1.3**
ASAJ				pmax		pmax		
	comp=Z,4.0nm,0.3s							
ASAJ				MLR		MLR		
	comp=Z,311nm,20.4s							
MA2	**Magadan**	**10.84**	**346**	*e*P		**P**	**12 35 14.4**	**-1.0**
FX1	**Attu Island--F**	**11.60**	**65**	*e*P		**P**	**12 35 22.9**	**-2.8**
KLR	**Kul'dur**	**15.67**	**279**	*e*P		**P**	**12 36 22.3**	**+3.2**
MAJO	**Matsushiro**	**17.94**	**232**	*e*P		**P**	**12 36 46.2**	**-1.5**
	comp=Z,11nm,0.7s							
MAT	**Matsushiro**	**17.94**	**232**	P		**P**	**12 36 46.1**	**-1.6**
MAT	**Matsushiro**	**17.94**	**232**	*e*P		**P**	**12 36 46.0**	**-1.7**
	comp=Z,11nm,0.7s							
ZEA	**Zeya**	**18.27**	**295**	*e*P		**P**	**12 36 56.6**	**+4.8**
ZEA				AMB		AMB	12 37 04.6	
	comp=Z,18nm,1.4s							
MDJ	**Mudanjiang**	**18.39**	**266**	P		**P**	**12 36 52.3**	**-1.0**
	comp=Z,8.2nm,0.7s							
YAK	**Yakutsk**	**19.40**	**321**	*e*P		**P**	**12 37 02.9**	**-1.9**
YAK				*e*S		**S**	**12 40 38.0**	**+2.1**
YAK				pmax		pmax		
	comp=Z,10.0nm,1.0s							
YAK				pmax		pmax		
	comp=N,2.0nm,1.1s							
YAK				pmax		pmax		
	comp=E,5.0nm,1.0s							
YAK				smax				
	comp=E,3.0nm,1.1s							
YAK				smax				
	comp=N,2.0nm,0.9s							
BILL	**Bilibino**	**19.67**	**12**	*e*P		**P**	**12 37 05.3**	**-2.5**
BILL				pmax		pmax		
	comp=Z,3.0nm,0.6s							
BILL				MLR		MLR		
	comp=Z,200nm,18.0s							
BILL	**Bilibino**	**19.67**	**12**	*e*P		**P**	**12 37 04.7**	**-3.0**
	comp=Z,6.0nm,0.8s							
CLNS	**Chul'man**	**19.96**	**304**	*e*P		**P**	**12 37 13.7**	**+2.8**
CLNS				pmax		pmax		
	comp=Z,18nm,1.0s							
CLNS				pmax		pmax		
	comp=N,15nm,1.2s							
CLNS				pmax		pmax		
	comp=E,13nm,0.8s							
CLNS				MLR		MLR		
	comp=Z,400nm,14.0s							
CLNS				MLR		MLR		
	comp=N,600nm,12.0s							
CLNS				MLR		MLR		
	comp=E,300nm,11.0s							
JNU	**Nakatsue**	**24.47**	**238**	P		**P**	**12 37 57.6**	**+1.7**
	comp=E,13nm,0.9s,mb4.4,baz=13,slow=19,SNR=5.5							
TIXI	**Tiksi**	**25.72**	**341**	*e*P		**P**	**12 38 04.0**	**-3.5**
TIXI				pmax		pmax		
	comp=Z,2.0nm,0.9s,mb3.6							
TIXI				MLR		MLR		
	comp=Z,84nm,15.0s,MS3.4							
BOD	**Bodaibo**	**25.93**	**305**	*e*P		**P**	**12 38 07.2**	**-2.3**
SSE	**Sheshan**	**31.62**	**248**	P		**P**	**12 38 59.0**	**-1.9**
SSE				XP		sP	12 39 22.3	+3.8
SSE				PP		PP	12 40 09.8	+3.5
SSE				S		**S**	**12 44 03.0**	**-2.6**
SSE				XS			12 44 27.5	
SSE				AMB		AMB		
	comp=Z,26nm,0.7s,mb5.2							
SSE				AMB		AMB		
	comp=Z,25nm,5.6s							
SSE				LR		LR		
	comp=N,31nm,20.8s,MS3.2							
SSE				LR		LR		
	comp=E,40nm,20.8s,MS3.2							
SSE				LR		LR		
	comp=Z,46nm,29.1s							
SONM	**Songino Array**	**32.26**	**287**	P		**P**	**12 39 07.2**	**+0.9**
	comp=Z,0.3nm,0.7s,baz=76,slow=7.5,SNR=2.9							
NJ2	**Nanjing**	**32.40**	**252**	*e*P		**P**	**12 39 08.3**	**+0.6**
NJ2				AP		pP	12 39 23.0	+3.3
NJ2				PP		PP	12 40 17.0	+0.6
NJ2				S		**S**	**12 44 19.0**	**+1.2**
NJ2				AMB		AMB		
	comp=Z,20nm,0.6s,mb5.1							
NJ2				AMB		AMB		
	comp=Z,190nm,4.5s							
NJ2				LR		LR		
	comp=N,450nm,18.2s,MS4.2							
NJ2				LR		LR		
	comp=E,140nm,20.8s,MS4.2							
NJ2				LR		LR		
	comp=Z,440nm,20.2s,MS4.2							
TLY	**Talaya**	**32.71**	**295**	*e*P		**P**	**12 39 08.4**	**-1.8**
TLY				pmax		pmax		
	comp=Z,91nm,0.8s							
TLY				MLR		MLR		
	comp=Z,1μm,16.0s							
SML	**Sawmill**	**33.03**	**46**	*e*P		**P**	**12 39 12.1**	**-0.7**
COLA	**College**	**33.17

PKI	**Pulchoki**	**57.08**	**275**	*e*P		**P**	**12 42 25.3**	**+1.2**
DMN	**Daman**	**57.25**	**276**	*e*P		**P**	**12 42 25.1**	**-0.2**
	comp=Z,11nm,0.4s,mb5.2							
GKN	**Gorkha**	**57.29**	**276**	*e*P		**P**	**12 42 24.6**	**-1.0**
KOLN	**Koldanda**	**58.12**	**277**	*e*P		**P**	**12 42 26.3**	**-5.1**
SUMG	**Summit**	**58.17**	**5**	*e*P		**P**	**12 42 30.1**	**-1.1**
QLMT	**Earthquake Lak**	**59.55**	**56**	*e*P		**P**	**12 42 41.8**	**+0.7**
NVAR	**Mina Array Bea**	**59.79**	**65**	P		**P**	**12 42 43.3**	**+0.5**
	comp=Z,0.4nm,0.6s,mb3.6,baz=303,slow=5.7,SNR=5.2							
NVAR				LR		LR	13 06 20.7	
	comp=Z,29nm,20.3s,MS3.4,baz=220,slow=34							
JOF	**Joensuu**	**59.96**	**334**	*ep*		**P**	**12 42 40.6**	**-3.0**
	comp=Z,1.4nm,0.6s,mb4.2							
JOF	**Joensuu**	**59.96**	**334**	*e*P		**P**	**12 42 40.6**	**-3.0**
JOF				pmax		pmax		
	comp=Z,1.0nm,0.6s,mb4.0							
BW06	**Boulder Array**	**61.93**	**56**	*e*P		**P**	**12 42 57.4**	**+0.1**
	comp=Z,3.4nm,1.0s,mb4.4							
PDAR	**Pinedale Array**	**61.93**	**56**	P		**P**	**12 42 57.3**	**+0.1**
	comp=Z,0.5nm,0.6s,mb3.8,baz=333,slow=3.3,SNR=5.8							
FINES	**FINESS Array B**	**62.61**	**335**	P		**P**	**12 42 59.2**	**-2.3**
	comp=Z,1.6nm,0.5s,mb4.4,baz=48,slow=7.9,SNR=24							
FINES				LR		LR	13 15 31.4	
	comp=Z,75nm,18.5s,MS3.9,baz=142,slow=41							
FINES	**FINESS Array B**	**62.61**	**335**	P		**P**	**12 42 59.3**	**-2.2**
FINES				pmax		pmax		
	comp=Z,2.0nm,0.5s							
FINES				MLR		MLR		
	comp=Z,75nm,18.5s							
ULM	**Lac du Bonnet**	**63.56**	**43**	LR		LR	13 13 50.7	
	comp=Z,46nm,19.4s,MS3.7,baz=338,slow=39							
SRU	**San Rafael**	**63.87**	**60**	*e*P		**P**	**12 43 10.1**	**+0.1**
OBN	**Obninsk**	**64.31**	**326**	*e*P		**P**	**12 43 09.8**	**-2.8**
OBN				*e*SS		SS	12 55 55.0	-2.5
OBN				pmax		pmax		
	comp=Z,7.0nm,0.6s,mb4.9							
PV10	**Paradox Valley**	**65.21**	**60**	*e*P		**P**	**12 43 18.7**	**-0.1**
NB2	**NORSAR Subarra**	**66.51**	**342**	P		**P**	**12 43 25.0**	**-1.6**
	comp=Z,3.4nm,1.2s,mb4.2,baz=25,slow=6.5							
NOA	**NORSAR Array B**	**66.51**	**342**	P		**P**	**12 43 24.4**	**-2.2**
	comp=Z,1.1nm,1.0s,mb3.8,baz=25,slow=6.3,SNR=3.3							
NOA				LR		LR	13 17 02.8	
	comp=Z,47nm,19.1s,MS3.7,baz=30,slow=40							
NOA	**NORSAR Array B**	**66.51**	**342**	P		**P**	**12 43 24.4**	**-2.2**
NOA				pmax		pmax		
	comp=Z,1.0nm,1.0s							
NOA				MLR		MLR		
	comp=Z,47nm,19.1s							
GOF	**Gofitskoye**	**69.36**	**316**	*e*P		**P**	**12 43 45.5**	**+0.8**
KIV	**Kislovodsk**	**70.37**	**315**⇓	*e*P		**P**	**12 43 50.9**	**+0.1**
KIV				MLR		MLR		
	comp=Z,100nm,16.0s,MS4.2							
SCHQ	**Schefferville**	**70.41**	**25**	P		**P**	**12 43 51.1**	**+0.3**
	comp=Z,1.5nm,0.5s,mb4.2,baz=263,slow=11,SNR=6.0							
ZEI	**Tsey**	**70.70**	**314**	*e*P		**P**	**12 43 52.3**	**-0.6**
WRA	**Warramunga Arr**	**71.37**	**201**	P		**P**	**12 43 56.0**	**-1.2**
	comp=Z,0.6nm,1.0s,mb3.5,baz=17,slow=6.6,SNR=4.9							
WRA	**Warramunga Arr**	**71.37**	**201**	P		**P**	**12 43 56.0**	**-1.3**
WRA				pmax		pmax		
	comp=Z,1.0nm,1.0s							
KWP	**Kalwaria**	**73.64**	**330**	*e*P		**P**	**12 44 10.0**	**-0.1**
OJC	**Ojcow**	**74.04**	**332**	*e*P		**P**	**12 44 11.9**	**-0.5**
NIE	**Niedzica**	**74.59**	**332**	*e*P		**P**	**12 44 16.5**	**+0.9**
CRVS	**Cervenica-Dubn**	**74.68**	**331**	*e*		**P**	**12 44 09.1**	**-7.0**
CRVS				*e*PCP		PcP	12 44 30.6	+0.1
TXAR	**Lajitas Array**	**74.81**	**63**	P		**P**	**12 44 17.8**	**+0.5**
	comp=Z,0.6nm,0.5s,mb3.8,baz=301,slow=5.0,SNR=19							
OKC	**Ostrava-Krasne**	**74.88**	**333**	*e*P		**P**	**12 44 18.5**	**+1.3**
OKC				L			13 22 20.0	
	comp=Z,0.2nm,18.6s							
UPC	**Upice**	**74.90**	**335**	*e*P		sP	12 44 33.2	-2.1
DPC	**Dobruska-Polom**	**74.95**	**334**	*e*P		**P**	**12 44 17.9**	**+0.3**
DPC				L			13 20 30.0	
	comp=Z,0.1nm,18.3s							
CLL	**Collm**	**74.98**	**337**	⇓P		**P**	**12 44 17.2**	**-0.6**
	comp=Z,logA/T=0.9,mb4.6							
CLL	**Collm**	**74.98**	**337**⇓	*i*P		**P**	**12 44 17.2**	**-0.6**
CLL				pmax		pmax		
	comp=Z,9.0nm,1.2s,mb4.6							
CLL	**Collm**	**74.98**	**337**⇓	*i*P		**P**	**12 44 17.2**	**-0.6**
	comp=Z,9.0nm,1.2s,mb4.6							
ASAR	**Alice Springs**	**75.06**	**201**	P		**P**	**12 44 18.8**	**-0.1**
	comp=Z,0.5nm,0.7s,mb3.6,baz=13,slow=4.8,SNR=12							
MORC	**Moravsky Berou**	**75.11**	**333**	*e*P		**P**	**12 44 18.3**	**-0.3**
	comp=Z,7.2nm,1.1s,mb4.5							
BRG	**Berggiesshubel**	**75.13**	**336**	*i* P		**P**	**12 44 17.7**	**-1.0**
BRG				pmax		pmax		
	comp=Z,2.0nm,0.7s,mb4.2							
BRG	**Berggiesshubel**	**75.13**	**336**	*i* P		**P**	**12 44 17.7**	**-1.0**
	comp=Z,1.9nm,0.7s,mb4.1							
PVCC	**Panska Ves**	**75.28**	**336**	L			13 20 20.0	
	comp=Z,0.2nm,19.8s							
PRU	**Pruhonice**	**75.77**	**335**	P		**P**	**12 44 22.3**	**-0.1**
	comp=Z,5.6nm,0.9s,mb4.5							
PRU				L			13 20 40.0	
PRU	**Pruhonice**	**75.77**	**335**	P		**P**	**12 44 22.3**	**-0.1**
PRU				pmax		pmax		
	comp=Z,6.0nm,0.9s,mb4.5							
VYHS	**Vyhne**	**75.86**	**332**	*e*P		**P**	**12 44 22.7**	**-0.2**
NKC	**Novy Kostel**	**76.11**	**337**	L			13 22 40.0	
	comp=Z,0.2nm,7.6s							
KHC	**Kasperske Hory**	**76.82**	**336**	*e*P		**P**	**12 44 28.2**	**-0.1**
KHC				L			13 21 30.0	
	comp=Z,0.1nm,17.7s							
GRF	**Grafenberg Arr**	**76.92**	**337**	*e*P		**P**	**12 44 28.9**	**0.0**
GRF				pmax		pmax		
	comp=Z,10.0nm,0.9s,mb4.8							
GERES	**GERESS Array B**	**77.04**	**335**	P		**P**	**12 44 29.3**	**-0.3**
	comp=Z,1.8nm,0.7s,mb4.1,baz=18,slow=4.2,SNR=14							
GERES	**GERESS Array B**	**77.04**	**335**	P		**P**	**12 44 29.3**	**-0.3**
GERES				pmax		pmax		
	comp=Z,2.0nm,0.7s							
BRTR	**Keskin Array B**	**77.82**	**318**	P		**P**	**12 44 34.1**	**+0.1**
	comp=Z,3.5nm,0.9s,mb4.3,baz=72,slow=3.9,SNR=15							
ARSA	**Arzberg**	**77.97**	**334**⇓	*i*P		**P**	**12 44 35.5**	**+0.8**
	comp=Z,5.8nm,1.0s,mb4.5							
BAIF	**Baives**	**78.19**	**342**	*e*P		**P**	**12 44 35.5**	**-0.4**
	comp=Z,9.3nm,1.0s,mb4.4							
KBA	**Koelnbreinsper**	**78.75**	**335**⇓	*i*P		**P**	**12 44 40.2**	**+1.2**
	comp=Z,24nm,0.8s,mb5.2							
WATA	**Walderalm**	**79.00**	**336**⇓	*i*P		**P**	**12 44 41.1**	**+0.7**
	comp=Z,6.7nm,0.9s,mb4.6							
WTTA	**Wattenberg**	**79.05**	**336**⇑	*i*P		**P**	**12 44 41.5**	**+0.8**
	comp=Z,19nm,1.1s,mb4.9							
CDF	**Champ du Feu**	**79.07**	**339**	*e*P		**P**	**12 44 40.3**	**-0.5**
	comp=Z,16nm,1.0s,mb4.6							
CDF				*ep*P		pP	12 44 51.3	-2.6
MOTA	**Moosalm**	**79.12**	**336**⇓	*i*P		**P**	**12 44 41.7**	**+0.7**
	comp=Z,13nm,1.1s,mb4.8							
SQTA	**Sankt Quirin**	**79.20**	**336**⇑	*i*P		**P**	**12 44 42.5**	**+1.0**
	comp=Z,16nm,1.2s,mb4.8							
DAVA	**Damuels**	**79.49**	**337**⇓	*i*P		**P**	**12 44 43.8**	**+0.8**
	comp=Z,9.3nm,1.0s,mb4.7							
MEZF	**Maizieres J'vi**	**79.49**	**341**	*e*P		**P**	**12 44 42.9**	**-0.1**
	comp=Z,26nm,1.1s,mb4.8							
MEZF				*ep*P		pP	12 44 54.3	-1.9
HAU	**Haudompre**	**79.67**	**340**	*e*P		**P**	**12 44 43.3**	**-0.7**
HAU				*e*R				
	comp=Z,58nm,17.0s							
HINF	**Hinteralfeld**	**79.73**	**339**	*e*P		**P**	**12 44 43.6**	**-0.7**
FLN	**La Foliniere**	**80.33**	**344**	*e*P		**P**	**12 44 47.0**	**-0.5**
FLN				*ep*P		pP	12 44 58.6	-2.1
FLN				*e*R				
	comp=Z,71nm,20.2s							
LDF	**La Druitiere**	**80.43**	**344**	*e*P		**P**	**12 44 47.6**	**-0.5**
	comp=Z,9.7nm,0.6s,mb4.6							
GRR	**Gorron**	**80.76**	**344**	*e*P		**P**	**12 44 49.7**	**-0.1**
	comp=Z,38nm,1.1s,mb5.0							
GRR				*ep*P		pP	12 45 01.1	-1.9
LOR	**Lormes**	**80.92**	**341**	*e*P		**P**	**12 44 50.3**	**-0.3**
	comp=Z,16nm,1.0s,mb4.6							
LOR				*ep*P		pP	12 45 01.7	-2.1
LOR				*e*R				
	comp=Z,91nm,18.8s							
CABF	**La Chapelle**	**81.04**	**339**	*e*P		**P**	**12 44 51.3**	**0.0**
	comp=Z,9.7nm,0.9s,mb4.4							
SGMF	**Saint Gilles**	**81.18**	**346**	*e*P		**P**	**12 44 52.0**	**0.0**
	comp=Z,8.2nm,0.7s,mb4.5							
SGMF				*ep*P		pP	12 45 03.5	-1.7
SSF	**Saint Saulge**	**81.19**	**341**	*e*P		**P**	**12 44 51.8**	**-0.3**
	comp=Z,11nm,1.0s,mb4.4							
ROSF	**Rostrenen**	**81.22**	**346**	*e*P		**P**	**12 44 52.1**	**-0.1**
	comp=Z,16nm,0.9s,mb4.7							
SMF	**Signal de Mont**	**81.51**	**341**	*e*P		**P**	**12 44 53.6**	**-0.2**
	comp=Z,35nm,1.3s,mb4.8							
BGF	**Bois d'Agland**	**81.81**	**341**	*e*P		**P**	**12 44 55.4**	**+0.1**
LPL	**La Plagne**	**81.92**	**339**	*e*P		**P**	**12 44 56.8**	**+0.9**
	comp=Z,14nm,0.8s,mb4.6							
LPL				*ep*P		pP	12 45 08.1	-1.0
LPG	**La Plagne**	**81.93**	**339**	*e*P		**P**	**12 44 57.0**	**+1.0**
	comp=Z,14nm,0.9s,mb4.6							
TCF	**Toulx Ste Croi**	**82.20**	**342**	*e*P		**P**	**12 44 57.6**	**+0.3**
	comp=Z,12nm,1.1s,mb4.4							
TCF				*ep*P		pP	12 45 08.8	-1.7
MFF	**Saint Martin d**	**82.36**	**343**	*e*P		**P**	**12 44 58.4**	**+0.3**
	comp=Z,6.6nm,0.8s,mb4.3							
MFF				*ep*P		pP	12 45 09.8	-1.5
BNI	**Bardonecchia**	**82.37**	**338**	*e*P		**P**	**12 44 58.9**	**+0.7**
BNI				*e*		pP	12 45 10.5	-1.0
MBDF	**Montbardon**	**82.65**	**338**	*e*P		**P**	**12 45 01.3**	**+1.6**
ORIF	**Oris-en-Rattie**	**82.69**	**339**	*e*P		**P**	**12 45 00.6**	**+0.8**
	comp=Z,15nm,1.1s,mb4.7							
ORIF				*e*R				
	comp=Z,44nm,18.8s							
VIVF	**Saint-Julien-l**	**83.03**	**340**	*e*P		**P**	**12 45 02.1**	**+0.5**
	comp=Z,17nm,1.1s,mb4.7							
VIVF				*ep*P		pP	12 45 13.5	-1.3
RJF	**Les Rejaudoux**	**83.28**	**342**	*e*P		**P**	**12 45 03.3**	**+0.5**
RJF				*e*R				
	comp=Z,74nm,17.5s							
SBF	**Sospel**	**83.30**	**337**	*e*P		**P**	**12 45 03.9**	**+0.9**
	comp=Z,31nm,1.1s,mb5.0							
CAF	**Calviac**	**83.53**	**342**	*e*P		**P**	**12 45 04.8**	**+0.8**
CAF				*ep*P		pP	12 45 16.3	-1.0
SMRF	**Simiane la Rot**	**83.65**	**339**	*e*P		**P**	**12 45 05.6**	**+0.9**
FRF	**La Foret Royal**	**83.78**	**338**	*e*P		**P**	**12 45 06.5**	**+1.2**
LFF	**La Frestale**	**83.78**	**342**	*e*P		**P**	**12 45 06.9**	**+1.6**
HILS	**Ha'il**	**83.79**	**305**	P		**P**	**12 45 06.9**	**+1.1**
LASF	**Ste Croix**	**83.95**	**340**	*e*P		**P**	**12 45 06.9**	**+0.7**
LASF				*ep*P		pP	12 45 18.4	-1.1
PGF	**Pioggiola**	**84.12**	**336**	*e*P		**P**	**12 45 07.4**	**+0.3**
	comp=Z,14nm,1.0s,mb4.8							
PGF				*ep*P		pP	12 45 19.1	-1.3
ARSS	**Ar Rass**	**84.20**	**303**	P		**P**	**12 45 08.1**	**+0.2**
MZLS	**Mizel**	**84.56**	**301**	P		**P**	**12 45 10.4**	**+0.7**
MTLF	**Montolieu**	**85.01**	**341**	*e*P		**P**	**12 45 12.5**	**+1.0**
MTLF				*ep*P		pP	12 45 23.8	-1.0
JMQS	**Jabal Moqyreh**	**85.65**	**310**	P		**P**	**12 45 16.9**	**+1.8**
EPF	**Esparros**	**85.70**	**342**	*e*P		**P**	**12 45 16.3**	**+1.4**
	comp=Z,6.8nm,0.8s,mb4.6							
EPF				*ep*P		pP	12 45 27.4	-0.8
AFFS	**'Afif**	**85.87**	**302**	P		**P**	**12 45 17.4**	**+1.2**
ETSF	**Etsaut**	**86.00**	**343**	*e*P		**P**	**12 45 18.1**	**+1.7**
	comp=Z,4.1nm,0.6s,mb4.5							
KBRS	**Khaybar**	**86.42**	**306**	P		**P**	**12 45 20.5**	**+1.7**
YNBS	**Yanbu' al Bahr**	**88.26**	**306**	P		**P**	**12 45 26.2**	**-1.5**
ESDC	**Sonseca Array**	**89.76**	**344**	P		**P**	**12 45 36.0**	**+1.5**
	comp=Z,0.8nm,0.7s,mb4.2,baz=353,slow=4.0,SNR=4.3							

*CASC **30** 12:35:06.9±1.6, 14.24N×91.41W, h72km±6km, MD4.1, ML4.6*
*NEIC **30** 12:35:07.5±1.2, 14.50N×91.32W, h183km±21km, MD3.8(MEX), Error ellipse: s-maj=21.0km s-min=12.8km az=211.0*
*MEX **30** 12:35:15.9±0.5, 14.93N×91.60W, h145km±6km, MD3.8*
ISC 30 12:35:06.1±0.7, **14.32N**±0.08×**91.43W**±0.05, **h81**km±7km, **n30**, σ0**96**/51, **4C-4D, Guatemala**

Code	Station Name	Δ°	AZ°	Phase ID		ISC	Time h m s	Res ISC
JAT	**Jato**	**0.20**	**269**	*e*P		**P**	**12 35 18.0**	**+0.1**
JAT				*e*S		**S**	**12 35 26.7**	**-0.2**
JAT				AML		AML	12 35 28.1	
	comp=E,25μm,0.3s							
PCG	**Pacaya**	**0.80**	**85**	*e*P		**P**	**12 35 23.3**	**+0.1**
PCG				*e*S		**S**	**12 35 35.9**	**0.0**
IXG	**Ixpaco**	**0.96**	**99**	*e*P		**P**	**12 35 24.5**	**-0.5**
IXG				*e*S		**S**	**12 35 37.5**	**-1.6**
IXG				AML		AML	12 35 39.4	
	comp=E,115μm,0.5s							
TPX	**Tapachula**	**0.99**	**306**	*i* P		**P**	**12 35 36.0**	**+11**
TPX				*i* S		**S**	**12 35 52.0**	**+12**
NBG	**Las Nubes**	**1.08**	**76**	*e*P		**P**	**12 35 27.9**	**+1.5**
NBG				*e*S		**S**	**12 35 46.0**	**+4.2**
NBG				AML		AML	12 35 49.5	
	comp=E,9μm,0.3s							
CUSS	**Cusmapa**	**1.50**	**106**⇑	*e*P		**P**	**12 35 31.0**	**-0.9**
CUSS				*e*S		**S**	**12 35 50.3**	**-0.7**
RBDL	**Robledal**	**1.71**	**97**⇓	*e*P		**P**	**12 35 34.4**	**-0.3**
RBDL				*e*S		**S**	**12 35 56.8**	**+1.1**
RTR	**El Retiro**	**1.79**	**103**	*e*P		**P**	**12 35 35.8**	**+0.1**
RTR				*e*S		**S**	**12 35 58.8**	**+1.2**
SBLS	**San Blas**	**1.82**	**105**	*e*P		**P**	**12 35 36.1**	**-0.1**
SBLS				*e*S		**S**	**12 35 59.3**	**+0.9**
SNJE	**San Jose**	**1.83**	**104**	*e*P		**P**	**12 35 36.2**	**-0.1**
SNJE				*e*S		**S**	**12 35 59.4**	**+0.9**
MTO2	**Montecristo 2**	**2.01**	**88**⇓	*e*P		**P**	**12 35 38.2**	**-0.5**
CCIG	**Comitan**	**2.06**	**341**	*i* P		**P**	**12 35 43.4**	**+3.9**
CCIG				*i* S		**S**	**12 36 03.6**	**-0.6**
BOQS	**Boqueron**	**2.17**	**105**	*e*P		**P**	**12 35 41.3**	**+0.3**
BOQS				*e*S		**S**	**12 36 08.2**	**+1.5**
PICS	**Picacho**	**2.19**	**105**	*e*P		**P**	**12 35 40.7**	**-0.6**
SNET	**Serv Nac Est T**	**2.23**	**106**	*e*P		**P**	**12 35 41.6**	**-0.2**
SNET				⇓*e*P			12 35 42.2	
SNET				*e*S		**S**	**12 36 08.8**	**+0.5**
LFU	**La Fuente**	**2.32**	**104**	*e*P		**P**	**12 35 42.6**	**-0.5**
LBRS	**Las Brisas**	**2.39**	**104**⇓	*e*P		**P**	**12 35 43.3**	**-0.7**
LFRS	**El Faro**	**2.40**	**106**⇑	*e*P		**P**	**12 35 44.1**	**-0.2**
LFRS				*e*S		**S**	**12 36 11.9**	**-0.7**
LCBS	**La Ceiba**	**2.47**	**105**	⇑*i*P		**P**	**12 35 44.7**	**-0.6**
LCBS				*e*S		**S**	**12 36 14.2**	**-0.2**
SNVI	**San Vicente**	**2.62**	**105**	*e*P		**P**	**12 35 46.8**	**-0.4**
SNVI				*e*S		**S**	**12 36 17.4**	**-0.5**
CAHU	**Cacacuatique**	**3.17**	**100**	*e*P		**P**	**12 35 55.6**	**+0.6**
BLLM	**Bellamira**	**3.22**	**105**⇑	*e*P		**P**	**12 35 58.7**	**+2.6**
BLLM				*e*S		**S**	**12 36 38.7**	**+5.6**
CNCH	**Conchagua**	**3.65**	**106**	*e*P		**P**	**12 36 00.5**	**-1.1**
CNCH				*e*S		**S**	**12 36 43.3**	**-0.3**
CMIG	**Matias Romero**	**4.32**	**310**	*e*P		**P**	**12 36 12.5**	**+1.7**
CMIG				*i* S		**S**	**12 36 57.0**	**-3.3**
HUIG	**Huatulco**	**4.74**	**288**	*i* S		**S**	**12 37 06.5**	**-4.3**
OXX	**Oaxaca**	**5.79**	**299**	*i* P		**P**	**12 36 37.0**	**+6.0**
VHO	**Vista Hermosa**	**5.79**	**299**	*i* P		**P**	**12 36 32.1**	**+1.1**
VHO				*i* S		**S**	**12 37 32.6**	**-4.2**
VHO	**Vista Hermosa**	**5.79**	**299**	*i* P		**P**	**12 36 32.1**	**+1.1**
VHO				*i* S		**S**	**12 37 27.5**	**-9.3**
TEIG	**Tepich**	**6.60**	**27**	*e*P		**P**	**12 36 40.0**	**-2.4**
JTS	**JuntasAbangare**	**7.49**	**122**	*e*P		**P**	**12 36 54.0**	**-0.7**
	comp=E,0.3nm,0.4s							

*NEIC **30** 12:51:32.7, 42.96N×0.26E, h15km, ML2.2(STR), ML2.0(LDG), After LDG.*
*LDG **30** 12:51:32.7±0.1, 42.96N×0.26E, h15km, Md2.0/2, Ml2.0/5, Error ellipse: s-maj=1.2km s-min=0.9km az=165.0*
*STR **30** 12:51:32.7±0.1, 42.93N×0.25E, h10km±1km, Ml2.2, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
*MDD **30** 12:51:33.8±0.4, 43.01N×0.23E, h10km±1km, mbLg1.3/4, Error ellipse: s-maj=8.2km s-min=3.1km az=160.0, PRXIMO*
ISC 30 12:51:31.5±0.4, **43.05N**±0.03×**0.29E**±0.03, **h15**km, **n15**, σ0**95**/24, **France**

Code	Station Name	Δ°	AZ°	Phase ID		ISC	Time h m s	Res ISC
EPF	**Esparros**	**0.05**	**118**	*e*Pg		**Pg**	**12 51 36.0**	**+1.7**
EPF				*e*Sg		**Sg**	**12 51 37.9**	**+1.7**
	79nm,0.2s							
RESF	**Ens**	**0.25**	**171**	Pg		**Pg**	**12 51 37.1**	**0.0**
RESF				Sg		**Sg**	**12 51 39.6**	**-1.3**
VIEF	**Viey**	**0.26**	**229**	Pg		**Pg**	**12 51 37.3**	**+0.1**
VIEF				Sg		**Sg**	**12 51 40.1**	**-1.0**
MELF	**Melles**	**0.39**	**117**	Pg		**Pg**	**12 51 40.5**	**+0.7**
MELF				Sg		**Sg**	**12 51 45.7**	**+0.4**
REYF	**Montagne du Re**	**0.50**	**272**	Pg		**Pg**	**12 51 42.6**	**+0.9**
REYF				Sg		**Sg**	**12 51 49.4**	**+0.8**
ETSF	**Etsaut**	**0.64**	**256**	*e*Pg		**Pg**	**12 51 44.6**	**+0.1**
ETSF				*e*Sg		**Sg**	**12 51 51.9**	**-1.3**
	10nm,0.2s							
SALF	**Salau**	**0.73**	**113**	Pg		**Pg**	**12 51 46.5**	**+0.3**
EALK	**Alkurruntz**	**1.32**	**278**	Pg		**Pg**	**12 51 58.4**	**+0.4**
	0.3nm,0.1s,SNR=7.9							
EALK				Lg			12 52 15.8	
	1.6nm,0.2s,SNR=6.2							
ESAC	**San Caprasio**	**1.44**	**203**	Pg		**Pg**	**12 52 00.1**	**-0.3**
	1.8nm,0.2s,SNR=7.9							
ESAC				Lg			12 52 18.8	
	9.2nm,0.1s,SNR=7.2							
MTLF	**Montolieu**	**1.44**	**78**	*e*Pn		**Pn**	**12 51 57.5**	**+0.3**
MTLF				*e*Sg		**Sg**	**12 52 19.6**	**-0.1**
	1.5nm,0.2s							
LFF	**La Frestale**	**1.92**	**10**	*e*Pg		**Pg**	**12 52 10.5**	**+0.7**
LFF				*e*Sg		**Sg**	**12 52 36.2**	**+0.8**
	2.4nm,0.2s							
CAF	**Calviac**	**2.27**	**34**	*e*Pg		**Pg**	**12 52 16.6**	**-0.3**
CAF				*e*Sg		**Sg**	**12 52 47.1**	**-0.1**
	1.2nm,0.3s							
RJF	**Les Rejaudoux**	**2.42**	**21**	*e*Sg		**Sg**	**12 52 51.4**	**-0.7**
	1.3nm,0.2s							
LASF	**Ste Croix**	**2.79**	**67**	*e*Sg		**Sg**	**12 53 02.3**	**-2.2**
	24nm,1.4s							
MFF	**Saint Martin d**	**3.56**	**355**	*e*Pg		**Pg**	**12 52 40.5**	**-2.1**

*NEIC **30** 12:59:25.5, 44.54N×7.20E, h10km, ML2.3(GEN), ML1.9(LDG), ML1.8(STR), After GEN.*
*LDG **30** 12:59:25.3±0.1, 44.56N×7.24E, h5km, Md1.9/2, Ml1.9/6, Error ellipse: s-maj=2.2km s-min=1.0km az=70.0*
*STR **30** 12:59:26.0±0.7, 44.52N×7.16E, h5km±1km, Ml1.8, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
ISC 30 12:59:24.8±0.3, **44.54N**±0.02×**7.18E**±0.04, **h13**km±3km, **n27**, σ0**52**/52, **Northern Italy**

Code	Station Name	Δ°	AZ°	Phase ID		ISC	Time h m s	Res ISC
SURF	**Saint Ours**	**0.27**	**258**	Pg		**Pg**	**12 59 31.7**	**+1.1**
SURF				Sg		**Sg**	**12 59 34.5**	**0.0**
STV2	**Anna di Valdie**	**0.31**	**160**	P		**Pg**	**12 59 31.7**	**+0.4**
STV2				S		**Sg**	**12 59 35.9**	**+0.1**
STV	**Sta Anna Valdi**	**0.31**	**160**	P		**Pg**	**12 59 31.7**	**+0.3**
STV				S		**Sg**	**12 59 35.9**	**+0.1**
BHB	**Bricherasio**	**0.31**	**11**	P		**Pg**	**12 59 31.6**	**+0.2**
BHB				S		**Sg**	**12 59 35.6**	**-0.2**
MBDF	**Montbardon**	**0.35**	**303**	*e*Pg		**Pg**	**12 59 33.1**	**+1.0**
MBDF				*e*Sg		**Sg**	**12 59 38.1**	**+1.1**
	15nm,0.3s							
ENR	**Entracque**	**0.35**	**151**	P		**Pg**	**12 59 32.4**	**+0.2**
ENR				S		**Sg**	**12 59 37.0**	**-0.2**
RRL	**Cesana Torines**	**0.48**	**324**	P		**Pb**	**12 59 35.1**	**+0.6**
RRL				S		**Sg**	**12 59 41.4**	**+0.3**
FENE	**Fenestrelle**	**0.50**	**350**	P		**Pb**	**12 59 35.2**	**+0.3**
FENE				S		**Sb**	**12 59 41.7**	**-0.1**
ROB	**Roburent**	**0.55**	**116**	P		**Pb**	**12 59 35.9**	**+0.2**
ROB				S		**Sb**	**12 59 43.0**	**-0.3**
AUTN	**L'Aution**	**0.57**	**162**	Pg		**Pg**	**12 59 36.3**	**-0.1**
AUTN				Sg		**Sg**	**12 59 43.6**	**-0.5**
MONE	**Monesi**	**0.62**	**138**	P		**Pb**	**12 59 36.9**	**0.0**
MONE				S		**Sb**	**12 59 44.8**	**-0.3**
RSP	**Reno Superiore**	**0.62**	**5**	P		**Pb**	**12 59 37.2**	**+0.3**
RSP				S		**Sb**	**12 59 45.1**	**-0.1**
MVIF	**Mont Vial**	**0.64**	**182**	Pg		**Pg**	**12 59 38.4**	**+0.6**
MVIF				Sg		**Sg**	**12 59 46.9**	**+0.5**
AURF	**Auriere**	**0.66**	**171**	Pg		**Pg**	**12 59 38.0**	**-0.1**
AURF				Sg		**Sg**	**12 59 47.3**	**+0.3**
SBF	**Sospel**	**0.70**	**165**	*e*Pg		**Pg**	**12 59 38.9**	**0.0**
SBF				*e*Sg		**Sg**	**12 59 48.1**	**-0.2**
	3.2nm,0.2s							
RORO		**0.77**	**123**	P		**Pb**	**12 59 39.5**	**0.0**
RORO				S		**Sb**	**12 59 49.1**	**-

VRSR					pmax	pmax			
	comp=N,10.0nm,0.5s								
VRSR					pmax	pmax			
	comp=E,10.0nm,0.6s								
AAK	**Ala-Archa**	**18.77**	**64**	*eP*	**P**		**13 14 12.5**	**+0.4**	
	comp=E,2.7nm,0.8s								
ARU	**Arti**	**20.45**	**11**	⇓*iP*	**P**		**13 14 29.8**	**-1.1**	
ARU				*e*			13 14 45.1		
ARU				*eS*	**S**		**13 18 15.0**	**+0.3**	
ARU				*eSS*	SS		13 18 31.3	-13	
ARU				pmax	pmax				
	comp=Z,28nm,0.8s								
ARU				MLR	MLR				
	comp=N,100nm,18.0s,MS3.3								
ARU				MLR	MLR				
	comp=Z,100nm,18.0s,MS3.2								
ARU				MLR	MLR				
	comp=E,100nm,23.0s,MS3.3								
ARU	**Arti**	**20.45**	**11**	*eP*	**P**		**13 14 29.5**	**-1.4**	
	comp=E,30nm,0.8s								
ZRNK	**Zerenda**	**20.52**	**31**	⇑P	**P**		**13 14 31.0**	**-0.5**	
	comp=E,8.7nm,1.0s								
ZRNK	**Zerenda**	**20.52**	**31**	*eP*	**P**		**13 14 30.9**	**-0.6**	
MLR	**Muntele Rosu**	**21.11**	**303**	P	**P**		**13 14 41.7**	**+4.0**	
	comp=E,4.2nm,0.7s,mb3.9,baz=109,slow=11,SNR=5.4								
MLR	**Muntele Rosu**	**21.11**	**303**	P	**P**		**13 14 41.7**	**+4.0**	
MLR				pmax	pmax				
	comp=Z,4.0nm,0.7s								
BRVK	**Borovoye**	**21.14**	**33**	⇑P	**P**		**13 14 37.8**	**-0.1**	
	comp=Z,11nm,1.2s,mb4.0								
BRVK	**Borovoye**	**21.14**	**33**	*eP*	**P**		**13 14 37.6**	**-0.4**	
OBN	**Obninsk**	**21.16**	**336**	*deP*	**P**		**13 14 37.3**	**-0.8**	
OBN				pmax	pmax				
	comp=Z,33nm,1.9s,mb4.3								
OBN				MLR	MLR				
	comp=Z,100nm,19.0s,MS3.2								
BVAR	**Borovoye Array**	**21.16**	**33**	P	**P**		**13 14 38.2**	**0.0**	
	comp=Z,6.3nm,0.7s,mb4.1,baz=218,slow=9.7,SNR=51								
VOSK	**Vostochnaya**	**21.22**	**34**	⇓P	**P**		**13 14 38.3**	**-0.4**	
	comp=Z,12nm,0.8s,mb4.2								
MOS	**Moscow**	**21.35**	**338**	*eP*	**P**		**13 14 39.5**	**-0.5**	
MOS				pmax	pmax				
	comp=Z,69nm,0.7s,mb5.1								
IDI	**Anoyia**	**21.49**	**275**	P	**P**		**13 14 42.8**	**+1.2**	
	comp=Z,5.9nm,0.8s,mb4.0,baz=68,slow=11,SNR=4.3								
KURK	**Kurchatov**	**24.07**	**45**	⇑P	**P**		**13 15 09.5**	**+2.6**	
	comp=Z,17nm,1.5s,mb4.2,baz=258,slow=5.5,SNR=26								
KURK	**Kurchatov**	**24.07**	**45**	*eP*	**P**		**13 15 09.1**	**+2.2**	
MK31	**Makanchi Array**	**25.08**	**56**	⇓P	**P**		**13 15 18.2**	**+1.5**	
	comp=Z,5.3nm,0.9s,mb4.1,baz=251,slow=6.9,SNR=19								
MKAR	**Makanchi Array**	**25.08**	**56**	P	**P**		**13 15 18.2**	**+1.5**	
	comp=Z,4.7nm,0.9s,mb4.0,baz=252,slow=7.4,SNR=17								
MKAR	**Makanchi Array**	**25.08**	**56**	*iP*	**P**		**13 15 18.6**	**+1.9**	
MKAR				pmax	pmax				
	comp=Z,5.0nm,0.9s								
SUW	**Suwalki**	**26.17**	**321**	*eP*	**P**		**13 15 29.9**	**+3.1**	
OJC	**Ojcow**	**26.49**	**311**	*eP*	**P**		**13 15 34.6**	**+4.9**	
GERES	**GERESS Array B**	**29.99**	**306**	P	**P**		**13 16 02.0**	**+0.5**	
	comp=Z,0.6nm,0.7s,mb3.4,baz=90,slow=9.3,SNR=6.3								
GERES	**GERESS Array B**	**29.99**	**306**	P	**P**		**13 16 02.0**	**+0.5**	
GERES				pmax	pmax				
	comp=Z,1.0nm,0.7s								
CLL	**Collm**	**30.93**	**311**	*iP*	**P**		**13 16 17.5**	**+7.8**	
	comp=Z,6.0nm,1.0s,mb4.4								
NB2	**NORSAR Subarra**	**35.17**	**327**	P	**P**		**13 16 46.1**	**-0.3**	
	comp=Z,0.7nm,0.8s,mb3.6,baz=117,slow=7.9								
NOA	**NORSAR Array B**	**35.17**	**327**	P	**P**		**13 16 46.2**	**-0.2**	
	comp=Z,1.0nm,0.8s,mb3.8,baz=119,slow=8.2,SNR=4.6								
NOA	**NORSAR Array B**	**35.17**	**327**	P	**P**		**13 16 46.2**	**-0.2**	
NOA				pmax	pmax				
	comp=Z,1.0nm,0.8s								
TLY	**Talaya**	**39.55**	**51**	*eP*	**P**		**13 17 24.6**	**+1.3**	
TLY				pmax	pmax				
	comp=Z,16nm,0.8s,mb4.8								
TLY				MLR	MLR				
	comp=Z,900nm,17.0s,MS4.7								
KMBO	**Kilima Mbogo**	**39.74**	**202**	LR	LR		13 34 27.6		
	comp=Z,75nm,21.9s,MS3.5,baz=87,slow=37								
EKA	**Eskdalemuir Ar**	**41.11**	**315**	P	**P**		**13 17 35.2**	**-0.9**	
	comp=Z,0.7nm,0.7s,mb3.4,baz=107,slow=7.4,SNR=3.2								
EKA	**Eskdalemuir Ar**	**41.11**	**315**	P	**P**		**13 17 35.3**	**-0.8**	
EKA				pmax	pmax				
	comp=Z,1.0nm,0.7s								
ESDC	**Sonseca Array**	**43.09**	**292**	P	**P**		**13 17 52.1**	**-0.4**	
	comp=Z,1.5nm,0.9s,mb3.7,baz=67,slow=7.2,SNR=4.6								
CMAR	**Chiang Mai Arr**	**45.37**	**100**	LR	LR		13 37 44.0		
	comp=Z,31nm,21.6s,MS3.2,baz=200,slow=37								
BOD	**Bodaibo**	**45.63**	**42**	*eP*	**P**		**13 18 11.1**	**-1.6**	
BORG	**Borgarnes**	**50.34**	**328**	LR	LR		13 42 28.2		
	comp=Z,75nm,21.8s,MS3.7,baz=222,slow=39								
TIXI	**Tiksi**	**51.83**	**23**	*eP*	**P**		**13 19 01.0**	**+0.4**	
TIXI				pmax	pmax				
	comp=Z,6.0nm,1.4s,mb4.3								
TSUM	**Tsumeb**	**64.01**	**216**	LR	LR		13 49 35.5		
	comp=Z,153nm,18.9s,MS4.2,baz=133,slow=37								
BILL	**Bilibino**	**65.03**	**22**	*deP*	**P**		**13 20 33.3**	**+0.6**	
BILL				pmax	pmax				
	comp=Z,6.0nm,1.3s,mb4.5								
BILL				MLR	MLR				
	comp=Z,100nm,16.0s,MS4.1								
TGY	**Tagaytay City**	**65.37**	**90**	LR	LR		13 53 39.1		
	comp=Z,59nm,21.7s,MS3.7,baz=166,slow=40								
COLA	**College**	**77.77**	**8**	*deP*	**P**		**13 21 50.1**	**+1.1**	
COLA	**College**	**77.77**	**8**	*eP*	**P**		**13 21 50.2**	**+1.2**	
	comp=Z,4.2nm,0.9s,mb4.4								
ILAR	**Eielson Array**	**77.98**	**8**	P	**P**		**13 21 51.0**	**+0.9**	
	comp=Z,0.7nm,0.8s,mb3.6,baz=334,slow=4.7,SNR=11								
ILAR				LR	LR		14 00 45.9		
	comp=Z,39nm,18.4s,MS3.8,baz=35,slow=39								
ILAR	**Eielson Array**	**77.98**	**8**	P	**P**		**13 21 51.0**	**+0.9**	
ILAR				pmax	pmax				
	comp=Z,1.0nm,0.8s								
ILAR				MLR	MLR				
	comp=Z,39nm,18.4s								
YKA	**Yellowknife Ar**	**80.64**	**353**	P	**P**		**13 22 05.0**	**+0.5**	
	comp=Z,0.5nm,0.9s,mb3.4,baz=6.6,slow=6.0,SNR=9.0								
YKA	**Yellowknife Ar**	**80.64**	**353**	P	**P**		**13 22 05.0**	**+0.4**	
YKA				pmax	pmax				
	comp=Z,1.0nm,0.9s								

*LDG **30** 13:12:35.9±0.1, 10.99N×62.86W, h100km, Mb4.2/18, Error ellipse: s-maj=6.4km s-min=2.1km az=105.0*
*NEIC **30** 13:12:37.5±0.2, 10.91N×62.55W, mb4.2/25, MD4.3(CAR), Error ellipse: s-maj=6.5km s-min=5.0km az=162.0*
*IDC **30** 13:12:37.9±0.6, 10.91N×62.51W, h90km±5km, mb3.9/20, mb1 4.1/23, mb1mx4.1/26, MS3.3/2, Ms1 3.3/2, ms1mx2.8/27, Error ellipse: s-maj=11.8km s-min=6.4km az=140.0*
*TRN **30** 13:12:38.1, 10.83N×62.51W, h61km, MD4.1*
TRN Felt (III) in Diego Martin and Glenco, Trinidad.
*FUNV **30** 13:12:38.5, 10.73N×62.41W, h71km, MW3.6*
*RSPR **30** 13:12:44.5, 11.25N×62.84W, h25km±31km*

ISC 30 13:12:36.1±0.2, 10.79N±0.02×62.51W±0.02, h94km±2km, h87km±2.5km: pP-P, n137, σ0s96/164, mb4.2/43, 19C-6D, Near coast of Venezuela

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
					Op	ISC	h m s	ISC
GUIV	**Guiria**	**0.31**	**116**	⇑*eP*	**P**		**13 12 49.4**	**-0.7**
GUIV				*eS*	**S**		**13 12 57.0**	**-3.8**
CRUV	**Carupano**	**0.73**	**261**	*eS*	**S**		**13 13 05.9**	**-0.4**
TCE	**Chacachacare**	**0.75**	**97**	*eP*	**P**		**13 12 53.6**	**-0.1**
TCE				*eS*	**S**		**13 13 03.1**	**-3.5**
GUNV	**Guanoco**	**0.75**	**215**	⇑*eP*	**P**		**13 12 55.0**	**+1.2**
GUNV				*eS*	**S**		**13 13 06.1**	**-0.7**
ITEV	**Isla Los Testi**	**0.83**	**313**	⇓*iP*	**P**		**13 12 55.6**	**+1.0**
ITEV				*eS*	**S**		**13 13 08.2**	**-0.1**
ALNG	**Atlantic LNG**	**1.00**	**127**	*eP*	**P**		**13 12 57.7**	**+1.3**
ALNG				*eS*	**S**		**13 13 12.5**	**+0.8**
TRN	**Trinidad (W)**	**1.09**	**97**	⇑*iP*	**P**		**13 12 57.8**	**+0.3**
TRN				*eS*	**S**		**13 13 10.8**	**-2.7**
TPP	**Pointe-a-Pierr**	**1.14**	**114**	*eP*	**P**		**13 12 58.9**	**+0.8**
TPP				*eS*	**S**		**13 13 13.2**	**-1.2**
SIPA	**Siparia**	**1.17**	**123**	*eP*	**P**		**13 12 59.5**	**+1.0**
TBH	**Brigand Hill**	**1.45**	**102**	*eP*	**P**		**13 13 02.6**	**+0.7**
TBH				*eS*	**S**		**13 13 21.5**	**+0.6**
GRW	**Mount Saint Ca**	**1.60**	**31**	*eP*	**P**		**13 13 04.4**	**+0.6**
GRW				*eS*	**S**		**13 13 22.2**	**-2.0**
GRHS	**Sauteurs**	**1.66**	**31**	*eP*	**P**		**13 13 04.2**	**-0.3**
GRHS				*eS*	**S**		**13 13 23.9**	**-1.7**
GRSS	**Sisters**	**1.74**	**30**	*eP*	**P**		**13 13 05.5**	**0.0**
GRSS				*eS*	**S**		**13 13 27.5**	**+0.2**
GRIC	**Isle de Caille**	**1.74**	**31**	*eP*	**P**		**13 13 05.5**	**-0.1**
GRIC				*eS*	**S**		**13 13 27.0**	**-0.4**
TPR	**Prospect**	**1.74**	**77**	*eP*	**P**		**13 13 06.2**	**+0.6**
TPR				*eS*	**S**		**13 13 26.5**	**-0.9**
BOT	**Bacolet**	**1.80**	**78**	*eP*	**P**		**13 13 06.8**	**+0.5**
BOT				*eS*	**S**		**13 13 26.9**	**-1.6**
GRCU	**Cariacou**	**1.97**	**32**	⇓*iP*	**P**		**13 13 08.5**	**0.0**
GRCU				*eS*	**S**		**13 13 33.4**	**+0.9**
PCRV	**Puerto La Cruz**	**2.18**	**254**	P	**P**		**13 13 14.0**	**+2.5**
	65nm,0.3s,baz=88,slow=3.1,SNR=862								
PCRV				S	**S**		**13 13 40.3**	**+2.7**
	55nm,0.3s,baz=155,slow=23,SNR=20								
IBAV	**Isla La Blanqu**	**2.28**	**297**	⇓*eP*	**P**		**13 13 14.3**	**+1.5**
IBAV				*eS*	**S**		**13 13 40.9**	**+0.9**
RIOV	**Rio Grande**	**2.78**	**166**	*eP*	**P**		**13 13 19.2**	**-0.6**
RIOV				*eS*	**S**		**13 13 49.0**	**-3.5**
SVV	**Soufriere Volc**	**2.82**	**27**	*eP*	**P**		**13 13 20.4**	**+0.2**
SSV	**Crater Summit**	**2.83**	**27**	*eP*	**P**		**13 13 20.9**	**+0.4**
GURV	**El Guri**	**3.06**	**191**	⇓*eP*	**P**		**13 13 23.3**	**-0.4**
GURV				*eS*	**S**		**13 13 54.0**	**-5.4**
MCLT	**Moule a Chique**	**3.28**	**28**	*eP*	**P**		**13 13 27.1**	**+0.4**
MCLT				*eS*	**S**		**13 14 03.7**	**-1.2**
SLB	**Belfond**	**3.34**	**25**	*eP*	**P**		**13 13 28.1**	**+0.6**
SLPE	**Piton Saint Es**	**3.38**	**26**	*eP*	**P**		**13 13 28.7**	**+0.7**
BIRV	**Birongo**	**3.71**	**266**	*eP*	**P**		**13 13 33.7**	**+1.2**
BIRV				*eS*	**S**		**13 14 13.9**	**-1.5**
BIM	**Bigot**	**3.96**	**21**	*eP*	**P**		**13 13 36.3**	**+0.3**
BIM				*eS*	**S**		**13 14 20.8**	**-0.9**
MERV	**Las Mercedes**	**4.03**	**248**	⇓*eP*	**P**		**13 13 37.9**	**+0.9**
MERV				*eS*	**S**		**13 14 21.2**	**-2.1**
MVM	**Montagne Vaucl**	**4.06**	**23**	*eP*	**P**		**13 13 37.5**	**+0.1**
FDF	**Fort de France**	**4.14**	**18**	*eP*	**P**		**13 13 38.6**	**+0.2**
FDF				*eS*	**S**		**13 14 20.8**	**-5.2**
CRM	**Caravelle**	**4.24**	**21**	*eP*	**P**		**13 13 40.2**	**+0.4**
BBL	**Barber's Block**	**4.82**	**12**	*eP*	**P**		**13 13 48.0**	**+0.2**
BBL				*eS*	**S**		**13 14 38.0**	**-4.8**
LUEV	**Luepa**	**5.02**	**168**	⇓*eP*	**P**		**13 13 48.5**	**-2.0**
CAOV	**Caicara del Or**	**5.10**	**228**	⇓*eP*	**P**		**13 13 51.6**	**0.0**
CAOV				*eS*	**S**		**13 14 45.2**	**-4.5**
PAG	**Le Parnasse**	**5.27**	**9**	*eP*	**P**		**13 13 54.3**	**+0.4**
SEG	**Port Louis**	**5.67**	**10**	*eP*	**P**		**13 14 00.7**	**+1.4**
DEG	**La Desirade**	**5.67**	**14**	*eP*	**P**		**13 13 59.4**	**0.0**
BAUV	**El Baul**	**5.75**	**252**	*eP*	**P**		**13 14 00.7**	**+0.2**
MBRY		**5.89**	**3**	*eP*	**P**		**13 14 04.2**	**+1.8**
MLYT		**5.91**	**3**	*eP*	**P**		**13 14 03.4**	**+0.8**
MLYT		**5.91**	**3**	*eP*	**P**		**13 14 03.4**	**+0.8**
MBGB		**5.92**	**3**	*iP*	**P**		**13 14 03.5**	**+0.7**
MBWH		**5.93**	**3**	*eP*	**P**		**13 14 03.4**	**+0.5**
MONV	**Montecano**	**7.41**	**280**	⇑*eP*	**P**		**13 14 23.9**	**+0.5**
ELOV	**Elorza**	**7.85**	**242**	*eP*	**P**		**13 14 28.7**	**-0.7**
STVI	**Saint Thomas**	**7.89**	**343**	⇑*eP*	**P**		**13 14 30.4**	**+0.5**
DABV	**Dabajuro**	**7.99**	**272**	*eP*	**P**		**13 14 30.6**	**-0.6**
HUMP	**Col San Antoni**	**8.00**	**337**	⇑*eP*	**P**		**13 14 30.3**	**-1.1**
SJG	**San Juan**	**8.09**	**335**	⇑*eP*	**P**		**13 14 32.0**	**-0.6**
SJG	**San Juan**	**8.09**	**335**	⇑*eP*	**P**		**13 14 31.9**	**-0.7**
SJG	**San Juan**	**8.09**	**335**	S	**S**		**13 15 52.7**	**-11**
SJG	**San Juan**	**8.09**	**335**	*eP*	**P**		**13 14 32.0**	**-0.6**
SJG				*eS*	**S**		**13 15 52.7**	**-11**
SJG	**San Juan**	**8.09**	**335**	P	**P**		**13 14 32.2**	**-0.4**
	3.3nm,0.3s,baz=144,slow=16,SNR=7.7								
SJG				S	**S**		**13 15 54.0**	**-9.1**
	6.6nm,0.3s,baz=116,slow=23,SNR=3.6								
SJG	**San Juan**	**8.09**	**335**	*ePn*	**P**		**13 14 31.0**	**-1.6**
SJG				*eSn*	**S**		**13 15 53.0**	**-10**
SJG				S	**S**		**13 15 54.0**	**-9.1**
ABV	**Anegada**	**8.09**	**348**	⇑*eP*	**P**		**13 14 33.3**	**+0.7**
SDV	**Santo Domingo**	**8.23**	**257**	P	**P**		**13 14 34.6**	**+0.1**
	3.2nm,0.3s,baz=87,slow=7.7,SNR=14								
SDV				S	**S**		**13 16 03.4**	**-3.1**	
	14nm,0.3s,baz=32,slow=11,SNR=8.1								
OBIP	**Obispado Ponce**	**8.23**	**332**	⇑*eP*	**P**		**13 14 33.7**	**-0.8**	
CELP	**Cerrillos**	**8.25**	**332**	⇑*eP*	**P**		**13 14 33.8**	**-0.9**	
CSB	**Colonia Sabana**	**8.25**	**335**	⇑*eP*	**P**		**13 14 35.5**	**+0.7**	
PORP	**Portuguez**	**8.26**	**332**	⇑*eP*	**P**		**13 14 34.1**	**-0.8**	
MGP	**Maguayo**	**8.44**	**329**	⇑*eP*	**P**		**13 14 37.2**	**-0.2**	
LRS	**Lares**	**8.56**	**331**	⇑*eP*	**P**		**13 14 39.9**	**+0.9**	
AOPR	**Arecibo Observ**	**8.56**	**332**	⇑*eP*	**P**		**13 14 39.1**	**+0.1**	
AOPR	**Arecibo Observ**	**8.56**	**332**	S	**S**		**13 16 05.5**	**-9.2**	
LSP	**Las Mesas**	**8.58**	**329**	⇑*eP*	**P**		**13 14 39.7**	**+0.5**	
SOCV	**Socops**	**8.60**	**254**	*eP*	**P**		**13 14 38.4**	**-1.1**	
IDE	**Isla Desecheo**	**8.96**	**328**	⇑*eP*	**P**		**13 14 45.2**	**+0.9**	
CAPV	**Capacho**	**10.10**	**254**	*eP*	**P**		**13 14 59.1**	**-0.9**	
OTAV	**Otavalo**	**19.00**	**238**	*eP*	**P**		**13 16 55.3**	**+2.2**	
	2.9nm,0.5s								
LPAZ	**La Paz**	**27.47**	**192**	P	**P**		**13 18 17.9**	**+2.2**	
	1.8nm,0.8s,mb3.6,baz=3.2,slow=11,SNR=8.1								
LPAZ				LR	LR		13 29 16.8		
	comp=Z,39nm,19.1s,baz=354,slow=36								
LPAZ	**La Paz**	**27.47**	**192**	*eP*	**P**		**13 18 17.1**	**+1.4**	
	1.2nm,0.8s,mb3.5								
LPAZ				LR	LR		13 29 16.8		
BDFB	**Brasilia**	**29.92**	**151**	P	**P**		**13 18 39.3**	**+1.6**	
	2.2nm,0.8s,mb3.9,baz=333,slow=17,SNR=4.0								
ELN	**Prospectdale**	**31.04**	**331**	*eP*	**P**		**13 18 47.6**	**+0.4**	
LVC	**Limon Verde**	**33.78**	**191**	P	**P**		**13 19 11.6**	**+0.4**	
	1.7nm,0.6s,mb4.1,baz=2.6,slow=3.5,SNR=7.5								
LVC	**Limon Verde**	**33.78**	**191**	*eP*	**P**		**13 19 11.5**	**+0.3**	
	1.8nm,0.6s,mb4.1								
HKT	**Hockley**	**36.40**	**307**	*eP*	**P**		**13 19 33.5**	**+0.2**	
	8.0nm,1.0s,mb4.6								
CPUP	**Villa Florida**	**37.23**	**172**	P	**P**		**13 19 40.8**	**+0.4**	
	1.6nm,0.5s,mb4.2,baz=16,slow=11,SNR=7.3								
CCM	**Cathedral Cave**	**37.42**	**321**	*eP*	**P**		**13 19 41.3**	**-0.5**	
	3.1nm,0.6s,mb4.4								
JCT	**Junction City**	**39.77**	**305**	*eP*	**P**		**13 20 00.7**	**-0.7**	
	9.3nm,0.6s,mb4.8								
LTX	**Lajitas**	**42.56**	**302**	*eP*	**P**		**13 20 24.6**	**+0.2**	
TXAR	**Lajitas Array**	**42.56**	**302**	P	**P**		**13 20 24.5**	**+0.1**	
	2.5nm,0.8s,mb4.0,baz=120,slow=10.0,SNR=37								
TXAR				PcP	PcP		13 22 15.4	-0.4	
	1.0nm,0.5s,baz=120,slow=5.4,SNR=12								
TXAR	**Lajitas Array**	**42.56**	**302**	P	**P**		**13 20 24.5**	**+0.1**	
TXAR				PcP	PcP		13 22 15.4	-0.4	
SCHQ	**Schefferville**	**44.07**	**356**	P	**P**		**13 20 37.0**	**+0.7**	
	4.2nm,0.5s,mb4.4,baz=175,slow=6.7,SNR=16								
SCHQ	**Schefferville**	**44.07**	**356**	P	**P**		**13 20 37.0**	**+0.7**	
MNTX	**Cornudas Mount**	**44.68**	**304**	*eP*	**P**		**13 20 40.4**	**-1.2**	
	2.3nm,0.7s,mb4.0								
SDCO	**Great Sand Dun**	**46.92**	**312**	*eP*	**P**		**13 20 58.5**	**-0.7**	
	2.7nm,0.7s,mb4.1								
ISCO	**Idaho Springs**	**47.84**	**315**	*eP*	**P**		**13 21 05.7**	**-0.7**	
PDAR	**Pinedale Array**	**51.77**	**317**	P	**P**		**13 21 35.1**	**-1.2**	
	3.9nm,0.5s,mb4.7,baz=113,slow=9.9,SNR=40								
PDAR				pP	pP		13 21 57.9	-1.4	
	1.3nm,0.7s,baz=112,slow=8.5,SNR=3.7								
HWUT	**Hardware Ranch**	**52.71**	**315**	*eP*	**P**		**13 21 42.0**	**-1.4**	
	2.8nm,0.8s,mb4.3								
NVAR	**Mina Array Bea**	**56.71**	**309**	P	**P**		**13 22 11.9**	**-0.5**	
	0.3nm,0.6s,mb3.5,baz=118,slow=9.3,SNR=4.0								
NVAR				PcP	PcP		13 23 07.0	-0.2	
	0.7nm,0.7s,baz=106,slow=6.1,SNR=4.1								
DBIC	**Dimbokro**	**57.06**	**89**	P	**P**		**13 22 15.3**	**0.0**	
	4.2nm,1.1s,mb4.4,baz=270,slow=4.0,SNR=3.6								
DBIC	**Dimbokro**	**57.06**	**89**	P	**P**		**13 22 15.3**	**0.0**	
NEW	**Newport**	**58.77**	**320**	P	**P**		**13 22 24.2**	**-2.4**	
	6.1nm,1.1s,mb4.5								
ESDC	**Sonseca Array**	**59.07**	**50**	P	**P**		**13 22 29.0**	**+0.2**	
	2.0nm,0.8s,mb4.2,baz=257,slow=7.1,SNR=16								
ESDC				PcP	PcP		13 23 17.1	+0.7	
	0.9nm,0.8s,baz=268,slow=4.6,SNR=5.0								
ETSF	**Etsaut**	**62.25**	**47**	*eP*	**P**		**13 22 50.9**	**+0.5**	
EPF	**Esparros**	**62.92**	**47**	*eP*	**P**		**13 22 55.4**	**+0.5**	
	7.0nm,0.5s,mb4.5								
GRR	**Gorron**	**63.28**	**41**	*eP*	**P**		**13 22 56.8**	**-0.4**	
	4.2nm,0.5s,mb4.3								
MFF	**Saint Martin d**	**63.32**	**43**	*eP*	**P**		**13 22 57.2**	**-0.3**	
SUMG	**Summit**	**63.41**	**8**	*eP*	**P**		**13 22 56.9**	**-0.8**	
LFF	**La Frestale**	**63.58**	**45**	*eP*	**P**		**13 22 59.0**	**-0.2**	
YKA	**Yellowknife Ar**	**63.58**	**336**	P	**P**		**13 22 56.1**	**-2.8**	
	0.5nm,0.5s,mb3.6,baz=107,slow=7.2,SNR=14								
YKA				pP	pP		13 23 19.7	-3.0	
	0.4nm,0.5s,baz=110,slow=7.3,SNR=4.1								
YKA				LR	LR		13 47 47.3		
	comp=Z,30nm,21.5s,baz=75,slow=33								
FLN	**La Foliniere**	**63.62**	**41**	*eP*	**P**		**13 22 59.1**	**-0.3**	
	8.1nm,0.5s,mb4.5								
LDF	**La Druitiere**	**63.81**	**41**	*eP*	**P**		**13 23 00.0**	**-0.6**	
RJF	**Les Rejaudoux**	**64.19**	**45**	*eP*	**P**		**13 23 02.9**	**-0.2**	
MTLF	**Montolieu**	**64.33**	**47**	*eP*	**P**		**13 23 03.8**	**-0.3**	
	5.0nm,0.7s,mb4.1								
CAF	**Calviac**	**64.50**	**45**	*eP*	**P**		**13 23 04.8**	**-0.4**	
	3.4nm,0.4s,mb4.2								
TCF	**Toulx Ste Croi**	**64.85**	**44**	*eP*	**P**		**13 23 07.0**	**-0.5**	
	2.3nm,0.5s,mb4.0								
SSF	**Saint Saulge**	**65.87**	**43**	*eP*	**P**		**13 23 13.6**	**-0.4**	
	1.6nm,0.5s,mb3.8								
SMF	**Signal de Mont**	**66.03**	**44**	*eP*	**P**		**13 23 14.7**	**-0.3**	
	2.6nm,0.5s,mb4.0								
LOR	**Lormes**	**66.15**	**43**	*eP*	**P**		**13 23 14.8**	**-0.9**	
	2.3nm,0.5s,mb4.0								
VIVF	**Saint-Julien-l**	**66.31**	**46**	*eP*	**P**		**13 23 17.2**	**+0.4**	
	1.6nm,0.4s,mb3.9								
BAIF	**Baives**	**66.89**	**40**	*eP*	**P**		**13 23 20.0**	**-0.4**	
MEZF	**Maizieres J'vi**	**67.15**	**42**	*eP*	**P**		**13 23 21.4**	**-0.6**	
	11nm,0.7s,mb4.5								
GIVF	**Givet**	**67.29**	**40**	*eP*	**P**		**13 23 22.3**	**-0.5**	
CABF	**La Chapelle**	**67.55**	**44**	*eP*	**P**		**13 23 24.2**	**-0.3**	
	4.7nm,0.7s,mb4.1								
LPL	**La Plagne**	**67.85**	**45**	*eP*	**P**		**13 23 27.1**	**+0.7**	
	4.2nm,0.6s,mb4.1								
LPG	**La Plagne**	**67.86**	**45**	*eP*	**P**		**13 23 27.3**	**+0.8**	
	4.6nm,0.8s,mb4.0								
HAU	**Haudompre**	**67.93**	**43**	*eP*	**P**		**13 23 26.6**	**-0.2**	
CDF	**Champ du Feu**	**68.60**	**42**	*eP*	**P**		**13 23 30.4**	**-0.6**	
	1.9nm,0.5s,mb3.9								
CLL	**Collm**	**72.60**	**40**	P	**P**		**13 23 56.1**	**+1.1**	
NB2	**NORSAR Subarra**	**72.75**	**29**	P	**P**		**13 23 56.6**	**+0.9**	
	7.8nm,0.9s,mb4.5,baz=263,slow=6.2								
NOA	**NORSAR Array B**	**72.75**	**29**	P	**P**		**13 23 56.6**	**+0.9**	
	4.2nm,0.8s,mb4.3,baz=262,slow=6.0,SNR=19								
NOA				pP	pP		13 24 18.8	-1.4	
	2.2nm,1.0s,baz=262,slow=6.0,SNR=3.6								
GERES	**GERESS Array B**	**72.86**	**42**	P	**P**		**13 23 56.7**	**0.0**	
	1.9nm,0.8s,mb4.0,baz=256,slow=5.5,SNR=14								
VRAC	**Vranov**	**74.80**	**42**	P	**P**		**13 24 08.8**	**+0.9**	
	2.1nm,0.6s,mb4.1,baz=286,slow=4.3,SNR=5.4								
ILAR	**Eielson Array**	**77.92**	**334**	P	**P**		**13 24 23.8**	**-1.3**	
	0.5nm,0.4s,mb3.6,baz=99,slow=4.0,SNR=19								
ARCES	**ARCESS Array B**	**79.28**	**21**	P	**P**

MOR8	**Moi Rana**	**7.40**	**147**	*e*P	**Pn**	**13 39 02.7**	**+0.2**
MOR8				*e*S	**Sn**	**13 40 19.0**	**-8.3**
MOR8				AML	AML	13 40 24.1	
	comp=Z,5.2nm,0.4s						
ARCES	**ARCESS Array B**	**7.49**	**104**	Pn	**Pn**	**13 39 03.4**	**-0.4**
	comp=Z,1.4nm,0.3s,baz=299,slow=12,SNR=60						
ARCES				LR	LR	13 42 10.3	
	comp=Z,55nm,21.7s,baz=280,slow=40						
ARCES	**ARCESS Array B**	**7.49**	**104**	Pn	**Pn**	**13 39 03.4**	**-0.4**
ARCES				LR	LR	13 42 10.3	
ARE0	**ARCESS Array S**	**7.49**	**104**	Pn	**Pn**	**13 39 03.5**	**-0.3**
KEV	**Kevo**	**7.80**	**101**	*e*P	**Pn**	**13 39 07.5**	**-0.7**
KEV				MPN		13 39 08.0	
	comp=Z,1.1nm,0.3s						
KEV				*e*S	**Sn**	**13 40 34.1**	**-3.4**
SCO	**Scoresbysund**	**8.61**	**268**	*i* P	**P**	**13 39 16.2**	**-3.2**
SGF	**Sodankyl**	**9.12**	**114**	*e*P	**P**	**13 39 26.9**	**+0.3**
SGF				MPN		13 39 31.5	
	comp=Z,1.0nm,0.3s						
MSF	**Maaselka**	**10.93**	**116**	*e*P	**P**	**13 39 51.7**	**+0.6**
MSF				MPN		13 39 53.2	
	comp=Z,1.4nm,0.4s						
KJN	**Kajaani**	**12.04**	**124**	*e*P	**P**	**13 40 06.3**	**+0.1**
HFS	**Hagfors**	**13.09**	**159**	Pn	**P**	**13 40 20.6**	**+0.3**
	comp=Z,0.0nm,0.3s,baz=349,slow=15,SNR=4.5						
JOF	**Joensuu**	**13.91**	**121**	*e*P	**P**	**13 40 29.9**	**-1.0**
FINES	**FINESS Array B**	**13.93**	**133**	Pn	**P**	**13 40 31.3**	**+0.2**
	comp=Z,0.2nm,0.3s,baz=333,slow=13,SNR=9.6						
FINES	**FINESS Array B**	**13.93**	**133**	Pn	**P**	**13 40 31.3**	**+0.2**
GERES	**GERESS Array B**	**24.26**	**165**	P	**P**	**13 42 34.0**	**+4.5**
	comp=Z,0.5nm,0.8s,mb3.0,slow=9.8,SNR=4.0						
YKA	**Yellowknife Ar**	**38.99**	**320**	LR	LR	14 01 26.8	
	comp=Z,43nm,18.8s,MS3.3,baz=20,slow=37						
MKAR	**Makanchi Array**	**42.55**	**83**	LR	LR	14 04 30.6	
	comp=Z,20nm,20.8s,MS3.0,baz=38,slow=39						
TXAR	**Lajitas Array**	**67.45**	**296**	LR	LR	14 17 12.0	
	comp=Z,40nm,21.0s,MS3.6,baz=175,slow=35						

MAN 30 13:49:25.4, 13.49N×120.18E, h30km, mb4.1, ML2.9, MS2.5, 8C, Mindoro

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
LUBP	**Lubang**	**0.25**	**14**↑	*e*P	Pb	13 49 33.3	+1.0
LUBP				*e*S	Sb	13 49 38.2	+1.3
PGP	**Puerto Galera**	**0.75**	**89**	*e*P	Pb	13 49 40.0	+0.1
PGP				*e*S	Sb	13 49 50.0	+0.2
TGY	**Tagaytay City**	**0.95**	**50**↑	*i* P	Pn	13 49 43.1	+0.2
TGY				*i* S	Sn	13 49 56.4	+0.9
NBP	**Mount Natib**	**1.27**	**10**↑	*e*P	Pn	13 49 46.8	-0.5
SJMP	**San Jose**	**1.37**	**138**↑	*e*P	Pn	13 49 49.1	+0.3
SJMP				*e*S	Sn	13 50 05.7	-0.3
QVPH	**Quezon City--P**	**1.44**	**36**↑	*i* P	Pn	13 49 47.2	-2.6
QVPH				*e*S	Sn	13 50 08.2	+0.5
BOAC	**Boac**	**1.62**	**91**↑	*e*P	Pn	13 49 53.3	+0.9
BOAC				*e*S	Sn	13 50 11.6	-0.8
ENPP	**El Nido**	**2.38**	**198**↑	*e*P	Pn	13 50 03.5	+0.1
ENPP				*e*S	Sn	13 50 30.7	-1.2
CUYO	**Cuyo Island**	**2.75**	**163**↑	*e*P	Pn	13 50 08.1	-0.4
CUYO				*e*S	Sn	13 50 38.7	-2.4

*NEIC **30** 13:52:19.8±3.9, 20.37S×178.11W, h441km±42km, mb3.9/5, Error ellipse: s-maj=24.7km s-min=17.3km az=45.0*
*IDC **30** 13:52:36.1±2.8, 20.66S×178.70W, h619km±35km, mb3.3/9, mb1 3.5/10, mb1mx3.3/17, Error ellipse: s-maj=24.5km s-min=18.9km az=172.0*
ISC 30 13:52:24.2±5.2, 20.5S±0.2×178.4W±0.2, h489km±55km, n20, σ0≤84/19, mb3.9/13, 2C, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**18.08**	**191**	P	**P**	**13 56 05.6**	**0.0**
	1.3nm,0.3s,baz=336,slow=9.1,SNR=6.9						
CTA	**Charters Tower**	**33.11**	**264**	P	**P**	**13 58 21.3**	**+1.2**
	6.4nm,0.8s,mb4.1,baz=91,slow=12,SNR=6.2						
CTA	**Charters Tower**	**33.11**	**264**	P	**P**	**13 58 21.3**	**+1.2**
CTAO	**Charters Tower**	**33.11**	**264**	*e*P	**P**	**13 58 21.2**	**+1.1**
	3.2nm,0.5s,mb4.0						
PMG	**Port Moresby**	**34.98**	**283**	P	**P**	**13 58 37.2**	**+1.3**
	28nm,1.0s,mb4.7,baz=302,slow=9.1,SNR=3.3						
STKA	**Stephens Creek**	**37.43**	**244**	P	**P**	**13 58 56.3**	**+0.4**
	2.0nm,0.8s,mb3.6,baz=92,slow=12,SNR=4.0						
ASAR	**Alice Springs**	**44.14**	**257**	P	**P**	**13 59 49.6**	**-0.4**
	4.2nm,0.5s,mb4.1,baz=94,slow=7.6,SNR=94						
ASAR				PcP	PcP	14 01 22.2	-2.8
	0.4nm,0.5s,baz=93,slow=6.0,SNR=4.3						
ASAR				S	**S**	**14 05 37.8**	**-9.3**
	2.3nm,1.0s,baz=92,slow=16,SNR=9.9						
WRAB	**Tennant Creek**	**44.21**	**262**	*e*P	**P**	**13 59 49.6**	**-1.0**
	3.8nm,0.5s,mb4.1						
WRA	**Warramunga Array**	**44.22**	**262**	P	**P**	**13 59 49.9**	**-0.8**
	3.0nm,0.6s,mb3.9,baz=97,slow=7.4,SNR=85						
FITZ	**Fitzroy Crossi**	**52.65**	**263**	P	**P**	**14 00 52.7**	**-1.4**
	10.0nm,1.3s,mb4.0,baz=105,slow=6.3,SNR=5.7						
SBA	**Scott Base**	**57.80**	**184**	*e*P	**P**	**14 01 29.2**	**-0.1**
	1.6nm,0.5s,mb3.6						
VNDA	**Vanda**	**57.83**	**185**	P	**P**	**14 01 28.6**	**-0.9**
	3.0nm,1.1s,mb3.5,baz=12,slow=5.6,SNR=10						
TPH	**Tonopah**	**81.82**	**44**	*e*P	**P**	**14 03 47.9**	**-4.6**
	1.2nm,0.5s,mb3.7						
VNA3	**Neumayer Olymp**	**88.12**	**176**↑	*i*	**P**	**14 04 23.0**	**+0.6**
COLA	**College**	**88.33**	**13**	*e*P	**P**	**14 04 22.9**	**-0.6**
	2.7nm,0.9s,mb4.0						
ILAR	**Eielson Array**	**88.44**	**13**	P	**P**	**14 04 23.7**	**-0.3**
	0.6nm,0.6s,mb3.5,baz=223,slow=5.6,SNR=12						
VNA2	**Neumayer--Watz**	**88.56**	**177**↑	*i*	**P**	**14 04 25.5**	**+1.1**
CMAR	**Chiang Mai Arr**	**89.77**	**290**	P	**P**	**14 04 32.2**	**+0.9**
	0.9nm,0.8s,mb3.6,baz=63,slow=2.0,SNR=6.6						
CLL	**Collm**	**148.02**	**346**	*e*PKP1	PKPdf	14 11 14.0	+4.5
CLL				*i* PKP2	PKPab	14 11 19.0	-1.2
GERES	**GERESS Array B**	**150.14**	**344**	PKPbc	PKPdf	14 11 18.5	+5.5
	0.6nm,0.8s,slow=1.0,SNR=3.6						

*NIED **30** 13:54:00, 27.70N×127.30E, h74km, Mw3.4 Best double couple: M₀1.49×10¹⁴ NP1:φs162°,δ67°,λ32°. NP2:φs59°, δ61°,λ153°.*
*JMA **30** 13:54:39.6±0.3, 27.72N×127.25E, h133km±5km, M3.9*
ISC 30 13:54:38.5±0.9, 27.6N±0.1×127.3E±0.1, h147km±16km, n13, σ0≤82/22, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
JIH	**Iheya**	**0.84**	**135**	P	**P**	**13 55 02.7**	**+0.8**
JIH				S	**S**	**13 55 19.8**	**-0.1**
JAGN	**Aguni-jima**	**1.03**	**183**	P	**P**	**13 55 04.1**	**+0.7**
JAGN				S	**S**	**13 55 22.4**	**-0.2**
JOW	**Kunigami**	**1.17**	**132**	P	**P**	**13 55 05.6**	**+0.8**
JOW				S	**S**	**13 55 24.4**	**-0.6**
JKE	**Kume jima 2**	**1.38**	**200**	P	**P**	**13 55 07.2**	**+0.4**
JKE				S	**S**	**13 55 29.1**	**+0.4**
NAH1	**Naha**	**1.46**	**166**	P	**P**	**13 55 09.0**	**+1.3**
NAH1				S	**S**	**13 55 29.9**	**-0.3**
JTK	**Tokunoshima**	**1.47**	**83**	P	**P**	**13 55 08.0**	**+0.2**
JTK				S	**S**	**13 55 29.5**	**-0.9**
JJT2	**Tamagusuku 2**	**1.54**	**165**	P	**P**	**13 55 10.1**	**+1.6**
JAM	**Amami Oshima**	**2.18**	**68**	P	**P**	**13 55 16.0**	**0.0**
JAM				*e*S	**S**	**13 55 43.4**	**-1.4**
JZK	**Kikaishima**	**2.46**	**73**	P	**P**	**13 55 20.0**	**+0.5**
JZK				*e*S	**S**	**13 55 50.8**	**-0.1**
JNN	**Nakanoshima**	**3.16**	**45**	P	**P**	**13 55 29.0**	**+0.5**
JNN				S	**S**	**13 56 07.1**	**+0.3**
JOGS	**Gusukube**	**3.32**	**211**	P	**P**	**13 55 29.7**	**-1.0**
JMJ	**Miyako jima 2**	**3.33**	**213**	P	**P**	**13 55 29.7**	**-1.1**
JTJ	**Tarama**	**3.78**	**219**	P	**P**	**13 55 34.9**	**-1.8**

*NEIC **30** 13:56:49.7±0.7, 12.43S×165.85E, h150km, mb4.4/1, Error ellipse: s-maj=24.9km s-min=16.3km az=126.0*
*IDC **30** 13:56:54.4±19.0, 12.46S×165.76E, h192km±180km, mb3.4/7, mb1 3.6/7, mb1mx3.5/13, MS3.7/7, Ms1 3.7/7, ms1mx3.4/20, Error ellipse: s-maj=50.0km s-min=33.3km az=56.0*
ISC 30 13:56:48.1±1.0, 12.5S±0.2×165.8E±0.2, h150km, n16, σ0≤40/10, mb3.8/9, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CTA	**Charters Tower**	**20.21**	**246**	LR	LR	14 08 20.7	
	comp=Z,143nm,18.6s,baz=52,slow=34						
STKA	**Stephens Creek**	**29.44**	**225**	LR	LR	14 14 06.9	
	comp=Z,164nm,19.5s,baz=27,slow=35						
WRA	**Warramunga Arr**	**31.07**	**252**	P	**P**	**14 02 54.7**	**+0.3**
	1.2nm,0.9s,mb3.6,baz=84,slow=8.3,SNR=4.0						
ASAR	**Alice Springs**	**32.22**	**245**	P	**P**	**14 03 04.0**	**-0.3**
	0.8nm,0.7s,mb3.5,baz=63,slow=9.7,SNR=4.1						
ASAR				LR	LR	14 14 34.1	
	comp=Z,55nm,19.0s,baz=27,slow=33						
RAR	**Rarotonga**	**33.99**	**109**	LR	LR	14 14 39.1	
	comp=Z,91nm,18.7s,baz=250,slow=31						
FITZ	**Fitzroy Crossi**	**39.09**	**257**	LR	LR	14 19 29.2	
	comp=Z,72nm,20.4s,baz=146,slow=35						
NWAO	**Narrogin (SRO)**	**48.71**	**237**	LR	LR	14 27 33.8	
	comp=Z,188nm,18.2s,baz=198,slow=38						
VNDA	**Vanda**	**65.03**	**181**	P	**P**	**14 07 14.0**	**0.0**
	1.1nm,0.9s,mb3.7,baz=352,slow=7.2,SNR=3.2						
CMAR	**Chiang Mai Arr**	**72.76**	**294**	P	**P**	**14 08 02.8**	**+0.5**
	0.6nm,0.8s,mb3.4,baz=130,slow=5.2,SNR=3.6						
ULN	**Ulaanbaatar**	**79.52**	**324**	*e*P	**P**	**14 08 39.5**	**-0.1**
	6.5nm,0.8s,mb4.3						
SONM	**Songino Array**	**79.88**	**324**	P	**P**	**14 08 41.0**	**-0.5**
	2.6nm,1.1s,mb3.8,baz=135,slow=5.2,SNR=13						
ILAR	**Eielson Array**	**84.88**	**18**	P	**P**	**14 09 07.5**	**+0.7**
	0.6nm,0.5s,mb3.5,baz=253,slow=4.7,SNR=17						
NVAR	**Mina Array Bea**	**86.92**	**50**	LR	LR	14 43 06.9	
	comp=Z,62nm,18.0s,baz=50,slow=32						
MKAR	**Makanchi Array**	**94.63**	**317**	P	**P**	**14 09 53.0**	**-0.1**
	5.7nm,0.7s,mb4.9,baz=94,slow=6.5,SNR=53						
YKA	**Yellowknife Ar**	**96.24**	**27**	P	**P**	**14 09 59.4**	**-0.5**
	0.1nm,0.5s,mb3.4,baz=255,slow=4.9,SNR=6.4						
YKA	**Yellowknife Ar**	**96.24**	**27**	P	**P**	**14 09 59.4**	**-0.5**

*WAR **30** 13:59:37.8, 50.21N×19.10E, ML2.3, Mining Induced PRU **30** 13:59:38.1, 50.27N×18.99E*
*NEIC **30** 13:59:39.4±1.9, 50.35N×18.86E, h5km, Error ellipse: s-maj=27.3km s-min=11.7km az=193.0*
ISC 30 13:59:36.5±0.7, 50.32N±0.05×18.98E±0.04, n13, σ1≤32/19, Poland

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OJC	**Ojcow**	**0.53**	**100**	*e*PG	**Pg**	**13 59 47.0**	**-0.1**
OJC				*i* SG	**Sg**	**13 59 53.2**	**-1.1**
OKC	**Ostrava-Krasne**	**0.72**	**228**	*e*SG	**Sg**	**14 00 01.1**	**+0.6**
MORC	**Moravsky Berou**	**1.07**	**240**	*e*Pg	**Pg**	**13 59 58.9**	**+1.0**
MORC				*e*Sg	**Sg**	**14 00 12.2**	**0.0**
NIE	**Niedzica**	**1.25**	**136**	*e*PG	**Pg**	**13 59 59.0**	**-2.4**
DPC	**Dobruska-Polom**	**1.70**	**272**	*e*PG	**Pg**	**14 00 08.8**	**-1.7**
DPC				*e*SG	**Sg**	**14 00 32.7**	**-0.5**
KSP	**Ksiaz**	**1.79**	**288**	*e*PG	**Pg**	**14 00 13.0**	**+0.7**
KSP				*e*SN	**Sn**	**14 00 36.0**	**+3.3**
VYHS	**Vyhne**	**1.83**	**183**	*e*PB	**Pb**	**14 00 12.0**	**+1.5**
VYHS				*e*SN	**Sn**	**14 00 32.5**	**-1.1**
UPC	**Upice**	**1.91**	**277**	*e*SG	**Sg**	**14 00 39.5**	**-0.5**
SMOL	**Smolenice**	**2.07**	**210**	*e*SB	**Sb**	**14 00 45.6**	**+4.6**
CRVS	**Cervenica-Dubn**	**2.15**	**130**	*e*PN	**Pn**	**14 00 16.8**	**+2.8**
CRVS				*e*SN	**Sn**	**14 00 43.0**	**+1.3**
PRU	**Pruhonice**	**2.87**	**265**	*e*SG	**Sg**	**14 01 10.3**	**-1.9**
	3.8nm,0.6s						
KHC	**Kasperske Hory**	**3.70**	**253**	*e*SG	**Sg**	**14 01 32.7**	**-7.0**
CLL	**Collm**	**3.92**	**287**	*e*SG	**Sg**	**14 01 48.0**	**+1.1**

*JMA **30** 14:06:49.5±0.6, 34.17N×141.64E, h24km, M3.0*
*IDC **30** 14:06:49.1±1.7, 34.01N×141.68E, mb3.6/4, mb1 3.8/5, mb1mx3.5/21, ML3.8/1, Error ellipse: s-maj=35.4km s-min=23.5km az=66.0*
ISC 30 14:06:47.3±2.2, 34.12N±0.05×141.74E±0.10, h8km±16km, n13, σ0≤86/16, mb3.5/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
BSO1	**Boso 1**	**0.83**	**310**	P	**Pb**	**14 07 03.3**	**-0.1**
BSO3	**Boso 3**	**1.22**	**304**	P	**Pb**	**14 07 10.4**	**+0.2**
BSO4	**Boso 4**	**1.45**	**307**	P	**Pn**	**14 07 13.6**	**-0.2**
CHOJ	**Chosi**	**1.74**	**336**	P	**Pn**	**14 07 17.6**	**-0.4**
JHJ2	**Mitsune**	**1.89**	**238**	P	**Pn**	**14 07 21.3**	**+1.1**
JHJ2				*e*S	**Sn**	**14 07 44.0**	**-0.5**
JHJ	**Hachijo jima 2**	**1.91**	**239**	Pn	**Pn**	**14 07 21.6**	**+1.1**
	28nm,0.3s,baz=253,slow=20,SNR=12						
JHJ				Sn	**Sn**	**14 07 45.1**	**+0.1**
	182nm,0.3s,baz=56,slow=23,SNR=14						
KTJJ	**Kamata 2**	**2.35**	**291**	P	**Pn**	**14 07 25.1**	**-1.7**
MAT	**Matsushiro**	**3.77**	**311**	P	**Pn**	**14 07 47.0**	**+0.1**
MAT				S	**Sn**	**14 08 31.4**	**-0.6**
CBIJ	**Chichi jima**	**7.01**	**177**	Pn	**Pn**	**14 08 31.5**	**-1.3**
	4.8nm,0.3s,baz=277,slow=21,SNR=4.3						
SONM	**Songino Array**	**29.71**	**308**	P	**P**	**14 12 57.5**	**+1.6**
	0.5nm,0.6s,mb3.5,baz=105,slow=8.4,SNR=5.1						
MKAR	**Makanchi Array**	**45.94**	**305**	P	**P**	**14 15 13.4**	**+1.2**
	0.4nm,0.6s,mb3.5,baz=94,slow=8.3,SNR=4.1						
WRA	**Warramunga Arr**	**54.22**	**189**	P	**P**	**14 16 15.6**	**-0.3**
	1.1nm,1.1s,mb3.7,baz=4.7,slow=7.4,SNR=19						
ASAR	**Alice Springs**	**57.85**	**188**	P	**P**	**14 16 42.4**	**-0.2**
	0.3nm,0.5s,mb3.6,baz=2.3,slow=5.6,SNR=6.2						

*MOS **30** 14:22:50.9±1.1, 54.13N×111.40E, h10km, mb4.0/1, Error ellipse: s-maj=17.2km s-min=8.7km az=79.7*
BYKL 30 14:22:51.2±0.2, 54.13N×111.44E, h7km±10km, 13C-9D, Lake Baykal region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
YLYR	**Ulyunkhan**	**0.77**	**348**↑	*i* Pg	Pg	14 23 04.5	-2.0
	200nm,0.8s						
YLYR				⇓ *i* Pg	Pg	14 23 04.5	-2.0
	41nm,0.8s						
YLYR				↑ *i* Pg	Pg	14 23 04.5	-2.0
	215nm,0.8s						
YLYR				*e*Sg	Sg	14 23 14.8	-2.0
YLYR				Pmax			
	266nm,0.8s						
YLYR				Smax			
	973nm,0.4s						
YLYR	**Ulyunkhan**	**0.77**	**348**	*e*PG	Pg	14 23 04.5	-2.0
YLYR				*e*		14 23 14.5	
YLYR				pmax	pmax		
	comp=Z,244nm,0.5s						
YLYR				smax			
	comp=E,967nm,0.4s						
SYVR	**Suvo**	**0.97**	**242**↑	*i* Pg	Pg	14 23 08.8	-1.9
SYVR				*e*Sg	Sg	14 23 22.4	-1.3
SYVR				*e*Sb	Sb	14 23 26.0	+3.1
SYVR				Pmax			
	comp=E,82nm,0.1s						
SYVR				max			
	comp=E,825nm,0.3s						
SYVR	**Suvo**	**0.97**	**242**	*e*PG	Pg	14 23 08.7	-2.0
SYVR				*e*		14 23 22.3	
SYVR				pmax	pmax		
	comp=Z,90nm,0.1s						
SYVR				smax			
	comp=N,483nm,0.1s						
KMO	**Kumora**	**1.77**	**356**↑	*i* Pg	Pg	14 23 22.7	-3.8
KMO				*i* Sg	Sg	14 23 46.6	-3.4
KMO				Pmax			
	comp=N,790nm,0.5s						
KMO				Smax			
	comp=N,2μm,0.8s						
KMO	**Kumora**	**1.77**	**356**↑	*i* PN	Pn	14 23 22.6	+0.1
KMO				*e*		14 23 23.4	
KMO				*e*S	Sn	14 23 45.6	+0.2
KMO				*e*		14 23 46.8	
KMO				pmax	pmax		
	comp=Z,825nm,0.4s						
KMO				smax			
	comp=N,2μm,1.1s						
UKT	**Uakit**	**1.86**	**42**⇓	*i* Pg	Pg	14 23 24.2	-4.1
	comp=N,32nm,0.8s						
UKT				⇓ *i* Pg	Pg	14 23 24.2	-4.1
	comp=N,36nm,0.8s						
UKT				⇓ *i* Pg	Pg	14 23 24.2	-4.1
	comp=N,36nm,0.8s						
UKT				*i*		14 23 26.6	
UKT				*e*Sg	Sg	14 23 49.6	-3.5
UKT				max			
	comp=N,287nm,0.6s						
UKT				Smax			
	comp=N,449nm,0.8s						
UKT	**Uakit**	**1.86**	**42**	*e*PN	Pn	14 23 24.4	+0.6
UKT				*e*		14 23 50.3	
UKT				pmax	pmax		
	comp=Z,202nm,0.4s						
UKT				smax			
	comp=E,221nm,0.2s						
NIZ	**Nizh Angarsk**	**1.98**	**327**↑	*i* Pg	Pg	14 23 26.4	-4.3
NIZ				*e*Sg	Sg	14 23 53.6	-3.5
NIZ				Pmax			
	comp=E,151nm,0.6s						
NIZ				Smax			
	comp=E,462nm,0.3s						
NIZ	**Nizh Angarsk**	**1.98**	**327**	*e*PN	Pn	14 23 26.9	+1.4
NIZ				*e*		14 23 53.4	
NIZ				pmax	pmax		
	comp=Z,137nm,0.6s						
NIZ				smax			
	comp=N,464nm,0.3s						
YOA	**Uoyan**	**2.01**	**5**	*e*Pn	Pn	14 23 25.2	-0.8
YOA				↑ *i* Pg	Pg	14 23 27.6	-3.8
YOA				*e*Sn	Sn	14 23 51.7	0.0
YOA				*e*Sg	Sg	14 23 55.0	-3.3
YOA				Pmax			
	comp=N,754nm,1.2s						
YOA				Smax			
	comp=N,3μm,0.7s						
YOA	**Uoyan**	**2.01**	**5**	⇓ *i* PN	Pn	14 23 27.6	+1.6
YOA				*e*		14 23 55.2	
YOA				pmax	pmax		
	comp=Z,436nm,0.4s						
YOA				smax			
	comp=N,3μm,0.7s						
OGRR	**Ongureny**	**2.33**	**259**↑	*i* Pn	Pn	14 23 30.3	-0.2
OGRR				↑ *i* Pg	Pg	14 23 32.1	-5.6
OGRR				*e*Sn	Sn	14 23 58.8	-0.9
OGRR				*e*Sg	Sg	14 24 02.6	-6.1
OGRR				Pmax			
	comp=N,57nm,0.4s						
OGRR				Smax			
	comp=N,464nm,1.1s						
OGRR	**Ongureny**	**2.33**	**259**	*e*PN	Pn	14 23 30.2	-0.3
OGRR				*e*		14 23 33.3	
OGRR				*e*		14 24 02.7	
OGRR				pmax	pmax		
	comp=Z,50nm,0.4s						
OGRR				smax			
	comp=E,289nm,0.8s						
SVKR	**Severomuysk**	**2.33**	**31**	*e*Pn	Pn	14 23 31.6	+1.0
SVKR				⇓ *i* Pg	Pg	14 23 33.7	-4.1
SVKR				*e*Sn	Sn	14 24 01.5	+1.7
SVKR				*e*Sg	Sg	14 24 06.3	-2.6
SVKR				Pmax			
	comp=E,106nm,0.5s						
SVKR				Smax			
	comp=E,1μm,0.9s						
SVKR	**Severomuysk**	**2.33**	**31**	*e*PN	Pn	14 23 31.5	+0.9
SVKR				*e*		14 23 33.7	
SVKR				*e*S	Sn	14 23 58.2	-1.6
CIT	**Chita**	**2.47**	**148**↑	*i* Pg	Pg	14 23 34.7	-5.8
	comp=E,39nm,0.4s						
CIT				⇓ *i* Pg	Pg	14 23 34.7	-5.8
	comp=E,7.0nm,0.4s						
CIT				⇓ *i* Pg	Pg	14 23 34.7	-5.8
	comp=E,49nm,0.4s						
CIT				*e*Sg	Sg	14 24 07.9	-5.5
CIT				Pmax			
	comp=E,166nm,1.5s						
CIT				Smax			
	comp=E,412nm,0.7s						
CIT	**Chita**	**2.47**	**148**	*e*PN	Pn	14 23 34.6	+2.1
CIT				*e*		14 24 07.8	
CIT				pmax	pmax		
	comp=Z,166nm,1.6s						
CIT				smax			
	comp=E,409nm,0.9s						
TRTB	**Turuntaevo**	**2.98**	**232**	*e*Pn	Pn	14 23 39.3	-0.5
TRTB				*e*Pg	Pg	14 23 44.0	-6.7
TRTB				*e*Sg	Sg	14 24 24.5	-5.9
TRTB				Pmax			
	comp=E,32nm,0.5s						
TRTB				Smax			
	comp=E,269nm,1.4s						
ZRHB	**Zarechye**	**3.02**	**240**	*e*Pg	Pg	14 23 46.8	-4.6
ZRHB				*e*Sn	Sn	14 24 13.8	-3.4
ZRHB				*e*Sg	Sg	14 24 25.4	-6.2
ZRHB				Pmax			
	comp=E,93nm,0.7s						
ZRHB				Smax			
	comp=E,649nm,0.8s						
TRG	**Tyrgan**	**3.34**	**248**	*e*Pn	Pn	14 23 44.0	-0.9
TRG				*e*Sn	Sn	14 24 22.4	-2.9
TRG				*e*Sg	Sg	14 24 33.6	-8.8
TRG				max			
	comp=E,13nm,0.6s						
TRG				Smax			
	comp=E,120nm,0.4s						
NLYR	**Nelyaty**	**3.40**	**44**↑	*i* Pn	Pn	14 23 45.2	-0.5
NLYR				*e*Pg	Pg	14 23 51.6	-7.4
NLYR				*e*Sg	Sg	14 24 37.0	-7.3
NLYR				Pmax			
	comp=E,50nm,0.5s						
NLYR				Smax			
	comp=E,354nm,1.3s						
KAB	**Kabansk**	**3.56**	**236**	*e*Sg	Sg	14 24 42.9	-6.8
KAB				Smax			
	comp=E,715nm,1.5s						
KAB	**Kabansk**	**3.56**	**236**	*e*PN	Pn	14 23 58.4	+10
KAB				*e*		14 24 44.5	
KAB				pmax	pmax		
	comp=Z,137nm,0.6s						
KAB				smax			
	comp=N,601nm,0.7s						
HRMR	**Khuramsha**	**3.70**	**229**	*e*Pn	Pn	14 23 50.0	0.0
HRMR				*e*Pg	Pg	14 23 57.9	-7.1
HRMR				*e*Sn	Sn	14 24 32.1	-2.2
HRMR				*e*Sg	Sg	14 24 45.7	-8.6
HRMR				Pmax			
	comp=N,83nm,0.4s						
HRMR				Smax			
	comp=N,1μm,0.8s						
BOD	**Bodaibo**	**3.97**	**20**	*e*Pn	Pn	14 23 51.8	-2.1
BOD				*e*Pg	Pg	14 24 01.4	-9.0
BOD				*e*Sn	Sn	14 24 36.0	-5.2
BOD				*e*Sg	Sg	14 24 52.7	-11
BOD				Pmax			
	comp=N,19nm,0.9s						
BOD				Smax			
	comp=N,76nm,1.2s						
**BT

TUP				pmax	pmax			
	comp=Z,8.0nm,0.3s							
TUP				smax				
	comp=N,183nm,0.9s							
TLY	**Talaya**	**5.32**	**246**	*e*Pn	Pn	14 24 11.9	-1.1	
TLY				*e*Pg	Pg	14 24 25.6	-12	
TLY				*e*Sn	Sn	14 25 10.3	-5.0	
TLY				*e*Sg	Sg	14 25 34.9	-13	
TLY				Pmax				
	comp=N,3.0nm,0.4s							
TLY				Smax				
	comp=N,36nm,1.0s							
TLY	**Talaya**	**5.32**	**246**	*e*PG	Pg	14 24 40.1	+2.7	
TLY				*i*		14 25 36.3		
TLY				pmax	pmax			
	comp=Z,16nm,0.6s							
TLY				smax				
	comp=E,91nm,1.1s							
ARS	**Arshan**	**5.87**	**252**	*e*Pg	Pg	14 24 36.1	-12	
ARS				*e*Sg	Sg	14 25 52.5	-14	
ARS				Pmax				
	comp=E,10.0nm,0.7s							
ARS				Smax				
	comp=E,121nm,0.8s							
ARS	**Arshan**	**5.87**	**252**	*e*PN	Pn	14 24 35.8	+15	
ARS				*e*		14 25 50.1		
ARS				pmax	pmax			
	comp=Z,7.0nm,0.6s							
ARS				smax				
	comp=E,108nm,0.8s							
ZAK	**Zakamensk**	**6.26**	**236**	*e*Pg	Pg	14 24 44.3	-12	
ZAK				*e*Sn	Sn	14 25 34.9	-4.0	
ZAK				*e*Sg	Sg	14 26 06.5	-13	
ZAK				Pmax				
	comp=E,5.0nm,1.2s							
ZAK				Smax				
	comp=E,31nm,1.1s							
MOY	**Mondy**	**6.79**	**253**	*e*Pn	Pn	14 24 32.4	-1.3	
MOY				*e*Pg	Pg	14 24 52.5	-14	
MOY				*e*Sn	Sn	14 25 44.9	-7.1	
MOY				*e*Sg	Sg	14 26 19.8	-17	
MOY				Pmax				
	comp=E,2.0nm,0.5s							
MOY				Smax				
	comp=E,30nm,1.6s							
ORL	**Orlik**	**7.15**	**262**	*e*Pn	Pn	14 24 37.0	-1.7	
ORL				*e*Pg	Pg	14 25 00.8	-13	
ORL				*e*Sn	Sn	14 25 53.6	-7.5	
ORL				*e*Sg	Sg	14 26 32.7	-16	
ORL				Pmax				
	comp=E,3.0nm,0.8s							
ORL				Smax				
	comp=E,47nm,1.7s							
ORL	**Orlik**	**7.15**	**262**	*e*PN	Pn	14 24 37.4	-1.3	
ORL				*e*		14 25 00.1		
ORL				*e*		14 26 32.6		
ORL				pmax	pmax			
	comp=Z,4.0nm,1.1s							
ORL				smax				
	comp=N,34nm,1.1s							
TNDR	**Tynda**	**7.78**	**77**	*e*Sg	Sg	14 26 52.9	-17	
CLNS	**Chul'man**	**8.11**	**65**	*e*Sg	Sg	14 27 01.8	-19	
TDJR	**Todzha**	**9.36**	**266**	*e*Sg	Sg	14 27 38.8	-24	
ARDR	**Aradan**	**10.88**	**269**	*e*Sg	Sx	14 28 27.7		

*ATH **30** 14:32:30.4, 37.50N×20.89E, h16km±3km, MD3.6/6*
*NEIC **30** 14:32:31.1, 37.50N×20.94E, h18km, MD3.6(ATH), After ATH.*
ISC 30 14:32:32.3±1.1, 37.56N±0.06×20.99E±0.09, h16km, n14, σ1§25/18, 1C, Ionian Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RLS	**Riolos of Patr**	**0.63**	**37**	*e*P	B	**Pb**		**14 32 43.9**	**-0.5**
RLS				*e*S	N	**Sn**		**14 32 54.9**	**-1.0**
VLS	**Valsamata**	**0.70**	**333**	⇑*i*P	n	**Pn**		**14 32 44.9**	**-2.4**
VLS				*e*Sn		**Sn**		**14 32 56.9**	**-0.7**
ITM	**Ithomi**	**0.83**	**117**	*e*PB	B	**Pb**		**14 32 46.7**	**-1.3**
ITM				*e*SN		**Sn**		**14 32 59.8**	**-1.4**
LKD	**Levkas**	**1.18**	**347**	*e*P		**Pb**		**14 32 53.2**	**-0.6**
EVR	**Evrytania**	**1.50**	**25**	*e*PB	B	**Pb**		**14 32 59.0**	**-0.3**
VLI	**Veliai**	**1.77**	**118**	*e*PN		**Pn**		**14 33 03.7**	**+1.1**
AGG	**Agios Georgios**	**1.80**	**35**	*e*P		**Pn**		**14 33 06.0**	**+2.9**
AGG				*e*S		**Sn**		**14 33 33.7**	**+8.0**
LKR	**Lokris**	**1.92**	**55**	*e*PN		**Pn**		**14 33 06.1**	**+1.3**
KYTH	**Kithira**	**2.08**	**127**	*e*PN		**Pn**		**14 33 08.0**	**+1.0**
MEV	**Metsovon**	**2.23**	**5**	*e*P		**Pn**		**14 33 11.3**	**+2.0**
PTL	**Penteli**	**2.33**	**77**	*e*PB	B	**Pb**		**14 33 12.0**	**-1.4**
NEO	**Neokhori**	**2.48**	**44**	*e*PN		**Pn**		**14 33 13.5**	**+0.8**
AOS	**Alonnisos**	**2.78**	**54**	*e*P		**Pn**		**14 33 17.9**	**+0.8**
FNA	**Florina**	**3.24**	**5**	*e*P		**Pn**		**14 33 24.4**	**+0.8**

*IDC **30** 14:42:47.9±5.8, 15.91S×176.17W, h363km±58km, mb3.5/11, mb1 3.8/11, mb1mx3.6/15, Error ellipse: s-maj=24.4km s-min=19.2km az=157.0*
*NEIC **30** 14:42:49.0±3.5, 15.85S×176.25W, h373km±35km, mb3.9/7, Error ellipse: s-maj=16.5km s-min=13.2km az=159.0*
ISC 30 14:42:40.7±0.5, 15.8S±0.1×176.2W±0.1, h300km, n56, σ0§61/22, mb4.0/17, 4D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**23.12**	**194**	P		**P**		**14 47 21.2**	**-0.9**
	1.9nm,0.3s,mb3.9,baz=20,slow=20,SNR=4.6								
CTA	**Charters Tower**	**35.92**	**258**	P		**P**		**14 49 15.2**	**+0.5**
	2.2nm,0.3s,mb4.1,baz=104,slow=11,SNR=7.7								
CTAO	**Charters Tower**	**35.92**	**258**	P		**P**		**14 49 16.3**	**+1.5**
	2.2nm,0.4s,mb4.0								
STKA	**Stephens Creek**	**41.49**	**240**	⇓*i*P		**P**		**14 50 01.1**	**+0.5**
	1.6nm,0.3s,mb3.7								
STKA	**Stephens Creek**	**41.49**	**240**	P		**P**		**14 50 01.3**	**+0.7**
	2.7nm,0.3s,mb3.9,baz=68,slow=7.2,SNR=19								
WB2	**Warramunga Arr**	**47.11**	**257**	⇓*i*P		**P**		**14 50 45.2**	**0.0**
WRAB	**Tennant Creek**	**47.11**	**257**	*e*P		**P**		**14 50 44.7**	**-0.5**
	15nm,0.4s,mb4.7								
WRA	**Warramunga Arr**	**47.12**	**257**	P		**P**		**14 50 44.8**	**-0.5**
	5.0nm,0.3s,mb4.3,baz=92,slow=7.9,SNR=296								
AS12	**Alice Springs**	**47.41**	**252**	⇓*i*P		**P**		**14 50 47.7**	**+0.2**
	86nm,0.8s,mb5.1								
ASAR	**Alice Springs**	**47.41**	**252**	P		**P**		**14 50 47.8**	**+0.3**
	104nm,0.7s,mb5.2,baz=90,slow=7.5,SNR=2510								
KAKA	**Kakadu**	**49.82**	**267**	⇓*i*P		**P**		**14 51 05.7**	**-0.2**
	17nm,0.9s,mb4.4								
SBA	**Scott Base**	**62.63**	**184**	*e*P		**P**		**14 52 36.1**	**+1.1**
	2.5nm,0.7s,mb4.0								
VNDA	**Vanda**	**62.70**	**185**	P		**P**		**14 52 35.1**	**-0.3**
	1.2nm,0.9s,mb3.5,baz=2.9,slow=9.4,SNR=3.8								
VNDA	**Vanda**	**62.70**	**185**	P		**P**		**14 52 35.5**	**0.0**
NVAR	**Mina Array Bea**	**76.46**	**43**	P		**P**		**14 53 59.8**	**+0.3**
	0.7nm,0.7s,mb3.4,baz=212,slow=8.0,SNR=6.8								
HLID	**Hailey**	**81.68**	**40**	*e*P		**P**		**14 54 27.5**	**+0.4**
	1.0nm,0.8s,mb3.6								
MNTX	**Cornudas Mount**	**82.65**	**54**	P		**P**		**14 54 32.5**	**+0.2**
	1.9nm,0.9s,mb3.9								
TXAR	**Lajitas Array**	**83.09**	**57**	P		**P**		**14 54 35.0**	**+0.5**
	0.7nm,0.9s,mb3.5,baz=214,slow=4.5,SNR=5.8								
ILAR	**Eielson Array**	**83.40**	**12**	P		**P**		**14 54 34.2**	**-1.1**
	0.9nm,0.5s,mb3.9,baz=213,slow=5.2,SNR=32								
PDAR	**Pinedale Array**	**84.39**	**43**	P		**P**		**14 54 40.5**	**-0.4**
	0.7nm,0.8s,mb3.5,baz=225,slow=2.1,SNR=4.9								
MAW	**Mawson**	**86.52**	**199**	P		**P**		**14 54 49.9**	**-0.7**
	3.9nm,0.8s,mb4.3,baz=112,slow=9.0,SNR=4.6								
CMAR	**Chiang Mai Arr**	**90.19**	**289**	P		**P**		**14 55 09.1**	**0.0**
	0.8nm,0.7s,mb3.7,baz=82,slow=3.4,SNR=6.7								
MKAR	**Makanchi Array**	**109.20**	**315**	PKiKP				15 00 34.3	
	0.4nm,0.6s,baz=153,slow=2.7,SNR=5.3								
ARCES	**ARCESS Array B**	**124.62**	**351**	PKP		PKPdf		15 01 03.6	-0.5
	1.9nm,0.5s,baz=28,slow=1.0,SNR=15								
JOF	**Joensuu**	**129.17**	**344**	*ep*		PKPdf		15 01 12.4	-0.6
	0.6nm,0.4s								
FINES	**FINESS Array B**	**131.73**	**346**	PKP		PKPdf		15 01 17.3	-0.6
	1.7nm,1.0s,slow=1.9,SNR=11								
KMBO	**Kilima Mbogo**	**142.91**	**246**	PKP		PKPdf		15 01 37.9	-1.7
	1.8nm,0.7s,baz=50,slow=3.3,SNR=11								
MOX	**Moxa**	**144.70**	**351**	*e*P		PKPdf		15 01 40.0	-1.5
BRTR	**Keskin Array B**	**144.73**	**318**	PKP		PKPdf		15 01 42.0	0.0
	6.1nm,1.0s,baz=107,slow=2.3,SNR=17								
PRU	**Pruhonice**	**144.82**	**348**	*e*PKP		PKPdf		15 01 42.2	+0.4
VYHS	**Vyhne**	**145.16**	**342**	*e*PKP		PKPdf		15 01 43.3	+0.9
KHC	**Kasperske Hory**	**145.83**	**349**	*e*PKP		PKPdf		15 01 45.0	+1.5
BAIF	**Baives**	**145.85**	**360**	*e*PKP1		PKPbc		15 01 45.0	+0.3
GERES	**GERESS Array B**	**146.08**	**348**	PKPbc		PKPbc		15 01 45.6	+0.3
	0.9nm,0.5s,baz=26,slow=3.7,SNR=13								
FLN	**La Foliniere**	**146.96**	**5**	*e*PKP1		PKPbc		15 01 47.7	+0.4
	4.2nm,0.4s								
ROSF	**Rostrenen**	**147.06**	**9**	*e*PKP1		PKPdf		15 01 47.7	+2.0
LDF	**La Druitiere**	**147.16**	**5**	*e*PKP1		PKPdf		15 01 48.1	+2.3
	2.2nm,0.5s								
SGMF	**Saint Gilles**	**147.24**	**8**	*e*PKP1		PKPdf		15 01 48.2	+2.2
GRR	**Gorron**	**147.30**	**6**	*e*PKP1		PKPdf		15 01 48.8	+2.7
	6.4nm,0.4s								
CDF	**Champ du Feu**	**147.38**	**356**	*e*PKP1		PKPdf		15 01 49.2	+3.0
	4.1nm,0.7s								
QUIF	**Quistinic**	**147.48**	**9**	*e*PKP1		PKPdf		15 01 48.7	+2.4
LOR	**Lormes**	**148.65**	**360**	*e*PKP1		PKPdf		15 01 52.5	+4.3
	6.4nm,0.8s								
SSF	**Saint Saulge**	**148.85**	**0**	*e*PKP1		PKPdf		15 01 53.1	+4.6
	4.4nm,0.6s								
AVF	**Avril sur Loir**	**149.12**	**1**	*e*PKP1		PKPdf		15 01 53.3	+4.4
	2.9nm,0.6s								
CABF	**La Chapelle**	**149.24**	**357**	*e*PKP1		PKPdf		15 01 54.6	+5.5
	15nm,0.9s								
BGF	**Bois d'Agland**	**149.34**	**1**	*e*PKP1		PKPdf		15 01 54.1	+4.8
TCF	**Toulx Ste Croi**	**149.60**	**2**	*e*PKP1		PKPdf		15 01 54.6	+4.9
LPL	**La Plagne**	**150.29**	**356**	*e*PKP1		PKPdf		15 01 57.5	+6.7
	6.6nm,0.7s								
LPG	**La Plagne**	**150.31**	**356**	*e*PKP1		PKPdf		15 01 57.6	+6.8
	6.9nm,0.7s								
LFF	**La Frestale**	**150.86**	**4**	*e*PKP1		PKPdf		15 01 57.7	+6.1
ORIF	**Oris-en-Rattie**	**150.94**	**357**	*e*PKP1		PKPdf		15 01 58.4	+6.6
CAF	**Calviac**	**150.95**	**3**	*e*PKP1		PKPdf		15 01 58.1	+6.3
VIVF	**Saint-Julien-l**	**151.05**	**359**	*e*PKP1		PKPdf		15 01 58.6	+6.7
MBDF	**Montbardon**	**151.08**	**356**	*e*PKP1		PKPdf		15 01 58.6	+6.6
SMRF	**Simiane la Rot**	**151.90**	**357**	*e*PKP1		PKPdf		15 02 00.8	+7.6
	3.7nm,0.7s								
PGF	**Pioggiola**	**152.99**	**352**	*e*PKP1		PKPdf		15 02 03.5	+8.7
	9.0nm,0.8s								

*TAP **30** 14:47:01.6, 23.74N×121.83E, h34km, ML3.3*
*JMA **30** 14:47:03.7±0.4, 23.93N×121.84E, h93km, M2.2*
ISC 30 14:47:02.9±2.5, 23.8N±0.4×121.8E±0.1, h73km±63km, n6, σ0§40/11, Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**1.31**	**59**	P		**P**		**14 47 26.1**	**+0.1**
YOJ				*e*S		**S**		**14 47 43.1**	**-0.1**
IRIF	**Iriomote-Funau**	**1.87**	**73**	P		**P**		**14 47 33.6**	**+0.2**
IRIF				*e*S		**S**		**14 47 56.2**	**+0.3**
HATJ	**Hateruma jima**	**1.88**	**81**	*e*S		**S**		**14 47 56.1**	**0.0**
JKRS	**Kuro-shima**	**2.09**	**77**	P		**P**		**14 47 37.1**	**+0.6**
JKRS				*e*S		**S**		**14 48 01.6**	**+0.2**
JIJ	**Ishigaki jima**	**2.24**	**75**	P		**P**		**14 47 37.9**	**-0.7**
JIJ				S		**S**		**14 48 04.3**	**-0.8**
JTJ	**Tarama**	**2.80**	**72**	P		**P**		**14 47 46.4**	**-0.2**
JTJ				*e*S		**S**		**14 48 19.7**	**+0.4**

CASC 30 15:22:43.5±2.1, 13.34N×90.23W, h28km±5km, MD3.8, ML4.0, 8C-6D, Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CUSS	**Cusmapa**	**0.63**	**25**	*e*P		Pb		15 22 56.2	+0.3
CUSS				*e*S		Sb		15 23 04.1	-0.4
SBLS	**San Blas**	**0.77**	**49**	⇑*e*P		Pb		15 22 58.6	+0.3
SBLS				*e*S		Sb		15 23 08.8	+0.5
RTR	**El Retiro**	**0.79**	**45**	⇑*i*P		Pb		15 22 59.0	+0.4
RTR				*e*S		Sb		15 23 10.1	+1.1
SNJE	**San Jose**	**0.80**	**49**	⇑*e*P		Pb		15 22 59.0	+0.2
SNJE				*e*S		Sb		15 23 13.3	+4.1
IXG	**Ixpaco**	**0.86**	**345**	⇓*e*P		Pb		15 22 59.4	-0.4
IXG				*e*S		Sb		15 23 11.8	+0.8
IXG				AML		AML		15 23 17.3	
	comp=N,25μm,0.4s								
RBDL	**Robledal**	**0.93**	**34**	⇑*e*P		Pn		15 23 01.1	+0.3
RBDL				*e*S		Sb		15 23 14.5	+1.5
BOQS	**Boqueron**	**1.00**	**67**	⇑*e*P		Pn		15 23 01.5	-0.2
BOQS				*e*S		Sb		15 23 16.2	+1.3
PICS	**Picacho**	**1.02**	**67**	⇓*e*P		Pn		15 23 02.1	-0.1
PICS				*e*S		Sn		15 23 18.6	+3.0
SNET	**Serv Nac Est T**	**1.03**	**70**	*e*P		Pn		15 23 02.1	0.0
SNET				*e*S		Sn		15 23 15.7	0.0
LFU	**La Fuente**	**1.16**	**69**	⇑*e*P		Pn		15 23 03.9	-0.1
LFU				*e*S		Sn		15 23 23.5	+4.5
LFRS	**El Faro**	**1.17**	**76**	⇓*e*P		Pn		15 23 03.6	-0.6
LFRS				*e*S		Sn		15 23 18.6	-0.7
LBRS	**Las Brisas**	**1.22**	**71**	⇑*e*P		Pn		15 23 04.5	-0.4
LBRS				*e*S		Sn		15 23 21.5	+1.0
NBG	**Las Nubes**	**1.25**	**355**	*e*P		Pn		15 23 06.2	+0.9
NBG				*e*S		Sn		15 23 24.0	+2.7
NBG				AML		AML		15 23 26.3	
	comp=N,9μm,0.5s								
LCBS	**La Ceiba**	**1.25**	**75**	*e*P		Pn		15 23 05.1	-0.3
LCBS				*e*S		Sn		15 23 19.6	-1.8
MTO2	**Montecristo 2**	**1.35**	**38**	⇑*e*P		Pn		15 23 06.7	0.0
MTO2				*e*S		Sn		15 23 25.5	+1.6
SNVI	**San Vicente**	**1.38**	**78**	*e*P		Pn		15 23 06.7	-0.4
SNVI				⇓*e*P				15 23 06.8	
SNVI				*e*S		Sn		15 23 24.2	-0.4
SNVI				*e*S		Sn		15 23 25.2	+0.6
TP2	**Tecpan 2**	**1.63**	**332**	*e*P		Pn		15 23 11.7	+0.9
TP2				*e*S		Sn		15 23 32.2	+1.1
TP2				AML		AML		15 23 35.5	
	comp=N,1μm,0.4s								
JAT	**Jato**	**1.68**	**306**	*e*P		Pn		15 23 10.9	-0.7
JAT				*e*S		Sn		15 23 32.4	+0.1
JAT				AML		AML		15 23 38.5	
	comp=E,1μm,0.3s								
BLLM	**Bellamira**	**1.94**	**87**	⇓*i*P		Pn		15 23 16.2	+1.0
BLLM				*e*S		Sn		15 23 38.5	-0.3
CNCH	**Conchagua**	**2.33**	**91**	⇓*e*P		Pn		15 23 19.9	-0.9
CNCH				*e*S		Sn		15 23 49.1	+0.4

*NAO **30** 15:23:39.9±1.3, 59.75N×24.49E, ML2.8*
*IDC **30** 15:23:39.7±1.5, 59.68N×24.78E, mb3.3/1, mb1 3.5/4, mb1mx3.2/20, ML3.8/2, Error ellipse: s-maj=17.7km s-min=8.4km az=157.0*
*HEL **30** 15:23:41.0±0.1, 59.77N×24.58E, ML2.5, ML2.6(UPP), ML2.8(NAO), Explosion*
*BER **30** 15:23:41.2±3.4, 59.77N×24.58E, ML2.8(NAO), Suspected explosion*
ISC 30 15:23:37.7±0.6, 59.73N±0.04×24.34E±0.07, n19, σ1§38/34, mb3.1/1, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
MEF	**Metsahovi**	**0.49**	**4**	*e*P		**Pg**		**15 23 48.9**	**+1.4**
MEF				*e*S		**Sg**		**15 23 55.2**	**+1.2**
VSU	**Vasula**	**1.77**	**135**	*e*P		**Pn**		**15 24 11.3**	**+1.5**
VSU				*e*S		**Sn**		**15 24 33.5**	**+0.1**
VSU	**Vasula**	**1.77**	**135**	Pn		**Pn**		**15 24 11.3**	**+1.5**
VSU				Lg				15 24 33.4	
VJF	**Virojoki**	**1.81**	**62**	*e*P		**Pn**		**15 24 10.5**	**+0.2**
VJF				*e*S		**Sn**		**15 24 32.5**	**-1.7**
FIA0	**FINESS Array S**	**1.93**	**26**	*e*PN		**Pn**		**15 24 13.7**	**+1.7**
FIA0				*e*S		**Sn**		**15 24 37.1**	**-0.1**
FIA0				MSG				15 24 40.3	
	comp=Z,61nm,0.3s								
FIA0	**FINESS Array S**	**1.93**	**26**	Pn		**Pn**		**15 24 13.6**	**+1.6**
	baz=196,slow=18								
FIA0				Lg				15 24 39.0	
	baz=199,slow=37								
FINES	**FINESS Array B**	**1.93**	**26**	Pn		**Pn**		**15 24 13.6**	**+1.6**
	comp=Z,14nm,0.3s,baz=201,slow=16,SNR=600								
FINES				Sn		**Sn**		**15 24 38.5**	**+1.3**
	comp=Z,31nm,0.3s,baz=203,slow=25,SNR=36								
KEF	**Keuruu**	**2.46**	**6**	*e*PB		**Pb**		**15 24 22.8**	**+0.2**
KEF				*e*SB		**Sb**		**15 24 54.0**	**+0.5**
KEF				MSG				15 24 57.3	
	comp=Z,24nm,0.3s								
SUF	**Sumiainen**	**3.13**	**16**	*e*P		**Pn**		**15 24 30.9**	**+1.7**
SUF				*e*SB		**Sb**		**15 25 11.8**	**-1.1**
SUF				MSG				15 25 20.1	
	comp=Z,8.4nm,0.3s								
HFS	**Hagfors**	**5.37**	**279**	Pn		**Pn**		**15 25 02.0**	**+1.1**
	baz=84,slow=14								
HFS				Sn		**Sn**		**15 26 05.3**	**+0.9**
	baz=100,slow=28								
HFS				Lg				15 26 27.9	
	baz=86,slow=37								
HFS	**Hagfors**	**5.37**	**279**	*e*P		**Pn**		**15 25 02.0**	**+1.1**
HFS				*e*S		**Sn**		**15 26 05.3**	**+0.9**
HFS				*e*SG		**Sg**		**15 26 27.9**	**-8.4**
HFS	**Hagfors**	**5.37**	**279**	Pn		**Pn**		**15 25 02.5**	**+1.5**
	comp=Z,0.2nm,0.3s,baz=83,slow=12,SNR=26								
HFS				Sn		**Sn**		**15 26 05.3**	**+0.9**
	comp=Z,0.4nm,0.3s,baz=90,slow=27,SNR=10								
HFS				Lg				15 26 35.8	
	comp=Z,0.9nm,0.3s,baz=93,slow=30,SNR=7.3								
NOA	**NORSAR Array B**	**6.64**	**287**	Pn		**Pn**		**15 25 18.8**	**-0.1**
	comp=Z,1.2nm,0.3s,baz=93,slow=12,SNR=9.2								
NOA				Sn		**Sn**		**15 26 33.7**	**-2.5**
	comp=Z,1.0nm,0.3s,baz=98,slow=14,SNR=4.8								
NOA				Lg				15 27 08.3	
	comp=Z,1.9nm,0.3s,baz=133,slow=26,SNR=6.2								
ARA0	**ARCESS Array S**	**9.86**	**2**	Pn		**P**		**15 26 00.7**	**-2.9**
	baz=174,slow=16								
ARA0				Sn		**Sn**		**15 27 46.3**	**-10**
	baz=188,slow=28								
ARA0				Lg				15 28 42.0	
	baz=187,slow=37								
ARA0	**ARCESS Array S**	**9.86**	**2**	*e*P		**P**		**15 26 00.7**	**-2.9**
ARA0				*e*S		**Sn**		**15 27 46.3**	**-10**
ARA0				*e*SG				15 28 42.0	
ARCES	**ARCESS Array B**	**9.86**	**2**	Pn		**P**		**15 26 00.8**	**-2.8**
	comp=Z,1.1nm,0.3s,baz=182,slow=13,SNR=54								
ARCES				Sn		**Sn**		**15 27 49.0**	**-7.2**
	comp=Z,0.4nm,0.3s,baz=184,slow=27,SNR=3.2								
ARCES				Lg				15 28 43.4	
	comp=Z,0.6nm,0.3s,baz=178,slow=30,SNR=3.9								
SPA0	**Spitsbergen Ar**	**18.72**	**355**	P		**P**		**15 27 58.0**	**-1.4**
	baz=110,slow=7.9								
SPA0	**Spitsbergen Ar**	**18.72**	**355**	*e*P		**P**		**15 27 58.0**	**-1.4**
MKAR	**Makanchi Array**	**35.79**	**85**	P		**P**		**15 30 38.8**	**-1.4**
	comp=Z,0.1nm,0.3s,mb3.1,baz=307,slow=7.3,SNR=5.6								

THR 30 15:48:46.8±1.4, 36.44N×51.46E, ML3.5, Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
THKV	**Tehran--Karaj**	**0.71**	**222**	*e*PG		Pg		15 48 58.4	-2.5
THKV				*e*SG		Sg		15 49 08.9	-1.5
THKV				AMP				15 49 10.1	
	comp=N,2μm,0.7s								
DAMV	**Damavand**	**0.91**	**153**	*e*PG		Pg		15 49 03.0	-1.9
DAMV				*e*SG		Sg		15 49 15.4	-1.7
SNGE	**Sanandaj**	**3.61**	**249**	*e*PN		Pn		15 49 42.8	-2.3

*IDC **30** 16:18:55.8±1.3, 9.45S×122.94E, mb3.9/3, mb1 4.1/6, mb1mx3.9/14, ML3.9/3, Error ellipse: s-maj=117.0km s-min=20.6km az=62.0*
*NEIC **30** 16:19:06.5±0.9, 9.79S×123.07E, h100km, mb4.5/1, Error ellipse: s-maj=32.9km s-min=12.0km az=55.0*
ISC 30 16:19:07.9±2.0, 10.02S±0.09×123.1E±0.1, h144km±21km, n11, σ1§18/18, mb3.7/3, Timor region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**8.40**	**163**	*e*P		**P**		**16 21 08.5**	**+0.8**
	3.0nm,0.3s								
FITZ				*e*S		**S**		**16 22 39.6**	**-1.5**
FITZ	**Fitzroy Crossi**	**8.40**	**163**	Pn		**P**		**16 21 07.6**	**-0.1**
	1.5nm,0.3s,baz=2.5,slow=12,SNR=34								
FITZ				Sn		**S**		**16 22 39.2**	**-2.0**
	5.1nm,0.3s,baz=184,slow=12,SNR=13								
KAKA	**Kakadu**	**9.47**	**107**	*e*P		**P**		**16 21 22.8**	**+0.9**
	36nm,1.4s								
KAKA				*e*S		**S**		**16 23 06.1**	**-0.7**
WRA	**Warramunga Arr**	**14.64**	**134**	Pn		**P**		**16 22 29.3**	**+0.1**
	0.6nm,0.3s,baz=307,slow=14,SNR=29								
WRA				Sn		**S**		**16 25 06.8**	**-1.1**
	1.6nm,0.3s,baz=303,slow=23,SNR=12								
WB2	**Warramunga Arr**	**14.65**	**134**	*e*P		**P**		**16 22 30.1**	**+0.7**
WB2				*e*S		**S**		**16 25 04.0**	**-4.1**
AS12	**Alice Springs**	**17.03**	**144**	*e*P		**P**		**16 23 03.1**	**+4.2**
	9.1nm,1.3s								
AS12				*e*S		**S**		**16 26 03.1**	**+1.2**
ASAR	**Alice Springs**	**17.03**	**144**	P		**P**		**16 23 02.0**	**+3.1**
	0.5nm,0.3s,baz=320,slow=12,SNR=72								
ASAR				S		**S**		**16 26 04.2**	**+2.3**
	0.6nm,0.3s,baz=319,slow=22,SNR=15								
STKA	**

YKA Yellowknife Ar 66.18 30 P P 16 53 38.9 -0.4
0.2nm,0.6s,mb3.3,baz=299,slow=6.5,SNR=3.8
YKA PcP PcP 16 54 07.9 -1.6
0.3nm,0.9s,baz=311,slow=5.7,SNR=3.6
NVAR Mina Array Bea 76.52 53 P P 16 54 43.8 +2.0
0.5nm,0.7s,mb3.5,baz=284,slow=4.2,SNR=3.6
BOZ Bozeman (W) 76.61 44 P P 16 54 42.5 +0.3
NOA NORSAR Array B 76.95 338 P P 16 54 43.6 -0.2
1.3nm,1.1s,mb3.8,baz=39,slow=5.7,SNR=3.3
RAR Rarotonga 78.26 126 LR LR 17 25 18.6
comp=Z,130nm,18.0s,MS4.3,baz=66,slow=32
GERES GERESS Array B 85.31 329 P P 16 55 28.3 +0.4
0.2nm,0.6s,mb3.4,slow=3.9,SNR=3.7

CSEM ***30*** *16:43:46.1, 16.82S×70.47W, h10km, mb5.6*
NEIC ***30*** *16:43:57.6±0.1, 17.24S×70.55W, mb5.3/147, Error ellipse: s-maj=4.6km s-min=3.1km az=220.0*
NEIC Felt [IV] at Ilo and Moquegua; felt at Arequipa. Felt [III] at Arica, Chile.
HRVD ***30*** *16:43:57.7±0.2, 17.42S×70.83W, h125km±1km, MW5.4/65, Centroid moment Tensor Solution. LP body waves: s60,c94;Mantle waves: s65,c126; Half duration: 1s3 Moment tensor: Scale 10^17 Nm; Mrr=0.80±.03; Mθθ=0.15±.04; Mφφ=0.65±.04; Mrθ=1.09±.02; Mrφ=-0.70±.03; Mθφ=-0.90±.03; Best double couple: M0=1.72×10^17 NP1: φs=166°,δ=20°, λ=-56°. NP2:φs=310°, δ=73°, λ=-102°. Principal axes: T 1.86, Plg28°, Azm50°; N -.27, Plg11°, Azm314°; P -1.59, Plg60°, Azm204°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
SYO ***30*** *16:43:57.6, 17.24S×70.55W, h109km, MB5.3*
LDG ***30*** *16:43:58.6±0.6, 16.72S×70.34W, h106km, Mb5.3/45, Ms4.2/8, Error ellipse: s-maj=34.6km s-min=17.6km az=21.0*
IDC ***30*** *16:43:58.5±0.5, 17.14S×70.47W, h114km±4km, mb5.1/20, mb1 5.2/23, mb1mx5.2/24, MS4.3/12, Ms1 4.3/12, ms1mx4.1/21, Error ellipse: s-maj=11.6km s-min=9.3km az=65.0*
BJI ***30*** *16:43:58.3, 17.20S×70.50W, h108km, mB5.2*
MOS ***30*** *16:44:01.5±1.3, 17.14S×70.54W, h145km, mb5.6/10, Error ellipse: s-maj=19.6km s-min=12.4km az=137.3*
ISC 30 16:43:56.4±0.2, 17.17S±0.03×70.60W±0.03, h109km, h109km±.6km; pP-P, n509, σ0.95/392, mb5.3/180, 39C-35D, Near coast of Peru

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LPAZ	**La Paz**	**2.52**	**70**	P	**P**	**16 44 42.5**	**+5.6**
	2μm,0.3s,baz=256,slow=9.5						
LPAZ				S	**S**	**16 45 15.5**	**+8.2**
	148nm,0.3s,baz=166,slow=24,SNR=8.1						
LPAZ	**La Paz**	**2.52**	**70**	*i*P	**P**	**16 44 42.4**	**+5.5**
LVC	**Limon Verde**	**5.64**	**164**	*e*P	**P**	**16 45 16.7**	**-2.5**
LVC				*i* S	**S**	**16 46 15.6**	**-7.6**
LVC	**Limon Verde**	**5.64**	**164**	P	**P**	**16 45 16.8**	**-2.3**
	253nm,0.3s,baz=341,slow=9.4,SNR=3390						
LVC				S	**S**	**16 46 15.5**	**-7.7**
	316nm,0.3s,baz=43,slow=23,SNR=17						
LVC				LR	LR	16 47 54.2	
	comp=Z,1μm,19.0s,baz=316,slow=42						
LVC	**Limon Verde**	**5.64**	**164**	*e*P	**P**	**16 45 16.7**	**-2.4**
	818nm,0.7s						
ANCH	**Antofagasta**	**6.48**	**178**	*e*P	**P**	**16 45 25.6**	**-5.1**
ANCH				*e*S	**S**	**16 46 32.1**	**-12**
TLL	**Tololo Astrono**	**12.94**	**181**	*e*P	**P**	**16 46 51.7**	**-5.5**
TLL				*e*S	**S**	**16 49 06.8**	**-12**
CMCH	**Combarbala**	**13.94**	**181**	*e*P	**P**	**16 47 04.4**	**-5.8**
CPUP	**Villa Florida**	**15.32**	**129**	P	**P**	**16 47 24.6**	**-3.3**
	0.7nm,0.3s,baz=320,slow=12,SNR=20						
CPUP				LR	LR	16 54 00.7	
	comp=Z,606nm,20.6s,baz=326,slow=40						
CPUP	**Villa Florida**	**15.32**	**129**	P	**P**	**16 47 24.6**	**-3.3**
CPUP				pmax	pmax		
	comp=Z,1.0nm,0.3s						
CPUP				MLR	MLR		
	comp=Z,606nm,20.6s						
MDZ	**Mendoza**	**15.72**	**175**	*e*P	**P**	**16 47 32.1**	**-0.8**
MDZ				*e*		16 48 03.2	
FCH	**Farellones**	**16.09**	**179**	*i*P	**P**	**16 47 35.8**	**-1.8**
CLCH	**Cerro Calan**	**16.16**	**180**	*i*P	**P**	**16 47 35.9**	**-2.5**
LMEL	**Las Melosas**	**16.61**	**179**	*i*P	**P**	**16 47 41.8**	**-2.1**
OTAV	**Otavalo**	**18.95**	**335**	*e*P	**P**	**16 48 13.3**	**+1.6**
	comp=Z,34nm,0.5s						
LPA	**La Plata**	**20.98**	**150**	*de*P	**P**	**16 48 31.0**	**-1.5**
LPA				*ep*P		16 48 53.0	
LPA				*es*P		16 49 03.0	
LPA				*es*P		16 49 11.0	
LPA				*e*S	**S**	**16 52 18.0**	**+3.3**
LPA				*e*S	**S**	**16 52 23.0**	**+8.3**
LPA				*e*S	**S**	**16 52 30.0**	**+15**
LPA				*es*S		16 52 57.0	
LPA				*es*S		16 53 02.0	
BDFB	**Brasilia**	**21.71**	**89**	P	**P**	**16 48 39.8**	**-0.1**
	comp=Z,234nm,0.6s,mb5.7,baz=264,slow=12,SNR=206						
BDFB				S	**S**	**16 52 31.1**	**+2.8**
	comp=Z,13nm,0.8s,baz=86,slow=19,SNR=1.5						
BDFB	**Brasilia**	**21.71**	**89**	P	**P**	**16 48 39.8**	**-0.1**
BDFB				S	**S**	**16 52 31.1**	**+2.8**
BDFB				pmax	pmax		
	comp=Z,234nm,0.6s						
BDFB				smax			
	comp=Z,13nm,0.8s						
TRQA	**Tornquist**	**22.14**	**162**	*e*P	**P**	**16 48 41.3**	**-2.6**
	comp=Z,4.3nm,0.8s						
ROSC	**El Rosal**	**22.20**	**350**	P	**P**	**16 48 44.7**	**0.0**
	comp=Z,22nm,0.6s,mb4.7,baz=147,slow=20,SNR=7.8						
ROSC				S	**S**	**16 52 44.2**	**+7.3**
	comp=Z,23nm,0.8s,baz=203,slow=20,SNR=6.9						
ROSC				LR	LR	16 58 05.6	
	comp=Z,1μm,21.2s,baz=211,slow=38						
SDV	**Santo Domingo**	**25.89**	**360**	P	**P**	**16 49 19.1**	**-1.0**
	comp=Z,49nm,0.9s,mb4.9,baz=214,slow=6.4,SNR=43						
PCRV	**Puerto La Cruz**	**27.80**	**13**	P	**P**	**16 49 36.5**	**-1.2**
	comp=Z,17nm,0.5s,mb4.8,baz=195,slow=3.0,SNR=13						
PCRV				S	**S**	**16 54 06.5**	**-4.4**
	comp=Z,12nm,0.9s,baz=156,slow=20,SNR=1.9						
PCRV				LR	LR	17 01 04.1	
	comp=Z,1μm,21.4s,baz=9.4,slow=37						
JTS	**JuntasAbangare**	**30.76**	**331**	*e*P	**P**	**16 50 04.3**	**+0.5**
	comp=Z,0.9nm,0.9s						
BIM	**Bigot**	**32.86**	**17**	*e*P	**P**	**16 50 20.6**	**-1.6**
MVM	**Montagne Vaucl**	**32.95**	**17**	*e*P	**P**	**16 50 20.7**	**-2.2**
FDF	**Fort de France**	**33.04**	**17**	*e*P	**P**	**16 50 20.7**	**-3.0**
CRM	**Caravelle**	**33.13**	**17**	*e*P	**P**	**16 50 23.6**	**-0.9**
BBL	**Barber's Block**	**33.71**	**16**	*e*P	**P**	**16 50 26.2**	**-3.3**
PAG	**Le Parnasse**	**34.14**	**15**	*e*P	**P**	**16 50 30.5**	**-2.7**
SEG	**Port Louis**	**34.54**	**16**	*e*P	**P**	**16 50 34.0**	**-2.6**
DEG	**La Desirade**	**34.58**	**16**	*e*P	**P**	**16 50 32.6**	**-4.2**
CAUB	**Caruaru**	**34.85**	**80**	*e*P	**P**	**16 50 37.9**	**-1.3**
CAUB				*i*		16 50 39.0	
CAUB				*i*		16 50 40.0	
CAUB				*e*		16 50 45.1	
CAUB				*e*		16 50 52.2	
SJG	**San Juan**	**35.33**	**7**	P	**P**	**16 50 40.6**	**-2.6**
	comp=Z,119nm,0.9s,mb5.7,baz=203,slow=3.3,SNR=30						
SJG				S	**S**	**16 56 03.6**	**-5.0**
	comp=Z,38nm,0.9s,baz=271,slow=22,SNR=17						
SJG	**San Juan**	**35.33**	**7**	P	**P**	**16 50 40.6**	**-2.6**
SJG				S	**S**	**16 56 03.6**	**-5.0**
SJG				pmax	pmax		
	comp=Z,119nm,1.0s						
SJG				smax			
	comp=Z,38nm,0.9s						
SJG	**San Juan**	**35.33**	**7**	*e*P	**P**	**16 50 40.5**	**-2.7**
	comp=Z,155nm,1.0s,mb5.8						
CPB	**Codrington**	**35.65**	**14**	*e*P	**P**	**16 50 42.1**	**-3.8**
EFI	**East Falkland**	**35.84**	**167**	*e*P	**P**	**16 50 45.2**	**-1.9**
	comp=Z,210nm,1.0s,mb6.0						
USHA	**Ushuaia**	**37.62**	**178**	P	**P**	**16 51 01.3**	**-0.8**
	comp=Z,64nm,0.8s,mb5.5,baz=354,slow=6.0,SNR=58						
USHA				PcP	PcP	16 53 17.2	-0.8
	comp=Z,15nm,0.7s,baz=349,slow=2.9,SNR=5.5						
CCCC	**Cccc**	**38.78**	**349**	*e*P	**P**	**16 51 10.8**	**-1.2**
MGV	**Manicaragua**	**40.11**	**346**	*i* P	**P**	**16 51 22.7**	**-0.3**
MGV				*i* S	**S**	**16 57 13.3**	**-7.6**
	comp=N,519nm,3.1s						
	comp=E,804nm,4.1s						
TEIG	**Tepich**	**41.02**	**334**	P	**P**	**16 51 31.4**	**+0.8**
	comp=E,98nm,0.9s,mb5.7,baz=154,slow=6.7,SNR=7.0						
SOR	**Soroa**	**41.53**	**343**	*e*P	**P**	**16 51 35.3**	**+0.5**
SOR				*e*S	**S**	**16 57 36.3**	**-5.7**
	comp=N,2μm,3.5s						
	comp=E,2μm,3.5s						
CMIG	**Matias Romero**	**41.61**	**324**	*i* P	**P**	**16 51 36.4**	**+0.9**
ZIIG	**Zihuatanejo**	**46.02**	**317**	*i* P	**P**	**16 52 11.7**	**+0.6**
DWPF	**Disney**	**46.22**	**347**	*e*P	**P**	**16 52 11.9**	**-0.6**
	comp=E,97nm,0.8s,mb5.6						
COLM	**Colima**	**48.61**	**317**	*i* P	**P**	**16 52 31.6**	**+0.3**
SFJM	**Santa Fe**	**49.13**	**318**	*i* P	**P**	**16 52 36.0**	**+0.7**
BBSR	**BB Station**	**49.58**	**7**	*i*eP	**P**	**16 52 36.3**	**-2.3**
	comp=E,48nm,0.8s,mb5.5						
ZAIG	**Zacatecas**	**50.53**	**321**	*i* P	**P**	**16 52 47.0**	**+1.0**
COW	**Cow Castle Cre**	**51.19**	**349**	*e*P	**P**	**16 52 50.0**	**-0.8**
JSC	**Jenkinsville**	**52.16**	**349**	*e*P	**P**	**16 52 57.3**	**-0.8**
LRAL	**Lakeview Retre**	**52.33**	**343**	*e*P	**P**	**16 52 57.9**	**-1.4**
	comp=E,29nm,0.9s,mb5.3						
LRAL				*ep*P	pP	16 53 21.2	-4.2
HKT	**Hockley**	**52.79**	**332**	*e*P	**P**	**16 53 02.6**	**-0.2**
	comp=E,20nm,1.0s,mb5.1						
HKT				*ep*P	pP	16 53 29.7	+0.8
MYNC	**Murphy**	**53.52**	**346**	*e*P	**P**	**16 53 07.6**	**-0.6**
	comp=E,84nm,0.8s,mb5.8						
MYNC				*ep*P	pP	16 53 34.2	-0.1
NATX	**Nacogdoches**	**53.85**	**335**	*e*P	**P**	**16 53 10.4**	**-0.2**
SWET	**Sewanee**	**54.09**	**344**	*e*P	**P**	**16 53 11.1**	**-1.2**
SWET				*ep*P	pP	16 53 37.7	-0.8
PLAL	**Pickwick Lake**	**54.46**	**342**	*e*P	**P**	**16 53 12.2**	**-2.8**
	comp=E,24nm,0.8s,mb5.3						
PLAL				*ep*P	pP	16 53 38.5	-2.8
ELN	**Prospectdale**	**54.95**	**350**	*e*P	**P**	**16 53 18.2**	**-0.3**
JCT	**Junction City**	**55.09**	**329**	*e*P	**P**	**16 53 18.2**	**-1.4**
	comp=E,31nm,0.6s,mb5.5						
FWV	**Forest Hill**	**55.30**	**350**	*e*P	**P**	**16 53 20.4**	**-0.6**
WVT	**Waverly**	**55.46**	**343**	*e*P	**P**	**16 53 20.0**	**-2.3**
	comp=E,20nm,0.3s,mb4.6						
UALR	**University of**	**55.64**	**338**	*e*P	**P**	**16 53 22.1**	**-1.5**
	comp=E,35nm,0.9s,mb5.4						
MIAR	**Mount Ida**	**55.88**	**337**	*e*P	**P**	**16 53 24.1**	**-1.2**
	comp=E,40nm,0.6s,mb5.6						
MIAR				*ep*P	pP	16 53 50.1	-1.6
UTMT	**University of**	**55.96**	**342**	*e*P	**P**	**16 53 24.0**	**-1.8**
UTMT				*ep*P	pP	16 53 52.9	+0.7
LTX	**Lajitas**	**56.19**	**325**	*i*P	**P**	**16 53 26.7**	**-0.8**
	comp=E,47nm,1.5s,mb5.3						
TXAR	**Lajitas Array**	**56.19**	**325**	P	**P**	**16 53 26.8**	**-0.8**
	comp=E,12nm,0.7s,mb5.0,baz=149,slow=9.1,SNR=101						
TXAR				*ep*	pP	16 53 53.3	-0.6
	comp=E,12nm,1.1s,baz=153,slow=5.6,SNR=3.8						
WCI	**Wyandotte Cave**	**57.04**	**345**	*e*P	**P**	**16 53 31.5**	**-2.0**
	comp=E,44nm,0.6s,mb5.7						
MVL	**Millersville**	**57.12**	**355**	*e*P	**P**	**16 53 32.7**	**-1.3**
USIN	**University of**	**57.14**	**344**	*e*P	**P**	**16 53 32.2**	**-1.9**
	comp=E,42nm,0.7s,mb5.6						
SIUC	**Southern Illin**	**57.34**	**342**	*e*P	**P**	**16 53 33.8**	**-1.7**
	comp=E,173nm,0.6s,mb6.3						
SIUC				*ep*P	pP	16 54 00.5	-1.5
SSPA	**Standing Stone**	**57.91**	**353**	*e*P	**P**	**16 53 38.2**	**-1.3**
	comp=E,31nm,1.1s,mb5.2						
FVM	**French Village**	**57.94**	**342**	*e*P	**P**	**16 53 38.0**	**-1.8**
	comp=E,80nm,0.6s,mb5.9						
BLO	**Bloomington**	**57.99**	**345**	*e*P	**P**	**16 53 38.2**	**-1.9**
	comp=E,49nm,0.6s,mb5.7						
WMOK	**Wichita Mounta**	**58.16**	**333**	*i*eP	**P**	**16 53 39.8**	**-1.5**
	comp=E,23nm,0.7s,mb5.3						
WMOK				*ep*P	pP	16 54 07.9	0.0
CCM	**Cathedral Cave**	**58.26**	**341**	*e*P	**P**	**16 53 39.7**	**-2.3**
	comp=E,74nm,1.1s,mb5.6						
ACSO	**Alum Creek Sta**	**58.26**	**349**	*e*P	**P**	**16 53 40.7**	**-1.3**
	comp=E,146nm,0.9s,mb6.0						
ACSO				*ep*P	pP	16 54 07.4	-1.1
ACSO				*es*P	sP	16 54 20.5	-0.2
SLM	**Saint Louis**	**58.49**	**342**	*e*P	**P**	**16 53 41.2**	**-2.3**
	comp=E,29nm,0.6s,mb5.5						
CLNB	**Carlsbad**	**58.59**	**327**	*e*P	**P**	**16 53 43.7**	**-0.6**
GDL2	**Guadalupe Moun**	**58.79**	**327**	*e*P	**P**	**16 53 45.5**	**-0.3**
MNTX	**Cornudas Mount**	**58.95**	**325**	*e*P	**P**	**16 53 45.2**	**-1.6**
	comp=E,28nm,1.1s,mb5.2						
ALLY	**Alegheny Colle**	**59.19**	**352**	*e*P	**P**	**16 53 47.4**	**-0.9**
CPRX	**Cap Rock**	**59.19**	**328**	*e*P	**P**	**16 53 47.9**	**-0.5**
WES	**Weston**	**59.26**	**359**	*e*P	**P**	**16 53 47.2**	**-1.6**
BINY	**Binghamton**	**59.28**	**355**	*i*P	**P**	**16 53 48.0**	**-1.0**
	comp=E,128nm,1.1s,mb5.9						
HRV	**Harvard--Oak R**	**59.38**	**359**	*i*eP	**P**	**16 53 48.2**	**-1.5**
	comp=E,69nm,0.9s,mb5.7						
ERPA	**Erie**	**59.62**	**352**	*i*P	**P**	**16 53 50.4**	**-1.0**
	comp=E,355nm,0.8s						
ACCN	**Adirondack Com**	**60.32**	**357**	*e*P	**P**	**16 53 54.1**	**-1.9**
AAM	**Ann Arbor**	**60.39**	**349**	*e*P	**P**	**16 53 55.5**	**-1.1**
	comp=E,44nm,0.8s,mb5.5						
HNH	**Hanover**	**60.59**	**359**	*e*P	**P**	**16 53 57.0**	**-1.0**
	comp=E,1.3nm,0.8s						
NCB	**Newcomb**	**60.93**	**357**	*e*P	**P**	**16 53 58.7**	**-1.5**
	comp=E,34nm,1.0s,mb5.3						
KSU1	**Kansas State U**	**61.04**	**337**	*e*P	**P**	**16 53 59.6**	**-1.4**
BNM	**Barren Site**	**61.50**	**326**	*e*P	**P**	**16 54 04.0**	**-0.2**
LPM	**Los Pinos Moun**	**61.62**	**326**	*e*P	**P**	**16 54 04.3**	**-0.8**
LPM				*ep*P	pP	16 54 32.2	+0.3
LENM	**Lemitar**	**61.70**	**326**	*e*P	**P**	**16 54 05.5**	**0.0**
LAZ	**Ladron**	**61.96**	**326**	*e*P	**P**	**16 54 07.2**	**-0.1**
MSNY	**Massena**	**61.99**	**357**	*e*P	**P**	**16 54 06.2**	**-1.0**
ANMO	**Albuquerque**	**62.03**	**327**	*di*P	**P**	**16 54 07.3**	**-0.4**
ANMO	**Albuquerque**	**62.03**	**327**	*e*P	**P**	**16 54 06.7**	**-1.0**
	comp=E,10nm,0.7s,mb5.0						
ANMO				*ep*P	pP	16 54 35.8	+1.2
JFWS	**Jewell Farm**	**62.46**	**344**	*e*P	**P**	**16 54 08.7**	**-1.8**
	comp=E,37nm,0.6s,mb5.6						
TUC	**Tucson**	**62.46**	**322**	*e*P	**P**	**16 54 10.2**	**-0.4**
	comp=E,11nm,0.8s,mb5.0						
SDCO	**Great Sand Dun**	**63.73**	**330**	*e*P	**P**	**16 54 18.9**	**0.0**
	comp=E,41nm,0.8s,mb5.3						
VNA3	**Neumayer Olymp**	**64.66**	**162**	*i*	**P**	**16 54 26.4**	**+2.0**
VNA3	**Neumayer Olymp**	**64.66**	**162**	*i*	pP	16 54 52.8	+1.3
VNA3	**Neumayer Olymp**	**64.66**	**162**	*i*	PcP	16 54 57.9	+0.8
VNA3	**Neumayer Olymp**	**64.66**	**162**		sP	16 55 05.1	+1.6
VNA1	**Neumayer--Stat**	**64.87**	**161**	*i*	**P**	**16 54 28.1**	**+2.3**
VNA1	**Neumayer--Stat**	**64.87**	**161**	*i*	pP	16 54 54.2	+1.3
VNA1	**Neumayer--Stat**	**64.87**	**161**	*i*	PcP	16 54 59.4	+1.5
VNA1	**Neumayer--Stat**	**64.87**	**161**	*i*	sP	16 55 06.4	+1.5
WUAZ	**Wupatki**	**65.11**	**324**	*e*P	**P**	**16 54 28.0**	**+0.1**
	comp=E,64nm,1.3s,mb5.3						
RW3	**Ridgway**	**65.20**	**328**	*e*P	**P**	**16 54 28.7**	**+0.3**
VNA2	**Neumayer--Watz**	**65.24**	**161**	*i*	pP	16 54 56.5	+1.2
VNA2	**Neumayer--Watz**	**65.24**	**161**	*i*	PcP	16 55 01.6	+2.2
VNA2	**Neumayer--Watz**	**65.24**	**161**	*i*	sP	16 55 08.1	+0.8
VNA2	**Neumayer--Watz**	**65.24**	**161**	*i*P	**P**	**16 54 30.1**	**+1.9**
VNA2				*e*		17 01 06.8	
VNA2				*e*		17 01 35.1	
VNA2				*e*		17 01 48.4	
ISCO	**Idaho Springs**	**65.41**	**331**	*i*eP	**P**	**16 54 29.9**	**+0.1**
	comp=E,26nm,0.9s,mb5.1						
ISCO				*ep*P	pP	16 54 56.6	-0.3
ISCO				PcP	PcP	16 55 00.8	+0.1
PV01	**Paradox Valley**	**65.56**	**328**	*e*P	**P**	**16 54 31.1**	**+0.3**
PV10	**Paradox Valley**	**65.98**	**328**	*e*P	**P**	**16 54 33.1**	**-0.3**
BAR	**Barrett**	**66.32**	**318**	*e*P	**P**	**16 54 35.9**	**+0.1**
PFO	**Pinyon Flat Ob**	**66.80**	**319**	*e*P	**P**	**16 54 39.2**	**+0.5**
	comp=E,110nm,1.5s,mb5.5						
SNAA	**Sanae**	**66.87**	**161**	*e*P	**P**	**16 54 37.0**	**-1.5**
NEN	**Nelson**	**67.20**	**322**	*i*eP	**P**	**16 54 41.4**	**+0.2**
SRU	**San Rafael**	**67.29**	**327**	*e*P	**P**	**16 54 41.3**	**-0.4**
MSU	**Marysvale**	**67.73**	**326**	*e*P	**P**	**16 54 45.1**	**+0.7**
MVU	**Marysvale**	**67.74**	**326**	*e*P	**P**	**16 54 45.1**	**+0.6**
	comp=E,89nm,1.6s,mb5.3						
MWC	**Mount Wilson**	**68.21**	**319**	*e*P	**P**	**16 54 48.0**	**+0.6**
MPU	**Maple Canyon**	**68.54**	**327**	*e*P	**P**	**16 54 49.5**	**+0.2**
EGOM	**La Gomera**	**68.55**	**50**	P	**P**	**16 54 48.8**	**-0.9**
	comp=E,254nm,0.8s,mb6.1						
DAU	**Daniels Canyon**	**68.64**	**328**	*e*P	**P**	**16 54 50.8**	**+0.8**
NLU	**North Lily Min**	**68.72**	**327**	*e*P	**P**	**16 54 50.9**	**+0.4**
LIC	**Lamto**	**68.81**	**76**	*i*P	**P**	**16 54 50.3**	**-1.2**
	comp=E,180nm,0.7s,mb5.7						
LIC				*e*R			
	comp=E,433nm,22.0s						
JLU	**Jordanelle**	**68.88**	**328**	*e*P	**P**	**16 54 51.5**	**0.0**
TIC	**Toumodi**	**68.96**	**76**	*i*P	**P**	**16 54 51.3**	**-1.1**
	comp=E,66nm,0.3s,mb6.0						
CTU	**Camp Tracy**	**69.10**	**328**	*e*P	**P**	**16 54 52.9**	**0.0**
KIC	**Kosan Boka**	**69.12**	**76**	*i*P	**P**	**16 54 52.6**	**-0.8**
	comp=E,789nm,0.7s						
DBIC	**Dimbokro**	**69.12**	**76**	P	**P**	**16 54 52.5**	**-0.9**
	comp=E,160nm,0.8s,mb5.9,baz=226,slow=6.4,SNR=193						
DBIC				*ep*	pP	16 55 19.7	-1.1
	comp=E,58nm,0.9s,baz=214,slow=6.4,SNR=3.0						
DBIC				S	S	17 03 48.5	-0.2
	comp=E,8.5nm,1.0s,baz=57,slow=16,SNR=6.8						
DBIC				LR	LR	17 23 35.5	
	comp=E,228nm,21.1s,baz=223,slow=34						
DBIC	**Dimbokro**	**69.12**	**76**	P	**P**	**16 54 52.6**	**-0.8**
DBIC				*PP	pP	16 55 19.7	-1.1
DBIC				S	S	17 03 48.5	-0.2
DBIC				pmax	pmax		
	comp=Z,160nm,0.8s						
DBIC				pmax	pmax		
	comp=Z,58nm,0.9s						
DBIC				smax			
	comp=Z,9.0nm,1.0s						
DBIC				MLR	MLR		
	comp=Z,228nm,21.1s						
DBIC	**Dimbokro**	**69.12**	**76**	P	**P**	**16 54 52.5**	**-0.9**
DBIC				pP	pP	16 55 19.7	-1.1
DBIC				S	S	17 03 48.5	-0.2
DBIC				LR	LR	17 23 35.5	
CML	**Cha da Macela**	**69.13**	**37**	*e*		16 54 53.1	
PRCH	**Ribeira Ch**	**69.14**	**37**	*e*		16 54 53.6	
PVER	**Pico Vermelho**	**69.17**	**37**	*e*	**P**	**16 54 53.0**	**-0.3**
LFA	**Lagoa do Fogo**	**69.17**	**37**	*e*	**P**	**16 54 53.0**	**-0.3**
MESC	**Monte Escuro**	**69.20**	**37**	*e*	**P**	**16 54 53.5**	**0.0**
PMAT	**Coroa da Mata**	**69.20**	**37**	*e*	**P**	**16 54 53.6**	**+0.1**
PCNG	**Congro**	**69.21**	**37**	*e*	**P**	**16 54 53.7**	**+0.1**
TCUT	**Toone Canyon**	**69.24**	**328**	*e*P	**P**	**16 54 54.0**	**+0.4**
DAC	**Darwin (Calif)**	**69.27**	**321**	*e*P	**P**	**16 54 54.3**	**+0.4**
	comp=Z,46nm,1.0s,mb5.3						
PDAR	**Pinedale Array**	**69.58**	**330**	P	**P**	**16 54 55.4**	**-0.3**
	comp=Z,9.1nm,0.7s,mb4.7,baz=127,slow=7.1,SNR=48						
PDAR				PKPPKP		17 22 59.6	
	comp=Z,1.0nm,0.9s,baz=346,slow=3.7,SNR=7.5						
BW06	**Boulder Array**	**69.58**	**330**	*e*P	**P**	**16 54 55.1**	**-0.6**
	comp=Z,11nm,0.8s,mb4.7						
HWUT	**Hardware Ranch**	**69.68**	**328**	*e*P	**P**	**16 54 55.7**	**-0.7**
	comp=Z,11nm,0.6s,mb4.9						
SPUT	**South Promonto**	**69.91**	**328**	*e*P	**P**	**16 54 58.0**	**+0.3**
TPH	**Tonopah**	**70.25**	**322**	*e*P	**P**	**16 55 00.7**	**+0.8**
	comp=Z,46nm,1.1s,mb5.2						
AHID	**Auburn Hatcher**	**70.32**	**329**	P	**P**	**16 55 00.2**	**0.0**
	comp=Z,20nm,0.9s,mb5.0						
HVU	**Hansel Valley**	**70.42**	**328**	*i*eP	**P**	**16 55 00.8**	**0.0**
MTUM	**Tungsten Hills**	**70.56**	**321**	*e*P	**P**	**16 55 02.2**	**+0.5**
ULM	**Lac du Bonnet**	**70.73**	**343**	P	**P**	**16 55 01.5**	**-1.0**
	comp=Z,33nm,0.6s,mb5.4,baz=152,slow=5.7,SNR=28						
ULM				S	S	17 04 02.9	-3.8
	comp=Z,8.2nm,0.9s,baz=46,slow=22,SNR=8.1						
ULM				LR	LR	17 26 14.0	
	comp=Z,170nm,20.9s,baz=191,slow=36						
ULM	**Lac du Bonnet**	**70.73**	**343**	*i*eP	**P**	**16 55 01.3**	**-1.2**
	comp=Z,37nm,0.6s,mb5.4						
ULM				*ep*P	pP	16 55 29.4	-0.7
KSWY	**Kelly School**	**70.74**	**330**	*e*P	**P**	**16 55 03.2**	**+0.5**
MNV	**Mina**	**71.03**	**322**	*e*P	**P**	**16 55 04.9**	**+0.3**
	comp=Z,32nm,1.2s,mb5.0						
NVAR	**Mina Array Bea**	**71.12**	**322**	P	**P**	**16 55 06.1**	**+1.1**
	comp=Z,16nm,0.9s,mb4.9,baz=136,slow=7.5,SNR=90						
NVAR				pP	pP	16 55 34.9	+2.2
	comp=Z,6.1nm,0.7s,baz=138,slow=7.1,SNR=4.3						
MAIT	**Maitri**	**71.39**	**160**	*e*P	**P**	**16 55 05.6**	**-0.5**
LRV	**Little Rabbit**	**71.47**	**319**	*e*P	**P**	**16 55 08.5**	**+1.3**
YMR	**Madison River**	**71.69**	**331**	*e*P	**P**	**16 55 09.8**	**+1.5**
EFAM	**Famara**	**71.78**	**51**	P	**P**	**16 55 09.2**	**0.0**
SCHQ	**Schefferville**	**71.78**	**2**	P	**P**	**16 55 08.1**	**-0.6**
	comp=Z,69nm,0.8s,mb5.5,baz=185,slow=4.3,SNR=46						
SCHQ				LR	LR	17 25 20.7	
	comp=Z,123nm,18.5s,baz=132,slow=35						
SCHQ	**Schefferville**	**71.78**	**2**	*e*P	**P**	**16 55 07.8**	**-0.9**
	comp=Z,103nm

EVO eR
comp=Z,308nm,22.5s
PGC Sidney 80.61 328 *e*P **P** **16 55 59.1 +0.7**
comp=Z,455nm,1.5s,mb6.1
VNDA Vanda 80.81 190 P **P** **16 55 59.5 +0.5**
comp=Z,23nm,0.9s,mb5.0,baz=132,slow=4.6,SNR=82
VNDA Vanda 80.81 190 P **P** **16 55 59.5 +0.5**
VNDA pmax pmax
comp=Z,23nm,0.9s
VNDA Vanda 80.81 190 *e*P **P** **16 55 59.4 +0.4**
comp=Z,16nm,1.0s,mb4.8
PTOM Tomar 80.90 44 *e*P **P** **16 56 00.6 +0.4**
comp=Z,141nm,1.4s,mb5.6
SYO Syowa Base 81.09 160 ⇑P **P** **16 56 00.1 -0.5**
SYO Syowa Base 81.09 160 ⇑PcP PcP 16 56 05.8 -1.1
SYO Syowa Base 81.09 160 ⇓pP pP 16 56 27.2 -1.6
SYO Syowa Base 81.09 160 ⇑sP sP 16 56 35.3 -5.5
SYO Syowa Base 81.09 160 ⇑*i*P **P** **16 56 00.1 -0.5**
SYO *e*PcP PcP 16 56 05.8 -1.1
SYO *i* pP pP 16 56 27.2 -1.6
SYO *e*sP sP 16 56 35.3 -5.5
EMIN Mina Concepcio 81.14 46 P **P** **16 56 01.7 +0.3**
comp=Z,158nm,1.4s,mb5.7
ESPR Espera 81.27 47 P **P** **16 56 02.4 +0.3**
comp=Z,136nm,1.4s,mb5.6
EBAD Badajoz 81.39 45 P **P** **16 56 03.0 +0.3**
comp=Z,108nm,1.2s,mb5.5
EBAD pP pP 16 56 32.0 +1.0
PCBR Castelo Branco 81.63 44 *e*P **P** **16 56 04.5 +0.5**
comp=Z,56nm,1.1s,mb5.3
PVIS Viseu 81.80 43 *e*P **P** **16 56 05.8 +1.0**
comp=Z,78nm,1.4s,mb5.3
MTE Manteigas 81.87 43 *e*P **P** **16 56 05.6 +0.4**
comp=Z,88nm,1.0s,mb5.5
MTE *e*S S 17 06 08.3 +0.3
MTE Manteigas 81.87 43⇑*e*P **P** **16 56 05.3 +0.1**
EZAM Zamans 82.03 41 P **P** **16 56 05.5 -0.5**
comp=Z,34nm,0.9s,mb5.2
SUR Sutherland 82.15 121 S S 17 06 11.9 +0.8
comp=Z,5.6nm,1.0s,baz=163,slow=4.2,SNR=3.3
PVRL Vila Real 82.20 43 *e*P **P** **16 56 07.7 +0.8**
comp=Z,81nm,1.3s,mb5.4
EMAZ Mazaricos 82.27 41 P **P** **16 56 06.6 -0.6**
ELOB Lobios 82.29 42 P **P** **16 56 08.2 +0.9**
comp=Z,41nm,0.7s,mb5.4
STS Santiago 82.51 41 P **P** **16 56 09.2 +0.8**
comp=Z,20nm,0.8s,mb5.0
ELOJ Sierra Loja 82.60 48 P **P** **16 56 10.0 +1.0**
comp=Z,36nm,0.8s,mb5.3
ELUQ Luque 82.71 47 P **P** **16 56 10.6 +1.0**
comp=Z,49nm,0.8s,mb5.4
EADA Adamuz 82.78 47 P **P** **16 56 10.4 +0.5**
comp=Z,67nm,0.9s,mb5.5
ERON Agron 82.78 48 P **P** **16 56 11.2 +1.3**
comp=Z,14nm,0.6s,mb5.0
PBRG Braganca 83.10 43 *e*P **P** **16 56 12.5 +1.0**
comp=Z,104nm,1.4s,mb5.5
ECAL Calabor 83.17 42 P **P** **16 56 11.6 -0.2**
comp=Z,286nm,1.9s,mb5.8
RAR Rarotonga 83.20 250 P **P** **16 56 12.4 0.0**
comp=Z,12nm,1.0s,mb4.7,baz=174,slow=6.0,SNR=4.7
RAR Rarotonga 83.20 250 P **P** **16 56 12.4 0.0**
RAR pmax pmax
comp=Z,12nm,1.0s
EPON Pontenova 83.61 41 P **P** **16 56 14.1 +0.1**
comp=Z,311nm,2.0s,mb5.8
EQES Quesada 83.66 47 P **P** **16 56 14.6 +0.2**
comp=Z,44nm,1.0s,mb5.2
ESLA Sonseca Array 83.91 45⇑*e*P **P** **16 56 16.5 +0.9**
comp=Z,15nm,1.0s,mb4.8
ESLA *e*pP pP 16 56 44.3 +0.3
ESDC Sonseca Array 83.91 45 P **P** **16 56 16.6 +1.0**
comp=Z,23nm,0.7s,mb5.1,baz=251,slow=5.1,SNR=122
ESDC pP pP 16 56 45.5 +1.5
comp=Z,22nm,0.9s,baz=248,slow=5.2,SNR=4.5
ESDC LR LR 17 31 53.8
comp=Z,139nm,18.2s,baz=220,slow=34
ESDC Sonseca Array 83.91 45 P **P** **16 56 16.6 +1.0**
ESDC pP pP 16 56 46.1 +2.1
EHUE Huescar 84.00 48 P **P** **16 56 16.4 +0.3**
comp=Z,27nm,0.7s,mb5.2
GUD Guadarrama 84.24 45 P **P** **16 56 18.5 +1.3**
comp=Z,20nm,0.6s,mb5.1
EVIA Vianos 84.44 47 P **P** **16 56 19.8 +1.5**
comp=Z,88nm,0.8s,mb5.6
EARI Arriondas 84.83 42 P **P** **16 56 20.7 +0.7**
comp=Z,225nm,2.1s,mb5.7
EMUR La Murta 84.97 48 P **P** **16 56 21.2 +0.3**
comp=Z,56nm,1.2s,mb5.4
CART Cartagena 85.03 48 *e*P **P** **16 56 20.3 -0.9**
ETOB Tobarra 85.11 47 P **P** **16 56 21.9 +0.3**
comp=Z,166nm,0.9s,mb6.0
ETOB pP pP 16 56 51.4 +1.3
ELAN Lanestosa 85.93 42 P **P** **16 56 25.4 -0.1**
comp=Z,124nm,1.3s,mb5.7
EBEN Beniarda 86.07 48 P **P** **16 56 25.8 -0.5**
comp=Z,129nm,1.6s,mb5.6
YKA Yellowknife Ar 86.60 341 P **P** **16 56 28.7 +0.4**
comp=Z,91nm,1.2s,mb5.6,baz=135,slow=4.7,SNR=452
YKA ScS ScS 17 06 59.9 -0.7
comp=Z,0.6nm,0.9s,baz=129,slow=9.0,SNR=5.8
YKA PKKPbc 17 14 23.3
comp=Z,0.2nm,0.7s,baz=315,slow=2.6,SNR=4.4
YKA LR LR 17 35 14.6
comp=Z,126nm,20.6s,baz=120,slow=36
YKA Yellowknife Ar 86.60 341 P **P** **16 56 28.7 +0.4**
YKA 17 06 59.9
YKA pmax pmax
comp=Z,91nm,1.2s
YKA pmax pmax
comp=Z,1.0nm,0.9s
YKA MLR MLR
comp=Z,126nm,20.6s
YKA Yellowknife Ar 86.60 341 P **P** **16 56 28.7 +0.4**
YKA ScS ScS 17 06 59.9 -0.7
YKA PKKPbc 17 14 23.3
YKA LR LR 17 35 14.6
EMOS Mosqueruela 86.61 46 P **P** **16 56 29.4 +0.5**
comp=Z,52nm,1.0s,mb5.4
EMOS pP pP 16 56 59.6 +2.2
YKW3 Yellowknife Ar 86.65 341 *e*P **P** **16 56 28.5 0.0**
ESAC San Caprasio 87.21 45 P **P** **16 56 32.3 +0.5**
comp=Z,29nm,0.5s,mb5.5
OSSF Osses 87.36 43⇑*e*P **P** **16 56 32.2 -0.2**
LARF Larrau 87.44 43⇑*e*P **P** **16 56 33.6 +0.8**
EBR Ebro Roquetas 87.47 46 *e*P **P** **16 56 34.0 +0.9**
ETSF Etsaut 87.66 44 *e*P **P** **16 56 34.8 +0.9**
comp=Z,42nm,0.7s,mb5.2
REYF Montagne du Re 87.84 44⇑*e*P **P** **16 56 35.7 +0.9**
EGRA Graus 87.94 45 P **P** **16 56 36.2 +0.9**
comp=Z,16nm,0.7s,mb5.2
VIEF Viey 88.04 44⇑*e*P **P** **16 56 36.6 +0.9**
EPOB Poblet 88.10 46 P **P** **16 56 35.7 -0.3**
comp=Z,30nm,1.1s,mb5.2
RESF Ens 88.22 44⇑*e*P **P** **16 56 37.5 +0.9**
LBTB Lobatse 88.29 116 *e*P **P** **16 56 37.5 +0.2**
comp=Z,15nm,1.3s,mb4.9
QUIF Quistinic 88.30 38 *e*P **P** **16 56 36.3 -0.5**
comp=Z,38nm,0.8s,mb5.2
EPF Esparros 88.31 44 *e*P **P** **16 56 37.6 +0.6**
comp=Z,40nm,0.9s,mb5.2
EPF *e*pP pP 16 57 06.0 +0.3
ROSF Rostrenen 88.43 38 *e*P **P** **16 56 37.2 -0.2**
comp=Z,64nm,0.9s,mb5.3
ROSF *e*pP pP 16 57 05.2 -0.9
MELF Melles 88.52 44 *e*P **P** **16 56 38.9 +0.9**
SALF Salau 88.76 44⇑*e*P **P** **16 56 40.3 +1.2**
MLS Moulis 88.78 44 *e*P **P** **16 56 39.3 +0.1**
SGMF Saint Gilles 88.82 38 *e*P **P** **16 56 38.6 -0.6**
comp=Z,51nm,1.3s,mb5.1
MAW Mawson 88.91 164 P **P** **16 56 39.5 +0.3**
comp=Z,72nm,0.8s,mb5.8,baz=220,slow=5.8,SNR=83
MAW pP pP 16 57 08.0 0.0
comp=Z,24nm,1.0s,baz=242,slow=8.3,SNR=3.3
MAW LR LR 17 35 10.2
comp=Z,191nm,18.4s,baz=248,slow=35
MAW Mawson 88.91 164 P **P** **16 56 39.5 +0.3**
MAW pmax pmax
comp=Z,72nm,0.8s
MAW pmax pmax
comp=Z,24nm,1.0s
MAW MLR MLR
comp=Z,191nm,18.4s
MAW Mawson 88.91 164 *e*P **P** **16 56 39.2 0.0**
comp=Z,99nm,0.9s,mb5.8
MAW *e*pP pP 16 57 07.4 -0.6

VALF Valcebollere 89.17 45⇑*e*P **P** **16 56 41.6 +0.6**
LPEF Le Peyrat 89.32 44⇑*e*P **P** **16 56 41.9 +0.2**
LFF La Frestale 89.39 42 *e*P **P** **16 56 41.2 -0.8**
comp=Z,48nm,0.8s,mb5.3
MFF Saint Martin d 89.54 41 *e*P **P** **16 56 42.5 -0.2**
comp=Z,42nm,0.9s,mb5.3
MFF *e*pP pP 16 57 10.6 -0.8
FILF Fillols 89.60 45⇑*e*P **P** **16 56 43.0 -0.1**
DLBC Dease Lake 89.65 333⇓*e*P **P** **16 56 43.6 +0.8**
MTLF Montolieu 89.69 44 *e*P **P** **16 56 43.4 -0.1**
comp=Z,50nm,0.9s,mb5.4
EJON La Jonquera 89.78 45 P **P** **16 56 43.8 -0.1**
comp=Z,21nm,1.0s,mb5.2
EJON pP pP 16 57 13.0 +0.3
SJAF Saint Jean de 89.79 45 *e*P **P** **16 56 43.9 -0.1**
GRR Gorron 89.89 39 *e*P **P** **16 56 43.7 -0.6**
comp=Z,73nm,0.8s,mb5.6
RJF Les Rejaudoux 90.04 42 *e*P **P** **16 56 44.8 -0.2**
comp=Z,26nm,0.9s,mb5.1
RJF *e*R
comp=Z,306nm,21.0s
CAF Calviac 90.23 43 *e*P **P** **16 56 46.0 0.0**
comp=Z,33nm,0.9s,mb5.2
FLN La Foliniere 90.28 38 *e*P **P** **16 56 45.7 -0.4**
comp=Z,91nm,1.0s,mb5.5
FLN *e*pP pP 16 57 13.9 -1.0
FLN *e*R
comp=Z,124nm,18.2s
LDF La Druitiere 90.42 39 *e*P **P** **16 56 46.3 -0.4**
comp=Z,67nm,0.8s,mb5.5
TCF Toulx Ste Croi 90.88 41 *e*P **P** **16 56 48.5 -0.5**
comp=Z,22nm,0.9s,mb5.0
TCF *e*pP pP 16 57 16.8 -1.0
LASF Ste Croix 91.07 44 *e*P **P** **16 56 50.2 +0.3**
comp=Z,34nm,0.9s,mb5.2
LBL Lubilhac 91.12 43 *e*P **P** **16 56 50.9 +0.7**
PYM Petit Puy Mans 91.18 42 *e*P **P** **16 56 50.7 +0.3**
AGO Saint Agoulin 91.38 42 *e*P **P** **16 56 51.1 -0.2**
BGF Bois d'Agland 91.40 41 *e*P **P** **16 56 51.1 -0.3**
comp=Z,43nm,0.8s,mb5.3
BGF *e*pP pP 16 57 19.3 -0.9
PLDF La Plantade 91.66 42 *e*P **P** **16 56 53.0 +0.4**
ESK Eskdalemuir 91.76 32 *e*P **P** **16 56 52.6 -0.2**
comp=Z,8.6nm,0.8s,mb5.0
AVF Avril sur Loir 91.81 41 *e*P **P** **16 56 52.7 -0.6**
comp=Z,13nm,0.8s,mb4.9
PRAF Pradon 91.84 45 *e*P **P** **16 56 54.2 +0.7**
VIVF Saint-Julien-l 91.91 43 *e*P **P** **16 56 54.2 +0.4**
comp=Z,41nm,1.1s,mb5.3
VIVF *e*pP pP 16 57 22.6 0.0
SSF Saint Saulge 92.01 41 *e*P **P** **16 56 53.4 -0.8**
comp=Z,18nm,1.0s,mb5.0
SUMG Summit 92.06 9 *e*P **P** **16 56 55.6 +1.8**
SUMG *e*pP pP 16 57 23.0 +0.3
SUMG *e*sP sP 16 57 35.7 +1.4
SMF Signal de Mont 92.06 42 *e*P **P** **16 56 54.2 -0.2**
comp=Z,43nm,0.9s,mb5.4
SMF *e*pP pP 16 57 22.5 -0.8
SMRF Simiane la Rot 92.18 45 *e*P **P** **16 56 55.8 +0.8**
comp=Z,51nm,1.2s,mb5.3
SMRF *e*pP pP 16 57 24.1 +0.2
LOR Lormes 92.31 41 *e*P **P** **16 56 54.9 -0.7**
comp=Z,15nm,0.9s,mb4.9
LOR *e*pP pP 16 57 23.2 -1.2
LOR *e*R
comp=Z,265nm,23.0s
TAVF Tavernes 92.37 45 *e*P **P** **16 56 56.2 +0.3**
LMR La Mourre 92.58 45 *e*P **P** **16 56 57.1 +0.2**
comp=Z,44nm,0.9s,mb5.5
ORIF Oris-en-Rattie 92.73 44 *e*P **P** **16 56 58.4 +0.9**
comp=Z,57nm,1.0s,mb5.6
ORIF *e*R
comp=Z,344nm,21.0s
FRF La Foret Royal 92.75 45 *e*P **P** **16 56 57.8 +0.1**
comp=Z,64nm,1.4s,mb5.5
MBDF Montbardon 93.25 44 *e*P **P** **16 57 00.6 +0.7**
comp=Z,34nm,1.0s,mb5.3
REVF Revere 93.31 45 *e*P **P** **16 57 00.8 +0.6**
BNI Bardonecchia 93.31 44 *e*P **P** **16 57 00.8 +0.6**
AURF Auriere 93.33 45 *e*P **P** **16 57 00.6 +0.3**
SBF Sospel 93.39 45 *e*P **P** **16 57 01.1 +0.5**
comp=Z,27nm,0.7s,mb5.4
SBF *e*pP pP 16 57 29.0 -0.5
AUTN L'Aution 93.44 45 *e*P **P** **16 57 01.3 +0.5**
CABF La Chapelle 93.48 42 *e*P **P** **16 57 00.9 0.0**
comp=Z,18nm,1.0s,mb5.1
LPL La Plagne 93.51 43 *e*P **P** **16 57 02.1 +1.0**
comp=Z,38nm,1.0s,mb5.4
LPL *e*pP pP 16 57 30.4 +0.5
LPG La Plagne 93.51 43 *e*P **P** **16 57 02.2 +1.1**
comp=Z,29nm,0.9s,mb5.3
SAOF Saorge 93.52 45 *e*P **P** **16 57 01.4 +0.3**
MEZF Maizieres J'vi 93.53 40 *e*P **P** **16 57 00.9 -0.2**
comp=Z,24nm,0.8s,mb5.3
MEZF *e*pP pP 16 57 29.1 -0.8
BAIF Baives 93.60 39 *e*P **P** **16 56 59.3 -2.1**
comp=Z,15nm,0.9s,mb5.0
GIVF Givet 93.98 39 *e*P **P** **16 57 03.1 0.0**
comp=Z,29nm,0.9s,mb5.3
THEF They Montfort 94.00 41 *e*P **P** **16 57 02.9 -0.3**
PGF Pioggiola 94.02 47 *e*P **P** **16 57 03.8 +0.4**
comp=Z,20nm,0.8s,mb5.2
HAU Haudompre 94.15 41 *e*P **P** **16 57 03.5 -0.4**
comp=Z,9.7nm,0.7s,mb5.0
HAU *e*R
comp=Z,118nm,23.0s
HINF Hinteralfeld 94.40 41 *e*P **P** **16 57 04.6 -0.4**
comp=Z,11nm,0.9s,mb4.9
WLF Walferdange 94.62 39 *e*P **P** **16 57 06.3 +0.3**
comp=Z,31nm,1.3s,mb5.6
ECH Echery 94.73 41 *e*P **P** **16 57 06.8 +0.2**
CDF Champ du Feu 94.88 41 *e*P **P** **16 57 07.0 -0.2**
comp=Z,19nm,1.0s,mb5.2
CDF *e*pP pP 16 57 35.3 -0.8
HGN Heimansgroeve 94.89 38 *e*P **P** **16 57 06.5 -0.7**
comp=Z,8.8nm,1.6s,mb4.9
HGN *ex* x 16 57 34.8
HGN *e*PP PP 17 00 50.5 -8.8
HGN *e*S SKS 17 07 37.1 +6.0
HGN *e*SS SS 17 14 43.1 +3.6
WLS Welschbruch 94.92 41 *e*P **P** **16 57 10.0 +2.6**
FELD Feldberg 95.15 42 *e*P **P** **16 57 09.4 +0.9**
SPAK Spaichingen 95.72 41 *e*P **P** **16 57 11.1 +0.1**
WTSB Winterswijk 95.82 37 *e*P **P** **16 57 11.4 0.0**
comp=Z,8.9nm,1.4s,mb5.0
WTSB *ex* x 16 57 40.9
CSNT Castellina Chi 95.91 46 *e*P **P** **16 57 13.0 +1.0**
URZ Urewera 96.00 227 LR LR 17 30 06.5
comp=Z,202nm,21.1s,baz=275,slow=29
WIT Witteveen 96.04 37 *e*P **P** **16 57 13.5 +1.1**
comp=Z,56nm,0.9s,mb6.0
DAVA Damuels 96.16 42⇑*i*P **P** **16 57 13.6 +0.6**
comp=Z,9.0nm,0.8s,mb5.2
STU Stuttgart 96.20 41 P **P** **16 57 12.6 -0.6**
BRMO Bormio 96.22 43 *e*P **P** **16 57 14.1 +0.7**
INK Inuvik 96.35 341 P **P** **16 57 13.5 +0.1**
comp=Z,13nm,1.2s,mb5.2,baz=167,slow=2.7,SNR=10.0
INK PKKP PKKP 17 13 58.5 +14
comp=Z,2.1nm,0.9s,baz=337,slow=1.1,SNR=5.1
INK Inuvik 96.35 341 P **P** **16 57 13.5 +0.1**
INK pmax pmax
comp=Z,13nm,1.2s
INK pmax pmax
comp=Z,2.0nm,0.9s
INK Inuvik 96.35 341 *e*P **P** **16 57 13.1 -0.3**
comp=Z,20nm,1.3s,mb5.4
MOTA Moosalm 96.97 43⇑*i*P **P** **16 57 16.9 +0.2**
comp=Z,5.5nm,1.0s,mb4.9
SQTA Sankt Quirin 97.00 43⇓*i*P **P** **16 57 17.4 +0.5**
comp=Z,9.0nm,0.9s,mb5.2
AQU L'Aquila 97.06 48 *e*P **P** **16 57 18.6 +1.3**
ARV Arcevia 97.06 47 *e*P **P** **16 57 16.6 -0.7**
SDI San Donato 97.16 49 *e*P **P** **16 57 18.3 +0.5**
WATA Walderalm 97.27 43⇑*i*P **P** **16 57 18.3 +0.2**
comp=Z,4.7nm,0.9s,mb4.9
WTTA Wattenberg 97.29 43⇑*i*P **P** **16 57 18.7 +0.5**
comp=Z,16nm,0.8s,mb5.5
RPZ Rata Peaks 97.30 220 LR LR 17 32 37.0
comp=Z,215nm,21.2s,baz=184,slow=30
GRF Grafenberg Arr 97.75 40 *e*P **P** **16 57 20.6 +0.4**
GRF pmax pmax
comp=Z,9.0nm,0.9s,mb5.3
FVI Forni Avoltri 97.84 44 *e*P **P** **16 57 21.1 +0.4**
ROBS Robic 98.23 44 *e*Pdiff **P** **16 57 30.2 +7.7**
MOX Moxa 98.27 40 *i* P **P** **16 57 23.3 +0.8**

MOX S Sx 17 07 56.0
MOX L 17 42 50.0
MOX Moxa 98.27 40 *e*P **P** **16 57 23.3 +0.8**
MOX LR LR
comp=Z,100nm,20.0s
MUD Monsted U'grnd 98.61 34⇓*i*P **P** **16 57 26.2 +2.2**
comp=Z,22nm,1.0s,mb5.7
MUD Monsted U'grnd 98.61 34⇓*i*P **P** **16 57 26.2 +2.2**
MUD pmax pmax
comp=Z,22nm,1.0s,mb5.6
NKC Novy Kostel 98.66 40 *e*PDIF **P** **16 57 24.6 +0.2**
NKC *e*pP pP 16 57 53.9 +0.6
NKC *e*S Sx 17 07 57.9
NKC *e*SP SP 17 10 09.1 -2.2
NKC L 17 34 50.0
comp=Z,0.2nm,19.1s
NKC Novy Kostel 98.66 40 *i* P **P** **16 57 24.6 +0.2**
NKC *e*SP SP 17 10 09.1 -2.2
NKC MLR MLR
comp=Z,200nm,19.1s
CEY Cerknica 98.70 45 *e*Pdiff **P** **16 57 32.5 +7.8**
KHC Kasperske Hory 99.06 41 *e*PDIF **P** **16 57 26.0 -0.2**
KHC *e*pP pP 16 57 55.3 +0.2
KHC *e*S SKS 17 07 58.1 +5.1
KHC *e*SP SP 17 10 15.0 -0.7
KHC L 17 32 40.0
comp=Z,0.1nm,16.4s
KHC Kasperske Hory 99.06 41 *e*P **P** **16 57 26.0 -0.2**
KHC *e*SP SP 17 10 15.0 -0.7
KHC MLR MLR
comp=Z,100nm,16.4s
GERES GERESS Array B 99.06 42 P **P** **16 57 26.2 0.0**
comp=Z,2.6nm,0.7s,mb4.9,baz=243,slow=3.0,SNR=27
GERES pP pP 16 57 54.7 -0.4
comp=Z,1.9nm,1.0s,baz=252,slow=4.2,SNR=2.3
GERES PKKPbc 17 13 51.1
comp=Z,0.5nm,0.7s,baz=45,slow=1.4,SNR=5.0
GERES GERESS Array B 99.06 42 P **P** **16 57 26.2 -0.1**
GERES pmax pmax
comp=Z,3.0nm,0.7s
GERES pmax pmax
comp=Z,2.0nm,1.0s
GERES pmax pmax
comp=Z,1.0nm,0.7s
MOA Molln 99.16 43⇑*i*P **P** **16 57 26.8 +0.1**
comp=Z,4.2nm,0.7s,mb5.1
BOJS Bojanci 99.20 45 *e*Pdiff **P** **16 57 28.1 +1.1**
CLL Collm 99.29 39 P **P** **16 57 27.7 +0.5**
comp=Z,logA/T=0.9,mb5.2
CLL *e**PP pP 16 57 56.0 -0.1
CLL *e* 16 58 19.0
CLL *e*SKS SKS 17 07 59.0 +4.9
CLL *e*S S 17 08 49.0 +3.3
CLL *e*SP SP 17 10 14.0 -4.0
CLL *e*PPS PPS 17 11 00.0 -19
PERS Pernice 99.40 44 *e*Pdiff **P** **16 57 27.5 -0.3**
ILAR Eielson Array 99.67 335 P **P** **16 57 28.1 -0.5**
comp=Z,0.9nm,0.7s,mb4.5,baz=150,slow=4.1,SNR=11
ILAR PKKPbc 17 13 48.5
comp=Z,0.5nm,0.7s,baz=296,slow=3.8,SNR=4.8
ILAR Eielson Array 99.67 335 P **P** **16 57 28.1 -0.5**
ILAR pmax pmax
comp=Z,1.0nm,0.7s
ILAR pmax pmax
comp=Z,1.0nm,0.7s
BRG Berggiesshubel 99.75 40 *e*P **P** **16 57 30.5 +1.2**
BRG pmax pmax
comp=Z,8.0nm,1.4s,mb5.2
BRG Berggiesshubel 99.75 40 *e*P **P** **16 57 30.5 +1.2**
comp=Z,7.9nm,1.4s,mb5.2
BRG *e*pP pP 16 57 59.6 +1.4
BRG *e* 17 22 00.9
ARSA Arzberg 99.83 44⇑*i*P **P** **16 57 29.7 -0.1**
comp=Z,2.7nm,0.7s,mb5.0
PRU Pruhonice 99.89 41 *e*PDIF **P** **16 57 29.5 -0.5**
PRU *e*pP pP 16 57 59.2 +0.3
PRU *e*S SKS 17 08 01.2 +4.2
PRU *e*SP SP 17 10 24.6 +0.6
PRU L 17 41 10.0
PVCC Panska Ves 100.05 40 *e*PDIF P 16 57 33.5 +2.9
PVCC *e*pP 16 57 59.2
PVCC L 17 35 00.0
comp=Z,0.1nm,20.0s
PVCC Panska Ves 100.05 40 *e*P P 16 57 33.5 +2.9
PVCC MLR MLR
comp=Z,100nm,20.0s
COLA College 100.10 335 *e*P P 16 57 30.0 -0.5
COLA MLR MLR
comp=Z,100nm,18.0s
UPC Upice 100.94 40 *e*PDIF P 16 57 37.8 +3.2
UPC *e*pP 16 58 04.6
NB2 NORSAR Subarra 100.95 29 P P 16 57 35.2 +0.7
comp=Z,6.9nm,1.2s,baz=258,slow=4.6
NB2 NORSAR Subarra 100.95 29 P P 16 57 35.2 +0.7
baz=258,slow=4.6
NOA NORSAR Array B 100.95 29 P P 16 57 35.3 +0.8
comp=Z,0.9nm,0.8s,baz=269,slow=7.2,SNR=3.9
NOA NORSAR Array B 100.95 29 P P 16 57 35.3 +0.8
NOA pmax pmax
comp=Z,1.0nm,0.8s
DPC Dobruska-Polom 101.09 41 *e*PDIF P 16 57 37.8 +2.5
DPC *e*pP 16 58 04.7
DPC *e*S SKS 17 08 06.9 +4.1
DPC *e*SP SP 17 10 36.2 -0.7
DPC L 17 37 50.0
comp=Z,0.1nm,16.1s
ZST Bratislava 101.09 43 PDIF P 16 57 33.5 -1.9
ZST Bratislava 101.09 43 *e*P P 16 57 33.5 -1.9
BSD Bornholm Skovb 101.37 36 *i* P P 16 57 37.4 +0.9
comp=Z,6.7nm,0.9s
BSD Bornholm Skovb 101.37 36 *i* P P 16 57 37.4 +0.9
BSD pmax pmax
comp=Z,7.0nm,0.9s
OKC Ostrava-Krasne 102.12 41 *e*S SKS 17 08 12.0 +4.2
OKC *e*SP SP 17 10 57.3 +10
OKC L 17 36 20.0
comp=Z,0.1nm,20.1s
VYHS Vyhne 102.28 43 PDIF Pdif 16 57 41.2 +0.5
VYHS Vyhne 102.28 43 *e*P Pdif 16 57 41.2 +0.5
CRVS Cervenica-Dubn 104.07 43 PDIF Pdif 16 57 47.2 -1.3
CRVS Cervenica-Dubn 104.07 43 *e*P Pdif 16 57 47.2 -1.3
ARCES ARCESS Array B 108.08 22 PKKPbc 17 13 24.1
comp=Z,2.4nm,0.7s,baz=89,slow=3.7,SNR=15
ARCES PKKPab 17 13 37.3
comp=Z,4.1nm,0.9s,baz=76,slow=3.7,SNR=5.1
BRTR Keskin Array B 111.60 54 PKKPbc 17 13 13.8
comp=Z,1.4nm,1.1s,baz=108,slow=3.9,SNR=4.4
BRTR PKKPab 17 13 23.1
comp=Z,1.5nm,0.8s,baz=117,slow=5.5,SNR=8.7
OBN Obninsk 113.72 37 *i* PKIKP PKPdf 17 02 23.2 +1.3
OBN *e**PP 17 03 04.6
OBN *e* 17 03 15.6
OBN pmax pmax
comp=Z,10.0nm,1.1s
MOS Moscow 114.27 36 *e*PKIKP PKPdf 17 02 33.5 +11
VRSR Storozhevoye 115.57 41 *e*PKIKP PKPdf 17 02 27.2 +1.6
VRSR pmax pmax
comp=Z,6.0nm,1.1s
VRSR pmax pmax
comp=N,1.0nm,0.8s
VRSR pmax pmax
comp=E,4.0nm,1.0s
BILL Bilibino 117.93 339 *i* PKIKP PKPdf 17 02 31.2 +1.5
BILL pmax pmax
comp=Z,4.0nm,1.1s
KIV Kislovodsk 118.41 49 *i* PKIKP PKPdf 17 02 32.5 +1.2
KIV *e* 17 03 54.6
KIV *e* 17 09 18.9
KIV pmax pmax
comp=Z,5.0nm,0.9s
KIV pmax pmax
comp=N,3.0nm,0.7s
ZEI Tsey 119.37 50 *e*PKIKP PKPdf 17 02 34.7 +1.6
STKA Stephens Creek 122.28 212⇓*i*P PKPdf 17 02 39.9 +0.8
comp=N,5.6nm,0.8s
STKA Stephens Creek 122.28 212 PKP PKPdf 17 02 40.1 +1.0
comp=N,6.1nm,0.7s,baz=73,slow=1.7,SNR=10
TIXI Tiksi 124.32 353⇑*i*PKIKP PKPdf 17 02 42.7 +0.6
TIXI pmax pmax
comp=Z,6.0nm,0.9s
TIXI Tiksi 124.32 353 *e*PKPdf PKPdf 17 02 42.6 +0.5
ARU Arti 125.40 32*d i*PKIKP PKPdf 17 02 45.8 +1.4
ARU pmax pmax
comp=Z,10.0nm,0.7s

ARU	**Arti**	**125.40**	**32**	*e*PKPdf	PKPdf	17 02 45.9	+1.5		
THR	**Tehran**	**125.41**	**58**	PKP	PKPdf	17 02 47.1	+2.1		
	comp=Z,1.0nm,0.4s,baz=173,slow=3.7,SNR=5.3								
THR				pPKP		17 03 18.4			
	comp=Z,3.1nm,0.9s,baz=217,slow=0.9,SNR=3.7								
THR	**Tehran**	**125.41**	**58**	PKIKP	PKPdf	17 02 47.2	+2.1		
THR				pmax	pmax				
	comp=Z,1.0nm,0.4s								
THR				pmax	pmax				
	comp=Z,3.0nm,0.9s								
CTA	**Charters Tower**	**128.23**	**226**⇑	*i*P	PKPdf	17 02 52.0	+1.1		
	comp=Z,12nm,1.4s								
CTA	**Charters Tower**	**128.23**	**226**	PKP	PKPdf	17 02 51.7	+0.8		
	comp=Z,9.4nm,0.8s,baz=258,slow=4.4,SNR=7.0								
CTA	**Charters Tower**	**128.23**	**226**	PKIKP	PKPdf	17 02 51.7	+0.8		
CTA				pmax	pmax				
	comp=Z,9.0nm,0.8s								
FORT	**Forrest**	**129.06**	**201**⇓	*i*P	PKPdf	17 02 52.9	+0.7		
	comp=Z,108nm,0.8s								
NWAO	**Narrogin (SRO)**	**129.63**	**189**	PKP	PKPdf	17 02 53.8	+0.5		
	comp=Z,31nm,1.1s,baz=218,slow=6.4,SNR=4.2								
NWAO	**Narrogin (SRO)**	**129.63**	**189**	PKIKP	PKPdf	17 02 53.8	+0.5		
NWAO				pmax	pmax				
	comp=Z,31nm,1.1s								
KLBR	**Kellerberrin**	**130.86**	**189**⇑	*i*P	PKPdf	17 02 56.2	+0.6		
	comp=Z,81nm,1.4s								
ZRNK	**Zerenda**	**132.39**	**32**	*e*P	PKPdf	17 03 00.1	+2.1		
AS12	**Alice Springs**	**132.88**	**211**	*e*P	PKPdf	17 02 59.8	+0.1		
	comp=Z,24nm,1.4s								
ASAR	**Alice Springs**	**132.88**	**211**	PKhKP		17 02 42.4			
	comp=Z,1.3nm,0.6s,baz=132,slow=2.6,SNR=21								
ASAR				PKP	PKPdf	17 03 00.1	+0.5		
	comp=Z,6.6nm,0.7s,baz=140,slow=2.0,SNR=23								
ASAR				pPKP		17 03 31.4			
	comp=Z,4.5nm,1.0s,baz=156,slow=2.4,SNR=2.6								
ASAR				SKPbc		17 06 17.6			
	comp=Z,3.7nm,0.9s,baz=146,slow=3.6,SNR=6.1								
ASAR				SKP		17 06 29.2			
	comp=Z,3.3nm,0.9s,baz=147,slow=7.0,SNR=6.4								
YAK	**Yakutsk**	**132.97**	**347**	*d i*PKIKP	PKPdf	17 02 59.6	+0.8		
YAK				pmax	pmax				
	comp=Z,37nm,1.8s								
YAK	**Yakutsk**	**132.97**	**347**	*e*PKPdf	PKPdf	17 02 59.4	+0.6		
BRVK	**Borovoye**	**132.97**	**31**	*e*PKPdf	PKPdf	17 03 00.0	+1.0		
BVAR	**Borovoye Array**	**133.04**	**31**	SKP		17 06 29.0			
	comp=Z,6.3nm,0.9s,baz=297,slow=3.3,SNR=7.2								
WB2	**Warramunga Arr**	**135.72**	**215**⇓	*i*P	PKPdf	17 03 05.8	+0.8		
WB2				*i* S		17 06 36.5			
WRA	**Warramunga Arr**	**135.73**	**215**	PKhKP		17 02 49.5			
	comp=Z,2.1nm,0.7s,baz=147,slow=2.7,SNR=21								
WRA				PKP	PKPdf	17 03 05.8	+0.8		
	comp=Z,20nm,0.8s,baz=163,slow=1.4,SNR=36								
WRA	**Warramunga Arr**	**135.73**	**215**	PKHKP		17 02 49.5			
WRA						17 03 05.8			
WRA				pmax	pmax				
	comp=Z,2.0nm,0.7s								
WRA				pmax	pmax				
	comp=Z,20nm,0.8s								
NVS	**Novosibirsk**	**137.36**	**22**	*i* PKIKP	PKPdf	17 03 08.1	+1.1		
NVS				pmax	pmax				
	comp=N,1.0nm,1.0s								
NVS				pmax	pmax				
	comp=E,4.0nm,1.0s								
NVS				pmax	pmax				
	comp=Z,24nm,1.0s								
KURK	**Kurchatov**	**138.47**	**29**	*e*PKPdf	PKPdf	17 03 09.6	+0.5		
BOD	**Bodaibo**	**139.27**	**356**	*e*PKHKP		17 03 01.2			
AAK	**Ala-Archa**	**140.95**	**42**	*e*PKPpre		17 03 12.4			
ASAJ	**Asahikawa**	**141.24**	**321**	PKhKP		17 03 09.2			
	comp=Z,5.7nm,0.8s,baz=120,slow=2.0,SNR=4.9								
ASAJ	**Asahikawa**	**141.24**	**321**	PKHKP		17 03 09.2			
ASAJ				pmax	pmax				
	comp=Z,6.0nm,0.9s								
FITZ	**Fitzroy Crossi**	**141.48**	**205**	*e*P	PKPdf	17 03 09.9	-5.6		
	comp=Z,16nm,0.8s								
FITZ	**Fitzroy Crossi**	**141.48**	**205**	PKhKP		17 03 09.5			
	comp=Z,17nm,0.9s,baz=176,slow=9.6,SNR=14								
KAKA	**Kakadu**	**142.62**	**219**⇓	*i*P	PKPdf	17 03 13.0	-4.6		
	comp=Z,33nm,0.9s								
MKAR	**Makanchi Array**	**142.93**	**31**	PKhKP		17 03 15.4			
	comp=Z,9.0nm,0.8s,baz=28,slow=2.2,SNR=24								
MKAR				PKP	PKPdf	17 03 19.4	+2.3		
	comp=Z,7.3nm,0.7s,baz=339,slow=2.2,SNR=32								
MKAR	**Makanchi Array**	**142.93**	**31**	PKIKP	PKPdf	17 03 15.4	-1.7		
MKAR				pmax	pmax				
	comp=Z,9.0nm,0.8s								
MKAR				pmax	pmax				
	comp=Z,7.0nm,0.7s								
MKAR	**Makanchi Array**	**142.93**	**31**	PKP	PKPdf	17 03 15.4	-1.8		
MKAR				PKP	PKPdf	17 03 19.4	+2.3		
KLR	**Kul'dur**	**143.25**	**335**	*e*PKHKP		17 03 15.2			
KSH	**Kashi**	**143.43**	**46**	*e*PKP	PKPdf	17 03 16.0	-2.2		
KSH				*e*PKS	PKS	17 06 50.0	-2.9		
KSH				*e*SKS	SKS	17 10 14.0	-1.0		
KSH				PP	PP				
	comp=Z,140nm,5.6s								
KSH				LR	LR				
	comp=N,180nm,5.1s								
KSH				LR	LR				
	comp=E,130nm,7.2s								
IRK	**Irkutsk**	**144.77**	**5**	*e*PKIKP	PKPdf	17 03 21.2	+1.0		
MOY	**Mondy**	**144.94**	**9**	*e*PKIKP	PKPdf	17 03 23.0	+2.5		
TLY	**Talaya**	**145.27**	**6**	*i* PKIKP	PKPdf	17 03 23.5	+2.4		
TLY				*e*		17 06 40.7			
TLY				*e*SS	SS	17 25 24.8	+0.1		
TLY				pmax	pmax				
	comp=Z,580nm,0.9s								
GUMO	**Guam**	**145.65**	**269**	*e*PKPdf	PKPdf	17 03 23.6	+0.8		
POO	**Poona**	**146.16**	**82**	*e*PKP	PKPdf	17 03 25.5	+1.9		
ZAK	**Zakamensk**	**146.51**	**7**⇓	*i*PKP2	PKPab	17 03 25.7	-2.5		
HIA	**Hailar**	**146.91**	**348**	*e*PKPdf	PKPdf	17 03 25.5	+1.6		
KHET	**Khetri**	**147.25**	**65**	*e*PKP	PKPdf	17 03 26.5	+1.4		
KHET				*e*		17 03 35.4			
	comp=Z,63nm,0.8s								
WMQ	**Urumqi**	**147.71**	**30**	*e*PKP	PKPdf	17 03 27.8	+2.4		
WMQ				PP	PP	17 07 01.5	+2.0		
MDJ	**Mudanjiang**	**147.80**	**332**	*e*PKPdf	PKPdf	17 03 26.0	+0.4		
MDJ				*e*PKPbc	PKPdf	17 03 29.9	+4.3		
KUDL	**Kundal**	**147.82**	**64**	*e*PKP	PKPdf	17 03 28.1	+2.0		
KUDL				*e*		17 03 38.0			
	comp=Z,89nm,0.8s								
MAJO	**Matsushiro**	**148.06**	**313**	*e*PKPdf	PKPdf	17 03 27.8	+1.6		
MAJO				*e*PKPbc	PKPdf	17 03 31.2	+5.0		
MAT	**Matsushiro**	**148.06**	**313**	PKP	PKPdf	17 03 31.2	+5.0		
MAT	**Matsushiro**	**148.06**	**313**	*e*PKP	PKPdf	17 03 31.0	+4.8		
CBIJ	**Chichi jima**	**148.16**	**294**	PKPbc	PKPdf	17 03 30.8	+4.1		
	comp=Z,138nm,0.7s,baz=235,slow=5.8,SNR=5.3								
AYAN	**Aya Nagar**	**148.29**	**63**	*e*PKP	PKPdf	17 03 28.6	+1.7		
SONA	**Sohna**	**148.31**	**64**	*e*PKP	PKPdf	17 03 28.3	+1.5		
NDI	**New Delhi**	**148.32**	**63**	*e*PKP	PKPdf	17 03 28.0	+1.1		
JHJ	**Hachijo jima 2**	**148.40**	**306**	PKPbc	PKPdf	17 03 31.9	+5.0		
	comp=Z,264nm,0.9s,baz=221,slow=5.8,SNR=6.9								
AGRA	**Agra**	**149.28**	**65**	*e*PKP	PKPdf	17 03 30.5	+2.1		
AGRA				*e*		17 03 33.3			
	comp=Z,57nm,0.2s								
SONM	**Songino Array**	**149.32**	**4**	PKP	PKPdf	17 03 29.9	+2.0		
	comp=Z,29nm,0.6s,baz=310,slow=1.8,SNR=47								
SONM				PKPbc	PKPdf	17 03 34.5	+6.6		
	comp=Z,34nm,0.7s,baz=319,slow=1.9,SNR=141								
SONM				pPKPbc		17 04 05.4			
	comp=Z,27nm,0.8s,baz=320,slow=2.3,SNR=5.0								
ULN	**Ulaanbaatar**	**149.33**	**3**	*e*PKPdf	PKPdf	17 03 30.1	+2.2		
ULN				*e*PKPbc	PKPdf	17 03 34.9	+7.0		
BHPL	**Bhopal**	**149.43**	**73**	*e*PKPb		17 03 33.5			
BHPL				*e*		17 03 42.4			
	comp=Z,40nm,1.0s								
CN2	**Changchun**	**150.18**	**336**	*e*PKP	PKPdf	17 03 34.8	+5.5		
CN2				PP	PP	17 07 15.3	+2.0		
CN2				PP	PP				
	comp=Z,60nm,6.0s								
CN2				LR	LR				
	comp=N,100nm,22.0s								
CN2				LR	LR				
	comp=E,90nm,22.0s								
CN2				LR	LR				
	comp=Z,110nm,24.0s								
CUD	**Cuddapah**	**150.42**	**91**	*e*PKP	PKPdf	17 03 32.8	+2.3		
CUD				*e*PKiK		17 03 37.7			
CUD				*e*		17 03 44.1			
CUD				*e*		17 04 06.5			
HYB	**Hyderabad**	**150.56**	**85**	*i* PKP	PKPdf	17 03 32.5	+1.9		
HYB				*e*		17 03 37.0			
HYB				*e*PKPAB	PKPab	17 03 43.0	-2.5		
HYB				*e*		17 04 08.0			
HYB				*ep*PKP		17 04 19.0			
HYB	**Hyderabad**	**150.56**	**85**	*e*PKP	PKPdf	17 03 32.5	+1.9		
DANN	**Dangsing**	**153.92**	**60**	*e*P	PKPdf	17 03 45.3	+10		
KOLN	**Koldanda**	**153.98**	**62**	*e*P	PKPdf	17 03 36.8	+1.5		
	comp=Z,33nm,0.9s								
KS15	**Wonju Array Si**	**154.07**	**325**	*e*PKPbc	PKPdf	17 03 45.5	+10		
KS15				*e*PKPab	PKPab	17 03 58.8	-1.0		
GKN	**Gorkha**	**154.77**	**60**	*e*P	PKPdf	17 03 46.2	+10		
	comp=Z,154nm,0.8s								
JNU	**Nakatsue**	**154.98**	**313**	PKPab	PKPab	17 04 02.1	-1.6		
	comp=Z,16nm,0.8s,baz=102,slow=3.8,SNR=7.5								
DMN	**Daman**	**155.29**	**61**	*e*P	PKPdf	17 03 51.5	+14		
	comp=Z,62nm,0.8s								
KKN	**Kakani**	**155.38**	**60**	*e*P	PKPdf	17 03 54.6	+17		
	comp=Z,123nm,0.7s								
GTA	**Gaotai**	**156.32**	**19**	PKP	PKPdf	17 03 40.8	+2.8		
GTA				APKP		17 04 09.3			
GTA				PKP2	PKPab	17 04 11.0	+1.7		
GTA				XPKP		17 04 22.3			
GTA				PP	PP	17 07 51.3	+3.3		
GTA				SKS	SKS	17 10 36.3	+4.8		
GTA				PP	PP				
	comp=Z,86nm,6.8s								
GTA				LR	LR				
	comp=N,42nm,15.6s								
GTA				LR	LR				
	comp=E,80nm,13.3s								
GTA				LR	LR				
	comp=Z,96nm,22.8s								
HHC	**Hu-ho-hao-te**	**156.33**	**356**	*e*PKP	PKPdf	17 03 40.3	+2.3		
BJI	**Beijing**	**156.47**	**347**	PKP	PKPdf	17 03 40.0	+1.8		
LSA	**Lhasa**	**159.16**	**50**	*e*PKPdf	PKPdf	17 03 45.2	+3.3		
TIA	**Tai'an**	**159.84**	**342**	*e*PKP	PKPdf	17 03 44.8	+2.3		
JOW	**Kunigami**	**160.06**	**302**	PKPab	PKPab	17 04 25.1	-0.7		
	comp=Z,20nm,0.8s,baz=110,slow=4.7,SNR=6.8								
LZH	**Lanzhou**	**160.52**	**14**	*e*PKP	PKPdf	17 03 44.8	+1.6		
LZH				APKP		17 04 12.5			
LZH				XPKP		17 04 23.3			
LZH				LR	LR				
	comp=N,507nm,18.3s								
LZH				LR	LR				
	comp=Z,737nm,20.0s								
SHL	**Shillong**	**161.68**	**60**	*e*PKP	PKPdf	17 03 46.5	+1.9		
SHL				*e*		17 04 34.0			
SSE	**Sheshan**	**162.48**	**324**	PKP	PKPdf	17 03 47.0	+1.7		
XAN	**Xi'an**	**163.20**	**1**	PKP	PKPdf	17 03 48.3	+2.4		
CD2	**Chengdu**	**165.39**	**20**	*e*PKP	PKPdf	17 03 51.0	+2.9		
WHN	**Wuhan**	**165.94**	**342**	*e*PKP	PKPdf	17 03 51.0	+2.4		
WHN				PKP2	PKPab	17 04 50.3	-0.9		
WHN				PP	PP	17 08 37.0	-2.4		
KMI	**Kunming**	**169.94**	**37**	*e*PKP	PKPdf	17 03 52.8	+1.5		
KMI				XPKP		17 04 32.0			
KMI				PKP2	PKPab	17 05 08.5	-0.4		
KMI				PP	PP	17 08 57.8	-1.7		
KMI				PPP	PPP	17 13 01.8	-3.6		
KMI				SKKS		17 15 32.8			
KMI				PP	PP				
	comp=Z,91nm,8.2s								
CM31	**Chiang Mai Arr**	**169.95**	**81**	*e*PKPdf	PKPdf	17 03 53.0	+1.5		
CMAR	**Chiang Mai Arr**	**169.95**	**81**	PKP	PKPdf	17 03 53.5	+2.0		
	comp=Z,2.1nm,0.8s,baz=287,slow=1.4,SNR=17								
CMAR				PKPab	PKPab	17 05 10.3	+1.2		
	comp=Z,2.2nm,0.7s,baz=281,slow=5.1,SNR=14								
CMAR				pPKPab		17 05 38.3			
	comp=Z,2.8nm,1.0s,baz=268,slow=5.7,SNR=4.4								
CMAR				PP	PP	17 08 55.0	-4.7		
	comp=Z,2.6nm,0.9s,baz=277,slow=4.4,SNR=4.6								
CMAR	**Chiang Mai Arr**	**169.95**	**81**	PKIKP	PKPdf	17 03 53.5	+2.0		
CMAR						17 05 10.3			
CMAR						17 08 55.0			
CMAR				pmax	pmax				
	comp=Z,2.0nm,0.8s								
CMAR				pmax	pmax				
	comp=Z,2.0nm,0.7s								
CMAR				pmax	pmax				
	comp=Z,3.0nm,1.0s								
CMAR				pmax	pmax				
	comp=Z,3.0nm,1.0s								
GYA	**Guiyang**	**170.41**	**15**	PKP	PKPdf	17 03 53.8	+2.2		
GYA				APKP		17 04 24.0			
GYA				XPKP		17 04 30.8			
GYA				PKP2	PKPab	17 05 11.0	0.0		
GYA				PKS	PKS	17 07 24.8	+1.6		
GYA				PP	PP				
	comp=Z,240nm,9.4s								

IDC ***30*** *17:01:34.8±1.0,56.13N×163.26E, mb3.7/10, mb1 3.9/12, mb1mx3.8/25, ML3.5/2, Error ellipse: s-maj=27.7km s-min=15.8km az=11.0*

KRSC ***30*** *17:01:36.3±0.9,55.89N×163.48E, h15km±2km, ML4.3*

MOS ***30*** *17:01:37.2±1.2,55.96N×163.48E, h40km, mb4.1/6, Error ellipse: s-maj=16.8km s-min=9.3km az=69.5*

NEIC ***30*** *17:01:40.5±0.5,55.92N×163.28E, h50km, mb4.4/1, Error ellipse: s-maj=12.6km s-min=8.9km az=162.0*

ISC 30 17:01:35.5±0.3,55.85N±0.02×163.61E±0.04, h15km, n65, σ1§24/101, mb3.7/12, Off east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KBTR	**Krutoberegovo**	**0.57**	**309**	P	**Pb**	**17 01 46.1**	**-0.5**
KBTR				S	**Sb**	**17 01 53.5**	**-0.6**
KBTR	**Krutoberegovo**	**0.57**	**309**	*i* P	**Pb**	**17 01 46.1**	**-0.5**
KBTR				*i* S	**Sb**	**17 01 53.4**	**-0.7**
KBG	**Krutoberegovo**	**0.65**	**309**	*i* P	**Pb**	**17 01 47.3**	**-0.6**
KBG				*i* S	**Sb**	**17 01 56.2**	**-0.2**
KBG				Smax			
	13μm,0.4s						
BKI	**Bering**	**1.50**	**115**	*i* P	**Pn**	**17 02 02.9**	**+0.9**
BKI				*i* S	**Sb**	**17 02 22.2**	**+1.1**
BKI				Smax			
	460nm,0.8s						
SVLR	**Shiveluch**	**1.52**	**300**	*e*P	**Pn**	**17 02 03.2**	**+0.9**
SVLR				*e*S	**Sb**	**17 02 22.2**	**+0.5**
ZLN	**Zelenaya**	**1.58**	**277**	*i* P	**Pn**	**17 02 04.1**	**+0.9**
ZLN				*e*S	**Sn**	**17 02 24.7**	**+1.2**
CIRR	**Tsirk**	**1.63**	**281**	*i* P	**Pn**	**17 02 04.6**	**+0.8**
CIRR				*e*S	**Sn**	**17 02 25.5**	**+0.9**
LGNR	**Loginova**	**1.66**	**279**	*i* P	**Pn**	**17 02 05.2**	**+1.0**
LGNR				*e*S	**Sn**	**17 02 26.1**	**+0.8**
MKZ	**Mys Kozlova**	**1.69**	**220**	*i* P	**Pn**	**17 02 04.6**	**-0.1**
MKZ				*e*S	**Sn**	**17 02 24.9**	**-1.2**
KLY	**Klyuchi**	**1.72**	**287**	P	**Pn**	**17 02 04.0**	**-1.2**
KLY				S	**Sn**	**17 02 24.5**	**-2.4**
KLY	**Klyuchi**	**1.72**	**287**	*i* P	**Pn**	**17 02 03.9**	**-1.3**
KLY				*e*S	**Sn**	**17 02 24.5**	**-2.4**
KRSR	**Krestovskiy**	**1.75**	**283**	*e*P	**Pn**	**17 02 06.0**	**+0.5**
KRSR				*e*S	**Sn**	**17 02 27.0**	**-0.6**
KMNR	**Kamenistaya**	**1.90**	**268**	*e*P	**Pn**	**17 02 08.6**	**+0.8**
KMNR				*e*S	**Sn**	**17 02 31.7**	**+0.1**
KPT	**Kopyto**	**1.91**	**275**	*i* P	**Pn**	**17 02 08.8**	**+0.9**
KPT				*e*S	**Sn**	**17 02 32.5**	**+0.8**
TUMR	**Tumrok**	**2.05**	**255**	*i* P	**Pn**	**17 02 11.1**	**+1.3**
TUMR				*e*S	**Sn**	**17 02 36.8**	**+1.6**
KOZ	**Kozyrevsk**	**2.11**	**277**	P	**Pn**	**17 02 12.4**	**+1.7**
KOZ				S	**Sn**	**17 02 38.4**	**+1.6**
KOZ	**Kozyrevsk**	**2.11**	**277**	*i* P	**Pn**	**17 02 12.2**	**+1.5**
KOZ				*i* S	**Sn**	**17 02 38.6**	**+1.8**
SRDR	**Sredinnyy**	**2.23**	**284**	*e*P	**Pn**	**17 02 13.5**	**+1.0**
SRDR				*e*S	**Sn**	**17 02 40.5**	**+0.6**
ESO	**Esso**	**2.76**	**274**	*i* P	**Pn**	**17 02 20.7**	**+0.6**
ESO				*e*S	**Sn**	**17 02 54.2**	**+0.7**
ESO				Smax			
	290nm,1.0s						
KII	**Karymskiy**	**3.01**	**235**	P	**Pn**	**17 02 24.9**	**+1.3**
KII				S	**Sn**	**17 02 59.8**	**+0.1**
KII	**Karymskiy**	**3.01**	**235**	*e*P	**Pn**	**17 02 24.7**	**+1.1**
KII				*e*S	**Sn**	**17 02 59.6**	**-0.1**
OSSR	**Ossora**	**3.42**	**355**	*e*P	**Pn**	**17 02 29.0**	**-0.4**
OSSR				*e*S	**Sn**	**17 03 07.3**	**-2.8**
OSSR				Smax			
	70nm,0.7s						
SPN	**Mys Shipunski**	**3.46**	**219**	P	**Pn**	**17 02 29.1**	**-0.9**
SPN				S	**Sn**	**17 03 06.7**	**-4.4**
SPN	**Mys Shipunski**	**3.46**	**219**	*e*P	**Pn**	**17 02 29.0**	**-1.0**
SPN				*e*S	**Sn**	**17 03 07.5**	**-3.6**
NLC	**Nalytchevo**	**3.66**	**224**	P	**Pn**	**17 02 32.5**	**-0.3**
NLC				S	**Sn**	**17 03 14.0**	**-2.1**
NLC	**Nalytchevo**	**3.66**	**224**	*e*P	**Pn**	**17 02 32.4**	**-0.4**
NLC				*e*S	**Sn**	**17 03 14.0**	**-2.1**
SDLR	**Sedlovina**	**3.77**	**229**	*i* P	**Pn**	**17 02 34.9**	**+0.5**
SDLR				*e*S	**Sn**	**17 03 17.2**	**-1.7**
SMAR	**Somma**	**3.81**	**229**	*e*P	**Pn**	**17 02 35.5**	**+0.5**
SMAR				*e*S	**Sn**	**17 03 18.6**	**-1.5**
AVH	**Avacha**	**3.84**	**230**	*e*P	**Pn**	**17 02 36.2**	**+0.8**
AVH				*e*S	**Sn**	**17 03 21.3**	**+0.6**
UGLR	**Uglovaya**	**3.84**	**228**	*e*P	**Pn**	**17 02 36.4**	**+1.0**
UGLR				*e*S	**Sn**	**17 03 20.2**	**-0.6**
KOK	**Koryaka**	**3.87**	**230**	*e*P	**Pn**	**17 02 36.8**	**+1.0**
KOK				*e*S	**Sn**	**17 03 18.1**	**-3.2**
GNL	**Ganaly**	**3.93**	**239**	*e*P	**Pn**	**17 02 37.6**	**+1.0**
GNL				*e*S	**Sn**	**17 03 22.0**	**-0.9**
PET	**Petropavlovsk**	**4.05**	**228**	P	**Pn**	**17 02 38.8**	**+0.4**
PET				S	**Sn**	**17 03 24.1**	**-1.9**
PET	**Petropavlovsk**	**4.05**	**228**	*e*P	**Pn**	**17 02 38.8**	**+0.4**
PET				*e*S	**Sn**	**17 03 24.2**	**-1.8**
PET	**Petropavlovsk**	**4.05**	**228**	*e*Pn	**Pn**	**17 02 38.2**	**-0.1**
RUS	**Russkaya**	**4.55**	**223**	P	**Pn**	**17 02 45.5**	**0.0**
RUS				S	**Sn**	**17 03 35.5**	**-3.2**
RUS	**Russkaya**	**4.55**	**223**	*e*P	**Pn**	**17 02 45.4**	**-0.1**
RUS				*e*S	**Sn**	**17 03 35.5**	**-3.2**
APC	**Apacha**	**4.77**	**235**	*e*P	**Pn**	**17 02 49.8**	**+1.1**
FX1	**Attu Island--F**	**6.33**	**114**	Pn	**Pn**	**17 03 12.2**	**+1.6**
	1.2nm,0.3s,baz=292,slow=19,SNR=2.0						
FX1	**Attu Island--F**	**6.33**	**114**	PN	**Pn**	**17 03 12.2**	**+1.6**
FX1				pmax	pmax		
	comp=Z,1.0nm,0.3s						
FX1	**Attu Island--F**	**6.33**	**114**	*e*P	**Pn**	**17 03 13.1**	**+2.5**
ASAJ	**Asahikawa**	**17.82**	**238**	P	**P**	**17 05 44.8**	**+0.6**
	comp=Z,0.7nm,0.3s,baz=40,slow=6.9,SNR=7.4						
ASAJ	**Asahikawa**	**17.82**	**238**	P	**P**	**17 05 44.8**	**+0.6**
ASAJ				pmax	pmax		
	comp=Z,1.0nm,0.3s						
SML	**Sawmill**	**25.08**	**56**	P	**P**	**17 07 01.9**	**+1.6**
ILAR	**Eielson Array**	**25.43**	**49**	P	**P**	**17 07 03.0**	**-0.6**
	comp=Z,0.6nm,0.9s,mb3.1,baz=281,slow=5.7,SNR=5.7						
ILAR	**Eielson Array**	**25.43**	**49**	P	**P**	**17 07 03.0**	**-0.6**
ILAR				pmax	pmax		
	comp=Z,1.0nm,0.9s						
MAJO	**Matsushiro**	**25.86**	**232**	*e*P	**P**	**17 07 07.0**	**-0.9**
	comp=Z,8.7nm,0.8s,mb4.3						
MAJO				*e*		17 07 16.5	
INK	**Inuvik**	**30.43**	**41**	P	**P**	**17 07 47.0**	**-1.9**
	comp=Z,1.6nm,0.9s,mb3.7,baz=302,slow=8.2,SNR=5.4						
INK	**Inuvik**	**30.43**	**41**	P	**P**	**17 07 47.0**	**-1.9**
INK				pmax	pmax		
	comp=Z,2.0nm,0.9s						
SONM	**Songino Array**	**35.31**	**282**	P	**P**	**17 08 29.5**	**-2.1**
	comp=Z,0.4nm,0.6s,mb3.5,baz=58,slow=7.9,SNR=5.7						
YKA	**Yellowknife Ar**	**39.75**	**46**	P	**P**	**17 09 08.9**	**+0.2**
	comp=Z,0.1nm,0.4s,mb2.9,baz=299,slow=7.9,SNR=3.5						
MKAR	**Makanchi Array**	**48.81**	**296**	P	**P**	**17 10 17.8**	**-3.8**
	comp=Z,0.6nm,0.4s,mb4.0,baz=57,slow=7.4,SNR=6.2						
MKAR	**Makanchi Array**	**48.81**	**296**	P	**P**	**17 10 17.8**	**-3.7**
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.4s						
BVAR	**Borovoye Array**	**50.28**	**308**	P	**P**	**17 10 29.7**	**-3.0**
	comp=Z,0.4nm,0.4s,mb3.8,baz=56,slow=8.5,SNR=4.1						
ARCES	**ARCESS Array B**	**51.28**	**342**	P	**P**	**17 10 37.5**	**-2.6**
	comp=Z,1.8nm,0.8s,mb4.0,baz=53,slow=9.0,SNR=3.0						
ARCES	**ARCESS Array B**	**51.28**	**342**	P	**P**	**17 10 37.5**	**-2.6**
ARCES				pmax	pmax		
	comp=Z,2.0nm,0.8s						
JOF	**Joensuu**	**55.91**	**336**	*ep*	**P**	**17 11 11.9**	**-2.4**
	comp=Z,0.4nm,0.3s,mb3.9						
FINES	**FINESS Array B**	**58.37**	**338**	P	**P**	**17 11 29.9**	**-1.9**
	comp=Z,1.6nm,0.8s,mb4.1,baz=76,slow=7.9,SNR=5.4						
FINES	**FINESS Array B**	**58.37**	**338**	P	**P**	**17 11 29.9**	**-1.9**
FINES				pmax	pmax		
	comp=Z,2.0nm,0.8s						
NB2	**NORSAR Subarra**	**61.43**	**345**	P	**P**	**17 11 50.5**	**-2.3**
	comp=Z,0.5nm,0.6s

SCPH **Surigao** 7.86 349 *e*P Pn 17 16 38.2 +1.2
MSLP **Maasin** 8.33 346⇑ *e*P P 17 16 46.7 +3.0
BATP **Bataraza** 11.33 307⇑ *e*P P 17 17 25.7 +0.7
KKM **Kota Kinabalu** 11.43 291⇓ *e*P P 17 17 28.5 +2.1
ENPP **El Nido** 11.80 321⇑ *e*P P 17 17 32.6 +1.2
KAKA **Kakadu** 15.58 160 *e*P P 17 18 20.7 -0.8
185nm,0.6s
FITZ **Fitzroy Crossi** 20.02 184⇓ *i*P P 17 19 14.7 -1.1
37nm,0.6s
FITZ **Fitzroy Crossi** 20.02 184 P P 17 19 14.8 -0.9
31nm,0.6s,baz=5.4,slow=8.8,SNR=87
WRAB **Tennant Creek** 22.98 162 *e*P P 17 19 45.4 -0.3
242nm,0.6s,mb5.8
WRA **Warramunga Arr** 22.99 162 P P 17 19 45.4 -0.4
84nm,0.6s,mb5.4,baz=340,slow=11,SNR=366
WRA PcP PcP 17 23 36.1 -0.9
9.6nm,0.5s,baz=322,slow=2.2,SNR=11
WRA **Warramunga Arr** 22.99 162 P P 17 19 45.4 -0.4
WRA 17 23 36.1
WRA pmax pmax
comp=Z,84nm,0.6s
WRA pmax pmax
comp=Z,10.0nm,0.5s
WB2 **Warramunga Arr** 22.99 162⇑ *i*P P 17 19 45.7 -0.2
WB2 *e*S S 17 23 53.4 +2.4
PMG **Port Moresby** 23.11 120 P P 17 19 49.3 +2.2
comp=Z,24nm,1.1s,mb4.5,baz=297,slow=13,SNR=3.1
PMG **Port Moresby** 23.11 120 P P 17 19 49.3 +2.3
PMG pmax pmax
comp=Z,24nm,1.1s
KGM **Kluang** 23.61 270⇑ *e*P P 17 19 53.0 +1.1
QIZ **Qiongzhong** 23.80 316 P P 17 19 52.3 -1.4
QIZ XP 17 19 58.8
QIZ S S 17 24 05.5 +0.3
QIZ AMB AMB
comp=Z,54nm,1.4s,mb4.8
QIZ LR LR
comp=N,452nm,19.1s
QIZ LR LR
comp=Z,870nm,29.4s
QIZ **Qiongzhong** 23.80 316 *e*P P 17 19 52.3 -1.4
comp=Z,19nm,0.7s,mb4.6
QZH **Quanzhou** 24.18 341 P P 17 19 56.0 -1.4
QZH S S 17 24 09.0 -2.6
QZH AMB AMB
comp=Z,40nm,0.8s,mb4.9
QZH LR LR
comp=Z,3μm,29.5s,MS4.7
JOW **Kunigami** 24.71 3 P P 17 20 04.2 +1.7
comp=Z,60nm,0.8s,mb5.2,baz=197,slow=7.4,SNR=25
GZH **Guangzhou** 24.76 329 P P 17 20 03.5 +0.5
GZH AMB AMB
comp=Z,86nm,1.4s,mb5.1
GZH LR LR
comp=N,472nm,23.3s,MS4.0
GZH LR LR
comp=E,267nm,19.4s,MS4.0
GZH LR LR
comp=Z,569nm,29.9s
AS12 **Alice Springs** 26.40 166⇑ *i*P P 17 20 17.2 -1.2
comp=Z,55nm,0.7s,mb5.2
ASAR **Alice Springs** 26.40 166 P P 17 20 17.3 -1.1
comp=Z,16nm,0.6s,mb4.7,baz=346,slow=6.6,SNR=180
ASAR PcP PcP 17 23 43.2 -1.0
comp=Z,13nm,0.6s,baz=352,slow=2.2,SNR=12
ASAR S S 17 24 54.1 +5.3
comp=Z,2.3nm,0.7s,baz=346,slow=22,SNR=2.5
ASAR ScP 17 27 20.7
comp=Z,1.8nm,0.7s,baz=330,slow=2.7,SNR=5.2
CBIJ **Chichi jima** 28.90 29 P P 17 20 40.6 -0.4
comp=Z,47nm,0.6s,mb5.4,baz=240,slow=14,SNR=3.1
CTA **Charters Tower** 29.00 140 *e*P P 17 20 43.3 +1.3
comp=Z,8.8nm,0.7s,mb4.6
CTA **Charters Tower** 29.00 140 P P 17 20 42.5 +0.5
comp=Z,43nm,1.4s,mb5.0,baz=308,slow=8.1,SNR=6.8
CTA **Charters Tower** 29.00 140 P P 17 20 42.5 +0.5
CTA pmax pmax
comp=Z,43nm,1.4s
SSE **Sheshan** 29.44 350 P P 17 20 46.8 +1.0
SSE AP pP 17 20 49.8 -1.3
SSE S S 17 25 40.3 +2.6
SSE AMB AMB
comp=Z,15nm,3.6s
SSE LR LR
comp=N,205nm,20.9s,MS3.9
SSE LR LR
comp=E,199nm,20.8s,MS3.9
SSE LR LR
comp=Z,271nm,24.6s,MS3.8
WHN **Wuhan** 30.79 338 ⇓P P 17 20 57.8 0.0
WHN LR LR
comp=Z,2μm,29.3s,MS4.5
NJ2 **Nanjing** 30.84 347 *e*P P 17 20 59.0 +0.8
NJ2 PP PP 17 22 02.5 +2.7
NJ2 AMB AMB
comp=Z,50nm,0.7s,mb5.5
NJ2 AMB AMB
comp=Z,190nm,4.5s
NJ2 LR LR
comp=N,340nm,13.8s
NJ2 LR LR
comp=E,810nm,22.0s
NJ2 LR LR
comp=Z,610nm,21.8s
GYA **Guiyang** 31.15 323⇑ *i*P P 17 21 00.5 -0.5
GYA AP pP 17 21 05.3 -1.0
GYA XP sP 17 21 07.5 -1.2
GYA PP PP 17 22 05.8 +1.9
GYA XS 17 26 13.5
GYA AMB AMB
comp=Z,150nm,4.6s
GYA LR LR
comp=N,440nm,12.0s,MS4.4
GYA LR LR
comp=E,260nm,13.5s,MS4.4
GYA LR LR
comp=Z,190nm,13.8s,MS3.9
JNU **Nakatsue** 31.17 6 P P 17 21 00.9 -0.2
comp=Z,38nm,1.0s,mb5.2,baz=139,slow=3.9,SNR=11
BDT **Bhumibol Dam** 31.36 301 P P 17 21 02.0 -0.9
CM31 **Chiang Mai Arr** 31.95 303 *e*P P 17 21 06.5 -1.6
comp=Z,23nm,0.8s,mb5.1
CMAR **Chiang Mai Arr** 31.95 303 P P 17 21 07.0 -1.2
comp=Z,23nm,0.9s,mb5.0,baz=111,slow=6.6,SNR=112
CMAR PcP PcP 17 23 59.0 +0.7
comp=Z,2.2nm,0.9s,baz=140,slow=1.3,SNR=5.1
CMAR LR LR 17 34 27.6
comp=Z,317nm,21.9s,MS4.0,baz=110,slow=37
CMAR **Chiang Mai Arr** 31.95 303 P P 17 21 07.0 -1.1
CMAR 17 23 59.0
CMAR pmax pmax
comp=Z,23nm,0.9s
CMAR pmax pmax
comp=Z,2.0nm,0.9s
CMAR MLR MLR
comp=Z,317nm,21.9s
FORT **Forrest** 32.62 178⇓ *i*P P 17 21 12.7 -1.1
comp=Z,207nm,0.5s
ENH **Enshi** 32.62 331 *e*P P 17 21 12.0 -1.9
comp=Z,35nm,0.7s,mb5.4
KMI **Kunming** 32.76 317 *e*P P 17 21 14.3 -0.8
KMI AP pP 17 21 20.3 -0.1
KMI S S 17 26 31.3 +1.5
KMI SS SS 17 28 29.3 +1.1
KMI AMB AMB
comp=Z,31nm,1.2s,mb5.1
KMI LR LR
comp=N,319nm,17.5s
KMI LR LR
comp=E,317nm,23.7s
KMI LR LR
comp=Z,582nm,28.1s
KLBR **Kellerberrin** 34.54 194⇓ *i*P P 17 21 30.1 -0.4
comp=Z,120nm,0.8s,mb5.9
TIA **Tai'an** 35.23 346 *e*P P 17 21 35.8 -0.5
KS15 **Wonju Array Si** 35.27 1 *e*P P 17 21 37.1 +0.5
MUN **Mundaring** 35.30 196⇑ *i*P P 17 21 36.5 -0.5
comp=Z,45nm,0.6s,mb5.6
MAJO **Matsushiro** 35.91 16 *e*P P 17 21 40.2 -1.8
comp=Z,27nm,0.8s,mb5.2
MAT **Matsushiro** 35.91 16 P P 17 21 40.7 -1.4
MAT *e*S S 17 27 24.0 +5.5
MAT **Matsushiro** 35.91 16 *e*P P 17 21 41.0 -1.1
comp=Z,28nm,1.0s,mb5.2
MAT S S 17 27 25.0 +6.5
MAT LR LR
comp=Z,710nm,20.0s,MS4.4
NWAO **Narrogin (SRO)** 35.94 194 P P 17 21 42.1 -0.2
comp=Z,30nm,0.6s,mb5.4,baz=2.3,slow=5.4,SNR=38
NWAO **Narrogin (SRO)** 35.94 194 P P 17 21 42.2 -0.2
NWAO pmax pmax
comp=Z,30nm,0.6s
NWAO **Narrogin (SRO)** 35.94 194 *e*P P 17 21 42.2 -0.2
comp=Z,92nm,1.2s,mb5.6
XAN **Xi'an** 36.04 334 P P 17 21 41.5 -1.7
XAN AMB AMB
comp=Z,34nm,0.7s,mb5.4
CD2 **Chengdu** 36.16 325 P P 17 21 42.8 -1.4
CD2 PP PP 17 23 02.5 -4.4
CD2 PPP PPP 17 23 18.8 -8.1
CD2 S S 17 27 17.5 -5.0
CD2 AMB AMB
comp=Z,30nm,0.5s,mb5.5
CD2 AMB AMB
comp=Z,170nm,4.3s
CD2 LR LR
comp=N,430nm,15.8s
CD2 LR LR
comp=Z,420nm,17.3s,MS4.3
STKA **Stephens Creek** 36.45 159⇑ *i*P P 17 21 46.1 -0.6
comp=Z,31nm,0.6s,mb5.4
STKA **Stephens Creek** 36.45 159 P P 17 21 46.0 -0.7
comp=Z,31nm,0.6s,mb5.5,baz=332,slow=8.4,SNR=56
STKA PcP PcP 17 24 10.2 -0.8
comp=Z,11nm,0.5s,baz=327,slow=4.3,SNR=8.6
DL2 **Dalian** 37.04 353 P P 17 21 52.8 +1.2
DL2 *e*S S 17 27 35.5 -0.4
DL2 AMB AMB
comp=Z,50nm,0.9s,mb5.3
DL2 LR LR
comp=E,210nm,25.3s
DL2 LR LR
comp=Z,170nm,16.7s
BJT **Baijiatuao** 39.08 347 *e*P P 17 22 08.5 -0.2
comp=Z,87nm,0.8s,mb5.5
BJI **Beijing** 39.10 347 P P 17 22 08.5 -0.3
BJI AMB AMB
comp=Z,114nm,1.2s,mb5.5
BJI LR LR
comp=N,146nm,14.6s,MS4.0
BJI LR LR
comp=E,94nm,13.9s,MS4.0
BJI LR LR
comp=Z,110nm,38.6s
SNY **Shenyang** 39.76 356 ⇓P P 17 22 15.5 +1.2
SNY AMB AMB
comp=Z,40nm,0.6s,mb5.3
SNY LR LR
comp=E,270nm,21.2s
SNY LR LR
comp=Z,270nm,20.8s,MS4.1
LZH **Lanzhou** 40.09 330 ⇑P P 17 22 16.0 -1.1
LZH AP pP 17 22 19.5 -3.0
LZH PP PP 17 23 52.8 -0.3
LZH *e*S S 17 28 22.5 +0.4
LZH SS SS 17 31 14.3 +0.6
LZH AMB AMB
comp=Z,73nm,1.4s,mb5.2
LZH AMB AMB
comp=Z,258nm,5.3s
LZH LR LR
comp=E,958nm,13.2s
LZH LR LR
comp=Z,1μm,16.9s,MS4.8
HHC **Hu-ho-hao-te** 41.09 342 *e*P P 17 22 24.8 -0.4
HHC AP pP 17 22 34.8 +4.2
HHC AMB AMB
comp=Z,108nm,5.5s
HHC LR LR
comp=N,96nm,13.9s,MS4.0
HHC LR LR
comp=E,100nm,13.1s,MS4.0
HHC LR LR
comp=Z,182nm,16.7s,MS4.0
CN2 **Changchun** 41.63 358 *e*P P 17 22 31.0 +1.3
CN2 *e*XP sP 17 22 40.3 +3.0
CN2 *e*S S 17 28 48.8 +3.8
CN2 SS SS 17 31 49.3 +4.0
CN2 AMB AMB
comp=Z,10.0nm,0.6s,mb4.6
CN2 AMB AMB
comp=Z,200nm,4.0s
CN2 LR LR
comp=N,200nm,16.0s,MS4.2
CN2 LR LR
comp=E,200nm,16.0s,MS4.2
CN2 LR LR
comp=Z,200nm,17.0s,MS4.1
MDJ **Mudanjiang** 42.49 3 *e*P P 17 22 37.1 +0.4
comp=Z,37nm,0.8s,mb5.1
CNB **Canberra Magne** 42.65 153 *e*P P 17 22 37.7 -0.4
comp=Z,18nm,1.1s,mb4.7
TOO **Toolangi** 42.97 158⇓ *i*P P 17 22 42.3 +1.6
comp=Z,6.9nm,0.8s,mb4.4
LSA **Lhasa** 43.74 313 P P 17 22 47.0 -0.1
LSA **Lhasa** 43.74 313 *e*P P 17 22 46.7 -0.4
comp=Z,28nm,0.6s,mb5.2
ASAJ **Asahikawa** 44.17 16 P P 17 22 50.5 +0.1
comp=Z,13nm,0.8s,mb4.7,baz=225,slow=9.9,SNR=12
ASAJ **Asahikawa** 44.17 16 P P 17 22 50.5 +0.1
ASAJ pmax pmax
comp=Z,13nm,0.8s
GTA **Gaotai** 44.68 330 ⇓P P 17 22 53.8 -0.8
GTA XP sP 17 23 00.3 -1.9
GTA PP PP 17 24 38.3 -1.7
GTA SCP 17 28 29.0
GTA PCS 17 28 31.0
GTA S S 17 29 28.5 -1.0
GTA SS SS 17 32 38.0 -3.6
GTA AMB AMB
comp=Z,14nm,0.6s,mb5.0
GTA AMB AMB
comp=Z,117nm,4.6s
GTA LR LR
comp=N,139nm,20.9s,MS4.0
GTA LR LR
comp=E,146nm,22.1s,MS4.0
GTA LR LR
comp=Z,268nm,21.7s,MS4.1
BKM **Butte a Klehm** 45.14 117⇑ *i*P P 17 22 59.4 +0.9
BKM S pP 17 23 09.3 +5.4
YSS **Yuzh-Sakhalins** 46.84 15 *e*P P 17 23 11.0 -0.5
PKI **Pulchoki** 47.15 307 *e*P P 17 23 12.4 -1.9
comp=Z,31nm,0.7s,mb5.4
KLR **Kul'dur** 47.22 4 *e*P P 17 23 14.2 -0.4
KKN **Kakani** 47.34 307 *e*P P 17 23 14.3 -1.5
comp=Z,32nm,0.5s,mb5.5
DMN **Daman** 47.41 306 *e*P P 17 23 14.4 -1.9
comp=Z,78nm,1.1s,mb5.5
HIA **Hailar** 47.48 354 *e*P P 17 23 16.9 +0.3
comp=Z,30nm,1.1s,mb5.1
GKN **Gorkha** 47.95 307 *e*P P 17 23 18.5 -2.1
comp=Z,23nm,0.5s,mb5.5
KOLN **Koldanda** 48.69 306 *e*P P 17 23 24.5 -1.8
comp=Z,70nm,0.5s,mb5.9
DANN **Dangsing** 48.80 307 *e*P P 17 23 26.2 -0.9
ULN **Ulaanbaatar** 48.81 342 *e*P P 17 23 26.6 -0.4
comp=Z,21nm,0.8s,mb5.2
SONM **Songino Array** 48.99 342 P P 17 23 28.1 -0.2
comp=Z,15nm,0.7s,mb5.1,baz=158,slow=8.9,SNR=140
SONM PcP PcP 17 24 52.0 -0.6
comp=Z,5.8nm,0.8s,baz=147,slow=4.9,SNR=3.0
ZAK **Zakamensk** 52.21 341 ⇓ *i*P P 17 23 52.3 -0.5
ZAK *e* 17 25 04.1
TLY **Talaya** 53.22 342 *e*P P 17 24 00.2 -0.1
TLY *e**PP pP 17 24 33.2 +27
TLY *e*S S 17 31 16.8 -12
TLY pmax pmax
comp=Z,208nm,0.8s,mb6.1
TLY MLR MLR
comp=Z,4μm,23.0s,MS5.3
IRK **Irkutsk** 53.52 343 *e*P P 17 24 02.8 +0.2
IRK *e* 17 24 36.6
IRK *e* 17 25 08.9
WMQ **Urumqi** 54.25 326 *e*P P 17 24 07.0 -1.0
WMQ AP pP 17 24 10.0 -3.5
WMQ PCP PcP 17 25 11.3 -0.9
WMQ PP PP 17 26 10.3 -1.2
WMQ SCP 17 29 07.5
WMQ S S 17 31 42.0 -0.9
WMQ SCS ScS 17 33 52.5 -0.7
WMQ SS SS 17 35 23.3 -1.3
WMQ AMB AMB
comp=Z,23nm,0.9s,mb5.1
WMQ AMB AMB
comp=Z,197nm,5.7s
WMQ LR LR
comp=N,1μm,20.5s,MS5.0
WMQ LR LR
comp=E,988nm,20.1s,MS5.0
WMQ LR LR
comp=Z,2μm,20.1s,MS5.1
CLNS **Chul'man** 54.69 359 *e*P P 17 24 10.5 -0.5
CLNS pmax pmax
comp=Z,29nm,0.9s,mb5.3
CLNS pmax pmax
comp=N,11nm,0.8s
CLNS pmax pmax
comp=E,8.0nm,0.9s
BOD **Bodaibo** 56.59 352 *e*P P 17 24 24.1 -0.6
MKAR **Makanchi Array** 59.09 326 P P 17 24 41.1 -1.4
comp=E,25nm,0.6s,mb5.4,baz=123,slow=8.6,SNR=136
MKAR **Makanchi Array** 59.09 326 P P 17 24 41.1 -1.4
MKAR pmax pmax
comp=Z,25nm,0.6s
KSH **Kashi** 59.41 316 P P 17 24 44.5 -0.3
KSH *e*AP pP 17 24 48.8 -1.6
KSH *e*XP sP 17 24 51.8 -0.7
KSH *e*PCP PcP 17 25 32.3 0.0
KSH *e*PP PP 17 26 57.5 -0.5
KSH *e*SCP 17 29 30.8
KSH *e*PCS 17 29 32.0
KSH *e*S S 17 32 51.3 +0.1
KSH *e*SCS ScS 17 34 31.0 +0.5
KSH *e*SS SS 17 36 47.8 0.0
KSH AMB AMB
comp=Z,200nm,4.0s
KSH LR LR
comp=N,150nm,7.7s
KSH LR LR
comp=E,120nm,4.7s
YAK **Yakutsk** 59.91 1 *c i*P P 17 24 47.3 -0.6
YAK pmax pmax
comp=Z,139nm,0.8s,mb6.0
YAK MLR MLR
comp=Z,100nm,19.0s,MS4.0
YAK **Yakutsk** 59.91 1 *e*P P 17 24 47.1 -0.8
comp=Z,143nm,0.8s,mb6.0
RPZ **Rata Peaks** 60.24 144 P P 17 24 49.8 -0.7
comp=Z,33nm,0.6s,mb5.5,baz=335,slow=3.4,SNR=20
MA2 **Magadan** 60.31 14 *e*P P 17 24 50.6 -0.1
MA2 pmax pmax
comp=Z,39nm,1.1s,mb5.3
MA2 **Magadan** 60.31 14 *e*P P 17 24 50.6 -0.1
comp=Z,14nm,0.8s,mb5.1
KZA **Kyzart** 61.03 318 P P 17 24 55.5 -0.3
SNR=18
URZ **Urewera** 61.15 136 P P 17 24 54.8 -1.9
comp=Z,13nm,0.6s,mb5.2,baz=322,slow=6.3,SNR=10
TKM2 **Tokmak 2** 61.17 319 P P 17 24 55.8 -1.0
SNR=22
KBK **Karagaybulak** 61.48 319 P P 17 24 58.5 -0.4
SNR=10
UCH **Uchtor** 61.58 318 P P 17 24 59.3 -0.3
SNR=39
CHMS **Chumysh** 61.76 319 P P 17 24 59.7 -1.1
SNR=10
AAK **Ala-Archa** 61.77 318 P P 17 25 00.4 -0.4
SNR=8.5
AAK **Ala-Archa** 61.77 318 *e*P P 17 24 59.9 -1.0
comp=Z,8.3nm,0.8s,mb4.9
USP **Ospenovka** 62.05 319 P P 17 25 01.4 -1.3
SNR=42
AML **Almayashu** 62.09 318 P P 17 25 02.5 -0.5
SNR=28
EKS2 **Erkin-Say** 62.26 318 P P 17 25 03.4 -0.7
SNR=28
KURK **Kurchatov** 63.30 328 *e*P P 17 25 09.3 -1.6
NVS **Novosibirsk** 63.49 333 *i* P P 17 25 09.3 -2.8
NVS *i* *PP pP 17 25 27.0 +9.3
NVS *e* 17 25 42.4
NVS *i* S S 17 33 37.2 -5.6
NVS *e* 17 34 58.0
NVS pmax pmax
comp=N,16nm,0.9s
NVS pmax pmax
comp=E,14nm,0.9s
NVS pmax pmax
comp=Z,36nm,0.9s,mb5.5
NVS smax
comp=N,13nm,1.5s
NVS smax
comp=E,18nm,1.5s
SEY **Seymchan** 63.65 13 *e*P P 17 25 14.2 +1.2
SEY *PP pP 17 25 49.9 +31
SEY *e* 17 27 29.6
SEY *e*PPP PPP 17 29 05.1 -1.3
SEY *e*S S 17 33 28.8 -16
SEY 17 34 47.6
SEY *e*SS SS 17 37 50.6 -3.4
SEY pmax pmax
comp=Z,90nm,1.0s,mb5.8
SEY pmax pmax
comp=N,9.0nm,0.8s
SEY MLR MLR
comp=Z,2μm,26.0s,MS5.1
SEY MLR MLR
comp=N,60nm,19.0s
SEY MLR MLR
comp=E,120nm,16.0s
BVAR **Borovoye Array** 68.87 327 P P 17 25 45.5 -0.9
comp=E,35nm,0.7s,mb5.4,baz=127,slow=7.4,SNR=261
BRVK **Borovoye** 68.94 327 *e*P P 17 25 45.9 -1.0
TIXI **Tiksi** 69.55 1 *e*P P 17 25 48.0 -2.3
TIXI pmax pmax
comp=Z,21nm,0.9s,mb5.1
TIXI MLR MLR
comp=Z,223nm,22.0s,MS4.4
TIXI **Tiksi** 69.55 1 *e*P P 17 25 48.7 -1.6
comp=Z,21nm,0.6s,mb5.2
ZRNK **Zerenda** 69.59 327 *e*P P 17 25 49.5 -1.3
BILL **Bilibino** 71.15 15 *de*P P 17 25 59.2 -0.9
BILL pmax pmax
comp=Z,20nm,2.4s,mb4.6
BILL **Bilibino** 71.15 15 *e*P P 17 25 57.8 -2.3
comp=Z,6.0nm,1.0s,mb4.5
MIR **Mirnyy** 72.55 194⇓ *e*P P 17 26 08.8 +0.4
MIR *e* 17 26 27.0
MIR pmax pmax
comp=Z,40nm,0.8s,mb5.4
ARU **Arti** 76.50 328⇓ *i*P P 17 26 30.5 -0.8
ARU *e* 17 26 42.0
ARU *e* 17 29 20.6
ARU *e*S S 17 35 59.6 -15
ARU pmax pmax
comp=Z,29nm,0.7s,mb5.3
ARU **Arti** 76.50 328 *e*P P 17 26 30.8 -0.6
comp=Z,31nm,0.6s,mb5.4
THR **Tehran** 77.34 306 P P 17 26 36.8 +0.3
comp=Z,2.0nm,0.6s,mb4.2,baz=123,slow=6.5,SNR=9.2
THR **Tehran** 77.34 306 P P 17 26 36.8 +0.3
THR pmax pmax
comp=Z,2.0nm,0.6s
HASS **Wahat al Ahsa'** 77.61 295 P P 17 26 38.0 -0.2
MZLS **Mizel** 81.64 294 P P 17 27 00.5 +0.6
VNDA **Vanda** 81.70 173 P P 17 26 59.1 -0.1
comp=Z,14nm,1.0s,mb4.8,baz=314,slow=6.1,SNR=40
VNDA **Vanda** 81.70 173 P P 17 26 59.1 0.0
VNDA pmax pmax
comp=Z,14nm,1.0s
VNDA **Vanda** 81.70 173 *e*P P 17 26 58.8 -0.3
comp=Z,8.4nm,1.0s,mb4.6
KAMS **Al Khamasin** 82.15 290 P P 17 27 02.9 +0.4
MAW **Mawson** 82.23 200 P P 17 27 02.7 +0.8
comp=Z,15nm,0.6s,mb5.1,baz=66,slow=6.2,SNR=53
MAW **Mawson** 82.23 200 P P 17 27 02.7 +0.7
MAW pmax pmax
comp=Z,15nm,0.6s
MAW **Mawson** 82.23 200 *e*P P 17 27 02.2 +0.2
comp=Z,51nm,1.2s,mb5.3
SBA **Scott Base** 82.61 172 *e*P P 17 27 04.1 +0.3
comp=Z,19nm,1.2s,mb5.0
DJNS **Zahran al Janu** 83.11 287 P P 17 27 08.5 +1.0
TATS **Tathlith** 83.18 289 P P 17 27 08.6 +0.7
ZEI **Tsey** 83.53 313 *e*P P 17 27 10.5 +1.2
AFFS **'Afif** 83.66 294 P P 17 27 10.9 +0.6
GOF **Gofitskoye** 84.28 315 *e*P P 17 27 14.5 +1.5
NAMS **An Nimas** 84.38 289 P P 17 27 15.4 +1.3

KIV	**Kislovodsk**	**84.47**	**314**	*e*P		**P**		**17 27 14.3**	**+0.3**
KIV				*e*S		S		17 37 23.1	-15
KIV	comp=E,10.0nm,1.1s,mb4.9			pmax		pmax			
KIV	comp=E,130nm,23.0s,MS4.2			MLR		MLR			
KIV	comp=E,70nm,22.0s			MLR		MLR			
KIV	**Kislovodsk**	**84.47**	**314**	*e*P		**P**		**17 27 15.1**	**+1.1**
	comp=E,10.0nm,0.7s,mb5.0								
HILS	**Ha'il**	**84.78**	**297**	P		**P**		**17 27 16.9**	**+0.9**
BLJS	**Baljurashi**	**84.95**	**290**	P		**P**		**17 27 18.2**	**+1.3**
ERZM	**Erzurum**	**85.33**	**310**	*i* P		**P**		**17 27 20.5**	**+2.2**
PMR	**Palmer**	**85.34**	**28**	*e*P		**P**		**17 27 18.1**	**+0.2**
PMR	comp=E,30nm,1.0s,mb5.4			LR		LR			
	comp=E,240nm,22.0s,MS4.5								
BEST	**Besiri**	**85.36**	**308**	*i* P		**P**		**17 27 19.7**	**+1.1**
MCK	**McKinley**	**85.60**	**26**	*e*P		**P**		**17 27 19.1**	**0.0**
	comp=Z,3.1nm,0.7s,mb4.7								
SML	**Sawmill**	**85.74**	**28**	*e*P		**P**		**17 27 20.4**	**+0.5**
LTHS	**Al Lith**	**86.06**	**290**	P		**P**		**17 27 23.7**	**+1.3**
COLA	**College**	**86.15**	**25**	*e*P		**P**		**17 27 24.1**	**+2.3**
COLA	**College**	**86.15**	**25**	*e*P		**P**		**17 27 22.6**	**+0.8**
	comp=Z,3.0nm,0.7s,mb4.6								
COLA	comp=Z,159nm,19.0s,MS4.4			LR		LR			
ILAR	**Eielson Array**	**86.56**	**25**	P		**P**		**17 27 23.4**	**-0.4**
	comp=Z,1.0nm,0.5s,mb4.3,baz=244,slow=5.0,SNR=19								
ILAR	**Eielson Array**	**86.56**	**25**	P		**P**		**17 27 23.5**	**-0.3**
ILAR	comp=Z,1.0nm,0.5s			pmax		pmax			
SOC	**Sochi**	**86.62**	**313**	*d* iP		**P**		**17 27 25.1**	**+0.4**
SOC				*e*PPP		PPP		17 32 42.4	-3.5
SOC				*e*S		S		17 37 52.0	-6.9
SOC	comp=Z,10.0nm,0.6s,mb5.2			pmax		pmax			
SOC	comp=N,6.0nm,0.9s			pmax		pmax			
SOC	comp=E,3.0nm,0.6s			pmax		pmax			
VOR	**Voronezh**	**87.04**	**322**	*e*P		**P**		**17 27 26.5**	**0.0**
VOR	comp=E,40nm,1.0s			pmax		pmax			
VOR	comp=Z,70nm,1.0s,mb5.8			pmax		pmax			
VRSR	**Storozhevoye**	**87.04**	**321**	*c* iP		**P**		**17 27 27.2**	**+0.7**
VRSR	comp=Z,30nm,0.6s,mb5.7			pmax		pmax			
VRSR	comp=N,10.0nm,1.1s			pmax		pmax			
VRSR	comp=E,30nm,0.9s			pmax		pmax			
KBRS	**Khaybar**	**87.05**	**296**	P		**P**		**17 27 29.5**	**+2.3**
ELZG	**Elazig**	**87.16**	**308**	*i* P		**P**		**17 27 28.8**	**+1.3**
YNBS	**Yanbu' al Bahr**	**88.23**	**294**	P		**P**		**17 27 34.5**	**+1.7**
ANN	**Anapa**	**88.25**	**315**	*e*P		**P**		**17 27 33.3**	**+0.8**
ANN	comp=Z,10.0nm,0.7s,mb5.2			pmax		pmax			
GZT	**Gaziantep**	**88.30**	**307**	*i* P		**P**		**17 27 33.6**	**+0.6**
OBN	**Obninsk**	**88.58**	**325**	*de*P		**P**		**17 27 33.0**	**-0.8**
OBN	comp=Z,28nm,0.9s,mb5.6			pmax		pmax			
OBN	**Obninsk**	**88.58**	**325**	*e*P		**P**		**17 27 32.8**	**-1.1**
	comp=Z,38nm,0.9s,mb5.7								
TBKS	**Tabuk**	**89.41**	**298**	P		**P**		**17 27 40.1**	**+1.6**
KMBO	**Kilima Mbogo**	**89.73**	**269**	P		**P**		**17 27 41.8**	**+1.5**
	comp=Z,9.8nm,1.1s,mb5.0,baz=42,slow=6.7,SNR=10								
KMBO	**Kilima Mbogo**	**89.73**	**269**	*e*P		**P**		**17 27 41.5**	**+1.3**
	comp=Z,5.7nm,1.0s,mb4.9								
JMQS	**Jabal Moqyreh**	**89.98**	**299**	P		**P**		**17 27 41.9**	**+0.9**
BOYT	**Boyabat**	**90.22**	**311**	*i* P		**P**		**17 27 42.8**	**+1.0**
AYUS	**'Aynunah**	**90.54**	**298**	P		**P**		**17 27 44.2**	**+0.5**
JMOS	**Jabal al Moall**	**90.64**	**299**	P		**P**		**17 27 45.4**	**+1.3**
ALWS	**Ilw as Safayha**	**90.67**	**299**	P		**P**		**17 27 45.7**	**+1.5**
BDAS	**Al Bad'**	**90.68**	**298**	P		**P**		**17 27 45.4**	**+1.1**
JOF	**Joensuu**	**90.80**	**333**	*e*p		**P**		**17 27 45.4**	**+1.4**
	comp=Z,1.0nm,0.4s,mb4.5								
JOF	**Joensuu**	**90.80**	**333**	*e*P		**P**		**17 27 45.4**	**+1.4**
JOF	comp=Z,1.0nm,0.4s,mb4.5			pmax		pmax			
HAQS	**Haql**	**90.80**	**299**	P		**P**		**17 27 46.1**	**+1.3**
SYO	**Syowa Base**	**90.91**	**201**	⇓P		**P**		**17 27 44.9**	**+0.5**
SYO	**Syowa Base**	**90.91**	**201**	⇓PcP		PcP		17 27 47.8	+2.0
SYO	**Syowa Base**	**90.91**	**201**	⇓pP		pP		17 27 50.9	+0.7
SYO	**Syowa Base**	**90.91**	**201**	⇓*e*P		**P**		**17 27 44.9**	**+0.5**
SYO				*e*PcP		PcP		17 27 47.8	+2.0
SYO				*e*pP		pP		17 27 50.9	+0.7
SYO				*e*PP		PP		17 31 21.9	-1.1
BRTR	**Keskin Array B**	**91.28**	**310**	P		**P**		**17 27 47.0**	**+0.2**
	comp=Z,2.9nm,0.7s,mb4.7,baz=124,slow=4.5,SNR=16								
BRTR	comp=Z,53nm,20.8s,MS4.0,baz=115,slow=41			LR		LR		18 17 37.4	
BALT	**Daday**	**91.35**	**311**	*i* P		**P**		**17 27 48.0**	**+0.9**
INK	**Inuvik**	**91.67**	**22**	P		**P**		**17 27 48.1**	**+0.2**
	comp=Z,4.8nm,1.1s,mb4.7,baz=316,slow=6.9,SNR=11								
INK	**Inuvik**	**91.67**	**22**	P		**P**		**17 27 48.1**	**+0.2**
INK	comp=Z,5.0nm,1.1s			pmax		pmax			
INK	**Inuvik**	**91.67**	**22**	*e*P		**P**		**17 27 47.6**	**-0.3**
	comp=Z,14nm,1.4s,mb5.1								
CSS	**Prodhromos**	**91.83**	**305**	*e*P		**P**		**17 27 49.0**	**-0.5**
QSPA	**South Pole Qui**	**91.93**	**180**	*e*P		**P**		**17 27 49.6**	**+0.7**
	comp=Z,3.9nm,0.6s,mb4.9								
ARCES	**ARCESS Array B**	**92.13**	**340**	P		**P**		**17 27 49.3**	**-0.7**
	comp=Z,7.7nm,0.7s,mb5.2,baz=78,slow=6.4,SNR=25								
ARCES	comp=Z,1.6nm,0.7s,baz=243,slow=2.0,SNR=5.9			PKKP		PKKP		17 45 04.6	+7.5
ARCES	**ARCESS Array B**	**92.13**	**340**	P		**P**		**17 27 49.3**	**-0.7**
ARCES								17 45 04.6	
ARCES	comp=Z,8.0nm,0.7s			pmax		pmax			
ARCES	comp=Z,2.0nm,0.7s			pmax		pmax			
ARE0	**ARCESS Array S**	**92.13**	**340**	*e*P		**P**		**17 27 49.0**	**-1.0**
SPITS	**Spitsbergen Ar**	**92.20**	**349**	P		**P**		**17 27 50.2**	**0.0**
	comp=Z,9.3nm,0.8s,mb5.1,baz=102,slow=8.3,SNR=11								
FINES	**FINESS Array B**	**93.44**	**332**	P		**P**		**17 27 55.0**	**-1.2**
	comp=Z,2.6nm,0.6s,mb4.8,baz=65,slow=4.7,SNR=14								
FINES	comp=Z,121nm,21.4s,MS4.3,baz=214,slow=38			LR		LR		18 13 58.9	
FINES	**FINESS Array B**	**93.44**	**332**	P		**P**		**17 27 55.0**	**-1.2**
FINES	comp=Z,3.0nm,0.6s			pmax		pmax			
FINES	comp=Z,121nm,21.4s			MLR		MLR			
ULDT	**Uludag**	**94.69**	**310**	*i* P		**P**		**17 28 02.5**	**0.0**
SUW	**Suwalki**	**96.44**	**325**	*e*P		**P**		**17 28 08.7**	**-1.5**
DAG	**Danmarks Havn**	**98.98**	**352**	⇑iP		**P**		**17 28 20.3**	**-0.8**
	comp=Z,2.7nm,0.6s,mb5.0								
DAG	**Danmarks Havn**	**98.98**	**352**	⇑*i*P		**P**		**17 28 20.3**	**-0.8**
DAG	comp=Z,3.0nm,0.6s,mb5.0			pmax		pmax			
OJC	**Ojcow**	**99.36**	**322**	*e*P		**P**		**17 28 25.5**	**+2.1**
NB2	**NORSAR Subarra1**	**00.41**	**334**	P		P		17 28 26.0	-1.9
	comp=Z,3.9nm,1.2s,baz=68,slow=4.3								
NB2	**NORSAR Subarra1**	**00.41**	**334**	P		P		17 28 26.0	-1.9
	baz=68,slow=4.3								
NOA	**NORSAR Array B**	**100.41**	**334**	P		P		17 28 26.1	-1.9
	comp=Z,0.8nm,0.6s,baz=72,slow=4.2,SNR=6.2								
NOA	**NORSAR Array B**	**100.41**	**334**	P		P		17 28 26.1	-1.8
NOA	comp=Z,1.0nm,0.6s			pmax		pmax			
YKA	**Yellowknife Ar**	**100.97**	**25**	P		P		17 28 30.6	+0.3
	comp=Z,0.6nm,0.6s,baz=295,slow=4.2,SNR=13								
YKA	comp=Z,0.3nm,0.6s,baz=301,slow=1.5,SNR=6.0			PKiKP				17 32 55.9	
YKA	comp=Z,0.1nm,0.6s,baz=85,slow=2.0,SNR=4.2			PKKPbc				17 44 38.7	
BRG	**Berggiesshubel**	**102.74**	**323**	*e*P		Pdif		17 28 39.2	+0.6
BRG	comp=Z,3.0nm,0.9s			pmax		pmax			
BRG	**Berggiesshubel**	**102.74**	**323**	*e*P		Pdif		17 28 39.2	+0.6
	comp=Z,3.0nm,0.9s								
GERES	**GERESS Array B**	**103.56**	**321**			Pdiff	Pdif	17 28 42.2	-0.1
	comp=Z,0.4nm,0.8s,baz=98,slow=6.9,SNR=4.4								
PDAR	**Pinedale Array**	**112.50**	**42**			PKKPbc		17 44 07.3	
	comp=Z,0.3nm,0.5s,baz=90,slow=5.4,SNR=3.7								
ANMO	**Albuquerque**	**118.00**	**48**	*i* PKIKP			PKPdf	17 33 30.0	-1.0
MNTX	**Cornudas Mount**	**120.16**	**51**	*e*PKP			PKPdf	17 33 32.9	-2.4
SCHQ	**Schefferville**	**122.22**	**9**	PKP			PKPdf	17 33 36.2	-2.4
	comp=Z,4.2nm,0.6s,baz=212,slow=0.8,SNR=8.2								
SCHQ	**Schefferville**	**122.22**	**9**	PKP			PKPdf	17 33 36.2	-2.4
TXAR	**Lajitas Array**	**122.46**	**53**	PKP			PKPdf	17 33 37.5	-2.2
	comp=Z,1.6nm,0.7s,baz=232,slow=1.7,SNR=24								
JCT	**Junction City**	**125.00**	**50**	*e*PKP			PKPdf	17 33 42.1	-2.6
PLAL	**Pickwick Lake**	**130.71**	**38**	*e*PKP			PKPdf	17 33 52.4	-3.1
KIC	**Kosan Boka**	**131.06**	**280**	*e*PKIKP			PKPdf	17 33 54.7	-2.1
	comp=Z,420nm,0.9s								
DBIC	**Dimbokro**	**131.12**	**281**	PKP			PKPdf	17 33 54.8	-2.1
	comp=Z,12nm,1.1s,baz=109,slow=2.7,SNR=5.7								
DBIC	**Dimbokro**	**131.12**	**281**	PKIKP			PKPdf	17 33 54.8	-2.1
DBIC	comp=Z,12nm,1.1s			pmax		pmax			
TIC	**Toumodi**	**131.29**	**281**	*e*PKIKP			PKPdf	17 33 55.2	-2.0
	comp=Z,221nm,1.9s								
LIC	**Lamto**	**131.36**	**280**	*e*PKIKP			PKPdf	17 33 55.3	-2.1
	comp=Z,96nm,1.9s								
LRAL	**Lakeview Retre**	**132.65**	**40**	*e*PKP			PKPdf	17 33 57.0	-2.3
MYNC	**Murphy**	**133.01**	**35**	PKP			PKPdf	17 33 57.1	-2.9
TRQA	**Tornquist**	**143.20**	**168**	*e*PKP			PKPdf	17 34 12.1	-6.2
FCH	**Farellones**	**144.90**	**154**	*i* P			PKPbc	17 34 19.2	+1.6
CPUP	**Villa Florida**	**155.47**	**171**	PKPbc			PKPdf	17 34 45.5	+7.8
	comp=Z,8.9nm,0.8s,baz=186,slow=1.6,SNR=15								
LPAZ	**La Paz**	**159.47**	**135**	PKP			PKPdf	17 34 42.8	-0.2
	comp=Z,3.5nm,0.8s,baz=278,slow=1.5,SNR=17								
LPAZ	**La Paz**	**159.47**	**135**	PKIKP			PKPdf	17 34 42.8	-0.2
LPAZ	comp=Z,4.0nm,0.8s			pmax		pmax			
LPAZ	**La Paz**	**159.47**	**135**	*e*PKP			PKPdf	17 34 42.1	-0.9
BDFB	**Brasilia**	**165.57**	**200**	PKP			PKPdf	17 34 47.4	-1.7
	comp=Z,2.2nm,0.9s,baz=195,slow=6.8,SNR=3.1								
BDFB	comp=Z,3.6nm,0.6s,baz=205,slow=0.4,SNR=5.1			PKPab			PKPab	17 35 45.9	-0.1
BDFB	**Brasilia**	**165.57**	**200**	PKIKP			PKPdf	17 34 47.4	-1.7
BDFB								17 35 45.9	
BDFB				pmax		pmax			
BDFB	comp=Z,2.0nm,0.9s			pmax		pmax			
	comp=Z,4.0nm,0.6s								

*NEIC **30** 17:43:39.1,37.51N×36.24E,h5km,ML3.4(ISK),After ISK.*
*ISK **30** 17:43:39.1,37.51N×36.24E,h5km,MD3.5,ML3.4*
*NSSC **30** 17:43:42.3,36.88N×37.71E,h18km±9km*
ISC 30 17:43:40.4±0.4,37.50N±0.03×36.23E±0.04,h5km,n25,
σ1s04/33,1C-2D,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CEYT	**Ceyhan**	**0.62**	**219**	*e*PG	**Pg**	**17 43 52.6**	**-0.2**
GAZ	**Gaziantep**	**0.84**	**112**	*i* PG	**Pg**	**17 43 55.8**	**-1.5**
GAZ				*i* SG	**Sg**	**17 44 09.6**	**+1.0**
DRWC	**Darouich**	**0.94**	**158**	⇑P	**Pb**	**17 43 58.6**	**-0.2**
DRWC				⇑S	**Sb**	**17 44 10.7**	**-0.7**
COBT	**Iskenderun**	**0.97**	**179**	⇑*i*P	**Pb**	**17 43 58.9**	**-0.5**
COBT				*i* S	**Sb**	**17 44 14.6**	**+2.2**
GZT	**Gaziantep**	**1.07**	**97**	*i* P	**Pb**	**17 43 58.9**	**-2.1**
GZT				*i* S	**Sb**	**17 44 16.6**	**+1.4**
HTY	**Hatay**	**1.37**	**183**	PN	**Pn**	**17 44 06.5**	**+0.2**
BNN	**Bunyan**	**1.39**	**347**	*e*PN	**Pn**	**17 44 05.9**	**-0.6**
NIG	**Nigde**	**1.42**	**296**	*i* PN	**Pn**	**17 44 07.3**	**+0.3**
BTCH	**Batrach**	**1.47**	**173**	⇑P	**Pn**	**17 44 05.9**	**-1.8**
BTCH				⇑S	**Sb**	**17 44 22.3**	**-4.4**
ARNB	**Al Arnab**	**1.65**	**187**	⇓P	**Pn**	**17 44 11.5**	**+1.3**
ARNB				⇓S	**Sb**	**17 44 32.7**	**+0.9**
AVNT	**Avonos**	**1.68**	**320**	*i* P	**Pn**	**17 44 11.0**	**+0.3**
AVNT				*i* S	**Sn**	**17 44 36.3**	**+3.5**
SLNF	**Slenfeh**	**1.90**	**180**	⇑P	**Pn**	**17 44 11.3**	**-2.5**
MYA	**Malataya**	**1.92**	**64**	*i* PN	**Pn**	**17 44 14.4**	**+0.3**
YOZ	**Yozgat**	**2.26**	**342**	*e*PN	**Pn**	**17 44 19.1**	**+0.2**
SVST	**Sivas**	**2.34**	**14**	*e*P	**Pn**	**17 44 19.9**	**-0.2**
ELZG	**Elazig**	**2.39**	**64**	*i* P	**Pn**	**17 44 20.6**	**-0.3**
ELZG				*i* S	**Sn**	**17 44 56.1**	**+5.1**
IKL	**Isikli**	**2.40**	**239**	*e*PN	**Pn**	**17 44 21.3**	**+0.4**
SVSK	**Karacayir**	**2.49**	**14**	*e*PN	**Pn**	**17 44 21.7**	**-0.6**
KAMT	**Kaman**	**2.72**	**314**	*e*PN	**Pn**	**17 44 25.6**	**0.0**
HDMB	**Hadim**	**3.04**	**261**	*e*PN	**Pn**	**17 44 29.6**	**-0.5**
DIY	**Diyarbakir**	**3.19**	**82**	*e*PN	**Pn**	**17 44 32.8**	**+0.5**
CTKT	**Corum**	**3.32**	**341**	*i* P	**Pn**	**17 44 34.5**	**+0.5**
KELT	**Kelkit**	**3.55**	**41**	*e*P	**Pn**	**17 44 38.6**	**+1.2**
EZC	**Erzincan**	**3.60**	**50**	*e*PN	**Pn**	**17 44 34.1**	**-3.9**
ELDT	**Eldivan**	**3.70**	**325**	*i* P	**Pn**	**17 44 47.7**	**+8.1**

*NEIC **30** 17:50:30.9,45.71S×166.60E,ML4.1(WEL),After WEL.*
WEL 30 17:50:32.1±0.8,45.77S×166.67E,h5km,ML4.1/8,1D,
Error ellipse: s-maj=6.7km s-min=2.8km az=90.0,Off west coast of South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DCZ	**Deep Cove**	**0.45**	**50**	⇓PG	Pg	17 50 41.8	+0.7
DCZ				SG	Sg	17 50 48.5	+1.5
WHZ	**Wether Hill Ro**	**0.90**	**98**	P*	Pb	17 50 49.2	-0.6
WHZ				S*	Sb	17 51 01.6	-0.3
WHZ	**Wether Hill Ro**	**0.90**	**98**	*e*P	Pb	17 50 49.3	-0.5
WHZ				S	Sb	17 51 02.8	+0.8
MLZ	**Mavora Lakes**	**1.14**	**69**	P*	Pb	17 50 53.0	-0.8
MLZ				S*	Sb	17 51 09.1	+0.3
MLZ	**Mavora Lakes**	**1.14**	**69**	P	Pb	17 50 53.0	-0.8
MLZ				S	Sb	17 51 09.2	+0.4
MSZ	**Milford Sound**	**1.41**	**40**	PN	Pn	17 50 56.3	-2.2
MSZ				SN	Sn	17 51 15.2	-2.5
AXZ	**Alexandra**	**1.94**	**76**	PN	Pn	17 51 06.8	+0.8
TUZ	**Tuapeka**	**2.08**	**96**	PN	Pn	17 51 07.3	-0.7
TUZ	**Tuapeka**	**2.08**	**96**	P	Pn	17 51 07.4	-0.7
BWZ	**Berwen**	**2.59**	**63**	PN	Pn	17 51 14.0	-1.4
ODZ	**Otahua Downs**	**2.89**	**77**	PN	Pn	17 51 18.1	-1.6
ODZ	**Otahua Downs**	**2.89**	**77**	*e*P	Pn	17 51 18.2	-1.5
RPZ	**Rata Peaks**	**3.74**	**58**	PN	Pn	17 51 29.5	-2.2
RPZ	**Rata Peaks**	**3.74**	**58**	P	Pn	17 51 29.7	-2.0
WVZ	**Waitaha Valley**	**3.97**	**49**	PN	Pn	17 51 34.7	-0.2
LTZ	**Lake Taylor**	**5.01**	**55**	PN	Pn	17 51 46.7	-3.0

*JMA **30** 18:14:38.9±0.2,26.10N×125.61E,h109km±5km,M3.7*
*IDC **30** 18:14:38.3±2.7,26.24N×125.69E,h101km±23km,mb3.6/9, mb1 3.7/10,mb1mx3.5/22,Error ellipse: s-maj=26.4km s-min=20.6km az=31.0*
*NEIC **30** 18:14:39.6±1.1,26.16N×125.70E,h115km±11km,mb3.8/1, Error ellipse: s-maj=19.3km s-min=13.4km az=171.0*
ISC 30 18:14:37.6±0.3,26.08N±0.07×125.68E±0.06,h117km±6km, n32,σ1s02/51,mb3.7/10,Northeast of Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JKE	**Kume jima 2**	**1.03**	**76**	P	**P**	**18 15 01.1**	**+1.2**
JKE				S	**S**	**18 15 17.2**	**+0.6**
JMJ	**Miyako jima 2**	**1.30**	**195**	P	**P**	**18 15 03.8**	**+0.8**
JMJ				S	**S**	**18 15 21.8**	**-0.4**
JOGS	**Gusukube**	**1.33**	**191**	P	**P**	**18 15 04.3**	**+1.0**
JOGS				S	**S**	**18 15 22.5**	**-0.3**
JAGN	**Aguni-jima**	**1.50**	**70**	P	**P**	**18 15 06.4**	**+1.2**
JAGN				S	**S**	**18 15 26.1**	**+0.1**
JTJ	**Tarama**	**1.68**	**212**	P	**P**	**18 15 07.7**	**+0.3**
JTJ				S	**S**	**18 15 28.8**	**-1.0**
NAH1	**Naha**	**1.81**	**86**	P	**P**	**18 15 10.5**	**+1.5**
NAH1				*e*S	**S**	**18 15 32.7**	**0.0**
JJT2	**Tamagusuku 2**	**1.86**	**88**	P	**P**	**18 15 11.2**	**+1.6**
JJT2				*e*S	**S**	**18 15 34.7**	**+0.9**
JIJ	**Ishigaki jima**	**2.20**	**219**	P	**P**	**18 15 13.9**	**-0.1**
JIJ				S	**S**	**18 15 38.7**	**-2.7**
JIH	**Iheya**	**2.26**	**65**	P	**P**	**18 15 16.0**	**+1.2**
JIH				*e*S	**S**	**18 15 42.7**	**-0.2**
JKRS	**Kuro-shima**	**2.37**	**220**	P	**P**	**18 15 16.5**	**+0.2**
JKRS				*e*S	**S**	**18 15 44.6**	**-0.9**
JOW	**Kunigami**	**2.45**	**72**	P	**P**	**18 15 17.8**	**+0.5**
	44nm,0.3s,baz=201,slow=8.9,SNR=250						
JOW	40nm,0.3s,baz=136,slow=24,SNR=8.3			S	**S**	**18 15 45.3**	**-1.9**
JOW	**Kunigami**	**2.45**	**72**	P	**P**	**18 15 17.8**	**+0.5**
JOW				*e*S	**S**	**18 15 46.0**	**-1.2**
IRIF	**Iriomote-Funau**	**2.47**	**226**	P	**P**	**18 15 17.5**	**-0.1**
IRIF				*e*S	**S**	**18 15 47.1**	**-0.7**
HATJ	**Hateruma jima**	**2.63**	**221**	P	**P**	**18 15 20.2**	**+0.5**
HATJ				S	**S**	**18 15 50.2**	**-1.4**
YOJ	**Yonaguni jima**	**2.90**	**237**	P	**P**	**18 15 24.1**	**+0.8**
YOJ				*e*S	**S**	**18 15 58.6**	**+0.7**
JTK	**Tokunoshima**	**3.38**	**59**	P	**P**	**18 15 29.8**	**0.0**
JTK				S	**S**	**18 16 08.1**	**-1.5**
TATO	**Taipei**	**3.94**	**255**	*e*P	**P**	**18 15 38.8**	**+1.5**
JAM	**Amami Oshima**	**4.20**	**56**	P	**P**	**18 15 40.4**	**-0.5**
JAM				S	**S**	**18 16 26.9**	**-2.4**
JZK	**Kikaishima**	**4.43**	**59**	P	**P**	**18 15 43.4**	**-0.5**
JZK				S	**S**	**18 16 34.2**	**-0.6**
JMZ	**Minamidaito 2**	**5.00**	**92**	P	**P**	**18 15 49.3**	**-2.3**
JMZ				*e*S	**S**	**18 16 40.1**	**-8.6**
ULN	**Ulaanbaatar**	**26.22**	**331**	*e*P	**P**	**18 20 06.0**	**+2.9**
	1.4nm,0.5s,mb3.6						
SONM	**Songino Array**	**26.49**	**330**	P	**P**	**18 20 05.4**	**-0.2**
	1.7nm,0.5s,mb3.8,baz=144,slow=9.0,SNR=23						
MKAR	**Makanchi Array**	**39.94**	**313**	P	**P**	**18 22 01.9**	**+0.2**
	1.0nm,0.5s,mb3.9,baz=101,slow=10,SNR=24						
KURK	**Kurchatov**	**43.36**	**317**	*e*P	**P**	**18 22 29.0**	**-0.6**
BVAR	**Borovoye Array**	**48.87**	**319**	P	**P**	**18 23 12.4**	**-0.6**
	0.7nm,0.7s,mb3.7,baz=104,slow=6.1,SNR=4.8						
BVAR	0.6nm,0.5s,baz=108,slow=4.7,SNR=6.8			PcP	PcP	18 24 35.9	-0.2
ASAR	**Alice Springs**	**50.09**	**170**	P	**P**	**18 23 24.1**	**+1.3**
	0.3nm,0.9s,mb3.2,baz=356,slow=12,SNR=4.7						
ASAR	0.7nm,1.1s,baz=358,slow=7.8,SNR=5.4			pP	pP	18 23 49.7	-0.6
ILAR	**Eielson Array**	**65.66**	**28**	P	**P**	**18 25 10.6**	**-0.6**
	0.6nm,0.5s,mb3.7,baz=256,slow=4.7,SNR=18						
ARCES	**ARCESS Array B**	**69.30**	**338**	P	**P**	**18 25 32.9**	**-0.8**
	3.1nm,1.1s,mb4.0,baz=59,slow=7.1,SNR=5.4						
FINES	**FINESS Array B**	**71.86**	**330**	P	**P**	**18 25 48.8**	**-0.4**
	0.8nm,0.4s,mb3.9,baz=65,slow=6.2,SNR=13						
NB2	**NORSAR Subarra**	**78.42**	**333**	P	**P**	**18 26 25.9**	**-0.6**
	0.8nm,0.5s,mb3.7,baz=54,slow=5.6						
NOA	**NORSAR Array B**	**78.42**	**333**	P	**P**	**18 26 26.2**	**-0.3**
	0.9nm,0.6s,mb3.7,baz=54,slow=5.7,SNR=7.4						
YKA	**Yellowknife Ar**	**79.62**	**24**	P	**P**	**18 26 34.1**	**+1.2**
	0.9nm,0.5s,mb3.9,baz=303,slow=5.2,SNR=31						

*IDC **30** 18:52:09.1±2.5,59.69N×24.64E,mb1 3.1/3, mb1mx2.9/20,ML2.9/3,Error ellipse: s-maj=29.6km s-min=9.5km az=150.0*
*HEL **30** 18:52:10.5±0.1,59.76N×24.42E,ML2.0,ML2.3(UPP), ML2.2(NAO),Explosion*
*BER **30** 18:52:10.7±4.4,59.73N×24.47E,h0km±25km, ML2.2(NAO)*
*NAO **30** 18:52:12.2±3.2,59.93N×24.16E,ML2.2*
ISC 30 18:52:09.1±1.0,59.94N±0.07×24.09E±0.09,n14,σ1s75/28,
Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MEF	**Metsahovi**	**0.32**	**29**	*e*P	**Pg**	**18 52 18.5**	**+3.1**
MEF				*e*S	**Sg**	**18 52 24.9**	**+5.2**
FIA0	**FINESS Array S**	**1.80**	**32**	*e*PN	**Pn**	**18 52 43.9**	**+2.3**
FIA0				*e*S	**Sn**	**18 53 07.7**	**+2.2**
FIA0	comp=Z,12nm,0.2s			MSG		18 53 10.9	
FIA0	**FINESS Array S**	**1.80**	**32**	Pn	**Pn**	**18 52 44.0**	**+2.5**
	baz=202,slow=16						
FIA0	baz=195,slow=37			Lg		18 53 08.1	
FINES	**FINESS Array B**	**1.80**	**32**	Pn	**Pn**	**18 52 43.9**	**+2.3**
	comp=Z,2.5nm,0.3s,baz=200,slow=16,SNR=177						
FINES	comp=Z,3.3nm,0.3s,baz=189,slow=28,SNR=26			Sn	**Sn**	**18 53 07.9**	**+2.5**
VJF	**Virojoki**	**1.83**	**69**	*e*P	**Pn**	**18 52 41.2**	**-0.9**
VJF				*e*S	**Sn**	**18 53 04.3**	**-2.0**
KEF	**Keuruu**	**2.27**	**9**	*e*PB	**Pb**	**18 52 52.8**	**+2.1**
KEF				*e*SG	**Sg**	**18 53 24.7**	**+0.1**
KEF	comp=Z,4.3nm,0.2s			MSG		18 53 25.9	
SUF	**Sumiainen**	**2.96**	**19**	*e*P	**Pn**	**18 53 01.2**	**+3.0**
SUF				*e*SG	**Sg**	**18 53 45.1**	**-2.6**
HFS	**Hagfors**	**5.22**	**277**	Pn	**Pn**	**18 53 31.0**	**+0.8**
HFS	baz=104,slow=12			Sn	**Sn**	**18 54 32.7**	**+0.6**
HFS	baz=104,slow=28			Lg		18 54 56.3	
HFS	**Hagfors**	**5.22**	**277**	*e*P	**

PDAR	**Pinedale Array**	**38.63**	**82**	P	**P**	**19 19 13.2**	**+3.2**
	0.5nm,0.8s,mb3.4,baz=270,slow=6.3,SNR=3.7						
TXAR	**Lajitas Array**	**51.17**	**92**	P	**P**	**19 20 50.4**	**+0.2**
	0.3nm,0.4s,mb3.7,baz=307,slow=5.7,SNR=6.9						
TXAR				pP	pP	19 21 09.8	-0.8
	0.3nm,0.5s,baz=296,slow=5.4,SNR=3.5						
TXAR	**Lajitas Array**	**51.17**	**92**	P	**P**	**19 20 50.4**	**+0.2**
TXAR				pP	pP	19 21 09.8	-0.8
ARCES	**ARCESS Array B**	**56.78**	**355**	P	**P**	**19 21 30.5**	**-0.3**
	29nm,1.5s,mb5.1,baz=7.1,slow=7.3,SNR=3.5						
TSUM	**Tsumeb**	**145.44**	**353**	PKPbc	PKPbc	19 31 23.4	+1.0
	1.7nm,0.8s,baz=6.4,slow=1.7,SNR=8.8						

*BJI **30** 19:26:57.8,36.61N×51.06E,h29km,mB4.7,mb4.7,Ms4.6, Msz4.2*
*NEIC **30** 19:26:60.0±0.3,36.45N×51.56E,h10km,mb4.4/42,Error ellipse: s-maj=6.9km s-min=4.6km az=163.0*
*MOS **30** 19:27:01.9±1.0,36.40N×51.45E,h33km,mb4.4/14,Error ellipse: s-maj=12.5km s-min=7.6km az=108.7*
*IDC **30** 19:27:01.0±3.6,36.37N×51.61E,h17km±28km,mb4.0/18, mb1 4.2/19,mb1mx4.1/25,ML3.0/1,MS3.5/8,Ms1 3.6/8, ms1mx3.4/22,Error ellipse: s-maj=25.7km s-min=14.5km az=2.0*
*THR **30** 19:27:02.0±0.6,36.42N×51.66E,ML4.6*
*NNC **30** 19:27:10.2±4.6,37.34N×52.45E,Error ellipse: s-maj=66.4km s-min=51.1km az=85.0*
ISC 30 19:27:00.8±0.7,36.46N±0.03×51.56E±0.03,h28km±6km, n188,σ1§04/198,mb4.4/77,MS3.7/13,7C-11D,Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
THR	**Tehran**	**0.65**	**213**	Pg		**Pb**	**19 27 12.8**	**-0.7**
	357nm,0.3s,baz=15,slow=13,SNR=2223							
THR				Lg			19 27 21.8	
	2µm,0.3s,baz=160,slow=12,SNR=123							
THR	**Tehran**	**0.65**	**213**	P		**Pb**	**19 27 12.8**	**-0.7**
THR							19 27 21.8	
THR				pmax	pmax			
	comp=Z,357nm,0.3s							
THR				smax				
	comp=Z,2.0nm,0.3s							
THKV	**Tehran--Karaj**	**0.77**	**226**	*e*PG		**Pb**	**19 27 16.1**	**+0.6**
THKV				*e*SG		**Sb**	**19 27 26.9**	**+1.3**
THKV				AMP			19 27 29.1	
	comp=N,25µm,0.8s							
DAMV	**Damavand**	**0.89**	**158**	*e*PG		**Pb**	**19 27 16.7**	**-0.9**
DAMV				*e*SG		**Sb**	**19 27 28.1**	**-1.0**
SNGE	**Sanandaj**	**3.68**	**250**	*e*PN		**Pn**	**19 27 59.7**	**+2.3**
MIB	**Mutribah**	**7.52**	**209**	*e*P		**Pn**	**19 28 51.0**	**-0.5**
RST	**Umm Al-Ruwaisa**	**7.92**	**210**	*e*P		**Pn**	**19 28 55.8**	**-1.4**
RDF	**Al-Radifah**	**8.23**	**205**	*e*P		**P**	**19 28 59.8**	**-1.7**
ZEI	**Tsey**	**8.64**	**319**	*e*P		**P**	**19 29 06.5**	**-0.6**
KIV	**Kislovodsk**	**10.10**	**321**	*i* P		**P**	**19 29 27.0**	**-0.3**
KIV				*e*S		**S**	**19 31 15.0**	**-5.7**
KIV				pmax	pmax			
	comp=Z,6.0nm,0.7s							
KIV	**Kislovodsk**	**10.10**	**321**	*e*P		**P**	**19 29 25.8**	**-1.5**
	comp=Z,3.8nm,0.8s							
GOF	**Gofitskoye**	**10.75**	**326**	*e*P		**P**	**19 29 36.0**	**-0.1**
GOF				*i* S		**S**	**19 31 31.0**	**-5.5**
GOF				pmax	pmax			
	comp=Z,30nm,1.2s							
GOF				smax				
	comp=N,70nm,1.4s							
SOC	**Sochi**	**11.53**	**312**	*e*P		**P**	**19 29 46.7**	**0.0**
SOC				*e*S		**S**	**19 31 55.0**	**-0.6**
SOC				pmax	pmax			
	comp=Z,10.0nm,1.5s							
SOC				pmax	pmax			
	comp=N,9.0nm,1.0s							
SOC				pmax	pmax			
	comp=E,9.0nm,0.8s							
SOC				MLR	MLR			
	comp=Z,180nm,16.0s							
SOC				MLR	MLR			
	comp=E,90nm,10.0s							
HILS	**Ha'il**	**12.26**	**225**	P		**P**	**19 29 53.9**	**-2.8**
ARSS	**Ar Rass**	**12.71**	**216**	P		**P**	**19 29 58.8**	**-3.9**
ASF	**Jabal al Asfar**	**12.85**	**255**	LR		LR	19 35 56.3	
	comp=E,428nm,18.1s,baz=156,slow=42							
MZLS	**Mizel**	**13.54**	**206**	P		**P**	**19 30 09.9**	**-3.8**
AB31	**Akbulak array**	**14.18**	**23**	P		**P**	**19 30 14.4**	**-7.5**
	comp=E,5.6nm,0.4s,baz=210,slow=13,SNR=252							
AB31				⇑S		**S**	**19 32 43.1**	**-16**
	comp=E,4.8nm,0.4s,baz=193,slow=21,SNR=9.4							
BRTR	**Keskin Array B**	**14.48**	**288**	Pn		**P**	**19 30 30.9**	**+5.0**
	comp=E,0.1nm,0.3s,baz=100,slow=7.5,SNR=9.8							
CSS	**Prodhromos**	**14.89**	**270**	*e*P		**P**	**19 30 34.1**	**+2.9**
KBRS	**Khaybar**	**14.95**	**228**	P		**P**	**19 30 30.6**	**-1.5**
TBKS	**Tabuk**	**15.10**	**241**	P		**P**	**19 30 35.4**	**+1.3**
JMQS	**Jabal Moqyreh**	**15.20**	**245**	P		**P**	**19 30 37.5**	**+2.2**
ALWS	**Ilw as Safayha**	**15.57**	**247**	P		**P**	**19 30 43.6**	**+3.5**
JMOS	**Jabal al Moall**	**15.61**	**247**	P		**P**	**19 30 43.6**	**+2.9**
HAQS	**Haql**	**15.80**	**247**	P		**P**	**19 30 45.9**	**+2.7**
KK31	**Karatay Array**	**16.00**	**60**	⇓P		**P**	**19 30 40.7**	**-4.9**
	comp=E,9.0nm,0.8s,baz=245,slow=16,SNR=76							
KK31				⇓S		**S**	**19 33 32.5**	**-9.4**
	comp=E,1.2nm,0.4s,baz=323,slow=14,SNR=3.7							
BDAS	**Al Bad'**	**16.02**	**245**	P		**P**	**19 30 49.0**	**+3.1**
AYUS	**'Aynunah**	**16.03**	**244**	P		**P**	**19 30 48.8**	**+2.7**
YNBS	**Yanbu' al Bahr**	**16.79**	**228**	P		**P**	**19 30 55.8**	**0.0**
VRSR	**Storozhevoye**	**17.20**	**333**	*d* iP		**P**	**19 30 56.5**	**-4.2**
VRSR				*e*S		**S**	**19 34 06.6**	**-3.0**
VRSR				pmax	pmax			
	comp=Z,10.0nm,0.7s							
VRSR				pmax	pmax			
	comp=N,40nm,1.0s							
VRSR				pmax	pmax			
	comp=E,30nm,0.9s							
VRSR				smax				
	comp=N,5.0nm,0.4s							
VRSR				smax				
	comp=Z,5.0nm,0.5s							
VRSR				smax				
	comp=E,9.0nm,0.8s							
KAMS	**Al Khamasin**	**17.21**	**203**	P		**P**	**19 30 59.6**	**-1.4**
EKS2	**Erkin-Say**	**18.20**	**63**	P		**P**	**19 31 13.7**	**+0.5**
	SNR=12							
TATS	**Tathlith**	**18.28**	**205**	P		**P**	**19 31 13.7**	**-0.7**
UCH	**Uchtor**	**18.64**	**65**	P		**P**	**19 31 21.0**	**+2.3**
	SNR=8.3							
BLJS	**Baljurashi**	**18.68**	**211**	P		**P**	**19 31 18.5**	**-0.7**
AAK	**Ala-Archa**	**18.71**	**64**	P		**P**	**19 31 18.8**	**-0.6**
	SNR=5.4							
AAK	**Ala-Archa**	**18.71**	**64**	*e*P		**P**	**19 31 17.8**	**-1.6**
	comp=E,8.0nm,0.8s							
FRU	**Bishkek**	**18.84**	**63**	*e*P		**P**	**19 31 23.0**	**+2.0**
LTHS	**Al Lith**	**18.84**	**214**	P		**P**	**19 31 20.8**	**-0.4**
USP	**Ospenovka**	**18.85**	**62**	P		**P**	**19 31 19.8**	**-1.3**
	SNR=9.1							
CHMS	**Chumysh**	**18.97**	**63**	P		**P**	**19 31 22.5**	**0.0**
	SNR=11							
KBK	**Karagaybulak**	**19.04**	**64**	P		**P**	**19 31 23.8**	**+0.4**
	SNR=11							
NAMS	**An Nimas**	**19.08**	**208**	P		**P**	**19 31 23.7**	**-0.3**
KZA	**Kyzart**	**19.16**	**66**	P		**P**	**19 31 24.6**	**-0.2**
	SNR=8.5							
KSH	**Kashi**	**19.47**	**74**	*e*P		**P**	**19 31 28.3**	**-0.1**
KSH				*e*AP			19 31 35.0	
KSH				*e*PP		PP	19 31 45.8	-0.3
KSH				*e*PCP		PcP	19 35 49.0	+0.7
KSH				*e*SCP			19 39 23.3	
KSH				*e*SCS		ScS	19 43 04.0	+2.3
KSH				AMB		AMB		
	comp=Z,120nm,2.4s							
KSH				LR		LR		
	comp=N,160nm,4.6s							
KSH				LR		LR		
	comp=E,290nm,9.2s							
TKM2	**Tokmak 2**	**19.56**	**63**	P		**P**	**19 31 31.0**	**+1.6**
	SNR=17							
DJNS	**Zahran al Janu**	**19.98**	**203**	P		**P**	**19 31 34.7**	**+0.6**
ARU	**Arti**	**20.53**	**11**	⇓*i*P		**P**	**19 31 37.7**	**-1.9**
ARU				*e*			19 31 54.6	
ARU				*e*S		**S**	**19 35 21.4**	**-1.5**
ARU				pmax	pmax			
	comp=Z,97nm,0.7s							
ARU				MLR	MLR			
	comp=Z,200nm,18.0s,MS3.5							
ARU				MLR	MLR			
	comp=N,100nm,19.0s,MS3.4							
ARU				MLR	MLR			
	comp=E,100nm,19.0s,MS3.4							
ARU	**Arti**	**20.53**	**11**	*e*P		**P**	**19 31 37.5**	**-2.1**
	comp=E,124nm,0.7s							
ZRNK	**Zerenda**	**20.54**	**31**	⇑P		**P**	**19 31 38.5**	**-1.2**
	comp=E,14nm,0.7s							
ZRNK	**Zerenda**	**20.54**	**31**	*e*P		**P**	**19 31 38.3**	**-1.4**
BRVK	**Borovoye**	**21.16**	**32**	*e*P		**P**	**19 31 45.0**	**-1.0**
BVA0	**Borovoye Array**	**21.19**	**33**	⇓P		**P**	**19 31 45.6**	**-0.6**
	comp=E,4.4nm,0.8s,mb3.8							
BVAR	**Borovoye Array**	**21.19**	**33**	P		**P**	**19 31 45.4**	**-0.8**
	comp=E,14nm,0.6s,mb4.5,baz=225,slow=8.9,SNR=105							
VOSK	**Vostochnaya**	**21.24**	**34**	⇓P		**P**	**19 31 45.8**	**-1.0**
	comp=E,39nm,0.9s,mb4.7							
MLR	**Muntele Rosu**	**21.27**	**303**	P		**P**	**19 31 49.4**	**+2.2**
	comp=E,9.4nm,0.7s,mb4.2,baz=104,slow=4.1,SNR=20							
MLR	**Muntele Rosu**	**21.27**	**303**	P		**P**	**19 31 49.4**	**+2.3**
MLR				pmax	pmax			
	comp=Z,9.0nm,0.7s							
OBN	**Obninsk**	**21.30**	**336**	*d* iP		**P**	**19 31 46.4**	**-1.0**
OBN				pmax	pmax			
	comp=Z,23nm,1.3s,mb4.3							
OBN				MLR	MLR			
	comp=Z,100nm,17.0s,MS3.3							
OBN	**Obninsk**	**21.30**	**336**	*e*P		**P**	**19 31 46.1**	**-1.3**
	comp=E,5.5nm,0.4s,mb4.2							
FRSS	**Farasan al Kab**	**21.35**	**206**	P		**P**	**19 31 48.7**	**+0.5**
MOS	**Moscow**	**21.49**	**338**	*e*P		**P**	**19 31 49.3**	**0.0**
MOS				*e*S		**S**	**19 35 40.4**	**-0.8**
MOS				pmax	pmax			
	comp=Z,75nm,0.6s,mb5.2							
IDI	**Anoyia**	**21.62**	**275**	P		**P**	**19 31 50.7**	**-0.1**
	comp=Z,8.3nm,0.7s,mb4.3,baz=61,slow=9.9,SNR=6.6							
KURK	**Kurchatov**	**24.06**	**45**	⇓P		**P**	**19 32 16.4**	**+1.8**
	comp=Z,15nm,1.0s,mb4.4,baz=247,slow=7.2,SNR=56							
KURK	**Kurchatov**	**24.06**	**45**	*e*P		**P**	**19 32 16.0**	**+1.4**
KWP	**Kalwaria**	**24.68**	**311**	*e*P		**P**	**19 32 20.4**	**-0.2**
	comp=Z,7.6nm,0.8s,mb4.3							
MK31	**Makanchi Array**	**25.04**	**56**	P		**P**	**19 32 25.2**	**+1.1**
	comp=Z,11nm,0.8s,mb4.4,baz=246,slow=7.6,SNR=51							
MKAR	**Makanchi Array**	**25.04**	**56**	P		**P**	**19 32 25.1**	**+1.1**
	comp=Z,18nm,1.1s,mb4.5,baz=246,slow=8.2,SNR=37							
MKAR	**Makanchi Array**	**25.04**	**56**	P		**P**	**19 32 25.1**	**+1.0**
MKAR				pmax	pmax			
	comp=Z,18nm,1.1s							
PSZ	**Piszkesteto**	**25.93**	**306**	*e*P		**P**	**19 32 33.8**	**+1.5**
SUW	**Suwalki**	**26.33**	**321**	*e*P		**P**	**19 32 36.3**	**+0.3**
OJC	**Ojcow**	**26.65**	**311**	*e*P		**P**	**19 32 39.2**	**+0.2**
KOLN	**Koldanda**	**28.39**	**99**	*e*P		**P**	**19 32 59.5**	**+4.5**
	comp=Z,10nm,1.0s,mb4.4							
WMQ	**Urumqi**	**28.42**	**64**	*e*P		**P**	**19 32 55.8**	**+0.7**
WMQ				AP		pP	19 32 59.0	-4.2
WMQ				PP		PP	19 33 46.8	0.0
WMQ				S		**S**	**19 37 40.0**	**+1.0**
WMQ				SCP			19 39 48.3	
WMQ				AMB	AMB			
	comp=Z,9.0nm,0.6s,mb4.6							
WMQ				AMB	AMB			
	comp=Z,82nm,4.4s							
WMQ				LR	LR			
	comp=N,258nm,14.3s,MS4.1							
WMQ				LR	LR			
	comp=E,254nm,14.8s,MS4.1							
WMQ				LR	LR			
	comp=Z,383nm,14.1s,MS4.2							
NVS	**Novosibirsk**	**28.42**	**40**	*i* P		**P**	**19 32 58.2**	**+3.2**
NVS				*e*			19 33 15.1	
NVS				pmax	pmax			
	comp=N,9.0nm,1.2s							
NVS				pmax	pmax			
	comp=E,6.0nm,1.2s							
NVS				pmax	pmax			
	comp=Z,14nm,1.2s,mb4.5							
ARSA	**Arzberg**	**28.69**	**303**	⇓*i*P		**P**	**19 32 58.3**	**+0.8**
	comp=Z,3.4nm,0.8s,mb4.1							
GKN	**Gorkha**	**29.11**	**97**	*e*P		**P**	**19 33 01.2**	**-0.3**
	comp=Z,20nm,1.0s,mb4.8							
DMN	**Daman**	**29.66**	**98**	*e*P		**P**	**19 33 06.6**	**+0.2**
	comp=Z,16nm,0.8s,mb4.8							
FINES	**FINESS Array B**	**29.71**	**335**	P		**P**	**19 33 06.6**	**+0.1**
	comp=Z,0.7nm,0.5s,mb3.6,baz=135,slow=12,SNR=11							
FINES				LR		LR	19 47 28.1	
	comp=Z,66nm,19.4s,MS3.3,baz=334,slow=41							
FINES	**FINESS Array B**	**29.71**	**335**	P		**P**	**19 33 06.6**	**+0.1**
FINES				pmax	pmax			
	comp=Z,1.0nm,0.5s							
FINES				MLR	MLR			
	comp=Z,66nm,19.4s							
KKN	**Kakani**	**29.72**	**97**	*e*P		**P**	**19 33 05.5**	**-1.5**
PKI	**Pulchoki**	**29.92**	**97**	*e*P		**P**	**19 33 07.4**	**-1.3**
GERES	**GERESS Array B**	**30.16**	**306**	P		**P**	**19 33 11.2**	**+0.6**
	comp=Z,0.9nm,0.7s,mb3.6,baz=108,slow=8.4,SNR=14							
GERES				PcP		PcP	19 36 16.9	+5.4
	comp=Z,0.8nm,0.7s,baz=90,slow=2.7,SNR=5.5							
GERES	**GERESS Array B**	**30.16**	**306**	P		**P**	**19 33 11.2**	**+0.6**
GERES							19 36 16.9	
GERES				pmax	pmax			
	comp=Z,1.0nm,0.7s							
GERES				pmax	pmax			
	comp=Z,1.0nm,0.7s							
CLL	**Collm**	**31.10**	**311**	P		**P**	**19 33 20.0**	**+1.1**
CLL				*e*SP		sP	19 33 26.0	-4.6
CLL	**Collm**	**31.10**	**311**	*e*P		**P**	**19 33 20.0**	**+1.1**
CLL				*e*			19 33 26.0	
WTTA	**Wattenberg**	**31.32**	**303**	⇑*i*P		**P**	**19 33 21.0**	**+0.1**
	comp=Z,14nm,0.9s,mb4.8							
WATA	**Walderalm**	**31.36**	**303**	⇓*i*P		**P**	**19 33 21.2**	**-0.1**
	comp=Z,8.1nm,1.1s,mb4.5							
SQTA	**Sankt Quirin**	**31.60**	**303**	⇑*i*P		**P**	**19 33 23.2**	**-0.2**
	comp=Z,8.6nm,1.1s,mb4.5							
MOTA	**Moosalm**	**31.68**	**303**	⇑*i*P		**P**	**19 33 23.4**	**-0.7**
	comp=Z,5.0nm,1.0s,mb4.3							
DAVOX	**Davos**	**32.48**	**302**	P		**P**	**19 33 31.0**	**0.0**
	comp=Z,5.9nm,0.7s,mb4.5,baz=132,slow=8.6,SNR=10							
DAVA	**Damuels**	**32.51**	**303**	⇑*i*P		**P**	**19 33 31.1**	**-0.2**
	comp=Z,14nm,0.8s,mb4.9							
APA	**Apatity**	**32.83**	**347**	⇑*e*P		**P**	**19 33 41.7**	**+7.9**
PGF	**Pioggiola**	**33.13**	**294**	*e*P		**P**	**19 33 36.5**	**-0.2**
	comp=Z,7.6nm,0.9s,mb4.3							
HFS	**Hagfors**	**33.82**	**327**	P		**P**	**19 33 42.4**	**-0.2**
	comp=Z,0.8nm,0.4s,mb4.0,baz=117,slow=9.9,SNR=11							
HFS	**Hagfors**	**33.82**	**327**	P		**P**	**19 33 42.4**	**-0.2**
HFS				pmax	pmax			
	comp=Z,1.0nm,0.4s							
SBF	**Sospel**	**34.19**	**296**	*e*P		**P**	**19 33 46.2**	**+0.3**
	comp=Z,39nm,1.1s,mb4.9							
CDF	**Champ du Feu**	**34.34**	**304**	*e*P		**P**	**19 33 46.1**	**-1.0**
HINF	**Hinteralfeld**	**34.59**	**303**	*e*P		**P**	**19 33 48.2**	**-1.1**
LPG	**La Plagne**	**34.63**	**299**	*e*P		**P**	**19 33 49.6**	**0.0**
	comp=Z,9.8nm,0.9s,mb4.5							
MBDF	**Montbardon**	**34.63**	**298**	*e*P		**P**	**19 33 49.7**	**0.0**
	comp=Z,12nm,0.7s,mb4.6							
LPL	**La Plagne**	**34.64**	**299**	*e*P		**P**	**19 33 49.6**	**-0.2**
	comp=Z,4.4nm,0.5s,mb4.3							
BNI	**Bardonecchia**	**34.69**	**298**	*e*P		**P**	**19 33 48.7**	**-1.5**
FRF	**La Foret Royal**	**34.78**	**296**	*e*P		**P**	**19 33 50.8**	**-0.2**
	comp=Z,8.1nm,0.8s,mb4.4							
LMR	**La Mourre**	**34.90**	**296**	*e*P		**P**	**19 33 51.5**	**-0.5**
HAU	**Haudompre**	**34.94**	**304**	*e*P		**P**	**19 33 51.6**	**-0.7**
CABF	**La Chapelle**	**35.08**	**301**	*e*P		**P**	**19 33 53.8**	**+0.3**
	comp=Z,42nm,0.9s,mb5.0							
ORIF	**Oris-en-Rattie**	**35.26**	**298**	*e*P		**P**	**19 33 54.5**	**-0.6**
NB2	**NORSAR Subarra**	**35.33**	**327**	P		**P**	**19 33 55.2**	**-0.2**
	comp=Z,1.2nm,0.6s,mb4.0,baz=118,slow=8.6							
NOA	**NORSAR Array B**	**35.33**	**327**	P		**P**	**19 33 55.7**	**+0.2**
	comp=Z,0.9nm,1.0s,mb3.6,baz=114,slow=7.8,SNR=3.7							
NOA				LR		LR	19 51 54.5	
	comp=Z,66nm,18.4s,MS3.4,baz=100,slow=42							
NOA	**NORSAR Array B**	**35.33**	**327**	P		**P**	**19 33 55.7**	**+0.3**
NOA				pmax	pmax			
	comp=Z,1.0nm,1.0s							
NOA				MLR	MLR			
	comp=Z,66nm,18.4s							
SMRF	**Simiane la Rot**	**35.53**	**297**	*e*P		**P**	**19 33 57.3**	**-0.1**
ARCES	**ARCESS Array B**	**36.05**	**345**	P		**P**	**19 34 01.7**	**+0.2**
	comp=Z,1.9nm,0.8s,mb4.1,baz=146,slow=8.7,SNR=6.8							
ARCES				LR		LR	19 53 06.9	
	comp=Z,30nm,20.4s,MS3.0,baz=107,slow=43							
ARCES	**ARCESS Array B**	**36.05**	**345**	P		**P**	**19 34 01.7**	**+0.2**
ARCES				pmax	pmax			
	comp=Z,2.0nm,0.8s							
ARCES				MLR	MLR			
	comp=Z,30nm,20.4s							
VIVF	**Saint-Julien-l**	**36.12**	**298**	*e*P		**P**	**19 34 01.8**	**-0.5**
BAIF	**Baives**	**36.45**	**307**	*e*P		**P**	**19 34 06.5**	**+1.5**
	comp=Z,14nm,1.0s,mb4.5							
LOR	**Lormes**	**36.61**	**302**	*e*P		**P**	**19 34 05.9**	**-0.5**
	comp=Z,15nm,1.1s,mb4.4							
SMF	**Signal de Mont**	**36.63**	**301**	*e*P		**P**	**19 34 06.6**	**0.0**
	comp=Z,11nm,0.9s,mb4.4							
LASF	**Ste Croix**	**36.76**	**297**	*e*P		**P**	**19 34 07.5**	**-0.2**
	comp=Z,31nm,1.3s,mb4.7							
SSF	**Saint Saulge**	**36.85**	**302**	*e*P		**P**	**19 34 08.3**	**-0.1**
	comp=Z,6.7nm,0.8s,mb4.2							
AVF	**Avril sur Loir**	**36.96**	**302**	*e*P		**P**	**19 34 09.2**	**-0.2**
	comp=Z,17nm,0.9s,mb4.6							
TCF	**Toulx Ste Croi**	**37.77**	**301**	*e*P		**P**	**19 34 16.6**	**+0.4**
	comp=Z,20nm,1.0s,mb4.5							
GTA	**Gaotai**	**37.82**	**71**	*e*P		**P**	**19 34 13.0**	**-3.7**
GTA				AMB		AMB		
	comp=Z,2.0nm,1.0s,mb3.8							
CAF	**Calviac**	**37.96**	**299**	*e*P		**P**	**19 34 18.0**	**+0.2**
MTLF	**Montolieu**	**38.01**	**296**	*e*P		**P**	**19 34 18.1**	**-0.2**
	comp=Z,5.5nm,0.9s,mb4.0							
RJF	**Les Rejaudoux**	**38.32**	**299**	*e*P		**P**	**19 34 21.5**	**+0.7**
	comp=Z,14nm,1.0s,mb4.4							
LFF	**La Frestale**	**38.90**	**299**	*e*P		**P**	**19 34 26.0**	**+0.3**
LDF	**La Druitiere**	**39.26**	**305**	*e*P		**P**	**19 34 28.3**	**-0.3**
	comp=Z,11nm,0.8s,mb4.3							
ZAK	**Zakamensk**	**39.27**	**53**	*e*P		**P**	**19 34 30.4**	**+1.7**
MFF	**Saint Martin d**	**39.38**	**301**	*e*P		**P**	**19 34 29.4**	**-0.2**
	comp=Z,26nm,1.2s,mb4.5							
FLN	**La Foliniere**	**39.49**	**305**	*e*P		**P**	**19 34 30.4**	**-0.2**
	comp=Z,7.2nm,0.7s,mb4.2							
TLY	**Talaya**	**39.52**	**51**	*e*P		**P**	**19 34 32.1**	**+1.3**
TLY				*e*			19 36 08.9	
TLY				*e*S		**S**	**19 40 27.1**	**-4.0**
TLY				pmax	pmax			
	comp=Z,14nm,0.9s,mb4.7							
TLY				MLR	MLR			
	comp=Z,500nm,15.0s,MS4.5							
KMBO	**Kilima Mbogo**	**39.69**	**203**	LR		LR	19 52 57.1	
	comp=Z,42nm,20.2s,MS3.3,baz=96,slow=39							
KMBO	**Kilima Mbogo**	**39.69**	**203**	*e*P		**P**	**19 34 35.4**	**+2.8**
GRR	**Gorron**	**39.76**	**304**	*e*P		**P**	**19 34 32.7**	**0.0**
	comp=Z,20nm,0.9s,mb4.5							
SGMF	**Saint Gilles**	**40.89**	**304**	*e*P		**P**	**19 34 42.4**	**+0.3**
	comp=Z,15nm,0.7s,mb4.4							
EKA	**Eskdalemuir Ar**	**41.27**	**315**	P		**P**	**19 34 46.0**	**+1.0**
	comp=Z,0.6nm,0.5s,mb3.5,baz=102,slow=8.8,SNR=6.0							
EKA	**Eskdalemuir Ar**	**41.27**	**315**	P		**P**	**19 34 46.1**	**+1.0**
EKA				pmax	pmax			
	comp=Z,1.0nm,0.5s							
QUIF	**Quistinic**	**41.33**	**304**	*e*P		**P**	**19 34 45.6**	**0.0**
	comp=Z,27nm,0.9s,mb4.6							
ROSF	**Rostrenen**	**41.37**	**304**	*e*P		**P**	**19 34 46.2**	**+0.2**
	comp=Z,23nm,0.9s,mb4.5							
SONM	**Songino Array**	**41.41**	**56**	P		**P**	**19 34 46.1**	**-0.2**
	comp=Z,0.9nm,1.0s,mb3.3,baz=285,slow=14,SNR=4.7							
ETOB	**Tobarra**	**41.67**	**290**	P		**P**	**19 34 49.0**	**+0.5**
	comp=Z,0.4nm,0.3s,mb3.5							
LZH	**Lanzhou**	**41.72**	**74**	*e*P		**P**	**19 34 48.3**	**-0.7**
LZH				PP		PP	19 36 27.5	-1.1
LZH				AMB	AMB			
	comp=Z,26nm,1.5s,mb4.6							
LZH				LR	LR			
	comp=N,446nm,13.0s							
LZH				LR	LR			
	comp=Z,591nm,17.2s,MS4.5							
ULN	**Ulaanbaatar**	**41.85**	**56**	*e*P		**P**	**19 34 51.0**	**+1.1**
	comp=Z,5.0nm,0.8s,mb4.2							
EVIA	**Vianos**	**42.40**	**290**	P		**P**	**19 34 55.4**	**+0.8**
EHUE	**Huescar**	**42.68**	**289**	P		**P**	**19 34 56.7**	**-0.1**
EQES	**Quesada**	**43.05**	**289**	P		**P**	**19 34 59.5**	**-0.3**
	comp=Z,12nm,1.1s,mb4.5							
GUD	**Guadarrama**	**43.16**	**293**	P		**P**	**19 35 00.1**	**-0.5**
	comp=Z,1.1nm,0.6s,mb3.8							
ESDC	**Sonseca Array**	**43.24**	**292**	P		**P**	**19 35 01.4**	**0.0**
	comp=Z,3.5nm,0.6s,mb4.3,baz=69,slow=8.1,SNR=25							
ESDC	**Sonseca Array**	**43.24**	**292**	P		**P**	**19 35 00.8**	**-0.6**
	comp=Z,2.9nm,0.6s,mb4.2							
ERON	**Agron**	**43.83**	**288**	P		**P**	**19 35 05.4**	**-0.8**
ELUQ	**Luque**	**44.03**	**289**	P		**P**	**19 35 06.8**	**-1.0**
ELOJ	**Sierra Loja**	**44.06**	**288**	P		**P**	**19 35 07.1**	**-1.0**
EADA	**Adamuz**	**44.09**	**290**	P		**P**	**19 35 07.3**	**-1.1**
	comp

*BER **30** 19:38:47.0±5.1,59.84N×24.24E, h0^{km}±28^{km}, ML2.2(NAO)*

ISC 30 19:38:42.2±1.0,**59.71N**±0.06×**24.29E**±0.09,**n14**,σ1§**12**/26,
Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
MEF	**Metsahovi**	**0.51**	**6**	*e*P		**Pg**		**19 38 53.2**	**+0.9**
MEF				*e*S		**Sg**		**19 38 59.6**	**+0.5**
VJF	**Virojoki**	**1.83**	**62**	*e*P		**Pn**		**19 39 15.8**	**+0.6**
VJF				*e*S		**Sn**		**19 39 39.1**	**-0.3**
FIA0	**FINESS Array S**	**1.95**	**26**	*e*PG		**Pg**		**19 39 18.7**	**-2.4**
FIA0				*e*S		**Sn**		**19 39 42.6**	**+0.3**
FIA0				MSG				19 39 46.0	
	comp=Z,11nm,0.2s								
FIA0	**FINESS Array S**	**1.95**	**26**	Pn		**Pn**		**19 39 18.6**	**+1.8**
	baz=203,slow=16								
FIA0				Lg				19 39 42.6	
	baz=203,slow=37								
FINES	**FINESS Array B**	**1.95**	**26**	Pn		**Pn**		**19 39 18.6**	**+1.8**
	comp=Z,1.9nm,0.3s,baz=196,slow=16,SNR=129								
FINES				Sn		**Sn**		**19 39 42.7**	**+0.3**
	comp=Z,2.6nm,0.3s,baz=189,slow=29,SNR=22								
KEF	**Keuruu**	**2.48**	**6**	*e*PB		**Pb**		**19 39 27.5**	**+0.1**
KEF				*e*SB		**Sb**		**19 39 58.8**	**+0.3**
KEF				MSG				19 40 00.5	
	comp=Z,5.5nm,0.2s								
SUF	**Sumiainen**	**3.15**	**16**	*e*P		**Pn**		**19 39 35.0**	**+1.0**
SUF				*e*SB		**Sb**		**19 40 17.1**	**-0.9**
HFS	**Hagfors**	**5.35**	**279**	Pn		**Pn**		**19 40 05.7**	**+0.5**
	baz=79,slow=16								
HFS				Sn		**Sn**		**19 41 07.6**	**-0.9**
	baz=86,slow=28								
HFS				Lg				19 41 26.7	
	baz=97,slow=28								
HFS	**Hagfors**	**5.35**	**279**	*e*P		**Pn**		**19 40 05.7**	**+0.5**
HFS				*e*S		**Sn**		**19 41 07.6**	**-0.9**
HFS				*e*SG				19 41 26.7	
HFS	**Hagfors**	**5.35**	**279**	Pn		**Pn**		**19 40 05.6**	**+0.4**
	comp=Z,0.1nm,0.3s,baz=118,slow=12,SNR=32								
HFS				Sn		**Sn**		**19 41 08.5**	**0.0**
	comp=Z,0.1nm,0.3s,baz=93,slow=25,SNR=8.5								
NOA	**NORSAR Array B**	**6.62**	**287**	Pn		**Pn**		**19 40 22.6**	**-0.6**
	comp=Z,0.2nm,0.3s,baz=343,slow=19,SNR=2.5								
NOA				Sn		**Sn**		**19 41 41.0**	**+0.6**
	comp=Z,0.1nm,0.3s,baz=5.2,slow=18,SNR=2.8								
NOA				Lg				19 42 11.5	
	comp=Z,0.2nm,0.3s,baz=305,slow=18,SNR=2.5								
ARA0	**ARCESS Array S**	**9.88**	**2**	Pn		**P**		**19 41 05.2**	**-3.2**
	baz=186,slow=12								
ARA0				Sn		**Sn**		**19 42 52.5**	**-8.7**
	baz=188,slow=28								
ARA0	**ARCESS Array S**	**9.88**	**2**	*e*P		**P**		**19 41 05.2**	**-3.2**
ARA0				*e*S		**Sn**		**19 42 52.5**	**-8.7**
ARCES	**ARCESS Array B**	**9.88**	**2**	Pn		**P**		**19 41 05.1**	**-3.2**
	comp=Z,0.2nm,0.3s,baz=180,slow=14,SNR=28								

*IDC **30** 20:32:53.5±1.0,27.48N×140.22E, h390^{km}±12^{km}, mb3.3/5, mb1 3.5/6, mb1mx3.0/21, Error ellipse: s-maj=38.4km s-min=18.7km az=88.0*

*NEIC **30** 20:33:03.0±0.8,27.40N×140.00E, h500^{km}, Error ellipse: s-maj=38.6km s-min=18.9km az=84.0*

ISC 30 20:32:52.8±1.0,**27.4N**±0.2×**140.2E**±0.3,**h401**^{km}±12^{km},
n12,σ0§**56**/**13**,**mb3.5**/6,**Bonin Islands region**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**1.80**	**100**	P		**P**		**20 33 48.7**	**+0.6**
	37nm,0.3s,baz=67,slow=2.3,SNR=118								
CBIJ				S		**S**		**20 34 30.5**	**-0.9**
	33nm,0.3s,baz=269,slow=22,SNR=17								
JHJ	**Hachijo jima 2**	**5.69**	**357**	P		**P**		**20 34 23.5**	**+0.8**
	13nm,0.3s,baz=244,slow=23,SNR=4.5								
WRA	**Warramunga Arr**	**47.42**	**187**	P		**P**		**20 40 51.4**	**+0.5**
	0.2nm,0.4s,mb2.8,baz=7.4,slow=7.7,SNR=3.4								
KURK	**Kurchatov**	**51.49**	**314**	*e*P		**P**		**20 41 20.5**	**-0.5**
ARCES	**ARCESS Array B**	**72.65**	**340**	P		**P**		**20 43 39.0**	**+0.1**
	2.9nm,0.9s,mb3.8,baz=63,slow=8.1,SNR=9.7								
YKA	**Yellowknife Ar**	**72.69**	**28**	P		**P**		**20 43 39.7**	**+0.4**
	0.5nm,0.4s,mb3.4,baz=297,slow=6.1,SNR=19								
YKA	**Yellowknife Ar**	**72.69**	**28**	P		**P**		**20 43 39.7**	**+0.4**
JOF	**Joensuu**	**74.00**	**333**	*ep*		**P**		**20 43 46.1**	**-0.7**
	0.3nm,0.3s,mb3.4								
FINES	**FINESS Array B**	**76.86**	**333**	P		**P**		**20 44 02.7**	**-0.1**
	2.3nm,0.3s,mb4.2,baz=68,slow=5.2,SNR=58								
FINES	**FINESS Array B**	**76.86**	**333**	P		**P**		**20 44 02.7**	**-0.1**
NB2	**NORSAR Subarra**	**82.64**	**338**	P		**P**		**20 44 32.9**	**-0.3**
	0.6nm,0.6s,mb3.5,baz=49,slow=4.6								
NOA	**NORSAR Array B**	**82.64**	**338**	P		**P**		**20 44 32.9**	**-0.3**
	0.6nm,0.5s,mb3.6,baz=50,slow=4.4,SNR=4.6								

IDC 30 20:52:51.5±2.2,**0.24N**×**127.26E**,**mb3.5/3**,**mb1 3.8**/3,
mb1mx3.5/15,**Error ellipse: s-maj=193.0km**
s-min=26.2km az=66.0,**Halmahera**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**21.23**	**161**	P		P		20 57 38.6	-2.9
	0.8nm,0.4s,baz=340,slow=11,SNR=21								
ASAR	**Alice Springs**	**24.63**	**165**	P		P		20 58 14.4	-0.7
	0.8nm,0.4s,baz=341,slow=11,SNR=12								
MKAR	**Makanchi Array**	**60.71**	**326**	P		P		21 03 04.9	-2.3
	0.2nm,0.4s,baz=121,slow=7.9,SNR=5.3								

IDC 30 21:00:12.2±2.2,**1.19N**×**127.12E**,**mb3.6/3**,**mb1 3.9**/3,
mb1mx3.5/15,**Error ellipse: s-maj=179.0km**
s-min=25.0km az=66.0,**Halmahera**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**22.16**	**162**	P		P		21 05 09.2	-2.4
	0.9nm,0.3s,baz=340,slow=11,SNR=17								
ASAR	**Alice Springs**	**25.57**	**165**	P		P		21 05 43.8	-1.0
	0.9nm,0.5s,baz=353,slow=16,SNR=17								
MKAR	**Makanchi Array**	**59.85**	**326**	P		P		21 10 19.6	-2.4
	0.2nm,0.4s,baz=121,slow=7.3,SNR=6.3								

*BJI **30** 21:11:23.5,30.70S×176.65W, h6^{km}, mB6.0, mb5.6, Ms5.7, Msz5.6*

*IDC **30** 21:11:24.3±0.3,30.93S×177.05W, mb5.4/25, mb1 5.4/28, mb1mx5.4/29, ML5.1/3, MS5.6/15, Ms1 5.6/15, ms1mx5.4/27, Error ellipse: s-maj=15.5km s-min=13.1km az=5.0*

*NEIC **30** 21:11:25.4±0.1,31.05S×177.12W, h10^{km}, mb5.6/59, MS5.9/13, MW5.7, Error ellipse: s-maj=9.0km s-min=5.4km az=152.0, Moment Tensor Solution. s40 Moment tensor: Scale 10^{17}Nm; M_{rr}=4.10; $M_{\theta\theta}$=0.48; $M_{\phi\phi}$=3.63; $M_{r\theta}$=0.42; $M_{\theta\phi}$=-0.49; $M_{r\phi}$=0.32; Best double couple: M_w=3.9×10^{17} NP1: ϕ_s=346°, δ=43°, λ=-98°. NP2:ϕ_s=177°, δ=47°, λ=-82°. Principal axes: T 3.72, Plg2°, Azm262°; N .44, Plg6°, Azm352°; P -4.16, Plg84°, Azm154°;*

*MOS **30** 21:11:25.5±0.9,30.82S×177.11W, h10^{km}, mb5.9/33, MS5.7/21 Error ellipse: s-maj=16.2km s-min=9.9km az=69.7*

*SYO **30** 21:11:25.3,31.05S×177.12W, h10^{km}, MB5.6, MS5.9*

*HRVD **30** 21:11:25.4±0.1,30.90S×176.67W, h12^{km}, MW5.8/74, Centroid moment Tensor Solution. LP body waves: s72,c160;Mantle waves: s74,c165; Half duration: 2s0 Moment tensor: Scale 10^{17}Nm; M_{rr}=5.39±.07; $M_{\theta\theta}$=2.20±.07; $M_{\phi\phi}$7.58±.06; $M_{r\theta}$-1.06±.19; $M_{\theta\phi}$0.72±.06; $M_{r\phi}$-1.23±.17; Best double couple: M_o6.77×10^{17} NP1: ϕ_s168°, δ41°, λ-113°. NP2:ϕ_s18°, δ53°, λ-71°. Principal axes: T 7.76, Plg6°, Azm95°; N -1.99, Plg15°, Azm186°; P -5.78, Plg74°, Azm345°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 30 21:11:23.7±0.1,**31.31S**±0.03×**177.17W**±0.04,**h10**^{km},
n689,σ1§**15**/284,**mb5.6**/94,**MS5.7**/54,**35C-30D**,**Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
PUZ	**Puketiti**	**7.73**	**208**	P		**Pn**		**21 13 18.6**	**-0.4**
PUZ				S		**Sn**		**21 14 51.6**	**+4.1**
URZ	**Urewera**	**8.38**	**213**	Pn		**P**		**21 13 27.6**	**-0.5**
	13nm,0.3s,baz=306,slow=3.6,SNR=34								
URZ				Sn		**Sn**		**21 15 06.6**	**+2.8**
	89nm,0.3s,baz=109,slow=14,SNR=12								
URZ	**Urewera**	**8.38**	**213**	P		**P**		**21 13 26.5**	**-1.6**
WCZ	**Waipu Caves**	**8.45**	**235**	*e*P		**P**		**21 13 32.3**	**+3.2**
KNZ	**Kokohu**	**8.77**	**207**	P		**P**		**21 13 31.6**	**-2.0**
MGZ	**Maungaku**	**9.72**	**216**	P		**P**		**21 13 49.8**	**+3.1**
NGZ	**Ngauruhoe**	**9.82**	**215**	P		**P**		**21 13 49.8**	**+1.7**
FWVZ	**Far West T-bar**	**9.91**	**215**	P		**P**		**21 13 50.6**	**+1.3**
FWVZ				S		**Sn**		**21 15 39.8**	**-1.8**
BFZ	**Birch Farm**	**10.76**	**208**	P		**P**		**21 13 59.7**	**-1.3**
MRZ	**Mangatainoka R**	**11.02**	**210**	P		**P**		**21 14 01.3**	**-3.2**
KIW	**Kapiti Island**	**11.48**	**212**	P		**P**		**21 14 08.1**	**-2.7**
CAW	**Cannon Point**	**11.61**	**210**	P		**P**		**21 14 08.8**	**-3.7**
MRW	**Makara Radio**	**11.87**	**211**	P		**P**		**21 14 15.4**	**-0.6**
MRW				S		**S**		**21 16 24.4**	**-5.2**
WEL	**Wellington**	**11.88**	**211**	P		**P**		**21 14 16.0**	**-0.2**
BHW	**Baring Head**	**11.94**	**210**	S		**S**		**21 16 24.5**	**-6.8**
QRZ	**Quartz Range**	**12.62**	**218**	P		**P**		**21 14 24.5**	**-1.7**
QRZ				S		**S**		**21 16 46.2**	**-1.7**
THZ	**Tophouse**	**13.12**	**215**	P		**P**		**21 14 28.6**	**-4.2**
KHZ	**Kahutara**	**13.34**	**211**	P		**P**		**21 14 32.1**	**-3.6**
DSZ	**Dennistone Nort**	**13.67**	**217**	P		**P**		**21 14 38.7**	**-1.3**
LTZ	**Lake Taylor**	**14.21**	**213**	P		**P**		**21 14 43.7**	**-3.4**
MQZ	**McQueen's Vall**	**14.76**	**210**	P		**P**		**21 14 50.6**	**-3.7**
WVZ	**Waitaha Valley**	**15.17**	**216**	P		**P**		**21 14 58.8**	**-0.9**
RPZ	**Rata Peaks**	**15.49**	**214**	Pn		**P**		**21 15 00.6**	**-3.3**
	5.2nm,0.3s,baz=349,slow=23,SNR=25								
RPZ				Sn		**S**		**21 17 48.8**	**-7.3**
	6.1nm,0.3s,baz=287,slow=22,SNR=11								
RPZ	**Rata Peaks**	**15.49**	**214**	P		**P**		**21 15 01.8**	**-2.1**
BWZ	**Berwen**	**16.66**	**214**	P		**P**		**21 15 16.0**	**-2.8**
ODZ	**Otahua Downs**	**16.70**	**211**	P		**P**		**21 15 15.9**	**-3.4**
DZM	**Mont Dzumac**	**17.27**	**298**	*e*P		**P**		**21 15 31.5**	**+4.8**
NOUC	**Port Laguerre**	**17.36**	**298**	*e*P		**P**		**21 15 33.5**	**+5.7**
NOUC	**Port Laguerre**	**17.36**	**298**	*e*P		**P**		**21 15 33.5**	**+5.7**
AXZ	**Alexandra**	**17.47**	**213**	P		**P**		**21 15 32.4**	**+3.4**
MSZ	**Milford Sound**	**17.74**	**217**	P		**P**		**21 15 30.7**	**-1.6**
TUZ	**Tuapeka**	**17.86**	**211**	P		**P**		**21 15 34.3**	**+0.5**
MLZ	**Mavora Lakes**	**18.09**	**215**	P		**P**		**21 15 36.9**	**+0.2**
RAR	**Rarotonga**	**18.54**	**61**	P		**P**		**21 15 33.6**	**-8.8**
	11nm,0.3s,baz=237,slow=8.4,SNR=24								
RAR				S		S		21 18 36.6	-30
	8.4nm,0.3s,baz=64,slow=22,SNR=7.5								
RAR	**Rarotonga**	**18.54**	**61**	*e*P		**P**		**21 15 34.9**	**-7.6**
RAR				pmax		pmax			
	comp=Z,160nm,0.8s								
RAR	**Rarotonga**	**18.54**	**61**	*e*P		**P**		**21 15 34.9**	**-7.6**
	comp=Z,157nm,0.8s								
RAR				*e*S		S		21 18 34.6	-32
TBI	**Tubuai**	**25.81**	**79**	*e*P		**P**		**21 16 50.7**	**-6.1**
	comp=Z,239nm,1.1s,mb5.7								
TBI				*e*L				21 21 38.7	
TBI				*e*R				21 22 50.9	
	comp=Z,12μm,37.2s,baz=247								
CNB	**Canberra Magne**	**28.17**	**253**	*e*P		**P**		**21 17 21.6**	**+3.3**
	comp=Z,40nm,0.7s,mb5.2								
CNB				*e*PCP		PcP		21 20 34.6	+2.1
PAE	**Paea**	**28.45**	**68**	*e*P		**P**		**21 17 14.7**	**-6.3**
	comp=Z,153nm,1.3s,mb5.5								
PPT	**Papeete**	**28.51**	**68**	*e*P		**P**		**21 17 15.1**	**-6.4**
	comp=Z,76nm,1.3s,mb5.2								
PPT				*e*L				21 22 37.4	
PPT				*e*R				21 23 59.4	
	comp=Z,8μm,20.0s,baz=235								
TOO	**Toolangi**	**31.27**	**248**	*e*P		**P**		**21 17 49.9**	**+4.0**
	comp=Z,26nm,1.2s,mb4.9								
TOO				*e*PCP		PcP		21 20 42.2	+1.8
CTA	**Charters Tower**	**34.65**	**280**	↓*i*P		**P**		**21 18 17.3**	**+1.8**
	comp=Z,90nm,0.9s,mb5.7								
CTA	**Charters Tower**	**34.65**	**280**	P		**P**		**21 18 17.0**	**+1.5**
	comp=Z,88nm,0.7s,mb5.8,baz=103,slow=10,SNR=46								
CTA				S		**S**		**21 23 40.9**	**-3.2**
	comp=Z,13nm,1.2s,baz=66,slow=14,SNR=2.1								
CTAO	**Charters Tower**	**34.65**	**280**	*e*P		**P**		**21 18 16.5**	**+1.0**
CTAO				pmax		pmax			
	comp=Z,140nm,0.9s,mb5.9								
CTAO	**Charters Tower**	**34.65**	**280**	*e*P		**P**		**21 18 16.5**	**+1.0**
	comp=Z,137nm,0.9s,mb5.9								
STKA	**Stephens Creek**	**34.98**	**258**	↑*i*P		**P**		**21 18 20.2**	**+2.0**
	comp=Z,75nm,0.9s,mb5.6								
STKA				*e*S		S		21 24 36.4	+47
STKA	**Stephens Creek**	**34.98**	**258**	P		**P**		**21 18 20.0**	**+1.8**
	comp=Z,21nm,0.5s,mb5.3,baz=102,slow=9.5,SNR=30								
STKA				S		**S**		**21 23 50.6**	**+1.7**
	comp=Z,3.3nm,0.7s,baz=243,slow=18,SNR=2.6								
STKA				LR		LR		21 32 28.1	
	comp=Z,10μm,19.0s,MS5.6,baz=94,slow=36								
PMG	**Port Moresby**	**39.64**	**296**	P		**P**		**21 18 58.6**	**+1.1**
	comp=Z,23nm,0.9s,mb4.9,baz=127,slow=10,SNR=3.4								
PMG				PcP		PcP		21 21 05.7	+0.6
	comp=Z,56nm,0.8s,baz=102,slow=3.5,SNR=6.2								
PMG	**Port Moresby**	**39.64**	**296**	P		**P**		**21 18 57.6**	**+0.1**
PMG				*e*				21 21 06.6	
PMG				pmax		pmax			
	comp=Z,39nm,1.0s								
PMG				MLR		MLR			
	comp=Z,9μm,21.0s								
PMG	**Port Moresby**	**39.64**	**296**	P		**P**		**21 18 57.6**	**+0.1**
	comp=Z,39nm,0.9s,mb5.1								
PMG				*e*PcP		PcP		21 21 06.6	+1.5
PMG				LR		LR			
	comp=Z,9μm,21.0s,MS5.6								
AS12	**Alice Springs**	**43.78**	**268**	↓*i*P		**P**		**21 19 31.7**	**+0.3**
	comp=Z,43nm,1.0s,mb5.1								
ASAR	**Alice Springs**	**43.78**	**268**	P		**P**		**21 19 31.4**	**0.0**
	comp=Z,16nm,0.5s,mb5.0,baz=108,slow=6.9,SNR=59								
ASAR				PcP		PcP		21 21 19.9	+1.2
	comp=Z,14nm,0.6s,baz=118,slow=3.3,SNR=6.5								
ASAR				ScP				21 25 11.3	
	comp=Z,2.8nm,0.7s,baz=127,slow=4.5,SNR=2.7								
ASAR				S		**S**		**21 26 00.5**	**-0.9**
	comp=Z,3.3nm,0.9s,baz=113,slow=14,SNR=1.9								
ASAR				LR		LR		21 38 38.5	
	comp=Z,9μm,18.0s,MS5.7,baz=111,slow=37								
WB2	**Warramunga Arr**	**44.84**	**273**	↓*i*P		**P**		**21 19 39.3**	**-0.7**
WB2				*e*S		**S**		**21 26 15.5**	**-1.3**
WB2				*e*SCS		ScS		21 29 39.5	+4.2
WRAB	**Tennant Creek**	**44.84**	**273**	*e*P		**P**		**21 19 39.4**	**-0.6**
	comp=Z,289nm,0.8s,mb6.2								
WRAB				LR		LR			
	comp=Z,13μm,19.0s,MS5.9								
WRA	**Warramunga Arr**	**44.85**	**273**	P		**P**		**21 19 39.4**	**-0.7**
	comp=Z,58nm,0.4s,mb5.7,baz=111,slow=8.0,SNR=214								
WRA				PcP		PcP		21 21 23.3	+1.0
	comp=Z,21nm,0.8s,baz=112,slow=3.5,SNR=4.7								
WRA				S		**S**		**21 26 15.6**	**-1.3**
	comp=Z,11nm,0.9s,baz=110,slow=14,SNR=8.2								
WRA				LR		LR		21 38 41.7	
	comp=Z,14μm,18.3s,MS5.9,baz=105,slow=36								
FORT	**Forrest**	**46.51**	**256**	*e*P		**P**		**21 19 53.2**	**+0.1**
	comp=Z,249nm,0.7s,mb6.2								
SBA	**Scott Base**	**47.19**	**185**	*e*P		**P**		**21 20 02.7**	**+4.8**
SBA				pmax		pmax			
	comp=Z,200nm,1.4s,mb5.8								
SBA	**Scott Base**	**47.19**	**185**	*e*P		**P**		**21 20 02.7**	**+4.8**
	comp=Z,196nm,1.4s,mb5.8								
VNDA	**Vanda**	**47.27**	**186**	P		**P**		**21 20 02.3**	**+3.8**
	comp=Z,65nm,1.4s,mb5.3,baz=8.9,slow=8.6,SNR=19								
KAKA	**Kakadu**	**49.83**	**280**	*e*P		**P**		**21 20 19.6**	**+0.4**
	comp=Z,72nm,0.9s,mb5.7								
FITZ	**Fitzroy Crossi**	**53.07**	**270**	↓*i*P		**P**		**21 20 43.6**	**0.0**
	comp=Z,48nm,0.9s,mb5.4								
FITZ				*e*S		S		21 28 39.1	+27
FITZ	**Fitzroy Crossi**	**53.07**	**270**	P		**P**		**21 20 43.8**	**+0.1**
	comp=Z,59nm,0.8s,mb5.5,baz=166,slow=6.3,SNR=23								
FITZ				LR		LR		21 43 13.4	
	comp=Z,5μm,20.0s,MS5.5,baz=93,slow=36								
CASY	**Casey**	**54.68**	**208**	*e*P		**P**		**21 20 56.7**	**+2.0**
KLBR	**Kellerberrin**	**54.73**	**251**	*e*P		**P**		**21 20 55.5**	**-0.2**
	comp=Z,45nm,0.9s,mb5.5								
NWAO	**Narrogin (SRO)**	**54.75**	**250**	LR		LR		21 42 54.6	
	comp=Z,7μm,20.1s,MS5.7,baz=266,slow=34								
KIP	**Kipapa**	**55.56**	**22**	*e*P		**P**		**21 20 58.8**	**-3.0**
KIP				pmax		pmax			
	comp=Z,370nm,1.3s,mb6.2								
KIP	**Kipapa**	**55.56**	**22**	*e*P		**P**		**21 20 58.8**	**-3.0**
	comp=Z,374nm,1.4s,mb6.2								
MUN	**Mundaring**	**55.86**	**250**	*e*P		**P**		**21 21 03.0**	**-0.9**
	comp=Z,34nm,1.8s,mb5.1								
MUN				*e*S		**S**		**21 29 07.0**	**+18**
QSPA	**South Pole Qui**	**58.80**	**180**	*e*P		**P**		**21 21 27.3**	**+3.3**
	comp=Z,150nm,0.9s,mb6.0								
MIR	**Mirnyy**	**61.64**	**207**	↑*e*P		**P**		**21 21 45.5**	**+1.9**
MIR				pmax		pmax			
	comp=Z,165nm,1.5s,mb5.9								
MIR				pmax		pmax			
	comp=Z,50nm,0.3s,mb6.1								
MAW	**Mawson**	**71.71**	**200**	*e*P		**P**		**21 22 49.8**	**+2.4**
	comp=Z,31nm,0.9s,mb5.2								
MAW	**Mawson**	**71.71**	**200**	P		**P**		**21 22 50.2**	**+2.8**
	comp=Z,28nm,0.8s,mb5.2,baz=124,slow=8.1,SNR=26								
MAW	**Mawson**	**71.71**	**200**	*e*P		**P**		**21 22 49.5**	**+2.1**
MAW				pmax		pmax			
	comp=Z,170nm,1.3s								
KKM	**Kota Kinabalu**	**73.51**	**288**	↓*e*P		**P**		**21 23 00.0**	**+1.0**
TGY	**Tagaytay City**	**74.57**	**297**	P		**P**		**21 23 04.7**	**-0.3**
	comp=Z,247nm,0.3s,mb6.5,baz=219,slow=9.9,SNR=5.9								
USHA	**Ushuaia**	**74.77**	**145**	P		**P**		**21 23 07.7**	**+2.3**
	comp=Z,10nm,0.9s,mb4.7,baz=198,slow=3.7,SNR=5.6								
USHA				LR		LR		21 49 18.1	
	comp=Z,2μm,19.8s,MS5.5,baz=202,slow=30								
JHJ	**Hachijo jima 2**	**75.89**	**324**	P		**P**		**21 23 10.8**	**-1.5**
	comp=Z,144nm,0.7s,mb6.0,baz=152,slow=9.1,SNR=6.0								
SYO	**Syowa Base**	**76.39**	**193**	↑P		**P**		**21 23 10.6**	**-3.8**
SYO	**Syowa Base**	**76.39**	**193**	↓P		**P**		**21 23 18.7**	**+4.3**
SYO	**Syowa Base**	**76.39**	**193**	↓PcP		PcP		21 23 25.1	-1.5
SYO	**Syowa Base**	**76.39**	**193**	↓*e*P		**P**		**21 23 18.7**	**+4.3**
SYO				*e*PcP		PcP		21 23 25.1	-1.5
SNAA	**Sanae**	**77.23**	**178**	*e*P		**P**		**21 23 20.1**	**+1.1**
VNA3	**Neumayer Olymp**	**77.35**	**176**	↑*i*		**P**		**21 23 24.2**	**+4.5**
JOW	**Kunigami**	**77.80**	**312**	P		**P**		**21 23 23.1**	**0.0**
	comp=Z,52nm,0.8s,mb5.5,baz=158,slow=5.9,SNR=19								
VNA2	**Neumayer--Watz**	**77.80**	**177**	↑*i*		**P**		**21 23 27.2**	**+5.1**
MAIT	**Maitri**	**78.01**	**183**	*e*P		**P**		**21 23 25.2**	**+1.9**
VNA1	**Neumayer--Stat**	**78.02**	**176**	↑*i*		**P**		**21 23 28.6**	**+5.2**
MAJO	**Matsushiro**	**79.39**	**325**	*e*P		**P**		**21 23 29.7**	**-1.9**
MAJO				pmax		pmax			
	comp=Z,95nm,1.2s,mb5.6								
MAJO	**Matsushiro**	**79.39**	**325**	*e*P		**P**		**21 23 29.7**	**-1.9**
	comp=Z,95nm,1.2s,mb5.6								
MAT	**Matsushiro**	**79.39**	**325**	P		**P**		**21 23 29.1**	**-2.5**
MAT				S		S		21 33 29.0	-2.1
MAT	**Matsushiro**	**79.39**	**325**	*e*P		**P**		**21 23 29.0**	**-2.6**
	comp=Z,37nm,1.1s,mb5.2								
MAT				*e*S		S		21 33 30.0	-1.1
MAT				LR		LR			
	comp=Z,2μm,20.0s,MS5.4								
JNU	**Nakatsue**	**80.71**	**318**	P		**P**		**21 23 38.5**	**-0.1**
	comp=Z,44nm,0.9s,mb5.4,baz=65,slow=8.1,SNR=12								
JNU				LR		LR		21 54 11.6	
	comp=Z,1μm,21.0s,MS5.3,baz=232,slow=32								
TATO	**Taipei**	**81.06**	**306**	*e*P		**P**		**21 23 39.6**	**-1.0**
	comp=Z,90nm,0.9s,mb5.7								
EFI	**East Falkland**	**81.64**	**147**	*e*P		**P**		**21 23 43.1**	**0.0**
	comp=Z,157nm,0.8s,mb6.0								
KGM	**Kluang**	**82.09**	**277**	↓*e*P		**P**		**21 23 46.5**	**+0.3**
QZH	**Quanzhou**	**83.06**	**305**	*i* PR				21 23 51.0	
QZH				S		S		21 34 07.5	-1.6
QZH				AMB		AMB			
	comp=Z,90nm,1.1s,mb5.7								
QZH				AMB		AMB			
	comp=Z,1μm,9.0s								
QZH				LR		LR			
	comp=N,2μm,21.0s,MS5.8								
QZH				LR		LR			
	comp=E,4μm,20.9s,MS5.8								
QZH				LR		LR			
	comp=Z,3μm,20.8s,MS5.6								
ASAJ	**Asahikawa**	**83.57**	**332**	P		**P**		**21 23 53.8**	**+0.5**
	comp=Z,60nm,1.1s,mb5.7,baz=234,slow=11,SNR=21								
ASAJ				S		S		21 34 16.7	+2.8
	comp=Z,1.5nm,0.4s,baz=254,slow=34,SNR=2.2								

NJ2 S S 21 34 46.0 -5.1
NJ2 AMB AMB
comp=Z,30nm,0.5s,mb5.8
NJ2 LR LR
comp=N,4µm,21.6s,MS5.9
NJ2 LR LR
comp=E,3µm,20.3s,MS5.9
NJ2 LR LR
comp=Z,4µm,19.3s,MS5.9
DAC Darwin (Calif) 87.39 44 P **P 21 24 13.1 +0.7**
DAC Darwin (Calif) 87.39 44 *e*P **P 21 24 12.4 0.0**
KRMB Red Mountain 87.54 37 *e*P **P 21 24 13.3 +0.3**
MTUM Tungsten Hills 87.54 43 *e*P **P 21 24 12.4 -0.7**
VLA Vladivostok 87.55 325⇑ *i*P **P 21 24 13.0 0.0**
VLA *e*S S 21 34 38.0 -15
VLA *e* 21 34 50.0
VLA *e*SS SS 21 40 40.0 -1.4
VLA pmax pmax
comp=Z,1µm,8.0s
VLA pmax pmax
comp=N,500nm,9.0s
VLA pmax pmax
comp=E,500nm,8.0s
VLA smax
comp=N,500nm,7.0s
WDC Whiskeytown Da 87.58 38 P **P 21 24 14.1 +0.9**
WDC pmax pmax
comp=Z,79nm,1.4s,mb5.8
WDC Whiskeytown Da 87.58 38⇓ *e*P **P 21 24 12.8 -0.4**
comp=Z,79nm,1.4s,mb5.8
SFJM Santa Fe 87.74 64 *i*P **P 21 24 14.0 -0.4**
KBO Bosley Butte 87.88 36 *e*P **P 21 24 14.8 +0.2**
LDFC Landfair 88.10 46 *e*P **P 21 24 15.3 -0.5**
WCN Washoe City 88.20 41 P **P 21 24 16.2 0.0**
WCN pmax pmax
comp=Z,50nm,1.0s,mb5.7
WCN Washoe City 88.20 41 *e*P **P 21 24 15.7 -0.5**
comp=Z,50nm,1.0s,mb5.7
BEKR Beckwourth 88.25 40 *e*P **P 21 24 16.3 -0.2**
comp=Z,24nm,1.0s,mb5.4
TRQA Tornquist 88.29 134 *e*P **P 21 24 16.9 +0.3**
comp=Z,1.5nm,0.8s
KEBM Edson Butte 88.31 36 *e*P **P 21 24 15.9 -0.7**
YBH Yreka Blue Hor 88.31 38 P **P 21 24 16.4 -0.3**
comp=Z,13nm,0.9s,mb5.2,baz=178,slow=2.5,SNR=15
YBH Yreka Blue Hor 88.31 38 P **P 21 24 17.4 +0.7**
YBH pmax pmax
comp=Z,22nm,1.1s
YBH Yreka Blue Hor 88.31 38⇓ *e*P **P 21 24 15.8 -0.9**
comp=Z,22nm,1.1s,mb5.3
NVAR Mina Array Bea 88.42 42 P **P 21 24 16.1 -1.2**
comp=Z,37nm,0.9s,mb5.6,baz=208,slow=5.8,SNR=90
NVAR PKKPbc 21 42 02.6
comp=Z,0.8nm,0.6s,baz=67,slow=4.4,SNR=4.4
NVAR LR LR 21 57 56.5
comp=Z,6µm,19.5s,MS6.0,baz=180,slow=32
MNV Mina 88.51 42 P **P 21 24 16.1 -1.6**
MNV pmax pmax
comp=Z,52nm,1.1s,mb5.8
MNV Mina 88.51 42 *e*P **P 21 24 16.1 -1.6**
comp=Z,52nm,1.1s,mb5.8
NEN Nelson 88.64 46 *e*P **P 21 24 19.1 +0.7**
PAHR Pah Rah Range 88.68 41 *e*P **P 21 24 18.8 +0.3**
MOIG Morelia 88.72 66 *i*P **P 21 24 19.1 0.0**
HUMO Hull Mountain 88.81 37⇓ *e*P **P 21 24 18.4 -0.7**
TPH Tonopah 88.81 43 P **P 21 24 17.5 -1.7**
TPH pmax pmax
comp=Z,69nm,1.0s,mb5.9
TPH Tonopah 88.81 43 *e*P **P 21 24 17.1 -2.0**
comp=Z,69nm,1.1s,mb5.9
TPH *e* 21 24 34.9
TUC Tucson 89.12 51 P **P 21 24 20.3 -0.5**
TUC pmax pmax
comp=Z,84nm,1.4s,mb5.9
TUC Tucson 89.12 51 *e*P **P 21 24 19.9 -0.9**
comp=Z,84nm,1.4s,mb5.9
ZAIG Zacatecas 89.38 63 *i*P **P 21 24 21.2 -1.0**
HSO Harness Mounta 89.41 36 P **P 21 24 22.6 +0.7**
HSO Harness Mounta 89.41 36 *e*P **P 21 24 22.0 +0.2**
WHN Wuhan 89.46 307⇓ P **P 21 24 24.0 +1.6**
WHN SKS SKS 21 34 55.0 -0.6
WHN S S 21 35 16.0 +5.4
WHN LR LR
comp=N,850nm,16.0s
WHN LR LR
comp=Z,2µm,21.9s
MOD Modoc 89.70 39 *e*P **P 21 24 22.3 -1.0**
comp=Z,36nm,1.0s,mb5.7
MOD *e* 21 24 38.9
MDJ Mudanjiang 89.78 325 *e*P **P 21 24 23.1 -0.5**
comp=Z,74nm,1.3s,mb5.8
DL2 Dalian 90.10 317 P **P 21 24 23.8 -1.4**
DL2 SKS SKS 21 34 52.8 -6.4
DL2 S S 21 35 10.5 -5.7
DL2 AMB AMB
comp=Z,20nm,1.6s,mb5.2
DL2 AMB AMB
comp=Z,260nm,8.3s
BMN Battle Mountai 90.39 41 P **P 21 24 27.0 +0.5**
BMN pmax pmax
comp=Z,39nm,1.1s,mb5.7
BMN Battle Mountai 90.39 41 *e*P **P 21 24 25.7 -0.8**
comp=Z,40nm,1.1s,mb5.7
BMN *e* 21 24 42.0
NNT Nongplab 90.66 284 P **P 21 24 31.0 +2.7**
SSOR Sweet Springs 90.67 35 P **P 21 24 28.1 +0.4**
SSOR Sweet Springs 90.67 35 *e*P **P 21 24 26.2 -1.6**
KMOR Kings Mountain 90.73 34 P **P 21 24 28.6 +0.7**
WUAZ Wupatki 90.73 48 *e*P **P 21 24 27.7 -0.5**
comp=Z,73nm,1.1s,mb5.9
SNY Shenyang 90.94 320 PR 21 24 28.3
SNY AMB AMB
comp=Z,30nm,1.5s,mb5.4
SNY AMB AMB
comp=Z,460nm,11.5s
SNY LR LR
comp=N,1µm,19.2s,MS5.3
SNY LR LR
comp=E,420nm,20.2s,MS5.3
SNY LR LR
comp=Z,1µm,22.7s,MS5.2
WVOR Wild Horse Val 90.97 39 P **P 21 24 29.6 +0.5**
WVOR pmax pmax
comp=Z,94nm,1.7s,mb5.8
WVOR Wild Horse Val 90.97 39 *e*P **P 21 24 28.4 -0.7**
comp=Z,94nm,1.7s,mb5.8
TIA Tai'an 91.11 313 *e*P **P 21 24 29.8 -0.1**
TIA AMB AMB
comp=Z,76nm,1.3s,mb5.9
CN2 Changchun 91.29 322 *e*P **P 21 24 30.0 -0.6**
CN2 PP PP 21 28 10.8 +0.4
CN2 *e*S S 21 35 23.5 -3.2
CN2 AMB AMB
comp=Z,50nm,1.1s,mb5.8
CN2 LR LR
comp=N,630nm,20.0s,MS5.3
CN2 LR LR
comp=E,830nm,20.0s,MS5.3
VIPM Ingram Point 91.36 37 P **P 21 24 31.4 +0.6**
BMW Boistfort Moun 91.46 34 P **P 21 24 31.1 -0.2**
BMW Boistfort Moun 91.46 34 *e*P **P 21 24 31.3 0.0**
CROR Criterion Ridg 91.50 36 P **P 21 24 32.0 +0.5**
LVP Lakeview Peak 91.57 35 P **P 21 24 32.3 +0.5**
SHW Mount Saint He 91.74 35 P **P 21 24 33.8 +1.2**
SHW Mount Saint He 91.74 35 *e*P **P 21 24 33.4 +0.8**
OCWA Octopus Mounta 91.94 33 *e*P **P 21 24 33.4 -0.1**
comp=E,106nm,1.1s,mb6.1
NST Nakhon Sawan 91.95 287 P **P 21 24 37.1 +2.9**
VGB Gordon Butte 91.98 36 P **P 21 24 34.2 +0.5**
VGB Gordon Butte 91.98 36 *e*P **P 21 24 33.8 +0.1**
MVU Marysvale 92.08 45 *e*P **P 21 24 32.9 -1.5**
comp=E,26nm,1.1s,mb5.5
MSU Marysvale 92.11 45 P **P 21 24 34.5 0.0**
MSU Marysvale 92.11 45 *e*P **P 21 24 34.4 -0.1**
KLR Kul'dur 92.18 329 *e*P **P 21 24 34.0 -0.5**
KLR *e* 21 28 18.0
KLR *e*S S 21 35 41.5 +7.1
KLR *e*PS PS 21 37 22.5 +31
KLR *e*SS SS 21 41 44.5 -3.2
KLR pmax pmax
comp=Z,700nm,11.0s
KLR smax
comp=N,1µm,9.5s
KLR smax
comp=E,1µm,9.5s
LTX Lajitas 92.28 57 *e*P **P 21 24 35.3 -0.2**
LTX *e* pP 21 24 40.3 +1.6
LTX pmax pmax
comp=Z,26nm,1.0s,mb5.5
LTX Lajitas 92.28 57 *e*P **P 21 24 34.8 -0.7**
comp=Z,26nm,1.0s,mb5.5
LTX *e* 21 24 40.3
TXAR Lajitas Array 92.28 57 P **P 21 24 34.0 -1.4**
comp=Z,9.9nm,0.8s,mb5.2,baz=207,slow=5.1,SNR=70
TXAR LR LR 21 59 42.5
comp=Z,4µm,18.5s,MS5.9,baz=250,slow=32
LON Longmire 92.34 34 P **P 21 24 35.5 +0.2**
LON Longmire 92.34 34 P **P 21 24 35.4 0.0**
CMIG Matias Romero 92.36 72 *i*P **P 21 24 37.3 +1.2**
HDW Hoodsport 92.39 33 P **P 21 24 36.6 +1.1**
MNTX Cornudas Mount 92.43 54 *e*P **P 21 24 35.8 -0.3**
comp=Z,12nm,0.9s,mb5.2
FMW Mount Fremont 92.54 34 P **P 21 24 37.1 +0.9**
GYA Guiyang 92.62 299⇓ *i*P **P 21 24 37.5 +0.4**
GYA PP PP 21 28 22.8 +1.4
GYA SS SS 21 41 52.5 -2.3
GYA AMB AMB
comp=Z,40nm,0.7s,mb6.0
GYA AMB AMB
comp=Z,360nm,7.5s
GYA LR LR
comp=N,610nm,19.1s,MS5.3
GYA LR LR
comp=E,810nm,17.6s,MS5.3
ENH Enshi 92.70 304 *e*P **P 21 24 37.1 -0.3**
comp=E,109nm,1.0s,mb6.2
LENM Lemitar 92.79 51 *e*P **P 21 24 38.0 +0.3**
LAZ Ladron 92.82 51 *e*P **P 21 24 36.8 -1.0**
RMW Rattlesnake Mo 92.85 34 P **P 21 24 38.7 +1.1**
RMW Rattlesnake Mo 92.85 34 *e*P **P 21 24 38.0 +0.3**
LVC Limon Verde 92.87 119 P **P 21 24 39.9 +1.6**
comp=E,41nm,0.7s,mb5.9,baz=132,slow=17,SNR=53
LVC PKKPbc 21 41 50.2
comp=E,2.5nm,0.7s,baz=352,slow=0.8,SNR=5.7
LVC LR LR 21 53 33.4
comp=E,259nm,21.5s,MS4.7,baz=236,slow=27
LVC Limon Verde 92.87 119 *e*P **P 21 24 39.7 +1.4**
BNM Barren Site 93.01 52 *e*P **P 21 24 39.3 +0.6**
NLU North Lily Min 93.08 44 *e*P **P 21 24 39.0 +0.1**
LPM Los Pinos Moun 93.10 51 *e*P **P 21 24 38.5 -0.7**
SNIWA Snively Ranch 93.20 36 P **P 21 24 40.2 +0.9**
HAWA Hanford 93.22 36 *e*P **P 21 24 38.6 -0.8**
comp=E,114nm,1.5s,mb6.1
MPU Maple Canyon 93.38 44 *e*P **P 21 24 40.5 +0.3**
GDL2 Guadalupe Moun 93.42 54 *e*P **P 21 24 40.7 0.0**
GDL2 *e* 21 24 55.9
SRU San Rafael 93.49 46 P **P 21 24 41.4 +0.6**
SRU San Rafael 93.49 46 *e*P **P 21 24 40.9 +0.1**
LNOR Lincton Mounta 93.49 37 P **P 21 24 40.9 +0.3**
LNOR Lincton Mounta 93.49 37 *e*P **P 21 24 40.5 -0.1**
BBB Bella Bella 93.56 28 P **P 21 24 41.6 +0.8**
comp=E,23nm,0.8s,mb5.6,baz=131,slow=5.4,SNR=5.3
ANMO Albuquerque 93.59 51⇓ *e*P **P 21 24 40.1 -1.3**
ANMO Albuquerque 93.59 51 *e*P **P 21 24 39.7 -1.7**
comp=E,19nm,1.1s,mb5.4
RPW Rockport 93.69 33 *e*P **P 21 24 41.1 -0.4**
BDT Bhumibol Dam 93.69 288 P **P 21 24 44.0 +1.8**
SPUT South Promonto 93.71 43 *e*P **P 21 24 42.0 +0.3**
CTU Camp Tracy 93.73 44 *e*P **P 21 24 42.1 +0.2**
CLNB Carlsbad 93.80 54 *e*P **P 21 24 42.1 -0.3**
HVU Hansel Valley 93.82 43 P **P 21 24 41.4 -0.8**
HVU Hansel Valley 93.82 43 *e*P **P 21 24 40.1 -2.1**
DAU Daniels Canyon 93.85 44 *e*P **P 21 24 43.6 +1.2**
DAU Daniels Canyon 93.85 44 *e*P **P 21 24 42.3 -0.2**
JLU Jordanelle 93.86 44 *e*P **P 21 24 40.7 -1.7**
WTV Waterville 93.91 35 P **P 21 24 42.3 -0.2**
NLW Nelson Butte 93.99 34 *e*P **P 21 24 42.9 0.0**
HLID Hailey 94.03 40 *e*P **P 21 24 41.9 -1.3**
comp=E,34nm,1.0s,mb5.7
BJT Baijiatuao 94.06 315 *e*P **P 21 24 44.2 +0.9**
comp=E,18nm,0.8s,mb5.5
BJI Beijing 94.07 315 P **P 21 24 44.5 +1.1**
BJI AMB AMB
comp=Z,22nm,1.5s,mb5.4
PV01 Paradox Valley 94.11 47 *e*P **P 21 24 43.9 +0.2**
CPRX Cap Rock 94.24 54 *e*P **P 21 24 43.1 -1.3**
MA2 Magadan 94.35 344 *e*P **P 21 24 43.6 -0.7**
MA2 pmax pmax
comp=Z,36nm,1.0s,mb5.8
MA2 Magadan 94.35 344 *e*P **P 21 24 43.7 -0.6**
CM31 Chiang Mai Arr 94.37 289 *e*P **P 21 24 46.8 +1.5**
comp=Z,19nm,0.9s,mb5.5
CMAR Chiang Mai Arr 94.37 289 P **P 21 24 45.9 +0.6**
comp=Z,14nm,1.0s,mb5.3,baz=146,slow=3.1,SNR=54
CMAR PKKPbc 21 41 45.1
comp=Z,2.0nm,0.7s,baz=290,slow=4.3,SNR=11
HWUT Hardware Ranch 94.41 43 *e*P **P 21 24 44.9 -0.1**
comp=Z,9.5nm,1.0s,mb5.2
CHRT Chiangrai 94.43 290⇑ P **P 21 24 43.5 -2.0**
RW3 Ridgway 94.74 48 P **P 21 24 48.2 +1.6**
RW3 Ridgway 94.74 48 *e*P **P 21 24 47.0 +0.4**
RW3 *e* 21 25 01.5
KMI Kunming 94.86 296 P **P 21 24 50.3 +2.8**
KMI Kunming 94.86 296 *e*P **P 21 24 50.0 +2.5**
KMI PP PP 21 28 36.5 -2.1
KMI SKS SKS 21 35 21.3 -5.2
KMI S S 21 35 56.5 -1.7
KMI AMB AMB
comp=Z,18nm,1.0s,mb5.5
KMI AMB AMB
comp=Z,315nm,7.8s
KMI LR LR
comp=N,1µm,19.6s,MS5.5
KMI LR LR
comp=E,1µm,21.0s,MS5.5
TIY Taiyuan 95.00 311⇑ P **P 21 24 49.0 +1.2**
TIY LR LR
comp=E,809nm,19.0s
PNT Penticton 95.19 34 P **P 21 24 48.5 +0.2**
PMR Palmer 95.33 13 *e*P **P 21 24 48.7 0.0**
PMR LR LR
comp=Z,2µm,19.0s,MS5.6
NEW Newport 95.69 36 P **P 21 24 50.0 -0.7**
comp=Z,3.1nm,0.8s,mb4.8,baz=357,slow=8.5,SNR=5.2
NEW LR LR 22 04 46.6
comp=Z,4µm,18.6s,MS6.0,baz=231,slow=34
MCMT McKenzie Canyo 95.70 40 *e*P **P 21 24 51.1 +0.3**
JCT Junction City 95.70 58 P **P 21 24 50.8 -0.4**
JCT pmax pmax
comp=Z,4.0nm,0.3s,mb5.3
JCT Junction City 95.70 58 *e*P **P 21 24 49.2 -2.0**
comp=Z,3.7nm,0.3s,mb5.3
PDAR Pinedale Array 96.30 43 P **P 21 24 51.8 -1.8**
comp=Z,5.3nm,0.9s,mb5.0,baz=188,slow=4.7,SNR=36
PDAR PKKPbc 21 41 40.4
comp=Z,1.9nm,0.7s,baz=104,slow=6.1,SNR=16
PDAR LR LR 22 03 02.8
comp=Z,5µm,19.4s,MS6.0,baz=245,slow=32
MSO Missoula 96.39 38 *e*P **P 21 24 53.2 -0.7**
comp=Z,8.9nm,0.9s,mb5.2
QLMT Earthquake Lak 96.49 41 *e*P **P 21 24 55.1 +0.7**
QLMT *e* 21 25 10.2
CHMT Chamberlain Mo 96.81 38 *e*P **P 21 24 55.1 -0.6**
BOZ Bozeman (W) 96.89 40 P **P 21 24 55.3 -0.9**
BOZ pmax pmax
comp=Z,31nm,1.2s,mb5.6
BOZ Bozeman (W) 96.89 40 *e*P **P 21 24 53.9 -2.2**
comp=Z,31nm,1.3s,mb5.6
SEY Seymchan 97.02 346 *e*P **P 21 24 56.7 +0.3**
SEY *e* 21 28 50.0
SEY 21 35 33.7
SEY *e*S S 21 36 11.7 -3.9
SEY pmax pmax
comp=Z,40nm,1.0s,mb5.8
LPAZ La Paz 97.12 114 P **P 21 25 00.7 +2.8**
comp=Z,7.4nm,0.7s,mb5.3,baz=218,slow=2.9,SNR=33
LPAZ LR LR 22 01 22.0
comp=Z,864nm,20.2s,MS5.2,baz=62,slow=31
LPAZ La Paz 97.12 114 *e*P **P 21 24 59.3 +1.4**
LPAZ pmax pmax
comp=Z,6.0nm,0.7s
LPAZ La Paz 97.12 114 *e*P **P 21 24 59.3 +1.4**
comp=Z,6.1nm,0.7s,mb5.1
JTS JuntasAbangare 97.14 82 *e*P **P 21 24 59.2 +1.2**
comp=Z,1.3nm,1.1s
CD2 Chengdu 97.17 302 P **P 21 25 00.8 +3.0**
CD2 PP PP 21 29 01.5 +4.7
CD2 PPP PPP 21 31 11.3 +8.4
CD2 SKS SKS 21 35 33.3 -5.4
CD2 S S 21 36 19.5 +1.8
CD2 LR LR
comp=N,1µm,20.5s
MCK McKinley 97.33 12 P **P 21 24 57.4 -0.3**
MCK pmax pmax
comp=Z,7.0nm,0.9s,mb5.1
MCK McKinley 97.33 12 *e*P **P 21 24 56.4 -1.3**
comp=Z,7.1nm,0.9s,mb5.1
HHC Hu-ho-hao-te 97.37 314 *e*P **P 21 25 00.3 +1.8**
HHC PP PP 21 29 02.0 +3.9
HHC S S 21 36 19.0 -0.1
HHC XS 21 36 33.0
HHC AMB AMB
comp=Z,8.0nm,1.1s,mb5.1
HHC AMB AMB
comp=Z,222nm,8.7s
OTAV Otavalo 97.58 94 *e*P **P 21 25 01.9 +1.9**
comp=Z,14nm,1.3s,mb5.3
DLBC Dease Lake 97.67 23 PKKPbc 21 41 35.8
comp=Z,1.2nm,0.3s,baz=181,slow=26,SNR=5.7
COLA College 98.57 12⇑ *e*P **P 21 25 01.6 -1.7**
COLA College 98.57 12 *e*P **P 21 25 03.1 -0.2**
COLA LR LR
comp=Z,2µm,20.0s,MS5.7
ILAR Eielson Array 98.65 13 P **P 21 25 03.0 -0.7**
comp=Z,1.0nm,0.8s,baz=222,slow=5.7,SNR=6.9
ILAR PKiKP 21 29 33.7
comp=Z,1.5nm,0.8s,baz=247,slow=2.1,SNR=11
ILAR PKKPbc 21 41 32.9
comp=Z,1.4nm,0.8s,baz=321,slow=2.9,SNR=10
ILAR LR LR 22 07 11.0
comp=Z,1µm,18.6s,baz=233,slow=34
CPUP Villa Florida 98.87 128 P **P 21 25 08.8 +3.2**
comp=Z,7.2nm,0.8s,mb5.3,baz=265,slow=4.7,SNR=16
CPUP PKKPbc 21 41 31.6
comp=Z,3.0nm,0.8s,baz=93,slow=2.8,SNR=5.7
CPUP LR LR 22 03 34.5
comp=Z,2µm,18.9s,MS5.6,baz=256,slow=32
BILL Bilibino 99.82 354 *e*P **P 21 25 08.6 -0.3**
BILL pmax pmax
comp=Z,7.0nm,0.9s,mb5.1
BILL Bilibino 99.82 354 *e*Pdif **P 21 25 08.7 -0.2**
comp=Z,6.5nm,0.8s,mb5.1
LZH Lanzhou 99.83 306⇑ P **P 21 25 12.5 +2.7**
LZH PP PP 21 29 20.8 +3.9
LZH SKS SKS 21 35 44.5 -7.6
LZH *e*S S 21 36 38.3 -1.6
LZH SS SS 21 43 36.8 +0.8
LZH AMB AMB
comp=Z,33nm,1.5s,mb5.5
LZH AMB AMB
comp=Z,236nm,7.3s
LZH LR LR
comp=E,1µm,14.9s
LZH LR LR
comp=Z,2µm,18.3s,MS5.6
RSSD Black Hills 100.36 44 P **P 21 25 12.0 0.0**
RSSD pmax pmax
comp=Z,30nm,1.5s
RSSD Black Hills 100.36 44 *e*P **P 21 25 11.8 -0.1**
comp=Z,30nm,1.5s
CLNS Chul'man 100.50 332 *e*P **P 21 25 11.9 -0.4**
CLNS pmax pmax
comp=Z,10.0nm,1.0s
CLNS pmax pmax
comp=N,3.0nm,1.1s
CLNS pmax pmax
comp=E,3.0nm,1.3s
CLNS MLR MLR
comp=N,1µm,19.0s,MS5.5
CLNS MLR MLR
comp=Z,2µm,19.0s,MS5.7
CLNS MLR MLR
comp=E,300nm,16.0s,MS5.5
YAK Yakutsk 102.36 337 *e*P Pdif 21 25 20.1 -0.4
YAK pmax pmax
comp=Z,8.0nm,0.5s
SONM Songino Array 104.29 317 Pdiff Pdif 21 25 30.6 +1.2
comp=Z,1.2nm,0.8s,baz=121,slow=2.5,SNR=7.6
SONM PKiKP 21 29 45.0
comp=Z,0.9nm,0.8s,baz=118,slow=5.9,SNR=3.2
SONM PKKPbc 21 41 17.1
comp=Z,2.5nm,0.8s,baz=275,slow=3.0,SNR=15
INK Inuvik 104.46 15 PKiKP 21 29 45.0
comp=Z,4.6nm,1.0s,baz=224,slow=5.3,SNR=6.0
BOD Bodaibo 105.74 329 *e*P Pdif 21 25 33.5 -2.0
YKA Yellowknife Ar 105.95 25 Pdiff Pdif 21 25 36.3 0.0
comp=Z,1.0nm,0.9s,baz=232,slow=4.4,SNR=15
YKA PKiKP 21 29 48.0
comp=Z,1.7nm,0.6s,baz=255,slow=1.5,SNR=47
YKA PKKPbc 21 41 10.5
comp=Z,2.2nm,0.7s,baz=37,slow=3.0,SNR=24
YKA PKPPKP 21 49 35.4
comp=Z,0.2nm,0.7s,baz=47,slow=1.7,SNR=3.8
LSA Lhasa 106.06 295 PKiKP 21 29 48.2
ZAK Zakamensk 107.33 319 *e*P Pdif 21 25 43.0 +0.3
TLY Talaya 107.74 320 *e*P Pdif 21 25 42.3 -2.1
TLY *e* 21 30 11.3
TLY pmax pmax
comp=Z,21nm,0.8s
TLY MLR MLR
comp=Z,11µm,18.0s,MS6.5
ULM Lac du Bonnet 108.26 42 PKiKP 21 29 51.8
comp=Z,6.2nm,0.9s,baz=306,slow=5.2,SNR=3.6
ULM PKPPKP 21 49 28.8
comp=Z,2.6nm,0.7s,baz=178,slow=2.2,SNR=3.8
WCI Wyandotte Cave 109.21 56 *e*PKiKP 21 29 55.0
PKI Pulchoki 109.64 291 *e*P 21 29 57.1
comp=Z,9.2nm,0.6s
KKN Kakani 109.84 291 *e*P 21 29 57.4
comp=Z,16nm,0.9s
DMN Daman 109.90 291 *e*P 21 29 55.9
comp=Z,17nm,0.9s
GKN Gorkha 110.45 291 *e*P PKPdf 21 29 57.7 -1.7
comp=Z,20nm,1.1s
KOLN Koldanda 111.18 290 *e*P PKPdf 21 29 59.5 -1.3
comp=Z,12nm,0.7s
BDFB Brasilia 112.47 126 PKiKP 21 30 02.7
comp=Z,1.1nm,0.5s,baz=196,slow=4.1,SNR=4.4
BDFB PKKPbc 21 40 51.2
comp=Z,5.9nm,1.1s,baz=66,slow=2.3,SNR=9.0
SUR Sutherland 114.41 197 PKP PKPdf 21 30 06.6 -0.4
comp=Z,17nm,0.8s,baz=110,slow=3.0,SNR=12
MKAR Makanchi Array 118.90 310 PKP PKPdf 21 30 11.9 -3.5
comp=Z,9.5nm,0.8s,baz=144,slow=0.7,SNR=52
MKAR PKKPbc 21 40 29.5
comp=Z,2.3nm,0.8s,baz=281,slow=3.6,SNR=11
MKAR Makanchi Array 118.90 310 *i*PKIKP PKPdf 21 30 11.4 -4.0
MKAR pmax pmax
comp=Z,10.0nm,0.8s
MKAR Makanchi Array 118.90 310 PKP PKPdf 21 30 11.9 -3.5
MKAR PKKPbc 21 40 29.5
MSNY Massena 119.59 53 *e*PKPdf PKPdf 21 30 14.8 -2.0
NCB Newcomb 119.75 54 *e*PKPdf PKPdf 21 30 14.8 -2.3
LBTB Lobatse 119.91 204 PKIKP PKPdf 21 30 18.7 +0.9
LBTB Lobatse 119.91 204 *e*PKPdf PKPdf 21 30 18.2 +0.4
NVS Novosibirsk 120.29 319 *i*PKIKP PKPdf 21 30 12.8 -5.1
NVS pmax pmax
comp=N,6.0nm,1.1s
NVS pmax pmax
comp=E,11nm,1.1s
NVS pmax pmax
comp=Z,36nm,1.1s
NVS pmax pmax
comp=N,4.0nm,1.4s
NVS pmax pmax
comp=E,9.0nm,1.7s
KSH Kashi 121.31 300 *e*PKP PKPdf 21 30 16.3 -4.0
KSH *e*PKS PKS 21 33 51.3 -1.6
KSH *e*SKS SKS 21 37 23.8 +3.7
KSH PP PP
comp=Z,140nm,5.0s
KSH LR LR
comp=N,320nm,11.2s
KSH LR LR
comp=E,740nm,16.6s
ULHL Ulahol 121.86 303 P PKPdf 21 30 21.0 -0.3
SNR=11
KURK Kurchatov 122.19 313 PKIKP PKPdf 21 30 18.3 -3.4
KURK Kurchatov 122.19 313 *e*PKPdf PKPdf 21 30 17.9 -3.7
TKM2 Tokmak 2 122.49 304 P PKPdf 21 30 21.5 -0.9
SNR=14
KZA Kyzart 122.53 303 P PKPdf 21 30 22.7 +0.2
SNR=23
KBK Karagaybulak 122.89 303 P PKPdf 21 30 22.6 -0.5
SNR=15

UCH	**Uchtor**	**123.09**	**303**		P	PKPdf	21 30 22.1	-1.5	
	SNR=41								
CHMS	**Chumysh**	**123.11**	**304**		P	PKPdf	21 30 22.7	-0.9	
	SNR=16								
FRU	**Bishkek**	**123.17**	**303**		*e*PKIKP	PKPdf	21 30 22.5	-1.2	
FRU					pmax	pmax			
	comp=Z,60nm,1.9s								
AAK	**Ala-Archa**	**123.21**	**303**		P	PKPdf	21 30 23.3	-0.5	
	SNR=10.0								
AAK	**Ala-Archa**	**123.21**	**303**		PKIKP	PKPdf	21 30 23.2	-0.6	
AAK	**Ala-Archa**	**123.21**	**303**		*e*PKPdf	PKPdf	21 30 22.6	-1.1	
USP	**Ospenovka**	**123.35**	**304**		P	PKPdf	21 30 23.1	-0.9	
	SNR=28								
AML	**Almayashu**	**123.66**	**302**		P	PKPdf	21 30 24.8	0.0	
	SNR=23								
EKS2	**Erkin-Say**	**123.73**	**303**		P	PKPdf	21 30 24.4	-0.5	
	SNR=29								
SCHQ	**Schefferville**	**126.43**	**42**		PKP	PKPdf	21 30 26.9	-2.8	
	comp=Z,49nm,0.9s,baz=311,slow=1.5,SNR=27								
SCHQ	**Schefferville**	**126.43**	**42**		*e*PKPdf	PKPdf	21 30 26.6	-3.0	
BRVK	**Borovoye**	**127.62**	**315**		PKIKP	PKPdf	21 30 30.0	-2.0	
BRVK	**Borovoye**	**127.62**	**315**		*e*PKPdf	PKPdf	21 30 29.5	-2.6	
TSUM	**Tsumeb**	**127.82**	**198**		PKP	PKPdf	21 30 32.7	-0.6	
	comp=Z,7.5nm,0.5s,baz=146,slow=2.7,SNR=24								
ZRNK	**Zerenda**	**128.38**	**315**		*e*PKPdf	PKPdf	21 30 30.2	-3.3	
KBS	**Kingsbay**	**132.12**	**358**		AMS	AMS	22 23 23.9		
	comp=Z,996nm,22.0s,MS5.5								
SPB4	**Spitsbergen Ar**	**132.65**	**356**		*e*PKPdf	PKPdf	21 30 38.9	-2.3	
SPITS	**Spitsbergen Ar**	**132.65**	**356**		PKP	PKPdf	21 30 38.1	-3.0	
	comp=Z,27nm,0.8s,baz=135,slow=8.5,SNR=20								
DAG	**Danmarks Havn**	**133.36**		**7**	*i*P	PKPdf	21 30 39.6	-2.8	
	comp=Z,9.2nm,0.9s								
DAG	**Danmarks Havn**	**133.36**		**7**⇑	*i*PKIKP	PKPdf	21 30 39.6	-2.8	
DAG					pmax	pmax			
	comp=Z,9.0nm,0.9s								
SUMG	**Summit**	**133.38**	**16**		*e*PKPdf	PKPdf	21 30 40.7	-1.7	
KMBO	**Kilima Mbogo**	**134.09**	**232**		PKP	PKPdf	21 30 47.4	+2.0	
	comp=Z,6.2nm,0.9s,baz=62,slow=2.7,SNR=13								
KMBO	**Kilima Mbogo**	**134.09**	**232**		*e*PKPdf	PKPdf	21 30 47.3	+2.0	
ARU	**Arti**	**134.24**	**320**	⇓	*i*PKIKP	PKPdf	21 30 39.2	-5.2	
ARU					pmax	pmax			
	comp=Z,27nm,0.9s								
ARU					MLR	MLR			
	comp=N,1μm,22.0s,MS5.7								
ARU					MLR	MLR			
	comp=E,1μm,22.0s,MS5.7								
ARU					MLR	MLR			
	comp=Z,2μm,22.0s,MS5.8								
ARU	**Arti**	**134.24**	**320**		*e*PKPpre		21 30 31.6		
ARU					*e*PKPdf	PKPdf	21 30 42.2	-2.2	
SCO	**Scoresbysund**	**138.43**	**12**		*i*P	PKPdf	21 30 49.1	-2.8	
SCO	**Scoresbysund**	**138.43**	**12**		*e*P	PKPdf	21 30 49.1	-2.8	
LVZ	**Lovozero**	**138.93**	**342**		*e*PKIKP	PKPdf	21 30 48.5	-4.3	
LVZ					pmax	pmax			
	comp=Z,20nm,1.5s								
LVZ					pmax	pmax			
	comp=N,5.0nm,0.8s								
LVZ					pmax	pmax			
	comp=E,5.0nm,1.6s								
LVZ					MLR	MLR			
	comp=Z,2μm,21.0s,MS5.8								
LVZ					MLR	MLR			
	comp=N,1μm,22.0s,MS5.7								
LVZ					MLR	MLR			
	comp=E,1μm,21.0s,MS5.7								
LVZ	**Lovozero**	**138.93**	**342**		*e*P	PKPdf	21 30 48.4	-4.4	
KEV	**Kevo**	**139.16**	**347**		*e*p	PKPdf	21 30 50.8	-2.4	
APA	**Apatity**	**139.49**	**343**		*i* PKHKP		21 30 35.2		
APA					*i*		21 33 53.0		
APA					MLR	MLR			
	comp=Z,2μm,20.0s,MS5.8								
ARCES	**ARCESS Array B**	**139.62**	**348**		PKhKP		21 30 43.3		
	comp=Z,17nm,0.8s,baz=34,slow=4.4,SNR=25								
ARE0	**ARCESS Array S**	**139.62**	**348**		*e*PKPpre		21 30 43.9		
THR	**Tehran**	**139.84**	**290**		PKhKP		21 30 48.3		
	comp=Z,1.4nm,0.8s,baz=121,slow=7.4,SNR=3.2								
DJNS	**Zahran al Janu**	**140.78**	**260**		P	PKPdf	21 30 55.8	-1.8	
TATS	**Tathlith**	**141.66**	**262**		P	PKPdf	21 30 55.2	-3.8	
MZLS	**Mizel**	**141.95**	**270**		P	PKPdf	21 30 55.0	-4.4	
PECR	**Pechory**	**141.99**	**323**		*e*PKIKP	PKPdf	21 30 53.0	-5.4	
PECR					*e*		21 34 00.0		
PECR					MLR	MLR			
	comp=N,900nm,20.0s,MS5.9								
PECR					MLR	MLR			
	comp=E,2μm,20.0s,MS5.9								
PECR					MLR	MLR			
	comp=Z,2μm,20.0s,MS6.0								
NAMS	**An Nimas**	**142.57**	**261**		P	PKPdf	21 30 58.9	-1.7	
MAK	**Makhachkala**	**142.93**	**301**		*e*PKIKP	PKPdf	21 30 57.0	-3.5	
MAK					pmax	pmax			
	comp=Z,1μm,4.0s								
BLJS	**Baljurashi**	**143.40**	**261**		P	PKPbc	21 31 01.0	+3.6	
JOF	**Joensuu**	**143.52**	**338**		*e*p	PKPbc	21 30 55.9	-0.5	
	comp=Z,22nm,0.7s								
JOF	**Joensuu**	**143.52**	**338**		*e*PKIKP	PKPdf	21 30 55.9	-4.9	
JOF					pmax	pmax			
	comp=Z,22nm,0.7s								
AFFS	**'Afif**	**143.81**	**268**		P	PKPbc	21 30 59.9	+1.4	
LTHS	**Al Lith**	**144.58**	**261**		P	PKPbc	21 31 02.9	+2.1	
TI2	**Plekhanov**	**145.04**	**299**		*i* PKIKP	PKPdf	21 31 02.4	-1.8	
TI2					MLR	MLR			
	comp=N,1μm,20.0s,MS5.6								
TI2					MLR	MLR			
	comp=E,500nm,20.0s,MS5.6								
TI2					MLR	MLR			
	comp=Z,1μm,20.0s,MS5.6								
MOS	**Moscow**	**145.48**	**325**		*i* PKP2	PKPab	21 31 02.1	-1.7	
MOS					*e*		21 34 19.7		
MOS					*e*		21 38 05.5		
MOS					*e*PPS	PPS	21 47 02.6	+2.1	
MOS					*e*SS	SS	21 53 08.4	-6.4	
MOS					pmax	pmax			
	comp=Z,2μm,0.9s								
MOS					pmax	pmax			
	comp=Z,1μm,0.8s								
MOS					MLR	MLR			
	comp=Z,2μm,20.0s,MS5.9								
MOS					MLR	MLR			
	comp=N,1μm,21.0s								
ZEI	**Tsey**	**145.59**	**301**	*d*	*i*PKIKP	PKPdf	21 31 04.0	-1.1	
ZEI					*e*		21 34 32.0		
ZEI					pmax	pmax			
	comp=Z,2μm,8.0s								
ZEI					MLR	MLR			
	comp=Z,2μm,22.0s,MS5.7								
GOF	**Gofitskoye**	**145.91**	**305**		*e*PKP2	PKPab	21 31 05.0	-0.7	
HILS	**Ha'il**	**145.93**	**273**		P	PKPbc	21 31 06.5	+2.4	
PYA	**Pyatigorsk**	**146.05**	**303**	*d*	*i*PKIKP	PKPdf	21 31 04.0	-1.9	
PYA					pmax	pmax			
	comp=Z,3μm,6.0s								
PUL	**Pulkovo**	**146.12**	**335**		*e*PKIKP	PKPdf	21 31 03.4	-2.1	
PUL					*e*		21 34 22.3		
PUL					pmax	pmax			
	comp=N,630nm,0.8s								
PUL					pmax	pmax			
	comp=Z,1μm,0.8s								
PUL					pmax	pmax			
	comp=E,630nm,0.9s								
PUL					MLR	MLR			
	comp=N,1μm,21.0s,MS5.8								
PUL					MLR	MLR			
	comp=E,790nm,21.0s,MS5.8								
PUL					MLR	MLR			
	comp=Z,3μm,21.0s,MS6.0								
PUL	**Pulkovo**	**146.12**	**335**		*i* Pr		21 31 03.2		
FINES	**FINESS Array B**	**146.24**	**340**		PKP	PKPdf	21 31 03.2	-2.4	
	comp=Z,186nm,0.7s,baz=62,slow=4.0,SNR=249								
FINES					PKPbc	PKPbc	21 31 05.0	+1.3	
	comp=Z,186nm,0.7s,baz=63,slow=4.3,SNR=198								
NSS	**Namsos**	**146.27**	**353**		*e*P	PKPbc	21 31 01.8	-2.0	
NSS					AMb	AMB	21 31 06.1		
	comp=Z,325nm,2.0s								
OBN	**Obninsk**	**146.32**	**325**	*de*	PKIKP	PKPdf	21 31 04.1	-1.9	
OBN					*e*SS	SS	21 53 28.1	+3.8	
OBN					pmax	pmax			
	comp=Z,915nm,1.9s								
OBN					MLR	MLR			
	comp=Z,2μm,22.0s,MS5.8								
OBN	**Obninsk**	**146.32**	**325**		*e*PKPdf	PKPdf	21 31 03.8	-2.2	
KIV	**Kislovodsk**	**146.32**	**303**		*i* PKIKP	PKPdf	21 31 05.3	-1.0	
KIV					*e*		21 34 31.8		
KIV					*e*SS	SS	21 53 23.2	-1.5	
KIV					*e*SSS	SSS	21 58 49.3	-6.4	
KIV					pmax	pmax			
	comp=Z,90nm,1.7s								
KIV	**Kislovodsk**	**146.32**	**303**		*e*PKPdf	PKPdf	21 31 04.9	-1.5	
KIV					*e*PKPbc	PKPbc	21 31 06.8	+2.3	
VOR	**Voronezh**	**146.47**	**318**		*e*PKIKP	PKPdf	21 31 04.0	-2.3	
VOR					pmax	pmax			
	comp=Z,610nm,1.2s								
VRSR	**Storozhevoye**	**146.67**	**317**		*e*PKIKP	PKPdf	21 31 04.6	-2.1	
VRSR					pmax	pmax			
	comp=Z,510nm,1.7s								
VRSR					pmax	pmax			
	comp=N,90nm,1.1s								
VRSR					pmax	pmax			
	comp=E,200nm,1.2s								
VRSR					MLR	MLR			
	comp=Z,1μm,20.0s,MS5.7								
VRSR					MLR	MLR			
	comp=N,4μm,58.0s								
VRSR					MLR	MLR			
	comp=E,630nm,23.0s								
YNBS	**Yanbu' al Bahr**	**148.23**	**266**		P	PKPdf	21 31 12.6	+2.6	
SOC	**Sochi**	**148.51**	**303**	*d*	*i*PKIKP	PKPdf	21 31 08.6	-1.3	
SOC					*i*		21 31 12.0		
SOC					*e*		21 34 47.2		
SOC					*e*PPP	PPP	21 37 57.3	-7.3	
SOC					*e*SS	SS	21 54 25.4	+36	
SOC					pmax	pmax			
	comp=Z,70nm,0.8s								
SOC					pmax	pmax			
	comp=N,4.0nm,0.6s								
SOC					pmax	pmax			
	comp=E,10.0nm,1.1s								
MOL	**Molde**	**148.58**	**356**		*e*P	PKPdf	21 31 14.4	+5.0	
MOL					AMb	AMB	21 31 20.3		
	comp=Z,196nm,1.5s								
DOMB	**Dombas**	**148.99**	**354**		*e*P	PKPdf	21 31 08.9	-1.1	
DOMB					AMb	AMB	21 31 15.1		
	comp=Z,105nm,2.1s								
DOMB	**Dombas**	**148.99**	**354**		*e*P	PKPdf	21 31 12.5	+2.4	
NB2	**NORSAR Subarra1**	**149.75**	**352**		PKP		21 31 14.3		
	comp=Z,415nm,1.7s,baz=12,slow=2.6								
NB2	**NORSAR Subarra1**	**149.75**	**352**		PKPa		21 31 14.3		
	baz=12,slow=2.7								
NB2	**NORSAR Subarra1**	**149.75**	**352**		PKPab	PKPab	21 31 14.3	-6.3	
NOA	**NORSAR Array B**	**149.75**	**352**		PKP	PKPdf	21 31 10.1	-1.3	
	comp=Z,12nm,0.8s,baz=166,slow=19,SNR=42								
NOA					PKPbc	PKPdf	21 31 14.2	+2.8	
	comp=Z,65nm,1.2s,baz=34,slow=2.6,SNR=90								
ANN	**Anapa**	**149.85**	**306**		*e*PKP2	PKPab	21 31 16.0	-5.5	
ANN					pmax	pmax			
	comp=Z,70nm,0.9s								
NAO01	**NORSAR Array S**	**149.98**	**352**		*e*PKPdf	PKPdf	21 31 09.5	-2.2	
NAO01					*e*PKPbc	PKPdf	21 31 15.1	+3.4	
HFS	**Hagfors**	**150.27**	**349**		PKP	PKPdf	21 31 10.2	-2.0	
	comp=Z,19nm,0.9s,baz=270,slow=1.5,SNR=23								
HFS					PKPbc	PKPdf	21 31 14.3	+2.2	
	comp=Z,99nm,0.7s,baz=90,slow=1.5,SNR=66								
IZAR	**Zarasai**	**150.53**	**333**		*e*P	PKPdf	21 31 15.6	+2.9	
IZAR					AMPb	AMB	21 31 19.4		
	comp=Z,74nm,1.1s								
QURS	**Qurayyt al Mil**	**150.61**	**279**		P	PKPdf	21 31 18.6	+5.0	
TBKS	**Tabuk**	**150.63**	**273**		P	PKPdf	21 31 18.4	+4.7	
YEL1	**Yell**	**150.64**	**4**		*e*P	PKPdf	21 31 10.8	-1.9	
IDID	**Didziasalis**	**150.64**	**332**		*e*P	PKPdf	21 31 15.8	+2.9	
IDID					AMPb	AMB	21 31 19.6		
	comp=Z,59nm,1.1s								
ISAL	**Salakas**	**150.70**	**333**		*e*P	PKPdf	21 31 16.1	+3.1	
ISAL					AMPb	AMB	21 31 19.9		
	comp=Z,48nm,1.2s								
MNK	**Minsk**	**150.75**	**330**		*e*PKIKP	PKPdf	21 31 11.0	-2.1	
MNK					pmax	pmax			
	comp=Z,770nm,1.1s								
MNK					pmax	pmax			
	comp=N,450nm,1.8s								
MNK					pmax	pmax			
	comp=E,390nm,1.7s								
IIGN	**Ignalina**	**150.82**	**332**		*e*P	PKPdf	21 31 16.3	+3.2	
IIGN					AMPb	AMB	21 31 20.1		
	comp=Z,73nm,1.1s								
RUND	**Rundenannen**	**150.84**	**357**		*e*P	PKPdf	21 31 17.6	+4.6	
RUND					AMb	AMB	21 31 21.9		
	comp=Z,242nm,2.2s								
RUND	**Rundenannen**	**150.84**	**357**		*e*P	PKPdf	21 31 20.9	+7.9	
SACV	**Santiago Islan**	**150.87**	**118**		*e*PKPbc	PKPdf	21 31 19.2	+4.9	
WAL1	**Walls**	**150.90**	**5**		*e*P	PKPdf	21 31 12.6	-0.5	
LRW	**Lerwick**	**151.04**	**4**		*e*P	PKPdf	21 31 12.0	-1.3	
ASF	**Jabal al Asfar**	**151.08**	**281**		PKPbc	PKPdf	21 31 19.0	+4.8	
	comp=Z,46nm,0.8s,baz=343,slow=1.5,SNR=59								
SAN1	**Sandwick**	**151.16**	**4**		*e*P	PKPdf	21 31 14.4	+0.9	
KONO	**Kongsberg**	**151.29**	**353**		*e*P	PKPdf	21 31 16.9	+3.2	
KONO					AMb	AMB	21 31 20.0		
	comp=Z,214nm,1.1s								
KONO					AMS	AMS	22 43 41.6		
	comp=Z,1μm,20.0s,MS5.7								
KONO	**Kongsberg**	**151.29**	**353**		PKIKP	PKPdf	21 31 12.5	-1.2	
KONO	**Kongsberg**	**151.29**	**353**		*e*PKPdf	PKPdf	21 31 12.4	-1.3	
KONO					*e*PKPbc	PKPdf	21 31 18.4	+4.7	
KONO					LR	LR			
	comp=Z,17μm,20.0s,MS6.8								
JMQS	**Jabal Muqyreh**	**151.36**	**274**		P	PKPdf	21 31 20.0	+5.2	
AYUS	**'Aynunah**	**151.72**	**272**		P	PKPdf	21 31 22.6	+7.2	
BDAS	**Al Bad'**	**151.92**	**272**		P	PKPdf	21 31 22.9	+7.3	
OST	**Stronsay**	**151.98**	**6**		*e*P	PKPdf	21 31 18.6	+3.9	
MKRJ	**Makawir**	**152.06**	**279**		P	PKPdf	21 31 15.6	-0.2	
SIM	**Simferopol'**	**152.07**	**308**	*c*	*i*PKIKP	PKPdf	21 31 21.8	+6.5	
SIM					*e*SS	SS	21 54 28.0	-0.5	
SIM					pmax	pmax			
	comp=Z,70nm,0.8s								
JMOS	**Jabal al Moall**	**152.08**	**274**		P	PKPdf	21 31 23.1	+7.3	
KSHT	**Keshet**	**152.08**	**282**		P	PKPdf	21 31 16.1	+0.4	
ALWS	**Ilw as Safayha**	**152.15**	**274**		P	PKPdf	21 31 23.5	+7.5	
OHO	**Hoy**	**152.17**	**7**		*e*P	PKPdf	21 31 18.7	+3.7	
HRI	**Mount Hermon**	**152.18**	**283**		P	PKPdf	21 31 16.3	+0.4	
HAQS	**Haql**	**152.21**	**274**		P	PKPdf	21 31 23.7	+7.6	
HMDT	**Nahal Hemdat**	**152.24**	**281**		P	PKPdf	21 31 16.3	+0.3	
MZDA	**Masada**	**152.26**	**279**		P	PKPdf	21 31 16.0	0.0	
DRGI	**Dragot**	**152.27**	**279**		P	PKPdf	21 31 16.0	-0.1	
ZFRI	**Zfri**	**152.29**	**277**		P	PKPdf	21 31 16.2	+0.1	
EIL	**Elat**	**152.32**	**275**		P	PKPdf	21 31 16.3	+0.1	
OTO	**Tongue**	**152.37**	**8**		*e*P	PKPdf	21 31 18.8	+3.5	
MBH	**Mount Berech**	**152.38**	**275**		P	PKPdf	21 31 16.6	+0.3	
OBR	**Brabster**	**152.39**	**7**		*e*P	PKPdf	21 31 17.9	+2.6	
ORE	**Reay**	**152.39**	**7**		*e*P	PKPdf	21 31 18.7	+3.4	
PRNI	**Paran**	**152.40**	**276**		P	PKPdf	21 31 16.5	+0.2	
KMTI	**Karmit**	**152.60**	**276**		P	PKPdf	21 31 16.6	0.0	
MLA1	**Latheron**	**152.67**	**7**		*e*P	PKPdf	21 31 19.2	+3.4	
MASH	**Mash'abbe Sade**	**152.70**	**278**		P	PKPdf	21 31 16.6	-0.1	
HAF	**Haifa**	**152.72**	**282**		P	PKPdf	21 31 16.9	+0.2	
SVTA	**Shivta**	**152.83**	**278**		P	PKPdf	21 31 17.2	+0.3	
MVH1	**Achvaich**	**152.95**	**8**		*e*P	PKPdf	21 31 18.4	+2.3	
SUW	**Suwalki**	**153.01**	**333**	⇓	*e*PKP	PKPdf	21 31 15.3	-1.0	
SUW					*e*		21 31 23.0		
SUW					*e*		21 31 33.1		
KZIT	**Kziot**	**153.01**	**277**		P	PKPdf	21 31 17.7	+0.6	
KPL	**Plockton**	**153.32**	**10**	⇑	*e*P	PKPdf	21 31 15.9	-0.8	
MCD	**Coleburn Disti**	**153.40**	**7**		*e*P	PKPdf	21 31 21.3	+4.6	
MDO	**Dochfour**	**153.40**	**9**		*e*P	PKPdf	21 31 21.3	+4.5	
KSB	**Sheil Bridge**	**153.48**	**10**		*e*P	PKPdf	21 31 16.6	-0.3	
BRTR	**Keskin Array B**	**153.65**	**297**		PKP	PKPdf	21 31 14.4	-3.3	
	comp=Z,3.9nm,1.0s,baz=153,slow=2.8,SNR=15								
BRTR					PKPbc	PKPdf	21 31 25.2	+7.5	
	comp=Z,9.8nm,0.8s,baz=121,slow=2.5,SNR=28								
BRTR					PKPab	PKPab	21 31 37.4	-0.2	
	comp=Z,14nm,0.8s,baz=151,slow=4.5,SNR=15								
PHNC	**Paralimni**	**153.67**	**286**		P	PKPdf	21 31 25.7	+7.8	
MME1	**Meikle Cairn**	**153.69**	**7**		*e*P	PKPdf	21 31 20.2	+3.0	
KAR1	**Arisaig**	**153.69**	**11**		*e*P	PKPdf	21 31 15.7	-1.5	
LIC	**Lamto**	**153.98**	**162**		*e*PKIKP	PKPdf	21 31 19.2	+0.3	
	comp=Z,60nm,1.1s								
LIC					*e*R				
	comp=Z,3μm,21.0s								
LIC	**Lamto**	**153.98**	**162**		*e*PKIKP	PKPdf	21 31 19.1	+0.2	
	comp=Z,148nm,1.0s								
LIC	**Lamto**	**153.98**	**162**		*e*PKPdf	PKPdf	21 31 19.2	+0.3	
LIC					LR	LR			
	comp=Z,1μm,21.0s,MS5.7								
KIC	**Kosan Boka**	**154.19**	**162**		*e*PKIKP	PKPdf	21 31 19.5	+0.3	
	comp=Z,345nm,1.0s								
CSS	**Prodhromos**	**154.25**	**286**	⇑	P	PKPdf	21 31 26.2	+7.5	
	comp=Z,0.8nm,0.9s								
CSS	**Prodhromos**	**154.25**	**286**	⇑	*e*P	PKPdf	21 31 26.2	+7.5	
MAMC	**Mammari**	**154.34**	**287**		P	PKPdf	21 31 26.9	+8.1	
TIC	**Toumodi**	**154.39**	**162**		*e*PKIKP	PKPdf	21 31 19.7	+0.2	
	comp=Z,547nm,1.6s								
DBIC	**Dimbokro**	**154.45**	**162**		PKP	PKPdf	21 31 19.4	-0.1	
	comp=Z,9.4nm,0.9s,baz=45,slow=2.9,SNR=7.3								
DBIC					PKPab	PKPab	21 31 43.6	+1.8	
	comp=Z,29nm,0.9s,baz=162,slow=7.0,SNR=5.6								
DBIC	**Dimbokro**	**154.45**	**162**		PKP	PKPdf	21 31 19.4	-0.1	
DBIC					PKPab	PKPab	21 31 43.6	+1.8	
MUD	**Monsted U'grnd**	**154.47**	**352**		*i* P	PKPdf	21 31 16.1	-2.2	
	comp=Z,33nm,1.0s								
MUD	**Monsted U'grnd**	**154.47**	**352**		*e*PKIKP	PKPdf	21 31 16.1	-2.2	
MUD					pmax	pmax			
	comp=Z,33nm,1.0s								
SZAC	**Souni-Zanaja**	**154.62**	**286**	⇑	P	PKPdf	21 31 27.4	+8.2	
SZAC	**Souni-Zanaja**	**154.62**	**286**	⇑	*i*P	PKPdf	21 31 27.4	+8.2	
EAB	**Aberfoyle**	**154.62**	**9**		*e*P	PKPdf	21 31 17.5	-1.0	
EAB					AMB	AMB	21 31 31.9		
	comp=Z,62nm,1.4s								
BSD	**Bornholm Skovb**	**154.70**	**344**		*i* P	PKPdf	21 31 17.7	-0.9	
	comp=Z,38nm,0.9s								
BSD					*i*		21 31 40.6		
BSD					*e*		21 34 50.2		
BSD	**Bornholm Skovb**	**154.70**	**344**		*e*PKIKP	PKPdf	21 31 17.7	-0.9	
BSD					*i*		21 31 40.6		
BSD					pmax	pmax			
	comp=Z,38nm,0.9s								
BSD	**Bornholm Skovb**	**154.70**	**344**		*e*P	PKPdf	21 31 17.7	-0.9	
BSD					*i*		21 31 40.6		
BSD					*e*		21 34 50.2		
COP	**Copenhagen**	**154.71**	**347**		*i* P	PKPdf	21 31 17.5	-1.1	
	comp=Z,21nm,0.8s								
COP					*i*		21 31 40.7		
COP					*e*		21 35 09.2		
COP	**Copenhagen**	**154.71**	**347**		*e*PKIKP	PKPdf	21 31 17.5	-1.1	
COP					pmax	pmax			
	comp=Z,21nm,0.8s								
COP	**Copenhagen**	**154.71**	**347**		*e*P	PKPdf	21 31 17.5	-1.1	
COP					*i*		21 31 40.7		
COP					*e*		21 35 09.2		
EAU	**Auchinoon**	**155.07**	**8**		*e*P	PKPdf	21 31 18.1	-0.9	
EAU					AMB	AMB	21 31 44.6		
	comp=Z,120nm,1.5s								
ESY	**Stoneypath**	**155.10**	**7**		*e*P	PKPdf	21 31 18.3	-0.8	
ESY					AMB	AMB	21 31 27.6		
	comp=Z,37nm,0.8s								
WAR	**Warsaw**	**155.20**	**333**		*e*PKP	PKPdf	21 31 20.0	+0.6	
WAR					*e*		21 31 43.7		
RGN	**Rugen**	**155.59**	**345**		*e*PKPab	PKPab	21 31 44.5	-0.8	
EKA	**Eskdalemuir Ar**	**155.61**	**8**		PKP	PKPdf	21 31 18.3	-1.5	
	comp=Z,1.7nm,0.8s,baz=315,slow=1.2,SNR=5.7								
EKA					PKPab	PKPab	21 31 43.5	-1.9	
	comp=Z,11nm,0.9s,baz=346,slow=3.4,SNR=10								
GKP	**Gorka Klasztor**	**155.69**	**339**	⇓	*e*PKP	PKPdf	21 31 19.4	-0.6	
GKP					*e*		21 31 28.7		
GKP					*e*		21 31 44.9		
GKP	**Gorka Klasztor**	**155.69**	**339**	⇓	*e*PKIKP	PKPdf	21 31 19.4	-0.6	
GKP					*e*		21 31 44.9		
CFR	**Carcaliu**	**155.90**	**312**	⇓	*i*P	PKPab	21 31 47.2	+0.2	
CFR	**Carcaliu**	**155.90**	**312**	⇓	*i*P	PKPab	21 31 47.2	+0.2	
HARR	**Harsova**	**156.25**	**311**	⇑	*i*P	PKPab	21 31 48.6	+0.1	
HARR	**Harsova**	**156.25**	**311**	⇑	*i*P	PKPab	21 31 48.6	+0.1	
KWP	**Kalwaria**	**156.38**	**327**	⇓	*e*PKP	PKPdf	21 31 19.5	-1.5	
KWP					*e*		21 31 33.6		
KWP					*e*		21 31 48.7		
VRI	**Vrincioaia**	**156.45**	**315**	⇑	*i*P	PKPab	21 31 49.5	+0.2	
BSEG	**Bad Segeberg**	**156.75**	**349**		*e*PKIKP	PKPdf	21 31 20.0	-1.4	
MLR	**Muntele Rosu**	**157.11**	**315**		PKP	PKPdf	21 31 20.9	-1.2	
	comp=Z,14nm,1.3s,baz=80,slow=5.2,SNR=4.3								
MLR					PKPab	PKPab	21 31 52.3	+0.1	
	comp=Z,11nm,0.7s,baz=134,slow=8.9,SNR=8.6								
OJC	**Ojcow**	**157.25**	**331**		*e*PKP(df)		21 31 20.9		
OJC					*e*PP	PP	21 35 23.6	-8.7	
OJC					*e*SKKS(ac)		21 42 08.1		
OJC					*e*SS	SS	21 55 24.2	-0.1	
OJC					MLR	MLR	22 49 41.9		
	comp=Z,2μm,19.5s,MS5.9								
OJC	**Ojcow**	**157.25**	**331**		*e*PKIKP	PKPdf	21 31 20.9	-1.3	

PVCC e 21 35 37.7
PVCC MLR MLR
comp=Z,2μm,19.1s,MS5.9
PSZ Piszkesteto 158.91 327⇑ *e*PKP/F 21 31 21.8
PSZ *e*PKP/p 21 32 00.1
VYHS Vyhne 158.97 329 *e*PKP PKPdf 21 31 23.5 -0.9
VYHS *i* 21 31 59.8
KOLL Kolacno 159.09 330 *i* PKP PKPab 21 32 00.7 +0.1
WTSB Winterswijk 159.15 353 *e*PKP PKPdf 21 31 23.5 -1.0
comp=Z,18nm,0.4s
WTSB *ex* x 21 31 59.1
VRAC Vranov 159.24 334 PKP PKPdf 21 31 23.3 -1.3
comp=Z,3.2nm,0.7s,baz=339,slow=1.3,SNR=7.5
VRAC PKPab PKPab 21 31 59.9 -1.3
comp=Z,32nm,0.8s,baz=38,slow=3.4,SNR=32
PRU Pruhonice 159.38 338 *e*PKPDF PKPdf 21 31 23.4 -1.4
PRU *e*PKPAB PKPab 21 32 01.3 -0.5
PRU *e*PP PP 21 35 31.5 -12
PRU *ex* x 21 51 21.7
PRU L 22 52 40.0
comp=Z,1.8nm,19.0s
SMOL Smolenice 159.55 331 *i* PKP PKPab 21 32 02.9 +0.3
SRO Srobarova 159.71 329 *e*PKP PKPdf 21 31 24.0 -1.2
SRO *i* 21 32 02.5
NKC Novy Kostel 159.77 342 *e*PKPDF PKPdf 21 31 24.4 -0.8
NKC *e*PKPAB PKPab 21 32 03.0 -0.5
NKC *e*PP PP 21 35 40.2 -5.5
NKC *ex* x 21 51 52.1
NKC L 22 46 50.0
comp=Z,1.9nm,20.1s
NKC Novy Kostel 159.77 342 *e*PKIKP PKPdf 21 31 24.4 -0.8
NKC *e* 21 35 40.2
NKC MLR MLR
comp=Z,2μm,20.1s,MS5.9
ZST Bratislava 159.94 331 *e*PKP PKPdf 21 31 25.4 0.0
ZST *e* 21 32 04.3
HGN Heimansgroeve 160.43 354 *e*PKP PKPdf 21 31 24.5 -1.3
comp=Z,7.4nm,1.4s
HGN *ex* x 21 32 04.8
comp=Z,22nm,1.6s
HGN *e*PP PP 21 35 39.2 -10
KHC Kasperske Hory 160.43 339 *e*PKPDF PKPdf 21 31 24.9 -1.0
KHC *e*PKPAB PKPab 21 32 06.2 -0.1
KHC *e*PP PP 21 35 40.4 -9.1
KHC *ex* x 21 51 11.9
KHC L 22 45 40.0
comp=Z,2.4nm,20.9s
SOP Sopron 160.56 331 *e*PKP/p PKPab 21 32 07.1 +0.2
GRF Grafenberg Arr 160.58 343 *e*PKIKP PKPdf 21 31 25.0 -1.0
WET Wettzell 160.63 340 *e*PKIKP PKPdf 21 31 25.3 -0.8
GEC2 GERESS Array S 160.65 338 *e*PKIKP PKPdf 21 31 24.1 -2.0
GERES GERESS Array B 160.65 338 PKP PKPdf 21 31 24.9 -1.2
comp=Z,1.7nm,0.9s,baz=90,slow=1.3,SNR=11
GERES PKPbc PKPdf 21 31 39.6 +13
comp=Z,2.7nm,1.0s,slow=1.3,SNR=11
GERES PKPab PKPab 21 32 05.8 -1.5
comp=Z,16nm,0.9s,baz=27,slow=3.0,SNR=27
ABH Alteburg 161.11 351 *e*P PKPab 21 32 08.6 -0.6
IDI Anoyia 161.14 288 PKP PKPdf 21 31 26.7 -0.4
comp=Z,8.0nm,0.8s,baz=356,slow=6.4,SNR=4.5
IDI PKPab PKPab 21 32 10.2 +0.3
comp=Z,54nm,0.9s,baz=68,slow=5.6,SNR=10
GIVF Givet 161.17 356 *e*PKIKP PKPdf 21 31 22.7 -3.9
comp=Z,49nm,1.1s
TOD Tromm 161.18 348 *e*P PKPab 21 32 08.9 -0.6
BAIF Baives 161.24 357 *e*PKIKP PKPdf 21 31 23.0 -3.7
comp=Z,35nm,1.2s
VAY Valandovo 161.25 308 *i* P PKPab 21 32 10.3 +0.2
SIND Sindeldorf 161.27 346 *e*P PKPab 21 32 09.2 -0.7
MOA Molln 161.31 335⇑ *i*PKP PKPdf 21 31 25.6 -1.2
SWS Schriesheim 161.31 348 *e*P PKPab 21 32 09.4 -0.7
ARSA Arzberg 161.33 332⇑ *i*PKP PKPdf 21 31 26.0 -0.9
ARSA *i* 21 32 10.4
RUP Ruppelstein 161.35 351 *e*P PKPab 21 32 09.7 -0.6
RUP Ruppelstein 161.35 351 PKP PKPdf 21 31 26.5 -0.3
WLF Walferdange 161.49 353 PKIKP PKPdf 21 31 27.3 +0.4
WLF Walferdange 161.49 353 *e*PKPdf PKPdf 21 31 26.9 0.0
WLF *e*PKPab PKPab 21 32 07.3 -3.6
SKO Skopje 161.70 311 *e*PKP PKPdf 21 31 26.0 -1.4
SKO Skopje 161.70 311⇑ *i*P PKPab 21 32 13.5 +1.4
comp=Z,0.1nm,1.0s
HDH Heidenheim 161.86 344 *e*P PKPab 21 32 12.2 -0.4
STU Stuttgart 161.90 346 PKIKP PKPdf 21 31 26.6 -0.8
STU Stuttgart 161.90 346 *e*PKPdf PKPdf 21 31 26.0 -1.4
STU *e*PKPab PKPab 21 32 11.7 -1.1
FUR Furstenfeldbru 161.97 341 *e*PKIKP PKPdf 21 31 25.7 -1.8
LBG Lerchenberg 162.08 347 *e*P PKPab 21 32 12.8 -0.7
BUCH Bad Urach 162.18 346 *e*P PKPab 21 32 13.8 -0.1
KBA Koelnbreinsper 162.30 336⇑ *i*PKP PKPdf 21 31 24.5 -3.3
STR Strasbourg 162.34 349 PKP PKPdf 21 31 27.3 -0.5
ROSF Rostrenen 162.37 14 *e*PKIKP PKPdf 21 31 24.0 -3.9
comp=Z,47nm,1.3s
FLN La Foliniere 162.39 7 *e*PKIKP PKPdf 21 31 24.0 -3.9
comp=Z,42nm,1.0s
FLN *e*R
comp=Z,3μm,21.2s
BFO Black Forest 162.49 348 *e*PKIKP PKPdf 21 31 26.4 -1.6
WLS Welschbruch 162.57 350 PKP PKPdf 21 31 27.3 -0.8
CDF Champ du Feu 162.59 350 *e*PKIKP PKPdf 21 31 23.8 -4.3
comp=Z,43nm,1.7s
GUT Gutenstein 162.59 346 *e*P PKPab 21 32 15.2 -0.5
SGMF Saint Gilles 162.59 12 *e*PKIKP PKPdf 21 31 24.2 -3.9
comp=Z,86nm,1.5s
LDF La Druitiere 162.59 7 *e*PKIKP PKPdf 21 31 24.1 -4.0
comp=Z,64nm,1.2s
SPAK Spaichingen 162.62 347 *e*P PKPab 21 32 15.3 -0.6
SPAK Spaichingen 162.62 347 PKP PKPdf 21 31 27.1 -1.0
WATA Walderalm 162.64 340⇑ *i*PKP PKPdf 21 31 27.2 -1.0
WTTA Wattenberg 162.69 339⇑ *i*PKP PKPdf 21 31 26.6 -1.6
GRR Gorron 162.71 8 *e*PKIKP PKPdf 21 31 24.4 -3.8
comp=Z,49nm,1.1s
LJU Ljubljana 162.71 332 *e*PKPdf PKPdf 21 31 26.7 -1.6
LJU *e*PKPab PKPab 21 32 15.6 -0.7
UBR Uberruh 162.73 343 *e*P PKPab 21 32 15.8 -0.5
MEZF Maizieres J'vi 162.74 355 *e*PKIKP PKPdf 21 31 24.8 -3.4
comp=Z,75nm,1.1s
MOTA Moosalm 162.77 341⇑ *i*PKP PKPdf 21 31 27.5 -0.8
LIBD Limburg 162.79 349 *e*P PKPab 21 32 16.2 -0.4
LIBD Limburg 162.79 349 PKP PKPdf 21 31 26.9 -1.4
QUIF Quistinic 162.79 14 *e*PKIKP PKPdf 21 31 24.5 -3.8
ECH Echery 162.79 350 PKP PKPdf 21 31 27.1 -1.2
BOJS Bojanci 162.84 329 *e*PKPdf PKPdf 21 31 26.8 -1.6
BOJS *e*PKPab PKPab 21 32 16.7 -0.2
SQTA Sankt Quirin 162.85 340⇓ *i*PKP PKPdf 21 31 27.3 -1.1
PTCC Patocco-Chiusa 162.87 345 *e*PKP PKPdf 21 31 27.5 -0.9
KIZ Kirchzarten 162.93 348 *e*P PKPab 21 32 16.2 -1.0
THEF They Montfort 162.93 353 PKP PKPdf 21 31 28.0 -0.4
ROBS Robic 162.94 334 *e*PKPdf PKPdf 21 31 26.3 -2.3
ROBS *e*PKPab PKPab 21 32 16.0 -1.3
VOY Vojsko 162.97 333 *e*PKPdf PKPdf 21 31 27.6 -0.9
VOY *e* 21 32 16.0
FELD Feldberg 162.99 348 *e*P PKPab 21 32 16.7 -0.8
FELD Feldberg 162.99 348 PKP PKPdf 21 31 27.8 -0.7
GMNA Gemona 163.02 335 *e*PKP PKPdf 21 31 27.8 -0.8
HAU Haudompre 163.11 352 *e*PKIKP PKPdf 21 31 24.6 -4.0
comp=Z,51nm,1.4s
HAU *e*R
comp=Z,3μm,20.5s
DAVA Damuels 163.15 343⇑ *i*PKP PKPdf 21 31 28.0 -0.7
MOF Molkenrain 163.15 350 PKP PKPdf 21 31 27.8 -0.9
HINF Hinteralfeld 163.23 351 *e*PKIKP PKPdf 21 31 24.6 -4.1
comp=Z,76nm,1.6s
BBS Basel-Blauen 163.47 349 *e*P PKPab 21 32 19.0 -0.6
BBS Basel-Blauen 163.47 349 PKP PKPdf 21 31 27.3 -1.7
DAVOX Davos 163.62 343 PKP PKPdf 21 31 28.5 -0.7
comp=Z,6.1nm,0.8s,baz=56,slow=7.4,SNR=7.8
DAVOX PKPab PKPab 21 32 20.4 +0.1
comp=Z,36nm,0.8s,baz=357,slow=3.0,SNR=21
LOMF Lomont 163.69 350 PKP PKPdf 21 31 28.6 -0.6
LOR Lormes 164.04 357 *e*PKIKP PKPdf 21 31 25.8 -3.8
comp=Z,84nm,1.6s
LOR *e*R
comp=Z,3μm,21.5s
HYF Humbligny 164.06 0 *e*PKIKP PKPdf 21 31 26.2 -3.4
SSF Saint Saulge 164.26 358 *e*PKIKP PKPdf 21 31 26.0 -3.8
comp=Z,53nm,1.3s
CABF La Chapelle 164.51 352 *e*PKIKP PKPdf 21 31 26.7 -3.4
comp=Z,114nm,1.6s
AVF Avril sur Loir 164.53 359 *e*PKIKP PKPdf 21 31 26.0 -4.1
comp=Z,52nm,1.8s
MFF Saint Martin d 164.56 8 *e*PKIKP PKPdf 21 31 26.1 -4.0
comp=Z,55nm,1.4s
SMF Signal de Mont 164.66 357 *e*PKIKP PKPdf 21 31 26.2 -4.0
comp=Z,30nm,1.2s
BGF Bois d'Agland 164.77 360 *e*PKIKP PKPdf 21 31 26.6 -3.7
comp=Z,33nm,1.1s
MCGN Macugnaga 164.83 346 *e*PKP PKPdf 21 31 30.5 +0.1
TCF Toulx Ste Croi 165.03 2 *e*PKIKP PKPdf 21 31 26.8 -3.8
comp=Z,52nm,1.4s
AGO Saint Agoulin 165.28 359 PKP PKPdf 21 31 30.6 -0.2
STS Santiago 165.32 35 PKP PKPdf 21 31 30.8 -0.2
PLDF La Plantade 165.35 358 PKP PKPdf 21 31 30.6 -0.3
LSD Ceresole Reale 165.47 348 P PKPab 21 32 28.2 -0.2
LPL La Plagne 165.49 349 *e*PKIKP PKPdf 21 31 27.6 -3.4
LPG La Plagne 165.51 349 *e*PKIKP PKPdf 21 31 27.7 -3.4
PYM Petit Puy Mans 165.58 359 PKP PKPdf 21 31 31.0 -0.1
EPON Pontenova 165.63 31 PKP PKPdf 21 31 31.1 -0.2
EPON PKPab PKPab 21 32 27.6 -1.5
GRAM 165.66 339 P PKPab 21 32 28.8 -0.4
VALM 165.73 338 P PKPab 21 32 29.2 -0.3
RSP Reno Superiore 165.75 347 P PKPab 21 32 29.2 -0.4
CODM 165.82 339 P PKPab 21 32 29.3 -0.6
SARO Sassorosso 165.83 337 P PKPab 21 32 29.7 -0.3
BACM 165.85 338 P PKPab 21 32 29.6 -0.5
FENE Fenestrelle 165.91 348 P PKPab 21 32 29.6 -0.7
VINC Vinca 165.95 338 P PKPab 21 32 28.7 -1.8
BNI Bardonecchia 165.95 349 PKIKP PKPdf 21 31 31.2 -0.3
BNI Bardonecchia 165.95 349 PKPdf PKPdf 21 31 29.3 -2.2
BNI PKPab PKPab 21 32 30.4 -0.1
RJF Les Rejaudoux 165.99 4 *e*PKIKP PKPdf 21 31 27.9 -3.6
comp=Z,52nm,1.3s
RJF *e*R
comp=Z,4μm,21.2s
MAIM 166.04 336 P PKPab 21 32 29.6 -1.4
PCP Pian Castagno 166.05 343 P PKPab 21 32 30.4 -0.5
BHB Bricherasio 166.05 347 P PKPab 21 32 29.0 -1.9
RRL Cesana Torines 166.06 348 P PKPab 21 32 30.6 -0.4
LBL Lubilhac 166.09 359 PKP PKPdf 21 31 32.0 +0.4
TIP Timpagrande 166.18 308 PKPdf PKPdf 21 31 29.8 -2.0
TIP *e*PKPab PKPab 21 32 31.7 0.0
ORIF Oris-en-Rattie 166.20 351 *e*PKIKP PKPdf 21 31 27.8 -3.9
comp=Z,20nm,1.1s
ORIF *e*R
comp=Z,3μm,20.8s
MBDF Montbardon 166.25 348 *e*PKIKP PKPdf 21 31 28.0 -3.7
LFF La Frestale 166.29 6 *e*PKIKP PKPdf 21 31 28.1 -3.6
ELOB Lobios 166.32 37 PKP PKPdf 21 31 31.7 -0.1
CAF Calviac 166.39 2 *e*PKIKP PKPdf 21 31 28.3 -3.5
comp=Z,45nm,1.3s
VIVF Saint-Julien-l 166.40 354 *e*PKIKP PKPdf 21 31 28.2 -3.6
comp=Z,62nm,1.6s
EARI Arriondas 166.44 26 PKP PKPdf 21 31 32.3 +0.4
EARI PKPab PKPab 21 32 30.0 -2.6
FIN Finale Ligure 166.44 343 *e*PKP PKPab 21 32 31.4 -1.2
ROB Roburent 166.44 344 P PKPab 21 32 30.9 -1.7
RORO 166.57 344 P PKPab 21 32 31.3 -1.9
MONE Monesi 166.67 344 P PKPab 21 32 32.1 -1.6
IMI Imperia 166.80 344 *e*PKP PKPab 21 32 33.2 -1.0
AUTN L'Aution 166.82 345 PKP PKPdf 21 31 31.4 -0.7
NEGI Negi 166.90 344 P PKPab 21 32 32.7 -1.9
ECAL Calabor 166.91 33 PKP PKPdf 21 31 32.0 -0.2
ECAL PKPab PKPab 21 32 33.1 -1.6
PVRL Vila Real 166.92 38 *e*PKPdf PKPdf 21 31 33.1 +0.8
AURF Auriere 166.95 345 PKP PKPdf 21 31 31.4 -0.8
SBF Sospel 166.95 345 *e*PKIKP PKPdf 21 31 29.6 -2.6
comp=Z,35nm,0.9s
MVIF Mont Vial 166.98 346 PKP PKPdf 21 31 31.4 -0.8
PBRG Braganca 167.01 34 *e*PKPab PKPab 21 32 34.3 -0.9
ELAN Lanestosa 167.10 21 PKP PKPdf 21 31 32.1 -0.2
ELAN PKPab PKPab 21 32 34.5 -1.0
SMRF Simiane la Rot 167.17 351 *e*PKIKP PKPdf 21 31 29.2 -3.2
comp=Z,52nm,1.3s
PVIS Viseu 167.22 40 *e*PKPab PKPab 21 32 34.7 -1.4
LASF Ste Croix 167.23 357 *e*PKIKP PKPdf 21 31 29.0 -3.4
comp=Z,69nm,1.7s
VILF Villemus 167.27 350 PKP PKPdf 21 31 32.2 -0.2
PRAF Pradon 167.39 352 PKP PKPdf 21 31 31.5 -1.0
FRF La Foret Royal 167.40 347 *e*PKIKP PKPdf 21 31 28.4 -4.1
comp=Z,34nm,1.2s
TREF Trevaresse 167.54 351 PKP PKPdf 21 31 32.4 -0.2
MTE Manteigas 167.64 40 *e*PKPdf PKPdf 21 31 33.4 +0.6
MTE *e*PKPab PKPab 21 32 36.4 -1.6
MTE eLQ 22 29 35.4
MTE *e*- 22 38 38.1
comp=Z,2μm,20.5s
MTE Manteigas 167.64 40 *e*PKPdf PKPdf 21 31 32.5 -0.3
MTE *e*PKPab PKPab 21 32 36.4 -1.6
LMR La Mourre 167.65 347 *e*PKIKP PKPdf 21 31 28.5 -4.2
comp=Z,74nm,1.7s
PTOM Tomar 167.65 45 *e*PKPdf PKPdf 21 31 33.3 +0.5
PTOM *e*PKPab PKPab 21 32 36.9 -1.2
PGF Pioggiola 167.75 338 *e*PKIKP PKPdf 21 31 28.7 -4.1
comp=Z,19nm,0.9s
GELF Grande-Etoile 167.77 351 PKP PKPdf 21 31 32.6 -0.1
BERF Bertagne 167.80 350 PKP PKPdf 21 31 31.7 -1.1
LARF Larrau 167.91 13 PKP PKPdf 21 31 33.7 +0.9
MTLF Montolieu 167.98 2 *e*PKIKP PKPdf 21 31 29.3 -3.6
comp=Z,39nm,1.4s
PCBR Castelo Branco 168.06 42 *e*PKPdf PKPdf 21 31 33.7 +0.7
PCBR *e*PKPab PKPab 21 32 38.2 -1.6
ETSF Etsaut 168.12 12 *e*PKIKP PKPdf 21 31 30.6 -2.4
comp=Z,34nm,1.1s
EPF Esparros 168.13 9 *e*PKIKP PKPdf 21 31 30.3 -2.7
comp=Z,64nm,1.1s
MELF Melles 168.34 8 PKP PKPdf 21 31 33.8 +0.7
MOE Montemor 168.34 49 *e*PKPdf PKPdf 21 31 35.1 +1.9
EVO Evora 168.56 48 *e*PKIKP PKPdf 21 31 33.7 +0.3
comp=Z,81nm,1.1s
EVO *e*R
comp=Z,3μm,20.8s
VALF Valcebollere 168.91 3 PKP PKPdf 21 31 33.4 0.0
PBEJ Beja 168.94 50 *e*PKPdf PKPdf 21 31 35.0 +1.4
EBAD Badajoz 169.04 45 PKP PKPdf 21 31 33.1 -0.5
GUD Guadarrama 169.11 29 PKP PKPdf 21 31 33.2 -0.4
ESAC San Caprasio 169.28 13 PKP PKPdf 21 31 33.2 -0.5
ESAC PKPab PKPab 21 32 44.6 -0.6
EGRO El Granado 169.46 51 PKP PKPdf 21 31 33.7 -0.3
PALC Alcoutim 169.51 51 *e*PKPdf PKPdf 21 31 35.2 +1.2
EMIN Mina Concepcio 169.86 48 PKP PKPdf 21 31 34.4 +0.2
EPOB Poblet 169.88 8 PKP PKPdf 21 31 32.2 -0.9
EPOB PKPab PKPab 21 32 46.4 -1.4
ESDC Sonseca Array 169.99 32 PKP PKPdf 21 31 34.5 +0.3
comp=Z,2.8nm,0.8s,baz=1.0,slow=2.3,SNR=16
ESDC PKPab PKPab 21 32 47.1 -1.2
comp=Z,6.4nm,1.0s,baz=314,slow=3.6,SNR=12
ESDC PP PP 21 36 38.3 -0.8
comp=Z,2.2nm,0.8s,baz=345,slow=4.9,SNR=8.0
ESDC Sonseca Array 169.99 32 PKP PKPdf 21 31 33.8 -0.4
ESDC PKPab PKPab 21 32 47.0 -1.3
ESLA Sonseca Array 169.99 32 *e*PKPdf PKPdf 21 31 34.4 +0.2
ESLA *e*PKPab PKPab 21 32 45.9 -2.5
EBR Ebro Roquetas 170.32 11 *e*PKPDF PKPdf 21 31 35.2 +0.9
EBR *e*PKPpB 21 32 48.5
EMOS Mosqueruela 170.58 16 PKP PKPdf 21 31 33.3 -1.2
EADA Adamuz 170.84 40 PKP PKPdf 21 31 35.1 +0.3
EADA PKPab PKPab 21 32 50.4 -1.8
ESPR Espera 170.91 50 PKP PKPdf 21 31 35.3 +0.5
ELUQ Luque 171.44 41 PKP PKPdf 21 31 35.2 0.0
EVIA Vianos 171.48 29 PKP PKPdf 21 31 36.1 +1.0
ELOJ Sierra Loja 171.80 43 PKP PKPdf 21 31 35.5 +0.1
ELOJ PKPab PKPab 21 32 55.5 -0.9
ETOB Tobarra 171.85 25 PKP PKPdf 21 31 35.3 0.0
ETOB PKPab PKPab 21 32 56.4 -0.2
EQES Quesada 171.90 35 PKP PKPdf 21 31 35.6 +0.3
EQES PKPab PKPab 21 32 55.7 -1.2
ERON Agron 172.09 42 PKP PKPdf 21 31 35.2 -0.3
ERON PKPab PKPab 21 32 56.6 -1.1
EHUE Huescar 172.12 33 PKP PKPdf 21 31 37.0 +1.5
EHUE PKPab PKPab 21 32 56.6 -1.2
EIBI Ibiza 172.20 9 PKP PKPdf 21 31 35.6 +0.1
EBEN Beniarda 172.21 18 PKP PKPdf 21 31 36.3 +0.8
EMUR La Murta 172.67 26 PKP PKPdf 21 31 35.3 -0.5
CART Cartagena 172.98 26 *e*PKPdf PKPdf 21 31 35.2 -0.7
CART *e*PKPab PKPab 21 32 59.8 -1.9
ECHF Ech Chlef 175.01 14 P PKPdf 21 31 34.0 -2.6
EMHD Djebel Mahouad 175.12 359 P PKPdf 21 31 38.0 +1.4
EANR 'Ain N'Sour 175.15 17 P PKPdf 21 31 38.6 +1.9
ETRT Tiaret 175.73 17 P PKPdf 21 31 39.5 +2.7

*THE **30** 21:23:26.5,37.67N×20.54E,h10km,ML4.3*
*IDC **30** 21:23:28.4±1.3,38.10N×20.87E,mb3.9/9,mb1 4.0/15, mb1mx3.9/28,ML3.5/7,MS3.7/1,Ms1 3.7/1,ms1mx2.9/27, Error ellipse: s-maj=28.6km s-min=16.9km az=34.0*

*ATH **30** 21:23:29.7,37.89N×20.71E,h16km±2km,MD4.1/12, ML4.0*
*NEIC **30** 21:23:30.2,37.93N×20.72E,h18km,mb4.5/1, MD4.1(ATH),MD3.9(PDG),ML4.2(THE),After ATH.*
*MED_RC **30** 21:23:30.2±3.2,38.10N×20.90E,h15km,MW4.2/4, Moment Tensor Solution. Body waves: s4,c4; Duration: 1♦0 Moment tensor: Scale 10^15^Nm; Mrr0.94±1.70; Mθθ 1.47±.85; Mθφ -2.41±1.02; Mrθ 1.92±1.26; Mrφ 0.53±1.05; Mφφ 0.37±1.83; Best double couple: Mo2.85×10^15^ NP1: ♦s136°,δ60°,λ29°. NP2:♦s30°,δ65°,λ147°. Principal axes: T 3.22, Plg41°, Azm351°; N -.73, Plg49°, Azm177°; P -2.49, Plg3°, Azm84°; nsta1 refers to waves, cutoff=35s.*
*ZUR_RM **30** 21:23:30,37.93N×20.72E,h27km,Mw4.4/24,Moment Tensor Solution. s24 Moment tensor: Scale 10^15^Nm; Mrr -0.30; Mθθ 3.53; Mφφ -3.23; Mrθ 0.60; Mrφ 1.81; Mθr -0.06; Best double couple: Mo 3.88×10^15^ NP1:♦s121°, δ87°, λ8°. NP2:♦s31°, δ82°, λ177°. Principal axes: T 4.061, Plg7°, Azm346°; N -.367, Plg82°, Azm141°; P -3.693, Plg3°, Azm256°;*

ISC 30 21:23:30.0±0.5,**37.90N**±0.02×**20.64E**±0.02,**h22**km±4km, **n139,**σ1**38**/173,**mb3.8**/9,**6C-10D,Ionian Sea**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
VLS	**Valsamata**	**0.28**	**352**	⇑*i*	PB	**Pb**		**21 23 36.3**	**-0.2**
VLS				*e*	SB	**Sb**		**21 23 41.5**	**+0.5**
RLS	**Riolos of Patr**	**0.67**	**76**	⇓*i*	PB	**Pb**		**21 23 41.6**	**-1.3**
RLS				*e*	SN	**Sn**		**21 23 51.4**	**-2.5**
LKD	**Levkas**	**0.81**	**1**	*e*	Pg	**Pb**		**21 23 44.7**	**-0.6**
ITM	**Ithomi**	**1.25**	**125**	*e*	Pb	**Pb**		**21 23 51.8**	**-0.9**
ITM				*e*	Sn	**Sn**		**21 24 11.2**	**+2.7**
EVR	**Evrytania**	**1.37**	**42**	*e*	PB	**Pb**		**21 23 54.1**	**-0.7**
IGT	**Igoumenitsa**	**1.65**	**352**	*e*	Pb	**Pb**		**21 23 59.2**	**-0.4**
IGT				*e*	Sb	**Sb**		**21 24 25.2**	**+5.2**
AGG	**Agios Georgios** comp=Z,50nm,0.2s	**1.74**	**49**	*e*	Pb	**Pb**		**21 24 00.7**	**-0.3**
JAN	**Janina**	**1.76**	**5**	*e*	PN	**Pn**		**21 24 01.7**	**+2.0**
KEK	**Kerkira**	**1.93**	**340**	*e*	PN	**Pn**		**21 24 03.8**	**+1.8**
MEV	**Metsovon**	**1.94**	**14**	*e*	Pn	**Pn**		**21 24 04.4**	**+2.2**
LKR	**Lokris**	**2.00**	**67**	*e*	PN	**Pn**		**21 24 04.5**	**+1.4**
SRN	**Sarande**	**2.04**	**346**	*i*	Pn	**Pn**		**21 24 05.5**	**+1.8**
SRN				*i*	Sn	**Sn**		**21 24 32.4**	**+3.7**
MKIT	**Kithairon Oros**	**2.09**	**81**	*e*	PB	**Pb**		**21 24 05.0**	**-2.0**
VLI	**Veliai**	**2.18**	**122**	*e*	PN	**Pn**		**21 24 08.3**	**+2.7**
NSAL	**Nisos Salamina**	**2.23**	**89**	*e*	PB	**Pb**		**21 24 07.2**	**-2.3**
LSK	**Leskovik**	**2.25**	**359**	*e*	Pn	**Pn**		**21 24 09.8**	**+3.1**
LSK				*i*	Sn	**Sn**		**21 24 51.4**	**+17**
NAIG	**Nisos Aigina**	**2.26**	**93**	*e*	PN	**Pn**		**21 24 08.0**	**+1.2**
ATH	**Athens Observa**	**2.43**	**87**	*e*	PB	**Pb**		**21 24 08.7**	**-4.2**
MPAR	**Parnis Oros**	**2.46**	**83**	*e*	PN	**Pn**		**21 24 11.0**	**+1.4**
NEO	**Neokhori**	**2.46**	**54**	*e*	Pn	**Pn**		**21 24 11.3**	**+1.6**
XOR	**Xorichti**	**2.48**	**53**	*e*	Pn	**Pn**		**21 24 11.3**	**+1.3**
KYTH	**Kithira**	**2.50**	**129**	*e*	PN	**Pn**		**21 24 13.0**	**+2.7**
PTL	**Penteli**	**2.55**	**86**	*e*	PB	**Pb**		**21 24 12.0**	**-2.9**
KZN	**Kozani**	**2.56**	**20**	*e*	PN	**Pn**		**21 24 14.2**	**+3.1**
LIT	**Litokhoron** comp=Z,20nm,1.2s	**2.63**	**33**	*e*	Pn	**Pn**		**21 24 12.8**	**+0.7**
AOS	**Alonnisos** comp=Z,4.9nm,0.5s	**2.84**	**62**	*e*	Pn	**Pn**		**21 24 15.8**	**+0.7**
FNA	**Florina** comp=Z,4.5nm,0.6s	**2.94**	**11**	*e*	Pn	**Pn**		**21 24 17.7**	**+1.2**
PAIG	**Paliouri**	**3.12**	**49**	*e*	Pn	**Pn**		**21 24 19.8**	**+0.7**
LCI	**Lecce**	**3.13**	**322**	*e*	Pn	**Pn**		**21 24 20.0**	**+0.9**
OHR	**Ohrid**	**3.21**	**2**	⇑*i*	Pn	**Pn**		**21 24 21.8**	**+1.4**
OHR				*i*				21 24 30.8	
OHR				*i*				21 24 54.7	
OHR				*i*				21 25 02.2	
OHR				*i*				21 25 08.2	
OHR				*i*				21 25 16.0	
OHR				*i*				21 25 23.8	
THE	**Thessaloniki**	**3.27**	**33**	*e*	PN	**Pn**		**21 24 22.2**	**+1.0**
PLG	**Polygyros**	**3.30**	**41**	*e*	PN	**Pn**		**21 24 23.1**	**+1.5**
TIP	**Timpagrande**	**3.30**	**294**	*e*	Pn	**Pn**		**21 24 22.3**	**+0.7**
GRG	**Griva**	**3.35**	**23**	*e*	Pn	**Pn**		**21 24 22.4**	**+0.1**
GRI	**Girifalco**	**3.44**	**287**	*e*	Pn	**Pn**		**21 24 23.9**	**+0.3**
GRI				*e*	Sn	**Sn**		**21 25 06.4**	**+2.2**
TIR	**Tirane**	**3.50**	**350**	*e*	Pn	**Pn**		**21 24 25.5**	**+1.1**
TIR				*i*	Sn	**Sn**		**21 25 21.5**	**+16**
OUR	**Ouranopolis** comp=Z,6.5nm,0.8s	**3.56**	**46**	*e*	Pn	**Pn**		**21 24 26.2**	**+1.0**
SOH	**Sokhos**	**3.60**	**35**	*e*	Pn	**Pn**		**21 24 26.7**	**+0.9**
SOI	**Samo**	**3.63**	**274**	*e*	Pn	**Pn**		**21 24 26.4**	**+0.2**
QSH	**Qafa e Shtames**	**3.66**	**351**	*i*	Pn	**Pn**		**21 24 31.8**	**+5.0**
KNT	**Kendrikon**	**3.70**	**27**	*e*	Pn	**Pn**		**21 24 27.4**	**+0.1**
VAY	**Valandovo**	**3.73**	**23**	*i*	Pn	**Pn**		**21 24 28.0**	**+0.3**
VAY				*i*				21 24 38.8	
VAY				*i*	Sn	**Sn**		**21 25 15.4**	**+3.9**
VAY				*i*				21 25 24.0	
VAM	**Vamos**	**3.79**	**130**	*e*	PN	**Pn**		**21 24 29.7**	**+1.1**
TDS	**Terranova Siba**	**3.79**	**299**	*e*	PN	**Pn**		**21 24 32.1**	**+3.5**
MTTG	**Motta San Giov**	**3.91**	**273**	*e*	Pn	**Pn**		**21 24 30.5**	**+0.2**
MTTG				*e*	Sn	**Sn**		**21 25 17.1**	**+1.0**
ORI	**Oriolo Calabro**	**3.92**	**305**	*e*	Pn	**Pn**		**21 24 32.1**	**+1.7**
SRS	**Serrai**	**3.94**	**34**	*e*	Pn	**Pn**		**21 24 30.7**	**-0.1**
BRT	**Bari-Castellan**	**3.99**	**319**	*e*	Pn	**Pn**		**21 24 32.2**	**+0.7**
SKO	**Skopje**	**4.12**	**8**	*i*	Pn	**Pn**		**21 24 33.5**	**+0.3**
SKO				*i*				21 24 44.3	
SKO				*i*				21 24 50.0	
SKO				*i*	Sn	**Sn**		**21 25 20.9**	**-0.4**
SKO				*i*				21 25 32.4	
SKO				*i*				21 25 39.7	
PUK	**Puka**	**4.18**	**352**	*e*	Pn	**Pn**		**21 24 35.1**	**+1.0**
PUK				*i*	Sn	**Sn**		**21 25 32.6**	**+10**
ULC	**Ulcinj**	**4.20**	**346**	⇓*i*	Pn	**Pn**		**21 24 34.1**	**-0.3**
ULC				*e*	Sn	**Sn**		**21 25 24.4**	**+1.0**
NVR	**Nevrokopi**	**4.25**	**35**	*e*	PN	**Pn**		**21 24 34.9**	**-0.2**
IDI	**Anoyia** 0.6nm,0.3s,baz=321,slow=14,SNR=6.4	**4.30**	**126**	Pn	Pn	**Pn**		**21 24 35.3**	**-0.5**
IDI					Sn	**Sn**		**21 25 24.2**	**-1.6**
	5.8nm,0.3s,baz=294,slow=22,SNR=7.6								
AGST	**Augusta-Monte**	**4.35**	**263**	*e*	Pn	**Pn**		**21 24 34.6**	**-1.9**
KKB	**Krupnik**	**4.39**	**25**	P	Pn	**Pn**		**21 24 38.5**	**+1.4**
MMB	**Musomiste**	**4.39**	**32**	*i*	P	**Pn**		**21 24 37.3**	**+0.2**
MGR	**Morigerati**	**4.55**	**301**	*e*	Pn	**Pn**		**21 24 40.8**	**+1.4**
BUM	**Brajici-Budva**	**4.60**	**344**	⇓*i*	Pn	**Pn**		**21 24 40.1**	**+0.1**
BUM				*e*	Sn	**Sn**		**21 25 34.3**	**+0.9**
PZI	**Palazzolo**	**4.61**	**261**	*e*	Pn	**Pn**		**21 24 38.7**	**-1.5**
PZI				*e*	Sn	**Sn**		**21 25 31.0**	**-2.7**

AQU	L'Aquila	7.11	311		Pn	Pn	21 25 14.9	-0.6
SNTG	Esanatoglia	7.93	315	e	Pn	Pn	21 25 26.6	-0.4
ARV	Arcevia	8.09	316	e	Pn	P	21 25 28.3	-0.8
RHK1	Bakonya	8.41	348	e	P	P	21 25 33.8	+0.2
MLR	Muntele Rosu	8.56	26		Pn	P	21 25 35.5	-0.2
	0.2nm,0.3s,baz=147,slow=14,SNR=4.2							
BOJS	Bojanci	8.60	334	e	Pn	P	21 25 34.6	-1.6
VISS	Visnje	9.01	333	e	Pn	P	21 25 39.5	-2.3
CEY	Cerknica	9.10	331	i	Pn	P	21 25 41.0	-2.2
LJU	Ljubljana	9.32	333	e	Pn	P	21 25 43.6	-2.6
LJU					eSn	Sn	21 27 18.3	-13
JAVS	Javornik	9.37	331	e	Pn	P	21 25 44.2	-2.7
VOY	Vojsko	9.55	330	e	Pn	P	21 25 46.8	-2.5
VOY					eSn	Sn	21 27 22.2	-15
PERS	Pernice	9.64	337	e	Pn	P	21 25 47.5	-3.1
OBKA	Obir	9.72	334	i	Pn	P	21 25 48.8	-2.8
OBKA				i	SN	Sn	21 27 32.7	-8.4
ROBS	Robic	9.88	330	e	Pn	P	21 25 50.8	-3.0
ARSA	Arzberg	10.08	340	i	Pn	P	21 25 53.0	-3.5
ARSA				i	SN	S	21 27 42.6	-7.4
BRTR	Keskin Array B	10.31	76		Pn	P	21 25 58.8	-1.0
	0.1nm,0.3s,baz=304,slow=10,SNR=2.5							
KBA	Koelnbreinsper	10.63	332	i	Pn	P	21 26 01.5	-2.7
KBA				i	SN	S	21 27 57.3	-6.3
MOA	Molln	10.99	337	i	Pn	P	21 26 05.9	-3.1
MOA				i	SN	S	21 28 03.2	-9.0
SBF	Sospel	11.63	305	e	P	P	21 26 17.6	-0.2
	27nm,1.0s							
MOTA	Moosalm	11.76	326	i	Pn	P	21 26 17.7	-1.8
MOTA				i	Sn	S	21 28 26.2	-4.8
DAVOX	Davos	11.91	322		Pn	P	21 26 21.8	+0.2
	0.2nm,0.3s,baz=146,slow=16,SNR=3.6							
GERES	GERESS Array B	12.04	338		Pn	P	21 26 20.3	-3.0
	0.1nm,0.3s,baz=156,slow=13,SNR=12							
GERES					Sn	S	21 28 25.8	-12
	0.4nm,0.3s,baz=156,slow=25,SNR=5.8							
KHC	Kasperske Hory	12.34	338	e	PN	P	21 26 24.5	-2.7
KHC					x	x	21 26 39.5	
KHC	Kasperske Hory	12.34	338	e	P	P	21 26 24.5	-2.7
KHC					e		21 26 39.5	
MBDF	Montbardon	12.45	308	e	P	P	21 26 30.2	+1.4
LPG	La Plagne	12.85	311	e	P	P	21 26 40.1	+6.0
	12nm,1.0s							
PRU	Pruhonice	12.86	342	e	PN	P	21 26 30.5	-3.6
LPL	La Plagne	12.87	311	e	P	P	21 26 39.8	+5.4
HINF	Hinteralfeld	14.14	319	e	P	P	21 26 56.3	+5.3
	5.0nm,0.6s							
MOX	Moxa	14.28	336	i	P	P	21 26 50.9	-1.9
MOX	Moxa	14.28	336	e	PKP	P	21 26 50.9	-1.9
	54nm,1.1s							
MOX				e			21 31 24.1	
MOX				e			21 32 01.9	
CDF	Champ du Feu	14.32	321	e	P	P	21 26 58.4	+5.1
	7.8nm,0.9s							
CLL	Collm	14.46	340	e		P	21 27 03.0	+7.8
CLL				e	L		21 30 25.0	
ASF	Jabal al Asfar	14.48	108		LR	LR	21 32 32.6	
	comp=Z,333nm,20.8s,baz=129,slow=38							
HAU	Haudompre	14.52	319	e	P	P	21 27 01.7	+5.7
	8.7nm,0.7s							
MEZF	Maizieres J'vi	15.51	318	e	P	P	21 27 15.1	+6.2
	34nm,1.2s							
SSF	Saint Saulge	15.58	311	e	P	P	21 27 15.9	+6.0
TCF	Toulx Ste Croi	16.02	307	e	P	P	21 27 18.9	+3.4
SUW	Suwalki	16.21	5		P	P	21 27 14.3	-3.6
ESDC	Sonseca Array	19.25	283		P	P	21 27 56.2	+0.6
	0.2nm,0.3s,baz=77,slow=12,SNR=6.2							
HFS	Hagfors	22.69	351		P	P	21 28 29.9	-1.0
	2.6nm,0.6s,mb3.8,baz=169,slow=7.6,SNR=13							
EKA	Eskdalemuir Ar	23.71	325		P	P	21 28 41.0	+0.1
	4.2nm,0.8s,mb3.9,baz=127,slow=9.4,SNR=21							
FINES	FINESS Array B	23.82	6		P	P	21 28 41.0	-0.9
	3.3nm,0.8s,mb3.8,baz=180,slow=13,SNR=6.8							
FINES	FINESS Array B	23.82	6		P	P	21 28 41.0	-0.9
NB2	NORSAR Subarra	23.91	349		P	P	21 28 41.8	-1.0
	1.4nm,0.8s,mb3.4,baz=153,slow=10							
NB2	NORSAR Subarra	23.91	349		P	P	21 28 41.8	-1.0
NOA	NORSAR Array B	23.91	349		P	P	21 28 42.6	-0.1
	2.0nm,0.7s,mb3.6,baz=158,slow=9.2,SNR=10							
ARCES	ARCESS Array B	31.81	3		P	P	21 29 52.2	-2.6
	1.8nm,0.5s,mb4.1,baz=191,slow=11,SNR=21							
MKAR	Makanchi Array	45.37	58		P	P	21 31 46.0	-2.3
	1.1nm,0.5s,mb4.0,baz=270,slow=7.6,SNR=5.8							
MKAR	Makanchi Array	45.37	58		P	P	21 31 46.0	-2.3
SONM	Songino Array	60.56	50		P	P	21 33 38.6	-2.3
	0.8nm,0.8s,mb3.9,baz=297,slow=8.6,SNR=3.9							
CMAR	Chiang Mai Arr	69.83	82		P	P	21 34 40.0	-1.1
	0.3nm,0.4s,mb3.6,baz=309,slow=5.8,SNR=3.4							
YKA	Yellowknife Ar	73.69	340		P	P	21 35 03.3	+0.1
	0.4nm,0.6s,mb3.5,baz=34,slow=5.5,SNR=7.1							

*THE **30** 21:35:36.4, 37.76N×20.62E, h10km, ML3.8*
*IDC **30** 21:35:36.4±1.7, 38.02N×20.83E, mb3.7/5, mb1 3.7/8, mb1mx3.5/25, ML3.2/3, Error ellipse: s-maj=31.2km s-min=20.5km az=34.0*
*NEIC **30** 21:35:38.5, 37.91N×20.73E, h12km, ML3.8(THE), ML3.8(ATH), After ATH.*
*ATH **30** 21:35:38.5, 37.91N×20.73E, h12km±3km, MD3.8/10, ML3.8*

ISC 30 21:35:37.0±0.9, 37.84N±0.04×20.69E±0.04, h5km±5km, n48, σ1°34/59, mb3.6/5, 1C-1D, Ionian Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VLS	Valsamata	0.34	347	i	PG	Pg	21 35 44.6	+0.7
VLS				e	SG	Sg	21 35 49.8	+1.3
RLS	Riolos of Patr	0.65	71	i	PG	Pg	21 35 49.7	-0.4
RLS				e	SB	Sb	21 35 59.1	-0.5
LKD	Levkas	0.86	358	e	Pg	Pg	21 35 52.8	-1.5
ITM	Ithomi	1.19	123	e	PN	Pn	21 36 00.5	+0.3
EVR	Evrytania	1.39	39	e	PN	Pn	21 36 02.2	-0.9
IGT	Igoumenitsa	1.71	351	e	Pb	Pb	21 36 07.8	-0.7
IGT				e	Sb	Sb	21 36 33.2	+3.0
AGG	Agios Georgios	1.75	47	e	Pb	Pb	21 36 08.8	-0.4
AGG				e	Sb	Sb	21 36 33.6	+2.2
JAN	Janina	1.82	4	e	PN	Pn	21 36 10.6	+1.4
MEV	Metsovon	1.98	12	e	Pn	Pn	21 36 12.9	+1.3
KEK	Kerkira	1.99	340	e	PB	Pb	21 36 12.4	-1.0
LKR	Lokris	1.99	65	e	PN	Pn	21 36 12.8	+1.1
SRN	Sarande	2.10	345	e	Pn	Pn	21 36 16.8	+3.5
SRN				i	Sn	Sn	21 36 38.9	-1.2
VLI	Veliai	2.12	121	e	PG	Pg	21 36 17.3	-2.0
NSAL	Nisos Salamina	2.20	87	e	PB	Pb	21 36 15.5	-1.4
NAIG	Nisos Aigina	2.22	91	e	PN	Pn	21 36 17.0	+2.0
LSK	Leskovik	2.31	358	i	Pn	Pn	21 36 20.6	+4.4
LSK				i	Sn	Sn	21 36 55.8	+11
ATH	Athens Observa	2.40	86	e	PG	Pg	21 36 21.0	-3.9
MPAR	Parnis Oros	2.43	82	e	PN	Pn	21 36 20.5	+2.5
KYTH	Kithira	2.44	129	e	PN	Pn	21 36 21.0	+2.8
NEO	Neokhori	2.47	53	e	PB	Pb	21 36 19.3	-2.2
XOR	Xorichti	2.48	51	e	Pn	Pn	21 36 19.8	+1.1
PTL	Penteli	2.52	84	e	PN	Pn	21 36 21.5	+2.2
KZN	Kozani	2.60	19	e	PN	Pn	21 36 22.7	+2.3
LIT	Litokhoron	2.66	31	e	Pn	Pn	21 36 21.7	+0.5
	comp=Z,4.9nm,0.7s							
AOS	Alonnisos	2.83	61	e	Pn	Pn	21 36 23.9	+0.1
FNA	Florina	2.98	10	e	Pn	Pn	21 36 25.9	0.0
	comp=Z,2.0nm,0.6s							
PAIG	Paliouri	3.13	47	e	Pn	Pn	21 36 27.8	-0.1
LCI	Lecce	3.19	322	e	PN	Pn	21 36 27.9	-1.0
GRG	Griva	3.38	23	e	Pn	Pn	21 36 31.5	-0.1
OUR	Ouranopolis	3.57	45	e	Pn	Pn	21 36 34.0	-0.2
SOH	Sokhos	3.62	34	e	Pn	Pn	21 36 35.3	+0.4
KNT	Kendrikon	3.73	27	e	Pn	Pn	21 36 36.2	-0.3
SRS	Serrai	3.97	34	e	Pn	Pn	21 36 39.1	-0.7
SKO	Skopje	4.17	8	e	Pn	Pn	21 36 49.0	+6.3
IDI	Anoyia	4.24	126		Pn	Pn	21 36 43.4	-0.3
	0.6nm,0.3s,baz=333,slow=22,SNR=6.1							
IDI					Sn	Sn	21 37 33.5	-0.7
	2.9nm,0.3s,baz=331,slow=22,SNR=6.5							
PUK	Puka	4.24	352	i	Pn	Pn	21 36 43.2	-0.5
MGR	Morigerati	4.61	301	e	Pn	Pn	21 36 49.5	+0.5
SLCN	Sala Consilina	4.68	304	e	Pn	Pn	21 36 50.3	+0.3
SLCN				e	Sn	Sn	21 37 40.7	-4.7
MRLC	Muro Lucano	4.97	307	e	Pn	Pn	21 36 54.9	+0.8
SGO	Sicignano	4.98	305	e	Pn	Pn	21 36 55.0	+0.7
SGO				e	Sn	Sn	21 37 46.5	-6.5
VAE	Valguarnera	4.99	268		Pn	Pn	21 36 55.4	+1.0
	0.8nm,0.3s,baz=85,slow=16,SNR=2.8							
VAE					Sn	Sn	21 37 54.2	+0.9
	3.8nm,0.3s,baz=285,slow=11,SNR=6.5							
STON	Ston	5.52	337	i	Pn	Pn	21 36 58.6	-3.2
STON				i	Sn	Sn	21 37 58.3	-8.2
GERES	GERESS Array B	12.11	337		Pn	P	21 38 30.9	-2.2
	0.1nm,0.3s,baz=159,slow=14,SNR=3.0							
HFS	Hagfors	22.75	351		P	P	21 40 38.5	-2.5
	6.2nm,1.2s,mb3.9,baz=157,slow=11,SNR=11							
EKA	Eskdalemuir Ar	23.78	325		P	P	21 40 49.6	-1.3
	0.7nm,0.8s,mb3.2,baz=130,slow=11,SNR=3.0							
FINES	FINESS Array B	23.86	6		P	P	21 40 49.1	-2.6
	1.5nm,0.8s,mb3.5,baz=173,slow=11,SNR=3.3							
ARCES	ARCESS Array B	31.86	3		P	P	21 42 00.9	-3.8
	3.6nm,1.1s,mb4.1,baz=191,slow=11,SNR=21							
MKAR	Makanchi Array	45.37	58		P	P	21 43 54.3	-3.5
	0.3nm,0.4s,mb3.5,baz=274,slow=7.5,SNR=4.3							

*NEIC **30** 21:39:56.4±1.7, 22.84S×179.82W, h423km±20km, mb4.2/2, Error ellipse: s-maj=15.6km s-min=10.9km az=186.0*
*IDC **30** 21:40:03.7±6.3, 23.24S×179.95E, h498km±65km, mb3.6/9, mb1 3.7/10, mb1mx3.5/18, Error ellipse: s-maj=47.8km s-min=19.7km az=45.0*

ISC 30 21:39:57.2±3.2, 22.9S±0.1×179.9W±0.1, h445km±43km, n30, σ0°95/21, mb4.2/10, 2D, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	Urewera	15.49	189		P	P	21 43 14.5	-0.1
	1.2nm,0.3s,baz=349,slow=16,SNR=5.2							
URZ					S	S	21 45 48.8	-5.3
	1.2nm,0.3s,baz=62,slow=22,SNR=7.5							
RAR	Rarotonga	18.72	89		P	P	21 43 46.5	-0.5
SNZO	South Karori	18.87	193	e	P	P	21 43 49.5	+1.2
	16nm,0.6s							
RPZ	Rata Peaks	22.03	198		P	P	21 44 18.1	-0.3
	13nm,0.8s,mb4.5,baz=60,slow=8.1,SNR=4.8							
CTA	Charters Tower	31.59	269	i	P	P	21 45 44.3	+1.1
	16nm,0.3s,mb4.9							
CTA	Charters Tower	31.59	269		P	P	21 45 44.4	+1.2
	20nm,0.3s,mb5.0,baz=97,slow=11,SNR=47							
CTAO	Charters Tower	31.59	269	e	P	P	21 45 44.3	+1.1
	21nm,0.5s,mb4.8							
PMG	Port Moresby	34.30	288		P	P	21 46 07.9	+1.8
	7.7nm,0.6s,mb4.3,baz=121,slow=12,SNR=5.2							
PMG	Port Moresby	34.30	288	e	P	P	21 46 07.5	+1.5
	42nm,1.1s,mb4.8							
STKA	Stephens Creek	35.19	247		P	P	21 46 13.4	0.0
	2.1nm,0.6s,mb3.7,baz=24,slow=6.0,SNR=4.7							
AS12	Alice Springs	42.31	260	e	P	P	21 47 11.1	-0.6
	3.2nm,0.4s,mb4.1							
ASAR	Alice Springs	42.31	260		P	P	21 47 11.2	-0.5
	5.1nm,0.7s,mb4.1,baz=99,slow=6.6,SNR=47							
WB2	Warramunga Arr	42.58	265	i	P	P	21 47 13.0	-0.9
WRAB	Tennant Creek	42.58	265	e	P	P	21 47 13.0	-1.0
	15nm,0.6s,mb4.6							
WRA	Warramunga Arr	42.59	265		P	P	21 47 13.2	-0.8
	3.0nm,0.3s,mb4.2,baz=90,slow=5.9,SNR=256							
FITZ	Fitzroy Crossi	51.02	265		P	P	21 48 17.7	-1.0
	8.7nm,1.1s,mb4.0,baz=87,slow=3.7,SNR=11							
SBA	Scott Base	55.34	183	e	P	P	21 48 50.1	+1.1
	5.8nm,0.8s,mb4.0							
VNDA	Vanda	55.34	185		P	P	21 48 47.2	-1.8
	0.6nm,0.6s,baz=334,slow=5.8,SNR=4.2							
VNDA	Vanda	55.34	185		P	P	21 48 49.1	0.0
CMAR	Chiang Mai Arr	89.30	290		P	P	21 52 07.4	+1.1
	1.4nm,0.9s,mb3.8,baz=148,slow=3.4,SNR=8.1							
ARCES	ARCESS Array B	130.97	348		PKP	PKPdf	21 58 17.8	+1.4
	4.2nm,1.1s,baz=346,slow=5.0,SNR=6.0							
FINES	FINESS Array B	137.57	342		PKP	PKPdf	21 58 30.3	+1.5
	2.0nm,1.0s,baz=117,slow=4.3,SNR=3.8							
NB2	NORSAR Subarra	141.15	351		PKP		21 58 32.4	
	0.6nm,0.6s,baz=14,slow=3.0							
NOA	NORSAR Array B	141.15	351		PKhKP		21 58 32.4	
	0.7nm,0.6s,baz=16,slow=4.6,SNR=5.6							
HFS	Hagfors	141.63	349		PKhKP		21 58 33.8	
	2.9nm,0.5s,baz=45,slow=2.1,SNR=27							
BRTR	Keskin Array B	147.08	308		PKPbc	PKPdf	21 58 50.4	+4.4
	2.2nm,0.8s,baz=90,slow=3.3,SNR=5.3							
EKA	Eskdalemuir Ar	147.56	3		PKPbc	PKPdf	21 58 51.0	+4.7
	1.8nm,0.9s,baz=315,slow=2.4,SNR=5.0							
KSP	Ksiaz	149.43	340	e	PKPdf		21 58 57.3	+7.9
CLL	Collm	149.97	344	i	PKP1	PKPdf	21 58 58.2	+8.0
CLL				e	PKP2	PKPab	21 59 06.0	+0.5
GERES	GERESS Array B	151.99	341		PKPbc	PKPdf	21 59 02.2	+8.9
	0.6nm,0.7s,baz=45,slow=1.9,SNR=7.7							

*THE **30** 21:44:10.8, 37.82N×20.64E, h10km, ML4.2*
*IDC **30** 21:44:10.1±1.2, 38.09N×20.74E, mb3.8/9, mb1 3.9/16, mb1mx3.8/30, ML3.7/7, MS3.5/1, Ms1 3.5/1, ms1mx3.0/25, Error ellipse: s-maj=24.3km s-min=14.5km az=28.0*
*NEIC **30** 21:44:11.4, 37.89N×20.69E, h16km, mb3.5/4, MD4.1(ATH), MD4.0(PDG), ML4.4(THE), After ATH.*
*ATH **30** 21:44:11.4, 37.89N×20.69E, h16km±2km, MD4.1/13, ML3.8*

ISC 30 21:44:11.5±0.3, 37.94N±0.02×20.59E±0.02, h16km, n162, σ1°38/208, mb3.8/9, 9C-8D, Ionian Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VLS	Valsamata	0.24	0	i	PB	Pb	21 44 18.1	+1.1
VLS				e	SB	Sb	21 44 23.1	+2.4
RLS	Riolos of Patr	0.70	80	i	PB	Pb	21 44 23.5	-1.4
RLS				e	SN	Sn	21 44 33.5	-3.5
RLS	Riolos of Patr	0.70	80	e	Pb	Pb	21 44 23.5	-1.4
RLS				e	Sn	Sn	21 44 33.5	-3.5
LKD	Levkas	0.77	4	e	Pg	Pb	21 44 26.4	+0.3
ITM	Ithomi	1.30	125	e	PN	Pn	21 44 33.8	-1.3
EVR	Evrytania	1.37	44	e	PB	Pb	21 44 35.4	-0.9
IGT	Igoumenitsa	1.61	353	e	Pb	Pb	21 44 41.2	+0.9
IGT				e	Sb	Sb	21 45 06.9	+6.7
IGT	Igoumenitsa	1.61	353		P	Pn	21 44 41.3	+1.9
IGT					S	Sn	21 45 06.9	+7.0
JAN	Janina	1.73	7	e	PN	Pn	21 44 43.6	+2.4
AGG	Agios Georgios	1.75	51	e	Pb	Pb	21 44 42.9	+0.2
	comp=Z,35nm,0.2s							
AGG	Agios Georgios	1.75	51		P	Pn	21 44 42.9	+1.4
KEK	Kerkira	1.88	341	e	PB	Pb	21 44 45.0	+0.1
MEV	Metsovon	1.91	15	e	Pn	Pn	21 44 46.0	+2.2
MEV				e	Sn	Sn	21 45 13.8	+6.0
MEV	Metsovon	1.91	15		P	Pn	21 44 46.3	+2.4
SRN	Sarande	2.00	347	e	Pn	Pn	21 44 48.1	+3.1
SRN				i	Sn	Sn	21 45 14.5	+4.7
LKR	Lokris	2.03	69	e	PN	Pn	21 44 46.7	+1.2
MKIT	Kithairon Oros	2.12	82	e	PN	Pn	21 44 47.7	+0.8
LSK	Leskovik	2.21	0	i	Pn	Pn	21 44 51.1	+3.0
LSK				i	Sn	Sn	21 45 24.8	+9.5
VLI	Veliai	2.23	122	e	PN	Pn	21 44 49.8	+1.4
NSAL	Nisos Salamina	2.27	90	e	PN	Pn	21 44 49.4	+0.4
NAIG	Nisos Aigina	2.30	94	e	PB	Pb	21 44 48.0	-4.2
TPE	Tepelena	2.40	349	i	Pn	Pn	21 45 01.8	+11
ATH	Athens Observa	2.47	88	e	PN	Pn	21 44 52.5	+0.6
NEO	Neokhori	2.48	56	i	PN	Pn	21 44 53.1	+1.2
XOR	Xorichti	2.49	54	e	Pn	Pn	21 44 53.2	+1.1
XOR	Xorichti	2.49	54		P	Pn	21 44 53.1	+1.0
MPAR	Parnis Oros	2.50	84	e	PN	Pn	21 44 52.7	+0.5
KZN	Kozani	2.54	21	e	PB	Pb	21 44 55.9	-0.3
KYTH	Kithira	2.56	129	e	PB	Pb	21 44 54.6	-2.0
PTL	Penteli	2.59	86	e	PN	Pn	21 44 53.7	+0.1
LIT	Litokhoron	2.62	34	e	Pn	Pn	21 44 55.1	+1.1
	comp=Z,14nm,0.7s							
LIT	Litokhoron	2.62	34		P	Pn	21 44 55.1	+1.1
AOS	Alonnisos	2.86	63	e	Pn	Pn	21 44 57.7	+0.3
	comp=Z,4.0nm,0.5s							
AOS	Alonnisos	2.86	63		P	Pn	21 44 57.6	+0.2
FNA	Florina	2.91	12	e	Pn	Pn	21 44 59.3	+1.2
	comp=Z,6.3nm,0.1s							
FNA				e	Sn	Sn	21 45 36.9	+3.9
FNA	Florina	2.91	12		P	Pn	21 44 59.4	+1.3
LCI	Lecce	3.07	322	e	PN	Pn	21 45 01.7	+1.3
PAIG	Paliouri	3.13	50	e	Pn	Pn	21 45 01.6	+0.4
PAIG	Paliouri	3.13	50		P	Pn	21 45 01.4	+0.2
OHR	Ohrid	3.18	3	i	Pn	Pn	21 45 03.8	+1.9
OHR				i			21 45 09.9	
OHR				i			21 45 14.2	
OHR				i	Sn	Sn	21 45 43.5	+3.7
OHR				i			21 45 51.2	
OHR				i			21 46 02.1	
TIP	Timpagrande	3.25	294	i	PN	Pn	21 45 04.2	+1.3
TIP				e	S	Sn	21 45 40.3	-1.3
THE	Thessaloniki	3.26	34		P	Pn	21 45 04.1	+1.0
PLG	Polygyros	3.30	41	e	PN	Pn	21 45 04.4	+0.8
GRG	Griva	3.33	24	e	Pn	Pn	21 45 05.1	+1.1
GRG	Griva	3.33	24		P	Pn	21 45 05.2	+1.2
GRI	Girifalco	3.39	286	e	Pn	Pn	21 45 06.3	+1.3
GRI				e	Sn	Sn	21 45 47.1	+1.9
TIR	Tirane	3.45	351	e	Pn	Pn	21 45 07.0	+1.2
TIR				i	Sn	Sn	21 45 47.5	+0.7
OUR	Ouranopolis	3.56	47	e	Pn	Pn	21 45 08.0	+0.6
	comp=Z,5.8nm,0.8s							
OUR	Ouranopolis	3.56	47		P	Pn	21 45 07.3	-0.1
SOI	Samo	3.58	274	e	Pn	Pn	21 45 08.5	+0.8
SOI				e	Sn	Sn	21 45 49.2	-0.9
SOH	Sokhos	3.59	36	e	Pn	Pn	21 45 08.9	+1.1
SOH	Sokhos	3.59	36		P	Pn	21 45 09.0	+1.2
QSH	Qafa e Shtames	3.62	352	i	Pn	Pn	21 45 16.8	+1.8
QSH				i	Sn	Sn	21 45 56.0	+5.0
KNT	Kendrikon	3.68	28	e	Pn	Pn	21 45 10.1	+1.0
KNT	Kendrikon	3.68	28		P	Pn	21 45 09.9	+0.8
VAY	Valandovo	3.71	24	e	Pn	Pn	21 45 12.6	+3.1
VAY				i			21 45 21.9	
VAY				i	Sn	Sn	21 45 53.2	-0.1
VAY				i			21 46 01.8	
VAY				i			21 46 08.3	
TDS	Terranova Siba	3.74	299	e	Pn	Pn	21 45 11.9	+2.1
VAM	Vamos	3.85	130	e	PN	Pn	21 45 11.0	-0.4
SCLL	Scilla	3.86	276	e	Pn	Pn	21 45 14.9	+3.3
MTTG	Motta San Giov	3.87	272	e	Pn	Pn	21 45 12.3	+0.6
MTTG				e	Sn	Sn	21 45 57.1	-0.1
SRS	Serrai	3.94	35	e	Pn	Pn	21 45 13.0	+0.4
SRS	Serrai	3.94	35		P	Pn	21 45 13.1	+0.4
BRT	Bari-Castellan	3.94	319	e	Pn	Pn	21 45 13.8	+1.1
SKO	Skopje	4.08	9	e	Pn	Pn	21 45 15.8	+1.0
SKO				i			21 45 27.0	
PUK	Puka	4.14	353	e	Pn	Pn	21 45 16.9	+1.4
PUK				i	Sn	Sn	21 46 03.9	-0.2
ULC	Ulcinj	4.15	346	i	Pn	Pn	21 45 15.5	-0.3
ULC				e	Sn	Sn	21 46 02.2	-2.3
THR6	Thira Island,	4.15	111	e	Pn	Pn	21 45 15.8	0.0
THR6	Thira Island,	4.15	111		P	Pn	21 45 15.9	+0.1
NVR	Nevrokopi	4.24	36	e	PN	Pn	21 45 17.6	+0.5
AGST	Augusta-Monte	4.31	263	e	Pn	Pn	21 45 16.5	-1.5
IDI	Anoyia	4.35	126		Pn	Pn	21 45 18.5	-0.1
	0.9nm,0.3s,baz=310,slow=17,SNR=17							
IDI					Sn	Sn	21 46 08.2	-1.4
	6.3nm,0.3s,baz=277,slow=21,SNR=6.7							
MGR	Morigerati	4.49	301	e	Pn	Pn	21 45 21.6	+1.0
BUM	Brajici-Budva	4.55	344	e	Pn	Pn	21 45 21.1	-0.3
BUM				e	Sn	Sn	21 46 11.8	-2.7
SLCN	Sala Consilina	4.56	304	e	Pn	Pn	21 45 24.0	+2.4
SLCN				e	Sn	Sn	21 46 18.4	+3.5
PZI	Palazzolo	4.57	261	e	Pn	Pn	21 45 20.6	-1.1
PZI				e	Sn	Sn	21 46 12.8	-2.2
MEU	Monte Lauro	4.57	261	e	PN	Pn	21 45 21.6	-0.1
TTG	Podgorica	4.60	348	i	Pn	Pn	21 45 21.7	-0.4
TTG				e	Sn	Sn	21 46 12.4	-3.5
PVY	Plav	4.68	354	e	Pn	Pn	21 45 23.3	+0.1
PVY				e	Sn	Sn	21 46 15.0	-2.8
HCY	Herceg Novi	4.78	341	i	Pn	Pn	21 45 24.3	-0.4
HCY				e	Sn	Sn	21 46 16.7	-3.7
MRLC	Muro Lucano	4.85	307	e	Pn	Pn	21 45 26.8	+1.1
VAE	Valguarnera	4.92	267		Pn	Pn	21 45 27.8	+1.2
	1.6nm,0.3s,baz=105,slow=16,SNR=5.3							
VAE					Sn	Sn	21 46 25.6	+1.8
	11nm,0.3s,baz=313,slow=18,SNR=7.9							
VAE					LR	LR	21 47 50.4	
	comp=Z,488nm,18.9s,baz=293,slow=43							
IVA	Berane	4.96	354	e	Pn	Pn	21 45 27.1	0.0
IVA				e	Sn	Sn

MEZF	**Maizieres J'vi**	**15.45**	**318**	*e*P		**P**	**21 47 50.5**	**+0.2**
WLF	**Walferdange**	**15.65**	**323**	*e*P		**P**	**21 47 59.7**	**+6.8**
	16nm,1.1s							
TCF	**Toulx Ste Croi**	**15.96**	**307**	*e*P		**P**	**21 47 59.9**	**+3.0**
	9.6nm,1.0s							
MFF	**Saint Martin d**	**17.58**	**306**	*e*P		**P**	**21 48 19.0**	**+1.7**
	6.2nm,0.8s							
LDF	**La Druitiere**	**18.41**	**312**	*e*P		**P**	**21 48 29.8**	**+2.2**
FLN	**La Foliniere**	**18.70**	**312**	*e*P		**P**	**21 48 30.8**	**-0.3**
ESDC	**Sonseca Array**	**19.20**	**283**	P		**P**	**21 48 36.3**	**-0.9**
	0.1nm,0.3s,baz=80,slow=12,SNR=7.3							
HFS	**Hagfors**	**22.65**	**351**	P		**P**	**21 49 11.4**	**-1.4**
	6.2nm,0.8s,mb4.1,baz=164,slow=11,SNR=12							
EKA	**Eskdalemuir Ar**	**23.66**	**325**	P		**P**	**21 49 22.4**	**-0.2**
	3.6nm,0.8s,mb3.9,baz=128,slow=9.4,SNR=18							
FINES	**FINESS Array B**	**23.78**	**7**	P		**P**	**21 49 22.6**	**-1.2**
	1.9nm,0.8s,mb3.6,baz=180,slow=9.7,SNR=7.7							
NB2	**NORSAR Subarra**	**23.87**	**349**	P		**P**	**21 49 24.1**	**-0.5**
	0.2nm,0.6s,mb2.7,baz=160,slow=11							
NOA	**NORSAR Array B**	**23.87**	**349**	P		**P**	**21 49 23.4**	**-1.3**
	2.0nm,1.0s,mb3.5,baz=158,slow=9.1,SNR=9.4							
ARCES	**ARCESS Array B**	**31.77**	**3**	P		**P**	**21 50 34.6**	**-2.2**
	0.5nm,0.3s,mb3.8,baz=191,slow=10,SNR=37							
BVAR	**Borovoye Array**	**37.23**	**50**	P		**P**	**21 51 22.1**	**-1.7**
	0.9nm,0.8s,mb3.6,baz=270,slow=7.2,SNR=4.0							
KURK	**Kurchatov**	**42.38**	**53**	*e*P		**P**	**21 52 04.4**	**-2.0**
MKAR	**Makanchi Array**	**45.38**	**58**	P		**P**	**21 52 28.1**	**-2.6**
	1.8nm,0.5s,mb4.2,baz=274,slow=7.2,SNR=24							
SONM	**Songino Array**	**60.57**	**50**	P		**P**	**21 54 20.2**	**-3.1**
	1.4nm,1.2s,mb4.0,baz=270,slow=6.2,SNR=4.9							
YKA	**Yellowknife Ar**	**73.64**	**340**	P		**P**	**21 55 44.9**	**-0.4**
	0.3nm,0.6s,mb3.4,baz=37,slow=5.4,SNR=7.1							

*IDC **30** 22:15:38.4±6.5,36.57N×71.25E,h40km±55km,mb3.7/8, mb1 3.8/10,mb1mx3.6/19,ML3.6/2,Error ellipse: s-maj=38.5km s-min=19.4km az=28.0*
*NEIC **30** 22:15:42.1±3.7,36.65N×71.19E,h74km±31km,mb3.7/3, Error ellipse: s-maj=31.6km s-min=14.2km az=214.0*
*NNC **30** 22:15:51.1±2.6,37.35N×70.97E,h178km±22km,mpv4.3, Error ellipse: s-maj=25.1km s-min=14.8km az=31.0*

ISC 30 22:15:44.0±0.6,36.76N±0.03×71.35E±0.09,h109km±7km, n48,σ1§37/54,mb3.8/11,6C-2D,Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
CEP	**Cherat**	**2.96**	**171**	⇓P		**P**	**22 16 32.3**	**+1.8**
CEP				S		**S**	**22 17 05.0**	**-0.5**
CHCP	**Chirah Chowk**	**3.47**	**152**	P		**P**	**22 16 40.0**	**+2.7**
CHCP				S		**S**	**22 17 20.0**	**+2.3**
THW	**Thamme Wali**	**3.97**	**175**	P		**P**	**22 16 44.2**	**+0.1**
AML	**Almayashu**	**5.67**	**18**	P		**P**	**22 17 08.1**	**+0.9**
	SNR=37							
UCH	**Uchtor**	**5.99**	**23**	P		**P**	**22 17 12.3**	**+0.8**
	SNR=17							
KZA	**Kyzart**	**6.11**	**28**	P		**P**	**22 17 14.1**	**+0.9**
	SNR=18							
EKS2	**Erkin-Say**	**6.19**	**17**	P		**P**	**22 17 14.7**	**+0.4**
	SNR=32							
AAK	**Ala-Archa**	**6.35**	**21**	P		**P**	**22 17 17.3**	**+0.8**
	SNR=16							
AAK	**Ala-Archa**	**6.35**	**21**	*e*Pn		**P**	**22 17 16.7**	**+0.2**
	10nm,0.3s							
KK31	**Karatay Array**	**6.37**	**354**	⇓P		**P**	**22 17 14.7**	**-2.1**
	16nm,0.5s,baz=176,slow=12,SNR=290							
KK31				⇑S		**S**	**22 18 21.4**	**-7.3**
	17nm,0.4s,baz=190,slow=25,SNR=4.9							
CHMS	**Chumysh**	**6.76**	**22**	P		**P**	**22 17 22.4**	**+0.2**
	SNR=8.2							
USP	**Ospenovka**	**6.94**	**19**	P		**P**	**22 17 25.8**	**+1.2**
	SNR=16							
TKM2	**Tokmak 2**	**6.97**	**27**	P		**P**	**22 17 26.0**	**+0.9**
	SNR=19							
KHET	**Khetri**	**9.44**	**155**	*e*P		**P**	**22 17 55.1**	**-3.3**
KHET				*e*S		**S**	**22 19 33.8**	**-9.5**
KHET				*e*			22 19 39.9	
	comp=N,20nm,0.2s							
KHET				*e*			22 19 40.1	
	comp=E,27nm,0.3s							
KALG	**Kalgarh**	**9.53**	**137**	*e*S		**S**	**22 19 36.2**	**-9.1**
AYAN	**Aya Nagar**	**9.58**	**148**	*e*P		**P**	**22 17 58.7**	**-1.5**
AYAN				*e*			22 19 41.2	
AYAN				*e*			22 19 46.0	
	comp=Z,25nm,0.4s							
SONA	**Sohna**	**9.77**	**149**	*i* P		**P**	**22 17 57.6**	**-5.1**
SONA				*e*S		**S**	**22 19 40.5**	**-11**
SONA				*e*			22 19 48.2	
	comp=N,27nm,0.4s							
SONA				*e*			22 19 48.3	
	comp=E,38nm,0.4s							
MK31	**Makanchi Array**	**12.92**	**36**	⇑P		**P**	**22 18 44.7**	**+0.2**
	comp=E,1.9nm,0.6s,baz=185,slow=24,SNR=15							
MKAR	**Makanchi Array**	**12.92**	**36**	P		**P**	**22 18 41.0**	**-3.5**
	comp=E,0.3nm,0.3s,baz=230,slow=16,SNR=11							
KOLN	**Koldanda**	**13.69**	**127**	*e*P		**P**	**22 18 53.4**	**-1.1**
	comp=E,7.8nm,0.3s							
GKN	**Gorkha**	**14.21**	**124**	*e*P		**P**	**22 18 59.8**	**-1.4**
	comp=E,10nm,0.2s							
KKN	**Kakani**	**14.78**	**123**	*e*P		**P**	**22 19 06.7**	**-1.8**
	comp=E,16nm,0.6s							
DMN	**Daman**	**14.78**	**124**	*e*P		**P**	**22 19 07.5**	**-1.1**
	comp=E,10nm,0.3s							
KURK	**Kurchatov**	**14.90**	**18**	⇑P		**P**	**22 19 07.7**	**-2.2**
	comp=E,1.9nm,0.9s,baz=209,slow=8.8,SNR=6.3							
KURK	**Kurchatov**	**14.90**	**18**	*e*P		**P**	**22 19 12.9**	**+3.1**
AB31	**Akbulak array**	**15.00**	**330**	⇑P		**P**	**22 19 06.5**	**-4.6**
	comp=E,1.1nm,0.3s							
AB31				⇑S		**S**	**22 21 45.6**	**-9.0**
	comp=E,1.8nm,0.5s							
PKI	**Pulchoki**	**15.01**	**124**	*e*P		**P**	**22 19 11.0**	**-0.4**
	comp=E,5.8nm,0.2s							
VOSK	**Vostochnaya**	**15.97**	**359**	⇑P		**P**	**22 19 17.9**	**-5.4**
	comp=E,1.0nm,0.5s							
ZRNK	**Zerenda**	**16.28**	**355**	P		**P**	**22 19 24.9**	**-2.3**
BVA0	**Borovoye Array**	**16.28**	**358**	P		**P**	**22 19 22.0**	**-5.3**
	comp=E,0.2nm,0.6s,baz=149,slow=14,SNR=14							
BVAR	**Borovoye Array**	**16.28**	**358**	P		**P**	**22 19 24.8**	**-2.4**
	comp=E,0.3nm,0.3s,baz=162,slow=9.0,SNR=9.4							
BRVK	**Borovoye**	**16.32**	**358**	*e*P		**P**	**22 19 25.6**	**-2.1**
LSA	**Lhasa**	**17.98**	**107**	P		**P**	**22 19 47.5**	**-0.8**
	comp=E,2.3nm,0.6s							
SONM	**Songino Array**	**27.96**	**56**	P		**P**	**22 21 27.9**	**+1.7**
	comp=E,0.9nm,0.6s,mb3.5,baz=266,slow=9.4,SNR=11							
ULN	**Ulaanbaatar**	**28.40**	**56**	*e*P		**P**	**22 21 31.2**	**+1.1**
	comp=E,1.0nm,0.6s,mb3.5							
BRTR	**Keskin Array B**	**29.62**	**287**	P		**P**	**22 21 40.9**	**-0.1**
	comp=E,0.6nm,0.8s,mb3.2,baz=84,slow=9.8,SNR=5.2							
JOF	**Joensuu**	**35.79**	**330**	*e*p		**P**	**22 22 35.3**	**+1.3**
	comp=E,0.5nm,0.3s,mb3.9							
FINES	**FINESS Array B**	**37.43**	**326**	P		**P**	**22 22 47.7**	**-0.1**
	comp=E,0.7nm,0.3s,mb4.0,baz=126,slow=8.8,SNR=6.2							
FINES	**FINESS Array B**	**37.43**	**326**	P		**P**	**22 22 47.7**	**-0.1**
KEV	**Kevo**	**40.67**	**338**	*e*p		**P**	**22 23 19.9**	**+5.3**
ARCES	**ARCESS Array B**	**41.02**	**337**	P		**P**	**22 23 18.4**	**+1.0**
	comp=E,1.5nm,0.6s,mb4.0,baz=108,slow=7.7,SNR=11							
NB2	**NORSAR Subarra**	**44.34**	**323**	P		**P**	**22 23 44.8**	**+0.3**
	comp=E,1.1nm,0.5s,mb3.8,baz=95,slow=7.4							
NOA	**NORSAR Array B**	**44.34**	**323**	P		**P**	**22 23 44.5**	**0.0**
	comp=E,0.8nm,0.4s,mb3.8,baz=97,slow=7.7,SNR=9.9							
YKA	**Yellowknife Ar**	**80.98**	**3**	P		**P**	**22 27 49.0**	**+1.7**
	comp=E,0.5nm,0.4s,mb3.7,baz=349,slow=5.4,SNR=19							
YKA	**Yellowknife Ar**	**80.98**	**3**	P		**P**	**22 27 49.0**	**+1.7**
WRA	**Warramunga Arr**	**81.89**	**122**	P		**P**	**22 27 53.1**	**+0.2**
	comp=E,0.5nm,0.4s,mb3.7,baz=325,slow=4.8,SNR=32							
WRAB	**Tennant Creek**	**81.89**	**122**	*e*P		**P**	**22 27 53.3**	**+0.4**
	comp=E,2.3nm,0.4s,mb4.4							
ASAR	**Alice Springs**	**84.17**	**125**	P		**P**	**22 28 05.2**	**+0.8**
	comp=E,0.7nm,0.5s,mb3.7,baz=305,slow=5.2,SNR=12							

ISC 30 22:25:56.3±2.3,23.2N±0.1×93.2E±0.1,h10km,n7,σ0§97/9, Myanmar-India border region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
IMP	**Imphal**	**1.69**	**23**	*e*P		**Pn**	**22 26 27.0**	**+0.8**
IMP				*e*S		**Sn**	**22 26 47.0**	**-1.0**
SHL	**Shillong**	**2.63**	**333**	*e*P		**Pn**	**22 26 41.0**	**+1.5**
SHL				*e*S		**Sn**	**22 27 12.0**	**+0.2**
PKI	**Pulchoki**	**8.27**	**303**	*e*P		**P**	**22 28 00.0**	**+0.8**
KKN	**Kakani**	**8.48**	**304**	*e*P		**P**	**22 28 02.5**	**+0.4**
	3.6nm,0.4s							
DMN	**Daman**	**8.53**	**303**	*e*P		**P**	**22 28 02.7**	**0.0**
GKN	**Gorkha**	**9.08**	**303**	*e*P		**P**	**22 28 09.5**	**-0.9**
	10nm,0.3s							
KOLN	**Koldanda**	**9.79**	**300**	*e*P		**P**	**22 28 18.4**	**-1.8**
	3.3nm,0.3s							

*NEIC **30** 22:40:09.6±0.8,19.33S×173.54W,h10km,mb4.3/1,Error ellipse: s-maj=40.9km s-min=21.3km az=138.0*
*IDC **30** 22:40:10.6±3.6,18.58S×174.05W,mb3.8/5,mb1 4.1/5, mb1mx3.8/15,Error ellipse: s-maj=193.0km s-min=27.7km az=148.0*

ISC 30 22:40:08.0±0.9,19.4S±0.2×173.5W±0.2,h10km,n8, σ1§04/8,mb3.9/6,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op			h m s	ISC
ASAR	**Alice Springs**	**48.84**	**255**	P		**P**	**22 48 56.0**	**+0.1**
	2.5nm,0.8s,mb4.3,baz=89,slow=8.4,SNR=15							
WRA	**Warramunga Arr**	**48.90**	**260**	P		**P**	**22 48 56.5**	**+0.1**
	0.5nm,0.7s,mb3.7,baz=102,slow=7.5,SNR=6.2							
SBA	**Scott Base**	**59.23**	**185**	*e*P		**P**	**22 50 11.2**	**-0.2**
	2.0nm,0.8s,mb4.2							
BW06	**Boulder Array**	**85.36**	**42**	P		**P**	**22 52 45.6**	**-1.2**
PDAR	**Pinedale Array**	**85.36**	**42**	P		**P**	**22 52 48.5**	**+1.8**
	0.7nm,0.9s,mb3.8,baz=225,slow=2.6,SNR=4.4							
ILAR	**Eielson Array**	**86.42**	**11**	P		**P**	**22 52 50.0**	**-1.5**
	0.4nm,0.7s,mb3.8,baz=225,slow=5.6,SNR=6.4							
YKA	**Yellowknife Ar**	**93.84**	**23**	P		**P**	**22 53 27.3**	**+1.0**
	0.2nm,0.9s,mb3.5,baz=249,slow=5.3,SNR=3.7							
YKA	**Yellowknife Ar**	**93.84**	**23**	P		**P**	**22 53 27.3**	**+1.0**

IDC 30 22:51:04.1±1.7,21.20S×174.45W,mb4.0/5,mb1 4.2/7, mb1mx4.0/17,ML4.2/2,Error ellipse: s-maj=66.8km s-min=29.3km az=134.0,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op		ISC	h m s	ISC
RAR	**Rarotonga**	**13.69**	**93**	Pn		P	22 54 06.0	-16
	2.1nm,0.3s,baz=229,slow=10,SNR=8.1							
RAR				Sn		S	22 56 21.5	-35
	1.0nm,0.3s,baz=161,slow=18,SNR=2.7							
URZ	**Urewera**	**18.50**	**201**	P		P	22 55 21.6	-2.0
	0.4nm,0.3s,baz=8.1,slow=7.1,SNR=3.4							
STKA	**Stephens Creek**	**40.50**	**245**	P		P	22 58 45.0	-1.4
	1.0nm,0.6s,baz=132,slow=8.5,SNR=3.2							
ASAR	**Alice Springs**	**47.59**	**257**	P		P	22 59 41.9	-1.9
	2.4nm,0.7s,baz=92,slow=8.1,SNR=18							
WRA	**Warramunga Arr**	**47.79**	**262**	P		P	22 59 43.2	-2.2
	1.7nm,0.8s,baz=98,slow=8.2,SNR=8.1							
ILAR	**Eielson Array**	**88.29**	**11**	P		P	23 03 57.1	-1.2
	0.5nm,0.9s,baz=225,slow=5.1,SNR=5.2							
CMAR	**Chiang Mai Arr**	**93.48**	**288**	P		P	23 04 25.1	+1.7
	0.6nm,0.8s,baz=146,slow=3.5,SNR=4.3							
BRTR	**Keskin Array B**	**149.74**	**314**	PKPbc		PKPdf	23 10 56.7	+3.6
	2.4nm,1.2s,baz=66,slow=3.2,SNR=6.0							
GERES	**GERESS Array B**	**151.65**	**349**	PKPbc		PKPdf	23 10 59.5	+3.8
	0.6nm,0.9s,slow=2.7,SNR=5.6							

*NAO **30** 23:34:16.8±3.0,67.86N×20.02E,ML2.3*
*HEL **30** 23:34:17.4±0.1,67.81N×20.29E,ML1.9,ML2.0(UPP), ML1.8(BER),Explosion*
*BER **30** 23:34:19.3±3.0,67.85N×20.02E,ML1.8,ML2.3(NAO), Suspected explosion*

ISC 30 23:34:13.6±0.5,67.69N±0.03×19.92E±0.08,n15,σ1§33/26, Sweden

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op		ISC	h m s	ISC
KIF	**Kilpisjarvi**	**1.36**	**14**	*e*P		**Pb**	**23 34 39.7**	**+0.1**
KIF				*e*S		**Sb**	**23 34 55.9**	**-1.5**
KTK1	**Kautokeino**	**1.81**	**41**	*e*P		**Pn**	**23 34 47.1**	**+0.9**
KTK1				*e*SN		**Sn**	**23 35 11.8**	**+1.5**
KTK1				AML		AML	23 35 12.5	
	comp=Z,13nm,0.3s							
LOF	**Lofoten**	**2.45**	**283**	*e*SG		**Sg**	**23 35 36.4**	**+1.3**
LOF				AML		AML	23 35 41.8	
	comp=Z,5.4nm,0.3s							
SGF	**Sodankyl**	**2.55**	**93**	*e*P		**Pn**	**23 34 58.0**	**+1.2**
SGF				*e*S		**Sn**	**23 35 28.0**	**-1.0**
MOR8	**Moi Rana**	**2.64**	**237**	*e*SG		**Sg**	**23 35 39.1**	**-2.4**
MOR8				AML		AML	23 35 41.0	
	comp=Z,14nm,0.3s							
ARA0	**ARCESS Array S**	**2.76**	**45**	Pn		**Pn**	**23 35 00.1**	**+0.2**
	baz=227,slow=14							
ARA0				Sn		**Sn**	**23 35 32.5**	**-1.9**
	baz=232,slow=28							
ARA0	**ARCESS Array S**	**2.76**	**45**	*e*P		**Pn**	**23 35 00.1**	**+0.2**
ARA0				*e*S		**Sn**	**23 35 32.5**	**-1.9**
KEV	**Kevo**	**3.31**	**48**	*e*P		**Pn**	**23 35 07.8**	**+0.1**
KEV				*e*S		**Sn**	**23 35 45.0**	**-3.3**
KEV				MSG			23 35 53.1	
	comp=Z,2.6nm,0.3s							
OUL	**Oulu**	**3.56**	**135**	*e*P		**Pn**	**23 35 13.3**	**+2.2**
OUL				*e*S		**Sn**	**23 35 54.5**	**0.0**
OUL				MSG			23 36 15.8	
	comp=Z,2.7nm,0.3s							
MSF	**Maaselka**	**4.03**	**112**	*e*P		**Pn**	**23 35 19.1**	**+1.2**
MSF				*e*S		**Sn**	**23 36 04.5**	**-2.0**
MSF				MSG			23 36 24.4	
	comp=Z,3.2nm,0.6s							
NSS	**Namsos**	**4.53**	**229**	*e*SG		**Sg**	**23 36 43.9**	**-0.5**
NSS				AML		AML	23 36 44.6	
	comp=Z,4.6nm,0.5s							
FIA0	**FINESS Array S**	**6.81**	**154**	Pn		**Pn**	**23 35 59.2**	**+2.0**
	baz=350,slow=16							
FIA0				Sn		**Sn**	**23 37 16.1**	**-0.3**
	baz=351,slow=22							
FIA0				Lg			23 37 52.7	
	baz=342,slow=28							
FIA0	**FINESS Array S**	**6.81**	**154**	*e*P		**Pn**	**23 35 59.2**	**+2.0**
FIA0				*e*S		**Sn**	**23 37 16.1**	**-0.3**
FIA0				*e*			23 37 52.7	
HFS	**Hagfors**	**8.06**	**203**	*e*S		**Sn**	**23 37 47.1**	**-0.6**
HFS				*e*SG		**Sg**	**23 38 33.6**	**-8.4**
HFS	**Hagfors**	**8.06**	**203**	Sn		**Sn**	**23 37 47.1**	**-0.6**
	baz=25,slow=28							
HFS				Lg			23 38 33.6	
	baz=5.8,slow=37							

GUC 30 23:36:10.4±0.3,31.83S×68.89W,h16km±4km,MD3.7, ML3.1,1C-1D,San Juan Province

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op		ISC	h m s	ISC
JACH	**Jahuel**	**1.68**	**239**	*i* S		Sn	23 37 00.9	+0.3
PTCH	**Petorca**	**1.79**	**255**	*e*S		Sn	23 37 03.5	0.0
PTCH				AMP			23 37 09.4	
	comp=N,494nm,0.3s							
FCH	**Farellones**	**1.91**	**218**	⇑*i*P		Pn	23 36 43.2	+0.5
FCH				*i* S		Sn	23 37 08.1	+1.6
FCH				AMP			23 37 20.0	
	comp=N,57nm,0.3s							
CMCH	**Combarbala**	**1.92**	**289**	⇓*i*P		Pn	23 36 42.8	0.0
CMCH				*i* S		Sn	23 37 07.4	+0.6
CMCH				AMP			23 37 15.1	
	comp=N,727nm,0.7s							
PEL	**Peldehue**	**2.01**	**229**	AMP			23 37 17.4	
	comp=E,314nm,0.3s							
CLCH	**Cerro Calan**	**2.09**	**221**	*e*P		Pn	23 36 47.3	+1.9
CLCH				*i* S		Sn	23 37 14.1	+2.9
CLCH				AMP			23 37 17.8	
	comp=N,162nm,0.4s							
RCDM	**Rinconada Maip**	**2.32**	**224**	AMP			23 37 23.4	
	comp=N,120nm,0.3s							
TLL	**Tololo Astrono**	**2.33**	**315**	*e*P		Pn	23 36 49.7	+0.9
TLL				*e*S		Sn	23 37 19.5	+2.2
TLL				AMP			23 37 26.8	
	comp=N,122nm,0.5s							
TACH	**Talagante**	**2.51**	**223**	*e*P		Pn	23 36 51.3	0.0

*KISR **30** 23:48:00.3±0.5,32.60N×49.58E,h87km±11km,ML4.5*
*CSEM **30** 23:48:04.7,31.38N×49.39E,h33km,mb5.0*
*MOS **30** 23:48:08.4±1.4,31.89N×49.19E,h33km,mb4.4/17,Error ellipse: s-maj=13.5km s-min=7.5km az=95.2*
*IDC **30** 23:48:08.6±2.8,31.99N×49.20E,h18km±15km,mb4.0/16, mb1 4.2/20,mb1mx4.1/26,ML3.7/4,MS3.6/5,Ms1 3.6/5, ms1mx3.3/26,Error ellipse: s-maj=20.1km s-min=14.3km az=163.0*
*THR **30** 23:48:09.3±1.1,31.73N×49.19E,h25km±44km,MD4.8*
*SNSN **30** 23:48:10.6,31.68N×48.96E*
*NEIC **30** 23:48:13.6±0.5,32.18N×49.26E,h50km,mb4.5/40,Error ellipse: s-maj=10.6km s-min=6.5km az=175.0*
*BJI **30** 23:48:13.0,32.23N×48.78E,h80km,mB4.5,mb4.8,Ms4.5, Msz4.4*

ISC 30 23:48:07.5±1.1,31.98N±0.03×49.19E±0.03,h18km±8km, n223,σ1§29/233,mb4.5/82,MS4.0/9,6C-3D,Western Iran

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
				Op		ISC	h m s	ISC
MIB	**Mutribah**	**2.69**	**217**	*e*P		**Pn**	**23 48 52.7**	**+1.9**
MIB				AML		AML	23 49 46.8	
	comp=Z,778nm,0.5s							
RST	**Umm Al-Ruwaisa**	**3.10**	**218**	*e*P		**Pn**	**23 48 58.2**	**+1.4**
RST				AML		AML	23 50 03.3	
	comp=Z,809nm,0.6s							
QRN	**Al-Qurain**	**3.40**	**199**	*e*P		**Pn**	**23 49 02.3**	**+1.3**
QRN				*e*S		**Sn**	**23 49 48.2**	**+6.9**
QRN				AML		AML	23 49 50.7	
	comp=Z,676nm,0.4s							
SNGE	**Sanandaj**	**3.47**	**334**	*e*PN		**Pn**	**23 49 03.6**	**+1.7**
THKV	**Tehran--Karaj**	**4.17**	**19**	*e*PN		**Pn**	**23 49 14.2**	**+2.2**
THKV				SN		**Sn**	**23 50 00.9**	**+0.1**
THR	**Tehran**	**4.24**	**22**	Pn		**Pn**	**23 49 13.7**	**+0.7**
	comp=Z,0.9nm,0.3s,baz=170,slow=8.6,SNR=37							
THR				Pg		**Pn**	**23 49 24.7**	**+12**
	comp=Z,2.6nm,0.3s,baz=174,slow=12,SNR=36							
THR				Lg			23 50 24.0	
	comp=Z,2.2nm,0.3s,baz=77,slow=14,SNR=2.3							
DAMV	**Damavand**	**4.32**	**32**	*e*PN		**Pn**	**23 49 14.6**	**+0.6**
DAMV				SN		**Sn**	**23 50 04.0**	**-0.5**
HASS	**Wahat al Ahsa'**	**6.78**	**176**	P		**Pn**	**23 49 48.3**	**-0.4**
HILS	**Ha'il**	**7.89**	**236**	P		**Pn**	**23 50 00.9**	**-3.4**
ARSS	**Ar Rass**	**8.00**	**222**	P		**Pn**	**23 50 01.5**	**-4.4**
TVAN	**Van**	**8.06**	**326**	*i* P		**P**	**23 50 06.8**	**+0.1**
MAKU	**Maku**	**8.22**	**335**	*e*PN		**P**	**23 50 09.6**	**+0.6**
MZLS	**Mizel**	**8.66**	**205**	P		**P**	**23 50 11.9**	**-3.2**
BEST	**Besiri**	**8.78**	**314**	*e*P		**P**	**23 50 15.2**	**-1.4**
AFFS	**'Afif**	**9.70**	**216**	P		**P**	**23 50 24.7**	**-4.8**
QURS	**Qurayyt al Mil**	**10.12**	**270**	P		**P**	**23 50 31.9**	**-3.4**
ERZM	**Erzurum**	**10.13**	**323**	P		**P**	**23 50 19.5**	**-16**
ZHSF	**Zahedan**	**10.24**	**100**	*e*PN		**P**	**23 50 33.8**	**-3.1**
ASF	**Jabal al Asfar**	**10.43**	**274**	Pn		**P**	**23 50 35.8**	**-3.6**
	comp=Z,1.1nm,0.3s,baz=331,slow=6.0,SNR=11							
ASF				Sn		**S**	**23 52 31.2**	**-5.6**
	comp=Z,0.4nm,0.3s,baz=324,slow=19,SNR=2.8							
ASF				Lg			23 53 50.2	
	comp=Z,0.6nm,0.3s,baz=152,slow=16,SNR=2.2							
ASF				LR		LR	23 55 26.1	
	comp=Z,149nm,19.4s,baz=222,slow=42							
ELZG	**Elazig**	**10.57**	**311**	*i* P		**P**	**23 50 41.1**	**-0.2**
KBRS	**Khaybar**	**10.66**	**237**	P		**P**	**23 50 42.2**	**-0.4**
GZT	**Gaziantep**	**10.97**	**302**	*i* P		**P**	**23 50 45.2**	**-1.6**
ZEI	**Tsey**	**11.56**	**340**	*e*P		**P**	**23 51 01.0**	**+6.2**
ZEI				MLR		MLR		
	comp=Z,500nm,9.0s							
TBKS	**Tabuk**	**11.56**	**254**	P		**P**	**23 50 51.3**	**-3.6**
JMQS	**Jabal Moqyreh**	**11.89**	**258**	P		**P**	**23 50 58.1**	**-1.2**
KAMS	**Al Khamasin**	**12.33**	**201**	P		**P**	**23 51 00.8**	**-4.4**
ALWS	**Ilw as Safayha**	**12.45**	**261**	P		**P**	**23 51 07.1**	**+0.3**
JMOS	**Jabal al Moall**	**12.45**	**261**	D			23 49 46.3	
JMOS				P			23 51 06.7	
YNBS	**Yanbu' al Bahr**	**12.46**	**235**	P		**P**	**23 51 06.5**	**-0.5**
AYUS	**'Aynunah**	**12.63**	**256**	P		**P**	**23 51 04.1**	**-5.1**
HAQS	**Haql**	**12.63**	**260**	P		**P**	**23 51 09.6**	**+0.3**
BDAS	**Al Bad'**	**12.68**	**257**	P		**P**	**23 51 08.7**	**-1.3**
KIV	**Kislovodsk**	**13.01**	**339**	*e*P		**P**	**23 51 21.6**	**+7.4**
KIV				pmax		pmax		
	comp=Z,10.0nm,1.0s							
KIV				MLR		MLR		
	comp=Z,100nm,19.0s							
KIV				MLR		MLR		
	comp=E,50nm,18.0s							
KIV	**Kislovodsk**	**13.01**	**339**	P		**P**	**23 51 10.2**	**-4.0**
	comp=E,14nm,0.8s							
TATS	**Tathlith**	**13.40**	**204**	P		**P**	**23 51 21.6**	**+2.1**
SOC	**Sochi**	**13.78**	**330**	*d* P		**P**	**23 51 25.4**	**+1.0**
SOC				pmax		pmax		
	comp=Z,10.0nm,1.2s							
SOC				pmax		pmax		
	comp=N,10.0nm,1.1s							
SOC				pmax		pmax		
	comp=E,1.0nm,0.2s							
SOC				pmax		pmax		
	comp=Z,120nm,3.6s						

KSH eS S 23 57 19.5 +2.8
KSH AMB AMB
comp=Z,200nm,4.0s
KSH LR LR
comp=N,220nm,9.5s
KSH LR LR
comp=E,280nm,5.8s
CHMS Chumysh 22.99 54 P P 23 53 13.7 +1.5
SNR=9.9
KBK Karagaybulak 23.01 55 P P 23 53 14.6 +2.1
SNR=12
KZA Kyzart 23.04 57 P P 23 53 14.1 +1.4
SNR=22
GRG Griva 23.26 300 eP P 23 53 15.3 +0.5
KHET Khetri 23.35 93 eP P 23 53 15.6 -0.3
KHET AMb AMB 23 53 19.1
comp=Z,10nm,0.6s,mb4.5
TKM2 Tokmak 2 23.55 55 P P 23 53 20.3 +2.7
SNR=22
RTK Rohtak 23.62 90 eP P 23 53 18.4 -0.1
RTK AMb AMB 23 53 19.4
comp=Z,35nm,0.1s
ULHL Ulahol 23.80 57 P P 23 53 21.9 +1.8
SNR=9.7
MEV Metsovon 23.89 297 eP P 23 53 21.5 +0.6
KUDL Kundal 23.91 92 eP P 23 53 21.2 -0.1
KUDL AMb AMB 23 53 27.4
comp=Z,21nm,1.4s,mb4.4
FNA Florina 23.98 299 eP P 23 53 22.4 +0.6
LKD Levkas 24.17 294 eP P 23 53 24.4 +0.7
SKO Skopje 24.21 302 eP P 23 53 26.0 +1.8
AYAN Aya Nagar 24.36 91 eP P 23 53 25.9 +0.2
AYAN AMb AMB 23 53 30.2
comp=Z,18nm,0.3s,mb4.9
NDI New Delhi 24.39 90 eP P 23 53 26.5 +0.5
SONA Sohna 24.39 91 eP P 23 53 28.4 +2.4
SONA AMb AMB 23 53 30.1
comp=Z,16nm,1.0s,mb4.4
BOLS Boljevac 24.41 307⇑ iP P 23 53 26.7 +0.6
IGT Igoumenitsa 24.53 296 eP P 23 53 27.0 -0.2
OBN Obninsk 24.79 343 eP P 23 53 30.8 +1.2
OBN e 23 54 21.4
OBN pmax pmax
comp=Z,10.0nm,1.0s,mb4.3
MOS Moscow 25.11 345 eP P 23 53 32.6 0.0
MOS pmax pmax
comp=Z,52nm,0.7s,mb5.2
ARU Arti 25.31 12⇑ iP P 23 53 34.6 +0.1
ARU e 23 54 18.2
ARU i 23 56 59.5
ARU eS S 23 57 58.1 +1.2
ARU eSS SS 23 58 51.5 -7.0
ARU pmax pmax
comp=Z,12nm,1.1s,mb4.3
ARU Arti 25.31 12 eP P 23 53 33.4 -1.1
comp=Z,13nm,1.1s,mb4.4
ZRNK Zerenda 25.40 29 eP P 23 53 33.5 -1.9
KALG Kalgarh 25.50 88 eP P 23 53 31.8 -4.8
BRVK Borovoye 26.00 30 eP P 23 53 39.3 -1.7
BVAR Borovoye Array 26.02 30 P P 23 53 40.1 -1.1
comp=Z,7.0nm,0.6s,mb4.4,baz=224,slow=8.4,SNR=29
BVAR ScP 00 00 45.6
comp=Z,1.1nm,0.7s,baz=243,slow=3.3,SNR=6.4
BVAR LR LR 00 06 33.1
comp=Z,78nm,19.8s,MS3.2,baz=240,slow=42
KWP Kalwaria 26.49 319 eP P 23 53 44.6 -0.9
comp=Z,7.3nm,0.9s,mb4.2
MNK Minsk 27.16 332 eP P 23 53 50.0 -1.6
TIP Timpagrande 27.23 294 eP P 23 53 51.6 -0.8
PSZ Piszkesteto 27.31 314 eP P 23 53 52.8 -0.2
GRI Girifalco 27.47 294 eP P 23 53 59.4 +4.8
NIE Niedzica 27.73 317 eP P 23 54 10.0 +13
OJC Ojcow 28.41 319 eP P 23 54 10.5 +7.5
KURK Kurchatov 28.68 41 eP P 23 54 03.6 -1.7
MKAR Makanchi Array 29.30 50 P P 23 54 09.5 -1.5
comp=Z,2.3nm,0.7s,mb4.0,baz=243,slow=11,SNR=13
MKAR ScP 00 00 56.6
comp=Z,1.1nm,1.0s,baz=236,slow=4.4,SNR=4.1
MKAR LR LR 00 07 40.1
comp=Z,101nm,19.5s,MS3.5,baz=310,slow=40
MKAR Makanchi Array 29.30 50 P P 23 54 09.5 -1.6
MKAR pmax pmax
comp=Z,2.0nm,0.7s
MKAR pmax pmax
comp=Z,1.0nm,1.0s
MKAR MLR MLR
comp=Z,101nm,19.5s
MKAR Makanchi Array 29.30 50 P P 23 54 09.5 -1.5
MKAR ScP 00 00 56.6
MKAR LR LR 00 07 40.1
CII Carovilli 29.39 299 eP P 23 54 11.6 -0.3
KOLN Koldanda 30.06 89 eP P 23 54 16.9 -1.1
comp=Z,33nm,1.4s,mb4.9
ARV Arcevia 30.66 302 eP P 23 54 23.5 +0.4
MNS Montasola 30.68 300 eP P 23 54 25.0 +1.7
FSSB Fossombrone 30.81 303 eP P 23 54 16.1 -8.4
GKN Gorkha 30.87 88 eP P 23 54 24.3 -0.9
comp=Z,22nm,0.7s,mb5.1
KBA Koelnbreinsper 31.18 309⇑ iP P 23 54 27.5 -0.2
comp=Z,11nm,0.7s,mb4.8
DMN Daman 31.38 89 eP P 23 54 29.2 -0.5
comp=Z,18nm,0.5s,mb5.2
KKN Kakani 31.48 88 eP P 23 54 29.9 -0.6
comp=Z,54nm,0.9s,mb5.4
GERES GERESS Array B 31.48 313 P P 23 54 29.5 -0.8
comp=Z,0.7nm,0.7s,mb3.6,baz=112,slow=7.2,SNR=7.1
GERES ScP 00 01 04.7
comp=Z,0.2nm,0.4s,baz=180,slow=4.0,SNR=3.6
SFI Santa Sofia 31.51 303 eP P 23 54 32.1 +1.5
PGD Poggio Sodo 31.59 303 eP P 23 54 33.1 +1.8
PKI Pulchoki 31.65 88 eP P 23 54 31.4 -0.7
comp=Z,46nm,1.1s,mb5.2
KHC Kasperske Hory 31.65 313 eP P 23 54 32.0 +0.2
KHC x x 23 54 49.5
KHC Kasperske Hory 31.65 313 eP P 23 54 32.0 +0.2
KHC e 23 54 49.5
VMG Vicchio 31.73 303 eP P 23 54 34.9 +2.4
SEI Scarperia 31.88 303 eP P 23 54 35.5 +1.6
ZCCA Zocca 32.20 304 eP P 23 54 40.1 +3.4
WMQ Urumqi 32.33 57 eP P 23 54 38.8 +1.0
WMQ PP PP 23 55 46.0 +0.4
WMQ S S 23 59 50.3 +0.7
WMQ AMB AMB
comp=Z,7.0nm,0.9s,mb4.5
WMQ AMB AMB
comp=Z,55nm,5.4s
WMQ LR LR
comp=N,381nm,16.1s,MS4.3
WMQ LR LR
comp=E,387nm,17.2s,MS4.3
WMQ LR LR
comp=Z,581nm,16.8s,MS4.3
WTTA Wattenberg 32.35 309⇑ iP P 23 54 36.5 -1.4
comp=Z,20nm,0.9s,mb5.0
WATA Walderalm 32.41 309⇑ iP P 23 54 37.6 -0.8
comp=Z,9.1nm,0.9s,mb4.6
GSCL Gusciola 32.47 304 eP P 23 54 44.6 +5.6
VLC Villacollemand 32.59 303 eP P 23 54 39.4 -0.6
ERBM Eremo 32.61 304 eP P 23 54 46.8 +6.6
SQTA Sankt Quirin 32.62 309⇓ iP P 23 54 38.6 -1.7
comp=Z,9.1nm,0.8s,mb4.8
MOTA Moosalm 32.72 309⇓ iP P 23 54 39.6 -1.6
comp=Z,7.7nm,0.9s,mb4.6
CLL Collm 32.77 317 e*SP sP 23 54 59.0 +10
JOF Joensuu 32.99 345 ep P 23 54 43.7 +0.4
comp=Z,2.1nm,0.6s,mb4.2
JOF Joensuu 32.99 345 eP P 23 54 43.7 +0.4
JOF pmax pmax
comp=Z,2.0nm,0.6s,mb4.2
FINES FINESS Array B 33.09 340 P P 23 54 42.0 -2.2
comp=Z,1.7nm,0.5s,mb4.2,baz=145,slow=8.9,SNR=12
FINES FINESS Array B 33.09 340 i P P 23 54 43.1 -1.2
FINES pmax pmax
comp=Z,2.0nm,0.5s
NVS Novosibirsk 33.15 36 i P P 23 54 42.9 -1.9
NVS i S S 00 00 02.2 -0.1
NVS pmax pmax
comp=N,14nm,1.3s
NVS pmax pmax
comp=E,8.0nm,1.3s
NVS pmax pmax
comp=Z,17nm,1.3s,mb4.8
NVS smax
comp=N,26nm,2.2s
NVS smax
comp=E,13nm,1.7s
GRF Grafenberg Arr 33.29 313 eP P 23 54 45.8 -0.3
GRF pmax pmax
comp=Z,12nm,1.0s,mb4.8
DAVA Damuels 33.52 309⇑ iP P 23 54 46.5 -1.6
comp=Z,22nm,0.7s,mb5.2
SBF Sospel 34.66 302 eP P 23 54 57.8 -0.2
comp=Z,39nm,1.0s,mb5.0
KMBO Kilima Mbogo 34.81 201 P P 23 55 02.3 +2.7
MBDF Montbardon 35.23 304 eP P 23 55 03.6 +0.8
comp=Z,11nm,0.6s,mb4.6
BNI Bardonecchia 35.33 304 eP P 23 55 02.9 -0.9
LPG La Plagne 35.34 305 eP P 23 55 04.1 +0.4
comp=Z,18nm,0.7s,mb4.8
LPL La Plagne 35.35 305 eP P 23 55 04.4 +0.5
comp=Z,46nm,1.0s,mb5.0
ORIF Oris-en-Rattie 35.88 304 eP P 23 55 09.3 +0.9
comp=Z,5.1nm,0.8s,mb4.2
LSA Lhasa 35.94 82 P P 23 55 10.0 +0.9
LSA Lhasa 35.94 82 eP P 23 55 08.7 -0.4
comp=Z,10.0nm,0.8s,mb4.8
CABF La Chapelle 35.95 307 eP P 23 55 08.6 -0.3
comp=Z,32nm,0.9s,mb5.0
HAU Haudompre 36.00 309 eP P 23 55 07.2 -2.2
comp=Z,4.0nm,0.6s,mb4.2
HFS Hagfors 36.62 331 P P 23 55 12.6 -1.9
comp=Z,2.3nm,0.5s,mb4.3,baz=113,slow=11,SNR=4.8
HFS Hagfors 36.62 331 P P 23 55 12.6 -1.9
HFS pmax pmax
comp=Z,2.0nm,0.5s
MEZF Maizieres J'vi 36.94 310 eP P 23 55 16.6 -0.7
comp=Z,29nm,1.1s,mb4.7
SMF Signal de Mont 37.49 306 eP P 23 55 21.0 -0.8
comp=Z,21nm,0.8s,mb4.8
LOR Lormes 37.55 307 eP P 23 55 21.2 -1.2
comp=Z,7.3nm,0.8s,mb4.1
SSF Saint Saulge 37.76 307 eP P 23 55 23.3 -0.9
comp=Z,14nm,0.9s,mb4.4
SHL Shillong 37.78 89 eP P 23 55 24.0 -0.6
NB2 NORSAR Subarra 38.15 331 P P 23 55 24.6 -2.6
comp=Z,3.5nm,0.7s,mb4.2,baz=123,slow=8.6
NOA NORSAR Array B 38.15 331 P P 23 55 24.5 -2.8
comp=Z,0.4nm,0.5s,baz=135,slow=9.5,SNR=8.3
BGF Bois d'Agland 38.16 306 eP P 23 55 26.7 -0.8
comp=Z,6.4nm,0.7s,mb4.1
NAO01 NORSAR Array S 38.18 331 eP P 23 55 26.4 -1.1
TCF Toulx Ste Croi 38.57 306 eP P 23 55 30.5 -0.5
comp=Z,6.5nm,1.0s,mb4.0
RJF Les Rejaudoux 38.99 304 eP P 23 55 34.1 -0.4
EIBI Ibiza 39.21 294 P P 23 55 38.9 +2.5
EPOB Poblet 39.28 298 P P 23 55 37.0 0.0
LFF La Frestale 39.52 303 eP P 23 55 38.3 -0.6
comp=Z,5.0nm,0.6s,mb4.1
EBR Ebro Roquetas 39.74 297 eP P 23 55 42.5 +1.7
ARCES ARCESS Array B 39.91 347 P P 23 55 41.2 -0.6
comp=Z,1.5nm,0.8s,mb3.8,baz=153,slow=12,SNR=4.3
ARCES LR LR 00 15 56.4
comp=Z,57nm,18.3s,MS3.5,baz=341,slow=42
ARCES ARCESS Array B 39.91 347 P P 23 55 41.2 -0.7
ARCES pmax pmax
comp=Z,2.0nm,0.8s
ARCES MLR MLR
comp=Z,57nm,18.3s
ARCES ARCESS Array B 39.91 347 P P 23 55 41.2 -0.7
ARCES LR LR 00 15 56.4
MFF Saint Martin d 40.22 306 eP P 23 55 43.6 -1.1
comp=Z,6.7nm,0.8s,mb4.1
ESAC San Caprasio 40.42 298 P P 23 55 45.7 -0.7
comp=Z,6.9nm,0.5s,mb4.6
EMOS Moguerula 40.51 296 P P 23 55 48.2 +1.1
comp=Z,13nm,0.8s,mb4.6
FLN La Foliniere 40.62 309 eP P 23 55 45.8 -2.1
comp=Z,14nm,0.8s,mb4.3
EALK Alkurruntz 41.13 301 P P 23 55 50.5 -1.7
GTA Gaotai 41.33 65 eP P 23 55 54.8 +0.9
GTA AMB AMB
comp=Z,5.0nm,1.0s,mb4.1
ETOB Tobarra 41.50 294 P P 23 55 58.4 +3.1
comp=Z,7.5nm,0.8s,mb4.4
SGMF Saint Gilles 41.95 308 eP P 23 55 57.9 -0.9
comp=Z,14nm,0.7s,mb4.4
EVIA Vianos 42.24 294 P P 23 56 03.5 +2.1
comp=Z,7.4nm,0.6s,mb4.5
MOY Mondy 42.30 47 eP P 23 56 02.5 +0.8
QUIF Quistinic 42.34 308 eP P 23 56 00.8 -1.2
comp=Z,16nm,0.8s,mb4.4
EHUE Huescar 42.42 293 P P 23 56 04.4 +1.6
comp=Z,3.3nm,0.9s,mb4.0
ROSF Rostrenen 42.43 308 eP P 23 56 01.8 -1.0
EQES Quesada 42.80 293 P P 23 56 09.4 +3.5
comp=Z,5.6nm,0.8s,mb4.3
ESDC Sonseca Array 43.24 296 P P 23 56 10.0 +0.6
comp=Z,6.8nm,1.1s,mb4.3,baz=72,slow=8.3,SNR=10
ESDC Sonseca Array 43.24 296 P P 23 56 10.5 +1.0
comp=Z,1.2nm,0.6s,mb3.8
GUD Guadarrama 43.28 297 P P 23 56 09.9 +0.2
comp=Z,2.9nm,0.6s,mb4.2
ERON Agron 43.50 292 P P 23 56 15.3 +3.7
ZAK Zakamensk 43.62 49 eP P 23 56 11.3 -1.1
ZAK e 23 57 57.5
ELOJ Sierra Loja 43.75 292 P P 23 56 17.2 +3.5
comp=Z,1.5nm,0.6s,mb3.9
ELUQ Luque 43.77 293 P P 23 56 16.9 +3.1
EARI Arriondas 43.83 301 P P 23 56 12.9 -1.3
comp=Z,6.1nm,0.7s,mb4.4
EADA Adamuz 43.92 294 P P 23 56 17.6 +2.7
comp=Z,6.7nm,1.0s,mb4.3
TLY Talaya 43.95 47 eP P 23 56 14.1 -0.9
TLY eS S 00 02 41.7 -3.6
TLY pmax pmax
comp=Z,10.0nm,0.6s,mb4.7
TLY MLR MLR
comp=Z,2μm,15.4s,MS5.0
LZH Lanzhou 44.99 69 eP P 23 56 23.5 -0.2
LZH AMB AMB
comp=Z,22nm,1.5s,mb4.8
LZH LR LR
comp=E,256nm,13.2s
LZH LR LR
comp=Z,397nm,17.2s,MS4.4
ESPR Espera 45.14 292 P P 23 56 28.4 +3.5
SONM Songino Array 45.61 52 P P 23 56 28.0 -0.4
comp=Z,0.9nm,0.8s,mb3.7,baz=270,slow=9.9,SNR=7.8
EMIN Mina Concepcio 45.62 293 P P 23 56 31.3 +2.7
EBAD Badajoz 45.72 295 P P 23 56 31.2 +1.8
MTE Manteigas 45.87 297 eP P 23 56 31.6 +1.0
PVRL Vila Real 45.88 298 eP P 23 56 31.1 +0.5
PCBR Castelo Branco 45.90 296 eP P 23 56 31.0 +0.2
comp=Z,28nm,1.9s,mb4.9
ULN Ulaanbaatar 46.05 52 eP P 23 56 31.5 -0.4
comp=Z,1.5nm,0.4s,mb4.3
CMAR Chiang Mai Arr 46.61 94 P P 23 56 35.6 -1.1
comp=Z,3.4nm,0.8s,mb4.3,baz=292,slow=8.2,SNR=17
CMAR Chiang Mai Arr 46.61 94 P P 23 56 35.6 -1.1
CMAR pmax pmax
comp=Z,3.0nm,0.8s
PTOM Tomar 46.65 296 eP P 23 56 37.3 +0.6
comp=Z,35nm,1.6s,mb5.0
KMI Kunming 47.14 84 eP P 23 56 40.3 -0.5
KMI AMB AMB
comp=Z,13nm,1.0s,mb4.8
GYA Guiyang 49.98 81 P P 23 57 04.0 +1.2
GYA AMB AMB
comp=Z,10.0nm,0.6s,mb5.0
BOD Bodaibo 50.30 39 eP P 23 57 01.5 -3.3
WHN Wuhan 54.94 73 eP P 23 57 43.5 +3.7
DBIC Dimbokro 56.19 255 P P 23 57 47.9 -1.1
comp=Z,3.3nm,0.6s,mb4.5,baz=48,slow=9.2,SNR=6.0
DBIC LR LR 00 24 36.7
comp=Z,203nm,18.1s,MS4.2,baz=16,slow=39
DBIC Dimbokro 56.19 255 P P 23 57 47.9 -1.1
DBIC pmax pmax
comp=Z,3.0nm,0.6s
DBIC MLR MLR
comp=Z,203nm,18.1s
KIC Kosan Boka 56.26 255 eP P 23 57 50.2 +0.6
comp=Z,73nm,0.9s
TIC Toumodi 56.33 255 eP P 23 57 52.0 +1.9
comp=Z,176nm,1.7s
LIC Lamto 56.58 255 eP P 23 57 52.3 +0.5
comp=Z,41nm,0.9s,mb5.5
TIXI Tiksi 56.76 22 eP P 23 57 51.2 -1.2
TIXI pmax pmax
comp=Z,4.0nm,1.1s,mb4.4
TSUM Tsumeb 59.22 215 P P 23 58 08.7 -1.6
comp=Z,2.0nm,0.8s,mb4.2,baz=7.6,slow=15,SNR=3.7
CN2 Changchun 59.36 55 eP P 23 58 10.5 -0.5
CN2 AMB AMB
comp=Z,10.0nm,0.6s,mb5.0
CN2 LR LR
comp=N,200nm,21.0s,MS4.4
CN2 LR LR
comp=E,200nm,21.0s,MS4.4
CN2 LR LR
comp=Z,200nm,14.0s
LBTB Lobatse 60.98 205 eP P 23 58 22.8 +0.4
BILL Bilibino 69.96 21 eP P 23 59 16.8 -2.5
BILL pmax pmax
comp=Z,10.0nm,2.2s,mb4.4
COLA College 82.55 7 eP P 00 00 26.6 -3.6
ILAR Eielson Array 82.75 7 P P 00 00 31.4 +0.2
comp=Z,1.1nm,0.9s,mb3.9,baz=336,slow=3.8,SNR=10
ILAR Eielson Array 82.75 7 P P 00 00 31.5 +0.3
ILAR pmax pmax
comp=Z,1.0nm,0.9s
YKA Yellowknife Ar 84.96 353 P P 00 00 42.7 +0.3
comp=Z,0.8nm,0.7s,mb4.0,baz=10,slow=5.3,SNR=12
YKA Yellowknife Ar 84.96 353 P P 00 00 42.7 +0.3
YKA pmax pmax
comp=Z,1.0nm,0.7s
YKA Yellowknife Ar 84.96 353 P P 00 00 42.7 +0.3
WRAB Tennant Creek 96.39 109 P P 00 01 35.5 -1.6
QSPA South Pole Qui 121.81 180 ePKP PKPdf 00 07 03.4 -0.4

NAO ***30*** *23:58:51.8± 1.3, 59.76N× 24.36E, ML2.6*
IDC ***30*** *23:58:51.3± 3.0, 59.72N× 24.61E, mb1 3.5/3, mb1mx3.2/20, ML3.3/3, Error ellipse: s-maj=38.8km s-min=9.6km az=152.0*
HEL ***30*** *23:58:52.4± 0.1, 59.75N× 24.46E, ML2.3, ML1.4(UPP), ML2.6(NAO), Explosion*
BER ***30*** *23:58:57.0± 0.7, 59.80N× 25.05E, h6km± 9km, ML2.6(NAO)*

ISC 30 23:58:49.5±0.6, 59.73N±0.04× 24.17E±0.07, n13, σ1§23/24, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MEF	**Metsahovi**	**0.50**	**13**	*e*P	**Pg**	**23 59 00.5**	**+1.0**
MEF				*e*S	**Sg**	**23 59 06.8**	**+0.7**
VSU	**Vasula**	**1.84**	**133**	*e*P	**Pn**	**23 59 23.4**	**+0.8**
VSU				*e*SN	**Sn**	**23 59 46.5**	**-0.3**
VJF	**Virojoki**	**1.88**	**63**	*e*P	**Pn**	**23 59 23.1**	**0.0**
VJF				*e*S	**Sn**	**23 59 45.5**	**-2.3**
FIA0	**FINESS Array S**	**1.96**	**28**	*e*PN	**Pn**	**23 59 25.8**	**+1.5**
FIA0				*e*SN	**Sn**	**23 59 49.9**	**0.0**
FIA0				MSG		23 59 53.1	
	comp=Z,29nm,0.2s						
FIA0	**FINESS Array S** baz=198,slow=16	**1.96**	**28**	Pn	**Pn**	**23 59 25.9**	**+1.7**
FIA0				Lg		23 59 50.0	
	baz=197,slow=37						
FINES	**FINESS Array B**	**1.96**	**28**	Pn	**Pn**	**23 59 25.7**	**+1.5**
	comp=Z,7.9nm,0.3s,baz=196,slow=363						
FINES				Sn	**Sn**	**23 59 49.8**	**-0.1**
	comp=Z,10nm,0.3s,baz=189,slow=27,SNR=29						
KEF	**Keuruu**	**2.47**	**8**	*e*PB	**Pb**	**23 59 34.6**	**+0.2**
KEF				*e*SB	**Sb**	**00 00 05.8**	**+0.3**
KEF				MSG		00 00 07.9	
	comp=Z,12nm,0.2s						
SUF	**Sumiainen**	**3.15**	**17**	*e*P	**Pn**	**23 59 42.9**	**+1.6**
SUF				*e*SB	**Sb**	**00 00 24.2**	**-1.0**
HFS	**Hagfors** baz=84,slow=16	**5.29**	**279**	Pn	**Pn**	**00 00 12.8**	**+1.2**
HFS				Sn	**Sn**	**00 01 14.5**	**+0.3**
	baz=106,slow=37						
HFS				Lg		00 01 35.7	
	baz=91,slow=37						
HFS	**Hagfors**	**5.29**	**279**	Pn	**Pn**	**00 00 12.7**	**+1.1**
	comp=Z,0.2nm,0.3s,baz=75,slow=16,SNR=67						
HFS				Sn	**Sn**	**00 01 14.5**	**+0.3**
	comp=Z,0.2nm,0.3s,baz=94,slow=22,SNR=7.2						
HFS				Lg		00 01 36.8	
	comp=Z,0.4nm,0.3s,baz=95,slow=31,SNR=7.5						
NOA	**NORSAR Array B**	**6.56**	**287**	Pn	**Pn**	**00 00 29.3**	**-0.3**
	comp=Z,0.4nm,0.3s,baz=101,slow=13,SNR=4.4						
NOA				Sn	**Sn**	**00 01 43.8**	**-2.2**
	comp=Z,0.4nm,0.3s,baz=233,slow=15,SNR=2.4						
NOA				Lg		00 02 16.3	
	comp=Z,0.6nm,0.3s,baz=127,slow=2.2,SNR=3.3						
ARA0	**ARCESS Array S** baz=172,slow=14	**9.86**	**3**	Pn	**P**	**00 01 12.2**	**-3.2**
ARA0				Sn	**Sn**	**00 03 01.7**	**-6.4**
	baz=182,slow=22						
ARCES	**ARCESS Array B**	**9.86**	**3**	Pn	**P**	**00 01 12.2**	**-3.1**
	comp=Z,0.6nm,0.3s,baz=186,slow=11,SNR=64						

TRN ***31*** *00:03:37.0, 12.73N× 60.71W, h32km, MD3.8, Md3.5(FDF)*
TRN Felt at Hopewell, St. Vincent. .
NEIC ***31*** *00:03:38.6± 1.6, 12.88N× 61.04W, h84km± 12km, mb4.4/6, Error ellipse: s-maj=17.3km s-min=10.6km az=96.0*
IDC ***31*** *00:03:40.1± 1.4, 12.97N× 61.06W, h94km± 8km, mb3.8/11, mb1 4.1/14, mb1mx3.8/26, Error ellipse: s-maj=20.7km s-min=9.0km az=122.0*

ISC 31 00:03:37.3±0.4, 12.77N±0.02× 60.92W±0.06, h93km±2km, n61, σ1§01/84, mb4.2/15, 4C-9D, Windward Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GRCU	**Cariacou**	**0.60**	**241**	*e*P	**P**	**00 03 53.3**	**-0.1**
SVB	**Belmont**	**0.60**	**327**	*e*P	**P**	**00 03 53.5**	**+0.1**
SVB				*e*S	**S**	**00 04 05.2**	**-0.1**
SSV	**Crater Summit**	**0.62**	**335⇑**	*i*P	**P**	**00 03 53.6**	**0.0**
SSV				*e*S	**S**	**00 04 05.2**	**-0.4**
SVV	**Soufriere Volc**	**0.62**	**332⇓**	*i*P	**P**	**00 03 53.8**	**+0.2**
GRIC	**Isle de Caille**	**0.81**	**234**	*e*P	**P**	**00 03 55.4**	**0.0**
GRIC				*e*S	**S**	**00 04 08.9**	**+0.1**
GRSS	**Sisters**	**0.82**	**236⇑**	*i*P	**P**	**00 03 55.3**	**-0.3**
GRSS				*e*S	**S**	**00 04 08.9**	**-0.1**
GRHS	**Sauteurs**	**0.89**	**233**	*e*P	**P**	**00 03 56.0**	**-0.3**
GRHS				*e*S	**S**	**00 04 09.9**	**-0.4**
MCLT	**Moule a Chique**	**0.94**	**359⇑**	*e*P	**P**	**00 03 55.9**	**-0.9**
MCLT				*e*S	**S**	**00 04 10.0**	**-1.3**
GRW	**Mount Saint Ca**	**0.94**	**230**	*e*P	**P**	**00 03 57.7**	**+0.9**
GRW				*e*S	**S**	**00 04 10.1**	**-1.3**
SLB	**Belfond**	**1.06**	**354⇑**	*i*P	**P**	**00 03 57.5**	**-0.7**
SLB				*e*S	**S**	**00 04 12.8**	**-1.1**
SLPE	**Piton Saint Es**	**1.07**	**356⇓**	*i*P	**P**	**00 03 57.5**	**-0.9**
SLPE				*e*S	**S**	**00 04 08.5**	**-5.6**
SLTA	**Morne Tabac**	**1.10**	**354**	*e*P	**P**	**00 03 58.0**	**-0.7**
SLTA				*e*S	**S**	**00 04 14.0**	**-0.8**
SLW	**Petit Monier**	**1.25**	**359**	*e*P	**P**	**00 03 59.6**	**-1.0**
SLW				*e*S	**S**	**00 04 16.7**	**-1.2**
TPR	**Prospect**	**1.58**	**175**	*e*P	**P**	**00 04 03.3**	**-1.3**
BOT	**Bacolet**	**1.60**	**173**	*e*P	**P**	**00 04 04.8**	**-0.2**
BIM	**Bigot**	**1.75**	**355⇓**	*i*P	**P**	**00 04 06.9**	**+0.1**
BIM				*e*S	**S**	**00 04 30.1**	**+1.5**
MVM	**Montagne Vaucl**	**1.78**	**1⇓**	*i*P	**P**	**00 04 06.9**	**-0.3**
FDF	**Fort de France**	**1.97**	**353⇓**	*e*P	**P**	**00 04 09.9**	**+0.2**
FDF				*e*S	**S**	**00 04 33.9**	**+0.3**
CRM	**Caravelle**	**1.98**	**0⇓**	*i*P	**P**	**00 04 09.7**	**-0.2**
CRM				*e*S	**S**	**00 04 33.7**	**0.0**
TRN	**Trinidad (W)**	**2.16**	**193**	*e*P	**P**	**00 04 12.7**	**+0.4**
TRN				*e*S	**S**	**00 04 37.8**	**-0.4**
TCE	**Chacachacare**	**2.21**	**202**	*e*P	**P**	**00 04 13.6**	**+0.5**
TCE				*e*S	**S**	**00 04 41.1**	**+1.6**
TBH	**Brigand Hill**	**2.27**	**184**	*e*P	**P**	**00 04 14.7**	**+0.8**
TBH				*e*S	**S**	**00 04 41.1**	**+0.1**
TPP	**Pointe-a-Pierr**	**2.49**	**192**	*e*P	**P**	**00 04 18.4**	**+1.5**
DSTT	**Stowe**	**2.49**	**351**	*e*P	**P**	**00 04 18.7**	**+1.7**
DSTT				*e*S	**S**	**00 04 48.8**	**+2.3**
MDN	**Morne-Daniel**	**2.58**	**350**	*e*P	**P**	**00 04 20.0**	**+1.8**
MDN				*e*S	**S**	**00 04 51.7**	**+3.1**
BBL	**Barber's Block**	**2.80**	**349**	*e*P	**P**	**00 04 22.0**	**+0.8**
BBL	**Barber's Block**	**2.80**	**349**	*e*P	**P**	**00 04 22.8**	**+1.6**
BBL				*e*S	**S**	**00 04 53.4**	**-0.6**
BBL				*e*S	**S**	**00 04 55.0**	**+1.0**
DWS	**Wesley**	**2.81**	**352**	*e*P	**P**	**00 04 22.6**	**+1.3**
DWS				*e*S	**S**	**00 04 55.7**	**+1.3**
PAG	**Le Parnasse**	**3.33**	**347⇓**	*e*P	**P**	**00 04 29.1**	**+0.6**
DEG	**La Desirade**	**3.53**	**358⇓**	*e*P	**P**	**00 04 30.3**	**-1.0**
DEG				*e*S	**S**	**00 05 10.3**	**-1.7**
SEG	**Port Louis**	**3.66**	**351⇓**	*e*P	**P**	**00 04 33.5**	**+0.4**
BPA	**Boggy Peak**	**4.35**	**348**	*e*P	**P**	**00 04 43.8**	**+1.3**
BPA				*e*S	**S**	**00 05 34.5**	**+2.1**
PCRV	**Puerto La Cruz** 7.6nm,0.3s,baz=75,slow=2.6,SNR=35	**4.46**	**235**	P	**P**	**00 04 44.0**	**0.0**
PCRV				S	**S**	**00 05 38.2**	**+3.1**

baz=32,slow=22,SNR=3.8
CPB Codrington 4.92 350 *e*P **P** **00 04 50.7 +0.3**
SJG San Juan 7.33 317 P **P** **00 05 20.1 -3.3**
1.7nm,0.3s,baz=129,slow=13,SNR=3.6
SJG S **S** **00 06 40.0 -5.6**
3.0nm,0.3s,baz=311,slow=21,SNR=7.1
SJG San Juan 7.33 317 *e*P **P** **00 05 19.6 -3.8**
SJG S **S** **00 06 40.0 -5.6**
SDV Santo Domingo 10.29 249 P **P** **00 06 03.1 -0.5**
0.4nm,0.3s,slow=7.1,SNR=3.6
OTAV Otavalo 21.38 236 *e*P **P** **00 08 18.6 -0.3**
JTS JuntasAbangare 23.67 267 P **P** **00 08 43.0 +1.6**
TXAR Lajitas Array 42.90 299 P **P** **00 11 27.8 -0.6**
0.4nm,0.6s,mb3.4,baz=118,slow=9.0,SNR=7.7
TXAR PcP PcP 00 13 18.7 +0.4
0.4nm,0.6s,baz=117,slow=5.9,SNR=6.1
MNTX Cornudas Mount 44.90 302 *e*P **P** **00 11 44.1 -0.5**
1.9nm,0.5s,mb4.1
ULM Lac du Bonnet 47.03 330 P **P** **00 11 59.2 -1.9**
5.0nm,0.4s,mb4.6,baz=139,slow=7.2,SNR=5.8
ISCO Idaho Springs 47.60 313 *e*P **P** **00 12 04.8 -1.0**
2.7nm,0.8s,mb4.1
BW06 Boulder Array 51.44 315 *e*P **P** **00 12 35.1 -0.1**
PDAR Pinedale Array 51.44 315 P **P** **00 12 34.9 -0.3**
7.7nm,0.5s,mb5.0,baz=116,slow=9.9,SNR=61
HWUT Hardware Ranch 52.47 313 *e*P **P** **00 12 42.4 -0.5**
4.3nm,0.6s,mb4.7
HLID Hailey 55.06 315 *e*P **P** **00 13 01.6 -0.2**
4.9nm,0.6s,mb4.7
NVAR Mina Array Bea 56.71 308 P **P** **00 13 13.0 -0.7**
1.4nm,0.8s,mb4.0,baz=112,slow=5.6,SNR=5.0
NEW Newport 58.27 319 P **P** **00 13 24.1 -0.4**
1.9nm,0.6s,mb4.3,baz=164,slow=10,SNR=4.7
NEW Newport 58.27 319 *e*P **P** **00 13 23.8 -0.7**
1.5nm,0.6s,mb4.2
YBH Yreka Blue Hor 60.61 311 P **P** **00 13 39.5 -1.2**
2.3nm,0.8s,mb4.3,baz=110,slow=4.4,SNR=4.1
YKA Yellowknife Ar 62.44 335 P **P** **00 13 51.1 -1.6**
1.8nm,0.5s,mb4.4,baz=108,slow=7.3,SNR=43
INK Inuvik 71.80 338 P **P** **00 14 50.6 -0.7**
2.7nm,0.6s,mb4.2,baz=53,slow=7.8,SNR=3.7
INK Inuvik 71.80 338 *e*P **P** **00 14 50.5 -0.9**
9.3nm,1.3s,mb4.5
ILAR Eielson Array 76.83 334 P **P** **00 15 20.0 -0.4**
0.6nm,0.6s,mb3.5,baz=99,slow=4.3,SNR=6.3
ARCES ARCESS Array B 76.88 21 P **P** **00 15 22.0 +1.4**
1.7nm,0.8s,mb3.8,baz=270,slow=8.5,SNR=4.1
BRTR Keskin Array B 85.41 50 P **P** **00 16 08.3 +2.5**
0.3nm,0.8s,mb3.3,baz=333,slow=8.3,SNR=3.7
STKA Stephens Creek 151.90 224 PKPbc PKPdf 00 23 23.5 +8.2
3.7nm,0.9s,baz=124,slow=5.6,SNR=4.3
STKA Stephens Creek 151.90 224 PKPbc PKPdf 00 23 23.5 +8.2
ASAR Alice Springs 162.25 230 PKP PKPdf 00 23 30.5 +2.3
0.5nm,0.8s,baz=77,slow=0.9,SNR=3.9
WRA Warramunga Arr 163.72 242 PKP PKPdf 00 23 31.6 +1.9
0.8nm,1.0s,baz=181,slow=1.8,SNR=5.5

*IDC **31** 00:04:27.1±2.9,31.16S×177.08W,mb3.7/2,mb1 4.0/3, mb1mx3.8/14,ML3.5/1,Error ellipse: s-maj=72.4km s-min=35.6km az=120.0*
ISC 31 00:04:24.8±5.8,31.4S±0.3×176.3W±0.9,h33km,n4, σ0§30/4,mb3.7/2,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
URZ	**Urewera**	**8.72**	**217**	Pn	**P**	**00 06 31.4**	**0.0**
	0.6nm,0.3s,baz=193,slow=22,SNR=2.5						
URZ				Sn	**Sn**	**00 08 09.8**	**0.0**
	1.9nm,0.3s,baz=103,slow=22,SNR=7.0						
ASAR	**Alice Springs**	**44.55**	**267**	P	**P**	**00 12 35.5**	**+0.2**
	0.6nm,0.8s,mb3.5,baz=107,slow=7.3,SNR=5.5						
WRA	**Warramunga Arr**	**45.63**	**272**	P	**P**	**00 12 43.8**	**-0.2**
	0.7nm,0.3s,mb4.0,baz=111,slow=8.0,SNR=19						
FINES	**FINESS Array B**	**146.62**	**341**	PKPbc	PKPbc	00 24 07.5	+5.5
	1.4nm,0.6s,baz=72,slow=4.4,SNR=18						

*NEIC **31** 00:39:13.6,43.08N×0.31W,h2km,ML2.7(LDG), ML2.5(STR),MN2.0(MDD),After LDG.*
*LDG **31** 00:39:13.6±0.1,43.08N×0.31W,h2km,Md2.7/2,Ml2.7/13, Error ellipse: s-maj=1.6km s-min=1.3km az=165.0*
*STR **31** 00:39:13.7±0.1,43.02N×0.33W,h5km±1km,Ml2.5,Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
*MDD **31** 00:39:14.0±0.2,43.07N×0.31W,h5km±4km,mbLg1.9/10, Error ellipse: s-maj=2.9km s-min=1.7km az=6.0,PRXIMO*
ISC 31 00:39:11.7±0.3,43.19N±0.02×0.26W±0.02,h2km±3km,n50, σ1§34/96,Pyrenees

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
REYF	**Montagne du Re**	**0.15**	**220**	Pg	**Pg**	**00 39 15.4**	**+0.7**
REYF				Sg	**Sg**	**00 39 16.5**	**-0.3**
REYF	**Montagne du Re**	**0.15**	**220**	P	**Pg**	**00 39 15.4**	**+0.7**
REYF				S	**Sg**	**00 39 16.9**	**+0.1**
ATE	**Arette**	**0.34**	**253**	P	**Pg**	**00 39 19.0**	**+0.5**
ATE				S	**Sg**	**00 39 23.3**	**+0.3**
ETSF	**Etsaut**	**0.36**	**218**	*e*Pg	**Pg**	**00 39 18.4**	**-0.5**
	SNR=1.0						
ETSF				*e*Sg	**Sg**	**00 39 21.7**	**-2.0**
	112nm,0.3s,SNR=1.0						
VIEF	**Viey**	**0.37**	**145**	Pg	**Pg**	**00 39 19.3**	**+0.3**
VIEF				Sg	**Sg**	**00 39 23.6**	**-0.3**
VIEF	**Viey**	**0.37**	**145**	P	**Pg**	**00 39 19.4**	**+0.4**
VIEF				S	**Sg**	**00 39 23.4**	**-0.5**
FDAF	**Les Forges d'A**	**0.43**	**212**	P	**Pg**	**00 39 19.6**	**-0.7**
FDAF				S	**Sg**	**00 39 24.0**	**-2.0**
EPF	**Esparros**	**0.47**	**109**	*e*Pg	**Pg**	**00 39 22.6**	**+1.6**
	SNR=1.0						
EPF				*e*Sg	**Sg**	**00 39 29.3**	**+2.1**
	23nm,0.2s						
ORDF	**Ordiarp**	**0.49**	**274**	Pg	**Pg**	**00 39 22.5**	**+0.9**
ORDF				Sg	**Sg**	**00 39 30.2**	**+2.0**
ORDF	**Ordiarp**	**0.49**	**274**	P	**Pg**	**00 39 22.8**	**+1.2**
ORDF				S	**Sg**	**00 39 30.1**	**+1.9**
LARF	**Larrau**	**0.55**	**255**	Pg	**Pg**	**00 39 23.0**	**+0.2**
LARF				Sg	**Sg**	**00 39 30.1**	**0.0**
LARF	**Larrau**	**0.55**	**255**	P	**Pg**	**00 39 23.1**	**+0.4**
LARF				S	**Sg**	**00 39 30.4**	**+0.3**
RESF	**Ens**	**0.58**	**130**	Pg	**Pg**	**00 39 23.7**	**+0.4**
RESF				Sg	**Sg**	**00 39 31.2**	**+0.2**
RESF	**Ens**	**0.58**	**130**	P	**Pg**	**00 39 23.8**	**+0.5**
RESF				S	**Sg**	**00 39 31.2**	**+0.2**
OSSF	**Osses**	**0.74**	**276**	Pg	**Pg**	**00 39 27.6**	**+1.2**
OSSF	**Osses**	**0.74**	**276**	P	**Pg**	**00 39 27.6**	**+1.2**
OSSF				S	**Sg**	**00 39 37.9**	**+1.6**
MELF	**Melles**	**0.81**	**112**	Pg	**Pg**	**00 39 29.1**	**+1.2**
MELF				Sg	**Sg**	**00 39 40.0**	**+1.3**
MELF	**Melles**	**0.81**	**112**	P	**Pg**	**00 39 28.5**	**+0.6**
MELF				S	**Sg**	**00 39 40.1**	**+1.4**
EALK	**Alkurruntz**	**0.91**	**273**	Pg	**Pg**	**00 39 30.4**	**+0.5**
	0.6nm,0.1s,SNR=11						
EALK				Lg		00 39 42.3	
	5.9nm,0.2s,SNR=5.0						
EALK	**Alkurruntz**	**0.91**	**273**	Pg	**Pg**	**00 39 30.4**	**+0.5**
EALK				Lg		00 39 42.4	
MLS	**Moulis**	**1.02**	**102**	S	**Sb**	**00 39 46.6**	**+1.2**
EGRA	**Graus**	**1.08**	**157**	Pg	**Pg**	**00 39 32.5**	**-0.7**
	0.1nm,0.1s,SNR=7.9						
SALF	**Salau**	**1.15**	**111**	Pg	**Pg**	**00 39 35.7**	**+1.1**
SALF	**Salau**	**1.15**	**111**	P	**Pb**	**00 39 35.9**	**+2.0**
SALF				S	**Sb**	**00 39 50.4**	**+1.3**
ESAC	**San Caprasio**	**1.47**	**186**	Pg	**Pg**	**00 39 39.6**	**-1.4**
	16nm,0.2s,SNR=14						
ESAC				Lg		00 39 57.9	
	19nm,0.2s,SNR=5.0						
ESAC	**San Caprasio**	**1.47**	**186**	Pg	**Pg**	**00 39 39.4**	**-1.7**
ESAC				Lg		00 39 58.2	
MTLF	**Montolieu**	**1.82**	**84**	*e*Pn	**Pn**	**00 39 44.2**	**-0.1**
	SNR=1.0						
MTLF				*e*Pg	**Pg**	**00 39 48.2**	**+0.2**
MTLF				*e*Sg	**Sg**	**00 40 12.8**	**+0.6**
	5.6nm,0.2s,SNR=1.0						
VALF	**Valcebollere**	**1.85**	**114**	Pg	**Pg**	**00 39 48.7**	**0.0**
LFF	**La Frestale**	**1.90**	**22**	*e*Pg	**Pg**	**00 39 51.1**	**+1.5**
LFF				*e*Sg	**Sg**	**00 40 17.1**	**+2.2**
	16nm,0.3s,SNR=1.0						
EPOB	**Poblet**	**2.08**	**151**	Pg	**Pg**	**00 39 50.6**	**-2.7**
	0.6nm,0.1s,SNR=8.3						
EPOB				Lg		00 40 16.6	
	8.6nm,0.3s,SNR=5.0						
EPOB	**Poblet**	**2.08**	**151**	Pg	**Pg**	**00 39 50.6**	**-2.7**
EPOB				Sn	**Sn**	**00 40 12.9**	**-2.1**
EPOB				Lg		00 40 16.6	
CAF	**Calviac**	**2.42**	**43**	*e*Pn	**Pn**	**00 39 52.9**	**0.0**
	SNR=1.0						
CAF				*e*Pg	**Pg**	**00 40 00.5**	**+0.5**
CAF				*e*Sn	**Sn**	**00 40 24.6**	**+1.2**
	SNR=1.0						
CAF				*e*Sg	**Sg**	**00 40 33.3**	**+1.1**
	8.8nm,0.2s,SNR=1.0						
EJON	**La Jonquera**	**2.43**	**107**	Pn	**Pn**	**00 39 54.2**	**+1.2**
	0.2nm,0.1s,SNR=4.0						
EJON				Pg	**Pg**	**00 39 59.2**	**-1.0**
	0.5nm,0.2s,SNR=7.9						
EJON				Sn	**Sn**	**00 40 23.4**	**-0.4**
	0.3nm,0.1s,SNR=4.0						
EJON				Lg		00 40 32.5	
	3.9nm,0.3s,SNR=7.9						
EJON	**La Jonquera**	**2.43**	**107**	Pn	**Pn**	**00 39 56.7**	**+3.6**
EJON				Sn	**Sn**	**00 40 23.1**	**-0.7**
EJON				Lg		00 40 32.9	
RJF	**Les Rejaudoux**	**2.47**	**30**	*e*Pg	**Pg**	**00 40 01.3**	**+0.2**
	SNR=1.0						
RJF				*e*Sg	**Sg**	**00 40 34.7**	**+0.6**
	8.7nm,0.3s,SNR=1.0						
EMOS	**Mosqueruela**	**2.82**	**183**	Pg	**Pg**	**00 40 03.4**	**-4.7**
	0.2nm,0.1s,SNR=7.9						
EMOS				Sn	**Sn**	**00 40 30.3**	**-3.5**
	0.3nm,0.1s,SNR=7.9						
EMOS	**Mosqueruela**	**2.82**	**183**	Pn	**Pn**	**00 39 59.2**	**+0.5**
EMOS				Pg	**Pg**	**00 40 03.4**	**-4.7**
EMOS				Sn	**Sn**	**00 40 30.3**	**-3.5**
EMOS				Lg		00 40 40.5	
LASF	**Ste Croix**	**3.12**	**72**	*e*Pn	**Pn**	**00 40 03.0**	**+0.1**
	SNR=1.0						
LASF				*e*Pg	**Pg**	**00 40 12.8**	**-1.2**
LASF				*e*Sg	**Sg**	**00 40 52.5**	**-3.1**
	3.7nm,0.2s,SNR=1.0						
LBL	**Lubilhac**	**3.25**	**50**	Pn	**Pn**	**00 40 06.5**	**+1.8**
MFF	**Saint Martin d**	**3.42**	**1**	*e*Pn	**Pn**	**00 40 07.0**	**-0.1**
	SNR=1.0						
MFF				*e*Pg	**Pg**	**00 40 18.6**	**-1.4**
MFF				*e*Sg	**Sg**	**00 41 02.8**	**-2.7**
	2.8nm,0.2s,SNR=1.0						
PYM	**Petit Puy Mans**	**3.47**	**41**	Pn	**Pn**	**00 40 08.7**	**+0.8**
TCF	**Toulx Ste Croi**	**3.57**	**29**	*e*Pg	**Pg**	**00 40 21.3**	**-1.6**
	SNR=1.0						
TCF				*e*Sn	**Sn**	**00 40 49.7**	**-2.9**
	SNR=1.0						
TCF				*e*Sg	**Sg**	**00 41 07.7**	**-2.8**
	3.6nm,0.2s,SNR=1.0						
VIVF	**Saint-Julien-l**	**3.93**	**63**	*e*Pn	**Pn**	**00 40 14.3**	**-0.1**
VIVF				*e*Pg	**Pg**	**00 40 28.1**	**-2.1**
VIVF				*e*Sg	**Sg**	**00 41 19.4**	**-3.2**
	2.6nm,0.3s,SNR=1.0						
BGF	**Bois d'Agland**	**4.03**	**32**	*e*Pn	**Pn**	**00 40 15.2**	**-0.6**
BGF				*e*Pg	**Pg**	**00 40 30.4**	**-1.8**
BGF				*e*Sg	**Sg**	**00 41 23.2**	**-2.7**
	10nm,0.3s						
EIBI	**Ibiza**	**4.33**	**163**	Pn	**Pn**	**00 40 21.0**	**+0.9**
EIBI				Sn	**Sn**	**00 41 04.2**	**-7.6**
SMF	**Signal de Mont**	**4.52**	**39**	*e*Sg	**Sg**	**00 41 38.9**	**-3.4**
	2.1nm,0.4s						
SSF	**Saint Saulge**	**4.70**	**33**	*e*Pg	**Pg**	**00 40 42.8**	**-2.8**
SSF				*e*Sg	**Sg**	**00 41 44.7**	**-3.6**
	1.6nm,0.3s						
ECAL	**Calabor**	**4.94**	**258**	Pn	**Pn**	**00 40 28.5**	**-0.3**
	0.4nm,0.3s,baz=63,slow=7.9,SNR=7.9						
ECAL				Sn	**Sn**	**00 41 22.5**	**-4.9**
	1.1nm,0.3s,SNR=7.9						
ECAL	**Calabor**	**4.94**	**258**	Pn	**Pn**	**00 40 28.5**	**-0.3**
ECAL				Sn	**Sn**	**00 41 21.8**	**-5.6**
LOR	**Lormes**	**5.01**	**34**	*e*Sg	**Sg**	**00 41 54.4**	**-4.2**
	1.9nm,0.4s						

*NEIC **31** 00:42:30.9±1.9,36.90N×3.54E,h5km±12km,ML2.0(ALG), Error ellipse: s-maj=20.5km s-min=10.2km az=116.0*
*MDD **31** 00:42:31.4±1.8,36.93N×3.51E,mb3.5/9,Error ellipse: s-maj=19.7km s-min=7.9km az=101.0,PRXIMO*
ISC 31 00:42:32.5±1.1,37.05N±0.04×3.26E±0.09,h10km,n23, σ0§90/35,Western Mediterranean Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ABA	**Alger-Bouzarea**	**0.31**	**216**	P	**Pg**	**00 42 39.0**	**0.0**
EMHD	**Djebel Mahouad**	**0.89**	**196**	P	**Pb**	**00 42 47.0**	**-2.5**
ECHF	**Ech Chlef**	**1.79**	**241**	P	**Pn**	**00 43 03.0**	**-0.7**
EIBI	**Ibiza**	**2.48**	**323**	P	**Pn**	**00 43 14.2**	**+0.5**
	1.1nm,0.1s,SNR=13						
EIBI	**Ibiza**	**2.48**	**323**	P	**Pn**	**00 43 15.3**	**+1.6**
				S	**Sn**	**00 43 44.4**	**0.0**
EBEN	**Beniarda**	**3.21**	**302**	P	**Pn**	**00 43 24.7**	**+0.6**
	0.2nm,0.1s,SNR=9.7						
EBEN	**Beniarda**	**3.21**	**302**	P	**Pn**	**00 43 24.6**	**+0.6**
EBEN				S	**Sn**	**00 44 01.6**	**-1.2**
ETOB	**Tobarra**	**4.13**	**294**	P	**Pn**	**00 43 37.9**	**+0.8**
	0.6nm,0.2s,SNR=7.2						
ETOB				S	**Sn**	**00 44 26.2**	**+0.3**
	0.5nm,0.2s						
ETOB	**Tobarra**	**4.13**	**294**	P	**Pn**	**00 43 37.9**	**+0.9**
ETOB				S	**Sn**	**00 44 26.2**	**+0.3**
EMOS	**Mosqueruela**	**4.41**	**320**	P	**Pn**	**00 43 41.8**	**+0.7**
	0.2nm,0.1s,SNR=6.9						
EMOS				S	**Sn**	**00 44 33.0**	**-0.2**
	0.3nm,0.2s						
EMOS	**Mosqueruela**	**4.41**	**320**	P	**Pn**	**00 43 41.9**	**+0.8**
EMOS				S	**Sn**	**00 44 32.6**	**-0.5**
EPOB	**Poblet**	**4.62**	**339**	P	**Pn**	**00 43 44.3**	**+0.3**
	0.2nm,0.1s,SNR=7.9						
EPOB				S	**Sn**	**00 44 36.4**	**-1.9**
	0.3nm,0.2s,SNR=4.0						
EPOB	**Poblet**	**4.62**	**339**	P	**Pn**	**00 43 44.4**	**+0.4**
EPOB				S	**Sn**	**00 44 35.6**	**-2.8**
EQES	**Quesada**	**5.10**	**280**	P	**Pn**	**00 43 51.4**	**+0.6**
	0.1nm,0.2s,SNR=4.0						
EQES				S	**Sn**	**00 44 50.0**	**-0.4**
	0.4nm,0.3s						
EQES	**Quesada**	**5.10**	**280**	P	**Pn**	**00 43 51.4**	**+0.6**
EQES				S	**Sn**	**00 44 50.0**	**-0.4**
EJON	**La Jonquera**	**5.40**	**357**	P	**Pn**	**00 43 55.0**	**0.0**
	0.6nm,0.2s,SNR=7.8						
EJON				S	**Sn**	**00 44 53.4**	**-4.5**
	0.2nm,0.1s,SNR=7.9						
EJON	**La Jonquera**	**5.40**	**357**	P	**Pn**	**00 43 55.0**	**0.0**
EJON				S	**Sn**	**00 44 52.7**	**-5.3**
ELOJ	**Sierra Loja**	**5.93**	**273**	P	**Pn**	**00 44 03.5**	**+0.9**
ESDC	**Sonseca Array**	**6.25**	**297**	P	**Pn**	**00 44 07.1**	**0.0**
	0.9nm,0.2s,baz=109,slow=13,SNR=4.0						
ELIJ	**Sierra de Lija**	**6.92**	**271**	P	**Pn**	**00 44 16.9**	**+0.4**
EMIN	**Mina Concepcio**	**7.94**	**278**	P	**Pn**	**00 44 31.8**	**+1.0**
ECAL	**Calabor**	**9.14**	**305**	P	**P**	**00 44 46.6**	**-0.9**
	1.2nm,0.4s,SNR=7.9						
ECAL	**Calabor**	**9.14**	**305**	P	**P**	**00 44 46.8**	**-0.7**

*NAO **31** 00:44:55.8±1.3,59.78N×24.30E,ML2.3*
*HEL **31** 00:44:56.6±0.2,59.78N×24.48E,ML2.0,ML2.1(UPP), ML2.3(NAO),Explosion*
*BER **31** 00:44:56.9±6.0,59.77N×24.34E,ML2.3(NAO)*
*IDC **31** 00:44:57.6±3.4,59.86N×24.37E,mb1 3.1/2, mb1mx2.8/19,ML3.0/2,Error ellipse: s-maj=39.0km s-min=8.5km az=145.0*
ISC 31 00:44:53.6±0.6,59.75N±0.04×24.25E±0.08,n18,σ1§42/28, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MEF	**Metsahovi**	**0.47**	**9**	*e*P	**Pg**	**00 45 04.2**	**+1.2**
MEF				*e*S	**Sg**	**00 45 09.6**	**+0.3**
VSU	**Vasula**	**1.82**	**134**	*e*P	**Pn**	**00 45 27.1**	**+0.7**
VSU				*e*S	**Sn**	**00 45 50.8**	**+0.2**
VSU	**Vasula**	**1.82**	**134**	Pn	**Pn**	**00 45 27.3**	**+0.9**
VSU				Lg		00 45 52.9	
VJF	**Virojoki**	**1.83**	**63**	*e*P	**Pn**	**00 45 26.9**	**+0.3**
VJF				*e*S	**Sn**	**00 45 49.5**	**-1.3**
FIA0	**FINESS Array S**	**1.92**	**27**	*e*P	**Pn**	**00 45 29.6**	**+1.8**
FIA0				*e*SN	**Sn**	**00 45 53.9**	**+0.8**
FIA0				MSG		00 45 56.7	
	comp=Z,11nm,0.2s						
FIA0	**FINESS Array S**	**1.92**	**27**	Pn	**Pn**	**00 45 29.8**	**+1.9**
	baz=196,slow=16						
FIA0				Lg		00 45 53.8	
	baz=186,slow=37						
FINES	**FINESS Array B**	**1.92**	**27**	Pg	**Pg**	**00 45 29.6**	**-2.3**
	comp=Z,2.4nm,0.3s,baz=192,slow=15,SNR=124						
FINES				Lg		00 45 54.0	
	comp=Z,2.7nm,0.3s,baz=199,slow=31,SNR=9.5						
KEF	**Keuruu**	**2.44**	**7**	*e*P	**Pn**	**00 45 38.6**	**+3.3**
KEF				*e*SG	**Sg**	**00 46 09.8**	**-5.1**
KEF				MSG		00 46 13.0	
	comp=Z,5.2nm,0.2s						
SUF	**Sumiainen**	**3.12**	**16**	*e*P	**Pn**	**00 45 46.3**	**+1.4**
VAF	**Ylistaro**	**3.39**	**348**	*e*P	**Pn**	**00 45 51.4**	**+2.6**
KJN	**Kajaani**	**4.64**	**19**	MSG		00 47 21.2	
	comp=Z,2.6nm,0.2s						
JOF	**Joensuu**	**4.65**	**44**	*e*P	**Pn**	**00 46 05.6**	**-1.2**
HFS	**Hagfors**	**5.32**	**279**	Pn	**Pn**	**00 46 16.6**	**+0.3**
	baz=100,slow=12						
HFS				Sn	**Sn**	**00 47 19.1**	**-0.1**
	baz=103,slow=37						
HFS				Lg		00 47 38.1	
	baz=92,slow=37						
HFS	**Hagfors**	**5.32**	**279**	*e*P	**Pn**	**00 46 16.6**	**+0.3**
HFS				*e*S	**Sn**	**00 47 19.1**	**-0.1**
HFS				*e*SB	**Sb**	**00 47 38.1**	**+5.6**
NOA	**NORSAR Array B**	**6.59**	**287**	Pn	**Pn**	**00 46 33.1**	**-1.0**
	comp=Z,0.2nm,0.3s,baz=87,slow=19,SNR=2.6						
NOA				Sn	**Sn**	**00 47 46.8**	**-4.2**
	comp=Z,0.1nm,0.3s,baz=147,slow=17,SNR=2.5						
NOA				Lg		00 48 21.7	
	comp=Z,0.2nm,0.3s,baz=13,slow=14,SNR=2.2						
ARA0	**ARCESS Array S**	**9.84**	**3**	Pn	**P**	**00 47 16.0**	**-3.2**
	baz=180,slow=14						
ARA0				Sn	**Sn**	**00 49 03.2**	**-8.4**
	baz=184,slow=22						
ARA0	**ARCESS Array S**	**9.84**	**3**	*e*P	**P**	**00 47 16.0**	**-3.2**
ARA0				*e*S	**Sn**	**00 49 03.2**	**-8.4**
ARCES	**ARCESS Array B**	**9.84**	**3**	Pn	**P**	**00 47 17.0**	**-2.2**
	comp=Z,0.2nm,0.3s,baz=185,slow=12,SNR=25						

GUC 31 01:06:56.3±0.8,28.02S×71.52W,h46km±4km,MD3.9, ML3.6,1C,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
VACH	**Vallenar**	**0.87**	**130**	*i*P	P	01 07 12.9	+0.6
VACH				*i* S	S	01 07 25.2	+1.2
VACH				AMP		01 07 26.7	
	comp=N,3μm,0.1s						
CPCH	**Copiapo**	**1.23**	**58**	*e*P	P	01 07 17.4	+0.1
CPCH				*i* S	S	01 07 34.1	+1.1
CPCH				AMP		01 07 35.8	
	comp=E,2μm,0.1s						
TLL	**Tololo Astrono**	**2.23**	**164**	*e*P	P	01 07 32.5	+0.9
TLL				*i* S	S	01 07 58.9	+0.9
TLL				AMP		01 08 05.3	
	comp=N,254nm,0.6s						
CMCH	**Combarbala**	**3.17**	**172**	*e*P	P	01 07 44.3	-0.7
CMCH				*i* S	S	01 08 21.5	-0.5
CMCH				AMP		01 08 41.4	
	comp=E,438nm,0.8s						

*JMA **31** 01:24:29.2±0.2,24.06N×122.78E,h18km,M1.7*
*TAP **31** 01:24:30.4,24.06N×122.68E,h21km,ML2.7*
ISC 31 01:24:28.9±2.8,24.1N±0.1×122.8E±0.1,h23km±12km,n5, σ0§27/9,Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
YOJ	**Yonaguni jima**	**0.45**	**31**	P	**Pb**	**01 24 38.2**	**0.0**
YOJ				*e*S	**Sb**	**01 24 44.5**	**-0.1**
IRIF	**Iriomote-Funau**	**0.93**	**73**	P	**Pb**	**01 24 46.3**	**+0.1**
HATJ	**Hateruma jima**	**0.96**	**91**	P	**Pb**	**01 24 46.4**	**-0.3**
HATJ				*e*S	**Sb**	**01 24 58.8**	**-0.1**
JKRS	**Kuro-shima**	**1.16**	**81**	P	**Pn**	**01 24 50.4**	**+0.6**
JKRS				*e*S	**Sb**	**01 25 04.9**	**+0.3**
JIJ	**Ishigaki jima**	**1.30**	**77**	P	**Pn**	**01 24 51.5**	**-0.4**
JIJ				*e*S	**Sn**	**01 25 08.5**	**-0.1**

IDC 31 01:26:47.8±9.3,0.11N×121.94E,h245km±96km,mb3.2/4, mb1 3.3/4,mb1mx3.0/16,Error ellipse: s-maj=196.0km s-min=23.0km az=61.0,Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**23.34**	**149**	P	P	01 31 34.2	-1.6
	1.5nm,0.5s,baz=324,slow=11,SNR=22						
ASAR	**Alice Springs**	**26.34**	**155**	P	P	01 32 01.9	-1.5
	0.5nm,0.5s,baz=343,slow=13,SNR=9.1						
ASAR				PcP	PcP	01 35 20.4	-2.5
	0.3nm,0.4s,baz=342,slow=2.1,SNR=3.9						
STKA	**Stephens Creek**	**36.85**	**152**	P	P	01 33 33.2	-1.4
	1.3nm,0.7s,baz=315,slow=10.0,SNR=2.6						
MKAR	**Makanchi Array**	**57.96**	**329**	P	P	01 36 14.8	-2.0
	0.3nm,0.3s,baz=125,slow=8.9,SNR=6.4						

*FUNV **31** 01:28:45.6, 12.83N×60.79W,h30km,MW3.1*
*TRN **31** 01:28:46.2, 12.73N×60.76W,h34km,MD3.7,M4.3(FDF), MD3.3(FDF)*
*IDC **31** 01:28:47.9±4.0, 12.89N×60.70W,h96km±22km,mb3.3/5, mb1 3.7/5,mb1mx3.4/20,Error ellipse: s-maj=71.6km s-min=34.2km az=93.0*
ISC 31 01:28:46.2±0.4,12.74N±0.02×60.92W±0.06,h90km±3km, n39,σ0§95/68,mb3.6/5,5C-8D,Windward Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
GRCU	**Cariacou**	**0.58**	**243**	*i*P	**P**	**01 29 01.6**	**-0.2**
GRCU				*e*S	**S**	**01 29 11.3**	**-2.1**
SVB	**Belmont**	**0.62**	**329**	*e*P	**P**	**01 29 02.7**	**+0.5**
SVB				*e*S	**S**	**01 29 14.5**	**+0.5**
SSV	**Crater Summit**	**0.64**	**336**	*e*P	**P**	**01 29 02.7**	**+0.4**
SSV				*e*S	**S**	**01 29 15.9**	**+1.6**
SVV	**Soufriere Volc**	**0.65**	**334**	*i*P	**P**	**01

DEG	**La Desirade**	**3.56**	**358**	*e*P		**P**	**01 29 39.5**	**-0.9**
DEG				*e*S		**S**	**01 30 20.1**	**-1.4**
SEG	**Port Louis**	**3.69**	**351**⇓	*e*P		**P**	**01 29 43.0**	**+0.8**
SEG				*e*S		**S**	**01 30 28.1**	**+3.4**
CUPV	**Cœpira**	**5.46**	**241**⇑	*e*P		**P**	**01 30 05.6**	**-0.9**
TXAR	**Lajitas Array**	**42.91**	**299**	P		**P**	**01 36 37.8**	**+0.1**
	0.2nm,0.7s,mb3.0,baz=113,slow=6.9,SNR=3.1							
PDAR	**Pinedale Array**	**51.46**	**315**	P		**P**	**01 37 44.5**	**0.0**
	1.6nm,0.4s,mb4.4,baz=112,slow=9.5,SNR=18							
NVAR	**Mina Array Bea**	**56.72**	**308**	P		**P**	**01 38 22.8**	**-0.2**
	0.4nm,0.4s,mb3.9,baz=63,slow=16,SNR=2.9							
YKA	**Yellowknife Ar**	**62.46**	**335**	P		**P**	**01 39 00.3**	**-1.7**
	0.4nm,0.5s,mb3.7,baz=107,slow=7.2,SNR=12							
ILAR	**Eielson Array**	**76.86**	**334**	P		**P**	**01 40 29.3**	**-0.3**
	0.2nm,0.7s,mb3.0,baz=92,slow=4.9,SNR=4.2							

*ISK **31** 01:33:33.5,35.28N×31.58E,h11km,MD3.5*
*NIC **31** 01:33:34.9±0.2,35.56N×31.39E,h25km,ML3.4,MW3.2*
*NEIC **31** 01:33:37.2±0.8,35.27N×31.57E,h50km,MD3.5(ISK),*
Error ellipse: s-maj=15.7km s-min=6.2km az=215.0

ISC 31 01:33:35.0±1.4,**35.35N**±0.08×**31.49E**±0.07,**h12**km±14km,
n23,σ1**913**/29,**5C,Cyprus region**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AKMC	**Akamas**	**0.76**	**115**	P	**Pg**	**01 33 51.0**	**+0.6**
PPCY	**Paphos**	**0.84**	**123**	⇑P	**Pb**	**01 33 52.1**	**+1.0**
PPCY	**Paphos**	**0.84**	**123**⇑	*i*P	**Pb**	**01 33 52.1**	**+1.0**
ALFC	**Alevga**	**0.93**	**102**	P	**Pb**	**01 33 52.3**	**-0.3**
	21nm,0.2s						
ALFC				S	**Sb**	**01 34 06.2**	**+1.5**
LEF	**Lefka**	**1.17**	**101**	*e*PN	**Pn**	**01 33 54.9**	**-2.3**
SZAC	**Souni-Zanaja**	**1.29**	**117**	⇑P	**Pb**	**01 33 58.0**	**-0.7**
	6.8nm,0.4s						
SZAC				S	**Sb**	**01 34 16.2**	**+1.1**
SZAC	**Souni-Zanaja**	**1.29**	**117**⇑	*i*P	**Pb**	**01 33 58.0**	**-0.7**
SZAC				S	**Sb**	**01 34 16.2**	**+1.1**
MAMC	**Mammari**	**1.43**	**97**	P	**Pn**	**01 34 00.9**	**0.0**
CSS	**Prodhromos**	**1.56**	**104**	P	**Pn**	**01 34 01.7**	**-1.1**
	3.6nm,0.3s						
CSS				S	**Sb**	**01 34 22.3**	**-0.7**
LFK	**Lefkose**	**1.68**	**92**	PN	**Pn**	**01 34 03.1**	**-1.3**
ELL	**Elmali**	**1.89**	**318**	*e*PN	**Pn**	**01 34 08.1**	**+0.6**
MAGT	**Magosa**	**1.97**	**97**	PN	**Pn**	**01 34 05.8**	**-2.8**
IKL	**Isikli**	**2.00**	**63**	*i* PN	**Pn**	**01 34 07.4**	**-1.6**
PHNC	**Paralimni**	**2.12**	**99**	P	**Pb**	**01 34 14.8**	**+2.0**
	5.9nm,0.6s						
PHNC				S	**Sb**	**01 34 46.7**	**+7.7**
ISP	**Isparta**	**2.61**	**343**	*e*PN	**Pn**	**01 34 17.5**	**-0.2**
DNZL	**Cakiroluk**	**3.05**	**321**	*e*P	**Pn**	**01 34 31.4**	**+7.3**
YER	**Yerkesik**	**3.14**	**305**	*e*PN	**Pn**	**01 34 26.1**	**+0.8**
BDRM	**Kayabasi**	**3.69**	**299**	*e*P	**Pn**	**01 34 32.5**	**-0.5**
COBT	**Iskenderun**	**4.04**	**72**⇑	*e*P	**Pn**	**01 34 38.7**	**+0.6**
COBT				*e*S	**Sn**	**01 35 26.5**	**+0.5**
ESKT	**Eskisehir**	**4.19**	**353**	*e*P	**Pn**	**01 34 41.7**	**+1.4**
KAMT	**Kaman**	**4.39**	**23**	*e*PN	**Pn**	**01 34 42.8**	**-0.2**
GAZ	**Gaziantep**	**4.97**	**67**	*e*PN	**Pn**	**01 34 50.3**	**-1.0**
GZT	**Gaziantep**	**5.30**	**66**	*e*P	**Pn**	**01 34 56.8**	**+0.9**

*CASC **31** 01:39:07.9±1.2,13.12N×90.99W,h4km±7km,MD4.1,*
ML3.8,mb3.9(NEIC)
*NEIC **31** 01:39:12.7±2.5,13.21N×90.97W,h67km±20km,mb3.7/1,*
Error ellipse: s-maj=36.5km s-min=12.9km az=52.0
*IDC **31** 01:39:20.3±7.9,13.73N×90.41W,h98km±88km,mb3.4/4,*
mb1 3.6/6,mb1mx3.4/18,ML4.0/2,MS3.4/1,Ms1 3.3/1,
ms1mx2.7/15,Error ellipse: s-maj=83.8km s-min=25.7km
az=25.0

ISC 31 01:39:06.4±1.9,**13.03N**±0.08×**91.09W**±0.05,**h11**km±14km,
n28,σ0**998**/31,**mb3.8**/**5,MS3.4**/1,**5C-2D,Near coast of**
Guatemala

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
IXG	**Ixpaco**	**1.29**	**28**	*e*P	**Pb**	**01 39 29.8**	**-0.4**
JAT	**Jato**	**1.38**	**337**	*e*P	**Pn**	**01 39 32.8**	**+1.1**
FUG	**Fuego 3**	**1.43**	**10**	*e*P	**Pn**	**01 39 32.0**	**-0.3**
PCG	**Pacaya**	**1.43**	**19**	*e*P	**Pn**	**01 39 32.4**	**0.0**
SBLS	**San Blas**	**1.64**	**60**⇑	*e*P	**Pn**	**01 39 34.8**	**-0.5**
SBLS				*e*S	**Sn**	**01 39 56.8**	**+0.3**
RTR	**El Retiro**	**1.65**	**58**⇑	*e*P	**Pn**	**01 39 35.1**	**-0.4**
RTR				*e*S	**Sn**	**01 39 57.2**	**+0.5**
SNJE	**San Jose**	**1.67**	**60**⇑	*e*P	**Pn**	**01 39 35.3**	**-0.4**
NBG	**Las Nubes**	**1.71**	**25**	*e*P	**Pn**	**01 39 36.9**	**+0.5**
RBDL	**Robledal**	**1.73**	**52**	*e*P	**Pn**	**01 39 36.5**	**-0.3**
BOQS	**Boqueron**	**1.89**	**68**⇓	*e*P	**Pn**	**01 39 38.8**	**-0.2**
PICS	**Picacho**	**1.92**	**68**	*e*P	**Pn**	**01 39 39.8**	**+0.4**
LFRS	**El Faro**	**2.06**	**73**⇑	*e*P	**Pn**	**01 39 41.8**	**+0.4**
LFRS				*e*S	**Sn**	**01 40 07.1**	**-0.1**
LBRS	**Las Brisas**	**2.11**	**70**	*i*P	**Pn**	**01 39 44.7**	**+2.6**
LCBS	**La Ceiba**	**2.15**	**73**	*e*P	**Pn**	**01 39 42.7**	**+0.1**
SNVI	**San Vicente**	**2.26**	**75**⇑	*e*P	**Pn**	**01 39 44.8**	**+0.5**
CNCH	**Conchagua**	**3.18**	**85**	*e*P	**Pn**	**01 39 57.0**	**-0.4**
JTS	**JuntasAbangare**	**6.60**	**114**	*e*P	**Pn**	**01 40 46.6**	**+0.8**
TEIG	**Tepich**	**7.64**	**20**	*e*P	**Pn**	**01 40 58.8**	**-1.7**
TXAR	**Lajitas Array**	**19.99**	**326**	P	**P**	**01 43 43.0**	**+1.1**
	0.1nm,0.3s,baz=148,slow=12,SNR=7.9						
TXAR	**Lajitas Array**	**19.99**	**326**	P	**P**	**01 43 43.0**	**+1.1**
SDV	**Santo Domingo**	**20.50**	**100**	P	**P**	**01 43 45.1**	**-2.1**
	0.3nm,0.3s,baz=308,slow=9.5,SNR=3.3						
MNTX	**Cornudas Mount**	**22.75**	**327**	*e*P	**P**	**01 44 08.6**	**-1.3**
	3.2nm,1.1s,mb3.7						
NVAR	**Mina Array Bea**	**34.98**	**321**	P	**P**	**01 46 02.9**	**+2.2**
	1.5nm,0.7s,mb4.0,baz=130,slow=7.0,SNR=5.6						
SCHQ	**Schefferville**	**45.83**	**19**	P	**P**	**01 47 25.9**	**-4.1**
	3.6nm,0.9s,mb4.3,baz=252,slow=6.4,SNR=6.4						
SCHQ				LR	LR	02 06 23.5	
	comp=Z,46nm,21.0s,MS3.4,baz=89,slow=36						
SCHQ	**Schefferville**	**45.83**	**19**	P	**P**	**01 47 25.9**	**-4.1**
SCHQ				LR	LR	02 06 23.5	
YKA	**Yellowknife Ar**	**52.17**	**346**	P	**P**	**01 48 15.2**	**-3.7**
	0.3nm,0.8s,mb3.3,baz=142,slow=8.0,SNR=6.2						
YKA	**Yellowknife Ar**	**52.17**	**346**	P	**P**	**01 48 15.2**	**-3.7**
ILAR	**Eielson Array**	**64.07**	**337**	P	**P**	**01 49 41.5**	**-0.9**
	0.4nm,0.7s,mb3.5,baz=146,slow=3.4,SNR=5.2						

*BJI **31** 01:51:43.6,14.47N×93.79E,h26km,mB5.1,mb4.9,Ms4.8,*
Ms4.7
*NEIC **31** 01:51:45.5±0.2,14.39N×93.85E,mb4.7/47,MS4.4/9,*
Error ellipse: s-maj=5.8km s-min=4.4km az=209.0
*IDC **31** 01:51:45.1±0.8,14.32N×93.86E,h28km±4km,mb4.4/14,*
mb1 4.5/15,mb1mx4.4/19,ML5.1/1,MS4.3/15,Ms1 4.4/15,
ms1mx4.2/26,Error ellipse: s-maj=21.0km s-min=12.0km
az=50.0
*SYO **31** 01:51:45.5,14.39N×93.85E,h30km,MB4.7,MS4.4*
*MOS **31** 01:51:50.2±0.8,14.97N×93.86E,h60km,mb5.0/26,*
MS4.4/20,Error ellipse: s-maj=13.4km s-min=8.4km
az=99.4

ISC 31 01:51:40.5±0.9,**14.43N**±0.04×**93.81E**±0.03,**h6**km±5km,
h29km±1.3km:**pP-P,n288,**σ0**997**/281,**mb4.7**/83,**MS4.5**/43,
19C-18D,Andaman Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PBA	**Port Blair**	**2.95**	**201**	*e*P	**Pn**	**01 52 29.0**	**+0.2**
PBA				*e*S	**Sn**	**01 53 00.0**	**-4.9**
BDT	**Bhumibol Dam**	**5.73**	**60**	⇑P	**Pn**	**01 53 10.0**	**+1.8**
	149nm,0.9s						
CM31	**Chiang Mai Arr**	**6.35**	**50**	*e*P	**Pn**	**01 53 18.8**	**+1.8**
	172nm,0.8s						
CMAR	**Chiang Mai Arr**	**6.35**	**50**	Pn	**Pn**	**01 53 18.6**	**+1.7**
	11nm,0.3s,baz=238,slow=15,SNR=351						
CMAR				Sn	**Sn**	**01 54 29.2**	**-1.3**
	4.7nm,0.3s,baz=235,slow=28,SNR=4.8						
CMAR				LR	LR	01 56 16.4	
	comp=Z,2μm,21.6s,baz=240,slow=42						
CMAR	**Chiang Mai Arr**	**6.35**	**50**	P	**Pn**	**01 53 18.7**	**+1.8**
CMAR						01 54 29.3	
CMAR				pmax	pmax		
	comp=Z,11nm,0.3s						
CMAR				smax			
	comp=Z,5.0nm,0.3s						
CMAR				MLR	MLR		
	comp=Z,2μm,21.6s						
CAL	**Calcutta**	**9.59**	**328**	*e*P	**P**	**01 54 00.5**	**-1.7**
CAL				*e*		01 54 21.5	
CAL				*e*		01 56 11.5	
CAL				*e*		01 57 26.5	
AGT	**Agartala**	**9.71**	**346**	*e*P	**P**	**01 54 02.0**	**-1.8**
IMP	**Imphal**	**10.30**	**1**⇓	*i*P	**P**	**01 54 11.0**	**-0.9**
IMP				*e*		01 54 21.0	
VIS	**Vishakhapatnam**	**10.59**	**289**	*e*P	**P**	**01 54 14.8**	**-1.2**
VIS				*e*S	**S**	**01 56 02.5**	**-13**
VIS				*e*		01 56 25.8	
	comp=E,369nm,0.7s						
VIS				*e*		01 56 25.8	
	comp=N,725nm,0.9s						
UBT	**Ubonrachathani**	**10.87**	**84**	P	**P**	**01 54 23.0**	**+3.1**
SHL	**Shillong**	**11.22**	**351**⇓	*i*P	**P**	**01 54 22.0**	**-2.6**
SHL				*e*S	**S**	**01 56 20.0**	**-11**
IPM	**Ipoh**	**12.10**	**143**⇑	*e*P	**P**	**01 54 40.2**	**+3.6**
VJD	**Vijayawada**	**12.85**	**281**	*e*P	**P**	**01 54 44.0**	**-2.6**
VJD				*e*		01 56 58.0	
BLSP	**Bilaspur**	**13.47**	**306**	*e*P	**P**	**01 54 53.8**	**-0.9**
BLSP				*e*		01 57 14.0	
KMI	**Kunming**	**13.55**	**37**	*e*P	**P**	**01 54 58.0**	**+2.1**
KMI				AP		01 55 05.8	
KMI				PP	PP	01 55 12.0	+5.4
KMI				PPP	PPP	01 55 23.0	+9.4
KMI				S	**S**	**01 57 34.0**	**+6.2**
KMI				AMB	AMB		
	comp=Z,44nm,1.5s						
KMI				LR	LR		
	comp=N,3μm,13.8s						
KMI				LR	LR		
	comp=E,2μm,17.7s						
KMI				LR	LR		
	comp=Z,3μm,15.8s						
HYB	**Hyderabad**	**14.97**	**283**	*i* P	**P**	**01 55 13.0**	**-1.5**
	comp=Z,165nm,1.0s						
HYB				*e*S	**S**	**01 57 41.5**	**-20**
PKI	**Pulchoki**	**15.23**	**330**	*e*P	**P**	**01 55 18.1**	**+0.1**
	comp=Z,70nm,0.3s						
LSA	**Lhasa**	**15.39**	**351**	P	**P**	**01 55 17.0**	**-3.0**
LSA				AP		01 55 24.8	
LSA				XP		01 55 29.3	
LSA	**Lhasa**	**15.39**	**351**	*e*P	**P**	**01 55 17.7**	**-2.3**
	comp=Z,10nm,0.6s						
DMN	**Daman**	**15.41**	**330**	*e*P	**P**	**01 55 20.4**	**+0.1**
	comp=Z,175nm,0.7s						
KKN	**Kakani**	**15.48**	**331**	*e*P	**P**	**01 55 20.8**	**-0.4**
	comp=Z,114nm,0.8s						
JBP	**Jabalpur**	**15.70**	**306**⇓	*e*P	**P**	**01 55 28.0**	**+4.0**
JBP				*e*		01 58 13.0	
GKN	**Gorkha**	**15.97**	**329**	*e*P	**P**	**01 55 24.8**	**-2.7**
	comp=Z,120nm,0.6s						
QIZ	**Qiongzhong**	**16.02**	**71**	P	**P**	**01 55 29.8**	**+1.6**
QIZ				S	**S**	**01 58 27.3**	**+1.0**
QIZ				XS		01 58 39.0	
QIZ				AMB	AMB		
	comp=Z,273nm,6.9s						
QIZ				LR	LR		
	comp=N,3μm,25.2s						
QIZ				LR	LR		
	comp=Z,1μm,14.8s						
KOLN	**Koldanda**	**16.32**	**326**	*e*P	**P**	**01 55 27.9**	**-4.1**
	comp=Z,184nm,0.7s						
GYA	**Guiyang**	**16.96**	**43**⇓	*i*P	**P**	**01 55 40.8**	**+0.7**
GYA				AP		01 55 48.5	
GYA				XP		01 55 52.8	
GYA				PP	PP	01 55 56.8	+2.4
GYA				S	**S**	**01 58 51.8**	**+3.8**
GYA				XS		01 58 59.8	
GYA				SS	SS	01 59 11.5	+2.8
GYA				AMB	AMB		
	comp=Z,60nm,1.6s						
GYA				LR	LR		
	comp=N,1μm,13.5s						
GYA				LR	LR		
	comp=E,770nm,13.5s						
LATR	**Latur**	**17.01**	**286**	*e*P	**P**	**01 55 40.7**	**0.0**
LATR				*e*		01 58 37.5	
BHPL	**Bhopal**	**17.79**	**302**	*e*P	**P**	**01 55 51.3**	**+0.7**
BHPL				*e*		01 55 55.7	
	comp=Z,86nm,1.2s						
CD2	**Chengdu**	**18.78**	**27**	P	**P**	**01 56 02.0**	**-0.7**
CD2				PPP	PPP	01 56 27.5	-0.3
CD2				S	**S**	**01 59 28.5**	**-0.6**
CD2				XS		01 59 41.0	
CD2				SS	SS	01 59 54.5	+0.6
CD2				AMB	AMB		
	comp=Z,80nm,1.5s						
CD2				AMB	AMB		
	comp=Z,240nm,6.3s						
CD2				LR	LR		
	comp=E,1μm,17.7s						
CD2				LR	LR		
	comp=Z,2μm,12.3s						
KAD	**Karad**	**19.09**	**281**	*i* P	**P**	**01 56 07.0**	**+0.5**
KAD				*i*		01 59 23.0	
GOA	**Goa**	**19.33**	**276**⇑	*e*	**P**	**01 55 57.3**	**-12**
GOA				*e*		01 59 25.3	
POO	**Poona**	**19.56**	**285**	*i* P	**P**	**01 56 11.0**	**-1.0**
GZH	**Guangzhou**	**20.39**	**62**	P	**P**	**01 56 25.0**	**+4.1**
GZH				LR	LR		
	comp=N,2μm,24.3s,MS4.4						
GZH				LR	LR		
	comp=E,1μm,23.9s,MS4.4						
GZH				LR	LR		
	comp=Z,1μm,23.9s,MS4.1						
BOM	**Bombay**	**20.59**	**285**	*e*	**P**	**01 56 26.9**	**+3.9**
BOM				*e*		02 00 05.4	
SONA	**Sohna**	**20.74**	**314**	*e*P	**P**	**01 56 24.9**	**+0.5**
SONA				*e*		01 56 30.6	
	comp=Z,195nm,1.4s						
AYAN	**Aya Nagar**	**20.85**	**315**	*e*P	**P**	**01 56 27.1**	**+1.4**
AYAN				*e*		01 56 31.6	
	comp=Z,110nm,1.2s						
NDI	**New Delhi**	**20.92**	**315**⇑	*i*P	**P**	**01 56 26.0**	**-0.3**
NDI				*e*		02 00 10.0	
KUDL	**Kundal**	**21.09**	**313**	*e*P	**P**	**01 56 28.4**	**+0.3**
KUDL				*e*		01 56 31.6	
	comp=Z,141nm,1.5s						
ENH	**Enshi**	**21.38**	**40**	*e*P	**P**	**01 56 29.9**	**-1.1**
	comp=Z,432nm,1.5s,mb5.6						
AJM	**Ajmer**	**21.55**	**307**⇑	*i*P	**P**	**01 56 35.0**	**+2.2**
LZH	**Lanzhou**	**23.36**	**21**	⇓P	**P**	**01 56 52.3**	**+1.6**
LZH				AP		01 57 00.5	
LZH				XP		01 57 04.3	
LZH				PP	PP	01 57 24.5	+2.5
LZH				*e*S	**S**	**02 01 00.5**	**+0.6**
LZH				XS		02 01 12.5	
LZH				SS	SS	02 01 47.3	+1.0
LZH				AMB	AMB		
	comp=Z,69nm,1.5s,mb4.9						
LZH				AMB	AMB		
	comp=Z,178nm,4.1s						
LZH				LR	LR		
	comp=E,1μm,11.2s						
LZH				LR	LR		
	comp=Z,2μm,13.3s,MS4.7						
XAN	**Xi'an**	**23.84**	**32**	P	**P**	**01 56 55.0**	**-0.3**
XAN				AP		01 57 00.0	
XAN				AMB	AMB		
	comp=Z,77nm,1.1s,mb5.0						
WHN	**Wuhan**	**24.78**	**46**	⇓P	**P**	**01 57 05.5**	**+1.0**
WHN				S	**S**	**02 01 27.0**	**+2.7**
WHN				LR	LR		
	comp=N,1μm,12.0s,MS4.7						
WHN				LR	LR		
	comp=E,800nm,14.0s,MS4.7						
WHN				LR	LR		
	comp=Z,2μm,16.6s,MS4.8						
GTA	**Gaotai**	**25.44**	**11**⇓	*i*P	**P**	**01 57 12.3**	**+1.7**
GTA				AP	pP	01 57 17.3	+4.8
GTA				XP	sP	01 57 20.0	+6.6
GTA				PP	PP	01 57 52.0	+2.4
GTA				PCP	PcP	02 00 44.0	+0.4
GTA				S	**S**	**02 01 37.3**	**+2.1**
GTA				XS		02 01 47.3	
GTA				SCP		02 04 21.8	
GTA				SCS	ScS	02 08 09.0	-0.6
GTA				AMB	AMB		
	comp=Z,61nm,1.1s,mb5.0						
GTA				AMB	AMB		
	comp=Z,161nm,6.9s						
GTA				LR	LR		
	comp=N,212nm,20.1s,MS3.9						
GTA				LR	LR		
	comp=E,269nm,16.0s,MS3.9						
GTA				LR	LR		
	comp=Z,328nm,17.1s,MS3.9						
TGY	**Tagaytay City**	**26.29**	**87**	LR	LR	02 08 30.4	
	comp=Z,668nm,18.4s,MS4.2,baz=248,slow=38						
COCO	**West Island**	**26.62**	**173**	P	**P**	**01 57 21.7**	**-0.2**
TIY	**Taiyuan**	**28.48**	**32**	*e*P	**P**	**01 57 37.3**	**-1.2**
TIY				LR	LR		
	comp=E,945nm,14.0s						
TIY				LR	LR		
	comp=Z,451nm,10.0s,MS4.4						
NJ2	**Nanjing**	**28.82**	**48**	*e*P	**P**	**01 57 41.5**	**-0.2**
NJ2				AP	pP	01 57 51.3	+7.7
NJ2				XP	sP	01 57 56.0	+12
NJ2				PP	PP	01 58 31.5	-3.1
NJ2				S	**S**	**02 02 22.0**	**-8.5**
NJ2				AMB	AMB		
	comp=Z,210nm,1.4s,mb5.7						
NJ2				AMB	AMB		
	comp=Z,230nm,7.4s						
NJ2				LR	LR		
	comp=N,3μm,12.9s,MS5.1						
NJ2				LR	LR		
	comp=E,2μm,14.0s,MS5.1						
NJ2				LR	LR		
	comp=Z,4μm,13.8s,MS5.2						
QUE	**Quetta**	**29.27**	**307**	*e*P	**P**	**01 57 47.0**	**+1.2**
KSH	**Kashi**	**29.50**	**331**	*e*P	**P**	**01 57 46.0**	**-1.7**
KSH				*e*AP	pP	01 57 56.8	+7.2
KSH				*e*XP	sP	01 58 01.5	+11
KSH				AMB	AMB		
	comp=Z,200nm,4.5s						
BTO	**Baotou**	**29.67**	**25**	*e*P	**P**	**01 57 47.8**	**-1.4**
BTO				AMB	AMB		
	comp=Z,55nm,1.1s,mb5.2						
WMQ	**Urumqi**	**29.75**	**351**	*e*P	**P**	**01 57 50.5**	**+0.6**
WMQ				AP	pP	01 57 59.5	+7.7
WMQ				XP	sP	01 58 03.5	+11
WMQ				PP	PP	01 58 47.5	+0.9
WMQ				PCP	PcP	02 00 54.3	+0.4
WMQ				S	**S**	**02 02 42.8**	**-2.4**
WMQ				XS		02 02 58.8	
WMQ				SS	SS	02 04 18.3	-1.2
WMQ				SCP		02 04 32.3	
WMQ				AMB	AMB		
	comp=Z,25nm,1.0s,mb4.9						
WMQ				AMB	AMB		
	comp=Z,165nm,5.1s						
WMQ				LR	LR		
	comp=N,925nm,14.1s,MS4.7						
WMQ				LR	LR		
	comp=E,884nm,17.1s,MS4.7						
WMQ				LR	LR		
	comp=Z,1μm,14.3s,MS4.7						
SSE	**Sheshan**	**30.09**	**52**	P	**P**	**01 57 54.8**	**+1.8**
SSE				S	**S**	**02 02 48.5**	**-2.1**
SSE				XS		02 03 02.8	
SSE				AMB	AMB		
	comp=Z,36nm,0.7s,mb5.2						
SSE				LR	LR		
	comp=N,818nm,19.8s,MS4.4						
SSE				LR	LR		
	comp=E,435nm,19.7s,MS4.4						
SSE				LR	LR		
	comp=Z,672nm,15.9s,MS4.4						
HHC	**Hu-ho-hao-te**	**30.54**	**27**	⇓P	**P**	**01 57 57.3**	**+0.4**
HHC				AP	pP	01 58 05.3	+6.5
HHC				XP	sP	01 58 08.0	+8.4
HHC				PCP	PcP	02 00 58.8	+2.9
HHC				S	**S**	**02 02 57.8**	**+0.2**
HHC				XS		02 03 12.5	
HHC				SCP		02 04 31.5	
HHC				PCS		02 04 34.5	
HHC				SCS	ScS	02 08 27.0	-5.4
HHC				AMB	AMB		
	comp=Z,146nm,4.0s						
HHC				LR	LR		
	comp=N,405nm,15.7s,MS4.3						
HHC				LR	LR		
	comp=E,400nm,13.9s,MS4.3						
HHC				LR	LR		
	comp=Z,347nm,15.4s,MS4.1						
BJI	**Beijing**	**32.16**	**33**	*e*P	**P**	**01 58 11.3**	**+0.1**
BJI				AP	pP	01 58 18.0	+4.9
BJI				XP	sP	01 58 22.5	+8.6
BJI				S	**S**	**02 03 24.5**	**+1.4**
BJI				AMB	AMB		
	comp=Z,21nm,1.4s,mb4.8						
BJI				AMB	AMB		
	comp=Z,133nm,2.4s,mb5.3						
BJI				LR	LR		
	comp=N,961nm,17.4s,MS4.8						
BJI				LR	LR		
	comp=E,1μm,17.4s,MS4.8						
BJI				LR	LR		
	comp=Z,485nm,17.4s,MS4.2						
AAK	**Ala-Archa**	**32.66**	**333**	*e*P	**P**	**01 58 17.0**	**+1.5**
	comp=Z,13nm,1.4s,mb4.7						
FRU	**Bishkek**	**32.77**	**333**⇑	*e*P	**P**	**01 58 26.0**	**+10**
FRU				pmax	pmax		
	comp=Z,60nm,2.0s,mb5.2						
FRU				MLR	MLR		
	comp=Z,800nm,18.0s,MS4.5						
MKAR	**Makanchi Array**	**33.67**	**346**	P	**P**	**01 58 24.2**	**-0.1**
	comp=Z,50nm,1.2s,mb5.3,baz=157,slow=9.2,SNR=77						
MKAR				ScP		02 04 46.2	
	comp=Z,1.1nm,0.9s,baz=135,slow=3.4,SNR=4.1						
MKAR				LR	LR	02 15 46.2	
	comp=Z,371nm,20.4s,MS4.1,baz=158,slow=43						
MKAR	**Makanchi Array**	**33.67**	**346**	P	**P**	**01 58 24.2**	**-0.1**
MKAR				pmax	pmax		
	comp=Z,50nm,1.2s						
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.9s						
MKAR				MLR	MLR		
	comp=Z,371nm,20.4s						
DL2	**Dalian**	**34.57**	**40**	P	**P**	**01 58 33.0**	**+0.9**
DL2				*e*S	**S**	**02 04 03.3**	**+2.8**
DL2				AMB	AMB		
	comp=Z,30nm,1.3s,mb5.1						
DL2				AMB	AMB		
	comp=Z,110nm,3.1s						
DL2				LR	LR		
	comp=E,380nm,20.8s						
DL2				LR	LR		
	comp=Z,420nm,13.7s						
SONM	**Songino Array**	**34.91**	**15**	P	**P**	**01 58 35.4**	**+0.5**
	comp=Z,42nm,1.2s,mb5.2,baz=196,slow=9.0,SNR=112						
SONM				pP	pP	01 58 43.6	+6.8
	comp=Z,10nm,0.8s,baz=202,slow=6.4,SNR=8.2						
SONM				PcP	PcP	02 01 07.7	-0.2
	comp=Z,2.0nm,0.7s,baz=197,slow=4.7,SNR=3.9						
SONM				ScP		02 04 51.3	
	comp=Z,4.5nm,0.9s,baz=203,slow=3.5,SNR=18						
ULN	**Ulaanbaatar**	**35.10**	**16**	*e*P	**P**	**01 58 36.5**	**-0.1**
	comp=Z,57nm,1.4s,mb5.3						
ZAK	**Zakamensk**	**36.67**	**10**⇑	*i*P	**P**	**01 58 50.3**	**+0.5**
ZAK				*e*		02 01 11.8	
SNY	**Shenyang**	**37.53**	**38**	⇓P	**P**	**01 58 57.0**	**-0.1**
SNY				AMB	AMB		
	comp=Z,30nm,1.5s,mb4.8						

NVS e 02 05 59.9
NVS pmax pmax
comp=N,16nm,1.0s
NVS pmax pmax
comp=E,11nm,1.0s
NVS pmax pmax
comp=Z,35nm,1.0s,mb4.9
NVS smax
comp=N,47nm,2.0s
NVS smax
comp=E,112nm,2.0s
MDJ Mudanjiang 42.72 38 P **P** **01 59 40.3 +0.2**
MDJ AP pP 01 59 46.5 +4.5
MDJ XP sP 01 59 49.0 +6.2
MDJ S **S** **02 05 55.0 -8.7**
MDJ AMB AMB
comp=Z,10.0nm,1.1s,mb4.5
MDJ AMB AMB
comp=Z,77nm,5.0s
MDJ LR LR
comp=N,789nm,17.5s,MS4.7
MDJ LR LR
comp=E,102nm,13.7s,MS4.7
MDJ LR LR
comp=Z,732nm,16.0s,MS4.7
BRVK Borovoye 42.80 339 *e*P **P** **01 59 40.6 0.0**
ZRNK Zerenda 43.17 338 *e*P **P** **01 59 43.5 -0.1**
THR Tehran 43.71 307 P **P** **01 59 50.0 +1.8**
comp=Z,6.1nm,1.0s,mb4.3,baz=107,slow=6.3,SNR=19
THR LR LR 02 21 01.5
comp=Z,297nm,19.4s,MS4.2,baz=309,slow=40
THR Tehran 43.71 307 P **P** **01 59 50.1 +1.9**
THR pmax pmax
comp=Z,6.0nm,1.0s
THR MLR MLR
comp=Z,297nm,19.4s
FITZ Fitzroy Crossi 45.06 135⇓ *i*P **P** **01 59 57.6 -1.7**
comp=Z,14nm,0.9s,mb4.8
FITZ Fitzroy Crossi 45.06 135 P **P** **01 59 57.3 -2.0**
comp=Z,11nm,0.8s,mb4.7,baz=4.0,slow=6.8,SNR=15
MAJO Matsushiro 45.23 53 *e*P **P** **02 00 00.3 -0.1**
comp=Z,64nm,1.4s,mb5.3
MAT Matsushiro 45.23 53 P **P** **02 00 00.0 -0.5**
MAT S **S** **02 06 46.0 +5.8**
MIB Mutribah 45.37 298 *e*P **P** **02 00 02.1 +0.4**
RST Umm Al-Ruwaisa 45.62 297 *e*P **P** **02 00 03.6 0.0**
BOD Bodaibo 45.91 15 *e*P **P** **02 00 04.5 -1.0**
KLR Kul'dur 46.54 34 *e*P **P** **02 00 09.8 -0.8**
KLR MLR MLR
comp=N,1μm,19.0s,MS5.0
KLR MLR MLR
comp=E,1μm,19.0s,MS5.0
MZLS Mizel 46.67 289 P **P** **02 00 12.5 +0.5**
KAMS Al Khamasin 47.21 284 P **P** **02 00 16.3 0.0**
TATS Tathlith 48.27 283 P **P** **02 00 25.1 +0.5**
CLNS Chul'man 48.48 22 *e*P **P** **02 00 24.6 -1.1**
CLNS pmax pmax
comp=Z,20nm,1.1s,mb5.1
CLNS pmax pmax
comp=N,10.0nm,1.2s
CLNS pmax pmax
comp=E,10.0nm,1.1s
CLNS MLR MLR
comp=N,300nm,15.0s,MS4.5
CLNS MLR MLR
comp=Z,400nm,15.0s,MS4.5
CLNS MLR MLR
comp=E,100nm,13.0s,MS4.5
ARSS Ar Rass 48.56 292 P **P** **02 00 26.4 -0.3**
AFFS 'Afif 48.69 289 P **P** **02 00 28.6 +0.8**
NAMS An Nimas 49.48 283 P **P** **02 00 35.5 +1.5**
FRSS Farasan al Kab 49.73 280 P **P** **02 00 37.1 +1.2**
ARU Arti 49.80 335⇑ *i*P **P** **02 00 36.1 +0.2**
ARU *e* 02 01 55.8
ARU *e* 02 02 33.0
ARU *e*S **S** **02 07 44.3 -0.2**
ARU pmax pmax
comp=Z,17nm,1.4s,mb4.9
ARU MLR MLR
comp=Z,600nm,20.0s,MS4.6
ARU MLR MLR
comp=N,300nm,18.0s,MS4.6
ARU MLR MLR
comp=E,500nm,19.0s,MS4.6
ARU Arti 49.80 335 *e*P **P** **02 00 35.4 -0.5**
comp=E,4.8nm,0.8s,mb4.6
HILS Ha'il 49.94 294 P **P** **02 00 38.2 +0.8**
BLJS Baljurashi 50.02 284 P **P** **02 00 39.1 +1.0**
LTHS Al Lith 51.12 285 P **P** **02 00 47.3 +0.9**
YSS Yuzh-Sakhalins 51.95 41 *de*P **P** **02 00 52.0 -0.4**
YSS pmax pmax
comp=Z,20nm,0.9s,mb5.0
YSS MLR MLR
comp=Z,500nm,15.0s,MS4.7
KBRS Khaybar 52.13 292 P **P** **02 00 54.9 +0.9**
ERZM Erzurum 52.22 310 *i*P **P** **02 00 56.0 +1.5**
KIV Kislovodsk 52.37 315 *i*P **P** **02 00 55.9 +0.3**
KIV *e*PPP PPP 02 03 55.0 -4.3
KIV *e*S **S** **02 08 21.2 +1.0**
KIV pmax pmax
comp=Z,20nm,0.9s,mb5.0
KIV MLR MLR
comp=E,190nm,19.0s
KIV MLR MLR
comp=Z,270nm,19.0s,MS4.3
KIV Kislovodsk 52.37 315 *e*P **P** **02 00 56.0 +0.4**
comp=Z,32nm,1.1s,mb5.2
WRA Warramunga Arr 52.50 130 P **P** **02 00 54.8 -2.2**
comp=Z,3.9nm,0.7s,mb4.4,baz=314,slow=8.0,SNR=35
WRA PcP PcP 02 02 05.9 -1.5
comp=Z,2.4nm,0.7s,baz=313,slow=3.5,SNR=9.4
WRA ScP 02 05 59.1
comp=Z,1.1nm,0.8s,baz=305,slow=4.4,SNR=5.3
WRA Warramunga Arr 52.50 130 P **P** **02 00 54.8 -2.1**
WRA 02 02 05.9
WRA pmax pmax
comp=Z,4.0nm,0.7s
WRA pmax pmax
comp=Z,2.0nm,0.7s
WRA pmax pmax
comp=Z,1.0nm,0.8s
WRAB Tennant Creek 52.50 130 *e*P **P** **02 00 55.1 -1.9**
WB2 Warramunga Arr 52.51 130⇑ *i*P **P** **02 00 54.7 -2.3**
YNBS Yanbu' al Bahr 53.27 290 P **P** **02 01 02.5 -0.1**
ELZG Elazig 53.73 307 *i*P **P** **02 01 06.1 +0.3**
SOC Sochi 54.33 314 *d i*P **P** **02 01 14.0 +3.9**
SOC *e* 02 02 13.4
SOC *e* 02 03 10.2
SOC *e*S **S** **02 08 45.4 -1.3**
SOC *e*PS PS 02 09 02.1 +4.4
SOC *e*SS SS 02 12 28.3 -0.1
SOC pmax pmax
comp=Z,20nm,1.4s,mb4.8
SOC pmax pmax
comp=N,6.0nm,0.7s
SOC pmax pmax
comp=E,20nm,1.2s
SOC MLR MLR
comp=Z,250nm,23.0s,MS4.2
SOC MLR MLR
comp=N,230nm,26.0s,MS4.4
SOC MLR MLR
comp=E,330nm,25.0s,MS4.4
AS12 Alice Springs 54.50 133⇑ *i*P **P** **02 01 10.2 -1.4**
comp=E,48nm,1.8s,mb5.2
ASAR Alice Springs 54.50 133 P **P** **02 01 09.8 -1.8**
comp=E,5.1nm,0.6s,mb4.7,baz=312,slow=6.6,SNR=77
ASAR ScP 02 06 08.1
comp=E,1.6nm,0.8s,baz=319,slow=4.4,SNR=6.0
ASAR LR LR 02 27 58.3
comp=E,180nm,18.8s,MS4.2,baz=132,slow=40
TBKS Tabuk 54.62 294 P **P** **02 01 13.3 +0.8**
GZT Gaziantep 54.64 306 *i*P **P** **02 01 12.9 +0.5**
JMQS Jabal Moqyreh 55.24 295 P **P** **02 01 17.4 +0.5**
COBT Iskenderun 55.56 304 *i*P **P** **02 01 19.4 +0.2**
AYUS 'Aynunah 55.75 294 P **P** **02 01 20.9 +0.3**
BDAS Al Bad' 55.91 295 P **P** **02 01 21.9 +0.1**
JMOS Jabal al Moall 55.92 296 P **P** **02 01 22.2 +0.4**
ALWS Ilw as Safayha 55.96 296 P **P** **02 01 22.2 +0.1**
HAQS Haql 56.07 295 P **P** **02 01 22.5 -0.4**
ANN Anapa 56.23 315 *e*P **P** **02 01 19.0 -4.8**
ANN pmax pmax
comp=Z,10.0nm,1.2s,mb4.7
AVNT Avonos 56.97 307 *i*P **P** **02 01 28.8 -0.5**
VOR Voronezh 57.12 323 *e*P **P** **02 01 29.0 -1.1**
VOR pmax pmax
comp=Z,30nm,0.9s,mb5.3
BOYT Boyabat 57.34 310 *i*P **P** **02 01 32.8 +0.9**
BRTR Keskin Array B 58.04 308 P **P** **02 01 36.0 -0.7**
comp=Z,6.2nm,0.9s,mb4.6,baz=127,slow=6.2,SNR=36
KMBO Kilima Mbogo 58.06 259 LR LR 02 23 10.0
comp=Z,327nm,21.1s,MS4.4,baz=88,slow=32
KMBO Kilima Mbogo 58.06 259 P **P** **02 01 37.4 +0.2**
KMBO LR LR
comp=Z,281nm,19.0s,MS4.4
ELDT Eldivan 58.30 309 *i*P **P** **02 01 38.4 -0.2**
BALT Daday 58.49 310 *i*P **P** **02 01 39.8 -0.1**
SIM Simferopol' 58.56 314 *e*P **P** **02 01 41.0 +0.7**
SIM pmax pmax
comp=Z,45nm,1.4s,mb5.3
MOS Moscow 59.39 327 *e*P **P** **02 01 53.5 +7.6**
MOS pmax pmax
comp=Z,61nm,0.7s,mb5.7
OBN Obninsk 59.74 326 *de*P **P** **02 01 47.7 -0.7**
OBN *e* 02 02 01.9
OBN *e* 02 02 07.2
OBN *e* 02 02 33.2
OBN 02 03 59.0
OBN *e*S **S** **02 09 58.2 +0.3**
OBN pmax pmax
comp=Z,8.0nm,0.7s,mb4.9
OBN MLR MLR
comp=Z,400nm,19.0s,MS4.6
ESKT Eskisehir 60.15 307 *i*P **P** **02 01 50.3 -1.1**
TIXI Tiksi 60.91 12 *e*P **P** **02 01 54.3 -1.9**
TIXI *e*S **S** **02 10 05.3 -7.5**
TIXI pmax pmax
comp=Z,18nm,1.4s,mb5.0
TIXI MLR MLR
comp=Z,205nm,16.0s,MS4.4
TIXI Tiksi 60.91 12 *e*P **P** **02 01 53.0 -3.2**
comp=Z,16nm,0.8s,mb5.2
TIXI *e*pP pP 02 02 03.5 +5.3
MA2 Magadan 61.18 29 *e*P **P** **02 01 54.9 -3.2**
MA2 pmax pmax
comp=Z,67nm,1.8s,mb5.5
MA2 MLR MLR
comp=Z,400nm,16.0s,MS4.7
ULDT Uludag 61.52 308 *i*P **P** **02 01 60.0 -0.7**
CTAO Charters Tower 61.94 122 P **P** **02 02 03.0 -0.8**
KDAG Bornova 62.85 306 *i*P **P** **02 02 09.2 -0.4**
VRI Vrincioaia 63.84 314⇑ *i*P **P** **02 02 17.4 +1.3**
MBAR Mbarara 64.14 262 *e*P **P** **02 02 18.8 +0.3**
comp=Z,9.6nm,1.1s,mb4.7
KDZ Kurdzhali 64.44 309 P **P** **02 02 21.0 +0.9**
JOF Joensuu 64.85 333 *e*p **P** **02 02 22.5 +0.2**
comp=Z,1.6nm,0.5s,mb4.3
JOF Joensuu 64.85 333 *e*P **P** **02 02 22.5 +0.2**
JOF pmax pmax
comp=Z,2.0nm,0.5s,mb4.4
STKA Stephens Creek 64.94 136 *e*P **P** **02 02 21.5 -1.9**
comp=Z,3.2nm,0.6s,mb4.5
STKA Stephens Creek 64.94 136 P **P** **02 02 21.9 -1.5**
comp=Z,3.4nm,0.6s,mb4.5,baz=3.5,slow=7.4,SNR=8.6
STKA LR LR 02 32 16.1
comp=Z,506nm,18.2s,MS4.8,baz=116,slow=38
RZN Rozhen 64.97 309 P **P** **02 02 23.0 -0.5**
MMB Musomiste 65.70 309 *i*P **P** **02 02 36.3 +8.1**
VTS Vitosha 66.13 310 P **P** **02 02 31.0 +0.1**
KKB Krupnik 66.20 310 *i*P **P** **02 02 30.5 -0.8**
FINES FINESS Array B 66.82 331 P **P** **02 02 34.3 -0.6**
comp=Z,7.5nm,1.2s,mb4.6,baz=124,slow=6.9,SNR=11
FINES LR LR 02 37 27.8
comp=Z,374nm,19.7s,MS4.6,baz=71,slow=41
KWP Kalwaria 66.91 318 *e*P **P** **02 02 35.6 -0.1**
SUW Suwalki 67.07 323 *e*P **P** **02 02 36.0 -0.7**
CRVS Cervenica-Dubn 67.67 317 *e*P **P** **02 02 41.6 +1.1**
WAR Warsaw 68.18 321 *e*P **P** **02 02 54.7 +11**
NIE Niedzica 68.45 318 *e*P **P** **02 02 45.8 +0.4**
KEV Kevo 68.59 340 *e*p **P** **02 02 45.2 -0.8**
comp=Z,2.9nm,0.5s,mb4.5
KEV Kevo 68.59 340 *e*P **P** **02 02 45.2 -0.8**
KEV pmax pmax
comp=Z,3.0nm,0.5s,mb4.5
PSZ Piszkesteto 68.66 316 *e*P **P** **02 02 46.7 -0.1**
OJC Ojcow 68.82 319 *e*P **P** **02 02 47.5 -0.2**
ARCES ARCESS Array B 69.03 340 P **P** **02 02 48.8 +0.1**
comp=Z,2.1nm,0.6s,mb4.2,baz=104,slow=6.6,SNR=27
ARCES LR LR 02 37 02.7
comp=Z,526nm,18.4s,MS4.8,baz=205,slow=39
ARCES ARCESS Array B 69.03 340 P **P** **02 02 48.8 +0.1**
ARCES pmax pmax
comp=Z,2.0nm,0.6s
ARCES MLR MLR
comp=Z,526nm,18.4s
ARE0 ARCESS Array S 69.03 340 *e*P **P** **02 02 46.9 -1.8**
VYHS Vyhne 69.39 317 *e*P **P** **02 03 00.3 +9.1**
SRO Srobarova 69.72 316 *e*P **P** **02 02 53.8 +0.5**
OKC Ostrava-Krasne 69.87 318 *e*P **P** **02 03 02.9 +8.8**
OKC L 02 38 10.0
comp=Z,0.2nm,21.6s
BILL Bilibino 70.17 22 *d i*P **P** **02 02 53.8 -1.8**
BILL *e* 02 03 08.8
BILL *i* 02 03 16.7
BILL *i* 02 05 28.8
BILL *e*S S 02 12 01.4 -4.6
BILL *e*SS SS 02 16 31.4 -6.0
BILL pmax pmax
comp=Z,10.0nm,1.4s,mb4.5
BILL MLR MLR
comp=Z,300nm,17.0s,MS4.6
MORC Moravsky Berou 70.26 318 *e*P **P** **02 02 56.4 -0.1**
comp=Z,3.6nm,0.9s,mb4.3
GKP Gorka Klasztor 70.54 322 *e*P **P** **02 03 06.5 +8.4**
ZST Bratislava 70.54 316 *e*pP pP 02 03 07.4 +7.1
DPC Dobruska-Polom 71.05 319 *e*P **P** **02 03 09.6 +8.3**
DPC L 02 38 40.0
comp=Z,0.2nm,18.3s
KSP Ksiaz 71.07 319 *e*P **P** **02 03 01.6 +0.2**
KSP Ksiaz 71.07 319 *e*P **P** **02 03 01.4 0.0**
KSP *e*PP sP 02 03 08.7 +4.5
UPC Upice 71.25 319 *e*P **P** **02 03 11.3 +8.8**
BOJS Bojanci 71.86 314 *e*P **P** **02 03 06.1 -0.2**
BOJS *e* 02 03 14.9
BOJS *e* 02 03 28.0
PDKS Podkum 72.02 314 *e*P **P** **02 03 07.2 0.0**
PDKS *e* 02 03 16.1
VISS Visnje 72.14 314 *e*P **P** **02 03 08.1 +0.2**
VISS *e* 02 03 16.7
PVCC Panska Ves 72.17 319 *e*P **P** **02 03 17.1 +9.1**
PVCC L 02 39 30.0
comp=Z,0.3nm,25.7s
PRU Pruhonice 72.20 318 *e*P **P** **02 03 16.2 +8.0**
PRU L 02 39 20.8
LJU Ljubljana 72.35 314 *e*P **P** **02 03 09.8 +0.6**
LJU *e* 02 03 18.1
MOA Molln 72.45 316⇑ *i*P **P** **02 03 09.7 0.0**
comp=Z,14nm,1.1s,mb4.8
BRG Berggiesshubel 72.56 319 *e*P **P** **02 03 11.4 +1.1**
BRG pmax pmax
comp=Z,27nm,1.5s,mb5.0
BRG Berggiesshubel 72.56 319 *e*P **P** **02 03 11.4 +1.1**
comp=Z,27nm,1.5s,mb5.0
BRG *i* 02 03 20.3
GERES GERESS Array B 72.79 317 P **P** **02 03 11.7 +0.1**
comp=Z,3.2nm,0.7s,mb4.4,baz=86,slow=5.8,SNR=50
GERES GERESS Array B 72.79 317 P **P** **02 03 11.7 0.0**
GERES pmax pmax
comp=Z,3.0nm,0.7s
VOY Vojsko 72.79 314 *e*P **P** **02 03 10.9 -0.9**
VOY *e* 02 03 19.8
KHC Kasperske Hory 72.86 317 *e*P **P** **02 03 11.0 -1.1**
KHC *ex* x 02 03 21.6
KHC L 02 41 10.0
comp=Z,0.2nm,22.3s
KHC Kasperske Hory 72.86 317 *e*P **P** **02 03 21.6 +10**
KHC MLR MLR
comp=Z,200nm,22.3s,MS4.3
CLL Collm 73.14 320⇑ *i*P **P** **02 03 22.2 +8.5**
CLL pmax pmax
comp=Z,19nm,1.4s,mb4.8
PTCC Patocco-Chiusa 73.14 315 *e*P **P** **02 03 13.7 -0.1**
NKC Novy Kostel 73.54 319 *e*P **P** **02 03 24.6 +8.6**
NKC L 02 40 20.0
comp=Z,0.2nm,19.1s
ARV Arcevia 73.63 312 *e*P **P** **02 03 16.2 -0.5**
SNTG Esanatoglia 73.65 311 *e*P **P** **02 03 16.3 -0.5**
NB2 NORSAR Subarra 73.91 330 P **P** **02 03 17.2 -0.8**
comp=Z,6.5nm,1.1s,mb4.5,baz=90,slow=5.8
NOA NORSAR Array B 73.91 330 P **P** **02 03 17.5 -0.5**
comp=Z,1.5nm,0.7s,mb4.0,baz=90,slow=5.8,SNR=8.5
NOA pP pP 02 03 26.2 +6.2
comp=Z,1.2nm,0.6s,baz=89,slow=5.8,SNR=5.7
NOA LR LR 02 40 18.3
comp=Z,249nm,20.0s,MS4.5,baz=90,slow=39
NOA NORSAR Array B 73.91 330 P **P** **02 03 17.5 -0.5**
NOA pmax pmax
comp=Z,2.0nm,0.7s
NOA pmax pmax
comp=Z,1.0nm,0.6s
NOA MLR MLR
comp=Z,249nm,20.0s
MOX Moxa 74.05 319 *i*P **P** **02 03 19.1 +0.1**
MOX pP pP 02 03 28.0 +7.0
MOX *e* 02 03 42.0
MOX L 02 41 31.0
MOX Moxa 74.05 319 *e*P **P** **02 03 19.1 +0.1**
MOX *e* 02 03 41.9
MOX pmax pmax
comp=Z,24nm,1.8s,mb4.8
MOX MLR MLR
comp=Z,200nm,19.0s,MS4.4
MOX Moxa 74.05 319 *e*P **P** **02 03 19.1 +0.1**
comp=Z,24nm,1.8s,mb4.8
MOX *e* 02 03 28.0
MOX *e* 02 03 41.9
MOX LR LR
comp=Z,200nm,19.0s,MS4.4
WTTA Wattenberg 74.26 315⇑ *i*P **P** **02 03 19.3 -1.0**
comp=Z,22nm,1.7s,mb4.8
CTI Castel Tesino 74.35 314 *e*P **P** **02 03 21.4 +0.6**
GRA1 Grafenberg Arr 74.36 318 *e*P **P** **02 03 21.4 +0.6**
comp=Z,15nm,1.5s,mb4.7
GRA1 *e* 02 03 30.0
GRF Grafenberg Arr 74.36 318 *e*P **P** **02 03 21.4 +0.6**
GRF *e* 02 03 30.0
GRF pmax pmax
comp=Z,15nm,1.5s,mb4.7
SFI Santa Sofia 74.39 312 *e*P **P** **02 03 22.7 +1.6**
PGD Poggio Sodo 74.48 312 *e*P **P** **02 03 22.3 +0.6**
SQTA Sankt Quirin 74.56 315⇓ *i*P **P** **02 03 21.5 -0.5**
comp=Z,17nm,1.5s,mb4.8
VMG Vicchio 74.60 312 *e*P **P** **02 03 23.5 +1.2**
MOTA Moosalm 74.62 316⇓ *i*P **P** **02 03 22.0 -0.3**
comp=Z,7.9nm,1.1s,mb4.6
SEI Scarperia 74.73 312 *e*P **P** **02 03 24.4 +1.3**
GSCL Gusciola 75.25 313 *e*P **P** **02 03 27.2 +1.1**
DAVA Damuels 75.45 316⇑ *i*P **P** **02 03 27.7 +0.6**
comp=Z,19nm,1.3s,mb4.9
VAI Varese 76.36 314 *e*P **P** **02 03 31.7 -0.6**
PGF Pioggiola 76.60 311 *e*P **P** **02 03 33.5 -0.3**
comp=Z,20nm,1.0s,mb4.7
CDF Champ du Feu 77.07 317 *e*P **P** **02 03 36.0 -0.2**
LBTB Lobatse 77.16 240 *e*P **P** **02 03 37.8 +0.5**
comp=Z,3.8nm,0.9s,mb4.3
LBTB LR LR
comp=Z,206nm,19.0s,MS4.5
HINF Hinteralfeld 77.43 316 *e*P **P** **02 03 38.0 -0.2**
SBF Sospel 77.56 312 *e*P **P** **02 03 39.0 0.0**
comp=Z,21nm,0.8s,mb4.8
HAU Haudompre 77.74 317 *e*P **P** **02 03 39.7 -0.2**
HAU *e*R
comp=Z,172nm,20.5s
LPG La Plagne 77.81 314 *e*P **P** **02 03 41.0 +0.6**
comp=Z,20nm,0.8s,mb4.8
LPL La Plagne 77.82 314 *e*P **P** **02 03 41.0 +0.6**
comp=Z,23nm,0.8s,mb4.8
MBDF Montbardon 77.91 313 *e*P **P** **02 03 40.3 -0.6**
BNI Bardonecchia 77.93 314 *e*P **P** **02 03 40.7 -0.3**
CABF La Chapelle 78.11 315 *e*P **P** **02 03 42.4 +0.4**
comp=Z,5.2nm,0.8s,mb4.2
FRF La Foret Royal 78.17 312 *e*P **P** **02 03 42.6 +0.2**
comp=Z,9.5nm,0.7s,mb4.5
LMR La Mourre 78.30 312 *e*P **P** **02 03 43.2 +0.1**
comp=Z,9.4nm,0.8s,mb4.5
GIVF Givet 78.43 319 *e*P **P** **02 03 43.9 +0.2**
ORIF Oris-en-Rattie 78.51 314 *e*P **P** **02 03 44.4 +0.2**
ORIF *e*R
comp=Z,214nm,22.0s
MEZF Maizieres J'vi 78.52 317 *e*P **P** **02 03 44.3 +0.1**
comp=Z,1.3nm,0.5s,mb3.8
BAIF Baives 78.83 319 *e*P **P** **02 03 45.7 -0.2**
comp=Z,5.7nm,0.8s,mb4.3
SMRF Simiane la Rot 78.87 313 *e*P **P** **02 03 46.8 +0.6**
comp=Z,13nm,0.9s,mb4.5
VIVF Saint-Julien-l 79.37 314 *e*P **P** **02 03 49.0 +0.1**
LOR Lormes 79.52 316 *e*P **P** **02 03 49.4 -0.3**
comp=Z,4.2nm,0.8s,mb4.1
LOR *e*R
comp=Z,180nm,19.5s
SMF Signal de Mont 79.63 316 *e*P **P** **02 03 50.0 -0.3**
comp=Z,7.7nm,0.8s,mb4.4
SSF Saint Saulge 79.79 316 *e*P **P** **02 03 51.0 -0.1**
comp=Z,2.8nm,0.7s,mb4.0
LASF Ste Croix 80.08 313 *e*P **P** **02 03 53.2 +0.5**
TCF Toulx Ste Croi 80.81 315 *e*P **P** **02 03 56.9 +0.3**
DAG Danmarks Havn 81.04 348⇑ *i*P **P** **02 03 56.4 -0.8**
comp=Z,4.0nm,1.0s,mb4.3
DAG Danmarks Havn 81.04 348⇑ *e*P **P** **02 03 56.4 -0.8**
DAG pmax pmax
comp=Z,4.0nm,1.0s,mb4.3
DAG Danmarks Havn 81.04 348⇑ *e*P **P** **02 03 56.4 -0.8**
comp=Z,4.0nm,1.0s,mb4.3
CAF Calviac 81.17 314 *e*P **P** **02 03 58.0 -0.5**
comp=Z,4.5nm,0.8s,mb4.1
MTLF Montolieu 81.39 312 *e*P **P** **02 04 00.0 +0.3**
comp=Z,5.7nm,0.8s,mb4.2
RJF Les Rejaudoux 81.48 315 *e*P **P** **02 04 00.8 +0.7**
comp=Z,3.6nm,0.6s,mb4.2
RJF *e*R
comp=Z,126nm,21.2s
LDF La Druitiere 81.89 318 *e*P **P** **02 04 02.3 +0.2**
comp=Z,7.5nm,0.7s,mb4.4
FLN La Foliniere 82.08 318 *e*P **P** **02 04 03.4 +0.3**
comp=Z,4.1nm,0.7s,mb4.2
FLN *e*R
comp=Z,195nm,21.0s
LFF La Frestale 82.09 314 *e*P **P** **02 04 03.9 +0.6**
MFF Saint Martin d 82.34 316 *e*P **P** **02 04 04.7 +0.2**
comp=Z,34nm,1.2s,mb4.8
EPF Esparros 82.79 312 *e*P **P** **02 04 06.8 -0.2**
MAW Mawson 84.85 191 LR LR 02 33 54.8
comp=Z,164nm,19.8s,MS4.4,baz=222,slow=30
ESDC Sonseca Array 86.77 310 P **P** **02 04 26.7 -0.3**
comp=Z,0.8nm,0.7s,mb4.1,baz=61,slow=4.8,SNR=7.2
SUMG Summit 87.72 347 *e*P **P** **02 04 31.1 +0.2**
SUMG *e*pP pP 02 04 40.1 +7.2
COLA College 88.42 22 *e*P **P** **02 04 33.3 -1.1**
COLA LR LR
comp=Z,258nm,21.0s,MS4.6
ILAR Eielson Array 88.83 22 P **P** **02 04 35.5 -0.8**
comp=Z,0.9nm,0.7s,mb4.2,baz=298,slow=4.2,SNR=11
ILAR pP pP 02 04 46.0 +7.7
comp=Z,1.3nm,0.8s,baz=294,slow=4.2,SNR=7.4
ILAR PP PP 02 08 07.2 -0.6
comp=Z,0.5nm,0.8s,baz=296,slow=7.2,SNR=5.0
ILAR LR LR 02 50 52.1
comp=Z,168nm,20.4s,MS4.5,baz=321,slow=40
ILAR Eielson Array 88.83 22 P **P** **02 04 35.5 -0.8**
ILAR 02 08 07.3
ILAR pmax pmax
comp=Z,1.0nm,0.7s
ILAR pmax pmax
comp=Z,1.0nm,0.8s
ILAR pmax pmax
comp=Z,1.0nm,0.9s
PMR Palmer 89.62 25 *e*P **P** **02 04 39.9 -0.3**
comp=Z,10nm,1.1s,mb5.1
PMR LR LR
comp=Z,286nm,19.0s,MS4.7
SML Sawmill 89.83 25 *e*P **P** **02 04 40.9 -0.2**
EVO Evora 90.11 310 *e*P **P** **02 04 40.2 -2.8**
comp=Z,30nm,1.3s,mb5.2
EVO *e*R
comp=Z,133nm,23.0s
INK Inuvik 90.82 16 *e*P **P** **02 04 45.2 -0.3**
comp=Z,19nm,1.3s,mb5.3
INK *e*pP pP 02 04 54.9 +7.3
RPZ Rata Peaks 90.89 135 LR LR 02 46 33.2
comp=Z,257nm,18.6s,MS4.7,baz=217,slow=36
SYO Syowa Base 91.54 197⇓ *i*P **P** **02 04 49.6 +0.7**
SYO Syowa Base 91.54 197⇓ *e*P **P** **02 04 49.6 +0.7**
DBIC Dimbokro 96.68 279 LR LR 02 52 11.6
comp=Z,96nm,18.3s,MS4.3,baz=312,slow=38
VNDA Vanda 99.38 168 LR LR 02 46 22.3

comp=Z,40nm,21.6s,MS3.9,baz=163,slow=33
YKA Yellowknife Ar 100.16 13 P P 02 05 27.7 -0.6
comp=Z,0.5nm,0.9s,baz=327,slow=4.6,SNR=7.3
YKA pP 02 05 38.1
comp=Z,0.4nm,0.7s,baz=334,slow=4.6,SNR=5.9
YKA PP PP 02 09 29.4 -7.1
comp=Z,0.9nm,1.0s,baz=336,slow=7.9,SNR=5.4
YKA Yellowknife Ar 100.16 13 P P 02 05 27.7 -0.6
YKA 02 09 29.4
YKA pmax pmax
comp=Z,1.0nm,0.9s
YKA pmax pmax
comp=Z,1.0nm,1.0s
HLID Hailey 116.78 23 *e*PKP PKPdf 02 10 27.7 -1.0
KSWY Kelly School 118.06 20 PKP PKPdf 02 10 30.3 -0.8
PDAR Pinedale Array 119.17 20 PKP PKPdf 02 10 31.9 -1.5
comp=Z,2.1nm,0.8s,baz=110,slow=0.1,SNR=14
NVAR Mina Array Bea 119.42 29 PKP PKPdf 02 10 33.9 0.0
comp=Z,2.4nm,0.6s,baz=342,slow=1.5,SNR=11
NLU North Lily Min 120.77 23 PKP PKPdf 02 10 34.1 -2.5
MVU Marysvale 121.98 24 *e*PKP PKPdf 02 10 38.5 -0.4
MSU Marysvale 121.98 24 *e*PKP PKPdf 02 10 38.7 -0.2
ANMO Albuquerque 127.25 21 *c i*PKIKP PKPdf 02 10 49.2 0.0
ANMO Albuquerque 127.25 21 *e*PKP PKPdf 02 10 48.7 -0.4
LAZ Ladron 127.51 22 *e*PKP PKPdf 02 10 49.2 -0.5
LENM Lemitar 127.78 22 *e*PKP PKPdf 02 10 49.5 -0.8
BNM Barren Site 127.92 22 *e*PKP PKPdf 02 10 50.2 -0.4
GDL2 Guadalupe Moun 130.47 20 *e*PKP PKPdf 02 10 54.5 -1.0
MNTX Cornudas Mount 130.58 22 *e*PKP PKPdf 02 10 54.8 -0.9
TXAR Lajitas Array 133.33 21 PKP PKPdf 02 10 60.0 -0.9
comp=Z,1.4nm,0.5s,baz=215,slow=0.4,SNR=32
TXAR SKPbc 02 14 25.9
comp=Z,3.1nm,1.0s,baz=274,slow=1.5,SNR=13
TXAR Lajitas Array 133.33 21 PKP PKPdf 02 10 60.0 -0.9
TXAR SKPbc 02 14 25.9
JCT Junction City 133.47 16 *e*PKP PKPdf 02 11 00.1 -1.0
BDFB Brasilia 143.14 263 PKP PKPdf 02 11 19.6 +0.6
comp=Z,3.5nm,0.8s,baz=162,slow=4.7,SNR=5.7
BDFB Brasilia 143.14 263 PKIKP PKPdf 02 11 19.6 +0.6
BDFB pmax pmax
comp=Z,4.0nm,0.8s
TRQA Tornquist 148.16 218 *e*PKP PKPdf 02 11 26.6 -0.3
CPUP Villa Florida 150.54 242 PKPbc PKPdf 02 11 34.7 +3.6
comp=Z,7.1nm,1.0s,baz=168,slow=3.5,SNR=5.5
CPUP PKPab PKPab 02 11 42.4 -0.4
comp=Z,3.6nm,0.9s,baz=106,slow=1.8,SNR=3.4
CPUP Villa Florida 150.54 242 PKIKP PKPdf 02 11 34.7 +3.7
CPUP 02 11 42.4
CPUP pmax pmax
comp=Z,7.0nm,1.0s
CPUP pmax pmax
comp=Z,4.0nm,1.0s
CPUP Villa Florida 150.54 242 PKPbc PKPdf 02 11 34.7 +3.6
CPUP PKPab PKPab 02 11 42.4 -0.4
LPAZ La Paz 162.48 262 PKPab PKPab 02 12 34.2 +0.2
comp=Z,2.7nm,1.2s,baz=57,slow=7.0,SNR=3.5
LPAZ La Paz 162.48 262 PKPab PKPab 02 12 34.2 +0.2

GUC 31 02:16:08.1±0.8, 30.97S×71.26W, h59km±4km, MD3.5, ML3.1, 3C-1D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CMCH	**Cambarbala**	**0.30**	**132**	⇓*iP*	P	02 16 18.8	+0.6
CMCH				*i* S	S	02 16 26.5	+1.0
CMCH				AMP		02 16 26.8	
	comp=E,4μm,0.2s						
ILCH	**Illapel**	**0.66**	**173**	*eP*	P	02 16 22.1	+0.2
ILCH				*i* S	S	02 16 32.5	+0.3
ILCH				AMP		02 16 33.8	
	comp=N,833nm,0.2s						
TLL	**Tololo Astrono**	**0.90**	**26**	⇑*iP*	P	02 16 25.6	+0.7
TLL				*i* S	S	02 16 38.6	+1.2
TLL				AMP		02 16 40.8	
	comp=N,591nm,0.5s						
LSCH	**La Serena**	**1.06**	**1**	⇑*iP*	P	02 16 27.3	+0.1
LSCH				*i* S	S	02 16 41.7	+0.3
LSCH				AMP		02 16 42.6	
	comp=N,278nm,0.7s						
PTCH	**Petorca**	**1.32**	**168**	⇑*iP*	P	02 16 30.7	-0.1
PTCH				*i* S	S	02 16 47.3	-0.3
PTCH				AMP		02 16 52.0	
	comp=N,794nm,0.2s						
PACH	**Papudo**	**1.56**	**185**	*eP*	P	02 16 34.1	-0.1
PACH				*i* S	S	02 16 54.2	+0.7
PEL	**Peldehue**	**2.22**	**167**	*i* S	S	02 17 09.6	0.0
PEL				AMP		02 17 15.1	
	comp=E,171nm,0.1s						
FCH	**Farellones**	**2.49**	**161**	*eP*	P	02 16 47.4	+0.3
FCH				*i* S	S	02 17 17.7	+1.4
FCH				AMP		02 17 24.9	
	comp=E,86nm,0.3s						
CLCH	**Cerro Calan**	**2.49**	**166**	*i* S	S	02 17 16.4	-0.1
CLCH				AMP		02 17 28.7	
	comp=E,94nm,0.6s						
RCDM	**Rinconada Maip**	**2.54**	**171**	*i* P	P	02 16 47.4	-0.4
RCDM				AMP		02 17 27.7	
	comp=E,203nm,0.1s						
LMEL	**Las Melosas**	**3.00**	**163**	*eP*	P	02 16 54.5	+0.1
LMEL				AMP		02 17 40.2	
	comp=N,150nm,0.2s						

*NAO **31** 02:17:11.6±1.3, 59.75N×24.34E, ML2.2*
*HEL **31** 02:17:12.5±0.3, 59.76N×24.44E, ML2.0, ML2.1(UPP), ML2.2(NAO), Explosion*
*BER **31** 02:17:12.4±5.5, 59.74N×24.34E, h0km±28km, ML2.2(NAO)*
*IDC **31** 02:17:14.0±2.6, 59.88N×24.30E, mb1 3.0/2, mb1mx2.8/19, ML3.0/2, Error ellipse: s-maj=27.6km s-min=8.0km az=148.0*

ISC 31 02:17:09.5±0.6, 59.76N±0.04×24.28E±0.08, n16, σ1§41/30, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MEF	**Metsahovi**	**0.46**	**7**	*eP*	**Pg**	**02 17 20.4**	**+1.7**
MEF				*eS*	**Sg**	**02 17 25.6**	**+0.8**
VJF	**Virojoki**	**1.81**	**63**	*eP*	**Pn**	**02 17 43.0**	**+0.7**
VJF				*eS*	**Sn**	**02 18 05.5**	**-0.8**
VSU	**Vasula**	**1.82**	**135**	*eP*	**Pn**	**02 17 43.3**	**+1.0**
VSU				*eS*	**Sn**	**02 18 06.8**	**+0.4**
VSU	**Vasula**	**1.82**	**135**	Pn	**Pn**	**02 17 43.4**	**+1.1**
VSU				Lg		02 18 06.5	
FIA0	**FINESS Array S**	**1.91**	**27**	*eP*	**Pn**	**02 17 45.7**	**+2.2**
FIA0				*eS*	**Sn**	**02 18 09.8**	**+1.2**
FIA0				*eSG*	**Sg**	**02 18 11.9**	**-1.0**
FIA0				MSG		02 18 12.7	
	comp=Z,10nm,0.2s						
FIA0	**FINESS Array S**	**1.91**	**27**	Pn	**Pn**	**02 17 45.7**	**+2.2**
	baz=198,slow=16						
FIA0				Lg		02 18 09.9	
	baz=199,slow=37						
FINES	**FINESS Array B**	**1.91**	**27**	Pg	**Pg**	**02 17 45.8**	**-1.8**
	comp=Z,2.0nm,0.3s,baz=214,slow=16,SNR=131						
FINES				Lg		02 18 09.9	
	comp=Z,2.6nm,0.3s,baz=189,slow=27,SNR=17						
KEF	**Keuruu**	**2.43**	**7**	*eP*	**Pn**	**02 17 54.7**	**+3.6**
KEF				*eSB*	**Sb**	**02 18 25.9**	**+1.4**
KEF				MSG		02 18 27.7	
	comp=Z,5.5nm,0.2s						
VAF	**Ylistaro**	**3.38**	**347**	*eP*	**Pn**	**02 18 06.7**	**+2.1**
JOF	**Joensuu**	**4.63**	**44**	*eP*	**Pn**	**02 18 21.8**	**-0.7**
JOF				*eS*	**Sn**	**02 19 15.6**	**-2.2**
JOF				MSG		02 19 36.6	
	comp=Z,1.7nm,0.2s						
HFS	**Hagfors**	**5.34**	**279**	Pn	**Pn**	**02 18 32.5**	**+0.1**
	baz=108,slow=14						
HFS				Sn	**Sn**	**02 19 34.9**	**-0.6**
	baz=90,slow=28						
HFS				Lg		02 19 53.5	
	baz=94,slow=28						
HFS	**Hagfors**	**5.34**	**279**	*eP*	**Pn**	**02 18 32.5**	**+0.1**
HFS				*eS*	**Sn**	**02 19 34.9**	**-0.6**
HFS				*eSB*	**Sb**	**02 19 53.5**	**+4.7**
NOA	**NORSAR Array B**	**6.60**	**287**	Pn	**Pn**	**02 18 49.1**	**-1.1**
	comp=Z,0.1nm,0.3s,baz=136,slow=8.6,SNR=2.7						
NOA				Sn	**Sn**	**02 20 02.6**	**-4.5**
	comp=Z,0.1nm,0.3s,baz=256,slow=22,SNR=2.3						
NOA				Lg		02 20 37.8	
	comp=Z,0.2nm,0.3s,baz=20,slow=20,SNR=2.6						
ARA0	**ARCESS Array S**	**9.83**	**3**	Pn	**P**	**02 19 32.0**	**-2.9**
	baz=184,slow=14						
ARA0				Sn	**Sn**	**02 21 19.2**	**-8.0**
	baz=185,slow=22						
ARA0	**ARCESS Array S**	**9.83**	**3**	*eP*	**P**	**02 19 32.0**	**-2.9**
ARA0				*eS*	**Sn**	**02 21 19.2**	**-8.0**
ARCES	**ARCESS Array B**	**9.83**	**3**	Pn	**P**	**02 19 33.2**	**-1.8**
	comp=Z,0.2nm,0.3s,baz=182,slow=12,SNR=29						
ARCES				Sn	**Sn**	**02 21 19.2**	**-8.1**
	comp=Z,0.1nm,0.3s,baz=190,slow=22,SNR=2.4						

*NIED **31** 02:19:00, 25.50N×126.50E, h35km, Mw4.9 Best double couple: Mo2.27×10^16 NP1:φs174°, δ73°, λ119°. NP2: φs292°, δ34°, λ32°.*
*BJI **31** 02:19:30.8, 25.25N×126.69E, h77km, mB4.7, mb4.8, Ms4.3, Msz4.1*
*NEIC **31** 02:19:31.9±0.1, 25.44N×126.51E, mb5.0/69, MS4.4/6, Error ellipse: s-maj=4.6km s-min=4.1km az=89.0*
NEIC Felt on Okinawa-jima. Recorded [2 JMA] on Kume-jima.
*JMA **31** 02:19:31.0±0.1, 25.50N×126.48E, h80km±3km, M5.1*
JMA Felt II J1.
*HRVD **31** 02:19:31.9±0.4, 25.26N×126.49E, h37km±1km, MW5.0/45, Centroid moment Tensor Solution. LP body waves: s26,c28;Mantle waves: s45,c64; Half duration: 0 Moment tensor: Scale 10^16Nm; Mrr3.27±.24; Mθθ-1.35±.14; Mφφ-1.92±.15; Mrθ0.10±.12; Mrφ1.78±.07; Mθφ-1.30±.11; Best double couple: Mo3.6×10^16 NP1:φs307°, δ38°, λ70°. NP2:φs152°, δ55°, λ105°. Principal axes: T 3.6, Plg75°, Azm106°; N 0, Plg12°, Azm323°; P -3.6, Plg9°, Azm231°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*MOS **31** 02:19:32.0±0.9, 25.95N×126.24E, h33km, mb5.4/32 Error ellipse: s-maj=13.9km s-min=6.8km az=111.5*
*IDC **31** 02:19:32.2±1.5, 25.45N×126.43E, h45km±13km, mb4.7/22, mb1 4.8/24, mb1mx4.8/26, ML4.4/3, MS4.0/15, Ms1 4.0/15, ms1mx3.8/33, Error ellipse: s-maj=13.3km s-min=10.7km az=117.0*

ISC 31 02:19:30.3±0.3, 25.37N±0.02×126.56E±0.02, h45km±2km, h44km±1.4km:pP-P, n351, σ1§05/357, mb5.0/103, MS4.2/30, 46C-16D, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JKE	**Kume jima 2**	**0.97**	**12**	P	**P**	**02 19 48.8**	**+1.1**
JKE				S	**S**	**02 20 01.7**	**+1.2**
JOGS	**Gusukube**	**1.21**	**240**	P	**P**	**02 19 53.0**	**+2.0**
JOGS				*eS*	**S**	**02 20 08.9**	**+2.5**
JMJ	**Miyako jima 2**	**1.27**	**244**	P	**P**	**02 19 53.8**	**+1.9**
JMJ				*eS*	**S**	**02 20 10.2**	**+2.1**
NAH1	**Naha**	**1.32**	**51**	P	**P**	**02 19 54.0**	**+1.3**
JJT2	**Tamagusuku 2**	**1.32**	**54**	P	**P**	**02 19 54.2**	**+1.5**
JJT2				*eS*	**S**	**02 20 11.7**	**+2.3**
JAGN	**Aguni-jima**	**1.36**	**27**	P	**P**	**02 19 54.2**	**+0.9**
JAGN				S	**S**	**02 20 10.9**	**+0.5**
JTJ	**Tarama**	**1.83**	**247**	P	**P**	**02 20 00.7**	**+0.8**
JIH	**Iheya**	**2.08**	**37**	P	**P**	**02 20 04.0**	**+0.5**
JOW	**Kunigami**	**2.12**	**46**	P	**P**	**02 20 04.9**	**+0.9**
JOW				S	**S**	**02 20 32.2**	**+3.0**
	430nm,0.3s,baz=302,slow=28,SNR=8.1						
JOW	**Kunigami**	**2.12**	**46**	P	**P**	**02 20 04.7**	**+0.7**
JIJ	**Ishigaki jima**	**2.41**	**246**	P	**P**	**02 20 08.0**	**-0.1**
JIJ				*eS*	**S**	**02 20 37.6**	**+1.0**
JKRS	**Kuro-shima**	**2.58**	**244**	P	**P**	**02 20 10.5**	**0.0**
IRIF	**Iriomote-Funau**	**2.77**	**249**	P	**P**	**02 20 12.5**	**-0.7**
HATJ	**Hateruma jima**	**2.82**	**243**	P	**P**	**02 20 13.3**	**-0.7**
JTK	**Tokunoshima**	**3.22**	**41**	P	**P**	**02 20 19.1**	**-0.6**
YOJ	**Yonaguni jima**	**3.34**	**255**	P	**P**	**02 20 21.0**	**-0.4**
JAM	**Amami Oshima**	**4.07**	**41**	P	**P**	**02 20 30.8**	**-0.9**
JAM				*eS*	**S**	**02 21 16.6**	**-2.1**
JZK	**Kikaishima**	**4.23**	**45**	P	**P**	**02 20 33.2**	**-0.7**
JMZ	**Minamidaito 2**	**4.24**	**83**	P	**P**	**02 20 31.0**	**-3.0**
JMZ				S	**S**	**02 21 15.7**	**-7.1**
TATO	**Taipei**	**4.61**	**266**	*eP*	**P**	**02 20 40.5**	**+1.2**
JNN	**Nakanoshima**	**5.34**	**33**	P	**P**	**02 20 48.2**	**-1.2**
JKC	**Kuchinoerabu**	**6.01**	**32**	P	**P**	**02 20 57.8**	**-1.0**
BBP	**Basco**	**6.48**	**222**	⇑*eP*	**P**	**02 21 01.9**	**-3.6**
JTN	**Tanegashima 3**	**6.55**	**36**	P	**P**	**02 21 05.3**	**-1.2**
QZH	**Quanzhou**	**7.23**	**268**	⇓*iP*	**P**	**02 21 14.5**	**-1.4**
QZH				S	**S**	**02 22 31.0**	**-6.5**
QZH				LR	LR		
	comp=N,2μm,6.4s						
QZH				LR	LR		
	comp=E,1μm,8.9s						
QZH				LR	LR		
	comp=Z,3μm,28.2s						
JNAR	**Kushima--Naru**	**7.40**	**33**	S	**S**	**02 22 39.3**	**-2.6**
SSE	**Sheshan**	**7.41**	**322**	P	**P**	**02 21 19.8**	**+1.4**
SSE				S	**S**	**02 22 42.3**	**+0.2**
SSE				AMB	AMB		
	comp=Z,49nm,0.6s						
SSE				LR	LR		
	comp=N,668nm,19.1s						
SSE				LR	LR		
	comp=E,568nm,19.5s						
SSE				LR	LR		
	comp=Z,951nm,20.2s						
JTZ	**Takazaki**	**7.63**	**30**	P	**P**	**02 21 19.2**	**-2.2**
JTZ				S	**S**	**02 22 44.7**	**-2.7**
SGCP	**Mt. Cagua**	**8.24**	**211**	⇑*eP*	**P**	**02 21 26.9**	**-3.1**
SGCP	**Mt. Cagua**	**8.24**	**211**	⇑*eP*	**S**	**02 22 55.9**	**-6.8**
JKIT	**Kitakata**	**8.40**	**30**	S	**S**	**02 23 03.4**	**-3.3**
JNU	**Nakatsue**	**8.59**	**25**	P	**P**	**02 21 33.5**	**-1.4**
	comp=Z,2.2nm,0.3s,baz=206,slow=6.5,SNR=16						
JNU				LR	LR	02 25 06.7	
	comp=Z,1μm,19.4s,baz=61,slow=39						
CVP	**Callao Caves**	**8.81**	**211**	⇑*eP*	**P**	**02 21 35.4**	**-2.4**
APYP	**Conner**	**8.96**	**214**	⇑*eP*	**P**	**02 21 37.6**	**-2.2**
APYP	**Conner**	**8.96**	**214**	⇑*eP*	**S**	**02 23 17.9**	**-2.6**
PALP	**Palanan**	**9.12**	**206**	⇑*eP*	**P**	**02 21 39.7**	**-2.4**
PALP	**Palanan**	**9.12**	**206**	⇑*eP*	**S**	**02 23 15.0**	**-10**
CAUP	**Cauayan**	**9.48**	**209**	⇑*eP*	**P**	**02 21 46.6**	**-0.4**
CAUP	**Cauayan**	**9.48**	**209**	⇑*eP*	**S**	**02 23 17.1**	**-16**
BALP	**Baler**	**10.65**	**207**	⇑*eP*	**P**	**02 22 00.8**	**-2.4**
PCPH	**Palayan**	**11.02**	**209**	*eP*	**P**	**02 22 06.2**	**-1.9**
WHN	**Wuhan**	**11.95**	**298**	*eP*	**P**	**02 22 22.0**	**+1.3**
WHN				S	**S**	**02 24 32.3**	**-1.3**
WHN				LR	LR		
	comp=N,2μm,14.0s						
WHN				LR	LR		
	comp=E,2μm,17.4s						
WHN				LR	LR		
	comp=Z,2μm,19.4s						
KS15	**Wonju Array Si**	**12.09**	**5**	*eP*	**P**	**02 22 22.9**	**+0.4**
TGY	**Tagaytay City**	**12.39**	**206**	P	**P**	**02 22 27.1**	**+0.4**
	comp=Z,106nm,0.3s,baz=14,slow=1.2,SNR=4.3						
TGY				LR	LR	02 26 45.0	
	comp=Z,472nm,19.4s,baz=96,slow=35						
TGY	**Tagaytay City**	**12.39**	**206**	P	**P**	**02 22 27.1**	**+0.4**
TGY				pmax	pmax		
	comp=Z,106nm,0.3s						
TGY				MLR	MLR		
	comp=Z,472nm,19.4s						
DL2	**Dalian**	**14.12**	**344**	*eP*	**P**	**02 22 50.8**	**+1.5**
DL2				*eS*	**S**	**02 25 31.5**	**+6.1**
DL2				AMB	AMB		
	comp=Z,20nm,1.2s						
DL2				AMB	AMB		
	comp=Z,170nm,5.3s						
DL2				LR	LR		
	comp=N,490nm,17.7s						
DL2				LR	LR		
	comp=E,190nm,20.4s						
DL2				LR	LR		
	comp=Z,320nm,11.4s						
CBIJ	**Chichi jima**	**14.13**	**80**	P	**P**	**02 22 52.0**	**+2.5**
	comp=Z,2.9nm,0.3s,baz=247,slow=20,SNR=4.6						
CBIJ				LR	LR	02 27 32.0	
	comp=Z,547nm,21.1s,baz=279,slow=34						
MAJO	**Matsushiro**	**14.95**	**39**	*eP*	**P**	**02 22 58.8**	**-1.3**
	comp=Z,28nm,0.9s						
MAT	**Matsushiro**	**14.95**	**39**	P	**P**	**02 23 05.8**	**+5.6**
ENH	**Enshi**	**15.87**	**292**	*eP*	**P**	**02 23 13.3**	**+1.3**
	comp=Z,137nm,1.8s						
SNY	**Shenyang**	**16.60**	**352**	⇓P	**P**	**02 23 21.5**	**+0.4**
SNY				S	**S**	**02 26 33.5**	**+10**
SNY				AMB	AMB		
	comp=Z,10.0nm,0.3s						
SNY				AMB	AMB		
	comp=Z,190nm,5.4s						
SNY				LR	LR		
	comp=N,570nm,15.6s						
SNY				LR	LR		
	comp=Z,610nm,18.0s						
QIZ	**Qiongzhong**	**16.71**	**251**	P	**P**	**02 23 25.3**	**+2.6**
QIZ				S	**S**	**02 26 25.5**	**-0.3**
QIZ				LR	LR		
	comp=N,302nm,19.0s						
QIZ				LR	LR		
	comp=E,813nm,20.4s						
QIZ				LR	LR		
	comp=Z,1μm,21.2s						
QIZ	**Qiongzhong**	**16.71**	**251**	*eP*	**P**	**02 23 22.6**	**-0.1**
	comp=Z,123nm,1.4s						
BJT	**Baijiatuan**	**17.00**	**332**	*eP*	**P**	**02 23 27.1**	**+0.8**
	comp=Z,45nm,1.1s						
BJI	**Beijing**	**17.02**	**332**	*eP*	**P**	**02 23 27.3**	**+0.9**
BJI				AP		02 23 39.0	
BJI				XP		02 23 46.0	
BJI				S	**S**	**02 26 33.0**	**+0.3**
BJI				XS		02 26 59.5	
BJI				LR	LR		
	comp=N,399nm,14.4s						
BJI				LR	LR		
	comp=E,438nm,15.7s						
BJI				LR	LR		
	comp=Z,479nm,24.5s						
TIY	**Taiyuan**	**17.18**	**319**	*eP*	**P**	**02 23 28.8**	**+0.2**
TIY				LR	LR		
	comp=E,395nm,9.0s						
TIY				LR	LR		
	comp=Z,451nm,9.0s						
GYA	**Guiyang**	**17.93**	**278**	⇑*iP*	**P**	**02 23 38.5**	**+0.6**
GYA				AMB	AMB		
	comp=Z,50nm,1.0s						
GYA				LR	LR		
	comp=N,620nm,15.0s						
GYA				LR	LR		
	comp=E,730nm,15.0s						
GYA				LR	LR		
	comp=Z,610nm,17.1s						
CN2	**Changchun**	**18.41**	**357**	*eP*	**P**	**02 23 43.5**	**-0.2**
CN2				*e*AP		02 23 59.5	
CN2				*eS*	**S**	**02 27 04.0**	**-0.1**
CN2				AMB	AMB		
	comp=Z,200nm,5.0s						
CN2				LR	LR		
	comp=N,250nm,12.0s						
CN2				LR	LR		
	comp=E,340nm,12.0s						
CN2				LR	LR		
	comp=Z,210nm,13.0s						
MDJ	**Mudanjiang**	**19.36**	**7**	P	**P**	**02 23 54.3**	**-0.4**
MDJ				AP		02 24 04.3	
MDJ				S	**S**	**02 27 30.0**	**+4.6**
MDJ				XS		02 27 48.0	
MDJ				PCP	PcP	02 28 15.3	+0.2
MDJ				PCS		02 31 51.5	
MDJ				AMB	AMB		
	comp=Z,143nm,3.9s						
MDJ				LR	LR		
	comp=N,438nm,17.9s						
MDJ				LR	LR		
	comp=E,389nm,16.7s						
MDJ				LR	LR		
	comp=Z,583nm,17.9s						
HHC	**Hu-ho-hao-te**	**19.85**	**325**	*eP*	**P**	**02 24 01.8**	**+1.7**
HHC				AP		02 24 13.3	
HHC				PP	PP	02 24 24.5	+4.9
HHC				S	**S**	**02 27 44.3**	**+8.3**
HHC				XS		02 28 00.5	
HHC				AMB	AMB		
	comp=Z,160nm,5.0s						
HHC				LR	LR		
	comp=N,204nm,12.5s						
HHC				LR	LR		
	comp=E,237nm,13.1s						
HHC				LR	LR		
	comp=Z,190nm,14.7s						
BTO	**Baotou**	**20.52**	**322**	*eP*	**P**	**02 24 03.0**	**-4.1**
CD2	**Chengdu**	**20.83**	**291**	P	**P**	**02 24 09.5**	**-0.9**
CD2				S	**S**	**02 27 55.3**	**0.0**
CD2				AMB	AMB		
	comp=Z,30nm,1.0s						
CD2				AMB	AMB		
	comp=Z,280nm,6.3s						
CD2				LR	LR		
	comp=E,1μm,14.8s						
CD2				LR	LR		
	comp=Z,630nm,14.3s,MS4.1						
GUMO	**Guam**	**20.84**	**121**	*eP*	**P**	**02 24 10.6**	**0.0**
	comp=Z,291nm,1.0s						
KMI	**Kunming**	**21.54**	**274**	*eP*	**P**	**02 24 17.8**	**+0.2**
KMI				S	**S**	**02 28 06.8**	**-1.8**
KMI				LR	LR		
	comp=N,445nm,15.7s,MS4.2						
KMI				LR	LR		
	comp=E,489nm,14.8s,MS4.2						
KMI				LR	LR		
	comp=Z,521nm,15.9s,MS4.0						
KKM	**Kota Kinabalu**	**21.62**	**209**	⇑*eP*	**P**	**02 24 20.1**	**+1.7**
LZH	**Lanzhou**	**22.20**	**304**	*eP*	**P**	**02 24 24.8**	**+0.7**
LZH				AP		02 24 36.3	
LZH				PP	PP	02 24 52.5	+1.0
LZH				*eS*	**S**	**02 28 20.5**	**-0.2**
LZH				SS	SS	02 29 03.3	+0.8
LZH				AMB	AMB		
	comp=Z,71nm,1.5s,mb4.9						
LZH				AMB	AMB		
	comp=Z,169nm,4.5s						
LZH				LR	LR		
	comp=E,1μm,10.5s						
LZH				LR	LR		
	comp=Z,2μm,12.2s,MS4.8						
ASAJ	**Asahikawa**	**22.80**	**31**	P	**P**	**02 24 31.1**	**+1.1**
	comp=Z,20nm,0.6s,mb4.8,baz=236,slow=11,SNR=16						
ASAJ				LR	LR	02 34 17.7	
	comp=Z,459nm,20.0s,MS3.9,baz=348,slow=39						
ASAJ	**Asahikawa**	**22.80**	**31**	P	**P**	**02 24 31.1**	**+1.1**
ASAJ				pmax	pmax		
	comp=Z,20nm,0.6s						
ASAJ				MLR	MLR		
	comp=Z,459nm,20.0s						
KLR	**Kul'dur**	**24.16**	**8**	*eP*	**P**	**02 24 41.8**	**-1.2**
YSS	**Yuzh-Sakhalins**	**25.10**	**27**	⇓*eP*	**P**	**02 24 52.0**	**-0.2**
YSS				*e*	pP	02 25 01.2	-2.6
YSS				*e*		02 25 42.0	
YSS				*eS*	**S**	**02 29 10.0**	**-1.0**
YSS				pmax	pmax		
	comp=N,30nm,0.9s						
YSS				pmax	pmax		
	comp=Z,500nm,0.9s,mb5.0						
YSS				MLR	MLR		
	comp=Z,500nm,18.0s,MS4.1						
YSS	**Yuzh-Sakhalins**	**25.10**	**27**	*eP*	**P**	**02 24 50.9**	**-1.3**
	comp=Z,115nm,1.1s,mb5.3						
GTA	**Gaotai**	**26.45**	**308**	*eP*	**P**	**02 25 03.3**	**-1.5**
GTA				AP	pP	02 25 17.0	+0.4
GTA				PP	PP	02 25 46.0	-3.0
GTA				PCP	PcP	02 28 30.3	+0.7
GTA				S	**S**	**02 29 27.5**	**-5.8**
GTA				AMB	AMB		
	comp=Z,83nm,6.1s						
GTA				LR	LR		
	comp=N,192nm,16.0s,MS3.9						
GTA				LR	LR		
	comp=E,190nm,15.2s,MS3.9						
GTA				LR	LR		
	comp=Z,206nm,15.6s,MS3.8						
CMAR	**Chiang Mai Arr**	**26.49**	**260**	P	**P**	**02 25 05.9**	**+0.5**
	comp=Z,1.7nm,0.7s,mb3.7,baz=63,slow=8.3,SNR=12						
CMAR				PcP	PcP	02 28 30.2	+0.3
	comp=Z,1.7nm,0.4s,baz=85,slow=1.1,SNR=7.9						
CMAR				LR	LR	02 37 59.4	
	comp=Z,198nm,18.4s,MS3.7,baz=70,slow=42						
CMAR	**Chiang Mai Arr**	**26.49**	**260**	P	**P**	**02 25 05.9**	**+0.5**
CMAR						02 28 30.3	
CMAR				pmax	pmax		
	comp=Z,2.0nm,0.7s						
CMAR				pmax	pmax		
	comp=Z,2.0nm,0.4s						
CMAR				MLR	MLR		
	comp=Z,198nm,18.4s						
ULN	**Ulaanbaatar**	**27.22**	**331**	*eP*	**P**	**02 25 09.5**	**-2.3**
	comp=Z,10nm,0.8s,mb4.4						
SONM	**Songino Array**

comp=Z,2.7nm,0.5s,baz=156,slow=4.9,SNR=9.9
ZAK Zakamensk 30.75 330 *e*P **P** **02 25 40.9 -2.4**
SHL Shillong 31.25 278 *e* **P** **02 25 46.0 -2.0**
TLY Talaya 31.54 332 *e*P **P** **02 25 46.8 -3.5**
TLY pmax pmax
comp=Z,115nm,0.9s,mb5.7
LSA Lhasa 31.61 286 *e*P **P** **02 25 49.0 -2.2**
comp=Z,5.5nm,0.7s,mb4.5
MOY Mondy 32.68 330 *e*P **P** **02 25 58.5 -1.7**
GUN Gumba 36.33 283 *e*P **P** **02 26 32.1 +0.4**
comp=Z,37nm,0.9s,mb5.3
WMQ Urumqi 36.49 310 *e*P **P** **02 26 32.3 -0.6**
WMQ PP PP 02 27 56.8 -1.0
WMQ PCP PcP 02 28 56.3 -0.1
WMQ S **S** **02 32 10.0 -1.2**
WMQ PCS 02 32 43.0
WMQ SS ScS 02 34 36.8 -1.9
WMQ SCS ScS 02 36 42.5 -0.5
WMQ AMB AMB
comp=Z,32nm,0.8s,mb5.3
WMQ AMB AMB
comp=Z,283nm,5.4s
YAK Yakutsk 36.71 2 *e*P **P** **02 26 33.2 -1.3**
YAK pmax pmax
comp=Z,14nm,0.8s,mb4.8
PKI Pulchoki 36.78 283 *e*P **P** **02 26 35.8 +0.3**
comp=Z,13nm,0.5s,mb5.0
KKN Kakani 36.87 283 *e*P **P** **02 26 36.3 0.0**
comp=Z,17nm,0.6s,mb5.1
DMN Daman 37.04 283 *e*P **P** **02 26 38.3 +0.6**
GKN Gorkha 37.41 284 *e*P **P** **02 26 40.6 -0.2**
comp=Z,16nm,0.5s,mb5.1
KOLN Koldanda 38.35 283 *e*P **P** **02 26 49.2 +0.6**
comp=Z,29nm,0.9s,mb5.0
PMG Port Moresby 39.97 147 LR LR 02 41 44.2
comp=Z,174nm,18.1s,MS3.9,baz=288,slow=33
PMG Port Moresby 39.97 147 *e*P **P** **02 27 01.6 -0.7**
MKAR Makanchi Array 41.00 313 P **P** **02 27 08.8 -1.5**
comp=Z,20nm,0.6s,mb4.9,baz=99,slow=10,SNR=197
PcP PcP 02 29 09.8 -0.7
MKAR comp=Z,3.8nm,0.7s,baz=72,slow=3.8,SNR=6.0
ScP 02 32 55.8
MKAR comp=Z,0.6nm,0.8s,baz=135,slow=4.1,SNR=2.8
LR LR 02 45 47.5
MKAR comp=Z,121nm,18.4s,MS3.8,baz=105,slow=39
MKAR Makanchi Array 41.00 313 P **P** **02 27 08.8 -1.6**
MKAR 02 29 09.8
MKAR pmax pmax
comp=Z,20nm,0.6s
MKAR pmax pmax
comp=Z,4.0nm,0.7s
MKAR pmax pmax
comp=Z,1.0nm,0.9s
MKAR MLR MLR
comp=Z,121nm,18.4s
MKAR Makanchi Array 41.00 313 P **P** **02 27 08.8 -1.5**
MKAR PcP PcP 02 29 09.8 -0.7
MKAR ScP 02 32 55.8
MKAR LR LR 02 45 47.5
SEY Seymchan 41.28 18 *e*P **P** **02 27 12.9 +0.3**
SEY pmax pmax
comp=N,20nm,0.8s
SEY pmax pmax
comp=E,30nm,0.8s
SEY pmax pmax
comp=Z,50nm,0.8s,mb5.2
FITZ Fitzroy Crossi 43.22 181⇑ *i*P **P** **02 27 28.8 -0.2**
comp=Z,29nm,0.6s,mb5.2
FITZ *i* PCP PcP 02 29 18.1 -0.1
NVS Novosibirsk 43.25 325 *i* P **P** **02 27 25.9 -2.8**
NVS pmax pmax
comp=N,17nm,1.4s
NVS pmax pmax
comp=E,30nm,1.4s
NVS pmax pmax
comp=Z,23nm,1.4s,mb4.7
KSH Kashi 44.40 301 *e*P **P** **02 27 37.0 -1.3**
KSH AMB AMB
comp=Z,150nm,5.3s
ULHL Ulahol 44.41 305 P **P** **02 27 38.0 -0.2**
SNR=16
KURK Kurchatov 44.42 318 *e*P **P** **02 27 35.8 -2.4**
TKM2 Tokmak 2 44.95 306 P **P** **02 27 42.8 +0.3**
SNR=28
KZA Kyzart 45.12 305 P **P** **02 27 45.0 +1.0**
SNR=9.4
KBK Karagaybulak 45.40 306 P **P** **02 27 46.4 +0.3**
SNR=7.5
CHMS Chumysh 45.57 306 P **P** **02 27 47.2 -0.3**
SNR=7.4
FRU Bishkek 45.66 306 *e*P **P** **02 27 48.0 -0.2**
WRAB Tennant Creek 45.67 170 *e*P **P** **02 27 48.1 -0.5**
comp=Z,94nm,0.8s,mb5.8
WRA Warramunga Arr 45.67 170 P **P** **02 27 48.5 -0.1**
comp=Z,34nm,0.7s,mb5.4,baz=351,slow=8.6,SNR=153
WRA PcP PcP 02 29 26.1 -0.5
comp=Z,5.5nm,0.8s,baz=344,slow=3.7,SNR=5.0
WRA Warramunga Arr 45.67 170 P **P** **02 27 48.5 -0.2**
WRA 02 29 26.1
WRA pmax pmax
comp=Z,34nm,0.7s
WRA pmax pmax
comp=Z,6.0nm,0.8s
WB2 Warramunga Arr 45.68 170⇑ *i*P **P** **02 27 48.6 -0.1**
UCH Uchtor 45.68 305 P **P** **02 27 49.0 +0.5**
SNR=28
AAK Ala-Archa 45.73 306 *e*P **P** **02 27 47.5 -1.3**
comp=Z,2.9nm,0.6s,mb4.4
USP Ospenovka 45.78 307 P **P** **02 27 48.7 -0.6**
SNR=11
EKS2 Erkin-Say 46.26 306 P **P** **02 27 52.8 -0.1**
SNR=6.0
AML Almayashu 46.28 305 P **P** **02 27 53.6 +0.4**
SNR=5.8
TIXI Tiksi 46.33 1 *e*P **P** **02 27 50.6 -2.5**
TIXI pmax pmax
comp=Z,7.0nm,0.9s,mb4.6
TIXI MLR MLR
comp=Z,165nm,18.0s,MS4.0
TIXI Tiksi 46.33 1 *e*P **P** **02 27 50.3 -2.9**
comp=Z,6.0nm,0.5s,mb4.8
BILL Bilibino 48.96 19⇑ *i*P **P** **02 28 12.5 -1.2**
BILL *i* *PP pP 02 28 24.0 -2.2
BILL *e* *SP sP 02 28 28.4 -3.2
BILL *i* 02 29 37.7
BILL *i* 02 30 05.0
BILL *e* 02 30 55.4
BILL pmax pmax
comp=Z,26nm,1.4s,mb5.1
BILL MLR MLR
comp=Z,400nm,23.0s,MS4.3
BILL Bilibino 48.96 19 *e*P **P** **02 28 12.6 -1.1**
comp=Z,24nm,1.2s,mb5.1
CTA Charters Tower 49.08 155 *e*P **P** **02 28 16.4 +1.1**
comp=Z,15nm,1.5s,mb4.8
CTA Charters Tower 49.08 155 LR LR 02 47 38.5
comp=Z,212nm,20.6s,MS4.1,baz=47,slow=34
CTAO Charters Tower 49.08 155 *e*P **P** **02 28 15.3 +0.1**
AS12 Alice Springs 49.27 171⇑ *i*P **P** **02 28 16.9 +0.2**
comp=Z,15nm,0.9s,mb5.0
AS12 *i* PCP PcP 02 29 39.1 -0.3
ASAR Alice Springs 49.27 171 P **P** **02 28 16.8 +0.1**
comp=Z,10nm,0.5s,mb5.1,baz=356,slow=14,SNR=136
ASAR PcP PcP 02 29 39.0 -0.3
comp=Z,12nm,0.6s,baz=347,slow=2.8,SNR=24
ASAR LR LR 02 48 12.8
comp=Z,112nm,18.2s,MS3.9,baz=2.3,slow=35
BRVK Borovoye 49.99 319 *e*P **P** **02 28 20.2 -1.6**
ZRNK Zerenda 50.73 319 *e*P **P** **02 28 25.6 -1.9**
ARU Arti 57.13 322⇓ *i*P **P** **02 29 11.5 -3.0**
ARU *e* 02 30 06.7
ARU *e*S **S** **02 37 01.2 -3.3**
ARU pmax pmax
comp=Z,32nm,0.9s,mb5.3
ARU MLR MLR
comp=Z,300nm,21.0s,MS4.4
ARU MLR MLR
comp=N,100nm,18.0s,MS4.3
ARU MLR MLR
comp=E,200nm,20.0s,MS4.3
ARU Arti 57.13 322 *e*P **P** **02 29 11.6 -2.9**
comp=E,34nm,1.0s,mb5.3
KLBR Kellerberrin 57.26 189 *e*P **P** **02 29 12.5 -3.2**
comp=E,30nm,0.9s,mb5.3
STKA Stephens Creek 58.71 165⇑ *i*P **P** **02 29 25.3 -0.5**
comp=E,16nm,0.7s,mb5.2
STKA Stephens Creek 58.71 165 P **P** **02 29 25.5 -0.4**
comp=E,20nm,0.7s,mb5.3,baz=343,slow=6.7,SNR=33
STKA LR LR 02 51 11.3
comp=E,165nm,21.8s,MS4.1,baz=21,slow=32
KDAK Kodiak Island 64.10 36 *e*P **P** **02 30 00.3 -1.4**
comp=E,32nm,1.0s,mb5.3
CNB Canberra Magne 64.10 159⇑ *i*P **P** **02 30 02.8 +0.7**
comp=E,22nm,0.8s,mb5.2
THR Tehran 64.30 299 P **P** **02 30 03.9 +0.5**
comp=E,12nm,0.7s,mb5.0,baz=77,slow=5.7,SNR=36
THR LR LR 03 01 57.2
comp=E,47nm,19.6s,MS3.7,baz=283,slow=40
THR Tehran 64.30 299 P **P** **02 30 03.9 +0.5**
THR pmax pmax
comp=Z,12nm,0.7s
THR MLR MLR
comp=Z,47nm,19.6s
MCK McKinley 65.16 29 *e*P **P** **02 30 07.7 -0.8**
comp=Z,12nm,0.9s,mb4.9
PMR Palmer 65.35 32 *e*P **P** **02 30 08.5 -1.2**
comp=Z,23nm,1.3s,mb5.1
PMR LR LR
comp=Z,286nm,19.0s,MS4.5
COLA College 65.48 28 *d* *i*P **P** **02 30 10.7 +0.2**
COLA College 65.48 28 *e*P **P** **02 30 10.4 -0.1**
comp=Z,8.1nm,0.7s,mb4.9
COLA LR LR
comp=Z,258nm,21.0s,MS4.4
SML Sawmill 65.69 31 *e*P **P** **02 30 11.1 -0.8**
ILAR Eielson Array 65.90 28 P **P** **02 30 11.8 -1.3**
comp=Z,2.9nm,0.7s,mb4.4,baz=261,slow=5.0,SNR=37
ILAR Eielson Array 65.90 28 P **P** **02 30 11.9 -1.3**
ILAR pmax pmax
comp=Z,3.0nm,0.7s
HASS Wahat al Ahsa' 68.49 288 P **P** **02 30 29.9 -0.2**
KIV Kislovodsk 68.62 310 *i* P **P** **02 30 30.4 -0.2**
KIV *e* 02 30 55.9
KIV *e*S S 02 39 25.8 -2.7
KIV pmax pmax
comp=Z,70nm,0.9s,mb5.6
KIV MLR MLR
comp=Z,100nm,20.0s,MS4.0
KIV MLR MLR
comp=N,50nm,19.0s
KIV Kislovodsk 68.62 310 *e*P **P** **02 30 30.1 -0.5**
comp=N,118nm,1.2s,mb5.7
MOS Moscow 68.84 323 *e*P **P** **02 30 30.7 -1.0**
MOS pmax pmax
comp=Z,72nm,1.0s,mb5.6
MIB Mutribah 69.03 294 *e*P **P** **02 30 32.5 -0.9**
VRSR Storozhevoye 69.06 318 *e*P **P** **02 30 31.8 -1.4**
VRSR pmax pmax
comp=Z,30nm,1.0s,mb5.2
VRSR pmax pmax
comp=N,10.0nm,1.1s
VRSR pmax pmax
comp=E,10.0nm,1.0s
RDF Al-Radifah 69.13 293 *e*P **P** **02 30 33.0 -1.0**
OBN Obninsk 69.58 322 *a* *i*P **P** **02 30 34.8 -1.5**
OBN 02 33 12.0
OBN *e*S S 02 39 39.7 +0.1
OBN SS SS 02 44 02.0 -7.6
OBN pmax pmax
comp=Z,29nm,0.9s,mb5.2
OBN MLR MLR
comp=Z,200nm,19.0s,MS4.4
KEV Kevo 69.68 339 *e*p **P** **02 30 34.0 -2.7**
comp=Z,10nm,0.7s,mb4.9
KEV Kevo 69.68 339 *e*P **P** **02 30 34.0 -2.7**
KEV pmax pmax
comp=Z,10.0nm,0.7s,mb4.8
JOF Joensuu 70.06 331 *e*p **P** **02 30 37.5 -1.6**
comp=Z,1.6nm,0.4s,mb4.3
JOF Joensuu 70.06 331 *e*P **P** **02 30 37.5 -1.6**
JOF pmax pmax
comp=Z,2.0nm,0.4s,mb4.4
ARCES ARCESS Array B 70.25 338 P **P** **02 30 39.0 -1.1**
comp=Z,9.5nm,0.9s,mb4.7,baz=66,slow=7.6,SNR=17
ARCES LR LR 03 08 39.1
comp=Z,162nm,18.7s,MS4.3,baz=334,slow=42
INK Inuvik 70.27 23 P **P** **02 30 40.1 -0.2**
comp=Z,36nm,1.1s,mb5.2,baz=296,slow=7.2,SNR=40
INK Inuvik 70.27 23 P **P** **02 30 40.1 -0.2**
INK pmax pmax
comp=Z,36nm,1.1s
INK Inuvik 70.27 23 *e*P **P** **02 30 39.8 -0.5**
comp=Z,25nm,0.9s,mb5.2
ERZM Erzurum 70.69 306 *i* P **P** **02 30 44.0 +0.7**
SOC Sochi 70.79 310 *c* *i*P **P** **02 30 42.8 -1.1**
SOC *e* 02 31 01.9
SOC *e* 02 33 14.1
SOC *e*PPP PPP 02 35 02.5 -1.5
SOC *e*S S 02 39 47.0 -7.0
SOC *e*PS PS 02 40 12.6 -15
SOC *e* 02 40 33.7
SOC *e*SS SS 02 44 17.4 -11
SOC pmax pmax
comp=Z,40nm,0.9s,mb5.3
SOC pmax pmax
comp=N,4.0nm,0.5s
SOC pmax pmax
comp=E,8.0nm,0.4s
SOC MLR MLR
comp=Z,220nm,22.0s,MS4.4
SOC MLR MLR
comp=N,90nm,17.0s
SOC MLR MLR
comp=E,130nm,24.0s
ANN Anapa 71.99 312 *c* *i*P **P** **02 30 50.0 -1.0**
ANN pmax pmax
comp=N,10.0nm,0.8s
ANN pmax pmax
comp=E,8.0nm,0.8s
ANN pmax pmax
comp=Z,30nm,0.8s,mb5.3
MZLS Mizel 72.72 289 P **P** **02 30 55.9 +0.1**
FINES FINESS Array B 72.86 330 P **P** **02 30 55.0 -0.9**
comp=Z,15nm,0.7s,mb5.0,baz=70,slow=6.1,SNR=120
FINES LR LR 03 06 56.8
comp=Z,156nm,18.3s,MS4.3,baz=4.1,slow=39
FINES FINESS Array B 72.86 330 P **P** **02 30 55.0 -0.8**
FINES pmax pmax
comp=Z,15nm,0.7s
FINES MLR MLR
comp=Z,156nm,18.3s
ELZG Elazig 72.89 305 *i* P **P** **02 30 57.3 +0.8**
SIM Simferopol' 74.17 312⇑ *e*P **P** **02 31 03.3 -0.5**
SIM pmax pmax
comp=Z,69nm,0.7s,mb5.7
GZT Gaziantep 74.33 304 *i* P **P** **02 31 04.7 -0.1**
HILS Ha'il 74.43 293 P **P** **02 31 06.0 +0.3**
AFFS 'Afif 74.64 289 P **P** **02 31 07.2 +0.2**
BOYT Boyabat 74.86 309 *i* P **P** **02 31 07.9 +0.1**
CTKT Corum 75.22 308 *i* P **P** **02 31 10.2 +0.2**
DLBC Dease Lake 75.40 32 P **P** **02 31 12.1 +1.5**
comp=Z,12nm,1.1s,mb4.8,baz=305,slow=7.3,SNR=12
DLBC Dease Lake 75.40 32 *e*P **P** **02 31 11.2 +0.6**
COBT Iskenderun 75.60 304 *i* P **P** **02 31 12.9 +0.7**
AVNT Avonos 75.83 306 *i* P **P** **02 31 13.2 -0.2**
TATS Tathlith 75.85 285 P **P** **02 31 14.2 +0.3**
BALT Daday 75.88 309 *i* P **P** **02 31 13.9 +0.2**
DAG Danmarks Havn 75.90 352⇓ *i*P **P** **02 31 12.1 -1.1**
comp=Z,13nm,0.9s,mb4.9
DAG Danmarks Havn 75.90 352⇓ *i*P **P** **02 31 12.1 -1.1**
DAG pmax pmax
comp=Z,13nm,0.9s,mb4.9
ELDT Eldivan 76.23 308 *i* P **P** **02 31 15.8 +0.1**
BRTR Keskin Array B 76.36 308 P **P** **02 31 16.4 -0.1**
comp=Z,17nm,0.8s,mb5.0,baz=96,slow=5.6,SNR=113
BRTR LR LR 03 06 23.1
comp=Z,40nm,20.6s,MS3.7,baz=70,slow=37
NAMS An Nimas 77.09 285 P **P** **02 31 22.0 +1.0**
KBRS Khaybar 77.12 293 P **P** **02 31 22.2 +1.2**
SUW Suwalki 77.26 324⇑ *i*P **P** **02 31 20.7 -0.5**
comp=Z,100nm,0.0s
SUW Suwalki 77.26 324⇑ *i*P **P** **02 31 20.7 -0.5**
SUW MLR MLR
comp=Z,200nm,20.8s,MS4.4
BLJS Baljurashi 77.35 286 P **P** **02 31 23.3 +0.9**
CFR Carcaliu 78.02 314⇓ *i*P **P** **02 31 25.5 -0.1**
CFR Carcaliu 78.02 314⇓ *i*P **P** **02 31 25.5 0.0**
LTHS Al Lith 78.23 287 P **P** **02 31 27.9 +0.7**
HARR Harsova 78.35 314⇓ *i*P **P** **02 31 27.8 +0.4**
HARR Harsova 78.35 314⇓ *i*P **P** **02 31 27.9 +0.5**
CSS Prodhromos 78.39 303 *e*P **P** **02 31 27.3 -0.5**
TBKS Tabuk 78.44 296 P **P** **02 31 29.1 +0.8**
VRI Vrincioaia 78.64 315⇓ *i*P **P** **02 31 30.0 +1.0**
VRI Vrincioaia 78.64 315⇓ P **P** **02 31 30.1 +1.1**
JMQS Jabal Moqyreh 78.73 297 P **P** **02 31 30.2 +0.4**
YNBS Yanbu' al Bahr 78.73 292 P **P** **02 31 30.6 +0.6**
ALWS Ilw as Safayha 79.22 297 P **P** **02 31 33.2 +0.6**
JMOS Jabal al Moail 79.24 297 P **P** **02 31 33.1 +0.4**
PRD Provadia 79.31 313 *i* P **P** **02 31 33.0 +0.3**
ULDT Uludag 79.39 309 *i* P **P** **02 31 33.0 -0.2**
NB2 NORSAR Subarra 79.41 333 P **P** **02 31 31.8 -1.0**
comp=Z,30nm,0.8s,mb5.3,baz=56,slow=5.3
NB2 NORSAR Subarra 79.41 333 P **P** **02 31 31.8 -1.0**
baz=56,slow=5.6
NB2 NORSAR Subarra 79.41 333 P **P** **02 31 31.8 -1.0**
NOA NORSAR Array B 79.41 333 P **P** **02 31 32.0 -0.8**
comp=Z,21nm,0.8s,mb5.1,baz=55,slow=5.5,SNR=131
NOA LR LR 03 09 10.3
comp=Z,110nm,20.9s,MS4.2,baz=30,slow=38
NOA NORSAR Array B 79.41 333 P **P** **02 31 32.1 -0.7**
NOA pmax pmax
comp=Z,21nm,0.8s
NOA MLR MLR
comp=Z,110nm,20.9s
HAQS Haql 79.43 297 P **P** **02 31 34.0 +0.3**
KWP Kalwaria 79.46 320⇑ *i*P **P** **02 31 33.7 +0.3**
KWP MLR MLR 03 08 11.0
comp=Z,100nm,21.6s,MS4.1
AYUS 'Aynunah 79.49 296 P **P** **02 31 34.1 +0.1**
BDAS Al Bad' 79.53 296 P **P** **02 31 34.6 +0.3**
NAO01 NORSAR Array S 79.65 333 *e*P **P** **02 31 32.9 -1.3**
comp=Z,13nm,0.9s,mb4.8
YKW3 Yellowknife Ar 79.89 24 *e*P **P** **02 31 35.6 +0.2**
YKA Yellowknife Ar 79.93 24 P **P** **02 31 36.0 +0.4**
comp=Z,26nm,0.8s,mb5.2,baz=300,slow=5.3,SNR=366
YKA PKKPbc 02 50 19.3
comp=Z,0.5nm,0.7s,baz=126,slow=2.3,SNR=13
YKA Yellowknife Ar 79.93 24 P **P** **02 31 36.0 +0.4**
YKA pmax pmax
comp=Z,26nm,0.8s
YKA pmax pmax
comp=Z,1.0nm,0.7s
YKA Yellowknife Ar 79.93 24 P **P** **02 31 36.0 +0.4**
YKA PKKPbc 02 50 19.3
DNZL Cakiroluk 80.46 307 *i* P **P** **02 31 39.4 +0.4**
CRVS Cervenica-Dubn 80.52 320 *i* P **P** **02 31 39.6 +0.6**
GKP Gorka Klasztor 80.74 325⇑ *i*P **P** **02 31 40.2 +0.1**
GKP MLR MLR 03 10 09.9
comp=Z,300nm,22.3s,MS4.6
OJC Ojcow 80.85 321⇑ *i*P **P** **02 31 41.0 +0.2**
NIE Niedzica 80.94 321⇓ *e*P **P** **02 31 41.8 +0.5**
BSD Bornholm Skovb 80.96 327⇑ *i*P **P** **02 31 40.8 -0.4**
comp=Z,34nm,0.8s,mb5.3
BSD Bornholm Skovb 80.96 327⇑ *i*P **P** **02 31 40.8 -0.4**
BSD pmax pmax
comp=Z,34nm,0.8s,mb5.3
DIM Dimitrovgrad 81.05 312 *i* P **P** **02 31 42.5 +0.5**
PGB Panagyurishte 81.74 313 *i* P **P** **02 31 46.3 +0.7**
RZN Ryazhn 81.76 312 *i* P **P** **02 31 45.5 -0.2**
SUMG Summit 81.77 355 *e*P **P** **02 31 45.6 +0.4**
SCO Scoresbysund 81.83 350 *i* P **P** **02 31 45.8 +0.3**
comp=Z,16nm,0.8s,mb5.0
SCO Scoresbysund 81.83 350 *i* P **P** **02 31 45.8 +0.3**
SCO pmax pmax
comp=Z,16nm,0.8s,mb5.0
PSZ Piszkesteto 81.90 319⇑ *e*P **P** **02 31 46.6 +0.3**
OKC Ostrava-Krasne 81.96 322 *e*P **P** **02 31 47.3 +0.7**
OKC *e*pP pP 02 32 02.5 +2.5
VYHS Vyhne 82.24 320 *i* P **P** **02 31 49.0 +1.0**
VYHS *e*PP PP 02 34 59.8 +1.1
VYHS *e*S S 02 41 59.7 +1.2
MORC Moravsky Berou 82.33 322 *e*P **P** **02 31 48.5 0.0**
comp=Z,14nm,1.1s,mb4.8
VTS Vitosha 82.35 314 *i* P **P** **02 31 49.5 +0.8**
MMB Musomiste 82.46 312 *i* P **P** **02 31 49.7 +0.4**
KSP Ksiaz 82.48 323⇑ *i*P **P** **02 31 49.7 +0.5**
KSP MLR MLR 03 12 38.2
comp=Z,200nm,20.3s,MS4.5
KSP Ksiaz 82.48 323 *e*P **P** **02 31 49.4 +0.2**
KSP *e* *PP pP 02 32 01.2 -1.4
BOLS Boljevac 82.58 315⇑ *i*P **P** **02 31 49.9 0.0**
DPC Dobruska-Polom 82.72 323 *e*P **P** **02 31 51.5 +1.1**
DPC *e*pP pP 02 32 03.2 -0.7
KKB Krupnik 82.77 313 P **P** **02 31 51.0 +0.1**
UPC Upice 82.80 323 *e*P **P** **02 31 51.7 +0.8**
SRO Srobarova 82.88 320 *e*P **P** **02 31 52.4 +1.1**
MUD Monsted U'grnd 82.91 330⇑ *i*P **P** **02 31 51.5 +0.2**
comp=Z,28nm,0.6s,mb5.5
MUD Monsted U'grnd 82.91 330⇑ *i*P **P** **02 31 51.5 +0.2**
MUD pmax pmax
comp=Z,28nm,0.6s,mb5.5
RUE Ruedersdorf 82.94 325 *e*P **P** **02 31 51.6 +0.1**
SMOL Smolenice 83.04 321 *i* P **P** **02 31 53.9 +1.8**
VAY Valandovo 83.36 313⇑ *i*P **P** **02 31 53.8 -0.1**
ZST Bratislava 83.39 321 *e*S S 02 41 57.6 -12
PVCC Panska Ves 83.58 323 *e*P **P** **02 31 55.5 +0.7**
PVCC *e*pP pP 02 32 09.6 +1.4
BRG Berggiesshubel 83.72 324 *i* P **P** **02 31 56.3 +0.8**
BRG *e* pP 02 32 10.1 +1.1
BRG pmax pmax
comp=Z,17nm,1.4s,mb5.0
BRG Berggiesshubel 83.72 324 *i* P **P** **02 31 56.3 +0.8**
comp=Z,17nm,1.4s,mb5.0
BRG *i* 02 31 58.0
BRG *e* pP 02 32 10.1 +1.1
SKO Skopje 83.80 314 *i* P **P** **02 31 57.0 +0.9**
BSEG Bad Segeberg 83.85 328 *e*P **P** **02 31 56.7 +0.7**
BSEG pmax pmax
comp=Z,44nm,0.9s,mb5.6
PRU Pruhonice 83.88 323 *e*P **P** **02 31 56.7 +0.4**
CLL Collm 83.98 325 P **P** **02 31 57.2 +0.4**
comp=Z,logA/T=1.3,mb5.2
CLL *e* *PP pP 02 32 11.0 +0.7
CLL Collm 83.98 325 *i* P **P** **02 31 57.2 +0.4**
CLL *e* pP 02 32 11.0 +0.7
CLL pmax pmax
comp=Z,22nm,1.0s,mb5.2
CLL Collm 83.98 325 *i* P **P** **02 31 57.2 +0.4**
comp=Z,22nm,1.0s,mb5.2
CLL *e* pP 02 32 11.0 +0.7
ARSA Arzberg 84.79 320⇑ *i*P **P** **02 32 02.4 +1.4**
comp=Z,5.7nm,1.0s,mb4.7
KHC Kasperske Hory 84.87 323 *e*P **P** **02 32 01.7 +0.4**
KHC *e*pP pP 02 32 14.1 -0.7
NKC Novy Kostel 84.87 324 *e*P **P** **02 32 02.4 +1.1**
NKC *e*pP pP 02 32 14.5 -0.3
GEC2 GERESS Array S 84.96 322 *e*P **P** **02 32 02.4 +0.6**
GEC2 pmax pmax
comp=Z,12nm,1.5s,mb4.8
GEC2 GERESS Array S 84.96 322 *e*P **P** **02 32 02.4 +0.6**
comp=Z,12nm,1.5s,mb4.8
GERES GERESS Array B 84.96 322 P **P** **02 32 01.9 +0.1**
comp=Z,2.7nm,0.8s,mb4.4,baz=47,slow=5.0,SNR=35
GERES PKKPbc 02 50 10.0
comp=Z,0.7nm,0.7s,baz=207,slow=3.0,SNR=9.5
GERES GERESS Array B 84.96 322 P **P** **02 32 01.9 +0.1**
GERES pmax pmax
comp=Z,3.0nm,0.8s
GERES pmax pmax
comp=Z,1.0nm,0.7s
CLZ Clausthal 85.03 326 *e*P **P** **02 32 03.0 +1.0**
comp=Z,47nm,1.2s,mb5.5
MOX Moxa 85.08 325 *i* P **P** **02 32 03.2 +0.9**
MOX L 03 13 53.0
MOX Moxa 85.08 325 *e*P **P** **02 32 03.2 +0.9**
comp=Z,15nm,1.6s,mb4.9
MOX LR LR
comp=Z,100nm,20.0s,MS4.2
MOA Molln 85.19 321⇑ *i*P **P** **02 32 03.6 +0.7**
comp=Z,5.4nm,0.7s,mb4.8
WET Wettzell 85.25 323 *e*P **P** **02 32 03.7 +0.5**
WET pmax pmax
comp=Z,38nm,2.3s,mb5.1
WET Wettzell 85.25 323 *e*P **P** **02 32 03.7 +0.5**
comp=Z,38nm,2.3s,mb5.1
LEGS Legarje 85.60 319 *e*P **P** **02 32 05.6 +0.6**
OBKA Obir 85.75 320⇑ *i*P **P** **02 32 06.4 +0.7**
comp=Z,7.3nm,0.8s,mb5.0
GRA1 Grafenberg Arr 85.83 324 *e*P **P** **02 32 07.0 +1.0**
comp=Z,26nm,1.0s,mb5.4
GRF Grafenberg Arr 85.83 324 *e*P **P** **02 32 07.0 +1.0**
GRF pmax pmax
comp=Z,26nm,1.0s,mb5.4
BOJS Bojanci 85.88 319 *e*P **P** **02 32 07.2 +0.9**
LJU Ljubljana 86.02 320 *e*P **P** **02 32 07.6 +0.6**

SSOR	Sweet Springs	86.04	42	P		P	02 32 08.0	+0.8
KBA	Koelnbreinsper	86.13	321	⇑*i*P		P	02 32 08.5	+0.9
	comp=Z,4.6nm,0.6s,mb4.9							
VOY	Vojsko	86.39	320	*e*P		P	02 32 08.7	-0.2
FUR	Furstenfeldbru	86.68	323	*e*P		P	02 32 11.1	+0.9
FUR				pmax	pmax			
	comp=Z,22nm,1.0s,mb5.3							
FUR	Furstenfeldbru	86.68	323	*e*P		P	02 32 11.1	+0.9
	comp=Z,22nm,1.0s,mb5.3							
HUMO	Hull Mountain	86.92	44	*e*P		P	02 32 12.6	+1.0
WATA	Walderalm	86.99	322	⇓*i*P		P	02 32 12.1	+0.4
	comp=Z,6.9nm,1.3s,mb4.7							
WTTA	Wattenberg	86.99	322	⇑*i*P		P	02 32 12.1	+0.3
	comp=Z,9.5nm,0.9s,mb5.0							
NEW	Newport	87.19	37	*e*P		P	02 32 13.5	+0.8
	comp=Z,14nm,1.1s,mb5.1							
NEW				*e*pP		pP	02 32 26.1	-0.2
MOTA	Moosalm	87.25	322	⇑*i*P		P	02 32 12.3	-0.7
	comp=Z,2.5nm,0.9s,mb4.4							
SQTA	Sankt Quirin	87.26	322	⇑*i*P		P	02 32 13.1	+0.1
	comp=Z,4.9nm,1.1s,mb4.7							
STU	Stuttgart	87.45	324	*e*P		P	02 32 14.3	+0.4
YBH	Yreka Blue Hor	87.54	44	P		P	02 32 16.6	+2.1
	comp=Z,8.7nm,1.0s,mb5.0,baz=318,slow=1.8,SNR=12							
YBH	Yreka Blue Hor	87.54	44	P		P	02 32 16.6	+2.0
YBH				pmax	pmax			
	comp=Z,9.0nm,1.0s							
YBH	Yreka Blue Hor	87.54	44	*e*P		P	02 32 15.5	+1.0
	comp=Z,11nm,1.2s,mb5.0							
BFO	Black Forest	88.17	324	*e*P		P	02 32 19.1	+1.7
WLF	Walferdange	88.48	326	*e*P		P	02 32 19.1	+0.2
CDF	Champ du Feu	88.68	324	*e*P		P	02 32 19.8	0.0
	comp=Z,7.0nm,0.8s,mb4.7							
MOD	Modoc	88.96	43	*e*P		P	02 32 22.4	+1.1
	comp=Z,6.8nm,0.9s,mb5.0							
MOD				*e*pP		pP	02 32 36.6	+1.6
BAIF	Baives	89.21	327	*e*P		P	02 32 21.8	-0.5
HINF	Hinteralfeld	89.27	324	*e*P		P	02 32 21.8	-0.8
	comp=Z,3.6nm,0.6s,mb4.6							
HAU	Haudompre	89.42	325	*e*P		P	02 32 23.0	-0.3
HAU				*e*R				
	comp=Z,121nm,20.8s							
FCC	Fort Churchill	89.66	20	*e*P		P	02 32 24.1	-0.1
	comp=Z,36nm,1.1s,mb5.6							
WVOR	Wild Horse Val	89.69	42	*e*P		P	02 32 25.3	+0.6
	comp=Z,3.6nm,0.9s,mb4.7							
MSO	Missoula	89.78	37	*e*P		P	02 32 25.4	+0.4
	comp=Z,17nm,1.3s,mb5.2							
MSO				*e*pP		pP	02 32 39.7	+1.0
KMBO	Kilima Mbogo	89.85	269	P		P	02 32 26.8	+0.6
	comp=Z,2.3nm,0.8s,mb4.6,baz=31,slow=12,SNR=6.1							
FFC	Flin Flon	90.02	26	*e*P		P	02 32 26.3	+0.3
	comp=Z,29nm,0.9s,mb5.6							
CABF	La Chapelle	90.43	324	*e*P		P	02 32 27.8	-0.3
LPL	La Plagne	90.76	322	*e*P		P	02 32 29.9	+0.2
	comp=Z,12nm,0.8s,mb5.0							
LPG	La Plagne	90.76	322	*e*P		P	02 32 30.2	+0.5
	comp=Z,10nm,0.7s,mb5.0							
HRY	Holter Researc	90.98	36	*e*P		P	02 32 30.9	+0.2
CMB	Columbia Colle	91.05	47	*e*P		P	02 32 31.8	+0.6
LOR	Lormes	91.19	325	*e*P		P	02 32 31.2	-0.4
LOR				*e*R				
	comp=Z,234nm,22.8s							
MBDF	Montbardon	91.23	322	*e*P		P	02 32 31.3	-0.6
PGF	Pioggiola	91.27	319	*e*P		P	02 32 31.2	-0.9
	comp=Z,27nm,0.9s,mb5.3							
SBF	Sospel	91.39	321	*e*P		P	02 32 31.9	-0.7
	comp=Z,22nm,0.6s,mb5.3							
HLID	Hailey	91.52	39	*e*P		P	02 32 34.9	+1.6
	comp=Z,9.0nm,0.5s,mb5.4							
SMF	Signal de Mont	91.60	325	*e*P		P	02 32 32.2	-1.4
	comp=Z,4.8nm,0.8s,mb4.8							
ORIF	Oris-en-Rattie	91.61	322	*e*P		P	02 32 33.4	-0.2
ORIF				*e*R				
	comp=Z,5.8nm,0.8s,mb4.7							
	comp=Z,207nm,22.5s							
BOZ	Bozeman (W)	91.77	37	*e*P		P	02 32 35.4	+1.1
	comp=Z,10nm,1.2s,mb5.0							
BOZ				*e*pP		pP	02 32 47.9	-0.1
FRF	La Foret Royal	92.02	321	*e*P		P	02 32 35.0	-0.6
NVAR	Mina Array Bea	92.18	45	P		P	02 32 38.5	+2.1
	comp=Z,4.0nm,0.8s,mb4.8,baz=31,slow=3.6,SNR=14							
LMR	La Mourre	92.24	321	*e*P		P	02 32 36.4	-0.2
VIVF	Saint-Julien-l	92.31	323	*e*P		P	02 32 36.4	-0.5
FLN	La Foliniere	92.35	328	*e*P		P	02 32 36.5	-0.5
	comp=Z,16nm,1.0s,mb5.0							
FLN				*e*R				
	comp=Z,206nm,21.8s							
SMRF	Simiane la Rot	92.37	322	*e*P		P	02 32 36.7	-0.5
	comp=Z,10nm,0.9s,mb4.9							
QLMT	Earthquake Lak	92.40	37	*e*P		P	02 32 39.1	+1.8
QLMT				*e*pP		pP	02 32 52.8	+1.9
TPH	Tonopah	93.08	45	*e*P		P	02 32 41.4	+0.8
TPH				*e*pP		pP	02 32 55.8	+1.5
LASF	Ste Croix	93.26	323	*e*P		P	02 32 40.9	-0.3
	comp=Z,15nm,1.2s,mb5.0							
CAF	Calviac	93.67	324	*e*P		P	02 32 42.7	-0.4
	comp=Z,6.4nm,0.8s,mb4.8							
RJF	Les Rejaudoux	93.70	325	*e*P		P	02 32 41.7	-1.5
RJF				*e*R				
	comp=Z,134nm,22.0s							
HWUT	Hardware Ranch	94.38	40	*e*P		P	02 32 48.0	+1.6
	comp=Z,1.5nm,0.7s,mb4.5							
MTLF	Montolieu	94.64	323	*e*P		P	02 32 47.8	+0.3
BW06	Boulder Array	94.77	38	*e*P		P	02 32 48.4	+0.2
	comp=Z,1.3nm,0.8s,mb4.4							
PDAR	Pinedale Array	94.77	38	P		P	02 32 49.2	+1.1
	comp=Z,1.4nm,0.7s,mb4.5,slow=3.0,SNR=12							
ULM	Lac du Bonnet	95.85	26	P		P	02 32 52.7	-0.2
	comp=Z,6.3nm,0.7s,mb5.2,baz=349,slow=6.7,SNR=4.6							
ULM	Lac du Bonnet	95.85	26	P		P	02 32 52.7	-0.2
MVU	Marysvale	95.96	42	*e*P		P	02 32 55.0	+1.4
	comp=Z,2.0nm,0.9s,mb4.5							
MSU	Marysvale	95.98	42	*e*P		P	02 32 55.3	+1.6
VNDA	Vanda	104.79	173	Pdiff		Pdif	02 33 34.1	+1.6
	comp=Z,0.5nm,0.8s,baz=302,slow=9.5,SNR=3.7							
VNDA	Vanda	104.79	173	P		Pdif	02 33 34.1	+1.7
VNDA				pmax	pmax			
	comp=Z,1.0nm,0.8s							
TXAR	Lajitas Array	107.32	45	Pdiff		Pdif	02 33 47.0	+2.4
	comp=Z,0.3nm,0.9s,baz=349,slow=4.6,SNR=3.3							
TXAR				PKIKP			02 37 53.9	
	comp=Z,2.0nm,1.0s,baz=225,slow=1.3,SNR=12							
QSPA	South Pole Qui	115.16	180	*e*PKP		PKPdf	02 38 07.3	+1.4
DBIC	Dimbokro	123.04	297	PKP		PKPdf	02 38 23.6	+0.9
	comp=Z,3.4nm,0.5s,baz=306,slow=3.0,SNR=9.9							
DBIC	Dimbokro	123.04	297	PKIKP		PKPdf	02 38 23.6	+1.0
DBIC				pmax	pmax			
	comp=Z,3.0nm,0.5s							
VNA2	Neumayer--Watz	127.51	197	⇑*i*		Pdif	02 35 13.1	+0.7
VNA2	Neumayer--Watz	127.51	197	*e*		PKPdf	02 38 33.0	+3.2
VNA1	Neumayer--Stat	127.90	197	⇑*i*		Pdif	02 35 15.1	+1.0
VNA1	Neumayer--Stat	127.90	197	*e*		PKPdf	02 38 33.2	+2.6
VNA3	Neumayer Olymp	127.92	196	⇓*i*		Pdif	02 35 12.8	-1.4
VNA3	Neumayer Olymp	127.92	196	*e*		PKPdf	02 38 32.4	+1.8
ROSC	El Rosal	143.74	37	PKP		PKPdf	02 39 04.4	+3.2
	comp=Z,13nm,0.7s,baz=144,slow=2.8,SNR=6.0							
LPAZ	La Paz	163.58	59	PKP		PKPdf	02 39 33.2	+4.8
	comp=Z,3.4nm,1.1s,baz=355,slow=4.9,SNR=7.9							
LPAZ				PKPab		PKPab	02 40 22.3	-0.2
	comp=Z,1.6nm,0.7s,baz=355,slow=7.5,SNR=4.7							
LPAZ	La Paz	163.58	59	PKIKP		PKPdf	02 39 33.2	+4.8
LPAZ							02 40 22.3	
LPAZ				pmax	pmax			
	comp=Z,3.0nm,1.1s							
LPAZ				pmax	pmax			
	comp=Z,2.0nm,0.7s							
LPAZ	La Paz	163.58	59	PKP		PKPdf	02 39 33.2	+4.8
LPAZ				PKPab	PKPab		02 40 22.3	-0.2
BDFB	Brasilia	169.06	331	PKP		PKPdf	02 39 35.0	+2.3
	comp=Z,3.1nm,0.7s,baz=306,slow=3.3,SNR=5.3							
BDFB				PKPab		PKPab	02 40 45.2	-1.3
	comp=Z,1.8nm,0.8s,baz=90,slow=2.0,SNR=3.4							
BDFB	Brasilia	169.06	331	PKIKP		PKPdf	02 39 35.0	+2.3
BDFB							02 40 45.2	
BDFB				pmax	pmax			
	comp=Z,3.0nm,0.7s							
BDFB				pmax	pmax			
	comp=Z,2.0nm,0.8s							

*IDC **31** 02:37:47.9±2.9,24.51S×179.59W,h474km±29km,mb3.7/9, mb1 3.9/10,mb1mx3.7/15,Error ellipse: s-maj=22.0km s-min=20.7km az=33.0*
*NEIC **31** 02:37:49.3±1.6,24.49S×179.67W,h493km±18km,mb4.2/4,*

Error ellipse: s-maj=16.8km s-min=9.6km az=179.0
ISC 31 02:37:48.2±2.6,24.5S±0.2×179.8W±0.1,h489km±33km, n36,σ0°80/22,mb4.3/13,7D,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
URZ	Urewera	14.00	190	P		P	P	02 40 49.6	+0.8
	2.5nm,0.3s,baz=302,slow=1.9,SNR=8.7								
RAR	Rarotonga	18.70	84	P		P	P	02 41 35.3	-0.4
	2.1nm,0.5s								
RPZ	Rata Peaks	20.62	199	P		P	P	02 41 53.2	-0.6
	14nm,0.6s,baz=47,slow=18,SNR=9.9								
CTA	Charters Tower	31.71	271	⇓*i*P		P	P	02 43 33.5	+1.2
	18nm,0.4s,mb4.8								
CTA	Charters Tower	31.71	271	P		P	P	02 43 33.6	+1.2
	22nm,0.4s,mb4.9,baz=96,slow=11,SNR=43								
CTAO	Charters Tower	31.71	271	*e*P		P	P	02 43 33.5	+1.2
	23nm,0.5s,mb4.9								
STKA	Stephens Creek	34.72	249	⇓*i*P		P	P	02 43 58.4	+0.8
	2.9nm,0.6s,mb3.9								
STKA	Stephens Creek	34.72	249	P		P	P	02 43 58.6	+1.0
	3.1nm,0.5s,mb4.0,baz=94,slow=9.3,SNR=12								
PMG	Port Moresby	34.90	290	P		P	P	02 43 59.0	-0.1
AS12	Alice Springs	42.17	261	⇓*i*P		P	P	02 44 58.7	+0.2
	49nm,1.9s,mb4.6								
ASAR	Alice Springs	42.17	261	P		P	P	02 44 58.7	+0.2
	4.7nm,0.7s,mb4.0,baz=90,slow=6.4,SNR=47								
WB2	Warramunga Arr	42.58	267	⇓*i*P		P	P	02 45 01.6	-0.2
WRAB	Tennant Creek	42.59	267	*e*P		P	P	02 45 01.7	-0.2
	26nm,0.6s,mb4.8								
WRA	Warramunga Arr	42.59	267	P		P	P	02 45 01.8	-0.1
	15nm,0.5s,mb4.7,baz=99,slow=8.3,SNR=207								
WRA				ScP				02 49 50.0	
	0.8nm,0.6s,baz=102,slow=3.4,SNR=4.8								
FORT	Forrest	46.33	250	⇓*i*P		P	P	02 45 29.9	-1.0
	68nm,0.6s,mb5.2								
KAKA	Kakadu	46.63	276	⇓*i*P		P	P	02 45 32.4	-1.0
	9.3nm,0.3s,mb4.7								
FITZ	Fitzroy Crossi	51.01	266	*e*P		P	P	02 46 06.1	-0.1
	9.8nm,0.6s,mb4.3								
KLBR	Kellerberrin	54.98	248	⇓*i*P		P	P	02 46 33.4	-1.1
	9.3nm,0.5s,mb4.4								
MAW	Mawson	77.29	200	P		P	P	02 48 52.1	-0.1
	2.0nm,0.5s,mb3.9,baz=119,slow=5.2,SNR=9.4								
CMAR	Chiang Mai Arr	89.94	290	P		P	P	02 49 57.9	+1.9
	4.5nm,1.1s,mb4.2,baz=138,slow=3.2,SNR=6.3								
TXAR	Lajitas Array	90.54	58	P		P	P	02 49 59.5	+1.0
	0.4nm,0.7s,mb3.5,baz=214,slow=6.8,SNR=5.7								
ILAR	Eielson Array	92.53	13	P		P	P	02 50 06.0	-0.9
	0.2nm,0.6s,mb3.3,baz=195,slow=5.6,SNR=4.3								
MKAR	Makanchi Array	112.71	312	PKIKP				02 55 28.6	
	0.4nm,0.5s,baz=197,slow=1.4,SNR=5.3								
BVAR	Borovoye Array	121.02	318	PKP		PKPdf	PKPdf	02 55 44.8	+0.6
	1.0nm,0.4s,baz=60,slow=0.9,SNR=7.0								
ARCES	ARCESS Array B	132.49	348	PKP		PKPdf		02 56 06.1	+0.4
	3.0nm,1.0s,baz=90,slow=2.4,SNR=10								
ARCES	ARCESS Array B	132.49	348	PKP		PKPdf	PKPdf	02 56 06.1	+0.3
FINES	FINESS Array B	139.06	341	PKhKP				02 56 11.5	
	2.5nm,0.9s,baz=45,slow=2.7,SNR=5.2								
FINES				PKP		PKPdf	PKPdf	02 56 20.2	+2.3
	1.9nm,0.9s,baz=101,slow=4.0,SNR=6.4								
FINES	FINESS Array B	139.06	341	PKP		PKPdf		02 56 11.5	-6.4
FINES				PKP		PKPdf	PKPdf	02 56 20.2	+2.3
NB2	NORSAR Subarra	142.68	351	PKP				02 56 21.7	
	1.3nm,1.1s,baz=10.0,slow=3.1								
NB2	NORSAR Subarra	142.68	351	PKPab		PKPdf	PKPdf	02 56 21.7	-2.5
NOA	NORSAR Array B	142.68	351	PKhKP				02 56 22.1	
	1.5nm,0.8s,baz=12,slow=2.3,SNR=8.9								
ASF	Jabal al Asfar	146.96	292	PKPbc		PKPbc		02 56 37.7	+3.1
	5.2nm,0.7s,baz=320,slow=2.7,SNR=7.8								
BRTR	Keskin Array B	148.10	307	PKPbc		PKPdf		02 56 39.4	+5.3
	2.0nm,0.8s,baz=144,slow=4.3,SNR=14								
BRTR				PKPab		PKPab		02 56 44.9	0.0
	1.8nm,0.6s,baz=102,slow=4.0,SNR=12								
CLL	Collm	151.47	343	*i* PKP1		PKPdf		02 56 47.0	+8.2
CLL				*e*PKP2		PKPab		02 56 58.0	-0.5
BRG	Berggiesshubel	151.60	342	*i* P		PKPdf		02 56 47.8	+8.8
GERES	GERESS Array B	153.47	340	PKPbc		PKPdf		02 56 51.3	+10
	0.2nm,0.4s,baz=45,slow=1.9,SNR=4.7								
GERES				PKPab		PKPab		02 57 06.6	-0.4
	0.3nm,0.5s,baz=14,slow=4.0,SNR=3.4								

*IDC **31** 02:45:08.8±1.2,37.38S×177.64E,h118km±9km,mb4.4/8, mb1 4.5/9,mb1mx4.3/15,Error ellipse: s-maj=24.0km s-min=16.1km az=10.0*
*NEIC **31** 02:45:10.9,37.38S×177.56E,h104km,mb4.9/5,After WEL.*
*WEL **31** 02:45:10.7±0.2,37.39S×177.58E,h106km±1km,ML5.3/9, Error ellipse: s-maj=1.3km s-min=1.3km az=0.0*
*SYO **31** 02:45:10.9,37.38S×177.56E,h104km,MB4.9*
ISC 31 02:45:09.1±0.5,37.40S±0.05×177.55E±0.06,h120km±3km, n184,σ0°85/72,mb4.8/11,13C-29D,Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
WIZ	White Island	0.32	247	⇑PN		P	P	02 45 25.7	-0.5
WIZ	White Island	0.32	247	P		P	P	02 45 25.7	-0.5
MXZ	Matakaoa Point	0.62	105	PN		P	P	02 45 28.2	+0.2
MXZ				SN		S	P	02 45 41.4	-0.9
MXZ	Matakaoa Point	0.62	105	P		P	P	02 45 28.2	+0.2
MXZ				S		S	P	02 45 42.3	-0.1
PUZ	Puketiti	0.87	140	PN		P	P	02 45 30.3	+0.2
PUZ				*e*SN		S	P	02 45 45.2	-0.8
PUZ	Puketiti	0.87	140	P		P	P	02 45 30.3	+0.1
PUZ				S		S	P	02 45 45.3	-0.7
MARZ	Manawahe	0.91	230	⇓PN		P	P	02 45 30.9	+0.3
MARZ	Manawahe	0.91	230	P		P	P	02 45 30.9	+0.4
URZ	Urewera	0.93	202	P		P	P	02 45 30.6	-0.1
	3µm,0.3s,baz=295,slow=2.5,SNR=7881								
URZ				S		S	P	02 45 46.5	-0.3
	5µm,0.3s,baz=170,slow=21,SNR=75								
URZ	Urewera	0.93	202	⇓PN		P	P	02 45 30.9	+0.2
URZ				SN		S	P	02 45 46.5	-0.4
URZ	Urewera	0.93	202	P		P	P	02 45 30.9	+0.2
MWZ	Matawai	0.93	181	⇓PN		P	P	02 45 31.0	+0.2
MWZ				SN		S	P	02 45 46.6	-0.4
MWZ	Matawai	0.93	181	P		P	P	02 45 31.0	+0.2
MWZ				S		S	P	02 45 46.7	-0.3
EDRZ	Edgecumbe	0.95	222	⇑PN		P	P	02 45 31.5	+0.5
EDRZ	Edgecumbe	0.95	222	P		P	P	02 45 31.5	+0.5
MYRZ	Mayor Island	1.05	276	⇓PN		P	P	02 45 32.6	+0.6
TGRZ	Tauranga	1.08	252	⇓PN		P	P	02 45 32.7	+0.4
TGRZ				SN		S	P	02 45 49.6	0.0
TGRZ	Tauranga	1.08	252	P		P	P	02 45 32.7	+0.5
LIRZ	Lichensteins R	1.10	237	⇓PN		P	P	02 45 33.1	+0.6
LIRZ	Lichensteins R	1.10	237	P		P	P	02 45 33.1	+0.6
TAZ	Tarawera	1.17	225	⇑PN		P	P	02 45 34.0	+0.7
TAZ	Tarawera	1.17	225	P		P	P	02 45 34.0	+0.7
UTU	Utuhina	1.33	234	PN		P	P	02 45 36.0	+1.0
UTU	Utuhina	1.33	234	P		P	P	02 45 36.1	+1.1
KUZ	Kuaotunu	1.61	294	⇓PN		P	P	02 45 38.4	+0.2
KUZ				*e*SN		S	P	02 45 59.1	-1.1
KUZ	Kuaotunu	1.61	294	P		P	P	02 45 38.4	+0.2
KNZ	Kokohu	1.62	177	⇓PN		P	P	02 45 38.0	-0.3
KNZ				SN		S	P	02 45 58.9	-1.6
KNZ	Kokohu	1.62	177	P		P	P	02 45 38.0	-0.3
TOZ	Tahuroa Road	1.66	258	⇑PN		P	P	02 45 39.9	+1.0
TOZ	Tahuroa Road	1.66	258	P		P	P	02 45 39.9	+1.0
MKAZ	Moumakai	1.93	278	⇓PN		P	P	02 45 43.2	+1.1
MKAZ	Moumakai	1.93	278	P		Px		02 45 43.2	
WATZ	Wairara	1.94	227	⇓PN		P	P	02 45 43.1	+0.9
WATZ	Wairara	1.94	227	P		P	P	02 45 43.1	+0.9
BKZ	Black Stump Fm	1.95	205	⇓PN		P	P	02 45 41.8	-0.5
BKZ				SN		S	P	02 46 06.6	-0.9
BKZ	Black Stump Fm	1.95	205	P		P	P	02 45 41.8	-0.5
RATZ	Rangitukua	2.03	223	⇓PN		P	P	02 45 43.9	+0.6
RATZ	Rangitukua	2.03	223	P		P	P	02 45 43.9	+0.6
KATZ	Kakaramea	2.15	222	PN		P	P	02 45 45.2	+0.3
KATZ	Kakaramea	2.15	222	P		P	P	02 45 45.2	+0.3
OTAZ	Otara	2.15	281	⇓PN		Px		02 45 46.4	
OTAZ	Otara	2.15	281	P		Px		02 45 46.2	
MTAZ	Motutapu	2.20	285	⇓PN		Px		02 45 46.8	
MTAZ	Motutapu	2.20	285	P		Px		02 45 46.8	
MGZ	Maungaku	2.25	224	⇓PN		Px		02 45 46.7	
MGZ	Maungaku	2.25	224	P		Px		02 45 46.7	
KAVZ	Karewarewa	2.26	221	PN		Px		02 45 46.8	
KAVZ	Karewarewa	2.26	221	P		Px		02 45 46.1	
WTVZ	West Tongariro	2.31	222	⇓PN		Px		02 45 47.2	
NGZ	Ngauruhoe	2.34	220	PN		Px		02 45 47.4	
NGZ	Ngauruhoe	2.34	220	P		Px		02 45 47.6	
TWVZ	Taurewa	2.36	224	PN		Px		02 45 47.8	
TUVZ	Tukino	2.39	218	⇑PN		Px		02 45 47.8	
TUVZ	Tukino	2.39	218	P		Px		02 45 47.8	
CNZ	Chateau	2.39	221	⇑PN		Px		02 45 48.1	
CNZ	Chateau	2.39	221	P		Px		02 45 48.1	
WPVZ	Whakapapa	2.39	221	PN		Px		02 45 48.1	
HIZ	Hauiti	2.40	242	⇓PN		Px		02 45 49.7	
WTAZ	Waiatarua	2.43	280	PN		Px		02 45 50.1	
WTAZ	Waiatarua	2.43	280	P		Px		02 45 50.1	
FWVZ	Far West T-bar	2.43	220	⇑PN		Px		02 45 48.5	
FWVZ	Far West T-bar	2.43	220	P		Px		02 45 48.5	
DRZ	Dome Shelter	2.44	219	PN		Px		02 45 48.6	
DRZ	Dome Shelter	2.44	219	P		Px		02 45 48.7	
WNVZ	Wahianoa	2.46	218	⇓PN		Px		02 45 48.6	
PWZ	Pawanui	2.68	191	⇑PN		Px		02 45 50.0	
PWZ				*e*SN		Sx		02 46 22.3	
PWZ	Pawanui	2.68	191	P		Px		02 45 50.0	
VRZ	Vera Road	2.79	231	⇓PN		Px		02 45 53.8	
VRZ	Vera Road	2.79	231	P		Px		02 45 53.8	
TSZ	Takapari Road	2.93	205	⇓PN		Px		02 45 52.8	
TSZ				SN		Sx		02 46 28.2	
TSZ	Takapari Road	2.93	205	P		Px		02 45 52.9	
WCZ	Waipu Caves	2.96	299	*e*PN		Px		02 45 55.8	
WCZ	Waipu Caves	2.96	299	*e*P		Px		02 45 56.3	
WAZ	Wanganui	3.09	220	PN		Px		02 45 56.5	
RAEZ	Rainy Point	3.12	232	PN		Px		02 45 58.4	
RAEZ	Rainy Point	3.12	232	P		Px		02 45 58.4	
NEZ	North Egmont	3.30	234	PN		Px		02 46 01.0	
NEZ	North Egmont	3.30	234	P		Px		02 46 01.1	
DFE	Dawson Falls	3.32	234	PN		Px		02 46 01.2	
DFE	Dawson Falls	3.32	234	P		Px		02 46 01.3	
BFZ	Birch Farm	3.43	197	PN		Px		02 45 58.7	
BFZ				SN		Sx		02 46 37.9	
BFZ	Birch Farm	3.43	197	P		Px		02 45 58.7	
NRZ	Ngariki Road	3.44	235	PN		Px		02 46 02.7	
NRZ	Ngariki Road	3.44	235	P		Px		02 46 02.7	
MRZ	Mangatainoka R	3.60	205	⇓PN		Px		02 46 00.7	
MRZ				SN		Sx		02 46 37.9	
OUZ	Omahuta	3.87	303	PN		Px		02 46 08.7	
OUZ	Omahuta	3.87	303	*e*P		Px		02 46 08.7	
KIW	Kapiti Island	4.02	210	PN		Px		02 46 06.1	
KIW	Kapiti Island	4.02	210	P		Px		02 46 06.3	
MTW	Mount Morrison	4.08	202	⇓PN		Px		02 46 06.4	
MTW				SN		Sx		02 46 52.3	
MTW	Mount Morrison	4.08	202	P		Px		02 46 06.4	
CAW	Cannon Point	4.17	207	PN		Px		02 46 07.8	
CAW				SN		Sx		02 46 54.3	
CAW	Cannon Point	4.17	207	P		Px		02 46 07.9	
MSWZ	Moikau Station	4.39	203	PN		Px		02 46 10.0	
MSWZ				SN		Sx		02 46 58.0	
MRW	Makara Radio	4.42	209	PN		Px		02 46 10.7	
MRW				SN		Sx		02 47 00.3	
MRW	Makara Radio	4.42	209	P		Px		02 46 10.8	
WEL	Wellington	4.44	208	*e*PN		Px		02 46 11.2	
WEL	Wellington	4.44	208	P		Px		02 46 10.2	
SNZO	South Karori	4.48	209	PN		Px		02 46 11.4	
SNZO				SN		Sx		02 47 01.9	
SNZO	South Karori	4.48	209	P		Px		02 46 11.9	
BHW	Baring Head	4.51	207	PN		Px		02 46 11.7	
BHW				SN	

JOF	**Joensuu**	**147.22 332**	*e*p		PKPdf	03 04 36.1	+1.4
	6.1nm,0.4s						
ASF	**Jabal al Asfar**	**147.44 273**		PKPbc	PKPdf	03 04 39.8	+3.8
	3.3nm,0.6s,baz=344,slow=5.4,SNR=8.0						
EIL	**Elat**	**148.05 267**		P	PKPdf	03 04 40.8	+3.7
PRNI	**Paran**	**148.28 268**		P	PKPdf	03 04 41.5	+4.1
KMTI	**Karmit**	**148.40 268**		P	PKPdf	03 04 41.4	+3.8
KSHT	**Keshet**	**148.57 274**		P	PKPdf	03 04 42.6	+4.8
SVTA	**Shivta**	**148.80 269**		P	PKPdf	03 04 42.6	+4.4
DBIC	**Dimbokro**	**149.33 175**		PKPbc	PKPdf	03 04 43.6	+4.1
	2.5nm,0.5s,baz=116,slow=6.8,SNR=12						
FINES	**FINESS Array B**	**150.07 333**		PKPbc	PKPdf	03 04 43.7	+4.5
	4.5nm,0.6s,baz=39,slow=4.4,SNR=30						
FINES				PKPab	PKPab	03 04 50.4	-2.5
	1.1nm,0.4s,baz=67,slow=4.2,SNR=3.8						
FINES	**FINESS Array B**	**150.07 333**		PKPbc	PKPdf	03 04 43.7	+4.4
FINES				PKPab	PKPab	03 04 50.4	-2.5
BRTR	**Keskin Array B**	**151.81 286**		PKPbc	PKPdf	03 04 48.9	+6.3
	2.0nm,0.4s,baz=143,slow=3.8,SNR=19						
BRTR				PKPab	PKPab	03 04 58.5	-2.4
	1.9nm,0.6s,baz=127,slow=6.2,SNR=10.0						
NB2	**NORSAR Subarra**	**154.82 344**		PKPdf	PKPdf	03 04 55.0	+9.0
	0.2nm,0.5s,baz=31,slow=1.9						
NB2	**NORSAR Subarra**	**154.82 344**		PKPd		03 04 55.0	
	baz=31,slow=1.9						
NOA	**NORSAR Array B**	**154.82 344**		PKPbc	PKPdf	03 04 54.0	+8.1
	1.2nm,0.9s,baz=32,slow=2.0,SNR=4.5						
NOA				PKPab	PKPab	03 05 10.3	-2.6
	0.7nm,0.9s,baz=322,slow=1.8,SNR=3.2						
CRVS	**Cervenica-Dubn**	**159.21 311**	*e*PKP		PKPab	03 05 31.6	-0.5
VYHS	**Vyhne**	**160.95 312**	*e*PKP		PKPab	03 05 38.6	-1.0
DPC	**Dobruska-Polom**	**161.34 320**	*e*P		PKPab	03 05 40.6	-0.7
PVCC	**Panska Ves**	**162.11 323**	*e*P		PKPab	03 05 43.6	-1.0
CLL	**Collm**	**162.30 327**	*e*PKP2		PKPab	03 05 43.0	-2.4
NKC	**Novy Kostel**	**163.31 325**	*e*P		PKPab	03 05 48.6	-1.2
KHC	**Kasperske Hory**	**163.50 320**	*e*P		PKPab	03 05 47.7	-3.0
GERES	**GERESS Array B**	**163.62 319**		PKPab	PKPab	03 05 49.9	-1.3
	0.9nm,0.8s,baz=45,slow=3.8,SNR=12						

NIED ***31*** *02:56:00,45.60N×149.80E,h170km,Mw5.1 Best double couple: M0 5.11×10^16 NP1:φs179°,δ87°,λ53°. NP2:φs85°, δ37°,λ175°.*
SKHL ***31*** *02:56:51.8±2.0,46.27N×149.85E,h178km±20km,mb6.5/3, mbh6.0/2,msh5.9/4*
BJI ***31*** *02:56:53.3,46.51N×149.58E,h180km,mB5.0,mb5.4*
NEIC ***31*** *02:56:54.5±0.1,46.45N×149.52E,mb4.9/121,Error ellipse: s-maj=4.0km s-min=2.5km az=158.0*
NEIC Recorded [1 JMA] in the Bekkai area, Hokkaido.
SYO ***31*** *02:56:54.5,46.45N×149.52E,h172km,MB4.9*
HRVD ***31*** *02:56:54.5±0.2,46.42N×149.71E,h178km±2km, MW5.1/64,Centroid moment Tensor Solution. LP body waves: s35,c43;Mantle waves: s64,c123; Half duration: 0 Moment tensor: Scale 10^16Nm; Mrr-2.05±.17; Mθθ3.25±.20; Mφφ-1.20±.19; Mrθ2.93±.15; Mθφ-1.46±.16; Mφr-4.15±.12; Best double couple: M06×10^16 NP1:φs73°, δ27°,λ-155°. NP2:φs320°,δ79°,λ-66°. Principal axes: T 6.03, Plg30°, Azm30°; N -.06, Plg24°, Azm135°; P -5.97, Plg50°, Azm257°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
MOS ***31*** *02:56:55.3±1.2,46.52N×149.46E,h188km,mb4.7/20 Error ellipse: s-maj=10.4km s-min=6.5km az=95.5*
IDC ***31*** *02:56:55.6±0.5,46.49N×149.45E,h178km±4km,mb4.8/28, mb1 4.9/32,mb1mx4.9/33,MS3.7/4,Ms1 3.7/4, ms1mx3.1/31,Error ellipse: s-maj=9.4km s-min=6.1km az=138.0*
JMA ***31*** *02:56:56.9±0.6,45.58N×149.81E,h193km,M5.3*
JMA Felt I J1.
ISC 31 02:56:53.5±0.3,46.36N±0.02×149.62E±0.03,h177km±2km, h186km±1.5km:pP-P,n504,σ1s01/542,mb4.9/163,24C-30D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
KUR	**Kuril'sk**	**1.66**	**228**	*e*P		**P**	**02 57 28.4**	**+1.3**
KUR				AMB		AMB	02 57 29.0	
	14μm,0.5s							
KUR				*i* S		**S**	**02 57 57.5**	**+4.4**
KUR				A			02 57 59.0	
	10μm,2.0s							
KUR				A			02 57 59.0	
	15μm,2.0s							
KUR				A			02 57 59.2	
	22μm,2.0s							
KUR				A			02 57 59.2	
	60μm,2.0s							
KUR				A			02 57 59.8	
	5μm,0.6s							
KUR				A			02 57 59.8	
	5μm,0.6s							
KUR	**Kuril'sk**	**1.66**	**228**	*e*PN		**P**	**02 57 28.4**	**+1.3**
KUR				*i* S		**S**	**02 57 57.5**	**+4.4**
KUR				pmax		pmax		
	comp=Z,14μm,0.5s							
KUR				smax				
	comp=N,22μm,2.0s							
KUR				smax				
	comp=E,60μm,2.0s							
KUR				smax				
	comp=N,5μm,0.6s							
KUR				smax				
	comp=E,5μm,0.6s							
YUK	**Yuzh-Kuril'sk**	**3.53**	**230**	⇑*i* P		**P**	**02 57 49.4**	**+0.2**
YUK				⇑*i* P			02 57 49.4	
YUK				AMB		AMB	02 57 50.0	
	comp=E,36μm,1.0s							
YUK				AMB		AMB	02 57 50.0	
	comp=E,11μm,1.0s							
YUK				AMB		AMB	02 57 50.0	
	comp=E,20μm,1.0s							
YUK				AMB		AMB	02 57 50.4	
	comp=E,4μm,0.5s							
YUK				AMB		AMB	02 57 50.4	
	comp=E,8μm,0.5s							
YUK				AMB		AMB	02 57 50.4	
	comp=E,32μm,0.5s							
YUK				*i* S		**S**	**02 58 31.5**	**-0.6**
YUK				A			02 58 35.5	
	comp=E,13μm,0.6s							
YUK				A			02 58 35.5	
	comp=E,8μm,0.5s							
YUK				A			02 58 37.0	
	comp=E,50μm,2.0s							
YUK				A			02 58 37.0	
	comp=E,30μm,2.0s							
JRA	**Rausu**	**4.00**	**234**	P		**P**	**02 57 55.9**	**+0.8**
NEM2	**Nemuro 2**	**4.07**	**224**	P		**P**	**02 57 54.2**	**-1.9**
NEM2				*e*S		**S**	**02 58 38.8**	**-5.6**
JNK	**Nakash**	**4.45**	**233**	P		**P**	**02 58 01.4**	**+0.5**
JTKR	**Abashiri--Toko**	**4.69**	**241**	P		**P**	**02 58 05.2**	**+1.1**
YSS	**Yuzh-Sakhalins**	**4.76**	**280**	⇓*e*P		**P**	**02 58 07.0**	**+2.0**
YSS				AMB		AMB	02 58 09.0	
	comp=E,170nm,0.9s							
YSS				AMB		AMB	02 58 09.0	
	comp=E,40nm,0.8s							
YSS				AMB		AMB	02 58 09.0	
	comp=E,150nm,0.9s							
YSS				*i* sP			02 58 47.3	
YSS				*i* S		**S**	**02 59 02.8**	**+2.4**
YSS				A			02 59 08.0	
	comp=E,1μm,1.5s							
YSS				A			02 59 08.0	
	comp=E,1μm,1.5s							
YSS				A			02 59 08.0	
	comp=E,640nm,1.2s							
YSS				A			02 59 11.0	
	comp=E,3μm,7.0s							
YSS				A			02 59 11.0	
	comp=E,1μm,4.0s							
YSS				A			02 59 11.0	
	comp=E,5μm,6.0s							
YSS				AMS		AMS	03 00 15.0	
	comp=E,2μm,7.0s							
YSS				AMS		AMS	03 00 15.0	
	comp=E,1μm,7.0s							
YSS	**Yuzh-Sakhalins**	**4.76**	**280**	⇓*e*PN		**P**	**02 58 07.0**	**+2.0**
YSS				*i* S		**S**	**02 59 02.8**	**+2.4**
YSS				pmax		pmax		
	comp=Z,150nm,0.9s							
YSS				pmax		pmax		
	comp=N,40nm,0.8s							
YSS				pmax		pmax		
	comp=E,170nm,0.9s							
YSS				pmax		pmax		
	comp=Z,230nm,1.0s							
YSS				pmax		pmax		
	comp=E,140nm,0.6s							
YSS				pmax		pmax		
	comp=E,150nm,0.8s							
YSS				pmax		pmax		
	comp=Z,220nm,0.8s							
YSS				smax				
	comp=N,640nm,1.2s							
YSS				smax				
	comp=E,1μm,1.5s							
YSS				smax				
	comp=Z,1μm,1.5s							
YSS				smax				
	comp=N,3μm,7.0s							
YSS				smax				
	comp=E,1μm,4.0s							
YSS				smax				
	comp=Z,5μm,6.0s							
YSS				pmax		pmax		
	comp=N,7μm,3.0s							
YSS				pmax		pmax		
	comp=E,2μm,3.0s							
YSS				pmax		pmax		
	comp=N,300nm,1.0s							
YSS				pmax		pmax		
	comp=E,310nm,1.0s							
YSS				MLR		MLR		
	comp=N,2μm,7.0s							
YSS				MLR		MLR		
	comp=Z,1μm,7.0s							
YSS	**Yuzh-Sakhalins**	**4.76**	**280**	*e*P		**P**	**02 58 07.2**	**+2.1**
JAK	**Akkeshi**	**4.86**	**228**	P		**P**	**02 58 04.7**	**-1.6**
JAK				*e*S		**S**	**02 58 57.7**	**-4.9**
JMP	**Maruseppu**	**5.01**	**244**	P		**P**	**02 58 09.6**	**+1.4**
JSE	**Soyaes**	**5.13**	**257**	P		**P**	**02 58 12.1**	**+2.4**
JAR	**Ashorobuto**	**5.17**	**236**	P		**P**	**02 58 10.0**	**-0.3**
JOB	**Onbets**	**5.38**	**232**	P		**P**	**02 58 12.7**	**-0.4**
JOB				*e*S		**S**	**02 59 10.7**	**-4.2**
ASAJ	**Asahikawa**	**5.44**	**248**	P		**P**	**02 58 16.4**	**+2.5**
	comp=Z,88nm,0.3s,baz=80,slow=13,SNR=564							
ASAJ				S		**S**	**02 59 17.4**	**+1.2**
	comp=Z,19nm,0.3s,baz=275,slow=29,SNR=17							
ASAJ	**Asahikawa**	**5.44**	**248**	P		**P**	**02 58 16.2**	**+2.3**
ASAJ				*e*S		**S**	**02 58 18.7**	**+2.4**
ASAJ	**Asahikawa**	**5.44**	**248**	PN		**P**	**02 58 16.4**	**+2.5**
ASAJ				S		**S**	**02 59 17.5**	**+1.2**
ASAJ				pmax		pmax		
	comp=Z,89nm,0.3s							
ASAJ				smax				
	comp=N,19nm,0.3s							
JKK2	**Kamakawa 2**	**5.46**	**245**	P		**P**	**02 58 16.0**	**+1.9**
JKK2				*e*S		**S**	**02 59 17.8**	**+1.1**
JWK2	**Keihoku**	**5.50**	**262**	P		**P**	**02 58 18.3**	**+3.7**
UGL	**Uglegorsk**	**5.78**	**301**	*e*P		**P**	**02 58 19.8**	**+1.5**
UGL				AMB		AMB	02 58 23.0	
	comp=N,134nm,1.0s							
UGL				*e*S		**S**	**02 59 30.0**	**+5.9**
UGL				*i* S		**S**	**02 59 30.0**	**+5.9**
UGL				A			02 59 33.0	
	comp=N,312nm,1.3s							
UGL				A			02 59 33.0	
	comp=N,650nm,1.5s							
UGL				A			02 59 35.0	
	comp=N,2μm,4.0s							
UGL				A			02 59 35.0	
	comp=N,2μm,5.0s							
UGL				A			02 59 35.0	
	comp=N,1μm,5.0s							
JSS	**Shosan**	**5.81**	**253**	P		**P**	**02 58 22.3**	**+3.6**
JCH	**Churui**	**5.83**	**232**	P		**P**	**02 58 17.8**	**-1.2**
JCH				*e*S		**S**	**02 59 20.5**	**-5.0**
JFR	**Furan**	**5.93**	**240**	P		**P**	**02 58 21.5**	**+1.2**
JAB	**Ashibetsu**	**5.97**	**244**	P		**P**	**02 58 23.1**	**+2.2**
SKR	**Severo-Kuril's**	**6.11**	**43**	*e*P		**P**	**02 58 23.5**	**+0.8**
SKR				AMB		AMB	02 58 25.0	
	comp=N,4μm,1.0s							
SKR				AMB		AMB	02 58 25.0	
	comp=N,1μm,0.8s							
SKR				AMB		AMB	02 58 25.0	
	comp=N,420nm,0.5s							
SKR				AMB		AMB	02 58 25.0	
	comp=N,240nm,0.5s							
SKR				AMB		AMB	02 58 25.0	
	comp=N,4μm,3.0s							
SKR				*e*S		**S**	**02 59 29.2**	**-2.8**
SKR				A			02 59 36.6	
	comp=N,1μm,0.2s							
SKR				A			02 59 36.6	
	comp=N,1μm,0.2s							
SKR				AMS		AMS	03 01 13.0	
	comp=N,3μm,1.0s							
SKR	**Severo-Kuril's**	**6.11**	**43**	*e*PN		**P**	**02 58 23.5**	**+0.8**
SKR				*e*S		**S**	**02 59 29.2**	**-2.8**
SKR				pmax		pmax		
	comp=Z,4μm,1.0s							
SKR				pmax		pmax		
	comp=N,4μm,3.0s							
SKR				pmax		pmax		
	comp=Z,1μm,0.8s							
SKR				pmax		pmax		
	comp=N,420nm,0.5s							
SKR				pmax		pmax		
	comp=E,240nm,0.5s							
SKR				smax				
	comp=N,1μm,0.2s							
SKR				smax				
	comp=E,1μm,0.2s							
SKR				MLR		MLR		
	comp=Z,3μm,10.0s							
JHR	**Hokuryu**	**6.17**	**248**	P		**P**	**02 58 26.3**	**+2.8**
JBT2	**Biratori 2**	**6.30**	**238**	P		**P**	**02 58 24.9**	**-0.2**
JEM	**Erimo**	**6.36**	**229**	P		**P**	**02 58 25.1**	**-0.8**
JNBK	**Urakawa-nobuka**	**6.39**	**233**	P		**P**	**02 58 24.1**	**-2.3**
TYV	**Tymovskoe**	**6.45**	**317**	⇓*i* P		**P**	**02 58 28.3**	**+1.2**
TYV				AMB		AMB	02 58 31.2	
	comp=Z,59nm,0.9s							
JEW	**Eniwo**	**6.81**	**242**	P		**P**	**02 58 32.2**	**+0.3**
JEW				*e*S		**S**	**02 59 48.2**	**-0.4**
JSK	**Shakotan**	**7.16**	**248**	P		**P**	**02 58 36.6**	**+0.1**
JNB	**Noboribetsu**	**7.27**	**241**	P		**P**	**02 58 36.7**	**-1.3**
JNB				*e*S		**S**	**02 59 54.5**	**-5.0**
JKB	**Kayabe**	**7.62**	**237**	P		**P**	**02 58 40.3**	**-2.4**
JKB				*e*S		**S**	**02 59 59.6**	**-8.3**
JSH	**Shimam**	**7.79**	**245**	P		**P**	**02 58 45.0**	**+0.2**
JYM2	**Yakumo 2**	**7.88**	**241**	*e*S		**S**	**03 00 09.1**	**-4.8**
JSR	**Shiriuchi**	**8.21**	**237**	P		**P**	**02 58 48.6**	**-1.7**
JSR				*e*S		**S**	**03 00 14.0**	**-7.6**
JTM	**Tenmabayashi**	**8.34**	**231**	P		**P**	**02 58 48.4**	**-3.7**
JTM				*e*S		**S**	**03 00 13.9**	**-11**
OKH	**Okha**	**8.39**	**332**	*e*P		**P**	**02 58 52.1**	**-0.6**
OKH				*e*S		**S**	**03 00 31.2**	**+5.3**
JANG	**Nango**	**8.40**	**227**	P		**P**	**02 58 48.6**	**-4.3**
JANG				*e*S		**S**	**03 00 15.3**	**-11**
JOSM	**Okushiri--Mats**	**8.44**	**243**	P		**P**	**02 58 52.3**	**-1.2**
JTH	**Tanohata**	**8.56**	**224**	P		**P**	**02 58 50.5**	**-4.5**
JTH				*e*S		**S**	**03 00 20.0**	**-10**
PET	**Petropavlovsk**	**8.87**	**38**	⇑*e*PN		**P**	**02 58 59.0**	**-0.1**
PET	**Petropavlovsk**	**8.87**	**38**	*e*P		**P**	**02 58 58.5**	**-0.6**
	comp=Z,51nm,0.3s							
NKL	**Nikolayevsk**	**8.92**	**323**	*e*L			02 03 16.0	
NKL				*e*P			02 58 58.0	
NKL				AMB		AMB	02 59 02.3	
	comp=Z,34nm,0.9s							
TEY	**Ternei**	**9.21**	**266**	*i* P		**P**	**02 59 06.0**	**+2.5**
TEY				AMB		AMB	02 59 06.0	
	comp=Z,90nm,0.9s							
TEY				AMB		AMB	02 59 06.0	
	comp=Z,30nm,1.0s							
TEY				AMB		AMB	02 59 06.0	
	comp=Z,140nm,1.0s							
TEY				AMB		AMB	02 59 07.0	
	comp=Z,1μm,3.0s							
TEY				AMB		AMB	02 59 07.0	
	comp=Z,1μm,3.0s							
TEY				*i* S		**S**	**03 00 48.0**	**+2.9**
TEY				A			03 00 50.0	
	comp=Z,800nm,6.0s							
TEY				A			03 00 50.0	
	comp=Z,2μm,8.0s							
OFUJ	**Ofunato**	**9.33**	**222**	P		**P**	**02 59 01.3**	**-3.8**
OFUJ				*e*S		**S**	**03 00 39.6**	**-8.4**
JRG	**Rokugo**	**9.58**	**227**	P		**P**	**02 59 05.4**	**-2.9**
JRG				*e*S		**S**	**03 00 48.0**	**-5.9**
JOG2	**Oga 2**	**9.64**	**232**	P		**P**	**02 59 07.0**	**-2.1**
JIO	**Ouri**	**9.98**	**221**	P		**P**	**02 59 09.8**	**-3.7**
JIO				*e*S		**S**	**03 00 53.1**	**-10**
JYA	**Atsumi**	**10.66**	**227**	P		**P**	**02 59 20.0**	**-2.3**
JYA				*e*S		**S**	**03 01 12.1**	**-7.0**
JFK	**Kawauchi**	**11.09**	**219**	P		**P**	**02 59 24.3**	**-3.7**
JFK				*e*S		**S**	**03 01 19.5**	**-10**
JFY	**Yanaizu**	**11.59**	**223**	P		**P**	**02 59 32.5**	**-1.9**
JFY				*e*S		**S**	**03 01 33.8**	**-7.1**
JHK	**Hiroka**	**12.05**	**225**	P		**P**	**02 59 38.1**	**-2.2**
JKT	**Katashina**	**12.32**	**223**	P		**P**	**02 59 42.8**	**-1.0**
KLR	**Kul'dur**	**12.35**	**290**	⇑*i* PN		**P**	**02 59 46.0**	**+1.9**
KLR				pmax		pmax		
	comp=E,93nm,1.4s							
KLR				pmax		pmax		
	comp=Z,72nm,1.4s							
JAG	**Ashikaga**	**12.51**	**221**	P		**P**	**02 59 43.7**	**-2.5**
MAJO	**Matsushiro**	**13.00**	**225**	*e*P		**P**	**02 59 50.8**	**-1.7**
	comp=Z,40nm,0.6s							
MAT	**Matsushiro**	**13.00**	**225**	P		**P**	**02 59 50.7**	**-1.8**
MAT				S		**S**	**03 02 11.4**	**-2.2**
MAT	**Matsushiro**	**13.00**	**225**	P		**P**	**02 59 51.0**	**-1.5**
JNG	**Nsakai**	**13.16**	**225**	P		**P**	**02 59 53.2**	**-1.3**
MA2	**Magadan**	**13.26**	**3**	*c i*PN		**P**	**02 59 55.8**	**+0.2**
MA2	**Magadan**	**13.26**	**3**	*e*P		**P**	**02 59 55.2**	**-0.4**
	comp=Z,209nm,1.4s							
JGN	**Niukaw**	**13.70**	**227**	P		**P**	**03 00 01.3**	**+0.1**
JNY	**Yasuok**	**14.12**	**223**	P		**P**	**03 00 06.1**	**-0.4**
MDJ	**Mudanjiang**	**14.16**	**270**	P		**P**	**03 00 07.5**	**+0.6**
MDJ				S		**S**	**03 02 42.0**	**+2.2**
MDJ				PCP		PcP	03 05 13.8	+0.1
MDJ				SCP			03 08 29.3	
MDJ				PCS			03 08 47.5	
MDJ				SCS		ScS	03 12 06.5	+1.0
MDJ				AMB		AMB		
	comp=Z,159nm,1.2s							
MDJ				AMB		AMB		
	comp=Z,320nm,3.7s							
MDJ	**Mudanjiang**	**14.16**	**270**	*e*P		**P**	**03 00 08.0**	**+1.0**
	comp=Z,221nm,1.0s							
JGM	**Miyama**	**14.41**	**227**	P		**P**	**03 00 10.1**	**0.0**
HMMJ	**Hamamatsu 2**	**14.60**	**222**	P		**P**	**03 00 15.6**	**+3.1**
JHJ	**Hachijo jima 2**	**15.22**	**213**	P		**P**	**03 00 22.4**	**+2.2**
	comp=Z,14nm,0.3s,baz=94,slow=17,SNR=4.6							
JHJ				S		**S**	**03 02 59.5**	**-4.3**
	comp=Z,36nm,0.3s,baz=118,slow=22,SNR=7.1							
JKY	**Yasaka**	**15.30**	**231**	P		**P**	**03 00 20.5**	**-0.8**
ZEA	**Zeya**	**16.11**	**305**	*e*P		**P**	**03 00 31.0**	**-0.1**
ZEA				AMB		AMB	03 00 33.0	
	comp=Z,400nm,2.0s							
ZEA				AMB		AMB	03 00 33.0	
	comp=Z,700nm,2.0s							
ZEA				AMB		AMB	03 00 33.3	
	comp=Z,160nm,1.2s							
ZEA				AMB		AMB	03 00 33.3	
	comp=Z,260nm,1.2s							
ZEA				*e*S		**S**	**03 03 29.0**	**+5.2**
ZEA				A			03 03 34.0	
	comp=Z,400nm,6.0s							
ZEA				A			03 03 34.0	
	comp=Z,1μm,7.0s							
ZEA				A			03 03 34.0	
	comp=Z,700nm,7.0s							
FX1	**Attu Island--F**	**16.55**	**58**	P		**P**	**03 00 37.4**	**+0.9**
	comp=Z,22nm,0.3s,baz=283,slow=3.5,SNR=30							
FX1				S		**S**	**03 03 33.4**	**-0.3**
	comp=Z,15nm,0.3s,baz=191,slow=22,SNR=10							
FX1	**Attu Island--F**	**16.55**	**58**	P		**P**	**03 00 37.4**	**+0.9**
FX1				S		**S**	**03 03 33.4**	**-0.4**
FX1				pmax		pmax		
	comp=Z,22nm,0.3s							
FX1				smax				
	comp=N,15nm,0.3s							
FX1	**Attu Island--F**	**16.55**	**58**	*e*P		**P**	**03 00 36.9**	**+0.3**
SEY	**Seymchan**	**16.68**	**4**	*e*P		**P**	**03 00 38.0**	**-0.1**
SEY				*e*S		**S**	**03 03 35.7**	**-0.9**
SEY				pmax		pmax		
	comp=N,190nm,1.1s							
SEY				pmax		pmax		
	comp=E,50nm,1.1s							
SEY				pmax		pmax		
	comp=Z,260nm,1.1s							
JAI	**Aioi**	**17.06**	**228**	P		**P**	**03 00 42.4**	**-0.3**
CN2	**Changchun**	**17.25**	**270**	*e*P		**P**	**03 00 42.0**	**-2.8**
CN2				*e*S		**S**	**03 03 44.8**	**-4.3**
CN2				AMB		AMB		
	comp=Z,40nm,0.8s							
CN2				AMB		AMB		
	comp=Z,140nm,3.0s							
CN2				LR		LR		
	comp=N,320nm,12.0s							
CN2				LR		LR		
	comp=E,220nm,12.0s							
CN2				LR		LR		
	comp=Z,310nm,12.0s							
MRT2	**Murotomisaki 2**	**17.54**	**228**	P		**P**	**03 00 48.1**	**0.0**
JET	**Tanbara**	**17.81**	**231**	P		**P**	**03 00 51.3**	**+0.2**
JHM	**Kurahashi**	**17.82**	**233**	P		**P**	**03 00 51.2**	**0.0**
JKD	**Kudamatsu**	**18.25**	**234**	P		**P**	**03 00 56.0**	**+0.2**
JNA	**Nagahama**	**18.28**	**232**	P		**P**	**03 00 56.7**	**+0.5**
KS15	**Wonju Array Si**	**18.42**	**249**	*e*P		**P**	**03 00 56.7**	**-0.9**
UWA2	**Uwa jima 2**	**18.47**	**231**	P		**P**	**03 00 58.7**	**+0.6**
CLNS	**Chul'man**	**18.49**	**314**	*e*P		**P**	**03 00 56.8**	**-1.3**
CLNS				pmax		pmax		
	comp=N,30nm,0.9s							
CLNS				pmax		pmax		
	comp=Z,50nm,0.9s							
CLNS				pmax		pmax		
	comp=E,20nm,1.0s							
SNY	**Shenyang**	**19.21**	**266**	⇓P		**P**	**03 01 05.0**	**-0.7**
SNY				S		**S**	**03 04 27.5**	**-1.5**
SNY				AMB		AMB		
	comp=Z,130nm,0.9s							
SNY				LR		LR		
	comp=N,380nm,10.9s							
SNY				LR		LR		
	comp=E,290nm,10.7s							
SNY				LR		LR		
	comp=Z,400nm,10.6s							
INCN	**Inchon**	**19.21**	**251**	*e*P		**P**	**03 01 05.8**	**0.0**
	comp=Z,280nm,0.9s							
YAK	**Yakutsk**	**19.42**	**331**	*e*P		**P**	**03 01 08.0**	**+0.2**
YAK				*e*S		**S**	**03 04 32.7**	**-0.1**
YAK				pmax		pmax		
	comp=Z,60nm,0.9s							
YAK				pmax		pmax		
	comp=N,19nm,1.1s							
YAK				pmax		pmax		
	comp=E,20nm,0.9s							
YAK				smax				
	comp=E,63nm,1.1s							
YAK				smax				
	comp=Z,30nm,1.0s							
YAK				smax				
	comp=N,96nm,1.1s							
YAK	**Yakutsk**	**19.42**	**331**	*e*P		**P**	**03 01 06.8**	**-1.0**
	comp=N,125nm,0.7s							
JNU	**Nakatsue**	**19.49**	**234**	P		**P**	**03 01 09.0**	**+0.3**
	comp=N,4.2nm,0.3s,baz=53,slow=16,SNR=33							
JNU	**Nakatsue**	**19.49**	**234**	P		**P**	**03 01 08.9**	**+0.2**
JTSN	**Tsuno**	**19.81**	**231**	P		**P**	**03 01 13.2**	**+1.2**
CBIJ	**Chichi jima**	**20.11**	**200**	P		**P**	**03 01 16.9**	**+1.9**
	comp=N,295nm,0.7s,baz=2.7,slow=3.6,SNR=14							
JSJ	**Shimokoshiki**	**21.22**	**233**	P		**P**	**03 01 28.0**	**+1.9**
DL2	**Dalian**	**21.82**	**260**	PR			03 01 32.0	
DL2				AP			03 02 10.0	
DL2				XP			03 02 31.0	
DL2				S		**S**	**03 05 25.0**	**+8.2**
DL2				SS		SS	03 06 19.0	+7.2
DL2				AMB		A

BOD Bodaibo 24.40 311 *e*P **P** **03 01 53.2 -3.2**
BOD *e* 03 02 35.3
BJI Beijing 25.06 268 P **P** **03 02 02.8 +0.1**
BJI AP pP 03 02 37.3 -0.8
BJI XP sP 03 02 55.5 -3.5
BJI S **S** **03 06 11.8 +0.3**
BJI XS 03 07 18.0
BJI AMB AMB
comp=Z,129nm,0.9s,mb5.5
BJI AMB AMB
comp=Z,623nm,3.4s
BJT Baijiatuan 25.07 267 *e*P **P** **03 02 02.8 0.0**
comp=Z,86nm,0.7s,mb5.4
JOW Kunigami 25.81 228 P **P** **03 02 09.8 0.0**
comp=Z,111nm,0.9s,mb5.5,baz=31,slow=7.9,SNR=26
TIA Tai'an 26.27 259 *e*P **P** **03 02 14.0 0.0**
TIA AMB AMB
comp=Z,58nm,1.4s,mb5.0
SSE Sheshan 26.73 245 P **P** **03 02 19.5 +1.4**
SSE AP pP 03 02 57.0 +3.0
SSE XP sP 03 03 18.0 +3.2
SSE S **S** **03 06 39.5 +0.7**
SSE AMB AMB
comp=Z,114nm,1.1s,mb5.4
SSE LR LR
comp=N,155nm,20.2s
SSE LR LR
comp=E,117nm,20.2s
SSE LR LR
comp=Z,135nm,35.0s
TIXI Tiksi 27.21 346⇓ *i*P **P** **03 02 20.0 -2.1**
TIXI *e*S **S** **03 06 44.4 -1.8**
TIXI *e**SS 03 08 09.7
TIXI pmax pmax
comp=Z,13nm,0.5s,mb4.8
TIXI Tiksi 27.21 346 *e*P **P** **03 02 19.2 -2.9**
comp=Z,24nm,0.4s,mb5.2
NJ2 Nanjing 27.59 250 *e*P **P** **03 02 26.3 +0.3**
NJ2 PP PP 03 03 23.3 +2.0
NJ2 S **S** **03 06 50.0 -2.7**
NJ2 XS 03 08 02.0
NJ2 AMB AMB
comp=Z,110nm,0.7s,mb5.7
NJ2 AMB AMB
comp=Z,330nm,9.2s
NJ2 LR LR
comp=N,350nm,23.8s
NJ2 LR LR
comp=E,550nm,19.7s
NJ2 LR LR
comp=Z,590nm,24.3s
HHC Hu-ho-hao-te 27.91 272⇓ *i*P **P** **03 02 29.0 +0.2**
HHC AP pP 03 03 10.0 +5.1
HHC XP sP 03 03 25.0 -0.6
HHC PP PP 03 03 29.8 +4.5
HHC PCP PcP 03 05 38.3 -1.6
HHC S **S** **03 07 01.0 +3.2**
HHC XS 03 08 03.8
HHC SCP 03 09 00.3
HHC PCS 03 09 16.0
HHC AMB AMB
comp=Z,141nm,1.1s,mb5.6
HHC LR LR
comp=N,454nm,14.4s
HHC LR LR
comp=E,239nm,12.0s
HHC LR LR
comp=Z,305nm,12.4s
ULN Ulaanbaatar 28.74 289 *e*P **P** **03 02 34.5 -1.6**
comp=Z,16nm,0.9s,mb4.7
BTO Baotou 29.08 273 *e*P **P** **03 02 37.0 -2.2**
SONM Songino Array 29.18 289 P **P** **03 02 38.6 -1.4**
comp=Z,3.7nm,0.4s,mb4.4,baz=78,slow=7.7,SNR=23
SONM PcP PcP 03 05 42.4 -0.6
comp=Z,4.9nm,0.8s,baz=90,slow=3.7,SNR=4.2
SONM ScP 03 09 06.5
comp=Z,6.4nm,1.0s,baz=90,slow=2.5,SNR=14
TNA Tin City 29.71 35 *e*P **P** **03 02 44.1 -0.4**
comp=Z,111nm,1.1s,mb5.5
TLY Talaya 30.21 297⇓ *i*P **P** **03 02 47.6 -1.5**
TLY *i* *PP pP 03 03 30.2 +4.3
TLY *e**SP sP 03 03 51.8 +5.4
TLY *i* 03 05 45.6
TLY S **S** **03 07 32.5 -1.6**
TLY pmax pmax
comp=Z,262nm,1.1s,mb5.9
TLY MLR MLR
comp=Z,2µm,16.0s
ZAK Zakamensk 30.65 295⇓ *i*P **P** **03 02 51.5 -1.5**
ZAK *e* pP 03 03 29.8 0.0
ZAK *e* 03 05 45.1
WHN Wuhan 31.50 252⇓ *i*P **P** **03 03 00.3 -0.4**
WHN AMB AMB
comp=Z,112nm,1.0s,mb5.5
MOY Mondy 31.84 298 *e*P **P** **03 03 02.7 -0.7**
QZH Quanzhou 32.72 240⇓ *i*P **P** **03 03 12.0 +0.8**
XAN Xi'an 33.08 263 P **P** **03 03 14.0 -0.2**
XAN AMB AMB
comp=Z,88nm,1.3s,mb5.3
ENH Enshi 34.92 257 *e*P **P** **03 03 29.1 -0.9**
comp=Z,102nm,1.1s,mb5.4
LZH Lanzhou 35.48 270⇓ P **P** **03 03 35.0 +0.4**
LZH AP pP 03 04 12.0 -0.4
LZH XP sP 03 04 32.5 -0.4
LZH PP PP 03 05 00.5 +0.3
LZH PCP PcP 03 06 02.3 +2.0
LZH *e*S **S** **03 08 54.3 -1.6**
LZH SCP 03 09 30.3
LZH XS 03 09 59.3
LZH SCS ScS 03 13 33.3 +1.6
LZH AMB AMB
comp=Z,125nm,1.5s,mb5.3
LZH AMB AMB
comp=Z,399nm,4.7s
LZH LR LR
comp=N,759nm,11.2s
LZH LR LR
comp=Z,2µm,14.5s
KDAK Kodiak Island 36.21 50 *e*P **P** **03 03 39.5 -1.0**
comp=Z,424nm,1.0s,mb6.0
GTA Gaotai 36.64 277⇓ *i*P **P** **03 03 45.0 +0.8**
GTA AP pP 03 04 21.5 -0.7
GTA XP sP 03 04 39.3 -3.6
GTA PP PP 03 05 14.5 +1.2
GTA PCP PcP 03 06 05.0 +1.3
GTA S **S** **03 09 13.5 0.0**
GTA SCP 03 09 33.0
GTA PCS 03 09 52.5
GTA XS 03 10 19.5
GTA SS SS 03 11 52.3 -0.3
GTA SCS ScS 03 13 40.0 +1.9
GTA AMB AMB
comp=Z,98nm,1.1s,mb5.3
GTA AMB AMB
comp=Z,253nm,6.4s
GTA LR LR
comp=N,270nm,7.2s
GTA LR LR
comp=E,144nm,13.7s
GTA LR LR
comp=Z,163nm,14.4s
MCK McKinley 37.51 40 *e*P **P** **03 03 51.1 -0.1**
comp=Z,47nm,0.9s,mb5.1
PMR Palmer 37.55 43 *e*P **P** **03 03 50.6 -1.0**
comp=Z,60nm,0.9s,mb5.2
SML Sawmill 37.91 43 *e*P **P** **03 03 54.2 -0.4**
COLA College 37.94 38 *e i*P **P** **03 03 55.7 +0.9**
COLA College 37.94 38 *e*P **P** **03 03 55.6 +0.7**
comp=Z,160nm,0.9s,mb5.7
ILAR Eielson Array 38.35 38 P **P** **03 03 58.4 +0.1**
comp=Z,106nm,1.1s,mb5.4,baz=269,slow=6.9,SNR=503
ILAR pP pP 03 04 39.2 +2.7
comp=Z,28nm,1.1s,baz=263,slow=8.9,SNR=5.7
ILAR ScP 03 09 36.4
comp=Z,1.0nm,0.8s,baz=298,slow=4.7,SNR=5.0
ILAR P3KPbc 03 34 03.6
comp=Z,0.6nm,0.8s,baz=115,slow=3.6,SNR=6.9
ILAR Eielson Array 38.35 38 P **P** **03 03 58.4 +0.1**
ILAR *PP pP 03 04 39.2 +2.7
ILAR 03 09 36.4
ILAR pmax pmax
comp=Z,106nm,1.1s
ILAR pmax pmax
comp=N,28nm,1.1s
ILAR pmax pmax
comp=N,1.0nm,0.8s
ILAR pmax pmax
comp=Z,1.0nm,0.8s
ILAR Eielson Array 38.35 38 P **P** **03 03 58.4 +0.1**
ILAR pP pP 03 04 39.2 +2.7
ILAR ScP 03 09 36.4
ILAR *e* 03 34 03.6
CD2 Chengdu 38.44 263⇓ *i*P **P** **03 04 00.0 +0.6**
CD2 PP PP 03 05 34.5 +1.4
CD2 S **S** **03 09 39.0 -1.8**
CD2 XS 03 10 46.0
CD2 SS SS 03 12 27.5 -3.9
CD2 AMB AMB
comp=Z,260nm,1.0s,mb5.8
CD2 AMB AMB
comp=Z,140nm,6.8s
CD2 LR LR
comp=N,340nm,14.2s
CD2 LR LR
comp=Z,310nm,16.0s
GYA Guiyang 39.28 255⇓ *i*P **P** **03 04 07.0 +0.6**
GYA AP pP 03 04 45.5 +0.8
GYA XP sP 03 05 07.3 +1.8
GYA PP PP 03 05 46.5 +4.0
GYA PCP PcP 03 06 12.5 +0.4
GYA S **S** **03 09 56.8 +3.3**
GYA XS 03 11 04.5
GYA AMB AMB
comp=Z,40nm,1.0s,mb5.0
GYA AMB AMB
comp=Z,170nm,5.6s
EYAK Cordova Ski Ar 39.31 45 *e*P **P** **03 04 06.6 +0.3**
TGY Tagaytay City 40.17 226 P **P** **03 04 14.7 +1.0**
comp=Z,200nm,0.4s,baz=144,slow=7.1,SNR=8.4
TGY Tagaytay City 40.17 226 P **P** **03 04 14.7 +1.0**
TGY pmax pmax
comp=Z,203nm,0.4s
NVS Novosibirsk 41.50 307 *i* P **P** **03 04 21.5 -2.7**
NVS *e* 03 05 58.7
NVS pmax pmax
comp=N,6.0nm,1.1s
NVS pmax pmax
comp=E,11nm,1.1s
NVS pmax pmax
comp=Z,19nm,1.1s,mb4.6
KALP Kalibo 41.58 223⇑ *e*P **P** **03 04 26.1 +0.8**
QIZ Qiongzhong 42.49 244 P **P** **03 04 34.3 +1.6**
QIZ S **S** **03 10 43.8 +3.0**
QIZ AMB AMB
comp=Z,57nm,1.2s,mb5.1
QIZ Qiongzhong 42.49 244 *e*P **P** **03 04 33.4 +0.7**
comp=Z,94nm,1.3s,mb5.3
KMI Kunming 42.80 257 *e*P **P** **03 04 36.0 +0.8**
KMI AP pP 03 05 16.3 +2.4
KMI XP sP 03 05 33.0 -1.5
KMI PP PP 03 06 20.0 +1.1
KMI S **S** **03 10 40.5 -4.7**
KMI SS SS 03 13 56.3 +0.8
KMI SSS SSS 03 14 51.0 -5.1
KMI AMB AMB
comp=Z,134nm,1.3s,mb5.4
KMI AMB AMB
comp=Z,499nm,3.1s
KMI LR LR
comp=N,141nm,10.3s
KMI LR LR
comp=E,123nm,13.0s
KMI LR LR
comp=Z,143nm,12.2s
WMQ Urumqi 42.81 290⇑ *i*P **P** **03 04 35.3 +0.4**
WMQ AP pP 03 05 13.8 +0.2
WMQ XP sP 03 05 34.0 -0.2
WMQ PP PP 03 06 19.3 +0.6
WMQ PCP PcP 03 06 24.3 +0.9
WMQ SCP 03 09 57.3
WMQ PCS 03 10 15.3
WMQ S **S** **03 10 44.8 -0.3**
WMQ XS 03 11 52.0
WMQ SS SS 03 13 54.5 -0.8
WMQ SCS ScS 03 14 15.0 +0.7
WMQ AMB AMB
comp=Z,15nm,1.5s,mb4.4
WMQ AMB AMB
comp=Z,342nm,9.6s
INK Inuvik 43.27 32 P **P** **03 04 39.3 +1.0**
comp=Z,66nm,0.6s,mb5.5,baz=287,slow=6.5,SNR=305
INK Inuvik 43.27 32 P **P** **03 04 39.3 +1.0**
INK pmax pmax
comp=Z,66nm,0.6s
INK Inuvik 43.27 32 *e*P **P** **03 04 38.8 +0.5**
comp=Z,158nm,1.0s,mb5.6
MKAR Makanchi Array 44.97 296 P **P** **03 04 51.0 -1.1**
comp=Z,6.9nm,0.5s,mb4.5,baz=73,slow=7.8,SNR=65
MKAR pP pP 03 05 34.0 +2.8
comp=Z,8.4nm,0.9s,baz=69,slow=10,SNR=5.5
MKAR PcP PcP 03 06 30.1 -0.6
comp=Z,18nm,0.7s,baz=76,slow=5.0,SNR=8.6
MKAR ScP 03 10 04.5
comp=Z,4.7nm,0.9s,baz=56,slow=4.4,SNR=6.6
MKAR LR LR 03 23 54.7
comp=Z,128nm,21.6s,baz=67,slow=36
MKAR Makanchi Array 44.97 296 P **P** **03 04 51.0 -1.1**
MKAR *PP pP 03 05 34.0 +2.9
MKAR 03 06 30.1
MKAR pmax pmax
comp=Z,7.0nm,0.5s
MKAR pmax pmax
comp=N,8.0nm,0.9s
MKAR pmax pmax
comp=Z,18nm,0.7s
MKAR pmax pmax
comp=N,5.0nm,0.9s
MKAR MLR MLR
comp=Z,128nm,21.6s
KURK Kurchatov 45.56 303 *e*P **P** **03 04 54.4 -2.4**
DLBC Dease Lake 47.58 45 P **P** **03 05 14.5 +2.0**
comp=Z,19nm,0.6s,mb4.9,baz=289,slow=8.4,SNR=47
DLBC Dease Lake 47.58 45 *e*P **P** **03 05 13.7 +1.2**
LSA Lhasa 47.88 271 P **P** **03 05 17.0 +1.8**
LSA Lhasa 47.88 271 *e*P **P** **03 05 16.9 +1.7**
comp=Z,103nm,0.8s,mb5.5
UBT Uboonrachathani 48.36 245 P **P** **03 05 19.8 +0.8**
BVAR Borovoye Array 49.23 308 P **P** **03 05 23.9 -1.3**
comp=Z,7.4nm,0.8s,mb4.4,baz=68,slow=8.0,SNR=39
BVAR pP pP 03 06 08.5 +3.6
comp=Z,5.1nm,0.8s,baz=53,slow=7.4,SNR=6.9
BVAR PcP PcP 03 06 45.6 -0.3
comp=Z,2.5nm,0.3s,baz=88,slow=4.5,SNR=9.2
BVAR ScP 03 10 22.2
comp=Z,4.8nm,0.9s,baz=90,slow=4.4,SNR=7.4
BRVK Borovoye 49.27 308 *e*P **P** **03 05 22.4 -3.1**
CM31 Chiang Mai Arr 49.94 254 *e*P **P** **03 05 31.7 +0.6**
comp=Z,79nm,0.8s,mb5.4
CMAR Chiang Mai Arr 49.94 254 P **P** **03 05 32.1 +1.0**
comp=Z,48nm,0.6s,mb5.3,baz=38,slow=7.4,SNR=203
CMAR PcP PcP 03 06 49.6 +0.8
comp=Z,7.6nm,0.8s,baz=22,slow=2.4,SNR=4.7
CMAR ScP 03 10 28.3
comp=Z,5.0nm,0.9s,baz=16,slow=3.8,SNR=16
CMAR Chiang Mai Arr 49.94 254 P **P** **03 05 32.1 +1.0**
CMAR 03 06 49.7
CMAR pmax pmax
comp=Z,48nm,0.6s
CMAR pmax pmax
comp=Z,8.0nm,0.9s
CMAR pmax pmax
comp=N,5.0nm,0.9s
SHL Shillong 49.94 266⇓ *i*P **P** **03 05 31.0 0.0**
SHL *e*S **S** **03 12 26.0 -0.3**
ZRNK Zerenda 50.01 309 *e*P **P** **03 05 29.1 -2.0**
BDT Bhumibol Dam 50.77 252 P **P** **03 05 38.0 +0.6**
comp=N,16nm,1.0s,mb4.6
ULHL Ulahol 50.93 294 P **P** **03 05 38.4 +0.1**
SNR=7.8
TKM2 Tokmak 2 50.99 295 P **P** **03 05 38.5 -0.2**
SNR=13
BBB Bella Bella 51.26 51 P **P** **03 05 41.6 +1.0**
comp=N,49nm,0.9s,mb5.1,baz=306,slow=6.5,SNR=8.4
AGT Agartala 51.47 265 *i* **P** **03 05 34.0 -8.6**
AGT *e* pP 03 06 19.0 -3.6
USP Ospenovka 51.50 296 P **P** **03 05 42.2 -0.3**
SNR=33
KBK Karagaybulak 51.53 295 P **P** **03 05 42.7 -0.1**
SNR=17
KZA Kyzart 51.65 294 P **P** **03 05 44.5 +0.9**
SNR=33
FRU Bishkek 51.65 295 *e*P **P** **03 05 43.0 -0.6**
AAK Ala-Archa 51.83 295 P **P** **03 05 44.6 -0.4**
SNR=13
AAK Ala-Archa 51.83 295 *e*P **P** **03 05 43.9 -1.1**
comp=N,14nm,0.8s,mb4.6
EKS2 Erkin-Say 52.27 295 P **P** **03 05 47.8 -0.4**
SNR=23
KSH Kashi 52.55 291 *i* PR 03 05 50.3
KSH AP pP 03 06 30.0 -0.6
KSH XP sP 03 06 49.8 -0.3
KSH PCP PcP 03 06 59.0 +0.7
KSH PP PP 03 07 52.0 -0.2
KSH SCP 03 10 38.0
KSH PCS 03 10 56.0
KSH S **S** **03 13 01.0 -0.8**
KSH XS 03 14 10.8
KSH SCS ScS 03 15 18.5 0.0
KSH SS SS 03 16 40.5 -1.2
KSH AMB AMB
comp=Z,150nm,1.5s,mb5.5
KSH LR LR
comp=N,160nm,6.4s
KSH LR LR
comp=E,170nm,7.0s
AML Almayashu 52.60 295 P **P** **03 05 51.1 +0.4**
SNR=10.0
GUN Gumba 52.62 273 *e*P **P** **03 05 51.6 +0.5**
comp=E,168nm,0.4s
YKW3 Yellowknife Ar 52.62 35 *e*P **P** **03 05 50.4 -0.2**
YKW3 *e*pP pP 03 06 33.0 +2.3
YKA Yellowknife Ar 52.66 36 P **P** **03 05 51.0 +0.1**
comp=E,22nm,0.5s,mb5.1,baz=300,slow=7.0,SNR=385
YKA pP pP 03 06 33.9 +2.9
comp=E,7.5nm,1.0s,baz=298,slow=7.5,SNR=4.4
YKA ScP 03 10 37.8
comp=E,1.1nm,0.9s,baz=302,slow=4.5,SNR=4.7
YKA S **S** **03 13 05.7 +2.8**
comp=E,2.1nm,1.2s,baz=300,slow=14,SNR=3.9
YKA Yellowknife Ar 52.66 36 P **P** **03 05 51.0 +0.1**
YKA *PP pP 03 06 33.9 +2.8
YKA S **S** **03 13 05.7 +2.8**
YKA pmax pmax
comp=Z,22nm,0.5s
YKA pmax pmax
comp=N,8.0nm,1.0s
YKA pmax pmax
comp=N,1.0nm,0.9s
YKA smax
comp=N,2.0nm,1.2s
YKA Yellowknife Ar 52.66 36 P **P** **03 05 51.0 +0.1**
YKA pP pP 03 06 33.9 +2.9
YKA ScP 03 10 37.8
YKA S **S** **03 13 05.7 +2.8**
KKN Kakani 53.11 273 *e*P **P** **03 05 54.9 +0.2**
comp=N,563nm,1.2s
PKI Pulchoki 53.16 273 *e*P **P** **03 05 55.5 +0.5**
comp=N,570nm,1.3s
DMN Daman 53.34 273 *e*P **P** **03 05 57.0 +0.6**
comp=N,584nm,1.0s
GKN Gorkha 53.42 274 *e*P **P** **03 05 57.3 +0.3**
comp=N,323nm,0.6s
ARU Arti 53.65 316 *de*P **P** **03 05 55.9 -2.3**
ARU pmax pmax
comp=Z,9.0nm,0.5s,mb4.8
ARU Arti 53.65 316 *e*P **P** **03 05 56.0 -2.3**
comp=Z,18nm,0.8s,mb4.9
ARU *e*pP pP 03 06 41.2 +2.7
DANN Dangsing 53.81 275 *e*P **P** **03 06 00.8 +1.0**
KOLN Koldanda 54.28 274 *e*P **P** **03 06 03.9 +0.6**
comp=Z,665nm,1.0s
PMG Port Moresby 55.55 183 P **P** **03 06 13.6 +1.0**
comp=Z,18nm,0.9s,mb4.9,baz=236,slow=13,SNR=3.2
PMG Port Moresby 55.55 183 P **P** **03 06 13.6 +1.0**
PMG pmax pmax
comp=Z,18nm,0.9s
PMG Port Moresby 55.55 183 *e*P **P** **03 06 12.0 -0.6**
HDW Hoodsport 56.41 54 P **P** **03 06 18.7 +0.5**
MBW Mount Baker 56.42 53 P **P** **03 06 18.5 +0.2**
GNW Green Mountain 56.58 54 *e*P **P** **03 06 19.3 -0.1**
RPW Rockport 56.82 53 P **P** **03 06 21.0 -0.1**
KEV Kevo 56.89 340 *e*p **P** **03 06 19.4 -1.9**
comp=Z,3.0nm,0.4s,mb4.5
KEV Kevo 56.89 340 *e*P **P** **03 06 19.4 -1.9**
KEV pmax pmax
comp=Z,3.0nm,0.4s,mb4.5
DAG Danmarks Havn 56.92 357⇑ *i*P **P** **03 06 20.0 -1.5**
comp=Z,6.7nm,0.9s,mb4.5
DAG *i* pP 03 07 04.8 +2.6
DAG Danmarks Havn 56.92 357⇑ *i*P **P** **03 06 20.0 -1.5**
DAG *i* pP 03 07 04.8 +2.6
DAG pmax pmax
comp=Z,7.0nm,0.9s,mb4.5
PNT Penticton 57.36 51 P **P** **03 06 24.8 -0.1**
ARCES ARCESS Array B 57.41 340 P **P** **03 06 23.7 -1.2**
comp=Z,3.6nm,0.5s,mb4.5,baz=27,slow=7.9,SNR=20
ARCES pP pP 03 07 08.2 +2.4
comp=Z,10nm,1.1s,baz=45,slow=8.6,SNR=7.3
ARCES PcP PcP 03 07 16.3 -0.3
comp=Z,6.6nm,0.8s,baz=68,slow=5.6,SNR=6.1
ARCES S **S** **03 14 03.4 -2.5**
comp=Z,2.9nm,0.8s,baz=32,slow=16,SNR=4.6
ARCES LR LR 03 38 24.0
comp=Z,48nm,18.2s,baz=214,slow=44
ARCES ARCESS Array B 57.41 340 P **P** **03 06 23.7 -1.3**
ARCES *PP pP 03 07 08.2 +2.4
ARCES 03 07 16.3
ARCES S **S** **03 14 03.4 -2.5**
ARCES pmax pmax
comp=Z,4.0nm,0.5s
ARCES pmax pmax
comp=N,11nm,1.1s
ARCES pmax pmax
comp=Z,7.0nm,0.9s
ARCES smax
comp=N,3.0nm,0.9s
ARCES ARCESS Array B 57.41 340 P **P** **03 06 23.7 -1.2**
ARCES pP pP 03 07 08.2 +2.4
ARCES PcP PcP 03 07 16.3 -0.3
ARCES S **S** **03 14 03.4 -2.5**
ARCES LR LR 03 38 24.0
FMW Mount Fremont 57.59 54 P **P** **03 06 26.9 +0.4**
LON Longmire 57.62 54 *e*P **P** **03 06 26.1 -0.6**
NLW Nelson Butte 57.67 53 P **P** **03 06 27.5 +0.4**
SHW Mount Saint He 57.69 55 *e*P **P** **03 06 27.4 +0.1**
COR Corvallis 58.00 57 *e*P **P** **03 06 30.3 +0.9**
comp=N,143nm,1.1s,mb5.7
NDI New Delhi 58.10 279 *i* P **P** **03 06 29.5 -0.9**
WTV Waterville 58.10 53 P **P** **03 06 29.8 -0.3**
KTK1 Kautokeino 58.34 340 *e*P **P** **03 06 31.3 -0.2**
TDH Tom, Dick, Har 58.47 56 P **P** **03 06 33.3 +0.6**
VFP Flag Point 58.64 56 P **P** **03 06 34.7 +0.8**
HSO Harness Mounta 58.75 58 *e*P **P** **03 06 35.1 +0.5**
DPW Davenport 58.96 52 *e*P **P** **03 06 35.7 -0.3**
IPM Ipoh 59.08 241⇓ *e*P **P** **03 06 37.8 +0.4**
HAWA Hanford 59.10 54 *e*P **P** **03 06 36.5 -0.5**
comp=N,75nm,1.4s,mb5.3
CROR Criterion Ridg 59.11 56 P **P** **03 06 37.9 +0.7**
NEW Newport 59.31 51 P **P** **03 06 38.5 0.0**
comp=N,48nm,0.9s,mb5.3,baz=305,slow=7.6,SNR=52
NEW Newport 59.31 51 P **P** **03 06 38.5 0.0**
NEW pmax pmax
comp=Z,48nm,0.9s
NEW Newport 59.31 51 *e*P **P** **03 06 37.7 -0.8**
comp=Z,70nm,1.0s,mb5.5
NEW *e*pP pP 03 07 18.4 -1.2
HUMO Hull Mountain 59.37 59 *e*P **P** **03 06 39.1 +0.1**
KGM Kluang 59.77 237 *e*P **P** **03 06 43.0 +0.9**
YBH Yreka Blue Hor 60.04 60 P **P** **03 06 44.5 +1.0**
comp=Z,21nm,0.7s,mb5.1,baz=347,slow=3.1,SNR=55
YBH Yreka Blue Hor 60.04 60 P **P** **03 06 44.5 +1.0**
YBH pmax pmax
comp=Z,21nm,0.7s
YBH Yreka Blue Hor 60.04 60 *e*P **P** **03 06 43.5 0.0**
comp=Z,36nm,1.0s,mb5.2
LNOR Lincton Mounta 60.11 54 P **P** **03 06 44.4 +0.5**
WALA Waterton Lakes 60.53 49 *e*P **P** **03 06 46.3 -0.4**
comp=Z,76nm,0.8s,mb5.6
JOF Joensuu 60.59 332 *e*p **P** **03 06 44.5 -2.4**
comp=Z,2.7nm,0.4s,mb4.4
JOF Joensuu 60.59 332 *e*P **P** **03 06 44.5 -2.4**
JOF pmax pmax
comp=Z,3.0nm,0.4s,mb4.5
KAKA Kakadu 60.79 199⇓ *i*P **P** **03 06 47.9 -1.0**
comp=Z,85nm,0.8s,mb5.6

BSMT Bassoo Peak 60.81 50 P **P 03 06 49.4 +0.8**
WDC Whiskeytown Da 60.84 61 *e*P **P 03 06 48.0 -0.9**
comp=Z,26nm,0.9s,mb5.1
VIS Vishakhapatnam 61.08 266 *e*P **P 03 06 50.2 -0.6**
VIS *e* 03 06 52.4
comp=Z,112nm,1.4s
LOF Lofoten 61.19 343 *e*P **P 03 06 51.0 +0.1**
LOF AMb AMB 03 06 55.0
comp=Z,28nm,1.8s,mb4.8
LOF Lofoten 61.19 343 *e*P **P 03 06 51.0 +0.1**
comp=Z,28nm,1.8s,mb4.8
SUMG Summit 61.23 3 *e*P **P 03 06 49.8 -1.3**
SUMG *e*pP pP 03 07 36.1 +3.6
MOD Modoc 61.36 58 *e*P **P 03 06 52.5 +0.1**
comp=Z,45nm,0.8s,mb5.3
BHPL Bhopal 61.46 274 *e*P **P 03 06 52.7 -0.6**
MSO Missoula 61.90 51 *e*P **P 03 06 55.8 -0.1**
comp=Z,97nm,0.8s,mb5.7
WVOR Wild Horse Val 62.01 57 *e*P **P 03 06 56.9 +0.2**
comp=Z,59nm,1.0s,mb5.4
CHMT Chamberlain Mo 62.21 50 *e*P **P 03 06 57.6 -0.4**
OHCM Honcut 62.24 61 *e*P **P 03 06 57.5 -0.9**
FFC Flin Flon 62.57 38 *e*P **P 03 06 59.9 -0.4**
comp=Z,73nm,0.8s,mb5.6
BEKR Beckwourth 62.59 60 *e*P **P 03 07 00.5 -0.2**
comp=Z,45nm,0.9s,mb5.3
FCC Fort Churchill 62.89 32 *e*P **P 03 07 01.1 -1.2**
comp=Z,14nm,0.4s,mb5.1
HRY Holter Researc 63.09 50 *e*P **P 03 07 04.2 +0.3**
PAHR Pah Rah Range 63.28 60 *e*P **P 03 07 05.2 0.0**
comp=Z,33nm,1.2s,mb5.0
WCN Washoe City 63.31 60 *e*P **P 03 07 05.3 -0.1**
comp=Z,38nm,1.0s,mb5.2
FINES FINESS Array B 63.34 333 P **P 03 07 03.1 -2.1**
comp=Z,6.6nm,0.5s,mb4.7,baz=32,slow=8.0,SNR=30
FINES pP pP 03 07 48.8 +1.9
comp=Z,12nm,0.9s,baz=45,slow=8.1,SNR=7.9
FINES FINESS Array B 63.34 333 P **P 03 07 03.1 -2.1**
FINES *PP pP 03 07 48.8 +1.9
FINES pmax pmax
comp=Z,7.0nm,0.5s
FINES pmax pmax
comp=N,12nm,0.9s
HLID Hailey 63.70 54 *e*P **P 03 07 08.1 +0.3**
comp=N,26nm,1.0s,mb5.0
CMB Columbia Colle 63.73 62 *e*P **P 03 07 07.5 -0.5**
comp=N,31nm,1.1s,mb5.0
MCMT McKenzie Canyo 63.76 52 *e*P **P 03 07 07.8 -0.3**
BOZ Bozeman (W) 63.88 51 *e*P **P 03 07 09.4 +0.5**
comp=N,75nm,0.7s,mb5.6
BMN Battle Mountai 64.10 58 *e*P **P 03 07 10.8 +0.4**
comp=N,43nm,0.9s,mb5.3
BMN *e*pP pP 03 07 51.0 -1.1
OBN Obninsk 64.24 324α *i*P **P 03 07 09.2 -1.9**
OBN *i* *PP pP 03 07 55.6 +2.8
OBN *i* S **S 03 15 29.2 -3.4**
OBN *i* SS SKS 03 16 42.2 -1.5
OBN pmax pmax
comp=Z,10.0nm,0.6s,mb4.8
OBN MLR MLR
comp=Z,100nm,18.0s
QLMT Earthquake Lak 64.52 51 *e*P **P 03 07 13.3 +0.3**
QLMT *e*PcP PcP 03 07 45.8 +0.3
QLMT *e*pP pP 03 07 54.6 -0.3
HYB Hyderabad 64.59 269 *i*P **P 03 07 13.5 -0.4**
HYB Hyderabad 64.59 269 *e*P **P 03 07 13.5 -0.4**
NVAR Mina Array Bea 64.74 60 P **P 03 07 15.3 +0.7**
comp=Z,28nm,0.8s,mb5.2,baz=300,slow=5.2,SNR=161
NVAR pP pP 03 07 56.0 -0.4
comp=Z,7.2nm,0.8s,baz=306,slow=6.1,SNR=3.1
NVAR Mina Array Bea 64.74 60 P **P 03 07 15.3 +0.7**
NVAR pP pP 03 07 56.0 -0.4
MNV Mina 64.83 60 *e*P **P 03 07 14.6 -0.6**
comp=Z,31nm,1.0s,mb5.1
YMR Madison River 64.88 51 *e*P **P 03 07 15.7 +0.4**
TPH Tonopah 65.61 60 *e*P **P 03 07 20.3 +0.1**
comp=Z,45nm,0.9s,mb5.3
KSWY Kelly School 65.75 52 *e*P **P 03 07 21.9 +0.9**
HVU Hansel Valley 65.78 54 *e*P **P 03 07 21.4 +0.2**
HVU *e*PcP PcP 03 07 50.8 +0.1
VRSR Storozhevoye 65.87 320 *e*P **P 03 07 20.3 -1.3**
VRSR *e* 03 07 50.9
VRSR *e**PP pP 03 08 07.2 +3.6
VRSR pmax pmax
comp=Z,10.0nm,0.7s,mb4.8
VRSR pmax pmax
comp=N,20nm,0.9s
VRSR pmax pmax
comp=E,10.0nm,0.7s
AHID Auburn Hatcher 66.06 53 *e*P **P 03 07 22.7 -0.3**
comp=E,38nm,0.9s,mb5.2
BGU Big Grassy Mou 66.20 55 *e*P **P 03 07 24.0 +0.1**
CTA Charters Tower 66.20 183⇓*i*P **P 03 07 23.5 -0.7**
comp=E,15nm,1.0s,mb4.8
CTAO Charters Tower 66.20 183 *e*P **P 03 07 23.0 -1.2**
SPUT South Promonto 66.28 55 *e*P **P 03 07 24.8 +0.4**
MDRS Chennai 66.43 264 *e*P **P 03 07 24.9 -0.9**
MDRS *e* 03 07 27.8
comp=Z,108nm,1.7s
HWUT Hardware Ranch 66.57 54 *e*P **P 03 07 26.8 +0.5**
comp=Z,58nm,1.0s,mb5.4
BW06 Boulder Array 66.91 52⇑*i*P **P 03 07 28.7 +0.4**
comp=Z,54nm,0.8s,mb5.4
BW06 *e*pP pP 03 08 09.1 -1.3
PDAR Pinedale Array 66.91 52 P **P 03 07 28.6 +0.3**
comp=Z,50nm,0.7s,mb5.4,baz=281,slow=1.5,SNR=404
PDAR pP pP 03 08 09.7 -0.7
comp=Z,9.1nm,0.9s,baz=315,slow=2.1,SNR=2.9
PDAR PKPPKP 03 35 53.0
comp=Z,0.9nm,0.9s,baz=90,slow=4.4,SNR=5.8
TCUT Toone Canyon 66.99 54 *e*P **P 03 07 29.3 +0.4**
CTU Camp Tracy 67.08 55 *e*P **P 03 07 29.5 +0.1**
POO Poona 67.08 273 *e*P **P 03 07 29.3 -0.5**
POO *e* 03 07 31.1
comp=Z,171nm,1.4s
JLU Jordanelle 67.31 55 *e*P **P 03 07 31.2 +0.3**
JLU *e*pP pP 03 08 09.6 -3.4
NLU North Lily Min 67.39 55 *e*P **P 03 07 31.9 +0.5**
NLU *e*pP pP 03 08 12.8 -0.7
WRAB Tennant Creek 67.41 196 *e*P **P 03 07 30.4 -1.5**
comp=Z,166nm,1.1s,mb5.8
WRAB *e*PcP PcP 03 07 57.4 -0.6
WB2 Warramunga Arr 67.42 196⇓*i*P **P 03 07 30.6 -1.3**
WB2 *i*pP pP 03 07 58.4 -16
WRA Warramunga Arr 67.42 196 P **P 03 07 30.8 -1.1**
comp=Z,38nm,0.7s,mb5.3,baz=11,slow=6.5,SNR=120
WRA PcP PcP 03 07 58.2 +0.2
comp=Z,19nm,0.8s,baz=9.2,slow=4.6,SNR=12
WRA Warramunga Arr 67.42 196 P **P 03 07 30.8 -1.1**
WRA 03 07 58.2
WRA pmax pmax
comp=Z,38nm,0.7s
WRA pmax pmax
comp=Z,19nm,0.8s
DAU Daniels Canyon 67.55 55 *e*P **P 03 07 33.0 +0.6**
MPU Maple Canyon 67.60 55 *e*P **P 03 07 33.1 +0.4**
KAD Karad 67.69 272⇓*i*P **P 03 07 32.0 -1.6**
FITZ Fitzroy Crossi 67.72 205⇓*i*P **P 03 07 33.4 -0.4**
comp=Z,49nm,0.8s,mb5.3
NB2 NORSAR Subarra 67.79 340 P **P 03 07 31.8 -1.7**
comp=Z,8.0nm,0.6s,mb4.6,baz=28,slow=6.5
NOA NORSAR Array B 67.79 340 P **P 03 07 31.7 -1.7**
comp=Z,11nm,0.5s,mb4.8,baz=30,slow=6.4,SNR=68
NOA pP pP 03 08 13.5 -2.1
comp=Z,1.3nm,0.9s,baz=38,slow=5.1,SNR=1.3
NOA NORSAR Array B 67.79 340 P **P 03 07 31.7 -1.8**
NOA *PP pP 03 08 13.5 -2.1
NOA pmax pmax
comp=Z,11nm,0.5s
NOA pmax pmax
comp=N,1.0nm,0.9s
NAO01 NORSAR Array S 68.04 340 *e*P **P 03 07 33.0 -2.0**
comp=N,8.8nm,0.8s,mb4.5
NAO01 *e*pP pP 03 08 19.2 +2.0
MVU Marysvale 68.28 57 *e*P **P 03 07 37.5 +0.6**
comp=N,21nm,0.9s,mb4.9
MSU Marysvale 68.30 57 *e*P **P 03 07 37.7 +0.7**
MSU *e*pP pP 03 08 18.3 -0.9
ULM Lac du Bonnet 68.37 39 P **P 03 07 36.6 -0.6**
comp=N,19nm,0.7s,mb4.9,baz=316,slow=6.1,SNR=9.1
ULM Lac du Bonnet 68.37 39 *e*P **P 03 07 36.1 -1.2**
NEN Nelson 68.65 61 *e*P **P 03 07 39.2 0.0**
SRU San Rafael 68.84 55 *e*P **P 03 07 40.5 +0.2**
LDFC Landfair 68.87 61 *e*P **P 03 07 40.6 0.0**
RSSD Black Hills 68.90 48 *e*P **P 03 07 40.5 -0.1**
comp=N,41nm,0.8s,mb5.2
RSSD *e*pP pP 03 08 21.3 -1.6
PFO Pinyon Flat Ob 69.03 63 *e*P **P 03 07 41.0 -0.6**
comp=N,28nm,1.1s,mb4.9
KIV Kislovodsk 69.31 312 *e*P **P 03 07 42.7 -0.4**
KIV *e* 03 08 03.8
KIV *e**PP pP 03 08 30.7 +5.3
KIV *e*S S 03 16 32.2 -1.5
KIV pmax pmax
comp=Z,10.0nm,1.1s,mb4.5
KIV pmax pmax
comp=N,10.0nm,1.0s
KIV pmax pmax
comp=E,6.0nm,0.8s
KIV Kislovodsk 69.31 312 *e*P **P 03 07 43.2 +0.2**
comp=E,15nm,0.8s,mb4.8
BAR Barrett 69.52 64 *e*P **P 03 07 44.3 -0.3**
SUW Suwalki 70.15 330 *e*P **P 03 07 46.0 -2.0**
SUW *e*PcP PcP 03 08 08.3 -0.6
SUW *e*pP pP 03 08 32.5 +2.1
PV10 Paradox Valley 70.19 55 *e*P **P 03 07 49.4 +0.9**
THR Tehran 70.23 301 P **P 03 07 50.1 +1.2**
comp=E,18nm,1.2s,mb4.7,baz=32,slow=2.7,SNR=23
THR LR LR 03 41 42.3
comp=E,26nm,19.9s,baz=6.2,slow=38
THR Tehran 70.23 301 P **P 03 07 50.1 +1.3**
THR pmax pmax
comp=Z,19nm,1.2s
THR MLR MLR
comp=Z,26nm,19.9s
PV01 Paradox Valley 70.62 55 *e*P **P 03 07 51.4 +0.3**
WUAZ Wupatki 70.81 59 *e*P **P 03 07 53.0 +0.7**
comp=Z,29nm,1.0s,mb5.0
SOC Sochi 71.08 314*c* *i*P **P 03 07 52.9 -0.9**
SOC *e* 03 10 29.0
SOC *e*PPP PPP 03 12 21.7 +4.2
SOC *e*S S 03 16 51.4 -2.8
SOC *e* 03 17 30.3
SOC pmax pmax
comp=Z,4.0nm,0.4s,mb4.5
SOC pmax pmax
comp=N,4.0nm,0.7s
SOC pmax pmax
comp=E,9.0nm,0.6s
ISCO Idaho Springs 71.10 52 *e*P **P 03 07 54.7 +0.8**
comp=E,32nm,1.0s,mb5.0
ISCO *e*pP pP 03 08 35.6 -0.9
AS12 Alice Springs 71.13 195⇓*i*P **P 03 07 54.5 +0.1**
comp=E,44nm,0.7s,mb5.3
ASAR Alice Springs 71.13 195 P **P 03 07 54.7 +0.3**
comp=E,44nm,0.6s,mb5.4,baz=7.9,slow=5.5,SNR=374
ASAR pP pP 03 08 39.5 +2.6
comp=E,3.4nm,0.9s,baz=8.4,slow=5.6,SNR=0.8
ASAR LR LR 03 39 29.5
comp=E,78nm,20.6s,baz=105,slow=36
WAR Warsaw 72.35 330 *e*P **P 03 07 57.4 -3.7**
WAR *e*pP pP 03 08 43.7 -0.1
SDCO Great Sand Dun 72.62 53 *e*P **P 03 08 03.2 +0.3**
comp=E,40nm,1.3s,mb5.0
GKP Gorka Klasztor 72.76 332 *e*P **P 03 08 04.0 +0.6**
GKP *e*PP pP 03 08 49.2 +3.1
GKP LR LR
comp=Z,300nm,22.3s
TUC Tucson 73.39 61 *e*P **P 03 08 07.8 +0.2**
comp=Z,18nm,1.1s,mb4.7
KWP Kalwaria 73.88 327 *e*P **P 03 08 10.4 +0.3**
KWP *e*PcP PcP 03 08 20.0 -4.8
KWP *e*pP pP 03 08 56.4 +3.5
LAZ Ladron 74.07 57 *e*P **P 03 08 12.3 +0.9**
ANMO Albuquerque 74.07 56*c* *i*P **P 03 08 12.3 +0.9**
ANMO Albuquerque 74.07 56 *e*P **P 03 08 11.9 +0.4**
comp=Z,22nm,0.9s,mb4.9
ANMO *e*pP pP 03 08 53.3 -1.0
LENM Lemitar 74.33 57 *e*P **P 03 08 13.3 +0.3**
LPM Los Pinos Moun 74.42 57 *e*P **P 03 08 14.1 +0.6**
OJC Ojcow 74.46 329 *e*P **P 03 08 14.2 +0.9**
OJC *e* 03 08 21.7
BNM Barren Site 74.54 57 *e*P **P 03 08 14.8 +0.7**
SCHQ Schefferville 74.57 21 P **P 03 08 14.1 +0.2**
comp=Z,24nm,0.6s,mb5.0,baz=359,slow=6.3,SNR=71
SCHQ Schefferville 74.57 21 *e*P **P 03 08 13.7 -0.2**
comp=Z,21nm,0.8s,mb4.8
NIE Niedzica 74.94 328 *e*P **P 03 08 16.5 +0.4**
CRVS Cervenica-Dubn 74.95 328 *e*P **P 03 08 16.5 +0.4**
CRVS *e* 03 10 55.4
BOYT Boyabat 75.07 315 *i*P **P 03 08 18.4 +1.4**
KSP Ksiaz 75.13 331 *e*P **P 03 08 17.5 +0.4**
KSP *e*PcP PcP 03 08 26.0 -4.1
KSP *e*pP pP 03 09 03.1 +3.0
KSP Ksiaz 75.13 331 *e*P **P 03 08 16.3 -0.8**
KSP *e* 03 08 26.0
KSP *e**PP pP 03 09 02.9 +2.8
OKC Ostrava-Krasne 75.36 330 *e*P **P 03 08 31.6 +13**
OKC *e*pP pP 03 09 05.0 +3.6
UPC Upice 75.51 331 *e*P **P 03 08 21.3 +2.0**
DPC Dobruska-Polom 75.55 331 *e*P **P 03 08 20.1 +0.6**
DPC *e*pP pP 03 09 05.7 +3.2
MORC Moravsky Berou 75.62 330 *e*P **P 03 08 20.0 +0.1**
comp=Z,5.8nm,0.8s,mb4.3
MORC *e*pP pP 03 09 05.2 +2.3
BALT Daday 75.72 316 *i*P **P 03 08 20.9 +0.3**
CTKT Corum 75.73 315 *i*P **P 03 08 21.4 +0.7**
CLL Collm 75.78 334 P **P 03 08 20.2 -0.6**
comp=Z,logA/T=1.1,mb4.5
CLL *i*PCP PcP 03 08 29.3 -3.6
CLL *i**PP pP 03 09 01.4 -2.4
CLL *i* pP 03 09 06.1 +2.3
CLL *e* 03 09 49.0
CLL Collm 75.78 334 *i*P **P 03 08 20.2 -0.6**
CLL *i**PP pP 03 09 06.1 +2.3
CLL pmax pmax
comp=Z,13nm,1.0s,mb4.5
CLL Collm 75.78 334 *i*P **P 03 08 20.2 -0.6**
comp=Z,13nm,1.0s,mb4.5
CLL *i*pP pP 03 09 06.1 +2.3
PVCC Panska Ves 75.97 332 *e*P **P 03 08 22.3 +0.5**
PVCC *e*pP pP 03 09 08.2 +3.3
VYHS Vyhne 76.25 329 *e*P **P 03 08 23.8 +0.4**
VYHS *e* pP 03 09 10.4 +3.9
PSZ Piszkesteto 76.35 328 *e*P **P 03 08 24.4 +0.5**
comp=Z,3.6nm,0.8s,mb4.0
KSU1 Kansas State U 76.36 47 *e*P **P 03 08 23.0 -1.2**
PRU Pruhonice 76.44 332 *e*P **P 03 08 24.5 0.0**
PRU *e*pP pP 03 09 10.4 +2.8
ELDT Eldivan 76.50 315 *i*P **P 03 08 27.0 +2.0**
SMOL Smolenice 76.73 330 *e*P **P 03 08 26.7 +0.6**
MIB Mutribah 76.78 299 *i*P **P 03 08 26.9 +0.1**
MIB AMb AMB 03 08 28.6
comp=Z,163nm,0.7s,mb5.8
MOX Moxa 76.79 334 *i*P **P 03 08 27.4 +1.0**
MOX pP pP 03 09 12.0 +2.5
MOX Moxa 76.79 334 *e*P **P 03 08 27.4 +1.0**
MOX *e* pP 03 09 12.2 +2.7
MOX pmax pmax
comp=Z,13nm,1.6s,mb4.3
MOX Moxa 76.79 334 *e*P **P 03 08 27.4 +1.0**
comp=Z,13nm,1.6s,mb4.3
MOX *e* pP 03 09 12.2 +2.7
CPRX Cap Rock 76.94 56 *e*P **P 03 08 27.7 +0.1**
BRTR Keskin Array B 76.98 315 P **P 03 08 28.6 +0.8**
comp=Z,2.5nm,0.9s,baz=56,slow=4.5,SNR=12
MNTX Cornudas Mount 77.03 58 *e*P **P 03 08 28.2 +0.1**
comp=Z,27nm,1.0s,mb4.8
QRN Al-Qurain 77.19 298 *i*P **P 03 08 29.4 +0.4**
QRN AMb AMB 03 08 30.4
comp=Z,176nm,0.3s
RST Umm Al-Ruwaisa 77.20 299 *i*P **P 03 08 28.9 -0.2**
RST AMb AMB 03 08 30.7
comp=Z,184nm,0.7s,mb5.8
GDL2 Guadalupe Moun 77.26 57 *e*P **P 03 08 29.7 +0.3**
GDL2 *e*pP pP 03 09 11.8 -0.8
CLNB Carlsbad 77.49 56 *e*P **P 03 08 30.6 -0.1**
KHC Kasperske Hory 77.50 332 *e*P **P 03 08 30.7 +0.4**
KHC *e*pP pP 03 09 17.1 +3.5
GERES GERESS Array B 77.71 332 P **P 03 08 31.5 0.0**
comp=Z,2.1nm,0.5s,mb4.0,baz=38,slow=6.0,SNR=35
GERES PKKPbc 03 27 31.4
comp=Z,0.4nm,0.7s,baz=207,slow=3.0,SNR=5.0
GRA1 Grafenberg Arr 77.75 334 *e*P **P 03 08 31.9 +0.2**
comp=Z,32nm,1.7s,mb4.7
GRA1 *e*pP pP 03 09 18.1 +3.1
GRF Grafenberg Arr 77.75 334 *e*P **P 03 08 31.9 +0.2**
GRF *e**PP pP 03 09 18.1 +3.1
GRF pmax pmax
comp=Z,32nm,1.7s,mb4.7
STKA Stephens Creek 78.21 187⇓*i*P **P 03 08 35.3 +0.7**
comp=Z,16nm,0.8s,mb4.7
STKA Stephens Creek 78.21 187 P **P 03 08 35.4 +0.8**
comp=Z,21nm,0.8s,mb4.8,baz=340,slow=7.7,SNR=19
WMOK Wichita Mounta 78.51 51 *e*P **P 03 08 36.1 0.0**
comp=Z,26nm,0.9s,mb4.9
HASS Wahat al Ahsa' 78.63 294 P **P 03 08 37.0 0.0**
GROS Grobnik 79.17 330 *e*P **P 03 08 38.6 -0.9**
GROS *e*pP pP 03 09 26.1 +3.2
FORT Forrest 79.22 199 *e*P **P 03 08 40.6 +0.5**
comp=Z,257nm,0.7s,mb6.0
KBA Koelnbreinsper 79.37 331⇑*i*P **P 03 08 41.9 +1.4**
comp=Z,13nm,1.1s,mb4.5
BAIF Baives 79.39 338 *e*P **P 03 08 40.0 -0.6**
PDKS Podkum 79.67 330 *e*P **P 03 08 42.4 +0.3**
PDKS *e*pP pP 03 09 28.6 +3.0
WATA Walderalm 79.72 332⇑*i*P **P 03 08 43.5 +1.1**
comp=Z,5.0nm,1.0s,mb4.1
WTTA Wattenberg 79.76 332⇑*i*P **P 03 08 43.2 +0.6**
comp=Z,7.0nm,0.7s,mb4.4
LTX Lajitas 79.77 58 *e*P **P 03 08 43.6 +0.6**
comp=Z,37nm,0.9s,mb5.0
LTX *e*pP pP 03 09 26.2 -0.3
TXAR Lajitas Array 79.77 58 P **P 03 08 43.9 +0.8**
comp=Z,26nm,0.8s,mb4.9,baz=296,slow=4.2,SNR=212
TXAR pP pP 03 09 26.1 -0.4
comp=Z,5.8nm,0.9s,baz=288,slow=4.0,SNR=2.2
TXAR PKKPbc 03 27 29.6
comp=Z,0.7nm,0.8s,baz=146,slow=4.5,SNR=8.3
CCM Cathedral Cave 79.83 44 *e*P **P 03 08 42.6 -0.6**
comp=Z,40nm,0.9s,mb5.0
SLM Saint Louis 79.86 43 *e*P **P 03 08 42.9 -0.5**
comp=Z,90nm,1.3s,mb5.2
MOTA Moosalm 79.86 333⇓*i*P **P 03 08 43.8 +0.6**
comp=Z,4.2nm,1.0s,mb4.0
SQTA Sankt Quirin 79.94 333⇑*i*P **P 03 08 44.6 +1.0**
comp=Z,4.3nm,1.0s,mb4.0
VISS Visnje 79.97 330 *e*P **P 03 08 41.5 -2.3**
VISS *e*pP pP 03 09 29.8 +2.6
CDF Champ du Feu 80.06 336 *e*P **P 03 08 43.6 -0.6**
comp=Z,12nm,0.9s,mb4.2
CDF *e*pP pP 03 09 29.1 +1.4
FVM French Village 80.28 44 *e*P **P 03 08 44.7 -0.9**
comp=Z,25nm,0.9s,mb4.8
DAVA Damuels 80.30 333⇑*i*P **P 03 08 46.4 +0.9**
comp=Z,3.9nm,0.8s,mb4.1
MEZF Maizieres J'vi 80.60 337 *e*P **P 03 08 46.4 -0.7**
comp=Z,5.2nm,0.6s,mb4.0
MEZF *e*pP pP 03 09 32.2 +1.6
HAU Haudompre 80.69 336 *e*P **P 03 08 46.7 -0.9**
comp=Z,5.6nm,0.7s,mb4.0
HAU *e*R
comp=Z,70nm,17.2s
SKO Skopje 80.71 324 *i*P **P 03 08 49.0 +1.2**
HINF Hinteralfeld 80.72 336 *e*P **P 03 08 46.9 -0.8**
HRI Mount Hermon 80.86 309 P **P 03 08 49.6 +0.8**
KSHT Keshet 81.03 309 P **P 03 08 51.3 +1.6**
SIUC Southern Illin 81.07 43 *e*P **P 03 08 49.1 -0.7**
comp=Z,62nm,0.8s,mb5.3
JCT Junction City 81.15 55 *e*P **P 03 08 50.3 -0.1**
comp=Z,62nm,1.2s,mb5.1
HNTI Hanita 81.30 309 P **P 03 08 51.7 +0.6**
MIAR Mount Ida 81.41 48 *e*P **P 03 08 51.7 +0.1**
comp=Z,41nm,0.8s,mb5.1
ERPA Erie 81.48 35 *e*P **P 03 08 51.7 -0.2**
comp=Z,46nm,1.1s,mb5.0
FLN La Foliniere 81.75 341 *e*P **P 03 08 52.4 -0.6**
comp=Z,11nm,0.8s,mb4.3
FLN *e*R
comp=Z,79nm,17.2s
HMDT Nahal Hemdat 81.75 309 P **P 03 08 54.4 +1.0**
ALLY Alegheny Colle 81.82 35 *e*P **P 03 08 53.1 -0.5**
ALLY *e*pP pP 03 09 36.3 -1.0
LDF La Druitiere 81.82 340 *e*P **P 03 08 52.8 -0.6**
comp=Z,3.7nm,0.5s,mb4.0
UALR University of 81.86 47 *e*P **P 03 08 53.9 -0.1**
comp=Z,7.5nm,0.8s,mb4.4
HILS Ha'il 81.87 301 P **P 03 08 55.5 +1.4**
WCI Wyandotte Cave 82.02 41 *e*P **P 03 08 54.3 -0.4**
comp=Z,23nm,0.9s,mb4.8
CABF La Chapelle 82.03 336 *e*P **P 03 08 54.1 -0.5**
comp=Z,10nm,1.0s,mb4.1
LOR Lormes 82.05 337 *e*P **P 03 08 53.5 -1.1**
comp=Z,14nm,0.9s,mb4.3
LOR *e*pP pP 03 09 39.6 +1.3
LOR *e*R
comp=Z,65nm,18.8s
ARSS Ar Rass 82.11 299 P **P 03 08 56.0 +0.6**
GRR Gorron 82.18 341 *e*P **P 03 08 54.9 -0.4**
comp=Z,22nm,0.8s,mb4.5
MKRJ Makawir 82.22 308 P **P 03 08 57.0 +1.1**
MZLS Mizel 82.27 297 P **P 03 08 57.2 +0.9**
DRGI Dragot 82.33 308 P **P 03 08 57.2 +0.8**
SSF Saint Saulge 82.33 337 *e*P **P 03 08 54.8 -1.3**
comp=Z,4.1nm,0.6s,mb3.9
MZDA Masada 82.56 308 P **P 03 08 58.4 +0.8**
SMF Signal de Mont 82.63 337 *e*P **P 03 08 57.7 +0.1**
comp=Z,24nm,0.9s,mb4.6
SMF *e*pP pP 03 09 42.8 +1.4
SGMF Saint Gilles 82.69 342 *e*P **P 03 08 57.3 -0.6**
comp=Z,19nm,0.6s,mb4.7
ACCN Adirondack Com 82.75 30 *e*P **P 03 08 57.2 -1.1**
KLBR Kellerberrin 82.77 207⇓*i*P **P 03 08 58.7 0.0**
comp=Z,66nm,0.8s,mb5.4
ROSF Rostrenen 82.77 342 *e*P **P 03 08 57.7 -0.6**
comp=Z,28nm,0.9s,mb4.7
LPL La Plagne 82.84 335 *e*P **P 03 08 58.3 -0.4**
comp=Z,4.6nm,0.6s,mb4.1
LPG La Plagne 82.85 335 *e*P **P 03 08 58.7 -0.1**
comp=Z,8.1nm,0.7s,mb4.3
BGF Bois d'Agland 82.97 338 *e*P **P 03 08 58.4 -1.0**
comp=Z,9.0nm,0.8s,mb4.3
NATX Nacogdoches 83.00 51 *e*P **P 03 09 00.7 +0.8**
WVT Waverly 83.01 43 *e*P **P 03 08 60.0 +0.2**
comp=Z,25nm,1.0s,mb4.9
QUIF Quistinic 83.14 342 *e*P **P 03 08 59.4 -0.8**
comp=Z,26nm,0.9s,mb4.7
ZFRI Zfri 83.24 308 P **P 03 09 02.0 +0.9**
SVTA Shivta 83.26 308 P **P 03 09 01.9 +0.7**
TCF Toulx Ste Croi 83.39 338 *e*P **P 03 09 01.0 -0.5**
comp=Z,11nm,0.9s,mb4.3
TCF *e*pP pP 03 09 47.8 +2.5
KZIT Kziot 83.39 308 P **P 03 09 02.5 +0.6**
PRNI Paran 83.49 308 P **P 03 09 03.4 +1.0**
PRNI Paran 83.49 308⇓P **P 03 09 03.4 +1.0**
MBDF Montbardon 83.55 334 *e*P **P 03 09 01.7 -0.5**
SSPA Standing Stone 83.57 34 *e*P **P 03 09 02.2 -0.3**
comp=Z,16nm,1.1s,mb4.7
MUN Mundaring 83.62 208⇑*i*P **P 03 09 03.5 +0.6**
comp=Z,21nm,0.8s,mb4.9
TOO Toolangi 83.63 183⇓*i*P **P 03 09 04.6 +1.7**
comp=Z,9.0nm,0.7s,mb4.6
ORIF Oris-en-Rattie 83.64 335 *e*P **P 03 09 02.1 -0.6**
comp=Z,14nm,0.8s,mb4.5
ORIF *e*R
comp=Z,74nm,19.8s
MFF Saint Martin d 83.69 340 *e*P **P 03 09 02.6 -0.3**
comp=Z,14nm,0.8s,mb4.4
AFFS 'Afif 83.70 298 P **P 03 09 04.6 +1.1**
PLAL Pickwick Lake 83.81 44 *e*P **P 03 09 03.2 -0.6**
comp=Z,36nm,1.1s,mb5.0
KMTI Karmit 83.84 308 P **P 03 09 04.6 +0.5**
AQBJ Aqaba 83.95 307 P **P 03 09 05.7 +1.1**
MBH Mount Berech 83.97 307 P **P 03 09 05.7 +1.0**
VIVF Saint-Julien-l 84.04 336 *e*P **P 03 09 04.2 -0.5**
comp=Z,15nm,1.2s,mb4.3
EIL Elat 84.05 307 P **P 03 09 06.1 +1.0**
EIL Elat 84.05 307⇓P **P 03 09 06.1 +1.0**
SBF Sospel 84.12 334 *e*P **P 03 09 04.6 -0.5**
JMQS Jabal Moqyreh 84.14 306 P **P 03 09 07.1 +1.5**
NWAO Narrogin (SRO) 84.17 207 *e*P **P 03 09 06.1 +0.4**
ALWS Ilw as Safayha 84.26 307 P **P 03 09 07.5 +1.3**
TBKS Tabuk 84.27 305 P **P 03 09 07.6 +1.3**
JMOS Jabal al Moall 84.35 307 P **P 03 09 07.9 +1.3**
RJF Les Rejaudoux 84.48 338 *e*P **P 03 09 06.4 -0.5**
comp=Z,30nm,1.3s,mb4.6
RJF *e*R
comp=Z,60nm,20.2s
HAQS Haql 84.53 307 P **P 03 09 08.9 +1.3**
KBRS Khaybar 84.55 302 P **P 03 09 09.1 +1.4**
SMRF Simiane la Rot 84.58 335 *e*P **P 03 09 06.8 -0.6**
FRF La Foret Royal 84.64 334 *e*P **P 03 09 06.8 -0.9**
SWET Sewanee 84.65 43 *e*P **P 03 09 07.7 -0.3**
CAF Calviac 84.69 337 *e*P **P 03 09 07.2 -0.8**

comp=Z,23nm,1.1s,mb4.5
CAF epP pP 03 09 54.4 +2.5
MVL Millersville 84.72 34 *e*P **P** 03 09 08.3 +0.1
PGF Pioggiola 84.81 332 *e*P **P** 03 09 08.1 -0.5
comp=Z,22nm,1.0s,mb4.5
LMR La Mourre 84.89 334 *e*P **P** 03 09 08.0 -1.0
comp=Z,19nm,1.0s,mb4.5
LMR epP pP 03 09 55.3 +2.4
BDAS Al Bad' 84.92 306 P **P** 03 09 10.7 +1.2
TIP Timpagrande 84.97 325 *e*P **P** 03 09 09.9 +0.4
LASF Ste Croix 84.99 336 *e*P **P** 03 09 09.0 -0.5
LASF epP pP 03 09 55.7 +2.3
AYUS 'Aynunah 85.01 306 P **P** 03 09 11.0 +1.1
LFF La Frestale 85.03 338 *e*P **P** 03 09 08.6 -1.0
comp=Z,24nm,0.9s,mb4.6
CPCT Cooper Cave 85.11 42 *e*P **P** 03 09 10.2 -0.1
KAMS Al Khamasin 85.40 295 P **P** 03 09 13.3 +1.3
LRAL Lakeview Retre 85.91 45 *e*P **P** 03 09 13.7 -0.6
comp=Z,11nm,0.8s,mb4.6
MTLF Montolieu 86.12 337 *e*P **P** 03 09 14.5 -0.5
comp=Z,14nm,1.1s,mb4.3
YNBS Yanbu' al Bahr 86.40 302 P **P** 03 09 18.0 +1.2
TATS Tathlith 86.66 295 P **P** 03 09 19.5 +1.3
EPF Esparros 86.91 338 *e*P **P** 03 09 18.6 -0.2
comp=Z,5.7nm,0.7s,mb4.2
ETSF Etsaut 87.27 339 *e*P **P** 03 09 20.8 +0.3
comp=Z,5.9nm,0.6s,mb4.3
BLJS Baljurashi 87.58 296 P **P** 03 09 24.0 +1.5
NAMS An Nimas 87.73 295 P **P** 03 09 24.8 +1.5
URZ Urewera 87.78 159 P **P** 03 09 22.5 -0.6
comp=Z,14nm,0.8s,mb4.8,baz=353,slow=8.1,SNR=4.0
LTHS Al Lith 88.02 297 P **P** 03 09 25.9 +1.3
ESDC Sonseca Array 91.15 340 P **P** 03 09 38.3 -0.5
comp=Z,0.5nm,0.5s,baz=7.7,slow=4.5,SNR=7.0
DBIC Dimbokro 122.52 329 PKP PKPdf 03 15 28.9 +1.0
comp=Z,4.2nm,0.7s,baz=290,slow=2.2,SNR=9.4
DBIC Dimbokro 122.52 329 PKIKP PKPdf 03 15 28.9 +1.0
DBIC pmax pmax
comp=Z,4.0nm,0.7s
DBIC Dimbokro 122.52 329 PKP PKPdf 03 15 28.9 +1.0
VNDA Vanda 123.84 177 PKP PKPdf 03 15 30.4 +1.2
comp=Z,3.8nm,0.8s,baz=312,slow=4.7,SNR=18
VNDA Vanda 123.84 177 PKIKP PKPdf 03 15 30.4 +1.3
VNDA pmax pmax
comp=Z,4.0nm,0.8s
MAW Mawson 130.63 210 PKP PKPdf 03 15 43.6 +1.5
comp=Z,10nm,1.0s,baz=331,slow=0.7,SNR=14
MAW Mawson 130.63 210 PKIKP PKPdf 03 15 43.6 +1.4
MAW pmax pmax
comp=Z,10.0nm,1.0s
TSUM Tsumeb 132.38 288 PKhKP 03 15 44.2
comp=Z,2.0nm,0.6s,baz=351,slow=4.3,SNR=4.0
TSUM SKPbc 03 18 57.3
comp=Z,4.6nm,1.1s,baz=72,slow=3.2,SNR=3.7
QSPA South Pole Qui 136.09 180 *e*PKP PKPdf 03 15 45.1 -7.0
LPAZ La Paz 136.63 59 PKP PKPdf 03 15 57.4 +2.7
comp=Z,2.0nm,0.7s,baz=7.4,slow=8.1,SNR=8.9
LPAZ SKPbc 03 19 11.8
comp=Z,3.1nm,1.0s,baz=14,slow=4.2,SNR=7.1
LPAZ La Paz 136.63 59 PKIKP PKPdf 03 15 57.4 +2.8
LPAZ pmax pmax
comp=Z,2.0nm,0.7s
LPAZ pmax pmax
comp=N,3.0nm,1.0s
LPAZ La Paz 136.63 59 *e*PKP PKPdf 03 15 57.1 +2.5
BDFB Brasilia 146.01 31 PKPbc PKPbc 03 16 14.2 +1.8
comp=N,22nm,0.7s,baz=316,slow=2.4,SNR=47
BDFB SKPbc 03 19 35.5
comp=N,3.5nm,0.7s,baz=24,slow=1.6,SNR=3.0
BDFB Brasilia 146.01 31 PKP2 PKPab 03 16 14.2 -1.3
BDFB 03 19 35.5
BDFB pmax pmax
comp=Z,22nm,0.7s
BDFB pmax pmax
comp=N,4.0nm,0.7s
MAIT Maitri 148.30 205 *e*PKPdf PKPdf 03 16 19.1 +5.7
CPUP Villa Florida 150.72 56 PKPbc PKPdf 03 16 25.9 +7.4
comp=N,11nm,0.8s,baz=346,slow=2.9,SNR=15
CPUP Villa Florida 150.72 56 PKIKP PKPdf 03 16 25.9 +7.4
CPUP pmax pmax
comp=Z,11nm,0.9s
CPUP Villa Florida 150.72 56 PKPbc PKPdf 03 16 25.9 +7.4
SNAA Sanae 151.47 198 *e*PKPdf PKPdf 03 16 19.0 +0.8
SNAA *e*PKPbc PKPdf 03 16 25.5 +7.3
VNA2 Neumayer--Watz 152.98 196 ⇑*i* PKPdf 03 16 30.5 +10
VNA2 Neumayer--Watz 152.98 196 *e* PKPab 03 16 44.2 +1.8
VNA3 Neumayer Olymp 153.14 195 ⇑*i* PKPdf 03 16 31.9 +11
VNA3 Neumayer Olymp 153.14 195 *e* PKPab 03 16 44.5 +1.5
VNA1 Neumayer--Stat 153.38 196 ⇓*i* PKPdf 03 16 31.6 +11
VNA1 Neumayer--Stat 153.38 196 *e* PKPab 03 16 45.7 +1.7

HEL ***31*** *02:59:48.6±0.5,59.75N×24.40E,ML1.8,Explosion*
IDC ***31*** *02:59:49.0±2.8,59.78N×24.51E,mb1 2.9/2, mb1mx2.8/19,ML3.0/2,Error ellipse: s-maj=29.6km s-min=8.4km az=142.0*
ISC 31 02:59:44.7±1.2,59.67N±0.08×24.2E±0.1,n10,σ1§54/16,
Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
MEF	**Metsahovi**	**0.56**	**12**	*e*P		**Pg**		**02 59 56.6**	**+0.8**
MEF				*e*S		**Sg**		**03 00 03.1**	**-0.2**
VJF	**Virojoki**	**1.91**	**61**	*e*P		**Pn**		**03 00 19.2**	**+0.5**
VJF				*e*S		**Sn**		**03 00 42.6**	**-1.2**
FIA0	**FINESS Array S**	**2.01**	**27**	*e*P		**Pn**		**03 00 22.0**	**+1.8**
FIA0				*e*SN		**Sn**		**03 00 46.2**	**-0.3**
FINES	**FINESS Array B**	**2.01**	**27**	Pg		**Pg**		**03 00 22.0**	**-2.8**
	1.9nm,0.3s,baz=204,slow=17,SNR=108								
FINES				Lg				03 00 46.1	
	2.4nm,0.3s,baz=189,slow=28,SNR=19								
KEF	**Keuruu**	**2.53**	**8**	*e*P		**Pn**		**03 00 30.6**	**+3.0**
KEF				*e*SG		**Sg**		**03 01 03.1**	**-5.7**
KEF				MSG				03 01 04.0	
	comp=Z,5.4nm,0.2s								
SUF	**Sumiainen**	**3.20**	**17**	*e*P		**Pn**		**03 00 39.5**	**+2.3**
SUF				MSG				03 01 26.8	
	comp=Z,2.0nm,0.2s								
VAF	**Ylistaro**	**3.46**	**349**	*e*P		**Pn**		**03 00 42.5**	**+1.7**
JOF	**Joensuu**	**4.74**	**44**	*e*P		**Pn**		**03 00 57.8**	**-1.3**
JOF				MSG				03 01 53.9	
	comp=Z,1.2nm,0.2s								
NOA	**NORSAR Array B**	**6.57**	**288**	Pn		**Pn**		**03 01 25.6**	**+0.7**
	comp=Z,0.1nm,0.3s,baz=83,slow=14,SNR=2.2								
NOA				Sn		**Sn**		**03 02 39.5**	**-2.0**
	comp=Z,0.1nm,0.3s,baz=251,slow=14,SNR=2.3								
NOA				Lg				03 03 12.7	
	comp=Z,0.2nm,0.3s,baz=59,slow=15,SNR=2.4								
ARCES	**ARCESS Array B**	**9.92**	**3**	Pn		**P**		**03 02 09.2**	**-2.1**
	comp=Z,0.2nm,0.3s,baz=182,slow=12,SNR=26								
ARCES				Sn		**Sn**		**03 03 56.4**	**-8.3**
	comp=Z,0.1nm,0.3s,baz=184,slow=24,SNR=2.9								

DJA ***31*** *03:10:32.3±0.9,8.47S×113.69E,h128km±8km,MD4.6/2, ML5.1/3,Error ellipse: s-maj=41.9km s-min=18.4km az=19.0*
NEIC ***31*** *03:10:34.7±1.4,8.48S×113.86E,h118km±10km,Error ellipse: s-maj=32.9km s-min=8.9km az=51.0*
IDC ***31*** *03:10:37.4±8.5,8.47S×113.87E,h144km±80km,mb3.5/7, mb1 3.7/8,mb1mx3.6/15,Error ellipse: s-maj=80.9km s-min=16.7km az=55.0*
ISC 31 03:10:33.7±1.3,8.4S±0.2×113.8E±0.1,h123km±9km,n16,
σ0§56/20,mb3.7/7,1C-8D,Jawa

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
KELI	**Kelakatan**	**0.70**	**72**	⇓*i*	Pn		**P**	**03 10 53.6**	**+0.1**
	4µm,0.2s								
KELI				⇓*i*	Sn		**S**	**03 11 08.9**	**+0.3**
INGI	**Ingas**	**1.37**	**106**	⇓*i*	Pn		**P**	**03 11 00.2**	**0.0**
	1µm,0.1s								
INGI				⇓*i*	Sn		**S**	**03 11 19.7**	**-0.7**
RATI	**Rata**	**1.72**	**99**	⇑*i*	Pn		**P**	**03 11 04.5**	**+0.2**
	3µm,0.2s								
RATI				⇓*i*	Sn		**S**	**03 11 28.3**	**+0.7**
KEDI	**Kedomdong**	**2.27**	**91**	⇓*i*	Pn		**P**	**03 11 10.7**	**-0.6**
	398nm,0.2s								
KEDI				⇓*i*	Sn		**S**	**03 11 39.7**	**-0.1**
FITZ	**Fitzroy Crossi**	**14.98**	**131**	P			**P**	**03 13 59.5**	**-0.8**
	0.1nm,0.3s,baz=314,slow=11,SNR=5.2								
FITZ				S			**S**	**03 16 31.9**	**-11**
	0.2nm,0.3s,slow=13,SNR=4.4								
WRA	**Warramunga Arr**	**22.91**	**122**	P			**P**	**03 15 27.8**	**+0.1**
	1.1nm,0.5s,mb3.5,baz=307,slow=12,SNR=22								
WRAB	**Tennant Creek**	**22.92**	**122**	*e*P			**P**	**03 15 28.3**	**+0.5**
WB2	**Warramunga Arr**	**22.93**	**122**	⇓*i*	P		**P**	**03 15 28.2**	**+0.3**
ASAR	**Alice Springs**	**24.48**	**131**	P			**P**	**03 15 43.0**	**+0.2**
	1.3nm,0.4s,mb3.6,baz=305,slow=9.1,SNR=22								
CMAR	**Chiang Mai Arr**	**30.49**	**331**	P			**P**	**03 16 38.4**	**+0.9**
	0.8nm,0.4s,mb3.7,baz=157,slow=6.9,SNR=4.2								
STKA	**Stephens Creek**	**34.78**	**136**	P			**P**	**03 17 14.7**	**+0.3**
	1.1nm,0.3s,mb4.1,baz=318,slow=9.3,SNR=7.6								
SONM	**Songino Array**	**56.41**	**354**	P			**P**	**03 20 04.7**	**0.0**
	0.4nm,0.3s,mb3.9,baz=173,slow=8.8,SNR=5.5								
MKAR	**Makanchi Array**	**61.74**	**336**	P			**P**	**03 20 39.9**	**-1.5**
	0.3nm,0.4s,mb3.7,baz=151,slow=6.2,SNR=6.3								
MKAR	**Makanchi Array**	**61.74**	**336**	P			**P**	**03 20 39.9**	**-1.5**
BRTR	**Keskin Array B**	**87.86**	**310**	P			**P**	**03 23 10.7**	**0.0**
	0.7nm,1.0s,mb3.6,baz=117,slow=3.2,SNR=3.2								
CPUP	**Villa Florida**	**144.38**	**194**	PKP		PKPdf		03 29 57.4	+1.4
	1.0nm,0.4s,baz=90,slow=1.0,SNR=3.4								

WEL 31 03:22:57.9±0.1,36.73S×178.15E,h59km±2km,ML3.9/1,
1D,Error ellipse: s-maj=2.3km s-min=1.9km az=90.0,
Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
MXZ	**Matakaoa Point**	**0.84**	**171**	P*		P		03 23 13.7	-0.3
MXZ				S*		S		03 23 25.5	-0.4
MWZ	**Matawai**	**1.67**	**197**	P*		P		03 23 25.1	-0.4
MWZ				S*		S		03 23 45.5	-0.4
URZ	**Urewera**	**1.73**	**208**	⇓P*		P		03 23 26.0	-0.3
URZ				S*		S		03 23 46.8	-0.5
BKZ	**Black Stump Fm**	**2.76**	**208**	P*		P		03 23 40.3	-0.6

IDC ***31*** *03:27:41.4±1.6,4.50S×133.10E,mb3.7/2,mb1 4.0/5, mb1mx3.8/13,ML3.5/3,MS3.4/2,Ms1 3.4/2,ms1mx3.0/17, Error ellipse: s-maj=66.2km s-min=28.2km az=93.0*
ISC 31 03:27:41.0±3.4,4.50S±0.08×133.0E±0.2,h9km±21km,n10,
σ1§17/12,mb3.8/2,MS3.3/1,Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
KAKA	**Kakadu**	**8.17**	**184**	*e*P			**P**	**03 29 43.6**	**+0.9**
	6.1nm,0.5s								
KAKA				*e*S			**Sn**	**03 31 19.2**	**+3.1**
PMG	**Port Moresby**	**14.85**	**110**	LR		LR		03 37 28.4	
	comp=Z,124nm,18.5s,baz=324,slow=40								
FITZ	**Fitzroy Crossi**	**15.32**	**208**	Pn			**P**	**03 31 20.3**	**+0.9**
	0.3nm,0.3s,baz=26,slow=10,SNR=13								
FITZ				Sn			**S**	**03 34 09.2**	**-0.8**
	0.1nm,0.3s,baz=174,slow=20,SNR=3.4								
WRA	**Warramunga Arr**	**15.40**	**175**	Pn			**P**	**03 31 16.0**	**-4.4**
	0.2nm,0.3s,baz=359,slow=13,SNR=17								
WRA				Sn			**S**	**03 34 03.4**	**-8.4**
	0.1nm,0.3s,baz=356,slow=24,SNR=3.2								
WB2	**Warramunga Arr**	**15.40**	**175**	*e*P			**P**	**03 31 17.8**	**-2.6**
WB2				*e*S			**S**	**03 34 11.9**	**+0.1**
AS12	**Alice Springs**	**19.07**	**178**	*e*P			**P**	**03 32 11.7**	**+5.3**
	7.6nm,0.8s								
ASAR	**Alice Springs**	**19.07**	**178**	P			**P**	**03 32 05.8**	**-0.7**
	0.1nm,0.3s,baz=5.4,slow=14,SNR=9.6								
CTA	**Charters Tower**	**20.15**	**141**	LR		LR		03 40 28.0	
	comp=Z,148nm,20.5s,MS3.3,baz=226,slow=38								
MKAR	**Makanchi Array**	**67.86**	**325**	P			**P**	**03 38 41.9**	**-0.1**
	0.5nm,0.5s,mb3.8,baz=111,slow=8.0,SNR=10								
ILAR	**Eielson Array**	**89.83**	**25**	P			**P**	**03 40 41.6**	**+0.4**
	0.3nm,0.7s,mb3.7,baz=260,slow=5.6,SNR=4.8								

NEIC ***31*** *03:27:43.8±0.6,36.94N×104.84W,h5km,MN3.3,Error ellipse: s-maj=10.3km s-min=7.6km az=97.0*
IDC ***31*** *03:27:43.4±1.5,36.84N×105.14W,mb3.0/2,mb1 3.3/4, mb1mx3.2/19,ML3.4/2,Error ellipse: s-maj=72.9km s-min=10.9km az=72.0*
ISC 31 03:27:42.9±0.4,36.96N±0.03×104.75W±0.05,h5km,n38,
σ1§36/40,mb2.8/2,New Mexico

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
SDCO	**Great Sand Dun**	**0.99**	**323**	*e*P			**Pg**	**03 28 01.2**	**-1.4**
SDCO				*e*S			**Sg**	**03 28 13.4**	**-2.4**
ANMO	**Albuquerque**	**2.44**	**215**	*e*Pn			**Pn**	**03 28 23.9**	**-0.2**
ISCO	**Idaho Springs**	**2.91**	**347**	*e*Pn			**Pn**	**03 28 32.5**	**+1.7**
LPM	**Los Pinos Moun**	**3.06**	**211**	*e*Pn			**Pn**	**03 28 31.3**	**-1.5**
BNM	**Barren Site**	**3.20**	**209**	*e*Pn			**Pn**	**03 28 34.8**	**0.0**
LAZ	**Ladron**	**3.21**	**218**	*e*Pn			**Pn**	**03 28 34.1**	**-0.9**
PV01	**Paradox Valley**	**3.25**	**292**	*e*Pn			**Pn**	**03 28 36.2**	**+0.5**
LENM	**Lemitar**	**3.33**	**214**	*e*Pn			**Pn**	**03 28 37.6**	**+0.9**
PV10	**Paradox Valley**	**3.69**	**294**	*e*Pn			**Pn**	**03 28 43.6**	**+1.9**
CPRX	**Cap Rock**	**3.99**	**166**	*e*Pn			**Pn**	**03 28 48.2**	**+2.1**
CBKS	**Cedar Bluff**	**4.37**	**63**	*e*Pn			**Pn**	**03 28 52.3**	**+0.8**
CLNB	**Carlsbad**	**4.74**	**171**	Pn			**Pn**	**03 28 56.9**	**+0.1**
GDL2	**Guadalupe Moun**	**4.76**	**176**	Pn			**Pn**	**03 28 59.2**	**+2.2**
SRU	**San Rafael**	**5.04**	**297**	*e*Pn			**Pn**	**03 29 01.3**	**+0.3**
MNTX	**Cornudas Mount**	**5.28**	**186**	*e*Pn			**Pn**	**03 29 05.5**	**+1.2**
WMOK	**Wichita Mounta**	**5.33**	**113**	*e*Pn			**Pn**	**03 29 03.7**	**-1.3**
	5.6nm,0.5s								
WUAZ	**Wupatki**	**5.55**	**257**	*e*Pn			**Pn**	**03 29 06.7**	**-1.4**
MSU	**Marysvale**	**6.09**	**287**	*e*Pn			**Pn**	**03 29 11.9**	**-3.9**
MVU	**Marysvale**	**6.11**	**287**	Pn			**Pn**	**03 29 14.6**	**-1.6**
	5.5nm,0.6s								
DAU	**Daniels Canyon**	**6.15**	**306**	Pn			**Pn**	**03 29 17.5**	**+0.9**
MPU	**Maple Canyon**	**6.20**	**302**	Pn			**Pn**	**03 29 20.3**	**+2.9**
JLU	**Jordanelle**	**6.37**	**307**	Pn			**Pn**	**03 29 21.4**	**+1.7**
NLU	**North Lily Min**	**6.48**	**300**	Pn			**Pn**	**03 29 20.2**	**-1.1**
CTU	**Camp Tracy**	**6.61**	**306**	Pn			**Pn**	**03 29 22.8**	**-0.5**
TCUT	**Toone Canyon**	**6.64**	**311**	Pn			**Pn**	**03 29 25.6**	**+2.0**
KSU1	**Kansas State U**	**6.77**	**69**	Pn			**Pn**	**03 29 25.7**	**+0.3**
TUC	**Tucson**	**6.80**	**229**	Pn			**Pn**	**03 29 29.1**	**+3.2**
PDAR	**Pinedale Array**	**6.88**	**329**	Pn			**Pn**	**03 29 27.3**	**+0.4**
	0.1nm,0.3s,baz=129,slow=13,SNR=4.4								
PDAR				Pg			**Pg**	**03 29 52.9**	**-7.3**
	0.2nm,0.3s,baz=135,slow=15,SNR=12								
PDAR				Lg				03 31 18.6	
	0.1nm,0.3s,baz=137,slow=33,SNR=4.9								
HWUT	**Hardware Ranch**	**7.03**	**313**	Pn			**Pn**	**03 29 28.1**	**-1.0**
LTX	**Lajitas**	**7.66**	**173**	*e*Lg				03 31 40.0	
TXAR	**Lajitas Array**	**7.66**	**173**	Pn			**Pn**	**03 29 36.3**	**-1.6**
	0.1nm,0.3s,baz=1.8,slow=11,SNR=9.1								
TXAR				Pg			**Pg**	**03 30 02.3**	**-14**
	0.5nm,0.3s,baz=358,slow=13,SNR=9.5								
TXAR				Lg				03 31 40.9	
	1.2nm,0.3s,baz=337,slow=26,SNR=7.9								
TXAR	**Lajitas Array**	**7.66**	**173**	Pn			**Pn**	**03 29 36.3**	**-1.6**
TXAR				Pg			**Pg**	**03 30 02.3**	**-14**
TXAR				Lg				03 31 40.9	
JCT	**Junction City**	**7.67**	**146**	*e*Pn			**Pn**	**03 29 35.9**	**-2.1**
MIAR	**Mount Ida**	**9.40**	**102**	*e*Pn			**P**	**03 29 59.6**	**-2.4**
CCM	**Cathedral Cave**	**10.78**	**80**	Pn			**P**	**03 30 21.5**	**+0.5**
NVAR	**Mina Array Bea**	**10.84**	**282**	Pg			Px	03 31 03.6	
	0.1nm,0.3s,baz=104,slow=19,SNR=3.4								
YKA	**Yellowknife Ar**	**26.28**	**350**	P			**P**	**03 33 20.5**	**-0.2**
	0.1nm,0.6s,mb2.5,baz=151,slow=9.0,SNR=2.7								
ILAR	**Eielson Array**	**37.30**	**332**	P			**P**	**03 34 57.8**	**+0.4**
	0.2nm,0.8s,mb3.0,baz=136,slow=6.8,SNR=4.5								

IDC ***31*** *03:52:14.7±1.0,14.89S×173.90W,mb4.1/8,mb1 4.5/8, mb1mx4.3/14,MS3.9/14,Ms1 3.9/14,ms1mx3.8/21,Error ellipse: s-maj=56.8km s-min=20.7km az=144.0*
NEIC ***31*** *03:52:15.6±0.4, 15.03S×173.74W,h10km,mb4.4/6,Error ellipse: s-maj=21.0km s-min=8.3km az=143.0*
ISC 31 03:52:14.1±0.6,15.0S±0.2×173.8W±0.2,h10km,n47,
σ0§81/21,mb4.2/14,MS4.0/13,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**14.69**	**117**	LR		LR	LR	03 59 33.2	
	comp=Z,383nm,21.7s,baz=319,slow=30								
URZ	**Urewera**	**24.52**	**197**	LR		LR		04 06 10.6	
	comp=Z,418nm,20.6s,MS3.9,baz=318,slow=34								
CTA	**Charters Tower**	**38.35**	**257**	LR		LR		04 11 01.4	
	comp=Z,66nm,21.3s,MS3.4,baz=47,slow=29								
STKA	**Stephens Creek**	**43.90**	**239**	LR		LR		04 16 45.6	
	comp=Z,160nm,20.7s,MS3.9,baz=27,slow=34								
WB2	**Warramunga Arr**	**49.54**	**256**	*e*P			**P**	**04 01 07.9**	**+0.5**
WRAB	**Tennant Creek**	**49.55**	**256**	*e*P			**P**	**04 01 08.1**	**+0.7**
	3.5nm,0.5s,mb4.7								
WRA	**Warramunga Arr**	**49.55**	**256**	P			**P**	**04 01 06.9**	**-0.6**
	1.7nm,0.6s,mb4.3,baz=90,slow=7.3,SNR=43								
AS12	**Alice Springs**	**49.86**	**252**	*e*P			**P**	**04 01 09.4**	**-0.4**
	9.9nm,0.7s,mb5.0								
ASAR	**Alice Springs**	**49.86**	**252**	P			**P**	**04 01 09.8**	**0.0**
	12nm,0.6s,mb5.1,baz=87,slow=8.1,SNR=125								
ASAR				LR		LR	LR	04 20 03.3	
	comp=Z,194nm,21.1s,MS4.1,baz=75,slow=34								
FITZ	**Fitzroy Crossi**	**57.91**	**258**	LR		LR	LR	04 23 46.3	
	comp=Z,129nm,19.7s,MS4.0,baz=77,slow=33								
VNDA	**Vanda**	**63.73**	**186**	*e*P			**P**	**04 02 45.6**	**-2.1**
	1.9nm,1.3s,mb4.0								
JOW	**Kunigami**	**69.94**	**306**	LR		LR	LR	04 29 44.2	
	comp=Z,49nm,18.9s,MS3.8,baz=210,slow=32								
JNU	**Nakatsue**	**71.25**	**313**	LR		LR	LR	04 31 59.9	
	comp=Z,54nm,18.0s,MS3.9,baz=236,slow=34								
NVAR	**Mina Array Bea**	**74.30**	**42**	P			**P**	**04 03 54.2**	**+0.5**
	1.2nm,0.9s,mb3.8,baz=229,slow=11,SNR=5.2								
NVAR				LR		LR	LR	04 30 14.0	
	comp=Z,60nm,21.0s,MS3.9,baz=50,slow=31								
TPH	**Tonopah**	**74.81**	**43**	P			**P**	**04 03 56.7**	**0.0**
	5.9nm,1.1s,mb4.4								
TPH				*e*				04 04 08.2	
HLID	**Hailey**	**79.57**	**40**	*e*P			**P**	**04 04 22.1**	**-0.9**
	2.6nm,1.0s,mb4.1								
TXAR	**Lajitas Array**	**80.72**	**56**	P			**P**	**04 04 30.6**	**+1.2**
	0.5nm,0.8s,mb3.5,baz=225,slow=7.1,SNR=4.7								
TXAR				LR		LR	LR	04 32 02.4	
	comp=Z,98nm,18.8s,MS4.2,baz=325,slow=30								
TXAR	**Lajitas Array**	**80.72**	**56**	P			**P**	**04 04 30.6**	**+1.2**
TXAR				LR		LR	LR	04 32 02.4	
PV01	**Paradox Valley**	**80.73**	**47**	*e*P			**P**	**04 04 29.1**	**-0.2**
MCK	**McKinley**	**80.81**	**11**	*e*P			**P**	**04 04 28.2**	**-0.9**
	2.5nm,0.9s,mb4.1								
MCMT	**McKenzie Canyo**	**81.19**	**39**	*e*P			**P**	**04 04 31.4**	**-0.2**
COLA	**College**	**82.05**	**11**	*e*P			**P**	**04 04 35.6**	**0.0**
ILAR	**Eielson Array**	**82.14**	**11**	P			**P**	**04 04 35.5**	**-0.6**
	1.6nm,1.2s,mb3.8,baz=214,slow=6.5,SNR=5.7								
ILAR				LR		LR	LR	04 37 10.0	
	comp=Z,41nm,19.7s,MS3.8,baz=46,slow=33								
BW06	**Boulder Array**	**82.23**	**42**	*e*P			**P**	**04 04 36.8**	**-0.2**
PDAR	**Pinedale Array**	**82.23**	**42**	P			**P**	**04 04 38.2**	**+1.2**
	0.4nm,0.4s,mb3.7,slow=4.4,SNR=6.2								
PDAR				LR		LR	LR	04 34 46.5	
	comp=Z,69nm,18.1s,MS4.1,baz=253,slow=31								
BOZ	**Bozeman (W)**	**82.36**	**39**	*e*P			**P**	**04 04 37.2**	**-0.4**
	11nm,1.8s,mb4.5								
MAW	**Mawson**	**88.04**	**199**	P			**P**	**04 05 06.8**	**+1.4**
	2.6nm,1.0s,mb4.4,baz=90,slow=4.0,SNR=4.5								
YKA	**Yellowknife Ar**	**89.89**	**24**	P			**P**	**04 05 14.6**	**+0.3**
	0.6nm,0.8s,mb4.0,baz=235,slow=4.4,SNR=13								
YKA				LR		LR	LR	04 42 45.2	
	comp=Z,56nm,18.4s,MS4.0,baz=235,slow=34								
ULM	**Lac du Bonnet**	**93.87**	**39**	LR		LR	LR	04 43 23.6	
	comp=Z,116nm,18.1s,MS4.4,baz=32,slow=33								
GIVF	**Givet**	**144.98**	**2**	*e*PKP1		PKPbc		04 11 52.8	+1.1
BAIF	**Baives**	**145.00**	**2**	*e*PKP1		PKPbc		04 11 53.1	+1.3
	8.2nm,0.9s								
GRA1	**Grafenberg Arr**	**145.17**	**354**	*e*PKP		PKPdf		04 11 52.4	-2.5
KHC	**Kasperske Hory**	**145.44**	**351**	*e*PKP		PKPdf		04 11 54.0	-1.4
BRTR	**Keskin Array B**	**145.61**	**321**	PKPbc		PKPbc		04 11 55.3	+1.7
	4.6nm,0.8s,baz=96,slow=2.1,SNR=26								
GERES	**GERESS Array B**	**145.70**	**351**	PKPbc		PKPbc		04 11 55.6	+2.0
	1.2nm,0.9s,baz=45,slow=3.8,SNR=8.9								
CDF	**Champ du Feu**	**146.68**	**359**	*e*PKP1		PKPbc		04 11 58.5	+2.6
	10nm,1.0s								
HAU	**Haudompre**	**147.10**	**360**	*e*PKP1		PKPdf		04 11 59.8	+1.6
HINF	**Hinteralfeld**	**147.28**	**359**	*e*PKP1		PKPdf		04 12 00.2	+1.7
LOR	**Lormes**	**147.78**	**3**	*e*PKP1		PKPdf		04 12 01.6	+2.3
	2.7nm,0.6s								
SSF	**Saint Saulge**	**147.96**	**3**	*e*PKP1		PKPdf		04 12 02.1	+2.5
	5.0nm,0.9s								
SMF	**Signal de Mont**	**148.40**	**3**	*e*PKP1		PKPdf		04 12 03.0	+2.7
TCF	**Toulx Ste Croi**	**148.64**	**5**	*e*PKP1		PKPdf		04 12 03.5	+2.8
LPL	**La Plagne**	**149.58**	**359**	*e*PKP1		PKPdf		04 12 07.2	+4.9
LPG	**La Plagne**	**149.60**	**359**	*e*PKP1		PKPdf		04 12 07.4	+5.1
	23nm,1.3s								
VIVF	**Saint-Julien-l**	**150.22**

comp=Z,1.0nm,0.4s
CMAR MLR MLR
comp=Z,106nm,20.4s
WRA Warramunga Arr 28.26 118 P **P** **04 26 45.6 -2.0**
comp=Z,1.3nm,0.4s,mb3.8,baz=291,slow=12,SNR=33
WRA Warramunga Arr 28.26 118 P **P** **04 26 45.6 -2.0**
WRA pmax pmax
comp=Z,1.0nm,0.4s
WRAB Tennant Creek 28.27 118 *e*P **P** **04 26 45.5 -2.1**
WB2 Warramunga Arr 28.27 118 *e*P **P** **04 26 46.9 -0.8**
AS12 Alice Springs 29.43 125 *e*P **P** **04 26 57.1 -0.9**
ASAR Alice Springs 29.43 125 P **P** **04 26 57.5 -0.5**
comp=Z,1.0nm,0.5s,mb3.7,baz=307,slow=8.9,SNR=8.2
ASAR PcP PcP 04 30 02.8 +0.8
comp=Z,1.6nm,0.6s,baz=304,slow=2.1,SNR=12
ASAR ScP 04 33 40.2
comp=Z,2.6nm,1.0s,baz=320,slow=3.7,SNR=7.3
ASAR LR LR 04 40 20.0
comp=Z,100nm,18.7s,baz=214,slow=40
KMI Kunming 33.25 351 *e*P **P** **04 27 33.0 +1.6**
KMI S **S** **04 32 54.8 +11**
KMI LR LR
comp=Z,95nm,21.0s
CTAO Charters Tower 39.04 112 *e*P **P** **04 28 19.9 -0.4**
STKA Stephens Creek 39.36 132⇑*i*P **P** **04 28 23.5 +0.6**
comp=Z,10nm,0.5s,mb4.9
STKA Stephens Creek 39.36 132 P **P** **04 28 23.6 +0.7**
comp=Z,7.4nm,0.5s,mb4.7,baz=303,slow=9.2,SNR=25
STKA PcP PcP 04 30 31.2 +0.8
comp=Z,2.9nm,0.5s,baz=291,slow=3.9,SNR=4.4
JOW Kunigami 39.83 29 P **P** **04 28 26.9 0.0**
comp=Z,3.5nm,0.4s,mb4.6,baz=131,slow=20,SNR=2.7
SSE Sheshan 40.86 18 P **P** **04 28 38.3 +3.1**
SSE AMB AMB
comp=Z,31nm,0.6s,mb5.3
PKI Pulchoki 41.47 329 *e*P **P** **04 28 40.9 +0.7**
comp=Z,5.1nm,0.3s,mb4.8
DMN Daman 41.65 329 *e*P **P** **04 28 42.1 +0.2**
KKN Kakani 41.71 329 *e*P **P** **04 28 41.8 -0.5**
comp=Z,7.3nm,0.3s,mb4.9
GKN Gorkha 42.21 329 *e*P **P** **04 28 45.3 -1.2**
comp=Z,19nm,0.3s,mb5.3
KOLN Koldanda 42.57 327 *e*P **P** **04 28 47.9 -1.5**
comp=Z,12nm,0.4s,mb5.0
LZH Lanzhou 43.96 355 *e*P **P** **04 29 02.8 +2.2**
LZH AP pP 04 29 07.5 -13
LZH XP sP 04 29 10.3 -20
LZH AMB AMB
comp=Z,23nm,1.4s,mb4.7
LZH LR LR
comp=E,251nm,13.0s
LZH LR LR
comp=Z,297nm,17.2s
CN2 Changchun 53.91 16 *e*P **P** **04 30 19.5 +2.4**
CN2 *e*S **S** **04 37 52.8 +8.6**
WMQ Urumqi 54.68 342 *e*P **P** **04 30 23.3 +0.6**
WMQ AP pP 04 30 27.8 -16
WMQ XP sP 04 30 30.3 -23
WMQ PCP PcP 04 31 26.0 +1.7
WMQ PP PP 04 32 27.0 -0.4
WMQ SCP 04 35 22.5
WMQ S **S** **04 38 00.8 +6.3**
WMQ AMB AMB
comp=Z,4.0nm,1.1s,mb4.4
WMQ AMB AMB
comp=Z,32nm,5.8s
WMQ LR LR
comp=N,114nm,20.4s
WMQ LR LR
comp=E,122nm,20.0s
WMQ LR LR
comp=Z,182nm,20.5s
SONM Songino Array 55.55 359 P **P** **04 30 27.8 -1.1**
comp=Z,1.9nm,0.4s,mb4.4,baz=178,slow=8.4,SNR=23
SONM PcP PcP 04 31 27.5 -0.1
comp=Z,8.1nm,0.4s,baz=177,slow=4.0,SNR=51
SONM ScP 04 35 20.4
comp=Z,4.2nm,1.4s,baz=162,slow=3.9,SNR=4.6
ULN Ulaanbaatar 55.57 359 *e*P **P** **04 30 27.7 -1.4**
comp=Z,3.1nm,0.6s,mb4.5
MDJ Mudanjiang 55.87 19 P **P** **04 30 32.0 +0.7**
MDJ AMB AMB
comp=Z,2.0nm,0.9s,mb4.2
MDJ AMB AMB
comp=Z,94nm,6.1s
MKAR Makanchi Array 59.07 340 P **P** **04 30 51.5 -2.1**
comp=Z,5.1nm,0.4s,mb4.9,baz=153,slow=8.1,SNR=65
MKAR PcP PcP 04 31 41.8 +0.4
comp=Z,3.4nm,0.8s,baz=131,slow=6.6,SNR=3.8
MKAR Makanchi Array 59.07 340 P **P** **04 30 51.6 -2.1**
MKAR 04 31 41.8
MKAR pmax pmax
comp=Z,5.0nm,0.4s
MKAR pmax pmax
comp=Z,3.0nm,0.9s
KURK Kurchatov 63.68 340 *e*P **P** **04 31 23.0 -1.7**
BOD Bodaibo 65.73 4 *e*P **P** **04 31 34.5 -3.3**
MAW Mawson 66.72 197 P **P** **04 31 44.8 +0.8**
comp=Z,3.7nm,0.9s,mb4.2,baz=24,slow=5.2,SNR=9.1
MAW Mawson 66.72 197 P **P** **04 31 44.8 +0.9**
MAW pmax pmax
comp=Z,4.0nm,0.9s
MAW Mawson 66.72 197 *e*P **P** **04 31 44.5 +0.5**
BRVK Borovoye 68.64 337 *e*P **P** **04 31 55.0 -1.1**
THR Tehran 68.86 313 P **P** **04 31 58.5 +0.7**
comp=Z,2.8nm,0.7s,mb4.2,baz=83,slow=6.2,SNR=11
THR Tehran 68.86 313 P **P** **04 31 58.5 +0.7**
THR pmax pmax
comp=Z,3.0nm,0.7s
ZRNK Zerenda 69.07 336 *e*P **P** **04 31 57.8 -0.9**
VNDA Vanda 74.88 169 P **P** **04 32 33.8 +0.9**
comp=Z,2.2nm,0.8s,mb3.9,baz=320,slow=7.4,SNR=12
VNDA Vanda 74.88 169 P **P** **04 32 33.8 +1.0**
VNDA pmax pmax
comp=Z,2.0nm,0.8s
VNDA Vanda 74.88 169 *e*P **P** **04 32 33.5 +0.7**
comp=Z,1.0nm,0.8s,mb3.6
SYO Syowa Base 74.92 200 ⇑P **P** **04 32 31.5 -1.6**
SYO Syowa Base 74.92 200 ⇓PcP PcP 04 32 45.4 -1.5
SYO Syowa Base 74.92 200 ⇑sP sP 04 32 57.2 -7.2
SYO Syowa Base 74.92 200⇑*e*P **P** **04 32 31.5 -1.6**
SYO *e*PcP PcP 04 32 45.4 -1.5
SYO *es*P sP 04 32 57.2 -7.2
ARU Arti 75.85 334⇑*i*P **P** **04 32 38.5 -0.2**
ARU pmax pmax
comp=Z,7.0nm,1.0s,mb4.3
ARU MLR MLR
comp=Z,100nm,19.0s
SBA Scott Base 75.95 169 *e*P **P** **04 32 41.0 +2.0**
KIV Kislovodsk 78.16 318 *e*P **P** **04 32 47.7 -4.1**
KIV pmax pmax
comp=N,1.0nm,0.7s
KIV pmax pmax
comp=Z,3.0nm,0.7s,mb4.1
LBTB Lobatse 79.72 246 *e*P **P** **04 32 59.6 -1.1**
QSPA South Pole Qui 82.05 180 *e*P **P** **04 33 13.3 +1.4**
comp=Z,5.0nm,1.0s,mb4.3
BRTR Keskin Array B 83.10 312 P **P** **04 33 18.6 +0.6**
comp=Z,2.1nm,0.7s,mb4.0,baz=135,slow=7.0,SNR=14
VRSR Storozhevoye 83.13 324 *e*P **P** **04 33 17.9 0.0**
VRSR *e**PP pP 04 33 31.2 -9.3
VRSR pmax pmax
comp=Z,20nm,0.6s,mb5.1
VRSR pmax pmax
comp=N,6.0nm,0.5s
VRSR pmax pmax
comp=E,10.0nm,0.7s
OBN Obninsk 85.99 327 *e*P **P** **04 33 32.9 +0.9**
OBN pmax pmax
comp=Z,11nm,0.6s,mb5.0
BILL Bilibino 86.10 19 *e*P **P** **04 33 43.7 +11**
BILL *e* 04 33 52.2
BILL *e* 04 33 57.6
BILL pmax pmax
comp=Z,1.0nm,0.7s,mb3.9
SNAA Sanae 88.89 197 *e*P **P** **04 33 47.5 +1.9**
JOF Joensuu 90.96 334 *ep* **P** **04 33 55.7 +0.2**
comp=Z,3.5nm,0.5s,mb4.8
JOF Joensuu 90.96 334 *e*P **P** **04 33 55.7 +0.2**
JOF pmax pmax
comp=Z,4.0nm,0.5s,mb4.8
FINES FINESS Array B 93.01 332 P **P** **04 34 05.3 +0.3**
comp=Z,1.7nm,0.5s,mb4.6,baz=110,slow=6.7,SNR=18
FINES FINESS Array B 93.01 332 *i* P **P** **04 34 05.8 +0.8**
FINES pmax pmax
comp=Z,2.0nm,0.5s
ARCES ARCESS Array B 94.72 340 P **P** **04 34 12.8 +0.1**
comp=Z,1.6nm,0.6s,mb4.6,baz=90,slow=4.9,SNR=11
ARCES ARCESS Array B 94.72 340 P **P** **04 34 12.8 +0.2**
ARCES pmax pmax
comp=Z,2.0nm,0.6s
GERES GERESS Array B 98.67 318 P **P** **04 34 32.0 +1.0**
comp=Z,0.3nm,0.6s,mb4.0,baz=117,slow=3.0,SNR=5.8
YKA Yellowknife Ar 117.44 21 PKP PKPdf 04 39 37.3 +1.7
comp=Z,1.8nm,0.4s,baz=334,slow=1.3,SNR=77
YKA Yellowknife Ar 117.44 21 PKIKP PKPdf 04 39 37.3 +1.7
YKA pmax pmax
comp=Z,2.0nm,0.4s
MSO Missoula 127.35 35 *e*PKP PKPdf 04 39 57.3 +2.1
NVAR Mina Array Bea 128.59 46 PKP PKPdf 04 40 02.0 +4.1
comp=Z,0.9nm,0.7s,baz=264,slow=1.3,SNR=6.1
HLID Hailey 128.83 39 *e*PKP PKPdf 04 40 01.2 +3.0
MCMT McKenzie Canyo 129.10 37 *e*PKP PKPdf 04 40 02.3 +3.6
PDAR Pinedale Array 132.23 37 PKP PKPdf 04 40 07.6 +2.9
comp=Z,1.1nm,0.6s,baz=22,slow=0.8,SNR=11
NEN Nelson 132.25 48 *e*PKP PKPdf 04 40 08.9 +4.0
SCHQ Schefferville 133.05 356 PKP PKPdf 04 40 08.6 +2.7
comp=Z,7.4nm,0.9s,baz=48,slow=0.9,SNR=22
SCHQ Schefferville 133.05 356 *e*PKP PKPdf 04 40 07.6 +1.7
SRU San Rafael 133.65 42 *e*PKP PKPdf 04 40 11.1 +3.7
RSSD Black Hills 134.50 32 *e*PKP PKPdf 04 40 11.7 +2.8
PV10 Paradox Valley 135.02 42 *e*PKP PKPdf 04 40 13.6 +3.5
TXAR Lajitas Array 143.52 50 PKP PKPdf 04 40 25.9 +0.4
comp=Z,1.3nm,0.4s,baz=208,slow=0.9,SNR=65
WMOK Wichita Mounta 143.80 39 *e*PKP PKPdf 04 40 25.9 +0.1
NCB Newcomb 144.07 3 *e*PKP PKPdf 04 40 26.0 0.0
ACCN Adirondack Com 144.68 2 *e*PKP PKPdf 04 40 27.2 +0.1
ERPA Erie 145.27 10 *e*PKP PKPdf 04 40 29.6 +1.5
CCM Cathedral Cave 145.40 27 *e*PKP PKPdf 04 40 30.1 +1.6
HRV Harvard–Oak R 145.58 359 *e*PKP PKPdf 04 40 30.9 +2.2
ALLY Alegheny Colle 145.69 11 *e*PKP PKPdf 04 40 31.0 +2.1
BINY Binghamton 145.72 5 *e*PKP PKPdf 04 40 30.8 +1.8
JCT Junction City 145.75 45 *e*PKP PKPdf 04 40 32.5 +3.1
FVM French Village 145.82 26 *e*PKP PKPdf 04 40 31.6 +2.3
BLO Bloomington 146.32 20 *e*PKP PKPdf 04 40 33.0 +2.9
ACSO Alum Creek Sta 146.42 15 *e*PKP PKPdf 04 40 33.0 +2.8
BDFB Brasilia 146.54 226 PKPbc PKPbc 04 40 36.9 +4.4
comp=Z,3.0nm,0.5s,baz=166,slow=3.2,SNR=12
BDFB Brasilia 146.54 226 PKP2 PKPab 04 40 36.9 +0.9
BDFB pmax pmax
comp=Z,3.0nm,0.5s
MIAR Mount Ida 146.99 34 *e*PKPbc PKPdf 04 40 35.8 +4.5
SSPA Standing Stone 147.05 8 *e*PKPbc PKPdf 04 40 35.4 +4.1
WCI Wyandotte Cave 147.25 21 *e*PKPdf PKPdf 04 40 33.8 +2.2
WCI *e*PKPbc PKPdf 04 40 36.1 +4.5
UALR University of 147.47 32 *e*PKPbc PKPdf 04 40 36.9 +4.8
MVL Millersville 147.86 6 *e*PKPbc PKPdf 04 40 37.8 +5.3
WVT Waverly 148.49 25 *e*PKPdf PKPdf 04 40 36.1 +2.4
WVT *e*PKPbc PKPdf 04 40 39.7 +6.0
FWV Forest Hill 149.47 14 *e*PKPbc PKPdf 04 40 41.2 +6.0
ELN Prospectdale 149.82 14 *e*PKPbc PKPdf 04 40 42.3 +6.5
SWET Sewanee 150.05 23 *e*PKPbc PKPdf 04 40 42.8 +6.6
CPCT Cooper Cave 150.36 21 *e*PKPbc PKPdf 04 40 44.3 +7.6
LRAL Lakeview Retre 151.49 27 *e*PKPbc PKPdf 04 40 46.7 +8.3
JSC Jenkinsville 152.47 17 *e*PKPbc PKPdf 04 40 49.2 +9.3

*NAO **31** 04:47:38.8±1.3,59.75N×24.36E,ML2.2*
*BER **31** 04:47:39.9±4.5,59.74N×24.42E,h0km±23km, ML2.2(NAO)*
*IDC **31** 04:47:39.2±2.2,59.77N×24.55E,mb1 3.0/3, mb1mx2.9/20,ML3.0/3,Error ellipse: s-maj=23.6km s-min=6.7km az=142.0*
HEL 31 04:47:39.0±0.3,59.73N×24.39E,ML2.0,ML2.1(UPP), **ML2.2**(NAO),**Explosion,Baltic States - Belarus - Northwestern Russia**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MEF	**Metsahovi**	**0.49**	**1**	*e*P		04 47 47.3	-1.4
MEF				*e*S		04 47 53.6	-1.6
VSU	**Vasula**	**1.76**	**135**	*e*P		04 48 10.0	-0.9
VSU				*e*SN		04 48 34.1	-0.2
VJF	**Virojoki**	**1.78**	**62**	*e*P		04 48 09.8	-1.5
VJF				*e*S		04 48 33.1	-1.9
FIA0	**FINESS Array S**	**1.91**	**25**	*e*P		04 48 12.6	-0.5
FIA0				*e*S		04 48 33.7	-4.5
FIA0				*e*SG		04 48 37.8	-4.8
FIA0				MSG		04 48 39.8	
comp=Z,13nm,0.2s							
FIA0	**FINESS Array S**	**1.91**	**25**	Pn	Pn	04 48 12.9	-0.2
baz=200,slow=16							
FIA0				Lg		04 48 37.1	
baz=188,slow=37							
FINES	**FINESS Array B**	**1.91**	**25**	Pg	Pg	04 48 12.8	-4.4
comp=Z,2.7nm,0.3s,baz=206,slow=16,SNR=129							
FINES				Lg		04 48 36.8	
comp=Z,3.7nm,0.3s,baz=201,slow=27,SNR=19							
KEF	**Keuruu**	**2.46**	**5**	*e*P	Pn	04 48 21.5	+0.6
KEF				*e*SG	Sg	04 48 54.4	-6.4
KEF				MSG		04 48 56.2	
comp=Z,5.6nm,0.2s							
SUF	**Sumiainen**	**3.12**	**15**	*e*P	Pn	04 48 30.7	+0.3
JOF	**Joensuu**	**4.62**	**43**	*e*P	Pn	04 48 48.8	-2.9
JOF				MSG		04 50 03.8	
comp=Z,1.5nm,0.2s							
HFS	**Hagfors**	**5.39**	**279**	Pn	Pn	04 48 59.5	-3.2
baz=99,slow=10							
HFS				Sn	Sn	04 50 01.5	-4.8
baz=99,slow=22							
HFS				Lg		04 50 24.0	
baz=81,slow=28							
HFS	**Hagfors**	**5.39**	**279**	*e*P	Pn	04 48 59.5	-3.2
HFS				*e*S	Sn	04 50 01.5	-4.8
HFS				*e*SG	Sg	04 50 24.0	-15
HFS	**Hagfors**	**5.39**	**279**	Pn	Pn	04 48 59.5	-3.2
comp=Z,0.1nm,0.3s,baz=88,slow=11,SNR=27							
HFS				Sn	Sn	04 50 01.8	-4.6
comp=Z,0.1nm,0.3s,baz=93,slow=27,SNR=8.7							
HFS				Lg		04 50 24.0	
comp=Z,0.2nm,0.3s,baz=90,slow=30,SNR=9.0							
NOA	**NORSAR Array B**	**6.66**	**287**	Pn	Pn	04 49 16.6	-3.9
comp=Z,0.3nm,0.3s,baz=99,slow=7.5,SNR=3.2							
NOA				Sn	Sn	04 50 31.5	-6.6
comp=Z,0.1nm,0.3s,baz=61,slow=13,SNR=2.9							
NOA				Lg		04 51 05.5	
comp=Z,0.3nm,0.3s,baz=92,slow=11,SNR=2.6							
ARA0	**ARCESS Array S**	**9.86**	**2**	Pn	P	04 50 00.1	-4.7
baz=181,slow=14							
ARA0				Sn	Sn	04 51 47.2	-10
baz=178,slow=22							
ARA0	**ARCESS Array S**	**9.86**	**2**	*e*P	P	04 50 00.1	-4.7
ARA0				*e*S	Sn	04 51 47.2	-10
ARCES	**ARCESS Array B**	**9.86**	**2**	Pn	P	04 49 59.7	-5.2
comp=Z,0.2nm,0.3s,baz=184,slow=12,SNR=20							
ARCES				Sn	Sn	04 51 43.6	-14
comp=Z,0.1nm,0.3s,baz=172,slow=14,SNR=3.0							

*NEIC **31** 05:51:39.0±1.1,25.00S×174.71W,h10km,mb4.7/2,Error ellipse: s-maj=78.7km s-min=12.7km az=166.0*
*IDC **31** 05:51:40.6±2.4,23.90S×175.23W,mb4.1/8,mb1 4.4/9, mb1mx4.2/17,ML4.7/1,MS3.7/2,Ms1 3.7/2,ms1mx3.2/16, Error ellipse: s-maj=137.0km s-min=23.1km az=159.0*
ISC 31 05:51:39.6±1.1,25.1S±0.5×174.6W±0.2,h33km,n17, σ1§01/17,mb4.2/9,MS3.7/2,South of Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RAR	**Rarotonga**	**14.13**	**77**	Pn	**P**	**05 54 59.0**	**-0.6**
3.6nm,0.3s,baz=281,slow=9.2,SNR=10							
RAR				Sn	**S**	**05 57 24.4**	**-12**
0.7nm,0.3s,baz=343,slow=20,SNR=3.0							
RAR	**Rarotonga**	**14.13**	**77**	*e*P	**P**	**05 54 59.5**	**-0.1**
RAR				Sn	**S**	**05 57 24.4**	**-12**
CTA	**Charters Tower**	**36.44**	**270**	P	**P**	**05 58 42.5**	**-0.8**
2.9nm,0.4s,mb4.6,baz=90,slow=13,SNR=4.3							
CTA	**Charters Tower**	**36.44**	**270**	P	**P**	**05 58 42.5**	**-0.8**
CTAO	**Charters Tower**	**36.44**	**270**	P	**P**	**05 58 42.5**	**-0.7**
2.0nm,0.3s,mb4.5							
ASAR	**Alice Springs**	**46.73**	**260**	P	**P**	**06 00 08.8**	**+1.2**
0.6nm,0.5s,mb3.8,baz=104,slow=7.4,SNR=4.8							
ASAR				LR	LR	06 17 42.4	
comp=Z,102nm,20.6s,MS3.8,baz=306,slow=34							
WB2	**Warramunga Arr**	**47.26**	**265**	*e*P	**P**	**06 00 10.9**	**-0.8**
WRAB	**Tennant Creek**	**47.26**	**265**	*e*P	**P**	**06 00 11.1**	**-0.7**
4.9nm,0.4s,mb4.8							
WRA	**Warramunga Arr**	**47.27**	**265**	P	**P**	**06 00 11.4**	**-0.4**
2.2nm,0.4s,mb4.5,baz=92,slow=8.4,SNR=109							

FITZ Fitzroy Crossi 55.67 265 P **P** **06 01 15.5 +0.3**
8.5nm,1.1s,mb4.7,baz=164,slow=15,SNR=4.0
NVAR Mina Array Bea 82.26 41 P **P** **06 04 03.0 +3.8**
0.3nm,0.6s,mb3.4,baz=201,slow=7.7,SNR=2.8
NVAR LR LR 06 32 26.6
comp=Z,37nm,21.7s,MS3.7,baz=340,slow=30
NVAR Mina Array Bea 82.26 41 P **P** **06 04 03.0 +3.8**
NVAR LR LR 06 32 26.6
TXAR Lajitas Array 86.92 56 P **P** **06 04 26.8 +4.1**
0.4nm,1.0s,mb3.6,baz=209,slow=9.3,SNR=2.9
ILAR Eielson Array 92.11 11 P **P** **06 04 45.8 -0.5**
1.2nm,1.3s,mb4.1,baz=211,slow=5.3,SNR=2.8
CMAR Chiang Mai Arr 94.60 288 P **P** **06 05 00.8 +2.1**
2.7nm,1.0s,mb4.6,baz=121,slow=3.1,SNR=10
BRTR Keskin Array B 152.22 309 PKPbc PKPdf 06 11 34.1 +9.1
0.6nm,0.9s,baz=90,slow=1.4,SNR=2.8
BRTR PKPab PKPab 06 11 42.0 -2.0
0.8nm,0.9s,baz=135,slow=8.2,SNR=3.6
CLL Collm 153.19 349 *e*PKP1 PKPdf 06 11 40.0 +14
CLL *i* PKP2 PKPab 06 11 48.4 +0.8

GUC 31 06:03:35.2±0.4,38.93S×74.89W,h33km,MD3.7,ML3.7, 2C,Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
VLCH	**Valdivia**	**1.54**	**125**⇑*i*P		P	06 04 01.7	+1.0
VLCH				*i* S	S	06 04 21.7	+1.9
VLCH				AMP		06 04 21.9	
comp=E,3μm,0.2s							
TMCH	**Temuco**	**1.78**	**85**	*i* P	P	06 04 03.8	-0.2
TMCH				*i* S	S	06 04 25.2	-0.5
TMCH				AMP		06 04 26.4	
comp=N,557nm,0.3s							
OSCH	**Osorno**	**2.13**	**141**	*i* P	P	06 04 10.0	+0.9
OSCH				*i* S	S	06 04 35.9	+1.3
OSCH				AMP		06 04 39.6	
comp=E,1μm,0.7s							
CCHI	**Chillan**	**3.22**	**45**⇑*i*P		P	06 04 24.9	+0.3
CCHI				*i* S	S	06 05 02.3	+0.1
CCHI				AMP		06 05 11.3	
comp=N,193nm,0.5s							
TALC	**Talca**	**4.38**	**37**	*i* P	P	06 04 40.3	-0.8
TALC				*i* S	S	06 05 30.4	-1.3

*ATH **31** 06:18:22.3,37.78N×20.59E,h5km,MD3.5/5*
*NEIC **31** 06:18:23.3,37.80N×20.69E,h5km,MD3.5(ATH),After ATH.*
*THE **31** 06:18:23.9,37.89N×20.60E,h10km,ML3.3*
ISC 31 06:18:20.8±1.4,37.75N±0.06×20.6E±0.1,h5km,n11, σ0§86/13,Ionian Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
VLS	**Valsamata**	**0.42**	**4**	*e*PG	**Pg**	**06 18 29.6**	**+0.3**
LKD	**Levkas**	**0.96**	**5**	*e*Pg	**Pg**	**06 18 38.5**	**-1.4**
comp=Z,33nm,0.1s							
LKD				*e*Sg	**Sg**	**06 18 51.7**	**-1.0**
ITM	**Ithomi**	**1.23**	**117**	*e*PN	**Pn**	**06 18 44.5**	**-0.2**
EVR	**Evrytania**	**1.52**	**40**	*e*PB	**Pb**	**06 18 51.0**	**+1.8**
IGT	**Igoumenitsa**	**1.79**	**355**	*e*Pb	**Pb**	**06 18 53.6**	**-0.1**
AGG	**Agios Georgios**	**1.89**	**47**	*e*Pb	**Pb**	**06 18 54.9**	**-0.5**
comp=Z,2.9nm,0.6s							
AGG				*e*Sb	**Sb**	**06 19 19.4**	**+0.2**
JAN	**Janina**	**1.92**	**7**	*e*PN	**Pn**	**06 18 58.5**	**+4.1**
KEK	**Kerkira**	**2.04**	**343**	*e*Pg	**Pg**	**06 19 02.5**	**+0.9**
MEV	**Metsovon**	**2.10**	**14**	*e*Pb	**Pb**	**06 18 59.0**	**0.0**
VLI	**Veliai**	**2.17**	**118**	*e*PG	**Pg**	**06 19 03.2**	**-0.8**
XOR	**Xorichti**	**2.62**	**51**	*e*Pn	**Pn**	**06 19 05.3**	**+0.7**

*IDC **31** 06:26:07.6±2.0,59.59N×24.76E,mb1 3.5/3, mb1mx3.2/20,ML3.6/3,Error ellipse: s-maj=22.3km s-min=7.3km az=140.0*
*NAO **31** 06:26:09.3±1.3,59.74N×24.46E,ML2.6*
*BER **31** 06:26:10.6±3.1,59.74N×24.51E,ML2.6(NAO)*
HEL 31 06:26:09.4±0.3,59.70N×24.52E,ML2.6,ML2.3(UPP), **ML2.6**(NAO),**Explosion,Baltic States - Belarus - Northwestern Russia**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MEF	**Metsahovi**	**0.53**	**353**	*e*P		06 26 18.5	-1.4
MEF				*e*S		06 26 25.5	-1.4
VSU	**Vasula**	**1.69**	**136**	*e*P		06 26 39.1	-1.2
VSU				*e*S	Sb	06 27 01.7	-1.1
VSU	**Vasula**	**1.69**	**136**	Pn	Pn	06 26 39.5	-0.8
VSU				Lg		06 27 03.8	
VJF	**Virojoki**	**1.74**	**60**	*e*P	Pn	06 26 39.5	-1.5
VJF				*e*S	Sn	06 27 02.1	-2.1
FIA0	**FINESS Array S**	**1.92**	**23**	*e*P	Pn	06 26 43.4	-0.2
FIA0				*e*S	Sn	06 27 04.9	-3.8
FIA0				*e*SG	Sg	06 27 09.0	-4.2
FIA0	**FINESS Array S**	**1.92**	**23**	Pn	Pn	06 26 43.3	-0.3
baz=192,slow=18							
FIA0				Lg		06 27 07.9	
baz=211,slow=28							
FINES	**FINESS Array B**	**1.92**	**23**	Pn	Pn	06 26 43.3	-0.3
21nm,0.3s,baz=195,slow=16,SNR=347							
FINES				Sn	Sn	06 27 07.8	-1.0
34nm,0.3s,baz=201,slow=27,SNR=35							
FINES				Lg		06 27 10.1	
34nm,0.3s,baz=211,slow=24,SNR=31							
KEF	**Keuruu**	**2.49**	**4**	*e*P	Pn	06 26 52.5	+0.7
KEF				*e*SG	Sg	06 27 25.2	-7.0
KEF				MSG		06 27 27.0	
comp=Z,28nm,0.3s							
SUF	**Sumiainen**	**3.13**	**14**	*e*P	Pn	06 27 00.7	-0.3
SUF				MSG		06 27 50.1	
comp=Z,14nm,0.2s							
VAF	**Ylistaro**	**3.47**	**346**	*e*P	Pn	06 27 06.9	+1.1
JOF	**Joensuu**	**4.60**	**42**	*e*P	Pn	06 27 18.8	-3.0
JOF				MSG		06 28 35.0	
comp=Z,12nm,0.3s							
HFS	**Hagfors**	**5.47**	**279**	Pn	Pn	06 27 30.9	-3.1
baz=90,slow=14							
HFS				Sn	Sn	06 28 33.1	-5.5
baz=93,slow=22							
HFS				Lg		06 28 57.3	
baz=85,slow=37							
HFS	**Hagfors**	**5.47**	**279**	*e*P	Pn	06 27 30.9	-3.1
HFS				*e*S	Sn	06 28 33.1	-5.5
HFS				*e*SG	Sg	06 28 57.3	-14
HFS	**Hagfors**	**5.47**	**279**	Pn	Pn	06 27 30.8	-3.2
comp=Z,0.2nm,0.3s,baz=90,slow=14,SNR=25							
HFS				Sn	Sn	06 28 33.1	-5.5
comp=Z,0.2nm,0.3s,baz=90,slow=24,SNR=5.5							
HFS				Lg		06 28 57.2	
comp=Z,0.5nm,0.3s,baz=88,slow=33,SNR=4.9							
NOA	**NORSAR Array B**	**6.74**	**287**	Pn	Pn	06 27 47.0	-5.0
comp=Z,0.7nm,0.3s,baz=85,slow=13,SNR=6.5							
NOA				Sn	Sn	06 29 01.8	-8.6
comp=Z,0.8nm,0.3s,baz=118,slow=15,SNR=5.8							
NOA				Lg		06 29 36.1	
comp=Z,1.3nm,0.3s,baz=136,slow=14,SNR=4.4							
APA0	**Apatity Array**	**8.78**	**22**	Pn	P	06 28 17.4	-3.1
baz=212,slow=18							
APA0	**Apatity Array**	**8.78**	**22**	*e*P	P	06 28 17.4	-3.1
ARA0	**ARCESS Array S**	**9.89**	**2**	Pn	P	06 28 29.9	-5.7
baz=178,slow=14							
ARA0				Sn	Sn	06 30 16.7	-12
baz=185,slow=22							
ARA0	**ARCESS Array S**	**9.89**	**2**	*e*P	P	06 28 29.9	-5.7
ARA0				*e*S	Sn	06 30 16.7	-12
ARCES	**ARCESS Array B**	**9.89**	**2**	Pn	P	06 28 29.6	-6.1
comp=Z,1.3nm,0.3s,baz=180,slow=11,SNR=72							
ARCES				Sn	Sn	06 30 17.5	-11
comp=Z,0.4nm,0.3s,baz=180,slow=23,SNR=4.8							
ARCES				Lg		06 31 11.9	
comp=Z,0.5nm,0.3s,baz=172,slow=31,SNR=3.0							

*BJI **31** 06:30:36.4,37.10N×21.21E,h24km,mb4.8,Ms5.3, Msz4.8*
*ATH **31** 06:30:39.8,37.10N×21.51E,h16km±2km,MD4.3/24, ML4.5*
*NEIC **31** 06:30:41.0±0.3,37.17N×21.55E,h10km,mb4.3/26, MD4.4(PDG),ML4.5(ATH),ML4.4(THE),Error ellipse: s-maj=5.2km s-min=2.8km az=197.0*
*MOS **31** 06:30:41.4±1.2,37.24N×21.62E,h33km,mb4.7/15,Error ellipse: s-maj=13.6km s-min=6.3km az=81.1*

*THE **31** 06:30:41.9,37.18N×21.63E,h10km,ML4.5*

*MED_RC **31** 06:30:41.0±0.9,36.94N×21.52E,h15km,MW4.5/12, Moment Tensor Solution. Body waves: s12,c13; Duration: 1↕0 Moment tensor: Scale 10^15Nm; Mrr0.58±.18; Mθθ-0.42±.19; Mφφ-0.16±.14; Mrθ6.70±.33; Mθφ1.77±.12; Mφr-2.49±.29; Best double couple: M0 7.34×10^15 NP1: ↕s358°,↕11°,λ158°. NP2:↕s109°,↕86°,λ80°. Principal axes: T 6.86, Plg48°, Azm8°; N .95, Plg10°, Azm110°; P -7.82, Plg40°, Azm208°; nsta1 refers to waves, cutoff=35s.*

*ZUR_RM **31** 06:30:41,37.17N×21.55E,h33km,Mw4.5/19,Moment Tensor Solution. s19 Moment tensor: Scale 10^15Nm; Mrr1.12; Mθθ2.57; Mφφ-3.70; Mrθ3.98; Mθφ4.94; Mφr-1.47; Best double couple: M0 7.25×10^15 NP1:↕s109°, δ85°,λ37°. NP2:↕s15°, δ53°,λ174°. Principal axes: T 6.844, Plg29°, Azm339°; N .818, Plg53°, Azm116°; P -7.662, Plg21°, Azm236°;*

*IDC **31** 06:30:43.3±1.8,37.23N×21.60E,h33km±13km,mb4.2/18, mb1 4.3/25,mb1mx4.2/32,ML3.9/8,MS3.6/7,Ms1 3.7/7, ms1mx3.3/33 Error ellipse: s-maj=13.6km s-min=10.0km az=22.0,EIL timing error*

ISC 31 06:30:39.8±0.2,37.16N±0.02×21.49E±0.02,h16km, (h30km±3.1km:pP-P),n294,σ1§49/339,mb4.5/38,MS4.0/11, 15C-17D,Southern Greece

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
ITM	**Ithomi**	**0.35**	**87**	*e*	P		**Pb**	**06 30 47.2**	**0.0**
VLS	**Valsamata**	**1.24**	**325**	*e*	PN		**Pn**	**06 31 04.0**	**+1.5**
VLI	**Veliai**	**1.25**	**110**	*e*	PN		**Pn**	**06 31 03.2**	**+0.6**
KYTH	**Kithira**	**1.53**	**125**	*e*	PN		**Pn**	**06 31 07.5**	**+0.9**
LKD	**Levkas**	**1.68**	**337**	*e*	Pb		**Pb**	**06 31 11.6**	**+1.8**
NAIG	**Nisos Aigina**	**1.70**	**69**	*e*	PN		**Pn**	**06 31 11.0**	**+1.9**
MKIT	**Kithairon Oros**	**1.74**	**54**	*e*	PN		**Pn**	**06 31 11.5**	**+1.9**
NSAL	**Nisos Salamina**	**1.74**	**64**	*e*	PN		**Pn**	**06 31 11.5**	**+1.8**
EVR	**Evrytania**	**1.77**	**8**	*e*	PN		**Pn**	**06 31 14.1**	**+4.0**
ATH	**Athens Observa**	**1.95**	**65**	*e*	PN		**Pn**	**06 31 14.2**	**+1.5**
AGG	**Agios Georgios**	**1.97**	**19**	*e*	Pb		**Pb**	**06 31 17.0**	**+2.1**
MPAR	**Parnis Oros**	**2.04**	**60**	*e*	PN		**Pn**	**06 31 15.5**	**+1.5**
PTL	**Penteli**	**2.09**	**64**	*e*	PB		**Pb**	**06 31 15.8**	**-1.0**
IGT	**Igoumenitsa**	**2.53**	**339**	*e*	P		**Pn**	**06 31 23.7**	**+2.7**
IGT					Sn		**Sn**	**06 31 57.5**	**+5.7**
JAN	**Janina**	**2.54**	**349**	↓	PB		**Pb**	**06 31 24.5**	**+1.0**
NEO	**Neokhori**	**2.54**	**32**	↑	PB		**Pb**	**06 31 23.5**	**-1.0**
XOR	**Xorichti**	**2.58**	**31**	*e*	PN		**Pn**	**06 31 24.1**	**+2.4**
MEV	**Metsovon**	**2.62**	**356**	*e*	PN		**Pn**	**06 31 26.0**	**+3.7**
AOS	**Alonnisos** comp=Z,15nm,1.2s	**2.75**	**43**	*e*	PN		**Pn**	**06 31 25.4**	**+1.3**
VAM	**Vamos**	**2.81**	**128**	*e*	PN		**Pn**	**06 31 25.6**	**+0.7**
KEK	**Kerkira**	**2.87**	**333**	*e*	PN		**Pn**	**06 31 28.0**	**+2.2**
LIT	**Litokhoron** comp=Z,16nm,1.1s	**3.04**	**15**	*e*	PN		**Pn**	**06 31 30.4**	**+2.2**
KZN	**Kozani**	**3.15**	**4**	*e*	PN		**Pn**	**06 31 32.0**	**+2.2**
THR5	**Thira Island,**	**3.19**	**102**	*e*	PN		**Pn**	**06 31 31.5**	**+1.1**
THR4	**Thira Island,**	**3.22**	**101**	*e*	PN		**Pn**	**06 31 32.2**	**+1.4**
THR3	**Thira Island,**	**3.23**	**102**	*e*	PN		**Pn**	**06 31 32.4**	**+1.4**
APE	**Apeiranthos**	**3.23**	**90**	*e*	PN		**Pn**	**06 31 31.0**	**0.0**
APE	**Apeiranthos**	**3.23**	**90**		SN		**Sn**	**06 32 05.9**	**-3.6**
APE	**Apeiranthos**	**3.23**	**90**	*e*	PN		**Pn**	**06 31 31.5**	**+0.5**
THR6	**Thira Island,**	**3.24**	**103**	*e*	PN		**Pn**	**06 31 32.2**	**+1.0**
PAIG	**Paliouri**	**3.25**	**31**	*e*	PN		**Pn**	**06 31 32.8**	**+1.6**
SANT	**Santorini**	**3.29**	**103**	*e*	PN		**Pn**	**06 31 32.5**	**+0.7**
THR1	**Thera Island**	**3.29**	**103**	*e*	PN		**Pn**	**06 31 32.9**	**+1.1**
IDI	**Anoyia** 6.1nm,0.3s,baz=291,slow=18,SNR=30	**3.33**	**123**	*e*	Pn		**Pn**	**06 31 32.3**	**0.0**
IDI	53nm,0.3s,baz=300,slow=20,SNR=4.9				Sn		**Sn**	**06 32 12.6**	**+0.7**
IDI	50nm,0.3s,baz=42,slow=20,SNR=3.7				Lg			06 32 29.0	
PLG	**Polygyros**	**3.55**	**25**	*e*	PN		**Pn**	**06 31 37.0**	**+1.5**
FNA	**Florina** comp=Z,4.5nm,1.1s	**3.62**	**359**	*e*	PN		**Pn**	**06 31 38.4**	**+1.9**
THE	**Thessaloniki**	**3.65**	**18**	*e*	Pn		**Pn**	**06 31 37.9**	**+1.0**
OUR	**Ouranopolis** comp=Z,16nm,0.9s	**3.72**	**31**	*e*	Pn		**Pn**	**06 31 39.3**	**+1.4**
NPS	**Neapolis**	**3.84**	**118**	*e*	PN		**Pn**	**06 31 40.5**	**+0.9**
BIA	**Bitola**	**3.85**	**358**	↓	Pn		**Pn**	**06 31 40.2**	**+0.4**
BIA				*i*				06 31 53.7	
BIA				*i*	Sn		**Sn**	**06 32 19.2**	**-6.0**
BIA				*i*				06 32 24.8	
BIA				*i*				06 32 30.4	
GRG	**Griva**	**3.85**	**10**	*e*	PN		**Pn**	**06 31 41.4**	**+1.6**
SOH	**Sokhos**	**3.93**	**21**	*e*	PN		**Pn**	**06 31 42.6**	**+1.7**
OHR	**Ohrid**	**3.98**	**352**	↑	Pn		**Pn**	**06 31 43.6**	**+2.0**
OHR				*i*				06 31 57.7	
OHR				*i*	Sn		**Sn**	**06 32 28.5**	**+0.1**
OHR				*i*				06 32 38.2	
OHR				*i*				06 32 50.7	
XRY	**Khrisi**	**4.11**	**123**	*e*	PN		**Pn**	**06 31 45.0**	**+1.6**
LCI	**Lecce**	**4.12**	**321**	*e*	Pn		**Pn**	**06 31 45.0**	**+1.4**
LCI				*e*	Sn		**Sn**	**06 32 34.6**	**+2.7**
KNT	**Kendrikon**	**4.14**	**15**	*e*	Pn		**Pn**	**06 31 45.7**	**+1.8**
TIP	**Timpagrande**	**4.23**	**300**	*e*	PN		**Pn**	**06 31 46.8**	**+1.6**
VAY	**Valandovo**	**4.24**	**11**	↑	Pn		**Pn**	**06 31 46.7**	**+1.4**
VAY				*i*				06 32 01.6	
VAY				*i*	Sn		**Sn**	**06 32 24.2**	**-11**
VAY				*i*				06 32 37.1	
VAY				*i*				06 32 46.6	
SRS	**Serrai**	**4.27**	**22**	*e*	Pn		**Pn**	**06 31 47.2**	**+1.4**
PRK	**Paraskevi**	**4.30**	**60**	*e*	PN		**Pn**	**06 31 46.8**	**+0.6**
GRI	**Girifalco**	**4.33**	**294**	*e*	Pn		**Pn**	**06 31 49.7**	**+3.1**
TIR	**Tirane**	**4.36**	**344**	*e*	Pn		**Pn**	**06 31 48.5**	**+1.4**
SOI	**Samo**	**4.41**	**284**	*e*	Pn		**Pn**	**06 31 48.6**	**+0.9**
QSH	**Qafa e Shtames**	**4.52**	**345**	*i*	Pn		**Pn**	**06 31 50.0**	**+0.7**
QSH				*i*	Sn		**Sn**	**06 32 33.0**	**-9.1**
MTTG	**Motta San Giov**	**4.68**	**282**	*e*	Pn		**Pn**	**06 31 52.2**	**+0.7**
MTTG				*e*	Sn		**Sn**	**06 32 43.0**	**-3.0**
SCLL	**Scilla**	**4.71**	**285**	*e*	Pn		**Pn**	**06 31 53.8**	**+1.9**
SCLL				*e*	Sn		**Sn**	**06 32 44.3**	**-2.5**
IZM	**Izmir**	**4.74**	**73**		PN		**Pn**	**06 31 51.6**	**-0.8**
KDAG	**Bornova**	**4.74**	**73**	*i*	P		**Pn**	**06 31 52.6**	**+0.1**
KDAG				*i*	S		Sn	06 33 52.4	+65
TDS	**Terranova Siba**	**4.75**	**303**	*e*	Pn		**Pn**	**06 31 55.0**	**+2.5**
BDRM	**Kayabasi**	**4.76**	**89**	*i*	P		**Pn**	**06 31 51.8**	**-0.9**
BDRM				*i*	S		**Sn**	**06 33 07.7**	**+19**
SKO	**Skopje**	**4.80**	**360**	*i*	Pn		**Pn**	**06 31 54.1**	**+0.8**
SKO				*i*				06 32 04.9	
SKO				*i*				06 32 12.5	
	comp=Z,0.1nm,0.9s								
SKO				*i*	Sn		**Sn**	**06 32 49.0**	**-0.2**
SKO				*i*				06 33 02.1	
SKO				*i*				06 33 09.6	
KARP	**Karpathos**	**4.86**	**108**	*e*	PN		**Pn**	**06 31 54.5**	**+0.5**
KKB	**Krupnik**	**4.86**	**14**	*i*	P		**Pn**	**06 31 55.0**	**+1.0**
BRT	**Bari-Castellan**	**4.99**	**319**	*e*	Pn		**Pn**	**06 31 57.0**	**+1.1**
BRT				*e*	Sn		**Sn**	**06 32 51.1**	**-2.7**
AGST	**Augusta-Monte**	**5.00**	**273**	*e*	Pn		**Pn**	**06 31 54.9**	**-1.2**
AGST				*e*	Sn		**Sn**	**06 32 51.7**	**-2.4**
MLSB	**Milas**	**5.02**	**87**	*e*	PN		**Pn**	**06 31 56.6**	**+0.2**
PUK	**Puka**	**5.03**	**346**	*e*	Pn		**Pn**	**06 31 57.8**	**+1.4**
RDO	**Rodhopi**	**5.07**	**37**	*e*	PN		**Pn**	**06 31 57.5**	**+0.4**
ULC	**Ulcinj**	**5.09**	**341**	↓	Pn		**Pn**	**06 31 57.4**	**0.0**
ULC				*e*	Sn		**Sn**	**06 32 56.4**	**-0.2**
AYDN	**Tasoluk**	**5.11**	**82**	*i*	P		**Pn**	**06 32 02.1**	**+4.4**
ALN	**Alexandroupoli** comp=Z,1.9nm,0.9s	**5.15**	**42**	*e*	Pn		**Pn**	**06 31 57.9**	**-0.2**
RZN	**Rozhen**	**5.16**	**28**	*i*	P		**Pn**	**06 31 59.5**	**+1.1**
LPK	**Lapseki**	**5.22**	**51**	*e*	PN		**Pn**	**06 31 58.7**	**-0.5**
MEU	**Monte Lauro**	**5.24**	**271**	*e*	Pn		**Pn**	**06 31 59.4**	**0.0**
MEU				*e*	Sn		**Sn**	**06 33 00.2**	**0.0**
AKS	**Akhisar**	**5.28**	**69**	*e*	PN		**Pn**	**06 32 00.1**	**+0.1**
KDZ	**Kurdzhali**	**5.42**	**33**	*i*	P		**Pn**	**06 32 02.0**	**+0.1**
ARG	**Arkhangelos**	**5.42**	**98**	*e*	PN		**Pn**	**06 32 03.0**	**+1.0**
YER	**Yerkesik**	**5.43**	**88**	*e*	PN		**Pn**	**06 32 03.0**	**+0.9**
MNO	**Monte Soro**	**5.45**	**280**	*e*	Pn		**Pn**	**06 32 03.2**	**+0.8**
BUM	**Brajici-Budva**	**5.50**	**340**	↓	Pn		**Pn**	**06 32 02.9**	**-0.3**
BUM				*e*	Sn		**Sn**	**06 33 07.4**	**+0.5**
MGR	**Morigerati**	**5.51**	**304**	*e*	Pn		**Pn**	**06 32 04.6**	**+1.3**
MGR				*e*	Sn		**Sn**	**06 33 02.6**	**-4.4**
TTG	**Podgorica**	**5.53**	**343**	↓	Pn		**Pn**	**06 32 03.4**	**-0.2**
TTG				*e*	Sn		**Sn**	**06 33 08.1**	**+0.5**
PVY	**Plav**	**5.55**	**348**	*e*	Pn		**Pn**	**06 32 04.2**	**+0.4**
PVY				*e*	Sn		**Sn**	**06 33 07.7**	**-0.3**
VTS	**Vitosha**	**5.58**	**13**	*i*	P		**Pn**	**06 32 05.5**	**+1.2**
SLCN	**Sala Consilina**	**5.59**	**307**	*e*	Pn		**Pn**	**06 32 06.8**	**+2.3**
SLCN				*e*	Sn		**Sn**	**06 33 05.9**	**-3.2**
BALB	**Balikesir**	**5.60**	**62**	*e*	PN		**Pn**	**06 32 03.7**	**-0.8**
KGT	**Karabiga**	**5.61**	**52**	*e*	PN		**Pn**	**06 32 04.8**	**+0.2**
VAE	**Valguarnera** comp=Z,5.4nm,0.3s,baz=273,slow=2.8,SNR=8.5	**5.65**	**275**		Pn		**Pn**	**06 32 06.9**	**+1.7**
VAE					Sn		**Sn**	**06 33 11.4**	**+1.0**
VAE	comp=Z,9.8nm,0.3s,baz=145,slow=16,SNR=2.5				Lg			06 33 47.0	
MANT	**Manisa** comp=Z,5.6nm,0.3s,baz=288,slow=20,SNR=2.1	**5.75**	**75**	*i*	P		**Pn**	**06 32 07.4**	**+0.7**
HCY	**Herceg Novi**	**5.76**	**337**	↓	Pn		**Pn**	**06 32 06.1**	**-0.7**
HCY					eSn		**Sn**	**06 33 12.9**	**-0.2**
PGB	**Panagyurishte**	**5.76**	**20**	*e*	P		**Pn**	**06 32 07.0**	**+0.2**
DIM	**Dimitrovgrad**	**5.79**	**31**	*e*	P		**Pn**	**06 32 08.0**	**+0.7**
IVA	**Berane**	**5.83**	**348**	↓	Pn		**Pn**	**06 32 07.8**	**+0.1**
IVA				*e*	Sn		**Sn**	**06 33 14.5**	**-0.5**
MRLC	**Muro Lucano**	**5.89**	**309**	*e*	Pn		**Pn**	**06 32 10.1**	**+1.4**
SGO	**Sicignano**	**5.89**	**307**	*e*	Pn		**Pn**	**06 32 10.9**	**+2.2**
CSLB	**Castelbuono**	**5.95**	**280**	*e*	Pn		**Pn**	**06 32 10.1**	**+0.6**
BNT	**Bandirma**	**5.95**	**56**	*e*	PN		**Pn**	**06 32 09.5**	**0.0**
NKY	**Niksic**	**5.96**	**342**	↓	Pn		**Pn**	**06 32 09.0**	**-0.5**
NKY				*e*	Sn		**Sn**	**06 33 18.0**	**-0.2**
GIB	**Gibilmanna**	**5.98**	**280**	*e*	Pn		**Pn**	**06 32 11.0**	**+1.1**
DNZL	**Cakiroluk**	**6.04**	**83**	*i*	P		**Pn**	**06 32 11.9**	**+1.1**
BRY	**Bratogost**	**6.16**	**339**	↓	Pn		**Pn**	**06 32 11.7**	**-0.8**
BRY				*e*	Sn		**Sn**	**06 33 23.0**	**-0.3**
EDRB	**Edirne**	**6.20**	**39**	*e*	PN		**Pn**	**06 32 13.0**	**+0.1**
UPM	**Unac-Piva**	**6.35**	**343**	↓	Pn		**Pn**	**06 32 14.8**	**-0.2**
UPM				*e*	Sn		**Sn**	**06 33 27.0**	**-1.0**
PLE	**Pljevlja**	**6.36**	**346**	↓	Pn		**Pn**	**06 32 15.7**	**+0.4**
PLE				*e*	Sn		**Sn**	**06 33 27.4**	**-1.0**
STON	**Ston**	**6.40**	**334**	*i*	Pn		**Pn**	**06 32 14.1**	**-1.7**
STON				*i*	Sn		**Sn**	**06 33 23.8**	**-5.4**
RGNG	**Rignano Grg**	**6.41**	**316**	*e*	Pn		**Pn**	**06 32 15.7**	**-0.3**
NVSS	**Nova Varos 2**	**6.48**	**348**	↓	Pn		**Pn**	**06 32 15.6**	**-1.4**
BOLS	**Boljevac**	**6.67**	**3**	↑	Pn		**Pn**	**06 32 18.7**	**-0.9**
ULDT	**Uludag**	**6.69**	**61**	*i*	P		**Pn**	**06 32 19.4**	**-0.4**
ULDT				*e*	S		**Sn**	**06 33 43.6**	**+7.2**
PVL	**Pavlikeni**	**6.72**	**25**	*e*	P		**Pn**	**06 32 20.0**	**-0.4**
GRUS	**Gruza**	**6.74**	**355**	↓	Pn		**Pn**	**06 32 19.3**	**-1.4**
USI	**Ustica**	**6.74**	**286**	*e*	Pn		**Pn**	**06 32 19.9**	**-0.8**
ELL	**Elmali**	**6.76**	**91**	*e*	PN		**Pn**	**06 32 21.5**	**+0.7**
DIVS	**Divcibare**	**7.02**	**351**	↓	Pn		**Pn**	**06 32 22.9**	**-1.6**
YLV	**Yalova**	**7.03**	**59**	*e*	PN		**Pn**	**06 32 25.0**	**+0.3**
CPI2	**Carpinone**	**7.09**	**311**	*e*	Pn		**Pn**	**06 32 27.0**	**+1.4**
SVIS	**Svilajnac**	**7.13**	**358**	↑	Pn		**Pn**	**06 32 22.8**	**-3.2**
CII	**Carovilli**	**7.18**	**312**	*e*	Pn		**Pn**	**06 32 28.4**	**+1.6**
PRD	**Provadia**	**7.54**	**35**	*e*	P		**Pn**	**06 32 32.0**	**+0.2**
ESKT	**Eskisehir**	**7.73**	**69**	*e*	PN		**Pn**	**06 32 34.3**	**-0.1**
ESKT	**Eskisehir**	**7.73**	**69**	*i*	P		**Pn**	**06 32 35.3**	**+0.9**
ESKT				*e*	S		**Sn**	**06 33 58.8**	**-3.6**
AQU	**L'Aquila**	**8.10**	**312**		Pn		**P**	**06 32 40.9**	**+1.3**
MDU	**Mudurnu**	**8.28**	**64**	*e*	PN		**P**	**06 32 40.7**	**-1.4**
MNS	**Montasola**	**8.55**	**310**	*e*	Pn		**P**	**06 32 46.8**	**+0.9**
SNTG	**Esanatoglia**	**8.93**	**316**	*e*	Pn		**P**	**06 32 51.9**	**+0.7**
MLR	**Muntele Rosu** comp=Z,0.5nm,0.3s,baz=301,slow=12,SNR=14	**8.97**	**21**		Pn		**P**	**06 32 52.7**	**+1.0**
MLR					Lg			06 35 23.8	
	comp=Z,0.1nm,0.3s,baz=116,slow=12,SNR=1.9								
BOJS	**Bojanci**	**9.56**	**333**	*e*	Pn		**P**	**06 32 57.7**	**-2.1**
BOJS	comp=Z,14nm,0.4s				Sn		**Sn**	**06 34 42.5**	**-5.4**
CRES	**Cresnjevec ost**	**9.76**	**334**	*e*	Pn		**P**	**06 33 00.3**	**-2.3**
CRES	comp=Z,27nm,0.8s				Sn		**Sn**	**06 34 42.1**	**-11**
BRTR	**Keskin Array B** comp=Z,0.1nm,0.3s,baz=256,slow=12,SNR=2.6	**9.87**	**71**		Pn		**P**	**06 33 01.5**	**-2.6**
BRTR					Lg			06 35 55.8	
	comp=Z,0.0nm,0.3s,baz=233,slow=31,SNR=2.6								
BRTR	comp=Z,219nm,19.0s,baz=355,slow=40				LR		LR	06 37 08.5	
LEGS	**Legarje**	**9.92**	**334**	*e*	Pn		**P**	**06 33 02.1**	**-2.6**
VISS	**Visnje**	**9.96**	**332**	*e*	Pn		**P**	**06 33 03.3**	**-2.1**
DOBS	**Dobrina**	**10.04**	**335**	*e*	Pn		**P**	**06 33 03.6**	**-2.8**
CEY	**Cerknica**	**10.07**	**331**	*e*	Pn		**P**	**06 33 04.8**	**-2.0**
PDKS	**Podkum**	**10.14**	**333**	*e*	Pn		**P**	**06 33 05.5**	**-2.3**
BALT	**Daday**	**10.20**	**61**	*i*	P		**P**	**06 33 10.6**	**+2.0**
JAVS	**Javornik**	**10.34**	**330**	*e*	Pn		**P**	**06 33 08.1**	**-2.5**
VOY	**Vojsko**	**10.52**	**330**	*e*	Pn		**P**	**06 33 10.7**	**-2.3**
VOY				*e*	Sn		**S**	**06 35 05.0**	**-6.5**
PERS	**Pernice**	**10.58**	**335**	*e*	Pn		**P**	**06 33 11.2**	**-2.6**
OBKA	**Obir**	**10.67**	**333**	↑	PN		**P**	**06 33 14.1**	**-1.0**
OBKA				*i*	SN		**S**	**06 35 02.0**	**-13**
CADS	**Cadrg**	**10.74**	**330**	*e*	Pn		**P**	**06 33 13.8**	**-2.2**
CADS				*e*	Sn		**S**	**06 35 09.5**	**-7.5**
PSZ	**Piszkesteto**	**10.81**	**354**	‖	*e*		**P**	**06 33 14.9**	**-2.1**
PSZ					eSSS		SSS	06 35 14.1	-30
PGF	**Pioggiola** comp=Z,20nm,0.8s	**11.00**	**303**	*e*	P		**P**	**06 33 21.7**	**+2.2**
ARSA	**Arzberg**	**11.00**	**338**	↑	PN		**P**	**06 33 16.9**	**-2.7**
ARSA				*i*	SN		**S**	**06 35 10.6**	**-13**
PTCC	**Patocco-Chiusa**	**11.04**	**329**	*e*	Pn		**P**	**06 33 18.5**	**-1.7**
KIS	**Kishinev**	**11.23**	**27**	*e*	P		**P**	**06 33 25.0**	**+2.3**
KIS				*e*				06 35 21.0	
KIS	comp=Z,500nm,14.0s				MLR		MLR		
KIS	comp=Z,400nm,10.0s				MLR		MLR		
KBA	**Koelnbreinsper**	**11.60**	**331**	↑	PN		**P**	**06 33 26.6**	**-1.1**
KBA				*i*	SN		**S**	**06 35 24.0**	**-14**
COBT	**Iskenderun**	**11.85**	**89**	*i*	P		**P**	**06 33 32.0**	**+0.8**
MOA	**Molln**	**11.93**	**336**	↑	Pn		**P**	**06 33 30.0**	**-2.1**
MOA				*i*	Sn		**S**	**06 35 32.2**	**-14**
NIE	**Niedzica**	**12.28**	**356**	*e*	P		**P**	**06 33 38.8**	**+1.9**
SIM	**Simferopol'**	**12.29**	**47**		P		**P**	**06 33 46.0**	**+8.9**
WTTA	**Wattenberg**	**12.45**	**327**	↓	Pn		**P**	**06 33 38.3**	**-0.8**
WTTA				*i*	Sn		**S**	**06 35 46.6**	**-12**
KWP	**Kalwaria**	**12.49**	**4**	*e*	P		**P**	**06 33 36.4**	**-3.3**
KWP	comp=Z,800nm,17.6s				MLR		MLR	06 39 01.7	
WATA	**Walderalm**	**12.53**	**327**	↓	Pn		**P**	**06 33 39.2**	**-1.0**
WATA				*i*	Sn		**S**	**06 35 47.6**	**-13**
MOTA	**Moosalm**	**12.74**	**326**	↑	Pn		**P**	**06 33 41.1**	**-1.9**
MOTA				*i*	Sn		**S**	**06 35 53.8**	**-12**
GZT	**Gaziantep**	**12.81**	**84**	*i*	P		**P**	**06 33 52.8**	**+8.8**
OKC	**Ostrava-Krasne** comp=Z,0.8nm,13.5s	**12.90**	**350**		L			06 39 30.0	
DAVOX	**Davos**	**12.90**	**322**		Pn		**P**	**06 33 45.8**	**+0.6**
	comp=Z,0.2nm,0.3s,baz=118,slow=18,SNR=2.2								
DAVOX					Sn		**S**	**06 36 01.5**	**-8.0**
	comp=Z,0.2nm,0.3s,baz=306,slow=19,SNR=2.1								
DAVOX	**Davos**	**12.90**	**322**		Pn		**P**	**06 33 45.8**	**+0.5**
DAVOX					Sn		**S**	**06 36 01.5**	**-8.0**
GERES	**GERESS Array B** comp=Z,0.3nm,0.3s,baz=148,slow=13,SNR=32	**12.98**	**337**		Pn		**P**	**06 33 44.4**	**-1.8**
GERES					Sn		**S**	**06 36 06.2**	**-5.1**
	comp=Z,0.3nm,0.3s,baz=157,slow=22,SNR=4.8								
LMR	**La Mourre** comp=Z,18nm,1.2s	**12.99**	**303**	*e*	P		**P**	**06 33 49.2**	**+2.9**
OJC	**Ojcow**	**13.11**	**355**	*e*	P		**P**	**06 33 57.5**	**+10**
OJC				*e*	S		**S**	**06 36 29.0**	**+15**
OJC	comp=Z,700nm,17.6s				MLR		MLR	06 39 26.3	
KHC	**Kasperske Hory**	**13.27**	**337**	*e*	P		**P**	**06 33 44.9**	**-5.2**
KHC					x		x	06 33 50.0	
KHC					x		x	06 34 00.0	
KHC	comp=Z,1.8nm,14.1s				L			06 39 40.0	
KHC	**Kasperske Hory**	**13.27**	**337**	*e*	P		**P**	**06 33 44.9**	**-5.2**
KHC	comp=Z,2μm,14.1s				MLR		MLR		
MBDF	**Montbardon** comp=Z,15nm,0.7s	**13.43**	**309**	*e*	P		**P**	**06 33 55.6**	**+3.4**
ASF	**Jabal al Asfar** comp=Z,0.3nm,0.3s,baz=17,slow=19,SNR=2.0	**13.62**	**107**		Pn		**P**	**06 33 49.6**	**-5.1**
ASF	comp=Z,0.3nm,0.3s,baz=209,slow=19,SNR=2.1				Sn		**S**	**06 36 15.7**	**-11**
DPC	**Dobruska-Polom**	**13.70**	**346**	*e*	P		**P**	**06 34 03.4**	**+7.8**
DPC					L			06 40 10.0	
PRU	**Pruhonice**	**13.76**	**341**	*e*	P		**P**	**06 33 56.6**	**+0.1**
PRU					L			06 40 00.0	
LPG	**La Plagne** comp=Z,8.2nm,0.7s	**13.84**	**312**	*e*	P		**P**	**06 34 01.4**	**+3.9**
LPL	**La Plagne**	**13.86**	**312**	*e*	P		**P**	**06 34 00.9**	**+3.1**
ELZG	**Elazig**	**13.90**	**79**	*i*	P		**P**	**06 34 02.9**	**+4.5**
UPC	**Upice**	**13.91**	**345**	*e*	P		**P**	**06 34 07.2**	**+8.8**
ORIF	**Oris-en-Rattie** comp=Z,127nm,18.5s	**14.08**	**308**	*e*	P		**P**	**06 34 03.9**	**+3.2**
ORIF				*e*	R				
KSP	**Ksiaz**	**14.17**	**346**	*e*	P		**P**	**06 34 09.2**	**+7.4**
ANN	**Anapa**	**14.24**	**53**	*e*	P		**P**	**06 34 12.0**	**+9.2**
ANN	comp=N,10.0nm,1.1s				pmax		pmax		
ANN	comp=E,10.0nm,1.1s				pmax		pmax		
PVCC	**Panska Ves** comp=E,1.5nm,12.1s	**14.25**	**342**		L			06 40 10.0	
GRA1	**Grafenberg Arr**	**14.56**	**333**	*e*	P		**P**	**06 34 13.4**	**+6.5**
NKC	**Novy Kostel** comp=E,1.5nm,14.0s	**14.59**	**336**		L			06 40 30.0	
VIVF	**Saint-Julien-l**	**14.82**	**306**	*e*	P		**P**	**06 34 12.3**	**+1.9**
CABF	**La Chapelle** comp=E,12nm,0.9s	**14.83**	**314**	*e*	P		**P**	**06 34 09.8**	**-0.7**
LASF	**Ste Croix**	**15.05**	**303**	*e*	P		**P**	**06 34 17.0**	**+3.6**
HINF	**Hinteralfeld** comp=E,9.2nm,0.7s	**15.13**	**319**	*e*	P		**P**	**06 34 16.8**	**+2.3**
MOX	**Moxa** comp=E,logA/T=1.1	**15.22**	**335**	*i*	P		**P**	**06 34 16.0**	**+0.5**
MOX					L			06 41 11.0	
MOX	**Moxa**	**15.22**	**335**	*e*	P		**P**	**06 34 16.0**	**+0.5**
MOX	comp=Z,13nm,1.1s				pmax		pmax		
MOX	comp=Z,2μm,17.0s				MLR		MLR		
MOX	**Moxa** comp=Z,13nm,1.1s	**15.22**	**335**	*e*	P		**P**	**06 34 16.0**	**+0.5**
SOC	**Sochi**	**15.29**	**60**	*e*	P		**P**	**06 34 18.9**	**+2.4**
SOC				*e*	S		**S**	**06 37 08.0**	**+1.9**
SOC	comp=Z,9.0nm,0.4s				pmax		pmax		
SOC	comp=N,10.0nm,0.8s				pmax		pmax		
SOC	comp=E,40nm,1.0s				pmax		pmax		
SOC	comp=Z,600nm,34.0s				MLR		MLR		
SOC	comp=N,80nm,22.0s				MLR		MLR		
SOC	comp=E,820nm,24.0s				MLR		MLR		
CDF	**Champ du Feu**	**15.31**	**322**	*e*	P		**P**	**06 34 19.6**	**+2.9**
CLL	**Collm** comp=E,logA/T=0.9	**15.38**	**340**		P		**P**	**06 34 17.1**	**-0.5**
CLL				*i*				06 34 22.7	
CLL				*e*				06 34 33.0	
CLL				*e*				06 34 42.0	
CLL	**Collm** comp=Z,17nm,0.9s	**15.38**	**340**	*i*	P		**P**	**06 34 17.1**	**-0.5**
CLL	**Collm** comp=Z,17nm,0.9s	**15.38**	**340**	*i*	P		**P**	**06 34 17.1**	**-0.5**
CLL				*i*				06 34 22.7	
HAU	**Haudompre** comp=Z,28nm,0.7s	**15.52**	**319**	*e*	P		**P**	**06 34 22.3**	**+2.9**

comp=Z,38nm,1.1s
FINES MLR MLR
comp=Z,381nm,18.4s
NAO01 NORSAR Array S 24.64 348 *e*P **P 06 35 59.1 -1.3**
comp=Z,12nm,0.8s,mb4.5
EKA Eskdalemuir Ar 24.70 325 P **P 06 36 01.1 0.0**
comp=Z,6.7nm,0.7s,mb4.3,baz=127,slow=8.7,SNR=29
EKA Eskdalemuir Ar 24.70 325 P **P 06 36 01.1 0.0**
EKA pmax pmax
comp=Z,7.0nm,0.7s
ESK Eskdalemuir 24.71 325 *e*P **P 06 36 01.0 -0.2**
comp=Z,64nm,1.7s,mb4.9
NB2 NORSAR Subarra 24.77 348 P **P 06 36 00.6 -1.1**
comp=Z,1.2nm,0.7s,mb3.5,baz=153,slow=9.3
NOA NORSAR Array B 24.77 348 P **P 06 36 00.8 -0.9**
comp=Z,6.4nm,0.6s,mb4.3,baz=157,slow=8.9,SNR=53
NOA LR LR 06 47 32.8
comp=Z,200nm,18.9s,MS3.6,baz=185,slow=41
NOA NORSAR Array B 24.77 348 P **P 06 36 00.8 -0.9**
NOA pmax pmax
comp=Z,6.0nm,0.6s
NOA MLR MLR
comp=Z,201nm,19.0s
NOA NORSAR Array B 24.77 348 P **P 06 36 00.8 -0.9**
NOA LR LR 06 47 32.8
JOF Joensuu 26.48 10 *ep* **P 06 36 15.2 -2.5**
comp=Z,11nm,0.8s,mb4.5
JOF Joensuu 26.48 10 *e*P **P 06 36 15.2 -2.5**
JOF pmax pmax
comp=Z,11nm,0.8s,mb4.4
APA Apatity 31.19 9↑ *i*P **P 06 37 08.0 +8.0**
APA pmax pmax
comp=Z,13nm,1.0s,mb4.7
APA MLR MLR
comp=Z,400nm,11.0s,MS4.3
ARU Arti 31.33 40↑ *i*P **P 06 36 57.9 -3.4**
ARU *e* 06 37 58.9
ARU *e* 06 39 50.5
ARU *e*S **S 06 42 01.5 -4.9**
ARU *e* 06 47 31.2
ARU pmax pmax
comp=Z,14nm,1.4s,mb4.6
ARU MLR MLR
comp=Z,100nm,15.0s,MS3.6
ARU MLR MLR
comp=N,100nm,18.0s,MS3.6
ARU MLR MLR
comp=E,50nm,17.0s,MS3.6
ARCES ARCESS Array B 32.50 3 P **P 06 37 09.8 -1.6**
comp=E,5.7nm,0.8s,mb4.5,baz=192,slow=11,SNR=38
ARCES LR LR 06 51 35.2
comp=E,290nm,19.9s,MS4.0,baz=356,slow=39
ARCES ARCESS Array B 32.50 3 P **P 06 37 09.9 -1.6**
ARCES pmax pmax
comp=Z,6.0nm,0.8s
ARCES MLR MLR
comp=Z,290nm,19.9s
ARE0 ARCESS Array S 32.50 3 *e*P **P 06 37 06.2 -5.3**
KEV Kevo 32.79 4 *ep* **P 06 37 12.3 -1.6**
comp=Z,1.3nm,0.4s,mb4.2
KEV Kevo 32.79 4 *e*P **P 06 37 12.3 -1.6**
KEV pmax pmax
comp=Z,1.0nm,0.4s,mb4.1
ZRNK Zerenda 36.36 49 *e*P **P 06 37 42.5 -2.3**
BRVK Borovoye 37.14 49 *e*P **P 06 37 49.0 -2.3**
BVAR Borovoye Array 37.20 49 P **P 06 37 49.7 -2.1**
comp=Z,9.2nm,0.5s,mb4.8,baz=258,slow=6.1,SNR=66
BVAR LR LR 06 56 45.8
comp=Z,71nm,19.4s,MS3.5,baz=130,slow=42
BORG Borgarnes 37.37 331 LR LR 06 54 30.4
comp=Z,110nm,20.2s,MS3.6,baz=214,slow=38
DBIC Dimbokro 38.69 225 P **P 06 38 04.2 -0.6**
comp=Z,14nm,0.8s,mb4.8,baz=14,slow=7.9,SNR=15
DBIC Dimbokro 38.69 225 P **P 06 38 04.2 -0.5**
DBIC pmax pmax
comp=Z,14nm,0.8s
TIC Toumodi 38.80 225 *e*P **P 06 38 04.3 -1.4**
comp=Z,120nm,1.3s,mb5.5
KIC Kosan Boka 38.88 224 *e*P **P 06 38 05.2 -1.1**
comp=Z,71nm,0.9s,mb5.4
LIC Lamto 39.15 225 *e*P **P 06 38 07.3 -1.3**
comp=Z,72nm,0.8s,mb5.4
LIC Lamto 39.15 225 *e*P **P 06 38 08.2 -0.4**
comp=Z,24nm,0.8s,mb5.0
EKS2 Erkin-Say 39.95 65 P **P 06 38 13.1 -1.9**
SNR=10
USP Ospenovka 40.37 64 P **P 06 38 15.9 -2.5**
SNR=6.8
AAK Ala-Archa 40.48 65 *e*P **P 06 38 17.5 -1.7**
comp=Z,5.9nm,0.9s,mb4.3
FRU Bishkek 40.53 65 *e*P **P 06 38 18.0 -1.7**
CHMS Chumysh 40.60 65 P **P 06 38 18.5 -1.7**
SNR=5.5
KBK Karagaybulak 40.80 65 P **P 06 38 19.8 -2.1**
SNR=5.7
SPITS Spitsbergen Ar 41.18 358 P **P 06 38 24.6 -0.1**
comp=Z,9.3nm,1.1s,baz=141,slow=13,SNR=5.3
SPITS ScP 06 44 08.2
comp=Z,4.9nm,1.0s,baz=304,slow=7.2,SNR=3.4
SPITS LR LR 06 57 12.6
comp=Z,14nm,19.1s,baz=188,slow=39
TKM2 Tokmak 2 41.22 65 P **P 06 38 23.3 -2.1**
SNR=5.1
ULHL Ulahol 41.82 65 P **P 06 38 29.2 -1.0**
SNR=7.4
NVS Novosibirsk 44.81 46 *i* P **P 06 38 52.2 -2.2**
NVS *e* 06 40 43.0
NVS pmax pmax
comp=N,7.0nm,0.8s
NVS pmax pmax
comp=E,9.0nm,0.8s
NVS pmax pmax
comp=Z,26nm,0.8s,mb5.1
MKAR Makanchi Array 45.19 58 P **P 06 38 54.9 -2.6**
comp=Z,10nm,0.6s,mb4.9,baz=270,slow=7.5,SNR=110
MKAR ScP 06 44 26.8
comp=Z,0.6nm,0.5s,baz=270,slow=2.4,SNR=4.7
MKAR Makanchi Array 45.19 58 P **P 06 38 54.9 -2.6**
MKAR pmax pmax
comp=Z,10.0nm,0.6s
MKAR pmax pmax
comp=Z,1.0nm,0.5s
MKAR Makanchi Array 45.19 58 P **P 06 38 54.9 -2.6**
MKAR ScP 06 44 26.8
TLY Talaya 57.41 47↓ *i*P **P 06 40 27.8 -1.9**
TLY *i* 06 42 34.4
TLY S **S 06 48 21.0 -3.0**
TLY pmax pmax
comp=Z,26nm,1.1s,mb5.2
TLY MLR MLR
comp=Z,900nm,17.0s,MS4.9
LSA Lhasa 57.45 75 P **P 06 40 28.5 -1.8**
ZAK Zakamensk 57.65 49 *e*P **P 06 40 28.7 -2.7**
GTA Gaotai 59.63 62 *e*P **P 06 40 40.5 -4.8**
GTA AMB AMB
comp=Z,5.0nm,1.0s,mb4.5
SCHQ Schefferville 59.73 318 P **P 06 40 45.1 -0.6**
comp=Z,4.9nm,0.8s,mb4.6,baz=88,slow=1.8,SNR=7.9
TIXI Tiksi 60.33 20 *e*P **P 06 40 47.5 -2.2**
TIXI pmax pmax
comp=Z,2.0nm,0.8s,mb4.2
SONM Songino Array 60.51 50 P **P 06 40 48.6 -2.6**
comp=Z,3.4nm,0.8s,mb4.5,baz=280,slow=8.3,SNR=12
BOD Bodaibo 60.70 38 *e*P **P 06 40 48.8 -3.6**
BOD *e* 06 41 00.4
ULN Ulaanbaatar 60.90 50 *e*P **P 06 40 51.5 -2.4**
comp=Z,1.9nm,0.6s,mb4.4
LZH Lanzhou 63.97 63 *e*P **P 06 41 09.5 -5.0**
LZH AP pP 06 41 16.5 -3.0
LZH XP sP 06 41 20.3 -1.0
LZH AMB AMB
comp=Z,27nm,1.3s,mb5.1
CMAR Chiang Mai Arr 69.27 82 P **P 06 41 46.5 -1.8**
comp=Z,1.8nm,0.8s,mb4.1,baz=301,slow=8.0,SNR=6.6
CMAR Chiang Mai Arr 69.27 82 P **P 06 41 46.6 -1.8**
CMAR pmax pmax
comp=Z,2.0nm,0.8s
ENH Enshi 70.99 66 *e*P **P 06 41 56.0 -2.7**
comp=Z,22nm,1.3s,mb4.9
BILL Bilibino 71.83 13 *e*P **P 06 42 01.7 -1.4**
BILL *e**PP pP 06 42 12.2 +4.1
BILL *e**SP sP 06 42 16.2 +6.3
BILL *i* 06 42 20.3
BILL *i* 06 44 39.9
BILL *e* 06 46 24.7
BILL *i* S S 06 51 19.6 -2.0
BILL *e*SS SS 06 55 55.2 -4.6
BILL pmax pmax
comp=Z,8.0nm,1.5s,mb4.4
BILL MLR MLR
comp=Z,100nm,19.0s,MS4.1
CN2 Changchun 74.02 47 *e*P **P 06 42 14.5 -1.8**
YKA Yellowknife Ar 74.60 340 P **P 06 42 18.7 -0.6**
comp=Z,0.3nm,0.5s,mb3.5,baz=34,slow=5.4,SNR=13
YKA Yellowknife Ar 74.60 340 P **P 06 42 18.7 -0.6**
NJ2 Nanjing 76.66 60 *e*P **P 06 42 30.0 -1.6**
NJ2 AP pP 06 42 40.5 +3.8
NJ2 PCP PcP 06 42 42.5 -1.0
NJ2 XP sP 06 42 45.0 +6.6
NJ2 S S 06 52 09.0 -7.2
NJ2 XS 06 52 25.0
NJ2 LR LR
comp=N,490nm,19.5s
NJ2 LR LR
comp=E,540nm,13.0s
NJ2 LR LR
comp=Z,370nm,25.8s
ILAR Eielson Array 77.99 355 P **P 06 42 38.8 +0.5**
comp=Z,0.5nm,0.6s,mb3.7,baz=356,slow=3.6,SNR=16
ILAR Eielson Array 77.99 355 P **P 06 42 38.8 +0.6**
ILAR pmax pmax
comp=Z,1.0nm,0.6s
SSE Sheshan 78.83 60 P **P 06 42 40.5 -3.1**
SSE S S 06 52 33.5 -6.1
SSE LR LR
comp=N,252nm,14.2s,MS5.0
SSE LR LR
comp=E,478nm,13.9s,MS5.0
SSE LR LR
comp=Z,673nm,14.3s,MS5.1
KS15 Wonju Array Si 79.36 51 *e*P **P 06 42 45.0 -1.4**
PDAR Pinedale Array 88.82 326 P **P 06 43 34.1 +0.1**
comp=Z,0.6nm,0.6s,mb4.1,baz=106,slow=11,SNR=5.2
HWUT Hardware Ranch 90.64 327 *e*P **P 06 43 43.1 +0.6**
comp=Z,7.0nm,1.4s,mb4.8
TXAR Lajitas Array 96.23 314 P **P 06 44 10.0 +1.4**
comp=Z,0.3nm,0.8s,mb3.8,baz=63,slow=2.8,SNR=4.0
ASAR Alice Springs 121.29 97 PKP PKPdf 06 49 33.3 -3.0
comp=Z,0.8nm,0.4s,baz=304,slow=1.6,SNR=12

IDC ***31*** *06:41:06.6±1.4,34.09N×89.35E,mb3.9/7,mb1 4.1/10, mb1mx4.0/20,ML3.8/3,MS3.3/3,Ms1 3.3/3,ms1mx2.9/32, Error ellipse: s-maj=34.8km s-min=26.3km az=19.0*
NEIC ***31*** *06:41:08.3±0.4,34.04N×89.23E,h10km,mb4.5/1,Error ellipse: s-maj=14.6km s-min=7.3km az=62.0*
ISC 31 06:41:14.0±2.3,34.0N±0.1×89.4E±0.1,h75km±29km,n21, σ1$07/19,mb3.9/8,Xizang

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
LSA	**Lhasa**	**4.58**	**160**	*e*P		**P**	**06 42 24.3**	**+1.9**
KKN	**Kakani**	**7.14**	**210**	*e*P		**P**	**06 42 58.5**	**+0.7**
	6.0nm,0.2s							
GKN	**Gorkha**	**7.25**	**215**	*e*P		**P**	**06 43 00.7**	**+1.4**
	7.1nm,0.4s							
PKI	**Pulchoki**	**7.28**	**209**	*e*P		**P**	**06 42 58.6**	**-1.2**
	18nm,0.7s							
DMN	**Daman**	**7.37**	**211**	*e*P		**P**	**06 42 59.8**	**-1.2**
KOLN	**Koldanda**	**7.96**	**220**	*e*P		**P**	**06 43 05.7**	**-3.4**
	2.4nm,0.3s							
MKAR	**Makanchi Array**	**13.83**	**339**	Pn		**P**	**06 44 22.0**	**-5.7**
	0.1nm,0.3s,baz=168,slow=17,SNR=4.0							
AAK	**Ala-Archa**	**14.47**	**311**	*e*P		**P**	**06 44 40.0**	**+4.0**
	8.8nm,1.3s							
CMAR	**Chiang Mai Arr**	**17.72**	**149**	P		**P**	**06 45 16.4**	**-0.8**
	0.3nm,0.3s,baz=328,slow=14,SNR=13							
CMAR				LR		LR	06 52 54.2	
	comp=Z,73nm,20.3s,baz=180,slow=40							
SONM	**Songino Array**	**18.80**	**38**	P		**P**	**06 45 28.8**	**-1.1**
	0.1nm,0.3s,baz=225,slow=14,SNR=7.6							
BVAR	**Borovoye Array**	**23.31**	**330**	P		**P**	**06 46 15.5**	**-0.1**
	0.9nm,0.6s,mb3.3,baz=149,slow=8.6,SNR=9.8							
BRVK	**Borovoye**	**23.38**	**330**	*e*P		**P**	**06 46 16.9**	**+0.7**
THR	**Tehran**	**31.25**	**284**	LR		LR	07 02 37.7	
	comp=Z,38nm,20.0s,baz=292,slow=41							
ASF	**Jabal al Asfar**	**43.59**	**283**	LR		LR	07 11 01.7	
	comp=Z,54nm,20.2s,baz=119,slow=41							
BRTR	**Keskin Array B**	**44.32**	**294**	P		**P**	**06 49 18.1**	**0.0**
	1.2nm,0.9s,mb3.6,baz=90,slow=6.2,SNR=5.2							
MLR	**Muntele Rosu**	**48.90**	**303**	P		**P**	**06 49 55.5**	**+1.5**
	6.5nm,0.9s,mb4.6,baz=97,slow=10,SNR=3.7							
NOA	**NORSAR Array B**	**55.27**	**325**	P		**P**	**06 50 40.8**	**-0.7**
	2.0nm,1.1s,mb4.0,baz=83,slow=5.6,SNR=6.0							
GERES	**GERESS Array B**	**56.35**	**310**	P		**P**	**06 50 48.4**	**-1.0**
	0.6nm,0.7s,mb3.8,baz=90,slow=6.9,SNR=6.0							
COLA	**College**	**71.84**	**22**	*e*P		**P**	**06 52 30.2**	**+0.2**
	3.8nm,0.8s,mb4.3							
ILAR	**Eielson Array**	**72.21**	**22**	P		**P**	**06 52 32.2**	**0.0**
	2.0nm,0.9s,mb3.9,baz=301,slow=5.3,SNR=16							
YKA	**Yellowknife Ar**	**81.89**	**11**	P		**P**	**06 53 27.0**	**+0.9**
	0.5nm,0.8s,mb3.4,baz=333,slow=5.0,SNR=8.4							

NAO ***31*** *06:49:08.7±1.3,59.80N×24.50E,ML2.7*
IDC ***31*** *06:49:08.6±2.2,59.75N×24.73E,mb1 3.5/3, mb1mx3.2/20,ML3.4/3,Error ellipse: s-maj=23.4km s-min=6.8km az=141.0*
BER ***31*** *06:49:09.8±6.0,59.78N×24.56E,ML2.7(NAO)*
HEL 31 06:49:08.9±0.2,59.77N×24.50E,ML2.3,ML2.5(UPP), **ML2.7**(NAO)**,Explosion,Baltic States - Belarus - Northwestern Russia**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
MEF	**Metsahovi**	**0.45**	**354**	*e*P		Pg	06 49 16.9	-1.0
MEF				*e*S		Sg	06 49 22.8	-1.0
VJF	**Virojoki**	**1.71**	**62**	*e*P		Pn	06 49 38.6	-1.6
VJF				*e*S		Sb	06 50 00.8	-2.2
VSU	**Vasula**	**1.75**	**138**	*e*P		Pn	06 49 39.8	-1.0
VSU				*e*S		Sn	06 50 02.9	-1.1
VSU	**Vasula**	**1.75**	**138**	Pn		Pn	06 49 40.2	-0.5
VSU				Lg			06 50 02.6	
FIA0	**FINESS Array S**	**1.85**	**24**	*e*P		Pn	06 49 41.9	-0.3
FIA0				*e*SN		Sn	06 50 06.1	-0.5
FIA0				MSG			06 50 08.3	
	comp=Z,41nm,0.3s							
FIA0	**FINESS Array S**	**1.85**	**24**	Pn		Pn	06 49 41.8	-0.3
	baz=198,slow=16							
FIA0				Lg			06 50 05.2	
	baz=196,slow=28							
FINES	**FINESS Array B**	**1.85**	**24**	Pg		Pg	06 49 41.7	-4.1
	comp=Z,9.1nm,0.3s,baz=204,slow=15,SNR=157							
FINES				Lg			06 50 05.9	
	comp=Z,20nm,0.3s,baz=198,slow=26,SNR=35							
KEF	**Keuruu**	**2.41**	**4**	*e*P		Pn	06 49 51.0	+0.8
KEF				*e*SG		Sg	06 50 22.2	-7.0
KEF				MSG			06 50 24.4	
	comp=Z,11nm,0.2s							
JOF	**Joensuu**	**4.55**	**43**	*e*P		Pn	06 50 18.0	-2.7
JOF				MSG			06 51 30.7	
	comp=Z,5.3nm,0.2s							
HFS	**Hagfors**	**5.44**	**278**	Pn		Pn	06 50 30.4	-2.8
	baz=82,slow=14							
HFS				Sn		Sn	06 51 33.6	-3.8
	baz=106,slow=28							
HFS				Lg			06 51 55.5	
	baz=81,slow=37							
HFS	**Hagfors**	**5.44**	**278**	*e*P		Pn	06 50 30.4	-2.8
HFS				*e*S		Sn	06 51 33.6	-3.8
HFS				*e*SG		Sg	06 51 55.5	-15
HFS	**Hagfors**	**5.44**	**278**	Pn		Pn	06 50 30.8	-2.4
	comp=Z,0.1nm,0.3s,baz=93,slow=11,SNR=24							
HFS				Sn		Sn	06 51 34.1	-3.4
	comp=Z,0.4nm,0.3s,baz=92,slow=25,SNR=16							
HFS				Lg			06 51 56.7	
	comp=Z,0.5nm,0.3s,baz=84,slow=29,SNR=8.1							
NOA	**NORSAR Array B**	**6.70**	**287**	Pn		Pn	06 50 47.3	-3.7
	comp=Z,0.8nm,0.3s,baz=94,slow=14,SNR=7.3							
NOA				Sn		Sn	06 52 01.1	-7.9
	comp=Z,0.7nm,0.3s,baz=130,slow=13,SNR=4.0							
NOA				Lg			06 52 35.8	
	comp=Z,1.0nm,0.3s,baz=96,slow=10.0,SNR=4.9							
APA0	**Apatity Array**	**8.71**	**22**	Pn		P	06 51 14.9	-4.2
	baz=241,slow=10							
APA0	**Apatity Array**	**8.71**	**22**	*e*P		P	06 51 14.9	-4.2
ARA0	**ARCESS Array S**	**9.81**	**2**	Pn		P	06 51 28.7	-5.4
	baz=176,slow=16							
ARA0				Sn		Sn	06 53 16.1	-10
	baz=183,slow=22							
ARA0	**ARCESS Array S**	**9.81**	**2**	*e*P		P	06 51 28.7	-5.4
ARA0				*e*S		Sn	06 53 16.1	-10
ARCES	**ARCESS Array B**	**9.81**	**2**	Pn		P	06 51 28.2	-5.9
	comp=Z,0.6nm,0.3s,baz=177,slow=14,SNR=42							
ARCES				Sn		Sn	06 53 14.8	-12
	comp=Z,0.1nm,0.3s,baz=182,slow=21,SNR=3.0							

NIED ***31*** *06:51:00,34.30N×141.70E,h8km,Mw4.4 Best double couple: M0 4.85×10^15 NP1:φs39°,δ71°,λ107°. NP2:φs177°, δ25°,λ51°.*
IDC ***31*** *06:51:40.0±0.6,34.40N×141.45E,mb4.1/19,mb1 4.2/21, mb1mx4.2/27,ML4.2/2,MS3.4/4,Ms1 3.4/4,ms1mx3.0/28, Error ellipse: s-maj=17.8km s-min=13.5km az=118.0*
JMA ***31*** *06:51:40.6±0.4,34.34N×141.70E,h28km±2km,M3.8*
BJI ***31*** *06:51:40.1,34.41N×141.66E,h31km,mB4.7,mb4.6, Ms4.1,Msz3.8*
NEIC ***31*** *06:51:41.4±0.4,34.42N×141.42E,h10km,mb4.2/4,Error ellipse: s-maj=10.8km s-min=9.3km az=188.0*
MOS ***31*** *06:51:42.3±1.0,34.45N×141.42E,h30km,mb4.3/11,Error ellipse: s-maj=25.0km s-min=11.7km az=94.0*
ISC 31 06:51:42.4±1.2,34.39N±0.04×141.58E±0.06,h31km±7km, n74,σ1$12/76,mb4.3/28,MS3.8/4,3C,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**0.56**	**298**	P		**Pb**	**06 51 53.4**	**-0.5**
BSO2	**Boso 2**	**0.77**	**298**	S		**Sb**	**06 52 09.3**	**+1.8**
BSO3	**Boso 3**	**0.98**	**295**	P		**Pn**	**06 52 00.2**	**+0.1**
BSO3				S		**Sn**	**06 52 13.1**	**+0.2**
BSO4	**Boso 4**	**1.19**	**301**	P		**Pn**	**06 52 03.5**	**+0.4**
KTR	**Katsuura**	**1.29**	**306**	P		**Pn**	**06 52 05.2**	**+0.7**
CHOJ	**Chosi**	**1.44**	**336**	P		**Pn**	**06 52 06.6**	**-0.1**
CHOJ				S		**Sn**	**06 52 24.7**	**0.0**
JHJ2	**Mitsune**	**1.95**	**230**	P		**Pn**	**06 52 14.8**	**+0.9**
JHJ	**Hachijo jima 2**	**1.96**	**230**	P		**Pn**	**06 52 14.9**	**+0.7**
	79nm,0.3s,baz=87,slow=20,SNR=19							
JHJ				Sn		**Sn**	**06 52 40.0**	**+2.1**
	80nm,0.3s,baz=73,slow=24,SNR=5.8							
MAJO	**Matsushiro**	**3.49**	**309**↑	*e*Pn		**Pn**	**06 52 35.7**	**-0.2**
MAT	**Matsushiro**	**3.49**	**309**	P		**Pn**	**06 52 35.8**	**-0.2**
MAT				S		**Sn**	**06 53 18.4**	**+1.6**
CBIJ	**Chichi jima**	**7.29**	**176**	P		**Pn**	**06 53 28.0**	**-1.6**
	14nm,0.3s,baz=87,slow=23,SNR=11							
CBIJ				Sn		**Sn**	**06 54 47.0**	**-5.2**
	11nm,0.3s,baz=257,slow=18,SNR=3.2							
ASAJ	**Asahikawa**	**9.75**	**4**	Pn		**P**	**06 54 01.2**	**-2.4**
	1.8nm,0.3s,baz=184,slow=19,SNR=5.4							
ASAJ				Sn		**Sn**	**06 55 45.1**	**-7.9**
	1.8nm,0.3s,baz=157,slow=31,SNR=7.2							
ASAJ				LR		LR	06 58 57.6	
	comp=Z,800nm,18.4s,baz=169,slow=45							
ASAJ	**Asahikawa**	**9.75**	**4**	P		**P**	**06 54 01.2**	**-2.4**
ASAJ							06 55 45.2	
ASAJ				pmax	pmax			
	comp=Z,2.0nm,0.3s							
ASAJ				smax				
	comp=Z,2.0nm,0.3s							
ASAJ				MLR	MLR			
	comp=Z,800nm,18.4s							
YSS	**Yuzh-Sakhalins**	**12.58**	**4**↑	*e*P		**P**	**06 54 41.3**	**-0.8**
YSS				MLR	MLR			
	comp=N,500nm,15.0s							
YSS				MLR	MLR			
	comp=Z,500nm,15.0s							
YSS	**Yuzh-Sakhalins**	**12.58**	**4**	P		**P**	**06 54 38.7**	**-3.4**
MDJ	**Mudanjiang**	**13.77**	**321**	P		**P**	**06 54 56.3**	**-1.4**
MDJ				AMB	AMB			
	comp=Z,8.0nm,0.7s							
MDJ				AMB	AMB			
	comp=Z,85nm,5.9s							
HIA	**Hailar**	**21.93**	**319**	*e*P		**P**	**06 56 31.0**	**-3.9**
	comp=Z,9.3nm,1.1s,mb4.1							
WHN	**Wuhan**	**23.27**	**268**	*e*P		**P**	**06 56 47.8**	**-0.4**
ENH	**Enshi**	**27.37**	**270**	*e*P		**P**	**06 57 24.7**	**-2.1**
	comp=Z,6.1nm,0.7s,mb4.2							
ULN	**Ulaanbaatar**	**29.02**	**308**	*e*P		**P**	**06 57 40.8**	**-0.8**
	comp=Z,6.3nm,1.0s,mb4.3							
FX1	**Attu Island--F**	**29.05**	**41**	LR		LR	07 06 42.3	
	comp=Z,4.1nm,21.4s,baz=106,slow=31							
SONM	**Songino Array**	**29.45**	**308**	P		**P**	**06 57 45.5**	**+0.1**
	comp=Z,3.9nm,0.7s,mb4.2,baz=106,slow=9.0,SNR=17							
BOD	**Bodaibo**	**29.86**	**330**	*e*P		**P**	**06 57 47.7**	**-1.3**
GTA	**Gaotai**	**33.56**	**291**	*e*P		**P**	**06 58 21.0**	**-0.6**
GTA				AP	pP		06 58 26.0	-4.8
GTA				XP	sP		06 58 29.8	-4.9
GTA				AMB	AMB			
	comp=Z,5.0nm,0.9s,mb4.4							
GTA				LR	LR			
	comp=N,124nm,15.6s,MS3.8							
GTA				LR	LR			
	comp=E,89nm,14.5s,MS3.8							
GTA				LR	LR			
	comp=Z,117nm,15.2s,MS3.7							
CMAR	**Chiang Mai Arr**	**41.03**	**258**	P		**P**	**06 59 22.9**	**-1.6**
	comp=Z,1.4nm,0.5s,mb3.9,baz=46,slow=7.2,SNR=8.1							
CMAR	**Chiang Mai Arr**	**41.03**	**258**	P		**P**	**06 59 23.0**	**-1.6**
CMAR				pmax	pmax			
	comp=Z,1.0nm,0.5s							
WMQ	**Urumqi**	**42.21**	**299**	*e*P		**P**	**06 59 33.0**	**-1.0**
MKAR	**Makanchi Array**	**45.68**	**304**	P		**P**	**07 00 02.0**	**+0.1**
	comp=Z,3.5nm,0.7s,mb4.4,baz=92,slow=9.4,SNR=6.3							
MKAR				LR		LR	07 20 29.4	
	comp=Z,78nm,18.8s,MS3.7,baz=275,slow=38							
MKAR	**Makanchi Array**	**45.68**	**304**	P		**P**	**07 00 02.1**	**+0.2**
MKAR				pmax	pmax			
	comp=Z,4.0nm,0.7s							
MKAR				MLR	MLR			
	comp=Z,78nm,18.8s							
KURK	**Kurchatov**	**47.70**	**310**	*e*P		**P**	**07 00 16.9**	**-1.0**
PKI	**Pulchoki**	**48.12**	**278**	*e*P		**P**	**07 00 20.6**	**-0.9**
	comp=Z,23nm,0.8s,mb5.2							
KKN	**Kakani**	**48.15**	**278**	*e*P		**P**	**07 00 20.9**	**-0.7**
	comp=Z,29nm,0.9s,mb5.3							
DMN	**Daman**	**48.36**	**278**	*e*P		**P**	**07 00 22.5**	**-0.8**
	comp=Z,13nm,0.5s,mb5.2							
GKN	**Gorkha**	**48.59**	**279**	*e*P		**P**	**07 00 24.2**	**-0.9**
	comp=Z,68nm,1.0s							
KOLN	**Koldanda**	**49.53**	**279**	*e*P		**P**	**07 00 31.6**	**-0.7**
	comp=Z,48nm,1.3s							
ILAR	**Eielson Array**	**51.67**	**31**	P		**P**	**07 00 48.2**	**+0.2**
	comp=Z,0.8nm,0.7s,mb3.8,baz=262,slow=6.0,SNR=15							
ILAR	**Eielson Array**	**51.67**	**31**	P		**P**	**07 00 48.3**	**+0.3**
ILAR				pmax	pmax			
	comp=Z,1.0nm,0.7s							
BVAR	**Borovoye Array**	**52.48**	**314**	P		**P**	**07 00 53.3**	**-1.0**
	comp=Z,4.2nm,0.9s,mb4.4,baz=90,slow=8.9,SNR=12							
BVAR				PcP	PcP		07 02 04.2	-0.4
	comp=Z,1.5nm,0.6s,baz=90,slow=3.0,SNR=4.5							
ZRNK	**Zerenda**	**53.31**	**314**	*e*P		**P**	**07 00 60.0**	**-0.6**
ZRNK				*e*			07 01 05.5	
WRA	**Warramunga Arr**	**54.47**	**188**	P		**P**	**07 01 08.7**	**-0.7**
	comp=Z,3.6nm,0.9s,mb4.3,baz=4.7,slow=7.6,SNR=15							
WRA	**Warramunga Arr**	**54.47**	**188**	P		**P**	**07 01 08.7**	**-0.7**
WRA				pmax	pmax			
	comp=Z,4.0nm,0.9s							
INK	**Inuvik**	**56.68**	**26**	P		**P**	**07 01 25.7**	**+0.9**
	comp=Z,1.8nm,0.9s,mb4.1,baz=294,slow=8.6,SNR=4.9							
INK	**Inuvik**	**56.68**	**26**	P		**P**	**07 01 25.7**	**+0.9**
INK				pmax	pmax			
	comp=Z,2.0nm,0.9s							
INK	**Inuvik**	**56.68**	**26**	*e*P		**P**	**07 01 25.3**	**+0.5**
	comp=Z,1.7nm,0.8s,mb4.1							
ASAR	**Alice Springs**	**58.19**	**188**	P		**P**	**07 01 35.3**	**-0.7**
	comp=Z,1.3nm,0.8s,mb4.0,baz=12,slow=9.9,SNR=9.1							
ASAR				LR	LR		07 26 18.3	
	comp=Z,99nm,21.5s,MS3.9,baz=203,slow=36							
ARU	**Arti**	**58.45**	**320**↑	*i*P		**P**	**07 01 36.3**	**-1.0**
ARU				pmax	pmax			
	comp=Z,11nm,0.9s,mb4.9							
YKA	**Yellowknife Ar**	**66.03**	**30**	P		**P**	**07 02 27.9**	**+0.2**
	comp=Z,0.1nm,0.5s,baz=296,slow=5.8,SNR=3.6							
YKA	**Yellowknife Ar**	**66.03**	**30**	P		**P**	**07 02 27.9**	**+0.2**
JOF	**Joensuu**	**68.36**	**332**	*ep*		**P**	**07 02 41.1**	**-1.4**
	comp=Z,1.6nm,0.7s,mb4.2							
JOF	**Joensuu**	**68.36**	**332**	*e*P		**P**	**07 02 41.1**	**-1.4**
JOF				pmax	pmax			
	comp=Z,2.0nm

comp=Z,2.4nm,0.8s,mb4.2,baz=45,slow=2.7,SNR=8.5
FINES FINESS Array B 71.22 333 P **P** **07 02 59.1 -0.9**
FINES pmax pmax
comp=Z,2.0nm,0.8s
KIV Kislovodsk 72.75 312 *eP* **P** **07 03 10.3 +0.9**
KIV *e* 07 03 27.5
KIV *eS* S 07 12 33.2 +1.7
KIV pmax pmax
comp=Z,10.0nm,1.2s,mb4.6
KIV MLR MLR
comp=Z,70nm,19.0s,MS4.0
KIV MLR MLR
comp=N,50nm,20.0s,MS3.9
KIV MLR MLR
comp=E,40nm,19.0s,MS3.9
NVAR Mina Array Bea 76.47 53 P **P** **07 03 33.5 +2.7**
comp=E,0.7nm,0.7s,mb3.7,baz=269,slow=6.8,SNR=5.2
NB2 NORSAR Subarra 76.68 338 P **P** **07 03 31.6 +0.1**
comp=E,3.2nm,0.8s,mb4.3,baz=41,slow=5.6
NOA NORSAR Array B 76.68 338 P **P** **07 03 31.9 +0.4**
comp=E,2.5nm,0.8s,mb4.2,baz=39,slow=5.7,SNR=14
NOA NORSAR Array B 76.68 338 P **P** **07 03 31.9 +0.4**
NOA pmax pmax
comp=Z,3.0nm,0.8s
NOA NORSAR Array B 76.68 338 P **P** **07 03 31.9 +0.4**
FRB Frobisher Bay 79.31 13 P **P** **07 03 47.1 +1.1**
comp=Z,2.6nm,0.7s,mb4.3,baz=330,slow=8.7,SNR=3.5
FRB Frobisher Bay 79.31 13 P **P** **07 03 47.1 +1.1**
FRB pmax pmax
comp=Z,3.0nm,0.7s
PDAR Pinedale Array 79.43 45 P **P** **07 03 49.1 +2.1**
comp=Z,0.3nm,0.8s,mb3.3,baz=333,slow=11,SNR=2.6
BRTR Keskin Array B 80.71 312 P **P** **07 03 55.0 +1.1**
comp=Z,1.8nm,0.7s,mb4.1,baz=80,slow=4.1,SNR=8.5
PV10 Paradox Valley 82.42 48 *eP* **P** **07 04 04.8 +1.9**
PV01 Paradox Valley 82.86 48 *eP* **P** **07 04 07.2 +2.1**
ASF Jabal al Asfar 83.10 304 P **P** **07 04 08.1 +1.6**
comp=Z,1.9nm,0.5s,mb4.4,baz=66,slow=7.1,SNR=3.0
KHC Kasperske Hory 84.87 329 *eP* **P** **07 04 16.0 +1.0**
GERES GERESS Array B 85.03 328 P **P** **07 04 16.7 +0.9**
comp=Z,0.8nm,0.8s,mb3.9,baz=18,slow=4.2,SNR=5.5
GERES GERESS Array B 85.03 328 P **P** **07 04 16.7 +0.9**
GERES pmax pmax
comp=Z,1.0nm,0.8s
TXAR Lajitas Array 91.62 52 P **P** **07 04 49.1 +1.4**
comp=Z,0.3nm,0.7s,mb3.7,baz=281,slow=4.6,SNR=3.2
LPAZ La Paz 147.83 63 PKPbc PKPdf 07 11 28.4 +1.5
comp=Z,1.0nm,0.7s,baz=300,slow=7.8,SNR=4.6
LPAZ La Paz 147.83 63 PKPbc PKPdf 07 11 28.4 +1.5
LVC Limon Verde 150.86 74 PKPbc PKPdf 07 11 35.2 +3.6
comp=Z,1.7nm,0.6s,baz=262,slow=8.7,SNR=3.7

*IDC **31** 06:59:03.7±0.5,8.12N×39.07W,mb4.3/28,mb1 4.4/28, mb1mx4.4/30,MS4.0/20,Ms1 4.0/20,ms1mx3.9/25,Error ellipse: s-maj=15.9km s-min=12.1km az=164.0*
*NEIC **31** 06:59:04.9±0.3,8.07N×39.01W,h10km,mb4.8/51,Error ellipse: s-maj=8.5km s-min=4.4km az=166.0*
*SYO **31** 06:59:04.9,8.07N×39.01W,h10km,MB4.8*
ISC 31 06:59:03.4±0.3,8.16N±0.07×39.00W±0.04,h10km,n130, σ1§02/127,mb4.6/77,MS4.0/20,4C-2D,Central Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
SACV	**Santiago Islan**	**16.52**	**64**	*eP*		**P**	**07 02 52.3**	**-4.7**
BDFB	**Brasilia**	**25.27**	**201**	P		**P**	**07 04 32.1**	**+0.5**
	7.3nm,0.8s,mb4.3,baz=27,slow=11,SNR=21							
BDFB				S		**S**	**07 09 04.2**	**+10**
	1.5nm,0.7s,baz=38,slow=19,SNR=1.9							
BDFB				LR		LR	07 13 26.1	
	comp=Z,270nm,21.4s,MS3.7,baz=25,slow=34							
PCRV	**Puerto La Cruz**	**25.39**	**277**	P		**P**	**07 04 32.1**	**-0.7**
	3.8nm,1.0s,mb3.9,baz=30,slow=7.9,SNR=2.7							
SJG	**San Juan**	**28.19**	**293**	P		**P**	**07 04 57.5**	**-1.0**
	4.5nm,0.3s,mb4.6,baz=334,slow=14,SNR=4.5							
SJG				LR		LR	07 13 40.7	
	comp=Z,376nm,19.2s,MS4.0,baz=101,slow=31							
LIC	**Lamto**	**33.75**	**91**	*eP*		**P**	**07 05 45.7**	**-1.9**
	20nm,0.9s,mb4.7							
DBIC	**Dimbokro**	**33.88**	**90**	P		**P**	**07 05 47.7**	**-1.0**
	9.2nm,0.7s,mb4.8,baz=248,slow=11,SNR=16							
DBIC				LR		LR	07 16 47.3	
	comp=Z,250nm,18.1s,MS4.0,baz=252,slow=31							
DBIC	**Dimbokro**	**33.88**	**90**	P		**P**	**07 05 47.7**	**-1.0**
DBIC				LR		LR	07 16 47.3	
ROSC	**El Rosal**	**35.25**	**267**	P		**P**	**07 06 01.2**	**+0.8**
	22nm,0.9s,mb5.1,baz=135,slow=8.7,SNR=12							
LPAZ	**La Paz**	**37.70**	**230**	P		**P**	**07 06 21.8**	**+0.7**
	10.0nm,0.9s,mb4.5,baz=45,slow=8.4,SNR=21							
LPAZ				LR		LR	07 21 22.5	
	comp=Z,123nm,20.0s,MS3.7,baz=86,slow=36							
LPAZ	**La Paz**	**37.70**	**230**	*eP*		**P**	**07 06 21.8**	**+0.7**
	23nm,1.4s,mb4.7							
CPUP	**Villa Florida**	**38.63**	**207**	LR		LR	07 22 40.2	
	comp=Z,338nm,19.4s,MS4.2,baz=311,slow=37							
OTAV	**Otavalo**	**40.09**	**261**	*eP*		**P**	**07 06 41.8**	**+0.7**
	6.0nm,0.8s,mb4.4							
EVO	**Evora**	**41.14**	**38**	*eP*		**P**	**07 06 49.1**	**-0.4**
	46nm,1.2s,mb4.7							
EVO				*eR*				
	379nm,21.5s							
ESPR	**Espera**	**41.50**	**41**	P		**P**	**07 06 53.4**	**+1.0**
	11nm,1.0s,mb4.4							
EMIN	**Mina Concepcio**	**41.50**	**40**	P		**P**	**07 06 52.2**	**-0.3**
EBAD	**Badajoz**	**41.89**	**38**	P		**P**	**07 06 54.4**	**-1.3**
	8.6nm,0.7s,mb4.5							
LVC	**Limon Verde**	**42.35**	**223**	P		**P**	**07 06 58.1**	**-1.5**
	7.5nm,1.0s,mb4.3,baz=65,slow=6.2,SNR=3.9							
LVC				LR		LR	07 25 02.8	
	comp=Z,158nm,18.8s,MS3.9,baz=13,slow=37							
LVC	**Limon Verde**	**42.35**	**223**	P		**P**	**07 06 58.1**	**-1.5**
LVC				LR		LR	07 25 02.8	
ELOJ	**Sierra Loja**	**42.78**	**42**	P		**P**	**07 07 04.7**	**+1.7**
	2.1nm,0.4s,mb4.2							
ELUQ	**Luque**	**42.94**	**42**	P		**P**	**07 07 06.2**	**+2.0**
ERON	**Agron**	**42.94**	**43**	P		**P**	**07 07 07.1**	**+2.8**
ELOB	**Lobios**	**43.28**	**34**	P		**P**	**07 07 02.9**	**-4.1**
EQES	**Quesada**	**43.86**	**42**	P		**P**	**07 07 11.8**	**0.0**
	14nm,0.7s,mb4.8							
ECAL	**Calabor**	**44.08**	**35**	P		**P**	**07 07 10.8**	**-2.7**
EHUE	**Huescar**	**44.18**	**42**	P		**P**	**07 07 15.7**	**+1.3**
	1.6nm,0.2s,mb4.4							
ESDC	**Sonseca Array**	**44.34**	**39**	P		**P**	**07 07 16.3**	**+0.7**
	1.2nm,0.6s,mb3.8,baz=243,slow=8.8,SNR=8.3							
ESDC				LR		LR	07 22 07.1	
	comp=Z,244nm,20.4s,MS4.1,baz=250,slow=31							
ESDC	**Sonseca Array**	**44.34**	**39**	P		**P**	**07 07 16.0**	**+0.4**
	2.8nm,0.9s,mb4.0							
EVIA	**Vianos**	**44.69**	**41**	P		**P**	**07 07 19.1**	**+0.6**
	14nm,1.0s,mb4.8							
GUD	**Guadarrama**	**44.79**	**38**	P		**P**	**07 07 17.5**	**-1.7**
	3.6nm,0.6s,mb4.4							
ETOB	**Tobarra**	**45.32**	**42**	P		**P**	**07 07 24.5**	**+1.0**
EARI	**Arriondas**	**45.81**	**34**	P		**P**	**07 07 23.1**	**-4.2**
ELAN	**Lanestosa**	**46.78**	**36**	P		**P**	**07 07 31.7**	**-3.3**
EMOS	**Mosqueruela**	**46.94**	**41**	P		**P**	**07 07 36.6**	**+0.3**
	24nm,1.1s,mb5.0							
ETSF	**Etsaut**	**48.29**	**38**	*eP*		**P**	**07 07 47.4**	**+0.6**
	16nm,1.0s,mb4.7							
EGRA	**Graus**	**48.43**	**39**	P		**P**	**07 07 47.0**	**-1.0**
EPOB	**Poblet**	**48.47**	**40**	P		**P**	**07 07 48.2**	**0.0**
	17nm,1.1s,mb5.0							
EPF	**Esparros**	**48.91**	**38**	*eP*		**P**	**07 07 52.4**	**+0.8**
	61nm,1.3s,mb5.2							
ROSF	**Rostrenen**	**50.11**	**31**	*eP*		**P**	**07 08 00.8**	**0.0**
	52nm,1.2s,mb5.1							
EJON	**La Jonquera**	**50.19**	**40**	P		**P**	**07 07 59.7**	**-1.7**
	13nm,0.9s,mb5.0							
LFF	**La Frestale**	**50.22**	**36**	*eP*		**P**	**07 08 01.4**	**-0.2**
MTLF	**Montolieu**	**50.23**	**39**	*eP*		**P**	**07 08 02.0**	**+0.3**
SADO	**Sadowa**	**50.36**	**323**	P		**P**	**07 08 04.0**	**+1.3**
	1.7nm,0.5s,mb4.4,baz=111,slow=12,SNR=3.1							
SWET	**Sewanee**	**50.62**	**309**	*eP*		**P**	**07 08 05.0**	**+0.2**
MFF	**Saint Martin d**	**50.68**	**34**	*eP*		**P**	**07 08 05.5**	**+0.4**
LRAL	**Lakeview Retre**	**50.73**	**306**	*eP*		**P**	**07 08 05.5**	**-0.2**
	12nm,1.0s,mb4.8							
CAF	**Calviac**	**50.99**	**37**	*eP*		**P**	**07 08 07.1**	**-0.4**
	23nm,1.1s,mb4.7							
SCHQ	**Schefferville**	**51.58**	**340**	P		**P**	**07 08 13.1**	**+1.3**
	6.8nm,1.0s,mb4.5,baz=141,slow=7.6,SNR=4.9							
SCHQ				LR		LR	07 25 59.2	
	comp=Z,136nm,20.6s,MS4.0,baz=100,slow=31							
TCF	**Toulx Ste Croi**	**51.83**	**36**	*eP*		**P**	**07 08 13.4**	**-0.4**
	31nm,1.2s,mb4.8							
PLAL	**Pickwick Lake**	**52.20**	**308**	*eP*		**P**	**07 08 16.2**	**-0.6**
	18nm,1.3s,mb4.8							
BGF	**Bois d'Agland**	**52.34**	**36**	*eP*		**P**	**07 08 17.3**	**-0.4**
	32nm,1.0s,mb4.9							
WVT	**Waverly**	**52.39**	**310**	*eP*		**P**	**07 08 17.5**	**-0.7**
	9.8nm,1.0s,mb4.7							
VIVF	**Saint-Julien-l**	**52.53**	**38**	*eP*		**P**	**07 08 19.4**	**+0.3**
	30nm,1.0s,mb4.8							
SSF	**Saint Saulge**	**53.00**	**35**	*eP*		**P**	**07 08 22.8**	**+0.2**
	5.1nm,0.9s,mb4.2							
LOR	**Lormes**	**53.31**	**35**	*eP*		**P**	**07 08 24.2**	**-0.7**
	11nm,0.8s,mb4.5							
LOR				*eR*				
	224nm,23.0s							
MBDF	**Montbardon**	**53.76**	**39**	*eP*		**P**	**07 08 27.0**	**-1.2**
SBF	**Sospel**	**53.78**	**41**	*eP*		**P**	**07 08 28.0**	**-0.4**
	16nm,0.8s,mb4.7							
BNI	**Bardonecchia**	**53.86**	**39**	*eP*		**P**	**07 08 33.4**	**+4.4**
SIUC	**Southern Illin**	**53.97**	**311**	*eP*		**P**	**07 08 29.8**	**0.0**
	28nm,1.0s,mb5.1							
LPG	**La Plagne**	**54.12**	**38**	*eP*		**P**	**07 08 29.9**	**-0.9**
CABF	**La Chapelle**	**54.27**	**37**	*eP*		**P**	**07 08 31.9**	**0.0**
	13nm,1.0s,mb4.5							
MEZF	**Maizieres J'vi**	**54.66**	**35**	*eP*		**P**	**07 08 35.3**	**+0.6**
	19nm,0.9s,mb4.8							
FVM	**French Village**	**54.96**	**311**	*eP*		**P**	**07 08 36.2**	**-0.9**
	6.9nm,0.9s,mb4.7							
BAIF	**Baives**	**55.05**	**33**	*eP*		**P**	**07 08 37.7**	**+0.1**
	1.6nm,1.6s,mb5.0							
HAU	**Haudompre**	**55.13**	**36**	*eP*		**P**	**07 08 37.5**	**-0.7**
	9.1nm,0.7s,mb4.6							
HAU				*eR*				
	130nm,21.8s							
HINF	**Hinteralfeld**	**55.33**	**36**	*eP*		**P**	**07 08 38.9**	**-0.8**
UALR	**University of**	**55.49**	**307**	*eP*		**P**	**07 08 40.2**	**-0.8**
	27nm,1.3s,mb5.1							
MIAR	**Mount Ida**	**56.41**	**306**	*eP*		**P**	**07 08 46.4**	**-1.3**
	20nm,1.4s,mb5.0							
DAVOX	**Davos**	**56.64**	**38**	P		**P**	**07 08 51.0**	**+1.9**
	2.6nm,0.8s,mb4.3,baz=196,slow=18,SNR=3.7							
NATX	**Nacogdoches**	**56.67**	**303**	*eP*		**P**	**07 08 49.0**	**-0.5**
GRA1	**Grafenberg Arr**	**58.77**	**36**	*eP*		**P**	**07 09 02.7**	**-1.3**
	12nm,1.0s,mb4.9							
FRB	**Frobisher Bay**	**59.39**	**345**	P		**P**	**07 09 08.8**	**+0.6**
	5.1nm,0.9s,mb4.5,baz=167,slow=10,SNR=8.7							
GERES	**GERESS Array B**	**59.86**	**37**	P		**P**	**07 09 10.3**	**-1.3**
	0.4nm,0.5s,mb3.7,baz=243,slow=3.0,SNR=4.8							
KHC	**Kasperske Hory**	**59.90**	**37**	*eP*		**P**	**07 09 11.0**	**-0.9**
WMOK	**Wichita Mounta**	**60.64**	**305**	*eP*		**P**	**07 09 15.1**	**-2.0**
	4.1nm,0.7s,mb4.7							
JCT	**Junction City**	**60.79**	**300**	P		**P**	**07 09 19.5**	**+1.3**
	7.9nm,0.8s,mb4.9							
PRU	**Pruhonice**	**60.83**	**36**	*eP*		**P**	**07 09 17.0**	**-1.2**
VRAC	**Vranov**	**61.79**	**38**	P		**P**	**07 09 25.9**	**+1.2**
	2.3nm,0.4s,mb4.6,baz=263,slow=12,SNR=3.1							
TSUM	**Tsumeb**	**62.02**	**117**	P		**P**	**07 09 26.9**	**+0.3**
	7.2nm,0.9s,mb4.8,baz=238,slow=22,SNR=11							
ULM	**Lac du Bonnet**	**62.91**	**323**	P		**P**	**07 09 31.6**	**-0.6**
	8.3nm,0.8s,mb4.9,baz=79,slow=7.3,SNR=3.9							
ULM				LR		LR	07 33 45.8	
	comp=Z,59nm,18.2s,MS3.8,baz=95,slow=33							
TXAR	**Lajitas Array**	**63.99**	**299**	P		**P**	**07 09 38.5**	**-1.1**
	1.0nm,0.7s,mb4.0,baz=102,slow=6.9,SNR=13							
TXAR				LR		LR	07 36 10.1	
	comp=Z,65nm,19.7s,MS3.8,baz=120,slow=35							
IDI	**Anoyia**	**64.06**	**55**	P		**P**	**07 09 40.5**	**+0.6**
	8.0nm,0.9s,mb4.7,baz=270,slow=18,SNR=3.4							
SUMG	**Summit**	**64.36**	**0**	*eP*		**P**	**07 09 43.1**	**+1.7**
NB2	**NORSAR Subarra**	**64.44**	**24**	P		**P**	**07 09 42.0**	**0.0**
	8.1nm,1.2s,mb4.6,baz=237,slow=6.5							
NOA	**NORSAR Array B**	**64.44**	**24**	P		**P**	**07 09 41.7**	**-0.3**
	0.8nm,0.8s,mb3.8,baz=232,slow=6.9,SNR=3.1							
NOA	**NORSAR Array B**	**64.44**	**24**	P		**P**	**07 09 41.7**	**-0.4**
CPRX	**Cap Rock**	**64.56**	**303**	*eP*		**P**	**07 09 42.2**	**-1.1**
GDL2	**Guadalupe Moun**	**64.88**	**302**	*eP*		**P**	**07 09 44.8**	**-0.5**
MNTX	**Cornudas Mount**	**65.69**	**301**	*eP*		**P**	**07 09 49.4**	**-1.2**
	6.1nm,1.0s,mb4.6							
SDCO	**Great Sand Dun**	**66.50**	**308**	*eP*		**P**	**07 09 55.7**	**+0.1**
	6.5nm,0.8s,mb4.7							
ISCO	**Idaho Springs**	**66.89**	**310**	*eP*		**P**	**07 09 58.4**	**+0.3**
	14nm,1.4s,mb4.8							
LAZ	**Ladron**	**67.42**	**304**	*eP*		**P**	**07 10 01.8**	**+0.2**
FFC	**Flin Flon**	**67.93**	**326**	*eP*		**P**	**07 10 06.5**	**+2.1**
	14nm,1.1s,mb4.9							
PV01	**Paradox Valley**	**68.95**	**308**	*eP*		**P**	**07 10 11.6**	**+0.6**
PV10	**Paradox Valley**	**69.34**	**308**	*eP*		**P**	**07 10 14.1**	**+0.6**
PDAR	**Pinedale Array**	**70.25**	**312**	P		**P**	**07 10 18.2**	**-0.7**
	0.6nm,0.9s,mb3.5,baz=85,slow=10.0,SNR=3.2							
PDAR				LR		LR	07 37 40.2	
	comp=Z,118nm,19.6s,MS4.2,baz=112,slow=33							
TUC	**Tucson**	**70.31**	**301**	*eP*		**P**	**07 10 19.3**	**-0.2**
	4.5nm,1.1s,mb4.3							
WUAZ	**Wupatki**	**70.97**	**305**	*eP*		**P**	**07 10 23.6**	**+0.1**
	12nm,0.8s,mb4.9							
FINES	**FINESS Array B**	**71.09**	**27**	P		**P**	**07 10 23.1**	**-0.6**
	1.4nm,0.9s,mb3.9,baz=186,slow=34,SNR=3.3							
FINES				LR		LR	07 36 12.5	
	comp=Z,96nm,20.5s,MS4.0,baz=243,slow=31							
DAU	**Daniels Canyon**	**71.25**	**310**	*eP*		**P**	**07 10 25.9**	**+0.9**
TCUT	**Toone Canyon**	**71.44**	**311**	*eP*		**P**	**07 10 28.7**	**+2.6**
BRTR	**Keskin Array B**	**71.48**	**51**	P		**P**	**07 10 27.0**	**+0.6**
	1.5nm,0.5s,mb4.2,baz=252,slow=5.9,SNR=8.4							
YMR	**Madison River**	**71.49**	**314**	*eP*		**P**	**07 10 27.4**	**+1.0**
HWUT	**Hardware Ranch**	**71.60**	**311**	*eP*		**P**	**07 10 26.4**	**-0.7**
	28nm,1.3s,mb5.0							
MVU	**Marysvale**	**71.84**	**308**	*eP*		**P**	**07 10 29.1**	**+0.6**
	6.0nm,1.3s,mb4.4							
SPUT	**South Promonto**	**72.23**	**311**	*eP*		**P**	**07 10 30.5**	**-0.4**
BGU	**Big Grassy Mou**	**72.64**	**310**	*eP*		**P**	**07 10 33.1**	**-0.3**
MCMT	**McKenzie Canyo**	**72.84**	**314**	*eP*		**P**	**07 10 35.0**	**+0.5**
CHMT	**Chamberlain Mo**	**73.33**	**316**	*eP*		**P**	**07 10 37.2**	**-0.1**
ARCES	**ARCESS Array B**	**73.63**	**19**	P		**P**	**07 10 39.9**	**+1.3**
	1.7nm,0.8s,mb4.1,baz=286,slow=6.6,SNR=5.9							
ARCES				LR		LR	07 37 50.5	
	comp=Z,124nm,18.7s,MS4.2,baz=28,slow=32							
HLID	**Hailey**	**73.86**	**313**	*eP*		**P**	**07 10 40.6**	**+0.2**
	6.9nm,1.3s,mb4.4							
BAR	**Barrett**	**75.29**	**302**	*eP*		**P**	**07 10 48.9**	**0.0**
TPH	**Tonopah**	**75.76**	**307**	*eP*		**P**	**07 10 51.0**	**-0.4**
	13nm,1.3s,mb4.7							
YKA	**Yellowknife Ar**	**76.17**	**332**	P		**P**	**07 10 51.6**	**-1.6**
	1.8nm,0.7s,mb4.1,baz=102,slow=5.7,SNR=31							
YKA				LR		LR	07 39 03.9	
	comp=Z,100nm,21.2s,MS4.1,baz=100,slow=32							
YKW3	**Yellowknife Ar**	**76.18**	**332**	*eP*		**P**	**07 10 56.1**	**+2.8**
KMBO	**Kilima Mbogo**	**76.56**	**93**	P		**P**	**07 10 58.2**	**+1.8**
	2.7nm,1.1s,mb4.1,baz=44,slow=24,SNR=2.1							
KMBO				LR		LR	07 39 02.8	
	comp=Z,83nm,21.3s,MS4.0,baz=278,slow=31							
NVAR	**Mina Array Bea**	**76.61**	**308**	P		**P**	**07 10 56.2**	**0.0**
	2.4nm,1.1s,mb4.0,baz=88,slow=7.0,SNR=5.8							
NVAR				LR		LR	07 40 57.7	
	comp=Z,68nm,20.5s,MS4.0,baz=340,slow=33							
NVAR	**Mina Array Bea**	**76.61**	**308**	P		**P**	**07 10 56.2**	**0.0**
NVAR				LR		LR	07 40 57.7	
WVOR	**Wild Horse Val**	**76.91**	**312**	*eP*		**P**	**07 10 58.3**	**+0.5**
	10.0nm,1.3s,mb4.6							
MOD	**Modoc**	**78.14**	**311**	*eP*		**P**	**07 11 05.6**	**+1.0**
	22nm,1.1s,mb5.0							
VNA1	**Neumayer--Stat**	**81.33**	**170**	⇑*i*		**P**	**07 11 34.4**	**+13**
VNA3	**Neumayer Olymp**	**81.61**	**171**	⇑*i*		**P**	**07 11 26.2**	**+3.6**
VNA2	**Neumayer--Watz**	**81.71**	**170**	⇓*i*		**P**	**07 11 28.7**	**+5.6**
SNAA	**Sanae**	**83.15**	**169**	*eP*		**P**	**07 11 31.5**	**+0.9**
INK	**Inuvik**	**84.16**	**338**	P		**P**	**07 11 35.9**	**+0.1**
	3.4nm,0.8s,mb4.6,baz=55,slow=3.1,SNR=11							
INK				LR		LR	07 42 57.0	
	comp=Z,113nm,20.6s,MS4.2,baz=75,slow=31							
THR	**Tehran**	**85.38**	**55**	LR		LR	07 51 03.9	
	comp=Z,38nm,20.1s,MS3.8,baz=38,slow=36							
ILAR	**Eielson Array**	**90.17**	**336**	P		**P**	**07 12 05.8**	**+0.8**
	0.4nm,0.7s,mb3.8,baz=64,slow=3.3,SNR=6.8							
ILAR				LR		LR	07 47 54.7	
	comp=Z,63nm,18.0s,MS4.1,baz=272,slow=32							
SYO	**Syowa Base**	**93.49**	**159**	⇑P		**P**	**07 12 17.7**	**-2.4**
SYO	**Syowa Base**	**93.49**	**159**	⇓PcP	PcP		07 12 22.2	+1.2
SYO	**Syowa Base**	**93.49**	**159**	⇑*eP*		**P**	**07 12 17.7**	**-2.4**
SYO				*e*PcP	PcP		07 12 22.2	+1.2
BVAR	**Borovoye Array**	**94.94**	**35**	LR		LR	07 55 08.3	
	comp=Z,142nm,19.4s,MS4.5,baz=240,slow=35							

*JMA **31** 07:12:21.6±0.4,34.09N×141.78E,h25km±3km,M3.6*
*IDC **31** 07:12:22.2±0.7,34.23N×141.56E,mb3.7/9,mb1 4.0/10, mb1mx3.8/23,ML3.9/1,Error ellipse: s-maj=25.1km s-min=15.7km az=114.0*
*NEIC **31** 07:12:23.9±0.4,34.15N×141.59E,h10km,mb4.3/1,Error ellipse: s-maj=12.9km s-min=9.9km az=72.0*
ISC 31 07:12:24.4±1.2,34.17N±0.04×141.66E±0.06,h30km±8km, n27,σ1§07/32,mb3.8/11,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
BSO1	**Boso 1**	**0.75**	**311**	P		**Pb**	**07 12 37.7**	**-1.1**
BSO1				S		**Sb**	**07 12 49.6**	**+0.9**
BSO2	**Boso 2**	**0.95**	**308**	S		**Sb**	**07 12 56.3**	**+1.8**
BSO3	**Boso 3**	**1.14**	**304**	P		**Pn**	**07 12 44.3**	**-0.2**
BSO3				S		**Sn**	**07 13 00.0**	**+0.7**
BSO4	**Boso 4**	**1.37**	**307**	P		**Pn**	**07 12 47.8**	**+0.1**
BSO4				S		**Sn**	**07 13 06.0**	**+1.0**
JHJ2	**Mitsune**	**1.86**	**236**	S		**Sn**	**07 13 17.9**	**+0.3**
JHJ	**Hachijo jima 2**	**1.88**	**237**	Pn		**Pn**	**07 12 56.1**	**+1.0**
	19nm,0.3s,baz=78,slow=21,SNR=8.6							
JHJ				Sn		**Sn**	**07 13 18.9**	**+0.9**
	88nm,0.3s,baz=87,slow=23,SNR=9.7							
JIM2	**Oshima 3**	**1.92**	**287**	P		**Pn**	**07 12 54.0**	**-1.7**
KTJJ	**Kamata 2**	**2.27**	**290**	P		**Pn**	**07 12 59.5**	**-1.2**
JOD2	**Odawara 2**	**2.39**	**298**	P		**Pn**	**07 13 00.2**	**-2.1**
MAJO	**Matsushiro**	**3.69**	**311**	*eP*		**Pn**	**07 13 21.1**	**+0.3**
MAT	**Matsushiro**	**3.69**	**311**	P		**Pn**	**07 13 20.0**	**-0.8**
MAT				S		**Sn**	**07 14 01.6**	**-2.2**
CBIJ	**Chichi jima**	**7.07**	**176**	Pn		**Pn**	**07 14 07.8**	**-0.8**
	5.8nm,0.3s,baz=287,slow=19,SNR=3.5							
CBIJ				Sn		**Sn**	**07 15 21.9**	**-6.8**
	3.7nm,0.3s,baz=270,slow=20,SNR=2.5							
SONM	**Songino Array**	**29.63**	**308**	P		**P**	**07 18 28.3**	**-0.9**
	0.6nm,0.7s,mb3.5,baz=105,slow=9.0,SNR=4.5							
MKAR	**Makanchi Array**	**45.86**	**305**	P		**P**	**07 20 45.2**	**-0.3**
	0.5nm,0.4s,mb3.8,baz=86,slow=11,SNR=3.9							
ILAR	**Eielson Array**	**51.82**	**31**	P		**P**	**07 21 31.4**	**0.0**
	0.8nm,0.7s,mb3.8,baz=266,slow=6.4,SNR=11							
AAK	**Ala-Archa**	**52.07**	**300**	*eP*		**P**	**07 21 34.5**	**+0.9**
	13nm,1.3s,mb4.7							
FITZ	**Fitzroy Crossi**	**54.17**	**199**	P		**P**	**07 21 49.8**	**+0.4**
	8.0nm,1.1s,mb4.5,baz=28,slow=10,SNR=3.8							
WRAB	**Tennant Creek**	**54.25**	**188**	P		**P**	**07 21 49.3**	**-0.6**
	1.1nm,0.3s,mb4.3							
WRA	**Warramunga Arr**	**54.26**	**188**	P		**P**	**07 21 49.7**	**-0.3**
	0.7nm,0.4s,mb3.9,baz=4.0,slow=7.5,SNR=21							
ASAR	**Alice Springs**	**57.98**	**188**	P		**P**	**07 22 16.7**	**0.0**
	0.3nm,0.5s,mb3.5,baz=9.8,slow=7.1,SNR=4.3							
YKA	**Yellowknife Ar**	**66.19**	**30**	P		**P**	**07 23 11.2**	**+0.3**
	0.1nm,0.8s,mb2.9,baz=302,slow=6.2,SNR=3.8							
NVAR	**Mina Array Bea**	**76.55**	**53**	P		**P**	**07 24 15.9**	**+2.4**
	0.3nm,0.7s,mb3.4,baz=307,slow=3.9,SNR=3.8							
NB2	**NORSAR Subarra**	**76.91**	**338**	P		**P**	**07 24 14.6**	**-0.4**
	0.9nm,0.7s,mb3.8,baz=40,slow=5.6							
NOA	**NORSAR Array B**	**76.91**	**338**	P		**P**	**07 24 15.3**	**+0.3**
	0.6nm,0.6s,mb3.7,baz=39,slow=5.6,SNR=4.9							
NOA	**NORSAR Array B**	**76.91**	**338**	P		**P**	**07 24 15.3**	**+0.3**
PV10	**Paradox Valley**	**82.52**	**48

0.3nm,0.8s,mb3.3,baz=336,slow=4.9,SNR=6.6
YKA Yellowknife Ar 81.83 11 P P 07 41 53.7 -0.3

*IDC **31** 07:56:52.2±0.9,22.13S×175.78W,mb4.1/9,mb1 4.4/10, mb1mx4.2/17,ML4.2/1,MS3.7/2,Ms1 3.7/2,ms1mx3.2/17, Error ellipse: s-maj=36.1km s-min=21.1km az=156.0*
*NEIC **31** 07:56:53.6±0.6,22.13S×175.82W,h10km,mb4.6/2,Error ellipse: s-maj=30.3km s-min=12.7km az=159.0*
ISC 31 07:56:50.6±0.6,22.9S±0.2×175.6W±0.1,h10km,n20, σ0§64/19,mb4.2/10,MS3.8/1,1C-1D,Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**14.75**	**86**	Pn	**P**		**08 00 07.9**	**-13**
	0.9nm,0.3s,baz=267,slow=9.6,SNR=5.4							
RAR				Sn	S		08 02 31.2	-34
	0.5nm,0.3s,baz=93,slow=17,SNR=2.9							
RAR				LR	LR		08 05 06.5	
	comp=Z,224nm,18.7s,baz=174,slow=33							
CTA	**Charters Tower**	**35.56**	**267**	P	**P**		**08 03 50.9**	**+0.8**
	7.5nm,0.9s,mb4.6,baz=89,slow=12,SNR=7.4							
CTA	**Charters Tower**	**35.56**	**267**	P	**P**		**08 03 50.9**	**+0.8**
CTAO	**Charters Tower**	**35.56**	**267**	*e*P	**P**		**08 03 50.5**	**+0.4**
	2.8nm,0.5s,mb4.5							
ASAR	**Alice Springs**	**46.21**	**259**	P	**P**		**08 05 18.1**	**+0.4**
	1.3nm,1.0s,mb3.8,baz=100,slow=8.1,SNR=6.6							
WB2	**Warramunga Arr**	**46.53**	**264**	*e*P	**P**		**08 05 19.7**	**-0.6**
WRAB	**Tennant Creek**	**46.53**	**264**	*e*P	**P**		**08 05 19.4**	**-0.9**
	7.1nm,0.6s,mb4.8							
WRA	**Warramunga Arr**	**46.54**	**264**	P	**P**		**08 05 20.0**	**-0.4**
	3.5nm,0.8s,mb4.4,baz=95,slow=8.3,SNR=55							
FITZ	**Fitzroy Crossi**	**54.97**	**263**	P	**P**		**08 06 24.3**	**-0.2**
	11nm,1.1s,mb4.8,baz=119,slow=4.4,SNR=3.6							
VNDA	**Vanda**	**55.74**	**186**	P	**P**		**08 06 35.9**	**+6.5**
	0.7nm,0.3s,mb4.2,baz=309,slow=5.6,SNR=13							
VNDA	**Vanda**	**55.74**	**186**	*e*P	**P**		**08 06 35.8**	**+6.4**
	0.4nm,0.4s,mb3.8							
NVAR	**Mina Array Bea**	**81.26**	**42**	P	**P**		**08 09 07.8**	**-0.7**
	0.8nm,0.8s,mb3.7,baz=210,slow=6.8,SNR=5.1							
NVAR				LR	LR		08 37 22.1	
	comp=Z,47nm,21.8s,MS3.8,baz=155,slow=30							
MNV	**Mina**	**81.35**	**42**	*e*P	**P**		**08 09 08.6**	**-0.3**
VNA3	**Neumayer Olymp**	**85.59**	**175**	*i*	**P**		**08 09 29.9**	**+0.1**
VNA2	**Neumayer--Watz**	**86.06**	**176**	*i*	**P**		**08 09 32.2**	**+0.1**
TXAR	**Lajitas Array**	**86.48**	**56**	P	**P**		**08 09 35.5**	**+0.3**
	0.5nm,1.0s,mb3.7,baz=236,slow=4.5,SNR=4.2							
TXAR	**Lajitas Array**	**86.48**	**56**	P	**P**		**08 09 35.5**	**+0.3**
PDAR	**Pinedale Array**	**89.19**	**42**	P	**P**		**08 09 48.0**	**+0.1**
	0.2nm,0.7s,mb3.6,SNR=3.1							
CMAR	**Chiang Mai Arr**	**93.03**	**289**	P	**P**		**08 10 07.8**	**+1.7**
	4.3nm,1.0s,mb4.8,baz=126,slow=3.1,SNR=13							
BRTR	**Keskin Array B**	**150.11**	**311**	PKPbc	PKPdf		08 16 42.2	+2.6
	1.6nm,1.1s,SNR=3.4							
BRTR				PKPab	PKPab		08 16 49.6	-0.2
	2.8nm,1.0s,baz=135,slow=3.5,SNR=4.7							

*THR **31** 08:12:16.7±0.5,36.46N×51.26E,ML3.7*
ISC 31 08:12:14.6±3.6,36.5N±0.2×51.29E±0.09,h7km±23km,n4, σ0§15/6,Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
THKV	**Tehran--Karaj**	**0.65**	**211**	*e*PG	**Pg**		**08 12 27.7**	**0.0**
THKV				*e*SG	**Sg**		**08 12 36.4**	**0.0**
THKV				AMP			08 12 37.7	
	comp=N,4μm,0.4s							
DAMV	**Damavand**	**1.01**	**147**	*e*PG	**Pg**		**08 12 34.9**	**+0.1**
DAMV				*e*SG	**Sg**		**08 12 48.2**	**-0.1**
ASAO	**Ashtian**	**2.18**	**209**	*e*PN	**Pn**		**08 12 52.0**	**+0.1**
SNGE	**Sanandaj**	**3.49**	**248**	*e*PN	**Pn**		**08 13 10.4**	**-0.1**

*NAO **31** 08:16:50.4±1.6,59.70N×24.09E,ML2.4*
*IDC **31** 08:16:51.0±2.3,59.76N×24.24E,mb1 3.1/3, mb1mx2.9/20,ML2.9/3,Error ellipse: s-maj=26.0km s-min=6.5km az=146.0*
*BER **31** 08:16:51.6±6.4,59.68N×24.08E,ML2.4(NAO), Suspected explosion*
HEL 31 08:16:51.0±0.3,59.71N×24.29E,ML1.9,ML2.4(NAO), Explosion,Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
MEF	**Metsahovi**	**0.51**	**6**	*e*P		Pg	08 16 59.6	-1.5
MEF				*e*S		Sg	08 17 06.7	-1.3
VSU	**Vasula**	**1.78**	**134**	*e*P		Pn	08 17 22.0	-1.2
VSU				*e*S		Sn	08 17 45.7	-1.1
VSU	**Vasula**	**1.78**	**134**	Pn		Pn	08 17 22.3	-0.9
VSU				Lg			08 17 48.8	
VJF	**Virojoki**	**1.83**	**62**	*e*P		Pn	08 17 22.8	-1.2
VJF				*e*S		Sn	08 17 47.8	-0.4
FIA0	**FINESS Array S**	**1.95**	**26**	*e*P		Pn	08 17 25.6	0.0
FIA0				*e*S		Sn	08 17 48.4	-2.8
FIA0				*e*SG		Sg	08 17 51.6	-4.3
FIA0				MSG			08 17 54.4	
	comp=Z,8.3nm,0.2s							
FIA0	**FINESS Array S**	**1.95**	**26**	Pn		Pn	08 17 25.9	+0.2
	baz=201,slow=16							
FIA0				Lg			08 17 51.0	
	baz=190,slow=28							
FINES	**FINESS Array B**	**1.95**	**26**	Pg		Pg	08 17 25.6	-4.3
	comp=Z,4.7nm,0.3s,baz=207,slow=14,SNR=176							
FINES				Lg			08 17 51.1	
	comp=Z,4.4nm,0.3s,baz=209,slow=26,SNR=16							
KEF	**Keuruu**	**2.48**	**6**	*e*P		Pn	08 17 33.6	+0.3
KEF				*e*SG		Sg	08 18 07.4	-6.2
KEF				MSG			08 18 08.1	
	comp=Z,4.7nm,0.2s							
SUF	**Sumiainen**	**3.15**	**16**	*e*SB		Sb	08 18 24.8	-2.1
SUF				MSG			08 18 26.4	
	comp=Z,1.6nm,0.2s							
JOF	**Joensuu**	**4.67**	**43**	*e*SG		Sg	08 19 13.5	-13
JOF				MSG			08 19 15.9	
	comp=Z,1.8nm,0.3s							
HFS	**Hagfors**	**5.35**	**279**	*e*P		Pn	08 18 10.6	-3.5
HFS				*e*PB		Pb	08 18 23.2	-2.1
HFS				*e*S		Sn	08 19 10.9	-6.4
HFS				*e*SB		Sb	08 19 29.4	-1.3
HFS	**Hagfors**	**5.35**	**279**	Pn		Pn	08 18 10.3	-3.7
	comp=Z,0.1nm,0.3s,baz=90,slow=13,SNR=9.2							
HFS				Pg		Pg	08 18 23.2	-15
	comp=Z,0.1nm,0.3s,baz=90,slow=18,SNR=7.1							
HFS				Sn		Sn	08 19 11.3	-6.0
	comp=Z,0.1nm,0.3s,baz=103,slow=25,SNR=4.2							
HFS				Lg			08 19 28.7	
	comp=Z,0.3nm,0.3s,baz=95,slow=31,SNR=10							
HFS	**Hagfors**	**5.35**	**279**	Pn		Pn	08 18 10.6	-3.5
	baz=67,slow=12							
HFS				Pg		Pg	08 18 23.2	-15
	baz=86,slow=18							
HFS				Sn		Sn	08 19 10.9	-6.4
	baz=71,slow=22							
HFS				Lg			08 19 29.4	
	baz=89,slow=37							
NOA	**NORSAR Array B**	**6.62**	**287**	Pn		Pn	08 18 24.7	-7.3
	comp=Z,0.2nm,0.3s,baz=90,slow=11,SNR=2.4							
NOA				Sn		Sn	08 19 38.8	-10
	comp=Z,0.2nm,0.3s,baz=118,slow=12,SNR=2.9							
NOA				Lg			08 20 10.9	
	comp=Z,0.7nm,0.3s,baz=74,slow=20,SNR=5.5							
ARA0	**ARCESS Array S**	**9.88**	**2**	Pn		P	08 19 11.8	-5.3
	baz=187,slow=12							
ARA0				Sn		Sn	08 21 03.9	-6.1
	baz=189,slow=22							
ARA0	**ARCESS Array S**	**9.88**	**2**	*e*P		P	08 19 11.8	-5.3
ARA0				*e*			08 21 03.9	
ARCES	**ARCESS Array B**	**9.88**	**2**	Pn		P	08 19 11.5	-5.7
	comp=Z,0.2nm,0.3s,baz=184,slow=12,SNR=13							

*IDC **31** 08:41:15.5±1.2,34.17N×141.68E,mb3.5/5,mb1 3.7/6, mb1mx3.5/22,ML3.6/1,MS2.8/2,Ms1 2.8/2,ms1mx2.4/31, Error ellipse: s-maj=29.9km s-min=19.8km az=111.0*
*NEIC **31** 08:41:17.1±1.0,34.12N×141.74E,h10km,Error ellipse: s-maj=28.8km s-min=16.3km az=63.0*
*JMA **31** 08:41:18.1±0.7,34.16N×141.64E,h21km±3km,M3.5*
ISC 31 08:41:17.5±1.7,34.18N±0.05×141.77E±0.09,h28km±12km, n19,σ0§90/21,mb3.5/5,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**0.81**	**306**	P	**Pb**		**08 41 31.9**	**-1.0**
BSO3	**Boso 3**	**1.21**	**301**	P	**Pn**		**08 41 38.9**	**+0.1**
BSO4	**Boso 4**	**1.43**	**305**	P	**Pn**		**08 41 43.0**	**+1.0**
CHOJ	**Chosi**	**1.70**	**334**	P	**Pn**		**08 41 46.6**	**+0.9**
TATJ	**Tateyama 2**	**1.77**	**299**	P	**Pn**		**08 41 47.5**	**+0.7**
JHJ2	**Mitsune**	**1.94**	**237**	P	**Pn**		**08 41 49.9**	**+0.6**
JHJ	**Hachijo jima 2**	**1.96**	**238**	Pn	**Pn**		**08 41 50.1**	**+0.6**
	34nm,0.3s,baz=50,slow=21,SNR=10.0							
JHJ				Sn		**Sn**	**08 42 12.7**	**-0.8**
	64nm,0.3s,baz=74,slow=22,SNR=9.8							
JIM2	**Oshima 3**	**2.01**	**286**	P	**Pn**		**08 41 49.4**	**-0.8**
JOD2	**Odawara 2**	**2.46**	**297**	P	**Pn**		**08 41 56.0**	**-0.7**
JAG	**Ashikaga**	**2.94**	**321**	P	**Pn**		**08 42 03.7**	**+0.2**
JAG				*e*S		**Sn**	**08 42 37.4**	**-0.8**
MAJO	**Matsushiro**	**3.75**	**310**	*e*Pn	**Pn**		**08 42 16.2**	**+1.2**
MAT	**Matsushiro**	**3.75**	**310**	P	**Pn**		**08 42 16.1**	**+1.1**
MAT				S	**Sn**		**08 42 58.7**	**0.0**
JNU	**Nakatsue**	**9.14**	**266**	LR	LR		08 46 17.6	
	comp=Z,52nm,20.4s,baz=224,slow=33							
ASAJ	**Asahikawa**	**9.95**	**3**	Pn	**P**		**08 43 39.4**	**-2.4**
	0.6nm,0.3s,baz=177,slow=15,SNR=3.7							
ASAJ				LR	LR		08 48 08.2	
	comp=Z,55nm,20.7s,baz=37,slow=41							
SONM	**Songino Array**	**29.70**	**308**	P	**P**		**08 47 22.2**	**-0.9**
	0.5nm,0.8s,mb3.3,baz=102,slow=7.8,SNR=3.3							
MKAR	**Makanchi Array**	**45.93**	**305**	P	**P**		**08 49 39.5**	**+0.1**
	0.5nm,0.6s,mb3.7,baz=100,slow=8.8,SNR=3.6							
ILAR	**Eielson Array**	**51.77**	**31**	P	**P**		**08 50 25.1**	**+0.7**
	0.4nm,0.8s,mb3.4,baz=280,slow=5.5,SNR=5.1							
WRA	**Warramunga Arr**	**54.28**	**189**	P	**P**		**08 50 42.1**	**-1.5**
	0.6nm,0.6s,mb3.7,baz=6.7,slow=7.6,SNR=8.7							
ASAR	**Alice Springs**	**58.01**	**189**	P	**P**		**08 51 10.9**	**+0.7**
	0.4nm,0.8s,mb3.5,baz=7.1,slow=7.3,SNR=3.2							

IDC 31 08:41:48.7±8.1,20.35S×67.55W,h264km±54km,mb2.8/2, mb1 3.1/4,mb1mx3.0/15,Error ellipse: s-maj=110.0km s-min=23.1km az=25.0,Southern Bolivia

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
LPAZ	**La Paz**	**4.08**	**352**	P	P		08 42 55.3	+0.7
	0.4nm,0.3s,baz=198,slow=6.5,SNR=12							
LPAZ				S	S		08 43 47.7	+1.8
	0.3nm,0.3s,baz=201,slow=13,SNR=5.8							
BDFB	**Brasilia**	**19.16**	**79**	P	P		08 45 52.9	-1.4
	0.3nm,0.3s,baz=250,slow=9.6,SNR=4.0							
TXAR	**Lajitas Array**	**60.44**	**324**	P	P		08 51 30.4	-2.4
	0.1nm,0.6s,baz=126,slow=7.8,SNR=2.3							
YKA	**Yellowknife Ar**	**90.54**	**340**	P	P		08 54 21.2	-0.2
	1.0nm,1.2s,baz=137,slow=4.6,SNR=6.1							

*JMA **31** 08:44:31.7±0.5,34.20N×141.53E,h42km±2km,M3.2*
*IDC **31** 08:44:33.5±2.8,33.32N×141.13E,h49km±26km,mb3.3/4, mb1 3.5/5,mb1mx3.3/21,ML3.4/1,Error ellipse: s-maj=36.7km s-min=23.1km az=77.0*
ISC 31 08:44:23.6±1.3,33.67N±0.09×141.7E±0.2,h10km,n13, σ0§98/14,mb3.5/4,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**1.14**	**329**	P	**Pb**		**08 44 44.4**	**-0.6**
JHJ2	**Mitsune**	**1.67**	**251**	P	**Pn**		**08 45 01.4**	**+8.3**
JHJ	**Hachijo jima 2**	**1.69**	**251**	P	**Pn**		**08 44 52.6**	**-0.8**
	20nm,0.3s,baz=52,slow=19,SNR=7.9							
BSO4	**Boso 4**	**1.73**	**320**	P	**Pn**		**08 44 53.7**	**-0.3**
JIM2	**Oshima 3**	**2.15**	**300**	P	**Pn**		**08 45 00.7**	**+0.7**
JOD2	**Odawara 2**	**2.67**	**307**	P	**Pn**		**08 45 07.8**	**+0.3**
JAG	**Ashikaga**	**3.30**	**327**	P	**Pn**		**08 45 15.5**	**-1.0**
MAT	**Matsushiro**	**4.04**	**316**	P	**Pn**		**08 45 27.6**	**+0.6**
MAT				*e*S	**Sn**		**08 46 08.0**	**-7.0**
CBIJ	**Chichi jima**	**6.57**	**176**	P	**Pn**		**08 46 03.2**	**+0.5**
	2.4nm,0.3s,baz=98,slow=23,SNR=5.2							
MKAR	**Makanchi Array**	**46.16**	**305**	P	**P**		**08 52 51.7**	**+1.7**
	0.6nm,0.7s,mb3.7,baz=87,slow=8.4,SNR=4.6							
ILAR	**Eielson Array**	**52.23**	**31**	P	**P**		**08 53 43.2**	**+6.6**
	0.2nm,0.7s,mb3.2,baz=277,slow=7.3,SNR=4.8							
WRA	**Warramunga Arr**	**53.77**	**189**	P	**P**		**08 53 46.2**	**-2.4**
	1.3nm,1.2s,mb3.7,baz=5.1,slow=7.6,SNR=4.5							
ASAR	**Alice Springs**	**57.50**	**188**	P	**P**		**08 54 16.1**	**+0.6**
	0.6nm,1.0s,mb3.6,baz=14,slow=7.4,SNR=2.6							

*HEL **31** 08:59:57.7±0.7,64.68N×30.72E,ML1.7,Explosion*
*IDC **31** 08:59:58.5±2.1,64.63N×30.91E,mb1 2.8/4, mb1mx2.7/21,ML2.6/4,Error ellipse: s-maj=26.5km s-min=8.0km az=102.0*
ISC 31 08:59:55.3±1.0,64.75N±0.05×30.7E±0.2,n9,σ1§13/14, Finland-Karelia border region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
KJN	**Kajaani**	**1.44**	**244**	*e*P		**Pn**	**09 00 23.0**	**+0.3**
KJN				*e*S		**Sb**	**09 00 41.7**	**+0.1**
JOF	**Joensuu**	**1.86**	**171**	*e*P		**Pn**	**09 00 28.8**	**+0.2**
JOF				*e*S		**Sn**	**09 00 52.5**	**-0.7**
SUF	**Sumiainen**	**2.86**	**227**	*e*P		**Pn**	**09 00 44.7**	**+1.7**
SUF				MSG			09 01 27.0	
	comp=Z,1.8nm,0.2s							
KEF	**Keuruu**	**3.67**	**228**	*e*P		**Pn**	**09 00 55.9**	**+1.5**
KEF				MSG			09 01 52.4	
	comp=Z,1.3nm,0.2s							
FIA0	**FINESS Array S**	**3.91**	**214**	*e*P		**Pn**	**09 00 58.4**	**+0.5**
FINES	**FINESS Array B**	**3.91**	**214**	Pn		**Pn**	**09 00 57.8**	**-0.2**
	comp=Z,0.1nm,0.3s,baz=36,slow=12,SNR=4.5							
FINES				Pg		**Pg**	**09 01 07.4**	**-6.0**
	comp=Z,0.3nm,0.3s,baz=32,slow=16,SNR=6.9							
FINES				Lg			09 01 57.8	
	comp=Z,1.1nm,0.3s,baz=39,slow=29,SNR=10							
ARCES	**ARCESS Array B**	**5.21**	**340**	Pn		**Pn**	**09 01 16.5**	**+0.1**
	comp=Z,0.2nm,0.3s,baz=156,slow=14,SNR=12							
ARCES				Sn		**Sn**	**09 02 18.3**	**+0.2**
	comp=Z,0.2nm,0.3s,baz=157,slow=23,SNR=3.2							
ARCES				Lg			09 02 44.5	
	comp=Z,0.4nm,0.3s,baz=153,slow=32,SNR=5.7							
HFS	**Hagfors**	**9.11**	**247**	Pn	**P**		**09 02 09.1**	**-1.9**
	comp=Z,0.0nm,0.3s,baz=45,slow=13,SNR=6.4							
HFS				Sn		**Sn**	**09 03 46.5**	**-8.9**
	comp=Z,0.0nm,0.3s,baz=68,slow=23,SNR=2.6							
HFS				Lg			09 04 39.7	
	comp=Z,0.0nm,0.3s,baz=66,slow=25,SNR=3.2							
NOA	**NORSAR Array B**	**9.60**	**256**	Pn	**P**		**09 02 15.0**	**-2.7**
	comp=Z,0.1nm,0.3s,baz=29,slow=19,SNR=2.2							
NOA				Lg			09 04 54.3	
	comp=Z,0.1nm,0.3s,baz=62,slow=24,SNR=2.6							

*HEL **31** 09:11:00.8±0.3,59.70N×24.16E,ML1.8,ML2.3(UPP), ML2.2(NAO),Explosion*
*NAO **31** 09:11:00.6±1.7,59.72N×24.06E,ML2.2*
*BER **31** 09:11:02.2±3.6,59.73N×24.12E,ML2.2(NAO), Suspected explosion*
ISC 31 09:10:58.4±0.7,59.80N±0.04×24.05E±0.08,n13,σ1§12/25, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
MEF	**Metsahovi**	**0.45**	**23**	*e*P		**Pg**	**09 11 10.2**	**+2.9**
MEF				*e*S		**Sg**	**09 11 17.1**	**+3.7**
VJF	**Virojoki**	**1.90**	**66**	*e*P		**Pn**	**09 11 33.3**	**+0.9**
VJF				*e*S		**Sn**	**09 11 58.7**	**+1.3**
FIA0	**FINESS Array S**	**1.93**	**30**	Pn		**Pn**	**09 11 36.0**	**+3.2**
	baz=200,slow=16							
FIA0				Lg			09 12 01.7	
	baz=211,slow=28							
FIA0	**FINESS Array S**	**1.93**	**30**	*e*P		**Pn**	**09 11 36.1**	**+3.4**
FIA0				*e*S		**Sn**	**09 11 57.0**	**-1.1**
FIA0				*e*SG		**Sg**	**09 12 01.9**	**-0.6**
FIA0				MSG			09 12 06.8	
	comp=Z,4.6nm,0.2s							
VSU	**Vasula**	**1.93**	**133**	*e*P		**Pn**	**09 11 32.9**	**0.0**
VSU				*e*S		**Sn**	**09 11 56.9**	**-1.3**
VSU	**Vasula**	**1.93**	**133**	Pn		**Pn**	**09 11 32.8**	**0.0**
VSU				Lg			09 11 59.5	
KEF	**Keuruu**	**2.41**	**9**	*e*P		**Pn**	**09 11 44.5**	**+4.9**
KEF				*e*SG		**Sg**	**09 12 17.9**	**-0.6**
KEF				MSG			09 12 19.4	
	comp=Z,4.4nm,0.2s							
KJN	**Kajaani**	**4.63**	**20**	*e*SG		**Sg**	**09 13 24.8**	**-7.8**
JOF	**Joensuu**	**4.69**	**45**	*e*P		**Pn**	**09 12 11.7**	**-0.4**
JOF				*e*SG		**Sg**	**09 13 23.2**	**-11**
JOF				MSG			09 13 25.9	
	comp=Z,1.3nm,0.3s							
HFS	**Hagfors**	**5.21**	**278**	Pn		**Pn**	**09 12 20.5**	**+0.9**
	baz=78,slow=14							
HFS				Sn		**Sn**	**09 13 20.9**	**-0.4**
	baz=99,slow=37							
HFS				Lg			09 13 41.3	
	baz=90,slow=28							
HFS	**Hagfors**	**5.21**	**278**	*e*P		**Pn**	**09 12 20.5**	**+0.9**
HFS				*e*S		**Sn**	**09 13 20.9**	**-0.4**
HFS				*e*SG		**Sg**	**09 13 41.3**	**-11**
ARA0	**ARCESS Array S**	**9.79**	**3**	Pn		**P**	**09 13 22.4**	**-1.0**
	baz=184,slow=12							
ARA0				Sn		**Sn**	**09 15 10.2**	**-5.1**
	baz=186,slow=28							
ARA0	**ARCESS Array S**	**9.79**	**3**	*e*P		**P**	**09 13 22.4**	**-1.0**
ARA0				*e*S		**Sn**	**09 15 10.2**	**-5.1**

*IDC **31** 09:23:21.7±6.3,4.76S×152.89E,h63km±52km,mb3.8/8, mb1 4.0/9,mb1mx3.9/14,ML2.9/1,MS3.3/2,Ms1 3.3/2, ms1mx3.1/16,Error ellipse: s-maj=36.4km s-min=24.7km az=84.0*
*NEIC **31** 09:23:22.9±0.6,4.79S×152.89E,h75km,mb4.2/3,Error ellipse: s-maj=19.6km s-min=12.0km az=128.0*
ISC 31 09:23:21.3±4.3,4.7S±0.1×152.8E±0.2,h70km±34km,n20, σ1§02/18,mb4.2/11,1C,New Britain region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**7.28**	**230**	P	**P**		**09 25 07.9**	**+0.9**
	1.2nm,0.3s,baz=212,slow=17,SNR=4.5							
PMG				S	**S**		**09 26 27.9**	**-0.9**
	4.2nm,0.3s,baz=133,slow=20,SNR=6.6							
KAKA	**Kakadu**	**21.66**	**247**	*e*P	**P**		**09 28 07.3**	**-0.3**
	33nm,1.3s,mb4.5							
WRAB	**Tennant Creek**	**23.48**	**228**	*e*P	**P**		**09 28 26.5**	**+1.0**
	27nm,0.6s,mb4.8							
WB2	**Warramunga Arr**	**23.48**	**228**	*e*P	**P**		**09 28 26.1**	**+0.6**
WRA	**Warramunga Arr**	**23.49**	**228**	P	**P**		**09 28 26.8**	**+1.2**
	8.7nm,0.4s,mb4.4,baz=54,slow=10.0,SNR=132							
AS12	**Alice Springs**	**26.20**	**222**	*e*P	**P**		**09 28 51.3**	**-0.1**
	6.4nm,1.2s,mb3.9							
ASAR	**Alice Springs**	**26.20**	**222**	P	**P**		**09 28 51.0**	**-0.4**
	0.7nm,0.5s,mb3.4,baz=54,slow=9.0,SNR=16							
ASAR				LR	LR		09 37 56.0	
	comp=Z,100nm,18.1s,baz=20,slow=33							
STKA	**Stephens Creek**	**28.97**	**200**	P	**P**		**09 29 13.6**	**-2.8**
	5.1nm,1.2s,mb4.0,baz=353,slow=17,SNR=3.1							
STKA	**Stephens Creek**	**28.97**	**200**	P	**P**		**09 29 13.6**	**-2.9**
FITZ	**Fitzroy Crossi**	**29.70**	**241**	*i*P	**P**		**09 29 21.7**	**-1.3**
	9.3nm,1.5s,mb4.2							
FITZ	**Fitzroy Crossi**	**29.70**	**241**	P	**P**		**09 29 21.7**	**-1.3**
	2.2nm,0.3s,mb4.2,baz=47,slow=10,SNR=55							
FITZ				LR	LR		09 40 51.9	
	comp=Z,39nm,21.2s,baz=156,slow=35							
CMAR	**Chiang Mai Arr**	**57.87**	**295**	P	**P**		**09 33 09.2**	**+0.7**
	1.8nm,1.0s,mb4.0,baz=118,slow=6.6,SNR=5.6							
SONM	**Songino Array**	**66.28**	**328**	pP	pP		09 34 26.6	+3.5
	0.3nm,0.5s,baz=143,slow=5.9,SNR=3.8							
VNDA	**Vanda**	**72.88**	**178**	P	**P**		**09 34 44.5**	**+0.4**
	1.0nm,0.5s,mb3.9,baz=341,slow=6.2,SNR=12							
VNDA	**Vanda**	**72.88**	**178**	*e*P	**P**		**09 34 44.1**	**+0.1**
	0.7nm,0.6s,mb3.7							
MKAR	**Makanchi Array**	**80.29**	**319**	P	**P**		**09 35 26.4**	**+0.2**
	0.9nm,0.9s,mb3.6,baz=111,slow=12,SNR=3.6							
ILAR	**Eielson Array**	**82.10**	**22**	P	**P**		**09 35 33.8**	**-1.6**
	0.6nm,0.9s,mb3.4,baz=244,slow=5.4,SNR=6.2							
QSPA	**South Pole Qui**	**85.22**	**180**	*e*P	**P**		**09 35 51.6**	**+1.0**
	14nm,0.4s,mb5.3							
GERES	**GERESS Array B**	**124.01**	**329**	PKP	PKPdf		09 42 12.9	+1.1
	0.3nm,0.6s,baz=45,slow=1.9,SNR=3.9							
BDFB	**Brasilia**	**151.10**	**135**	PKPbc	PKPdf		09 43 09.1	+7.8
	3.9nm,0.6s,baz=206,slow=5.5,SNR=8.8							

*NAO **31** 09:25:06.2±1.3,59.76N×24.47E,ML2.9*
*HEL **31** 09:25:07.2±0.2,59.79N×24.60E,ML2.4,ML2.5(UPP), ML2.9(NAO),Explosion*
*BER **31** 09:25:07.4±3.9,59.78N×24.57E,ML2.9(NAO), Suspected explosion*
*IDC **31** 09:25:08.6±2.1,59.96N×24.27E,mb1 3.7/4, mb1mx3.3/21,ML3.6/4,Error ellipse: s-maj=23.0km s-min=5.7km az=148.0*
ISC 31 09:25:03.5±0.6,59.77N±0.04×24.38E±0.08,n21,σ1§64/36, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
MEF	**Metsahovi**	**0.45**	**1**	*e*P		**Pg**	**09 25 14.4**	**+1.9**
MEF				*e*S		**Sg**	**09 25 19.7**	**+1.2**
VJF	**Virojoki**	**1.77**	**63**	*e*P		**Pn**	**09 25 36.2**	**+0.7**
VJF				*e*S		**Sn**	**09 25 58.3**	**-0.7**
VSU	**Vasula**	**1.79**	**136**	*e*P		**

mb1mx4.1/17,MS3.6/8,Ms1 3.6/8,ms1mx3.3/28,Error ellipse: s-maj=41.3km s-min=19.8km az=52.0
*NEIC **31** 09:40:26.5±0.6,5.11N×99.44W,h10km,mb4.0/14,Error ellipse: s-maj=20.9km s-min=8.3km az=50.0*

ISC 31 09:40:25.6±1.6,5.2N±0.2×99.4W±0.2,h10km,n37, σ0°90/28,mb3.9/20,MS3.7/8,Eastcentral Pacific Ocean

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OTAV	**Otavalo**	**21.48**	**103**	*e*P	**P**	**09 45 15.5**	**-1.2**
	17nm,0.9s,mb4.4						
TXAR	**Lajitas Array**	**24.33**	**351**	P	**P**	**09 45 45.4**	**+0.6**
	2.4nm,0.9s,mb3.6,baz=166,slow=10,SNR=24						
TXAR				LR	LR	09 54 23.8	
	comp=Z,80nm,18.9s,MS3.2,baz=185,slow=34						
ROSC	**El Rosal**	**24.96**	**90**	P	**P**	**09 45 52.9**	**+1.9**
	2.6nm,0.4s,mb4.1,baz=191,slow=22,SNR=2.6						
JCT	**Junction City**	**25.14**	**359**	*e*P	**P**	**09 45 52.1**	**-0.5**
	6.9nm,0.8s,mb4.2						
MNTX	**Cornudas Mount**	**26.94**	**349**	*e*P	**P**	**09 46 08.4**	**-0.9**
	1.2nm,0.7s,mb3.5						
TUC	**Tucson**	**28.99**	**340**	*e*P	**P**	**09 46 28.0**	**+0.2**
	3.2nm,0.9s,mb4.0						
ANMO	**Albuquerque**	**30.31**	**348**	*e*P	**P**	**09 46 39.0**	**-0.6**
	1.0nm,0.7s,mb3.6						
WUAZ	**Wupatki**	**32.12**	**341**	*e*P	**P**	**09 46 55.7**	**+0.2**
	3.4nm,0.8s,mb4.2						
SDCO	**Great Sand Dun**	**32.86**	**351**	*e*P	**P**	**09 47 01.5**	**-0.4**
	1.3nm,0.8s,mb3.9						
NEN	**Nelson**	**33.47**	**337**	*e*P	**P**	**09 47 07.7**	**+0.5**
PV01	**Paradox Valley**	**33.82**	**347**	*e*P	**P**	**09 47 10.6**	**+0.3**
PV10	**Paradox Valley**	**34.16**	**346**	*e*P	**P**	**09 47 11.4**	**-1.8**
ISCO	**Idaho Springs**	**34.89**	**352**	*e*P	**P**	**09 47 19.5**	**0.0**
	2.6nm,0.8s,mb4.2						
NLU	**North Lily Min**	**36.43**	**343**	*e*P	**P**	**09 47 33.1**	**+0.6**
CTU	**Camp Tracy**	**37.03**	**344**	*e*P	**P**	**09 47 37.9**	**+0.3**
NVAR	**Mina Array Bea**	**37.27**	**335**	P	**P**	**09 47 40.4**	**+0.8**
	1.0nm,0.8s,mb3.7,baz=144,slow=8.0,SNR=11						
LPAZ	**La Paz**	**37.58**	**125**	P	**P**	**09 47 42.6**	**+0.3**
	1.1nm,0.7s,mb3.7,baz=324,slow=9.0,SNR=5.6						
LPAZ	**La Paz**	**37.58**	**125**	*e*P	**P**	**09 47 42.5**	**+0.1**
	1.8nm,1.0s,mb3.8						
HWUT	**Hardware Ranch**	**37.84**	**345**	*e*P	**P**	**09 47 44.7**	**+0.4**
	1.3nm,0.6s,mb3.8						
BW06	**Boulder Array**	**38.47**	**348**	*e*P	**P**	**09 47 49.5**	**-0.1**
	1.9nm,0.5s,mb4.1						
PDAR	**Pinedale Array**	**38.47**	**348**	P	**P**	**09 47 49.6**	**0.0**
	3.1nm,0.9s,mb4.0,baz=146,slow=8.2,SNR=20						
HLID	**Hailey**	**40.43**	**343**	P	**P**	**09 48 06.5**	**+0.7**
	1.1nm,0.7s,mb3.7						
WVOR	**Wild Horse Val**	**40.82**	**338**	*e*P	**P**	**09 48 09.8**	**+0.7**
	5.0nm,1.2s,mb4.0						
QLMT	**Earthquake Lak**	**40.85**	**347**	P	**P**	**09 48 10.3**	**+1.1**
BOZ	**Bozeman (W)**	**41.67**	**347**	*e*P	**P**	**09 48 16.0**	**0.0**
	1.7nm,0.7s,mb3.8						
ULM	**Lac du Bonnet**	**44.98**	**3**	LR	LR	10 09 15.1	
	comp=Z,55nm,21.5s,MS3.5,baz=30,slow=38						
DLBC	**Dease Lake**	**58.17**	**342**	LR	LR	10 14 15.9	
	comp=Z,70nm,18.1s,MS3.8,baz=337,slow=35						
YKA	**Yellowknife Ar**	**58.26**	**352**	P	**P**	**09 50 19.5**	**-3.0**
	0.6nm,0.8s,mb3.7,baz=162,slow=6.9,SNR=12						
YKA				PcP	PcP	09 51 11.9	-1.7
	0.3nm,0.8s,baz=157,slow=3.1,SNR=5.3						
YKA	**Yellowknife Ar**	**58.26**	**352**	P	**P**	**09 50 19.6**	**-3.0**
YKA				PcP	PcP	09 51 11.9	-1.7
ILAR	**Eielson Array**	**68.29**	**340**	P	**P**	**09 51 26.9**	**-1.9**
	2.4nm,1.0s,mb4.2,baz=149,slow=4.6,SNR=24						
ILAR				LR	LR	10 22 52.7	
	comp=Z,47nm,18.3s,MS3.8,baz=50,slow=37						
BORG	**Borgarnes**	**80.22**	**25**	LR	LR	10 26 01.6	
	comp=Z,63nm,19.6s,MS4.0,baz=10,slow=34						
JMIC	**Jan Mayen**	**85.39**	**19**	LR	LR	10 30 50.2	
	comp=Z,31nm,21.4s,MS3.7,baz=164,slow=35						
NOA	**NORSAR Array B**	**95.26**	**27**	LR	LR	10 32 19.0	
	comp=Z,33nm,21.1s,MS3.8,baz=125,slow=33						
ARCES	**ARCESS Array B**	**96.65**	**17**	LR	LR	10 34 58.5	
	comp=Z,30nm,20.9s,MS3.7,baz=15,slow=34						
ASAR	**Alice Springs**	**125.58**	**245**	PKP	PKPdf	09 59 28.9	-2.4
	0.7nm,0.7s,baz=75,slow=1.7,SNR=5.9						
WRA	**Warramunga Arr**	**125.80**	**249**	PKP	PKPdf	09 59 29.3	-2.5
	0.4nm,0.9s,baz=86,slow=2.2,SNR=6.8						
CMAR	**Chiang Mai Arr**	**150.34**	**323**	PKPbc	PKPdf	10 00 18.7	+2.7
	1.5nm,0.8s,baz=352,slow=4.1,SNR=6.4						

SKHL 31 09:47:28.1±0.3,53.06N×128.91E,h7km±3km,mb4.0/5,2D, Southeastern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZEA	**Zeya**	**1.20**	**305**	∥*e*Pg	Pg	09 47 50.5	-1.7
ZEA				AMB	AMB	09 47 51.5	
	74nm,0.2s						
ZEA				pPg		09 47 52.1	
ZEA				*e*Sg	Sg	09 48 06.3	-1.9
ZEA				A		09 48 08.5	
	270nm,0.3s						
ZEA				A		09 48 08.5	
	310nm,0.3s						
BMKR	**Bomnak**	**1.66**	**359**	∥*i*Pg	Pg	09 47 57.7	-3.5
BMKR				AMB	AMB	09 47 59.0	
	122nm,0.4s						
BMKR				AMB	AMB	09 47 59.0	
	35nm,0.4s						
BMKR				AMB	AMB	09 47 59.0	
	112nm,0.4s						
BMKR				sPg		09 48 03.5	
BMKR				*i* Sg	Sg	09 48 19.7	-3.5
BMKR				A		09 48 23.9	
	360nm,0.5s						
BMKR				A		09 48 23.9	
	180nm,0.5s						
KROS	**Kirovskiy**	**1.79**	**321**	*e*Pg	Pg	09 48 00.5	-3.4
KROS				AMB	AMB	09 48 02.0	
	52nm,0.5s						
KROS				AMB	AMB	09 48 02.0	
	39nm,0.5s						
KROS				AMB	AMB	09 48 02.0	
	62nm,0.5s						
KROS				*i* Sg	Sg	09 48 24.5	-3.4
KROS				A		09 48 26.4	
	110nm,0.5s						
KROS				A		09 48 26.4	
	240nm,0.5s						
EKMR	**Ekimchan**	**2.44**	**88**	*e*Pn	Pn	09 48 07.5	-1.5
EKMR				*e*Pg	Pg	09 48 12.0	-4.8
EKMR				AMB	AMB	09 48 14.4	
	8.0nm,0.3s						
EKMR				AMB	AMB	09 48 14.4	
	12nm,0.3s						
EKMR				AMB	AMB	09 48 14.4	
	11nm,0.3s						
EKMR				*e*Sn	Sn	09 48 38.8	-0.6
EKMR				*e*Sg	Sg	09 48 44.3	-5.0
EKMR				A		09 48 47.0	
	170nm,0.6s						
EKMR				A		09 48 47.0	
	80nm,0.6s						
KLR	**Kul'dur**	**4.23**	**154**	*e*Pg	Pg	09 48 44.8	-7.8
KLR				*e*Sg	Sg	09 49 40.8	-8.2
GRNR	**Gornyy**	**5.18**	**113**	*e*Sg	Sg	09 50 10.0	-11
TUP	**Tupik**	**5.49**	**288**	*e*Pn	Pn	09 48 51.0	-1.3
TUP				*e*Pg	Pg	09 49 07.7	-10
TUP				AMB	AMB	09 49 10.6	
	4.0nm,0.4s						
TUP				*e*Sg	Sg	09 50 19.8	-11
TUP				A		09 50 30.3	
	38nm,1.3s						
CRS	**Chara**	**7.23**	**306**	*e*Sg	Sg	09 51 14.3	-14
CRS				A		09 51 23.3	
	33nm,2.3s						

*HEL **31** 10:01:57.3±0.3,61.75N×30.77E,ML2.1,ML2.1(UPP), ML2.3(NAO),Explosion*
*NAO **31** 10:02:00.7±2.8,62.00N×30.22E,ML2.3*
*BER **31** 10:02:00.1±4.1,61.84N×30.50E,ML2.3(NAO), Suspected explosion*
*IDC **31** 10:02:01.2±2.3,61.88N×30.27E,mb1 3.0/3, mb1mx2.8/20,ML2.7/3,Error ellipse: s-maj=23.1km s-min=8.9km az=135.0*

ISC 31 10:01:58.0±0.8,62.09N±0.05×29.9E±0.1,n16,σ0°71/29, Finland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOF	**Joensuu**	**1.08**	**39**	*e*P	**Pb**	**10 02 18.6**	**-0.6**
JOF				*e*S	**Sb**	**10 02 34.0**	**+0.3**
SUF	**Sumiainen**	**1.83**	**292**	*e*P	**Pn**	**10 02 38.6**	**+7.5**
SUF				*e*Sg	**Sg**	**10 03 09.7**	**+11**
SUF				MSG		10 03 13.6	
	comp=Z,9.2nm,0.2s						
FIA0	**FINESS Array S**	**1.91**	**252**	*e*P	**Pn**	**10 02 36.3**	**+4.2**
FIA0				*e*SB	**Sb**	**10 03 05.7**	**+8.0**
FIA0	**FINESS Array S**	**1.91**	**252**	Pn	**Pn**	**10 02 36.4**	**+4.3**
	baz=90,slow=16						
FIA0				Lg		10 03 05.4	
	baz=74,slow=28						
FIA0				Rg		10 03 16.1	
	baz=70,slow=37						
FINES	**FINESS Array B**	**1.91**	**252**	Pg	**Pg**	**10 02 36.4**	**+0.3**
	comp=Z,5.9nm,0.3s,baz=88,slow=15,SNR=187						
FINES				Lg		10 03 05.5	
	comp=Z,2.2nm,0.3s,baz=76,slow=25,SNR=14						
FINES				Rg		10 03 21.1	
	comp=Z,6.6nm,0.9s,baz=87,slow=38,SNR=7.7						
VJF	**Virojoki**	**1.91**	**216**	*e*P	**Pn**	**10 02 31.8**	**-0.3**
VJF				*e*S	**Sn**	**10 02 56.1**	**-1.1**
KEF	**Keuruu**	**2.34**	**274**	*e*P	**Pn**	**10 02 45.3**	**+7.0**
KEF				*e*SB	**Sb**	**10 03 20.9**	**+11**
KEF				MSG		10 03 21.7	
	comp=Z,6.0nm,0.2s						
MEF	**Metsahovi**	**3.24**	**237**	*e*P	**Pn**	**10 02 52.0**	**+0.8**
APA0	**Apatity Array**	**5.70**	**12**	*e*P	**Pn**	**10 03 26.6**	**+0.5**
ARA0	**ARCESS Array S**	**7.69**	**349**	Pn	**Pn**	**10 03 54.0**	**+0.1**
	baz=159,slow=16						
ARA0				Sn	**Sn**	**10 05 22.0**	**-0.8**
	baz=166,slow=28						
ARA0	**ARCESS Array S**	**7.69**	**349**	*e*P	**Pn**	**10 03 54.0**	**+0.1**
ARA0				*e*S	**Sn**	**10 05 22.0**	**-0.8**
ARCES	**ARCESS Array B**	**7.69**	**349**	Pn	**Pn**	**10 03 54.1**	**+0.2**
	comp=Z,0.1nm,0.3s,baz=159,slow=14,SNR=7.0						
ARCES				Sn	**Sn**	**10 05 22.5**	**-0.3**
	comp=Z,0.1nm,0.3s,baz=165,slow=21,SNR=3.2						
ARCES				Lg		10 06 07.0	
	comp=Z,0.2nm,0.3s,baz=158,slow=33,SNR=5.6						
HFS	**Hagfors**	**8.06**	**263**	Pn	**P**	**10 03 59.6**	**+0.4**
	baz=72,slow=10						
HFS				Sn	**Sn**	**10 05 33.2**	**+1.0**
	baz=79,slow=28						
HFS				Lg		10 06 20.4	
	baz=69,slow=37						
HFS	**Hagfors**	**8.06**	**263**	*e*P	**P**	**10 03 59.6**	**+0.4**
HFS				*e*S	**Sn**	**10 05 33.2**	**+1.0**
HFS				*e*Sg	**Sg**	**10 06 20.4**	**-6.0**
HFS	**Hagfors**	**8.06**	**263**	Pn	**P**	**10 03 59.4**	**+0.2**
	comp=Z,0.0nm,0.3s,baz=66,slow=15,SNR=6.6						
HFS				Sn	**Sn**	**10 05 30.2**	**-2.0**
	comp=Z,0.0nm,0.3s,baz=69,slow=36,SNR=4.0						
NOA	**NORSAR Array B**	**8.95**	**272**	Pn	**P**	**10 04 12.0**	**+0.5**
	comp=Z,0.1nm,0.3s,baz=83,slow=13,SNR=2.3						
NOA				Sn	**Sn**	**10 05 50.4**	**-3.8**
	comp=Z,0.1nm,0.3s,baz=305,slow=20,SNR=2.5						

*NEIC **31** 10:03:31.5,37.88N×20.52E,h5km,MD3.4(ATH),After ATH.*
*ATH **31** 10:03:33.0,37.89N×20.68E,h5km,MD3.4/4*
*THE **31** 10:03:34.6,37.98N×20.66E,h10km,ML3.1*

ISC 31 10:03:31.1±1.3,37.85N±0.06×20.6E±0.1,h10km,n9, σ0°81/11,Ionian Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VLS	**Valsamata**	**0.33**	**4**	*e*PG	**Pb**	**10 03 39.2**	**+0.7**
LKD	**Levkas**	**0.86**	**5**	*e*Pg	**Pg**	**10 03 47.7**	**-0.6**
	comp=Z,26nm,0.1s						
LKD				*e*Sg	**Sg**	**10 03 59.0**	**-0.8**
ITM	**Ithomi**	**1.27**	**121**	*e*PN	**Pn**	**10 03 55.4**	**+0.4**
EVR	**Evrytania**	**1.45**	**42**	*e*PG	**Pg**	**10 03 58.5**	**-1.5**
IGT	**Igoumenitsa**	**1.69**	**354**	*e*Pb	**Pb**	**10 04 02.6**	**+0.8**
AGG	**Agios Georgios**	**1.81**	**49**	*e*Pb	**Pb**	**10 04 03.8**	**-0.2**
	comp=Z,2.4nm,0.4s						
AGG				*e*Sb	**Sb**	**10 04 27.6**	**+0.9**
KEK	**Kerkira**	**1.95**	**342**	*e*Pg	**Pb**	**10 04 06.0**	**-0.4**
MEV	**Metsovon**	**2.00**	**15**	*e*Pb	**Pb**	**10 04 08.4**	**+1.3**
VLI	**Veliai**	**2.21**	**120**	*e*PG	**Pg**	**10 04 14.6**	**-0.6**

*IDC **31** 10:04:36.0±1.7,17.36S×178.06W,mb4.1/5,mb1 4.4/5, mb1mx4.0/14,Error ellipse: s-maj=146.0km s-min=23.7km az=153.0*

ISC 31 10:04:40.3±1.5,16.8S±0.8×178.4W±0.4,h33km,n7, σ0°39/7,mb4.0/5,2D,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**39.15**	**240**	P	**P**	**10 12 07.1**	**+0.4**
	2.8nm,0.6s,mb4.2,baz=92,slow=11,SNR=8.3						
WB2	**Warramunga Arr**	**44.81**	**258**	∥*i*P	**P**	**10 12 53.3**	**+0.1**
WRA	**Warramunga Arr**	**44.83**	**258**	P	**P**	**10 12 53.4**	**+0.1**
	1.1nm,0.6s,mb3.8,baz=100,slow=6.9,SNR=25						
AS12	**Alice Springs**	**45.08**	**253**	∥*i*P	**P**	**10 12 54.8**	**-0.6**
	9.7nm,0.7s,mb4.7						
ASAR	**Alice Springs**	**45.08**	**253**	P	**P**	**10 12 54.9**	**-0.5**
	13nm,0.6s,mb5.0,baz=89,slow=8.1,SNR=256						
NVAR	**Mina Array Bea**	**78.65**	**44**	P	**P**	**10 16 41.4**	**+0.5**
	0.5nm,0.9s,mb3.5,baz=217,slow=5.5,SNR=3.6						
TXAR	**Lajitas Array**	**85.43**	**58**	P	**P**	**10 17 15.8**	**-0.5**
	0.4nm,0.8s,mb3.6,baz=225,slow=7.1,SNR=4.9						

*NEIC **31** 10:10:12.7,52.24N×166.34W,h28km,ML3.3(AEIC),After AEIC.*
*IDC **31** 10:10:15.2±0.8,52.32N×166.35W,h43km±5km,mb3.5/13, mb1 3.7/15,mb1mx3.7/25,ML3.6/2,Error ellipse: s-maj=23.2km s-min=14.2km az=8.0*

ISC 31 10:10:12.9±0.6,52.32N±0.05×166.39W±0.07,h44km, h44km±.9km:pP-P,n31,σ0°80/33,mb3.7/13,Fox Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OKER	**East Rim**	**1.52**	**319**	P	**P**	**10 10 38.6**	**+0.5**
UNV	**Unalaska Valle**	**1.53**	**357**	P	**P**	**10 10 37.6**	**-0.6**
UNV				S	**S**	**10 10 57.7**	**+0.6**
MSW	**Makushin Switc**	**1.61**	**352**	P	**P**	**10 10 39.4**	**0.0**
MSW				S	**S**	**10 11 00.7**	**+1.5**
NIKO	**Nikolski**	**1.64**	**294**	P	**P**	**10 10 39.2**	**-0.6**
NIKO				S	**S**	**10 10 58.8**	**-1.0**
MTBL	**Makushin Table**	**1.66**	**354**	P	**P**	**10 10 40.4**	**+0.3**
MCIR	**Makushin Cirqu**	**1.66**	**350**	P	**P**	**10 10 40.2**	**+0.2**
AHB	**Akutan Harbor**	**1.83**	**11**	P	**P**	**10 10 42.2**	**-0.2**
WESE	**West Dahl East**	**2.41**	**26**	P	**P**	**10 10 50.5**	**-0.2**
DRIA	**Deer Island**	**3.61**	**41**	P	**P**	**10 11 06.5**	**-1.3**
DTNA	**Dutton South F**	**3.75**	**39**	P	**P**	**10 11 09.0**	**-0.7**
HAG	**Hague Volcano**	**4.01**	**40**	P	**P**	**10 11 13.1**	**-0.2**
SDPT	**Sand Point**	**4.63**	**47**	P	**P**	**10 11 20.9**	**-1.3**
ATKA	**Atka Island**	**4.80**	**272**	P	**P**	**10 11 23.8**	**-0.8**
FX1	**Attu Island--F**	**12.44**	**281**	P	**P**	**10 13 09.2**	**-0.5**
	1.4nm,0.3s,baz=93,slow=21,SNR=2.5						
ILAR	**Eielson Array**	**16.00**	**31**	P	**P**	**10 13 52.9**	**-3.1**
	0.1nm,0.3s,baz=232,slow=11,SNR=5.4						
INK	**Inuvik**	**22.40**	**32**	P	**P**	**10 15 08.1**	**-0.3**
	3.8nm,0.6s,mb4.0,baz=246,slow=13,SNR=14						
INK				sP		10 15 24.5	
	5.8nm,0.7s,baz=237,slow=8.9,SNR=7.2						
INK	**Inuvik**	**22.40**	**32**	*e*P	**P**	**10 15 07.3**	**-1.1**
YKA	**Yellowknife Ar**	**28.89**	**49**	P	**P**	**10 16 10.1**	**+1.0**
	0.4nm,0.8s,mb3.2,baz=271,slow=8.4,SNR=8.9						
YKA				PcP	PcP	10 19 17.6	-0.2
	0.2nm,0.6s,baz=276,slow=2.4,SNR=11						
YKA	**Yellowknife Ar**	**28.89**	**49**	P	**P**	**10 16 10.2**	**+1.0**
YKA				PcP	PcP	10 19 17.6	-0.2
NVAR	**Mina Array Bea**	**35.83**	**93**	P	**P**	**10 17 10.4**	**+0.5**
	0.4nm,0.7s,mb3.5,baz=288,slow=10,SNR=4.6						
PDAR	**Pinedale Array**	**38.61**	**81**	P	**P**	**10 17 34.4**	**+1.3**
	0.1nm,0.4s,mb2.9,baz=297,slow=6.0,SNR=2.3						
SPITS	**Spitsbergen Ar**	**49.76**	**359**	P	**P**	**10 19 01.5**	**-0.6**
	3.2nm,1.0s,mb4.3,baz=135,slow=2.8,SNR=3.4						
TXAR	**Lajitas Array**	**50.92**	**91**	P	**P**	**10 19 11.7**	**+0.1**
	0.4nm,0.7s,mb3.5,baz=299,slow=5.9,SNR=7.2						
TXAR				pP	pP	10 19 24.1	+0.2
	0.4nm,0.6s,baz=300,slow=5.3,SNR=4.6						
SONM	**Songino Array**	**52.88**	**302**	P	**P**	**10 19 27.2**	**+1.1**
	1.1nm,0.9s,mb3.8,baz=53,slow=6.2,SNR=6.7						
SONM				pP	pP	10 19 38.9	+0.5
	0.8nm,0.7s,baz=45,slow=7.0,SNR=3.7						
ARCES	**ARCESS Array B**	**58.15**	**355**	pP	pP	10 20 18.7	+2.4
	1.7nm,0.8s,baz=27,slow=8.1,SNR=2.3						
BVAR	**Borovoye Array**	**64.79**	**326**	P	**P**	**10 20 49.5**	**+1.0**
	0.8nm,0.5s,mb4.0,baz=37,slow=7.4,SNR=6.2						
BVAR				pP	pP	10 21 02.7	+1.4
	0.7nm,0.5s,baz=48,slow=6.8,SNR=4.6						
MKAR	**Makanchi Array**	**65.15**	**315**	P	**P**	**10 20 51.2**	**+0.2**
	0.7nm,0.7s,mb3.8,baz=45,slow=6.9,SNR=5.3						
MKAR				pP	pP	10 21 04.1	+0.4
	1.1nm,0.8s,baz=47,slow=7.1,SNR=6.1						
FINES	**FINESS Array B**	**66.15**	**353**	P	**P**	**10 20 57.6**	**+0.5**
	1.2nm,0.6s,mb4.1,baz=14,slow=12,SNR=3.5						
FINES				pP	pP	10 21 10.9	+1.0
	1.0nm,0.7s,baz=45,slow=12,SNR=2.2						
HFS	**Hagfors**	**67.90**	**360**	P	**P**	**10 21 08.4**	**+0.3**
	0.8nm,0.5s,mb4.0,baz=27,slow=3.3,SNR=8.7						
GERES	**GERESS Array B**	**79.21**	**360**	P	**P**	**10 22 14.8**	**+0.5**
	0.4nm,0.7s,mb3.5,baz=27,slow=6.0,SNR=4.8						
ASAR	**Alice Springs**	**91.79**	**232**	P	**P**	**10 23 17.4**	**+0.3**
	0.6nm,0.7s,mb4.0,baz=41,slow=5.1,SNR=6.6						
ASAR				pP	pP	10 23 30.1	-0.3
	0.3nm,0.6s,baz=30,slow=5.0,SNR=2.2						

*NEIC **31** 10:15:26.2±3.0,57.89S×25.38W,h51km±27km,mb3.8/2, Error ellipse: s-maj=25.2km s-min=12.5km az=66.0*
*IDC **31** 10:15:26.9±0.7,57.86S×25.43W,h54km±5km,mb4.0/5, mb1 4.0/5,mb1mx3.9/12,Error ellipse: s-maj=38.0km s-min=22.7km az=69.0*

ISC 31 10:15:24.8±0.7,57.8S±0.1×25.4W±0.4,h51km,n22, σ1°06/16,mb4.3/6,3D,South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VNA1	**Neumayer--Stat**	**14.80**	**157**	∥*i*	**P**	**10 18 54.2**	**+2.2**
VNA1	**Neumayer--Stat**	**14.80**	**157**	*e*S	**S**	**10 21 22.9**	**-12**
VNA3	**Neumayer Olymp**	**15.01**	**160**	∥*i*	**P**	**10 18 55.5**	**+0.8**
VNA3	**Neumayer Olymp**	**15.01**	**160**	*e*S	**S**	**10 21 24.8**	**-15**
VNA2	**Neumayer--Watz**	**15.20**	**157**	∥*i*	**P**	**10 18 58.4**	**+1.3**
VNA2	**Neumayer--Watz**	**15.20**	**157**	*e*S	**S**	**10 21 27.7**	**-17**
SNAA	**Sanae**	**16.74**	**155**	*e*P	**P**	**10 19 15.6**	**-1.0**
QSPA	**South Pole Qui**	**32.44**	**180**	*e*P	**P**	**10 21 50.6**	**-0.9**
	16nm,0.5s,mb5.1						
MAW	**Mawson**	**38.16**	**142**	*e*P	**P**	**10 22 38.6**	**-1.7**
VNDA	**Vanda**	**44.86**	**182**	P	**P**	**10 23 35.0**	**+0.1**
	2.4nm,0.8s,mb4.1,baz=186,slow=7.2,SNR=12						
VNDA	**Vanda**	**44.86**	**182**	*e*P	**P**	**10 23 34.9**	**0.0**
	1.0nm,0.7s,mb3.8						
BDFB	**Brasilia**	**45.37**	**329**	P	**P**	**10 23 40.3**	**+0.5**
	1.6nm,0.4s,mb4.2,baz=235,slow=4.5,SNR=3.4						
LPAZ	**La Paz**	**52.18**	**304**	P	**P**	**10 24 32.2**	**-0.1**
	0.5nm,0.4s,mb3.8,baz=165,slow=8.2,SNR=4.9						
LPAZ				PcP	PcP	10 25 44.0	+0.4
	0.4nm,0.4s,baz=90,slow=1.0,SNR=2.6						
LPAZ	**La Paz**	**52.18**	**304**	P	**P**	**10 24 32.2**	**-0.1**
	0.8nm,0.7s,mb3.8						
LPAZ				PcP	PcP	10 25 44.0	+0.4
DBIC	**Dimbokro**	**66.39**	**22**	P	**P**	**10 26 10.9**	**+0.4**
	4.2nm,0.8s,mb4.5,baz=94,slow=4.6,SNR=3.6						
ASAR	**Alice Springs**	**97.02**	**161**	P	**P**	**10 28 51.5**	**-0.4**
	0.6nm,0.7s,mb4.2,baz=191,slow=4.6,SNR=7.0						
FINES	**FINESS Array B**	**125.49**	**28**	PKP	PKPdf	10 34 19.0	0.0
	0.7nm,0.7s,baz=90,slow=1.9,SNR=5.9						
YKA	**Yellowknife Ar**	**138.12**	**316**	PKP	PKPdf	10 34 44.1	+1.4
	1.0nm,0.7s,baz=129,slow=2.4,SNR=19						
YKA				pPKP		10 34 59.7	
	1.0nm,0.7s,baz=127,slow=2.1,SNR=3.3						
YKA	**Yellowknife Ar**	**138.12**	**316**	PKP	PKPdf	10 34 44.1	+1.4
YKA				pPKP		10 34 59.7	
INK	**Inuvik**	**147.77**	**318**	PKPbc	PKPdf	10 35 03.6	+4.5
	5.2nm,0.7s,baz=91,slow=4.0,SNR=13						
INK				pPKPbc		10 35 19.5	
	2.8nm,0.7s,baz=113,slow=5.5,SNR=4.0						
SONM	**Songino Array**	**149.84**	**88**	PKPbc	PKPdf	10 35 09.9	+6.8
	1.8nm,0.4s,baz=224,slow=3.3,SNR=14						
SONM				pPKPbc		10 35 25.2	
	0.6nm,0.5s,baz=225,slow=1.7,SNR=2.9						
ILAR	**Eielson Array**	**151.99**	**309**	PKPbc	PKPdf	10 35 14.2	+8.4
	8.3nm,1.1s,baz=135,slow=3.1,SNR=56						
ILAR				pPKPbc		10 35 30.2	
	1.9nm,0.7s,baz=148,slow=6.0,SNR=8.6						

*IDC **31** 10:19:52.4±0.8,34.13N×141.64E,mb3.7/9,mb1 3.9/10, mb1mx3.8/24,ML3.5/1,MS2.9/1,Ms1 2.9/1,ms1mx2.4/26, Error ellipse: s-maj=22.6km s-min=16.5km az=110.0*
*NEIC **31** 10:19:53.9±0.5,34.15N×141.67E,h10km,Error ellipse: s-maj=15.2km s-min=11.4km az=48.0*
*JMA **31** 10:19:53.8±0.6,34.11N×141.83E,h30km±4km,M3.6*

ISC 31 10:19:53.4±1.6,34.09N±0.05×141.80E±0.07,h24km±11km, n26,σ0°82/26,mb3.7/9,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**0.88**	**310**	P	**Pb**	**10 20 10.1**	**+0.1**
BSO3	**Boso 3**	**1.28**	**304**

	comp=Z,9.6nm,0.3s,baz=211,slow=22,SNR=17								
FINES					Rg			10 24 25.2	
	comp=Z,3.2nm,0.2s,baz=199,slow=30,SNR=4.3								
VSU	**Vasula**	**1.97**	**132**		Pn		**Pn**	**10 23 46.3**	**-0.5**
VSU					Lg			10 24 12.6	
VSU	**Vasula**	**1.97**	**132**	*e*P			**Pn**	**10 23 46.2**	**-0.6**
KEF	**Keuruu**	**2.40**	**10**	*e*P			**Pn**	**10 23 57.6**	**+4.5**
KEF				*e*SG			**Sg**	**10 24 31.0**	**-0.9**
KEF				MSG				10 24 33.2	
	comp=Z,14nm,0.2s								
HFS	**Hagfors**	**5.17**	**278**		Pn		**Pn**	**10 24 34.0**	**+1.6**
	baz=106,slow=12								
HFS					Sn		**Sn**	**10 25 34.1**	**+0.5**
	baz=80,slow=28								
HFS					Lg			10 25 54.3	
	baz=96,slow=37								
HFS	**Hagfors**	**5.17**	**278**	*e*P			**Pn**	**10 24 34.0**	**+1.6**
HFS				*e*S			**Sn**	**10 25 34.1**	**+0.5**
HFS				*e*SG			**Sg**	**10 25 54.3**	**-10**
HFS	**Hagfors**	**5.17**	**278**		Pn		**Pn**	**10 24 33.6**	**+1.3**
	comp=Z,0.1nm,0.3s,baz=102,slow=13,SNR=22								
HFS					Pg		**Pg**	**10 24 46.5**	**-8.6**
	comp=Z,0.2nm,0.3s,baz=94,slow=17,SNR=10								
HFS					Sn		**Sn**	**10 25 36.4**	**+2.7**
	comp=Z,0.2nm,0.3s,baz=90,slow=27,SNR=7.1								
HFS					Lg			10 25 57.9	
	comp=Z,0.4nm,0.3s,baz=90,slow=33,SNR=9.5								
NOA	**NORSAR Array B**	**6.43**	**287**		Pn		**Pn**	**10 24 49.9**	**-0.3**
	comp=Z,0.5nm,0.3s,baz=92,slow=19,SNR=3.8								
NOA					Lg			10 26 35.6	
	comp=Z,0.9nm,0.3s,baz=130,slow=23,SNR=4.8								
APA0	**Apatity Array**	**8.78**	**23**		Pn		**P**	**10 25 20.9**	**-2.1**
	baz=212,slow=18								
APA0	**Apatity Array**	**8.78**	**23**	*e*P			**P**	**10 25 20.9**	**-2.1**
ARA0	**ARCESS Array S**	**9.78**	**3**		Pn		**P**	**10 25 35.2**	**-1.5**
	baz=180,slow=14								
ARA0					Sn		**Sn**	**10 27 21.4**	**-7.2**
	baz=188,slow=28								
ARA0	**ARCESS Array S**	**9.78**	**3**	*e*P			**P**	**10 25 35.2**	**-1.5**
ARA0				*e*S			**Sn**	**10 27 21.4**	**-7.2**
ARCES	**ARCESS Array B**	**9.78**	**3**		Pn		**P**	**10 25 35.6**	**-1.1**
	comp=Z,0.4nm,0.3s,baz=180,slow=15,SNR=49								
ARCES					Sn		**Sn**	**10 27 20.4**	**-8.2**
	comp=Z,0.2nm,0.3s,baz=182,slow=22,SNR=3.2								

*NAO **31** 10:37:54.6±1.4,59.73N×24.45E,ML2.8*
*BER **31** 10:37:55.9±3.1,59.72N×24.49E,ML2.8(NAO), Suspected explosion*
*IDC **31** 10:37:57.4±1.9,59.90N×24.31E,mb1 3.6/3, mb1mx3.1/20,ML3.6/3,Error ellipse: s-maj=21.2km s-min=6.4km az=148.0*

HEL 31 10:37:54.5±0.2,59.68N×24.49E,ML2.4,ML2.5(UPP), ML2.8(NAO),Explosion,Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
MEF	**Metsahovi**	**0.54**	**355**	*e*P		Pg	10 38 04.0	-1.3
MEF				*e*S		Sg	10 38 10.8	-1.8
VSU	**Vasula**	**1.69**	**135**	*e*P		Pn	10 38 24.6	-0.8
VSU				*e*S		Sb	10 38 45.7	-2.1
VSU	**Vasula**	**1.69**	**135**	Pn		Pn	10 38 24.7	-0.7
VSU				Lg			10 38 49.1	
VJF	**Virojoki**	**1.76**	**59**	*e*S		Sn	10 38 47.8	-2.2
FIA0	**FINESS Array S**	**1.94**	**23**	*e*P		Pn	10 38 28.6	-0.4
FIA0				*e*S		Sn	10 38 48.7	-5.7
FIA0				*e*SG		Sg	10 38 54.5	-4.5
FIA0				MSG			10 38 55.8	
	comp=Z,30nm,0.2s							
FIA0	**FINESS Array S**	**1.94**	**23**	Pn		Pn	10 38 28.7	-0.3
	baz=193,slow=18							
FIA0				Lg			10 38 53.7	
	baz=205,slow=28							
FINES	**FINESS Array B**	**1.94**	**23**	Pg		Pg	10 38 28.6	-4.6
	comp=Z,10.0nm,0.3s,baz=202,slow=15,SNR=177							
FINES				Lg			10 38 53.5	
	comp=Z,5.2nm,0.3s,baz=207,slow=28,SNR=4.2							
KEF	**Keuruu**	**2.50**	**4**	*e*P		Pn	10 38 37.7	+0.6
KEF				*e*SB		Sb	10 39 10.0	-1.6
KEF				MSG			10 39 12.2	
	comp=Z,14nm,0.2s							
SUF	**Sumiainen**	**3.16**	**14**	*e*P		Pn	10 38 45.8	-0.6
JOF	**Joensuu**	**4.63**	**42**	*e*P		Pn	10 39 04.5	-2.8
JOF				MSG			10 40 17.9	
	comp=Z,5.0nm,0.3s							
HFS	**Hagfors**	**5.45**	**279**		Pn	Pn	10 39 16.6	-2.4
	baz=100,slow=14							
HFS					Sn	Sn	10 40 18.4	-4.9
	baz=100,slow=28							
HFS					Lg		10 40 41.4	
	baz=89,slow=37							
HFS	**Hagfors**	**5.45**	**279**	*e*P		Pn	10 39 16.6	-2.4
HFS				*e*S		Sn	10 40 18.4	-4.9
HFS				*e*SG		Sg	10 40 41.4	-15
HFS	**Hagfors**	**5.45**	**279**		Pn	Pn	10 39 16.3	-2.6
	comp=Z,0.2nm,0.3s,baz=104,slow=14,SNR=36							
HFS					Pg	Pg	10 39 30.8	-13
	comp=Z,0.1nm,0.3s,baz=95,slow=16,SNR=6.8							
HFS					Sn	Sn	10 40 18.6	-4.7
	comp=Z,0.3nm,0.3s,baz=87,slow=24,SNR=8.0							
HFS					Lg		10 40 40.8	
	comp=Z,0.4nm,0.3s,baz=82,slow=30,SNR=5.4							
NOA	**NORSAR Array B**	**6.72**	**287**		Pn	Pn	10 39 32.6	-4.3
	comp=Z,0.7nm,0.3s,baz=86,slow=13,SNR=5.4							
NOA					Sn	Sn	10 40 46.5	-8.7
	comp=Z,0.8nm,0.3s,baz=96,slow=17,SNR=3.9							
NOA					Lg		10 41 20.4	
	comp=Z,1.0nm,0.3s,baz=94,slow=14,SNR=4.3							
APA0	**Apatity Array**	**8.80**	**22**		Pn	P	10 40 01.4	-4.6
	baz=205,slow=12							
APA0	**Apatity Array**	**8.80**	**22**	*e*P		P	10 40 01.4	-4.6
ARA0	**ARCESS Array S**	**9.91**	**2**	*e*S		Sn	10 42 02.3	-12
ARA0	**ARCESS Array S**	**9.91**	**2**		Sn	Sn	10 42 02.3	-12
	baz=184,slow=28							
ARCES	**ARCESS Array B**	**9.91**	**2**		Pn	P	10 40 15.6	-5.4
	comp=Z,1.4nm,0.3s,baz=179,slow=12,SNR=87							
ARCES					Sn	Sn	10 42 00.9	-13
	comp=Z,0.2nm,0.3s,baz=184,slow=24,SNR=3.4							
ARCES					Lg		10 42 57.6	
	comp=Z,0.3nm,0.3s,baz=174,slow=26,SNR=2.9							

IDC 31 10:40:19.6±12.0,35.94S×97.02W,mb4.0/4,mb1 4.4/4, mb1mx4.1/15,Error ellipse: s-maj=325.0km s-min=44.3km az=8.0,West Chile Rise

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
LPAZ	**La Paz**	**32.30**	**60**	P		P	10 46 51.0	-1.4
	1.8nm,0.7s,baz=223,slow=7.5,SNR=7.9							
TXAR	**Lajitas Array**	**65.22**	**354**	P		P	10 51 02.8	-2.3
	0.4nm,0.8s,baz=170,slow=7.6,SNR=5.5							
NVAR	**Mina Array Bea**	**76.57**	**343**	P		P	10 52 12.2	-1.2
	1.4nm,0.7s,baz=173,slow=7.3,SNR=16							
PDAR	**Pinedale Array**	**79.16**	**351**	P		P	10 52 25.9	-1.6
	1.3nm,0.6s,baz=160,slow=5.5,SNR=13							

CASC 31 10:46:15.9±2.3,11.90N×86.87W,h101km±19km,MD4.2, ML3.2,6C-2D,Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
COPN	**Copaltepe**	**0.40**	**44**	⇓*i*P		P	10 46 30.6	-0.6
COPN				*e*S		S	10 46 41.9	-0.9
PYN	**Poneloya**	**0.51**	**343**	⇑*i*P		P	10 46 31.1	-0.9
LEON	**Leon**	**0.52**	**358**	⇑*i*P		P	10 46 31.9	-0.3
CRUN	**El Crucero**	**0.57**	**81**	*e*P		P	10 46 31.9	-0.6
XAVN	**Gruta Xavier**	**0.59**	**65**	*e*P		P	10 46 32.5	-0.2
MOMJ	**Momotombo**	**0.61**	**33**	*e*P		P	10 46 33.6	+0.8
CNGN	**Cerro Negro**	**0.62**	**16**	⇑*e*P		P	10 46 33.5	+0.5
MGAN	**Managua**	**0.66**	**68**	⇑*e*P		P	10 46 33.4	+0.1
MGAN				*e*S		S	10 46 47.8	+1.5
MGAN				*i*			10 46 57.3	
	comp=N,514nm,0.5s							
TEL3	**Telica 3**	**0.67**	**2**	*e*P		P	10 46 34.0	+0.7
WILN	**Americas 2**	**0.72**	**68**	*e*P		P	10 46 34.1	+0.2
COFN	**Cofrada**	**0.79**	**71**	⇓*e*P		P	10 46 34.8	+0.3
APON	**Apoyo**	**0.79**	**88**	*e*P		P	10 46 33.5	-1.0
PYTN	**Playitas**	**1.02**	**51**	⇑*e*P		P	10 46 38.6	+1.7
VCR	**Vista de Mar**	**2.14**	**145**	*e*P		P	10 46 52.1	+1.2
PRS1	**Puriscal**	**3.15**	**127**	*e*P		P	10 47 05.5	+0.7
LAJ	**Bijagual**	**3.37**	**126**	*e*P		P	10 47 01.1	-6.7
LCR2	**La Lucha 2**	**3.54**	**127**	*e*P		P	10 47 08.7	-1.4

CASC 31 11:05:58.3±1.6,12.54N×88.80W,h18km±6km,MD3.7, 4C-9D,Off coast of central America

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
VSM	**San Miguel**	**1.02**	**30**	⇓*e*P		Pb	11 06 17.4	+0.3
VSM				*e*S		Sb	11 06 32.5	+2.4
BLLM	**Bellamira**	**1.05**	**31**	*e*P		Pb	11 06 17.4	-0.2
BLLM				*e*S		Sb	11 06 31.2	+0.2
SNVI	**San Vicente**	**1.07**	**358**	⇓*e*P		Pb	11 06 17.7	-0.2
SNVI				*e*S		Sb	11 06 31.3	-0.1
LFRS	**El Faro**	**1.11**	**347**	⇓*e*P		Pb	11 06 18.1	-0.5
LFRS				*e*S		Sb	11 06 34.2	+1.6
LCBS	**La Ceiba**	**1.12**	**351**	⇓*e*P		Pb	11 06 18.3	-0.6
LCBS				*e*S		Sb	11 06 31.7	-1.3
CNCH	**Conchagua**	**1.19**	**52**	*e*P		Pb	11 06 19.0	-1.1
LBRS	**Las Brisas**	**1.21**	**349**	⇓*e*P		Pb	11 06 20.0	-0.4
SNET	**Serv Nac Est T**	**1.22**	**340**	⇓*e*P		Pb	11 06 19.7	-0.8
SNET				*e*S		Sb	11 06 36.0	+0.3
LFU	**La Fuente**	**1.24**	**346**	⇓*e*P		Pn	11 06 20.3	-0.6
PICS	**Picacho**	**1.27**	**340**	⇓*e*P		Pn	11 06 20.9	-0.4
PICS				*e*S		Sb	11 06 39.3	+1.9
BOQS	**Boqueron**	**1.28**	**339**	⇑*i*P		Pn	11 06 21.1	-0.2
BOQS				*e*S		Sb	11 06 38.3	+0.8
CAHU	**Cacacuatique**	**1.35**	**25**	*e*P		Pn	11 06 22.6	+0.1
SBLS	**San Blas**	**1.52**	**328**	⇓*e*P		Pn	11 06 24.5	-0.3
SBLS				*e*S		Sn	11 06 45.2	+1.0
SNJE	**San Jose**	**1.54**	**329**	⇓*e*P		Pn	11 06 24.8	-0.3
SNJE				*e*S		Sn	11 06 45.3	+0.7
RTR	**El Retiro**	**1.58**	**329**	⇓*e*P		Pn	11 06 25.5	-0.2
RTR				*e*S		Sn	11 06 46.1	+0.3
RBDL	**Robledal**	**1.79**	**331**	⇓*e*P		Pn	11 06 28.8	+0.1
RBDL				*e*S		Sn	11 06 52.3	+1.3
MTO2	**Montecristo 2**	**1.93**	**344**	*e*P		Pn	11 06 31.2	+0.6
JCR	**Jicaral**	**4.50**	**126**	*e*P		Pn	11 07 05.1	-2.2
VPS2	**Volcan Poas 2**	**5.05**	**117**	*e*P		Pn	11 07 12.3	-2.8
LCR2	**La Lucha 2**	**5.47**	**120**	*e*P		Pn	11 07 20.9	0.0

JMA 31 11:59:35.1±0.7,29.78N×138.66E,h516km,M3.6, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
JAG	**Ashikaga**	**6.66**	**6**	P		P	12 01 18.6	-0.8
JAG				*e*S		S	12 02 41.6	-0.6
JHO	**Hitachi**	**7.00**	**13**	P		P	12 01 23.1	+0.4
JHO				*e*S		S	12 02 49.5	+1.3

*ROM **31** 12:01:43.1±0.1,44.47N×9.68E,h5km,MD2.5/4,ML1.9/3, Error ellipse: s-maj=1.0km s-min=0.8km az=0.0*
*NEIC **31** 12:01:44.2,44.51N×9.74E,h15km,MD2.5(ROM), ML2.6(GEN),ML2.5(LDG),ML2.5(STR),After GEN.*
*STR **31** 12:01:46.6±0.2,44.46N×9.54E,h10km±1km,ML2.5, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
*LDG **31** 12:01:47.2±0.2,44.37N×9.70E,h12km,Ml2.5/18, Error ellipse: s-maj=5.0km s-min=3.0km az=90.0*

ISC 31 12:01:43.5±0.2,44.44N±0.02×9.63E±0.02,h5km,n60, σ1°18/108,5C-1D,Northern Italy

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
CODM		**0.16**	**107**	⇑P		**Pg**	**12 01 47.7**	**+0.8**
CODM				S		**Sg**	**12 01 50.2**	**+1.0**
GRAM		**0.31**	**80**	⇓P		**Pg**	**12 01 49.1**	**-0.7**
GRAM				S		**Sg**	**12 01 52.7**	**-1.4**
BOB	**Bobbio (Coli)**	**0.35**	**338**	⇑*i*Pg		**Pg**	**12 01 50.9**	**+0.3**
BOB				*i*Sg		**Sg**	**12 01 56.0**	**+0.6**
BOB	**Bobbio (Coli)**	**0.35**	**338**	⇑*i*Pg		**Pg**	**12 01 50.9**	**+0.3**
BOB				*e*Sg		**Sg**	**12 01 56.0**	**+0.6**
BACM		**0.35**	**117**	⇑P		**Pg**	**12 01 50.9**	**+0.2**
BACM				S		**Sg**	**12 01 55.5**	**+0.1**
VALM		**0.45**	**101**	P		**Pg**	**12 01 52.0**	**-0.5**
VALM				S		**Sg**	**12 01 57.4**	**-1.2**
GENL	**Genova Univers**	**0.48**	**266**	P		**Pg**	**12 01 55.4**	**+2.3**
GENL				S		**Sg**	**12 02 02.5**	**+3.0**
VINC	**Vinca**	**0.48**	**128**	⇑P		**Pg**	**12 01 53.3**	**+0.2**
VINC				S		**Sg**	**12 01 59.7**	**+0.2**
ERBM	**Eremo**	**0.56**	**92**	*e*PG		**Pg**	**12 01 54.5**	**-0.2**
ERBM				SG		**Sg**	**12 02 03.1**	**+0.9**
ERBM	**Eremo**	**0.56**	**92**	*e*Pg		**Pg**	**12 01 54.5**	**-0.2**
ERBM				*e*Sg		**Sg**	**12 02 03.1**	**+0.9**
SARO	**Sassorosso**	**0.61**	**114**	P		**Pg**	**12 01 55.5**	**-0.2**
SARO				S		**Sg**	**12 02 02.6**	**-1.2**
GSCL	**Gusciola**	**0.69**	**97**	*e*PG		**Pg**	**12 01 57.6**	**+0.3**
GSCL				SG		**Sg**	**12 02 07.0**	**+0.4**
GSCL	**Gusciola**	**0.69**	**97**	*e*Pg		**Pg**	**12 01 57.6**	**+0.3**
GSCL				*e*Sg		**Sg**	**12 02 07.0**	**+0.4**
PCP	**Pian Castagno**	**0.79**	**278**	P		**Pg**	**12 02 00.3**	**+1.1**
PCP				S		**Sg**	**12 02 11.2**	**+1.5**
BDI	**Bagni Di Lucca**	**0.79**	**118**	*e*PG		**Pg**	**12 01 58.5**	**-0.8**
BDI				SG		**Sg**	**12 02 11.0**	**+1.2**
	61nm,0.2s							
BDI	**Bagni Di Lucca**	**0.79**	**118**	*e*Pg		**Pg**	**12 01 58.5**	**-0.8**
BDI				*e*Sg		**Sg**	**12 02 11.0**	**+1.2**
MAIM		**0.81**	**130**	P		**Pb**	**12 01 59.2**	**-0.5**
MAIM				S		**Sg**	**12 02 09.3**	**-1.2**
PII	**Pisa**	**0.96**	**138**	*e*PG		**Pg**	**12 02 02.2**	**-0.6**
PII				SG		**Sg**	**12 02 16.6**	**+1.0**
PII	**Pisa**	**0.96**	**138**	*e*Pg		**Pg**	**12 02 02.2**	**-0.5**
PII				*e*Sg		**Sg**	**12 02 16.6**	**+0.9**
ZCCA	**Zocca**	**0.97**	**95**	*e*PG		**Pg**	**12 02 02.3**	**-0.6**
ZCCA	**Zocca**	**0.97**	**95**	*e*Pg		**Pg**	**12 02 02.3**	**-0.6**
FIN	**Finale Ligure**	**1.05**	**258**	*e*PN		**Pn**	**12 02 04.8**	**+0.1**
	25nm,0.4s							
FIN	**Finale Ligure**	**1.05**	**258**	P		**Pb**	**12 02 04.8**	**+1.1**
FIN				S		**Sb**	**12 02 17.9**	**+0.2**
RORO		**1.17**	**254**	P		**Pb**	**12 02 05.5**	**-0.4**
RORO				S		**Sb**	**12 02 18.9**	**-2.3**
ROB	**Roburent**	**1.27**	**264**	P		**Pb**	**12 02 08.5**	**+0.9**
ROB				S		**Sb**	**12 02 23.1**	**-1.1**
IMI	**Imperia**	**1.36**	**248**	*e*PN		**Pn**	**12 02 09.6**	**+0.4**
	10.0nm,0.3s							
IMI	**Imperia**	**1.36**	**248**	P		**Pb**	**12 02 09.4**	**+0.3**
IMI				S		**Sb**	**12 02 24.3**	**-2.4**
MONE	**Monesi**	**1.40**	**256**	P		**Pb**	**12 02 09.9**	**+0.2**
MONE				S		**Sb**	**12 02 25.1**	**-2.7**
NEGI	**Negi**	**1.51**	**248**	P		**Pn**	**12 02 11.0**	**-0.4**
NEGI				S		**Sb**	**12 02 26.8**	**-4.2**
SAOF	**Saorge**	**1.56**	**254**	P		**Pn**	**12 02 12.9**	**+0.8**
SAOF				S		**Sb**	**12 02 33.2**	**+0.7**
ENR	**Entracque**	**1.60**	**263**	P		**Pn**	**12 02 12.8**	**+0.1**
ENR				S		**Sb**	**12 02 28.9**	**-4.8**
AUTN	**L'Aution**	**1.65**	**255**	P		**Pn**	**12 02 14.2**	**+0.9**
AUTN				S		**Sb**	**12 02 36.0**	**+1.0**
STV2	**Anna di Valdie**	**1.67**	**264**	P		**Pn**	**12 02 13.3**	**-0.3**
STV2				S		**Sb**	**12 02 29.5**	**-6.1**
STV	**Sta Anna Valdi**	**1.67**	**264**	P		**Pn**	**12 02 13.8**	**+0.2**
STV				S		**Sb**	**12 02 29.8**	**-5.8**
SBF	**Sospel**	**1.68**	**251**	*e*Pn		**Pn**	**12 02 14.1**	**+0.3**
SBF				*e*Sn		**Sn**	**12 02 35.5**	**-0.5**
	18nm,0.3s							
BHB	**Bricherasio**	**1.74**	**284**	P		**Pn**	**12 02 15.0**	**+0.3**
TOUF	**Mont Tournerai**	**1.77**	**257**	P		**Pn**	**12 02 16.1**	**+1.1**
RSP	**Reno Superiore**	**1.83**	**294**	P		**Pn**	**12 02 15.8**	**-0.2**
MVIF	**Mont Vial**	**1.87**	**254**	P		**Pn**	**12 02 17.7**	**+1.3**
MVIF				S		**Sn**	**12 02 42.3**	**+1.7**
PGF	**Pioggiola**	**1.95**	**194**	*e*Pn		**Pn**	**12 02 17.9**	**+0.3**
PGF				*e*Sn		**Sn**	**12 02 40.3**	**-2.4**
	2.0nm,0.2s							
LSD	**Ceresole Reale**	**2.03**	**301**	P		**Pn**	**12 02 18.9**	**+0.1**
MBDF	**Montbardon**	**2.06**	**279**	*e*Pn		**Pn**	**12 02 21.2**	**+1.9**
MBDF				*e*Sn		**Sn**	**12 02 45.6**	**-0.1**
	8.7nm,0.4s							
CALN	**Calern**	**2.09**	**252**	P		**Pn**	**12 02 21.1**	**+1.4**
LPG	**La Plagne**	**2.30**	**298**	*e*Pn		**Pn**	**12 02 25.4**	**+2.7**
LPG				*e*Sn		**Sn**	**12 02 52.0**	**+0.2**
	6.3nm,0.5s							
LPL	**La Plagne**	**2.32**	**299**	*e*Pn		**Pn**	**12 02 25.0**	**+2.0**
LPL				*e*Sn		**Sn**	**12 02 52.5**	**+0.2**
	5.1nm,0.5s							
FRF	**La Foret Royal**	**2.33**	**249**	*e*Pn		**Pn**	**12 02 23.3**	**+0.3**
FRF				*e*Sn		**Sn**	**12 02 50.3**	**-2.1**
	4.1nm,0.2s							
LMR	**La Mourre**	**2.51**	**245**	*e*Pn		**Pn**	**12 02 25.3**	**-0.4**
LMR				*e*Sn		**Sn**	**12 02 55.3**	**-1.8**
	5.9nm,0.3s							
ORIF	**Oris-en-Rattie**	**2.72**	**281**	*e*Pn		**Pn**	**12 02 29.8**	**+1.1**
ORIF				*e*Sn		**Sn**	**12 03 01.4**	**-0.9**
	4.4nm,0.3s							
SMRF	**Simiane la Rot**	**2.95**	**262**	*e*Pn		**Pn**	**12 02 33.0**	**+1.0**
SMRF				*e*Sn		**Sn**	**12 03 06.2**	**-2.1**
	1.9nm,0.3s							
CABF	**La Chapelle**	**3.31**	**312**	*e*Pn		**Pn**	**12 02 39.4**	**+2.4**
CABF				*e*Sn		**Sn**	**12 03 16.2**	**-1.0**
	59nm,1.7s							
VIVF	**Saint-Julien-l**	**3.56**	**278**	*e*Pn		**Pn**	**12 02 43.7**	**+3.0**
VIVF				*e*Sn		**Sn**	**12 03 21.8**	**-1.9**
	0.6nm,0.2s							
HINF	**Hinteralfeld**	**3.89**	**331**	*e*Pn		**Pn**	**12 02 46.4**	**+1.1**
HINF				*e*Sn		**Sn**	**12 03 29.6**	**-2.4**
	2.0nm,0.3s							
LASF	**Ste Croix**	**4.17**	**267**	*e*Pn		**Pn**	**12 02 48.7**	**-0.5**
LASF				*e*Sn		**Sn**	**12 03 35.0**	**-3.9**
	0.8nm,0.2s							
HAU	**Haudompre**	**4.23**	**329**	*e*Pn		**Pn**	**12 02 50.1**	**-0.1**
HAU				*e*Sn		**Sn**	**12 03 38.5**	**-2.2**
	4.3nm,0.3s							
CDF	**Champ du Feu**	**4.29**	**339**	*e*Pn		**Pn**	**12 02 49.8**	**-1.3**
CDF				*e*Sn		**Sn**	**12 03 37.8**	**-4.4**
	2.2nm,0.4s							
SMF	**Signal de Mont**	**4.63**	**300**	*e*Pn		**Pn**	**12 02 55.2**	**-0.6**
SMF				*e*Sn		**Sn**	**12 03 47.6**	**-3.1**
	1.3nm,0.3s							
LOR	**Lormes**	**4.93**	**307**	*e*Pn		**Pn**	**12 03 01.0**	**+1.0**
LOR				*e*Sn		**Sn**	**12 03 54.7**	**-3.5**
	2.1nm,0.3s							
SSF	**Saint Saulge**	**5.03**	**304**	*e*Sn		**Sn**	**12 03 57.3**	**-3.4**
	0.4nm,0.2s							
BGF	**Bois d'Agland**	**5.22**	**296**	*e*Pn		**Pn**	**12 03 03.9**	**-0.3**
MTLF	**Montolieu**	**5.47**	**261**	*e*Pn		**Pn**	**12 03 06.7**	**-1.0**

*IDC **31** 12:21:06.2±3.7,21.72S×170.09E,mb3.8/4,mb1 4.0/4, mb1mx3.8/11,Error ellipse: s-maj=157.0km s-min=41.2km az=152.0*

ISC 31 12:21:13.6±1.1,21.81S±0.09×169.26E±0.08,h33km,n13, σ1°50/14,mb3.8/4,1C-2D,Southeast of Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.63**	**264**	*e*P		**P**	**12 22 55.2**	**+0.7**
DZM				*e*S		**S**	**12 22 26.0**	**+0.4**
NOUC	**Port Laguerre**	**2.76**	**263**	*e*P		**P**	**12 21 57.0**	**+0.5**
NOUC				*e*S		**S**	**12 22 27.3**	**-1.7**
BKM	**Butte a Klehm**	**4.23**	**347**	*i*P		**P**	**12 22 13.5**	**-3.8**
BKM				S		**S**	**12 23 07.6**	**+1.4**
ASAR	**Alice Springs**	**32.61**	**260**	P		**P**	**12 27 46.0**	**+1.5**
	2.1nm,0.9s,mb4.1,baz=77,slow=8.3,SNR=6.7							
CMAR	**Chiang Mai Arr**	**79.58**	**295**	P		**P**	**12 33 19.9**	**+0.5**
	0.5nm,0.6s,mb3.6,baz=132,slow=3.8,SNR=4.1							
VNA3	**Neumayer Olymp**	**87.20**	**180**	⇓*i*		**P**	**12 33 55.9**	**-1.2**
VNA3	**Neumayer Olymp**	**87.20**	**180**	⇓*i*		**P**	**12 34 00.1**	**+3.0**
VNA2	**Neumayer--Watz**	**87.49**	**181**	⇑*i*		**P**	**12 33 58.2**	**-0.3**
VNA2	**Neumayer--Watz**	**87.49**	**181**			**P**	**12 34 01.8**	**+3.3**
SONM	**Songino Array**	**89.28**	**323**	P		**P**	**12 34 05.5**	**-2.0**
	0.3nm,0.8s,mb3.7,baz=68,slow=1.3,SNR=3.7							
ILAR	**Eielson Array**	**92.66**	**17**	P		**P**	**12 34 17.3**	**-5.6**
	0.1nm,0.4s,mb3.6,baz=240,slow=4.9,SNR=5.9							
ARCES	**ARCESS Array B**	**127.54**	**345**	PKP		PKPdf	12 40 12.6	-2.3
	4.0nm,1.1s,baz=45,slow=1.7,SNR=5.2							
GERES	**GERESS Array B**	**146.74**	**330**	PKPbc		PKPbc	12 40 50.9	-0.8
	0.4nm,0.7s,baz=27,slow=3.0,SNR=4.8							

*JMA **31** 12:39:46.8±0.3,34.12N×141.69E,h19km±3km,M3.3*
*NEIC **31** 12:39:48.1±0.5,34.14N×141.68E,h10km, Error ellipse: s-maj=13.3km s-min=10.9km az=49.0*
*IDC **31** 12:39:51.8±5.6,34.15N×141.66E,h34km±45km,mb3.4/9, mb1 3.7/10,mb1mx3.5/24,ML3.7/1,MS3.3/2,Ms1 3.3/2, ms1mx2.8/20,Error ellipse: s-maj=25.6km s-min=18.3km az=95.0*

ISC 31 12:39:48.1±1.4,34.18N±0.05×141.68E±0.07,h22km±9km, n23,σ0°92/27,mb3.5/9,MS3.2/2,Off east coast of Honshu

| Code | Station Name | Δ° | AZ° | Phase | Op |

DPC	**Dobruska-Polom**	**1.17**	**172**	*e*PG	**Pg**	**12 51 58.2**	**-0.5**
DPC				*e*SG	**Sg**	**12 52 13.3**	**-1.1**
PVCC	**Panska Ves**	**1.36**	**224**	*e*PG	**Pg**	**12 52 02.8**	**+0.4**
CLL	**Collm**	**1.92**	**265**	*i* PG	**Pg**	**12 52 13.0**	**-0.6**
CLL				*i*		12 52 15.9	
CLL				*e*SG	**Sg**	**12 52 39.0**	**-0.2**
KHC	**Kasperske Hory**	**2.86**	**215**	*e*SG	**Sg**	**12 53 11.1**	**+0.6**

*LDG **31** 13:13:21.7±0.1,50.37N×87.58E,h10km,Mb4.7/22, Ms4.1/7,Error ellipse: s-maj=8.2km s-min=2.9km az=48.0*
*MOS **31** 13:13:22.5±1.3,50.25N×87.56E,h8km,mb4.5/21,Error ellipse: s-maj=8.0km s-min=6.5km az=89.0*
*IDC **31** 13:13:22.4±0.5,50.37N×87.67E,mb4.3/21,mb1 4.5/24, mb1mx4.5/25,ML4.9/4,MS3.8/13,Ms1 3.8/13, ms1mx3.6/31,Error ellipse: s-maj=9.0km s-min=8.4km az=93.0*
*BJI **31** 13:13:22.1,50.41N×87.49E,h10km, mB4.5,mb4.4,ML5.4, Ms4.9,Msz4.5*
*NEIC **31** 13:13:24.3±0.3,50.37N×87.56E,h10km,mb4.7/31, MS4.4/3,Error ellipse: s-maj=8.1km s-min=5.5km az=2.0*
*NNC **31** 13:13:28.1±3.0,50.48N×86.79E,mpv5.1,Error ellipse: s-maj=26.7km s-min=11.7km az=81.0*

ISC 31 13:13:21.6±0.7,50.34N±0.02×87.47E±0.03,h3km±4km, h19km±5.7km:pP-P,n193,σ1°30/222,mb4.6/74,MS4.1/35, 21C-8D,Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
AKAR	**Aktash**	**0.10**	**102**	*e*PG		**Pg**		**13 13 24.3**	**+0.6**
KTNR	**Kaitanak**	**1.30**	**262**	*i* PG		**Pg**		**13 13 46.8**	**-0.8**
KTNR				*i* S		**Sb**		**13 14 05.0**	**+1.7**
UKR	**Ust'-Kan**	**1.82**	**290**	*e*PN		**Pn**		**13 13 57.5**	**+3.4**
UKR				*i* S		**Sn**		**13 14 21.9**	**+4.0**
TASR	**Tashtagol**	**2.44**	**6**	*e*PN		**Pn**		**13 14 07.9**	**+4.9**
TASR				*e*S		**Sn**		**13 14 42.8**	**+9.1**
CERR	**Cheremushki**	**3.52**	**43**	*e*PN		**Pn**		**13 14 21.1**	**+2.7**
CERR				*e*				13 14 28.6	
CERR				*e*S		**Sn**		**13 15 12.6**	**+11**
ZAL	**Zalesovo**	**3.96**	**337**	Pn		**Pn**		**13 14 26.1**	**+1.4**
	244nm,0.3s,baz=233,slow=9.2,SNR=1194								
ZAL				Sn		**Sn**		**13 15 14.1**	**+1.8**
	316nm,0.3s,baz=226,slow=13,SNR=8.6								
ZAL				Lg				13 15 27.8	
	202nm,0.3s,baz=167,slow=13,SNR=3.0								
ZAL	**Zalesovo**	**3.96**	**337**	PN		**Pn**		**13 14 26.1**	**+1.5**
ZAL								13 15 14.1	
ZAL				S		**Sn**		**13 15 27.8**	**+16**
ZAL				pmax	pmax				
	comp=Z,244nm,0.3s								
ZAL				smax					
	comp=N,316nm,0.3s								
ZAL	**Zalesovo**	**3.96**	**337**	Pn		**Pn**		**13 14 26.1**	**+1.4**
ZAL				Sn		**Sn**		**13 15 14.1**	**+1.8**
ZAL				Lg				13 15 27.8	
SHRR	**Shira**	**4.48**	**21**	*e*PN		**Pn**		**13 14 34.6**	**+2.5**
SHRR				*e*				13 14 43.0	
SHRR				*e*				13 15 41.5	
SHRR				pmax	pmax				
	comp=Z,580nm,0.5s								
SHRR				pmax	pmax				
	comp=Z,4μm,0.6s								
SHRR				smax					
	comp=E,28μm,0.8s								
MK31	**Makanchi Array**	**4.94**	**226**	Pn		**Pn**		**13 14 41.2**	**+2.7**
	comp=E,65nm,0.3s,baz=48,slow=11,SNR=2218								
MK31				⇑Pg		**Pg**		**13 14 54.6**	**-5.6**
	comp=E,707nm,1.0s,baz=48,slow=17,SNR=9.3								
MK31				⇓Sn		**Sn**		**13 15 37.9**	**+0.8**
	comp=E,646nm,0.6s,baz=54,slow=17,SNR=8.0								
MK31				⇑Lg				13 15 58.5	
	comp=E,2μm,0.6s,baz=49,slow=28,SNR=8.5								
MK31				⇓Rg				13 16 19.6	
	comp=E,1μm,5.5s								
MKAR	**Makanchi Array**	**4.94**	**226**	Pn		**Pn**		**13 14 41.1**	**+2.5**
	comp=E,105nm,0.3s,baz=60,slow=13,SNR=434								
MKAR				Sn		**Sn**		**13 15 37.5**	**+0.4**
	comp=E,216nm,0.3s,baz=56,slow=27,SNR=12								
MKAR				Lg				13 15 59.9	
	comp=E,369nm,0.3s,baz=43,slow=30,SNR=20								
MKAR	**Makanchi Array**	**4.94**	**226**	PN		**Pn**		**13 14 41.1**	**+2.6**
MKAR								13 15 37.5	
MKAR				S		Sn		13 15 59.9	+23
MKAR				pmax	pmax				
	comp=Z,105nm,0.3s								
MKAR				smax					
	comp=N,216nm,0.3s								
MKAR	**Makanchi Array**	**4.94**	**226**	Pn		**Pn**		**13 14 41.1**	**+2.5**
MKAR				Sn		**Sn**		**13 15 37.5**	**+0.4**
MKAR				Lg				13 15 59.9	
NVS	**Novosibirsk**	**5.19**	**332**	*e*PN		**Pn**		**13 14 41.6**	**-0.5**
NVS				*i*				13 14 58.2	
NVS				*e*S		**Sn**		**13 15 43.2**	**-0.2**
NVS				*i*				13 16 06.3	
KURK	**Kurchatov**	**5.66**	**277**	⇑Pn		**Pn**		**13 14 49.3**	**+0.7**
	comp=N,101nm,0.6s,baz=97,slow=9.5,SNR=385								
KURK				⇑Lg				13 16 12.5	
	comp=N,945nm,0.6s,baz=350,slow=16,SNR=12								
KURK				⇓Rg				13 16 37.7	
	comp=N,2μm,11.4s								
KURK	**Kurchatov**	**5.66**	**277**	*e*P		**Pn**		**13 14 49.4**	**+0.8**
WMQ	**Urumqi**	**6.52**	**179**	⇑*i*P		**Pn**		**13 15 01.0**	**+0.1**
WMQ				S		**Sn**		**13 16 19.0**	**+2.2**
WMQ				SG		**Sg**		**13 16 46.0**	**-13**
WMQ				S		Sn			
	comp=N,956nm,0.9s								
WMQ				S		Sn			
	comp=E,1μm,0.9s								
MOY	**Mondy**	**8.64**	**76**	*e*P		**P**		**13 15 32.1**	**+1.6**
MOY				pmax	pmax				
	comp=Z,125nm,1.4s								
ZAK	**Zakamensk**	**10.11**	**84**	*e*P		**P**		**13 15 51.4**	**+0.7**
ZAK				pmax	pmax				
	comp=Z,56nm,1.4s								
TLY	**Talaya**	**10.29**	**76**	*e*P		**P**		**13 15 53.2**	**+0.1**
TLY				*e*S		**S**		**13 17 45.7**	**-4.5**
TLY				pmax	pmax				
	comp=Z,49nm,1.0s								
TLY				MLR	MLR				
	comp=Z,10μm,9.0s								
VOSK	**Vostochnaya**	**10.55**	**289**	⇑Pn		**P**		**13 15 53.8**	**-2.9**
	comp=Z,16nm,0.5s								
VOSK				⇓Sn		**S**		**13 17 48.9**	**-7.6**
	comp=Z,177nm,0.8s								
VOSK				⇑Rg				13 19 25.9	
	comp=Z,903nm,9.9s								
BVA0	**Borovoye Array**	**10.94**	**291**	⇑Pn		**P**		**13 15 59.4**	**-2.6**
	comp=Z,8.4nm,0.9s,baz=106,slow=14,SNR=231								
BVA0				⇑Sn		**S**		**13 17 58.8**	**-7.3**
	comp=Z,15nm,0.7s,baz=89,slow=23,SNR=5.8								
BVA0				⇓Rg				13 19 42.7	
	comp=Z,247nm,9.5s								
BVAR	**Borovoye Array**	**10.94**	**291**	Pn		**P**		**13 16 00.1**	**-1.9**
	comp=Z,16nm,0.3s,baz=102,slow=14,SNR=284								
BVAR				Sn		**S**		**13 18 00.0**	**-6.1**
	comp=Z,30nm,0.3s,baz=86,slow=24,SNR=10.0								
BVAR				Lg				13 19 14.2	
	baz=109,slow=26,SNR=1.8								
BVAR				LR		LR		13 20 48.4	
	comp=Z,566nm,19.1s,baz=330,slow=40								
BRVK	**Borovoye**	**11.01**	**291**	*e*P		**P**		**13 16 00.3**	**-2.7**
TKM2	**Tokmak 2**	**11.02**	**232**	P		**P**		**13 16 01.8**	**-1.4**
	SNR=34								
ULHL	**Ulahol**	**11.21**	**228**	P		**P**		**13 16 06.7**	**+0.9**
	SNR=14								
USP	**Ospenovka**	**11.35**	**236**	P		**P**		**13 16 05.5**	**-2.2**
	SNR=43								
CHMS	**Chumysh**	**11.40**	**235**	P		**P**		**13 16 07.5**	**-0.9**
	SNR=11								
KBK	**Karagaybulak**	**11.54**	**233**	P		**P**		**13 16 09.1**	**-1.3**
	SNR=15								
FRU	**Bishkek**	**11.59**	**235**	*e*P		**P**		**13 16 09.5**	**-1.4**
FRU				*i*				13 18 21.0	
ZRNK	**Zerenda**	**11.76**	**290**	⇑Pn		**P**		**13 16 10.5**	**-2.7**
	comp=Z,36nm,0.8s								
ZRNK				⇑Sn		**S**		**13 18 19.4**	**-6.8**
	comp=Z,94nm,0.7s								
ZRNK				⇑Rg				13 20 10.3	
	comp=Z,1μm,11.7s								
AAK	**Ala-Archa**	**11.79**	**234**	P		**P**		**13 16 12.9**	**-0.8**
	SNR=10								
AAK	**Ala-Archa**	**11.79**	**234**	*e*P		**P**		**13 16 10.8**	**-2.9**
	comp=Z,8.5nm,0.4s								
KZA	**Kyzart**	**11.82**	**230**	P		**P**		**13 16 14.6**	**+0.6**
	SNR=21								
UCH	**Uchtor**	**12.07**	**233**	P		**P**		**13 16 17.9**	**+0.4**
	SNR=14								
EKS2	**Erkin-Say**	**12.15**	**236**	P		**P**		**13 16 16.6**	**-1.9**
	SNR=19								
AML	**Almayashu**	**12.57**	**234**	P		**P**		**13 16 26.2**	**+2.1**
	SNR=8.6								
SONM	**Songino Array**	**12.66**	**94**	Pn		**P**		**13 16 23.9**	**-1.5**
	comp=Z,0.1nm,0.3s,baz=284,slow=10,SNR=28								
SONM				Pg		P		13 17 11.2	+46
	comp=Z,0.5nm,0.3s,baz=296,slow=17,SNR=7.2								
SONM				Sn		**S**		**13 18 41.3**	**-6.7**
	comp=Z,0.4nm,0.3s,baz=257,slow=16,SNR=4.4								
SONM				Lg				13 19 57.6	
	comp=Z,0.7nm,0.3s,baz=265,slow=26,SNR=5.9								
ULN	**Ulaanbaatar**	**13.07**	**93**	*e*P		**P**		**13 16 30.3**	**-0.5**
ULN	**Ulaanbaatar**	**13.07**	**93**	*e*P		**P**		**13 16 29.6**	**-1.2**
	comp=Z,2.5nm,0.9s								
KK31	**Karatay Array**	**13.68**	**245**	⇑Pn		**P**		**13 16 35.2**	**-3.6**
	comp=Z,37nm,0.8s,baz=50,slow=16,SNR=196								
KK31				⇑Sn		**S**		**13 19 04.7**	**-7.7**
	comp=Z,23nm,0.6s								
GTA	**Gaotai**	**13.98**	**137**	*e*P		**P**		**13 16 39.3**	**-3.5**
GTA				AP				13 16 43.3	
GTA				XP				13 16 46.8	
GTA				PP		PP		13 16 49.3	-4.6
GTA				AMB		AMB			
	comp=Z,3.0nm,0.8s								
GTA				AMB		AMB			
	comp=Z,27nm,3.8s								
GTA				LR		LR			
	comp=N,2μm,8.4s								
GTA				LR		LR			
	comp=E,4μm,8.7s								
GTA				LR		LR			
	comp=Z,1μm,6.5s								
BOD	**Bodaibo**	**17.19**	**54**	*e*P		**P**		**13 17 23.7**	**-0.4**
AB31	**Akbulak array**	**17.77**	**277**	⇓P		**P**		**13 17 28.5**	**-2.9**
	comp=Z,9.4nm,0.6s								
ARU	**Arti**	**18.20**	**301**	⇑*i*P		**P**		**13 17 34.0**	**-2.7**
ARU				*e*S		**S**		**13 20 55.7**	**-1.8**
ARU				pmax	pmax				
	comp=Z,21nm,0.8s								
ARU				MLR	MLR				
	comp=Z,600nm,17.0s								
ARU				MLR	MLR				
	comp=N,100nm,15.0s								
ARU				MLR	MLR				
	comp=E,500nm,18.0s								
LZH	**Lanzhou**	**18.53**	**134**	*e*P		**P**		**13 17 42.0**	**+1.1**
LZH				AP				13 17 45.5	
LZH				PP		PP		13 17 58.3	+1.8
LZH				*e*S		**S**		**13 21 06.5**	**+1.4**
LZH				XS				13 21 09.8	
LZH				SS		SS		13 21 28.5	-0.7
LZH				AMB		AMB			
	comp=Z,58nm,1.3s								
LZH				AMB		AMB			
	comp=Z,197nm,4.3s								
LZH				LR		LR			
	comp=E,3μm,8.5s								
LZH				LR		LR			
	comp=Z,3μm,12.2s								
HHC	**Hu-ho-hao-te**	**19.27**	**110**	*e*P		**P**		**13 17 48.5**	**-1.4**
HHC				AP				13 17 52.0	
HHC				XP				13 17 55.8	
HHC				PP		PP		13 18 04.5	-2.5
HHC				AMB		AMB			
	comp=Z,10.0nm,1.2s								
HHC				AMB		AMB			
	comp=Z,62nm,6.5s								
HHC				LR		LR			
	comp=N,1μm,9.3s								
HHC				LR		LR			
	comp=E,777nm,10.3s								
HHC				LR		LR			
	comp=Z,567nm,11.3s								
LSA	**Lhasa**	**20.80**	**171**	P		**P**		**13 18 07.0**	**+0.5**
TIY	**Taiyuan**	**21.82**	**116**	*e*P		**P**		**13 18 18.5**	**+1.7**
TIY				LR		LR			
	comp=E,1μm,11.0s								
TIY				LR		LR			
	comp=Z,902nm,10.0s,MS4.5								
GKN	**Gorkha**	**22.41**	**187**	*e*P		**P**		**13 18 21.8**	**-1.0**
	comp=Z,88nm,1.0s,mb5.2								
BJI	**Beijing**	**22.57**	**106**	*e*P		**P**		**13 18 25.8**	**+1.6**
BJI				S		**S**		**13 22 35.8**	**+8.4**
BJI				AMB		AMB			
	comp=Z,17nm,0.8s,mb4.5								
BJI				LR		LR			
	comp=N,1μm,11.2s,MS4.9								
BJI				LR		LR			
	comp=E,2μm,11.2s,MS4.9								
BJI				LR		LR			
	comp=Z,897nm,19.4s								
KKN	**Kakani**	**22.58**	**185**	*e*P		**P**		**13 18 24.0**	**-0.4**
	comp=Z,90nm,1.0s,mb5.2								
KOLN	**Koldanda**	**22.73**	**189**	*e*P		**P**		**13 18 25.2**	**-0.7**
	comp=Z,89nm,1.0s,mb5.2								
DMN	**Daman**	**22.77**	**185**	*e*P		**P**		**13 18 25.8**	**-0.5**
	comp=Z,45nm,0.8s,mb4.9								
PKI	**Pulchoki**	**22.79**	**185**	*e*P		**P**		**13 18 25.5**	**-1.0**
	comp=Z,53nm,0.9s,mb5.0								
CD2	**Chengdu**	**22.92**	**142**	*e*P		**P**		**13 18 29.0**	**+1.3**
CD2				S		**S**		**13 22 40.8**	**+7.0**
CD2				AMB		AMB			
	comp=Z,10.0nm,1.2s,mb4.1								
CD2				AMB		AMB			
	comp=Z,110nm,4.9s								
CD2				LR		LR			
	comp=E,4μm,17.0s								
CD2				LR		LR			
	comp=Z,940nm,11.6s								
CLNS	**Chul'man**	**22.92**	**59**	*e*P		**P**		**13 18 26.6**	**-0.8**
CLNS				pmax	pmax				
	comp=Z,10.0nm,1.2s,mb4.1								
CLNS				pmax	pmax				
	comp=N,10.0nm,0.9s								
CLNS				pmax	pmax				
	comp=E,10.0nm,1.0s								
NDI	**New Delhi**	**22.99**	**204**	*e*P		**P**		**13 18 27.0**	**-1.4**
SHL	**Shillong**	**24.97**	**171**	*e*P		**P**		**13 18 47.0**	**-0.6**
SHL				*e*S		**S**		**13 23 12.0**	**+2.8**
YAK	**Yakutsk**	**25.74**	**47**	*e*P		**P**		**13 18 54.4**	**-0.1**
YAK				*e*				13 19 39.3	
YAK				*e*PPP		PPP		13 19 46.9	+0.7
YAK				*e*S		**S**		**13 23 29.7**	**+8.0**
YAK				*e*SS		SS		13 24 36.1	+11
YAK				pmax	pmax				
	comp=Z,12nm,0.9s,mb4.4								
YAK				pmax	pmax				
	comp=E,9.0nm,1.2s								
YAK				pmax	pmax				
	comp=Z,9.0nm,1.2s,mb4.2								
YAK				smax					
	comp=E,43nm,11.4s								
YAK				smax					
	comp=N,36nm,10.7s								
YAK				MLR	MLR				
	comp=N,944nm,12.0s,MS4.5								
YAK				MLR	MLR				
	comp=Z,65nm,12.0s,MS3.4								
YAK				MLR	MLR				
	comp=E,362nm,13.0s,MS4.5								
YAK	**Yakutsk**	**25.74**	**47**	*e*P		**P**		**13 18 54.1**	**-0.4**
	comp=E,27nm,1.0s,mb4.7								
SNY	**Shenyang**	**26.24**	**95**	⇓P		**P**		**13 19 01.3**	**+1.9**
SNY				AMB		AMB			
	comp=Z,30nm,2.4s,mb4.4								
SNY				LR		LR			
	comp=E,690nm,18.0s								
SNY				LR		LR			
	comp=Z,710nm,19.6s,MS4.2								
CN2	**Changchun**	**26.46**	**90**	*e*P		**P**		**13 19 01.3**	**-0.1**
CN2				XP		sP		13 19 08.5	+6.0
CN2				PP		PP		13 19 45.0	+0.5
CN2				*e*S		**S**		**13 23 31.5**	**-2.5**
CN2				AMB		AMB			
	comp=Z,10.0nm,0.6s,mb4.5								
CN2				LR		LR			
	comp=N,430nm,11.0s,MS4.4								
CN2				LR		LR			
	comp=E,400nm,11.0s,MS4.4								
CN2				LR		LR			
	comp=Z,530nm,17.0s								
KMI	**Kunming**	**27.81**	**149**	*e*P		**P**		**13 19 13.8**	**-0.1**
KMI				XP		sP		13 19 20.8	+5.8
KMI				S		**S**		**13 23 54.5**	**-1.5**
KMI				SS		SS		13 25 18.5	+3.0
KMI				AMB		AMB			
	comp=Z,4.0nm,0.5s,mb4.3								
KMI				LR		LR			
	comp=N,332nm,14.9s								
KMI				LR		LR			
	comp=E,341nm,9.5s								
KMI				LR		LR			
	comp=Z,389nm,12.8s,MS4.2								
GYA	**Guiyang**	**28.03**	**141**	⇓*i*P		**P**		**13 19 15.0**	**-0.9**
GYA				AP		pP		13 19 20.5	+3.8
GYA				XP		sP		13 19 22.8	+5.8
GYA				S		**S**		**13 23 57.5**	**-2.0**
GYA				AMB		AMB			
	comp=Z,20nm,1.0s,mb4.7								
GYA				LR		LR			
	comp=Z,520nm,11.4s,MS4.4								
TIXI	**Tiksi**	**28.30**	**26**	*e*P		**P**		**13 19 16.7**	**-1.2**
TIXI				*e*S		**S**		**13 23 54.6**	**-8.9**
TIXI				pmax	pmax				
	comp=Z,4.0nm,0.9s,mb4.0								
TIXI				MLR	MLR				
	comp=Z,567nm,18.0s,MS4.2								
TIXI	**Tiksi**	**28.30**	**26**	*e*P		**P**		**13 19 16.6**	**-1.4**
	comp=Z,6.6nm,0.1s,mb5.2								
MDJ	**Mudanjiang**	**28.74**	**85**	P		**P**		**13 19 21.0**	**-1.1**
MDJ				AP		pP		13 19 23.5	+0.6
MDJ				S		**S**		**13 24 11.3**	**+0.5**
MDJ				XS				13 24 15.5	
MDJ				SCP				13 26 12.0	
MDJ				PCS				13 26 13.5	
MDJ				SCS		ScS		13 30 05.8	+0.1
MDJ				AMB		AMB			
	comp=Z,5.0nm,0.7s,mb4.3								
MDJ				AMB		AMB			
	comp=Z,47nm,5.2s								
MDJ				LR		LR			
	comp=N,1μm,13.3s,MS4.7								
MDJ				LR		LR			
	comp=E,654nm,12.1s,MS4.7								
MDJ				LR		LR			
	comp=Z,862nm,10.9s,MS4.6								
NJ2	**Nanjing**	**29.55**	**116**	*e*P		**P**		**13 19 28.5**	**-1.0**
NJ2				AP		pP		13 19 37.5	+7.2
NJ2				XP		sP		13 19 42.5	+12
NJ2				S		**S**		**13 24 22.0**	**-1.8**
NJ2				AMB		AMB			
	comp=Z,10.0nm,0.7s,mb4.7								
NJ2				AMB		AMB			
	comp=Z,140nm,7.0s								
NJ2				LR		LR			
	comp=N,820nm,14.5s,MS4.7								
NJ2				LR		LR			
	comp=E,730nm,12.6s,MS4.7								
NJ2				LR		LR			
	comp=Z,1μm,14.0s,MS4.7								
THR	**Tehran**	**29.85**	**255**	P		**P**		**13 19 34.7**	**+2.5**
	comp=Z,1.3nm,0.5s,mb3.9,baz=95,slow=4.7,SNR=5.6								
THR				LR		LR		13 32 53.4	
	comp=Z,79nm,19.4s,MS3.4,baz=268,slow=39								
THR	**Tehran**	**29.85**	**255**	P		**P**		**13 19 34.7**	**+2.5**
THR				pmax	pmax				
	comp=Z,1.0nm,0.5s								
THR				MLR	MLR				
	comp=Z,79nm,19.4s								
MOS	**Moscow**	**29.90**	**300**	*e*P		**P**		**13 19 33.5**	**+1.0**
MOS				pmax	pmax				
	comp=Z,92nm,0.9s,mb5.5								
MOS				MLR	MLR				
	comp=Z,700nm,12.7s,MS4.5								
VRSR	**Storozhevoye**	**30.11**	**291**	*e*P		**P**		**13 19 34.0**	**-0.3**
VRSR				*e*				13 20 32.3	
VRSR				pmax	pmax				
	comp=Z,10.0nm,0.6s,mb4.7								
VRSR				pmax	pmax				
	comp=N,9.0nm,0.5s								
VRSR				MLR	MLR				
	comp=Z,330nm,13.0s,MS4.2								
ZEI	**Tsey**	**30.54**	**273**	*e*P		**P**		**13 19 37.0**	**-1.2**
ZEI				*e*S		**S**		**13 24 33.0**	**-6.4**
ZEI				pmax	pmax				
	comp=Z,50nm,6.0s								
ZEI				MLR	MLR				
	comp=Z,400nm,17.0s,MS4.1								
OBN	**Obninsk**	**30.62**	**299**	α *i*P		**P**		**13 19 39.9**	**+1.1**
OBN				*e*				13 20 52.2	
OBN				*e*SS		SS		13 26 17.8	-3.2
OBN				pmax	pmax				
	comp=Z,18nm,0.6s,mb5.1								
OBN				MLR	MLR				
	comp=Z,300nm,19.0s,MS4.0								
KIV	**Kislovodsk**	**30.74**	**276**	*e*P		**P**		**13 19 40.1**	**+0.1**
KIV				pmax	pmax				
	comp=Z,10.0nm,1.1s,mb4.6								
KIV				MLR	MLR				
	comp=Z,320nm,19.0s,MS4.0								
KIV				MLR	MLR				
	comp=E,210nm,18.0s								
SSE	**Sheshan**	**31.60**	**115**	P		**P**		**13 19 47.0**	**-0.7**
SSE				S		**S**		**13 24 58.5**	**+2.4**
SSE				XS				13 25 03.5	
SSE				AMB		AMB			
	comp=Z,47nm,0.7s,mb5.4								
SSE				LR		LR			
	comp=N,254nm,19.2s,MS4.1								
SSE				LR		LR			
	comp=E,331nm,19.8s,MS4.1								
SSE				LR		LR			
	comp=Z,141nm,16.2s,MS3.7								
JOF	**Joensuu**	**32.23**	**315**	*e*p		**P**		**13 19 52.4**	**-0.4**
	comp=Z,0.9nm,0.3s,mb4.1								
JOF	**Joensuu**	**32.23**	**315**	*e*P		**P**		**13 19 52.4**	**-0.4**
JOF				pmax	pmax				
	comp=Z,1.0nm,0.3s,mb4.1								
SOC	**Sochi**	**32.81**	**277**	*e*P		**P**		**13 19 56.0**	**-2.1**
SOC				*e*S		**S**		**13 25 09.6**	**-5.3**
SOC				pmax	pmax				
	comp=Z,10.0nm,0.7s,mb4.8								
SOC				pmax	pmax				
	comp=N,8.0nm,0.4s								
SOC				pmax	pmax				
	comp=E,20nm,1.1s								
SOC				MLR	MLR				
	comp=N,290nm,19.0s,MS4.3								
SOC				MLR	MLR				
	comp=Z,350nm,19.0s,MS4.1								
SOC				MLR	MLR				
	comp=E,400nm,15.0s,MS4.3								
CMAR	**Chiang Mai Arr**	**33.11**	**160**	P		**P**		**13 20 00.0**	**-0.9**
	comp=E,2.6nm,0.7s,mb4.3,baz=341,slow=9.0,SNR=21								
CMAR				LR		LR		13 34 34.7	
	comp=E,108nm,20.3s,MS3.5,baz=250,slow=38								
CMAR	**Chiang Mai Arr**	**33.11**	**160**	P		**P**		**13 20 00.0**	**-0.9**
CMAR				pmax	pmax				
	comp=Z,3.0nm,0.7s								
CMAR				MLR	MLR				
	comp=Z,108nm,20.3s								
ARCES	**ARCESS Array B**	**34.45**	**327**	P		**P**		**13 20 12.2**	**+0.1**
	comp=Z,2.5nm,0.9s,mb4.2,baz=90,slow=7.3,SNR=8.0								
ARCES				LR		LR		13 34 46.7	
	comp=Z,100nm,18.8s,MS3.6,baz=284,slow=37								
ARCES	**ARCESS Array B**	**34.45**	**327**	P		**

comp=N,658nm,15.4s,MS4.9
QIZ LR LR
comp=E,2µm,15.8s,MS4.9
QIZ LR LR
comp=Z,481nm,11.8s,MS4.5
AKASG Malin Array Be 36.20 294 P **P** **13 20 27.4 +0.2**
SEY Seymchan 36.20 45 *e*P **P** **13 20 29.2 +2.2**
SEY *e* 13 21 49.0
SEY *e*S **S** **13 26 07.3 +0.1**
SEY *e*SS SS 13 28 27.9 -2.2
SEY *e*SSS SSS 13 29 00.8 +2.1
SEY 13 30 45.3
SEY pmax pmax
comp=Z,30nm,0.7s,mb5.3
SEY smax
comp=N,70nm,14.8s
SEY smax
comp=E,160nm,19.3s
SEY MLR MLR
comp=Z,870nm,19.0s,MS4.5
SEY MLR MLR
comp=N,190nm,18.0s,MS4.4
SEY MLR MLR
comp=E,580nm,17.0s,MS4.4
SPITS Spitsbergen Ar 37.44 341 P **P** **13 20 37.2 -0.1**
comp=E,2.0nm,0.8s,mb4.0,baz=101,slow=10,SNR=8.7
SPITS PcP PcP 13 22 56.4 -0.1
comp=E,4.3nm,0.8s,baz=104,slow=8.3,SNR=5.3
BRTR Keskin Array B 38.70 275 P **P** **13 20 49.4 +1.0**
comp=E,17nm,0.9s,mb4.8,baz=90,slow=7.4,SNR=43
BRTR LR LR 13 39 33.4
comp=E,117nm,20.6s,MS3.7,baz=120,slow=40
KWP Kalwaria 40.45 295 *e*P **P** **13 21 05.2 +2.5**
KWP Kalwaria 40.45 295 *e*P **P** **13 21 00.9 -1.8**
comp=E,36nm,1.1s,mb5.0
BILL Bilibino 40.70 34 *e*P **P** **13 21 04.8 +0.3**
BILL *i* 13 22 41.1
BILL *i* 13 23 07.9
BILL *i*S **S** **13 27 12.9 -2.4**
BILL *i*SS SS 13 30 16.1 +6.1
BILL pmax pmax
comp=Z,5.0nm,0.9s,mb4.1
BILL MLR MLR
comp=Z,200nm,16.0s,MS4.1
BILL Bilibino 40.70 34 *e*P **P** **13 21 05.2 +0.6**
comp=Z,4.5nm,1.0s,mb4.0
ASF Jabal al Asfar 41.24 264 P **P** **13 21 10.4 +1.1**
comp=Z,5.8nm,0.6s,mb4.4,baz=283,slow=9.8,SNR=7.8
CRVS Cervenica-Dubn 41.51 295 *e*P **P** **13 21 12.9 +1.6**
CRVS *e*PP PP 13 22 46.3 -4.1
NB2 NORSAR Subarra 41.86 315 P **P** **13 21 13.4 -0.6**
comp=Z,5.4nm,0.7s,mb4.3,baz=63,slow=7.9
NOA NORSAR Array B 41.86 315 P **P** **13 21 13.4 -0.5**
comp=Z,4.5nm,0.7s,mb4.2,baz=66,slow=7.8,SNR=8.9
NOA LR LR 13 38 36.8
comp=Z,185nm,21.1s,MS3.9,baz=45,slow=36
NOA NORSAR Array B 41.86 315 P **P** **13 21 13.4 -0.6**
NOA pmax pmax
comp=Z,5.0nm,0.7s
NOA MLR MLR
comp=Z,185nm,21.1s
OJC Ojcow 41.86 297 *e*P **P** **13 21 15.0 +0.9**
OJC *e*S **S** **13 27 32.2 -0.4**
OJC MLR MLR 13 39 11.6
comp=Z,400nm,19.6s,MS4.3
NIE Niedzica 41.94 296 *e*P **P** **13 21 17.5 +2.7**
NAO01 NORSAR Array S 42.08 315 *e*P **P** **13 21 14.0 -1.7**
comp=Z,4.2nm,0.7s,mb4.2
OKC Ostrava-Krasne 42.98 297 L 13 39 40.0
comp=Z,0.4nm,19.0s
VYHS Vyhne 43.23 295 *e*P **P** **13 21 27.3 +1.9**
MORC Moravsky Berou 43.35 298 *e*P **P** **13 21 25.6 -0.8**
comp=Z,6.0nm,0.9s,mb4.3
KOLL Kolacno 43.44 296 *e*P **P** **13 21 28.7 +1.6**
VTS Vitosha 43.68 286 *e*P **P** **13 21 30.0 +0.9**
DPC Dobruska-Polom 43.77 299 *e*P **P** **13 21 32.1 +2.4**
DPC L 13 40 20.0
comp=Z,0.4nm,13.4s
UPC Upice 43.87 299 *e*P **P** **13 21 32.8 +2.3**
MMB Musomiste 43.92 284 *e*P **P** **13 21 30.0 -1.0**
SMOL Smolenice 44.04 296 *e*P **P** **13 21 34.9 +3.0**
PVCC Panska Ves 44.66 300 *e*P **P** **13 21 39.1 +2.2**
PVCC L 13 40 10.0
comp=Z,0.4nm,11.2s
BRG Berggiesshubel 44.84 300 *e*P **P** **13 21 40.7 +2.4**
BRG pmax pmax
comp=Z,3.0nm,0.8s,mb4.2
BRG Berggiesshubel 44.84 300 *e*P **P** **13 21 40.7 +2.4**
comp=Z,2.5nm,0.8s,mb4.1
PRU Pruhonice 44.94 299 *e*P **P** **13 21 41.4 +2.2**
PRU L 13 40 50.0
CLL Collm 45.14 301 P **P** **13 21 41.0 +0.2**
comp=Z,logA/T=1.0,mb4.6
CLL *e**SP sP 13 21 47.0 +5.1
CLL *e*PPP PPP 13 24 03.0 -4.7
CLL *e* 13 24 19.0
CLL Collm 45.14 301 *e*P **P** **13 21 41.0 +0.2**
CLL *e* 13 21 47.0
CLL pmax pmax
comp=Z,10.0nm,0.9s,mb4.7
CLL Collm 45.14 301 *e*P **P** **13 21 41.0 +0.2**
comp=Z,10.0nm,0.9s,mb4.7
CLL *e* 13 21 47.0
KHC Kasperske Hory 45.92 299 *e*P **P** **13 21 49.9 +3.0**
KHC x x 13 21 58.5
KHC L 13 41 30.0
comp=Z,0.4nm,18.7s
KHC Kasperske Hory 45.92 299 *e*P **P** **13 21 49.9 +3.0**
KHC MLR MLR
comp=Z,400nm,18.7s,MS4.4
NKC Novy Kostel 45.98 300 *e*P **P** **13 21 45.0 -2.4**
NKC L 13 41 30.0
comp=Z,0.4nm,17.2s
GERES GERESS Array B 46.00 298 P **P** **13 21 48.9 +1.3**
comp=Z,2.2nm,0.8s,mb4.1,baz=51,slow=8.5,SNR=9.1
GERES PP PP 13 23 41.0 +5.3
comp=Z,1.1nm,0.8s,baz=45,slow=9.4,SNR=4.4
GERES GERESS Array B 46.00 298 P **P** **13 21 48.9 +1.3**
GERES 13 23 41.0
GERES pmax pmax
comp=Z,2.0nm,0.8s
MOX Moxa 46.23 301 *i* P **P** **13 21 49.7 +0.3**
comp=Z,logA/T=1.0,mb4.7
MOX QM 13 39 46.0
MOX RM 13 42 04.0
MOX Moxa 46.23 301 *e*P **P** **13 21 49.7 +0.3**
MOX pmax pmax
comp=Z,9.0nm,0.9s,mb4.7
MOX MLR MLR
comp=Z,300nm,18.0s,MS4.3
MOX Moxa 46.23 301 *e*P **P** **13 21 49.7 +0.3**
comp=Z,9.0nm,0.9s,mb4.7
MOX LR LR
comp=Z,300nm,18.0s,MS4.3
GRA1 Grafenberg Arr 46.94 300 *e*P **P** **13 21 57.0 +2.0**
comp=Z,12nm,0.8s,mb4.9
GRF Grafenberg Arr 46.94 300 *e*P **P** **13 21 57.0 +2.0**
GRF pmax pmax
comp=Z,12nm,0.8s,mb4.9
CBIJ Chichi jima 47.33 98 LR LR 13 41 59.4
comp=Z,114nm,21.2s,MS3.8,baz=157,slow=36
CDF Champ du Feu 49.82 301 *e*P **P** **13 22 17.2 -0.2**
comp=Z,6.4nm,0.7s,mb4.4
GIVF Givet 50.19 304 *e*P **P** **13 22 20.1 -0.1**
HINF Hinteralfeld 50.39 300 *e*P **P** **13 22 21.5 -0.3**
comp=Z,9.4nm,0.9s,mb4.5
BAIF Baives 50.55 304 *e*P **P** **13 22 22.8 -0.1**
comp=Z,24nm,1.1s,mb4.7
HAU Haudompre 50.56 301 *e*P **P** **13 22 23.3 +0.3**
comp=Z,11nm,0.7s,mb4.6
HAU *e*R
comp=Z,306nm,17.8s
MEZF Maizieres J'vi 50.98 302 *e*P **P** **13 22 26.3 +0.1**
comp=Z,39nm,0.9s,mb5.1
CABF La Chapelle 51.51 299 *e*P **P** **13 22 30.2 -0.1**
LPG La Plagne 51.80 298 *e*P **P** **13 22 32.5 0.0**
comp=Z,22nm,0.8s,mb4.8
LPL La Plagne 51.80 298 *e*P **P** **13 22 32.7 +0.2**
comp=Z,7.2nm,0.4s,mb4.6
BNI Bardonecchia 52.10 298 *e*P **P** **13 22 32.4 -2.4**
MBDF Montbardon 52.24 297 *e*P **P** **13 22 36.0 +0.1**
comp=Z,23nm,0.8s,mb4.9
PGF Pioggiola 52.27 294 *e*P **P** **13 22 35.7 -0.4**
LOR Lormes 52.36 301 *e*P **P** **13 22 36.5 -0.2**
comp=Z,17nm,1.2s,mb4.6
LOR *e*R
comp=Z,199nm,17.5s
SBF Sospel 52.38 296 *e*P **P** **13 22 36.9 0.0**
ORIF Oris-en-Rattie 52.64 298 *e*P **P** **13 22 38.8 0.0**
ORIF *e*R
comp=Z,645nm,18.8s
SSF Saint Saulge 52.67 301 *e*P **P** **13 22 38.9 -0.2**
comp=Z,11nm,0.9s,mb4.5
SMF Signal de Mont 52.74 301 *e*P **P** **13 22 39.2 -0.4**
comp=Z,13nm,1.1s,mb4.5
LMR La Mourre 53.24 296 *e*P **P** **13 22 43.3 0.0**
comp=Z,54nm,1.3s,mb5.0
VIVF Saint-Julien-l 53.36 298 *e*P **P** **13 22 43.7 -0.5**
comp=Z,8.6nm,0.7s,mb4.5
SMRF Simiane la Rot 53.38 297 *e*P **P** **13 22 44.3 -0.1**
LDF La Druitiere 53.70 305 *e*P **P** **13 22 46.1 -0.5**
comp=Z,35nm,1.1s,mb4.9
FLN La Foliniere 53.79 305 *e*P **P** **13 22 46.9 -0.3**
comp=Z,23nm,0.9s,mb4.8
FLN *e*R
comp=Z,610nm,19.0s
TCF Toulx Ste Croi 53.85 301 *e*P **P** **13 22 47.7 0.0**
GRR Gorron 54.21 305 *e*P **P** **13 22 50.2 -0.1**
LASF Ste Croix 54.30 298 *e*P **P** **13 22 51.1 +0.1**
comp=Z,22nm,1.1s,mb4.7
MFF Saint Martin d 54.94 303 *e*P **P** **13 22 55.7 0.0**
comp=Z,16nm,0.9s,mb4.8
SGMF Saint Gilles 55.19 306 *e*P **P** **13 22 57.2 -0.3**
LFF La Frestale 55.50 301 *e*P **P** **13 23 00.6 +0.8**
QUIF Quistinic 55.72 306 *e*P **P** **13 23 01.0 -0.4**
comp=Z,15nm,0.7s,mb4.8
COLA College 57.41 25 *e*P **P** **13 23 12.2 -1.1**
comp=Z,1.7nm,0.6s,mb4.2
ILAR Eielson Array 57.75 24 P **P** **13 23 14.1 -1.6**
comp=Z,1.8nm,0.6s,mb4.3,baz=324,slow=5.3,SNR=34
ILAR LR LR 13 51 35.0
comp=Z,72nm,20.2s,MS3.8,baz=151,slow=40
ILAR Eielson Array 57.75 24 P **P** **13 23 14.1 -1.5**
ILAR pmax pmax
comp=Z,2.0nm,0.6s
ILAR MLR MLR
comp=Z,72nm,20.2s
INK Inuvik 57.80 17 P **P** **13 23 14.8 -1.2**
comp=Z,5.6nm,1.0s,mb4.5,baz=340,slow=9.3,SNR=11
INK Inuvik 57.80 17 P **P** **13 23 14.8 -1.1**
INK pmax pmax
comp=Z,6.0nm,1.0s
INK Inuvik 57.80 17 *e*P **P** **13 23 14.5 -1.4**
comp=Z,9.0nm,1.1s,mb4.7
ESDC Sonseca Array 61.59 299 P **P** **13 23 43.1 +0.7**
comp=Z,4.9nm,1.0s,mb4.6,baz=49,slow=6.9,SNR=7.9
YKA Yellowknife Ar 66.16 11 P **P** **13 24 10.5 -1.3**
comp=Z,1.0nm,0.6s,mb4.0,baz=340,slow=6.8,SNR=21
YKA LR LR 13 52 35.9
comp=Z,64nm,19.4s,MS3.8,baz=305,slow=36
KMBO Kilima Mbogo 66.74 237 P **P** **13 24 16.6 +0.3**
comp=Z,1.4nm,0.9s,mb4.0,baz=40,slow=16,SNR=3.8
SCHQ Schefferville 73.02 345 P **P** **13 24 52.1 -1.8**
comp=Z,12nm,0.9s,mb4.5,baz=208,slow=7.6,SNR=6.3
ULM Lac du Bonnet 79.75 2 LR LR 14 05 25.2
comp=Z,72nm,21.4s,MS4.0,baz=360,slow=39
WRA Warramunga Arr 81.27 136 P **P** **13 25 40.0 -0.6**
comp=Z,1.4nm,0.8s,mb4.0,baz=340,slow=5.8,SNR=11
WRA Warramunga Arr 81.27 136 P **P** **13 25 40.0 -0.5**
WRA pmax pmax
comp=Z,1.0nm,0.8s
CHMT Chamberlain Mo 81.49 14 *e*P **P** **13 25 40.9 -0.2**
MCMT McKenzie Canyo 83.58 14 *e*P **P** **13 25 50.9 -1.0**
ASAR Alice Springs 84.35 138 P **P** **13 25 55.0 -1.4**
comp=Z,0.9nm,0.6s,mb4.1,baz=334,slow=5.0,SNR=14
RSSD Black Hills 85.39 8 *e*P **P** **13 26 01.1 +0.1**
comp=Z,5.7nm,1.0s,mb4.7
PDAR Pinedale Array 86.09 12 P **P** **13 26 03.2 -1.3**
comp=Z,0.2nm,0.4s,mb3.7,baz=27,slow=4.0,SNR=3.4
PDAR LR LR 14 10 35.6
comp=Z,58nm,20.0s,MS4.0,baz=224,slow=40
DBIC Dimbokro 86.40 276 P **P** **13 26 06.4 -0.4**
comp=Z,3.0nm,0.8s,mb4.6,baz=40,slow=9.7,SNR=4.3
DBIC Dimbokro 86.40 276 P **P** **13 26 06.4 -0.3**
DBIC pmax pmax
comp=Z,3.0nm,0.8s
NVAR Mina Array Bea 88.74 20 P **P** **13 26 17.6 +0.2**
comp=Z,0.8nm,0.8s,mb4.1,baz=7.0,slow=3.2,SNR=7.4
NVAR LR LR 14 06 58.0
comp=Z,78nm,20.4s,MS4.1,baz=135,slow=36
MSU Marysvale 89.85 15 *e*P **P** **13 26 25.2 +2.5**
PV01 Paradox Valley 90.78 13 *e*P **P** **13 26 29.7 +2.7**
STKA Stephens Creek 94.82 136 P **P** **13 26 47.1 +1.4**
comp=Z,4.1nm,1.1s,mb4.8,baz=124,slow=20,SNR=3.9
VNA2 Neumayer--Watz 137.98 209 *i* Pdif 13 29 51.7 -3.8
VNA2 Neumayer--Watz 137.98 209 *i* PKPdf 13 32 49.1 +0.4
VNA1 Neumayer--Stat 138.17 210 *i* PKPdf 13 32 50.7 +1.6
VNA3 Neumayer Olymp 138.78 209 *i* Pdif 13 29 50.9 -8.1
VNA3 Neumayer Olymp 138.78 209 PKPdf 13 32 50.7 +0.5
CPUP Villa Florida 143.96 298 PKP PKPdf 13 32 58.0 -2.4
comp=Z,5.0nm,0.8s,baz=35,slow=1.6,SNR=9.5
CPUP Villa Florida 143.96 298 PKIKP PKPdf 13 32 58.0 -2.4
CPUP pmax pmax
comp=Z,5.0nm,0.8s
LVC Limon Verde 146.72 318 *e*PKP PKPdf 13 33 05.7 +0.4

*WAR **31** 13:19:17.2,50.18N×18.81E,ML2.4,Mining Induced*
*PRU **31** 13:19:18.2,50.23N×18.75E*
ISC 31 13:19:16.3±0.6,50.18N±0.06×18.70E±0.04,n10,σ1§23/16,
Poland

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
OKC	**Ostrava-Krasne**	**0.49**	**227**	*e*PG		**Pg**	**13 19 28.5**	**+2.4**
OJC	**Ojcow**	**0.71**	**86**	*e*Pg		**Pg**	**13 19 30.0**	**-0.4**
OJC				*i* Sg		**Sg**	**13 19 39.6**	**-0.3**
NIE	**Niedzica**	**1.29**	**125**	*e*Pg		**Pg**	**13 19 41.4**	**-0.7**
NIE				*e*			13 19 41.9	
NIE				*i* Sg		**Sg**	**13 19 59.1**	**-0.2**
NIE	**Niedzica**	**1.29**	**125**	*e*PG		**Pg**	**13 19 41.0**	**-1.1**
NIE				*i* SG		**Sg**	**13 19 59.1**	**-0.2**
DPC	**Dobruska-Polom**	**1.54**	**277**	*e*PG		**Pg**	**13 19 46.4**	**-0.5**
DPC				*e*SG		**Sg**	**13 20 07.3**	**-0.1**
	9.5nm,0.3s							
KSP	**Ksiaz**	**1.68**	**294**	*e*PG		**Pg**	**13 19 50.0**	**+0.3**
KSP				*e*SG		**Sg**	**13 20 13.0**	**+1.0**
VYHS	**Vyhne**	**1.69**	**177**	*e*PN		**Pn**	**13 19 50.2**	**+3.0**
VYHS				*e*SN		**Sn**	**13 20 10.2**	**+0.4**
UPC	**Upice**	**1.75**	**282**	*e*SG		**Sg**	**13 20 15.7**	**+1.1**
PRU	**Pruhonice**	**2.68**	**268**	*e*SG		**Sg**	**13 20 43.5**	**-2.1**
KHC	**Kasperske Hory**	**3.49**	**255**	*e*SG		**Sg**	**13 21 10.1**	**-2.3**

*BJI **31** 13:36:06.1,50.88N×87.22E,h10km,ML4.0*
*MOS **31** 13:36:10.3±2.0,50.14N×87.64E,h10km,mb4.0/1,Error ellipse: s-maj=33.5km s-min=13.9km az=90.2*
*IDC **31** 13:36:11.9±2.3,50.38N×87.63E,mb3.9/1,mb1 4.2/4, mb1mx3.6/21,ML3.9/3,MS3.4/1,Ms1 3.4/1,ms1mx2.6/24, Error ellipse: s-maj=27.4km s-min=10.3km az=97.0*
*NEIC **31** 13:36:17.5±2.4,50.46N×86.99E,h10km,Error ellipse: s-maj=31.4km s-min=14.5km az=97.0*
*NNC **31** 13:36:18.8±3.1,50.42N×86.67E,mpv3.6,Error ellipse: s-maj=27.9km s-min=12.0km az=80.0*
ISC 31 13:36:10.7±0.7,50.35N±0.04×87.85E±0.08,h10km,n26,
σ1§15/28,mb3.8/1,MS3.4/1,8C-3D,Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
AKAR	**Aktash**	**0.15**	**258**	*e*PG		**Pg**	**13 36 13.3**	**-0.9**
UKR	**Ust'-Kan**	**2.05**	**288**	*e*PN		**Pn**	**13 36 46.5**	**+0.9**
UKR				*e*S		**Sn**	**13 37 10.9**	**-0.5**
TASR	**Tashtagol**	**2.41**	**0**	*e*PN		**Pg**	**13 36 57.1**	**-1.7**
TASR				*e*S		**Sg**	**13 37 31.3**	**+0.3**
CERR	**Cheremushki**	**3.35**	**40**	*e*PN		**Pg**	**13 37 17.5**	**0.0**
CERR				*e*S		**Sg**	**13 38 00.3**	**-1.9**
ZAL	**Zalesovo**	**4.05**	**334**	Pn		**Pn**	**13 37 15.4**	**+1.3**
	11nm,0.3s,baz=236,slow=10,SNR=67							
ZAL				Sn		**Sn**	**13 38 03.0**	**+0.7**
	18nm,0.3s,baz=339,slow=23,SNR=10							
ZAL				Lg			13 38 18.6	
	34nm,0.3s,baz=289,slow=14,SNR=14							
ZAL	**Zalesovo**	**4.05**	**334**	PN		**Pn**	**13 37 15.5**	**+1.3**
ZAL							13 38 03.0	
ZAL							13 38 18.6	
ZAL				pmax	pmax			
	comp=Z,11nm,0.3s							
ZAL				smax				
	comp=N,18nm,0.3s							
ZAL	**Zalesovo**	**4.05**	**334**	Pn		**Pn**	**13 37 15.4**	**+1.3**
ZAL				Sn		**Sn**	**13 38 03.0**	**+0.7**
ZAL				Lg			13 38 18.6	
SHRR	**Shira**	**4.39**	**18**	*e*PN		**Pn**	**13 37 21.2**	**+2.3**
SHRR				*e*			13 37 32.1	
SHRR				*e*			13 38 29.7	
SHRR				pmax	pmax			
	comp=Z,34nm,0.3s							
SHRR				pmax	pmax			
	comp=Z,197nm,0.6s							
SHRR				smax				
	comp=E,700nm,0.7s							
MK31	**Makanchi Array**	**5.13**	**228**	⇑Pn		**Pn**	**13 37 30.2**	**+0.7**
	comp=E,3.4nm,0.3s,baz=49,slow=12,SNR=760							
MK31				⇓Pg		**Pb**	**13 37 45.0**	**+4.7**
	comp=E,7.8nm,0.3s,baz=46,slow=16,SNR=9.4							
MK31				⇑Sn		**Sn**	**13 38 25.2**	**-4.2**
	comp=E,20nm,0.5s,baz=49,slow=18,SNR=4.1							
MK31				⇑Lg			13 38 47.7	
	comp=E,82nm,0.6s,baz=45,slow=31,SNR=9.4							
MKAR	**Makanchi Array**	**5.13**	**228**	Pn		**Pn**	**13 37 30.2**	**+0.7**
	comp=E,14nm,0.3s,baz=49,slow=13,SNR=296							
MKAR				Sn		**Sn**	**13 38 28.2**	**-1.2**
	comp=E,20nm,0.3s,baz=59,slow=28,SNR=14							
MKAR				Lg			13 38 47.0	
	comp=E,30nm,0.3s,baz=45,slow=31,SNR=19							
MKAR	**Makanchi Array**	**5.13**	**228**	PN		**Pn**	**13 37 30.2**	**+0.8**
MKAR							13 38 28.2	
MKAR							13 38 47.0	
MKAR				pmax	pmax			
	comp=Z,14nm,0.3s							
MKAR				smax				
	comp=N,20nm,0.3s							
MKAR	**Makanchi Array**	**5.13**	**228**	Pn		**Pn**	**13 37 30.2**	**+0.7**
MKAR				Sn		**Sn**	**13 38 28.2**	**-1.2**
MKAR				Lg			13 38 47.0	
NVS	**Novosibirsk**	**5.30**	**330**	*e*PN		**Pb**	**13 37 43.6**	**+0.4**
NVS				*e*			13 38 57.7	
KURK	**Kurchatov**	**5.90**	**277**	Pn		**Pn**	**13 37 38.5**	**-1.8**
	comp=N,3.2nm,0.6s,baz=84,slow=9.6,SNR=19							
KURK				⇑Lg			13 39 03.4	
	comp=N,34nm,0.8s,baz=335,slow=15,SNR=8.8							
KURK	**Kurchatov**	**5.90**	**277**	*e*Pn		**Pn**	**13 37 38.4**	**-1.9**
KURK				*e*Sg		Sx	13 39 12.1	
WMQ	**Urumqi**	**6.54**	**181**	*e*P		**Pn**	**13 37 50.0**	**+0.7**
WMQ				PG		**Pg**	**13 38 15.5**	**-5.6**
WMQ				S		Sn		
	comp=N,23nm,0.8s							
WMQ				S		Sn		
	comp=E,52nm,1.0s							
VOSK	**Vostochnaya**	**10.78**	**289**	⇑Pn		Px	13 38 43.1	
	comp=E,1.3nm,0.5s							
VOSK				⇑Sn		Sx	13 40 37.5	
	comp=E,2.1nm,0.5s							
BVA0	**Borovoye Array**	**11.16**	**291**	⇑Pn		Px	13 38 49.0	
	comp=E,0.3nm,0.5s,baz=107,slow=14,SNR=22							
BVA0				⇑Sn		Sx	13 40 49.3	
	comp=E,0.6nm,0.6s,baz=98,slow=23,SNR=4.3							
BVAR	**Borovoye Array**	**11.16**	**291**	Pn		Px	13 38 49.3	
	comp=E,1.4nm,0.3s,baz=103,slow=14,SNR=35							
BVAR				Sn		Sx	13 40 49.3	
	comp=E,1.7nm,0.3s,baz=78,slow=21,SNR=9.2							
BRVK	**Borovoye**	**11.23**	**291**	*e*Pn		**P**	**13 38 50.3**	**-4.0**
ZRNK	**Zerenda**	**11.99**	**290**	⇓Pn		Px	13 39 00.0	
	comp=E,1.1nm,0.5s							
ZRNK				⇓Sn		Sx	13 41 07.2	
	comp=E,2.3nm,0.5s							
ZRNK	**Zerenda**	**11.99**	**290**	*e*Pn		Px	13 38 59.8	
ZRNK				*e*Sn		Sx	13 41 08.9	
SONM	**Songino Array**	**12.41**	**95**	Lg			13 42 50.6	
	comp=E,0.2nm,0.3s,baz=293,slow=30,SNR=6.3							
KK31	**Karatay Array**	**13.91**	**245**	Pn		Px	13 39 24.7	
	comp=E,0.2nm,0.2s,baz=52,slow=14,SNR=9.4							
JNU	**Nakatsue**	**35.84**	**102**	LR		LR	13 57 37.5	
	comp=E,59nm,18.5s,MS3.4,baz=234,slow=36							
BRTR	**Keskin Array B**	**38.95**	**276**	P		**P**	**13 43 38.5**	**+0.3**
	comp=E,0.9nm,0.5s,mb3.8,baz=80,slow=8.8,SNR=5.6							

*IDC **31** 13:45:12.4±0.9,12.51N×145.02E,mb3.7/10,mb1 3.9/10, mb1mx3.8/21,MS3.5/4,Ms1 3.5/4,ms1mx3.1/25,Error ellipse: s-maj=32.4km s-min=20.3km az=102.0*
*NEIC **31** 13:45:20.1±1.3,12.45N×144.93E,h56km±11km,Error ellipse: s-maj=20.1km s-min=12.5km az=105.0*
ISC 31 13:45:18.8±1.6,12.4N±0.1×144.8E±0.2,h59km±13km,n15,
σ0§64/15,mb3.7/10,MS3.5/4,South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
GUMO	**Guam**	**1.18**	**1**	*e*Pn		**P**	**13 45 38.5**	**-1.0**
GUMO				*e*Sn		**S**	**13 45 55.0**	**+0.2**
SAPN	**Saipan**	**2.93**	**17**	P		**P**	**13 46 03.8**	**-0.3**
SAPN				*e*S		**S**	**13 46 39.4**	**+1.1**
SARN	**Sarigan**	**4.37**	**12**	*e*P		**P**	**13 46 24.2**	**0.0**
TGY	**Tagaytay City**	**23.33**	**277**	LR		LR	13 58 32.1	
	comp=Z,82nm,20.7s,MS3.2,baz=207,slow=34							
WRA	**Warramunga Arr**	**33.76**	**198**	P		**P**	**13 51 57.1**	**0.0**
	1.0nm,0.6s,mb4.0,baz=21,slow=9.8,SNR=16							
ASAR	**Alice Springs**	**37.41**	**197**	P		**P**	**13 52 28.8**	**+0.8**
	0.3nm,0.7s,mb3.2,baz=16,slow=13,SNR=7.5							
ASAR				LR		LR	14 07 43.8	
	comp=Z,59nm,21.0s,MS3.4,baz=117,slow=36							
STKA	**Stephens Creek**	**44.13**	**184**	LR		LR	14 12 31.6	
	comp=Z,97nm,18.4s,MS3.8,baz=23,slow=37							
CMAR	**Chiang Mai Arr**	**44.56**	**284**	P		**P**	**13 53 27.9**	**+0.9**
	0.5nm,0.6s,mb3.5,baz=76,slow=7.4,SNR=3.7							
SONM	**Songino Array**	**47.69**	**325**	P		**P**	**13 53 50.7**	**-0.6**
	0.3nm,0.4s,mb3.7,baz=108,slow=4.6,SNR=2.7							
MKAR	**Makanchi Array**	**52.33**	**316**	P		**P**	**13 55 37.6**	**+0.3**
	0.5nm,0.7s,mb3.8,baz=91,slow=9.9,SNR=4.4							
ILAR	**Eielson Array**	**69.64**	**25**	P		**P**	**13 56 22.6**	**-1.1**
	0.2nm,0.4s,mb3.4,baz=249,slow=5.9,SNR=11							
ILAR				LR		LR	14 28 31.9	
	comp=Z,26nm,18.1s,MS3.5,baz=98,slow=37							
BVAR	**Borovoye Array**	**70.84**	**322**	P		**P**	**13 56 30.9**	**-0.2**
	0.6nm,0.5s,mb3.8,baz=107,slow=7.9,SNR=6.0							
YKA	**Yellowknife Ar**	**83.92**	**27**	P		**P**	**13 57 43.0**	**-0.3**
	0.3nm,0.6s,mb3.6,baz=288,slow=5.2,SNR=6.3							
NVAR	**Mina Array Bea**	**87.68**	**51**	P		**P**	**13 58 03.1**	**+0.7**
	0.4nm,0.8s,mb3.7,baz=225,slow=6.4,SNR=3.0							
FINES	**FINESS Array B**	**92.22**	**335**	P		**P**	**13 58 22.6**	**-0.5**
	1.0nm,0.7s,mb4.3,baz=72,slow=6.0,SNR=3.5							

*MAN **31** 14:09:06.5,13.56N×120.68E,h103km,mb3.8,ML2.6, MS2.1*
ISC 31 14:09:05.2±2.1,13.52N±0.09×120.6E±0.1,h124km±14km,
n6,σ0§87/10,5C,Mindoro

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
PGP	**Puerto Galera**	**0.31**	**93**	*e*P		**P**	**14 09 22.5**	**-0.2**
LUBP	**Lubang**	**0.43**	**300**	*e*P		**P**	**14 09 24.3**	**+0.9**
LUBP				*e*S		**S**	**14 09 36.5**	**-0.6**
SJMP	**San Jose**	**1.15**	**156**	*e*P		**P**	**14 09 30.1**	**+0.6**
SJMP				*e*S		**S**	**14 09 47.2**	**-0.4**
BUSP	**Coron**	**1.56**	**196**	*e*P		**P**	**14 09 35.3**	**+1.2**
BUSP				*e*S		**S**	**14 09 56.4**	**+0.4**
ENPP	**El Nido**	**2.58**	**207**	*e*P		**P**	**14 09 44.8**	**-2.3**
ENPP				*e*S		**S**	**14 10 18.9**	**+0.2**
CUYO	**Cuyo Island**	**2.68**	**172**	*e*P		**P**	**14 09 48.0**	**-0.3**

GUC 31 14:10:53.7±0.7,32.01S×67.05W,h2km±22km,MD3.8,
ML4.1,4C,Mendoza Province

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
FCH	**Farellones**	**3.04**	**243**	⇑*i*P		Pn	14 11 42.2	-1.5
FCH				*i* S		Sn	14 12 21.0	-0.3
FCH				AMP			14 12 26.3	
	comp=N,421nm,0.7s							
JACH	**Jahuel**	**3.08**	**256**	*i* P		Pn	14 11 45.0	+0.7
JACH				*i* S		Sn	14 12 23.4	+1.2
LMEL	**Las Melosas**	**3.23**	**234**	*i* P		Pn	14 11 46.9	+0.5
LMEL				*i* S		Sn	14 12 27.1	+1.0
LMEL				AMP			14 12 30.9	
	comp=N,368nm,0.4s							
CLCH	**Cerro Calan**	**3.25**	**244**	⇑*i*P		Pn	14 11 46.9	+0.1
CLCH				*i* S		Sn	14 12 27.8	+1.1
CLCH				AMP			14 12 36.4	
	comp=E,462nm,0.5s							
PEL	**Peldehue**	**3.28**	**249**	*i* S		Sn	14 12 27.8	+0.5
PEL				AMP			14 12 29.3	
	comp=E,391nm,0.7s							
**PCH

PCH				*i* S	Sn	14 12 29.9	+1.2	
CMCH	**Combarbala**	**3.48**	**283**	*i* S	Sn	14 12 32.9	+0.6	
ROCH	**El Roble**	**3.49**	**253**	*i* P	Pn	14 11 50.5	+0.4	
ROCH				*i* S	Sn	14 12 33.4	+0.8	
CHCH	**Chadas Angostu**	**3.59**	**237**⇑	*i* P	Pn	14 11 51.4	-0.2	
CHCH				*i* S	Sn	14 12 35.4	+0.3	
CICH	**Cipreses**	**3.65**	**230**	*i* P	Pn	14 11 52.5	+0.1	
CICH				*i* S	Sn	14 12 37.4	+0.6	
TLL	**Tololo Astrono**	**3.71**	**299**	AMP		14 12 57.0		
	comp=N,257nm,0.4s							

WEL 31 14:20:24.7±0.3**,37.14S**×**177.46E,h130**km±3km**,ML3.5/1, 1C-1D,Error ellipse: s-maj=2.0km s-min=2.0km az=0.0, Off east coast of North Island**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MXZ	**Matakaoa Point**	**0.79**	**122**	⇑PN	P	14 20 45.7	-0.1
MXZ				SN	S	14 21 01.8	-0.2
PUZ	**Puketiti**	**1.12**	**146**	PN	P	14 20 48.7	-0.3
PUZ				SN	S	14 21 06.8	-0.6
MWZ	**Matawai**	**1.19**	**178**	PN	P	14 20 49.1	-0.6
MWZ				SN	S	14 21 08.2	-0.5
KUZ	**Kuaotunu**	**1.45**	**285**	⇓PN	P	14 20 51.9	-0.7
MKAZ	**Moumakai**	**1.83**	**270**	PN	P	14 20 57.2	+0.2
KNZ	**Kokohu**	**1.88**	**175**	PN	P	14 20 56.5	-1.1
KNZ				SN	S	14 21 21.6	-1.1
MTAZ	**Motutapu**	**2.07**	**279**	PN	P	14 21 00.2	+0.3
BKZ	**Black Stump Fm**	**2.16**	**200**	*e*PN	P	14 20 59.8	-1.3
KAAZ	**Kauri Point**	**2.23**	**277**	PN	P	14 21 01.9	-0.1
PWZ	**Pawanui**	**2.92**	**189**	PN	P	14 21 08.4	-2.7
PWZ				SN	S	14 21 42.5	-3.9
BFZ	**Birch Farm**	**3.66**	**195**	PN	P	14 21 17.6	-3.3
BFZ				SN	S	14 21 58.6	-5.2
MRZ	**Mangatainoka R**	**3.81**	**202**	PN	P	14 21 18.4	-4.4
MRZ				SN	S	14 22 00.6	-6.8
MTW	**Mount Morrison**	**4.29**	**200**	*e*PN	P	14 21 23.3	-6.0
CAW	**Cannon Point**	**4.38**	**204**	PN	P	14 21 25.5	-4.9
MRW	**Makara Radio**	**4.61**	**207**	*e*SN	S	14 22 18.8	-7.9
THZ	**Tophouse**	**5.81**	**216**	PN	P	14 21 45.1	-4.5
THZ				SN	S	14 22 47.7	-7.9
MQZ	**McQueen's Vall**	**7.51**	**208**	SN	S	14 23 22.7	-14

ISC 31 14:56:21.8±1.0**,4.0N**×0.1×**126.6E**±0.2**,h33km,n6,**σ0**75/7, mb4.1/2,2C,Talaud Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PAGZ	**Pagadian**	**4.94**	**320**⇑	*e*P	**P**	**14 57 35.5**	**-0.1**
PAGZ				*e*S	**S**	**14 58 32.1**	**-0.2**
BUTP	**Butuan**	**5.00**	**349**⇑	*e*P	**P**	**14 57 36.8**	**+0.4**
KAKA	**Kakadu**	**17.60**	**161**	*e*P	**P**	**15 00 26.0**	**-0.3**
	68nm,1.9s						
FITZ	**Fitzroy Crossi**	**22.01**	**182**	*e*P	**P**	**15 01 16.1**	**+1.1**
	8.8nm,1.3s,mb4.0						
WB2	**Warramunga Arr**	**25.02**	**162**	*e*P	**P**	**15 01 43.0**	**-1.5**
STKA	**Stephens Creek**	**38.46**	**159**	*e*P	**P**	**15 03 43.0**	**+0.5**
	4.2nm,1.0s,mb4.1						

*NIED **31** 14:59:00,34.20N×141.80E,h5km,Mw4.4 Best double couple: M₀4.1×10¹⁵ NP1:φs274°,δ84°,λ-92°. NP2:φs118°, δ6°,λ-66°.*
*IDC **31** 14:59:09.8±0.6,34.18N×141.67E,mb4.1/20,mb1 4.3/22, mb1mx4.3/28,ML4.2/2,MS3.9/1,Ms1 3.9/1,ms1mx2.8/32, Error ellipse: s-maj=16.8km s-min=13.2km az=129.0*
*NEIC **31** 14:59:11.5±0.2,34.13N×141.65E,h10km,mb4.3/7,Error ellipse: s-maj=6.5km s-min=6.2km az=23.0*
*BJI **31** 14:59:11.5,34.10N×141.60E,h10km,mB4.6,mb4.6, Ms4.0,Msz3.6*
*JMA **31** 14:59:12.3±0.6,34.16N×141.80E,h38km±4km,M4.2*
*MOS **31** 14:59:15.9±1.0,34.71N×141.69E,h33km,mb4.4/14,Error ellipse: s-maj=21.6km s-min=9.7km az=101.6*

ISC 31 14:59:12.6±1.3**,34.14N**±0.04×**141.72E**±0.04**,h29km±8km, n99,**σ1**04/108,mb4.3/36,MS4.3/5,4C-3D,Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**0.80**	**310**	⇑P	**Pb**	**14 59 27.8**	**-0.1**
BSO3	**Boso 3**	**1.20**	**304**	P	**Pn**	**14 59 34.2**	**+0.6**
BSO4	**Boso 4**	**1.42**	**307**	P	**Pn**	**14 59 37.9**	**+1.1**
KTR	**Katsuura**	**1.54**	**311**	P	**Pn**	**14 59 38.8**	**+0.3**
KTR				*e*S	**Sn**	**14 59 58.4**	**+0.8**
CHOJ	**Chosi**	**1.71**	**336**	P	**Pn**	**14 59 40.7**	**-0.3**
JCN	**Nagara**	**1.79**	**316**	P	**Pn**	**14 59 43.1**	**+1.0**
JHJ2	**Mitsune**	**1.89**	**238**	⇓P	**Pn**	**14 59 45.0**	**+1.5**
JHJ2				*e*S	**Sn**	**15 00 08.2**	**+1.6**
JHJ	**Hachijo jima 2**	**1.91**	**238**	Pn	**Pn**	**14 59 44.5**	**+0.7**
	277nm,0.3s,baz=54,slow=4.3,SNR=73						
JHJ				Sn	**Sn**	**15 00 08.0**	**+0.9**
	622nm,0.3s,baz=244,slow=23,SNR=24						
JIM2	**Oshima 3**	**1.98**	**288**	P	**Pn**	**14 59 44.6**	**-0.2**
JIZS	**Izushimoda**	**2.42**	**285**	P	**Pn**	**14 59 50.7**	**-0.4**
JIZS				*e*S	**Sn**	**15 00 20.1**	**0.0**
JOD2	**Odawara 2**	**2.44**	**298**	P	**Pn**	**14 59 50.8**	**-0.6**
JOD2				*e*S	**Sn**	**15 00 22.5**	**+1.9**
JAG	**Ashikaga**	**2.94**	**322**	P	**Pn**	**14 59 58.3**	**-0.2**
JAG				*e*S	**Sn**	**15 00 32.5**	**-0.7**
MAJO	**Matsushiro**	**3.74**	**311**	*e*P	**Pn**	**15 00 10.0**	**+0.1**
MAT	**Matsushiro**	**3.74**	**311**	P	**Pn**	**15 00 10.1**	**+0.2**
MAT				S	**Sn**	**15 00 53.6**	**+0.1**
CBIJ	**Chichi jima**	**7.04**	**177**	Pn	**Pn**	**15 00 53.8**	**-2.6**
	18nm,0.3s,baz=283,slow=20,SNR=13						
CBIJ				Sn	**Sn**	**15 02 09.7**	**-6.6**
	18nm,0.3s,baz=118,slow=22,SNR=3.7						
ASAJ	**Asahikawa**	**9.99**	**4**	Pn	**P**	**15 01 32.1**	**-5.2**
	1.4nm,0.3s,baz=181,slow=9.1,SNR=8.0						
ASAJ				Sn	**Sn**	**15 03 21.0**	**-8.4**
	1.1nm,0.3s,baz=284,slow=30,SNR=4.3						
ASAJ	**Asahikawa**	**9.99**	**4**	P	**P**	**15 01 32.1**	**-5.2**
ASAJ						15 03 21.0	
ASAJ				pmax	pmax		
	comp=Z,1.0nm,0.3s						
ASAJ				smax			
	comp=Z,1.0nm,0.3s						
YSS	**Yuzh-Sakhalins**	**12.82**	**3**⇑	*e*P	**P**	**15 02 10.0**	**-5.7**
YSS				pmax	pmax		
	comp=Z,30nm,0.9s						
YSS				MLR	MLR		
	comp=Z,300nm,17.0s						
YSS				MLR	MLR		
	comp=E,400nm,16.0s						
YSS	**Yuzh-Sakhalins**	**12.82**	**3**	*e*P	**P**	**15 02 10.2**	**-5.5**
	comp=E,20nm,0.8s						
SSE	**Sheshan**	**17.56**	**266**	P	**P**	**15 03 22.0**	**+5.1**
SSE				S	**S**	**15 06 37.3**	**+7.9**
SSE				AMB	AMB		
	comp=Z,20nm,0.7s						
SSE				LR	LR		
	comp=N,105nm,16.3s						
SSE				LR	LR		
	comp=E,43nm,16.3s						
SSE				LR	LR		
	comp=Z,107nm,16.5s						
NJ2	**Nanjing**	**19.27**	**270**	*e*P	**P**	**15 03 41.5**	**+3.8**
NJ2				PP	PP	15 03 58.0	+3.2
NJ2				S	**S**	**15 07 14.0**	**+6.0**
NJ2				AMB	AMB		
	comp=Z,20nm,0.6s						
NJ2				AMB	AMB		
	comp=Z,260nm,6.5s						
NJ2				LR	LR		
	comp=N,480nm,17.2s						
NJ2				LR	LR		
	comp=E,480nm,21.2s						
NJ2				LR	LR		
	comp=Z,490nm,16.8s						
HIA	**Hailar**	**22.19**	**320**	P	**P**	**15 04 06.9**	**-1.1**
WHN	**Wuhan**	**23.37**	**269**	*e*P	**P**	**15 04 19.3**	**-0.4**
YAK	**Yakutsk**	**28.95**	**348**	*e*P	**P**	**15 05 09.4**	**-1.8**
YAK				pmax	pmax		
	comp=Z,4.0nm,0.9s,mb4.2						
ULN	**Ulaanbaatar**	**29.27**	**308**	*e*P	**P**	**15 05 14.5**	**+0.2**
ULN	**Ulaanbaatar**	**29.27**	**308**	*e*P	**P**	**15 05 14.7**	**+0.4**
	comp=Z,3.1nm,0.8s,mb4.1						
SONM	**Songino Array**	**29.69**	**308**	P	**P**	**15 05 18.3**	**+0.2**
	comp=Z,2.7nm,0.6s,mb4.2,baz=108,slow=9.3,SNR=13						
BOD	**Bodaibo**	**30.14**	**330**	*e*P	**P**	**15 05 20.2**	**-1.7**
ZAK	**Zakamensk**	**32.32**	**312**	⇓*i*P	**P**	**15 05 41.3**	**+0.1**
TLY	**Talaya**	**32.47**	**314**	*e*P	**P**	**15 05 42.1**	**-0.4**
TLY						15 06 49.4	
TLY				pmax	pmax		
	comp=Z,36nm,1.3s,mb5.0						
TLY				MLR	MLR		
	comp=Z,3μm,15.0s,MS5.1						
GTA	**Gaotai**	**33.75**	**291**	*e*P	**P**	**15 05 53.3**	**-0.4**
GTA				AMB	AMB		
	comp=Z,5.0nm,0.8s,mb4.5						
BILL	**Bilibino**	**36.74**	**15**	*e*P	**P**	**15 06 17.6**	**-1.2**
BILL				*e*		15 07 39.0	
BILL				*i*		15 08 41.5	
BILL				pmax	pmax		
	comp=Z,8.0nm,1.9s,mb4.2						
BILL	**Bilibino**	**36.74**	**15**	*e*P	**P**	**15 06 18.3**	**-0.6**
TIXI	**Tiksi**	**38.19**	**353**	⇑*i*P	**P**	**15 06 30.6**	**-0.4**
TIXI				pmax	pmax		
	comp=Z,4.0nm,0.9s,mb4.2						
TIXI				MLR	MLR		
	comp=Z,101nm,16.0s,MS3.7						
TIXI	**Tiksi**	**38.19**	**353**	*e*P	**P**	**15 06 30.3**	**-0.7**
CMAR	**Chiang Mai Arr**	**41.09**	**259**	P	**P**	**15 06 54.3**	**-1.3**
	comp=Z,1.0nm,0.6s,mb3.6,baz=48,slow=7.3,SNR=7.5						
CMAR	**Chiang Mai Arr**	**41.09**	**259**	P	**P**	**15 06 54.3**	**-1.3**
CMAR				pmax	pmax		
	comp=Z,1.0nm,0.6s						
WMQ	**Urumqi**	**42.43**	**300**	*e*P	**P**	**15 07 03.5**	**-2.8**
ZAL	**Zalesovo**	**44.10**	**315**	P	**P**	**15 07 19.1**	**-0.6**
	comp=Z,1.5nm,0.8s,mb3.8,baz=275,slow=8.1,SNR=5.8						
ZAL	**Zalesovo**	**44.10**	**315**	P	**P**	**15 07 19.1**	**-0.6**
ZAL				pmax	pmax		
	comp=Z,2.0nm,0.8s						
NVS	**Novosibirsk**	**45.05**	**316**	*e*P	**P**	**15 07 16.0**	**-11**
MKAR	**Makanchi Array**	**45.92**	**305**	P	**P**	**15 07 34.0**	**-0.3**
	comp=Z,2.8nm,0.7s,mb4.3,baz=90,slow=9.7,SNR=14						
MKAR	**Makanchi Array**	**45.92**	**305**	*i* P	**P**	**15 07 34.3**	**0.0**
MKAR				pmax	pmax		
	comp=Z,3.0nm,0.7s						
KURK	**Kurchatov**	**47.95**	**310**	*e*P	**P**	**15 07 49.5**	**-0.8**
PKI	**Pulchoki**	**48.27**	**278**	*e*P	**P**	**15 07 52.7**	**-0.4**
KKN	**Kakani**	**48.30**	**279**	*e*P	**P**	**15 07 52.6**	**-0.7**
	comp=Z,19nm,0.7s,mb5.2						
DMN	**Daman**	**48.51**	**278**	*e*P	**P**	**15 07 54.4**	**-0.5**
GKN	**Gorkha**	**48.74**	**279**	*e*P	**P**	**15 07 55.8**	**-0.9**
	comp=Z,35nm,0.9s,mb5.4						
KOLN	**Koldanda**	**49.68**	**279**	*e*P	**P**	**15 08 03.1**	**-0.8**
	comp=Z,16nm,0.8s,mb5.1						
SML	**Sawmill**	**51.20**	**35**	*e*P	**P**	**15 08 15.3**	**+0.3**
ILAR	**Eielson Array**	**51.82**	**31**	P	**P**	**15 08 18.7**	**-1.0**
	comp=Z,2.5nm,0.7s,mb4.2,baz=266,slow=6.1,SNR=36						
ILAR	**Eielson Array**	**51.82**	**31**	P	**P**	**15 08 18.7**	**-1.0**
ILAR				pmax	pmax		
	comp=Z,3.0nm,0.7s						
BVAR	**Borovoye Array**	**52.73**	**314**	P	**P**	**15 08 25.4**	**-1.3**
	comp=Z,2.9nm,0.8s,mb4.2,baz=104,slow=6.1,SNR=5.4						
BVAR				LR	LR	15 33 20.3	
	comp=Z,106nm,18.2s,MS3.9,baz=280,slow=39						
ZRNK	**Zerenda**	**53.57**	**314**	*e*P	**P**	**15 08 32.2**	**-0.7**
FITZ	**Fitzroy Crossi**	**54.16**	**199**	*e*P	**P**	**15 08 37.3**	**-0.3**
	comp=Z,2.3nm,0.6s,mb4.3						
WRAB	**Tennant Creek**	**54.23**	**189**	*e*P	**P**	**15 08 37.2**	**-0.9**
WB2	**Warramunga Arr**	**54.23**	**189**	⇑*i*P	**P**	**15 08 37.3**	**-0.9**
WRA	**Warramunga Arr**	**54.24**	**189**	P	**P**	**15 08 37.4**	**-0.8**
	comp=Z,1.6nm,0.4s,mb4.3,baz=4,9,slow=7.6,SNR=38						
WRA	**Warramunga Arr**	**54.24**	**189**	P	**P**	**15 08 37.4**	**-0.8**
WRA				pmax	pmax		
	comp=Z,2.0nm,0.4s						
INK	**Inuvik**	**56.86**	**26**	P	**P**	**15 08 55.6**	**-0.9**
	comp=Z,2.0nm,0.7s,mb4.3,baz=274,slow=5.5,SNR=5.8						
INK	**Inuvik**	**56.86**	**26**	P	**P**	**15 08 55.6**	**-0.9**
INK				pmax	pmax		
	comp=Z,2.0nm,0.7s						
INK	**Inuvik**	**56.86**	**26**	*e*P	**P**	**15 08 56.1**	**-0.5**
	comp=Z,2.2nm,0.7s,mb4.3						
ASAR	**Alice Springs**	**57.96**	**188**	P	**P**	**15 09 04.3**	**-0.6**
	comp=Z,1.9nm,0.7s,mb4.2,baz=12,slow=9.6,SNR=10						
ARU	**Arti**	**58.71**	**320**	⇓*i*P	**P**	**15 09 07.4**	**-2.3**
ARU				*e*		15 10 00.2	
ARU				*e*		15 11 17.2	
ARU				*e*S	**S**	**15 17 07.4**	**-3.3**
ARU				*e*SS	SS	15 21 01.1	-4.5
ARU				pmax	pmax		
	comp=Z,5.0nm,0.7s,mb4.7						
ARU				MLR	MLR		
	comp=Z,100nm,17.0s,MS4.0						
ARU				MLR	MLR		
	comp=N,40nm,18.0s,MS4.0						
ARU				MLR	MLR		
	comp=E,100nm,16.0s,MS4.0						
YKA	**Yellowknife Ar**	**66.19**	**30**	P	**P**	**15 09 58.5**	**-0.7**
	comp=E,0.6nm,0.7s,mb3.7,baz=296,slow=5.9,SNR=10						
YKA	**Yellowknife Ar**	**66.19**	**30**	P	**P**	**15 09 58.5**	**-0.8**
YKA				pmax	pmax		
	comp=Z,1.0nm,0.7s						
YKA	**Yellowknife Ar**	**66.19**	**30**	P	**P**	**15 09 58.5**	**-0.7**
THR	**Tehran**	**71.39**	**301**	P	**P**	**15 10 31.8**	**-0.2**
	comp=Z,0.4nm,0.4s,mb3.7,baz=31,slow=5.9,SNR=2.3						
THR	**Tehran**	**71.39**	**301**	P	**P**	**15 10 31.8**	**-0.2**
FINES	**FINESS Array B**	**71.49**	**333**	P	**P**	**15 10 31.7**	**-0.4**
	comp=Z,1.4nm,0.8s,mb3.9,baz=63,slow=8.5,SNR=6.2						
FINES	**FINESS Array B**	**71.49**	**333**	P	**P**	**15 10 31.7**	**-0.4**
FINES				pmax	pmax		
	comp=Z,1.0nm,0.8s						
FINES	**FINESS Array B**	**71.49**	**333**	P	**P**	**15 10 31.7**	**-0.4**
NEW	**Newport**	**72.04**	**44**	P	**P**	**15 10 36.4**	**+0.7**
	comp=Z,3.1nm,0.8s,mb4.3,baz=287,slow=4.6,SNR=6.0						
NEW	**Newport**	**72.04**	**44**	P	**P**	**15 10 36.4**	**+0.8**
NEW				pmax	pmax		
	comp=Z,3.0nm,0.8s						
NEW	**Newport**	**72.04**	**44**	*e*P	**P**	**15 10 36.0**	**+0.4**
	comp=Z,3.6nm,0.8s,mb4.3						
KIV	**Kislovodsk**	**73.00**	**312**	*e*P	**P**	**15 10 43.3**	**+2.0**
KIV				pmax	pmax		
	comp=Z,9.0nm,0.8s,mb4.8						
KIV				pmax	pmax		
	comp=N,2.0nm,0.7s						
KIV				pmax	pmax		
	comp=E,4.0nm,0.8s						
SOC	**Sochi**	**75.03**	**313**	*e*P	**P**	**15 11 03.7**	**+11**
SOC				*e*		15 11 20.7	
SOC				*e*		15 13 42.2	
SOC				*e*PPP	PPP	15 15 20.0	-8.3
SOC				*e*S	S	15 20 33.0	+5.4
SOC				*e*		15 20 57.1	
SOC				*e*SS	SS	15 25 19.3	+0.5
SOC				*e*SSS	SSS	15 28 32.3	-0.5
SOC				pmax	pmax		
	comp=Z,10.0nm,0.7s,mb4.8						
SOC				pmax	pmax		
	comp=N,20nm,1.0s						
SOC				pmax	pmax		
	comp=E,10.0nm,0.6s						
SOC				MLR	MLR		
	comp=Z,150nm,19.0s,MS4.3						
SOC				MLR	MLR		
	comp=N,350nm,21.0s,MS4.9						
SOC				MLR	MLR		
	comp=E,530nm,21.0s,MS4.9						
NVAR	**Mina Array Bea**	**76.53**	**53**	P	**P**	**15 11 02.6**	**+0.9**
	comp=E,1.2nm,0.7s,mb3.9,baz=290,slow=3.4,SNR=6.4						
BOZ	**Bozeman (W)**	**76.62**	**44**	*e*P	**P**	**15 11 03.9**	**+1.9**
	comp=E,1.2nm,0.7s,mb3.9						
AKASG	**Malin Array Be**	**76.75**	**323**	P	**P**	**15 11 02.0**	**-0.6**
	comp=E,1.4nm,0.6s,mb4.1,baz=47,slow=5.8,SNR=9.4						
NB2	**NORSAR Subarra**	**76.95**	**338**	P	**P**	**15 11 03.4**	**-0.2**
	comp=E,1.0nm,0.7s,mb3.9,baz=40,slow=5.6						
NOA	**NORSAR Array B**	**76.95**	**338**	P	**P**	**15 11 03.3**	**-0.3**
	comp=E,1.3nm,0.7s,mb4.0,baz=40,slow=5.7,SNR=9.6						
NOA	**NORSAR Array B**	**76.95**	**338**	P	**P**	**15 11 03.3**	**-0.3**
NOA				pmax	pmax		
	comp=Z,1.0nm,0.7s						
HWUT	**Hardware Ranch**	**79.01**	**47**	*e*P	**P**	**15 11 17.0**	**+1.8**
	comp=Z,4.5nm,1.0s,mb4.3						
BW06	**Boulder Array**	**79.52**	**45**	*e*P	**P**	**15 11 18.9**	**+0.8**
	comp=Z,0.9nm,0.4s,mb4.0						
PDAR	**Pinedale Array**	**79.52**	**45**	P	**P**	**15 11 19.2**	**+1.2**
	comp=Z,1.5nm,0.7s,mb4.0,baz=305,slow=2.9,SNR=16						
NLU	**North Lily Min**	**79.67**	**49**	*e*P	**P**	**15 11 20.5**	**+1.7**
BRTR	**Keskin Array B**	**80.37**	**312**	P	**P**	**15 11 26.3**	**+0.5**
	comp=Z,1.9nm,1.1s,mb4.0,baz=124,slow=4.5,SNR=3.8						
SRU	**San Rafael**	**81.13**	**49**	*e*P	**P**	**15 11 27.3**	**+0.6**
PV10	**Paradox Valley**	**82.50**	**48**	*e*P	**P**	**15 11 36.0**	**+2.2**
PV01	**Paradox Valley**	**82.94**	**48**	*e*P	**P**	**15 11 38.0**	**+1.9**
RW3	**Ridgway**	**83.41**	**48**	*e*P	**P**	**15 11 40.9**	**+2.4**
KHC	**Kasperske Hory**	**85.14**	**329**	*e*P	**P**	**15 11 48.0**	**+1.1**
GERES	**GERESS Array B**	**85.30**	**329**	P	**P**	**15 11 48.3**	**+0.6**
	comp=Z,0.9nm,0.8s,mb4.0,baz=45,slow=5.7,SNR=10						
GERES	**GERESS Array B**	**85.30**	**329**	P	**P**	**15 11 48.3**	**+0.6**
GERES				pmax	pmax		
	comp=Z,1.0nm,0.8s						
TXAR	**Lajitas Array**	**91.68**	**53**	P	**P**	**15 12 19.2**	**+0.7**
	comp=Z,0.4nm,0.7s,mb3.8,baz=270,slow=5.0,SNR=4.1						
LPAZ	**La Paz**	**147.84**	**64**	PKPbc	PKPdf	15 18 58.2	+0.9
	comp=Z,2.8nm,0.9s,baz=307,slow=3.4,SNR=9.8						
LPAZ	**La Paz**	**147.84**	**64**	PKP2	PKPab	15 18 58.3	-1.5
LPAZ				pmax	pmax		
	comp=Z,3.0nm,1.0s						
LPAZ	**La Paz**	**147.84**	**64**	*e*PKPbc	PKPdf	15 18 57.5	+0.2

*NEIC **31** 15:02:51.2,39.24N×20.58E,h37km,MD3.2(ATH),After ATH.*
*THE **31** 15:02:51.4,39.18N×20.56E,h10km,ML3.0*
*ATH **31** 15:02:51.2,39.24N×20.58E,h37km±13km,MD3.2/4*

ISC 31 15:02:50.8±0.8**,39.18N**±0.03×**20.52E**±0.06**,h6km±6km, n12,**σ1**21/19,Greece-Albania border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IGT	**Igoumenitsa**	**0.38**	**338**	*e*Pg	**Pg**	**15 02 58.7**	**+0.2**
IGT				*e*Sg	**Sg**	**15 03 05.6**	**+2.0**
LKD	**Levkas**	**0.48**	**168**	*e*Pg	**Pg**	**15 02 59.9**	**-0.6**
LKD				*e*Sg	**Sg**	**15 03 08.3**	**+1.3**
JAN	**Janina**	**0.54**	**28**	*e*PB	**Pb**	**15 03 01.0**	**-1.3**
JAN				*e*SB	**Sb**	**15 03 10.0**	**0.0**
KEK	**Kerkira**	**0.77**	**314**	*e*PN	**Pn**	**15 03 06.5**	**-1.4**
MEV	**Metsovon**	**0.82**	**42**	*e*Pg	**Pg**	**15 03 05.3**	**-1.8**
MEV				*e*Sg	**Sg**	**15 03 18.6**	**+0.6**
VLS	**Valsamata**	**1.00**	**177**	*e*PN	**Pn**	**15 03 11.0**	**-0.3**
VLS				*e*SN	**Sn**	**15 03 27.0**	**+1.2**
EVR	**Evrytania**	**1.04**	**104**	*e*PN	**Pn**	**15 03 10.3**	**-1.5**
AGG	**Agios Georgios**	**1.42**	**96**	*e*Pb	**Pb**	**15 03 16.1**	**-1.2**
	comp=Z,4.5nm,0.4s						
AGG				*e*Sb	**Sb**	**15 03 38.0**	**+2.5**
FNA	**Florina**	**1.73**	**22**	*e*Pb	**Pb**	**15 03 23.0**	**+0.4**
FNA				*e*Sb	**Sb**	**15 03 46.2**	**+1.7**
LIT	**Litokhoron**	**1.78**	**58**	*e*Pb	**Pb**	**15 03 22.6**	**-0.9**
	comp=Z,2.6nm,0.4s						
XOR	**Xorichti**	**2.08**	**84**	*e*Pn	**Pn**	**15 03 27.6**	**+0.8**
PAIG	**Paliouri**	**2.56**	**72**	*e*Pn	**Pn**	**15 03 32.6**	**-0.9**

*JMA **31** 15:06:20.9±0.5,33.95N×141.81E,h5km±3km,M3.8*
*NEIC **31** 15:06:26.0±0.8,34.10N×141.54E,h10km,Error ellipse: s-maj=24.6km s-min=12.4km az=68.0*
*IDC **31** 15:06:30.2±5.0,34.11N×141.41E,h41km±48km,mb3.6/4, mb1 4.0/6,mb1mx3.5/25,ML3.8/2,Error ellipse: s-maj=44.2km s-min=23.9km az=95.0*

ISC 31 15:06:22.9±0.7**,34.07N**±0.07×**141.7E**±0.1**,h5km,n20,** σ0**95/26,mb3.9/4,Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**0.86**	**313**	P	**Pb**	**15 06 39.6**	**-0.3**
BSO1				*e*S	**Sb**	**15 06 53.7**	**+2.2**
BSO3	**Boso 3**	**1.25**	**306**	P	**Pb**	**15 06 46.5**	**-0.1**
BSO3				*e*S	**Sb**	**15 07 03.2**	**+0.3**
BSO4	**Boso 4**	**1.48**	**309**	P	**Pn**	**15 06 50.9**	**+0.6**
BSO4				S	**Sb**	**15 07 09.0**	**-0.5**
CHOJ	**Chosi**	**1.79**	**336**	P	**Pn**	**15 06 54.7**	**+0.1**
JIM2	**Oshima 3**	**2.02**	**289**	P	**Pn**	**15 06 57.7**	**-0.3**
JIZS	**Izushimoda**	**2.46**	**286**	P	**Pn**	**15 07 04.2**	**0.0**
JOD2	**Odawara 2**	**2.49**	**299**	P	**Pn**	**15 07 04.3**	**-0.4**
JYN	**Shimob**	**2.99**	**299**	P	**Pn**	**15 07 11.8**	**-0.1**
JAG	**Ashikaga**	**3.01**	**322**	P	**Pn**	**15 07 11.9**	**-0.2**
JRY	**Ryogami san**	**3.03**	**311**	P	**Pn**	**15 07 12.6**	**+0.1**
MAJO	**Matsushiro**	**3.80**	**312**	*e*P	**Pn**	**15 07 23.3**	**-0.2**
MAT	**Matsushiro**	**3.80**	**312**	P	**Pn**	**15 07 23.4**	**0.0**
MAT				S	**Sn**	**15 08 05.5**	**-3.6**
CBIJ	**Chichi jima**	**6.96**	**177**	P	**Pn**	**15 08 10.4**	**+2.3**
	6.9nm,0.3s,baz=275,slow=22,SNR=5.6						
CBIJ				S	**Sn**	**15 09 25.9**	**-2.7**
	4.3nm,0.3s,baz=268,slow=21,SNR=3.2						
ASAJ	**Asahikawa**	**10.06**	**4**	P	**P**	**15 08 46.4**	**-4.6**
	0.6nm,0.3s,baz=112,slow=32,SNR=3.4						
ASAJ				S	**S**	**15 10 34.3**	**-11**
	0.5nm,0.3s,baz=275,slow=30,SNR=4.1						
MKAR	**Makanchi Array**	**45.97**	**305**	P	**P**	**15 14 47.4**	**-1.2**
	0.3nm,0.4s,mb3.5,baz=82,slow=9.2,SNR=5.1						
KURK	**Kurchatov**	**48.01**	**310**	*e*P	**P**	**15 15 03.4**	**-1.1**
ILAR	**Eielson Array**	**51.87**	**31**	P	**P**	**15 15 34.7**	**+0.8**
	0.6nm,0.7s,mb3.6,baz=268,slow=6.1,SNR=8.1						
WB2	**Warramunga Arr**	**54.17**	**189**	*e*P	**P**	**15 15 52.4**	**+0.9**

AKASG	**Malin Array Be**	**38.06**	**69**	P		**P**	**15 26 17.3**	**-1.4**
	0.1nm,0.3s,mb3.1,baz=303,slow=8.5,SNR=5.4							
YKA	**Yellowknife Ar**	**39.45**	**314**	P		**P**	**15 26 30.3**	**+0.2**
	0.4nm,0.5s,mb3.4,baz=62,slow=9.2,SNR=9.9							
YKA				PcP		PcP	15 28 35.9	-2.8
	0.5nm,0.8s,baz=58,slow=3.3,SNR=7.9							
YKA	**Yellowknife Ar**	**39.45**	**314**	P		**P**	**15 26 30.3**	**+0.2**
YKA				PcP		PcP	15 28 35.9	-2.8
BRTR	**Keskin Array B**	**47.22**	**79**	P		**P**	**15 27 33.7**	**+0.4**
	1.3nm,0.8s,mb3.9,baz=288,slow=3.9,SNR=5.5							
PDAR	**Pinedale Array**	**48.12**	**288**	P		**P**	**15 27 39.3**	**-0.9**
	0.9nm,0.7s,mb3.9,baz=63,slow=6.9,SNR=8.2							
ILAR	**Eielson Array**	**49.80**	**329**	P		**P**	**15 27 53.5**	**+0.7**
	0.5nm,0.6s,mb3.7,baz=43,slow=6.2,SNR=11							
ILAR				PcP		PcP	15 29 11.1	-2.8
	0.4nm,0.8s,baz=357,slow=3.0,SNR=4.7							
TXAR	**Lajitas Array**	**54.26**	**271**	P		**P**	**15 28 25.2**	**-1.6**
	0.1nm,0.3s,mb3.2,baz=52,slow=10,SNR=3.3							
BVAR	**Borovoye Array**	**56.30**	**44**	P		**P**	**15 28 41.8**	**+0.6**
	0.6nm,0.6s,mb3.8,baz=259,slow=7.6,SNR=3.9							
BVAR				LR		LR	15 53 00.3	
	comp=Z,32nm,19.3s,MS3.4,baz=240,slow=36							
MKAR	**Makanchi Array**	**65.93**	**42**	P		**P**	**15 29 45.6**	**-0.9**
	1.0nm,0.8s,mb3.9,baz=329,slow=7.1,SNR=7.7							
SONM	**Songino Array**	**72.78**	**26**	P		**P**	**15 30 28.8**	**+0.4**
	0.6nm,0.5s,mb3.8,baz=333,slow=8.3,SNR=3.9							
ASAR	**Alice Springs**	**147.89**	**19**	PKPbc		PKPdf	15 38 43.5	-0.2
	2.6nm,0.6s,baz=353,slow=2.3,SNR=53							

*NIED **31** 15:30:00.38.40N×142.30E,h41km,Mw3.6 Best double couple: M0 2.91×10^14 NP1:φs183°,δ60°,λ105°. NP2: φs335°,δ34°,λ66°.*
*JMA **31** 15:30:00.4±0.1,38.44N×142.33E,h34km±2km,M4.0*
JMA Felt I J1.
ISC 31 15:30:00.8±1.5,38.42N±0.06×142.3E±0.1,h34km,n11, σ0§69/18,2C-5D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
JIO	**Ouri**	**0.77**	**273**	⇓P		**P**	**15 30 15.0**	**-0.2**
JIO				eS		S	15 30 24.9	-0.8
OFUJ	**Ofunato**	**0.84**	**322**	⇑P		**P**	**15 30 15.8**	**-0.3**
JMK	**Ichinoseki**	**1.02**	**302**	⇓P		**P**	**15 30 18.6**	**-0.1**
JMK				eS		S	15 30 31.8	-0.2
JOU	**Okura**	**1.31**	**268**	⇓P		**P**	**15 30 23.2**	**+0.3**
JOU				eS		S	15 30 39.8	+0.4
JMM	**Marumori**	**1.33**	**246**	⇓P		**P**	**15 30 22.6**	**-0.6**
JMM				eS		S	15 30 39.1	-0.8
JOM	**Ohasama**	**1.33**	**323**	⇑P		**P**	**15 30 23.2**	**0.0**
JOM				eS		S	15 30 39.7	-0.2
JFK	**Kawauchi**	**1.56**	**228**	P		**P**	**15 30 25.4**	**-1.0**
JYK	**Kaneyama**	**1.62**	**289**	⇓P		**P**	**15 30 27.6**	**+0.2**
JYK				eS		S	15 30 48.1	+0.8
JYS	**Shirataka**	**1.79**	**264**	P		**P**	**15 30 30.2**	**+0.4**
JFT	**Otama**	**1.81**	**241**	P		**P**	**15 30 30.3**	**+0.2**
MAT	**Matsushiro**	**3.77**	**242**	P		**P**	**15 30 59.9**	**+1.8**
MAT				eS		S	**15 31 45.9**	**+4.0**

*NAO **31** 15:36:16.8±1.3,59.78N×24.31E,ML2.2*
*BER **31** 15:36:17.9±4.3,59.75N×24.31E,ML2.2(NAO), Suspected explosion*
*IDC **31** 15:36:17.6±2.2,59.78N×24.48E,mb1 3.1/3, mb1mx3.0/21,ML2.9/3,Error ellipse: s-maj=24.4km s-min=6.5km az=147.0*
HEL 31 15:36:16.6±0.2,59.73N×24.35E,ML2.1,ML2.2(UPP), ML2.2(NAO),Explosion,Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
MEF	**Metsahovi**	**0.49**	**3**	*e*P		Pg	15 36 25.4	-1.0
MEF				*e*S		Sg	15 36 31.2	-1.8
VSU	**Vasula**	**1.77**	**135**	Pn		Pn	15 36 48.3	-0.4
VSU				Lg			15 37 13.5	
VSU	**Vasula**	**1.77**	**135**	*e*S		Sn	15 37 11.1	-1.2
VJF	**Virojoki**	**1.80**	**62**	*e*P		Pn	15 36 47.9	-1.3
VJF				*e*S		Sn	15 37 11.2	-1.8
FIA0	**FINESS Array S**	**1.92**	**26**	*e*P		Pn	15 36 50.9	0.0
FIA0				*e*SG		Sg	15 37 15.9	-4.6
FIA0				MSG			15 37 17.9	
	comp=Z,21nm,0.2s							
FIA0	**FINESS Array S**	**1.92**	**26**	Pn		Pn	15 36 50.9	0.0
	baz=202,slow=16							
FIA0				Lg			15 37 14.8	
	baz=201,slow=28							
FINES	**FINESS Array B**	**1.92**	**26**	Pg		Pg	15 36 50.8	-4.2
	comp=Z,3.0nm,0.3s,baz=202,slow=16,SNR=129							
FINES				Lg			15 37 15.0	
	comp=Z,3.6nm,0.3s,baz=193,slow=30,SNR=11							
KEF	**Keuruu**	**2.46**	**6**	*e*P		Pn	15 36 59.6	+1.0
KEF				*e*SG		Sg	15 37 32.7	-5.8
KEF				MSG			15 37 33.5	
	comp=Z,7.2nm,0.2s							
SUF	**Sumiainen**	**3.13**	**15**	*e*P		Pn	15 37 07.2	-0.9
JOF	**Joensuu**	**4.64**	**43**	*e*P		Pn	15 37 26.8	-2.8
JOF				MSG			15 38 44.0	
	comp=Z,1.9nm,0.2s							
HFS	**Hagfors**	**5.37**	**279**	Pn		Pn	15 37 37.6	-2.4
	baz=82,slow=18							
HFS				Sn		Sn	15 38 38.2	-5.3
	baz=82,slow=22							
HFS				Lg			15 38 59.8	
	baz=97,slow=37							
HFS	**Hagfors**	**5.37**	**279**	*e*P		Pn	15 37 37.6	-2.4
HFS				*e*S		Sn	15 38 38.2	-5.3
HFS				*e*SG		Sg	15 38 59.8	-16
HFS	**Hagfors**	**5.37**	**279**	Pn		Pn	15 37 37.5	-2.5
	comp=Z,0.1nm,0.3s,baz=112,slow=10,SNR=21							
HFS				Sn		Sn	15 38 39.3	-4.2
	comp=Z,0.1nm,0.3s,baz=93,slow=27,SNR=7.8							
HFS				Lg			15 39 07.0	
	comp=Z,0.1nm,0.3s,baz=93,slow=31,SNR=5.0							
NOA	**NORSAR Array B**	**6.64**	**287**	Pn		Pn	15 37 54.5	-3.4
	comp=Z,0.2nm,0.3s,baz=305,slow=15,SNR=3.0							
NOA				Sn		Sn	15 39 08.9	-6.4
	comp=Z,0.1nm,0.3s,baz=215,slow=14,SNR=2.3							
NOA				Lg			15 39 47.6	
	comp=Z,0.2nm,0.3s,baz=165,slow=12,SNR=2.6							
APA0	**Apatity Array**	**8.78**	**22**	Pn		P	15 38 23.4	-4.3
	baz=229,slow=16							
APA0	**Apatity Array**	**8.78**	**22**	*e*P		P	15 38 23.4	-4.3
ARA0	**ARCESS Array S**	**9.86**	**2**	Pn		P	15 38 37.1	-5.4
	baz=179,slow=14							
ARA0				Sn		Sn	15 40 26.9	-8.3
	baz=183,slow=22							
ARA0	**ARCESS Array S**	**9.86**	**2**	*e*P		P	15 38 37.1	-5.4
ARA0				*e*S		Sn	15 40 26.9	-8.3
ARCES	**ARCESS Array B**	**9.86**	**2**	Pn		P	15 38 38.2	-4.2
	comp=Z,0.2nm,0.3s,baz=183,slow=13,SNR=19							

MAN 31 15:58:16.7,11.46N×122.21E,h24km,mb4.2,ML3.0, MS2.7,7C,Panay

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
RCP	**Roxas**	**0.53**	**79**	⇑*e*P		Pb	15 58 28.5	+1.1
RCP				*i* S		Sb	15 58 38.5	+3.9
OTRP	**Odiongan**	**0.92**	**348**	⇑*e*P		Pb	15 58 33.7	-0.1
OTRP				*e*S		Sb	15 58 46.9	+1.3
CUYO	**Cuyo Island**	**1.32**	**243**	⇑*e*P		Pn	15 58 39.5	-0.4
CUYO				*e*S		Sn	15 58 59.6	+2.8
SJMP	**San Jose**	**1.46**	**313**	⇑*e*P		Pn	15 58 42.2	+0.2
SJMP				*e*S		Sn	15 59 00.4	-0.1
BUSP	**Coron**	**2.04**	**286**	⇑*e*P		Pn	15 58 49.7	-0.6
ENPP	**El Nido**	**2.75**	**265**	⇑*e*P		Pn	15 58 59.5	-0.8
LUBP	**Lubang**	**2.97**	**320**	⇑*e*P		Pn	15 59 04.0	+0.6

DJA 31 16:21:45.9±0.9,9.86S×115.61E,h15km,MD5.3/4, ML4.3/3,6C-2D,Error ellipse: s-maj=18.7km s-min=12.8km az=175.0,South of Bali

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
RATI	**Rata**	**1.13**	**356**	⇑*e*Pn		Pn	16 22 04.2	-2.9
	302nm,0.2s							
RATI				⇑*e*Sn		Sn	16 22 18.5	-3.8
INGI	**Ingas**	**1.13**	**336**	⇑*e*Pn		Pn	16 22 04.1	-3.0
	1µm,0.2s							
INGI				⇓*e*Sn		Sn	16 22 17.9	-4.4
KEDI	**Kedomdong**	**1.45**	**20**	⇑*e*Pn		Pn	16 22 09.2	-2.5
KEDI				⇓*e*Sn		Sn	16 22 26.3	-4.1
KELI	**Kelakatan**	**1.97**	**326**	⇑*e*Pn		Pn	16 22 17.2	-1.9
	113nm,0.2s							
KELI				⇑*e*Sn		Sn	16 22 38.9	-4.8

*IDC **31** 16:26:29.6±1.3,43.29N×46.35E,mb3.7/7,mb1 3.9/9, mb1mx3.7/20,ML3.9/2,Error ellipse: s-maj=33.3km s-min=16.9km az=36.0*
*MOS **31** 16:26:31.1±3.2,43.29N×46.37E,h10km,mb4.2/4,Error ellipse: s-maj=19.0km s-min=8.3km az=121.6*
*TIF **31** 16:26:32.2,43.31N×45.33E,h10km,Mpv4.8*
*NEIC **31** 16:26:34.0±0.4,5,43.28N×46.28E,h33km±38km,Error ellipse: s-maj=15.3km s-min=9.1km az=190.0*
ISC 31 16:26:29.2±1.1,43.46N±0.03×46.35E±0.06,h1km±7km, n33,σ1§30/45,mb3.7/7,2C-2D,Eastern Caucasus

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
DBC	**Dubki**	**0.56**	**142**	⇑*i*PG		**Pg**	**16 26 40.5**	**+0.1**
DBC				*i* S		**Sg**	**16 26 47.5**	**-0.4**
DBC				pmax		pmax		
	comp=Z,2µm,0.2s							
UNCR	**Uncukul**	**0.81**	**157**	⇑*i*PG		**Pg**	**16 26 44.5**	**-1.0**
UNCR				*i* S		**Sg**	**16 26 55.5**	**-0.8**
UNCR				pmax		pmax		
	comp=Z,632nm,0.2s							
BUJR	**Buynaksk**	**0.84**	**139**	*i* PG		**Pg**	**16 26 46.5**	**+0.5**
BUJR				*i* S		**Sg**	**16 26 59.5**	**+2.2**
BUJR				pmax		pmax		
	comp=Z,964nm,0.2s							
MAK	**Makhachkala**	**0.98**	**120**	PG		**Pg**	**16 26 51.8**	**+3.0**
MAK				*i*			16 27 04.8	
MAK				pmax		pmax		
	comp=Z,360nm,0.4s							
MAK				smax				
	comp=N,4µm,0.5s							
MAK				smax				
	comp=N,3µm,0.6s							
MAK				smax				
	comp=E,2µm,0.6s							
URKR	**Urkarakh**	**1.60**	**144**	*i* PG		**Pg**	**16 26 58.0**	**-3.2**
URKR				*i* S		**Sb**	**16 27 19.5**	**-0.5**
TI2	**Plekhanov**	**2.09**	**215**	*i* PN		**Pn**	**16 27 05.6**	**-0.3**
TI2				*e*			16 27 07.0	
TI2				*i* S		**Sn**	**16 27 32.8**	**-0.2**
TI2				smax				
	comp=N,1µm,0.6s							
TI2				smax				
	comp=E,1µm,0.6s							
TBLG	**Delisi**	**2.10**	**215**	*i* P		**Pn**	**16 27 05.6**	**-0.4**
	comp=Z,20nm,0.4s							
TBLG				*i* S		**Sn**	**16 27 31.4**	**-1.7**
	comp=N,1µm,0.6s							
DGRG	**David-gareji**	**2.14**	**200**	⇓*i*P		**Pn**	**16 27 07.6**	**+1.1**
DGRG				*i* S		**Sn**	**16 27 35.4**	**+1.4**
KIV	**Kislovodsk**	**2.71**	**282**	*e*Pn		**Pn**	**16 27 14.6**	**0.0**
STE	**Stepanavan**	**2.86**	**211**	*e*P		**Pn**	**16 27 27.2**	**+10**
STE				*i* S		**Sn**	**16 28 05.7**	**+13**
GOF	**Gofitskoye**	**2.87**	**305**	⇓*i*PN		**Pn**	**16 27 29.0**	**+12**
GOF				*i* S		**Sn**	**16 28 06.5**	**+14**
GOF				pmax		pmax		
	comp=Z,80nm,1.1s							
GOF				smax				
	comp=N,1µm,1.1s							
AKH	**Akhalkalaki**	**2.95**	**227**	*e*P		**Pn**	**16 27 19.0**	**+0.9**
AKH				*i* S		**Sn**	**16 27 57.0**	**+2.4**
THR	**Tehran**	**8.39**	**152**	Pn		**P**	**16 28 32.1**	**-2.8**
	comp=N,0.8nm,0.3s,baz=318,slow=13,SNR=11							
THR				Sn		**Sn**	**16 30 03.7**	**-7.8**
	comp=N,0.6nm,0.3s,baz=28,slow=9.6,SNR=13							
THR	**Tehran**	**8.39**	**152**	P		**P**	**16 28 32.1**	**-2.8**
THR							16 30 03.7	
THR				pmax		pmax		
	comp=Z,1.0nm,0.3s							
THR				smax				
	comp=N,1.0nm,0.3s							
THR	**Tehran**	**8.39**	**152**	Pn		**P**	**16 28 32.1**	**-2.7**
THR				Sn		**Sn**	**16 30 03.7**	**-7.8**
ZRNK	**Zerenda**	**17.77**	**50**	*e*P		**P**	**16 30 41.4**	**+2.2**
BRVK	**Borovoye**	**18.52**	**50**	*e*P		**P**	**16 30 47.5**	**-1.2**
BVAR	**Borovoye Array**	**18.57**	**51**	P		**P**	**16 30 47.8**	**-1.4**
	comp=N,0.8nm,0.3s,baz=243,slow=12,SNR=20							
FINES	**FINESS Array B**	**21.67**	**333**	P		**P**	**16 31 22.6**	**-0.5**
	comp=N,8.3nm,0.9s,mb4.2,baz=141,slow=12,SNR=20							
FINES	**FINESS Array B**	**21.67**	**333**	P		**P**	**16 31 22.6**	**-0.5**
FINES				pmax		pmax		
	comp=Z,8.0nm,0.9s							
KURK	**Kurchatov**	**23.00**	**60**	*e*P		**P**	**16 31 38.1**	**+1.9**
GERES	**GERESS Array B**	**23.14**	**295**	P		**P**	**16 31 38.2**	**+0.6**
	comp=Z,0.4nm,0.3s,mb3.4,baz=88,slow=10,SNR=9.0							
CII	**Carovilli**	**23.59**	**277**	*e*P		**P**	**16 31 40.6**	**-1.4**
MKAR	**Makanchi Array**	**25.43**	**70**	P		**P**	**16 32 00.7**	**+0.9**
	comp=Z,0.3nm,0.6s,mb3.2,baz=269,slow=7.6,SNR=4.1							
HFS	**Hagfors**	**25.81**	**322**	P		**P**	**16 32 03.5**	**+0.2**
	comp=Z,4.7nm,0.5s,mb4.4,baz=117,slow=9.9,SNR=27							
HFS	**Hagfors**	**25.81**	**322**	P		**P**	**16 32 03.5**	**+0.3**
HFS				pmax		pmax		
	comp=Z,5.0nm,0.5s							
NB2	**NORSAR Subarra**	**27.31**	**322**	P		**P**	**16 32 16.0**	**-0.9**
	comp=Z,0.5nm,0.6s,mb3.4,baz=117,slow=9.3							
NOA	**NORSAR Array B**	**27.31**	**322**	P		**P**	**16 32 16.3**	**-0.7**
	comp=Z,0.3nm,0.7s,mb3.2,baz=119,slow=9.2,SNR=3.3							
NOA	**NORSAR Array B**	**27.31**	**322**	P		**P**	**16 32 16.3**	**-0.7**
ARCES	**ARCESS Array B**	**28.24**	**345**	P		**P**	**16 32 25.9**	**+0.5**
	comp=Z,1.0nm,0.8s,mb3.7,baz=159,slow=7.7,SNR=3.5							
ARCES	**ARCESS Array B**	**28.24**	**345**	P		**P**	**16 32 25.9**	**+0.6**
ARCES				pmax		pmax		
	comp=Z,1.0nm,0.8s							
CMAR	**Chiang Mai Arr**	**50.54**	**102**	P		**P**	**16 35 28.3**	**-3.0**
	comp=Z,0.6nm,0.6s,mb3.7,baz=304,slow=8.5,SNR=6.2							
CMAR	**Chiang Mai Arr**	**50.54**	**102**	P		**P**	**16 35 28.3**	**-3.0**
CMAR				pmax		pmax		
	comp=Z,1.0nm,0.6s							

*NAO **31** 16:39:00.6±3.2,60.65N×28.85E,ML2.3*
*HEL **31** 16:39:02.9±0.5,60.82N×28.94E,ML1.9,ML2.3(NAO), Explosion*
*BER **31** 16:39:03.4±1.6,60.85N×28.88E,ML2.3(NAO), Suspected explosion*
ISC 31 16:39:01.9±1.7,61.01N±0.09×28.9E±0.2,n8,σ1§44/12, Finland-Karelia border region

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
FIA0	**FINESS Array S**	**1.44**	**289**	*e*P		**Pb**	**16 39 29.2**	**-0.1**
FIA0				*e*SB		**Sb**	**16 39 50.4**	**+2.4**
FIA0	**FINESS Array S**	**1.44**	**289**	Pn		**Pn**	**16 39 29.1**	**-0.1**
	baz=116,slow=16							
FIA0				Lg			16 39 50.2	
	baz=106,slow=28							
FIA0				Rg			16 39 57.5	
	baz=118,slow=37							
SUF	**Sumiainen**	**2.16**	**324**	*e*P		**Pn**	**16 39 42.6**	**+3.0**
SUF				MSG			16 40 15.4	
	comp=Z,5.5nm,0.2s							
KEF	**Keuruu**	**2.25**	**303**	*e*P		**Pn**	**16 39 43.1**	**+2.2**
KEF				*e*SG		**Sg**	**16 40 15.5**	**-1.4**
KEF				MSG			16 40 18.6	
	comp=Z,4.1nm,0.2s							
MEF	**Metsahovi**	**2.36**	**252**	*e*P		**Pn**	**16 39 42.3**	**-0.2**
MEF				*e*S		**Sn**	**16 40 12.3**	**-0.3**
HFS	**Hagfors**	**7.55**	**270**	Pn		**Pn**	**16 40 52.4**	**-3.4**
	baz=76,slow=14							
HFS				Sn		**Sn**	**16 42 14.7**	**-8.5**
	baz=78,slow=28							
HFS				Lg			16 42 55.5	
	baz=80,slow=37							
ARA0	**ARCESS Array S**	**8.68**	**352**	Pn		**P**	**16 41 10.6**	**-1.0**
	baz=167,slow=12							
ARA0	**ARCESS Array S**	**8.68**	**352**	*e*P		**P**	**16 41 10.6**	**-1.0**

*HEL **31** 16:43:32.8±0.2,59.74N×24.35E,ML2.0,ML2.1(UPP), Explosion*
*IDC **31** 16:43:34.0±2.1,59.78N×24.57E,mb1 2.9/3, mb1mx2.8/21,ML2.9/3,Error ellipse: s-maj=21.1km s-min=6.4km az=146.0*
ISC 31 16:43:30.8±0.6,59.74N±0.04×24.26E±0.08,n11,σ1§29/21, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
MEF	**Metsahovi**	**0.49**	**8**	*e*P		**Pg**	**16 43 41.3**	**+0.7**
MEF				*e*S		**Sg**	**16 43 47.5**	**+0.5**
VSU	**Vasula**	**1.81**	**134**	*e*P		**Pn**	**16 44 03.9**	**+0.4**
VSU				*e*S		**Sn**	**16 44 27.5**	**+0.1**
VJF	**Virojoki**	**1.83**	**63**	*e*P		**Pn**	**16 44 03.6**	**-0.2**
VJF				*e*S		**Sn**	**16 44 27.6**	**-0.5**
FIA0	**FINESS Array S**	**1.93**	**27**	*e*P		**Pn**	**16 44 06.5**	**+1.3**
FIA0				*e*SN		**Sn**	**16 44 31.1**	**+0.4**
FIA0				MSG			16 44 34.1	
	comp=Z,9.3nm,0.2s							
FINES	**FINESS Array B**	**1.93**	**27**	Pg		**Pg**	**16 44 06.6**	**-2.8**
	comp=Z,3.1nm,0.3s,baz=200,slow=15,SNR=78							
FINES				Lg			16 44 31.3	
	comp=Z,3.4nm,0.3s,baz=207,slow=25,SNR=16							
KEF	**Keuruu**	**2.46**	**7**	*e*P		**Pn**	**16 44 15.3**	**+2.5**
KEF				*e*SG		**Sg**	**16 44 47.8**	**-4.8**
KEF				MSG			16 44 49.0	
	comp=Z,7.3nm,0.2s							
SUF	**Sumiainen**	**3.13**	**16**	*e*P		**Pn**	**16 44 23.4**	**+1.1**
SUF				*e*SB		**Sb**	**16 45 06.2**	**+0.1**
JOF	**Joensuu**	**4.66**	**44**	*e*P		**Pn**	**16 44 43.0**	**-1.1**
JOF				*e*S		**Sn**	**16 45 35.8**	**-3.9**
JOF				MSG			16 45 58.6	
	comp=Z,2.1nm,0.3s							
HFS	**Hagfors**	**5.33**	**279**	Pn		**Pn**	**16 44 55.1**	**+1.6**
	comp=Z,0.1nm,0.3s,baz=113,slow=11,SNR=7.7							
HFS				Sn		**Sn**	**16 45 56.6**	**0.0**
	comp=Z,0.1nm,0.3s,baz=90,slow=28,SNR=6.1							
HFS				Lg			16 46 26.5	
	comp=Z,0.1nm,0.3s,baz=80,slow=33,SNR=4.9							
NOA	**NORSAR Array B**	**6.60**	**287**	Pn		**Pn**	**16 45 11.1**	**-0.4**
	comp=Z,0.2nm,0.3s,baz=320,slow=13,SNR=2.4							
NOA				Sn		**Sn**	**16 46 25.2**	**-3.1**
	comp=Z,0.1nm,0.3s,baz=148,slow=24,SNR=2.5							
NOA				Lg			16 47 06.3	
	comp=Z,0.3nm,0.3s,baz=225,slow=32,SNR=2.5							
ARCES	**ARCESS Array B**	**9.85**	**3**	Pn		**P**	**16 45 54.1**	**-2.4**
	comp=Z,0.2nm,0.3s,baz=184,slow=13,SNR=14							
ARCES				Sn		**Sn**	**16 47 39.4**	**-10**
	comp=Z,0.1nm,0.3s,baz=178,slow=24,SNR=2.6							

GUC 31 16:59:13.6±0.8,35.33S×72.07W,h7km±3km,MD3.7, ML3.6,8C-4D,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time	Res
					Op		h m s	ISC
TALC	**Talca**	**0.36**	**100**	⇑*i*P		Pg	16 59 21.2	+0.3
TALC				*i* S		Sg	16 59 26.6	+0.9
TALC				AMP			16 59 27.0	
	comp=N,11µm,0.6s							
COCH	**Cobquecura**	**0.99**	**216**	*e*P		Pb	16 59 31.7	-1.0
COCH				AMP			16 59 46.5	
	comp=E,574nm,0.2s							
SFDO	**San Fernando**	**1.12**	**51**	⇓*i*P		Pb	16 59 34.0	-1.0
CCHI	**Chillan**	**1.27**	**180**	⇓*i*P		Pb	16 59 36.6	-0.8
CCHI				*i* S		Sb	16 59 53.7	-0.1
CCHI				AMP			16 59 54.3	
	comp=N,2µm,0.2s							
CCHI				AMP			16 59 54.5	
	comp=N,3µm,0.1s							
LNV	**Longovilo**	**1.48**	**22**	⇓*i*P		Pn	16 59 39.3	-1.5
CICH	**Cipreses**	**1.69**	**54**	*e*P		Pn	16 59 43.5	-0.4
CICH				*i* S		Sn	17 00 05.7	-0.2
CACH	**El Canelo**	**1.71**	**45**	⇑*i*P		Pn	16 59 43.8	-0.3
CACH				*i* S		Sn	17 00 06.4	-0.1
CHCH	**Chadas Angostu**	**1.82**	**40**	⇑*i*P		Pn	16 59 45.5	-0.2
CHCH				*i* S		Sn	17 00 09.0	-0.2
TACH	**Talagante**	**1.92**	**29**	*e*P		Pn	16 59 46.6	-0.4
TACH				*i* S		Sn	17 00 11.8	0.0
RCDM	**Rinconada Maip**	**2.11**	**30**	⇑*i*P		Pn	16 59 50.0	+0.1
RCDM				*i* S		Sn	17 00 17.4	+0.7
RCDM				AMP			17 00 19.9	
	comp=E,419nm,0.1s							
ANTU	**Antumapu**	**2.12**	**34**	*i* P		Pn	16 59 50.5	+0.5
ANTU				*i* S		Sn	17 00 18.3	+1.4
ANTU				AMP			17 00 21.6	
	comp=E,896nm,0.7s							
LMEL	**Las Melosas**	**2.13**	**47**	⇑*i*P		Pn	16 59 50.5	+0.3
LMEL				*i* S		Sn	17 00 18.9	+1.7
LMEL				AMP			17 00 20.8	
	comp=N,708nm,0.2s							
PCH	**Pirque**	**2.14**	**37**	*e*P		Pn	16 59 50.5	+0.3
PCH				*i* S		Sn	17 00 18.4	+1.1
CLCH	**Cerro Calan**	**2.31**	**34**	⇓*i*P		Pn	16 59 53.6	+0.9
CLCH				*i* S		Sn	17 00 23.6	+1.9
CLCH				AMP			17 00 30.4	
	comp=N,620nm,0.5s							
PEL	**Peldehue**	**2.47**	**28**	⇑*i*P		Pn	16 59 56.4	+1.5
PEL				*e*S		Sn	17 00 27.3	+1.7
PEL				AMP			17 00 34.3	
	comp=E,594nm,0.5s							
FCH	**Farellones**	**2.48**	**37**	⇑*i*P		Pn	16 59 56.0	+0.9
FCH				*i* S		Sn	17 00 28.7	+2.6
FCH				AMP			17 00 31.8	
	comp=E,358nm,0.5s							
ROCH	**El Roble**	**2.51**	**21**	⇑*i*P		Pn	16 59 56.1	+0.5
JACH	**Jahuel**	**2.91**	**25**	*i* P		Pn	17 00 04.2	+2.9

*IDC **31** 17:24:17.0±0.8,60.77S×35.34W,mb4.0/3,mb1 4.2/4, mb1mx4.0/12,ML3.3/1,MS3.7/6,Ms1 3.6/6,ms1mx3.6/14, Error ellipse: s-maj=55.0km s-min=25.3km az=36.0*
ISC 31 17:24:16.7±1.0,60.8S±0.2×35.3W±0.4,h10km,n23, σ0§65/13,mb4.0/3,MS3.6/5,4C-3D,Scotia Sea

| Code | Station Name |

*SNSN **31** 17:25:44.4, 33.90N×36.69E, h163km, Ml3.9*
*GII **31** 17:25:50.7±1.6, 32.94N×35.67E, h7km±5km, ML3.4/9, Mw3.2/6*
*NSSC **31** 17:25:51.9, 32.95N×35.74E, h12km±1km*
*GRAL **31** 17:25:51.3±2.8, 32.90N×35.65E, h15km±330km, MD3.7*
*NIC **31** 17:25:52.7±0.4, 33.05N×35.69E, h36km, ML3.3, MW3.2*
ISC 31 17:25:50.3±0.4,**32.96N**±0.02×**35.63E**±0.03,**h15**km±3km, **n43**,σ0**76**/60,**1C-7D,Dead Sea region**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
KSDI	**Kefar Szold**	**0.24**	**7**	Pg		**Pg**	**17 25 56.6**	**+0.9**
GLH	**Golan-Tel Qazi**	**0.24**	**175**	Pg		**Pg**	**17 25 56.1**	**+0.2**
HRI	**Mount Hermon**	**0.32**	**16**	Pg		**Pg**	**17 25 57.9**	**+0.7**
HNTI	**Hanita**	**0.40**	**289**	Pg		**Pg**	**17 25 59.4**	**+0.6**
HNTI				Sg		**Sg**	**17 26 05.5**	**+1.2**
TCHB	**Talchebab**	**0.41**	**135**	⇓P		**Pb**	**17 25 58.9**	**+0.2**
TCHB				⇓S		**Sb**	**17 26 03.6**	**-0.7**
BRBR	**Barbar**	**0.53**	**31**	⇑P		**Pb**	**17 26 01.4**	**+0.7**
BRBR				⇑S		**Sb**	**17 26 08.0**	**+0.2**
HAF	**Haifa**	**0.54**	**251**	Pg		**Pg**	**17 26 01.5**	**+0.1**
MATL	**Matirih**	**0.59**	**335**	*i* PG		**Pg**	**17 26 02.4**	**+0.1**
OFRI	**'Ofer**	**0.64**	**238**	Pg		**Pg**	**17 26 02.9**	**-0.4**
HMDT	**Nahal Hemdat**	**0.71**	**187**	Pg		**Pg**	**17 26 03.7**	**-0.9**
TOTH	**TOTAH**	**0.79**	**59**	⇑P		**Pb**	**17 26 05.7**	**+0.6**
TOTH				⇑S		**Sb**	**17 26 15.5**	**+0.2**
QASN	**Qassioun**	**0.79**	**43**	⇑P		**Pb**	**17 26 06.0**	**+0.8**
QASN				⇑S		**Sb**	**17 26 15.6**	**+0.1**
BHL	**Bhannes**	**0.95**	**1**	*i* PG		**Pg**	**17 26 08.3**	**-1.0**
BHL				*i* SG		**Sg**	**17 26 21.9**	**-0.2**
SALA	**Sala**	**0.96**	**104**	⇓P		**Pb**	**17 26 08.5**	**+0.3**
SALA				⇓S		**Sb**	**17 26 20.2**	**-0.2**
MARH	**Ras Al Marh**	**1.28**	**34**	⇑P		**Pb**	**17 26 14.7**	**+1.1**
MARH				⇑S		**Sb**	**17 26 30.5**	**+0.7**
HWQ	**Hawqa**	**1.35**	**11**	*i* PG		**Pg**	**17 26 15.5**	**-1.8**
HWQ				*i* SG		**Sg**	**17 26 34.3**	**-1.1**
DRGI	**Dragot**	**1.37**	**188**	Pn		**Pn**	**17 26 14.6**	**-0.4**
MKRJ	**Makawir**	**1.40**	**179**	Pn		**Pn**	**17 26 15.2**	**-0.2**
ZALF	**Zalf**	**1.44**	**91**	⇓P		**Pn**	**17 26 16.1**	**+0.2**
ZALF				⇓S		**Sb**	**17 26 33.4**	**-0.8**
MZDA	**Masada**	**1.66**	**188**	Pn		**Pn**	**17 26 19.0**	**-0.1**
MZDA				Sn		**Sn**	**17 26 40.3**	**+0.2**
RTMM	**Retamin**	**2.06**	**203**	Pn		**Pn**	**17 26 25.1**	**+0.2**
MASH	**Mash'abbe Sade**	**2.08**	**200**	Pn		**Pn**	**17 26 25.3**	**+0.1**
QURS	**Qurayyt al Mil**	**2.13**	**137**	P		**Pn**	**17 26 27.1**	**+1.2**
QURS				S		**Sn**	**17 27 00.5**	**+8.4**
SVTA	**Shivta**	**2.19**	**203**	Pn		**Pn**	**17 26 26.9**	**+0.1**
KZIT	**Kziot**	**2.29**	**207**	Pn		**Pn**	**17 26 28.3**	**+0.1**
KZIT				Sn		**Sn**	**17 26 59.6**	**+3.2**
PHNC	**Paralimni**	**2.44**	**327**	P		**Pn**	**17 26 29.8**	**-0.4**
PRNI	**Paran**	**2.65**	**192**	Pn		**Pn**	**17 26 32.7**	**-0.6**
CSS	**Prodhromos** 0.8nm,0.4s	**2.77**	**317**	⇓P		**Pn**	**17 26 34.4**	**-0.6**
CSS				S		**Sn**	**17 27 06.7**	**-1.6**
SZAC	**Souni-Zanaja** 3.4nm,0.2s	**2.90**	**309**	⇑P		**Pn**	**17 26 36.4**	**-0.5**
SZAC				S		**Sn**	**17 27 11.8**	**-0.1**
KMTI	**Karmit**	**2.94**	**195**	Pn		**Pn**	**17 26 37.3**	**-0.2**
MAMC	**Mammari**	**2.98**	**319**	P		**Pn**	**17 26 38.1**	**+0.1**
EIL	**Elat**	**3.33**	**190**	Pn		**Pn**	**17 26 42.8**	**-0.1**
ALFC	**Alevga** 2.7nm,0.2s	**3.34**	**312**	P		**Pn**	**17 26 43.1**	**0.0**
ALFC				S		**Sn**	**17 27 23.5**	**+0.7**
PPCY	**Paphos**	**3.34**	**306**	P		**Pn**	**17 26 42.6**	**-0.5**
COBT	**Iskenderun**	**3.59**	**8**	*i* P		**Pn**	**17 26 55.8**	**+9.1**
ALWS	**Ilw as Safayha**	**3.67**	**188**	P		**Pn**	**17 26 55.3**	**+7.6**
JMOS	**Jabal al Moall**	**3.80**	**187**	P		**Pn**	**17 26 56.5**	**+6.9**
HAQS	**Haql**	**3.93**	**189**	P		**Pn**	**17 26 59.8**	**+8.2**
JMQS	**Jabal Moqyreh**	**4.06**	**177**	P		**Pn**	**17 26 58.9**	**+5.5**
BDAS	**Al Bad'**	**4.53**	**186**	P		**Pn**	**17 27 05.9**	**+5.9**
GZT	**Gaziantep**	**4.67**	**19**	*i* P		**Pn**	**17 27 16.7**	**+15**
AYUS	**'Aynunah**	**4.76**	**184**	P		**Pn**	**17 27 09.4**	**+6.1**
AYUS				S		**Sn**	**17 28 17.4**	**+19**
KBRS	**Khaybar**	**7.81**	**155**	P		**Pn**	**17 27 43.3**	**-3.0**

*BJI **31** 17:42:24.5, 17.50S×178.15W, h576km, mB4.4, mb4.4*
*IDC **31** 17:42:24.3±2.0, 17.59S×178.73W, h540km±23km, mb3.9/20, mb1 4.0/21, mb1mx4.0/22, Error ellipse: s-maj=16.9km s-min=9.3km az=160.0*
*NEIC **31** 17:42:26.2±0.2, 17.56S×178.77W, h565km, mb4.3/26, Error ellipse: s-maj=9.6km s-min=5.4km az=143.0*
ISC 31 17:42:20.4±2.2,**17.48S**±0.09×**178.75W**±0.06, **h506**km±26km,**n174**,σ0**83**/72,**mb4.3**/42,**11C-20D,Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase	ID	ISC	Time h m s	Res ISC
RAR	**Rarotonga** 1.0nm,0.3s,baz=280,slow=6.1,SNR=3.0	**18.28**	**105**	P		**P**	**17 46 03.0**	**-0.1**
URZ	**Urewera** 22nm,1.1s,mb4.6,baz=166,slow=5.3,SNR=7.4	**21.02**	**189**	P		**P**	**17 46 27.5**	**-1.3**
RPZ	**Rata Peaks** 7.2nm,0.8s,mb4.1,baz=14,slow=4.2,SNR=3.5	**27.54**	**196**	P		**P**	**17 47 26.4**	**-0.9**
PPT	**Papeete** 14nm,0.4s,mb4.7,baz=268,slow=9.0,SNR=4.0	**27.81**	**95**	P		**P**	**17 47 30.4**	**+0.5**
CTA	**Charters Tower** 8.9nm,0.8s,mb4.2	**33.20**	**260**	⇓P		**P**	**17 48 16.3**	**+0.3**
CTA	**Charters Tower** 13nm,0.8s,mb4.4,baz=94,slow=12,SNR=10	**33.20**	**260**	P		**P**	**17 48 16.7**	**+0.6**
CTA				PcP		PcP	17 50 44.2	-0.5
CTAO	**Charters Tower** 13nm,0.8s,mb4.4 6.8nm,0.7s,baz=158,slow=2.3,SNR=5.0	**33.20**	**260**	eP		**P**	**17 48 16.4**	**+0.3**
CNB	**Canberra Magne** 46nm,0.7s,mb5.0	**33.43**	**232**	⇓P		**P**	**17 48 19.3**	**+1.4**
PMG	**Port Moresby** 30nm,0.9s,mb4.7,baz=112,slow=4.3,SNR=5.8	**34.07**	**279**	P		**P**	**17 48 25.7**	**+2.3**
PMG	**Port Moresby** 29nm,0.8s,mb4.8	**34.07**	**279**	eP		**P**	**17 48 23.6**	**+0.2**
TOO	**Toolangi** 14nm,0.8s,mb4.5	**37.19**	**230**	⇑P		**P**	**17 48 50.5**	**+1.5**
STKA	**Stephens Creek** 16nm,0.6s,mb4.6	**38.55**	**241**	⇓P		**P**	**17 49 01.6**	**+1.4**
STKA	**Stephens Creek** 19nm,0.5s,mb4.8,baz=86,slow=9.1,SNR=92	**38.55**	**241**	P		**P**	**17 49 01.7**	**+1.5**
WB2	**Warramunga Arr**	**44.38**	**259**	⇓P		**P**	**17 49 46.3**	**-0.6**
WRAB	**Tennant Creek** 33nm,1.0s,mb4.7	**44.38**	**259**	eP		**P**	**17 49 46.2**	**-0.8**
WRA	**Warramunga Arr** 11nm,0.8s,mb4.3,baz=97,slow=7.4,SNR=148	**44.39**	**259**	P		**P**	**17 49 46.3**	**-0.7**
AS12	**Alice Springs** 59nm,0.7s,mb5.1	**44.60**	**254**	⇓P		**P**	**17 49 48.7**	**+0.1**
ASAR	**Alice Springs** 86nm,0.7s,mb5.3,baz=88,slow=7.8,SNR=848	**44.60**	**254**	P		**P**	**17 49 48.8**	**+0.2**
ASAR				PcP		PcP	17 51 20.1	-1.0
ASAR	5.5nm,0.6s,baz=103,slow=4.0,SNR=9.4			S		**S**	**17 55 43.5**	**-4.0**
KAKA	**Kakadu** 36nm,0.4s,mb5.2	**47.31**	**269**	⇓P		**P**	**17 50 09.3**	**-0.2**
FORT	**Forest** 134nm,0.5s	**49.90**	**244**	⇑P		**P**	**17 50 28.2**	**-0.6**
FITZ	**Fitzroy Crossi** 14nm,0.9s,mb4.3	**52.78**	**260**	⇓P		**P**	**17 50 49.8**	**-0.1**
FITZ	**Fitzroy Crossi** 11nm,0.6s,mb4.3,baz=148,slow=7.9,SNR=54	**52.78**	**260**	P		**P**	**17 50 49.6**	**-0.3**
KLBR	**Kellerberrin** 21nm,0.6s,mb4.6	**58.73**	**243**	⇓P		**P**	**17 51 29.9**	**-1.1**
NWAO	**Narrogin (SRO)** 13nm,1.0s,mb4.2,baz=123,slow=7.0,SNR=7.3	**59.13**	**242**	P		**P**	**17 51 32.5**	**-1.2**
NWAO	**Narrogin (SRO)**	**59.13**	**242**	eP		**P**	**17 51 33.0**	**-0.6**
MUN	**Mundaring** 6.7nm,0.7s,mb4.2	**60.03**	**243**	⇑P		**P**	**17 51 39.3**	**-0.3**
VNDA	**Vanda** 0.6nm,0.5s,baz=25,slow=4.6,SNR=5.3	**60.84**	**185**	P		**P**	**17 51 44.9**	**+0.5**
MAJO	**Matsushiro** 5.3nm,0.4s,mb4.5	**67.38**	**323**	eP		**P**	**17 52 25.4**	**-1.1**
MDJ	**Mudanjiang**	**77.65**	**325**	P		**P**	**17 53 26.0**	**+0.8**
MDJ	comp=Z,15nm,1.0s,mb4.4				AMB	AMB		
MDJ	comp=Z,42nm,4.4s				AMB	AMB		
MDJ	**Mudanjiang** comp=Z,5.9nm,0.4s,mb4.4	**77.65**	**325**	eP		**P**	**17 53 25.6**	**+0.4**
NVAR	**Mina Array Bea** comp=Z,3.4nm,0.7s,mb4.0,baz=214,slow=7.6,SNR=31	**79.34**	**44**	P		**P**	**17 53 34.8**	**+0.5**
CN2	**Changchun**	**79.49**	**322**	eP		**P**	**17 53 35.5**	**+0.5**
CN2	comp=Z,10.0nm,1.2s,mb4.2				AMB	AMB		
WVOR	**Wild Horse Val** comp=Z,8.1nm,0.9s,mb4.2	**81.29**	**40**	eP		**P**	**17 53 44.7**	**+0.4**
TUC	**Tucson**	**81.70**	**52**	eP		**P**	**17 53 47.7**	**+1.1**
	comp=Z,3.6nm,0.8s,mb4.0							
WUAZ	**Wupatki** comp=Z,6.1nm,0.9s,mb4.1	**82.71**	**49**	eP		**P**	**17 53 52.0**	**+0.3**
BJT	**Baijiatuau**	**83.25**	**315**	eP		**P**	**17 53 54.7**	**+0.4**
ENH	**Enshi** comp=Z,42nm,1.4s,mb4.8	**83.77**	**304**	eP		**P**	**17 53 57.6**	**+0.5**
MAW	**Mawson** comp=Z,2.9nm,0.6s,mb4.0,baz=110,slow=7.2,SNR=10	**84.15**	**200**	P		**P**	**17 53 58.5**	**+0.4**
MCK	**McKinley** comp=Z,3.0nm,0.8s,mb3.9	**84.20**	**13**	eP		**P**	**17 53 57.3**	**-1.1**
NEW	**Newport** comp=Z,2.6nm,0.6s,mb4.0	**85.36**	**36**	eP		**P**	**17 54 03.8**	**-0.6**
COLA	**College** comp=Z,8.4nm,1.0s,mb4.3	**85.43**	**13**	eP		**P**	**17 54 02.9**	**-1.4**
ILAR	**Eielson Array** comp=Z,2.6nm,0.5s,mb4.2,baz=224,slow=5.2,SNR=53	**85.55**	**13**	P		**P**	**17 54 03.6**	**-1.3**
MNTX	**Cornudas Mount** comp=Z,0.9nm,0.5s,mb3.7	**85.60**	**55**	eP		**P**	**17 54 06.2**	**+0.2**
PV01	**Paradox Valley**	**85.89**	**48**	eP		**P**	**17 54 07.1**	**-0.1**
BILL	**Bilibino** comp=Z,2.1nm,0.6s,mb3.9	**85.98**	**354**	eP		**P**	**17 54 06.9**	**-0.1**
TXAR	**Lajitas Array** comp=Z,2.8nm,0.8s,mb4.0,baz=216,slow=6.3,SNR=37	**86.04**	**58**	P		**P**	**17 54 09.8**	**+1.6**
ANMO	**Albuquerque** comp=Z,2.0nm,0.9s,mb3.8	**86.08**	**52**	eP		**P**	**17 54 08.4**	**+0.2**
MCMT	**McKenzie Canyo**	**86.12**	**41**	eP		**P**	**17 54 09.0**	**+0.8**
CHMT	**Chamberlain Mo**	**86.90**	**39**	eP		**P**	**17 54 11.4**	**-0.4**
BW06	**Boulder Array** comp=Z,2.3nm,0.5s,mb4.2	**87.27**	**44**	eP		**P**	**17 54 13.5**	**-0.2**
PDAR	**Pinedale Array** comp=Z,2.2nm,0.6s,mb4.1,baz=212,slow=2.9,SNR=20	**87.27**	**44**	P		**P**	**17 54 13.8**	**+0.2**
BOZ	**Bozeman (W)** comp=Z,0.9nm,0.5s,mb3.8	**87.27**	**40**	eP		**P**	**17 54 14.0**	**+0.4**
KMI	**Kunming**	**87.35**	**297**	eP		**P**	**17 54 15.3**	**+0.8**
KMI	comp=Z,11nm,1.1s,mb4.5				AMB	AMB		
CMAR	**Chiang Mai Arr** comp=Z,4.3nm,0.9s,mb4.2,baz=102,slow=2.6,SNR=28	**88.44**	**290**	P		**P**	**17 54 21.0**	**+1.3**
SNAA	**Sanae**	**91.03**	**179**	eP		**P**	**17 54 29.5**	**-0.9**
VNA3	**Neumayer Olymp**	**91.18**	**176**			**P**	**17 54 32.2**	**+1.0**
VNA3	**Neumayer Olymp**	**91.18**	**176**	⇑*i*		**P**	**17 54 33.4**	**+2.2**
VNA3	**Neumayer Olymp**	**91.18**	**176**			**P**	**17 54 41.6**	**+10**
VNA3	**Neumayer Olymp**	**91.18**	**176**	⇑*i*		**P**	**17 54 46.4**	**+15**
INK	**Inuvik** comp=Z,3.0nm,0.8s,mb4.3,baz=234,slow=3.4,SNR=4.6	**91.56**	**15**	P		**P**	**17 54 31.9**	**-1.1**
INK	**Inuvik**	**91.56**	**15**	eP		**P**	**17 54 32.0**	**-0.9**
VNA2	**Neumayer--Watz**	**91.62**	**177**	⇓*i*		**P**	**17 54 34.1**	**+0.9**
VNA2	**Neumayer--Watz**	**91.62**	**177**			**P**	**17 54 35.4**	**+2.2**
VNA2	**Neumayer--Watz**	**91.62**	**177**	⇑*i*		**P**	**17 54 44.2**	**+11**
VNA2	**Neumayer--Watz**	**91.62**	**177**	⇑*i*		**P**	**17 54 48.0**	**+15**
VNA1	**Neumayer--Stat**	**91.85**	**177**			**P**	**17 54 33.5**	**-0.7**
ULN	**Ulaanbaatar** comp=Z,1.0nm,0.4s,mb4.2	**92.62**	**320**	eP		**P**	**17 54 38.4**	**0.0**
SONM	**Songino Array** comp=Z,1.6nm,1.0s,mb4.0,baz=140,slow=5.6,SNR=9.8	**93.02**	**319**	P		**P**	**17 54 40.2**	**+0.1**
YKA	**Yellowknife Ar** comp=Z,1.4nm,0.6s,mb4.2,baz=245,slow=4.4,SNR=32	**94.08**	**25**	P		**P**	**17 54 43.9**	**-0.7**
YKA	**Yellowknife Ar**	**94.08**	**25**	P		**P**	**17 54 43.9**	**-0.7**
YKW3	**Yellowknife Ar**	**94.11**	**25**	eP		**P**	**17 54 44.1**	**-0.7**
MKAR	**Makanchi Array** comp=Z,1.1nm,0.5s,baz=198,slow=0.3,SNR=21	**108.61**	**314**	PKiKP			17 59 50.7	
KURK	**Kurchatov**	**111.30**	**318**	ePKPdf	PKPdf		17 59 55.2	-0.6
BRVK	**Borovoye**	**116.32**	**321**	ePKPdf	PKPdf		18 00 05.5	-0.2
ZRNK	**Zerenda**	**117.15**	**321**	ePKPdf	PKPdf		18 00 06.9	-0.3
ARCES	**ARCESS Array B** comp=Z,4.1nm,0.8s,baz=342,slow=3.8,SNR=9.1	**125.84**	**350**	PKP	PKPdf		18 00 24.1	+0.5
SUR	**Sutherland**	**127.00**	**201**	ePKPdf	PKPdf		18 00 28.3	+1.5
THR	**Tehran** comp=Z,0.5nm,0.6s,baz=360,slow=5.3,SNR=3.6	**132.35**	**303**	PKP	PKPdf		18 00 39.6	+2.7
FINES	**FINESS Array B** comp=Z,3.3nm,1.1s,baz=72,slow=4.4,SNR=3.5	**132.69**	**344**	PKP	PKPdf		18 00 36.9	+0.1
NB2	**NORSAR Subarra** comp=Z,0.5nm,0.6s,baz=17,slow=2.6	**135.92**	**353**	PKP			18 00 43.8	
NOA	**NORSAR Array B** comp=Z,0.7nm,0.6s,baz=14,slow=4.1,SNR=6.1	**135.92**	**353**	PKP	PKPdf		18 00 43.2	+0.5
LTHS	**Al Lith**	**142.90**	**281**	P	PKPdf		18 00 56.3	-0.1
BSEG	**Bad Segeberg**	**142.94**	**351**	ePKPbc	PKPdf		18 00 53.8	-1.6
KWP	**Kalwaria**	**143.55**	**336**	ePKP	PKPdf		18 00 56.4	-0.2
KWP	**Kalwaria**	**143.55**	**336**	ePKPdf	PKPdf		18 00 56.2	-0.4
KWP				ePKP	PKPdf		18 00 56.4	-0.2
KBRS	**Khaybar**	**143.82**	**290**	P	PKPbc		18 00 58.8	+1.5
OJC	**Ojcow**	**144.10**	**340**	ePKP	PKPdf		18 00 57.6	+0.1
BRTR	**Keskin Array B** comp=Z,6.2nm,0.7s,baz=119,slow=3.6,SNR=30	**144.25**	**315**	PKP	PKPdf		18 00 59.0	+0.8
CFR	**Carcaliu**	**144.41**	**327**	⇑*i* P	PKPdf		18 00 59.5	+1.3
NIE	**Niedzica**	**144.61**	**338**	⇓ePKP	PKPdf		18 00 59.6	+1.1
KSP	**Ksiaz**	**144.61**	**343**	ePKP	PKPdf		18 01 00.2	+1.8
KSP	**Ksiaz**	**144.61**	**343**	ePKP	PKPdf		18 01 00.0	+1.6
CRVS	**Cervenica-Dubn**	**144.62**	**337**	*i* PKP	PKPdf		18 00 59.8	+1.3
CRVS				*e*			18 01 02.5	
VRI	**Vrincioaia**	**144.65**	**329**	⇑*i* P	PKPdf		18 01 00.3	+1.6
ASF	**Jabal al Asfar** comp=Z,18nm,1.1s,baz=237,slow=1.5,SNR=11	**144.68**	**301**	PKP	PKPdf		18 01 00.7	+1.5
HARR	**Harsova**	**144.84**	**326**	⇑*i* P	PKPdf		18 01 01.1	+2.1
CLZ	**Clausthal**	**144.96**	**350**	ePKPbc	PKPbc		18 01 00.7	+0.9
OKC	**Ostrava-Krasne**	**144.97**	**341**	ePKP	PKPdf		18 01 00.4	+1.3
CLL	**Collm**	**144.98**	**347**	⇓*i* PKP1	PKPbc		18 01 00.3	+0.5
UPC	**Upice**	**144.99**	**344**	ePKP	PKPdf		18 01 00.9	+1.8
DPC	**Dobruska-Polom**	**145.05**	**343**	ePKP	PKPdf		18 01 01.4	+2.2
YNBS	**Yanbu' al Bahr**	**145.09**	**288**	P	PKPdf		18 01 01.8	+1.7
BRG	**Berggiesshubel**	**145.18**	**346**	*i* P	PKPdf		18 01 01.4	+2.0
MORC	**Moravsky Berou**	**145.21**	**341**	ePKPbc	PKPbc		18 01 01.1	+0.7
ISR	**Istrita**	**145.27**	**328**	⇓*i* P	PKPdf		18 01 02.7	+2.9
MLR	**Muntele Rosu** comp=Z,5.6nm,0.6s,baz=31,slow=3.6,SNR=6.5	**145.30**	**329**	PKPbc	PKPbc		18 01 02.3	+1.5
PVCC	**Panska Ves**	**145.35**	**345**	ePKP	PKPdf		18 01 02.0	+2.3
PRU	**Pruhonice**	**145.85**	**345**	ePKP	PKPdf		18 01 03.3	+2.7
MOX	**Moxa** comp=Z,logA/T=0.9	**145.89**	**348**	*i* P	PKPdf		18 00 50.7	-10
MOX	**Moxa**	**145.89**	**348**	eP	PKPdf		18 00 50.7	-10
VYHS	**Vyhne**	**145.91**	**339**	*i* PKP	PKPdf		18 01 03.7	+3.0
VRAC	**Vranov** comp=Z,7.7nm,0.8s,baz=41,slow=2.8,SNR=8.3	**145.91**	**342**	PKPbc	PKPbc		18 01 03.6	+1.4
PSZ	**Piszkesteto**	**146.02**	**337**	⇓*i* P	PKPdf		18 01 03.9	+3.0
PSZ	**Piszkesteto**	**146.02**	**337**	ePKPbc	PKPbc		18 01 03.6	+1.1
NKC	**Novy Kostel**	**146.11**	**347**	ePKP	PKPdf		18 01 04.1	+3.1
JMQS	**Jabal Moqyreh**	**146.33**	**296**	P	PKPdf		18 01 05.6	+3.6
SMOL	**Smolenice**	**146.35**	**340**	*i* PKP	PKPdf		18 01 05.8	+4.4
SMOL				*e*			18 01 13.7	
CSS	**Prodhromos**	**146.57**	**308**	ePKPbc	PKPbc		18 01 05.3	+1.0
CSS				ePKPab	PKPab		18 01 08.3	-1.4
SRO	**Srobarova**	**146.67**	**339**	ePKP	PKPdf		18 01 04.4	+2.4
ZST	**Bratislava**	**146.74**	**341**	ePKP	PKPdf		18 01 06.2	+4.1
GRA1	**Grafenberg Arr**	**146.88**	**348**	ePKPbc	PKPbc		18 01 06.5	+2.1
KHC	**Kasperske Hory**	**146.88**	**345**	ePKP	PKPdf		18 01 06.3	+4.0
JMOS	**Jabal al Moall**	**146.92**	**297**	P	PKPdf		18 01 07.2	+4.2
ALWS	**Ilw as Safayha**	**146.93**	**297**	P	PKPdf		18 01 07.1	+4.1
AYUS	**'Aynunah**	**146.99**	**295**	P	PKPdf		18 01 06.9	+3.8
BDAS	**Al Bad'**	**147.09**	**295**	P	PKPdf		18 01 07.2	+4.0
HAQS	**Haql**	**147.10**	**297**	P	PKPdf		18 01 07.6	+4.3
GEC2	**GERESS Array S**	**147.12**	**345**	ePKPbc	PKPdf		18 01 06.8	+4.1
GERES	**GERESS Array B** comp=Z,9.6nm,0.8s,baz=22,slow=2.8,SNR=78	**147.12**	**345**	PKPbc	PKPdf		18 01 06.8	+4.2
GIVF	**Givet** comp=Z,18nm,0.6s	**147.33**	**356**	ePKP1	PKPdf		18 01 07.2	+4.2
BAIF	**Baives** comp=Z,22nm,0.7s	**147.41**	**356**	ePKP1	PKPdf		18 01 07.5	+4.4
WLF	**Walferdange**	**147.65**	**354**	ePKPbc	PKPdf		18 01 08.5	+5.0
MOA	**Molln**	**147.89**	**343**	⇓*i* PKP	PKPdf		18 01 08.8	+4.9
ARSA	**Arzberg**	**148.07**	**341**	⇑*i* PKP	PKPdf		18 01 08.1	+3.9
STU	**Stuttgart**	**148.13**	**350**	ePKPbc	PKPdf		18 01 09.3	+5.0
FUR	**Furstenfeldbru**	**148.32**	**347**	ePKPbc	PKPdf		18 01 09.9	+5.3
BFO	**Black Forest**	**148.69**	**351**	ePKPbc	PKPdf		18 01 10.6	+5.4
PERS	**Pernice**	**148.74**	**341**	ePKPbc	PKPdf		18 01 10.3	+5.0
CDF	**Champ du Feu** comp=Z,25nm,0.8s	**148.76**	**352**	ePKP1	PKPdf		18 01 10.9	+5.6
FLN	**La Foliniere** comp=Z,46nm,0.8s	**148.77**	**2**	ePKP1	PKPdf		18 01 10.5	+5.2
KBA	**Koelnbreinsper**	**148.84**	**344**	⇓*i* PKP	PKPdf		18 01 10.5	+5.0
MEZF	**Maizieres J'vi** comp=Z,20nm,0.8s	**148.91**	**355**	ePKP1	PKPdf		18 01 11.4	+5.9
LDF	**La Druitiere**	**148.95**	**2**	ePKP1	PKPdf		18 01 10.9	+5.3
ROSF	**Rostrenen**	**149.00**	**6**	ePKP1	PKPdf		18 01 10.9	+5.2
WATA	**Walderalm**	**149.04**	**346**	⇓*i* PKP	PKPdf		18 01 11.4	+5.6
WTTA	**Wattenberg**	**149.09**	**346**	⇓*i* PKP	PKPdf		18 01 11.9	+6.0
GRR	**Gorron** comp=Z,24nm,0.7s	**149.13**	**3**	ePKP1	PKPdf		18 01 11.6	+5.7
MOTA	**Moosalm**	**149.13**	**347**	⇓*i* PKP	PKPdf		18 01 11.6	+5.7
SGMF	**Saint Gilles** comp=Z,14nm,0.6s	**149.15**	**5**	ePKP1	PKPdf		18 01 11.4	+5.5
SQTA	**Sankt Quirin**	**149.23**	**347**	⇓*i* PKP	PKPdf		18 01 12.1	+6.0
HAU	**Haudompre** comp=Z,15nm,0.6s	**149.27**	**353**	ePKP1	PKPdf		18 01 12.1	+6.0
LEGS	**Legarje**	**149.30**	**341**	*i* PKPbc	PKPdf		18 01 12.0	+5.8
LEGS				ePKPab	PKPab		18 01 18.6	-1.6
HINF	**Hinteralfeld** comp=Z,15nm,0.8s	**149.40**	**353**	ePKP1	PKPdf		18 01 12.2	+5.8
DAVA	**Damuels**	**149.44**	**348**	⇓*i* PKP	PKPdf		18 01 12.7	+6.3
LJU	**Ljubljana**	**149.46**	**342**	*i* PKPbc	PKPdf		18 01 12.5	+6.0
BOJS	**Bojanci**	**149.71**	**340**	*i* PKPbc	PKPdf		18 01 13.5	+6.5
DAVOX	**Davos** comp=Z,32nm,0.7s,baz=229,slow=2.0,SNR=37	**149.92**	**348**	PKPbc	PKPdf		18 01 14.2	+7.0
LOR	**Lormes** comp=Z,25nm,0.6s	**150.22**	**356**	ePKP1	PKPdf		18 01 14.4	+6.7
SSF	**Saint Saulge** comp=Z,26nm,0.7s	**150.44**	**357**	ePKP1	PKPdf		18 01 15.0	+7.0
CABF	**La Chapelle** comp=Z,54nm,1.1s	**150.68**	**353**	ePKP1	PKPdf		18 01 16.0	+7.6
SMF	**Signal de Mont**	**150.84**	**356**	ePKP1	PKPdf		18 01 15.7	+7.1
MFF	**Saint Martin d** comp=Z,12nm,0.6s	**150.94**	**2**	ePKP1	PKPdf		18 01 15.8	+7.0
BGF	**Bois d'Agland** comp=Z,26nm,0.8s	**150.98**	**358**	ePKP1	PKPdf		18 01 16.1	+7.3
TCF	**Toulx Ste Croi** comp=Z,15nm,0.8s	**151.26**	**359**	ePKP1	PKPdf		18 01 16.6	+7.4
LPL	**La Plagne**	**151.68**	**352**	ePKP1	PKPdf		18 01 18.6	+8.8
LPG	**La Plagne**	**151.69**	**352**	ePKP1	PKPdf		18 01 18.7	+8.8
BNI	**Bardonecchia**	**152.14**	**352**	ePKPbc	PKPdf		18 01 19.0	+8.5
RJF	**Les Rejaudoux** comp=Z,13nm,0.8s	**152.26**	**360**	ePKP1	PKPdf		18 01 19.2	+8.5
ORIF	**Oris-en-Rattie** comp=Z,9.6nm,0.7s	**152.37**	**353**	ePKP1	PKPdf		18 01 19.6	+8.8
MBDF	**Montbardon** comp=Z,14nm,0.7s	**152.44**	**351**	ePKP1	PKPdf		18 01 19.7	+8.8
VIVF	**Saint-Julien-l** comp=Z,4.5nm,0.6s	**152.56**	**355**	ePKP1	PKPdf		18 01 19.8	+8.7
CAF	**Calviac**	**152.63**	**359**	ePKP1	PKPdf		18 01 19.8	+8.6
SBF	**Sospel** comp=Z,12nm,0.6s	**153.19**	**350**	ePKP1	PKPdf		18 01 21.5	+10

comp=Z,238nm,19.3s,MS3.9,baz=76,slow=30
LBTB Lobatse 38.74 49 P **P** 18 37 22.1 -0.2
3.8nm,1.2s,mb4.0
TRQA Tornquist 41.02 272 *e*P **P** 18 37 40.7 -0.3
0.8nm,0.9s,mb3.4
TSUM Tsumeb 41.07 35 LR LR 18 51 02.5
comp=Z,154nm,18.9s,MS3.9,baz=258,slow=31
SBA Scott Base 45.91 178 P **P** 18 38 20.7 +0.6
8.8nm,1.1s,mb4.6
VNDA Vanda 46.10 176 P **P** 18 38 21.9 +0.3
1.0nm,0.6s,mb3.9,baz=278,slow=9.6,SNR=3.5
VNDA Vanda 46.10 176 P **P** 18 38 21.9 +0.3
CPUP Villa Florida 47.39 287 P **P** 18 38 32.4 -0.1
2.1nm,0.8s,mb4.2,baz=176,slow=8.1,SNR=3.8
CPUP LR LR 18 53 57.2
comp=Z,99nm,20.4s,MS3.8,baz=169,slow=30
BDFB Brasilia 51.74 304 P **P** 18 39 06.7 +0.7
1.4nm,0.4s,mb4.2,baz=99,slow=3.5,SNR=3.5
BDFB LR LR 18 56 11.3
comp=Z,122nm,21.2s,MS3.9,baz=116,slow=30
LVC Limon Verde 56.63 279 *e*P **P** 18 39 40.4 -1.4
5.0nm,0.7s,mb4.7
LPAZ La Paz 61.35 284 P **P** 18 40 15.2 +0.7
6.2nm,0.9s,mb4.8,baz=164,slow=5.7,SNR=26
KMBO Kilima Mbogo 65.02 49 LR LR 19 07 04.7
comp=Z,102nm,18.5s,MS4.0,baz=91,slow=34
ROSC El Rosal 82.37 291 LR LR 19 16 16.5
comp=Z,82nm,18.1s,MS4.1,baz=216,slow=34
BVAR Borovoye Array 125.62 46 PKP PKPdf 18 48 58.8 -1.4
0.5nm,0.6s,baz=225,slow=4.2,SNR=4.6
SONM Songino Array 139.09 72 PKP PKPdf 18 49 23.6 -2.0
0.1nm,0.4s,baz=90,slow=1.4,SNR=4.2
YKA Yellowknife Ar 145.03 310 PKPbc PKPbc 18 49 33.3 +0.7
1.5nm,0.7s,baz=106,slow=3.6,SNR=35
YKA Yellowknife Ar 145.03 310 PKPbc PKPbc 18 49 33.3 +0.7
YKW3 Yellowknife Ar 145.07 310 PKPdf PKPdf 18 49 31.8 -3.7
ILAR Eielson Array 159.47 310 PKPab PKPab 18 50 34.1 +0.6
0.4nm,0.8s,baz=104,slow=3.7,SNR=4.0

*HEL **31** 18:30:29.7±0.2,59.74N×24.47E, ML2.3,ML2.3(UPP), ML2.5(NAO),Explosion*
*NAO **31** 18:30:29.4±1.3,59.76N×24.46E, ML2.5*
*BER **31** 18:30:30.4±5.1,59.75N×24.53E, ML2.5(NAO)*
*IDC **31** 18:30:30.0±2.1,59.74N×24.55E,mb1 3.4/3, mb1mx3.1/21,ML3.3/3, Error ellipse: s-maj=21.9km s-min=6.6km az=144.0*
ISC 31 18:30:25.7±0.6,59.71N±0.03×24.39E±0.07,n19,σ1§68/33, Baltic States - Belarus - Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time	Res
							h m s	ISC
MEF	**Metsahovi**	**0.51**	**0**	*e*P		**Pg**	**18 30 37.9**	**+2.0**
MEF				*e*S		**Sg**	**18 30 44.3**	**+1.5**
VSU	**Vasula**	**1.74**	**135**	*e*PG		**Pg**	**18 31 00.7**	**+0.4**
VSU				*e*SG		**Sg**	**18 31 23.0**	**-0.5**
VJF	**Virojoki**	**1.79**	**61**	*e*P		**Pn**	**18 31 00.4**	**+2.3**
VJF				*e*S		**Sn**	**18 31 23.0**	**+1.1**
FIA0	**FINESS Array S**	**1.93**	**25**	*e*P		**Pn**	**18 31 02.9**	**+2.7**
FIA0				*e*SG		**Sg**	**18 31 27.9**	**-2.2**
FIA0				MSG			18 31 31.6	
	comp=Z,21nm,0.2s							
FIA0	**FINESS Array S**	**1.93**	**25**	Pn		**Pn**	**18 31 03.2**	**+3.1**
	baz=200,slow=18							
FIA0				Lg			18 31 27.2	
	baz=186,slow=28							
FINES	**FINESS Array B**	**1.93**	**25**	Pg		**Pg**	**18 31 03.2**	**-1.1**
	comp=Z,8.8nm,0.3s,baz=204,slow=16,SNR=423							
FINES				Lg			18 31 28.5	
	comp=Z,10.0nm,0.3s,baz=205,slow=32,SNR=23							
KEF	**Keuruu**	**2.48**	**5**	*e*P		**Pn**	**18 31 12.0**	**+4.0**
KEF				*e*SB		**Sb**	**18 31 43.4**	**+1.2**
KEF				MSG			18 31 45.6	
	comp=Z,13nm,0.2s							
SUF	**Sumiainen**	**3.14**	**15**	*e*P		**Pn**	**18 31 21.0**	**+3.6**
VAF	**Ylistaro**	**3.45**	**347**	*e*P		**Pn**	**18 31 24.8**	**+3.0**
JOF	**Joensuu**	**4.64**	**43**	*e*P		**Pn**	**18 31 39.3**	**+0.6**
JOF				*e*S		**Sn**	**18 32 31.9**	**-2.2**
JOF				MSG			18 32 55.3	
	comp=Z,4.4nm,0.2s							
HFS	**Hagfors**	**5.40**	**279**	Pn		**Pn**	**18 31 51.0**	**+1.6**
	baz=96,slow=10							
HFS				Sn		**Sn**	**18 32 53.3**	**+0.1**
	baz=86,slow=37							
HFS				Lg			18 33 16.4	
	baz=80,slow=37							
HFS	**Hagfors**	**5.40**	**279**	*e*P		**Pn**	**18 31 51.0**	**+1.6**
HFS				*e*S		**Sn**	**18 32 53.3**	**+0.1**
HFS				*e*SG		**Sg**	**18 33 16.4**	**-9.0**
HFS	**Hagfors**	**5.40**	**279**	Pn		**Pn**	**18 31 51.2**	**+1.8**
	comp=Z,0.1nm,0.3s,baz=90,slow=12,SNR=27							
HFS				Sn		**Sn**	**18 32 53.1**	**-0.1**
	comp=Z,0.2nm,0.3s,baz=90,slow=27,SNR=8.0							
HFS				Lg			18 33 19.6	
	comp=Z,0.3nm,0.3s,baz=82,slow=32,SNR=6.1							
NOA	**NORSAR Array B**	**6.67**	**287**	Pn		**Pn**	**18 32 07.3**	**0.0**
	comp=Z,0.5nm,0.3s,baz=95,slow=14,SNR=4.5							
NOA				Sn		**Sn**	**18 33 22.2**	**-2.8**
	comp=Z,0.3nm,0.3s,baz=234,slow=24,SNR=2.7							
NOA				Lg			18 33 57.1	
	comp=Z,0.6nm,0.3s,baz=117,slow=13,SNR=4.3							
APA0	**Apatity Array**	**8.79**	**22**	*e*P		**P**	**18 32 34.8**	**-2.2**
	baz=228,slow=14							
APA0	**Apatity Array**	**8.79**	**22**	*e*P		**P**	**18 32 34.8**	**-2.2**
ARA0	**ARCESS Array S**	**9.88**	**2**	Pn		**P**	**18 32 49.6**	**-2.3**
	baz=178,slow=16							
ARA0				Sn		**Sn**	**18 34 38.1**	**-6.7**
	baz=180,slow=22							
ARA0	**ARCESS Array S**	**9.88**	**2**	*e*P		**P**	**18 32 49.6**	**-2.3**
ARA0				*e*S		**Sn**	**18 34 38.1**	**-6.7**
ARCES	**ARCESS Array B**	**9.88**	**2**	Pn		**P**	**18 32 50.4**	**-1.5**
	comp=Z,0.6nm,0.3s,baz=182,slow=13,SNR=53							
ARCES				Sn		**Sn**	**18 34 37.6**	**-7.3**
	comp=Z,0.2nm,0.3s,baz=180,slow=23,SNR=4.2							

*NEIC **31** 18:42:43.7,39.08N×24.15E,h28km, ML2.9(ATH), After ATH.*
*THE **31** 18:42:43.6,39.13N×24.19E,h16km, ML2.5*
*ATH **31** 18:42:43.7,39.08N×24.15E,h28km±3km, MD3.0/8, ML2.9*
ISC 31 18:42:43.3±0.6,39.12N±0.03×24.18E±0.05,h17km±7km, **n17,σ0§89/24,Aegean Sea**

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time	Res
							h m s	ISC
AOS	**Alonnisos**	**0.24**	**283**	*e*Pg		**Pb**	**18 42 48.8**	**-0.1**
AOS				*e*Sg		**Sb**	**18 42 53.0**	**+0.4**
NEO	**Neokhori**	**0.77**	**284**	*e*PN		**Pn**	**18 42 58.5**	**-0.8**
NEO				*e*SN		**Sn**	**18 43 10.0**	**-0.4**
XOR	**Xorichti**	**0.81**	**288**	*e*Pg		**Pb**	**18 42 58.9**	**+0.4**
XOR				*e*Sg		**Sb**	**18 43 10.3**	**+1.3**
PAIG	**Paliouri**	**0.90**	**334**	*e*Pg		**Pb**	**18 43 00.6**	**+0.6**
PAIG				*e*Sg		**Sb**	**18 43 12.8**	**+1.2**
MPAR	**Parnis Oros**	**1.03**	**200**	*e*PB		**Pb**	**18 43 02.0**	**-0.3**
MPAR				*e*SN		**Sn**	**18 43 17.5**	**+0.5**
LOS	**Limnos**	**1.07**	**40**	*e*Pg		**Pb**	**18 43 02.8**	**-0.2**
LOS				*e*Sg		**Sb**	**18 43 17.5**	**+0.9**
PTL	**Penteli**	**1.10**	**193**	*e*PB		**Pb**	**18 43 03.0**	**-0.4**
MKIT	**Kithairon Oros**	**1.18**	**218**	*e*PN		**Pn**	**18 43 05.5**	**+0.3**
ATH	**Athens Observa**	**1.20**	**198**	*e*PN		**Pn**	**18 43 05.4**	**-0.1**
ATH				*e*SN		**Sn**	**18 43 21.5**	**+0.1**
OUR	**Ouranopolis**	**1.22**	**353**	*e*Pb		**Pb**	**18 43 05.0**	**-0.6**
	comp=Z,5.4nm,0.4s							
NSAL	**Nisos Salamina**	**1.33**	**205**	*e*PB		**Pb**	**18 43 06.5**	**-1.0**
AGG	**Agios Georgios**	**1.45**	**267**	*e*Pb		**Pb**	**18 43 08.3**	**-1.1**
	comp=Z,1.6nm,0.5s							
NAIG	**Nisos Aigina**	**1.46**	**202**	*e*PN		**Pn**	**18 43 11.0**	**+1.8**
PRK	**Paraskevi**	**1.63**	**85**	*e*PN		**Pn**	**18 43 13.0**	**+1.4**
SOH	**Sokhos**	**1.82**	**340**	*e*Pb		**Pb**	**18 43 13.9**	**-1.9**
SRS	**Serrai**	**2.05**	**347**	*e*Pn		**Pn**	**18 43 16.8**	**-0.8**
ALN	**Alexandroupoli**	**2.28**	**38**	*e*Pn		**Pn**	**18 43 19.7**	**-1.3**

*IDC **31** 18:45:15.5±2.8,27.94S×64.88E, mb3.9/5,mb1 4.1/5, mb1mx3.8/16,MS4.0/1,Ms1 4.0/1,ms1mx3.2/16,Error ellipse: s-maj=86.3km s-min=41.0km az=50.0*
ISC 31 18:45:15.6±4.1,27.9S±0.6×65.0E±0.8,h10km, **n7,σ0§54/5, mb3.9/5,MS4.0/1,Indian Ocean Triple Junction**

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time	Res
							h m s	ISC
NWAO	**Narrogin (SRO)**	**44.94**	**110**	LR		LR	19 08 09.9	
	comp=Z,174nm,21.6s,MS4.0,baz=148,slow=30							
CMAR	**Chiang Mai Arr**	**56.62**	**39**	P		**P**	**18 55 01.3**	**-0.1**
	2.0nm,0.7s,mb4.3,baz=232,slow=7.5,SNR=21							
ASAR	**Alice Springs**	**61.44**	**103**	P		**P**	**18 55 34.7**	**-0.1**
	0.4nm,0.5s,mb3.8,baz=243,slow=6.8,SNR=7.9							
MKAR	**Makanchi Array**	**75.99**	**12**	P		**P**	**18 57 04.1**	**-0.4**
	0.8nm,0.7s,mb3.7,baz=194,slow=5.0,SNR=8.7							
ZAL	**Zalesovo**	**83.30**	**12**	P		**P**	**18 57 43.5**	**-0.1**
	0.8nm,0.3s,mb4.2,baz=42,slow=4.0,SNR=5.1							
SONM	**Songino Array**	**84.08**	**27**	P		**P**	**18 57 48.5**	**+0.7**
	0.6nm,1.1s,mb3.6,baz=333,slow=3.2,SNR=3.1							
YKA	**Yellowknife Ar**	**145.43**	**360**	PKPbc	PKPbc		19 04 54.4	+0.7
	0.7nm,0.7s,baz=345,slow=3.5,SNR=16							

*IDC **31** 18:58:22.4±3.2,9.53S×112.78E, mb3.7/6,mb1 3.9/7, mb1mx3.7/16,ML3.5/1, Error ellipse: s-maj=162.0km s-min=14.9km az=48.0*
*DJA **31** 18:58:23.7±1.0,9.38S×112.70E,h190km±26km, MD4.6/4, ML4.7/3, Error ellipse: s-maj=76.9km s-min=27.3km az=11.0*
*NEIC **31** 18:58:29.8±2.4,9.62S×112.88E,h60km, mb4.4/2, Error ellipse: s-maj=113.0km s-min=11.4km az=49.0*
ISC 31 18:58:23.5±3.7,9.74S±0.09×112.56E±0.08,h27km±28km, **n14,σ1§03/19,mb3.8/8,2C-4D,South of Jawa**

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time	Res
							h m s	ISC
KELI	**Kelakatan**	**2.44**	**52**	*e*Pn		**Pn**	**18 59 02.8**	**+0.4**
	458nm,0.3s							
KELI				⇑*e*Sn		**Sn**	**18 59 32.8**	**+1.1**
INGI	**Ingas**	**2.71**	**70**	⇓*e*Pn		**Pn**	**18 59 07.4**	**+1.0**
	305nm,0.2s							
RATI	**Rata**	**3.10**	**71**	⇓*e*Pn		**Pn**	**18 59 11.6**	**-0.3**
	420nm,0.2s							
RATI				⇓*e*Sn		**Sn**	**18 59 47.3**	**-1.3**
KEDI	**Kedomdong**	**3.72**	**71**	⇓*e*Pn		**Pn**	**18 59 19.9**	**-0.8**
KEDI				⇑*e*Sn		**Sn**	**18 59 59.2**	**-5.1**
FITZ	**Fitzroy Crossi**	**15.17**	**125**	Pn		**P**	**19 01 56.1**	**-1.8**
	0.2nm,0.3s,baz=297,slow=14,SNR=7.0							
FITZ				Sn		**S**	**19 04 32.6**	**-13**
	0.2nm,0.3s,baz=180,slow=20,SNR=4.2							
WRA	**Warramunga Arr**	**23.34**	**118**	P		**P**	**19 03 32.1**	**+1.3**
	1.2nm,1.2s,mb3.2,baz=291,slow=11,SNR=4.9							
WRAB	**Tennant Creek**	**23.35**	**118**	P		**P**	**19 03 31.5**	**+0.6**
	32nm,1.3s,mb4.6							
ASAR	**Alice Springs**	**24.64**	**127**	P		**P**	**19 03 44.5**	**+1.1**
	0.8nm,0.8s,mb3.3,baz=304,slow=8.8,SNR=10							
ASAR				S		**S**	**19 08 08.3**	**+8.1**
	0.2nm,0.9s,baz=310,slow=17,SNR=2.8							
CMAR	**Chiang Mai Arr**	**31.07**	**334**	P		**P**	**19 04 43.2**	**+1.3**
	0.3nm,0.8s,mb3.2,baz=164,slow=8.6,SNR=4.3							
ULN	**Ulaanbaatar**	**57.56**	**356**	*e*P		**P**	**19 08 12.7**	**-0.6**
	1.0nm,0.6s,mb4.0							
SONM	**Songino Array**	**57.58**	**355**	P		**P**	**19 08 12.7**	**-0.7**
	0.6nm,0.4s,mb3.9,baz=172,slow=7.5,SNR=6.5							
MKAR	**Makanchi Array**	**62.43**	**337**	P		**P**	**19 08 46.6**	**0.0**
	1.0nm,0.4s,mb4.3,baz=149,slow=7.5,SNR=30							
ZAL	**Zalesovo**	**67.65**	**343**	P		**P**	**19 09 18.7**	**-1.6**
	0.9nm,0.4s,mb4.2,baz=242,slow=5.8,SNR=3.5							
ZAL	**Zalesovo**	**67.65**	**343**	P		**P**	**19 09 18.7**	**-1.6**

*IDC **31** 19:43:37.5±4.7,4.64S×146.71E,h96km±46km, mb3.8/4, mb1 4.1/6,mb1mx3.7/15,MS2.8/1,Ms1 2.8/1,ms1mx2.3/14, Error ellipse: s-maj=43.9km s-min=25.0km az=117.0*
*NEIC **31** 19:43:42.1±1.1,5.00S×147.07E,h155km,mb4.7/3, Error ellipse: s-maj=27.9km s-min=15.6km az=107.0*
ISC 31 19:43:44.5±3.0,5.3S±0.2×147.1E±0.2,h182km±29km, **n15, σ0§64/18,mb3.8/5,2D,Eastern New Guinea region**

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time	Res
							h m s	ISC
PMG	**Port Moresby**	**4.05**	**180**	P		**P**	**19 44 47.3**	**+0.3**
	15nm,0.3s,baz=328,slow=6.3,SNR=60							
PMG				S		**S**	**19 45 31.6**	**-3.6**
	12nm,0.3s,baz=31,slow=22,SNR=12							
PMG				LR		LR	19 46 42.9	
	comp=Z,111nm,19.9s,baz=129,slow=39							
PMG	**Port Moresby**	**4.05**	**180**	P		**P**	**19 44 47.3**	**+0.3**
PMG				*e*Sn		**S**	**19 45 26.4**	**-8.9**
PMG				S		**S**	**19 45 31.6**	**-3.6**
PMG				LR		LR	19 46 42.9	
KAKA	**Kakadu**	**16.29**	**242**	*e*P		**P**	**19 47 24.6**	**-0.1**
	18nm,0.5s							
WRAB	**Tennant Creek**	**19.12**	**219**	*e*P		**P**	**19 47 55.4**	**-0.5**
	16nm,0.5s							
WB2	**Warramunga Arr**	**19.13**	**219**	⇓*i*P		**P**	**19 47 55.6**	**-0.4**
WRA	**Warramunga Arr**	**19.14**	**219**	P		**P**	**19 47 55.4**	**-0.7**
	2.4nm,0.3s,baz=47,slow=12,SNR=224							
AS12	**Alice Springs**	**22.25**	**214**	⇓*i*P		**P**	**19 48 28.2**	**+1.1**
	6.6nm,0.7s,mb4.2							
ASAR	**Alice Springs**	**22.25**	**214**	P		**P**	**19 48 28.3**	**+1.2**
	3.7nm,0.7s,mb3.9,baz=34,slow=12,SNR=74							
FITZ	**Fitzroy Crossi**	**24.55**	**237**	*e*P		**P**	**19 48 49.6**	**+0.5**
	9.7nm,0.4s,mb4.7							
FITZ	**Fitzroy Crossi**	**24.55**	**237**	P		**P**	**19 48 49.7**	**+0.6**
	11nm,0.4s,mb4.7,baz=41,slow=5.9,SNR=54							
STKA	**Stephens Creek**	**26.91**	**190**	*e*P		**P**	**19 49 22.7**	**+12**
	3.7nm,1.2s,mb3.9							
STKA	**Stephens Creek**	**26.91**	**190**	P		**P**	**19 49 16.4**	**+5.6**
	3.7nm,1.1s,mb3.9,baz=15,slow=11,SNR=2.1							
STKA	**Stephens Creek**	**26.91**	**190**	P		**P**	**19 49 16.4**	**+5.6**
SONM	**Songino Array**	**63.89**	**331**	P		**P**	**19 53 53.8**	**-6.2**
	0.2nm,0.7s,mb3.1,baz=124,slow=5.2,SNR=4.1							
ILAR	**Eielson Array**	**84.81**	**23**	P		**P**	**19 55 59.2**	**-0.2**
	0.3nm,0.6s,mb3.2,baz=248,slow=4.6,SNR=5.3							

GUC 31 20:01:50.0±0.9,31.57S×69.99W,h132km±8km, **MD3.5, ML3.7,4C-2D,San Juan Province**

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time	Res
							h m s	ISC
CMCH	**Combarbala**	**0.95**	**294**	⇓*i*P		P	20 02 12.6	-0.3
CMCH				*i* S		S	20 02 30.4	+0.1
ILCH	**Illapel**	**1.01**	**266**	*e*P		P	20 02 14.0	+0.6
ILCH				*i* S		S	20 02 31.7	+0.6
ILCH				AMP			20 02 35.8	
	comp=N,2μm,0.2s							
PTCH	**Petorca**	**1.06**	**229**	*i* P		P	20 02 13.8	-0.1
PTCH				*i* S		S	20 02 32.0	0.0
PTCH				AMP			20 02 35.2	
	comp=E,4μm,0.3s							
JACH	**Jahuel**	**1.22**	**205**	⇑*i*P		P	20 02 15.6	0.0
JACH				*i* S		S	20 02 35.3	+0.3
PACH	**Papudo**	**1.56**	**232**	*e*P		P	20 02 19.5	+0.2
PACH				*i* S		S	20 02 41.8	0.0
TLL	**Tololo Astrono**	**1.56**	**333**	*e*P		P	20 02 19.9	+0.5
TLL				*i* S		S	20 02 42.2	+0.5
TLL				AMP			20 02 44.5	
	comp=N,822nm,0.3s							
ROCH	**El Roble**	**1.65**	**212**	⇓*i*P		P	20 02 20.4	+0.1
ROCH				*i* S		S	20 02 43.4	0.0
PEL	**Peldehue**	**1.68**	**200**	*i* P		P	20 02 20.6	-0.1
PEL				*i* S		S	20 02 44.0	-0.1
PEL				AMP			20 02 45.2	
	comp=E,644nm,0.3s							
FCH	**Farellones**	**1.77**	**188**	*e*P		P	20 02 21.6	-0.1
FCH				*i* S		S	20 02 46.0	+0.1
FCH				AMP			20 02 49.7	
	comp=E,448nm,0.3s							
CLCH	**Cerro Calan**	**1.88**	**194**	*i* P		P	20 02 23.4	+0.4
CLCH				*i* S		S	20 02 48.6	+0.4
CLCH				AMP			20 02 52.9	
	comp=E,594nm,0.5s							
LSCH	**La Serena**	**1.98**	**326**	*e*P		P	20 02 24.3	+0.1
LSCH				*i* S		S	20 02 49.6	-0.6
LSCH				AMP			20 02 51.9	
	comp=N,598nm,0.3s							
RCDM	**Rinconada Maip**	**2.04**	**200**	⇑*i*P		P	20 02 25.1	+0.2
RCDM				*i* S		S	20 02 51.0	-0.5
RCDM				AMP			20 02 53.6	
	comp=E,570nm,0.1s							
PCH	**Pirque**	**2.09**	**192**	*i* P		P	20 02 26.1	+0.5
PCH				*i* S		S	20 02 53.3	+0.5
TACH	**Talagante**	**2.23**	**201**	⇑*i*P		P	20 02 27.1	-0.3
TACH				*i* S		S	20 02 54.9	-0.9
LMEL	**Las Melosas**	**2.28**	**185**	⇑*i*P		P	20 02 28.1	0.0
LMEL				*i* S		S	20 02 58.2	+1.2
LMEL				AMP			20 03 03.3	
	comp=N,299nm,0.2s							
LCCH	**Las Cruces**	**2.32**	**215**	*i* P		P	20 02 28.5	-0.1
CHCH	**Chadas Angostu**	**2.42**	**193**	*e*P		P	20 02 30.2	+0.3
CHCH				*i* S		S	20 02 59.9	-0.4
CACH	**El Canelo**	**2.59**	**191**	*e*P		P	20 02 32.6	+0.5
SFDO	**San Fernando**	**3.16**	**196**	*i* P		P	20 02 38.9	-0.7

*MEX **31** 20:21:48.8±1.0, 14.80N×94.53W,h24km±54km, MD4.7*
*NEIC **31** 20:21:49.4±1.8, 15.07N×94.07W,h20km±12km,mb4.3/18, MD4.6(MEX), Error ellipse: s-maj=11.4km s-min=5.1km az=215.0*
*IDC **31** 20:21:52.9±4.3, 14.89N×94.21W,h58km±36km, mb3.9/13, mb1 4.2/15,mb1mx4.1/21,ML3.9/2,MS3.8/8,Ms1 3.8/8, ms1mx3.5/24, Error ellipse: s-maj=36.6km s-min=17.0km az=47.0*
ISC 31 20:21:47.9±1.8,15.04N±0.06×94.14W±0.05,h22km±12km, **n92,σ1§07/92,mb4.4/31,MS3.9/8,Near coast of Oaxaca**

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time	Res
							h m s	ISC
TPX	**Tapachula**	**1.82**	**94**	*i* P		**Pn**	**20 22 19.5**	**+1.1**
TPX	**Tapachula**	**1.82**	**94**	*i* P		**Pn**	**20 22 17.5**	**-0.9**
TPX				*i* S		**Sn**	**20 22 36.5**	**-4.5**
HUIG	**Huatulco**	**2.04**	**291**	*i* P		**Pn**	**20 22 16.0**	**-5.6**
HUIG				*i* S		**Sn**	**20 22 36.2**	**-10**
CMIG	**Matias Romero**	**2.16**	**341**	*i* P		**Pn**	**20 22 23.9**	**+0.4**
CMIG				*i* S		**Sn**	**20 22 49.2**	**-0.6**
SCX	**San Cristobal**	**2.22**	**40**	*e*P		**Pn**	**20 22 25.5**	**+1.3**
CCIG	**Comitan**	**2.29**	**57**	*i* P		**Pn**	**20 22 29.7**	**+4.5**
CCIG				*i* S		**Sn**	**20 23 00.9**	**+7.9**
CCIG	**Comitan**	**2.29**	**57**	*i* P		**Pn**	**20 22 29.7**	**+4.5**
CCIG				*i* S		**Sn**	**20 22 54.0**	**+1.1**
TUIG	**Tuzandepetl**	**2.99**	**355**	*i* P		**Pn**	**20 22 36.9**	**+1.7**
TUIG				*i* S		**Sn**	**20 23 17.3**	**+6.5**
VHO	**Vista Hermosa**	**3.21**	**309**	*i* P		**Pn**	**20 22 35.2**	**-3.2**
VHO				*i* S		**Sn**	**20 23 09.6**	**-6.8**
VHO	**Vista Hermosa**	**3.21**	**309**	*i* P		**Pn**	**20 22 36.6**	**-1.8**
VHO				*i* S		**Sn**	**20 23 12.0**	**-4.4**
EVV	**El Vigia**	**3.59**	**341**	*e*P		**Pn**	**20 22 41.5**	**-2.2**
IISM	**Ciudad Serdan**	**5.00**	**322**	*e*P		**Pn**	**20 23 05.0**	**+1.2**
POHV	**Veracruz**	**5.01**	**324**	*e*P		**Pn**	**20 23 07.0**	**+3.1**
PPM	**Popocatepetl**	**5.87**	**314**	*e*P		**Pn**	**20 23 15.5**	**-0.5**
TEIG	**Tepich**	**7.60**	**46**	P		**Pn**	**20 23 43.1**	**+2.8**
	6.0nm,0.3s,baz=210,slow=11,SNR=7.1							
TEIG	**Tepich**	**7.60**	**46**	*e*P		**Pn**	**20 23 40.2**	**-0.2**
JTS	**JuntasAbangare**	**10.13**	**117**	*e*P		**P**	**20 24 13.1**	**-2.3**
	0.7nm,1.1s							
JCT	**Junction City**	**16.23**	**342**	*e*P		**P**	**20 25 36.2**	**-0.2**
	7.3nm,0.8s							
LTX	**Lajitas**	**16.73**	**330**	*e*P		**P**	**20 25 42.6**	**-0.1**
	14nm,1.3s							
TXAR	**Lajitas Array**	**16.73**	**330**	P		**P**	**20 25 43.8**	**+1.0**
	0.1nm,0.3s,baz=156,slow=14,SNR=26							
CLNB	**Carlsbad**	**19.31**	**334**	*e*P		**P**	**20 26 14.1**	**-0.3**
MIAR	**Mount Ida**	**19.43**	**1**	*e*P		**P**	**20 26 13.3**	**-2.5**
	12nm,0.9s							
GDL2	**Guadalupe Moun**	**19.46**	**333**	*e*P		**P**	**20 26 15.4**	**-0.8**
UALR	**University of**	**19.72**	**4**	*e*P		**P**	**20 26 16.0**	**-3.0**
	8.9nm,0.6s							
CPRX	**Cap Rock**	**19.97**	**335**	*e*P		**P**	**20 26 20.7**	**-1.2**
WMOK	**Wichita Mounta**	**20.05**	**349**	*e*P		**P**	**20 26 19.9**	**-2.8**
	6.0nm,1.0s							
OTAV	**Otavalo**	**21.37**	**132**	*e*P		**P**	**20 26 38.1**	**+1.8**
WVT	**Waverly**	**21.75**	**14**	*e*P		**P**	**20 26 39.3**	**-0.7**
	2.9nm,0.6s,mb3.9							
ROSC	**El Rosal**	**21.95**	**115**	P		**P**	**20 26 45.7**	**+3.5**
	23nm,1.0s,mb4.6,baz=317,slow=19,SNR=6.6							
BNM	**Barren Site**	**22.12**	**332**	*e*P		**P**	**20 26 44.8**	**+1.0**
LPM	**Los Pinos Moun**	**22.26**	**332**	*e*P		**P**	**20 26 45.7**	**+0.7**
JSC	**Jenkinsville**	**22.41**	**29**	*e*P		**P**	**20 26 46.6**	**+0.1**
LAZ	**Ladron**	**22.57**	**331**	*e*P		**P**	**20 26 49.8**	**+1.6**
ANMO	**Albuquerque**	**22.71**	**333**	*e*P		**P**	**20 26 50.4**	**+0.7**
	2.7nm,0.9s,mb3.7							
TUC	**Tucson**	**22.92**	**321**	*e*P		**P**	**20 26 53.2**	**+1.5**
	20nm,1.6s,mb4.3							
CCM	**Cathedral Cave**	**23.07**	**6**	*e*P		**P**	**20 26 52.0**	**-1.0**
	13nm,0.8s,mb4.4							
WCI	**Wyandotte Cave**	**24.11**	**15**	*e*P		**P**	**20 27 02.2**	**-1.0**
	11nm,0.8s,mb4.3							
SDCO	**Great Sand Dun**	**24.76**	**338**	*e*P		**P**	**20 27 10.6**	**+1.2**
	9.4nm,1.0s,mb4.3							
WUAZ	**Wupatki**	**25.59**	**326**	*e*P		**P**	**20 27 18.4**	**+1.0**
	11nm,0.9s,mb4.4							
PV01	**Paradox Valley**	**26.31**	**334**	*e*P		**P**	**20 27 24.7**	**+0.7**
PV10	**Paradox Valley**	**26.71**	**333**	P		**

CDF	**Champ du Feu**	**86.28**	**41**	*e*P		**P**	**20 34 28.8**	**-0.6**
SMRF	**Simiane la Rot**	**86.52**	**45**	*e*P		**P**	**20 34 31.0**	**+0.3**
MBDF	**Montbardon**	**87.10**	**44**	*e*P		**P**	**20 34 33.8**	**+0.3**
LMR	**La Mourre**	**87.36**	**46**	*e*P		**P**	**20 34 35.2**	**+0.4**
GERES	**GERESS Array B**	**90.11**	**39**	P		**P**	**20 34 47.6**	**-0.1**
	0.3nm,0.5s,mb3.9,baz=270,slow=4.0,SNR=5.4							
FINES	**FINESS Array B**	**90.43**	**25**	LR		LR	21 18 01.0	
	comp=Z,30nm,18.7s,MS3.8,baz=162,slow=37							
MKAR	**Makanchi Array**	**118.37**	**3**	PKP		PKPdf	20 40 32.3	-6.0
	0.2nm,0.6s,baz=18,slow=3.8,SNR=4.1							
WRA	**Warramunga Arr**	**133.63**	**257**	PKP		PKPdf	20 41 03.6	-4.6
	0.7nm,1.1s,baz=84,slow=2.4,SNR=8.1							
CMAR	**Chiang Mai Arr**	**144.31**	**338**	PKP		PKPdf	20 41 21.9	-5.7
	1.4nm,0.9s,baz=350,slow=3.7,SNR=8.2							

*NEIC **31** 20:34:20.9, 35.04N×4.00W, MG3.6(MDD), After MDD.*
MDD 31 20:34:20.6±1.4, 35.04N×4.01W, mb3.5/5, Error ellipse: s-maj=14.6km s-min=6.2km az=13.0, PRXIMO AftershockPLICA, Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EMEL	**Melilla**	**0.90**	**73**	P	Pg	20 34 36.8	-1.8
	106nm,0.1s,SNR=14						
EMEL				S	Sg	20 34 49.5	-1.1
	259nm,0.2s,SNR=5.7						
EJIF	**Jimena Fronter**	**1.84**	**320**	P	Pn	20 34 53.4	-0.3
	1.5nm,0.2s,SNR=7.9						
EJIF	**Jimena Fronter**	**1.84**	**320**	P	Pn	20 34 53.7	-0.1
ERON	**Agron**	**1.98**	**5**	P	Pn	20 34 54.7	-1.1
	3.9nm,0.2s,SNR=7.9						
ERON				S	Sn	20 35 18.7	-2.9
	5.7nm,0.2s,SNR=7.9						
ERON	**Agron**	**1.98**	**5**	P	Pn	20 34 55.0	-0.8
ERON				S	Sn	20 35 18.9	-2.8
ELOJ	**Sierra Loja**	**2.11**	**357**	P	Pn	20 34 57.5	0.0
	4.1nm,0.3s,SNR=11						
ELOJ				S	Sn	20 35 21.0	-3.8
	1.9nm,0.3s,SNR=5.6						
ELOJ	**Sierra Loja**	**2.11**	**357**	P	Pn	20 34 57.6	+0.1
ELOJ				S	Sn	20 35 21.7	-3.2
ESPR	**Espera**	**2.36**	**321**	P	Pn	20 34 59.2	-1.9
	0.4nm,0.1s,SNR=4.0						
ESPR				S	Sn	20 35 28.1	-3.2
	4.9nm,0.3s,SNR=4.0						
ESPR	**Espera**	**2.36**	**321**	P	Pn	20 35 00.5	-0.7
ESPR				S	Sn	20 35 29.7	-1.6
ELUQ	**Luque**	**2.53**	**355**	P	Pn	20 35 02.4	-1.2
	1.5nm,0.2s,SNR=7.9						
ELUQ				S	Sn	20 35 32.8	-2.6
	3.7nm,0.2s,SNR=7.9						
ELUQ	**Luque**	**2.53**	**355**	P	Pn	20 35 01.8	-1.7
ELUQ				S	Sn	20 35 31.9	-3.6
EQES	**Quesada**	**2.86**	**15**	P	Pn	20 35 06.0	-2.3
	5.8nm,0.3s,SNR=26						
EQES				S	Sn	20 35 40.2	-3.8
	9.5nm,0.2s,SNR=7.9						
EQES	**Quesada**	**2.86**	**15**	P	Pn	20 35 07.0	-1.3
EQES				S	Sn	20 35 40.8	-3.2
EHUE	**Huescar**	**3.00**	**22**	P	Pn	20 35 08.9	-1.3
	0.8nm,0.2s,SNR=6.1						
EHUE				S	Sn	20 35 43.3	-4.1
	1.0nm,0.2s,SNR=4.0						
EHUE	**Huescar**	**3.00**	**22**	P	Pn	20 35 08.7	-1.6
EHUE				S	Sn	20 35 43.0	-4.4
EADA	**Adamuz**	**3.16**	**352**	P	Pn	20 35 10.2	-2.3
	0.8nm,0.1s,SNR=7.9						
EADA				S	Sn	20 35 46.5	-4.9
	2.1nm,0.3s,SNR=7.9						
EADA	**Adamuz**	**3.16**	**352**	P	Pn	20 35 10.6	-1.9
EADA				S	Sn	20 35 48.0	-3.5
EMIN	**Mina Concepcio**	**3.47**	**323**	P	Pn	20 35 12.7	-4.2
	0.1nm,0.1s,SNR=7.9						
EMIN				S	Sn	20 35 53.1	-6.3
	0.8nm,0.1s,SNR=7.9						
EMIN	**Mina Concepcio**	**3.47**	**323**	P	Pn	20 35 13.9	-3.0
EMIN				S	Sn	20 35 54.3	-5.0
EGRO	**El Granado**	**3.75**	**313**	P	Pn	20 35 17.2	-3.7
	0.8nm,0.1s,SNR=7.9						
EGRO				S	Sn	20 36 00.4	-6.1
	2.3nm,0.2s,SNR=7.9						
EGRO	**El Granado**	**3.75**	**313**	P	Pn	20 35 16.7	-4.3
EGRO				S	Sn	20 35 59.8	-6.7
ETOB	**Tobarra**	**4.11**	**28**	P	Pn	20 35 23.9	-2.1
	1.1nm,0.2s,SNR=8.2						
ETOB				S	Sn	20 36 10.5	-4.9
	1.8nm,0.4s,SNR=4.0						
ETOB	**Tobarra**	**4.11**	**28**	P	Pn	20 35 23.9	-2.1
ETOB				S	Sn	20 36 08.9	-6.6
EBAD	**Badajoz**	**4.42**	**328**	P	Pn	20 35 26.9	-3.6
	1.1nm,0.2s,SNR=4.0						
EBAD				S	Sn	20 36 17.2	-6.3
	3.7nm,0.2s,SNR=7.9						
EBAD	**Badajoz**	**4.42**	**328**	P	Pn	20 35 26.9	-3.6
EBAD				S	Sn	20 36 16.9	-6.6
ESDC	**Sonseca Array**	**4.63**	**0**	P	Pn	20 35 30.0	-3.4
	2.2nm,0.3s,baz=178,slow=12,SNR=4.6						
EIBI	**Ibiza**	**5.85**	**46**	P	Pn	20 35 46.3	-4.3
	0.7nm,0.2s,SNR=7.9						
EIBI				S	Sn	20 36 49.6	-10
	1.1nm,0.3s,SNR=7.9						
EIBI	**Ibiza**	**5.85**	**46**	P	Pn	20 35 46.3	-4.3
EIBI				S	Sn	20 36 49.2	-10
ECAL	**Calabor**	**7.22**	**344**	P	Pn	20 36 06.2	-3.7
	1.1nm,0.3s,SNR=7.9						
ECAL				S	Sn	20 37 22.7	-11
	2.3nm,0.5s,SNR=7.9						
ECAL	**Calabor**	**7.22**	**344**	P	Pn	20 36 05.9	-4.0
ECAL				S	Sn	20 37 23.5	-10

*DJA **31** 20:55:38.3±0.9, 8.14S×108.33E, h400km, MD4.6/4, Error ellipse: s-maj=154.7km s-min=21.1km az=4.0*
*NEIC **31** 20:55:46.3±0.2, 6.66S×108.45E, mb4.5/19, Error ellipse: s-maj=9.3km s-min=4.4km az=46.0*
*IDC **31** 20:55:46.6±0.7, 6.67S×108.37E, h220km±6km, mb4.1/19, mb1 4.2/19, mb1mx4.1/23, Error ellipse: s-maj=17.4km s-min=7.2km az=53.0*
ISC 31 20:55:43.9±1.1, 6.64S±0.07×108.45E±0.08, h213km±11km, h220km±1.5km; pP-P, n89, σ1§02/92, mb4.4/34, 5C-9D, Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KELI	**Kelakatan**	**6.19**	**105**	*e*Pn	P	**20 57 16.3**	**+1.8**
KELI				↓*e*Sn	S	**20 58 28.8**	**+3.8**
KELI	**Kelakatan**	**6.19**	**105**	*e*Pn	P	**20 57 16.3**	**+1.8**
KELI				*e*Sn	S	**20 58 29.8**	**+4.8**
INGI	**Ingas**	**6.98**	**108**	↓*e*Pn	P	**20 57 24.9**	**+0.3**
INGI				↓*e*Sn	S	**20 58 41.3**	**-1.9**
INGI	**Ingas**	**6.98**	**108**	↓*e*Pn	P	**20 57 24.8**	**+0.2**
INGI				*e*Sn	S	**20 58 40.5**	**-2.7**
RATI	**Rata**	**7.32**	**107**	*e*Pn	P	**20 57 28.9**	**-0.1**
RATI				↓*e*Sn	S	**20 58 50.2**	**-0.9**
RATI	**Rata**	**7.32**	**107**	↑*e*Pn	P	**20 57 29.1**	**+0.1**
RATI				*e*Sn	S	**20 58 50.3**	**-0.8**
KEDI	**Kedomdong**	**7.81**	**104**	↑*e*Pn	P	**20 57 35.4**	**0.0**
KEDI				↓*e*Sn	S	**20 59 01.2**	**-1.5**
KEDI	**Kedomdong**	**7.81**	**104**	↑*e*Pn	P	**20 57 35.2**	**-0.2**
KEDI				*e*Sn	S	**20 58 59.6**	**-3.1**
IPM	**Ipoh**	**13.39**	**326**	↑*e*P	P	**20 58 49.3**	**+2.6**
FITZ	**Fitzroy Crossi**	**20.26**	**126**	*e*P	P	**21 00 05.4**	**+1.0**
	21nm,0.8s						
FITZ				*e*S	S	**21 03 50.7**	**+16**
FITZ	**Fitzroy Crossi**	**20.26**	**126**	P	P	**21 00 06.0**	**+1.6**
	17nm,0.6s,baz=334,slow=6.2,SNR=41						
FITZ				S	S	**21 03 50.5**	**+16**
	6.6nm,0.7s,baz=187,slow=19,SNR=4.3						
KAKA	**Kakadu**	**24.35**	**106**	*e*P	P	**21 00 44.7**	**+0.7**
	16nm,0.5s,mb4.9						
MUN	**Mundaring**	**26.23**	**165**	*e*P	P	**21 01 00.2**	**-1.0**
	11nm,0.9s,mb4.5						
KLBR	**Kellerberrin**	**26.30**	**162**	*e*P	P	**21 01 00.4**	**-1.5**
	9.2nm,0.4s,mb4.8						
CM31	**Chiang Mai Arr**	**26.65**	**340**	*e*P	P	**21 01 05.9**	**+0.8**
	21nm,0.8s,mb4.8						
CMAR	**Chiang Mai Arr**	**26.65**	**340**	P	P	**21 01 06.3**	**+1.2**
	13nm,0.9s,mb4.6,baz=184,slow=8.8,SNR=68						
CMAR				PcP	PcP	21 04 24.4	+1.0
	1.0nm,0.6s,baz=201,slow=3.6,SNR=6.2						
CMAR				ScP		21 07 44.6	
	0.9nm,0.7s,baz=200,slow=4.0,SNR=7.5						
NWAO	**Narrogin (SRO)**	**27.40**	**164**	P	P	**21 01 10.7**	**-1.1**
	4.6nm,0.4s,mb4.4,baz=330,slow=11,SNR=7.6						
WRA	**Warramunga Arr**	**28.39**	**120**	P	P	**21 01 21.2**	**+0.4**
	5.2nm,0.4s,mb4.5,baz=296,slow=8.5,SNR=59						
WRA				PcP	PcP	21 04 26.8	-0.9
	1.1nm,0.5s,baz=304,slow=3.4,SNR=5.6						
WRA				ScP		21 07 48.4	
	1.2nm,0.8s,baz=306,slow=2.9,SNR=6.2						
WRAB	**Tennant Creek**	**28.40**	**120**	*e*P	P	**21 01 20.9**	**+0.1**
	18nm,0.4s,mb5.1						
WB2	**Warramunga Arr**	**28.40**	**120**	↓*i*P	P	**21 01 20.9**	**0.0**
AS12	**Alice Springs**	**29.74**	**127**	*e*P	P	**21 01 32.8**	**+0.1**
	23nm,0.7s,mb4.9						
ASAR	**Alice Springs**	**29.74**	**127**	P	P	**21 01 32.9**	**+0.1**
	16nm,0.7s,mb4.8,baz=299,slow=5.2,SNR=27						
ASAR				PcP	PcP	21 04 31.6	+0.5
	0.8nm,0.4s,baz=308,slow=1.5,SNR=5.0						
ASAR				S	S	**21 06 11.8**	**-0.1**
	0.9nm,0.8s,baz=288,slow=15,SNR=4.6						
ASAR				ScP		21 07 53.7	
	2.3nm,0.7s,baz=313,slow=3.2,SNR=11						
FORT	**Forrest**	**30.24**	**145**	*e*P	P	**21 01 36.6**	**-0.5**
	15nm,0.3s,mb5.1						
ENH	**Enshi**	**36.72**	**1**	*e*P	P	**21 02 32.1**	**-0.3**
CTA	**Charters Tower**	**39.02**	**114**	*e*P	P	**21 02 53.5**	**+1.9**
	5.3nm,0.7s,mb4.2						
CTA	**Charters Tower**	**39.02**	**114**	P	P	**21 02 53.5**	**+1.9**
	7.6nm,0.7s,mb4.3,baz=286,slow=12,SNR=5.2						
CTAO	**Charters Tower**	**39.02**	**114**	*e*P	P	**21 02 53.3**	**+1.7**
	12nm,0.9s,mb4.4						
LSA	**Lhasa**	**39.78**	**336**	*e*P	P	**21 02 59.4**	**+1.7**
	4.5nm,0.4s,mb4.2						
STKA	**Stephens Creek**	**39.82**	**133**	↓*i*P	P	**21 02 59.5**	**+1.4**
	44nm,0.5s,mb5.2						
STKA	**Stephens Creek**	**39.82**	**133**	P	P	**21 02 59.5**	**+1.4**
	69nm,0.6s,mb5.3,baz=309,slow=8.3,SNR=247						
PKI	**Pulchoki**	**40.66**	**328**	*e*P	P	**21 03 06.1**	**+1.1**
DMN	**Daman**	**40.85**	**327**	*e*P	P	**21 03 06.4**	**-0.2**
	28nm,0.7s,mb4.8						
KKN	**Kakani**	**40.91**	**328**	*e*P	P	**21 03 06.6**	**-0.4**
	26nm,0.8s,mb4.7						
GKN	**Gorkha**	**41.42**	**327**	*e*P	P	**21 03 09.7**	**-1.5**
KOLN	**Koldanda**	**41.80**	**326**	*e*P	P	**21 03 13.8**	**-0.6**
	36nm,0.6s,mb5.0						
SONM	**Songino Array**	**54.27**	**358**	P	P	**21 04 51.2**	**+1.2**
	2.2nm,0.5s,mb4.0,baz=177,slow=8.1,SNR=31						
SONM				pP	pP	21 05 40.1	+2.5
	1.6nm,0.9s,baz=180,slow=7.4,SNR=3.6						
ULN	**Ulaanbaatar**	**54.28**	**359**	*e*P	P	**21 04 51.1**	**+1.1**
	3.9nm,0.5s,mb4.2						
ULN				*e*		21 05 28.6	
ULN				*e*pP	pP	21 05 39.9	+2.1
MKAR	**Makanchi Array**	**58.05**	**339**	P	P	**21 05 16.0**	**-0.8**
	3.2nm,0.6s,mb4.2,baz=151,slow=8.3,SNR=62						
MKAR				pP	pP	21 06 06.7	+1.5
	4.1nm,0.6s,baz=144,slow=7.8,SNR=8.1						
MKAR	**Makanchi Array**	**58.05**	**339**	P	P	**21 05 16.0**	**-0.8**
MKAR				pP	pP	21 06 06.7	+1.5
KURK	**Kurchatov**	**62.67**	**339**	*e*P	P	**21 05 46.8**	**-1.1**
KURK				*e*pP	pP	21 06 38.0	+0.8
KURK				*e*sP	sP	21 06 58.3	-3.6
ZAL	**Zalesovo**	**63.55**	**345**	P	P	**21 05 52.0**	**-1.6**
	1.3nm,0.3s,mb4.0,baz=261,slow=3.7,SNR=5.3						
ZAL				pP	pP	21 06 43.7	+0.7
	1.2nm,0.4s,baz=292,slow=2.9,SNR=4.1						
ZAL	**Zalesovo**	**63.55**	**345**	P	P	**21 05 52.0**	**-1.6**
ZAL				pP	pP	21 06 43.7	+0.7
HASS	**Wahat al Ahsa'**	**65.28**	**301**	P	P	**21 06 03.7**	**-1.6**
BVAR	**Borovoye Array**	**67.61**	**336**	P	P	**21 06 18.4**	**-1.1**
	1.8nm,0.5s,mb4.0,baz=144,slow=9.0,SNR=25						
BVAR				pP	pP	21 07 10.0	+0.5
	1.9nm,0.6s,baz=140,slow=9.1,SNR=8.9						
BRVK	**Borovoye**	**67.68**	**336**	*e*P	P	**21 06 18.8**	**-1.1**
BRVK				*e*PcP	PcP	21 06 48.6	+3.3
BRVK				*e*pP	pP	21 07 08.5	-1.4
ZRNK	**Zerenda**	**68.12**	**336**	*e*P	P	**21 06 21.4**	**-1.2**
ZRNK				*e*pP	pP	21 07 13.3	+0.7
MAW	**Mawson**	**68.13**	**197**	P	P	**21 06 22.6**	**+0.2**
	5.4nm,0.6s,mb4.4,baz=48,slow=6.4,SNR=26						
MAW	**Mawson**	**68.13**	**197**	*e*P	P	**21 06 22.3**	**-0.2**
MAW				P		21 06 22.6	
MAW				*e*PcP	PcP	21 06 45.4	-1.6
MAW				*e*pP	pP	21 07 13.6	+1.1
KAMS	**Al Khamasin**	**68.23**	**295**	P	P	**21 06 21.7**	**-2.1**
THR	**Tehran**	**68.39**	**313**	P	P	**21 06 23.5**	**-1.1**
	0.6nm,0.5s,mb3.5,baz=71,slow=3.2,SNR=5.0						
MZLS	**Mizel**	**68.75**	**299**	P	P	**21 06 26.0**	**-1.0**
TATS	**Tathlith**	**69.02**	**294**	P	P	**21 06 27.7**	**-0.9**
AFFS	**'Afif**	**70.65**	**298**	P	P	**21 06 38.1**	**-0.4**
ARSS	**Ar Rass**	**71.02**	**300**	P	P	**21 06 39.7**	**-1.0**
KMBO	**Kilima Mbogo**	**71.20**	**271**	P	P	**21 06 42.5**	**+0.6**
	0.6nm,0.4s,mb3.6,baz=61,slow=14,SNR=4.2						
KMBO	**Kilima Mbogo**	**71.20**	**271**	*e*P	P	**21 06 42.5**	**+0.6**
	1.2nm,0.6s,mb3.7						
HILS	**Ha'il**	**72.70**	**301**	P	P	**21 06 50.7**	**-0.1**
KBRS	**Khaybar**	**74.43**	**299**	P	P	**21 07 01.1**	**+0.3**
YNBS	**Yanbu' al Bahr**	**75.17**	**297**	P	P	**21 07 05.3**	**+0.2**
VNDA	**Vanda**	**76.06**	**170**	P	P	**21 07 09.7**	**+0.7**
	5.2nm,0.6s,mb4.3,baz=318,slow=6.0,SNR=48						
VNDA	**Vanda**	**76.06**	**170**	*e*P	P	**21 07 09.5**	**+0.5**
VNDA				P		21 07 09.7	
SBA	**Scott Base**	**77.12**	**169**	*e*P	P	**21 07 16.1**	**+1.2**
	9.1nm,0.8s,mb4.5						
KIV	**Kislovodsk**	**77.58**	**318**	*e*P	P	**21 07 17.7**	**-0.3**
	4.5nm,0.7s,mb4.2						
ASF	**Jabal al Asfar**	**78.13**	**305**	P	P	**21 07 22.0**	**+0.7**
	7.1nm,0.5s,mb4.5,baz=344,slow=5.0,SNR=12						
JMQS	**Jabal Moqyreh**	**78.13**	**301**	P	P	**21 07 21.6**	**+0.2**
AYUS	**'Ayn'unah**	**78.48**	**300**	P	P	**21 07 23.1**	**-0.2**
BDAS	**Al Bad'**	**78.68**	**301**	P	P	**21 07 24.1**	**-0.3**
JMOS	**Jabal al Moall**	**78.85**	**301**	P	P	**21 07 25.2**	**-0.1**
ALWS	**Ilw as Safayha**	**78.92**	**301**	P	P	**21 07 25.7**	**0.0**
HAQS	**Haql**	**78.98**	**301**	P	P	**21 07 26.2**	**+0.3**
LBTB	**Lobatse**	**80.77**	**246**	*e*P	P	**21 07 35.8**	**+0.3**
	1.3nm,0.8s,mb3.6						
BRTR	**Keskin Array B**	**82.67**	**311**	P	P	**21 07 44.8**	**-0.2**
	4.4nm,0.8s,mb4.2,baz=136,slow=7.0,SNR=23						
QSPA	**South Pole Qui**	**83.34**	**180**	*e*P	P	**21 07 48.5**	**+0.8**
	5.4nm,0.5s,mb4.5						
SANT	**Santorini**	**88.28**	**307**	*e*P	P	**21 08 13.3**	**+0.7**
IDI	**Anoyia**	**88.56**	**306**	P	P	**21 08 14.6**	**+0.7**
	4.5nm,0.3s,mb4.7,baz=131,slow=5.0,SNR=17						
SNAA	**Sanae**	**90.29**	**197**	*e*P	P	**21 08 22.3**	**+1.1**
VNA2	**Neumayer--Watz**	**91.94**	**197**		P	**21 08 32.7**	**+3.8**
FINES	**FINESS Array B**	**92.14**	**332**	P	P	**21 08 30.6**	**+0.6**
	1.0nm,0.9s,mb3.7,baz=90,slow=5.7,SNR=4.6						
VNA1	**Neumayer--Stat**	**92.32**	**197**	↓*i*	P	**21 08 34.3**	**+3.6**
VNA3	**Neumayer Olymp**	**92.45**	**197**	↓*i*	P	**21 08 39.8**	**+8.6**
SPITS	**Spitsbergen Ar**	**96.89**	**348**	P	P	**21 08 52.8**	**+1.5**
	3.4nm,1.1s,mb4.5,baz=118,slow=2.5,SNR=4.0						
YKA	**Yellowknife Ar**	**116.03**	**21**	PKP	PKPdf	21 14 02.4	+1.3
	2.0nm,0.4s,baz=329,slow=2.0,SNR=6.2						
YKA	**Yellowknife Ar**	**116.03**	**21**	PKP	PKPdf	21 14 02.4	+1.3
TXAR	**Lajitas Array**	**142.25**	**49**	PKP	PKPdf	21 14 52.2	+0.8
	0.2nm,0.5s,baz=90,slow=0.9,SNR=2.6						
JCT	**Junction City**	**144.43**	**45**	*e*PKPdf	PKPdf	21 14 56.7	+1.5
CPUP	**Villa Florida**	**144.44**	**202**	PKP	PKPdf	21 14 56.7	+1.4
	3.5nm,0.7s,baz=149,slow=3.2,SNR=6.3						
CPUP	**Villa Florida**	**144.44**	**202**	PKP	PKPdf	21 14 56.7	+1.4
MIAR	**Mount Ida**	**145.59**	**33**	*e*PKPdf	PKPdf	21 14 58.2	+1.2
WVT	**Waverly**	**147.08**	**25**	*e*PKPbc	PKPdf	21 15 04.1	+4.6

*PRU **31** 20:56:47.4, 50.33N×18.81E*
WAR 31 20:56:47.6, 50.25N×18.88E, h1km, 2C, Location given by Central Institute of Mining, origin time based upon OJC, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAC	**Raciborz**	**0.47**	**249**	*e*PG	Pg	20 56 57.0	-0.1
RAC				*e*SG	Sg	20 57 04.0	+0.6
OJC	**Ojcow**	**0.59**	**93**	*e*Pg	Pg	20 56 59.0	-0.4
OJC				*e*Sg	Sg	20 57 07.5	+0.2
OKC	**Ostrava-Krasne**	**0.63**	**229**	*e*PG	Pg	20 56 59.8	-0.4
LIKS	**Likavka**	**1.21**	**173**	*e*SN	Sn	20 57 27.5	-1.5
NIE	**Niedzica**	**1.25**	**131**	↑*e*Pg	Pg	20 57 11.0	-1.6
NIE				*e*Sg	Sg	20 57 28.5	-0.7
DPC	**Dobruska-Polom**	**1.64**	**274**	*e*PG	Pg	20 57 16.4	-4.0
DPC				*e*SG	Sg	20 57 38.3	-4.0
	10nm,0.3s						
KSP	**Ksiaz**	**1.75**	**291**	*e*PG	Pg	20 57 20.0	-2.6
KSP				*e*SG	Sg	20 57 42.0	-4.0
VYHS	**Vyhne**	**1.76**	**181**	*e*PN	Pn	20 57 18.4	-1.1
VYHS				*e*SN	Sn	20 57 40.1	-2.8
UPC	**Upice**	**1.85**	**279**	*e*SG	Sg	20 57 45.3	-4.0
CRVS	**Cervenica-Dubn**	**2.16**	**128**	*e*PN	Pg	20 57 27.7	-3.0
CRVS				*e*SN	Sg	20 57 56.0	-3.5
PSZ	**Piszkesteto**	**2.43**	**164**	↑*i*P	Pg	20 57 34.6	-1.6
PSZ				*e*S	Sg	20 58 03.7	-4.9
PRU	**Pruhonice**	**2.81**	**266**	*e*SG	Sg	20 58 14.1	-6.9
KHC	**Kasperske Hory**	**3.62**	**254**	*e*SG	Sg	20 58 41.1	-7.1
CLL	**Collm**	**3.88**	**288**	*e*SG	Sg	20 58 55.0	-1.7

*NEIC **31** 21:00:50.7, 38.39N×20.60E, h16km, MD3.2(ATH), After ATH.*
*THE **31** 21:00:50.2, 38.38N×20.52E, h20km, ML2.7*
*ATH **31** 21:00:50.7, 38.39N×20.60E, h16km±2km, MD3.2/5*
ISC 31 21:00:51.0±0.8, 38.43N±0.05×20.67E±0.08, h16km, n9, σ1§37/13, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VLS	**Valsamata**	**0.26**	**194**	*e*PB	**Pb**	**21 00 56.0**	**-0.8**
LKD	**Levkas**	**0.28**	**357**	*e*Pg	**Pb**	**21 00 57.3**	**+0.1**
LKD				*e*Sg	**Sb**	**21 01 04.0**	**+2.5**
EVR	**Evrytania**	**1.02**	**61**	*e*PN	**Pn**	**21 01 11.0**	**+0.4**
IGT	**Igoumenitsa**	**1.14**	**347**	*e*Pg	**Pb**	**21 01 10.2**	**-1.6**
IGT				*e*Sg	**Sb**	**21 01 25.5**	**-0.6**
JAN	**Janina**	**1.24**	**7**	*e*PN	**Pn**	**21 01 15.2**	**+1.5**
AGG	**Agios Georgios**	**1.43**	**65**	*e*Pb	**Pb**	**21 01 15.5**	**-1.4**
AGG				*e*Sb	**Sb**	**21 01 34.8**	**+0.1**
KEK	**Kerkira**	**1.45**	**332**	*e*PN	**Pn**	**21 01 18.0**	**+1.2**
ITM	**Ithomi**	**1.59**	**141**	*e*PN	**Pn**	**21 01 20.5**	**+1.6**
FNA	**Florina**	**2.42**	**13**	*e*Pn	**Pn**	**21 01 28.0**	**-2.6**
FNA				*e*Sn	**Sn**	**21 01 56.1**	**-4.0**

IDC 31 21:08:44.5±2.2, 20.43S×175.55W, mb3.8/5, mb1 4.1/5, mb1mx3.9/15, Error ellipse: s-maj=183.0km s-min=24.9km az=154.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**39.89**	**244**	P	P	21 16 19.6	-2.3
	2.2nm,0.5s,baz=90,slow=14,SNR=3.5						
ASAR	**Alice Springs**	**46.77**	**256**	P	P	21 17 16.2	-1.4
	2.0nm,0.8s,baz=88,slow=7.9,SNR=14						
WRA	**Warramunga Arr**	**46.88**	**261**	P	P	21 17 16.8	-1.8
	0.6nm,0.7s,baz=30,slow=2.2,SNR=13						
NVAR	**Mina Array Bea**	**79.42**	**42**	P	P	21 20 52.9	-1.3
	0.6nm,0.7s,baz=242,slow=13,SNR=4.2						
TXAR	**Lajitas Array**	**85.10**	**56**	P	P	21 21 22.9	-1.1
	0.3nm,0.7s,baz=225,slow=8.8,SNR=3.5						

*NIED **31** 21:15:00, 34.10N×141.70E, h8km, Mw3.9 Best double couple: M0 9.38×10^14 NP1:φ=36°, δ56°, λ106°. NP2:φ=189°, δ37°, λ67°.*
*IDC **31** 21:15:12.2±0.7, 34.20N×141.61E, mb3.9/12, mb1 4.1/14, mb1mx4.0/24, ML4.0/2, MS2.6/1, Ms1 2.6/1, ms1mx2.3/34, Error ellipse: s-maj=20.7km s-min=14.3km az=105.0*
*NEIC **31** 21:15:13.7±0.4, 34.16N×141.59E, h10km, mb4.3/4, Error ellipse: s-maj=11.2km s-min=7.8km az=76.0*
*JMA **31** 21:15:14.3±0.6, 34.15N×141.72E, h35km, M3.6*
ISC 31 21:15:14.0±1.4, 34.16N±0.04×141.73E±0.07, h29km±9km, n48, σ0§79/52, mb4.1/21, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**0.79**	**308**	P	**Pb**	**21 15 29.1**	**-0.1**
BSO3	**Boso 3**	**1.19**	**303**	P	**Pn**	**21 15 35.5**	**+0.5**
BSO4	**Boso 4**	**1.42**	**306**	P	**Pn**	**21 15 39.1**	**+0.9**
CHOJ	**Chosi**	**1.69**	**335**	P	**Pn**	**21 15 42.6**	**+0.4**
JHJ2	**Mitsune**	**1.91**	**237**	P	**Pn**	**21 15 46.6**	**+1.3**
JHJ	**Hachijo jima 2**	**1.93**	**238**	Pn	**Pn**	**21 15 46.0**	**+0.4**
	133nm,0.3s,baz=126,slow=6.3,SNR=46						
JHJ				Sn	**Sn**	**21 16 10.2**	**+1.2**
	267nm,0.3s,baz=249,slow=23,SNR=

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**17.31**	**103**	P	**P**	**21 50 57.5**	**-1.3**
	40nm,1.3s						
URZ	**Urewera**	**20.54**	**191**	P	**P**	**21 51 29.0**	**-0.1**
	5.5nm,0.4s,baz=94,slow=1.9,SNR=7.6						
SNZO	**South Karori**	**23.97**	**194**	*e*P	**P**	**21 51 59.6**	**-0.6**
RPZ	**Rata Peaks**	**27.18**	**198**	P	**P**	**21 52 28.6**	**+0.2**
	6.9nm,0.8s,mb4.4,slow=4.0,SNR=3.4						
ARMA	**Armidale**	**30.29**	**240**	*e*P	**P**	**21 52 57.3**	**+1.9**
CNB	**Canberra Magne**	**33.71**	**233**	⇓*i*P	**P**	**21 53 25.9**	**+1.7**
	9.9nm,0.5s,mb4.6						
CTA	**Charters Tower**	**33.92**	**261**	*e*P	**P**	**21 53 27.3**	**+1.2**
	9.6nm,0.6s,mb4.5						
CTA	**Charters Tower**	**33.92**	**261**	P	**P**	**21 53 27.2**	**+1.1**
	12nm,0.7s,mb4.5,baz=91,slow=9.9,SNR=16						
CTAO	**Charters Tower**	**33.92**	**261**	*e*P	**P**	**21 53 27.1**	**+1.0**
	15nm,0.8s,mb4.6						
PMG	**Port Moresby**	**35.01**	**280**	P	**P**	**21 53 37.0**	**+1.8**
	22nm,0.8s,mb4.8,baz=61,slow=5.7,SNR=5.0						
PMG	**Port Moresby**	**35.01**	**280**	*e*P	**P**	**21 53 36.7**	**+1.5**
PMG				P		21 53 37.0	
STKA	**Stephens Creek**	**38.98**	**242**	*e*P	**P**	**21 54 07.9**	**+0.4**
	5.0nm,0.6s,mb4.2						
STKA	**Stephens Creek**	**38.98**	**242**	P	**P**	**21 54 08.7**	**+1.2**
	5.3nm,0.6s,mb4.3,baz=82,slow=8.9,SNR=16						
WB2	**Warramunga Arr**	**45.09**	**260**	⇓*i*P	**P**	**21 54 55.5**	**-0.6**
WRAB	**Tennant Creek**	**45.09**	**260**	*e*P	**P**	**21 54 55.6**	**-0.5**
	35nm,0.5s,mb5.2						
WRA	**Warramunga Arr**	**45.10**	**260**	P	**P**	**21 54 56.0**	**-0.2**
	12nm,0.4s,mb4.8,baz=96,slow=7.5,SNR=57						
AS12	**Alice Springs**	**45.23**	**254**	⇓*i*P	**P**	**21 54 57.0**	**-0.1**
	23nm,1.0s,mb4.7						
ASAR	**Alice Springs**	**45.23**	**254**	P	**P**	**21 54 57.1**	**0.0**
	18nm,0.4s,mb4.9,baz=92,slow=7.7,SNR=266						
ASAR				PcP	PcP	21 56 23.4	-2.1
	2.6nm,0.5s,baz=104,slow=3.8,SNR=7.8						
KAKA	**Kakadu**	**48.14**	**269**	*e*P	**P**	**21 55 18.6**	**-0.7**
	22nm,0.4s,mb5.0						
FORT	**Forrest**	**50.38**	**245**	*e*P	**P**	**21 55 34.1**	**-1.7**
	45nm,0.7s,mb5.0						
FITZ	**Fitzroy Crossi**	**53.51**	**261**	⇑*i*P	**P**	**21 55 57.8**	**-0.5**
	3.0nm,0.4s,mb4.0						
KLBR	**Kellerberrin**	**59.20**	**244**	⇓*i*P	**P**	**21 56 35.7**	**-1.6**
	12nm,0.7s,mb4.2						
NWAO	**Narrogin (SRO)**	**59.57**	**242**	*e*P	**P**	**21 56 35.9**	**-3.8**
SBA	**Scott Base**	**60.24**	**184**	*e*P	**P**	**21 56 44.1**	**+0.6**
	3.1nm,0.7s,mb3.8						
VNDA	**Vanda**	**60.28**	**185**	P	**P**	**21 56 43.8**	**0.0**
	0.4nm,0.5s,mb3.0,baz=358,slow=8.5,SNR=5.0						
MUN	**Mundaring**	**60.49**	**243**	*e*P	**P**	**21 56 44.8**	**-1.0**
	4.7nm,0.4s,mb4.2						
MAJO	**Matsushiro**	**68.39**	**323**	*e*P	**P**	**21 57 34.5**	**-1.0**
	5.0nm,0.5s,mb4.3						
QSPA	**South Pole Qui**	**71.93**	**180**	*e*P	**P**	**21 57 55.3**	**-0.3**
	4.3nm,0.7s,mb4.0						
MDJ	**Mudanjiang**	**78.66**	**325**	P	**P**	**21 58 34.0**	**+0.8**
MDJ				AMB	AMB		
	comp=Z,7.0nm,0.9s,mb4.0						
MDJ				AMB	AMB		
	comp=Z,43nm,4.9s						
MDJ	**Mudanjiang**	**78.66**	**325**	*e*P	**P**	**21 58 33.7**	**+0.4**
	comp=Z,5.0nm,0.6s,mb4.0						
NVAR	**Mina Array Bea**	**79.22**	**44**	P	**P**	**21 58 37.6**	**+1.2**
	comp=Z,1.6nm,0.8s,mb3.4,baz=215,slow=8.0,SNR=12						
TPH	**Tonopah**	**79.74**	**44**	*e*P	**P**	**21 58 39.4**	**+0.4**
	comp=Z,2.1nm,0.7s,mb3.6						
PMR	**Palmer**	**82.69**	**13**	P	**P**	**21 58 52.7**	**-0.9**
	comp=Z,3.6nm,0.6s,mb4.1						
BJT	**Baijiatuan**	**84.29**	**315**	*e*P	**P**	**21 59 02.3**	**+0.3**
	comp=Z,7.7nm,0.9s,mb4.2						
MCK	**McKinley**	**84.63**	**12**	*e*P	**P**	**21 59 02.3**	**-0.8**
	comp=Z,9.7nm,1.2s,mb4.2						
LTX	**Lajitas**	**85.67**	**57**	*e*P	**P**	**21 59 10.3**	**+1.3**
	comp=Z,3.1nm,0.6s,mb4.1						
TXAR	**Lajitas Array**	**85.67**	**57**	P	**P**	**21 59 10.8**	**+1.8**
	comp=Z,1.5nm,0.6s,mb3.8,baz=217,slow=6.2,SNR=30						
ANMO	**Albuquerque**	**85.82**	**51**	*e*P	**P**	**21 59 10.7**	**+1.1**
	comp=Z,1.6nm,0.9s,mb3.6						
COLA	**College**	**85.87**	**12**	*e*P	**P**	**21 59 07.6**	**-1.4**
	comp=Z,6.4nm,0.8s,mb4.3						
ILAR	**Eielson Array**	**85.98**	**13**	P	**P**	**21 59 08.3**	**-1.3**
	comp=Z,1.5nm,0.5s,mb3.9,baz=222,slow=4.8,SNR=46						
PDAR	**Pinedale Array**	**87.15**	**43**	P	**P**	**21 59 16.1**	**+0.5**
	comp=Z,1.2nm,0.7s,mb3.7,baz=229,slow=3.0,SNR=12						
CMAR	**Chiang Mai Arr**	**89.44**	**290**	P	**P**	**21 59 27.5**	**+0.6**
	comp=Z,3.0nm,1.0s,mb4.1,baz=112,slow=2.7,SNR=16						
YKA	**Yellowknife Ar**	**94.31**	**25**	P	**P**	**21 59 47.6**	**-0.5**
	comp=Z,0.5nm,0.6s,mb3.8,baz=243,slow=4.4,SNR=13						
BVAR	**Borovoye Array**	**117.34**	**321**	PKP	PKPdf	22 05 08.6	-1.0
	comp=Z,0.7nm,0.4s,baz=122,slow=2.5,SNR=9.1						
KEV	**Kevo**	**126.17**	**350**	*ep*	PKPdf	22 05 25.1	-1.1
ARCES	**ARCESS Array B**	**126.62**	**350**	PKP	PKPdf	22 05 26.2	-0.9
	comp=Z,1.3nm,0.5s,baz=76,slow=1.3,SNR=19						
JOF	**Joensuu**	**130.91**	**343**	*ep*	PKPdf	22 05 34.2	-1.3
	comp=Z,0.6nm,0.4s						
KAF	**Kangasniemi**	**132.91**	**345**	*ep*	PKPdf	22 05 37.4	-1.8
	comp=Z,1.2nm,0.5s						
FINES	**FINESS Array B**	**133.53**	**344**	PKP	PKPdf	22 05 39.3	-1.1
	comp=Z,1.3nm,0.8s,baz=68,slow=2.4,SNR=7.9						
BSEG	**Bad Segeberg**	**143.70**	**352**	*e*PKPbc	PKPbc	22 05 58.1	0.0
KWP	**Kalwaria**	**144.47**	**337**	*e*PKPdf	PKPdf	22 05 59.9	-0.3
OJC	**Ojcow**	**144.99**	**340**	*e*PKP	PKPdf	22 06 01.8	+0.7
BRTR	**Keskin Array B**	**145.30**	**315**	PKPbc	PKPbc	22 06 03.0	-0.1
	comp=Z,3.2nm,0.5s,baz=137,slow=4.1,SNR=20						
KSP	**Ksiaz**	**145.46**	**344**	*e*P	PKPdf	22 06 03.5	+1.7
NIE	**Niedzica**	**145.51**	**339**	*e*P	PKPdf	22 06 03.6	+1.6
CRVS	**Cervenica-Dubn**	**145.53**	**337**	*i* PKP	PKPdf	22 06 04.0	+2.0
CRVS				*e*		22 06 06.3	
CRVS				*e*		22 06 25.4	
CLZ	**Clausthal**	**145.73**	**351**	*e*PKPbc	PKPbc	22 06 04.1	+0.4
ASF	**Jabal al Asfar**	**145.73**	**301**	PKPbc	PKPbc	22 06 04.3	0.0
	comp=Z,4.5nm,0.8s,baz=271,slow=8.3,SNR=6.4						
CLL	**Collm**	**145.78**	**348**	⇓*i*PKP1	PKPbc	22 06 04.4	+0.5
UPC	**Upice**	**145.84**	**344**	⇑*e*PKPB	PKPbc	22 06 05.0	+1.0
OKC	**Ostrava-Krasne**	**145.84**	**341**	⇑*e*PKPB	PKPbc	22 06 04.6	+0.5
DPC	**Dobruska-Polom**	**145.90**	**344**	⇑*e*PKPB	PKPbc	22 06 05.2	+1.0
BRG	**Berggiesshubel**	**146.00**	**347**	*i* P	PKPdf	22 06 05.3	+2.5
BRG				LR	LR		
	comp=Z,130nm,20.7s						
PVCC	**Panska Ves**	**146.18**	**346**	⇑*e*PKPB		22 06 05.8	
MLR	**Muntele Rosu**	**146.28**	**329**	PKPbc	PKPbc	22 06 05.6	+0.4
	comp=Z,5.6nm,1.0s,baz=283,slow=22,SNR=5.4						
MOX	**Moxa**	**146.68**	**349**	*e*P	PKPdf	22 06 06.0	+2.1
PRU	**Pruhonice**	**146.68**	**345**	⇑*e*PKPB		22 06 06.9	
VYHS	**Vyhne**	**146.80**	**340**	*e*PKP	PKPdf	22 06 07.5	+3.3
NKC	**Novy Kostel**	**146.91**	**348**	⇑*e*PKPB		22 06 07.7	
SMOL	**Smolenice**	**147.23**	**341**	*e*PKP	PKPdf	22 06 08.8	+3.9
SMOL				*e*		22 06 13.6	
GRA1	**Grafenberg Arr**	**147.67**	**349**	*e*PKPbc	PKPdf	22 06 09.5	+4.0
KHC	**Kasperske Hory**	**147.71**	**346**	⇑*e*PKPB		22 06 09.8	
GEC2	**GERESS Array S**	**147.95**	**346**	*e*PKPbc	PKPdf	22 06 10.2	+4.2
GERES	**GERESS Array B**	**147.95**	**346**	PKPbc	PKPdf	22 06 10.5	+4.5
	comp=Z,2.9nm,0.6s,baz=26,slow=3.0,SNR=37						
GIVF	**Givet**	**148.02**	**357**	*e*PKP1	PKPdf	22 06 10.0	+3.9
BAIF	**Baives**	**148.10**	**357**	*e*PKP1	PKPdf	22 06 10.3	+4.1
	comp=Z,6.8nm,0.6s						
FUR	**Furstenfeldbru**	**149.12**	**348**	*e*PKPbc	PKPdf	22 06 13.0	+5.2
FLN	**La Foliniere**	**149.36**	**3**	*e*PKP1	PKPdf	22 06 13.0	+4.8
BFO	**Black Forest**	**149.45**	**352**	*e*PKPbc	PKPdf	22 06 13.7	+5.3
CDF	**Champ du Feu**	**149.50**	**353**	*e*PKP1	PKPdf	22 06 13.7	+5.2
LDF	**La Druitiere**	**149.55**	**3**	*e*PKP1	PKPdf	22 06 13.3	+4.8
	comp=Z,6.3nm,0.6s						
MEZF	**Maizieres J'vi**	**149.60**	**356**	*e*PKP1	PKPdf	22 06 14.2	+5.6
GRR	**Gorron**	**149.71**	**4**	*e*PKP1	PKPdf	22 06 13.9	+5.1
	comp=Z,7.9nm,0.6s						
HAU	**Haulompre**	**150.00**	**354**	*e*PKP1	PKPdf	22 06 14.7	+5.4
	comp=Z,1.2nm,0.7s						
HINF	**Hinteralfeld**	**150.13**	**354**	*e*PKP1	PKPdf	22 06 14.9	+5.4
	comp=Z,4.3nm,0.6s						
LOR	**Lormes**	**150.90**	**358**	*e*PKP1	PKPdf	22 06 16.9	+6.3
	comp=Z,7.6nm,0.6s						
HYF	**Humbligny**	**150.93**	**359**	*e*PKP1	PKPdf	22 06 17.3	+6.6
SSF	**Saint Saulge**	**151.12**	**358**	*e*PKP1	PKPdf	22 06 17.4	+6.4
	comp=Z,6.9nm,0.6s						
CABF	**La Chapelle**	**151.40**	**354**	*e*PKP1	PKPdf	22 06 18.5	+7.1
SMF	**Signal de Mont**	**151.52**	**358**	*e*PKP1	PKPdf	22 06 18.2	+6.6
MFF	**Saint Martin d**	**151.54**	**3**	*e*PKP1	PKPdf	22 06 18.0	+6.4
	comp=Z,13nm,0.8s						
TCF	**Toulx Ste Croi**	**151.91**	**360**	*e*PKP1	PKPdf	22 06 18.9	+6.8
	comp=Z,9.5nm,0.9s						
LPL	**La Plagne**	**152.42**	**353**	*e*PKP1	PKPdf	22 06 20.8	+8.0
LPG	**La Plagne**	**152.43**	**353**	*e*PKP1	PKPdf	22 06 21.2	+8.3

*IDC **31** 22:05:32.2±1.2, 36.58N×51.17E, mb3.5/3, mb1 3.7/3, mb1mx3.4/19, Error ellipse: s-maj=27.1km s-min=9.2km az=101.0*

ISC 31 22:05:32.3±1.5, 36.6N±0.2×51.3E±0.5, h10km, n4, σ1s05/4, mb3.4/3, Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THR	**Tehran**	**0.67**	**193**	Pg	**Pg**	**22 05 45.6**	**-0.1**
	45nm,0.3s,baz=2.9,slow=15,SNR=720						
THR				Lg		22 05 54.0	
	523nm,0.3s,baz=149,slow=5.6,SNR=137						
BVAR	**Borovoye Array**	**21.21**	**33**	P	**P**	**22 10 19.4**	**-0.8**
	2.2nm,0.6s,mb3.7,baz=219,slow=10,SNR=23						
MKAR	**Makanchi Array**	**25.15**	**56**	P	**P**	**22 10 59.3**	**+0.5**
	0.9nm,0.7s,mb3.4,baz=245,slow=8.1,SNR=12						
ILAR	**Eielson Array**	**78.00**	**8**	P	**P**	**22 17 32.2**	**+0.5**
	0.2nm,0.8s,mb3.1,baz=14,slow=3.7,SNR=3.1						

*NEIC **31** 22:32:16.0, 31.33S×121.76E, ML3.7(AUST), After AUST.*
NEIC Felt in the Kambalda area.

AUST 31 22:32:16.7, 31.33S×121.76E, ML3.7, 2C, Western Australia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KLBR	**Kellerberrin**	**3.43**	**265**	*e*P	Pn	22 33 09.6	-3.0
KLBR				*e*		22 33 16.3	
KLBR				*e*S	Sn	22 33 49.5	-5.1
	35nm,0.4s						
NWAO	**Narrogin (SRO)**	**4.16**	**246**	*e*P	Pn	22 33 19.3	-3.6
NWAO				*e*S	Sn	22 34 18.7	+5.8
	460nm,0.4s						
BLDU	**Ballidu**	**4.40**	**278**	*e*P	Pn	22 33 22.0	-4.3
BLDU				*e*		22 33 35.5	
BLDU				*e*S	Sn	22 34 10.2	-8.8
	8.0nm,0.3s						
BLDU				*e*RG		22 35 00.8	
MUN	**Mundaring**	**4.78**	**261**	*e*P	Pn	22 33 27.6	-4.1
MUN				*e*		22 33 41.6	
MUN				*e*S	Sn	22 34 21.4	-7.2
	36nm,0.5s						
MUN				*e*RG		22 35 14.0	
RKGY	**Rocky Gully**	**5.18**	**230**	*e*P	Pn	22 33 34.9	-2.5
MEEK	**Meekatharra**	**5.42**	**329**	⇑*i*P	Pn	22 33 37.3	-3.5
MEEK				*e*S	Sn	22 34 33.9	-11
	29nm,0.3s						
MEEK	**Meekatharra**	**5.42**	**329**	⇑*i*P	Pn	22 33 37.3	-3.5
	29nm,0.3s						
MEEK				*e*S	Sn	22 34 33.9	-11
FORT	**Forrest**	**5.43**	**86**	*e*P	Pn	22 33 36.2	-4.7
FORT				*e*		22 33 52.9	
MBWA	**Marble Bar**	**10.29**	**349**	*e*P	P	22 34 42.1	-6.6
MBWA				*e*S	S	22 36 29.3	-17
AS12	**Alice Springs**	**13.20**	**58**	*e*P	P	22 35 20.7	-7.4
AS12				*e*S	S	22 37 41.9	-15
FITZ	**Fitzroy Crossi**	**13.63**	**16**	*e*P	P	22 35 26.1	-7.7
FITZ				*e*S	S	22 37 49.4	-18
	2.0nm,0.4s						
FITZ	**Fitzroy Crossi**	**13.63**	**16**	*e*P	P	22 35 26.1	-7.7
	2.0nm,0.4s						
FITZ				*e*S	S	22 37 49.4	-18
WB2	**Warramunga Arr**	**16.03**	**48**	*e*P	P	22 35 55.9	-9.3
WB2				*e*S	S	22 38 44.5	-19
WRAB	**Tennant Creek**	**16.03**	**48**	*e*P	P	22 35 56.3	-9.0
	31nm,1.2s						

*NEIC **31** 22:42:36.1, 39.07N×27.71E, h9km, MD2.7(ISK), After ISK.*
*ISK **31** 22:42:36.1, 39.07N×27.71E, h9km, MD2.7*

ISC 31 22:42:36.9±0.6, 39.06N±0.03×27.75E±0.07, h9km, n10, σ0s98/15, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKS	**Akhisar**	**0.19**	**165**	*i* PG	**Pg**	**22 42 40.9**	**-0.1**
BALB	**Balikesir**	**0.59**	**10**	*e*SG	**Sg**	**22 42 56.3**	**-0.3**
BALB	**Balikesir**	**0.59**	**10**	*e*Pg	**Pg**	**22 42 48.6**	**-0.1**
BALB				*e*Sg	**Sg**	**22 42 56.3**	**-0.3**
KDAG	**Bornova**	**0.76**	**210**	*i* P	**Pb**	**22 42 51.0**	**-0.9**
KDAG				*i* S	**Sb**	**22 43 04.1**	**+2.1**
IZM	**Izmir**	**0.77**	**210**	*e*PG	**Pg**	**22 42 51.0**	**-1.3**
MANT	**Manisa**	**0.85**	**132**	*i* P	**Pb**	**22 42 52.5**	**-0.9**
MANT				*i* S	**Sb**	**22 43 04.3**	**-0.4**
DST	**Dursunbey**	**0.87**	**51**	*e*PG	**Pg**	**22 42 53.6**	**-0.8**
KCT	**Karacabey**	**1.29**	**21**	*e*PN	**Pn**	**22 43 00.8**	**-0.4**
AYDN	**Tasoluk**	**1.40**	**176**	*i* P	**Pn**	**22 43 03.8**	**+1.1**
AYDN				*i* S	**Sb**	**22 43 21.0**	**+0.2**
ULDT	**Uludag**	**1.52**	**44**	*i* P	**Pn**	**22 43 04.8**	**+0.4**
ULDT				*i* S	**Sb**	**22 43 26.3**	**+2.2**

*THE **31** 22:49:54.5, 40.42N×32.12E, h5km, ML4.4*
*MOS **31** 22:50:02.0±0.8, 39.74N×30.82E, h33km, mb3.8/4, Error ellipse: s-maj=32.7km s-min=10.4km az=85.9*
*NEIC **31** 22:50:08.3, 40.51N×30.60E, h8km, ML4.0(ISK), After ISK.*
*ISK **31** 22:50:08.3, 40.51N×30.60E, h8km, MD3.9, ML4.0*
*IDC **31** 22:50:12.5±3.9, 40.45N×30.39E, h43km±28km, mb3.5/4, mb1 3.6/6, mb1mx3.4/22, ML3.4/2, MS3.6/2, Ms1 3.8/2, ms1mx2.7/23, Error ellipse: s-maj=77.0km s-min=17.0km az=39.0*

ISC 31 22:50:09.2±0.5, 40.57N±0.02×30.58E±0.02, h15km±3km, n100, σ0s95/114, mb3.8/5, MS3.8/3, 8C-4D, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EYL	**Eskiyayla**	**0.33**	**269**	*i* SG	**Sg**	**22 50 22.2**	**+1.3**
EYL	**Eskiyayla**	**0.33**	**269**	*i* Pg	**Pg**	**22 50 16.8**	**+0.6**
EYL				*i* Sg	**Sg**	**22 50 22.2**	**+1.3**
HENT	**Hendek**	**0.34**	**44**	*i* P	**Pg**	**22 50 16.7**	**+0.1**
HENT				*i* S	**Sg**	**22 50 23.6**	**+2.1**
GPA	**Golpazari**	**0.35**	**216**	*i* PG	**Pg**	**22 50 15.6**	**-1.2**
MDU	**Mudurnu**	**0.49**	**103**	*i* PG	**Pg**	**22 50 17.9**	**-1.5**
HRT	**Hereke**	**0.74**	**290**	*i* PG	**Pg**	**22 50 23.4**	**-0.8**
HRT	**Hereke**	**0.74**	**290**	*i* PG	**Pg**	**22 50 23.9**	**-0.3**
YLV	**Yalova**	**0.92**	**270**	*i* PG	**Pg**	**22 50 26.0**	**-1.8**
ESKT	**Eskisehir**	**1.07**	**169**	*i* P	**Pb**	**22 50 28.1**	**-0.9**
ESKT				*i* S	**Sb**	**22 50 44.2**	**+1.7**
BADT	**Buyukada**	**1.15**	**284**	*i* PN	**Pn**	**22 50 31.3**	**+0.6**
ULDT	**Uludag**	**1.19**	**249**	*i* P	**Pn**	**22 50 31.3**	**+0.4**
ULDT				*i* S	**Sb**	**22 50 49.3**	**+3.4**
ISK	**Istanbul-Kandi**	**1.26**	**293**	*i* PN	**Pn**	**22 50 33.5**	**+1.2**
ORLT	**Orhaneli**	**1.40**	**248**	*i* PN	**Pn**	**22 50 35.1**	**+0.8**
SAFT	**Safranbolu**	**1.73**	**67**	PN	**Pn**	**22 50 40.5**	**+1.5**
KCT	**Karacabey**	**1.73**	**260**	*i* PN	**Pn**	**22 50 39.5**	**+0.5**
CTT	**Catalca**	**1.73**	**290**	PN	**Pn**	**22 50 40.1**	**+1.0**
DST	**Dursunbey**	**1.79**	**238**	PN	**Pn**	**22 50 40.0**	**+0.2**
LOD	**Lodumlu**	**1.80**	**112**	PN	**Pn**	**22 50 39.8**	**-0.3**
ANTO	**Ankara**	**1.83**	**112**	PN	**Pn**	**22 50 41.0**	**+0.5**
BNT	**Bandirma**	**2.04**	**265**	*e*PN	**Pn**	**22 50 44.2**	**+0.7**
EDC	**Edincik**	**2.09**	**265**	*e*PN	**Pn**	**22 50 44.5**	**+0.3**
ELDT	**Eldivan**	**2.17**	**91**	*i* P	**Pn**	**22 50 45.7**	**+0.4**
BALB	**Balikesir**	**2.27**	**247**	*e*PN	**Pn**	**22 50 46.8**	**0.0**
MRMT	**Marmara Adasi**	**2.28**	**272**	*e*PN	**Pn**	**22 50 46.9**	**0.0**
CANT	**Cankiri**	**2.31**	**88**	*e*PN	**Pn**	**22 50 47.4**	**0.0**
KHL	**Karahalli**	**2.39**	**200**	*e*PN	**Pn**	**22 50 47.8**	**-0.7**
BRTR	**Keskin Array B**	**2.49**	**109**	P	**Pn**	**22 50 50.9**	**+1.0**
	0.6nm,0.3s,baz=284,slow=12,SNR=21						
BRTR				S	**Sn**	**22 51 29.4**	**+9.1**
	11nm,0.3s,baz=288,slow=24,SNR=8.3						
KGT	**Karabiga**	**2.50**	**268**	*e*PN	**Pn**	**22 50 50.1**	**0.0**
MANT	**Manisa**	**2.60**	**218**	*e*P	**Pn**	**22 50 50.9**	**-0.6**
MANT				*i* S	**Sn**	**22 51 25.7**	**+2.5**
TOS	**Tosya**	**2.65**	**79**	*e*PN	**Pn**	**22 50 52.4**	**+0.2**
KAMT	**Kaman**	**2.69**	**116**	*e*PN	**Pn**	**22 50 52.4**	**-0.4**
AKS	**Akhisar**	**2.73**	**232**	*e*PN	**Pn**	**22 50 52.8**	**-0.5**
ISP	**Isparta**	**2.73**	**181**	*e*PN	**Pn**	**22 50 52.4**	**-0.9**
BZK	**Bozkurt**	**2.92**	**61**	*e*PN	**Pn**	**22 50 56.5**	**+0.4**
KONT	**Konya--Tatoy**	**2.96**	**152**	*e*PN	**Pn**	**22 50 55.6**	**-1.1**
DENT	**Denizli**	**3.06**	**204**	*e*PN	**Pn**	**22 50 57.0**	**-1.1**
DNZL	**Cakiroluk**	**3.12**	**203**	*i* P	**Pn**	**22 50 48.4**	**-10**
DNZL				*i* S	**Sn**	**22 51 44.4**	**+8.2**
EDRB	**Edirne**	**3.16**	**295**	*e*PN	**Pn**	**22 50 59.8**	**+0.3**
BYBT	**Boyabat**	**3.29**	**73**	*e*PN	**Pn**	**22 51 01.6**	**+0.3**
KDAG	**Bornova**	**3.36**	**231**	*i* P	**Pn**	**22 51 01.2**	**-1.1**
KDAG				*i* S	**Sn**	**22 51 52.8**	**+10**
IZM	**Izmir**	**3.37**	**231**	*e*PN	**Pn**	**22 51 02.5**	**+0.1**
ALN	**Alexandroupoli**	**3.46**	**277**	*e*Pn	**Pn**	**22 51 03.7**	**0.0**
	comp=Z,4.7nm,0.3s						
ALN				*e*Sn	**Sn**	**22 51 55.7**	**+11**
PRD	**Provadia**	**3.54**	**319**	*i* P	**Pn**	**22 51 04.5**	**-0.4**
BOZC	**Bozcaada**	**3.55**	**260**	*i* P	**Pn**	**22 51 05.1**	**+0.1**
BOZC				*i* S	**Sn**	**22 52 04.5**	**+18**
AYDN	**Tasoluk**	**3.59**	**217**	*i* P	**Pn**	**22 51 16.4**	**+11**
AYDN				*i* S	**Sn**	**22 52 07.7**	**+20**
YOZ	**Yozgat**	**3.75**	**103**	*e*PN	**Pn**	**22 51 08.0**	**+0.2**
AVNT	**Avonos**	**3.75**	**117**	*e*P	**Pn**	**22 51 08.1**	**+0.2**
AVNT				*i* S	**Sn**	**22 52 09.3**	**+17**
ELL	**Elmali**	**3.86**	**188**	*e*PN	**Pn**	**22 51 09.4**	**0.0**
YER	**Yerkesik**	**3.88**	**208**	*e*PN	**Pn**	**22 51 08.9**	**-0.7**
HDMB	**Hadim**	**3.90**	**157**	*e*PN	**Pn**	**22 51 09.8**	**-0.2**
MLSB	**Milas**	**3.94**	**215**	*e*PN	**Pn**	**22 51 10.8**	**+0.3**
NIG	**Nigde**	**3.97**	**127**	*e*PN	**Pn**	**22 51 10.3**	**-0.7**
LOS	**Limnos**	**4.26**	**263**	*e*Pn	**Pn**	**22 51 14.4**	**-0.7**
BDRM	**Kayabasi**	**4.28**	**216**	*e*P	**Pn**	**22 51 25.5**	**+10**
BDRM				*i* S	**Sn**	**22 52 21.5**	**+16**
BNN	**Bunyan**	**4.41**	**111**	*e*PN	**Pn**	**22 51 17.2**	**0.0**
HARR	**Harsova**	**4.55**	**335**	⇑*i*P	**Pn**	**22 51 19.5**	**+0.2**
HARR	**Harsova**	**4.55**	**335**	⇑*i*P	**Pn**	**22 51 19.4**	**+0.2**
RZN	**Rozhen**	**4.57**	**286**	P	**Pn**	**22 51 19.5**	**0.0**
SEV	**Sevastopol'**	**4.58**	**29**	*e*P	**Pn**	**22 51 20.0**	**+0.4**
PLD	**Plovdiv**	**4.68**	**291**	*e*P	**Pn**	**22 51 20.0**	**-1.1**
YAL	**Yalta**	**4.72**	**33**	*e*P	**Pn**	**22 51 22.0**	**+0.4**
YAL				*e*S	**Sn**	**22 52 14.0**	**-2.6**
CFR	**Carcaliu**	**4.94**	**339**	⇓*i*P	**Pn**	**22 51 24.5**	**-0.2**
CFR	**Carcaliu**	**4.94**	**339**	⇓P	**Pn**	**22 51 24.6**	**-0.1**
SVSK	**Karacayir**	**4.95**	**96**	*e*PN	**Pn**	**22 51 25.4**	**+0.5**
ALU	**Alushta**	**4.98**	**33**	*e*P	**Pn**	**22 51 25.1**	**-0.2**
ALU				*e*S	**Sn**	**22 52 20.0**	**-3.2**
OUR	**Ouranopolis**	**5.04**	**269**	*e*Pn	**Pn**	**22 51 24.7**	**-1.5**
	comp=Z,1.8nm,0.4s						
SIM	**Simferopol'**	**5.09**	**30**	⇑*i*P	**Pn**	**22 51 27.3**	**+0.5**
SIM				pmax	pmax		
	comp=Z,317nm,0.3s						
PGB	**Panagyurishte**	**5.20**	**294**	P	**Pn**	**22 51 28.0**	**-0.4**
MMB	**Musomiste**	**5.28**	**283**	P	**Pn**	**22 51 18.8**	**-11**
SRS	**Serrai**	**5.33**	**278**	*e*Pn	**Pn**	**22 51 30.5**	**+0.3**
AOS	**Alonnisos**	**5.34**	**257**	*e*Pn	**Pn**	**22 51 29.3**	**-1.2**
ISR	**Istrita**	**5.43**	**328**	⇑*i*P	**Pn**	**22 51 33.0**	**+1.4**
ISR	**Istrita**	**5.43**	**328**	⇑P	**Pn**	**22 51 33.0**	**+1.4**
BRD	**Bordesti

5.8nm,0.4s,mb4.7
ASAR Alice Springs 30.75 165 P **P 22 56 17.9 -0.7**
6.4nm,0.5s,mb4.7,baz=344,slow=7.4,SNR=76
ASAR PcP PcP 22 59 11.8 -0.1
1.7nm,0.4s,baz=350,slow=2.2,SNR=6.8
ASAR ScP 23 02 39.6
1.7nm,0.7s,baz=348,slow=2.7,SNR=7.8
KS15 Wonju Array Si 31.14 3 *eP* **P 22 56 22.0 +0.1**
MAJO Matsushiro 32.27 19 *eP* **P 22 56 29.8 -1.9**
20nm,1.1s,mb4.8
BJT Baijiatuau 34.74 347 *eP* **P 22 56 52.2 -0.4**
10nm,0.6s,mb4.6
BJI Beijing 34.76 347 *eP* **P 22 56 52.3 -0.5**
BJI AMB AMB
comp=Z,10.0nm,0.6s,mb4.6
LZH Lanzhou 35.88 329 *eP* **P 22 57 02.5 +0.2**
LZH AMB AMB
comp=Z,27nm,1.3s,mb4.7
FORT Forrest 36.85 177⇑ *iP* **P 22 57 10.7 +0.2**
comp=Z,66nm,0.6s,mb5.4
SHL Shillong 37.64 305 *eP* **P 22 57 19.0 +1.8**
KLBR Kellerberrin 38.36 191⇑ *iP* **P 22 57 23.1 0.0**
comp=Z,23nm,0.5s,mb5.1
MDJ Mudanjiang 38.40 4 P **P 22 57 23.5 +0.2**
MDJ AMB AMB
comp=Z,37nm,0.9s,mb5.0
MDJ AMB AMB
comp=Z,60nm,5.3s
MDJ Mudanjiang 38.40 4 *eP* **P 22 57 24.2 +0.9**
comp=Z,48nm,1.0s,mb5.1
MUN Mundaring 39.05 193 *eP* **P 22 57 29.1 +0.2**
comp=Z,28nm,0.6s,mb5.1
NWAO Narrogin (SRO) 39.76 191 P **P 22 57 35.3 +0.7**
comp=Z,42nm,0.6s,mb5.3,baz=22,slow=8.5,SNR=51
NWAO Narrogin (SRO) 39.76 191 P **P 22 57 35.3 +0.7**
NWAO *eP* 22 57 35.4
LSA Lhasa 40.08 310 P **P 22 57 39.5 +2.1**
comp=Z,2.1nm,0.9s,mb3.8
GTA Gaotai 40.47 329 *eP* **P 22 57 41.0 +0.5**
GTA AMB AMB
comp=Z,4.0nm,1.0s,mb4.0
ASAJ Asahikawa 40.54 19 P **P 22 57 42.7 +1.7**
comp=Z,12nm,0.7s,mb4.6,baz=165,slow=34,SNR=6.7
STKA Stephens Creek 40.79 159⇑ *iP* **P 22 57 43.7 +0.6**
comp=Z,13nm,0.8s,mb4.6
STKA Stephens Creek 40.79 159 P **P 22 57 44.0 +0.9**
comp=Z,15nm,0.7s,mb4.7,baz=338,slow=7.6,SNR=23
STKA PcP PcP 22 59 41.0 -0.5
comp=Z,4.4nm,0.5s,baz=345,slow=5.5,SNR=3.1
STKA ScP 23 03 17.4
comp=Z,1.3nm,0.6s,baz=1.5,slow=6.3,SNR=3.0
HIA Hailar 43.20 354 *eP* **P 22 58 03.3 +0.7**
comp=Z,23nm,1.5s,mb4.6
ARMA Armidale 44.07 147 *eP* **P 22 58 10.7 +0.9**
ULN Ulaanbaatar 44.47 342 *eP* **P 22 58 12.4 -0.3**
comp=Z,5.0nm,1.0s,mb4.1
ULN *e* 22 58 30.9
SONM Songino Array 44.64 341 P **P 22 58 13.4 -0.7**
comp=Z,0.7nm,0.7s,mb3.4,baz=90,slow=2.5,SNR=4.9
SONM ScP 23 03 31.6
comp=Z,1.2nm,0.7s,baz=168,slow=4.2,SNR=7.0
MKAR Makanchi Array 54.97 325 P **P 22 59 31.6 -1.0**
comp=Z,1.2nm,0.4s,mb4.0,baz=118,slow=6.9,SNR=22
MKAR pP pP 23 00 09.8 -1.2
comp=Z,3.1nm,0.7s,baz=124,slow=7.7,SNR=2.7
MKAR Makanchi Array 54.97 325 P **P 22 59 31.6 -1.0**
MKAR pP pP 23 00 09.8 -1.2
YAK Yakutsk 55.77 2 *eP* **P 22 59 38.1 0.0**
comp=Z,99nm,0.6s
ZAL Zalesovo 57.94 333 P **P 22 59 53.1 -0.4**
comp=Z,1.0nm,0.7s,mb3.8,baz=236,slow=2.8,SNR=5.0
KURK Kurchatov 59.13 327 *eP* **P 22 59 59.6 -2.3**
RPZ Rata Peaks 64.35 145 P **P 23 00 37.5 +0.8**
comp=Z,7.4nm,0.6s,mb4.7,baz=340,slow=17,SNR=5.4
BVAR Borovoye Array 64.71 327 P **P 23 00 37.5 -1.4**
comp=Z,0.7nm,0.5s,mb3.8,baz=129,slow=9.5,SNR=11
BVAR pP pP 23 01 17.5 -1.2
comp=Z,1.8nm,0.8s,baz=117,slow=6.6,SNR=3.2
BRVK Borovoye 64.79 327 *eP* **P 23 00 37.3 -2.1**
ZRNK Zerenda 65.44 326 *eP* **P 23 00 41.7 -2.0**
BILL Bilibino 67.42 15 *eP* **P 23 00 55.1 -0.8**
comp=Z,2.7nm,0.5s,mb4.3
THR Tehran 73.92 305 P **P 23 01 36.0 +0.5**
comp=Z,0.6nm,0.6s,mb3.5,baz=321,slow=3.4,SNR=3.7
THR Tehran 73.92 305 P **P 23 01 36.0 +0.5**
KDAK Kodiak Island 80.33 33 *eP* **P 23 02 11.8 +1.5**
comp=Z,16nm,0.7s,mb4.8
PMR Palmer 82.25 29 *eP* **P 23 02 21.1 +0.8**
comp=Z,13nm,0.9s,mb4.6
MCK McKinley 82.39 27 *eP* **P 23 02 22.0 +1.0**
comp=Z,3.8nm,0.6s,mb4.2
COLA College 82.89 25 *eP* **P 23 02 24.0 +0.5**
comp=Z,4.3nm,0.9s,mb4.2
ILAR Eielson Array 83.30 26 P **P 23 02 25.6 +0.1**
comp=Z,3.1nm,0.7s,mb4.1,baz=241,slow=4.8,SNR=32
MAW Mawson 85.73 200 P **P 23 02 38.3 +0.7**
comp=Z,7.6nm,0.7s,mb4.5,baz=48,slow=2.9,SNR=17
VNDA Vanda 86.00 173 P **P 23 02 39.5 +0.7**
comp=Z,1.0nm,0.5s,mb3.8,baz=317,slow=5.1,SNR=6.3
VNDA pP pP 23 03 18.1 -2.5
comp=Z,1.5nm,0.9s,baz=309,slow=6.5,SNR=2.4
VNDA Vanda 86.00 173 P **P 23 02 39.5 +0.7**
VNDA pP pP 23 03 18.1 -2.5
JOF Joensuu 86.53 333 *ep* **P 23 02 40.8 -0.7**
comp=Z,0.7nm,0.3s,mb4.0
BRTR Keskin Array B 87.69 310 P **P 23 02 47.5 -0.1**
comp=Z,0.7nm,0.7s,mb3.6,baz=90,slow=6.2,SNR=5.2
ARCES ARCESS Array B 87.79 340 P **P 23 02 47.1 -0.3**
comp=Z,2.6nm,0.8s,mb4.1,baz=88,slow=6.2,SNR=15
SPITS Spitsbergen Ar 87.87 349 P **P 23 02 47.9 +0.2**
comp=Z,7.9nm,1.1s,mb4.5,baz=102,slow=8.1,SNR=19
INK Inuvik 88.22 21 P **P 23 02 49.7 +0.2**
comp=Z,1.4nm,0.6s,mb4.0,baz=157,slow=12,SNR=2.8
INK Inuvik 88.22 21 *eP* **P 23 02 48.5 -1.0**
comp=Z,2.8nm,0.8s,mb4.1
KMBO Kilima Mbogo 88.62 269 P **P 23 02 53.1 +0.4**
comp=Z,1.6nm,1.0s,mb3.9,baz=51,slow=18,SNR=3.1
KAF Kangasniemi 88.95 332 *ep* **P 23 02 52.3 -0.8**
comp=Z,0.5nm,0.3s,mb3.9,baz=75,slow=4.3
FINES FINESS Array B 89.19 332 P **P 23 02 53.5 -0.7**
comp=Z,1.4nm,0.6s,mb4.1,baz=79,slow=4.6,SNR=20
FINES FINESS Array B 89.19 332 P **P 23 02 53.5 -0.7**
HFS Hagfors 95.38 332 P **P 23 03 22.0 -0.8**
comp=Z,0.5nm,0.3s,mb4.2,baz=90,slow=3.0,SNR=7.0
NB2 NORSAR Subarra 96.14 334 P **P 23 03 24.4 -1.7**
comp=Z,0.1nm,0.6s,baz=69,slow=5.3
NOA NORSAR Array B 96.14 334 P **P 23 03 25.1 -1.1**
comp=Z,1.3nm,0.9s,mb4.3,baz=66,slow=4.5,SNR=4.5
YKA Yellowknife Ar 97.65 24 P **P 23 03 34.2 +1.2**
comp=Z,2.1nm,1.1s,mb4.5,baz=302,slow=4.6,SNR=15
YKA Yellowknife Ar 97.65 24 P **P 23 03 34.2 +1.2**
TRQA Tornquist 147.54 169 *e*PKPbc PKPdf 23 09 42.9 +4.4

*IDC **31** 23:00:33.7±1.0,5.90N×127.01E,mb3.8/6,mb1 4.0/6, mb1mx3.7/19,Error ellipse: s-maj=64.6km s-min=20.5km az=77.0*
ISC 31 23:00:37.1±0.9,**5.9N**±0.2×**127.0E**±0.4,**h33**km,**n6**,σ1°**13**/6, **mb3.7**/6,**Mindanao**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**23.84**	**183**	P	**P**	**23 05 47.3**	**-1.1**
	3.8nm,1.0s,mb3.8,baz=154,slow=9.3,SNR=4.4						
WRA	**Warramunga Ar**	**26.64**	**164**	P	**P**	**23 06 16.0**	**+1.1**
	0.8nm,0.4s,mb3.6,baz=342,slow=10,SNR=12						
ASAR	**Alice Springs**	**30.11**	**167**	P	**P**	**23 06 46.0**	**0.0**
	0.5nm,0.5s,mb3.5,baz=349,slow=7.7,SNR=5.2						
MKAR	**Makanchi Array**	**55.97**	**324**	P	**P**	**23 10 14.4**	**-0.2**
	0.4nm,0.5s,mb3.8,baz=116,slow=7.1,SNR=6.7						
ILAR	**Eielson Array**	**83.10**	**26**	P	**P**	**23 12 59.8**	**-0.8**
	0.3nm,0.5s,mb3.6,baz=252,slow=5.0,SNR=5.8						
FINES	**FINESS Array B**	**90.09**	**332**	P	**P**	**23 13 35.6**	**+0.9**
	0.4nm,0.7s,mb3.9,baz=90,slow=4.2,SNR=3.6						

MOS 31 23:01:14.1±1.5,**43.08N**×**46.57E**,**h10**km,**mb4.0**/1,**Error ellipse: s-maj=47.1km s-min=14.7km az=124.4,Eastern Caucasus**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DBC	**Dubki**	**0.20**	**107**	*i* PG	Pg	23 01 18.5	0.0
DBC				*i* S	Sg	23 01 25.5	+4.1
UNCR	**Uncukul**	**0.40**	**155**	*i* PG	Pg	23 01 22.0	-0.3
UNCR				*i* S	Sg	23 01 32.0	+4.2
BUJR	**Buynaksk**	**0.47**	**122**	*i* PG	Pg	23 01 25.5	+1.8
BUJR				*i* S	Sg	23 01 37.0	+6.9
KMKR	**Kumukh**	**1.02**	**157**	*i* PG	Pg	23 01 34.0	-0.6
KMKR				*i* S	Sb	23 01 52.0	+5.2
URKR	**Urkarakh**	**1.21**	**139**	*i* PG	Pg	23 01 38.5	+0.3
URKR				*i* S	Sb	23 02 00.0	+8.0
GOF	**Gofitskoye**	**3.23**	**309**	*e*PN	Pn	23 02 06.5	+0.6
GOF				*i* S	Sn	23 02 54.0	+9.3
GOF				pmax	pmax		
	comp=Z,30nm,0.9s						
GOF				smax			
	comp=N,140nm,1.2s						

*BJI **31** 23:04:08.4, 13.80N×120.94E,h141km,mb4.7*
*MAN **31** 23:04:09.7, 13.66N×120.58E,h125km,mb4.9,ML3.8, MS3.8*
*NEIC **31** 23:04:09.6±0.3, 13.65N×120.92E,mb4.3/8, Error ellipse: s-maj=12.5km s-min=6.0km az=63.0*
*IDC **31** 23:04:09.3±0.7, 13.66N×120.90E,h144km±6km,mb3.8/19, mb1 3.9/19,mb1mx3.9/24, Error ellipse: s-maj=24.6km s-min=9.7km az=68.0*
ISC 31 23:04:08.4±0.2,**13.62N**±0.02×**120.61E**±0.04,**h147**km±2km, **h156**km±6.3km:**pP-P,n64,**σ1°**16**/79,**mb4.2**/34,**20C-1D, Mindoro**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PGP	**Puerto Galera**	**0.35**	**109**⇓ *iP*		**P**	**23 04 26.0**	**-3.2**
PGP				*i* S	**S**	**23 04 47.0**	**+1.9**
LUBP	**Lubang**	**0.38**	**288**⇑ *eP*		**P**	**23 04 29.0**	**-0.3**
LUBP				*e*S	**S**	**23 04 42.9**	**-2.4**
TGY	**Tagaytay City**	**0.57**	**33**⇑ *iP*		**P**	**23 04 30.0**	**-0.2**
TGY				*i* S	**S**	**23 04 45.6**	**-1.4**
TGY	**Tagaytay City**	**0.57**	**33** P		**P**	**23 04 30.3**	**0.0**
	2µm,0.3s,baz=215,slow=1.6,SNR=133						
BOAC	**Boac**	**1.21**	**97**⇑ *eP*		**P**	**23 04 35.0**	**0.0**
BOAC				*e*S	**S**	**23 04 54.7**	**-0.8**
SJMP	**San Jose**	**1.25**	**157**⇑ *eP*		**P**	**23 04 36.0**	**+0.5**
SJMP				*e*S	**S**	**23 04 56.1**	**-0.3**
BUSP	**Coron**	**1.66**	**194**⇑ *eP*		**P**	**23 04 40.6**	**+0.8**
BUSP				*e*S	**S**	**23 05 04.4**	**+0.6**
POLP	**Polilio Island**	**1.69**	**49**⇑ *eP*		**P**	**23 04 41.2**	**+1.0**
POLP				*e*S	**S**	**23 05 05.0**	**+0.4**
OTRP	**Odiongan**	**1.85**	**132**⇑ *eP*		**P**	**23 04 42.2**	**+0.2**
OTRP				*e*S	**S**	**23 05 05.5**	**-2.3**
PCPH	**Palayan**	**1.99**	**14** *iP*		**P**	**23 04 42.5**	**-1.0**
PCPH				*e*S	**S**	**23 05 12.1**	**+1.6**
AUQP	**San Andres**	**2.03**	**98**⇑ *eP*		**P**	**23 04 49.5**	**+5.5**
AUQP				*e*S	**S**	**23 05 13.3**	**+2.0**
SCZP	**Santa Cruz**	**2.25**	**342**⇑ *eP*		**P**	**23 04 46.6**	**-0.1**
SCZP				*e*S	**S**	**23 05 13.9**	**-2.3**
BALP	**Baler**	**2.31**	**24**⇑ *eP*		**P**	**23 04 48.0**	**+0.5**
BALP				*e*S	**S**	**23 05 17.4**	**0.0**
ENPP	**El Nido**	**2.67**	**206**⇑ *eP*		**P**	**23 04 54.0**	**+1.9**
ENPP				*e*S	**S**	**23 05 24.0**	**-1.4**
CUYO	**Cuyo Island**	**2.78**	**172**⇑ *eP*		**P**	**23 04 54.6**	**+1.1**
CUYO				*e*S	**S**	**23 05 28.7**	**+0.7**
BOLP	**Bolinao**	**2.83**	**346**⇑ *eP*		**P**	**23 04 54.2**	**0.0**
BOLP				*e*S	**S**	**23 05 27.2**	**-1.9**
PVCP	**Virac**	**3.44**	**90**⇑ *eP*		**P**	**23 05 03.2**	**+1.0**
CAUP	**Cauayan**	**3.50**	**19**⇑ *eP*		**P**	**23 05 04.0**	**+1.1**
PALP	**Palanan**	**3.84**	**27**⇑ *eP*		**P**	**23 05 06.1**	**-1.3**
PALP				*e*S	**S**	**23 05 51.9**	**-0.8**
CNP	**Catarman**	**4.10**	**105**⇑ *eP*		**P**	**23 05 11.8**	**+1.1**
APYP	**Conner**	**4.26**	**8**⇑ *eP*		**P**	**23 05 14.9**	**+1.9**
ENH	**Enshi**	**19.50**	**330** *eP*		**P**	**23 08 26.4**	**-0.1**
	6.8nm,0.5s						
CM31	**Chiang Mai Arr**	**21.37**	**286** *eP*		**P**	**23 08 48.6**	**+3.3**
	17nm,0.8s,mb4.4						
CMAR	**Chiang Mai Arr**	**21.37**	**286** P		**P**	**23 08 48.6**	**+3.3**
	7.4nm,0.7s,mb4.1,baz=94,slow=7.8,SNR=45						
XAN	**Xi'an**	**22.93**	**334** P		**P**	**23 09 01.5**	**+1.0**
XAN				AMB	AMB		
	comp=Z,11nm,0.9s,mb4.3						
LZH	**Lanzhou**	**26.97**	**329**⇑ P		**P**	**23 09 39.5**	**+1.2**
LZH				AP	pP	23 10 14.5	+5.7
LZH				AMB	AMB		
	comp=Z,51nm,1.2s,mb5.0						
GTA	**Gaotai**	**31.56**	**328**⇑ P		**P**	**23 10 20.3**	**+1.1**
GTA				AMB	AMB		
	comp=Z,13nm,0.7s,mb4.8						
LSA	**Lhasa**	**31.59**	**305** *eP*		**P**	**23 10 20.7**	**+1.1**
	comp=Z,4.1nm,0.5s,mb4.4						
FITZ	**Fitzroy Crossi**	**31.91**	**171** P		**P**	**23 10 22.5**	**+0.1**
	comp=Z,6.9nm,1.3s,mb4.2,baz=346,slow=7.6,SNR=3.1						
PKI	**Pulchoki**	**35.62**	**299** *eP*		**P**	**23 10 54.8**	**+0.9**
	comp=Z,18nm,0.4s,mb5.0						
KKN	**Kakani**	**35.79**	**299** *eP*		**P**	**23 10 56.2**	**+0.8**
	comp=Z,15nm,0.6s,mb4.8						
DMN	**Daman**	**35.89**	**298** *eP*		**P**	**23 10 56.1**	**-0.1**
	comp=Z,20nm,0.7s,mb4.8						
ULN	**Ulaanbaatar**	**35.96**	**344** *eP*		**P**	**23 10 56.4**	**-0.2**
	comp=Z,2.1nm,0.5s,mb4.0						
WRAB	**Tennant Creek**	**35.98**	**158** *eP*		**P**	**23 10 54.7**	**-2.3**
	comp=Z,5.9nm,0.6s,mb4.4						
WRA	**Warramunga Arr**	**35.98**	**158** P		**P**	**23 10 55.2**	**-1.9**
	comp=Z,1.9nm,0.6s,mb3.9,baz=340,slow=9.1,SNR=28						
WRA				pP	pP	23 11 27.4	-1.8
	comp=Z,2.1nm,0.7s,baz=335,slow=9.5,SNR=6.9						
SONM	**Songino Array**	**36.11**	**344** P		**P**	**23 10 58.0**	**+0.1**
	comp=Z,2.5nm,0.6s,mb4.0,baz=163,slow=10,SNR=25						
GKN	**Gorkha**	**36.39**	**299** *eP*		**P**	**23 11 00.8**	**+0.4**
	comp=Z,20nm,0.7s,mb4.8						
KOLN	**Koldanda**	**37.22**	**298** *eP*		**P**	**23 11 04.1**	**-3.3**
	comp=Z,12nm,0.7s,mb4.7						
ASAR	**Alice Springs**	**39.27**	**161** P		**P**	**23 11 23.6**	**-0.9**
	comp=Z,1.7nm,0.4s,mb4.0,baz=339,slow=6.9,SNR=20						
ASAR				pP	pP	23 11 57.3	+0.3
	comp=Z,1.4nm,0.6s,baz=337,slow=6.7,SNR=7.9						
MKAR	**Makanchi Array**	**46.05**	**324** P		**P**	**23 12 20.1**	**+1.0**
	comp=Z,3.6nm,0.5s,mb4.3,baz=129,slow=9.1,SNR=38						
NWAO	**Narrogin (SRO)**	**46.40**	**184** P		**P**	**23 12 21.2**	**-0.8**
	comp=Z,8.4nm,0.9s,mb4.4,baz=7.1,slow=8.4,SNR=7.6						
NWAO	**Narrogin (SRO)**	**46.40**	**184** P		**P**	**23 12 21.2**	**-0.8**
NWAO				*e*P		23 12 21.3	
ZAL	**Zalesovo**	**49.09**	**333** P		**P**	**23 12 41.6**	**-1.0**
	comp=Z,3.3nm,0.5s,mb4.3,baz=250,slow=7.9,SNR=16						
STKA	**Stephens Creek**	**49.51**	**156** P		**P**	**23 12 44.0**	**-2.1**
	comp=Z,3.3nm,1.1s,mb3.9,baz=331,slow=5.7,SNR=3.0						
KURK	**Kurchatov**	**50.21**	**326** *eP*		**P**	**23 12 51.6**	**+0.4**
BVAR	**Borovoye Array**	**55.79**	**326** P		**P**	**23 13 32.3**	**-0.1**
	comp=Z,1.5nm,0.7s,mb4.0,baz=117,slow=9.0,SNR=12						
BRVK	**Borovoye**	**55.86**	**326** *eP*		**P**	**23 13 32.6**	**-0.3**
ZRNK	**Zerenda**	**56.52**	**325** *eP*		**P**	**23 13 36.8**	**-0.8**
THR	**Tehran**	**65.59**	**303** P		**P**	**23 14 39.6**	**+0.7**
	comp=Z,0.7nm,0.6s,mb3.7,baz=11,slow=3.7,SNR=3.3						
KIV	**Kislovodsk**	**72.02**	**312** *eP*		**P**	**23 15 18.7**	**+0.5**
	comp=Z,15nm,1.0s,mb4.7						
JOF	**Joensuu**	**77.67**	**332** *ep*		**P**	**23 15 49.3**	**-0.7**
MCK	**McKinley**	**78.10**	**27** *eP*		**P**	**23 15 51.2**	**-1.1**
	comp=Z,2.2nm,0.7s,mb3.9						
ILAR	**Eielson Array**	**78.86**	**26** P		**P**	**23 15 55.3**	**-1.1**
	comp=Z,0.6nm,1.0s,mb3.2,baz=303,slow=4.3,SNR=4.1						
ARCES	**ARCESS Array B**	**79.13**	**339** P		**P**	**23 15 57.5**	**-0.2**
	comp=Z,1.0nm,0.5s,mb3.8,baz=74,slow=6.8,SNR=15						
BRTR	**Keskin Array B**	**79.13**	**308** P		**P**	**23 15 59.3**	**+0.9**
	comp=Z,1.0nm,0.9s,mb3.5,baz=34,slow=4.5,SNR=4.5						
SPITS	**Spitsbergen Ar**	**79.65**	**348** P		**P**	**23 16 00.2**	**-0.3**
	comp=Z,2.5nm,0.7s,mb4.0,baz=100,slow=6.9,SNR=18						
KAF	**Kangasniemi**	**80.09**	**332** *ep*		**P**	**23 16 01.1**	**-2.0**
	comp=Z,0.3nm,0.4s,mb3.3						
FINES	**FINESS Array B**	**80.31**	**331** P		**P**	**23 16 04.3**	**0.0**
	comp=Z,0.6nm,0.4s,mb3.5,baz=52,slow=5.2,SNR=12						
FINES	**FINESS Array B**	**80.31**	**331** P		**P**	**23 16 04.3**	**0.0**
MLR	**Muntele Rosu**	**83.65**	**315** P		**P**	**23 16 23.7**	**+1.9**
	comp=Z,2.6nm,0.8s,mb4.0,baz=214,slow=7.3,SNR=4.8						
NB2	**NORSAR Subarra**	**87.29**	**333** P		**P**	**23 16 38.3**	**-1.0**
	comp=Z,0.8nm,0.7s,mb3.7,baz=68,slow=4.3						
NOA	**NORSAR Array B**	**87.29**	**333** P		**P**	**23 16 39.0**	**-0.3**
	comp=Z,1.0nm,0.7s,mb3.8,baz=68,slow=4.5,SNR=6.9						
YKA	**Yellowknife Ar**	**92.88**	**22** P		**P**	**23 17 05.8**	**+0.3**
	comp=Z,0.7nm,0.5s,mb4.0,baz=308,slow=4.5,SNR=21						
TXAR	**Lajitas Array**	**119.59**	**45** PKP		PKPdf	23 22 43.4	+2.0
	comp=Z,0.5nm,0.6s,baz=246,slow=1.3,SNR=7.9						

*IDC **31** 23:09:27.5±1.3,8.67S×111.28E,mb3.9/7,mb1 4.0/8, mb1mx3.9/17,ML3.5/1,MS3.3/1,Ms1 3.3/1,ms1mx2.7/22, Error ellipse: s-maj=82.2km s-min=18.2km az=49.0*
*DJA **31** 23:09:33.8±0.9,9.63S×111.33E,h33km,MD4.9/4, ML5.1/4,Error ellipse: s-maj=49.9km s-min=17.8km az=165.0*

*NEIC **31** 23:09:35.5±0.8,8.80S×111.31E,h65km,mb4.5/3,Error ellipse: s-maj=20.9km s-min=9.3km az=210.0*
ISC 31 23:09:37.4±2.4,**8.6S**±0.1×**111.6E**±0.1,**h96**km±21km,**n15,** σ0°**90**/18,**mb3.8**/9,**6C-2D,Jawa**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KELI	**Kelakatan**	**2.94**	**82**⇑ *ePn*		**P**	**23 10 24.9**	**+1.7**
	771nm,0.2s						
KELI				⇑ *eSn*	**S**	**23 11 02.3**	**+4.7**
INGI	**Ingas**	**3.56**	**94**⇓ *ePn*		**P**	**23 10 31.4**	**-0.4**
	555nm,0.2s						
INGI				⇑ *eSn*	**S**	**23 11 12.9**	**-0.1**
RATI	**Rata**	**3.94**	**92**⇑ *ePn*		**P**	**23 10 36.9**	**-0.1**
	608nm,0.2s						
RATI				⇓ *eSn*	**S**	**23 11 21.7**	**-0.6**
KEDI	**Kedomdong**	**4.52**	**89**⇑ *ePn*		**P**	**23 10 43.7**	**-1.2**
	84nm,0.2s						
KEDI				⇑ *eSn*	**S**	**23 11 37.2**	**+0.7**
FITZ	**Fitzroy Crossi**	**16.63**	**126** Pn		**P**	**23 13 25.7**	**-0.3**
	0.1nm,0.3s,baz=309,slow=6.5,SNR=3.5						
WRA	**Warramunga Arr**	**24.75**	**120** P		**P**	**23 14 52.9**	**+1.2**
	1.4nm,0.9s,mb3.4,baz=298,slow=11,SNR=7.4						
WRA				PcP	PcP	23 18 28.0	+1.0
	0.5nm,0.7s,baz=327,slow=1.6,SNR=7.8						
NWAO	**Narrogin (SRO)**	**24.76**	**169** LR		LR	23 24 18.4	
	comp=Z,71nm,18.9s,baz=143,slow=36						
WRAB	**Tennant Creek**	**24.76**	**119** P		**P**	**23 14 50.6**	**-1.1**
	12nm,0.9s,mb4.3						
ASAR	**Alice Springs**	**26.11**	**128** P		**P**	**23 15 04.7**	**+0.3**
	0.5nm,0.6s,mb3.2,baz=300,slow=8.8,SNR=6.0						
ASAR				PcP	PcP	23 18 31.8	+1.8
	0.5nm,0.6s,baz=304,slow=1.6,SNR=4.6						
ULN	**Ulaanbaatar**	**56.37**	**356** *eP*		**P**	**23 19 11.3**	**+0.3**
	1.1nm,0.5s,mb4.1						
SONM	**Songino Array**	**56.38**	**356** P		**P**	**23 19 11.6**	**+0.5**
	0.6nm,0.6s,mb3.8,baz=180,slow=12,SNR=5.3						
SONM				PcP	PcP	23 20 08.4	+1.5
	0.7nm,0.4s,baz=178,slow=3.8,SNR=6.8						
MKAR	**Makanchi Array**	**61.01**	**337** P		**P**	**23 19 43.0**	**-0.1**
	1.4nm,0.6s,mb4.2,baz=150,slow=7.2,SNR=22						
ZAL	**Zalesovo**	**66.29**	**343** P		**P**	**23 20 15.9**	**-1.7**
	0.9nm,0.3s,mb4.1,baz=268,slow=11,SNR=3.1						
BVAR	**Borovoye Array**	**70.66**	**335** P		**P**	**23 20 43.9**	**-0.6**
	0.7nm,0.8s,mb3.5,baz=158,slow=7.8,SNR=3.7						
BRTR	**Keskin Array B**	**86.27**	**311** P		**P**	**23 22 11.3**	**+1.5**
	0.9nm,0.8s,mb3.8,baz=124,slow=5.2,SNR=5.2						

WEL 31 23:22:06.2±0.3,**37.52S**×**177.46E,h105**km±3km,**ML3.6**/1, **1C,Error ellipse: s-maj=5.5km s-min=5.3km az=90.0, Off east coast of North Island**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MXZ	**Matakaoa Point**	**0.68**	**94**	PN	P	23 22 23.8	-0.2
MXZ				*e*SN	S	23 22 37.6	+0.2
URZ	**Urewera**	**0.79**	**200**	⇑PN	P	23 22 24.3	-0.8
URZ				SN	S	23 22 38.9	-0.2
BKZ	**Black Stump Fm**	**1.81**	**204**	PN	P	23 22 36.7	-0.2
BKZ				SN	S	23 23 00.3	+0.4
MGZ	**Maungaku**	**2.11**	**225**	PN	P	23 22 40.9	0.0
NGZ	**Ngauruhoe**	**2.20**	**221**	*e*PN	P	23 22 41.7	-0.4
TUVZ	**Tukino**	**2.25**	**219**	*e*PN	P	23 22 42.1	-0.6
FWVZ	**Far West T-bar**	**2.29**	**220**	PN	P	23 22 42.5	-0.8
WAZ	**Wanganui**	**2.95**	**220**	*e*PN	P	23 22 48.7	-3.7
BFZ	**Birch Farm**	**3.29**	**196**	*e*PN	P	23 22 53.8	-3.2
MRZ	**Mangatainoka R**	**3.46**	**204**	PN	P	23 22 55.4	-3.9
MRZ				*e*SN	S	23 23 34.4	-5.1
THZ	**Tophouse**	**5.50**	**218**	*e*PN	P	23 23 21.5	-5.6
MQZ	**McQueen's Vall**	**7.18**	**209**	*e*SN	S	23 24 57.7	-13

*THE **31** 23:26:60.0,38.73N×20.99E,h9km,ML2.4*
*NEIC **31** 23:27:00.7,38.75N×21.06E,h31km,MD3.0(ATH),After ATH.*
*ATH **31** 23:27:00.7,38.75N×21.06E,h31km±27km,MD3.0/4*
ISC 31 23:26:59.4±0.9,**38.76N**±0.05×**21.04E**±0.05,**h12**km±6km, **n7,**σ1°**10**/12,**Greece**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LKD	**Levkas**	**0.31**	**261**	*e*Pg	**Pg**	**23 27 05.8**	**-0.2**
EVR	**Evrytania**	**0.62**	**75**	*e*PN	**Pn**	**23 27 13.5**	**-0.2**
EVR				*e*SN	**Sn**	**23 27 22.5**	**-1.1**
VLS	**Valsamata**	**0.68**	**212**	*e*PN	**Pn**	**23 27 14.0**	**-0.6**
VLS				*e*SN	**Sn**	**23 27 26.0**	**+0.9**
JAN	**Janina**	**0.91**	**351**	*e*PN	**Pn**	**23 27 16.5**	**-1.4**
JAN				*e*SN	**Sn**	**23 27 31.5**	**+0.6**
IGT	**Igoumenitsa**	**0.95**	**325**	*e*Pg	**Pg**	**23 27 16.5**	**-2.0**
IGT				*e*Sg	**Sg**	**23 27 31.9**	**+0.7**
AGG	**Agios Georgios**	**1.04**	**75

	comp=Z,1.0nm,0.3s										
CMAR					pmax		pmax				
	comp=Z,1.0nm,0.4s										
AS12	**Alice Springs**	**30.30**	**166**	*e*P		**P**		**23 48 04.7**	**+7.9**
	comp=Z,26nm,1.6s,mb4.7										
ASAR	**Alice Springs**	**30.30**	**166**	P		**P**		**23 47 55.4**	**-1.4**
	comp=Z,1.0nm,0.5s,mb3.8,baz=336,slow=6.7,SNR=12										
ASAR				PcP		PcP		23 50 53.2	+0.2		
	comp=Z,2.1nm,0.9s,baz=356,slow=4.3,SNR=4.5										
ASAR				ScP				23 54 21.8			
	comp=Z,1.2nm,0.8s,baz=329,slow=2.2,SNR=5.5										
CTA	**Charters Tower**	**32.49**	**143**	P		**P**		**23 48 15.9**	**0.0**
	comp=Z,23nm,1.2s,mb4.8,baz=325,slow=9.6,SNR=4.4										
CTA	**Charters Tower**	**32.49**	**143**	P		**P**		**23 48 15.9**	**0.0**
CTA					pmax		pmax				
	comp=Z,23nm,1.2s										
BJI	**Beijing**	**35.20**	**347**	*e*P		**P**		**23 48 38.8**	**+0.1**
BJI					AMB		AMB				
	comp=Z,13nm,0.8s,mb4.6										
LZH	**Lanzhou**	**36.39**	**329**	*e*P		**P**		**23 48 49.5**	**+0.7**
LZH					AMB		AMB				
	comp=Z,23nm,1.3s,mb4.7										
FORT	**Forrest**	**36.47**	**177**	*e*P		**P**		**23 48 49.2**	**-0.3**
	comp=Z,45nm,0.5s,mb5.4										
KLBR	**Kellerberrin**	**38.08**	**192**	*e*P		**P**		**23 49 02.6**	**-0.4**
	comp=Z,7.8nm,0.4s,mb4.7										
SHL	**Shillong**	**38.17**	**305**	*e*P		**P**		**23 49 04.0**	**+0.2**
MUN	**Mundaring**	**38.79**	**194**	*e*P		**P**		**23 49 08.9**	**0.0**
	comp=Z,16nm,0.5s,mb4.9										
NWAO	**Narrogin (SRO)**	**39.48**	**192**	P		**P**		**23 49 15.0**	**+0.4**
	comp=Z,15nm,0.5s,mb4.9,baz=17,slow=6.8,SNR=27										
NWAO	**Narrogin (SRO)**	**39.48**	**192**	P		**P**		**23 49 15.0**	**+0.5**
NWAO					pmax		pmax				
	comp=Z,15nm,0.5s										
STKA	**Stephens Creek**	**40.31**	**159**	*e*P		**P**		**23 49 21.2**	**-0.2**
	comp=Z,3.9nm,0.4s,mb4.4										
STKA	**Stephens Creek**	**40.31**	**159**	P		**P**		**23 49 21.7**	**+0.3**
	comp=Z,4.2nm,0.7s,mb4.2,baz=7.6,slow=10,SNR=8.6										
ARMA	**Armidale**	**43.56**	**147**	*e*P		**P**		**23 49 48.4**	**+0.5**
PKI	**Pulchoki**	**44.28**	**304**	*e*P		**P**		**23 49 53.6**	**-0.1**
	comp=Z,16nm,0.8s,mb4.7										
KKN	**Kakani**	**44.47**	**304**	*e*P		**P**		**23 49 55.1**	**-0.1**
	comp=Z,25nm,1.1s,mb4.8										
DMN	**Daman**	**44.55**	**304**	*e*P		**P**		**23 49 55.7**	**-0.1**
	comp=Z,23nm,1.0s,mb4.8										
ULN	**Ulaanbaatar**	**44.93**	**342**	*e*P		**P**		**23 49 59.0**	**+0.4**
ULN	**Ulaanbaatar**	**44.93**	**342**	*e*P		**P**		**23 49 59.5**	**+0.9**
	comp=Z,2.9nm,0.9s,mb3.9										
GKN	**Gorkha**	**45.08**	**304**	*e*P		**P**		**23 49 59.9**	**-0.2**
	comp=Z,8.9nm,0.5s,mb4.7										
SONM	**Songino Array**	**45.11**	**341**	P		**P**		**23 50 00.3**	**+0.2**
	comp=Z,1.2nm,0.9s,mb3.5,baz=158,slow=7.9,SNR=6.7										
KOLN	**Koldanda**	**45.85**	**303**	*e*P		**P**		**23 50 06.5**	**+0.3**
DANN	**Dangsing**	**45.92**	**304**	*e*P		**P**		**23 50 07.3**	**+0.5**
TLY	**Talaya**	**49.34**	**342**	*e*P		**P**		**23 50 32.8**	**-0.1**
TLY					pmax		pmax				
	comp=Z,39nm,1.0s,mb5.0										
BOD	**Bodaibo**	**52.70**	**352**	*e*P		**P**		**23 50 58.6**	**+0.5**
MKAR	**Makanchi Array**	**55.49**	**325**	P		**P**		**23 51 17.9**	**-0.7**
	comp=Z,3.4nm,0.4s,mb4.4,baz=118,slow=7.4,SNR=72										
MKAR	**Makanchi Array**	**55.49**	**325**	P		**P**		**23 51 17.9**	**-0.7**
MKAR					pmax		pmax				
	comp=Z,3.0nm,0.4s										
ZAL	**Zalesovo**	**58.45**	**333**	P		**P**		**23 51 37.8**	**-1.5**
	comp=Z,0.8nm,0.3s,mb4.0,baz=257,slow=5.5,SNR=5.1										
ZAL	**Zalesovo**	**58.45**	**333**	P		**P**		**23 51 37.8**	**-1.5**
ZAL					pmax		pmax				
	comp=Z,1.0nm,0.4s										
KURK	**Kurchatov**	**59.65**	**327**	*e*P		**P**		**23 51 46.4**	**-1.2**
TIXI	**Tiksi**	**65.75**	**1**	*e*P		**P**		**23 52 27.1**	**-0.5**
TIXI				*i* *PP		pP		23 53 03.1	-3.4
TIXI					pmax		pmax				
	comp=Z,11nm,1.1s,mb4.6										
ZRNK	**Zerenda**	**65.96**	**326**	*e*P		**P**		**23 52 27.9**	**-1.3**
ZRNK				*e*				23 52 38.0			
BILL	**Bilibino**	**67.67**	**15**	*e*P		**P**		**23 52 38.8**	**-0.9**
BILL				*i*				23 53 03.9			
BILL				*e*PP		pP		23 53 15.1	-3.7
BILL				*e*SP		sP		23 53 31.5	-5.0
BILL				*i*				23 55 09.4			
BILL					pmax		pmax				
	comp=Z,2.0nm,0.7s,mb4.0										
ARU	**Arti**	**72.84**	**327**	⇑*i*P		**P**		**23 53 09.7**	**-1.3**
ARU				*e*				23 55 53.6			
ARU				*e*S		S		00 02 24.5	+2.5		
ARU				*e*SS		SS		00 07 09.1	+1.1		
ARU					pmax		pmax				
	comp=Z,4.0nm,0.8s,mb4.2										
ZEI	**Tsey**	**80.36**	**312**	*e*P		**P**		**23 53 53.4**	**+0.3**
ILAR	**Eielson Array**	**83.46**	**26**	P		**P**		**23 54 08.8**	**+0.1**
	comp=Z,0.9nm,0.8s,mb3.5,baz=244,slow=5.2,SNR=11										
ILAR	**Eielson Array**	**83.46**	**26**	P		**P**		**23 54 08.8**	**+0.2**
ILAR					pmax		pmax				
	comp=Z,1.0nm,0.8s										
VRSR	**Storozhevoye**	**83.56**	**321**	*e*P		**P**		**23 54 09.7**	**+0.2**
VRSR					pmax		pmax				
	comp=N,2.0nm,0.6s										
VRSR					pmax		pmax				
	comp=Z,6.0nm,0.6s,mb4.5										
VRSR					pmax		pmax				
	comp=E,7.0nm,1.0s										
OBN	**Obninsk**	**85.00**	**325**	α *i*P		**P**		**23 54 16.6**	**+0.1**
OBN				*e*		pP		23 54 54.3	-3.1		
OBN				*e*				00 06 13.6			
OBN					pmax		pmax				
	comp=Z,13nm,0.7s,mb4.8										
VNDA	**Vanda**	**85.59**	**173**	P		**P**		**23 54 19.4**	**+0.5**
	comp=Z,1.5nm,0.5s,mb4.0,baz=308,slow=6.8,SNR=7.2										
VNDA	**Vanda**	**85.59**	**173**	P		**P**		**23 54 19.5**	**+0.5**
VNDA					pmax		pmax				
	comp=Z,2.0nm,0.5s										
JOF	**Joensuu**	**87.03**	**333**	*e*p		**P**		**23 54 26.0**	**-0.2**
BRTR	**Keskin Array B**	**88.22**	**310**	P		**P**		**23 54 32.2**	**-0.3**
	comp=Z,1.6nm,0.8s,mb3.9,baz=105,slow=4.6,SNR=11										
ARCES	**ARCESS Array B**	**88.27**	**340**	P		**P**		**23 54 32.4**	**+0.5**
	comp=Z,5.5nm,0.8s,mb4.4,baz=83,slow=6.2,SNR=21										
ARCES	**ARCESS Array B**	**88.27**	**340**	P		**P**		**23 54 32.4**	**+0.4**
ARCES					pmax		pmax				
	comp=Z,6.0nm,0.8s										
ARCES	**ARCESS Array B**	**88.27**	**340**	P		**P**		**23 54 32.4**	**+0.5**
KAF	**Kangasniemi**	**89.45**	**332**	*e*p		**P**		**23 54 37.6**	**-0.1**
	comp=Z,0.7nm,0.4s,mb3.9										
KAF	**Kangasniemi**	**89.45**	**332**	*e*P		**P**		**23 54 37.6**	**-0.1**
KAF					pmax		pmax				
	comp=Z,1.0nm,0.4s,mb4.1										
FINES	**FINESS Array B**	**89.70**	**332**	P		**P**		**23 54 39.1**	**+0.3**
	comp=Z,0.7nm,0.4s,mb3.9,baz=59,slow=5.5,SNR=22										
FINES	**FINESS Array B**	**89.70**	**332**	P		**P**		**23 54 39.1**	**+0.3**
FINES					pmax		pmax				
	comp=Z,1.0nm,0.4s										
NB2	**NORSAR Subarra**	**96.64**	**334**	P		**P**		**23 55 10.1**	**-0.6**
	comp=Z,1.0nm,0.7s,mb4.2,baz=65,slow=4.6										
NOA	**NORSAR Array B**	**96.64**	**334**	P		**P**		**23 55 10.7**	**0.0**
	comp=Z,1.0nm,0.7s,mb4.2,baz=64,slow=4.7,SNR=5.9										
NOA	**NORSAR Array B**	**96.64**	**334**	P		**P**		**23 55 10.7**	**0.0**
NOA					pmax		pmax				
	comp=Z,1.0nm,0.7s										
YKA	**Yellowknife Ar**	**97.82**	**24**	P		**P**		**23 55 16.7**	**+0.6**
	comp=Z,0.3nm,0.7s,mb3.8,baz=300,slow=4.9,SNR=7.0										
YKA	**Yellowknife Ar**	**97.82**	**24**	P		**P**		**23 55 16.7**	**+0.6**
TXAR	**Lajitas Array**	**120.75**	**51**	PKP		PKPdf		00 00 34.5	+2.8		
	comp=Z,0.4nm,0.7s,baz=174,slow=1.5,SNR=5.7										
TXAR	**Lajitas Array**	**120.75**	**51**	PKP		PKPdf		00 00 34.5	+2.8		

*IDC **31** 23:51:13.3±4.0, 18.09S×178.04W, h640km±50km, mb3.9/11, mb1 4.2/11, mb1mx4.0/16, Error ellipse: s-maj=45.7km s-min=20.4km az=152.0*
*NEIC **31** 23:51:14.2±2.6, 18.16S×178.06W, h654km±32km, mb4.5/14, Error ellipse: s-maj=16.8km s-min=12.6km az=141.0*

ISC 31 23:51:13.6±4.5, 18.2S±0.2×178.1W±0.2, h662km±60km, n46,σ0ᵗ75/42, mb4.4/22, 4C-1D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h m s		ISC
ARMA	**Armidale**	**30.05**	**240**	*e*P	**P**	**23 56 34.6**		**+0.4**
CNB	**Canberra Magne**	**33.49**	**233**	⇓*i*P	**P**	**23 57 03.4**		**+0.4**
	46nm,0.6s,mb5.2							
CTA	**Charters Tower**	**33.66**	**261**	⇑*i*P	**P**	**23 57 04.5**		**-0.1**
	18nm,0.6s,mb4.8							
CTA	**Charters Tower**	**33.66**	**261**	P	**P**	**23 57 04.9**		**+0.4**
	22nm,0.7s,mb4.8,baz=97,slow=11,SNR=29							
CTAO	**Charters Tower**	**33.66**	**261**	*e*P	**P**	**23 57 04.5**		**0.0**
	28nm,0.8s,mb4.8							
PMG	**Port Moresby**	**34.75**	**280**	P	**P**	**23 57 14.6**		**+1.1**
	54nm,0.9s,mb5.1,baz=62,slow=4.5,SNR=9.4							
PMG	**Port Moresby**	**34.75**	**280**	P	**P**	**23 57 14.6**		**+1.0**
PMG				*e*		23 57 33.2		
TOO	**Toolangi**	**37.22**	**231**	*e*P	**P**	**23 57 32.8**		**-0.8**
	8.8nm,0.8s,mb4.3							
STKA	**Stephens Creek**	**38.74**	**241**	*e*P	**P**	**23 57 46.4**		**+0.5**
	16nm,0.9s,mb4.4							
STKA	**Stephens Creek**	**38.74**	**241**	P	**P**	**23 57 46.5**		**+0.6**
	21nm,0.8s,mb4.6,baz=83,slow=9.0,SNR=28							
POHA	**Pohakuloa**	**43.72**	**32**	P	**P**	**23 58 20.2**		**-5.1**
WB2	**Warramunga Arr**	**44.83**	**260**	⇑*i*P	**P**	**23 58 33.4**		**-0.4**
WRA	**Warramunga Arr**	**44.84**	**260**	P	**P**	**23 58 33.5**		**-0.4**
	27nm,0.7s,mb4.7,baz=97,slow=7.3,SNR=23							
AS12	**Alice Springs**	**44.97**	**254**	⇑*i*P	**P**	**23 58 34.8**		**-0.1**
	39nm,0.9s,mb4.7							
ASAR	**Alice Springs**	**44.97**	**254**	P	**P**	**23 58 34.6**		**-0.2**
	30nm,0.5s,mb4.9,baz=94,slow=7.5,SNR=25							
ASAR				PcP	PcP	00 00 01.2		-0.1
	3.8nm,0.7s,baz=106,slow=4.3,SNR=4.0							
KAKA	**Kakadu**	**47.88**	**269**	⇑*i*P	**P**	**23 58 56.2**		**-0.5**
	28nm,0.4s,mb5.0							
GUMO	**Guam**	**48.22**	**308**	P	**P**	**23 58 59.1**		**-0.2**
	114nm,1.6s,mb5.0							
MBWA	**Marble Bar**	**58.27**	**256**	*e*P	**P**	**00 00 03.9**		**-5.8**
	0.1nm,0.6s							
KLBR	**Kellerberrin**	**58.95**	**244**	*e*P	**P**	**00 00 13.2**		**-0.9**
MUN	**Mundaring**	**60.24**	**243**	*e*P	**P**	**00 00 22.3**		**-0.3**
QSPA	**South Pole Qui**	**71.91**	**180**	*e*P	**P**	**00 01 33.3**		**+0.1**
	9.5nm,0.7s,mb3.9							
NVAR	**Mina Array Bea**	**79.42**	**44**	P	**P**	**00 02 15.1**		**+0.3**
	4.0nm,0.7s,mb4.1,baz=214,slow=7.0,SNR=24							
NVAR	**Mina Array Bea**	**79.42**	**44**	P	**P**	**00 02 15.1**		**+0.3**
TPH	**Tonopah**	**79.94**	**44**	*e*P	**P**	**00 02 17.8**		**+0.2**
	5.6nm,0.9s,mb4.0							
EYAK	**Cordova Ski Ar**	**82.66**	**15**	*e*P	**P**	**00 02 30.6**		**-0.3**
HLID	**Hailey**	**84.64**	**41**	*e*P	**P**	**00 02 39.9**		**-1.1**
	3.6nm,0.8s,mb4.0							
HWUT	**Hardware Ranch**	**85.48**	**44**	P	**P**	**00 02 43.7**		**-1.3**
	1.6nm,0.5s,mb3.9							
LTX	**Lajitas**	**85.91**	**58**	*e*P	**P**	**00 02 48.1**		**+0.9**
	9.2nm,0.8s,mb4.5							
TXAR	**Lajitas Array**	**85.91**	**58**	P	**P**	**00 02 48.2**		**+1.0**
	7.2nm,0.8s,mb4.4,baz=219,slow=6.3,SNR=93							
TXAR	**Lajitas Array**	**85.91**	**58**	P	**P**	**00 02 48.2**		**+0.9**
ILAR	**Eielson Array**	**86.06**	**13**	P	**P**	**00 02 46.0**		**-1.1**
	1.5nm,0.5s,mb3.9,baz=222,slow=4.8,SNR=30							
ILAR	**Eielson Array**	**86.06**	**13**	P	**P**	**00 02 46.0**		**-1.1**
HIA	**Hailar**	**86.71**	**325**	P	**P**	**00 02 54.9**		**+4.3**
QLMT	**Earthquake Lak**	**87.13**	**41**	*e*P	**P**	**00 02 53.5**		**+0.9**
PDAR	**Pinedale Array**	**87.35**	**43**	P	**P**	**00 02 53.8**		**+0.1**
	3.0nm,0.7s,mb4.0,baz=239,slow=2.7,SNR=33							
PDAR	**Pinedale Array**	**87.35**	**43**	P	**P**	**00 02 53.8**		**+0.1**
SDCO	**Great Sand Dun**	**87.92**	**49**	*e*P	**P**	**00 02 56.7**		**+0.2**
	1.6nm,0.8s,mb3.7							
CMAR	**Chiang Mai Arr**	**89.20**	**290**	P	**P**	**00 03 05.2**		**+2.3**
	1.8nm,0.5s,mb4.0,baz=108,slow=2.8,SNR=4.2							
CMAR	**Chiang Mai Arr**	**89.20**	**290**	P	**P**	**00 03 05.2**		**+2.3**
RSSD	**Black Hills**	**91.56**	**44**	*e*P	**P**	**00 03 12.9**		**-0.2**
	3.2nm,0.9s,mb4.2							
YKA	**Yellowknife Ar**	**94.44**	**25**	P	**P**	**00 03 25.3**		**-0.5**
	0.6nm,0.6s,mb3.8,baz=242,slow=4.5,SNR=17							
YKA	**Yellowknife Ar**	**94.44**	**25**	P	**P**	**00 03 25.3**		**-0.5**
BRTR	**Keskin Array B**	**145.13**	**315**	PKPbc	PKPbc	00 09 40.9		+2.1
	2.4nm,0.8s,baz=45,slow=5.2,SNR=8.4							
BRTR	**Keskin Array B**	**145.13**	**315**	PKPbc	PKPbc	00 09 40.9		+2.1
GERES	**GERESS Array B**	**147.91**	**345**	PKPbc	PKPdf	00 09 47.1		+5.2
	0.5nm,0.8s,baz=45,slow=1.9,SNR=3.8							
GERES	**GERESS Array B**	**147.91**	**345**	PKPbc	PKPdf	00 09 47.1		+5.2

*BGR **31** 23:52:03.1±0.2, 49.68N×8.39E, h10km, ML2.3/6, Error ellipse: s-maj=2.2km s-min=1.1km az=144.0*
*STR **31** 23:52:03.4±0.4, 49.64N×8.37E, h5km±1km, Ml2.7, Error ellipse: s-maj=0.0km s-min=0.0km az=1.0*
*NEIC **31** 23:52:04.1, 49.64N×8.35E, h16km, ML3.0(LDG), ML2.7(STR), ML2.3(SZGRF), After LDG.*
*LEDBW **31** 23:52:04.0±0.2, 49.66N×8.40E, h13km±3km, ML2.4, Error ellipse: s-maj=6.0km s-min=4.0km az=3.0*
*LDG **31** 23:52:04.1±0.1, 49.64N×8.35E, h16km, Md2.9/2, Ml3.0/20, Error ellipse: s-maj=2.4km s-min=1.7km az=48.0*
*BNS **31** 23:52:06.1±0.5, 49.68N×8.34E, h18km±22km, ML1.9*
*PRU **31** 23:52:09.4, 49.76N×8.76E, h45km*

ISC 31 23:52:00.2±0.2, 49.70N±0.01×8.32E±0.02, h10km±2km, n92,σ1ᵗ41/186, 8C-5D, Germany

Code	Station Name	Δ°	AZ°	Phase ID		Time		Res
				Op	ISC	h m s		ISC
SWS	**Schriesheim**	**0.33**	**131**	⇑*i*P	**Pg**	**23 52 09.4**		**+2.4**
SWS				*i* S	**Sg**	**23 52 13.2**		**+1.7**
SWS	**Schriesheim**	**0.33**	**131**	⇑*i*P	**Pg**	**23 52 09.4**		**+2.4**
SWS				P		23 52 11.2		
SWS				*i* S	**Sg**	**23 52 13.2**		**+1.7**
TOD	**Tromm**	**0.33**	**106**	⇑*i*Pg	**Pg**	**23 52 09.5**		**+2.5**
TOD				Sg	**Sg**	**23 52 13.9**		**+2.4**
KTD	**Kalmit**	**0.41**	**203**	⇑*e*Pg	**Pg**	**23 52 11.9**		**+3.3**
KTD				*e*Sg	**Sg**	**23 52 17.3**		**+3.0**
ABH	**Alteburg**	**0.54**	**290**	⇓*e*Pg	**Pg**	**23 52 15.4**		**+4.3**
LANF	**Langenberg**	**0.80**	**205**	⇑*e*Pg	**Pg**	**23 52 18.5**		**+2.3**
LANF	**Langenberg**	**0.80**	**205**	Pg	**Pg**	**23 52 18.3**		**+2.1**
LANF				Sg	**Sg**	**23 52 28.8**		**+1.9**
BGG	**Burgeitz**	**0.81**	**309**	⇓*e*Pg	**Pg**	**23 52 20.9**		**+4.3**
BGG				*i* Sg	**Sg**	**23 52 32.4**		**+4.8**
	63nm,0.5s							
RUP	**Ruppelstein**	**0.82**	**271**	⇑*i*P	**Pb**	**23 52 20.3**		**+4.2**
RUP				*e*Pg	**Pg**	**23 52 20.3**		**+3.6**
RUP				*e*Sg	**Sg**	**23 52 31.1**		**+3.4**
SIND	**Sindeldorf**	**0.91**	**112**	⇓*e*Pn	**Pn**	**23 52 19.8**		**+1.0**
SIND				⇑*i*Pg	**Pg**	**23 52 20.3**		**+1.9**
SIND				Sg	**Sg**	**23 52 31.4**		**+0.9**
SIND	**Sindeldorf**	**0.91**	**112**	⇑*i*PG	**Pg**	**23 52 20.3**		**+1.9**
SIND				SG	**Sg**	**23 52 31.4**		**+0.8**
SIND	**Sindeldorf**	**0.91**	**112**	⇓*e*Pn	**Pn**	**23 52 19.8**		**+1.0**
SIND				⇑*i*Pg	**Pg**	**23 52 20.3**		**+1.9**
SIND				Sg	**Sg**	**23 52 31.4**		**+0.8**
LBG	**Lerchenberg**	**1.08**	**163**	Pn	**Pn**	**23 52 22.4**		**+1.1**
STU	**Stuttgart**	**1.09**	**148**	*e*Sg	**Sg**	**23 52 37.1**		**+0.4**
STU	**Stuttgart**	**1.09**	**148**	*e*P	**Pb**	**23 52 24.2**		**+3.5**
STU				*e*S	**Sb**	**23 52 37.7**		**+2.9**
TUBL	**Tuebingen Lnz**	**1.28**	**157**	Sg	**Sg**	**23 52 43.1**		**+0.2**
STB	**Steinbach**	**1.31**	**314**	*e*Pg	**Pg**	**23 52 29.6**		**+3.1**
STB				*e*Sg	**Sg**	**23 52 44.2**		**+0.2**
	11nm,0.8s							
BFO	**Black Forest**	**1.37**	**180**	*e*Pg	**Pg**	**23 52 29.1**		**+1.5**
BFO				*e*Sg	**Sg**	**23 52 46.3**		**+0.3**
BFO	**Black Forest**	**1.37**	**180**	*e*Pg	**Pg**	**23 52 29.1**		**+1.4**
BFO				*e*Sg	**Sg**	**23 52 46.4**		**+0.4**
WLF	**Walferdange**	**1.41**	**269**	*e*Pn	**Pn**	**23 52 28.9**		**+2.9**
	SNR=3.9							
WLF				*e*Pg	**Pg**	**23 52 30.7**		**+2.2**
WLF				*e*Sg	**Sg**	**23 52 49.4**		**+2.1**
WLF	**Walferdange**	**1.41**	**269**	*i* P	**Pn**	**23 52 28.9**		**+2.9**
WLF				*i* S	**Sb**	**23 52 46.3**		**+2.2**
BUCH	**Bad Urach**	**1.42**	**151**	⇓*i*Pg	**Pg**	**23 52 30.1**		**+1.4**
BUCH				Sg	**Sg**	**23 52 47.2**		**-0.5**
WLS	**Welschbruch**	**1.44**	**207**	Pg	**Pg**	**23 52 30.6**		**+1.6**
WLS				*e*Sg	**Sg**	**23 52 48.8**		**+0.6**
WLS	**Welschbruch**	**1.44**	**207**	Pn	**Pn**	**23 52 27.0**		**+0.6**
WLS				Pg	**Pg**	**23 52 30.4**		**+1.4**
WLS				Sg	**Sg**	**23 52 48.7**		**+0.5**
HROE	**Hohe Rhon--Fla**	**1.45**	**54**	*e*Pn	**Pn**	**23 52 27.7**		**+1.1**
HROE				*i* Pg	**Pg**	**23 52 30.8**		**+1.6**
CDF	**Champ du Feu**	**1.46**	**209**	*e*Pn	**Pn**	**23 52 27.2**		**+0.4**
	SNR=1.0							
CDF				*e*Pg	**Pg**	**23 52 30.5**		**+1.0**
CDF				*e*Sg	**Sg**	**23 52 49.2**		**+0.2**
	40nm,0.2s							
KLL	**Kalltalsperre**	**1.60**	**307**	*e*Pg	**Pg**	**23 52 32.4**		**0.0**
KLL				*e*Sg	**Sg**	**23 52 52.8**		**-1.0**
	8.9nm,0.5s							
LIBD	**Limburg**	**1.62**	**197**	Pg	**Pg**	**23 52 34.6**		**+2.0**
LIBD	**Limburg**	**1.62**	**197**	Pg	**Pg**	**23 52 34.1**		**+1.4**
SPAK	**Spaichingen**	**1.63**	**169**	*e*Pg	**Pg**	**23 52 33.7**		**+0.9**
SPAK	**Spaichingen**	**1.63**	**169**	Pg	**Pg**	**23 52 33.5**		**+0.7**
SPAK				Sg	**Sg**	**23 52 54.4**		**-0.1**
HDH	**Heidenheim**	**1.67**	**131**	Sg	**Sg**	**23 52 54.5**		**-1.2**
ECH	**Echery**	**1.67**	**208**	*e*Pn	**Pn**	**23 52 30.0**		**+0.2**
	SNR=2.4							
ECH				Pg	**Pg**	**23 52 34.8**		**+1.1**
ECH				*e*Sg	**Sg**	**23 52 55.5**		**-0.5**
ECH	**Echery**	**1.67**	**208**	P	**Pg**	**23 52 34.8**		**+1.1**
ECH	**Echery**	**1.67**	**208**	Pn	**Pn**	**23 52 29.9**		**+0.1**
ECH				Pg	**Pg**	**23 52 34.8**		**+1.1**
ECH				Sg	**Sg**	**23 52 56.2**		**+0.2**
GUT	**Gutenstein**	**1.71**	**162**	Pn	**Pn**	**23 52 31.4**		**+1.1**
KIZ	**Kirchzarten**	**1.77**	**189**	Pn	**Pn**	**23 52 31.3**		**+0.2**
FELD	**Feldberg**	**1.84**	**187**	Pn	**Pn**	**23 52 32.5**		**+0.3**
FELD				*e*Pg	**Pg**	**23 52 37.8**		**+0.9**
FELD				*e*Sg	**Sg**	**23 53 00.1**		**-1.3**
BUG	**Bochum--Univer**	**1.87**	**339**	*e*Sg	**Sg**	**23 53 03.1**		**+0.6**
HGN	**Heimansgroeve**	**1.87**	**306**	*e*Pg	**Pg**	**23 52 40.5**		**+2.9**
	0.3nm,0.3s							
HGN				*e*Sg	**Sg**	**23 53 02.7**		**+0.1**
GRFO	**Grafenberg**	**1.88**	**89**	*e*Pg	**Pg**	**23 52 37.9**		**+0.1**
GRFO				*e*Sg	**Sg**	**23 53 01.2**		**-1.7**
GRFO	**Grafenberg**	**1.88**	**89**	*e*Pg	**Pg**	**23 52 37.9**		**+0.1**
GRFO				*e*Sg	**Sg**	**23 53 01.4**		**-1.5**
GRA1	**Grafenberg Arr**	**1.88**	**89**	*e*Pg	**Pg**	**23 52 37.3**		**-0.6**
GRA1				*e*Sg	**Sg**	**23 53 01.3**		**-1.7**
MOF	**Molkenrain**	**2.01**	**204**	Pg	**Pg**	**23 52 41.1**		**+0.7**
MOF				*e*Sg	**Sg**	**23 53 06.4**		**-0.8**
MOF	**Molkenrain**	**2.01**	**204**	Pn	**Pn**	**23 52 34.4**		**-0.2**
MOF				Pg	**Pg**	**23 52 41.0**		**+0.6**
SISB	**Singen-Sch Ber**	**2.06**	**168**	Sg	**Sg**	**23 53 08.2**		**-0.6**
HINF	**Hinteralfeld**	**2.12**	**208**	*e*Pn	**Pn**	**23 52 35.9**		**-0.3**
	SNR=1.0							
HINF				*e*Pg	**Pg**	**23 52 42.4**		**-0.2**
HINF				*e*Sg	**Sg**	**23 53 09.4**		**-1.5**
	27nm,0.2s,SNR=1.0							
THEF	**They Montfort**	**2.13**	**227**	*e*Pn	**Pn**	**23 52 37.0**		**+0.6**
	SNR=2.2							
THEF				Pg	**Pg**	**23 52 42.6**		**-0.2**
THEF				*e*Sg	**Sg**	**23 53 10.4**		**-0.9**
THEF	**They Montfort**	**2.13**	**227**	P	**Pg**	**23 52 42.6**		**-0.2**
THEF	**They Montfort**	**2.13**	**227**	Pn	**Pn**	**23 52 36.4**		**0.0**
THEF				Pg	**Pg**	**23 52 43.2**		**+0.4**
HAU	**Haudompre**	**2.14**	**218**	*e*Pn	**Pn**	**23 52 36.3**		**-0.2**
	SNR=1.0							
HAU				*e*Pg	**Pg**	**23 52 43.0**		**0.0**
	SNR=1.0							
HAU				*e*Sg	**Sg**	**23 53 10.0**		**-1.5**
	36nm,0.2s,SNR=1.0							
RFYF	**Reffroy**	**2.15**

s-maj=10.1km s-min=4.8km az=77.0
HRVD ***31*** *23:52:18.2±1.4,0.47S×127.17E,h93km±5km,MW5.0/23, Centroid moment Tensor Solution. LP body waves: s13,c20;Mantle waves: s23,c37; Half duration: 0 Moment tensor: Scale 10^{16}Nm; Mrr=1.02±.26; Mθθ=2.91±.18; Mφφ=-1.89±.29; Mrθ=1.69±.14; Mrφ=0.29±.26; Mθφ=-1.55±.19; Best double couple: M0=3.44×10^{16} NP1:φs47°,δ45°,λ-163°. NP2:φs305°,δ78°,λ-47°. Principal axes: T 3.55, Pl21°, Azm3°; N -.22, Pl42°, Azm114°; P -3.33, Pl40°, Azm254°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
BJI ***31*** *23:52:18.2,0.40S×127.30E,h90km,mB5.2,mb5.2,Ms4.8*
IDC ***31*** *23:52:19.5±0.7,0.40S×127.17E,h103km±5km,mb4.7/21, mb1 4.7/22,mb1mx4.7/24,MS3.6/11,Ms1 3.7/11, ms1mx3.5/24,Error ellipse: s-maj=18.3km s-min=6.4km az=76.0*

ISC 31 23:52:17.2±0.9,0.45S±0.03×127.42E±0.06,h98km±8km, h91km±1.3km:pP-P,n123,σ1s01/121,mb5.0/45,18C-6D, Halmahera

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
PAGZ	**Pagadian**	**9.17**	**334**	↑	*e*P	**P**	**23 54 27.4**	**-0.9**
TBP	**Tagbilaran**	**10.68**	**341**		*e*P	**P**	**23 54 48.0**	**-0.6**
MSLP	**Maasin**	**10.82**	**346**	↑	*e*P	**P**	**23 54 50.1**	**-0.4**
BESP	**Borongan**	**12.13**	**351**	↑	*e*P	**P**	**23 55 07.9**	**-0.1**
CUYO	**Cuyo Island**	**12.91**	**331**	↑	*e*P	**P**	**23 55 18.2**	**+0.1**
KAKA	**Kakadu**	**13.13**	**158**		*e*P	**P**	**23 55 19.5**	**-1.6**
	22nm,0.6s							
CNP	**Catarman**	**13.16**	**348**	↑	*e*P	**P**	**23 55 21.9**	**+0.4**
ENPP	**El Nido**	**14.04**	**326**	↑	*e*P	**P**	**23 55 33.4**	**+0.3**
PVCP	**Virac**	**14.32**	**347**	↑	*e*P	**P**	**23 55 33.8**	**-2.9**
PVCP					*e*S	x	23 55 42.7	
LUBP	**Lubang**	**15.78**	**333**	↑	*e*P	**P**	**23 55 55.6**	**+0.4**
TGY	**Tagaytay City**	**15.82**	**336**		P	**P**	**23 55 55.9**	**+0.2**
	baz=220,slow=7.6,SNR=6.8							
BALP	**Baler**	**17.09**	**340**	↑	*e*P	**P**	**23 56 10.4**	**-1.0**
FITZ	**Fitzroy Crossi**	**17.63**	**186**		*e*P	**P**	**23 56 17.6**	**-0.5**
	31nm,0.7s							
FITZ	**Fitzroy Crossi**	**17.63**	**186**		P	**P**	**23 56 17.9**	**-0.3**
	1.5nm,0.3s,baz=14,slow=10,SNR=43							
FITZ					S	**S**	**23 59 35.5**	**+6.9**
	1.0nm,0.3s,baz=193,slow=16,SNR=5.3							
FITZ					LR	LR	00 03 17.0	
	comp=Z,120nm,19.1s,baz=86,slow=37							
SCZP	**Santa Cruz**	**17.75**	**336**	↑	*e*P	**P**	**23 56 19.9**	**+0.4**
PALP	**Palanan**	**18.09**	**344**	↑	*e*P	**P**	**23 56 25.8**	**+2.3**
CAUP	**Cauayan**	**18.14**	**343**	↑	*e*P	**P**	**23 56 25.6**	**+1.4**
BOLP	**Bolinao**	**18.29**	**336**	↑	*e*P	**P**	**23 56 25.1**	**-0.8**
CVP	**Callao Caves**	**18.86**	**343**	↓	*e*P	**P**	**23 56 33.1**	**+0.8**
APYP	**Conner**	**19.18**	**342**	↑	*e*P	**P**	**23 56 35.3**	**-0.5**
WRAB	**Tennant Creek**	**20.52**	**161**		*e*P	**P**	**23 56 49.5**	**-0.2**
	225nm,0.8s							
WRAB					*e*pP		23 57 08.1	
WRAB					*e*		23 58 33.3	
WRA	**Warramunga Arr**	**20.52**	**161**		P	**P**	**23 56 49.6**	**-0.1**
	60nm,0.8s,baz=340,slow=11,SNR=197							
WRA					S	**S**	**00 00 35.0**	**+6.2**
	12nm,0.9s,baz=341,slow=18,SNR=6.9							
WRA					ScP		00 04 24.7	
	6.9nm,0.9s,baz=340,slow=2.9,SNR=15							
WB2	**Warramunga Arr**	**20.53**	**161**	↓	*i*P	**P**	**23 56 49.6**	**-0.2**
WB2					*e*S	**S**	**00 00 29.3**	**+0.5**
MBWA	**Marble Bar**	**21.91**	**200**		*e*P	**P**	**23 56 58.6**	**-5.1**
GUMO	**Guam**	**22.21**	**50**		*e*P	**P**	**23 57 08.5**	**+1.9**
	109nm,0.8s,mb5.2							
GUMO					*e*pP		23 57 28.2	
GUMO					*e*		23 57 39.7	
AS12	**Alice Springs**	**23.92**	**165**		*e*P	**P**	**23 57 24.8**	**+1.7**
	171nm,1.0s,mb5.3							
ASAR	**Alice Springs**	**23.92**	**165**		P	**P**	**23 57 24.6**	**+1.5**
	116nm,0.9s,mb5.2,baz=345,slow=9.5,SNR=246							
ASAR					S	**S**	**00 01 38.9**	**+10**
	15nm,0.9s,baz=347,slow=19,SNR=6.8							
ASAR					ScP		00 04 33.8	
	8.2nm,1.0s,baz=3.8,slow=2.2,SNR=14							
ASAR					LR	LR	00 07 56.0	
	comp=Z,111nm,20.7s,baz=359,slow=39							
KGM	**Kluang**	**24.22**	**276**	↑	*e*P	**P**	**23 57 28.0**	**+1.8**
	172nm,1.0s,mb5.3							
QIZ	**Qiongzhong**	**25.93**	**319**		P	**P**	**23 57 45.8**	**+3.5**
QIZ	**Qiongzhong**	**25.93**	**319**		*e*P	**P**	**23 57 42.3**	**0.0**
	22nm,1.0s,mb4.5							
IPM	**Ipoh**	**26.84**	**281**	↑	*e*P	**P**	**23 57 51.0**	**+0.3**
	30nm,0.7s,mb4.9							
CTA	**Charters Tower**	**26.84**	**138**		*e*P	**P**	**23 57 52.6**	**+1.9**
	11nm,0.9s,mb4.4							
CTA	**Charters Tower**	**26.84**	**138**		P	**P**	**23 57 52.8**	**+2.1**
	15nm,0.9s,mb4.5,baz=310,slow=11,SNR=4.8							
CTAO	**Charters Tower**	**26.84**	**138**		*e*P	**P**	**23 57 51.4**	**+0.7**
	24nm,1.0s,mb4.7							
CTAO					*e*pP	pP	23 58 12.3	-0.1
GZH	**Guangzhou**	**27.11**	**331**		P	**P**	**23 57 57.3**	**+4.2**
JOW	**Kunigami**	**27.14**	**2**		P	**P**	**23 57 53.7**	**+0.4**
	85nm,0.7s,mb5.4,baz=185,slow=8.0,SNR=40							
JOW					LR	LR	00 07 35.9	
	comp=Z,148nm,20.2s,baz=231,slow=34							
FORT	**Forrest**	**30.17**	**179**		*e*P	**P**	**23 58 20.1**	**-0.3**
	522nm,0.8s							
CBIJ	**Chichi jima**	**30.85**	**26**		P	**P**	**23 58 25.5**	**-0.9**
	107nm,0.6s,mb5.7,baz=215,slow=10,SNR=5.7							
KLBR	**Kellerberrin**	**32.30**	**196**		*e*P	**P**	**23 58 37.5**	**-1.5**
	42nm,0.7s,mb5.3							
COCO	**West Island**	**32.51**	**248**		*e*P	**P**	**23 58 37.0**	**-4.0**
	190nm,1.0s,mb5.9							
MUN	**Mundaring**	**33.10**	**198**	↓	*i*P	**P**	**23 58 44.7**	**-1.3**
	36nm,0.6s,mb5.4							
WHN	**Wuhan**	**33.24**	**339**	↑	P	**P**	**23 58 48.8**	**+1.6**
NJ2	**Nanjing**	**33.33**	**347**		*e*P	**P**	**23 58 49.0**	**+1.1**
GYA	**Guiyang**	**33.41**	**325**	↓	*i*P	**P**	**23 58 50.0**	**+1.3**
JNU	**Nakatsue**	**33.55**	**5**		P	**P**	**23 58 49.3**	**-0.5**
	25nm,0.9s,mb5.0,baz=323,slow=12,SNR=7.3							
JNU					LR	LR	00 11 57.9	
	comp=Z,98nm,19.1s,baz=216,slow=35							
NWAO	**Narrogin (SRO)**	**33.70**	**196**		P	**P**	**23 58 50.1**	**-1.0**
	36nm,0.8s,mb5.3,baz=21,slow=9.1,SNR=24							
NWAO					LR	LR	00 13 48.6	
	comp=Z,194nm,21.4s,baz=205,slow=38							
NWAO	**Narrogin (SRO)**	**33.70**	**196**		*e*P	**P**	**23 58 50.0**	**-1.1**
	50nm,0.9s,mb5.3							
NWAO					LR	LR	00 13 48.6	
CM31	**Chiang Mai Arr**	**33.71**	**305**		*e*P	**P**	**23 58 52.8**	**+1.4**
	7.5nm,0.8s,mb4.6							
CMAR	**Chiang Mai Arr**	**33.71**	**305**		P	**P**	**23 58 52.2**	**+0.9**
	2.5nm,0.8s,mb4.1,baz=137,slow=7.2,SNR=16							
CMAR					ScP		00 05 05.3	
	5.7nm,0.8s,baz=157,slow=2.9,SNR=17							
STKA	**Stephens Creek**	**34.01**	**158**		*e*P	**P**	**23 58 54.5**	**+0.7**
	28nm,0.8s,mb5.1							
STKA	**Stephens Creek**	**34.01**	**158**		P	**P**	**23 58 54.6**	**+0.8**
	32nm,0.8s,mb5.2,baz=336,slow=8.8,SNR=23							
STKA					LR	LR	00 15 26.8	
	comp=Z,136nm,18.2s,baz=22,slow=41							
KMI	**Kunming**	**34.88**	**319**		*e*P	**P**	**23 59 03.8**	**+2.6**
KMI					AMB	AMB		
	comp=Z,17nm,1.1s,mb4.8							
ENH	**Enshi**	**35.00**	**332**		*e*P	**P**	**23 59 02.9**	**+0.6**
	comp=Z,56nm,0.7s,mb5.5							
ARMA	**Armidale**	**37.65**	**145**	↑	*i*P	**P**	**23 59 27.2**	**+2.7**
KS15	**Wonju Array Si**	**37.70**	**1**		*e*P	**P**	**23 59 25.0**	**+0.1**
TIA	**Tai'an**	**37.71**	**346**		*e*P	**P**	**23 59 24.8**	**-0.2**
MAJO	**Matsushiro**	**38.14**	**14**		*e*P	**P**	**23 59 27.7**	**-0.9**
	comp=Z,28nm,0.5s,mb5.4							
MAT	**Matsushiro**	**38.14**	**14**		P	**P**	**23 59 27.3**	**-1.2**
MAT					*e*S	PP	00 01 05.3	+5.3
CD2	**Chengdu**	**38.44**	**326**	↓	*i*P	**P**	**23 59 32.5**	**+1.4**
CD2					AMB	AMB		
	comp=Z,50nm,1.0s,mb5.3							
XAN	**Xi'an**	**38.45**	**335**		P	**P**	**23 59 31.8**	**+0.7**
BJT	**Baijiatuau**	**41.57**	**347**		*e*P	**P**	**23 59 56.5**	**-0.3**
	comp=Z,29nm,0.6s,mb5.2							
BJT					*e*pP	pP	00 00 18.5	-1.5
BJI	**Beijing**	**41.59**	**347**		*e*P	**P**	**23 59 57.0**	**0.0**
BJI					AMB	AMB		
	comp=Z,35nm,0.9s,mb5.1							
MDJ	**Mudanjiang**	**44.91**	**2**		*e*P	**P**	**00 00 23.7**	**-0.2**
	comp=Z,58nm,1.0s,mb5.3							
MDJ					*es*P	sP	00 00 56.4	-2.1
LSA	**Lhasa**	**45.77**	**314**		*e*P	**P**	**00 00 33.3**	**+2.4**
	comp=Z,35nm,0.8s,mb5.1							
ASAJ	**Asahikawa**	**46.39**	**15**		P	**P**	**00 00 36.4**	**+0.8**
	comp=Z,21nm,0.4s,mb5.2,baz=230,slow=18,SNR=12							
YSS	**Yuzh-Sakhalins**	**49.08**	**14**		*e*P	**P**	**00 00 56.0**	**-0.5**
	comp=Z,31nm,0.5s,mb5.5							
HIA	**Hailar**	**49.96**	**353**		*e*P	**P**	**00 01 03.0**	**-0.2**
	comp=Z,5.4nm,0.6s,mb4.7							
HYB	**Hyderabad**	**51.27**	**293**	↓	*e*P	**P**	**00 01 13.5**	**-0.1**
	comp=Z,120nm,1.0s,mb5.9							
ULN	**Ulaanbaatar**	**51.28**	**343**		*e*P	**P**	**00 01 13.2**	**-0.1**
	comp=Z,40nm,1.0s,mb5.4							
ULN					*e*pP	pP	00 01 35.2	-1.8
ULN					*es*P	sP	00 01 47.1	-0.9
ULN					*e*ScP		00 06 12.8	
SONM	**Songino Array**	**51.46**	**342**		P	**P**	**00 01 14.7**	**+0.1**
	comp=Z,0.1nm,0.3s,baz=153,slow=8.3,SNR=14							
SONM					pP	pP	00 01 38.0	-0.4
	comp=Z,6.0nm,0.6s,baz=157,slow=7.3,SNR=4.5							
SONM					ScP		00 06 14.2	
	comp=Z,4.3nm,0.8s,baz=161,slow=4.8,SNR=12							
SONM	**Songino Array**	**51.46**	**342**		P	**P**	**00 01 14.7**	**+0.1**
SONM					pP	pP	00 01 38.0	-0.4
SONM					ScP		00 06 14.2	
BHPL	**Bhopal**	**53.97**	**299**		*e*P	**P**	**00 01 33.4**	**-0.1**
BHPL					*e*		00 01 34.1	
	comp=Z,41nm,0.7s							
AGRA	**Agra**	**54.90**	**304**		*e*P	**P**	**00 01 39.3**	**-1.0**
AGRA					*e*		00 01 40.3	
	comp=Z,54nm,0.3s							
KALG	**Kalgarh**	**55.12**	**307**		*e*	**P**	**00 01 35.0**	**-6.9**
KALG					*e*		00 01 35.5	
	comp=Z,10nm,0.3s							
ASOR	**Ausora**	**55.62**	**306**		*e*P	**P**	**00 01 44.3**	**-1.1**
ASOR					*e*		00 01 45.9	
	comp=Z,278nm,0.3s							
SONA	**Sohna**	**55.99**	**305**		*e*P	**P**	**00 01 47.2**	**-0.9**
SONA					*e*		00 01 48.8	
	comp=Z,45nm,0.9s							
AYAN	**Aya Nagar**	**56.04**	**305**		*e*P	**P**	**00 01 47.5**	**-1.0**
AYAN					*e*		00 01 49.2	
	comp=Z,31nm,1.0s							
KUDL	**Kundal**	**56.44**	**305**		*e*P	**P**	**00 01 50.3**	**-1.0**
KUDL					*e*		00 01 51.5	
	comp=Z,39nm,0.8s							
RTK	**Rohtak**	**56.82**	**306**		*e*P	**P**	**00 01 53.2**	**-0.8**
RTK					*e*		00 01 54.5	
	comp=Z,90nm,0.6s							
KKR	**Kurukshetra**	**56.84**	**307**		*e*P	**P**	**00 01 54.4**	**+0.2**
KKR					*e*		00 01 55.6	
	comp=Z,61nm,0.4s							
KHET	**Khetri**	**56.98**	**304**		*e*P	**P**	**00 01 54.4**	**-0.7**
KHET					*e*		00 01 55.6	
	comp=Z,34nm,0.8s							
JASL	**Jaisalmer**	**60.73**	**301**		*e*P	**P**	**00 02 20.8**	**-0.3**
MKAR	**Makanchi Array**	**61.38**	**326**		P	**P**	**00 02 24.8**	**-0.4**
	comp=Z,22nm,0.5s,mb5.4,baz=118,slow=8.2,SNR=182							
MKAR					pP	pP	00 02 48.4	-1.4
	comp=Z,18nm,0.7s,baz=118,slow=8.4,SNR=4.8							
MKAR					ScP		00 06 57.7	
	comp=Z,11nm,0.8s,baz=127,slow=6.1,SNR=16							
MKAR					S	**S**	**00 10 35.5**	**-0.9**
	comp=Z,1.9nm,0.8s,baz=128,slow=14,SNR=8.9							
MKAR	**Makanchi Array**	**61.38**	**326**		P	**P**	**00 02 24.8**	**-0.4**
MKAR					pP	pP	00 02 48.4	-1.4
MKAR					ScP		00 06 57.7	
MKAR					S	**S**	**00 10 35.5**	**-0.9**
YAK	**Yakutsk**	**62.34**	**1**		*e*P	**P**	**00 02 30.8**	**-0.6**
	comp=Z,230nm,0.6s							
ZAL	**Zalesovo**	**64.61**	**334**		P	**P**	**00 02 44.7**	**-1.7**
	comp=Z,6.7nm,0.8s,mb4.5,baz=270,slow=6.0,SNR=48							
ZAL					S	**S**	**00 11 12.5**	**-4.1**
	comp=Z,1.3nm,0.8s,baz=140,slow=21,SNR=14							
ZAL	**Zalesovo**	**64.61**	**334**		P	**P**	**00 02 44.7**	**-1.7**
ZAL					S	**S**	**00 11 12.5**	**-4.1**
FX1	**Attu Island--F**	**65.37**	**29**		P	**P**	**00 02 52.1**	**+0.8**
	comp=Z,72nm,0.9s,mb5.5,baz=46,slow=3.3,SNR=6.8							
FX1					LR	LR	00 28 32.4	
	comp=Z,5.5nm,19.2s,baz=55,slow=33							
KURK	**Kurchatov**	**65.63**	**328**		*e*P	**P**	**00 02 52.3**	**-0.7**
KURK					*e*pP	pP	00 03 14.9	-3.0
KURK					*e*PP	PP	00 05 15.2	-5.6
BVAR	**Borovoye Array**	**71.19**	**328**		P	**P**	**00 03 27.0**	**-0.3**
	comp=Z,9.9nm,0.8s,mb4.7,baz=143,slow=7.4,SNR=57							
BVAR					pP	pP	00 03 51.0	-1.5
	comp=Z,6.9nm,0.7s,baz=141,slow=9.5,SNR=3.9							
BVAR					S	S	00 12 31.8	-3.2
	comp=Z,1.3nm,1.0s,baz=120,slow=12,SNR=7.1							
BVAR	**Borovoye Array**	**71.19**	**328**		P	**P**	**00 03 27.0**	**-0.3**
BVAR					pP	pP	00 03 51.0	-1.5
BVAR					S	S	00 12 31.8	-3.2
BRVK	**Borovoye**	**71.26**	**328**		*e*P	**P**	**00 03 27.1**	**-0.6**
BRVK					*e*pP	pP	00 03 49.6	-3.4
ZRNK	**Zerenda**	**71.90**	**327**		*e*P	**P**	**00 03 31.1**	**-0.4**
ZRNK					*e*pP	pP	00 03 53.6	-3.2
BILL	**Bilibino**	**73.40**	**14**		*e*P	**P**	**00 03 37.4**	**-2.7**
	comp=Z,4.7nm,0.4s,mb4.7							
THR	**Tehran**	**79.18**	**307**		P	**P**	**00 04 13.2**	**0.0**
	comp=Z,0.5nm,0.5s,baz=55,slow=4.9,SNR=4.1							
THR	**Tehran**	**79.18**	**307**		P	**P**	**00 04 13.2**	**0.0**
VNDA	**Vanda**	**79.22**	**173**		P	**P**	**00 04 12.9**	**+0.3**
	comp=Z,4.0nm,0.7s,mb4.4,baz=230,slow=7.1,SNR=5.3							
VNDA					LR	LR	00 40 13.9	
	comp=Z,91nm,19.5s,baz=316,slow=36							
VNDA	**Vanda**	**79.22**	**173**		P	**P**	**00 04 12.9**	**+0.3**
VNDA					LR	LR	00 40 13.9	
MAW	**Mawson**	**80.11**	**201**		P	**P**	**00 04 17.7**	**+0.2**
	comp=Z,12nm,0.7s,mb4.8,baz=70,slow=6.0,SNR=22							
MAW					LR	LR	00 37 44.0	
	comp=Z,137nm,20.2s,baz=342,slow=34							
MAW	**Mawson**	**80.11**	**201**		*e*P	**P**	**00 04 17.9**	**+0.4**
KIV	**Kislovodsk**	**86.51**	**314**		*e*P	**P**	**00 04 52.0**	**+1.5**
	comp=Z,5.0nm,0.7s,mb4.5							
MCK	**McKinley**	**87.58**	**26**		*e*P	**P**	**00 04 51.0**	**-4.2**
	comp=Z,3.2nm,0.7s,mb4.5							
ILAR	**Eielson Array**	**88.56**	**25**		P	**P**	**00 04 58.8**	**-1.0**
	comp=Z,2.5nm,0.6s,mb4.4,baz=240,slow=5.3,SNR=33							
ILAR					PKKPbc		00 22 38.9	
	comp=Z,0.4nm,0.8s,baz=56,slow=3.3,SNR=5.3							
ILAR					LR	LR	00 38 45.9	
	comp=Z,30nm,20.8s,baz=110,slow=31							
ILAR	**Eielson Array**	**88.56**	**25**		P	**P**	**00 04 58.8**	**-1.0**
ILAR					PKKPbc		00 22 38.9	
ILAR					LR	LR	00 38 45.9	
QSPA	**South Pole Qui**	**89.48**	**180**		*e*P	**P**	**00 05 05.0**	**+1.1**
	comp=Z,21nm,1.1s,mb5.1							
QSPA					*e*	pP	00 05 30.3	+0.1
KMBO	**Kilima Mbogo**	**90.16**	**269**		P	**P**	**00 05 10.1**	**+1.5**
	comp=Z,4.0nm,0.8s,mb4.6,baz=66,slow=9.3,SNR=9.1							
KMBO	**Kilima Mbogo**	**90.16**	**269**		P	**P**	**00 05 10.1**	**+1.5**
OBN	**Obninsk**	**90.86**	**325**		P	**P**	**00 05 10.8**	**0.0**
	comp=Z,5.1nm,0.4s,mb5.0							
ARCES	**ARCESS Array B**	**94.58**	**340**		P	**P**	**00 05 27.2**	**-0.3**
	comp=Z,2.1nm,0.7s,mb4.7,baz=79,slow=6.2,SNR=13							
ARCES					LR	LR	00 57 47.4	
	comp=Z,35nm,18.4s,baz=63,slow=42							
SPITS	**Spitsbergen Ar**	**94.69**	**349**		P	**P**	**00 05 27.2**	**-0.7**
	comp=Z,8.0nm,1.1s,mb5.1,baz=126,slow=17,SNR=4.3							
SPITS	**Spitsbergen Ar**	**94.69**	**349**		P	**P**	**00 05 27.2**	**-0.7**
FINES	**FINESS Array B**	**95.82**	**332**		P	**P**	**00 05 32.1**	**-1.2**
	comp=Z,0.4nm,0.5s,mb4.1,baz=63,slow=4.3,SNR=5.8							
FINES	**FINESS Array B**	**95.82**	**332**		P	**P**	**00 05 32.1**	**-1.2**
YKA	**Yellowknife Ar**	**102.98**	**25**		Pdiff	Pdif	00 06 06.3	+0.8
	comp=Z,0.4nm,0.7s,baz=297,slow=4.5,SNR=9.7							
YKA					PKKPbc		00 22 02.4	
	comp=Z,0.3nm,0.8s,baz=115,slow=3.0,SNR=5.6							
YKA	**Yellowknife Ar**	**102.98**	**25**		Pdif	Pdif	00 06 06.3	+0.8
YKA					PKKPbc		00 22 02.4	
PDAR	**Pinedale Array**	**113.99**	**43**		PKKPbc		00 21 28.4	
	comp=Z,0.8nm,0.6s,baz=113,slow=5.4,SNR=9.4							
PDAR					PKKPab		00 21 34.8	
	comp=Z,1.0nm,0.8s,baz=104,slow=6.5,SNR=6.4							
TXAR	**Lajitas Array**	**123.52**	**55**		PKP	PKPdf	00 11 06.4	+2.6
	comp=Z,0.2nm,0.6s,baz=305,slow=2.0,SNR=4.0							
TXAR					PKKPbc		00 20 53.8	
	comp=Z,0.4nm,0.8s,baz=132,slow=6.8,SNR=5.2							
TXAR	**Lajitas Array**	**123.52**	**55**		PKP	PKPdf	00 11 06.4	+2.6
TXAR					PKKPbc		00 20 53.8	
DBIC	**Dimbokro**	**132.00**	**279**		SKPbc		00 14 39.9	
	comp=Z,8.9nm,0.6s,baz=68,slow=4.0,SNR=22							
CPUP	**Villa Florida**	**152.99**	**171**		PKPbc	PKPdf	00 12 05.7	+9.4
	comp=Z,6.3nm,0.8s,baz=161,slow=2.8,SNR=8.4							
CPUP	**Villa Florida**	**152.99**	**171**		PKPbc	PKPdf	00 12 05.7	+9.4
LPAZ	**La Paz**	**157.37**	**138**		*e*PKPdf	PKPdf	00 12 05.8	+3.5
BDFB	**Brasilia**	**163.39**	**196**		PKPab	PKPab	00 13 02.0	-0.7
	comp=Z,2.5nm,0.8s,baz=185,slow=1.2,SNR=4.5							

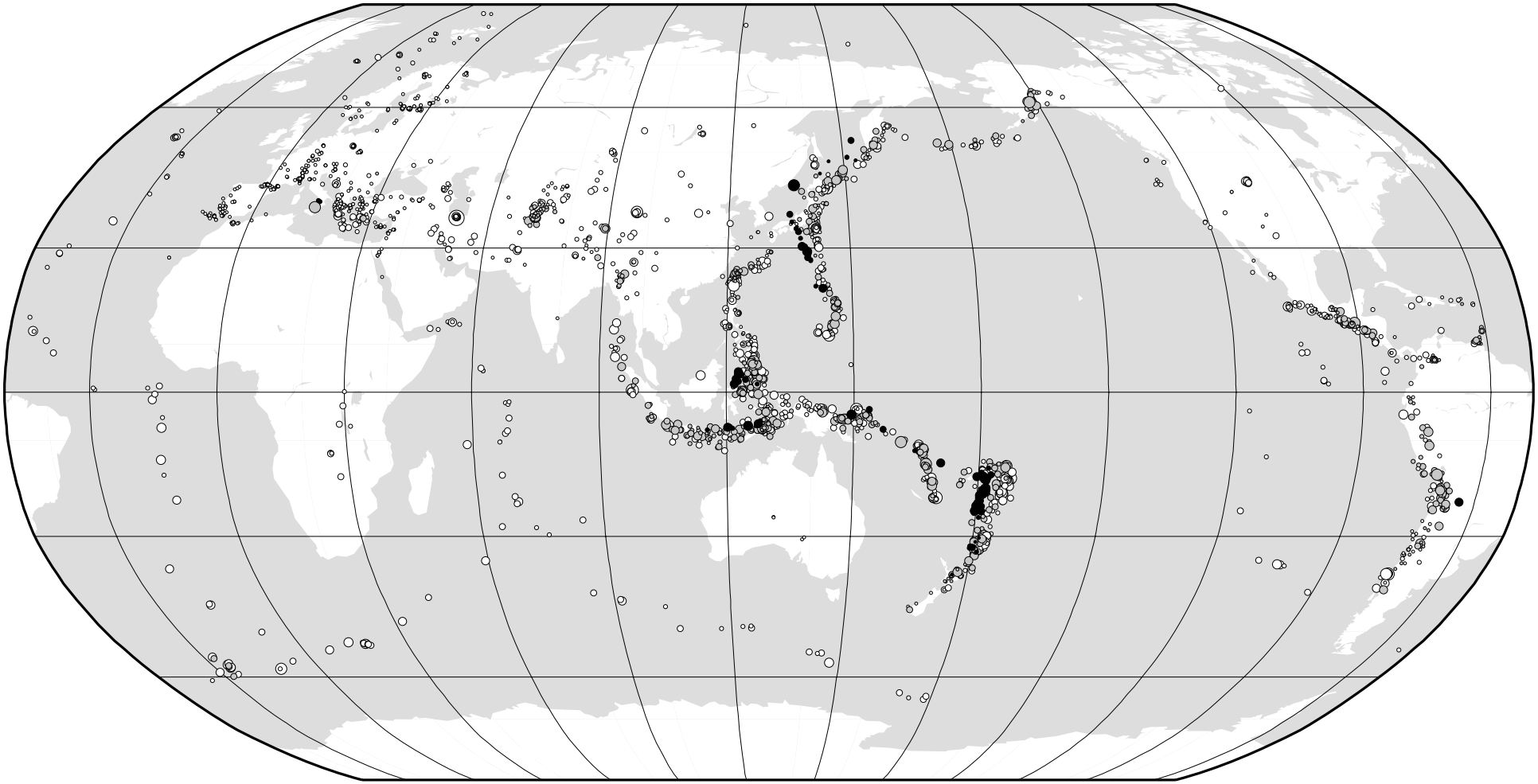
SNSN ***31*** *23:52:36.5,32.11N×35.23E,Ml3.5*
GII ***31*** *23:52:38.5±0.2,32.03N×35.48E,h2km±1km,ML3.5/13, Mw3.2/3*

GII Felt III.
GRAL ***31*** *23:52:38.7±1.9,32.00N×35.60E,h13km±63km,MD3.7*
NSSC ***31*** *23:52:43.2,32.24N×35.63E,h10km±3km*

ISC 31 23:52:38.0±0.4,32.03N±0.02×35.51E±0.04,h4km±4km, n41,σ0s90/57,6D,Dead Sea region

Code	Station Name	Δ°	AZ°	Phase	ID		Time	Res
				Op		ISC	h m s	ISC
HMDT	**Nahal Hemdat**	**0.22**	**3**		Pg	**Pg**	**23 52 43.3**	**+0.9**
MMLI	**Mount Malkishu**	**0.41**	**349**		Pg	**Pg**	**23 52 46.8**	**+0.6**
MMLI					Sg	**Sg**	**23 52 53.8**	**+2.1**
DRGI	**Dragot**	**0.45**	**193**		Pg	**Pg**	**23 52 47.8**	**+0.7**
MKRJ	**Makawir**	**0.49**	**167**		Pg	**Pg**	**23 52 49.1**	**+1.2**
GLH	**Golan-Tel Qazi**	**0.69**	**10**		Pg	**Pg**	**23 52 52.6**	**+0.9**
AMZI	**Amatzia**	**0.72**	**316**		Pg	**Pg**	**23 52 52.3**	**-0.1**
AMZI					Sg	**Sg**	**23 53 03.2**	**+1.1**
MZDA	**Masada**	**0.73**	**190**		Pg	**Pg**	**23 52 52.7**	**+0.1**
MZDA					Sg	**Sg**	**23 53 02.7**	**+0.3**
OFRI	**'Ofer**	**0.73**	**323**		Pg	**Pg**	**23 52 52.6**	**-0.1**
TCHB	**Talchebab**	**0.74**	**31**	↑	P	**Pg**	**23 52 53.6**	**+0.8**
TCHB				↓	S	**Sg**	**23 53 00.7**	**-2.0**
HAF	**Haifa**	**0.85**	**331**		Pg	**Pg**	**23 52 54.9**	**0.0**
KSHT	**Keshet**	**0.98**	**15**		Pg	**Pg**	**23 52 57.6**	**+0.1**
HNTI	**Hanita**	**1.08**	**345**		Pg	**Pg**	**23 52 59.0**	**-0.6**
HNTI					Sg	**Sg**	**23 53 14.6**	**+0.5**
KSDI	**Kefar Szold**	**1.16**	**6**		Pg	**Pg**	**23 53 01.1**	**-0.1**
MASH	**Mash'abbe Sade**	**1.21**	**211**		Pg	**Pg**	**23 53 01.1**	**-1.0**
RTMM	**Retamin**	**1.21**	**216**		Pg	**Pg**	**23 53 01.2**	**-0.8**
SALA	**Sala**	**1.23**	**57**	↑	P	**Pb**	**23 53 02.3**	**+0.8**
SALA				↑	S	**Sb**	**23 53 18.0**	**+0.3**
HRI	**Mount Hermon**	**1.24**	**9**		Pg	**Pg**	**23 53 01.9**	**-0.9**
SVTA	**Shivta**	**1.34**	**215**		Pn	**Pn**	**23 53 03.2**	**-0.3**
BRBR	**Barbar**	**1.42**	**15**	↓	P	**Pn**	**23 53 04.8**	**+0.1**
BRBR				↑	S	**Sb**	**23 53 22.2**	**-0.9**
MATL	**Matirih**	**1.46**	**354**	*i*	PG	**Pg**	**23 53 06.4**	**-0.7**
KZIT	**Kziot**	**1.47**	**221**		Pn	**Pn**	**23 53 05.4**	**0.0**
KZIT					Sn	**Sn**	**23 53 25.9**	**+0.5**
ZFRI	**Zfri**	**1.50**	**191**		Pn	**Pn**	**23 53 05.7**	**-0.2**
TOTH	**TOTAH**	**1.53**	**30**	↓	P	**Pn**	**23 53 07.1**	**+0.8**
TOTH				↑	S	**Sb**	**23 53 25.8**	**-0.5**
QASN	**Qassioun**	**1.63**	**23**	↓	P	**Pn**	**23 53 08.8**	**+1.2**
QASN				↓	S	**Sb**	**23 53 28.3**	**-0.8**
QURS	**Qurayyt al Mil**	**1.68**	**112**		P	**Pn**	**23 53 10.5**	**+2.2**
QURS					S	**Sb**	**23 53 36.4**	**+6.0**
PRNI	**Paran**	**1.73**	**195**		Pn	**Pn**	**23 53 09.3**	**+0.1**
PRNI					Sn	**Sn**	**23 53 32.7**	**+0.7**
ZALF	**Zalf**	**1.78**	**60**	↓	P	**Pn**	**23 53 11.5**	**+1.8**
BHL	**Bhannes**	**1.87**	**4**	*i*	PG	**Pg**	**23 53 12.4**	**-2.9**
BHL				*i*	SG	**Sg**	**23 53 39.6**	**-0.6**
HRFI	**Mount Harif**	**2.03**	**192**		Pn	**Pn**

ISC Computed Locations for May 2004



Depth (km)	0-70	70-300	>300
M=8	○	○	●
M=6.5	○	○	●
M=4	○	○	●

Robinson Projection, centred on 0˚N,130˚E

2728 Events